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OFFICIAL GAZETTE UNITED STATES PATENT OFFICE

VOL. 122

MAY - JUNE

1906

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OFFICIAL GAZETTE

OF THE

UNITED STATES PATENT OFFICE.

VOLUME CXXII.

MAY 1 TO JUNE 26, INCLUSIVE.

1906.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1907.

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ERRATA.

820,297, page 640, in heading, name of first-mentioned patentee, for "Roy H. Garner" read *Ray H Garner.*

820,676, page 861, third claim, line 8, for "cylinder" read *burner*, and same claim and line, for "burner' read *cylinder.*

820,930, page 983, in heading, for "Filed Nov. 8, 1905. Serial No. 286,375" read *Original application filed Mar. 26, 1903, Serial No. 149,680. Divided and this application filed Nov. 8, 1905. Serial No. 286,375.*

821,174, page 1157, in heading, name of patentee for "Adolf W. Kützer" read *Adolf W. Kutzer.*

821,291, page 1205, in heading, title of invention, for "Benzoyl Succinyl Peroxid and Process of Making Same" read *Benzoyl Succinyl Peroxid.*

821,743, page 1466 second claim, line 4, for the word "joists" read *hoists.*

822,890, page 2011, in heading, after residence of inventor, insert *assignor to The Kilbourn Knitting Machine Company, New Brunswick, N. J.*

823,586, page 2433, sixth claim, line 2, strike out the word "and" before the word "connected," and same claim, same line, before the words "a feeding-disk shaft" insert the word *and.*

823,796, page 2519, fourth claim, line 8, for the word "rockable" read *rotatable.*

823,936, page 2579, fifth claim, line 8, for "shaft-support" read *shaft supported.*

824,439, page 2841, in heading, assignment, name of assignee, for "American Company" read *America Company.*

824,445, page 2843, in heading, title of invention, last word in title, for "Cake" read *Cakes.*

53,688, (Trade-Mark,) page 2376, line 5, for the word "Stono" read *National.*

53,690, (Trade-Mark,) page 2376, line 5, for the word "National" read *Stono.*

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OF THE

UNITED STATES PATENT OFFICE.

MAY—JUNE, 1906.

Patents Nos. 819,034 to 819,705.

THE OFFICIAL GAZETTE

OF THE

United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

VOL. 122—No. 1. TUESDAY, MAY 1, 1906. PRICE—$5 per year.

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TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama	1	1	Nevada	....	....
Alaska, District of	....	....	New Hampshire	2	....
Arizona Territory	1	....	New Jersey	23	8
Arkansas	1	....	New Mexico Ter't'y	....	....
California	39	11	New York	116	106
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District of Columbia	5	....	Oklahoma Territ'y	3	....
Florida	2	1	Oregon	1	1
Georgia	7	1	Pennsylvania	66	20
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Idaho	....	....	Rhode Island	5	9
Illinois	72	23	South Carolina	2	....
Indian Territory	2	....	South Dakota	1	....
Indiana	19	6	Tennessee	7	1
Iowa	16	1	Texas	6	4
Kansas	4	1	Utah	2	1
Kentucky	6	....	Vermont	2	....
Louisiana	6	1	Virginia	8	2
Maine	4	3	Washington	8	1
Maryland	7	11	West Virginia	4	1
Massachusetts	34	28	Wisconsin	10	8
Michigan	18	8	Wyoming	1	....
Minnesota	15	4	U. S. Army	....	....
Mississippi	....	....	U. S. Navy	....	....
Missouri	16	5			
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Nebraska	8	....			

TO CITIZENS OF FOREIGN COUNTRIES.

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Algeria	....	....	Netherlands	....	....
Austria-Hungary	4	....	Newfoundland	....	....
Belgium	....	....	New South Wales	....	....
Brazil	....	....	New Zealand	1	....
British West Indies	....	....	Nicaragua	1	....
Canada	11	1	Persia	....	....
Cape Colony	....	....	Queensland	....	....
Chile	....	....	Roumania	....	....
China	....	....	Russia	....	....
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Trade-Marks.

The publication of trade-marks under the act of February 20 1905, in the OFFICIAL GAZETTE, commenced May 2, 1905, and will appear in each weekly number of the GAZETTE thereafter.

Extra copies of the trade-mark portion of the GAZETTE, which will be sold separately, may be obtained single or in quantities for five cents each. Coupons will be taken in payment therefor.

Amendments to Amendments.

RULE 74. When an amendatory clause is amended, it must be wholly rewritten, so that no interlineation or erasure shall appear in the clause, as finally amended, when the application is passed to issue. If the number or nature of the amendments shall render it otherwise difficult to consider the case or to arrange the papers for printing or copying, the Examiner or Commissioner may require the entire specification to be rewritten.

Attorneys' Use of Assignment Records.

It has been brought to my attention that certain attorneys and other persons have made use of the assignment records to obtain the addresses of persons having applications pending before this Office, in order to send them letters and circulars offering to secure foreign patents or to transact other business which it may be presumed the attorneys of record in such applications are competent and willing to do. Such use of the assignment records is not a proper or legitimate use. These records are not open to the public for any such purpose.

It is hereby ordered that any attorney or other person who is known to make such use of the assignment records of this Office will be denied access thereto.

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business April 24, 1906.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
	In arrears—Under fifteen days.			
378	XXXVIII. Artesian and Oil Wells, Bottles and Jars, Care of Live Stock, Fishing and Trapping, Stationery, Stone-Working.	Apr. 17	Mar. 24	277
321	I. Tillage, etc., Fences, and Railway Draft Appliances.	Apr. 14	Mar. 23	233
322	XXXVI. Curtains, Shades, and Screens, Drafting, Driers, Measuring Instruments, and Wind-Wheels.	Apr. 11	Mar. 28	270
303	XVII. Linotyping, Printing, Matrix-Making, Nut and Bolt Locks.	Apr. 10	Feb. 9	335
154	XI. Boot and Shoe Making, Boots, Shoes, and Leggings, Button, Eyelet, and Rivet Setting, Leather Manufacturing, Nailing and Stapling, Check-Controlled Apparatus, Whips and Whip Apparatus.	Apr. 9	Jan. 12	330
179	XX. Artificial Limbs, Builders' Hardware, Dentistry, Locks and Latches, Safes, Undertaking.	Apr. 9	Sept. 21	431
	Under one month.			
148	XXXII. Carbonating Beverages, Dispensing Beverages, Dispensing-Cans, Metallic Shipping and Storing Vessels, Packaging Liquids, Paper Receptacles, Refrigeration, Wooden Receptacles.	Apr. 8	Nov. 24	754
175	III. Annealing and Tempering, Coating with Metal, Electrochemistry, Metal-Founding, Metallurgy, Shaping Fluid Metal.	Apr. 6	Feb. 16	414
332	X. Carriages and Wagons	Apr. 6	Nov. 17	998
107	XXXVII. Electricity, Conductors, Lighting, Special Apparatus.	Apr. 5	Sept. 27	807
105	XXVI. Electricity, Generation, Electric Heaters, Electric Railways, Motive Power.	Apr. 5	Sept. 25	783
304	XXXIV. Railways, Railway-Brakes, Rolling-Stock.	Apr. 4	Feb. 20	418
122	XIX. Stoves and Furnaces and Steam-Boiler Furnaces.	Apr. 4	Oct. 28	699
128	II. Bee Culture, Dairy, Label-Affixers, Paper Files and Binders, Presses, Store-Service, Tobacco, etc.	Apr. 3	Jan. 11	293
137	VIII. Beds, Chairs, Furniture, Kitchen and Table Articles, Store Furniture.	Apr. 3	Dec. 11	631
327	XVIII. Steam-Engineering, etc	Apr. 2	Dec. 28	452
379	XXIII. Acoustics, Coin-Handling, Horology, Recorders, Registers, Optics, Signals, Time Controlling Mechanism.	Apr. 2	Oct. 30	736
330	XIII. Arms, Projectiles, and Explosive Charges, Making, Metal-Working, Needle and Pin Making.	Apr. 2	Sept. 19	623
153	XXX. Fluid-Pressure Regulators, Lamps and Gas-Fittings, Type-Writing Machines.	Apr. 1	Sept. 15	724
244	XXXV. Baggage, Buckles, Buttons, and Clasps, Card, Picture, and Sign Exhibiting, Deposit and Collection Receptacles, Package and Article Carriers, Packing and Storing Vessels, Photography.	Mar. 31	Jan. 31	622
172	XXXI. Alcohol, Charcoal and Coke, Distillation, Gas, Heating and Illuminating, Hides, Skins, and Leather, Liquid Coating Compositions, Oils, Fats, and Glue, Water Purification.	Mar. 30	Mar. 5	287
318	VI. Bleaching and Dyeing, Chemicals, Explosives, Fertilizers, Medicines, Preserving, Sugar and Salt.	Mar. 28	Jan. 5	490

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Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
147	XXIX. Coopering, Roofs, Wheelwright-Machines, Wooden Buildings, Wood-Sawing, Wood-Turning, Woodworking-Tools.	Mar. 26	Dec. 20	458
164	XXXIII. Canes, Canopies, Cutlery, Domestic Cooking Vessels, Electricity, Medical and Surgical, Electric Signaling, Fireproof Buildings, Harness, Masonry, Tents, and Umbrellas.	Mar. 26	Oct. 19	743
324	XII. Elevators, Journal-Boxes, Lubricators, Machine Elements, Pulleys and Shafting.	Mar. 24	Feb. 14	492
	Between one and two months.			
167	V. Fine Arts, Bookbinding, Harvesters, Jewelry, and Music.	Mar. 23	Feb. 5	529
308	XV. Bread, Pastry, and Confections, Making, Coating, Laminated Sheets and Fabrics, Fuel, Glass, Hydraulic Lime and Cement, Paper-Making, Paving, and Plastics.	Mar. 22	Jan. 6	453
315	XXV. Butchering, Mills, Threshing, and Vegetable Cutters and Crushers.	Mar. 20	Oct. 30	578
232	IV. Bridges, Conveyers, Cranes and Derricks, Excavating, Hoisting, Hydraulic Engineering, Loading and Unloading, and Towers.	Mar. 17	Mar. 19	387
144	XXIV. Apparel, Apparel Apparatus, Sewing-Machines, Surgery, Toilet.	Mar. 17	Nov. 21	663
109	XVI. Telegraphy and Telephony	Mar. 16	Feb. 5	358
307	XIV. Cutting and Punching Sheets and Bars, Farriery, Metal-Bending, Metal-Ornamenting, Metal Personal Wear, Making, Sheet-Metal Ware, Making, Tools, Wire-Working.	Mar. 12	Dec. 22	411
142	IX. Baths and Closets, Fire-Extinguishers, Hydraulic Motors, Pumps, Sewerage, and Water Distribution.	Mar. 12	Aug. 17	1183
133	XXII. Air-Guns, Ammunition and Explosive Devices, Boats and Buoys, Catapults and Targets, Firearms, Marine Propulsion, Ordnance, Ships.	Mar. 3	Oct. 21	348
	Between two and three months.			
375	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, Washing Apparatus.	Feb. 14	Oct. 19	807
382	XXVIII. Air and Gas Engines, Air and Gas Pumps, Pneumatics.	Feb. 12	July 12	1199
312	VII. Velocipedes, Clutches, Fire-Escapes, Games and Toys, Ladders, Mechanical Motors, and Paper Manufactures.	Feb. 7	Nov. 14	514
112	XXI. Textiles, Carding, Knitting, Spinning, Weaving, etc.	Jan. 27	Sept. 15	676
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159	TRADE-MARKS, DESIGNS, LABELS AND PRINTS.			
	Between one and two months.			
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	Under one month.			
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	Under fifteen days.			
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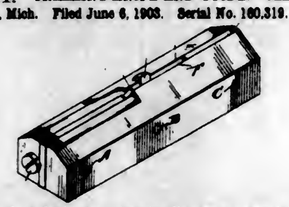
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PATENTS

GRANTED MAY 1, 1906.

819,034. **TRIMMING-KNIFE AND GUIDE.** JAMES B. ALLEN, Detroit, Mich. Filed June 6, 1903. Serial No. 160,319.



Claim.—1. A device for trimming linotypes comprising two parallel knives having a space between them, a feather secured to one of the knives and lying in said space so as to act as a guide for the slug and a third knife filling one end of said space.

2. In trimming-knives and guides used in linotype-machines the combination, with a knife which trims the bottom of the slugs or linotypes, of a feather adapted to fit into a groove in the slug and acting as a guide and bearing to hold the slug against the knife during the operation of trimming said feather being connected to a part of the device in front of said knife.

3. In trimming-knives and guides used in linotype-machines the combination with a knife adapted to trim the bottom of the slug or linotype and having a slot therein, a boss connected to a part of the device upon which the said knife slides by means of said slot, a screw adapted to be moved so as to act as an adjustable stop to regulate the degree of movement of the said knife, of knives which at the same time trim also the sides of the linotype, and a feather adapted to fit in a groove in the slug and acting as a guide and bearing to hold the slug against the bottom cutting-knife during the operation of trimming, substantially as described.

819,035. **RAIL-JOINT.** JACOB P. ANK, Crawfordsville, Iowa, assignor of one-half to W. A. Harper, Crawfordsville, Iowa. Filed June 22, 1905. Serial No. 266,450.



Claim.—In a rail-joint, the combination of the abutting rail ends, a base-plate extending beyond the base of the rails at one side and having spike-openings therein and also having a wing formed integral therewith on the opposite side and closely fitting against the web and base of the rails, said base-plate being provided with teeth on its under side which are adapted to engage with the ties to prevent spreading of the rails and are so formed as to separate the fibers of the wood instead of cutting the same and weakening the tie, a removable plate fitting closely against the opposite side of the rails and embracing the web and base thereof, bolts passing through registering openings in said plate, the web of the rail, and the before-mentioned wing, and spikes passing through the spike-openings in the base-plate, the heads of the spikes engaging with the lower portion of the removable plate fitting against the base of the rails and tending to wedge the rails into a close engagement with the wing on the opposite side thereof.

819,036. **CUSHION-TIRE.** FRANK M. ASHLEY, New York, N. Y. Filed Aug. 3, 1903. Serial No. 167,994.

Claim.—1. A tire portion comprising yielding side walls contributing to form an inner recess, radial walls integral with and laterally disposed, said radial walls being integral with a tire portion in the inner side thereof and presenting interiorly-extended transverse edges containing transversely-extended radial arches forming a clearance or space for promoting the movements of the tire under tread compression, and a radial longitudinal web intersecting the radial walls and extending continuously from the roof of the arch to the top of the tire portion.



2. A tire portion presenting integrally-yielding side walls contributing to form an inner recess, radial walls integral with and laterally disposed, said radial walls being integral with a tire portion in the inner side thereof and presenting interiorly-extended transverse edges containing transversely-extended radial arches forming a clearance or space for promoting the movements of the tire under tread compression, and a radial longitudinal web intersecting the radial walls and extending continuously from the roof of the arch to the top of the tire portion.

3. A tire portion comprising yielding side walls contributing to form an inner recess, and radial walls in a longitudinal series within said recess and also yielding, each of said radial walls being laterally oblique, integral with said side walls and continuously spanning said recess.

4. A tire portion comprising yielding side walls contributing to form an inner recess, a radial longitudinal web within said recess, and radial walls at opposite sides of the web, said radial walls being laterally oblique and integral with the said side walls.

5. In a tire, a core containing an inner recess and radial walls within the latter and integral with said core, said walls being each laterally oblique and continuously spanning said recess at both sides of the radial center thereof.

6. In a tire, a core-section comprising a flexible material and containing an inner longitudinally-extending recess, and radial walls within the latter and integral with the core-section, said walls being laterally oblique and continuously spanning said recess.

7. In a tire, a core containing an inner longitudinally-extending recess, a longitudinal web within said recess and integral with the core, and radial walls obliquely disposed within and each spanning the recess.

8. In a tire, a flexible core containing an inner longitudinally-extending recess, a plurality of longitudinal webs within said recess and integral with the core, and integral radial walls obliquely disposed within and each spanning the recess.

9. In a tire, a core containing an inner longitudinally-extending recess, radial walls integral with the said core and each obliquely disposed within and continuously spanning said recess, and a flexible covering for the core.

10. In a tire, a core containing an inner longitudinally-extending recess, a longitudinal web within said recess and integral with the core, integral lateral walls obliquely within and each spanning said recess, and a flexible covering for the core.

11. In a tire, a core containing an inner longitudinally-extending recess, a plurality of longitudinal webs within said recess and in-

tegral with the core, integral lateral walls obliquely within and each spanning said space, and a covering for the core.

12. A tire embodying side walls and a longitudinal web, the latter for limiting the longitudinal strain but adapted to recede under tread compression, and a plurality of laterally-oblique connections at each side of the web for placing said side walls under tension when tread compression is incurred.

13. A tire embodying side walls presenting an intermediate inner recess, a longitudinal web within such recess and integrally supported at its outer edge, and oblique truss-sections integrally connecting the web and side walls and spanning the recess.

14. The combination with a felly and wheel-rim, the latter comprising two sections overlapping at the felly, of a yielding tire containing lugs provided with longitudinally-extended heads interiorly clamping the tire, screws bearing in one of the overlapping rim portions and engaging the lugs and bolts bearing in the felly and engaging both overlapping portions of the rim-sections.

15. In a tire, an integral core of flexible material having laterally-disposed V-shaped openings contracting in the direction of the core-center and open at their inner sides.

16. A tire portion comprising yielding side walls contributing to form an inner recess, and radial walls in a longitudinal series within said recess, said walls presenting interior edges embodying side horizontal bearing portions and intermediate extended horizontal arch, the latter coacting to form an inner clearance-space for promoting the movements of the walls under tread compression.

17. A tire portion comprising yielding side walls contributing to form an inner recess, and radial walls in a longitudinal series within and transversely spanning said recess, certain of said radial walls partaking of a horizontal obliquity in a direction opposite to the lateral obliqueness of the other walls.

18. A tire portion comprising yielding side walls contributing to form an inner recess, and radial walls in a longitudinal series within said recess, certain of said radial walls being laterally oblique and intersecting certain of the other radial walls to form horizontally-contracting interspaces.

19. A tire portion comprising yielding side walls contributing to form an inner recess, and radial walls in a longitudinal series with said recess, certain of said radial walls partaking of a horizontal obliquity in a direction opposite to the lateral obliqueness of the other radial walls whereby the walls mutually intersect and form horizontally-contracting interspaces.

20. A tire portion comprising yielding side walls contributing to form an inner recess, a longitudinal radial web within said recess, and radial walls also within said recess and intersecting the web at an angle, certain of said radial walls partaking of a horizontal obliquity in a direction opposite to the lateral obliqueness of the other walls.

21. A tire portion comprising yielding side walls contributing to form an inner recess, and radial walls in a longitudinal series therein and presenting horizontally-contracting interspaces, one of the surfaces forming which is radially inclined.

22. A tire portion comprising yielding side walls contributing to form an inner recess, and radial walls in a longitudinal series therein and presenting horizontally-contracting interspaces, the opposite wall surfaces of each space being mutually radially coaverged.

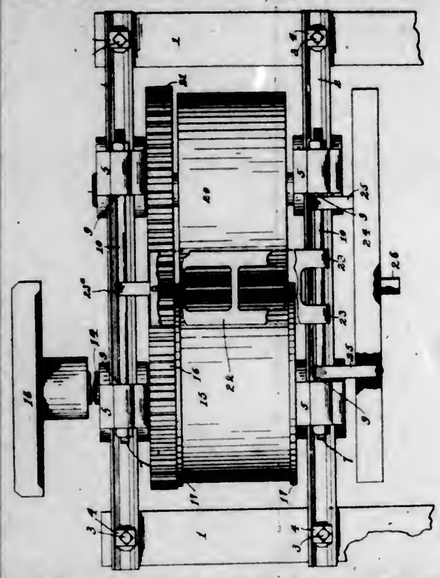
819,087. CANE-MILL. JUDSON BUCHANAN, Chattanooga, Tenn., assignor to Chattanooga Plow Company, Chattanooga, Tenn., a Corporation of Tennessee. Filed July 24, 1905. Serial No. 270,906.

Claim.—1. In a machine of the nature described, the combination with two upright, parallel rolls, a bearing-block at each end of each of said rolls, horizontal parallel bars extending through and supporting said bearing-blocks, and means for supporting said bars, substantially as described.

2. In a machine of the nature described, the combination with two upright, parallel rolls and intermeshing spur-gears applied to said rolls, of a bearing-block at each end of each of said rolls, horizontal, parallel bars, extending through said blocks and means for supporting said bars, substantially as described.

3. In a machine of the nature described, the combination with two upright, parallel rolls and intermeshing spur-gears applied to said rolls, of a bearing-block at each end of each of said rolls, parallel, horizontal bars extending through said blocks, the blocks applied to one of said rolls being immovable and the others being slidable on said bars, and means for supporting said bars, substantially as described.

4. In a machine of the nature described, the combination with two upright, parallel rolls, of a bearing-block at each end of each of said rolls, bars extending through said blocks for supporting said blocks, the blocks applied to one of said rolls being bolted to said bars and the other of said blocks being slidable on said bars, and means for supporting said bars, substantially as described.



5. In a machine of the nature described, the combination with two upright, parallel rolls, of a bearing-block at each end of each of said rolls, horizontal bars extending through said blocks, horizontal bolts joining the upper of said blocks and horizontal bolts joining the lower of said blocks, and means for holding the blocks applied to one of said rolls immovably, and means for supporting said bars, substantially as described.

6. In a machine of the nature described, the combination with two upright, parallel rolls, of a bearing-block at each end of each of said rolls, the blocks applied to one of said rolls having parallel ears, parallel horizontal bars supporting said blocks, and bolts engaging said bars and ears, and means for supporting said bars, substantially as described.

7. In a machine of the nature described, the combination with two upright, parallel rolls, of bearing-blocks at each end of each of said rolls, horizontal, parallel bars extending through and supporting said bearing-blocks, means for supporting said bars, and a feed-guide adjacent to said rolls, substantially as described.

8. In a machine of the nature described, the combination with two upright, parallel rolls, of bearing-blocks at each end of each of said rolls, horizontal parallel bars supporting said bearing-blocks, means for supporting said bars, and a hinged feed-guide adjacent to said rolls, substantially as described.

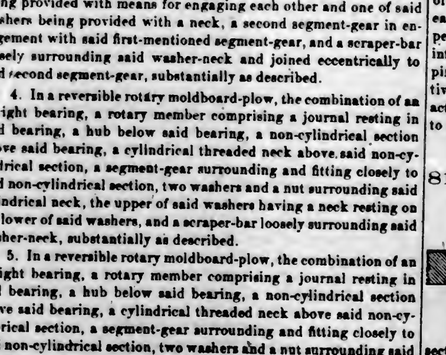
9. In a machine of the nature described, the combination with two upright, parallel rolls, a bearing-block at each end of each of said rolls, horizontal, parallel bars extending through and supporting said bearing-blocks, horizontal bolts joining the upper bearing-blocks, horizontal bolts joining the lower bearing-blocks, and a feed-guide supported by two of said bars, substantially as described.

10. In a machine of the nature described, the combination with two upright, parallel rolls, a bearing-block at each end of each of said rolls, horizontal, parallel bars extending through and supporting said blocks, means for supporting said bars, and a juice-pan supported beneath said rolls, substantially as described.

11. In a machine of the nature described, the combination with two upright, parallel rolls, a bearing-block at each end of each of said rolls, horizontal, parallel bars supporting said blocks, means for supporting said bars, and a juice-pan having hook-form hangers, substantially as described.

12. In a machine of the nature described, the combination with two upright, parallel rolls, of a bearing-block at each end of each of said rolls, horizontal, parallel bars supporting said blocks, horizontal bolts joining the lower of said blocks, a juice-pan located below said rolls and having hangers engaging said bolts, substantially as described.

819,038. PLOW. JUDSON BUCHANAN, Chattanooga, Tenn., assignor to Reversible Disc Plow & Implement Company, Chattanooga, Tenn., a Corporation of Tennessee. Filed Nov. 13, 1905. Serial No. 287,078.



Claim.—1. In a reversible rotary moldboard-plow, the combination of an upright bearing, a rotary member comprising a journal resting in said bearing, a hub below said bearing, a non-cylindrical section above said bearing, a cylindrical threaded neck above said non-cylindrical section, a segment-gear surrounding and fitting closely to said non-cylindrical section, a washer having a neck, a nut surrounding said cylindrical neck, a second segment-gear in engagement with said first-mentioned segment-gear, and a scraper-bar loosely surrounding said washer-neck, and joined eccentrically to said second segment-gear, substantially as described.

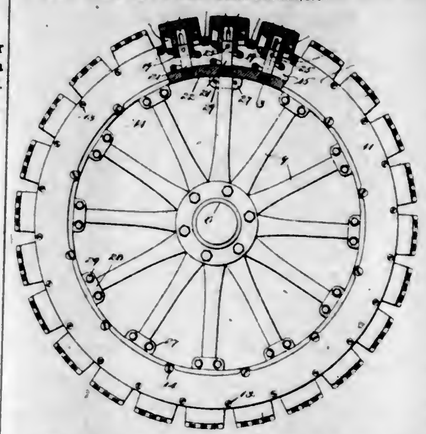
2. In a reversible rotary moldboard-plow, the combination of an upright bearing, a rotary member comprising a journal resting in said beating, a hub below said bearing, a non-cylindrical section above said bearing, a cylindrical threaded neck above said non-cylindrical section, a segment-gear surrounding and fitting closely to said non-cylindrical section, two washers and a nut surrounding said cylindrical neck, one of said washers having a neck, a second segment-gear in engagement with said first-mentioned segment-gear, and a scraper-bar loosely surrounding said washer-neck and joined eccentrically to said second segment-gear, substantially as described.

3. In a reversible rotary moldboard-plow, the combination of an upright bearing, a rotary member comprising a journal resting in said bearing, a hub below said bearing, a non-cylindrical section above said bearing, a cylindrical threaded neck above said non-cylindrical section, a segment-gear surrounding and fitting closely to said non-cylindrical section, two washers and a nut surrounding said cylindrical neck, the lower of said washers and said segment-gear being provided with means for engaging each other and one of said washers being provided with a neck, a second segment-gear in engagement with said first-mentioned segment-gear, and a scraper-bar loosely surrounding said washer-neck and joined eccentrically to said second segment-gear, substantially as described.

4. In a reversible rotary moldboard-plow, the combination of an upright bearing, a rotary member comprising a journal resting in said bearing, a hub below said bearing, a non-cylindrical section above said bearing, a cylindrical threaded neck above said non-cylindrical section, a segment-gear surrounding and fitting closely to said non-cylindrical section, two washers and a nut surrounding said cylindrical neck, the upper of said washers having a neck resting on the lower of said washers, and a scraper-bar loosely surrounding said washer-neck, substantially as described.

5. In a reversible rotary moldboard-plow, the combination of an upright bearing, a rotary member comprising a journal resting in said bearing, a hub below said bearing, a non-cylindrical section above said bearing, a cylindrical threaded neck above said non-cylindrical section, a segment-gear surrounding and fitting closely to said non-cylindrical section, two washers and a nut surrounding said cylindrical neck, the lower of said washers and said segment-gear being provided with means for engaging each other and the upper of said washers having a neck resting on the lower of said washers, and a scraper-bar loosely surrounding said washer-neck, substantially as described.

819,039. VEHICLE WHEEL. MARCELLUS BUNKER, Woburn, Mass. Filed Oct. 26, 1905. Serial No. 284,409.



Claim.—1. A vehicle-wheel comprising in its construction a rim, a series of blocks adapted to slide radially to said wheel, the outer end of each of said blocks, respectively, projecting outwardly beyond the periphery of said rim, each of said blocks having a radial post in the interior thereof surrounded by an annular recess, a series of radial pins each projecting into a recess in its respective post, a spiral spring located in each of said annular recesses encircling said post and acting to move its respective block outwardly, and means to limit the extent of said outward movement.

2. A vehicle-wheel comprising in its construction a rim, a series of blocks adapted to slide radially to said wheel, the outer end of each of said blocks, respectively, projecting outwardly beyond the periphery of said rim, each of said blocks having a radial post in the interior thereof surrounded by an annular recess, a series of radial pins each adapted to guide its respective block in its radially-sliding movement, a spiral spring located in each of said annular recesses and acting to move its respective block outwardly, and means to limit the extent of said outward movement.

3. A vehicle-wheel comprising in its construction a rim, a series of blocks adapted to slide radially to said wheel, the outer end of each of said blocks, respectively, projecting outwardly beyond the periphery of said rim, each of said blocks having a radial post in the interior thereof surrounded by an annular recess, a series of radial pins, each fast to said rim and projecting into a recess in its respective post, a spiral spring located in each of said annular recesses and acting to move its respective block outwardly, and means to limit the extent of said outward movement.

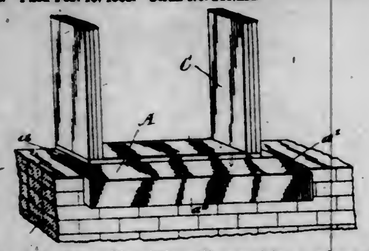
4. A vehicle-wheel comprising in its construction a rim, a series of blocks adapted to slide radially to said wheel, the outer end of each of said blocks, respectively, projecting outwardly beyond the periphery of said rim, each of said blocks having a radial post in the interior thereof surrounded by an annular recess, a series of radial pins, each fast to said rim and projecting into a recess in its respective post, a spiral spring located in each of said annular recesses and acting to move its respective block outwardly, and a cross-pin fast to said pin and projecting into a slot provided in said post.

819,040. SUCKER-ROD COUPLING. LEONARD CHRONINGER, Findlay, Ohio. Filed Dec. 13, 1905. Serial No. 291,540.



Claim.—A coupling for rods formed in sections, each of said sections having a bore for the reception of a rod, one of said sections having a female member, a male member on the remaining section engaging the female member, and a shoulder on the second-named section against which the first-named section is intended to abut, said first-named section having an annular recess in its abutting edge.

819,041. **WINDOW-SILL.** WILLIAM CORBETT, Smith's Falls, Canada. Filed Feb. 13, 1905. Serial No. 245,244.



Claim.—1. A metallic window-sill comprising a substantially horizontal bed, and an overhanging outwardly-protruding hollow central portion integral therewith as and for the purpose specified.

2. A metallic window-sill comprising a substantially horizontal bed, a downwardly-extending wall-gripping flange and an overhanging hollow outwardly-protruding central portion as and for the purpose specified.

3. A metallic window-sill comprising a substantially horizontal bed, an inclined water-wash protruding beyond the wall of the building and a breast-plate downwardly extending from the front of said water-wash as and for the purpose specified.

4. A metallic window-sill comprising a substantially horizontal bed, an inclined water-wash integral therewith, and protruding beyond the wall of the building, a breast-plate downwardly extending from the front of said water-wash and a flange inwardly extending from the face of said breast-plate as and for the purpose specified.

5. A metallic window-sill comprising a substantially horizontal bed, a water-wash integral therewith and protruding beyond the wall, of the building, a breast-plate downwardly extending from the front of said water-wash and inwardly extending end portions integral with said breast-plate as and for the purpose specified.

6. A metallic window-sill comprising a substantially horizontal bed, an inclined water-wash integral therewith, and protruding beyond the walls of the building, a breast-plate downwardly extending from the front of said water-wash, a flange inwardly extending from the face of said breast-plate and inwardly-extending end portions integral with said breast-plate as and for the purpose specified.

7. An extensible metal window-sill comprising a plurality of hollow telescopic members as and for the purpose specified.

8. An extensible metal window-sill comprising a plurality of hollow telescopic members provided with hollow central portions adapted to extend beyond the wall of the building and top substantially horizontal beds integral with said central portions as and for the purpose specified.

819,042. **UNDERREAMER FOR MINERAL BORING.** ALEXANDER CUMMINGS, Los Angeles, Cal. Filed Feb. 25, 1905. Serial No. 247,340.



Claim.—1. In an underreamer, a body having a recess extending upwardly into its lower end, a pair of jaws vertically movable in the recess and having tilting engagement with each other, the sides of the jaws being in firm sliding contact with the walls of the recess, and means for actuating the jaws to cause the upper ends thereof to contract simultaneously with the expansion of their lower ends, substantially as shown and described.

2. In an underreamer, a body having a recess extending upwardly into its lower end between lateral portions thereof, a pair of jaws in tilting engagement with each other, having free vertical movement between said lateral portions but held from sidewise movement by said lateral portions, means for actuating the jaws to cause the upper ends thereof to retract simultaneously with the expansion of their lower ends, and transverse guide-pins carried by the lateral portions of the body adapted to engage the jaws to guide them in their movement, substantially as shown and described.

3. In an underreamer, a body provided with a socket at its lower end, a pair of jaws vertically slidable in said socket and provided upon their adjacent faces with angular fulcrum portions in contact, said jaws also having slots adjacent to their fulcrum portions, guide-pins carried by the body and extending through said slots, resilient means for holding said jaws normally in raised position in the socket in the body, and means for actuating the jaws to cause the upper ends thereof to retract simultaneously with the expansion of the lower ends thereof, substantially as described.

4. In an underreamer, a body having projecting portions C'' and provided with recesses adjacent to said portions, a pair of jaws slidable in the lower end of the body and in tilting engagement with each other, means for normally maintaining said jaws in elevated position in the body, and lateral portions upon said jaws engaging the sides of the portion C'' and entering the recesses adjacent thereto to hold the lower ends of the jaws apart when elevated, substantially as described.

5. In an underreamer, a body having a socket at its lower end, a pair of jaws in said socket in tilting engagement with each other, said jaws having slots adjacent to the tilting portions, guide-pins carried by the body and extending through the slots in the jaws, means for holding the jaws normally in raised position, means for expanding the lower ends of the jaws when in raised position, and portions C'' upon the body disposed between the lower ends of the jaws and adapted to positively hold the latter expanded when raised, substantially as described.

6. In an underreamer, a body, a pair of jaws vertically slidable in the body, means for normally holding said jaws in raised position, means for expanding the lower ends of the jaws when in raised position, and interengaging portions disposed at the lower end of the body and on the sides of the jaws to positively hold the latter expanded when in raised position, substantially as described.

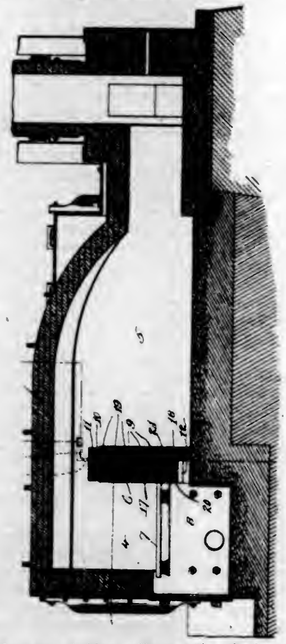
7. In an underreamer, a body provided with downwardly-projecting portions C'' at its lower end, a pair of jaws vertically movable in the body and in tilting engagement with each other, means for normally holding said jaws in raised position, and laterally-projecting portions upon said jaws adapted to contact with the portions C'' when the jaws are raised to positively hold the latter open, substantially as described.

8. In an underreamer, a body having a socket provided with recesses H at its upper end and having the inclined shoulders H' adjacent to said recesses, said body having the projection C'', and upwardly-extending recesses at the sides of the projection C'', a pair of jaws disposed in the socket in the body, each jaw having a shank the upper end of which is adapted to engage one of the inclined shoulders H' and be guided into the recess H, projections K on opposite sides of each jaw adapted to enter the recesses at the sides of the portions C'', said jaws also having contacting angular portions upon their adjacent faces, a spring-actuated rod disposed axially in the upper end of the body, and a cross-tail carried at the lower end of said rodd adapted to engage the upper ends of the jaws, substantially as described.

9. In an underreamer, a body provided with a socket, a pair of jaws slidably mounted in the socket in pivotal contact with each other, said jaws being provided on their outer faces with a pair of spaced perforations, and detachable contact-pieces adapted to be interposed between the face of the jaws and the well-casing, said contact-pieces consisting of metal bars having angular beat ends adapted for insertion into said spaced perforations, substantially as described.

819,043. **REVERBERATORY FURNACE.** MATTHEW CUMMINGS, Boston, Mass. Filed Feb. 6, 1905. Serial No. 244,383.

Claim.—1. In a furnace, a bridge-wall separating the furnace-chamber from the heating-chamber, said bridge-wall having within it an air-space which communicates at its lower end with the ash-pit and extends nearly to but terminates below the top of said bridge-wall, the back side and top of the bridge-wall being imperforate, said air-space extending laterally into each side wall of the furnace beyond the limits of the bridge-wall, and the laterally-extended portions and said air-space being extended upwardly above the level of the top of the bridge-wall to communicate with outlet-ducts which are directed into the heating-chamber above the level of the top of the bridge-wall and slightly to the rear thereof.



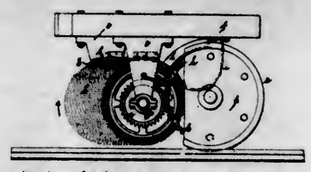
2. In a furnace, a bridge-wall separating the furnace-chamber from the heating-chamber, said bridge-wall having within it an air-space which communicates at its lower end with the ash-pit and extends nearly to but terminates below the top of said bridge-wall, said air-space extending laterally into each side wall of the furnace beyond the limits of the bridge-wall, and the laterally-extended portions and said air-space being extended upwardly above the level of the top of the bridge-wall to communicate with outlet-ducts which are directed into the heating-chamber above the level of the top of the bridge-wall and slightly to the rear thereof, said outlet-ducts being inclined relative to the length of the furnace.

3. In a furnace, a heating-chamber, a furnace-chamber, a bridge-wall separating said chambers, said bridge-wall being formed of two sections which are separated from each other to form between them an air-space, an angle-plate on which the front section of the bridge-wall rests, said bridge-wall having beneath the angle-plate an opening connecting the air-space in the bridge-wall with the ash-pit, the side walls of the furnace being provided with extensions of the air-space which communicate with inclined outlet-ducts leading into the heating-chamber above the bridge-wall and slightly back thereof.

4. In a furnace, a bridge-wall separating the furnace-chamber from the heating-chamber, said bridge-wall having within it an air-space which communicates at its lower end with an ash-pit and which extends nearly to but terminates below the top of the bridge-wall, the back side and top of the bridge-wall being imperforate, said air-space communicating with outlet-ducts in the wall of the furnace, which ducts have their discharge ends above the level of the top of the bridge-wall and to the rear thereof, whereby the air heated in the air-space of the bridge-wall is delivered into the heating-chamber above the flame.

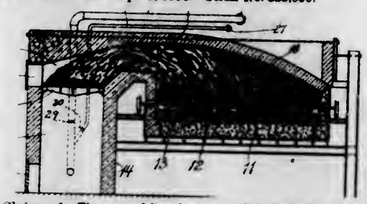
819,044. **CAR-FENDER.** JOHN DOBOS, New York, N. Y. Filed Jan. 23, 1906. Serial No. 297,409.

Claim.—1. A street-car fender comprising a rotary brush obliquely set in the car-frame, a guard-plate above the brush and an open guard between the end of the first-named guard and the car-frame.



2. In a street-car fender, a miter-gear on the car-wheel shaft, an oblique shaft having a miter-gear meshing therewith, said oblique shaft carrying a drum with a brush-like surface, a guard-plate *g* mounted in brackets above the drum and having connected along its inner edge a flexible open-work guard *i*, the upper end of which guard is secured across the under side of the side frame.

819,045. **APPLICATION OF HEAT IN METALLURGICAL AND OTHER FURNACES.** BYRON E. ELDRED, Brookline, Mass., assignor to Combustion Utilities Company, New York, N. Y., a Corporation of New York. Filed Sept. 9, 1904. Serial No. 223,880.



Claim.—1. The art of heating materials in furnaces of the reverberatory type which consists in transmitting through a body of ignited fuel a draft-current of air diluted with products of combustion in such proportion as to check and cool the combustion of said fuel and to retard combustion of its gaseous products, passing said gaseous products through an igniting region in a general horizontal direction over the material to be heated and completing the combustion of the said gaseous products thereabove by radiant heat from the igniting region.

2. The art of heating materials in furnaces of the reverberatory type which consists in transmitting through a body of ignited fuel a draft-current of air diluted with products of combustion in such proportion as to check and cool the combustion of such fuel and to retard combustion of its gaseous products, passing said gaseous products into a refractory-walled chamber containing the material to be heated and there completing their combustion by radiant heat from the walls.

3. The art of heating materials which consists in transmitting through a body of ignited fuel a draft-current of air diluted with products of combustion in such proportion as to check and cool the combustion of such fuel and to retard combustion of its gaseous products and applying the resultant tardily-burning flame to the materials in a substantially unobstructed refractory-walled region capable of completing the burning of said flame by radiant heat.

4. The art of heating materials which consists in producing above such materials in a refractory-walled chamber a tardily-burning flame composed of air, combustible gases and preformed products of combustion, the latter being present in proportions to substantially retard combustion, and completing the burning of said flame by radiant heat from the walls.

5. The art of heating materials which consists in transmitting such materials continuously through a reverberatory furnace and past a plurality of inflated and diluted flames.

6. The art of heating materials which consists in continuously transmitting the same through a refractory-walled chamber containing a tardily but uniformly burning flame atmosphere.

7. The art of heating materials which consists in continuously transmitting the same through a refractory-walled chamber containing a tardily but uniformly burning flame atmosphere of admixed carbon dioxid, oxygen and combustible gas.

819,046. **MEANS FOR CONTROLLING GAS VELOCITY IN REVERBERATORY FURNACES.** BYRON E. ELDRED, Brookline, N. Y., assignor to Combustion Utilities Company, New York, N. Y., a Corporation of New York. Filed Feb. 8, 1905. Serial No. 244,738.

Claim.—1. A reverberatory furnace provided with a plurality of successive flame-introducing means at different points along its hearth-chamber and of an internal diameter increased beyond each such flame-introducing means.



2. A reverberatory furnace provided with a plurality of successive flame-introducing means at different points along its hearth-chamber and with the arch of said hearth-chamber stepped up beyond each such flame-introducing means.

3. A reverberatory furnace provided with a plurality of fire-boxes feeding its hearth-chamber at different successive points along its length, and of an internal diameter increased beyond each such fire-box.

4. A reverberatory furnace provided with a plurality of fire-boxes feeding its hearth-chamber at different successive points along its length, and with the arch of said hearth-chamber stepped up beyond each such fire-box.

5. In a reverberatory furnace, means for successively increasing the volume of flame therein, and means beyond each point of increment in flame volume for increasing the cross-sectional area of the hearth-chamber to correspond to the increased volume of flame.

6. In a reverberatory furnace, a hearth-chamber of successively-increasing internal diameter, a chimney-stack therefor, fire-boxes opening into said hearth-chamber at different distances from the stack, and means for returning stack-gases to the draft-chambers of the several fire-boxes.

7. A reverberatory furnace provided with a hearth-chamber increased in internal diameter at a succession of points along its course and provided with a flame-septum at each point of increment.

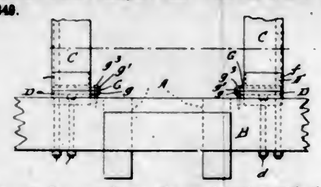
8. In a reverberatory furnace, a hearth-chamber having points of successively-increasing internal diameter, one or more flame-septa at points of increment, and one or more fire-boxes opening into the hearth-chamber under said septa.

9. A reverberatory furnace comprising a long hearth-chamber with its roof stepped up at various points along its length to give increased chamber room, a source of flame at each such point of increased height, a horizontal flame-septum above each inlet for flame and mechanical means for advancing material through the furnace.

10. A reverberatory furnace comprising a long hearth-chamber with its roof stepped up at various points along its length to give increased chamber room, a fire-box opening into the chamber at each such point of increased height, a chimney-stack for the chamber, means for admitting a mixture of waste gases from the stack and air into each fire-box and mechanical means for advancing material through the furnace.

11. A reverberatory furnace comprising a long hearth-chamber with its roof stepped up at various points along its length to give increased chamber room, a fire-box opening into the chamber at each such point of increased height, a flame-septum above the opening from each fire-box, a chimney-stack for the chamber, means for admitting a mixture of waste gases from the stack and air into each fire-box, and mechanical means for advancing material through the furnace.

819,047. CAR-BODY. WILLIAM H. RENRICK, Osawatomie, Kans., and PETER ALQUIST, Memphis, Tenn. Filed Jan. 6, 1906. Serial No. 294,849.



Claim.—1. In a car-frame, the combination with the sills or horizontal framework, of the posts or upright framework, connecting-plates secured to the horizontal sills or framework, connecting-plates having sockets for receiving the posts or upright frame members, said connecting-plates being provided on their meeting faces with dovetail grooves, a double-dovetail key fitting in the dovetail grooves of the connecting-plates for removably securing the same together, said connecting-plates and key being provided with registering upright grooves or slots and tie-rods fitting in said grooves or slots of the connecting-plates and key, substantially as specified.

2. In a car-frame, the combination with the horizontal and upright frame members, of connecting-plates furnished with dovetails on their meeting faces and a removable locking-key for removably securing the connecting-plates together, substantially as specified.

3. In a car-frame, the combination with the horizontal and upright frame members, of connecting-plates furnished with dovetails on their meeting faces and a removable dovetail key for removably securing the connecting-plates together, and a tie-rod, the connecting-plates having registering slots to receive the tie-rod, substantially as specified.

4. In a car-frame, the combination with the horizontal and upright frame members, of connecting-plates furnished with dovetails on their meeting faces and a removable dovetail key for removably securing the connecting-plates together, and a tie-rod, the connecting-plates having registering slots to receive the tie-rod, and the key being also provided with a registering slot to receive the tie-rod, substantially as specified.

5. In a car-frame, the combination with the horizontal and upright frame members, of connecting-plates furnished with dovetails on their meeting faces and a removable dovetail key for removably securing the connecting-plates together, and a tie-rod, the connecting-plates having registering slots to receive the tie-rod, and a bolt or screw for holding the key in place, substantially as specified.

6. The combination with two frame members, of a pair of connecting-plates, one furnished with a socket to receive one of the frame members, and both provided with dovetails on their meeting faces, and a removable double-dovetail key, substantially as specified.

7. The combination with two frame members, of a pair of connecting-plates, one furnished with a socket to receive one of the frame members, and both provided with dovetails on their meeting faces, a removable double-dovetail key, and a tie-rod, said connecting-plates and key having registering slots to receive the tie-rod, substantially as specified.

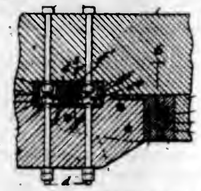
8. The combination with two frame members, of a pair of connecting-plates, one furnished with a socket to receive one of the frame members, and both provided with dovetails on their meeting faces, of a removable double-dovetail key, and a tie-rod, said connecting-plates and key having registering slots to receive the tie-rod, and means for holding the key in place, substantially as specified.

819,048. CAR-FRAME. WILLIAM H. RENRICK, Osawatomie, Kans., and PETER ALQUIST, Memphis, Tenn. Filed Jan. 6, 1906. Serial No. 294,850.

Claim.—1. In a car-frame, the combination with the center sills and body-bolster, of removable draft-timbers, and dovetail connecting-plates for removably connecting the draft-timbers with the center sills and body-bolster, substantially as specified.

2. In a car-frame, the combination with the horizontal and upright frame members, of connecting-plates furnished with dovetails on their meeting faces and a removable dovetail key for removably securing the connecting-plates together, and a tie-rod, the connecting-plates having registering slots to receive the tie-rod, and the key being also provided with a registering slot to receive the tie-rod, substantially as specified.

body-bolster, and removable keys fitting in the dovetail grooves of the connecting-plates, substantially as specified.



3. In a car-frame, the combination with the center sills and body-bolster, of removable draft-timbers, dovetail connecting-plates for removably connecting the draft-timbers with the center sills and body-bolster, removable keys fitting in the dovetail grooves of the connecting-plates, and bolts and washers for locking the removable keys in place, substantially as specified.

4. In a car, the combination with the center sills and body-bolster, of removable draft-timbers, dovetail connecting-plates secured to the center sills, coöperative dovetail connecting-plates secured to the draft-timbers, removable dovetail keys, dovetail connecting-plates secured to the body-bolster, and coöperative dovetail connecting-plates secured to the draft-timbers at the ends thereof, and removable dovetail keys connecting said dovetail connecting-plates on the body-bolster with those on the ends of the draft-timbers, substantially as specified.

5. In a car, the combination with the center sills and body-bolster, of removable draft-timbers, dovetail connecting-plates secured to the center sills, coöperative dovetail connecting-plates secured to the draft-timbers, removable dovetail keys, dovetail connecting-plates secured to the body-bolster, coöperative dovetail connecting-plates secured to the draft-timbers at the ends thereof, removable dovetail keys connecting said dovetail connecting-plates on the body-bolster with those on the ends of the draft-timbers, said dovetail keys having bolts for locking the same in place, substantially as specified.

6. In a car, the combination with the center sills and body-bolster, of removable draft-timbers, dovetail connecting-plates secured to the center sills, coöperating dovetail connecting-plates secured to the draft-timbers, said connecting-plates secured to the center sills and draft-timbers having interengaging recesses and bosses or projections on their meeting faces, removable dovetail keys, dovetail connecting-plates secured to the body-bolster, and coöperating dovetail connecting-plates secured to the draft-timbers at the ends thereof, and removable dovetail keys connecting said dovetail connecting-plates on the body-bolster with those on the ends of the draft-timbers, substantially as specified.

7. In a car, the combination with frame sills or members, of dovetail connecting-plates secured thereto and having dovetail grooves on their meeting faces, and provided also on their meeting faces with interengaging bosses or projections, and a removable double-dovetail key, substantially as specified.

8. In a car, the combination with frame sills or members, of dovetail connecting-plates secured thereto and having dovetail grooves on their meeting faces, and provided also on their meeting faces with interengaging bosses or projections, a removable dovetail key and a bolt for locking the removable key in place, substantially as specified.

9. In a car, the combination with frame sills or members, of dovetail connecting-plates secured thereto and having dovetail grooves on their meeting faces, and provided also on their meeting faces with interengaging bosses or projections, a removable dovetail key and a bolt for locking the removable key in place, said bolt having washers fitting each against the adjacent faces of both connecting-plates, substantially as specified.

10. In a car, the combination with a frame member, of a removable frame member, connecting-plates D D′ secured, respectively, to said members, and provided with dovetails on their meeting faces, and with an interengaging boss and recess, and a removable key, substantially as specified.

11. In a car, the combination with a frame member, of a removable frame member, connecting-plates D D′ secured, respectively, to said members and provided with dovetails on their meeting faces, and with an interengaging boss and recess, a removable key, and a bolt for locking the key in place, substantially as specified.

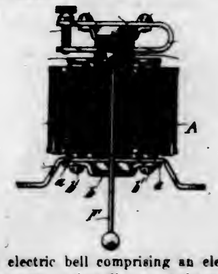
12. The combination with a body-bolster and draft-timbers, of a connecting-plate secured to the body-bolster, a connecting-plate secured to the end of the draft-timber, and said connecting-plates being provided on their meeting faces with dovetail grooves and with a removable double-dovetail key, substantially as specified.

13. In a car, the combination with the body-bolster, of draft-timbers removably connected to the body-bolster, and dovetail connecting-plates, substantially as specified.

14. In a car, the combination with the body-bolster of draft-timbers removably connected to the body-bolster, and dovetail connecting-plates, said dovetail connecting-plates having dovetail grooves on their meeting faces, and a double-dovetail key fitting in said dovetail grooves, substantially as specified.

15. In a car, the combination with the body-bolster of draft-timbers removably connected to the body-bolster, and dovetail connecting-plates, having dovetail grooves on their meeting faces, a double-dovetail key fitting in said dovetail grooves, and a bolt for locking the key in place, substantially as specified.

819,049. ELECTRIC BELL. JOHN ERICKSON, Chicago, Ill., assignor to Automatic Electric Company, Chicago, Ill. Filed Oct. 31 1904. Serial No. 230,756.



Claim.—1. An electric bell comprising an electromagnet, a flexible spring, an armature pivotally mounted upon said spring, and means for flexing said spring and thereby moving the armature toward and away from said electromagnet, the armature being disposed between the spring and magnet.

2. An electric bell comprising a pair of electromagnets, a bracket to which the cores of said magnets are rigidly secured, a permanent magnet having one pole rigidly secured to said bracket, and an armature for said electromagnets, said armature being adjustably mounted upon the other pole of said permanent magnet, together with means also carried by the permanent magnet for adjusting the armature toward and away from the electromagnet, the armature being disposed between the said armature-adjusting means and magnet.

3. An electric bell comprising an electromagnet, a permanent magnet, an armature for said electromagnet, a flexible armature-mounting carried by the permanent magnet and to which the said armature is pivotally secured, and an adjusting-screw for flexing said mounting and thereby moving the armature toward and away from the electromagnet, the armature being disposed between the said mounting and magnet.

4. An electric bell comprising a permanent magnet, a pair of electromagnets having their cores rigidly secured to one pole of said permanent magnet, a U-shaped spring secured to the other pole of said permanent magnet, one side portion of said U-shaped spring being left free and positioned between the electromagnet-cores and the adjacent pole of the permanent magnet, an armature for said electromagnets, said armature being pivotally mounted upon the free portion of said spring, and a screw connecting the end portions of said spring, whereby the said armature may be moved toward and away from the cores of the electromagnets.

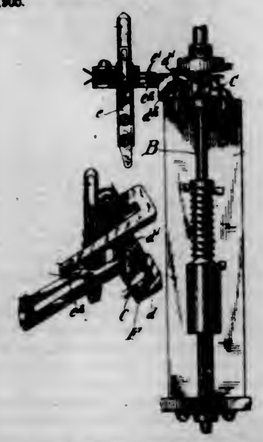
5. The combination of a permanent magnet, a pair of electromagnets having their cores rigidly secured to one pole of said permanent magnet, an armature for said electromagnets, spring means tensioned to move the armature toward the cores of the electromagnets, and screw-threaded means for opposing the tension of said spring means and moving the armature away from the cores of the electromagnets.

6. The combination of a pair of electromagnets having their cores rigidly connected at one end, an armature for the other ends of said cores, a U-shaped spring upon which the said armature is pivoted, means for moving the end portions of said spring toward and away from each other, and thereby moving the armature toward and away from the said cores, a permanent magnet constituting a medium of rigid connection between one side of said spring and the rigidly-connected end portions of the said cores.

7. The combination of an electromagnet, a spring held normally under tension, an armature for said magnet, the said armature being mounted upon a movable portion of said spring, and means for releasing said spring and allowing it to utilize its tension in moving the armature toward the electromagnet.

8. The combination of a bracket-plate, a pair of electromagnets, a permanent magnet, a strap or clamping-piece for securing together the said permanent magnet and bracket-plate, screws extending through both the bracket-plate and the said strap or clamping-piece and into the cores of said electromagnets, a U-shaped spring turned on its side and straddling the other pole of said permanent magnet, another strap or clamping-piece for securing said spring and permanent magnet together, screws extending through the said spring and said last-mentioned strap or clamping-piece, the free portion of said spring being provided with ears, an armature for said electromagnets, means for pivotally mounting said armature upon said ears, a thumb-screw connecting the end portions of said spring, and whereby the said armature may be moved toward and away from the cores of said electromagnets, together with a striker secured to the said armature.

819,050. INDICATING DEVICE FOR AUTOMATIC TELEPHONE-SWITCHES. JOHN ERICSSON, Chicago, Ill., assignor to Automatic Electric Company, Chicago, Ill. Filed Dec. 30, 1904. Serial No. 238,905.



Claim.—1. An individual switch for automatic telephone systems, said switch being provided with an operative part under the control of the subscriber, and adapted to be given a plurality of positions, one of said positions being appropriated solely for the purpose of transmitting alarms or special signals, and an indicating device responsive to said appropriated position, and adapted to remain operated until manually restored and without interfering with the natural restoration and further use of said switch.

2. An individual switch for automatic telephone systems, comprising an operative part under the control of the subscriber, and adapted to be given various positions, according to the character of the connection desired, one or more of said positions being appropriated solely for the purpose of giving alarms or special signals, and an indicating device responsive to said appropriated position, and adapted to remain operated until manually restored and without interfering with the natural restoration and further use of said switch.

3. An individual switch for automatic telephone systems, comprising means under the control of the subscriber for establishing any one of a number of possible connections, and an indicating device adapted, only when a connection of a special or particular character is made, to produce a telltale visual signal without interfering with the natural restoration and further use of said switch, and whereby the restoration and further use of the switch by the subscriber is unaccompanied by a restoration of said signal, whereby the particular act necessary for making such indication cannot be committed without discovery thereof.

4. A "first-selector switch" for automatic telephone systems, comprising a rotary and endwise-movable shaft, said shaft being adapted to be given various positions, according to the character of the connection desired, and an indicating device adapted, when a connection of a certain character is established, to produce a telltale signal without interfering with the natural restoration and further use of said switch.

5. A switch for automatic telephone systems, comprising means under the control of the subscriber for establishing any one of a number of possible connections, and means adapted, only when a connection of a special or particular character is established, to leave a telltale indication thereof not liable to effacement by the subscriber, and without interfering with the natural restoration and further use of the said switch, whereby the particular act necessary for making such indication cannot be committed without discovery thereof.

6. An individual switch for automatic telephone systems, comprising an operative part under the control of the subscriber, and adapted to be given various positions, according to the character of the connection desired, and a visual indicator associated with said switch, and adapted to be operated thereby only upon the establishment, by the subscriber, of a connection of a particular character, and adapted to remain operated without interfering with the natural restoration and further use of said switch.

7. The improved telltale indicating device for automatic telephone-switches, adapted to leave a telltale indication not liable to effacement by the subscriber, whereby the particular act necessary for making such indication cannot be committed without discovery thereof, said device when once operated being non-controllable by the subscriber.

8. In a telephone trunk-selecting switch mechanism, a switch-shaft adapted to be moved to a plurality of positions for connecting purposes, and a visual signal associated with said shaft, together with connecting means by which the shaft operates the signal only when it is moved to a certain one of said positions.

9. In a device of the class specified, the combination of subscriber-operated means for making any one of a number of possible connections, and a signal adapted to be operated only by the establishment of a certain one of said connections, said signal when once operated being non-controllable by the subscriber.

10. In a device of the character described, the combination of subscriber-operated means for making any one of a number of possible connections, and indicating means adapted to be operated only by the establishment of a certain one of said connections, said indicating means when once operated being non-restorable and non-controllable by the subscriber.

11. Automatic telephone switching apparatus comprising subscriber-controlled means for establishing any one of a number of possible connections, and signaling or indicating means responsive only to the establishment of a certain one of said connections.

12. The combination of automatic switching means adapted to establish any one of a number of possible connections, a lamp-signal mounted on said automatic switching means, and normally open switch-contacts controlling the circuit of said lamp-signal and adapted to be closed only by the establishment of a certain one of said connections.

13. In automatic telephone switching apparatus, the combination of a switch-shaft adapted to be moved to a plurality of positions for establishing different connections, a lamp-signal individual to one of said positions, and means operated by the shaft for controlling the said lamp-signal.

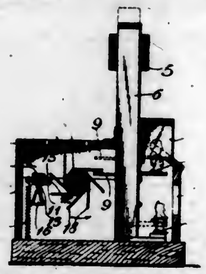
14. The combination of a subscriber's automatic telephone-switch for establishing any one of a number of possible connections, a signal or indicating device individual to the subscriber and also individual to one of said connections, and means operated by the switch for controlling the said signal or indicating device.

15. A telephone first selector provided with a lamp-signal which is individual to a single subscriber and which is also individual to a certain one of the different connections which the selector is capable of establishing.

16. A telephone subscriber's individual trunk-selecting switch mechanism provided with a visual signal or indicating device which is individual to the subscriber and which is also individual to a certain one of the different connections which the switch is capable of establishing.

819,051. MUSICAL TOY. ALBERT C. FECHTIS, New York, N. Y. Filed Apr. 29, 1904. Serial No. 205,453.

Claim.—1. A musical toy, comprising vertically-operating reciprocally-slidable gravity-bars having rearwardly-projecting pins thereon, and a rotary shaft having fingers adapted to engage said pins and operate said bars to produce sounds by their gravity action, substantially as described.



2. A musical toy, comprising a casing having openings in the front, vertically-operating reciprocally-slidable gravity-bars having figures thereon, and means for operating said bars to produce sounds by their gravity action and cause the figures to appear before and disappear from said openings, substantially as described.

3. A musical toy, comprising a casing having openings in the front, vertically-operating reciprocally-slidable gravity-bars having figures and pins thereon, a power-shaft having fingers adapted to engage said pins and operate said bars to produce sounds by their gravity action and cause the figures to appear before and disappear from said openings, and jointed figures connected to and operated by said power-shaft, substantially as described.

4. A musical toy, comprising a casing having openings in the front, vertically-operating reciprocally-slidable gravity-bars having figures, an oscillatory shaft having bells thereon, and a power-shaft for operating said bars and bells to produce sounds and to cause the figures to appear before and disappear from said openings, substantially as described.

5. A musical toy, comprising a casing having openings, reciprocating bars having figures and pins thereon, an oscillatory shaft having bells and pins thereon, and a power-shaft having fingers adapted to engage the pins on the oscillatory shaft and bars and operate the same to produce sounds, substantially as described.

6. A musical toy, comprising reciprocating bars carrying figures or devices, an oscillatory shaft carrying bells or sounding means, and means for conjointly actuating the bars in their reciprocal movement and said shaft in its oscillating movement.

7. A musical toy, comprising reciprocating bars carrying figures or devices, an oscillatory shaft carrying bells or sounding means, and a rotary shaft intermediately between said bars and oscillatory shaft and carrying projecting means for engaging said bars and oscillatory shaft to conjointly operate the same.

8. A musical toy, comprising reciprocating bars carrying figures or devices, an oscillatory shaft carrying bells or sounding means, a rotary shaft intermediately between said bars and oscillatory shaft, and fingers projecting from said rotary shaft and engaging said bars and oscillatory shaft to operate the same.

9. A musical toy, comprising reciprocating bars carrying figures or devices, pivotally-mounted sounding means, and a rotary shaft intermediately between said bars and sounding means and provided with projecting members for engaging said bars and sounding means to operate the same.

10. A musical toy, comprising reciprocating bars carrying figures or devices, resistance means having sounding elements, a rotary shaft intermediately between said bars and resistance means, and fingers projecting from said rotary shaft and engaging said bars and sounding elements to operate the same.

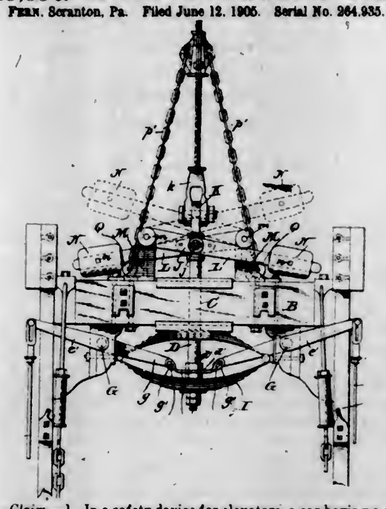
11. A musical toy, comprising a series of reciprocating bars carrying figures or devices, sounding elements, a rotary shaft intermediately between said bars and sounding elements, and a plurality of radially-projecting fingers extending from said rotary shaft and disposed thereon in successive operative position with respect to the succession of the series of said bars, said fingers successively and respectively engaging the bars and sounding elements to operate the same.

12. A musical toy, comprising a series of reciprocating bars carrying figures or devices, a resistance means having sounding elements, a rotary shaft intermediately between said bars and resistance means, and a plurality of radially-projecting fingers extending from said rotary shaft and disposed thereon in successive operative position with respect to the succession of the series of said bars, said fingers successively and respectively engaging the bars and sounding elements to operate the same.

13. A musical toy, comprising a series of reciprocating bars carrying figures or devices and having rearwardly-extending projections, sounding elements having a forwardly-projecting part, a rotary shaft intermediately between the bars and sounding elements, and a plurality of radially-projecting fingers extending from said rotary shaft and disposed thereon in successive operative position with respect to the respective projections comprised in the successive series of said bars, said fingers successively and respectively engaging the respective fingers of said bars and the projecting part of the sounding elements to operate the same.

14. A musical toy, comprising reciprocating bars carrying figures or devices, resistance means, a rotary power-shaft, and fingers radially projecting from said shaft and engaging said bars and resistance means.

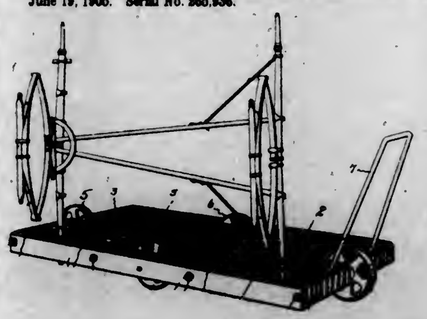
819,052. SAFETY DEVICE FOR ELEVATORS. WILLIAM H. FERN, Scranton, Pa. Filed June 12, 1905. Serial No. 264,935.



Claim.—1. In a safety device for elevators, a car having a cross-beam, a rod slidable through the cross-beam, brackets on the cross-beam arranged to each side of the slidable rod, levers pivoted at one end to the brackets and intermediate their length to the rod, slidable weights adjustably mounted on the free portions of the levers, stop mechanism carried by the car, and means for connecting the slidable rod to the stop mechanism.

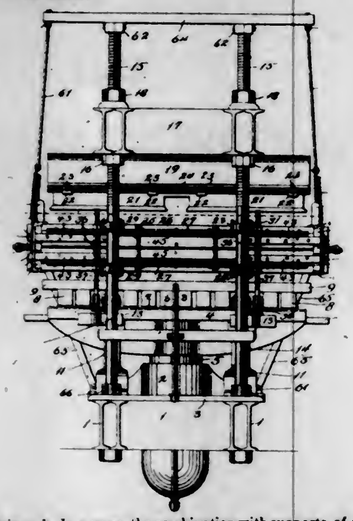
2. In a safety device for elevators, a car having a cross-beam, a rod slidable through the cross-beam, brackets on the cross-beam arranged to each side of the slidable rod, a head formed in sections on the slidable rod, oppositely-arranged trunnions on the head, levers pivoted at one end to the brackets and engaging the trunnions of the head intermediate their length, weights mounted on the free portions of the levers and adjustable longitudinally thereof, stop mechanism carried by the car, and means connecting the slidable rod to said stop mechanism.

819,053. TRUCK. JOSEPH F. FIRESTONE, Columbus, Ohio. Filed June 19, 1905. Serial No. 265,936.



Claim.—A wheeled truck or rack for supporting running-gears comprising a plurality of tapered rails assembled together in fixed relation so as to provide tapering openings or spaces for the reception of the ends of the axles of the running-gears.

819,054. **PRESS FOR MOLDING ARTIFICIAL STONE OR THE LIKE.** WILLIS H. FISHER, Mount Gilead, Ohio. Filed May 11, 1905. Serial No. 260,011.



Claim.—1. In a press, the combination with supports, of a movable platen guided by said supports, means for moving said platen, a head supported by said supports, a mold-box frame, means for adjusting said frame, and cushioning means for said frame.

2. In a press, the combination with supports, a movable platen, means for moving said platen, a head supported by said supports, a mold-box frame provided with guides engaging the supports and cushioning means carried by the guides.

3. In a press, the combination with supports, of a movable platen, means for moving said platen, a head supported by said supports, a mold-box frame, guides for the mold-box frame engaging the supports, means for permitting the frame to be moved in relation to its guides to permit the sides of the mold-box frame to be drawn together and means to draw the sides thereof together.

4. In a press, the combination with supports, of a movable platen, means for moving said platen, a head supported by said supports, a mold-box frame, guides for the mold-frame engaging the supports and yielding means connecting the guides and the frame.

5. In a press, the combination with supports, of a movable platen, means for moving said platen, a head supported by said supports, a mold-box frame, guides encircling the supports, a bolt projecting from one side of the guides, a projection on the frame through which the bolt passes and a spring mounted on the bolt and adapted to be put under tension by the movement of the frame in one direction.

6. In a press, the combination with supports, of a movable platen, means for moving said platen, a head supported by said supports, a mold-box frame, a guide mounted upon the supports, a bolt pivoted at one end to the guide, a projection on the frame through which the bolt passes, and means for permitting movement between the bolt and the projection on the frame.

7. In a press, the combination with operating means, of a vertically-movable platen connected thereto, said platen being adapted to receive a wheeled truck, openings in the platen, crickets projecting through the openings and normally engaging the wheels of the truck for supporting the body of the same above the platen, but allowing the wheels of the truck to project into the openings and the body of the truck to contact with the platen when the platen is raised.

8. In a press, the combination with operating means, of a vertically-moving platen connected thereto and provided with tracks and openings in the tracks, said platen being adapted to receive a wheeled truck, crickets projecting through the openings normally engaging the wheels of the truck for supporting the body of the same above the platen, but allowing the wheels of the truck to project into the openings and the body to contact with the platen when the platen is raised.

9. In a press, the combination with a platen, means for operating the platen, a head, a mold-box frame comprising two sides and two end gates pivoted to the sides, means for adjusting the sides toward and away from each other, latching means carried upon the end gates adapted to engage coöperating parts carried by the sides and means for moving the latching means transversely of the end gates.

10. In a press, the combination with a movable platen, means for operating the same, of a head, a mold-box frame supported by the platen comprising two side plates and end gates hinged to the side plates, means for adjusting the side plates toward and away from each other, a latching means carried by the end gates adapted to engage coöperating parts carried by the sides for securing the free ends of the gates to the sides and means for moving the latching means transversely of the end gates.

11. In a press, the combination with a platen and a head, a mold-box frame supported upon the platen consisting of two sides and two ends hinged to the sides, means for adjusting the sides toward and away from each other, a plate adjustably mounted upon the ends and means for securing the ends and sides together carried by the plate.

12. In a press, the combination with a platen and a head, of a mold-box frame supported upon the platen, consisting of two sides and two ends hinged to the sides, means for adjusting the sides toward and away from each other, a plate adjustably mounted upon the ends and latching means for the ends mounted upon the plate.

13. In a press, the combination with a platen and a head, of a mold-box frame supported upon the platen, consisting of two sides and two ends hinged to the sides, means for adjusting the sides toward and away from each other, latch-hooks projecting from the side plates, a plate adjustably mounted upon the end gates and a latch carried by said plate whereby said latch can engage the latch-hooks when the side plates are in different positions of adjustment.

14. In a press, the combination with a moving platen, operating means in connection therewith and a head, of a mold-frame supported by the platen, comprising side plates, end gates pivotally supported from the side plates, latching means carried upon the end gates, and pivoted rack-bars engaging the latching means and adapted to release the same when the mold-frame is moved in one direction.

15. In a press, the combination with a movable platen, means for operating the same, a head, a mold-box frame supported by the platen comprising side plates and end gates hinged to the side plates, latching means carried by the end gates, pivoted rack-bars engaging the latching means and adapted to release the same when the mold-frame is moved in one direction and means independent of the bars for causing the gates to swing after they have been released and started by the rack-bars.

16. In a press, the combination with supports, and a moving platen, of a mold-frame adjustably supported from the platen, stiffening and strengthening means projecting on the frame, and means for adjusting the frame connected to the supports and arranged on the stiffening means.

17. In a press, the combination with a movable platen and means to operate the same, of a head, a mold-box frame comprising two sides and two ends, and means for automatically causing the sides to move toward and away from each other by the opening and closing of the ends.

18. In a press, the combination with a movable platen, of a mold-box composed of two sides, end gates hinged to the sides and automatic means for moving the sides toward each other to decrease the size of the frame to clamp a mold, said means being operated by the closing of the gates.

19. In a press, the combination with supports and a moving platen, of a mold-frame having adjustable sides, end gates mounted upon the frame and adapted to draw the sides together when they are closed, and resilient means for withdrawing the sides when the gates are opened.

20. In a press, the combination with a platen, and a head, of a mold-box adapted to be pressed by the platen against the head, a frame having two sides movable toward and away from each other in parallel planes and ends hinged to the sides to open and close the frame, said frame being provided with means to cause the sides to move toward each other when the ends are closed.

21. In a press, the combination with a platen and a head, of a mold-box adapted to be pressed by the platen against the head, a frame having two sides movable toward and away from each other in parallel planes and ends adapted to close the frame and means actuated by the motion of the ends to move the sides toward each other.

22. In a press, the combination with a platen and a head, of a mold-box adapted to be pressed by the platen against the head, a frame having two sides and two ends, one end and one side being hinged together and automatic means for moving the sides toward each other to decrease the size of the frame to clamp a mold-box, said means being operated by the closing of the ends, and means for locking the ends and sides together.

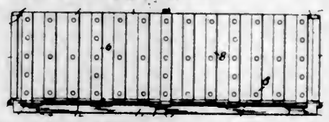
23. In a press, the combination with a platen and a head, of a mold-box adapted to be pressed by the platen against the head, a frame having two sides and two ends, one side and one end being hinged together, means for securing the free ends of the sides and ends together and simultaneously causing the sides to approach each other in parallel planes.

24. In a press, the combination with a platen and a head, a mold-box adapted to be pressed by the platen against the head, a frame having two sides and two ends, means for automatically moving the sides away from each other when the frame is opened and means for causing them to approach each other when the frame is closed.

25. In a press, the combination with a platen and a head, of a mold-box adapted to be pressed by the platen against the head, a frame having two sides and two ends, means for adjusting the sides toward and away from each other, means independent of the adjusting means for causing the sides to approach each other and means for moving the sides away from each other.

26. In a press, the combination with a platen, and a head, of a mold-box adapted to be pressed by the platen against the head, a frame having two sides and two ends, the sides being adapted to move toward and away from each other in parallel planes, means for moving the sides toward each other when the frame is closed and automatic means for moving the sides away from each other when the frame is opened.

819,055. **MOLD-BOX.** WILLIS H. FISHER, Mount Gilead, Ohio. Filed May 11, 1905. Serial No. 260,012.



Claim.—1. A mold-box comprising a bottom, side plates and end plates hinged to the bottom, a partition dividing the box into compartments, and a facing-plate mounted upon the partition.

2. A mold-box comprising a bottom, side plates and end plates hinged to the bottom, a partition dividing the box into compartments and a facing-plate removably mounted upon the partition.

3. A mold-box comprising a bottom, side plates and end plates hinged to the bottom, a removable pallet provided with core-receiving openings adapted to be placed upon the bottom, downwardly-tapering cores detachably fitting in the openings of the pallet and resting upon the bottom of the box.

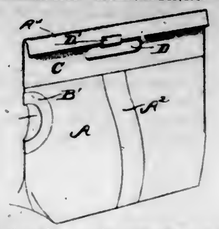
4. A mold-box for forming artificial stone and the like provided on one of its sides with a facing-plate, said facing-plate being provided with a plain surface and an ornamental surface below the plain surface whereby a compression-plate may be placed on top of the material to form the block and fit the mold.

5. A mold-box provided with a partition adapted to divide the box into compartments, a facing-plate mounted upon the partition, said facing-plate being provided with a plain surface and an ornamental surface below the plain surface, whereby a compression-plate may be placed upon the top of the material to form the block and fit the compartment.

6. A mold-box provided with a partition adapted to divide the box into compartments, a facing-plate removably secured to the partition, said facing-plate being provided with a plain surface and an ornamental surface below the plain surface, whereby a compression-plate may be placed upon the top of the material to form the block and fit the compartment.

7. In a mold-box, the combination with hinged doors, means for dividing the mold-box into compartments, pallets having core-receiving openings arranged in the compartments, removable and detachable cores fitting in the openings of the pallets, and compression-plates having openings adapted to receive the cores.

819,056. **POULTRY-CARRIER.** DANIEL A. GARBER, Roanoke, Va. Filed Feb. 13, 1905. Serial No. 245,679.



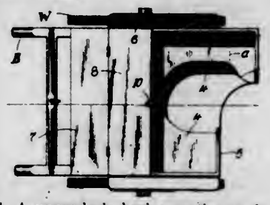
Claim.—1. A poultry-carrier comprising an upwardly-open bag having an opening in the side, alining slots in the sides, and a tongue adapted to pass through the slots and engage the upper marginal portions of the bag when the same are bent over.

2. A device of the kind described comprising a receptacle adapted to contain a fowl, the receptacle having flexible sides adapted to be folded over upon themselves at the upper open end of the receptacle, an opening being formed in one side of the receptacle for the head of the fowl to project through and said receptacle having slots in its opposing sides, a reinforcement upon the upper portion of the receptacle adjacent the slots, and a tongue secured at one end to the reinforcement and adapted to project through the slots and engage the folded-over portions.

3. A device of the kind described comprising a receptacle having an opening in one side and having a slot in each side adjacent the top of the receptacle, and a tongue secured upon one side of the receptacle and adapted to project through the slots and engage the upper edges of the receptacle when the same are folded over upon the side of the receptacle opposite that to which the tongue is secured.

4. A device of the kind described comprising a foldable receptacle, having an opening in one side, a reinforcing-strip arranged circumferentially around the upper portion of the receptacle, said receptacle having alining slots in the sides, said slots extending through the said reinforcing-strip, a tongue secured to one side of the receptacle and adapted to extend through the said slots, the upper marginal portions being adapted to lie under the free end of the tongue, as and for the purpose described.

819,057. **WAGON-BODY.** PAUL C. GERHART, St. Louis, Mo. Filed Sept. 21, 1905. Serial No. 279,434.



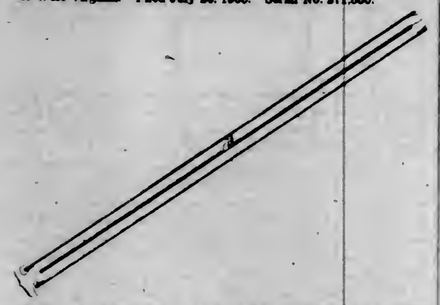
Claim.—1. A wagon-body having contiguous front and rear compartments depending below the line of the axle, and having suitable provision for the transverse passage of the wagon-axle between them, one side of the wagon-body being longer than the opposite side, and a ledge following the inclosing walls of the body and having one end extended to conform to the longer side of the body, substantially as set forth.

2. A wagon-body having suitable lateral offsets for the accommodation of the vehicle-shafts, and divided into a front and rear compartment respectively, the adjacent walls of the compartments below the plane of the offsets being separated to accommodate the axle of the vehicle, a ledge disposed along the vertical inclosing walls of the rear compartment, and substantially in the plane of the offsets, one end of the ledge extending rearwardly beyond the opposite end, a lid for the front compartment and a gate for the rear compartment adapted to close against the free edge of the lid, substantially as set forth.

3. A wagon-body divided into a front and rear compartment, a lid hinged to and closing the top of the front compartment, a vertical wall separating the upper portions of the compartments, a gate hinged to the said wall and adapted to close against the free edge of the lid, and means for coupling the free edges of the lid and gate for the closed positions thereof, substantially as set forth.

4. A wagon-body having one side longer than the side opposite thereto, and a ledge following the inclosing walls of the body and having one end extended to conform to the longer side of the body, substantially as set forth.

819,058. TABLET FOR SOUND-RECORDS. HAROLD GODWIN, Hackensack, N. J., and AUGUST HOFFMAN, New York, N. Y., assignors to American Graphophone Company, Bridgeport, Conn., a Corporation of West Virginia. Filed July 26, 1905. Serial No. 271,330.



Claim.—1. A tablet for sound-records, comprising a plurality of layers connected together only around their margins.

2. A tablet for sound-records, comprising a plurality of layers, the greater portion of whose adjacent surfaces is essentially free from an adhesive.

3. A tablet for sound-records, comprising a layer of celluloid and a layer of bristol-board, the greater portion of whose adjacent surfaces is essentially free from an adhesive.

4. A tablet for sound-records, comprising two layers of celluloid secured together only around their margins.

5. A tablet for sound-records comprising two enveloping layers of celluloid secured together only around their margins, and an interior layer of bristol-board or the like.

6. A tablet for sound-records comprising two layers of different material held together but the greater extent of whose surfaces is essentially free from any adhesive.

819,059. MOUTHPIECE FOR TELEPHONE-TRANSMITTERS. HARRY J. GUTTMAN, Chicago, Ill., assignor to Automatic Electric Company, Chicago, Ill. Filed Oct. 21, 1904. Serial No. 229,390.



Claim.—1. As an article of manufacture, a mouthpiece for telephone-transmitters, said mouthpiece consisting of a hollow body portion of drawn steel, having a bend or deflection in the metal providing external and internal shoulders, and a separately-formed perforated diaphragm secured within the base of said hollow body portion and against said internal shoulder, the said hollow body being externally threaded between its external shoulder and its smaller end, said threaded portion being cylindric and internally smooth, and means integral with the said bend or deflection for holding the diaphragm in place against the internal shoulder.

2. As an article of manufacture, a drawn-steel mouthpiece for telephone-transmitters, said mouthpiece consisting of a hollow body portion and a separately-formed perforated diaphragm, said hollow body portion being provided with internally-arranged lugs bent into position to hold the said diaphragm in place.

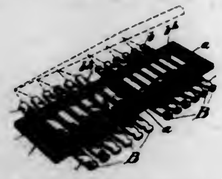
3. As an article of manufacture, a drawn-steel mouthpiece for telephone-transmitters, said mouthpiece consisting of a hollow body portion provided internally with a shoulder, and a perforated diaphragm seated against said shoulder, the said hollow body portion being provided internally with lugs bent into position to hold the diaphragm against said shoulder.

4. As an article of manufacture, a drawn-steel mouthpiece for telephone-transmitters, said mouthpiece consisting of a hollow body portion and a separately-formed perforated diaphragm, said hollow body portion being provided with internally-arranged lugs bent into position to hold the said diaphragm in place, the said hollow body being provided with a screw-threaded attaching portion.

5. As an article of manufacture, a metal mouthpiece for telephone-transmitters, said mouthpiece consisting of a hollow body portion provided internally with a shoulder, and a perforated diaphragm seated against said shoulder, the said hollow body portion being provided internally with lugs bent into position to hold the diaphragm against said shoulder, the said hollow body being provided with an externally-screw-threaded attaching portion.

6. As an article of manufacture, a steel mouthpiece for telephones, said mouthpiece being of thin steel and provided at one end with an externally-threaded attaching portion, and having an internal annular shoulder, together with a perforated or reticulated diaphragm having its marginal portions resting upon said shoulder, and means integral with the mouthpiece for fixedly securing the said diaphragm upon the said shoulder.

819,060. TERMINAL STRIP. HARRY J. GUTTMAN, Chicago, Ill., assignor to Automatic Electric Company, Chicago, Ill., a Corporation of Illinois. Filed Nov. 9, 1904. Serial No. 231,981.



Claim.—1. A strip of insulation provided with openings, and a plurality of metal strips extending crosswise of said strip of insulation, each metal strip having end portions lying flatwise upon one surface of said strip of insulation, and having also an intermediate portion lying flatwise against the opposite surface of said strip of insulation the said metal strips being suitably spaced apart and insulated from each other and provided with free ends adapted for connection with circuit-conductors.

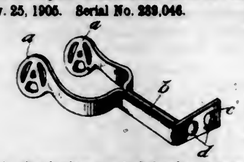
2. A strip of insulation provided with parallel rows of openings, and metal strips applied to said openings and extending crosswise of said strip of insulation, each metal strip having end and intermediate lengthwise portions lying flatwise against the opposite surfaces of said strip of insulation, and having also relatively short crosswise or transverse portions extending through said openings in the strip of insulation the said metal strips being suitably spaced apart and insulated from each other and provided with free ends adapted for connection with circuit-conductors.

3. A strip of insulation provided with parallel rows of openings, and parallel strips of metal inserted through said openings and extending crosswise of said strip of insulation, each metal strip having end portions projecting beyond the opposite edges of said strip of insulation, and having an intermediate portion joined to said end portions by transverse portions which extend through said openings, whereby the end and intermediate portions of said metal strip are held flatwise against opposite surfaces of the strip of insulation the said metal strips being suitably spaced apart and insulated from each other and provided with free ends adapted for connection with circuit-conductors.

4. A strip of insulation provided with openings, and U-shaped metal strips inserted through said openings and having their end portions bent outwardly to provide electric terminals or contacts, each of said members having its end portions separated from its middle portion by the thickness of said strip of insulation whereby the said end and middle portions are disposed upon or at the oppositely-facing surfaces of said insulation the said metal strips being suitably spaced apart and insulated from each other and provided with free ends adapted for connection with circuit-conductors.

5. A bank of electric terminals or contacts, comprising a plurality of flat plates of insulation held together by screw-threaded means, and separated one from the other by washers mounted upon the said screw-threaded means, each plate of insulation being provided with a plurality of said electric terminals or contacts, and each electric terminal or contact consisting of a strip of metal having projecting end portions held flatwise against one surface of its allotted plate, and having also an intermediate portion held flatwise against the opposite surface of such plate the said metal strips being suitably spaced apart and insulated from each other and provided with free ends adapted for connection with circuit-conductors.

819,061. TELEPHONE SWITCH-HOOK. HARRY J. GUTTMAN, Chicago, Ill., assignor to Automatic Electric Company, Chicago, Ill. Filed Nov. 25, 1905. Serial No. 289,046.



Claim.—1. A telephone switch-hook constructed from a single integral sheet-metal blank bent and folded into shape to provide a neck or body of double thickness, a hook or supporting prongs of single thickness, and attaching means of single thickness.

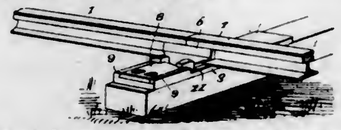
2. A telephone switch-hook constructed from a blank having a main or body portion *b* adapted to be folded longitudinally, and having end portions *a* adapted to be spread apart to form the prongs of the completed switch-hook, together with a rear portion *c* adapted to be bent laterally to provide the switch-hook with a laterally-projecting attaching portion.

3. A telephone switch-hook constructed from a single integral piece of sheet metal folded longitudinally to provide a neck or arm portion, and bent or spread apart at its forward end for the purpose of providing the switch-hook with two prongs, and having a perforated rear and laterally-extending attaching portion.

4. As an article of manufacture, a sheet-metal blank adapted to be converted into a telephone switch-hook, said blank having a body portion adapted to be folded longitudinally upon itself, and having end portions adapted to be spread apart and curved suitably to provide the completed switch-hook with prongs, together with a perforated portion adapted to be bent at a right angles to form an attaching portion for the completed switch-hook.

5. As an article of manufacture, a telephone switch-hook comprising a neck or body portion *b* consisting of sheet metal folded longitudinally upon itself, end portions *a* integral with the said portion *b* and constituting prongs for the switch-hook, together with an attaching portion *c* integral with one layer of the said portion *b* and provided with screw or rivet holes *d*.

819,062. RAIL-JOINT. FRANK A. HAPTONSTALL, Covington, Va. Filed July 19, 1905. Serial No. 270,373.



Claim.—1. In combination a rail-chair comprising a base having an integral abutment to engage with one side of a rail resting upon the chair, and having spaced integral guides upon the end portion remote from said abutment, a sliding abutment mounted upon the base between the said guides and interlocking at its edges therewith and adapted to engage with the opposite side of the rail, the base of the sliding abutment having notches in its edges to register with vertical openings in the base of the chair at the inner ends of the aforesaid guides, and spikes passed through the openings in the chair-base at the inner ends of the guides and abutting thereagainst and seated in the registering notches of the sliding-abutment base.

2. In a rail-joint the combination of a base-plate having an integral abutment and integral guides, companion rails having their adjacent ends resting upon the base-plate and engaged by the said abutment thereof and provided in their webs with transverse openings, a sliding abutment having lugs projected therefrom and entering the openings in the webs of the rail ends and having the edge portions of its base interlocking with the said guides between which the sliding abutment is fitted, the base of the sliding abutment having notches in opposite edges to register with vertical openings in the base-plate at the inner ends of the aforesaid guides thereof, and spikes passed through the openings of the base-plate at the inner ends of said guides thereof and abutting against the inner extremities of the guides and seated in the registering notches of the sliding-abutment base, substantially as set forth.

819,063. SAND AND CAVINGS PUMP. HOWARD R. HARDENBURG, Saginaw, Mich. Filed Sept. 21, 1905. Serial No. 279,477.

Claim.—The combination in a sand-pump of a tubular body-section, a bail rigidly secured within the upper end of said body portion so as to leave said upper end open, a nipple on said bail adapted to be screwed into the lower end of a drill-stem, a sleeve of larger diameter than the body portion upon the lower end thereof, another sleeve having a transverse bit formed on its lower end, secured upon the first-named sleeve, a valve-seat secured between said sleeves, and a valve pivoted to and seated upon said valve-seat, substantially as set forth.



819,064. CORD ATTACHMENT FOR WINDOW-SHADES. EDMUND F. HARTSHORN, Newark, N. J., assignor to Stewart Hartshorn Company, East Newark, N. J., a Corporation of New Jersey. Filed Feb. 1, 1904. Serial No. 191,457.



Claim.—1. A cord attachment, which comprises a clasp formed of a single piece of tempered sheet-steel arranged to fit around and closely grasp the slat and having teeth on its upper edge, the teeth being adapted to engage with the top or sides of the slat as depends upon the width of the latter, the said clasp having a cup at its bottom formed integrally with the clasp and adapted to retain and conceal the knot of the cord.

2. A cord attachment, which comprises a clasp formed of a single piece of tempered sheet-steel arranged to fit around and closely grasp the slat and having teeth on its upper edge, the teeth being adapted to engage with the top or sides of the slat as depends upon the width of the latter, the said clasp having a cup at its bottom which is adapted to retain and conceal the knot of the cord.

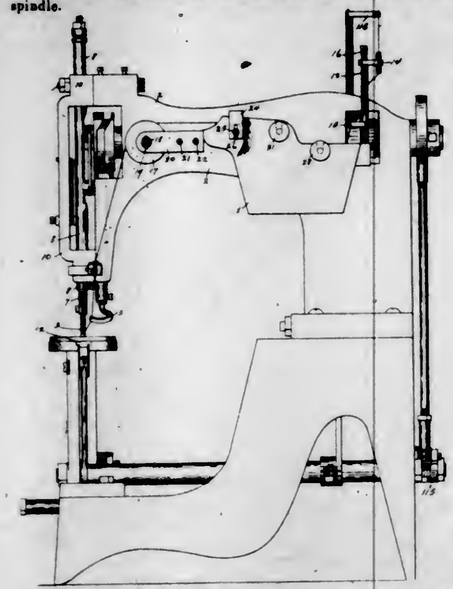
3. A cord attachment which comprises a clasp having integral arms of elastic sheet metal with teeth at their upper edges, the arms being bent closer together when removed from the slat than when in place, whereby the teeth will be forced into the slat by the elasticity of the metal, the said clasp having an integral cup for concealing the knot of the cord.

819,065. WAXED-THREAD SEWING-MACHINE. MADOR D. HERBERT, Gloversville, N. Y. Filed Mar. 13, 1905. Serial No. 249,875.

Claim.—1. In a machine of the class described, a tension for the thread comprising a spindle around which the thread is adapted to be wound mounted at its inner end upon a suitable support; and a thread-guide offset from and rotatively mounted upon the outer end of said spindle whereby adjustment of the tension can be accomplished by rotating said guide without unthreading the tension.

2. In a machine of the class described, a tension for the thread comprising a spindle around which the thread is adapted to be wound mounted at its inner end upon a suitable support; a thread-guide offset from and rotatively mounted upon the outer end of said spindle; and a thread-guide mounted upon a suitable support and projecting opposite the outer end of said spindle.

3. In a machine of the class described, the combination with the tar-cup and thread-scraper; of a tension for the thread in advance of the tar-cup comprising a spindle around which the thread is adapted to be wound mounted at its inner end upon a suitable support, and a pair of guides for the thread in passing to and from said spindle, one of said guides being rotatively mounted upon the outer end of said spindle.



4. In a machine of the class described, the combination with the tar-cup and thread-scraper; of a tension for the thread in advance of the tar-cup comprising a spindle around which the thread is adapted to be wound mounted at its inner end upon a suitable support, and a pair of guides for the thread in passing to and from said spindle, one of said guides being rotatively mounted upon the outer end of said spindle; and means for frictionally holding said movable guide in adjusted position upon the spindle.

819,066. COTTON-CHOPPER. HIRAM HERROLD, Luther, Okla. Filed June 26, 1905. Serial No. 267,075.

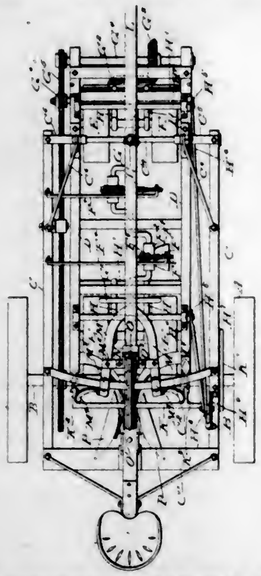
Claim.—1. In a cotton-chopper, the combination of two independent frames arranged one within the other and having a horizontal pivotal connection at their front parts, a pair of drive-wheels supporting one of said frames, a movable chopping-tool carried by the other frame in advance of said drive-wheels, and means for actuating said chopping-tool from said drive-wheels.

2. In a cotton-chopper, the combination of two independent frames arranged together and having a horizontal pivotal connection at their front parts, a movable chopping-tool carried by one frame, gage-wheels supporting said frame, a pair of drive-wheels supporting the other frame, and means for operating said chopping-tool from said drive-wheels, the frame carrying the chopping-tool being adapted to move up and down relative to the drive-wheels.

3. In a cotton-chopper, the combination of an outside main frame, an inside frame inclosed thereby and having its front part pivotally connected to the front end of the outside frame on a horizontal axis, wheels supporting the inside frame, a movable chopping-tool carried by said inside frame, a pair of drive-wheels supporting the rear end of the outside frame, and means for operating said chopping-tool from said drive-wheels.

4. In a cotton-chopper, the combination of the main frame and supporting drive-wheels therefor attached to the rear part of said frame, a cross-rod at the front end of said frame, and an independently wheel-supported frame arranged within said main frame and having its front part pivotally attached to said cross-rod, a revolving chopping mechanism carried by the latter frame, and means for actuating said mechanism from said drive-wheels.

5. In a cotton-chopper, the combination of a main frame, a pair of supporting drive-wheels therefor, an independently wheel-supported frame carrying a chopping mechanism, the latter frame having a pivotal connection with the forward portion of the main frame allowing an independent up and down movement of the chopper-carrying frame relative to the drive-wheels, and means for operating said mechanism from said drive-wheels.



6. In a cotton-chopper, the combination of a main frame and drive-wheels supporting the rear end of said frame, an independently wheel-supported chopper-carrying frame pivotally connected to the front end of the main frame so as to allow up and down movement of the chopper-carrying frame relative to the drive-wheels, means for adjusting the chopper-carrying frame relative to its supporting-wheels, and means for actuating the chopper mechanism from the supporting-wheels of the main frame.

7. In a cotton-chopper, the combination of an outside main frame, a pair of supporting drive-wheels therefor, an inside independently wheel-supported chopper-carrying frame, a cross-rod attached to the front ends of both frames and establishing a pivotal connection between them, allowing a relative vertical oscillation of the frames, and mechanism for actuating choppers from the drive-wheels.

8. In a cotton-chopper, the combination of a main frame supported at its rear end by a pair of drive-wheels, an independently wheel-supported chopping mechanism arranged within and connected with the main frame so as to be capable of up and down movement relative thereto, means for actuating the choppers by the travel of the machine, means for adjusting the chopping mechanism with relation to the supporting-wheels thereof, and means for adjusting as a whole the said wheel-supported chopping mechanism with relation to the main frame, and means for lifting the entire chopping mechanism and front of the machine so as to cause the entire machine to travel on the drive-wheels.

9. In a cotton-chopper, the combination of a main frame, a pair of supporting-wheels therefor at the rear of said frame, an independently wheel-supported inside frame carrying chopping mechanism, means for operating said chopping mechanism by the travel of the machine, the two frames having a front horizontal pivotal connection allowing a vertical swinging movement of the one frame with respect to the other, and means mounted on the main frame for lifting the rear end of the chopper-carrying frame.

10. In a cotton-chopper, the combination of a main frame, a pair of supporting-wheels therefor, a tongue attached to said frame adapted to move vertically, an independently wheel-supported frame carrying chopping mechanism, the latter frame arranged within the former, means for operating said chopping mechanism by the travel of the machine, the two frames having a front horizontal pivotal connection allowing a vertical swinging movement of the one frame with respect to the other, a lever mounted on the main frame, and mechanism actuated by said lever for lifting the rear end of the chopper-carrying frame, and a lever on the main frame and connections between the same and the tongue whereby the entire front of the machine can be lifted and the entire machine caused to travel on the drive-wheels.

11. In a cotton-chopper, the combination of a main frame, a pair of supporting drive-wheels therefor, an independently wheel-supported chopper-carrying frame, the forward portion of the main frame being supported by said chopper-carrying frame and having a horizontal pivotal connection therewith allowing relative movement between the two frames, a cross-shaft mounted on the main frame, a manipulating-lever therefor, and rigid arms on said cross-shaft pivotally connected with the rear end of the chopper-carrying frame.

12. In a cotton-chopper, the combination of a main frame, a pair of supporting drive-wheels therefor, a chopper-carrying frame pivotally connected with the forward portion of the main frame, the chopper-carrying frame thereby supporting the forward portion of said main frame, gage-wheels for said chopper-carrying frame mounted on swinging axles, cross-shafts on the chopper-carrying frame, having crank-arms connected with said axles and having other arms connected by links or rods with a lever mounted on the main frame, whereby the position of the chopper-carrying frame relative to its gage-wheels may be adjusted by said lever.

13. In a cotton-chopper, the combination of a main frame, a pair of supporting drive-wheels therefor, an independently wheel-supported chopper-carrying frame supporting the forward portion of the main frame and pivotally connected therewith, means on the main frame for lifting the rear portion of the chopper-carrying frame, a tongue having an intermediate fulcrum on the forward portion of the machine, the forward part of the tongue adapted to be supported by the team drawing the machine, and means mounted on the main frame for lifting the rear end of the tongue and thereby elevating the entire front of the machine.

14. In a cotton-chopper, the combination of a main frame, a pair of supporting drive-wheels therefor, an independently wheel-supported chopper-carrying frame supporting the forward portion of the main frame and pivotally connected therewith to allow relative movement between the frames, means on the main frame for lifting the rear portion of the chopper-carrying frame, a tongue having an intermediate fulcrum on the forward portion of the machine, the forward part of the tongue adapted to be supported by the team drawing the machine, and means mounted on the main frame for lifting the rear end of the tongue and thereby elevating the entire front of the machine, said means comprising an intermediately-fulcrumed lever one arm of which serves as a handle while the other arm is connected with the rear end of the tongue by links.

15. In cotton-chopper, the combination of a wheel-supported frame and chopping mechanism carried thereby, a tongue having an intermediate fulcrum on the forward portion of the machine, the forward part of the tongue adapted to be supported by the team drawing the machine, and means carried by the machine for lifting the rear end of the tongue and thereby elevating the front portion of the machine, the chopping mechanism being liftable therewith.

16. In a cotton-chopper, the combination of a main frame and supporting drive-wheels therefor, the main frame extending forwardly of said drive-wheels, a chopper-carrying frame arranged within said main frame and forwardly of said drive-wheels, there being a horizontal pivotal connection between the front portion of the main frame and the chopper-carrying frame, gage-wheels supporting said chopper-carrying frame, whereby said chopper-carrying frame supports the front portion of the main frame, and means for operating the chopper mechanism from said drive-wheels.

17. In a cotton-chopper, the combination of a main frame and supporting drive-wheels therefor the main frame extending forwardly of said drive-wheels, a chopper-carrying frame arranged within said main frame and forwardly of said drive-wheels, there being a horizontal pivotal connection between the front portion of the main frame and the chopper-carrying frame, gage-wheels supporting said chopper-carrying frame, whereby said chopper-carrying frame supports the front portion of the main frame, and means for operating the chopper mechanism from said drive-wheels, means for adjusting the height of the chopper-carrying frame relative to its gage-wheels, and a lever mounted on the main frame for operating said means.

18. In a cotton-chopper, the combination of a main frame and supporting drive-wheels therefor, the main frame extending forwardly of said drive-wheels, a chopper-carrying frame arranged within said main frame and forwardly of said drive-wheels, there being a horizontal pivotal connection between the front portion of the main frame and the chopper-carrying frame, gage-wheels supporting said chopper-carrying frame, whereby said chopper-carrying frame supports the front portion of the main frame, and means for operating the chopper mechanism from said drive-wheels, means for lifting the rear end of the chopper-carrying frame, and a lever operated on the main frame for operating said means.

19. In a cotton-chopper, the combination of a main frame and supporting drive-wheels therefor, a wheel-supported chopper mechanism arranged forwardly of said drive-wheels, the frame of said chopper mechanism having a horizontal pivotal connection with the forward portion of the main frame, a tongue having an intermediate fulcrum on the forward portion of the main frame, and means carried by said main frame and connected with the rear end of the tongue for lifting said rear end of the tongue and thereby tilting up the forward end of the machine.

20. In a cotton-chopper, the combination of a main frame, supporting drive-wheels therefor, a wheel-supported frame arranged forwardly of said drive-wheels and having a horizontal pivotal connection with the forward end of said main frame, a chopping mechanism carried by the latter frame, means for operating said chopping mechanism by the travel of the machine, a tongue having an intermediate attachment to the forward end of the main frame and adapted to be moved vertically and horizontally, a driver's seat on the main frame, means for moving the rear end of the tongue laterally, and a lever and connections movable with the rear end of the tongue for lifting the same and thereby tilting up the front portion of the machine.

21. In a cotton-chopper, the combination of a wheel-supported frame, chopping mechanism carried thereby, means for operating the chopping mechanism by the drive-wheels of the machine, relatively fixed cultivating devices associated with the chopping mechanism, a driver's seat mounted on the frame, a tongue having an intermediate swivel connection with the forward portion of the machine, and means within reach of the driver's seat for shifting the frame laterally with respect to the rear end of the tongue.

22. In a cotton-chopper, the combination of a wheel-supported frame, chopping mechanism carried thereby, means for operating the chopping mechanism by the drive-wheels of the machine, a driver's seat mounted on the frame, a tongue having an intermediate swivel connection with the forward portion of the machine, a curved yoke extending across the frame, the rear end of the tongue having a fork attached thereto which is slidable on said yoke, and foot-rests attached to said fork and adapted for the driver's feet, whereby the driver can shift the frame laterally with respect to the rear end of the tongue.

23. In a cotton-chopper, the combination of a crank, a cutting-tool having its shank loosely mounted on said crank, an arm connected with the crank, a link pivotally connecting said arm with the frame of the machine, and a yieldable connection between said arm and shank of the tool for holding the tool yieldably in proper position.

24. In a cotton-chopper, the combination of a crank, a cutting-tool having its shank loosely mounted on said crank, an arm loosely mounted on said crank, the shank of the cutting-tool being movable relatively to said arm, and a connection between said arm and the shank of the tool comprising pivotally-connected links and a spring, thereby holding the tool in proper working position but allowing the connection to yield when the tool strikes an obstruction.

819,067. METALLIC PILING. WILLIAM HUNTER, Kincardine, Canada. Filed Apr. 7, 1905. Serial No. 254,423.



Claim.—1. A metallic piling comprising vertical opposing beams having inwardly-extending opposing flanges, connecting means between the opposing beams, a vertically-disposed I-beam connecting the adjacent pillars and means without said opposing flanges of said opposing beams for securing the flanges of the I-beam within the same, substantially as described.

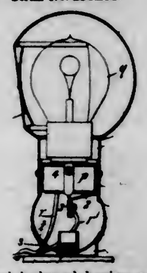
2. A metallic piling, comprising vertical opposing beams forming pillars and having inwardly-extending opposing flanges, connecting means between the opposing beams, a vertically-disposed I-beam connecting the adjacent pillars having the flanges thereof extending within the opposing flanges of the opposing beams and angle-bars without said opposing flanges designed to hold the flanges

of the I-beams and the flanges of the opposing beams together as and for the purpose specified.

3. A metallic piling, comprising vertical opposing beams forming pillars and having inwardly-extending opposing flanges, connecting means between the opposing beams, vertically-disposed I-beams connecting the adjacent pillars having the flanges thereof extending within the opposing flanges of the opposing beams, and angle-bars secured to the I-beams and designed to hold the flanges of the I-beam and the opposing flanges of the opposing beams together as and for the purpose specified.

4. A metallic piling, comprising vertical opposing beams forming pillars and having inwardly-extending opposing flanges, vertically-disposed I-beams connecting the adjacent pillars, and angle-irons adapted to hold the flanges of said I-beams against the opposing flanges of said vertical opposing beams, substantially as described.

819,068. **LIGHT-FIXTURE.** HUBERT R. IVES, Montreal, Canada. Filed Nov. 25, 1904. Serial No. 234,201.



Claim.—1. A metal bedstead having a hollow post with an opening in its side, an electric lamp with connections inclosed within such post opposite the opening, and a part of said post movable to control the light from said lamp.

2. A metal bedstead one of the posts of which has the hollow spherical metal knob thereof formed with an opening in its sides, adjustably connected with the post proper and adapted to contain an electric lamp, connections with a source of current, and said knob adapted to control such current, for the purpose set forth.

3. In a metal bedstead the combination with one of its posts having a socket at its upper end, of the hollow spherical metal knob of such post formed with an opening in its side the ball portion of a ball-and-socket joint secured to the bottom of said knob, and filling said socket, and the knob adapted to contain an electric lamp, for the purpose set forth.

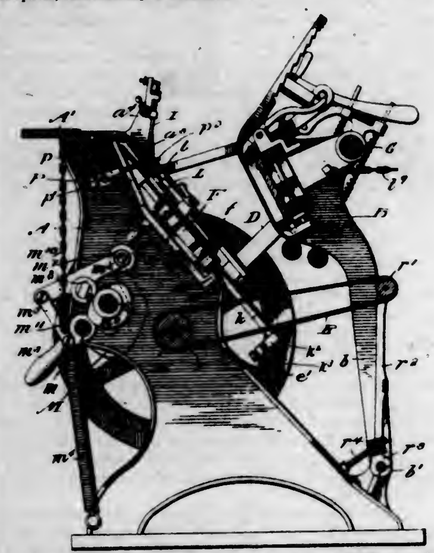
4. In a metal bedstead the combination with one of its posts having a socket at its upper end, of the hollow spherical metal knob of such post formed with an opening in its side, the ball portion of a ball-and-socket joint secured to the bottom of said knob and filling said socket, a slide to close said opening, and an incandescent electric lamp located within said knob for the purpose set forth.

5. In a metal bedstead the combination with one of the posts having a socket at its upper end and a hollow ball-shaped member fitting said socket to constitute a ball-and-socket joint and formed with an annular neck portion of the hollow spherical metal knob of such post formed with an opening in its side and provided with annular neck portion adapted to rotatively connect with the annular neck portion of said ball-shaped member, and an incandescent electric lamp located within said knob for the purpose set forth.

6. In a metal bedstead the combination with one of its posts having a socket at its upper end and a hollow ball-shaped member fitting said socket to constitute a ball-and-socket joint and formed with a cylindrical upper portion, of the hollow spherical metal knob of such post formed with an opening in its side and provided with an annular neck portion adapted to rotatably connect with the annular neck portion of said ball-shaped member, an incandescent electric lamp located within said knob, switch-contacts for said lamp and said knob adapted by rotation thereof to operate one of said contacts for the purpose set forth.

819,069. **PLATEN PRINTING-PRESS.** ROBERT B. KNIGHT and ARTHUR KNIGHT, Rensselaer, N. Y. Filed Jan. 20, 1905. Serial No. 241,668.

Claim.—1. In a platen printing-press, the combination with the movable type-bed and stationary platen-supporting devices, of a platen removable bodily from the press, and a plurality of adjustable devices projecting from the rear face of the platen and connected therewith having portions at their outer ends adapted to rest upon said platen-supporting devices, whereby said platen can be removed and said adjustable devices adjusted while it is disassociated from the press, substantially as described.



2. In a platen printing-press, the combination with the movable type-bed and stationary platen-supporting devices, of a platen removable bodily from the press, and a plurality of adjusting-screws engaging the rear face of said platen and projecting therefrom, said screws having portions at their outer ends adapted to rest upon said platen-supporting devices, whereby said platen may be entirely removed from the press, and said screws adjusted, substantially as described.

3. In a platen printing-press, the combination with the movable type-bed and stationary platen-supporting devices, of a platen removable bodily from the press and a plurality of adjusting-screws engaging the rear face of said platen and projecting therefrom, said screws having portions at their outer ends adapted to rest upon said platen-supporting devices, whereby said platen may be entirely removed from the press, and said screws adjusted, and a locking device for each of said screws arranged eccentrically thereto, substantially as described.

4. In a platen printing-press, the combination with the main frame, provided at each side with an inclined platen-supporting web, and adjustable devices for supporting the lower edge of the platen, of the movable type-bed, and a platen removable bodily from the press having its rear face provided with a plurality of adjusting-screws, having end portions adapted to engage said webs, when the platen is in printing position, and lateral adjustable screws extending through the main frame, and arranged to engage the sides of the platen to prevent lateral movement thereof, substantially as described.

5. In a platen printing-press, the combination with the main frame provided with platen-supporting devices, and the movable type-bed, of the platen, independent adjusting-screws secured to and projecting from said platen and adapted to engage said platen-supporting devices, each of said screws being provided with a circular portion provided with locking-notches, and a movable locking device for engaging said notches, substantially as described.

6. In a platen printing-press, the combination with the main frame provided with platen-supporting devices, and the movable type-bed, of the platen, independent adjusting-screws secured to and projecting from said platen and adapted to engage said platen-supporting devices, each of said screws being provided with a circular portion provided with locking-notches, and a spring-actuated locking-pin for engaging said notches, substantially as described.

7. In a platen printing-press, the combination with the main frame provided with webs or flanges for supporting the platen, and

the reciprocating type-bed, of a platen provided with a plurality of independent adjusting-screws engaging the platen at separated points and projecting therefrom and adapted to engage said supporting webs or flanges, each of said screws being provided with a circular portion provided on the face adjacent to the platen with a series of radial notches, and a spring-actuated locking-pin located in a recess in said platen adjacent to each of said screws for engaging said radial notches thereof, substantially as described.

8. In a platen printing-press, the combination with the main frame, of an oscillating type-bed, a shaft for operating said type-bed, and connections between said shaft and type-bed including draw-bars, of an impression-throw-off mechanism comprising a shaft rotatably mounted in the type-bed and provided with eccentric portions engaging said draw-bars, an arm for oscillating said shaft, a spring connected with said shaft for maintaining the type-bed in non-printing relation with said draw-bars, a rod connected to said arm, a stop on the main frame for engaging said rod and causing the said shaft to rotate when the type-bed moves toward the platen, a movable throw-off lever for engaging said rod and lifting it out of engagement with said stop, substantially as described.

9. In a platen printing-press, the combination with the main frame, of an oscillating type-bed, a shaft for operating said type-bed, and connections between said shaft and type-bed including draw-bars, of an impression-throw-off mechanism, comprising a shaft rotatably mounted in the type-bed and provided with eccentric portions engaging said draw-bars, an arm for oscillating said shaft, a spring connected with said shaft for maintaining the type-bed in non-printing relation with said draw-bars, a rod connected to said arm, a stop on the main frame for engaging said rod and causing the said shaft to rotate when the type-bed moves toward the platen, a throw-off lever having an aperture loosely engaging said rod, for lifting it out of engagement with said stop, whereby said rod will be reciprocated through said aperture and the said spring will hold said shaft in position to cause the type-bed to miss an impression, substantially as described.

10. In a platen printing-press, the combination with the main frame, of an oscillating type-bed, a shaft for operating said type-bed, and connections between said shaft and type-bed including draw-bars, of an impression-throw-off mechanism comprising a shaft rotatably mounted in the type-bed and provided with eccentric portions engaging said draw-bars, an arm for oscillating said shaft for maintaining the type-bed in non-printing relation with said draw-bars, a rod connected to said arm, a stop on the main frame, for engaging said rod and causing the said shaft to rotate when the type-bed moves toward the platen, a movable throw-off lever for engaging said rod and lifting it out of engagement with said stop, and mechanism for securing said lever and rod in such position to permit the type-bed to miss a number of impressions, substantially as described.

11. In a platen printing-press, the combination with the main frame, of an oscillating type-bed, a shaft for operating said type-bed, and connections between said shaft and type-bed including draw-bars, of an impression-throw-off mechanism, comprising a shaft rotatably mounted in the type-bed and provided with eccentric portions engaging said draw-bars, an arm for oscillating said shaft, a spring connected with said shaft for maintaining the type-bed in non-printing relation with said draw-bars, a rod connected to said arm, a stop on the main frame for engaging said rod and causing the said shaft to rotate when the type-bed moves toward the platen, a movable throw-off lever for engaging said rod and lifting it out of engagement with said stop, and an operating-arm for said lever adjustably connected thereto, substantially as described.

12. In a platen printing-press, the combination with the main frame, of an oscillating type-bed, a shaft for operating the same and draw-bars connecting said shaft with said type-bed, of a shaft mounted in said type-bed engaging said draw-bars and provided with eccentric portions, a spring connected to said shaft for partially rotating it in one direction, a stop for limiting the movement of said shaft, a buffer for said stop, means for operating said shaft in the opposite direction when the type-bed is moved toward the platen, including a rod engaging a stop on the main frame, and a throw-off lever for lifting said rod out of engagement with said stop, substantially as described.

13. In a platen printing-press, the combination with the main frame, of an oscillating type-bed, operating devices therefor including draw-bars, a shaft connecting said draw-bars with the type-bed and provided with eccentric portions, an operating-arm secured to said shaft, a spring connected to said shaft for partially rotating it in one drection, a stop on said operating-arm provided with a buffer for engaging one of said draw-bars to limit the rotation of said shaft under the influence of said spring, a rod connected to said arm and normally engaging a stop on the main frame and a throw-off lever for lifting said rod out of engagement with said stop, substantially as described.

14. In a platen printing-press, the combination with the platen and movable type-bed, of a reciprocating gripper for feeding the sheets over the platen between said platen and the type-bed, a rock-shaft mounted in the main frame, an arm secured thereto and connected to said gripper, an operating-arm connected to said rock-shaft, a cam-shaft provided with a gripper-operating cam, a pivoted lever, having a part engaging said cam, a connection between said lever and the operating-arm on said rock-shaft and a spring for returning the gripper-carriage operatively connected with the rock-shaft, substantially as described.

15. In a platen printing-press, the combination with the platen, the movable type-bed, a feeding-table and a movable gripper for taking the sheets from said table and carrying them over the platen, of a transversely-extending rock-shaft, a block mounted thereon and adjustable rotatively and longitudinally thereon, said block being provided on one face with perforated ears, and on another face at an angle to the first-mentioned face, with a slotted projection, of a bottom guide and retaining-finger having a portion passing through said ears, and provided with an adjusting-nut, and having an angular portion above said nut extending through said slotted projection and provided with a clamping-nut and means for tripping said rock-shaft, substantially as described.

16. In a platen printing-press, the combination with the platen, the movable type-bed, a feeding-table and a movable gripper for taking the sheets from said table and carrying them over the platen, of a laterally-movable side guide for moving the paper laterally on the table, a longitudinally-movable rod carrying said guide, an arm secured to said rod and provided with a cam-engaging portion and a rotating cam for engaging said arm and moving said rod and side guide substantially as described.

17. In a platen printing-press, the combination with the platen, the movable type-bed, a feeding-table and a movable gripper for taking the sheets from said table and carrying them over the platen, of a laterally-movable side guide for moving the paper sheets laterally on the table, a longitudinally-movable spring-actuated rod to which said guide is adjustably secured to vary the feed of the paper, an operating-shaft for said guide, provided with a cam, and an arm adjustably secured to said rod at one end and having its other end provided with a guiding-yoke engaging said shaft and a lateral cam-engaging portion, substantially as described.

18. In a platen printing-press, the combination with the platen and movable type-bed, of a gripper adapted to move across the platen between it and the type-bed, mechanism for moving the gripper toward and from the plane of the platen, to lay the paper sheet upon the platen and an adjustable stop for limiting the movement of the gripper in a direction toward the platen, substantially as described.

19. In a platen printing-press, the combination with the platen and movable type-bed, of a gripper adapted to be moved across the platen between it and the type-bed, guide-bars for said gripper, means for moving said guide-bars to move the gripper toward and from the plane of the platen, and an adjustable stop secured to one of said guide-bars, for engaging a stationary part to limit the movement of the gripper in a direction toward the platen, substantially as described.

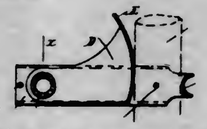
20. In a platen printing-machine, the combination with the platen and movable type-bed, of a gripper adapted to be moved across the platen between it and the type-bed, means for adjusting the platen with respect to the type-bed, mechanism for moving the gripper toward and from the plane of the platen, and an adjustable stop for limiting the movement of the gripper in a direction toward the adjustable platen, substantially as described.

21. In a platen printing-press, the combination with the platen and movable type-bed, of a gripper adapted to be moved across the platen between it and the type-bed, guide-bars for said gripper, means for moving said guide-bars to move the gripper toward and from the plane of the platen, and an adjustable stop comprising a bracket secured to one of said guide-bars and provided with an adjusting-screw adapted to engage a stationary part, to limit the movement of the gripper in a direction toward the platen, substantially as described.

819,070. **BROOM-HOLDER.** JOSEPH E. KENERSON, Lynn, Mass. Filed July 6, 1905. Serial No. 268,347.

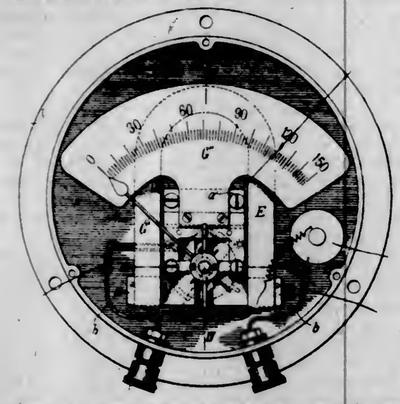
Claim.—1. The combination, with a supporting-bar channel-shaped in cross-section and provided at one end with a concavo-con-

vex projection, of an arm pivoted to the other end portion of the said bar and provided with a plate at its free end which is arranged opposite the said projection.



2. The combination, with a stationary bar of thin sheet metal channel-shaped in cross-section and provided with an integrally-formed tubular pivot at one end and a concavo-convex projecting arm at its other end, of an arm pivoted on the said tubular pivot and provided with a curved eccentric plate at its free end.

819,071. **ELECTRICAL MEASURING INSTRUMENT.** FREDERICK A. LA ROCHE and MAURICE C. RYPINSKI, New York, N. Y. Filed Nov. 8, 1904. Serial No. 231,925.



Claim.—1. In an electrical measuring instrument, the combination of an F-shaped center piece having four horizontally-projecting arms, a flat iron pole-piece supported by each of said arms, a flat iron core supported by said center piece between said four pole-pieces, a permanent U-shaped magnet supported by said pole-pieces, an insulated bridge-piece supported above said center piece, a similar bridge-piece below the same, filaments extending between said bridge-pieces and supporting a moving coil, and said moving coil located in the flat fields of force between said fields and said plates.

2. In an electrical measuring instrument, the combination of a center piece providing supports for four pole-pieces and for a centrally-disposed core between the same, said pole-pieces and core, and a permanent U-shaped magnet supported by said pole-pieces, two bridge-pieces supported from said center piece, and a moving coil suspended between said pole-pieces.

3. The herein-described F-shaped center piece for electrical measuring instruments, having two pairs of forwardly-extended arms.

4. In an electrical measuring instrument, the combination with suitable parts for forming the field of force and a coil movable in said field and two filaments for suspending said coil, of means for supporting each filament, the same consisting of a hollow plug to which the end of the filament is secured, said plug being axially adjustable in a fixed support.

5. In an electrical measuring instrument, the combination of a permanent magnet having four flat pole-pieces, a soft-iron core supported centrally of the latter to provide four flat uniform and intense fields of force, and a moving coil of substantially rectangular shape surrounding said core and suspended within said fields of force by two filaments having electrical connection therewith and with the binding-posts of the instrument.

6. In an electrical measuring instrument, the combination of a magnet having four flat pole-pieces and a centrally-disposed core outlining fields of magnetic force, a moving coil located within said fields of force, oppositely-disposed filaments for suspending said moving coil, and means for supporting and adjusting said filaments.

7. In an electrical measuring instrument, the combination of a permanent magnet having four flat pole-pieces, a core centrally disposed between said pole-pieces and serving with them to outline four flat fields of force, a moving coil surrounding said core and located within said fields of force, two oppositely-disposed filaments carrying said coil, supports for said filaments and a yielding device interposed between said supports.

8. In an electrical measuring instrument, the combination of a permanent magnet having four flat pole-pieces, a core centrally disposed between said pole-pieces and serving with them to outline four flat fields of force, a moving coil surrounding said core and located within said fields of force, two oppositely-disposed filaments carrying said coil, and supports for said filaments, one or both of said supports being adjustable.

9. In an electrical measuring instrument, the combination of a permanent magnet having four flat pole-pieces, a core centrally disposed between said pole-pieces and serving with them to outline four flat fields of force, a moving coil surrounding said core and located within said fields of force, two oppositely-disposed filaments carrying said coil, supports for said filaments, and a yielding device interposed between said supports, one or both of said supports being adjustable.

10. In an electrical measuring instrument, the combination of a permanent magnet and a core therefor outlining an intense field of force, a movable coil located in said field of force, means for supporting said coil consisting of two oppositely-disposed filaments, a support for each filament, each of said supports being provided with means for adjusting its filament axially without affecting it longitudinally.

11. In an electrical measuring instrument, the combination of a permanent magnet and a core therefor outlining an intense field of force, a movable coil located in said field of force, means for supporting said coil consisting of two oppositely-disposed filaments, a support for each filament, each of said supports being provided with means for adjusting its filament longitudinally without moving it axially.

12. In an electrical measuring instrument, the combination of a permanent magnet and a core therefor outlining an intense field of force, a movable coil located in said field of force, means for supporting said coil consisting of two oppositely-disposed filaments, a support for each filament, each of said supports being provided with means for adjusting its filament axially without affecting it longitudinally and also with means for adjusting the filament longitudinally without moving it axially.

819,072. **SOUND-RECORD.** GEORGE A. MANWARING, Bayonne, N. J., assignor to American Graphophone Company, Bridgeport, Conn., a Corporation of West Virginia. Filed July 26, 1905. Serial No. 271,328.



Claim.—1. The combination with a disk record-tablet and a label therefor of paper or the like, of a second disk of the last-named material at the back of said record-tablet, and means extending through said record-tablet for securing said paper disks together.

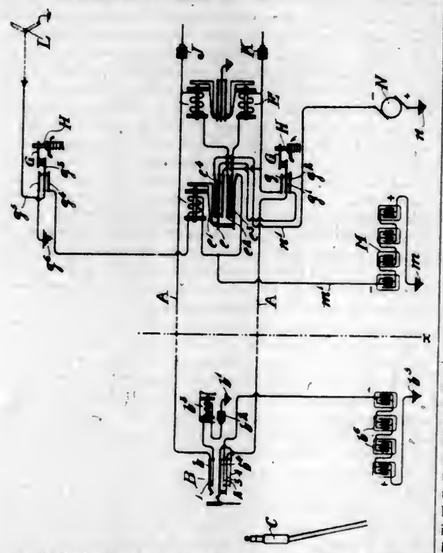
2. The combination with a record-tablet having one or more holes therethrough, of a tablet of paper or the like upon each side of the said record-tablet, and a glue located in said holes and securing said paper disks together.

819,073. **MEANS FOR CHARGING STORAGE BATTERIES OF TELEPHONE SYSTEMS.** TALBOT G. MARTIN, Chicago, Ill., assignor to Automatic Electric Company, Chicago, Ill. Filed Dec. 12, 1904. Serial No. 236,640.

Claim.—1. A telephone system comprising a manual exchange, an automatic exchange, a trunk-line extending between the two exchanges, a storage battery at the manual exchange, a source of current at the automatic exchange for charging the said storage battery, together with a charging-circuit including one side of the said trunk-line.

2. A telephone system comprising a storage battery, a source of current for charging said battery, and a "selector-switch" provided with means for opening the charging-circuit when the switch is operated.

3. A telephone system comprising a storage battery, a source of current for charging said battery, a normally closed charging-circuit including the said battery and source of current, and a "selector-switch" provided with a bridge cut-off relay adapted when energized to open the said charging-circuit.



4. A telephone system comprising a storage battery, a source of current for charging said battery, a normally closed circuit including said battery and source of current, and a "selector-switch" provided with a normal post-arm adapted when actuated to open the said charging-circuit.

5. A telephone system comprising a trunk-line, a storage battery, a source of current for charging said battery, a normally closed charging-circuit including said battery and source of current, and including also one side of said trunk-line, and an automatic step-by-step switch provided with means for opening said charging-circuit when the trunk-line is to be used for talking or signaling purposes.

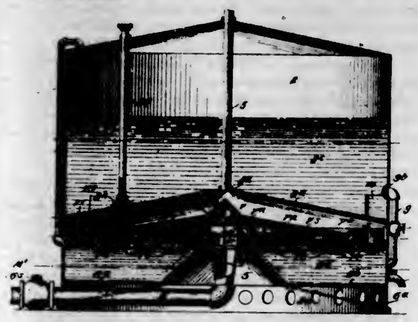
6. A telephone system comprising a trunk-line, a storage battery normally connected between ground and one side of said line, a source of charging-current normally connected between ground and the same side of the trunk-line, a "selector-switch" allotted to the said trunk-line and normally connected therewith, and a "connector-switch private wiper," said "selector-switch" having a bridge cut-off relay provided with a normally open circuit adapted to be closed by the said "connector-switch private wiper" when the latter is actuated in the establishment of connection with the trunk-line, and a normally closed charging-circuit including said battery and source of current, and including also one side of the trunk-line, said charging-circuit having normally closed switch-contacts adapted to be opened by the energizing of said bridge cut-off relay.

7. A telephone system comprising a line, a storage battery normally connected with one end of said line, a source of charging-current normally connected with the other end of said line, whereby the battery is supplied with charging-current whenever the line is not in use for other purposes, and an electromagnetic switch associated with the end of the line connected with the source of charging-current, and adapted to be controlled from the other end of the line, said switch being provided with normally closed switch-contacts adapted to disconnect the source of charging-current when the switch is operated from the other end of the line.

8. A telephone system comprising a talking-conductor, a storage battery, a source of charging-current, a normally closed charging-circuit including said battery and source of current, and also including said talking-conductor, and an electromagnetic switching device adapted when operated to disconnect the said source of current from the talking-conductor.

9. In a telephone system, the combination of a line-wire, a storage battery normally connected with one end of said line-wire, a source of charging-current normally connected with the other end of said line-wire, a plug-switch for disconnecting the said battery when it is desired to use the line for other purposes, and an electromagnetic switching device for disconnecting said source of current when it is desired to use the line for other purposes.

819,074. **GAS-GENERATING MACHINE.** ORVILLE V. MONROE, Portland, Oreg., assignor, by direct and mesne assignments, to General Patent Promoting Company, Portland, Oreg. Filed May 15, 1905. Serial No. 260,519.



Claim.—1. A gas-generator comprising a storage-reservoir and a carbureter, a feed and a vent pipe connecting said storage-reservoir with said carbureter, a service-pipe leading from the carbureter, means for admitting air to the carbureter, means for vaporizing the hydrocarbon within the carbureter, means for drawing off the surplus moisture from the carbureter-chamber, said air-admitting means comprising a pipe entering into said carbureter-chamber through the bottom thereof, and discharging above the level of the liquid therein, said pipe having its discharge end enlarged and having a cut-off valve for controlling the air-supply and said carbureter-bottom including a conical portion through which the air-pipe passes, said vaporizing means having a central conical dome held over the air-admitting pipe leading into the carbureter-chamber, a baffle within said conical dome, a pin passing through said baffle and projecting downwardly into the air-admitting pipe, and means within the air-admitting pipe for receiving said pin.

2. A gas-generator comprising a storage-reservoir and a carbureter, a feed and a vent pipe connecting said storage-reservoir with said carbureter, a service-pipe leading from the carbureter, means for admitting air to the carbureter, means for vaporizing the hydrocarbon within the carbureter, means for drawing off the surplus moisture from the carbureter-chamber, said air-admitting means comprising a pipe entering into said carbureter-chamber through the bottom thereof, and discharging above the level of the liquid therein, said pipe having its discharge end enlarged and having a cut-off valve for controlling the air-supply and said carbureter-bottom including a conical portion through which the air-pipe passes, and a dam within the reservoir for guarding the mouth of the feed-pipe, said vaporizing means having a central conical dome held over the air-admitting pipe leading into the carbureter-chamber, a baffle within said conical dome, a pin passing through said baffle and projecting downwardly into the air-admitting pipe, and means within the air-admitting pipe for receiving said pin.

3. A gas-generator comprising a storage-reservoir and a carbureter, a feed and a vent pipe connecting said storage-reservoir with said carbureter, a service-pipe leading from the carbureter, means for admitting air to the carbureter, means for vaporizing the hydrocarbon within the carbureter, means for drawing off the surplus moisture from the carbureter-chamber, said air-admitting means comprising a pipe entering into said carbureter-chamber through the bottom thereof, and discharging above the level of the liquid therein, said pipe having its discharge end enlarged and having a cut-off valve for controlling the air-supply and said carbureter-bottom including a conical portion through which the air-pipe passes, a dam within the reservoir for guarding the mouth of the feed-pipe, and a screen over the mouth of the feed-pipe within the reservoir, said vaporizing means having a central conical dome held over the air-admitting pipe leading into the carbureter-chamber, a baffle within said conical dome, a pin passing through said baffle and projecting downwardly into the air-admitting pipe and means within the air-admitting pipe for receiving said pin, substantially as shown and described.

4. A gas-generator comprising a storage-reservoir and a carbureter, a feed and a vent pipe connecting said storage-reservoir with said carbureter, a service-pipe leading from said carbureter, means for admitting air to the carbureter, a vaporizer within the carbureter, said vaporizer having a central guide-rod, means for drawing off the surplus moisture from the carbureter-chamber, said air-admitting

means comprising a pipe, a funnel in said carbureter-chamber and discharging above the level of the liquid therein, said air-admitting pipe connected to said funnel, a vertically-elongated socket connected within said funnel to receive said vaporizer guide-rod, said air-pipe having a cut-off valve for controlling the air-supply, and a ventilated air-chamber beneath said carbureter and surrounding said air-admitting means, substantially as shown and described.

5. A gas-generator comprising a tank divided into compartments, the upper compartment forming a storage-reservoir, the intermediate forming the carbureter, the lower compartment forming an air space or chamber, means for admitting liquid into said reservoir, a vent-pipe connected with the carbureter and with the reservoir, a feed-pipe connected with the carbureter and with the reservoir, a cut-off valve in said feed-pipe, a dam within the reservoir adjacent the end of said feed-pipe, means for vaporizing the liquid in the carbureter, and means for withdrawing the gas from the carbureter-chamber, said vaporizing means comprising a horizontally-disposed disk, means for forcing air under said disk, said disk being centrally apertured, a dome secured over the central aperture of the disk, a central guide-rod within said dome, said air-forcing means including an inlet-pipe having a funnel-shaped discharge, discharging into the carbureter-chamber under the vaporizer-dome and means within the funnel discharge for guiding the central rod of the vaporizer-dome, a plurality of spirally-arranged partitions secured to said vaporizer-disk, supplemental strips secured to said disk between said spiral partitions, and a float adjustably secured to said vaporizer-disk, all being arranged substantially as shown and described.

6. In a gas-generator of the character stated, a carbureter comprising a casing forming a chamber, the bottom of said casing having an inwardly-projecting hood centrally apertured, a funnel-shaped member secured to said hood at its central aperture and projecting upwardly through the hood and spaced therefrom, an air-supplying pipe secured to said funnel-shaped member, a vaporizer within said carbureter comprising a disk having a central aperture, a dome-shaped member secured over said central aperture of the disk, a bearing member within said funnel-shaped member, a flexible guide-rod carried by said bearing member, means within the disk-hood for receiving said flexible guide-rod, a roof over said disk, spiral partitions depending from said disk to form spiral channels leading from the central hood to the edge of the disk, baffles depending from the disk and arranged at intervals from each other, and an annular float connected to the outer edge of the vaporizer-disk, and means for admitting liquid into the said carbureter and withdrawing the generated gas therefrom, substantially as shown and described.

7. A gas-generating apparatus comprising a tank having a storage-reservoir, a carbureter-chamber and an air-chamber, means for admitting liquid into said reservoir, means for automatically feeding said liquid from said reservoir into said carbureter, means for vaporizing said liquid within said carbureting-chamber, said means comprising a disk, a plurality of spiral partitions depending from said disk, a plurality of baffles between said spiral partitions, a float adjustably secured to said disk at its periphery, and means for forcing air into said carbureter-chamber below said disk and through the channels formed between the spiral partitions, substantially as shown and described.

8. An apparatus of the character stated comprising a tank divided into independent chambers arranged one above the other, one of said chambers serving a storage-reservoir, another serving as a carbureter-chamber, and the other serving as an air-chamber, means for admitting liquid into the reservoir, means for automatically feeding said liquid from the reservoir into the carbureter-chamber as the gas is generated, said means comprising a feed-pipe communicating with the reservoir above and near its bottom, and with the carbureter above its bottom, a cut-off valve in said feed-pipe, a vent-pipe connecting with the carbureter at a point opposite and above the carbureter end of the feed-pipe, said vent-pipe having its other end communicating with the reservoir at its top, means for admitting air into the carbureter-chamber, means for vaporizing liquid within the carbureter-chamber, means for maintaining said air-admitting means from freezing up, means for drawing off the gas from the carbureter-chamber, said vaporizing means comprising a disk, spiral partitions secured to said disk to form spiral channels, baffles within said spiral channels, an annular float, means for adjustably securing said annular float to said disk, said last-named means comprising bracket-plates secured to the float, bolts secured to the disk and projecting through said bracket-plates, coil-springs on said bolts below said bracket-plates, and adjusting-nuts above said bracket-plates on said bolts substantially as shown and described.

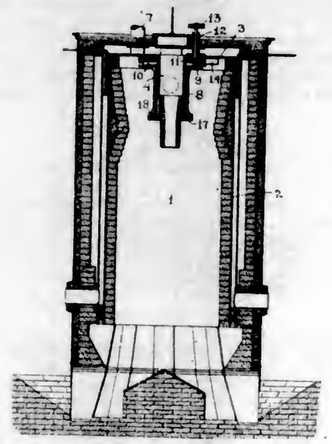
9. A gas-generator comprising a tank having a plurality of partitions divided into three compartments, the upper compartment serving as a storage-reservoir, the lower compartment serving as an air-chamber and the intermediate compartment serving as a carbureter-chamber, the bottom of said carbureter-chamber having a central aperture, a conical hood secured over said central aperture and projecting upwardly into the carbureter-chamber, said conical hood having its apex truncated to form an aperture, an air-inlet pipe having a portion projecting up through said conical hood and secured to said aperture of the conical hood, a valve in said air-inlet pipe for controlling the air admission, a gas-offtake pipe communicating with said carbureter-chamber, a feed-pipe connecting said carbureter-chamber to said storage-reservoir, a screen over the reservoir end of said feed-pipe, a dam within said reservoir adjacent the reservoir end of said feed-pipe, a vent-pipe connecting the reservoir with the carbureter-chamber, a vaporizer within the carbureter-chamber comprising a centrally-apertured disk, a cone-shaped hood secured to said disk over said central aperture, an inverted-cone-shaped member secured within said conical hood of the disk, a guide-rod passing through said inverted-cone-shaped member for said guide-rod, depending partitions secured to said disk and forming channels, baffles within said channels secured to said disk, an annular float surrounding said disk at its periphery, and means for adjustably securing said annular float to said disk, substantially as shown and described.

10. A gas-generator comprising a tank having a plurality of partitions divided into three compartments, the upper compartment serving as a storage-reservior, the lower compartment serving as an air-chamber and the intermediate compartment serving as a carbureter-chamber, the bottom of said carbureter-chamber having a central aperture, a hood secured over said central aperture and projecting upwardly into the carbureter-chamber, said hood being truncated to form an aperture, an air-inlet pipe having a portion projecting up through said hood and secured to said aperture of the hood, a valve in said air-inlet pipe for controlling the air admission, a gas-offtake pipe communicating with said carbureter-chamber, a feed-pipe connecting said carbureter-chamber to said storage-reservoir, a screen over the reservior end of said feed-pipe, a dam within said reservoir adjacent the reservoir end of said feed-pipe, a vent-pipe connecting the reservior with the carbureter-chamber, a vaporizer within the carbureter-chamber comprising a centrally-apertured disk, a hood secured to said disk over said central aperture, an inverted member secured within said hood of the disk, a guide-rod passing through said inverted member for said guide-rod, depending partitions secured to said disk and forming channels, baffles within said channels secured to said disk, an annular float surrounding said disk at its periphery, and means for adjustably securing said annular float to said disk, substantially as shown and described.

11. A gas-generator comprising a tank having a plurality of partitions divided into three compartments, the upper compartment serving as a storage-reservoir, the lower compartment serving as an air-chamber and the intermediate compartment serving as a carbureter-chamber, the bottom of said carbureter-chamber having a central aperture, a conical hood secured over said central aperture and projecting upwardly into the carbureter-chamber, said conical hood having its apex truncated to form an aperture, an air-inlet pipe having a portion projecting up through said conical hood and secured to said aperture of the conical hood, a valve in said air-inlet pipe for controlling the air admission, a gas-offtake pipe communicating with said carbureter-chamber, a feed-pipe connecting said carbureter-chamber to said storage-reservoir, a screen over the reservoir end of said feed-pipe, a dam within said reservoir adjacent the reservoir end of said feed-pipe, a vent-pipe connecting the reservoir with the carbureter-chamber, a vaporizer within the carbureter-chamber comprising a centrally-apertured disk, a cone-shaped hood secured to said disk over said central aperture, an inverted-cone-shaped member secured within said conical hood of the disk, a guide-rod passing through said inverted-cone-shaped member for said guide-rod, depending partitions secured to said disk and forming channels, baffles within said channels secured to said disk, an annular float surrounding said disk at its periphery, and means for adjustably securing said annular float to said disk, and a roof or cover secured to said disk and to said disk conical hood substantially as shown and described.

819,075. GAS-PRODUCER. CHARLES H. MORGAN, Worcester, Mass. Filed June 3, 1904. Serial No. 210,960.

Claim.—1. In a gas-producer, the combination with a gas-producing chamber, of a cover for said chamber, a rotating member journaled beneath said cover, an opening in said cover for the admission of fuel eccentric to the axis of said member, a scraping-blade projecting from the top of said rotating member, whereby the top of the fuel in said chamber is leveled.



2. In a gas-producer, the combination with a gas-producing chamber, of a cover for said chamber, a rotating member journaled beneath said cover, an opening in said cover for the admission of fuel eccentric to the axis of said member, a scraping-blade projecting tangentially from the top of said rotating member, whereby the top of the fuel in said chamber is leveled.

3. In a gas-producer, the combination with a gas-producing chamber, of a cover for said chamber, a rotating member journaled beneath said cover, an opening in said cover for the admission of fuel eccentric to the axis of said member, a scraping-blade with its advancing side beveled projecting from the top of said rotating member, whereby the top of the fuel in said chamber is leveled.

4. In a gas-producer, the combination with a gas-producing chamber having an opening for the admission of coal, of a rotating sleeve journaled concentrically with the axis of the chamber, a tangential blade carried by said sleeve, a cup-shaped flange on said sleeve, having an internal gear, a pinion inclosed in said flange and engaging said gear, and means for rotating said pinion.

5. In a gas-producer, the combination with a gas-producing chamber having a cover, of a twyer depending from said cover concentrically to the axis of said chamber, an opening through said cover eccentric to the axis of said chamber, a sleeve journaled on said twyer, means for rotating said sleeve, a blade carried by said sleeve and projecting beneath said opening, said blade having its advancing side tangential to said sleeve.

819,076. WHISTLE. PETER A. MORTENSEN, Sanford, Colo. Filed June 16, 1905. Serial No. 265,543.



Claim.—1. A musical instrument comprising a mouthpiece, and a trumpet of less width than the mouthpiece, said mouthpiece being formed of upper and lower members each provided with an air-inlet opening.

2. A musical instrument comprising a mouthpiece, and a trumpet, the latter being of less width than the mouthpiece, said mouthpiece being formed of a pair of flanged plates united at their rear edges and arranged on slightly divergent lines, each plate being provided with an air-inlet opening.

3. A musical instrument comprising a sheet of metal bent to form a mouthpiece, and a trumpet, the sides of the mouthpiece being open, and the sides of the trumpet being closed.

4. A musical instrument comprising a mouthpiece closed at its rear end and open at its opposite sides, and a trumpet extending from the mouthpiece and of less width than said mouthpiece.

5. A musical instrument comprising upper and lower divergent plates connected at their rear ends, and the sides of the front portions of the plates being connected to form a trumpet, the plates having non-registering air-inlet openings.

6. A musical instrument comprising a flat whistle having spaced top and bottom members connected to each other at one end and provided with sound-holes, and a trumpet substantially rectangular in cross-section extending integrally from the outer end of the top and bottom members of the whistle, the trumpet increasing gradually in height from the whistle outward.

7. A musical instrument comprising a flat whistle open at the sides and front and provided in its top and bottom members with sound-holes, and a trumpet extending integrally from the outer ends of the top and bottom members of the whistle.

8. A musical instrument comprising a flat whistle having spaced top and bottom members connected to each other at one end, and provided with sound-holes, and a trumpet substantially rectangular in cross-section extending integrally from the outer ends of the top and bottom members of the whistle.

819,077. PUMP-PISTON. SAMUEL MUNCH, Fremont, Ohio. Filed July 1, 1904. Serial No. 214,938.



Claim.—1. In a pump for oil and other deep wells, the combination with a valved piston, of a rod located therein below the valve thereof and having its lower end projecting downward therefrom, said rod being adapted, when the normal position of the piston-stroke is changed, to be thrust upward to open the piston-valve, and means also located in said piston for automatically withdrawing said rod from contact with said valve on the upstroke of the piston.

2. In a pump for oil and other deep wells, the combination with a valved piston, of a spring-restrained rod located therein below the valve thereof, said rod being adapted, when the normal position of the piston-stroke is changed, to cause the opening of the piston-valve on the downstroke of the piston, and to be automatically withdrawn from contact with said valve to permit its closing on the upstroke of said piston.

3. In a pump for oil and other deep wells, the combination with a valved piston, and a standing valve therefor, of a rod located in said piston below the valve thereof and projecting downward therefrom, said rod being adapted, when the normal position of the piston-stroke is changed, to contact with the casing of the standing valve on the downstroke of said piston and thrust upward to open said piston-valve, and means located in said piston for automatically withdrawing said rod from contact with said piston-valve as the end of said rod is withdrawn from contact with the casing of said standing valve, to permit the closing of said piston-valve.

4. In a pump for oil and other deep wells, the combination with a valved piston, of a rod located therein below the valve thereof, guides in said piston in which said rod is mounted, and a spring also located in said piston for holding said rod, normally, out of contact with the piston-valve, said rod being adapted, when the normal position of the piston-stroke is changed, to be thrust upward against the action of said spring to open said valve, and to be withdrawn from contact with said valve by the action of said spring when the thrust is removed.

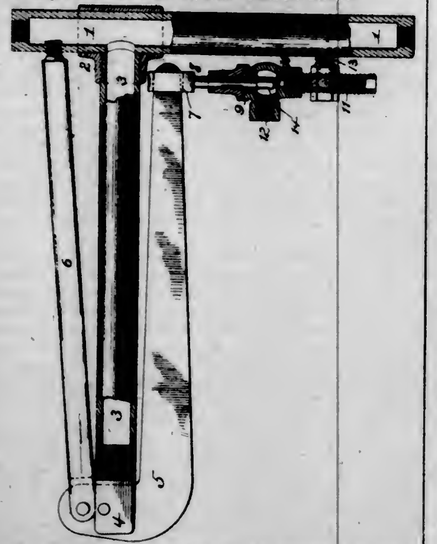
5. In a pump for deep wells, the combination with a valved vertically-reciprocating piston, of a rod located therein below the valve having its lower end free and projecting downward therefrom, said rod being in such position that upon downward movement of the piston in excess of the normal pumping movement it will be thrust upward relatively to the piston to open the piston-valve and being subjected to a downwardly-acting force sufficient to automatically withdraw it from contact with the valve on the upstroke of the piston.

6. In a pump of the class described, the combination with a reciprocatory piston having a bottom provided with a guide-opening, of a valve movably mounted in the piston, a stem slidably mounted in the guide-opening and depending below the bottom, said stem when elevated in the piston being arranged to raise the valve, means located in the path of movement of the stem for effecting the movement of said stem with respect to the piston, said stem normally reciprocating with the piston toward and from the said moving means and engaging the latter on an abnormal movement of the piston, and means carried by the stem and movable into and out of engagement with a portion of the piston to limit the relative movement of said stem and piston.

7. In a pump of the class described, the combination with a reciprocatory piston having a bottom provided with a guide-opening, of a valve movably mounted in the piston, a stem slidable in the guide-opening and depending below the bottom, said stem when elevated in the piston being arranged to raise the valve, means located in the path of movement of the stem for effecting the movement of the same with respect to the piston, said stem normally reciprocating with the piston and having its lower end movable toward and from said moving means and arranged to abut against the same upon the abnormal movement of the piston, and a stop carried by the stem and movable into and out of engagement with the bottom of the piston to limit the relative movement of said stem and piston.

8. In a pump of the class described, the combination with a reciprocatory piston having a bottom provided with a guide-opening, of a valve movably mounted in the piston, a stem slidable in the guide-opening and depending below the bottom, said stem normally reciprocating with the piston, and when elevated in said piston being arranged to raise the valve, means located in the path of movement of the stem for effecting the movement of the same with respect to the piston, and spaced stops carried by the lower portion of the stem on opposite sides of the bottom and movable into and out of engagement with said bottom to limit the relative movement of the stem and piston.

819,078. **FEED-WATER REGULATOR.** ERNEST G. OPFELDT, Brooklyn, N. Y. Filed Jan. 18, 1905. Serial No. 241,693.

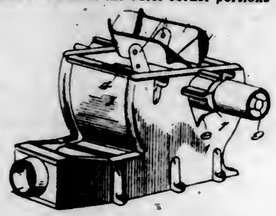


Claim.—1. The combination with a pipe adapted at its ends to communicate with a boiler, of a thermostatic tube carried by said pipe and communicating therewith, a rod or bar secured to said pipe and projecting outwardly therefrom, a lever pivoted to the free end of said rod and to the thermostatic tube, said lever having a long arm projecting toward said pipe, a by-pass valve attached to and communicating with said pipe, and a connection between the stem of said valve and the long arm of the lever.

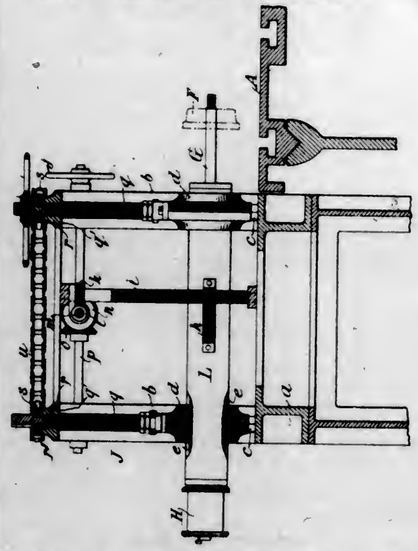
2. In an apparatus of the character described, the combination with a vertical tube communicating at its ends with the boiler above and below the normal water-level of the boiler, of a horizontal thermostatic tube communicating with the pipe and located at or near the normal water-level of the boiler, a rod or bar secured to the pipe above the tube, an L-shaped lever fulcrumed at the end of its shorter member to said bar or rod, and connected between the ends of its shorter member with the end of the tube, a water-supply pipe, a by-pass valve to close the end of said tube, a pipe connecting the supply-pipe with the first-mentioned pipe below the by-pass valve, and said valve connected with and operated directly by the longer member of said lever.

819,079. **FAN-BLOWER.** LEWIS R. PARVIN, Metamora, Ind. Filed Apr. 14, 1905. Serial No. 255,594.

Claim.—In a fan-blower, the combination of a cylinder or casing having a discharge at the lower portion thereof, a rotary fan mounted in the cylinder and comprising a hub, a plurality of arms extending from the hub and integral therewith, and a plurality of blades attached to the arms, the cylinder having inlets at its upper portion leading through a side thereof, the ends of the blades adjacent the inlets of the cylinder being curved in the direction of rotary movement of the fan, the opposite end portions of the blades being curved in the opposite direction at the outer corner portions thereof.



819,080. **STONE-WORKING MACHINE.** JOHN R. PEIRCE, New York, N. Y. Filed Nov. 14, 1904. Serial No. 232,630.



Claim.—1. In a stone-cutting machine, a shaft and means for moving it including a rack connected to the shaft and an elongated gear meshing with said rack.

2. In a stone-cutting machine, a shaft, a carrier having bearings therefor, and means for moving said carrier comprising a rack connected with the latter and an elongated gear meshing with said rack.

3. In a stone-cutting machine, a shaft, and means for moving it comprising a rack connected with said shaft, an elongated gear meshing with said rack, a hand-operated member, and a worm and worm-wheel connection between said member and said gear.

4. In a stone-cutting machine, a shaft, a carrier having bearings therefor, and means for moving said carrier comprising a pair of racks mounted on opposite sides of said carrier, a pair of elongated gears meshing with said racks, worm-wheels fixed upon said gears, and a shaft having worms meshing with said worm-wheels.

5. In a stone-cutting machine, a shaft, a carrier therefor, means for longitudinally moving said carrier comprising a rack connected therewith and an elongated gear meshing with said rack, and means for moving said carrier laterally comprising a screw connected to said carrier, and an operating member engaging said screw to move it in a lengthwise direction.

6. In a stone-cutting machine the combination of a rapidly-rotating cutter-shaft adapted to carry a cutting-wheel of agglomerated

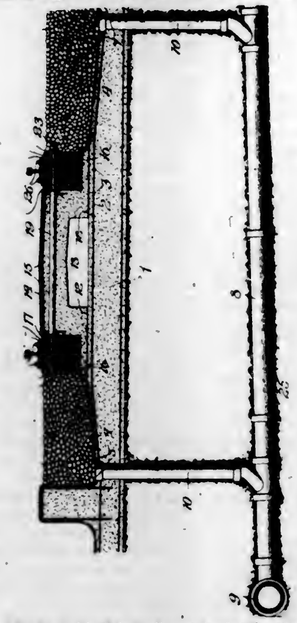
coarse crystalline hard material, a frame comprising a bed-plate *a* and front and rear guides *b* a pair of slides *d* moving vertically in said guides, and a shaft-carrier L moving axially in said slides.

7. In a stone-cutting machine, a frame having front and rear guides, a pair of slides moving in said guides, a shaft-carrier moving longitudinally in said slides, a rack on said carrier, an elongated gear meshing with said rack, an operating-shaft having bearings in said frame, and connected with said gear to move the latter, a screw connected with said carrier, and an operating member adapted to move said screw.

8. In a stone-cutting machine, the combination of slides *d*, carrier L, racks *h*, gears *i*, worm-wheels *k* on said gears, worms *l*, transverse shaft *m* for said worms, bevel-gear *n* on said shaft, bevel-gear *o* meshing with said gear *n*, and operating-shaft *p*.

9. In a stone-cutting machine, the combination of slides *d*, carrier L, racks *h*, gears *i*, worm-wheels *k* on said gears, worms *l*, transverse shaft *m* for said worms, bevel-gear *n* on said shaft, bevel-gear *o* meshing with said gear *n*, operating-shaft *p*, screws *q* connected to said slides, sprockets *s* for operating said screws, and chain *u* connecting said sprockets.

819,081. **CONCRETE ROAD-BED FOR RAILWAYS.** JULIUS W. SCHAUB, Chicago, Ill. Filed Jan. 22, 1906. Serial No. 297,298.



Claim.—1. A road-bed for railways having longitudinal rail-supports, said road-bed consisting of a body of concrete located between and beneath said rail-supports, and means for detachably anchoring said rail-supports to each other as well as to that portion of said body lying between them.

2. A road-bed for railways having longitudinal rail-supports, said road-bed consisting of a body of concrete located between and beneath said rail-supports, and means for rigidly connecting said rail-supports to and through said body of concrete.

3. The combination with a railway having longitudinal rail-supports, of a road-bed comprising a body of concrete located beneath and between said rail-supports, the portion between said supports being provided with transverse openings, and tie-rods arranged to pass through said openings and rail-supports to bind the latter to said road-bed.

4. The combination in a road-bed having longitudinal rail-supports, of a concrete substructure, a superimposed concrete structure arranged to extend beneath and between said rail-supports to afford lateral and vertical support thereto, a line of cleavage being formed between said substructure and said superimposed structure, and means for detachably anchoring said rail-support to that portion of said superimposed structure lying between them.

5. A road-bed for railways having longitudinal rail-supports, said road-bed comprising a body of concrete having portions located between and beneath said rail-supports, means for detachably anchoring said rail-supports to each other as well as to that portion of said body lying between them, means for securing lateral drainage and means for conveying said drainage away from the road-bed.

6. A road-bed for railways having longitudinal rail-supports, said road-bed consisting of a concrete substructure laid upon the ground, longitudinal gutters therein communicating with suitable drain-pipes for preventing water from entering the ground beneath, a superimposed concrete structure arranged to extend beneath and between said rail-supports, a line of cleavage being formed between said substructure and said superimposed structure, means for detachably anchoring said rail-supports to that portion of said superimposed structure lying between them, and plates upon said rail-supports to receive the rails, whereby drainage between the rails may pass between them to said gutters and the load be distributed upon said supports.

7. The combination with a railway having longitudinal rail-supports, of a road-bed comprising a body of concrete located beneath and between said rail-supports to give lateral and vertical support thereto, the portion between said supports having a series of transverse pipes embedded therein, and tie-rods arranged to pass through said pipes and track-supports to bind the latter to said road-bed.

8. A road-bed for railways having longitudinal rail-supports, said road-bed comprising a body of concrete having portions located between and beneath said rail-supports, means for detachably anchoring said rail-supports to each other as well as to that portion of said body lying between them, and means for laterally supporting said rail-supports from the outside.

9. The combination with a railway having longitudinal rail-supports, of a road-bed comprising a body of concrete located beneath and between said rail-supports, said concreted bed extending outwardly and downwardly from said rail-supports to form drainage-gutters, means for detachably anchoring said rail-supports to the middle concrete portion between them, means for draining said middle portion laterally into said gutters and loose ballast in said gutters for giving lateral support to the outer faces of said rail-supports.

819,082. **ELECTRIC RELAY.** MICHAEL SETTER, Chicago, Ill., assignor to Automatic Electric Company, Chicago, Ill. Filed Oct. 31, 1904. Serial No. 230,757.



Claim.—1. A relay comprising a magnet, a combined magnet-shell and armature-mounting made from a single sheet-metal blank, an armature suitably mounted on the said combined magnet-shell and armature-mounting, switch-springs also carried by the said combined magnet-shell and armature-mounting, the said armature being provided with an arm for operating said springs, and a removable sheet-metal cover for said switch-springs and the arm of said armature.

2. A relay comprising a magnet, a shell for said magnet, switch-springs mounted on said shell, an armature mounted on said shell and provided with a rearwardly-extending arm for operating the forward end of said springs, and a removable cover inclosing said springs and arm.

3. A relay comprising a combined magnet-shell and armature-mounting made from a single sheet-metal blank or stamping, and circuit-controlling contacts, together with an L-shaped armature having lateral bearing portions at its elbow.

4. A relay comprising a magnet-shell made from a sheet-metal blank or stamping, and circuit-controlling contacts, together with an L-shaped armature having lateral bearing portions at its elbow.

5. A relay comprising a magnet-shell made from a sheet-metal blank or stamping, and provided with an end wall and curved side walls meeting at their lower edges, and circuit-controlling contacts, together with an L-shaped armature having lateral bearing portions at its elbow.

6. A relay comprising an armature-mounting made from a sheet-metal blank or stamping, a magnet encircled by a portion of said armature-mounting, and circuit-controlling contacts, together

with an L-shaped armature having lateral bearing portions at its elbow.

7. A relay comprising a combined magnet-shell and armature-mounting made from a single sheet-metal blank or stamping, an armature carried by said mounting, said armature being also made from a single sheet-metal blank or stamping, and circuit-controlling contacts, said sheet-metal blank or stamping having a slot or recess in which the armature is hung.

8. A relay comprising a magnet, a shell for said magnet, said shell having a flat upper portion overhanging its forward end, said overhanging portion being provided with a transverse slot, and having also an opening leading from its edge and communicating with one end of said slot, an armature adapted to be inserted into said slot through said opening and provided with laterally-projecting lugs adapted to rest upon the shell at each end of said slot, switch-springs operated by said armature, and a locking-plate for holding the said armature within said slot.

9. A relay comprising a magnet, an armature-mounting provided with a transverse slot, and having an opening leading from its edge to one end of said slot, an armature having a neck portion adapted to be inserted in said slot by way of said opening, said neck portion being provided with laterally-projecting lugs adapted to rest upon the armature-mounting at each end of said slot, means for holding the armature within said slot, and circuit-controlling contacts.

10. A relay comprising a magnet, a magnet-shell inclosing said magnet, said shell having a flat top, switch-springs with interposed layers of insulation secured in a superimposed condition upon the rear portion of said top portion of the shell, an armature hung upon the forward end portion of said shell and provided at its upper end with a rearwardly-extending arm, and a piece of insulation on the forward end of one of said springs adapted to engage the upper surface of said arm, and thereby hold the armature normally away from the magnet.

11. A relay comprising a magnet, a magnet-shell formed from a sheet-metal blank or stamping, said blank having side portions bent downwardly and adapted to meet at their lower edges, and provided also with a rear portion bent downwardly to form the end wall of the magnet-shell, a screw inserted through said end wall and into the core of the magnet, and terminals for the magnet extending rearwardly through the said end wall, together with an armature, and switch-contacts operated by said armature.

819,083. **ELECTRIC BELL.** MICHAEL SETTER, Chicago, Ill., assignor to Automatic Electric Company, Chicago, Ill. Filed Oct. 31, 1904. Serial No. 230,758.



Claim.—1. An electric bell comprising a bracket, a permanent magnet secured to said bracket, an electromagnet also secured to said bracket, a mounting adjustably secured to said bracket, a vibratory armature carried by said mounting, said mounting being adapted to engage and slide upon the cores of said electromagnet, whereby the said armature will remain connected with the bracket when either the permanent or the electro magnet is removed, a striker secured to said armature and extending through the end portion of said permanent magnet, the said bracket and striker being disposed at opposite ends of said electromagnet, the said electromagnet comprising two coils sufficiently separated to afford access between them to the adjustable connection between the bracket and armature, for purposes of adjustment of the latter, the entire adjusting means being located in a plane between the upper and lower ends of the electromagnet, and at a point close to the inner side of the permanent magnet, an adjusting-screw disposed at a right angle to the inner side of the permanent magnet, and means whereby the endwise movement of said screw shifts the armature in a direction at a right angle to such endwise movement.

2. An electric bell comprising a bracket, an electromagnet secured to the bracket, a permanent magnet also secured to the bracket, an armature-mounting adjustably connected directly with and carried by said bracket, said mounting being adapted to slide on the cores of the electromagnet, a vibratory armature mounted upon the said armature-mounting, whereby the said armature may remain mounted upon the said bracket when the two magnets are removed, a striker secured to said armature and extending through the end portion of said permanent magnet, the said bracket and striker being disposed at opposite ends of said electromagnet, the said electromagnet comprising two coils sufficiently separated to afford access between them to the adjustable connection between the bracket and armature, for purposes of adjustment of the latter, the entire adjusting means being located in a plane between the upper and lower ends of the electromagnet, and at a point close to the inner side of the permanent magnet, an adjusting-screw disposed at a right angle to the inner side of the permanent magnet, and means whereby the endwise movement of said screw shifts the armature in a direction at a right angle to such endwise movement.

3. An electric bell comprising a bracket, a permanent magnet having one pole secured to the outside of said bracket, an electromagnet secured to the inner surface of said bracket, an armature-mounting provided with an integral stem adjustably connected with an integral portion of said bracket, the said integral portion of the bracket extending toward the armature, and a vibratory armature mounted upon said armature-mounting, together with adjusting means comprising a screw applied to said integral portion and disposed at a right angle thereto, the said electromagnet comprising two coils sufficiently separated to afford access between them to the adjustable connection between the bracket and armature, for purposes of adjustment of the latter, the entire adjusting means being located in a plane between the upper and lower ends of the electromagnet, and at a point close to the inner side of the permanent magnet, and means whereby the endwise movement of said screw shifts the armature in a direction at a right angle to such endwise movement.

4. An electric bell comprising a bracket provided with an integral central upturned vertical portion, an electromagnet secured to said bracket, a permanent magnet also secured to said bracket, an armature-mounting adapted to slide upon the cores of said electromagnet and provided with an integral stem portion adjustably connected with the said vertical portion of the bracket, and a vibratory armature mounted upon said armature-mounting, together with adjusting means comprising a screw applied to said integral portion and diaposed at a right angle thereto, the said electromagnet comprising two coils sufficiently separated to afford access between them to the adjustable connection between the bracket and armature, for purposes of adjustment of the latter, the entire adjusting means being located in a plane between the upper and lower ends of the electromagnet, and at a point close to the inner side of the permanent magnet, and means whereby the endwise movement of said screw shifts the armature in a direction at a right angle to such endwise movement.

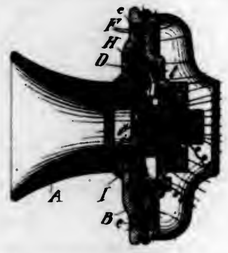
5. An electric bell comprising a bracket, an electromagnet secured to said bracket, a permanent magnet secured to said bracket, said bracket having a bevel, an armature-mounting provided with a threaded opening, a screw inserted in said threaded opening and having its end engaging said bevel, and an armature carried by said armature-mounting, said armature being adjustable relatively to the electromagnet-cores by adjusting said screw.

6. An electric bell comprising a magnet, a support, a vibratory armature, and an adjustable connection between said armature and support, said connection comprising a screw carried by one part and adapted to engage a beveled surface on another part, whereby the adjustment of said screw effects an adjustment of the armature relatively to said magnet.

7. An electric bell comprising a bracket provided with an upturned vertical portion having guides, an electromagnet secured to said bracket, a permanent magnet also secured to said bracket, an armature-mounting provided with a stem adapted to slide up and down between said guides, the said upturned portion of the bracket being provided with a bevel, and the said stem having a screw adapted to engage said bevel, another screw for clamping the stem and upturned vertical portion of the bracket tightly together, and an armature carried by said armature-mounting.

8. An electric bell comprising a bracket, an electromagnet, a permanent magnet, a yoke positioned between the electromagnet and the adjacent pole of the permanent magnet, said yoke being adapted to slide upon the cores of said electromagnet, and the adjacent pole of the permanent magnet having a recess or opening, an armature pivotally mounted upon said yoke, the armature being located between the yoke and the adjacent pole of the permanent magnet, a striker carried by the said armature and projecting through the said recess or opening in the permanent magnet, the said bracket and striker being disposed at opposite ends of said electromagnet, the said electromagnet comprising two coils sufficiently separated to afford access between them to the adjustable connection between the bracket and armature, for purposes of adjustment of the latter, the entire adjusting means being located in a plane between the upper and lower ends of the electromagnet, and at a point close to the inner side of the permanent magnet, an adjusting-screw disposed at a right angle to the inner side of the permanent magnet, and means whereby the endwise movement of said screw shifts the armature in a direction at a right angle to such endwise movement.

819,084. **TELEPHONE-TRANSMITTER.** MICHAEL SETTER, Chicago, Ill., assignor to Automatic Electric Company, Chicago, Ill. Filed Oct. 31, 1904. Serial No. 230,759.



Claim.—1. A telephone-transmitter comprising a casing, a diaphragm, a support secured to the diaphragm, a vibratory front electrode secured to the diaphragm, a stationary back electrode secured to the said support, granular carbon between said electrodes, and means for holding or inclosing the granular carbon, the said diaphragm, support, electrodes, carbon-holding means and granular carbon being inclosed within said casing, and the same being organized into a structure which is removable as a unit from the interior of said casing the means for holding or inclosing the granular carbon being vibratory with the diaphragm and removable with the electrodes through an opening in the back of said unit.

2. A telephone-transmitter comprising a casing, a diaphragm, a vibratory front electrode, a stationary back electrode, granular carbon between the two electrodes, means for holding or inclosing the granular carbon, together with a cover-plate upon which said back electrode is mounted, the said diaphragm, electrodes, cover-plate, carbon-holding means and granular carbon being organized into a structure which is removable as a unit from the interior of said casing the means for holding or inclosing the granular carbon being vibratory with the diaphragm and removable with the electrodes through an opening in the back of said unit.

3. A telephone-transmitter comprising a casing, a diaphragm, a cover-plate having its perimeter secured to the edge of said diaphragm, a vibratory front electrode secured to the diaphragm, a stationary back electrode mounted in and removable through an opening in the center of said cover-plate, and granular carbon between the two electrodes, said operative elements being removable as a unit from the interior of said casing together with a vibratory carbon-holder adapted for removal through the said opening.

4. A telephone-transmitter comprising a diaphragm, a concave cover-plate having its perimeter secured to the marginal portions of said diaphragm, said cover-plate being provided with a central opening, a vibratory front electrode secured to the diaphragm, a stationary back electrode mounted in and removable through the said opening in the cover-plate, and granular carbon between the two electrodes together with a vibratory carbon-holder adapted for removal through the said opening.

5. A telephone-transmitter comprising a diaphragm, a concave cover-plate having its perimeter held in engagement with the marginal portions of said diaphragm, said cover-plate having a central opening through which access may be had to the fully-inclosed space provided between the diaphragm and cover-plate, a closure for said opening, a vibratory front electrode secured to the diaphragm, a stationary back electrode removably secured to said closure, and granular carbon between the two electrodes together with a vibratory carbon-holder adapted for removal through the said opening.

6. A telephone-transmitter comprising a diaphragm, a sheet-metal binding, a concave cover-plate having its perimeter held in engagement with the marginal portions of the diaphragm by the sheet-metal binding, a vibratory front electrode carried by the diaphragm, a stationary back electrode carried by the said cover-plate, granular carbon between the two electrodes, a casing provided with a shoulder, and a clamping-ring for clamping the marginal portions of the cover-plate and diaphragm against the said shoulder.

7. A telephone-transmitter comprising a diaphragm, a support bridging the back of the diaphragm, a vibratory front electrode secured to the diaphragm, a stationary back electrode mounted in and removable from the transmitter through an opening in the center of said support, and granular carbon between the two electrodes together with a vibratory carbon-holder adapted for removal through the said opening.

8. A telephone-transmitter comprising a diaphragm, a sheet-metal binding, a concave cover-plate having its perimeter secured to the marginal portions of said diaphragm by the sheet-metal binding, a casing providing a chamber from which the said diaphragm and cover-plate are removable as a unit, and a resistance-bearing device within the fully-inclosed space provided between the diaphragm and cover-plate.

9. A telephone-transmitter comprising a diaphragm, a support bridging the back of the diaphragm, a sheet-metal cup, a vibratory front electrode clamping the bottom wall of said cup to the back of said diaphragm, a stationary back electrode provided with a shoulder, a ring of soft fibrous material encircling the rear portion of said back electrode and closing the mouth of said cup, granular carbon between the two electrodes, screw-threaded means for clamping the said ring against the shoulder on the said back electrode, and means for removably mounting said back electrode in the said support.

10. A telephone-transmitter comprising a front plate, a diaphragm, a vibratory metal cup, a vibratory front electrode secured to the back of said diaphragm, a concave cover-plate having its perimeter held in engagement with the marginal portions of said diaphragm, and with said front plate, the said front electrode being electrically connected with said cover-plate through the medium of said diaphragm, a stationary back electrode removably mounted in the central portion of said cover-plate but insulated therefrom, said cover-plate being provided at its center with an opening through which the cup and both electrodes are removable from the chamber provided between the diaphragm and cover-plate, whereby the cup and electrodes can be removed without separating the front and cover plates.

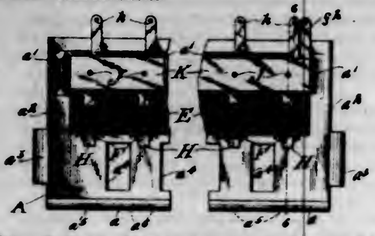
11. A telephone-transmitter comprising a front plate, a mouthpiece removably secured to the center of said front plate, a shell removably secured to the periphery of said front plate, a diaphragm, a support secured to and bridging the back of the diaphragm, a vibratory front electrode secured to the diaphragm, a stationary back electrode carried by the said support, and granular carbon between the two electrodes, said diaphragm, support, electrodes, and granular carbon being organized into a structure which is removable as a unit from the chamber provided by the said front plate and shell together with a vibratory carbon-holder adapted for removal through the said opening.

12. A telephone-transmitter comprising a diaphragm, a concave cover-plate having its perimeter secured to the marginal portions of said diaphragm, a casing, means for insulating the diaphragm and cover-plate from the casing, a vibratory front electrode secured to the diaphragm, a stationary back electrode removably mounted in said cover-plate, granular carbon interposed between the two electrodes, damping-springs secured to the cover-plate and bearing against the back of the diaphragm, and a clamping-ring for holding the unit-like structure comprising the diaphragm and cover-plate against the said casing.

13. A telephone-transmitter comprising a diaphragm, a sheet-metal binding, a concave cover-plate having its perimeter held against the marginal portions of said diaphragm by the sheet-metal binding, a resistance-bearing device connected between the diaphragm and cover-plate and inclosed within the chamber between the same, and one or more damping-springs secured to the inner surface of the cover-plate and bearing against the said diaphragm.

14. A telephone-transmitter comprising a diaphragm, a concave cover-plate covering the back of said diaphragm, said plate having an internally-threaded central opening, a vibratory front electrode carried by the diaphragm, a peripherally-threaded closure screwed into said opening and cover-plate, a stationary back electrode removably secured to said closure, and granular carbon between the two electrodes together with a vibratory carbon-holder adapted for removal through the said opening.

819,085. STRIP OF LAMP-JACKS. MICHAEL SEITZ, Chicago, Ill., assignor to Automatic Electric Company, Chicago, Ill. Filed Jan. 13, 1905. Serial No. 240,965.



Claim.—1. A strip of lamp-jacks having a body made of sheet metal bent into shape to provide an integral front plate having a plurality of lamp-openings, and lamps in said jacks.

2. A strip of lamp-jacks comprising a body made of sheet metal bent into shape to provide a raised base, and also an integral front plate having a plurality of lamp-openings, together with a plurality of jack-springs arranged in pairs and suitably secured upon said raised portion of the body, and lamps in said jacks.

3. A strip of lamp-jacks comprising a pressed sheet-metal body having an upturned integral front plate provided with a plurality of openings, and having jack-springs arranged in pairs and suitably mounted upon said body, each pair being mounted opposite one of said openings, the lower or inner jack-springs of the different pairs being formed of a sheet-metal strip stamped and pressed into shape to provide several forwardly-extending jack-springs connected in common, and a miniature incandescent electric lamp removably held in each jack, together with an upper clamping-strip K and screws J by which both upper and lower jack-springs are clamped in place, said metal strip of the lower jack-springs having said screws extending therethrough, all in combination, substantially as set forth.

4. A strip of lamp-jacks comprising a metal body having an integral upturned front plate provided with a plurality of openings, a chamber back of said plate, thimbles removably inserted in said openings, each thimble being provided at its outer end with a light-transmitting member, spring-jacks mounted upon said body, and miniature incandescent lamps inserted in said spring-jacks, the jacks and lamps being in the chamber back of said front plate, and the bulb of each lamp projecting into the inner end portion of one of said thimbles.

5. A strip of lamp-jacks comprising a body made of sheet metal stamped and pressed into shape to provide an integral front plate having a plurality of openings, and to provide a plurality of partitions, spring-jacks mounted upon said body, and miniature incandescent lamps inserted in said spring-jacks, said lamps being separated from each other by said partitions.

6. A strip of lamp-jacks comprising a sheet-metal body provided with an integral front plate having a plurality of openings, and provided with integral partitions, and a plurality of spring-jacks mounted upon said body, said openings being arranged opposite the said spring-jacks, and said partitions alternating with the said jacks.

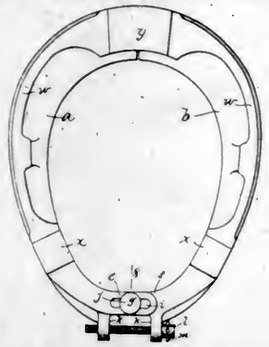
7. A strip of lamp-jacks comprising a sheet-metal body provided with an integral front plate having a plurality of openings, each opening having notches or indentations at each side thereof, lamps in said jacks and thimbles each provided with a light-transmitting member and adapted to be inserted in said openings, said notches or indentations permitting the insertion of a tool for the purpose of removing said thimbles, and said jacks having lower springs provided with side portions adapted to coöperate with the said thimbles in preventing lateral displacement of the lamps.

8. A strip of lamp-jacks comprising a sheet-metal body having an integral front plate provided with a pulrality of openings, and having integral lugs or flanges at its ends, together with spring-jacks mounted upon said body and each arranged opposite one of said openings, said jacks having upper and lower springs arranged in upper and lower rows extending substantially from one lug to the other.

9. A strip of lamp-jacks comprising a suitable support, a plurality of lower or inner jack-springs connected in common by an integral strip of metal, upper or outer jack-springs each arranged to coöperate with one of said inner or lower jack-springs, each upper or outer jack-spring provided with a terminal, and the lower or inner jack-springs provided with a terminal which is integral with said metal strip, all of which jack-springs have their free ends pointing toward the front of the structure, and all of said terminals projecting rearwardly, a strip of insulation interposed between the said metal strip and the said upper or outer jack-springs, and a miniature incandescent electric lamp removably held in each jack, together with an upper clamping-strip K and screws J by which both upper and lower jack-springs are clamped in place, said metal strip of the lower jack-springs having said screws extending therethrough, all in combination, substantially as set forth.

10. A strip of lamp-jacks comprising lower or inner jack-springs each provided with a pair of cheeks or guards, and upper or outer jack-springs each arranged to coöperate with one of said lower or inner jack-springs, together with means for securing said springs in place.

819,086. HORSESHOE. HARRY D. SHAFFER, Philadelphia, Pa. Filed Aug. 9, 1904. Serial No. 220,060.



Claim.—1. A horseshoe comprising two parts or halves, each part or half having an upwardly-extending flange adapted to engage the outer surface of the hoof and an inwardly-extending flange adapted to engage the under surface of the hoof, the under surface of one of the inwardly-extending flanges being cut away at its front end to form a shallow inset and a recess above the inset, the inwardly-extending flange of the other part being thickened at its front end, a lug, extending beyond the front end of the last-named flange, whose under face is substantially flush with the under face of said thickened portion and whose side walls are substantially flush with the side walls of said thickened portions, a projection above said lug, said lug being adapted to extend within and project below said inset and the projection being adapted to extend within said recess, substantially as described.

2. A horseshoe comprising two parts or halves, each of which has an upwardly-extending flange adapted to engage the outer surface of the hoof and an inwardly-extending flange adapted to engage the under surface of the hoof, the last-named flange comprising a horizontal base, widened out at its front and rear ends, and an upwardly-inclined portion within the base and between the latter's widened ends, substantially as described.

3. A horseshoe comprising two parts or halves, each of which has an upwardly-extending flange adapted to engage the outer surface of the hoof and an inwardly-extending flange adapted to engage the under surface of the hoof, the last-named flange comprising first, a horizontal base of substantially the width of the flange at its front and rear ends, relatively narrow between its ends and somewhat widened at a point substantially midway of its ends, and secondly, an upwardly-inclined portion adjacent to its inner edge, substantially as described.

4. A horseshoe comprising two parts or halves, each of which has an upwardly-extending flange adapted to engage the outer surface of the hoof and an inwardly-extending flange adapted to engage the under surface of the hoof, each part or half being provided with a rearward extension, one of which is slotted, and a pin having a relatively contracted upper end engaging the other extension, a disk-shaped head at its lower end, and a relatively enlarged intermediate portion extending through the slot, substantially as described.

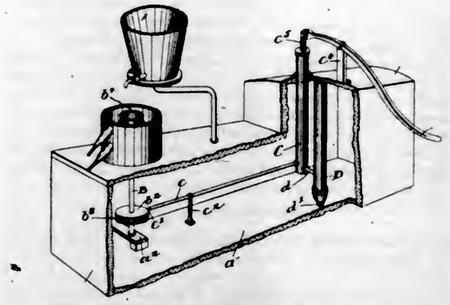
5. A horseshoe comprising two parts or halves, each of which has an upwardly-extending flange adapted to engage the outer surface of the hoof and an inwardly-extending flange adapted to engage the under surface of the hoof, each part or half being provided with a rearward extension, one of which is slotted while the other of which is orificed, and a pin having a disk-shaped head underlying the slotted extension, a relatively enlarged portion above the head and extending through the slot, and a relatively contracted upper end extending into said orifice and upset therein, substantially as described.

6. A horseshoe comprising two parts or halves, each of which has an upwardly-extending flange adapted to engage the outer surface of the hoof and an inwardly-extending flange adapted to engage the under surface of the hoof, orificed lugs at the front of each part or half, a threaded pin extending through the orifices in said lugs, and a threaded sleeve on said pin adapted to extend within one of said orifices, substantially as described.

7. A horseshoe comprising two parts or halves, each of which has an upwardly-extending flange adapted to engage the outer surface of the hoof and an inwardly-extending flange adapted to engage the under surface of the hoof, orificed lugs at the front of each part or half, a headed pin extending through the orifices in said lugs, the end opposite the head being threaded, and a threaded sleeve engaging said pin and having a shank adapted to enter the orifice in one of said lugs and a conically-shaped head adapted to abut against said lug, substantially as described.

8. A horseshoe comprising two parts or halves, each of which has an upwardly-extending flange adapted to engage the other surface of the hoof and an inwardly-extending flange adapted to engage the under surface of the hoof, orificed lugs at the front of each part or half, a pin extending through the orifices in said lugs, one end of said pin being threaded, a threaded sleeve on said pin having a shank adapted to extend within the orifice in, and a head adapted to abut against, one of said lugs, an orificed head at the other end of said pin adapted to abut against the other of said lugs, and a cotter-pin adapted to extend through said orificed head, substantially as described.

819,087. WATER-MOTOR FOR CREAM-SEPARATING MACHINES. JOHN SHARPE, Bloomfield, Canada, assignor to Abraham Barker Saylor, Bloomfield, Canada. Filed Sept. 8, 1905. Serial No. 277,518.

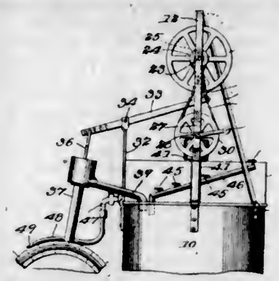


Claim.—1. A motor for cream-separating vessels comprising a casing, a shaft mounted therein, a water-wheel secured thereto, a water-nozzle adapted to discharge against the blades of the water-wheel, a vertical lift and force pump extending through the top of said casing, a pipe connecting the discharge-orifice of said pump to said nozzle, an intake-nozzle for the pump adapted to withdraw the water from the bottom of the inside of the casing after it has been through the water-wheel, an inlet-pipe connecting said intake-nozzle to the intake of the pump, an operating-handle for said pump and a standard secured to the top of the casing to which the handle is pivoted as and for the purpose specified.

2. A motor for cream-separating vessels comprising a casing, a shaft mounted therein, a water-wheel secured thereto, a water-nozzle adapted to discharge against the blades of the water-wheel, a vertical lift and force pump extending through the top of the casing, a pipe connecting the discharge-orifice of said pump to said nozzle, an intake-nozzle for the pump adapted to withdraw the water from the bottom of the inside of the casing after it has been passed through the water-wheel, a vertically-extending intake-pipe adapted to serve as a temporary reservoir for the water, a connecting-pipe connecting said reservoir-pipe to the intake of the pump and operating means for the pump external to the casing as and for the purpose specified.

3. A motor for cream-separating vessels comprising a casing, a shaft mounted therein, a water-wheel secured thereto, a water-nozzle adapted to discharge against the blades of the water-wheel, a vertical lift and force pump extending through the top of said casing, a pipe connecting the discharge-orifice of said pump to said nozzle, an intake-nozzle for the pump adapted to withdraw the water from the bottom of the inside of the casing after it has been through the water-wheel an inlet-pipe connecting said intake-nozzle to the intake of the pump and operating means for said pump external to the casing as and for the purpose specified.

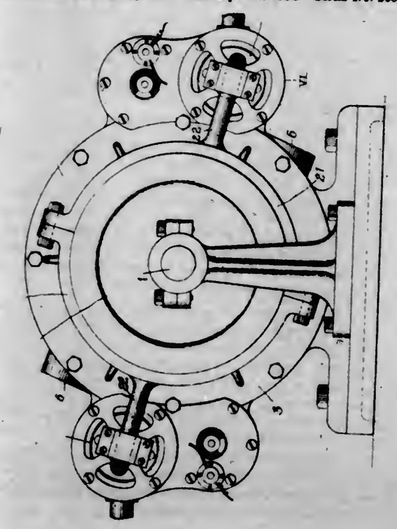
819,088. TANK-PUMP AND LIQUID-MEASURE. JAMES H. SHERRARD, Sparta, Ill. Filed July 24, 1905. Serial No. 271,078.



Claim.—1. In an apparatus of the class described, a source of supply, a receiver for the liquid to be dispensed, means for conducting the liquid from the source of supply to the receiver, means for discharging the liquid from said receiver, a conductor disposed at an angle to said receiver and discharging into the source of supply, a plurality of branch pipes spaced apart and leading laterally from said conductor and connected into said receptacle at certain predetermined heights, and a controlling-valve in each of said branches.

2. In an apparatus of the class described, a supply-tank, spaced standards attached to said tank and extended inwardly above the same with their ends overlapping, means for adjustably coupling said overlapping ends, a shaft journaled in said standards and provided with a crank, a receiver for the liquid to be measured and dispensed, a pump supported in said tank with its discharge above said receiver, connecting means between said shaft-crank and the plunger of said pump, means for rotating said shaft, overflow-valves connected to said receiver at points corresponding to the height which the various quantities of liquids which are to be measured and dispensed will rise therein, means for conducting the surplus liquid flowing through said valves back to the tank, and a draw-off valve connected to said receiver.

819,089. GAS-TURBINE. CHARLES W. SHOEMAKER and JOHN M. LITHGOW, Allegheny, Pa. Filed Apr. 14, 1904. Serial No. 203,186.



Claim.—1. In a gas-engine the combination, with a power-shaft and impact-surfaces in operative connection therewith, of an explosion-chamber provided with an inlet-port through which gas is received and with a discharge-port through which the products of explosion are delivered to the impact-surfaces, means for exploding gas in said explosion-chamber, and a valve arranged in said explosion-chamber to move in uniform direction to open and close said inlet-port prior to explosion and to open and close said discharge-port subsequent to explosion, substantially as described.

2. In a gas-engine the combination, with a power-shaft and impact-surfaces in operative connection therewith, of a mixing-chamber wherein the gases to be exploded are mingled, a compression-chamber wherein the mingled gases are compressed, a valve-controlled port leading from said mixing-chamber to said compression-chamber, an explosion-chamber, means for exploding the mingled and compressed gases within said explosion-chamber, a port leading from said compression-chamber to said explosion-chamber, a port leading from said explosion-chamber through which the products of explosion are delivered to the impact-surfaces, and a valve in said explosion-chamber rotating in uniform direction to open and close the port from the compression-chamber prior to explosion and to open and close the port from the explosion-chamber subsequent to explosion, substantially as described.

3. In a gas-engine including in its structure a rotary power-shaft and a chamber wherein gas is compressed prior to explosion, the combination of means for compressing gas within said chamber, a disk angularly mounted on said power-shaft, and operative connection between said disk and said compressing means, substantially as described.

4. In a gas-engine the combination with a power-shaft and means for driving said shaft, of an explosion-chamber provided with a port through which the products of explosion are delivered to said driving means, a valve movable to control said port, means for normally moving said valve, said valve-moving means constructed to permit a limited independent movement thereof, and means operated on by the products of explosion for shifting said valve through a portion of its range of movement in advance of its otherwise normal position, substantially as described.

5. In a gas-engine provided with an explosion-chamber and with a port leading therefrom through which the products of explosion are delivered to the driving mechanism, the combination of a valve containing an orifice and mounted to rotate in said chamber and in rotation to open and close said port through its said orifice, means for rotating said valve, and connection between said valve and its operating means constructed to permit a limited movement of the valve independent of its operating means, the anterior edge of the orifice of said valve arranged to sustain the impact of the outflowing products of explosion on the initial opening of said port and thereby to shift the said valve independently of said operating means, substantially as described.

6. In a gas-engine in combination with a rotatable power-shaft and means for exploding compressed gases and for applying the expansive power of gases so exploded to the rotation of said shaft, of a compression-chamber, means for compressing gas within said compression-chamber, a disk angularly mounted on said power-shaft, and connection between said disk and said compressing means, substantially as described.

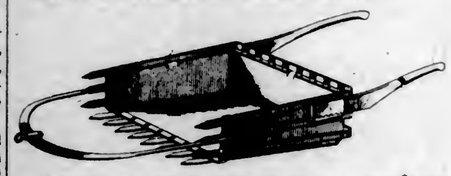
7. In a gas-engine, the combination of a rotatable power-shaft and coöperating impact-surfaces, an explosion-chamber, a port leading from the explosion-chamber through which the products of explosion are directed against the impact-surfaces of the power-shaft, a compression-chamber in operative connection with the explosion-chamber, a compression-piston movable within the compression-chamber, a disk angularly mounted on the power-shaft, and connection between the compression-piston and the disk whereby upon the rotation of the power-shaft the piston is caused to move within the compression-chamber, substantially as described.

8. In a turbine-engine, the combination of a rotatable power-shaft carrying peripheral impact-surfaces, an explosion-chamber, a port leading from the explosion-chamber through which the products of explosion are directed against the impact-surfaces, a compression-chamber, a port leading from the compression-chamber to the explosion-chamber, a valve controlling communication through said ports, means for compressing gas within the compression-chamber, means operated by the rotation of the power-shaft for shifting said valve to close both ports before explosion and open them successively after explosion, and mechanism operated by the rotation of the power-shaft to operate the compressing means within the compression-chamber, substantially as described.

9. In a turbine-engine, the combination of a rotatable power-shaft, two sets of oppositely-arranged impact-surfaces carried by said power-shaft, two explosion-chambers, two oppositely-directed ports leading from said explosion-chambers through which the products of explosion from each chamber are directed against one set of impact-surfaces, a reversing-valve adapted to be shifted to close either one of said ports, a valve adapted to control communication from the explosion-chambers through the orifices of the reversing-valve and through the said ports, substantially as described.

10. In a turbine-engine, the combination of a rotatable power-shaft carrying two sets of oppositely-arranged impact-surfaces, two explosion-chambers, two valve-controlled and oppositely-directed ports leading from the explosion-chambers and through which the products of explosion are directed against the impact-surfaces, a compression-chamber, communication from the compression-chamber to the explosion-chambers, and a reversing-valve controlling communication from the compression-chamber to the several explosion-chambers, substantially as described.

819,090. SCRAPER. ARCHIE M. SMITH and WILLIAM C. DEAN, Ballinger, Tex. Filed July 22, 1905. Serial No. 270,882.



Claim.—1. The combination of a scraper and a removable bottom or lining therefor.

2. The combination of a scraper, a removable bottom or lining therefor and means for holding the removable bottom or lining in position.

3. The combination of a scraper, a removable bottom or lining therefor and tongues projecting from the removable bottom or lining and engaging with the scraper to hold the lining in position.

4. The combination of a scraper the sides and bottom of which are formed of longitudinally-disposed teeth or tines connected by a transverse bar, a removable bottom or lining comprising a bottom, sides, and end corresponding to those of the scraper and fitting therein in the rear of the aforementioned cross-bar, and tongues projecting from the edges of the removable bottom and engaging with the cross-bar, the uppermost side tines and the transverse bar connecting the rear ends of the uppermost side tines.

819,091. BODY-PROTECTOR. THOMAS B. SMITH, Cynthiana, Ky. Filed June 12, 1905. Serial No. 264,903.

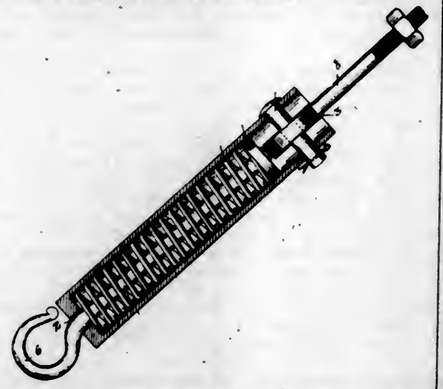


Claim.—1. As a new article, a pad or protective covering for the back comprising an upper scapulary section and a caudal section connected thereto, and adjustable shoulder-straps, each shoulder-strap being connected at opposite ends thereof to a side portion of the scapulary section.

2. As a new article, a protective covering or pad for the back, consisting of a scapulary section and a caudal section composed of plies or thicknesses of material, and means for attaching said covering to the body, the opposite sides of the scapulary section having openings at the upper portions thereof to admit of introduction of padding material for shaping purposes, the caudal section also having an opening for introduction of padding material for the purpose specified.

3. As a new article, a protective covering or pad for the back, consisting of a scapulary section and caudal section composed of plies or thicknesses of material, means for attaching said covering to the body, the opposite sides of the scapulary section having openings at the upper portions thereof to admit of introduction of padding material for shaping purposes, the caudal section also having an opening for introduction of padding material for the purpose specified, and a curved line of stitching extending inwardly from the lower central end portion of the caudal section and connecting the plies or thicknesses of material comprising the same.

819,092. SPRING DRAFT DEVICE. WILLIAM B. SMITH, Chicago, Ill. Filed Apr. 14, 1905. Serial No. 255,576.



Claim.—1. A spring draft device comprising a tubular body member provided at one end with a restricted opening, a hitching-bolt passing through said restricted opening and having sliding engagement with the interior of said tubular member, a spring within said tubular member upon said hitching-bolt and engaging at its opposite ends said tubular member and said hitching-bolt, an attaching member pivotally connected to the opposite end of said tubular body member for attaching the device to the load and guides on the tubular body holding the attaching member and said body in substantial alinement as to one plane while permitting free lateral movement thereof in said plane.

2. A spring draft device comprising a tubular body member provided at one end with a restricted opening and at its opposite end with oppositely-disposed slots, a hitching-bolt sliding within said body member and through said restricted opening, a spring upon said hitching-bolt within said body member and acting upon the sliding movement thereof, and an eyebolt pivotally connected into the end of said body member with portions occupying said oppositely-disposed slots, substantially as described.

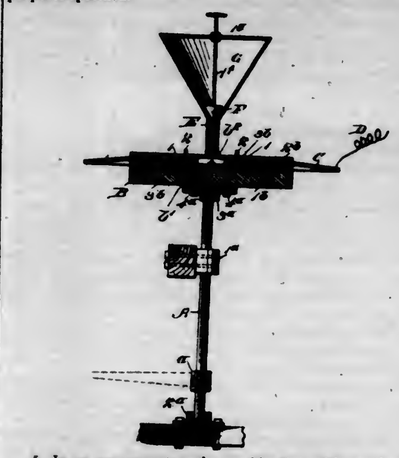
819,093. ORE-SEPARATOR. EDWIN A. SPERRY, Denver, Colo., assignor of one-third to Wylie G. Wilson, Denver, Colo. Filed Jan. 9, 1905. Serial No. 240,227.

Claim.—1. In an ore-separator, the combination with an electrostatically-charged member adapted to alternately attract and repel the material operated upon, of a centrifugal distributer, substantially as and for the purposes specified.

2. In an ore-separator, the combination with an electrostatically-charged annular member adapted to alternately attract and repel the material operated upon, of a centrifugal distributer, substantially as and for the purposes specified.

3. In an ore-separator, the combination with an electrostatically-charged annular member having an inclination from its inner to its outer circumference and adapted to alternately attract and repel the material operated upon, of a centrifugal distributer, substantially as and for the purposes specified.

4. In an ore-separator, the combination with an electrostatically-charged member adapted to alternately attract and repel the material operated upon, of a centrifugal distributer comprised of a plurality of disks the distance between which gradually contracts from their centers to their peripheries, substantially as and for the purposes specified.



5. In an ore-separator, the combination with an electrostatically-charged member adapted to alternately attract and repel the material operated upon, of a centrifugal distributer having a peripheral discharge-opening, and means for varying the area of such discharge-opening, substantially as and for the purposes specified.

6. In an ore-separator, the combination with an electrostatically-charged member adapted to alternately attract and repel the material operated upon, of a centrifugal distributer comprised of a plurality of disks and vanes interposed between said disks, substantially as and for the purposes specified.

7. In an ore-separator, the combination with an electrostatically-charged member adapted to alternately attract and repel the material operated upon, of a centrifugal distributer comprised of a lower disk and an upper disk having a feed-aperture located centrally thereof and having its inner face coned, substantially as and for the purposes specified.

8. In an ore-separator, the combination with an electrostatically-charged member adapted to alternately attract and repel the material operated upon, of a centrifugal distributer comprised of a lower disk and an upper disk having a feed-aperture located centrally thereof and having its inner face coned, and means for adjusting the distance between the said disks, substantially as and for the purposes specified.

9. In an ore-separator, the combination with an electrostatically-charged member adapted to alternately attract and repel the material operated upon, of a centrifugal distributer comprised of a lower disk having an ore-spreading projection and an upper disk having a feed-aperture located centrally thereof and having its inner face coned, and means for regulating the quantity of material fed to the said distributer, substantially as and for the purposes specified.

10. In an ore-separator, the combination with an annular member adapted to be electrostatically charged to alternately attract and repel the material operated upon, of a centrifugal distributer comprised of a lower disk, an upper disk and vanes interposed between said disks, substantially as and for the purposes specified.

11. In an ore-separator, the combination with an annular member located adjacent to and circumscribing a centrifugal distributer, of a centrifugal distributer having a peripheral discharge-opening, and means for varying the area of such discharge-opening, substantially as and for the purposes specified.

12. In an ore-separator, the combination with an annular member located adjacent to and circumscribing a centrifugal distributer, of a centrifugal distributer comprised of a lower disk having an ore-spreading projection and an upper disk having a feed-aperture located centrally thereof and having its inner face coned, said upper disk and said lower disk having vanes interposed between them, substantially as and for the purposes specified.

819,094. APPARATUS FOR MOLDING THREADED SHAFTS. WILLIAM N. SPRINGER, Peoria, Ill., assignor to The Avery Manufacturing Company, Peoria, Ill., a Corporation of Illinois. Filed Aug. 30, 1904. Serial No. 221,555.

Claim.—1. In an apparatus for casting metal bodies with spirally-arranged projections, the combination of a frame, a flask adapted to be removably supported on said frame, a supporting guide-rod passing through the flask and extending beyond the same, and a rotary, longitudinally-movable threaded pattern supported on said rod and having a support on the frame independent of the rod, substantially as set forth.



2. The combination of the frame having the two outside uprights or bearings and the intermediate upright or support and adapted to have a removable flask supported thereon between one of the outside supports and the intermediate support, a guide-rod on said frame held by the outside supports and passing through the intermediate support and the externally-threaded pattern on the said rod extending substantially the entire length of the flask and to points outside thereof, substantially as set forth.

3. The combination of the frame, the pattern-supporting rod, the rotary longitudinally-movable externally-threaded pattern on the said rod, the outside uprights or carriers on the frame for supporting the said rod, the intermediate upright having a bearing through which pass both the rod and the pattern, and means for causing the combined longitudinal and rotary movement of the pattern, substantially as set forth.

4. The combination of the frame having the upright or standard a and the upright or standard E and adapted to have a removable flask supported thereon between the said standards, the rod detachably fixed to the standard a and extending through the standard E, the rotary longitudinally-movable threaded pattern around the rod and extending through the standard E and supported at its opposite end on the rod and means for causing the rotation and the longitudinal movement of the pattern, substantially as set forth.

5. In an apparatus for molding metal bodies, the combination of a flask, a supporting guide-rod extending through said flask, and a rotary, longitudinally-movable threaded pattern loosely mounted upon said rod and adapted to move relative thereto as it is removed from said flask.

6. In an apparatus for molding threaded shafts, the combination of a flask, a supporting and guiding rod extending through said flask and supported at either end, a rotary, longitudinally-movable, externally-threaded, hollow pattern loosely mounted upon said rod, and means for causing the combined longitudinal and rotary movement of the said pattern relative both to the said flask and supporting-rod.

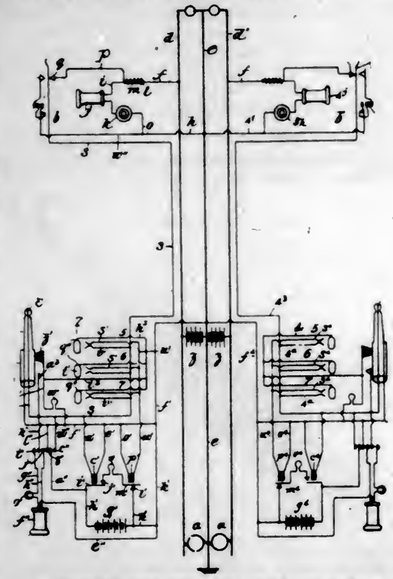
7. In an apparatus for molding threaded shafts, the combination of a flask, a supporting and guiding rod extending through said flask, a rotary, longitudinally-movable, externally-threaded pattern loosely mounted upon said rod and adapted to move relatively thereto, supports for the opposite ends of said rod, an intermediate support, and adjustable lugs carried by the intermediate support, adapted to engage the walls of the helical grooves of the said pattern.

819,095. **COMMUNICATING ELECTRIC SYSTEM.** ALEXANDER M. STARK, Toronto, Canada, assignor to The Stark Electrical System Limited, Toronto, Canada, a Corporation of Ontario. Filed Aug. 9, 1902. Serial No. 119,138.

Claim.—1. An electric system comprising a main circuit, a substation-circuit in shunt thereto, an auxiliary circuit, a line-signal in the auxiliary circuit, a relay responsive to the substation-circuit adapted when energized to close the auxiliary circuit through the line-signal, a second substation-circuit and a second relay responsive to the second substation-circuit when connected with the first-mentioned substation-circuit and adapted when energized to open the battery-circuit through the line-signal.

2. An electric system comprising an auxiliary circuit, a line-signal in the auxiliary circuit, a substation-circuit, a relay responsive to the substation-circuit adapted when energized to close the central-station auxiliary circuit through the line-signal, a second substation-circuit, and a second relay responsive to the second substation-circuit when connected with the first-mentioned substation-circuit and adapted when energized to open the central-station auxiliary circuit through the line-signal.

3. An electric system comprising a substation-circuit, a line-signal closing circuit in shunt to the substation-circuit, an auxiliary circuit, a line-signal in the auxiliary circuit, the auxiliary circuit being closed through the line-signal by the circuit of the current through the line-signal closing circuit, a second substation-circuit, and a line-signal opening circuit formed by connecting the second substation-circuit with the first-mentioned substation-circuit.



4. An electric system comprising a substation-circuit, a line-signal closing circuit tapped on the substation-circuit, an auxiliary circuit, a line-signal through which the auxiliary circuit is closed by the circuit of the current through the line-signal closing circuit, and a line-signal opening circuit formed by the closing of two substation-circuits.

5. An electric system comprising a substation-circuit, a connecting-plug and a series of jacks in the substation-circuit, and a disconnect-signal in shunt to the substation-circuit comprising a contact-point tapped on one of the conductors of the substation-circuit, a signal device tapped on the other conductor and a contact-spring for the signal device to engage the contact-point and close the circuit through the signal device when the plug is lifted from its seat and an insulator for the switch to engage the connecting-plug when in its seat and open the circuit through the signal device.

6. An electric system comprising a substation-circuit, a connecting-plug and a series of jacks in the substation-circuit and a disconnect-signal in shunt to the substation-circuit comprising a contact-point tapped on one of the conductors of the substation-circuit, a signal device tapped on the other conductor and a contact-spring for the signal device to engage the contact-point and close the circuit through the signal device when the plug is lifted from its seat, an insulator for the switch to engage the connecting-plug when in its seat and open the circuit through the signal device, and a conductor from the switch to the substation-jacks.

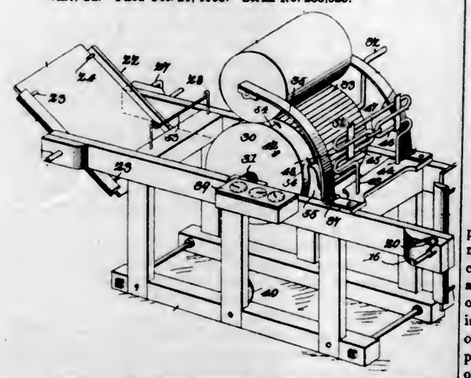
7. An electric system comprising a substation-circuit, a connecting-plug in the substation-circuit, a disconnect-signal tapped on one of the conductors of the substation-circuit, a contact-point tapped on the other conductor of the substation-circuit, a switch for the disconnect-signal displaced from the contact-point by the connecting-plug when in its seat, a spring-jack in the substation-circuit and an electric conductor from the disconnect-signal switch to the line-spring of the jack.

8. An electric system comprising a main circuit having a storage battery therein, a substation-circuit connected with the main circuit, a line-signal closing relay in the substation-circuit, an auxiliary circuit having an armature controlled by the relay, a line-signal through which the auxiliary circuit is closed when the armature has responded to the relay, a second substation-circuit, a line-signal opening relay energized by the second substation-circuit when connected with the first-mentioned substation-circuit, and an armature for the line-signal responsive to the second-mentioned relay to open the battery-circuit through the line-signal.

9. An electric system comprising a main circuit having a storage battery therein, a substation-circuit connected with the main circuit, a line-signal opening relay, a series of jacks in the substation-circuit, the line-springs of which are connected with the line-wire of the substation-circuit and the sockets of which are coupled together and the contact-springs of which are in circuit with the return-wire of the substation-circuit through the line-signal opening relay, a line-signal having an armature adapted to be attracted by the line-signal opening relay as the current flows through it, a line-signal closing relay connected with the substation-circuit, an auxiliary circuit having an armature responsive to the line-signal closing relay to close the auxiliary circuit through the line-signal, a connecting-plug in the substation-circuit, a disconnect-signal on one of the conductors of the substation-circuit having a conductor-spring displaced by the plug when in its seat, a contact-point opposed to the conductor-spring and connected with the other conductor of the substation-circuit to be engaged by the conductor-spring when the plug is removed from its seat.

10. An electric system comprising a main circuit having a storage battery therein, a substation-circuit connected with the main circuit, a line-signal opening relay, a series of jacks in the substation-circuit, the line-springs of which are connected with the line-wire of the substation-circuit and the sockets of which are coupled together and the contact-springs of which are in circuit with the return-wire of the substation-circuit through the line-signal opening relay, a line-signal having an armature adapted to be attracted by the line-signal opening relay as the current flows through it, a line-signal closing relay connected with the substation-circuit, an auxiliary circuit having an armature responsive to the line-signal closing relay to close the auxiliary circuit through the line-signal, a connecting-plug in the substation-circuit, a disconnect-signal on one of the conductors of the substation-circuit having a conductor-spring displaced by the plug when in its seat, a contact-point opposed to the conductor-spring and connected with the other conductor of the substation-circuit to be engaged by the conductor-spring when the plug is removed from its seat, and a conductor connected to the conductor-spring and the sockets for the jacks.

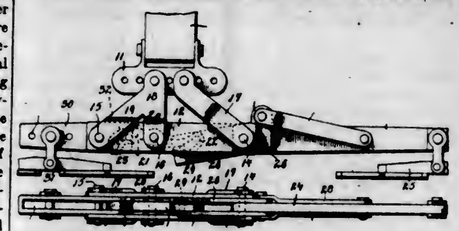
819,096. **FABRIC-MEASURING DEVICE.** THOMAS A. TEATE, Thomasville, Ga., assignor of one-half to Henry C. Ramsey, Thomasville, Ga. Filed Oct. 21, 1905. Serial No. 283,825.



Claim.—1. In a fabric-measuring device, a holding means for the fabric to be measured, a winding means for receiving the fabric after it is measured, a measuring-wheel between the holding means and winding means, and a guiding means between the holding means and measuring-wheel, and consisting of a plurality of spaced bars parallel to the axle of the measuring-wheel and between which bars the material passes to the measuring-wheel, and spaced stop-bars woven between the spaced bars and adjustable longitudinally of the same.

2. In a fabric-measuring device, a holding means for the fabric to be measured, a winding means for receiving the fabric after it is measured, a measuring-wheel between the holding means and winding means, and a guiding means between the holding means and measuring-wheel formed from a single piece of wire and comprising a relatively long flat loop having parallel sides and two shorter flat loops coupled end to end intermediate the longer loop and with supporting-standards depending from the shorter loops and stop-bars woven among the loops and adjustable longitudinally of the same.

819,097. **DRAFT-EVENER.** HENRY THIEDEMANN and JURGEN H. THIEDEMANN, Hickman, Nebr. Filed Oct. 24, 1905. Serial No. 284,177.

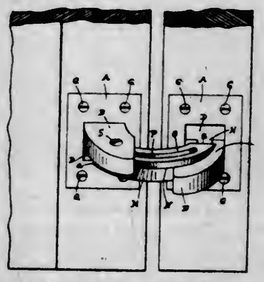


Claim.—1. A draft-evener comprising a supporting-frame, an evener-bar pivoted in said frame and formed with arc-shaped slots in its ends, a pair of evener-levers pivoted on opposite sides of the evener-bar and operatively connected, respectively, at their inner ends to the slots in the evener-bar.

2. A draft-evener comprising a supporting-frame, an evener-bar pivoted in said frame and formed with arc-shaped slots, a pair of evener-levers pivoted in said frame and carrying at their inner ends bolts which work, respectively, in the slots of the evener-bar.

3. A draft-evener comprising a supporting-frame, an evener-bar pivoted in said frame, and formed with arc-shaped slots in its ends, an evener-lever and an angle-lever pivoted in said frame on a common pivot, said angle-lever being connected at one end to the evener-lever, and its other end being operatively connected to one of the slots in the evener-bar, and a second evener-lever pivoted in the supporting-frame and operatively connected to the other slot of the evener-bar.

819,098. **HINGE.** DILLEN UNDERHILL, Toledo, Ohio. Filed Mar. 20, 1905. Serial No. 250,914.



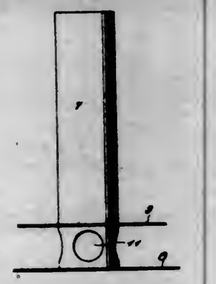
Claim.—1. A hinge comprising a pair of complementary base-plates having complementary lugs that have the form of ring-segments, said lugs having complementary bearing-faces provided with concentric complementary dovetail grooves, and said plates having an opening in each plate opposite and adapted to receive the lug of the other plate, a key that is a ring-segment in form, that in cross-section is complementary to a cross-section of the combined dovetail grooves of the lugs, and that is adapted to movably connect the lugs when partly inserted in the grooves of both lugs, said key having stopped-off grooves, one opposite and abutting each lug, that are arcs concentric of the key, and stops secured, one in each lug, and projecting into the grooves of the key, substantially as set forth.

2. In a hinge the combination of base-plates A, A, having the openings D, D, and the complementary segmental bearing-lugs B, B, provided with the complementary dovetail grooves H, H, concentric to the arcs of the lugs, the segmental key M, complementary to the grooves H, H, of the lugs, provided with the concentric stopped-off arc grooves P, P, and stops S, S, secured to the lugs and projecting into the groove P, P, substantially as set forth.

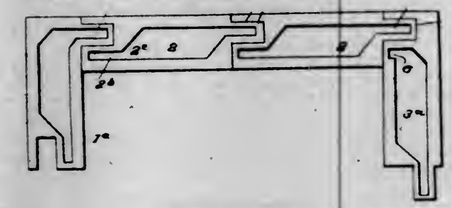
819,099. **CHURN-DASHER.** WILLIAM B. VESTAL, Dallas, Tex. Filed Apr. 20, 1904. Serial No. 204,042.

Claim.—A churn-dasher comprising a tubular stem open at the bottom and having a perforated base-plate extending outwardly

therefrom, an imperforate baffle-plate extending outwardly from the stem above said base-plate, and a partition extending across within the stem to close the same and form the top of an air-chamber in the lower end thereof, the stem having openings through the wall thereof, from said chamber, between the plates.

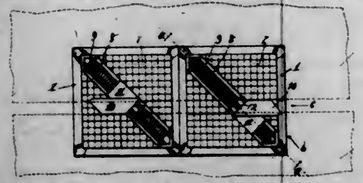


819,100. BUILDING-BLOCK. ISAAC A. VICKERMAN, Preston, Minn. Filed May 22, 1905. Serial No. 261,646.



Claim.—A building-wall constructed of building-blocks, each block comprising a body formed with a longitudinal continuous vertical passage extending from one end of the block to the other, an extension projected from one end of the block longitudinally thereof, the passage aforesaid extending into and terminating in said extension, the opposite end of the block having a recess formed therein in longitudinal alinement with the extension aforesaid, the passage in the block curving to one side of the recess above mentioned and overlapping the same, the extensions at one end of the blocks being adapted to enter the recesses at the other ends of the blocks, when the several blocks are assembled in the wall structure, whereby frost or the like is caused to take a tortuous passage in penetrating the bodies of the blocks.

819,101. PRINTER'S REGISTERING DEVICE. WALLACE S. WARNOCK, Chicago, Ill. Filed Mar. 3, 1905. Serial No. 248,257.



Claim.—1. A registering device including a block forming a separable part of a plate foundation, a register-hook, a threaded shaft carried by the block for effecting adjustment of the register-hook and placed obliquely with reference to the block and substantially parallel to the top of the block, and a nut working upon the shaft and engaging the register-hook, the register-hook being provided with a base in unthreaded engagement with the shaft, the aforesaid block being provided with an obliquely-slotted or cut-away top, within the slot of which top the said register-hook moves.

2. A registering device including a block forming a separable part of a plate foundation, a register-hook, a threaded shaft carried by the block for effecting adjustment of the register-hook and placed obliquely with reference to the block and substantially parallel to the top of the block, and a nut working upon the shaft and engaging a side of the register-hook, the aforesaid block being provided with an obliquely-slotted or cut-away top, within the slot of which top the said register-hook moves.

3. A registering device including a block forming a separable part of a plate foundation, a register-hook, a threaded shaft carried by the block for effecting adjustment of the register-hook and placed obliquely with reference to the block and substantially parallel to the top of the block, and a nut working upon the shaft and engaging a side of the register-hook, the aforesaid block being provided with an obliquely-slotted or cut-away top, within the slot of which top the said register-hook moves.

4. A registering device including a block forming a separable part of a plate foundation, a register-hook, a threaded shaft carried by the block for effecting adjustment of the register-hook and placed obliquely with reference to the block and substantially parallel to the top of the block, and a nut working upon the shaft and engaging the register-hook, the aforesaid block being provided with an obliquely-slotted or cut-away top, within the slot of which top the said register-hook moves.

5. A registering device including a block forming a separable part of a plate foundation, a register-hook, and a threaded shaft carried by the block for effecting adjustment of the register-hook and placed obliquely with reference to the block and substantially parallel to the top of the block, the aforesaid block being provided with an obliquely-slotted or cut-away top, within the slot of which top the said register-hook moves.

6. A registering device including a block forming a separable part of a plate foundation, a register-hook, and an adjusting device therefor engaging a side of the register-hook, the aforesaid block being provided with an obliquely-slotted or cut-away top, within the slot of which top the said register-book moves.

7. A registering device including a block forming a separable part of a plate foundation, a register-hook, a threaded shaft carried by the block for effecting adjustment of the register-hook and placed obliquely with reference to the block and substantially parallel to the top of the block, and a nut working upon the shaft and engaging a side of the register-hook, the register-hook being provided with a base in unthreaded engagement with the shaft.

8. A registering device including a block forming a separable part of a plate foundation, a register-hook, a threaded shaft carried by the block for effecting adjustment of the register-hook and placed obliquely with reference to the block and substantially parallel to the top of the block, and a nut working upon the shaft and engaging the register-hook, the register-hook being provided with a base in unthreaded engagement with the shaft.

9. A registering device including a block forming a separable part of a plate foundation, a register-hook, a threaded shaft carried by the block for effecting adjustment of the register-hook and placed obliquely with reference to the block and substantially parallel to the top of the block, and a nut working upon the shaft and engaging a side of the register-hook.

10. A registering device including a block forming a separable part of a plate foundation, a register-hook, a threaded shaft carried by the block for effecting adjustment of the register-hook and placed obliquely with reference to the block and substantially parallel to the top of the block, and a nut working upon the shaft and engaging the register-hook.

11. A register-hook including a block forming a separable part of a plate foundation, a register-hook, and a threaded shaft carried by the block for effecting adjustment of the register-hook and placed obliquely with reference to the block and substantially parallel to the top of the block.

12. A registering device including a block forming a separable part of a plate foundation, a register-hook movable obliquely upon the block, and a shaft coöperating with said hook and having stationary mounting.

13. A registering device including a registering hook provided with a base portion oblique with respect to the hook proper, the said base portion and hook proper being substantially fixed with respect to each other, and a threaded shaft coöperating with the base portion for effecting adjustment of the hook and having stationary mounting.

14. A registering device including an obliquely-slotted or cut-away block forming a separable part of a plate foundation, a register-hook working within the slotted or cut-away portion of the block, and a shaft coöperating with said hook and having stationary mounting.

15. A registering device including a block forming a separable part of a plate foundation, a register-hook movable obliquely upon the block, and a shaft diagonally disposed with respect to the block, which shaft coöperates with said hook and has a stationary mounting.

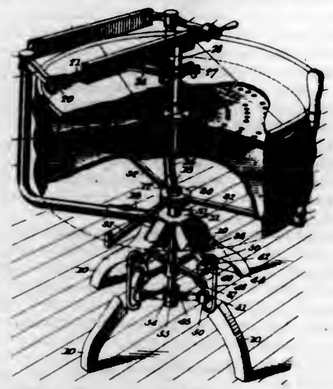
16. A registering device including a block forming a separable part of a plate foundation, a register-hook movable obliquely upon the block, and a threaded shaft diagonally disposed with respect to the block, which shaft coöperates with said hook and has a stationary mounting.

17. A registering device including a block forming a separable part of a plate foundation, a register-hook movable obliquely upon the block, and a threaded shaft diagonally disposed with respect to the block, which shaft coöperates with said hook.

18. A registering device including a block forming a separable part of a plate foundation, a register-hook movable obliquely upon the block, and a threaded shaft coöperating with said hook and having stationary mounting.

19. A registering device including a block forming a separable part of a plate foundation, a register-hook movable obliquely upon the block, and a shaft coöperating with said hook and having stationary mounting.

819,102. WASHING-MACHINE. RICHARD L. WEARNE, Binghamton, N. Y., assignor to The Nineteen Hundred Washer Co., Inc., Binghamton, N. Y. Filed May 22, 1905. Serial No. 261,658.



Claim.—1. In combination, a pair of rubbing members, one of which is mounted for oscillatory movement with respect to the other, a suspended support for one of said members, and means for imparting both oscillatory and vertical movement to the support.

2. In combination, a pair of rubbing members, one of which is mounted for oscillatory movement with respect to the other, a suspended support for one of said members, and means operable through said support for decreasing and increasing the distance between the rubbing members to effect alternate squeezing and release of the clothes.

3. The combination with a pair of rubbing members, of a suspended support for one of them, and means operable on rocking movement of said support for imparting vertical movement to the rubbing member carried by said support.

4. The combination with a pair of rubbing members, of a support for one of them, a support-suspending means normally arranged in a vertical plane, rocking or oscillatory movement of the support moving the suspending means from the vertical plane and effecting vertical movement of the support.

5. The combination with a pair of rubbing members, of a suspended support for one of them, said support permitting limited oscillatory movement of the supported rubbing member, and means operable on excessive movement of said rubbing member for effecting vertical movement of said support.

6. The combination with a pair of rubbing members, of a suspended support for one of them, suspension members normally arranged in a vertical plane, the supported rubbing member being free for limited oscillatory movement in a horizontal plane, and means operable at the completion of such limited movement for utilizing the acquired momentum in oscillating the support and moving the suspension members from a vertical plane.

7. The combination with a pair of rubbing members, of a support for one of them, swinging yokes on which said support is suspended, the movement of the yokes from a normal vertical plane effecting a vertical reciprocation of said support.

8. The combination with a pair of rubbing members, of a vertically-arranged shaft carrying one of said members, a shaft-support, swinging yokes carrying said support, and means for transmitting rocking movement from the shaft to the support, and from thence to the yokes, thereby to effect vertical movement of the support and shaft.

9. The combination with a pair of rubbing members, of a vertically-guided shaft carrying one of said members, a support in which said shaft is mounted, the shaft being free for rocking movement to a limited extent independent of the support, means for transmitting excessive rocking movement of the shaft to the support, and suspension members carrying said support and serving on movement of the latter to effect vertical movement of the support and shaft.

10. The combination with a pair of rubbing members, of a clothes-container carrying one of said members, a vertically-guided shaft carrying said clothes-container, a supporting-bar in which the shaft is stepped, suspension members for the supporting-bar, and means for engaging the shaft with the support after limited rocking movement of said shaft in either direction.

11. The combination with a pair of rubbing members, of a clothes-container carrying one of said members, a vertically-disposed shaft carrying said clothes-container, a supporting-bar in which the shaft is stepped, suspension-yokes carrying said supporting-bar, and normally occupying a vertical position, and interengaging means between the shaft and supporting-bar, whereby rocking movement of the shaft is transmitted to the bar and to the yokes.

12. The combination in a washing-machine, of a clothes-container, a vertical shaft carrying the same, a supporting-bar in which the shaft is stepped, suspension-yokes carrying said bar, said bar having spaced projections adjacent to the shaft, and vertical pins carried by the shaft and adapted to engage said projections.

13. In a washing-machine, a vertically-disposed shaft, a clothes-container carried thereby, a supporting-bar in which the shaft is stepped, a rigid frame, a suspension-yoke connecting the frame to the supporting-bar, and interengaging means between the shaft and bar, whereby rocking movement of the shaft may be imparted to said bar after limited movement of the shaft in both directions.

14. In a washing-machine, the combination with a vertically-disposed shaft, of a clothes-container supported thereby, a spider-frame having a guiding-opening for the shaft, cups or socket members carried by said frame, a supporting-bar in which the lower end of the shaft is stepped, said bar having a pair of spaced projections adjacent to the shaft, pins carried by the shaft and playing between said projections, cups or sockets arranged in the lower face of the bar in vertical alinement with those of the spider-frame, and suspension-yokes having their opposite ends fitted in said cups or sockets.

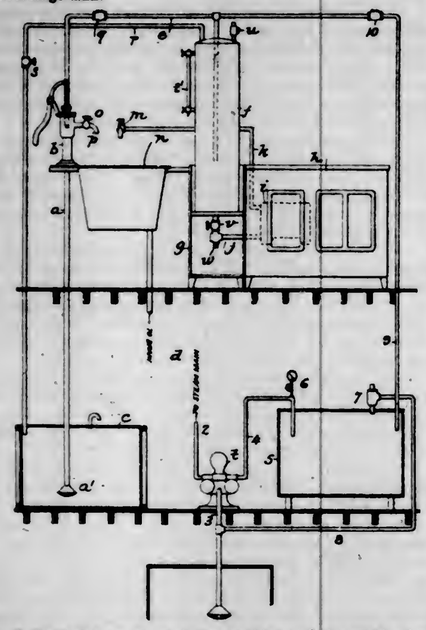
15. The combination in a washing-machine, of a vertically-guided shaft, a clamp arranged at the upper end of the same and having a hub or collar member, a frame or standard on which the hub or collar member is supported to limit downward movement of the shaft, arms projecting radially from said clamp, a clothes-container carried by the arms, a spider-frame forming a bearing for the lower portion of the shaft and provided with cups or sockets, stops extending from said frame, a supporting-bar in which the lower end of the shaft is stepped, said bar being provided with a pair of spaced projections adjacent to the shaft, pins projecting from the shaft and playing between said projections, cups or socket members carried by the bar in alinement with those of the spider-frame, and suspension-yokes having terminal balls fitted in said cups or sockets.

16. The combination in a washing-machine, of a main frame including standards, a spider arranged at the upper end of the frame and connecting the members thereof, said spider having a centrally-disposed guiding-opening, a shaft extending therethrough, a clamping member secured to the upper end of the shaft and serving by engagement with said spider to limit downward movement of the shaft, projecting arms carried by the clamping member, a clothes-container carried by the arms, a second spider-frame secured to the standards and having a guiding-opening for the passage of the shaft, a support in which the lower end of the shaft is stepped, and swinging yoke members extending between the second spider-frame and support.

819,103. GALLEY HOT-WATER SYSTEM. ELMER WEBB, Jr., Philadelphia, Pa. Filed Aug. 26, 1905. Serial No. 276,030.

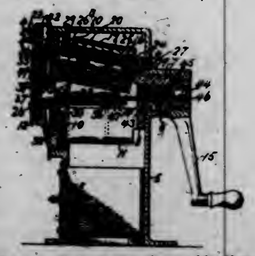
Claim.—1. In a hot-water system for use on shipboard, the combination of a fresh-water storage-tank; a combination suction and force hand-pump connected therewith; a circulating hot-water

boiler; means connecting said hand-pump and boiler; automatic devices located in said means for preventing the backflow of hot water from said boiler to said pump; a coal-box located beneath and supporting said boiler; a galley-range connected by inflow and outflow pipes with said boiler; a galley-sink; means for conducting hot water from said boiler to said galley-sink; an outlet from said pump to said galley-sink; and a vent-pipe connecting the top of said boiler with said storage-tank.



2. In a hot-water system for use on shipboard, the combination with water-heating devices, of a circulating hot-water boiler; means for distributing hot water from said boiler; a storage-tank; a pump connected with said storage-tank; means connecting said pump with the top of said boiler, said means being provided with automatic devices for preventing the backflow of water from said boiler to said pump; and a vent-pipe connecting the top of said boiler with said storage-tank.

819,104. PENCIL-SHARPENER. JOHN A. WEBSTER, New York, N. Y., assignor to Florence A. Morrison, New York, N. Y. Filed Feb. 5, 1904. Serial No. 192,163.



Claim.—1. In a pencil-sharpener, the combination of the frame comprising the disks 9 and 10 with the block 11 connecting the same, bearings at opposite ends of the frame, a crank for rotating the same, bearings 19 and 20 in the said disks at an angle to the disks, the shaft 18 fitted to the said bearings, the sharpening-cylinder 16 carried by the said shaft and gearing arranged and operated to rotate the sharpening-cylinder when the frame is turned by the crank.

2. In a pencil-sharpener, the combination of the frame comprising the disks 9 and 10 with the block 11 connecting the same, bearings at opposite ends of the frame, a crank for rotating the same, bearings 19 and 20 in the said disks at an angle to the disks, the shaft 18 fitted to the said bearings the sharpening-cylinder 16 carried by the same shaft, the pinion 21 upon the end of the shaft 18, the face-plate 28 having the internal gear 32 fitted to the pinion, and a casing having the face-plate secured detachably thereon and holding the parts in an operative relation.

3. In a pencil-sharpener, the combination of the frame comprising the disks 9 and 10 with the block 11 connecting the same, a casing provided with bearings for the opposite ends of the frame and having a box 48 to receive the shavings, a crank for rotating the frame in the casing, bearings 19 and 20 in the said disks at an angle to the axis of the disks, the shaft 18 fitted to the said bearings, the sharpening-cylinder 16 carried by said shaft and gearing arranged and operated to rotate the sharpening-cylinder when the frame is turned by the hand-crank.

4. In a pencil-sharpener a frame, a shaft mounted in the opposite sides thereof, a cylindrical cutter mounted on said shaft, and bushings in the opposite ends of said cutter, one of said bushings being provided with an interior screw-thread, and the shaft being provided for a portion of the length thereof with a screw-thread adapted to engage said bushing, as and for the purpose set forth.

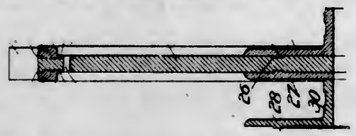
5. In a pencil-sharpener a frame and means to rotate the same a cylindrical cutter mounted in said frame at an angle to the axis of rotation thereof, a pencil-bearing block mounted at the axis of rotation, and means to adjust said bearing-block longitudinally along said axis, for the purpose set forth.

6. In a pencil-sharpener a frame and means to rotate the same, a pencil-bearing block provided with an extension passing into the hub of said frame, a screw passing into said hub, and engaging with said extension of the bearing-block, and means to prevent the longitudinal movement of said screw, for the purpose set forth.

7. In a pencil-sharpener a frame and means to rotate the same, a pencil-bearing block provided with an extension passing into the hub of said frame, a screw passing into said hub, and engaging with said extension of the bearing-block, and means to prevent the longitudinal movement of said screw, said bearing-block being provided with a longitudinal slot, and a pin in said frame adapted to engage said slot, as and for the purpose set forth.

8. A pencil-sharpener comprising a casing, a frame mounted therein, and means to rotate the same, a cylindrical cutter provided with spiral blades mounted in said frame and provided with a pinion, an internal gear fixed to said casing and in engagement with said pinion, and a pencil-bearing block and means to adjust the same, and a pencil-holder adapted to grip the pencil and hold the same against rotation, as and for the purpose set forth.

819,105. BUCKET-WHEEL. JAMES WILKINSON, Providence, R. I., assignor to Wilkinson Turbine Company, a Corporation of Alabama. Filed May 5, 1905. Serial No. 258,970.



Claim.—1. In combination, a bucket-bearing element having a bucket-supporting portion shouldered on each side and recessed to receive the buckets having bifurcated ends, and buckets adapted to be slipped astride said portion and brought into interlocking engagement with said shoulders by a movement of the buckets around said element.

2. In combination, a bucket-wheel having a bucket-engaging portion on one or both sides of its rim, integral bucket elements bifurcated and adapted to straddle said rim and bucket-engaging portion or portions and to interlock with the latter, and means to space said buckets.

3. A bucket-wheel having shoulders near its periphery, notches in said shoulders, and buckets having shouldered openings in their ends which are adapted to be passed over said wheel and through said notches and to engage said wheel-shoulders when moved out of register with said notches.

4. A bucket-wheel having a rim substantially T-shaped in cross-section, a bucket having a substantially T-shaped recess in one end, and means to mount said bucket astride said rim portion, substantially as described.

5. A bucket-wheel having a narrow shouldered rim, buckets having recessed portions which straddle said rim and interlock with the shoulders thereof, and elements connected to said wheel, which are recessed to receive the inner end portions of said buckets and hold them in relative position.

6. A bucket-wheel having a sectional rim portion comprising a shouldered peripheral section of the wheel-body, and recessed rings detachably connected thereto, in combination with buckets having portions engaging the shoulders on said wheel-body whereby said buckets are held against radial displacement, said portions being adapted to engage within recesses in said rings, whereby said buckets are held against lateral displacement.

7. In combination, a shouldered bucket-supporting device, a plurality of buckets bifurcated at one end by a slot which corresponds in shape with the cross-sectional contour of said device, the bifurcated ends of the buckets being adapted to interlock with said device in a manner to permit of their adjustment to and from each other, one or more members having a plurality of equidistantly-spaced tapering slots which receive the lower ends of the buckets, and means to secure said member or members to said device.

8. The combination with a bucket-wheel having a body portion of sheet metal provided with a central shaft-opening, of a ring provided with a shoulder which interlocks with a portion of said wheel-body, and an integral flange on said ring adapted to engage the hub portion of an adjacent wheel, substantially as described.

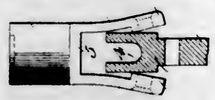
9. In a bucket-wheel, a body portion of sheet metal having a central shaft-opening and recesses in its sides near said opening, rings secured to said body to form the wheel-hub, which have annular shoulders that engage in said recesses and are locked therein by the engagement of said rings with the rings attached to adjacent wheels and one or more rings secured around the periphery of said body and forming the wheel-rim.

10. A bucket-wheel having a sectional rim comprised of a central portion integral with the wheel and a detachable ring on each side thereof, in combination with buckets connected to said central portion and engaged by said rings, substantially as described.

11. A bucket-wheel, a plurality of buckets connected thereto, and spacer means for said buckets comprising an element secured to said wheel and provided with a plurality of equidistant recesses into which portions of the buckets are adapted to enter, and by means of which they are held in relative position.

12. The combination with a bucket-wheel having a body portion of sheet metal provided with a central shaft-opening and an annular groove in each side adjacent to said opening, of a pair of rings adapted to form a detachable hub for said wheel which are provided with annular shoulders that engage in said side recesses, one of said rings being provided with a laterally-projecting annular flange which engages the hub portion of an adjacent wheel, substantially as and for the purposes described.

819,106. TURBINE BUCKET-WHEEL. JAMES WILKINSON, Providence, R. I., assignor to Wilkinson Turbine Company, a Corporation of Alabama. Filed Aug. 9, 1905. Serial No. 273,496.



Claim.—1. As an article of manufacture, a bucket or vane having integral ductile shanks oppositely disposed and provided with inwardly-projecting shoulders, the top faces of which are disposed substantially at right angles to said shanks.

2. As an article of manufacture, a bucket or vane having integral therewith a base-block and elongated shanks which depend from said base-block and are spaced apart, said shanks being adapted to be sprung or bent to or from each other, and shoulders near the free ends of said shanks which project inwardly and have their upper faces substantially parallel with said base-block, substantially as and for the purposes described.

3. The combination with a bucket-supporting element provided with shouldered portions on each side, of a plurality of buckets adapted to be mounted thereon and provided each with a pair of integral shanks adapted to straddle said element, and projections on said shanks which catch under said shouldered portions, the corresponding shanks of adjacent buckets being adapted to abut.

4. The combination with a bucket-wheel provided with a shouldered rim, of a plurality of bucket elements having bifurcated bases which straddle said rim, hooked projections carried by said bases and adapted to engage under said rim, and means to hold said projections in engagement with the rim, said base portions serving to space the buckets and brace them in position when assembled.

5. The combination with an element having an undercut bucket-supporting portion, of buckets having shanks which straddle said element and provided with inwardly-disposed projections which are adapted to interlock with the overhanging parts of the bucket-supporting portion, and means to hold said parts in engagement.

6. A turbine bucket wheel or drum, a bucket-supporting rim thereon, buckets mounted on said rim and having integral elongated shank portions which straddle said rim and hug the sides thereof, inwardly-disposed hooked extensions carried by said shanks and adapted to engage with said rim to hold the buckets against radial displacement, and means to secure said buckets positively to said rim.

7. A turbine bucket-wheel having a rim, in combination with bucket elements, each of which is provided with arms adapted to be spread apart and passed over said rim so as to straddle it, hooked projections on said arms so disposed that when the bucket is seated upon the rim and said arms have been brought together against the sides of the rim, the said projections will catch under said rim, and means to hold said projections in engagement with the rim.

8. A turbine bucket element having a rim portion on which the buckets are mounted, in combination with buckets having shanks which straddle said rim portion, shoulders on said shanks adapted to engage a portion of said rim, and projections on said rim adapted to be calked against said shanks to hold them in engagement with said rim.

9. A turbine bucket-wheel having an undercut rim portion, a bucket having hooked shanks which straddle and interlock with said rim, calking-shoulders on the wheel adjacent to said shanks, and means to turn said shoulders to lock said shanks in engagement with said rim.

10. A turbine bucket-wheel having a shouldered rim of considerable radial thickness, an annular groove in said rim to lighten it, buckets adapted to seat against said rim and having elongated hooked shanks which straddle said rim, fitting closely against its sides and catching under the shouldered portions thereof, and means to hold said shanks in engagement with said rim.

11. In combination, a bucket-supporting element, a series of buckets mounted thereon, and a flange disposed at the outer ends of each bucket, said flanges being spread in a circumferential direction after the buckets have been assembled to cause them to engage adjacent buckets, substantially as and for the purposes described.

12. The combination with a bucket-supporting element, of a row of buckets mounted thereon and provided each with a spacing flange at its outer end, which is spread until it abuts against an adjacent bucket.

13. A bucket-wheel comprising a row of buckets spaced at their inner and outer ends and placed under an initial tension at their outer ends by spreading or calking their abutting portions.

14. A bucket-wheel having a rim portion for supporting buckets and an annular flange on each side, in combination with buckets adapted to be mounted on said wheel and to be held in position by having said flanges bent into engagement with them.

15. A turbine bucket-wheel comprising an undercut rim and two calking-flanges, in combination with buckets having portions which interlock with said rim, said flanges being so disposed relatively to said bucket portions that they may be bent into engagement with them, for the purposes described.

16. A turbine bucket-wheel provided near its periphery with an annular flanged portion, and a narrow annular web connecting said portion with a rim which is wider than said web but of less width than said flanged portion, in combination with buckets which straddle and interlock with said rim, the sides of said flanged portion being adapted to be bent into engagement with said buckets, for the purposes described.

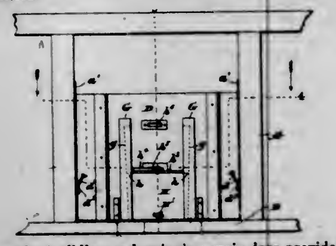
819,107. ATTACHMENT FOR CHANDELIERS. HERMAN V. WILLMAN, Chicago, Ill. Filed Aug. 3, 1905. Serial No. 272,543.

Claim.—The combination with a chandelier of a drop-light attachment comprising a gooseneck arranged for detachable engagement with a jet of the chandelier, sectional tubing consisting of an angular member pivotally connected to said gooseneck, a second member formed of telescopic sections, one of which is connected to said first-named member, and a third member connected to the other section of said telescopic member and provided with a hook at its end, a lamp-supporting frame connected to the third member of said tubing and a ring arranged to secure a central ornamental knob to

the chandelier, and provided with a suspended chain for detachable connection with the said hook.



819,108. GRAIN-CAR DOOR. GUSTAVE WILLMS, ALFRED H. OSTRAND, and ERICK OSTRAND, Genoa, Nebr. Filed Feb. 24, 1905. Serial No. 247,063.

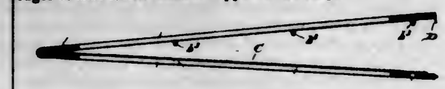


Claim.—1. A sliding and swinging grain-door provided with an auxiliary gate-opening therein and with a plurality of recessed portions above said gate-opening, downwardly and inwardly tapering guides secured to said door adjacent the gate-opening and extending therebove, a metallic gate provided with tapering edges adapted to engage said guides, the rear ends of said gate being arranged to snugly engage the door, said gate being provided with a laterally-extending flange formed integral therewith and extending transversely thereacross, and a cam-lever pivotally secured to said flange and adapted to engage with either of the recessed portions in the door to hold the gate in various positions of adjustment within the guides, the flange of the gate being of sufficient width so that no part of the lever will project beyond the edge thereof when in its closed position.

2. A grain-door provided with an auxiliary gate-opening therein, and with a plurality of recessed portions above said gate-opening, guides secured to said door adjacent the gate-opening and extending therebove, a gate slidably secured in said guides, said gate being provided with a laterally-projecting flange extending transversely thereof, a cam-lever pivotally secured to said flange and adapted to engage with either of the recessed portions in the door to hold the gate in various positions of adjustment within the guides, the flange of said gate being of sufficient width so that no part of the lever will project beyond the edge thereof when in its closed position.

819,109. FRAME FOR HOLDING NET FABRICS. SAMUEL WINNEKEN, Chicago, Ill., assignor to Harry C. Jorgensen, Chicago, Ill. Filed July 26, 1902. Serial No. 117,204.

Claim.—In combination with a sheet-metal open frame, of integral pins struck up from one of its faces, a complementary sheet-metal frame hinged thereto and provided with sockets to receive the ends of said pins, and fastening means adapted to engage the free edges of said frame members opposite the hinge.



819,110. MEANS FOR CLAMPING PHOTOGRAPHIC SHUTTERS, COLOR-SCREENS, &c., TO PHOTOGRAPHIC-LENS MOUNTS. ANDREW WOLLENSAK, Rochester, N. Y., assignor to Wollensak Optical Company, Rochester, N. Y., a Corporation of New York. Filed Nov. 2, 1905. Serial No. 285,556.



Claim.—1. In an apparatus for holding devices on the ends of lens-mounts, a split ring carried by such device and adapted to clasp the end of a lens-mount, lever mechanism for opening said split ring, and spring means for closing the same.

2. In an apparatus for holding devices on the ends of lens-mounts, a split ring carried by such device and adapted to clasp the end of a lens-mount, levers for actuating the free ends of said split ring, means for causing like operation of the said levers, and spring means for closing said split ring.

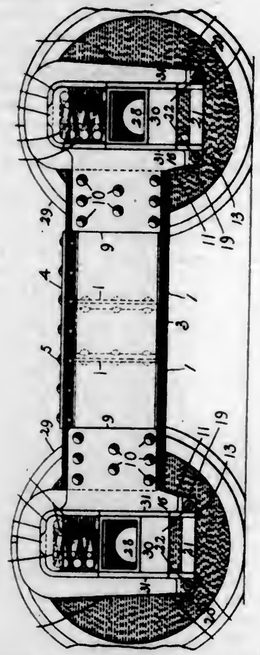
3. In an apparatus for holding devices on the ends of lens-mounts, a split ring carried by such device and adapted to clasp the end of a lens-mount, split flanges on said ring having a slot in each flange, means for holding the flanges at a common point to such device, guide-pins in such device and resting in said slots, and means for opening and closing said split ring.

819,111. CONSTRUCTION OF CAR-TRUCKS. RANSOM C. WRIGHT, Philadelphia, Pa., and FRANK H. STEBBINS, Washington, D. C. Filed Feb. 14, 1896. Serial No. 579,234.

Claim.—1. The combination in a composite truck-frame structure, of two channel-beam transoms, said transoms located between the pairs of wheels, with their webs in vertical planes and flanges extending outwardly, and provided with means for supporting the end of a car-body; two channel side pieces located outside the wheels with their flanges extending outwardly, and secured to the channel-transoms, the ends of the said side pieces being cut off through the webs and flanges so as to form plain ends; and metallic pedestals each having vertical jaws open at the bottom, a head fashioned at its under surface to receive a removable cap, and a neck or extension on one side only, and said pedestals secured upon the extreme ends of the channel side pieces by rivets passed through the extensions of the pedestals and the ends of the channel side pieces.

2. The combination in a composite truck-frame structure, of two channel-beam transoms, said transoms located between the pairs of wheels, with their webs in vertical planes and flanges extending outwardly, and provided with means for supporting the end of a car-body; two channel side pieces located outside the wheels with their flanges extending outwardly, and secured to the channel-transoms, the ends of the said side pieces being cut off through the webs and flanges so as to form plain ends; and metallic pedestals each having vertical jaws open at the bottom and with bearing-flanges, a head fashioned at its under surface to receive a removable cap, and an extension on one side only, and said pedestals secured upon the extreme ends of the channel side pieces by rivets passed through the extensions of the pedestals and the webs of the channel side pieces.

3. The combination in a composite truck-frame structure, of two channel-beam transoms, said transoms located between the pairs of wheels, with their webs in vertical planes and flanges extending outwardly, and provided with means for supporting the end of a car-body; two channel side pieces located outside the wheels with their flanges extending outwardly, and secured to the channel-transoms, the ends of the said side pieces being cut off through the webs and flanges so as to form plain ends; and metallic pedestals each having vertical jaws with bearing-flanges open at the bottom, a neck or extension on one side only and at right angles to the jaws, strengthening-flanges for the outer jaw and pedestal-head, which latter is fashioned at its under surface to receive a removable cap, and said pedestals secured upon the extreme ends of the channel side pieces by rivets passed through the extensions of the pedestals and the webs of the channel side pieces.



4. The combination in a composite truck-frame structure, of two channel-beam transoms, said transoms located between the pairs of wheels, with their webs in vertical planes and flanges extending outwardly, and provided with means for supporting the end of a car-body; two channel side pieces located outside the wheels with their flanges extending outwardly, and secured to the channel-transoms, the ends of the said side pieces being cut off through the webs and flanges so as to form plain ends; and metallic pedestals each having vertical jaws open at the bottom, a head fashioned at its under surface to receive a removable cap, and an extension on one side only, and said pedestals secured upon the extreme ends of the channel side pieces, so as to abut the entire vertical ends of the side pieces, by rivets passed through the extensions of the pedestals and the webs of the channel side pieces.

5. The combination in a composite truck-frame structure, of two channel-beam transoms, said transoms located between the pairs of wheels, with their webs in vertical planes and flanges extending outwardly, and provided with means for supporting the end of a car-body; two channel side pieces located outside the wheels with their flanges extending outwardly, and secured to the channel-transoms, the ends of the said side pieces being cut off through the webs and the flanges so as to form plain ends; and metallic pedestals each having vertical jaws with an opening between the same for a journal-box and spring, said opening being bounded by a ∏-shaped flange, strengthening-flanges for the outer jaw and head of the pedestal, and a neck or extension on one side only, and said pedestals secured upon the extreme ends of the channel side pieces by rivets passed through the extensions of the pedestals and the ends of the channel side pieces.

6. The combination in a composite car-truck-frame structure, of two channel-beam transoms with their webs in vertical planes and located between the pairs of wheels; means secured to the transoms for supporting the end of a car-body; two channel side pieces located outside the wheels and secured to the channel-transoms, the ends of said side pieces being plain and having substantially straight edges; and cast-metal pedestals, each having vertical jaws open at the bottom, a head fashioned at its under surface to receive a removable cap, and a neck or extension on one side only, and said pedestals secured upon the extreme ends of the channel side pieces by rivets passed through the extensions of the pedestals and the ends of the channel side pieces.

7. The combination in a composite car-truck-frame structure, of two channel-beam transoms with their webs in vertical planes and located between the pairs of wheels; means secured to the transoms for supporting the end of a car-body; two channel side pieces located outside the wheels and secured to the channel-transoms, the ends of said side pieces being plain and having substantially straight edges; and cast-metal pedestals, each having vertical jaws open at the bottom and with bearing-flanges, a head fashioned at its under surface to receive a removable cap, and an extension on one side only, and said pedestals secured upon the extreme ends of the channel side pieces by rivets passed through the extensions of the pedestals and the webs of the channel side pieces.

8. The combination in a composite car-truck-frame structure, of two channel-beam transoms with their webs in vertical planes and located between the pairs of wheels; means secured to the transoms for supporting the end of a car-body; two channel side pieces located outside the wheels and secured to the channel-transoms, the ends of said pieces being plain and having substantially straight edges; and cast-metal pedestals, each having vertical jaws with bearing-flanges open at the bottom, a neck or extension on one side only and at right angles to the jaws, strengthening-flanges for the outer jaw and pedestal-head, which latter is fashioned at its under surface to receive a removable cap, and said pedestals secured upon the extreme ends of the channel side pieces by rivets passed through the extensions of the pedestals and the webs of the channel side pieces.

9. The combination in a composite car-truck-frame structure, of two channel-beam transoms with their webs in vertical planes and located between the pairs of wheels; means secured to the transoms for supporting the end of a car-body; two channel side pieces located outside the wheels and secured to the channel-transoms, the ends of said side pieces being plain and having substantially straight edges; and cast-metal pedestals, each having vertical jaws open at the bottom, a head fashioned at its under surface to receive a removable cap, and an extension on one side only, and said pedestals secured upon the extreme ends of the channel side pieces, so as to abut the entire vertical ends of the side pieces, by rivets passed through the extensions of the pedestals and the webs of the channel side pieces.

10. The combination in a composite car-truck-frame structure, of two channel-beam transoms with their webs in vertical planes and located between the pairs of wheels; means secured to the transoms for supporting the end of a car-body; two channel side pieces located outside the wheels and secured to the channel-transoms, the ends of said side pieces being plain and having substantially straight edges; and cast-metal pedestals, each having vertical jaws with an opening between the same for a journal-box and spring, said opening being bounded by a ∏-shaped flange, strengthening-flanges for the outer jaw and head of the pedestal, and a neck or extension on one side only, and said pedestals secured upon the extreme ends of the channel side pieces by rivets passed through the extensions of the pedestals and the ends of the channel side pieces.

11. The combination in a composite car-truck-frame structure, of two channel-beam transoms with their webs in vertical planes and located between the pairs of wheels; means in connection with the transoms for supporting the end of a car-body; two flanged side pieces located outside the wheels and secured to the channel-transoms, the ends of said side pieces being cut off or fashioned so as to form plain ends and straight edges; and cast-metal pedestals, each having vertical jaws open at the bottom, a head fashioned at its under surface to receive a removable cap, and a neck or extension on one side only, and said pedestals secured upon the extreme ends of the side pieces by rivets passed through the extensions of the pedestals and the ends of the side pieces.

12. The combination in a composite car-truck-frame structure, of two channel-beam transoms with their webs in vertical planes and located between the pairs of wheels; means in connection with the transoms for supporting the end of a car-body; two flanged side pieces located outside the wheels and secured to the channel-transoms, the ends of said side pieces being cut off or fashioned so as to form plain ends with straight edges; and cast-metal pedestals, each having vertical jaws open at the bottom and with bearing-flanges, a head fashioned at its under surface to receive a removable cap, and

an extension on one side only, and said pedestals secured upon the extreme ends of the side pieces by rivets passed through the extensions of the pedestals and the webs of the side pieces.

13. The combination in a composite car-truck-frame structure, of two channel-beam transoms with their webs in vertical planes and located between the pairs of wheels; means in connection with the transoms for supporting the end of a car-body; two flanged side pieces located outside the wheels and secured to the channel-transoms, the ends of said pieces being cut off or fashioned so as to form plain ends with straight edges; and cast-metal pedestals, each having vertical jaws with bearing-flanges open at the bottom, a neck or extension on one side only and at right angles to the jaws, strengthening-flanges for the outer jaw and pedestal-head which latter is fashioned at its under surface to receive a removable cap, and said pedestals secured upon the extreme ends of the side pieces by rivets passed through the extensions of the pedestals and the webs of the side pieces.

14. The combination in a composite car-truck-frame structure, of two channel-beam transoms with their webs in vertical planes and located between the pairs of wheels; means in connection with the transoms for supporting the end of a car-body; two flanged side pieces located outside the wheels and secured to the channel-transoms, the ends of said side pieces being cut off or fashioned so as to form plain ends with straight edges; cast-metal pedestals, each having vertical jaws open at the bottom, a head fashioned at its under surface to receive a removable cap, and an extension on one side only, and said pedestals secured upon the extreme ends of the side pieces, so as to abut the entire vertical ends of the side pieces, by rivets passed through the extensions of the pedestals and the webs of the side pieces.

15. The combination in a composite car-truck-frame structure, of two channel-beam transoms with their webs in vertical planes and located between the pairs of wheels; means in connection with the transoms for supporting the end of a car-body; two flanged side pieces located outside the wheels and secured to the channel-transoms, the ends of said side pieces being cut off or fashioned so as to form plain ends with straight edges; and cast-metal pedestals, each having vertical jaws with an opening between the same for a journal-box and spring, said opening being bounded by a ∏-shaped flange, strengthening-flanges for the outer jaw and head of the pedestal, and a neck or extension on one side only, and said pedestals secured upon the extreme ends of the side pieces by rivets passed through the extensions of the pedestals and the ends of the side pieces.

16. The combination in a composite car-truck-frame structure, of two flanged transom-beams with their webs in vertical planes and located between the pairs of wheels; means in connection with said transoms to support the end of a car-body; two flanged side pieces located outside the wheels and secured to the flanged transoms, the ends of said flanged side pieces being fashioned for the reception of pedestals upon their extreme ends; and cast-metal pedestals, each having vertical jaws open at the bottom, a head fashioned at its under surface to receive a removable cap, and a neck or extension on one side only, and said pedestals secured upon the extreme ends of the side pieces by rivets passed through the extensions of the pedestals and the ends of the said side pieces.

17. The combination in a composite car-truck-frame structure, of two flanged transom-beams with their webs in vertical planes and located between the pairs of wheels; means in connection with said transoms to support the end of a car-body; two flanged side pieces located outside the wheels and secured to the flanged transoms, the ends of said flanged side pieces being fashioned for the reception of pedestals upon their extreme ends; and cast-metal pedestals, each having vertical jaws open at the bottom and with bearing-flanges, a head fashioned at its under surface to receive a removable cap, and an extension on one side only, and said pedestals secured upon the extreme ends of the side pieces by rivets passed through the extensions of the pedestals and the webs of the side pieces.

18. The combination in a composite car-truck-frame structure, of two flanged transom-beams with their webs in vertical planes and located between the pairs of wheels; means in connection with said transoms to support the end of a car-body; two flanged side pieces located outside the wheels and secured to the flanged transoms, the ends of said flanged side pieces being fashioned for the reception of pedestals upon their extreme ends; and cast-metal pedestals, each having vertical jaws with bearing-flanges open at the bottom, a neck or extension on one side only and at right angles to the jaws, strengthening-flanges for the outer jaw and pedestal-head which latter is fashioned at its under surface to receive a removable cap, and said pedestals secured upon the extreme ends of the side pieces by rivets passed through the extensions of the pedestals and the webs of the side pieces.

19. The combination in a composite car-truck-frame structure, of two flanged transom-beams with their webs in vertical planes and located between the pairs of wheels; means in connection with said transoms to support the end of a car-body; two flanged side pieces located outside the wheels and secured to the flanged transoms, the ends of said flanged side pieces being fashioned for the reception of pedestals upon their extreme ends; and cast-metal pedestals, each having vertical jaws open at the bottom, a head fashioned at its under surface to receive a removable cap, and an extension on one side only, and said pedestals secured upon the extreme ends of the side pieces, so as to abut the entire vertical ends of the side pieces, by rivets passed through the extensions of the pedestals and the webs of the side pieces.

20. The combination in a composite car-truck-frame structure, of two flanged transom-beams with their webs in vertical planes and located between the pairs of wheels; means in connection with said transoms to support the end of a car-body; two flanged side pieces located outside the wheels and secured to the flanged transoms, the ends of said flanged side pieces being fashioned for the reception of pedestals upon their extreme ends; and cast-metal pedestals, each having vertical jaws with an opening between the same for a journal-box and spring, said opening being bounded by a ∏-shaped flange, strengthening-flanges for the outer jaw and head of the pedestal, and a neck or extension on one side only, and said pedestals secured upon the extreme ends of the side pieces by rivets passed through the extensions of the pedestals and the ends of the said side pieces.

21. The combination in a composite car-truck-frame structure, of flanged-beam transoms located between the pairs of wheels; means in connection with the transom-beams for supporting the end of a car-body; two channel side pieces located outside the wheels and secured to the flanged transoms, the ends of the said side pieces being cut off through the webs and flanges or fashioned square; and metallic pedestals, each having vertical jaws open at the bottom, a head fashioned at its under surface to receive a removable cap, and a neck or extension on one side only, and said pedestals secured upon the extreme ends of the side pieces by rivets passed through the extensions of the pedestals and the ends of the said side pieces.

22. The combination in a composite car-truck-frame structure, of flanged-beam transoms located between the pairs of wheels; means in connection with the transom-beams for supporting the end of a car-body; two channel side pieces located outside the wheels and secured to the flanged transoms, the ends of the said side pieces being cut off through the webs and flanges or fashioned square; and metallic pedestals, each having vertical jaws open at the bottom and with bearing-flanges, a head fashioned at its under surface to receive a removable cap, and an extension on one side only, and said pedestals secured upon the extreme ends of the side pieces by rivets passed through the extensions of the pedestals and the webs of the said side pieces.

23. The combination in a composite car-truck-frame structure, of flanged-beam transoms located between the pairs of wheels; means in connection with the transoms for supporting the end of a car-body; two channel side pieces located outside the wheels and secured to the flanged transoms, the ends of the said side pieces being cut off through the webs and flanges or fashioned square; and metallic pedestals, each having vertical jaws with bearing-flanges open at the bottom, a neck or extension on one side only and at right angles to the jaws, strengthening-flanges for the outer jaw and pedestal-head, which latter is fashioned at its under surface to receive a removable cap, and said pedestals secured upon the extreme ends of the side pieces by rivets passed through the extensions of the pedestals and the webs of the said side pieces.

24. The combination in a composite car-truck-frame structure, of flanged-beam transoms located between the pairs of wheels, means in connection with the transom-beams for supporting the end of a car-body; two channel side pieces located outside the wheels and secured to the flanged transoms, the ends of the said side pieces being cut off through the webs and flanged or fashioned square; and metallic pedestals, each having vertical jaws open at the bottom, a head fashioned at its under surface to receive a removable cap, and an extension on one side only, and said pedestals secured upon the extreme ends of the side pieces, so as to abut the entire vertical ends of the side pieces, by rivets passed through the extensions of the pedestals and the webs of the side pieces.

25. The combination in a composite car-truck-frame structure, of flanged-beam transoms located between the pairs of wheels; means in connection with the transom-beams for supporting the end of a car-body; two channel side pieces located outside the wheels and secured to the flanged transoms, the ends of the said side pieces being cut off through the webs and flanges or fashioned square; and metallic pedestals, each having vertical jaws with an opening between the same for a journal-box and spring, said opening being bounded by a ∏-shaped flange, strengthening-flanges for the outer jaw and head of the pedestal, and a neck or extension on one side only, and said pedestals secured upon the extreme ends of the side pieces by rivets passed through the extensions of the pedestals and the ends of the side pieces.

26. The combination in a composite car-truck-frame structure, of a transom or transoms located between the pairs of wheels and provided with means for supporting the end of a car-body; two wrought-metal flanged side pieces located outside the wheels and secured to the transom or transoms, the ends of said side pieces being plain and with the webs perforated; and cast-metal pedestals, each having vertical jaws open at the bottom, a head fashioned at its under surface to receive a removable cap, and a neck or extension on one side only, and said pedestals secured upon the extreme ends of the side pieces by rivets passed through the extensions of the pedestals and the ends of the side pieces.

27. The combination in a composite car-truck-frame structure of a transom or transoms located between the pairs of wheels and provided with means for supporting the end of a car-body; two wrought-metal flanged side pieces located outside the wheels and secured to the transom or transoms, the ends of said side pieces being plain and with the webs perforated; and cast-metal pedestals each having vertical jaws open at the bottom and with bearing-flanges, a head fashioned at its under surface to receive a removable cap, and an extension on one side only, and said pedestals secured upon the extreme ends of the side pieces by rivets passed through the extensions of the pedestals and the webs of the said side pieces.

28. The combination in a composite car-truck-frame structure, of a transom or transoms located between the pairs of wheels and provided with means for supporting the end of a car-body; two wrought-metal flanged side pieces located outside the wheels and secured to the transom or transoms, the ends of said side pieces being plain and with the webs perforated; and cast-metal pedestals, each having vertical jaws with bearing-flanges open at the bottom, a neck or extension on one side only and at right angles to the jaws, strengthening-flanges for the outer jaw and pedestal-head, which latter is fashioned at its under surface to receive a removable cap, and said pedestals secured upon the extreme ends of the side pieces by rivets passed through the extensions of the pedestals and the webs of the side pieces.

29. The combination in a composite car-truck-frame structure, of a transom or transoms located between the pairs of wheels and provided with means for supporting the end of a car-body; two wrought-metal flanged side pieces located outside the wheels and secured to the transom or transoms, the ends of said side pieces being plain and with the webs perforated; and cast-metal pedestals, each having vertical jaws open at the bottom, a head fashioned at its under surface to receive a removable cap, and an extension on one side only, and said pedestals secured upon the extreme ends of the side pieces, so as to abut the entire vertical ends of the side pieces, by rivets passed through the extensions of the pedestals and the webs of the side pieces.

30. The combination in a composite car-truck-frame structure of a transom or transoms located between the pairs of wheels and provided with means for supporting the end of a car-body; two wrought-metal flanged side pieces located outside the wheels and secured to the transom or transoms, the ends of said side pieces being plain and with the webs perforated; and cast-metal pedestals, each having vertical jaws with an opening between the same for a journal-box and spring said opening being bounded by a ∏-shaped flange, strengthening-flanges for the outer jaw and head of the pedestal, and a neck or extension on one side only, and said pedestals secured upon the extreme ends of the said side pieces by rivets passed through the extensions of the pedestals and the webs of the side pieces.

31. The combination in a composite car-truck-frame structure, of flanged-beam transoms with their webs in vertical planes located between the pairs of wheels; means in connection with the transoms for supporting the end of a car-body; two flanged side pieces located outside the wheels and secured to the flanged transoms, the ends of said side pieces being plain and the webs perforated; strengthening or gusset plates riveted to the flanges of the transoms and side pieces at the centers of the latter; and metallic pedestals, each having vertical jaws open at the bottom, a head fashioned at its under surface to receive a removable cap, and a neck or extension on one side only, and said pedestals secured upon the extreme ends of

the side pieces by rivets passed through the extensions of the pedestals and the ends of the side pieces.

32. The combination in a composite car-truck-frame structure, of flanged-beam transoms with their webs in vertical planes and located between the pairs of wheels; means in connection with the transoms for supporting the end of a car-body; two flanged side pieces located outside the wheels and secured to the flanged transoms, the ends of said side pieces being plain and fashioned square; strengthening or gusset plates riveted to the flanges of the transoms and side pieces at the centers of the latter; and metallic pedestals, each having vertical jaws open at the bottom and with bearing-flanges, a head fashioned at its under surface to receive a removable cap, and an extension on one side only, and said pedestals secured upon the extreme ends of the side pieces by rivets passed through the extensions on the pedestals and the ends of the side pieces.

33. The combination in a composite car-truck-frame structure, of flanged-beam transoms with their webs in vertical planes and located between the pairs of wheels; means in connection with the transoms for supporting the end of a car-body; two flanged side pieces located outside the wheels and secured to the flanged transoms, the ends of said side pieces being plain, cut off square and the webs perforated; strengthening or gusset plates riveted to the flanges of the transoms and side pieces at the centers of the latter; and metallic pedestals, each having vertical jaws with bearing-flanges open at the bottom, a neck or extension on one side only and at right angles to the jaws; strengthening-flanges for the outer jaw and pedestal-head which latter is fashioned at its under surface to receive a removable cap, and said pedestals secured upon the extreme ends of the side pieces by rivets passed through the extensions of the pedestals and the webs of the side pieces.

34. The combination in a composite car-truck-frame structure, of channel-beam transoms with their webs in vertical planes and located between the pairs of wheels, means in connection with the transoms for supporting the end of a car-body; two channel side pieces having their flanges turned outwardly and located outside the wheels and secured to the channel-transoms, the ends of said side pieces being plain, cut off square, and with their webs perforated; strengthening or gusset plates riveted to the flanges of the transoms and side pieces adjacent the centers of the latter; and metallic pedestals, each having vertical jaws open at the bottom, a head fashioned at its under surface to receive a removable cap, and an extension on one side only, and said pedestals secured upon the extreme ends of the channel side pieces, so as to abut the entire vertical ends of the side pieces, by rivets passed through the extensions of the pedestals and the webs of the channel side pieces.

35. The combination in a composite car-truck-frame structure, of channel-beam transoms with their webs in vertical planes and located between the pairs of wheels; means in connection with the transoms for supporting the end of a car-body; two channel side pieces located outside the wheels and secured to the channel-transoms, the ends of said side pieces being plain, cut off on straight lines, and with their webs perforated; strengthening or gusset plates riveted to the flanges of the transom and side pieces adjacent the center of the latter; and metallic pedestals, each having vertical jaws with an opening between the same for a journal-box and spring said opening being bounded by a ∏-shaped flange, strengthening-flanges for the outer jaw and head of the pedestal, and a neck or extension on one side only, and said pedestals secured upon the extreme ends of the side pieces by rivets passed through the extensions of the pedestals and the webs of the side pieces.

36. The combination in a truck and with the wheels, axles, journals and journal-boxes, of a composite frame comprising two flanged transom-beams with their webs in vertical planes and located between the pairs of wheels; means in connection with the transoms to support the end of a car-body; two flanged side pieces located outside the wheels and secured to the flanged transoms, the ends of the side pieces having plain webs and flanges; metallic pedestals, each having vertical jaws open at the bottom, a head fashioned at its under surface to receive a cap, and a neck or extension on one side only at right angles to the jaws, said pedestals being secured upon the extreme ends of the side pieces by rivets passed through the extensions of the pedestals and the ends of the side pieces; removable caps; helical springs located upon the tops of the journal-boxes and bearing at their upper ends against the caps; and means for uniting the ends of the pedestal-jaws.

37. The combination in a truck and with the wheels, axles, journals and journal-boxes, of a composite frame comprising two flanged transom-beams with their webs in vertical planes and located between the pairs of wheels; means in connection with the

transoms to support the end of a car-body; two flanged side pieces located outside the wheels and secured to the flanged transoms, the ends of the flanged side pieces having plain webs and flanges; metallic pedestals, each having vertical jaws open at the bottom and with bearing-flanges, a head fashioned at its under surface to receive a removable cap, and an extension on one side only, said pedestals being secured upon the extreme ends of the side pieces by rivets passed through the extensions of the pedestals and the webs of the side pieces; removable caps; helical springs located upon the tops of the journal-boxes and bearing at their upper ends against the caps; and means for uniting the ends of the said jaws.

38. The combination in a truck and with the wheels, axles, journals and journal-boxes, of a composite frame comprising two flanged transom-beams with their webs in vertical planes located between the pairs of wheels; means in connection with the transoms to support the end of a car-body; two flanged side pieces located outside the wheels and secured to the flanged transoms, the ends of the flanged side pieces having plain webs and flanges; metallic pedestals each having vertical jaws with bearing-flanges open at the bottom, a neck or extension on one side only, strengthening-flanges for the outer jaw and pedestal-head which latter is fashioned at its under surface to receive a removable cap, said pedestals being secured upon the extreme ends of the side pieces by rivets passed through the extensions of the pedestals and the webs of the side pieces; removable caps; helical springs located upon the tops of the journal-boxes and bearing at their upper ends against the caps; and means for uniting the ends of the pedestal-jaws.

39. The combination in a truck and with the wheels, axles, journals and journal-boxes, of a composite frame comprising two flanged transom-beams with their webs in vertical planes and located between the pairs of wheels; means in connection with the transoms to support the end of a car-body; two channel side pieces located outside the wheels and secured to the flanged transoms, the ends of the channel side pieces having plain webs and flanges and cut off on substantially straight lines; metallic pedestals, each having vertical jaws open at the bottom, a head fashioned at its under surface to receive a removable cap, and an extension on one side only, said pedestals being secured upon the extreme ends of the side pieces, so as to abut the entire vertical ends of the side pieces, by rivets passed through the extensions of the pedestals and the webs of the side pieces; removable caps; helical springs located upon the tops of the journal-boxes and bearing at their upper ends against the caps; and means for uniting the ends of the pedestal-jaws.

40. The combination in a truck and with the wheels, axles, journals and journal-boxes, of a composite frame comprising two flanged transom-beams with their webs in vertical planes and located between the pairs of wheels; means in connection with the transoms to support the end of a car-body; two flanged side pieces located outside the wheels and secured to the flanged transoms, the ends of the flanged side pieces having plain webs and flanges; metallic pedestals, each having vertical jaws with an opening between the same for a journal-box and spring, said opening being bounded by a ∏-shaped flange, strengthening-flanges for the outer jaw and head of the pedestal, and a neck or extension on one side only, said pedestals being secured upon the extreme ends of the side pieces by rivets passed through the extensions of the pedestals and the ends of the side pieces; removable caps; helical springs located upon the tops of the journal-boxes and bearing at their upper ends against the caps; and means for uniting the ends of the pedestal-jaws.

41. The combination in a car-truck and with the wheels, axles, journals and journal-boxes, of a composite frame comprising a transom or transoms located between the pairs of wheels; means in connection with the transom or transoms to support the end of a car-body; two flanged side pieces located outside the wheels and secured to the transom or transoms, the ends of the side pieces being cut off or fashioned plain; cast-metal pedestals, each having vertical jaws open at the bottom, a seat for a cap at the under surface of the head, and a neck or extension on one side only, said pedestals being secured on the extreme ends of the side pieces by rivets passed through the extensions of the pedestals and the ends of the side pieces; removable caps; helical springs resting upon the journal-boxes and bearing at their upper ends against the caps; and means for uniting the ends of the pedestal-jaws.

42. The combination in a car-truck and with the wheels, axles, journals and journal-boxes, of a composite frame comprising a transom or transoms located between the pairs of wheels; means in connection with the transom or transoms to support the end of a car-body; two flanged side pieces located outside the wheels and secured to the transom or transoms, the ends of the side pieces being cut off or fashioned plain; cast-metal pedestals each having vertical jaws open at the bottom and with bearing-flanges, a head fashioned at its under surface to receive a removable cap, and an extension on one side only, said pedestals being secured upon the extreme ends of the side pieces by rivets passed through the extensions of the pedestals and the webs of the side pieces; removable caps; helical springs resting upon the journal-boxes and bearing at their upper ends against the caps; and means for uniting the ends of the pedestal-jaws.

43. The combination in a car-truck and with the wheels, axles, journals and journal-boxes, of a composite frame comprising a transom or transoms located between the pairs of wheels; means in connection with the transom or transoms to support the end of a car-body; two flanged side pieces located outside the wheels and secured to the transom or transoms, the ends of the side pieces being cut off or fashioned plain; cast-metal pedestals, each having vertical jaws with bearing-flanges open at the bottom, a neck or extension on one side only and at right angles to the jaws, strengthening-flanges for the outer jaw and pedestal-head which latter is fashioned at its under surface to receive a removable cap, said pedestals being secured upon the extreme ends of the side pieces by rivets passed through the extensions of the pedestals and the webs of the side pieces; removable caps; helical springs resting upon the journal-boxes and bearing at their upper ends against the caps; and means for uniting the ends of the pedestal-jaws.

44. The combination in a car-truck and with the wheels, axles, journals and journal-boxes, of a composite frame comprising a transom or transoms located between the pairs of wheels; means in connection with the transom or transoms to support the end of a car-body; two flanged side pieces located outside the wheels and secured to the transom or transoms, the ends of the side pieces being cut off and fashioned square and plain; cast-metal pedestals each having vertical jaws open at the bottom, a head fashioned at its under surface to receive a removable cap, and an extension on one side only, said pedestals being secured upon the extreme ends of the side pieces, so as to abut the entire vertical ends of the side pieces, by rivets passed through the extensions of the pedestals and the webs of the side pieces; removable caps; helical springs resting upon the journal-boxes and bearing at their upper ends against the caps; and means for uniting the ends of the pedestal-jaws.

45. The combination in a car-truck and with the wheels, axles, journals and journal-boxes, of a composite frame comprising a transom or transoms located between the pairs of wheels; means in connection with the transom or transoms to support the end of a car-body; two flanged side pieces located outside the wheels and secured to the transom or transoms, the ends of the side pieces being cut off or fashioned plain; cast-metal pedestals, each having vertical jaws with an opening between the same for a journal-box and spring being bounded by a ∏-shaped flange, strengthening-flanges for the outer jaw and head of the pedestal, and a neck or extension on one side only, said pedestals being secured upon the extreme ends of the side pieces by rivets passed through the extensions of the pedestals and the ends of the side pieces; removable caps; helical springs resting upon the journal-boxes and bearing at their upper ends against the caps; and means for uniting the ends of the pedestal-jaws.

46. The combination with the vertical end of a car-truck side frame-piece having flanges and its web in a vertical plane, of a metallic pedestal provided with a head fashioned at its under surface to receive a cap, two jaws for engaging the sides of a journal-box said jaws being open at the bottom, and a neck or extension projecting horizontally from one of the jaws and attached to the web of the side piece by rivets, the other and outer jaw constituting the opposite side of the pedestal; a cap bearing against the under surface of the pedestal-head; and means for uniting the ends of the pedestal-jaws; the arrangement being such that the jaws will receive a journal-box and that a spring may be interposed between the box and the cap.

47. The combination with the vertical end of a car-truck side frame-piece having flanges and its web in a vertical plane, of a metallic pedestal provided with a head fashioned at its under surface to receive a cap, two jaws for engaging the sides of the journal-box, said jaws being open at the bottom, and a neck or extension projecting horizontally from one of the jaws and attached to the web of the side piece by rivets, the other and outer jaw constituting the opposite side of the pedestal; a cap bearing against the under surface of the pedestal-head; means for uniting the ends of the pedestal-jaws; a journal-box; and a spring located between the pairs of wheels; means in connection with the transom or transoms to support the end of a car-body; two flanged side pieces located outside the wheels and secured to the transom or transoms, the ends of the side pieces being cut off or fashioned plain; cast-metal pedestals, each having vertical jaws with bearing-flanges open at the bottom, a neck or extension on one side only and at right angles to the jaws, strengthening-flanges for the outer jaw and pedestal-head which latter is fashioned at its under surface to receive a removable cap, said pedestals being secured upon the extreme ends of the side pieces by rivets passed through the extensions of the pedestals and the webs of the side pieces; removable caps; helical springs resting upon the journal-boxes and bearing at their upper ends against the caps; and means for uniting the ends of the pedestal-jaws.

48. The combination with the vertical end of a car-truck side frame-piece having flanges and its web in a vertical plane, of a metallic pedestal provided with a head fashioned at its under surface to receive a cap, two jaws for engaging the sides of a journal-box, said jaws being open at the bottom, and a neck or extension projecting horizontally from one of the jaws and attached to the web of the side piece by rivets, the other and outer jaw constituting the opposite side of the pedestal; a cap bearing against the under surface of the pedestal-head; means for uniting the ends of the pedestal-jaws; a journal-box; and a spring between the box and cap; the said head and outer jaw of the pedestal being provided with strengthening-flanges.

49. The combination with the vertical end of a car-truck side frame-piece having flanges and its web in a vertical plane, of a metallic pedestal provided with a head fashioned at its under surface to receive a cap, two jaws for engaging the sides of a journal-box, said jaws being open at the bottom, and a neck or extension projecting horizontally from one of the jaws and attached to the web of the side piece by rivets, the other and outer jaw constituting the opposite side of the pedestal; a cap bearing against the under surface of the pedestal-head; means uniting the ends of the pedestal-jaws; a journal-box; and a spring interposed between the journal-box and cap; said pedestal-head having a vertical strengthening-flange which extends from the outer jaw over the top of the spring and cap to the neck or extension, whereby the head of the pedestal is strengthened.

50. The combination with the vertical end of a car-truck side frame-piece having flanges and the web in a vertical plane, of a cast-metal pedestal provided with a head having a bearing-flange 15 for a cap, two jaws each having a bearing-flange which unite at their upper portions with the flange 15 to form a ∏-shaped flange, said jaws being open at the bottom, a neck or extension projecting horizontally from one of the jaws and attached by rivets to the end of the frame side piece, the other and outer jaw constituting the opposite side of the pedestal, and strengthening-flanges for the outer jaw and top bearing-flange 15, said latter strengthening-flange extending from the upper end of the outer jaw over the pedestal-head to the neck; a removable cap engaging the flange 15; means for closing the ends of the pedestal-jaws; a journal-box; and a spring interposed between the journal-box and the cap.

51. The combination with a car-truck-frame side piece having flanges and a web in a vertical plane, of a metallic pedestal having one side riveted to the vertical end of said side piece and provided with a laterally-projecting flange surrounding the journal-box opening.

52. The combination with a car-truck-frame side piece having flanges and a web in a vertical plane, of a metallic pedestal having one side riveted to the vertical end of said side piece and provided with a laterally-projecting flange surrounding the journal-box opening and strengthening-flanges, as 17 and 18, at right angles to the laterally-projecting flange.

53. The combination with a car-truck-frame side channel-piece cut off or fashioned square at the end, of a metallic pedestal located upon the vertical end of the channel-piece and riveted to the web thereof, said pedestal having a laterally-projecting flange surrounding the journal-box opening.

54. The combination with a car-truck-frame side channel-piece cut off or fashioned square at the end, of a metallic pedestal located upon the vertical end of the channel-piece and riveted to the web thereof, said pedestal having a laterally-projecting flange surrounding the journal-box opening and strengthening-flanges at right angles to the laterally-projecting flange, said strengthening-flanges extending up the outer jaw and over the pedestal-head.

55. The combination with a car-truck-frame side channel-piece cut off or fashioned square at the end, of a metallic pedestal having a projection on one side only and said projection riveted to the web of the channel end, said pedestal being provided with a laterally-projecting flange surrounding the opening for the journal-box and spring, and a strengthening-flange upon the outer portion and top of the laterally-projecting flange.

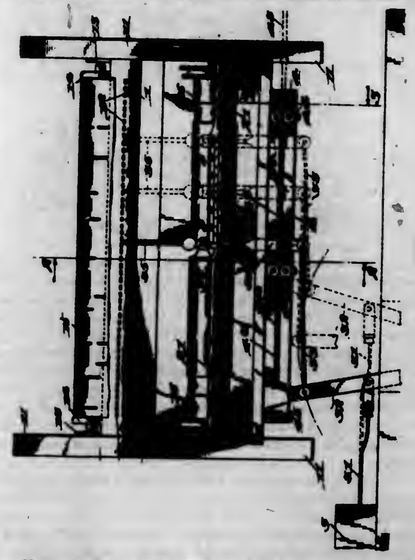
819,112. DISH-CLEANING APPARATUS. RICHARD WYLIE, Napa, Cal. Filed Sept. 5, 1905. Serial No. 277,041.

Claim.—A dish-cleansing apparatus comprising a rack, having parallel side rails which are perforated and slots formed in said rails, said rack being provided with a screen bottom, rods adapted to pass through registering apertures in said rails and designed to hold different-sized dishes, each of said rods having an angled end adapted to rest in one of said slots, as set forth.

819,112.



819,113. TEMPO-INDICATOR. FRANCIS L. YOUNG, New York, N. Y., assignor to The Aeolian Company, New York, N. Y., a Corporation of Connecticut. Filed Mar. 24, 1905. Serial No. 251,731.



Claim.—1. In a mechanical musical instrument, a tracker, means for moving a music-sheet over said tracker, a tempo-scale mounted in a plane in front of said tracker, and a bar guided to move laterally in front of said tracker and behind said scale and having a pointer in front of said tracker and a second pointer in front of said scale.

2. In a mechanical musical instrument, a tracker, music-sheet, means for moving the sheet over the tracker, and a manually-actuated tempo-modifying means, the improved tempo-indicator thereof having a sliding mounting combining a slide-bar, friction-reducing rollers therefor, a rearwardly-extending member and a slot or guide in which said member runs.

3. In a mechanical musical instrument, a tracker, music-sheet, means for moving the sheet over the tracker, and a manually-actuated tempo-modifying means, the improved tempo-indicator thereof having a scale, a pointer for said scale, a second pointer extending behind said scale and over said music-sheet, a rigid connection between the said two pointers, and sliding connections for guiding the said two pointers to slide in parallel paths respectively in front of and behind the said scale.

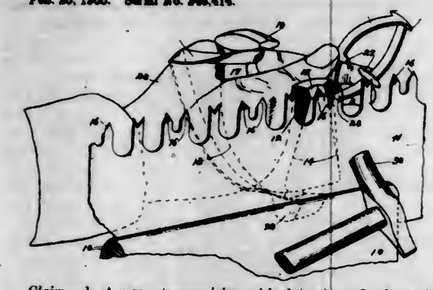
4. In a mechanical musical instrument, a tracker, music-sheet, means for moving the sheet over the tracker, and a manually-actuated tempo-modifying means, the improved tempo-indicator thereof having a scale, a combined handle and pointer coöperating with said scale, guides on which the said handle is mounted to slide in a rectilinear path, and a pointer extending over the music-roll and connected to move in a rectilinear path parallel with said handle.

5. In a mechanical musical instrument, a tracker, music-sheet, means for moving the sheet over the tracker, and a manually-actuated tempo-modifying means, the improved tempo-indicator thereof having a pointer extending over the music-sheet, a control-handle connected for moving the said indicator and the other parts of the

tempo-modifying means, and means for guiding the said handle and the said pointer to move in parallel rectilinear paths, the said handle and said pointer being connected to move equally in their respective paths.

6. In a mechanical musical instrument, a tracker, music-sheet, means for moving the sheet over the tracker, and a manually-actuated tempo-modifying means, the improved tempo-indicator thereof having two pointers, one extending over the music-sheet for coöperation with tempo-indicators thereon, a scale with which the other coöperates, guiding means for guiding the two pointers to move in parallel straight lines, and connections between them and the other parts of the tempo-modifying means.

819,114. SAW-SET. GUSTAV Y. ANDERSON, Seattle, Wash. Filed Feb. 20, 1905. Serial No. 246,414.



Claim.—1. A saw-set comprising a block having a flat face with a portion thereof beveled to form a die, an upwardly and rearwardly projecting neck on the upper portion of the block, a projection on the lower portion of the block, and retaining means adapted to be secured to the neck and said projection, substantially as described.

2. A saw-set comprising a block having a flat face with a part thereof beveled to form a die, an upwardly and rearwardly extending neck on the upper portion of the block having a recess in its front portion, a hooked projection on the lower portion of the block, and means adapted to be located at its ends in said recess and hook to retain the block on the hand of the operator, substantially as described.

3. A saw-set comprising a block having a flat face with the upper part thereof beveled to form a die, an upwardly and rearwardly extending neck having a head at its top, retaining means associated with said neck and extending over the back of the hand, said block having a suitable hole or recess in the lower portion thereof to receive one or more of the lower fingers of the hand of the operator, for steadying and holding the block in position, substantially as described.

819,115. SAVINGS-RECEPTACLE. HARRISON M. ANGLE, Newark, N. J. Filed Feb. 13, 1904. Serial No. 193,373.



Claim.—1. In a coin-chute for a savings-receptacle a pair of baffle-plates secured one above the other within said receptacle, with their adjacent edges overlapping and separated by a narrow space, and a pair of gravity-triggers pivotally secured in said narrow space, said triggers normally supported by the lower baffle-plate.

2. In a coin-chute for a savings-receptacle a pair of baffle-plates secured within and extending respectively from the opposite ends of said receptacle, the inner edges of said plates overlapping and separated by a narrow space, and a pair of gravity-triggers pivotally secured in said narrow space and normally supported by the lower baffle-plate.

3. In a coin-chute for a savings-receptacle a pair of parallel baffle-plates secured within said receptacle, the adjacent edges of said plates overlapping and separated by a narrow space, a gravity-trigger pivotally secured to the forward edge of the upper plate, the forward portion of said trigger being normally supported by the adjacent portion of the under plate.

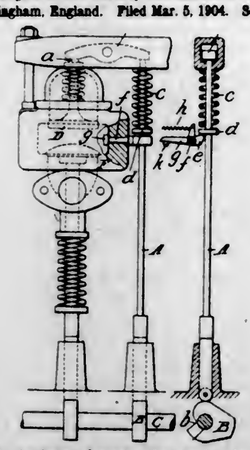
4. In a coin-chute for a savings-receptacle a baffle-plate secured within said receptacle near its top, and extending from one end of said receptacle to a point near the middle thereof, a second baffle-plate secured within said receptacle and extending from the opposite end thereof and underlapping said first-named plate, but leaving a narrow space between the lapping edges of said plates, and a pair of gravity-triggers pivotally secured in said narrow space and normally supported by said second plate.

5. A coin-chute for a savings-receptacle comprising an opening in said receptacle, an upper plate secured within said receptacle adjacent to and below said opening, a gravity-trigger pivotally secured within said receptacle above said opening, a lower plate secured within said receptacle in advance of and below said upper plate, whereby a narrow space is provided between said upper and lower plates, and a pair of gravity-triggers pivotally secured in said narrow space and normally supported by the said lower plate.

6. A coin-chute for a savings-receptacle comprising an opening in said receptacle, an upper plate secured within said receptacle adjacent to and below said opening, a gravity-trigger pivotally secured within said receptacle above said opening, a lower plate secured within said receptacle in advance of and below said upper plate, whereby a narrow space is provided between said upper and lower plates, a tubular opening for bills in said lower plate, and a pair of gravity-triggers pivotally secured in said narrow space.

7. In a coin-chute for a savings-receptacle a pair of baffle-plates secured within said receptacle, the adjacent edges of said plates overlapping and separated by a narrow space, a pair of gravity-triggers pivotally secured within the space between said plates, and a gravity-trigger pivotally secured to the forward edge of the upper plate, the forward portion of said trigger being normally supported by the adjacent portion of the under plate.

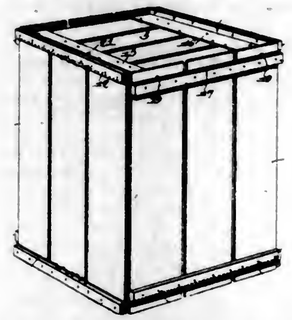
819,116. VALVE AND IGNITION MECHANISM FOR INTERNAL-COMBUSTION ENGINES. HERBERT AUSTIN, Birmingham, England, assignor to The Wolseley Tool and Motor Car Company Limited, Birmingham, England. Filed Mar. 5, 1904. Serial No. 196,721.



Claim.—1. An internal-combustion engine, having a valve to be opened, a rod, slidable in guides, for opening the said valve, the guides for the rod, a cam for operating said rod to open the valve, said cam having in its operative edge a special recess, a spring which holds said rod in operative relation with the cam, a laterally-projecting part on the said slidable rod, a fixed electric contact, a movable electric contact, a spring which holds said contacts normally in touch with each other, a movable contact-actuating arm in the path of said lateral projection on the rod and adapted to be actuated thereby when the spring on the rod moves the end of the latter into the recess in the cam to produce a spark between the contacts when said movable arm is actuated.

2. An internal-combustion engine, having a valve to be opened, a rod A for opening said valve, a cam B for operating said rod to open the valve, said cam having a recess b, a spring c which holds said rod pressed up to the cam, a projecting part d on said rod, a rocking spindle f, in the wall of the combustion-chamber, an arm e on said spindle in the path of the part d, a fixed contact k, a contact-arm g on the spindle f, and a spring h which keeps the contacts normally in touch substantially as and for the purpose set forth.

819,117. SHIPPING-CRATE. ELIAS M. AVERILL, Newaygo, Mich. Filed June 26, 1905. Serial No. 267,021.



Claim.—1. A crate embodying walls, cleats secured thereto, and assembling-bands engaging the walls and disposed on alternate sides and lengthwise of the cleats.

2. A crate embodying walls, cleats secured exteriorly thereof, and assembling-bands encircling the walls and disposed on alternate sides and lengthwise of the cleats.

3. A crate embodying walls, cleats secured exteriorly thereof, and assembling-bands carried by certain of the walls and disposed on alternate sides and lengthwise of the cleats.

4. A crate embodying walls, cleats secured exteriorly thereof, the cleats of two of the walls being disposed approximately flush with the terminals thereof and those of the other walls being inset from the terminals, and assembling-bands secured on the outer sides of the inset cleats and designed to engage the inner sides of the flush cleats.

5. A crate comprising walls, cleats secured exteriorly thereof, assembling-bands disposed on alternate sides of the cleats, battens secured to the inner sides of two of the walls, and heads having their terminals engaging the inner sides of the battens.

6. A crate comprising walls, cleats secured to two of the walls and located short of the terminals thereof, assembling-bands pivotally connected with the outer sides of the cleats, cleats secured to the other walls and having their inner sides engaged by the bands, and heads sprung within the body of the receptacle and held in place by frictional contact with the walls thereof.

7. A crate comprising walls, cleats secured exteriorly of the terminals thereof and disposed in break-joint order relatively to each other, and assembling-bands held in place by the cleats and extending lengthwise thereof.

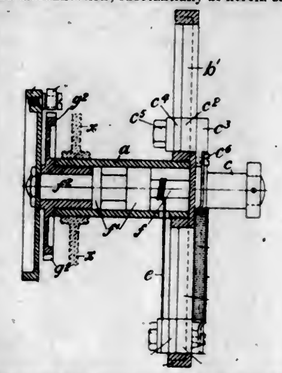
8. A crate comprising walls, exteriorly-disposed cleats combined therewith and arranged in break-joint order relatively to each other, and assembling-bands held in position by the cleats and pivotally connected with one of the walls.

9. A crate comprising walls, exteriorly-disposed cleats combined therewith and arranged in break-joint order relatively to each other, and pivoted assembling-bands disposed on alternate sides of the cleats for holding the walls assembled.

819,118. VARIABLE-SPEED GEAR. WILLIAM BAINES, Crosby, England. Filed May 31, 1904. Renewed Mar. 26, 1906. Serial No. 308,034.

Claim.—1. In a motor-vehicle rotary variable speed or power gear, a part for transmitting the motion, movable away from, and toward the axis; a carrier for said part; a flexible band connected with said part, and passed to the center of the gear, and adapted to be operated therefrom; a hollow shaft carrying said carrier; and manually-controlled means connected with said hollow shaft for moving said flexible connection; substantially as set forth.

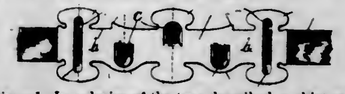
2. In a motor-vehicle rotary variable speed or power gear, the part *c* for transmitting the motion, movable away from and toward the axis; the carrier *b* for the part *c*; the hollow shaft *a* carrying said carrier *b*; the flexible band *e* connected with the part *c*; the rod *f* within the hollow shaft *a*; and engaging and disengaging parts on said hollow shaft *a* and said internal rod *f*, for moving same in relation to each other and manually-controlled means for effecting such connection and disconnection; substantially as herein set forth.



3. In a motor-vehicle rotary variable speed or power gear, the pin *c* for transmitting motion, movable away from and toward the axis; a hollow shaft *a*; a carrier *b* for carrying the pin *c* and adapted to permit of the pin *c* being slid radially therein; a flexible connection *e* connected with said pin and with the hollow shaft adapted to move in one direction; an internal rod *f*; springs *d* connected with the pin *c* and carriers *b* for moving the pin in the opposite direction; and manually-controlled trip mechanism connected with the shaft *a* and rod *f* adapted to move same in relation to each other; substantially as set forth.

4. In a variable-speed device, a tubular counter-shaft, a disk carried thereby, a crank-pin slidably carried by said disk, spring means for normally holding the pin in the center of the disk, a spindle rotatable within the counter-shaft, a flexible band having its ends connected respectively with the spindle and counter-shaft, a disk carried by the spindle outside the counter-shaft, a pawl on said disk, a ratchet-wheel connected with the counter-shaft, and manually-controlled means for operating the pawl and braking the disk, substantially as described.

819,119. SKIRT-SUPPORTER. ALEXANDER W. BUCY, Detroit, Mich. Filed Oct. 8, 1904. Serial No. 227,632.



Claim.—1. In a device of the type described, a skirt and waist supporter embodying an integral metal band having oppositely-disposed undercut projections disposed on each edge and arranged along the entire length thereof, and integral hooks in the body of the metallic band, alternate hooks projecting in opposite directions.

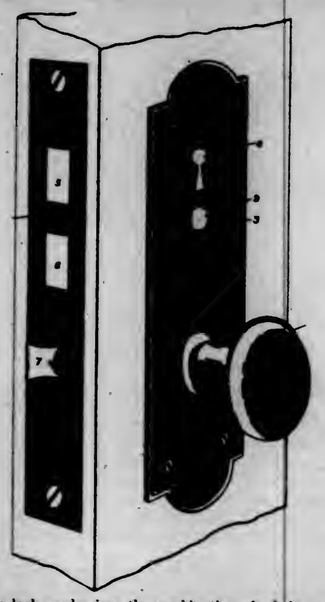
2. In a device of the type described, a skirt and waist supporter embodying an integral piece of metal having oppositely-disposed undercut projections on each edge and arranged along the entire length thereof, integral hooks in the body of the metallic band, said band having on one edge offsets *c*, *c* to limit the movement of hooks engaging said band.

3. A skirt and waist supporter composed of a metallic band having undercut projections on both edges, and integral hooks struck up from the band between the edges, alternate hooks projecting in opposite directions, said band being formed intermediate the projections on one edge with offsets, and being formed adjacent its ends with loops to receive a tape.

819,120. LOCK AND LATCH. CHARLES J. CALEY, New Britain, Conn., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn., a Corporation of Connecticut. Filed May 27, 1904. Serial No. 210,037.

Claim.—1. In a lock mechanism, the combination of a lock-casing, a rotatable member having a limited movement and adapted to be operated by a key and an indicating-dial outside of said casing removably connected to said member for the purpose specified.

2. In a lock mechanism, the combination of a lock-casing, an escutcheon-plate, an indicating-dial mounted behind said escutcheon-plate, a tubular member extending from said dial into said casing and a spring for holding said parts in their proper relative positions.



3. In a lock mechanism, the combination of a bolt, means for operating the same from the inside of the lock only, an indicating-dial arranged to be visible from the opposite side of the lock, key-controlled means for operating said indicating-dial and means for preventing the withdrawal of said key until said dial is returned to its normal position.

4. In a lock mechanism, the combination of a casing having a keyhole-opening in one side, a hub rotatably mounted in the other side of the casing, a body carried by said hub inside the casing and having a recess to receive a portion of a key, a stop to limit the rotation of said body, an indicating-dial, and telescopic means of connection between said dial and said hub.

5. In a lock mechanism, the combination of a casing having a keyhole-opening in one side, a hub rotatably mounted in the other side of the casing, a body carried by said hub inside the casing and having a recess to receive a portion of a key, an indicating-dial, and telescopic means of connection between said dial and said hub.

819,121. HOLDING AND GRIPPING PLIERS. JOHN CARTER, Malden, Mass., assignor to Globe Optical Company, Boston, Mass., a Corporation of Massachusetts. Filed Jan. 13, 1906. Serial No. 296,597.

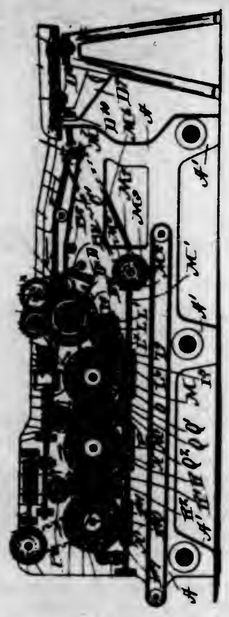


Claim.—1. Holding and gripping pliers for opticians' use comprising a pair of coöperating longitudinally-slotted jaws; the outer upper face of one of said jaws being formed directly in rear of its nose end with a depression to permit the free movement of the frame under operation and the inner face of the other of said jaws being formed with a transverse groove adapted to receive the curved lens-holding part of a strap.

2. Holding and gripping pliers for opticians' use comprising a pair of coöperating longitudinally-slotted jaws; the inner face of one jaw being formed with a groove adapted to receive the curved lens-holding part of a strap and the opposed inner face of the other jaw being recessed to fit over said lens-holding part.

3. Holding and gripping pliers for opticians' use comprising a pair of coöperating jaws; one of said jaws being formed with an aperture and with a transverse groove on its inner face and extending from the side walls of said aperture to the outer edges of said face, said transverse groove deepening from said side walls to the outer edges of said face, whereby said pliers are adapted to hold without deformation the curved lens-holding part of a strap.

819,122. CORN-HUSKER. HERBERT C. CHAPMAN, Leamington, Canada. Filed Sept. 8, 1905. Serial No. 277,619.



Claim.—1. A corn-husker and silk-remover comprising a frame, endless conveyers, means for allowing the inner portions of the latter to yield, means for feeding the butt-ends of ears foremost upon said conveyers, feeding-disks, circular knives for cutting the husks longitudinally as they are fed between said disks, and means for cutting off the butt-end of the ear as it is held by said feeding-disks, as set forth.

2. A corn-husker and silk-remover comprising a frame, endless conveyers, means for allowing the inner portions of the latter to yield, means for feeding the butt-ends of ears foremost upon said conveyers, feeding-disks, circular knives for cutting the husks longitudinally as they are fed between said disks, means for cutting off the butt-end of the ear as it is held by said feeding-disks, mechanism for reversing the ear after the butt-end has been severed and feeding the same forward through the apparatus, and mechanism for removing the loosened husks and silk, as set forth.

3. A corn-husker and silk-remover comprising a frame, endless conveyers, means for allowing the inner portions of the latter to yield, means for feeding the butt-ends of ears foremost upon said conveyers, feeding-disks, circular knives for cutting the husks longitudinally as they are fed between said disks, a rotatable shell, spring-actuated pivoted knives carried thereby, longitudinally-movable fingers for tilting said knives as they rotate, said fingers being actuated by an ear as it is fed forward by said disks, and mechanism for removing the husks and silk from the ear after the butt-end has been cut therefrom, as set forth.

4. A corn-husker and silk-remover comprising a frame, endless conveyers, means for allowing the inner portions of the latter to yield, means for feeding the butt-ends of ears foremost upon said conveyers, feeding-disks, circular knives for cutting the husks longitudinally as they are fed between said disks, a rotatable shell, spring-actuated pivotal knives carried thereby, a spring-actuated ring supported by said shell, fingers secured to said ring and adapted to actuate said knives as an ear comes in contact with the ring, and mechanism for removing the husks and silk after the butt-end has been cut from an ear of corn, as set forth.

5. A corn-husker and silk-remover comprising a frame, endless conveyers, means for allowing the inner portions of the latter to yield, means for feeding the butt-ends of ears foremost upon said conveyers, feeding-disks, circular knives for cutting the husks longitudinally as they are fed between said disks, a rotatable shell, spring-actuated pivoted knives carried thereby, a spring-actuated ring supported by said shell, fingers secured to said ring and having inclined edges which are adapted to contact with the outer edges of said fingers, whereby the end of an ear may be cut, and mechanism for removing the husks and silk from the ears, as set forth.

6. A corn-husker and silk-remover comprising a frame, endless conveyers, means for allowing the inner portions of the latter to yield, means for feeding the butt-ends of ears foremost upon said conveyers, feeding-disks, circular knives for cutting the husks longitudinally as they are fed between said disks, a rotatable shell, spring-actuated pivoted knives carried thereby, a spring-actuated ring supported by said shell, said shell having slots formed therein, fingers upon said ring adapted to move through said slots and contact with said knives for throwing the same toward each other as an ear of corn is fed into the ring, and mechanism for removing the husks and silk from the ears, as set forth.

7. A corn-husker and silk-remover comprising a frame, endless conveyers, means for allowing the inner portions of the latter to yield, means for feeding the butt-ends of ears foremost upon said conveyers, feeding-disks, circular knives for cutting the husks longitudinally as they are fed between said disks, feeding-disks arranged in pairs, rubber-covered wheels intermediate said disks, rotatable concaved brushes, and pivotal bearings in which the shafts of said brushes are mounted and between which brushes the ears of corn are fed by said disks, as set forth.

8. A corn-husker and silk-remover comprising a frame, endless conveyers, means for allowing the inner portions of the latter to yield, means for feeding the butt-ends of ears foremost upon said conveyers, feeding-disks, circular knives for cutting the husks longitudinally as they are fed between said disks, feeding-disks arranged in pairs, rubber-covered wheels intermediate said disks, rotatable concaved brushes, and pivoted bearings in which the shafts of said brushes are mounted and between which brushes the ears of corn are fed by said disks, drag-brushes, and flexible arms upon which the same are mounted and under which the ears are adapted to be fed by said disks, as set forth.

9. A corn-husker and silk-remover comprising a frame, endless conveyers, means for allowing the inner portions of the latter to yield, means for feeding the butt-ends of ears foremost upon said conveyers, feeding-disks, circular knives positioned intermediate said disks, means for cutting the butt-ends of the ears as they are fed by said disks and the husks slitted longitudinally by said knives, and means for removing the husks and silk after the butts of the ears have been cut off, as set forth.

10. A corn-husker and silk-remover comprising a frame, a shaker set at an inclination and adapted to feed ears butt foremost into the apparatus, an endless conveyer upon which the ears are fed, disks for feeding said ears forward from the conveyers, circular knives intermediate said disks, means for cutting the butt-ends of the ears while the latter are held by said feeding-disks, and mechanism for removing the husks and silk after the butts have been cut off, as set forth.

819,123. PENCIL-SHARPENER. JOHN A. CLOUGH, Spring Valley, Wis. Filed July 18, 1904. Serial No. 216,960.



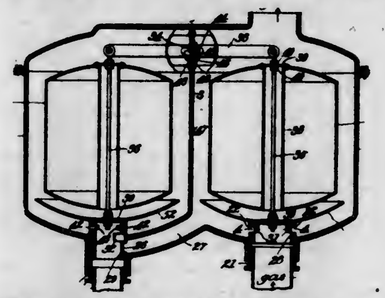
Claim.—1. A pencil-sharpener of the class described consisting of an outer cylinder, an inner cylinder formed with helical slots, a helical spring arranged between said cylinders, a pencil-holder arranged within the inner cylinder and provided with ears extending through said slots in position to be supported upon said spring.

2. A pencil-sharpener of the class described, consisting of an open-end cylinder provided with helical slots, a helical spring arranged around said cylinder, a pencil-holder consisting of an inverted cone resting upon said spring and carrying ears extending through said slots, and a knife carried by said cone.

3. A pencil-sharpener of the class described, consisting of a cylinder provided with a helical track, a helical spring arranged around said cylinder, a washer resting upon the spring, an inner open-end tube and an inclosed open-end inverted cone resting upon said washer and coöperating with said track, and a knife carried by said cone.

4. A pencil-sharpener of the class described, consisting of an outer cylinder, a helical track arranged within said cylinder, a stand removably supporting said cylinder, a helical spring arranged within said cylinder, a pencil-holder consisting of an inner tube and an inclosed inverted open-end cone resting upon said spring, said holder coöperating with said track, a knife carried by said cone, and a cap closing the top of said outer cylinder and provided with an opening registering with said cone.

819,124. AIR AND GAS MIXING APPARATUS. MONROE D. COLBATH, Hampden, Me. Filed June 10, 1905. Serial No. 264,723.



Claim.—1. An air and gas stationary mixing apparatus comprising a mixing-chamber, air and gas conduits communicating therewith, an air-valve and a gas-valve controlling the passage of air and gas through said conduits, and automatic means inclosed within said mixing-chamber controlled by the density of the gas for simultaneously adjusting said valves to increase the flow through either valve and correspondingly decrease the flow through the other valve.

2. An air and gas stationary mixing apparatus comprising a mixing-chamber, air and gas conduits communicating therewith, a gas-valve adapted to permit a constant but variable passage of gas to the chamber, an air-valve adapted to permit a variable flow of air to the chamber and to entirely shut off the air-supply, and automatic means inclosed within said mixing-chamber controlled by the density of the gas for simultaneously adjusting said valves to increase the flow through either valve and correspondingly decrease the flow through the other valve.

3. An air and gas stationary mixing apparatus comprising a mixing-chamber, air and gas conduits communicating therewith, valves controlling the passage of air and gas through said conduits, connections between said valves whereby movement imparted to the gas-valve is caused to impart an opposite movement to the air-valve, and means inclosed within said mixing-chamber controlled by the density of the gas for simultaneously adjusting the valves.

4. An air and gas stationary mixing apparatus comprising a mixing-chamber, air and gas conduits communicating therewith, valves controlling the passage of air and gas through said conduits, an oscillatory lever connected at its end portions with the valves and fulcrumed between its ends, whereby the valves are caused to move simultaneously in opposite directions, and means inclosed within said mixing-chamber controlled by the density of the gas for determining the position of the lever and valves.

5. An air and gas mixing apparatus comprising a mixing-chamber, air and gas conduits communicating therewith, valves controlling the passage of air and gas through said conduits, an oscillatory lever connected at its end portions with the valves, an adjustable fulcrum for said lever whereby the length of its arms may be varied to vary the initial positions of the valves, and means inclosed within said mixing-chamber controlled by the density of the gas for determining the position of the lever and valves.

6. An air and gas mixing apparatus comprising a mixing-chamber, air and gas conduits communicating therewith, valves controlling the passage of air and gas through said conduits, an oscillatory lever connected at its end portions with the valves, a fulcrum for said lever, a movable bearing for said fulcrum, means for adjusting said bearing, and means inclosed within said mixing-chamber controlled by the density of the gas for determining the position of the lever and valves.

7. An air and gas mixing apparatus comprising a mixing-cham-

ber, air and gas conduits communicating therewith, valves controlling the passage of air and gas through said conduits, an oscillatory lever connected at its end portions with the valves, a fulcrum for said lever, a movable bearing for said fulcrum, said bearing having a rack, and an operating-shaft journaled in fixed bearings and having a gear meshing with said rack.

8. An air and gas stationary mixing apparatus comprising a mixing-chamber, air and gas conduits communicating therewith, valves for said conduits, an oscillatory lever connected at its end portions with the valves and fulcrumed between its ends, hermetically-sealed air-chambers supported by the end portions of the lever, one of said chambers being located in the mixing-chamber, and the other outside the mixing-chamber.

9. An air and gas stationary mixing apparatus comprising a mixing-chamber, air and gas conduits communicating therewith, valves, for said conduits, an oscillatory lever connected at its end portions with the valves and fulcrumed between its ends, hermetically-sealed air-chambers supported by the end portions of the lever, one of said chambers being located in the mixing-chamber, and a compartment adjacent to the mixing-chamber containing the other air-chamber.

10. The combination of a carbureter, an air-forcing apparatus connected with the carbureter, a stationary mixing-chamber, gas and air conduits connecting the said chamber with the carbureter and air-forcing apparatus respectively, valves controlling said conduits, and automatic means inclosed within said mixing-chamber controlled by the density of the gas for simultaneously adjusting said valves to increase the flow through either valve and simultaneously decrease the flow through the other valve.

819,125. METHOD OF APPLYING ANTIFOULING COATING TO SHIPS' BOTTOMS. GEORGE D. COLEMAN, Boston, Mass. Filed June 29, 1901. Serial No. 66,600.

Claim.—1. The method of applying antifouling coating to ships' bottoms and structures submerged in or exposed to the action of water and particularly sea-water, which consists, first, in applying to the surface to be coated a layer of paint, second, in projecting into the moist layer of paint particles of metallic copper which adhere to said first layer of paint and form a body of copper, third, in rubbing, or hammering or burnishing the said layer of copper to embed it in the layer of paint, fourth, in applying to the body layer of copper a layer of paint, fifth, in applying to the moist layer of paint last before mentioned a layer of still more finely divided copper, sixth, in allowing the last-named layer of paint with its adhering layer of surface copper to dry until it becomes tacky, seventh, in rubbing or hammering or burnishing the surface layer of copper so as to embed it in the second layer of paint and into the interstices between the particles of the body-copper, eighth, in applying a third layer of paint thinner relatively than the preceding layer, ninth, in allowing the last-named layer of paint to dry, and tenth, in polishing the surface, substantially as described.

2. The method of applying antifouling coating to ships' bottoms and structures submerged in or exposed to the action of water and particularly sea-water, which consists, first, in applying to the surface to be coated a layer of paint, second, in projecting into the moist layer of paint particles of metallic copper which adhere to said first layer of paint and form a body of copper, third, in rubbing, or hammering or burnishing the said layer of copper to embed it in the layer of paint, fourth, in applying to the body layer of copper a layer of paint, fifth, in applying to the moist layer of paint last mentioned a layer of still more finely divided copper, sixth, in allowing the last-named layer of paint with its adhering layer of surface copper to dry until it becomes tacky, seventh, in rubbing, or hammering or burnishing the surface layer of copper so as to embed it in the second layer of paint and into the interstices between the particles of the body-copper, and eighth, in polishing the surface, substantially as described.

819,126. FLOOR AND CABINET SCRAPER. SAMUEL H. COLLINS, Valparaiso, Ind. Filed May 13, 1905. Serial No. 260,257.



Claim.—1. The combination with a suitable handle, of a flat spring-metal scraper-blade and a holder for the blade, such holder having a releasable clamping-frame and an adjustable bar 21 on one side of the blade, and an opposing support 22 on the other side of the blade.

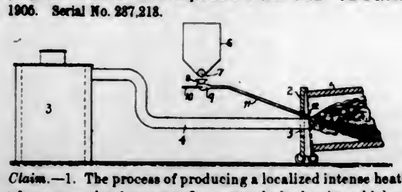
2. The combination with a suitable handle having wings 16, of a flat spring-metal scraper-blade and a holder for the blade, such holder embodying a clamping device pivoted to the wings and adapted to clamp the blade, a support under the blade between its point and the clamping device, and an adjustable device holding down the acting edge of the blade and preventing chattering.

3. The combination with a suitable handle, of a flat spring-metal scraper-blade and a holder for the blade, such holder embodying the pivoted clamping device adapted to bend the upper portion of the blade, a support under the blade below said clamping device, and an adjustable bar below said support and upon the opposite side of the blade therefrom.

4. The combination with a suitable handle, of a flat spring-metal scraper-blade and a holder for the blade, such holder having two stationary supports on its under side, and an adjustable support and a clamping-frame on its upper side, the latter depressing the blade between said stationary supports.

5. The combination with a suitable handle, of a flat spring-metal scraper-blade and a holder for the blade, such holder having two separated points supporting the blade upon one side, a downwardly-acting movable pressure-creating device acting upon the other side of the blade between said points, and a stationary support on the same side of the blade with the pressure device and acting on the point of the blade.

819,127. PROCESS OF CONDUCTING COMBUSTION. HENRY L. DOHERTY, New York, N. Y., assignor to Combustion Utilities Company, New York, N. Y., a Corporation of New York. Filed Nov. 14, 1905. Serial No. 287,218.



Claim.—1. The process of producing a localized intense heating effect from a non-luminous gas-flame at a desired point which consists in blowing into said flame at said point a stream of fuel capable of burning with production of radiant heat.

2. The process of operating a cement-kiln which consists in producing in the same a flame of producer-gas and in injecting into said flame in proximity to the clinkering zone of the kiln, a stream of fuel capable of burning with production of radiant heat.

3. The process of operating a cement-kiln which consists in producing in the same a gas-flame and in locally intensifying the heat-radiating effect of such flame at a desired point by injecting thereinto at said point a stream of powdered coal.

4. The process of operating a cement-kiln which consists in producing in the same a gas-flame and in locally intensifying the heat-radiating effect of such flame at a desired point by injecting powdered coal carried in suspension in an air-current thereinto at said point.

5. The process of conducting combustion in cement-kilns which consists in introducing into the kiln a stream of producer-gas; in injecting across the path of travel of said stream of producer-gas a stream of powdered coal; and in subjecting the combustible mixture so produced to an igniting temperature in the presence of air.

6. The process of operating a rotary cement-kiln which consists in producing therein a flame of producer-gas opposite in direction to the flow of cement material through such kiln and in injecting powdered coal into said flame at a point in proximity to the clinkering zone of the kiln.

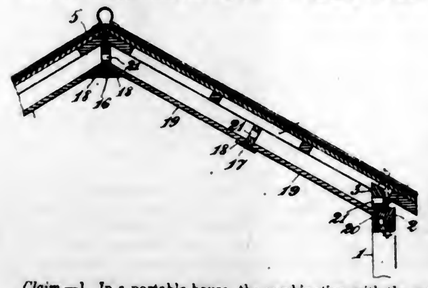
7. The process of operating a rotary cement-kiln which consists in producing therein a flame of producer-gas opposite in direction to the flow of cement material through such kiln and in injecting commingled air and powdered coal into said flame at a point in proximity to the clinkering zone of the kiln.

819,128. VEHICLE-AXLE. CHARLES H. DRIVER, Tarpon Springs, Fla., assignor of one-sixth to William W. K. Decker, one-sixth to John K. Chaney, and one-sixth to Hayes Bigelow, all of Tarpon Springs, Fla. Filed Dec. 1, 1904. Serial No. 235,074.

Claim.—The combination with an axle-box interiorly tapered at the outer end and provided at the inner end with a plurality of interiorly-arranged shoulders of increasing diameter, and an axle having a polygonal body portion and a round spindle, the latter being provided at its outer end with a plurality of longitudinal grooves, of an inner removable and reversible collar located within the inner end of the axle-box and provided with a plurality of exterior shoulders increasing in diameter from the outer to the inner end of the collar, said collar being also provided with interiorly-arranged polygonal and cylindrical portions conforming to the configuration of the spindle and the body portion of the axle, an outer reversible conical collar fitted within the outer end of the axle-box and provided with an interior rib slidably engaging one of the said grooves, and an axle-nut arranged on the spindle and engaging the outer collar and retaining the same and the inner collar in their interlocked relation with the axle and in their engagement with the axle-box and being spaced from the latter.



819,129. PORTABLE HOUSE. WILLIAM M. DUCKER, New York, N. Y. Original application filed Dec. 27, 1904, Serial No. 238,532. Divided and this application filed July 27, 1905. Serial No. 271,456.



Claim.—1. In a portable house, the combination with the siding-sections 1, and the plates 2 and 3, supported on the siding-section, the latter having in it apertures 21, of the roof-sections, notched onto the plate 3, T-bolts for securing the roof-sections in place, a ceiling 19 below the inner face of the roof-sections and plates 16 and 17, having in them also apertures 21, said plates being provided with cleats to support said ceiling.

2. In a portable house, the combination with the siding-section 1, and the plates 2 and 3, supported on the siding-section, of the roof-sections 4, notched at 6 to engage the plate 3, and the T-headed bolt 7, which has spurs on its head entering the wood of adjacent roof-sections, and which extends down through the plate 2 and the upper transverse member of the siding-section, substantially as set forth.

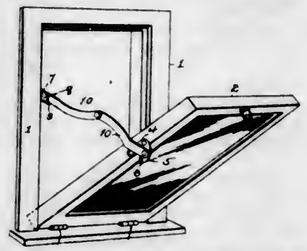
3. In a portable house, the combination with the wall-plates and roof-sections, and the longitudinal plates 16 and 17, provided with supporting-cleats, of the ceiling-boards 19 supported on said cleats and providing an air-space between said ceiling and roof-sections, and means for providing a circulation of air through said space.

819,130. CORK-EXTRACTOR. HERBERT H. DUNN, Dayton, Ohio. Filed July 22, 1905. Serial No. 270,770.



Claim.—As a new article of manufacture, a cork-extractor having a core or inner member consisting of twine or cord of suitable strength, and an outer member consisting of a casing of packing material, a portion of which is impervious to moisture, and whereby the twine or cord is protected from the contents of the bottle, substantially as set forth.

819,131. COMBINATION LOCK AND SUPPORT. CHARLES J. ERICSON, Salt Lake City, Utah. Filed June 27, 1905. Serial No. 267,197.



Claim.—1. The combination with a frame and a member hinged thereto, of brackets secured respectively to the frame and hinged member so as to be disposed side by side when the hinged member is closed, bars pivotally connected together at one end and pivoted at their other ends respectively to the respective brackets, said brackets provided with ledges which when the hinged member is closed, lie substantially parallel with each other to receive the bars when folded and support them with the several pivotal connections approximately in alinement to lock the hinged member closed.

2. The combination with a frame and a hinged member, of pivotally-connected bars for supporting the hinged member when open and locking it when open or when closed, a bracket secured to the frame and pivoted to one of said pivoted bars, a bracket secured to the hinged member and pivotally connected to the other pivoted bar, said brackets disposed to lie side by side when the hinged member is closed, and each bracket provided with a ledge for supporting the bars approximately perpendicular to the frame and hinged member when the latter is closed pivoted thereto.

3. The combination with a frame and a hinged member, of two curved supporting-bars pivotally connected together, a bracket secured to the frame and to which one of said curved bars is pivoted, a bracket secured to the hinged member and to which the other curved bar is pivoted, said brackets provided with ledges for supporting the bars, said ledges cooperating to support said curved bars parallel with each other and approximately horizontal when the hinged member is closed.

4. The combination with a frame and a hinged member, of locking and supporting bars pivotally connected together at one end, and one bar pivotally connected to the frame and the other to the hinged member, plates secured to the frame and hinged member, outwardly-projecting arms on said plates provided with ledges disposed to support the bars parallel with each other and their pivotal connections approximately in line with each other when the hinged member is closed.

819,132. GAME APPARATUS. EDWARD L. EVERS, Malvern, South Australia, Australia. Filed Dec. 1, 1904. Serial No. 235,103.



Claim.—In apparatus for a new game of skill a roller shaped in the form of a conic frustum and having a flexible rim or tire about its circumference, said roller being formed with a weighted center.

819,133. BUGGY. HORACE M. FOULK, Oshkosh, Wis. Filed May 25, 1905. Serial No. 262,262.

Claim.—1. In a buggy of the class described, a rear-axle bed or cap interposed or spliced between the prongs of the reach, substantially as shown.

2. In a buggy of the class described, a rear-axle bed interposed between the prongs of the reach and means for attaching the same to the prongs, substantially as shown.

3. In a buggy of the class described, the combination with prongs of the reach, of an axle-bed engaging said prongs, and substantially T-shaped bolts connecting said prongs and axle-bed.

4. In a buggy of the class described, the combination with the

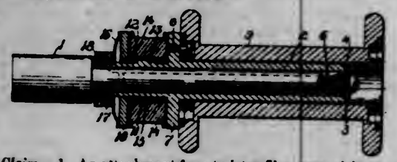
prongs of the reach, of an axle-bed engaging said prongs, and fastening means extending through said prongs and axle-bed.



5. In a buggy of the class described, the combination with the prongs of the reach, an axle-bed interposed between said prongs, and removable fastening means for attaching said axle-bed to said prongs.

6. In a buggy of the class described, the combination with the prongs of the reach, of an axle-bed engaging said prongs, and fastening means for attaching said axle-bed and prongs.

819,184. **BOBBIN-SHAFT ATTACHMENT FOR TWISTER-FLIERS.** PETER HARDMAN, Willimantic, Conn., assignor to The American Thread Company, Jersey City, N. J., a Corporation of New Jersey. Filed Sept. 8, 1905. Serial No. 277,863.



Claim.—1. An attachment for a twister-flier, comprising a spindle, a sleeve adapted to carry a bobbin and rotate therewith on said spindle, two flanges rotatable with said sleeve, one of said flanges being longitudinally movable, a rotatable pulley between said flanges, and an adjustable spring for varying the frictional engagement of the pulley with said flanges.

2. An attachment for a flier-twister, comprising a sleeve adapted to carry a bobbin and rotate therewith, said sleeve having a flange integral therewith, a second flange having a collar longitudinally movable but keyed to rotate with said sleeve, a pulley mounted between said flanges, and a spring pressing against said movable flange.

3. An attachment for a flier-twister, comprising a hollow rotatable sleeve having a flange projecting therefrom, a pulley mounted to rotate relative to said flange, and adjustable spring-pressed means for varying the frictional engagement between said pulley and said flange.

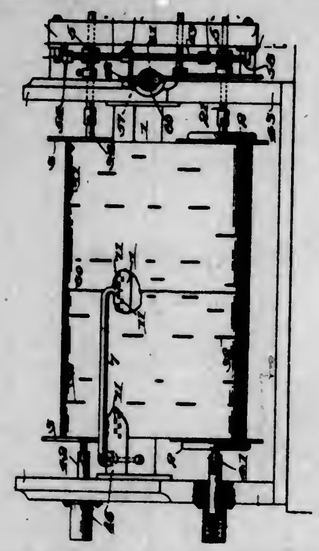
819,185. **MUSIC-SHEET INDICATOR.** JOHN W. HEINS, Cranford, N. J., assignor to The Aeolian Company, New York, N. Y., a Corporation of Connecticut. Filed June 24, 1905. Serial No. 266,733.

Claim.—1. In a mechanical musical instrument, in combination, a tracker, a music-sheet, means for supporting and moving the sheet over said tracker, means for giving relative adjustment between the music-sheet and said tracker laterally of the path of movement of the music-sheet, and an indicator having a fixed operative position relatively to the tracker-board, said sheet having a line which registers with the said indicator when the sheet is in accurate alinement on the tracker, substantially as set forth.

2. In combination, a tracker and an indicator in fixed relation thereto when in operation, a music-sheet having a line which registers with the indicator when the sheet is in accurate alinement on the tracker, means for supporting and actuating the said sheet, and means for giving relative adjustment between the sheet and the tracker to aline them, substantially as set forth.

3. In combination, a tracker and an indicator in fixed relation thereto when in operation, a music-sheet having a line which registers with the indicator when the sheet is in accurate alinement on the tracker, means for supporting and actuating the said sheet, and means for giving relative adjustment between the sheet and the tracker to aline them, said indicator being mounted to move away from said fixed relation to permit the introduction and removal of music-sheets.

4. In combination, a tracker and an indicator in fixed relation thereto when in operation, a music-sheet having a line which registers with the indicator when the sheet is in accurate alinement on the tracker, means for supporting and actuating the said sheet, and means for giving relative adjustment between the sheet and the tracker to aline them, said indicator and said line being substantially in the center of the sheet width.



5. In combination, a tracker and an indicator in fixed relation thereto when in operation, a music-sheet having a line which registers with the indicator when the sheet is in accurate alinement on the tracker, means for supporting and actuating the said sheet, and means for giving relative adjustment between the sheet and the tracker to aline them, said line consisting of a row of perforations distinct from and additional to the note-perforations of the sheet.

6. In combination with a music-sheet having a longitudinal alining guide-line, the tracker and sheet-moving means, an indicator fixed relatively to the tracker and extending over and adjacent to the music-sheet to coöperate with said guide-line, and means for giving said tracker and said music-sheet relative movement laterally of the latter.

7. In combination with a music-sheet having a longitudinal alining guide-line, the tracker, sheet-moving means, an indicator supported to extend over and adjacent to the music-sheet in fixed relation to the tracker and to coöperate with said guide-line, and means for giving said sheet-moving means and said tracker relative adjustment laterally of the line of travel of said music-sheet.

8. In combination with a music-sheet having a longitudinal guide-line, the tracker, sheet-moving means, an indicator supported in fixed relation to the tracker to extend over and adjacent to the music-sheet and to coöperate with said guide-line, and means for laterally adjusting said sheet upon the tracker.

9. In combination with a music-sheet having a longitudinal guide-line, the tracker, rolls, and rotatable roll-supports, an indicator supported to extend over and adjacent to the music-sheet and to coöperate with said guide-line, and means for laterally adjusting said rolls, whereby said music-sheet may be moved laterally of said tracker.

10. In combination with a perforated music-sheet having a longitudinal line of perforations in addition to those for controlling the sounding devices, the tracker and sheet-moving means, means for laterally adjusting the sheet while in motion, and an indicator supported to extend over and adjacent to the music-sheet and to coöperate with said guide-line.

11. In combination with a perforated music-sheet having a central longitudinal line of perforations in addition to those for controlling the sounding devices, the tracker and sheet-moving means, said tracker having its duct-apertures arranged with an extra interval or imperforate space at the middle of said tracker, and an indicator supported in said instrument for indicating the superposition of said line of perforations accurately over said imperforate space.

819,186. **TOOTH-SPREADER.** JOHN B. HERMAN, Sandusky, Ohio. Filed July 24, 1905. Serial No. 271,082.



Claim.—1. A tooth-spreader embodying a pair of longitudinally-tapered resilient spreading members, a wedge-shaped flexing element, and means for reciprocating the flexing element.

2. A tooth-spreader embodying a head, a pair of longitudinally-tapered resilient spreading members carried thereby, a wedge-shaped flexing element disposed between the members, and an adjusting-screw carried by the head and engaging a threaded socket in the flexing element, and means for holding the screw against endwise movement relatively to the head.

3. A tooth-spreader embodying a head carrying a pair of resilient spreading members, a wedge-shaped flexing element disposed between the members, an adjusting-screw seated at one end in the flexing element and provided with a circumferential groove, and a pin carried by the head and engaging the groove.

819,187. **DENTAL MATRIX-RETAINER.** JOHN B. HERMAN, Sandusky, Ohio. Filed Aug. 14, 1905. Serial No. 274,301.



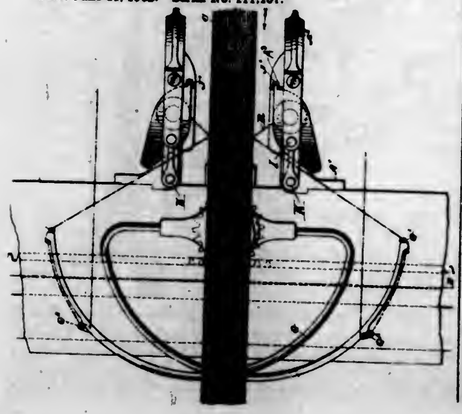
Claim.—1. An implement of the class described embodying a pair of pivotally-connected tooth-engaging members having bifurcated terminals, a matrix combined with one of the members, and a tooth-clamping member carried by the other member.

2. An implement of the class described embodying a pair of pivotally-connected tooth-engaging members, means carried by one of the members to cause the two members to approach each other, a matrix carried by one of the members, and a tooth-clamping element carried by the other member and disposed obliquely thereto.

3. An implement of the class described embodying a pair of pivotally-connected tooth-engaging members having bifurcated terminals, means for adjusting the members relatively to each other, a matrix carried by one of the members, and an angularly-disposed tooth-clamping element carried by the other member.

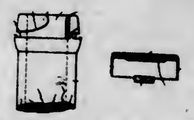
4. An implement of the class described comprising a pair of pivotally-connected tooth-engaging members provided with bifurcated terminals, one of the members being approximately rectangular in shape, and the other approximately semicircular in shape, means for causing the bifurcated portions of the members to approach each other, and a tooth-clamping element carried by the curved member and disposed obliquely with relation to the other member.

819,188. **NEEDLE-LOOM.** EDUARD HERRE, Union Hill, N. J. Filed June 11, 1903. Serial No. 161,107.



Claim.—In a loom, the combination with swinging weft-carriers, of stationary brackets provided with openings for the passage of the weft-carriers, pins carried by said brackets and spaced so as to leave a clearance in the same plane with the said openings, a selvage-thread carrier arranged to move on said pins and of greater height than the gap between them, and an operating mechanism provided with two arms connected to move in unison and embracing the selvage-thread carrier between them, the distance between said arms being greater than the height of the selvage-thread carrier.

819,189. **CLOSURE DEVICE FOR BOTTLES AND OTHER VESSELS.** RICHARD HOHLBAUM, Brooklyn, N. Y. Filed Sept. 1, 1905. Serial No. 276,606.

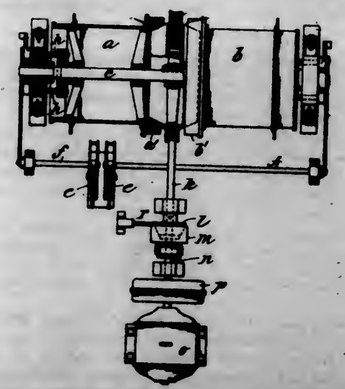


Claim.—1. A bottle or similar device provided with a neck, the top portion of which is enlarged and provided in its opposite sides with vertically-arranged recesses which communicate with annularly-arranged grooves formed in the enlarged portion of the neck and provided with stops, the top walls of said grooves adjacent to said recesses being inclined upwardly, and a closure device provided with a depending flange or rim which extends downwardly to said annularly-arranged grooves and the bottom edge of which is provided with inwardly-directed spring lugs or projections adapted to enter said recesses and grooves, substantially as shown and described.

2. A bottle or similar device provided with a neck, the top portion of which is enlarged and provided in its opposite sides with vertically-arranged recesses which communicate with annularly-arranged grooves formed in the enlarged portion of the neck and provided with stops, the top walls of said grooves adjacent to said recesses being inclined upwardly, and a closure device provided with a depending flange or rim which extends downwardly to said annularly-arranged grooves and the bottom edge of which is provided with inwardly-directed spring lugs or projections adapted to enter said recesses and grooves, said lugs or projections being in the form of spring-rolls, substantially as shown and described.

3. A bottle or similar device provided with a neck, the top portion of which is provided in its opposite sides with vertically-arranged recesses which communicate with annularly-arranged grooves formed in the top portion of the neck and provided with stops, the top walls of said grooves adjacent to said recesses being inclined upwardly, and a closure device provided with a depending flange or rim which extends downwardly to said annularly-arranged grooves and the bottom edge of which is provided with inwardly-directed spring lugs or projections adapted to enter said recesses and grooves, substantially as shown and described.

819,140. **HOISTING APPARATUS.** WILLIAM F. HUNT and ROBERT J. ROBERTS, New York, N. Y. Filed Jan. 20, 1905. Serial No. 241,015.



Claim.—1. The combination, in a hoisting apparatus, of a source of power, two hoisting-drums, independent variable driving means

interposed between the source of power and the drums respectively whereby either of said drums may be driven independently of the other, a third variable driving means interposed between the source of power and the first-named variable driving means, and means for preventing the reverse rotation of the first-named variable driving means, substantially as described.

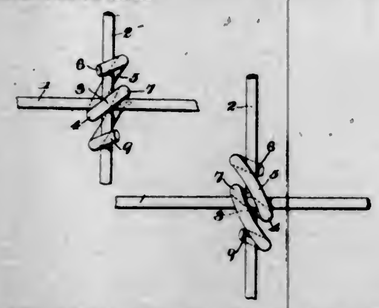
2 The combination, in a hoisting apparatus, of a source of power, two hoisting-drums, independent clutches interposed between the source of power and the drums respectively whereby either of said drums may be driven independently of the other, a third clutch interposed between the source of power and the first-named clutches, and means for preventing the reverse rotation of the first-named clutches, substantially as described.

3. A hoisting apparatus comprising two drums, a non-reversible transmitting mechanism, clutches interposed between the drums and the transmitting mechanism, a motor, a clutch interposed between the motor and the transmitting mechanism, and means to control said clutch, substantially as described.

4. A hoisting apparatus comprising two drums, a non-reversible transmitting mechanism having a gear common to both drums, clutches interposed between said gear and said drums, a motor, a clutch interposed between said motor and the transmitting mechanism and means to control said clutches, substantially as described.

5. A hoisting apparatus comprising two drums, a worm-gear common to both drums, independent clutches interposed between said gear and said drums whereby either of said drums may be driven independently of the other, a worm-shaft, a motor, a clutch interposed between the said motor and the worm-shaft and means to control said clutches, substantially as described.

819,141. **WIRE FENCE.** SHELDON B. JACKSON, Weston, Mich., assignor of one-half to Ephraim B. Lee, Weston, Mich. Filed Sept. 22, 1904. Serial No. 225,493.



Claim.—A fence comprising crossed runner and stay wires and a lock-wire having its intermediate portion looped around the two wires at their point of intersection and engaging the crotches formed thereby, the terminals of the lock-wire being looped around one of the fence-wires at points above and below the intermediate loop, and terminating on the same side of the fence-wire, and all of the loops being diagonally disposed relatively to the fence-wires.

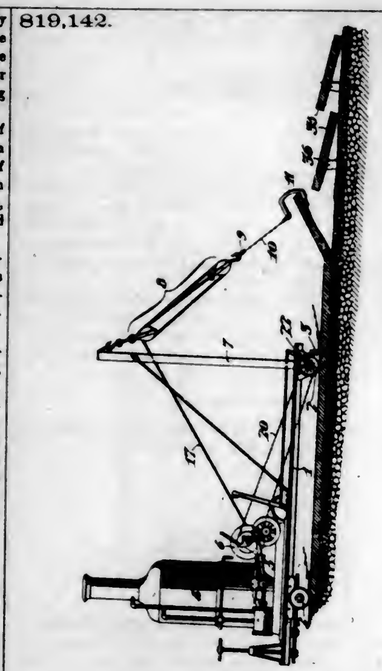
819,142. **APPARATUS FOR RAISING ASPHALT PAVEMENT.** WILLIAM B. KERR, Fox Chase, Pa., assignor to The Barber Asphalt Paving Company, Philadelphia, Pa., a Corporation of West Virginia. Filed Aug. 7, 1905. Serial No. 272,944.

Claim.—1. An apparatus for raising the surface of asphalt pavement which consists of a movable platform carrying an engine-derrick and hoisting-tackle, and having attached to the fall-block of the tackle a plurality of chains with hooks on their ends capable of insertion beneath the surface of the pavement.

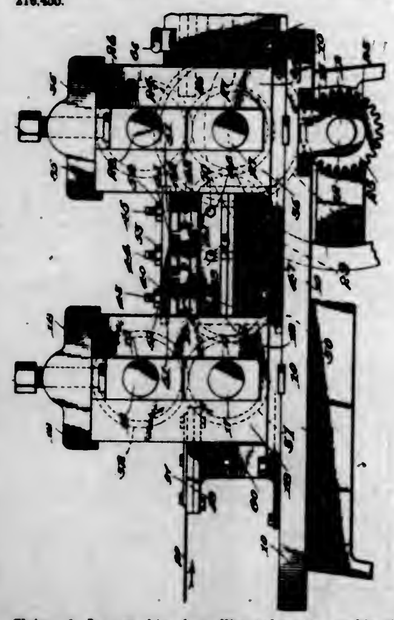
2. An apparatus for raising the surface of asphalt pavement which consists of a movable platform carrying an engine-derrick and hoisting-tackle, and having attached to the fall-block of the tackle a pivoted hook with shank, bight and point at right angles to each other.

3. An apparatus for raising asphalt pavement, which comprises a movable platform arranged to be supported by and to traverse said pavement; means carried by said platform, arranged to overhang and engage the edge of said pavement; and, means carried by said platform, arranged to uplift said engaging means and said pavement, substantially as set forth.

819,142.



819,143. **MACHINE FOR ROLLING TUBES.** ROBERT KOENIG, New York, N. Y., assignor to The Phenix Tube Company, Jersey City, N. J., a Corporation of New Jersey. Filed July 14, 1904. Serial No. 216,455.



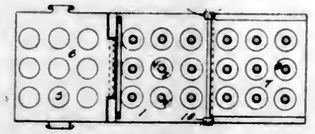
Claim.—1. In a machine for rolling tubes, the combination of starting and finishing rollers and one or more pairs of intermediate rollers, to feed a sheet or strip of material and roll it progressively from a flat to a tubular shape, said intermediate rollers being placed horizontally and provided with peripheral grooves so shaped that the upper sides of said grooves will press the central portion of the sheet or strip of material down against and conform it to the shape of the lower sides of said grooves.

2. In a machine for rolling tubes, the combination of a pair of starting-rollers, a pair of finishing-rollers, and one or more pairs of horizontal intermediate rollers, said intermediate rollers having peripheral grooves so shaped that their upper sides will press the sheet or strip of material down against and conform it to the shape of their lower sides, and means for positively rotating one or more of said pairs of rollers to feed the sheet or strip of material through the machine.

3. In a machine for rolling tubes, the combination of positively-rotated starting and finishing rollers, and one or more pairs of loose horizontal intermediate rollers provided with peripheral grooves so shaped that their upper sides will cause a sheet or strip of material to press down against and conform to the shape of their lower sides.

4. In a machine for rolling flat sheets or strips of material into tubes, the combination of male and female starting-rollers, grooved finishing-rollers, and a plurality of sets of horizontal intermediate grooved rollers the grooves of each set differing in shape from those of each other set and so shaped and arranged that the upper sides of the grooves will cause the sheet or strip of material to conform to the shape of their lower sides and thereby progressively advance the curvature of the sheet or strip from the preliminary shaping given it by the starting-rollers to approximately the finished shape which it receives in passing through the finishing-rollers, and means for feeding the sheet or strip through said rollers.

819,144. **WAFER-CAPSULE MACHINE.** SIMON S. KÖNIG, Vienna, Austria-Hungary, assignor to Sigmund Kassel, Vienna, Austria-Hungary. Filed Mar. 8, 1905. Serial No. 249,114.



Claim.—1. In a device of the character described, a base-plate, slotted bearings carried by the base-plate, a pressure-plate mounted in the slotted bearings, and yieldable means for normally limiting the movement of the pressure-plate in its bearings.

2. In a device of the character described, a base-plate, slotted bearings carried by the base-plate, a pressure-plate mounted in the slotted bearings, and means independent of the bearings for normally limiting the movement of the pressure-plate in its bearings.

3. In a device of the character described, a base-plate, slotted bearings carried by the base-plate, a pressure-plate mounted in the slotted bearings and spring means for normally limiting the movement of the pressure-plate within the bearings.

4. In a device of the character described, a base-plate, slotted bearings carried by the base-plate, a pressure-plate mounted in the slotted bearings, and projections on the pressure-plate, and means contacting with the projections to limit the normal movement of the pressure-plate.

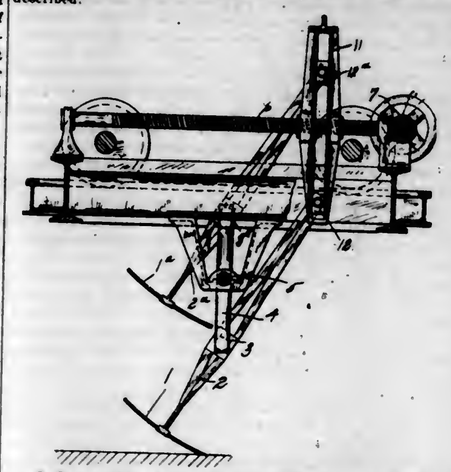
5. In a device of the character described, a base-plate, slotted bearings carried by the base-plate, a pressure-plate mounted in the slotted bearings, projections on the pressure-plate and means carried by the base-plate for normally limiting the movement of the pressure-plate within the bearings.

6. In a device of the character described, a base-plate, slotted bearings carried by the base-plate, a pressure-plate mounted in the slotted bearings, and projections on the pressure-plate riding in slots of the bearings, and means contacting with the projections for limiting the movement of the pressure-plate.

819,145. **GREEN-MALT-TURNING MACHINE.** HANS G. KRAUSS, Altoona, Pa. Filed June 13, 1905. Serial No. 265,109.

Claim.—1. In a machine of the class described, the combination with a frame, shovels carried thereby and means for giving a reciprocating action to said shovels, of means for changing the angularity of such said reciprocating action of shovels, all substantially as shown and described.

2. In a machine of the character described, a suitable frame, a rotatable shaft journaled therein, cranks on said shaft, one or more suitable shovels suspended from said frame, means of suspension between said shovels and cranks, adjustable guideways attached to said frame, blocks slidable within said guideways, connected to upper ends of said shovels, and means for locating and securing said guideways adjustably on said frame, all substantially as shown and described.

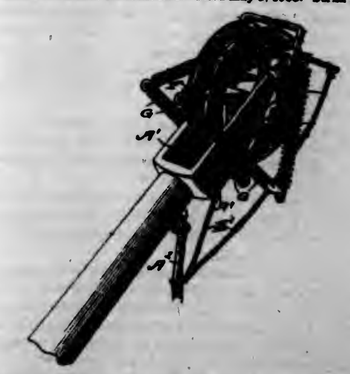


3. In a machine of the character described, a movable frame, cross-bars within the frame, vertical guideways adjustable on said cross-bars, means for changing the position of said guideways, slides contained with the guideways, a power-driven shaft journaled in the frame, cranks disposed thereon, one or more suitable shovels depending from said frame, having their upper ends connected to said slides, and connecting-rods between said shovels and cranks, all substantially as shown and described.

4. In a machine of the character described, a truck-supported frame adapted to travel on a suitable trackway, screw-threaded cross-bars journaled in said frame, vertically-disposed cross-heads movably mounted on said cross-bars and operative thereby, means for revolving said cross-bars, a shaft central with said frame, cranks mounted thereon, slides within said cross-heads, shovels connected at their upper end to said slides and a pitman attached to said shovel and to said crank, all substantially as shown and described.

5. In a machine of the class described, a movable frame, screw-threaded bars journaled therein, bevel-gears centered on the ends of said bars, a shaft journaled in said frame, above and at a right angle thereto, bevel-gears centered thereon adapted to mesh with the aforesaid bevel-gear, means for operating said shaft, a second shaft central with said frame, cranks mounted thereon, slides within said cross-heads, shovels connected at their upper end to said slides and a pitman attached to said shovel and to said crank, all substantially as shown and described.

819,146. **TROLLEY-WHEEL GUARD.** JAMES H. LANE and URIAH GULNICK, Newark, N. J. Filed May 3, 1905. Serial No. 258,664.



Claim.—1. The combination with a trolley-pole having a wheel journaled thereto, of guard-arms yieldingly journaled to the pole and

having a revoluble and longitudinal movement, and springs connected to the arms for holding them in alinement.

2. The combination with a trolley-pole and fork having a wheel journaled in the fork, of guard-arms journaled in each member of the fork, forwardly and rearwardly extensions arranged upon each guard-arm, and springs connected to each extension for the purpose set forth.

3. The combination with a trolley-pole and fork, having a wheel journaled in the fork, of journals arranged upon each member of the fork, guard-arms revolubly retained in each journal, said guard-arms having angle extensions extending over the wheel, forwardly and rearwardly projecting extensions secured to the arms, brackets secured to the fork, and springs connecting the extensions and brackets.

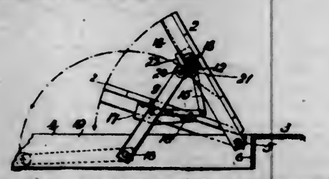
4. The combination with a trolley-pole and fork, having a wheel journaled in the fork, of journals secured to each member of the fork, guard-arms held in the journals, said arms, having a slight longitudinal movement through the journals, extensions arranged upon the arms, brackets secured to the fork, springs connecting the extensions and brackets, and means for revolving the guards for the purpose set forth.

5. The combination with a trolley-pole and fork, having a wheel journaled therein, of guard-arms journaled to the fork, said arms having a revoluble and longitudinal movement, and means for limiting such movement.

6. The combination with a trolley-pole and fork, having a wheel journaled in the fork, of journals arranged upon each member of the fork, each journal having an opening near its lower end, guard-arms operating in the journals, said arms having angular extensions at their upper ends, a collar arranged upon each arm, a pin carried by each arm, and projecting into its respective opening in the journals, forwardly and rearwardly projecting extensions formed upon each arm, brackets secured to the said fork, springs connecting the extensions and brackets, and levers connected to the guard-arms.

7. A device of the kind described, comprising guard-arms, having angle extensions at the outer ends projecting toward each other, forward and rearward extensions carried by the arms, springs for holding the angle extensions in alinement, and levers for operating the arms, substantially as set forth.

819,147. FLASH-BOARD FOR DAMS. WILLIAM H. LAMB, New Orleans, La., assignor to Sanderson & Porter, New York, N. Y., a Firm. Filed Aug. 9, 1905. Serial No. 273,261.



Claim.—1. A series of flash-boards for a dam, supports for holding them in elevated position and means operated by the falling of one flash-board for tripping the supports for the next in the series, substantially as described.

2. In a dam a plurality of flash-boards hinged at their lower edges to the crest of the dam, a shaft carried by each flash-board, connected links or toggles and a series of braces or struts whereby whenever a falling movement is imparted to the end flash-board a like movement will be successively imparted to each adjoining flash-board, substantially as described.

3. A flash-board for a dam hinged at its lower edge to the crest of the dam combined with a shaft, above said hinge an arm or lever at one end of said shaft and one or more tripping devices operated by said shaft, substantially as described.

4. A flash-board for a dam combined with a shaft, an arm or lever at one end of said shaft, one or more tripping devices operated by said shaft, and means secured to the flash-board for operating a trip-shaft, substantially as described.

5. In a dam a pair of flash-boards hinged to the top of the dam, a shaft carried by each of said flash-boards, an arm or lever at one end of each shaft, one or more tripping devices for each shaft, means for supporting the flash-boards in elevated position and a link or toggle at one end of each shaft, substantially as and for the purposes described.

6. In a dam a series of flash-boards and a series of struts or braces hinged to the dam, a shaft at the back of each flash-board, an arm or lever at one end of each shaft, a link or toggle connected to said arm or lever and connected to the adjacent flash-board and one or more tripping devices operated by said shafts for tripping the said struts or braces, substantially as described.

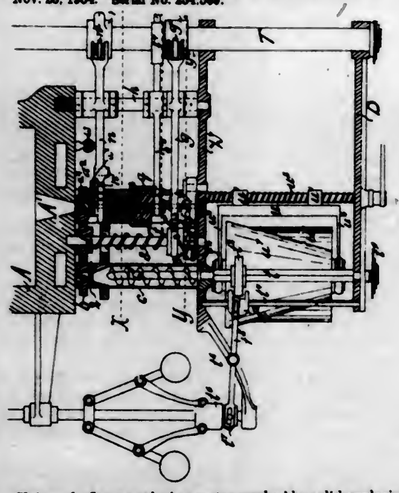
7. A flash-board for a dam, a shaft carried by said flash-board, an arm or lever at one end of said shaft a cam formed with a recess in its outer surface and a strut or brace arranged to enter said recess substantially as described.

8. A flash-board for a dam, a shaft carried by said flash-board, an arm or lever at one end of said shaft, a tripping device operated by said shaft, plates or cheek-pieces adjacent to said tripping device forming a channel and a strut or brace hinged to the dam and adapted to engage said tripping device and held from lateral movement by said cheek-pieces substantially as described.

9. In a dam an initial flash-board hinged to the top of the dam, a shaft carried by the said flash-board, an arm or lever at one end of said flash-board, a tripping device operated by said shaft, a strut or brace hinged to the dam and means operated from an abutment for turning said shaft substantially as and for the purposes described.

10. In a dam, a flash-board hinged at one end of the dam, a shaft carried by said flash-board, an arm or lever at one end of said shaft, a link or toggle connected at one end to said arm or lever and at the other to the long arm of a lever, a connecting-rod attached to the short arm of said lever means for raising and lowering said connecting-rod, and another flash-board, a shaft having an arm carried thereby and a link connected to the last-mentioned arm substantially as and for the purposes described.

819,148. FEEDING AND IGNITING MECHANISM FOR EXPLOSION-MOTORS. FRANZ R. LORENZ, Gumbinnen, Germany. Filed Nov. 28, 1904. Serial No. 234,569.



Claim.—1. In an explosion-motor worked by solid explosive the combination with the motor-cylinder, of an axially-slidable feed-disk having equally-spaced perforations equidistant from its axis, means for rotating the feed-disk intermittently so as to bring each perforation in turn in coincidence with the inlet-orifice of the explosion-chamber of the motor-cylinder, a screw conveyer for charging the perforations of the feed-disk in succession in the intervals between the partial revolutions of the feed-disk, means for rotating said conveyer intermittently, means for automatically regulating the speed of said conveyer, means for optionally varying the speed of said conveyer, means for separating the charge of explosive in the perforations of the feed-disk from the mass in the conveyer, and for obturating the space between the feed-disk and said conveyer, an anvil-plate having a firing-hole opening into each perforation of the feed-disk when the same is in coincidence with the said explosion-chamber, means for pressing the feed-disk into gas-tight contact with the said explosion-chamber just before and during the explosion, means for feeding a chain of detonators intermittently through said anvil-plate, a firing-pin for exploding each detonator as it comes in coincidence with the said firing-hole, and means for cocking and releasing said firing-pin, substantially as set forth.

2. In an explosion-motor worked by solid explosive the combination with the motor-cylinder, of a feed-disk having equally-spaced perforations equidistant from its axis, mounted in an axially-slidable manner on a shaft, a disk keyed on said shaft having outer ratchet-teeth and inner ratchet-teeth, a pawl adapted to engage with said outer ratchet-teeth, a tooth-clutch loose on said shaft, having also gear-teeth, a spring tending to press said tooth-clutch into engagement with said inner ratchet-teeth, and a rocking lever bearing at one end on a cam on a revolving shaft and provided at its other end with a circular rack engaging with the gear-teeth of said toothed clutch, whereby the feed-disk is rotated at intervals through part of a revolution so as to bring an empty perforation in coincidence with the charging-orifice of the screw conveyer, and also a charged perforation in coincidence with the inlet-orifice of the explosion-chamber of the motor-cylinder, and whereby the feed-disk is caused to pause between said intervals for the purpose of charging the one perforation and exploding the charge in the other perforation, substantially as set forth.

3. In an explosion-motor worked by solid explosive, the combination with the motor-cylinder, of an axially-slidable intermittently-rotating feed-disk having equally-spaced perforations equidistant from its axis, a screw conveyer delivering explosive into the perforations of the said disk, and a lever of wedge-shaped cross-section for obturating the space between the delivery-outlet of the conveyer and the feed-disk between the intervals of charging the perforations in the feed-disk, said lever having a hole through which explosive is charged by the conveyer into the perforations in the feed-disk, and said hole being formed with a knife-edge whereby the charge contained in the perforation in the feed-disk is severed from the mass in the conveyer, with means for actuating said lever, substantially as set forth.

4. In an explosion-motor worked by solid explosive, the combination with the explosion-chamber of the motor-cylinder, of an axially-slidable intermittently-rotating feed-disk having equally-spaced perforations equidistant from its axis, a screw-spindle parallel to the axis of the feed-disk, and axial with the inlet-orifice of the explosion-chamber of the motor-cylinder, and having gear-teeth, a nut prevented from motion in which said screw-spindle works, a spring tending to rotate said screw-spindle to force said feed-disk into gas-tight contact with the motor-cylinder just before and during the explosion, a rocking lever bearing at one end on a cam on a rotating shaft, and formed at its other end with a circular rack gearing with the teeth of the screw-spindle whereby the said rocking lever is actuated by said cam to revolve said screw-spindle so as to move away from said feed-disk after the explosion, substantially as set forth.

5. In an explosion-motor worked by solid explosive, the combination of an axially-slidable intermittently-rotating feed-disk having equally-spaced perforations equidistant from its axis, a screw conveyer for delivering explosive into the perforations of said feed-disk, a disk on the conveyer-shaft, and a continuously-revolving cam-drum in frictional contact with said disk, whereby said cam-drum acts upon the said disk so as to rotate the conveyer-shaft intermittently, substantially as set forth.

6. In an explosion-motor worked by solid explosive, the combination of a screw conveyer for delivering explosive, a square extension of the conveyer-shaft, a slidable disk on said square extension, a continuously-rotating cam-disk in frictional contact with said disk, a centrifugal governor and a part actuated by said centrifugal governor, whereby said slidable disk is moved automatically along the square extension-shaft by the centrifugal governor, so as to be rotated at speeds corresponding to the varying radius of the said cam-drum, substantially as set forth.

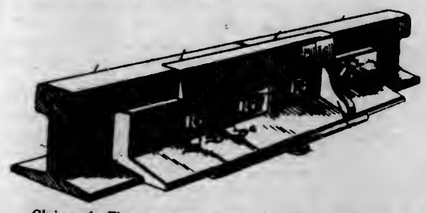
7. In an explosion-motor worked by solid explosive, the combination of a screw conveyer for delivering explosive, a disk on the conveyer-shaft, a continuously-rotating cam-drum slidable along a square shaft, a screw-spindle, nuts on said screw-spindle, arms carried by said nuts adapted to bear against each end of the said cam-drum, and a crank-handle for rotating said screw-spindle, whereby said screw-spindle may be optionally rotated so as to cause said cam-drum to slide along its shaft and bring its greater or less radius in contact with the said disk, and thus vary the speed of the conveyer, substantially as set forth.

8. In an explosion-motor worked by solid explosive the combination of an axially-slidable intermittently-rotating feed-disk having equally-spaced perforations equidistant from its axis, an anvil-plate having a transverse slot with a firing-hole axial with the inlet-orifice of the explosion-chamber of the motor-cylinder, situate behind said feed-disk, means for feeding a chain of detonators intermittently through said slot, and a firing-pin for detonating each detonator as it comes in coincidence with said firing-hole, substantially as set forth.

9. In an explosion-motor worked by solid explosive, the combination of an anvil-plate having a transverse slot with a firing-hole, a chain of detonators having driving-holes, and driving-pin rollers, whereby the detonator-chain is fed intermittently through the slot in the anvil-plate so as to bring each detonator in turn in coincidence with the said firing-hole, substantially as set forth.

10. In an explosion-motor worked by solid explosive, the combination of an intermittently-rotating screw-spindle having an axial hole, and an inclined rear face, a firing-pin extending through the said hole in the screw-spindle, and having an enlarged portion formed with an inclined front face, a firing-spring tending to impel said firing-pin forward, a stop on said firing-pin, a rocking lever bearing at one end on a cam on a continuously-revolving shaft, and provided at its other end with a catch adapted to engage with the stop on the firing-pin, whereby when said screw-spindle rotates it forces back the firing-pin in opposition to the firing-spring and thus cocks the firing-pin, the firing-pin being then retained in its cocked position by the catch on said rocking lever engaging with the stop on the firing-pin, and whereby the firing-pin is released at the proper time by the action of the cam on the rocking lever, substantially as set forth.

819,149. RAIL-JOINT. BENJAMIN F. LUNG, Johnstown, Pa. Filed Sept. 13, 1904. Serial No. 224,372.

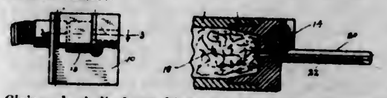


Claim.—1. The combination with a rail, of splice-bars, each splice-bar having a bottom plate, the opposing faces of said plates being adapted to interlock, lugs carried by said interlocking portions, and means for engaging said lugs and drawing said interlocking plates closer together.

2. The combination with a rail, of splice-bars having bottom plates, the opposing faces of said bottom plates being adapted to interlock, guide-lugs carried by said interlocking plates, and a key adapted to be forced between said lugs for the purpose of drawing the plates closer together.

3. The combination with adjacent rails cut away at their ends, of splice-bars one of which has an upwardly-extending portion adapted to fit the cut-away portion of the rails, bottom plates carried by the splice-bars, the opposing faces of said plates interlocking, guide-lugs carried by the interlocking plates, a wedge-key adapted to engage said lugs, and means for connecting the splice-bars to the webs and bases of the rails.

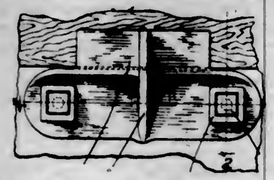
819,150. DIE FOR MAKING ORNAMENTED PLASTIC ARTICLES. JEREMIAH L. MAHONEY, Naugatuck, Conn. Filed Oct. 15, 1904. Serial No. 228,537.



Claim.—1. A die for making ornamental plastic strips consisting of a body having a socket for a roller and provided with a die-opening for shaping the compound to strip form, and an ornamenting-roller fitting closely in the socket of the body and extending into the die-opening whereby the article formed in the die-opening is ornamented by the roller, the said socket embracing at least substantially half of the roller-body.

2. In a die of the character described, the combination with a body having a socket for a roller and having a die-opening for shaping the compound to strip form, of means for conducting a plastic compound to said opening, an ornamenting-roller fitting closely in the socket of the body and extending into the die-opening to ornament the strip formed by said die-opening, and means for driving said roller, the said socket embracing at least substantially half of the roller-body.

819,151. **CAR-DOOR BRACKET.** JAMES L. MALLORY, Evanston, Ill., assignor to Chicago Grain Door Company, Chicago, Ill., a Corporation of Illinois. Filed Jan. 23, 1905. Serial No. 242,331.



Claim.—1. The combination with a car, of a one-piece car-door bracket, retaining members passing through said bracket on each side thereof and secured to said car, the heads of said members engaging said bracket and being protected by said bracket against operative access by a removing instrument.

2. The combination with a car, of a one-piece car-door bracket secured thereto by a plurality of attaching members adapted to be passed through said bracket and driven into the side of said car, the heads of said retaining members engaging said bracket and being protected thereby against operative access by a removing instrument.

3. The combination with a car, of a car-door bracket and a plurality of attaching members passed through said bracket, said attaching members being pointed and provided with a plurality of annular barbs tapering toward the pointed end of said members, whereby said members are adapted to be driven into said car, the heads of said members engaging said bracket and being protected by said bracket against operative access by a removing-tool.

4. The combination with a car, of a bracket, a plurality of attaching members adapted to be driven into said car, said attaching members being provided with circular heads and said bracket being provided with a plurality of circular sockets adapted and proportioned to said circular heads, so as to receive the same and protect them against operative access by a removing-tool.

5. The combination with a car having a projecting post, of a car-door bracket secured to the side of said car and adapted to engage said post, whereby lateral movement of the bracket is prevented, and an attaching member adapted to secure said bracket in position, the head of said attaching member engaging said bracket and being protected thereby against operative access for the purpose of removal.

6. The combination with a car provided with a projecting post, of a car-door bracket secured to the side of said car and adapted to engage said post, so as to prevent lateral movement of said bracket, and an attaching member adapted to pass through said bracket at one side of said post and to be driven into said car, the head of said attaching member being protected by the bracket against operative access by any tool whereby said attaching member might otherwise be removed.

7. The combination with a car, of a bracket, a plurality of attaching members, said attaching members being provided with circular heads and said bracket being provided with a plurality of circular sockets adapted and proportioned to said circular heads, so as to receive the same and protect them against operative access by a removing-tool.

8. The combination with a car, of a one-piece car-door bracket, and a plurality of attaching members passed through said bracket and embedded in the side of said car, said attaching members being tapered toward their inner ends and being barbed, whereby said members are adapted to be driven into said car, the heads of said members engaging said bracket and being protected by said bracket against operative access by a removing-tool.

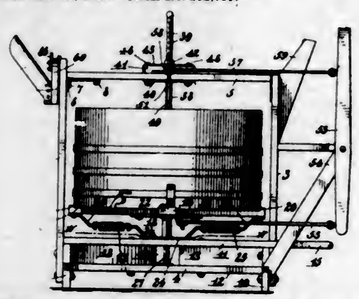
9. The combination with a car, of a one-piece bracket, a plurality of retaining members passing through said bracket and secured to said car, said retaining members having such engagement with said bracket as to prevent the turning of the retaining members so as to detach the same from the car.

10. The combination with a car, of a one-piece car-door bracket, retaining members passing through said bracket on each side thereof and embedded in said car, said retaining members having such engagement with said bracket as to prevent the turning of said retaining members.

11. The combination with a car having a projecting post, of a car-door bracket formed to fit over said post and to be secured to the side of said car, and an attaching member adapted to secure said bracket in position, the head of said attaching member engaging said bracket and being protected thereby against operative access by a removing-tool.

12. The combination with a car, of a car-door bracket and a plurality of attaching members passed through said bracket, a portion of said attaching members being provided with a plurality of annular barbs and being adapted to be driven into the side of said car, said attaching members being provided with circular heads and said bracket being provided with circular sockets adapted and proportioned to receive said circular heads so as to protect them against operative access by a removing-tool.

819,152. **WASHING-MACHINE.** JACOB MATT, Buffalo, N. Y. Filed Mar. 29, 1905. Serial No. 252,739.



Claim.—1. The combination with a frame having an upright and adapted to support a tub, of a wringer-support pivoted to the upper end of said upright, a lip extending from the hinged end of said wringer-support and adapted to bear against the inner side of the upright when said support is swung into its elevated position, and a slide-bolt on the outer side of said upright adapted to hold said wringer-support elevated.

2. The combination with a frame having uprights, a cross-bar connecting the upper ends of said uprights, and a tub carried on the frame, of a rubbing-disk in said tub, a bushing held rotatably in said cross-bar and having diametrical apertures, an upright shaft secured to the rubbing-disk and passing through said bushing, said shaft having a series of transverse openings, a pin passing through said bushing and any one of the series of openings in said shaft, and means for oscillating said rubbing-disk.

3. The combination with a frame having uprights, and a tub carried on said frame, of a cross-bar connecting the upper ends of said uprights, a yoke-piece on said cross-bar, a bushing rotatable in said yoke-piece and provided with two pairs of diametrical apertures, an upright shaft secured to said rubbing-disk and passing up through said cross-bar, the yoke-piece and bushing, said shaft having a series of transverse openings, and a pin passing through one pair of apertures in said bushing and one of said openings in the shaft.

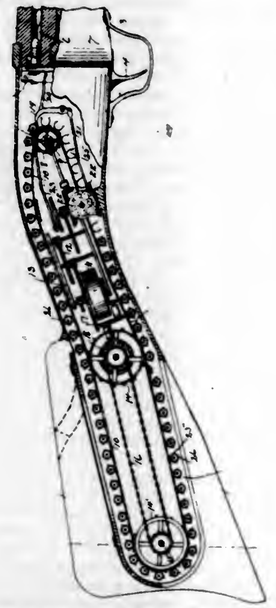
4. The combination with a frame having uprights, and a tub carried on said frame between said uprights, of a rubbing-disk in said tub, a cross-bar connecting the upper ends of said uprights, a yoke-piece on said cross-bar having a depression in its upper face, a bushing having a flange which fits into said depression and being provided with two pairs of diametrical apertures, a plate secured to said cross-bar and holding said bushing rotatably in said depression, an upright shaft secured to the rubbing-disk and passing through said cross-piece and the bushing, said shaft having a series of transverse openings, and a pin passing through one pair of apertures in said bushing and one of said openings in the shaft.

819,153. **REPEATING FIREARM OR RIFLE.** ARRUDIO MICHELE, Pittsburg, Pa., assignor of one-half to Bernard Gasparro, Pittsburg, Pa. Filed Sept. 26, 1904. Serial No. 226,340.

Claim.—1. In a firearm of the nature described, the combination comprising the spring-actuated mechanism for rotating sprockets, of a belt or strap engaging said sprockets to give the same a forward continuous movement, a lever for removing cartridges attached to said belt or strap one at a time, and delivering the same to the loading and firing mechanism of the firearm, as described.

2. In a firearm, a barrel, an endless cartridge-conveyer operated by spring-actuated mechanism, means for extracting the cartridges therefrom, means for turning said cartridges, and means for feeding said cartridges to said barrel.

3. A firearm, in combination with the barrel, of an endless cartridge-carrier operated by spring-actuated mechanism, pivoted means by which said cartridges are extracted from said carrier, and means operating within said pivoted means for feeding said cartridges into said barrel.

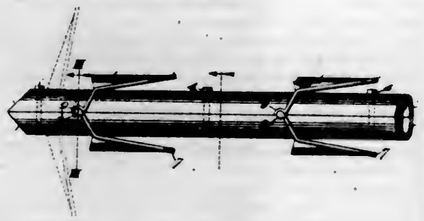


4. A firearm, in combination with the barrel, of an endless cartridge-conveyer operated by spring-actuated mechanism, a cartridge-extractor, means in conjunction therewith for turning the cartridges, and a vertically-moving means for transferring the cartridges from said extractor into the barrel.

5. A firearm, in combination with the barrel, of an endless cartridge-conveyer operated by spring-actuated mechanism, means for extracting the cartridge therefrom, and a vertically and horizontally movable breech-block for feeding the cartridge from said extracting means to said barrel.

6. In a firearm, in combination with the barrel, of an endless cartridge-conveyer operated by spring-actuated mechanism, a pivoted extractor and turner a breech-block operating through said pivoted extractor, and means whereby said breech-block is moved vertically and horizontally.

819,154. **MINER'S TOOL.** ROBERT W. MINERD, Pittsburg, Kans. Filed Nov. 1, 1904. Serial No. 230,984.



Claim.—A miner's tool, comprising a handle, composed of two sections secured together and provided with registering grooves forming diametric openings, and one or more spoons, each spoon consisting of two sections substantially semicircular in form, one of said spoon-sections having a cross-rod at its straight edge and the other a semicircular cross-rod at its corresponding edge and pivoted to the cross-rod of the first-named spoon-section, said cross-rods extending pivotally through the diametric openings of the handle.

819,155. **BOTTLE.** JAMES F. MOORE, New York, N. Y. Filed June 23, 1905. Serial No. 266,389.



Claim.—1. In a bottle, the combination of a bottle-neck provided with an external annular flange and a tubular extension above said flange, and a cap arranged over said extension but separated therefrom by an intervening space, and resting on said flange and having an outlet-opening at its lower end, substantially as set forth.

2. In a bottle, the combination of a bottle-neck provided with an external annular flange and a tubular extension above said flange and a cap arranged over said extension but separated therefrom by an intervening space, said cap being unconnected with said extension but resting only at its lower end on said flange and provided with an outlet-opening at its lower end, substantially as set forth.

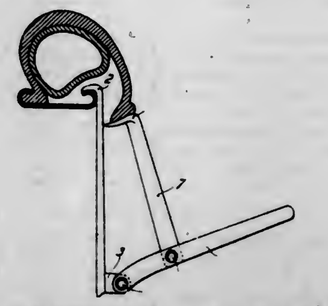
3. In a bottle, the combination of a bottle-neck provided with an external annular flange and a tubular extension above said flange, and a cap arranged over said extension but separated therefrom by an intervening space, said cap being unconnected with said extension but resting only at its lower end on said flange, and provided on diametrically opposite sides of its lower edge with outlet-openings, substantially as set forth.

4. In a bottle, the combination of a bottle-neck having an external annular flange and a tubular extension above said flange, a cap arranged over said extension and provided at its lower end with an external annular flange which rests on the flange of said neck and with an outlet-opening, and a coupling member extending across the joint between the flanges on the neck and cap and provided at its opposite ends with inwardly-projecting parts which engage with the upper and lower sides of said flanges, substantially as set forth.

5. In a bottle, the combination of a bottle-neck having an external annular flange and a tubular extension above said flange, a cap arranged over said extension and provided at its lower end with an external annular flange which rests on the flange of said neck and with an outlet-opening, and a coupling-ring arranged around the periphery of said external flanges and having internal flanges at its upper and lower ends which engage with the upper and lower sides of said external flanges, substantially as set forth.

6. In a bottle, the combination of a bottle-neck having an external annular flange and a tubular extension above said flange, a cap arranged over said extension and provided at its lower end with an external annular flange which rests on the flange of said neck and with an outlet-opening, and a coupling-ring arranged around the periphery of said external flanges and having internal flanges at its upper and lower ends which engage with the upper and lower sides of said external flanges, said coupling-ring having an outlet-opening which registers with that of the cap, substantially as set forth.

819,156. **APPLIANCE FOR PUTTING TIRES ON THE RIMS OF VEHICLES.** LEON G. MORRILL, Norwood, Mass. Filed Mar. 11, 1905. Serial No. 249,573.

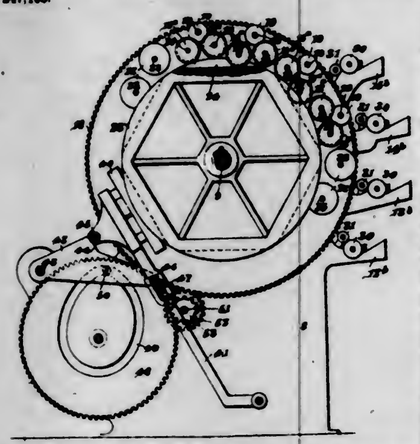


Claim.—1. The combination in an appliance for putting tires on vehicles of a hook member having a hook portion at one end and a pivot portion near its other end; a lever pivoted at one of its ends to one end of the hook member; a pusher member pivoted at one end to the lever and arranged to move longitudinally of the hook member, said pusher member having a head laterally extending therefrom.

and arranged to overlap the hook of said hook member the pivots in all said members being so arranged as to lock the pusher member against longitudinal movement when the lever is pushed upward against the hook member.

3. The combination in an appliance for putting tires on vehicles, of a stationary member having a hook at one of its ends adapted to hook over the rim of a wheel; a lug near its other end; a lever having its inner end pivoted to said lug; a pusher member adapted to slide longitudinally of said stationary member; a head upon said pusher member laterally extending therefrom adapted to slide upon said stationary member and overlap its hooked portion, the lower end of said pusher member being pivoted to the lever in such manner as to be moved longitudinally by the rotation of said lever member.

819,157. **MULTICOLOR-PRINTING PRESS.** FRANK H. MOWBRAY, Glenburnie, WILLIAM BLACK, Wardsworth Common, and ROBERT WARRINER, Catford, England. Filed Feb. 24, 1905. Serial No. 247,160.



Claim.—1. In a multicolor-printing press, the combination with a plurality of flat color-design surfaces located in different planes, of means for automatically inking said flat surfaces, and means for collecting and impressing the designs inked upon said surfaces.

2. In a multicolor-printing press, the combination with a plurality of flat design-surfaces located in angular relation, of means for automatically inking the different flat surfaces, and means for collecting and impressing the designs inked thereupon.

3. In a multicolor-printing press, the combination with means for supporting a plurality of color-design plates having flat surfaces with said surfaces located in different planes, of means for automatically and separately inking each surface, and means for collecting and impressing the designs inked thereupon.

4. In a multicolor-printing press, the combination with means for supporting a plurality of color-design plates having flat surfaces with such surfaces in angular relation with respect to each other, of means for automatically inking the flat surfaces, and means for collecting and impressing the designs inked thereupon.

5. In a multicolor-printing press, the combination with a polygonal support for mounting a plurality of flat color-design plates with their operative faces in angular relation, of means for automatically inking the various surfaces, and means for collecting and impressing the designs upon said surfaces.

6. In a multicolor-printing press, the combination with a polygonal support for mounting a plurality of flat color-design plates with their operative flat surfaces in angular relation, of means for automatically inking the various flat surfaces, and means for collecting and impressing the designs inked thereupon, said inking and collecting means and support being relatively movable.

7. In a multicolor-printing press, the combination with a stationary polygonal drum, the sides of which constitute supports for a plurality of angularly-disposed color-design plates, of a rotatable supporting device, inking mechanisms mounted on the supporting device and respectively coacting with the color-design plates mounted on the drum, and means for collecting and impressing the designs inked upon the plates.

8. In a multicolor-printing press, the combination with a stationary polygonal drum, the sides of which constitute supports for a plurality of angularly-disposed color-design plates, of a rotatable support, separate inking mechanisms mounted on the support and rotatable therewith about the drum, each of said mechanisms coacting with the plate on one side of the drum, means for maintaining said mechanisms out of coaction with the other plates, and means for collecting and impressing the inked designs.

9. In a multicolor-printing press, the combination with a polygonal drum having flat sides which constitute supports for angularly-disposed flat color-design surfaces, of a supporting device, a plurality of inking mechanisms mounted on the supporting device, each mechanism coacting with one of said surfaces, means for maintaining said mechanisms out of coaction with the other of such surfaces, means for effecting the relative rotation of the support and drum, and means for collecting and impressing the inked designs.

10. In a multicolor-printing press, the combination with a shaft, of a stationary polygonal drum mounted on the shaft, the sides of said drum constituting supporting means for a plurality of color-design surfaces, a rotatable support journaled on the shaft, a plurality of inking mechanisms mounted on the support and rotatable therewith, each mechanism coacting with one of such surfaces, means for maintaining the mechanisms out of coaction with the other surfaces, means for revolving the support and the inking mechanisms carried thereby, and means for collecting and impressing the designs inked upon said surfaces.

11. In a multicolor-printing press, the combination with a polygonal drum having flat sides which constitute supports for angularly-disposed flat color-design surfaces, of a supporting device, tracks or guides carried by the drum and having depressed runways located alongside the sides of the drum, a plurality of inking mechanisms journaled on the supporting device including inking-rollers having bearers operating on the tracks or guides to maintain them out of coaction with design-plates placed upon the sides of the drum, said bearers also moving into certain of the runways to permit the coaction of the rollers with the plates, means for effecting the relative rotation of the support and runway, and means for collecting and impressing the designs inked upon the plates.

12. In a multicolor-printing press, the combination with a shaft, of a stationary drum mounted thereon and having a plurality of substantially flat sides constituting supports for a plurality of substantially flat color-design plates, tracks or guides located at the ends of the drum and having depressed runways, a rotatable support comprising gear-wheels journaled on the shaft at the ends of the drum, inking mechanisms mounted on the supporting device and including rollers journaled thereon and movable toward and from the color-design plates, bearers carried by the rollers and operating on the tracks, said bearers moving into certain of the runways to permit the movement of the rollers toward the design-plates, means engaging the gear-wheels for rotating the support, and means for collecting and impressing the designs inked upon the plates.

13. In a multicolor-printing press, the combination with a plurality of flat color-design plates having their operative faces located in angular relation, of means for separately inking the faces, a flat form-plate, means for collecting the designs from the design-plates and transferring them to the form-plate, and impression means coacting with the form-plate.

14. In a multicolor-printing press, the combination with means for supporting in angular relation a plurality of color-design plates having flat operative surfaces, of means rotatable about the support for separately inking the plates, a flat form-plate, means also rotating about the support for collecting the inked designs from the design-plates and transferring them to the form-plate, and impression means coacting with the form-plate.

15. In a multicolor-printing press, the combination with a polygonal drum, the different sides of which constitute supports for color-design plates and one of said sides constituting a support for a form-plate, of a supporting device rotatable about the drum, inking mechanism and transferring mechanism carried by the supporting device, and a platen coacting with the side of the drum that constitutes the form-plate support.

16. In a multicolor-printing press, the combination with a polygonal drum, the different sides of which constitute supports for color-design plates and one of said sides constituting a support for a form-plate, of a supporting device rotatable about the drum, inking mechanism and transferring mechanism carried by the supporting device, and a platen movable toward and from the side of the drum that constitutes the support for the form-plate.

17. In a multicolor-printing press, the combination with a polygonal drum, the different sides of which constitute supports for color-design plates and one of said sides constituting a support for a form-plate, of a supporting device rotatable about the drum, inking mechanism and transferring mechanism carried by the supporting device, and an oscillatory platen coacting with the side of the drum that constitutes the support for the form-plate.

18. In a multicolor-printing press, the combination with a polygonal drum, of a rotatable support, inking mechanisms mounted on the support and rotatable therewith, each of said mechanisms coacting with one side of the drum, transferring mechanism coacting with all sides of the drum, and impression means coacting with the transferring mechanism and receiving the inked designs therefrom.

19. In a multicolor-printing press, the combination with a stationary polygonal drum, of a plurality of flat color-design plates mounted on different sides of the drum in angular relation to each other, a form-plate mounted on another side of the drum, a rotatable supporting device revolving about the drum, inking mechanisms mounted on the supporting device and rotating therewith, said mechanisms including inking-rollers, the rollers of each mechanism coacting with one of the color-design plates, means for maintaining said rollers out of coacting relation with the other design-plates and with the form-plate, transferring mechanism including rollers that operate over all of the color-design plates and also over the form-plate, and impression mechanism receiving the designs from the transferring mechanism.

20. In a multicolor-printing press, the combination with a supporting-frame, of a stationary shaft mounted therein, a stationary drum secured to the shaft and having a plurality of flat sides constituting supports for a plurality of color-design plates, one of said sides also constituting a support for a form-plate, tracks located at the ends of the drum and having depressed runways, a supporting device journaled upon the shaft and rotatable with respect to the drum, inking mechanisms mounted on the supporting device and including rollers movable toward and from the drum, bearers carried by the rollers and operating on the tracks or guides, said bearers each running in certain of the runways to permit the movement of the rollers toward the drum, transferring-rollers journaled on the supporting device and rotatable therewith, said rollers having fixed paths of movement with respect to the drum, a polygonal stationary gear-wheel located at one end of the drum, gears carried by the transferring-rollers and meshing with the gear-wheel, a platen movable toward and from the face of the drum that constitutes a form-plate support, and means for rotating the supporting device and moving the platen.

21. The combination with a plurality of flat color-design surfaces, of mechanism for automatically inking the said surfaces, means for moving the inking mechanism continuously in one direction repeatedly over said surfaces, and means for collecting and impressing the designs inked upon said surfaces.

22. The combination with a plurality of flat color-design surfaces, of mechanism for automatically inking said surfaces, means for moving the inking mechanism continuously in one direction and repeatedly over said surfaces, means for transferring the inked designs, said transferring means being also movable continuously in one direction and repeatedly over the surfaces, and a printing-couple receiving the inked designs from said transferring means.

23. The combination with a plurality of flat design-surfaces located in angular relation, of means for inking the various surfaces, said inking means and flat design-surfaces being relatively rotatable, means for effecting the relative rotation of the same, and means for collecting and impressing the inked designs.

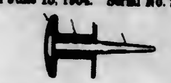
24. The combination with a polygonal support for a plurality of flat-sided color-design surfaces, of circular tracks located at the ends of said support and having depressed portions, inking mechanisms having bearers that run upon the tracks, each of said bearers moving into certain of the depressed portions to permit the engagement of each inking mechanism with a predetermined surface, and means for collecting and impressing the designs inked upon the flat surfaces.

25. The combination with a polygonal support for a plurality of flat-sided color-design surfaces, of separate means for automatically and independently inking each of said surfaces, and means for collecting and impressing the designs inked upon the surfaces, said means including polygonal racks located at the support and corresponding thereto, and transferring-rollers having gears that mesh with said racks, said rollers operating on the flat surfaces.

26. The combination with a stationary support, of a plurality of flat color-design surfaces mounted on the support and disposed in angular relation thereupon and about a common center, rotatable inking mechanism having rollers, means for mounting the rollers to permit their coaction with the flat surfaces, and means for collecting and impressing the designs inked upon said surfaces.

27. In a multicolor-printing press, the combination with a support for a plurality of color-design plates, of a stationary form, means for inking the plates, means for transferring the inked designs from the plates to the form, a platen coöperating with the form, and means for moving the platen toward and from the form.

819,158. **CARRIAGE-CURTAIN KNOB.** FRED A. NEIDER, Augusta, Ky. Filed June 15, 1904. Serial No. 213,605.



Claim.—A carriage-curtain knob consisting of a nail, a sheet-metal covering drawn over and under the head of the nail and in adjacent to and parallel with the upper part of the shank of the nail to form the head and neck of the knob leaving the lower end of the nail to form the shank of the knob and a metal washer fitting over the shank and abutting against the lower end of the metal covering to form the collar of the knob.

819,159. **STORAGE-BATTERY JAR.** ROGER M. NEWBOLD, Louisville, Ky., assignor to The Adams & Westlake Company, a Corporation of Illinois. Filed Apr. 24, 1905. Serial No. 257,145.



Claim.—1. A battery-jar closure comprising, in combination, a rigid plate, and a soft flange projecting from the margin of the plate and inclined upwardly from the plane thereof, whereby the flange presents a flat face to the walls of the jar.

2. A battery-jar closure comprising, in combination, a rigid plate having terminal apertures, and soft flanges projecting from the margins of the plate and of the apertures and being inclined upwardly from the plane of the plate, whereby the flanges present a flat face to the walls of the jar and to the terminals.

3. A closure for battery-jars, comprising a substantially rigid plate having apertures for the battery-terminals, and soft-rubber flanges projecting beyond its margins and encircling the terminal apertures and projecting inwardly.

4. A closure for battery-jars comprising a substantially rigid plate having apertures for battery-terminals, and flanges projecting beyond the margins of the plate and encircling and projecting into the terminal apertures, such flanges being of material more flexible than the plate.

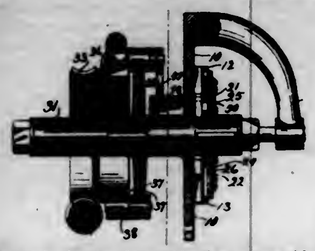
5. A closure for battery-jars comprising a substantially rigid plate having apertures for battery-terminals, and flanges encircling and projecting into the terminal apertures, such flanges being of material more flexible than the plate.

819,160. **POLE-CHANGER.** ROGER M. NEWBOLD, Louisville, Ky., assignor to The Adams & Westlake Company, a Corporation of Illinois. Filed July 8, 1905. Serial No. 268,820.

Claim.—1. In a pole-changer, in combination, an oscillatable switch; a rotatable member; a spring-closed friction-band operatively connected with the switch and frictionally engaging the rotatable member; and means for spreading the band as the switch reaches the end of its travel.

2. In a pole-changer, in combination, a rotatable member; a spring-contracted friction-band encircling such member; a switch;

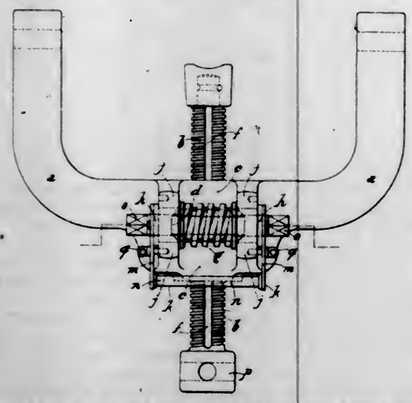
and loose connection between the band and switch, whereby the band actuates the switch but has a degree of movement independent thereof.



3. In a pole-changer, in combination, a rotatable member; a split, spring-compressed friction-band encircling such member; a cam for expanding the band and traveling therewith; stops for turning the cam in opposition to the band-contracting spring; a switch; and an arm traveling with the band and having a segmental slot engaging an appurtenance of the switch.

4. In a pole-changer, in combination, a shaft; a four-pointed oscillatable switch free on the shaft; a crank-arm fixed to the shaft and having a segmental slot engaging an appurtenance of the switch; a cross-arm fixed to the shaft; a worm-wheel loose on the shaft and having an annular flange; a split friction-band encircling the flange and fixed to the cross-arm; an oscillatable cam mounted upon the arm and located between the ends of the band and adapted to spread them; a crank-arm carried by the cam; and fixed stops in the path of the last-named crank-arm.

819,161. JIM-CROW, &c., FOR BENDING RAILS. BENJAMIN NEWMAN, Gateshead, England. Filed Jan. 19, 1906. Serial No. 296,798.



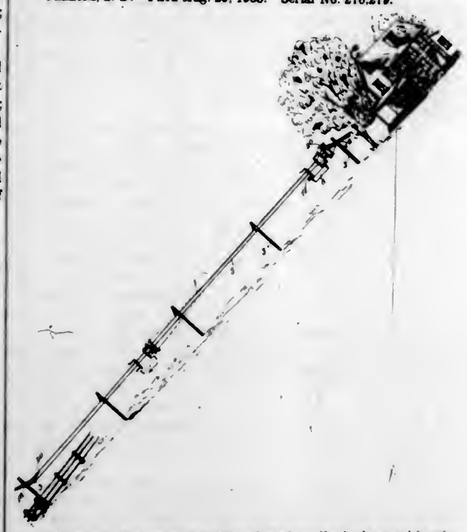
Claim.—1. An appliance for bending and straightening rails, tubes and the like comprising the combination of a U-shaped frame, arms on said frame, said arms being adapted to engage the rail, a screwed boss on said frame, a screwed rod passing through said boss and coacting therewith, gearing through which said screwed rod is normally operated and means for disengaging said gearing from the screwed rod, substantially as described.

2. An appliance for bending and straightening rails, tubes and the like comprising the combination of a U-shaped frame, arms on said frame, said arms being adapted to engage the rail, a screwed boss on said frame, a screwed rod passing through said boss and coacting therewith, a keyway in said screwed rod, a worm-wheel disposed around said screwed rod and connected thereto by a key adapted to slide in said keyway, a worm adapted to coact with said worm-wheel, and means for operating said worm, substantialy as described.

3. An appliance for bending and straightening rails, tubes and the like comprising the combination of a U-shaped frame, arms on said frame, said arms being adapted to engage the rail, a screwed boss on said frame, a screwed rod passing through said boss and coacting therewith, a keyway in said screwed rod, a worm-wheel disposed around said screwed rod and connected thereto by a key adapted to slide in said keyway, bearings in said frame, bearing-blocks disposed in said bearings, a worm eccentrically mounted on said bearing-blocks, means for operating said worm, and means for locking said bearings in position, substantially as described.

4. An appliance for bending and straightening rails, tubes and the like comprising the combination of a U-shaped frame, arms on said frame, said arms being adapted to engage the rail, a screwed boss on said frame, a screwed rod passing through said boss and coacting therewith, a keyway in said screwed rod, a worm-wheel disposed around said screwed rod and connected thereto by a key adapted to slide in said keyway, two sets of bearings in said frame, two sets of bearing-blocks in said bearings, a worm eccentrically mounted on each set of bearing-blocks, means for operating said worms, and means for locking each of said sets of bearings in position, substantially as described.

819,162. MAIL-DELIVERY APPARATUS. JULIUS J. NOHR, Yankton, S. D. Filed Aug. 29, 1905. Serial No. 276,279.



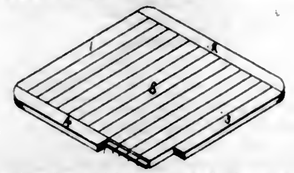
Claim.—1. In apparatus of the class described, the combination of a pair of spaced yieldably-supported track members, a carrier having traction-wheels engaging the track members, a lever fulcrumed independently of the track, a cross-head fulcrumed intermediate of its ends upon the lever and provided with opposite seats loosely receiving the track members, and a controller connected to the cross-head for swinging the same upon its fulcrum-support to spread the wires.

2. In apparatus of the class described, the combination with vertically-spaced yieldably-supported wires, a carrier provided at opposite ends with upstanding hangers, each hanger having a traction-wheel running upon the top of the upper wire, a lower traction-wheel running against the under side of the lower wire and an intermediate wheel running between the wires, and means at each end of the track for successive operation to spread the wires.

3. In apparatus of the class described, the combination with a support, of upper and lower track-wires, a substantially horizontal helical supporting-spring connected to each wire and to the support, a helical brace-spring connected to the first-mentioned spring and to the support above said spring, a carrier having traction-wheels running in engagement with the wires, and means to spread the wires in rear of the carrier to advance the same upon the track.

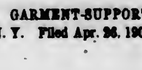
819,163. STOVE-BOARD. PHILIP PFEIL, Chicago, Ill. Filed Oct. 26, 1904. Serial No. 230,380.

Claim.—1. A stove-board comprising a rectangular frame two of the opposite members of which are each formed with a longitudinal groove in its inner face, and slats filling the space bounded by said frame, said slats being formed at their ends with tongues seated in the grooves in said frame members, said slats being arranged with their edge faces in contact with but disconnected from each other, a covering of sheet material laid upon one face of the board, the side edges of the covering extending over the edges of the board and secured upon the opposite face thereof, and a separate sheet of material laid on the last-mentioned face of the board and extending over the marginal edges of the first-named sheet.



2. A stove-board comprising a rectangular frame two of the opposite members of which are each formed with a longitudinal groove on its inner face, slats filling the space bounded by said frame, said slats being formed at their ends with tongues seated in the grooves in said frame members, said slats being arranged with their longitudinal edge faces in contact with but disconnected from each other, a covering of sheet-asbestos for the upper side of the board the side edges of said sheet being bent over the edges of the board and secured down upon the under side of the latter, and a separate sheet of asbestos covering the under side of the board and extending over the marginal edges of the first-named sheet.

819,164. GARMENT-SUPPORTER. GEORGE H. PHELPS, Boston, Mass., assignor to George Frost Company, Boston, Mass., a Corporation of Massachusetts. Filed Oct. 2, 1905. Serial No. 280,969.



Claim.—1. A hose-supporter clasp comprising a loop and a button having a covering formed of paper covered by a fabric and impregnated with a cement to render it leathery.

2. A hose-supporter clasp comprising a loop and a button having a covering, the exterior portion of which is formed of a fabric and which is impregnated with a cement which renders it tough, soft and yielding.

3. A hose-supporter clasp comprising a loop and a button having a covering, the exterior part of which is impregnated with a cement to render it leathery.

4. A hose-supporter clasp comprising a loop and a button having a covering of paper wound into a tube, covered with a fabric and impregnated with a cement which renders it leathery.

5. A hose-supporter clasp comprising a loop and a button having a covering of paper coated with a cement and which is covered with textile fabric impregnated with cement to render it leathery.

6. A hose-supporter clasp comprising a loop and a button having a covering of paper coated with a cement and which is in turn covered by threads braided upon it and impregnated with a cement to render it leathery.

819,165. GARMENT-SUPPORTER. GEORGE H. PHELPS, Boston, Mass., assignor to George Frost Company, Boston, Mass., a Corporation of Massachusetts. Filed Nov. 27, 1905. Serial No. 289,315.



Claim.—1. A hose-supporter clasp comprising a loop and a button having a yielding covering composed of a wound strip of paper inclosed by textile or fibrous material applied directly thereto.

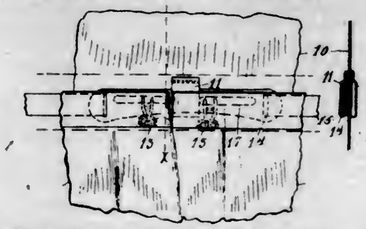
2. A hose-supporter clasp comprising a loop and a button having a covering composed of a yielding interior or body portion and an exterior portion of textile or fibrous material applied directly to the yielding body.

3. A hose-supporter clasp comprising a loop and a button, having a covering formed by successive windings of a strip or ribbon of suitable material to form an elastic body and which is inclosed by textile or fibrous material to render it antislipping.

4. A hose-supporter clasp comprising a loop and a button, having a covering formed of a strip or ribbon of suitable material, wound into an elastic or yielding tube and having an exterior antislipping surface.

819,166. GARMENT-SUPPORTER. FREDRICK W. PHILLIPS, Jamestown, N. Y. Filed Apr. 26, 1905. Serial No. 257,400.

Claim.—1. In combination with a garment provided with a loop and a skirt having fastening members, a belt, a bar having vertical end slots to receive said belt and a pair of spaced horizontal slots to receive said fastening members, said bar having an upwardly-curved lower edge and engaging said loop at the center of said bar and in said space between the horizontal slots.

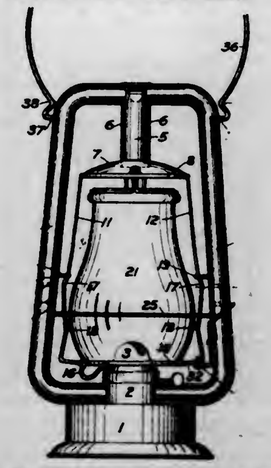


2. The combination of the skirt with hooks thereon, a belt, a waist provided with a loop, a bar formed with a pair of vertical end slots for said belt and a horizontal slot of equal width throughout for said hooks, the lower edge of the bar being curved upwardly and being engaged at the highest point of this curve by said loop.

3. In combination with a garment provided with a loop and a skirt having fastening members, a bar having an upwardly-curved lower edge received in said loop and engaged thereby at the highest points of its curve, said bar having slots therein extending on opposite sides of the loop, a belt to hold said bar in place, said fastening members of the skirt engaging in said slots and on opposite sides of said loop.

4. In combination with a garment provided with a loop and a skirt having fastening members, a bar having an upwardly-curved lower edge received in said loop and engaged thereby at the highest points of its curve, said bar having a slot therein to receive said fastening means of the skirt at any point along the length of said slot and a belt to hold the bar in place.

819,167. TUBULAR LANTERN. ALBERT R. PRITCHARD, Rochester, N. Y. Filed Nov. 29, 1904. Serial No. 234,738.



Claim.—1. In a globe-frame for tubular lanterns, a canopy having a rolled edge, a globe-plate having a rolled edge, and two side wires, each having a vertical portion, and end portions turned at an angle to the vertical portion, one end portion of each side wire being inclosed in the rolled edge of the canopy, the other end portion being inclosed in the rolled edge of the globe-plate, whereby the globe-plate and the canopy are held rigidly in position in combination with a lantern-frame, and guides thereon for said side wires having open notches for said side wires.

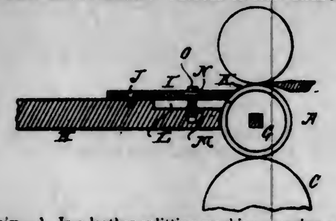
2. In a globe-frame for tubular lanterns, a canopy having a rolled edge, a globe-plate having a rolled edge, and two side wires, each having a vertical portion, and end portions turned in opposite directions and at an angle to the vertical portion, one end portion being inclosed in the rolled edge of the canopy and the other end portion

being inclosed in the rolled edge of the globe-plate, whereby the globe-plate and the canopy are held rigidly in position in combination with a lantern-frame, and guides thereon for said side wires having open notches for said side wires.

3. In a tubular lantern having side tubes, a rigid projection on a side tube, a globe-frame having the usual vertical side wires, one of which has a depression and a long gradual outwardly-projecting portion and adjacent to the upper end thereof a short steep inwardly-projecting portion for engagement with said rigid projection, whereby the globe-frame is held downwardly by the engagement of said steep inwardly-projecting portion with said rigid projection and the upward movement of the globe-frame is made smooth and easy by the pressure of said long and gradual portion against said rigid projection and is held in the raised position by engagement of said projection in said depression.

4. In a tubular lantern having side tubes, a rigid projection on a side tube, a globe-frame having the usual vertical side wires, one of which has a depression and a long gradual outwardly-projecting portion and adjacent to the upper end thereof a short steep inwardly-projecting portion for engagement with said rigid projection, whereby the globe-frame is held downward by the engagement of said steep inwardly-projecting portion with said rigid projection and the upward movement of the globe-frame is made smooth and easy by the pressure of said long and gradual portion against said rigid projection and is held in the raised position by engagement of said projection in said depression, and a lifting-lever pivoted on one of the side tubes and having a loop around one of said side wires.

819,168. MEANS FOR TRUING THE SPRING-ROLLS OF LEATHER-SPLITTING MACHINES. WILLIAM D. QUIGLEY and JOSEPH H. GAY, Newark, N. J. Filed Jan. 16, 1905. Serial No. 241,503.



Claim.—1. In a leather-splitting machine, a spring-roll having an elastic or yielding surface and means external to said roll for truing said surface at a plurality of points.

2. In a leather-splitting machine, a spring-roll having an elastic or yielding surface and means for truing said surface by subjecting same to regulated pressure at a plurality of points.

3. In a leather-splitting machine, a spring-roll having an elastic or yielding surface, a blade parallel to the axis of said roll and having its edge bearing on said surface, and means for regulating the pressure of said edge against said surface at a plurality of points.

4. In a leather-splitting machine, a spring-roll having an elastic or yielding surface, a support, a flexible blade disposed parallel to the axis of said roll and secured to said support and having its edge bearing upon the surface of said roll, and means for pressing said edge against said surface at a plurality of points.

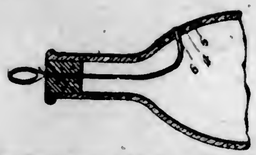
5. In a leather-splitting machine, a spring-roll having an elastic or yielding surface, a blade parallel to the axis of said roll, and a plurality of adjusting devices bearing upon the said blade and operating independently to press the edge thereof against the surface of said roll.

6. In a leather-splitting machine, a spring-roll having an elastic or yielding surface, a support, a flexible blade disposed on said support parallel to the axis of said roll, and a plurality of screws in said support bearing on said blade and operating independently to press the edge of said blade against the surface of said roll.

819,169. ANTIREFILLING BOTTLE. HENRY O. RICHTER, Clinton, Miss. Filed June 23, 1905. Serial No. 266,655.

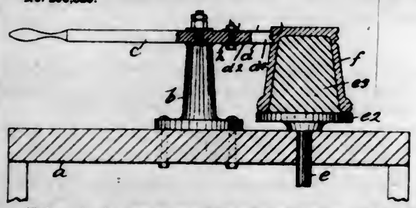
Claim.—1. In combination with a bottle or like necked receptacle, a seal embedded in a side of the bottle and frangible to admit of displacement thereof to form an outlet-opening, and a connection for displacing said seal extending out of the bottle.

2. In combination with a bottle or like necked receptacle, a seal therefor comprising a sealing-disk larger than the opening in the neck of the bottle and embedded in a side of said bottle, and a connection arranged within the bottle and connected at one end to the said sealing-disk, the other end of said connection passing out of the bottle through the neck thereof and formed with a finger-loop for connection thereof, the sealing-disk being of a size larger than the opening in the neck of the bottle to prevent the disk from being withdrawn from the receptacle.



3. In combination with a bottle, a sealing-disk embedded in a side thereof and comprising a flanged plate, and a flexible connection arranged within the bottle and connected at one end to the said sealing-disk, the other end of said connection passing out of the bottle through the neck thereof and formed with a finger-loop for connection thereof, the sealing-disk being of a size larger than the opening in the neck of the bottle to prevent the disk from being withdrawn from the receptacle.

819,170. DEVICE FOR ORNAMENTING EARTHENWARE ARTICLES. FREDERICK J. RIDGWAY, JOSEPH ATHELEY, and FREDERICK HANCOCK, Stoke-upon-Trent, England. Filed Dec. 6, 1905. Serial No. 290,529.



Claim.—1. An apparatus of the class described, comprising a suitable support, a standard mounted thereon, an arm mounted on said standard and adapted to swing in a horizontal plane and provided at one end with a cutter, and a rotatable holder mounted on said support adjacent to said standard, substantially as shown and described.

2. In an apparatus of the class described, an arm pivoted to swing in a horizontal plane and provided at one end with a former, and a rotatable holder mounted adjacent to said arm and adapted to support a goblet or other article to be operated on by said former, substantially as shown and described.

3. In an apparatus of the class described, a pivoted arm adapted to swing in a horizontal plane provided at one end with a cutter or former composed of sheet metal bent into yoke shape, substantially as shown and described.

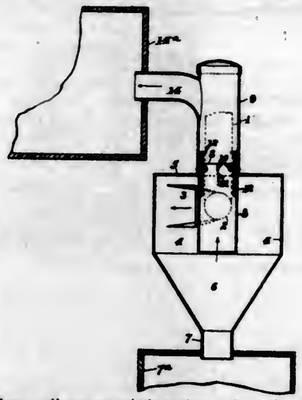
4. An apparatus of the class described, comprising a frame, a rotatable support mounted thereon, an arm-support mounted adjacent to the rotatable support, and an arm pivotally mounted on said arm-support and adapted to swing in a horizontal plane, substantially as shown and described.

5. An apparatus of the class described, comprising a frame, a rotatable support mounted thereon, an arm-support mounted adjacent to the rotatable support, and an arm pivotally mounted on said arm-support and adapted to swing in a horizontal plane, and provided with a cutter or former composed of sheet metal bent into yoke shape, substantially as shown and described.

6. In an apparatus of the class described, a support, a rotatable holder mounted thereon and adapted to support a goblet or other article, and an arm mounted over said support and adapted to swing in a horizontal plane and provided at one end with a cutter or former adapted to operate on the outer surface of the goblet or other article, substantially as shown and described.

819,171. DOWN-SEPARATING APPARATUS. WILLIAM H. ROBINSON, Steinway, N. Y., assignor, by mesne assignments, to himself, and W. M. Hanes, Winston Salem, N. C. Filed Feb. 11, 1902. Serial No. 93,559.

Claim.—1. A down-separator consisting of a cyclone-chamber having both an inlet for an air-blast and an outlet for the contour feathers, and also provided with a collector for the down, said collector extending into the interior of the cyclone-chamber in combination with a bin for the separated contour feathers and a separate bin for the down; said bins being in closed communication with the outlet from the cyclone-chamber and the central outlet for the down, respectively.



2. A down-collector consisting of a cyclone-chamber having both an inlet for an air-blast and an outlet for the contour feathers, and also provided with a collector for the down, said collector extending into the interior of the cyclone-chamber and terminating about centrally or midway between the ends and sides thereof in combination with a bin for the separated contour feathers and a separate bin for the down; said bins being in closed communication with the outlet from the cyclone-chamber and the central outlet for the down, respectively.

3. A down-separator consisting of a circular cyclone-chamber having both an inlet for an air-blast and an outlet for the contour feathers, and having a hollow core which collects the down and conducts it out of the chamber in combination with a bin for the separated contour feathers and a separate bin for the down; said bins being in closed communication with the outlet from the cyclone-chamber and the central outlet for the down, respectively.

4. In a down-separator, a cyclone-chamber consisting of a drum joined to the upper end of a downwardly-tapering cone, and a tubular down-collector extending downwardly from the head of said drum into the interior thereof in combination with a bin for the separated contour feathers and a separate bin for the down; said bins being in closed communication with the outlet from the cyclone-chamber and the central outlet for the down, respectively.

5. In a down-separator, a cyclone-chamber consisting of a drum and a cone and having a tubular down-collector which extends from the head of the drum toward the apex of the cone, and terminates between said head and said cone-apex in combination with a bin for the separated contour feathers and a separate bin for the down; said bins being in closed communication with the outlet from the cyclone-chamber and the central outlet for the down, respectively.

6. In a down-separator, a cyclone-chamber having a tapering outlet for the contour feathers, a core, and an outlet for the down in combination with a bin for the separated contour feathers and a separate bin for the down; said bins being in closed communication with the outlet from the cyclone-chamber and the central outlet for the down, respectively.

7. In a down-separator, a cyclone-chamber having a core and also having an outlet for the down and an outlet for the contour feathers in combination with a bin for the separated contour feathers and a separate bin for the down; said bins being in closed communication with the outlet from the cyclone-chamber and the central outlet for the down, respectively.

8. In a down-separator, a cyclone-chamber having a core and also having an outlet for the down at said core in combination with a bin for the separated contour feathers and a separate bin for the down; said bins being in closed communication with the outlet from the cyclone-chamber and the central outlet for the down, respectively.

9. In a down-separator, a cyclone-chamber having a core and also having an outlet for the down at said core, one portion of said chamber having a conical formation in combination with a bin for the separated contour feathers and a separate bin for the down; said bins being in closed communication with the outlet from the cyclone-chamber and the central outlet for the down, respectively.

10. A down-separator comprising a cyclone-chamber and an adjustable vent in combination with a bin for the separated contour feathers and a separate bin for the down; said bins being in closed communication with the outlet from the cyclone-chamber and the central outlet for the down, respectively.

11. A down-separator comprising a cyclone-chamber, an outlet for the contour feathers, a collector for the down, and means for effecting a relative adjustment between said outlet and said collector in combination with a bin for the separated contour feathers and a separate bin for the down; said bins being in closed communication with the outlet from the cyclone-chamber and the central outlet for the down, respectively.

12. A down-separator comprising a cyclone-chamber, said chamber consisting of a drum and a cone joined thereto, and an adjustable outlet for the down in combination with a bin for the separated contour feathers and a separate bin for the down; said bins being in closed communication with the outlet from the cyclone-chamber and the central outlet for the down, respectively.

13. A down-separator consisting of a cyclone-chamber having both an inlet for an air-blast and an outlet for the contour feathers, and also provided with an adjustable collector for the down, said collector extending into the interior of the cyclone-chamber in combination with a bin for the separated contour feathers and a separate bin for the down; said bins being in closed communication with the outlet from the cyclone-chamber and the central outlet for the down, respectively.

14. A down-collector consisting of a cyclone-chamber having both an inlet for an air-blast and an outlet for the contour feathers, and also provided with an adjustable collector for the down, said collector extending into the interior of the cyclone-chamber and terminating about centrally or midway between the ends and sides thereof in combination with a bin for the separated contour feathers and a separate bin for the down; said bins being in closed communication with the outlet from the cyclone-chamber and the central outlet for the down, respectively.

15. A down-separator consisting of a circular cyclone-chamber having both an inlet for an air-blast and an outlet for the contour feathers, and having an endwise adjustable hollow core which collects the down and conducts it out of the chamber in combination with a bin for the separated contour feathers and a separated bin for the down; said bins being in closed communication with the outlet from the cyclone-chamber and the central outlet for the down, respectively.

16. In a down-separator, a cyclone-chamber consisting of a drum and a cone and having an internally-arranged adjustable down-collector in combination with a bin for the separated contour feathers and a separate bin for the down; said bins being in closed communication with the outlet from the cyclone-chamber and the central outlet for the down, respectively.

17. In a down-separator, a cyclone-chamber consisting of a drum joined to the upper end of a downwardly-tapering cone, and a vertically-adjustable tubular down-collector extending downwardly from the head of said drum into the interior thereof in combination with a bin for the separated contour feathers and a separate bin for the down; said bins being in closed communication with the outlet from the cyclone-chamber and the central outlet for the down, respectively.

18. In a down-separator, the combination of drum 4, cone 6, adjustable tube 8, and pipe 9 in combination with a bin for the separated contour feathers and a separate bin for the down; said bins being in closed communication with the outlet from the cyclone-chamber and the central outlet for the down, respectively.

19. In a down-separator, the combination of drum 4, cone 6, adjustable tube 8, pipe 9, and cap 13 in combination with a bin for the separated contour feathers and a separate bin for the down; said bins being in closed communication with the outlet from the cyclone-chamber and the central outlet for the down, respectively.

20. A down-separator comprising a cyclone-chamber having a tapering outlet for the contour feathers, a core, an outlet for the down, and means for adjusting the last-mentioned outlet in combination with a bin for the separated contour feathers and a separate bin for the down; said bins being in closed communication with the outlet from the cyclone-chamber and the central outlet for the down, respectively.

21. In a down-separator, the combination of drum 4, cone 6, tube 8, pipe 9, and wing-screws 10 in combination with a bin for the separated contour feathers and a separate bin for the down; said bin being in closed communication with the outlet from the cyclone-chamber and the central outlet for the down, respectively.

22. In a down-separator, the combination of drum 4, cone 6, tube 8, pipe 9, wing-screws 10, and perforations 11 in combination

with a bin for the separated contour feathers and a separate bin for the down; said bins being in closed communication with the outlet from the cyclone-chamber and the central outlet for the down, respectively.

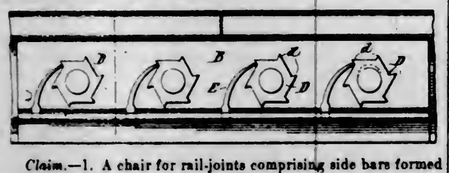
23. The combination of box 3, drum 4 having head 5, cone 6, pipe 9, cap 13, tube 8, wing-screws 10, and perforations 11 in combination with a bin for the separated contour feathers and a separate bin for the down; said bins being in closed communication with the outlet from the cyclone-chamber and the central outlet for the down, respectively.

24. A down-separating apparatus comprising a cyclone-chamber having an inlet for a blast of air, feathers and down, and having an outlet for the contour feathers, a bin in closed communication with said outlet, said chamber having a tubular core which terminates at its lower end within the chamber, a second bin, a closed conductor from said core to said bin, an opening being provided in said conductor to give access to said core, and a cover for said opening.

25. A down-separating apparatus comprising a cyclone-chamber having a lower outlet for contour feathers; a bin in closed communication with said outlet; said chamber having an upper central collector for down; said collector being adjustable for height; a conductor surmounting said conductor, and provided at its upper end with an opening and a cover, and a pipe connected to said conductor; and a bin to which said pipe leads.

26. A down-separating apparatus comprising a cyclone-drum, having an inlet for a blast of feathers and down, a bottom outlet for feathers, a bin in closed communication with said outlet, a top outlet for down, a second bin in closed communication with top outlet, a tubular central collector adjustable for height, an opening being provided to give access to said collector for adjusting the same, and a cover provided for closing said opening.

819,172. RAIL-JOINT. LEO L. SAVOIE, New Orleans, La. Filed May 13, 1905. Serial No. 260,236.



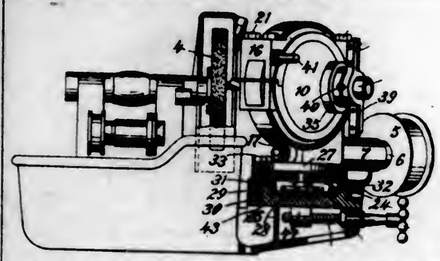
Claim.—1. A chair for rail-joints comprising side bars formed to engage the base and web of the rails on opposite sides thereof, each side bar comprising a vertical web-engaging portion and a horizontal base-engaging portion, the web-engaging portions being perforated to receive bolts, bolts passed through said web-engaging portions and the included rail-webs, nuts threaded to said bolts, and a plate secured to the horizontal base-engaging portion of one of said side bars and provided with spring locking members to engage with said nuts.

2. A rail-joint connection comprising side bars arranged to engage on opposite sides of the meeting ends of two rails, each bar comprising a vertical web-engaging portion and a substantially horizontal base portion which fits over the foot of the rails, the vertical portions being perforated to register with perforations in the rail-webs, bolts having threaded ends, nuts to engage on the ends of said bolts, and means for preventing the unscrewing of said nuts comprising a plate having teeth struck up therefrom fitted in a dovetailed groove cut in the base portion of one of said side bars.

3. A rail-joint connection comprising side bars arranged to engage the webs on opposite side of the meeting ends of two rails, each bar having also a projecting base portion to fit over the side of the rail-feet and said bars being perforated to register with perforations in the rail-webs, bolts arranged to pass through said perforations, each bolt being provided with means engaging one of said side bars whereby it is held from turning, nuts arranged to fit one on each of said bolts, and a plate having a number of teeth struck up therefrom to engage with said nuts, said plate being secured to the base portion of one of said bars by being fitted in a dovetailed groove cut in said base and the edges of said groove being swaged in to engage in recesses formed on said plate.

819,173. DRILL-GRINDING MACHINE. FRIEDRICH SCHMALTZ, Mühlweg, Offenbach-on-the-Main, Germany. Divided and this application filed July 5, 1904. Serial No. 215,268.

Claim.—1. In a machine for grinding drills, the combination of a drill-holder continuously revolving about an outside axis, and intermittently rotary about its own axis, and a driver connected up with said holder for producing those two motions.



2. In a machine for grinding drills, the combination of a drill-holder continuously revolving about an outside axis, and intermittently rotary about its own axis, a driver connected up with said holder for producing those two motions, and means for causing the intermittent rotations to be through equal curves.

3. In a machine for grinding drills, the combination of a drill-holder continuously revolving about an outside axis and intermittently rotary about its own axis, and a driver connected up with said holder for producing those two motions, the means for connecting up said driver to said holder, consisting of spiral gearing for producing the revolving motion, a clutch and stop for producing the intermittent rotations.

4. In a machine for grinding drills, the combination of a drill-holder continuously revolving about an outside axis, and intermittently rotary about its own axis, a driver connected up with said holder for producing those two motions, the intermittent rotations being through equal curves, a grinding-disk, and means for reciprocating the holder radially with respect to said disk.

5. In a machine for grinding drills, the combination of a drill-holder continuously revolving about an outside axis, and intermittently rotary about its own axis, a driver connected up with said holder for producing those two motions, the intermittent rotations being through equal curves, a grinding-disk, and means for reciprocating the holder radially with respect to said disk continuously, said means being governed by said driver automatically.

6. In a machine for grinding drills, a drill-holder continuously revolving about an outside axis, and intermittently rotary about its own axis, and continuously reciprocating and means for producing the several motions named herein.

7. In a machine for grinding drills, the combination of a drill-holder continuously revolving about an outside axis, and intermittently rotary about its own axis, and continuously reciprocating, and a grinding-disk whose axis intersects the axis of said holder, at predetermined phases of said axis and means for producing the several motions named herein.

8. In a machine for grinding drills, the combination of a drill-holder continuously revolving about an outside axis, and intermittently rotary about its own axis, a driver connected up with said holder for producing those two motions, and a grinding-disk whose axis intersects the axis of said holder.

9. In a machine for grinding drills, the combination of a drill-holder continuously revolving about an outside axis, and intermittently rotary about its own axis, a driver connected up with said holder for producing those two motions, the intermittent rotations being through equal curves, a grinding-disk, and means for reciprocating the holder radially with respect to said disk, a plane of the holder-axis intersecting the plane of the disk-axis.

10. In a machine for grinding drills, the combination of a grinding-disk, a driver, a drill-holder, and means connected up between the last two elements for automatically revolving said holder around an outside axis, and to and from the face of said disk, said outside axis intersecting the axis of the holder.

11. In a machine for grinding drills, the combination of a grinding-disk, a driver, a drill-holder, and means connected up between the last two elements for automatically revolving said holder around an outside axis, and to and from the face of said disk, said outside axis intersecting the axis of the holder at a point laterally of the point of the drill which is carried by said holder.

12. In a machine for grinding drills, the combination of a grinding-disk, a driver, a drill-holder, and means connected up between the last two elements for automatically revolving said holder around an outside axis and to and from the face of said disk, said outside axis intersecting the axis of the holder at a point within the body of the drill which is carried by said holder, to bring the bevel-surface which is beyond the cutting edge of the drill nearer the grinding-surface of the disk than said edge was brought, so that a clearance behind the cutting edge is produced.

13. In a machine for grinding drills, the combination of a rotating disk with a grinding surface perpendicular to its own axis, a drill-holder with its own axis intersecting said surface at an acute angle, a driver, and means connected up between said driver and said holder for automatically revolving the point of the drill in said holder in a circle which is at an angle and tangent to said grinding-surface.

14. In a machine for grinding drills, the combination of a rotating disk with a grinding-surface perpendicular to its own axis, a drill-holder with its own axis intersecting said surface at an acute angle, a driver, and means connected up between said driver and said holder for automatically revolving the point of the drill in said holder in a circle which is at an angle and tangent to said grinding-surface, the angle between the axis of the holder and the grinding-surface being such that the cutting edge and contiguous conical surface of the drill remain in contact for a predetermined time with the grinding-surface at each evolution of the holder, and a device controlled by said driver for adjusting the drill twice in each revolution to bring the surfaces of the drill to be ground against said grinding-surface.

15. In a machine for grinding drills, the combination of a drill-holder continuously revolving about an outside axis, and intermittently rotary about its own axis, a driver connected up with said holder for producing those two motions, and a manual device for feeding said holder to and fro.

16. In a machine for grinding drills, the combination of a drill-holder continuously revolving about an outside axis, and intermittently rotary about its own axis, and a driver connected up with said holder for producing those two motions, said intermittent rotations being through semicircles, and a manual device for feeding said holder to and fro.

17. In a machine for grinding drills, the combination of a drill-holder, means for continuously revolving said holder about an outside axis, intermittently rotating it about its own axis, and continuously reciprocating the holder, and a manual device for feeding said holder to and fro.

18. In a machine for grinding drills, the combination of a drill-holder continuously revolving about an outside axis, and intermittently rotary about its own axis, a driver connected up with said holder for producing those two motions, the intermittent rotations being through equal curves, a grinding-disk, means for reciprocating the holder radially with respect to said disk, a plane of the holder-axis intersecting the plane of the disk-axis, and a manual device for feeding said holder to and fro.

19. In a machine for grinding drills, the combination of a grinding-disk, a driver, a drill-holder, means connected up between the last two elements for automatically revolving said holder around an outside axis, and to and from the face of said disk, said outside axis intersecting the axis of the holder, and a manual device for feeding said holder to and fro.

20. In a machine for grinding drills, the combination of a rotating disk with a grinding-surface perpendicular to its own axis, a drill-holder with its own axis intersecting said surface at an acute angle, a driver, means connected up between said driver and said holder for automatically revolving the point of the drill in said holder in a circle which is at an angle and tangent to said grinding-surface, and a manual device for feeding said holder to and fro.

21. In a machine for grinding drills, the combination of a drill-holder continuously revolving about an outside axis, and intermittently rotary about its own axis, a driver connected up with said holder for producing those two motions, and a continuously-rotating socket-wheel supporting said holder eccentrically.

22. In a machine for grinding drills, the combination of a drill-holder continuously revolving about an outside axis, and intermittently rotary about its own axis, and continuously reciprocating, a grinding-disk whose axis intersects the axis of said holder, at predetermined phases of said axis, and a continuously-rotating socket-wheel supporting said holder eccentrically and means for producing the several motions named therein.

23. In a machine for grinding drills, the combination of a drill-holder continuously revolving about an outside axis, and intermittently rotary about its own axis, a driver connected up with said holder for producing those two motions, a grinding-disk whose axis intersects the axis of said holder, and a continuously-rotating socket-wheel supporting said holder eccentrically.

24. In a machine for grinding drills, the combination of a grinding-disk, a driver, a drill-holder, and means connected up between the last two elements for automatically revolving said holder around an outside axis and to and from the face of said disk, said outside axis intersecting the axis of the holder at a point within the body of the drill which is carried by said holder, to bring the bevel-surface which is beyond the cutting edge of the drill nearer the grinding-surface of the disk than said edge was brought, so that a clearance behind the cutting edge is produced, and a continuously-rotating socket-wheel supporting said holder eccentrically.

25. In a machine for grinding drills, the combination of a drill-holder continuously revolving about an outside axis, and intermittently rotary about its own axis, a driver connected up with said holder for producing those two motions, a continuously-rotating socket-wheel supporting said holder eccentrically, a clutch between said socket-wheel and said holder, and a stop for disengaging said clutch intermittently, for causing a predetermined number of partial rotations during each revolution of said holder.

26. In a machine for grinding drills, the combination of a drill-holder continuously revolving about an outside axis, and intermittently rotary about its own axis, and continuously reciprocating, a grinding-disk whose axis intersects the axis of said holder, at predetermined phases of said axis, a continuously-rotating socket-wheel supporting said holder eccentrically, a clutch between said socket-wheel and said holder, and a stop for disengaging said clutch intermittently, for causing a predetermined number of partial rotations during each revolution of said holder.

27. In a machine for grinding drills, the combination of a drill-holder continuously revolving about an outside axis, and intermittently rotary about its own axis, a driver connected up with said holder for producing those two motions, a grinding-disk whose axis intersects the axis of said holder, and a continuously-rotating socket-wheel supporting said holder eccentrically, a clutch between said socket-wheel and said holder, and a stop for disengaging said clutch intermittently, for causing a predetermined number of partial rotations during each revolution of said holder.

28. In a machine for grinding drills, the combination of a grinding-disk, a driver, a drill-holder, means connected up between the last two elements for automatically revolving said holder around an outside axis and to and from the face of said disk, said outside axis intersecting the axis of the holder at a point within the body of the drill which is carried by said holder, to bring the bevel-surface which is beyond the cutting edge of the drill nearer the grinding-surface of the disk than said edge was brought, so that a clearance behind the cutting edge is produced, a continuously-rotating socket-wheel supporting said holder eccentrically, a clutch between said socket-wheel and said holder, and a stop for disengaging said clutch intermittently, for causing a predetermined number of partial rotations during each revolution of said holder.

29. In a machine for grinding drills, the combination of a drill-holder, a socket-wheel in which said holder is supported eccentrically to the axis of said wheel, a driving-shaft, and spiral gearing between said socket-wheel and said shaft.

30. In a machine for grinding drills, the combination of a drill-holder continuously revolving about an outside axis, and intermittently rotary about its own axis, a driver connected up with said holder for producing those two motions, a grinding-disk whose axis intersects the axis of said holder, and a device for continuously reciprocating said holder.

31. In a machine for grinding drills, the combination of a grinding-disk, a driver, a drill-holder, means connected up between the last two elements for automatically revolving said holder around an outside axis, and to and from the face of said disk, said outside axis intersecting the axis of the holder, and a device for continuously reciprocating said holder.

32. In a machine for grinding drills, the combination of a grinding-disk, a driver, a drill-holder, means connected up between the last two elements for automatically revolving said holder around an outside axis and to and from the face of said disk, said outside axis intersecting the axis of the holder at a point within the body of the drill which is carried by said holder, to bring the bevel-surface which is beyond the cutting edge of the drill nearer the grinding-surface of the disk than said edge was brought, so that a clearance behind the cutting edge is produced, and a device for continuously reciprocating said holder.

33. In a machine for grinding drills, the combination of a rotating disk with a grinding-surface perpendicular to its own axis, a drill-holder with its own axis intersecting said surface at an acute angle, a driver, means connected up between said driver and said

holder for automatically revolving the point of the drill in said holder in a circle which is at an angle and tangent to said grinding-surface, and a device for continuously reciprocating said holder.

34. In a machine for grinding drills, the combination of a drill-holder, a socket-wheel in which said holder is supported eccentrically to the axis of said wheel, and a device for continuously reciprocating said holder.

35. In a machine for grinding drills, the combination of a drill-holder, a socket-wheel in which said holder is supported eccentrically to the axis of said wheel, and at such an angle that the axis of said holder and said wheel intersect each other at a point within the material of the drill carried by said holder during normal operation, and a device for continuously reciprocating said holder.

36. In a machine for grinding drills, the combination of a drill-holder, mechanism revolving said drill-holder about an outside axis, a device for intermittently rotating said holder, means for reciprocating said holder, and a driver connected up with the above-named elements.

37. In a machine for grinding drills, the combination of a drill-holder, mechanism revolving said drill-holder about an outside axis, a device for intermittently rotating said holder, means for reciprocating said holder, a driver connected up with the above-named elements, and a handle for reciprocating the holder in a different direction from the other reciprocations.

38. In a machine for grinding drills, the combination of a drill-holder, mechanism revolving said drill-holder about an outside axis, a device for intermittently rotating said holder, means for reciprocating said holder, a driver connected up with the above-named elements, said mechanism consisting of a socket-wheel in whose socket is carried said holder, teeth on said wheel, a shaft for the driver, and a pinion on said shaft gearing with said wheel.

39. In a machine for grinding drills, the combination of a drill-holder, mechanism revolving said drill-holder about an outside axis, a device for intermittently rotating said holder, means for reciprocating said holder, a driver connected up with the above-named elements, said mechanism consisting of a socket-wheel in whose socket is carried said holder, teeth on said wheel, a shaft for the driver and a pinion on said shaft gearing with said wheel, said wheel having its bearing at the periphery thereof.

40. In a machine for grinding drills, the combination of a drill-holder, mechanism revolving said drill-holder about an outside axis, a device for intermittently rotating said holder, means for reciprocating said holder, a driver connected up with the above-named elements, the above-named elements being so disposed, and the said motions being so related, that the point of the drill in said holder moves repeatedly in a closed curve, and that the drill intermittently rotates, and a grinding-disk whose surface is tangent to said curve and which is tangent successively to the ground surfaces of said drill.

41. In a machine for grinding drills, the combination of a drill-holder, mechanism revolving said drill-holder about an outside axis, a device for intermittently rotating said holder, means for reciprocating said holder, a driver connected up with the above-named elements, a handle for reciprocating the holder in a different direction from the other reciprocations, the above-named elements being so disposed, and the said motions being so related, that the point of the drill in said holder moves repeatedly in a closed curve, and that the drill intermittently rotates, and a grinding-disk whose surface is tangent to said curve and which is tangent successively to the ground surfaces of said drill.

42. In a machine for grinding drills, the combination of a drill-holder, mechanism revolving said drill-holder about an outside axis, a device for intermittently rotating said holder, means for reciprocating said holder, a driver connected up with the above-named elements, said mechanism consisting of a socket-wheel in whose socket is carried said holder, teeth on said wheel, a shaft for the driver, a pinion on said shaft gearing with said wheel, the above-named elements being so disposed, and the said motions being so related, that the point of the drill in said holder moves repeatedly in a closed curve, and that the drill intermittently rotates, and a grinding-disk whose surface is tangent to said curve and which is tangent successively to the ground surfaces of said drill.

43. In a machine for grinding drills, the combination of a drill-holder, a socket-wheel supporting said holder eccentrically, mechanism for revolving said wheel continuously, a device for intermittently rotating said holder, means for reciprocating all of the above-named elements continuously, and a driver connected up with said elements for producing said motions.

44. In a machine for grinding drills, the combination of a drill-holder, a socket-wheel supporting said holder eccentrically, mechanism for revolving said wheel continuously, a device for intermittently rotating said holder, means for reciprocating all of the above-named elements continuously, and a driver connected up with said elements for producing said motions, said device consisting of a clutch between said wheel and said holder, a projection on said holder, and a stop in the path of said projection for disengaging said clutch and rotating said holder during the time that said stop is against said projection.

45. In a machine for grinding drills, the combination of a drill-holder, a socket-wheel supporting said holder eccentrically, mechanism for revolving said wheel continuously, a device for intermittently rotating said holder, means for reciprocating all of the above-named elements continuously, a driver connected up with said elements for producing said motions, said device consisting of a clutch between said wheel and said holder, a projection on said holder, a stop in the path of said projection for disengaging said clutch and rotating said holder during the time that said stop is against said projection, said clutch consisting of a spring-pin projecting from said wheel, and a notched collar surrounding and fixed to said holder.

46. In a machine for grinding drills, the combination of a drill-holder, a socket-wheel supporting said holder eccentrically, mechanism for revolving said wheel continuously, a device for intermittently rotating said holder, means for reciprocating all of the above-named elements continuously, a driver connected up with said elements for producing said motions, said device consisting of a clutch between said wheel and said holder, a projection on said holder, a stop in the path of said projection for disengaging said clutch and rotating said holder during the time that said stop is against said projection, said projection consisting of a clamp detachable and adjustable relatively to said holder.

47. In a machine for grinding drills, the combination of a drill-holder, a socket-wheel supporting said holder eccentrically, mechanism for revolving said wheel continuously, a device for intermittently rotating said holder, means for reciprocating all of the above-named elements continuously, a driver connected up with said elements for producing said motions, said device consisting of a clutch between said wheel and said holder, a projection on said holder, and a stop in the path of said projection for disengaging said clutch and rotating said holder during the time that said stop is against said projection, said projection consisting of a clamp detachable and adjustable relatively to said holder, said clamp consisting of a ring having set-screws for pressing against said holder, said projection extending in both directions from said ring.

48. In a machine for grinding drills, the combination of a drill-holder, a socket-wheel supporting said holder eccentrically, mechanism for revolving said wheel continuously, a device for intermittently rotating said holder, means for reciprocating all of the above-named elements continuously, and a driver connected up with said elements for producing said motions, said device consisting of a clutch between said wheel and said holder, a projection on said holder, a stop in the path of said projection for disengaging said clutch and rotating said holder during the time that said stop is against said projection, and a bearing for said wheel supporting said pin.

49. In a machine for grinding drills, the combination of a drill-holder, a socket-wheel supporting said holder eccentrically, mechanism for revolving said wheel continuously, a device for intermittently rotating said holder, means for reciprocating all of the above-named elements continuously, and a driver connected up with said elements for producing said motions, said device consisting of a clutch between said wheel and said holder, a projection on said holder, a stop in the path of said projection for disengaging said clutch and rotating said holder during the time that said stop is against said projection, the above-named elements being carried by a common slide, a grinding-disk, and a manual device for moving said slide to and from said disk.

50. In a machine for grinding drills, the combination of a drill-holder, a socket-wheel supporting said holder eccentrically, mechanism for revolving said wheel continuously, a device for intermittently rotating said holder, means for reciprocating all of the above-named elements continuously, and a driver connected up with said elements for producing said motions, said device consisting of a clutch between said wheel and said holder, a projection on said holder, a stop in the path of said projection for disengaging said clutch and rotating said holder during the time that said stop is against said projection, said clutch consisting of a spring-pin projecting from said wheel, and a notched collar surrounding and fixed to said holder, the above-named elements being carried by a common slide, a grinding-disk, and a manual device for moving said slide to and from said disk.

51. In a machine for grinding drills, the combination of a drill-holder, a socket-wheel supporting said holder eccentrically, mechanism for revolving said wheel continuously, a device for intermittently rotating said holder, means for reciprocating all of the above-named elements continuously, a driver connected up with said elements for producing said motions, said device consisting of a clutch between said wheel and said holder, a projection on said holder, a stop in the path of said projection for disengaging said clutch and rotating said holder during the time that said stop is against said projection, said projection consisting of a clamp detachable and adjustable, relatively to said holder, the above-named elements being carried by a common slide, a grinding-disk, and a manual device for moving said slide to and from said disk.

52. In a machine for grinding drills, the combination of a drill-holders, a socket-wheel supporting said holder eccentrically, mechanism for revolving said wheel continuously, a device for intermittently rotating said holder, means for reciprocating all of the above-named elements continuously, a driver connected up with said elements for producing said motions, said device consisting of a clutch between said wheel and said holder, a projection on said holder, a stop in the path of said projection for disengaging said clutch and rotating said holder during the time that said stop is against said projection, said projection consisting of a clamp detachable and adjustable relatively to said holder, said clamp consisting of a ring having set-screws for pressing against said holder, said projection extending in both directions from said ring, the above-named elements being carried by a common slide, a grinding-disk, and a manual device for moving said slide to and from said disk.

53. In a machine for grinding drills, the combination of a drill-holder, a socket-wheel supporting said holder eccentrically, mechanism for revolving said wheel continuously, a device for intermittently rotating said holder, means for reciprocating all of the above-named elements continuously, and a driver connected up with said elements for producing said motions, said device consisting of a clutch between said wheel and said holder, a projection on said holder, a stop in the path of said projection for disengaging said clutch and rotating said holder during the time that said stop is against said projection, a bearing for said wheel supporting said pin, the above-named elements being carried by a common slide, a grinding-disk, and a manual device for moving said slide to and from said disk.

54. In a machine for grinding drills, the combination of a drill-holder, a socket-wheel supporting said holder eccentrically, mechanism for revolving said wheel continuously, a device for intermittently rotating said holder, means for reciprocating all of the above-named elements continuously, and a driver connected up with said elements for producing said motions, said means consisting of a cam and rollers for said cam.

55. In a machine for grinding drills, the combination of a drill-holder, a socket-wheel supporting said holder eccentrically, mechanism for revolving said wheel continuously, a device for intermittently rotating said holder, means for reciprocating all of the above-named elements continuously, and a driver connected up with said elements for producing said motions, said device consisting of a worm on said driver, a worm-wheel engaged with said worm, a base-plate for said socket-wheel, forming a bearing for said worm-wheel, a cam carried by said worm-wheel, and rollers bearing against said cam for producing the reciprocating motions.

56. In a machine for grinding drills, the combination of a drill-holder, a socket-wheel supporting said holder eccentrically, mechanism for revolving said wheel continuously, a device for intermittently rotating said holder, means for reciprocating all of the above-named elements continuously, a driver connected up with said elements for producing said motions, a slide supporting all the above-named elements, a handle for moving the same to and fro, a base-plate for the socket-wheel, and devices connected up between said driver and said slide for reciprocating said base-plate.

57. In a machine for grinding drills, the combination of a drill-holder, a socket-wheel supporting said holder eccentrically, mechanism for revolving said wheel continuously, a device for intermittently rotating said holder, means for reciprocating all of the above-named elements continuously, a driver connected up with said elements for producing said motions, a slide supporting all the above-named elements, a handle for moving the same to and fro, a base-plate for the socket-wheel, devices connected up between said driver and said slide for reciprocating said base-plate, the last-named device consisting of a rotary cam on the base-plate, and grinding-rollers on the slide.

58. In a machine for grinding drills, the combination of a drill-holder, mechanism for revolving said drill-holder about an outside axis, a device for intermittently rotating said holder, means for reciprocating said holder, and a driver connected up with the above-named elements, said mechanism consisting of a socket-wheel in whose socket is carried said holder, teeth on said wheel, a shaft for the driver, and a pinion on said shaft gearing with said wheel, said device consisting of a clutch between said wheel and said holder, a projection on said holder, and a stop in the path of said projection for disengaging said clutch and rotating said holder during the time that said stop is against said projection.

59. In a machine for grinding drills, the combination of a drill-holder, mechanism for revolving said drill-holder about an outside axis, a device for intermittently rotating said holder, means for reciprocating said holder, and a driver connected up with the above-named elements, said mechanism consisting of a socket-wheel in whose socket is carried said holder, teeth on said wheel, a shaft for the driver, and a pinion on said shaft gearing with said wheel, said device consisting of a clutch between said wheel and said holder, a projection on said holder, and a stop in the path of said projection for disengaging said clutch and rotating said holder during the time that said stop is against said projection, said device consisting of a worm on said driver, a worm-wheel engaged with said worm, a base-plate for said socket-wheel forming a bearing for said worm-wheel, a cam carried by said worm-wheel, and rollers bearing against said cam for producing the reciprocating motions.

60. In a machine for grinding drills, the combination of a drill-holder, mechanism for revolving said drill-holder about an outside axis, a device for intermittently rotating said holder, means for reciprocating said holder, a driver connected up with the above-named elements, said mechanism consisting of a socket-wheel in whose socket is carried said holder, teeth on said wheel, a shaft for the driver, and a pinion on said shaft gearing with said wheel, said device consisting of a clutch between said wheel and said holder, a projection on said holder, and a stop in the path of said projection for disengaging said clutch and rotating said holder during the time that said stop is against said projection, said device consisting of a worm on said driver, a worm-wheel engaged with said worm, a base-plate for said socket-wheel forming a bearing for said worm-wheel, a cam carried by said worm-wheel, and rollers bearing against said cam for producing the reciprocating motions, a slide supporting all the above-named elements, a handle for moving the same to and fro, a base-plate for the socket-wheel, and devices connected up between said driver and said slide for reciprocating said base-plate.

61. In a machine for grinding drills, the combination of a drill-holder, a socket-wheel in which said holder is supported eccentrically to the axis of said wheel, a device for continuously reciprocating said holder, and a brake for holding said device stationary.

62. In a machine for grinding drills, the combination of a grinding-disk, a driver, a drill-holder, means connected up between the last two elements for automatically revolving said holder around an outside axis, and to and from the face of said disk, said outside axis intersecting the axis of the holder, a device for continuously reciprocating said holder parallel to the grinding-surface of said disk, a manually-movable slide supporting the said device for feeding the holder to and fro from said disk, said device consisting of a cam supporting the tool-holder and rollers, a second slide supporting said rollers, and a brake for locking the two slides together.

63. In a machine for grinding drills, the combination of a grinding-disk, a driver, a drill-holder, means connected up between the last two elements for automatically revolving said holder around an outside axis and to and from the face of said disk, said outside axis intersecting the axis of the holder at a point within the body of the drill which is carried by said holder, to bring the bevel-surface which is beyond the cutting edge of the drill nearer the grinding-surface of the disk than said edge was brought, so that a clearance behind the cutting edge is produced, a device for continuously reciprocating said holder parallel to the grinding-surface of said disk, a manually-movable slide supporting the said device for feeding the holder to and fro from said disk, said device consisting of a cam supporting the tool-holder and rollers, a second slide supporting said rollers, and a brake for locking the two slides together.

64. In a machine for grinding drills, the combination of a rotating disk with a grinding-surface perpendicular to its own axis, a drill-holder with its own axis intersecting said surface at an acute angle, a driver, means connected up between said driver and said holder for automatically revolving the point of the drill in said holder in a circle which is at an angle and tangent to said grinding-surface, a device for continuously reciprocating said holder parallel to the grinding-surface of said disk, a manually-movable slide supporting

the said device for feeding the holder to and fro from said disk, said device consisting of a cam supporting the tool-holder and rollers, a second slide supporting said rollers, and a brake for locking the two slides together.

65. In a machine for grinding drills, the combination of a drill-holder, a socket-wheel supporting said holder eccentrically, mechanism for revolving said wheel continuously, a device for intermittently rotating said holder, means for reciprocating all of the above-named elements continuously, a driver connected up with said elements for producing said motions, said means consisting of a cam and rollers for said cam, a slide supporting the rollers, and a brake for locking the slide stationary.

66. In a machine for grinding drills, the combination of a drill-holder continuously revolving about an outside axis, and intermittently rotary about its own axis, a driver connected up with said holder for producing those two motions, the intermittent rotations being through equal curves, a grinding-disk, means for reciprocating the holder radially with respect to said disk continuously, said means being governed by said driver automatically, and a device controlled by said driver for intermittently feeding said holder toward said disk.

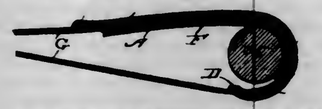
67. In a machine for grinding drills, the combination of a drill-holder continuously revolving about an outside axis, and intermittently rotary about its own axis, a driver connected up with said holder for producing those two motions, a grinding-disk whose axis intersects the axis of said holder, and a device controlled by said driver for intermittently feeding said holder toward said disk.

68. In a machine for grinding drills, the combination of a grinding-disk, a driver, a drill-holder, means connected up between the last two elements for automatically revolving said holder around an outside axis, and to and from the face of said disk, said outside axis intersecting the axis of the holder, and a device controlled by said driver for intermittently feeding said holder toward said disk.

69. In a machine for grinding drills, the combination of a grinding-disk, a driver, a drill-holder, means connected up between the last two elements for automatically revolving said holder around an outside axis, and to and from the face of said disk, said outside axis intersecting the axis of the holder, a manual device for feeding said holder to and fro, and a device controlled by said driver for intermittently feeding said holder toward said disk.

70. In a machine for grinding drills, the combination of a drill-holder, a grinding-disk, means for reciprocating the holder along the face of said disk, means for feeding said holder intermittently toward said disk, means for turning the holder for a grinding action against said disk, means for rotating said holder to bring a different cutting edge of the drill against said disk, and a driver connected up with all of said means for grinding a drill automatically.

819,174. **BREAST-STRAP PROTECTOR.** JAMES A. SCOTT, Havelock, Iowa. Filed Mar. 13, 1905. Serial No. 250,473.



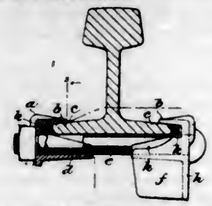
Claim.—1. A breast-strap protector comprising a plate bent back upon itself adjacent one end and having side flanges, said flanges being continued beyond the plate at each end, the ends of said flanges being connected by end cross-bars, to hold the breast-strap in place.

2. A breast-strap protector comprising a plate bent back upon itself adjacent one end and provided with side flanges, said flanges extending beyond the ends of the plate, cross-bars connecting the ends of the flanges, and an intermediate cross-bar connected to the flanges at their curved ends, between the flanges.

3. A breast-strap consisting of a plate bent back upon itself adjacent one end, said plate having side flanges, said flanges projecting beyond the ends of the plate, cross-bars connecting the ends of the flanges and an intermediate cross-bar connecting the flanges adjacent the cross-bar at the curved end, and a leather sheath connected to the plate upon the inner side as set forth.

4. A breast-strap protector consisting of a plate bent back upon itself adjacent one end provided with side flanges projecting beyond the ends of the plate and connected at their ends by cross-bars, an intermediate cross-bar arranged between the flanges adjacent the curved end, and a leather shield connected to the plate and extending out to each side adjacent the flanges for the purpose described.

819,175. **RAIL-ANCHOR.** JOHN M. SCOTT, Racine, Wis. Filed Feb. 27, 1906. Serial No. 303,304.



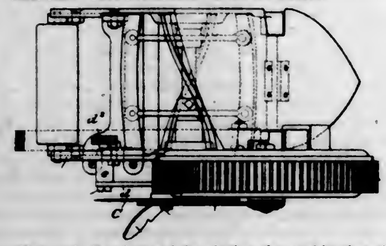
Claim.—1. A rail-anchor comprising separate jaws, each formed on the upper side with an inturned longitudinal flange to fit over a rail-base and cut away below said flange to clear the rail, a bolt adjustably connecting said jaws and adapted to bear against the bottom of the rail, each jaw having a bearing against the under side of the bolt and one of the jaws having a depending bearing adapted to abut against the side of a tie, substantially as described.

2. A rail-anchor comprising separate jaws each formed on the upper side with an inturned longitudinal flange to fit over a rail-base, and with an inwardly-extended bearing on the under side of a transverse bolt-hole below said flange, a bolt adjustably connecting said jaws and adapted to bear against the bottom of the rail and to clamp the jaws out of contact with each other on the rail-base, one of said jaws having a depending bearing adapted to abut against the side of a tie, substantially as described.

3. A rail-anchor comprising separate jaws each formed on the upper side with an inturned longitudinal flange to fit over a rail-base and cut away below said flange to clear the bottom of the rail, a bolt adjustably connecting said jaws and adapted to bear against the bottom of the rail, each jaw having an inwardly-extended bearing arranged to engage and support the bolt on its under side and at a distance from its ends and one of the jaws having a depending bearing adapted to abut against the side of a tie and cut away at the top to clear the rail, substantially as described.

4. A rail-anchor comprising separate jaws each formed at the top with an inturned longitudinal flange to fit over and engage with the upper inclined face of a rail-base, a vertical web having a bolt-hole through it below said flange, a bolt-supporting bearing extending inwardly from said web on the under side of the bolt-hole and a reinforcing-flange joining said web and bearing; a bolt adjustably connecting said jaws and adapted to bear against the bottom of the rail, each jaw being cut away or recessed below its top flange to clear the rail-base and one jaw having a depending bearing adapted to abut against the side of a tie, substantially as described.

819,176. **LAWN-TRIMMING DEVICE.** HARRY O. SECREST, Cleveland, Ohio. Filed Feb. 1, 1905. Serial No. 243,604.



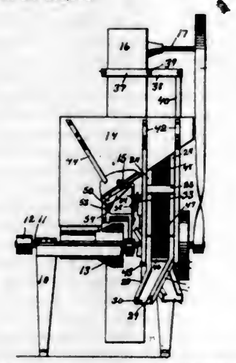
Claim.—1. In a lawn-edging device, the combination of a suitable frame, an arm mounted thereon, a rotatable cutter mounted upon said arm, and a plow mounted upon the latter near the cutting edge of said cutter.

2. In a lawn-edging device, the combination of a suitable frame, an adjustable arm mounted thereon, a rotatable cutter mounted upon said arm, and a plow mounted upon the latter near the cutting edge of said cutter.

3. In a lawn-edging device, the combination of a suitable frame, a ground-wheel mounted thereon, an arm pivotally mounted and having its pivotal axis in the line of axis of said wheel, means for fixing said arm in various angular positions relatively to said frame, a rotatable cutting-disk mounted upon said arm, and a plow mounted upon the latter and in proximity to the cutting edge of said disk.

4. In a lawn-edging device, the combination of a suitable frame, a ground-wheel mounted thereon, an arm pivotally mounted and having its pivotal axis in the line of axis of said wheel, a rotatable cutting-disk mounted upon said arm, and an adjusting-arm pivoted upon said first-named arm and having its pivotal axis in the line of axis of said disk, and means for securing said adjusting-arm to said frame at points varying relatively to each other.

819,177. **CORNMEAL-BOLTER.** HERMAN C. SELLE, Grinnell, Iowa, assignor of one-half to L. F. Selle, Grinnell, Iowa. Filed July 31, 1905. Serial No. 271,964.



Claim.—1. The combination with a grinding-mill having a pivoted lever designed to be vibrated during the operation of the mill, a sieve-frame adjustably and slidingly connected with the mill, means for introducing the product of the mill into the sieve-frame and a spring fixed to the sieve-frame and connected with the said pivoted lever and capable of adjustment toward and from the pivotal center thereof, said spring causing the sieve-frame to move in a straight line when the pivoted lever is vibrated.

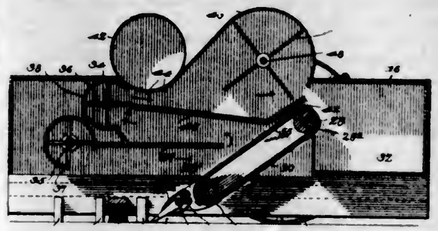
2. The combination with a grinding-mill, of a pivoted lever, means for vibrating the lever, an arm attached to the lever and formed with a series of openings, a sieve-frame arranged to receive discharge from the mill, means for supporting the sieve-frame to permit it to move vertically and a spring fixed at one end to the sieve-frame extended longitudinally thereof, its free end capable of up-and-down movement relative thereto, said free end designed to be passed through any of the openings in said arm and means for securing it therein.

3. The combination with a grinding-mill having a pivoted lever, means for vibrating the lever and an elevator-spout, of a hanger-frame adjustably and detachably connected with the elevator-spout, a cross-rod supported in said hanger-frame, a second hanger-frame fixed to a part of the mill, a cross-rod supported thereby, a sieve-frame slidingly mounted on said cross-rods, an arm fixed to the lever and provided with a row of openings extending from the pivotal center of the lever upwardly, a spring fixed to the sieve-frame at one end and capable of being fixed in any one of said row of openings and a pivoted block adjustably secured to the sieve-frame to hold the spring in the openings.

4. In a corn-mill bolter, a sieve-frame formed of a single piece of sheetmetal and comprising a solid bottom and solid sides, the top margins of said sides inclined inwardly, a sieve-supporting guide riveted to the inner face of each side, each guide having its upper and lower margins extended inwardly, a spout at the top of the discharge end of the sieve-frame having its sides formed of the upper portion of the sides of the sieve-frame, a bottom piece secured thereto forming an upper spout, a middle spout at the discharge end of the sieve-frame having its sides formed of the said sieve-guide members, a bottom piece therein to complete the spout, a third spout secured to the sieve-frame below the middle one and arranged to receive the discharge from the bottom of the sieve-frame, and a number of sieves for the frame, each comprising two side rails formed of sheetmetal, U-shaped in cross-section and designed to fit astride of the inwardly-projecting portions of the sieve-guides and an end rail U-shaped in cross-section designed when in position to stand astride of the bottoms of the said spout portions and a sieve secured to said rails.

5. The combination with a grinding-mill having a rotatable shaft, an eccentric on the shaft, a spring-actuated lever pivotally supported and held against said eccentric and a feed-plate, of a sieve-frame slidingly supported on the mill, an arm connected therewith, an arm connected with the said lever and having the arm of the sieve-frame adjustably fixed to it and a bolt fixed to the arm of the lever and also fixed to the feed-plate of the mill.

819,178. **STREET-SWEEPER.** PETER A. SHELEY, Louisville, Ky. Filed Oct. 20, 1904. Serial No. 229,204.



Claim.—1. In a street-sweeper, a casing, a dirt-receptacle, an endless conveyer for carrying dirt upward to the receptacle, means for directing dirt onto the conveyer, partitions arranged within the casing in front of the conveyer and forming in connection with the latter an air and dust passage, and means for directing currents of air through such passage to remove from the conveyer the lighter particles of dust and dirt in advance of the dumping-point of said conveyer.

2. In a street-sweeper, a casing having a dust-passage, a conveyer forming one wall of said passage, means for directing the dirt onto the conveyer, a series of partitions disposed at angles oblique to the plane of the conveyer and forming stationary walls of the passage, and fans or blowers for directing currents of air through the passage into contact with the carrying-surface of the conveyer, and for withdrawing the dust-laden air at a point in advance of the dumping-point of the conveyer.

3. In a street-sweeper, a casing having a dirt-receptacle, a conveyer for carrying the heavier particles of dirt and dust to said receptacle, means for directing dirt onto the conveyer, means for removing the lighter particles of dust and dirt from said conveyer in advance of the dumping-point of the latter, and for directing the same into the receptacle, and means for moistening the lighter particles of dust and dirt in advance of the deposit of the latter in said receptacle.

4. In a street-sweeping machine, a frame, a casing supported thereby and telescopically connected with the frame, springs between the frame and casing, dust disturbing and collecting devices carried by the frame, and means within the casing for directing the course of currents of dust-laden air.

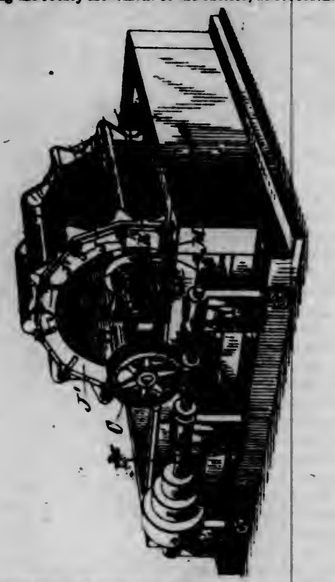
5. The combination with a pivotally-mounted conveyer-frame, of a conveyer, a pivot-bar at the bottom of the conveyer-frame, a plurality of independently-yieldable blade-sections mounted on the pivot-bar, springs for holding said blades in operative position, said springs being approximately U-shaped in form and bearing on both top and bottom of each section.

819,179. **PNEUMATIC FILTER.** EDWARD G. SHORTT, Carthage, N. Y., assignor of one-half to The New York Lime Company, Carthage, N. Y., a Corporation of New York. Filed Dec. 20, 1905. Serial No. 293,611.

Claim.—1. A pneumatic filter-press comprising a rotary carrier having a series of pockets about its circumference, a tank in which said pockets dip, a concaved shield extending over a portion of said carrier and adapted to retain the material within the pockets during a partial rotary movement of the carrier and means for subjecting the contents of each pocket to the action of a vacuum and also to the action of air under pressure at different moments during the rotary movement of the carrier, as set forth.

2. A pneumatic filter-press comprising a rotary carrier having a series of pockets about its circumference, a tank in which said pockets dip, a concaved shield extending over a portion of said carrier and adapted to retain the material within said pockets during a partial rotary movement of said carrier, each of said pockets having an opening in the bottom thereof, a recessed hub to said carrier, passages communicating between said openings and recesses, and means for bringing each of said recesses into communication with a vacuum and with an air-pressure duct at different intervals during the rotary movement of the carrier, as set forth.

3. A pneumatic filter-press comprising a rotary carrier having a series of pockets about its circumference, a tank in which said pockets dip, a concaved shield extending over a portion of said carrier and adapted to retain the material within said pockets during a partial rotary movement of said carrier, each of said pockets having an opening in the bottom thereof, a recessed hub to said carrier, passages communicating between said openings and recesses, and adjustable means for bringing each of said recesses into communication with a vacuum and with an air-pressure duct at different intervals during the rotary movement of the carrier, as set forth.



4. A pneumatic filter-press comprising a rotary carrier having a series of pockets about its circumference, a tank in which said pockets dip, a concaved shield extending over a portion of said carrier and adapted to retain the material within said pockets during a partial rotary movement of said carrier, each of said pockets having an opening in the bottom thereof, a recessed hub to said carrier, open-ended passages communicating between each pocket and a recess of said hub, a stationary chest having ports opening through the face thereof, adapted to communicate with said recesses, one of said ports adapted to communicate with the vacuum and the other with a pressure-chamber, as set forth.

5. A pneumatic filter-press comprising a rotary carrier having a series of pockets about its circumference, a tank in which said pockets dip, a concaved shield extending over a portion of said carrier and adapted to retain the material within said pockets during a partial rotary movement of said carrier, each of said pockets having an opening in the bottom thereof, a recessed hub to said carrier, open-ended passages communicating between each pocket and a recess of said hub, a stationary chest held yieldingly against the recessed face of said hub and provided with ports opening through the face thereof, adapted to communicate with said recesses, one of said ports adapted to communicate with the vacuum and the other with a pressure-chamber, as set forth.

6. A pneumatic filter-press comprising a rotary carrier having a series of pockets about its circumference, a tank in which said pockets dip, a concaved shield extending over a portion of said carrier and adapted to retain the material within said pockets during a partial rotary movement of said carrier each of said pockets having an opening in the bottom thereof, a recessed hub to said carrier, open-ended passages communicating between each pocket and a recess of said hub, a stationary chest held yieldingly against the recessed face of said hub and provided with ports opening through the face thereof, adapted to communicate with said recesses, one of said ports adapted to communicate with the vacuum and the other with a pressure-chamber, and means for adjusting said chest with reference to the recessed hub, as set forth.

7. A pneumatic filter-press comprising a rotary carrier having a series of pockets about its circumference, a tank in which said pockets dip, a concaved shield extending over a portion of said carrier and adapted to retain the material within said pockets during a partial rotary movement of said carrier, each of said pockets having an opening in the bottom thereof, a hub to said carrier having recesses formed therein, passages communicating between said recesses and the openings in said pockets, a stationary chest having ports opening through the face thereof and adapted to register with the recesses in said hub, whereby communication may be had between each recess and a vacuum, and a pressure-cylinder at different moments during the rotary movement of the carrier, and a hollow yielding sleeve adjustably secured to said chest, as set forth.

8. A pneumatic filter-press comprising a rotary carrier having a series of pockets about its circumference, means for automatically filling said pockets as the carrier rotates, the bottom of each pocket having an opening therein, a hub to said carrier having recesses formed therein, passages communicating between said recesses and the openings in said pockets, a stationary chest having ports opening through the face thereof and adapted to register with the recesses in said hub, whereby communication may be had between each recess and a vacuum, and a pressure-cylinder at different moments during the rotary movement of the carrier, and a hollow yielding shaft, one end of which has a flange with elongated slots therein, bolts secured to said chest and passing through said slots, and nuts upon said bolts, as set forth.

9. A pneumatic filter-press comprising a rotary carrier having a series of pockets about its circumference, means for automatically filling said pockets as the carrier rotates, each of said pockets having an opening in the bottom thereof, a shaft on which the carrier is mounted, the hub of said carrier having series of recesses formed therein, open-ended passages, each communicating between an opening in the pocket and one of said recesses, a stationary chest having ports opening through the face thereof and adapted to register with said recesses whereby each recess may be thrown into communication with the vacuum and with an air-pressure chamber at different moments during the rotary movement of the carrier, a hollow shaft fixed at one end to said chest, its other end being recessed, a spring seated in said recess and adapted to hold the chest tightly against the recessed face of said hub, as set forth.

10. A pneumatic filter-press comprising a rotary carrier having a series of pockets about its circumference, means for automatically filling said pockets as the carrier rotates, and means for subjecting the contents of each pocket to the action of a vacuum and also to the action of air under pressure at different moments during the rotary movement of the carrier, a corrugated plate positioned in each pocket, means for holding the plates in the pockets, a strainer over each pocket, and means for holding the strainers upon the carrier, as set forth.

11. A pneumatic filter-press comprising a rotary carrier having a series of pockets about its circumference, means for automatically filling said pockets as the carrier rotates, and means for subjecting the contents of each pocket to the action of a vacuum and also to the action of air under pressure at different moments during the rotary movement of the carrier, a corrugated plate positioned in each pocket, means for holding the plates in the pockets, a strainer over each pocket, a series of plates, and means for holding said plates upon the carrier, as set forth.

12. A pneumatic filter-press comprising a rotary carrier having a series of pockets about its circumference, a bucket positioned adjacent to each pocket and affording means to fill the latter as the carrier rotates, and means for subjecting the contents of each pocket to the action of a vacuum and also to the action of air under pressure at different moments during the rotary movement of the carrier, as set forth.

13. A pneumatic filter-press comprising a rotary carrier having a series of pockets about its circumference, means for automatically filling said pockets as the carrier rotates, and means for subjecting the contents of each pocket to the action of a vacuum and also to the action of air under pressure at different moments during the rotary movement of the carrier, a corrugated plate positioned in each pocket, means for holding the plates in the pockets, a strainer over each pocket, a series of plates and means for holding said plates upon the carrier, and a bucket carried by each plate, as set forth.

14. A pneumatic filter-press comprising a rotary carrier having a series of pockets about its circumference, means for automatically filling said pockets as the carrier rotates, and means for subjecting the contents of each pocket to the action of a vacuum and also to the action of air under pressure at different moments during the rotary movement of the carrier, a corrugated plate positioned in each pocket, means for holding the plates in the pockets, a strainer over each pocket, means for holding the strainers upon the carrier, each clamp having slotted lugs projecting from the ends thereof, and means engaging said lugs for holding the clamps upon the carrier, as set forth.

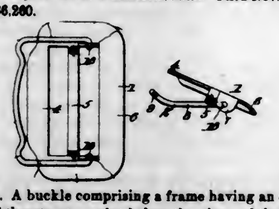
15. A pneumatic filter-press comprising a rotary carrier having a series of pockets about its circumference, means for automatically filling said pockets as the carrier rotates, and means for subjecting the contents of each pocket to the action of a vacuum and also to the action of air under pressure at different moments during the rotary movement of the carrier, a corrugated plate positioned in each pocket, means for holding the plates in the pockets, a strainer over each pocket, means for holding the strainers upon the carrier, each clamp having slotted lugs projecting from the ends thereof, bolts having angled ends fitted in holes in the rim of the carrier and positioned in the slots of said lugs, nuts fitted upon the threaded ends of said bolts, as set forth.

16. A pneumatic filter-press comprising a rotary carrier having a series of pockets about its circumference, means for automatically filling said pockets as the carrier rotates, and means for subjecting the contents of each pocket to the action of a vacuum and also to the action of air under pressure at different moments during the rotary movement of the carrier, a corrugated plate positioned in each pocket, means for holding the plates in the pockets, a strainer over each pocket, a series of clamps and means for holding said clamps upon the carrier, a bucket carried by each clamp, each bucket having an end which extends beyond the marginal edge of the bucket, as set forth.

17. A pneumatic filter-press comprising a rotary carrier having a circumference made up of a series of flat portions, each of which is recessed forming a pocket, means for subjecting the contents of each pocket to the action of a vacuum and also to the action of air under pressure at different moments during the rotary movement of the carrier, a series of clamps having angled ends adapted to fit over the marginal edges of the pockets, a corrugated plate mounted in each pocket, a screen held by said clamps over each pocket, and means for automatically filling the pockets as the carrier rotates, as set forth.

18. A pneumatic filter-press comprising a rotary carrier having a circumference made up of a series of flat portions, each of which is recessed forming a pocket, means for subjecting the contents of each pocket to the action of a vacuum and also to the action of air under pressure at different moments during the rotary movement of the carrier, a series of clamps having angled ends adapted to fit over the marginal edges of the pockets, a corrugated plate mounted in each pocket, a screen held by said clamps over each pocket, a bucket formed integral with each of said clamps and positioned along the marginal edge of each pocket, as set forth.

819,180. BUCKLE. EDWARD M. SOUTHWICK, Worcester, Mass., assignor to George A. Weld, Winchester, Mass. Filed Nov. 8, 1899. Serial No. 736,260.



Claim.—1. A buckle comprising a frame having an edge, and a tongue pivoted thereto at a point below the plane of the frame, said edge and tongue presenting opposing jaws formed to bite one part of an interposed strip, said frame edge and tongue being relatively proportioned and connected to bite the strip part without overlapping, a portion of said frame constituting a stop to limit the movement of the tongue so as to permit the jaw thereof to snap slightly past the frame edge and to also prevent the tongue from passing the frame edge beyond the strip-gripping relation, a bar for the attachment of another part of the strip, said bar being connected with the tongue and located between the said frame edge and the pivotal point of the tongue, the frame having a bar 6 at the rear of the pivotal point of the tongue and above the plane of the attached part of the strip to form a space between said bar and said strip, whereby the first-named part of the strip may be passed under said bar 6 to fill said space and prevent the accidental disengagement of the said jaws.

2. A buckle comprising a frame having an edge, and a pivoted tongue, said edge and tongue presenting opposing jaws formed to bite an interposed strip, said frame edge and tongue being relatively proportioned and connected to bite without overlapping, a portion of said frame constituting a stop to limit the movement of the tongue in one direction and prevent it from passing the frame edge beyond a strap-gripping relation, said tongue being undulated.

3. A buckle comprising a frame having an edge, and a pivoted tongue, said edge and tongue presenting opposing jaws formed to bite an interposed strip, said frame edge and tongue being relatively proportioned and connected to bite without overlapping, a portion of said frame constituting a stop to limit the movement of the tongue in one direction and prevent it from passing the frame edge beyond a strap-gripping relation, the biting portion of said tongue being undulated in form.

4. A buckle comprising a frame and a tongue pivoted thereto, said tongue and one edge of said frame presenting opposing jaws formed to bite an interposed strap, said frame and said tongue being relatively proportioned, and connected to bite without overlapping, a portion of said frame constituting a stop to limit the movement of the tongue in one direction and prevent it from passing the frame edge beyond a strap-gripping relation, one of the said opposing jaws having curved portions adapted to permit the jaws to yield relatively to each other substantially in the plane of the buckle.

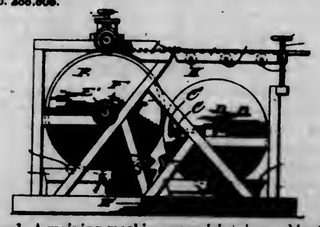
5. A buckle comprising hinged jaws having relatively resilient strap-gripping portions formed to bite the strap without overlapping, and constructed to exert a frictional hold on the strap, one of the jaw forming a stop to limit the relative movement of the jaws in one direction to prevent them from passing beyond a strap-gripping relation, said buckle being provided with a strap-end-attaching member having a position relatively to the hinged point and the gripping-point, to cause a pulling movement on said member to close the jaws to their strap-gripping relation.

819,181. CONVERTIBLE SPADE AND HOE. JOHN P. STENSTROM, Mora, Minn., assignor of one-third to Anton Peterson and one-third to Andrew M. Anderson, Mora, Minn. Filed Sept. 7, 1905. Serial No. 277,355.



Claim.—The combination with a handle 2 having a bifurcated trunnion 7, of a blade 1 having a socket member formed with the outside hinged lugs 4 and the centrally-located relatively long lug 5 pivotally connected to said bifurcated trunnion 7, the said lug 5 working between the prongs thereof, and the lock-ring 9 having a notch 10 and cam-surface 11, which ring is mounted on said trunnion 7 and operates on said lug 5 to lock said blade in either of its two positions, and which cam-surface 11 coöperates with bearing-surfaces carried by said blade to frictionally hold said ring in its locked position, substantially as described.

819,182. FRICTION GRAINING-MACHINE. FRED A. TAYLOR and NATHAN E. FLINT, San Francisco, Cal. Filed Nov. 23, 1905. Serial No. 288,809.

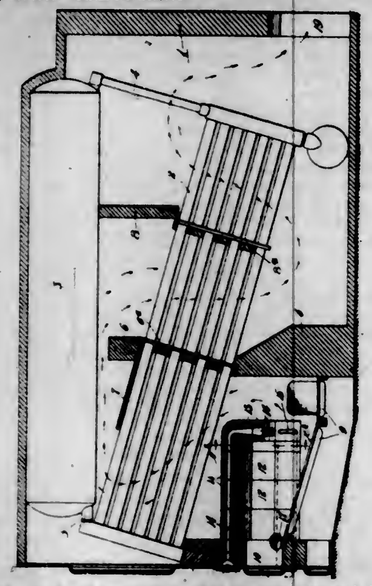


Claim.—1. A graining-machine comprising, in combination with a frame, a positive adjustable cylinder adapted to carry a design for the graining, a printing-roller, an adjustable impression-cylinder, a rack hinged at its inner end intermediate and above said positive cylinder and roller, and means for raising and lowering the outer end of said rack, as set forth.

2. A graining-machine comprising, in combination with a frame, a horizontally-adjustable positive cylinder, a printing-roller journaled in the frame of the apparatus, a vertically-adjustable impression-cylinder mounted above said roller, a rack hinged intermediate and above said positive cylinder and roller, adjusting-screws

mounted in threaded apertures in the outer end of said rack and resting upon said frame, as set forth.

819,183. FURNACE. JOHN C. TELLER, Minneapolis, Minn. Filed May 23, 1905. Serial No. 261,773.



Claim.—1. In a furnace, the combination with a fire-arch having a depending transverse inner wall formed of blocks provided with air-passages forming, when put together, independent air-ducts, said air-ducts having damper-controlled inlets, substantially as described.

2. In a furnace, the combination with a fire-arch provided with side walls and a transverse inner wall, formed of blocks provided with air-passages which, when the blocks are put together, form independent air-ducts in the side walls below the transverse inner wall and in the arch and depending transverse wall, and independent dampers controlling the inlets of the several air-ducts, substantially as described.

819,184. ANTIFRICTION-BEARING. WILLIAM THORNTON, Chattanooga, Tenn. Filed Oct. 20, 1904. Serial No. 230,292.



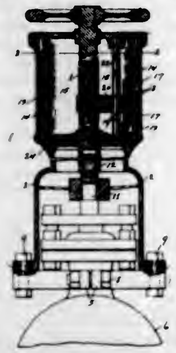
Claim.—1. An antifriction-bearing comprising a fixed member having an annular recess therein, a rotary member provided with a cylindrical portion mounted in said recess, elongated rollers in said recess between the members having contracted ends seated upon the base of the recess in the fixed member, and means for sustaining the rotary member free of the other ends of the elongated rollers.

2. An antifriction-bearing comprising a fixed member having an annular recess and a groove below said recess, a rotary member having a cylindrical portion mounted in said recess and provided with a groove at its lower end, elongated rollers in the recess surrounding the cylinder and balls mounted in the grooves in the fixed member and the cylindrical portion of the rotary member and sustaining the rotary member free of the upper ends of the elongated rollers.

3. An antifriction-bearing comprising a fixed ring having an annular recess and a groove below said recess, a rotary member having a cylindrical portion disposed within said fixed member and having a groove at its lower end, elongated rollers in said recess between the cylindrical portion of the rotary member and the vertical wall of the recess, said rollers having contracted ends supported upon the bottom of the recess, and balls mounted to run in the grooves in the cylindrical portion of the rotary member and the ring and sustaining the rotary member free of the elongated rollers.

4. In a device of the character described, the combination with a frame, a vertical shaft having a bearing at one end in the frame, a rotary member secured on the shaft, said rotary member having a cylindrical depending portion provided at its lower end with a groove, a fixed ring having an annular recess, and also having a groove below the recess, elongated rollers mounted in said recess, and balls mounted in the grooves in the fixed ring and the cylindrical portion of the fixed member and sustaining the rotary member free of the upper ends of the elongated rollers.

819,185. VALVE-INDICATOR. GEORGE P. VINCENT, Schenectady, N. Y., assignor of one-fourth to Herman Wagner, one-fourth to Albert B. Van Voast, and one-fourth to M. Frankie Vincent, Schenectady, N. Y. Filed Apr. 13, 1905. Serial No. 255,366.



Claim.—1. In an indicator, the combination with the case provided with an inspection-aperture; and a spindle rotatively mounted within the case; of an indicator member mounted within said case to rotate or revolve concentrically with said spindle, said member being adapted in certain of its positions for the display through said inspection-apertures of indicating characters; and operating connections between said spindle and indicator member whereby said member is rotated.

2. In an indicator, the combination with a case provided with an inspection-aperture; and a spindle rotatively mounted within the case; of an indicator-cylinder rotatively mounted within the case concentrically with said spindle, and adapted in certain of its positions for the display through said inspection-aperture of indicating characters; and operating connections between said spindle and cylinder whereby rotative movements are imparted to the latter.

3. In an indicator the combination with a case provided with a plurality of inspection-apertures disposed about its periphery; and a spindle rotatively mounted within the case; of an indicator-cylinder rotatively mounted within the case concentrically with said spindle, and adapted in certain of its positions for the display through all of said inspection-apertures simultaneously of like indicating characters; and operating connections between said spindle and cylinder whereby rotative movements are imparted to the latter.

4. In an indicator, the combination with a case provided with an inspection-aperture; and a spindle rotatively mounted within said case; of an indicator member capable of rotative or revoluble movements within the case concentrically with said spindle, and adapted in certain of its positions for the display through said inspection-aperture of indicating characters; a nut fitting and adapted to travel along a screw-threaded portion of said spindle; and cam connections between said nut and indicator member whereby rotative or revoluble movements are imparted to the latter.

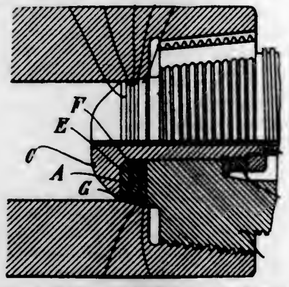
5. In an indicator, the combination with a case provided with an inspection-aperture; and a spindle rotatively mounted within the case; of an indicator-cylinder rotatively mounted within the case concentrically with said spindle, and adapted in certain positions for the display through said inspection-aperture of indicating characters; a nut fitting and adapted to travel along a screw-threaded portion of said spindle; and cam connections between said nut and cylinder whereby rotative movements are imparted to the latter.

6. In an indicator, the combination with a case provided with an inspection-aperture; and a spindle rotatively mounted within the case; of an indicator-cylinder rotatively mounted within the case concentrically with said spindle; a cam fixed upon said cylinder and provided with an inclined cam-slot; and a nut fitting and adapted to travel along a screw-threaded portion of said spindle; and having a projection adapted to fit within said cam-groove.

7. In an indicator, the combination with a case provided with a plurality of inspection-apertures disposed about its periphery; and a spindle rotatively mounted within the case; of an indicator-cylinder rotatively mounted within the case concentrically with the spindle and adapted in certain positions for the display through all of the inspection-apertures simultaneously of like indicating characters; a cam fixed upon said cylinder and provided with an inclined cam-slot; and a nut fitting and adapted to travel along said spindle and having a projection adapted to fit within said cam-groove.

8. In an indicator, the combination with a case having an inspection-aperture; and a spindle rotatively mounted within said case; of an indicator-cylinder rotatively mounted within said case concentrically with said spindle and adapted in certain of its positions for the display through said inspection-aperture of indicating characters; a cam-plate provided with an inclined cam-slot adjustably mounted upon the inner side of said cylinder; means for locking said cam-plate in different positions of adjustment in which said slot occupies differently-inclined positions; and a nut fitting and adapted to travel along a screw-threaded portion of said spindle and having a projection adapted to fit within said cam-groove.

819,186. PLASTIC GAS-CHECK FOR SCREW BREECH MECHANISMS. JOHN VOLLMER, Rellinghausen, near Essen-on-the-Ruhr, and HERMANN HERBACHOWSKI, Essen-on-the-Ruhr, Germany, assignors to Fried. Krupp Aktiengesellschaft, Essen-on-the-Ruhr, Germany. Filed Sept. 12, 1905. Serial No. 278,185.



Claim.—1. A plastic gas-check for screw breech mechanisms comprising an annular core of pressure-resisting material, and a layer of plastic material covering the outer periphery and face of said core.

2. A plastic gas-check for screw breech mechanisms comprising a core of pressure-resisting material and a layer of plastic material by which the core is entirely surrounded.

3. A plastic gas-check for screw breech mechanisms comprising an annular core of pressure-resisting material, and a layer of plastic material covering its outer periphery and its front and rear faces.

4. A plastic gas-check for screw breech mechanisms comprising an annular core of pressure-resisting material, a layer of plastic material covering its outer periphery and its front and rear faces, and a pair of protecting-rings of pressure-resisting material covering the edges of the outer periphery of said plastic layer.

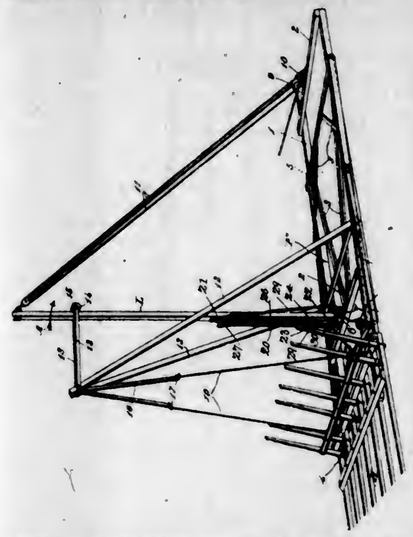
5. A plastic gas-check for screw breech mechanisms comprising a plurality of cores of pressure-resisting material, and plastic material arranged between and on the outer peripheries of the cores.

6. A plastic gas-check for screw breech mechanisms comprising a plurality of cores of pressure-resisting material, and intervening plastic material covering the outer periphery and the front and rear faces of the cores of pressure-resisting material.

7. In a gas-check for screw breech mechanisms, the combination of a plurality of outwardly-tapering cores, and a plastic material arranged between the outwardly-tapering portions of the cores.

8. In a gas-check for screw breech mechanisms, the combination with the protecting-rings, of the plastic material filling the space between the rings, and a core for the plastic material, of less diameter than the rings.

819,187. HAY-STACKER. OLEE P. VROOM, Linneus, Mo., assignor to The Superior Hay Stacker Manufacturing Company, Linneus, Mo. Filed Sept. 11, 1905. Serial No. 277,939.



Claim.—1. In a hay-stacker, an operating-lever, a pivoted hoisting-frame, and means connecting the apex of the hoisting-frame with the lever and movable upon the latter.

2. In a hay-stacker, an operating-lever, a pivoted hoisting-frame, straps connected with the apex of the latter, and a pulley supported by said straps and movably engaging the lever.

3. In a hay-staker, a base-frame, a stacker-frame connected therewith, a pivoted hoisting-frame, collapsible connecting means between the hoisting-frame and the stacker-frame, a operating-lever, a pulley movable upon said lever, and straps connecting the axis of said pulley with the apex of the hoisting-frame.

4. In a hay-stacker, a pivoted stacker-frame, a pivoted hoisting-frame, and collapsible connecting means between said frames including slidably-connected rigid members.

5. In a hay-stacker, the combination with suitably-connected hoisting and stacker frames, of an operating-lever, and means connecting the hoisting-frame with the lever and movable upon the latter between its fulcrum and its free end to which power is applied.

6. In a hay-stacker, a base-frame, a stacker-frame connected therewith, a pivoted hoisting-frame, an operating-lever, a guide-rod connected with and spaced from said lever, a spring-actuated slide movable upon said guide-rod, and suitably-guided flexible members connected with said slide and with the head of the stacker-frame.

7. In a hay-stacker, a base-frame, a stacker-frame connected therewith, a pivoted hoisting-frame, collapsible connecting means between the hoisting-frame and the stacker-frame, an operating-lever, a guide-rod connected with and spaced from said lever, a collar adjustable upon the guide-rod, a slide movable upon the latter and having laterally-extending perforated ears, suitably-guided flexible elements connecting the slide with the head of the stacker-frame, and a spring coiled upon the guide-rod between the collar and the slide.

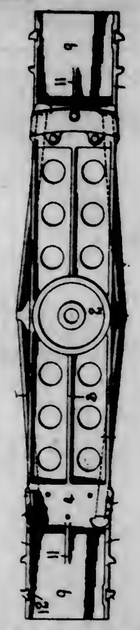
819,188. CAR-TRUCK BOLSTER. JOHN C. WANDS, St. Louis, Mo. Filed Jan. 8, 1906. Serial No. 295,104.

Claim.—1. In a car-truck bolster, the combination with a casting constituting a compression member, said casting having recesses formed in the side faces thereof at each end, and tension members which are seated in said recesses; substantially as described.

2. In a car-truck bolster, the combination of a casting constituting a compression member, said casting having heads at each end, the side walls of said heads being recessed, tension members seated in said recesses, and extensions projecting beyond the head portions, said extensions forming spring-seats; substantially as described.

3. In a car-truck bolster, the combination of a casting constituting the compression member, said casting having recesses forming seats for the headed ends of the tension member, a headed tension

member, and means for holding said tension member in position; substantially as described.



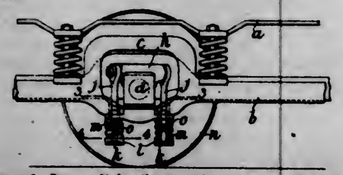
4. In a car-truck bolster, the combination with a casting forming a compression member, said casting having a center bearing, heads at each end of the casting for supporting the side bearing, recesses in the sides of said heads, headed tension-rods whose ends are arranged in said recesses, keys for holding the ends of said tension-rods in position, and extensions projecting beyond each head and forming spring-seats; substantially as described.

5. In a car-truck bolster, the combination of a casting forming a compression member, said casting having shouldered recesses near each end, headed tension-rods having their ends arranged in said recesses, wedge-shaped keys coöperating with the ends of said tension-rods to hold them in position; and means for holding said keys in place; substantially as described.

6. In a car-truck bolster, the combination of a casting having dovetailed grooves at its ends, and column-guides arranged in said dovetailed grooves; substantially as described.

7. A car-truck bolster having tapered dovetailed grooves, and wedge-shaped column-guides arranged in said grooves; substantially as described.

819,189. **RADIAL RAILWAY AND TRAMWAY TRUCK.** JAMES S. WARNER, Forest Gate, England. Filed Nov. 2, 1905. Serial No. 285,647.



Claim.—1. In a radial railway and tramway truck, the combination with a vehicle-supporting frame, of a subtruck-frame provided with a pin adapted to engage with a slot in said vehicle-supporting frame, axle-boxes connected to said subtruck-frame, an axle mounted in said axle-boxes, wheels mounted on said axle and connections between said axle-boxes and said supporting-frame whereby said axle and wheels may move transversely and longitudinally of the vehicle, substantially as described.

2. In a radial railway or tramway truck, the combination with a vehicle-supporting frame, of a lower frame yieldingly supporting said vehicle-supporting frame, axle-boxes, an axle mounted therein, wheels mounted on said axles, and yielding connections between said axle-boxes and said lower frame whereby said axle and wheels may move transversely and longitudinally of the vehicle, substantially as described.

3. In a radial or tramway truck, the combination with a vehicle-supporting frame, of a lower frame yieldingly supporting said vehicle-supporting frame, axle-boxes, an axle mounted therein, wheels mounted on said axles, and links connecting said axle-boxes and said lower frame whereby said axles and wheels may move transversely and longitudinally of the vehicle, substantially as described.

4. In a radial or tramway truck, the combination with a vehicle-supporting frame, of a lower frame yieldingly supporting said vehicle-supporting frame, axle-boxes, an axle mounted therein, wheels mounted on said axles, links connected to said axle-boxes passing through orifices in said lower frame, yielding connections between said links and said frame whereby said axle and wheels may move transversely and longitudinally of the vehicle, substantially as described.

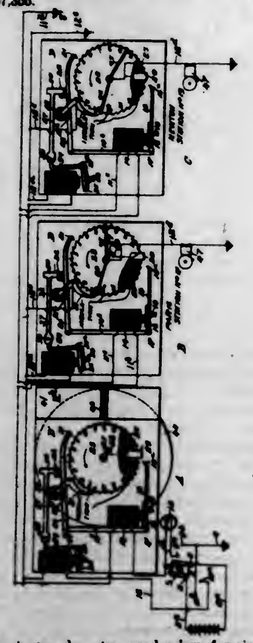
5. In a radial railway or tramway truck, the combination with the axle-boxes of stirrups which straddle the same at an inclination to the longitudinal axis thereof and support springs carrying the truck-frame, substantially as described.

6. In a radial railway or tramway truck, the combination with the axle-boxes of plates having horns or pivots for supporting links inclined to and carrying the truck-frame through the medium of springs, substantially as described.

7. In a radial railway or tramway truck, the combination with the axle-boxes of plates integral with the pivoted subtruck-frame and adapted to rest upon the axle-boxes, the said plates being recessed to receive the heads of links pivoted thereto and carrying the truck-frame through the medium of springs, substantially as described.

8. In a radial railway and tramway truck, the combination with a vehicle-supporting frame, of a lower frame yieldingly supporting the same, axle-boxes, plates on said axle-boxes and provided with pivot-pins having their longitudinal axes extending toward the same point, links fulcrumed on said pins and extending through orifices in said lower frame and yielding connections between said links and said frame, substantially as described.

819,190. **ELECTRIC SIGNALING SYSTEM.** JEAN F. WEBB and CLAYTON H. FREDERICKSON, Denver, Colo. Filed Apr. 25, 1905. Serial No. 257,355.



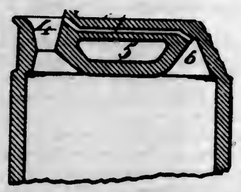
Claim.—1. A step-by-step mechanism for signaling systems comprising a supporting-frame, a pair of ratchet-disks mounted for simultaneous rotation in said frame, the teeth of one of said disks being disposed in a direction opposite to the teeth of the other disk, actuating means for said disks comprising a pivot-lever having a finger at one end for engaging the teeth of one of said disks, a pitman connected to the other end of said lever and having a dog, for engaging the teeth of the other disk, a pawl pivotally mounted on said frame and engaging the teeth of said other disk, and engaging said pitman, electromagnets for operating said actuating means, releasing mechanism for disconnecting said pitman and pawl from connection with the rotatable disk, electromagnets for actuating said releasing mechanism, and means for returning said disks to their normal positions when released, substantially as shown and described.

2. A step-by-step mechanism for signaling systems comprising a supporting-frame, a pair of ratchet-disks mounted for simultaneous rotation in said frame, the teeth of one of said disks being disposed in a direction opposite to the teeth of the other disk, actuating means for said disks comprising a pivot-lever having a finger at one end for engaging the teeth of one of said disks, a pitman connected to the other end of said lever and having a dog for engaging the teeth of the other disk, a pawl pivotally mounted on said frame and engaging the teeth of said other disk, and engaging said pitman, electromagnets for operating said actuating means, releasing mechanism for disconnecting said pitman, and pawl from connection with the ratchet-disks, electromagnets for actuating said releasing mechanism, means for returning said disks to their normal positions when released, and a plurality of contacts on said other disk for contacting with the pawl at times substantially as shown and described.

3. A device of the class described comprising a supporting frame, a shaft rotatable therein, a pair of rotatable disks mounted on said shaft to turn therewith, said disks having peripheral ratchet-teeth, an L-shaped lever fulcrumed on said frame and having a finger for engaging with one of said ratchet-disks at times, an operating-pitman connected with said L-shaped lever for engaging the other ratchet-disk at times, a pawl engaged by said pitman for engaging said other ratchet-disk, means for operating said L-shaped lever to operate the pitman to rotate the disks in one direction, a pivotally-mounted catch member for engaging said pitman at times to disengage it from the rotatable disks, magnetically-operating means for said actuating member and means for returning said ratchet-disks to their normal positions when released, substantially as shown and described.

4. An indicator for selective signaling systems comprising a supporting-frame, a shaft rotatable therein, a pair of rotatable disks mounted on said shaft to turn therewith, said rotatable disks having peripheral teeth, an indicating-dial mounted on the shaft to rotate therewith, an L-shaped lever fulcrumed on said frame and having a dog for engaging with one of said ratchet-disks at times, an operating-pitman connected with said L-shaped lever for engaging the other ratchet-disk at times, a pawl for engaging said other ratchet-disk, said pawl being engaged by said pitman, means for operating said L-shaped lever to operate the pitman to rotate the disks in one direction, a pivotally-mounted catch member for engaging said pitman at times to disengage the pitman from the rotatable disks, magnetically-operating means for said actuating member, and means for returning said ratchet-disks to their normal positions when released substantially as shown and described.

819,191. **JUG.** ARTHUR J. WEEKS, Akron, Ohio. Filed Jan. 23, 1906. Serial No. 297,236.



Claim.—1. A jug provided with a spout and an annularly-formed air-space in the upper portion of said jug connected together by an air-passage.

2. A jug provided with a spout and an annularly-formed air-space in the upper portion thereof connected by a vent extending to that portion of said air-passage which is highest when said spout is being used.

3. A jug having its top portion formed with an annular ridge, the portion inclosed by said ridge being depressed, a handle extending across said depressed part from one side of said ridge to the other.

4. A jug having its top portion formed with an annular ridge and a depressed central portion, and a handle extending across said depressed part wholly included within the normal outlines of said jug.

5. A jug having its top portion formed with an annular ridge and a depressed central portion, a handle extending across said depressed central portion, and a spout for said jug.

6. A jug having its upper portion formed with an annular ridge and a depressed central portion inclosed thereby, a perforated handle extending across said depressed portion, and a spout provided with a vent at one side of said ridge.

7. A jug having its top portion formed with an annular ridge and a depressed central portion surrounded thereby, a perforated handle extending across said depressed portion, and a spout for said jug provided with a vent connecting with said perforated handle.

8. A jug having an annular air-space formed in its top portion, an exteriorly-depressed central portion forming a portion of the walls of said air-space, a handle extending across said depressed portion, and a spout for said jug.

9. A jug having its top portion formed with an annular air-space and an exteriorly-depressed portion, the sides of which form one of the side walls of said air-space, a spout in said top, a handle extending across said depressed part to the spout, said handle being provided with an air-vent extending from said spout to said air-space.

10. A jug provided with a spout and further provided with a depressed portion, and a handle extending across said depressed portion provided with venting means to connect said spout with the interior of said jug.

11. A jug having a spout and provided with a depressed portion, and a handle extending across said depressed portion.

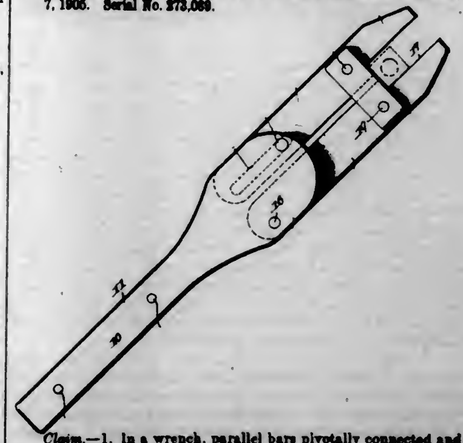
12. A jug having a spout and a depression in the top thereof adjacent said spout, and a perforated integral handle arranged wholly within the outlines of said depression.

13. A jug having a spout and a depression in the top thereof adjacent said spout, and a handle extending across said depression wholly included therein and provided with venting means connecting said spout and the interior of said jug.

14. A jug provided with a centrally-disposed depressed portion in its upper part, a spout arranged at one side of said depression, a handle extending from said spout to the other side of said depression provided with venting means connecting said spout and the interior of said jug.

15. A jug provided at its top portion with an exteriorly-arranged annular ridge containing an air-space corresponding in contour to said ridge, a handle extending between the sides of said ridge, a spout at one end of said handle, said handle being provided with means for establishing communication between said spout and the interior of said jug.

819,192. **WRENCH.** LA FAYETTE T. WEVER, Crawfordville, Fla., assignor of one-half to John M. Towles, Crawfordville, Fla. Filed Aug. 7, 1905. Serial No. 273,069.



Claim.—1. In a wrench, parallel bars pivotally connected and continued by work-engaging jaws, handle-plates embracing the ends

of the bars and pivoted to one of them and a pin through the plates and through a slot in the other bar.

2. A wrench comprising a handle embodying spaced parallel plates, a bar pivoted at one end between the plates and having a work-engaging jaw at its other end, another bar disposed parallel with the first bar and having a longitudinal slot between the plates and an opposed work-engaging jaw at the other end, means pivotally connecting the bars adjacent the jaws and a pin extending through the plates and the slot and so arranged that a movement of the handle relative to the bars separates the bars.

3. A wrench comprising two bars or members pivotally connected between their ends, one of the bars or members being provided at its inner portion with a longitudinal slot, an operating-lever embodying two plates having enlarged ends embracing the inner ends of the bars, said operating-lever being provided at one side with a pivot arranged in said slot, the other bar or member being pivoted to the opposite side of the operating-lever.

4. A wrench comprising two bars or members pivotally connected between their ends, one of the bars or members being provided at its inner portion with a longitudinal slot, an operating-lever composed of two side plates having enlarged end sections embracing the inner ends of the bars or members and having pivot-pins therethrough adjacent opposite sides, one of the pivots being arranged in said slot and the other pivot-pin connecting the inner end of the other bar or member.

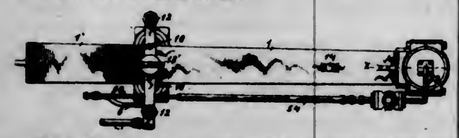
5. A wrench comprising pivotally-connected parallel bars lying in the same plane continued by opposed work-engaging jaws and one of said bars having a longitudinal slot therethrough, spaced handle-plates having broadened ends embracing the ends of the bars, a pivot-pin through one side of the plates and one bar and a pin through the other side of the plates and through the slot.

6. A wrench comprising pivotally-connected parallel bars continued by opposed work-engaging jaws and one of said bars having a longitudinal slot therethrough, a handle having spaced plates clamped upon opposite sides and with broadened parallel ends extending beyond the handle and embracing the bars, a pivot-pin through one side of the plates and one bar and a pin through the other side of the plates and through the slot.

7. A wrench comprising normally parallel bars continued by opposed work-engaging jaws and one of the bars having a longitudinal slot therethrough and the other a pivot-opening, strips disposed adjacent the jaws and pivotally connecting the bars, a handle embodying spaced plates embracing the bars, a pin through one side of the plates and the pivot-opening of the bar and a pin through the opposite side of the plates and through the longitudinal slot.

819,193. HYDRAULIC PIPE-RIVETING MACHINE. CARL WIGREL, Brooklyn, N. Y., assignor to Francis H. Stillman, Brooklyn, N. Y.

Filed Oct. 5, 1900. Serial No. 32,066.



Claim.—1. In a hydraulic pipe-riveting machine the combination of: a frame comprising a rigidly-united main stake and anvil-stake mounted to turn on an axis, the main stake having on it a ram-cylinder containing a ram; a riveting-tool affixed to the ram and movable by it to the work on the exterior of a suitably-supported pipe; a riveting-post on the anvil-stake to act on the work within the pipe; a sleeve surrounding and normally extending beyond the riveting-post; hydraulic apparatus on and within the anvil-stake to act on the sleeve; means to impose fluid-pressure on said hydraulic apparatus and on the ram; and means to render the force exerted by the ram great enough to overcome the resistance offered by the sleeve, the riveting-post acting on a rivet within the sleeve, and the inertia of the frame and mechanism mounted thereon, to the movement of the frame on its axis by said fluid-pressure to the proper extent to upset the rivet in the work clamped between the sleeve and head of the rivet; substantially as described.

2. In a hydraulic pipe-riveting machine mounted to turn on an axis, the part of the machine on one side of the axis overbalancing the part on the other side of the axis to render the machine movable by gravity to its normal position after a rivet has been set in the work, the combination of: a ram and riveting-tool on the main stake; a riveting-post and compressor on the anvil-stake; fluid-passages for conveying fluid to the ram and compressor; and a stop to limit the movement of the machine when it is restored by gravity to its normal position; substantially as described.

3. In a hydraulic pipe-riveting machine the combination of: a frame comprising a rigidly-united main stake and anvil-stake mounted to turn on an axis, the main stake having on it a ram-cylinder containing a ram; a riveting-tool affixed to the ram and movable by it to the work on the exterior of a suitably-supported pipe; a riveting-post on the anvil-stake to act on the work within the pipe; a sleeve surrounding and normally extending beyond the riveting-post; hydraulic apparatus on and within the anvil-stake to act on the sleeve, said apparatus including a piston or pistons smaller than the ram; and intercommunicating ducts wherein a continuous quantity of fluid acts on the ram and on said apparatus in opposite directions; substantially as described.

4. A hydraulic pipe-riveting machine mounted to turn on an axis and comprising the combination of: a frame having an upper main stake and a lower anvil-stake extending in front of the axis; a head 3 on the main stake; a ram 32 in the head; a piston 32′ active against the ram; a riveting-post on the anvil-stake; a compressor comprising a sleeve surrounding the riveting-post, and hydraulic mechanism for supporting and actuating the sleeve; and a system of intercommunicating pipes for conveying fluid to the ram and to the piston 32′ and to the compressor; substantially as described.

5. A hydraulic pipe-riveting machine comprising the combination of: a frame mounted on trunnions one of which is hollow, and having a main stake and an anvil-stake; a ram and riveting-tool on the main stake; a riveting-post and a hydraulic compressor on the anvil-stake; and a system of intercommunicating pipes for conveying fluid to the ram and to the compressor, the system of pipes being attached to the frame and being in communication with the interior of the hollow trunnion; substantially as described.

6. In a hydraulic pipe-riveting machine the combination with a ram and riveting-tool of: an anvil-stake to act within the pipe; a riveting-post on this stake; and a compressor comprising a sleeve surrounding the riveting-post, and pistons confined in intercommunicating chambers; substantially as described.

7. A hydraulic riveting and plate closing apparatus consisting of a ram and its cylinder with pipes by which fluid under pressure is admitted thereto, a mandrel and a rivet-head-forming tool opposed to the ram, a sleeve loosely surrounding the rivet-heading tool, hydraulic pressure-plungers and a head transversely connecting the upper ends thereof and supporting said sleeve and by which said sleeve is forced upwardly to form a support for the meeting pipe-sections whereby the pressure of the ram first closes the sections together, and afterward forces the support backwardly to allow the rivet to be headed.

8. A plate-closing and riveting device, consisting of a fluid-pressure cylinder, a ram movable therein and a riveting-plunger actuated by said ram, a mandrel over which the pipe-sections extend, a head fitted to the end of the mandrel and formed with a plurality of parallel vertically-disposed cylinders with plungers movable therein, a ring or head connecting the upper ends of the plungers transversely and a sleeve supported upon said ring or head, a head-forming stem intermediate of the cylinders and supported within said sleeve, means for applying hydraulic pressure to the plungers whereby the sleeve is held in position to receive and resist the first pressure upon the pipe-sections whereby they are closed together, said sleeve afterward yielding to allow all parts to advance until the inner end of the rivet contacts with and is upset by the action of the head-former within the sleeve.

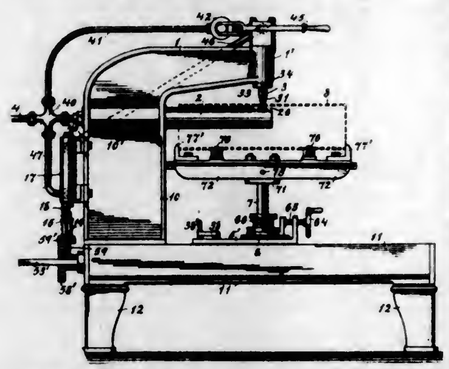
9. A hydraulic riveting apparatus consisting of a suspended upper section and mandrel, a cylinder and ram carried by the upper section, a head fitted to the end of the mandrel and formed with a plurality of vertical parallel cylinders with plungers, a head or ring transversely connecting the upper ends of the plungers and a sleeve actuated thereby, a head-former intermediate of the cylinders and over which the sleeve is slidable, pipes by which fluid-pressure is transmitted simultaneously from a common source to the ram and to the sleeve-actuating plungers whereby a yielding pressure of less force is opposed to that of the ram, and the plates or pipe-sections are first closed together, and the parts afterward moved by the superior pressure of the ram until the end of the rivet is headed by the head-former.

10. A plate-closing and riveting device including an upper section, and a mandrel united at their inner ends, heads detachably fitted to said section and mandrel and provided with riveting-tools, fluid-pressure devices actuating said tools from a common source, one of said heads formed with a plurality of cylinders and connected plungers movable therein, and plate-closing means actuated by the plungers

11. A hydraulic plate-closing and riveting apparatus consisting of a mandrel and upper section united at one end and divergent outwardly therefrom, a ram-cylinder fixed to the end of the section and plate-closing pressure-cylinders and plungers connected with the mandrel, a swivel-jointed pipe through which water from an accumulator or pressure apparatus is brought to the riveter, branches extending respectively along the upper section and mandrel, one connecting with the ram, and the other with the plate-closing cylinders.

819,194. HYDRAULIC PIPE-RIVETING MACHINE. CARL WIGREL, Brooklyn, N. Y., assignor to Francis H. Stillman, Brooklyn, N. Y.

Filed Jan. 17, 1901. Serial No. 43,577.



Claim.—1. In a hydraulic pipe-riveting machine the combination with a ram and riveting-tool of: an anvil-stake that extends into the skelps and that has within it a fluid-passage extending from the base to the outer part of the stake; a riveting-post at the outer end of this stake; and a compressor comprising a sleeve surrounding the riveting-post, and hydraulic apparatus to which fluid is conducted through said fluid-passage; substantially as described.

2. A hydraulic pipe-riveting machine comprising the combination of: a riveting-machine proper having an upper main stake and a lower anvil-stake; a vertically-movable work-support under the anvil-stake; and a spring acting upward on the work-support; substantially as described.

3. A hydraulic pipe-riveting machine comprising the combination of: a riveting-machine proper; and a work-support comprising vertically-yielding work-holding apparatus mounted to turn on a vertical axis; substantially as described.

4. A hydraulic pipe-riveting machine comprising the combination of: a riveting-machine proper; a work-support that is movable horizontally and that comprises vertically-yielding work-holding apparatus; and feeding mechanism to actuate said work-support; substantially as described.

5. A hydraulic pipe-riveting machine comprising the combination of: a riveting-machine proper; and a work-support comprising a platform or frame mounted to rock on a horizontal axis; substantially as described.

6. A hydraulic pipe-riveting machine comprising the combination of: a riveting-machine proper; and a work-support comprising a platform or frame mounted to rock on a horizontal axis and to turn on a vertical axis; substantially as described.

7. A hydraulic pipe-riveting machine comprising the combination of: a riveting-machine proper; and a work-support comprising a vertically-yielding platform or frame mounted to rock on a horizontal axis and to turn on a vertical axis; substantially as described.

8. A hydraulic pipe-riveting machine comprising the combination of: a riveting-machine proper; vertically-yielding work-holding apparatus; a carriage on which said apparatus is mounted; and mechanism to actuate the carriage; substantially as described.

9. A hydraulic pipe-riveting machine comprising the combination of: a riveting-machine proper; vertically-yielding work-holding apparatus; a carriage on which said apparatus is mounted; means to adjust said apparatus horizontally; and mechanism to actuate the carriage; substantially as described.

10. A hydraulic pipe-riveting machine comprising the combination of: a riveting-machine proper; vertically-yielding work-holding apparatus mounted to turn on a vertical axis; a carriage on which said apparatus is secured; and mechanism to actuate the carriage; substantially as described.

11. A hydraulic pipe-riveting-machine comprising the combination of: a riveting-machine proper; a platform or frame having work-holding devices thereon; a vertical post on which the platform or frame is mounted; a socket in which the post is secured; a spring within the socket, supporting the post; and a carriage to which the socket is attached; substantially as described.

12. A hydraulic pipe-riveting machine comprising the combination of: a riveting-machine proper; a platform or frame having work-holding devices thereon; a vertical post on which the platform or frame is mounted; a socket in which the post is secured; a spring within the socket, supporting the post; a carriage; and a slide supporting the socket on the carriage; substantially as described

13. In a hydraulic pipe-riveting machine the combination with the riveting-tools and hydraulic apparatus for actuating them of: a carriage with work-holding apparatus secured thereon; a pinion and gear fast on a common shaft mounted on the carriage; a fixed rack-bar with which the pinion engages; and mechanism connected with said hydraulic apparatus and said gear and operative to actuate said gear.

14. A hydraulic pipe-riveting machine comprising the combination of: a riveting-machine proper; a carriage with work-holding apparatus secured thereon; and carriage-driving mechanism comprising a shaft and a case through which the shaft extends, the case being mounted to turn in a fixed bearing, and the shaft having bearings on the carriage and being movable on its axis with the case and movable lengthwise in the case; substantially as described.

15. A hydraulic pipe-riveting machine comprising the combination of: a riveting-machine proper; a carriage with work-holding apparatus secured thereon; and carriage-driving mechanism comprising a shaft 53 and a case 56, the case being mounted in a fixed bearing 57, and the shaft having bearings on the frame of the carriage, and the part 53′ of the shaft extending through the case between the rollers 56′; substantially as described.

16. A hydraulic pipe-riveting-machine comprising the combination of: a riveting-machine proper; a carriage with work-holding apparatus secured thereon; carriage-driving mechanism operative to actuate the carriage in the intervals between the operations of the riveting-tools on the rivets, said mechanism comprising a shaft having bearings on the carriage and movable lengthwise with the carriage; and means to reverse the motion of the carriage; substantially as described.

17. A hydraulic pipe-riveting machine comprising the combination of: a riveting-machine proper; a carriage with work-holding apparatus secured thereon; a fixed rack-bar; a pinion mounted on the carriage and engaging with the rack-bar; a shaft having bearings on the frame of the carriage and movable lengthwise with the carriage; gearing between the pinion and said shaft; and shaft-driving mechanism to rotate said shaft; substantially as described.

18. A hydraulic riveting-machine consisting of a stationary frame having an arm or support and a mandrel, said arm or support and mandrel united at the rear and separated at the front, a fluid-pressure ram upon the arm or support, and a heading-tool carried thereby, a yielding plate-closing device and an internal heading-tool carried by the mandrel, said tools operating at right angles to the arm or support and mandrel, connections with a source of pressure-supply whereby the upper heading-tool is depressed, and connections located within the mandrel by which pressure is supplied simultaneously to act upon the plate-closer whereby the plates are clamped between it and the upper heading-tool, said plate-closer being moved by superior pressure from above to allow the rivet to contact with the inner head-forming tool.

19. In hydraulic riveting apparatus, a fixed mandrel and arm or support, a yielding plate-closer and heading-tool carried by the mandrel, a fluid-pressure-actuated ram and a heading-tool carried thereby in opposition to the plate-closer and tool carried by the mandrel, a carriage and mechanism by which it is advanced after the setting of each rivet to bring the next rivet-hole in line, and a tilting carrier or frame mounted upon the carriage and forming a pipe-support whereby the pipe is allowed to automatically adjust itself to the positions of the riveting-tool.

20. In a hydraulic riveting apparatus, a mandrel and arm or support, an internal yielding plate-closer and riveting-tool concentric therewith, an exterior fluid-pressure ram and heading-tool carried thereby, a carriage and mechanism by which it is advanced a distance equal to that between the rivet-holes after the setting of each rivet, a tilting-carrier supported thereon, supports fixed in pairs upon

said carrier upon which the pipe rests and upon which it is turnable to bring either series of rivet-holes into the line of the riveting-tools, and an end clamping mechanism by which the pipe-section is held in position after adjustment.

21. A hydraulic riveting-machine, exterior and interior heading-tools, a fluid-pressure ram and yielding plate-closer, a tilting carrier and clamps by which the pipe is secured thereto, a carriage upon which the carrier is supported, mechanism by which the carriage is advanced a distance equal to that between the rivet-holes after the setting of each rivet, and a supplemental slide movable upon the carriage whereby the carrier and pipe may be exactly adjusted to the riveting-tools.

22. In a hydraulic riveting-machine, the exterior and interior rivet-heading tools, a fluid-pressure ram and yielding plate-closing device, a carrier and means for supporting and securing the pipe thereon, a carriage movable to bring the rivet-holes successively in line with the riveting-tools, a standard supporting the carrier from the carriage, and a guide or socket within which it is vertically slidable, and a yielding support to said standard whereby the pipe is raised from the mandrel after a rivet is set, and is allowed to be depressed with relation thereto while the riveting is being effected.

23. In a hydraulic riveting apparatus, a fixed hollow mandrel and a standard or support from which it is supported, a fluid-pressure ram carried by the standard and a riveting-tool actuated thereby, a second riveting-tool supported upon the end of the mandrel and an annular plate-closing socket-piece movable with relation to said interior tool, plungers movable in cylinders and acting to press the plate-closer upwardly, pipe connections with the source of pressure-supply extending through the hollow mandrel and connecting with the cylinders.

24. In a hydraulic riveting-machine, a fixed mandrel and a standard from which it projects and is supported, a fluid-pressure ram mounted upon the standard and a riveting-tool carried thereby, a second riveting heading-tool mounted upon the end of the mandrel in opposition to that carried by the ram a sleeve or socket concentric and movable with relation to the interior tool, vertically-moving plungers fitting in cylinders upon each side of the heading-tool having their upper ends adapted to support opposite sides of the socket-piece or sleeve, a pipe or passage opening into the cylinders and connecting with a source of fluid-pressure supply whereby the plungers are simultaneously raised and the sleeve forced above the level of the riveting-tool so that plates to be riveted are first compressed together between the exterior riveting-head and the interior yielding sleeve and the latter is afterward forced down by superior pressure of the ram to allow the rivet to be headed between the two tools.

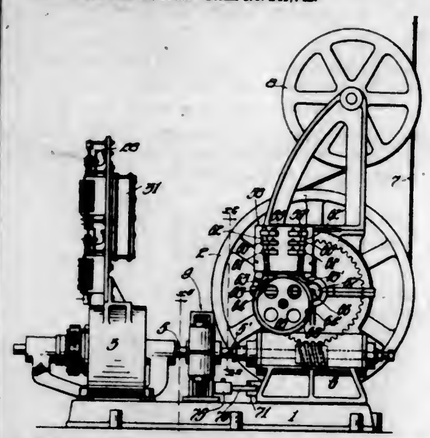
25. In a hydraulic riveting-machine, a fixed mandrel, a standard to which it is connected, a fluid-pressure ram, a riveting-tool carried by the ram, an interior riveting-tool arranged in opposition to the tool carried by the ram and supported upon the outer end of the mandrel, a yielding socket-piece or sleeve vertically movable with relation to the riveting-tool of the mandrel having a convex surface coincident with the curvature of the pipe and a corresponding socket-piece through which the riveting-tool of the ram passes, said socket-piece having a concaved lower face coincident with the exterior curvature of the pipe whereby the latter is first compressed between said socket-piece before the riveting-tools have acted to head the rivet.

26. In a hydraulic riveting-machine, a fixed mandrel and supporting-standard having an arm or support, a fluid-pressure ram mounted upon the arm or support, the riveting-tool carried thereby, an internal riveting-tool supported upon the outer end of the mandrel, said tools operating substantially at right angles to the projection of the arm or support and mandrel, socket-pieces or sleeves through which the riveting-tools pass, the interior socket-piece being yieldingly supported and slidable with relation to the tool which it incloses having a convex surface corresponding with the curvature of the pipe and the concavity of the exterior socket-piece, and a guide whereby it is maintained in position and prevented from turning during its reciprocations.

27. In a hydraulic riveting-machine, a fixed mandrel with riveting-tool and yielding plate-closer arranged substantially at right angles thereto, an exterior fluid-pressure ram and a riveting-tool carried thereby, socket-pieces through which the exterior and interior riveting-tools pass, said socket-pieces having their faces respectively made concave and convex to fit the shape of the pipe and guides by which they are prevented from turning.

28. In a hydraulic riveting apparatus, a fixed mandrel a riveting-tool carried thereby and surrounding yielding socket-piece, a fluid-pressure ram and exterior riveting-tool carried thereby with corresponding socket-piece through which it passes, said tools operating substantially at right angles to the mandrel and said socket-pieces having the angles cut away to allow them to extend between the adjacent lines of rivets without contact therewith.

819,195. **ELECTRIC ELEVATOR.** PARVIN WRIGHT, Los Angeles, Cal. Filed Jan. 19, 1905. Serial No. 241,742.



Claim.—1. In combination with an electric elevator-motor, a brake therefor, a controlling-circuit for the motor, means operated by said controlling-circuit to control the brake, a circuit for the motor independent of the controlling-circuit, and means operated by said independent circuit to control the brake.

2. In combination with an electric elevator-motor, a brake therefor, a controlling-circuit, a switch operated thereby to control the motor, connections for establishing a closed circuit for the motor independent of said switch, electromagnetic means operated by the controlling-circuit for releasing the brake, and electromagnetic means operated by said independent circuit for releasing the brake.

3. In combination with an electric elevator-motor, a brake therefor, an energizing-circuit, a main switch in said circuit and switches and reversing connections establishing reversely-operating circuits from the energizing-circuit to the motor, a controlling-circuit comprising means for operating said switches, means controlled by the operation of the reversing-switches to establish a closed circuit for the motor independent of the energizing-circuit, electromagnetic means in said closed circuit operating on the reversing means to hold the same in operated position and electromagnetic means in said closed circuit operating to release the brake.

4. In combination with an electric motor, a brake therefor, an energizing-circuit, a main switch in said circuit and switches and reversing connections establishing reversely-operating circuits from the energizing-circuit to the motor, a controlling-circuit comprising means for operating said switches, means controlled by the operation of the reversing-switches to establish a closed circuit for the motor independent of the energizing-circuit, electromagnetic means in said closed circuit operating on the reversing means to hold the same in operated position, electromagnetic means in said closed circuit operating to release the brake and a switch in the controlling connection of each reversing-switch and engaged by the other reversing-switch to close said connection when said other reversing-switch is open, and to open said connection when said other reversing-switch is closed.

5. In combination with an electric motor and its operating-circuit, a switch controlling said circuit, electromagnetic operating means for said switch comprising a coil for operating the switch and a coil for retaining the switch in operative position, a controlling-circuit including said operating-coil, and a closed circuit including the armature of the electric motor and the said retaining-coil.

6. In combination with an electric motor and its operating-circuit, a switch controlling said circuit, electromagnet operating means for said switch comprising a coil for operating the switch and a coil for retaining the switch in operative position, a controlling-circuit including said operating-coil, and a closed circuit including the armature of the electric motor and the said retaining-coil, said last-named circuit being independent of the motor-operating circuit.

7. In combination with an electric elevator-motor, a brake therefor, an energizing-circuit, a main switch in said circuit and switches and reversing connections establishing reversely-operating circuits from the energizing-circuits to the motor, a controlling-circuit comprising means for operating said switches, means controlled by the operation of the reversing-switches to establish a closed circuit for the motor independent of the energizing-circuit, electromagnetic means in said closed circuit operating on the reversing means to hold the same in operated position, electromagnetic means in said closed circuit operating to release the brake, and electromagnetic means in the controlling-circuit also operating to release the brake.

8. In combination with an electric elevator-motor, a brake therefor, an energizing-circuit, a main switch in said circuit and switches and reversing connections establishing reversely-operating circuits from the energizing-circuit to the motor, a controlling-circuit comprising means for operating said switches, means controlled by the operation of the reversing-switches to establish a closed circuit for the motor independent of the energizing-circuit, electromagnetic means in said closed circuit operating on the reversing means to hold the same in operated position, electromagnetic means in said closed circuit operating to release the brake, and limit-switches controlled by the movement of the elevator to break the respective controlling-circuit connections when the elevator reaches its limit of movement in either direction.

9. In combination with an electric elevator-motor, a brake therefor, an energizing-circuit, a main switch in said circuit and switches and reversing connections establishing reversely-operating circuits from the energizing-circuit to the motor, a controlling-circuit comprising means for operating said switches, means controlled by the operation of the reversing-switches to establish a closed circuit for the motor independent of the energizing-circuit, electromagnetic means in said closed circuit operating on the reversing means to hold the same in operated position, electromagnetic means in said closed circuit operating to release the brake, and limit-switches controlled by the movement of the elevator to break the respective controlling and brake circuit connections when the elevator reaches its limit of movement in either direction.

10. In combination with an electric elevator-motor, a cable-winding drum and a cable thereon, a brake for the motor, an energizing-circuit, a main switch in said circuit and switches and reversing connections establishing reversely-operating circuits from the energizing-circuit to the motor, a controlling-circuit comprising means for operating said switches, means controlled by the operation of the reversing-switches to establish a closed circuit for the motor independent of the energizing-circuit, electromagnetic means in said closed circuit operating on the reversing means to hold the same in operated position, electromagnetic means in said closed circuit operating to release the brake, and a switch controlled by the cable to open the controlling-circuit on occurrence of a slack cable.

11. In combination with an electric elevator-motor, a cable-winding drum and a cable thereon, a brake for the motor, an energizing-circuit, a main switch in said circuit and switches and reversing connections establishing reversely-operating circuits from the energizing-circuit to the motor, a controlling-circuit comprising means for operating said switches, means controlled by the operation of the reversing-switches to establish a closed circuit for the motor independent of the energizing-circuit, electromagnetic means in said closed circuit operating on the reversing means to hold the same in operated position, electromagnetic means in said closed circuit operating to release the brake, and a switch controlled by the cable to open the controlling and brake circuits on occurrence of a slack cable.

12. In an electric elevator system, a rheostatic device comprising a plurality of spring-contact devices arranged side by side and mounted to have a parallel linear movement toward and from one another, resistances connected to said contacts, an operating-solenoid, a core therefor, an arm connected to said core and engaging one of said contacts to press the contacts together, each of said contact devices comprising two parallel springs fixed at one end and carrying the contact means at their other end.

13. In combination with an electric motor and its operating-circuit, switches controlling said operating-circuit to operate the motor in reverse directions, retaining means for each switch to hold same in operative position, and means responsive to, and operated by, the movement of the motor to control said switch-retaining means.

14. In combination with an electric motor and its operating-circuit, switches controlling said operating-circuit to operate the motor in reverse directions, electromagnetic devices holding said switches in operative position, and a controlling connection with said operating-devices to the armature of the motor to retain the switches in operated position while the motor is in motion.

15. In combination with an electric motor and its operating-circuit, switches connected to said circuit to control the operation of the motor in reverse directions, means controlled by the operation of each of said switches to prevent operation of the other switch, and means for retaining the switches in operated position, said means being responsive to, and operated by the movement of the motor.

16. In combination with an electric motor and its operating-circuit, and electric operating rheostatic switch devices controlling the resistance of said circuit, electromagnetically-operated switch devices for reversing the connections of the motor to said circuit, means retaining said reversing-switches in operated position independently of the operation of the electromagnetic device, and switch means controlled by each of the reversing-switches to render inoperative the operative connections for the other reversing-switch.

17. In an electric elevator system, an electric operating-motor, a starting-switch for the motor comprising main and rheostatic switches and a solenoid having a core connected to operate the main switch and a supplemental core connected to operate the rheostatic switch, said cores extending into the solenoid from the same end thereof and subject to attraction by the solenoid in the same direction.

18. In an electric elevator system, an electric operating-motor, a starting-switch for the motor comprising main and rheostatic switches and a solenoid having a core connected to operate the main switch, and a supplemental core connected to operate the rheostatic switch, one of said cores telescoping within the other, said cores extending into the solenoid from the same end thereof and subject to attraction by the solenoid in the same direction.

19. In an electrical elevator system, the combination with a motor of a rheostatic switch therefor comprising a plurality of spring-supported contacts normally held in separate positions, resistance connections to the contacts, a solenoid having a removable core and an arm connected to said core to engage with one of the contacts to press the contacts successively into conducting connections, said cores extending into the solenoid from the same end thereof and subject to attraction by the solenoid in the same direction.

20. In an electric elevator system, the combination with a motor, a rheostatic switch for the motor comprising a plurality of spring-supported contacts normally held in separate positions, resistance connections to the contacts, a solenoid having a movable core and an arm connected to said core to engage with one of the contacts to press the contacts successively into conducting connection, and a dash-pot connected to said arm.

21. In an electric elevator system, the combination with a motor, of a rheostatic switch for the motor comprising a plurality of spring-supported contacts normally held in separate positions, resistance connections to the contacts, a solenoid having a movable core and an arm connected to said core to engage with one of the contacts to press the contacts successively into conducting connection, a dash-pot connected to said arm, provided with a piston-valve movable to allow free movement of the arm in one direction to allow the contacts to separate and to retard the movement in the opposite direction.

22. In combination with an electric motor, a brake therefor, and two electromagnets operating conjointly on the brake and on one another, and a controlling-circuit for the motor including both of said electromagnets.

23. In combination with an electric motor, a brake therefor, mutually-attractive electromagnetic devices acting conjointly on said brake to release the same, an operating-circuit for the motor including both of said electromagnetic devices, and a closed circuit including the armature of the motor and one of said electromagnetic brake-releasing devices.

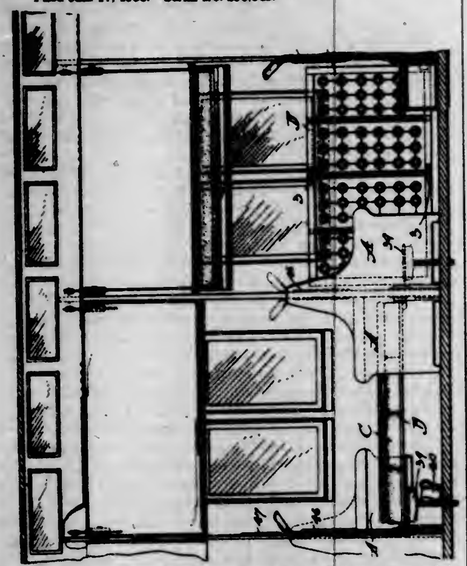
24. In combination with an electric motor, a brake therefor, a circuit for the motor having an operating line connection, electromagnetic means acting on the brake to release the same, and a closed circuit including the armature of the electric motor and said electromagnetic releasing means, said closed circuit being independent of the operating line connection for the motor.

25. In combination with an electric motor and its operating-circuit, an electromagnetic operating-switch controlling said operating-circuit, the controlling-circuit including the electromagnetic operating means for said switch, and a field-coil of the motor.

26. In combination with an electric motor, a brake therefor, electromagnetic releasing means for the brake, an operating-circuit for the motor, an electromagnetically-operated switch in said circuit, a controlling-circuit including the electromagnetic operating means for said switch and a field-coil of the motor, and electromagnetic releasing means for the brake having an energizing-coil included in said controlling-circuit, and an energizing-coil included in the motor-operating circuit.

27. In combination with an electric motor, a brake therefor, electromagnetic releasing means for the brake, an operating-circuit for the motor, an electromagnetically-operated switch in said circuit, a controlling-circuit including the electromagnetic operating means for said switch and a field-coil of the motor, and electromagnetic releasing means for the brake having an energizing-coil included in said controlling-circuit, and an energizing-coil included in the operating-circuit and also in the controlling-circuit.

819,196. SLEEPING-CAR. TWYMAN O. ABBOTT, Seattle, Wash. Filed Jan. 17, 1906. Serial No. 296,545.



Claim.—1. In a sleeping-car having fixed seats arranged in pairs facing each other and forming a section for a bed, a frame fitted to rest on said seats, to cover the space between the seats, and to support the cushions, and also adapted to be removed to uncover the said space.

2. In a sleeping-car having fixed seats arranged in pairs facing each other and forming a section for a bed, a frame fitted to rest on said seats, to cover the space between the seats and to support the cushions, and also adapted to be turned upon its edge against the side of the car.

3. In combination, with the seats arranged to face each other, and with the cushions therefor, a frame extending over said seats and over the intermediate space, and to support the bed-forming cushions, said frame being arranged to turn on bearings and to be upturned toward the side of the car.

4. In combination with the seats arranged to face each other, and with the cushions therefor, a frame extending over said seats and over the intermediate space and to support the bed-forming cushions, said frame being arranged to turn on trunnions movable in slots.

5. In combination with the seats arranged to face each other, and with the cushions therefor, a frame extending over said seats and over the intermediate space and to support the bed-forming cushions, said frame being arranged to turn on trunnions movable in slots and provided with springs and cords to assist the movement.

6. In a sleeping-car having fixed seats arranged in pairs and facing each other, and movable cushions for said seats adapted to form the bed, a bed-supporting frame adapted to be moved to uncover the space between the seats, in combination with a supplemental floor, and a trap-door therefor in said space.

7. In a sleeping-car having seats arranged in pairs and facing each other, and movable cushions for said seats, adapted to form the bed, a bed-supporting frame adapted to be moved to uncover the space between the seats in combination with an upper berth pivoted to rise on its bearings when swung downward.

8. In a sleeping-car having fixed seats arranged in pairs and facing each other, and movable cushions for said seats, adapted to form the bed, a bed-supporting frame adapted to be moved to uncover the space between the seats, in combination with toilet bowls or basins, and water-supply pipes, located in the space beneath the seats, said bowls or basins being uncovered by the removal of the frame.

9. In a sleeping-car having seats arranged in pairs and facing each other, and movable cushions for said seats, adapted to form the bed, a bed-supporting frame adapted to be moved to uncover the space between the seats and an upper berth vertically movable on its pivots.

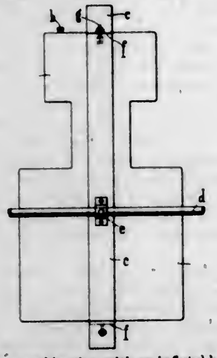
819,197. ADJUSTABLE CURTAIN-FIXTURE. BURROUGHS AGIN and GEORGE B. THOMPSON, Kansas City, Mo. Filed May 29, 1905. Serial No. 263,752.



Claim.—1. A curtain-fixture consisting of a pair of supporting-plates adapted to engage the sides of a window-casing, a telescopic rod having its outer ends bearing against said plates, a section forming part of said rod provided at its inner end with an integral flange, a second section having its inner end arranged within the first-mentioned section, an expansion-spring encircling the second section and bearing at one end against the flange, a collar adjustably mounted upon the second section for adjusting the length of the rod and regulating the tension of the spring, and brackets adjustably secured to the supporting-plates.

2. A curtain-fixture consisting of a pair of supporting-plates adapted to engage the sides of a window-casing, a telescopic rod having its outer ends bearing against the supporting-plates, a section forming part of said rod provided at its inner end with a flange, a second section having its inner end adjustably arranged within the first-mentioned section, an expansion-spring encircling the second section and bearing at one end against the flange, means carried by the second section for adjusting the length of the rod and regulating the tension of the spring, and brackets secured to the supporting-plates.

819,198. SELF-ACTING COLLAPSING TARGET. WILHELM ARR, Berlin, Germany. Filed Feb. 17, 1905. Serial No. 246,073.



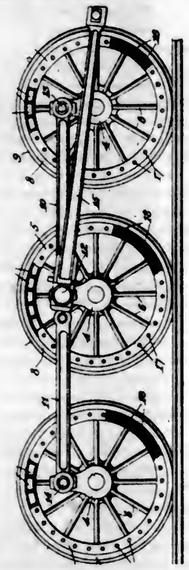
Claim.—1. The combination with an inflatable target, of a pair of holders for the target, means securing th two holders together when the target is inflated and permitting them to separate when the target is deflated.

2. The combination with an inflatable target, of a pair of holders between which the target is held, eyes on one of said holders, and pins carried by the other holder, held within the eyes by the target when the target is inflated and released from one of the eyes when the target is deflated.

3. The combination with an inflatable target, of a pair of holders, one of which is pivotally mounted, eyes carried at the ends of one of the holders and pins carried by the endsof the other holder, held within the eyes when the target is inflated and movable in the eyes when the target is deflated to release the target.

4. The combination with a pivotally-mounted holdar, of an inflatable target adapted to be held by the holder, and means automatically causing the turning of the target when the target is deflated.

819,199. LOCOMOTIVE DRIVING-WHEEL OR THE LIKE. JAMES B. ALLFREE, Ironton, Ohio, and IRA C. HUBBELL, Chicago, Ill. Filed June 14, 1905. Serial No. 265,220.



Claim.—1. In a locomotive or the like, a driving-wheel body having a hollow rim, a plurality of pockets formed in the hollow rim and counterbalancing-weights inserted in said pockets.

2. In a locomotive or the like, a driving-wheel body having a hollow rim concentric with the hub, a plurality of pockets formed in the hollow rim and counterbalancing-weights inserted in said pockets.

3. In a locomotive or the like, a driving-wheel body having a rim subdivided into a plurality of chambers and means for retaining counterbalancing and variable weights in said chambers.

4. In a locomotive or the like, a driving-wheel body having a rim subdivided into a plurality of independent pockets and means for retaining congealed molten metal in said pockets.

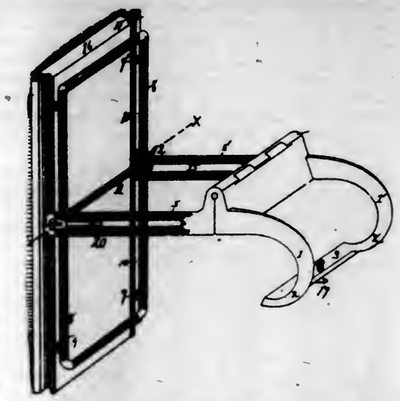
5. In a locomotive or the like, the combination with a main driving-wheel and one or more coupled wheels, each of the rims in the body of said main and coupled wheels being subdivided into chambers and provided with means for retaining variable and counterbalancing weights.

6. In a locomotive or the like, a driving-wheel body having a rim subdivided into a plurality of pockets concentric with the hub of the wheel and means for retaining a counterbalancing-weight in each of the pockets, the center of gravity of said counterbalancing-weights being eccentric to the center of the wheel and on the opposite side of the wheel from that of the crank-pin hub.

819,200. ADJUSTABLE BACK-BRUSH FOR BATH-TUBS. JEFFERSON W. BEDFORD, Jr., Omaha, Nebr. Filed Apr. 15, 1905. Serial No. 255,835.

Claim.—1. A brush of the class described, in combination with engaging means upon a bath-tub; a compression-bar, and brush-supporting arms; said brush being slidably mounted upon the compression-bar and adapted to have a swinging movement thereon; the compression-bar mounted upon the brush-supporting arms; and means to cause a compression of the brush with the brush-supporting arms.

2. A brush of the class described, in combination with engaging means upon a bath-tub; a hinge part; a compression-bar and brush-supporting arms; said brush being slidably mounted upon the compression-bar and adapted to have a swinging movement thereon; the compression-bar mounted upon the brush-supporting arms; means to cause a compression of the brush with the brush-supporting arms; the hinge part forming a connection between the engaging means upon the bath-tub and the brush-supporting arms.



3. A brush of the class described, in combination with engaging means upon a bath-tub; a brush-frame; a hinge member; a compression-bar and brush-supporting arms; said brush being mounted within said brush-frame; said brush-frame being slidably mounted upon the compression-bar and adapted to have a swinging movement thereon; said compression-bar mounted upon the brush-supporting arms; means to cause a compression of the brush-frame with the brush-supporting arms; said hinge member forming a connection between the engaging means upon the bath-tub and the brush-supporting arms.

4. A new article of manufacture for the purpose mentioned, in combination with engaging means upon a bath-tub; a brush; a brush-frame; a hinged member; a compression-bar; and brush-supporting arms; said brush-frame having parallel and integrally-mounted sliding bars; said brush mounted within said brush-frame; said parallel and integrally-mounted sliding bars of said brush-frame mounted upon said compression-bar and adapted to have a swinging movement thereon; said compression-bar mounted upon said brush-supporting arms; means to cause a compression of the sliding bars of the brush-frame with the brush-supporting arms; said hinge member forming a connection between the engaging means upon the bath-tub and the brush-supporting arms.

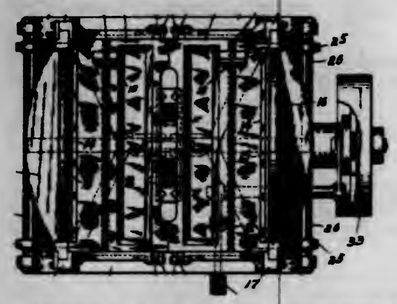
5. A new article of manufacture for the purpose mentioned; in combination with engaging means upon a bath-tub; a brush; a brush-frame; a hinge member; a compression-bar; and brush-supporting arms; said brush-frame having parallel and integrally-mounted sliding bars; said brush mounted within said brush-frame; said parallel and integrally-mounted sliding bars of said brush-frame mounted upon said compression-bar and adapted to have a swinging movement thereon; said compression-bar mounted upon said brush-supporting arms; means to cause a compression of the sliding bars of the brush-frame with the brush-supporting arms; said hinge member forming a connection between the engaging means upon the bath-tub and the brush-supporting arms; said brush being removable from said brush-frame, substantially as described.

819,201. RESQUARING-SHEARS. CHARLES W. BENNETT, Elwood, Ind., assignor to American Sheet & Tin Plate Company, New York, N. Y., a Corporation of New Jersey. Filed Jan. 2, 1906. Serial No. 294,146.

Claim.—1. In a machine of the class described, the combination with a suitable supporting-frame, and work-table, of a pair of shear-blades carried by said table at opposite edges, means for adjusting the distance between said shear-blades, a pair of shear-blade heads reciprocably mounted on the main frame in position to cooperate with the first-mentioned shear-blades, and means for actuating said shear-blade heads.

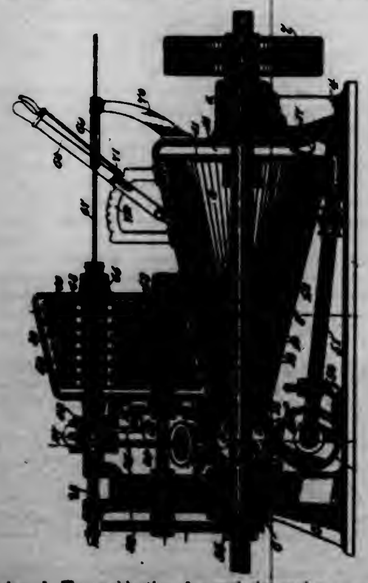
2. In a machine of the class described, the combination with a suitable supporting-frame and work-table, of a pair of shear-blades carried by said table at opposite edges, means for adjusting the distance between said shear-blades, a pair of shear-blade heads reciprocably mounted on the main frame in position to cooperate with the first-mentioned shear-blades, and means for simultaneously actuating said shear-blade heads.

3. In a machine of the class described, the combination of a suitable supporting-frame and two-part work-table, means for positioning material on said table, two shear-blades mounted at opposite sides of the work-table one upon each of the two parts thereof, means for adjusting the two parts of the work-table toward and from each other to vary the distance between the shear-blades, two pairs of guide-brackets mounted on the main frame, means for adjusting said guide-brackets along lines at an angle to the shear-blades, a shear-blade head reciprocally mounted in each pair of guide-brackets, and means for reciprocating said shear-blade heads.



4. In a machine of the class described, the combination of a suitable supporting-frame and work-table, means for positioning material on said table, two shear-blades mounted at opposite sides of the work-table, two pairs of guide-brackets mounted on the main frame, means for adjusting said guide-brackets along lines at an angle to the shear-blades, a shear-blade head reciprocally mounted in each pair of guide-brackets, a pair of levers projected toward each other and connected at their adjacent ends, means for engaging said levers at their connected ends to reciprocate the same, and connections between each lever and a shear-blade head, substantially as and for the purpose set forth.

819,202. GAS TURBINE-OPERATING SYSTEM. HENRY F. BLACKWELL, New York, N. Y. Filed Mar. 14, 1904. Serial No. 196,092.



Claim.—1. The combination of an explosive-engine, a pumping element operatively connected with the engine-shaft, an adjusting device, arranged to cause the pumping element to act as an explosive-engine and drive the engine-shaft when said device is in one position, and when said device is shifted to another position to cause the pumping element to feed the mixture to the engine, and when said adjusting device is shifted to a third position to cause the pumping element to pump atmospheric air into the engine.

2. The combination of an explosive-engine, a pumping element normally connected with the shaft of the engine, an adjusting device, means arranged to cause the pumping element to feed explosive mixture to the engine when said device is in one position, and when said device is in another position to cause the pumping element to operate as an explosive-engine and means for causing the gases operating said element to act on said explosive-engine.

3. The combination of an explosive-engine, a pumping element operatively connected with the shaft of the engine, a set of valves for the pumping element, a set of cams actuated from the engine-shaft and arranged to operate said valves to cause the pumping element to feed explosive mixture to the engine, a set of cams actuated from the engine-shaft and arranged to cause the pumping element to operate as a prime mover and thereby drive the engine-shaft, and means for shifting the sets of cams into position to operate the valves.

4. The combination of an explosive-engine, a pumping element operatively connected with the shaft of the engine, a set of valves for the pumping element, a set of cams actuated from the engine-shaft and arranged to operate said valves to cause the pumping element to feed explosive mixture to the engine, a second set of cams actuated from the engine-shaft, and arranged to cause the pumping element to operate as a prime mover and thereby drive the engine-shaft, a third set of cams actuated from the engine-shaft and arranged to operate said valves to cause the pumping element to feed air to said explosive-engine, and means for shifting the sets of cams to bring them into position to operate the valves.

5. The combination of an explosive-engine, a pumping element, an adjustable device, means arranged to cause the pumping element to act as a prime mover and drive the engine-shaft when said device is in one position, and when said device is shifted to another position to cause the pumping element to feed explosive mixture to the engine, a fly-wheel, and means for connecting and disconnecting the fly-wheel with the pumping element.

6. The combination of an explosive-engine, a pumping element, a clutch device operatively connecting such element with the engine-shaft, a fly-wheel arranged to be connected with the pumping element by the clutch device, an adjusting device, and means arranged to cause the pumping element to act as a prime mover and drive the engine-shaft when such device is in one position, and when such device is shifted to another position to cause the pumping element to feed explosive mixture to the engine.

7. The combination of an explosive-engine, a pumping element operatively connected with the shaft of the engine, a set of valves for the pumping element, a set of cams actuated from the engine-shaft and arranged to operate said valves to cause the pumping element to feed explosive mixture to the engine, a set of cams actuated from the engine-shaft and arranged to cause the pumping element to operate as an explosive-engine and thereby drive the engine-shaft, and means for shifting the sets of cams into position to operate the valves.

8. The combination of an explosive-engine, a pumping element operatively connected with the shaft of the engine, a set of valves for the pumping element, a second shaft connected from the engine shaft, a set of cams on the second shaft arranged to operate said valves and cause the pumping element to feed explosive mixture to the engine, a second set of cams on the second shaft arranged to cause the pumping element to operate as an explosive-engine and drive said engine-shaft, a third set of cams on said second shaft arranged to operate said valves to cause the pumping element to feed air to said explosive-engine, and means for shifting the second shaft to bring the said sets of cams alternately into position to operate the valves.

9. The combination of an explosive-engine, a pumping element operatively connected with the engine-shaft, an adjusting device, and means arranged to cause the pumping element to act as an explosive-engine and drive the engine-shaft when said device is in one position, and when said device is shifted to another position to cause the pumping element to feed explosive mixture to the engine.

10. The combination of an explosive-engine, a pumping element operatively connected with the shaft of the engine, a set of valves for the pumping element, means for operating said valves from the engine-shaft to cause the pumping element to feed explosive mixture to the engine, and an adjusting member coöperating with said valves and arranged to cause the pumping element to operate as an explosive-engine and thereby drive the engine-shaft.

11. The combination of an explosive turbine-engine, a pumping element operatively connected with the engine-shaft, an adjusting device, and means arranged to cause the pumping element to act as an explosive-engine and drive the engine-shaft when said device is in one position, and when said device is shifted to another position to cause the pumping element to feed explosive mixture to the engine.

12. The combination of an explosive-engine, a plurality of pumping elements each operatively connected with the engine-shaft, an adjusting device for each element, and means for each element arranged to cause it to act as an explosive-engine and drive the engine-shaft when its coöperating adjusting device is in one position, and when such device is shifted to another position to cause the pumping element to feed the mixture to the explosive-engine.

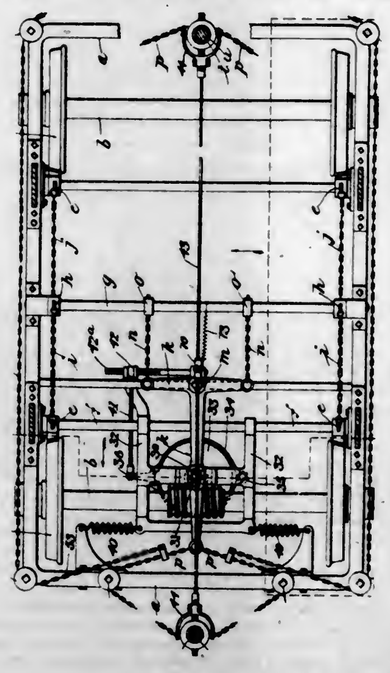
13. The combination of an explosive-engine, a pumping element operatively connected with the shaft of the engine, a set of valves for the pumping element, cams actuated from the engine-shaft arranged to operate said valves to cause the pumping element to feed explosive mixture to the engine, and an adjusting member arranged to shift said cams and operate the valves to cause the pumping element to operate as an explosive-engine, and thereby drive the engine-shaft.

14. The combination of an explosive-engine, a pumping element, a clutch device operatively connecting such element with the engine-shaft, an adjusting device, and means arranged to cause the pumping element to act as an explosive-engine and drive the engine-shaft when said device is in one position, and when said device is shifted to another position to cause the pumping element to feed explosive mixture to the engine.

15. The combination of an explosive-engine, a pumping element, a speed-changing device operatively connecting such element with the engine-shaft, an adjusting device, and means arranged to cause the pumping element to act as an explosive-engine and drive the engine-shaft when such device is in one position, and when such device is shifted to another position, to cause the pumping element to feed explosive mixture to the engine.

16. The combination of an explosive-engine, a pumping element, a clutch-operated speed-changing device operatively connecting such element with the engine-shaft, an adjusting device, and means arranged to cause the pumping element to act as an explosive-engine and drive the engine-shaft when said device is in one position, and when said device is shifted to another position to cause the pumping element to feed explosive mixture to the engine.

819,203. CAR-BRAKE. WILLIAM W. BROGA, Springfield, Mass. Filed Feb. 1, 1904. Renewed Sept. 23, 1904. Serial No. 225,613.



Claim.—1. In a car-brake of the class described, an axle and a worm thereon, a frame slidably supported on the truck of the car, a drum supported on the frame, and constricting means encircling the drum; a lever pivotally supported on the truck, a rock-shaft to operate the brake-shoes in the usual manner, and a connection between one end of said lever and an arm on the shaft, the opposite end of the lever being connected with said frame; a worm-gear on the axis of the drum in mesh with the worm on the axle; means to tighten the constricting means about the drum more or less, to impart movement to the frame to effect the rotation of the rock-shaft, whereby the brakes may be set.

2. In a car-brake of the class described, an axle and a worm thereon, a frame slidably supported on the truck of the car to move in opposite directions transversely thereof, a drum rotatably supported in the frame, a worm-gear on the axis of the drum in mesh with the worm on the shaft, a lever pivoted on the truck having oppositely-extending arms, connections from said arms to a rock-shaft, a connection between said lever and said slidable frame whereby the movements of the latter in either direction may effect the oscillation of said rock-shaft, means extending to the platform of the car to apply frictional resistance to said drum whereby said frame may have imparted thereto more or less movement in opposite directions, together with means to return the frame to normal position upon the release of the drum.

3. In a car-brake of the class described, a car-axle and a worm fixed thereon, a frame supported to slide in opposite directions in parallelism with the axle, a worm-gear in mesh with said worm, said gear being supported in said frame and normally rotating idly therein, and means carried on the frame and operable from the platform of the car to resist more or less the rotation of said worm-gear, and a brake-operating lever pivotally supported on the truck of the car and having a suitable engagement with said frame, whereby the movement of the frame may operate the brake, together with manually-operated means to impart movement to the brake-operating lever independently of any movement imparted thereto by the rotation of the axle.

4. In a car-brake of the class described, a frame supported on the truck to slide in opposite directions, a brake-lever pivoted on the truck and having a connection with said frame whereby the sliding movements of the latter in either direction will operate to set the brakes; a brake-post on the platform of the car at each end thereof, manually-operated means extending from said posts to said brake-operating lever, to operate the brakes by hand in the usual manner, in combination with normally inoperative mechaniam carried on said frame and connected with the axle of the car, whereby the rotation of the latter may operate to impart sliding movement to said frame independently of the hand operating means, together with connections extending from the frame to the platform of the car to effect the actuation of said mechaniem at will.

5. In a car-brake, a suitable brake mechanism, momentum-operated brake-setting devices, suitable connections between said devices and the axle of the car to effect their operation, a brake-post, manually-actuated connections between said post and the brake mechanism, and separate means for operating the momentum-operated and manually-actuated connections jointly or independently.

6. The combination with a car-brake, of momentum-operated and manually-operated devices to set the brake; a brake-post located at either end of a car, and means on said posts to actuate said momentum or said manual brake-setting devices either independently or one in connection with the other.

7. The combination with a car-brake of momentum-operated and manually-operated devices to set the brake, of a brake-post, connections between said post and said momentum devices and manual devices, and means on said post common to both of said devices whereby the latter may be operated either singly or together.

8. The combination with a car-brake, of momentum-operated and manually-operated devices to set the brake; a brake-post located at either end of a car, and means on said posts to actuate said momentum or said manual brake-setting devices, either independently or one in connection with the other, together with means to render one of said brake-posts inoperative when the other is operated.

9. The combination with a car-brake of momentum-operated and manually-operated devices to set the brake, a brake-post consisting of two concentric rotatable members, a drum secured to each member, and a flexible connection extending from said drums to the brake-operating devices, a crank-arm, and means to connect the arm to either of said concentric post members, whereby one may be operated independently of the other to set the brake, together with means connected with said crank-arm to effect the actuation of the momentum-operated brake-setting devices.

10. In a car-brake, the combination with momentum-operated and manually-actuated devices to set the brake, of a brake-post, separate sets of connections respectively between said post and the momentum-operated and manually-actuated devices, and means common to both of said devices whereby the latter may be operated either singly or together.

819,204. CHICKEN-ROOST. GEORGE H. BUCKINGHAM, Los Angeles, Cal. Filed May 22, 1905. Serial No. 261,673.
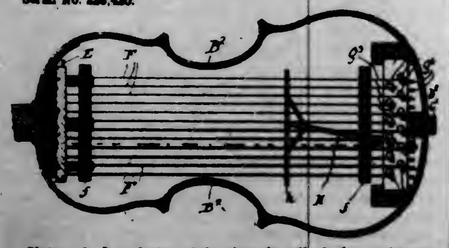


Claim.—1. The herein-described chicken-roost, comprising an upright support, a plurality of outwardly-extending members hinged to the top of the upright support and adapted to carry foot-rests, each member being provided on the under face thereof with a socket for the reception and engagement of supporting-struts; supporting-struts hinged to the supporting member at one end and adapted to enter the sockets in the projecting members and support the same; foot-rests for chickens hinged at one end to a horizontal member and being detachably engaged at the other end of an adjoining horizontal member.

2. The herein-described portable chicken-roost comprising the upright supporting member A; outwardly-projecting members B hinged at the top thereof and adapted to be supported by a strut pivotally secured to the supporting member, the strut D hinged to the upright and adapted to engage the outwardly-projecting member B; chicken foot-rests hinged on one end of an outwardly-projecting member and adapted to detachably engage the outer end of the adjoining outwardly-projecting member.

3. A chicken-roost arranged to be folded together for transportation or otherwise comprising an upright supporting member carrying on the top thereof hinged outwardly-projecting members; means to detachably support the outwardly-projecting members in a horizontal position, comprising supporting-struts hinged to the upright member and adapted to engage and support the upwardly-projecting member; foot-rests disposed above the outwardly-projecting members one end of each foot-rest being hinged to the outer end of one of the outwardly-projecting members and having means at the other end to detachably engage the outer end of the adjoining outwardly-projecting member.

819,205. VIOLIN. ERIC CARSON, Harlem, Ill. Filed Oct. 14, 1904. Serial No. 228,430.



Claim.—1. In a device of the class described, the combination with the body and neck of a violin, of a guide at the upper end of the body, a bar transversely movable in the guide through an opening in the side wall of the body, strings secured to the bar, suitable bridges over which the strings run, and means at the lower end of the body for tuning said strings.

2. In a device of the class described, the combination with the body and neck of a violin, of a plurality of strings secured to the upper end of the body within the same, bridges over which the strings run, keys at the lower end of the body and doors in the side wall of the body through which the keys can be reached.

819,206. COMBINED FUSE AND SWITCH. FREDERICK H. CHEYNE, Indianapolis, Ind., assignor of one-half to Gordon B. Varney, Indianapolis, Ind. Filed Jan. 12, 1905. Serial No. 240,733.



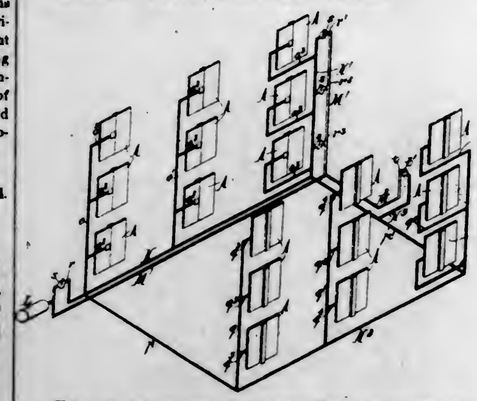
Claim.—The combination, in a combined fuse and switch, of suitable contacts, suitable fuse-plugs, a holder-handle in which said plugs are mounted, a support for said holder-handle, movement-limiting devices whereby the movement of the holder-handle relative to its support is limited, and a spring by which the holder-handle is held to the extreme position permitted by said movement-limiting device, and disengagement between the plugs and contacts thus maintained after being effected until engagement is forcibly reëstablished.

819,207. COMBINED TOBACCO-PLUG HOLDER AND CUTTER. JAMES H. COBB, Christchurch, New Zealand. Filed Apr. 15, 1904. Serial No. 203,331.



Claim.—In an apparatus for cutting plug-tobacco, in combination a case having a longitudinal partition therein dividing the case into a large and a small chamber, a feed-screw located in the small chamber, said screw having a squared head projecting from the top of the case, an elevator-plate adapted to move upon the screw and extending into the large chamber, a knife having a hole at one end fitting over the head of the screw so as to rotate the screw and a handle pivoted upon the knife and adapted to be folded thereon.

819,208. DOOR-RELEASING APPARATUS. CHARLES A. CRIQUI, Buffalo, N. Y. Filed May 2, 1905. Serial No. 258,480.

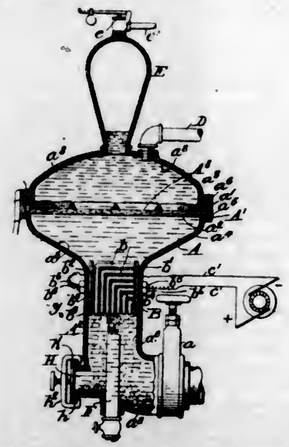


Claim.—1. An apparatus for simultaneously releasing a plurality of doors from different points, comprising pneumatic operating means for the bolt of each door, a source of fluid-pressure, a main pressure-line connected with said source, a supplemental pressure-line extending along the main line, connections between said main and supplemental lines located in different parts of the building, controlling-valves in said connection, and branch pipes leading from said supplemental line to said individual bolt-operating means, substantially as set forth.

2. In an apparatus for simultaneously releasing a plurality of doors from different points the combination with a building having a plurality of floors or stories and exit-doors on each floor provided with bolts, of pneumatic operating means for the bolt of each door, a source of fluid-pressure, a main pressure-line connected with said source and rising to the uppermost of the floors included in the system, a supplemental pressure-line extending along the main line, valved connections between said main and supplemental lines located on different floors, and valveless branch pipes connected with the supplemental line at different floors and leading to said individual bolt-operating means, substantially as set forth.

3. The combination with a theater a similar building having a plurality of doors in opposite walls thereof and on different floors, of pneumatic means for operating the bolt of each door, a source of fluid-pressure, a main pressure-line connected with said source and extending lengthwise along one side of the building and vertically to the uppermost of the floors included in the system, a supplemental pressure-line extending along said main line for supplying the pneumatic bolt-operating means on that side of the building, an extension of said supplemental line arranged along the opposite side of the building for supplying the pneumatic operating means of the corresponding door-bolts, connections between said main and supplemental lines located in the lower front and rear parts of the building and on the upper floors thereof, controlling-valves in said connections, and branch pipes leading from said supplemental line and its extension to the several bolt-operating means of the system, substantially as set forth.

819,209. APPARATUS FOR TREATING LIQUIDS. LÉON DION, New York, N. Y., assignor to The Americus Electro-Hermatic Company, New York, N. Y., a Corporation of Arizona. Filed June 3, 1904. Serial No. 210,979.



Claim.—1. The combination, with a vessel or reservoir, and means through which a liquid may be supplied to it, of a group of cooperating positive and negative electrodes, with which the liquid contained within the vessel or reservoir may be brought in contact, constructed in prismoidal form angularly bent transversely of their axes, and means through which a current of electricity may be supplied to such electrodes, substantially as described.

2. The combination, with a vessel or reservoir constructed with an enlarged globular upper portion and a contracted lower portion, of a group of coöperating positive and negative electrodes arranged within the lower contracted portion of the vessel or reservoir, and constructed in prismoidal form angularly bent transversely of their axes, means through which a current of electricity may be supplied to such electrodes, and means through which a liquid may be supplied to the vessel or reservoir up through the bottom thereof and between the electrodes, substantially as described.

3. The combination, with a base-plate, of a series of electrodes connected at one of their ends thereto in vertical rows, and constructed in prismoidal form bent at points intermediate their lengths whereby each is provided with a horizontal and vertical portion, substantially as described.

4. The combination, with a base-plate, of a series of electrodes connected at one of their ends to such plate, and each constructed of a right-angular form in longitudinal section and of an equilateral triangular form in cross-section, substantially as described.

819,210. WANTAGE-ROD. GEORGE P. DOHRN, Chicago, Ill. Filed Dec. 7, 1904. Serial No. 235,905.



Claim.—1. The combination with a wantage or ullage rod, of a slidable reading device for indicating the level of the liquid at the surface of such liquid, and means whereby the operator may determine when the reading device is in proper position for indicating the level of the liquid.

2. The combination with a wantage-rod, of a slidable liquid-level-indicating device for indicating such level at the surface of the liquid, means for sliding said device, and means whereby the operator may determine when said device is in position for indicating the level of the liquid.

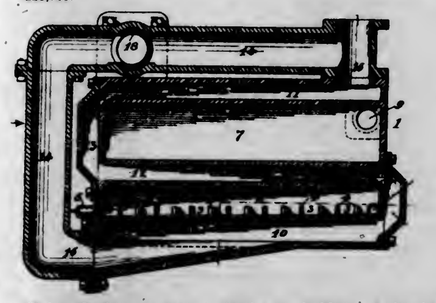
3. The combination with a wantage-rod, of a slidable liquid-level-indicating device, means for sliding said device, a receptacle in connection with said indicating device, and a float in said receptacle for indicating the distance to which said device should be inserted in the liquid for the indicating-points to correspond with the level of the liquid.

4. The combination with a gage-rod and a manually-slidable gage-reading device, of a float for indicating when said device is in proper position to register the level of the liquid.

5. The combination with a wantage-rod, of a stop on said rod for engaging with the barrel, a sleeve on said rod provided with indicating-points, a wire for moving said sleeve, means for locking said wire when the sleeve is in adjusted position, an open cylinder connected with said sleeve, and a float in said cylinder.

6. The combination with a gage-rod, of a manually-slidable gage-reading device provided with a cylinder having openings in the top and bottom thereof and a float in said cylinder for indicating when said reading device is in proper position to register the level of the liquid.

819,211. VAPOR-GENERATOR. RICHARD F. DRISCOLL, San Francisco, Cal., assignor to The Economist Gas Engine Co., San Francisco, Cal., a Corporation of California. Filed Sept. 24, 1904. Serial No. 225,783.

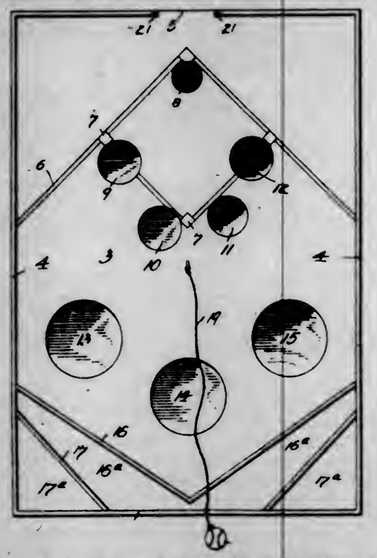


Claim.—1. A vapor-generator having a suitable retort-chamber in which the vapor is generated, an independent chamber for superheating said vapor arranged thereabove, the respective chambers being separated from one another by two partitions forming an unobstructed passage-way, a connecting-passage between said chambers, and means for supplying a heating medium to said unobstructed passage-way whereby the heat will simultaneously act upon both of said chambers.

2. A vapor-generator comprising a shell having a suitable retort-chamber within its lower portion, to which the oil is supplied and in which the vapor is generated, an independent superheating vapor-chamber within its upper portion, communicating with the retort-chamber by a passage-way in one side of the shell, to receive the vapor therefrom and having a suitable outlet for said vapor, a continuous passage comprising a course under the retort-chamber,

a course above the vapor-chamber, a course intermediate the two chambers and connecting end courses, said passage having an inlet at its lower end and an outlet at its upper end, a pipe having its ends communicating with said inlet and outlet, a pipe from the source of the heating medium, communicating with the first-named pipe intermediate its ends, and a valve controlling said communication to direct the heating medium to either end, at will.

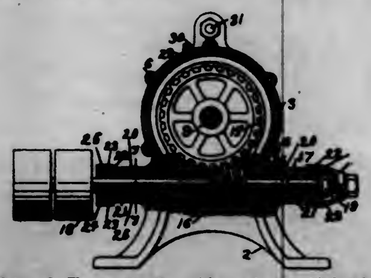
819,212. PARLOR BASE-BALL APPARATUS. HERBERT A. PALM, Kensington, Md. Filed Oct. 5, 1905. Serial No. 281,509.



Claim.—1. A table for parlor base-ball having a miniature base-ball-field diagram, a small pocket or recess in proximity to the home plate, larger pockets in proximity to the first base, second base, short-stop and third, still larger pockets in positions corresponding to those of the outfielders, and spaces bounded by raised flanges in the outfield and beyond the larger pockets for indicating two-base and three-base hits, substantially as described.

2. A parlor base-ball game apparatus comprising a table having a miniature base-ball diagram, recesses or pockets for the infield and outfield positions, said recesses increasing in diameter from the infield to the outfield, substantially as described.

819,213. REVERSIBLE POWER-TRANSMISSION GEAR. OLE O. FUREU, St. Paul, Minn., assignor of one-half to Miss Crosstedt, St. Paul, Minn. Filed Mar. 21, 1905. Serial No. 251,214.



Claim.—1. The combination, with a casing provided with bearing-boxes, of a worm-wheel mounted in said casing, a worm engaging said wheel, a shaft fitting within said worm, bearing-sleeves interposed between said shaft and boxes and having flanged outer ends, caps fitting over said flanges and forming dust and oil proof joints therewith, ball-bearings provided between said caps and sleeves, and said worm and worm-wheel operating in a chamber adapted to contain a body of oil and communicating with said ball-bearing through said bearing-sleeves, substantially as described.

2. The combination, with a casing provided with bearing-boxes, of a worm-wheel mounted in said casing, a worm engaging said wheel, a shaft whereon said worm is mounted, said shaft having a driving-pulley at one end and a thread and lock-nut at the other end, bearing-sleeves provided within said boxes and between them and said shaft, a cap secured on the driving-pulley end of said shaft, and ball-bearings interposed between said bearing-sleeves and said cap and said lock-nut, substantially as described.

3. The combination, with a worm-wheel, of a worm, a shaft whereon said worm is mounted, one end of said shaft being provided with a thread and lock-nut, bearing-boxes provided on each side of said worm, sleeves having flanged outer ends fitting within said boxes, bearing-sleeves arranged between said flanged sleeves and said shaft, a cap secured on said shaft and inclosing the flanged end of one of said sleeves and forming a dust-proof joint therewith, a cap inclosing the threaded periphery of the flange on the opposite sleeves, ball-bearings provided between said caps and said sleeves, and a driving-pulley mounted on said shaft.

4. The combination, with a worm-wheel, of a worm and its shaft fitting therein, bearing-boxes on each side of said worm, a thread and lock-nut provided on one end of said shaft, a driving-pulley on the other end of said shaft, removable bearing-sleeves fitting within said boxes between them and said shaft, a cap secured on said shaft near said driving-pulley, a ball-bearing interposed between said cap and said lock-nut and said bearing-sleeves, substantially as described.

5. The combination, with a worm-wheel and its shaft, of a worm, a driving-shaft therefor, a driving-pulley mounted on said shaft, a disk secured on said worm-wheel shaft, a pitman-rod pivotally connected to one end of said disk, and said driving-shaft being removable from said worm and reversible therein to allow said worm to be driven from either side of the machine.

6. The combination, with a worm-wheel and its shaft, of a worm engaging said wheel, a shaft removably fitting within said worm, bearing-boxes at each end of said worm, sleeves fitting within said boxes and inclosing said shaft, a fixed cap mounted on said shaft at one end of one of said boxes, a driving-pulley also mounted on said shaft near said cap, and said shaft being provided near the outer end of the opposite bearing-sleeve with a thread and an adjustable lock-nut whereby said shaft can be moved longitudinally to adjust said sleeves, and antifriction-bearings provided between said fixed sleeves and said cap and said lock-nut, substantially as described.

7. The combination, with a casing provided with bearing-boxes and having a chamber adapted to contain a body of oil, of a worm-wheel having its shaft journaled in the walls of said casing and revolving in said chamber, a worm engaging said wheel and also revolving in said chamber, a driving-shaft fitting within said worm and journaled in said boxes, a driving-pulley mounted on said shaft, ball-bearings at the outer ends of said boxes having dust and oil proof joints and communicating through said boxes with said oil-chamber, and said driving-shaft being reversible in said worm, for the purpose specified.

8. The combination, with a casing provided with bearing-boxes, of a worm-wheel journaled in said casing, a worm engaging said wheel, a driving-shaft journaled in said boxes and passing through said worm, bearing-sleeves inclosing said driving-shaft, an antifriction-bearing arranged to take up the end thrust of said shaft, and means for adjusting said shaft lengthwise to take up the wear in said bearings, substantially as described.

9. The combination, with a casing provided with bearing-boxes and a chamber adapted to contain a body of oil, of a worm-wheel having its shaft mounted in the walls of said casing and revolving in said oil-chamber, a worm engaging said wheel and also revolving in said chamber, a driving-shaft journaled in said boxes and on which shaft said worm is mounted, ball-bearings arranged to take up the lengthwise thrust of said shaft and communicating through said boxes with said oil-chamber.

10. The combination, with a casing provided with bearing-boxes, of a worm-wheel mounted in said casing, a worm engaging said wheel, a driving-shaft journaled in said boxes and on which shaft said worm is mounted, a driving-pulley for said shaft, and antifriction-bearings provided at the outer ends of said boxes and arranged to take up the lengthwise thrust of said shaft and means for adjusting said shaft lengthwise.

819,214. VEHICLE LOCK-SHOE. LLOYD G. GALLUP, Walton, N. Y. Filed Sept. 20, 1905. Serial No. 279,344.

Claim.—1. A lock-shoe comprising a boxing open at the bottom, cross-strips therein and integral therewith, a wear-plate within the bottom of the boxing and extending under and held against longitudinal movement by the strips, and means for detachably securing the plate to the strips.



2. A lock-shoe comprising a boxing open at the bottom, cross-strips therein and integral therewith, a wear-plate seated in the bottom of the boxing and extending under the cross-strips, lugs thereon contacting with the strips to hold the plate against longitudinal movement, and means for detachably securing the plate to the strips.

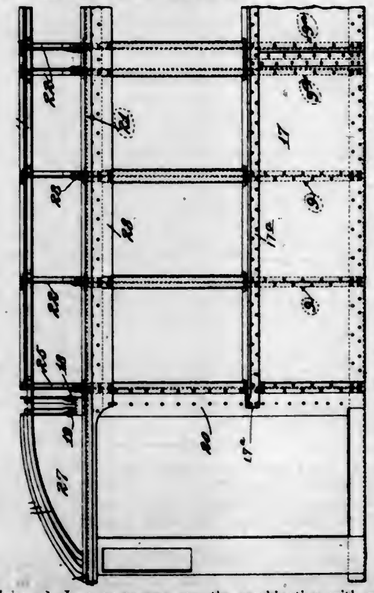
3. A lock-shoe comprising a boxing open at the bottom, cross-strips integral therewith, a brace portion within the boxing, a wear-plate within the bottom of the boxing and extending under the cross-strips and brace portion, lugs upon the wear-plate and interposed between and contacting with the cross-strips, and means for detachably securing the plate to said strips.

4. A lock-shoe comprising, a boxing open at the bottom and having strips transversely thereof, a wear-shoe provided with tapered openings registering with openings through the strips and tapered bolts proportioned to fit the tapered openings and extend through the openings in the strips.

5. A lock-shoe comprising a boxing open at the bottom and provided with strips transversely thereof, a wear-plate provided with tapered openings registering with openings formed through the strips and with lugs proportioned to engage the strips and the sides of the boxing and tapered bolts proportioned to fit the tapered openings and extend through the openings in the strips.

6. A lock-shoe comprising, a boxing open at the bottom and provided with strips transversely thereof, a wear-plate covering the bottom of and extending laterally beyond the boxing and provided with tapered openings registering with openings formed through the strips and having lugs proportioned to engage the strips and the sides of the boxing and tapered bolts proportioned to fit the tapered openings and extend through the openings in the strips.

819,215. PASSENGER-CAR FRAME. GEORGE GIBBS, New York, N. Y. Filed May 13, 1905. Serial No. 260,281.



Claim.—1. In a passenger-car, the combination with plate-girder sides, posts riveted to and carried by said sides, a roof having side angles with flanges overlapping the posts, fastenings for securing said angles to said posts, and a facia-plate riveted to the side angles; substantially as described.

2. In a passenger-car, the combination with plate-girder sides, posts riveted to and carried by said sides, an angle carried by the upper ends of said posts and connected thereto, and a facia-plate riveted to said angle and overlapping the lower edge of the same; substantially as described.

3. In a passenger-car, the combination with plate-girder sides, of posts riveted to and carried by said sides, flanged side plates riveted to the upper ends of said posts, and facia-plates secured to the flanged side plates; substantially as described.

4. In a passenger-car, the combination with the sides thereof having vertical posts connected thereto, of flanged side plates connected directly to said posts at the upper edges of the sides, facia-plates along the upper edges of each side and secured to the flanged side plates thereof, and carlines riveted to the said flanged side plates; substantially as described.

5. In a passenger-car, the combination of vertical ports, side angles carried by the upper ends of said posts and connected thereto, and a facia-plate carried by the upper ends of said posts and overlapping the edges of the side angles; substantially as described.

6. In a passenger-car, the combination with plate-girder sides, posts riveted thereto, a flanged side plate overlapping the upper ends of said posts, a facia-plate riveted to the posts, and carlines riveted to the side plate; substantially as described.

7. In a passenger-car, the combination of plate-girder sides, posts riveted thereto, a side plate riveted to said posts, and vertically disposed sheets at the ends of the car having their ends spaced away from the sides to provide door-entering slots; substantially as described.

8. In a passenger-car, the combination with plate-girder sides, metallic sheets at the ends of the car, vertical channels connected to the metallic sheets, said channels being spaced away from the sides of the car to provide door-entering slots; substantially as described.

9. In a passenger-car, the combination of a plate-girder side whose tension-flange is inwardly disposed, a compression member having an outwardly-disposed flange and comprising the belt-rail for the plate-girder sides, and an angle side plate at the upper edge of the car; substantially as described.

10. In a passenger-car, the combination with plate-girder sides and center sills, of a truss comprising cross-bearers secured to the sides and center sills, straps connecting the cross-bearer members on either side of the center sills, and tension members connected to the sides and to the cross-bearer members; substantially as described.

11. In a passenger-car, the combination with plate-girder sides and center sills, of a truss comprising cross-bearers secured to the sides and center sills, straps connecting the cross-bearer members on either side of the center sills, and tension members connected to the cross-bearer members and to the straps; substantially as described.

12. In a passenger-car, the combination with plate-girder sides and center sills, compression members connected to the plate-girder sides and center sills, devices connecting the compression members and extending below the center sills, and tension members connected to the sides, to the compression members and to the connecting devices; substantially as described.

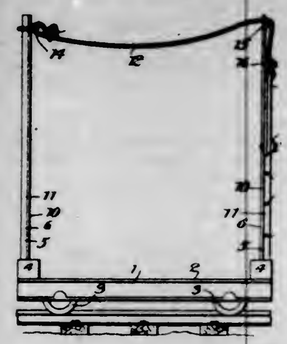
13. In a railway passenger-car, the combination with plate-girder sides and center sills, compression members connected to the sides and center sills, a commercially-shaped beam connecting the compression members on both sides of the center sills, and tension members connected to the compression members, to the commercially-shaped beam and to the sides; substantially as described.

819,216. CAR STAKE AND LOAD-BINDING DEVICE. THOMAS GREEN, La Fayette, Ind. Filed Nov. 9, 1905. Serial No. 286,033.

Claim.—1. In a device of the character described, the combination of a pair of stakes, a flexible connection attached to one of said stakes, a guide upon the other of said stakes for said flexible connection, a rack upon said stake, a sliding element upon said stake and attached to the free end of said flexible connection, a pawl upon said element adapted to engage said rack, and means for holding said pawl in engagement with said rack.

2. In a device of the character described, the combination of a pair of stakes, a flexible connection attached to one of said stakes, a guide upon the other of said stakes for said flexible connection, a rack upon said stake, a sliding element upon said stake and attached

to the free end of said flexible connection, a pawl upon said element adapted to engage said rack, and a cam-lever upon said element for holding said pawl in engagement with said rack.



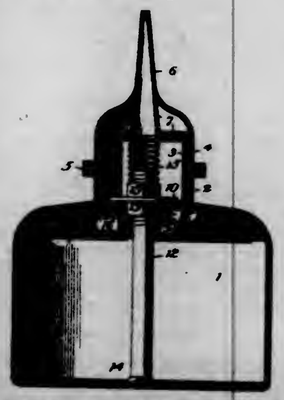
3. The combination with a metallic stake, of a guide thereon, a flexible connection engaged with said guide, a rack upon said stake, a sliding body upon said stake and attached to said flexible connection, a pawl upon said body to engage said rack, and a cam-lever upon said body to hold said pawl in engagement with said rack.

4. The combination with a metallic stake, of a guide thereon, a flexible connection engaged with said guide, a rack upon said stake, a sliding body upon said stake and attached to said flexible connection, a pawl upon said body to engage said rack, a cam-lever for holding said pawl in engagement with said rack, a hook carried by said body, a lever adapted to engage said rack, and a bail carried by said lever and engaged with said hook.

5. The combination of a metallic stake of T form, a guide upon said stake, a flexible connection engaged with said guide, a block or body slidable upon the main portion of said T-bar, a rack-bar upon one side of said main portion, a pawl upon said body to engage said rack-bar, and a cam-lever carried by said body and adapted to engage the opposite face of the main portion of said T-bar.

6. A metallic stake for cars, or the like, comprising a straight T-bar and an H-shaped base formed in its cross portion with a recess to receive the lower end of said T-bar, substantially as described.

819,217. OIL-CAN. CHARLES R. HARLESS, Dayton, Wash. Filed Oct. 9, 1905. Serial No. 282,040.



Claim.—1. An oil-can having a neck and further provided with a stem extending from the bottom of the can into said neck, a valve fixed on said stem, a casing in said neck having a bottom provided with an opening through which said stem extends and forming a seat for said valve, a cap on said casing and having a spout, and a spring acting on the valve to normally close the same.

2. In an oil-can, the combination with the can-body having an interiorly-threaded neck, of a valve-casing adapted to be screwed into said neck, said casing having formed therein a discharge-opening, a cap adapted to be screwed onto said valve-casing, a discharge-spout, having its inner end disposed in said cap, washers arranged in the cap to support the inner end of the spout and to close said valve-casing, an oil-discharge valve arranged in the bottom of said casing, to close said discharge-opening, a spring to close said valve, and means whereby the latter may be opened by pressure on the bottom of the can, substantially as described.

3. In an oil-can, the combination with the can-body having an interiorly-threaded neck, of a valve-casing adapted to be screwed into said neck, said casing having formed therein a discharge-opening, a cap adapted to be screwed onto said valve-casing, a discharge-spout, having its inner end disposed in said cap, washers arranged in the cap to support the inner end of the spout and to close said valve-casing, a washer arranged between the inner edge of the cap and the edge of the can-opening, an oil-discharge valve arranged in said casing to close said discharge-opening, a spring to normally hold said valve in closed position and a valve-stem secured to said valve, said stem being adapted to engage the bottom of said can whereby upon pressure on the bottom of the latter the valve will be opened, substantially as described.

819,218. SUPERHEATING COMPOUND. HERMAN L. HARTENSTEIN, Chicago, Ill., assignor, by mesne assignments, to Electro Chemical & Development Company, Pierre, S. D., a Corporation of South Dakota. Filed July 23, 1902. Renewed Sept. 30, 1905. Serial No. 280,723.

Claim.—1. In the manufacture of calcium carbid, a superheating compound comprising calcium carbid, carbon, an oxygen-producing substance, and a metallic element, as and for the purpose set forth.

2. A superheating compound of the character described, comprising a mixture of calcium carbid, black oxid of manganese, bituminous coal, aluminium and chlorate of potash, as and for the purpose set forth.

3. A superheating compound of the character described, comprising a mixture of the following ingredients when pulverized or granulated and in the proportions specified: calcium carbid, black oxid of manganese, bituminous coal, aluminium, and chlorate of potash, as and for the purpose set forth.

4. In the manufacture of calcium carbid, a superheating compound comprising calcium carbid and carbon, intermixed with oxygen-producing substances and aluminium, as and for the purpose set forth.

5. A superheating compound comprising calcium carbid carbon, oxid of manganese and chlorate of potash, as and for the purpose set forth.

819,219. MANUFACTURE OF CARBID. HERMAN L. HARTENSTEIN, Chicago, Ill., assignor, by mesne assignments, to Electro Chemical & Development Company, Pierre, S. D., a Corporation of South Dakota. Filed July 23, 1902. Renewed Sept. 30, 1905. Serial No. 280,724.

Claim.—1. In the manufacture of carbid, the method which consists in first fusing lime and carbon containing elements to reduce the same to liquid or fluid condition, and finally supplying carbonaceous material to the mass while in a molten condition, to complete the conversion of metallic elements or particles of the mass.

2. In the manufacture of carbid, the method which consists in first fusing lime-containing material with only a small percentage of carbon, to reduce the same to liquid or fluid state, and then applying carbonaceous material to the molten mass while in fluid or liquid condition to complete the conversion.

3. In the manufacture of carbid, the method which consists in first fusing lime-containing material in the presence of only a small amount of carbon, to reduce the same to liquid or fluid state, then heating a mold or other receptacle, and applying thereto carbon in a finely-divided state, and finally delivering the molten mass while still in a liquid or fluid condition into such mold, whereby the finely-divided carbon completes the conversion of any unconverted metallic particles of the mass.

819,220. METHOD OF PRODUCING CARBID. HERMAN L. HARTENSTEIN, Chicago, Ill., assignor, by mesne assignments, to Electro Chemical & Development Company, Pierre, S. D., a Corporation of South Dakota. Filed July 23, 1902. Renewed Sept. 30, 1905. Serial No. 280,725.

Claim.—In the manufacture of carbid, the method which consists in fusing lime and carbon containing elements to reduce the same to molten condition, and finally running off the molten mass into thin sheets to chill the same.

819,221. PROCESS IN THE PRODUCTION OF CARBID. HERMAN L. HARTENSTEIN, Chicago, Ill., assignor, by mesne assignments, to Electro Chemical & Development Company, Pierre, S. D., a Coporation of South Dakota. Filed July 23, 1902. Renewed Sept. 30, 1905. Serial No. 280,726.

Claim.—1. In the production of carbid, the method which consists in applying to the interior surface of a suitable mold a material impervious to water, and then flowing the molten carbid in fluid state directly from the furnace into such mold, whereby the carbid is uniformly coated and impregnated superficially with the said material while fluid and in a state of incandescence, as and for the purpose set forth.

2. In the production of carbid, the method which consists in applying to the interior surface of a suitable mold a preparation of tar, and then flowing the molten carbid in fluid state directly from the furnace into such mold, whereby the carbid is uniformly coated and superficially impregnated with the tar while fluid and in a state of incandescence, as and for the purpose set forth.

3. In the production of carbid, the method which consists in applying to the interior surface of a suitable mold a preparation of tar, then heating such mold and finally flowing the molten carbid in fluid state directly from the furnace into such heated mold, whereby the carbid is uniformly coated and superficially impregnated with the tar while in a state of incandescence, as and for the purpose set forth.

4. In the production of carbid, the method which consists in applying to the interior surface of a suitable mold a combined plastic and pulverulent material impervious to water, and finally flowing the molten carbid in fluid state from the furnace directly into such mold, whereby the carbid is uniformly coated superficially impregnated with the said material while fluid and in a state of incandescence, as and for the purpose set forth.

5. In the production of carbid, the method which consists in applying to the interior surface of a suitable mold a preparation of tar and pulverulent material, and finally flowing the molten carbid in fluid state from the furnace directly into such mold, whereby the carbid is uniformly coated and superficially impregnated with the tar while fluid and in a state of incandescence, as and for the purpose set forth.

6. In the production of carbid, the method which consists in applying to the interior surface of a suitable mold a preparation of tar and carbonaceous material, and then flowing the molten carbid in fluid state from the furnace directly into such mold, whereby the carbid is uniformly coated and superficially impregnated with the tar while fluid and in a state of incandescence, as and for the purpose set forth.

7. The method which consists in coating the interior surfaces of molds with tar mixed with coke in a finely-divided condition, then heating such molds and finally delivering carbid in melted and fluid condition into the heated mold, whereby a protecting coating is applied to the surface of the carbid, as and for the purpose set forth.

819,222. MANUFACTURE OF CARBID. HERMAN L. HARTENSTEIN, Chicago, Ill., assignor, by mesne assignments, to Electro Chemical & Development Company, Pierre, S. D., a Corporation of South Dakota. Filed July 23, 1902. Renewed Sept. 30, 1905. Serial No. 280,727.

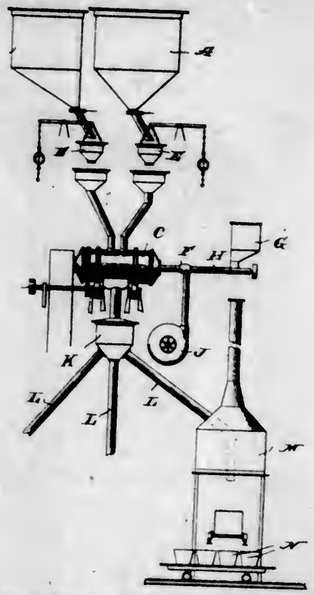
Claim.—1. In the manufacture of carbid, the process which consists in calcining limestone in the presence of carbonaceous material, then adding to the calcined mass a mixture of calcium carbid, black oxid of manganese, bituminous coal, aluminium and chlorate of potash, to maintain the temperature of the heated mass and to expel or drive off any phosphorus present therein, and finally fusing or melting the mass.

2. In the manufacture of carbid, the method which consists in calcining limestone in the presence of carbonaceous material, then adding to the heated mass a superheating flux, and finally subjecting the superheated mass to the fusing action of heat.

3. In the manufacture of carbid, the process which consists in mixing together pulverized limestone and carbon-containing substances, then preheating the mixture, then superheating the heated mixture to a state of incandescence, and finally fusing the mass.

4. In the manufacture of carbid, the process which consists in calcining limestone in the presence of a carbon-containing substance, then superheating the mass to incandescence, and finally fusing the mass while in a heated state.

5. In the manufacture of carbid, the process which consists in heating pulverized limestone in the presence of pulverized coke, then superheating the mixture to incandescence, and finally fusing the mass while in a highly-heated condition.



6. The method which consists in calcining limestone in the presence of powdered coke, then adding a superheating flux to the calcined mass while in a heated condition, and finally fusing the superheated mass.

7. In the manufacture of carbid, the process which consists in calcining pulverized limestone in the presence of carbonaceous material, and agitating the mass during the calcining operation to effect an intimate mixture of the elements, then superheating the calcined product to a state of incandescence, and finally fusing the superheated mass.

819,223. LINING FOR ELECTRIC OR OTHER FURNACES AND METHOD OF PREPARING THE SAME. HERMAN L. HARTENSTEIN, Chicago, Ill., assignor, by mesne assignments, to Electro Chemical & Development Company, Pierre, S. D., a Corporation of South Dakota. Filed July 23, 1902. Renewed Sept. 30, 1905. Serial No. 280,728.

Claim.—1. The method of preparing linings for electric or other furnaces, which consists in mixing together asbestos, a hydrocarbon adherent, cream of lime and coke, and then forming the same into bricks, blocks or slabs, as and for the purpose set forth.

2. The method of making linings for electric or other furnaces, which consists in mixing together cream of lime and pulverized coke and then adding thereto a mixture of asbestos and a hydrocarbon adherent, then forming the same into bricks, blocks or slabs, and then pressing and drying the same, as and for the purpose set forth.

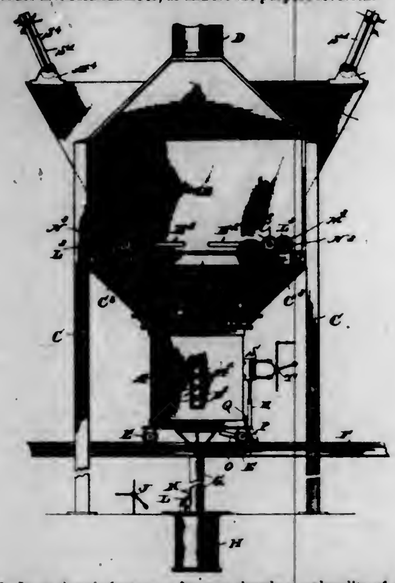
3. As a new article of manufacture, a lining for electric or other furnaces, composed of a thorough admixture of coke, cream of lime, asbestos and a hydrocarbon adherent, as and for the purpose set forth.

4. As a new article of manufacture, a lining for electric or other furnaces in the form of pressed and dried bricks, blocks or slabs, composed of powdered coke, cream of lime, a powdered hydrocarbon element and asbestos in about the proportion specified, as and for the purpose set forth.

5. As a new article of manufacture, a lining for electric or other furnaces, composed of powdered coke, slaked lime, an adhesive element, and a non-heat and electric conducting element, said element being incombustible as and for the purpose set forth.

819,224. ELECTRIC FURNACE. HERMAN L. HARTENSTEIN, Chicago, Ill., assignor, by mesne assignments, to Electro Chemical & Development Company, Pierre, S. D., a Corporation of South Dakota. Filed July 26, 1902. Renewed Sept. 30, 1905. Serial No. 280,729.

Claim.—1. In an electric furnace, a furnace-chamber, electrodes projecting into said chamber, means for adjusting the inclination of said electrodes, independent means for adjusting said electrodes laterally, and means for adjusting the extent of projection of said electrodes into said chamber, as and for the purpose set forth.



2. In an electric furnace, a furnace-chamber, a plurality of electrodes arranged to project into said chamber, means for adjusting the relative inclination of said electrodes, means for adjusting the proximity of said electrodes, and means for adjusting the extent of projection of said electrodes into said chamber, all of said adjusting means being independent of each other, as and for the purpose set forth.

3. In an electric furnace, a furnace-chamber, an electrode arranged to project into said chamber, said electrode provided with a seat or recess, a block having a seat adapted to receive said electrode, a lug formed in said seat and arranged to be received in said recess, means for clamping said electrode in said seat, and a holder arranged to incase and surround said block, as and for the purpose set forth.

4. In an electric furnace, a carbon-holder provided with seats, blocks arranged to be removably received in said seats, and means for clamping carbon slabs in said blocks, as and for the purpose set forth.

5. In an electric furnace, a carbon-holder having seats, blocks arranged to be removably received in said seats, means for clamping said blocks in said seats, and a carbon for each block, and means for removably clamping said carbons in said blocks, as and for the purpose set forth.

6. In an electric furnace, a carbon-holder having a plurality of seats, a block arranged to be received in each seat, a strap connected to each block, means for removably clamping said straps to said holder, whereby said blocks may be independently removed, and a carbon arranged to be removably received in each block, as and for the purpose set forth.

7. In an electric furnace, a holder having seats, a lug or projection associated with each seat, a block arranged to be received in each seat and provided with a pivoted strap arranged to be received over a lug or projection upon said holder, a carbon, and means for removably clamping said carbon in said block, as and for the purpose set forth.

8. In an electric furnace, a carbon-holder, a block adapted to be supported thereby, said block provided with a seat, a carbon adapted to be received in said seat, a clamping-plate arranged to be applied to said carbon, and a set-screw tapped through said block and engaging said clamping-plate to clamp said carbon to said block, as and for the purpose set forth.

9. In an electric furnace, a carbon-holder, a block arranged to be removably supported thereby and provided with a seat, said seat having a recess, a carbon adapted to be received in said seat, a clamping-plate adapted to be received in said recess in position to be applied to said carbon, and a set-screw tapped through said block and bearing against said clamping-plate to clamp said carbon to said block, as and for the purpose set forth.

10. In an electric furnace, a furnace-chamber, an electrode operating therein, a holder for said electrode, a support for said holder, said support provided with rack-teeth, and gearing arranged to engage said rack-teeth to longitudinally adjust said support, as and for the purpose set forth.

11. In an electric furnace, a furnace-chamber, an electrode, a support therefor, means for engaging said support, and worm-and-screw gearing for rocking said engaging means, whereby said support may be tilted, as and for the purpose set forth.

12. In an electric furnace, a furnace-chamber, an electrode, a support therefor, a shaft, bearings swiveled on said shaft and arranged to receive said support therebetween and to engage the same, and means for rocking said bearings to adjust the angular position of said support, as and for the purpose set forth.

13. In an electric furnace, a furnace-chamber, an electrode, a support therefor, a shaft, plates carried by said shaft and having angle-arms arranged to embrace and form a bearing for said support, and means for tilting said arms, as and for the purpose set forth.

14. In an electric furnace, a furnace-chamber, an electrode, a support therefor, suitably-journaled sleeves carrying plates, angle-arms carried by said plates, bearings respectively mounted upon said sleeves and arms and arranged to respectively engage said support on opposite sides to form bearings therefor, and means for rotarily adjusting said sleeves to tilt said support, as and for the purpose set forth.

15. In an electric furnace, a furnace-chamber, an electrode, a support therefor provided with a rack extending longitudinally thereof, a transversely-journaled shaft carrying a pinion engaging said rack, a sleeve mounted upon said shaft and carrying bearing-points arranged to embrace and engage said support, and means for independently rotating said shaft and sleeve, as and for the purpose set forth.

16. In an electric furnace, a furnace-chamber, an electrode, a support therefor, bearings arranged to embrace and maintain said support, a shaft upon which said bearings are mounted, journal-boxes for said shaft, and means for laterally adjusting said journal-boxes, as and for the purpose set forth.

17. In an electric furnace, a hopper or casing, a furnace-chamber communicating therewith, an electrode, a support therefor, a shaft transversely journaled in said hopper or casing and carrying bearing-arms arranged to embrace and maintain said support, slide-boxes in which said shaft is mounted, and means for adjusting said slide-boxes, as and for the purpose set forth.

18. In an electric furnace, a hopper or casing provided with a smoke-stack, a furnace-chamber, an electrode supported in said hopper or casing and projecting into said chamber, a support for said electrode, means for adjusting the inclination of said support with reference to said chamber, said support having an offset or bend in the length thereof whereby clearance is left for the stack, as and for the purpose set forth.

19. In an electric furnace, a hopper or casing, a furnace-chamber communicating therewith, an electrode, a support therefor, said hopper or casing provided with a slot or opening through which said support projects, a slide-guide for said support, and means for adjusting the position of said support, as and for the purpose set forth.

20. In an electric furnace, a hopper, a furnace-chamber, an electrode, a support for said electrode, said hopper provided with a slot, a slide-guide mounted to move along said slot, a bearing-block journaled in said slide-guide, said support operating loosely through said bearing-block, and means for adjusting said support, as and for the purpose set forth.

21. In an electric furnace, a hopper having a slot or opening therethrough, a furnace-chamber, an electrode, a support for the latter, said support projecting through said slot or opening, means for adjusting said support, and means operated by the movement of said support into adjusted position for constantly maintaining said slot or opening closed, as and for the purpose set forth.

22. In an electric furnace, a hopper having a slot or opening therethrough, a furnace-chamber, an electrode, a support for the latter, a slide-guide arranged to move along the slot or opening in said hopper and adapted to receive said support loosely therethrough, means for adjusting said support, and a flexible cover connected to said slide-guide and operating to close said slot or opening in whatever position said support is shifted or adjusted, as and for the purpose set forth.

23. In an electric furnace, an electrode, a support therefor, a shaft, said holder bearing upon said shaft, plates mounted upon said shaft and each having arms arranged to extend beyond said holder, the arms of one plate being connected to the arms of the other in position to form additional bearings upon the opposite side or face of said holder, and means for turning the shaft to adjust the same rotarily, as and for the purpose set forth.

24. In an electric furnace, an electrode, a support therefro, a shaft having rollers mounted thereon and arranged to form a bearing for one side of said holder, arms carried by said shaft arranged to project beyond the other side of such holder to form additional bearings therefor, said arms carrying bearing-rollers, and means positively acting on said arms for tilting the same, as and for the purpose set forth.

25. In an electric furnace, an upper portion or casing having supports for a pair of electrodes, a furnace-chamber laterally removable from beneath the casing, a pressure device for elevating said member against the casing, and means for withdrawing the electrodes out of said furnace-chamber to facilitate its removal, as and for the purpose set forth.

26. In an electric furnace, an upper portion or casing having a pair of electrodes, a lower member or furnace-chamber into which said electrodes project, and mechanism wholly inclosed within said casing for adjusting said electrodes, as and for the purpose set forth.

27. In an electric furnace, an upper portion or casing having a pair of electrodes, a lower member or furnace-chamber into which said electrodes project, and mechanism wholly included within the casing and operated by shafts extending through the walls thereof for adjusting said electrodes, as and for the purpose set forth

28. In an electric furnace, an upper portion or casing having a pair of electrodes, a lower member or furnace-chamber into which said electrodes project, and mechanism wholly included within the casing and operated by concentric shafts extending through the walls thereof for adjusting said electrodes, as and for the purpose set forth.

29. In an electric furnace, an upper portion or casing having a pair of electrodes, a lower member or furnace-chamber into which said electrodes project, and mechanism operated by concentric shafts for tilting and adjusting said electrodes, as and for the purpose set forth.

30. In an electric furnace, an upper portion or casing having a pair of electrodes, a lower member or furnace-chamber into which said electrodes project, and mechanism operated by concentric shafts for tilting and adjusting said electrodes longitudinally and rotarily, as and for the purpose set forth.

31. In an electric furnace, an upper portion or casing having a pair of electrodes, a lower member or furnace-chamber into which said electrodes project, mechanism operated by concentric shafts for adjusting said electrodes, and means for laterally adjusting said shafts, as and for the purpose set forth.

32. In an electric furnace, an upper portion or casing having a pair of electrodes, a lower member or furnace-chamber into which said electrodes project, and mechanism disposed within the casing and adjustable laterally whereby the electrodes may be shifted into a substantially vertical position, as and for the purpose set forth.

33. In an electric furnace, acasing, a pair of electrodes, an opening in the casing through which portions of an electrode project, and means for closing the space of said opening which is not occupied by said electrode, as and for the purpose set forth.

34. In an electric furnace, a pair of electrodes, and mechanism for laterally, longitudinally and rotarily adjusting the same, as and for the purpose set forth.

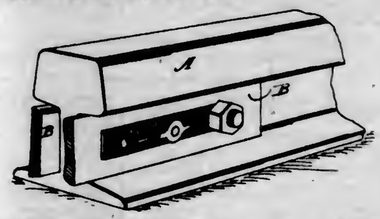
35. In an electric furnace, a pair of electrodes, and mechanism included within the casing for laterally, longitudinally and rotarily adjusting the same, as and for the purpose set forth.

36. In an electric furnace, a melting-pot, an enlarged casing above the same, electrodes included within the casing, and mechanism for adjusting said electrodes arranged in offset relation with respect thereto, whereby said electrodes may be shifted into a substantially vertical position adjacent to one another, as and for the purpose set forth.

37. In an electric furnace, an upper portion or casing having a stack, and a pair of electrodes, a lower member or chamber into which said electrodes project, supports having laterally-offset portions, the electrodes being mounted on said laterally-offset portions, whereby a movement of the supports into proximity to the stack moves the electrodes into proximity to each other, as and for the purpose set forth.

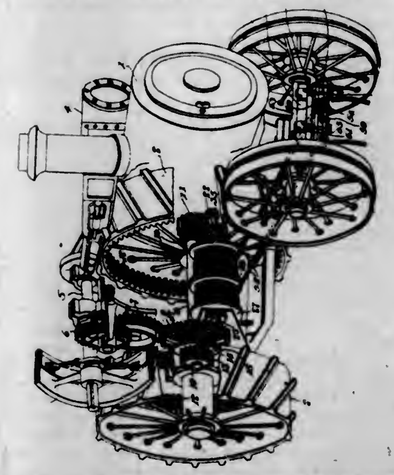
38. In an electric furnace, an upper portion or casing, a lower member or furnace-chamber removably located beneath said casing and having discharge-openings in the side thereof, a complete system of electrodes all supported entirely from the upper casing and out of contact with the lower casing, and a truck for laterally removing said furnace-chamber, as and for the purpose set forth.

819,225. NUT-LOCK. GALVESTON HARWELL, Cartersville, Ga. Filed Feb. 15, 1905. Serial No. 245,763.



Claim.—A nut-lock comprising a washer-plate having bolt-openings, and longitudinal slots communicating with said openings, the central portion of said washer-plate having a stud projecting therefrom, a locking-plate having a central opening through which the stud of the washer-plate is adapted to pass and oppositely-extending spring-arms twisted in reverse directions adjacent their outer ends, said twisted ends being adapted to engage the inner face of the nuts to be locked as set forth.

819,226. TRACTION-ENGINE. CHARLES O. HEDGES, Massillon, Ohio, assignor to The Russell and Company, Massillon, Ohio, a Corporation of Ohio. Filed July 1, 1905. Serial No. 267,910.



Claim.—1. The combination, with a traction-engine comprising a boiler, an engine proper having an engine-shaft, driving-wheels, and a counter-shaft located below the boiler and driven from the engine-shaft, of a winding-drum also located below the boiler, and means whereby said counter-shaft may be caused at will to drive either the driving-wheels or the winding-drum, substantially as described.

2. The combination, with a traction-engine comprising a boiler, an engine proper having an engine-shaft, driving-wheels, and a counter-shaft located below the boiler and driven from the engine-shaft, of a drum-shaft arranged parallel with the counter-shaft below the boiler, a winding-drum mounted on said drum-shaft, and means whereby said counter-shaft may be caused at will to drive either the driving-wheels or the winding-drum, substantially as described.

3. The combination, with a traction-engine comprising a boiler, an engine proper having an engine-shaft, driving-wheels, and a counter-shaft driven from the engine-shaft, of a drum-shaft arranged parallel with the counter-shaft below the boiler, a winding-drum loosely mounted on said drum-shaft, means whereby said counter-shaft may be caused at will to drive either the driving-

wheels or the winding-drum, and means for connecting said winding-drum and drum-shaft to cause the two to rotate in unison, substantially as described.

4. In a traction-engine, the combination, with an engine having an engine-shaft, driving-wheels provided with gears, and a counter-shaft operatively connected with the engine-shaft by a compensating gear and provided with fast and loose pinions respectively meshing with the driving-wheel gears, the fast pinion being movable into and out of mesh with its driving-wheel gear, of a winding-drum, a driving-gear for said winding-drum, and a pinion rotating with the counter-shaft and movable thereon into and out of mesh with said driving-gear, substantially as described.

5. The combination, with a traction-engine comprising an engine proper and driving-wheels, of a drum-shaft, two winding-drums loosely mounted on said drum-shaft and provided with friction-brakes, a clutch member rotating with said drum-shaft and normally out of engagement with both drums, means for moving said clutch member into engagement with either drum exclusively, and means whereby the engine may be caused to drive either the driving-wheels or said drum-shaft, substantially as described.

6. The combination, with a traction-engine comprising a boiler, an engine proper mounted thereon and having an engine-shaft, driving-wheels, and a counter-shaft located below the boiler and having a driving connection with the driving-wheels which may be rendered inoperative at will, of a drum-shaft located below the boiler and having two winding-drums loosely mounted thereon, means for effecting at will a driving connection between said counter-shaft and drum-shaft, and means for connecting either winding-drum with the drum-shaft to impart rotary motion to said drum, substantially as described.

7. The combination, with a traction-engine comprising a boiler, an engine proper having an engine-shaft, driving-wheels, and a counter-shaft driven from the engine-shaft, located below the boiler transversely thereof and having a driving connection with the driving-wheels which may be interrupted at will, of a drum-shaft located below the boiler parallel with said counter-shaft, means for effecting at will a driving connection between said counter-shaft and drum-shaft, two winding-drums loosely mounted on said drum-shaft, and means for connecting either of said drums with said drum-shaft to impart rotary motion to the drum thus connected, substantially as described.

8. In a traction-engine, the combination, with a counter-shaft from which the driving-wheels are driven, of a hollow drum-shaft mounted parallel with said counter-shaft below the boiler, means for effecting a driving connection between said counter-shaft and drum-shaft winding-drums loosely mounted on said drum-shaft and having clutch members on their adjacent faces, a clutch member slidably mounted on said drum-shaft between said drums and rotating in unison with said shaft, an operating-rod mounted in the hollow drum-shaft, connected to the central clutch member at one end and extending beyond the drum-shaft at the other end, and operating means connected to said other end whereby the operator can move said central clutch member into engagement with either drum, substantially as described.

9. In a traction-engine, the combination, with a counter-shaft from which the driving-wheels are driven, of a hollow drum-shaft mounted parallel with said counter-shaft below the boiler, means for effecting a driving connection between said counter-shaft and drum-shaft, winding-drums loosely mounted on said drum-shaft and having clutch members on their adjacent faces, a clutch member slidably mounted on said drum-shaft between said drums and rotating in unison with said shaft, an operating-rod mounted in the hollow drum-shaft, connected to the central clutch member at one end and extending beyond the drum-shaft at the other end, and operating means connected to said other end whereby the operator can move said central clutch member into engagement with either drum, said operating means comprising a hand-lever provided with locking devices, a connecting-rod, and an upright rock-shaft having one arm connected with the clutch-operating rod and the other arm connected with said connecting-rod, substantially as described.

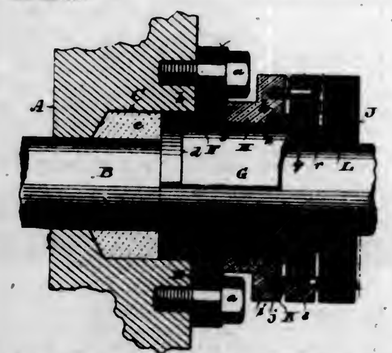
10. The combination, with a traction-engine having a winding-drum located below its boiler with its axis transverse thereto, of guiding devices for the rope or cable supported by the front axle of said traction-engine, substantially as described.

11. The combination, with a traction-engine having a winding-drum located transversely below its boiler, of a rope-guiding device supported by the front axle of the traction-engine and comprising a grooved guide-roller free to move in the direction of its axis of rotation transversely to the engine, and a spring-actuated guard-roller engaging the groove of said guide-roller and free to move transversely in unison therewith, substantially as described.

12. A guiding device for use in connection with a traction-engine winding-drum, comprising a support having parallel rods, a non-rotating shaft mounted on said rods, grooved guide-rollers loosely mounted on said shaft and free to rotate and slide longitudinally thereon, a second non-rotating shaft mounted to slide on said rods toward and from the guide-roller shaft, and having loosely mounted thereon guard-rollers adapted to fit within the grooves of the guide-rollers, and springs for moving said guard-roller shaft toward said guide-roller shaft, substantially as described.

13. A guiding device for use in connection with a traction-engine winding-drum, comprising a support having parallel rods, a non-rotating shaft mounted on said rods, grooved guide-rollers loosely mounted on said shaft and free to rotate and slide longitudinally thereon, a second non-rotating shaft mounted to slide on said rods toward and from the guide-roller shaft, and having loosely mounted thereon guard-rollers adapted to fit within the grooves of the guide-rollers, and springs for moving said guard-roller shaft toward said guide-roller shaft, said guide-roller shaft being provided with stops to limit the lateral movement of the guide-rollers, substantially as described.

819,227. **PACKING FOR SHAFTS AND ROTARY-VALVE STEMS.** JOHN H. HOYER, Corliss, Wis. Filed Oct. 23, 1905. Serial No. 283,935.



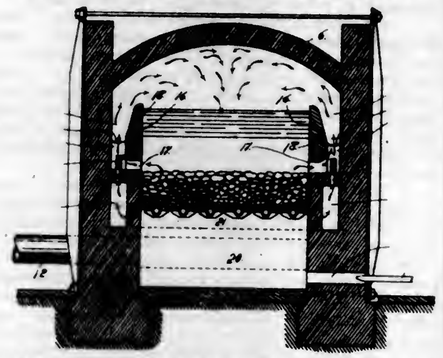
Claim.—1. A rotary-shaft packing, comprising a stationary cap, a sleeve mounted therein, through which the shaft is adapted to project, a shoulder on the sleeve in opposition to one face of the cap, a thimble mounted upon said sleeve and arranged to abut the other face of said cap, means for packing the thimble and sleeve-joint, means for packing the sleeve and shaft joint, and other means for adjusting said shoulder and thimble against the faces of the cap.

2. A rotary-shaft packing comprising a stationary cap, a sleeve mounted therein, through which the shaft is adapted to project, a shoulder on the sleeve in opposition to one face of the cap, a thimble mounted upon said sleeve and arranged to abut the other face of said cap, a recess in the end of the thimble, a gland fitted in said recess, a longitudinally-adjustable ferrule secured to the end of the aforesaid sleeve, and means in connection with the ferrule and thimble, whereby the latter is adjusted to one face of the cap simultaneously with the sleeve-shoulder to the opposite face thereof.

3. A rotary-shaft packing comprising a stationary cap, a sleeve mounted therein through which the shaft is adapted to project, a shoulder on the sleeve in opposition to one face of the cap, a thimble mounted upon said sleeve and arranged to abut the opposite face of said cap, a recess in the end of the thimble, a gland fitted in said recess, means for holding the gland against rotation with relation to the thimble, springs interposed between the latter and said gland, a ferrule in threaded connection with the sleeve whereby the latter is made steam-tight with relation to said shaft, and adjusting-screws in connection with the ferrule and the aforesaid gland.

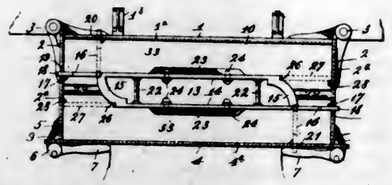
819,228. **FURNACE.** ALFRED B. JOHNSON, Denver, Colo., assignor to The Johnson Furnace and Engineering Company, Colorado Springs, Colo. Filed July 1, 1905. Serial No. 267,963.

Claim.—1. A furnace having inner side walls extending above the fuel-bed and forming chambers between the furnace-walls proper and the fire-box, the inner walls being tapered whereby the said chambers increase in size as they extend upwardly, their upper extremities having free communication with the upper part of the furnace, the inner side walls having openings in their lower portions whereby the fire-box communicates with the chambers, and partitions located in the bottom of the chambers between the bottom openings in the side walls whereby a series of compartments or flues is formed, and means for introducing air from below and under pressure into the said compartments or flues for the purpose set forth.



2. A furnace having a chamber located outside of and above the tops of the fuel-bed, the said chamber increasing in volume as it extends upwardly, its top having free communication with the upper part of the furnace, the said chamber communicating at its bottom with the fire-box by a series of openings above the fuel-bed, partitions separating the bottom of the chamber into a series of compartments corresponding with the openings communicating with the fire-box, and upwardly-directed nozzles entering the bottom of the chamber and protruding into the respective compartments in the bottom thereof.

819,229. **ADJUSTABLE MOLD.** THEODORE G. JOHNSON, Kansas City, Mo. Filed Apr. 11, 1905. Serial No. 254,959.



Claim.—1. An adjustable mold consisting of a casing, an off-bearing plate adapted to be placed and removed from beneath said casing, a core separable from the casing and the off-bearing plate, partitions hinged to said core, and means for locking said partitions from accidental movement.

2. An adjustable mold consisting of a casing having notches in its upper surface, an off-bearing plate arranged beneath said casing, a core separable from the casing and the off-bearing plate, partitions hinged to two diagonal corners of said core adapted to be arranged in alinement with the sides of the core or at right angles thereto, and latches secured to the partitions adapted to engage the notches in the casing.

3. An adjustable mold consisting of a casing, an off-bearing plate adapted to be placed and removed from beneath said casing, as core separable from the casing and the off-bearing plate and adapted to rest upon the latter, and partitions detachably secured to said core and casing.

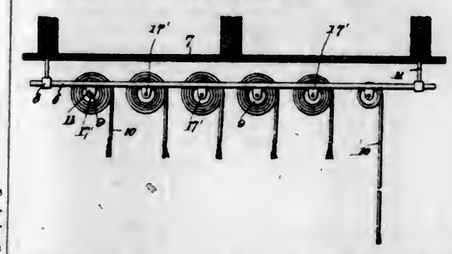
4. A mold for building-blocks consisting of a casing, an off-bearing plate arranged beneath said casing, a core arranged in the casing and resting upon said off-bearing plate, filling-blocks of less height and length than said core, and pins for detachably securing said filling-blocks to the core, said pins being arranged to be withdrawn through the interior of the core so the latter may be removed from the casing and leave the filling-blocks embedded in the building-blocks, substantially as described.

5. In a mold for building-blocks, the combination of a track, a platform located at one end thereof, a casing supported by said platform above the track, and a truck consisting of an off-bearing plate arranged beneath the casing and rollers carrying said off-bearing plate and arranged to travel upon the track, substantially as described.

6. In a mold for building-blocks, in combination, a track, a truck arranged to travel thereon, and a casing fixed above said track and provided with adjustable walls adapted to embrace the upper portion of the truck, substantially as described.

7. The combination with a track, of a truck consisting of an off-bearing plate and rollers mounted upon the track and carrying said off-bearing plate, an adjustable casing arranged to inclose the off-bearing plate, a core separable from the casing and the off-bearing plate arranged to rest upon the latter, and strips secured to the off-bearing plate and arranged between the casing and the core.

819,230. **DISPLAY-RACK.** JACOB H. KUMMER, Uhrichsville, Ohio. Filed Apr. 29, 1905. Serial No. 258,068.



Claim.—1. In a display-rack, a plurality of hangers for attachment to a ceiling or other support, a pair of horizontal rails supported by said hangers and adjustable longitudinally therein, supporting-brackets carried by the rails, spring-actuated display-rollers journaled in said brackets and each provided with an angular end portion, means carried by the hangers for locking said rails in adjusted position, and locking-clips pivoted to the brackets and adapted to engage the angular end portions of said rollers for locking the latter in the supporting-brackets.

2. In a display-rack, a plurality of hangers for attachment to a ceiling or other support and provided with terminal sockets having transverse openings formed therein, a pair of spaced horizontal rails engaging said sockets and adjustable longitudinally therein, supporting-brackets depending from the rails and adapted to enter the transverse openings in the sockets to thereby permit the adjustment of the rails, spring-actuated rollers journaled in said brackets, means for locking the rollers in said brackets, and means carried by the hangers for clamping the rails in adjusted position.

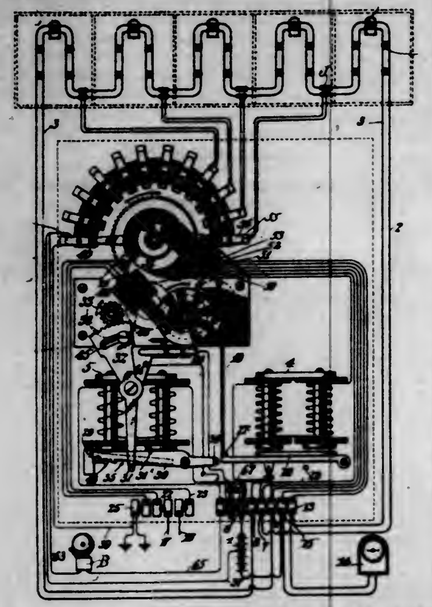
3. In a display-rack, a plurality of hangers for attachment to a ceiling or other support and provided with terminal sockets having transverse openings formed therein, a pair of spaced horizontal rails engaging said sockets and adjustable longitudinally therein, supporting-brackets depending from said rails and adapted to enter the transverse openings in the sockets to thereby permit the adjustment of said rails, spring-actuated display-rollers journaled in said brackets and each provided with an angular end portion, clamping members carried by said rollers, pivoted clips adapted to engage the angular portions of the rollers for locking said rollers in the supporting-brackets, and set-screws carried by the hangers and adapted to engage the horizontal rails for locking the latter in adjusted position.

4. In a display-rack, a plurality of hangers provided with threaded shanks for attachment to a ceiling or other support, a pair of spaced horizontal rails supported by said hangers and adjustable longitudinally therein, supporting-brackets depending from said rails, spring-actuated rollers journaled in said brackets and provided with spring-catches, locking-clips pivoted to the brackets for engagement with the rollers, clamping-bars pivoted to said rollers and having their free ends engaging said spring-catches, and set-screws carried by the hangers and adapted to engage the horizontal rails for locking the latter in adjusted position.

819,231. **ALARM SYSTEM AND APPARATUS.** JOHN M. LATIMER, Flushing, N. Y., assignor to The Consolidated Fire Alarm Company, New York, N. Y., a Corporation of New York. Filed Sept. 13, 1905. Serial No. 278,240.

Claim.—1. An alarm system and apparatus including a local circuit having two branches, a battery, an "alarm-signal" magnet

normally connected between the branches at one end, a "trouble-signal" magnet normally connected between the branches at the other end, a series of normally open circuit-closers arranged between the branches, and signal-transmitting mechanism controlled by said magnets.



2. An alarm system and apparatus comprising a local circuit having two branches, a battery, an "alarm-signal" magnet normally connected in said circuit at one end, a "trouble-signal" magnet normally connected in said circuit at the other end, signal-transmitting mechanism, means for releasing said mechanism controlled by said "trouble-signal" magnet, a grounded connection from said battery, and means for automatically opening said ground before the completion of a "trouble-alarm."

3. An alarm system and apparatus comprising a local circuit having two branches, a battery, an "alarm-signal" magnet between the said branches at one end of said circuit, a "trouble-signal" magnet connected between the said branches at the other end, normally open circuit-closing devices arranged in said circuit, signal-transmitting mechanism, means normally controlled by said "trouble-signal" magnet for restraining said mechanism, and automatic means for cutting said "trouble-signal" magnet out of said circuit when said signal-transmitting mechanism operates.

4. In an alarm system and apparatus, a local circuit having two branches, a battery, an "alarm-signal" magnet normally connected in series therewith at one end of said circuit, a "trouble-signal" magnet normally in series with said circuit at the other end, normally open circuit-closing devices arranged between the branches of said circuit, normally restrained signal-transmitting mechanism, means for releasing said transmitting mechanism controlled by said "trouble-signal" magnet, and means for automatically connecting the battery and alarm-signal magnet between the ends of the branches, with the branches in parallel and the "trouble-signal" magnet cut out, when the transmitting mechanism operates.

5. In an alarm system and apparatus, a local circuit having two branches, a battery, a "trouble-signal" magnet, and an "alarm-signal" magnet normally in series therewith, normally restrained signal-transmitting mechanism, means controlled by said "trouble-signal" magnet for releasing said transmitting mechanism, and means for automatically cutting out said "trouble-signal" magnet and arranging the two branches of the circuit in parallel when said signal-transmitting mechanism is released.

6. An alarm system and apparatus comprising a local circuit having two branches, a battery, a "trouble-signal" magnet, an "alarm-signal" magnet and an annunciator normally in series therewith, circuit-closers arranged between said branches, signal-transmitting mechanism, a series of pairs of contact-points, normally closed and connected in one branch of said circuit, means for releasing said signal-transmitting mechanism upon the disturbance of the normal condition of said "trouble-signal" magnet, means for automatically cutting out said annunciator when said signal-transmitting mechanism is released, means for opening and closing the circuits through said contact-points while the signal-transmitting mechanism is in operation, and means for subsequently cutting in said annunciator when the "alarm-signal" magnet is operated.

7. In an alarm apparatus, terminals for a local circuit, a "trouble-signal" magnet, an armature normally attracted thereby, signal-transmitting mechanism normally restrained by the said armature, an arm moving with said transmitting mechanism, a lever normally held thereby adapted to be released and stop said transmitting mechanism when said arm has moved a given distance, and an "alarm-signal" magnet and an armature therefor adapted to move said lever to release the transmitting mechanism when said "alarm-signal" magnet is sufficiently energized.

8. In an alarm apparatus, terminals for a local circuit, a "trouble-signal" magnet, an armature normally attracted thereby, signal-transmitting mechanism normally restrained by the said armature, an arm moving with said transmitting mechanism, a lever normally held thereby adapted to be released and stop said transmitting mechanism when said arm has moved a given distance, an "alarm-signal" magnet and an armature therefor adapted to move said lever to release the transmitting mechanism when said "alarm-signal" magnet is sufficiently energized, a local bell, a battery, and means for automatically completing a circuit through said bell when said transmitting mechanism has partially operated.

9. In an alarm system and apparatus, a local circuit having two branches, two magnets and a battery normally connected in series in said circuit, signal-transmitting mechanism, armatures for said magnets, one of said magnets normally attracting its armature to restrain said mechanism, and the other magnet being adapted to attract its armature to prevent the stopping of said mechanism.

10. In an alarm system and apparatus, a local circuit having two branches, two magnets and a battery normally connected in series in said circuit, signal-transmitting mechanism, armatures for said magnets, one of said magnets normally attracting its armature to restrain said mechanism, and the other magnet being adapted to attract its armature to prevent the stopping of said mechanism, and means for short-circuiting the magnet whose armature is normally attracted.

11. An alarm system and apparatus comprising a local circuit, a battery therefor, alarm-transmitting mechanism, a normally energized "trouble-signal" magnet having an armature normally restraining said mechanism, an "alarm-signal" magnet, means moving with said mechanism to stop it automatically after a "trouble-alarm" signal has been sent, and a normally retracted armature controlled by said "alarm-signal" magnet for releasing said stopping means.

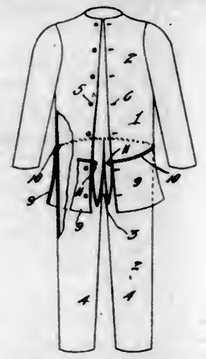
12. An alarm system and apparatus comprising a local circuit, a battery therefor, alarm-transmitting mechanism, a "trouble-signal" magnet having an armature normally restraining said mechanism, an "alarm-signal" magnet, means moving with said mechanism to stop it automatically after a "trouble-alarm" signal has been sent, an armature controlled by said "alarm-signal" magnet for releasing said stopping means, and means for automatically opening the battery-circuit when a complete alarm has been sent in.

13. In an alarm apparatus, signal-transmitting mechanism, a trouble-signal magnet, an armature normally attracted thereby and restraining said mechanism, an arm moving with said transmitting mechanism, a lever normally held thereby and adapted when released to stop said transmitting mechanism, a dog carried by said lever having a limited tilting movement relative thereto and acting as an abutment to said arm, an "alarm-signal" magnet and an armature therefor adapted when attracted to raise said lever and permit said dog to tilt beneath the end of said arm.

14. An alarm apparatus comprising "trouble" and "alarm" signal magnets, armatures therefor, signaling transmitting mechanism normally restrained by the armature of the "trouble-signal" magnet, means for stopping said mechanism when released, means controlled by the armature of the other magnet for again releasing said transmitting mechanism, a commutator for controlling the connections of the local circuit, and means for stopping said transmitting mechanism and commutator with the commutator in its original position.

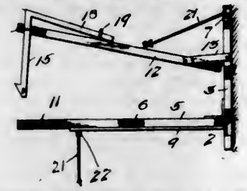
819,282. **SLEEPING-GARMENT OR PAJAMAS.** WALTER O. LEE, New York, N. Y. Filed Nov. 22, 1904. Serial No. 233,897.

Claim.—1. A garment of the character described comprising the united jacket and trousers, the latter being open around the crotch from the front to the rear of the waist, and the former having a skirt secured on the outside and adapted to conceal the opening in the trousers, substantially as shown and described.



2. A garment of the character described comprising a jacket and trousers, the body of the former and the legs of the latter being formed of a continuous strip of material, said trousers being open around the crotch from the front to the rear of the waist, and a surrounding skirt attached to the garment on the outer side at the waist and depending therefrom to conceal said opening in the trousers, substantially as shown and described.

819,233. **SELF-LOCKING HARNESS-RACK.** NELS LOFSTAD, Detroit City, Minn. Filed Dec. 5, 1905. Serial No. 290,414.



Claim.—1. In a device of the character described, the combination with an angle-bracket having a vertical and a horizontal arm, a groove in said bracket, and pulleys in said groove, of a vertically-swinging hinged arm, a latch or angle-arm pivoted to said hinged arm and adapted to engage the horizontal arm of said bracket, and a cable secured to said hinged arm and passing through said groove and over the pulleys therein, for the purpose of raising and lowering said arm and the latch secured thereto out of and into engagement with the horizontal arm of the bracket.

2. In a device of the character described, the combination with an angle-bracket having a vertical and a horizontal arm, said horizontal arm having at its outer end an opening or slot therein, of a hinged vertically-swinging arm having its outer end bifurcated, a latch or angle-arm pivoted in said bifurcated end, the lower end of said latch being provided with a catch and the short arm thereof being confined by a suitable guide, and means for raising and lowering said vertically-swinging arm and the latch or angle-arm pivoted thereto into and out of engagement with the horizontal arm of the bracket.

3. In a device of the character described, the combination with an angle-bracket having a vertical and a horizontal arm, a standard on said horizontal arm, and a groove or channel extending through said bracket, of a vertically-swinging hinged arm, a latch pivoted thereto and adapted to engage the horizontal arm, and means for raising and lowering said swinging arm out of and into engagement with said horizontal arm.

4. In a device of the character described, the combination with an angle-bracket having a vertical and a horizontal arm, a standard on said horizontal arm, and a groove or channel extending through said bracket, of a vertically-swinging hinged arm, a latch pivoted thereto and adapted to engage the horizontal arm, a seat in said swinging arm adapted to receive the upper end of the standard on the horizontal arm, and means for raising and lowering said swinging arm out of and into engagement with the horizontal arm and standard thereon.

819,284. **HERMETIC CLOSURE FOR RECEPTACLES.** WILLIAM A. LORENZ, Hartford, Conn. Filed Feb. 15, 1904. Serial No. 193,705.



Claim.—1. The combination with a plain-rimmed receptacle and a gasket, of a flaring cap for compressing the gasket at an inclination against an edge of the receptacle-rim, and a gasket-support separate from the cap provided with means for positioning the gasket in sealing relation to the said edge of the receptacle-rim.

2. The combination with a plain-rimmed receptacle, a gasket and a flaring cap, of a support provided with means for supporting the gasket and cap in wedging relation to an edge of the rim of the receptacle.

3. The combination with a plain-rimmed receptacle and a gasket, of a flaring cap for compressing the gasket inwardly against the outer edge of the receptacle-rim, of a gasket-support provided with means for supporting the gasket in sealing relation to the said outer edge of the receptacle-rim, and provided with means for guiding the cap in concentric relation to the gasket and receptacle during the downward sealing movement of the cap.

4. The combination with a hermetically-sealed receptacle having a rounded rim, and having its gasket compressed with a wedging action against an outer zone of the said rim, of an inner cover for the receptacle, provided with means for supporting the gasket in sealing relation to the said outer zone of the rounded rim of the receptacle.

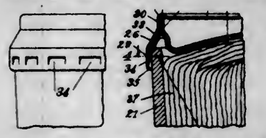
5. The combination with a receptacle having a rounded rim, a gasket, an outer sealing-cap provided with a flaring rim for compressing the gasket inwardly and downwardly against an outer zone of the rounded rim of the receptacle, of a separate inner cover for the receptacle, provided with means for supporting the gasket, and with means for supporting the cap in sealing relation to the said outer zone of the receptacle-rim.

6. The combination with a receptacle having a rounded rim, of a gasket, an outer sealing-cap provided with a flaring rim for compressing the gasket downwardly and inwardly against an outer zone of the receptacle-rim, and a gasket-support provided with an annular groove for supporting the gasket in sealing relation to the said outer zone of the receptacle-rim.

7. The combination with a plain-rimmed receptacle and a gasket, of a flaring cap and a separate gasket-support having a recess over the gasket between th contours of the cap and support.

8. A closure for receptacles comprising a gasket, and two separate caps provided with flaring flexible rims, one of said caps being inverted within the other cap with the adjacent sides of their respective rims forming the upwardly-converging walls of a downwardly-facing annular groove, for positioning the gasket in sealing relation to the outer edge of the receptacle-rim.

819,235. **HERMETIC CLOSURE FOR RECEPTACLES.** WILLIAM A. LORENZ, Hartford, Conn. Filed Nov. 17, 1904. Serial No. 233,084.



Claim.—1. A hermetic closure comprising a cap having a flaring internal seat, a band-shaped lining-gasket therefor, and a holder coöperating with the cap to form an annular groove for the upper edge of the gasket, the cap being indented in its lower portion to receive the lower edge of the gasket.

2. The combination of a receptacle having a sealing-seat, a cap having a flaring internal seat, a band-shaped lining-gasket therefor, and a holder coöperating with the cap to form an annular groove for the upper edge of the gasket, the cap being indented in its lower portion to receive the lower edge of the gasket.

3. The combination with a gasket, of a cap provided with indentations comprising portions of the flange of the cap which have

been partially separated from their adjacent portions of the flange, to support the gasket.

4. The combination with a gasket, of a cap provided with indentations comprising portions of the flange of the cap which have been partially separated from their adjacent portions of the flange, to support the gasket and pinch it against the flange.

5. A closure for hermetically-sealed receptacles, comprising a gasket having an approximately cylindrical face and an adjacent face forming an oblique angle therewith, and a cap having gasket-supporting indentations partially separated from the cap-rim, and having a gasket-receiving seat, a portion of which is inclined in substantial accordance with the oblique face of the gasket.

6. The combination with a receptacle, of a hermetic sealing-closure comprising a gasket having an acute-angled edge which projects at an inclination downwardly and across th sealing-seat of the receptacle, and a cap having gasket-supporting indentations partially separated from the cap-rim, and having an inclined sealing portion for wedging the gasket against the sealing-seat of the receptacle.

7. The combination with a receptacle having a rounded rim, of a self-centering closure therefor, comprising a cap having a flexible flaring flange, a gasket, the upper portion of which is smaller than the outer diameter of the receptacle-rim, and having lower faces which converge downwardly at an acute angle and project between the rounded rim and the cap-flange, the lower portion of the cap-flange being turned inwardly beneath the gasket to engage the receptacle and center the closure therewith.

8. A hermetic closure for receptacles having a rounded rim, comprising a gasket having an outside diameter larger than that of the receptacle rim, provided with a downwardly and outwardly inclined lower surface disposed to rest upon the said rim, and having an acute-angled lower outer corner, which in the uncompressed condition of the closure projects outside of the said rim, and a cap having a flexible flange provided with an annular seat for receiving the outside of the said gasket, portions of the flange being turned inwardly beneath the gasket to center the closure with the receptacle.

9. The combination with tumblers and similar receptacles having a rounded rim, of a hermetic closure comprising a cap provided with a flexible flange having an annular gasket-seat substantially larger in diameter than the tumbler-rim, and a gasket in said seat having in its uncompressed condition, a downwardly and outwardly inclined lower surface resting on the said rim with its lower outer edge projecting below the level of the rim, and in its compressed condition sustaining the entire atmospheric pressure upon the cap, portions of the cap-flange being turned inwardly beneath the gasket to engage the receptacle and center the closure therewith.

10. The combination with a tumbler or similar receptacle having a rounded rim, of a hermetic closure therefor consisting of a cap provided with a flexible flange having an annular portion substantially larger in diameter than the receptacle-rim, and extending a substantial distance below the level of the rim, and a gasket seated in said cap and having a downwardly and outwardly inclined lower edge resting upon the said rim and having, in its uncompressed condition, an acute-angled outer lower corner projecting into the annular space between the rim and the enlarged portion of the cap-flange, portions of the said flange being turned inwardly beneath the gasket to engage the receptacle and center the closure therewith.

819,236. HERMETIC CLOSURE FOR RECEPTACLES. WILLIAM A. LORENZ, Hartford, Conn. Filed Nov. 17, 1904. Serial No. 233,087.



Claim.—1. The combination with a gasket, of a flanged cap provided with a downwardly-projecting shoulder for engaging the upper margin of the inner face of the gasket and provided with an upwardly-projecting shoulder for engaging the lower margin of the inner face of the gasket.

2. A closure for hermetically-sealed receptacles, comprising a gasket having an approximately cylindrical face and an adjacent face forming an oblique angle therewith, and a cap having a gasket-receiving seat, a portion of which is inclined in substantial accordance with the oblique face of the gasket, and having the lower edge of its rim turned inwardly beneath the edge of the gasket.

3. A closure for hermetically-sealed receptacles, comprising a gasket having an approximately cylindrical face and an adjacent face forming an oblique angle therewith, and a cap having a gasket-receiving seat, a portion of which is inclined in substantial accordance with the oblique face of the gasket, and having the lower edge of its rim turned inwardly to form an upwardly-facing groove to support the edge of the gasket.

4. A closure for hermetically-sealed receptacles, comprising a gasket having an approximately rhombic or rhomboidal cross-section, the inner and outer faces of which are substantially cylindrical, and a cap having a receiving-seat, a portion of which is inclined in substantial accordance with one of the oblique angled faces of the gasket, and having the lower edge of its rim turned inwardly to form an upwardly-facing groove to support the gasket.

5. A closure for hermetically-sealed receptacles comprising a gasket having an approximately cylindrical face and an adjacent face forming an oblique angle therewith, and a cap having a gasket-receiving seat, a portion of which is inclined in substantial accordance with the oblique face of the gasket and provided with means for pinching the lower margin of the gasket.

6. The combination with a receptacle, of a hermetic-sealing closure, comprising a gasket having an acute-angled edge which projects at an inclination downwardly and across the sealing-seat of the receptacle, and a cap provided with means for pinching the lower margin of the gasket and having an inclined sealing portion for wedging the gasket against the sealing-seat of the receptacle.

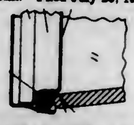
7. A hermetic closure comprising a gasket, a flaring-cap provided with a shoulder in its lower portion to support the lower edge of the gasket, and a separate holder forming a downwardly-projecting shoulder for supporting the upper edge of the gasket.

8. The combination with a receptacle, of a hermetic-sealing closure, comprising a gasket having an acute-angled edge which projects at an inclination downwardly and across the sealing-seat of the receptacle, a separate holder forming a downwardly-projecting shoulder for supporting the upper edge of the gasket, and a cap having the lower edge of its rim turned inwardly beneath the gasket and having an inclined sealing portion for wedging the gasket against the sealing-seat of the receptacle.

9. The combination with a receptacle, of a hermetic-sealing closure, comprising a gasket having an acute-angled edge which projects at an inclination downwardly and across the sealing-seat of the receptacle, a holder forming a downwardly-projecting shoulder for supporting the upper edge of the gasket, and a cap having the lower edge of its rim turned inwardly beneath the gasket and having an inclined sealing portion for wedging the gasket against the sealing-seat of the receptacle, the cap being also provided with a downwardly-facing groove in its top to receive the upper edge of the holder.

10. The combination with a receptacle, of a hermetic-sealing closure comprising a gasket having an acute-angled edge which projects at an inclination downwardly and across the sealing-seat of the receptacle, a holder forming a downwardly-projecting shoulder for supporting the upper edge of the gasket, and a cap having the lower end of its flange turned under to pinch the lower margin of the gasket, and having an inclined sealing portion for wedging the gasket against the sealing-seat of the receptacle.

819,237. HERMETIC CLOSURE FOR TUMBLERS. WILLIAM A. LORENZ, Hartford, Conn. Filed July 29, 1905. Serial No. 271,755.



Claim.—1. The combination with a receptacle and a gasket, of a cap and a separate gasket-support provided with flexible flaring rims and seated upon two different zones of the gasket.

2. The combination with a receptacle and a gasket, of a cap and a separate gasket-support provided with flexible flaring rims seated upon the outer and inner zones, respectively of the gasket.

3. The combination with a receptacle, of a separate gasket-support provided with means for centralizing itself with the receptacle, a flaring cap provided with means for carrying the support down with it, and a gasket inserted between the support and the cap.

4. The combination with a plain-rimmed receptacle and a gasket, of a gasket-support resting upon and within the gasket, and a separate flaring cap resting upon the gasket having a limited sliding movement upon the support, whereby the support and the cap rest independently upon the gasket.

5. The combination with a plain-rimmed receptacle and a gasket, of a gasket-support resting upon and within the gasket, and a separate flaring cap fitted for limited sliding movement upon the support, and resting upon the outer portion of the gasket, whereby the cap and support rest independently upon the gasket prior to the sealing operation, and compress the gasket against the inner and outer portions of the receptacle-rim in the sealing operation.

6. The combination with a plain-rimmed receptacle and a gasket, of a flaring cap resting upon the gasket, and a separate gasket-support having a flexible rim provided with means for centralizing itself within the receptacle-rim, and with means for supporting itself upon the gasket.

7. The combination with a plain-rimmed receptacle and a gasket, of a gasket-support provided with means for centralizing itself within the receptacle-rim, and having a flaring rim resting within and upon the gasket, and an outer cap covering the inner support and the gasket and having a flaring rim resting upon the gasket.

8. The combination with a plain-rimmed receptacle and a gasket, of a gasket-support provided with means for centralizing itself within the rim of the receptacle, and having a flaring rim resting within and upon the gasket, and a cap inclosing the support and having a flaring rim resting upon an outer zone of the gasket, the support and the cap resting upon the gasket independently of each other.

9. The combination with a plain-rimmed receptacle and a gasket, of an inner and an outer sealing-cap each provided with a flaring rim for compressing the gasket, one of the said caps having its flaring rim turned downwardly over an outer zone of the gasket while the other cap is inverted within the first cap, and rests upon the gasket, and extends within the circle of the receptacle-rim, to centralize the several members with each other.

10. The combination with a receptacle and a gasket, of an inner sealing-cap having an upwardly and outwardly flaring flexible rim seated upon an inner zone of the gasket, and an outer sealing-cap having a downwardly and outwardly flaring flexible rim seated upon an outer zone of the gasket.

11. A closure for receptacles comprising two separate caps provided with flaring flexible rims, one of said caps being inverted within the other cap with the adjacent sides of their respective rims forming the upwardly-converging walls of a downwardly-facing annular groove which approximately conforms in position to the rim of the receptacle, and a gasket seated in said groove.

819,238. UMBRELLA RUNNER OR NOTCH. CLYDE MACMILLAN, Williamsport, Pa., assignor to Adjutor N. Audet and William J. Brennan, Williamsport, Pa. Filed July 6, 1905. Serial No. 268,331.



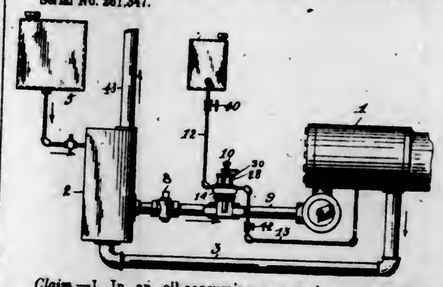
Claim.—1. In a runner or notch for umbrellas, the combination with a sleeve, of a head arranged thereon, said head comprising an inner plate having formed in its periphery, a series of radially-disposed slots, intermediate plates having formed therein a series of radially-disposed slots terminating in recesses or sockets, and an outer locking-plate revolubly mounted on said sleeve to open and close the slots and recesses in said intermediate plates, substantially as described.

2. In a runner or notch for umbrellas, the combination with a series of ribs having spherical ends, of a sleeve, a head arranged thereon, said head comprising an inner plate having formed in its periphery a series of radially-disposed slots, intermediate plates having formed therein a series of radially-disposed slots terminating in recesses or sockets, and an outer locking-plate revolubly mounted on said sleeve, said locking-plate having formed therein a radially-disposed slot and recess to normally prevent the withdrawal of said spherical heads, said locking-plate being adjustable to permit the removal of said heads, substantially as described.

3. In a runner or notch for umbrellas, the combination with a sleeve, of a head arranged thereon, said head comprising an inner plate having formed in its periphery a series of radially-disposed slots, intermediate plates having formed therein a series of radially-disposed slots terminating in recesses or sockets, an outer locking-plate revolubly mounted in said sleeve, said locking-plate having formed therein a radially-disposed slot or recess corresponding to and adapted to be brought into alinement with the slots and recesses in said intermediate plate, and ribs and braces having ball-bearing ends to engage the notches and recesses in said plates, substantially as described.

4. In a runner or notch for umbrellas, the combination with a sleeve, of a head arranged thereon, said head comprising an inner plate having formed in its peripbery a series of radially-disposed slots, intermediate plates having formed therein a series of radially-disposed slots terminating in recesses or sockets, means to hold said inner and intermediate plates against rotation on said sleeve, an outer locking-plate revolubly mounted on said sleeve, said plate having formed therein a laterally-disposed slot and recesses corresponding to and adapted to be brought into alinement with the slots and recesses in said intermediate plates and ribs and braces having ball-bearing ends to engage the notches and recesses in said plates, substantially as described.

819,239. MIXING AND COMBINING DEVICE FOR GAS-ENGINES. LEONARD J. MARKS, San Francisco, Cal. Filed May 20, 1905. Serial No. 261,347.



Claim.—1. In an oil-consuming gas-engine, a volatilizing-chamber, a cylinder, a mixing device interposed between said volatilizing-chamber and the engine-cylinder, said device having an automatically-opening and closing air-valve, an inlet for water controlled thereby, and variably-registering air-apertures for admitting air to said valve in regulated quantity, substantially as specified.

2. In an oil-consuming gas-engine, a volatilizing-chamber, a cylinder, a mixing device interposed between said volatilizing-chamber and the cylinder, said device having adjustable means for admitting air in regulated quantities, an inlet for volatile hydrocarbon, to mingle with the admitted air and temporarily supply fuel-gas to the engine in starting, a tank for the volatile hydrocarbon, conducting-pipes from said tank to the mixing device, and means to regulate the amount of volatile fluid supplied, substantially as specified.

3. In an oil-consuming gas-engine, a volatilizing-chamber, a cylinder, a mixing device interposed between said volatilizing-chamber and the cylinder, said device having adjustable means for admitting air in regulated quantities, an inlet-way for liquid fuel, an inlet-way for water, means for supplying said fuel and water in regulated quantities, and an automatically opening and closing valve to admit and mix said fluids, substantially as specified.

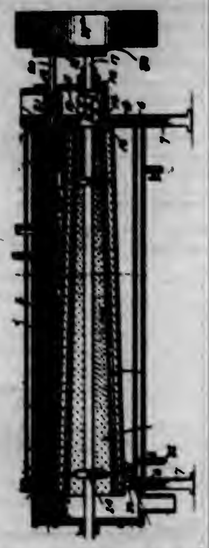
4. In an oil-consuming gas-engine, a volatilizing-chamber, a cylinder, a mixing device interposed between said volatilizing-chamber and the cylinder, said device having adjustable means for admitting air in regulated quantities, adjustable means for supplying liquid fuel and for supplying water thereto in regulated quantities, and an automatically opening and closing valve for admitting and mixing said fluids, said valve being mounted on and guided by a central adjustable stem, accessible from the exterior, substantially as specified.

819,240. WHEAT TEMPERER AND HEATER. ISAAC J. MILLS, Macy, Ind. Filed Apr. 11, 1905. Serial No. 254,950.

Claim.—1. In combination, a double drum, heads for the drum, a perforated drum in the double drum, a feed-chamber carried by one of the heads of the double drum and communicating with the perforated drum, means for controlling the passage through the feed-chamber, means for rotating the perforated drum, a flange on the perforated drum contacting with the inner surface of the double drum, a suitable connection communicating with the space of the double drum for admitting steam therein, and a suitable connection communicating with the interior of the inner drum for admitting steam thereto.

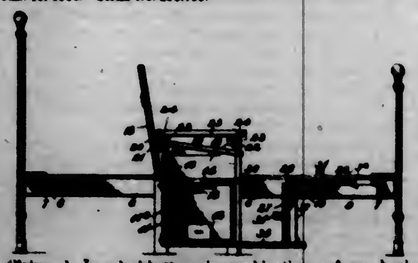
2. In combination, a double drum, heads for the drums, a perforated drum in the double drum, said drum being tapered and open at its larger end, longitudinal ribs on the interior of said perforated

drum, means for rotating the perforated drum, a flange on the larger end of the perforated drum contacting with the double drum, a suitable connection communicating with the space of the double drum for admitting steam thereto and a suitable connection communicating with the interior of the inner drum for admitting steam thereto.



3. In combination, a double drum, heads therefor, one of said heads having a bore and having a boss arranged thereabout, a feed-chamber carried by the head having the bore, a delivery-spout carried by the opposite head, a shaft extending longitudinally of the double drum and mounted in the heads thereof, spiders on the shaft, a perforated drum carried by the spiders, said drum having a perforated head engaging the boss of the head of the double drum, a flange on the larger end of the perforated drum contacting with the double drum, a feeding device within the feed-chamber, and means for admitting steam within the double arm.

819,241. BEDSTEAD. WILLIAM A. MOORE, Canton, Miss. Filed Jan. 13, 1906. Serial No. 296,720.

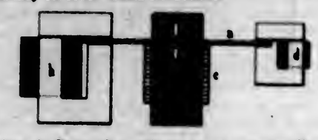


Claim.—1. In a bed-bottom, in combination, a frame having side posts at the middle thereof which stand upon the floor, a commode-box and seat swingingly hung from the posts, a head-section hinged to the box and adjustable to various angles.

2. A bed-bottom comprising a frame, a commode-box supported therein and forming the middle section of the bottom, a head-section hinged to the box and having means to support the same in an upright position, and a foot-section having a hinged part detachably engaged at one end to the box and hinged at its other end to the other part of the foot-section and adapted to be swung down and away from the box.

3. A bed-bottom comprising a frame having cleats at the head and foot end posts on each side at the middle, a commode-box hung from said posts, a head-section hinged to the top of the box and adapted to rest upon the cleat at the head of the frame, and a foot-section formed of parts hinged together and resting upon the cleats at the foot of the frame and detachably connected to the box.

819,242. ALTERNATING-CURRENT METER ON FERRARIS PRINCIPLE. EMANUEL MOSCH, Frankfort-on-the-Main, Germany. Filed May 10, 1904. Serial No. 207,314.



Claim.—1. In an alternating-current meter on Ferraris principle, means providing an additional torque or turning moment on the armature which additional torque or turning moment increases exactly as or as far as is possible approximately as the third power of the effective current, for the purpose of eliminating the variable damping influence of the current-coil upon the indications of the meter, substantially as set forth.

2. In an alternating-current meter of Ferraris principle, the combination of the main-current coil with an auxiliary coil containing iron, dependent on the main current and having approximately a quadratic curve of magnetization as long as the iron remains unsaturated by the current in question, substantially as and for the purposes set forth.

3. In an alternating-current meter, the combination with the main-current coil, and the armature of an auxiliary coil having a bridge extending across the gap between the poles of the coils in which the armature revolves, said bridge and gap being so proportioned that the field passing through the armature of the auxiliary coil has a quadratic curve of magnetization.

819,243. MEASURING DEVICE. GEORG MOYEN, Ruhrort-on-the-Ruhr, Germany, assignor to Fried. Krupp Aktiengesellschaft, Ruhrort-on-the-Ruhr, Germany. Filed Apr. 6, 1905. Serial No. 254,191.



Claim.—1. A measuring device comprising a frame having a plane bottom face, a measure having a scale extending in opposite directions from a zero-point, and means for moving the measure to bring the zero-point of the scale to a position corresponding to the bottom face of the frame without projecting the measure below the bottom face of the frame.

2. A measuring device comprising a frame having a plane bottom face, a measuring-tape adjustable vertically on said frame, and having a scale extending in opposite directions from the zero-point, means guiding the tape at right angles to the bottom of the frame and means for moving the zero-point of the measuring-tape to a position corresponding to the bottom face of the frame, without projecting the measure below the bottom face of the frame.

3. A measuring device comprising a frame, an endless tape adjustable thereon, and having a scale extending in opposite directions from a zero-point, and means for guiding the tape at right angles to the bottom of the frame.

4. A measuring device comprising a frame, having a plane bottom face, a measuring-tape movable vertically on said frame, means at the bottom of the frame around which the tape passes, a mark on the measuring-tape, and a mark on the frame at such a distance above the bottom face that when the mark on the tape coincides therewith, the zero-point of the tape is in a position corresponding to the plane of the base of the bottom of the frame.

5. A measuring device comprising a frame, a measuring-tape movable on said frame, means guiding the tape at right angles to the bottom of the frame, a roller around which the tape passes, and means for adjusting the roller comprising means for giving the roller a rough adjustment and means for giving it a fine adjustment.

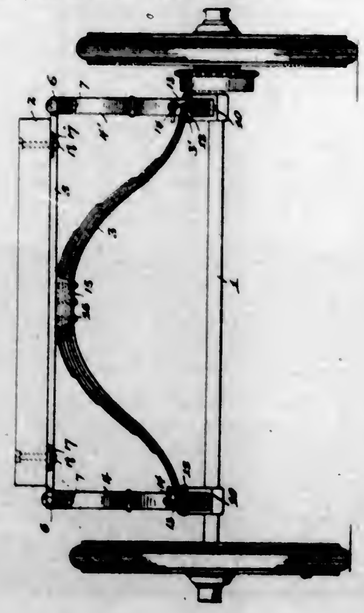
6. A measuring device, comprising a frame, a measure adjustable on said frame, a shaft for transmitting motion to said measure, a hand-wheel causing the shaft to turn therewith and movable axially on the shaft, a worm-wheel surrounding the shaft and with which the hand-wheel engages when moved axially in one direction and a worm for adjusting the worm-wheel.

7. A measuring device comprising a frame, having a plane bottom face, a measure movable on said frame, at right angles to the plane bottom face, and having a scale extending in opposite direction from the zero-point, a vernier adjustable on the frame over the measure to provide for fine adjustment and means for moving the measure to bring the zero-point to a point corresponding with the bottom face of the frame without projecting the measure below the bottom face of the frame.

8. A measuring device comprising a frame provided with vertical grooves, and a plane bottom face, a measure adjustable vertically on the frame and over the measure, said vernier comprising two parts one of which carries a set-screw for securing the vernier in different positions on the frame and the other of which carries a vernier-scale and is connected to the first part by a micrometer-screw.

9. A measuring device of the class described, comprising a frame having a plane bottom face, a pair of rolls rotatably arranged in said frame, an endless measuring-tape passing over said rolls, said tape having scales extending in opposite directions from a zero-point, and means for adjusting the tape within the frame.

819,244. VEHICLE. FREDERICK J. NEWMAN, Chicago, Ill., assignor to Woods Motor Vehicle Company, Chicago, Ill., a Corporation of Illinois. Filed Jan. 9, 1905. Serial No. 240,304.

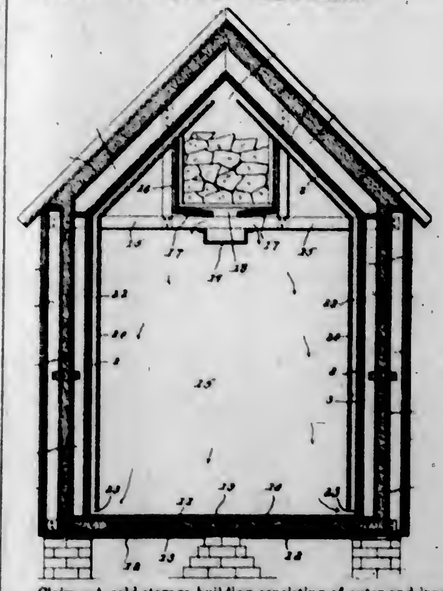


Claim.—1. In a vehicle, the combination of a running-gear frame, a spring-supported box-frame, a semi-elliptic transversely-disposed spring rigidly bolted at its central portion to one of said frames, slidably connected at its ends with the other frame, lateral guides embracing the end portions of said spring to confine the latter against lateral displacement and a longitudinally-disposed elliptic spring at each end of said semi-elliptic spring having its upper and lower central portions rigidly united with the spring-supported frame and running-gear frame respectively.

2. In a vehicle, the combination with one of the axles of the running-gear, of a transversely-disposed body-supporting bar, a semi-elliptic spring rigidly united at its center to said bar, pedestal-clips mounted upon the respective ends of the axle and receiving the ends of said semi-elliptic spring, each pedestal-clip provided with a seat receiving the ends of the spring and within which the latter is free to reciprocate endwise but is rigidly confined against lateral movement and a longitudinally-disposed elliptic spring, on each side of the vehicle having its central upper portion rigidly united with said box-supporting bar and its central lower portion rigidly united with the pedestal-clip, substantially as described.

3. In a vehicle, the combination with one of the running-gear axles of a transversely-disposed box-supporting bar provided at its central portion with rigidly-united parallel spring-embracing clips, and at each end with a transverse head portion, a semi-elliptic spring having its central portion seated between the clips of said bar and rigidly bolted to the latter, pedestal-clips mounted upon the respective ends of the axle and each provided with a seat having parallel side walls between which the receiving ends of the springs are accurately confined, and a bottom wall upon which the spring rests, and a longitudinally-disposed elliptic spring at each side of the vehicle, having its central upper portion rigidly bolted to the corresponding head of the box-supporting bar, and its lower central portion rigidly united to said pedestal-clip, as and for the purpose set forth.

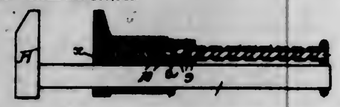
819,245. COLD-STORAGE BUILDING. BENNY A. NORMAN, Logan, Utah. Filed Aug. 31, 1904. Serial No. 222,886.



Claim.—A cold-storage building consisting of outer and inner lagged walls and an intermediate lagged division-wall forming air-spaces at opposite sides thereof, a lagged roof and flooring constituting continuations of the division-wall said roof being peaked, an inner lagged wall constituting a portion of the roof and forming an air-space thereabove; supplemental walls within the building and spaced from the inner lagged walls of the sides and roof and terminating above the floor and adjacent the apex of the ceiling said supplemental walls forming flues for conducting air from the floor of the building to the apex of the ceiling, an ice-chamber supported from the ceiling and having imperforate walls and an outlet in the

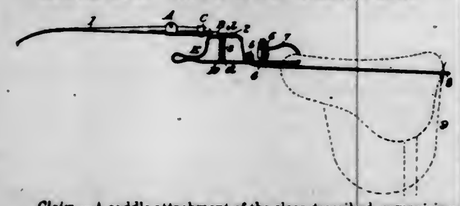
bottom thereof; and a drip-box disposed below the outlet, the air-outlet between the upper ends of the supplemental walls being disposed above the center of the ice-receptacle.

819,246. WRENCH. CHARLES H. HOYER, Decatur, Nebr. Filed Jan. 6, 1905. Serial No. 239,949.



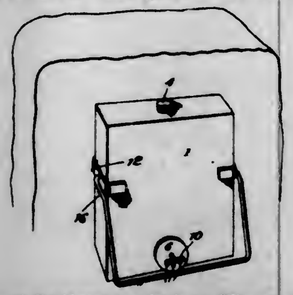
Claim.—A bar rectangular in cross-section and having an integral wrench-head at one end, a striding member secured to the opposite end of said bar, provided with a socket, a second striding perforated member secured intermediate of the ends of said bar, said perforations being in alinement with said socket, a doubly-threaded shaft provided with an intermediate collar portion, said collar portion being held by said perforated member, one end of said shaft being held within said socket, the threads of said doubly-threaded shaft running in opposite directions and being of different pitches, a sliding head working upon said bar, provided with an opening into which the remaining end of said shaft threads, a washer working upon said shaft and interposed between said sliding head and second-mentioned striding perforated member, and a square nut loosely working upon said shaft between said striding members, said nut sliding upon said rectangular bar, all arranged in the manner set forth.

819,247. SADDLE ATTACHMENT. WILLIAM O'NEILL, Dohile, Rathkeale, Ireland. Filed Dec. 13, 1904. Serial No. 236,596.



Claim.—A saddle attachment of the class described, comprising a supporting-frame provided at one end with a clasp for engagement with the saddle and at its other end formed with a vibrating spring member, a pull connection with said vibrating spring member, and an independently laterally swinging whip-holder having a pivotal connection at one end with the vibrating member and carrying holding means for a whip.

819,248. ATTACHMENT FOR BARBERS' CHAIRS. GEORGE E. OBEAN, Tomah, Wis. Filed Aug. 31, 1905. Serial No. 276,573.



Claim.—A liquid-container having a filling-opening and discharge-openings formed therein, a manually-opened, spring-closed valve to cover said discharge-openings, a frame to removably support said container, a guard-bail secured to said frame to protect said valve against casual opening, and supporting-lugs for said bail in said frame, substantially as described.

819,249. DENTAL FILLING. FREDERICK C. G. T. A. OTTO, Muskegon, Mich. Filed May 15, 1905. Serial No. 260,833.

Claim.—1. A soft dental filling material composed of pulverized metal and dental cement mixed together, the metal being suspended in and indifferent to the cement, substantially as described.

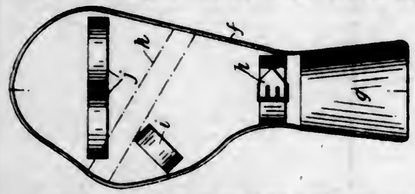


2. A soft dental filling material composed of precipitated gold and a dental cement mixed together, the metal being suspended in and indifferent to the cement, substantially as described.

3. A dental filling material composed of metal and a zinc cement mixed together, substantially as described.

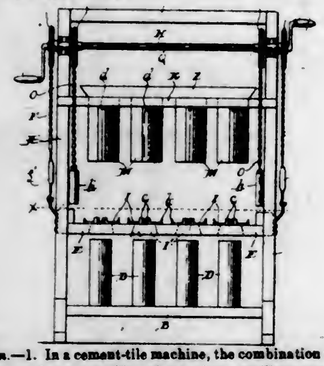
4. The process herein described of producing a dental filling for teeth capable of being burnished and polished consisting of mixing with gold pulverized to a fine powder, a cement and reducing the mixed compound to a powder the metal being suspended in and indifferent to the cement.

819,250. STRIKING-BAT FOR BALL GAMES. EMANUEL B. PAGET, London, England. Filed Apr. 17, 1905. Serial No. 256,167.



Claim.—A striking-bat for ball games comprising a striking-plate having a palm-piece and a wrist-protecting extension hinged together, a resilient facing extending over the palm-piece and wrist extension, and holding means for securing the palm-piece and wrist extension respectively to the palm and wrist of the hand.

819,251. CEMENT-TILE MACHINE. LUKE R. PECK, Caro, Mich., assignor of one-half to Charles O. Thomas, Caro, Mich. Filed Jan. 26, 1906. Serial No. 297,956.



Claim.—1. In a cement-tile machine, the combination with one-piece inner and outer molds, of one-piece auxiliary outer molds formed of a pliable sheet of a material such as tar or roofing paper and provided upon opposite ends with fastening devices detachably connecting the ends of the sheet together and forming it into an open-ended mold adapted to form a lining for the outer mold in casting the tile and an independent and removable outer support for the tile after casting it.

2. In a cement-tile machine, the combination with an inner mold, of an outer mold adapted to diametrically expand and contract at least for a portion of its length, and an auxiliary outer mold formed of a single sheet of pliable material with overlapping ends provided with fastening devices detachably securing the ends together, said auxiliary molds adapted to form a non-adhesive lining for the outer mold in casting the tile and a removable independent outer support for the tile after the removal of the outer mold.

3. In a cement-tile machine, the combination with an inner mold, of a one-piece outer mold adapted to be diametrically contracted at least for a portion of its length, and an auxiliary outer mold fitting within the outer mold and formed of a sheet of roofing-paper with overlapping ends provided with a button fastening device detachably securing the ends together.

4. In a cement-tile machine, the combination with an inner mold mounted upon a base, a vertically-movable outer mold open-ended and contractible for a portion of its length, a vertically-movable clamping-ring adapted to contract the outer mold upon its lower end and form the base thereon in casting the tile and an auxiliary outer mold adapted to form a non-adhesive lining for the outer mold in casting the tile and an independent and removable outer support for the tile after the removal of the outer mold.

5. In a cement-tile machine the combination with a supporting-frame, of an inner mold rigidly supported thereon, an outer mold vertically movably supported in said frame, and adapted to register with the inner mold, said mold being contractible for a portion of its length, a clamping-ring vertically movably supported in said frame and adapted to register with the inner mold and form the base of the mold in casting the tile and an auxiliary outer mold formed of a sheet of roofing-paper with overlapping ends detachably connected together and adapted to form a lining for the outer mold in casting the tile and an independent outer support for the tile after the withdrawal of the outer mold.

6. In a cement-tile machine, the combination with a supporting-frame and an innner mold stationarily supported therein, of an open-ended outer mold vertically movably supported in the frame above the inner mold and adapted to be registered therewith, said mold being formed of a single sheet of metal with overlapping ends and adapted to be contracted upon its lower portion, and a clamping-ring vertically movably supported in the frame below the outer mold and adapted to be registered with the inner mold and form the base of the mold in casting the tile, said clamping-ring composed of pivoted halves provided with upwardly-projecting guide-lugs adapted to engage the lower end of the outer mold and center and contract the same in the operative position of the parts.

7. In a cement-tile machine, the combination with a supporting-frame, of a series of inner molds stationarily supported in the frame, a corresponding series of outer molds, a common support for the same vertically guided in the frame, a series of clamping-rings adapted to cooperate with the inner and outer molds in the manner described, a common support for said clamping-rings vertically guided in the frame, two actuating-shafts journaled in the frame, and actuating connection between said shafts and the supports and adapted to raise and lower the same independently of each other.

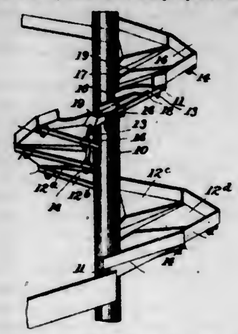
8. In a cement-tile machine, the combination with a supporting-frame formed with vertical standards, of a series of inner molds stationarily supported in the frame, a horizontal support vertically guided at its ends in the standards of the frame, a series of open-ended outer molds mounted in openings in said support, a hopper mounted upon the support and communicating with the openings therein, a horizontal support guided in the standards of the frame below the first-named support and provided with openings adapted to register with the inner molds, clamping-rings mounted upon the last-named support around the openings therein, and adapted to form clamping and centering bases for the lower ends of the outer molds, and means for vertically raising and lowering the above-named supports independently of each other, and auxiliary outer molds adapted to form a lining for the outer molds in casting the tiles and to support the tiles independently of the outer molds after casting the tiles.

819,252. COAL-SEPARATOR. JAMES POLLOCK, Wilkes-Barre, Pa. Filed Nov. 9, 1905. Serial No. 286,545.

Claim.—1. A separating apparatus for coal, ore, &c., comprising a plurality of substantially triangular plates arranged about a common vertical axis and collectively constituting an inclined separating-chute, the upper portion of each plate being reversely inclined and arranged with respect to the next higher plate so that the livelier material will pass over the reverse incline, while the more sluggish material will fall upon it.

2. A separating apparatus for coal, ore, &c., comprising a plurality of substantially triangular plates arranged about a common vertical axis and collectively constituting an inclined separating-chute, the said plates being inclined toward the vertical axis and also inclined laterally, and the upper portion of each plate having a reverse incline arranged to receive a part of the material from the lower edge of the next plate above.

3. A separating apparatus for coal, ore, &c., comprising a plurality of substantially triangular plates arranged about a common vertical axis and collectively constituting an inclined separating-chute, each of said plates having reversely-arranged inclines 16, 17, 18, the incline 17 gradually increasing in width toward the inner end of the plate, substantially as and for the purpose set forth.



4. A separating apparatus for coal, ore, &c., comprising a plurality of substantially triangular plates arranged about a common vertical axis and collectively constituting an inclined separating-chute, the lower plates being of greater radial length than the upper plates.

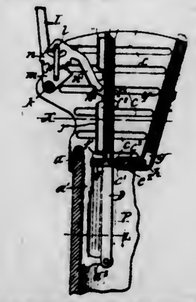
5. A separating apparatus for coal, ore, &c., comprising a plurality of substantially triangular plates arranged about a common vertical axis and collectively constituting an inclined separating-chute, a part of said plates at the lower end of said apparatus gradually increasing in radial length toward the bottom of the apparatus.

6. A separating apparatus for coal, ore, &c., comprising a series of plates arranged about a common axis and collectively constituting an inclined separating-chute, a plurality of successive plates at the upper part of the apparatus being of the same radial dimensions, and a plurality of the plates at the lower part of the apparatus gradually increasing in radial length, for the purpose set forth.

7. A separating apparatus for coal, ore, &c., comprising an inclined separating-chute arranged spirally about a vertical axis, the upper part of the chute being of uniform radial dimensions and the lower part of the chute gradually increasing in its radial dimension, for the purpose set forth.

8. A separating apparatus for coal, ore, &c., comprising a plurality of substantially triangular plates arranged about a common vertical axis the upper edge of each plate resting upon a fixed arm or support, and adjustable supports for the lower edge of each plate whereby the incline of each plate may be adjusted.

819,253. MOP-WRINGER. HERMAN M. REYNOLDS and WILLIAM E. SHERWOOD, Oneida, N. Y., assignors, by direct and mesne assignments, to The White Mop Wringer Company, Fultonville, N. Y. Filed Apr. 28, 1904. Serial No. 206,333.



Claim.—1. The combination, with the stationary wringer-frame, stationary breast and the presser-board provided with perforations for escape of the expelled water, of a water-shed disposed across the exterior of the entire perforated portion of the presser-board and leading to the interior of the mop-pail, as set forth.

2. The combination, with the wringer-frame, the stationary breast and the perforated presser-board, of the bottom board secured stationary to the wringer-frame and disposed with a water-passage between it and the bottom of the presser-board, and a water-shed extending completely across the perforated portion of the presser-

board and leading to the bottom board adjacent to the aforesaid water-passage as set forth.

3. In a mop-wringer of the within-described class, the combination with the perforated presser-board, of a water-shed fastened to the exterior of said presser-board and extending across the entire perforated portion thereof with a space between them and leading to the interior of the mop-pail.

4. The combination in a mop-wringer of a movable presser, a stationary breast, a frame supporting the breast, a rock-shaft mounted in bearings in the frame, a gear-sector on the shaft, a link connected with the movable presser having a gear-sector meshing with the gear-sector on the shaft, and means for holding said gear-sectors in working engagement, substantially as set forth.

5. The combination of the wringer-frame, stationary breast, and stationary bottom board, a pair of vertical arms pivoted to the frame, the presser-board secured to said arms, a shield disposed across the exterior of the perforated portion of the presser-board with a space between them and leading to the interior of the mop-pail, and means securing the said shield to the presser-board.

6. The combination of the wringer-frame, the stationary breast, the stationary bottom board, a pair of vertical arms pivoted to the frame, the presser-board secured to said arms, and a shielding-plate disposed at the outer face of the presser-board and formed at its side edges with flanges secured between the presser-board and arms as set forth and shown.

7. The combination with the wringer-frame, of a pair of vertical arms pivoted to said frame and formed with parallel inwardly-projecting flanges, the presser-board secured at its side edges between said flanges, and a shielding-plate formed at its side edges with flanges secured between the presser-board and outer flanges of the said arms as set forth and shown.

8. The combination with the wringer-frame, of a pair of vertical arms pivoted to said frame and each formed with a pair of parallel inwardly-projecting flanges, the outer flanges terminating at their lower ends with shoulders, and formed at their main portions with lugs disposed out of the plane of the flanges, the presser-board inserted with its side edges between said flanges and secured therein, and a shielding-plate disposed at the outer face of the presser-board and formed at its side edges with flanges inserted between the aforesaid lugs and presser-board and supported on said shoulders as set forth and shown.

9. The combination with the wringer-frame, a pair of vertical arms pivoted to said frame, a presser-board secured to said arms, and a rock-shaft mounted in opposite sides of the frame, of sectoral gears projecting eccentric from the rock-shaft, arms pivoted to the arms of the presser-board and formed with sectoral gears engaging the gears of the rock-shaft, and straps or links coupling said gears together as set forth and shown.

10. The combination in a mop-wringer of a movable presser, a stationary breast, a frame supporting the breast, a rock-shaft mounted in bearings in the frame, an eccentric gear-sector on the shaft, a connecting-rod having teeth engaging the gear-sector, and means for holding the teeth of the connecting-rod and gear-sector in mesh, substantially as set forth.

819,254. **WASHING-MACHINE.** GEORGE H. RUHLMAN and GEORGE C. MILLER, Cardington, Ohio. Filed May 20, 1905. Serial No. 261,357.



Claim.—1. In a washing-machine, the combination of a receptacle, oppositely-disposed rotary rubbers arranged within the receptacle and disposed eccentrically with relation to each other, whereby the clothes will be prevented from collecting or bunching centrally of the rotary rubbers, and means for rotating the same.

2. In a washing-machine, the combination of a receptacle, oppositely-disposed rotary rubbers consisting substantially of truncated cones and having central openings for the passage of water, and means for rotating the rubbers.

3. In a washing-machine, the combination of a receptacle, opposite eccentrically-arranged rotary rubbers having central openings, a shaft extending through the openings of the rubbers and connected directly with one of the same, and gearing for connecting the shaft with the other rubber.

4. In a washing-machine, the combination of a receptacle, opposite rotary rubbers having central openings, a stub-shaft mounted at one side of the receptacle and supporting one of the rotary rubbers, an operating-shaft extending inwardly from the other side of the receptacle and connected directly with the other rotary rubber, and gearing for connecting the shaft with the rubber which is mounted upon the stub-shaft.

5. In a washing-machine, the combination of a receptacle, opposite rotary rubbers, a stub-shaft mounted on the receptacle and receiving one of the rotary rubbers, an operating-shaft connected with the other rotary rubber for directly rotating the same, a bearing-bracket secured to the stub-shaft and supporting the adjacent end of the operating-shaft, and gearing connecting the operating-shaft with the adjacent rubber.

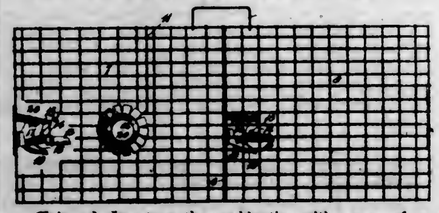
6. In a washing-machine, the combination of a receptacle, a stub-shaft extending inwardly from one side of the receptacle, an operating-shaft extending inwardly from the opposite side of the receptacle, rotary rubbers having openings and provided with spiders arranged on the said shafts, one of the rubbers being fixed to the operating-shaft, and gearing connecting the latter with the other rubber.

7. In a washing-machine, the combination of a receptacle, a rotary rubber having an opening, a spider secured to the rubber and provided with an extended hub having a gear, a stub-shaft mounted on the receptacle and receiving the spider, an operating-shaft having a gear meshing with that of the spider, and a bearing-bracket detachably secured to the stub-shaft and receiving and supporting the operating-shaft.

8. In a washing-machine, the combination of a receptacle, a pair of spaced rotary rubbers consisting of corrugated conical frustums having central openings, and means for rotating the rubbers.

9. In a washing-machine, the combination of a receptacle, a pair of spaced rotary rubbers consisting of eccentrically-arranged corrugated conical frustums having central openings, and means for rotating the rubbers.

819,255. **ANIMAL-TRAP.** ROBERT L. STRINGFELLOW, White Bluffs, Tenn. Filed Feb. 15, 1906. Serial No. 301,195.



Claim.—1. In a trap, the combination with a cage, of an entrance-tube extending thereinto, and having at its exit end a tilting platform carrying a guard-plate extending into the tube behind the platform, when the latter is tilted.

2. In a trap, the combination with a cage, of an entrance-tube extending thereinto, and having at its exit end a tilting platform, and behind said platform a slit, and a guard-plate carried by the platform, and swinging through the aforesaid slit into the tube to close the latter when the platform is tilted.

819,256. **DRAFT-EQUALIZER.** WILLIAM L. VIERBUCK, Lime Spring, Iowa. Filed Aug. 7, 1905. Serial No. 273,070.

Claim.—1. The combination with an evener, of a substantially horizontal clevis, means for connecting the clevis to an implement, a link connecting the evener and clevis and disposed in angular relation to the line of draft, another link connected to the evener and disposed diagonally of the line of draft and in angular relation to the first-mentioned link, said latter link extending diagonally across the clevis and in rear of the same, and means for connecting the link to an implement in rear of and at one side of the clevis.



2. The combination with an evener, of a substantially horizontal clevis, means for securing the clevis to one side of an implement, a link connecting the evener and clevis and disposed in angular relation to the line of draft, an extensible link connected to the evener and disposed diagonally of the line of draft and in angular relation to the first-mentioned link, said extensible link being disposed diagonally across the clevis and in rear of the same, a guide device adjustably mounted on the clevis and engaging the extensible link, and means for connecting said extensible link to an implement in rear of the clevis.

3. The combination with an evener including a yoke, of a clevis, a link pivoted to the yoke and to the clevis, another link pivoted to the yoke and extending diagonally across the clevis, and means for pivotally securing the rear end of the latter link to an implement.

4. The combination with an evener, of a clevis, means for attaching the clevis to an implement, a swinging connection between the clevis and the evener, and means connected to the evener and to the implement independently of the clevis for holding said swinging connection in different angular relations.

5. The combination with an evener, of a clevis, means for attaching the clevis to an implement, a swinging connection between the clevis and evener, and an extensible link connected to the evener and having means for attachment to the implement independently of the clevis for holding said swinging connection in different angular relations to the clevis.

6. The combination with an evener, of a clevis, means for attaching the clevis to the front portion of an implement, a swinging connection between the clevis and evener, and means connected to the evener and having a device arranged to be attached to an intermediate portion of the implement, said means holding the swinging connection in different angular relations and being slidably associated with the clevis.

7. The combination with a clevis, of means for connecting the same to an implement, an evener, a link connection between the clevis and evener, and means for holding the link connection in different angular relations with respect to the clevis said means being slidably associated with the clevis.

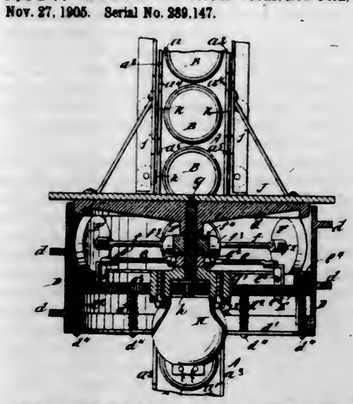
8. The combination with a clevis, of means for connecting the same to an implement, an evener, a link connection between the clevis and evener, and means for holding the link connection in different angular relations with respect to the clevis, said means including a stirrup that embraces the clevis.

9. The combination with a clevis, of means for connecting the same to an implement, an evener, a link connection between the clevis and evener, and an extensible link for holding the said link connection in different angular relations with respect to the clevis, said link comprising a sectional rod having means at its rear end for attachment to an implement, and a stirrup secured to the front end of the rod, said stirrup slidably embracing the clevis and being pivoted to the link connection.

10. The combination with a plurality of plow-beams, of a rod connecting and projecting beyond one side of the same, a clevis pivoted to the projecting end of the rod, an evener, a link connecting the evener and clevis and means connecting the evener and beams independently of said clevis.

11. The combination with a plurality of spaced plow-beams, of a tie-rod connecting the same and projecting beyond one side thereof, a clevis journaled upon the projecting portion of the tie-rod, an evener having a rearwardly-extending yoke, a link pivotally connecting the yoke and clevis, a stirrup pivotally connected to the yoke and slidably embracing the clevis, and an extensible rod connected to the stirrup and to one of the plow-beams.

819,257. **ELEVATOR.** ERNEST H. VOGEL, New York, N. Y. Filed Nov. 27, 1905. Serial No. 289,147.



Claim.—1. In an elevating device of the character designated, the combination with the platform, of an electrical motor suspended thereon, a driving-pinion actuated by said motor, intermediate gearing supported by the platform and arranged to transmit motion from said driving-pinion to a floating rack-ring, said floating rack-ring resting upon springs supported upon a worm-drum, said worm-drum, means for coupling the said rack-ring and drum so that they will rotate together while allowing the ring to move vertically upon its spring-supports antifriction-wheels interposed between said floating rack-ring and the platform, and vertically-arranged supporting-rolls engaging the peripheral worm on said drum, for the purpose described

2. In an elevating device of the character designated, the combination with the platform, of an electrical motor suspended thereon, a driving-pinion actuated by said motor, intermediate gearing supported by the platform and arranged to transmit motion from the said driving-pinion to a floating rack-ring, said floating rack-ring resting upon springs supported upon a worm-drum, said worm-drum, means for centralizing said floating rack-ring with relation to the worm-drum, means for coupling said floating rack-ring and drum so that they will rotate together while allowing the ring to move vertically upon its spring-supports, antifriction-wheels interposed between said floating rack-ring and the platform, and vertically-arranged supporting-rolls engaging the peripheral worm on said drum, for the purpose described.

3. In an elevating device of the character designated, the combination with the platform, of an electrical motor suspended thereon, a driving-pinion actuated by said motor, intermediate gearing supported by the platform and arranged to transmit motion from said driving-pinion to a floating rack-ring, said floating rack-ring resting upon springs supported upon the worm-drum, said springs, means for centralizing and supporting said springs against lateral

displacement, said worm-drum, means for coupling the said rack-ring and drum so that they will rotate together while allowing the ring to move vertically upon its spring-supports, antifriction-wheels interposed between said floating rack-ring and the platform, and vertically-arranged supporting-rolls engaging the peripheral worm on said drum, for the purpose described.

4. In an elevating device of the character designated, the combination with the platform, of an electric motor suspended thereon, a driving-pinion actuated by said motor, intermediate gearing supported by the platform and arranged to transmit motion from said driving-pinion to a floating rack-ring, said floating rack-ring resting upon springs supported upon a worm-drum, said springs, means for centralizing and supporting said springs against lateral displacement, consisting of tubular posts internally threaded and secured to a flange on the drum by engaging screws, said worm-drum, means for coupling the said rack-ring and drum so that they will rotate together while allowing the ring to move vertically upon its spring-supports, antifriction-wheels interposed between said floating rack-ring and the platform, and vertically-arranged supporting-rolls engaging the peripheral worm on said drum, for the purpose described.

5. In an elevating device of the character designated, the combination with the platform, of an electrical motor suspended thereon, a driving-pinion actuated by said motor, intermediate gearing supported by the platform and arranged to transmit motion from said driving-pinion to a floating rack-ring, said floating rack-ring resting upon springs supported upon a worm-drum, a central spindle supported on the platform a hub on said spindle and radial arms connecting said hub with the rack-ring for the purpose of centralizing the latter, said worm-drum, means for coupling the said rack-ring and drum so that they will rotate together while allowing the ring to move vertically upon its spring-supports, antifriction-wheels interposed between said floating rack-ring and the platform, and vertically-arranged supporting-rolls engaging the peripheral worm on said drum, for the purpose described.

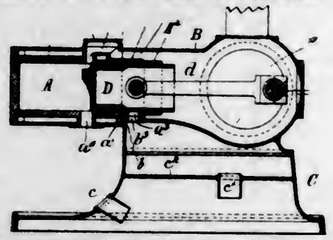
6. In an elevating device of the character designated, the combination with the platform, of an electrical motor suspended thereon, a driving-pinion actuated by said motor, intermediate gearing supported by the platform and arranged to transmit motion from said driving-pinion to a floating rack-ring, said floating rack-ring resting upon springs supported upon a worm-drum, said worm-drum, means for coupling said floating rack-ring and drum so that they will rotate together while allowing the ring to move vertically upon its spring-supports, antifriction-wheels interposed between said floating rack-ring and the said platform, a central spindle supported upon the platform, a rotatable hub on said spindle, radial connections coupling said antifriction-wheels with said centralizing-hub and vertically-arranged supporting-rolls engaging with the peripheral worm on the said drum for the purpose described.

7. In an elevating device of the character designated, the combination with the platform, of an electrical motor suspended thereon, a driving-pinion actuated by said motor, intermediate gearing supported by the platform and arranged to transmit motion from said driving-pinion to a floating rack-ring, said floating rack-ring resting upon springs supported upon a worm-drum, said worm-drum, means for coupling said floating rack-ring and drum so that they will rotate together while allowing the ring to move vertically upon its spring-supports, antifriction-wheels interposed between said floating rack-ring and the said platform, said antifriction-wheels being rigidly attached to axles arranged radially with relation to a central spindle, said central spindle supported upon the platform, a rotatable hub on said spindle, bearings upon said rotatable hub adapted to receive and support the inner ends of the antifriction-wheel axles, and vertically-arranged peripheral rolls engaging with the worm on said drum for the purpose described.

8. In an elevating device of the character designated, the combination with the platform, of an electrical motor suspended thereon, a driving-pinion actuated by said motor, intermediate gearing supported by the platform and arranged to transmit motion from said driving-pinion to a floating rack-ring, said floating rack-ring resting upon springs supported upon a worm-drum, said worm-drum, means for coupling said floating rack-ring and drum so that they will rotate together while allowing the ring to move vertically upon its spring-supports, antifriction-wheels interposed between said floating rack-ring and the said platform, said antifriction-wheels being rigidly attached to axles arranged radially with relation to a central spindle, said central spindle supported upon the platform, a rotatable hub on said spindle, antifriction-bearings upon said rotatable hub adapted to receive and support the inner ends of the antifriction-wheel axles and vertically-arranged peripheral rolls engaging with the worm on said drum for the purpose described.

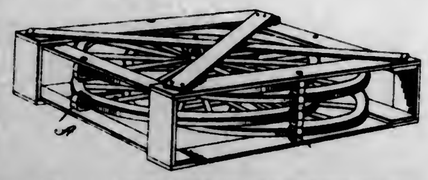
9. In an elevating device of the character designated, the combination with the platform, of an electrical motor suspended thereon, a driving-pinion actuated by said motor, intermediate gearing supported by the platform and arranged to transmit motion from said driving-pinion to a floating rack-ring, said floating rack-ring resting upon springs supported upon a worm-drum, said worm-drum, means for coupling said rack-ring and drum so that they will rotate together while allowing the ring to move vertically upon its spring-supports, antifriction-wheels interposed between said floating rack-ring and the said platform, said antifriction-wheels being rigidly attached to axles arranged radially with relation to a central spindle, said central spindle supported upon the platform, a rotatable hub on said spindle, bearings upon said rotatable hub adapted to receive and support the inner ends of the antifriction-wheel axles, bearings on the axles of the antifriction-wheels adjacent to the latter spacing and connecting rods uniting said bearings, and vertically-arranged peripheral rolls engaging with the worm on said drum for the purpose described.

819,258. **INTERNAL-COMBUSTION ENGINE.** CARL W. WEISS, Brooklyn, N. Y. Filed Mar. 6, 1903. Serial No. 96,878.



Claim.—A frame for an explosive-engine comprising a base, an independent crank-chamber portion formed with an interior seat having an air-inlet port in said seat and a finished face, and an independent cylinder portion formed with a finished face to fit the finished face of the crank-chamber portion and having an extension fitting closely within said seat in the crank-chamber portion with a port arranged to be covered by the piston registering with the air-inlet port in said seat, said crank-chamber portion and said cylinder portion having other registering ports in their respective finished faces and an exhaust-port in the cylinder portion arranged to be covered by the piston, substantially as described.

819,259. **CLAMP.** JOHN E. WHITE, Moline, Ill. Filed Aug. 29, 1905. Serial No. 276,296.



Claim.—1. A clamp for vehicle-wheels to protect the rims from injury in crating comprising several pairs of two like jaws, each pair having a convex lug and an alined recess extending across their opposed faces, the lug on one fitting the recess of the other and tending to prevent lateral or shearing motion, while permitting rocking motion, and a single bolt passing through said pairs and a nut to clamp all of said jaws.

2. A clamp for vehicle-wheels to protect the rims from injury in crating, comprising two like jaws each having a convex lug and an alined recess extending across their opposed faces, the lug of one fitting the recess of the other and tending to prevent lateral or shearing motion, while permitting rocking motion, and a single bolt passing through both and a nut to clamp said jaws.

819,260. **GAS-HEATER.** EDGAR H. WHITNEY, Boston, Mass. Filed Nov. 14, 1904. Serial No. 232,563.

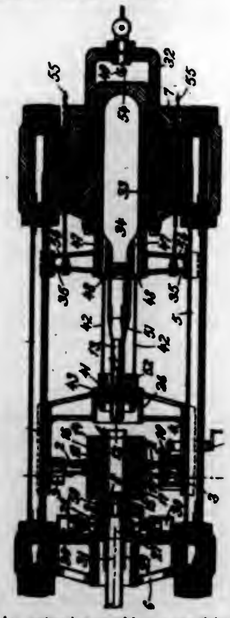
Claim.—1. In a gas-heater, a hot-air chamber, provided with air inlets and outlets, a gas-burner for heating the front wall thereof externally, and a log of refractory material in front of said burner, to afford a confined space between said log and front wall, in which the combustion takes place, substantially as specified.



2. In a gas-heater, a metallic hot-air chamber provided with air inlets and outlets, the front wall thereof being rearwardly curved downward, a gas-burner at the base of said front wall for heating the same, and a log of refractory material in front of said burner to deflect the heat upward against said front wall, substantially as specified.

3. In a gas-heater, a metallic hot-air chamber provided with air inlets and outlets, the front wall thereof being rearwardly curved downward, a gas-burner for heating said front wall externally, a refractory log in front of said burner forming a confined space between said log and front wall in which the heat is concentrated on the latter, and a refractory covering at the top of the heater to limit radiation and conserve the heat in the hot-air chamber, substantially as specified.

819,261. **APPARATUS FOR TREATING HEATED METAL UNDER PRESSURE.** WILLIAM A. WOOD, Ansonia, Conn., assignor to The Coe Brass Manufacturing Company, a Corporation of Connecticut. Filed July 25, 1905. Serial No. 271,233.



Claim.—1. An extrusion-machine comprising a supporting-frame, a container and die mounted in the frame, a coöperating ram movable independently of the container, and means for transmitting motion from the ram to the container.

2. An extrusion-machine comprising a supporting-frame, a container and die mounted in the frame, a coöperating ram, and means for giving the container the motion of the ram throughout a portion only of the stroke thereof.

3. An extrusion-machine comprising a supporting-frame, a container and die mounted in the frame, means for rotating the container, a coöperating ram, and means for giving the container the motion of the ram throughout a portion only of the stroke thereof.

4. An extrusion-machine comprising a supporting-frame, a carriage movable in the frame, a container mounted in the carriage, a coöperating ram, and a connection independent of the container for transmitting motion from the ram to the carriage.

5. An extrusion-machine comprising a supporting-frame, a carriage movable in the frame, a container mounted in the carriage, a coöperating ram, and a connection for transmitting motion from the ram to the carriage, said connection being such as to yield to pressure in excess of that required to advance the carriage in the frame.

6. An extrusion-machine comprising a die, a frame providing a seat for the die, a carriage movable in the frame, a container supported by the carriage, a coöperating ram movable relatively to the container, and a connection for transmitting motion from the ram to the carriage.

7. An extrusion-machine, comprising a frame, a die mounted therein, hydraulic locking means for the die, a carriage movable in the frame, a container mounted in the carriage, and a hydraulically-reciprocated ram movable through the container.

819,262. **PROCESS OF CONCENTRATING DILUTED NITRIC ACID.** OTTO BAUMER, Griesheim, Germany, assignor to Chemische Fabrik Griesheim Electron, Frankfort-on-the-Main, Germany. Filed May 22, 1905. Serial No. 261,659.

Claim.—1. The method of concentrating diluted nitric acid, which consists in mixing the diluted nitric acid with a quantity of polysulfate in a still at from 110° to 130° centigrade, distilling concentrated nitric acid from the mixture at this temperature, discharging the concentrated nitric acid into a storage vessel, increasing the temperature in the still up to from 250° to 300° centigrade, so that the remaining water passes over, allowing the latter to run off, cooling the polysulfate in the still down to its initial temperature, and repeating the operation with a fresh charge of diluted nitric acid.

2. The method of concentrating diluted nitric acid, which consists in mixing the diluted nitric acid with a quantity of polysulfate ($H_2Na(SO_4)_2$) in a still at from 110° to 130° centigrade, distilling concentrated nitric acid from the mixture at this temperature, discharging the concentrated nitric acid into a storage vessel, increasing the temperature of the mass in the still up to from 250° to 300° centigrade, so that first the remaining nitric acid passes over in a diluted state and afterward the remaining water, putting back the extracted diluted nitric acid for the following operation and allowing the extracted water to run off, cooling the polysulfate ($H_2Na(SO_4)_2$) in the still down to its initial temperature, and repeating the operation with a fresh charge of diluted nitric acid.

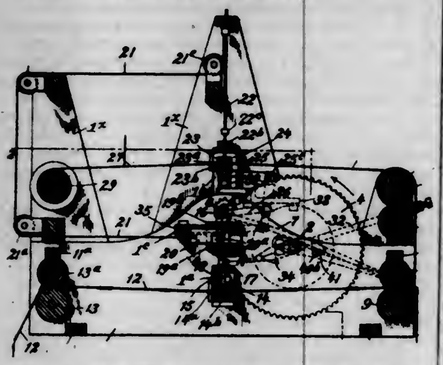
3. The method of concentrating diluted nitric acid which consists in cooling a quantity of hot polysulfate in a still, mixing a charge of diluted nitric acid with this polysulfate, distilling concentrated nitric acid from the mixture at the same temperature, discharging the concentrated nitric acid into a storage vessel, increasing the temperature of the mass in the still up to such a point, that the remaining water passes over, allowing the latter to run off, cooling the polysulfate in the still down to its initial temperature, and repeating the operation with a fresh charge of diluted nitric acid

4. The method of concentrating diluted nitric acid, which consists in constantly blowing air through a quantity of hot polysulfate in a still, mixing a charge of diluted nitric acid with this polysulfate, distilling concentrated nitric acid from the mixture at the same temperature, discharging the concentrated nitric acid into a storage vessel, increasing the temperature of the mass in the still up to such a point, that the remaining water passes over, allowing the latter to run off, cooling the polysulfate in the still down to its initial temperature with the aid of the air blown through, and repeating the operation with a fresh charge of diluted nitric acid.

5. The method of concentrating diluted nitric acid, which consists in constantly blowing air through a quantity of hot polysulfate ($H_2Na(SO_4)_2$) in a still, mixing a charge of diluted nitric acid with this polysulfate ($H_2Na(SO_4)_2$) distilling concentrated nitric acid from the mixture at the same temperature, discharging the concentrated nitric acid into a storage vessel, increasing the temperature of the mass in the still up to such a point, that first the remaining nitric acid passes over in a diluted state and afterward the remaining water, putting back the extracted diluted nitric acid for the following operation and allowing the extracted water to run off, cooling the polysulfate ($H_2Na(SO_4)_2$) in the still down to its initial temperature with

the aid of the air blown through, and repeating the operation with a fresh charge of diluted nitric acid.

819,263. MACHINE FOR TRANSFERRING PATTERNS. HENRY P. BALL, Schenectady, N. Y., assignor of one-half to Samuel Insull, Chicago, Ill. Filed Oct. 24, 1903. Serial No. 178,383.



Claim.—1. An automatic pattern-transferring machine comprising a moving pattern, a moving series of cards, a series of fingers adapted to coöperate with said moving pattern, means for moving the fingers transversely relative to the pattern, a series of perforating devices adapted to coöperate with the cards, and means controlled by the fingers for controlling the movement of the punches.

2. An automatic pattern-transferring machine comprising a moving pattern, a moving series of cards, means for imparting motion to said cards, a series of fingers adapted to coöperate with said moving pattern, means for moving the pattern vertically relative to the fingers, means for moving the fingers transversely relative to the pattern, a series of punches adapted to perforate the cards, means for moving the cards vertically relative to the punches, and means controlled by the fingers for controlling the movement of the punches.

3. An automatic pattern-transferring machine comprising a moving perforated pattern, a moving series of cards to be perforated, means for imparting to said pattern and cards rates of forward movement different from each other, a series of reciprocatory fingers adapted to coöperate with the perforations in the moving pattern, means for moving the fingers across the pattern, a series of punches adapted to perforate the cards, and means controlled by the fingers for throwing the punches into and out of action.

4. An automatic pattern-transferring machine comprising a moving strip of material having successive series of transversely-arranged perforations therein, a series of transversely-arranged fingers adapted to coact with such perforations, means for reciprocating said fingers transversely across the moving strip of material, means for vertically reciprocating the moving strip of material relative to the fingers, a moving series of cards, a series of punches arranged transversely over the cards, means for imparting a forward movement to the cards greater than that imparted to the moving strip of material and means controlled by the movement of the fingers for controlling the punches.

5. An automatic pattern-transferring machine comprising a perforated pattern, means for imparting forward movement to said pattern, a series of fingers adapted to coact with the perforations in said pattern, a series of moving cards, means for imparting forward movement to said cards at a rate which is a multiple of that imparted to the perforated pattern, a series of punches arranged in relation to said cards, means for reciprocating the fingers across the moving pattern and mechanism controlled by the fingers and, in turn, controlling the punches.

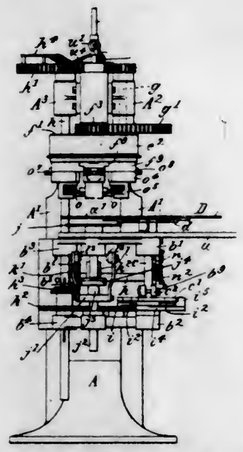
6. In an automatic pattern-transferring machine, the combination of mechanism for feeding a continuous web of blank material through the machine, a bank of punching mechanisms through which the blank web is fed, controlling devices for throwing each punch into or out of operation independently of the others, mechanism for feeding a perforated master-pattern through the machine at a speed proportional to that of the web, a series of yielding fingers arranged in operative relation to the perforated pattern, means for causing said pattern and fingers to alternately approach toward and recede from each other, and a connection from each finger to a punch-controlling device, together with means for giving the fingers an intermittent motion across the face of the master-pattern.

7. In an automatic card-punching machine, the combination of mechanism for feeding a series of connected cards step by step through the machine, a bank of punching mechanisms through which the cards are fed, controlling devices for throwing each punch into or out of operation independently of all the others, mechanism for feeding a perforated master-record step by step through the machine, the pattern being fed one step for every predetermined series of steps the cards are fed, a series of yielding fingers arranged in operative relation to the perforated pattern, means for causing said patterns and fingers to alternately approach toward and recede from each other, a connection from each finger to a punch-controlling device, and means for giving the fingers a step-by-step motion across the face of the pattern synchronously with the step-by-step motion of the cards.

8. In a mechanism for giving a step-by-step feed-motion to a connected series of cards, the combination of the feed-rollers, pawl-and-ratchet mechanism, a crank-shaft and connecting-rod to said pawl, a quick-action cam geared to the crank-shaft by speed-reducing gearing, and a connecting-rod from said cam to said pawl.

9. The combination of step-by-step feed mechanism for a web-pattern, a series of fingers movable across the face of said pattern at right angles to its line of travel, a rotating cam geared to the feed mechanism so as to make one rotation for each step thereof, the face of said cam having a series of steps in one direction, and a single return step in the other direction, mechanism for moving the fingers across the face of the pattern, and connections between said mechanism and said cam.

819,264. CAN-HEADING MACHINE. JULIUS BRENNINGER, Mount Vernon, N. Y., assignor to The Max Ams Machine Company, Mount Vernon, N. Y., a Corporation of New York. Filed Oct. 19, 1905. Serial No. 283,367.



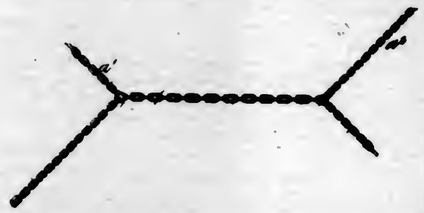
Claim.—1. A can-heading machine provided with a fixed worm, a head rotatable around the same, slides radially movable along the head, seaming-rollers pivoted to the slides, and means actuated by the worm for operating the slides, substantially as specified.

2. A can-heading machine provided with a fixed worm, a head rotatable around the same, slides radially movable along the head, seaming-rollers pivoted to the slides, worm-wheels engaging the worm, and means actuated by the worm-wheels for operating the slides, substantially as specified.

3. A can-heading machine provided with a fixed worm, a head rotatable around the same, slides radially movable along the head, seaming-rollers pivoted to the slides, worm-wheels engaging the worm, levers engaging the slides, and means actuated by the worm-wheels for oscillating the levers, substantially as specified.

4. A can-heading machine provided with a fixed worm, a head rotatable around the same, worm-wheels pivoted to the head and engaging the worm, cams rotated by the worm-wheels, levers operatively engaged by the cams, slides engaged by the levers, and seaming-rollers pivoted to the slides, substantially as specified.

819,265. EMERGENCY-CHAIN FOR RAILROADS. HAMILTON H. BROWN, Yonkers, N. Y. Filed Sept. 9, 1905. Serial No. 277,768.



Claim.—1. A draw-bar emergency coupling-chain formed with a bifurcated end consisting of an auxiliary extension, and a hook extension, said extensions adapted to pass around one draw-bar with the hook engaging the auxiliary extension, and the other end of the chain having a hook and adapted to pass around the other draw-bar, the hook engaging in a link.

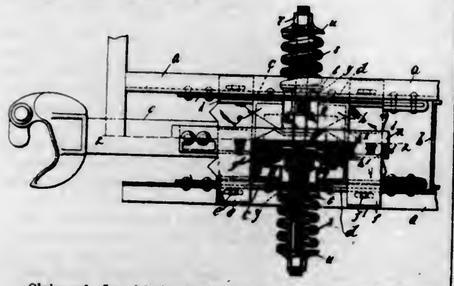
2. A draw-bar emergency coupling-chain formed with bifurcated ends each consisting of a hook extension and an auxiliary extension, the hook extension being formed with a hook having a lateral hole through one of its members, for the purpose set forth.

3. A draw-bar emergency coupling-chain formed with bifurcated ends each consisting of a hook extension and an auxiliary extension, the hook extension being formed with a hook having inner parallel surfaces and with a lateral hole through one of its members for the purposes set forth.

4. A draw-bar emergency coupling-chain formed with bifurcated ends each consisting of a hook extension and an auxiliary extension united to the main portion of the chain by a triangular link, the hook extension being formed with a hook having a lateral hole through one of its members, for the purpose set forth.

5. A draw-bar emergency coupling-chain formed with bifurcated ends each consisting of a hook extension and an auxiliary extension united to the main portion of the chain by a triangular link, the hook extension being formed with a hook having inner parallel surfaces and with a lateral hole through one of its members for the purposes set forth.

819,266. DRAFT-GEAR. JAMES R. CARDWELL, Chicago, Ill. Filed June 1, 1905. Serial No. 263,339.



Claim.—1. In a friction draft-gear, the combination with longitudinally-acting friction members, of transversely-acting friction members, the sills between which said friction members are disposed, and spring mechanism acting upon said members and bodily movable longitudinally of the sills, the spring portion of which is upon the exterior of said sills and there accessible.

2. In a friction draft-gear, the combination with the friction members thereof, the sills between which said members are disposed, a bolt *r* passing through a sill and a transversely-acting friction member, and a spring element *s* upon the exterior of the sills and coöperating with the friction members and bodily movable longitudinally of the sills.

3. In a friction draft-gear, the combination with longitudinally-acting friction members, of transversely-acting friction members, the sills between which said friction members are disposed, the transversely-movable friction members being apertured transversely of the sills, a bolt *r* passing through said latter members and the sills, and springs *s* upon the exterior of the sills acting in opposition to the transversely-movable members.

4. In a friction draft-gear, the combination with longitudinally-acting friction members, of transversely-acting friction members, the sills between which said friction members are disposed, the transversely-movable friction members being apertured transversely of the sills, a bolt *r* passing through said latter members and the sills, springs *s* upon the exterior of the sills acting in opposition to the transversely-movable members, and castings or elements *t* separately formed from the transversely-acting members passing through the sills into engagement with said members and effecting engagement with said springs.

5. In a friction draft-gear, the combination with longitudinally-acting friction members, of transversely-acting friction members, the sills between which said friction members are disposed, the transversely-movable friction members being apertured transversely of the sills, a bolt *r* passing through said latter members and the sills, springs *s* upon the exterior of the sills acting in opposition to the transversely-movable members, castings or elements *t* separately formed from the transversely-acting members passing through the sills into engagement with said members and effecting engagement with said springs, and adjustable caps upon the ends of the bolt engaging said springs.

6. In a friction draft-gear, the combination with longitudinally-acting friction members, of transversely-acting friction members, the sills between which said friction members are disposed, a casting or element *t* separately formed with respect to a friction member and passing through a sill, and a spring *s* upon the exterior of the sills operating upon the said element *t* and thereby upon the friction members.

7. A friction draft-gear including sills, a longitudinally-movable friction member having sliding mounting in slots provided in the said sills, and spring mechanism having spring adjustment.

8. A friction draft-gear including the sills thereof, longitudinally-movable friction members having sliding mounting upon the sills, transversely-movable friction members, spring mechanism against the force of which said friction members are moved, a yoke, and a coupler with which the said yoke is connected, the said yoke acting upon the friction members, the said sills being slotted to receive portions of the longitudinally-movable friction members, the portions of the said members engaging the said slots being in the form of plates separately formed from the balance of said members.

9. A friction draft-gear including the sills thereof, longitudinally-movable friction members having sliding mounting upon the sills, transversely-movable friction members, spring mechanism against the force of which said friction members are moved, a yoke, and a coupler with which the said yoke is connected, the said yoke acting upon the friction members, the said sills being slotted to receive portions of the longitudinally-movable friction members, the portions of the said members engaging the said slots being in the form of plates separately formed from the balance of said members, said spring mechanism acting transversely of the sills upon the friction members.

10. A friction draft-gear including the sills thereof, longitudinally-movable friction members having sliding mounting upon the sills, transversely-movable friction members, spring mechanism having spring adjustment and against the force of which said friction members are moved, and a coupler, the said sills being slotted to receive portions of the longitudinally-movable friction members, said spring mechanism being upon the exterior of the sills and coöperating with the friction members.

11. A friction draft-gear including the sills thereof, longitudinally-movable friction members having sliding mounting upon the sills, transversely-movable friction members, spring mechanism against the force of which said friction members are moved, a yoke, and a coupler with which the said yoke is connected, the said yoke acting upon the friction members, the said sills being slotted to receive portions of the longitudinally-movable friction members, the portions of the said members engaging the said slots being in the form of plates separately formed from the balance of said members, said spring mechanism being upon the exterior of the sills acting upon said friction members.

12. A friction draft-gear including the slotted sills thereof, the spring mechanism therefor having spring adjustment, plates working in the slots and in operative connection with the spring mechanism, and a coupler in engagement with the plates, one plate receiving the thrust of the coupler and the other plate receiving the pull of the coupler.

13. A friction draft-gear including relatively movable triangular friction-blocks, a central longitudinally-disposed friction element *q'* interposed between and frictionally engaging the same, and transversely-movable friction-blocks *q* between which the said fric-

tion element q' is disposed, which blocks q also have frictional engagement with the triangular blocks.

14. A friction draft-gear including relatively movable triangular blocks g', relatively movable triangular blocks h', a coupler in pushing relation with the first triangular blocks and in pulling relation with the second triangular blocks, transversely-movable friction-blocks q q, a friction element q' interposed between the blocks q q and frictionally engaging at one end the blocks g' and frictionally engaging at the other end the blocks h', and spring mechanism to effect the frictional engagement that is to be maintained between the friction blocks or elements.

15. A friction draft-gear including relatively movable triangular blocks g', relatively movable triangular blocks h', a coupler in pushing relation with the first triangular blocks and in pulling relation with the second triangular blocks, transversely-movable friction-blocks q q, a friction element q' interposed between the blocks q q and frictionally engaging at one end the block g' and frictionally engaging at the other end the block h', sills between which the said friction-blocks and elements are disposed, and spring mechanism acting transversely of the sills to effect the desired frictional engagement between the said friction blocks and elements.

16. In a friction draft-gear, the combination with friction members, of the sills between which said friction members are disposed, and spring mechanism upon the exterior of said sills acting upon said members and having spring adjustment, said spring mechanism being bodily movable longitudinally of the sills.

17. A friction draft-gear including friction members, the sills between which said friction members are disposed, spring mechanism upon the exterior of the sills and acting transversely thereof, and block mechanism t extending from between the sills to the exterior thereof and receiving spring-pressure from the spring mechanism and transferring the spring-pressure to the friction portion of the gear.

18. A friction draft-gear including friction members, the sills between which said friction members are disposed, spring mechanism upon the exterior of the sills and acting transversely thereof, a rod extending transversely of the sills and provided with an adjustable cap for effecting adjustment of the spring mechanism, and block mechanism t extending from between the sills to the exterior thereof and receiving spring-pressure from the spring mechanism and transferring the spring-pressure to the friction portion of the gear.

19. A friction draft-gear including friction members, the sills between which said friction members are disposed, spring mechanism upon the exterior of the sills and acting transversely thereof, a rod extending transversely of the sills and through the spring mechanism and provided with an adjustable cap for effecting adjustment of the spring mechanism, and block mechanism t extending from between the sills to the exterior thereof and receiving spring-pressure from the spring mechanism and transferring the spring-pressure to the friction portion of the gear.

20. A friction draft-gear including friction members, the sills between which said friction members are disposed, spring mechanism upon the exterior of the sills and acting transversely thereof, a rod extending transversely of the sills and through the same and the spring mechanism and provided with an adjustable cap for effecting adjustment of the spring mechanism, and block mechanism t extending from between the sills to the exterior thereof and receiving spring-pressure from the spring mechanism and transferring the spring-pressure to the friction portion of the gear.

21. A friction draft-gear including friction members, the sills between which said friction members are disposed, spring mechanism upon the exterior of the sills and acting transversely thereof, a rod extending transversely of the sills and through the same and provided with an adjustable cap for effecting adjustment of the spring mechanism, and block mechanism t extending from between the sills to the exterior thereof and receiving spring-pressure from the spring mechanism and transferring the spring-pressure to the friction portion of the gear.

22. A friction draft-gear including friction members, the sills between which said friction members are disposed, spring mechanism upon the exterior of the sills, and block mechanism t extending from between the sills to the exterior thereof and receiving spring-pressure from the spring mechanism and transferring the spring-pressure to the friction portion of the gear.

23. A friction draft-gear including transversely-acting friction members, the sills between which the same are disposed, spring mechanism upon the exterior of the sills, and a rod r extending transversely of the sills through the spring mechanism into the space between the sills, the sill or sills through which the rod passes being longitudinally slotted to permit of the movement of the rod and the spring mechanism longitudinally of the sills, said rod also passing through that transversely-acting friction member upon which the spring mechanism directly acts.

24. A friction draft-gear including transversely-acting friction members, the sills between which the same are disposed, spring mechanism upon the exterior of the sills, and a rod r extending transversely of the sills through the spring mechanism into the space between the sills, the sill or sills through which the rod passes being longitudinally slotted to permit of the movement of the rod and the spring mechanism longitudinally of the sills.

25. A friction draft-gear including relatively movable triangular friction-blocks, a longitudinally-disposed friction element q' interposed between and frictionally engaging the same, and transversely-movable friction-blocks q between which the said friction element q' is disposed, which blocks q also have frictional engagement with the triangular blocks.

26. In a friction draft-gear, the combination with friction members, of the sills between which said friction members are disposed, and transversely-acting spring mechanism upon the exterior of said sills acting upon said members bodily movable longitudinally of the sills and having spring adjustment.

27. In a friction draft-gear, the combination with friction members, of the sills between which said friction members are disposed, and spring mechanism upon the exterior of the sills acting upon said members, said spring mechanism including a rod r extending transversely of the sills through the same and provided with an adjusting-cap for effecting adjustment of the spring mechanism.

28. In a friction draft-gear, the combination with friction members, of the sills between which said friction members are disposed, and spring mechanism upon the exterior of the sills acting upon said members, said spring mechanism including a rod r extending transversely of the sills and provided with an adjusting-cap for effecting adjustment of the spring mechanism, said rod passing through the spring of the spring mechanism into the space between the sills.

29. In a friction draft-gear, the combination with friction members, of the sills between which said friction members are disposed, and spring mechanism upon the exterior of the sills and including a rod passing into the space between the sills and bodily movable longitudinally of the sills.

30. In a friction draft-gear, the combination with friction members, of the sills between which said friction members are disposed, and spring mechanism upon the exterior of the sills bodily movable longitudinally of the sills and including a rod passing into the space between the sills and through the spring portion of the spring mechanism and the friction member or members immediately associated with said spring portion.

31. In a friction draft-gear, the combination with friction members, of the sills between which said friction members are disposed, and spring mechanism upon the exterior of the sills bodily movable longitudinally of the sills and including a rod passing into the space between the sills and through the friction member or members immediately associated with said spring portion.

32. A friction draft-gear including friction members, the sills between which the same are disposed and spring mechanism upon the exterior of the sills, and movable bodily longitudinally of the sills and having spring adjustment.

33. A friction draft-gear including friction members, sills between which the same are disposed, spring mechanism upon the exterior of the sills, and a rod passing through the spring mechanism and the sills, the said spring mechanism and the rod being movable bodily longitudinally of the sills.

34. In a friction draft-gear, the combination with friction members, of the sills between which the said friction members are disposed and spring mechanism upon the exterior of the sills including a rod passing through the sills and bodily movable longitudinally of the sills.

35. A friction draft-gear including friction members, sills between which the same are disposed, spring mechanism upon the exterior of the sills, a rod passing through the spring mechanism and the sills, and means for effecting spring adjustment.

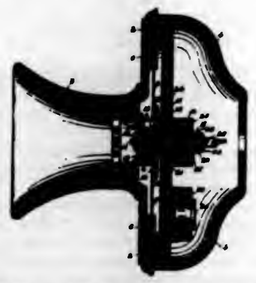
36. A friction draft-gear including friction members, sills between which the same are disposed, spring mechanism upon the exterior of the sills, a rod passing through the spring mechanism and the sills, the said spring mechanism and the rod being movable bodily longitudinally of the sills, and means for effecting spring adjustment.

37. In a friction draft-gear, the combination with friction members, of the sills between which the said friction members are disposed, spring mechanism upon the exterior of the sills including a rod passing through the sills and bodily movable longitudinally of the sills, and means for effecting spring adjustment.

38. The combination with a draft and buffing gear, provided with slotted supports and constructed substantially as described, of a front follower with a passage therethrough, a rear follower with a passage, keys within the passages of the followers and slots of the supports, and a friction device between the followers.

39. The combination with a draft and buffing gear, provided with slotted supports, of a front follower with a passage therethrough, a rear follower with a passage, keys within the passages of the followers and slots of the supports, a friction device, and a spring.

819,267. **TELEPHONE-TRANSMITTER.** WILLIAM W. DEAN, Chicago, Ill., assignor to Kellogg Switchboard and Supply Company, Chicago, Ill., a Corporation of Illinois. Filed Oct. 27, 1902. Serial No. 128,883.



Claim.—1. In a telephone-transmitter, the combination with a sound-receiving diaphragm, of a single flat shallow chamber containing comminuted conducting material and in which the said material may pass from one part to another, a positive, negative and an intermediate electrode in said chamber, and means to divide the current-path through the material in said chamber into several parts, the arrangement of said electrodes being such as to cause the current to traverse said parts in series, substantially as described.

2. In a telephone-transmitter, the combination with a sound-receiving diaphragm, of a single flat shallow chamber containing comminuted conducting material and in which the said material may pass from one part to another, electrodes in said chamber, and means to divide the current-path through the material in said chamber into several parts and to cause the current to traverse said parts in series, substantially as described.

3. In a telephone-transmitter, the combination with a sound-receiving diaphragm, of a single flat shallow chamber containing comminuted conducting material and in which the said material may pass from one part to another, electrodes in said chamber, and means to divide the current-path through the material in said chamber into two parts and to cause the current to traverse said parts in series, substantially as described.

4. In a telephone-transmitter, the combination with a sound-receiving diaphragm, of a single chamber containing comminuted conducting material in which said material may pass from one part to another, a plurality of electrodes on one side of the chamber, and means to cause the current to pass across said material a number of times in series between said electrodes, substantially as described.

5. In a telephone-transmitter, the combination with a sound-receiving diaphragm, of a chamber containing comminuted conducting material, a conducting member on one side of the chamber and two electrodes on the other, and means to cause the current to pass across the chamber between said electrodes and member in series while at the same time permitting the material to pass from one part of the chamber to another, substantially as described.

6. In a telephone-transmitter, the combination with a sound-receiving diaphragm, of a chamber containing comminuted conducting material, a conducting member on one side of the chamber actuated by the diaphragm, and a pair of electrodes on the other and opposite side of said chamber and forming the terminals of the electric circuit, said electrodes being insulated from each other and means to cause the current to pass from one electrode to the said plate and from the plate to the other electrode in series, the said material being permitted to circulate from one part to another of the chamber, substantially as described.

7. In a telephone-transmitter, the combination with a sound-receiving diaphragm, of a chamber containing comminuted conducting material, a conducting-plate on one side of said chamber, a pair of electrodes on the other, an insulating-partition projecting into the said chamber to divide it into two parts corresponding to said electrodes to cause the current to pass in series through the two parts of the chamber, said partition at the same time permitting the movement of the comminuted material from one part of the chamber to another, substantially as described.

8. In a telephone-transmitter, the combination with a sound-receiving diaphragm having a forwardly-deflected portion, of a chamber containing comminuted conducting material, a front conducting-plate located within said chamber and within the forwardly-deflected portion of the diaphragm, two electrodes opposing said plate and located upon the other side of the chamber, comminuted conducting material carried in said chamber between said plate and the electrodes, said electrodes being insulated from each other, an insulating-partition to cause the current to pass through different parts of said material between said electrodes in series, and a straight bridge located in the rear of the diaphragm to which said electrodes are rigidly secured, substantially as described.

9. In a telephone-transmitter, the combination with a sound-receiving diaphragm having a central forwardly-deflected portion, a chamber containing comminuted conducting material, a conducting-plate on one side of said chamber and located within said deflected portion, two electrodes on the other side of said chamber opposed to the conducting-plate, the outer electrode being of ring form and the inner electrode of disk form fitting within the inner periphery of the ring, said electrodes being insulated from each other, a forwardly-extending insulating-partition projecting nearly across the chamber, and a rigid support for said electrodes, substantially as described.

10. In a telephone-transmitter, the combination with a shallow chamber containing comminuted conducting material, of an electrode on one side of the chamber, a plurality of electrodes on the opposite side of the chamber, an insulating-partition between said latter electrodes projecting into the chamber toward the first-mentioned electrode but terminating short of the same, granular carbon in said chamber between said opposed electrodes, said material being adapted to pass from one part of the chamber to the other between said first electrode and the edge of said partition, substantially as described.

11. In a telephone-transmitter, the combination with a shallow chamber containing comminuted conducting material, of an electrode on one side of the chamber, a pair of electrodes on the other side of the chamber, one of said latter electrodes having a depression in its inner face, an insulating-cup adapted to fit within said depression with its edges projecting forwardly into the chamber and nearly across the same toward the opposite electrode, the other electrode of said pair fitting within said cup, whereby said electrodes are insulated from each other and the chamber is divided into two parts, substantially as described.

12. In a telephone-transmitter, the combination with a shallow chamber containing comminuted conducting material, of an electrode on one side of the chamber, a pair of electrodes on the opposite side of the chamber, one of said latter electrodes having a rearwardly-extending sleeve, an insulating-cup, the other of said pair of electrodes fitting within said cup and having a stem passing through said sleeve but insulated therefrom, the edges of said cup projecting forwardly into the chamber and toward the first-named electrode to form an insulating-partition in the chamber and said cup serving to insulate the two electrodes of the pair, said sleeve and stem forming the terminals of the electrodes and being secured together to clamp said pair of electrodes and the cup together, substantially as described.

13. In a telephone-transmitter, the combination with a shallow chamber containing comminuted conducting material, of an electrode on one side of the chamber, a pair of electrodes on the opposite side of the chamber, one of said latter electrodes having a sleeve extending from its outer face and a central depression in its inner face, an insulating-cup fitting within the said depression with its edges projecting forwardly into and across the chamber toward the first-named electrode, the second electrode of said pair fitting within said cup and having a stem extending rearwardly through said sleeve but insulated therefrom, means for clamping said stem and sleeve together whereby said pair of electrodes and the insulating-cup are firmly secured together, said sleeve and stem being adapted to form the electrical terminals for the said chamber, substantially as described.

14. In a telephone-transmitter, the combination with a main sound-receiving diaphragm, of a single chamber suitably associated therewith and containing a number of compartments, a small, sup-

plemental flexible diaphragm for closing one side of said chamber, comminuted conducting material in said compartments, adapted to pass from one compartment to another, an electrode in each of said compartments, and means to cause the current to pass through said comminuted material in said compartments in series between said electrodes, substantially as described.

15. In a telephone-transmitter, the combination with a sound-receiving diaphragm, of a single chamber suitably associated therewith and containing two compartments, a supplemental diaphragm of insulating material adapted to close both compartments, and partaking of the movement of said first-mentioned diaphragm, comminuted conducting material in said compartments, an electrode in each of said compartments on the same side of said chamber, and means to cause the current to pass through the conducting material in said compartments in series between said electrodes, substantially as described.

16. In a telephone-transmitter, the combination with a main sound-receiving diaphragm, of a chamber containing comminuted conducting material, an insulating supplemental diaphragm for closing said chamber, two electrodes on the side of said chamber closed by said supplemental diaphragm and vibratory therewith, and means whereby the current from one electrode to the other must twice pass transversely across the chamber, substantially as described.

17. In a telephone-transmitter, the combination with a sound-receiving diaphragm, of a chamber containing comminuted conducting material, a suitable partition within said chamber projecting into said material, two electrodes for said chamber, one upon either side of said partition, a supplemental diaphragm associated with said electrodes and closing said chamber, and means whereby current in passing from one electrode to the other must cross the chamber in two directions, substantially as described.

18. In a telephone-transmitter, the combination with a sound-receiving diaphragm, of a chamber containing comminuted conducting material associated with said diaphragm, a supplemental diaphragm of insulating material constituting one wall of said chamber, a non-conducting partition in said chamber dividing the comminuted conducting material into a plurality of compartments, two electrodes in said chamber, and means for causing current to pass from one electrode to the other through the material of all compartments in series, substantially as described.

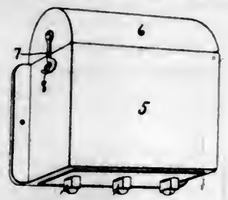
19. In a telephone-transmitter, the combination with a main diaphragm, of a chamber associated therewith, comminuted conducting material within said chamber, a flexible supplemental diaphragm of insulating material for closing one side of said chamber, a pair of electrodes on the side of said chamber closed by said supplemental diaphragm, and a suitable insulating partition separating said electrodes and projecting into said material, while permitting said material to pass from one side thereof to the other, the current being adapted to travel around said partition and through the comminuted material upon either side thereof in series, substantially as described.

20. In a telephone-transmitter, the combination with a main diaphragm, of a chamber associated therewith, comminuted conducting material within said chamber, a flexible supplemental diaphragm for closing one side of said chamber, a pair of electrodes on the side of said chamber closed by said supplemental diaphragm, an electrode upon the opposite side of said chamber, and a suitable insulating-partition separating said pair of electrodes and projecting into said material, while permitting said material to pass from one side thereof to the other, the current being adapted to travel around said partition and through the comminuted material upon either side thereof in series, substantially as described.

21. In a telephone-transmitter, the combination with a main sound-receiving diaphragm, of a chamber associated therewith, a rigid support for one side of said chamber, a flexible supplemental diaphragm of insulating material interposed between said support and said main diaphragm and constituting one wall of said chamber, comminuted conducting material within said chamber, a partition in said chamber suitably secured to one side thereof and projecting into said material, but stopping short of the opposite side of said chamber, and means to cause the current to traverse the parts of said material divided by said partition in series, substantially as described.

22. In a telephone-transmitter, the combination with a chamber containing comminuted conducting material, of a main sound-receiving diaphragm secured to one side of said chamber, a bridge or support to which the other side of said chamber is attached, a flexible supplemental diaphragm of insulating material disposed between said main diaphragm and said bridge and constituting one wall of said chamber, a pair of electrodes within said chamber mounted on said insulating-diaphragm, and a partition extending from one side of said chamber into said comminuted conducting material but stopping short of the opposite side thereof, whereby the current is obliged to traverse the divided portions of said comminuted conducting material in series, substantially as described.

819,268. ELECTRIC SPARKING DEVICE. ALBERT B. DOMAN, Elbridge, N. Y. Filed Feb. 1, 1905. Serial No. 243,736.



Claim.—1. An electric sparking device, comprising a spark-coil having parallel cores turned toward each other at one end beyond the main body of the cores to diminish the reluctance of the magnetic circuit, a vibrator electrically connected in series with the primary windings of the spark-coil and having its armature playing between said inturned ends of the cores, and sparking terminals in circuit with the secondary windings of said coil.

2. An electric sparking circuit comprising two electromagnets having their pole-pieces projecting laterally toward each other some distance beyond their cores to diminish reluctance in the magnetic circuit, said electromagnets having primary and secondary windings, a source of electric energy for the primary windings, sparking terminals in circuit with the secondary windings, a vibrator electrically connected in the primary circuit in series with said primary windings and having its armature playing between said pole-pieces.

3. An electric sparking device comprising a body of insulating material, a spark-coil embedded in and inclosed by said body and having pole-pieces bent laterally toward each other beyond their cores to reduce reluctance to the magnetic circuit, said insulating-body having an opening through which portions of the pole-pieces are exposed, a vibrator connected in series with the windings of the spark-coil and having its armature playing in said opening, and sparking terminals electrically connected in the secondary circuit.

4. In an electric sparking device, a body of insulating material, a spark-coil embedded in said body and having pole-pieces extending toward each other beyond their cores, a vibrator electrically connected in series with the primary windings of said spark-coil and having its armature playing between said pole-pieces, sparking terminals in the secondary circuit and a condenser electrically connected in the primary circuit, and also embedded in the body of insulating material.

5. An electric sparking device comprising a body of insulating material, a sparking coil embedded in and inclosed by said body, a vibrator mounted upon the exterior of said body and electrically connected in the primary circuit of the spark-coil, said vibrator having its armature playing between the pole-pieces of the spark-coil, and a sectional casing inclosing the body of insulating material and vibrator.

6. In an electric sparking device, an induction-coil and a make-and-break contact device in the primary circuit, said device including a vibrating arm carrying an armature and a loose weighted member on the armature, the inertia of which causes the armature to leave it when attracted by the core of the spark-coil to permit a quick break, said loose member immediately following the attracted armature to retard its recovery.

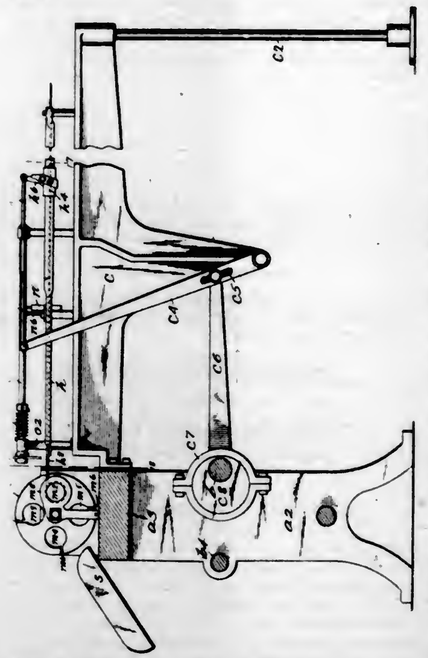
7. In combination with a spark-coil having the ends of its core brought into close relation with each other, a make-and-break contact device electrically connected in series with the primary winding of the spark-coil, and including a vibrating member carried by the armature for the purpose described and means to retard the action of the vibrating member in closing the circuit after each break.

8. In an electric sparking device, a spark-coil having the ends of its core brought close together, a make-and-break contact device having its vibrating member provided with an armature normally resting in close proximity to the projecting ends of said core, a weighted member mounted loosely upon the armature for the purpose described, and a condenser connected to the terminals of the make-and-break contact device, said device being electrically connected in series with the primary windings of the spark-coil.

9. An electric sparking device comprising an insulating-block, a spark-coil inclosed or embedded within said block, a condenser also inclosed within the block below the spark-coil, and a vibrator mounted upon the top of the block above the spark-coil, said spark-coil having its ends brought upwardly into close relation to each other and the insulator-block having an opening in its top registering with the projecting ends of the core, an armature secured to the vibrating member of the vibrator and a weighted member resting loosely upon the top face of the armature for the purpose described.

10. In combination with an inclosing case open at the bottom and top, an insulating-block fitted in the case, a cap covering the upper end of the case and insulating-block and detachably secured to said case, a spark-coil embedded in the insulating-block and having the ends of its core brought close together at the top, and a make-and-break contact device mounted on the insulating-block and having its vibrating member provided with an armature suspended over the adjacent ends of said core, and a weighted member loosely mounted upon the top face of the armature for the purpose described.

819,269. MACHINE FOR MAKING FIBROUS PACKINGS. WILLIAM B. FENN, Sheepshead Bay, N. Y. Filed Jan. 10, 1905. Serial No. 240,497.



Claim.—1. A machine for making packing-rings for bottles, jars and the like, comprising a rotatable disk provided with a plurality of circular openings and a slot for each of said openings through which a strip of fiber is adapted to be passed, a feed for said fibrous material, a cutting device for said fibrous material, devices for arranging said fibrous material spirally in the opening of said disk adjacent to said fibrous strip, devices for rotating said disk through a predetermined arc, a hollow tapered head adjacent to the subsequent position of the opening containing said spirally-arranged fibrous strip, and a head passed through said opening and forcing said spirally-arranged fibrous strip against the tapered surface of said hollow head and compressing the same, substantially as shown and described.

2. A machine for making packing-rings for bottles, jars and the like, comprising a guide through which a strip of fibrous material may be passed, a feed for said fibrous strip, a tank containing paraffin or similar material through which said fibrous strip passes, a cutting device for detaching predetermined lengths of said fibrous strip and devices for winding each of said detached portions spirally and compressing the same and forming an annular band thereof, substantially as shown and described.

3. In a machine of the class described, a disk provided with a plurality of openings and peripheral slots therefor, a guide adjacent to one of said openings and through which a strip of fibrous material may be passed, a feed for forcing said strip into said last-named opening, a cutting device for said strip, and means for winding the detached portions of said strip spirally in said opening, said cutting device comprising a fixed blade beneath said strip, a vertically-movable blade in operation with said fixed blade above said strip, and means connected with the machine for forcing said vertically-movable blade downwardly, said means comprising a rod, a finger thereon bearing on the top of said vertically-movable blade, a crank-arm on said rod, a pin on said crank-arm, a vertically-movable bar provided with jaws which engage said pin, a power-shaft, a cam thereon, a vertically-movable arm in operative connection with said cam, a bolt provided with an inclined head on said arm, a pivoted finger on said bar and adapted to engage with said inclined head in the downward movement of said vertically-movable arm, a pin against which said spring bears, said pin being adapted to force said finger away from said inclined bolt and be released therefrom in the downward movement thereof, and a coil-spring on said rod for returning said rod and bar to their normal positions, substantially as shown and described.

4. In a machine of the class described, a disk provided with a plurality of openings and peripheral slots therefor, a guide adjacent to one of said openings and through which a strip of fibrous material may be passed, a cutting device for separating said fibrous strip into predetermined lengths, a feed for forcing one of said detached portions of said strip into said last-named opening, a horizontally-movable block in said last-named opening, a spring-operated finger thereon engaging said strip of fibrous material, a power-shaft, a cam thereon, and means for rotating said horizontally-movable block, comprising a pivoted lever provided with a rack in operative connection with said cam, a pinion in operation with said rack, a gear-wheel secured to said pinion, a shaft upon which said horizontally-movable block is mounted, said shaft being provided with a pinion and meshed with said gear-wheel, substantially as shown and described.

5. In a machine of the class described, a disk provided with a plurality of openings and peripheral slots therefor, a guide adjacent to one of said openings and through which a strip of fibrous material is adapted to pass, a blade for separating said fibrous material into predetermined lengths, a feed for forcing one of said lengths into the corresponding one of said openings, a rotatable block in said opening, a spring-operated finger thereon engaging said fibrous strip, a horizontally-movable casing, a shaft therein upon which said block is mounted, a power-shaft, a cam thereon, a vertically-movable arm in operative connection with said cam, a pinion engaging a rack on said arm, a crank-lever connected with said pinion, a connecting-rod connecting said crank with said casing, and means for rotating said block, substantially as shown and described.

6. In a machine of the class described, a disk provided with a plurality of openings and peripheral slots therefor, said disk being provided with a plurality of radial slots, a pivoted arm adjacent to said disk, a spring-operated finger in said arm adapted to engage one of said radial slots, and means for moving said arm through a predetermined arc of a circle, substantially as shown and described.

7. In a machine of the class described, a disk provided with a plurality of openings, and peripheral slots therefor, said disk being provided with a plurality of radial slots, a pivoted arm adjacent to said disk, a spring-operated finger in said arm adapted to engage one of said radial slots, and means for moving said arm through a predetermined arc of a circle, comprising a power-shaft, a cam thereon, a vertically-movable arm provided with a rack in operative connection with said cam, and a pinion secured to said first-named arm and meshed with said rack, substantially as shown and described.

8. In a machine of the class described, a rotatable disk provided with a plurality of openings and peripheral slots therefor, each of said openings being adapted to receive a strip of fibrous material, devices for winding said strip of fibrous material spirally in said opening, a tapered hollow head adjacent to said disk, a spirally-ribbed head, and means for forcing said spirally-ribbed head through the opening in said disk and into said hollow head, substantially as shown and described.

9. In a machine of the class described, a disk provided with a plurality of openings and peripheral slots therefor, devices for winding a strip of fibrous material in each of said openings consecutively, a head provided with a spiral rib, a hollow head in line with said spi-

rally-ribbed head, devices for moving said spirally-ribbed head through said opening thereby forcing said spirally-arranged strip of fiber into said hollow head and compressing the same, and means for removing said fibrous material when compressed from said hollow head, substantially as shown and described.

10. In a machine of the class described, a disk provided with a plurality of openings and peripheral slots therefor, devices for winding a strip of fibrous material in each of said openings consecutively, a head provided with a spiral rib, a hollow head in line with said spirally-ribbed head, devices for moving said spirally-ribbed head through said opening thereby forcing said spirally-arranged strip of fibrous material into said hollow head and compressing the same, and means for removing said fibrous material when compressed from said hollow head, comprising a plunger in said hollow head, a dash-pot in operative connection with said plunger, tripping devices in operative connection with said hollow head and said plunger, and devices for disconnecting said tripping device from said plunger, substantially as shown and described.

11. In a machine of the class described, a table, a horizontally-movable casing on said table, a plurality of shafts mounted in said casing, a circular block on one of said shafts, a hollow head on the other of said shafts, devices for moving said casing horizontally, and means for rotating said shafts, substantially as shown and described.

12. In a machine of the class described, a disk provided with a plurality of circular openings and each of said openings being provided with peripheral slots, and with an integral flange at one side thereof, devices for rotating said disk through an arc of a circle, and an independent plate adjacent to said disk and provided with an opening slightly smaller than each of said circular openings, said plate serving as a flange for each of said openings consecutively, substantially as shown and described.

13. In a machine of the class described, a disk provided with a plurality of openings and peripheral slots communicating therewith, means for rotating said disk, a guide adjacent to one of said openings and through which a strip of fibrous material may be passed, a feed for forcing said strip into said last-named opening, a cutting device for cutting said strip, means for winding the detached portions of said strips spirally in said openings, devices for compressing said spirally-wound strip so as to form a ring, and means for removing said ring, substantially as shown and described.

14. In a machine for making packing-rings, a rotatable disk provided with a plurality of circular openings into which a strip of fibrous material of a predetermined length is adapted to be passed, devices for winding said strips of fibrous material spirally and successively in each of said openings, devices for compressing said strips in said openings so as to form a ring, and means for removing the ring so formed, substantially as shown and described.

15. In a machine of the class described, a rotatable disk having circular openings and peripheral slots communicating therewith, means for feeding strips of fibrous material successively into said openings, a rotatable block operating in said openings and adapted to engage the strips of fibrous material and to wind the same thereon, devices for removing a spirally-arranged strip from said block, means for compressing the spirally-arranged strip to form a ring, and devices for removing said ring, substantially as shown and described.

16. In a machine for making packing-rings, a disk provided with a plurality of openings and peripheral slots communicating therewith, a guide adjacent to one of said openings and through which a strip of fibrous material may be passed, a feed device for said fibrous strip, a cutting device for said strip, a block adjacent to said guide and adapted to rotate in said disk adjacent to said openings, a spring-operated plunger on said block for engaging the end of said fibrous strip so as to form the latter into a spirally-arranged ring, devices for withdrawing said block from the opening in said disk after the release thereof, devices for moving said disk through an arc of a circle, devices for compressing the spirally-arranged strip into ring form and means for removing the ring so formed, substantially as shown and described.

17. In a machine of the class described, a disk provided with a plurality of circular openings circularly arranged and peripheral slots communicating therewith, means for rotating said disk, a guide adjacent to one of said openings and through which a strip of fibrous material may be passed, a feed for forcing said strip into said last-named opening, a device for cutting said strip, means for winding the detached portion of said strip spirally in said opening, devices for compressing the spirally-arranged strip to form a ring, and means for removing said ring, substantially as shown and described.

18. In a machine for making packing rings or bands, a rotatable disk provided with a plurality of circularly-arranged circular openings and peripheral slots communicating therewith, means for winding a strip of fibrous material in said openings to form a ring composed of separate layers, means for saturating said strip before it is wound in said opening, means for compressing the spirally-formed strip to form a ring, and devices for removing said ring, substantially as shown and described.

19. In a machine of the class described, a carriage, two shafts rotatably mounted therein and carried thereby, a block on one of said shafts, a hollow head on the other of said shafts, and devices for rotating said shafts in opposite directions, substantially as shown and described.

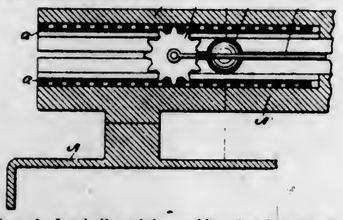
20. In a machine of the class described, a carriage, a plurality of shafts rotatable therein and carried thereby, a block on one of said shafts, a hollow head on another of said shafts, a piston in said hollow head, and means for forcing said piston forwardly at a predetermined time in the forward movement of said carriage, substantially as shown and described.

21. In a machine of the class described, a carriage, a shaft rotatably mounted thereon and carried thereby, a block on the end of said shaft, a pivoted finger on said block, a spring bearing against said finger and internal means for operating said finger against said spring, substantially as shown and described.

22. In a machine of the class described, a carriage, a shaft rotatably mounted thereon and carried thereby, a hollow head on the end of said shaft, a piston in said hollow head, a rod secured to said piston and passing through said shaft, a dash-pot in which the piston-rod operates, a lock mounted on said carriage and in operative connection with said piston-rod to move said rod backwardly in the movement of said carriage, and means for releasing said lock from said rod, substantially as shown and described.

23. In a machine of the class described, a rotatable disk provided with a plurality of circular openings, a shaft, a hollow head thereon, devices for moving said head to a position adjacent to one of said openings, a plunger on the opposite side of said disk, devices for forcing said plunger through said disk and into said hollow head, and means for rotating said head in one direction in the forward movement of said plunger and in the opposite direction in the backward movement of said plunger, substantially as shown and described.

819,270. BALL RETAINING AND LOCATING DEVICE FOR TYPE-WRITERS. WILLIAM R. FOX, Grand Rapids, Mich. Filed July 28, 1905. Serial No. 271,681.



Claim.—1. In a ball retaining and locating device for type-writing carriages, the combination of a rear rail having a V-shaped groove or ball-race suitably recessed; a carriage having a corresponding V-shaped groove or ball-race suitably recessed; balls interposed between said grooves or ball-races and held in position by a ball-retaining frame; U-shaped racks, consisting of sheet-metal strips with the edges turned over and down and provided longitudinally and centrally with transverse slots or perforations, adapted to be received in said recesses in said rear rail and carriage; and a pinion connected to said ball-retaining frame at one end, coacting between said racks, whereby the ball-retainer is kept in position by means independent of the balls themselves, for the purpose specified.

2. In a ball retaining and locating device for type-writing carriages, the combination of a rail having a groove or ball-race suitably recessed; a carriage having a corresponding groove or ball-race suitably recessed; balls interposed between said grooves or ball-races and held in position by a ball-retaining device; U-shaped racks, consisting of sheet-metal strips with the edges turned over and down and provided longitudinally and centrally with transverse slots or perforations, adapted to be received in said recesses in said rail and carriage; and a pinion connected to said ball-retaining device, coacting between said racks, for the purpose specified.

3. In a ball retaining and locating device for type-writing carriages, the combination of a rear rail having a groove or ball-race suitably recessed; a carriage having a corresponding groove or ball-race suitably recessed; balls interposed between said groove or ball-race; a ball-spacer provided at one end with a pinion coacting between the said racks, whereby the ball-retainer is kept in position by means independent of the balls themselves; racks having turn-down edges and provided longitudinally and centrally with transverse slots or perforations, adapted to be received in said recesses in said rear rail and carriage; for the purpose specified.

4. In a ball retaining and locating device for type-writing carriages, the combination of a carriage with a recessed ball-race therein; a rail provided with a corresponding recessed ball-race; balls interposed between said ball-races and held in position by a ball-retaining device; U-shaped racks consisting of sheet-metal strips and having the edges turned over and down and provided longitudinally and centrally with transverse slots or perforations, adapted to be received in said recessed ball-races; a pinion connected to said ball-retaining device and coacting between said racks; for the purpose specified.

5. In a ball retaining and locating device for type-writing carriages, the combination of a carriage with a recessed ball-race therein; a rail provided with a corresponding recessed ball-race; balls interposed between said ball-races and held in position by a ball-retaining device; racks provided longitudinally and centrally with transverse slots or perforations, adapted to be received in said recessed ball-races; a pinion connected to said ball-retaining device and coacting between said racks, for the purpose specified.

6. In a ball retaining and locating device for type-writer carriages, the combination of the type-writer frame with suitable recessed ball-races; a carriage with a corresponding recessed ball-race; racks having turned-down edges and provided with transverse slots or perforations, adapted to be received in the recesses of said ball-races; ball-bearings between the type-writer frame and the carriage; a perforated plate embracing said ball-bearings and movable therewith; and a pinion connected to said perforated plate, coacting between said racks, for the purpose specified.

7. In a ball retaining and locating device for type-writer carriages, the combination of the type-writer frame with suitable recessed ball-races; a carriage with a corresponding recessed ball-race; racks adapted to be received in the recesses of said ball-races; ball-bearings between the type-writer frame and the carriage; a perforated plate embracing said ball-bearings and movable therewith; and a pinion connected to said perforated plate, coacting between said racks, for the purpose specified.

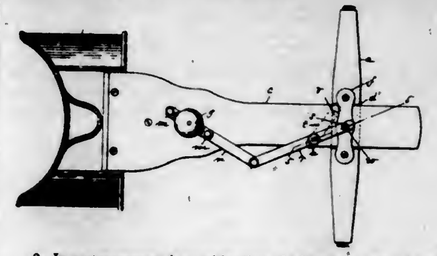
819,271. POLISHING DEVICE. EMIL FRANKE, Astoria, N. Y. Filed Oct. 7, 1905. Serial No. 281,832.



Claim.—A device of the character described comprising a handle having at one end an enlarged seat portion and an extension projecting therefrom and provided with a threaded socket, a body of polishing material bearing against said seat portion and formed at its inner end with a socket receiving said extension, said body being further formed with a countersink at its outer end and a passage leading therefrom and communicating with said socket, and a securing-screw having its head seated in said countersink and its shank projecting through said passage with its inner screw-threaded end engaging the threaded socket in the tubular extension and holding the parts in assembled relation.

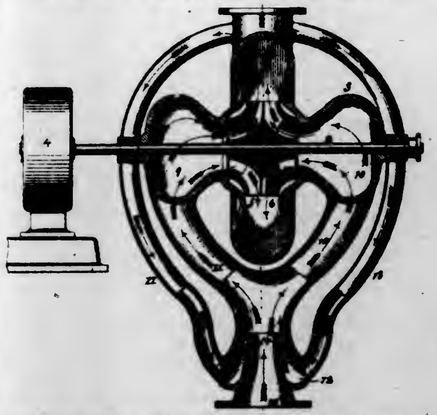
819,272. STEREOSCOPE. CHARLES FRASER, Bennington, Vt. Filed Dec. 20, 1905. Serial No. 292,577.

Claim.—1. In a stereoscope, in combination, the box or eye-guard *a*; the bar or frame *c* extending from said box or eye-guard; a slide mounted on said bar and provided with means for holding the photograph or view; a handle rotatively supported by said bar or frame; the bar *f* secured to the under side of the slide and extending across the under side of the frame *e*; a pivot-pin extending downward from said bar *f*; the bar *n* rigidly connected at one end with the handle; the bar *r* pivotally connected at one end with the forward end of the bar *n* and provided near its outer end with the notch or screw *s*; the latch *t* pivotally connected at one end with the bar *r* and provided near its outer end with the notch or recess *v*; and means for swinging said latch from its connected end whereby its notch may be moved into engagement with said pivot-pin.



2. In a stereoscope, in combination, the box or eye-guard *a*; the bar or frame *c* extending from said box or eye-guard; a slide mounted on said bar and provided with means for holding the photograph or view; a handle; the plate comprising the spreading portions *h*, central portion *h'* and prongs h^2 by which it is connected with the upper end of the handle; the plate consisting of the spring-jaws *l* and central portion *l'*, said jaws *l* and portions *h* being coincidently indented and held normally together; a pivotal connection between the said central portion *l'* and the bar or frame whereby the handle may be rotated; and mechanism intermediate of said portion *l'* and the slide, whereby said slide is reciprocated by the rotation of the handle for the purpose of focusing the picture.

819,273. ROTARY FLUID-IMPELLING DEVICE. ALBERT E. GUY, Trenton, N. J., assignor to Delaval Steam Turbine Company, New York, N. Y. Filed Apr. 3, 1905. Serial No. 253,444.



Claim.—1. The method of increasing the initial pressure of a fluid entering a flow-producing apparatus by admitting to the said entering flow a portion of the flow delivered by said apparatus.

2. The method of augmenting the normal flow-producing capacity of a fluid-impelling device operating at a speed too high for efficient impulsion, by employing a portion of the kinetic energy of flow produced by said device to increase the kinetic energy of flow entering said device.

3. A pump and means actuated by a portion of the liquid delivered thereby for increasing the pressure of the liquid on the suction side of said pump.

4. A pump, and an injector actuated by a portion of the liquid delivered by said pump, and acting upon the liquid on the suction side of said pump.

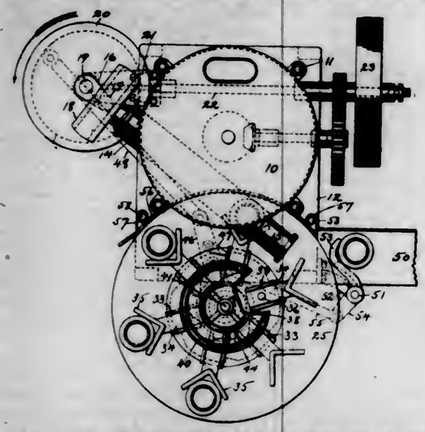
5. In a pump, an impeller-wheel and an injector actuated by a portion of the liquid delivered by said wheel and constructed to increase the pressure of the liquid on the suction side of said wheel.

6. The combination of a fluid-impelling device, a supply-conduit therefor, and means for increasing the kinetic energy of the supply-current actuated by the flow delivered by said device.

7. The combination of a fluid-impelling device, a supply-conduit therefor, and means within said conduit for increasing the kinetic energy of the supply-current actuated by the flow delivered by said device.

8. The combination with a fluid-impelling device, a supply-pipe having a constricted nozzle, an annular chamber surrounding said nozzle and pipes leading respectively from said annular chamber to the delivery and to the inlet of said device.

819,274. CAN-FILLING MACHINE. JAMES P. HAIGHT, Hoopeston, Ill., assignor to Sprague Canning Machinery Company, Chicago, Ill., a Corporation of Illinois. Filed June 19, 1905. Serial No. 265,966.



Claim.—1. In a filling-machine of the class described, the combination with a delivery-nozzle and a rotary can-carrier disposed therebeneath, of radially-movable can-guides mounted on said carrier and provided with projections, an angularly-movable disk having cam-slots engaging said projections, and means for clamping said disk in any position of angular adjustment, substantially as described.

2. In a filling-machine of the class described, the combination with a delivery-nozzle and a rotary can-carrier disposed therebeneath, of radial slideways formed on said carrier, can-guides having shanks movable in said slideways, pins on said shanks, an angularly-movable disk overlying said shanks and having cam-slots engaging said projections, and means for clamping said disk in any position of angular adjustment, substantially as described.

3. In a filling-machine of the class described, the combination with a delivery-nozzle and a rotary can-carrier disposed therebeneath, of raidal slideways formed on said carrier, can-guides having shanks movable in said slideways, pins on said shanks, an angularly-movable disk overlying said shanks, said disk having cam-slots formed in its under side engaging said projections and a hand-wheel on its upper side for turning the same, a clamping-bolt passed through said disk, and a nut engaging said bolt, substantially as described.

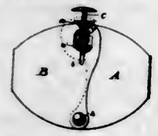
4. In a filling-machine of the class described, the combination with a delivery-nozzle, of a rotary can-carrier disposed therebeneath, said can-carrier having a depending hub, a stationary split ring having an inclined slot formed therein, a bearing-sleeve carried by said ring and constituting a bushing for the hub of said carrier, said bearing-sleeve having a pin projecting through the slot of said ring whereby said bearing-sleeve is vertically adjusted relatively to said ring, and means for imparting rotary movement to said carrier, substantially as described.

5. In a filling-machine of the class described, the combination with a delivery-nozzle, of a rotary can-carrier disposed therebeneath, a pivoted ejector-arm movable across the periphery of said carrier, a ratchet-disk on the hub of said carrier, an oscillating arm carrying a pawl actuating said ratchet-disk, an actuating-arm on the pivotal shaft of said ejector-arm, and a link connecting the latter and said oscillating arm whereby the former is actuated from the latter, substantially as described.

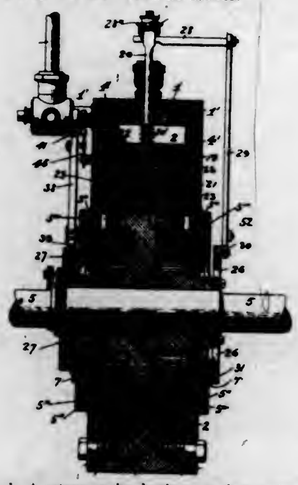
819,275. LOCKING DEVICE. WILLIAM N. HALL, Bangs, Tex. Filed Mar. 23, 1905. Serial No. 251,701.

Claim.—1. A locking device comprising the plate B having the slot b, the wings a and a', the bolt C, the lug e and the collar f, together with the spring D, in combination with the notched plate A substantially as described.

2. In a binder, an end plate having outwardly-extending perforated wings and a slot disposed beneath the wings, a bolt passing through the wings and having a lug adapted to reciprocate in the slot, a coil-spring surrounding the bolt and disposed between the wings and adapted to hold the bolt in a normally elevated position, in combination with a second plate adapted to bear against and depress the lug and having a notched portion adapted to engage the lug and lock the plates, together with means for depressing the bolt and unlocking the plates, substantially as described.



819,276. ROTARY ENGINE. RUDOLPH C. HEUNISCH, Washington, D. C. Filed Apr. 21, 1905. Serial No. 256,730.



Claim.—1. A rotary engine having a casing, a circular piston with hubs projecting laterally beyond the casing, and lining-plates extending inward within the casing to the peripheral edge of the piston, said piston being splined on the engine-shaft, and the side plates of the casing extending inward to the hub of the piston.

2. In a rotary engine, the combination of an annular casing, an annular piston within the casing, annular plates forming the inner lining for the side walls of the steam-space, and a spring packing-ring pressing outwardly against the inner edge of the lining-plates, and inwardly against the sides of the piston.

3. In a rotary engine, the combination of an annular casing, a rotating piston within the casing, annular plates lining the side walls of the steam-space from the casing inward to the peripheral edge of the piston, a spring-ring, pressing outward against the inner edge of the lining-plates, springs pressing the ring inward laterally against the piston, and means for adjusting the springs.

4. In a rotary engine, the combination of an annular casing, a rotating piston within the casing, annular plates lining the side walls of the steam-space from the casing inward to the peripheral edge of the piston, a spring-ring pressing outward against the inner edge of the lining-plates, side plates inclosing the lining-plates, the piston and the ring, recesses in the side plates, springs inclosed in said recesses and pressing the ring against the piston, external rings on the side plates outside of the springs, and means for adjusting the plates to tighten the springs.

5. In a rotary engine, the combination of an admission-valve having a head 41, a spring-actuated link 45, connected to the arms of the head, a cam on the engine-shaft, and a rod reciprocated by the cam and acting on the arm of the valve-head in opposition to the spring.

6. In a rotary engine, the combination of an admission-valve having a head 41, spring-actuated links 45, connected to the arms of the head, a cam on the engine-shaft, a rod reciprocated by the cam and adapted to act on either arm of the valve-head, and a lever 42, for adjusting the position of the rod.

7. In a rotary engine, a piston having a head consisting of a body portion 8', a spring-pressed top plate 9 seated in a recess thereon, and end plates 9' pressed outwardly by springs, said end plates consisting of parts 11, 11', pressed apart by spring 12.

8. In a rotary engine, a piston-head having a spring-pressed top plate 9, sectional end plates 9', pressed outward by springs, springs for pressing the sections of the end plates apart, and facing-plates 14, 14', arranged to break joints with the sections of the end plates.

9. In a rotary engine, the combination of the casing, the shaft and the abutment, of a cam on the shaft, a rod operated by the cam, a spring connection between the rod and the plunger of the abutment to press the rod down on the cam, and a spring reacting between the interior of the casing and the top of the abutment.

10. In a rotary engine, the combination with the casing, the shaft and the abutment, of a cam on the shaft, a rod 29 operated by the cam, a pivoted link 32 to control the rod, a spring connection between the rod and the plunger of the abutment, and means for adjusting the spring.

11. In a rotary engine, the combination with the hub of the piston, of a cam 26 provided with a groove or channel 31, for the reception therein of the roller 30 on the lower end of the rod 29, a pivoted link 32 to control the movement of said rod, a spring connection between the rod and the plunger of the abutment, and means for adjusting said spring.

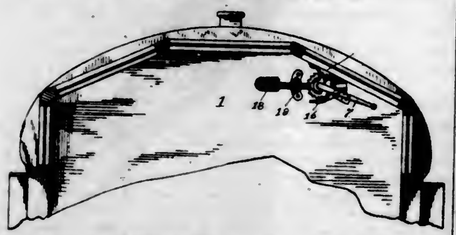
12. In a rotary engine, an abutment comprising a block 19 recessed to receive a supplemental block 21, springs pressing the block 21 below the edge of the main block, and facing-plates 23, let into the side edges of the supplemental block and pressed outward against the sides of the steam-space by springs.

13. In a rotary engine, an abutment comprising a hollow block 19, a supplemental block 21, inclosed therein, springs 22, allowing the supplemental block to yield independently of the block 19, facing-plates 23, let into the ends of the supplemental block, transverse slots 25, in the ends of the main block 19, flanges on the facing-plates 23 fitting in said slots, and springs pressing the facing-plates against the sides of the steam-space.

14. A rotary engine, the combination with the cam 27 attached to the hub of the piston, and having loosely mounted thereon plates 48 and 49, forming an auxiliary cam adapted to move sidewise upon the cam 27; said plate 49 having a series of teeth 49' extending around the peripheral edge of its central opening, a gear-wheel 50 mounted loosely upon the hub 6, a pinion 51 journaled upon the cam 27 and adapted to rotate between said gear-wheel 50 and the teeth 49', and meshing with the teeth thereof, of a rack-bar 52 provided with teeth which engage the teeth of the gear-wheel 50, to move and adjust the cam, formed by plates 48 and 49, in any desired position upon the face of the cam 27 to retard the speed of the engine.

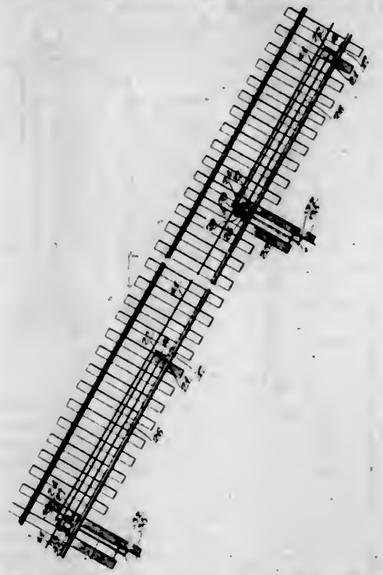
15. In a rotary engine, the cam 27, attached to the hub of the piston and having plates 48 and 49, forming an auxiliary cam, loosely mounted upon the face thereof; said plate 49 having a series of teeth 49' extending around the peripheral edge of its central opening, and a pinion 51 journaled upon said cam 27, in combination with a gear-wheel 50 loosely mounted upon the hub 6, and means engaging therewith for moving said plates 48 and 49 around upon the face of said cam 27.

819,277. BRAKING APPARATUS. WILLIAM L. HOLMAN, San Francisco, Cal. Filed Apr. 26, 1905. Serial No. 257,532.



Claim.—In braking apparatus, a vertical shaft made in two parts, a clutched crank-handle on top of the upper part, a winding-chain attached to the lower part, a socketed clutch member on the lower part, recessed in the platform, a ratcheted clutch member splined on the upper part, engaging with and telescoping said lower clutch member, a foot-lever for raising said ratcheted clutch member out of engagement, and a foot-pawl for engaging and holding said ratcheted clutch member against recession when in engagement with the lower clutch member, substantially as specified.

819,278. BLOCK SIGNALING AND SAFETY SYSTEM. JAMES M. HUEY, Ruston, La. Filed Feb. 14, 1905. Serial No. 245,607.



Claim.—1. In block systems, a train-actuated member in each block, a train-engaging member arranged in each block, a connecting-rod extending between the two members, a spring tending to normally maintain the train-actuated member in operative position and the train-engaging member in inoperative position, an automatically-operated locking device arranged in each block for engaging and holding the train-engaging member in operative position, and means connecting the train-actuating means of each block to the locking device of the following block.

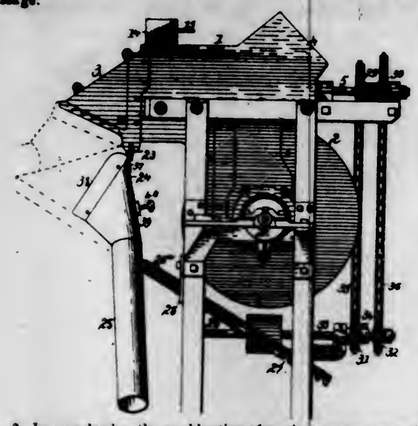
2. In block systems, a train-actuated means arranged in each block, a train-engaging member, and a semaphore-arm also arranged in each block and connected to said train-actuating means, an automatic locking device for holding both the train-engaging member and the semaphore-arm in adjusted position, and mechanism connecting the train-actuated means of each block to the locking device of the following block.

3. In block systems, the combination with a train-carried brake-setting device, of a rocker-arm movable to an upright position to engage said brake-setting device, a bar arranged to be engaged by the wheel-flanges of a train, a rock-shaft to which said bar is connected, a rocker-arm carried by said shaft and connected to the brake-operating arm, a second rocker-arm carried by the rock-shaft, a locking device engaging the brake-operating arm, and means connecting said second rocker-arm to the locking device.

4. In block systems, a vertically-guided bar arranged in each block and having a cam-shaped head to be engaged by the wheel-flanges of a train, a rock-shaft having three rocker-arms, one of which is connected to said bar, a second rock-shaft, a pair of arms carried thereby, one of which is movable to form a road-bed obstruction, a sectional rod including a spring member connecting the second rocker-arm of the first shaft to the second rocker-arm of the second shaft, a spring-pressed locking-bar adapted to automatically engage the road-bed-obstruction arm, a bell-crank lever connected to the locking-bar, a rod connecting said bell-crank lever to the third rocker-arm of the first-named rock-shaft, and a brake-setting member carried by the train and arranged to be engaged by the road-bed-obstruction arm.

819,279. CAR-LOADER. JAMES G. HUFFMAN, Decatur, Ill., assignor of one-half to Edmund M. Hyberger, Pana, Ill. Filed July 3, 1905. Serial No. 268,249.

Claim.—1. In a car-loader, the combination of an air-passage, means for producing a blast in the air-passage, a cylindrical grain-passage above the air-passage, a slot in the discharge end of the lower part of the grain-passage, an inclined chute extending below the slot and into the air-passage, and a screw conveyer in the grain-passage.



2. In a car-loader, the combination of an air-passage, means for producing a blast in the air-passage, a cylindrical grain-passage above the air-passage, a slot in the lower part of the discharge end of the grain-passage, a slide to limit the length of the slot-opening, an inclined chute extending below the slot and into the air-passage, and a screw conveyer in the grain-passage.

3. In a car-loader, the combination of a cylindrical grain-passage, a screw conveyer in the grain-passage, conveyer-chutes attached to the discharge end of the grain-passage in which the screw operates, dust-outlets in the cylindrical grain-passage above the discharge end of the screw, an air-passage beneath the grain-cylinder and communicating therewith at the discharge end thereof, and a fan to produce a blast in the air-passage.

4. In a car-loader, the combination of a cylindrical grain-passage, a screw conveyer in the grain-passage, an air-passage beneath the grain-passage communicating therewith at the discharge end thereof, a slot in the lower part of the discharge end of the cylindrical grain-passage, an inclined chute beneath the slot and in the air-passage and a three-part conveyer-chute having the central member adapted to receive grain from the inclined chute beneath the slot of the grain-passage.

5. In a car-loader, the combination with a grain-passage and an air-passage communicating therewith, of a trunk, or hopper placed to receive the combined blast of air and grain, a pair of diverging conveyer-tubes to receive grain from the upper part of the trunk and a central conveyer-tube to receive grain from the lower part of the trunk.

6. In a car-loader, the combination with a grain-feeder and an air-blast, of a trunk or hopper to receive the grain forced by the blast, a pair of divergent conveyer-tubes attached to the hopper, a central conveyer-tube secured to the hopper and a valve in the central tube.

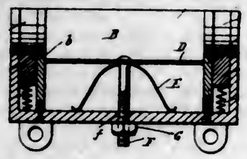
7. In a car-loader, the combination with a grain-feeder and an air-blast of a trunk or hopper hinged to the discharge end of the grain-feeder and provided with a plurality of conveyer-tubes and a notched brace hinged to the hopper and adapted to hold the tubes in a raised position.

8. In a car-loader, the combination of a grain-passage, a screw in the grain-passage, a grain-deflecting plate swung from its upper edge in the grain-passage beyond the screw, an adjustable cross-rod connecting with the lower part of the deflecting-plate, an air-passage communicating with the grain-passage in front of the deflecting-plate, and a fan to produce a blast in the air-passage.

9. In a car-loader, the combination of a screw conveyer, a casing for the conveyer having a nose protruding beyond the screw, and a discharge-chute hinged to the under part of the nose and adapted to form a continuation of the nose when raised.

819,280. SHAFT-OILER. THOMAS HUGHES, East Somerville, Mass. Filed July 6, 1905. Serial No. 268,370.

Claim.—1. In an oiler, the combination, with a box divided into three compartments, of dust-guards arranged in the end compartments of the said box, a spring-pressed platen slidable in the middle compartment of the said box, a regulating-screw connected to the said platen and projecting through a hole in the bottom of the said box, and a regulating-nut on the projecting end portion of the said screw.



2. In an oiler, the combination, with a box, of a spring-pressed platen slidable in the said box and supporting the lubricant, a regulating-screw secured to the said platen and projecting through a hole in the bottom of the said box, and a regulating-nut on the projecting end portion of the said screw.

819,281. AXLE-LUBRICATOR. THOMAS HUGHES, East Somerville, Mass. Filed July 6, 1905. Serial No. 268,371.



Claim.—1. The combination, with a bearing member provided with a chamber at one side, of a tube for lubricating material which is slidable longitudinally in the said chamber.

2. The combination, with a bearing member provided with a chamber at one side having a narrow mouth, of a trough-shaped tube for lubricating material which is slidable longitudinally in the said chamber.

3. The combination, with a bearing member provided with a chamber at one side, of a thin sheet-metal tube for lubricating material having a restricted outlet and slidable longitudinally in the said chamber.

819,282. MEANS FOR PROTECTING PILES. ANDREW M. HUNT, Berkeley, Cal. Filed Aug. 16, 1904. Serial No. 220,948.



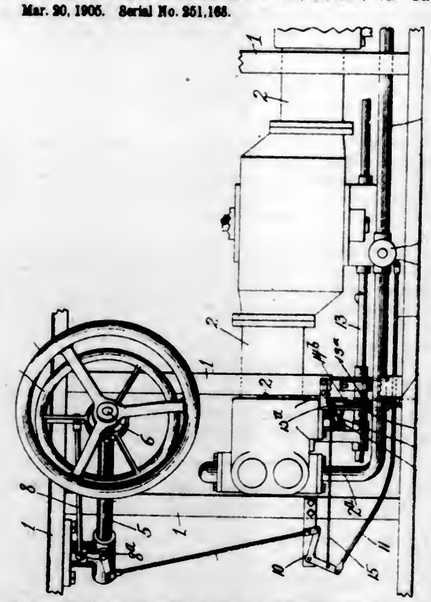
Claim.—1. The means of protecting wooden piles to render the same proof against the action of marine worms, bugs, insects or animals, which consists in inclosing the section of the pile to be protected within an outer casing of cement, mortar or concrete composed of magnesium oxid and an inert filler impregnated with magnesium chlorid.

2. The means of protecting wooden piles to render the same proof against the action of marine worms, bugs, insects or animals, which consists in inclosing the section of the pile to be protected within an outer casing of cement, mortar or concrete composed of magnesium oxid and an inert filler impregnated with magnesium chlorid, there being embedded within the outer artificial casing a metallic bond of interstitial or mesh material.

3. The means of protecting wooden piles to render the same proof against the action of marine worms, bugs, insects or animals, which consists in inclosing the section of the pile to be protected, within an outer casing of cement, mortar or concrete composed of magnesium oxid and sawdust impregnated with magnesium chlorid.

4. The means of protecting wooden piles to render the same proof against the action of marine worms, bugs, insects or animals, which consists in inclosing the section of the pile to be protected, within an outer casing of cement, mortar or concrete composed of approximately one part sawdust moistened throughout with magnesium chlorid and then thoroughly mixed with approximately one part magnesium oxid.

819,283. SPARKING-IGNITER-ADJUSTING DEVICE FOR EXPLOSIVE-ENGINES. THOMAS B. JEFFERY, Kenosha, Wis. Filed Mar. 20, 1905. Serial No. 251,168.



Claim.—1. In an explosive-engine in combination with a valve for controlling the supply of motive fluid, a contact making and breaking device comprising a rotatable element and an adjustable element; movable devices for operating the supply-valve; a flexible cable connecting the said supply-valve-operating devices and the adjustable element of the contact device, and a guide about which the same passes located for causing said adjustable element to be moved positively in direction for delayed ignition by the valve-closing movement of the valve-operating devices, and a spring for retracting said adjustable element upon the reverse movement of said devices.

2. In an explosive-engine in combination with a valve for controlling the supply of motive fluid, a contact making and breaking device comprising a rotatable element and an adjustable element; movable devices for operating the supply-valve; a flexible cable connecting said supply-valve-operating devices and the adjustable element of the contact device, and a guide about which the same passes located for causing the adjustable device to be moved in direction for advanced ignition by the valve-opening movement of the valve-operating devices; a spring for retracting the said adjustable element upon the reverse movement of said devices, and a stop limiting said retracting movement of the adjustable element.

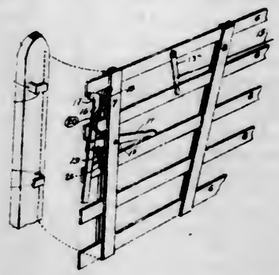
3. In an explosive-engine in combination with a valve for controlling the supply of motive fluid, a contact making and breaking device comprising a rotatable element and an adjustable element; means for operating the supply-valve at will; a spring for yieldingly holding said adjustable element at the limit of its range of movement for advanced ignition, and connections between said adjustable element and the valve-operating means operating by pulling to retract the adjustable element against the action of the spring in the movement for closing the supply-valve.

4. In an explosive-engine in combination with a valve for controlling the supply of motive fluid, a contact making and breaking device comprising a rotatable element and an adjustable element; means for operating the supply-valve at will; a spring for yieldingly holding said adjustable element at the limit of its range of movement for advanced ignition, and connections between said adjustable element and the valve-operating means operating by pulling to retract the adjustable element against the action of the spring in the movement for closing the supply-valve, said connections being adapted to yield so as to be inoperative in pushing.

5. In an explosive-engine in combination with a valve for controlling the supply of motive fluid, a contact making and breaking device comprising a rotatable element and an adjustable element; means for operating the supply-valve at will; a spring for yieldingly holding said adjustable element at the limit of its range of movement for advanced ignition, and connections between said adjustable element and the valve-operating means operating by pulling to retract the adjustable element against the action of the spring in the movement for closing the supply-valve, said connections being adapted to yield so as to be inoperative in pushing, the range of movement of the valve-operating connections for opening and closing the valve being greater than that of said adjustable device, and the connections being arranged to cause the valve to be closed when said adjustable element is at the limit of its movement for delayed ignition.

6. In an explosive-engine in combination with a valve for controlling the supply of motive fluid, a contact making and breaking device comprising a rotatable element and an adjustable element; means for operating the supply-valve at will; a spring for yieldingly retracting said adjustable element to the limit of its range of movement for most advanced ignition, and a flexible cable connecting said element with the valve-operating means adapted to operate by pulling on said adjustable element against the action of its spring in the valve-closing movement, and to hold said element at the limit of its range of movement for delayed ignition when the valve is closed.

819,284. GATE-LATCH. JOSEPH S. JOHNSON, Lodi, Ohio, assignor of one-half to H. M. Myers, Lodi, Ohio. Filed Jan. 2, 1906. Serial No. 294,107.



Claim.—1. A locking mechanism for gates, consisting of a pivotally-mounted operating-lever secured at the free end of the gate, a vertically-arranged keeper-bar carried by said operating-lever, keepers adapted to be engaged by said keeper-bar, and a pivotally-mounted depending gravity-pawl adapted to engage and release said operating-lever when the gate is opened and closed, respectively.

2. In a gate, a locking mechanism, consisting of a pivotally-mounted operating-lever secured at the free end of the gate, a vertically-arranged keeper-bar secured thereto, keepers adapted to be engaged by said keeper-bar, and a pivotally-mounted depending gravity-pawl provided at its lower end with a hooked portion adapted to engage said operating-lever, and an outwardly-extending curved portion adapted to engage the front face of the keeper-post when the gate is closed whereby to release the hooked portion from said operating-lever.

3. In a gate, a locking mechanism, consisting of a horizontally-arranged operating-lever pivotally mounted and secured to the free end of the gate, a vertically-arranged keeper-bar secured thereto, keepers adapted to be engaged by said keeper-bar, and a pivotally-

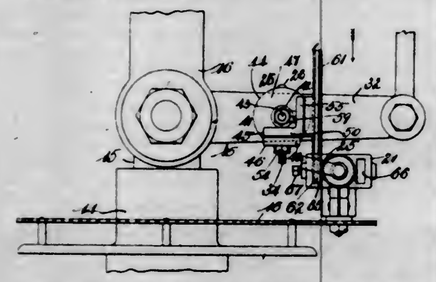
mounted depending gravity-pawl provided with a hooked portion adapted to engage said operating-lever, and a curved portion adapted to engage the front face of the keeper-post when the gate is closed whereby to release the hooked portion from said operating-lever.

4. In a locking mechanism for gates, the combination with a pivotally-mounted operating-lever secured at the free end of the gate, and a vertically-arranged keeper-bar secured thereto; of a pivotally-mounted depending gravity-pawl, provided at its lower end with a hooked portion adapted to engage said operating-lever, and a curved portion formed therewith and adapted to engage the front face of the keeper-post when the gate is closed whereby to release the hooked portion from said operating-lever.

5. In a locking mechanism for gates, the combination with a pivotally-mounted horizontally-arranged operating-lever suitably secured and provided with a keeper-bar; of a pivotally-mounted depending gravity-pawl provided with a hooked portion adapted to engage the operating-lever, and a curved portion adapted to engage the keeper-post when the gate is closed.

6. In a locking mechanism for gates, the combination with a pivotally-mounted operating-lever provided with means for locking the gate in its closed position; of a depending gravity-pawl provided with a hooked portion adapted to engage the said operating-lever and a curved portion adapted to engage the keeper-post when the gate is closed.

819,285. **UNIVERSALLY-ADJUSTABLE CLAMP-BRACKET.** FREDERICK B. JONES, Somerville, Mass., assignor to Warner Instrument Company, Beloit, Wis., a Corporation of Wisconsin. Filed Nov. 4, 1905. Serial No. 285,824.



Claim.—1. A bracket comprising a base, a plurality of arms, each of said arms projecting through a slot provided in said base and having a lateral projection upon each of its opposite sides, said projections extending into recesses provided in said base upon opposite sides of said slot, and means to draw said arms toward each other at their free ends.

2. A bracket comprising a base, a plurality of arms, each of said arms projecting, respectively, through a slot provided in said base and having a lateral projection upon each of its opposite sides, said base provided with a plurality of recesses upon each of the opposite sides of said slots into which said projections are adapted to extend, whereby said arms are pivotally and adjustably attached to said base, and means to draw said arms toward each other.

3. A bracket comprising a base, two arms pivoted thereto and extending outwardly therefrom, one of said arms projecting through a slot provided in said base and having a lateral projection upon each of its opposite sides, said projections extending into recesses provided in said base upon opposite sides of said slot, and means to draw said arms toward each other.

4. A bracket comprising a base, a pair of arms pivoted thereto, means to draw said arms toward each other, a standard mounted on said base and universally adjustable relatively thereto, and a holder fast to said standard.

5. A bracket comprising a base, a pair of arms pivoted thereto, means to draw said arms toward each other, a standard mounted on said base and universally adjustable relatively thereto, and a holder fast to said standard and adjustable laterally thereof.

6. A bracket comprising a base, a pair of arms pivoted thereto, means to draw said arms toward each other, a standard mounted on said base and universally adjustable relatively thereto, and a right-angle holder, one arm thereof slidably mounted upon said standard.

7. A bracket comprising a base, a pair of arms pivoted thereto, means to draw said arms toward each other, a standard mounted on said base and universally adjustable relatively thereto, a holder adjustable laterally of said standard, and a gear-casing adjustable in a direction at right angles to said lateral adjustment of said holder.

8. A bracket comprising a base, a pair of arms pivoted thereto, means to draw said arms toward each other, a standard mounted on said base and universally adjustable relatively thereto, and a holder having two arms at right angles to each other, one arm thereof slidably mounted upon said standard, and a gear-casing vertically adjustable on said other arm.

9. In a device of the character described a base, clamp-arms pivotally mounted thereon, a standard mounted on said base and universally adjustable relatively thereto, a holder adjustably mounted on said standard, a gear-casing adjustably fastened to said holder, and a gear journaled on said casing; in combination with a measuring device and mechanism connecting said gear to said measuring device.

10. In combination a vehicle-wheel, a steering-knuckle connected thereto, a gear fast to said wheel, a pinion meshing into said gear, a bracket upon which said pinion is journaled, said bracket clamped to said steering-knuckle and formed in parts universally adjustable relatively to said steering knuckle and gear, a measuring device, and mechanism connecting said pinion to said measuring device.

819,286. **METHOD OF CANDYING CHERRIES.** KARL KIEFER, Cincinnati, Ohio. Filed Dec. 27, 1904. Serial No. 238,451.

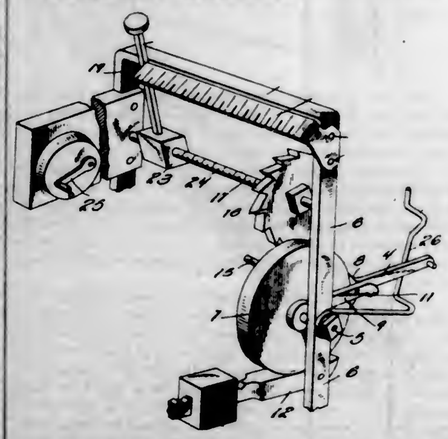


Claim.—1. The process of producing a seedless candied cherry with stem, consisting of seeding the cherry through the stem-hole, candying it, attaching the stem after being hardened itself by shoving the thicker part formerly attached to the cherry into the interior of the cherry, and allowing the flesh of the cherry to subsequently harden around it.

2. The process of producing seedless candied cherries with stem, consisting of seeding, candying and coloring the cherries and stems separately, attaching the stem to the cherry afterward by shoving the thicker part of the stem within the stem-hole of the cherry, and allowing the flesh of the cherry to close and harden around the stem.

3. A seedless candied cherry having the stem attached, characterized by having the appearance of the natural cherry in color and form, not showing any obliteration on the flesh of the cherry except near the stem-hole, having no seed, and having the thicker part of the stem shoved nearer the center than in a fresh cherry.

819,287. **AUTOMATIC BRAKE.** CÆSAR KLAUS, Eureka, Ill. Filed Sept. 11, 1905. Serial No. 277,976.



Claim.—1. A device of the class described, comprising a frame, a disk mounted therein, a lever to coöperate therewith, a brake to prevent the retrograde movement of said disk, a shaft mounted within the frame, a ratchet thereon, means carried by the disk for rotating the ratchet and a hammer movably carried by said shaft.

2. A device of the class described comprising a frame, a disk mounted therein, a lever to coöperate therewith, means carried by the lever for turning the disk, a brake therefor to prevent the retrograde movement, a guide-frame for the said lever, a shaft mounted within the frame, a ratchet thereon, means carried by the disk for rotating the ratchet and the shaft therewith, a hammer movably carried by said shaft and a guide therefor.

3. A device of the class described comprising a frame, a disk mounted there in, a lever to coöperate therewith, a brake to prevent the retrograde movement of said disk, a shaft mounted within the frame, a ratchet thereon, a pin carried by the disk for rotating the ratchet and a hammer to be actuated by the rotary movement of said shaft.

4. An automatic stop comprising a frame, a shaft mounted therein, a hammer movably carried by the shafts, means to guide the hammer in its longitudinal movement of the frame and means to rotate the shaft.

5. An automatic stop comprising a frame, a shaft journaled therein, a ratchet thereon, means for rotating the ratchet and shaft and a hammer movably carried by the shaft.

6. An automatic stop comprising a frame, a shaft journaled therein, a ratchet thereon, means for rotating the ratchet and shaft, means for preventing the retrograde movement of the first-named means and a hammer movably carried by the shaft.

7. An automatic stop comprising a frame, a shaft journaled therein, a ratchet thereon, a disk carried by the frame and having means for rotating the ratchet, a lever having means for imparting an intermittent movement to the disk and a hammer movably carried by the shaft.

8. An automatic stop comprising a frame, a shaft journaled therein, a hammer movably carried thereon, a disk carried by the frame and having means to engage means carried by the shaft to rotate the said shaft and cause the said hammer to move longitudinally of the frame, and a lever having means to impart an intermittent movement to the disk.

9. An automatic stop comprising a frame, a disk having a lateral projecting pin and carried by the frame, a lever having means to impart a rotary intermittent motion to the disk, a catch device for the lever, means to prevent the retrogression of the disk, a shaft journaled in the frame, means carried by the shaft to be engaged by the said pin and a hammer movably carried by the shaft.

819,288. **NUT-LOCK.** ALBERT KOOTS and EDWARD B. SCHIRMER, Parkersburg, W. Va., assignors of one-third to Henry C. Jackson, Parkersburg, W. Va. Filed Sept. 27, 1905. Serial No. 280,269.



Claim.—1. The method of locking a nut on a bolt which consists in first spreading apart the end of the bolt; second, compressing the material of the nut into the spread end of the bolt simultaneously on both sides.

2. The method of locking a nut on a bolt which consists in first spreading apart the end of the bolt so as to force the sides of the bolt against the interior of the nut; second, forcing the material of the nut into the spread end of the bolt simultaneously on both sides.

3. The method of locking a nut on a bolt which consists in, first, spreading apart the slotted end of the bolt so as to force the sides of the bolt against the interior of the nut; second, compressing the end of the nut at points opposite the slot of the bolt so as to force the material of the nut into the slot simultaneously on both sides.

4. The method of locking a nut on a bolt which consists in first forcing a wedge into the end of the bolt so as to spread open the same and force its walls against the interior of the nut; second, forcing wedges into the top of the nut in line with the slot so as to force the material of the nut into the spread end of the slot simultaneously on both sides.

5. The method of locking a nut on a bolt which consists in, first, forcing a wedge into the end of the bolt longitudinally in the plane of its axis, so as to spread open the same and force its walls against the interior of the nut; second, forcing wedges in the same way into the top of the nut at each side of the slot so as to simultaneously force the material of the nut on each side into the slot.

6. The method of locking a nut on a bolt which consists in applying a force so as to successively spread open the end of the bolt and simultaneously compress both sides of the nut into the slot by one motion.

7. The method of locking a nut on a bolt which consists in, first, spreading the end of the bolt; second, forcing portions of the nut on opposite sides of the bolt simultaneously toward each other and into the slot.

819,289. **NUT-LOCKING DEVICE.** ALBERT KOOTS and EDWARD B. SCHIRMER, Parkersburg, W. Va., assignors of one-third to Henry C. Jackson, Parkersburg, W. Va. Filed Sept. 27, 1905. Serial No. 280,270.



Claim.—1. A nut-locking tool comprising a wedge tapering in two dimensions and having its lower edge cut back on each side of the center to form two flanking swaging-spurs adapted to act at right angles to the main body of the wedge.

2. A nut-locking tool having a general wedge shape, the lower edge of which is cut back so as to leave a central wedge portion of less width than the whole and form two swaging-spurs one on each side of the central wedge, the operating-faces of which are at right angles to the operating-faces of the wedge as a whole.

3. A nut-locking device having a wedge-shaped blade, and two swaging-spurs oppositely disposed in the plane of the blade.

4. A nut-locking tool having a wedge-shaped blade, and oppositely-disposed swages lying in the plane of the blade and adapted to act at right angles to the main part of the wedge.

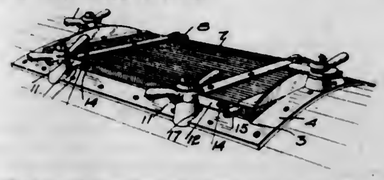
5. A nut-locking tool having a general wedge shape, and having the lower edge cut back so as to leave a central projecting portion, and two flanking swaging-spurs lying in the plane of the blade.

6. A nut-locking tool having a wedge-shaped blade, and two swaging-spurs oppositely disposed relative to the main part of the blade, and having their outside faces diverging from the axial line of the blade and their inside faces converging thereto.

7. A nut-locking tool having a wedge-shaped blade, and two swaging-spurs oppositely disposed relative to the main part of the blade and having their inside faces converging toward the axial line of the blade.

8. A nut-locking tool having a wedge-shaped expanding blade and two oppositely-disposed compressing-spurs lying in the same plane and adapted to act at right angles to the expanding wedge.

819,290. **CHURN.** FRANK LA BARR, Owatonna, Minn., assignor to Owatonna Manufacturing Co., Owatonna, Minn., a Corporation. Filed July 17, 1905. Serial No. 270,051.



Claim.—1. The combination, with a churn and butter-worker provided with an opening and a door therefor, of means arranged to temporarily prevent the complete closing of said door leaving a narrow crack between it and its seat, and means for locking said door in its nearly but not entirely closed position.

2. The combination, with a churn and butter-worker having an opening and door therefor, of sliding means mounted on said door, means mounted on the churn in the path of said sliding means to engage the same and prevent the complete closing of said door, and means for locking the door in its nearly but not entirely closed position.

3. The combination, with a churn and butter-worker having an opening and a door therefor, of a plate having a recess mounted on said door, a lug provided on the churn to enter said recess, said plate being movable to prevent said lug from entering said recess, and means for locking said lug in engagement with said plate and said door in its partially-closed position, substantially as described.

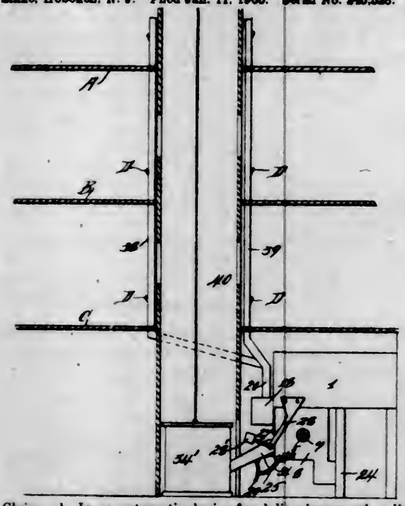
4. The combination, with a churn and butter-worker having an opening and door therefor, of plates slidably mounted on said door and having recesses in their edges, lugs provided on the churn and adapted to enter said recesses and allow the complete closing of said door or engage said plates at one side of said recesses and prevent the complete closing of said door, and cam-levers arranged to engage said door and lock it in its nearly but not entirely closed position.

5. The combination, with a churn and butter-worker having a door-opening and door therefor hinged at one side of said opening, of plates 12 slidably mounted on the edge of said door opposite from said hinges and provided with recesses in their lower edges, lugs 17 provided near the edge of said opening and adapted to enter said recesses and allow the complete closing of said door and engage the lower edge of said plates when they are moved lengthwise on said door and prevent the complete closing of the same, and cam-levers arranged to engage the top of said door and lock it in its closed or partially-open positions, substantially as described.

6. The combination, with a revolving receptacle provided with a peripheral opening and a door therefor, of means arranged to temporarily prevent the complete closing of said door leaving a narrow crack between it and its seat, and means for rigidly securing said door in its closed position or in its nearly but not entirely closed position.

7. The combination with a churn and butter-worker provided with a door and opening therefor, of means for temporarily locking said door in a partially-open position leaving a narrow crack between it and its seat and preventing it from moving in either direction, substantially as described.

819,291. COIN-CONTROLLED DELIVERY APPARATUS. JULIUS H. W. LANDES, Fort Lee, N. J., assignor of one-fourth to Bernhard Zinke, Hoboken, N. J. Filed Jan. 11, 1905. Serial No. 240,533.

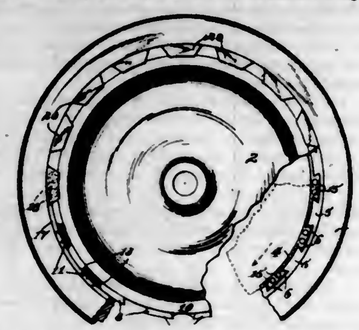


Claim.—1. In an automatic device for delivering merchandise, the combination of a hopper, a pivotally-mounted receiver adapted for rotation, the pivotal point of said receiver being at one side of the center of gravity thereof, releasable means for normally preventing the rotation of said receiver, a coin-controlled means for releasing said rotation-preventing means, and a spring adapted to return said receiver to its normal position after having been rotated, together with a movable chute for delivering merchandise from said receiver, means carried by said chute for holding said receiver until delivered of its contents, and means for moving said chute out of engagement with said receiver.

2. In an automatic device for delivering merchandise, the combination of a hopper, a receiver mounted upon a rotatable shaft, said shaft being at one side of the center of gravity of said receiver, a gear carried by said shaft, a pinion adapted to mesh with said gear, coin-controlled releasable means meshing with said pinion and adapted to prevent the rotation thereof, a spring attached to said receiver normally out of tension, a movable chute for receiving merchandise from said receiver, a latch upon said chute for holding said receiver when rotated, and means for moving said chute out of engagement with said receiver whereby said receiver is returned to its normal position by the reaction of said spring.

819,292. CAR-WHEEL. FRANK LATHERS, High Bridge, N. J., assignor of one-half to Taylor Iron and Steel Company, High Bridge, N. J., a Corporation of New Jersey. Filed Dec. 18, 1905. Serial No. 292,175.

Claim.—1. A car-wheel comprising a tire, and a center interlocked transversely by independent dovetailed interlocking means.



2. A car-wheel comprising a tire and a center interlocked transversely by opposing and independent dovetailed interlocking means.

3. A car-wheel comprising a tire and a center having dovetailed interlocking means, which when assembled by inserting the dovetailed members of the center between the dovetailed members of the tire and shifting one of said members relatively to the other are locked together and locking members located in the openings formed between said dovetailed interlocking devices for locking said center and tire together.

4. A car-wheel having a tire provided with a circumferential rib on one side and a series of locking-lugs on the other side, a center having a series of locking members adapted to interlock with the locking-lugs of the tire when the parts are being assembled and to be shifted intermediate said locking-lugs and rib of the tire, and headed locking members located in the openings formed between the locking lugs and members of the tire and center respectively for locking said parts together, and having a part projecting into the circumferential rib of the tire and clamped at the outer side thereof.

5. A car-wheel having a tire provided with a circumferential rib on one side and a series of locking-lugs on the other side, a center having a series of locking members adapted to interlock with the locking-lugs of the tire when the parts are being assembled and to be shifted intermediate said locking-lugs and rib of the tire, and headed locking members located in the opening formed between the locking lugs and members of the tire and center respectively for locking said parts together, and having a part projecting into the circumferential rib of the tire and clamped at the outer side thereof, the side faces of the locking-lugs of the tire and center being dovetailed and opposing each other when assembled, and said locking member having dovetailed portions corresponding to the dovetailed portions of said lugs and locking members of the tire and center.

6. A car-wheel comprising a center and a tire, each having projections having an interlocking engagement during the assemblage of the tire and center and constructed to form ways or openings of similar formation to such projections, said tire and center being interlocked both transversely and circumferentially thereof, and locking means comprising independent members conforming to and fitting the said ways or openings for locking the tire and center together.

7. A car-wheel comprising a center and a tire interlocking both transversely and circumferentially thereof, the transverse locking means comprising independent dovetailed members.

8. A car-wheel having a tire and a center, one provided with one or more projections at one side of its periphery and with projecting means at the opposite side of its said periphery and the other having one or more projections located in alinement with the projection or projections of said first member when the tire and center are assembled, the said alined projections forming a way or ways at the sides thereof conforming to the shape of such projections, one or more locking members fitting said way or ways for holding the tire and center against circumferential shifting, and means for securing said locking member or members against transverse displacement.

9. A car-wheel comprising a center and a tire having dovetailed interlocking portions and assembled by a lateral and circumferential movement of one member relative to the other member, and a locking member having corresponding dovetailed faces for locking said tire and center together.

10. A car-wheel comprising a tire and a center, each having dovetailed locking portions and assembled by a lateral and circumferential movement of one relative to the other, in which position the dovetailed faces of the locking members oppose each other, and headed locking devices having opposing dovetailed faces corresponding to the dovetailed faces of the tire and center and having a part clamped at one side of the wheel, whereby said tire and center are locked both laterally and circumferentially.

11. A car-wheel comprising a center and a tire having projections provided with interlocking faces to permit the assemblage of the tire and center and forming transverse ways or openings conforming to the shape of such protections, and locking members, each having interlocking faces corresponding to the shape of such projections for locking said tire and center together.

12. A car-wheel comprising a center and a tire having projections constructed to enable the tire and center to be assembled laterally and then one shifted circumferentially of the other to bring said projections into alinement transversely of the wheel, said projections having openings at their sides, and interlocking members fitting said openings and locking the tire and center together.

13. A car-wheel comprising a center and a tire having projections constructed to enable the tire and center to be assembled laterally and then one shifted circumferentially of the other to bring said projections into alinement transversely of the wheel and forming openings at the sides of said projections, interlocking members fitting said openings and locking the tire and center together, and means for securing said locking members in position whereby the tire and center are locked both circumferentially and transversely against movement relatively to each other.

14. A car-wheel comprising a center and a tire having projections constructed to enable the tire and center to be assembled laterally and then one shifted circumferentially of the other to bring said projections into alinement transversely of the wheel with the side faces of said projections opposed to each other, and interlocking members also having opposed locking-faces fitting the openings between said projections and locking the tire and center together.

819,293. ELECTRIC RAILWAY. MATHIAS A. LAZAREFF, New York, N. Y. Filed May 19, 1905. Serial No. 261,208.



Claim.—1. In an electric railway, the combination of the conductor, the housing inclosing it, the collecting-shoe; the said housing having a contact-surface for the collecting-shoe, slide-rods movable in and out of the contact-surface of the housing by the action of the shoe, and mechanism operated by successive slide-rods to cut the conductor in and out of circuit with the contact-surface of the housing.

2. In an electric railway, the combination with the collecting-shoe, the conductor, the housing inclosing it and a rigid contact-surface of the housing, of slide-rods movable in and out and connected with the contact-surface and adapted to be operated by the face of the collecting-shoe, a shaft within the housing, means for turning the shaft by the movement of the slide-rods, and connections between the shaft and the conductor whereby one movement of the shaft cuts the conductor into circuit with the contact-surface of the housing and a further movement of the shaft cuts the said contact-surface out of circuit.

3. In an electric railway, the combination with the collecting-shoe, the conductor, the housing inclosing it and the rigid contact-surface of the housing, of slide rods or bars adapted to be operated by the face of the collecting-shoe and arranged in pairs in the contact-surface so as to move in and out of the housing, and a switch mechanism operated by the slide-rods and arranged so that the movement of one slide-rod cuts the conductor into circuit with the contact-surface of the housing and the movement of the next slide-rod cuts the said contact-surface out of circuit.

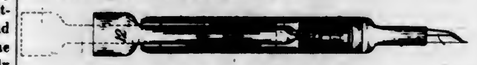
4. In an electric railway, the combination with the collecting-shoe, the conductor, its containing-housing and the slide-rods movable in and out of the housing and adapted to be operated by the face of the collecting-shoe, of a shaft in the housing, contacts carried by the shaft and adapted to touch contacts on the conductor, and connections between the slide-rods and the shaft whereby the movement of one slide-rod brings the contacts of the shaft and conductor in touch and the movement of the next slide-rod breaks connection between the said contacts.

5. In an electric railway, the combination of the collecting-shoe, the conductor, its containing-housing and the contacts on the conductor, of the shaft-section journaled in the housing parallel with the conductor, contacts on the shaft to connect with the conductor, a pair of ratchet-wheels on the shaft, and slide-rods operated from outside the conductor by the face of the collecting-shoe, and adapted to engage the ratchet-wheels and turn the shaft.

6. In an electric railway, the combination with the conductor and its projecting contacts, of the rotary contact-arms spaced apart and adapted to successively engage the contacts of the conductor, a housing inclosing the conductor and contact-arms, and having a sectional contact-surface, slide-bars moving in and out through the contact-surface of the housing, and means for turning the contact-arms by the slide-rods.

7. In an electric railway, the combination of the conductor, the housing inclosing it, the said housing having a sectional contact-surface, slide-rods moving in and out through the contact-surface and mechanism operated by the slide-rods to make and break the circuit between the conductor and the contact-surface.

819,294. FOUNTAIN-PEN. HENRY B. LEVY, New York, N. Y. Filed Aug. 22, 1905. Serial No. 275,216.



Claim.—1. A fountain-pen comprising a barrel, a piston therein, and a pen-covering cap, said cap having an elongated neck adapted for insertion into the barrel and to be detachably connected with the piston to act as a piston-rod therefor.

2. A fountain-pen comprising a barrel, a plunger therein having a threaded socket, and a pen-covering cap, said cap having a hollow neck adapted for insertion into the barrel to act as an operating-rod for the plunger, the neck having a threaded end adapted to engage the threaded socket in said plunger.

3. A fountain-pen comprising a barrel, a plunger therein provided with a threaded opening, a nozzle-section detachably secured to the barrel, a cap for the pen, said cap having a neck adapted to fit said nozzle-section and means for operating said plunger.

4. A fountain-pen, comprising a barrel, a plunger therein, an open head detachably secured to the outer end of the barrel, the opening in said head being smaller than the bore of said barrel, a nozzle-section detachably secured to said barrel, a cap for the pen, the cap having a tubular neck adapted to fit the nozzle-section, and means carried by said neck for operating the plunger.

5. A fountain-pen, comprising a barrel, a plunger therein provided with a threaded socket, a head having an opening detachably secured to the outer end of the barrel, a nozzle-section detachably secured to said barrel, a cap for the pen, the cap having an elongated contracted portion and a threaded end adapted to engage the threaded socket of said plunger.

6. In a fountain-pen, the combination of a barrel, a plunger therein, said plunger provided with a packing and a lug smaller in diameter than said plunger, a washer upon said lug adapted to fit the bore of the barrel, a cap for the pen, and means carried by the cap for operating the plunger.

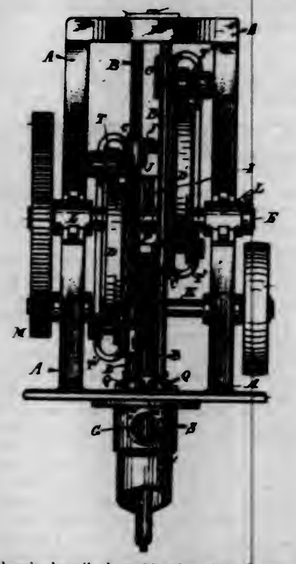
7. In a fountain-pen, the combination of a barrel, an open head detachably secured to the end of said barrel, the opening in said head being smaller in diameter than the bore of the barrel, a plunger in said barrel, said plunger provided with a packing adapted to fit the bore of said barrel, and said plunger having a threaded socket, a cap for the pen, the cap having a contracted elongated portion provided with a threaded end adapted to engage the threaded socket in said plunger.

8. In a fountain-pen, the combination of a barrel, having a head detachably secured thereto, the head provided with an opening, a plunger in said barrel having a threaded opening and provided with a packing and a lug smaller in diameter than said plunger, a washer upon said lug fitting the bore of said barrel, a nozzle-section carried by the barrel, a cap for said pen, the cap being provided with a contracted threaded portion adapted to engage the threaded opening in the plunger for operating same.

9. In a fountain-pen, the combination of a barrel, a plunger therein, means for limiting the outward stroke of said plunger, and a cap for the pen, the cap having an elongated hollow neck, said neck being adapted to cover the pen-point and to act as a detachable operating-rod for the plunger.

819,295. PUMP MECHANISM. SAMUEL W. LUTTRELLER, Los Angeles, Cal. Filed Dec. 5, 1898. Serial No. 698,398.

Claim.—1. The combination of the framing consisting of the base, two vertical side members, and the top member, the base being that from which the pump is suspended and wherein the lower ends of the slide-bars are carried, the sides constituting and containing the bearings for the driving-shaft and cam-shaft, the upper member of the framing constituting and containing the sockets through and by which the slide-bars are passed and held, having also a center opening for the lowering and raising of the pump rods and plungers, the vertical slide-bars, the driving-shaft, the cam-shaft, the cams on said shaft, the spur-pinion and spur-wheel for operating the cam-shaft, the cam-frames with their alternately-arranged offsets, the antifriction-rollers in said cam-frames, the pump-rods, the pump, the whole constituting an improved double-plunger pump and operating substantially as hereinbefore described and shown upon the annexed drawings.



2. The herein-described combination of the framing consisting of the base, two vertical side members, and the top member, the base being that from which the pump is suspended, the sides constituting and containing the bearings for the driving-shaft and the cam-shaft, said top member having a center opening for the lowering and raising of the pump rods and plungers through, the vertical slide-bars, means for carrying and supporting the slide-bars, the driving-shaft, the cam-shaft, the cams on said shaft, the spur-pinion and spur-wheel for operating the cam-shaft, the cam-frames with their alternately-arranged offsets, the antifriction-rollers in said cam-frames, the pump-rods, the pump, the whole constituting an improved double-plunger pump operating substantially as hereinbefore described

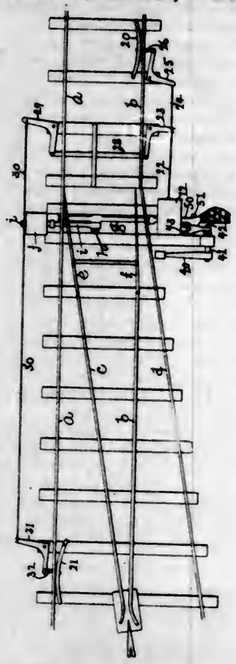
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819,296. AUTOMATIC RAILWAY-SWITCH. JOHN A. MACDONALD, Malden, Mass., assignor to Frank L. Wells, Boston, Mass. Filed Jan. 17, 1906. Serial No. 296,478.

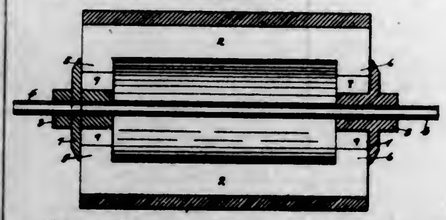
Claim.—1. The combination with a railway-switch, of means for automatically moving said switch from its opened into its closed position, means for controlling said switch-operating means, said controlling means being automatically operated by a train, and a manually-operated device coöperating with the said switch to hold the latter in its opened position and render said controlling means ineffective upon the switch, substantially as described.

2. The combination with a railway-switch, of means for automatically moving said switch from its opened into its closed position, means located along the main line of the track for controlling said switch-operating means, said controlling means being operated by a train, and a device coöperating with the said switch to hold the latter in its opened position and render said controlling device ineffective upon the switch, substantially as described.

3. In a railway-switch, in combination, a switch-bar, a spring to move said bar to close the switch, a switch-lever, means to lock said bar to said lever to permit the switch to be manually operated, a device operated by a train to unlock said switch-bar, and means to prevent the spring from moving the switch-bar to close the switch when said bar is unlocked, substantially as described.



819,297. DESIGN-ROLLER. BENNETT D. MARKS, Chicago, Ill. Filed June 14, 1905. Serial No. 265,286.



Claim.—1. In a design-roller for graining-machines, the combination with two hubs, of wooden sections mounted on said hubs, said sections extending radially from said hubs, said sections tapering inwardly, flanges on said hubs, means to secure said sections to said hubs, sections of design-wood having the grain running around the roller adapted to form an outer covering for said tapering sections and means to secure said design-sections to said tapering sections, for the purpose set forth substantially as described.

2. In a design-roller for graining-machines, the combination with two flanged hubs, of wooden sections extending radially from the said hubs, said sections tapering inwardly, an outer covering of sections of design-wood having the grain running in various directions, means to secure said sections to said tapering sections, said tapering sections being mounted in sockets cast or formed upon the hubs of the roller, and a shaft extending through said roller, for the purpose set forth substantially as described.

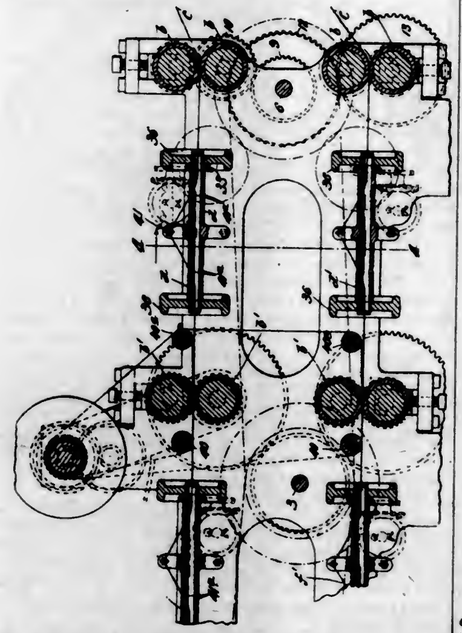
3. In a design-roller for graining-machines, the combination with two hubs, of wooden sections extending radially from the said hubs, said sections tapering inwardly and having an outer covering of sections of design-wood having the grain running around the roller, said sections being joined in such a manner that there will be no break in transmitting the impression of the grain to the printing-roller, means to secure said sections to said tapering sections, and means to secure said tapering sections to said hubs, for the purpose set forth substantially as described.

4. In a design-roller for graining-machines, the combination with two hubs, of wooden sections extending radially from the said hubs, said sections tapering inwardly and having an outer covering of sections of design-wood having the grain running around the roller, said sections being joined in such a manner that there will be no break in transmitting the impression of the grain to the printing-roller, said tapering sections being mounted in sockets cast or formed on the hubs of the roller, and a shaft extending through said roller, for the purpose set forth substantially as described.

5. In a design-roller for graining-machines, the combination with two flanged hubs having a bevel-gear cut upon the outer face of said flanges, of wooden sections extending radially from the said hubs, said sections tapering inwardly and having their outer surface turned true, an outer covering of sections of design-wood having the grain running in various directions, said sections being joined in such a manner that there will be no break in transmitting the impression of the grain to the printing-roller, means to secure said sections to said tapering sections, and means to secure said tapering sections to said hubs, for the purpose set forth substantially as described.

6. In a design-roller for graining-machines, the combination with two flanged hubs having a bevel-gear cut upon the outer face of the said flanges, of wooden sections extending radially from the said hubs, said sections tapering inwardly and having their outer surface turned true, said sections being provided with extensions at each end, said extensions extending inwardly and fitting around the said hubs, an outer covering of sections of design-wood having the grain running around the roller, said sections being joined in such a manner that there will be no break in transmitting the impression of the grain to the printing-roller, means to secure said sections to said tapering sections, means to secure said tapering sections to said hubs, and a shaft extending through said roller, for the purpose set forth substantially as described.

819,298. SPINNING-MACHINE. JOSEPH W. MARTIN, Holyoke, Mass. Filed June 20, 1904. Serial No. 213,315.



Claim.—1. In a spinning-machine, two twisting-spindles having a common axis, a pair of rolls located between the contiguous ends of the twisting-spindles, a second pair of rolls located beyond the end of one of the twisting-spindles, means to rotate the spindles in opposite directions, whereby a yarn may be twisted in one direction by one twisting-spindle and in the opposite direction by the other twisting-spindle, together with means to feed a spun yarn between the rolls located between the twisting-spindles whereby it may be doubled with the yarn being formed on the machine, and twisted therewith.

2. In a spinning-machine, two pairs of rolls, a twisting-spindle located between the rolls, the axis of the spindle being in the plane of the meeting edges of said rolls, and means to support the yarn at each end of the twisting-spindle axially thereof, and another support for the yarn located midway between the ends of the twisting-spindle, eccentrically of the latter, whereby the yarn advances toward the support and recedes from the same at the same angle with the axis of the head.

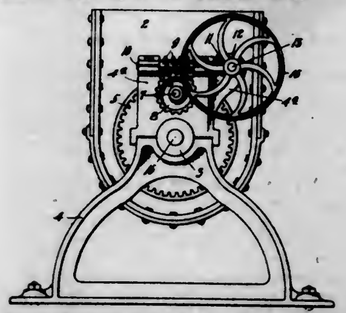
3. In a spinning-machine, three pairs of rolls in substantially the same plane, a twisting-spindle located at each side of the central pair of rolls in the plane of the meeting edges thereof, means of support for the yarn located on said twisting-spindles axially at each end thereof, and another support on each twisting-spindle located between the ends and eccentrically thereof, means to rotate the twisting-spindles in opposite directions, and means to rotate the rolls to draw yarn longitudinally of the twisting-spindles.

4. In a spinning-machine, two pairs of twisting-spindles located in the same plane one above the other, each pair having a common axis, a pair of rolls between the contiguous ends of each pair of twisting-spindles, another pair of rolls located at the end of the forward twisting-spindle of each pair, supports on the twisting-spindles for the yarn at each end of the same, and another support for the yarn located between the ends thereof eccentrically thereto, means to rotate the twisting-spindles in opposite directions, and means to rotate the rolls to draw the yarn longitudinally of the twisting-spindles, and a rotatable bobbin to take up the yarn from each pair of twisting-spindles.

5. In a spinning-machine, a twisting-spindle, a pair of rolls located at each end of the latter, means of engagement for the yarn on the twisting-spindle located axially at each end thereof, and a support for the yarn located midway between the ends of the twisting-spindle eccentrically to the axis of the same, whereby the yarn advances toward the support and recedes from the same at the same angle with the axis of the spindle, the rolls at the delivery end of the twisting-spindle being rotatable at a greater speed than the rolls at the opposite end whereby the yarn may be drawn down more or less during the spinning operation.

6. In a spinning-machine, a spinning and a twisting spindle, means to rotate the same in opposite directions, a pair of feed-rolls located between said twisting-spindles, and another pair of feed-rolls located beyond the twisting-spindles, to draw the yarn from the latter whereby the yarn may be spun and twisted at one operation, together with means to feed one or more spun yarns between the rolls located between the spinning and twisting spindles, to be twisted into the yarn being spun on the machine.

819,299. CONCRETE MIXER. JOHN MILLER, Minneapolis, Minn., assignor to Winner Block Machine Company, a Corporation of Minnesota. Filed May 18, 1905. Serial No. 260,946.

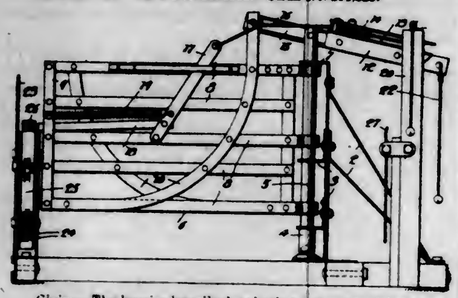


Claim.—1. The combination with a mixing-trough, of a shaft extending longitudinally through the same, said shaft having radial blades located in longitudinal rows and provided at their free ends with obliquely-set blades, the blades of the one row being given an inclination in opposite direction from that of the adjacent row and the extreme end members of said blades being set at a backward inclination with respect to their direction of travel and having their outer edges extended radially and working close to the respective adjacent heads of said trough, substantially as described.

2. The combination with a mixing-trough, journaled for com-

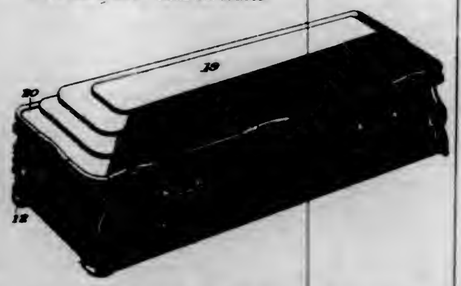
plete rotary movements, of means for rotating the said trough, involving a worm and worm-gear for normally locking the same in a set position, and a rotary shaft extended longitudinally through the journals of said trough, and provided with radial arms having at their ends, obliquely-set agitating-blades, substantially as described.

819,300. GATE. WILLIAM H. MITCHELL and JOSHUA A. ISAMAN, Amora, Nebr. Filed Dec. 11, 1905. Serial No. 291,233.



Claim.—The herein-described swinging gate comprising a post, a pivoted bar revolubly mounted thereon, brackets extending horizontally from said post, a gate mounted to slide vertically on said pivoted bar, a lever to raise and lower the gate, a curved bar 10 secured to the front end of the gate and extending backward and upward above the gate and pivotally connected to said lever, a latch-bar adapted to be simultaneously retracted when the gate is opened, a lever connected to said latch, a latch-post, pivoted gravity-operated keeper-plates arranged on said post to receive the end of said latch-bar when the gate is in closed position, a spring 19 secured to said lever 17 and flexible connections between said bar 17 and the operating-lever for opening and closing the gate, substantially as described.

819,301. BURIAL-CASKET. LEVI H. MONTROSS, Camden, N. J. Filed Mar. 5, 1906. Serial No. 304,301.



Claim.—1. In a burial-casket, upper and lower sections having lateral extensions grooved upon their lower and upper faces complementarily to form a passage therebetween, clamping members engaging said lateral extensions and a pneumatically-inflated tube for tightening said clamping members and sealing said passage to prevent access of air to the casket.

2. In a burial-casket, top and bottom sections having each lateral extensions of curved section, coöperating to form a passage therebetween said extensions forming grooves above and below the extensions respectively between them and the top and bottom sections, C-clamps resting within the upper groove, reinforcing-strips resting within the lower groove, said C-clamps and strips forming an inside surface conforming to the exterior of the lateral extensions and an inflatable tube for sealing the interior of said extensions against passage of air into the casket.

3. In a burial-casket, upper and lower sections having coöperating lateral extensions forming downwardly and upwardly directed grooves which coöperate to form a passage therebetween, clamping members securing said sections together by means of the extensions, an inflatable tube within said passage for hermetically sealing the casket and a protective material within the tube.

4. In a burial-casket, upper and lower sections having lateral extensions coöperating to form a passage thereabout, clamping members surrounding said passage a tube within the passage and cement within the tube.

5. In a burial-casket, upper and lower portions having laterally-extended curved edges coöperating to form upper and lower grooves between said extensions and the upper and lower sections respectively a tube within the grooves, a tube-protective medium within the tube preventing access of air to the walls thereof, a gas within the tube, and a clamping member engaging said extensions within said grooves.

6. In a burial-casket, separable parts having coöperating lateral sealing extensions in combination with a clamp surrounding said extensions and reinforcing means adjacent said clamp supporting said extensions.

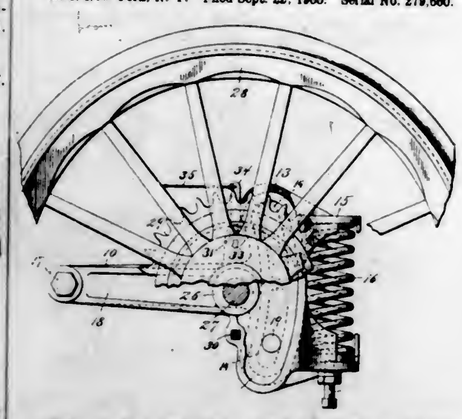
7. In a burial-casket, separable sections having semitubular coöperating sealing extensions about their junction, a clamp inclosing said semitubular extensions and reinforcing means extending beyond the clamp and conforming to the shape of the extension.

8. In a burial-casket, semitubular coöperating meeting flanges, an inflatable tube within said flanges, a clamping member preventing separation of the flanges and a preserving-strip between the tube and the line of division of the flanges.

9. In a burial-casket, separable sections having meeting grooved coöperating flanges forming a channel between the sections, means for retaining the flanges from separation, an inflatable tube within the channel and a preserving-strip secured to the tube in proximity to the line of division of said flanges.

10. In a burial-casket, separable sections having a strengthening-rib about their meeting edges, a handle, a handle-support resting against said strengthening-rib, a clamp surrounding said strengthening-rib and a reinforcing-strip secured to said clamp and adapted to overlie said rib above the point of contact with the handle-support.

819,302. WHEEL-MOUNT FOR VEHICLES. GEORGE D. MUNSING, New York, N. Y. Filed Sept. 22, 1905. Serial No. 279,660.



Claim.—1. In a mount for a vehicle-wheel, the combination with a stationary member on the vehicle; of a swinging member pivoted at one end thereto and having a friction-face, means to guide the opposite end of the said swinging member and having a friction-face coöperating with the face on the swinging member, means between the two members to cushion the movement of the swinging member and means projecting from the swinging member on which a wheel is rotatively mounted.

2. In a mount for a vehicle-wheel, the combination with a stationary member on the vehicle; of a swinging member pivoted at one end thereto and having an arcuate friction-face, arcuate means to guide the opposite end of said swinging member, means between the two members to cushion the movement of the swinging member and means projecting from the swinging member on which a wheel is rotatively mounted.

3. In a wheel-mount, the combination with a relatively fixed member on the vehicle having an arcuate portion; of a swinging member pivoted at one end thereto and having a like arcuate portion, means frictionally connecting the arcuate portions, means between the two members to cushion the movement of the swinging member and a wheel mounted on the swinging member, whereby said wheel can have movement about the pivot-point in a vertical plane parallel to the direction of travel and independent of the other wheels of the vehicle.

4. In a wheel-mount, the combination with a relatively fixed member on the vehicle and having an arcuate portion; of a swinging member having a like arcuate portion and pivoted on one side to the fixed member at the center of said arcuate portion, a friction-plate connected to the arcuate portion of the swinging member on the other side of said fixed member to frictionally retard the movement of the swinging member, a spring between the two members, whereby a wheel mounted on the spindle can have movement about the pivot-point and in a vertical plane parallel to the direction of travel of the vehicle.

5. In a wheel-mount, the combination with a rigid arm and means to detachably secure it at right angles to an axle; of a swinging arm, means to pivotally connect the arm at one end, means to slidably connect the other ends of said arms, friction means between the two arms, a coil-spring between the two arms, a boss between the ends of the swinging arm and a wheel-spindle in said boss.

6. In a wheel-mount, the combination with a rigid arm and means thereon to pivot said arm to an axle to move in a horizontal plane around its pivot-point; of a vertically-swinging arm, said arms pivoted together at one end and slidably connected at the other, to produce friction between them, means between the arms to cushion the swinging arm and a wheel-spindle mounted in the swinging arm.

7. In a wheel-mount, the combination with a rigid arm and means to detachably connect it to an axle, said arm having an arcuate slotted end and a plate projecting from the top of said arcuate end; of a similarly-shaped swinging arm pivoted at one end to an end of the rigid arm, and a plate projecting from the lower part of the arcuate end of said swinging arm under the plate on the rigid arm, a spring between the two plates, pins in the arcuate end of the swinging arm projecting through the slots, a friction-plate mounted on the pins to slide on the arcuate portion of the rigid arm, means to adjust the friction of said plate, a boss on the swinging arm and a wheel-spindle in the boss, substantially as and for the purpose set forth.

8. In a wheel-mount, a rigid member, a swinging member pivotally connected to the rigid member to swing in a plane parallel to the wheel, a wheel-spindle on the swinging member and means to retard the swing of the swinging member including a friction-retard, an air-cushion retard and a spring-retard, substantially as and for the purposes set forth.

9. In a wheel-mount, a rigid member, a swinging member pivotally connected to the rigid member, a wheel-spindle on the swinging member and means to retard the swing of the swinging member including an air-cushion retard, a spring-retard and a liquid-cataract retard, substantially as set forth.

10. In a wheel-mount, a rigid member, a swinging member pivotally connected to the rigid member, a wheel-spindle on the swinging member and means to retard the swing of the swinging member including a friction-retard, a resilient retard and a liquid-cataract retard, substantially as set forth.

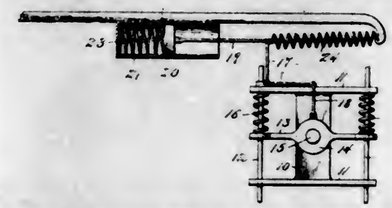
11. In a wheel-mount, the combination with a rigid arm and means to connect it to an axle, said arm having an arcuate slotted end and a bearing projecting from the top of said end; of a similarly-shaped swinging arm, a bolt pivotally connecting the arms at one end, a bearing projecting from the lower part of the arcuate end of the swinging arm under the first bearing, a cylinder pivoted in each bearing, one cylinder working within the other, an air-admission valve in one cylinder, a spriag within and exerting pressure between the two cylinders, pins in the arcuate portion of the swinging arm projecting through the slots and a friction-plate mounted on the pins in frictional contact with the arcuate portion of the rigid arm, substantially as and for the purposes set forth.

12. The combination with a driving-wheel and sprocket-wheel thereon and a brake, of a rigid member secured to the axle of the vehicle, a swinging member pivoted to the rigid member, means to retard the movement of the swinging member and a device on the swinging member to actuate the brake, said device capable of being set in operation by the driver of the vehicle, substantially as set forth.

13. The combination with a driving-wheel, a driving and a driven sprocket-wheel, of a fixed member, a swinging arm pivoted to the fixed member, means to retard the movement of the swinging arm, a wheel-spindle on the swinging arm on which said driving and sprocket wheels are mounted, the pivot-point of the swinging arm and of the driving-pinion being substantially the same whereby the upward and downward movements of the wheel with respect to the axle will not produce a slack in the driving-chain.

14. The combination with an axle, of an arm secured near one end to the end of the axle, a swinging arm pivoted at one end to the free end of the arm on the axle, a wheel-spindle on the swinging arm and means between the two arms to hold the swinging arm in position for the spindle thereon to be about in alinement with the axle under normal conditions, said means also permitting the movement and cushioning of the swinging arm.

819,303. WHEEL-MOUNT FOR VEHICLES. GEORGE D. MUNSING, New York, N. Y. Filed Sept. 26, 1905. Serial No. 280,201.



Claim.—1. In a wheel-mount, the combination with a fork of a support, means at each side of the support in the fork to yieldingly and non-rotatably guide the same, and a wheel-spindle secured to said support between said means, substantially as described.

2. In a wheel-mount, the combination with a fork; of a support non-rotatable in the fork and vertically movable between the tines of the fork, a wheel-spindle secured to the support, and cushioning means at each side of the spindle to cushion the movement of the spindle and support, substantially as described.

3. In a wheel-mount, the combination with a fork; of a support having lateral extensions, coil-springs between the extensions and the fork to permit non-rotatable vertical movement of the support within the fork and a wheel-spindle secured to the support.

4. In a wheel-mount, the combination with a fork; of a support having lateral extensions, rods fixed to the extensions and passing through the tines of the fork, coil-springs surrounding the rods and between the extensions and upper tine of the fork and a wheel-spindle secured to the support.

5. In a wheel-mount, the combination with a fork; of a support, means to yieldingly and non-rotatably mount the support in the fork, a second fork on the support and a wheel-spindle mounted to turn on a vertical pivot in the second fork, substantially as described.

6. In a wheel-mount, the combination with a fork; of a support having lateral extensions, rods fixed to the extensions and passing through the tines of the fork, coil-springs surrounding the rods and between the extensions and upper tine of the fork, a second fork on the support, a revoluble pivot-pin passing through the tines of the fork and a wheel-spindle fixed on and movable with said pin between the tines of the second fork.

7. In a wheel-mount, the combination with a fork; of a support, means to yieldingly mount the support in the fork, a dash-pot, a piston therein and mechanism to operatively connect the piston and support.

8. In a wheel-mount, the combination with a fork; of a support, a dash-pot and piston, means to operatively connect the piston and support and a coil-spring to assist the cushioning action of the piston.

9. In a wheel-mount, the combination with a fork; of a support yieldingly mounted therein, a dash-pot, a piston and a spring therein and means to operatively connect the piston and support.

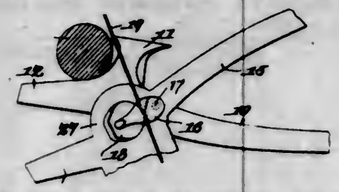
10. In a wheel-mount, the combination with a fork; of a support yieldingly mounted therein, a dash-pot, a piston and a spring therein, a piston-rod jointed to the piston, a bell-crank lever mounted on the fork and connected at one end to the piston-rod, a link connecting the other end of the bell-crank to the support and a spring connected at one end to the vehicle-frame and at the other to the piston-rod.

11. In a wheel-mount, the combination with an axle having a fork on its ends; of a support in the fork, means to yieldingly hold the support in the fork, a dash-pot having an air-port, a piston and a spring therein, said port controlled by the piston, a piston-rod, a bell-crank lever operatively connected at one end to the rod, a link connecting the other end of the bell-crank lever to the support, a second fork on the support, a pivot-pin loosely mounted in said second fork, a wheel-spindle fixed on the pin within the fork and a coil-spring to antagonize the movement of the piston-rod and bell-crank lever from their normal positions.

12. The combination with a vehicle-wheel, an independent yielding mount for the wheel whereby said wheel will have relative

vertical movement independent of the other wheels on the vehicle, a dash-pot out of the line of movement of said mount, a piston in the dash-pot and devices operatively connecting the piston and mount, substantially as described.

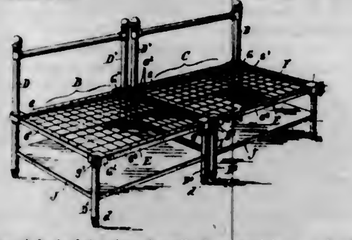
819,304. WIRE-WORKING TOOL. DEWEY L. MCKINSEY and GEORGE W. HENDERSON, Fairmont, W. Va. Filed July 26, 1905. Serial No. 271,233.



Claim.—1. A wire-working tool comprising a pair of crossed members having corresponding ends terminating in coöperating jaws and their other ends formed into handles, a wire-clamp upon one side of one of the members, and a T-shaped pin carried by the other side of said member, and the other member being provided with an opening intersected by a diametric slot for the detachable pivotal reception of the T-shaped pin.

2. A wire-working tool comprising a pair of crossed members having a separable pivotal connection and provided with coöperating jaw and handle terminals, one of the members being provided with a lateral projection at the inner end of the jaw with its front face concaved and merging into the back of the jaw, and a wire-clamp carried by the other member.

819,305. FOLDING BED. WILLIAM S. MCLEWEE, Yardley, Pa., assignor to Carrie Howell McLewee Yardley, Pa. Filed Feb. 26, 1904. Serial No. 196,392.

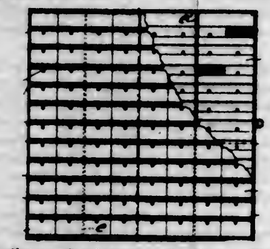


Claim.—A bed of the class described, comprising a pair of sections formed of rectangular frames having suitable supporting-legs, the inner sides of said sections, when placed in the bed formation, being parallel and having at their respective ends corner-brackets provided with outwardly-extending apertured projections, the brackets of one section alining with the brackets of the other when the sections are placed in the bed formation, and extending beyond the plane of the sides of said sections, the projections of the contiguous brackets occupying different horizontal planes and interfitting when brought together to form hinges at opposite sides of the bed, and pins fitted in said projections to maintain the projections of the contiguous brackets in locked relation, said pins being removable, whereby said sections may be separated at either side of the bed to permit them being swung relatively to each other, or entirely separated.

819,306. BALLOT MEMBER FOR VOTE-REGISTERING MACHINES. DAVID L. NEWCOMB, San Diego, Cal. Filed Feb. 23, 1901. Renewed Sept. 6, 1904. Serial No. 223,627.

Claim.—1. A ballot member for vote-registering machine comprising a base-plate provided with a plurality of parallel disconnected channels; a plurality of rows of perforations through said plate in the bottom of said channel; said perforations forming tappet-seats; a tappet to seat in said seat to actuate registering mechanism; a tappet-seat closure placed in said channel and means for moving and adjusting said tappet-seat closures so as to temporarily close all remaining tappet-seats after the voter has seated a tappet into the tappet-seat assigned to the candidate of his choice, substantially as described.

2. A ballot member for vote-registering machine comprising a base-plate provided with a plurality of parallel disconnected channels; a plurality of rows of perforations through said plate in the bottom of said channel; said perforations forming tappet-seats; a tappet to seat in said seat to actuate registering mechanism; a tappet-seat closure placed in said channel; a face-plate perforated near one edge, secured to the channeled face of the ballot member, said perforation so formed as to register with the tappet-seats in said ballot member, substantially as described.



3. In a ballot member for vote-registering machine comprising a base-plate, furnished with a tappet-seat; a tappet to seat in said seat to actuate registering mechanism; a face-plate perforated near one one of its edges and secured to the ballot member, said perforations placed so they register with the tappet-seats in said ballot member, the opposite edge of said face-plate raised at right angles to its surface, substantially as described.

4. In a ballot member for vote-registering machine comprising a base-plate provided with a plurality of parallel disconnected channels; a plurality of perforations through said plate in the bottom of said channel, said perforations forming tappet-seats; a tappet to seat in said seat; a tappet-seat closure placed in said channel and a transverse groove and dividing-stop, substantially as described.

5. In a ballot member for vote-registering machine comprising a base-plate provided with a plurality of parallel disconnected channels; a plurality of rows of perforations formed through said plate in the bottom of said channel; said perforations forming tappet-seats, a tappet to seat in said seat; a tappet-seat closure placed in said channel and a plate secured to the edges of said ballot member, at right angle with said channels to keep said closure in place, substantially as and for the purpose set forth.

6. A ballot member for vote-registering machine furnished with a series of parallel channels, the floors of which channels are perforated.

7. A ballot member for vote-registering machine furnished with a series of channels, the floors of which are perforated, said perforations forming tappet-seats and a tappet to seat in said seats.

8. A ballot member, for vote-registering machine furnished with a series of channels, the floors of which channels are perforated, said perforations forming tappet-seats and a movable tappet-seat closure placed in said channel.

9. A ballot member, for vote-registering machine furnished with a series of channels, the floors or walls of which are perforated, said perforations forming tappet-seats, a tappet to seat in said seats to actuate registering mechanism, an inverted-T-shaped tappet-seat closure to temporarily close said tappet-seats and a plate perforated near one of its edges, its opposite edge raised at a right angle to its surface, substantially as described.

10. A ballot member, for a vote-registering machine furnished with a series of channels, the floors of which are perforated, said perforations forming tappet-seats, a movable T-shaped tappet-seat closure in said channel; said member being also furnished with a transverse groove and movable division-stop to divide the channels into spaces, substantially as described.

11. A ballot member, for vote-registering machine furnished with a series of channels, the floors of which are perforated; said perforations forming tappet-seats, an inverted-T-shaped tappet-seat closure placed in said channel, and plates attached to the edges of said ballot member and at a right angle to said channels to keep said closure in said channel, substantially as described.

12. A channeled ballot member having perforations and cross-channels; and tappets formed with intermediate shoulders.

13. A ballot member comprising a base-plate having suitable parallel ways, tappet-seats formed adjacent said ways, tappet-seat closures slidable along said ways and suitable tappets for the tappet-seats, a tappet-seat closure preventing the seating of a tappet when in a definite position relatively to the tappet-seat.

14. A ballot member comprising a base-plate having parallel ways having perforations definitely spaced apart, thereby forming tappet-seats, suitable tappets for the tappet-seats, tappet-seat closures slidably mounted on said ways and adapted to obstruct the perforations to prevent the insertion of a tappet in a seat.

15. A ballot member comprising a base-plate having suitable parallel ways, tappet-seats formed adjacent said ways, tappet-seat closures slidable along said ways and suitable tappets for the tappet seats, a tappet-seat closure preventing the seating of a tappet when in a definite position relatively to the tappet-seat, and plates attached to the edges of the base-plate at right angles to the ways to keep the closures on the ways.

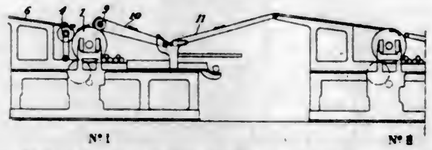
16. A ballot member comprising a perforated plate and means for obstructing the perforations in said plate.

17. A ballot member comprising a plate furnished with seats and means for closing said seats.

18. A ballot member comprising a plate furnished with seats, movable closure for said seats, and a guide for directing the movement of said closure.

19. A ballot member comprising a plate furnished with seats, a movable closure for said seats, a guide for directing the movement of said closure, and a member adapted to be seated in said seats when uncovered to actuate registering mechanism.

819,307. PRINTING-MACHINE. THOMAS M. NORTH, London, England, assignor to Linotype and Machinery Limited, London, England. Filed Aug. 7, 1905. Serial No. 273,187.



Claim.—In a connected series of sheet-fed printing-machines, the combination of a machine adapted to print a single impression only on one side of a sheet, means capable of adapting the said machine to print alternatively on the other side of the sheet, another machine adapted to print only on one side of the sheet and means adapted to automatically conduct the sheet from the first to the second named of such machines.

819,308. HORSE-DETACHER. JUAN ORTEIG, Phœnix, Ariz. Filed May 18, 1905. Serial No. 260,999.



Claim.—1. In a horse-detacher, the combination with a whiffletree, of independent trace-engaging devices mounted on the whiffletree, and independent locking means also mounted on the whiffletree and arranged to engage the said devices at different points for positively holding either or both of them in or out of engagement.

2. In a horse-detacher, the combination of a whiffletree, a reciprocating trace-engaging device provided with opposite shoulders, a spring arranged to engage either of the said shoulders, whereby the trace-engaging device is locked against movement in either direction, and means for operating the trace-engaging device.

3. In a hore-detacher, the combination of a whiffletree, reciprocating trace-engaging rods or bolts provided with bends forming inner and outer shoulders, springs secured at one end and provided at the other end with engaging portions extending across the rods or bolts and arranged to engage either the inner or outer shoulders, and means for moving the rods or bolts inward simultaneously, and outward independently of each other.

4. In a horse-detacher, the combination of a whiffletree, reciprocating trace-engaging rods or bolts mounted within the whiffletree, a flexible loop extending from the whiffletree and connected with the rods or bolts, and an operating-hook for engaging the loop.

5. In a horse-detacher, the combination of a whiffletree, a reciprocating rod or bolt provided with a spirally-coiled portion, and a flexible connection arranged within and clamped by the spirally-coiled portion.

6. In a horse-detacher, the combination of a whiffletree having a wooden body portion and provided with a base-plate, end casings receiving the body portion, said end casings having side and end walls and provided with solid portions supporting the ends of the said wooden body portion and interlocked therewith, trace-engaging rods or bolts guided in the solid portions of the casings, and means for operating the same.

819,309. MULTICOLOR-PRINTING PRESS. CLAUDE L. POST, Chicago, Ill. Filed Apr. 23, 1905. Serial No. 256,865.



Claim.—1. In a printing-press, the combination with the bed thereof of oppositely-presented inking-disks thereon, inking-rolls for different colors movable over the bed and over type-form thereon and between the disks, a plurality of tracks at each side of the bed and a single track beside the inking-disks, adjustable abutments removably attached to the tracks along the sides of the bed, rollers carried on the different inking-rolls and traveling upon the tracks and abutments and arranged to cause the inking-rolls to contact with determined disks and with corresponding types on the bed, a plurality of ink-fountains respectively provided with ink-feed rollers, and means to cause part of the rolls to contact with the feed-roll of one fountain and part to contact with the feed-roll of another fountain.

2. In a printing-press, the combination with the bed thereof, of oppositely-presented inking-disks, inking-rolls for different colors movable over the bed and over a type-form thereon, and between the disks, a plurality of inking-fountains, each provided with an ink-feeding roll, means to cause part of the inking-rolls to contact with one disk, and part with the other, means to cause part of the inking-rolls to contact with some of the type on the bed of the press and a part to contact with others of such type, and means to cause one of the inking-rolls to contact with the ink-feeding roll of one fountain and another of the inking-rolls to contact with the ink-feeding roll of another fountain.

3. In a printing-press, the combination with the bed thereof and with an inking-disk, of a plurality of inking-disks oppositely presented to the first-named inking-disk, inking-rolls for different colors movable over the bed, over a type-form on such bed, and between the first-named disk and the oppositely-placed disks, a plurality of tracks at each side of the bed and a single track beside the inking-disks, adjustable abutments attached to the tracks along the sides of the bed, and rollers carried on the different inking-rolls and traveling upon the tracks and abutments, to cause the inking-rolls to contact with determined disks and with corresponding types on the bed.

4. The combination with the bed of a printing-press, of inking-rolls, oppositely-presented inking-disks, a plurality of tracks on each side of the bed, each of such tracks provided with recesses therein, abutments respectively provided with spring-arms arranged to fit in the recesses in the tracks and means to cause part of the rolls to contact with one disk and part with the other.

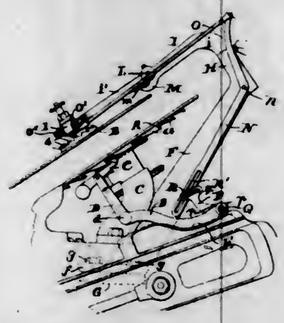
5. In a printing-press the combination with sectional inking-rolls and with means to distribute ink of different colors on different sections of the rolls, of a plurality of tracks on each side of the bed of the press, such tracks provided with holes therein, and abutments respectively provided with spring-arms arranged to fit the respective holes.

6. In a printing-press provided with a rotatable inking-disk, a lever and a pawl engageable with notches on the back of the disk, the combination of an oppositely-presented rotatably-mounted inking-disk provided with notches on the back thereof and means to

turn the same, such means comprising a rocking shaft mounted in the frame on which the oppositely-presented disk is mounted, arms attached to the rocking shaft, a connection between one of such arms and the lever and a pawl on one of such arms, such pawl engageable with the notches on such oppositely-presented disk.

7. In a printing-press provided with a rotatable inking-disk provided with notches on the back thereof and means comprising a lever and a pawl engageable with the notches, to rotate the disk, the combination of an oppositely-presented rotatably-mounted inking-disk also provided with notches on the back thereof, with means to rotate the oppositely-presented disk, the means for mounting such disk comprising a frame, bolts to attach the frame to the frame of the printing-press, and an additional frame hinged to the first-named frame, and the means for rotating such oppositely-presented disk comprising a rocking shaft mounted in the frame, arms on the rocking shaft, a link connecting one of such arms with the lever, and a pawl engageable with the notches on the back of the disk mounted on one of such arms.

819,310. PRINTING-PRESS. CLAUDE L. POST, Chicago, Ill. Filed Oct. 25, 1905. Serial No. 284,379.



Claim.—1. The combination of a base and a two-part frame pivotally attached thereto, such base provided with a foot at one end and a head comprising a cylindrical wall at the other end and such cylindrical wall provided with a slot therein, and means to lessen the width of the slot and force such wall to close contact with the pivot thereon; substantially as described.

2. The combination of a base and a two-part frame pivotally attached thereto, such base provided with a foot at one end and a head comprising cylindrical wall at the other end and such cylindrical wall provided with a slot therein, and means to lessen the width of the slot and force such wall to close contact with the pivot therein, means to adjust the forward part of the two-part frame relative to the rear part thereof; substantially as described.

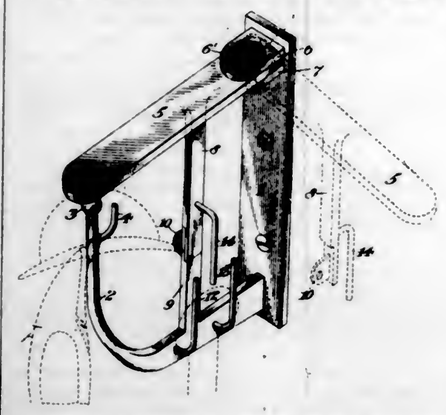
3. The combination of a base and a two-part frame pivotally attached thereto, such base provided with a foot at one end and a head comprising cylindrical wall at the other end and such cylindrical wall provided with a slot therein, and means to lessen the width of the slot and force such wall to close contact with the pivot therein, the parts of the two-part frame pivotally connected together, with a finger on the rear part thereof extending forward of the connecting-pivot and a table on the forward part resting on such finger; substantially as described.

4. The combination of a base and a two-part frame pivotally attached thereto, such base provided with a foot at one end and a head comprising cylindrical wall at the other end and such cylindrical wall provided with a slot therein, and means to lessen the width of the slot and force such wall to close contact with the pivot therein, and a bell-crank pivotally mounted on the base, a bell-crank to actuate the lower disk a connection between such bell-crank and the bell-crank actuating the lower disk of the press and a latch engagable with the ratchet-teeth on the upper disk connected to the upper end of the first-named bell-crank; substantially as described.

5. The combination of a base and a two-part frame pivotally attached thereto, such base provided with a foot at one end and a head comprising cylindrical wall at the other end and such cylindrical wall provided with a slot therein, and means to lessen the width of the slot and force such wall to close contact with the pivot therein, means to adjust the forward part of the two-part frame relative to the rear part thereof a bell-crank to actuate the lower disk, a bell-crank pivotally mounted on the base, a connection between such bell-crank and the bell-crank actuating the lower disk of the press, and a latch engageable with th ratchet-teeth on the upper disk connected to the upper end of the first-named bell-crank.

6. The combination of a base and a two-part frame pivotally attached thereto, such base provided with a foot at one end and a head comprising a cylindrical wall at the other end and such cylindrical wall provided with a slot therein, and means to lessen the width of the slot and force such wall to close contact with the pivot therein, a bell-crank to actuate the lower disk, a bell-crank pivotally mounted on the base, a slot in the lower end of the bell-crank and a latch to turn the upper inking-disk connected to the upper end thereof, a slotted piece attached to the bell-crank actuating the lower inking-disk, and a bolt extending through the slot in the first-named bell-crank and rigidly secured in the slot in the piece attached to the bell-crank turning the lower inking-disk; substantially as described.

819,311. COAT, HAT, AND UMBRELLA RACK. WILLIAM R. PURVIS, Bayonne, N. J. Filed Mar. 31, 1905. Serial No. 252,996.



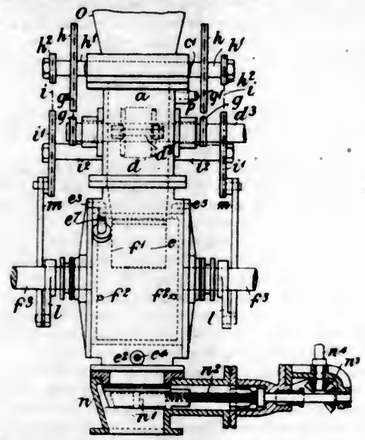
Claim.—1. A device of the character set forth, comprising a plate having a rigid forwardly and upwardly extending arm, a laterally-movable pivoted arm adapted to be moved over the end of the rigid arm, a bar extending downwardly from the pivoted arm, a bar extending upwardly from the rigid arm and means for locking said bars together and thereby locking the pivoted arm, substantially as described.

2. A device of the character set forth comprising a plate having a rigid forwardly and upwardly extending arm, a laterally-movable pivoted arm adapted to be moved over the end of the rigid arm, a bar extending upwardly from the rigid arm and having a slot in its end, a bar extending downwardly from the pivoted arm and having an eye adapted to engage the slot in the other bar, and means for engaging said eye to lock said bars together and thereby lock the pivoted arm, substantially as described.

3. A device of the character set forth comprising a plate having a rigid forwardly and upwardly extending arm, hooks on the forwardly-extending portion of said arm, a hook on the upwardly-extending portion of said arm, a laterally-movable pivoted arm adapted to be moved over the end of the rigid arm, a bar extending upwardly from the rigid arm, a bar extending downwardly from the pivoted arm and having a hook extending downwardly between the hooks on the forwardly-extending portion of the rigid arm and means for locking said bars together to lock said pivoted arm, substantially as described.

4. A device of the character set forth comprising a plate having a rigid forwardly and upwardly extending arm, hooks on the forwardly-extending portion of said arm, a hook on the upwardly-extending portion of said arm, a laterally-movable pivoted arm adapted to be moved over the end of the rigid arm, a bar extending upwardly from the rigid arm and having a slot in its end, a bar extending downwardly from the pivoted arm and having a hook extending downwardly between the hooks on the forwardly-extending portion of the rigid arm and an eye adapted to engage the slot in the other bar, and means for engaging said eye to lock said bars together and thereby lock the pivoted arm, substantially as described.

819,312. APPARATUS FOR REMOVING ASHES AND CLINKERS FROM STEAMSHIPS. GAVIN C. RALSTON, Twickenham, England. Filed Nov. 13, 1905. Serial No. 287,186.

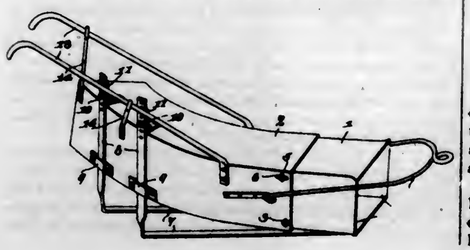


Claim.—1. In combination with a device for crushing clinkers and the like delivered into same along with the ashes from a marine boiler, a casing fixed under the crushing device and provided with upper opening, for receiving the ashes and clinkers crushed, a lower opening for discharge of the said material into the sea, a port for admitting compressed air at the top, a smaller port for admitting compressed air at the bottom, and a port for admitting water for the purpose set forth, a hollow drum adapted to be reciprocated in the casing, and pierced in its circumference for alternately receiving and discharging the material admitted from the upper opening in the casing and with ports registering with the ports in the casing, and means for reciprocating the drum, substantially as set forth.

2. In combination with a casing provided with an upper opening for receiving ashes and crushed clinkers and the like from a crushing device, a lower opening for discharge of the said material into the sea, a port for admitting compressed air at the top, a smaller port for admitting compressed air at the bottom, and a port for admitting water, of a hollow drum adapted to be reciprocated in the casing and pierced in its circumference for alternately receiving and discharging the material admitted from the upper opening in the casing and with ports registering with the ports in the casing, and means for reciprocating the drum with a slow motion while it is being filled and with a quick motion while it is being discharged, substantially as set forth.

3. In combination with a casing provided with an upper opening for receiving ashes and crushed clinkers and the like from a crushing device, a lower opening for discharge of the said material into the sea, a port for admitting compressed air at the top, a smaller port for admitting compressed air at the bottom and a port for admitting water, of a hollow drum adapted to be reciprocated in the casing and pierced in two portions of its circumference for alternately receiving and discharging the material admitted from the upper opening in the casing and with ports registering with ports in the casing, and means for reciprocating the drum, substantially as set forth.

819,313. DITCHING-MACHINE. ROBERT B. REED and WILLIAM PICKFORD, Canon City, Colo. Filed Jan. 8, 1906. Serial No. 295,148.



Claim.—1. In a ditching-machine, a duct including a plurality of tubular members hingedly and adjustably connected with each other.

2. In a ditching-machine, a duct including a plurality of tubular members hingedly and adjustably connected with each other; one of said members having a flaring mouth.

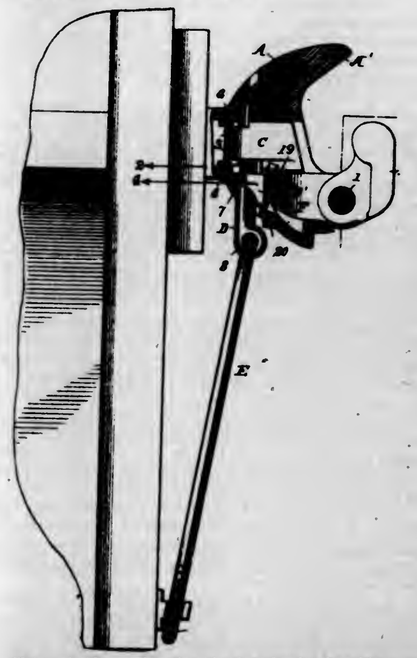
3. In a ditching-machine, a duct composed of a plurality of tubular members hingedly and adjustably connected with each other; one of said members having a flaring mouth and another of said members being laterally curved.

4. In a ditching-machine, a duct including a plurality of tubular members, runners supporting one of said members and having upturned terminal brackets, means for pivotally connecting the tubular members of the duct, and means for connecting one of the duct members adjustably with the upturned bracket members of the runners.

5. A ditching-machine having a duct composed of a plurality of tubular members hingedly and adjustably connected, runners supporting one of said members and having upturned terminal brackets, means for connecting one of the duct members adjustably with said terminal brackets, and handles and draft means connected with the tubular duct member thus supported.

6. A ditching-machine having a duct composed of a plurality of tubular members hingedly and adjustably connected, one of said members having a flaring mouth and another of said members being curved laterally; runner members connected with and supporting the tubular member having the flaring mouth, said runner members being provided with upturned brackets at their rear ends; means for connecting said brackets adjustably with the laterally-curved tubular member; and a draft-yoke and handles connected with said laterally-curved tubular member.

819,314. CAR-COUPLING. ALFRED H. RENSHAW, Darien, Conn. Filed Sept. 8, 1904. Serial No. 223,170.



Claim.—1. The combination of a draw-head, a knuckle, a pivoted lock-block, an operating-rod engaging the lock-block eccentric to its pivot and adapted to lift and hold the lock-block elevated, and a hand-rod whereby to both lift and release the lock-block from the side of the car, substantially as set forth.

2. The combination of a draw-head, a knuckle, a pivoted lock-block, and an operating-rod extending through the lock-block eccentric to the pivot of the latter, and adapted to swing the lock-block on its pivot when the rod is turned, substantially as set forth.

3. The combination of a draw-head, a pivoted knuckle, a pivoted lock-block, and an operating-rod extending transversely through the lock-block eccentric to the pivot of the latter, and adapted to lift the lock-block and hold it in its elevated position when the rod is turned, substantially as set forth.

4. The combination of a draw-head, a pivoted knuckle, a pivoted lock-block having a transverse opening eccentric to its pivot and a projection extending into said opening, and an operating-rod extending through said opening and provided with a projection adapted to engage the projection on the block and lift the block when the rod is turned, substantially as set forth.

5. The combination of a draw-head, a pivoted knuckle, a pivoted lock-block having a transverse opening, and a projection extending into the opening and provided with an inner bearing-face, and an operating-rod having a projection adapted to first engage the side of the projection on the block to lift the latter and to then engage said inner face of the projection to hold the block elevated, substantially as set forth.

6. The combination of a draw-head, a pivoted knuckle, a pivoted lock-block, an operating-rod extending through the lock-block eccentric to the pivot of the latter, means on said rod for lifting the lock-block and holding it in elevated position, and means on the knuckle for releasing the lock-block, substantially as set forth.

7. The combination of a draw-head, a pivoted knuckle having a locking-arm, a pivoted lock-block, an operating-rod extending through the lock-block eccentric to the pivot of the latter, means on said rod for lifting the lock-block and holding it in elevated position, and a boss on the locking-arm of the knuckle for releasing the lock-block, substantially as set forth.

8. The combination of a draw-head, a pivoted knuckle, a pivoted lock-block having a transverse opening eccentric to its pivot, an operating-rod extending through said opening and having a rib adapted to lift the block and hold it elevated, and a boss on the locking-arm of the knuckle adapted to release the lock-block, substantially as set forth.

9. The combination of a draw-head, a knuckle, a pivoted lock-block, an operating-rod eccentric to the pivot of the lock-block adapted to lift the latter and hold it elevated, means on the knuckle for raising the lock-block out of engagement with the rod, and means for automatically returning the rod to its normal position, substantially as set forth.

10. The combination of a draw-head, a knuckle, a pivoted lock-block, an operating-rod eccentric to the pivot of the lock-block adapted to lift the latter and hold it elevated, means on the knuckle for raising the lock-block out of engagement with the rod, and a hand-rod having a handle adapted to automatically return the operating-rod to its normal position, substantially as set forth.

11. The combination of a draw-head, a knuckle, a lock-block, an operating-rod having a rib adapted to lift the lock-block and hold it elevated, a boss on the locking-arm of the knuckle, a hand-rod connected to the operating-rod and having a handle extending from one side only and normally occupying a vertical position, substantially as set forth.

12. The combination of a draw-head, a pivoted knuckle, a pivoted lock-block, an operating-rod adapted to lift the lock-block, a knuckle-opening finger loose on said rod, and connections between the rod and finger whereby the finger is operated to open the knuckle after the lock-block is lifted, substantially as set forth.

13. The combination of a draw-head, a pivoted knuckle, a pivoted lock-block having a transverse opening, an operating-rod extending through the lock-block and having a rib, and a knuckle-opening finger loosely mounted on the rod and adapted to be engaged and operated by said rib, substantially as set forth.

14. The combination of a draw-head, a pivoted knuckle, a pivoted lock-block, an operating-rod for the block, a rotatable knuckle-opening finger carried by the rod, and means on the rod and finger whereby the finger is rotated only after the rod has lifted the lock-block, substantially as set forth.

15. The combination of a draw-head, a knuckle, a lock-block, a rotating and sliding operating-rod therefor having an eye, a hand-rod secured to the eye, and a vertical locking-shoulder on the draw-head adapted to be engaged by said eye, substantially as set forth.

16. An operating-rod for a lock-block, consisting of a body substantially circular in cross-section and reduced in diameter for a portion of its length and having a recess in its reduced portion adapted to receive a rib on the lock-block, and a projection or rib at one side of said recess, substantially as set forth.

17. An operating-rod for a lock-block, consisting of a body substantially circular in cross-section and reduced in diameter for a portion of its length and having a recess in its reduced portion adapted to receive a rib on the lock-block, a projection or rib at one side of said recess, and an eye at one end of the rod, substantially as set forth.

18. An operating-rod for a lock-block, consisting of a body substantially circular in cross-section and reduced in diameter for a portion of its length forming an annular shoulder and having a recess in said reduced portion adapted to receive a projection or rib on the lock-block, and a projection or rib at one side of said recess, said rib increasing in depth at the end adjacent to said shoulder, substantially as set forth.

19. A lock-block adapted to be pivoted at its inner end and having an opening transversely therethrough eccentric to the pivot-point, substantially as set forth.

20. A lock-block adapted to be pivoted at its inner end and having an opening transversely therethrough in advance of the pivot-point, and a projection or rib extending inward from the upper portion of said opening, substantially as set forth.

21. A lock-block provided with trunnions at its inner end and having an opening transversely through its body for the reception of an operating-rod, substantially as set forth.

22. A lock-block provided with trunnions at its inner end and having an opening transversely through its body for the reception of an operating-rod, and a projection or rib extending inward from the upper portion of said opening, substantially as set forth.

23. A pivotal lock-block having an opening transversely through its body and a projection or rib extending inward from the upper side of the opening and having a concave face, substantially as set forth.

24. A knuckle-opening finger consisting of a hub and a substantially radial finger portion, the hub having a central opening, and a slot in the wall of said opening, substantially as set forth.

25. A knuckle-opening finger consisting of a hub and a substantially radial finger portion, the hub having a recess in one of its side faces and a central opening with a slot in its wall, substantially as set forth.

819,315. DRAW-HEAD KNUCKLE. ALFRED H. RENSHAW, Troy, N. Y. Filed May 12, 1905. Serial No. 260,116.



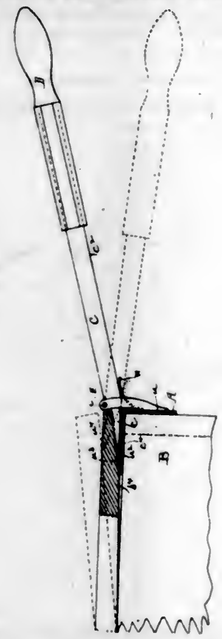
Claim.—A knuckle for car-couplers having a head 1 and tail 2 at right angles to each other, a pivot-point at the junction of the two with an outer face *x* at right angles to the inner face *v* of the tail and extending outward to the pivot-point, and an inner face *y* parallel to the face *x*, and extending inward beyond the face substantially as set forth.

819,316. BOX-OPENER. ISAAC N. ROGERS, New York, N. Y. Filed Sept. 27, 1904. Serial No. 226,163.

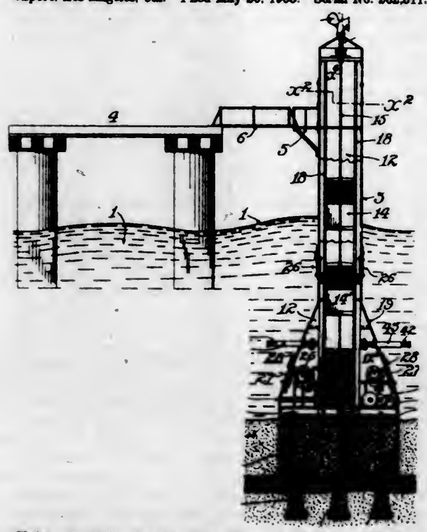
Claim.—1. The combination and arrangements of the following parts, in an implement for opening boxes, the right-angle rest with depression and slot, the lever, with short member with slot, and resting in the depression of the right-angle rest for the purpose specified, and long member carried upward from the fulcrum on an angle, as shown and for the purpose set forth, and the curved fulcrum-bracket cast to the right-angle rest and extending upward on a curve line to a point above the lifting-point of the short member of the lever, for the purpose set forth.

2. In an implement for opening boxes, the combination of the following parts: the lever, with slotted short member, and long upwardly-inclined member for the purpose set forth, fulcrumed on the forked bracket cast to the rest, in such a manner as to place the fulcrum above the lifting or short member of the lever, the right-angle rest with slotted member having a depression for the purpose set forth, and the weighted handle placed on the upwardly-inclined long arm of lever for the purpose set forth.

3. In an implement for opening boxes, the lever with the long arm having weighted handle, and a short or lifting arm with the center slot, and a cutting blade or die on the under side, the fulcrum-rest with the vertical member and outwardly and inwardly curved bracket to which the lever is fulcrumed and a horizontal member, with the center slot, and die-slot to receive the blade or die of the short lever-arm for the purpose of cutting the bands of boxes.



819,317. SUBMARINE OBSERVATION-TOWER. JOSEPH E. SHREWSBURY, Longbeach, Cal., assignor of one-half to Henry MacDavenport, Los Angeles, Cal. Filed May 26, 1905. Serial No. 262,311.



Claim.—1. A fixed submarine observation-tower attached to a submarine bed and extending from said bed to and above the level of the water and having observation-openings provided with transparent closures.

2. A fixed submarine observation-tower attached to a submarine bed and extending above and below the water-level and provided below the water with observation-openings having transparent closures and with illuminating means consisting of electric lamps and supply connections extending through the tower to said lamps.

3. A fixed submarine observation-tower attached to a submarine bed and extending above and below the water-level and provided below the water with observation-openings having transparent closures and with illuminating means exteriorly of the tower below the water-level, and projecting supports for said illuminating means extending outwardly from the tower.

4. A submarine observation-tower extending below and above the water-level and provided below the water-level with observation-openings, having transparent closures with illuminating means exteriorly of the tower and retractile supports for said illuminating means.

5. A submarine observation-tower extending below and above the water-level and provided below the surface of the water with observation-openings and with illuminating means exteriorly of the tower and a movable closure for the illuminating means.

6. A fixed submarine observation-tower attached to a submarine bed extending above and below the water-level and being provided with observation-openings below the water-level and with illuminating means above and below the water exteriorly of the tower and a removable support for the illuminating means.

7. A submarine observation-tower extending below and above the water-level and provided with observation-openings below the water-level, and elevator means working within the tower and provided with means of access thereto at the top and bottom of the tower.

8. A fixed submarine observation-tower formed as a water-tight vessel and provided at its bottom with foundation-attaching means in combination with a submarine foundation on which the tower is fastened by said attaching means.

9. A submarine observation-tower formed as a water-tight vessel and provided at its bottom with a depending caisson-flange and with means for attachment to a foundation.

10. A submarine observation-tower extending below and above the water-level and having a partition extending vertically therein.

11. A submarine observation tower extending below and above the water-level and having a vertical partition with openings at its lower portion and removable closures for said openings.

12. A fixed submarine observation-tower attached to a submarine bed extending below and above the water-level and provided with observation-openings, a ventilating-duct in the tower extending from above to below the water-level and means for supplying air through said duct.

13. A submarine observation-tower extending below and above the water-level and provided below the water with observation-openings and glass closures for said openings and shutters for said openings.

14. A submarine observation-tower extending below and above the water-level and provided below the water-level with observation-openings, and glass closures for said openings, shutters for said openings and means for automatically closing the said shutters on breakage of the glass closures.

15. A submarine observation-tower extending below and above the water-level and provided below the water-level with observation-openings and glass closures for said openings, shutters for said openings and means for automatically closing the said shutters on breakage of the glass closure, said means comprising a trip device located in a path of inflowing water, from said opening and controlling the movement of said shutters.

16. A submarine observation-tower provided with a laterally-extending tunnel having observation-openings with transparent closures.

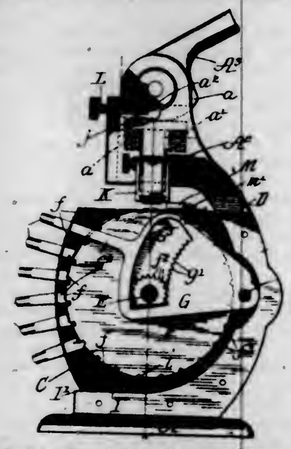
17. A submarine observation-tower provided with a laterally-extending tunnel and another tower extending upwardly from said tunnel and having observation-openings with transparent closures.

819,318. CHECK-MARKER. LOUIS SMITH, Chicago, Ill., assignor of one-half to Charles A. Ambruster, Chicago, Ill. Filed Aug. 13, 1904. Serial No. 220,529.

Claim.—1. The combination with a rotative disk provided on its periphery with a series of types, of a shaft on which it is rotatively mounted, a gear-pinion fixed concentrically on the flat face of the disk, a lever pivoted at its rear end to a part stationary with the shaft and provided between its ends with a curved slot within which the said gear-pinion extends, one margin of the curved slot having a curved rack concentric with the pivot of the lever which meshes with said gear-pinion.

2. A check-marking device embracing a fixed frame provided with a chamber, a shaft extending therethrough, a plurality of character-disks mounted side by side and independently rotative on said

shaft, each disk being provided on its periphery with a series of types, said frame being provided in its top wall with an opening through which the types of the disks project to constitute the printing-line and in its front wall with a plurality of slots, a reciprocating platen for pressing the work against the types, pinions affixed concentrically to and rotative with said disks, levers interposed between the type-disks and hinged to the frame and provided with curved gears meshing with said pinions of the disks, and with handles extending forwardly through said slots in the front wall of the chamber.



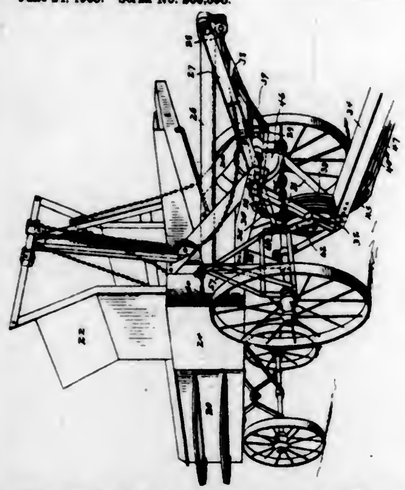
3. A check-marking device embracing a frame provided with a chamber, a shaft extending therethrough, a plurality of character-disks mounted side by side and independently rotative on said shaft, each provided on its periphery with a series of types, said frame being provided in its wall with an opening through which the types of the disks project to constitute the printing-line, and in its front wall with a plurality of slots, pinions affixed concentrically to and rotative with said disks, levers located between said disks and hinged at their rear ends to the frame of the machine, said levers being provided with handles which extend through said slots in the front wall of the frame, and between their ends with curved slots, the side margins of which are formed to constitute gears which mesh with the pinions of the associated type-disks.

4. A check-marking device embracing a frame provided with a chamber, a shaft extending thereacross, a plurality of type-disks rotatively mounted and independently rotative on said shaft, each provided on its periphery with a series of character-types, and on their sides with concentric pinions, said frame being provided in its wall with an opening through which the types of the disks project to constitute the printing-line, and in its front wall with a plurality of slots, levers located between said disks and hinged at their rear ends to the frame and provided with handles which extend forwardly through said slots in the front wall and provided between their ends with curved slots having their side margins formed to constitute curved racks which mesh with the gear-pinions of the type-disks.

5. A check-marking device embracing a frame provided with a chamber, a shaft extending thereacross, a plurality of type-disks rotatively mounted and independently rotative on said shaft, each provided on its periphery with a series of character-types, said frame being provided in its wall with an opening through which the types of the disks project to constitute the printing-line, and in its front wall with a plurality of slots, levers located between said disks and hinged at their rear ends to the frame and provided at their front ends with handles which extend forwardly through said slots in the front wall, and provided between their ends with curved slots on one margin of which are formed curved racks which mesh with the gear-pinions of the type-disks, said disks being provided on the parts of their margins not occupied by the type-spaces with V-shaped notches and a plurality of springs one for each disk provided with projections adapted to engage said notches.

6. A check-marking device comprising a frame provided with a chamber, a shaft extending thereacross, a plurality of type-disks rotatively mounted and independently rotative on the shaft, said disks being provided with concentric gear-wheels which turn therewith and interposed between the disks, levers interposed between the disks and pivoted at their rear ends to the frame, said levers being provided with curved slots into which said pinions extend, and provided with curved gear-teeth which mesh with the pinions, said levers being provided with forwardly-extending handles which extend through slots in the front wall of the casing, the front wall of the casing being provided with scales.

819,319. BALING-PRESS. JULIUS A. SPENCER, Dwight, Ill. Filed June 24, 1905. Serial No. 266,595.



Claim.—1. In a baling-press, the combination with a compression-chamber, a plunger, and a plunger-operating mechanism, of a feeding-in chamber having an extensible side, and means independent of said plunger for actuating said extensible side from the plunger-operating mechanism, substantially as described.

2. In a baling-press, the combination with a compression-chamber, a plunger, and a plunger-operating mechanism, of a feeding-in chamber having an extensible side, a toggle connected to said extensible side, a pitman connected to said toggle, an arm connected to and oscillated by said plunger-operating mechanism, power-transmitting connections between said arm and said pitman, and means for automatically establishing and breaking said connections near the outer limit of travel of said pitman, substantially as described.

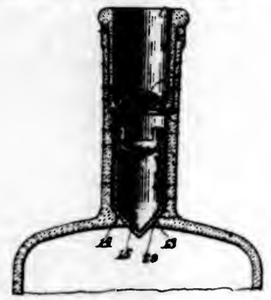
3. In a baling-press, the combination with a compression-chamber, a plunger, and a plunger-operating mechanism, of a feeding-in chamber having an extensible side, a toggle connected to said extensible side, a pitman connected to said toggle, a rocking frame connected to said pitman, an arm connected to and oscillated by said plunger-operating mechanism, and a hook-and-latch mechanism carried by said rocking frame, whereby its connection with said oscillating arm is automatically established and broken near the outer limit of travel of said pitman, substantially as described.

4. In a baling-press, the combination with a compression-chamber, a plunger, a plunger-operating toggle, a fulcrum-shaft, and a power-transmitting cable connected to the knuckle of said toggle, of a feeding-in chamber having an extensible side, means for actuating the latter from said plunger-operating toggle, and an arm projecting forwardly of said fulcrum-shaft and engaged by said power-transmitting cable to effect the initial part of the opening movement of the toggle and, synchronously therewith, the actuation of said extensible side of the feeding-in chamber, substantially as described.

5. In a baling-press, the combination with a compression-chamber, a plunger, a plunger-operating toggle, a fulcrum-shaft for said toggle, and a power-transmitting cable connected to the knuckle of said toggle, of a feeding-in chamber having an extensible side, a toggle connected to said extensible side, a pitman connected to said toggle, an arm rigid with and oscillated by the short arm of said plunger-operating toggle, power-transmitting connections between said arm and pitman, and another arm projecting forwardly of said fulcrum-shaft and engaged by said power-transmitting cable to effect the initial part of the opening movement of the toggle and, synchronously therewith, the actuation of said extensible side of the feeding-in chamber, substantially as described.

6. In a baling-press, the combination with a feeding-in chamber having an extensible side, of a fulcrum-shaft and a leverage-arm thereon, a power-transmitting cable engaging said leverage-arm, and actuating connections between the latter and said extensible side, substantially as described.

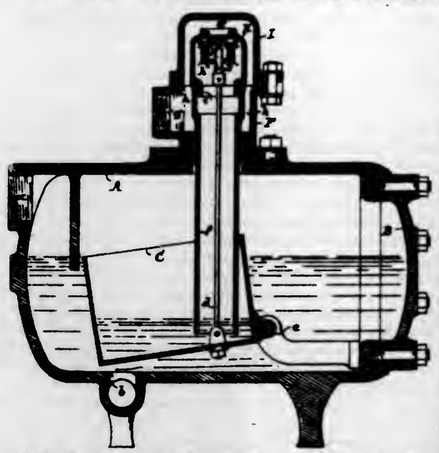
819,320. NON-REFILLABLE BOTTLE. JOHN SPINELLI, Chelsea, Mass. Filed Nov. 13, 1905. Serial No. 287,029.



Claim.—1. The combination with a bottle provided with a contracted mouth, of a cylindrical valve provided with a pointed end adapted to close said contracted mouth and having a plurality of longitudinal peripheral ribs extending beyond the opposite end, a yielding abutment for said ribs to limit the movement of said valve toward the mouth of the bottle, and a perforated closure permanently secured in said mouth and holding said abutment in position.

2. The combination with a bottle provided with a contracted mouth, of a cylindrical valve provided with a pointed end adapted to close said contracted mouth and having a plurality of longitudinal peripheral ribs, a yielding abutment for said ribs to limit the movement of said valve toward the mouth of the bottle, and a perforated closure permanently secured in said mouth and holding said abutment in position.

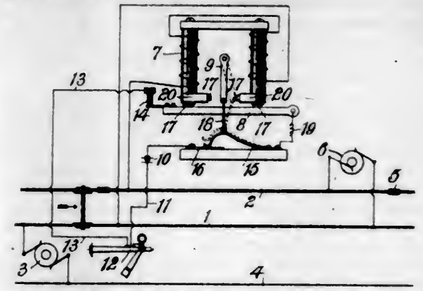
819,321. STEAM-TRAP. CHARLES E. SQUIRES and BENJAMIN F. SILLIMAN, Cleveland, Ohio. Filed Feb. 24, 1905. Serial No. 247,071.



Claim.—In a steam-trap the combination with the hinged bucket inside said trap and a removable bonnet located outside said trap and having a tube depending into said bucket, of a rod terminating in valve form, said rod being hinged to said bucket and extending upward through said tube, a valve-cage with top outlet secured on top of said bonnet, an apertured cone-valve seating against the top outlet, guided in said cage and furnishing a seat for said rod-valve as shown and for the purpose set forth.

819,322. ELECTRIC SIGNALING. JACOB B. STRAUBLE, Wilkinsburg, Pa., assignor to The Union Switch & Signal Company, Swissvale, Pa., a Corporation of Pennsylvania. Filed Nov. 16, 1901. Serial No. 82,823.

Claim.—1. In a signaling system, the combination of a closed track-circuit, an alternating-current supply for said track-circuit, a relay in circuit with the closed track-circuit, a polarized and a neutral armature controlled by the relay and a signal-circuit controlled by the armatures.



2. In an electric signaling system the combination of a series of rail-sections having adjacent ends insulated or electrically separated from each other to form track-circuits, an alternating-current supply for said track-circuits, and inductive resistances connecting the rails included in adjacent track-circuit whereby alternating currents are confined to the track-circuits and direct or motor currents are permitted to flow from rail-section to rail-section.

3. In an electric railway-signaling system, the combination of a series of rail-sections having adjacent ends insulated or electrically separated from each other to form track-circuits, an alternating-current supply for said track-circuits, inductive resistances connecting adjacent ends of rail-sections and forming a path from section to section for direct currents, and a source of direct current having one pole connected to the line of rails, substantially as set forth.

4. In a signaling system, the combination of a closed track-circuit, an alternating-current supply therefor, a signal, and means to control the operation of said signal, said means responding to the absence or presence of the alternating current in the track-circuit and not responding to continuous or direct currents traversing said track-circuit in its control of the signal.

5. In a signaling system, the combination with a closed track-circuit, of an alternating-current supply therefor, a signal, and means included in said circuit to govern the operation of said signal, having provision to cause said signal to be operated by its response to the presence or absence of the alternating current traversing said track-circuits and to prevent said signal being operated by continuous or direct currents traversing said track-circuit.

6. In a signaling system, the combination of a closed track-circuit, a source of alternating-current supply therefor, a signal, means to govern the operation of said signal which are responsive to the presence or absence of alternating current in the track-circuit, and means to prevent the operation of said signal by continuous or direct currents traversing said track-circuit.

7. In a signaling system, the combination of a closed track-circuit, an alternating-current supply therefor, a signal, and a translating device responding to the absence or presence of the alternating current in the track-circuit, which governs the operation of said signal and having provision to prevent said signal being operated by continuous or direct currents traversing said track-circuit.

8. In a signaling system, the combination of a normally closed track-circuit, a source of alternating-current supply therefor, a signal and circuit therefor, and means for controlling said signal-circuit, said means being operated through the alternating current in the track-circuit and having provision to prevent its controlling the signal-circuit by direct or continuous currents traversing the track-circuit.

9. In a signal system, the combination of a closed track-circuit, an alternating-current supply therefor, a signal, a circuit therefor, and a translating device in circuit with the track-circuit and responding to the absence or presence of alternating current in the track-circuit, said translating device affecting the signal-circuit to have the signal moved to "danger" when responding to the absence of alternating currents and also preventing the signal moving from "danger" to "safety" by direct current in the track-circuit.

10. In a signaling system, the combination with a closed track-circuit, of a source of alternating-current supply a signal, a circuit therefor, and means for controlling said circuit, said means responding to the presence or absence of the alternating current in the track-circuit in its control of the signal-circuit and unresponsive in its con-

trol of the signal-circuit to continuous or direct current in the track-circuit when alternating current is not in the track-circuit.

11. In a signaling system for use on railways employing an electric current as a motive power and the track as a return for the electric current, the combination of a circuit which includes portions of both rails, an alternating-current supply for such circuit, and a translating device responsive to the presence or absence in it of the alternating current in said track-circuit to control a signal and not responsive to the motive-power current or continuous or direct currents in said circuit in its control of a signal.

12. In a signaling system for use on railways employing a direct current as a motive power and the track as a return for the direct current, the combination of a circuit which includes portions of both rails, an alternating-current supply for such circuit, and a translating device responding to the presence or absence in it of alternating current in said circuit in its control of a signal and not responding to continuous or direct currents in said circuit in its control of a signal.

13. In a signaling system the combination of a track-circuit, a constant source of alternating-current supply therefor, a signal, and means to control the operation of said signal, said means responding to the absence or presence of the alternating current in the track-circuit and not responding to continuous or direct currents traversing said track-circuit in its control of the signal.

14. In a signaling system the combination of a closed track-circuit, an alternating-current supply therefor, a signal, and means to control the operation of said signal, said means responding to the absence or presence of the alternating current in the track-circuit and not responding to continuous or direct currents traversing said track-circuit when the signal is at "danger."

15. In a signaling system the combination of a closed track-circuit, a constant source of alternating-current supply therefor, a signal and means to control the operation of said signal, said means responding to the absence or presence of the alternating current in the track-circuit and not responding to continuous or direct currents traversing said track-circuit when the signal is at "danger."

16. In combination with a railway the rails of which are employed as a return for the propulsion-current of the car, a generator for the propulsion-current, and a signaling system, said system comprising a series of track-circuits, an alternating-current supply for each of said track-circuits, and means for restraining the alternating current to the track-circuits but permitting the propulsion-current to pass from the track-rails of a track-circuit to the track-rails of another track-circuit.

17. In combination with a railway one of the rails of which is electrically continuous and the other of which is divided into sections, reactance-coils connecting adjacent ends of the rail-sections, a direct-current generator having one pole connected with the rails, and a signaling system, said system comprising track-circuits, an alternating-current supply for each track-circuit and a translating mechanism operated from the alternating current of the track-circuit.

18. In combination, a source of electric energy, a distribution-circuit for said source of energy, motor-vehicles operated from said source of energy, a number of circuits electrically independent of each other for controlling signaling devices supplied with current differing in character from the current supplied from the other source of energy, signaling devices, and means carried by a vehicle for electrically isolating a signal when the vehicle moves into one of said independent circuits.

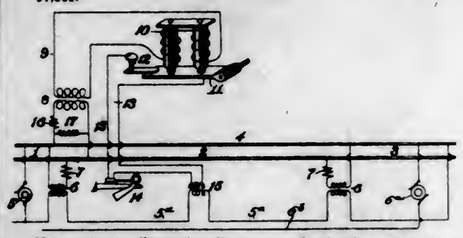
19. A signaling system for electric railways employing the track as a return for the car-propulsion current, having in combination a number of circuits electrically independent and each formed in part by the track, a source of current for each circuit, a translating device for each circuit responsive to control a signaling device to the current intended for its operation and not to the propulsion-current, and the signaling devices.

20. In an electric-railway system, a source of power-current, vehicles operated thereby, a power-circuit comprising two conductors extending from the power-current source to the cars, one of which is formed by the track, a signal-circuit of which the track forms both sides, a source of current for said signal devices connected to both rails of the track, and signal devices completing such circuit.

21. In an electric-railway system, a source of power-current of one character, vehicles operated thereby, a circuit for said power-current comprising two conductors with which the cars make moving contact, one of which is formed by the track, a signal-circuit of which the rails of the track forms both sides, a source of current for said signal-circuit furnishing current of a different character and connected to both rails, and signal devices completing such signal-circuit.

22. In an electric-railway system, a source of power-current, a power-circuit in which the track forms one side and conducts current in the same direction, signaling-circuits formed by the track in which the two rails conduct current in opposite directions consisting of a series of rail-sections having adjacent ends electrically separated from each other and inductive resistances connecting said adjacent ends and forming a path from section to section for the power-currents.

819,323. **RAILWAY SIGNALING.** JACOB B. STRUBLE, Wilkinsburg, Pa., assignor to The Union Switch & Signal Company, Swissvale, Pa., a Corporation of Pennsylvania. Filed Mar. 12, 1902. Serial No. 97,861.



Claim.—1. A railway signaling system, having in combination a source of alternating current, a track-circuit in circuit with the source of alternating current, a reactance-coil connected across the track-rails of the track-circuit, and a translating mechanism operative to control a railway-signal by an alternating current in the track-circuit.

2. In a signaling system for railways, in which one line of rails thereof is electrically continuous and the other line of rails is divided into sections insulated or electrically separated from each other, the combination of a source of alternating-signaling-current supply connected with the electrically-continuous track-rail and an insulated section of the other track-rail, and reactance-coils connecting the continuous line of rails with the insulated rail-sections.

3. In a signaling system for railways having one of its lines of rails electrically continuous and its other line of rails divided into insulated sections, the combination of a series of track-circuits each of which comprises an insulated section of rail and a portion of the continuous line of rails, a source of alternating-signaling-current supply for each track-circuit, a translating mechanism for each track-circuit and operable by the alternating signaling-current in its track-circuit and reactance-coils connecting the insulated rail-sections with the continuous line of rails.

4. A closed track-circuit for railway signaling purposes, comprising track-rails, a source of alternating-current supply and a translating mechanism operable by the alternating current and constructed to induce a current in another circuit and thereby control a railway-signal.

5. In a signaling system for railways the combination of a series of closed track-circuits, an alternating-current generator, a series of transformers, one being provided for each track-circuit, a translating mechanism for each track-circuit and constructed to induce a current in another circuit and thereby control a railway-signal, and a series of railway-signals, one being provided for each track-circuit.

6. In a signaling system for railways, the combination of a series of track-circuits, an alternating-current generator, a series of transformers, one being provided for each track-circuit, a translating mechanism for each track-circuit, operable by the alternating current of the track-circuit, and constructed to induce a current in another circuit and thereby control a railway-signal, a series of railway-signals, one being provided for each track-circuit, and a reactance-coil connected across the terminals of each translating device.

7. In a signaling system for railways having one of its lines of rails electrically continuous and its other line of rails divided into insulated sections, the combination of a series of track-circuits, an alternating-signaling-current generator, a series of transformers, one being provided for each track-circuit, a translating mechanism for each track-circuit operable by the alternating signaling-current of the track-circuit and constructed to induce a current in another circuit and thereby control a railway-signal, a series of railway-signals, one being provided for each track-circuit, and reactance-coils for connecting the insulated rail-sections with the continuous rail.

8. In a signaling system for railways having one of its lines of rails electrically continuous and its other line of rails divided into insulated sections, the combination of a series of track-circuits, an alternating-signaling-current generator, a series of transformers, one being provided for each track-circuit, a translating device for each track-circuit operable by the alternating signaling-current of the track-circuit, a series of railway-signals controlled by the translating mechanisms, and reactance-coils for connecting the insulated rail-sections with the continuous rail.

9. A track-circuit for railway signaling purposes comprising an alternating-current supply, a translating mechanism and a reactance-coil.

10. In a signaling system, the combination with a closed track-circuit including a source of alternating-current supply, a reactance-coil and a translating mechanism, of a signal, and a circuit for said signal which is controlled by said translating mechanism.

11. In combination with a track-circuit for signaling purposes, an alternating-current supply for said track-circuit, a translating mechanism in circuit with said track-circuit and responsive in its operation to the absence or presence of alternating current in the track-circuit to control a signal, and means for preventing direct current from effectively operating the translating mechanism in its control of the signal.

12. A closed track-circuit for railway signaling systems comprising a source of alternating-current supply, a translating mechanism which is responsive to the alternating-current supply for the track-circuit, and means for shunting a direct current in the track-circuit from the translating mechanism.

13. A closed track-circuit for railway signaling system comprising portions of track-rails, a source of alternating-current supply connected with the track-rails, a reactance-coil which is connected with both track-rails and a translating mechanism also connected with the track-rails.

14. A signaling system for railways in which one of the track-rails is electrically continuous and the other of which track-rail is divided into insulated sections; the combination of a series of closed track-circuits each of which comprises a portion of the electrically-continuous track-rail and an insulated section of the other track-rail, a source of alternating-signaling-current supply, a translating mechanism, and a reactance-coil which is connected across both track-rails and included in the track-circuit: and a series of railway-signals at least one of which is controlled from each translating mechanism.

15. A closed track-circuit for railway signaling system comprising a source of alternating current located at one end of the track-circuit, a translating mechanism located at the other end of the track-circuit and a reactance-coil.

16. A system of electrical distribution and signaling for railways, comprising two sources of electrical energy delivering currents differing in character, conductors of which both rails form a part and said rails divided into blocks through which the currents from said sources of energy are transmitted, a signaling device in each block, a source of energy therefor, and means interposed between the rails of each block and each signaling device and normally adapted to actuate mechanism to close a circuit through a source of energy connected to a signaling device and to be rendered inoperative when a car enters a block.

17. In a system of electrical distribution and signaling for railways, the combination of two sources of electrical energy delivering currents differing in character, two track-rails, one continuous and the other divided into sections to form blocks, and means interposed in said track-rails whereby the current from one of said sources of energy will flow through said rails as a return-path and the current from the other source of energy be limited in its effects to the individual blocks.

18. In a system of electrical distribution and signaling for railways, the combination of two sources of electrical energy delivering currents differing in character, two track-rails and means interposed in said track-rails whereby the current from one of said sources of energy will flow through said rails as a return-path and the current from the other source of energy be limited in its effects to the individual blocks.

19. In combination with a railway the rails of which are employed as a return for direct current employed for the motors of cars traveling along the railway, a signaling system, said system comprising a series of track-circuits, an alternating-signaling-current generator, means for supplying alternating signaling-current to said track-circuits from the alternating-signaling-current generator, and means for limiting the effect of the alternating signaling-current to the track-circuits, but permitting the direct current to pass from the track-rails of one track-circuit to the track-rails of another track-circuit.

20. In combination with a railway the rails of which are employed as a return for direct current employed for the motors of cars traveling along the railway, a direct-current generator, a feed-conductor extending along the line of railway, and a signaling system, said system comprising a series of track-circuits, an alternating-signaling-current generator, means for supplying alternating signaling-current to said track-circuits from the alternating-signaling-current generator, and means for limiting the effect of the alternating signaling-current to the track-circuits, but permitting the direct current to pass from the track-rails from one track-circuit to the track-rails of another track-circuit.

21. In combination with a railway the rails of which are employed as a return or ground for the propulsion-current for the car-motors, a signaling system, said system comprising track-circuits, a translating mechanism and a source of alternating signaling-current for each track-circuit and means for shunting the propulsion-current from the translating mechanisms.

22. In combination with a railway the rails of which are employed as a return or ground for the propulsion-current for the car-motors, a signaling system, said system comprising track-circuits, a translating mechanism and a source of alternating signaling-current for each track-circuit and means for limiting the effect of the alternating signaling-current to the track-circuits, but permitting the propulsion-current to flow from the rails of one track-circuit to the rails of another track-circuit.

23. In combination with a railway the rails of which are employed as a return for direct current employed for the motors of the cars traveling along the railway, a direct-current generator, a feed-conductor extending along the line of railway, and a signaling system, said system comprising a series of track-circuits, an alternating-signaling-current generator, means for supplying alternating signaling-current to said track-circuits from the alternating-current generator, and reactance-coils for limiting the effect of the alternating signaling-current to the track-circuits, but permitting direct current to flow from the rails of one track-circuit to the rails of another track-circuit.

24. In combination with a railway the rails of which are employed as a return for direct current employed for the motors of the cars traveling along the railway and one of said rails being electrically continuous and the other of said rails being divided into insulated sections, a feed-conductor extending along the line of railway, and a signaling system, said system comprising a series of track-circuits, an alternating-signaling-current generator, means for supplying alternating current to said track-circuits from the alternating-signaling-current generator, and reactance-coils connecting the insulated rail-sections with the continuous rail.

25. In a system of electrical distribution and signaling for railways, the combination of two sources of electrical energy delivering currents differing in character, outgoing feeder-conductors, two track-rails, one continuous and the other divided into sections to form blocks, and a reactance device connected across the rails of each block.

26. A signaling system comprising a source of direct current, a source of alternating signaling-current, a feeder for the direct current and a common return for both currents, motor-vehicles actuated by the direct current, signaling devices actuated by the alternating signaling-current, and means controlled by the movement of the motor-vehicle for controlling the movement of the signaling device.

27. A signaling system comprising a source of direct current, a source of alternating signaling-current, a feeder for the direct current, a common return for both currents, motor-vehicles actuated from the source of direct-current energy, signaling devices actuated from the source of alternating-signaling-current energy, and means carried by the moving vehicles and adapted to shunt the alternating signaling-current around the signaling devices.

28. A signaling system comprising two sources of electric energy delivering currents differing in character, a system of conductors involving a common return for both currents from said sources of energy, motor-vehicles actuated by the current from one of said sources of energy, signaling devices actuated by the current from the other source of energy, means in said system of conductors for maintaining electric separation of the two currents transmitted, and means carried by the moving vehicles for shunting the current used to operate the signals around any one of the signals.

29. A signaling system comprising two sources of current differing in character, a system of distributing-conductors over which both currents are transmitted and formed in part by both rails of a railway, a motor-vehicle on such rails, a series of signaling-circuits over which only one of such currents is transmitted, signaling devices in said signaling-circuits, means for maintaining the electric separation of the two currents and confining their individual action

to certain apparatus; one current to the operation of the motor-vehicle and the other to the operation of the signals; together with means carried by the vehicle for cutting a signaling device out of circuit.

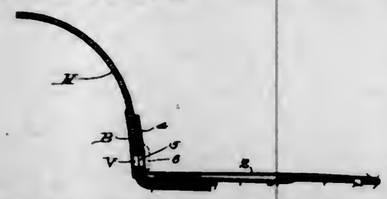
30. A signaling system comprising two sources of electric energy differing in character, a distributing-circuit for the currents from said sources of energy formed in part by both rails of the railway, motor-vehicles actuated by the current from one source of energy, signaling devices in said distributing-circuit, electrically independent of each other and adapted to be operated by the current from the other source of energy, means for effecting and maintaining the separation of the two currents generated and delivering said currents to the respective apparatus designed to be operated thereby, a moving vehicle carrying means for electrically isolating a signal when a vehicle moves into the portion of the distributing-circuit in which said signal is located.

31. In combination, two sources of electric energy, a distribution-circuit for each source of energy, motor-vehicles operated from one of said sources of energy, a number of circuits electrically independent of each other for controlling signaling devices and supplied with current from the other source of energy, and signaling devices.

32. In a signaling system for railways the trackway of which is divided to form block-sections, a signaling-circuit for each block, a source of alternating signaling-current for each of said signaling-circuits, a translating mechanism for each signaling-circuit, and reactance-coils connected across the rails of the block-sections.

33. In an electric railway system, a source of power-current of one character, vehicles operated thereby, a circuit for said power-current comprising two conductors with which the car makes moving contact, one of which is formed by the track, independent signal-circuits in each of which the rails of the track form both sides, a source of current for said signal-circuit furnishing current of a different character and connected to both rails, a signal device completing each signal-circuit, and reactance-coils connected across the track-rails of the signal-circuits.

819,324. HAT-BRIM. RICHARD A. THRATT, Ivanhoe, N. C. Filed Apr. 10, 1905. Serial No. 254,317.



Claim.—1. An article of the class described comprising a brim-supporting member having a relatively stiff brim-section and a flexible crown-engaging band provided with ventilating-openings.

2. An article of the class described comprising a brim-supporting member having a relatively stiff brim-section and a flexible crown-engaging band provided with ventilating-openings, extensible arms carried by the brim-section and provided with terminal clamping elements, and a brim having a reinforced brim to be engaged by the clamping elements.

3. The combination with a hat provided with ventilating-openings, of a brim-supporting member having a relatively stiff brim-section and a flexible crown-engaging band provided with ventilating-openings adapted to register with those in the hat and to be closed by the crown-engaging band, and a brim combined with the brim-supporting member.

819,325. WEIGHING-SCALE. JAMES M. TRIMBLE, Chicago, Ill. Filed Aug. 11, 1904. Serial No. 220,321.



Claim.—1. In a scale, the combination of a pointer, an arbor therefor having a pinion, a platform-standard, means connected with said standard for yieldingly sustaining the same, a pivoted lever pivoted at one end to said standard at a point contiguous to the point of connection between it and said sustaining means, and a rack-bar connected to the other end of the said lever and engaging said pinion.

2. In a scale, the combination of a pointer, an arbor therefor having a pinion, a platform-standard, means connected with said standard for yieldingly sustaining the same, a pivoted lever pivoted at one end to said standard at a point contiguous to the point of connection between it and said sustaining means and a rack-bar engaging said pinion and pivoted to the other end of the said lever on crossed axes whereby the rack-bar may oscillate both lengthwise and transversely of the lever.

3. In a scale, the combination of a pointer, a pinion for rotating the same, a platform, a rack-bar engaging said pinion, a curved slide and a bearing therefor, one secured to and carried by the rack-bar and the other fixed with relation to the rack-bar and contiguous to the pinion and over which the rack-bar slides, a pivoted lever having one end pivoted to said rack-bar for reciprocating it, an operative connection between said platform and pivoted lever, and means for yieldingly sustaining the platform.

4. In a scale, the combination of a pointer, a pinion for operating the same, a reciprocatory rack-bar, a curved slide thereon, a bearing for said slide fixed with relation thereto, a pivoted lever operatively connected with said rack-bar for reciprocating it, a platform operatively connected with said lever and means for yieldingly sustaining said platform.

5. In a scale, the combination of a pointer, a pinion for operating the same, a pivoted lever, a rack-bar engaging the pinion and pivoted on an axis extending transversely of the lever, a bearing for said rack-bar, a counterweight for holding the rack-bar against said bearing, a platform operatively connected with said lever, and means for yieldingly sustaining said platform.

6. In a scale, the combination of a pointer, a pinion for operating the same, a pivoted lever, a rack-bar pivoted to said lever on crossed axes so as to oscillate transversely and longitudinally of said lever, a bearing against which said rack-bar rests and slides, a counterweight having its center of gravity out of center with both of said axes whereby it will hold the rack-bar against the pinion and also against its said bearing, a platform operatively connected with said lever and means for yieldingly sustaining said platform.

7. In a scale, the combination of a pointer, a pinion for operating the same, a rack-bar engaging said pinion, a yoke in which said pinion is journaled and which embraces the pinion and rack-bar, said pinion having a countersink in one end and the yoke a projecting pin engaging in said countersink, a pivoted lever pivoted to said rack-bar, a platform connected with said lever and means for yieldingly sustaining said platform.

8. In a scale, the combination of a dial normally inclined to the vertical, a pivoted pointer therefor, a pinion for operating said pointer, a rack-bar engaging said pinion, means for holding said rack-bar parallel with the dial and at right angles to the pinion, a pivoted lever pivoted at one end to one end of said rack-bar for reciprocating it, the other end of the rack-bar being free, a platform-standard pivoted to the other end of said lever and means for yieldingly sustaining said standard.

9. In a scale, the combination of a dial normally inclined to the vertical, a pointer therefor, a pinion for operating said pointer, a rack-bar engaging said pinion, a platform, a pivoted lever having pivotal connection with one end of said rack-bar and platform whereby the rack-bar will be reciprocated, the other end of the rack-bar being free, means for holding said rack-bar parallel with the dial and at right angles to said pinion, and means for yieldingly sustaining the platform.

10. In a scale, the combination of a pointer, a casing provided with an aperture, a platform having a connection extending through said casing, mechanism within said casing operatively connected with the platform and pointer for operating the latter by the movement of the platform, said mechanism comprising means for yieldingly sustaining the platform, and an adjusting means located entirely within the casing and comprising an operating member located opposite said aperture whereby the operating member will be accessible therethrough from the outside.

11. In a scale, the combination of a casing having a notched cross-bar and a notched wall, a second cross-bar let into said notches, a bifurcated platform-standard straddling said second cross-bar, a spring connected to said standard and to said second cross-bar,

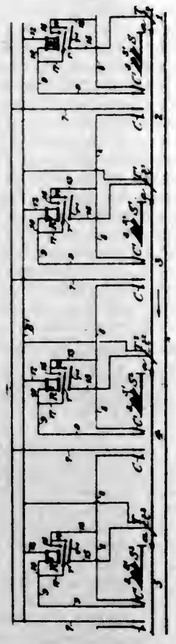
means for maintaining the equilibrium of said standard and a pointer operatively connected with the standard.

12. In a scale, the combination of a casing having a removable cover, a removable cross-bar supported within the casing below and held in place by said cover, a platform-standard, a spring secured to said standard and cross-bar, means for maintaining the equilibrium of said standard, a pointer and means operatively connecting the same with the standard.

13. In a scale, the combination of a platform-standard comprising a plate having side flanges and upwardly-extending projections at both sides thereof, a platform having depending stems around which said projections are folded to form sockets therefor, a spring supported independently of said standard at one end, a swivel connecting the other end of said standard thereto on a transverse axis extending through the said flanges at the lower end of the standard, means for maintaining the equilibrium of the standard, a pointer and means operatively connecting the pointer with the standard.

14. In a scale the combination of a pointer, a pinion for operating the same, a dial normally inclined to the vertical, behind which said pinion is arranged, a pivoted lever arranged behind said inclined dial and movable in a plane at an angle thereto, a rack-bar engaging the pinion and pivoted at one end on an axis extending transversely of one end of the lever, means for holding the rack-bar at right angles to the axis of the pinion during the oscillation of the lever, a platform operatively connected with said lever, and means for yieldingly sustaining said platform.

819,326. CONTROL OF APPARATUS GOVERNING THE PASSAGE OF CARS OR VEHICLES ALONG A RAILWAY. MATTHIAS VAN ARCH VAN WYCK, New York, N. Y., assignor to The Union Switch and Signal Company, Swissvale, Pa., a Corporation of Pennsylvania. Filed Oct. 26, 1905. Serial No. 284,584.



Claim.—1. In combination with a train-stop the trip of which is usually in its operative position, an open circuit for said trip, and means affected by a train for closing said circuit to have the train-stop move its trip to its inoperative position.

2. In combination with railway-signals the semaphores of which are usually in their clear position of indication, a train-stop the trip of which is usually in its operative position adjacent each railway-signal, an open circuit for each train-stop, and means affected by a train for closing said circuits to have the train-stop move its trip to its inoperative position.

3. In combination with railway-signals, a train-stop adjacent such railway-signal the trip of which is usually in its operative position, and an open circuit for each train-stop, said circuit being arranged to be closed when a railway-signal gives a danger indication.

4. In combination with block-sections of a railway, a train-stop for each block-section the trip of which is usually in its operative position, an open circuit for each train-stop, and means affected by a train for closing an open circuit on a train-stop of a block-section before it reaches the block-section and for opening the circuit which it previously closed after passing the train-stop to have the trip thereof again move to its operative position.

5. In combination with a block-section of a railway, a train-stop for said block-section the trip of which is usually in its operative position, train-controlled means for automatically causing the train-stop to move its trip to its inoperative position as a train approaches the block-section and for causing the train-stop to reset its trip in its operative position after the train has completely entered the block-section or passed beyond the block-section.

6. In combination with a block-section of a railway, a train-stop for said block-section the trip of which is usually in its operative position, an open circuit for said train-stop, a device for closing and opening said circuit, and means affected by a train to operate said device to have it close said open circuit and again affected by the same train for to have said device again open said circuit after it has passed the train-stop.

7. In combination with a block-section of a railway, a train-stop for said block-section, the trip of which is usually in its operative position, an open circuit for said train-stop which when closed causes the train-stop to move its trip to its inoperative position, a relay for closing and opening said circuit, and means affected by a train in one block-section to have said relay close the circuit of the train-stop, and again affected by the same train in another block-section to have said relay again open the circuit.

8. In combination with a block-section of a railway, a train-stop therefor the trip of which is usually in its operative position, an open circuit for said relay, and means affected by a train approaching said block-section to close said circuit to have the train-stop move its trip to its inoperative position, and again affected by the same train after it has passed the train-stop to again open said circuit.

9. In combination with a block-section of a railway, a train-stop therefor, the trip of which is usually in its operative position, an open main circuit for said train-stop, a relay for opening and closing said main train-stop circuit, a main and supplemental circuit, both open, for said relay, and means affected by a train for closing said main and supplemental relay-circuits, and at a later time for again opening said circuits either simultaneously or at different periods of time.

10. In combination with a block-section of a railway, a train-stop therefor the trip of which is usually in its operative position, an open circuit for said train-stop which when closed causes the train-stop to move its trip to its inoperative position, a relay for opening and closing said circuit, a main and supplemental circuit, both open, for said relay, means controlled by a train for closing said main and supplemental circuit, and at another time for opening one of said circuits, and other means controlled by the same train for opening said other circuit of the relay.

11. The combination with a train-stop the trip of which is usually in its operative position, an open circuit for said trip, and means comprising a circuit-controller usually open and affected by a train to close said circuit to have the train-stop move its trip to its inoperative position.

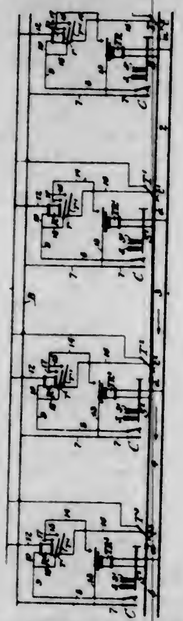
12. In combination with a series of sections of a railway, a series of train-stops the trips of which are usually in their operative position, and means comprising track-circuits actuated by an approaching train for successively causing the trips to be moved to their inoperative position.

13. In combination with a series of sections of a railway, railway-signals for controlling the passage of cars or trains along the sections, a series of train-stops the trips of which are usually in their operative position, and means comprising track-circuits actuated by an approaching train, when the signals permit of the passage of the train, for successively causing the trips to be moved to their inoperative position.

819,327. CONTROL OF APPARATUS GOVERNING THE PASSAGE OF CARS OR VEHICLES ALONG A RAILWAY. MATTHIAS M. VAN ARCH VAN WYCK, New York, N. Y., assignor to The Union Switch and Signal Company, Swissvale, Pa., a Corporation of Pennsylvania. Filed Nov. 10, 1905. Serial No. 286,641.

Claim.—1. In combination with railway-signals the semaphores of which are usually in their danger position of indication, a train-

stop the trip of which is usually in its danger or operative position adjacent each railway-signal, an open circuit for each train-stop, and means affected by a train for closing said circuits to have the train-stop move its trip to its clear or inoperative position.



2. In combination with railway-signals, the semaphores of which are usually in their danger position, a train-stop adjacent such railway-signal the trip of which is usually in its operative position, and an open circuit for each train-stop, said circuit being arranged to be closed when a semaphore of a railway-signal gives a clear indication.

3. In combination with a block-section of a railway, a railway-signal for each block-section the home semaphore of which is usually at danger, a train-stop for said block-section the trip of which is usually in its danger or operative position, train-controlled means for automatically causing a train-stop to move its trip to its clear or inoperative position when an adjacent railway-signal moves its home semaphore to its clear position, and other train-controlled means for causing the train-stop to reset its trip in its operative position after the train has completely entered the block-section or passed beyond the block-section.

4. In combination with a block-section of a railway, a railway-signal for each block-section the home semaphore of which is usually in its danger position, a train-stop for said block-section the trip of which is usually in its danger or operative position, an open circuit for said train-stop, a device for closing said circuit controlled by a train, and means affected by a train to operate said device to have it open said circuit after it has passed the train-stop.

5. In combination with a block-section of a railway, a railway-signal therefor the home semaphore of which is usually in its danger position, a train-stop therefor, the trip of which is usually in its operative position, an open main circuit for said train-stop, a relay for opening and closing said main train-stop circuit, a main and supplemental circuit, both open, for said relay, the main circuit being closed when said semaphore moves to its clear position, and means affected by a train for closing said supplemental relay-circuit and at a later time for again opening said circuit.

6. In combination with a series of sections of a railway, railway-signals for controlling the passage of cars or trains along the sections, the semaphores of which are usually in their danger position, a series of train-stops, the trips of which are usually in their operative position, and means actuated by a train traveling along the railway for successively causing one or more semaphores to move to their clear position and one or more stops to their inoperative position and later to have the semaphores in its rear to move to their danger position and the stops to their operative position.

819,328. PIANO-ACTION. JOSEPH L. WILSON, Los Angeles, Cal. Filed May 29, 1905. Serial No. 263,909.



Claim.—1. In a piano-action a hammer having a butt and a shank; a repeating-lever having one end thereof contacting with the shank and the other end with the butt of the hammer; a wippen upon which said repeating-lever is pivotally mounted; a jack mounted on said wippen; means secured to said wippen to regulate the throw of said jack; and means for operating said wippen.

2. In a piano-action a hammer having a shank and a butt; a wippen; a repeating-lever carried thereby; adjusting devices in said repeating-lever; a spring secured to said wippen engaged by the adjusting devices of the repeating-lever whereby the position of the repeating-lever is regulated; and means for operating the parts.

3. In a piano-action the combination of a hammer having a shank provided with a butt and a repeating-lever having one end thereof adapted to engage the shank of the hammer and the other end to engage the butt; and means to actuate said repeating-lever.

4. In a piano-action a wippen having one portion thereof partially separated from the other portion by a longitudinal slit, whereby the lower portion forms a spring; and an abstract secured to said spring portion of the wippen and passing therethrough and contacting with the main body of the wippen whereby the same is actuated.

5. In a piano-action the combination of a wippen pivotally secured at one end and longitudinally separated for a portion of its length, the lower portion forming a spring; an abstract carried by the spring portion of said wippen and having its head engaging the other portion of said wippen; a jack carried by the free end of said wippen; means carried by said wippen to regulate the movement of said jack; a hammer having a butt, said butt being engaged by said jack; and a repeating-lever carried by said wippen retaining the hammer-butt in position to be instantly engaged by the jack.

6. In a piano-action a wippen having a spring portion on the bottom thereof and an abstract secured to said spring portion, said abstract contacting with the main body of the wippen whereby motion is imparted to said wippen substantially as described herein.

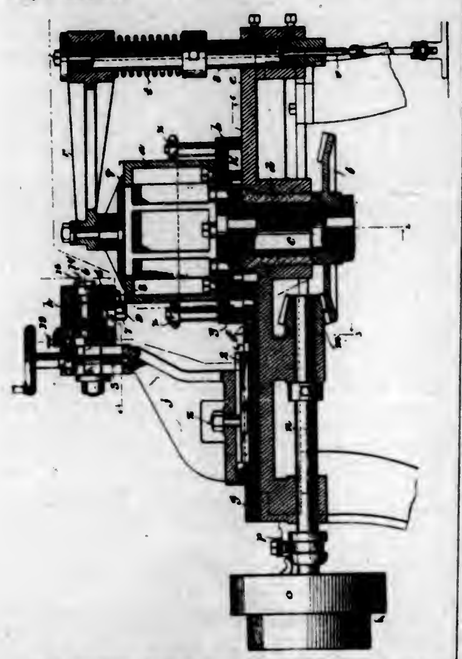
7. In a piano-action in combination, a hammer having a shank and a butt; a repeating-lever having one end engaging the shank and the other end engaging the butt of the hammer; and means to regulate the position of the repeating-lever.

819,329. SEAMING-MACHINE. ANTHONY J. WIRA, Milwaukee, Wis., assignor of one-fourth to Mathew Regenfuss and one-fourth to Melchior Steiner, Milwaukee, Wis. Filed June 4, 1904. Serial No. 211,062.

Claim.—1. In a seaming-machine the combination of a rotary form for holding the work and a head mounted and adapted to turn upon a suitable support and provided with a number of pairs of seaming-rollers, one pair having parallel cylindrical peripheries, another pair having opposing conical or beveled peripheries and parallel axes, and another pair having cylindrical peripheries at right angles to each other, substantially as described.

2. In a seaming-machine the combination of a rotary form or work-support; a head mounted and adapted to turn on a stem and provided on its sides with a number of pairs of seaming-rollers, one pair having opposing cylindrical peripheries and parallel axes, another pair having opposing beveled peripheries and parallel axes, and another pair having cylindrical peripheries and axes at right angles to each other, substantially as described.

3. In a seaming-machine the combination of a rotary form or work-support, and a rotary head movable toward and from said form and provided with several sets of seaming-rollers, one set being adapted to fold an inturned marginal flange on the body-section of a sheet-metal vessel against a marginal flange turned up on the bottom or end section and fitted into the body-section of the vessel, another set adapted to turn the two flanges thus folded obliquely inward over the bottom or end section and another set adapted to fold said flanges together against the bottom or end section of the vessel, substantially as described.



4. In a seaming-machine the combination of a rotary form or work-support, and an adjustable head provided with a number of sets of seaming and guiding rollers, each set having a swivel connection therewith, substantially as described.

5. In a seaming-machine the combination of a rotary work-supporting form, a cam of corresponding shape attached thereto, a carriage movable toward and from said form and connected with said cam, a rotary head mounted upon said carriage, swivel disks or blocks mounted on said head and seaming and guiding rollers mounted on said swivel disks or blocks, substantially as described.

6. In a seaming-machine the combination of a rotary work-supporting form, a carriage movable toward and from said form, a head movably mounted upon said carriage, swivel disks or blocks mounted on said head and each provided with a set of seaming and guiding rollers, means for locking said head with either set of rollers in operative position relative to said form and a connection between said carriage and form adapted to maintain the proper working relation between the form as it turns and one set of seaming-rollers, substantially as described.

7. In a seaming-machine the combination of a rotary work-supporting form, means for holding the bottom or end and body sections of a sheet-metal vessel in place thereon, and an adjustable head provided with a number of sets of seaming-rollers constructed and arranged to successively and progressively fold the adjoining flanged edges of said sections together and turn them inwardly against the bottom or end section, substantially as described.

8. In a seaming-machine the combination of a rotary work-supporting form, a rotary clamp carried by a swinging arm and movable therewith into and out of line with said form, and a rotary head provided with seaming-rollers movable therewith into and out of working relation to said form, substantially as described.

9. In a seaming-machine the combination with a suitable frame, of a rotary work-supporting form mounted thereon, a post adjustable endwise in said frame parallel with the axis of said form, an arm adapted to turn on said post and movable endwise thereof, a clamp swiveled in the free end of said arm parallel with said post and adapted to be swung thereon into and out of line with said form, and a rotary head provided with seaming-rollers, substantially as described.

10. In a seaming-machine the combination with a suitable frame, of a rotary work-supporting form mounted thereon, a longitudinally-adjustable post secured in said frame parallel with the axis of said form, an arm adapted to turn upon said post and movable endwise thereof, a clamp swiveled in said arm parallel with said post and adapted to be swung into and out of line with said form, a lever connected with said arm by a rod passing axially through said post for pressing and holding the clamp with the work against the form, a spring tending to move said arm and clamp away from the form, and a rotary head provided with seaming-rollers, substantially as described.

11. In a seaming-machine the combination with a suitable frame, of a journal having a bearing in said frame, a work-supporting form detachably secured to said journal and provided in its base with a cam-groove corresponding with the contour of the form, a carriage movable radially toward and from said journal and having a projection engaging with said cam-groove, a rotary head mounted upon said carriage and adjustable lengthwise of and toward and from the same, and seaming-rollers mounted on said head, substantially as described.

12. In a seaming-machine the combination with a suitable frame, a journal having a bearing in said frame, a work-supporting form detachably secured to said journal, means for turning said form, a carriage movable on said frame toward and from said form, a bracket mounted upon and adjustable lengthwise of said carriage, a stem carried by said bracket, a screw for adjusting said stem laterally toward and from the carriage, and a head mounted and adapted to turn upon said stem and provided with a number of sets of seaming-rollers and with means for locking it in different positions on said stem, substantially as described.

13. In a seaming-machine, the combination of a rotary work-supporting form, a head adjustable transversely to and parallel with the axis of said form, a disk swiveled in said head, a pair of seaming-rollers mounted on said disk, one of them being centrally arranged thereon and coaxial therewith, and guiding-rollers also mounted on said disk, one on each side of the central seaming-roller, substantially as described.

14. In a seaming-machine the combination of a rotary work-supporting form, a rotary head adjustable toward and from said form and provided with disks swiveled therein, and seaming and guiding rollers mounted on said disks and adapted to progressively fold and turn the flanged edges of vessel-sections held on said form together against the bottom or end section, one pair of seaming-rollers having beveled peripheries and one of said rollers being releasable and movable when released away from the other, substantially as described.

15. In a seaming-machine the combination with a suitable frame or bed, of a journal having a bearing in said bed, a work-supporting form detachably secured to said journal and having a cam-groove in its base corresponding in shape with the cross-section of the form, a carriage movable in ways on said frame or bed toward and from said form, a bracket mounted upon and adjustable lengthwise of said carriage, a stem adjustably connected with said bracket, a screw for adjusting said stem toward and from the carriage, a head mounted and adapted to turn on said stem, means for locking said head in different positions on said stem, disks swiveled in said head, and seaming and guiding rollers mounted on said disks, one seaming-roller of each set being centrally and coaxially arranged with relation to the disk on which it is mounted, substantially as described.

819,330. HYPODERMIC SYRINGE. OSVALDO A. YCAZA, Guatemala, Guatemala. Filed June 10, 1905. Serial No. 264,714.



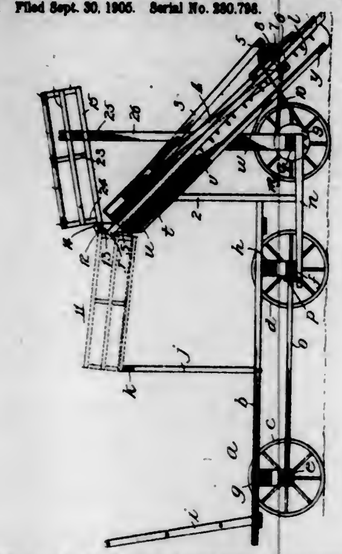
Claim.—1. A hypodermic syringe comprising a tube, disks closing the ends of the tube, a piston, a piston-rod working through one of said disks, spring-metal bars connecting the disks, and a ring slidable on said bars and adapted to compress the bars and hold the disks in position.

2. A syringe comprising a tube and washers at the ends thereof, disks carrying said washers, bars connecting the disks, and a clamping-ring movable upon said bars to increase and decrease their tension upon the disks, as set forth.

3. A syringe of the kind described comprising a glass tube having a piston working therein, said piston being detachable from the rod, the washers against which the ends of the tube bear, the disks carrying said washers, said disks being notched at their edges, the

bars engaging said notches and having heads adapted to engage the disks, the clamping-ring embracing the said bars and movable thereon, all of said parts being arranged and adapted to operate as set forth.

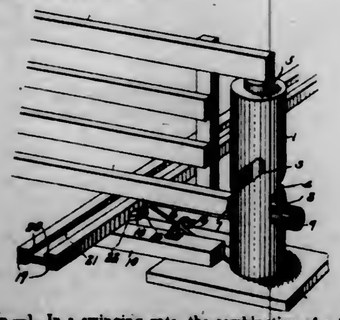
819,331. VEHICLE-LOADER. FRANK D. AUCUTT, Sugar Grove, Ill. Filed Sept. 30, 1905. Serial No. 280,798.



Claim.—1. In a machine of the class described, the combination of a carrier-frame, a chute mounted at the upper end of such carrier-frame movable into and out of operative position over the vehicle to be loaded, and upright standards mounted upon the vehicle to be loaded forming a partition between the forward and rear portions thereof and forming a support for the forward end of such chute when in extended operative position.

2. In a machine of the class described, the combination of a carrier-frame, a chute pivotally mounted at the upper end of such frame movable to extended operative position over the vehicle to be loaded and to inoperative position, means for supporting such chute in inoperative positions, and means for supporting the forward end of the chute in operative position which means consist of a partition between the front and rear portions of the vehicle to be loaded, whereby material discharged from the carrier-frame is carried forward over the vehicle when the movable chute is in operative position and permitted to pass onto the rear portion of the vehicle when the movable chute is in inoperative position.

819,332. GATE. CYRIL BELIVEAU, Henderson, Minn. Filed Jan. 15, 1906. Serial No. 296,193.



Claim.—1. In a swinging gate, the combination of a tubular gate-post having corresponding front and rear spiral slots, an upright bar movable endwise and rotatable within the post and projecting above the top thereof, a gate connected to the top of the bar, a cross-bar connecting the gate and the upright bar and working in the slots, and means to elevate the gate.

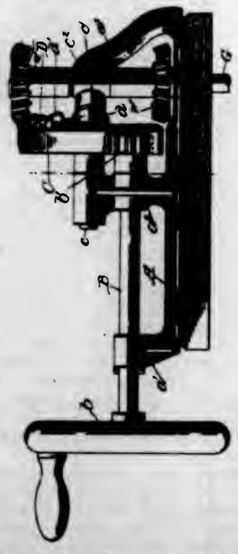
2. The combination of a post having a spiral guideway, a swinging and vertically-movable gate having a guide working in the guideway, a lever for elevating the gate, and a yieldable track connected with the lever and disposed for engagement by vehicle-wheels to elevate the gate.

3. The combination of a post having a spiral guideway, a swinging vertically-movable gate having a guide working in the guideway, a lever for elevating the gate, a guideway disposed in the path of vehicle-wheels, and a yieldable track carried by the guideway and connected with the lever for elevating the gate.

4. The combination with a post having a spiral guideway, of a vertically-movable and swinging gate having a guide working in the guideway, a lever fulcrumed intermediate of its ends and pivotally connected to the gate, a trip-lever connected to the first-mentioned lever, and a yieldable track associated with the trip-lever and disposed in the path of vehicle-wheels.

5. The combination of a tubular post open at its upper end and provided with front and rear corresponding spiral slots, a rotatable and endwise-movable bar mounted in the post and rising above the same, a gate connected to the post, a cross-bar carried by the upright bar and working in the spiral slots, a lever fulcrumed intermediate of its ends and pivotally connected to the bottom of the upright bar, a trip-lever connected to the first-mentioned lever, a guideway disposed in the path of vehicle-wheels, and a yieldable track mounted in the guideway and associated with the trip-lever for elevating the gate.

819,333. MECHANICAL MOVEMENT. HENRY BRAMMER, St. Louis, Mo. Filed Aug. 3, 1905. Serial No. 272,594.



Claim.—1. A mechanical movement comprising a continuously-revolving drive-shaft; a continuously-revolving internal idle gear actuated thereby, the axis of the shaft of said idle gear being parallel with that of said drive-shaft; a segmental gear on the opposite face of said idle gear; a rotary reciprocal shaft, the axis of which is at right angles to the axis of said drive-shaft; and mutilated pinions having irregularly-shaped teeth and fast on said rotary reciprocal shaft, one of which pinions is adapted to be engaged by the idle gear simultaneously with the disengagement of the opposite pinion and vice versa.

2. A mechanical movement comprising a continuously-revolving drive-shaft; a continuously-revolving internal idle gear actuated thereby, the axis of the shaft of said idle gear being parallel with that of said drive-shaft; a segmental gear on the opposite face of said idle gear; a rotary reciprocal shaft, the axis of which is at right angles to the axis of said drive-shaft; and mutilated pinions fast on said rotary reciprocal shaft, one of which pinions is adapted to be engaged by the idle gear simultaneously with the disengagement of the opposite pinion and vice versa.

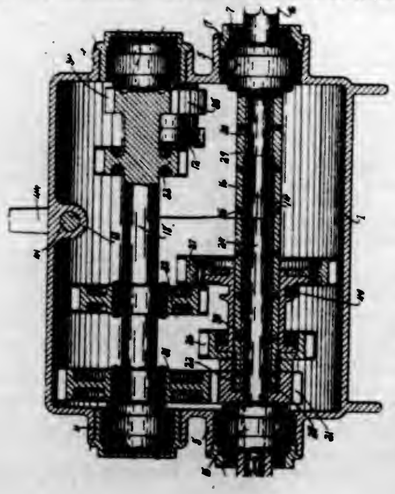
3. A mechanical movement comprising a continuously-revolving drive-shaft; a continuously-revolving internal idle gear actuated thereby, the axis of the shaft of said idle gear being parallel with that of said drive-shaft; a segmental gear on the opposite face of said idle gear, the tooth at each end of the same being larger than the remaining teeth thereof and provided with semicircular engaging surfaces; a rotary reciprocal shaft, the axis of which is at right angles to the axis of said drive-shaft; and mutilated pinions fast on said rotary reciprocal shaft, one of which pinions is adapted to be engaged by the idle gear simultaneously with the disengagement of the opposite pinion and vice versa.

4. A mechanical movement comprising a continuously-revolving drive-shaft, a continuously-revolving internal idle gear actuated thereby, the axis of the shaft of said idle gear being parallel with that of said drive-shaft; a segmental gear on the opposite face of said idle gear; a rotary reciprocal shaft, the axis of which is at right angles to the axis of said drive-shaft; and mutilated pinions fast on said rotary reciprocal shaft, the end teeth of which are enlarged and depressed inside the periphery described by the other teeth of said pinion, and one of said pinions being adapted to be engaged by the idle gear simultaneously with the disengagement of the opposite pinion and vice versa.

5. A mechanical movement comprising a continuously-revolving drive-shaft; a continuously-revolving internal idle gear actuated thereby, the axis of the shaft of said idle gear being parallel with that of said drive-shaft; a segmental gear on the opposite face of said idle gear; a rotary reciprocal shaft, the axis of which is at right angles to the axis of said drive-shaft; and mutilated pinions fast on said rotary reciprocal shaft, the ends of which are provided with concave recesses and an intermediate uncut portion between said recesses; one of said pinions being adapted to be engaged by the idle gear simultaneously with the disengagement of the opposite pinion and vice versa.

6. A mechanical movement comprising a continuously-revolving drive-shaft; a continuously-revolving internal idle gear actuated thereby, the axis of the shaft of said idle gear being parallel with that of said drive-shaft, the tooth at each end of the same being larger than the remaining teeth thereof and provided with semicircular engaging surfaces; a rotary reciprocal shaft, the axis of which is at right angles to the axis of said drive-shaft; and mutilated pinions fast on said rotary reciprocal shaft the ends of which are provided with concaved recesses and intermediate uncut portions, said recesses conforming to and engaged by the enlarged teeth on said segmental gear; one of said pinions being adapted to be engaged by the idle gear simultaneously with the disengagement of the opposite pinion, and vice versa.

819,334. TRANSMISSION-GEAR. ALEXANDER T. BROWN, Syracuse, N. Y., assignor to The Brown-Lipe Gear Company, Syracuse, N. Y., a Copartnership. Filed Nov. 16, 1905. Serial No. 287,580.



Claim.—1. In a transmission-gear, a case having opposing walls formed with integral hollow hubs, caps for the hubs, a revoluble shaft within the case formed of greater length than the distance between the opposing walls of the case, the shaft being supported by the hubs, and gears fixed to the shaft, the gear nearest one of the hubs being of less diameter than the internal opening of said one of the hubs, substantially as and for the purpose specified.

2. In a transmission-gear, a case provided with a removable top and having opposing walls formed with integral hubs below the top, perforated caps for the hubs, driving and driven shafts extending respectively through the perforations of the caps, and power-transmitting means within the case connecting the shafts, substantially as and for the purpose set forth.

3. In a transmission-gear, a case formed with a plurality of hubs, caps for closing two of the hubs, perforated caps for other hubs, a revoluble shaft within the case supported by the first-mentioned caps, driving and driven shafts extending respectively through the perforations of the second-mentioned caps, and gears within the case connecting the shafts, substantially as and for the purpose described.

4. In a transmission-gear, a case having opposite bearings, a shaft journaled in one bearing and terminating near the other bearing, a shaft journaled in said other bearing and having a hollow portion encircling the first-mentioned shaft and terminating near the bearing therefor, and power-transmitting means within the case connecting the shafts, substantially as and for the purpose specified.

5. In a transmission-gear, a case having opposite bearings, a shaft journaled in one bearing and terminating near the other bearing, a part of the shaft between the inner end thereof and the bearing for such shaft being of reduced diameter, a shaft journaled in said other bearing and having a hollow portion encircling the first-mentioned shaft and terminating near the bearing therefor, bushings between contiguous surfaces of the shafts at opposite sides of the reduced portion of the first-mentioned shaft, and power-transmitting means within the case connecting the shafts, substantially as and for the purpose described.

6. In a transmission-gear, a case having opposite bearings, a gear having a hollow hub on its outer side journaled in one bearing, said gear being formed with a socket extending axially from its inner side, a shaft fixed in the hollow hub and terminating near the other bearing, a shaft journaled in said other bearing and having a hollow portion encircling the first-mentioned shaft and extending into the socket of the gear and terminating near the bearing for such gear, and power-transmitting means within the case connecting the gear and the second-mentioned shaft, substantially as and for the purpose set forth.

7. In a transmission-gear, a case having opposite bearings, a shaft journaled in one bearing, a shaft journaled in the other bearing and having a hollow portion encircling the first-mentioned shaft, said hollow portion being formed with a plurality of transverse ducts communicating with the interior thereof, and power-transmitting means within the case connecting the shafts, substantially as and for the purpose described.

8. In a transmission-gear, a case having opposite bearings, a shaft journaled in one bearing and terminating near the other bearing, a shaft journaled in said other bearing and having a hollow portion encircling the first-mentioned shaft and terminating near the bearing therefor, said hollow portion being formed with a plurality of transverse ducts communicating with the interior thereof, bushings between contiguous surfaces of the shafts, said bushings being formed with transverse ducts alined with the first-mentioned ducts, and power-transmitting means within the case connecting the shafts, substantially as and for the purpose specified.

9. In a transmission-gear, a case having an upright journal-bearing extending from the bottom of the case and terminating near the top of the case, the opening of the bearing extending through the outer face of the bottom, power-transmitting means in the case comprising a sliding gear, and mechanism for shifting the gear including a rock-shaft journaled in the bearing and extended downwardly outside of the case and upwardly above the upper end of the bearing, and means in the case for connecting the upper end of the rock-shaft and the sliding gear, substantially as and for the purpose set forth.

10. In a transmission-gear, a case having an upright journal-bearing extending from the bottom of the case and terminating near the top of the case, the opening of the bearing extending through the outer face of the bottom, power-transmitting means in the case comprising a sliding gear, and mechanism for shifting the gear including a rectilinearly-movable yoke, a rock-shaft journaled in the bearing and extending downwardly outside of the case and upwardly above the upper end of the bearing, an arm fixed to the upper end of the

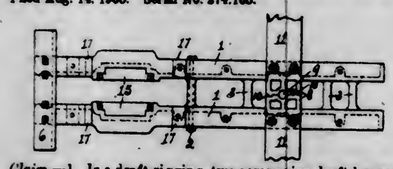
rock-shaft, and a link connecting the yoke and the arm, substantially as and for the purpose described.

11. In a transmission-gear, a case formed with an opening, a removable part for closing the opening, and opposing walls having edges thereof opposed to the removable part, the opposing walls having channels opening through their inner faces and said edges, power-transmitting means in the case comprising a sliding gear, mechanism for shifting the gear including a rectilinearly-movable yoke, a guide-rod for the yoke, and bearings for the guide-rod mounted in the channels and held in place by said removable part of the case, substantially as and for the purpose specified.

12. In a transmission-gear, a case having one of its walls formed with an internally-threaded hub near the bottom thereof, said case having an internal lug projecting from its bottom and formed with a bearing alined with the opening of the hub, a spindle extending through the hub and into the bearing and having a head provided with peripheral threads meshing with the internal threads of the hub, a screw engaged with the threaded hub and the head of the spindle for locking said spindle in position, a gear on the spindle, and power-transmitting means within the case coacting with the gear, substantially as and for the purpose set forth.

13. In a transmission-gear, a case having one of its walls formed with a bearing near the bottom thereof, said case having an internal lug projecting from its bottom and formed with a bearing alined with the first-mentioned bearing, a spindle supported by said bearings and formed with a lengthwise passage having one end closed and its other end opening through the end face of the spindle nearest the internal lug, said spindle being formed with transverse ducts extending through its periphery from the lengthwise passage, a gear on the spindle, said gear being formed with a duct leading from the exterior thereof to the spindle, and power-transmitting means within the case coacting with the gear, substantially as and for the purpose described.

819,335. **DRAFT-BEAM.** WILLIAM H. BROWN, Toledo, Ohio. Filed Aug. 14, 1905. Serial No. 274,165.

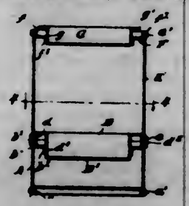


Claim.—1. In a draft-rigging, two companion draft-beams having integral abutting projections formed on their inner faces to constitute a center-pin block, said projections having their abutting faces interlocked and formed with an opening for a center pin, and means for securing the beams together.

2. In a draft-rigging, two cast-metal beams secured together in spaced relation and having abutting projections formed integral on their inner faces to constitute a center-pin bearing-block, said blocks having their abutting faces formed with vertically-disposed tongue-and-groove connection whereby to prevent an independent longitudinal movement of either beam and also formed with an opening for a center pin.

3. In a draft-rigging, two cast-metal beams secured together in rigidly-spaced relation and provided adjacent to their rear ends with an interposed center-pin block, said block comprising two abutting sections, one of which is cast integral with each beam, and countersunk portions provided in the upper and lower surfaces of each beam in transverse alinement with the center-pin block for the reception of upper and lower transom members.

819,336. **SECTIONAL OR COMPARTMENT CAN.** EDWARD W. CARNES, Chicago, Ill., assignor to American Can Company, New York, N. Y., a Corporation of New Jersey. Filed June 26, 1905. Serial No. 266,979.



Claim.—1. A sectional or compartment can comprising in combination a lower section having an annular top, furnished with a depending friction seat wall or flange surrounding the opening therein, and an upper section having a bottom head provided with an integral boss friction-cap closure fitting in and closing the opening in the annular top of the lower section, and connecting the two sections together, and provided with an annular top having a depending friction seat wall or flange, and a friction-cap fitting in and closing the same, substantially as specified.

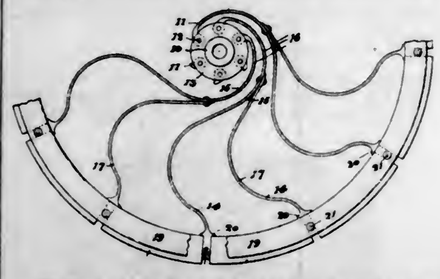
2. A sectional or compartment can comprising in combination a lower section having an annular top furnished with a depending friction seat wall or flange surrounding the opening therein, and an upper section having a bottom head furnished with an integral boss fitting in the opening of the annular top of the lower section and constituting a friction-cap closure therefor and a means for connecting the two sections of the can together, substantially as specified.

3. In a sectional or compartment can, the combination with a lower section having a body A, annular top B and bottom C, said annular top having a depending flange b and a raised annular rim or shoulder b^3 and an upper section having a body E and bottom head D furnished with integral boss D', an annular shoulder or rim d^3, said boss fitting in and forming a closure for the annular top of the lower section and connecting the two sections together, said upper section having an annular top F furnished with depending friction seat wall or flange f, an annular shoulder or rim f^3 and a friction-cap G having a folded projecting rim g', substantially as specified.

4. In a sectional or compartment can, the combination with a lower section having an annular top, and a flange or wall surrounding the opening therein, of an upper section having a bottom head furnished with an integral portion adapted to fit said flange or wall surrounding the opening in the annular top of the lower section and close the opening of the lower section and to connect the two sections together, substantially as specified.

5. A sectional or compartment can, comprising in combination a lower section having an annular top provided with a depending flange surrounding the opening therein, an upper section having a bottom portion furnished with an integral boss fitting within the flanged opening of the annular top of the lower section, means for securing the parts together independent of their frictional engagement with each other, and a friction-cap closure or cover for the upper section, substantially as specified.

819,337. **VEHICLE-WHEEL.** SAMUEL S. CHILDS and WILLIAM CHILDS, Jr., Bernardsville, N. J. Filed Aug. 22, 1905. Serial No. 275,219.



Claim.—1. A wheel comprising a hub, a rim, and a series of ogee curved spokes, each spoke being secured at one end to the hub at a point in the hub's periphery, and attached at its other end to the rim at a point approximately diametrically opposite to the point of attachment to the hub.

2. A wheel comprising a hub, a rim, and series of springs of an ogee shape fastened to the hub and the rim on opposite sides of the center of the wheel.

3. A wheel comprising a hub, a rim, a series of springs of an ogee shape fastened to the hub and the rim on opposite sides of the center of the wheel, and a second series of springs attached to the rim and to the ogee springs.

4. A wheel comprising a hub, a rim, and a series of spring-spokes, each spoke having one end secured to the hub, and the spoke winding part way around the hub at a distance therefrom and then passing in a reverse curve and being secured to the rim at a point diametrically opposite the attachment to the hub.

5. The combination with the flanged hub and rim or tire consisting of a series of blocks joined together, of a series of resilient spokes having ogee curves, one end of each of which is fastened to the hub between the flanges thereof and the other end of each of which extends between the said blocks, and means for fastening the blocks and spokes together.

6. The combination with the hub and rim or tire consisting of a series of blocks joined together, of a series of resilient spokes having ogee curves, one end of each of which is fastened to the hub and the other end of each of which extends between the said blocks, and means for fastening the blocks and spokes together.

7. The combination with the hub and a rim or tire composed of segmental blocks, of a series of curved springs connecting said hub and rim or tire, and supplemental springs reinforcing said connecting-springs, substantially as set forth.

819,338. **SIGN-SUPPORT.** ARTHUR P. CLARIDGE, Baltimore, Md. Filed Nov. 27, 1905. Serial No. 289,299.



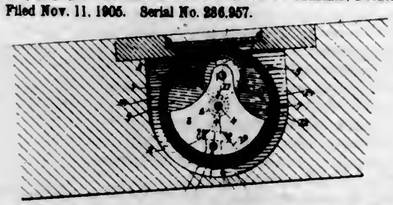
Claim.—1. The combination with a sign, of a support therefor consisting of two pieces, each secured to the sign intermediate the ends thereof, each piece having laterally-extending arms bent at an angle to fit the shape of the support to which the sign is to be attached and to present flat surfaces for the passage of fastening means therethrough.

2. The combination with a sign, of a support therefor consisting of two pieces each piece being composed of a body portion adapted to be secured to the sign, said body portion being provided at each end with arms extending diagonally at an angle to the body portion and lateral extensions extending diagonally and at an angle to the arms.

3. A sign-support consisting of a body portion provided with arms extending diagonally at an angle to the body portion and lateral extensions extending diagonally and at an angle to the arms.

4. The combination with a sign, of supporting means therefor consisting of a body portion secured to the sign, the ends of the body portion being provided with arms bent diagonally to the body portion and extending at an angle therefrom and lateral extensions at the ends of the arms bent diagonally to the arms and extending at an angle thereto.

819,339. **INCLINOMETER.** JOHN W. CLELAND, Decatur, Ill. Filed Nov. 11, 1905. Serial No. 286,957.



Claim.—1. In an inclinometer, the combination of a stock, a pivot-shaft journaled in the stock crosswise thereof, an internally-toothed flange fixed in the stock concentric with the pivot-shaft, a pinion fastened onto the pivot-shaft, a plumb-bob swung on the pivot-shaft, a gear-wheel carried on the plumb-bob in mesh with the pinion and with the internally-toothed flange, and a movable member of an indicator attached to the pivot-shaft, substantially as described.

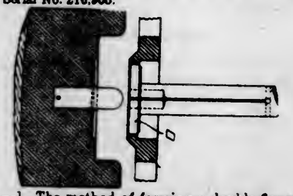
2. In an inclinometer, the combination with a stock, of a pair of plates placed in the stock and held separate one from the other, a pivot-shaft journaled in the plates, an internally-toothed flange fastened to one of the plates concentric with the pivot-shaft, a pinion fastened onto the pivot-shaft, a plumb-bob swung on the pivot-shaft, a gear-wheel carried by the plumb-bob in mesh with the pinion and with the internally-toothed flange, and a movable member for an indicator fastened onto the pivot-shaft, substantially as described.

3. In an inclinometer, the combination of a stock, a pivot-shaft journaled in the stock crosswise thereof, an internally-toothed flange fixed in the stock concentric with the pivot-shaft, a pinion fastened onto the pivot-shaft, a pair of plumb-bob plates swung on the pivot-shaft and extended above and below the same, a weight between the plumb-bob plates below the pivot-shaft, a cross-shaft carried by the plumb-bob plates above the pivot-shaft, a gear-wheel on the cross-shaft in mesh with the pinion and with the internally-toothed flange and a movable member of an indicator attached to the pivot-shaft, substantially as described.

4. In an inclinometer, the combination of a stock, a pivot-shaft journaled in the stock crosswise thereof, an internally-toothed flange fixed in the stock concentric with the pivot-shaft, a pinion fastened onto the pivot-shaft, a pair of plumb-bob plates swung on the pivot-shaft and extended above and below the same, a weight secured between the lower extensions of the plumb-bob plates, an adjusting-screw in the weight, a gear-wheel carried by the upper extension of the plumb-bob in mesh with the pinion and with the internally-toothed flange, and a movable member of an indicator attached to the pivot-shaft, substantially as described.

5. In an inclinometer, the combination of a stock, a pivot-shaft journaled in the stock crosswise thereof, an internally-toothed flange fixed in the stock concentric with the pivot-shaft, a pinion fastened onto the pivot-shaft, a plumb-bob swung on the pivot-shaft, a gear-wheel carried on the plumb-bob in mesh with the pinion and with the internally-toothed flange, and a cylindrical indicator-rim secured to the pivot-shaft concentric therewith and outside the internally-toothed flange, substantially as described.

819,340. **METHOD OF MAKING SPINNING-RINGS.** JAMES R. COE, Ansonia, Conn., assignor, by mesne assignments, to Connecticut Mill Supply Company, a Corporation of New Jersey. Filed July 16, 1904. Serial No. 216,905.



Claim.—1. The method of forming a double-flanged spinning-ring from sheet metal, consisting in forming a cup having the lower portion of the sides tapered, in reducing said tapered portion to form an annular shoulder, in forming a similar annular shoulder on the opposite end of the cup thus formed, in removing the bottom of the cup, in closing the ends of the tube over, and against said shoulder, and flattening said closed portions to form flanges.

2. The method of forming a double-flanged spinning-ring, consisting in forming a blank having a central tubular portion and end tubular portions of slightly-different diameter, in supporting said central portion internally, and in bending said end portions, while the central portion is thus supported, and compressing and flattening the bent end portions to form flanges, substantially as shown and described.

3. The method of forming a double-flanged spinning-ring, consisting in forming a blank having a central tubular portion, and end tubular portions of slightly-different diameter, in supporting said central tubular portion, and in bending said end portions while the central portion is thus supported, and compressing and flattening the bent end portions to form flanges.

4. The method of forming a double-flanged spinning-ring, consisting in forming a blank having a central tubular portion and end tubular portions of slightly-different diameter, in supporting said central portion externally and internally, and in bending said end portions while the central portion is thus supported, and compressing and flattening the bent end portions to form flanges, substantially as shown and described.

5. The method of forming a double-flanged spinning-ring from sheet metal, consisting in forming a tubular blank having a central portion of one diameter, and end portions of a different diameter, in supporting said central portion, and in bending, compressing and flattening the end portions to form flanges, while the central portion is thus supported.

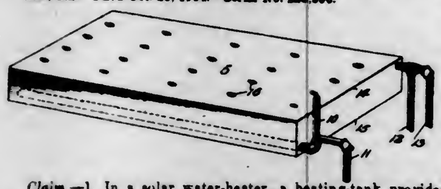
819,341. CIGAR-HUMIDIFIER. JAMES S. CONWELL, Anderson, Ind. Filed Nov. 27, 1905. Serial No. 289,289.



Claim.—1. A tobacco-humidifier consisting of a base, a grid over the base, a tray vertically adjustable between the base and the grid, and an inorganic absorbent pad on the tray, substantially as described.

2. A humidifier for tobacco, consisting of a supporting-grid, a base, a tray, an absorbent inorganic pad in the tray, links pivotally connecting the tray and base under the grid, and means for vertically adjusting the tray between the base and grid, substantially as described.

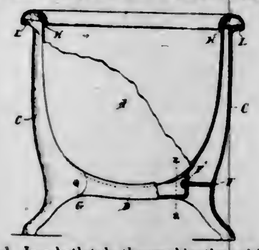
819,342. SOLAR WATER-HEATER. MICHAEL T. CUNNIFF, Riverside, Cal. Filed Oct. 25, 1904. Serial No. 229,000.



Claim.—1. In a solar water-heater, a heating-tank provided with a plurality of hollow stiffening and air-circulating tubes connected to the top and bottom plates of said tank.

2. In a solar water-heater, a heating-tank of rectangular shape provided with a plurality of hollow stiffening and air-circulating tubes connected to the top and bottom plates of said tank by being expanded at the top and bottom and then soldered thereto, said tubes having outwardly-extending grooves just below the top plate and just above the bottom plate of the tank.

819,343. BATH-TUB. ELMER M. DAY, Detroit, Mich. Filed Oct. 6, 1902. Renewed Sept. 29, 1905. Serial No. 280,090.



Claim.—1. In a bath-tub, the combination with the tub, of the concaved rim thereon, inwardly-extending lugs on said rim, legs formed with lateral offsets at their upper ends engaging said lugs and transverse bars each connecting their respective pair of legs.

2. In a bath-tub, the combination with the tub-body, of a detachable metallic rim formed with lugs engaging said tub-body, inwardly-extending lugs on said rim and legs formed with lateral extensions at their upper ends engaging said lugs and forming the means for supporting the tub and detachably locking the rim upon the tub.

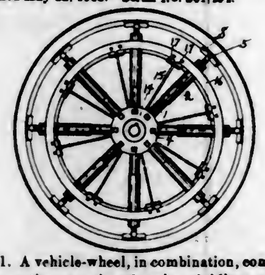
3. In a bath-tub, the combination of a rim formed with a shoulder around its inner edge, lugs depending from said rim adjacent to said shoulder, between which the upper edge of the tub-body is brought into engagement with the rim, lugs on the outer edge of said rim, legs adapted to be brought into engagement with said last-mentioned lugs and transverse bars connecting said legs near their lower ends.

4. In a bath-tub, the combination of a metallic rim concavo-convex in cross-section, an outwardly-extending flange around the inner edge of said rim, downwardly-depending lugs adjacent to said flange between which flange and lugs the upper edge of the tub-body is adapted to be inserted, inwardly-extending lugs on the outer edge of said rim, legs formed with lateral offsets adapted to be brought into engagement with said last-mentioned lugs and transverse bars connecting said legs near their lower ends across the bottom of the tub at or near the ends thereof.

5. In a bath-tub, the combination with the tub-body, of the rim B and legs C engaging said rim, the transverse bars D, at the opposite ends of the tub, the bolts F adjustably connecting each pair of legs with their respective bar and the bolts G for locking the parts together when in their adjusted position.

6. In a bath-tub, the combination with the tub-body, of a rim engaging said body, legs detachably engaging said rim and transverse bars each connecting a pair of legs and formed with cut-out portions at their ends for the reception of the securing-flanges for the ends of the tub.

819,344. VEHICLE-WHEEL. JAMES F. DE JARNETTE, Omaha, Nebr. Filed May 22, 1905. Serial No. 261,494.



Claim.—1. A vehicle-wheel, in combination, comprising a hub; coiled springs; a tire; a series of spokes rigidly mounted upon the hub and extending therefrom a part of the radial distance from the hub to the tire; annular rims; said annular rims being mounted rigid upon said series of rigidly-mounted spokes; resiliently-formed spokes; said resiliently-formed spokes being each composed of two tube portions having suitable spring-bearing ends, said tube portions of each spoke being of different diameters and of a length less than the radial distance from the hub to the tire; the end of one tube portion being pivotally mounted upon the hub, the end of the other tube portion of each tubular spoke inclosing the opposite end and part of the body of the other tube portion and forming within said tube portions a radially-extending chamber; one of said coiled springs being seated within each of chambers and extending lengthwise therein between said spring-bearing ends of said tube portions; said resiliently-formed spokes being disposed between and closely adjacent to said annular rims.

2. A vehicle-wheel, in combination; comprising a hub; a tire; spiral springs; resiliently-formed spokes; bearing-heads having thread-and-groove stems; each of said resiliently-formed spokes consisting of two radially-extending tube portions of differing diameters and each being of a less length than the radial distance from the hub to the tire; a part of one tube portion being inclosed by a part of the other tube portion; one of said tube portions having a closure at one end; said closure having a thread-and-groove aperture therein adapted to receive the stem of said bearing-head; said bearing-head being pivotally mounted upon said tire; the other tube portion having an end closure and mounted upon the hub at the end having said end closure; a longitudinal chamber formed within said tube portions and between said closures, and a spring seated therein.

3. A vehicle-wheel, in combination; comprising a hub; a tire; spiral springs; a series of spokes rigidly mounted upon the hub and extending therefrom a part of the radial distance from the hub to the tire; circular rim portions; said circular rim portions being mounted rigid upon said series of rigidly-mounted spokes; resiliently-formed spokes; said resiliently-formed spokes being each composed of two tube portions having suitable spring-bearing ends, said tube portions of each spoke being of different diameters and of a length less than the radial distance from the hub to the tire; the end of one tube portion being pivotally mounted upon the hub; the end of the other tube portion being pivotally mounted upon the tire; the opposite end of one tube portion of each of said resiliently-formed spokes inclosing the opposite end and a part of the body of the other tube portion, and forming within said tube portions a radially-extending chamber; one of said spiral springs being seated within each of said chambers and extending lengthwise therein between said spring-bearing ends of said tube portions; said resiliently-formed spokes being disposed tween and closely adjacent to said circular rim portions; and means to increase or decrease the resiliency of said springs at will.

4. A vehicle-wheel, in combination; comprising a hub; a tire; spiral springs; resiliently-formed spokes; bearing-heads having thread-and-groove stems; circular rim portions; stop-blocks; a series of spokes rigidly mounted upon the hub and extending therefrom a part of the radial distance from the hub to the tire; said circular rims being mounted rigidly upon said series of rigidly-mounted spokes one upon either side of said spokes and at equal distances from said hub; each of said resiliently-formed spokes consisting of two radially-extending tube portions of differing diameters and each being of a less length than the radial distance from the hub to the tire; a part of one tube portion being inclosed by a part of the other tube portion; one of said tube portions having a closure at one end; said closure having a thread-and-groove aperture therein adapted to receive the stem of said bearing-head; said bearing-head being pivotally mounted upon said tire; the other tube portion having an end closure; a longitudinal chamber formed within said tube portions and between said closures, and one of said spiral springs seated therein; said stop-blocks being mounted rigidly between the transverse walls of the circular rim portions rigidly with said series of rigidly-mounted spokes; said resiliently-mounted spokes being adapted to have a radial movement upon their pivotal bearings between said circular rim portions and between said stop-blocks; and means to increase or decrease the resiliency of said springs at will, substantially as described.

819,345. PUZZLE. BENJAMIN DORSTROM, Bristol, R. I. Filed Feb. 5, 1906. Serial No. 299,637.



Claim.—1. A puzzle comprising a body consisting of a plurality of disks each disk having a series of arms extending radially from the disk and a link or its equivalent adapted to be locked to the body between the radial arms, means for holding the disks together, and means for controlling the movements of the disks, whereby on the disks being made to assume predetermined positions the link is radially detached from the body.

2. A puzzle comprising a body consisting of three disks each disk having a series of arms extending radially from the disk and a link or its equivalent adapted to be locked to the body between the radial arms, means for holding the disks together, and means for controlling the movements of the disks, whereby on giving a predetermined movement to the outer disks in the same direction and the same movement to the central disk in the reverse direction, the link is readily detached from the body.

3. A puzzle comprising a body consisting of a plurality of disks each disk having a series of arms extending radially from the disks, a cam-slot, and a radial slot, a stud adapted to extend through the cam-slots in the disks, plates secured to the end of the stud and adapted to conceal the slots in the disks, and a link or its equivalent adapted to be locked to the body between the radial arms, whereby on the disks being made to assume predetermined positions, the link is readily detached from the body.

4. A puzzle comprising a body consisting of a plurality of disks each disk having a series of radial arms, a cam-slot one end of which is concentric and the other end eccentric with the center of the disk and a radial slot extending from the edge of the disk toward the center of the disk, a stud adapted to extend through the concentric ends of the cam-slots with the body in the locked position, plates adapted to conceal the slots in the disks and secured to the ends of the stud, a link or its equivalent adapted to be locked to the body between the radial arms, whereby on the disks being moved into predetermined positions the radial slots are moved outward beyond the plates into a position to coincide and to receive one end of the link, thus allowing the other end of the link to be carried over the ends of the radial arms and detached from the body, as described.

5. A puzzle comprising a body consisting of three disks each disk having a series of radial arms, a cam-slot one end of which is concentric and the opposite end of which is eccentric with the center of the disks and a slot extending radially from the edge of one arm toward the center of the disk, the cam and radial slots in the central disk being in a reversed position relative to the cam and radial slots in the outside disks, a stud adapted to extend through the concentric ends of the cam-slots with the body in the locked position, circular plates adapted to conceal the slots in the disks and secured to the ends of the stud, and a link or its equivalent adapted to be locked to the body between the radial arms, whereby on the disks being moved to bring the stud from the concentric end to the eccentric end of the cam-slot, the radial slots in the disks are moved outward beyond the edges of the plates and into an exposed position to coincide and to receive one end of the link, thus allowing the opposite end of the link to be carried over the ends of the radial arms and detached from the body, as described.

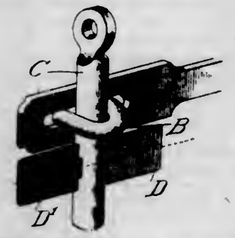
6. In a puzzle, the combination of the disks *a*, *b* and *c* each disk having a cam-slot *g* the end *g'* being concentric with the center of the disk, the series of arms *h h* extending radially from the edge of the disk and a radial slot *i* extending inwardly from the edge of one of the arms toward the center of the disk, the plates *d d* each having a central hole *d'*, a stud *e* adapted to extend through the cam-slots *g g g* in the disks and riveted to the plates *h h* through the holes *h' h'* in the plates, and an elongated rectangular link *f* having the ends *f'* and *f²* connected by the sides *f³ f⁴* adapted to be locked to the disks between the arms *h h* and to be detached from the disks by predetermined movements of the disks, as described.

819,346. LOOSE-LEAF BINDER. FREDERICK BOGE, Bridgeport, Conn., assignor to The National Blank Book Company, Holyoke, Mass., a Corporation of Massachusetts. Filed June 10, 1905. Serial No. 264,658.



Claim.—A device of the class described comprising an elongated strip having its edges bent to form parallel flanges along opposite sides, a rod mounted beneath the strip and against one flange and arranged to be moved rotatably, arms carried by the rod and curved to terminate above the strip, a resilient detent secured to the under side of the strip in parallelism with and adjacent to the rod, a lug carried by the rod in contact with the detent and positioned to contact with the under side of the strip to limit the rotary movement of the rod, and other arms secured in contact with the flange at the opposite edge and bent to meet the first-mentioned arm above the strip.

819,347. SEAL. LEWIS A. FOOTE, Chicago, Ill., assignor to Chicago Car Seal & Manufacturing Company, Chicago, Ill., a Corporation of Illinois. Filed Aug. 7, 1905. Serial No. 273,090.



Claim.—1. The combination with a hasp-pin provided with a transverse key-channel, of a sheet-metal member comprising a body portion and a hollow open-ended tongue formed integrally therewith, the metal being cut and bent into box form to form said tongue, and a sheet-metal member comprising a body portion and a projecting portion bent upon itself to form a tongue, the key-channel receiving said first-named tongue and said first-named tongue receiving said second-named tongue, said tongues being provided with interlocking means preventing separation, for the purpose set forth.

2. The combination with a hasp-pin provided with a transverse key-channel, of a sheet-metal member equipped with a hollow tongue having struck-in spring-catches, and a sheet-metal member equipped with a tongue provided with sockets receiving said spring-catches, said tongues being telescoped together within and filling said key-channel for the purpose set forth.

3. The combination with a hasp-pin having a transverse key-channel, of a sheet-metal member having the metal cut transversely at its lateral edges and bent, forming a hollow open-ended tongue, the bent portion of the metal lying at one side of the body of the member, and a sheet-metal member having an extension of reduced cross-section bent upon itself forming a tongue, the extremity of said extension being bent laterally, forming a shoulder at the base of the tongue, said tongues being in telescopic connection within and fill-

ing the key-channel and having interlocking connection preventing separation, for the purpose set forth.

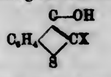
4. A self-locking seal adapted for use in connection with a hasp-pin, comprising a sheet-metal member having a projecting hollow tongue and provided with a struck-in spring-catch, and a sheet-metal member having a projecting tongue adapted to fit within said first-named tongue and provided with a socket for said catch.

5. A seal for use in connection with a hasp-pin comprising a sheet-metal member having a hollow tongue, the metal being cut transversely at its lateral edges and bent into box form to form said tongue, and a sheet-metal member having an extension of reduced cross-section bent upon itself and forming a tongue adapted to fit accurately within said first-named tongue, one of said tongues having its metal struck in to form a spring-catch, and the other tongue having a socket for receiving said catch.

6. A self-locking seal for use in connection with hasp-pins, comprising a sheet-metal member having the metal cut transversely at its lateral edges and bent to one side of the body portion forming a hollow open-ended tongue, the metal being struck in at the sides of said tongue at different places in the length of the tongue, and a sheet-metal member having a tongue fitting within said first-named tongue and provided at different points in its length with sockets receiving said catches.

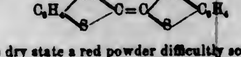
819,348. **RED SULFUR DYE AND PROCESS OF MAKING SAME.** PAUL FRIEDLAENDER, Vienna, Austria-Hungary, assignor to The Firm of Kalle and Company Aktiengesellschaft, Biebrich, Germany. Filed Nov. 16, 1905. Serial No. 287,738. (Specimens.)

Claim.—1. As a new process the manufacture of a red sulfur containing coloring-matter by acting with oxidizing agents on the thio-indoxyl compounds having the following constitution:



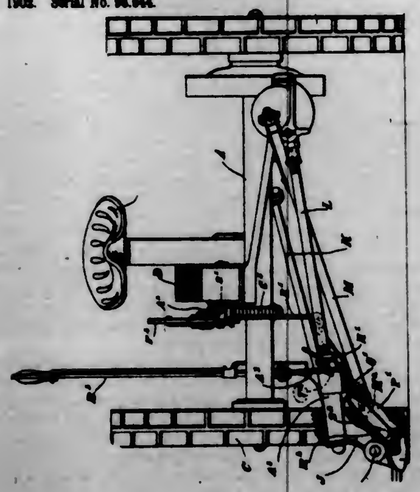
in which formula X stands for a hydrogen atom (H) or for a carboxylic group (COOH).

2. As a new product the sulfur-containing coloring-matter obtained by oxidizing thio-indoxyl compounds and having very probably the following constitution:



which is in the dry state a red powder difficultly soluble in the usual solvents, which sublimes on heating without decomposition forming brilliant bronze-colored needles and gives on treatment with reducing agents a yellow solution, from which the coloring-matter is reprecipitated by the access of air, and which produces on the textile fibers red shades of excellent fastness.

819,349. **MOWER.** PAUL HANSON, St. Paul, Minn. Filed Mar. 4, 1903. Serial No. 96,044.



Claim.—1. In a mowing-machine, a main frame provided with an extension, bearings supported in said extension, a counter-shaft journaled in said bearings, a plug to receive the end thrust of said shaft, a ball-bearing interposed between the end of said shaft and said plug, said ball-bearing including a circular ball-race formed in the end of said shaft and encircling concentrically the axis of rotation of the shaft, whereby said ball operates off the center of rotation of said shaft, a pitman, a main axle, a drive-gear thereon and gearing carried by said counter-shaft and actuated by the drive-gear on said main axle for operating said pitman, as and for the purpose set forth.

2. In a mowing-machine, a yoke, a shoe pivotally mounted thereon and provided with a lug or extension, said lug or extension having a shoulder at the end thereof, a gag-lever pivotally mounted upon said yoke, an auxiliary part pivotally connected to said lever and forming an extension thereof, said auxiliary part having at its extremity an engaging lug arranged to snap over the shoulder on said shoe extension to form a lock to hold said shoe in tilted position, and means for releasing said lock, as and for the purpose set forth.

3. In a mowing-machine, a shoe, a support therefor upon which said shoe is pivotally mounted, a finger-bar carried by said shoe, said shoe provided with an extension, said extension having a shoulder at the end thereof, a gag-lever arranged to engage said extension to tilt the shoe, an auxiliary piece pivotally connected to said gag-lever and forming a continuation thereof, said auxiliary piece provided with an engaging lug at the end thereof said lug arranged, when said finger-bar is raised to vertical or upright position, to snap over said shoulder to form a lock therefor and connections for releasing said lug, as and for the purpose set forth.

4. In a mowing-machine, a shoe, a support upon which said shoe is pivotally mounted, a finger-bar carried by said shoe, said shoe provided with an extension having a shoulder at the end thereof, a gag-lever arranged to coöperate with said extension to tilt said shoe when said lever is rocked, a forked or bifurcated extension pivotally connected to said lever for rocking movement relatively thereto, said extension forming a continuation of said lever, and provided at its extremity with an engaging lug adapted, when the finger-bar is raised to vertical or upright position, to snap over and engage the shoulder on the shoe extension to form a lock therefor, and means for releasing the engagement of said extension and shoulder, as and for the purpose set forth.

5. In a mowing-machine, a shoe, means for pivotally supporting said shoe, said shoe provided with an extension having a shoulder, a finger-bar carried by said shoe, a gag-lever having an opening therethrough, a forked extension pivotally connected to said lever and having lugs projecting into said opening whereby said extension is permitted rocking movement relative to said lever, an engaging lug formed on said extension and operating to snap over and lock said shoulder when said finger-bar is raised into vertical or upright position, as and for the purpose set forth.

6. In a mowing-machine, a main frame, a casting pivotally mounted thereon, a gag-lever, a lifting-link respectively connected to the casting and gag-lever, a counterbalancing-spring connected at one end to the main frame and at the other end to said casting, a foot-bar rigidly connected at one end to said casting and carrying at its opposite end a treadle arranged in convenient position to be engaged by the foot of the driver, and a latch carried by said foot-treadle, and a shoulder formed on the main frame, with which said latch coöperates, as and for the purpose set forth.

819,350. **LONG-DISTANCE LEVEL.** JOSEPH H. JANSSEN and FREDERICK T. KOESTER, Chicago, Ill. Filed May 31, 1905. Serial No. 263,113.



Claim.—1. A long-distance leveling device, comprising a support rotative on a vertical axis, a leveling member rotatively mounted thereon to rotate in a vertical plane, and a leveling-cord attached to said leveling member.

2. A long-distance leveling device, comprising a balanced rotative leveling member, a leveling-cord attached thereto, a reel upon which said cord is wound and a shank on which said reel is rotatively mounted.

3. A long-distance leveling device, comprising a rotatively-mounted leveling member, a leveling-cord attached thereto, a reel upon which said cord is wound and a shank on which said reel is rotatively mounted, said shank being provided with a transverse aperture through which the leveling-cord passes to the reel.

4. A long-distance leveling device comprising a frame or support, a leveling member rotatively mounted thereon, a leveling-cord attached to said leveling member, a reel upon which said cord is wound and a shank on which said reel is rotatively mounted, said shank being provided with a transverse aperture through which said cord passes to the reel, the parts being so arranged that the distance between said aperture and the lower end of the reel is equal to the distance between the axis of rotation of the leveling member and the lower part of its support.

5. A long-distance leveling device comprising a balanced rotatively-mounted leveling member and a leveling-cord attached thereto.

6. A long-distance leveling device comprising a frame or support, a circular leveling member concentrically and rotatively mounted on said support, and a leveling-cord attached to the periphery of said leveling member.

7. A long-distance leveling device comprising a rotative, circular leveling member, a level-indicator, a scale or indicating mark on said member coöperating with said indicator, and a leveling-cord attached to the periphery of said leveling member.

8. A long-distance leveling device comprising a rotative leveling member provided at its lower side with a curved ball-race, a ball located in said race, and a leveling-cord attached to said leveling member.

9. A long-distance leveling device comprising a rotative leveling member provided with a curved ball-race, a ball located in said race, and a leveling-cord attached to said leveling member, said leveling member being provided with a scale which coöperates with said ball.

10. A long-distance leveling device comprising a circular rotative leveling member provided with a ball-race, curved concentrically with the axis of rotation of said member, a ball located in said race, and a leveling-cord attached to the periphery of said leveling member.

11. A long-distance leveling device comprising a circular rotative leveling member provided with a ball-race, curved concentrically with the axis of rotation of said member, a ball located in said race, a leveling-cord attached to the periphery of said leveling member, and a reel upon which said leveling-cord is wound.

12. A long-distance leveling device comprising a support, a disk rotatively mounted thereon and provided with a curved raceway, a ball located in said raceway, the side wall of said raceway being made of transparent material, a scale or indicating mark on said disk coöperating with said ball, and a leveling-cord attached to the periphery of the disk.

13. A long-distance leveling device comprising a frame, a leveling member rotatively mounted thereon, a leveling-cord attached to said member, said frame being provided with a downwardly-opening socket and a support for the frame provided with a vertical stud having bearing in said socket.

819,351. **THREAD-PARTING MECHANISM FOR LOOMS.** HERBERT F. KELLEY, Lewiston, Me., assignor to Draper Company, Hopedale, Mass., a Corporation of Maine. Filed Sept. 15, 1905. Serial No. 278,538.



Claim.—1. In an automatic filling-replenishing loom, a thread-parter and a thread-clamp, each comprising a movable and a relatively fixed member, to act upon the thread of the filling-supply to be abandoned, the fixed member of the clamp coöperating with both movable members to securely clamp the thread, and means to actuate the movable members to successively clamp and part the thread upon replenishment of filling.

2. In an automatic filling-replenishing loom, a thread-parter and a thread-clamp, each comprising a movable and a relatively fixed member, to act upon the thread of the filling-supply to be abandoned, the fixed member of the clamp coöperating with both movable members to securely clamp the thread, a connection between the movable members, and means acting through such connection to operate the movable members in unison to successively clamp and part the thread upon filling-replenishment.

3. In an automatic filling-replenishing loom, a thread-parter and a thread-clamp, each comprising a movable and a relatively fixed member, bodily movable upon replenishment of filling into position to act upon the thread of the filling-supply to be abandoned, the fixed member of the clamp being interposed between the said two movable members and coöperating therewith to clamp the thread, and means to actuate the movable members in unison to clamp and part the thread upon replenishment of filling.

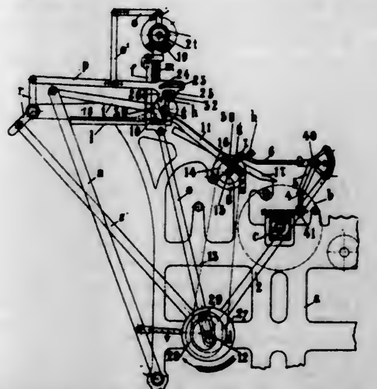
4. In an automatic filling-replenishing loom, a thread-parter and a thread-clamp, arranged in juxtaposition and adapted to act upon the thread of the filling-supply to be abandoned, a movable combined parting-blade and clamp member, forming one element of the parter and clamp, a second clamp member movable with said first-named member, means to operatively move said members upon replenishment of filling, and a relatively fixed member of the clamp, with which both movable members coöperate to doubly clamp the thread.

5. In an automatic filling-replenishing loom, a thread-parter and a thread-clamp, arranged in juxtaposition and adapted to act upon the thread of the filling-supply to be abandoned, the parter including a fixed blade and the clamp a fixed member, a movable combined parting-blade and clamp member movable between and adapted to coöperate with both of said fixed members, a second movable clamping member coöperating with the fixed member of the clamp and connected with the combined parting-blade and clamp member, and means to move the latter and the second clamping member in unison, to clamp the thread at each side of the fixed member of the clamp and then part the thread.

6. In an automatic filling-replenishing loom, a thread-parter and a thread-clamp, bodily movable upon replenishment of filling into position to act upon the thread of the filling-supply to be abandoned, the parter including a fixed blade and the clamp including a parallel fixed jaw, a combined blade and jaw movable between said fixed members and coöperating with each, a jaw fixedly connected with the combined blade and jaw and coöperating with the outer face of the fixed jaw of the clamp, and means to yieldingly press the fixed and movable members laterally against each other when actuated upon replenishment of filling, and means to effect actuation of the movable members in unison.

7. In an automatic filling-replenishing loom, a shuttle to contain a supply of filling, a shuttle-feeler, movable into operative position prior to filling change, means mounted on the feeler to act upon the thread of the filling-supply to be abandoned, said means including a fixed blade and a fixed jaw, two connected, movable members one of which coöperates only with the said jaw and the other with both the jaw and the fixed blade, whereby the thread is doubly clamped before it is parted, and means to operate the movable members to clamp and then part the thread when the shuttle-feeler is operatively positioned.

819,352. **SHEET-FEEDING DEVICE FOR PRINTING-MACHINES.** GUSTAV KLEIN, Leipsic, Germany. Filed Jan. 5, 1905. Serial No. 239,737.



Claim.—1. In a pneumatic sheet-feeding device for printing-machines, the combination with a horizontal tube provided with a plurality of dependent boxes for sucking the uppermost sheet, said horizontal tube being adapted to turn on the edges of the sucking-boxes in an axis parallel to it, means for connecting said horizontal

tube with an air-sucking device, two open bearings for the axis of said horizontal tube, means for feeding said two open bearings down with reference to the axis through the thickness of one sheet to be printed during each revolution of the printing-cylinder, means for moving said two open bearings vertically, means for reciprocating said horizontal tube around its axis during the vertical motion of said two open bearings, an inclined table hinged to said two open bearings and adjoining to the printing-cylinder, means for moving the axis of said horizontal tube out of said two open bearings down said inclined table and vice versa, and means for seizing the front edge of the sheet and delivering it to the printing-cylinder.

2. In a pneumatic sheet-feeding device for printing-machines, the combination with two vertical guides on both sides of the machine-frame, two slides moving in said two vertical guides and provided each with a vertical screw-spindle, means for moving said two slides up and down, two bearings open on one side and adapted to slide in said two slides and engaging said two screw-spindles, means for turning said two screw-spindles, to feed said two bearings downward through the thickness of one sheet to be printed during each rotation of the printing-cylinder, two trunnions adapted to turn in said two bearings and provided with two arms, a horizontal tube secured in the free ends of the two arms of said two bearings and provided with a plurality of dependent boxes for sucking the front edge of the uppermost sheet, one of said two trunnions and its arm being hollow to communicate with the horizontal tube and the sucking-boxes and the pneumatic frame formed thereby being so arranged, that the bottom edges of said sucking-boxes on one side are in the axis of the two trunnions, means for connecting the hollow trunnion of said pneumatic frame with an air-sucking device, means for rocking said pneumatic frame during the vertical motion of said two slides and releasing same in the one extreme position, an inclined table leading to the printing-cylinder, two inclined rails hinged at the upper ends to said two bearings and guided at the lower ends by two pins on the machine-frame, means for moving the trunnions of said pneumatic frame when released out of said two bearings down said two inclined rails and vice versa, and means for seizing the front edge of the sheet released by said sucking-boxes and delivering it up to the printing-cylinder.

3. In a pneumatic sheet-feeding device for printing-machines, the combination with two vertical guides on both sides of the machine-frame at the front of the sheet-piling table, two slides moving in said two vertical guides and provided each with an arm and a vertical screw-spindle with a bevel-wheel on the upper end, two bearings open on one side and adapted to slide in said two slides and engaging said two screw-spindles, a horizontal shaft mounted to turn in the arms of said two slides, two bevel-wheels on said horizontal shaft and engaging in the two bevel-wheels on said two screw-spindles, a friction-wheel on said horizontal shaft, means for moving said friction-wheel to feed said two bearings downward through the thickness of one sheet to be printed during each rotation of the printing-cylinder, a pneumatic frame formed of two trunnions adapted to turn in said two bearings, two arms connected with these trunnions, a horizontal tube secured in the free ends of these two arms and a plurality of dependent boxes integral with the horizontal tube, said dependent boxes being adapted to suck the uppermost sheet and having their bottom edges on one side in the axis of the pneumatic frame, the one trunnion and arm of said pneumatic frame being hollow to communicate with the horizontal tube, means for connecting the hollow trunnion of said pneumatic frame with an air-sucking device, two bell-crank levers mounted to rock on said two slides, two horizontal rods pivotally connected with the upper arms of said two bell-crank levers and provided on the front ends each with a slot and two dependent projections, the dependent projections of said two horizontal rods being adapted to engage the horizontal tube of said pneumatic frame and thereby to rock the latter, said two bearings being provided with two pins engaging in the slots of said two horizontal rods for so guiding them, that in their one extreme position they release said pneumatic frame, an inclined table leading from the sheet-piling table to the printing-cylinder, two inclined rails hinged at the upper ends to said two bearings and guided at the lower ends by two pins on the machine-frame, a horizontal pulley-shaft mounted to turn in the machine-frame beneath said inclined table, a plurality of pulleys fastened on said horizontal pulley-shaft and just projecting through the slots in said inclined table, a rocking frame mounted above the printing-cylinder to turn on two pins at the side parts of the machine-frame, means mounted to turn in said rocking frame and adapted to work with said pulleys for seizing the sheet and moving it to the printing-cylinder, two friction-disks on the trunnions of said pneumatic frame, two eyed rods adapted to embrace with their eyed ends said two friction-disks, two rear levers mounted to swing on pins at the machine-frame and pivotally connected at their free ends with said two eyed rods, a lower shaft mounted to turn in the machine-frame and driven at the same rate as the printing-cylinder, means for transmitting the rotation from said lower shaft to said horizontal pulley-shaft, means fastened on said lower shaft of the machine, a plurality of radial rods engaging at their lower ends the means fastened to said lower shaft, the upper ends of said radial rods being pivotally connected with said two rear levers, said two slides, said rocking frame and the lower arms of said two bell-crank levers respectively.

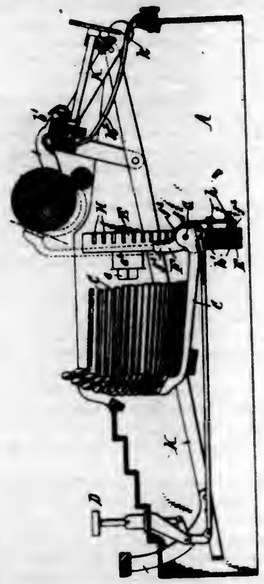
4. In a pneumatic sheet-feeding device for printing-machines, the combination with a horizontal tube provided with a plurality of dependent boxes for sucking the uppermost sheet, said horizontal tube being adapted to turn on the edges of the sucking-boxes in an axis parallel to it, means for connecting said horizontal tube with an air-sucking device, two open bearings for the axis of said horizontal tube, means for feeding said two open bearings down through the thickness of one sheet to be printed during each revolution of the printing-cylinder, means for moving said two open bearings vertically, means for reciprocating said horizontal tube around its axis during the vertical motion of said two open bearings, and means for engaging and transferring each sheet to printing mechanism.

5. In a pneumatic sheet-feeding device for printing-machines, the combination with two vertical guides on both sides of the machine-frame, two slides moving in said two vertical guides and provided each with a vertical screw-spindle, means for moving said two slides up and down, two bearings open on one side and adapted to slide in said two slides and engaging said two screw-spindles, means for turning said two screw-spindles to feed said two bearings downward through the thickness of one sheet to be printed during each rotation of the printing-cylinder, two trunnions adapted to turn in said two bearings and provided with two arms, a horizontal tube secured in the free ends of the two arms of said two trunnions and provided with a plurality of dependent boxes for sucking the front edge of the uppermost sheet, one of said two trunnions and its arm being hollow to communicate with the horizontal tube and the sucking-boxes and the pneumatic frame formed thereby being so arranged, that the bottom edges of said sucking-boxes on one side are in the axis of the two trunnions, means for connecting the hollow trunnion of said pneumatic frame with an air-sucking device, means for rocking said pneumatic frame during the vertical motion of said two slides and releasing same in the one extreme position, and means for engaging and transferring each sheet to printing mechanism.

6. In a pneumatic sheet-feeding device for printing-machines, the combination with two vertical guides on both sides of the machine-frame at the front of the sheet-piling table, two slides moving in said two vertical guides and provided each with an arm and a vertical screw-spindle with a bevel-wheel on the upper end, two bearings open on one side and adapted to slide in said two slides and engaging said two screw-spindles, a horizontal shaft mounted to turn in the arms of said two slides, two bevel-wheels on said horizontal shaft and engaging in the two bevel-wheels on said two screw-spindles, a friction-wheel on said horizontal shaft, means for moving said friction-wheel to feed said two bearings downward through the thickness of one sheet to be printed during each rotation of the printing-cylinder, a pneumatic frame formed of two trunnions adapted to turn in said two bearings, two arms connected with these trunnions, a horizontal tube secured in the free ends of these two arms and a plurality of dependent boxes integral with the horizontal tube, said dependent boxes being adapted to suck the uppermost sheet and having their bottom edges on one side in the axis of the pneumatic frame, the one trunnion and arm of said pneumatic frame being hollow to communicate with the horizontal tube, means for connecting the hollow trunnion of said pneumatic frame with an air-sucking device, two bell-crank levers mounted to rock on said two slides, two horizontal rods pivotally connected with the upper arms of said two bell-crank levers and provided on the front ends each with a slot and two dependent projections, the dependent projections of said two horizontal rods being adapted to engage the horizontal tube of said pneumatic frame and thereby to rock the latter, said two bearings being provided with two pins engaging in the slots of said two horizontal rods for so guiding them, that in their one extreme position they release said pneumatic frame, and means for engaging and feeding each sheet to printing mechanism.

819,353. **TYPE-WRITING MACHINE.** BENJY G. LAVVA, Friendship, N. Y., assignor of one-half to Harvey A. Moyer, Syracuse, N. Y. Filed Oct. 31, 1904. Serial No. 230,255.

Claim.—1. The combination with a type-writing machine having a platen, and a series of type-bars arranged to strike the front of the platen, of a series of hangers to which the type-bars are pivoted arranged radially in front of and below the platen, said hangers being of U cross-section and having their rear sides and upper portions above the type-bar pivots closed, substantially as set forth.



2. The combination in a type-writing machine, having a series of type-bars, of an upright segment, and a series of type-bar hangers of U cross-section radially arranged on the rear side of the segment in contact thereon in radial lines and extending above the inner edge of the segment and formed above the segment with parallel side walls to receive the type-bars, substantially as set forth.

3. The combination in a type-writing machine having an upright segment, and a series of type-bars, of a series of type-bar hangers of U cross-section arranged with their open sides away from the printing-point and against the segment and having openings in which the type-bars are pivoted, and which are closed above the type-bar pivots, substantially as set forth.

4. The combination in a type-writing machine having a series of type-bars, and an upright segment, of a series of hangers of U cross-section arranged on the segment, and having central portions with parallel side walls between which the type-bars are pivoted, and end portions at opposite sides of the central pivot portions resting in contact on radial lines, substantially as set forth.

5. The combination in a type-writing machine having a series of type-bars and an upright segment, of a series of hangers of U cross-section arranged on the segment, and having central portions with parallel side walls between which the bars are pivoted, and end portions both above and below the central pivot portions resting in contact on radial lines, substantially as set forth.

6. The combination with a type-bar, and its connecting-rod, of a hanger of substantially U section having an inner end with inclined side faces to guide the bar, a central part with parallel side faces to embrace the bar, and a portion of wider section to admit the end of the connecting-rod, substantially as set forth.

7. The combination in a front-strike type-writing machine, of a series of hangers arranged in substantially upright relation, and type-bars pivoted thereto, the hangers having opposable side walls open at the front to receive the type-bars, and closed or united at the rear and over the type-bar pivots to exclude dust and stiffen the hangers, substantially as set forth.

8. The combination in a type-writing machine having a series of type-bars normally extending forwardly from an upright segment, of a series of hollow type-bar hangers arranged on the segment and having their sides and upper ends closed except for openings at one side to receive the ends of the type-bars, substantially as set forth.

9. The combination in a type-writing machine having an upright segment, and a series of type-bars, of a series of semitubular hangers radially arranged on the segment in such a way that the segment closes the open sides of the hangers, the upper ends of the hangers being closed except for openings at one side to receive the type-bars, substantially as set forth.

10. The combination in a type-writing machine having a series of type-bars provided with offset pivot ends, of a series of upright hangers in which said bars are pivoted, the upper ends and rear sides of the hangers being united so as to inclose the offset ends of the type-bars, substantially as set forth.

11. The combination in a type-writing machine having a series of type-bars provided with offset pivot ends and connecting-rods pivoted thereto, of a series of hangers of U cross-section in which the offset ends of the type-bars are pivoted, the ends of the hangers in which the bars are pivoted being closed to form covers over the offset ends of the type-bars and the pivots joining the type-bars and connecting-rods, substantially as set forth.

12. The combination in a type-writing machine having a series of type-bars provided with offset ends normally extending in front of an upright segment, of a series of hangers having side walls pivotally connected to the offset ends of the type-bars, the side walls of the hangers being united by semicircular connecting portions over the offset ends of the type-bars to exclude dust from the pivots and stiffen the hangers, substantially as set forth.

13. The combination in a type-writing machine having a series of type-bars provided with offset pivot ends, of a series of type-bar hangers of U cross-section having offset ends to receive the offset ends of the type-bars, the side walls of the offset ends of the hangers being united by semicircular connecting portions to cover the offset ends of the bars and stiffen the hangers, substantially as set forth.

14. The combination in a type-writing machine, of a segment having radial slots, and a series of hangers having opposable side walls arranged with one side wall of two adjoining hangers seated in the same slot in the segment, substantially as set forth.

15. The combination in a type-writing machine, of a hanger-support having slots radial to the printing-point, a series of type-bar hangers having opposable side walls engaged in said slots whereby the hangers are held in radial relation, and securing means for said hangers which permit the latter to be adjusted angularly in said slots, substantially as set forth.

16. The combination in a type-writing machine, of a hanger-support having slots radial to the printing-point, a series of type-bar hangers held in radial relation by said slots, and securing means for said hangers which permit the latter to be adjusted angularly and lengthwise in said slots, substantially as set forth.

17. The combination in a type-writing machine, of a hanger-support, a series of type-bars and connecting-hangers, each hanger being secured to the support by two screws and having a rocking bearing on the support, whereby the free ends of the hangers may be adjusted in the planes in which the type-bars swing by changing the position of the screws, substantially as set forth.

18. The combination in a type-writing machine, of a hanger-support, a series of type-bars, a series of hangers pivoted to the bars and having integral extensions forming guides for the type-bars, and means for adjusting the guide portions of the hangers angularly in the planes in which the type-bars swing to fit the bars when at the printing-point, substantially as set forth.

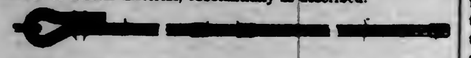
19. The combination in a type-writing machine, of a segment, a series of pivoted type-bars, hangers for the same, and means for adjusting the inner ends of the hangers toward and from the printing-point in the planes in which the type-bars swing and also in a direction parallel with the plane of the segment, substantially as set forth.

20. The combination in a type-writing machine, of a platen, a plain segment curved on the same radius throughout and arranged in front and below the platen, a series of type-bars having angularly-arranged type-heads, and a series of hangers radially arranged on the segment and pivotally connected to the type-bars, the pivots connecting the type-bars to the hangers in the central part of the segment being arranged at the same distance from the segment, and the pivots connecting the type-bars near the ends of the segment being arranged at graduated distances from the segment, substantially as set forth.

819,354. **WHIP-GUARD FOR RAILWAYS.** WILLIAM H. LAWRENCE and CHARLES A. SCHROYER, Chicago, Ill. Filed Apr. 1, 1905. Serial No. 253,257.

Claim.—1. In a whip-guard of the class described, the combination of inner discontinuous metallic wire portions, and an outer covering of fibrous material, substantially as described.

2. In a whip-guard of the class described, the combination of inner discontinuous spring-wire portions, and an outer covering of fibrous or similar material, substantially as described.



3. In a whip-guard of the class described, the combination of inner discontinuous copper spring-wire portions, and an outer covering of fibrous or similar material, substantially as described.

4. In a whip-guard of the class described, the combination of inner metal wire portions separated substantially midway of the length of the whip, an outer covering of fibrous material, and a cord or similar element wound around the exterior of the fibrous covering substantially at the disconnected ends of the inner wire so as to provide a flexible bending joint for the whip, substantially as described.

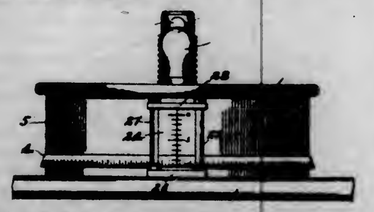
5. In a whip-guard of the class described, the combination of inner spring-wire portions disconnected substantially midway of the length of the whip, an outer covering of rope or similar material, and cord or similar element wound around the exterior portion of the rope substantially at the ends of the inner wire portion, substantially as described.

6. In a whip-guard of the class described, the combination of inner spring-wire portions disconnected substantially midway of the whip, an outer covering of rope or similar material looped at its upper portion, and an outer winding cord or similar material wound around the exterior surface of the rope at its lower end and again substantially midway of the length of the guard over the disconnected ends of the inner spring-wire portions, substantially as described.

7. In a whip-guard of the class described, the combination of an inner stiffening portion or portions, and an outer covering of fibrous material, substantially as described.

8. In a whip-guard of the class described, a whip formed with an inner discontinuous stiffening-wire portion, and an outer covering of fibrous material, substantially as described.

819,355. **POTENTIOMETER.** MORRIS E. LEEDS and EDWIN F. NORTHRUP, Philadelphia, Pa., assignors to The Leeds & Northrup Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Aug. 2, 1905. Serial No. 272,360.



Claim.—1. In a potentiometer, the combination with a potentiometer-circuit including a plurality of series-connected resistances and a coiled stationary extended wire, a movable contact for said plurality of resistances, a movable contact for the extended wire, and means to connect the source of electromotive force to be measured, in series with an indicating instrument, between said movable contacts, of means to check the current flowing through the potentiometer, consisting of an extra adjustable resistance connected in the potentiometer-circuit, a standard cell, and means to connect said standard cell from a point in said extra adjustable resistance through said indicating instrument to a point in said potentiometer-circuit.

2. In a potentiometer, the combination with a potentiometer-circuit including a plurality of series-connected resistances and a stationary extended wire, a movable contact for said plurality of resistances, a movable contact for the extended wire, and means to connect the source of electromotive force to be measured, in series with an indicating instrument, between said movable contacts, of a vertically-disposed stationary cylinder upon the periphery of which said extended wire is wound, means to check the current flowing through the potentiometer, consisting of an extra adjustable resistance connected in the potentiometer-circuit, a standard cell, and means to connect said standard cell from a point in said extra adjustable resistance through said indicating instrument to a point in said potentiometer-circuit.

3. In a potentiometer, the combination with a stationary cylinder having a vertical axis, of a potentiometer-circuit including a plurality of series-connected resistances and an extended wire, wound in helical formation, on the periphery of said cylinder, a movable contact for the said plurality of resistances, a movable contact for the extended wire, means to connect the source of electromotive force to be measured, in series with an indicating instrument, between said movable contacts, means to check the current flowing through the potentiometer, consisting of an extra adjustable resistance connected in the potentiometer, a standard cell and means to connect said standard cell from a point in said extra adjustable resistance through said indicating instrument to a point in said potentiometer-circuit, shunt, and means to connect said shunts around the potentiometer-circuit to extend the range of the readings.

4. In a potentiometer, a potentiometer-circuit including a plurality of series-connected resistances and a stationary extended wire, a movable contact for the said plurality of resistances and a movable contact for the extended wire, an extra set of series-connected resistances connected in the potentiometer-circuit to the end of said first-named resistances opposite said extended wire, a movable contact for the extra set of resistances, and a standard cell, one pole of which is connected to the movable contact of said extra resistance, a tap-off wire connected to a point in said first-named series of resistances, and a double-throw switch arranged to connect the source of electromotive force to be measured in series with an indicating instrument, between said movable contacts when thrown in one direction, and to connect said tap-off wire in circuit with said standard cell and disconnect the first-made connections, when thrown in another direction.

5. In a potentiometer, a stationary cylinder with axis vertically disposed, an extended wire wound in the form of a helix upon the periphery of said cylinder, a contact arranged to bear upon said wire, a movable support for said contact mounted to cause said contact to follow the convolutions of the helical wire, a movable protecting-hood for said extended wire arranged to move with said contact, a scale carried upon the periphery of said hood, and a stationary index for said scale.

6. A potentiometer, comprising a potentiometer-circuit including a plurality of resistances connected in series with each other, a movable contact for said plurality of resistances, an extended wire in series with said resistances, a cylinder upon which said wire is wound in the form of a helix, a contact-plug having a hardened-steel tip arranged to bear upon said wire, a movable support for said contact-plug, mounted to cause the contact to follow the convolutions of the helical wire, and circuit connections for connecting the unknown quantity to be measured in series between the movable contact of said series-connected resistances and said hardened-steel tip.

7. In a potentiometer, an extended wire, a cylinder upon which said wire is wound in the form of a helix, a contact-maker arranged to bear upon said wire, a movable support for said contact mounted to cause said contact to follow the convolutions of the helix, and a protecting-hood mounted for movement with said contact-support and arranged to extend over the extended wire.

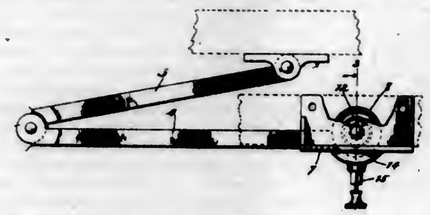
8. In a potentiometer, an extended wire, a cylinder upon which said wire is wound in the form of a helix, a contact-maker arranged to bear upon said wire, a movable support for said contact mounted to cause said contact to follow the convolutions of the helix, a protecting-hood mounted for movement with said contact-support and arranged to extend over the extended wire, an annular scale mounted on the outside of said hood, and a stationary scale and index mounted near said annular scale.

9. In a potentiometer, an extended wire, a cylinder upon which said wire is wound in helical formation, a screw extending upward through the center of said cylinder, a screw-threaded sleeve arranged to travel on said screw, an arm mounted fast on said sleeve, a spring-pressed contact carried by said arm and arranged to engage said extended wire, a protecting-hood mounted fast upon said sleeve, inclosing said arm and contact and adapted to extend over the extended wire and cylinder supporting the same, an annular scale carried upon the outside of said hood, a glass plate mounted near said hood and having thereon a stationary vertical index for said scale and a stationary vertical scale of which the said circular scale forms the index, substantially as described.

819,356. **DOOR STOP AND HOLDER.** AXEL F. LIDVENDAHL, Chicago, Ill. Filed Sept. 6, 1904. Serial No. 223,356.

Claim.—1. A device of the kind described, comprising a pair of pivotally-connected arms, each arm provided with means for pivotally attaching its free end to one of two objects united by a hinged connection thereby when said arms are extended limiting the action of said connection, in combination with resilient means tending to normally hold the arms partly closed.

2. A device of the kind described, comprising a pair of pivotally-connected arms each arm provided with means for pivotally attaching its free end to one of two objects united by means of a hinged connection, thereby when said arms are extended limiting the action of said connection, in combination with resilient means tending to normally hold the arms partly closed and a lock adapted when engaged to hold the pivotal connections to said arms in a straight line.



3. A device of the kind described, comprising a pair of pivotally-connected arms each arm provided with means for pivotally attaching its free end to one of two objects united by means of a hinged connection, thereby when said arms are extended limiting the action of said connection, in combination with resilient means tending normally to hold the arms partly closed and locking means adapted to engage one of the pivotal connections of said arms to fixedly maintain the same in a certain position.

4. A device of the kind described, comprising a pair of pivotally-connected arms, each arm provided with means for pivotally attaching its free end to one of two objects united by means of a hinged connection, and adapted to limit the action of said connection, in combination with resilient means tending to normally hold the arms partly closed and a bolt adapted to engage one of the pivotal connections of said arms to fixedly maintain said arm in a certain position.

5. In a device of the kind described, the pivotally-connected arms one of which is provided with a bracket at its free end adapted to be secured to one of a pair of hinged parts, in combination with a head pivotally carried upon the free end of the other arm and comprising a plate adapted to be secured to the other member of the pivotally-connected pair and provided with intermediate resilient means positioned between the plate and the free end of the arm and when the parts are in place tending to normally hold the arms partly closed.

6. In a device of the kind described, a head comprising a plate adapted to be secured to a movable part, an arm pivotally connected to the plate by a bolt securing the parts in position; in combination with a spring intermediately arranged between the arm and plate and having one end connected to the arm and the other end to the plate.

7. In a device of the kind described, a head comprising a plate adapted to be secured to a movable part and provided with a spring-pocket, in combination with an arm pivotally connected to the head by a bolt centrally positioned in the pocket, a helical spring centrally arranged within the pocket and having one end connected with the arm and the other with the plate and a retaining-plate carried by the bolt and adapted to partially inclose and retain the parts in position.

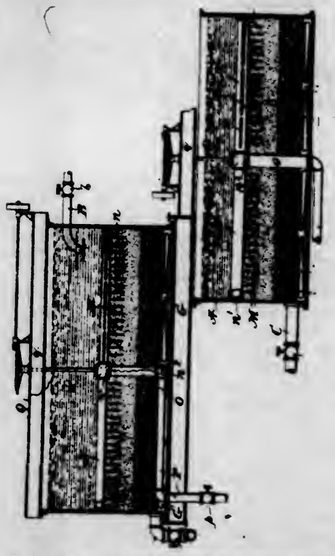
8. In a device of the kind described, pivotally-connected arms one of which is provided with a bracket at its free end adapted to be secured to one of a pair of hinged parts, in combination with a head pivotally carried upon the free end of the other arm comprising a plate adapted to be secured to the other member of the pivotally-connected pair and provided with intermediate resilient means positioned between the plate and the free end of the arm, tending, when the parts are in place to normally hold the arms partly closed, and locking means adapted when engaged to prevent the closing of said arms.

9. In a device of the kind described, a head comprising a plate adapted to be secured upon a movable part and provided with a recessed chamber, and a spring arranged within said chamber, in combination with an arm resiliently and pivotally connected to said plate by said spring, means for securing the parts in said position, and locking means adapted to engage the pivotal connection of said arm to fixedly maintain the same in a certain position.

10. In a device of the kind described, a head comprising a plate adapted to be secured to a movable part, an arm pivotally connected to the plate by a bolt securing the parts in position, in combination with a spring intermediately arranged between the arm and plate, having one end connected to the arm and the other end to the plate, and locking means connected to the plate adapted to engage said arm to fixedly maintain the same in a certain position.

11. In a device of the kind described, a head comprising a plate adapted to be secured to a movable part and provided with a spring-pocket, in combination with an arm pivotally connected to the head by a bolt centrally positioned in the pocket, a helical spring centrally arranged within the pocket and having one end connected with the arm and the other with the plate and a retaining-plate carried by the bolt and adapted to partially inclose and retain the parts in position, and locking means adapted to engage the pivotal connection of said arm to fixedly maintain the same in a certain position.

819,357. **FILTER FOR PURIFYING WATER.** JOHN MACDOUGALL, Detroit, Mich., assignor, by direct and mesne assignments, to Frank B. Kirby, Detroit, Mich., and William W. Near, Montreal, Canada. Filed Mar. 19, 1900. Renewed Mar. 14, 1906. Serial No. 306,011.



Claim.—1. In a filter, the combination of a rotary pipe having an outlet at its inner end, and means for the admission of water to it enlarging in size from its inner to its outer end, substantially as and for the purpose described.

2. In a filter, the combination of a bed of filtering material, and a pipe for wash-water extending from the center of the bed outward, and having a water-inlet and a water-outlet, the latter being carried downward directly from the pipe, substantially as and for the purpose described.

3. In a filter, the combination of a bed of filtering material, and a pipe for wash-water above the same extending from the center of the bed outward, and having a water-inlet and a water-outlet, the latter being extended downward through the bed at its center directly from the pipe, substantially as and for the purpose described.

4. In a filter, the combination of a bed of filtering material, and a pipe for wash-water movable above such bed, that extends from the center thereof outward and has a water-inlet and a water-outlet, the latter being extended downward through the bed at its center directly from the pipe, substantially as and for the purpose described.

5. In a filter, the combination of a bed of filtering material a vertical pipe extending therethrough, and a pipe above the filter-bed, pivotally connected to and in communication with said vertical pipe and having an inlet for wash-water, the construction being such that wash-water passes directly downward into the vertical pipe from the pipe pivotally connected therewith, substantially as and for the purpose described.

6. In a filter, the combination of a bed of filtering material, and a support therefor, formed of open-bottomed segment-shaped sections, each comprising radial and curved bars, substantially as and for the purpose described.

7. In a filter, the combination of a bed of filtering material, and a support therefor, formed of segment-shaped sections having radial bars through which are water-passages, substantially as and for the purpose described.

8. In a filter, the combination of a bed of filtering material, and a support therefor, formed of segment-shaped sections, each comprising radial and curved bars, said radial bars being perforated and cut away on their under sides, substantially as and for the purpose described.

819,358. METHOD OF CLEANING FILTERS. JOHN MACDOUGALL, Detroit, Mich., assignor, by direct and mesne assignments, to Frank B. Kirby, Detroit, Mich., and William W. Near, Montreal, Canada. Filed Apr. 5, 1900. Serial No. 11,731.



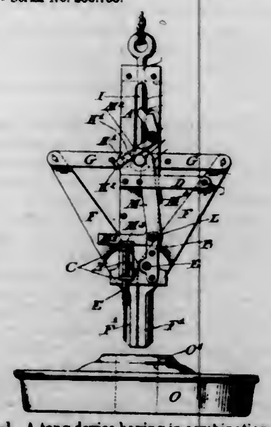
Claim.—1. The method of cleaning filter-beds, which consists in agitating only the befouled portion of the bed in the presence of a fixed quantity of water, removing the dirty water that results, and then passing pure water through the bed from the bottom upward, and removing it at a level close to the surface of the bed, substantially as and for the purpose described.

2. The method of cleaning filter-beds, which consists in agitating only the upper portion of the filter-bed in the presence of water before it has been filtered, removing the befouled water which results, and then passing pure water upward through the bed.

3. The method of cleaning filter-beds, which consists in agitating the upper portion of the filter-bed in the presence of a fixed quantity of water, removing the befouled water which results, and then washing the bed by passing pure water therethrough from the bottom upward.

4. The method of cleaning filter-beds, which consists in stopping the influx of water to be filtered, stopping its efflux when a predetermined level above the bed is reached, agitating the upper portion of the bed only, removing the befouled water which results, and then passing filtered water through the bed from the bottom upward.

819,359. TONGS. WILLIS H. MARKLAND, Altoona, Pa. Filed Sept. 30, 1905. Serial No. 280,733.



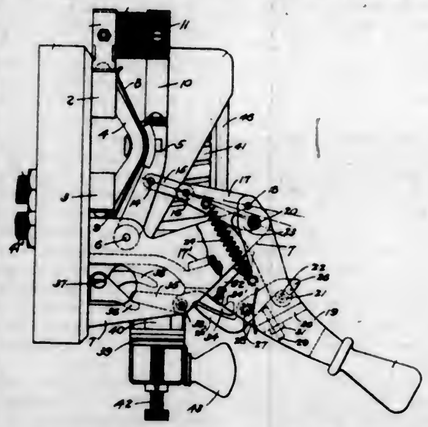
Claim.—1. A tong device having in combination a frame formed with a vertical guideway, tong-levers pivoted on said frame, a sliding head guided on said frame, rods connecting said head and the ends of the tong-levers and a latch-lever K, K', pivoted on said frame adjacent to the guideway and adapted, as described, to engage and lock the sliding head as it moves down in the frame and to be shifted to engaging position by the head as it moves upward.

2. A tong device having in combination a frame, tong-levers pivoted on said frame, a sliding head guided on said frame, rods connecting said head and the ends of the tong-levers, a latch secured to the frame and adapted to engage the head in its lowermost position, and an automatic latch-releasing device adapted to act on said latch and to be set in operation by contact with the object to be gripped by the tongs.

3. A tong device having in combination a frame, tong-levers pivoted on said frame, a sliding head guided on said frame, rods connecting said head and the ends of the tong-levers, a latch secured to the frame and adapted to engage the head in its lowermost position, an automatic latch-releasing device adapted to act on said latch and to be set in operation by contact with the object to be gripped by the tongs and a separate latch adapted to engage and hold the head in lower position and to automatically engage said head when lowered.

4. A tong device having in combination a frame, tong-levers pivoted on said frame, a sliding head guided on said frame, rods connecting said head and the ends of the tong-levers, a latch-lever M, M', pivoted on the lower part of the frame and having a jaw M^1, adapted to engage the head in lowermost position, a latch-releasing pin N, adapted to shift said lever to non-engaging position when pushed up and a second latch-lever K, K', pivoted on the frame alongside the slideway for the head and adapted as described to engage said head when it is lowered.

819,360. ELECTRICAL SWITCH. WALTER S. MAYER, Philadelphia, Pa., assignor to A. Edward Newton, Daylesford, Pa., and William M. Scott, Philadelphia, Pa. Filed Mar. 22, 1905. Serial No. 251,416.



Claim.—1. In an electrical switch, a movable contact member, a toggle for operating said contact member, an actuator, and locking connections between said toggle and said actuator whereby said toggle may overtravel when operated by said actuator and is underset when unlocked from said actuator.

2. In an electrical switch, a movable contact member, a toggle for operating said contact member, an actuator, a link of said toggle pivoted upon said actuator, and a latch for connecting said toggle-link with said actuator.

3. In an electrical switch, a movable contact member, a toggle for operating said member, an actuator, a link of said toggle pivoted to said actuator, a latch for connecting said link with said actuator, said toggle being adapted to overtravel to lock said contact member in normal position when said link is latched to said actuator, and electroresponsive means for actuating said latch to release said link from said actuator and permit said toggle to collapse.

4. In an electrical switch, a movable contact member, a toggle for operating said contact member, a pivoted actuator, a link of said toggle pivoted to said actuator at a distance from the pivot of said actuator, and a latch for connecting said toggle-link with said actuator.

5. In an electrical switch, a movable contact member, a toggle for operating said contact member, an actuator rotatable upon a pivot, a link of said toggle pivoted to said actuator at a distance from said pivot, and a latch for connecting said toggle-link with said actuator, whereby said toggle slightly overtravels to move said contact member to normal position, and is slightly undertraveled when said link is free from said actuator.

6. In an electrical switch, a movable contact member, a toggle for operating said contact member, an actuator rotatable upon a pivot, a link of said toggle pivoted to said actuator at a distance from said pivot, and a latch for connecting said actuator with said toggle-link, whereby said toggle may overtravel when said link is locked to said actuator, and is undertraveled when said link is unlocked from said actuator.

7. In an electrical switch, a movable contact member, a toggle for operating said contact member, an actuator, a locking connection between said toggle and said actuator whereby said toggle may overtravel when operated by said actuator and is underset when unlocked from said actuator, and electroreaponsive means for breaking said connection upon attempted operation of the switch during the continuance or existence of predetermined electrical conditions.

8. In an electrical switch, a movable contact member, a toggle for operating said contact member, an actuator, a link of said toggle pivoted upon said actuator, a latch for connecting said toggle-link with said actuator, and electroresponsive means for controlling said latch upon attempted operation of said actuator during the existence or continuance of predetermined electrical conditions.

9. In an electrical switch, a movable contact member, a toggle for operating said contact member, an actuator, a locking connection between said toggle and said actuator whereby said toggle may overtravel when operated by said actuator and is underset when unlocked from said actuator, and means for limiting the overtravel of said toggle.

10. In an electrical switch, a movable contact member, a toggle for operating said contact member, an actuator, a link of said toggle pivoted upon said actuator, a latch for connecting said toggle-link with said actuator, and means for actuating said latch upon reversed movement of said actuator.

11. In an electrical switch, a movable contact member, a toggle for operating said contact member, an actuator, a link of said toggle pivoted upon said actuator, and means for connecting said toggle link with said actuator to cause them to operate as a unit, said toggle being overtraveled when said link and actuator are connected together and when said contact member is in normal position, and underset when said link is disconnected from said actuator.

12. In an electrical switch, a movable contact member, a toggle-link pivoted to said member, a second link pivoted to said first-mentioned link, said second link having a plurality of pivotal supports about which it may rotate, and means for shifting said link from one of said pivotal supports to another.

13. In an electrical switch, a movable contact member, a toggle-link pivoted thereto, a second toggle-link pivoted to said first-mentioned link, a plurality of pivotal supports about which said second link may rotate, and electroresponsive means for shifting said link from one pivot to another.

14. In an electrical switch, a movable contact member, a toggle-link pivoted thereto, a second toggle-link pivoted to said first-mentioned link, a plurality of pivotal supports about which said link may rotate, and electroresponsive means for shifting said second link from one pivotal support to another upon attempting to move said contact member to normal position during the existence or continuance of predetermined electrical conditions.

15. In an electrical switch, a movable contact member, means for operatiag said contact member comprising an actuator and a lever pivoted upon said actuator, said lever intervening between said actuator and said contact member, and a latch for connecting said actuator and said lever together, whereby said contact member may be moved to and locked in normal position and is unlocked when said connection is broken.

16. In an electrical switch, a movable contact member, means for operating said contact member comprising an actuator and a member pivoted upon said actuator, said member intervening between said actuator and said movable contact member, and means for connecting said member and actuator together to cause them to operate as a unit, whereby said movable contact member may be moved to and locked in normal position and is unlocked when said connection is broken.

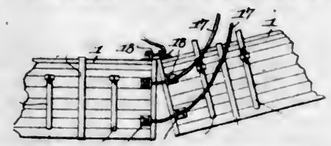
17. In an electrical switch, a movable contact member, means for operating said contact member comprising an actuator and a member pivoted upon said actuator, said member intervening between said actuator and said movable contact member, means for connecting said actuator and said member together to cause them to operate as a unit, and means for breaking said connection upon reversed movement of said actuator.

18. In an electrical switch, a movable resilient contact member, a toggle for cramping said contact member in normal position, an actuator, a link of said toggle pivoted upon said actuator, and a latch for locking said toggle-link and actuator together, whereby said toggle may overtravel to lock the contact member in normal position and is underset when unlocked from said actuator.

19. In an electrical switch, a movable contact member, an actuator, a power-multiplying device intervening between said actuator and said contact member and having a member pivoted to said actuator, a connection for locking said actuator and said pivoted member together, and means for breaking said connection whereby said contact member may move independently of said actuator.

20. In an electrical switch, a movable contact member, a toggle-link mechanically connected with said contact member, a second toggle-link pivoted to said first-mentioned link, a plurality of pointa of support about which said second link may rotate, an actuator, and a latch for locking said actuator and said second toggle-link together.

819,361. TUNNEL-ROOF SHIELD. JAMES C. MEEM, Brooklyn, N. Y., assignor of one-half to Borough Construction Company, Brooklyn, N. Y., a Corporation. Filed Oct. 11, 1905. Serial No. 282,299.



Claim.—1. A tunnel-roof shield having means combined therewith for introducing water under pressure beneath its edges, and means for assembling it with an adjacent shield.

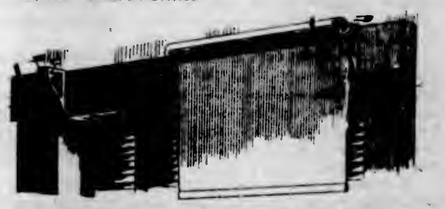
2. A tunnel-roof shield having a water-conveying pipe disposed at intervals along two of its edges and provided with means for attachment to a water-supply, and means for assembling it with an adjacent shield.

3. A tunnel-roof shield having arch members, upper and lower chord-stiffeners, uprights that bear at their respective ends against the opposed ends of the chord-stiffeners, means for holding the parts assembled, means for introducing water beneath the edges of the shield, and means for combining it with an adjacent shield.

4. A tunnel-shield having cutting edges, water-conveying pipes projecting through the edges, and means for assembling a shield that is being submerged with one that is already submerged.

5. A tunnel-shield having cutting edges, water-conveying pipes projecting through the edges, and orificed cleats arranged adjacent to the ends of the shield and adapted to be engaged by ropes or chains to assemble a shield that is being submerged with one that is already submerged.

819,362. COMBINATION SHADE-BRACKET AND CURTAIN-HOLDER. JOHN C. MILLER, Philadelphia, Pa., assignor of one-half to George Holoch, Philadelphia, Pa. Filed May 20, 1904. Renewed Sept. 22, 1905. Serial No. 279,713.



Claim.—1. A device of the kind described comprising a bracket adapted to support a shade-roller and having its upper marginal edge portion bent over to form a longitudinal flange, said flange projecting in advance of the bracket and bent downwardly at its forward end and apertured, and also apertured to the rear of the bent portion, and a pole-supporting arm adapted to have its rear portion passed through the aperture of the turned-down portion of the flange and having its rear end bent upwardly to engage the aperture of the flange in the rear of the bent-down portion.

2. A shade-bracket having an upper, longitudinal, horizontal and laterally-extending flange projecting in advance and to the rear of the bracket, and having its rear end portion bent at an angle to the bracket and barbed, and its forward end portion bent at an angle and apertured, the said flange being apertured intermediate the bent portions, and a pole-supporting arm having a curved and a straight portion, the straight portion resting in the aperture in the angled por-

tion of the flange and extending under the flange and having its rear end angled and engaged with the aperture in the flange intermediate the angled portions.

819,363. CORD AND ROPE HOLDER. LEWIS I. MILLER, Deposit, N. Y. Filed July 11, 1905. Serial No. 269,179.



Claim.—1. A cord or rope holding device, having a shank portion, and arms extending therefrom in substantially opposite directions, each of said arms being of hook form, and each provided with a recess, said recesses opening outward in opposite directions to receive a rope or cord.

2. A cord or rope holding device, having portions for attachment to a support, a shank portion upon which said supporting portions are formed, and arms extending from the said shank portion in substantially opposite directions, each of said arms being of hook form and provided each with a substantially wedge-shaped open-end recess, said recesses opening outward in opposite directions to receive the cord or rope.

3. A cord or rope holding device, having portions for attachment to a support, a shank portion upon which said supporting portions are formed, arms extending from the said shank portion in substantially opposite directions, each of said arms being of hook form and provided each with a substantially wedge-shaped open-end recess, said recesses opening outward in opposite directions to receive the cord or rope, and a cross-piece extending from one of said hooked arms to the other at the top of the shank portion.

4. A cord or rope holding device, having portions for attachment to a support, a shank portion upon which said supporting portions are formed, arms extending from the said shank portion in substantially opposite directions, each of said arms being of hook form and provided each with a substantially wedge-shaped open-end recess, said recesses opening outward in opposite directions to receive the cord or rope, and a cross-piece extending from one of said hooked arms to the other at the top of the shank portion and protruding inward between said arms.

5. A cord or rope holding device formed of a single piece of wire, having shank members, and arms extending therefrom in substantially opposite directions, each of said arms being of hook form, and each provided with a recess, said recesses opening outward in opposite directions to receive a rope or cord.

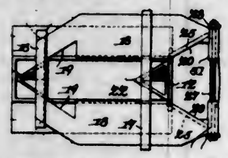
6. A cord or rope holding device formed of a single piece of wire, having portions for attachment to a support, shank members upon which said supporting portions are formed, and arms extending from the said shank members in substantially opposite directions, each of said arms being of hook form and provided each with an open-end recess, said recesses opening outward in opposite directions to receive the cord or rope.

7. A cord or rope holding device formed of a single piece of wire, having portions for attachment to a support, shank members upon which said supporting portions are formed, arms extending from the said shank members in substantially opposite directions, each of said arms being of hook form and provided each with a substantially wedge-shaped open-end recess, said recesses opening outward in opposite directions to receive the cord or rope, and a cross-piece extending from one of said hooked arms to the other at the top of the shank portion.

8. A cord or rope holding device formed of a single piece of wire, having portions for attachment to a support, a shank portion consisting of two shank members upon which said supporting portions are formed, arms extending from the said shank members in substantially opposite directions, each of said arms being of hook form and provided each with a substantially wedge-shaped open-end recess, said recesses opening outward in opposite directions to receive the cord or rope, and a cross-piece extending from one of said hooked arms to the other at the top of the shank members and protruding inward between said arms.

9. A cord or rope holding device formed of a single piece of wire bent to form supporting portions, a shank member extending from each of said supporting portions, arms consisting of upturned looped hooks extending and opening outward in opposite directions from said shank members and a cross-piece extending from one of said arms to the other across the top of the shank portion.

819,364. ASH-PAN FOR LOCOMOTIVES. LOUIS S. MOORE, Selma, Ala. Filed Aug. 14, 1905. Serial No. 274,170.



Claim.—1. An ash-pan having an outlet in the bottom thereof, deflecting devices fixedly mounted within the pan, closures for said outlet, and means for sliding the closures against the deflectors to move said closures apart.

2. An ash-pan having an outlet in the bottom thereof, deflectors fixedly mounted within the outlet, oppositely-disposed closures having cam edges for contacting with the deflectors, and means for sliding the closures against opposite faces of the deflectors to spread said closures apart.

3. An ash-pan having an outlet, wedge-like deflectors fixedly mounted in the outlet, closures slidably mounted to close the outlet and having angular recesses normally embracing the deflectors, and means for sliding the plates against the deflectors to spread said closures apart.

4. An ash-pan having an outlet, supporting-rails thereunder, oppositely-disposed closure-plates slidably mounted on the rails, means for moving the plates longitudinally, and fixed devices interposed between the plates for deflecting them laterally during their longitudinal movement.

5. An ash-pan having an outlet, supporting-rails thereunder, oppositely-disposed closure-plates mounted upon the rails, means for sliding the plates longitudinally upon the rails, and fixed devices secured to the rails and between and projecting into the plates for deflecting said plates laterally during their longitudinal movement.

6. An ash-pan having an outlet, supporting-rails thereunder, a rod, closure-plates upon the rails and slidably connected at one end to the rod, means for shifting the rod to slide the plates longitudinally and deflectors interposed between and projecting into the plates to slide the plates upon the rod in opposite directions during their longitudinal movement.

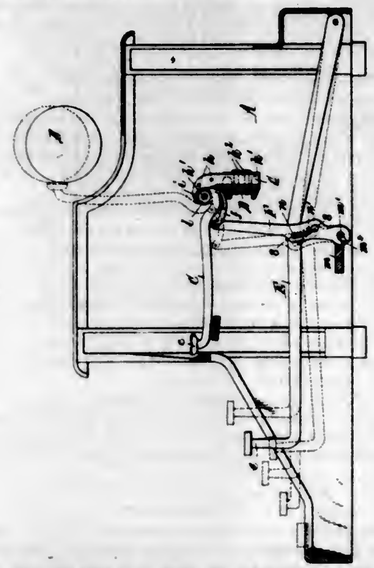
7. An ash-pan having an outlet, supports thereunder, closure-plates upon the supports, means for simultaneously sliding the plates longitudinally, wedge-like deflectors fixedly secured to the rails and between the plates to deflect said plates apart during their longitudinal movement in one direction and means adjacent the outer edges of the plates for directing said plates into closed position while they are moving in the other direction.

819,365. TYPE-WRITING MACHINE. HARVEY A. MOYER and EMMIT G. LATTA, Syracuse, N. Y. Filed Apr. 28, 1905. Serial No. 257,841.

Claim.—1. The combination in a type-writing machine, of a pivoted type-bar, a key-lever pivoted at one end, an auxiliary lever pivoted at one end and operatively connected at the opposite end to said type-bar, said levers crossing each other, a projection on one of said levers, and a surface on the other lever which is slidably engaged by said projection and is curved in such relation to the path of movement of said projection as to cause an accelerated movement of the type-bar, substantially as set forth.

2. The combination in a type-writing machine, of a type-bar pivoted to swing upwardly and rearwardly, a substantially horizontal key-lever pivoted at one end, an upright auxiliary lever pivoted at its lower end and operatively connected at its upper end to said type-bar, said levers crossing each other between their ends, a pin on one of said levers, and said other lever having a slot of irregular curvature in which said pin slides, substantially as set forth.

3. The combination in a type-writing machine, of a frame, a series of type-bars, a series of key-levers extending under the type-bars and pivoted at their rear ends, a series of upright auxiliary levers operatively connected at their upper ends to the type-bars and to the frame at their lower ends, said levers crossing between their ends, and pin-and-slot connections between the two series of levers, the slots being curved, and the curvature being on a smaller radius at the upper ends of the slots, substantially as set forth.



4. The combination in a type-writing machine, of a frame, a series of pivoted type-bars, a series of key-levers pivoted at one end, a series of auxiliary levers of graduated lengths crossing said key-levers between their ends and operatively connected at one end to the type-bars and pivoted at their other ends to the frame, and pin-and-slot connections between the two series of levers, the slots being of different form to compensate for the different lengths of the levers, substantially as set forth.

5. In a type-writing machine, the combination of a series of pivoted type-bars arranged to swing upwardly and rearwardly, a series of key-levers extending rearwardly under the type-bar pivots, a series of upright auxiliary levers of the third class fulcrumed at their lower ends below the key-levers on horizontal pivots and extending vertically to points above the key-levers, sliding connections between the key-levers and auxiliary levers consisting of horizontal pins on one series of levers engaging curved inclined faces on the other series of levers, and connections between the upper portions of the auxiliary levers and the type-bars, substantially as set forth.

6. In a type-writing machine, the combination of a series of type-bars pivoted in a vertical arc to swing upwardly and rearwardly, a series of key-levers of different lengths extending beneath the type-bars and pivoted at their rear ends, a series of upright auxiliary levers of graduated lengths fulcrumed below the key-levers on the same horizontal axial line and extending above the key-levers and connected at their upper ends to the type-bars, pins secured to said key-levers in substantially the same horizontal line and engaging in slots in said auxiliary levers, said slots being of different shapes whereby equal movements of the key-levers will produce equal and accelerating movements of the upper ends of said auxiliary levers and type-bars, substantially as set forth.

7. The combination of a type-writing machine, of a series of type-bars pivoted in a vertical segment to swing upwardly and rearwardly, a series of key-levers extending rearwardly under the type-bars, a series of upright auxiliary levers supported by horizontal pivots at their lower ends below the key-levers and extending vertically to points above the key-levers, then on converging lines to the intersection of the radial planes in which the type-bars swing, and having their upper ends arranged to stand in such radial planes and operatively connected to the type-bars, and slot-and-pin connections between the two series of levers, substantially as set forth.

8. The combination in a type-writing machine, of a frame, a series of type-bars radially pivoted in a vertical segment to swing upwardly and rearwardly, a series of key-levers extending rearwardly under the type-bars and pivoted at their rear ends, a series of upright auxiliary levers of graduated lengths having their upper ends operatively connected to the type-bars by links and pivots arranged at right angles to the type-bars, their lower ends connected to the frame by horizontal pivots below the key-levers, their central parts connected to the key-levers by slots and horizontal pins, and their upper portions between the type-bar connections and horizontal pins arranged on inclined lines, substantially as set forth.

9. The combination in a type-writing machine, of a frame, a series of radial type-bars arranged to swing upwardly and rearwardly, a series of key-levers of the second class extending rearwardly under the type-bars on substantially horizontal parallel lines, a series of upright auxiliary levers of graduated lengths operatively connected at their upper ends to the type-bars and having slot and horizontal pin connections with the key-levers between their ends, and horizontal pivotal connections between said auxiliary levers and the frame directly under the pin-and-slot connections with the key-levers, substantially as set forth.

10. The combination in a type-writing machine, of a type-bar body and hanger-body of slightly-different thicknesses, but each of uniform thickness throughout, and separate connecting-plates arranged on opposite sides of said type-bar and hanger bodies, said connecting-plates being rigidly secured to the thicker body and pivotally connected to the thinner body, substantially as set forth.

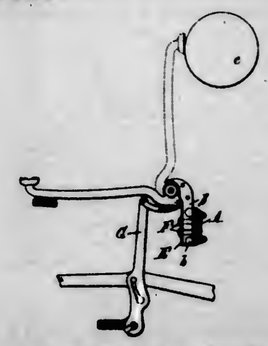
11. The combination in a type-writing machine, of a type-bar body and hanger-body of slightly-different thickness, and separate connecting-plates arranged on opposite sides of said type-bar and hanger bodies, said connecting-plates being rigidly secured to the thicker body, and a pivot for the thinner body consisting of a rivet joining said plates and having shoulders to hold said plates spaced apart a distance equal to the thickness of the thicker body, substantially as set forth.

12. The combination in a type-writing machine, of a type-bar and hanger consisting of a pair of independent opposable side plates, a type-bar body, and a hanger-body between the side plates, one of said bodies being shaped to overhang the other body to exclude dust, substantially as set forth.

13. The combination in a type-writing machine, of a type-bar and hanger consisting of a pair of independent opposable side plates, a type-bar body, and a hanger-body between the side plates, one of said bodies having a segmental circular part oscillating between the side plates and the other body forming a bridge over said oscillating part between the side plates, substantially as set forth.

14. The combination in a type-writing machine, of a type-bar and hanger consisting of a pair of independent opposable side plates, a type-bar body, and a hanger-body between the side plates, one of said bodies being formed to overhang the other part between the side plates, and the side plates being shaped to conform to said overhanging part, substantially as set forth.

819,366. SECURING MEANS FOR THE HANGERS OF TYPE-WRITING MACHINES. HARVEY A. MOYER, Syracuse, N. Y., assignor of one-half to Emmit G. Latta, Syracuse, N. Y. Filed Feb. 19, 1906. Serial No. 301,823.



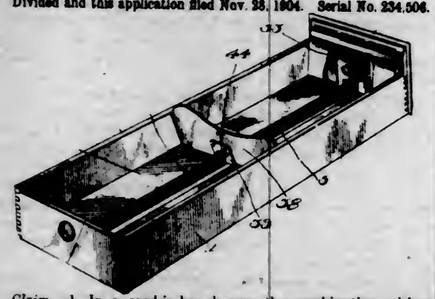
Claim.—1. In a type-writing machine, the combination of a segment having a radial slot, a hanger adapted to be inserted lengthwise into said slot, a clamping-plate bearing upon said hanger and holding the same frictionally in said slot, and fastening devices securing the clamping-plate to said segment on opposite sides of said slot, substantially as set forth.

2. In a type-writing machine, the combination of a segment having radial slots, a series of hangers adapted to be inserted lengthwise into said slots, a clamping-plate extending over said hangers and bearing upon the same and holding the same frictionally in said slots, and fastening devices securing the clamping-plate to said segment, substantially as set forth.

3. The combination in a type-writing machine, of a segment having radial slots, a series of hangers seated in the slots, a flexible clamping-plate arranged over the hangers and having screw-holes, and screws passing through said holes between the adjacent hangers into the segment to clamp the plate against the hangers on the segment, substantially as set forth.

4. The combination in a type-writing machine, of a segment having radial slots, a series of hangers adjustably seated in the slots, a clamping-plate having holes for two rows of screws, the holes in one row alternating with those in the other row, and two screws for each hanger passing through said holes in the clamping-plate at opposite sides of the hanger, substantially as set forth.

819,367. CARD-INDEX DRAWER. CURTIS MCPHER, Wabash, Ind. Original application filed Apr. 17, 1905, Serial No. 255,938. Divided and this application filed Nov. 28, 1904. Serial No. 234,506.



Claim.—1. In a card-index drawer the combination with a drawer proper of a pair of rods each curved in cross-section on the arc of a circle and arranged with their convex or curved faces together, pivots supporting said rods and arranged eccentric to the arcs of their respective faces, and means for rocking the rods on said pivots

2. In a card-index drawer the combination with a drawer proper, of a longitudinal bar in the bottom thereof, a follower, a slide secured to said follower and having a perforation through which said bar passes, said slide including a horizontal portion arranged below the bar and two lugs or ears projecting upwardly from the end of said horizontal portion on both sides of said bar, for guiding the slide or gripping the bar.

819,368. LOOSE-LEAF BINDER. CHARLES R. NELSON, Chicago, Ill., assignor to Sieber & Trussell Manufacturing Company, a Corporation of Missouri. Filed Nov. 30, 1903. Serial No. 183,223.



Claim.—1. In a loose-leaf binder, in combination, a back frame; binding-hooks pivoted to the frame intermediate of their ends and having their inner ends slotted; and a crank-rod mounted longitudinally upon the frame and engaging the slotted ends of the hooks.

2. In a loose-leaf binder, in combination, a back frame; binding-hooks pivoted to the frame, one thereof being pivoted intermediate of its ends and having its inner end slotted; and a crank-rod mounted longitudinally upon the frame and engaging the slotted end of the hook.

3. In a loose-leaf binder, in combination, a back plate having upturned sides and ends, coöperating binding-hooks pivoted to the sides thereof and having their outer ends arranged to close together and their inner ends overlapping and slotted; and a crank-shaft journaled in the ends of the back plate and having its wrist portions engaged with the slots of the binding-hooks.

4. In a loose-leaf binder, in combination, a back frame; two sets of hooks, each hook being pivoted to the frame adjacent the side thereof so as to swing in the plane of its curvature and having its inner end extending across the frame in the plane of the body of the hook; and a rod mounted longitudinally upon the frame and operatively engaging the hooks by a cam action to swing them on their pivots.

5. In a loose-leaf binder, in combination, a back frame; coöperating hooks pivoted at the opposite sides of the frame so as to swing each in the plane of its curvature and having overlapping inner ends; and a rod mounted longitudinally on the frame and operatively engaging the hooks by a cam action to rock them on their pivots.

6. In a loose-leaf binder, in combination, a back frame; side members hinged thereto; coöperating-hooks pivoted at the opposite sides of the frame and independent of the side members of the binder, so as to swing in the plane of their curvature, and having overlapping inner ends; and a rod mounted longitudinally on the frame and operatively engaging the hooks to rock them on their pivots.

7. A binder of the character described having a backbone, a pivoted leaf-engaging finger or prong thereon and a crank for manipulating the same, said crank being loosely associated with said finger and adapted to assume a dead-center position in either of two arrangements of the parts to lock the finger open or closed.

8. A binder of the character described comprising a backbone, a plurality of pairs of pivoted fingers thereon oppositely disposed to constitute rings, and a corresponding number of cranks one engaging each pair of fingers for simultaneously manipulating the fingers of the respective pairs.

9. A binder of the character described comprising a backbone, a plurality of pairs of pivoted fingers thereon oppositely disposed to constitute rings, and a corresponding number of cranks one engaging each pair of fingers for manipulating the fingers of the respective pairs.

10. A binder of the character described comprising a backbone, a plurality of pairs of pivoted fingers thereon oppositely disposed to constitute rings, and a corresponding number of cranks for manipulating the fingers of the respective pairs, one of said cranks being loosely associated with its pair of fingers and adapted to assume a dead-center position relative thereto.

11. In combination with a channel member, leaf-engaging fingers pivoted intermediate their ends to the flanges of said member, and means in engagement with the inner ends of said fingers and shiftable transversely of the channel members for manipulating the same.

12. A binder of the character described having a backbone, a pair of pivoted fingers thereon oppositely disposed to constitute a ring, and a crank for positively shifting said fingers said crank being loosely associated with said fingers and adapted to assume a dead-center position in either of two arrangements of the parts to lock the fingers open or closed.

13. A binder of the character described having a backbone, a pair of pivoted fingers thereon oppositely disposed to constitute a ring, and a crank shiftable in the direction of opening of the leaves for opening and closing said fingers.

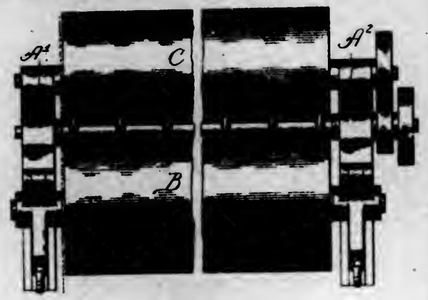
14. In a loose-leaf binder, in combination, a hook, means for pivotally supporting the same, said hook having a slotted portion, and a crank-rod engaging said slotted portion to shift the hook on its pivot.

15. A binder of the character described, comprising a backbone, a plurality of movable leaf-engaging fingers thereon, and a corresponding number of cranks for manipulating said fingers, one of said cranks being operatively associated with its finger to assume a dead-center position relative thereto.

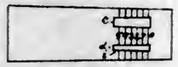
819,369. METHOD IN POLISHING SHEET METAL. JOHN NELSON, Peru, Ill. Original application filed Apr. 22, 1905, Serial No. 256,938. Divided and this application filed Oct. 9, 1905. Serial No. 281,914.

Claim.—1. The method of feeding sheets of metal through a polishing-machine, which consists in overlapping the sheets, whereby the leaving sheet is subjected to the binding action of the following sheet to prevent the former from being violently thrown by the action of the polishing-cylinder, for the purpose set forth.

2. The method of polishing sheets of metal, which consists in passing the sheets in overlapping condition between a supporting-roll and juxtaposed feed and polishing rolls coacting therewith and then reversing the sheets (without inversion) and passing them in overlapping condition between the supporting-roll and the feed and polishing rolls, whereby an entire surface of each sheet is polished and the sheets preserved from being violently thrown from the machine by the polishing-roll.

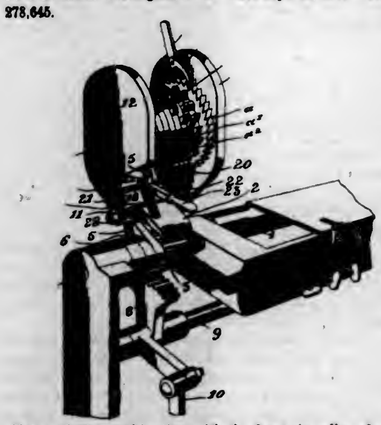


819,370. GAGE. PAUL NOACKE, Grand Rapids, Mich. Filed Apr. 4, 1905. Serial No. 253,900.



Claim.—In a gage for measuring matrices for linotype-machines, a thin plate uniformly tapered, edgewise, toward the end and having slots uniformly tapered toward the opposite direction, and alined graduations indicating the measurements both at the edges of the plate and in the slots, substantially as and for the purpose set forth.

819,371. INKING APPARATUS FOR PRINTING-PRESSES. JOHN A. NOEL, Washington, D. C. Filed Sept. 15, 1905. Serial No. 278,645.



Claim.—1. In combination with the fountain-roller of a printing-press and with its pawl-and-ratchet wheel, an arm supporting said pawl and complete means carried by said arm whereby the pawl is brought into engagement with the ratchet-wheel at intervals.

2. In combination with the fountain-roller of a printing-press and with its pawl-and-ratchet wheel, an arm supporting said pawl and complete means carried by said arm for controlling the intermittent engagement of the pawl and ratchet.

3. In combination with the fountain-roller of a printing-press and with its pawl-and-ratchet wheel, an arm supporting said pawl, a rotatable member carried by said arm and means interposed between the pawl and member and actuated by the rotation of said member for controlling the intermittent engagement of the pawl and ratchet.

4. In combination with the fountain-roller of a printing-press and with its pawl-and-ratchet wheel, an arm supporting said pawl, a rotatable member carried by said arm and means interposed between said pawl and member for controlling the intermittent engagement of the pawl and ratchet.

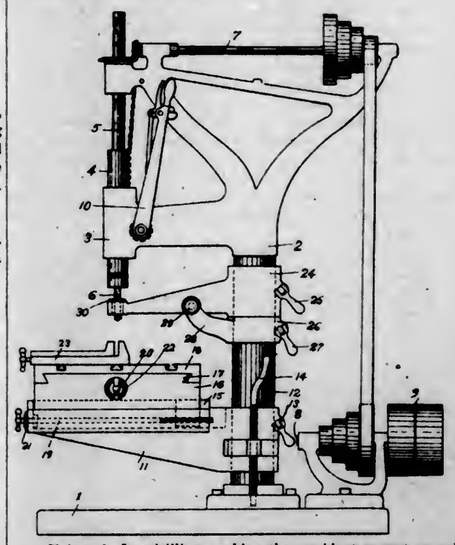
5. In combination with the fountain-roller of a printing-press and with its pawl-and-ratchet wheel, an arm supporting said pawl, a rotatable member carried by said arm and means interposed between the pawl and member and actuated by the rotation of said member whereby said pawl is brought into engagement with the ratchet-wheel at intervals.

6. In combination with the fountain-roller of a printing-press and with its pawl-and-ratchet wheel of a rotatable member having a bearing independent of the fountain-roller adapted by its rotation to control the intermittent engagement of the pawl and ratchet.

7. In combination with the fountain-roller of a printing-press and with its pawl-and-ratchet wheel of a rotatable member having a bearing independent of the fountain-roller and means interposed between the pawl and member and actuated by the rotation of said member for controlling the intermittent engagement of the pawl and ratchet.

8. In combination with the fountain-roller of a printing-press and with its pawl-and-ratchet wheel, a spring normally holding said pawl out of engagement with its ratchet-wheel and means for varying the interval of time between the engagements of the pawl with its ratchet-wheel.

819,372. DRILL-PRESS. HENRY F. NOYES, Waynesboro, Pa. Filed June 14, 1904. Serial No. 212,543.



Claim.—1. In a drilling-machine the combination with an axially-movable drill, a work-support, a drill-guide supported at one side of the drill and means permitting movement of said guide longitudinally and transversely of the drill, and means for locking said guide in axial alinement with the drill, substantially as described.

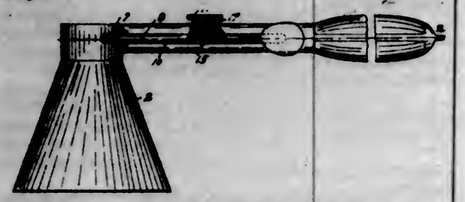
2. In a drilling-machine the combination with an axially-movable drill, a work-support, a drill-guide, an arm for supporting said guide in axial alinement with the drill, a standard, disposed at one side of and parallel to the drill on which said arm is mounted to swing transversely and move longitudinally thereof, and means for locking said arm when said guide is in axial alinement with the drill, substantially as described.

3. In a drilling-machine, the combination with an axially-movable drill, a work-support, a drill-guide, means permitting movement of said guide to one side of the drill in a path intersecting the axis thereof, a stop for limiting the movement of said guide when it is in axial alinement with the drill, and means for locking said guide, substantially as described.

819,373. ICE-CREAM DIPPER. ALBERT P. OLMSTEAD, Watervliet, N. Y., assignor to Lasalle A. Michael, trustee, Troy, N. Y. Filed Dec. 30, 1905. Serial No. 293,931.

Claim.—1. A dipper for plastic material comprising in combination a handle and bowl provided with a hub-bearing at the inner end of, and open to, the bowl; a toothed scraper-hub rotatively mounted in said hub-bearing and insertible and removable through the bowl, said hub having a peripheral flange overhanging on the inner side the teeth thereon; a scraper fixed upon said hub; and a

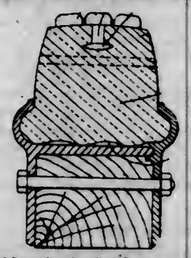
hand-lever mounted upon the handle and having a gear-rack engageable with the teeth on the hub on the outer side of said overhanging flange.



2. A dipper for plastic material comprising in combination a handle and bowl provided with a hub-bearing at the inner end of the bowl; and with a slot in the handle opening laterally into said bearing; a toothed scraper-hub rotatively mounted in said hub-bearing; a scraper fixed upon said hub; a hand-lever located in said slot in the handle and having a gear-rack engageable with said toothed hub; and a lever-actuating spring.

3. A dipper for plastic material comprising in combination a handle and bowl provided with a hub-bearing at the inner end of, and open to, the bowl and with a slot in the handle opening laterally into said bearing; a toothed scraper-hub rotatively mounted in said hub-bearing and insertible and removable through the bowl, said hub having a peripheral flange overhanging on the inner side the teeth thereon; a scraper fixed upon said hub; a hand-lever located within said handle-slot and having a gear-rack engageable with the teeth on the hub on the outer side of said overhanging flange, said lever being provided with a longitudinal fulcrum-slot formed with an enlargement at its outer end; a fulcrum-screw fitting a screw-threaded aperture in the handle and having a contracted portion passing through the slot in said lever, and a shoulder adapted to fit said slot enlargement.

819,874. **ELASTIC TIRE FOR ROAD-WHEELS.** EDWARD C. F. OTTO, London, England, assignor of one-half to George Frederick Richardson, Lee, England. Filed Mar. 7, 1905. Serial No. 248,963.



Claim.—1. A rubber tire having brass-coated metallic studs vulcanized into its tread, substantially as described.

2. A rubber tire having studs vulcanized into its tread, the studs having bases embedded in the tread in order to distribute the pressure, substantially as described.

3. Rubber tires and the like having in combination a body part of rubber, and metallic non-skidding studs vulcanized into said body part, substantially as described.

4. Rubber tires and the like having in combination a body part of rubber, brass-coated studs vulcanized into said body part, substantially as described.

5. Solid-rubber tires and the like having in combination a body part of rubber, brass-coated studs vulcanized into said body part substantially as described.

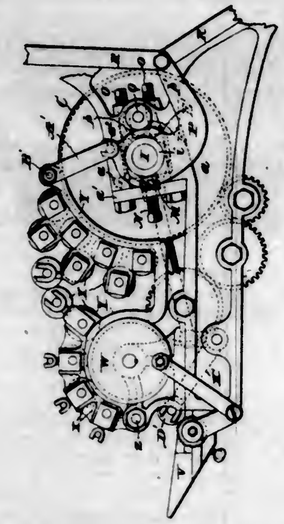
6. Pneumatic tires having an outer cover in the tread of which studs are vulcanized substantially as described.

7. A separate rubber tread for pneumatic tires in which tread studs are vulcanized, substantially as described.

8. As an article of manufacture, a rubber tire, having a tread of rubber, brass-coated studs let into said tread while the rubber is in its plastic state prior to vulcanization and subsequently vulcanized thereto, substantially as described.

9. A tire having a rubber body, a rubber tread, a pressure-distributing strip interposed between the rubber body and the rubber tread, brass-coated non-skidding studs vulcanized into said tire, substantially as described.

819,875. **PRINTING-PRESS.** CHARLES H. PALMER and JOHN W. DENNEAD, Akron, Ohio, assignors to The Diamond Match Company, New York, N. Y., a Corporation of Illinois. Filed Oct. 30, 1900. Serial No. 34,931.



Claim.—1. In a printing-press, the combination of the impression-cylinder, a form-cylinder, a movable bearing for the latter, a plurality of independently-adjustable stops for said bearing, and yielding means for automatically pressing said bearing against said stops.

2. In a printing-press, the combination of the impression-cylinder, a form-cylinder, movable bearings for the latter at the respective ends thereof, a plurality of independently-adjustable stops for each of said bearings, and yielding means for automatically pressing the bearings against said stops.

3. In a printing-press, the combination of the impression-cylinder, a form-cylinder, movable bearings for the latter at the respective ends thereof, a plurality of independently-adjustable screws for each of the said bearings, and yielding means for automatically pressing the bearings against said screws.

4. In a printing-press, the combination of the impression-cylinder, a form-cylinder, movable bearings for the latter at the respective ends thereof, a plurality of adjustable stops for each of said bearings engaging the same on the same side, and spring-pressure means acting upon the opposite sides of the bearings.

5. In a printing-press, the combination of the impression-cylinder, a form-cylinder, movable bearings for the latter at the respective ends thereof, a plurality of adjusting-screws for each of said bearings engaging the same on the same side, said screws being movable independently of each other, and spring-pressure means acting upon the opposite side of said bearings.

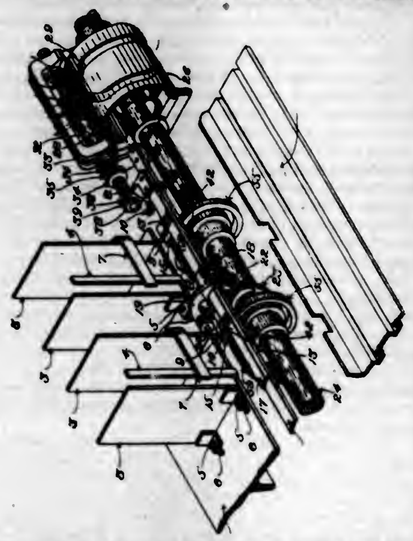
6. In a printing-press, the combination of the impression-cylinder, a form-cylinder, movable bearings for the latter, and a cam mechanism for moving said bearings, consisting of a pivoted cam acting on a laterally-projecting part on the bearing-box, substantially as and for the purpose described.

7. In a printing-press, the combination of the impression-cylinder, a form-roll, movable bearings for the latter, and a cam mechanism for moving said bearings, consisting of a pivoted cam acting on a roller mounted on the bearing-box, substantially as and for the purpose described.

8. In a printing-press, the combination of the impression-cylinder, a form-cylinder, movable bearings therefor, inking-rolls, a movable frame therefor, a cam for each bearing for moving the same, and a link connecting each cam and a frame.

9. In a printing-press, the combination of the impression-cylinder, a form-cylinder, movable bearings therefor, inking-rolls, a movable frame therefor, a cam for each bearing, a link connecting each cam and a frame, a single operating mechanism and connections between the latter and each of the cams.

819,876. **FEEDING MECHANISM FOR ARTICLES IN SHEET FORM.** STUART H. PRAY, Norwood, Mass.; Ida H. Pray executrix of said Stuart H. Pray, deceased. Filed June 13, 1904. Serial No. 212,308.



Claim.—1. The combination with means for holding a stack of signatures or the like to be fed, and transferring devices to engage with the elements of the said stack successively and withdraw such elements from the stack, of a picker, a separator, and actuating connections for said picker and separator whereby the picker is caused to engage the leading element of the stack and whereby the separator is caused to enter between said element and the remainder of the stack and then is moved to relieve the pressure of the said remainder from the said leading element to facilitate the withdrawal of the latter.

2. The combination with means for holding a stack of signatures or the like to be fed, and transferring devices to engage with the elements of the said stack successively and withdraw such elements from the stack, of a suction-picker, a separator, and actuating connections for said picker and separator whereby the picker is caused to engage the leading element of the stack and whereby the separator is caused to enter between said element and the remainder of the stack and then is moved to relieve the pressure of the said remainder from the said leading element to facilitate the withdrawal of the latter.

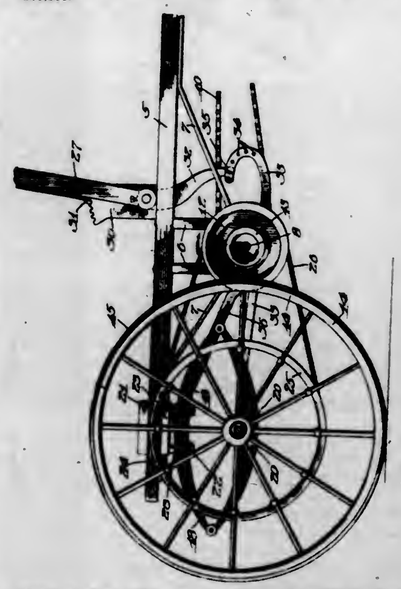
3. The combination with means for holding a stack of signatures or the like to be fed, and transferring-grippers to engage with the elements of the said stack successively and withdraw such elements from the stack, of a picker, a separator, and actuating connections for said picker and separator whereby the picker is caused to engage the leading element of the stack and whereby the separator is caused to enter between said element and the remainder of the stack and then is moved to relieve the pressure of the said remainder from the said leading element to facilitate the withdrawal of the latter.

4. The combination with a support for a stack of signatures or the like to be fed, a picker, a separator, and actuating connections for said picker and separator whereby the picker is caused to engage the leading element of the stack and whereby the separator is caused to enter between said element and the remainder of the stack, and then is moved to relieve the pressure of the said remainder from the said leading element to facilitate the withdrawal of the latter, of a rotating carrier, two jaws upon said carrier, and means whereby in the forward rotation of the carrier both jaws are moved rearwardly to inclose the forward edge of said element and also moved relatively to each other to close upon said edge, the continued movement of the carrier effecting the withdrawal of the element from the stack.

5. The combination with a support for a stack of signatures or the like to be fed, a picker, a separator, and actuating connections for said picker and separator whereby the picker is caused to engage the leading element of the stack and whereby the separator is caused to enter between said element and the remainder of the stack and then is moved to relieve the pressure of the said remainder from the said leading element to facilitate the withdrawal of the latter, a rotating carrier, a movable spring-actuated gripper-jaw mounted on said carrier, an opposing jaw also mounted on said carrier and a cam whereby in the continued forward rotation of the carrier the latter jaw is actuated to communicate a rearward movement to both jaws, close them upon an edge of the said element, and withdraw the latter from the stack.

6. The combination with a support for a stack of signatures or the like to be fed, a picker, a separator, and actuating connections for said picker and separator whereby the picker is caused to engage the leading element of the stack and whereby the separator is caused to enter between said element and the remainder of the stack, and then is moved to relieve the pressure of the said remainder from the said leading element to facilitate the withdrawal of the latter, of a rotating carrier, two jaws upon said carrier mounted upon pivots which are eccentric with relation to each other, and means whereby in the rotation of the carrier the jaws are moved rearwardly to pass over the forward edge of the said element, and also moved relative to each other to close upon said edge, the continued forward movement of the carrier effecting the withdrawal of the element from the stack.

819,877. **DRIVING MECHANISM FOR AUTOMOBILES.** WILLIAM C. PRICE, Chicago, Ill., assignor to Stover Carriage Company, Chicago, Ill., a Corporation of Illinois. Filed July 8, 1905. Serial No. 268,880.



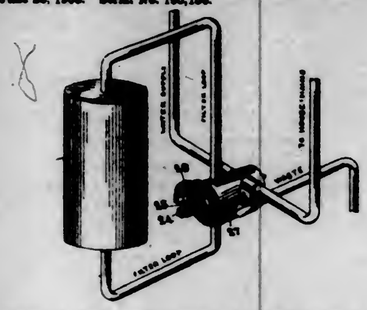
Claim.—1. In a self-propelled vehicle, the combination with a frame, slide-boxes mounted on said frame, springs secured to said slide-boxes, an axle secured to said springs, driving-wheels mounted upon said axle, and driving-pulleys rigidly connected with said driving-wheels, of a driving-shaft, driving-pulleys secured to said driving-shaft, driving-belts connecting the driving-pulleys on said driving-shaft with the driving-pulleys on said driving-wheels, friction-pulleys secured to said driving-shaft in alinement with said wheels, a lever mounted on said frame, and connections between said lever and said slide-boxes and axle, whereby when said lever is moved in one direction the said driving-belts will be tightened and when said lever is moved in the other direction said driving-belts will be slackened and said driving-wheels moved into frictional engagement with said friction-pulleys.

2. In a self-propelled vehicle, the combination with a frame, slide-bearings carried thereby and movable longitudinally thereof, an axle connected with said slide-bearings, driving-wheels on said axle, and driving-pulleys connected with said driving-wheels, of a driving-shaft journaled in said frame, driving-pulleys on said driving-shaft, belts connecting the driving-pulleys on said driving-shaft with those connected with the driving-wheels, a lever mounted on

said frame, and connections between said lever and said axle and slide-bearings.

3. In a self-propelled vehicle, the combination with a frame, slide-bearings carried thereby and movable longitudinally thereof, springs secured to said slide-bearings, an axle secured to said springs, driving-wheels on said axle, and driving-pulleys connected with said driving-wheels, of a driving-shaft journaled in said frame, driving-pulleys on said driving-shaft, belts connecting the driving-pulleys on said driving-shaft with those connected with the driving-wheels, a lever mounted on said frame, and connections between said lever and said axle and slide-bearings.

819,378. VALVE. CHARLES V. ROGERS, Philadelphia, Pa. Filed June 26, 1903. Serial No. 163,156.



Claim.—1. In a multiway valve, the combination of a supply-duct, means for directing the flow of the liquid in opposite directions through a chamber or looped duct, means for connecting either end of said looped duct with one of two outlet-ducts without closing said supply-duct.

2. In a multiway valve, the combination of a supply-duct, an outlet-duct, means for directing the flow of liquid through a chamber or looped duct, a discharge-duct, means for connecting either end of said chamber with the discharge-duct and means for connecting the supply-duct directly with said outlet-duct without closing said supply-duct.

3. In a multiway valve, the combination of a supply-duct, an outlet-duct, means for directing the flow of the liquid in opposite directions through a chamber or looped duct, a discharge-duct, means for connecting either end of said chamber with the discharge-duct, means for connecting the supply-duct directly with said outlet-duct, and means for closing said supply-duct, said supply-duct being always open in the intervals between the operations of each of said means.

4. In a multiway valve, the combination of a supply-duct, means for directing the flow of the liquid in opposite directions through a chamber or looped duct, two outlet-ducts one of which may act as a discharge-duct, means for connecting one end of said chamber with either of the two outlet-ducts, means for connecting the other end of said looped duct with one of said outlet-ducts and means for connecting the supply-duct directly with one outlet-duct, said supply-duct being always open in the intervals between the operations of each of said means.

5. In a multiway valve, the combination of a casing having a supply-port, a pair of ports adapted to be connected with a looped duct, a discharge-port and an outlet-port, with a rotatable part having passages and chambers therein such that when the said part is in a central position the supply-duct is connected with one of said pair of ports, the other being connected with the outlet-duct; when in the next adjacent position on one side of the central position, the second of said pair of ports is connected with the discharge-port; when in the next adjacent position, a reverse flow is caused through said pair of ports; when in the first position on the opposite side of the central position, the supply-port is connected directly with the outlet-port and when in the next adjacent position the supply-port is closed.

6. A multiway valve, comprising a casing having an inlet-port and outlet-port, a pair of ports adapted to be connected with a looped duct, a rotatable part for said valve and means within said rotatable part for directing the flow of the liquid in opposite directions through said looped duct and for connecting either end of said duct with said outlet-port without closing said inlet-port.

7. A multiway valve, comprising a casing having an inlet-port, two outlet-ports, a pair of ports adapted to be connected with a looped duct, a rotatable part for said valve and means within said rotatable part for directing the flow of the liquid in opposite directions through said looped duct and for connecting either end of said duct with either of said outlet-ports without closing said inlet-port.

8. A multiway valve, comprising a casing having an inlet-port and outlet-port, a pair of ports adapted to be connected with a looped duct, a rotatable part for said valve and means within said rotatable part for directing the flow of the liquid in opposite directions through said looped duct, for connecting either end of said looped duct with one of said outlet-ports and for connecting the inlet-port directly with the other outlet-port without closing said inlet-port.

9. A multiway valve, comprising a casing having an inlet-port, an outlet-port, a pair of ports adapted to be connected with a looped duct, a rotatable part for said valve, means within said rotatable part for directing the flow of the liquid in opposite directions through said looped duct, for connecting one end of said looped duct with the said outlet-port, for connecting the inlet-port directly with the outlet-port without closing said inlet-port, and for closing the inlet-port.

10. A multiway valve, comprising a casing having an inlet-port, an outlet-port, a discharge-port, a pair of ports adapted to be connected with a looped duct, a rotatable part for said valve and means within said rotatable part for directing the flow of the liquid in opposite directions through said looped duct, for connecting one end of said duct with either the outlet-port or the discharge-port, for connecting the other of said outflows with said discharge-port and for connecting the inlet-port directly with the outlet-port without closing said inlet-port.

11. A multiway valve, comprising an inlet-port, an outlet-port, a discharge-port, a pair of ports adapted to be connected with a looped duct, a rotatable part for said valve, a means within said rotatable part for directing the flow of the liquid in opposite directions through said looped duct, for connecting one end of said duct with either the outlet-port or the discharge-port, for connecting the other end of said looped duct with the discharge-port, for connecting the inlet-port directly with the outlet-port, and for closing said inlet-port, the arrangement of said means within said rotatable part being such that the inlet-port is not closed in the intervals between the positions of said part.

12. A multiway valve, comprising a casing having an inlet-port, an outlet-port, a discharge-port and a pair of ports adapted to be connected with a looped duct, a rotatable part for said valve having two sets of chambers therein formed by a partial transverse partition and longitudinal partitions separating the chambers of each set there being communication between said sets of chambers, said rotatable part having openings in its walls communicating with said chambers, the openings in one set of chambers being adapted to communicate with the inlet and outlet ports and openings in the other set of chambers being adapted to communicate with the pair of ports connected with the looped duct and with the discharge-port.

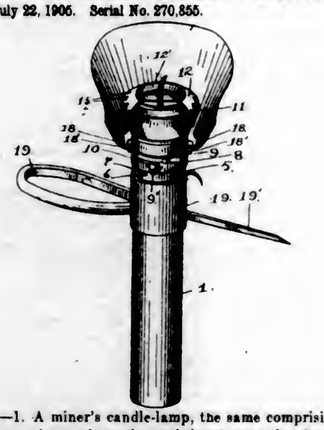
13. A multiway valve comprising a casing having an inlet-port, an outlet-port, a discharge-port and a pair of ports adapted to be connected with a looped duct, a rotatable part for said valve having two sets of chambers therein formed by a partial transverse partition and longitudinal partitions separating the chambers of each set, said sets of chambers having communication with each other, the walls of one set of chambers of said rotatable part having two openings adapted to communicate with the inlet and outlet ports and the walls of the other set of chambers having four openings adapted to communicate with said pair of ports and the discharge-port.

14. A multiway valve, comprising a casing having an inlet-port, an outlet-port, a drain-port, and a pair of ports adapted to be connected with a looped duct, a rotatable part retained within said casing and having two sets of chambers therein formed by a partial transverse partition, a substantially diametric partition separating two of the chambers of one set of chambers and two substantially parallel partitions forming a passage from one of said chambers to the rear of the rotatable part, each of the chambers of said named set having two openings adapted to communicate with the pair of ports and the drain-port and the second set of chambers each having an opening adapted to communicate with the inlet and outlet ports.

15. A multiway valve, comprising a casing having an inlet-port, and outlet-port, a drain-port and a pair of ports adapted to be connected with a looped duct, a tapering part for said valve having two sets of chambers therein formed by a partial transverse partition formed by a sector slightly less than a semicircle, the chambers of the forward set being separated by a substantially diametric partition and the chambers of the rear set being formed by substantially radial partitions connected at their inner ends, one of said radial partitions forming substantially an extension of said diametric partition so that corresponding longitudinal chambers to communicate with each other, each of the chambers of the former set having two openings adapted to communicate with the pair of ports and the drain-port, and the rear chambers each having an opening adapted to communicate with the inlet and outlet ports.

16. A multiway valve, comprising a casing having an inlet-port and an outlet-port in one transverse plane, a pair of ports adapted to be connected with a looped duct and a passage leading to a drain-port in another transverse plane, a tapering part for said valve having two sets of chambers each set corresponding to one of aforesaid transverse planes and formed by a sector slightly less than a semicircle, the chambers of the forward set being separated by a substantially diametric partition and the chambers of the rear set being separated by substantially radial partitions connected at their inner ends, one of said radial partitions forming substantially an extension of said diametric partition so that corresponding longitudinal chambers communicate with each other, each of the chambers of the forward set having two openings adapted to communicate with the pair of ports and the passage leading to the drain-port, and each of the chambers of the rear set having an opening adapted to communicate with the inlet and outlet ports, one of the last-named openings being of sufficient width to include both of said last-named ports.

819,379. CANDLE-LAMP. WILLIAM J. ROGERS, San Jose, Cal. Filed July 22, 1905. Serial No. 270,855.



Claim.—1. A miner's candle-lamp, the same comprising a tubular body, a spring-projector located therein, a socket for the candle carried thereby, a lock-collar fitted to the outer end portion of the tubular body, an air-draft thimble detachably fitted to the lock-collar, a double-draft air-opening in the thimble, and outlet-openings in said thimble for the escape of air outside of the sphere of the flame.

2. A miner's candle-lamp, the same comprising a tubular body, a spring-projector located therein, a socket for the candle carried thereby, a lock-collar fitted to the outer end portion of the tubular body, an air-draft thimble detachably fitted to the lock-collar, a double-draft air-opening in the thimble, outlet-openings in said thimble for the escape of air outside of the sphere of the flame, and a shield secured to and carried by the air-draft thimble.

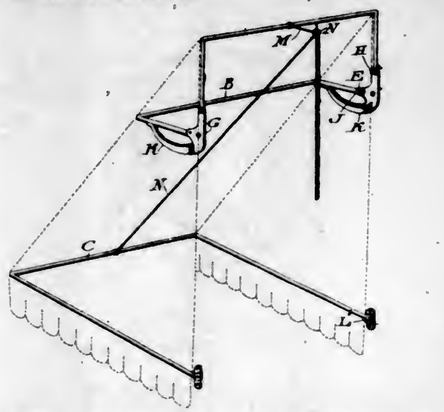
3. A miner's candle-lamp, the same comprising a tubular body portion, a spring-projector located therein, a socket for the reception of a candle carried thereby, lateral projection extending from the upper portion of the body, a lock-collar fitted on the said body, bayonet-slots therein engaged by the said lateral projections, an air-draft thimble carried by the lock-collar, a bayonet-slot in said thimble, lateral projection on the collar which fits in the said slot, an air-draft opening in said thimble, and a series of outlet-openings therein for the escape of the admitted air.

819,380. THERMOMETER. JULIUS SCHACHT, New York, N. Y., assignor to Solomon Charles Hirschberg, New York, N. Y. Filed Dec. 26, 1903. Serial No. 186,635.



Claim.—A thermometer comprising a thermometric tube, a cap in which said tube is seated and by which it is carried, a depending collar on the said cap, having exterior and interior threads, a transparent interchangeable casing adapted to cover the said tube and secured to the interior of the said collar, and an exterior casing secured to the said collar by means of the said exterior threads.

819,381. AWNING. WILLIAM SCHEU, Philadelphia, Pa. Filed July 11, 1905. Serial No. 269,145.



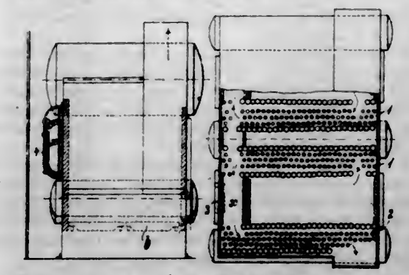
Claim.—1. In an awning, top and bottom frames, means for pivotally mounting the several frames, an intermediate frame, an arm, and a support for the latter, the arm being adapted to project from its support and sustain the intermediate frame in horizontal position.

2. In an awning, top and bottom frames and an intermediate frame, bearings for said several frames, a forwardly-projecting arm and means for supporting said bearings and arm, said intermediate frame being adapted to be supported in horizontal position on said arm.

3. In an awning, top and bottom frames and an intermediate frame, a bracket, means for supporting the latter, said top and intermediate frames being adapted to be mounted on said bracket, means for pivotally mounting the bottom frame, and an arm projecting from said bracket, adapted to support said intermediate frame in horizontal position.

4. In an awning, top and bottom frames and an intermediate frame, a bracket, bearings thereon for the top and intermediate frames, means for pivotally mounting the lower frame, and an arm projecting from said bracket, adapted to support said intermediate frame in horizontal position.

819,382. STEAM-GENERATOR. RICHARD SCHULS, Berlin, Germany. Filed July 22, 1905. Serial No. 270,848.

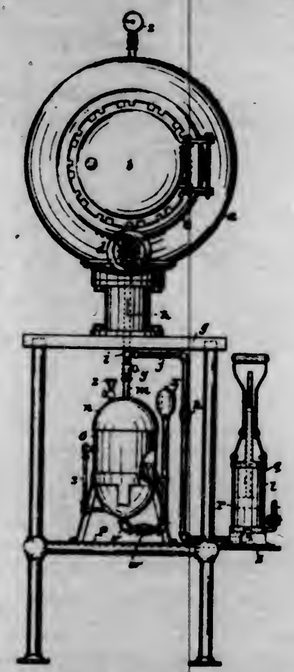


Claim.—1. A water-tube steam-boiler having a grate and a continuous fire-gas passage around three sides of the fire-box; comprising side passages formed between the boiler-tubes and a chamber above the grate connecting the ends of the side passages, said passages connecting longitudinally at their ends with the chamber and said chamber inclined downward toward the grate, substantially as and for the purposes set forth.

2. A water-tube steam-boiler having a grate and a continuous fire-gas passage around the three sides of the fire-box; comprising side passages extending the length of the fire-box and formed between water-tubes, and a connecting-chamber outside of the fire-box and ex-

tending across the ends of said passages and above the grate, substantially as and for the purposes set forth.

819,383. PROCESS OF TREATING SURGICAL ARTICLES. AUSTIN V. M. SPRAGUE, New York, N. Y. Filed Nov. 3, 1904. Serial No. 231,326.



Claim.—1. The method of treating penetrable articles whereby to render them aseptic which consists in inclosing them in a fluid-tight chamber, producing a substantially perfect vacuum in said chamber, and then precipitately permitting an external gaseous fluid to impel itself against, charge itself with and convey along with it into said chamber, an asepticizing medium mixable with said fluid, substantially as described.

2. The herein-described method of treating surgical articles consisting in inclosing the articles to be treated in a vacuum-chamber, then exhausting said chamber, and then causing atmospheric pressure to impel a gaseous fluid against, and convey along with it into said chamber, an asepticizing medium mixable with said fluid, substantially as described.

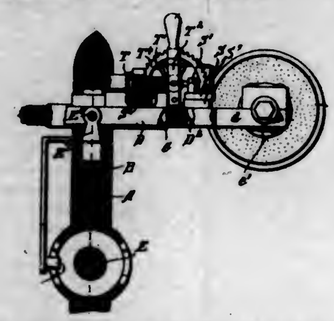
3. The herein-described method, of treating surgical articles consisting in inclosing the articles to be treated in a closed chamber and causing external pressure to impel a fluid against, and to thus induce ebullition in, a liquid, and to then cause said fluid to convey along with it into said chamber increments of the product of such ebullition, substantially as described.

4. The herein-described method of treating surgical articles consisting in inclosing the articles to be treated in a closed chamber and causing external pressure to impel a fluid against, and to thus induce ebullition in, a liquid, and to then cause said fluid to mix itself with, and convey along with it into said chamber, increments of the product of such ebullition, substantially as described.

819,384. APPARATUS FOR TRUING GRINDING-DISKS. JOSEPH A. STARKWEDER, Los Angeles, Cal. Original application filed June 6, 1903, Serial No. 159,952. Divided and this application filed Nov. 12, 1903. Serial No. 180,629.

Claim.—1. A device for truing the edge of a grinding-disk comprising, in combination with a tilting disk, diamond-points, and means for causing said points to contact alternately with the opposite beveled edges of the disk as the latter tilts, as set forth.

2. An apparatus for truing the edge of a grinding-disk comprising, in combination with a disk and means for tilting the same, pivotal members, a diamond-point carried by each of said members, and means for tilting said members, as set forth.



3. An apparatus for truing the edge of a grinding-disk comprising, in combination with a disk and means for tilting the same, pivotal members, a diamond-point carried by each of said members, means for tilting said members, and mechanism for feeding the latter forward, as set forth.

4. An apparatus for truing the cutting edge of a grinding-disk comprising a rocking yoke, a grinding-disk tilting with said yoke, pivotal angle members mounted upon said yoke, a diamond-point upon each of said members, a rod pivotally connected to each member and fixed to a part of the frame of the apparatus, as set forth.

5. An apparatus for truing the edge of a grinding-disk comprising a rocking yoke, a disk carried by the forked ends of said yoke and tilting therewith, angle members pivotally mounted upon the yoke, diamond-points mounted upon the inner ends of said members, a rod pivotally connected to each member, the outer end of each rod being fixed to a stationary part of the frame of the apparatus, and means for feeding said members upon the yoke, as set forth.

6. An apparatus for truing the edges of grinding-disks comprising a yoke, a lever having bifurcated ends secured to said yoke, a shaft, cylindrical segment-shells fixed to said shaft with a cam-groove intermediate their inner ends, a lug projecting from said lever and adapted to travel in said cam-groove whereby the lever and yoke may be rocked, a disk carried by said yoke, diamond-points carried by said yoke and adapted to alternately contact with the opposite beveled edges of the disk as the yoke rocks, as set forth.

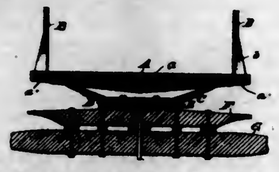
7. A device for truing the edge of a grinding-disk comprising a rocking yoke, a disk carried thereby, a lide mounted upon said yoke, pivotal members mounted upon said slide, a diamond-point carried by each member, rods pivotally connected one to each of said members and fixed each to the frame of the apparatus, and means for moving said slide, as set forth.

8. A device for truing the edge of a grinding-disk comprising a rocking yoke, a disk carried thereby, a slide mounted upon said yoke, pivotal members mounted upon said slide, a diamond-point carried by each member, rods pivotally connected one to each of said members and fixed each to the frame of the apparatus, a series of rack-teeth along the inner marginal edge of said slide, a shaft, pinion-wheel fixed thereto and in engagement with said teeth, and gear mechanism for rotating said shaft, as set forth.

9. A device for truing the edge of a grinding-disk comprising a rocking yoke, a disk carried thereby, a slide mounted upon said yoke, pivotal members mounted upon said slide, a diamond-point carried by each member, rods pivotally connected one to each of said members and fixed each to the frame of the apparatus, a series of rack-teeth along the inner marginal edge of said slide, a worm-wheel T, a yoke T^2 and worm-wheel carried thereby and in mesh with said wheel T, a handle upon said yoke T^2, a gear-wheel rotating with said worm-wheel T^2 and in mesh with said ratchet-teeth, a gear-wheel mounted upon said yoke T^2, a counter-shaft mounted upon the yoke D, a gear-wheel upon said counter-shaft in mesh with said gear-wheel upon the yoke T^2, a ratchet-wheel upon said counter-shaft, a pivotal pawl mounted upon the frame of the apparatus and in the path of the teeth of said ratchet-wheel, whereby as the yoke carrying the ratchet-wheel tilts upward, a partial rotary movement will be imparted to the ratchet-wheel and, through the gear mechanism described, to impart a movement to said slide, as set forth.

10. An apparatus for truing the edge of a grinding-disk comprising, in combination with a rocking yoke, a disk carried thereby, a movable slide, pivotal members mounted upon said slide, a diamond-point upon each of said members, and means for imparting an intermittent movement to said slide as the yoke carrying the latter rocks, as set forth.

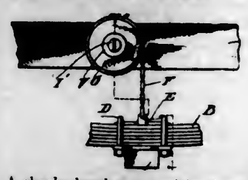
819,385. SPRING-BOLSTER. JOHN H. TERELKELD, Lucas Station, Iowa. Filed Nov. 2, 1905. Serial No. 285,653.



Claim.—1. In a vehicle, the combination of a front bolster constructed of a channel-iron and having a stake or standard at each end, each standard being bifurcated at its lower end so as to embrace the end of the bolster, a bow-spring having its respective ends housed in the bolster, these ends having a sliding bearing on the under side of the bolster-bar, a bolt passed transversely through each end of the bolster, this bolt passing through the bifurcated end of the stake and through the eye in the end of the spring, a wear-plate bolted to the middle of the spring on its under side, and a sand-board bolted to the axle and provided with a sand-board plate.

2. A spring-bolster consisting of a bow-spring adapted at its middle for attachment to the axle and having its ends extended upwardly and outwardly, the extreme ends being provided with elongated eyes, a channel-bar resting on and housing the upper ends of the spring and carrying a stake at each end, and fastening-bolts passed through the downward-turned flanges of the channel-bar and the eyes of the spring, substantially as set forth.

819,386. SHOCK-ABSORBER. HARRY C. TURNER, Los Angeles, Cal. Filed Aug. 31, 1905. Serial No. 276,629.



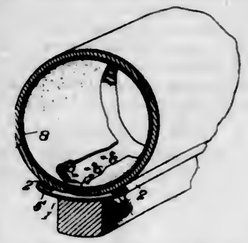
Claim.—1. A shock-absorber comprising inner and outer hub members, a clutch, means for tightening the clutch, a ratchet-casing, a spring connecting the ratchet-casing with the inner hub and a flexible connection connected at one end to the ratchet-casing, the absorber adapted to be secured to one portion of a vehicle and the outer end of the flexible connection to another whereby to absorb the shock caused by one in the other.

2. A shock-absorber comprising an inner and outer hub, clutch mechanism, means for tightening the clutch, comprising a locking-bolt having a screw-thread which turns in a thread in the inner hub with its head bearing against the outer hub, a ratchet-casing, a spring connecting the ratchet-casing and inner hub, and a flexible connection connected at one end to the ratchet-casing, the absorber adapted to be secured to one portion of a vehicle and the outer end of the flexible connection to another whereby to absorb the shock caused by one in the other.

3. In a shock-absorber, the combination with an inner and outer hub, a locking-bolt connecting the two, a ratchet-wheel mounted on the inner hub and provided with ratchet-teeth, an outer ratchet member having pockets therein, and ratchet-balls interposed between the outer and inner ratchet members, of annular rings connected with the inner ratchet member, washers, a friction-ring, the locking-bolt adapted to be turned to tighten the rings and washers, a ratchet-casing, a spring extending from the casing to the inner hub and a flexible connection connected at one end to the ratchet-casing.

4. The herein-described shock-absorber, comprising inner and outer hub members, a bolt extending centrally therethrough and having external threads thereon, the inner hub member being provided with a central screw-threaded bore for the reception of the locking-bolt; a ratchet-wheel revolubly and concentrically mounted on said inner hub member and provided with ratchet-teeth; an outer ratchet member disposed concentrically with and on the outside of said ratchet-wheel and being provided on the inside thereof with ratchet-ball seats, ratchet-balls in said seats; a coiled spring secured at one end on said inner hub member, the outer member of said spring being secured to the outer casing of the ratchet; a sprocket-chain secured to the ratchet-casing at one end, the other end of said sprocket-chain being secured to the running-gear; annular leather washers concentrically placed on said inner hub member and adapted to be pressed together and cause frictional engagement between the hub member and the ratchet-casing.

819,387. PNEUMATIC TIRE. CHARLES R. TWITCHELL, Los Angeles, Cal., assignor of one-half to James M. Brennan, Los Angeles, Cal. Filed June 20, 1905. Serial No. 266,152.



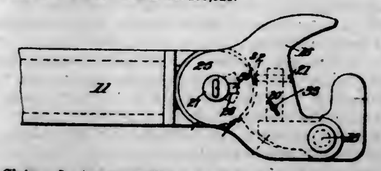
Claim.—1. The combination with a wheel-rim having opposite edge flanges, of a tire-casing of substantially uniform thickness and having two series of hooks secured thereto at or near its edges, each of said hooks having an inner secured portion and an outer flange-engaging portion, which latter is spaced away from the casing so as to accommodate and interlock with the rim-flanges, the connecting portions between said inner and outer portions of the hooks being designed to contact with the edges of the rim as the casing is expanded.

2. The combination with a wheel-rim having opposite edge flanges, of a tire-casing having two series of hooks secured thereto near the edges thereof, one series being located a greater distance from one edge of the casing than the other series is in respect to the other edge, said former edge constituting a flap, and all of said hooks being spaced away from the casing so as to accommodate and interlock with said edge flanges, and means for preventing the casing from creeping on the rim.

3. The combination with a wheel-rim having opposite flanges formed with edge recesses, of a tire-casing having two series of hooks secured thereto near the edges thereof, one series being located a greater distance from one edge of the casing than the other series is in respect to the other edge, said former edge constituting a flap, and all of said hooks being spaced away from the casing and of width substantially equal to that of said recesses, the interlocking of the hooks with the recessed edges of the wheel-rim preventing the casing from creeping on the latter.

4. The combination with a wheel-rim having opposite flanges formed with spaced-apart edge recesses, of a casing of substantially uniform thickness, from edge to edge, and two series of hooks secured to the casing near its edges, one series being located a greater distance from one edge of the casing than the other series is in respect to the other edge, said former edge constituting a flap, said hooks being designed to enter said recesses of the rim-flanges, the interlocking of the hooks with the latter preventing the casing from creeping on the rim.

819,388. CAR-COUPLING. JOHN F. WAGNER, Tamaqua, Pa. Filed Feb. 7, 1906. Serial No. 299,923.



Claim.—1. A car-coupling comprising a draw-bar and a coupler-head pivotally connected thereto, means for rigidly locking the head in alinement with the bar, and means for limiting lateral swing of the coupler-head when the locking means are out of engagement.

2. A car-coupling comprising a draw-bar and a coupler-head, a

pivot-pin connecting them and having a dowel or wing, the said bar and head having locking-recesses to receive said dowel or wing.

3. A car-coupling comprising a draw-bar having a forwardly-projecting tongue formed with a hole and having a locking-recess adjacent said hole, a coupler-head having a rearwardly-extending portion formed with a hole and overlapping the tongue of the said bar and having a recess similar to the locking-recess of said bar, and a pivot-pin having a dowel or wing adapted to fit the recesses of the overlapping parts.

4. A car-coupling comprising a draw-bar and a coupler-head pivotally connected thereto and having locking-recesses normally in alinement with each other, and a dowel or wing projecting from the pivot member and adapted to engage said locking-recesses.

5. A car-coupling comprising a draw-bar having a tongue at its forward end provided with a hole and a recess adjacent said hole and formed with supporting-recesses at the sides of the first-mentioned recess, a coupler-head having rear flanges or ears and having a locking-recess, and a pivot-pin adapted to connect the flanges of the coupler-head with the tongue of the draw-bar and having an integral dowel or wing substantially as and for the purpose described.

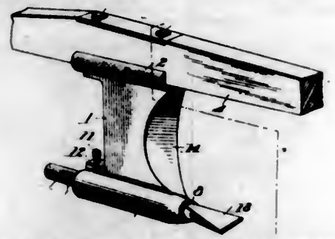
819,389. ELECTRIC-WIRE TERMINAL. JOSEPH D. WARREN, Providence, R. I. Filed May 2, 1905. Serial No. 258,458.



Claim.—1. The combination of an electric-wire terminal stamped from sheet spring metal and shaped to form the side wings c' c', a body portion having the hole c^3 and bent substantially U shape to form the spring-arm c^7 having the rounded end c^8, the hole c^4 coinciding with the hole c^3 and the ribs c^5 c^5 radiating from the hole c^4, and a binding-post fastener d constructed to screw onto a binding-post of an electric cell and having the notches d^3 d^3, whereby an electric wire is secured to the terminal by folding the wings c' c' over the wire, and the terminal secured to the binding-post of an electric cell by passing the binding-post through the holes c^3 and c^4 in the terminal and screwing the fastener onto the binding-post to bring the ribs c^5 c^5 on the spring-arm of the terminal into engagement with the notches d^3 d^3 in the fastener for the purpose, as described.

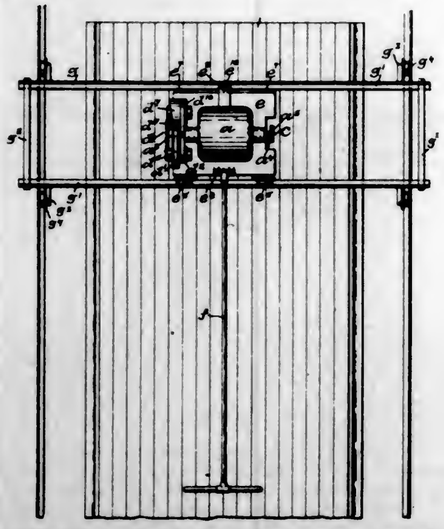
2. The combination with an electric cell a having the binding-posts b b secured to the positive and negative poles of the cell, of an electric-wire terminal c stamped from sheet spring metal and shaped to form the side wings c' c', a body portion having the hole c^3 and bent substantially U-shaped to form the spring-arm c^7 having the rounded end c^8, the hole c^4 coinciding with the hole c^3, and the ribs c^5 c^5 radiating from the hole c^4, a binding-post fastener d having the notches d^3 d^3 and constructed to screw onto a binding-post b, whereby a wire is secured to the terminal c by folding the wings c' c' over the wire, the terminal c is secured to the binding-post and the fastener d held from unscrewing by the ribs c^5 c^5 on the spring-arm c^7 engaging with the notches d^3 d^3 in the fastener under spring tension, as described.

819,390. PLOW. THOMAS J. WARREN, Stanley, N. C. Filed June 16, 1904. Serial No. 212,868.



Claim.—A subsoiling-plow including a single casting having flat opposite upright faces and a concaved front cutting edge beveled on one side, the top of the casting terminating in a laterally-enlarged head projecting in front and rear thereof with its projecting portions pierced by bolt-openings, integral flanges rising at opposite sides of the head, an integral open-ended tubular socket at the base of the casting and extending longitudinally thereof, and a subsoiling-share having a shank removably received in the socket.

819,391. FLOOR-DRESSING MACHINE. CYRA B. WATTLES, Providence, R. I., assignor to Surfacing Machine Company, Providence, R. I., a Corporation of Rhode Island. Filed Sept. 11, 1905. Serial No. 277,919.



Claim.—1. In a floor-dressing machine, a carriage, means for supporting and guiding the carriage lengthwise and crosswise over the raised floor of a bowling-alley, a motor secured to the carriage, a dressing-roller rotatably and reciprocally secured to the carriage, mechanism operatively connecting the motor with the dressing-roller whereby the dressing-roller is given simultaneously a rotating and a reciprocating motion, and means for adjusting the dressing-roller vertically, as described.

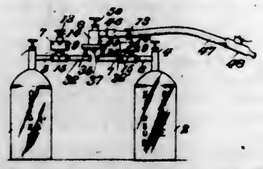
2. In a floor-dressing machine, a carriage movably supported on a transverse frame which in turn is movably supported on rails running lengthwise and parallel with the raised floor of a bowling-alley, a motor secured to the top of the carriage, a dressing-roller rotatably and reciprocally held in bearings secured to the under side of the carriage, mechanism operatively connecting the motor with the dressing-roller whereby the dressing-roller is given simultaneously a rotating and a reciprocating motion, means for adjusting the dressing-roller vertically consisting of an adjusting-screw in the carriage adapted to bear on the transverse frame, and means for moving the carriage and the transverse frame lengthwise of the alley consisting of a handle pivotally secured to the carriage, as described.

3. A floor-dressing machine comprising rails secured to a floor one on each side of and parallel with the raised floor of a bowling-alley, a transverse frame having rigid ways and wheels adapted to run on the rails, a carriage having wheels, disks and an adjusting-screw adapted to movably and adjustably support the carriage on the transverse frame, a motor secured to the top of the carriage, a dressing-roller secured to a shaft, means for rotatably and reciprocally securing the dressing-roller shaft to the under side of the carriage, means for operatively connecting the motor with the dressing-roller shaft to revolve the dressing-roller, and means for operatively connecting the motor with the dressing-roller shaft to simultaneously reciprocate the dressing-roller consisting of a grooved collar on the dressing-roller shaft, a pulley on the motor, pulleys on a counter-shaft supported in bearings on the carriage, a belt connecting the pulley on the motor with a pulley on the counter-shaft, a pulley having a cam-face supported in bearings on the carriage, a belt connecting the cam-face pulley with a pulley on the counter-shaft, a vertical lever pivotally secured near its center to the carriage in a position for the upper end of the lever to engage with the cam on the face of the cam-pulley and the lower end to engage with the grooved collar on the shaft of the dressing-roller, and a whip-spring rigidly secured at one end to the carriage in a position for the free end to engage with the upper end of the lever, whereby the dressing-roller is simultaneously revolved and is reciprocated in one direction by the cam-face pulley and in the opposite direction by the tension of the whip-spring, as described.

4. The combination with a floor-dressing machine, of a motor a having the casing a', the base a^2, the bearings a^3 a^3, the shaft a^4, the sprocket-wheel a^5 on one end of the shaft, the pulley a^6 on the opposite end of the shaft, a dressing-roller b secured to a shaft b', a sprocket-wheel b^3 secured to one end of the shaft b', a grooved collar b^4 secured to the opposite end of the shaft b', a sprocket-chain c' connecting the sprocket-wheel a^5 with the sprocket-wheel b^3, a carriage e, means for securing the motor-base a^2 to the top of the carriage e, means for rotatably and reciprocally securing the dressing-roller shaft b' to the under side of the carriage e, pulleys d' and d^3 supported in bearings on the carriage e, a belt d^4 connecting the pulley a^6 with the pulley d', a pulley d^5 having the cam-face d^7 supported in bearings on the carriage e, a belt d^{10} connecting the pulley d^5 with the pulley d^3, a lever d^{11} pivotally secured near its center to the carriage e in a position for the upper end of the lever to engage with the cam-face d^7 on the pulley d^5 and for its lower end to engage with the grooved collar b^4 on the dressing-roller shaft b', and a whip-spring d^{14} rigidly secured at one end in a position for the free end to engage with the upper end of the lever d^{11}, whereby the dressing-roller b is simultaneously revolved and reciprocated, as described.

5. In a floor-dressing machine, the combination of the following instrumentalities:—a motor a, a dressing-roller b, a dressing-roller-revolving mechanism c, a dressing-roller-reciprocating mechanism d, a carriage e, a handle f pivotally secured to the carriage, a transverse frame g adapted to movably support the carriage e, and rails h h secured to a floor and adapted to movably support the transverse frame g, whereby the dressing-roller b is simultaneously revolved and reciprocated and guided lengthwise and crosswise on the raised floor of a bowling-alley, as shown and described.

819,392. GAS-ADMINISTERING APPARATUS. WALTER N. WAYMAN, Staunton, Va. Filed June 28, 1905. Serial No. 267,433.



Claim.—1. In gas-administering apparatus, the combination of a valve-casing having a high-pressure inlet open to reservoir pressure and a low-pressure valve-closed outlet, a partition separating the inlet from the outlet, and having an opening, a valve seating in said opening and a hollow valve-stem for said valve, a plurality of resilient diaphragms supported by the casing and supporting said valve-stem, rigid disks on said stem centrally supporting alternate diaphragms, annular plates fast to the casing alternating with said disks and circumferentially reinforcing alternate diaphragms, said stem being provided with openings to admit low-pressure fluid to one side of each of said centrally-supported diaphragms, resilient means controlled outside the casing for adjusting the valve to its seat.

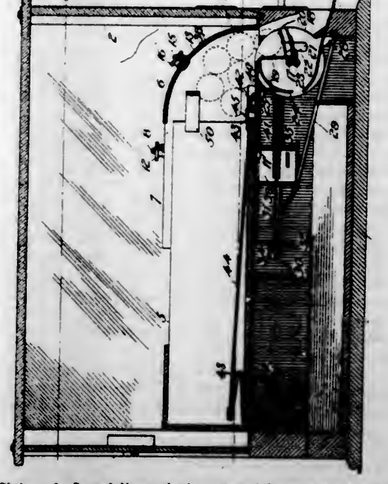
2. In gas-administering apparatus, the combination of a valve-casing having a high-pressure inlet open to reservoir-pressure, and a low-pressure outlet, a partition separating the inlet from the outlet and having an opening therein, a valve seating in said opening, and a hollow valve-stem for said valve, a plurality of resilient diaphragms supported by the casing and supporting said valve-stem, rigid disks on said stem centrally supporting alternate diaphragms, annular plates fast to the casing alternating with said disks and circumferentially reinforcing alternate diaphragms, said stem being provided with openings to admit low-pressure fluid to one side of each of said centrally-supported diaphragms and for closing said outlet.

3. In gas-administering apparatus, a combined mixing and automatic cut-off valve, comprising a casing having a plurality of gas-inlets, a sliding valve opening and closing said inlets, centrally-disposed gas-receiving tubes in said casing provided with a common spring-pressed valve for closing outlets of same, the inlet ends of said tubes being controlled by said sliding valve, and said casing being provided with connections for delivering said gas or gases.

4. In gas-administering apparatus, the combination of a valve-casing having an inlet open to reservoir-pressure and a low-pressure outlet, a pressure-reducing valve therein controlling the passage of fluid from said inlet to said outlet, and a low-pressure outlet-valve subject to reduced reservoir-pressure on one side and to spring-pressure on the opposite side for normally closing said outlet.

5. In gas-administering apparatus, the combination of a valve-casing having an inlet open to reservoir-pressure and a low-pressure outlet, a pressure-reducing valve in said casing controlling the passage of fluid through the same, a conduit communicating with said outlet, a spring-pressed outwardly-opening valve normally closing said conduit, and a casing inclosing said valve and provided with a mouthpiece, said casing constituting a pressure-reducing and gas-delivery chamber.

819,393. DELIVERY DEVICE FOR VENDING-MACHINES. DANIEL K. WENRICH, Joplin, Mo. Filed Dec. 1, 1904. Serial No. 235,096.



Claim.—1. In a delivery device, an article-support mounted to reciprocate therein and constructed to feed articles forward and off the same, an oscillatory pan, means for actuating said pan and means pivotally connecting the pan to the support, such that upon operation of the pan the support is operated to deliver articles into the pan, substantially as described.

2. A delivery device consisting of an oscillating pan and a reciprocating flap operatively connected to said pan, article-elevators attached to said pan and operating between the pan and flap and a means for operating said pan.

3. A delivery device consisting of an oscillating pan, a hood located above the pan, a reciprocating flap operatively connected to said pan and a means for oscillating said pan.

4. A delivery device consisting of an oscillating pan, a hood lo-

cated above the pan, a reciprocating flap operatively connected to said pan, article-elevators attached to said pan and operating between the pan and flap and a means for operating said pan.

5. A delivery device consisting of a movable pan, a hood located above said pan and having adjustable side walls, a means for bringing the article to be delivered to the pan and a means for operating said pan.

6. A delivery device consisting of a movable pan, a means for operating the same, an adjustable false bottom, located in said pan having lugs provided with notches which extend through openings in the bottom proper, a spring located under said pan and adapted to enter the notches of said lugs, and a means for bringing the article to be delivered to the pan.

7. A delivery device consisting of a movable pan, a means for operating the same, a plate extending to said pan, article-elevators attached to said pan, and operating through recesses cut in the edge of said plate, and a means for bringing the article to be delivered to said elevators and pan.

8. A delivery device consisting of a movable pan, a means for moving said pan, links pivoted at their forward ends to said pan, a rod connecting the rear ends of said links together and a flap attached to said rod.

9. A delivery device consisting of a movable pan, a means for moving said pan, an apron connected with said pan and a flap detachably attached to said apron.

10. A delivery device consisting of a movable pan, a means for moving said pan, a flap connected with said pan, and having transversely-extending ridges.

11. A delivery device consisting of a movable pan, a means for moving said pan, a flap connected with said pan and having transversely-extending ridges provided with precipitous and slanting sides.

12. A delivery device consisting of a movable pan, a means for moving said pan, a flap connected with said pan and a means for automatically elevating the rear end of said flap.

13. A delivery device consisting of a movable pan, a means for moving said pan, a flap connected with said pan and a spring attached to said flap for automatically elevating the rear end thereof.

14. A delivery device consisting of a movable pan, a means for moving said pan, an apron attached to and operated by said pan, said apron having its forward edge extending downward toward the pan and a flap attached to said apron.

15. A delivery device consisting of a pan, disks located at the ends of said pan, a shaft supporting said disks, a pitman attached at one end to one disk, a push-rod attached at its inner end to the other end of said pitman.

16. A delivery device consisting of a movable pan, a pitman connected at one end with said pan, a push-rod, the rear end of said pitman being adjustably connected to the rear end of said push-rod.

17. A delivery device consisting of a movable pan, a pitman connected at one end with said pan and having at its other end a bent portion, a push-rod having at its inner end a lug provided with several perforations adapted to receive the bent portion of the pitman.

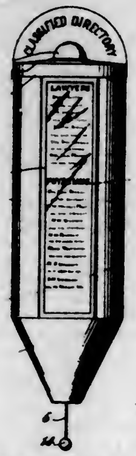
18. A delivery device consisting of a movable pan, a pitman connected at one end with said pan, and having at its other end a bent portion, a push-rod having at its inner end a perforated lug adapted to receive the bent portion of the pitman and a plate pivoted to said rod and adapted to be swung over the said bent portion of the pitman.

19. A delivery device consisting of a movable pan, a means for moving the same, a hood located over said pan and having concaved telescoping aprons, said hood adapted to receive a box containing the article to be delivered.

20. A delivery device consisting of a movable pan, a means for moving the same, a hood located over said pan, and having adjustable side walls, adjustable lugs located upon the inner faces of said walls and adapted to receive the edges of a box containing the article to be delivered.

819,394. **ADVERTISING DEVICE.** HARRY B. WILLIAMS, Los Angeles, Cal., assignor, by mesne assignments, to Clinton B. Dawson, Los Angeles, Cal. Filed Mar. 27, 1905. Serial No. 252,210.

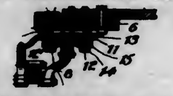
Claim.—1. An advertising device comprising a vertical, cylindrical case having a conical extension at its lower end and a removable cover at its upper end, said cover provided with a central perforation, a pivot-rod extending axially through said case and cover and having an enlargement above the cover to rest thereon, a manual operating means at its lower end exteriorly of the case, a polygonal drum carried by said pivot-rod and provided on its sides with advertising matter, and a bearing member for said pivot-rod at the lower end of the case extension.



2. An advertising device comprising a vertical, cylindical case having a conical extension at its lower end and a removable cover at its upper end, said cover provided with a central perforation, a pivot-rod extending axially through said case and cover and having an enlargement above the cover to rest thereon, a manual operating means at its lower end exteriorly of the case, a polygonal drum carried by said pivot-rod and provided on its sides with advertising matter, and a bearing member for said pivot-rod at the lower end of the case extension, said bearing member consisting of a conical piece removably fitting in the lower end of the conical case extension.

3. An advertising device comprising a cylindrical case having an exhibit-opening and provided at its lower end with a conical extension, a pivot-rod extending axially of the case and provided at its lower end with a manual operating means exteriorly of the case, a removable cover at the top of the case having a perforation forming a bearing for the upper end of said pivot-rod, a removable hood on the top of said cover over said bearing, and a plate attached to the top of the cover and extending transversely thereof.

819,395. **FIFTH-WHEEL FOR VEHICLES.** FREDERICK G. WINNEK, Dearborn, Mo. Filed Nov. 6, 1905. Serial No. 286,085.



Claim.—1. In a fifth-wheel including the king-bolt and the axle, the lower member of the fifth-wheel having a pair of depending tenons, a saddle-plate having corresponding depending sockets open at the top of said saddle-plate, each socket closed at its sides and bottom and adapted each to receive one of said tenons, the opposite walls of said sockets flaring upward whereby to form separate closures and abutments for said separate tenons to limit their sidewise rocking movements in the sockets, pivot-bolts confining said tenons within their sockets, and means for supporting the saddle-plate upon the axle.

2. In a fifth-wheel, the lower member whereof formed with a pair of depending tenons, a saddle-plate having corresponding depending sockets open at the top of said saddle-plates, each socket closed at its sides and bottom and adapted each to receive one of said tenons, the axle, a pair of springs secured thereto one of said springs supporting the front end of the saddle-plate, the other spring supporting said saddle-plate between its depending sockets, and pivot-bolts confining said tenons within their sockets.

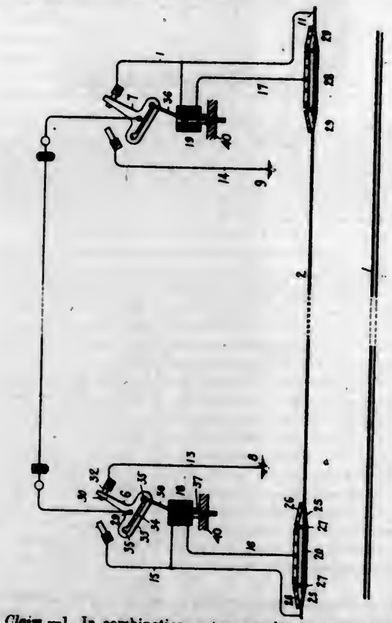
3. In a vehicle running-gear, the combination with the body and the reach-bar, the upper member of the fifth-wheel fixed to said bar, the front axle, a pair of springs fixed thereon one at the front and one at the rear side thereof, a saddle-plate fixed upon said springs, the king-bolt, and means for pivotally mounting the fifth-wheel upon said saddle-plate consisting of a pair of lugs or tenons depending from the upper member of the fifth-wheel and sockets in said saddle-plate within which the lugs or tenons are pivotally mounted on each side of the fastening of said saddle-plate to the spring at the inner side of the axle, for the purpose stated.

819,396. **FLEXIBLE WINDOW-SCREEN.** JOSEPH ANGELBTH, Kenosha, Wis. Filed Apr. 24, 1905. Serial No. 257,118.



Claim.—The combination of a window-sash; a window-screen; a screen-supporting roller; a radial flange provided with a plurality of recesses connected with one end of said roller; one end of said screen being attached to said window-sash and the opposite end being attached to said roller; means for automatically winding said screen upon said roller as the same is released by the movement of the sash and a horizontally-moving locking-pin having slidable bearings in the window-frame adapted to engage the recesses of said radial flange and lock the screen-supporting roller at any desired point of adjustment.

819,397. **RAILWAY-SIGNAL.** ROLLIN A. BALDWIN, South Norwalk, Conn., assignor to The Baldwin & Rowland Switch & Signal Company, a Corporation of Connecticut. Filed Feb. 16, 1904. Serial No. 193,353.



Claim.—1. In combination, a two-arm lever provided with a longitudinal slot terminating at opposite sides of the lever-fulcrum and provided at each end with a socket, a reciprocating member, and a link pivoted at one end to said reciprocating member and at the other end engaging said slot and movable into either socket by a movement of said reciprocating member.

2. In combination, a switch comprising a contact member and a portion in the form of a two-arm lever provided with a longitudinal slot terminating at opposite sides of the lever-fulcrum and provided at each end with a socket, a reciprocating member, and a link pivoted at one end to said reciprocating member and at the other end engaging said slot and movable into either socket.

3. In combination, a two-arm T-shaped lever provided with a longitudinal slot terminating on opposite sides of the lever-fulcrum and provided at each end with offset sockets, a solenoid, a core therefor, and a link attached to said core and having shifting engagement with said slot.

4. In combination, a switch comprising a contact member and a portion in the form of a two-arm lever provided with a longitudinal slot terminating at opposite sides of the lever-fulcrum, a solenoid, a core, and a link connecting said slot to one of said solenoid and core elements.

5. In combination, a switch comprising a contact member and a portion in the form of a two-arm lever provided with a longitudinal slot terminating at opposite sides of the lever-fulcrum and provided at each end with a socket, a solenoid, a core, and a link connecting said core to said slot.

6. In a railway signaling apparatus, a signaling-circuit provided with a switch, said switch being pivoted and comprising a portion in the form of a two-arm lever having a longitudinal slot terminating at opposite sides of the lever-fulcrum, a reciprocating member operable through the passage of a railway-car, and a link connecting said reciprocating member to said slot.

7. In a railway signaling apparatus, a signaling-circuit provided with a switch, said switch being pivoted and comprising a portion in the form of a two-arm lever having a longitudinal slot terminating at opposite sides of the pivot, a local circuit controllable through the motor-circuit of a railway-car, a solenoid included in said local circuit, a core, and a link connecting said core to said slot.

8. In a railway signaling apparatus, a signaling-wire extending the length of the section, a switch at each end of the wire for either grounding the latter or connecting it to the main conductor of the railway, each switch being pivoted and comprising a portion in the form of a two-arm lever having a longitudinal slot terminating at opposite sides of the pivot, local circuits at the ends of the section, one for controlling each switch, said local circuits being controllable through the motor-circuit of a railway-car, a solenoid included in each local circuit, cores for the solenoids, and links connecting the cores to said slots.

9. In a railway signaling apparatus, a signaling-wire extending the length of the section, a switch at each end of the wire for either grounding the latter or connecting it to the main conductor of the railway, each switch being pivoted and comprising a portion in the form of a two-arm lever having a longitudinal slot terminating in sockets at opposite sides of the pivot, local circuits at the ends of the section, one for controlling each switch, said local circuits being controllable through the motor-circuit of a railway-car, a solenoid included in each local circuit, cores for the solenoids, and links connecting the cores to the slots and adapted to enter said sockets.

10. The combination of a local circuit having a contact in position to engage the traveling contact of an electric-railway car, a solenoid included in said circuit, a core for said solenoid, means for effecting relative adjustment of the solenoid and core, and means operable by a movement of one of said solenoid and core elements, for directing or controlling the movement of the car.

11. The combination of a local circuit having a contact in position to engage the traveling contact of an electric-railway car, a solenoid included in said circuit, a core for said solenoid, means for adjusting the core, and a signal operable by the core.

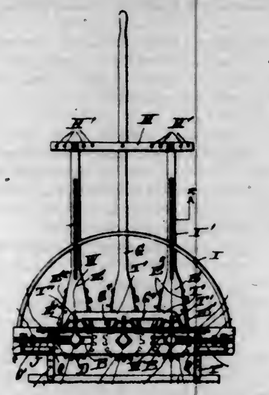
12. The combination of a local circuit including a solenoid and having a contact in position for engagement with the traveling contact of an electric-railway car, a core, a rod adjustably connected to the core, and a car controlling or directing member operable by said rod.

13. In a signaling apparatus for electric railways, the combination of a local circuit connected at one end to the main conductor of the railway and at the other end having a contact in position for engaging the traveling contact of a railway-car, a solenoid included in said circuit, a core for said solenoid, a rod adjustably connected to said core, adjustable stops for limiting the movements of said rod, a link connected to said rod, a switch having a portion in the form of a two-arm lever provided with a longitudinal slot engaged by said link, and a signal-circuit controllable by said switch.

819,398. **MACHINE FOR PLACING AND REMOVING NUTS UPON RAIL-SECURING BOLTS.** WILLIAM H. W. BALMLEY, Sherando, Va. Filed Jan. 16, 1906. Serial No. 296,227.

Claim.—1. A device for tightening and loosening screws from bolts comprising a frame, a series of longitudinally-movable shafts mounted therein, socket members upon said shafts adapted to engage nuts, ratchet-wheels rotating with said shafts, a series of swinging levers journaled upon said shafts, pawls carried by the levers and engaging the ratchet-wheels, one of said shafts being mounted in fixed bearings and the others in adjustable bearings, a rod mounted in suitable bearings upon the side of the frame, a bar pivotally mounted upon said rod, and adjustable angle-screws mounted upon said

bar adapted to engage the ends of bolts upon which nuts engaged by the socket members are mounted, as set forth.

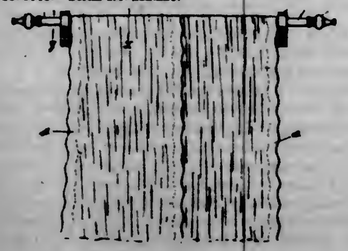


2. A device for tightening and loosening screws from bolts comprising a frame, a series of longitudinally-movable shafts mounted therein, socket members upon said shafts adapted to engage nuts, ratchet-wheels rotating with said shafts, a series of swinging levers journaled upon said shafts, the middle of said shafts mounted in fixed bearings, eyebolts mounted in threaded bearings upon the frame and in the eyes of which bolts, the shafts on either side of the central shaft are journaled, adjusting-nuts mounted upon said eyebolts, whereby the latter may be moved longitudinally, and means carried by the frame for engaging a bolt upon which a nut to be loosened or tightened by said socket members is mounted, as set forth.

3. A device for tightening and loosening screws from bolts comprising a frame, a series of longitudinally-movable shafts mounted therein, socket members upon said shafts adapted to engage nuts, ratchet-wheels rotating with said shafts, a series of swinging levers journaled upon said shafts, the middle of said shafts mounted in fixed bearings, eyebolts mounted in threaded bearings upon the frame and in the eyes of which bolts, the shafts on either sides of the central shaft are journaled, adjusting-nuts mounted upon said eyebolts, whereby the latter may be moved longitudinally, a rod journaled in suitable bearings in the frame of the apparatus, a bar mounted upon said rod, and angle-screws carried by said bar and adapted to engage the ends of bolts upon which nuts to be loosened by said socket members are mounted, as set forth.

4. A device for tightening and loosening screws from bolts comprising a frame, a series of longitudinally-movable shafts mounted therein, socket members upon said shafts adapted to engage nuts, ratchet-wheels rotating with said shafts, a series of swinging levers journaled upon said shafts, the middle of said shafts mounted in fixed bearings, eyebolts mounted in threaded bearings upon the frame and in the eyes of which bolts, the shafts on either side of the central shaft are journaled, adjusting-nuts mounted upon said eyebolts, whereby the latter may be moved longitudinally, and means carried by the frame for engaging a bolt upon which a nut to be loosened or tightened by said socket members is mounted, perforated bars, a serrated strip connected to said bars, leaf-springs fixed to said frame, and pins carried by said springs and adapted to engage registering apertures in said perforated bars and frame, as set forth.

819,399. CURTAIN-POLE. JOHN M. BARR, Bellevue, Ohio. Filed Oct. 11, 1905. Serial No. 282,286.



Claim.—1. A curtain-pole divided longitudinally to form a body member and a locking member having parallel clamping-surfaces, the body member being provided with sockets having inclined walls, and the locking member having its ends adapted to enter said sockets, the inclined walls whereof serve to force the locking member toward the body member to grip the curtain between them, substantially as described.

2. A curtain-pole divided from top to bottom longitudinally to form a body member and a locking member having parallel clamping-surfaces, the body member having enlarged end portions of the full size of the complete pole, provided with sockets open at their tops and inner ends and having downwardly and forwardly inclined rear walls, the locking member being provided with terminal tenons adapted to enter said sockets and having corresponding inclined rear walls, substantially as described.

3. A curtain-pole comprising a body member and a locking member having opposed clamping-surfaces, the body member being provided at its ends with sockets wedge shape in cross-section, and the locking member having end tenons correspondingly shaped in cross-section, substantially as described.

819,400. APPARATUS FOR PROMOTING COMBUSTION. GEORGE R. BARNS, Buffalo, N. Y. Filed July 20, 1905. Serial No. 270,479.



Claim.—1. In an apparatus for promoting combustion, the combination with a combustion-chamber having an opening in one of its walls, of a door closing said opening and having an air-chamber therein as an air-inlet for said chamber, and an air-conduit comprising a fixed section secured to said door and a movable section carried by said fixed section and projecting into the combustion-chamber to direct the air to the fuel within said combustion-chamber.

2. In an apparatus for promoting combustion, the combination with a combustion-chamber having an opening in one of its walls, of a door hinged to said wall to close said opening and having an air-chamber and an air-inlet for said chamber, and an air-conduit comprising a fixed section secured to said door and a swivel-section mounted on said fixed section and projecting into the combustion-chamber to direct the air against the fuel therein.

3. In an apparatus for promoting combustion, the combination with a combustion-chamber having an opening in one of its walls, a door hinged to said wall to close said opening and having an air-chamber provided with an air-inlet and an air-outlet, an air-conduit comprising a fixed section secured to said door in communication with the chamber therein, and a movable section carried by said fixed section and having an inwardly-projecting portion lying normally perpendicular to the door, said movable section on opening the door being swung out of its normal position by contact with the wall of the combustion-chamber, and means to cause said movable section to automatically return to its normal position when closing the door.

4. In an apparatus for promoting combustion, the combination with a combustion-chamber having an opening in one of its walls, a door hinged to said wall to close said opening and having an air-chamber provided with an air-inlet and two air-outlets, an air-conduit comprising a fixed section having a horizontal portion connecting said air-outlets and a vertical portion extending upward from the center of said horizontal portion, and a movable section carried on said fixed section and projecting into the combustion-chamber.

5. In an apparatus for promoting combustion, the combination with a combustion-chamber having an opening in one of its walls, a door hinged to said wall to close said opening and having an air-chamber provided with an air-inlet and two air-outlets, an air-conduit comprising a fixed section having a horizontal portion connecting said air-outlets and a vertical portion extending upward from the center of said horizontal portion, a movable section normally held perpendicular to said door and on opening the latter being swung out of its normal position by contact with the wall of the combustion-chamber, and means to cause the movable section to automatically return to its normal position when closing said door.

6. In an apparatus for promoting combustion, the combination with a combustion-chamber having an opening in one of its walls, a door hinged to said wall to close said opening and having an air-chamber provided with an air-inlet and two air-outlets, an air-conduit comprising a fixed section having a horizontal portion connecting said air-outlets and a vertical portion extending upward from the center of the horizontal portion and having a reduced upper end to form an inclined shoulder, and a movable section having a vertical portion fitting onto the reduced upper end of the fixed section and provided with an inclined end coöperating with said inclined shoulder and a horizontal portion extending into the combustion-chamber and having a series of openings to direct jets of air against the fuel.

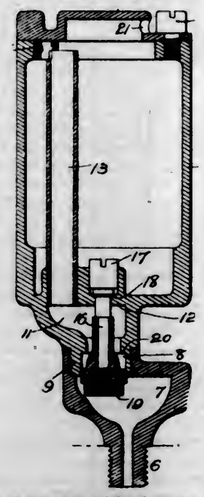
7. An apparatus for promoting combustion, comprising a plate adapted to be secured to a fire-door to form an air-chamber, an air-conduit affixed to said plate and extending therefrom into the combustion-chamber, said conduit communicating with the air-chamber formed in the door and having a series of air-openings at its free end to direct jets of air to the fuel.

8. An apparatus for promoting combustion comprising a hollow fire-door to form an air-chamber and having an air-inlet and an air-outlet, an air-conduit comprising a vertical portion and a horizontal portion lying in a plane slightly below the top of the fire-door, said horizontal member extending into the combustion-chamber and having means at its free end to direct jets of air to the fuel within the combustion-chamber.

9. An apparatus for promoting combustion, comprising a fire-door having an air-chamber therein provided with an air-inlet and an air-outlet, an air-conduit leading to a point approximately central in the combustion-chamber and comprising a fixed section and an oscillating section, said fixed section having a vertical tube reduced at its upper end to form a shoulder and having a depression in said shoulder formed by opposite inclines, and said oscillating section having a vertical tube fitting the reduced upper end of the fixed section and provided with a complementary inclined end for coaction with the depression in the shoulder of the fixed section.

10. In an apparatus for promoting combustion, the combination with the usual fire-door having an air-opening and a damper for said opening, of a plate secured to said door and separated from the front wall thereof to form an air-heating chamber, and an air-conduit leading from said chamber into the combustion-chamber to direct the heated air against the fuel.

819,401. LUBRICATING APPARATUS FOR AIR-PUMPS. PETER BEAHM, Altoona, Pa. Filed Aug. 27, 1904. Serial No. 222,406.



Claim.—1. In an apparatus of the character described, the combination with a pump, of a lubricant-receptacle connected with the pump, a lubricant-depositing chamber, a valve between the receptacle and chamber actuated in its movements in both directions solely by the operation of the pump-piston and an air-tube communicating with the chamber and through which chamber the lubricant is sucked with the air upon each stroke of the piston.

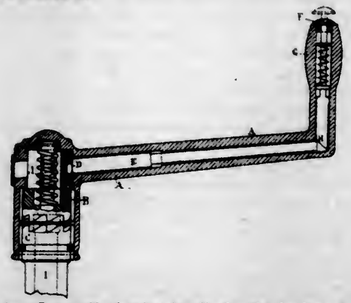
2. In an apparatus of the character described, the combination with a pump, of a chamber communicating therewith, means for admitting air to said chamber, a lubricant-receptacle above the chamber, a valve actuated solely by the compression and suction of the pump-piston to permit passage of lubricant to the chamber and from the same to the pump.

3. In a lubricator, the combination with a receptacle, a depositing-chamber below the same, connected valves controlling the passage of lubricant from the main receptacle to the depositing-chamber and from the latter, and means for admitting air to the depositing-chamber.

4. In an apparatus of the character described, the combination with a pump, of a chamber communicating therewith, a lubricant-receptacle above the chamber having an air-inlet port in its top, an air-inlet pipe communicating with the chamber and extending above the lubricant-level in the receptacle, and a double-headed valve, the valve-heads secured together and actuated solely by the compression and suction of the pump-piston to permit passage of lubricant to the chamber and suck the same to the pump with the air.

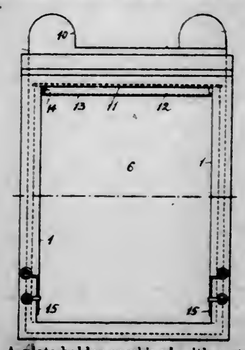
5. A lubricator comprising a lubricant-receptacle and two chambers below the same, a valve between said chambers and a valve between the upper chamber and the lubricant-receptacle, said valves secured one to the other and movable together in both directions and means for admitting air to the chamber between the valves.

819,402. SELF-RELEASING BRAKE-HANDLE FOR TRAM-CARS, &c. MARIUS BELMONDO, Marseille, France. Filed Aug. 8, 1905. Serial No. 273,316.



Claim.—In a self-releasing handle for the brakes of electric tram-cars and other vehicles, a spring-controlled button F, placed in the handle A and acting by means of a beveled extremity H on a tongue E in the horizontal part of the handle which tongue penetrating a catch D connected to one of the two toothed pinions B and C renders the handle free in both directions when the said button F is depressed, substantially as described.

819,403. MAGAZINE PLATE-HOLDER. ARTHUR A. BROOKS and GEORGE A. WATSON, Liverpool, England. Filed May 16, 1905. Serial No. 260,661.



Claim.—1. A plate-holder combined with a storage-magazine for a photographic camera, adapted for the successive insertion of single sensitized plates in envelops; consisting of an exposure-frame with a trapped entrance-slot at one side for admitting and withdrawing the envelop; a compartment for the storage of exposed plates behind said exposure-frame and separated therefrom by a slidable

shutter and means for permitting the unloading of said compartment.

2. A plate-holder combined with a storage-magazine for a photographic camera adapted for the successive insertion of single sensitized plates in envelops; consisting of an exposure-frame with a trapped entrance-slot thereto, means for pressing the sensitized plate inward and means for preventing the withdrawal of the same; a compartment for the storage of exposed plates behind said exposure-frame and separated therefrom by a slidable shutter, and means for permitting the unloading of said compartment.

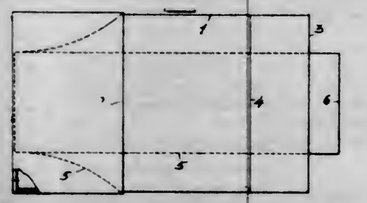
3. A plate-holder combined with a storage-magazine for a photographic camera, adapted for the successive insertion of single sensitized plates in envelops; consisting of an exposure-frame with a trapped entrance-slot thereto; means for pressing the sensitized plate inward, and spring-fingers each with a pointed turned-in end fixed one in each side of the said frame and adapted to allow the envelop and plate being pushed past them but preventing the withdrawal of the plate after the envelop has been partly removed; a compartment for the storage of the exposed plates behind the exposure-frame and separated therefrom by a slidable shutter, and another slidable shutter forming the back of said compartment to permit unloading the same.

4. A plate-holder combined with a storage-magazine for a photographic camera adapted for the successive insertion of single sensitized plates in envelops; consisting of an exposure-frame with a trapped entrance-slot at one side for admitting the envelop, having a longitudinally-hinged bar resiliently covering the inner end of said slot and adapted to give way upon inserting the envelop and to press the plate inward, and a spring-finger having a pointed end in each side of the said frame adapted to press the plate inward and to prevent its withdrawal when the envelop is partly removed; a slidable shutter at the back of the exposure-frame covering an opening adapted to pass the sensitized plate through; a compartment for exposed plates behind said shutter and another slidable shutter forming the back of the apparatus and adapted to permit unloading said compartment.

5. A plate-holder having a slideway having a trapped entrance-slot for receiving the sensitized plate and holding it in position for exposure; and another slideway immediately behind the first-named one and fitted with a withdrawable shutter; a compartment for exposed plates behind said shutter and a door for permitting the unloading of said compartment.

6. A plate-holder having a slideway having a trapped entrance-slot for receiving the sensitized plate and holding it in position for exposure; and another slideway immediately behind the first-named one and fitted with a withdrawable shutter; a compartment for exposed plates behind said shutter; a door for permitting the unloading of said compartment and springs for bearing upon the sensitized plate in the first-named slideway and pressing it against said shutter.

819,404. LIGHT-PROOF ENVELOP FOR SENSITIZED PLATES. ARTHUR A. BROOKS and GEORGE A. WATSON, Liverpool, England. Filed Aug. 1, 1905. Serial No. 271,267.
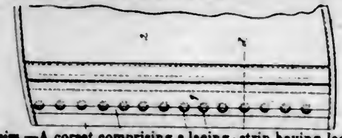


Claim.—1. An envelop for a sensitized plate, which consists of a sheath having an open end, and a cap to fit over and close light-tight said open end and having an extension on one side forming a band which is adapted to fold into said cap so as to pass round the end of said sheath and plate therein and extend to the opposite end of the sheath.

2. An envelop for a sensitized plate which consists of a sheath having one open end, and a cap to fit over and close light-tight said open end and having one side formed with a strip extension of greater length than the depth of the cap and the length of the envelop combined for the purpose set forth.

3. An envelop for holding a single sensitized plate which consists of a sheath with one end open, and a cap to fit over and close light-tight said open end, said cap having a long strip forming a tab fixed to one side thereof of such a length that it can be folded into said cap so as to pass round the end of the sheath therein and extend outward to the opposite end of the sheath for the purpose set forth.

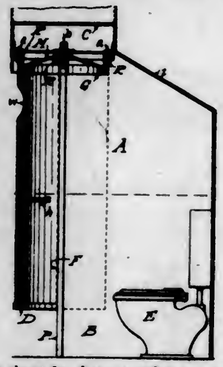
4. In an envelop adapted to hold a single sensitized plate the combination with a sheath open at one end and having a finger-grip extension at the other, of a cap adapted to fit over the open end of the sheath in a light-tight manner and having one side extended in length approximately equal to that of the envelop with plate inclosed and the depth of the cap combined for the purpose set forth.

819,405. CORSET. WILLIAM F. BROOKS, New Haven, Conn., assignor to The Brooks Corset Co., New Haven, Conn., a Corporation. Filed May 11, 1905. Serial No. 260,878.



Claim.—A corset comprising a lacing-strip having lacing-eyelets therein, and a fly secured to the inner face of the corset and extending toward the edge thereof and partially overlapping the said eyelets the outer portions of which are exposed, substantially as described.

819,406. CLOSET FOR SHOPS AND OTHER PURPOSES. ALEXANDER H. BROWN, Cleveland, Ohio, assignor to The Brown Hoisting Machinery Company, Cleveland, Ohio. Filed July 29, 1905. Serial No. 271,839.



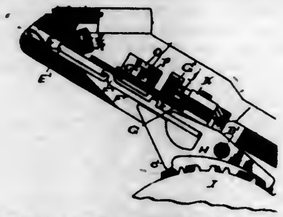
Claim.—1. A closet for shops, or other purposes, made up of a plurality of stalls provided, respectively, with semicylindrical, or other convex-concave form of doors, suitably mounted, within or before said stalls, so as to be revoluble about their geometrical centers, the said stalls having a common roof portion, with hood extending downwardly therefrom in front of said doors, that leads to and opens into a ventilation-shaft provided for the purpose, substantially as shown and described.

2. A closet for shops, or other purposes, made up of a plurality of stalls provided, respectively, with semicylindrical, or other convex-concave form of doors having side flanges, as described, said doors being suitably mounted, within or before said stalls, so as to be revoluble about their geometrical centers until said flanges are in bearing against the door-posts, or sides of the stalls, the said stalls having a common roof portion, with hood extending downwardly therefrom in front of said doors, that leads to and opens into a ventilation-shaft provided for the purpose.

3. A latrinal closet made up of a main compartment, a semicylindrical or other convex-concave form of door, with side flanges as described, revolubly connected to the same; suitable stops or parts, within said compartment, against which said flanges shall bear when said door is revolved to a predetermined limit, and a roof, provided with a suitable ventilating-shaft, that overhangs said door, substantially as shown and described.

819,407. PATTERN KNITTING-MACHINE. WILLIAM W. BURSON, Chicago, Ill. Filed Dec. 30, 1905. Serial No. 573,769.

Claim.—1. The combination of two rows of needles and controlling pattern devices to operate a part of both rows of needles in the first passage of the yarn-carrier across them, and to operate only each alternate one of said needles in the return-passage leaving the others inactive, whereby to set up and close the toe of hose, substantially as described.



2. The combination of two rows of needles, and needle-controlling pattern devices to knit a heel portion of hose integrally by operating only a part of the needles in one row in the first passage of the yarn-carrier, dropping uniformly the last needle knit in the return movement of the yarn-carrier, and uniformly leaving the "reversing-needle" inactive when it is knit past, whereby a heel is knit integrally by making successive stitch-rows of unequal length without the "eyelet-holes" otherwise made where reversing is done in the fabric with the needles drawn down, substantially as described.

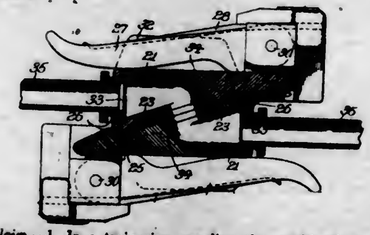
3. The combination of two rows of needles, and needle-controlling pattern devices to operate each alternate needle of one row in the first passage of the yarn-carrier and in like manner each alternate needle in the other row in the return-passage of the yarn-carrier, the others being inactive, and in the second round to leave the first set of operating-needles inactive and operate the other set, whereby the fabric is set up with a selvage on both rows of needles, substantially as set forth.

4. The combination of rows of needles, and two needle-controlling pattern devices whereby when the fabric is to be widened a new needle is brought into action on one row and the edge needle of the other row is operated at the same time, all the others being inactive, whereby the yarn is engaged by said single needle between the fabric and the new widening-needle and knit into the other row and the "eyelet-hole" otherwise made in widening is closed, substantially as specified.

5. The combination of two rows of needles, and needle-controlling patterns so formed that when the fabric is to be widened a new needle is brought into action at the edge of the fabric and given the yarn once and then dropped out of action remaining inactive during one or more rounds while another needle outside of said needle is brought into action thereby knitting over or past the first widening-needle, substantially as specified.

6. The combination of two rows of needles, and needle-controlling patterns so formed that when a needle is widened the first adjoining needle on which there is already a stitch, as also the third needle from said widening-needle are dropped out of action, whereby the strain on the yarn in the operation of widening is reduced, substantially as set forth.

819,408. AUTOMATIC TRAIN-PIPE COUPLING. LEWIS C. CARY, Chicago, Ill., assignor, by direct and mesne assignments, to Cary Inventions Co., a Corporation of Illinois. Filed July 6, 1905. Serial No. 268,566.



Claim.—1. In a train-pipe coupling the combination of two coupling members having inclined engaging faces and having their forward ends provided with inwardly-projecting shoulders each adapted to make locking engagement with the heel of the opposite member, substantially as shown and described.

2. In a train-pipe coupling the combination of two coupling members having body portions substantially triangular in cross-section and their forward ends provided with inwardly-projecting shoulders each adapted to make locking engagement with the heel of the opposite member.

3. In a train-pipe coupling the combination of two coupling members having body portions substantially triangular in cross-section and inclined engaging faces, the forward ends thereof having inwardly-projecting shoulders each adapted to make locking engagement with the heel of the opposite member.

4. In a train-pipe coupling the combination of two coupling members having their forward ends provided with inwardly-projecting shoulders each adapted to make locking engagement with the heel of the opposite member and a spring-actuated pivoted guide-arm bearing on each said member when the car-coupling heads are coupled substantially as shown and described.

5. In a train-pipe coupling the combination of two coupling members having body portions substantially triangular in cross-section and inclined engaging faces, the forward ends of said members having inwardly-projecting shoulders each adapted to make locking engagement with the heel of the opposite member, and a spring-pressed pivoted guide-arm bearing on the back of each said member when the heads are coupled, substantially as shown and described.

6. In an automatic train-pipe coupling the combination with two coupling members having inclined engaging faces and provided at their forward ends with inwardly-projecting shoulders each adapted to make locking engagement with the heel of the opposite member, of spring-actuated pivoted guide-arms each positioned opposite to an engaging face and pivoted adjacent to the rear end thereof and adapted to bear upon the back of the opposite member when coupled in operative engagement.

7. The combination with a pair of car-coupling heads, of a pipe-coupling comprising two members having inclined engaging faces and having their forward ends provided with inwardly-projecting shoulders each adapted to make locking engagement with the heel of the opposite member, substantially as shown and described.

8. The combination with a pair of car-coupling heads, of a pipe-coupling comprising two members having inclined engaging faces and each having a guideway on the back thereof, the forward ends of said members having inwardly-projecting shoulders each adapted to make locking engagement with the heel of the opposite member, and a pivoted guide-arm bearing on the back of each said member when said heads are coupled.

9. The combination with a pair of car-coupling heads, of a pipe-coupling comprising two members having their forward ends provided with inwardly-projecting shoulders each adapted to make locking engagement with the heel of the opposite member, and a spring-actuated pivoted guide-arm bearing on the back of each said member when said heads are in coupling engagement.

10. The combination with a pair of car-coupling heads, of a pipe-coupling consisting of two members having body portions substantially triangular in cross-section and having the forward ends thereof provided with inwardly-projecting shoulders each adapted to make locking engagement with the heel of the opposite member, and a pivoted guide-arm bearing on the back of each said member when said heads are coupled.

11. The combination with a pair of car-coupling heads, of a pipe-coupling comprising two members having body portions substantially triangular in cross-section and having the forward ends thereof provided with inwardly-projecting shoulders each adapted to make locking engagement with the heel of the opposite member, and a spring-pressed pivoted guide-arm bearing on the back of each said member when said heads are coupled.

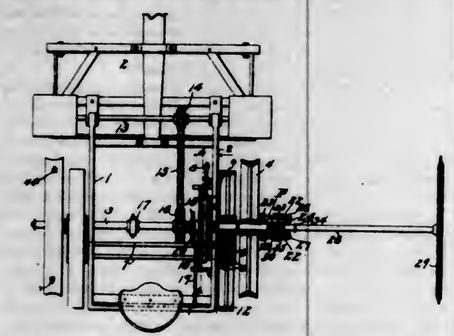
12. The combination with a pair of car-coupling heads, of a pipe-coupling comprising two members the forward ends of which are provided with inwardly-projecting shoulders each adapted to make locking engagement with the heel of the opposite member, each said member having one or more air or steam passages in the body portion entering at the rear and opening in the face thereof, and a spring-actuated pivoted guide-arm adjacent to the face of each member and adapted to make sliding contact with the back of the opposite member.

13. In a train-pipe coupling the combination of two coupling members whose body portions are substantially triangular in cross-section having inclined engaging faces and a guideway on the backs thereof, the forward ends of said members having inwardly-projecting shoulders each adapted to make locking engagement with the heel of the opposite member, and a spring-pressed pivoted guide-arm adapted to bear on the back of each said member substantially as shown and described.

14. The combination with a pair of car coupling heads, of a

pipe-coupling comprising two members having body portions substantially triangular in cross-section and having inclined engaging faces and a guideway on the back thereof, the forward ends of said members having inwardly-projecting shoulders each adapted to make locking engagement with the heel of the opposite member, and a spring-actuated pivoted guide-arm adapted to bear on each said members when said heads are coupled.

819,409. CORN-PLANTER. ROY E. CHESEMAN, La Fayette, Ind. Filed Sept. 25, 1905. Serial No. 280,010.



Claim.—1. In a planter, a frame, an axle connected for rotation with the frame, operating-wheels mounted securely upon the axle, and wheel-carrying disks supported eccentrically upon the axle.

2. In a planter, a frame, an axle connected for rotation with the frame, operating-wheels secured upon the axle, eccentric disks mounted loosely upon the axle, and supporting-wheels mounted for rotation upon the eccentric disks.

3. In a planter, a frame, an axle connected for rotation with the frame, operating-wheels secured upon the axle, eccentric disks mounted loosely upon the axle, transverse bars connecting the eccentric disks, means for adjusting the disks and for securing them at various adjustments with relation to the frame, and transporting-wheels journaled upon the disks.

4. In a planter, a frame, a pair of transporting-wheels, a pair of operating-wheels, and means for changing the relative positions of the transporting-wheels and the operating-wheels to enable the frame to be supported upon the former or the latter at will.

5. A pair of disks, transporting-wheels journaled peripherally upon said disks, an axle journaled eccentrically in the disks, a planter-frame supported upon the axle, and operating-wheels secured upon the latter.

6. A pair of disks, transporting-wheels journaled upon and concentrically with said disks, an axle journaled eccentrically in the disks, a frame supported upon the axle, and operating-wheels upon the latter.

7. A pair of disks, transporting-wheels journaled upon and concentrically with said disks, an axle journaled eccentrically in the disks, a frame supported upon the axle, operating-wheels upon the latter, connecting means for the disks, a lever to manipulate the disks, and means for retaining said lever at various adjustments with relation to the frame.

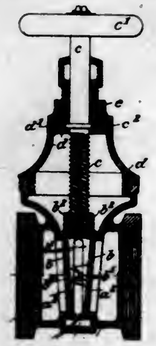
8. In a planter, an axle, supporting-wheels upon the axle, a pair of eccentric disks supported loosely upon the axle, transporting-wheels supported for rotation concentrically with the disks, and means for adjusting the latter with relation to the axle and for retaining them in adjusted position.

819,410. MANUFACTURE OF CHLORIN. ADOLF CLEMM, Mannheim, Germany. Filed Feb. 27, 1905. Serial No. 247,611.

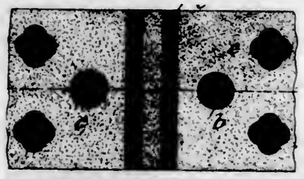
Claim.—The herein-described process of manufacturing chlorin and at the same time phosphate soluble in a solution of citric acid which consists in first preparing a combined solution of acid phosphoric acid salt, and a chlorid and then subjecting the said combined solution to the action of an electric current, as and for the purpose set forth.

819,411. GATE-VALVE. WILLIAM H. CRIST, New York, N. Y., assignor to The Crist Valve Mfg. Co., Chittenango, N. Y., a Corporation of New York. Filed Mar. 9, 1905. Serial No. 249,173.

Claim.—In a gate-valve, a pair of threaded valve-disks having each on one side an integral tongue V-shaped in longitudinal section and rounded in cross-section, and on the other side a correspondingly-shaped bearing, the tongue of one disk being alined with the bearing of the other disk, combined with a spindle engaging the disks, substantially as specified.



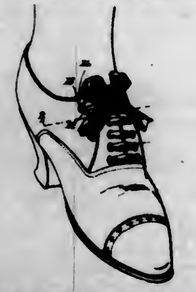
819,412. ORNAMENTING PILE FABRICS. OSWYN ST. LEGER DAVIES, Castleton, England. Filed Oct. 6, 1904. Serial No. 227,512.



Claim.—1. The method of producing ornamental patterns or effects on pile goods consisting in printing the pile fabrics in parts only and on its pile face with a protecting medium which where applied incases and protects the already existing pile and defines the pattern and thereafter singeing the piece to remove the unprotected portions of the pile by passing the coated piece over a singeing-surface and finally removing the protecting medium from the preserved pile and raising and restoring such preserved pile to form the pile portion of the pattern substantially as described.

2. The method of producing ornamental patterns or effects on pile goods consisting in printing the pile fabrics in part only and on its pile face with a gum thickening which where applied incases and protects the already existing pile and defines the pattern and thereafter singeing the piece to remove the unprotected portions of the pile by passing the coated piece over a singeing-roller and finally removing the gum thickening from the preserved pile and raising and restoring such preserved pile to form the pile portion of the pattern substantially as described.

819,418. TIE-HOLDER FOR SHOES. JAMES DEVERMAN, New York, N. Y. Filed Apr. 25, 1904. Serial No. 204,710.



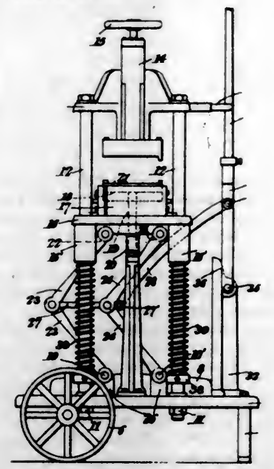
Claim.—1. A tie-holder for shoes comprising a post, means for securing the same to a shoe, said post having a transverse slit therein terminating in recesses at one side of said post, apertures in said post

to the rear of said recesses, and a bail consisting of a body portion having lateral members extending outwardly therefrom, adapted to be maintained under spring-pressure in said slit and recesses, and the ends of said lateral members in the apertures aforesaid, substantially as specified.

2. A tie-holder for shoes comprising a post, means for securing said post to a shoe, said post having a slit extending through the same provided with recesses at one end thereof, and apertures in the sides of said post adjacent to the opposite end of said slit, and a bail comprising an elliptical body portion having substantially parallel projections extending therefrom terminating in ends bent at right angles thereto and extending through the apertures in said post, said parallel projections being adapted to work in the slit of the post and their ends to be engaged by the recesses at one end thereof, substantially as specified.

3. A tie-holder for shoes, comprising a post, said post having a base having a plurality of corners adapted to be passed through its support and bent inwardly thereunder, and a slit extending through said post having recesses at one end thereof, said post having also apertures in its sides adjacent to the opposite end of said slit, and a bail comprising an elliptical body portion having substantially parallel projections extending therefrom terminating in ends bent at right angles thereto and extending through the apertures in said post, said parallel projections being adapted to work in the slit of the head and their ends engaged by the recesses adjacent to one end thereof, substantially as specified.

819,414. PRESS. JOHN E. DONALDSON, Frankfort, Ind. Filed Oct. 26, 1905. Serial No. 284,533.



Claim.—1. In a machine of the class described, a base, guide-rods secured to the base, a die-carrying plate mounted for vertical movement on the guide-rods, toggle-levers pivoted to the base and die-carrying plate, respectively, a pivoted operating-lever for actuating the toggle-levers to raise and lower the die-carrying plate, and a link connecting the toggle-levers and operating-lever and having one end thereof movable to a position below the pivotal center of the operating-lever when the latter is depressed for locking said lever in operative position.

2. In a machine of the class described, a base, guide-rods secured to the base, a die-carrying plate mounted for vertical movement on the guide-rods, a plurality of sets of toggle-levers pivoted to the base and die-carrying plate, respectively, a pivoted operating-lever for actuating the several sets of toggle-levers to raise and lower the die-carrying plate, and a link connecting the toggle-levers and operating-levers and having its intermediate portion bowed laterally and one end thereof movable to a position below the pivotal center of the operating-lever when the latter is depressed for locking said lever in operative position.

3. In a machine of the class described, a base, guide-rods secured to the base, a die-carrying plate mounted for vertical movement on the guide-rods and provided with depending bearing-boxes, a plurality of sets of toggle-levers pivoted to the base and die-carrying plate, respectively, springs mounted on the guide-rods and adapted to engage the bearing-boxes, a pivoted operating-lever for actuating the several sets of toggle-levers to raise and lower the die-carrying plate, and a link connecting the toggle-levers and operating-lever and having its intermediate portion bowed laterally and one end thereof movable to a position below the pivotal center of the operating-lever when the latter is depressed for locking said lever in operative position.

4. In a machine of the class described, a base, vertical guides secured to the base, a die-carrying plate mounted for vertical movement on the guides, a plurality of sets of toggle-levers pivoted to the base and die-carrying plate, respectively, a bracket secured to the base, and an operating-lever pivoted to the bracket for actuating the toggle-levers to raise and lower the die-carrying plate, said bracket serving to limit the upward-and-forward movement of the operating-lever.

5. In a machine of the class described, a base, vertical guides secured to the base, a die-carrying plate mounted for vertical movement in the guides, a plurality of sets of toggle-levers pivoted to the base and die-carrying plate, respectively, a bracket secured to the base and having its upper end bifurcated, a pin extending transversely of the bracket, an operating-lever mounted for swinging movement on said pin, and a link or bar connecting the toggle-levers and operating-lever and adapted to enter the bifurcated portion of the bracket and engage the transverse pin for limiting the downward movement of the operating-lever.

6. In a machine of the class described, a base, vertical guides secured to the base, a die-carrying plate mounted for vertical movement on the guides, a plurality of sets of toggle-levers pivoted to the base and die-carrying plate, respectively, a bracket secured to the base and having its upper end bifurcated and provided with shoulders, a pin extending transversely of the bracket, an operating-lever mounted for swinging movement on said pin, a curved link or bar connecting the toggle-levers and operating-lever and adapted to enter the bifurcated end of the bracket and engage the transverse pin for limiting the downward movement of the lever, the upward-and-forward movement of said lever being limited by engagement with the shoulders, and means for locking the operating-lever in substantially vertical position.

7. In a machine of the class described, a base, provided with a pair of spaced vertically-disposed reinforcing-ribs having their upper edges provided with curved lugs and their outer walls opposite said lugs formed with lateral enlargements provided with concave recesses, a die-carrying plate mounted for vertical movement on the guide-rods, a plurality of sets of toggle-levers having their upper ends pivoted to the die-carrying plate and their lower ends pivoted to the lugs and seated in the concave recesses, a bracket secured to the base and having its upper end bifurcated, an operating-lever pivoted to the bracket, and a link or bar connecting the toggle-levers and the operating-lever and adapted to enter the bifurcated end of the bracket.

8. In a machine of the class described, a base, vertical guide-rods secured to the base, a head-plate secured to the rods, a platen carried by the head-plate, a die-carrying plate mounted for vertical movement on the guide-rods and provided with depending bearing-boxes, springs carried by the guide-rods and interposed between the bearing-boxes and the base, a plurality of sets of toggle-levers pivoted to the die-carrying plate and the base, respectively, a bracket secured to said base, an operating-lever pivoted to the bracket, a link or bar connecting the toggle-levers and operating-lever, and a clip secured to the head-plate and adapted to engage the operating-lever for holding the latter in substantially vertical position.

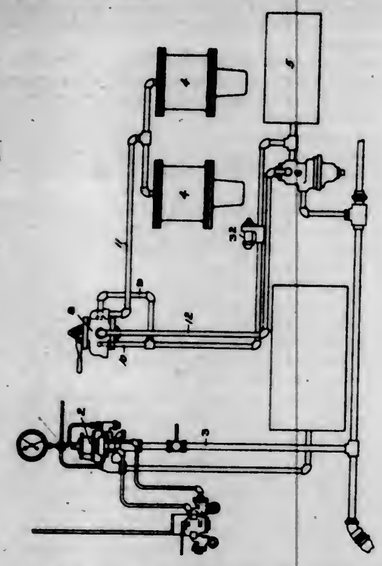
819,415. AIR-BRAKE SYSTEM. FRANK H. DUKESMITH, Meadville, Pa. Filed Dec. 8, 1905. Serial No. 290,980.

Claim.—1. In an automatic air-brake system, the combination of a brake-cylinder, an auxiliary reservoir, a triple valve and an engineer's valve connected in the usual way, and control-valve mechanism connected to the auxiliary reservoir and to the brake-cylinder and arranged to connect both the brake-cylinder and auxiliary reservoir to the atmosphere.

2. In an automatic air-brake system, the combination of a brake-cylinder, an auxiliary reservoir, a triple valve and an engineer's valve connected in the usual way, and control-valve mechanism connected to the auxiliary-reservoir port and to the triple-valve exhaust-port and arranged to connect both of said ports to the atmosphere.

3. In an automatic air-brake system, the combination of a brake-cylinder, an auxiliary reservoir, a triple valve and an engi-

neer's valve connected in the usual way, and control-valve mechanism connected to the auxiliary reservoir and the brake-cylinder, and arranged to connect the auxiliary reservoir to both the atmosphere and to the brake-cylinder.



4. In an automatic air-brake system, the combination of a brake-cylinder, an auxiliary reservoir, a triple valve and an engineer's valve connected in the usual way, and control-valve mechanism connected to the brake-cylinder, the auxiliary reservoir, and the triple-valve exhaust-port, and arranged to connect each of these to the atmosphere.

5. In an automatic air-brake system, the combination of a brake-cylinder, an auxiliary reservoir, a triple valve and an engineer's valve connected in the usual way, and control-valve mechanism connected to the triple-valve exhaust-port, the brake-cylinder and the auxiliary reservoir, and arranged to connect the triple-valve exhaust-port and brake-cylinder to the atmosphere and connect the auxiliary reservoir to the brake-cylinder.

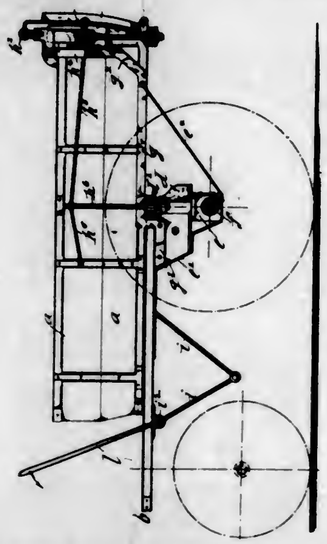
6. In an automatic air-brake system, the combination of a brake-cylinder, an auxiliary reservoir, a triple valve and an engineer's valve connected in the usual way, and control-valve mechanism connected to the auxiliary reservoir, the brake-cylinder, and the triple-valve exhaust-port, and arranged to connect the auxiliary reservoir, the triple-valve exhaust, and the brake-cylinder to the atmosphere, and to also connect the auxiliary reservoir to the brake-cylinder.

7. In an automatic air-brake system, the combination of a brake-cylinder, an auxiliary reservoir, a triple valve and an engineer's valve connected in the usual way, and control-valve mechanism connected to the auxiliary reservoir and brake-cylinder, and arranged in one position to connect the auxiliary reservoir and the brake-cylinder to the atmosphere, and in another position to connect only the brake-cylinder to the atmosphere.

819,416. DUMPING-WAGON. GIOVANNI D'URSO, New York, N. Y. Filed Nov. 6, 1905. Serial No. 286,104.

Claim.—1. The combination, with the front and rear axles, of a bolster on the rear axle, a reach connecting the same with the front axle, a body pivoted to the bolster on the rear axle, means applied to the front end of the body for tilting the same on its pivot, side supports attached to the bolster, an end-gate hinged to the rear ends of said side supports, and a lever connection between the end-gate and the bolster for raising the end-gate when the wagon-body is tilted and returning the same to the rear end of the body when the same is returned into normal position.

2. In a dumping-wagon, the combination, with the front and rear axles, of a bolster on the rear axle, a reach connecting the same on the front axle, a body pivoted to the bolster on the rear axle, a lever mechanism connected with the front part of the wagon-body for tilting it or returning it to normal position, side supports attached to the bolster and provided with angular upwardly-extending rear portions, an end-gate hinged to the upper ends of the rear supports, upright rods supported on the under side of the wagon-body, and lever-rods between said upright supports and the sides of the end-gate for raising the latter when the body is tilted and returning the same into normal position on the rear end of the body when the same is in normal position.



3. In a dumping-wagon, the combination, with the rear axle, of bolsters on the same, a wagon-body pivoted to said bolsters, side supports attached to said bolsters and extending in rearward direction and provided with upwardly-extending rear portions, upright supports attached to a transverse bar of the wagon-body, an end-gate hinged to the upper rear portions, and pivot-rods connecting the sides of the end-gate with the upper ends of the upright side supports.

4. In a dumping-wagon, the combination, with the rear axle, of boxes on the same, a bolster supported on the same, a wagon-body pivoted to the bolster, a transverse bar attached to the bottom of the body, upright rods attached to the ends of said transverse bar, side supports provided with upwardly-extending rear supports, braces connecting said axle-boxes with the rear supports, keepers on said rear supports, an end-gate hinged to the upper ends of said rear supports, and pivot-rods between the sides of the end-gate and the upright supports of the wagon-body.

5. The combination, in a dumping-wagon, of a dumping-body, side uprights attached outside of said body, side supports attached to the bolster and provided with angular upwardly-extending rear portions, an end-gate hinged to the upper ends of the rear supports, pivot-rods supporting said supports with the sides of the end-gate, a link connection between one of said pivot-rods and one side of the end-gate, and a removable bolt connection at the opposite end of the gate so as to permit the loosening and swinging over of the same into open position.

819,417. BAKE-OVEN. JOHN FAULDS, Chicago, Ill., assignor to Middleby Oven Manufacturing Company, a Corporation of Illinois. Filed Mar. 17, 1904. Serial No. 198,668.

Claim.—1. In a bake-oven, in combination, a suitable shell, a fire-grate, slideways flanking the grate, a slide running on the ways, and an arch seated on the slides.

2. In a bake-oven the combination of a suitable shell, the fire-grate therein, slideways flanking the grate, a U-shaped chair slidable on the ways into and out of the shell, and having its cross member at the front of the grate, and an arch seated on the side members of the chair.

3. In a bake-oven, in combination, a suitable shell, a furnace located within the shell and a grate and an arch both independently movable into and out of the shell.

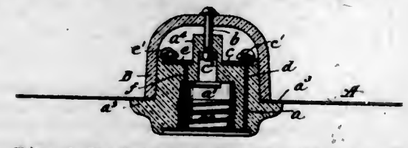
4. In a bake-oven, in combination, a suitable shell, a pair of independently-slidable frames located in the shell, a grate carried by one frame, and an arch covering the grate carried by the other frame.



5. In a bake-oven, in combination, a suitable shell, a U-shaped frame slidably supported in the shell and having its cross member at the front of the fire-box and being movable into and out of the shell, a fire-box arch seated on the side members of the frame, a tile seated on the cross member of the frame and a grate located between the members of the frame.

6. In a bake-oven, in combination, a suitable shell containing a baking-chamber, a furnace located within the baking-chamber and having walls independent of the walls of the shell, its front plate forming a part of the wall of the shell and being detachable therefrom independently of the walls of the furnace, and a sliding plate carrying the walls of the furnace, movable into and out of the shell.

819,418. ELECTRICAL RECEPTACLE. PHILIP H. FIELDING, New York, N. Y. Filed Nov. 17, 1904. Serial No. 233,068.



Claim.—1. In a device of the character specified, the combination with a supporting-plate having an opening, of an electric receptacle comprising two parts, one of which carries binding-posts, contacts and the other live parts, and partly passes through the opening in said plate and having a face abutting one side of said plate, while the other is a cover adapted to protect the said posts and live parts, and having a face abutting the other side of said plate, and means for securing the two parts together and whereby the supporting-plate may be clamped between the said faces abutting it for sustaining the receptacle in position thereon.

2. In a device of the character specified, the combination with a supporting-plate having an opening therein, of an electric receptacle comprising a body having a socket in its front end and binding-posts for live conductors on its rear end, and an engaging face for said supporting-plate intermediate of its front and rear ends, and its rear end passing through said plate, and a cover adjusted over the binding-posts on the rear end of the body and having an engaging face bearing against the supporting-plate for sustaining the receptacle thereon.

3. A support for electric lamps, comprising a plate having an opening therein, a receptacle within said opening having a shoulder abutting against said plate around the opening and a cylindrical cavity with a threaded metallic bushing therein, and having a rear portion projecting through said opening, a cover for said rear portion having a peripheral edge adapted to abut against said plate, and separate means for drawing said parts toward one another.

4. A support for electric lamps comprising a plate having an opening therein, a receptacle within said opening and having a shoulder abutting against said plate and a rear portion projecting through the opening, terminal connections upon said rear portion in a plane substantially remote from the plane of said plate, a cover having a peripheral edge adapted to bear against said plate, and separate means for connecting said cover and receptacle.

5. In a support for electric lamps, a plate having an opening therein, a receptacle in said opening having a shoulder abutting against said plate and a rear portion projecting through said opening, terminal connections upon said rear portion in a plane substantially remote from the plane of said plate, and a cover adapted to be secured to said rear portion and having openings in the plane of said connections.

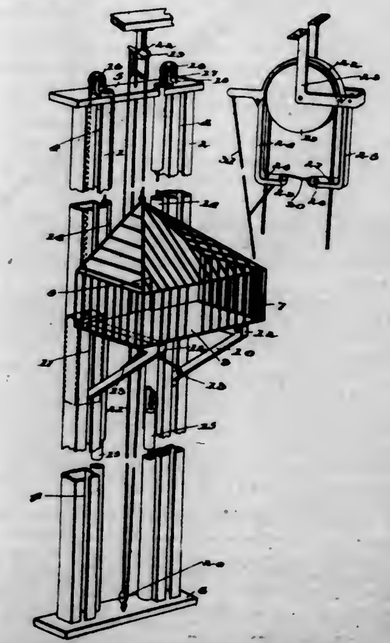
6. In a support for electric lamps, a plate having an opening therein, a receptacle within said opening and having a shoulder abutting against said plate and having a rear portion projecting through the opening, a dividing-wall upon said rear portion, connecting-terminals on alternate sides of said rear wall and in a plane substantially remote from the plane of said plate, and a cover adapted to be secured to said receptacle and having a peripheral edge formed to bear against said plate.

7. In a support for electric lamps, a plate having an opening, a receptacle within said opening and having a shoulder formed to abut against said plate and having a rear portion projecting through said opening, a dividing-wall upon said rear portion, terminals upon said rear portion on alternate sides of said rear wall and in a plane substantially remote from the plane of said plate, a cover having a peripheral edge adapted to bear against said plate, and having openings substantially in the plane of said terminals, and separate means for fastening said cover to said receptacle.

8. The combination with a plate having an opening, of a lamp-socket having a portion for extending through said opening and carrying binding-posts and contact connections, a larger portion having a shoulder for engaging the face of said plate, said binding-post-carrying portion having wire-supporting faces at a distance relatively remote from said shoulder, a cover for said portion, and having a shoulder for engaging the rear of said plate, and means for clamping said cover in position and said shoulders against said plate.

9. The combination with a pair of line-wires, of a plate having an opening through it, a socket comprising a body portion having a lamp-socket within it, a shoulder on said body at a plane midward of the ends of said lamp-socket to abut the face of said plate, said body portion extending beyond the bottom of said lamp-socket and having wire-supporting faces on such extending part, a cover therefor having a face for engaging the rear of said plate and for pressing it upon said plate and against said shoulder, and means for securing said parts together.

819,419. FIRE-ESCAPE. LOUIS S. FRANKLIN, Buffalo, N. Y. Filed July 22, 1904. Serial No. 217,703.



Claim.—1. In a fire-escape, the combination with the cage and its operating-cable and the pulley on which said cable passes, of a

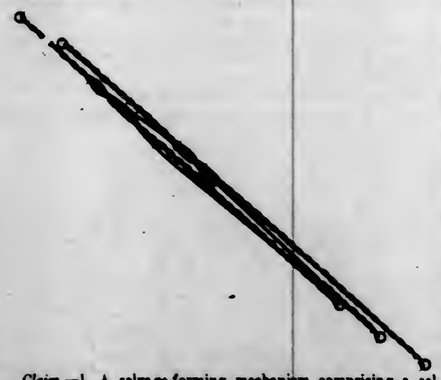
braking device comprising a brake-band mounted in proximity to the periphery of said pulley, an operating-rope attached to the free end of said band, swinging hangers depending below the pulley and having eyes through which the hoisting-cable passes, and means connected to the operating-rope for drawing said depending hangers together, substantially as described.

2. The combination with the cage and its hoisting-cable and the pulley on which said cable passes, of a brake band or shoe, movable guides for the hoisting-cable below the pulley, and an operating-rope having connections for simultaneously drawing said guides toward each other and applying the brake shoe or band, substantially as described.

3. In a fire-escape, the combination with the vertical guideways, the platform operating therein and the operating-cable therefor extending around the upper and lower pulleys, of a braking device comprising a brake-band pivotally connected between the arms of the supporting-bracket of the upper pulley and designed to extend over the pulley and an operating-rope attached to the free end of the brake-band, swinging hangers provided with perforated inturned ends through which the main operating-cable passes, a rope connected to one hanger and designed to pass down through a hole in the opposite hanger and to be secured to the brake-operating rope as and for the purpose specified.

4. In a fire-escape, the combination with the vertical guideways, the platform operating therein and the operating-cable therefor designed to extend around the upper and lower pulleys, of a brake-band extending around the upper pulley and means when the brake-band is operated of drawing the main operating-cable around a greater portion of the periphery of the pulley as and for the purpose specified.

819,420. **SELVAGE ATTACHMENT FOR LOOMS.** THEODORE GARESSO, South Bethlehem, Pa. Filed Oct. 18, 1904. Serial No. 229,041.



Claim.—1. A selvage-forming mechanism comprising a selvage-thread carrier and means slidable on the carrier to alternately lift said carrier and selvage-thread, substantially as and for the purpose set forth.

2. A selvage-forming mechanism, comprising a selvage-thread carrier and a pair of alternately-operating selvage-thread lifters each to lift the carrier independent of the other, substantially as and for the purpose set forth.

3. A selvage-forming mechanism, comprising a selvage-thread carrier, and a pair of alternately-operating selvage-thread lifters sliding on the selvage-thread carrier, substantially as described.

4. A selvage-forming attachment for looms, comprising a wire selvage-thread carrier and wire selvage-thread lifters coöperating with the carrier to move the selvage-thread back and forth across the desired number of warp-threads at each formation of the shed, substantially as described.

5. A selvage-forming attachment for looms, comprising a loop having a selvage-thread eye at one end, and a selvage-thread lifter slidable on each member of said loop, substantially as described.

6. A selvage-forming attachment for looms, comprising a wire loop having a selvage-thread eye at its upper end and a wire selvage-thread lifter on each member of the loop, substantially as described.

7. A selvage-forming attachment for looms, comprising a selvage-thread carrier, two selvage-thread lifters loosely connected to and slidable on the carrier, and a retractor for each lifter, substantially as described.

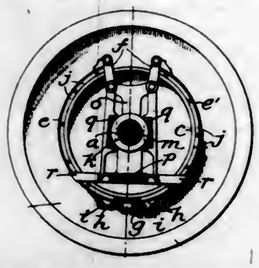
8. A selvage-forming attachment for looms, comprising a wire selvage-thread carrier, two wire selvage-thread lifters slidable on the carrier and a wire retractor connected to each lifter, substantially as described.

9. A selvage-forming attachment for looms, comprising a selvage-thread carrier, a selvage-thread lifter and a retractor for the lifter, said lifter and retractor formed in a single piece, substantially as described.

10. A selvage-forming attachment for looms, comprising a loop having a selvage-thread eye at its upper end, and a shank terminating in an eye at its lower end, means engaging the latter eye to retract the loop, a wire selvage-thread lifter having an eye and open twist, slidable on each member of the loop, a retractor connected in the open twist of each lifter, and means to draw down each retractor, substantially as described.

11. A center selvage-forming attachment, comprising an eye for the crossing selvage warp-thread, and two extensions from said eye, each extension passing through an eye or opening in a wire or cord, and said wires or cords adapted to have an alternate vertical motion, substantially as shown and described.

819,421. **CLUTCH MECHANISM.** BENJAMIN A. GRAMM, Chillicothe, Ohio. Filed Nov. 29, 1905. Serial No. 289,567.



Claim.—In a clutch mechanism, the combination of a driving-shaft; a wheel mounted thereon and formed with a flange; a two-part band adapted to be tightened around said flange, one pair of the opposed ends of said band being connected by a turnbuckle and the other pair of the opposed ends of said band being positively secured to the ends of levers; a pair of levers one end of each of which is positively secured to one end of each part of said band, the other end of each of said levers being connected by a spring, said levers being each provided with a roller on opposite sides of said shaft; said spring; said turnbuckle; a bracket upon which said levers are fulcrumed; a sleeve mounted loosely upon said shaft and secured to said bracket; and a cone slidable along said sleeve and adapted to enter between said rollers to swing said levers and tighten said band.

819,422. **COIN-ACTUATED VENDING-MACHINE.** JOHN J. GREEN, Boonton, N. J., assignor to Edward P. Coe and Leonard Brunner, New York, N. Y. Filed Dec. 6, 1904. Serial No. 235,969.



Claim.—1. In a coin-actuated vending-machine, the combination of a vertically-disposed chute for a coin, a stationary gage-plate having a horizontally-extended operative edge projecting into, beyond, and transversely of the path of said chute at a given level, a movable gage-disk disposed in a vertical plane rectangularly disposed toward and at a lower level than said edge of said gage-plate, said operative edges being spaced to sustain said coin between them, coacting braces horizontally movable in a direction parallel with said operative edge of said gage-plate and disposed to support the coin in edgewise presentation to said operative edges and means to move said braces and gage-disk relatively to said operative edge of said gage-plate, whereby the coin is supported by said braces and operative edges until moved bevond the operative edge of said gage-plate.

2. In a coin-actuated vending-machine, the combination of a vertically-disposed chute for a coin a stationary gage-plate having a horizontally-extended operative edge projecting into, beyond, and transversely of the path of said chute at a given level, a movable knife-edge gage-disk disposed in a vertical plane rectangularly disposed toward and at a lower level than said edge of said gage-plate, said operative edges being spaced to sustain said coin between them, coacting braces horizontally movable in a direction parallel with said operative edge of said gage-plate and disposed to support the coin in edgewise presentation to said operative edges and means to move said braces and gage-disk relatively to said operative edge of said gage-plate, whereby the coin is supported by said braces and operative edges until moved beyond the operative edge of said gage-plate.

3. In a coin-actuated vending-machine, the combination of a vertically-disposed chute for a coin, a stationary gage-plate having a horizontally-extended operative edge projecting into, beyond, and transversely of, the path of said chute at a given level, a movable gage-disk disposed in a vertical plane rectangularly disposed toward and at a lower level than said edge of said gage-plate, said operative edges being spaced to sustain said coin between them, a chute for an article, a floor extending beneath the bottom of said article-chute to sustain the weight of said coin, coacting braces movable relatively to said floor and chute and arranged to loosely hold said coin in substantially upright, on-edge, presentation relatively to and while sustained first by said operative gage-edges and afterward by said floor and means to move said guide-disk and braces past said operative edges of said guide-plate, over said floor, and past the bottom of said article-chute.

4. In a coin-actuated vending-machine, the combination of a vertically-disposed chute for the coin, open at top and bottom, a stationary gage-plate having a horizontally-extended operative edge projecting into, and transversely of, the path of said chute at a given level, a movable gage-disk having a peripheral knife-edge in a vertical plane rectangularly disposed toward and at a lower level than said edge of said gage-plate, said edges being spaced apart less than the diameter of said coin, and a pair of braces, parallel with each other and with said plane of said knife-edge, spaced apart less than double the thickness of said coin and each equidistantly disposed on opposite sides of said knife-edge, whereby a coin of required diameter and thickness is arrested and held within said chute, while a coin of deficient diameter or thickness falls through.

5. In a coin-actuated vending-machine, the combination of a vertically-disposed continuous coin-chute, open at top and bottom, a horizontally-movable coin-carrier normally interposed medially in the path of said chute, a chute for an article, means to move said carrier horizontally out of said path of said chute to bank said coin and to deliver said article, in said article-chute a follower normally supported by said article, means in said article-chute to support said follower after said article is delivered, a stop-pin loosely supported in said follower and adapted to project below the bottom thereof after said article is delivered, a part connected and moving with said carrier and disposed to abut against said stop-pin to prevent retraction of said carrier into normal position in said coin-chute, whereby a coin deposited in said chute after delivery of said article falls through the chute and is returned to the depositor.

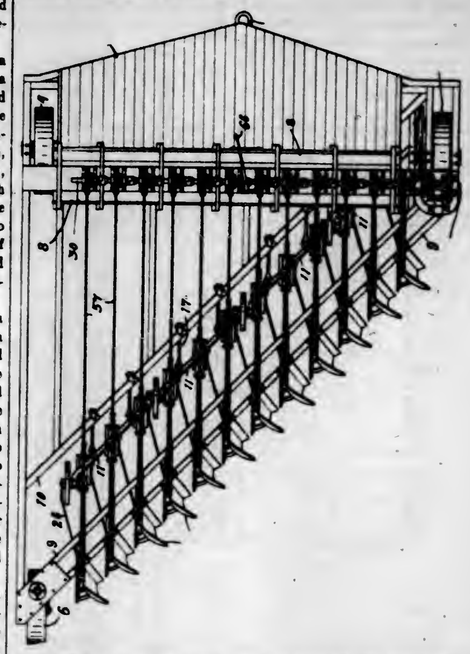
819,423. **MEANS FOR OPERATING GANG-PLOWS.** WALTER GREGORY, Minneapolis, Minn. Filed Aug. 7, 1905. Serial No. 273,094.

Claim.—1. The combination, with a series of plows constituting a gang, means connected with said plows for moving the same, and power-operated means for lifting said plows in succession, clear of the ground upon which they are operating, substantially as described.

2. A gang-plow and power-operated means for raising the plows of the gang in succession, for the purpose set forth.

3. The combination, with a suitable platform and wheels supporting the same, of a gang of plows arranged to be drawn by said platform as the same is moved over the ground, and power-operated means arranged upon said platform for raising said plows in succession, substantially as described.

4. The combination, with a suitable platform and its supporting-wheels, of a series of plows connected with said platform and arranged to be drawn thereby, and means arranged upon said platform and operated from the axle thereof for lifting said plows in succession, substantially as described.



5. The combination, with a suitable platform and supporting-wheels therefor, of a gang of plows connected with said platform, and power-operated means arranged upon said platform for lifting said plows in succession from the ground, for the purpose set forth.

6. The combination, with a suitable platform and supporting-wheels therefor, of a series of plows arranged in the rear of said platform and connected therewith, a rotatable shaft arranged upon said platform and formed of a series of shaft-sections connected together by suitable couplings, means permitting each section to make a partial rotation before moving the next succeeding section, and a lifting mechanism arranged upon each of said sections and connected with the corresponding plow.

7. The combination, with a suitable frame or platform, of a series of plows connected therewith, a rotatable shaft arranged upon said frame or platform and formed of a series of shaft-sections connected together by suitable couplings, means permitting each section to make a partial rotation before moving the next succeeding section, a wheel or pulley upon each shaft-section, and connecting means between each pulley and the corresponding plow, substantially as described.

8. The combination, with a suitable platform and supporting-wheels therefor, of a series of plows arranged in the rear of said platform and connected therewith, a rotatable shaft arranged upon said platform and formed of a series of shaft-sections connected together by suitable couplings, means permitting each section to make a partial rotation before moving the next succeeding section, a wheel or pulley upon each shaft-section, a flexible connection between each pulley and the corresponding plow, and means for locking each pulley with the plow in an elevated position, substantially as described.

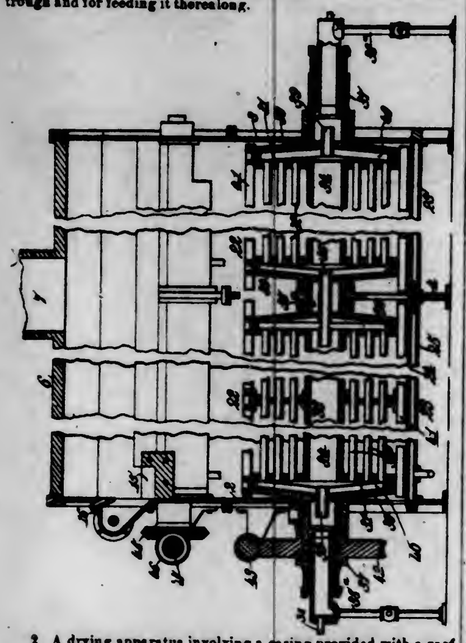
9. A gang-plow, and means for automatically raising the plows of the gang in succession, for the purpose set forth.

10. A gang-plow, and means, under the control of the operator, for automatically raising the plows of the gang in succession.

819,424. **GRAIN-DRIER.** WILHELM GRIMMER, Joplin, Mo., assignor to Olga Koehn, New York, N. Y. Filed Sept. 21, 1905. Serial No. 279,473.

Claim.—1. A drying apparatus involving a casing, two troughs in the casing, arranged side by side, a deflector between the head ends of the troughs, means for delivering material onto the deflector, the latter serving to divide the material into two portions and to di-

rect such portions into the respective troughs, stirring devices in the troughs adapted also to feed the material therealong, said troughs having outlets, a trough into which the material falls from said outlets, and means for heating the material while in the last-mentioned trough and for feeding it therealong.



2. A drying apparatus involving a casing provided with a roof having upwardly-extending flues, two troughs in the casing, arranged side by side, a deflector between the head ends of the troughs, means for delivering material onto the deflector, the latter serving to divide the material into two portions and to direct such portions into the respective troughs, stirring devices in the troughs adapted also to feed the material therealong, a trough into which the material falls from the first-mentioned trough, and means for heating the material while in the last-mentioned trough and for feeding it therealong.

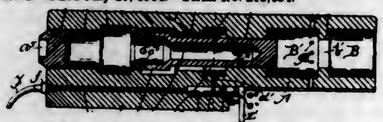
3. A drying apparatus involving a casing, two troughs in the casing arranged side by side and each consisting of similar separably-connected sections, means for delivering material to the troughs, means in the troughs adapted to feed the material therealong, a trough below and adapted to receive the material from the other troughs, and means for heating the material while in the last-mentioned trough and for feeding the same therealong.

4. A drying apparatus involving a casing, two troughs in the casing, arranged side by side, a deflector between the head ends of the troughs, means for delivering the material onto the deflector, the latter serving to divide the material into two portions and to direct such portions into the respective troughs, stirring devices in the troughs adapted also to feed the material therealong, said troughs, having outlets, and a drum to receive the material from the troughs said drum being provided with steam-spaces at its opposite ends, tubes connecting the ends of the drum for the passage of steam from one space to the other, said drum being rotative and having means for feeding material, and a trough in which the said drum rotates.

5. A drying apparatus involving a casing, two troughs in the casing, arranged side by side, a deflector between the head ends of the troughs, means for delivering material onto the deflector, the latter serving to divide the material into two portions and to direct such portions into the respective troughs, stirring devices in the troughs adapted also to feed the material therealong, said troughs having outlets, and a drum to receive the material from the troughs, said drum being provided with steam-spaces at its opposite ends, tubes connecting the ends of the drums for the passage of steam from one space to the other, said drum being rotative and having means for feeding material, a trough in which the said drum rotates, and a screw conveyer and its casing, the latter communicating with said deflector and having a perforated bottom.

6. A drying apparatus involving a casing, two troughs in the casing, arranged side by side, a deflector between the head ends of the troughs, means for delivering material onto the deflector, the latter serving to divide the material into two portions and to direct such portions into the respective troughs, stirring devices in the troughs adapted also to feed the material therealong, said troughs having outlets, and a drum to receive the material from the troughs, said drum being provided with steam-spaces at its opposite ends, tubes connecting the ends of the drum for the passage of steam from one space to the other, said drum being rotative and having means for feeding material, a trough in which the said drum rotates, a screw conveyer and its casing, the latter communicating with said deflector and having a perforated bottom, and a drip-pan located under said perforated bottom.

819,425. **PNEUMATIC HAMMER.** MARTIN HARDCOCK, Ottumwa, Iowa. Filed July 29, 1904. Serial No. 218,634.



Claim.—1. In a pneumatic hammer, the combination of a main cylinder provided with a pressure-passage leading to its interior, a barrel on the main frame or cylinder forming a shoulder at its forward end, and provided on its interior with a longitudinally-extending pressure-passage, a valve-plug outwardly projecting from the forward end of the barrel, a handle for operating the valve, and a reciprocating hammer within the main frame or cylinder adapted to be operated by the pressure admitted by the valve, substantially as described.

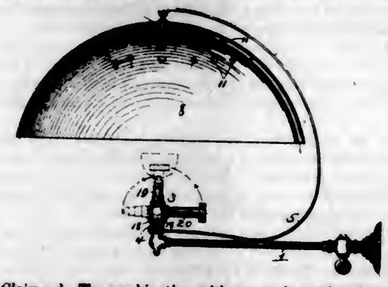
2. In a pneumatic hammer, the combination of a main frame or cylinder and forming a shoulder in combination therewith, and provided on its interior with a pressure-supply passage adapted to communicate with a pressure-supply passage leading to the interior of the main frame or cylinder, a valve-plug entered through the shoulder or abutment, and provided with a bore communicating with the longitudinally-extending passage, and further provided with an opening adapted to communicate with the passage leading to the interior of the cylinder, a handle on the forward end of the valve-plug for turning the same, and a hammer within the main frame or cylinder adapted to be reciprocated by the pressure admitted through the valve-plug, substantially as described.

3. In a pneumatic hammer, the combination of a main frame or cylinder and forming a shoulder in combination therewith, and provided on its interior with a longitudinally-extending pressure-supply passage adapted to communicate with a pressure-supply passage leading to the interior of the main frame or cylinder, a valve-plug entered through the shoulder or abutment, and provided with a bore communicating with the longitudinally-extending passage, and further provided with an opening adapted to communicate with a passage leading to the interior of the cylinder, a handle on the forward end of the valve-plug for turning the same, a hammer within the main frame or cylinder adapted to be reciprocated by the pressure admitted through the valve-plug, and handles outwardly projecting from the main frame or cylinder near the rear end thereof, substantially as described.

4. In a pneumatic hammer, the combination of a main frame or cylinder, having a transversely-extending passage leading to its interior, and having on one side a thickened portion or barrel forming a shoulder or abutment in combination with the main frame or cylinder, said bore having therein a longitudinally-extending pressure-passage enlarged at its forward end to form a valve-socket, a valve-plug entered into the enlarged portion and forwardly projecting from the shoulder or abutment, and provided on its interior with a longitudinally-extending bore communicating with the longitudinally-extending passage, and further provided with a transversely-extending port adapted to communicate with the transversely-extending passage leading to the interior of the frame or cylinder, and provided on its exterior with a circular curve or recess, a pin passing through the barrel and projecting into the recess to retain the valve-plug in place, a handle at the forward end of the valve-plug for turning same, and a hammer within the main frame or cylinder adapted to be reciprocated by the pressure admitted to the main frame or cylinder, substantially as described.

5. In a pneumatic hammer, the combination of a main frame or cylinder, having a transversely-extending passage leading to its interior, and having on one side a thickened portion or barrel forming a shoulder or abutment in combination with the main frame or cylinder, said bore having therein a longitudinally-extending pressure-passage enlarged at its forward end to form a valve-socket, a valve-plug entered into the enlarged portion and forwardly projecting from the shoulder or abutment, and provided on its interior with a longitudinally-extending bore communicating with the longitudinally-extending passage, and further provided with a transversely-extending port adapted to communicate with the transversely-extending passage leading to the interior of the frame or cylinder, and provided on its exterior with a circular curve or recess, a pin passing through the barrel and projecting into the recess to retain the valve-plug in place, a handle at the forward end of the valve-plug for turning same, and a hammer within the main frame or cylinder adapted to be reciprocated by the pressure admitted to the main frame or cylinder, and handles outwardly projecting on opposite sides of the main frame or cylinder near its rear end, substantially as described.

819,426. **HEATER AND DUPLEX BURNER.** CHARLES R. HARRIS, Los Angeles, Cal. Filed Aug. 17, 1904. Serial No. 221,055.



Claim.—1. The combination with a gas pipe or bracket, of an angle-coupling pivotally mounted on said pipe or bracket, a heater over said coupling a lighting-burner attached to one arm of said pivoted coupling, a heating-burner attached to the other arm of said coupling for heating said heater, said burners having fixed relation to each other, whereby either of said burners can be moved into operative position and the other kept out of operative position.

2. The combination with a heater, and a gas pipe or bracket under the same, of an angle-coupling pivotally mounted on said pipe or bracket, a lighting-burner mounted on one arm of said coupling, and a heating-burner secured to the other arm of said coupling having fixed relation to the lighting-burner, whereby one of said burners can be disposed in operative position under the heater and the other burner moved away from such operative position so as to be out of reach of heat from the operating-burner.

819,427. **CAR-AXLE.** WILLIAM HARTILL-LAW, Toronto, Canada. Filed Nov. 23, 1904. Renewed Sept. 15, 1905. Serial No. 278,595.



Claim.—1. An axle comprising two parts, one journaled within the other, in combination with a complete metal ring fitted in an annular flat-sided channel formed partly in one part of the axle and partly in the other, substantially as described.

2. An axle comprising two parts, one journaled within the other, an annular channel being formed partly in one part and partly in the other, and a slot cut in the outer part communicating with the said channel, in combination with a ring completely filling the channel and formed in segments of an annulus insertible through the said slot, substantially as described.

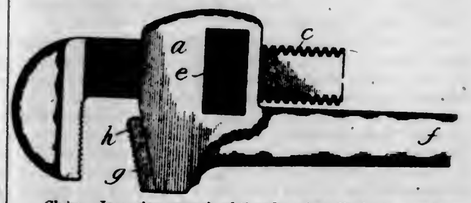
3. An axle comprising two parts, one journaled within the other, an annular channel being formed partly in one part and partly in the other, and a slot cut in the outer part communicating with the said channel, in combination with a ring fitting the channel and formed in segments insertible through the said slot; and a locking-piece secured in the said slot, substantially as described.

4. An axle comprising two parts, one journaled within the other, an annular channel being formed partly in one part and partly in the other, and a slot cut in the outer part communicating with the said channel, in combination with a ring fitting the channel and formed in segments insertible through the said slot; and a locking-piece secured in the said slot and formed as part of one of the segments of the ring, substantially as described.

5. An axle formed in two parts, the end of one journaled within the end of the other, the inner part having collars integral therewith, having a space between them, and the outer part an annular recess forming with the space between the collars an annular channel, in combination with a metal ring completely filling said channel, substantially as described.

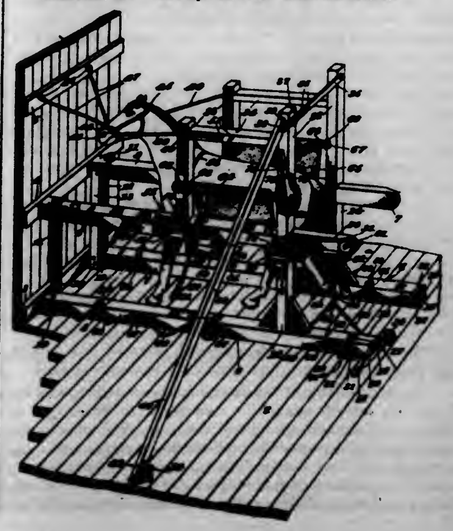
6. An axle formed in two parts, the end of one journaled within the end of the other, the inner part having collars integral therewith, having a space between them, and the outer part an annular recess forming with the space between the collars an annular channel, in combination with a ring fitting the channel and formed in segments insertible through the said slot; and a locking-piece secured in the said slot and formed as part of one of the segments of the ring, substantially as described.

819,428. **PIPE-WRENCH.** FRANK A. HEADSON, La Fayette, Ind. Filed Mar. 2, 1905. Serial No. 248,131.



Claim.—In a pipe-wrench of the class described, the combination of a body portion provided with a fixed jaw having an inclined face with a groove or recess therein, a movable jaw slidingly mounted in the body portion and having a threaded shank and a right-angular jaw portion arranged opposite the fixed jaw portion, a ring-nut loosely mounted in the body portion engaging the threaded shank of the movable jaw to operate the same, a lever-handle attached to said body portion, a transversely-movable gripping-plate provided with a tongue portion and an integral perforated lug slidingly mounted in the groove and recess of the fixed jaw, a holding-pin passed through the perforated lug of the gripping-plate and the recess of the fixed jaw, and a helically-coiled spring surrounding said holding-pin and interposed between the lug of the gripping-plate and the fixed jaw to yieldingly hold said gripping-plate at its outer limit of motion, substantially as described.

819,429. **HORSESHOEING-STOCKS.** MARTIN L. HEMPHILL, Rensselaer, Ind. Filed Apr. 10, 1905. Serial No. 254,718.



Claim.—1. An apparatus of the character described comprising two members spaced apart, one member being pivotally mounted for swinging movement in a horizontal plane, a traveler connected with the movable member to run upon a floor and a device carried on the movable member and adapted to be moved out of and into engagement with a reciprocal device at the floor for locking the movable member in adjusted position upon the floor.

2. An apparatus of the character described comprising two members spaced apart, one member being pivotally mounted for swinging movement in a horizontal plane and having a sill adapted, in such movement, to traverse a floor, locking means for holding said movable member in adjusted position and an adjustable traveler connected with the movable member and comprising a roller engageable on the floor and adapted, when adjusted in one position to lift said roller from the floor to permit said sill to rest securely thereon and when adjusted to another position, to raise said sill and rest the same upon said roller.

3. An apparatus of the character described comprising members spaced apart, one member being pivotally movable in a horizontal plane and having a sill adapted, in such movement, to traverse a floor, locking means to hold the movable member in adjusted position and a lever pivotally mounted on the sill and provided with a roller adapted, when the lever is pivotally swung, to engage the floor and lift the sill clear of the same.

4. An apparatus of the character described comprising members spaced apart, one member being pivotally movable in a horizontal plane and having a sill adapted, in such movement, to traverse a floor, locking means to hold the movable member in adjusted position, a plate carried by the sill with a central opening and a lateral notch, said plate having an edge portion adjacent to the notch spaced from the sill and a lever having a pivot-pin engaged in the central opening of the plate, a terminal roller adapted, when the lever is swung, to engage the floor and lift the sill clear of the same and a detent adapted to pass through the lateral notch of said plate and to engage in the space between said plate and the sill when the lever is swung.

5. An apparatus of the character described comprising a member pivotally movable in a horizontal plane and having a sill adapted, in such movement, to traverse a floor, a ring adapted to be secured in said floor and a lever pivoted on said sill with an end portion engageable with said ring to lock the member in position upon said floor.

6. An apparatus of the character described having a member mounted for movement in a horizontal plane, holding means, and a brace or prop having means for engagement with said member and also for engagement with a floor, wall or the like for holding the member against such movement.

7. An apparatus of the character described comprising spaced members one of which is movable toward and from the other, and means connected with such other member for holding an animal between said members closely against the member with which such means are connected.

8. An apparatus of the character described comprising spaced members one of which is stationary and the other movable toward and away from such stationary member and means connected with such stationary member for drawing an animal between the members closely against such stationary member.

9. An apparatus of the character described comprising spaced members one of which is movable toward and from the other, a shoulder-strap one end of which is adapted for connection with a floor-ring or other fixed part, and a winding-shaft mounted to turn on one member and having connection with said strap to wind the same thereon when the shaft is turned.

10. An apparatus of the character described comprising stationary and movable members, a floor or other supporting-surface traversed by the movable member and provided with a fastening device, a shoulder-strap one end of which is adapted for connection with said fastening device at the floor and the other end of which is adapted for passage over the withers of an animal between the members toward the stationary member, and a winding-shaft mounted to turn on the stationary member and having connection with said shoulder-strap and adapted when the shaft is turned, to wind said strap thereon to draw the animal against the stationary member.

11. An apparatus of the character described comprising stationary and movable members, a fastening device adapted for attachment to a floor or other fixed part, a shoulder-strap having one end adapted for connection with said floor-fastening device and having its other end adapted to be passed toward the stationary member across the shoulders of an animal standing between the members, a winding-shaft journaled on the stationary member, and with which the end of said shoulder-strap is adapted for connection to wind thereon when the shaft is turned, a crank connectible with the shaft and a pawl-and-ratchet device for holding the shaft from back rotation.

12. An apparatus of the character described comprising spaced members one of which is movable toward and from the other, a roller journaled on one member, means for rotating said roller and for preventing back rotation thereof, an apron having one end connected to wind on said roller when the roller is turned and having its opposite end adapted to be passed across the space between the members and beneath an animal standing between the members and a rod secured upon the said opposite end of said apron and having means for detachable engagement with the movable member.

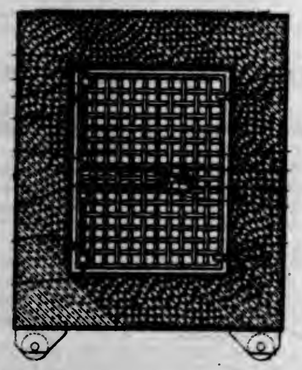
13. An apparatus of the character described comprising a member, means for holding an animal to be shod alongside said member, a winding-shaft journaled on the member, sheaves held to turn on the member at opposite sides of the winding-shaft, and a flexible connection arranged to wind on said shaft and adapted to be extended over either of said sheaves.

14. An apparatus of the character described comprising a member, means for holding an animal to be shod alongside thereof, a winding-shaft journaled on the member, a flexible connection arranged to wind on said shaft and adapted to be connected with an animal's leg and a plurality of sheaves spaced apart along said member and over each of which said flexible connection is adapted to be passed for connection with fore and hind legs of the animal to be shod.

15. An apparatus of the character described comprising a member alongside which an animal to be shod is adapted to be held and having parallel parts, sheaves held to turn on one of the parts, a winding-shaft mounted to turn, a flexible connection coupled to said shaft and arranged to be wound thereon and adapted to be passed around either of said sheaves, other flexible connections held to the other parallel part of said member opposite the respective sheaves and a cuff adapted for detachable connection with the animal's leg and having means for detachable connection with each of said flexible connections.

16. An apparatus of the character described comprising spaced members, a roller carried on one member and adapted to be turned, means for holding the roller against back rotation, an apron one end of which is connected to wind on said roller and the other end of which is arranged to be passed across the space between the members and is provided with a bar having projecting end portions, uprights on the other member, one of said uprights having an aperture to receive one of the projecting ends of said bar and a detent-lever carried on the other upright and having a hooked end adapted, when the lever is pivotally moved, for detachable engagement with the other projecting end of said bar.

819,430. **BURGLAR-PROOF SAFE.** JAMES H. HOWARD, Medford, Mass. Filed Jan. 19, 1905. Serial No. 241,757.

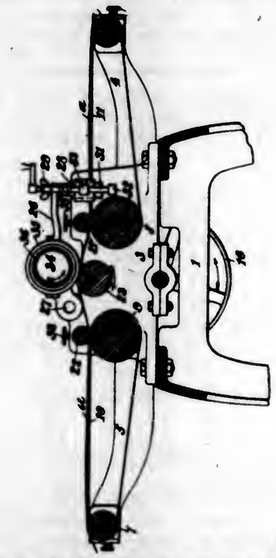


Claim.—1. A safe having an outer door, a burglar-resisting-vented inner guard interposed between the outer door and the interior of the safe, and means for locking said guard.

2. A safe having a suitable door of fireproof material, a burglar-resisting vented inner guard interposed between the outer door and the interior of the safe and hinged thereto, the guard being constructed to permit the passage of gases through it and separated at its edges from the sides of the door-opening to permit the passage of gases across its edges, and means for locking the said guard.

3. In a safe, a vented inner guard adapted to be locked in the safe behind the outer door thereof, consisting of a plurality of crossed rods, the rods being made of material having portions of different degrees of hardness.

819,431. **MACHINE FOR CUTTING CLOTH ON THE BIAS.** BENJAMIN HURD, New York, N. Y. Filed Mar. 26, 1901. Serial No. 53,733.



Claim.—1. In a machine of the character described, the combination with the cutting-disk and supporting-roller, of two pairs of yielding-surfaced feeding-rollers one for conveying the web to and the other from the cutting-disk, gear-wheels fixed to the shafts of said feeding-rollers, and a cog meshing with and driving said gear-wheels; the gear-wheel on the roller conveying the web from the cutting-disk having fewer teeth than the other gear-wheel, thereby rotating said roller at a higher rate of speed than the first, substantially as described.

2. In a machine of the character described, the combination with the cutting-disk and supporting-roller, of two pairs of yielding-surfaced feeding-rollers one for conveying the web to and the other from the cutting-disk, said feeding-rollers being covered with yielding material, and gear-wheels fixed to the shafts of said feeding-rollers, and a cog meshing with and driving said gear-wheels; the gear-wheel on the roller conveying the web from the cutting-disk having fewer teeth than the other gear-wheel, thereby rotating said roller at a higher rate of speed than the first, substantially as described.

3. In a machine of the character described, the combination with two pairs of feeding-rollers, one for conveying a web of uneven thickness to and the other from the cutting-disk, of means for causing said web to adhere to said feeding-rollers while passing therethrough, substantially as described.

4. In a machine of the character described, the combination with two pairs of feeding-rollers, of a supporting-roller intermediate said pairs of feeding-rollers and adapted to raise the web of the cloth between said pairs of rollers, a cutting disk or disks cutting against said supporting-roller and having the cutting edge thereof in contact with the cloth at its maximum point of support, and means for rotating said disk or disks at a different rate of speed from that at which the supporting-roller is rotated, substantially as described.

5. In a machine of the character described, the combination of two pairs of feeding-rollers, said rollers being covered with yielding frictional material, a supporting-roller intermediate said pairs of feeding-rollers and adapted to raise the web of the cloth therebetween, an independently-rotated shaft, a plurality of circular disks and rings alternately spaced on said shaft, the cutting edge of said disks cutting against said supporting-roller at the maximum point of support of the cloth and means for rotating one of said pairs of feeding-rollers at a higher rate of speed than that at which the other is rotated, substantially as described.

6. In a machine of the character described, the combination of two pairs of feeding-rollers, said rollers being covered with yielding frictional material, a supporting-roller intermediate said pairs of feeding-rollers and adapted to raise the web of the cloth therebetween, an independently-rotated shaft, a plurality of circular disks and rings alternately spaced on said shaft, the cutting edge of said disks cutting against said supporting-roller at the maximum point of support of the cloth and means for adjusting the relative positions of said feeding-disks and supporting-roller with respect to each other, substantially as described.

7. In a machine of the character described, the combination with the cutting-disks, of two pairs of rollers, one pair adapted to convey a web to the cutting-dirks and present the same thereto at an angle to the web, the other pair adapted to convey the web from said cutting-disks, and yielding means for preventing said web from puckering or creeping when being cut, substantially as described.

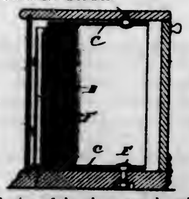
8. In a machine of the character described, the combination with the cutting-disks, of feeding-rollers adapted to deliver a web of cloth to the cutting-disks and present the same thereto at an angle to the web, and yielding means for preventing sidewise creeping of said web, substantially as described.

9. In a machine of the character described, the combination of a shaft carrying a plurality of spaced cutting-disks, feed-rollers adapted to deliver a web of cloth to said cutting-disks at an angle to the web, yielding means for preventing sidewise creeping of said web, and means for removing the web from the cutting-disks, substantially as described.

10. In a machine of the character described, the combination with the cutting-disks, of two pairs of rollers adapted to feed webs of varying thickness diagonally, cutters in the rear of said rollers adapted to cut strips from said web on the bias, and means for smoothing the web, substantially as described.

11. In a machine of the character described, the combination of a shaft carrying a plurality of spaced cutting-disks, two sets of feed-rollers on opposite sides thereof adapted to feed a web of varying thickness at an angle to the cutters, and means causing the web to adhere to the feed-rolls at all points as it passes through, substantially as described.

819,432. **SHOW-CASE.** OTTO JAEGER, Philadelphia, Pa. Filed Feb. 18, 1905. Serial No. 246,243.

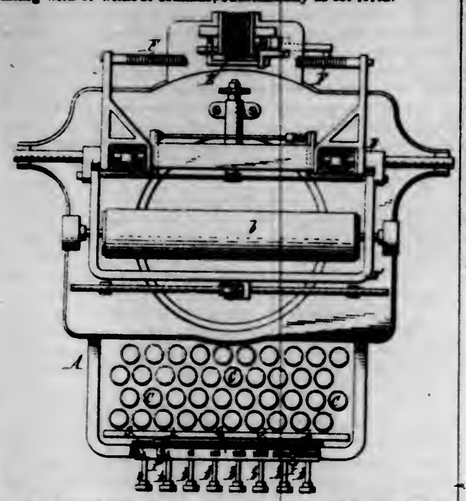


Claim.—In a device of the character described, a case provided with transparent walls, two semicircular plates arranged within the case, one at the top and the other at the bottom, independent pivots pivoting the top plate to the top of the case and the bottom plate to the bottom of the case, the curved edges of said plates being concentric with the pivotal point, a door arranged at the rear of the case, the pivots being arranged in such a position that when the carrier is revolved the curved front edge of the carrier will extend beyond the rear of the case, a vertical wall joining the periphery of the plates together, a horizontal concentric flange extending outward from the bottom of the carrier upon which articles of merchandise are adapted to rest and be arranged around the curved wall, and concentric bands passing around the outside of the articles of merchandise and secured at each end to the rearward ends of the curved wall, as and for the purpose specified.

819,433. **TABULATING MECHANISM FOR TYPE-WRITING MACHINES.** HAROLD JARVIS, Buffalo, N. Y., assignor to Jarvis Typewriter & Tabulator Company, Buffalo, N. Y. Filed Dec. 26, 1902. Serial No. 136,578.

Claim.—1. The combination with the denomination-keys of a type-writer tabulating mechanism, of a duplex scale located adjacent to said keys and comprising two series of indications registering with the keys, respectively, some of the indications in one of said series being offset with reference to like indications in the other series,

whereby the two series may be employed interchangeably for tabulating with or without commas, substantially as set forth.



2. The combination with the denomination-keys of a type-writer tabulating mechanism, of a reversible duplex scale-bar located adjacent to said keys and bearing on one side a series of indications arranged to register with said keys, respectively, and on its opposite side a similar series of indications, some of which are offset with reference to like indications of the other series to leave comma-spaces between some of the indications, substantially as set forth.

819,434. **WHEEL-FASTENER.** EDWARD A. JOHNSTON, Sterling, Ill. Filed July 29, 1905. Serial No. 271,321.



Claim.—1. A wheel-fastening device, comprising a washer slipped over the end of the axle, a pin passing diametrically through registering holes in the washer and axle, said pin having a laterally-extending spring member, and a locking overhanging lug on the washer beneath which said spring member is turned to lock the pin in position.

2. A wheel-fastening device, comprising a washer to engage the end of the axle, a pin adapted to pass through registering holes in the washer and axle, said pin having a laterally-curved spring member, and concentrically-arranged lugs located on different radii on said washer to engage opposite sides of said spring member to lock the pin in position.

3. A combined dust-guard and wheel-fastener, comprising a cap to engage the end of the axle and cover the edge of the hub, a pin adapted to pass through registering holes in the cap and axle, said pin having a laterally-extending spring member, and a locking overhanging lug on said cap with which said spring member is engaged by rotating the pin after it is in position.

4. A combined dust-guard and wheel-fastener, comprising a cap to engage the end of the axle and cover the edge of the hub, a pin adapted to pass through registering holes in the cap and axle, said pin having a lateral curved spring member, and concentrically-arranged lugs located on different radii on said cap to engage opposite sides of said spring member to lock the pin in position.

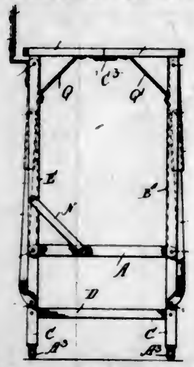
5. In a fastening device designed to hold two members in engagement, the combination of a washer encircling a relatively stationary member and contacting with a relatively movable member, a pin adapted to pass through the stationary member in a manner to secure said washer in place, said pin having a spring member, and an overhanging lug on the washer to engage said spring member to lock the pin in position.

6. In a wheel-fastening device, in combination, a sleeve-like washer slipped over the end of the axle, a pin passing through the axle and sleeve and securing said washer in place, said pin having a laterally-extending spring member, and an overhanging lug on said washer engaging said spring member and locking the pin in position.

7. In a wheel-fastening device in combination, a washer to engage the end of the axle, a pin adapted to pass through the axle in a manner to secure said washer in place, said pin having a laterally-curved spring member, and lugs on said washer arranged to engage opposite sides of said spring member to lock the pin in position.

8. In a wheel-fastening device, in combination, a washer to engage the end of the axle, a pin adapted to pass through the axle in a manner to secure said washer in place, said pin having a laterally-curved spring member, and lugs on said washer located on different radii to engage opposite sides of said spring member to lock the spring in position.

819,435. **METALLIC FOLDING BED.** CHARLES JONAS, Chicago, Ill., assignor to Metallic Folding Bed Company, Chicago, Ill., a Corporation of Illinois. Filed Feb. 1, 1904. Serial No. 191,828.



Claim.—1. In a metallic folding bed, a bed-frame having a central section, and head and foot sections hinged or pivoted thereto and adapted to be rocked or swung toward each other into closed position, a head and foot board carried respectively by the hinged sections and disposed at right angles thereto, supporting-legs arranged at the free ends of said sections, links pivotally connected to said central section and to the pivoted legs of said head and foot sections, the point of pivotal connection of said links and central section being off center with reference to the hinging axis of said head and foot sections to said central section, and a panel attached to and supported by the pivoted legs of said head-section and forming a backboard when said head and foot sections occupy closed position and rocking or swinging into substantially right-angular relation with respect to the plane of said head-section and behind the headboard when the sections are extended to form a bed.

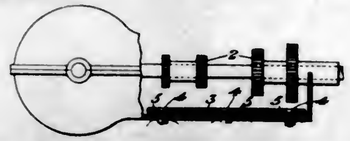
2. In a metallic folding bed, a bed-frame having a central section, and head and foot sections hinged or pivoted thereto, a headboard carried by the free end of one section and disposed at a right angle thereto, supporting-legs pivotally connected to the head and foot sections adjacent to the free ends thereof, links pivotally connecting said legs and central section of the bed-frame, the points of pivotal connection of said links to said legs and said central section being off center with respect to the points of pivotal connection of said legs to said sections and of said sections to said central section, and a panel, said panel being secured to the supporting-leg adjacent the headboard, offset therefrom and adapted to rock or swing with the pivoted legs and behind said headboard.

3. In a folding bed, a frame having a central section, a head and foot section hinged or pivoted thereto, pivoted supporting-legs for said hinged sections, links pivotally connecting the legs and central section, a panel comprising two members, one of said members being secured to the legs and the other member to the links, said members being entirely supported by the links and legs and so disposed in relation to each other, that their adjacent edges will at all times stand in close proximity to each other when the links and legs are turned upon their pivots.

4. In a metallic folding bed, a bed-frame having a central section, and head and foot sections hinged or pivoted thereto, supporting-legs for said hinged or pivoted sections, said supporting-legs being hinged or pivoted to said sections, links pivotally connected at one end to said central section and at the other end to said legs, the points of pivotal connection of said link to said central section and to said legs being off center with respect to the points of pivotal connection of said pivoted section to said central section and of said legs to said pivoted section, a panel carried by one of said frame-sections, said panel having a portion thereof hinged or pivoted thereto on an axis concentric with the axis of pivotal connection of the pivoted legs thereof, one portion of said hinged or pivoted portion of the panel being connected to the adjacent pivoted legs and the other to the links.

5. In a metallic folding bed, a bed-frame having a central section, supporting-legs therefor, head and foot sections pivotally connected to said hinged section, supporting-legs pivotally connected to each of said hinged or pivoted frame-sections adjacent the fore ends thereof, links pivotally connected at one end to the legs of the central section and at the other end to the pivotally-mounted legs of the head and foot sections respectively, boards carried by each of said frame-sections adjacent the free ends thereof and arranged in right-angular relation with respect to the planes of said sections, a panel forming a plate attached to and supported by the pivoted legs of said head-section to rock or swing therewith, a panel carried by the foot-section and having a portion hinged or pivoted thereto on an axis concentric with the pivotal axis of the pivoted legs of said foot-section, said hinged or pivoted portion of said panel being connected to rock or swing with the legs of said foot-section and the other portion of the panel being connected to the links.

819,436. **MAGNETIC METAL-COLLECTOR FOR GEAR-CASINGS.** GEORGE H. JONES, Philadelphia, Pa. Filed July 14, 1905. Serial No. 269,610.



Claim.—1. The combination with a gear-casing, of a magnetic bar therein, substantially as described.

2. The combination with a gear-casing, of a magnetic bar secured therein, substantially as described.

3. The combination with a gear-casing, of a magnetic bar therein and means for removably securing said bar in place, substantially as described.

4. The combination with a gear-casing, of means therein for attracting metal particles, substantially as described.

5. The combination with a gear-casing, of a magnetic bar therein, bolts passing through said bar and casing and nuts on said bolts, substantially as described.

819,437. **MEANS FOR PACKING JOINTS.** JAMES H. JONES, Chicago, Ill. Filed Dec. 5, 1904. Serial No. 235,923.



Claim.—1. The combination with a lamp-socket having a conical recess in one end thereof, of a threaded sleeve extending inwardly from said recess, a lamp-bulb engaged in said sleeve and affording between the same and the walls of said recess an annular conical chamber of greater width at its outer than at its inner end and a packing-ring, cylindric in cross-section, fitted closely between the bulb and the walls of said recess and adapted when the bulb is moved inwardly to wedge in said chamber with a rolling movement.

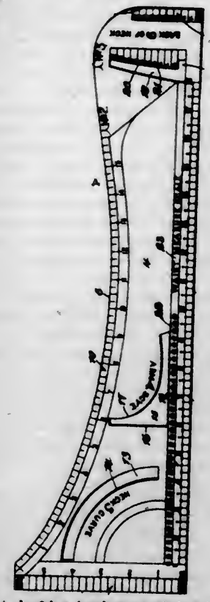
2. The combination with a light-plug having a longitudinal bore therethrough of a light-bulb engaged in said bore, a conical-shaped chamber in the outer end of said plug partially inclosing the bulb and having its walls slanting upwardly and inwardly at a slightly-greater angle than the walls of the bulb and forming therewith an annular wedge-shaped recess, a resilient ring, cylindric in cross-section carried on said bulb and adapted when the latter is secured in place to roll between the bulb and plug with a wedging action.

3. In a device of the class described the combination with a lamp-bulb having a threaded connection thereon, of a light-plug having a threaded socket therein adapted to receive said connection, a part on said plug extending outwardly over the bulb and affording a conical chamber about the same and an annular resilient packing member engaged between the bulb and said part and adapted to wedge therebetween with a rolling action.

4. The combination with a light-plug having a conical recess in the end thereof of a light-bulb having threaded engagement with said plug and out of contact with the walls of the recess and partly inclosed thereby and an annular cylindric packing-ring supported solely by frictional engagement with the walls of said recess and bulb and adapted to roll therebetween when the bulb is inserted.

5. The combination with a light-bulb of a light-plug provided with a conical recess therein having its walls slightly divergent from the walls of the bulb and extending outwardly over the same and a cylindric packing-ring fitting closely between said walls and bulb and adapted when the bulb is being secured in the plug to be wedged into the plug with a rolling action.

819,438. **DRAFTING IMPLEMENT.** MINNIE JONES, (now by remarriage Minnie Franklin,) Denver, Colo. Filed June 9, 1905. Serial No. 264,472.



Claim.—1. A drafting implement of the class described, comprising a body having a straight and a curved edge, scales associated with certain of the edges, said body being provided with a transversely-disposed opening contiguous to one end, one of the edges of said opening constituting a neck-drafting guide, said opening having at one end an angular offset that extends toward one end of the body and forms a sight-opening, and a scale located along the guideway and terminating at the offset.

2. A drafting implement of the class described, comprising a body having a straight and a curved edge, scales located on the body and associated with the edges, said body being provided with transversely-disposed openings at its opposite ends, said openings having different radii, one of the openings having an angular offset at one end that extends toward one end of the body, and a scale located along one of the edges of one of the transverse openings.

3. A drafting implement of the class described comprising a flat body-plate having a straight and a curved longitudinal edge and straight substantially parallel end edges, one of said end edges being longer than the other, scales located on both faces of the body-plate and associated with the different edges, said body having in one end a curved opening, one of the edges of which constitutes a drafting-guide, said body being also provided with another opening having substantially right-angular edges and a curved edge, said curved edge also constituting a drafting-guide, the body being furthermore

provided with a transversely-disposed opening having an angular offset at one end, one of the edges of the opening being curved and constituting a drafting-guide, and a scale located along said curved edge.

819,439. PLIERS. RUDOLPH C. KOCH, New York, N. Y. Filed July 3, 1905. Serial No. 268,111.



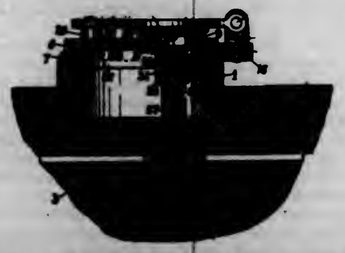
Claim.—1. In an implement of the character designated, the combination of pivotally-connected levers having jaws formed with opposed semiconical intaglio dies, and a centralizing-disk pivotally mounted upon one jaw and formed with peripheral notches of different radial depths, for the purpose described.

2. In an implement of the character designated, the combination of pivotally-connected levers having jaws formed with opposed semiconical intaglio dies, the jaws of one of said levers being formed with parallel sustaining-shoulders extending at right angles to the axial line of said opposed conical intaglio die, a cutting-blade mounted upon said latter jaw between said parallel shoulders, whereby the blade is sustained laterally on either side, and means for adjusting said cutting-blade between said parallel shoulders and with relation to the concave surface of the semiconical die upon said jaw, for the purpose described.

3. In an implement of the character designated, the combination of pivotally-connected levers formed with opposed inner recesses in their jaws, steel cheek-pieces secured in said opposed recesses and formed with semiconical intaglio die-surfaces, the jaw of one of said levers being also formed with parallel sustaining-shoulders extending at right angles to the axial line of the said opposed semiconical intaglio die, a cutting-blade mounted upon said latter jaw between said parallel shoulders, and means for adjusting said cutting-blade between the said parallel shoulders and with relation to the concave surface of the semiconical die upon said jaw, for the purpose described.

4. In an implement of the character designated, the combination of pivotally-connected levers having jaws formed with opposed semiconical intaglio dies, and a core-wire-centralizing device on one jaw adapted to sustain the core-wire in axial alinement with the said dies, for the purpose described.

819,440. ADJUSTABLE DROP-FEED LUBRICATOR. JOSEF LARATH, Aix-la-Chapelle, Germany. Filed Sept. 18, 1905. Serial No. 278,949.



Claim.—1. A drop-feed lubricator comprising a reservoir with a tubular bottom projection for direct lubrication, a feed-tube removably held in said tubular projection and provided with an adjustable boss, a cap secured to said reservoir and provided with an aperture for the introduction of the lubricant and insertion or withdrawal of said feed-tube, means for holding down said removable feed-tube, and a cover for closing said aperture when the lubricator is in operation.

2. A drop-feed lubricator comprising in combination with a part of machinery executing a combined rotary and reciprocating motion, a reservoir forming an integral part of said part of machinery, a tubular projection upon the bottom of said reservoir, a feed-tube passing through said tubular projection and provided with a recessed head having below said recess adjusting means to vary the free sectional area of the feed-tube passage, a cap secured to said reservoir and provided with an aperture arranged opposite said feed-tube, a spring on said cap to retain said feed-tube in place, a self-locking cover hinged to said cap, and a sealing-disk at the bottom side of said cover to close the aperture in said cap air-tight.

3. In a lubricator of the kind described the combination with the reservoir, of a tubular projection upon the bottom of said reservoir, a feed-tube removably held in said tubular projection and provided with a cup-shaped head having adjustable feed-regulating means, and means retaining said feed-tube in its working position and adapted to let the feed-tube pass upward for regulating purposes.

4. In a lubricator of the kind described the combination with the tubular projection of the reservoir, of a removable feed-tube passing through and held by said tubular projection and comprising a lower reduced part ending adjacent to the surface to be oiled, a shank snugly fitting into the bore of said tubular projection, a head having a cup-shaped recess for the reception of the lubricant; and adjusting means below said recess to regulate the flow of the lubricant through said feed-tube.

819,441. POT-COVER. CHARLES W. LASHER, Davenport, Iowa. Filed Aug. 20, 1904. Serial No. 221,575.



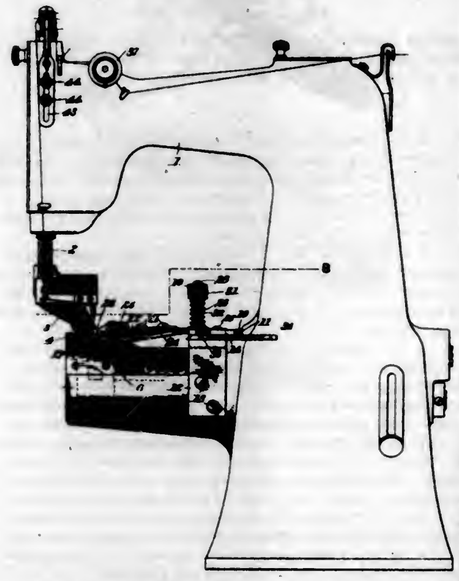
Claim.—1. The combination with an arch-like, resilient and detachable handle having at its ends outwardly and oppositely projecting ears and provided with shoulders alongside said ears, to rest upon a cover, of a cover cut through along approximately parallel lines conforming to said projecting ears and stamped up outside said lines to allow said ears to pass horizontally beneath the raised portions of the cover.

2. The combination with a cover cut through along two lines upon opposite sides of its center, of an arch-like resilient and detachable handle extending from one line to the other, provided with shoulders resting upon the cover alongside the cuts therethrough and having broad flat ears projecting through the cover at said cuts, extending therefrom oppositely outward and lying closely against the lower face of the cover, and adapted to be withdrawn by springing the ends of the handle inwardly.

3. The combination with a cover cut through along parallel lines and having on the outer side of each cut a small portion of the cover upwardly embossed to form in the lower face of the cover a shallow recess having a lateral opening above the body of the cover, of an arch-like resilient handle spanning the space between the cuts, having shoulders to rest upon the cover, and provided with ears extending horizontally outward beneath said raised portions, respectively, drawing the shoulders firmly down upon the cover, and substantially filling the recesses formed by the embossing.

819,442. MACHINE FOR SEWING SWEAT-BANDS IN HATS. ALEXANDER LAUBSCHER, Bridgeport, Conn., assignor to Wheeler & Wilson Manufacturing Company, Bridgeport, Conn., a Corporation of Connecticut. Filed Feb. 8, 1904. Serial No. 192,613.

Claim.—1. In a machine for sewing sweat-bands in hats, a presser-foot and a driven feed-dog with which it coöperates to feed the hat-body, said feed-dog having portions for individual coöperation with the hat-body and the sweat-band, a work-support, a clamp or presser having a plate horizontally pivoted on the work-support and an arm horizontally pivoted on said plate movable vertically with said plate and also having an independent vertical movement thereon and provided with a spring pressing vertically upon it to hold it in contact with the sweat-band after the manner of a presser-foot, whereby the hat-body and the sweat-band are separately pressed into contact with the respective portions of the feed-dog.



2. In a machine for sewing sweat-bands in hats, a presser-foot and a driven feed-dog with which it coöperates to feed the hat-body, said feed-dog having portions for individual coöperation with the hat-body and the sweat-band, a work-support, a clamp or presser having a plate horizontally pivoted on the work-support and an arm horizontally pivoted on said plate movable vertically with said plate and having an independent vertical movement thereon and provided with a spring pressing vertically upon it to hold it in contact with the sweat-band after the manner of a presser-foot, and means to vary the pressure of said spring, whereby the hat-body and the sweat-band are separately pressed into contact with the respective portions of the feed-dog.

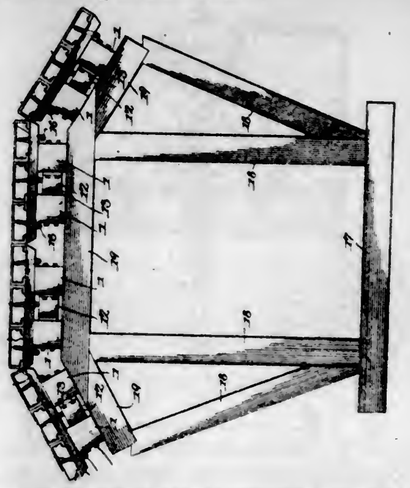
3. In a machine for sewing sweat-bands in hats, a presser-foot, a driven feed-dog to feed the hat-body, a vertically-movable plate, a bracket rigid with the work-support and to which said plate is hinged, an arm having one end secured to said plate, a grooved guide for the beaded edge of the sweat-band applied to the other end of said arm, a lever coöperating with said hinged plate to lift the same in order to introduce the sweat-band, and a spring for depressing said plate and arm carried thereon, in combination with an arm adjacent to said first-mentioned arm and pivoted at its heel end so as to overlie said plate while the free end coöperates with said feed-dog to feed the sweat-band, and means for varying the pressure of said arm.

4. In a machine for sewing sweat-bands in hats, a work-support, and a presser for the work, comprising a horizontally-hinged and vertically-movable plate, an arm fixed to said plate, a spring normally depressing said arm and plate, a second spring-pressed arm independently hinged to said hinged plate and movable vertically independent of and also conjointly with it, and independent means for regulating the spring-pressure upon the respective arms.

819,443. APPARATUS FOR EXCAVATING TUNNELS. JAMES C. MEEM, Brooklyn, N. Y., assignor of two-thirds to Borough Construction Company, Brooklyn, N. Y., a Corporation. Filed Oct. 11, 1905. Serial No. 282,800.

Claim.—1. A tool for tunneling consisting of a roof-shield comprising a plurality of independently-adjustable sections, and means combined with each section for introducing water under pressure under or ahead of the tool, and in the direction of its length.

2. A tool for tunneling consisting of a roof-shield comprising a plurality of independently-adjustable sections, means combined with each section for introducing water under pressure under or ahead of the tool and in the direction of its length, and excavating mechanism associated with the noses of the sections.



3. An implement for tunneling comprising a plurality of bearing-beams, cross-beams secured thereto, a plurality of cover-plates extending beyond the terminals of the bearing-beams, the extended portions constituting nose and tail pieces respectively, means combined with each of the cover-plates for introducing water under pressure under or ahead of the nose-pieces and in the direction of their length, excavating means assembled with the nose-pieces, and means for projecting one of the cover-plates independently of the others.

4. An implement for tunneling comprising a plurality of bearing-beams, cross-bars secured thereto, a cover-plate extending beyond the terminals of the bearing-beams, the extended portions of which constitute nose and tail pieces respectively, and means associated with the implement for introducing water under pressure under or ahead of the nose-piece and in the direction of its length.

819,444. HAIR-STRAIGHTENER. SIMON E. MONROE, Boston, Mass., assignor, by direct and mesne assignments, of one-third to Benjamin F. Jackson, Boston, Mass., and one-third to James H. McDonough, Chelsea, Mass. Filed Sept. 21, 1903. Serial No. 173,963.



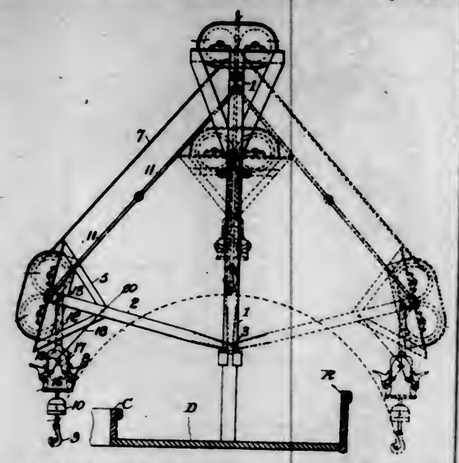
Claim.—A hair-straightener comprising a body portion having a metallic back piece provided with a chamber, rigid metallic teeth carried by said body portion, those teeth which are beneath the chamber being hollow and communicating with the chamber, and bristles also secured to the body portion and interspersed between the teeth.

819,445. HOISTING AND TRANSFERRING APPARATUS. CHARLES A. MORRIS, Bloomfield, N. J., assignor to The Hayward Company, New York, N. Y. Filed Dec. 19, 1904. Serial No. 237,460.

Claim.—1. A hoisting and transferring apparatus, comprising a fixed, elevated guide for the hoisting-rope, the said rope, a boom hinged at a point directly below the said guide and adapted to swing in a vertical plane from one side to the other of a vertical line passing through the said hinging-point of the boom, and automatic means, carried by the boom, for locking the rope thereto when the boom rises and freeing it when the boom descends, said means comprising a single stop on the rope, and means carried by the boom for engaging the stop above and below while the boom is swinging over.

2. A hoisting and transferring apparatus, comprising a fixed, elevated guide for the hoisting-rope, the said rope, a boom hinged at a point directly below the said guide and adapted to swing in a vertical plane from one side to the other of a vertical line passing through the said hinging-point of the boom, the latter being adjust-

able as to length, and automatic means for locking the rope to the boom when the latter rises and freeing it when the boom descends.



3. A hoisting and transferring apparatus, comprising a fixed, elevated guide for the hoisting-rope, the said rope, a boom hinged at a point directly below the said guide and adapted to swing in a vertical plane from one side to the other of a vertical line passing through the said hinging-point of the boom, means for limiting the descent of the boom at each side of said line, and automatic means, carried by the boom, for locking the rope to the latter as it is lifted, said means comprising a single stop on the rope, and means carried by the boom for engaging the stop above and below while the boom is swinging over.

4. An apparatus for the purpose specified, having elevated guide-sheaves for the hoisting-rope, the said rope, a boom hinged at its foot beneath said guide-sheaves and adapted to swing over from side to side through an arc exceeding ninety degrees, means for limiting at both sides the descent of the boom, guide-sheaves on the boom between which the hoisting-rope plays, and automatic means for locking the rope to the boom when the latter is lifted thereby, said means comprising a bell suspended from the boom and provided with a restricted aperture in its crown for the hoisting-rope, a single stop on the rope, to enter said bell, and stop devices on the bell to take under said rope-stop while the boom is swinging over.

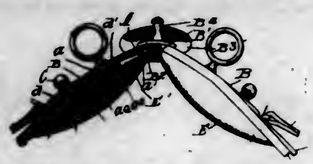
5. An apparatus for the purpose specified, having an elevated guide for the hoisting-rope, the said rope, a boom hinged at its foot below said guide and adapted to swing over from side to side through an arc exceeding ninety degrees, said boom being made up of members with a space or way between them, a guide for the hoisting-rope, carried by said boom, a locking-bell B, suspended between the members of the boom and open for the passage of the hoisting-rope, a stop on the hoisting-rope adapted to be drawn up into said bell, levers 8 on the bell and provided with shoulders to take under the said rope-stop, and means for displacing said levers when the boom descends to its lowest positions.

6. An apparatus for the purpose specified, having a hoisting-rope, and a stop 10 secured to said rope, said stop being hollow, in two sections, with a transverse stem 10^a for the attachment of the rope, and a securing-screw 10^b, which extends through said stem and draws the two sections of the stop together.

7. An apparatus for the purpose specified, having a boom, a guide on the boom for the hoisting-rope, the said rope, a bell B through which the rope plays in hoisting the load, arms 12, which suspend the bell from the boom, a stop on the hoisting-rope of such size as to enter the bell, levers mounted in slots in the bell and having shoulders which extend into the bell under said stop, arms 16 for displacing said levers, a guide 19 on the bell, a bridle connected with the arms 16, and a cord, connected to said bridle and to the boom, and playing through said guide, for operating the levers to displace them.

819,446. **HARNESS-SADDLE.** JOSEPH HOOPER, Grundale, Ill. Filed Mar. 13, 1905. Serial No. 249,695.

Claim.—1. In a device of the class described the combination with a resilient stay-plate of an auxiliary plate rigidly engaged thereon at its ends and adapted to hold the same inwardly under tension, means spacing said plate centrally, back-pads carried on said stay-plate and means affording a finish for the structure thus formed.



2. In a harness-saddle, a stay-plate having its ends sprung downwardly, an auxiliary stay rigidly engaged thereto, at its end and out of contact therewith centrally and adapted to hold the ends of said plate from springing outwardly, resilient spacing means engaged centrally between said plates and stays and a girth and back-pad engaged on the structure thus formed.

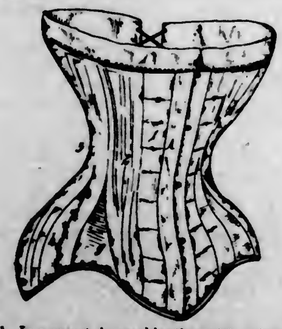
3. In a harness-saddle, a curved, resilient stay-plate, an auxiliary stay of different curvature than said stay-plate, means engaging the ends of said stays together under tension, means separating said stays centrally, a check-support thereon, a girth engaged to said stays and a pair of back-pads rigidly engaged thereto.

4. In a harness-saddle the combination with a resilient stay-plate having its ends sprung downwardly of an auxiliary stay adapted to engage the ends of said plate and hold the same under tension, a facing above said plate, a girth beneath the same, a pair of cushions beneath said girth and means for engaging said parts together.

5. In a harness-saddle the combination with the back-pads of a tree comprising a resilient plate bent centrally and provided with apertures intermediate the bend and the ends, a centrally-bent plate of less curvature than aforesaid plate rigidly engaged at one end thereto and provided with apertures adapted to be brought into register with the aforesaid apertures when the plates are sprung downwardly and a resilient washer intermediate the central portions of said plates.

6. A tree of the class described comprising a centrally-bent plate provided with apertures therethrough, a plate beneath the same bent at a different angle thereto and provided with aperures therethrough normally out of register with the aforesaid apertures, a resilient washer between said plates and means adapted to engage the plates together under tension when the apertures are brought into register.

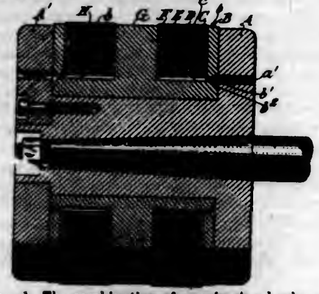
819,447. **CORSET.** LILLIAN F. MOYLAN, Detroit, Mich. Filed Oct. 14, 1905. Serial No. 282,729.



Claim.—1. In a corset, in combination with a clasp-stay, a section composed of a plurality of horizontally-arranged strips of varying length extending therefrom, a reinforced intermediate section next adjacent thereto, a side section adjacent to the upper portion of the intermediate section, an elastic gore inserted between the lower portions of said sections, a second gore-piece attached to the lower portion of the rear edge of the side section, an ovoid hip-section next adjacent to the upper portion of said side section and to the rear edge of said second gore-piece, and a back piece next adjacent to said hip-section, substantially as described.

2. In a corset, in combination with a clasp-stay, a plurality of horizontally-arranged strips, a unitary section to which the rear ends of said strips are attached extending from top to bottom of the corset, a side section attached to said unitary section along the upper portion of its length, a hip-section similarly secured to the upper portion of said section, the lower portion of said hip-section having an ovoid swell therein and being contracted around its bottom edge, gore-pieces inserted between the lower portions of said unitary section, side section and hip-section, and a back gore attached to the rear edge of said hip-section, substantially as described.

819,448. **PISTON-PACKING.** WILLIAM H. MYERS, Brooklyn, N. Y., assignor, by mesne assignments, to Myers Machine Works, Brooklyn, N. Y., a Corporation of New York. Filed Sept. 7, 1900. Serial No. 29,260.



Claim.—1. The combination of a main ring having a radially-extending body and an inner axially-extending flange, and a supplementary ring composed of a plurality of individual continuous rings supported on said flange and adapted to be pressed outward by the expansion of said main ring, the bearing-faces and the bodies of said main ring and each of said individual rings being of the same width, and means for admitting steam under the flange of said main ring, whereby the rings wear equally and are subjected to the same expansive pressure.

2. The combination of a main ring having a radially-extending body and an inner axially-extending flange, and a supplementary ring composed of three individual continuous rings supported on said flange and adapted to be pressed outward by the expansion of said main ring, each of said rings having a subdividing slit, the slits of each outer ring and its adjacent ring being diametrically opposite and those of the two intermediate rings being ninety degrees apart.

3. The combination of a main ring having a radially-extending body and an inner axially-extending flange, and a supplementary ring composed of a plurality of individual continuous rings supported on said flange and shouldered over such end.

4. The combination of a main ring having a radially-extending body and an inner axially-extending flange, and a plurality of individual continuous rings supported on said flange and adapted to be pressed outward by the expansion of said main ring, the bodies of said individual rings and of said main ring being of substantially equal cross-section.

5. The combination of a piston having ports a', a bull-ring having a packing-groove b and a groove b' communicating with said ports and with said packing-ring groove, and a packing in said packing-ring groove consisting of a main ring having a radially-extending body and an inner axially-extending flange, and a plurality of individual rings supported on said flange.

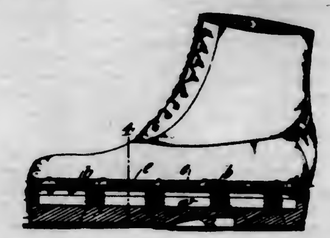
6. The combination of a plurality of rings, the adjacent rings being connected by means of a screw H whose body screws into one ring and whose head fits into a space cut out of the other.

7. The combination of a main ring C^3 having an inner flange c^3, a second ring D^3 having a portion d^3 supported on said main-ring flange, and having an inner flange d^{3a}, and a third ring E^3 supported on said flange c^3.

819,449. **VENTILATING-SOLE.** HENRY OTTERSTEDT, North Bergen, N. J. Filed Nov. 20, 1905. Serial No. 288,031.

Claim.—1. A ventilating-sole consisting of a wooden outer sole provided with a heel made of wood, a rim and a depression within the rim, an inner sole provided with openings, intermediate cushioning-springs between the outer and inner soles, and a connecting-strip attached to the outer sole and adapted to be attached to the upper.

2. A ventilating-sole consisting of an outer sole and heel made of wood, said outer sole being provided with a rim and a depression within said rim, an inner sole provided with ventilating-openings, cushioning-springs between the outer and inner soles, a strip of leather or other suitable material, and means for attaching said strip to the outer sole so as to permit the doubling up and attaching of the same to the upper.

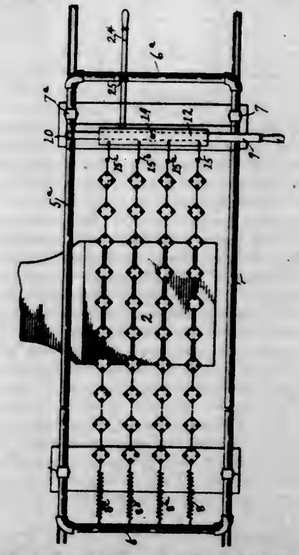


3. A ventilating-sole consisting of an outer sole and heel made of one piece of wood, said outer sole being provided with a rim at its upper edge, an inner sole provided with ventilating-openings, intermediate helical cushioning-springs connected at their upper and lower ends with the inner and outer soles respectively, and a strip of leather or other suitable material attached by means of a fastening-wire to the outer sole, said strip being adapted to be doubled up for connection with the upper.

819,450. **WATERPROOF FABRIC.** FREDERICK C. OVERBURY, New York, N. Y., assignor to Flintkote Manufacturing Company, Rutherford, N. J., a Corporation of New Jersey. Filed May 26, 1905. Serial No. 263,429.

Claim.—As a new article of manufacture, a waterproof material consisting of a fibrous body saturated with a hydrocarbon waterproofing substance and having one surface substantially non-adhesive, the other surface being coated with an adhesive hydrocarbon waterproofing substance.

819,451. **LINK-CLOSING PRESS.** CHARLES J. PERRY, New York, N. Y., assignor to David C. Storr, New Paltz, N. Y. Filed Jan. 10, 1905. Serial No. 240,467.



Claim.—1. A stretcher-frame for link-closing presses having means at each end for detachably securing the ends of the chain to be closed, a tension device for stretching said chain, and locking means for holding said tension device in operative position.

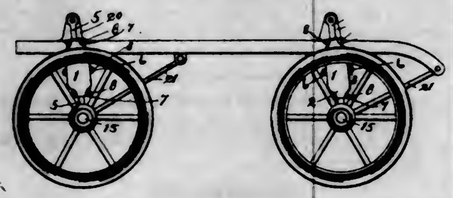
2. A stretcher-frame for link-closing presses, having at one end thereof helical springs for attaching one end of the chains to be closed and a lever pivoted to the other end of the frame carrying an

equalizing-bar provided with means for securing the other ends of the chains, and means for locking the lever and bar in closed position when the chains are under tension.

3. A stretcher-frame for link-closing presses, having at one end thereof helical springs for attaching the chains to be closed, a lever pivoted to the other end of the frame carrying an equalizing draft-bar with means for attaching the other ends of the chains, a bolt with a beveled end normally held in the path of and adapted to engage a projection on the lever, and means for retracting said bolt to release said lever and draft-bar.

4. A stretcher-frame for link-closing presses comprising a grooved plate, a stretcher-frame movable over said plate and having means at each end for detachably securing the ends of the chain to be closed, said means alining with the groove on the plate, means for placing the chain under tension, and means for locking and unlocking said tension device.

819,452. PNEUMATIC CUSHION. VACLAV H. PODSTATA, Dunning, Ill. Filed Oct. 13, 1905. Serial No. 283,616.



Claim.—1. A cushion consisting of a rigid outer casing, a pneumatic receptacle inside the casing of sufficient cross-sectional diameter to bear against the inner side walls of the casing and be supported thereby and two oppositely-disposed pistons slidably mounted in the casing and adapted to contact with the pneumatic receptacle to compress the same under tension, substantially as described.

2. In a cushion, the combination of an outer rigid casing, a pneumatic receptacle inside the casing having a cross-sectional diameter substantially equal to the interior diameter of the casing and having a less length than the interior length of the casing and two pistons slidably mounted in opposite ends of the casing and of less diameter than the pneumatic receptacle and adapted to contact with the opposite ends of the pneumatic receptacle to inwardly compress the ends under tension, substantially as described.

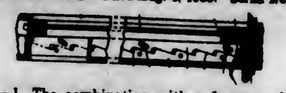
3. In a cushion, the combination of a rigid casing a pneumatic receptacle inside the casing consisting of an outer non-elastic supporting fabric, an inner elastic sack or receptacle, an air-valve for inflating the elastic receptacle to any desired tension, and two oppositely-disposed plungers of lesser diameter than the pneumatic receptacle and slidably mounted in the casing and adapted to contact with the ends of the receptacle and compress the same under tension, substantially as described.

4. In a cushion, the combination of a rigid elongated cylindrical casing contracted at its ends and having at its ends plunger-mountings, oppositely-disposed plungers reciprocally held within the mountings, a pneumatic receptacle within the casing of substantially equal width with the casing and of less length and adapted to be inflated and to have its ends inwardly compressed by the oppositely-disposed plungers, substantially as described.

5. In a cushion, the combination of a rigid elongated cylindrical casing contracted at its ends and having at its ends plunger-mountings, oppositely-disposed plungers reciprocally held within the mountings, a pneumatic receptacle within the casing of substantially equal width with the casing and of less length and adapted to be inflated and to have its ends inwardly compressed by the oppositely-disposed plungers, said pneumatic receptacle consisting of an inner elastic sack and an outer covering of non-elastic fabric, and a valve for admitting pressure to the interior of the elastic sack, substantially as described.

6. In combination with a vehicle-axle and body, a cushion consisting of a rigid elongated outer shell or casing having slidably mounted therein oppositely-arranged plungers one of the plungers being secured to the axle and the other plunger to the vehicle-body, and a pneumatic receptacle within the casing adapted to be compressed from either direction by the oppositely-disposed plungers for providing a cushioning action between the vehicle-body and the axle, substantially as described.

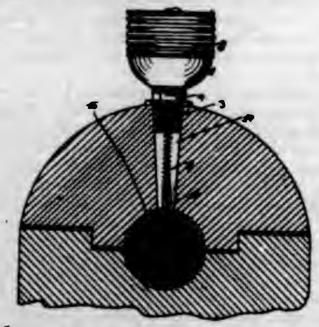
819,453. SASH-HOLDER. WILLIAM A. RALSTON, Rochester, N. Y., assignor to Caldwell Manufacturing Company, Rochester, N. Y., a Corporation of New York. Filed Aug. 4, 1903. Serial No. 168,194.



Claim.—1. The combination with a frame and sash, of two wedge-bars one relatively movable with respect to the other the movable bar having its wedge surface tapered to decrease in the direction in which the sash moves in opening; the wedge surface on the other bar being oppositely tapered, a spring pressing the movable bar upwardly to cause it to clamp the sash, and a manually-actuated device engaging said movable bar to depress it against the action of the spring and cause it to release the sash, substantially as set forth.

2. The combination with a frame and sash, of two pairs of wedge-bars at opposite edges of the sash, each pair having one bar relatively movable with respect to the other and having its wedge surface tapered to decrease in the direction in which the sash moves in opening; the wedge surface of the other bars being oppositely arranged with respect to those of the movable bars, springs pressing the movable wedge-bars upwardly to cause them to clamp the sash, and a manually-actuated bar or rod having cranked ends engaging the lower ends of said movable bars to depress the said bars against the action of their springs and release the sash, substantially as described.

819,454. LUBRICANT-RECEPTACLE. WILLIAM T. RANDERSON, Mumhall, Pa., assignor of one-half to James Horton, Mumhall, Pa. Filed Nov. 24, 1905. Serial No. 288,365.



Claim.—1. An oil-cup embodying a receptacle, a screw-threaded stem carried by said receptacle and having a centrally-disposed bore formed therein, a cap adapted to fit upon said receptacle, a coiled spring carried by said cap and extending from within the receptacle through the said bore in the stem and below the end of the stem, a contact-block carried by said spring, the contact-block being disposed wholly below the end of the said stem, substantially as described.

2. A grease-cup embodying a receptacle, a centrally-disposed screw-threaded stem carried by said receptacle and having a centrally-disposed bore formed therein, a cap mounted upon said receptacle, a coiled spring carried by said cap and extending downwardly through the bore of said stem, a tapering contact-block carried by said spring, said tapering block being formed with a groove to receive said spring, said block being disposed wholly below the bottom of the stem substantially as described.

3. A grease-cup embodying a receptacle, a stem carried by said receptacle, said stem having a bore formed therein, a cap mounted upon said receptacle, a spring carried by said cap and extending downwardly through the bore of said stem and below the end of the stem, a removable contact-block carried by said spring, said block being disposed wholly below the stem substantially as described.

819,455. CAN-OPENER. ALONZO P. READ, Chicago, Ill. Filed June 1, 1905. Serial No. 263,945.

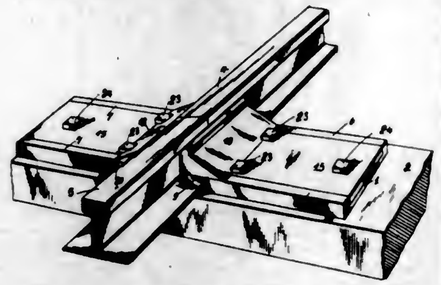


Claim.—1. A can-opener comprising a handle formed of a folded strip of metal, and a blade which is secured to the ends of the strip and extends in a plane parallel to the length of the handle, the blade having at its rear edge an angular flange, the edges of the ends of the strip and of the flange having notches and being engaged with each other at the notches.

2. A can-opener comprising a handle formed of a flattened and folded strip of metal the ends of which are notched at the edges and provided with a longitudinally-extending prong, and a blade which is secured to said ends and extends lengthwise beyond the same and opposite to the prong, said blade having an inturned flange which fits in said notches.

3. A can-opener comprising a handle formed of a folded strip of metal the ends of which are flattened and have notches and rivet-lugs on one edge thereof and prongs extending longitudinally at the other edge, and a blade consisting of a piece of metal which is seated upon the edge of said ends opposite to the prongs and is secured thereto by riveting the lugs and has an inturned flange at its inner ends with notches corresponding to the notches in the strip, the flange and ends of the strip being engaged together at the notches.

819,456. RAIL-JOINT. HENRY A. REINELANDER, Freedom, Pa. Filed Sept. 30, 1905. Serial No. 280,815.



Claim.—1. In a rail-joint, the combination with rail-sections and a tie, of a base-plate, said base-plate having a seat formed therein, flanges carried by the longitudinal edges of said plate, the ends of two of said flanges extending over said seat and adapted to engage the bases of said rails, a liner adapted to be mounted upon said seat, fish-plates mounted upon the ends of said plate between said flanges, and means to secure said base-plate and said fish-plates in engagement with said tie and said rail-sections, substantially as described.

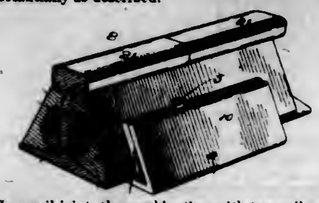
2. In a rail-joint, the combination with rail-sections and a tie, of a base-plate having a seat formed therein, adapted to support said rails, flanges carried by the longitudinal edges of said plate, a liner adapted to be mounted upon said seat and engaging one edge of the base of the rail, fish-plates adapted to be mounted upon the ends of said base-plate to engage said rail-sections, and means to secure said fish-plates and said base-plate upon said tie.

3. In a rail-joint, the combination with rail-sections, of a base-plate having a seat formed therein adapted to support said rails, a liner adapted to be mounted within said seat and to bear against the base of the rail to retain said rails therein, two separable fish-plates mounted upon the ends of said base-plate, and means to secure said fish-plates in engagement with said base-plate, substantially as described.

4. In a rail-section, the combination with a plate having a seat formed therein, flanges carried by the longitudinal edges of said plate, two fish-plates adapted to be mounted upon the ends of said plate and between said flanges said fish-plates being separable from said first-named plate, and means to secure said fish-plates in engagement with said plate, substantially as described.

819,457. RAIL-JOINT. CHARLES M. RHODES, Steubenville, Ohio. Filed Feb. 8, 1906. Serial No. 300,137.

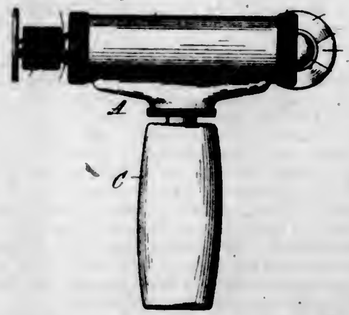
Claim.—1. In a rail-joint, the combination with two rail-sections, the base-flanges of said sections having notches formed therein, of a chair adapted to embrace said sections, a depending rib carried by said chair, side plates carried by said chair, lugs or pins carried by said chair, some of said lugs engaging in the notches of said rails, fish-bars mounted in said chair, and embracing said rails, a locking member mounted between one of said fish-bars and one of said side plates, said member having slots formed therein engaging the other of said lugs, a locking-key inserted between said locking member and one of said side plates, and engaging some of said lugs, said side plate having an opening formed therein adjacent to said key, substantially as described.



2. In a rail-joint, the combination with two rails, of a chair, a depending rib carried by said chair, side plates carried by said chair, fish-bars mounted in said chair between said rails and said side plates, a locking member inserted between one of said side plates and one of said fish-bars, lugs carried by said side plate and engaging said member, a key inserted between said member and said side plate, to lock said fish-bars and said locking member within said chair, substantially as described.

3. In a rail-joint, the combination with rails, of a chair, side plates carried by said chair, fish-bars mounted in said chair between said rails, and said side plates, a locking member inserted between one of said fish-bars and one of said side plates, lugs carried by one of said side plates and engaging said locking member, and means to lock said member within said chair, substantially as described.

819,458. VIBRATOR-APPLICATOR AND CONNECTION THEREFOR. CLARENCE H. RICHWOOD, Boston, Mass. Filed Apr. 5, 1905. Serial No. 254,033.



Claim.—1. A vibrator-head provided with an external screw-threaded boss formed with an endwise-open inwardly-tapering axial socket, an applicator having a stem provided with a shoulder and an annular nut screw-engaging said boss and having an internal projection engaging said shoulder on the applicator-stem for the purpose set forth.

2. A vibrator-head provided with a boss or projection formed with an endwise-opening tapering socket, and provided with screw-threads combined with an applicator having a stem to be seated in said tapered socket, and having a shoulder or abutment and an element formed with threads and screw-engaging said boss or projection and having a part engaging said shoulder of the applicator-stem, for the purposes set forth.

3. In a device of the character described, a vibrator comprising a cylindrical head having an end-closing cap constructed with an externally-threaded boss or projection having an axial endwise-opening socket, an applicator having a tapered stem to be seated in said socket and formed with an external flange and an annular nut screw-engaging said boss, and formed with an endwise-located internal flange located to surround said stem between the external flange thereof and the applicator proper.

4. In a device of the character described, a vibrator comprising a cylindrical head having a screw-engaging end-closing cap constructed with an integral externally-threaded and axially-socketed boss, the axial line of which is at right angles to the axis of the vibrator-head, and an applicator provided with a stem formed tapered and with an external flange and equipped with an annular nut, concentrically surrounding said stem and provided with an internal projection interlocking between the stem-flange and the applicator proper and thereby retained non-detachable relatively thereto.

5. In a device of the character described, the combination with

the head of a vibrator constructed with an extension, and an applicator having a shank or extension, one of said extensions being made with a socket and the other being formed tapering, and one of said extensions being constructed with a shoulder, and an annular nut having an internal shoulder engaging the shoulder of the one said extension and screw-engaging the other extension and adapted on being turned to impart endwise movements of the one part relatively to the other.

819,459. APPLICATOR FOR MECHANICAL MASSAGE. CLARENCE H. RICHWOOD, Boston, Mass. Filed Sept. 20, 1905. Serial No. 279,021.



Claim.—1. An applicator for a massage implement comprising an inflatable body having an opening therein, a hollow stem arranged in said opening and having a head located within the body, a clamping device on the stem to clamp the body to said head, a coupling device movably engaging the stem and means operable by a relative movement of the device and stem for controlling access of inflating fluid to the body.

2. An applicator for a massage implement comprising an inflatable body having an opening therein, an exteriorly-threaded hollow stem arranged in said opening and having a head located within the body, a clamping device threaded on said stem to clamp the shell of the body to said head and a coupling device movably engaging the stem and means operable by a relative movement of the coupling device and stem for controlling access of inflating fluid to the body.

3. An applicator for a massage implement comprising an inflatable body having an opening therein and an annular rib surrounding said opening, a stem arranged in said opening and provided with a head located within the body, a clamping device on the stem and having a groove to receive the rib on the body, said device serving to clamp the shell of the body to the said head, and means for controlling the access of inflating fluid to the body.

4. An applicator for a massage implement comprising an inflatable body, an air-tube clamped therein and communicating therewith, means associated with the air-tube to open and close the communication with the inflatable body, means for coupling the air-tube to a massage implement, said means having an air-channel communicating with the air-tube.

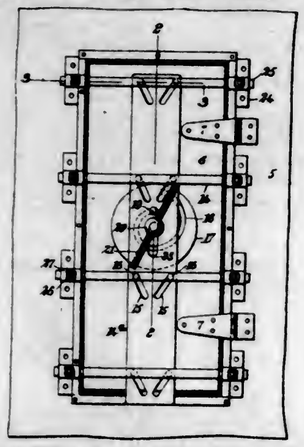
5. An applicator for a massage implement comprising an inflatable body, an air-tube clamped therein and communicating therewith, a coupling device engaging the air-tube and having an air-channel communicating therewith and means located between the said tube and device for controlling the passage of air from one to the other.

6. An applicator for a massage implement comprising an inflatable body, an air-tube clamped therein and communicating therewith, a coupling device movably engaging the air-tube and having an air-channel communicating therewith and means located between the said tube and device for controlling the passage of air from one to the other, said means being operated by the relative movement of said tube and stem.

7. An applicator for a massage implement, comprising an inflatable body, an air-tube secured therein and having communication therewith, said tube being provided at its outer end with a wall having an air-passage opening into the bore of said tube, means to secure the body to the tube, a coupling device having a socket to receive the outer end of said tube and a central air-passage opening into the socket, and a disk having a central aperture, interposed between the end wall of the air-tube and the base of the socket.

819,460. DOOR-FASTENING. JAMES ROONEY, New York, N. Y. Filed Sept. 20, 1905. Serial No. 279,205.

Claim.—1. The combination with a door-casing and a door, of a plurality of pairs of bolts mounted to slide laterally on the door, the bolts of a pair moving in opposite directions, keepers on the casing for receiving the bolts, a shifting-plate mounted on the door and having divergent slots, rollers connected to the bolts and engaging in the slots, and a cam for moving said plate vertically.

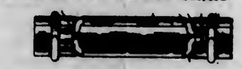


2. The combination with a door-casing and a door, of guide-boxes on the door, bolts slidable in said guide-boxes the bolts being arranged in oppositely-movable pairs, the said guide-boxes having openings in the upper and lower walls, a shifting-plate movable through said openings, the said shifting-plate having divergent slots for receiving pins, a disk mounted to rotate on the door and having a spirally-disposed slot, a pin extended from the shifting-plate into said spirally-disposed slot, and keepers on the door-casing for receiving the bolts.

3. The combination with a door-casing and a door, of a plurality of pairs of locking-bolts slidable laterally on the door, means for simultaneously sliding the several bolts, keepers secured to the casing for receiving said bolts, and wear-plates adjustable in the keepers.

4. The combination with a door-casing and a door, the said door having a flange extended around its edge, a packing material on the casing with which said flange is designed to engage, locking-bolts arranged in pairs on the doors, the bolts of a pair being mounted to slide in opposite directions, a shifting-plate for moving the bolts and means for moving said plates from both the inner and outer sides of the door.

819,461. LOOSE-LEAF BINDER. JOHN SCHADE, Jr., New York, N. Y. Filed Jan. 17, 1905. Serial No. 241,458.



Claim.—1. In a temporary or loose leaf-binder, the combination with a base-plate made of spring sheet metal, of separable eyes mounted pivotally directly on the edges of said base-plate and having bent wire arms, the arms of the two opposite separable eyes being engaged to form toggle-levers between the sides of the spring base-plate, substantially as set forth.

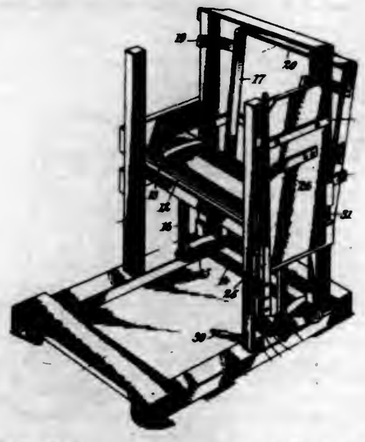
2. The combination with a spring base-plate having its outer edges turned inward and downward to form sockets, of wires mounted to turn axially in said sockets, which wires are provided with inwardly-projecting arms and with curved hooks at the ends of said wires, the arms of the two opposite wires being in contact, substantially as set forth.

3. The combination with a spring base-plate having its outer edges turned inward and downward to form tubular sockets, wires mounted to turn in said sockets, which wires are provided with inwardly-extending arms, the arms of two opposite wires being in contact, hooks formed on the outer ends of the wires, notches being formed in the tubular sockets for the lower ends of the hooks, substantially as set forth.

4. The combination with a spring base-plate having its outer edges turned inward and downward to form longitudinal sockets, wires mounted to turn axially in said sockets, which wires are bent inward to form arms, the arms of the two opposite wires being in contact and one arm recessed and the other provided with a corresponding projection and hooks formed on the outer ends of said wires, substantially as set forth.

5. The combination with a spring-metal base-plate having its outer edges turned inward and downward to form tubular sockets, wires mounted to turn axially in said sockets, which wires are provided with inwardly-extending arms, the arms of two opposite wires being in contact and the outer ends of said wires being bent to form hooks, and transverse sheet-metal plates placed over the engaging arms and held in place by the inwardly and downwardly bent edges of the base-plate, substantially as set forth.

819,462. STAVE-PRESS. JOHN B. SCHOFIELD, Tomahawk, Wis. Filed May 27, 1905. Serial No. 262,694.



Claim.—1. A press comprising a frame, a shaft journaled on the frame, a pair of clamps connected with said shaft, means for oscillating the shaft, comprising a segment rigidly connected with the shaft, a pinion meshing with the segment and oscillatably mounted upon the frame and an operating-lever rigidly connected with the pinion, and means for holding said segment, comprising a series of teeth on the segment and a dog adapted to engage said teeth.

2. A press comprising a frame, a shaft journaled thereon, a pair of clamps connected with the shaft, means for oscillating the shaft, comprising a segment and an operating means for the segment, and means for holding the segment, comprising teeth on the segment, a dog mounted on the frame and adapted to engage the teeth, a treadle connected with the dog and means for normally holding the dog in engagement with the teeth.

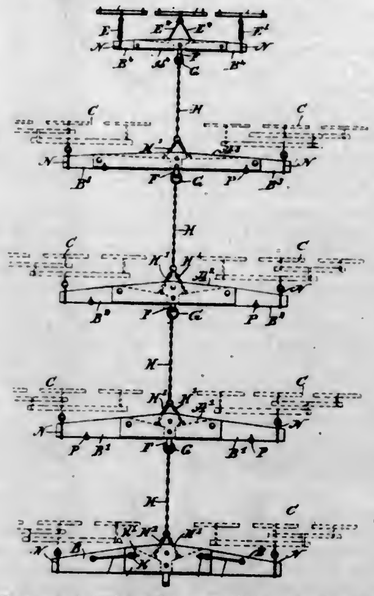
3. A stave-press comprising a frame having uprights, a shaft journaled on said frame, a pair of arms rigidly connected with said shaft, a rod pivotally connected with each of said arms, a clamp-head rigidly mounted on one of said rods and having an upper curved surface. and a clamp rigidly mounted on the other rod and having a lower surface correspondingly curved, said uprights constituting a stand for a bundle of staves and being adapted to hold the edges of the staves in vertical alinement while said clamps operate to press the bundle.

4. A stave-press comprising a frame having uprights, a cross-piece connecting said uprights and having a slot, a shaft journaled on said frame, a pair of arms rigidly connected with said shaft, a rod pivotally connected with each of said arms, one of said rods passing through said slot and the other being free to move about its pivot, a clamp on the first-named rod having an upper curved surface, a clamp on the other rod having a lower surface correspondingly curved, and means for oscillating said shaft; said means comprising a segment rigidly connected with the shaft, a pinion meshing with said segment and oscillatably mounted upon said frame, and an operating-lever rigidly connected with said pinion.

5. A stave-press comprising a frame having uprights, a cross-piece connecting said uprights and having a slot, a shaft journaled on said frame, a pair of arms rigidly connected with said shaft, a rod pivotally connected with each of said arms, one of said rods passing through said slot and the other being free to move about its pivot, a clamp on the first-named rod having an upper curved surface, a clamp on the other rod having a lower surface correspondingly curved, and means for oscillating said shaft; said means comprising a segment rigidly connected with the shaft, a pinion meshing with said segment and oscillatably mounted upon said frame, an operating-lever rigidly connected with said pinion, and means for holding said segment, comprising a series of teeth on the segment and a dog adapted to engage said teeth.

6. A stave-press comprising a frame having uprights, a cross-piece connecting said uprights and having a slot, a shaft journaled on said frame, a pair of arms rigidly connected with said shaft, a rod pivotally connected with each of said arms, one of said rods passing through said slot and the other being free to move about its pivot, a clamp on the first-named rod having an upper curved surface, a clamp on the other rod having a lower surface correspondingly curved, means for oscillating said shaft comprising a segment and an operating means for the segment, and means for holding the segment comprising teeth on the segment, a dog pivotally mounted on the frame and adapted to engage the teeth, a treadle connected with the dog, and a spring for normally holding the dog in engagement with the teeth.

819,463. DRAFT-EQUALIZER. HERMON C. SCOTT, Ritzville, Wash. Filed Sept. 23, 1905. Serial No. 280,556.



Claim.—1. A draft-equalizer comprising a plurality of successively-arranged draft-bars, a pair of equalizing-bars pivoted on each draft-bar, flexible connections between the inner ends of a pair of equalizing-bars and the middle of the next draft-bar ahead, and braces connecting the rearmost draft-bar with its equalizing-bars.

2. A draft-equalizer comprising a plurality of successively-arranged draft-bars, each made of a pair of spaced members, a clevis and bolts securing the clevis and members together at the middle thereof, pivots secured to the outer ends of the said members, a pair of equalizing-bars mounted to swing on the said pivots between the said spaced members, a ring on the said clevis, and chains connecting the inner ends of a pair of equalizing members with the ring of the clevis on the next draft-bar ahead.

3. A draft-equalizer provided with a draft-bar formed of spaced members, a clevis having its side arms engaging the inner opposite faces of the said members at the middle thereof, and bolts passing through the said members and the side arms of the said clevis.

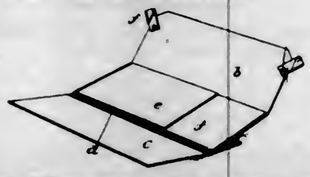
4. A draft-equalizer provided with a draft-bar formed of spaced members, a clevis having its side arms engaging the inner opposite faces of the said members at the middle thereof, bolts passing through the said members and the side arms of the said clevis, pivots held in the outer ends of the said spaced members, and equalizing-bars extending between the said members and fulcrumed on the said pivots.

5. A draft-equalizer provided with a draft-bar formed of spaced members, a clevis having its side arms engaging the inner opposite faces of the said members at the middle thereof, the terminals of the said clevis side arms having angular flanges engaging the front edges of the said members, and bolts passing through the said members and the side arms of the said clevis.

6. A draft-equalizer provided with a draft-bar formed of spaced members, a clevis having its side arms engaging the inner opposite faces of the said members at the middle thereof, bolts passing through the said members and the side arms of the said clevis, and thimbles on the said bolts between the said side arms of the clevis, to spread the said members farther apart at the middle than at the ends.

7. A draft-equalizer provided with an equalizing-bar and a clevis for the outer end of the said equalizing-bar, the clevis being fulcrumed on an attaching-strap having a plurality of apertures, and a bolt on the said outer end of the equalizing-bar engaging one of the said apertures.

819,464. FILE AND FASTENER. CHARLES R. SHRAD, St. Paul, Minn. Filed June 30, 1905. Serial No. 267,782.



Claim.—1. A file-wrapper comprising a main part or body and closing-flaps at opposite sides thereof, and fasteners respectively attached to the free corners of the outer closing-flap and adapted to engage the inner edge portions of the second or inner closing-flap, whereby to fasten the outer flap at each end.

2. A file-wrapper comprising a main part or body and closing-flaps at opposite sides thereof, and fasteners respectively attached to the free corners of the outer or closing flaps and adapted to engage the inner edge portions of the second or inner closing-flap, whereby to fasten the outer flap at each end, said fasteners being attached to the inner side of the outer closing-flap, for the purpose specified.

3. A file-wrapper comprising a main part or body, and closing-flaps at opposite sides thereof, said flaps being adapted to fold one over the other, and fasteners attached respectively to the corners of the free portion of the outer flap and adapted removably to engage a part of the file to hold said outer flap at each end thereof.

819,465. ICE-CREAM CAN. JAMES J. SWEO, Pittsburg, Pa. Filed Aug. 19, 1905. Serial No. 274,930.

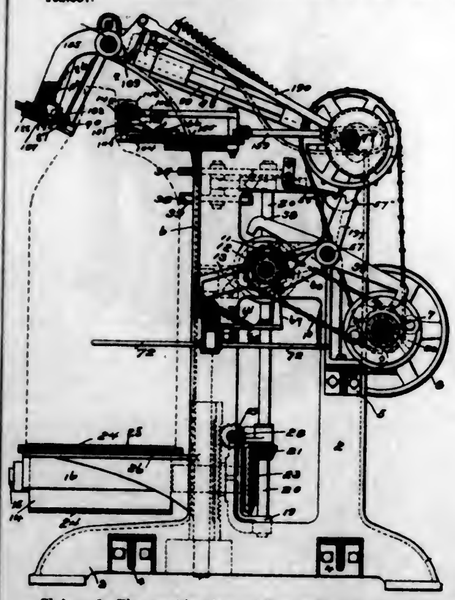


Claim.—1. A cooling-receptacle embodying exterior and interior concentrically-arranged containers, a locking device therefor comprising a ring secured to the bottom of the exterior container and surrounding the interior container and provided with oppositely-disposed seats, each of said seats being formed with an angular recess arranged opposite to the recess formed in the opposing seat, and a pair of oppositely-disposed lateral extensions carried by the interior container and adapted to pass through said recesses and beneath said ring.

2. A cooling-receptacle embodying exterior and interior concentrically-arranged containers, a locking device therefor comprising a ring secured to the bottom of the exterior container, said ring being provided with supporting-legs and oppositely-arranged depressions, each depression being formed with vertical side walls and horizontal bottom walls, one of the side walls of each depression being formed with an angular passage-way, and a pair of oppositely-disposed laterally-extending studs carried by the interior container, said studs being designed to pass through said passage-ways and beneath said ring.

3. A cooling-receptacle embodying exterior and interior concentrically-arranged containers, a locking device therefor comprising a ring secured to the exterior container, said ring being formed with oppositely-disposed depressions, each depression having arranged therein on a side opposite to the corresponding side of the other depression an angular passage-way, and a pair of laterally-extending studs carried by the interior container, said studs being adapted to pass through said passage-ways and beneath said ring.

819,466. SACK FOLDING AND SECURING MACHINE. EDWIN G. STAUDE, Minneapolis, Minn. Filed June 20, 1903. Serial No. 162,357.



Claim.—1. The combination, with a sack-conveyer, of means for folding the top of the sack vertically and fastening the same, a driven shaft, independently-operable mechanisms connecting said driven shaft with said conveyer and with said folding and fastening means, a turnstile operated by the movement of the sack, and a mechanism actuated by the movement of the turnstile for stopping said conveyer-operating mechanism and starting said folding and fastening mechanism.

2. The combination, with a sack-conveyer, of means for flattening the top of a sack and gathering it into a substantially circular form, mechanism for placing a fastener on the sack, and mechanism actuated by the movement of the sack for stopping said conveyer and starting said fastening mechanism.

3. The combination, with a sack-conveyer, of means for folding the top of the sack vertically and securing the same, a drive-shaft, independently-operable mechanisms connecting said drive-shaft with said conveyer and with said folding and fastening means, a turnstile operated by the movement of the sack, and suitable clutch-controlling mechanisms operated by the movement of the turnstile for stopping said conveyer-operating mechanism and starting said folding and fastening mechanism.

4. The combination, with a suitable conveyer whereon the sacks are placed, of means for flattening and folding vertically the open top of the sack, a drive-shaft, a feed-shaft continuously driven therefrom, clutches provided on said drive and feed shafts, suitable driving connections provided between said feed-shaft clutch and said conveyer, a cam-shaft connected with the clutch on said drive-shaft, suitable mechanisms provided between said cam-shaft and said folding and fastening means, and means actuated by the moving sack for unlocking said feed-shaft clutch and locking said drive-shaft clutch when the sack is opposite said folding and fastening mechanisms.

5. The combination, with a suitable conveyer whereon the sacks are placed in an upright position, of a mechanism for folding the top of the sack vertically and gathering the same to close the top thereof, a drive-shaft, a feed-shaft driven continuously thereby, clutch mechanisms provided on said drive and feed shafts, suitable gearing connecting said feed-shaft clutch with said conveyer for operating the same, a cam-shaft connected with said drive-shaft clutch and inoperative when said conveyer is in motion, suitable mechanisms connecting said cam-shaft and said folding and fastening means, a turnstile provided in the path of the sacks carried along by said conveyer to be actuated thereby, and a suitable mechanism operated by said turnstile for releasing said feed-shaft clutch to stop said conveyer and lock said drive-shaft clutch to start said cam-shaft.

6. The combination, with a suitable conveyer, of means for folding the top of the sack and securing the same, a drive-shaft, a feed-shaft driven therefrom, clutch mechanism provided on said drive and feed shafts, suitable gearing connecting said feed-shaft clutch and said conveyer, a cam-shaft connected with said drive-shaft clutch and also with said folding and fastening mechanisms to operate the same, means operated by the sack carried along by said conveyer, a mechanism connected with said sack-operated means for releasing said feed-shaft clutch and locking said drive-shaft clutch, and a shifter mechanism for reversing the movement of said clutch-releasing mechanism when said cam-shaft completes its revolution.

7. The combination, with a suitable conveyer whereon the sacks are placed, of a folding and fastening mechanism arranged to make a vertical fold in the top of the sack and secure the same, a drive-shaft, a feed-shaft driven therefrom, clutch devices provided on said drive and said feed shafts, suitable gearing connecting said feed-shaft clutch with said conveyer, a cam-shaft driven from said drive-shaft clutch and having suitable connections with said folding and fastening devices, a turnstile operated by the moving sack, a mechanism operated by the movement of said turnstile for releasing the clutch on said feed-shaft and locking the corresponding clutch on said drive-shaft, and a shifter mechanism arranged to reverse the movement of said turnstile-operated mechanism and operate said clutch devices to start said feed-shaft and stop said cam-shaft when the latter has completed its revolution.

8. The combination, with a drive-shaft, of a feed-shaft driven therefrom, clutches provided on said drive and feed shafts, a shaft 57 provided between said drive and feed shafts, oppositely-extending hooks provided on said shaft 57, an arm 60 secured on said shaft 57, a yieldingly-held pin carried by said arm, a cam provided on said feed-shaft and arranged to engage said pin when projected, a bell-crank having one arm normally in engagement with said pin, and a turnstile having a cam arranged to engage the other arm of said bell-crank.

9. In a machine of the class described, the combination, of mechanism for gathering and compressing the top of a sack, with mechanism adapted to fold a fastener around said top and interlock its ends on the side of the sack opposite from the normal inoperative position of said folding mechanism.

10. In a machine of the class described, the combination, of means for flattening the top of a sack, with means operating substantially at right angles to said flattening means and adapted to gather the edges of the top when flattened and compress them into a circular form, substantially as described.

11. In a machine of the class described, the combination, with a suitable support, of sliding folders having concave faces adapted to engage the open top of a sack and close and compress it into a substantially circular form, and means for operating said folders.

12. In a machine of the class described, the combination, with a sack-conveyer, of means actuated by the moving sack for stopping said conveyer at a certain predetermined point, and sack-folders having concave faces arranged to clasp and compress the open end of the sack upon the stopping of said conveyer.

13. The combination, with a suitable frame, of a swinging bar between which and said frame the sack to be closed is moved, said bar engaging and flattening the open top of the sack, and sack-folders arranged to clasp the flattened edges of the sack and fold the same vertically.

14. The combination, with a suitable frame, of a swinging bar between which and said frame the sack to be closed is moved, said bar engaging and flattening the open top of the sack, and sack-folders slidably supported upon said bar and adapted when moved toward each other to clasp the flattened edges of the sack and fold the same vertically.

15. The combination, with a suitable frame, of a conveyer whereon the sacks to be closed and fastened are placed, means for operating said conveyer, means actuated by the moving sack for stopping said conveyer at a certain predetermined point, a reciprocating bar for flattening the open top of the sack, sliding folders carried by said bar and arranged to engage the top of the sack and make a vertical fold therein, and mechanism coöperating with said folders to clasp a metallic band or fastener around said vertical fold to close and secure the mouth of the sack.

16. The combination, with a suitable frame, of a conveyer whereon the filled sacks are placed, a drive-shaft, a feed-shaft driven continuously therefrom, clutches provided on said feed and drive shafts, a cam-shaft, operative connections provided between said conveyer and said feed-shaft clutch and said cam-shaft and said drive-shaft clutch, a rock-shaft operatively connected with said cam-shaft, a swinging bar carried by said rock-shaft and arranged to engage and flatten the top of a sack, folder-arms also connected with said cam-shaft for making a vertical fold in the top of the sack, and means actuated by the moving sack for operating said clutches to stop said conveyer and start said cam-shaft.

17. In a machine of the class described, the combination, of sack-folders adapted to engage and make a vertical fold in the top of a sack, said folders operating in a substantially horizontal plane and provided with concave sack-engaging faces, for the purpose specified.

18. In a machine of the class described, the combination of an oscillating bar for engaging and flattening the top of the sack, and a rock-shaft whereon said bar is supported, with sack-folders slidably arranged on said bar, and means for swinging said bar to flatten the sack and sliding said folders toward each other simultaneously.

19. In a machine of the class described, the combination, with a suitable frame, of mechanism mounted thereon and arranged to gather the top of a sack and close its mouth, mechanism for forming hooked ends on a metallic ribbon, and mechanism for bending said ribbon around the closed mouth of the sack and interlocking said hooked ends, substantially as described.

20. In a machine of the class described, the combination, with means for closing the top of a sack, of pivoted folders arranged to bend a clamp or fastener around said closed top and secure its ends together, substantially as described.

21. In a machine of the class described, the combination of mechanism for vertically folding the top of a sack, with mechanism for pressing a metallic ribbon against the folded portion of said sack, and mechanism for bending the ends of said ribbon around said folded portion and interlocking them on the side of the sack opposite from the normal position of said bending mechanism.

22. In a machine of the class described, the combination of mechanism for vertically folding the top of a sack, with mechanism for pressing the middle portion of a metallic ribbon having hooked ends against the folded part of the sack, mechanism for bending said hooked ends around said folded part and interlocking them, and mechanism for pressing said interlocked ends together.

23. In a machine of the class described, the combination of means for vertically folding the top of the sack, with means for bending the ends of a flexible metallic strip in opposite directions to form hooks thereon, means for pressing the middle portion of said strip against the folded portion of said sack, and means for bending the ends of said strip around the sack and interlocking said hooks.

24. The combination in a machine of the class described, with means for making a vertical fold in the top of the sack, of means for severing a metallic strip of sufficient length to clasp the fold of the sack, and forming hooks on the ends of said strip, means for pressing the middle portion of said strip against the folded portion of the sack, and means for bending the hooked ends of said strip around said folded portion and interlocking them.

25. A machine of the class described having slotted sack-folders arranged to engage and fold the mouth of a sack vertically, a plunger adapted to engage a metallic fastener having oppositely-turned ends and press the middle portion of the same against the sack, and pivoted folder-arms arranged to enter the slots in said sack-folders and bend the hooked ends of the fastener around the sack and interlock said ends.

26. A machine of the class described having reciprocating sack-folders having central longitudinal slots and concave end faces, a plunger having a concave end face and operating substantially at right angle to the said folders, reciprocating bars provided upon each side of said plunger, oscillating folders mounted on said bars, means for projecting said folders into the slots in said sack-folders, and means for swinging said oscillating folders, substantially as described.

27. In a machine of the class described, the combination, of

mechanism for gathering and folding vertically the top of a sack, with mechanism for forming a clamp or fastener, and pivoted folders, having an oscillating movement to bend said fastener around the closed mouth of the sack, and a reciprocating movement toward and from said sack-gathering mechanism.

28. In a machine of the class described, the combination, of mechanism for gathering and folding the top of a sack, with means having a reciprocating movement toward and from said sack-folding mechanism to bend a metallic fastener around said sack, and means operating between said reciprocating means for gripping the fastener during the bending operation, substantially as described.

29. In a machine of the class described, the combination, with a suitable frame, of mechanism for closing the mouth of a sack, mechanism for placing a fastener on the sack, and mechanism actuated by the delivery of the sack to said closing mechanism for starting said fastening mechanism, substantially as described.

30. In a machine of the class described, the combination of mechanism for vertically folding the top of a sack, with mechanism for bending a metallic clasp or fastener having hooked ends around the folded portion of said sack and interlocking said hooked ends, and mechanism for clenching said hooked ends.

31. In a machine of the class described, the combination, of means for pressing a metallic ribbon or band having oppositely-turned hooked ends against the vertically-folded top of the sack, with means for bending said ribbon around the sack and interlocking its hooked ends, a pivoted anvil device around which the ends of said ribbon are passed and a clenching-hammer arranged to press said interlocked ends against said anvil.

32. In a machine of the class described, the combination of means for bending a metallic ribbon having oppositely-turned ends around the gathered or vertically-folded mouth of a sack, with an anvil device between said interlocked ends and said sack, and a clenching device arranged to engage and press said interlocked ends against said anvil.

33. In a machine of the class described, the combination of means for folding a metallic clip or fastener having oppositely-turned ends around the gathered or vertically-folded mouth of a sack and interlocking said ends, with a pivoted hook device having a point around which said fastener is passed beneath said interlocked ends against the point of said hooks and clenching the same, and a trip for tilting said hook and disengaging its point from between the fastener and the sack.

34. In a machine of the class described, the combination, with means for placing a metallic fastener having hooked ends upon the vertically-folded mouth of a sack, of a pivoted hook 183 having a point around which the fastener is passed, said hook being opposite the point where the ends of the fastener are interlocked and beneath the same, an adjustable pin having a point to engage the ends of the fastener and clench them against said hook, a swinging arm whereon said pin is supported, and a trip device for tilting said hook to remove it from between said fastener and sack.

35. In a machine of the class described, the combination, with the stack-folders, of a reciprocating plunger, reciprocating bars provided on each side of the same, pivoted folders mounted on said bars, means for reciprocating said bars and oscillating said folders, one of said folders having a slotted end, an anvil provided between said oscillating folders, and a hammer operating through said slotted end.

36. In a machine of the class described, the combination, of a sack-conveyer with gathering devices operating in a substantially horizontal plane and having concave sack-engaging faces, substantially as described.

37. In a machine of the class described, gathering devices having slotted concave faces adapted to compress the top of a sack into a circular form, in combination with folders operating through the slots in said faces.

38. In a machine of the class described, gathering devices having concave faces arranged to compress the top of a sack into a circular form, in combination with mechanism adapted to place a fastener around the compressed portion of the sack between the said compressed portion and said concave faces.

39. In a machine of the class described, the combination, of gathering devices operating in a substantially horizontal plane and having concave faces, with mechanism for placing a fastener having hooked ends around the compressed portion of the sack between said compressed portion and said faces.

40. In a machine of the class described, the combination, of gathering devices adapted to compress the top of a sack and having slotted faces, with folders operating through said slotted faces and adapted to place a fastener around the closed top of a sack, substantially as described.

41. In a machine of the class described, the combination, with means for gathering the top of a sack to close the same, of reciprocating folders arranged to engage the ends of a fastener and bend them around the closed portion of said sack, substantially as described.

42. In a machine of the class described, in combination, mechanism for forming hooked ends on a piece of metal, mechanism for closing the mouth of a sack, a folding device for bending said hooked ends of said strip of metal around said closed mouth of a sack and interlocking them, and a plunger device operating between said folding devices.

43. In a machine of the class described, means for gathering the mouth of a sack in combination, with mechanism for forming hooked ends on a strip of metal, reciprocating folders engaging said ends, and a plunger adapted to operate between said folders.

44. In a machine of the class described, means for gathering the mouth of a sack in combination, with mechanism for forming hooked ends on a metallic ribbon, means for bending said ends around the closed mouth of a sack and interlocking them, and means for clenching said interlocked ends.

45. In a machine of the class described, means for gathering the mouth of a sack and means for forming oppositely-turned hooked ends on a strip of metal, in combination with folding devices adapted to engage said ends, and a clenching device operating between said folders.

46. In a machine of the class described, means for gripping the top of a sack and compressing it into a substantially circular form, in combination with pivoted folders operating through said gripping means for folding a fastening device around the closed top of the sack and interlocking its ends on the side of the sack opposite from said folders.

47. In a machine of the class described, the combination, with mechanism for closing the top of a sack and gripping the same, of mechanism operating through said gripping means to place a fastener around the closed portion of said sack.

48. In a machine of the class described, means for flattening the open top of a sack, means having slotted concave faces arranged to engage the edges of said flattened top and compress the same into a circular form, in combination with a mechanism for forming hooked ends on a strip of metal, folders adapted to operate through said slotted faces and engage said hooked ends, and means operating between said folders to hold said metal strip against the sack during the folding operation.

49. In a machine of the class described, the combination, with reciprocating supports, of pivoted folders mounted thereon, and means for oscillating said folders when near the limit of their reciprocating movement in one direction.

50. In a machine of the class described, the combination, with means for closing the mouth of a sack, of pivoted folders having a reciprocating movement toward and from said sack-closing means, and means for swinging said folders on their pivots toward one another when near said sack-closing means to fold and clamp a fastener around the closed portion of the sack.

51. In a machine of the class described, the combination, with means for closing the mouth of a sack and gripping the same, with a plate adapted to support a metallic fastener having oppositely-turned hooked ends, and means for pushing said fastener against the closed portion of the sack and bending its ends around said closed portion and interlocking them, substantially as described.

52. The combination, with a sack-support, of means for closing the mouth of the sack and gripping the same, and means operating through said gripping means for placing a fastener around the gripped portion of the sack, substantially as described.

53. In a machine of the class described, the combination, with means for closing the top of a sack and gripping the same, of oscillating folders, a reciprocating support whereon said folders are mounted, mechanism for operating said support, and mechanism for oscillating said folders when they have been moved by said support to a point near said closing means, substantially as described.

54. In a machine of the class described, the combination of mechanism for closing the top of a sack, with mechanism for pressing the middle portion of a metallic ribbon against the closed top of a sack, oscillating folders, a reciprocating support whereon said folders are mounted, mechanism for operating said support, and mechanism for oscillating said folders, substantially as described.

55. In a machine of the class described, the combination, of a suitable frame, a plate thereon adapted to support a metallic ribbon having oppositely-turned hooked ends, a sack-support provided near said plate, and mechanism for folding the ends of said ribbon around the closed mouth of the sack and interlocking them, substantially as described.

56. In a machine of the class described, the combination, with a suitable frame provided with a sack-support, of mechanism for forming hooked ends on a metallic ribbon in combination with mechanism for bending said ribbon around the closed mouth of the sack and interlocking said ends, substantially as described.

57. In a sack-closing machine, the combination, of means for gathering the mouth of a sack, with mechanism adapted to form oppositely-turned ends on a strip of metal, and folding devices adapted to engage said ends and bend them around the gathered mouth of the sack, substantially as described.

58. In a machine of the class described, the combination of mechanism having slotted faces for gripping and closing the mouth of a sack, with curved reciprocating folders operating through said slotted faces to bend a fastener around the closed top of a sack.

59. In a machine of the class described, mechanism arranged to engage and close the mouth of a sack, in combination with a folding mechanism, a reciprocating support whereon said folders are pivoted, and mechanism for oscillating said folding mechanism independently of their movement with said support.

60. In a machine of the class described, the combination of mechanism for gripping the closed top of a sack, with mechanism for forming hooked ends on a strip of metal, and a mechanism operating through said gripping means for folding said strip of metal around the closed top of a sack and interlocking its ends.

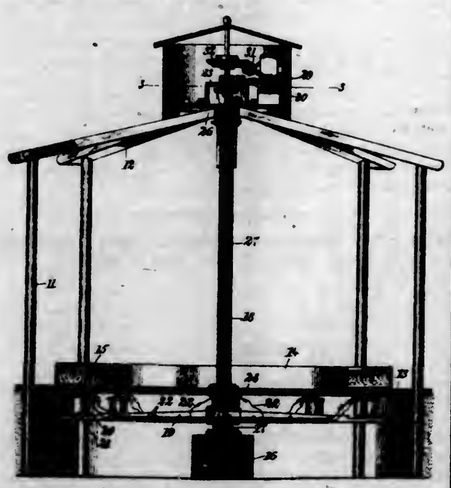
61. In a machine of the class described, means for gathering the top of a sack, in combination with mechanism for folding the hooked ends of a fastener around the closed top of a sack, an oscillating anvil device adapted to slip between said ends and said closed top, and a reciprocating hammer.

819,467. COMPOSITION FOR THE CONSTRUCTION OF BRICKS. EDWARD R. STOWELL, Portland, Ind. Filed Apr. 18, 1904. Serial No. 203,763.

Claim.—1. The herein-described brick composed of amorphous carborundum and Portland cement, substantially as described and for the purpose specified.

2. The herein-described composition of amorphous carborundum and Portland cement, substantially as described and for the purpose specified.

819,468. TOY FISH-TANK. ERNEST T. SULZER, New York, N. Y. Filed May 11, 1905. Serial No. 259,892.



Claim.—1. An amusement device comprising a platform adapted to support a tank for containing toy fish and the like, an attracting device for the fish located below the platform and concealed thereby, means for energizing said attracting device, a tube passing upwardly from the platform and adapted to conceal said means, and means for moving the attracting device.

2. A toy comprising a platform adapted to support a water-tank for containing images, means located below the platform for attracting said images, an electric circuit connected with said attracting means for energizing it, and means for concealing said circuit.

3. An amusement device comprising a tank for containing water, a series of images having magnetizable material connected therewith and adapted to move in the tank, a series of movable electromagnets located below the tank and concealed from view, an electric circuit connected with said magnets and passing upwardly from a point below the tank to a point above it, means for concealing said circuit, and means for connecting the circuit with a source of energy.

4. The combination with a tank for containing water and toy fish, of a movable support mounted adjacent to the tank, magnets on the support, a rod connected with said support, and conductors from the magnets to a point upon the rod whereby a current may be conducted to the magnets.

5. The combination with a tank for containing water and toy fish, of a support mounted adjacent to the tank, electromagnets on the support, a rod upon which said support is mounted, conductors passing from said magnets along the rod, means for concealing said rod and conductors, a commutator on the rod and brushes for conducting the current to said conductors, and means for moving the rod.

6. The combination with a tank for containing water and toy fish having an iron portion, of a support rotatably mounted below the tank, magnets on the support, a rod upon which said support is mounted, conductors from the magnets to a point upon the rod, a commutator on the rod in connection with said conductors, brushes bearing upon said commutator, and binding-posts connected with the brushes, whereby a current may be conducted to the magnets.

7. The combination with a tank for containing water and toy fish having an iron portion, of a support rotatably mounted below the tank, magnets on the support, a rod upon which said support is mounted, conductors from the magnets to a point upon the rod, a commutator on the rod in connection with said conductors, brushes bearing upon said commutator, binding-posts connected with the brushes, whereby a current may be conducted to the magnets, a gear-wheel upon the rod, a motor connected with said gear-wheel for rotating the rod, and means for concealing the rod.

819,469. CLUTCH. NELS E. SWANSON, York, Nebr. Filed Sept. 11, 1905. Serial No. 278,045.



Claim.—1. In a clutch, the combination of a shell or hollow drum adapted to be attached to one member, a web located in the drum and adapted to be attached to the other member, said web having an annular groove, an expansion-band having an annular rib fitting loosely in the groove, and means in the drum for operating the band.

2. In a clutch, the combination of a rotary drum, a rotary split band coacting therewith, a toggle lying in the plane of rotation of the band to operate the same, one link of the toggle having a tail extending toward the axis of rotation of the band, and means for operating the toggle through the medium of the tail.

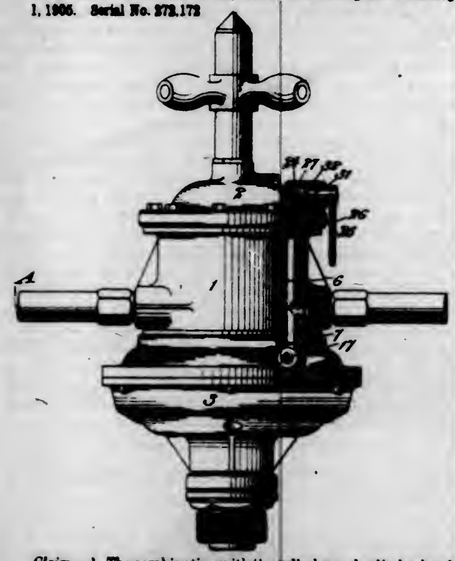
3. In a clutch, the combination of a rotary drum, a rotary split band coacting therewith, a toggle lying in the plane of rotation of the band to operate the same, one link of the toggle having a tail extending toward the axis of rotation of the band, and means for operating the toggle through the medium of the tail, including a tapering operating member movable along the axis of rotation of the band.

4. In a clutch, the combination of a rotary drum, a rotary split band coacting therewith; and having pockets in its end portions, a toggle-link engaged in one pocket and having a ball at its end, a second toggle-link engaged in the other pocket and having a socket receiving the said ball, the second link having a tail projecting to-

ward the axis of rotation of the band, and means for operating the toggle-links through the medium of the rail.

5. In a clutch, the combination of a hollow rotary drum, a hub arranged loosely therein, the drum and hub being adapted to be connected respectively with the parts to be connected by the clutch, a web attached to the hub within the drum, a split band carried by the web and loosely engaged with the periphery thereof, a toggle connected to the band to operate the same, a cone loosely mounted on the hub and rotating with the drum, and a member located outside of the drum and rotating therewith, said member being connected with the cone to permit moving the cone to operate the toggle.

819,470. **REVERSING MECHANISM FOR ROTARY MOTORS.** ALBERT H. TAYLOR, Boston, Pa., assignor to The Ingersoll-Sergeant Drill Company, New York, N. Y., a Corporation of West Virginia. Filed Aug. 1, 1905. Serial No. 272,172.



Claim.—1. The combination with the cylinder and cylinder-heads of a rotary motor and means for supplying motive fluid thereto, of a reversing-valve located in one head and a manually-operated auxiliary valve located in the other head arranged to control the admission of the motive fluid to either side of the reversing-valve to move it in the one or the other direction at pleasure.

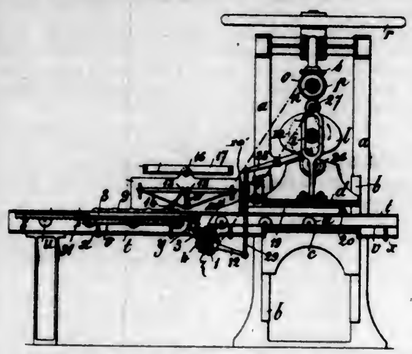
2. The combination with the cylinder and cylinder-heads of a rotary motor and means for supplying motive fluid thereto, of a reversing-valve located entirely in one of the cylinder-heads and means for controlling the admission of the motive fluid to either side of the reversing-valve to move it in the one or the other direction at pleasure.

3. A motor, means for supplying motive fluid thereto, a reversing-valve, a manually-operated auxiliary valve, a passage leading from the motive-fluid supply to the face of the auxiliary valve, passages leading from the face of the auxiliary valve to the opposite sides of the reversing-valve and a port in the auxiliary valve for opening the fluid-supply passage to the one or the other of the passages leading to the opposite sides of the reversing-valve.

4. A motor, means for supplying motive fluid thereto, a reversing-valve, a manually-operated auxiliary valve, a passage leading from the motive-fluid supply to the face of the auxiliary valve, passages leading from the face of the auxiliary valve to the opposite sides of the reversing-valve, passages leading from the face of the auxiliary valve to the external atmosphere and ports in the auxiliary valve arranged to alternately open communication from the fluid-pressure supply to one side of the reversing-valve and the other side of the reversing-valve to the external atmosphere.

5. The combination with the cylinder and cylinder-heads of a rotary motor and means for supplying motive fluid thereto, of a reversing-valve located in a horizontal direction in one cylinder-head and a manually-operated auxiliary valve located in the other cylinder-head for controlling the admission of motive fluid to either side of the reversing-valve to move it in the one or the other direction at pleasure.

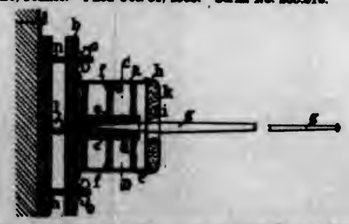
819,471. **NAILING-MACHINE.** THEOPHILE J. M. THEURET, Gallan, France. Filed Aug. 28, 1902. Serial No. 121,589.



Claim.—1. In a nailing-machine, the combination of the following elements: a movable carriage, magnet-holders mounted upon the carriage, magnets mounted upon the magnet-holders and arranged in lines in accordance with the nails which are to be applied to the panels, a distributer of nails formed with sockets therein and comprising lateral brackets and inclined sieves made of metallic wires arranged in series each leading to a socket, plates closing the sockets, means carried by the carriage for actuating said plates, a hammer, vertical guides for said hammer, means for actuating the hammer, a frame with horizontal guides for the movable carriage, rollers mounted upon the frame for supporting the carriage, means for propelling the carriage, guides mounted upon the aforesaid frame for supporting a wooden frame receiving the panels which are to be nailed, springs upon the first frame for supporting the said guides, an abutment upon the first frame for arresting the said wooden frame, and the cross-piece at the end of the movable carriage to which the magnet-holders are fixedly attached and which is cut on an inclined plane, the parts being arranged substantially as described above and for the purposes specified.

2. In a nailing-machine, the combination of the following elements: a movable carriage carrying magnets with beveled poles and placed in lines in accordance with the nails upon the panel which is to be secured thereby, a frame, a distributer of the nails formed of lateral walls articulated upon the frame and formed with sockets therein, the transverse bars, inclined sieves secured on said bars and made of metallic wires placed parallel and arranged in series each leading to a socket, covers normally closing said sockets, axles for said covers, a movable carriage, cams arranged upon the sides of the movable carriage, arms mounted upon the axles of the covers and carrying rollers which engage with said cams, teeth arranged upon the extremities of the above-named lateral walls of the distributer, connecting-rods having a tooth underneath each of said teeth of the distributer, and means for actuating said connecting-rods, a nail-sorter, a shaft disposed transversely upon the walls of the distributer, and means for causing said shaft to move, substantially as described and for the purposes specified.

819,472. **EXERCISING APPARATUS.** JEAN C. A. THOUVERET, St. Lô, France. Filed Oct. 31, 1905. Serial No. 285,316.



Claim.—1. In an exercising apparatus, a hollow body, *a*; a padded cover upon said body and leaving an opening thereinto, a movable piece within the body, springs sustaining said piece in desired position within the body, and a foil or blade carried by said piece and projecting outwardly from the body and through the opening left by the padded cover aforesaid.

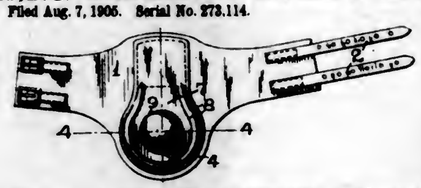
2. In an exercising apparatus, a hollow box secured upon a base, a padded cover upon said box and leaving an opening thereinto, a movable piece centrally located within the box, springs sustaining said piece in said position, and a foil or blade carried by said piece and projecting outwardly from the body and through the opening left by the padded cover aforesaid.

3. In an exercising apparatus, a box secured upon a base, a padded cover having a central opening therethrough and secured upon the front of the box, a movable piece centrally located within the box, springs between said piece and the inner walls of the box for sustaining said piece in desired position, and a foil or blade carried by said piece and projecting outwardly through the central opening in the padded cover aforesaid.

4. In an exercising apparatus, a base, a foil or blade supporting piece, springs sustaining said piece in place in relation to said base, a second base, and supports comprising a ball or pivot between the bases, and studs or bolts provided with winged nuts for adjustably engaging both bases.

5. In an exercising apparatus, a base, a foil or blade supporting piece, springs sustaining said piece in relation to said base, a second base, a pivotal piece between the bases and secured to one of them, and studs adjustably engaging both bases and provided with locking means.

819,473. **INTERFERING-BOOT.** JACOB TRUEB, St. Louis, Mo. Filed Aug. 7, 1905. Serial No. 273,114.

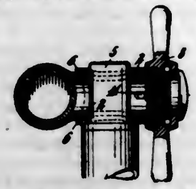


Claim.—1. An interfering-boot, constructed with a rounded protuberance, and a reinforcing-rib surrounding said protuberance; substantially as specified.

2. An interfering-boot, constructed with a strap adapted to surround the fetlock-joint of an animal's limb, a rounded protuberance carried by said strap, and a U-shaped reinforcing-rib surrounding said protuberance; substantially as specified.

3. An interfering-boot, constructed with a strap adapted to surround the fetlock-joint of an animal's limb, a rounded protuberance carried by said strap, a reinforcing-rib surrounding said protuberance, and a pad arranged on the strap above the protuberance and reinforcing-rib; substantially as specified.

819,474. **BICYCLE HANDLE-BAR.** BOHUMIL TULKA, Prague, Austria-Hungary. Filed June 21, 1905. Serial No. 266,347.



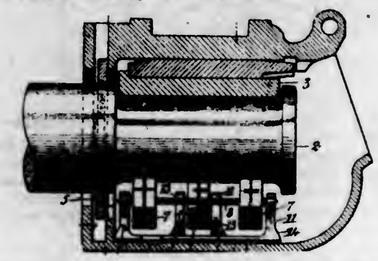
Claim.—1. In a bicycle handle-bar, the combination of the head, two members arranged telescopically and having coinciding transverse openings receiving a portion of the head, and means for adjusting said members in opposite directions, whereby to cause them to be clamped securely to the head, substantially as described.

2. In a bicycle handle-bar, the combination of the head, two members arranged telescopically and having coinciding transverse openings receiving a portion of the head, and means for adjusting said members in opposite directions longitudinally, whereby to cause them to be clamped securely to the head, substantially as described.

3. In a bicycle handle-bar, the combination of the head, two members arranged telescopically and having coinciding transverse openings receiving a portion of the head, and means, directly carried by one and bearing against the other of said members, for adjusting said members in opposite directions longitudinally, whereby to cause them to be clamped securely to said head, substantially as described.

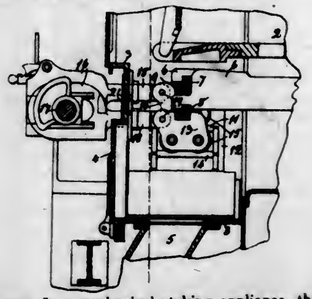
4. In a bicycle handle-bar, the combination of the head, two members arranged telescopically and having coinciding transverse openings receiving a portion of the head, and a nut, screwed onto one and bearing against the other of said members, for adjusting said members in opposite directions longitudinally, whereby to cause them to be clamped securely to said head, substantially as described.

819,475. **JOURNAL-LUBRICATOR.** CHARLES H. TURNER, New York, N. Y. Filed Apr. 6, 1905. Serial No. 254,097.



Claim.—The combination with a journal-box and a journal therein, of a base-plate removably resting on the bottom of the box, there being upwardly-extended stiffening-flanges on opposite sides of the plate, resilient fingers on the plate, the said fingers being curved inward and then outward at opposite sides of the plate, shafts having bearings in the fingers, and rollers mounted on the shafts.

819,476. **MECHANICAL STOKING APPLIANCE.** JOHN VICARS, the Elder, THOMAS VICARS, and JOHN VICARS, the Younger, Earlestown, England. Filed Nov. 26, 1902. Serial No. 133,926.



Claim.—1. In a mechanical stoking appliance, the combination with the fire-bars of a furnace, of a fire-bar support engaging the outer ends thereof, movable carriages removably connected to the ends of the fire-bar support, and reciprocating mechanism detachably secured to said carriages; substantially as described.

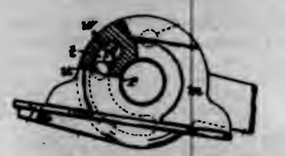
2. In combination in mechanical stoking appliances a casing inclosing the ash-pit of a furnace, a fire-bar support within the casing, a movable carriage connected to each end of the fire-bar support, detachable extension-bars passing through openings in the front of the casing approximately in line with the travel of the carriages and connected to each carriage by ends of less dimensions than the cross-section of the extension-bars, and mechanism external to the casing for reciprocating the extension-bars; substantially as described.

3. In combination in mechanical stoking appliances, a casing inclosing the ash-pit of the furnace, a fire-bar support within the casing, a movable carriage connected to each end of the fire-bar support, detachable extension-bars passing through openings in the front of the casing approximately in line with the travel of the carriages and connected to each carriage by ends of less dimensions than the cross-section of the extension-bars, packing devices round the extension-bars at the openings in the casing adapted to prevent escape of air, and mechanism external to the casing for reciprocating the extension-bars; substantially as described.

819,477. **HINGE-BRACKET FOR CHAIR-SEATS.** ALBERT WARNER, Jr., New York, N. Y. Filed Oct. 5, 1905. Serial No. 281,469.

Claim.—1. In a seat-supporting hinge-bracket for chairs having pivoted seats, the combination of a fixed member, a movable or seat-carrying member pivotally connected to said fixed member, and

a slot-and-pin arrangement for limiting the pivotal movement of the movable member in the fixed member, one of said members having an opening leading to the slot for the admission of spacers interposable between one end of the slot and the pin and whereby to vary the pivotal movement of the movable member, substantially as described.



2. In a seat-supporting hinge-bracket for chairs having pivoted seats, the combination of a fixed member, a movable seat-carrying member pivotally connected to said fixed member, a slot-and-pin arrangement for limiting the pivotal movement of the movable member in the fixed member, and a spacer or spacers loosely arranged between one end of the slot and the pin, substantially as described.

819,478. **BENT-WOOD CHAIR.** ALBERT WARNER, Jr., Hoboken, N. J. Filed Oct. 5, 1905. Serial No. 281,410.



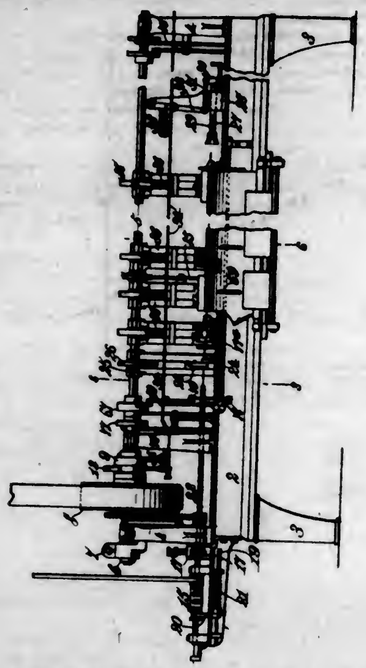
Claim.—1. A chair having several legs in combination with a brace consisting of a single piece of material formed with a substantially straight front intermediate portion and two upwardly-arched side portions, said brace having its front portion connecting and secured to the front legs of the chair in a plane below but relatively near the chair-seat and also having its arched portions bearing against the seat and each also against a back leg, and said arched portions being secured to the seat and legs where they engage the same, substantially as described.

2. A chair having several legs in combination with a brace consisting of a single piece of material formed with a substantially straight front intermediate portion and two upwardly-arched side portions, said brace having its front portion connecting and secured to the front legs of the chair in a plane below but relatively near the chair-seat and also having its arched portions bearing against the seat and each also against a back leg relatively remote from the seat, and said arched portions being secured to the seat and legs where they engage the same, substantially as described.

819,479. **WIRE-WORKING MACHINE.** OLLA H. WATKINS and CHARLES F. SCHLLHORN, Clinton, Iowa, assignors to Benjamin F. Windsor, Kenosha, Wis. Filed Dec. 22, 1904. Serial No. 238,053.

Claim.—1. A wire-working machine having mechanism for successively forming crimps in a wire blank and while said wire blank is free throughout its entire length for movement from its opposite ends toward the intermediate portion thereof.

2. A wire-working machine having mechanism for cutting off a predetermined length of wire to constitute a blank, and mechanism for successively forming crimps in said wire blank and while the same is free throughout its entire length for movement from its opposite ends toward the intermediate portion thereof.



3. A wire-working machine having mechanism for successively forming crimps in a wire blank and while said blank is free throughout its entire length for movement from its opposite ends toward the intermediate portion thereof, and mechanism for positively moving the finished product away from the crimp-forming mechanism when the operation of the latter is concluded.

4. A wire-working machine having means for feeding the wire, cutting mechanism for severing the wire into a predetermined length to constitute a blank, crimping mechanism, and mechanism actuated by the wire to throw the cutting and crimping mechanisms into action.

5. A wire-working machine having means for feeding the wire, cutting mechanism for severing the wire into a predetermined length to constitute a blank, crimping mechanism, mechanism for successively operating the cutting and crimping mechanisms, and mechanism actuated by the wire to throw the operating mechanisms for the cutting and crimping mechanisms into action.

6. A wire-working machine having a shaft, a driving member movable independently of said shaft, a clutch member for coupling the driving member to the shaft, a pair of feed-rollers for frictionally engaging the wire to normally feed the same, said feed-rollers being geared to and continuously operable by said driving member, cutting mechanism for cutting the wire into a predetermined length to form a blank, mechanism actuated by the wire for causing the clutch to couple the driving member to said shaft, and crimping mechanism for the wire operated from said shaft after the wire has been cut to form a blank.

7. A wire-working machine having a shaft, a continuously-operable power-driven member, friction wire-feeding mechanism connected with and continuously operable by the said power-driven member, and mechanism operable by the wire for putting the shaft into operative relation with the power-driven member, and cutting and crimping mechanisms to operate successively upon the wire and actuated from said shaft.

8. A wire-working machine having a shaft, a driving member movable independently of said shaft, a clutch member for coupling the driving member to the shaft, means for feeding the wire, cutting mechanism for cutting the wire into a predetermined length to form a blank, mechanism actuated by the wire for causing the clutch to couple the driving member to said shaft, and crimping mechanism for the wire operated from said shaft after the wire has been cut to form a blank.

9. A wire-working machine having crimping mechanism, means for presenting a blank to the crimping mechanism, and means into which the crimp is drawn after its formation, acting against said crimp to prevent lateral motion thereof.

10. A wire-working machine having a shaft, a continuously-operable power-driven member, friction wire-feeding means connected with and continuously operable by said power-driven member, a shaft, means actuated by the wire for throwing the shaft into working relation with the power-driven member to thereby cause the turning of the latter, wire-cutting mechanism actuated from said shaft to cut the wire into a predetermined length, and crimping and ejecting mechanisms to act in succession upon the cut wire and operable also from said shaft.

11. A wire-working machine having mechanism for forming crimps at predetermined distances in the length of a wire blank and while said wire blank is free for movement from its opposite ends toward the intermediate portion thereof, and superposed flanges between which the blank is located and serving to positively prevent lateral motion of the crimps during the action of the crimp-forming mechanism.

12. A wire-working machine having wire-feeding means, cutting mechanism arranged to cut a wire into a predetermined length to constitute a blank, crimping mechanism for forming a succession of crimps in the blank and while the latter is free for movement from its opposite ends toward the intermediate portion thereof, and mechanism arranged to be actuated by the wire for throwing the cutting and crimping mechanisms successively into action.

13. A wire-working machine having mechanism for feeding the wire, mechanism for cutting the wire into a predetermined length to constitute a blank, crimping mechanism for operating on the blank, a wire-guide to prevent vibration of the leading end of the wire, and mechanism for operating said wire-guide to release the crimped blank.

14. A wire-working machine having mechanism for feeding wire, means for cutting the wire into a predetermined length to constitute a blank, mechanism for forming a succession of crimps in the wire blank, guides through which the leading end of the wire is fed and serving to prevent vibration thereof, and mechanism for actuating the guides to release the crimped blank.

15. A wire-working machine having mechanism for successively forming crimps in a wire blank and while the same is free for movement from its opposite ends toward the intermediate portion thereof, means for positively moving the crimped product away from the crimping means, a chute to receive the crimped product, and means for moving the crimped product away from the delivery end of the chute.

16. A wire-working machine having mechanism for successively forming crimps in a wire blank, means for positively forcing the crimped product away from the crimping means, a chute to receive the crimped product, means in the chute to momentarily arrest the descent of the crimped product through the chute, mechanism for actuating the arresting means to release the crimped product whereby it can fall through the delivery end of the chute, and means for positively moving the crimped product away from the delivery end of the chute.

17. A wire-working machine having wire-feeding means, means for cutting the wire into a predetermined length to form a blank, crimping mechanism arranged to operate on the blank, mechanism for positively forcing the crimped product away from the crimping means, a chute to receive the crimped product, a table arranged to receive the crimped product from the chute, and means for advancing the crimped product along the table and away from the delivery end of said chute.

18. A wire-working machine having wire-feeding means, cutting mechanism arranged to cut the wire into a predetermined length to form a blank, a plurality of crimping mechanisms arranged to act in succession and after the operation of the cutting mechanism, a shaft having a plurality of cams arranged to operate the cutting and crimping mechanisms, and mechanism arranged for operation by the wire to actuate said shaft.

19. A wire-working machine having means for feeding the wire, a tube arranged to receive the advance end of the wire, a rod in said tube adapted for longitudinal movement by the wire, a shaft, cutting and crimping mechanisms arranged to successively operate upon the wire, cam devices for actuating said cutting and crimping mechanisms, and mechanism arranged for operation by said rod, when it is operated by the wire, to start the shaft in operation.

20. A wire-working machine having a pair of suitably-operated rolls adapted to frictionallly advance the wire through the machine, cutting mechanism including a perforated cutting member, through the perforation of which the leading end of the wire extends, the perforated cutting member being arranged to press the wire downward to cut the same and against the other cutting member to arrest the feed of the wire, and means for successively forming crimps in the cut length of wire and while said cut length of wire is free for movement from its opposite ends toward the intermediate portion thereof.

21. A wire-working machine having a die member provided with projecting lugs, and a loop-forming device arranged for movement between said legs.

22. A wire-working machine having a fixed die member, a reciprocating die member having projecting legs, the fixed die member being apertured to receive said legs, and a loop-forming device arranged for movement between said legs.

23. A wire-working machine having a fixed die member, a reciprocatory die member having projecting legs, the fixed die member being apertured to receive said legs, and a loop-forming device arranged for movement between said legs, the fixed die member being channeled to receive and guide said loop-forming device.

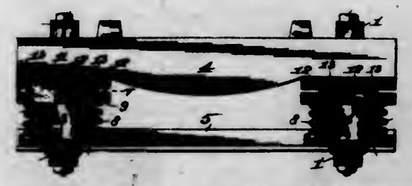
24. A wire-working machine having a fixed die member, a reciprocatory die member having projecting legs, the fixed die member being apertured to receive said legs, and a loop-forming device arranged for movement between said legs, said reciprocatory die member and loop-forming device having coöperating means to form a bend at the free and of the loop.

25. A wire-working machine having a fixed die member, a reciprocatory die member having projecting legs, the fixed die member being apertured to receive said legs, and a loop-forming device arranged for movement between said legs, said reciprocatory die member and loop-forming device having coöperating means to form a bend at the free end of the loop, and said two die members having coöperating means to form bends in the body of the wire at the loop.

26. A wire-working machine having means for feeding the wire, means for cutting the wire into a predetermined length to constitute a blank, mechanism for successively forming crimps in the blank while the same is free for movement from its opposite ends toward the intermediate portion thereof, said crimping mechanism involving fixed and reciprocatory dies, means for moving the reciprocatory dies away from their normal range of action, and means for ejecting the crimped product after said movement of the reciprocatory dies.

27. A wire-working machine having means for presenting the wire, means for cutting the wire into a predetermined length to form a blank, and means for successively forming crimps in said blank and while the blank is free throughout its entire length for movement from its opposite ends toward the intermediate portion thereof.

819,480. **CAR-TRUCK.** CHARLES T. WESTLAKE, St. Louis, Mo. Filed Dec. 7, 1905. Serial No. 290,734.



Claim.—1. A car having a rolling body-support therein adapted to elevate one side of the car-body independent of the other side of the body, substantially as and for the purpose set forth.

2. A car having a rolling body-support therein adapted to simultaneously produce a rising movement of the car-body at one of its sides and a horizontal movement of said body at its other side, substantially as set forth.

3. In a car, the combination of a bolster, and a pair of roller-supports for said bolster adapted to elevate one end of said bolster independent of its other end, substantially as set forth.

4. In a car, the combination of a bolster, and a pair of roller-supports for said bolster; one of said supports being adapted to impart a rising motion to one end of said bolster while at the same time the other of said supports provides for a horizontal motion of the other end of said bolster, substantially as set forth.

5. In a car, the combination of a bolster, two sets of bearing-plates supporting said bolster, and rollers interposed between the bearing-plates of each of said sets; said bearing-plates having run-
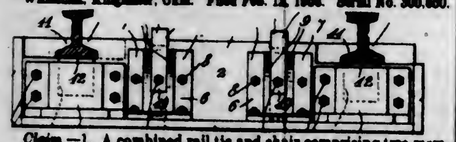
ways for said rollers that are in part inclined planes and in part horizontal planes, substantially as set forth.

6. In a car, the combination of a bolster, two sets of bearing-plates supporting said bolster, and rollers interposed between the bearing-plates of each of said steps; one of said bearing-plates in each set having a runway in part an outwardly-extending inclined plane and in part a horizontal plane and the mating bearing-plate in each set having a runway in part an inwardly-extending inclined plane and in part a horizontal plane, substantially as set forth.

7. In a car, the combination of a bolster, two sets of bearing-plates supporting said bolster, and rollers interposed between the bearing-plates of each of said sets; each of said bearing-plates having a plurality of runways each in part an inclined plane and in part a horizontal plane, substantially as set forth.

8. In a car, the combination of a bolster, two sets of bearing-plates supporting said bolster, and rollers interposed between the bearing-plates of each of said sets; one of said bearing-plates in each set having a plurality of runways each in part an outwardly-extending inclined plane, and in part a horizontal plane, and the mating bearing-plate in each set having a plurality of runways each in part an inwardly-extending inclined plane and in part a horizontal plane, substantially as set forth

819,481. METALLIC RAIL TIE AND CHAIR. BERKEL WHEELER, Kingfisher, Okla. Filed Feb. 12, 1906. Serial No. 300,650.



Claim.—1. A combined rail tie and chair comprising two members, each having a base and an upright chair portion, braces secured to the said parts and provided with spaced lugs, overhanging lugs for engaging the flanges of the rail, and keys adapted to straddle the two members and hold them in position, said keys extending between the two lugs of the braces, substantially as described.

2. A combined rail tie and chair comprising two members, one of which is provided with end cleats or stops, and the other fitted within the cleats or stops, said members each having registering recesses at their upper edges and overhanging lugs to engage the flanges of the rail, and keys fitted into said recesses and held in place by bolts, substantially as described.

3. A combined tie and rail chair comprising two members having overhanging lugs to engage the flanges of the rails, and keys for securing said two members together, cushion-boxes secured to said members, and cushions within said boxes to support the bottom of the rails, substantially as described

4. A combined rail tie and chair comprising two members, each member having a cushioning device thereon to support the rails, substantially as described.

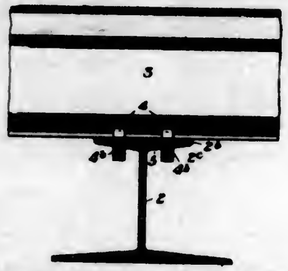
819,482. PAPER-CABINET. SETH WHEELER, Castleton, N. Y. Filed Oct. 10, 1905. Serial No. 282,158.



Claim.—1. In a paper-cabinet the combination with a receiving structure comprising a drawer-frame arranged to be secured within a wall, partition or the like, of a drawer or receptacle for receiving a package of interfolded sheets, said drawer or receptacle fitted to said receiving structure and arranged to slide into and be withdrawn from same, a front plate for said drawer or receptacle, the same comprising one wall thereof, means for removably securing said front plate to the body portion of said drawer or receptacle, and a locking device for securing the drawer and the front plate in position in the receiving structure, and for permitting the removal thereof bodily when desired.

2. In a paper-cabinet, the combination with a drawer or receptacle for receiving a package of interfolded paper sheets, and provided with a removable front plate having a delivery-opening therein, said removable front plate forming one wall of the said drawer, said receptacle being arranged to be received and removably held within an opening in a wall, partition or the like, of a locking device for securing said cabinet in position in the wall, partition or the like, and for permitting its removal bodily when desired, and locking means for securing the front plate to the main body portion of the drawer, such locking means accessible only when the drawer is withdrawn from its locked position within the wall, partition or the like.

819,488. METALLIC TIE AND RAIL-FASTENING. WILLIAM WENGHAM, Pittsburg, Pa., assignor to Carnegie Steel Company, Pittsburg, Pa., a Corporation of New Jersey. Filed Dec. 16, 1905. Serial No. 292,027.



Claim.—1. The combination with a metallic tie of I-beam form, having its rail-seating flange formed with inclined lower faces, and with apertures therethrough, of fastening means consisting of one or more clips having each a transverse portion inclined or beveled to fit the inclined face of said flange, and upwardly-extending portions to engage said apertures and bend over upon the base-flange of the rail; substantially as described.

2. The combination with a metallic tie having a rail-seating flange formed with apertures therethrough, the distance between which is less than the width of the rail-base, of a removable fastening-clip having arms adapted to engage the said aperture and to be bent over into engagement with the rail-base, one of said arms having a step or shoulder; substantially as described.

3. A rail-fastening, consisting of a U-shaped clip having the end portions of its arms beveled; substantially as described.

4. A rail-fastening, consisting of a U-shaped clip, having the upper surface of the transverse portion beveled or inclined; substantially as described.

5. A rail-fastening, consisting of a U-shaped clip having a rail-engaging arm provided on the inner side with a step or shoulder; substantially as described.

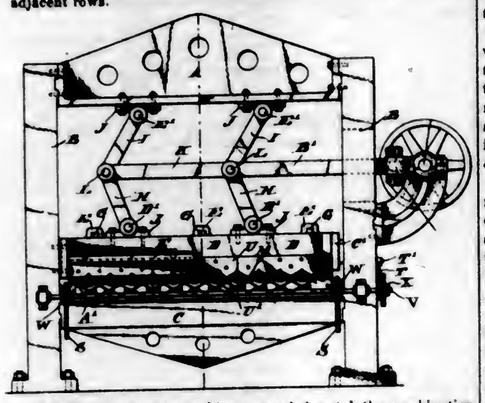
6. A rail-fastening, consisting of a U-shaped clip having one of its arms provided on the inner side with a step or shoulder, and the other arm having an approximately straight vertical face; substantially as described.

7. The combination with a metallic tie of I-beam form having a rail-seating flange whose under surface is inclined to the vertical plane of the web, of a rail-fastening clip having arms engaging both sides of the rail-base, and a portion connecting said arms and having its upper surface inclined to the vertical plane of the web portion of the tie at substantially the same angle as the under surface of the flange; substantially as described.

819,484. MACHINE FOR EXPANDING METAL. HERBERT N. WHITE, Youngstown, Ohio, assignor to The General Fireproofing Company, Youngstown, Ohio, a Corporation of Ohio. Filed June 24, 1905. Serial No. 266,764.

Claim.—1. In a machine for making expanded metal, the combination of means for suitably supporting a sheet of metal corrugated to expand with the opening or expansion with the corrugated edge projecting beyond the support, and means for slitting and expanding or opening the metal, one line of slits after another along the corrugated edge presented at the edge of the support, thereby straightening the corrugations, leaving uncovered joints or connections between the rows of strands so formed.

2. In a machine for making expanded metal, the combination of means for suitably supporting a sheet of metal corrugated to shorten it and afford provision for the expansion or opening without substantially stretching with the corrugated edge projecting beyond the support, means for slitting the sheet along the corrugated edge transversely to the corrugations and pressing and forming the strands away from the general plane of the corrugated sheet thereby straightening the corrugations to form a row of meshes or part meshes, and means for successively slitting and forming other rows in like manner, leaving uncut connections between the strands of adjacent rows.



3. In a machine for making expanded metal, the combination of means for suitably supporting a sheet of metal, corrugated in a manner to shorten it in the direction of the slits to be formed with the corrugated edge projecting beyond the support, means for simultaneously slitting and bending portions of the sheet along the corrugated edge in such manner as to substantially straighten out the corrugations in the strands so formed, while leaving such strands connected to the body of the sheet between such slits, and means for simultaneously slitting and bending the sheet in like manner in places alternate to the first-mentioned portions, thus producing the finished expanded sheet metal of substantially the same length as the corrugated or shortened sheet.

4. In a machine for making expanded metal, the combination with means for suitably supporting a corrugated sheet in position to be expanded with the corrugated edge projecting beyond the support, and means for simultaneously slitting and opening portions of the sheet along the corrugated edge presented beyond the support thereby straightening the corrugations to form meshes or part meshes.

5. In a machine for making expanded metal, the combination with means for suitably supporting a sheet of metal corrugated or crimped to shorten the sheet in the direction of the slits to be formed with the corrugated edge presented beyond the support, thereby straightening the corrugations to form an open or reticulated expanded structure without substantial stretching of the metal itself.

6. In a machine for expanding sheet metal, the combination of means for supporting a corrugated sheet of metal with the corrugated edge continuously presented beyond the support, and means for slitting and expanding the sheet in a direction substantially at right angles to the general plane of the sheet and transversely to the corrugations along the corrugated edge continuously presented to the slitting and expanding means, thereby straightening out the corrugations.

7. In a machine for expanding sheet metal, the combination of means for supporting a corrugated sheet of metal with the corrugated edge continually presented beyond the support, and means for slitting and expanding the sheet transversely to the corrugations along the corrugated edge continually presented beyond the support to the action of the slitting and expanding means, thereby straightening out the corrugations.

8. In a machine for expanding sheet metal, the combination of means for supporting a corrugated sheet in suitable position to be cut and expanded with the corrugated edge projecting beyond the support, a reciprocating cutter arranged to slit and expand the projecting corrugated edge of the sheet transversely to the corrugations thereby straightening out the corrugations, means for feeding the sheet between strokes and means for shifting the cutter transversely after each stroke.

9. In a machine for expanding sheet metal, the combination of means for suitably supporting a sheet of corrugated metal in position to be cut and expanded with the corrugated edge projecting beyond the support, a reciprocating cutter adapted to cut, expand the sheet along the corrugated edge and straighten the corrugations, means for shifting said cutter transversely to the direction of reciprocation, and a clamp for holding the sheet and preventing feeding.

10. In a machine for expanding sheet metal, the combination of a corrugated die for supporting a corrugated sheet of metal, with the corrugated edge projecting beyond the die and a toothed cutter adapted to cut and expand the sheet of metal transversely to the corrugations along the said projecting edge and thereby straighten out the corrugations.

11. In a machine for expanding sheet metal, the combination with the corrugated die or cutter for supporting the sheet in position to be cut and expanded with the corrugated edge projecting beyond the edge of the die, and a toothed cutter having a reciprocating movement in two directions at an angle to each other and adapted to cut and expand the sheet of metal along the projecting corrugated edge in a direction transverse to the corrugations and thereby straighten out the corrugations.

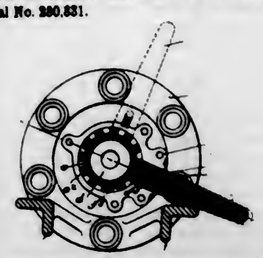
12. In a machine for expanding metal, the combination of means for supporting a corrugated sheet of metal in position to be cut and expanded with the corrugated edge projecting beyond the support, and means for cutting and expanding said sheet in a direction transverse to the corrugations along the corrugated edge thereby straightening out the corrugations without shortening the sheet and without substantially stretching the metal.

13. In a machine for expanding metal, the combination of a corrugated die for supporting a sheet of corrugated metal in position to be cut and expanded with the corrugated edge projecting beyond the die, and a toothed cutter adapted to cooperate with the corrugated die and constructed to cut and expand the metal along the corrugated edge without shortening the sheet and without substantially stretching the metal.

14. In a machine for expanding metal, means for cutting and expanding a corrugated sheet of metal along the corrugated edge transversely to the plane of the sheet and thereby straightening the corrugations without shortening the sheet and without substantially stretching the metal.

15. In a machine for expanding metal, the combination of cooperating dies or cutters constructed to cut and expand a corrugated sheet of metal along the corrugated edge transversely to the plane of the sheet thereby straightening out the corrugations without shortening the sheet and without substantially stretching the metal.

819,485. STUFFING-BOX ADJUSTER. GEORGE E. WHITNEY, Boston, Mass., assignor to Whitney Motor Wagon Company, Kittery, Me., a Corporation of Maine. Filed Oct. 3, 1903. Renewed Sept. 30, 1905. Serial No. 280,831.



Claim.—1. The combination of a stuffing-box, a gland, a threaded adjusting member therefor, a radially-extended operating member to cause movement of said adjusting member and a holder therefor.

2. The combination of a stuffing-box, a gland, a threaded adjusting member therefor, an operating-lever connected with said adjusting member for moving the same by an angular movement thereof about said stuffing-box and a holder for said lever.

3. The combination of a stuffing-box, an adjusting member therefor, and operating means for said adjusting member adapted to be moved coaxially therewith either in or out of engagement with said adjusting member.

4. The combination of a stuffing-box, an adjusting member therefor, operating means capable of independent movement thereof for effecting a movement of said adjusting member, and adapted within its path of movement to engage said adjusting member in a plurality of positions and holding means for said operating means.

5. The combination of a stuffing-box, an adjusting member, operating means for moving said adjusting member adapted for engagement with and disengagement from said operating member and capable of independent though guided movement during periods of disengagement.

6. The combination of a stuffing-box, an adjusting member

swingingly mounted, operating means normally in engagement with said adjusting member for moving the same, and means to release said operating means and engage the adjusting member in a different position.

7. The combination of a stuffing-box, an adjusting member, a laterally-extended swingingly-mounted operating-lever in engagement with said adjusting member for moving the same, and means to release said operating-lever and engage the adjusting member in a different position.

8. The combination of a stuffing-box, an adjusting member therefor, a laterally-extended operating-lever for moving the same, means for engaging and disengaging the same from said adjusting member and a holder for said lever.

9. The combination of a stuffing-box, an adjusting member therefor, an operating member having an operating movement for moving the same, coöperating locking parts upon the operating member and adjusting member, and means to engage the adjusting member by the operating member in a plurality of positions said operating member when unlocked having a movement similar to its operating movement.

10. The combination of a stuffing-box, a rotary adjusting member therefor provided with a plurality of peripheral locking-surfaces, an operating-lever capable of independent rotary movement about said adjusting member and having coöperating locking-surfaces adapted for engagement with the several locking-surfaces on said adjusting member and means for engaging and disengaging the coöperating locking parts.

11. The combination of a stuffing-box, a rotary adjusting member therefor provided with a plurality of peripheral teeth, an operating member capable of independent rotary movement about said adjusting member and having a latch adapted for engagement with several teeth upon said adjusting member, and means for causing the engagement and disengagement of the latch with the said teeth.

12. A stuffing-box comprising an adjusting member, a swingingly-mounted radial operating member, and coöperating locking devices upon said operating member and adjusting member to permit the same to be engaged and disengaged.

13. A stuffing-box comprising an adjusting member, a swingingly-mounted radial operating member, coöperating locking devices upon said operating member and adjusting member to permit the same to be engaged and disengaged, and holding means to hold said operating member in operative relation to said adjusting member.

14. An adjustable stuffing-box having an adjusting member, an operating member to move the same but capable of movement independently thereof, and means for holding said operating member at all times in operative relation to said adjusting member.

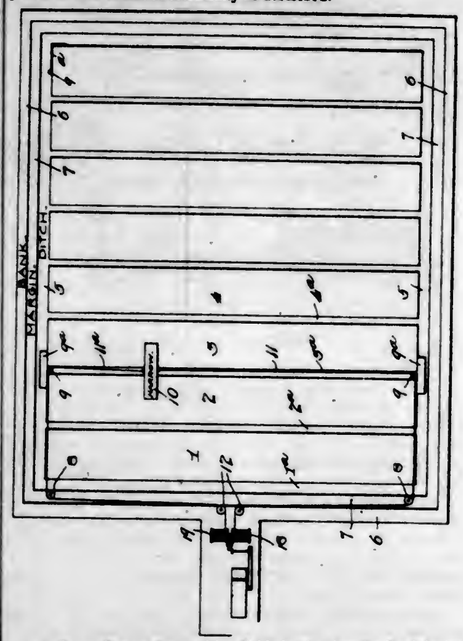
15. An adjustable stuffing-box having an adjusting member, an operating member to move the same but capable of movement independently thereof, means for holding said operating member at all times in operative relation to said adjusting member, and means for releasing said operating member from said adjusting member by radial movement of the former.

819,486. AGRICULTURAL APPLIANCE. MARINUS WILLETT, Brookgreen, S. C. Filed Aug. 7, 1905. Serial No. 273,146.

Claim.—1. The combination with a pair of fixed pulleys and a pair of shiftable pulleys with means for anchoring the latter along the field, of an agricultural implement interposed between said shiftable pulleys, operating drums and gearing therebetween to normally rotate one of said drums in a direction the reverse of the other, cables fixedly connected at one of their ends to said agricultural implement and at their other ends so associated with said drums as to be reversely wound and unwound, and means operative to throw said drums out of gear and allow said cables to simultaneously unwind therefrom, substantially as described.

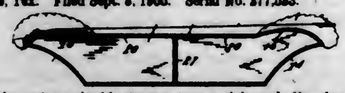
2. The combination with a pair of fixed pulleys and a pair of shiftable pulleys with means for anchoring the latter along the field, of an agricultural implement interposed between said shiftable pulleys, independently-mounted drums, cables connected at one end to said implement and at their other ends so associated with said drums as to be reversely wound thereon and unwound therefrom when said drums are in couple, power mechanism, and means for throwing said power mechanism and drums in and out of couple thereby permitting said cables to simultaneously unwind therefrom when said drums are out of couple, substantially as described.

3. In appliances for working fields having longitudinal drains, the combination with shiftable floats operating in said drains, pulleys mounted on said floats, an agricultural implement operative between said pulleys, fixed pulleys at one end of the field at opposite sides thereof, operating-drums, and cables connected at one of their ends to said agricultural implement, reeving through said pulleys and at their other ends so associated with said drums as to be reversely wound and unwound therefrom, and means for applying power to said drums substantially as described.



4. In appliances for working fields having longitudinal drains, the combination with shiftable floats operating in said drains, pulleys mounted on said floats, an agricultural implement operative between said pulleys, fixed pulleys at one end of the field at opposite sides thereof, operating-drums, and cables connected at one of their ends to said agricultural implement, reeving through said pulleys and at their other ends so associated with said drums as to be reversely wound and unwound therefrom, power mechanism, and means for throwing said power mechanism and drums in and out of couple to permit said drums to simultaneously unwind and pay off said cables to secure a slack for shifting the position of said floats, substantially as described.

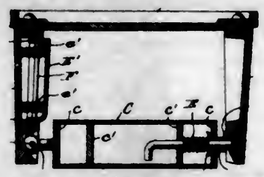
819,487. MUSICAL INSTRUMENT. AMANDA A. WILLIAMS, Florence, Tex. Filed Sept. 8, 1905. Serial No. 277,533.



Claim.—A musical instrument comprising a hollow body having its end portions curved upwardly in arc shape above the central portion, the sides of said end portion extending above the top of the body, a tailpiece lying partly between the sides of an end portion and having terminal lugs engaging against the edges of the sides, said edge of the sides having means for holding the lugs in place thereagainst a keyboard secured between the sides at the opposite end of the body and provided with tuning-keys, and strings connected between the tailpiece and the tuning-keys.

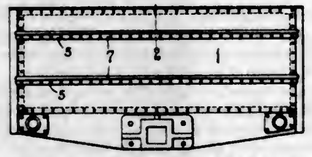
819,488. TOILET-PAPER FIXTURE. HARRY J. WILLIAMS, New Haven, Conn., assignor to United States Envelope Company, Springfield, Mass., a Corporation of Maine. Filed Jan. 27, 1906. Serial No. 298,295.

Claim.—1. In a toilet-paper fixture, the combination with the base and forwardly-extending supporting-arms rigid therewith of the core provided with roll-supporting surfaces and permanently hinged at one end in the end of one of the said arms and a lock coöperating with the opposite arm for holding the core against movement on its hinge, and located in position to be concealed by the roll of paper held by the core; substantially as described.



2. In a toilet-paper fixture, the combination with the base and forwardly-extending supporting-arms rigid therewith, of the core having circular bearing-surfaces for the roll, axial extensions on the core, one of which is movable longitudinally to form a lock adapted to engage a recess in one arm, and a permanent hinge connection between the other axial extension and the end of one of the supporting-arms; substantially as described.

819,489. END BRACING FOR CARS. HERBERT W. WOLFF, St. Louis, Mo., assignor to American Car & Foundry Company, St. Louis, Mo., a Corporation of New Jersey. Filed Dec. 11, 1905. Serial No. 291,257.



Claim.—1. An end brace for cars consisting of a horizontal portion of varying width with a leg or flange at its inner edge for attachment to the end wall of a car; substantially as described.

2. An end brace for cars consisting of a horizontal portion of varying width with a leg or flange at its inner edge for attachment to the end wall of a car, said flange extending around the corners and attached to the side walls of the car; substantially as described.

3. An end brace for cars consisting of a horizontal portion with a leg or flange at its inner edge for attachment to the end wall of a car, and a flange or leg at the outer edge of said horizontal portion; substantially as described.

4. An end brace for cars consisting of a horizontal portion with a leg or flange at its inner edge for attachment to the end wall of a car, and a flange or leg at the outer edge of said horizontal portion, said flanges extending around the corners of the car and attached to the side walls thereof; substantially as described.

5. An end brace for cars comprising a device of truss form extending transversely outside the end of the car and connected to the end wall; substantially as described.

6. An end brace for cars comprising a device of truss form extending transversely outside the end of the car and connected to the side walls thereof; substantially as described.

7. An end brace for cars consisting of a horizontal portion whose legs or flanges are of unequal lengths; substantially as described.

8. A transversely-extending end brace for cars comprising an approximately channel-shaped body having a horizontal portion widest at the center and tapering thence toward the sides of the car; substantially as described.

9. An end brace for cars having a horizontal portion tapering from the center toward the ends, the legs or flanges thereof being of unequal lengths; substantially as described.

10. An end brace for cars having a horizontal portion provided with legs or flanges separated at the center and lying directly upon each other at the ends of the brace; substantially as described.

11. An end brace for cars which is substantially channel-shaped, the web of the channel being horizontally disposed, and being widest at the center, the legs of said channel lying directly upon each other at the ends of the brace and extending around the corners of the car; substantially as described.

12. An end brace for cars, the same comprising a channel-shaped body whose web portion is widest in the center and tapers toward the ends of the brace, and the legs of the channel being of unequal lengths and lying directly upon each other at the ends of the brace; substantially as described.

13. A blank from which car-braces may be formed, said blank having a cut or shear in its end dividing the end portion of the blank into two portions whereby said end portions may be folded upon each other and bent at an angle to the body portion of the blank; substantially as described.

14. An end brace for cars comprising a body portion having a horizontal web and depending flanges of unequal lengths, one of said flanges being shallower at its middle portion than at its ends; substantially as described.

15. An end brace for cars which is substantially channel-shaped, the web of said channel being widest at its middle portion and tapering thence toward the ends of the brace so as to throw the legs of the channel inclose proximity to each other, the material between the legs beyond the ends of the webs being cut away to facilitate the bending of the legs; substantially as described.

16. An end brace for cars comprising a substantially trough-shaped body, the ends of which are adapted to be connected to the opposite sides of the car, the web portion of said body being horizontally disposed; substantially as described.

17. An end brace for cars comprising a channel-shaped body extending transversely of the end of the car and having its ends connected to the opposite sides of the car, the web portion of said body being horizontally disposed; substantially as described.

18. An end brace for cars comprising a substantially channel-shaped member extending transversely of the end of a car and having its opposite ends extending at an angle to the body portion thereof and connected to the sides of the car, the web portion of said body lying in a horizontal plane; substantially as described.

819,490. NON-REFILLABLE BOTTLE. EUGENIO K. WOOD, San Francisco, Cal. Filed June 27, 1905. Serial No. 267,206.



Claim.—1. The herein-described device for preventing the refilling of bottles consisting of a lower cross-plate having an open center, an upwardly-projecting flange surrounding the center, and a lip projecting inwardly beyond the said flange, a main tube fitting at its lower end within the flange of the cross-plate and bearing against the lip thereof, said main tube being closed at its outer end, provided adjacent thereto with vent-openings, below the said vent-openings with a shoulder on its outer side, and below said shoulder with openings for the passage of liquid from the bottle, an upper cross-plate having a central opening to fit over the main tube and bearing against the shoulder thereon, and provided with a depending tube surrounding the main tube and spaced apart therefrom, the said cross-plate provided outside the said depending tube with openings for the passage of liquid, a cover-slide fitting over the main tube and having a tubular portion operating between the same and the depending tube of the cross-plate and also provided with a valve-plate to seat against the said depending plate of the cross-plate, and a valve operating within the main tube and movable therein in both directions to points beyond the openings in said tube for the passage of liquid, substantially as set forth.

2. The herein-described device for preventing the refilling of bottles consisting of an upper cross-plate, a lower cross-plate, a main tube extending between the said plates and vented at its outer end and provided between the said cross-plates with an opening for the passage of liquid, a valve operating in the main tube to points on opposite sides of the opening for the passage of liquid, and a slide fitting over the main tube and movable thereon, substantially as set forth.

3. The combination in a non-refillable bottle of a main tube, the lower cross-plate, the upper cross-plate having a depending tubular apron, outlet-openings being provided in the main tube within the said apron, a cover-slide operating on the main tube and having a valve seating against the inner end of the depending tube of the cross-plate, and a valve operating in the main tube, substantially as set forth.

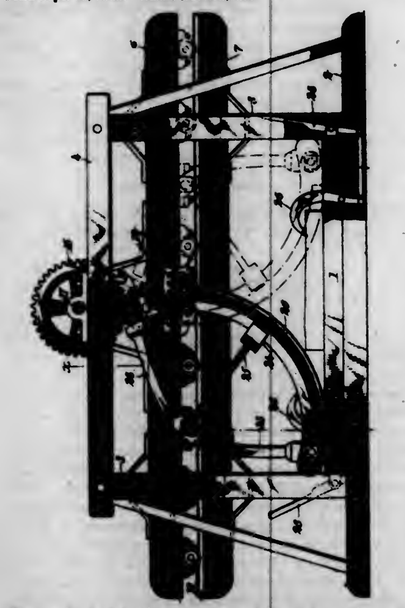
4. The combination in a non-refillable bottle with the main tube having an opening for the passage of liquid, a lower cross-plate and an outer cross-plate having openings for the passage of liquid, of a cover-slide operating along the main tube and adapted to permit the passage of liquid from the main tube to the openings in the outer cross-plate and to prevent a reverse flow of liquid, and a valve oper-

ating in the main tube and a seat for said valve, substantially as described.

5. The combination in a non-refillable bottle of a lower cross-plate, an outer cross-plate having an opening for a main tube, a main tube fitting in said opening and seating against the inner cross-plate, a valve in the main tube, and a cover-slide movable along the main tube, substantially as set forth.

6. The combination in a non-refillable bottle with a main tube having an opening for passage of liquid, a lower cross-plate and an upper cross-plate having openings for the passage of liquid and a depending tube overlying the outlet-opening in the main tube and spaced from said tube, and a cover-slide movable along the main tube and having a valve portion seating against the depending tube of the cross-plate, substantially as described.

819,491. CROSS-TIE CUTTER. RICHARD S. WRIGHT, Nelson, Ark. Filed Sept. 16, 1905. Serial No. 278,730.



Claim.—1. A cross-tie cutter comprising a frame, a carriage movable horizontally along the frame, racks on said carriage, gear-wheels coacting with said racks, and two pairs of segmental blades mounted on the carriage at opposite sides, the blades of each pair being spaced apart, the blades of one pair being closer together than the blades of the other pair.

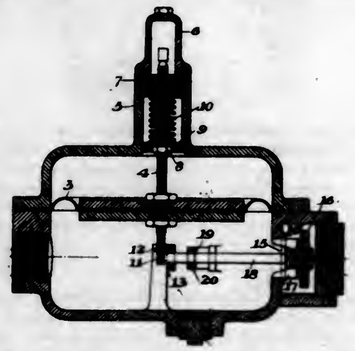
2. A cross-tie cutter comprising a frame, upper and lower bars extended longitudinally through the frame, tracks on the under sides of the upper bars, tracks on the upper sides of the lower bars, a carriage, rollers on said carriage for engaging with the upper and lower tracks, a gear mechanism for causing back and forth movements of the carriage, and two pairs of segmental blades mounted on the carriage at opposite sides, the blades of one pair being closer together than the blades of the opposite pair.

819,492. GAS-CONTROLLER. THOMAS B. WYLIE, Pittsburg, Pa. Filed May 23, 1905. Serial No. 261,905.

Claim.—1. In a controller for gas or fluid under pressure, an inlet-valve, a diaphragm, a stop for the valve, and connections between the diaphragm and stop arranged to move the stop out of the path of the valve-rod on both an upper and lower limit of pressure; substantially as described.

2. In a controller for fluid under pressure, an inlet-valve, means for exerting a closing pressure upon the valve, a latch for holding the valve open against the pressure, a diaphragm, and connections between the diaphragm and latch arranged to trip the latch both at a higher and a lower limit of pressure; substantially as described.

3. In a controller, a casing containing a diaphragm, an inlet-valve having a stem, a diaphragm-rod having a stop for the stem, and a spring arranged to act upon the rod against the pressure of the diaphragm, said diaphragm and spring being arranged under variations in pressure to move the rod out of the path of the valve-stem both at a higher and at a lower limit of pressure; substantially as described.

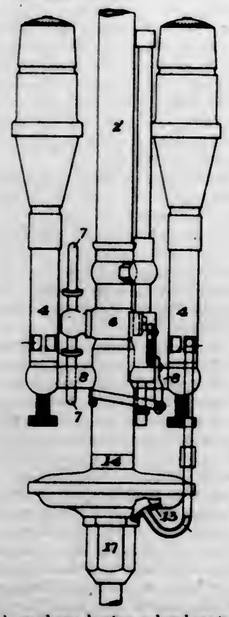


4. In a controller, a casing having a diaphragm, an inlet-valve on one side of the diaphragm and having a spring-pressed stem, a diaphragm-rod, a spring arranged to exert a pressure upon the rod when moved beyond a certain limit, and a stop device on the rod in the path of the valve-stem; substantially as described.

5. In a gas regulator or controller, a diaphragm having a rod with a stop portion, a spring, a washer normally pressed by the spring against a seat or shoulder, an abutment on the diaphragm-stem arranged to compress the spring when the stem is moved beyond the predetermined distance, and a valve-stem controlled by the rod and actuating an inlet-valve; substantially as described.

6. In a controller for fluids under pressure, a diaphragm having a rod, a stop on the rod, and a valve-stem engaged by said stop, the stop being arranged to release the rod after a predetermined movement in either direction; substantially as described.

819,493. GAS-LAMP. THOMAS B. WYLIE, Pittsburg, Pa. Filed May 23, 1905. Serial No. 261,906.



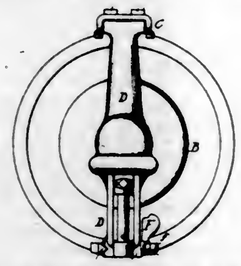
Claim.—1. A gas-lamp having a hand-controlled cock in its supply-pipe, a valve in the supply-pipe between the said cock and the burners, a diaphragm-chamber below the said valve, a diaphragm therein, a rod connecting the diaphragm with the intermediate valve, a spring arranged to act upon the valve in opposition to the gas-pressure, and means for preventing the conduction of heat to the diaphragm-chamber; substantially as described.

2. A gas-lamp having a regulating-valve in its supply-pipe, a diaphragm-chamber and diaphragm therein, a connection between the said valve and the diaphragm, and a leakage-pipe extending from the diaphragm-chamber to one of the lamp-burner connections, whereby any gas leaking by the diaphragm is delivered to the lamp-burner; substantially as described.

3. A gas-lamp having a diaphragm-chamber connected to a controlled valve, and a leakage-pipe extending from said diaphragm-chamber to one of the mixers; substantially as described.

4. A gas-lamp having a hand-controlled cock, burners surrounding the supply-pipe, a valve in the supply-pipe below the hand-cock and between it and the branch pipes, a diaphragm-chamber secured to the lower end of the supply-pipe, a rod connecting the diaphragm to the intermediate valve, and a spring connected with the diaphragm; substantially as described.

819,494. CLAMP FOR THE CROSS-BARS OF ICE-CREAM FREEZERS. CHRISTIAN AICHELE, Philadelphia, Pa., assignor to North Brothers Manufacturing Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed June 25, 1904. Serial No. 214,123.



Claim.—1. The combination of a tub, two projections on one side thereof, one of said projections being undercut, a cross-bar having one side arranged to fit the undercut portion of said projection, and means arranged to enter the space between the cross-bar and the other projection and to force said cross-bar against said undercut projection, substantially as described.

2. The combination of a tub, two projections on one side thereof, one of said projections being undercut, a cross-bar having one side arranged to fit the undercut portion of said projection, a wedge-shaped lever carried by the other projection and arranged to be forced between the said projection and the bar, substantially as described.

3. The combination of a tub, a plate secured to the tub at its edge, two projections on the plate, a cross-bar arranged to rest between the said projections, a lever pivoted to one projection and arranged to be forced between said projection and the bar, substantially as described.

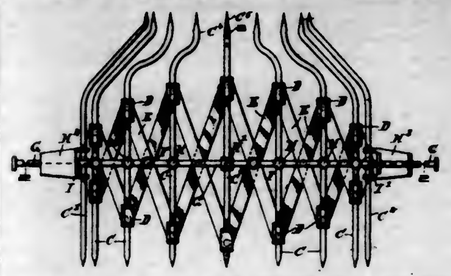
4. The combination of a tub, a plate secured thereto, said plate having two projections, one of said projections being undercut, a cross-bar having one side arranged to fit the undercut portion of said projection, and means for forcing the cross-bar against said undercut projection, substantially as described.

5. The combination of a tub, a plate secured thereto, said plate having an undercut and V-shaped projection, a cross-bar having one side arranged to fit said projection, and means for forcing the bar against said projection, substantially as described.

6. The combination of a tub, a plate thereon, two projections, one of said projections being undercut, a lever pivoted to the other projection, a cross-bar arranged to rest between the two projections and to be forced against the undercut projection by the lever, substantially as described.

7. The combination of a tub, a plate secured thereto and having two projections, one projection being V-shaped and undercut, a lever pivoted to the other projection and having a beveled portion, a cross-bar arranged to rest between the two projections and having one side arranged to fit the undercut and V-shaped projections, and having a beveled portion on the opposite side against which the lever acts, substantially as described.

819,495. DRAFTING INSTRUMENT. ALBERT A. ALLEN, Ortonville, Minn. Original application filed July 7, 1904, Serial No. 215,662. Divided and this application filed Apr. 8, 1905. Serial No. 254,431.

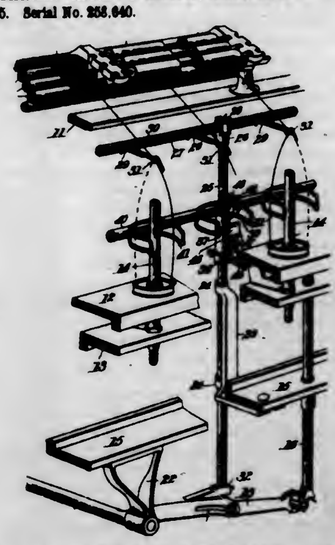


Claim.—1. An instrument for obtaining curved coördinates, comprising a diameter-divider having spacing-bars, a cross-bar mounted to slide in bearings on the said spacing-bars, and connected links slidably connected with the said spacing-bars and the said cross-bar.

2. An instrument for obtaining curved coördinates, comprising a diameter-divider having spacing-bars, a cross-bar mounted to slide in bearings on the said spacing-bars, connected links slidably connected with the said spacing-bars and the said cross-bar, and a fastening device for holding the parts against movement.

3. An instrument for obtaining curved coördinates, comprising a diameter-divider having spacing-bars arranged parallel and having reducing extensions at one end, a cross-bar mounted to slide in bearings on the said spacing-bars, and connected links slidably connected with the said spacing-bars and the said cross-bar.

819,496. SEPARATOR ATTACHMENT FOR RING-SPINNING MACHINES. ANDREW C. ALLCOCK, Henderson, N. C. Filed May 3, 1905. Serial No. 258,640.



Claim.—1. As a new article of manufacture, a separator for spinning-frames, consisting of a single piece of wire having parallel upper and lower curved portions and having attaching-shanks substantially in the same plane with one of said curved portions, the separator being formed with a space opposite the attaching-shanks having sufficient width to pass a spindle and a bobbin thereon.

2. As a new article of manufacture, a separator for spinning-frames, consisting of a single piece of wire bent to form a partial circle, the wire at each end of said partial circle being bent back and curved to partially correspond with said partial circle and in a plane parallel therewith, the ends of the wire forming attaching-shanks substantially in the same plane as the said backwardly bent and curved portions, the separator being formed with a space opposite

the attaching-shanks having sufficient width to pass a spindle and a bobbin thereon.

3. A spinning-machine having a rotatable separator-rod, wire separators carried thereby, each separator extending both sides of a spindle and formed with a space opposite its connection with said rod, said space having a sufficient width to pass a spindle and a bobbin thereon, and stop devices for limiting the rocking movements of said rod.

4. A spinning-machine having thread-eyes and lifting-rods therefor, means for actuating said rods a separator-rod, means for supporting said separater-rod, the supporting means being movably supported on said lifting-rods and separators carried by said seperater-rod.

5. A spinning-machine having thread-eyes and lifting-rods therefor, means for actuating said rods, a separator-rod, means for supporting said separator-rod, the supporting means being movably supported on said lifting-rods, the separator-rod being rotatably mounted in said supporting means, stop devices for limiting the rocking movements of the separator-rod, and separators carried by said separator-rod.

6. In a spinning-machine, the combination with a separator-rod having curved wire separators adapted to partially embrace the spindles, of supporting means for said rod, the rod being rotatably mounted in said supporting means, and stop devices for limiting the rocking movements of said rod.

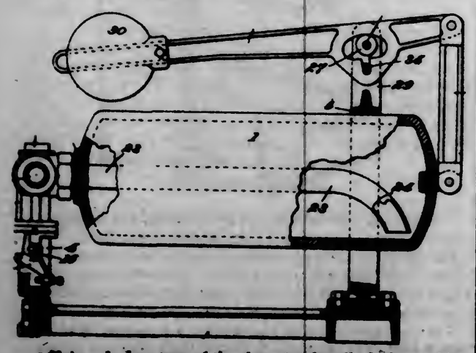
7. In a spinning-machine, the combination with thread-eyes and lifting-rods therefor, of collars adjustably secured to said lifting-rods, brackets having sleeve portions slidably mounted on the lifting-rods and having slotted heads, a separator-rod extending through said heads, a cam-stop mounted in the slot of one of said heads and secured to the separator-rod and having shoulders adapted to alternately engage the bottom of said slot, and separators carried by the separator-rod

8. A spinning-machine attachment comprising in its construction a plurality of rods adapted to reciprocate vertically, means for reciprocating said rods, a thread-eye rod supported by said vertically-movable rods, sleeves mounted on said vertically-movable rods, means carried by said rods for engaging the lower ends of the sleeves, bearings carried by said sleeves, a separator-rod mounted in said bearings and having separators, and stop devices for limiting movement of the separator-rod in said bearings.

9. A spinning-machine attachment comprising in its construction a separator-rod and separators, supports for said separator-rod, means for permitting said supports to be given vertical movements, and means carried by the ring-rail for engaging said supports to lift them.

10. In a spinning-machine, the combination with vertical rods, of brackets slidingly supported on said rods, a rod having separators and supported by said brackets, and adjustable brackets attached to the ring-rail and adapted to engage the slidably-supported brackets to lift the separators.

819,497. **STEAM-TRAP.** EDWARD V. ANDERSON, Pittsburg, Pa., assignor of two-thirds to Charles E. Golden, Crafton, Pa. Filed June 8, 1905. Serial No. 264,515.



Claim.—1. In a trap of the character described, the combination with a fluid-receiver, of a valve-casing, valve mechanism in said casing, a supply-trunnion, a waste-trunnion, said receiver connected with the valve-casing, and said casing supported on the trunnions.

2. In a trap of the character described, the combination, with a tilting receiver, of a valve mechanism, a counterbalancing-lever having an elliptically-formed fulcrum-bearing and a vertically-disposed slot, a fulcrum-roller, having fixed bearings, said lever-bearing mounted on the roller-fulcrum, and a pin located in the said slot.

3. In a trap of the character described the combination with a receiver, of a valve-casing, a valve mechanism in the casing, trunnions on which the valve-casing is mounted and arranged to turn, one end of the receiver attached to the valve-casing and adapted to move therewith, a fluid-discharge pipe in the receiver and in communication with the valve mechanism, and a lever provided with a counterweight connected to one end of the receiver.

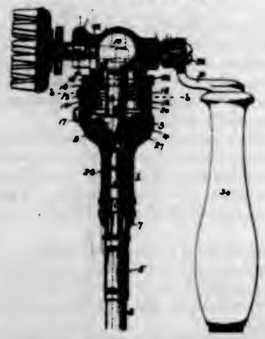
4. In a trap of the character described the combination with a tilting receiver having a fluid-discharge pipe, of a valve mechanism comprising a main valve, an auxiliary valve, a piston, means for moving the auxiliary valve to admit fluid to one side of the piston for the purpose of moving the piston to open the main valve as the receiver tilts.

5. In a trap of the character described, the combination with supporting-trunnions, a valve mechanism having its casing mounted on the trunnions, a tilting receiver attached to the valve-casing and arranged to move therewith, a main valve controlling the fluid-discharge from the receiver, a piston, and an auxiliary valve actuated by tilting the receiver whereby fluid is admitted to one side of the piston for the purpose of moving the main valve.

6. In a trap of the character described the combination with supporting-trunnions, a valve mechanism having its casing mounted on the trunnions, a tilting receiver attached at one end to the casing, a counterbalancing-lever connected with the opposite end of the receiver, said lever having an elliptically-formed fulcrum-bearing and a vertically-disposed slot, a fulcrum-roller having fixed bearings, said lever-bearing mounted on the roller-fulcrum, and a pin located in the said slot.

7. In a trap of the character described, the combination with a fluid-receiver of a valve mechanism comprising a main valve and an auxiliary valve, a counterbalancing-lever having an elliptically-formed bearing, a roller-fulcrum, said lever-bearing mounted on the roller and arranged to be shifted thereon.

819,498. **MASSAGE IMPLEMENT.** JAMES BARKER, Philadelphia, Pa. Filed Sept. 30, 1904. Serial No. 226,637.



Claim.—1. The combination, in a massage implement, of a driving-shaft having a head with conical recess therein eccentric in respect to the axis of the shaft and having its axis oblique thereto, a vibrator shaft or spindle having a conical head adapted to the recess in the head of the driving-shaft, and means for maintaining said parts in operative relation, substantially as specified.

2. The combination, in a massage implement, of a shaft having a rounded head, a casing providing a bearing for said head, means for imparting gyrating movement to the shaft, and a spring-pressed follower bearing upon the head on the side opposite that which is adapted to the fixed bearing, substantially a specified.

3. The combination, in a massage implement, of a shaft having a rounded head, means for imparting gyrating movement to said shaft, a casing providing a bearing for said head and inclosing an oil-chamber, and an adjustable follower bearing upon the head and constituting one of the closures of said oil-chamber, substantially as specified.

4. The combination, in a massage implement, of a shaft having a rounded head, means for imparting gyrating movement to said shaft, a casing having a bearing for said rounded head, a follower contained within said casing and also bearing upon the head, a spring for maintaining said follower in contact with the head, and an adjusting-nut carried by the casing and acting upon said spring, substantially as specified.

5. The combination, in a massage implement, of a shaft having a rounded head thereon, means for imparting gyrating movement to said shaft, a casing having a cap with bearing for said head, a follower in said cap also bearing upon the head, packing-rings, one inside of the cap and the other outside of the same, and a lock-nut on the cap for imparting pressure to the outside packing-ring, substantially as specified.

6. The combination, in a massage implement, of a shaft having a rounded head thereon, means for imparting gyrating movement to said shaft, a casing having a cap with bearing for said head, a follower in said cap also bearing upon the head, packing-rings, one inside of the cap, and the other outside of the same, an adjustable spring for imparting pressure to the inside packing-ring, and a lock-nut on the cap for imparting pressure to the outside packing-ring, substantially as specified.

7. The combination, in a massage implement, of a driving-shaft having at one end a head with eccentric recess therein, a second shaft having at one end a rounded head and at the other end a head adapted to said eccentric recess, and a casing having bearings for said parts, said casing containing a sealed oil-chamber which is in communication with said bearings, substantially as specified.

8. The combination, in a massage implement, of a driving-shaft having at one end a head with eccentric recess therein, a second shaft having at one end a rounded head and at the other end a head adapted to said eccentric recess, and a casing having bearings for said parts, said casing containing an inclosed oil-chamber which is in communication with said bearings through passages in the second shaft, substantially as specified.

9. The combination, in a massage implement, of a driving-shaft having at one end a head with eccentric recess therein, a second shaft having at one end a rounded head and at the other end a head adapted to the eccentric recess of the driving-shaft, a casing having a bearing for the head of the driving-shaft, a cap closing the end of said casing and having a bearing for the rounded head of the second shaft, a shaft projecting from said rounded head and carrying the massage member, and a handle pivotally mounted upon the cap which closes the end of the casing, said handle being free to turn around its axis, substantially as specified.

10. The combination, in a massage implement, of a shaft carrying a massage member, means for vibrating said shaft, a casing, and a handle pivotally mounted upon said casing, and adjustable to different angles in respect to the driving-shaft, substantially as specified.

11. The combination, in a massage implement, of a shaft carrying a massage member, means for vibrating said shaft, a casing, and a handle pivotally mounted upon said casing, the axis of said handle being at a right angle to the axis of the driving-shaft, and forming a substantial continuation of the axis of the shaft which carries the massage member, substantially as specified.

12. The combination, in a massage implement, of a massage member, a shaft carrying the same, means for vibrating said shaft, a casing, a handle pivotally mounted thereupon, and means for imparting yielding pressure to the pivotal member of said handle, substantially as specified.

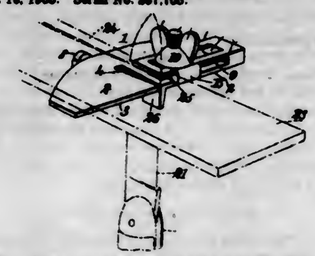
13. The combination, in a massage implement, of the massage member, a shaft carrying the same, means for vibrating said shaft, a casing having a projection thereon, a handle having a member pivotally mounted on said projection, a screw for confining said pivotal member of the handle longitudinally to said projection, and a spring-actuated washer bearing upon said pivotal member of the handle, substantially as specified.

14. The combination, in a massage implement, of the massage member, a shaft carrying the same, means for vibrating the shaft, and a casing having depending spring-plates secured thereto, one on each side of said shaft, said plates being in contact with the shaft, so as to prevent lateral movement thereof, substantially as specified.

15. The combination, in a massage implement, of the massage member, a spindle carrying the same and having a threaded portion and an unthreaded portion beyond the same, with an operating-shaft having a head with threaded opening for the reception of the threaded portion of the spindle and a socket for the reception of the unthreaded portion of the same, substantially as specified.

16. The combination, in a massage implement, of a shaft carrying a massage member, a driving-shaft, a casing, and a handle mounted upon said casing so as to be free to swing on an axis different from the axis of the driving-shaft and entirely independent of the same, substantially as specified.

819,499. **GAGE.** BARNEY H. BATEMAN, Baldur, Canada. Filed Nov. 16, 1905. Serial No. 287,703.



Claim.—1. A gage for the purpose described, comprising a plate provided with a slot, one end of which extends to an edge of the plate and is open, and the sides of which converge toward said edge, said slot being for the reception of the blade of a knife, a projection on the under side of the plate adjacent to the inner end of the slot, and a screw working in an opening therefor in the projection, for engaging with the back of said blade.

2. A gage for the purpose described, comprising a plate having a straight edge, and provided with a slot, one end of which extends to said straight edge and is open, the sides of the slot converging in the direction of its open end, and the slot being for the reception of the blade of a knife, a projection on the under side of the plate adjacent to the inner end of the slot, and a screw working in an opening therefor in the projection, for engaging with the back of said blade.

3. A gage for the purpose described, comprising a plate having a straight edge and provided with a slot, one end of which extends to said straight edge and is open, the sides of the slot converging toward the straight edge, and said slot being for the reception of the blade of a knife, a guide on the plate located at one side of the slot, and a gage-block working in said guide, and provided with means for securing the same in different positions of adjustment.

4. A gage for the purpose described, comprising a plate having a straight edge and formed with a slot, one end of which extends to said edge and is open, said slot being for the reception of the blade of a knife, means for engaging with the back of the blade, for holding the blade to its work, a guide on the plate located at one side of the slot, a gage-block working in said guide, and means for securing said block in different positions of adjustment thereof.

5. A gage for the purpose described, comprising a plate having a straight edge and provided with a slot, one end of which extends to said straight edge and is open, the sides of the slot converging toward each other, in the direction of the straight edge, and said slot being for the reception of the blade of a knife, a shelf rigid with the plate at one side of the slot, and separated from the plate by a space, the plate and said shelf being formed with corresponding rectangular slots disposed at right angles to the slot first mentioned, a gage-block working in said space between the shelf and plate, a screw extending through said rectangular slots and through an opening therefor in the gage-block, and a nut on the screw for securing the gage-block in different positions of adjustment thereof.

6. A gage for the purpose described, comprising a plate having a straight edge and provided with a slot, one end of which extends to said straight edge and is open, the sides of the slot converging toward each other, in the direction of the straight edge, and said slot being for the reception of the blade of a knife, a shelf rigid with the plate at one side of the slot, and separated from the plate by a space, the plate and said shelf being formed with corresponding rectangular slots disposed at right angles to the slot first mentioned, a gage-block working in said space between the shelf and plate, a screw extending through said rectangular slots and through an opening therefor in the gage-block, and a nut on the screw for securing the gage-block in different positions of adjustment thereof, the gage-block being provided with flanges, one of which moves against one edge of said shelf, and others of which move against the opposite edge of the shelf, and a portion of the straight edge of the plate.

7. A gage for the purpose described, comprising a plate provided with a slot, one end of which extends to an edge of the plate and is open, and the sides of which converge toward said edge, said slot being for the reception of the blade of a knife, a projection on the under side of the plate adjacent to the inner end of the slot, and

a screw working in an opening therefor in the projection, for engaging with the back of said blade, the head of said screw fitting and working between the sides of one of said rectangular slots.

8. A gage for the purpose described, comprising a plate provided with a slot, one end of which extends to an edge of the plate and is open, and the sides of which converge toward said edge, said slot being for the reception of the blade of a knife, a projection on the under side of the plate adjacent to the inner end of the slot, and a screw working in an opening therefor in the projection, for engaging with the back of said blade, the plate being provided on the under side thereof, at one side of the slot with a brace for said blade.

9. A gage for the purpose described, comprising a plate provided with a slot one end of which extends to the edge of the plate and is open, and the sides of which converge toward said edge, said slot being for the reception of the blade of a knife, and a screw for engaging and supporting the back of the blade.

819,500. FISHING-ROD. GEORGE C. BEARSE, Portland, Me. Filed Apr. 12, 1905. Serial No. 255,077.



Claim.—1. A fishing-rod, having a butt provided with reel-seats at its opposite ends and in the same plane, combined with means to secure a reel in either of said seats.

2. A fishing-rod, having a butt provided with reel-seats at its opposite ends and in the same plane, combined with means to secure a reel in either or both of said seats.

3. A fishing-rod, having a butt provided with fixed sockets at opposite ends adapted to receive a reel stand or support, and collars slidable on said butt and adapted to engage the reel stand or support and thereby coöperate with the sockets to secure the reel stand or support upon the butt.

4. A fishing-rod, having a butt provided with fixed sockets at opposite ends adapted to receive a reel stand or support, and collars slidable on said butt and adapted to engage the reel stand or support and thereby coöperate with the sockets to secure the reel stand or support upon the butt, combined with a reel.

5. A fishing-rod handle or butt, having a grip, and reel-seats arranged upon the side of said handle or butt at both ends thereof and at opposite ends of the grip.

6. A fishing-rod handle or butt, having a grip, and longitudinal reel-seats arranged at both ends of the handle or butt and at opposite ends of the grip.

7. A fishing-rod handle or butt, having a grip, and longitudinal reel-seats arranged in alinement at both ends of the handle or butt and at opposite ends of the grip.

8. A fishing-rod butt, provided at each end with means for holding one end of a reel-stand, a grip on said butt between the same, and means at each end of said grip adapted to hold the other end of said reel-stand, whereby the reel may be held either above or below said grip.

9. A fishing-rod butt, provided at each end with a socket for holding one end of a reel-stand, a grip on said butt between the same, and means carried by said butt at each end of said grip and slidable on said butt and adapted to hold the other end of said reel-stand, whereby the reel may be held either above or below said grip.

10. A fishing-rod butt, provided at each end with a socket for holding one end of a reel-stand, a grip on said butt between the same, and means carried by said butt at each end of said grip and adapted to hold the other end of said reel-stand, whereby the reel may be held either above or below said grip.

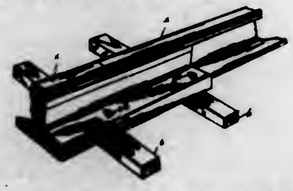
11. A fishing-rod butt, provided at each end with a socket for holding one end of a reel-stand, a grip on said butt between the same, and a collar carried by said butt at each end of said grip and slidable on said butt and adapted to hold the other end of said reel-stand, whereby the reel may be held either above or below said grip.

819,501. SINGLE-DELIVERY MATCH-BOX. HILARY J. BEAUCHAMP, Verner, Canada. Filed Apr. 8, 1905. Serial No. 254,514.



Claim.—A match-box comprising a body portion including ends and sides, the upper portion of the sides being converged upwardly and having their adjacent edges rounded and spaced apart to form a slot in the top of the body and having the lower portions of its sides converged downwardly and spaced apart at their lower edges and forming a slot in the bottom of the body, a pin engaged through one of said upper side portions and through said ends, a cross-sectionally angular tubular stem depending from the body and communicating therewith through said bottom slot, a base, a plunger carried by the base and projecting upwardly therefrom and engaged slidably in said tubular stem, said plunger being of a length to lie with its upper end edge flush with the edges of the upper slot in the body of the box when the lower end of the stem is upon the base, the said plunger being of a less diameter than the lower portion of the upper slot and of substantially the same width as the upper portion of the said slot, and means for limiting upward sliding movement of the body and stem with respect to the plunger when the upper end edge of the plunger shall have entered the tubular stem, said upper end edge of the plunger having longitudinal grooves therein.

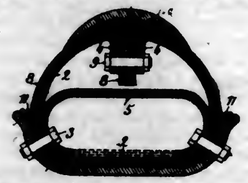
819,502. RAIL-JOINT. SAMUEL A. BEELER, Washington, Pa. Filed Nov. 3, 1905. Serial No. 285,733.



Claim.—1. The combination with ties and rails adapted to be supported upon said ties, of a chair supporting said rails, flanges carried by said chair and extending over the top of the base of the rail and upwardly adjacent the web of the rail, said flanges having longitudinally-disposed grooves formed therein, fish-bars adapted to fit within said chair and embrace the web portions of said rails, said fish-bars having ribs fitting in the grooves in the chair means to lock said fish-bars and rails in engagement with said chair and said foundation, substantially as described.

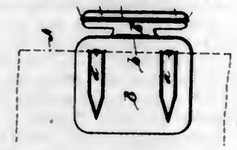
2. In a rail-joint, the combination with two sections of rails, the base-flanges of said rails having openings formed therein, of a chair having flanges extending over the base-flanges of the rails and upwardly adjacent the webs of the rails and adapted to embrace said rails, said chair having vertically-disposed alining openings formed therein adapted to register with the openings of the base-flanges of said rails, fish-bars mounted in said chair and adapted to embrace the sides of said rails said fish-bars being formed at their upper edges with laterally-extending head-flanges engaging the upper edges of the vertical portions of the flanges of the chair ribs carried by said bars and engaging said chair, means to lock said rails, fish-bars and chair together, substantially as described.

819,503. TIRE FOR VEHICLE-WHEELS. VICTOR B. BELLENOT, Paris, France. Filed Nov. 16, 1905. Serial No. 287,560.



Claim.—In an elastic tire for all kinds of wheels the combination of a felly, spring-plates secured transversally on the felly and having their lateral portions curved outward and toward each other, their ends being bent inward toward the center of the wheel, a tread-rim of flexible material and T-shaped in cross-section, the median rib of which is engaged between the ends of the spring-plates and the lateral portions of which spread on the curved outer portions of the said spring-plates, and flat springs curved into C or O shape secured within the said curved spring-plates and extending under and at a certain distance below the inner edge of the tread-rim so that the said rim shall come and bear on the said inner springs when it is pressed toward the center of the wheel, and a cloth cover spreading on the lateral portions of the said spring-plates and having its middle engaged between the ends of the latter so as to fold under and surround the median rib of the tread-rim.

819,504. MUSIC-LEAF TURNER. ROY P. BENEDICT, Syracuse, N. Y. Filed Nov. 23, 1905. Serial No. 288,649.



Claim.—1. As an improved article of manufacture, a paper-leaf attachment consisting of a plate formed with leaf-gripping tongues struck up from one face of the plate and extending parallel thereto toward one edge of the plate, and the opposite edge of the plate provided with an upwardly and outwardly bent lip to produce a thumb-piece as set forth and shown.

2. The combination with the leaf, of a turning device composed of a plate provided with tongues, between which tongues and plate the marginal portion of the leaf is inserted, the outer edge of the plate being formed with an upwardly and outwardly deflected lip serving as a thumb-piece, and a surface-protecting guard consisting of a rubber band applied to said lip as set forth.

3. The combination with the leaf, of a turning device composed of a plate detachably applied to the marginal portion of the leaf and formed at its outer edge with a thumb-piece consisting of an upturned lip deflected outwardly and terminating in lateral extensions, and a surface-protecting guard consisting of a rubber band stretched around said extensions as set forth.

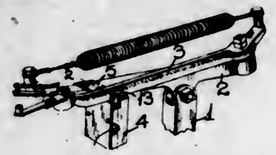
4. The combination with the leaf, of a turning device composed of a plate detachably applied to the marginal portion of the leaf and formed with a thumb-piece provided with notched portions, and a surface-protecting guard consisting of a non-metallic band attached to said notched portions as set forth.

5. The combination with the leaf, of a turning device composed of a plate detachably applied to the marginal portion of the leaf and provided with a thumb-piece consisting of a lip projecting from the outer edge of the plate and formed with lateral extensions having notched ends, and a surface-protecting guard consisting of rubber band passing around said extensions and seated in the notches thereof as set forth.

6. The combination with the leaf, of a turning device composed of a plate formed with tongues, between which tongues and plate the marginal portion of the leaf is inserted, and formed at its outer edge with a lip terminating in lateral extensions having notched ends, and a surface-protecting guard consisting of a rubber band passing lengthwise around said extensions and seated in the notches thereof as set forth.

819,505. ELECTRIC RELEASE FOR TARGET-TRAPS. JOSEPH R. BIRCH, St. Louis, Mo. Filed Aug. 26, 1905. Serial No. 276,076.

Claim.—The combination with a target-trap, of a housing secured to the frame of the trap in the side of which housing is formed an aperture, a vertical arm pivotally mounted in the housing with its upper end projecting through an opening in the top of said housing, a laterally-projecting arm integral with the vertical arm, a lug integral with the outer end of the lateral arm, which lug projects through the opening in the top of the housing, magnet-coils located within the housing, means whereby said coils are energized, and an armature arranged above said coils, in the top side of which armature is formed a notch to receive the lower end of the vertically-arranged arm when in a normal position, and the free end of the armature projecting through the opening in the side of the housing; substantially as specified.



819,506. PROCESS OF MAKING HYDROCARBON AND COMBUSTIBLE GAS. HENRY S. BLACKMORE, Mount Vernon, N. Y. Filed Sept. 22, 1905. Serial No. 279,591.

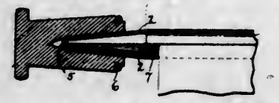
Claim.—1. The process of producing hydrocarbon, which consists in exposing a ketone to the action of steam and heat.

2. The process of producing hydrocarbon, which consists in exposing a gaseous mixture of ketone and steam to the action of heat.

3. The process of producing methane, which consists in exposing acetone, dimethyl ketone, to the action of superheated steam.

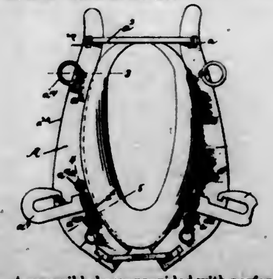
4. The process of producing combustible gas, which consists in exposing a mixture of ketone and superheated steam to the action of carbon heated to incandescence.

819,507. CURTAIN-POLE. SAMUEL BLAKELY, Grampian, Pa. Filed June 9, 1905. Serial No. 264,420.



Claim.—A curtain-pole formed of two semicylindrical sections, having flat adjacent faces throughout their length, and having the outer face of both sections tapered at each end, each tapered face having a plurality of slits, extending from the outer extremity of the section to a point adjacent the beginning of the taper, the said tapered faces forming frusto-conical ends on the pole when the sections are matched together, in combination with securing-heads engaging said conical ends on the pole, each head consisting of a solid cylindrical body having a conical opening of less length than the conical ends on the pole whereby the slitted ends of the sections will be clamped together as the securing-head is tightened on the conical end of the pole, a shoulder on the inner end of each securing-head, and a ring clamped on said shoulder to hold the securing-head against splitting, substantially as described.

819,508. REVERSIBLE HAME. ROBERT L. BOND, Orange, Va. Filed July 14, 1905. Serial No. 269,656.



Claim.—1. A reversible hame provided with perforations therethrough and with countersunk portions communicating with said perforations at either end thereof, said countersunk portions located

in the two side faces of the hame, terret-carrying means passed through one of such perforations and removably secured therein, and a staple whose legs project through the remaining perforations and removably secured therein.

2. A reversible hame provided with perforations therethrough and with countersunk portions communicating with said perforations at either end thereof, said countersunk portions located in the two side faces of the hame, terret-carrying means passed through one of such perforations and removably secured therein, said means carrying a stop-collar reposing in one of said countersunk portions, and a staple whose legs project through the remaining perforations and are removably secured therein, each leg carrying a stop-collar reposing in one of said countersunk portions.

3. A reversible hame provided with perforations therethrough and with countersunk portions communicating with said perforations at either end thereof, said countersunk portions located in the two side faces of the hame, an eyebolt passed through one of such perforations and removably secured therein, and carrying a stop-collar in proximity to the eye and reposing in one of said countersunk portions, and a staple whose legs project through the remaining perforations and are removably secured therein, each leg carrying a stop-collar reposing in one of said countersunk portions.

4. A reversible hame provided with perforations therethrough and with countersunk portions communicating with said perforations at either end thereof, said countersunk portions located in the two side facesof the hame, an eyebolt passing through one of said perforations and removably secured by a nut on its end reposing in a countersunk portion in one of the side faces, said eyebolt also carrying in proximity to the eye a stop-collar reposing in a countersunk portion in the other side face, and a staple whose legs project through the remaining perforations and are removably secured by nuts on their ends reposing in countersunk portions in one of the side faces, said legs also carrying stop-collars reposing in countersunk portions in the other side face.

5. A reversible hame provided with openings therethrough, terret-carrying projections passing through and removably secured in certain of said openings, and draft-hook-carrying projections passed through and removably secured in the remaining openings.

6. A reversible hame having its inner edge, or that edge which is directly in contact with the horse's collar, doubly beveled, or wedge-shaped, said hame being provided with openings therethrough, terret-carrying projections passing through and removably secured in certain of said openings, and draft-hook-carrying projections passed through and removably secured in the remaining openings.

7. A reversible hame having its inner edge, or that edge which is directly in contact with the horse's collar, doubly beveled, or wedge-shaped, said hame provided with perforations therethrough and with countersunk portions communicating with said perforations at either end thereof, said countersunk portions located in the two side faces of the hame, an eyebolt passing through one of said perforations and removably secured therein, said means carrying a stop-collar reposing in a countersunk portion in the other side face, and a staple whose legs project through the remaining perforations and are removably secured therein, each leg carrying a stop-collar reposing in countersunk portions in the other side face.

819,509. **TOE-WEIGHT FOR HORSES.** GEORGE W. BOETTGER, Chicago, Ill. Filed Aug. 17, 1905. Serial No. 274,602.



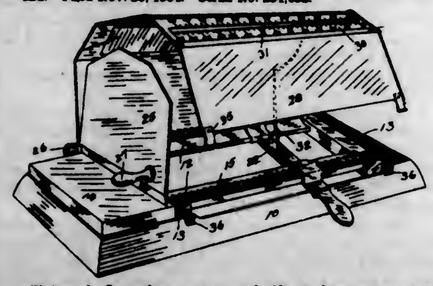
Claim.—1. The combination with a wedge-shaped plate adapted to fit a wedge-recess in the hoof and provided with a longitudinal groove and having an opening in its smaller forward end, of a V-shaped weight-carrying member one arm of which is adapted to enter said groove in said plate, a weight slidably mounted on the other arm, and a spring-bar adapted to enter said opening in said wedge-shaped plate at one end and having its free end disposed to bear upon the elbow portion of said V-shaped plate and upon the said weight to hold the latter in place.

2. The combination with a wedge-shaped plate adapted to fit a wedge-shaped recess in the toe portion of the hoof, and having its smaller end disposed forward, said plate being provided with a longitudinal groove and with an opening in its forward end, of a V-shaped bar disposed with one arm parallel with the hoof and its other arm within said groove in said plate, a spring-bar having one end entering said opening in said plate and bearing between its ends against said V-shaped member, and a weight provided with a recess adapted to receive the free arm of said V-shaped member and the free end of said spring-bar, substantially as and for the purpose described.

3. The combination with a wedge-shaped plate adapted to fit a wedge-shaped recess in the toe portion of the hoof, and having its smaller end disposed forward, said plate being provided with a longitudinal groove and with an opening in its forward end, of a V-shaped bar disposed with one arm parallel with the hoof and its other arm within said groove in said plate, said free arm being wedge-shaped in cross-section and provided in its outer face with a groove, a spring-bar having an ogee-curved lower end adapted to enter and engage said spring in said plate and bearing adjacent said end against said V-shaped bar, and a weight provided in one face with a dovetail recess and with a groove in the bottom of said recess adapted to be inserted over said wedge-shaped arm and the free end of said opening-bar, substantially as and for the purpose described.

4. The combination with a wedge-shaped plate adapted to fit a wedge-shaped recess in the toe portion of the hoof, and having its smaller end disposed forward, said plate being provided with a longitudinal groove and with an opening in its forward end, of a V-shaped bar disposed with one arm parallel with the hoof and its other arm within said groove in said plate, said free arm being wedge-shaped in cross-section and provided in its outer face with a groove, a spring-bar having an ogee-curved lower end adapted to enter and engage said opening in said plate and bearing adjacent each end against said V-shaped bar, and a weight provided in one face with a dovetail recess and with a groove in the bottom of said recess adapted to be inserted over said wedge-arm and the free end of said spring-bar, said free end portion of said spring-bar being provided with a notch, and a projection disposed in said groove in said weight adapted to enter said notch to lock said bar in position on said V-shaped member.

819,510. **CHEESE-CUTTER.** CHARLES W. BRIDGES, Indianapolis, Ind. Filed Nov. 28, 1904. Serial No. 234,662.



Claim.—1. In a cheese-cutter, a knife, a cheese-support movable toward and away from the knife, and means for moving the cheese on said cheese-support toward the knife.

2. In a cheese-cutter, a knife, a base provided with a longitudinal guideway, and a cheese-support movable longitudinally in said guideway toward and away from said knife.

3. In a cheese-cutter, a base with a longitudinal guideway, a cheese-support longitudinally movable in said guideway, a slice-board at one end of said guideway that stops the movement of the cheese-support, and a knife mounted over said slice-board.

4. In a cheese-cutter, a knife, a base provided with a longitudinal guideway, a cheese-support movable in said guideway toward and away from said knife, and means for moving said cheese-support.

5. In a cheese-cutter, a knife, a cheese-support, movable toward and away from the knife, and a single means for moving said cheese-support and also feeding said cheese thereon toward the knife.

6. In a cheese-cutter, a knife, a cheese-support, a handle-bar movably mounted on said cheese-support at the rear of the cheese with a handle thereon for operating said handle-bar, and a follower on the handle-bar for pushing the cheese as the handle-bar is operated.

7. In a cheese-cutter, a knife, a cheese-support, a rack-bar at each side of said cheese-support, a slide mounted on each rack-bar, a pawl on each slide that engages the rack-bars, a handle-bar pivoted to said slides for operating the same, and a follower on said handle-bar to push the cheese substantially as set forth.

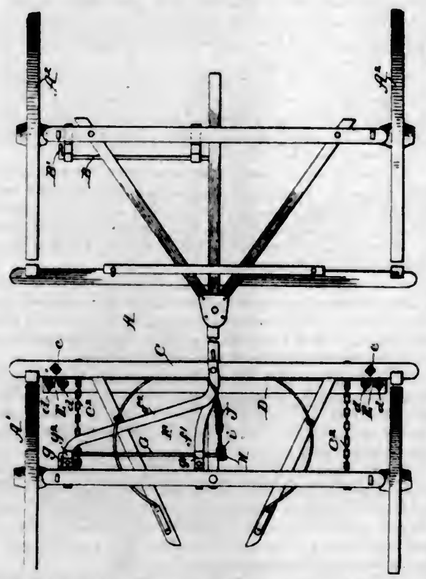
8. In a cheese-cutter, a knife, a cheese-support, a rack-bar at each side of said cheese-support, a slide mounted on each rack-bar, a pawl on each slide that engages the rack-bars, a handle-bar pivoted to said slides for operating the same, and a follower pivotally mounted upon said handle-bar for pressing against and pushing the cheese without any rocking movement when the handle-bar is operated.

9. In a cheese-cutter, a knife, a cheese-support having two side bars, a rack upon each side bar, a slide mounted on each rack, a pawl pivoted to each slide for engaging the teeth of the racks, a handle-lever pivoted to one of said slides and slotted under the other slide, a pin for the last-mentioned slide extending loosely through said slot in the handle-bar, and a follower on said handle-bar for engaging and pushing the cheese when the handle-bar is operated.

10. In a cheese-cutter, the combination with a knife and a follower for pushing the cheese to the knife, of an indicator connected with said follower, and a scale along which said indicator moves as the cheese is fed for indicating the extent of movement of the cheese.

11. In a cheese-cutter, the combination with a knife, means for feeding the cheese to the knife, and a cover, of a scale on the cover, and an indicator connected with the feeding means extending in proxim ty to said scale for indicating the extent of movement of said cheese.

819,511. **BRAKE MECHANISM FOR VEHICLES.** GILBERT D. BUCHANAN, Saratoga, Wyo. Filed Jan. 27, 1905. Serial No. 242,976.



Claim.—1. A brake-operating mechanism adapted to be applied to the front part of the running-gear of a four-wheeled vehicle and comprising a brake-beam adapted to be disposed transversely of the running-gear of the wagon at the rear of the front wheels, a hound-bar adapted to be secured underneath the hounds of the wagon slightly in advance of the brake-beam, with its ends projecting beyond the sides of the hounds, V-shaped links having loops at their apex ends, and hooks at their other ends, eyebolts in the brake-beam engaging said apex-loops and similar eyebolts in the hound-bar engaging said hooks, stay-chains at the ends of the brake-beam adapted to extend forwardly to connect with the front axle of the wagon, an eye-plate adapted to be secured on the coupling-pole of the wagon underneath the brake-beam with its forward end extending in advance of said beam and bent upwardly and provided with an eye, a bolster-brace having two branches, extending from a common apex, said apex terminating in a hook engaging said eye, one branch of said brace extending forwardly from said apex and slightly offset inwardly about its middle and terminating in an upward return-bend adapted to engage the front bolster at one side of the king-bolt, the other branch of said brace extending forwardly and outwardly to a point near the end of the bolster and turned upward at its extremity, said upwardly-bent portion being also provided with means for engaging the bolster, a bearing-loop secured to the return portion of the bend at the extremity of said first branch and a similar loop secured in front of the upwardly-bent portion at the extremity of the second branch, a draw-bar supported in said loops and having an operating-lever at its outer end adapted to be engaged by auxiliary operating mechanism the inner end of said draw-bar terminating slightly beyond the outer side of said offset portion of the first-named branch of the bolster-brace, and flat at its extremity, a crank having a slot at its upper end easily receiving said flattened end, said slot being of a length greater than the width of said end to permit the crank to rock longitudinally thereupon, a brake-operating bar secured to the center of the brake-beam and extending forwardly in direction of said crank and a link connecting said bar and crank.

2. The combination with the running-gear of a four-wheeled vehicle of brake mechanism for the front wheels thereof, said mechanism comprising a brake-beam at the rear of the front wheels, flexible connections between the ends of the brake-beam and the hounds of the wagon to prevent undue upward movement of said beam when the brakes are applied, flexible connections between the ends of the brake-beam and front axle of the wagon, a draw-bar supported upon the front bolster, a brace for holding said bolster and draw-bar approximately at right angles to the coupling-pole, a crank on said draw-bar approximately at the transverse center of the wagon, a flexible connection between the center of the brake-beam and said crank, and a lever for applying power to the draw-bar.

3. The combination with the running-gear of a four-wheeled wagon having rear braking mechanism of additional braking mechanism comprising a brake-beam suitably supported at the rear of the front wheels of the wagon, a draw-bar supported by the front bolster and provided with an operating-lever, a crank longitudinally rockable on said draw-bar, a brake-bar extending from the brake-beam in direction of said crank, a flexible connection between the free end of the crank and said brake-bar, a bolster-brace for holding the draw-bar approximately at right angles to the coupling-pole, and detachable auxiliary operating mechanism adapted to connect the front and rear operating-levers to operate both cranks simultaneously.

4. The combination with the running-gear of a four-wheeled wagon having rear braking mechanism of additional braking mechanism comprising a brake-beam suitably supported at the rear of the front wheels of the wagon, a draw-bar supported by the front bolster and provided with an operating-lever, a crank longitudinally rockable on said draw-bar, a brake-bar extending from the brake-beam in direction of said crank, a flexible connection between the free end of the crank and said brake-bar, a bolster-brace for holding the draw-bar approximately at right angles to the coupling-pole, and detachable auxiliary operating mechanism comprising extension members having means at their lower ends for ready attachment to the front and rear operating-levers, the member attached to the front operating-lever having an eye near its upper end, the extension member for the rear brake-lever having its upper end bent rearwardly and provided with a pulley and a flexible connection secured to the eye in the front extension member and passing over said pulley, whereby a pull on said cord draws both levers toward each other to apply the brakes.

5. The combination with the running-gear of a four-wheeled wagon having rear braking mechanism of additional braking mechanism comprising a brake-beam suitably supported at the rear of the front wheels of the wagon, a draw-bar supported by the front bolster and provided with an operating-lever, a crank longitudinally rockable on said draw-bar, a brake-bar extending from the brake-beam in direction of said crank, a flexible connection between the free end of the crank and said brake-bar, a bolster-brace for holding the draw-bar approximately at right angles to the coupling-pole, and detachable auxiliary operating mechanism comprising a double-acting lever secured at its center to the wagon-body, a rod extending from the ordinary foot-lever at the front of the wagon-body to said double-acting lever to operate the same, a second rod extending from the upper end of said double-acting lever to the operating-lever of the rear brake, and a third rod extending from the lower end of

the double-acting lever to the operating-lever of the front brake, whereby a single movement of the foot-lever operates both brakes.

6. The combination with the running-gear of a four-wheeled wagon having rear braking mechanism of additional braking mechanism comprising a brake-beam suitably supported at the rear of the front wheels of the wagon, a draw-bar supported by the front bolster and provided with an operating-lever, a crank longitudinally rockable on said draw-bar, a brake-bar extending from the brake-beam in direction of said crank, a flexible connection between the free end of the crank and said brake-bar, a bolster-brace for holding the draw-bar approximately at right angles to the coupling-pole, and detachable auxiliary operating mechanism comprising a pulley secured to one of the brake-applying levers, a flexible connection secured to the other brake-applying lever and passing over said pulley, a double-acting lever secured at its center to the wagon-body, a foot-lever at the front of the wagon-body, a rod extending from said foot-lever to said double-acting lever to operate the same, a second rod extending from the upper end of said double-acting lever to the operating-lever of the rear brake, and a third rod extending from the lower end of the double-acting lever to the operating-lever of the front brake.

7. The combination with the front and rear wheels of front and rear brake mechanism, the front brake mechanism comprising a draw-bar held approximately at right angles to the coupling-pole of the wagon, a crank longitudinally rockable on said bar but held against rotation thereon, and located about midway of the front part of the wagon, a brake-operating bar extending from the middle of the brake-beam toward said crank, and a flexible connection between said bar and the free end of said crank.

8. The combination with the running-gear of a four-wheeled vehicle of front brake mechanism comprising a brake-beam, a draw-bar, a crank longitudinally rockable on said draw-bar but held against rotation thereon, and a brake-operating bar extending from the brake-beam and pivotally connected to the free end of said rockable crank.

9. The combination of the front bolster, the hounds, the perch-pole, the brake-beam above the hounds, drag-chains at the ends of said beam, intermediate devices between the ends of the brake-beam and the hounds, a bolster-brace comprising a bracket secured to the bolster and extended rearwardly therefrom and secured to the pole, and a brake-setting shaft journaled to the bracket and connected with the brake-beam and arranged for operation substantially as described.

819,512. **POULTRY-CAR.** CYRUS L. BUNDY, Scranton, Pa. Filed Oct. 4, 1905. Serial No. 281,236.



Claim.—1. A poultry-car having longitudinal center sills, side sills, intermediate sills, inner and outer upright posts, horizontal guides between the posts and inclined braces between the inner upright posts and supported by the intermediate sills forming compartments opening outwardly for the reception of coops.

2. A car for poultry transportation having longitudinal center sills, side sills, intermediate sills, inclined braces supported by the intermediate sills and forming a longitudinal aisle, upright posts and horizontal guides carried thereby forming compartments opening outwardly for the reception of coops.

3. In a car for poultry transportation, a body having a longitudinal aisle and a transverse aisle, vertical posts arranged at intervals along the sides of the aisles and the sides of the body, and horizontal guides supported by the posts, and coops supported by the guides and independent of each other and removable outwardly.

4. In a car for the transportation of poultry, a section having a plurality of tiers of compartments for the reception of coops, locks for said coops, and a single handle and shaft with connections for simultaneously operating all of the locks for the section.

5. In a car for the transportation of poultry, a tier of compartments for the reception of coops, locks for holding the coops in the compartments, and a single operating-rod for all of the locks for the tier.

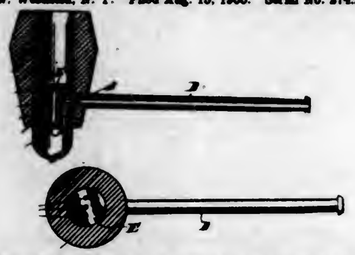
6. In a car for the transportation of poultry, a compartment for the reception of a removable coop, a locking-bolt at each side of the compartment, and means for simultaneously operating both locks.

7. In a car for the transportation of poultry, a vertical series of tiers of compartments for the reception of removable coops formed by inner and outer stationary vertical posts and horizontal guides carried by said posts, the entrance to said compartments being from the outside of the car.

8. In a poultry-car, center sills, side sills, intermediate sills, top and bottom transversely-arranged transoms connecting the sills, posts mounted on the side sills, posts mounted on the intermediate sills, and guides carried between the posts forming independent compartments for the reception of coops.

9. In a car for the transportation of poultry, a car-body, vertical posts arranged at intervals along the sides of the body, horizontal guides for supporting removable coops, pivoted levers carried by said posts and having two arms, a bolt carried by each arm of each lever adapted to project beyond the posts and in front of the coops, a rock-shaft extending alongside of the car, and vertically-movable rods, each rod being connected to all the levers on one post and to said shaft.

819,513. **CONDENSER FOR TOBACCO-PIPES.** CHARLES G. BUSCROW, Westfield, N. Y. Filed Aug. 15, 1905. Serial No. 274,287.



Claim.—1. A condenser for smoking-pipes consisting of a plug adapted to be inserted in the bore of a pipe, and a cup or chamber at the lower end of said plug, said plug having a passage passing vertically through it and also a passage leading from the cup to and through the side of the plug.

2. A condenser for smoking-pipes consisting of a plug adapted to be attached to the bore of a pipe and a cup or chamber at the lower end of said plug, said plug provided with a vertical passage therethrough and an angular passage extending from the cup or chamber to and through the side of the plug.

3. A condenser for smoking-pipes consisting of a plug adapted to be fitted to the bore of a pipe, a cup or chamber at the lower end of the plug, said plug having a central vertical passage therethrough and an angular passage extending from the cup to and through the side of the plug, and a disk at the top of the plug, said disk having small perforations therethrough.

4. In a tobacco-pipe the combination with a bowl, of a condenser consisting of a plug at the lower extremity of said bowl and a cup or chamber at the lower end of the plug, said plug having a passage passing vertically through it and also a passage leading from the cup to the stem-opening of the bowl.

5. In a tobacco-pipe the combination with a bowl, of a condenser consisting of a plug within said bowl and a cup at the lower end of the plug, said plug provided with a vertical passage therethrough, and an angular passage extending from the cup to the stem-opening of the bowl.

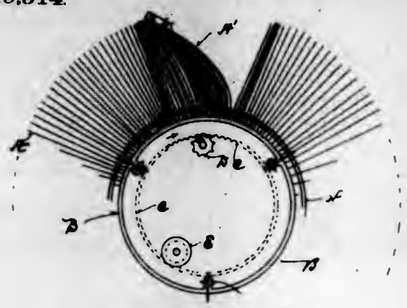
6. In a tobacco-pipe, the combination with a bowl, of a condenser consisting of a plug within said bowl, a cup secured to the lower end of the plug, said plug having a vertical passage therethrough, a perforate plate or disk at the upper end of the plug, said plug also having an angular passage from the cup and through the side of the plug to the stem-opening of the bowl.

7. In a tobacco-pipe comprising a bowl and stem, a separable smoke-condensing chamber adapted to fit within the bore of said bowl, said condensing-chamber comprising a plug provided with a vertical and a bent passage, and a detachable cup fitted to the lower end of the plug.

819,514. **MOTION-PICTURE MACHINE.** JEREMIAH H. CAHILL and CHARLES F. JENKINS, Washington, D. C.; said Jenkins assignor to said Cahill. Filed Dec. 1, 1905. Serial No. 289,986.

Claim.—In motion-picture apparatus, the combination with a set of series picture-cards in register, of a multiple-section ring-like frame, a curved wire attached to each section slightly longer than the section and securing the cards thereto.

819,514.

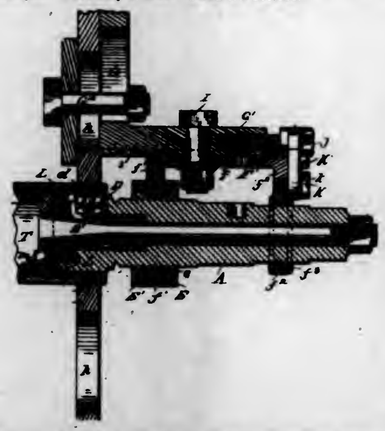


819,515. **FOLDING FLUE-STOP.** JOHN C. CARR, Burlington, Ind. Filed Sept. 11, 1905. Serial No. 277,962.



Claim.—A device of the class described, comprising an inner plate designed to be arranged within a chimney or flue opening, an outer or cap plate for covering the said opening, a pintle-rod carried by the outer or cap plate and having arms, said arms being provided with terminal pivots connected with the inner plate, and a second pintle-rod mounted on the inner plate and arranged at an angle to the pintle-rod of the outer or cap plate and provided with integral terminal arms engaging the outer or cap plate, the latter pintle and the arms thereof constituting a locking device for holding the inner plate and the outer or cap plate in spaced relation, and the arms of such locking device being movable in unison.

819,516. **TOOL FOR CUTTING AND FITTING BOILER-TUBES.** PHILIP W. CHAMBERLAIN and EDWARD G. CHAMBERLAIN, Greytown, Nicaragua. Filed July 6, 1905. Serial No. 268,586.



Claim.—1. A boiler-tube tool, comprising a revolving head carrying movable die-blocks and dies, a longitudinally-adjustable mandrel having an inclined surface adapted to project said die-blocks away from the center, a rotary sleeve carrying said die-blocks and extending the full length of the tool, a swivel-frame for supporting the sleeve between its ends, a support for the swivel-frame, and means for gaging and fixing the position of the swivel-frame in relation to its support as described.

2. A boiler-tube tool, comprising a revolving head carrying movable die-blocks and dies, a longitudinally-adjustable mandrel having an inclined surface adapted to project said die-blocks away from the center, a rotary sleeve carrying said die-blocks and extending the full length of the tool, a swivel-frame for supporting the sleeve between its ends, a support for the swivel-frame, a cross-bar and bolt for anchoring said support in one of the holes in the boiler-head and means for gaging and fixing the position of the swivel-frame in relation to the support as described.

3. A boiler-tube tool, comprising a revolving head carrying expansible dies, a longitudinally-adjustable mandrel having an inclined surface adapted to project said dies away from the center, a rotary sleeve, a swivel-frame for the sleeve, a support for the swivel-frame, a grooved headed screw-bolt tapped in the end of said support and a gage-latch pivoted to the swivel-frame and arranged to lock into the groove of the bolt substantially as described.

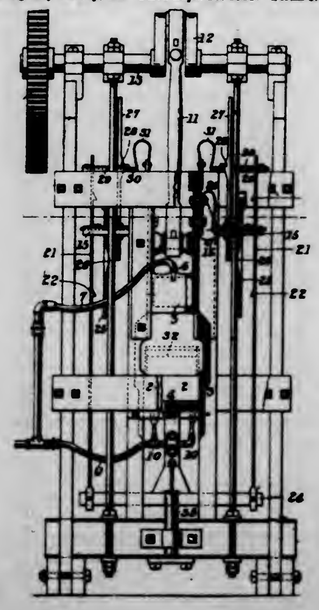
4. A boiler-tool, comprising a revolving head carrying expansible dies, a longitudinally-adjustable mandrel having an inclined surface adapted to project said dies away from the center, a rotary sleeve, a swivel-frame for the sleeve, a support for the swivel-frame, said support and swivel-frame having a longitudinal adjustment in relation to each other and a bolt rigidly connecting them and means for determining the position of the support and swivel-frame in relation to each other.

5. A boiler-tube tool, comprising a revolving head carrying expansible dies, a longitudinally-adjustable and tapering mandrel, a rotary sleeve having a screw-threaded exterior, a sectional collar interiorly threaded and adjustably fixed upon said sleeve, a swivel-frame having a ring turning on the sectional collar, a support for the swivel-frame, and means for regulating the position of the swivel-frame on its support as described.

6. A boiler-tube tool, comprising a revolving head carrying expansible dies, a longitudinally-adjustable and tapering mandrel, a rotary sleeve having a grooved collar fixed rigidly thereto but longitudinally adjustable thereon, a swivel-frame having a ring forming a bearing for said collar, a support for the swivel-frame, and means for regulating the position of said frame on its support as described.

7. A boiler-tube tool, comprising a revolving head carrying expansible dies, a longitudinally-adjustable and tapering mandrel, a rotary sleeve bearing an adjustable collar, a swivel-frame having two pendent rings, one supporting the sleeve-collar and the other the outer end of the sleeve, a support for the swivel-frame and means for regulating the relation between the said frame and its support as described.

819,517. **MOLDING-PRESS.** GEORGE H. L. CLARK, Sterrett township, Allegheny county, Pa. Filed Sept. 26, 1905. Serial No. 280,131.



Claim.—1. In a press, a movable upper plunger, means for reciprocating the same, a movable mold-bottom, lifting-rods for the mold-bottom, locking devices arranged to periodically connect the movable bottom and plunger through the said rods to move together to raise the mold-bottom to a point somewhat above the top level of the mold, means for then releasing such connection and allowing the mold-bottom to drop slightly, other locking means for temporarily holding the mold-bottom in such dropped position, and other releasing means for subsequently again releasing the mold-bottom; substantially as described.

2. In a press, the combination with a reciprocating upper plunger and a movable mold-bottom, of lifter-bars connected to the mold-bottom and normally disconnected from the movable plunger, locking devices arranged to lock the lifter-bars to the plunger, and key-bars arranged to unlock the lifter-bars to allow the mold-bottom to drop; substantially as described.

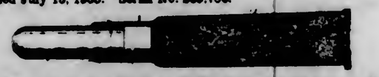
3. In a brick-press, a mold having a movable bottom, upwardly-extending connections for the bottom, spring-pressed locking devices arranged to lock the bars to the reciprocating plunger, and key-bars arranged to unlock the lifter-bars and allow dropping of the mold-bottom; substantially as described.

4. In a brick-press, a feeding-box having a cavity with open top and bottom, a movable mold-bottom, a reciprocating plunger, lifting-bars, for the movable bottom, means for periodically connecting the movable bottom and plunger through the lifting-bars to lift the mold-bottom, locking means for holding the movable bottom at the level of the mold while the feeding-box is pushed forward into line with it, and means for then disconnecting the movable bottom from the plunger to permit it to fall by gravity; substantially as described.

5. In a brick-press, a reciprocating upper plunger, a movable mold-bottom, upwardly-extending lifting-bars connected to such bottom and normally disconnected from the plunger, lifting devices arranged to engage said bars as the plunger rises, means for holding the bottom stationary at the upper level of the mold, and means for subsequently dropping the bottom; substantially as described.

6. In a brick-press, a movable upper plunger and means for reciprocating the same, a movable mold-bottom, lifting-bars connected to the mold-bottom and normally disconnected from the plunger, locking devices carried by the plunger for connecting it to the lifting-bars, fixed means on the frame for engaging and temporarily supporting the lifting-bars, a movable bottom, and fixed and movable cam means for controlling the operation of the locking and holding devices; substantially as described.

819,518. **CARTRIDGE.** HENRY F. CLARK, Poughkeepsie, N. Y. Filed July 15, 1905. Serial No. 269,736.



Claim.—1. A cartridge for small-arms, comprising a shell having a reduced end portion, a bullet having a slightly-enlarged base adapted to fit appreciably within the reduced end of said shell, and a lubricating material filling the annular space between the bullet and reduced end of the shell, and the shoulder formed by the enlarged end of the bullet.

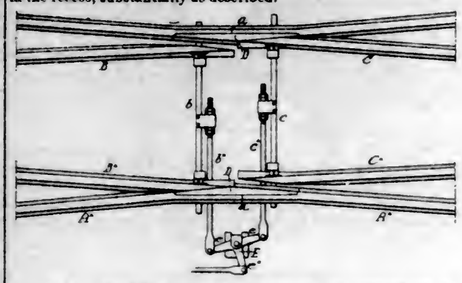
2. A cartridge, comprising a shell having a reduced end portion, a bullet having a slightly-enlarged base adapted to fit appreciably within the reduced end of said shell and a lubricating material filling the annular space between the bullet and reduced end of the shell and the shoulder formed by the enlarged end of the bullet, the edge of said reduced end being rolled down on the surface of the bullet to form a chamber in which said lubricating material is inclosed.

3. A cartridge for small-arms comprising a shell having a reduced end portion, a bullet having a slightly-enlarged base adapted to fit appreciably within the reduced end of said shell, and the free edge of the reduced portion contacting with the bullet, and a lubricating material filling the annular space between the bullet and the reduced end of the shell and the shoulder formed by the enlarged end of the bullet.

819,519. WITHDRAWN.

819,520. **MOVABLE-POINT RAILWAY-CROSSING.** WARNER B. COOKE, Jenkintown, Pa., assignor to William Wharton, Jr., & Company, Incorporated, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Mar. 9, 1906. Serial No. 305,667.

Claim.—1. In a movable-point railway-crossing, the combination of a bent stock-rail recessed at the angle, with an insert mounted in the recess, substantially as described.



2. In a movable-point railway-crossing, the combination of a bent stock-rail recessed at the angle, with an insert mounted in the recess, the inner edge of the insert alining with the inner edge of the rail, substantially as described.

3. In a movable-point railway-crossing, the combination of a stock-rail recessed at the angle and bent to aline with the adjoining rails of the crossing, with an insert tapered at each side of the center and secured to the stock-rail, substantially as described.

4. In a movable-point railway-crossing, the combination of a bent stock-rail recessed at the angle, an insert mounted in the recess, and movable-point rails arranged to be moved toward and away from the said insert, substantially as described.

5. In a movable-point railway-crossing, the combination of a recessed stock-rail bent to the desired angle, an insert mounted in the recess and resting upon the base-flange of the stock-rail, and means for securing the insert to the stock-rail, substantially as described.

819,521. **TWINE HOLDER AND TAKE-UP.** FREDERICK W. COPCUTT, New York, N. Y., assignor of one-half to Catherine L. Copcutt, New York, N. Y. Filed Aug. 19, 1904. Serial No. 221,381.



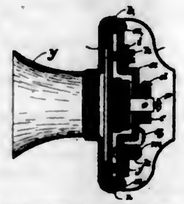
Claim.—1. A twine holder and take-up comprising a basket for the ball of twine, a depending rod for supporting the said basket and provided with a frame having open-end twine-guides, a lever pivoted on the frame, to one side of the said rod, and having twine-guides, a fixed clamp located over the said lever, for the latter to clamp the twine in place, a weight slidable on the said rod and having a twine-guide, open at one end, and a cushioning stop in the path of the weight and having a beveled portion, for the free end of the twine-guide of the weight to abut against, to close the twine-guide.

2. A twine holder and take-up provided with a take-up weight mounted to slide and having an open twine-guide, and a cushioning-stop in the path of the weight and having a beveled portion for the free end of the twine-guide to abut against.

3. In a twine holder and take-up, a rod, a cup on the rod and having a cushion therein, and a weight slidable on the rod and provided with a guide in the form of a hook open at the bottom and whose free end engages the cushion when the weight is in its lowermost position.

4. A twine holder and take-up provided with a weight mounted to slide and having an open twine-guide, and means in the path of the guide for closing the same when the weight reaches the end of its movement.

819,522. **TELEPHONE-TRANSMITTER.** ELMER R. CORWIN, West Lafayette, and FREDERICK R. PARKER, La Fayette, Ind.; said Corwin assignor to said Parker, Chicago, Ill. Filed May 6, 1903. Serial No. 155,871.



Claim.—1. In a transmitter, the combination with the speaking-diaphragm thereof, of a projecting pin making contact therewith, an insulating-disk to which the projecting pin is secured, and a secondary diaphragm resting against the insulating-disk, substantially as described.

2. In a telephone-transmitter, a diaphragm, a rigid portion extending over the diaphragm, a dampener-button for the diaphragm, and a coil-spring supported by the said rigid portion and capable of adjustment to adjust the dampener-button.

3. In a transmitter, the combination with the speaking-diaphragm thereof, of a secondary diaphragm, a flexible insulating-disk held against the secondary diaphragm and covering same, and a pin interposed between the speaking-diaphragm and the insulating-disk, for the purpose of transmitting the vibrations of the speaking-diaphragm to the secondary diaphragm, substantially as described.

4. In a transmitter, the combination with the electrode-containing cup thereof, of a back electrode contained therein, a threaded ring screwed to the said cup, a front electrode held to the cup by the said ring, an insulating-disk held to the front electrode by the said ring, and a projecting pin secured to the insulating-disk, substantially as described.

5. In a transmitter, the combination with the electrode-carrying cup thereof, of an electrode contained in the said cup, a threaded ring secured to the said cup, a secondary diaphragm used as the other electrode and secured to the said cup by the said ring, an insulating-disk held to the secondary diaphragm by the said ring, and a projecting pin secured to the said disk, substantially as described.

6. In a transmitter, the combination with the electrode-carrying cup thereof, of an electrode rigidly contained in the said cup, a ring secured to the said cup by threaded engagement therewith, a secondary diaphragm used as the other electrode and secured to the said cup by the said ring, a conical-shaped chamber in the said cup between the said electrodes, the larger diameter of which is next to the secondary diaphragm, the said chamber being used to contain the granular carbon or equivalent material, an insulating-disk held to the said secondary diaphragm by the said ring, and a projecting pin secured to the said disk, substantially as described.

7. In a transmitter, the combination with the electrode-carrying cup thereof, of a gold-plated electrode rigidly contained in the said cup, a ring secured to the said cup by threaded engagement therewith, a gold-plated secondary diaphragm used as the other electrode and secured to the said cup by the said ring, a conical-shaped chamber in the said cup between the said gold-plated electrodes, the larger diameter of which is next to the said secondary diaphragm, the said chamber being used to contain the granular carbon or equivalent material, a mica disk held to the said secondary diaphragm by the said ring, and a projecting pin secured to the mica disk, substantially as described.

8. In a transmitter, the combination with the electrode-carrying cup thereof, of a gold-plated back electrode contained in and secured to the said cup by threaded engagement therewith, a ring secured to the said cup by threaded engagement therewith, a gold-plated secondary diaphragm used as the front electrode and secured to the said cup by the said ring, a conical-shaped chamber in the said cup between the said gold-plated electrodes, the larger diameter of which is next to the said secondary diaphragm, the said chamber being used to contain the granular carbon or equivalent material, a mica disk held to the said secondary diaphragm by the said ring, and a projecting pin secured to the mica disk, substantially as described.

9. In a transmitter, the combination with the speaking-diaphragm thereof, of a secondary diaphragm used as an electrode, an insulating-disk held to the secondary diaphragm, a projecting pin secured to the said disk and interposed between the said disk and the speaking-diaphragm, the projecting pin touching the speaking-diaphragm when the transmitter is in adjustment, an electrode-carrying cup made of insulating material and to which the secondary diaphragm is held, an electrode contained in the said cup and secured thereto, and means whereby the projecting pin may be adjusted against the speaking diaphragm, substantially as described.

10. In a transmitter, the combination with the speaking-diaphragm thereof, of a secondary diaphragm used as one electrode, an insulating-disk held against the secondary diaphragm, a projecting pin making contact with the insulating-disk and the speaking-diaphragm when the transmitter is in adjustment, an electrode-carrying-cup to which the secondary diaphragm is held, a conductor soldered to the secondary diaphragm and extending through a hole in the said cup, an electrode secured to and contained in the said cup, and means whereby the insulating-disk may be adjusted relatively to the speaking-diaphragm, substantially as described.

11. In a telephone-transmitter, a button comprising a receptacle for retaining comminuted material, comminuted material in the receptacle, a flexible electrode covering the comminuted material and secured at its periphery to the button, and an insulating material applied to one surface of the said electrode and covering same.

12. In a transmitter, the combination of a speaking-diaphragm, a granule-containing means, a flexible secondary diaphragm secured at its periphery to the granule-containing means and used as an electrode, a flexible insulating-disk covering the secondary diaphragm, and means for transmitting the vibrations of the speaking-diaphragm to the secondary diaphragm.

13. In a transmitter, the combination with the granule-containing cup thereof, of an electrode contained in the said cup and secured thereto by threaded engagement therewith, a flexible diaphragm used as the other electrode, an insulating-disk, a ring adapted to secure the said diaphragm and said disk to the said cup, by threaded engagement therewith, means for connecting the electrodes in the circuit, and means for vibrating the diaphragm.

14. In a telephone-transmitter, a button comprising a receptacle for retaining comminuted material, comminuted material in the receptacle, a flexible electrode covering the comminuted material and secured at its periphery to the button, an insulating covering for the exposed surface of the said electrode, and a second electrode supporting the button.

15. In a transmitter, the combination with the speaking-diaphragm thereof, of a projecting pin which rests against the speaking-diaphragm when the transmitter is in adjustment, a mica disk to which the projecting pin is secured, a gold-plated secondary diaphragm used as an electrode, an insulating electrode-carrying cup to which the mica disk and gold-plated secondary diaphragm are secured by a ring having threaded engagement with the cup, the secondary diaphragm being between the said cup and mica disk, a gold-plated electrode contained in and secured to the said cup, by threaded engagement therewith, a conical-shaped chamber in the said cup, for carrying the granular carbon or equivalent material, and interposed between the gold-plated elecrodes, the larger diameter of the said chamber being next to the secondary diaphragm, means for adjusting the projecting pin against the speaking-diaphragm, and means whereby electrical conductors may be attached to the respective electrodes, substantially as described.

16. In a transmitter, the combination with the speaking-diaphragm thereof, of an electrode-carrying cup, an electrode contained in and secured to the said cup, a secondary diaphragm used as an electrode and held to the said cup, an insulating-disk held against the secondary diaphragm, and a projecting pin secured to the said disk, and interposed between the latter and the speaking-diaphragm, substantially as described.

17. In a transmitter, the combination with the speaking-diaphragm thereof, of an electrode-carrying cup, an electrode contained in and secured to the said cup, a secondary diaphragm used as an

electrode and held to the said cup, a flexible insulating-disk held against the secondary diaphragm, thus inclosing the latter and a pin interposed between the insulating-disk and the speaking-diaphragm, substantially as described.

18. In a transmitter, the combination with the speaking-diaphragm thereof, of an electrode-carrying cup, an electrode contained in and secured to the said cup, a flexible secondary diaphragm used as an electrode and held to the said cup, a pin interposed between the said diaphragms, a flexible sheet of insulation between the said pin and secondary diaphragm and covering the latter, and means for adjusting the said pin to enable it to transmit the vibrations of the speaking-diaphragm to the secondary diaphragm.

19. In a transmitter, the combination with the speaking-diaphragm thereof, of an insulating, electrode-carrying cup, a gold-plated electrode contained in and secured to the said cup and insulated from the speaking-diaphragm, a gold-plated, flexible, secondary diaphragm used as an electrode and secured to the said cup, a mica disk held to the secondary diaphragm, a conical-shaped chamber in the said cup between the said electrodes, and used for containing the granular carbon or equivalent material, a projecting pin secured to the mica disk, means whereby the said pin may be adjusted so as to enable it to transmit vibrations from the speaking-diaphragm to the secondary diaphragm, and means whereby the said electrodes may be electrically connected to respective conductors leading from the transmitter, substantially as described.

20. In a transmitter, the combination with the speaking-diaphragm thereof, of a granule-containing means, a flexible electrode in the form of a diaphragm and secured at its periphery to the granule-containing means, a sheet of insulating material completely covering the said electrode, and means for transmitting vibrations between the speaking-diaphragm and the said electrode.

21. In a transmitter, the combination with the speaking-diaphragm thereof, of a dampener-button held thereto, a coil-spring for holding the dampener-button against the speaking-diaphragm, a socket for holding the coil-spring, and a screw-adjustment to the said socket whereby the said button may be adjusted against the speaking-diaphragm through the agency of the coil-spring, substantially as described.

22. In a transmitter, the combination with the speaking-diaphragm thereof, of an annular, rubber fold in which the edge of the speaking-diaphragm is inserted, a dampener-button held against the said rubber fold, a coil-spring for holding the dampener-button against the rubber fold, and a socket secured to the bridge of the transmitter and adapted to hold the coil-spring in place, substantially as described.

23. In a transmitter, the combination with the speaking-diaphragm thereof, of a dampener-button held against the speaking-diaphragm, the said dampener-button being covered with a felt covering next to the speaking-diaphragm, a coil-spring which holds the dampener-button against the speaking-diaphragm, a hollow screw secured to the bridge of the transmitter by threaded engagement therewith and which contains one end of the coil-spring, a lock-nut which locks the hollow screw to the bridge, and means whereby the hollow screw may be adjusted to adjust the coil-spring which in turn adjusts the pressure of the dampener-button against the speaking-diaphragm, substantially as described.

24. In a transmitter, the combination of a speaking-diaphragm, a bridge, a dampener-button which rests against the speaking-diaphragm, a coil-spring adapted to hold the dampener-button to the speaking-diaphragm, a hollow screw in which one end of the coil-spring is inserted, the said hollow screw being secured to the said bridge by threaded engagement therewith, a lock-nut by which the hollow screw may be locked to the bridge, means whereby the hollow screw may be adjusted to adjust the said dampener-button against the speaking-diaphragm, an annular rubber fold in which the edge of the speaking-diaphragm is inserted, a second dampener-button which rests against the said rubber fold, a second coil-spring adapted to hold the said second dampener-button against the said rubber fold, and a hollow nut in which one end of the said second coil-spring is inserted and which is secured to the said bridge, substantially as described.

25. In a device of the character described, a granule-containing means, flexible diaphragms, one being an electrode and secured at its periphery to the granule-containing means, insulating material covering one surface of the said electrode, and means for transmitting vibrations from one diaphragm to another.

26. In a transmitter, the combination with the speaking-diaphragm thereof, of a granule-containing means, a flexible secondary diaphragm used as an electrode and secured at its periphery to the granule-containing means, means interposed between the said diaphragms and arranged to transmit the vibrations of one to the other, and an insulating material covering the secondary diaphragm.

27. In a transmitter, the combination of a speaking-diaphragm, an electrode-carrying cup, a flexible electrode secured at its periphery to the electrode-carrying cup and covered by an insulating material, and a pin interposed between the said diaphragm and electrode and adapted to transmit the vibration of one to the other.

28. In a transmitter, the combination with the granule-containing cup thereof, of an electrode contained therein, a ring secured to the said cup, a flexible diaphragm used as the other electrode and secured to the said cup by the said ring, an insulating-disk covering the said diaphragm and held thereto by the said ring, and means for vibrating the diaphragm.

29. In a device of the character described, a granule-containing means, a speaking-diaphragm, a flexible, conducting, secondary diaphragm secured at its periphery to the granule-containing means, insulating material covering one surface of the secondary diaphragm, and means for transmitting vibrations from one diaphragm to the other.

30. In a telephone-transmitter, a diaphragm, a bridge extending over the diaphragm, a dampener-button for the diaphragm, and a coil-spring supported by the bridge and capable of adjustment to adjust the dampener-button.

31. In a transmitter, a granule-containing means, an electrode formed out of a flexible sheet of metal and a flexible sheet of insulating material secured together, and secured at its periphery to the granule-containing means, and means for vibrating the electrode, substantially as described.

32. In a transmitter, the combination with the granule-containing cup thereof, of an electrode contained in the said cup and secured thereto by threaded engagement therewith, a flexible diaphragm used as the other electrode and secured to the said cup at its periphery, a flexible insulating-disk held against the said diaphragm and covering same, and means for vibrating the latter.

33. In a transmitter of the character described, a speaking-diaphragm, an electrode-carrying means, a flexible electrode secured at its periphery to the electrode-carrying means and covered by an insulating material, and means for transmitting vibrations from the diaphragm to the electrode.

34. In a transmitter of the character described, the combination with the granule-containing means thereof, of a ring, a flexible electrode secured to the said means by the said ring, and insulating material covering one surface of the electrode.

35. In a device of the character described, a diaphragm, granule-containing means, a flexible electrode in the form of a diaphragm and secured at its periphery to the granule-containing means, insulating material covering the said electrode, and means for transmitting vibrations between the diaphragm and the electrode.

36. In a device of the character described, granule-containing means, an electrode comprising a flexible piece of metal covered on one side by insulating material and secured at its periphery to the granule-containing means, and means for vibrating the electrode.

37. In a device of the character described, the combination with the granule-containing means thereof, of a metallic electrode removably held at its periphery to the said means, and insulating material covering the electrode.

819,523. **HAND AND FOOT POWER.** JACOB F. DEAL, Tilton, Ga. Filed June 20, 1905. Serial No. 267,697.

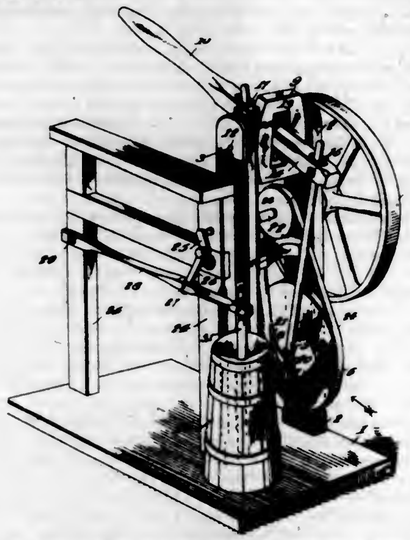
Claim.—1. A device of the character described, comprising a shaft having double cranks, a pivoted lever, means for allowing said lever to have a vertical movement independent of its pivotal connection, and pitmen connecting said lever and cranks.

2. A device of the character described, comprising a shaft having double cranks, a pivoted lever, means for allowing said lever to have a vertical movement independent of the pivotal connection, pitmen connecting said lever and the cranks, and means carried by the shaft for transmitting motion.

3. A device of the character described, comprising a shaft having double cranks, a pivoted yoke, means for vertically movably securing said lever in the yoke, and pitmen connecting said lever and cranks.

4. A device of the character described, comprising a shaft having double cranks, a pivoted yoke, a lever within the yoke, means for vertically movably securing the lever in the yoke, and a pitman pivotally connected to said lever on each side of the yoke, and connected to said cranks.

5. A device of the character described, comprising a shaft having double cranks, a pivoted yoke, a lever passing through said yoke, a vertically-disposed rod carried by the yoke and passing loosely through the lever, and a pitman connected to said lever on each side of the yoke and having their lower ends connected to the double cranks.



6. A device of the character described, comprising a base, upwardly-extending standards carried thereby, a yoke pivotally mounted between the upper ends of the said standards and having an elongated vertical slot therein, a lever passing through the said slot, a rod carried by the yoke and passing through the lever, a shaft carried by the standards below the yoke and having double cranks, and a pitman connected to said lever on each side of the yoke and having their lower ends connected to said double cranks.

7. A device of the character described, comprising a base, upwardly-extending standards carried thereby, a yoke pivotally mounted between the upper ends of said standards and having a vertical elongated slot therein, a lever passing through said slot and of a width considerably less than the length of said slot, a rod carried by the yoke and passing loosely through the lever, and pitmen connected to the lever on each side of the yoke and having their lower ends connected to the double cranks.

8. A device of the character described, comprising a base, standards carried thereby, a shaft rotatably mounted between the lower ends of said standards and having double cranks, a lever pivotally connected between the upper ends of said standards, means for allowing said lever to have a vertical movement independent of the pivotal connection, pitmen connecting said lever and the double cranks, a drive-pulley carried by the shaft, a second shaft rotatably mounted within the standard above the first shaft, a pulley-wheel carried by the second shaft between the standards, a belt passing around said pulleys, a balance-wheel carried by the second shaft and the outside of the standards, the opposite end of said shaft having a crank, a lever having one end pivoted to a standard, a link connection between the opposite end of said lever and the crank, and means carried by said lever for imparting a reciprocating movement to the machine to be operated.

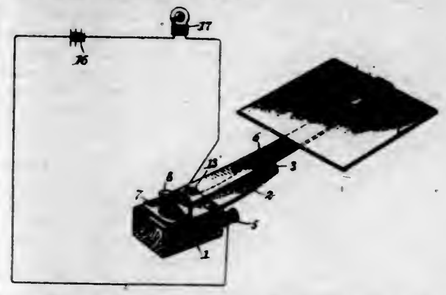
819,524. **OIL-BREAK DEVICE FOR ELECTRIC SWITCHES AND CIRCUIT-BREAKERS.** JAMES H. DELANY, Wilkinsburg, Pa. Filed Aug. 12, 1904. Serial No. 220,496.



Claim.—1. In a fluid-break electric switch, a fluid-containing chamber into which extends a switch-contact or electrode, a piston working in said chamber and carrying a coöperating contact or electrode, and a by-pass channel around the piston and having a discharge-opening adjacent to the meeting-point of the contacts; substantially as described.

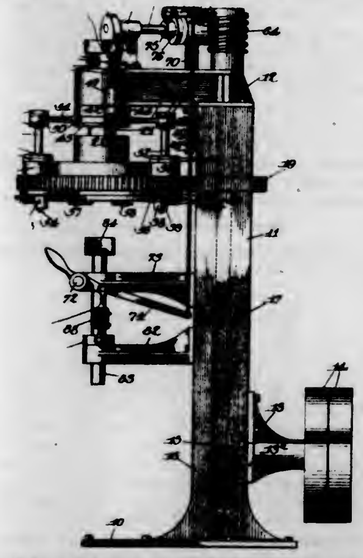
2. In a fluid-break electric switch, a fluid-containing chamber, in which are fixed and movable contacts or electrodes, a piston-head carrying the movable electrodes, and by-pass passages around the piston-head and having discharge-openings adjacent to the meeting-points of the contacts and directed thereto at an angle; substantially as described.

819,525. **RAIN-ALARM.** VINCENT A. DEVER, Philadelphia, Pa. Filed May 9, 1905. Serial No. 259,557.



Claim.—A device of the class described, consisting of a block and a fixed contact-plate attached to the vertical face of the block, a movable contact-plate attached to the upper face of the block and projecting above the fixed contact-plate, an adjusting-screw in connection with the movable contact-plate for regulating the distance between the plates, a plate of relatively large area on the end of the movable contact-plate, an absorbent material carried by the relatively large plate and affording means for depressing the movable contact-plate when moist, and means whereby to secure the absorbent material on the relatively large plate.

819,526. **CAN-SEAMING MACHINE.** HENRY DUECKE, Bastport, Me. Filed Dec. 6, 1904. Serial No. 235,602.



Claim.—1. In a can-seaming machine, a lever having a pivotal support at one end, a pin disposed at the opposite end, a grooved cam receiving said pin, a second lever pivoted at a point intermediate its ends to the first lever, a roller-die carried by one end of the second lever, and an adjustable cam arranged near the pivotal point of the first lever and adapted to engage with the second lever and force the roller-die carried thereby into engagement with the can.

2. In a can-seaming machine, a lever having at one end a perforated boss and provided with a second grooved boss in alinement with the first, an antifriction-roller arranged at the opposite end of the lever, a grooved cam receiving the antifriction-roller, a second lever pivoted at a point intermediate its ends to the first lever, a roller-die at one end of the second lever, an adjustable screw at the opposite end of the second lever, a slidable cam guided by the two bosses and having an inclined face for engagement with said screw, and means for operating the cam.

3. In a can-seaming machine, the combination with a revoluble disk, of means for revolving the same, a pair of sets of levers carried by said disk, each set of levers comprising a carrying-lever pivoted at one end to the disk and provided at the opposite end with an antifriction-roller, a die-carrying lever pivoted to the main lever, one of said dies being arranged to form a seam, and the other to flatten the same, and a pair of cams movable through the main levers and adapted to engage the die-carrying levers, movement of the cams in one direction serving to force the forming-die into engagement with a can in advance of the operation of the flattening-die, and to effect the removal of the forming-die from the work during the operation of the flattening-die.

4. The combination in a can-seaming machine, of a toothed disk, a revoluble pinion engaging the disk, a rigid shaft supporting said disk, a vertically-movable chuck supported by the shaft and provided with a cam-groove, and an anvil, a pair of sets of levers pivoted to the disk, antifriction-rollers carried by one set of levers and entering the cam-groove, seaming-dies carried by the second set of levers, vertically-movable cam-bars for engaging and locking the seaming-die-carrying levers, a collar revoluble with the disk and having arms for supporting said cam-rods, a stationary sleeve having a groove for the reception of said collar and mounted on the shaft, lugs projecting from the sleeve, a pair of rods connected to said lugs, a cross-bar connecting the upper ends of the rods, an antifriction-roller on said cross-bar, a revoluble cam-shaft, a cam mounted thereon and engaging the antifriction-roller, a worm-wheel on the cam-shaft, a worm-shaft, a worm mounted thereon and meshing with the worm-wheel, a clutch for engaging the worm-wheel with its shaft, a can-receiving platform, an elevating-lever for the platform, a rock-shaft, a rocker-arm, a clutch-operating lever secured to the rocker-arm, a rod extending between the rocker-arm and the operating-lever, a recessed disk on the cam-shaft, and a roller carried by said rocker-arm and adapted to engage the recessed disk.

5. The combination in a can-seaming machine, of a revoluble carrying device, a pair of cam-actuated levers supported thereby, roller-dies, one for the formation of a seam and the other for the flattening of the same, roller-die-carrying levers pivoted to the cam-actuated levers, and cams for successively engaging the carrying-lever of the forming-die and the carrying-lever of the flattening-die.

6. The combination in a can-seaming machine, of a revoluble gear having a pair of arcuate slots, levers pivoted thereto, dies carried by said levers, antifriction-rollers projecting from the levers and movable outward through said arcuate slots, and a vertically-adjustable disk arranged within a recess in the gear-wheel and provided with a cam-groove for the reception of said antifriction-rollers.

819,527. **FLAT-CAR STANDARD.** GEORGE W. DU BOS, New Orleans, La. Filed Jan. 13, 1906. Serial No. 295,951.



Claim.—1. An apparatus for maintaining and releasing loads on cars or other vehicles, comprising a series of standards provided with inclined tongues, and perforated heels, brackets secured to the vehicle-body and provided with inclined pockets adapted to receive said tongues, and U-shaped bolts secured to the vehicle-body and engaging in the perforations in the heels of said standards, substantially as described.

2. An apparatus for maintaining and releasing loads on cars or other vehicles, comprising a series of standards provided with inclined tongues, and perforated heels, brackets secured to the vehicle-body and provided with inclined pockets adapted to receive said tongues, and U-shaped bolts secured to the vehicle-body and engaging in the perforations in the heels of said standards, with means for securing together the oppositely-disposed standards on both sides of the vehicle, substantially as described.

3. An apparatus for maintaining and releasing loads on cars or other vehicles, comprising a series of standards provided with inclined tongues, and perforated heels, brackets secured to the vehicle-body and provided with inclined pockets adapted to receive said tongues, and U-shaped bolts secured to the vehicle-body and engaging in the perforations in the heels of said standards, chains connected to the heads of said standards, and means for securing said chains to similar chains on the standards on the opposite side of the vehicle, substantially as described.

4. An apparatus for maintaining and releasing loads on cars or other vehicles, comprising a series of standards provided with inclined tongues, and perforated heels, brackets secured to the vehicle-body and provided with inclined pockets adapted to receive said tongues, and U-shaped bolts secured to the vehicle-body and engaging in the perforations in the heels of said standards, chains connected to the heads of said standards, and means for securing said chains to similar chains on the standards in the opposite side of the vehicle, with hooks arranged at the side of the vehicle below the platform to engage said chains when the standards are in the lowered position, substantially as described.

5. An apparatus for maintaining and releasing loads on cars or other vehicles, comprising a series of metal standards provided with downwardly and inwardly inclined tongues, and perforated heels, metal brackets secured to the vehicle-body and provided with inclined pockets adapted to receive said tongues, and bolts secured to the vehicle-body and engaging in the perforations in the heels of said standards, substantially as described.

6. An apparatus for maintaining and releasing loads on cars or other vehicles, comprising a series of metal standards provided with downwardly and inwardly inclined tongues, and perforated heels, metal brackets secured to the vehicle-body and provided with inclined pockets adapted to receive said tongues, and U-shaped bolts curved upwardly in their center and secured to the vehicle-body and engaging in the perforations in the heels of said standards, substantially as described.

7. An apparatus for maintaining and releasing loads in cars or other vehicles, comprising a series of metal standards provided with downwardly and inwardly inclined tongues, and perforated heels, metal brackets secured to the vehicle-body and provided with inclined pockets adapted to receive said tongues, bolts secured to the vehicle-body and engaging in the perforations in the heels of said standards, chains connected to the heads of said standards, and means for securing said chains to similar chains on the standards on the opposite side of the vehicle, substantially as described.

8. An apparatus for maintaining and releasing loads on cars or other vehicles, comprising a series of standards provided with inclined tongues, and with heels having elongated vertical slots therein, brackets secured to the vehicle-body and provided with inclined pockets adapted to receive said tongues, and bolts secured to the vehicle-body and engaging in the slots in the heels of said standards, substantially as described.

9. An apparatus for maintaining and releasing loads on cars or other vehicles, comprising a series of standards provided with inclined tongues, and with heels having elongated vertical slots therein, brackets secured to the vehicle-body and provided with inclined pockets adapted to receive said tongues, and U-shaped bolts curved upward at their center and secured to the vehicle-body and engaging in the slots in the heels of said standards, substantially as described.

10. An apparatus for maintaining and releasing loads on cars or other vehicles, comprising a series of standards provided with downwardly and inwardly inclined tongues; and with heels having elongated vertical slots therein, brackets secured to the vehicle-body and provided with inclined pockets adapted to receive said tongues, and U-shaped bolts curved upward at their center and secured to the vehicle-body and engaging in the slots in the heels of said standards, with means for securing together the standards on opposite sides of the vehicle, substantially as described.

11. An apparatus for maintaining and releasing loads on cars or other vehicles, comprising a series of standards provided with downwardly and inwardly inclined tongues, and perforated heels, brackets secured to the vehicle-body and provided with V-shaped pockets open at the bottom and adapted to receive said tongues, and U-shaped bolts curved upward at their center and secured to the vehicle-body and engaging in the perforations in the heels of said standards, chains connected to the heads of said standards, and means for securing said chain to a similar chain on the standard on the opposite side of the vehicle, substantially as described.

12. In an apparatus for maintaining and releasing loads on cars or other vehicles, the combination of a metal standard provided with a downwardly and inwardly inclined tongue, and a perforated heel, of a metal bracket secured to the vehicle-body and provided with an inclined pocket adapted to receive said tongue, and a bolt secured to the vehicle-body and engaging in the perforation in said heel, substantially as described.

13. In an apparatus for maintaining and releasing loads on cars or other vehicles, the combination of a metal standard provided with a downwardly and inwardly inclined tongue, and a perforated heel, a metal bracket secured to the vehicle-body and provided with an inclined pocket adapted to receive said tongue, and a U-shaped bolt curved upwardly in its center and secured to the vehicle-body and engaging in the perforation in the heel of said standard, substantially as described.

14. In an apparatus for maintaining and releasing loads on cars or other vehicles, the combination of a metal standard provided with a downwardly and inwardly inclined tongue, and a perforated heel, a metal bracket secured to the vehicle-body and provided with an inclined pocket adapted to receive said tongue, and a bolt secured to the vehicle-body and engaging in the perforation in the heel of said standard, substantially as described.

15. In an apparatus for maintaining and releasing loads on cars or other vehicles, the combination of a metal standard provided with a holding-tongue located above the heel of said standard, a metal bracket secured to the vehicle-body and provided with a pocket adapted to receive said tongue, and a U-shaped bolt curved upwardly in its center and secured to the vehicle-body and engaging in the heel of said standard, substantially as described.

16. In an apparatus for maintaining and releasing loads on cars or other vehicles, the combination of a standard provided with a downwardly and inwardly inclined tongue, and with a heel having an elongated slot therein, a bracket secured to the vehicle-body and provided with an inclined pocket adapted to receive said tongue, and a bolt secured to the vehicle-body and engaging in the slot in the heel of said standard, substantially as described.

17. In an apparatus for maintaining and releasing loads on cars or other vehicles, the combination of a standard provided with a downwardly and inwardly inclined tongue, and with a heel having an elongated slot therein, a bracket secured to the vehicle-body and provided with an inclined pocket adapted to receive said tongue, and a U-shaped bolt curved upward at its center and secured to the vehicle-body and engaging in the slot in the heel of said standard, substantially as described.

18. In an apparatus for maintaining and releasing loads on cars or other vehicles, the combination of a standard provided with a downwardly and inwardly inclined tongue, and with a heel having an elongated slot therein, a bracket secured to the vehicle-body and provided with an inclined pocket adapted to receive said tongue, and a U-shaped bolt curved upward at its center and secured to the vehicle-body and engaging in the slot in the heel of said standard, with means for securing together the standards on opposite sides of the vehicle, substantially as described.

19. In an apparatus for maintaining and releasing loads on cars or other vehicles, the combination of a standard provided with a downwardly and inwardly inclined tongue, and with a heel having an elongated slot therein, a bracket secured to the vehicle-body and provided with an inclined pocket adapted to receive said tongue, and a U-shaped bolt curved upward at its center and secured to the vehicle-body and engaging in the slot in the heel of said standard, a chain connected to the head of said standard, and means for securing said chain to a similar chain on the standard on the opposite side of the vehicle, substantially as described.

20. An apparatus for maintaining and releasing loads on cars or other vehicles, comprising a series of metal standards provided with holding-tongues, metal brackets secured to the vehicle-body and provided with pockets adapted to receive said tongues, and a U-shaped bolt curved upwardly in its center and secured to the vehicle-body and engaging the heel of the standard, substantially as described.

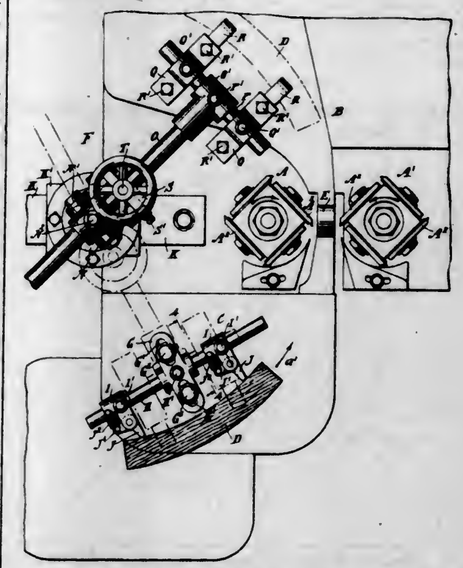
21. An apparatus for maintaining and releasing loads on cars or other vehicles, comprising a series of metal standards provided with holding-tongues, metal brackets secured to the vehicle-body and provided with pockets adapted to receive said tongues, and a U-shaped bolt curved upwardly in its center and secured to the vehicle-body and engaging the heel of the standard, a chain connected to the head of said standard, and means for securing said chain to a similar chain on the standard on the opposite side of the vehicle, substantially as described.

22. An apparatus for maintaining and releasing loads on cars or other vehicles, comprising a series of metal standards provided with holding-tongues, metal brackets secured to the vehicle-body and provided with pockets adapted to receive said tongues, and a U-shaped bolt curved upwardly in its center and secured to the vehicle-body and engaging the heel of the standard, with means located beneath the platform of the vehicle-body for supporting the head of the standard when in the lowered position, substantially as described.

23. In an apparatus for maintaining and releasing loads on cars or other vehicles, the combination with a bracket secured to the vehicle-body, and a standard pivotally connected to the vehicle-body, and means for connecting said standard and said bracket whereby the lifting of the standard effects the swinging outward of the upper portion of said standard, substantially as described.

24. In an apparatus for maintaining and releasing loads on cars or other vehicles, the combination of a metal standard provided with a holding-tongue located above the heel of said standard, a metal bracket secured to the vehicle-body and provided with a tapered pocket open at top and bottom and adapted to receive said tongue, and means secured to the vehicle-body and adapted to engage the heel of the standard for holding the same in all positions of the standard, substantially as described.

819,528. **PLANING-MACHINE.** GEORGE A. ENSIGN, Defiance, Ohio, assignor to The Defiance Machine Works, Defiance, Ohio. Filed Oct. 18, 1905. Serial No. 283,257.



Claim.—1. A felly-planing machine, comprising a table, a rotatable standard mounted thereon, a radially-adjustable feed-arm mounted on the standard, a transverse rod mounted on the end of the feed-arm and adjustable with respect thereto, prongs on the ends of the rod for engaging the top of the felly, a centering device on the table and comprising a bracket adjustable toward and from the standard, a rod mounted transversely of the bracket and adjustable with respect thereto, centering-fingers on the ends of the rod for engaging the inner face of the felly, said fingers being mounted to yield in the direction of travel of the felly, and a pair of spaced revoluble cutter-heads arranged to engage the inner and outer faces of the felly as it is moved thereby by the feed-arm.

2. A felly-planing machine, comprising a table, a rotatable standard mounted thereon, a feed-arm adjustably mounted on the standard, means on the feed-arm for engaging a felly near the opposite ends thereof, a centering device for centering the felly prior to

its engagement by the feed-arm, said device comprising a rod having fingers upon each end thereof for engaging the inner face of the felly, means for adjusting said rod toward and from the standard, and a pair of rotatable cutters arranged upon each side of the path of travel of the felly and adapted to engage the inner and outer sides thereof.

3. In a felly-planing machine, a plurality of revoluble cutter-heads spaced apart to permit the passage of a felly, of devices for centering the felly with respect to the cutters comprising an adjustable rod, having centering-fingers for engaging the felly near its ends, said fingers being adjustable on the rod, and means for moving the felly between the cutters, said means engaging the felly near the opposite ends thereof, whereby to retain it in its centered position.

4. A felly-planing machine provided with a felly-feeding device, comprising an adjustable base, a standard mounted to turn thereon, a head mounted to swing on the said standard, an arm adjustably held in the said head, holders adjustably secured on the said arm, prongs secured on the said holders, and a fastening device on the standard for locking the arm against swinging.

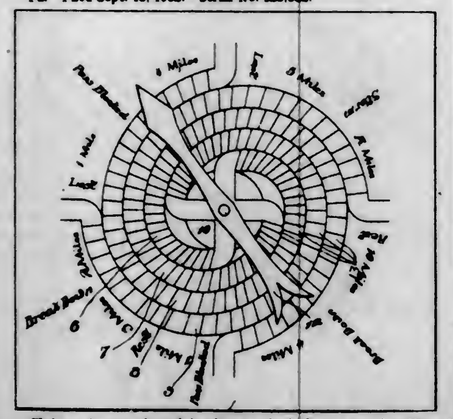
819,529. **VULCANIZED MATERIAL AND PROCESS FOR MAKING THE SAME.** FERDINAND EBERAIM, San Francisco, Cal. Filed July 11, 1905. Serial No. 269,246.

Claim.—1. The process herein described of treating rubber or gum containing plants, which consists in crushing or pulverizing the same as a whole, adding thereto a vulcanizing material, and then vulcanizing the admixture.

2. The product herein described, consisting of vulcanized material containing crushed, ground or pulverized material in the proportions found in rubber or gum containing plants.

3. The process herein described of treating rubber or gum containing plants, which consists in crushing or pulverizing the same, so as to form a powder consisting partly of rubber or analogous material admixed with the natural fiber of the plant, adding a vulcanizing material, and finally vulcanizing the admixture.

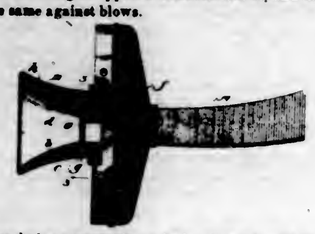
819,530. **GAME APPARATUS.** HERBERT A. FENNEY, Crum Lynne, Pa. Filed Sept. 13, 1902. Serial No. 123,333.



Claim.—A game-board having marked thereon a plurality of concentric spiral paths, each of said paths being divided into blocks for movement of game-pieces thereover, penalties indicated on said board exterior to said paths and numbers for indicating the movement of game-pieces over the said blocks, said numbers being disposed alternately with said penalties, the outermost ends of said paths being disposed at ninety degrees to each other and the inner ends of said paths terminating in the center of the center of the board at a point in line with the opposite ends thereof, there being a series of said paths located between the ends of each one of the four paths and an index pivoted concentric with the paths, the said index being spaced vertically from the said board to allow passage of the former over game-pieces on the latter.

819,531. **MOUTHPIECE FOR TELEPHONES.** FRANK C. FISHER, Cheltenham, Pa., and WALTER C. CULEN, Camden, N. J. Filed Oct. 30, 1905. Serial No. 285,089.

Claim.—1. A mouthpiece comprising a section of hard rubber or analogous material, and a metallic body carrying the said section and having one of its ends extended beyond the section and provided with means for effecting connection between the mouthpiece and a support and also having its opposite end extended beyond the section to protect the same against blows.



2. A mouthpiece comprising a body of metal, and sections of other material arranged at opposite sides of the body and interposed between enlargements on the body.

3. A mouthpiece comprising a body of metal having inner and outer enlargements, and a section of other material carried by the body and interposed between the enlargements thereof.

4. A mouthpiece comprising a body of metal having inner and outer enlargements, and a section of hard rubber, gutta-percha or analogous material, carried by the body and interposed between the enlargements thereof.

5. A mouthpiece comprising a body of metal having means at its inner end whereby it may be connected to a support, and also having inner and outer enlargements, and a section of other material carried by the body and interposed between the enlargements thereof.

6. A mouthpiece comprising a body of metal having means at its inner end whereby it may be connected to a support and also having inner and outer enlargements at its inner and outer sides, an inner section of other material arranged between the enlargements at the inner side of the body, and a section of said material arranged between the enlargements at the outer side of the body.

7. A mouthpiece comprising a body, of metal, having a comparatively thick portion at its inner end provided with exterior threads and a circumferential flange, and also having a comparatively thin portion, and an enlargement at the outer end of said thin portion affording shoulders at opposite sides thereof, an outer section of hard rubber, gutta-percha or the like arranged at the outer side of the thin portion of the body and between shoulders thereof, and an inner section of hard rubber, gutta-percha or the like arranged at the inner side of the thin portion of the body and between shoulders thereof.

819,532. **WHEEL DISK PLOW.** EDWARD FOWLER, Cedar Grove, Ga., assignor of one-half to Adolphus L. Fowler, Cedar Grove, Ga. Filed Mar. 28, 1905. Serial No. 252,516.



Claim.—1. In a plow, the combination with the beam, of a freely-swinging animal-hitch having a broad flat upper face, and a clevis at its front end, and pivoted at a point in the rear of the front end of the beam, so that it may be supported by that portion of the beam in front of its pivot.

2. In a plow, a standard flanged on opposite sides, a disk-mounting secured on one side of the standard between the flanges, a disk carried thereby, a rear caster-wheel mounting secured to the other side of the standard between the flanges and a freely-swinging caster-wheel carried thereby, and securing-bolts engaging both mountings.

3. In a plow, a standard, a disk-mounting on one side of the standard, a casting on the other side of the standard, securing-bolts engaging the disk-mounting and the casting, a disk carried by the disk-mounting, and a seat carried by the casting.

4. In a plow, a standard, a disk-mounting on one side of the standard, a casting on the other side of the standard, securing-bolts engaging the disk-mounting and the casting, a disk carried by the disk-mounting, a seat carried by the casting, and a rear furrow caster-wheel also carried by the casting.

5. In a plow, a standard flanged on opposite sides, a disk-mounting mounted on one side of the standard, between the flanges, a casting mounted on the other side of the standard between the flanges, and a seat and a rear furrow caster-wheel carried by the casting.

6. The combination with the seat-post and the swinging arm of the rear furrow-wheel, of a foot-rest having a hook at one end and pivoted intermediate its ends to the seat-post to move the hooked end into and out of the path of the swinging arm.

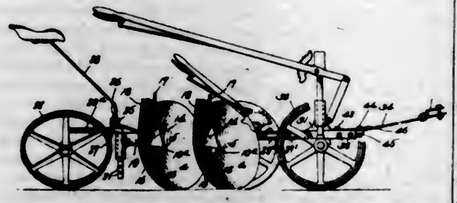
7. The combination with the standard, of the rear furrow-wheel mounting, the disk-mounting, bolts engaging both the disk-mounting and the rear furrow-wheel mounting, and means permitting the vertical adjustment of the disk-mounting without disturbing the adjustment of the rear furrow-wheel mounting.

8. In a wheeled disk plow, the combination with the arched beam and the standard depending therefrom, of a rotary cutting-disk vertically adjustable on the standard, with its cutting edge directly beneath the beam, wheels for supporting the front portion of the beam, and a freely-swinging rear furrow-wheel secured to the standard.

9. The combination with the arched main beam, of an arched supplemental beam of less length than the main beam having an integral laterally-extending spacing member at its front end, means detachably securing the free end of the forward spacing member to the main beam, a front furrow-wheel mounting carrying a vertically-adjustable wheel, and means for securing said mounting to the supplemental beam or to the main beam.

10. The combination with the standard, provided with flanges, of a disk-bearing having an attaching-plate movable on the flanges and provided with vertical slots, and a corrugated outer face, and bolts carrying parts provided with corrugations and holding the disk-bearing in its adjusted position.

819,533. **DISK PLOW.** EDWARD FOWLER, Cedar Grove, Ga., assignor of one-sixth to Oty T. Simmons, one-sixth to Jessey L. Simmons, and one-sixth to Byron V. Kell, Cedar Grove, Ga. Filed Aug. 2, 1905. Serial No. 272,382.



Claim.—1. In a disk plow, a rear furrow-wheel swinging arm, a foot-rest pivoted above the swinging arm and carrying a depending portion adapted to be thrown downwardly in the path of the arm, and means permitting the foot-rest to be adjusted vertically.

2. In a disk plow, the combination with the rear furrow-wheel swinging arm, of a seat-post provided with a vertical series of perforations, a foot-rest carrying a depending portion to be thrown in the path of the arm, and bolt passing through any one of the perforations and pivotally securing the foot-rest.

3. The combination with the vertically-adjustable swinging rear furrow-wheel, of a vertically-adjustable lock for limiting the swinging of the rear furrow-wheel.

4. The combination with the main beam having a straight forward portion adapted to have a front furrow-wheel secured thereto, a portion deflected toward the land side, and a portion deflected toward the furrow side, all of said portions being integral with one another; of an animal-hitch secured to the front end of the main beam; a rear furrow-wheel and disk secured to the portion deflected to the furrow side; an unplowed-land wheel secured to the main beam; a supplemental beam having a central portion detachably secured to the straight forward portion of the main beam, a rear portion approximately parallel with that portion of the main beam deflected toward the furrow side, a spacing portion deflected forwardly from the central portion, and a wheel-mounting portion extending from the spacing portion; a disk carried by the rear portion of the supplemental beam; and a front furrow-wheel adapted to be secured to the wheel-mounting portion of the supplemental beam or to the forward portion of the main beam.

5. The combination with the main beam, of a member pivoted to the main beam to swing vertically, an animal-hitch pivoted to the member to swing laterally a clevis on the forward end of the hitch and means for adjusting and holding the hitch, in any lateral position between two fixed limits.

6. The combination with a beam, of an animal-hitch having a broad flat upper face to support a whiffletree, a clevis on the forward end of the hitch, means permitting the hitch to freely swing vertically relatively to the beam, and means permitting said hitch to be moved laterally to any position within two fixed limits and to be clamped in any position within these limits.

7. The combination with the main beam, of a member having depending arms positioned on opposite sides of the beam and pivoted thereto so that the member may swing vertically, said member being also provided with a horizontal arcuate slot; an animal-hitch pivoted to the member to swing laterally, and a bolt engaging the hitch and passing through the slot to hold the hitch in various lateral positions.

819,534. **CLASP.** HENRY C. FRANK, New York, N. Y. Filed Aug. 29, 1905. Serial No. 276,211.



Claim.—1. A clasp comprising two jaw-plates hinged together, the said jaw-plates being extended forwardly to form the jaws and extended rearwardly to form finger extensions, the rear ends of the said finger extensions being bent to form transverse lugs or projections for preventing the fingers of the person operating the clasp from slipping off the clasp.

2. A clasp comprising two jaw-plates hinged together, the said jaw-plates being extended forwardly and inwardly and thence forwardly parallel with each other to form the jaws, the said plates being furthermore extended rearwardly to form finger extensions, the rear ends of the said finger extensions being bent to form transverse lugs or projections for preventing the fingers of the person operating the clasp from slipping off the clasp.

3. A clasp comprising two jaw-plates hinged together, the said jaw-plates being extended rearwardly to form finger extensions and forwardly to form jaws, one jaw being provided with a smooth-faced yielding disk and the other jaw with a plurality of teeth struck inwardly from the body of the jaw arranged to coact with the said disk.

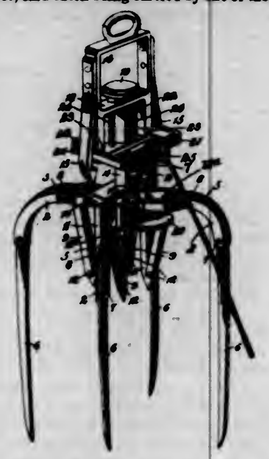
819,535. **HAY-FORK.** EDWARD FROHN and CHARLES S. EDICK, Eldora, Iowa. Filed May 24, 1905. Serial No. 262,103.

Claim.—1. A fork of the class described, comprising a head, tines pivotally connected with the head, a member also connected with the tines and movable independently of the head, and a hanger connected with and having a limited movement independent of the head and provided with means for detachably engaging the said member.

2. A fork of the class described, comprising a head, tines pivotally connected with the head, a member also connected with the tines and movable independently of the head, a hanger connected with and having a limited movement independent of the head and provided with means for detachably engaging the said member, and a tripping device for disconnecting the said member from the hanger.

3. A fork of the class described, comprising a head, tines pivotally connected with the head, a member connected with the tines and

movable independently of the head to permit the tines to open and close, a hanger, and a catch for detachably connecting the hanger with the member, said catch being carried by one of the parts.



4. A fork of the class described, comprising a head, tines pivotally connected with the head, a member connected with the tines and movable independently of the head to permit the tines to open and close, a hanger, a catch for detachably connecting the hanger with the member, said catch being carried by one of the parts, and a tripping device for throwing the catch out of engagement to release the said member.

5. A fork of the class described, comprising a head, tines pivotally connected therewith, a member connected with the tines and movable independently of the head to permit the tines to open and close, a hanger provided with a catch arranged to engage the said member, and a tripping device for throwing the catch out of engagement with the member.

6. A fork of the class described, comprising a head, tines pivotally connected therewith, a member connected with the tines and movable independently of the head to permit the tines to open and close, a hanger provided with a catch arranged to engage the said member, and a slidable tripping device having a tapered or wedge-shaped portion arranged to throw the catch out of engagement with the said member.

7. A fork of the class described, comprising a head having a guide, tines pivotally connected with the head, a member slidable on the guide and connected with the tines, a hanger movable on the guide, and means for detachably connecting the member with the hanger.

8. A fork of the class described, comprising a head having a guide, tines pivotally connected with the head, a member slidable on the guide and connected with the tines, a hanger movable on the guide, a catch for detachably connecting the member with the hanger, and means for releasing the said member.

9. A fork of the class described, comprising a head, tines pivotally connected with the head, a guide extending from the head, a member slidable on the guide and connected with the tines, a hanger also slidable on the guide and provided with a catch arranged to engage the said member, and a movable tripping device mounted on the hanger for throwing the catch out of engagement with the said member

10. A fork of the class described, comprising a head, tines pivotally connected with the head, a bar extending from the head and forming a guide, a slidable member mounted on the bar and connected with the tines, and a hanger having a limited movement on the bar and provided with means for detachably connecting it with the said member.

11. A fork of the class described, comprising a head, tines pivotally connected with the head, a bar extending from the head, a slidable member mounted on the bar and slidably and pivotally connected with the tines, and a hanger slidable on the bar and provided with means for detachably connecting it with the said member.

12. A fork of the class described, comprising a head, tines pivotally connected to the head, a tine-controlling member capable of movement independently of the head, links connecting the tine-controlling member with the said tines, a hanger having a limited movement independently of the head, and means for detachably connecting the hanger with the movable member.

13. A fork of the class described, comprising a head having arms, tines pivotally connected between their ends to the arms, a slidable member, links connecting the slidable member with the tines, and a hanger movable independently of the head and provided with means for detachably engaging the slidable member.

14. A fork of the class described, comprising a head having arms and provided with a guide, tines pivotally connected with the arms, a slidable member mounted on the guide and provided with depending arms, links connecting the latter with the tines, and a hanger movably mounted on the guide and provided with means for detachably engaging the slidable member.

15. A fork of the class described, comprising a head having arms composed of two sides or portions spaced apart to provide openings, tines pivoted between their ends in the openings of the arms, a guide extending upward from the head, a slidable member mounted on the guide and having depending arms extending through the said openings, inclined links extending from the arms of the slidable member to the tines, and a hanger slidable on the guide and provided with means for detachably engaging the slidable member.

16. A fork of the class described, comprising a head, tines pivotally connected with the head, a bar extending from the head and forming a guide, a slidable member mounted on the bar and connected with the tines, a frame or hanger slidable on the bar, catches located at opposite sides of the frame or hanger and arranged to engage the said member, and a tripping device slidable on the frame or hanger and provided with means for throwing the catches out of engagement with the said members.

17. A fork of the class described, comprising a head, tines pivoted to the head, a bar extending from the head and forming a guide, a member slidable on the bar and connected with the tines, a frame or hanger also slidable on the bar and having opposite sides provided with guides and spaced from the bar, catches mounted on the sides of the frame or hanger and arranged to engage the said member, and a tripping device composed of sides having loops to embrace the sides of the frame or hanger and arranged in the guides thereof and provided with means for throwing the catches out of engagement with the said member.

18. A fork of the class described, comprising a head having arms and provided between the same with a projecting foot-piece, tines pivotally connected with the arms of the head, a guide extending from the head, a member slidable on the guide and connected with the tines, a hanger, and means for detachably connecting the hanger with the said member.

19. A fork of the class described, comprising a head, tines pivotally connected with the head, a guide extending from the head, a slidable member mounted on the guide and connected with the tines and having projecting lugs or flanges, and a hanger slidable on the guide and provided with catches arranged to engage the lugs or flanges.

20. A fork of the class described, comprising a head, tines pivotally connected with the head, a member also connected with the tines and movable independently of the head, means for locking and tripping the tines, and means for subjecting the said member to the weight of the load when the tines are tripped.

21. A fork of the class described, comprising a head, tines pivotally connected with the head, a member also connected with the tines and movable independently of the head, a hanger connected with and having a limited movement independently of the head, and provided with means for detachably engaging the said member, a tripping device for disconnecting the said member from the hanger, and means mounted on the hanger for subjecting the said member to the weight of the load when the tripping device is operated.

22. A fork of the class described, comprising a head, tines pivotally connected with the head, a member also connected with the tines and movable independently of the head, a hanger connected with and having a limited movement independently of the head and provided with means for detachably engaging the said member, a tripping device for disconnecting the said member from the hanger, and a reciprocatable device mounted on the hanger and arranged to engage the said member when the tripping device is operated, whereby the said member will be subjected to the weight of the load.

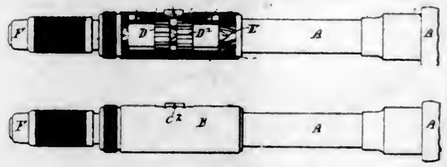
23. A fork of the class described, comprising a head having a guide, tines pivotally connected with the head, a member slidable on the guide and connected with the tines, a hanger movable on the guide, means for detachably connecting the member with the hanger, and a reciprocatable device interposed between the guide and the

member, whereby the latter will be subjected to the weight of the load when the fork is tripped.

24. A hay-fork of the class described, comprising a head, tines pivotally connected with the head, a guide extending from the head and having a projecting portion, a member slidable on the guide and connected with the tines, a hanger, rods slidable on the hanger and interposed between the projecting portion of the guide and the said member, and means for detachably connecting the hanger with the said member.

25. A hay-fork of the class described, comprising a head, tines pivoted to the head, a guide-bar extending from the head and provided with a projecting portion, a member slidable on the bar and connected with the tines, a frame or hanger also slidable on the bar, catches mounted on the sides of the frame or hanger and arranged to engage the said member, slidable rods mounted on the frame or hanger at opposite sides of the guide-bar and arranged to be engaged by the projecting portion thereof and adapted to engage the said member, and a tripping device for throwing the catches out of engagement with the member.

819,536. **SHIFTER-LOCK FOR PAWL-AND-RATCHET TOOLS.** ZACHRY T. FURBISH, Philadelphia, Pa., assignor to North Brothers Manufacturing Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Jan. 30, 1904. Serial No. 191,370.



Claim.—The combination in a ratchet-tool, of a casing having a slot therein and a series of notches in one of the walls of the slot, ratchet-wheels mounted in the casing, pawls pivoted to the casing and arranged to engage the ratchet-wheels, a spring-shifter bearing upon the pawls and arranged to throw one pawl into engagement and the other out of engagement when it is shifted longitudinally, a projection on the shifter extending through the slot, and a lug on the shifter resting in one of the notches when the shifter is in its normal position but when the shifter is depressed said lug will be out of the plane of the slot, so that the shifter can be moved longitudinally, substantially as described.

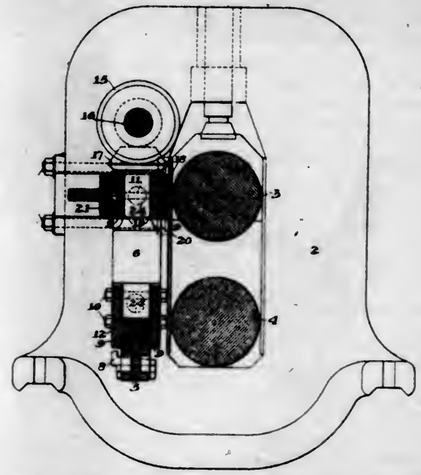
819,537. **RAILWAY-RAIL JOINT.** JOHN GABRIEL, New Orleans, La. Filed Dec. 13, 1905. Serial No. 291,690.



Claim.—1. The combination of a rail, chair-sections of resilient metal, having V-shaped portions, the mouths of which are normally of a less width than the thickness of the rail-base at the points where said base merges into the web, placed under tension on the base of the rail, and also having fish-plate portions extending upwardly from the V-shaped portions, and alined barrels on said V-shaped portions below the rail, a longitudinal rod arranged in the said alined barrels of the chair-sections and connecting the same together, and coöperating means on the fish-plate portions of the chair-sections and the rail for holding said chair-sections and rail against endwise movement with respect to each other.

2. The combination of a sleeper or tie having a notch or groove in its upper side, rails having sockets in their webs, chair-sections of resilient metal, having V-shaped portions, the mouths of which are normally of a less width than the thickness of the rail-bases at the points where said bases merge into the webs, placed under tension on the bases of the rails, and also having fish-plate portions extending upwardly from the V-shaped portions and equipped with lugs seated in the sockets of the rail-webs, and further having alined barrels arranged on the V-shaped portions below the rails and arranged in the notch or groove of the sleeper or tie, and a longitudinal rod arranged in the said alined barrels of the chair-sections and connecting the same together.

819,538. **UNIVERSAL MILL.** KIRTLAND C. GARDNER, Pittsburg, Pa., assignor to United Engineering and Foundry Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed Feb. 28, 1905. Serial No. 247,705.



Claim.—1. A universal mill having vertical rolls, a frame supporting at least one of said rolls, a rest-bar on which the frame is carried, and means for clamping the upper portion of the frame in position, said frame being divided on a vertical plane substantially parallel with the plane in which the vertical-roll axes lie; substantially as described.

2. A universal mill having a rest-bar, a vertical-roll frame carried on said rest-bar, and a removable transverse clamping device holding the vertical-roll frame in position, the roll-frame being made in inner and outer parts on opposite sides of the rest-bar; substantially as described.

3. A universal mill having a rest-bar, a vertical-roll frame supported on the rest-bar, and made in halves secured together on opposite sides of the rest-bar, and means for clamping the upper portion of the frame in position; substantially as described.

4. A universal mill having a rest-bar, a frame carrying a vertical roll and supported on the rest-bar, and removable transverse clamping-bars between which the upper part of the roll-frame is secured, said frame being divided substantially in line with the rest-bar; substantially as described.

5. A universal mill having a rest-bar, a vertical-roll-carrying frame having a recessed sliding engagement with the rest-bar, and upper clamping-bars between which the upper portions of the frame is slidingly clamped, said frame being divided substantially in line with the rest-bar; substantially as described.

6. A universal mill having a vertical roll, a frame supporting said roll and provided with a step-bearing carried on the frame, and a rest-bar on which the frame is carried, said frame being divided substantially in line with the rest-bar; substantially as described.

7. A universal mill having vertical rolls, a driving-shaft therefor, gear connections between the rolls and the driving-shaft, a sectional frame supporting the vertical rolls, said frame being divided in a vertical plane passing through the axes of the vertical rolls, and means whereby the vertical rolls may be lowered in said frame to disengage their connections with the driving-shaft; substantially as described.

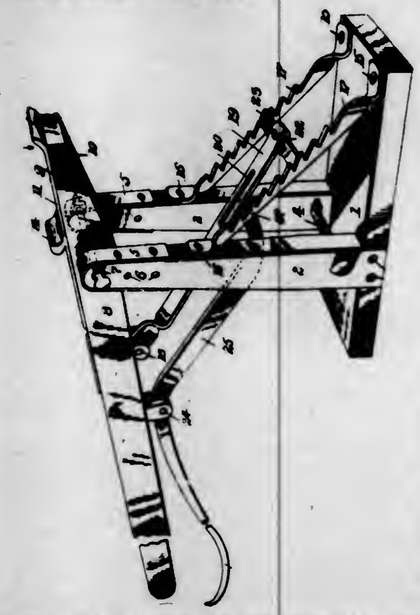
8. A universal mill having vertical rolls, a driving-shaft for said rolls, gear connections between the rolls and the driving-shaft, a frame supporting said rolls, a rest-bar on which the frame is carried, means for securing the frame in position, said frame being divided in a vertical plane substantially in line with the rest-bar, and means in the frame whereby the rolls may be lowered therein to disengage them from the driving-shaft; substantially as described.

9. A universal mill having vertical rolls, an upper driving-shaft having gear connection therewith, a divided frame for the rolls arranged to allow their tipping outwardly on the rest-bar, and means for lowering the vertical roll to disengage its gear connections; substantially as described.

10. A universal mill having a pair of vertical rolls, a separate

two-part frame for each of said pair, upper clamping-bars arranged to hold the pair of frames in position, and a rest-bar on which the two frames are carried; substantially as described.

819,539. LIFTING-JACK. SAMUEL T. GOOLEY, Cumberland, Md. Filed Dec. 27, 1905. Serial No. 293,483.



Claim.—1. In a lifting-jack, the combination, with a base, standards carried by said base, a lifting-lever adjustably mounted between said standards, of angularly-disposed rack-bars supported by said base and said standard a slotted bar pivotally connected to said lifting-lever, a contact-bar swiveled upon said bar and adapted to contact with the teeth of said rack-bars, an operating-lever pivotally connected to said lifting-lever and to said slotted bar, substantially as described.

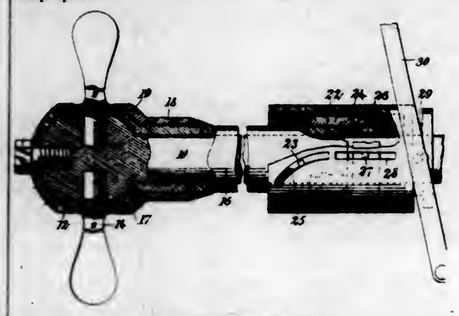
2. A device of the type set forth, comprising a base having standards, a lever pivotally supported from the standards, rack-bars connected by their ends to said base and standards, a bar pivoted to the under side of said lever and carrying a transverse contact-bar at its free end engaging said rack-bars, and an operating-lever pivoted to the under side of said lever and to the rear of said bar, and having its free end pivotally connected to said bar.

3. A device of the type set forth, comprising a base having standards, a lever supported between said standards, rack-bars supported by said standards and base, a bar pivoted to said lever and carrying a contact part to engage said racks, and an operating-lever pivoted to said first-named lever and having its front end curved downwardly to approach said pivoted bar from the rear thereof and being pivotally secured to said pivoted bar.

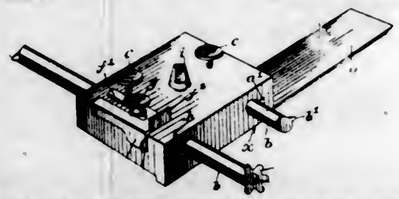
819,540. PROPELLER. PYRR C. GOSSOW, Ascotin, Wash. Filed May 27, 1905. Serial No. 262,596.

Claim.—1. In a reversing propeller the combination of a main shaft having a substantially spherical enlargement at one end thereof, and having portions of the surface of the enlargement cut away to form recesses circular in outline, propeller-blades having flanges to fit within the recesses, a sleeve on the main shaft and having a flange for engaging the flanges of the propeller-blades, a hood on the end of the shaft for engaging the flanges of the propeller-blades and means whereby to reverse the propeller-blade.

2. In a reversing propeller, the combination of a main shaft having an enlargement at one end thereof, a propeller-blade provided with a concave-convex disk or flange engaging the enlargement on the after end of the main shaft, a tubular shaft or sleeve loosely mounted on the main shaft, a gear on the tubular shaft, said gear being meshed with the teeth on the flange or disk of the propeller-blade, a sleeve mounted on the tubular shaft and having a flange engaging the flange of the blade, a hood attached to the after end of the enlargement on the main shaft and also engaging the flange on the blade, and means for turning said tubular shaft or sleeve to reverse the propeller.



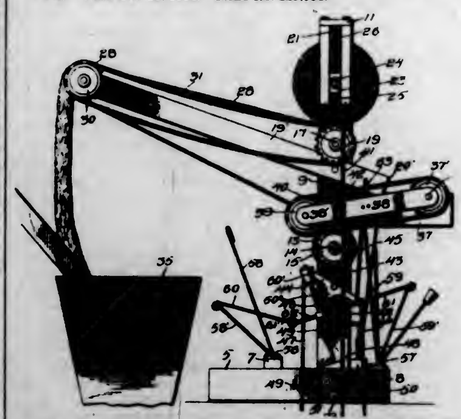
819,541. TRIPLE-GAGE, BUTT-GAGE, AND TOOL HOLDER. PHILLIP GYSELER, Cleveland, Ohio. Filed Sept. 19, 1905. Serial No. 279,074.



Claim.—1. A tool-holder, comprising a block having a passage therethrough, a bar in said passage having a scriber thereon, a gage mounted on the outside of the block, means for adjustably securing said gage to the block, and a stationary scribing-point mounted on the block.

2. A tool-holder comprising a block having a passage therethrough, a bar in said passage having a scriber thereon, a gage mounted on the block, means for adjustably securing the gage to the block, and a stationary scribing-point on the block.

819,542. LINT-COTTON FEEDER. JAMES A. HAGUE, Robinson, Tex. Filed Oct. 20, 1904. Serial No. 229,351.



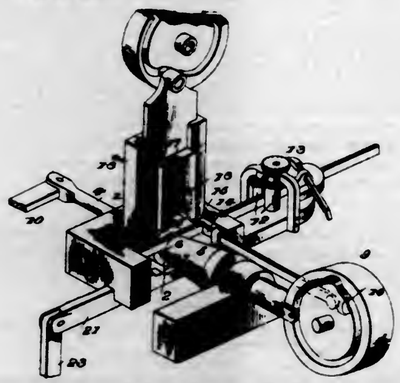
Claim.—1. An apparatus of the class described, comprising upper and lower rollers, a bat-receiving apron attached at its ends to the rollers and adapted to be wound from one to the other, a supporting-roller below the upper roller and adapted to support the weight of said roller with a bat thereon and with respect to which the upper roller is vertically movable, a frame pivoted at a point between the upper and lower rollers and a guide-roller mounted in the frame and over which the apron is passed, said guide-roller being movable with the frame above and below the elevation of the supporting-roller to hold the apron in position to receive and discharge a bat.

2. An apparatus of the class described comprising upper and lower rollers, a bat-receiving apron attached at its ends to the rollers and adapted to be wound from one to the other of the rollers, a supporting-roller below the upper roller and adapted to support the weight of the upper roller, a pivoted frame, a guide-roller in the pivoted frame over which the apron is passed, said guide-roller being spaced forwardly from the first-named rollers and being movable with the frame into raised and lowered positions, sprocket-wheels carried by the supporting-roller and the lower roller, a drive-chain movable into engagement with said sprocket-wheels interchangeably and means for shifting said frame simultaneously with the shifting of the chain.

3. An apparatus of the class described, comprising upper and lower rollers, an apron attached to the rollers and adapted to be wound from one to the other and to receive and convey a bat, sprocket-wheels for conveying motion to said rollers, a drive-chain movable into operative engagement with the sprocket-wheels interchangeably and to lie in a neutral position, means for shifting the chain into either of its engaging positions and means for shifting the chain to its neutral position at a predetermined point of winding of the apron in either direction.

4. An apparatus of the class described comprising upper and lower rollers, an apron attached to the rollers and adapted to be wound from either to the other and to receive and discharge a bat, a pivoted frame, a guide-roller mounted in the frame and over which the apron is passed, said guide-roller being movable with the frame to different elevations, a supporting-roller for the upper roller, sprocket-wheels carried by the supporting-roller and the lower roller, a drive-shaft an arm pivoted upon the drive-shaft and lying between the sprocket-wheels, sprocket-wheels carried by the arm and drive-shaft, a chain engaged with the last-named sprocket-wheels and movable with the arm into engagement with the first-named sprocket-wheels interchangeably, means for manually shifting the arms with the chain into engagement with the first-named sprockets, connections between the arm and pivoted frame for shifting the latter, and means for automatically shifting the driving-chain into inactive position at a predetermined point of winding of the apron in each direction.

819,543. MACHINE FOR MAKING WASHERS. HUBERT C. HART, Unionville, Conn. Filed May 21, 1903. Renewed Nov. 11, 1905. Serial No. 286,912.



Claim.—1. In a machine of the class described, a mandrel, an anvil surrounding the mandrel, a horizontally-movable plunger, means for normally holding the plunger a distance from the face of the anvil slightly greater than the washer-stock to provide a groove for the washer, means for bending a strip about the mandrel and in the groove, and means for forcing the plunger against the washer.

2. In a machine of the class described, an anvil, a movable plunger, means for normally holding the plunger a distance from the face of the anvil slightly greater than the washer-stock to form a washer-securing groove, means for forming a ring in said groove, and means to force the plunger against the washer.

3. A machine of the class described, comprising a mandrel, an anvil, a plunger positioned to form a groove a distance from the anvil slightly greater than the width of the washer-stock to receive a flat strip of metal, mechanism for bending the strip of metal edgewise around the mandrel and in the groove to form a split ring, and, mechanism to move the plunger for flattening the rough surfaces on the ring when the latter is in the groove, substantially as described.

4. A machine of the class described, comprising a mandrel, an anvil, a plunger normally positioned a distance from the anvil slightly wider than the washer-stock to form a groove of predetermined width around the mandrel, mechanism for introducing a strip of flat metal edgewise in the groove, mechanism for bending the metal strip edgewise into a ring, and mechanism for moving the plunger for decreasing the width of the groove to remove irregular surfaces on the ring to form a finished washer, substantially as described.

5. A machine of the class described, comprising a reciprocating mandrel, an anvil through which said mandrel operates, a movable plunger, having a seat for the mandrel, a plunger, means for holding the plunger a distance from the anvil slightly greater than the width of the washer-stock to form a groove, mechanism for introducing a flat metal strip edgewise in the groove, mechanism for bending the flat strip edgewise in the groove to form a split ring, and means for forcing the plunger toward the anvil to flatten and finish the ring to a washer, substantially as described.

6. A machine of the class described, comprising an anvil, a movable plunger, means for holding the plunger spaced from the anvil a distance equal to the width of the stock to form a groove, mechanism for introducing flat strips of metal edgewise in the groove, mechanism for giving an initial edgewise bend to the strip, a reciprocating slide bearing contacts to successively act on the terminal of the initially-bent strip to form a split ring, means for operating the slide and means for operating the plunger to decrease the width of the groove to flatten and finish the ring to a washer, substantially as described.

7. A machine of the class described, comprising an anvil, a movable plunger, means for holding the plunger normally spaced a predetermined distance from the anvil to form a washer-holding groove, mechanism for introducing flat strips of metal edgewise in the groove, mechanism for giving an initial edgewise bend to the strip, movable projections to successively act on the terminals of the initially-bent strip to form a split ring, means for moving said projections, and means for operating the plunger to decrease the width of the groove to flatten and finish the ring to a washer, substantially as described.

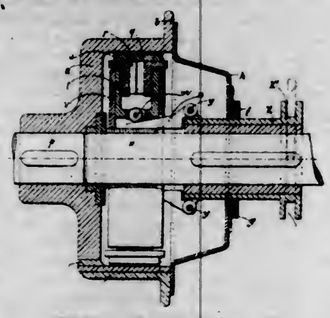
8. In a machine of the class described, an anvil, a movable plunger, means for holding the plunger normally spaced a predetermined distance from the anvil to form a groove, mechanism for introducing flat strips of metal edgewise in the groove, mechanism for giving an initial edgewise bend to the strip, reciprocating slide-bearing projections, each of said respective projections contacting with a respective terminal of the initially-bent strip at each reciprocation of the slide to form a split ring, and means for operating the plunger to decrease the width of the groove to flatten and finish the ring in a washer, substantially as described.

9. A machine of the class described, comprising an anvil, a mandrel reciprocating in the anvil, a movable plunger, means for normally holding the plunger spaced a predetermined distance from the anvil to form a groove, mechanism for introducig a flat strip of metal edgewise in the groove, a vertically-moving plunger adapted to initially bend the strip edgewise in the groove and remain in contact with the said strip, and a reciprocating slide bearing two projections which respectively and successively contact with the respective terminals of the initially-bent strip to form the latter into a ring, and means for operating the plunger to flatten the ring to form a finished washer, substantially as described.

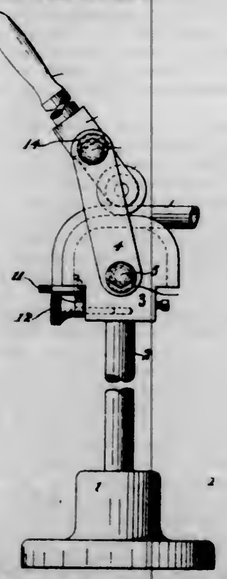
819,544. FRICTION-CLUTCH. ALBERT HERISSON, Nimes, France. Filed Nov. 23, 1904. Serial No. 233,961.

Claim.—1. In a friction-clutch, a cup-shaped member having a portion of its circumferential wall expandible and the other portion extending from and to said expandible portion rigid, thereby causing the movable part of the clutch to press unequally on the walls of the said cup-shaped member and to progress more readily when the points of maximum pressure are in and against the expandible portion of the cup-shaped member, thus determining a considerable increase of pressure when they reach the undeformable part of the cup-shaped member, substantially as hereinbefore described.

2. A friction-clutch having as a part thereof, a cup-shaped member having a portion thereof provided with a plurality of recesses and a slot and the other portion rigid so as to permit of the movable part of the clutch pressing unequally on the walls of said cup-shaped member to progress more readily when the points of maximum pressure are in said recessed and slotted portion, thus determining a considerable increase of pressure when they reach the rigid portion of the cup-shaped member.



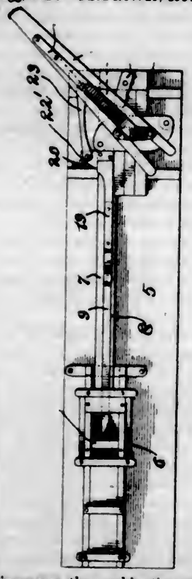
819,545. DEVICE FOR BENDING TUBING. WILLIAM J. HEAR, Grand Rapids, Mich., assignor to C. G. Conn Company, Elkhart, Ind. Filed Sept. 30, 1905. Serial No. 280,791.



Claim.—1. In a machine of the class described, a bed-plate having a standard, a fixed die on said standard and provided with a groove in one of its faces, the latter adapted to determine the bend of the tubing when operated upon, said groove in the fixed die encircling a portion of the tubing when in position on the die, a lever, links for movably connecting the lever to the fixed die, a rotary forming-die provided with a groove encircling the remaining portion of the tubing and supported by said lever, said rotary forming-die adapted to travel on said stationary die when in operative position, and eccentrics carried by the said links for regulating the position of the dies with respect to one another.

2. A machine for bending tubes including a base-plate, a standard thereon, a die carried at the free end of said standard and having an annular groove for encircling a portion of the tubing to be operated upon, said die adapted to determine the bend of the tube, a rotary forming-die having a groove for encircling the remaining portion of the tube, and adapted when in operative position to travel on the stationary die, a lever for said rotary die, links pivotally connected with the lever and the fixed die at opposite sides thereof for movably supporting said holder, eccentrics carried by said links and in engagement with the pivotal connections of the links to adjust the dies for regulating the pressure thereof, and a locking device carried by the fixed die for securing one end of the tubing in position on the same.

819,546. HAY-PRESS. JOSEPH M. HOLDERFIELD and EDDY C. HOLDERFIELD, Fogg, Tenn. Filed Nov. 29, 1904. Serial No. 234,787.



Claim.—In a baling-press, the combination with a baling-chamber, of a guide extending forwardly from the chamber, a follower located within the chamber, a follower-arm connected with the follower and slidably mounted in the guide for longitudinal movement therein, an upwardly-projecting member secured to the arm and extending forwardly, a laterally-projecting facing-piece carried by the forward end of the member, a horizontal angle-lever pivoted at the free end of one of its arms forwardly of the member and lying with its other arm extending in the same general direction as the facing-piece, a link pivoted to the outer end of the last-named arm and to the laterally-projecting portion of the facing-piece, and a cam member pivoted at the opposite side of the member from the link, said cam member lying with one of its ends between the facing-piece and the angle-lever and having a cam-surface directed toward the angle-lever, said member being revoluble upon its pivot to initially move the follower-arm rearwardly and to subsequently move its other end into engagement with the first-named arm of the angle-lever, said angle-lever being disposed for movement when thus engaged to move the follower-arm forwardly through the medium of the link.

819,547. CAR-SEAL. GARRETT H. HUSKINS, Chicago, Ill., assignor to Porter Safety Seal Company, Chicago, Ill., a Corporation of Illinois. Filed June 30, 1905. Serial No. 267,359.



Claim.—1. A seal including a loop, a casing, and a bodily-movable locking device carried by the casing, said locking device presenting a slot or opening for the passage of a free loop end, which loop end has an eye, one of the sides of the slot having a hook formation, the inserted loop end serving to effect movement of the locking device as it is being inserted and cause the passage of the hook into engagement with the eye to prevent the withdrawal of said loop end, said slot having a surface *q* that coöperates with the said loop end to force the movement of the locking member, the loop end that is companion to the loop end provided with the aforesaid eye being in interlocking relation with the latter loop end.

2. A seal including a loop, a casing, a bodily-movable locking

device carried by the casing, said locking device presenting a slot or opening for the passage of a free loop end, which loop end has an eye, one of the sides of the slot having a hook formation, the inserted loop end serving to effect movement of the locking device as it is being inserted and cause the passage of the hook into engagement with the eye to prevent the withdrawal of said loop end, said slot having a surface *q* that coöperates with the said loop end to force the movement of the locking member, and a recess *e'* to prevent disengagement of the said loop end from the locking member, the loop end that is companion to the loop end provided with the aforesaid eye being in interlocking relation with the latter loop end.

3. A seal including a loop, a casing, and a bodily-movable locking device carried by the casing, said locking device presenting a slot or opening for the passage of a free loop end, which loop end has an eye, one of the sides of the slot having a hook formation, the inserted loop end serving to effect movement of the locking device as it is being inserted and cause the passage of the hook into engagement with the eye to prevent the withdrawal of said loop end, the companion member of the loop also having an eye while the locking device has a hook complemental to the latter eye for engaging the same.

4. A seal including a loop, a casing, and a bodily-movable locking device carried by the casing, said locking device presenting a slot or opening for the passage of a free loop end, which loop end has an eye, one of the sides of the slot having a hook formation, the inserted loop end serving to effect movement of the locking device as it is being inserted and cause the passage of the hook into engagement with the eye to prevent the withdrawal of said loop end, said slot having a surface *q* that coöperates with the said loop end to force the movement of the locking member, the companion member of the loop also having an eye while the locking device has a hook complemental to the latter eye for engaging the same.

5. A seal including a loop, a casing, a bodily-movable locking device carried by the casing, said locking device presenting a slot or opening for the passage of a free loop end, which loop end has an eye, one of the sides of the slot having a hook formation, the inserted loop end serving to effect movement of the locking device as it is being inserted and cause the passage of the hook into engagement with the eye to prevent the withdrawal of said loop end, said slot having a surface *q* that coöperates with said loop end to force the movement of the locking member, and a recess *e'* to prevent disengagement of the said loop end from the locking member, the companion member of the loop also having an eye while the locking device has a hook complemental to the latter eye for engaging the same.

6. A seal including a loop, a casing, and a bodily-movable locking device carried by the casing, said locking device presenting a slot or opening for the passage of a free loop end, which loop end has an eye, one of the sides of the slot having a hook formation, the inserted loop end serving to effect movement of the locking device as it is being inserted and cause the passage of the hook into engagement with the eye to prevent the withdrawal of said loop end, said hook being serrated or toothed, the loop end that is companion to the loop end provided with the aforesaid eye being in interlocking relation with the latter loop end.

7. A seal including a loop, a casing, and a bodily-movable locking device carried by the casing, said locking device presenting a slot or opening for the passage of a free loop end, which loop end has an eye, one of the sides of the slot having a hook formation, the inserted loop end serving to effect movement of the locking device as it is being inserted and cause the passage of the hook into engagement with the eye to prevent the withdrawal of said loop end, said slot having a surface *q* that coöperates with the said loop end to force the movement of the locking member, said hook being serrated or toothed, the loop end that is companion to the loop end provided with the aforesaid eye being in interlocking relation with the latter loop end.

8. A seal including a loop, a casing, a bodily-movable locking device carried by the casing, said locking device presenting a slot or opening for the passage of a free loop end, which loop end has an eye, one of the sides of the slot having a hook formation, the inserted loop end serving to effect movement of the locking device as it is being inserted and cause the passage of the hook into engagement with the eye to prevent the withdrawal of said loop end, said slot having a surface *q* that coöperates with the said loop end to force the movement of the locking member, and a recess *e'* to prevent disengagement of the said loop end from the locking member, said hook being serrated or toothed, the loop end that is companion to the loop end provided with the aforesaid eye being in interlocking relation with the latter loop end.

9. A seal including a loop, a casing, and a movable locking device carried by the casing, said locking device presenting a slot or opening for the passage of a free loop end, which loop end has an eye, the opposite sides of the slot being substantially immovable with respect to each other, one of the sides of said slot having a hook formation, the inserted loop end serving to effect movement of the locking device as it is being inserted and cause the passage of the hook into engagement with the eye to prevent the withdrawal of said loop end, the companion member of the loop also having an eye while the locking device has a hook complemental to the eye for engaging the same, said hooks being serrated or toothed.

10. A seal including a loop, a casing, and a bodily-movable locking device carried by the casing, said locking device presenting a slot or opening for the passage of a free loop end, which loop end has an eye, one of the sides of the slot having a hook formation, the inserted loop end serving to effect movement of the locking device as it is being inserted and cause the passage of the hook into engagement with the eye to prevent the withdrawal of said loop end, the companion member of the loop also having an eye while the locking device has a hook complemental to the eye for engaging the same, said hooks being serrated or toothed.

11. A seal including a loop, a casing, and a bodily-movable locking device carried by the casing, said locking device presenting a slot or opening for the passage of a free loop end, which loop end has an eye, one of the sides of the slot having a hook formation, the inserted loop end serving to effect movement of the locking device as it is being inserted and cause the passage of the hook into engagement with the eye to prevent the withdrawal of said loop end, said slot having a surface *q* that coöperates with the said loop end to force the movement of the locking member, the companion member of the loop also having an eye while the locking device has a hook complemental to the eye for engaging the same, said hooks being serrated or toothed.

12. A seal including a loop, a casing, a bodily-movable locking device carried by the casing, said locking device presenting a slot or opening for the passage of a free loop end, which loop end has an eye, one of the sides of the slot having a hook formation, the inserted loop end serving to effect movement of the locking device as it is being inserted and cause the passage of the hook into engagement with the eye to prevent the withdrawal of said loop end, said slot having a surface *q* that coöperates with the said loop end to force the movement of the locking member, and a recess *e'* to prevent disengagement of the said loop end from the locking member, the companion member of the loop also having an eye while the locking device has a hook complemental to the eye for engaging the same, said hooks being serrated or toothed.

819,548. FABRIC-FOLDING MACHINE. MOSES ISAACS and MAX PELLAR, New York, N. Y. Filed June 30, 1905. Serial No. 267,747.

Claim.—1. In a fabric-folding machine, a table, a carriage movable along the table, carrier-bars supported by the carriage, and means for automatically shifting the carrier-bars upward.

2. In a fabric-folding machine, a table, a wheel-mounted carriage mounted on the table, rocking bars on the carriage, carrier-bars supported by the rocking bars and automatic means for shifting said carrier-bars.

3. In a fabric-folding machine, a wheel-mounted carriage, fabric-engaging devices on the carriage, swinging uprights on the carriage, a table having pivotal connection with said uprights, and means for holding the uprights in vertical position.

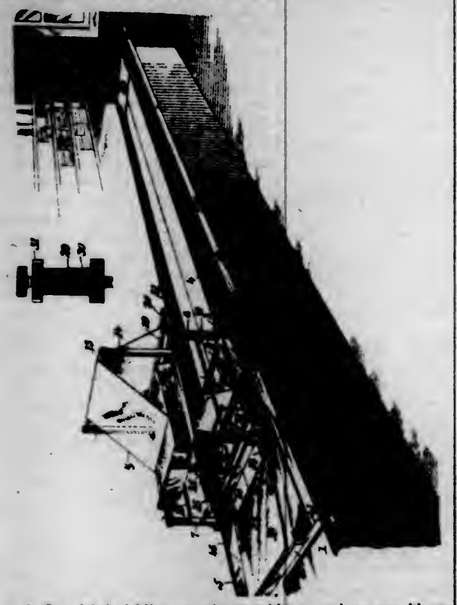
4. In a fabric-folding machine, a table, a carriage movable on the table, fabric-engaging devices on the carriage, uprights having swinging connection with the carriage, a table pivotally connected to the uprights, standards on the table, a roller supported by the standards, a roller at one end of the table, and a tension-roller coacting with the last-named roller.

5. In a fabric-folding machine, a table, a carriage movable on the table, fabric-clamping devices at the ends of the table and mounted to swing vertically, carrier-bars mounted on the carriage, and devices on the carrier-bars for swinging the clamping-plates upward.

6. A fabric-folding machine comprising a table, a carriage movable on the table, rocking bars on the carriage, carrier-bars supported by the rocking bars, arms extended downward from the rocking bars, clamping-plates mounted to swing at the ends of the table, and inclined surfaces adjacent to said clamping-plates for engaging with said arms.

7. In a fabric-folding machine, a table, a carriage movable on the table, rocking bars on the carriage, carrier-bars, stems extended upward from the carrier-bars through the rocking bars, connections

between the several stems of each set, one of the stems of each set being threaded, an interiorly-threaded ratchet-wheel engaging with each threaded stem, and means for rotating the ratchet-wheel as the carriage approaches its extreme positions.



8. In a fabric-folding machine, a table, a carriage movable on the table, carrier-bars having swinging connection with the carriage, and cutting-blades detachably connected to the carrier-bars.

9. In a fabric-folding machine, a table, a carriage movable on the table, fabric-engaging devices on the carriage, a table on the carriage, uprights on said last-named table, one of the uprights having detachable connection with the table, the other of said uprights having swinging and rotary connection with the table, and a roller supported by the uprights.

10. In a fabric-folding machine, a table, a carriage movable on the table, carrier-bars having swinging connection with the carriage, cam-plates on said bars, vertically-swinging clamping-plates at the ends of the table, and fingers on said swinging plates for engaging with the cam-plates on the carrier-bars.

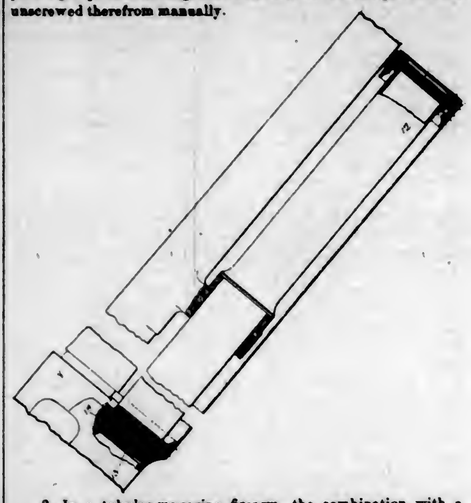
11. In a fabric-folding machine, a table, fabric-clamping devices mounted to swing at the ends of the table, a carriage movable on the table, carrier-bars mounted to swing on the carriage, devices on the carrier-bars for swinging the said clamping-plates upward, a table on the carriage for supporting the fabric, and a guide-roller at the under side of said table supported by the carriage over which the fabric passes to the carrier-bars.

12. In a fabric-folding machine, a table, a carriage movable on the table, rock-bars supported by the carriage, carrier-bars mounted on the rock-bars, arms depending from the rock-bars and having cam-shaped ends, fabric-clamping devices at the ends of the table, and inclines adjacent to said clamping devices and adapted to be engaged by the cam-shaped ends of the arms to rock the rocking bars.

13. In a fabric-folding machine, a table, a carriage movable on the table, rocking bars on the carriage, carrier-bars supported by the rocking bars, pins extended from the rocking bars, a recording device on the carriage, and actuating devices for the recording device operated by said pins.

819,549. **TUBULAR-MAGAZINE FIREARM.** THOMAS C. JOHNSON, New Haven, Conn., assignor to The Winchester Repeating Arms Co., New Haven, Conn., a Corporation. Filed Jan. 8, 1906. Serial No. 295,670.

Claim.—1. In a tubular-magazine firearm, the combination with the fore-arm thereof, of a tubular magazine passing through the said fore-arm, and a yielding magazine-lock mounted in the forward end of the magazine and coacting with the forward end of the fore-arm to prevent the magazine from jarring loose when firing the gun, but yielding to permit the magazine to be screwed into the gun-frame or unscrewed therefrom manually.

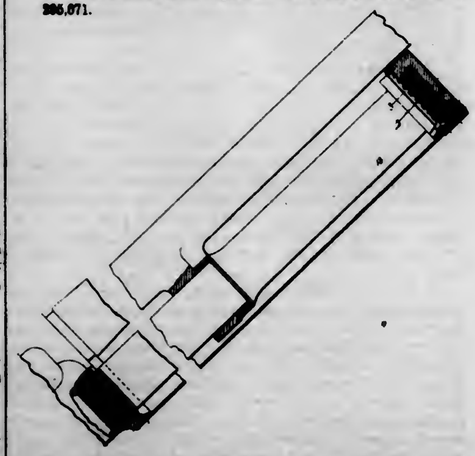


2. In a tubular-magazine firearm, the combination with a wrought-metal fore-arm, of a tubular magazine passing through the said fore-arm, and a yielding magazine-lock mounted in the forward end of the magazine and coacting with the forward end of the fore-arm to prevent the same from jarring loose when firing the gun.

3. In a tubular-magazine firearm, the combination with a wrought-metal fore-arm, of a tenon inserted into the front end of the said fore-arm, a tubular magazine passing through the said fore-arm and tenon, and a yielding magazine-lock mounted in the forward end of the said magazine and coacting with the said tenon to prevent the fore-arm from jarring loose in firing the gun.

4. In a tubular-magazine firearm, the combination with a wrought-metal fore-arm, of a ring-like metal tenon inserted into the forward end of the said fore-arm and projecting therefrom and formed in its front face with a circular series of locking-notches, a tubular magazine passing through the said fore-arm and formed with a take-down flange, and a yielding magazine-lock mounted in the said flange and coacting with the said notches for preventing the magazine from jarring loose when firing the gun.

819,550. **TUBULAR-MAGAZINE FIREARM.** THOMAS C. JOHNSON, New Haven, Conn., assignor to The Winchester Repeating Arms Co., New Haven, Conn., a Corporation. Filed Jan. 8, 1906. Serial No. 295,671.



Claim.—1. In a tubular-magazine firearm, the combination with the fore-arm thereof, of a tubular magazine passing through the said fore-arm, a fore-arm tip in the form of a nut applied to the front end of the magazine, and a yielding nut-lock mounted in the nut and coacting with the front end of the fore-arm to prevent the nut from jarring loose.

2. In a tubular-magazine firearm, the combination with the fore-arm thereof, of a tubular magazine passing through the said fore-arm, a fore-arm tip in the form of a nut applied to the front end of the magazine, a ring-like tenon-piece mounted in the front end of the fore-arm, and a yielding nut-lock mounted in the said nut and coacting with the said tenon-piece to prevent the nut from jarring loose.

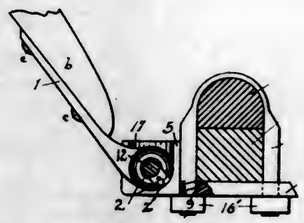
3. In a tubular-magazine firearm, the combination with a wrought-metal fore-arm, of a tubular magazine passing through the same, a fore-arm tip in the form of a nut applied to the front end of the magazine, a ring-like tenon mounted in the front end of the wrought-metal fore-arm and formed with a circular series of locking-notches, and a yielding nut-lock coacting with the said notches to prevent the nut from jarring loose.

819,551. **WROUGHT-METAL FORE-ARM FOR GUNS.** THOMAS C. JOHNSON, New Haven, Conn., assignor to Winchester Repeating Arms Co., New Haven, Conn., a Corporation. Filed Jan. 22, 1906. Serial No. 297,106.



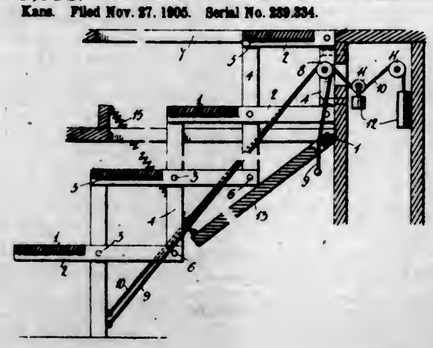
Claim.—As a new article of manufacture, a wrought-metal fore-arm for guns, the said fore-arm having its front and rear ends adapted to be operatively connected with parts of a gun and having those portions of its surface which are gripped by the hand in handling the gun, struck up to form alternating elevations and depressions for its protection against indentation and distortion and forming pockets for air.

819,552. **THILL-COUPLING.** JOHN W. JONES, Council Bluffs, Iowa, assignor to Joel W. West, Omaha, Nebr. Filed July 10, 1905. Serial No. 268,914.



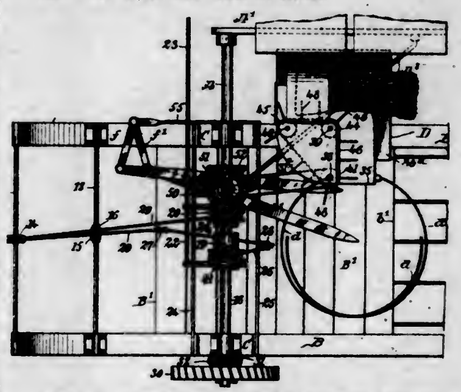
Claim.—A quick-adjusting thill-coupling, comprising a split socket, having a ball-bearing, of a clamping-bolt, passing through said socket and a thill-iron provided with a slotted ball, said ball being adapted to stride said clamping-bolt and work within said socket, substantially in the manner set forth.

819,553. **FOLDING STAIR.** HERBERT D. KEITH, Council Grove, Kans. Filed Nov. 27, 1905. Serial No. 289,334.



Claim.—A folding stair secured at its upper end and comprising lazy-tong bars and steps carried thereby, and a tackle to raise and lower said stair, in combination with a hinged, downwardly-opening trap-door disposed in the path of the lower portion of the stair and opened thereby when the stair is lowered, and a spring to close the said trap-door when the stair is raised and clears said trap-door, substantially as described.

819,554. **WHEAT-SHOCKER.** GEORGE R. KELTNER, Covington, Okla. Filed May 31, 1905. Serial No. 263,063.



Claim.—1. In shocker attachments for harvesting-machines, a hopper adapted to receive the bundles, guard-fingers for the bundles, receiving them from the hopper, feed devices operating within the hopper, a platform mounted for sliding movement beneath the guard-fingers, means for moving the platform to and from the guard-fingers, discharging-fingers pivotally mounted beneath the platform, and latches for said fingers pivotally supported above them, acting to normally hold them in an upper position, and means for releasing the latches at the forward movement of the platform.

2. In shocker attachments for harvesting-machines, a hopper adapted to receive the bundles, guard-fingers for the bundles, receiving them from the hopper, feed devices operating within the hopper, a platform mounted for sliding movement beneath the guard-fingers, means for moving the platform to and from the guard-fingers, discharge-fingers pivotally mounted beneath the platform, latches for the discharge-fingers, pivoted above them, means for releasing the said latches at the forward movement of the platform, packing-fingers operating collectively within the space encircled by the guard-fingers, and means for imparting a rotary movement to the packing-fingers, and also a thrusting movement.

3. In shocker attachments for harvesting-machines, a hopper adapted to receive the bundles, guard-fingers for the bundles, receiving them from the hopper, feed devices operating within the hopper, a platform mounted for sliding movement beneath the guard-fingers, means for moving the platform to and from the guard-fingers, discharge-fingers pivotally mounted beneath the platform, latches for the discharge-fingers pivoted above them, means for releasing the said latches at the forward movement of the platform, packing-fingers operating collectively within the space encircled by the guard-fingers, means for imparting a rotary movement to the packing-fingers, and also a thrusting movement, means for automatically returning the discharge-fingers to their normal position when their load is discharged, and a mounting for the packing-fingers, whereby they are both operated from the same shaft, one located above the other, and working in parallel planes.

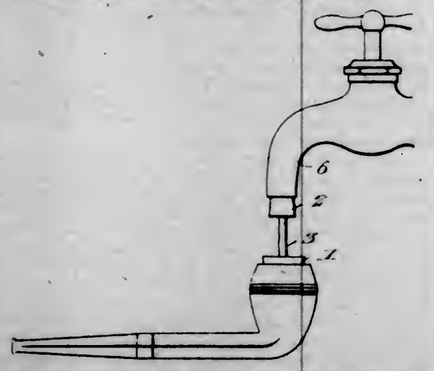
4. In shocker attachments for harvesting-machines, a wheel-supported skeleton frame, a platform having sliding movement in the side members of the frame, a drive-shaft, bearings therefor, a driving connection between the drive-shaft and a supporting-wheel of the frame, a collar secured on the drive-shaft and having clutch-teeth in opposite faces, winding-drums loosely mounted on the said shaft, one at each side of the said clutch-collar, a shifting device controlling the movement of each drum, each drum having a clutch-face for engagement with a clutch-surface of the said clutch-collar, a cable leading from the forward end of the platform, forward guides for the cable carried by the frame, the said cable being returned rearward to the under side of one of the winding-drums and being secured thereto, a second cable leading from the forward portion of the

platform rearward, roller-supports for the said second cable, which second cable is carried upward over the second drum, whereby when one drum is in engagement with the clutch-collar the platform is brought to its rear or normal position.

5. In shocker attachments for harvesting-machines, a wheel-supported frame, a platform slidably mounted in the said frame and means for moving the said platform forward and rearward, a hopper adapted to receive bundles, located on the frame and extending over a portion of the platform, feed devices operating within the said hopper, guard-fingers extending over the platform from the outlet end of the hopper, a drive-shaft, means for operating the said drive-shaft from a supporting-wheel of the frame, a shaft driven from the drive-shaft and provided with two oppositely-directed crank-arms, one above the other, packing-fingers pivoted between their ends one to each of the said crank-arms, brackets extending forwardly from the frame at one side thereof, links pivotally connecting the said brackets with the forward ends of the said packing-fingers, and means for driving the feed devices in the hopper from the said drive-shaft.

6. In shocker attachments for harvesting-machines, a wheel-supported frame, a platform slidably mounted in the said frame and means for moving the said platform forward and rearward, a hopper adapted to receive bundles, located on the frame and extending over a portion of the platform, feed devices operating within the said hopper, guard-fingers extending over the platform from the outlet end of the hopper, a drive-shaft, means for operating the said drive-shaft from a supporting-wheel of the frame, a shaft driven from the drive-shaft and provided with two oppositely-directed crank-arms, one above the other, packing-fingers pivoted between their ends, one to each of said crank-arms, brackets extending forwardly from the frame at one side thereof, links pivotally connecting the said brackets with the forward ends of the said packing-fingers, means for driving the feeding devices in the hopper from the said drive-shaft, a tension-controlled bar located beneath the platform and independent thereof, discharging-fingers extending rearward from the said bar to the rear end portion of the frame, latches for the said bar, normally holding the said discharging-fingers in an upper horizontal position, and trips for the said latches, located at the rear end of the platform and operating on said latches to release them when said platform is in its forward position.

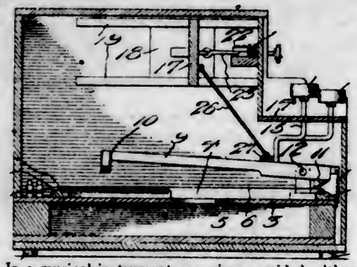
819,555. TOBACCO-PIPE CLEANER. WILLIAM M. KENDALL, Manchester, N. H. Filed June 14, 1905. Serial No. 265,190.



Claim.—As a new article of manufacture, a pipe-cleaner comprising a pair of plugs having openings therethrough, said openings being enlarged at the normally outer ends of the plugs to form shoulders within the latter, a tubular element connecting the plugs and extended through the openings in the latter, and tubular clamping-thimbles seated in the element within the enlarged portion of the openings in the plugs for securing the element to the latter.

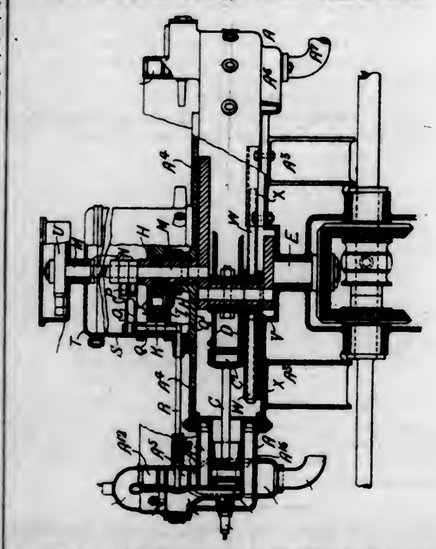
819,556. ACTION FOR STRINGED MUSICAL INSTRUMENTS. CHARLES B. KING, Washington, Kans. Filed Nov. 26, 1905. Serial No. 288,697.

Claim.—1. In a musical instrument, a sounding-board, a string stretched thereover, a striking-lever pivoted above to act upon said string, means for operating the lever, a movable governor-bar sustained above the lever, a cross-piece operatively connected with the bar to bear on said lever, a pivoted operating-lever operatively connected at one side of its fulcrum with the governor-bar, and a push-button connected with the operating-lever at the other side of its fulcrum.



2. In a musical instrument, a casing provided with guides, a sounding-board above the casing, a string stretched over the board, a striking-lever pivoted between its ends in position to act upon the string, said lever having a head adapted to act upon and a damper to normally contact with the string, a spring for maintaining the lever in normal position, a governor-bar movably mounted in the guides, a cross-piece adapted to bear on the striking-lever and operatively connected with said bar, an operating-lever pivoted in the casing, a push-button connected with said lever, and operative connections between the operating-lever and governor-bar.

819,557. INTERNAL-COMBUSTION ENGINE. JOHN B. KING, Plymouth, England. Filed Apr. 26, 1905. Serial No. 257,457.

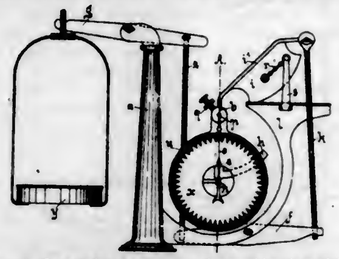


Claim.—1. The improved internal-combustion engine, comprising in combination an annular casting, an odd number of cylinders having their axes in one plane and radially disposed in said casting with spaces for water circulation between the same, a crank-shaft, a disk formed in two parallel halves and connected to said crank-shaft, pistons in said cylinders, connecting-rods for said pistons, pins on said disk to which said connecting-rods are pivoted, means for guiding said disk to prevent its rotation on its own center, a centrally-disposed half-time shaft, gearing connecting said half-time shaft with the crank-shaft, a commutator on said half-time shaft, commutator-segments disposed so as to effect ignition successively in alternate cylinders, and valves for said cylinders actuated from said half-time shaft.

2. The improved internal-combustion engine, comprising in combination an annular casting, a crank-shaft, a plurality of cylinders formed in said casting with their axes in one plane, and disposed radially of said crank-shaft, a diaphragm and water inlet sand outlets for circulating water through said annular casting, pistons

adapted to reciprocate in said cylinders, connecting-rods for said pistons, a disk formed in parallel halves and supported on the crank-pin of said crank-shaft, pins pivotally connecting said piston-rods with said disk, a cross-head adapted to slide in brackets secured to the engine-frame and preventing rotation of the disk on its own center, valve mechanism, a half-time shaft arranged in alinement with said crank-shaft and centrally of the valve mechanism, gearing operating said half-time shaft from said crank-shaft, cams operating said valve mechanism, and a commutator on said half-time shaft with devices for producing ignition in the cylinders, substantially as described.

819,558. WEIGHING APPARATUS. GUSTAV KLEY, Siegburg, Germany. Filed July 15, 1905. Serial No. 269,823.



Claim.—1. In weighing apparatus the combination with means for supporting the load of a rolling lever, a support on which said lever rolls, a weight suspended from said lever, a device carried by said weight for indicating the load, and means for actuating said device on the rolling movement of said lever.

2. The improved weighing apparatus, comprising, in combination, means for supporting the load, a lever having a rolling face, a connection between said lever and said load-supporting means, a surface over which said lever rolls, a weight suspended from said lever, a dial on said weight and a pointer actuated from said lever traveling over said dial.

3. The improved weighing apparatus, comprising, in combination, means for supporting the load, a lever having a curved rolling face, a connection between said load-supporting means and said lever, a surface over which said lever rolls, a weight suspended from said lever, a graduated toothed sector connected to said lever, a pinion mounted on said weight and engaging the sector, a pointer carried by said pinion and a graduated dial carried by said weight, as and for the purpose set forth.

4. The improved weighing apparatus comprising, in combination, means for supporting the load, a lever having a rolling face, a connection between said lever and said load-supporting means, a weight suspended from said lever and provided with indicating-marks, a pointer traveling over said marks and means for rotating said pointer on the movement of said lever.

819,559. CIRCUIT-BREAKER. JOSEPH LA COS, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Aug. 25, 1904. Serial No. 222,062.

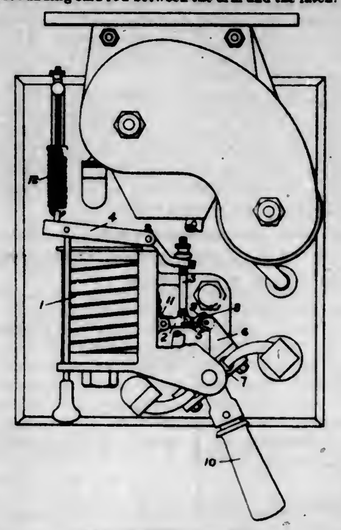
Claim.—1. The combination with a pivoted arm, of a roller pivoted in said arm, a pivoted latch having a tooth to engage the periphery of the roller, and a horn on said latch adapted to rest on said roller.

2. In a circuit-breaker, the combination with a movable element, of a roller pivoted therein, a pivoted latch having a tooth engaging with the periphery of said roller, and means for engaging the roller to arrest said parts with the tooth just below the line joining the pivots of the roller and the latch.

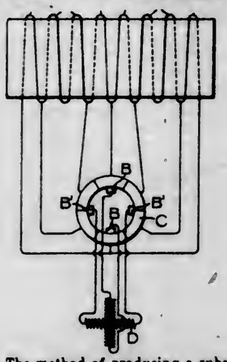
3. In a circuit-breaker, the combination with the movable contact-carrier, of an arm thereon, a roller pivoted in said arm, and a latch to hold the circuit-breaker closed, provided with a tooth bearing against the periphery of said roller.

4. In a circuit-breaker, the combination with the movable contact-carrier, of an arm thereon, a roller pivoted in said arm, a latch to hold the circuit-breaker closed, provided with a tooth bearing against the periphery of said roller, and a horn on said latch to rest on said roller.

5. In a circuit-breaker, the combination with a pivoted latch and an overload-coil armature having an arm, of a rod attached to said latch and passing through said arm, a nut on the rod adjacent to but not touching said arm when the breaker is closed, and a helical spring surrounding said rod between the arm and the latch.



819,560. METHOD OF PRODUCING A CONSTANT MAGNETIZATION BY MEANS OF ALTERNATING CURRENTS. MARIUS C. A. LATOUR, Paris, France, assignor to General Electric Company, a Corporation of New York. Filed Sept. 10, 1904. Serial No. 223,943.



Claim.—1. The method of producing a substantially constant unidirectional flux in a magnetic circuit, which consists in producing therein a plurality of magnetomotive forces each varying as the square of a sine function.

2. The method of producing a substantially constant unidirectional flux in a magnetic circuit, which consists in producing therein a plurality of superimposed magnetomotive forces varying respectively as the squares of the sines of the phase angles of a polyphase system.

3. The method of producing a substantially constant unidirectional flux in a magnetic circuit provided with an exciting-winding, which consists in impressing polyphase voltages on said winding and varying the number of effective turns connected to each phase of said voltages at the same rate as that at which the voltage of that phase varies.

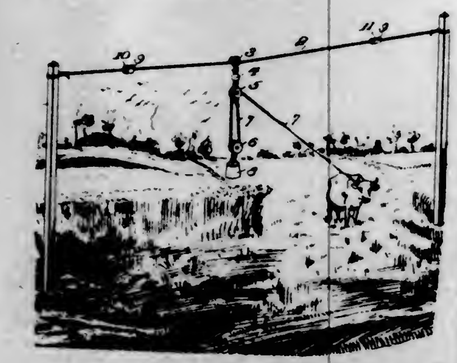
4. The method of producing a substantially constant unidirectional flux in a magnetic circuit provided with an exciting-winding, which consists in impressing on said winding polyphase voltages and varying the number of effective turns connected to each phase of said voltages as the sine of the phase angle of the voltage of that phase.

5. The method of producing a substantially constant unidirectional flux in a magnetic circuit provided with an exciting-winding, which consists in causing polyphase currents to flow in said winding and varying the number of effective turns traversed by each of said currents in accordance with the variation in the current itself.

6. The method of producing a substantially constant unidirectional flux in a magnetic circuit provided with an exciting-winding, which consists in causing polyphase currents to flow in said winding and varying the number of effective turns traversed by each of said currents in accordance with the variation in the sine of the phase angle of the current of that phase.

7. The method of producing a substantially constant unidirectional flux in a magnetic circuit provided with an exciting-winding, which consists in causing polyphase currents to flow in said winding and varying the number of effective turns traversed by each current in accordance with the sine of the phase angle of said current, whereby a plurality of magnetomotive forces are produced each varying with the sine of the current which produces it.

819,561. **TETHER.** WILLIAM F. LAWS, Governors Island, N. C. Filed Nov. 9, 1905. Serial No. 286,580.



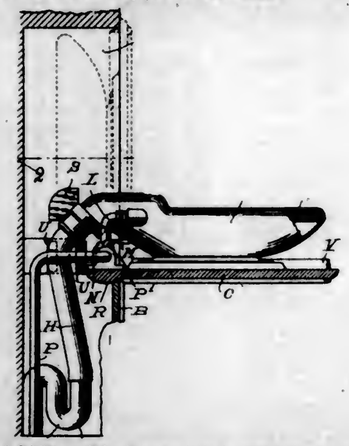
Claim.—1. In a device of the character described, vertical uprights, a cable stretched between said uprights and held suspended thereby, a pulley adapted to travel along said cable, a plurality of blocks each having a longitudinal groove therein to span the cable, set-screws arranged in the blocks and adapted to bring the edges on each side of the groove closer together to grip the cable and thereby hold the blocks in adjusted position, and to release the edges to permit of adjustment of the blocks longitudinal of the cable, the blocks being adapted to limit the travel of the pulley, a second pulley, a ball-and-socket connection between said pulleys, a tethering-rope having one end depending from the second-mentioned pulley and the other end passing over it and thence to the animal whereby said animal is tethered, and a weighted pulley engaging the tethering-rope whereby the same is held taut against the movements of the animal.

2. A device of the character described comprising the uprights 1, the rope or cable 2 stretched horizontally therebetween and having its ends fixedly secured thereto, the pulley 3 adapted to travel along said rope or cable, the grooved or slotted blocks 9 engaged with said rope or cable and adjustably secured thereon by the set-screws 11 for limiting the movement of said pulley, the second pulley 5, the ball-and-socket connection 4 between said pulleys 3 and 5, the members of said connection permitting of a free axial or rotary movement and a limited angular movement of said pulleys with respect to each other and having a loose or link connection with said pulleys, the third pulley 6 having the weight 8 removably suspended from it, and the tethering-rope 7 passed under the pulley 6 and over the pulley 5 and having one of its ends attached to the pulley 5, substantially as described and for the purpose set forth.

819,562. **FOLDING WALL-BASIN.** LEROY C. LAMBAR, Chicago, Ill. Filed Nov. 23, 1904. Serial No. 234,572.

Claim.—1. A folding wall-basin comprising in combination a wall-cabinet, a vertically-swinging panel closing same at its upper end, a basin mounted on said panel and terminating at its inner end in a funnel having flexible connection with the waste-pipe, valve-casings mounted on said panel and connected with the interior of said basin by means of pipes, and valves revolubly mounted in said casings and rigidly connected with the service-pipes, said valves and casings forming pivots upon which said panel swings and establishing communication between said service-pipes and said basin.

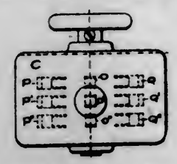
2. A folding wall-basin comprising in combination a wall-cabinet, a vertically-swinging panel closing same at its upper end, a basin mounted on said panel and terminating at its inner end in a funnel having flexible connection with the waste-pipe, valve-casings mounted on said panel and connected with the interior of said basin by means of L-shaped pipes, cocks interposed in said pipes, and valves revolubly mounted in said valve-casings and rigidly connected with the service-pipes, said valves being each provided with an L-shaped passage communicating at one end with the service-pipe and at its other end adapted to communicate with an opening in the wall of the casing communicating with said L-shaped pipe when said panel is in its horizontal position, said valves and casings forming pivots upon which said panel swings and establishing communication between said service-pipes and said basin.



3. A folding wall-basin comprising in combination a wall-cabinet in which the service and waste pipes enter, a vertically-swinging panel closing said cabinet at one end and carrying a basin terminating at one end in a funnel having flexible connection with the waste-pipe and serving when said panel is in its horizontal position as an overflow to determine the maximum level of water in said basin, counterweights disposed adjacent the outlet end of said funnel, a service-pipe having connection with said basin, and a cock interposed in said connection and forming one of the pivots upon which the panel swings, said cock being so arranged that the service-pipe forms the stem of the valve, and the casing is rigid with the panel.

4. The combination with a vertically-swinging panel carrying a basin of water-supply pipes pivotally connected therewith and forming the pivot of said panel, said connection including a horizontally-disposed valve having an L-shaped passage, a valve-casing revolubly mounted thereon and having a radial opening adapted to register with one arm of said passage in said valve when said panel is horizontally disposed, said pivots being adapted to control the supply of water to said basin in accordance with the position of said panel.

819,563. **ELECTRIC-MOTOR CONTROLLER.** JOHN B. LINN, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Mar. 1, 1902. Serial No. 96,211.



Claim.—1. The combination of multiphase windings, a plurality of terminals for each of said windings, a fixed contact for each of said terminals, multiphase supply-conductors, a fixed contact connected to each supply-conductor, movable contacts constructed and arranged to connect the supply-contacts with either set of winding-terminal contacts.

2. The combination of multiphase windings, a plurality of terminals for each of said windings, a fixed contact for each of said terminals, multiphase supply-conductors, a fixed contact connected to each supply-conductor, movable contacts constructed and arranged to connect the supply-contacts with one set of winding-terminal contacts and connect the other set of said winding-terminal contacts together.

3. The combination of multiphase windings, multiphase supply-conductors, rows of stationary contacts having the contacts of each row connected to the supply-conductors and winding of one phase, rows of movable contacts corresponding to said rows of stationary contacts, each row of said movable contacts movable along and adapted to connect the contacts of a row of said stationary contacts, and other movable contacts adapted to connect contacts lying in a plurality of said rows of stationary contacts.

4. In a switching mechanism, rows of stationary contacts, rows of movable contacts corresponding to said rows of stationary contacts, each row of contacts movable in the plane of its corresponding row of fixed contacts and adapted to connect together stationary contacts lying in the same row, and other movable contacts located so as to move in a plane between adjacent rows of fixed contacts and connect together stationary contacts lying in adjacent rows.

5. In a switching mechanism, rows of stationary contacts, each of said contacts comprising two electrically-connected contact-members spaced apart, connected movable contacts adapted to enter the spaces between said contact members whereby stationary contacts in the same row may be connected together, and other movable contacts adapted to pass without said space and contact with the contact members of the stationary contacts in adjacent rows whereby stationary contacts in different rows may be connected together.

6. The combination of multiphase windings conne ted in Y, multiphase supply-conductors, rows of stationary contacts, each of said rows containing a contact connected to the free end of one of said multiphase windings, a contact connected to the middle point of the same one of said multiphase windings, and a contact connected to one of said supply-conductors, rows of movable contacts having the contacts of one row connected together, said rows of movable contacts movable along said rows of stationary contacts and other movable contacts moving between said rows of stationary contacts, all of said movable contacts occupying definite positions in one of which no connections are made, in another position said supply-conductors are connected to said free ends of windings, and in still another position said supply-conductors are connected to said middle points of windings, and said free ends of windings are connected together.

7. The combination of three-phase motor-windings connected in Y, three-phase supply-conductors, rows of stationary contacts, each of said rows containing a contact connected to the free end of one of said windings, a contact connected to the middle point of the same one of said windings and a contact connected to one of said supply-conductors, rows of movable contacts having the contacts of one row connected together, said row of movable contacts movable along said rows of stationary contacts and other movable contacts moving between said rows of stationary contacts, all of said movable contacts occupying definite positions in one of which no connections are made, in another said supply-conductors are connected to said free ends of windings and in still another position said supply-conductors are connected to said middle points of windings and said free ends of windings are connected together.

8. In a controller, the combination of a casing comprising two semicylindrical headed portions, one of which is provided with an opening to receive conductors, a semicylindrical body of insulating material mounted in one of said portions of the casing, fixed contacts mounted on said insulating-body and coöperating movable contacts mounted on a movable shaft journaled in the heads of the controller-casing.

9. A controller-casing comprising two headed portions, one of which is provided with an opening to receive conductors, a body of insulating material having a concave surface mounted within one of said portions of the controller-casing, fixed contacts mounted on the concave surface of said body of insulating material, and coöperating movable contacts mounted on a movable shaft journaled in the heads of the controller-casing.

10. In a controller, the combination of fixed contacts, each contact comprising a plurality of spring members, movable contacts for engaging the spring members of each of the several fixed contacts, and other movable contacts for connecting the adjacent spring members of different contacts.

11. In a controller, the combination of a row of fixed contacts, each contact comprising two spring members, and a rotatable shaft provided with a plurality of sets of coöperating contacts, the contacts of one set being arranged to engage the two spring members of the several fixed contacts, and the contacts of another set being arranged to connect the adjacent spring members of different contacts.

12. The combination of a plurality of insulating-pieces and a contact coöperating with said insulating-pieces to prevent relative motion.

13. The combination of an insulating-piece having a projection, and another insulating-piece having a projection, said projections coöperating to form a locking-seat for a controller-contact.

14. As an article of manufacture, an insulating-piece having upon one side a projection adapted to coöperate with a similar projection upon another insulating-piece to form a locking-seat for a controller-contact, and having upon the opposite side a similar projection adapted to coöperate with a similar projection upon still another insulating-piece to form a locking-seat for still another controller-contact.

15. As an article of manufacture, an insulating-piece having a projection adapted to coöperate with a similar projection upon another insulating-piece to form a locking-seat for a controller-contact.

16. As an article of manufacture, an insulating-piece having a projection, said projection having a plurality of sides and adapted to coöperate with a similar projection from another insulating-piece to form a polygon as a locking-seat for a controller-contact.

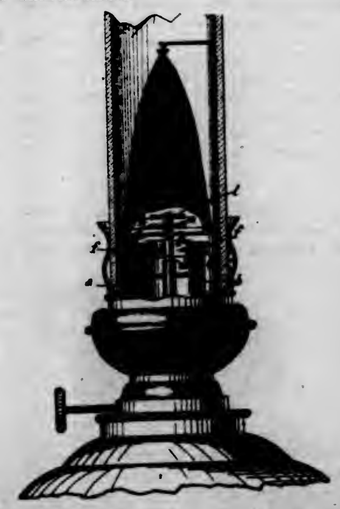
17. As an article of manufacture, a contact-piece for an electric switch composed of two exactly similar parts, said parts having seat portions adapted to fit closely together and offset contact portions, said similar parts being of such conformation as to coöperate with their seat to prevent relative movement thereto.

18. The combination of a shaft, a piece rigidly connected thereto, an insulating-piece on said shaft coöperating with said rigid piece to prevent relative movement, a second piece of insulation coöperating with said first insulating-piece in such manner as to prevent relative movement, a succession of similar insulating-pieces similarly coöperating, seats formed by said insulating-pieces, contact-pieces coöperating with said seats in such manner as to prevent relative motion, a washer adapted to be forced against the last insulating-piece and thereby to secure the said contacts and insulating-pieces rigidly in position.

19. The combination of a controller-casing provided with an entrance for conductors, a curved insulating-shell mounted in said casing and bridging said entrance, and stationary contacts secured to said insulating-shell.

20. As an article of manufacture, an insulating-piece having a projection, said projection coöperating with another projection from another insulating-piece to form a body of other than circular form as a locking-seat for a controller-contact.

819,564. **LAMP-BURNER.** LUDWIG LORENZ, Berlin, Germany, assignor of one-half to Max Herrmann, Berlin, Germany. Filed Dec. 5, 1904. Serial No. 235,503.



Claim.—1. In a burner for inflammable-liquid-consuming lamps the combination with an annular wick-tube provided near its upper end with apertures in both inner and outer walls thereof, of an

inner and outer ring secured to the wick-tube beneath the said apertures and extending upwardly and forming an inner and outer channel with the wick-tube and of a flame-expander, substantially as and for the purpose described.

2. In a burner for inflammable-liquid-consuming lamps the combination with an annular wick-tube provided near its upper end with apertures in both inner and outer walls thereof, of an inner ring secured to the said wick-tube beneath the said apertures and extending at a little distance from the tube, of an outer ring fixed to the wick-tube beneath the outer apertures thereof and extending upwardly, thereby forming two circular channels about the upper end of the wick-tube, and of a flame-expander, substantially as and for the purpose described.

3. In a burner for inflammable-liquid-consuming lamps the combination with an annular wick-tube provided near its upper end with apertures in both inner and outer walls thereof, of an inner and an outer ring secured to the said wick-tube beneath its apertures and bent first upwardly and then inwardly in such a manner that they converge toward each other and form a slit between them and over the wick in the tube, and of a flame-expander, substantially as and for the purpose described.

4. In a burner for inflammable-liquid-consuming lamps the combination with an annular wick-tube provided near its upper end with apertures in both inner and outer walls thereof, of an inner and outer ring secured to the wick-tube beneath the said apertures and extending upwardly, and of a flame-expander comprising a plurality of disks mounted upon a central tube above the wick, the said tube being provided with a plurality of holes beneath each disk, substantially as and for the purpose set forth.

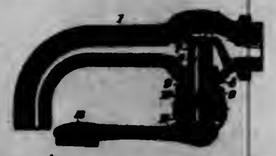
819,565. LAMP-BURNER. LUDWIG LORENZ, Berlin, Germany, assignor of one-half to MAX HERRMANN, Berlin, Germany. Filed Dec. 5, 1904. Serial No. 235,504.



Claim.—1. In a lamp-burner the combination with the wick-regulating spindle, of a rotary pin supported on the spindle and adapted to be rotated round its axis upon the said spindle, a finger at the upper or free end of the pin, a grooved segment fixed to the lamp-casing which the said finger is adapted to engage, stops provided upon the said segment and adapted to limit the movement of said finger substantially as and for the purpose set forth.

2. In a lamp-burner the combination with the wick-regulating spindle, a rotary pin supported on the spindle and adapted to be rotated round its axis upon the said spindle, a finger at the upper or free end of the pin, a grooved segment fixed to the lamp-casing which the said finger is adapted to engage, two stops on the grooved segment one of which closes the end of the groove while the other is adjustably connected to the segment substantially as and for the purpose set forth.

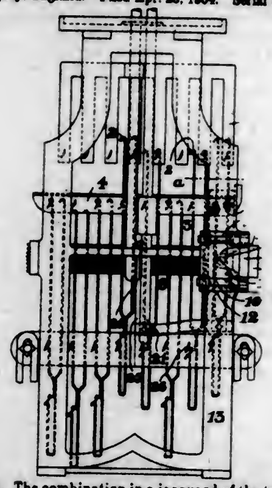
819,566. AUTOMATIC FAUCET. JOHN P. LOCKETT, Baltimore, Md., assignor of two-thirds to Edward L. Hubbard and Rexford M. Smith, Washington, D. C. Filed Mar. 25, 1903. Serial No. 99,947.



Claim.—1. The combination of a faucet-body provided with a tubular boss depending from the lower side thereof at a point remote from the discharge end thereof, a vertically-movable valve working in said boss, a packing-nut having a detachable connection with the bottom of said boss, a valve-actuating spring inclosed within and retained by said nut, and a horizontally-disposed valve-operating lever arranged beneath the faucet-body and pivotally connected to and carried by the lower end of the valve-stem and having its forward end located near the discharge end of the faucet.

2. The combination of a faucet-body, a valve therein having a stem extending downward through the faucet-body, an exteriorly-grooved nut detachably connected with the faucet-body and surrounding the stem, and a valve-operating lever located beneath the faucet-body and pivotally connected at one end to the valve-stem, said lever having one or more projections which engage the grooved face of the nut.

819,567. JACQUARD FOR WEAVING-LOOMS. HARRY MACKINTOSH, Shipley, England. Filed Apr. 28, 1904. Serial No. 205,401.



Claim.—1. The combination in a jacquard of the type described with the spring-box and its needles and the back grate, of a device adapted to move the spring-box and needles in a direction longitudinal to the needles and thus increase the lateral distance of the free hooks from the lifting-grates when the two are in close proximity whereby the free hooks are sprung back by the needles clear of said grates.

2. The combination in a jacquard of the type described, of the spring-box and needles, and the back grate, and a roller attached to the latter, of the bottom grate, and a vertical continuation on the frame thereof having a cam-surface adapted to come in contact with the roller when the free hooks of the jacquard are in the neighborhood of the lifting-grates whereby the free hooks are sprung back by the needles clear of said grates.

3. The combination of the spring-box 6, its needles carried therein, the back grate 7, and a roller carried thereon; with a bottom grate 4 having a cam-surface vertical continuation 18, substantially as described.

4. In a jacquard of the type substantially as described, the combination with the needles, of a substantially vertical supporting-grate located near their middle and rigidly fixed to the framework of the jacquard, said grate being formed of a series of horizontal spacing-bars and the end plates to which the bars are rigidly fixed.

5. An upright of a jacquard of the type described formed solidly in one near the bottom as at 32, and having one leg projecting downward turned round and rising upward and formed with a hook 23 and a loop confining the distance which the vertically-rising leg can spring from the main line of the upright substantially as described.

6. In a jacquard of the type described, a double-limbed upright having a hook at the top of each limb and a hook near the bottom, the wire below the hook being in the same axial line as one of the two upper limbs of the hooks pointing in the same direction substantially as described.

819,568. WATCH. ROBERT MANTHEY, Bridgeport, Conn. Filed Oct. 26, 1903. Serial No. 178,482.

Claim.—1. In a watch free from center wheel and center-wheel pinion, the combination with a main-wheel arbor rotating from left to right, and a minute-wheel in frictional engagement therewith, said minute-wheel having its axis in alinement with the axis of the main-wheel arbor, of a cannon-pinion, a pinion intermediate the cannon-pinion and the minute-wheel, and a dial-wheel, dial-pinion, and hour-wheel.



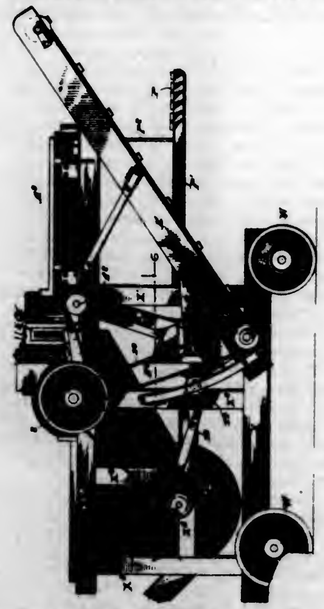
2. In a watch, the combination with a bridge and back plate, and a main-wheel arbor journaled therein, of a minute-wheel, a staff by which it is carried, said staff extending axially of said arbor and adapted to be reciprocated longitudinally thereof, said staff being of greater length than said arbor, a nut 53, and a spring interposed between said nut and the bridge, said spring tending to retain said minute-wheel in frictional engagement with the end of the arbor.

3. In a watch, the combination with a main-wheel arbor and its actuating mechanism, of a minute-wheel frictionally carried by said arbor, means for controlling the movement of said arbor, a cannon-pinion carrying the minute-hand, and an intermediate pinion meshing with said minute-wheel and cannon-pinion.

4. In a watch, a barrel, a main-wheel arbor mounted axially thereof and carrying a main wheel, a spring connecting the barrel and main-wheel arbor, a minute-wheel frictionally carried by said arbor, escapement mechanism operatively connected with said main wheel, a cannon-pinion carrying the minute-hand, and an intermediate pinion meshing with the minute-wheel and cannon-pinion.

5. In a watch, the combination with a main-wheel arbor and its actuating mechanism, of a main wheel carried thereby, said arbor and its main wheel rotating from left to right, a third wheel and pinion, a second wheel and pinion, a fifth or scape wheel and pinion, a pallet, the third pinion engaging the main wheel, the second pinion engaging the third wheel, the fifth pinion engaging the second wheel, and the fifth or scape wheel engaging the pallet, a minute-wheel frictionally carried by said arbor, a cannon-pinion carrying the minute-hand, and an intermediate pinion meshing with said minute-wheel and cannon-pinion.

819,569. CORN-SNAPPER AND FEED-CUTTER. FREEMAN T. MARTIN, Winchester, Ky. Filed July 28, 1905. Serial No. 271,683.



Claim.—1. A feed-cutter, comprising an endless feed-apron, a pair of rolls at the delivery end thereof, a rotary cutter on the opposite side of the rolls from the feed-apron and yielding bearings for the upper roll consisting of a journal-block, a vertical slotted frame inclosing the block, a stem rising from the block through the frame and having a spiral spring around it within the frame, a yoke-shaped piece inclosing the frame, a yoke-shaped cap above the latter, two vertical screw-threaded stems extending up through the ends of the yoke-shaped pieces, spiral springs arranged upon the ends of said cap and surrounding the stems and nuts screwed upon the stems to compress the springs substantially as described.

2. A corn-snapper and feed-cutter, comprising a casing, an endless feed-apron, a pair of snapping-rolls at the delivery end thereof, a rotary cutter having a shaft with a pulley on each end of the same, a chute below the rotary cutter having its lower end turned up to form a receiving-chamber, a fan located inside the casing and within the receiving-chamber and made of less width than the chute and having its central side opening in communication with the receiving-chamber of the chute said rotary fan having a shaft extended beyond the sides of the machine and provided with a pulley at each end, and two belts connecting the two pulleys of the fan-shaft to two corresponding pulleys of the rotary cutter-shaft as shown and described.

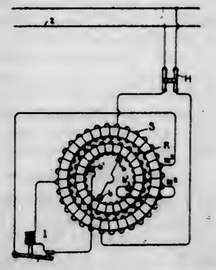
819,570. REFLECTOR. EERLIG MATLOWSKY, New York, N. Y. Filed Oct. 7, 1905. Serial No. 281,776.



Claim.—1. A reflector adapted to surround an illuminated point and having upon its surface a plurality of cavities presenting inclined faces coated with a reflecting substance, said cavities having uncoated bottoms through which the reflected light may pass.

2. A reflector having in its surface a plurality of cavities formed in rows and presenting substantially flat surfaces at their bottoms, with inclined side faces, said inclined faces having a coat of a reflecting substance adapted to reflect light through said bottom faces.

819,571. ALTERNATING-CURRENT-MOTOR CONTROL. MAURICE MILCH, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Jan. 15, 1904. Serial No. 189,121.



Claim.—1. In combination, in an alternating-current motor, a rotor-winding provided with a commutator, brushes short-circuiting the rotor-winding on a line displaced from the line of magnetization of the primary member, a switch adapted to close the rotor-circuit on a second line at an angle to the first, and electromagnetic controlling means adapted to operate said switch when the motor is up to speed.

2. In combination, in an alternating-current motor, a rotor-winding provided with a commutator, brushes short-circuiting the rotor-winding on a line displaced from the line of magnetization of the primary member, a switch adapted to close the rotor-circuit on a second line at an angle to the first, and a magnet-winding connected to said brushes and controlling said switch.

3. In combination, in an alternating-current motor, a rotor-winding provided with a commutator, brushes short-circuiting the rotor-winding on a line displaced from the line of magnetization of the primary member, a switch adapted to close the rotor-circuit through a source of compensating electromotive force on a second

line at an angle to the first, and a magnet-winding connected to said brushes and controlling said switch.

4. In combination, in an alternating-current motor, a rotor-winding provided with a commutator, brushes short-circuiting the rotor-winding on a line displaced from the line of magnetization of the primary member, a switch adapted to close the rotor-circuit through a source of compensating electromotive force on a second line at an angle to the first, and electromagnetic controlling means adapted to operate said switch when the motor is up to speed.

5. In combination, a repulsion-motor having two sets of commutator-brushes, said sets being displaced from each other by approximately ninety electrical degrees and both sets being displaced from the line of magnetization of the primary member, means for short-circuiting one set, and a switch operative upon a decrease of potential between the brushes of the second set to close a circuit between said brushes.

6. In combination, a repulsion-motor having two sets of commutator-brushes, said sets being displaced from each other by approximately ninety electrical degrees and both sets being displaced from the line of magnetization of the primary member, means for short-circuiting one set, and a switch operative upon a decrease of potential between the brushes of the second set to close a circuit between said brushes, through a source of compensating electromotive force.

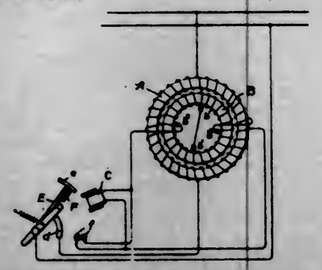
7. In combination, a repulsion-motor having two sets of commutator-brushes, said sets being displaced from each other by approximately ninety electrical degrees, and both sets being displaced from the line of magnetization of the primary member, means for short-circuiting one set, a switch adapted to close a circuit between the brushes of the second set, and a magnet-winding controlling said switch and connected in circuit with the brushes of the second set.

8. In combination, a repulsion-motor having two sets of commutator-brushes, said sets being displaced by approximately ninety electrical degrees and both sets being displaced from the line of magnetization of the primary member, means for short-circuiting one set, a switch in circuit with the brushes of the second set, and means responsive to voltage variations in the motor for closing said switch.

9. In combination, a repulsion-motor having two sets of commutator-brushes, said sets being displaced by approximately ninety electrical degrees and both sets being displaced from the line of magnetization of the primary member, means for short-circuiting one set, a switch in circuit with the brushes of the second set, and an electromagnet for operating said switch, the winding of the said magnet being included in circuit with said second set of brushes through a winding on the primary member of the motor.

10. In combination, a repulsion-motor having two sets of commutator-brushes, said sets being displaced by approximately ninety electrical degrees and both sets being displaced from the line of magnetization of the primary member, means for short-circuiting one set, a switch in circuit with the brushes of the second set, and an electromagnet for operating said switch, the winding of said magnet being included in circuit with the said second set of brushes through all or a portion of the primary winding of the motor, the connections to the primary winding being made along a line corresponding substantially to the line of the second set of brushes.

819,572. **ALTERNATING-CURRENT MOTOR AND STARTING-SWITCH.** MAURICE MILCH, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Sept. 9, 1904. Serial No. 223,838.



Claim.—1. In an alternating-current motor, a rotor-winding provided with a commutator, commutator-brushes and connections short-circuiting the rotor on a definite line, a starting-switch for the motor having a movable switch member adapted to close the circuit of the rotor-winding on a second line at an angle to the first, and means for retarding the movement of said switch member.

2. In an alternating-current motor, a rotor-winding provided with a commutator, commutator-brushes and connections short-circuiting the rotor on a definite line, a starting-switch for the motor having a movable switch member adapted to close the circuit of the rotor-winding on a second line at an angle to the first, and an electromagnet connected in shunt to the rotor-winding on said second line and adapted to retard the movement of said switch member.

3. In an alternating-current motor, a rotor-winding provided with a commutator, commutator-brushes and connections short-circuiting the rotor on a definite line, a starting-switch for the motor having a movable switch member adapted to close the circuit of the rotor-winding on a second line at an angle to the first, and means for arresting the movement of the switch member until the potential of said rotor-winding on said second line falls to a predetermined value.

4. In an alternating-current motor, a rotor-winding provided with a commutator, commutator-brushes and connections short-circuiting the rotor-winding on a definite line, a switch adapted to close the primary circuit of the motor, a switch-arm arranged to fall by gravity when said switch is closed and to close the circuit of the rotor-winding on a second line at an angle to the first, and means for retarding the fall of said switch-arm.

5. In an alternating-current motor, a rotor-winding provided with a commutator, commutator-brushes and connections short-circuiting the rotor-winding on a definite line, a switch adapted to close the primary circuit of the motor, a switch-arm arranged to fall by gravity when said switch is closed and to close the circuit of the rotor-winding on a second line at an angle to the first, and means for arresting the fall of said switch-arm until the potential of the rotor-winding on said second line falls to a predetermined value.

6. In an alternating-current motor, a rotor-winding provided with a commutator, a set of brushes arranged and connected to short-circuit the rotor-winding on a line at an angle to the primary field magnetization, a second set of brushes on a line displaced from the first, a starting-switch for the motor having a movable switch member adapted to close the circuit of said second set of brushes, and means for retarding the movement of said switch member.

7. In an alternating-current motor, a rotor-winding provided with a commutator, a set of brushes arranged and connected to short-circuit the rotor-winding on a line at an angle to the primary field magnetization, a second set of brushes on a line displaced from the first, a starting-switch for the motor having a movable switch member adapted to close the circuit of said second set of brushes, and a magnet-winding connected to said brushes and adapted to retard the movement of said switch-arm.

8. In an alternating-current motor, a rotor-winding provided with a commutator, a set of brushes arranged and connected to short-circuit the rotor-winding on a line at an angle to the primary field magnetization, a second set of brushes on a line displaced from the first, a starting-switch for the motor having a movable switch member adapted to close the circuit of said second set of brushes, and means for retarding the movement of said switch-arm until the potential between said brushes falls to a predetermined value.

9. In an alternating-current motor, a rotor-winding provided with a commutator, a set of brushes arranged and connected to short-circuit the rotor-winding on a line at an angle to the primary field magnetization, a second set of brushes on a line displaced from the first, a switch adapted to close the primary circuit of said motor, a switch-arm arranged to fall by gravity when said switch is closed and to short-circuit the second set of brushes, and a magnet-winding connected to said second set of brushes and adapted to restrain the movement of said switch-arm.

10. In combination, a repulsion-motor having two sets of commutator-brushes, said sets being displaced from each other by approximately ninety electrical degrees and both sets being displaced from the line of magnetization of the primary member, connections short-circuiting one set, a starting-switch having a movable switch member adapted and arranged to short-circuit the second set, and means for retarding the movement of said switch member.

11. In combination, a repulsion-motor having two sets of commutator-brushes, said sets being displaced from each other by approximately ninety electrical degrees and both sets being displaced from the line of magnetization of the primary member, connections short-circuiting one set, a starting-switch having a movable switch member adapted and arranged to short-circuit the second set, and a magnet-winding connected to said second set of brushes and adapted to retard the movement of said switch member.

12. In combination, a repulsion-motor having two sets of commutator-brushes, said sets being displaced from each other by approximately ninety electrical degrees and both sets being displaced from the line of magnetization of the primary member, connections short-circuiting one set, a source of compensating voltage, a starting-switch having a movable switch member adapted and arranged to short-circuit the second set through said source, and means for retarding the movement of said switch member.

13. In an alternating-current motor, a rotor-winding provided with a commutator, a set of brushes arranged and connected to short-circuit the rotor-winding on a line at an angle to the primary field magnetization, a second set of brushes on a line displaced from the first, a source of compensating voltage, a starting-switch having a movable member adapted to close the circuit of said second set of brushes through said source, and means for retarding the movement of said member.

14. In an alternating-current motor, a rotor-winding provided with a commutator, commutator-brushes and connections short-circuiting the rotor on a definite line, a source of compensating voltage, a starting-switch having a movable member adapted to close the circuit of the rotor-winding through said source on a second line at an angle to the first, and means for retarding the movement of said member.

15. In an alternating-current motor, a stator-winding, a rotor-winding provided with a commutator, commutator-brushes and connections short-circuiting the rotor-winding on a definite line, a starting-switch for the motor adapted to connect the stator-winding in series and in parallel, a switch member adapted to move to closed position when said switch is closed and to close the circuit of the rotor-winding on a second line at an angle to the first, and means for retarding the movement of said switch member.

16. In combination, a repulsion-motor having two sets of commutator-brushes displaced from each other by approximately ninety electrical degrees and both sets being displaced from the line of magnetization of the primary member, connections short-circuiting one set, a starting-switch for the motor adapted to connect the primary winding of the motor in series and in parallel, a switch member adapted to move to closed position when said switch is closed and to close the circuit of the second set of brushes, and means for retarding the movement of said switch member.

17. In an alternating-current motor, a rotor-winding provided with a commutator, commutator-brushes and connections short-circuiting the rotor on a definite line, a starting-switch for the motor having a movable switch member adapted to short-circuit the rotor-winding independently of said brushes, and means for retarding the movement of said switch member.

18. In an alternating-current motor, a rotor-winding provided with a commutator, commutator-brushes and connections short-circuiting the rotor on a definite line, a starting-switch for the motor having a movable switch member adapted to short-circuit the rotor-winding independently of said brushes, and a magnet-winding in the circuit of the motor arranged to retard the movement of said switch member.

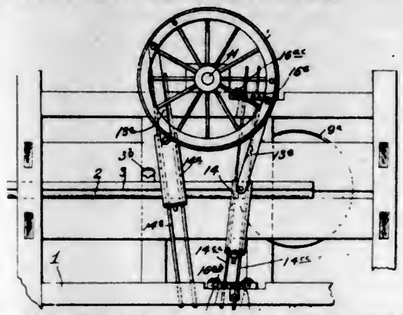
19. In an alternating-current motor, a rotor-winding provided with a commutator, commutator-brushes and connections short-circuiting the rotor-winding on a definite line, a switch adapted to close the primary circuit of the motor, a switch-arm arranged to fall by gravity when said switch is closed and to short-circuit the rotor-winding independently of said brushes, and means for retarding the fall of said switch-arm.

20. In an alternating-current motor, a rotor-winding provided with a commutator, commutator-brushes and connections short-circuiting the rotor-winding on a definite line, a switch adapted to close the primary circuit of the motor, a switch-arm arranged to fall by gravity when said switch is closed and to short-circuit the rotor-winding independently of said brushes, and a magnet-winding in circuit with the motor arranged to retard the fall of said switch-arm.

21. In an alternating-current motor, a rotor-winding provided with a commutator, commutator-brushes and connections short-circuiting the rotor-winding on a definite line, a switch-arm adapted to close the primary circuit of the motor, a second switch-arm operatively connected to the first and adapted to follow the first when the first arm is closed and to short-circuit the rotor-winding independently of said brushes, and means for retarding the movement of said second switch-arm.

22. In an alternating-current motor, a rotor-winding provided with a commutator, commutator-brushes and connections short-circuiting the rotor-winding on a definite line, a switch-arm adapted to close the primary circuit of the motor, a second switch-arm operatively connected to the first and adapted to follow the first when the first arm is closed and to short-circuit the rotor-winding independently of said brushes, and a magnet-winding in circuit with the motor arranged to retard the movement of said second switch-arm.

819,573. **INTERCHANGEABLE AND ADJUSTABLE HAND, BAND, AND JIG SAW FILING MACHINE.** HERBERT MILLER, Hudson, N. Y. Filed Aug. 24, 1904. Serial No. 221,983.



Claim.—1. A machine of the character described, comprising a supporting-frame having an upper and a lower bar each provided with slots, a holder or bracket for carrying a file, inclined guiding-rods for, and passing through said holder or bracket and through said slots, and retaining-plates for, and having rods passing through them, and means for effecting the adjustment of said plates for varying the angle of inclination of said rods.

2. A machine of the character described, comprising a saw-clamp carriage equipped along one edge with a rack, a rotary spiral cam engaging said rack for moving said carriage intermittently and parallel with the axis of the saw-blade which may be carried by the clamp, a suitably-fulcrumed lever engaging said carriage and a cam-arm engaging said lever and carried by an actuating-shaft for moving said carriage also intermittently but at right angles to the aforesaid movement, and a common mean for operating the aforesaid parts.

3. A machine of the character described, comprising a saw-clamp carriage, a guide consisting of an upstanding lateral piece provided with a longitudinal slot receiving the corresponding edge of said carriage and of such depth as to permit the movement of the latter laterally or from side to side in right lines, said carriage being equipped with a feed-rack, a cam having its actuating-tooth member engaging said rack, means for imparting to said carriage its lateral or shifting movement, and a common means for actusting said cam and said carriage-shifting means.

819,574. **TICKET-CASE.** NEWTON W. MOORE, Windber, Pa. Filed Oct. 26, 1905. Serial No. 284,574.



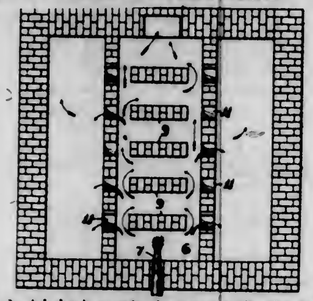
Claim.—1. A ticket-holder consisting of a casing of rectangular form, a cover hinged at one edge to one of the longer sides of the casing and adapted to overlap the opposite edge and a portion of the back of the casing and to be secured to said back, a frame mounted in said casing, a roller journaled in said frame, and adapted to receive a roll of tickets, and a block arranged within the casing, said casing having an opening at one end for the passage of the tickets from the roll, and said lid or casing having a cut-away portion to permit the tickets to be gripped.

2. A ticket-holder embodying a casing of rectangular form, and a flexible lid hinged at one edge to one side wall of the casing, said lid overlapping the top, one side wall and a portion of the back of the casing, and being secured at its free edge to the back of the casing, a frame arranged within the casing and a roller adapted to receive a roll of tickets and mounted in said frame.

3. A ticket-holder consisting of a casing of rectangular form, a cover hinged at one edge to one of the longer sides of the casing and adapted to overlap the opposite edge and a portion of the back of the

casing and to be secured to said back, said cover being provided with a cut-away portion at one end, a block arranged within the casing and extending from one end thereof to near the other end thereof, a frame arranged in said casing, said frame being of substantially U-shaped form and said frame being disposed in the space between the end of said block and the end of the casing, a pin journaled in said frame and adapted to receive a roll of tickets.

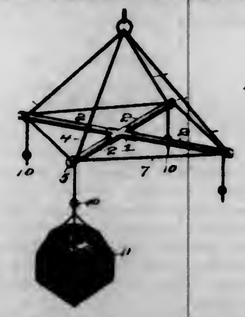
819,575. **BAKING APPARATUS.** GEORGE A. MULLER, San Francisco, Cal. Filed Sept. 20, 1905. Serial No. 279,682.



Claim.—1. A baker's oven having an oven-chamber and a revoluble carrier therein having means for supporting the articles to be baked, a furnace extending through the center of the lower part of the oven, closed at the top and having a series of transversely-extending piers for diverting the heat-currents said piers forming supports for the closed top of the furnace and having their ends terminating short of the side walls of said furnace, said side walls having openings proximate to the ends of the piers and through which openings heat products will pass into the oven-chamber, a hydrocarbon-burner located at one end of the furnace and discharging in line with the piers, whereby the course of the heat products is diverted, and a discharge-flue at the opposite end of the furnace.

2. A baker's oven having an oven-chamber, a furnace extending through the center of the lower part thereof said furnace having a fuel-inlet at one end and a discharge-flue at the opposite end, a series of parallel transverse piers in the furnace between the inlet and discharge ends thereof said piers having their ends terminating short of the side walls of the furnace and said side walls having openings proximate to the ends of the piers and into which openings the heat products are diverted, a tiled structure forming a closed top for the furnace said piers supporting said top, and a revoluble carrier in the oven-chamber directly above the closed top of the furnace and having means for supporting the articles to be baked.

819,576. **SLING FOR HOISTING APPARATUS.** WILLIAM L. MCCABE, Seattle, Wash. Filed Mar. 20, 1905. Serial No. 251,079.



Claim.—1. In an apparatus of the class described, the combination with a plurality of cables, of a hollow bar spacing the same apart, said cables being passed through said bar, a filling for said bar, and means for causing said filling to bite said cables for maintaining the same against movement with respect to the bar.

2. In an apparatus of the class described, the combination with a plurality of cables, of a hollow bar for spreading the same apart, said cables being passed through said bar at points near the ends thereof, a filling for said bar, a cap threaded onto said bar at each end, and means interposed between each cap and the filling for causing the filling to engage said cable, and a pin passed through each cap into said filling through said cable.

3. In an apparatus of the class described, the combination with a plurality of cables, of arms arranged at right angles to each other and engaging said cables for spacing the same apart, a cable passed through the free ends of said arms, and a pin passed through said last-mentioned cable and into each of said bars.

4. In a container for hoists, the combination of a rigid floor, and a flexible inclosing net independent of and designed to be connected to said floor.

5. In a container for hoists, the combination of a floor, an independent inclosing mesh designed to engage said floor, a cable for supporting said mesh, and means for connecting said cables with said floor.

6. In a container for hoists, the combination of a floor, a bail connected with each corner thereof, a netting designed to inclose said floor, means for supporting said netting, and means for connecting said bails with the support for said netting.

7. In a container for hoists, the combination with a floor, of cables connected therewith at each end and constituting bails, a netting designed to surround said floor, cables supporting said netting, and means for connecting the last-mentioned cables with said bails.

8. In a container for hoists, the combination of a floor, ears projecting therefrom, cables connected with said ears, a netting designed to inclose articles disposed on said floors, cables for supporting said netting, and means for connecting said first and second mentioned cables.

9. In a container for hoists, the combination with the floor, of a netting removably engaging the same, and means for supporting said netting.

10. In a container for hoists, the combination with a floor, of a cable designed to engage the same and comprising a plurality of sections formed with an eye at each end, and a lanyard connecting the contiguous eyes of said sections, a flexible mesh engaging said cable, and means for supporting said mesh.

11. In a container for hoists, the combination with a floor, of a bail connected with each corner thereof, a netting designed to inclose material mounted upon said floor, a ring at the upper edge of said mesh and connected therewith, cables connected to said ring and converging to a common center, and hooks carried by said cables designed to engage said bails.

12. In an apparatus of the class described, the combination with a plurality of cables, of a spreader for said cables, said spreader comprising a series of radially-extending arms, and a container carried by said spreader.

13. In a device of the character described, the combination with a series of cables, of a spreader spacing said cables apart, said spreader comprising a series of arms, and a container supported by each of said arms.

14. A device of the class described comprising a flooring, means for sustaining said flooring, a flexible mesh inclosing said flooring, and means independent of the flooring for sustaining the mesh in position about the flooring.

15. In a device of the class described, the combination of a flooring, bails connected to said flooring for sustaining the same, a flexible mesh inclosing said flooring, and means adapted to engage said mesh and said bails for independently supporting the flooring and mesh while maintaining the same in their respective relations.

16. In a device of the class described, the combination of a flooring, flexible bails connected thereto, a mesh inclosing said flooring and bails, and cables engaging said bails and mesh for sustaining the parts.

17. In a device of the class described, the combination of a flooring, a bail arranged at each corner thereof, a flexible mesh inclosing said flooring, a cable engaging each of said bails, and means connecting said mesh with said cables, and means for supporting said cables.

819,577. **CURTAIN-FIXTURE.** PETER F. MCCARTY, Washington, D. C. Filed Jan. 16, 1906. Serial No. 296,333.

Claim.—1. The improved curtain-fixture herein described, comprising a supporting-section having a face-plate deflected outwardly at its upper and lower ends and having its lower free end notched in its lower edge and adapted to operate by its resilience to yieldingly retain the tongue of a bracket-section, the section being returned or folded at its upper end to form a doubled hammer edge and extended to provide a top plate and spurs depending therefrom, and a bracket having means for supporting curtain-holders and provided with a back plate having at its upper end a hook to engage the doubled portion of the supporting-section and at its lower end a projecting tongue to engage in the notches in the lower deflected portion of the face-plate of the supporting-section, substantially as set forth.

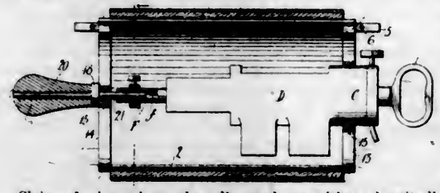


2. A curtain-fixture, comprising a supporting-section having a face-plate deflected at its upper and lower ends, and notched in its lower edge and provided at its upper end with the projecting bead, and a bracket having a hook engaging with said bead and a projecting tongue for engagement with the notched lower edge of the face-plate, substantially as set forth.

3. In a curtain-fixture, a supporting-section having a face-plate, a top plate and an upwardly-projecting doubled hammer edge at the juncture of the face-plate and top plate, in combination with a bracket having a hook engaging the said hammer edge, substantially as set forth.

4. A curtain-fixture comprising a supporting-section having a face-plate deflected outwardly at its lower end and notched in its lower edge and adapted to operate by its resilience to yieldingly retain a tongue pressed therein, and a bracket-section detachably engaging at its upper end with the supporting-section above said outwardly-deflected lower end and provided with a projecting tongue to engage in the notches in the lower deflected portion of the supporting-section, substantially as set forth.

819,578. **SANDING-TOOL.** ERNEST K. MCCOY, Portsmouth, Va., assignor of one-half to John C. Tyler, Portsmouth, Va. Filed Sept. 18, 1905. Serial No. 279,011.



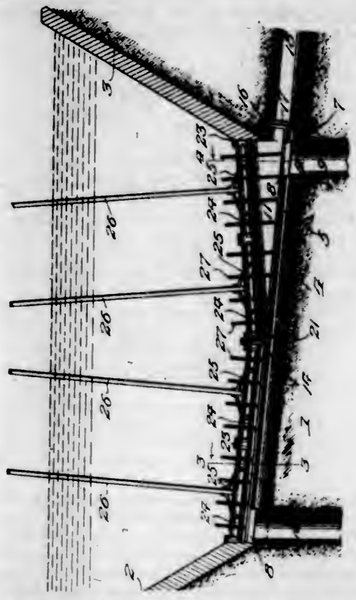
Claim.—1. A rasping and sanding tool comprising a longitudinally-slit cylinder, an abrasive cylinder on the slit cylinder, brackets 7 on the inner side of the slit cylinder, at the ends thereof and on opposite sides of the slit therein, lugs 5 in the said brackets and projecting beyond the ends of the slit cylinder, and set-screws connecting the said lugs, substantially as described.

2. A rasping and sanding tool for use in connection with a rotary power hand-drill, and comprising a cylinder having a longitudinal split on one side, an abrasive cylinder on the split cylinder, means to diametrically expand and contract the split cylinder, and removable heads in said split cylinder, one of said heads having a central opening to form the bearing for the cylindrical portion of the power-drill and the other having a bearing for the shank of a handle for attachment to the drill-spindle.

819,579. **SUBMARINE FILTER.** PATRICK MCGRANIGHAN, Granite, Va. Filed Nov. 4, 1905. Serial No. 285,904.

Claim.—1. A canal or other watercourse provided with a submerged sand or other grit eliminator extending transversely across the bed thereof and inclined from one bank to the other, said device having its upper side inclining downward toward its center from the banks and provided with inlet-openings, valve mechanism controlling said openings, and a discharge extending through one of the banks of the canal and communicating with the lower end of the eliminator.

2. A submarine filter for extracting sand and other gritty matter from canals and other watercourses comprising a bottom section inclined from one side to the other of the canal, top sections coöperating with said bottom section and having their upper surfaces sloping toward the center of the conduit and provided with inlets, said sections being properly united and forming a conduit enlarged from its center to its outer end, and a discharge-pipe connected with the outer end.



3. A canal or other watercourse provided with a filter submerged therein and extending transversely across the bed thereof, said filter being inclined from one bank to the other and having an outlet through one bank at its lower end, the tube being provided in its body portion with inlets, controlling closures for said inlets, and fenders on the upstream side of the tube and projecting over said inlets.

4. A canal or other watercourse provided with a submerged filter extending across the bed thereof and inclined from one bank to the other, said filter comprising a tubular body having inlet-openings and a discharge through one of the banks at its lower end, the lower half of the body having an upward enlargement, the upper surfaces of the body being inclined from the banks toward the center of the body, and controlling closures for said inlets.

5. A canal or other watercourse provided with a filter submerged therein and extending transversely across the bed thereof, said filter comprising a tube inclined from one bank to the other and having an outlet at its lower end through the adjacent bank, said tube being provided in its top with inlets facing on the upstream side and closures mounted on the tube for controlling said inlets.

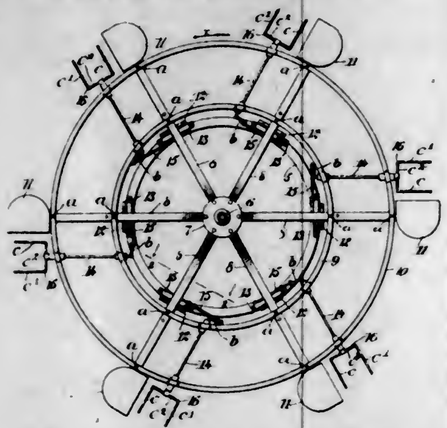
6. A canal or other watercourse provided with a filter submerged therein and extending transversely across the bed thereof, said filter comprising a tube inclined from one bank to the other and having an outlet through one bank at its lower end, the upper side of the tube being inclined toward its center from the banks and provided with inlet-openings facing on the upstream side, and valves upon the tubes controlling said openings.

7. A canal or other watercourse provided with a filter submerged therein and extending transversely across the bed thereof, said filter comprising a tube inclined from one bank to the other and having an outlet at its lower end through one bank, the upper side of the tube being inclined downwardly toward its center from the bank and provided with inlets facing on the upstream side, controlling-closures on the tube for said inlets, and fenders on the upstream side of the tube projecting over said inlets.

8. A canal or other watercourse provided with a filter submerged therein and extending transversely across the bed thereof, said filter comprising a tube inclined from one bank to the other and having an outlet at its lower end through one of the banks, said tube having its upper side inclining downward toward its center from the banks and provided with inlets facing toward the upstream side, guideways upon the tube adjacent the inlets, closures slidably mounted in said guideways, and means for actuating said closures.

9. A submarine filter comprising a tubular body provided with inlets on the upstream side thereof, closures for said inlets, and fenders on the upstream side of the tube and projecting over said inlets.

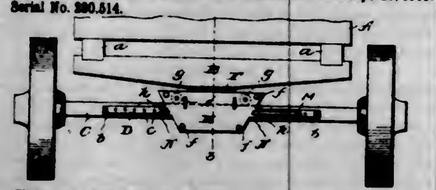
819,580. MERRY-GO-ROUND. GEORGE B. MCKINNEY, Barry, Ill. Filed Aug. 4, 1905. Serial No. 273,664.



Claim.—1. A merry-go-round, embodying a supported level circular track, an upright post central within the track, a whirling frame having a central hub pivoted upon the post, and further comprising a plurality of spaced arms radiating from said hub, and a brace secured on the outer portions of the arms, a pendent bracket-frame on each arm, a traction-wheel pivoted upon each bracket-frame, said wheels resting upon the track, a seat on the outer end of each arm, rock-shafts loosely mounted on the whirling frame, one ahead of each seat, means for transmitting rotary motion from each shaft when it is rocked, and means for rocking the shafts by the occupants of the seats.

2. A merry-go-round, comprising a supported level circular track, an upright post central within the track, a whirling frame embodying a hub pivoted upon the post, a plurality of spaced arms radiating from the hub, and two brace-rings of different diameters secured on the arms, a seat mounted upon each arm at its outer end, a bracket-frame depending from each arm near the track, a traction-wheel pivoted on each bracket-frame and seated upon the track, rock-shafts loosely mounted upon the whirling frame, one ahead of each seat, a crank-arm on the inner end of each rock-shaft, a pitman pivoted at its ends respectively on a crank-arm and an adjacent traction-wheel, and a rocking frame secured on the outer end of each rock-shaft, said frames each comprising a foot-bar and a handle-bar spaced apart parallel with each other for movement with the feet and hands of the occupant of an adjacent seat.

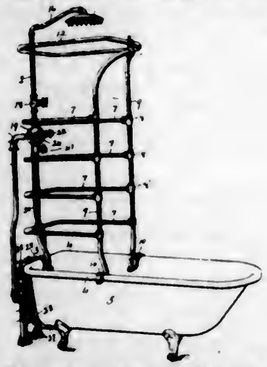
819,581. DEVICE FOR SHIFTING THRESHING-MACHINE BODIES. HUGH J. MCNEILL, Brandon, Canada. Filed Sept. 26, 1905. Serial No. 280,514.



Claim.—1. In a device for shifting a threshing-machine body on its axle, the combination of an axle provided at intervals in its length and at one of its sides with indentations, a body, a carriage connected to the body and movable on the axle in the direction of the length thereof, and an oscillating lever mounted at an intermediate point of its length on the carriage and having an outer arm adapted to serve as a handle and an inner arm the end of which is arranged to directly engage in succession the indentations with which the axle is provided.

2. In a device for shifting a threshing-machine body on its axle, the combination of an axle provided at intervals in its length and at one of its sides with indentations, a body, a carriage connected to the body and movable on the axle in the direction of the length thereof; said carriage being provided at its ends with devices for fulcruming a lever, antifriction devices carried by the carriage and bearing on the axle, and an oscillating lever detachably connected at an intermediate point of its length to one of the fulcruming devices of the carriage and having an outer arm adapted to serve as a handle and an inner arm the end of which is arranged to directly engage in succession the indentations with which the axle is provided.

819,582. COMBINATION SPRAY AND SHOWER ATTACHMENT FOR BATH-TUBS. WILLIAM G. NEWTON, New Haven, Conn., assignor to The Peck Brothers and Company, New Haven, Conn., a Corporation. Filed June 27, 1904. Serial No. 214,221.



Claim.—1. In a combination spray and shower attachment for bath-tubs, the combination with a tubular rear support forming a water-supply pipe for the attachment, and two front supports, all of the said supports being adapted in length to extend down into a bath-tub below the roll thereof; of clips adapted to rest upon the roll of the tub upon which the attachment is thus saddled, the inner end of each of the said clips being extended downward into the tub and bent inwardly to form a bearing-arm to which the lower ends of the said supports are secured in position to form a space between their lower ends and the inner ends of the clips for the lower edge of the curtain.

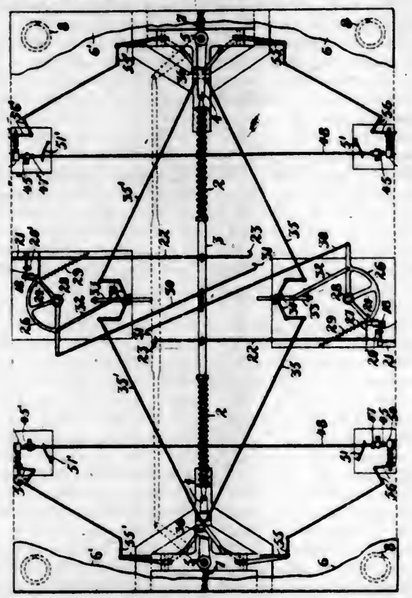
2. In a combination spray and shower attachment for bath-tubs, the combination with a tubular rear support and two front supports, of horizontally-arranged tubular spray-arms located one above the other and supported by the said rear and front supports, and a curtain-ring supported by the said rear support and by the two front supports the upper ends of which are combined to form a single support for it.

3. In a combination spray and shower attachment for bath-tubs, the combination with a tubular rear support and two front supports, of horizontally-arranged tubular spray-arms located one above the other and supported by the said rear and front supports, and an oblong curtain-ring having its rear end supported by the said rear support and its front end supported by the upper ends of the two front supports which are inclined toward the head of the tub for the extension of the space inclosed by the curtain in the direction of the length of the tub, and which are also inclined toward each other to form a single support for the front end of the ring, whereby the curtained space is extended toward the head of the tub, and the front end of the ring supported at a single point.

819,583. AUTOMATIC DOOR OPENER AND CLOSER. KENJIRO NISHIMOTO, San Francisco, Cal. Filed Feb. 9, 1906. Serial No. 300,965.

Claim.—1. In apparatus of the character described, the combination of a drive-shaft having constant motion in one direction, a driven shaft, a door carried by the driven shaft, a loose sprocket on the driven shaft, flexible connections between the sprocket and the drive-shaft to rotate the sprocket constantly, a hinged platform, and means operable by the platform to lock the sprocket to the driven shaft to turn the door.

2. The combination of a drive-shaft having constant motion in one direction, a door-shaft on each side of said drive-shaft, loose sprockets on said door-shafts, means for operating said sprockets constantly in unison from the drive-shaft, a hinged platform, and means to lock said sprockets to their respective door-shafts.



3. The combination of a drive-shaft, door-shafts on each side of said drive-shaft, loose sprockets on the door-shafts, flexible connections between the sprockets and drive-shaft to operate the sprockets in unison, a hinged platform, and means operable by the platform to lock the sprockets to their respective door-shafts.

4. The combination of a drive-shaft, door-shafts on each side thereof, upper and lower sets of loose sprockets on the door-shafts, flexible connections between the upper set of sprockets and the drive-shafts to operate the sprockets in said set in opposite directions to each other, flexible connections between the sprockets of the lower set and the drive-shafts to operate the sprockets in said lower set in opposite directions to each other and in the reverse direction to the direction of motion of the upper set of sprockets, hinged platforms, means operable by one of said platforms to lock the upper set of sprockets to their respective door-shafts, and means operable by the other platform to lock the lower set of sprockets to the door-shafts.

5. The combination of a drive-shaft, door-shafts on each side thereof, upper and lower sets of loose sprockets on the door-shafts, flexible connections between the upper set of sprockets and the drive-shafts to operate the sprockets in said set in opposite directions to each other, flexible connections between the sprockets of the lower set and the drive-shaft to operate the sprockets in said lower set in opposite directions to each other and in the reverse direction to the direction of motion of the upper set of sprockets, hinged platforms, means operable by one of said platforms to lock the upper set of sprockets to their respective door-shafts, means operable by the other platform to lock the lower set of sprockets to the door-shafts, and means operable by one platform to prevent the operation of the other platform.

6. The combination of a drive-shaft, a door-shaft, a door carried by the door-shaft, a loose sprocket on the door-shaft, flexible connections between the drive-shaft and sprocket to operate the latter constantly, a hinged platform, a clutch member carried by the sprocket, a corresponding clutch member carried by the door-shaft, and means operable by the platform to actuate one of said clutch members to lock the sprocket to the door-shaft.

7. The combination of a door-shaft, a door carried thereby, a loose sprocket on the door-shaft, means for operating the sprocket, a hinged platform, a movable clutch member carried by the sprocket, a corresponding clutch member carried by the door-shaft, and means operable by the platform to actuate said movable clutch member to lock the sprocket to the door-shaft.

8. The combination of a door-shaft, two loose sprockets thereon, means for rotating said sprockets in opposite directions, clutch members carried by said sprockets, corresponding clutch members carried by the door-shaft, two hinged platforms, and means operable by said platforms to actuate a respective clutch member to lock one or the other of the sprockets to the door-shaft.

9. The combination of a door-shaft, two loose sprockets thereon, means for rotating said sprockets in opposite directions, clutch members carried by said sprockets, corresponding clutch members carried by the door-shafts, two hinged platforms, means operable by said platforms to actuate respective clutch members to lock one or the other of the sprockets to the door-shaft, and means for preventing the actuation of both clutches at the same time.

10. The combination of a door-shaft, two loose sprockets thereon, means for rotating said sprockets in opposite directions, clutch members carried by said sprockets, corresponding clutch members carried by the door-shaft, two hinged platforms, means operable by said platforms to actuate respective clutch members to lock one or the other of the sprockets to the door-shaft, and a sliding member operable by one platform and interposable in the path of the other platform to prevent the actuation of both clutches at the same time.

11. The combination of a door-shaft, two loose sprockets thereon, means for rotating said sprockets in opposite directions, clutch members carried by said sprockets, corresponding clutch members carried by the door-shaft, two hinged platforms, means operable by said platforms to actuate respective clutch members to lock one or the other of the sprockets to the door-shaft, means for preventing the actuation of both clutches at the same time, said last-named means including a shiftable rod, stop members on the rod, and connections between the platforms and the rod to shift the latter on the actuation of one platform to interpose one of said stop members in the path of the other platform.

12. The combination of two hinged platforms, a door-shaft between the platforms, means operable on the depression of one platform to turn the door-shaft in one direction, means operable on the depression of the other platform to turn the door-shaft in the other direction, and means to prevent the operation of both platforms at the same time, said last-named means including a shiftable rod, stop members carried by said rod, respective projections on the platforms in the path of said stop members, connections between the platforms and the rod to shift the latter to interpose one of said stops in the path of the respective projection, and means to hold the stop members in normal inoperative position.

13. The combination of two hinged platforms, a door-shaft between the platforms, means operable on the depression of one platform to turn the door-shaft in one direction, means operable on the depression of the other platform to turn the door-shaft in the other direction, and means to prevent the operation of both platforms at the same time, said last-named means including a shiftable rod, stop members carried by said rod, respective projections on the platforms in the path of said stop members, connections between the platforms and the rod to shift the latter to interpose one of said stops in the path of the respective projection, means to hold the stop members in normal inoperative position, and means independent of the platforms to maintain a stop in operative position with respect to its projection.

14. The combination of two hinged platforms, a door-shaft between the platforms, means operable on the depression of one platform to turn the door-shaft in one direction, means operable on the depression of the other platform to turn the door-shaft in the other direction, and means to prevent the operation of both platforms at the same time, said last-named means including a shiftable rod, stop members carried by said rod, respective projections on the platform in the path of said stop members, connections between the platforms and the rod to shift the latter to interpose one of said stops in the path of the respective projection, means to hold the stop members in normal inoperative position, means independent of the platforms to maintain a stop in operative position with respect to its projection, and means operative by the turning of the door-shaft to release said stop from its operative position.

15. The combination of two hinged platforms, a door-shaft between the platforms, means operable on the depression of one platform to turn the door-shaft in one direction, means operable on the depression of the other platform to turn the door-shaft in the other direction, and means to prevent the operation of both platforms at the same time, said last-named means including a shiftable rod, stop members carried by said rod, respective projections on the platform in the path of said stop members, connections between the platforms and the rod to shift the latter to interpose one of said stops in the path of the respective projection, means to hold the stop members in normal inoperative position, a latch member engageable with each stop to hold the latter in operative position with respect to its pro-

jection, and means operative by the turning of the door-shaft to release said latch members.

16. The combination of a door-shaft, a loose sprocket on the door-shaft, means for turning the sprocket, a rocking platform, means to lock the sprocket to the door-shaft, said last-named means including a pivoted clutch member carried by the sprocket, and a fixed clutch member on the door-shaft engageable by said movable member.

17. The combination of a door-shaft, a loose sprocket on the door-shaft, means for operating the sprocket, a hinged platform, a movable clutch member on the sprocket, a corresponding fixed clutch member on the door-shaft, a cam member interposable in the path of said movable member to actuate the latter, and means operated by the platform to actuate said cam member.

18. The combination of a door-shaft, a loose sprocket on the door-shaft, means for operating the sprocket, a hinged platform, a movable clutch member on the sprocket, a corresponding fixed clutch member on the door-shaft, a cam member interposable in the path of said movable member to actuate the latter, means operated by the platform to actuate said cam member, and means independent of the platform to disengage said clutch members.

19. The combination of two hinged platforms, two door-shafts between the platforms, doors on said shafts, means to hold said doors normally closed, means operative by one platform to turn said door-shafts in one direction, means operative by the other platform to turn said door-shafts in the opposite direction, and shiftable stop members operative by one platform to prevent the actuation of the other platform, spring-latches engageable with said stop members to hold them in operative position to prevent the actuation of a platform.

20. The combination of two hinged platforms, two door-shafts between the platforms, doors on said shafts, means to hold said doors normally closed, means operative by one platform to turn said door-shafts in one direction, means operative by the other platform to turn said door-shafts in the opposite direction, shiftable stop members operative by one platform to prevent the actuation of the other platform, spring-latches engageable with said stop members to hold them in operative position to prevent the actuation of a platform, and means operated by the opening movement of the doors to release said latch members.

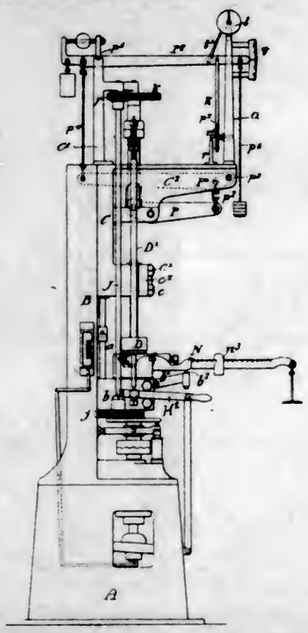
21. The combination of two hinged platforms, two door-shafts between the platforms, doors carried by said shafts means for maintaining the doors normally closed, means operative by one platform to open the doors in one direction, means operative by the other platform to open the doors in the opposite direction, said means for opening the doors including loose sprockets on the shafts, clutch members on the sprockets, and corresponding clutch members on the shafts, movable cams operative on the depression of a platform and interposable in the path of the clutch members on the sprockets, and means independent of the platforms to retract said cams.

22. The combination of two door-shafts, doors carried thereby, means for maintaining the doors normally closed, a movable platform, loose sprockets on the shafts, means for operating the sprockets simultaneously in opposite directions, clutch members on the sprockets, corresponding clutch members on the shafts, cams engageable with certain of said clutch members to lock the sprockets to the shafts, a rockable part connected with said cams, means for maintaining said cams in normally inoperative position, and means to rock said rockable part on the depression of the platform to place said cams in operative position with respect to said clutches.

23. The combination of two door-shafts, doors carried thereby, means for maintaining the doors normally closed, a movable platform, loose sprockets on the shafts, means for operating the sprockets simultaneously in opposite directions, clutch members on the sprockets, corresponding clutch members on the shafts, cams engageable with certain of said clutch members to lock the sprockets to the shafts, a rockable part connected with said cams, means for maintaining said cams in normally inoperative position, means to rock said rockable part on the depression of the platform to place said cams in operative position with respect to said clutches, and means operated by the opening of the doors to reset said cams in inoperative position independent of the platform.

819,584. **TESTING-MACHINE.** THEIS OLSEN, Philadelphia, Pa. Filed Nov. 10, 1904. Serial No. 232,173.

Claim.—1. The combination in a testing-machine, of means for holding one end of a specimen, a cross-bar and a plate through which the specimen extends, a ball to which the opposite end of the specimen is attached, a shaft, a head on the shaft, a block on one side of the head for acting against the ball when the shaft is turned so as to give the end of the specimen a gyrating motion, means for imparting tension to the specimen, and a scale-beam for indicating the amount of tension, substantially as described.



2. The combination in a testing-machine, of means for holding one end of a specimen, a cross-bar, and a ball to which the opposite end of the specimen is attached, a shaft, a head on the shaft, a block on one side of the head acting against the ball when the shaft is turned so as to give the end of the specimen a gyrating motion, means for imparting tension to the specimen, a scale-beam for indicating the amount of tension, a clutch through which the tension mechanism is actuated, and an electric device controlled by the scale-beam for throwing the clutch into action, substantially as described.

3. The combination in a testing-machine, of means for holding one end of a specimen, a ball attached to the opposite end of the specimen, a cross-bar mounted above the ball, rods attached to the cross-bar, a cross-head actuating said rods, a screw-shaft controlling the movement of the cross-head, a driven shaft, a head carried by the shaft, an eccentric block mounted on the head so as to give a gyrating motion to one end of the specimen, clutch mechanism between the said shaft and the operating mechanism for the cross-head, a lever, an armature on the lever, a magnet, a scale-beam, and contacts, one actuated by the scale-beam so that when the scale-beam is at a certain point it will make contact and energize the magnet, throwing the clutch into action to place tension upon the specimen, substantially as described.

4. The combination in a testing-machine, of a bracket, a bushing in the bracket to which the specimen is secured, a cross-bar through which the specimen passes, said cross-bar being concaved on its under side, a convex plate mounted under the cross-bar, a ball mounted under the plate, the specimen passing through the cross-bar, plate and ball, a nut on the end of the specimen bearing against the ball, a shaft having a head, and an adjustable block on the head bearing against the ball so that as the shaft is rotated a gyrating motion will be imparted to one end of the specimen, substantially as described.

5. The combination of a specimen rigidly secured at one end, a ball attached to the opposite end of the specimen, a cross-bar mounted above the ball, mechanism for applying pressure to the cross-bar for placing strain upon the specimen, a shaft, a head on the shaft, a block carried by the head bearing against the ball, and a wedge for adjusting the block, substantially as described.

6. The combination of a specimen rigidly secured at one end, a ball attached to the opposite end of the specimen, a cross-bar mounted above the ball, mechanism for imparting pressure upon the cross-bar for placing strain upon the specimen, a shaft, a head on the shaft, a block carried by the head bearing against the ball, and a wedge for adjusting the block, with a scale-beam hung to the head so that it can be readily removed, said scale-beam indicating the pressure of the block upon the ball, substantially as described.

7. The combination in a testing-machine, of means for rigidly attaching one end of a specimen, a ball secured to the opposite end of the specimen, a shaft, a head carried by the shaft, an adjustable block mounted on the head for causing a gyrating motion to the ball, arms on the head, a scale-beam having portions bearing against the arms and being provided with a projection, with means operatively connecting said projection and the block, substantially as described.

8. The combination in a testing-machine, of means for rigidly securing one end of a specimen, a ball carried by the other end of the specimen, a shaft, a head on the shaft, an adjustable block carried by the head and resting against one side of the ball, plates secured to the block, a head secured to the plates, a set-screw passing through the head, a scale-beam pivoted to the head and having a projection carrying a knife-edge, and a plate mounted between the knife-edge on the projection and the end of the set-screw, substantially as described.

9. The combination in a testing-machine, of means for holding a specimen in position, a shaft, means for imparting motion to the shaft, means carried by said shaft for giving a gyrating motion to one end of the specimen, a clutch-face on the shaft, a sleeve carrying another clutch-face, a pinion on the sleeve, a vertical shaft, a gear-wheel on the said vertical shaft with which the pinion meshes, a pinion on the opposite end of this shaft, a gear-wheel with which the said pinion meshes, a screw carrying the said gear-wheel, a cross-head on the screw, vertical rods passing through the cross-head, shoulders on the rods, a cross-bar engaging one end of the specimen, and means for throwing the clutch mechanism into gear, substantially as described.

10. The combination in a testing-machine, of means for rigidly securing one end of a specimen, a cross-bar attached to the other end of the specimen, means for imparting a gyrating motion to the said specimen, means for imparting tension to the specimen, a clutch interposed between a source of power and said strain-exerting mechanism, vertical rods engaging the cross-bar, and a lever to actuate the clutch having arms in line with the rods, so that when the said rods are depressed they will move the lever and throw the clutch out of action and stop the machine, substantially as described.

11. The combination in a testing-machine, of means for placing tensile strain upon the specimen, and means for gyrating one end of the specimen, a scale-beam, and means connecting the scale-beam with the specimen so that the tensile strain on the specimen will be indicated by the scale-beam, substantially as described.

12. The combination in a testing-machine, of means for rigidly securing one end of the specimen, means for gyrating the opposite end of the specimen, a cross-bar secured to said free end of the specimen, a scale-beam and a series of levers connected to the scale-beam, and mechanism mounted between the cross-bar and the said levers for imparting tensile strain to the specimen, substantially as described.

13. The combination in a testing-machine, of means for rigidly attaching one end of the specimen, mechanism for imparting a gyratory motion to the opposite end of the specimen, and a scale-beam connected to the said mechanism so as to indicate the lateral strain upon the specimen, substantially as described.

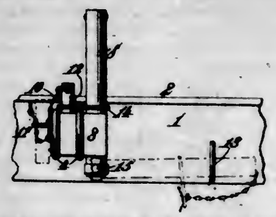
14. The combination in a testing-machine, of means for rigidly attaching one end of a specimen, and mechanism for moving the opposite end of the specimen laterally, with a detachable scale-beam connected to the mechanism for imparting a lateral motion to the specimen, substantially as described.

15. The combination in a testing-machine, of means for rigidly holding one end of a specimen, mechanism for imparting a gyratory motion to the opposite end of the specimen, mechanism for exerting a tensile strain upon the specimen, and means for indicating the amounts of the lateral and tensile strains exerted, substantially as described.

819,585. **FOLDING STANCHION FOR LUMBER-CARS.** JAMES S. O'NEAL, Valdosta, Ga. Filed Feb. 5, 1906. Serial No. 299,532.

Claim.—1. A car-body having a stanchion or stake pivotally connected thereto, a coupling-link engaging the stanchion, and a safety-key for removably passing through a part of the said link to reliably hold the stanchion in upright position.

2. A car having a socket member with a socket therein open at one side of the member, a stanchion pivotally secured to the car and movable into and outwardly from the said socket, and a removable safety-key for holding the stanchion in immovable relation with respect to the socket member.



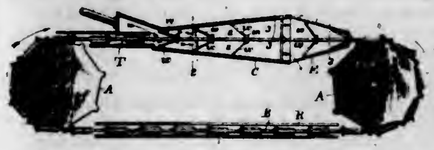
3. A car having a socket member secured to the side thereof and provided with two sockets, one of which opens through one end of the member, a stanchion pivotally connected to the car-body and movable into and out of the socket opening through one end of the member, a coupling-link carried by the stanchion, and a safety-key to engage the coupling-link and the remaining socket of the member.

4. A car having a member secured to the side thereof and formed with a socket opening through one side of the member, a stanchion pivotally held against the car side and movable inwardly and outwardly through the open side of the member and adjustable from an upright to a horizontal position, and a hooked arm secured to the side of the car adjacent to the member with a socket therein for receiving the stanchion when lowered to a horizontal position.

5. A car having a side socket member with two sockets therein, a stanchion or stake pivoted to the side of the car and movable into and out of one of the sockets, a coupling means carried by the stanchion or stake, a safety-key removably fitted in the remaining socket and insertible through the said coupling means to hold the stanchion or stake in positive upright position, and means for connecting and supporting the safety-key with relation to the side of the car.

6. A car having a stanchion or stake provided with pivotal means connected to the lower extremity thereof and including an eyebolt projected through the car side and having a spring on its inner portion.

819,586. **MOTOR.** IRA J. PADDOCK, Percival, Iowa. Filed Nov. 13, 1905. Serial No. 287,169.



Claim.—1. A motor comprising an endless chain bearing folding wings, wheels distending the same and a casing having a tapering form diverging from the inlet end to the exhaust.

2. A motor comprising an endless chain bearing folding wings, wheels distending the same, a casing having a tapering form diverging from the inlet end to the exhaust, and an open converging exhaust-chamber.

3. A motor comprising an endless chain bearing folding wings with a limited articulation, wheels distending the same, and a divergent casing having a convergent exhaust end.

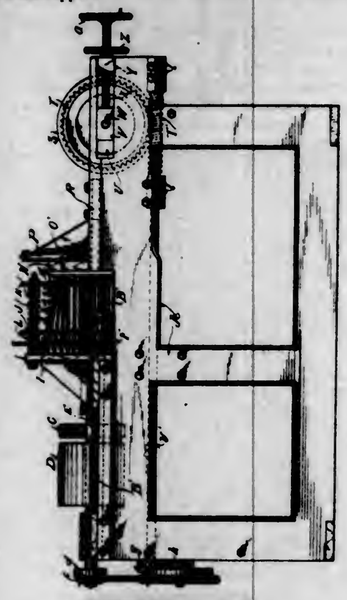
4. A motor comprising an endless chain belt having hinged wings with coinciding sleeves on opposite sides of the belt said belt being formed of links whose pintle-pin also extends through the sleeves of the wings and forms bearings for the same, wheels distending the belt and a casing inclosing the latter.

5. A motor comprising an endless chain belt having hinged wings, links of greater length than the hinged wings and having openings in the same beyond the edges of the wings when folded, wheels for distending the belt, and a casing inclosing the latter.

819,587. **MULTIPLE BORING-MACHINE.** DAVID P. PAGE and ANTHONY VANDERVELD, Grand Rapids, Mich., assignors to Grand Rapids Brush Company, Grand Rapids, Mich., a Corporation. Filed Nov. 9, 1903. Serial No. 180,470.

Claim.—In a boring-machine, the combination of a frame having a support, a stationary plate having a plurality of depressions, bars on said plates, separate movable plates having openings carried by said bars, springs between the plates, a guide-block mounted on

the foremost plate, bits having their butt portion in said depressions and supported by the plates, means intermediate the plates for imparting rotary motion simultaneously to the bits, said block forming a guide for the cutting extremities of the bits, means for actuating said first-mentioned means, a movable work-support on said frame and means coöperative with the last-mentioned means to gradually move the work-support.



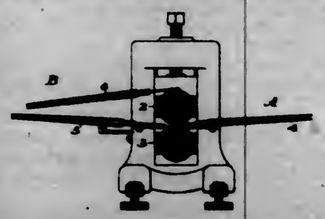
819,588. SASH-CURTAIN-ROD BRACKET. ROBERT PALMER, Waterbury, Conn., assignor to The American Ring Co., Waterbury, Conn., a Corporation. Filed Feb. 6, 1906. Serial No. 299,639.



Claim.—1. A sash-curtain-rod bracket made from a single piece of metal and comprising a body and two corresponding yielding arms terminating at their outer ends in cup-like seats having substantially circular front and substantially circular side entrances.

2. A sash-curtain-rod bracket made from a single piece of sheet metal and consisting of a body having fastening-ears and two yielding skeleton arms spread at their bases and setting toward each other at their ends and formed at their ends with cup-like seats having substantially circular front and substantially circular side entrances, and the said ears being cut out from the bases of the said arms.

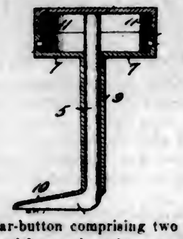
819,589. METHOD OF ROLLING SHEETS. ALEXANDER PATERSON, Wilkinsburg, Pa. Filed Apr. 14, 1905. Serial No. 255,886.



Claim.—1. In the method of producing sheets, the steps consisting of rolling three sheet-bars in rapid succession on a two-high mill, then immediately forming said three bars into a pack and rolling said pack of three; substantially as described.

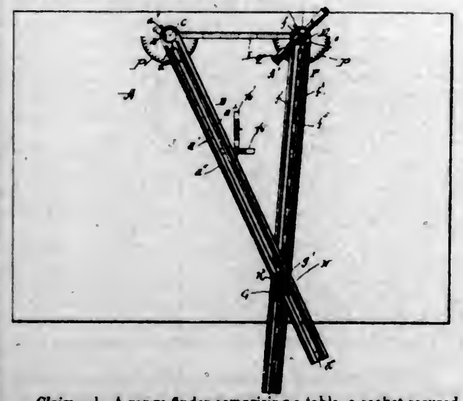
2. In the method of producing sheets, the steps consisting of rolling three sheet-bars singly at the same time on a two-high mill, and then piling said bars into a pack of three, and rerolling the pack without reheating; substantially as described.

819,590. COLLAR AND CUFF BUTTON. CHARLES S. PEDERSON, Alstad, Wis. Filed Apr. 11, 1905. Serial No. 255,041.



Claim.—A collar-button comprising two members, each provided with a peripheral flange adapted to engage with each other and form a cylindrical head, a stem projecting from one of the members and having a laterally-projecting arm at its free end, and a sleeve projecting from the other member and formed with a housing to receive the stem, said stem being rotatably mounted in the sleeve, and means for locking the members, said means being housed and concealed by the members.

819,591. RANGE-FINDER. HARRY C. PERCY, Natchitoches, La. Filed June 21, 1905. Serial No. 266,238.



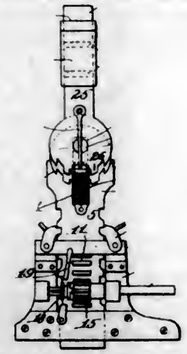
Claim.—1. A range-finder comprising a table, a socket secured beneath the table and provided with a set-screw, a socket on the upper face of the table at one side thereof, and provided with a set-screw, a graduated bar revolubly mounted around the socket, and provided on its upper face with oppositely-disposed grooves, a set-screw on the bar for engaging the socket, a second socket in the upper face of the table at the same side as the first socket and spaced apart therefrom, a set-screw engaging the side of the socket, a graduated bar revolubly mounted around the socket and provided on its upper face with oppositely-disposed grooves, a set-screw in the bar for engaging a socket, a graduated base-line on the table between the sockets, means for movably connecting the bars comprising a slide movable within the groove of the first bar and provided on its upper face with a vernier, a screw-threaded pin projecting upwardly from the slide, a second slide movable within the grooves of the second bar and provided on its upper face with a vernier and with an opening to engage the pin, a thumb-nut engaging the pin, and spirit-levels arranged in the upper face of the table in a direction corresponding with its length and breadth.

2. A range-finder comprising a table, means for supporting the table, means for determining the level of the table, a socket in the upper face of the table at one side thereof, and provided with a set-screw, a graduated bar revolubly mounted around the socket and provided on its upper face with oppositely-disposed grooves, a set-screw on the bar for engaging the socket, a second socket on the upper face of the table on the same side as the first socket and spaced apart therefrom, a set-screw engaging the side of the socket, a graduated bar revolubly mounted around the socket, and provided on its upper face with oppositely-disposed grooves, means for fixing the bar with relation to the socket, the table having a graduated base-line between the sockets, means for movably connecting the bars comprising a slide movable within the grooves of the first bar, a second slide movable within the grooves of the second bar, and means for securing the slides whereby they may rotate upon each other.

3. A range-finder comprising a table, means for supporting the table, means for determining the level of the table, means for supporting a telescope at one side of the table, a graduated bar revolubly mounted around said supporting means, a second telescope-supporting means on the table at the same side as the first supporting means and spaced apart therefrom, a graduated bar revolubly mounted around the second telescope-supporting means, the table having a graduated base-line between the telescope-supporting means, means for connecting the bars together whereby they may slide upon each other, comprising a slide movable on the first bar, a slide movable on the second bar, means for securing the slides together whereby they may rotate upon each other and means for fixing the bars with respect to each other and to the base-line.

4. In range-finders, the combination of a table, means for supporting the table, means for determining the level of the table, a triangular frame mounted on the table and having a fixed graduated base-line, and movable graduated side lines pivoted to the ends of the base-line, means at the ends of the base-lines for supporting a telescope, means for fixing the respective side lines with respect to the telescope-supporting means, and the base-line, means for fixing the side lines with respect to each other, and said last-named means being provided with verniers for coacting with the graduations on the side lines.

819,592. LIFTING MECHANISM. LONGAN C. PHILLIPS, Richmond, Va. Filed Oct. 4, 1905. Serial No. 281,320.



Claim.—1. In a lifting mechanism of the class set forth, the combination of pairs of pillars having tilting devices supported thereby, and jack means coöperating with said tilting devices.

2. In a lifting mechanism of the class set forth, the combination of vertically-movable pillars, tilting supporting means connected to said pillars, and jack means removably coöperating with said supporting means.

3. In a lifting mechanism of the class set forth, the combination of vertically-movable pillars, tilting supporting means connected to said pillars, and a portable jack coöperating with said supporting means.

4. In a lifting mechanism of the class set forth, the combination of vertically-movable pillars, means for locking the pillars in their adjusted position, and tilting supporting means having a slidable connection with the pillars.

5. In a lifting mechanism of the class set forth, the combination of vertically-movable pillars, and supporting means movably held by the pillars and having an automatic locking connection with the latter.

6. In a lifting mechanism of the class set forth, the combination of vertically-movable pillars, means for operating the said pillars, and supporting devices movably held by the upper extremities of the pillars and having resilient connecting means with respect to the latter.

7. In a lifting mechanism, the combination of vertically-movable pillars, and tilting supporting devices slidably connected to the upper extremities of the pillars and having resilient connections with respect to the latter.

8. In a lifting mechanism of the class set forth, the combination of vertically-movable pillars, and tilting supporting devices connected to the pillars and having a cross-head.

9. In a lifting mechanism of the class set forth, the combination of a pair of vertically-movable pillars, and supporting means having posts movably connected to the pillars and attached to each other by a cross-head.

10. In a lifting mechanism of the class set forth, front and rear pairs of coöperating vertically-movable pillars, tilting supporting means held by the said pillars, and portable jack devices to coöperate with the said supporting means.

11. In a lifting mechanism of the class set forth, the combination of front and rear pairs of vertically-movable pillars, shafts carrying pinions for operating said pillars, and tilting supporting means connected to the pillars.

12. In a lifting mechanism of the class set forth, the combination of vertically-movable pillars, shafts carrying pinions for operating said pillars, and tilting supporting means held by the pillars and provided with devices for automatically restoring them to vertical position.

13. In a lifting mechanism of the class set forth, the combination of a pair of vertically-movable pillars, supporting means movably held by the pillars and having a tilting motion, and means for automatically restoring the supporting means to a vertical position.

14. In a lifting mechanism of the class set forth, the combination of vertically-movable pillars having toothed cavities at their upper extremities, and supporting means movably held by the pillars and provided with toothed heads to coöperate with the said toothed cavities of the pillars.

15. In a lifting mechanism of the class set forth, the combination of vertically-movable pillars, means for locking the pillars in their adjusted position, and tilting supporting means having a self-locking connection with the upper extremities of the pillars.

16. In a lifting mechanism of the class set forth, the combination of vertically-movable pillars, and tilting supporting means movably connected to the upper extremities of the pillars and having a self-locking connection with the latter.

17. In a lifting mechanism of the class set forth, the combination of vertically-movable pillars with opposite toothed edges, dogs removably coöperating with the said toothed edges of the pillars, and supporting means movably held by the upper extremities of the pillars.

18. In a lifting mechanism of the class set forth, the combination of vertically-movable pillars having opposite toothed edges, dogs removably coöperating with the toothed edges of the pillars, and tilting supporting means pivotally held by the upper extremities of the pillars and having locking means to engage the latter.

19. The combination with a locomotive-engine, of means for elevating the same having a tilting motion, and a jack removably operating with said elevating means.

20. In a lifting mechanism of the class set forth, the combination of a vertically-adjustable supporting member, and blocks movably attached to the opposite extremities of said member and adjustable outwardly and inwardly, said blocks having a straight edge which may be disposed horizontally to engage engine-frames, and inclined edges for holding a boiler, and means for locking the blocks in adjusted position.

819,593. COLLAR. JAMES K. P. PINE, Troy, N. Y., assignor to United Shirt and Collar Company, Troy, N. Y., a Corporation of New York. Filed Aug. 23, 1905. Serial No. 275,337.



Claim.—1. A wing-collar comprising a body and folded-over corner wing portions, the said corner wing portions composed of several layers of fabric the outer layers of which are arranged with

their warp-threads at substantially right angles to the lines upon which they are bent or folded.

2. The combination in a wing-collar, of a body portion and folded-over corner wing portions, the facings of said body and wing portions comprising separate pieces of fabric secured together, the facing-pieces of the wing portions arranged with their warp-threads at substantially right angles to the lines upon which they are bent or folded over.

819,594. BOTTLE-CLOSURE. JOHN FOSTER and FREDERICK C. MAYER, Frostburg, Md. Filed Dec. 14, 1905. Serial No. 291,662.



Claim.—1. The combination substantially as herein described of a bottle-neck provided at one side with a seat-hook and on its other side with a projecting frangible locking-hook for engagement by a locking-bar, a sealing-frame having a cross bar or loop at one end engaged with the seat-hook and extending thence over the end of the bottle-neck, a bail-handle pivoted at its ends to the ends of the body portion of the sealing-frame, and a locking-bar pivoted to the bail-handle and having crank projections to engage beneath the point of the frangible hook and below the base of the said hook all substantially as and for the purposes set forth.

2. The combintion of a bottle-neck provided at one side with a projecting frangible hook, a sealing-frame held to the opposite side of the bottle-neck and extending thence over the end of the neck and means carried by the sealing-frame for engagement with the frangible hook and adapted to break the same when released, substantially as set forth.

3. The combination with a bottle-neck having a frangible hook, of a sealing-frame, a bail-handle pivoted to the sealing-frame and a locking-bar having crank projections to engage with the frangible hook and a locking-bar carried by the bail-handle, substantially as set forth.

4. The combination of a bottle-neck having an exterior frangible portion and a fastening device therefor, provided at one end with means for detachable engagement with the bottle-neck and at its other end with straining means for forcibly actuating the device to sealed position whereby it may be readily applied to and entirely detached from the bottle-neck, the straining means being arranged for engagement with the exterior frangible portion and adapted to break the same when released.

5. A bottle-neck having at one side a frangible locking-hook, a closure for the bottle-neck and a sealing-frame securing the closure and having means for engagement with the frangible locking-hook, substantially as set forth.

6. The combination with a bottle-neck having a seat-hook at one side, and a frangible locking-hook at the other side for engagement by a locking-bar, of a sealing-frame engaged at one end with the seat-hook and provided at its other end with a bail-handle and with a locking-bar pivoted to the said handle and having crank projections engaging beneath the hook-base and beneath the point of the frangible locking-hook, substantially as set forth.

7. The combination of a bottle-neck having a seat-hook at one side and a frangible locking-hook at its opposite side, a sealing-frame engaged at one end with the seat-hook and extending thence over the mouth of the bottle and having a cross-bar for securing the stopper, a bail-handle pivoted to the end of the sealing-frame opposite that engaged with the seat-hook and a locking-bar carried by the bail-handle for engagement with the frangible hook, substantially as set forth.

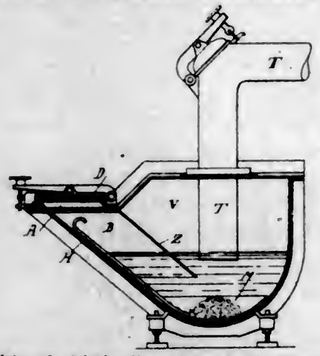
8. A bottle having an exterior frangible portion, and a sealing-frame having means for engagement with said portion and adapted to break the same when released.

819,595. PROCESS OF MAKING STRAWBOARD. PETER PRIMA, Minneapolis, Minn. Filed Oct. 20, 1905. Serial No. 283,699.

Claim.—1. A process for making strawboard which consists, first, in cutting the straw into short sections; second, in commingling the straw with quicklime within a closed compartment, and in subjecting the two to the action of steam while under agitation; third, in grinding up the fibrous pulp, to reduce the same to a homogeneous mass; fourth, in beating the ground pulp, to further reduce and lighten the same; fifth, in filtering, and at least partially drying, the pulp; and sixth, in forming the pulp into a sheet or sheets of desired thickness.

2. A process for making strawboard which consists, first, in cutting the straw into short sections; second, in confining the straw in a closed retort, and commingling the same with quicklime in the proportion of .06 pounds of quicklime to one pound of straw, in introducing steam into said retort under a pressure of about five atmospheres, and in keeping up an agitation of the said straw and quicklime for about three and a half hours; third, in grinding up the fibrous pulp into a homogeneous mass; fourth, in beating the ground pulp, to further reduce the same; fifth, in filtering and partially drying the pulp; and sixth, in pressing, rolling, or otherwise forming the pulp into a sheet or sheets of desired thickness.

819,596. HYDRAULIC CONDENSER. ROBERT REISTER, Dessau, Germany. Filed Sept. 15, 1905. Serial No. 278,644.



Claim.—1. A hydraulic condenser for the manufacture of illuminating-gas, having an aperture in the top thereof, in combination with a scoop adapted to be introduced through such aperture and be placed beneath the drip-tube for collecting the pitch dropping therefrom.

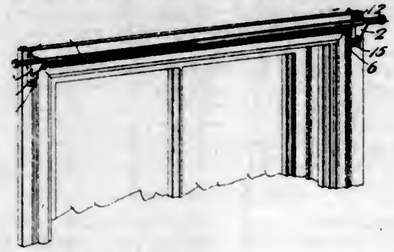
2. A hydraulic condenser for the manufacture of illuminating-gas, which is provided with a longitudinal sealing-wall to form a separate chamber and with an aperture in the top of said separate chamber, in combination with a scoop adapted to be introduced through said aperture and to be placed beneath the drip-tube for collecting the dropping pitch, and a cover adapted to open and to close said aperture.

3. A hydraulic condenser for the manufacture of illuminating-gas, which is provided with a front inclined wall, a longitudinal sealing-wall parallel to this front inclined wall, and forming a separate chamber, and a rectangular aperture in the top of this separate chamber, in combination with a handled scoop which can be introduced through the rectangular aperture and placed on the bottom of said hydraulic condenser directly beneath the drip-tube for collecting the pitch dropping therefrom.

4. The combination with a hydraulic condenser for the manufacture of illuminating-gas having a front inclined wall, of a longitudinal sealing-wall in said hydraulic condenser and parallel to its front inclined wall, whereby a separate chamber is formed, a rectangular aperture in the top of said separate chamber and arranged in the central plane of the drip-tube, a cover for said rectangular aperture, and a handled rectangular scoop fitting the bottom of said hydraulic condenser and adapted to be introduced through the rectangular aperture and be placed beneath the drip-tube for collecting the dropping pitch.

819,597. COMBINED CURTAIN-POLE AND SHADE-BRACKET SUPPORT. JAMES H. REYNOLDS, Huntington, W. Va., assignor to Huntington Curtain Pole Company, Huntington, W. Va. Filed Jan. 16, 1906. Serial No. 296,276.

Claim.—1. In a support of the character described, a bracket comprising a flat vertical plate formed at its rear edge with a sleeve having an expanded portion, a nut held within the expanded portion, and a hanger extending into the sleeve and threaded to engage the nut and provided at its upper end with suspending means.



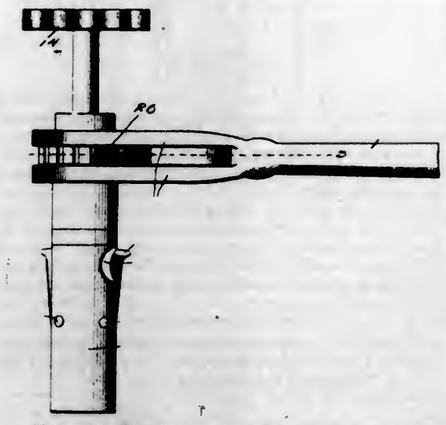
2. In a support of the character described, a bracket provided with a sleeve having an enlarged portion, a nut held within the enlarged portion, and a hanger extending into the sleeve and threaded to engage the nut.

3. In a support of the character described, a bracket having a seat-recess, a hollow rod seated therein, said rod having an interlocking connection with the wall of the recess, and a knob having a stud entering the rod and holding the parts in interlocking connection.

4. In a support of the character described, a bracket having a seat-recess and lugs projecting thereinto, a hollow split rod seated in said recess and having slots receiving the rod, and a knob having a stud entering the rod and maintaining the parts in engagement.

5. A combined curtain-pole and shade support comprising brackets having seat-recesses and lugs projecting into said recesses, adjustable hangers carried by the brackets to support the same from a window-frame, telescopic rods supported by said brackets, each rod consisting of a split tube seated at its outer end in the recess of its supporting-bracket and projecting beyond the same and provided with slots to receive said lugs, and knobs having studs projecting into the outer ends of the rods and holding the slotted portions thereof in engagement with the lugs.

819,598. BOILER-FLUE CUTTER. FRANK ROATCH, Newberry, Mich. Filed Aug. 3, 1904. Serial No. 219,410.

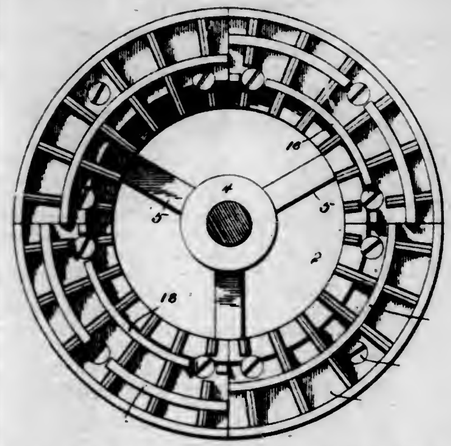


Claim.—A boiler-tube cutter comprising a body portion, cutters carried by the body portion and movable into and out of position to project therefrom, means for holding the cutter yieldably retracted, means for feeding the cutters from the body portion, a ratchet-wheel fixed to the body, a handle having a bifurcated head engaged with the body at both sides of the ratchet-wheel, a tapered portion of the handle, pawls mounted between the bifurcations of the head and disposed to engage the ratchet-wheel and the tapered portion of the handle, and a web connecting the said pawls.

819,599. GRINDING-MILL DISK. AARON J. ROBINSON, Fremont, N. H. Filed Mar. 10, 1905. Serial No. 249,430.

Claim.—1. In a grinding-mill, a grinding-disk embodying teeth each having undercut side faces and a recessed working face.

2. A grinding-disk embodying a plurality of segments each having one or more concentric ribs, the ribs of one segment alternating or being staggered with relation to those of the adjoining segments, and teeth extending radially from the ribs and having their working faces recessed to provide acute-angled cutting edges.

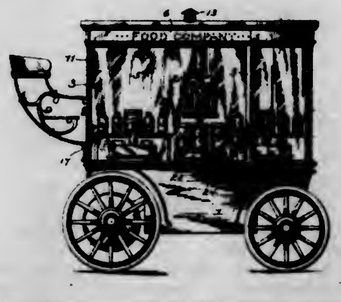


3. A grinding-disk embodying segmental concentric ribs arranged in staggered relation, and teeth extending radially from the ribs and having their working faces recessed below or within the plane of the outer faces of the ribs.

4. A grinding-mill embodying removable hard-metal grinding-plates each having one or more concentric ribs, and teeth extending radially from the ribs and having their working faces recessed in such manner that the opposite corners or edges thereof project beyond the plane of the center of the tooth.

5. A reversible-drive grinding-disk embodying removable hard-metal grinding-plates each having one or more concentric ribs and teeth extending radially from the ribs and provided with cutting edges at opposite sides and having their working faces recessed below and within the plane of the outer faces of the teeth.

819,600. DISPLAY-VEHICLE. LEONARD J. RODJEFF, Chicago, Ill. Filed Oct. 25, 1905. Serial No. 284,396.



Claim.—1. A traveling-vehicle body having transparent walls, a removable platform within said body, display-fixtures and means for removably securing the display-fixtures to said removable platform.

2. A display-vehicle body having transparent walls, a removable platform within said body, said platform having a series of grooves, and removable display-fixtures mounted in said grooves.

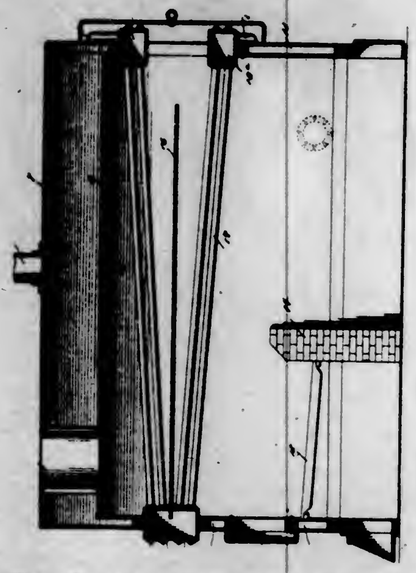
3. A display-vehicle body having transparent walls, and having ventilating-openings in its bottom and a ventilator in its top, a door at one end of said body, a slidable platform mounted upon the bottom of the body and display-fixtures on said platform.

4. A display-vehicle body having transparent walls, the bottom

of said body having guideways, a slidable platform movable in said guideways, said platform having grooves, and display-fixtures movable in the grooves in the platform.

6. The combination of a vehicle-body having transparent walls, a sliding door closing one end thereof, a removable display-platform mounted to slide into and from the body through the doorway, and grooves in said platform to receive removable display-stands.

819,601. STEAM-BOILER. JAMES A. ROSS, Chicago, Ill. Filed Oct. 20, 1905. Serial No. 283,630.



Claim.—1. A boiler comprising an upper dome and hollow walls or legs depending therefrom around the combustion-chamber, a front header set in the front wall, upper and lower rear headers set in the rear wall and having connecting-pipes therewith, and upper and lower banks of water-tubes connecting the front header and the respective rear headers.

2. A boiler of the wagon type, comprising an upper chamber or dome and legs or hollow walls formed of spaced casings and surrounding the combustion-chamber and having an outlet to the stack extending upwardly through the casings and the dome, at the front thereof, a header supported in the front wall and upper and lower headers supported in the rear wall, a bank of tubes inclined upwardly from the lower rear header to the front header, another bank inclined upwardly from the front header to the upper rear header, connections from the rear headers into the body of the boiler, and a baffle extending rearwardly from the front wall, across the combustion-chamber and between said bank of tubes, and causing a flow of the products of combustion rearwardly along the lower bank and forwardly along the upper bank to the outlet.

819,602. SPRAYER. HENRY RUFF, Kraft, Mich. Filed Aug. 29, 1905. Serial No. 276,343.

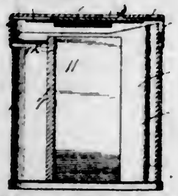
Claim.—1. A sprayer comprising a pipe terminating in a three-way-valve casing provided with branches, a pair of swinging extension branch pipes which terminate in spraying-heads and which may be turned toward or from each other, and couplings connecting said branches and the extension-pipes, each coupling having turning joints, on different axes, with the branches and the extensions respectively.

2. A sprayer comprising a supply-pipe terminating in a three-way-valve casing provided with a pair of branch pipes, a pair of swinging extension-pipes terminating in spraying-heads, and couplings connecting said branch pipes and the extension-pipes, each coupling consisting of a body having a turning connection with a branch pipe, and a turning connection with an extension-pipe, the axes of said connections being at an angle to each other.

819,602.

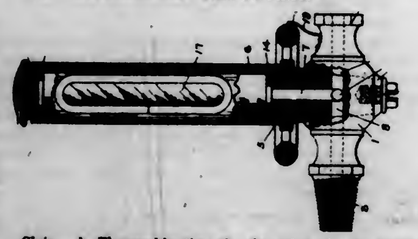


819,603. MATCH-BOX. JAMES W. SAUNDERS, Reynolds, Ill. Filed Dec. 4, 1905. Serial No. 290,233.



Claim.—A match-box comprising a hollow body portion having an open end, a removable closure for the open end, said closure having an opening therein at its lower portion, a slide movable into and out of position to close the opening, means for holding the slide yieldably in operative position, a pin carried by the slide for movement of the latter against the action of the spring, a longitudinally-extending gutter disposed within the body portion in position to discharge matches therefrom through the opening of the closure, upwardly-divergent wings carried by the gutter and resting against the sides of the body portion, and a vertical plate secured within the body portion and lying with its lower portion between and in spaced relation to the wings.

819,604. OIL-GAGE. CHARLES F. SCHWENNER, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Feb. 14, 1903. Serial No. 143,306.

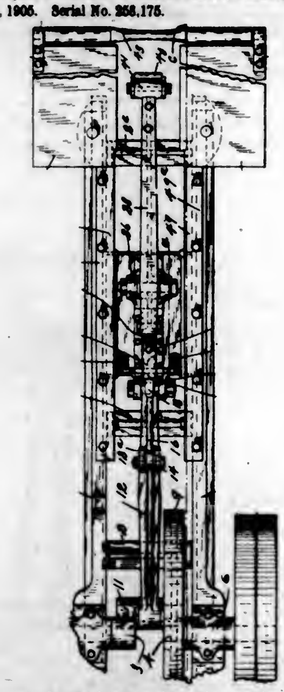


Claim.—1. The combination of a plug adapted to be connected to a reservoir and provided with an oil-passage and an intersecting

transverse aperture, a sight-glass, and a holder for said glass consisting of a metal cylinder having a chamber in its upper end for the reception of said glass, a projection at its lower end journaled in the transverse aperture in the said plug and provided with oil-passages, and a threaded cap closing the upper end of the chambered portion and adapted to force the sight-glass into oil-tight engagement with its packing.

2. The combination of a plug adapted to be connected to a reservoir and provided with an axial passage and a transverse intersecting passage, a sight-glass, a cup-shaped holder for receiving and protecting said glass journaled at its lower end in said transverse passage, and a cap provided with a vent-aperture and provided with means for forcing the sight-glass into oil-tight engagement with its packing.

819,605. STAKING-MACHINE. WALTER R. SCOTT, Philadelphia, Pa., assignor of one-half to Thomas Turner, Philadelphia, Pa. Filed May 1, 1905. Serial No. 258,175.



Claim.—1. In a staking-machine, the combination with a suitable supporting-frame, a shaft journaled thereon, means for conveying rotary motion to the shaft, a crank-disk affixed on the shaft, a single connecting-rod attached thereto, a slideway formed in the frame, a slide operatively combined thereto and attached to the connecting-rod in such manner as to receive reciprocating rectilinear motion therefrom; of staking-jaws pivotally attached to the said slide, means for normally opening the said jaws, independently adjustable, inclined faced wedges so combined with the jaws and slide as to close the jaws while receding, and distinct means of connection between the said connecting-rod and wedges, all substantially as shown and described.

2. In a leather-staking machine, the combination with a frame, a reciprocating slide movable in guideways thereon, upper and lower staking-jaws pivotally connected to the slide, springs attached to the jaws adapted to open the same, and means for producing reciprocating motion to the said parts; of independently-operating wedges for closing the said jaws, means for adjusting the wedges distinct from each other, rollers so combined with the said jaws as to take the thrust of the wedges and of means for adjustment to the rollers, all substantially as shown and described.

3. In a leather-staking machine, the combination with a frame, a slide movable on the frame, means for reciprocating the slide, upper and lower staking-jaws pivotally attached to the slide and suitable scrapers at their operative ends; of rollers attached to the respective jaws, means for adjusting the rollers relatively to each other, angular-faced blocks contacting with the rollers, movable in the slide, adjustable rods connecting the blocks and said reciprocating means and springs attached to the jaws opposing the angular blocks, all substantially as shown and described.

4. In a staking-machine, the combination of a suitable frame, a crank-shaft mounted therein, a cross-head slidable on the frame, a pitman between the crank-shaft and the cross-head, staking-jaws pivotally attached to the cross-head and means for opening the said staking-jaws; of movable wedges 24 and 25 combined with the said cross-head and said jaws, adjustable rolls 38 and 39 interposed between the jaws and wedges and of connecting-rods 16 and 17 between the said pitman and wedges, all substantially as shown and described.

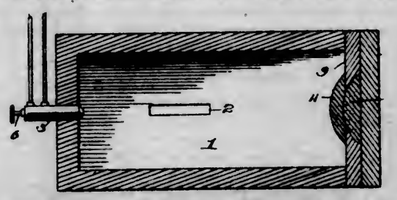
5. In a staking-machine, the pitman 12, having the projections 12^a and 12^b, connecting-rods 16 and 17 attached to the said projections, carriers 20 and 21 attached at the opposite ends of said connecting-rods, wedges 24 and 25 secured to the carriers, the cross-head 13, brackets 26 and 27 carrying the staking-jaws, and rolls attached thereto adapted to abut against and be separated by the said wedges, all as and for the purpose specified.

6. In a staking-machine, the combination with a suitable supporting-framework, a shaft journaled thereon, means for conveying rotary motion to the shaft, a crank-disk on the shaft, a connecting-rod attached thereto, a slideway formed in the framework, a slide operatively connected thereto and attached to the said connecting-rod so as to receive reciprocating, rectilinear motion therefrom; of staking-jaws pivotally attached to the said slide, means for normally opening the jaws, inclined faced wedges so combined with the jaws as to be operative thereto, means for independently adjusting each wedge, and means to compensate for wear on said wedges and operative parts, all substantially as shown and described.

7. In a leather-staking machine, the combination with a frame, a slide movable on the frame, means for producing reciprocating motion in the slide, upper and lower staking-jaws pivotally attached to the slide having suitable scrapers at their operative ends; of rollers attached to the respective jaws, means for adjusting the rollers relatively to each other, angular-faced blocks coacting with the rollers movable in the slide, adjustable rods connecting the blocks and said reciprocating means and springs attached to the jaws opposing the angular blocks, a single connecting member between the rotative and reciprocating members and means so combined with the said members as to effect a variable closure of the staking-jaws, all substantially as shown and described.

8. In a staking-machine, the combination with a suitable supporting-framework, a shaft journaled thereon, means for conveying rotary motion to the shaft, a crank-disk centered on the shaft, a connecting-rod attached thereto, a slideway formed in the frame, a slide operatively connected thereto and attached to the said connecting-rod adapted to receive reciprocating rectilinear motion therefrom, of staking-jaws pivotally attached to the said slide, inclined faced wedges each adjustably combined with the jaws, and means for independently adjusting the said jaws, all substantially as shown and described.

819,606. APPARATUS FOR PRODUCING CARBON. TRUMAN P. SHARTS, Readsboro, Vt., assignor of one-fourth to Charles J. Howe, Jamaica, Vt., and one-fourth to William C. Davis and one-fourth to J. H. Cole, Readsboro, Vt. Filed Mar. 6, 1905. Serial No. 248,683.



Claim.—1. An apparatus for producing carbon for electrical purposes, comprising a combustion-chamber having an outlet communicating with the atmosphere for some of the products of combustion, a burner for carrying on the combustion of hydrocarbon oils, and means for collecting the carbonaceous products of combustion in an integral mass.

2. An apparatus for producing charcoal carbon, comprising a combustion-chamber having an outlet leading into the atmosphere, a hydrocarbon-burner mounted therein, and means arranged oppo-

into said burner for collecting in a mass the carbonaceous products of combustion resulting from the burning of hydrocarbon oils.

3. An apparatus for producing charcoal carbon, comprising a combustion-chamber having a lateral outlet opening directly into the atmosphere, a hydrocarbon-burner projecting into said combustion-chamber and a movable collecting-plate arranged opposite to the burner for accumulating and collecting in homogeneous masses the carbon products of combustion.

4. An apparatus for producing charcoal carbon for electrical purposes, comprising an oil-burner, a movable surface mounted opposite thereto and capable of rearrangement for collecting the carbon products in successive layers and spacing material capable of holding said movable surface in its different positions.

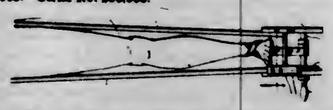
5. An apparatus for producing carbon for electrical purposes, comprising a combustion-chamber having an opening in one of its walls communicating with the atmosphere, a burner located so as to blow a jet of oil and air within the combustion-chamber so that the same may be burned therein and a movable wall arranged opposite to the burner for collecting the carbon products of combustion from the burning of the oil as they impinge upon the said removable wall.

6. An apparatus for producing carbon for electrical purposes, comprising a combustion-chamber, closed upon all sides save one, one of said sides being provided with a small outlet-opening communicating with the atmosphere and a movable wall for closing the remaining side of the furnace, a burner arranged in the furnace opposite the said wall, the wall being movably held in place so that it may be set back from the burner from time to time to thicken the collection of carbon thereon.

7. An apparatus for forming carbon for electrical purposes, comprising a combustion-chamber having an open end, a burner located opposite said open end and capable of causing the combustion of petroleum, a movable wall for closing the open end of the combustion-chamber and plastic material capable of building out the surface of the wall to different thicknesses as the carbon thickens upon the surface of the wall.

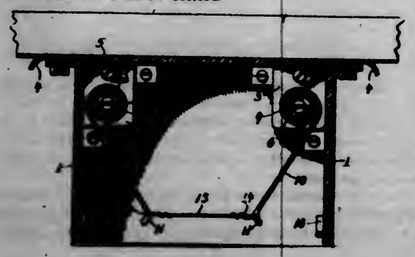
8. An apparatus for forming carbon for electrical purposes, comprising a fire-box having an open end, a petroleum-burner mounted in the opposite end, a movable wall for closing the open end, a plastic sealing material for holding the movable wall in position opposite the burner, the said sealing material insuring the closing of all crevices at that end of the combustion-chamber and permitting of the collection of the carbonaceous products of combustion in a hard homogeneous mass upon the inner face of the wall.

819,607. SPLINT. LOUIS H. SHAFER, Fridley, Mont. Filed Nov. 11, 1905. Serial No. 286,903.



Claim.—In a device of the class described, a longitudinally-extended rigid member, a box provided at the forward portion thereof and having an opening, bearing-arms attached to and projecting forwardly from the box, a shaft journaled for rotation in said arms at a point in advance of the box, a tension-strap attached to and to be wound upon the shaft, said strap being adapted to play through the opening and to be engaged with the limb to be treated, a ratchet fixed upon the shaft a pawl designed for engagement with the ratchet to lock the shaft against movement in one direction, and a crank-handle fixed upon and for operating the shaft.

819,608. FUSE-BOX. EARL SHERWOOD, Honesdale, Pa. Filed June 16, 1905. Serial No. 265,694.



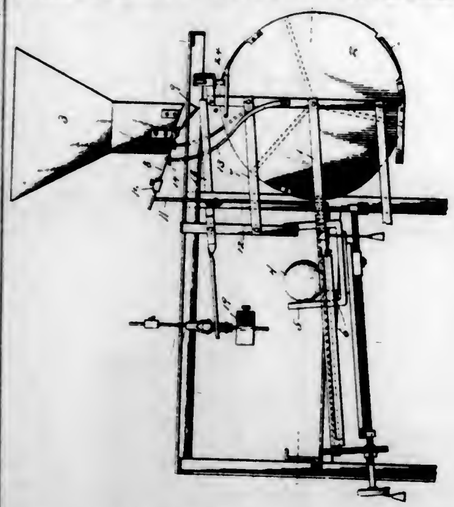
Claim.—A fuse-box having an open unobstructed bottom, in combination with oppositely-acting downwardly-extending spring-arms having a tendency to move away from each other and constituting circuit-terminals, contact-tips at the extremities of said arms located at or near the open bottom of the box and having notched seats for the looped ends of the fuse-wire, said tips being adapted to throw off the fragments of the fuse-wire, and stops which arrest the outward movement of the spring-arms.

819,609. SELF-PROPELLING DEVICE. BENJAMIN SHORTHOUSE, London, England. Filed Nov. 27, 1905. Serial No. 289,285.



Claim.—In a rotatable element, a weighted pendulum suspended about one of the axes of the said element and within the same, and a tensioning device connected to said element and to the pendulum for controlling the movement of the latter.

819,610. AUTOMATIC WEIGHING APPARATUS. BENJAMIN SIMONS, Charleston, S. C. Filed Sept. 26, 1898. Serial No. 691,923.



Claim.—1. In an automatic weighing-machine, a balance-frame, a counterweight therefor, an adjustable weight, a gage for said weight, and reversely-arranged differential screws for moving and adjusting said gage, and for operating the counterweight for the balance-frame.

2. In a weighing apparatus, the combination of a feed-hopper having a plurality of discharge-passages, a balance-frame, a main gate or cut-off, a secondary gate, and an adjustable weight for operating said cut-off in one direction only whereby the main gate may be given a variable force for closing without affecting the primary descent of the balance-frame, substantially as described.

3. An automatic weighing-machine comprising a hopper with a plurality of openings and having a plurality of gates for closing the same, a balance-frame, means not coupled with the balance-frame for closing the primary gate consisting of a floating frame and a tripping lever or bar, whereby no frictional resistance is transmitted to the balance-frame during the closing of the main gate, substantially as described.

4. An automatic weighing-machine comprising a balance-frame, an automatic rolling weight, a ball or weight gage for said weight, reversely-arranged differential screws for moving and adjusting said gage and for simultaneously operating a counterweight for maintaining the trim of the balance-frame, substantially as described.

5. In automatic weighing-machines having rotary buckets, the combination with the bucket-wheels, of stop-shoulders on the peripheries of the wheels, and spring-catches arranged to pass by the sides of the bucket and each formed to provide a tapering notch or socket between it and the opposite stop-shoulder, and a stop-pin adapted to fit in said socket, substantially as described.

6. In automatic weighing-machines, the combination of a scale-beam having an arm and carrying a platform, a balance-frame, and stop mechanism consisting of a pivoted lever coupled with the arm on the beam, a sliding rod, and a projection on the balance-frame, whereby the operation of the machine is automatically arrested, substantially as described.

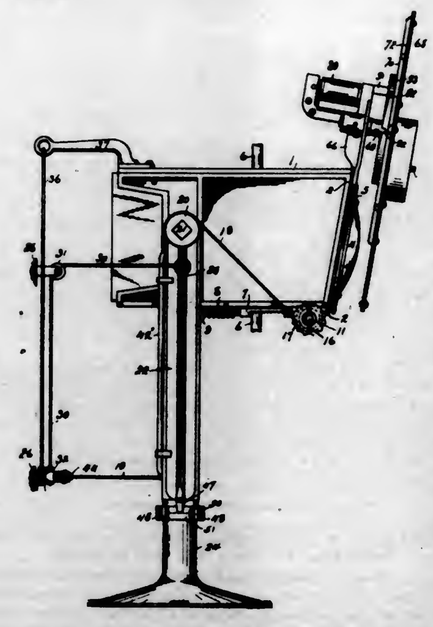
7. In automatic weighing-machines, the combination of a feed-hopper having a plurality of openings, a balance-frame, a primary or main cut-off, and a drip or final cut-off for closing the openings, and means disconnected from the balance-frame for holding the main gate open as the scale-beam is depressed, substantially as described.

8. In automatic weighing-machines having a hopper with a passage from the same, the combination with said hopper of a main cut-off, a secondary gate, and means not coupled with the balance-frame to close the main cut-off by extra or variable weight without affecting the travel of the scale-beam, substantially as described.

9. In automatic scales, a floating frame normally resting on the balance-frame and means for rendering the primary cut-off and the floating frame separate from each other, before the cut-off is closed or the floating frame comes to rest, substantially as described.

10. An automatic weighing-machine comprising a main frame, a feed-hopper with passages therefrom, a main or primary gate for closing certain of said passages, a valve-arm, means attached to the main frame for holding the primary gate open, whereby the weight of the valve-arm is not sustained by the scale-beam and whereby the effect of the friction of the valve on the movement of the scale-beam is eliminated during the primary descent of the scale-beam, and a floating frame for tripping said holding means, substantially as described.

819,611. LIGHT-PROJECTING APPARATUS. EDMOND W. SOHLBERG, Kansas City, Mo., assignor of two-thirds to Martin Lehman and Joseph L. Stiebel, Kansas City, Mo. Filed Dec. 30, 1904. Serial No. 238,923.



Claim.—1. In a light-projecting apparatus, the combination with a casing for inclosing an electric or other light-producing device and having an outlet for the rays of light, a support on which the casing is pivotally mounted, a base on which the support is pivotally mounted with its axis at an angle to the axis of the casing, a focusing device movable on the casing toward and from the light-producing device, a color-wheel rotatively mounted on the casing and adjustable with the focusing device and provided with a series of light-transmitting devices adapted when the wheel is rotated to intercept consecutively the focused rays of light, means for effecting movement to and fro of the focusing device, means for effecting oscillation respectively of the casing and support, and electromagnetic means for controlling the rotation of the color-wheel.

2. In a light-projecting apparatus, the combination with a casing for inclosing an electric or other light-producing device, of means for effecting oscillation of said casing in two planes disposed at angles to each other, a light-focusing device carried by said casing and adjustable toward and from the light-producing device, a color-wheel rotatively mounted on the casing and adjustable with the focusing device and adapted to intercept the focused rays of light, means for effecting rotation of said color-wheel, and electromagnetic means for controlling step-by-step rotation of said color-wheel.

3. In a light-projecting apparatus, the combination with a casing for inclosing a light-producing device having an outlet for the rays of light, of a support on which the casing may be vertically and laterally oscillated, means for effecting such oscillation, a rotary color-wheel longitudinally movable in line with said outlet, means for rotating the color-wheel, and means by which an operator located at a point distant from the casing may control the vertical and lateral oscillation of the casing and the rotation of the color-wheel respectively.

4. In a light-projecting apparatus, the combination with a casing for inclosing a light-producing device and having an outlet for the rays of light, of a support on which the casing may be vertically and laterally oscillated, means for oscillating vertically and laterally the casing, a light-focusing device movable with the casing and movable toward and from the light-producing device in line with said outlet, a color-wheel movable with the focusing device and rotatively mounted in a position for intercepting the rays projected from the focusing device, means for rotating the color-wheel, and means by which an operator located at a point distant from the casing may control the vertical and lateral oscillation thereof, the reciprocation of the focusing device and the rotation of the color-wheel respectively.

5. In a light-projecting apparatus, the combination with a casing for inclosing the light-producing device and having an outlet for the rays of light, of a support on which the casing may be vertically and laterally oscillated, a light-focusing device movable with the casing and reciprocative toward and from the light-producing device, a rotary color-wheel movable with the focusing device, means for rotating the color-wheel, means for reciprocating the focusing device, means for vertically and laterally oscillating the casing, and electromagnetic means controlling the rotation of the color-wheel.

6. In a light-projecting apparatus, the combination with a casing for inclosing a light-producing device and having an outlet for the rays of light, of means for vertically and laterally oscillating the casing, a color-wheel movable with the casing and adjustable toward and from the light-producing device and disposed so as to intercept the rays of light projected therefrom, means for rotating the color-wheel and means for controlling the step-by-step rotation of the color-wheel.

7. In a light-projecting apparatus, the combination with a casing for inclosing an electric or other light-producing device and having an outlet for the rays of light, of means for vertically and laterally oscillating the casing, a color-wheel movable with the casing and adjustable toward and from the light-producing device and disposed so as to intercept the rays of light projected therefrom, means for rotating the color-wheel, and electromagnetic means for controlling the step-by-step rotation of the color-wheel.

8. In a light-projecting apparatus, the combination with a casing for inclosing a light-producing device and having an outlet for the rays of light, of means for vertically and laterally oscillating the casing, a color-wheel movable with the casing and adjustable toward and from the light-producing device and disposed so as to intercept the rays of light projected therefrom, a spring, means by which when proper tension is imparted to the spring the color-wheel may be rotated, and means for controlling the step-by-step rotation of the color-wheel.

9. In a light-projecting apparatus, the combination with a casing having an outlet for rays of light, of means for vertically and laterally oscillating the casing, a color-wheel movable with the casing and adjustable toward and from the light-producing device and disposed in front of said outlet, a spring, means by which the tension of the spring may impart rotation to the color-wheel, and electromagnetic means controlling the wheel-rotating means.

10. In a light-projecting apparatus, the combination with a casing for inclosing a light-producing device and having an outlet for the rays of light, of means for vertically and laterally oscillating the

casing, a color-wheel movable with the casing and adjustable toward and from the light-producing device and provided with a series of light-transmitting devices adapted to pass consecutively in front of said outlet when the color-wheel is rotated, means for rotating the color-wheel, and means controllable by an operator located at a point distant from the casing for controlling the rotation of the color-wheel so that the same will rotate step by step and bring the light-transmitting devices of the color-wheel consecutively before the outlet of the casing.

11. In a light-projecting apparatus, the combination with a casing for inclosing a light-producing device and having an outlet for the rays of light, of means for vertically and laterally oscillating the casing, a rotary color-wheel movable with the casing and adjustable toward and from the light-producing device and provided with a series of light-transmitting devices disposed so as to pass consecutively before said outlet when the color-wheel is rotated step by step, means for rotating the color-wheel, and electromagnetic means controlling step-by-step rotation of the color-wheel.

12. In a light-projecting apparatus, the combination with a casing for inclosing a light-producing device and having an outlet for the rays of light, of a color-wheel movable with the casing and provided with a series of light-transmitting devices adapted to pass consecutively in front of said outlet when the color-wheel is rotated step by step, electromagnetic means controlling the rotation of the color-wheel, and a light-focusing device disposed so as to intercept the rays of light transmitted through the color-wheel and adjustable with the color-wheel toward and from the light-producing device.

13. In a light-projecting apparatus, the combination with a casing for inclosing a light-producing device and having an outlet for the rays of light, of means for vertically and laterally oscillating the casing, a color-wheel movable with the casing and provided with a series of light-transmitting devices adapted to pass consecutively in front of said outlet when the color-wheel is rotated step by step, electromagnetic means controlling the step-by-step rotation of the color-wheel, a light-focusing device disposed in front of said outlet and reciprocative toward and from the light-producing device, and means for reciprocating the focusing device.

14. In a light-projecting apparatus, the combination with a light-inclosing casing having an outlet for the rays of light, of a light-focusing device reciprocative toward and from a light-producing device adapted to be placed in the casing, a color-wheel mounted on said light-focusing device and provided with a series of light-transmitting devices adapted to pass in consecutive order before said outlet when the color-wheel is rotated step by step, means for oscillating the casing, means for reciprocating the focusing device and means for controlling the step-by-step rotation of the color-wheel.

15. In a light-projecting apparatus, the combination with a casing for inclosing a light-producing device, and having an outlet for the rays of light, of a light-focusing device reciprocatively mounted on the casing in line with said outlet, a rotary color-wheel carried by the focusing device and provided with a series of light-transmitting devices adapted to pass consecutively in front of said outlet when the color-wheel is rotated step by step, means for rotating the color-wheel, electromagnetic means controlling the step-by-step rotation of the color-wheel, means for reciprocating the focusing device, and means for oscillating the casing.

16. In a light-projecting apparatus, the combination with an oscillatory casing for inclosing a light-producing device and having an outlet for the rays of light, of a light-focusing device reciprocative toward and from the light-producing device and oscillatable with the casing, a color-wheel reciprocative with the focusing device and provided with a series of light-transmitting devices adapted to pass consecutively in front of said outlet when the wheel is rotated step by step, means for rotating the color-wheel, electromagnetic means for controlling the step-by-step rotation of the color-wheel, three cords or similar devices each reciprocative lengthwise, and means by which when said cords are respectively reciprocated the casing may be oscillated vertically and laterally, and the focusing device reciprocated.

17. In a light-projecting apparatus, the combination with a light-inclosing casing having an outlet for the rays of light, of a lens-frame reciprocatively mounted on the casing, a lens carried by said frame and disposed in front of said outlet, means for reciprocating said lens-frame, a color-wheel rotatively mounted on the lens-frame and provided with a series of light-transmitting devices adapted to pass consecutively in front of the lens when the color-wheel is rotated step by step, an electromagnetic means controlling the step-by-step rotation of the color-wheel, means for rotating the color-wheel, and means for oscillating the casing vertically and laterally.

18. In a light-projecting apparatus, the combination with a light-inclosing casing provided with an outlet for the rays of light, of means for focusing said rays of light, a color-wheel carried by the focusing means and provided with a plurality of light-transmitting devices adapted to pass consecutively in the path of the focused rays of light, an electromagnet provided with an armature adapted to engage and control the rotation of the color-wheel when the magnet is energized, means for energizing the electromagnet, and means for oscillating the casing vertically and laterally.

19. In a light-projecting device, the combination with a light-inclosing casing provided with an outlet for the rays of light, of a support on the casing, a color-wheel rotatively mounted on the support, and provided with a plurality of light-transmitting devices adapted to pass consecutively before the said outlet when the color-wheel is rotated step by step, a stationary pinion mounted on said support, a gear-wheel rotatively mounted on the color-wheel and engaging the pinion so as to have a planetary movement around the pinion, means for rotating the gear-wheel, and means for controlling the step-by-step rotation of the color-wheel.

20. In a light-projecting apparatus, the combination with a light-inclosing casing having an outlet for the rays of light, of a support on the casing, a color-wheel rotatively mounted on said support and provided with a plurality of light-transmitting devices adapted to pass consecutively in front of the said outlet, a stationary pinion mounted on said support, a gear-wheel rotatively mounted on the color-wheel and meshing with said pinion and disposed on the color-wheel so as to have a planetary movement around the pinion when the color-wheel is rotated, means for rotating the gear-wheel, and electromagnetic means controlling the step-by-step rotation of the color-wheel.

21. In a light-projecting apparatus, the combination with a light-inclosing casing having an outlet for the rays of light, of a support mounted on the casing, a color-wheel rotatively mounted on the support and having plurality of light-transmitting devices adapted to pass consecutively in front of the outlet when the wheel is rotated, a stationary pinion mounted on the said support concentrically with the color-wheel, a gear-wheel rotatively mounted on the color-wheel and meshing with the pinion, a spring supported by the color-wheel, means for imparting rotation to the gear-wheel by the tension of said spring, and means for controlling step-by-step rotation of the color-wheel.

22. In a light-projecting apparatus, the combination with a light-inclosing casing having a light-outlet, of a support on said casing, a color-wheel rotatively mounted on said support, and having a plurality of light-transmitting devices adapted to pass consecutively before the said outlet when the color-wheel is rotated, a stationary pinion mounted on said support concentrically with the color-wheel, a gear-wheel rotatively mounted on the color-wheel and meshing with the pinion, a spring carried by the color-wheel, means for imparting rotation to the gear-wheel from the tension of said spring, and electromagnetic means controlling the step-by-step movement of the color-wheel.

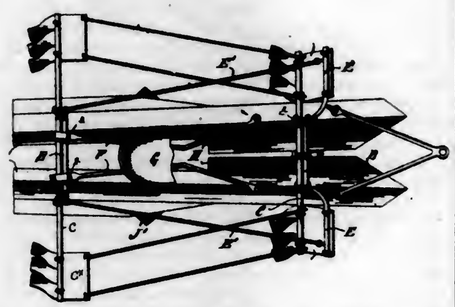
23. In a light-projecting apparatus, the combination with a support, of a color-wheel rotatively mounted thereon, a pinion mounted stationary on said support concentrically with the color-wheel, a gear-wheel rotatively mounted on the color-wheel eccentrically with the axis of the wheel and meshing with said pinion, and means for imparting rotation to the gear-wheel.

24. In a light-projecting apparatus, the combination with a support, of a color-wheel rotatively mounted on said support, a pinion stationary on the support and concentric with the color-wheel, a gear-wheel rotatively mounted on the color-wheel eccentrically with the axis of said color-wheel and meshing with the pinion, means for rotating said gear-wheel, and means for controlling the step-by-step rotation of the color-wheel.

819,612. LISTED-CORN CULTIVATOR. THOMAS H. SPARKS, Wichita, Kans. Filed Feb. 1, 1906. Serial No. 299,014.

Claim.—1. An apparatus for cultivating listed corn comprising runners which are set at angles to each other, yokes connecting said runners, clod-crushers secured to the projecting ends of said yokes, the rear portions of the runners being cut away, allowing a wider space between the runners at their rear ends than at their forward, and inclined cutting edges formed by the walls of said widened portion, as set forth.

2. An apparatus for cultivating listed corn comprising runners which are set at angles to each other, yokes connecting said runners, clod-crushers secured to the projecting ends of said yokes, the rear portions of the runners being cut away, allowing a wider space between the runners at their rear ends than at their forward, and inclined cutting edges formed by the walls of said widened portion, adjustable shields fastened to the runners and having outwardly-turned cutting edges opposite the widened portions of said runners, as set forth.



3. An apparatus for cultivating listed corn comprising runners which are set at angles to each other, yokes connecting said runners, clod-crushers secured to the projecting ends of said yokes, the rear portions of the runners being cut away, allowing a wider space between the runners at their rear ends than at their forward, and inclined cutting edges formed by the walls of said widened portion, adjustable shields fastened to the runners and having outwardly-turned cutting edges opposite the widened portions of said runners, adjustable plates secured at their forward ends to the inner walls of the widened portions of the runners and their opposite ends adjustably held to the rear ends of the runners, as set forth.

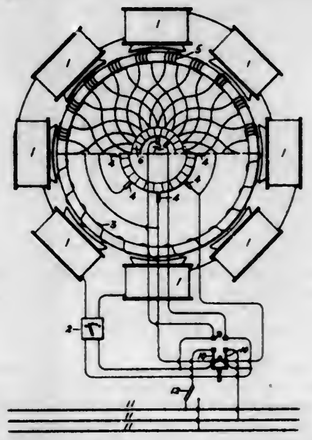
4. An apparatus for cultivating listed corn comprising runners which are set at angles to each other, the forward ends of said runners being beveled, a slight space intervening between the forward ends of the runners, yokes holding the runners together, each runner having a cut-away portion in the lower edge thereof, extending from substantially the middle portion of each runner to its rear end, each runner having a widened portion between its middle and rear end with an inclined cutting edge, adjustable shields mounted upon the outer face of each runner and having outwardly-turned inclined cutting edges adjacent to and at an angle to the cutting edges of said runners, as set forth.

5. An apparatus for cultivating listed corn comprising runners which are set at angles to each other, the forward ends of said runners being beveled, a slight space intervening between the forward ends of the runners, yokes holding the runners together, each runner having a cut-away portion in the lower edge thereof, extending from substantially the middle portion of each runner to its rear end, each runner having a widened portion between its middle and rear end with an inclined cutting edge, adjustable shields mounted upon the outer face of each runner and having outwardly-turned inclined cutting edges adjacent to and at an angle to the cutting edges of said runners, adjustable plates fastened at their inner ends to the inner face of the inclined wall of the runner and having their rear ends angled and slotted, and adjusting-screws fastened to the ends of the runners and extending through said slots, as set forth.

6. A listed-corn sled comprising two runners which have their forward ends beveled, yokes connecting said runners and holding the same at angles to each other, with a space intervening between the same, portions of the lower edges of the runners being cut away the side walls of the runners formed into inclined cutting edges, adjustable shields mounted upon the runners and held adjacent to said inclined cutting edges, clod-crushers mounted upon the projecting ends of said yokes; and brace-rod connections between said clod-crushers, as set forth.

7. A listed-corn sled comprising two runners which have their forward ends beveled, yokes connecting said runners and holding the same at angles to each other, with a space intervening between the same, portions of the lower edges of the runners being cut away the side walls of the runners formed into inclined cutting edges, adjustable shields mounted upon the runners and held adjacent to said inclined cutting edges, clod-crushers mounted upon the projecting ends of said yokes, brace-rod connections between said clod-crushers, rods secured to the upper edge of the runners and fastened to said yokes, and an adjustable seat mounted upon said rods, as set forth.

819,613. CONTROLLING THE SPEED OF MOTORS. CHARLES P. STEINMETZ, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Sept. 24, 1903. Serial No. 174,897.



Claim.—1. The combination with a multipolar electric motor, of means whereby the active armature-circuit may be of the parallel-wound or series-wound type, at will, the number of poles of the motor remaining unchanged.

2. A multipolar electric motor having two armature-windings, one multiple-circuit and the other two-circuit, and a switch for including either winding in circuit at will.

3. A multipolar electric motor having two armature-windings, one parallel and the other series, means for switching either winding into circuit, and means for varying the field strength of the motor.

4. A multipolar electric motor having a main parallel-wound armature-winding, and an auxiliary series-wound winding of higher resistance than the main winding, and means for switching either winding into circuit.

819,614. WRENCH. WILLIAM K. STEWART and FRANK MOWREY, Philadelphia, Pa. Filed Nov. 9, 1905. Serial No. 286,541.



Claim.—1. An axle-nut wrench comprising a shank provided with means for reversibly connecting it with the spokes of a wheel, sockets disposed on opposite sides of the shank and formed with attaching-flanges, said flanges being provided with abutting projections bearing against the edges of the shank and holding the sockets from lateral movement, and fastening devices passing through the shank and flanges and acting as common means for securing both sockets to the shank.

2. An axle-nut wrench comprising a shank provided with nut-engaging sockets on opposite sides thereof, and also provided at each end with a spoke-engaging member, each spoke-engaging member comprising a strip having its ends bent to form reversely-extending hooks and its central portion lying at right angles to the shanks of the hooks and bearing against one side of the shank member, and a fastening passing through said central portion and shank member and fastening the spoke-engaging member thereto.

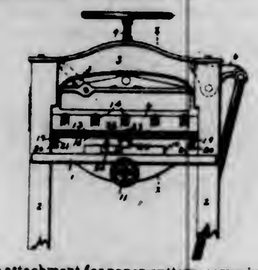
819,615. DIE ATTACHMENT FOR PAPER-CUTTERS. WILLIAM E. STERLING, Baltimore, Md. Filed June 7, 1905. Serial No. 264,054.

Claim.—1. A die attachment for paper-cutters, comprising an upper bar, and a lower bar slidably connected to the upper bar whereby when the said upper bar is raised or lowered on an incline the lower bar will be raised or lowered vertically.

2. A die attachment for paper-cutters, comprising an upper bar, a lower bar slidably connected to the upper bar, whereby when the said upper bar is raised or lowered on an incline the lower bar will be raised or lowered vertically, and a die carried by the lower bar.

3. A die attachment for paper-cutters, comprising an upper bar,

a lower bar slidably connected to the upper bar whereby when the said upper bar is raised or lowered on an incline the lower bar will be raised or lowered vertically, stops on the lower surface of the lower bar, and a die carried by the said lower bar.



4. A die attachment for paper-cutters, comprising an angle-bar, a die-carrying bar slidably connected to the angle-bar whereby when the angle-bar is raised or lowered on an incline the die-carrying bar will be raised or lowered vertically, and a die carried by said die-carrying bar.

5. A die attachment for paper-cutters comprising an angle-bar, a die-carrying bar slidably connected to the said angle-bar whereby when the said angle-bar is raised or lowered on an incline the die-carrying bar will be raised or lowered vertically, stops on the lower surface of the die-carrying bar, and a die carried by said die-carrying bar.

6. In combination with a paper-cutter, of a die attachment comprising an upper bar attached to the knife-bar, a die-carrying bar slidably connected to the upper bar and having its ends impinging against the sides of the cutter whereby when the knife-bar is raised or lowered on an incline the die-carrying bar will be raised or lowered vertically.

7. In combination with a paper-cutter, of a die attachment comprising an angle-bar attached to the knife-bar, a die-carrying bar slidably connected to the lower angle of the angle-bar whereby when the said angle-bar is raised or lowered on an incline the die-carrying bar will be raised or lowered vertically, and a die carried by said die-carrying bar.

8. In combination with a paper-cutter, of a die attachment comprising an angle-bar attached to the knife-bar, a die-carrying bar slidably connected to the lower angle of the angle-bar whereby when the said angle-bar is raised or lowered on an incline the die-carrying bar will be raised or lowered vertically and having stops on its lower surface, and a die carried by said die-carrying bar.

9. In combination with a paper-cutter, of a die attachment comprising an angle-bar adapted to be attached to the knife-bar, a die-carrying bar slidably connected to the angle-bar, whereby when the said angle-bar is raised or lowered on an incline the die-carrying bar will be raised or lowered vertically, a die carried by said die-carrying bar, and a side guide into which the die projects when cutting.

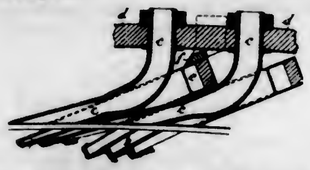
10. In combination with a paper-cutter comprising a table, two standards on opposite sides of the table, a cross-head connecting the said standards, and a knife-bar pivoted to the cross-head, of a die attachment comprising an angle-bar carried by the knife-bar, a die-carrying bar slidably connected to the angle-bar and having its ends impinging against the said standards, whereby when the angle-bar is raised or lowered on an incline the die-carrying bar will be raised or lowered vertically.

11. The combination with the table, a back gage, and means for operating said back gage, of the side guide comprising a flat bottom having a cut-out at one side and a plurality of holes on said side, a vertical extension at the rear, and a guide-piece adapted to be adjusted along the side of the guide.

819,616. MULTISTAGE STEAM-TURBINE. JOHANN STUMPF, Berlin, Germany, assignor to General Electric Company, a Corporation of New York. Filed Oct. 15, 1903. Serial No. 177,214.

Claim.—1. In an elastic-fluid turbine, the combination of a fluid-discharging device, a series of blades which receive fluid from said device and impart to it a circular movement, a guide which receives the fluid from the blades and continues the circular movement in substantially the same plane it traversed in passing through the blades, and a series of blades which receive fluid from the guide.

2. In an elastic-fluid turbine, the combination of rows of blades arranged side by side, with means which receive motive fluid from the outer or delivery ends of the blades of one row and conveys it over the blades and discharges it against the outer or inlet ends of the succeeding row.



3. In an elastic-fluid turbine, the combination of the plurality of sets of blades, means arranged between the outer ends of two adjacent sets for discharging fluid against one set, and a plurality of means connecting the outer ends of the blades for guiding the fluid over one set and discharging it against a succeeding set of blades.

4. In an elastic-fluid turbine, the combination of a plurality of sets of blades arranged side by side, means for discharging fluid against one set of blades at a point to cause the fluid to flow in a direction away from the adjacent set, and means for receiving the fluid delivered by the first set of blades and discharging it against the adjacent set at a point to cause the fluid to flow toward the first set.

5. In an elastic-fluid turbine, the combination of a series of sets of curved blades, a nozzle for discharging fluid under a predetermined velocity against the blades, and means so arranged with respect to the blades of adjacent sets that the fluid flowing from the inlet of the turbine to the exhaust traverses an unbroken curved path whereby the compression is maintained on but one side of the fluid stream.

6. In an elastic-fluid turbine, the combination of a wheel, the plurality of sets of blades of substantially semicircular form arranged in the periphery thereof, means receiving fluid and discharging it at the inner side of one set of curved blades, a means arranged to receive the fluid exhausting from the outer side of said set of curved blades and discharging it against the further side of the curved blades of an adjacent set.

7. In fluid-pressure turbines a plurality of sets of blades, and a fixed guide-blade or conveying-passage whose inlet is disposed adjacent to the outlet from one set of blades and whose outlet is adjacent to the inlet of a second set of blades, the said guide-blades crossing the plane of a set of blades.

8. In fluid-pressure turbines a plurality of sets of blades and a fixed guide-blade or conveying-passage which crosses one set of blades, and whose inlet is adjacent and opposite to the outlet from one set of said blades and whose outlet is parallel with its inlet and is adjacent and opposite to the inlet to the second set of blades.

9. In fluid-pressure turbines a plurality of sets of curved blades and a fixed guide-blade or conveying-passage whose curvature is such as to guide the motive fluid from the outlet of one set of blades to the inlet of the second set of blades in a circular path in the same direction imparted to it by the blades, substantially as described.

10. In fluid-pressure turbines a plurality of sets of curved blades and a fixed gulde-blade or conveying-passage whose curvature is such as to guide the motive fluid from the outlet of one set of blades to the inlet of the second set of blades in a circular path in the same direction imparted to it by the blades, and whose inlet and outlet respectively overlap the outlet and inlet respectively of the first and second set of blades.

11. In fluid-pressure turbines, a plurality of wheels and a corresponding number of sets of blades, a guide-blade or conveying-passage which crosses the planes of the blades, and whose inlet is adjacent and opposite to the outlet from one set of blades upon one wheel and whose outlet is adjacent and opposite to the inlet of the second set upon the second wheel, substantially as described.

12. In fluid-pressure turbines in which a plurality of curved blades are employed, a plurality of guide-blades or steam-passages which cross the plane of the blades and convey the steam discharged in one direction from one set of blades and admit it in an opposite direction to the second set of blades, substantially as described.

13. In fluid-pressure turbines in which a plurality of sets of blades are employed, a plurality of sets of guide-blades or steam-passages which cross from the outer edge of one row of blades to the outer edge of another row of blades for conveying steam discharged from the outlet of one set of blades in one direction and admitting it in the opposite direction to the inlet of another set of blades, substantially as described.

14. In an elastic-fluid turbine, the combination of a series of blades, a nozzle which discharges fluid against the blades in such manner that compression takes place on one side of the fluid column, a second series of blades, and guides which receive fluid from the first series of blades and discharge it against the second in such manner that the compression will take place on the same side of the fluid column.

15. In an elastic-fluid turbine, the combination of rows of blades, nozzles for discharging fluid against one row of blades, and a guide for the fluid exhausting from one row of blades and passing to another row which passes between nozzles.

16. In an elastic-fluid turbine, the combination of rows of blades, closely-associated nozzles for discharging fluid against a row of blades, and guides which are located between each two adjacent nozzles that receive fluid from one row of blades and carry it across the plane of the first row of blades and discharge it against a second row.

17. In an elastic-fluid turbine, the combination of a wheel having a row of blades, a perforated nozzle-support, and closely-associated nozzles which discharge motive fluid in the form of a solid column against the blades, the said nozzles passing through the perforations in the support and extending from the latter in a direction substantially at right angles thereto and gradually bending in a direction to deliver fluid against the blades at the desired angle.

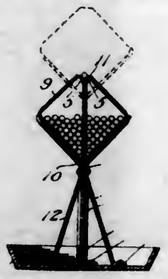
18. In an elastic-fluid turbine, the combination of a wheel having a row of blades, a perforated nozzle-support, closely-associated nozzles which discharge motive fluid in the form of a solid column against the blades, the said nozzles passing through the perforations in the support, and guides for conveying fluid from one row of blades to another which are arranged over the blades and have corresponding ends closely associated.

19. In an elastic-fluid turbine, the combination of a wheel having a row of blades, a perforated nozzle-support, closely-associated nozzles which discharge motive fluid in the form of a solid column against the blades, the said nozzles passing through the perforations in the support, and U-shaped guides located between nozzles, which receive fluid delivered as a solid column from one row of blades and discharge it as a solid column against another.

20. In an elastic-fluid turbine, the combination of a perforated support, tubular nozzles located in the perforations in the support, means for securing the nozzles in place, rows of blades, and guides for conveying fluid from one row of blades to another which are also secured to the support.

21. The combination of sets of blades, a plurality of discharging devices, a plurality of intermediate passages connecting the delivery and inlet ends of successive sets of blades, and a common support upon which the said devices and passages are closely nested in a position over the blades.

819,617. AUTOMATIC MATCH-BOX. HENRY G. TAYLOR, Milton, Mass. Filed Sept. 26, 1905. Serial No. 280,206.

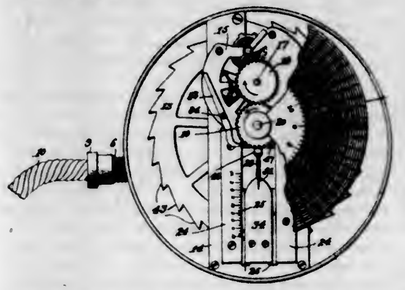


Claim.—1. In a match-safe comprising a tray, a delivery-plate provided with a groove and secured to said tray, a carrying-frame comprising channeled members adapted to embrace the ends of said plate and provided with upper forked ends, and a match-receptacle carried by the forked ends of said members.

2. A match-safe comprising a tray, a delivery-plate provided with a groove and secured to said tray, a carrying-frame comprising channeled end members adapted to embrace the ends of said plate and provided with upper forked ends, the lower ends of said channeled members being connected by means of plates, and a match-receptacle carried by the forked ends of said end members.

3. A match-safe comprising a tray, a delivery-plate having its upper end flared to provide a groove and having its lower end disposed horizontally to provide securing-flanges, a carrying-frame provided with forked ends movably mounted upon said delivery-plate, a match-receptacle carried by said forked ends, and braces having their upper ends reduced and secured to said delivery-plate, and their lower ends horizontally disposed to provide securing-flanges attached to the frame, said braces being provided with roughened surfaces.

819,618. APPARATUS FOR RECORDING THE MOVEMENTS OF VEHICLES. BENJAMIN F. TRAL, Glenside, Pa. Filed Aug. 9, 1905. Serial No. 273,200.



Claim.—1. In an apparatus for recording the movements of vehicles, a record-surface holder, means for constantly moving said holder at a predetermined speed, a marker, and a lever adapted to cause said marker to approach the contact area, said marker having motion toward the contact area after said lever has ceased to move, whereby the marker may be brought to the contact-point by a motion independent of the motion of the lever.

2. In an apparatus for recording the movements of vehicles, a record-surface holder, means for constantly moving said holder at a predetermined speed, a marker, a lever adapted to cause said marker to approach the contact area, said marker having motion toward the contact area after said lever has ceased to move, whereby the marker may be brought to the contact-point by a motion independent of the motion of the lever, and means for causing said lever to operate in unison with the movement of the vehicle.

3. In an apparatus for recording the movements of vehicles, a record-surface holder, means for constantly moving said holder at a predetermined speed, a lever, a lever adapted to cause said marker to approach the contact area, said marker having motion toward the contact area after said lever has ceased to move, whereby the marker may be brought to the contact-point by a motion independent of the motion of the lever, and a cam-wheel moving in unison with the movement of the vehicle for causing said lever to operate at intervals governed by the movement of the vehicle.

4. In an apparatus for recording the movements of vehicles, a record-surface holder, means for constantly moving said holder at a predetermined speed, a marker freely movable to and from a contact area and also adjustable with respect to said area to lie opposite the different points in the latter, a lever lying in the path of adjustment of said marker and adapted at all times to cause said marker to approach the contact area, said marker having motion toward the contact area after said lever has ceased to move, whereby the marker may be brought to the contact-point by a motion independent of the motion of the lever, and means for causing said lever to operate in unison with the movement of the vehicle.

5. In an apparatus for recording the movements of vehicles, a record-surface holder, means for constantly moving said holder at a predetermined speed, a marker freely movable to and from a contact area and also adjustable with respect to said area to lie opposite to different points in the latter, a spring-impelled lever pivoted intermediate its length and having one end lying in the path of adjustment of said marker and adapted at all times to cause said marker to approach the contact area, said marker having motion toward the contact area after said lever has ceased to move, whereby the marker may be brought to the contact-point by a motion independent of the motion of the lever, and a cam-wheel moving in unison with the movement of the vehicle and contacting with the opposite end of said lever for actuating the latter at intervals governed by the movement of the vehicle.

6. In an apparatus for recording the movements of vehicles, a record-surface holder, means for constantly moving said holder at a predetermined speed, a marker, a screw-shaft for shifting said marker transversely to the line of movement of said holder, and a lever adapted to cause said marker to approach the contact area, said

marker having motion toward the contact area after said lever has ceased to move, whereby the marker may be brought to the contact-point by a motion independent of the motion of the lever, said lever being actuated at intervals governed by the movement of the vehicle.

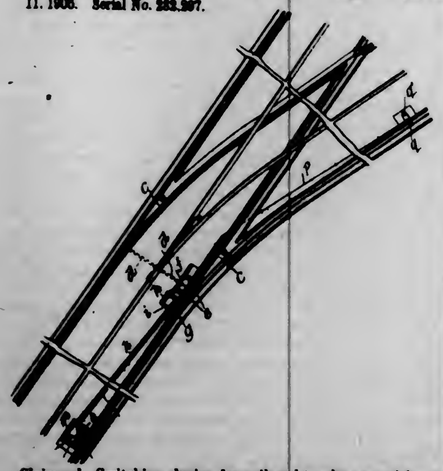
7. In an apparatus for recording the movements of vehicles, a rotary record-surface holder, means for constantly rotating said holder at a predetermined speed, a marker, a screw-shaft for shifting said marker radially with respect to said holder to successive recording-points, and a lever adapted to cause said marker to approach the contact area, said marker having motion toward the contact area after said lever has ceased to move, whereby the marker may be brought to the contact-point by a motion independent of the motion of the lever, said lever being actuated at intervals governed by the movement of the vehicle.

8. In an apparatus for recording the movements of vehicles, a rotary record-surface holder, mechanism for constantly rotating said holder at a predetermined speed, a marker freely movable to and from a contact area and also movable parallel and radially with respect to said area, a screw-shaft operated by the record-surface rotating mechanism for moving said marker radially and synchronously with the rotation of the record-surface holder, a spring-impelled lever adapted to cause said marker to approach the contact area, said marker having motion toward the contact area after said lever has ceased to move, whereby the marker may be brought to the contact-point by a motion independent of the motion of the lever, and a cam-wheel moving in unison with the movement of the vehicle and contacting with said lever for actuating the latter at intervals governed by the movement of the vehicle.

9. In combination with an apparatus for recording the movements of vehicles, a casing containing said apparatus, a cylinder fixed to the vehicle and adapted to be filled with a fluid, such as oil, a piston movable in said cylinder and provided with an aperture for the passage of the fluid in said cylinder, a piston-rod connected with said piston and with the casing whereby the latter will be supported, and a coiled spring in said cylinder on the side of the piston opposite to the casing and connected both with said piston and with the cylinder, said spring combining with the movement of the fluid in said cylinder through the aperture in the piston to compensate to the casing for shocks and jars experienced by the vehicle while in motion.

10. In an apparatus for recording the movements of vehicles, a time movement, such as a clock-train, a staff in gear therewith and adapted to removably receive record-disks, mechanism for recording the movements of the vehicle on said record-disks, and a lever adapted to engage the gear-teeth and hold said staff to prevent movement thereof while the record-disks are being removed from or placed on said staff.

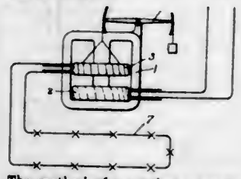
819,619. **DEVICE FOR SETTING SWITCHES BY THE MOTORMAN FROM THE CAR.** CARL TREBSHUHR, Pittsburg, Pa. Filed Oct. 11, 1905. Serial No. 282,997.



Claim.—1. Switching device for railroad-tracks comprising a lever suitably connected to the switch-tongues under spring-pressure and provided with means to retain said lever in the said position, compressing the spring, and provided with means to be disengaged, said lever having its free end in the bottom of the groove of one of the rails and comprising a spring-actuated rod on the car adapted to be pressed with its lower end into said groove substantially as described and for the purpose set forth.

2. Switching device for railroad-tracks comprising a lever *l* connected by a rod *k* and a bell-crank lever *h* with link *i* to one of the switch-tongues under spring-pressure, and provided with a tooth-sector *m* and a pawl *n* to retain said lever in the said position, compressing the springs, said pawl being connected by a chain to a lever *q* ahead of the side track, and entering into the groove with its free end, said lever *l* having its free end in the bottom of the groove of one of the rails and comprising a spring-actuated rod on the car, adapted to be pressed with its lower end into the groove, substantially as described and for the purpose set forth.

819,620. **METHOD OF OPERATING CONSTANT-CURRENT TRANSFORMERS.** MATTHEW O. TROY, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Dec. 13, 1903. Serial No. 184,892.



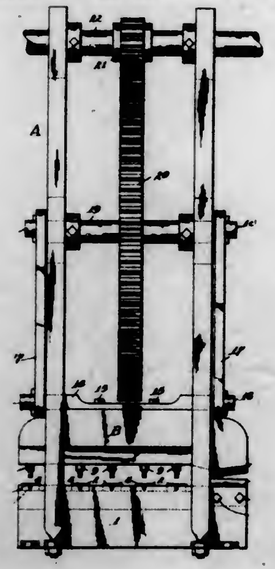
Claim.—1. The method of operating a constant-current transformer at a maximum load less than that correasponding to the full load for which the transformer is designed, which consists in utilizing less than the full number of secondary turns and adding to the number of primary turns normally employed.

2. The method of operating a constant-current transformer below full-load capacity, and at a high power factor, which consists in changing the ratio of transformation by varying both the number of primary turns and the number of secondary turns of the transformer.

3. The method of operating a constant-current transformer under varying loads, and at all times with a high power factor, which consists in preserving an approximately constant relation between the induced or internal voltage and the reactive voltage.

4. The method of operating a constant-current transformer, which consists in adjusting the induced secondary voltage to meet the demands of the load and at the same time minimizing the reactive voltage of the transformer.

819,621. **POWER PUNCH AND SHEARS.** LEWIS VAN DORIN, San Bernardino, Cal. Filed June 19, 1905. Serial No. 265,960.

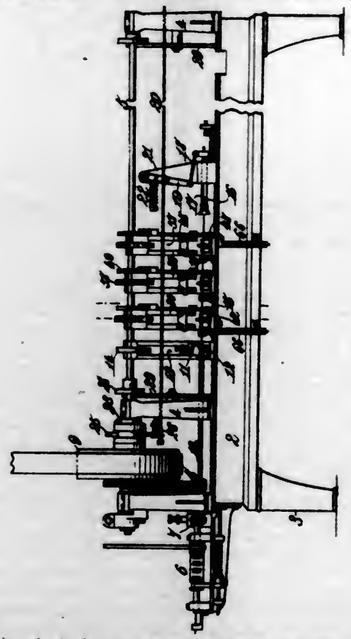


Claim.—1. In power punches and shears, the combination with a base and frame, of a reciprocating jaw, said jaw channeled at one end to receive a blade, and punches received in holes therein, the base being channeled to receive dies and a cutting-blade therein, which aline approximately with the blade and punches in the jaw.

2. The combination with a base and frame, the base having its upper edge channeled to receive a blade and punch dies, they being approximately in alinement with each other, and means for securing said blades and dies in position, of a jaw constructed and adapted to be guided and reciprocated in the frame, said jaw having a channel and holes therein, a blade secured in the channel and punches in the holes approximately in alinement with one another, and means for reciprocating the jaw, said means comprising a drive-shaft, an eccentric-shaft, intermeshed gearing on said shafts, and links extending from the eccentric-shaft to the reciprocating jaw.

3. In power punches and shears the combination with a frame comprising a base and uprights, of a jaw guided by the frame, a plate secured to the jaw and having bearings on its ends, the jaw carrying punches and a cutting-blade and the base having dies and a cutting-blade, and shafts having intermeshed gears, one of said shafts having cranks thereon and links extending from the cranks to the bearings on the plate.

819,622. **WIRE-WORKING MACHINE.** ORLA H. WATKINS and CHARLES F. SKELLENGER, Clinton, Iowa, assignors to Benjamin F. Windsor, Kenosha, Wis. Filed Dec. 28, 1904. Serial No. 238,684.



Claim.—1. A wire-working machine having two faces, a device for forcing an intermediate portion of a wire blank between said faces to form a loop therein, and a second pair of faces against which the loop is pressed by said device to form a bend in the loop.

2. A wire-working machine having two faces, a device for forcing an intermediate portion of a wire blank between said faces to form a loop therein, and a second pair of faces against which the loop is pressed by said device to form a bend in the loop, one of said faces being movable with respect to the blank to carry the same free of the wire.

3. A wire-working machine having an endwise movable and tiltable bending device, a pair of faces between which the wire is forced on the endwise movement of said device, thereby to form a loop in the wire, and a second pair of faces against which the loop is pressed by said device on the tilting movement thereof, thereby to form a bend in the loop.

4. A wire-working machine having an endwise movable and tiltable bending device, a pair of faces between which the wire is forced on the endwise movement of said device, thereby to form a loop in the wire, and a second pair of faces against which the loop is pressed by said device on the tilting movement thereof, thereby to form a bend in the loop, and said first-mentioned pair of faces being arranged for movement relative to, and to free, the wire.

5. A wire-working machine having a slotted block, a pair of pins associated with said block and movable above and below the upper face of said block, and a bending device arranged to play in the slot in said block and to press an intermediate portion of a length of wire between said pins to form a loop therein.

6. A wire-working machine having a slotted block, a pair of pins associated with said block and movable above and below the upper face of said block, and a bending device arranged to play in the slot in said block and to press an intermediate portion of a length of wire between said pins to form a loop therein, the walls of said slot having curved portions, and the bending device being arranged to press the loop against said curved faces to form a bend in said loop.

7. A wire-working machine having a slotted block, a pair of pins associated with said block, means to move in the slot in the block and to press an intermediate portion of the wire between said projections or pins to form a loop in the wire and means for subsequently bending the loop.

8. A wire-working machine having a slotted block, a pair of pins associated with said block, and a bending device arranged to move in the slot in the block and to press an intermediate portion of the wire between said projections or pins to form a loop in the wire, the walls of said slot having curved faces, and the said bending member being adapted to press the loop against said curved faces to form a bend in said loop.

9. A wire-working machine having two pins, a block having openings to receive the pins, the latter extending normally above the upper face of the block, means for pressing the intermediate portion of a wire blank between the pins to form a loop therein, means at opposite sides of the pins to prevent distortion of the blank during the formation of the loop, and means for operating upon the pins to bring their tops substantially flush with said block.

10. A wire-working machine having two faces, a device for forcing an intermediate portion of a wire blank between said faces to form a loop therein, a second pair of faces against which the loop is pressed by said device to form a bend in the loop, and means acting in opposition to said device to prevent distortion of the blank during the action of said device.

11. A wire-working machine having two faces, a device for forcing an intermediate portion of a wire blank between said faces to form a loop therein, and means normally out of contact with the wire and arranged to engage the same during the action of said device to prevent distortion of the wire during the bending operation.

12. A wire-working machine having crimping mechanism involving two coöperating members between which an intermediate portion of a wire blank is pressed, a member having wire-guiding means and arranged to act against the finished product in the direction to move it away from the crimping means, and means for freeing said members from the finished product.

13. A wire-working machine having crimping mechanism, a movable member having a guide-opening for the wire and an outlet-slot leading from said guide-opening, a latch carried by said movable member and arranged to normally hold the wire from movement through said slot, said latch being adapted, on the retractive movement of the said member, to be lifted by the wire to permit the same to pass out of said slot, and on the forward movement of said member to apply a force to the wire in a direction to move it away from the crimping mechanism.

14. A wire-working machine having crimping mechanism, a movable member having a guide-opening for the wire and an outlet-slot leading from said guide-opening, a latch carried by said movable member and arranged to normally hold the wire from movement through said slot, said latch being adapted, on the retractive movement of the said member, to be lifted by the wire to permit the same to pass out of said slot, and on the forward movement of said member to apply a force to the wire in a direction to move it away from the crimping mechanism, and means for positively holding the latch in its normal position.

15. A wire-working machine having crimping mechanism, a movable member having a guide-opening for the wire and an outlet-slot leading from said guide-opening, a latch carried by said movable member and arranged to normally hold the wire from movement through said slot, said latch being adapted, on the retractive movement of the said member, to be lifted by the wire to permit the same to pass out of said slot, and on the forward movement of said member

to apply a force to the wire in a direction to move it away from the crimping position.

16. A wire-working machine having die mechanism to form a crimp in a wire blank, said die mechanism having a movable element, automatic mechanism to operate said movable element to free it from the wire after the formation of the crimp therein, and means for normally guiding the wire, said means being movably mounted and adapted on one movement, to free the wire, and on the other movement, to positively eject the crimped wire away from the die mechanism.

17. A wire-working machine having a slotted block, pins fitted in bores in the block and normally extending above the upper surface of the same, a bending device to normally force an intermediate portion of a wire blank between said pins to form a loop in the blank, and mechanism for positively lowering the pins to carry their tops substantially flush with the upper surface of said block and to free the same from the wire.

18. A wire-working machine having a slotted and bored block, pins fitted in the bores in the block, each having rack-teeth and each pin normally extending above the upper surface of said block, a pinion arranged to mesh with the teeth of said pins, a bending member arranged to work in the slot in the block and to press an intermediate portion of a wire blank between said pins to form a loop in said wire, and means for actuating said pinion, after the formation of the loop, to free the same from the wire.

19. A wire-working machine having two faces, a reciprocatory block, a bending device, means operated by the said block for actuating the bending device in a direction to cause the same to force an intermediate portion of the wire blank between said faces to form a loop in said wire-blank, and means carried by said block for engaging the wire, upon the action of the bending device, and serving to prevent distortion of the blank during such time.

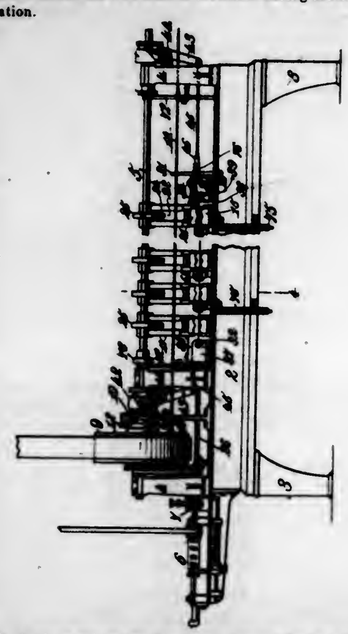
20. A wire-working machine having a disk provided with a wrist-pin, a longitudinally-slotted bending device, the slot in which receives said pin, and the slot terminating at its opposite ends in offsets, a guide-pin extending into said slot, a spring to maintain the walls of the slot in working relation with said wrist-pin, means for imparting a back-and-forth partial rotation to said disk, to thereby cause the bending device to receive an endwise and tilting movement, a pair of faces between which the wire blank is forced by said bending device on the endwise movement thereof, said bending device having a hook at its working end to engage the wire, and a pair of faces against which the wire is pressed, on the tilting movement of said bending device.

21. A wire-working machine having a disk provided with a wrist-pin, a longitudinally-slotted bending device, the slot in which receives said pin, and the slot terminating at its opposite ends in offsets, a guide-pin extending into said slot, a spring to maintain the walls of the slot in working relation with said pin, means for imparting a back-and-forth partial rotation to said disk to thereby cause the bending device to receive an endwise and tilting movement, a slotted block, in the slot of which said guide-pin is mounted and in which said bending device is arranged for operation, pins associated with said block, and between which a wire blank is forced by said bending device on the endwise movement thereof, said bending device having a hook at its working end to engage the wire, and the slot having a pair of faces against which the wire is pressed on the tilting movement of said bending device.

22. A wire-working machine having a reciprocatory block, a disk provided with a wrist-pin, a longitudinally-slotted bending device, the slot of which receives said pin, and the slot terminating at its opposite ends in offsets, a guide-pin extending into the slot, a spring to maintain the walls of the slot in working relation with said wrist-pin, means connected with said reciprocatory block for imparting a back-and-forth partial rotation to said disk to thereby cause the bending device to receive an endwise and tilting movement, a slotted block, in the slot of which said bending device works and in which the guide-pin is mounted, a pair of pins associated with said block and between which the wire is pressed by said bending device on the endwise movement thereof, said bending device having a hook at its working end to engage the wire, and the slot in the block having a pair of faces against which the wire is pressed on the tilting movement of said bending device, and means connected with said block and positioned thereby to act against the wire in opposition to said bending device and to prevent distortion of said wire during the action of the bending device.

819,623. WIRE-WORKING MACHINE. ORLA H. WATKINS and CHARLES F. SCHLLHORN, Clinton, Iowa, assignors to Benjamin F. Windsor, Kenosha, Wis. Filed Dec. 26, 1904. Serial No. 238,665.

Claim.—1. A wire-working machine having means for feeding the wire, and a member arranged to cut off a predetermined length of wire to form a blank, to also bend the wire into a hook, and to also arrest the feed of the wire back of the blank during the hook-forming operation.



2. A wire-working machine having means for forming hooks in the opposite ends of a wire blank, and crimping mechanism located between the hook-forming mechanism and consisting of a relatively stationary die member, and a coöperating movable die member, the opposite faces of the die members having salient portions, and the stationary member constituting a support for the blank, and means for operating the movable die member whereby it, and the coöperating die member, will form a crimp of compound curvature in the wire.

3. A wire-working machine having means for forming hooks in the opposite ends of a wire blank, a plurality of relatively stationary die members to support the blank, a corresponding number of movable die members coöperative with the relatively stationary die members, the coacting die members having opposing faces provided with salient portions, and means for operating the movable die members in succession after the formation of the hooks in the blank, to form a succession of crimps of compound curvature in the blank.

4. A wire-working machine having means for feeding the wire, and a member having a cutting part arranged to sever a predetermined length of wire to constitute a blank, said member being capable of independent movement to arrest the feed of the wire.

5. A wire-working machine having means for feeding the wire, a member having a cutting part arranged for movement to cause the cutting part to sever a predetermined length of wire to constitute a blank, said member being capable of independent movement to arrest the feed of the wire, and means for forming a crimp in the cut wire.

6. A wire-working machine having means for feeding the wire, a member to perform the following three operations, to wit: cutting the wire into a predetermined length to constitute a blank, arresting the feed of the wire back of the blank, and forming a hook in the rear end of the cut blank, and means for forming crimps in the wire.

7. The combination with two coöperating members, each having a bending portion and a movable part, the bending portion being adapted on the motion of the movable member to bend the opposite ends of a wire blank around the movable parts, mechanism for automatically moving the movable parts out of contact with the wire, and crimp-forming mechanism to act upon the wire between the hooks.

8. A wire-working machine having two turnable members, each provided with a bending-segment, and a movable pin extending through and normally beyond one end thereof, said turnable members being adapted to bend the opposite ends of a wire blank around the projecting ends of the pins to form hooks in the opposite ends of said wire, means for moving the pins endwise to carry them out of contact with the wire, and crimp-forming mechanism to act upon the wire between the hooks.

9. A wire-working machine having means for feeding the wire, a member having a cutting part and arranged for movement in one direction to cause the cutting part to sever a predetermined length of wire to constitute a blank and for movement in a different direction to arrest the feed of the wire.

10. In a wire-working machine a member having a cutting part and arranged for turning movement to cause the cutting part to sever a predetermined length of wire to constitute a blank and also arranged for endwise movement to arrest the feed of the wire.

11. A wire-working machine having a turnable member provided with a bending-segment on one end, a pin extending through said turnable member and projecting beyond that end thereof which is provided with said segment, said segment being arranged to bend the end of a wire about the projecting end of the pin on the turning movement of said member, and the pin being endwise movable to carry it free of the wire.

12. A wire-working machine having a turnable member provided with a bending-segment on one end, a pin extending through said turnable member and projecting beyond that end thereof which is provided with the segment, said segment having a cutting edge and being arranged to bend the end of a wire about the projecting end of the pin on the turning movement of said member.

13. A wire-working machine having a turnable member provided with a bending-segment on one end, a pin extending through said turnable member and projecting beyond that end thereof which is provided with the segment, said segment having a cutting edge and being arranged to bend the end of a wire about the projecting end of the pin on the turning movement of said member, and the pin being endwise movable to carry it free of the wire.

14. A wire-working machine having wire-feeding means, and a turnable member provided with a segment on one end, a pin extending through said turnable member and projecting beyond that end thereof which is provided with said segment, said segment being arranged to bend the end of the wire about the projecting end of the pin on the turning movement of said member and the pin being endwise movable to carry it free of the wire, and means for impartiug an endwise movement to said turnable member to bring it in position to arrest the feed of the wire.

15. A wire-working machine having a turnable member provided with a bending-segment on one end, a pin extending through said turnable member and projecting beyond that end thereof which is provided with said seagment, said segment being arranged to bend the end of a wire about the projecting end of the pin on the turning movement of said member, yieldable means for normally maintaining the pin in the relation set forth, and mechanism for positively imparting an endwise movement to the pin in opposition to said yieldable means to carry the pin free of the wire.

16. A wire-working machine having a turnable member provided with a bending-segment on one end, a pin extending through said turnable member and projecting beyond that end thereof which is provided with said segment, said segment being arranged to bend the end of a wire about the projecting end of the pin on the turning movement of said member, a spring for normally maintaining the pin in the relation set forth, means for positively operating the pin in opposition to said spring to carry the pin free of the wire, a pinion connected with the turnable member, a rack-bar the teeth of which mesh with the pinion, and means for reciprocating the rack-bar.

17. A wire-working machine having crimp-forming mechanism to act upon the wire blank, and two independently-supported and recessed members, the recesses of which mate to form a wire-guiding passage, and one of the members being operable by the other to effect the release of the wire, and mechanism for positively operating said other member to move the wire away from the companion member and after the formation of a crimp in the wire.

18. A wire-working machine having two independently-supported and recessed members, the recesses of which mate to form a wire-guiding passage, and one of said members being operable by the other to effect the release of the wire, and said other member being also operable to move the wire away from the companion member.

19. A wire-working machine having crimping mechanism, two independently-supported and recessed members, the recesses of which mate to form a wire-guiding passage, means for feeding the wire to the crimping mechanism and through said passage, one of said movably-mounted members being operable by the other to effect the release of the wire, and said other member being arranged to eject the crimped wire away from the crimping mechanism.

20. A wire-working machine having a recessed swinging member, and an independently-supported latch also recessed, the recesses in the two parts normally mating, said swinging member being adapted on its working movement to operate the latch in a direction to free the same from the wire and to also cause the movement of said wire.

21. A wire-working machine having a swinging member provided with a concavity and a recess in its head, and a latch supported independently of said swinging member and provided with a convexity normally to enter said concavity and with a recess to mate with the other recess to form a wire-guiding passage, said swinging member being adapted on its working movement to operate the latch in a direction to free the wire and to also move the wire away from the latch.

22. A wire-working machine having means for feeding the wire and for cutting the same into a predetermined length and for forming hooks in the opposite ends of the cut length, mechanism for forming a succession of crimps in the hook-formed wire, a plurality of coöperating independently-supported and recessed members, the recesses of which mate to form a wire-guiding passage, and one member in each case being operable by the other to effect the release of the wire, a notched part to receive the forward end of the wire, a notched detent, the notch of which coöperates with the notch in the said part to hold said front end of the wire, and a latch to normally maintain the detent in its operative position, said latch being operable by one of said movably-mounted members to cause the release of the detent.

819,624. INCANDESCENT ELECTRIC LAMP. HOWARD I. WOOD, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Oct. 31, 1904. Serial No. 230,735.

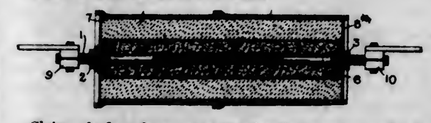


Claim.—1. The combination of a vitreous envelop, a thin metal band shrunk, while the parts are hot, about a portion of the envelop so as to make intimate contact therewith, and a metal conductor or wire passing through the envelop from the inside and making contact with the band or ring on the outside.

2. The combination of a vitreous envelop, conductors passing through the walls of said envelop from the inside, and external connections for said conductors formed in the case of one conductor of a metal plate or sheet and in the case of the other conductor of a sleeve or band, said plate or sheet and said sleeve or band both forming vacuum-tight joints with the envelop.

3. A seal for incandescent lamps, which consists of a sleeve or band of thin metal in intimate contact with the glass portion of the lamp, and a conductor passing through the glass and engaging the inner side of said band or sleeve.

819,625. ELECTRIC MUFFLE. ERLAND ZELL, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Oct. 28, 1903. Serial No. 179,132.



Claim.—1. In a furnace, an iron heating member and a heat-insulating packing therefor, containing calcium carbid in granular form.

2. In a furnace, an iron heating-chamber, means for introducing material to be heated within said chamber, means for connecting said chamber to a source of current and a packing surrounding said chamber and containing a carbid.

3. In a furnace, an iron heating-chamber, means for introducing material to be heated within said chamber, means for heating said chamber and a packing surrounding said chamber and in contact therewith, said packing containing calcium carbid.

4. In a furnace, an iron tube, means for heating said tube, means for introducing material to be heated within said tube, a cas-

ing surrounding said tube and a packing between said tube and casing containing calcium carbid in granular form.

5. An electrical furnace, consisting of an iron tube, and a tubular casing surrounding said tube having end pieces centrally apertured to receive said tube, said tube being secured against longitudinal movement with respect to one of said end pieces and free to move in either direction through the other end piece.

6. In a furnace, an iron heating-chamber, means for heating said chamber, means for introducing material to be heated within said chamber and a heat-insulating packing surrounding said iron chamber and in contact therewith, said packing containing a carbid.

7. In a furnace, an iron heating-chamber, means for introducing material to be heated within said chamber, means for connecting said chamber to the source of current and a packing surrounding said chamber and containing calcium carbid in granular form.

8. In a furnace, an iron heating-chamber, means for introducing material to be heated within said chamber, means for heating said chamber, and a granular packing surrounding said chamber containing a substance which when heated by said chamber may decompose to form a reducing-gas in the interstices of said packing.

9. In a furnace, an iron heating-tube, means for connecting said tube to a source of current and a granular packing surrounding said tube, said packing containing a substance which when heated by said tube may reduce to a refractory oxid and a non-oxidizing gas.

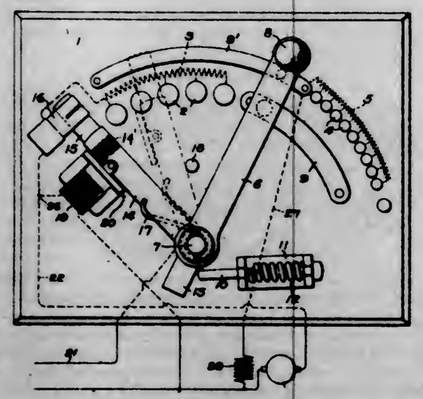
10. In a furnace, a metallic heating-chamber, means for introducing material to be heated within said chamber, means for connecting said chamber to a source of current to heat the same and a granular packing surrounding said chamber containing a carbid which when heated by said tube may form a reducing-gas in the interstices of said granular packing and a refractory oxid inert to said metallic heating-chamber.

11. In a furnace, a hollow heating member, means for introducing material to be heated within said hollow member, means for heating said member, and a heat-insulating packing surrounding said member and in contact therewith, said packing containing a carbid.

12. In a furnace, an oxidizable heating member, means for passing current through said member to heat the same, means for introducing material to be heated within said member, and a heat-insulating packing containing calcium carbid surrounding said member to protect it from oxidation.

13. In a furnace, an oxidizable heating-chamber, means for connecting said chamber to a source of current, means for introducing material to be heated within said chamber, and a heat-resisting packing surrounding said chamber to protect it from the atmosphere, said packing containing calcium carbid in granular form.

819,626. **MOTOR STARTING AND REGULATING RHEOSTAT.** PAUL H. ZIMMER, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed June 23, 1905. Serial No. 267,368.



Claim.—1. In a rheostat, the combination with armature and field resistances and a controlling member therefor, of means whereby said member is returned to the starting position of said armature resistance after running conditions have been established, and means in connection with said member for varying said field resistance.

2. In a rheostat, the combination with armature and field resistances, of a controlling-arm therefor having a bias to the starting position of said armature resistance, means for closing a shunt-circuit around said arm when the latter is moved to running position, and means in connection with said arm for varying said field resistance.

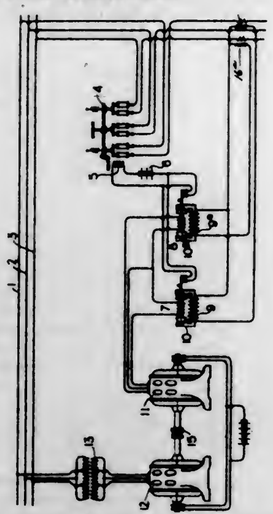
3. In a rheostat, the combination with armature and field resistances, of a controlling-arm therefor having a bias to the starting position of said armature resistance, electrically-controlled means for closing a shunt-circuit around said arm when the latter is moved to running position, and means in connection with said arm for varying said field resistance.

4. In a rheostat, the combination with armature and field resistances, of a controlling-arm therefor having a bias to the starting position of said armature resistance, a switch adapted to be closed to short-circuit said arm by the movement of the latter to running position, and means in connection with said arm for varying said field resistance.

5. In a rheostat, the combination with armature and field resistances, of a controlling-arm therefor, a switch biased to open position and adapted to be closed to short-circuit said arm by the movement of the latter to running position, electrically-controlled means for maintaining the closed position of said switch, and means in connection with said arm for varying said field resistance.

6. In a rheostat, the combination of a plurality of armature and field resistances and studs therefor, of a controlling-arm normally at a position between said studs and biased to the starting position of said armature resistance, a switch biased to open position and adapted to be closed to short-circuit said arm by the movement of the latter in one direction to running position, and electrically-controlled means for maintaining the closed position of said switch, said arm being free to be moved in the opposite direction to vary said field resistance.

819,627. **PROTECTIVE MEANS FOR ALTERNATING-CURRENT SYSTEMS.** ERNST F. W. ALEXANDERSON, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed July 16, 1903. Serial No. 165,761.



Claim.—1. An alternating-current system comprising a switch or circuit-breaker, a reverse-current device for tripping the same provided with a series coil governed by current in the system, and a potential-coil energized by an energy-storing device.

2. The combination with an alternating-current system, of a reverse-current device comprising a current-coil, a potential-coil, and means for prolonging the action of the potential-coil when potential on the line ceases.

3. The combination with an alternating-current system, of a switch or circuit-breaker, a reverse-current relay for tripping the same having a current-coil and a potential-coil, and means for prolonging the magnetization of the potential-coil under cessation of potential in the system.

4. The combination with an alternating-current system, of a switch or circuit-breaker, a reverse-current relay for tripping the same having a current-coil and a potential-coil supplied by the system, and means between the lines and the potential-coil for delaying its demagnetization under short circuit in the system.

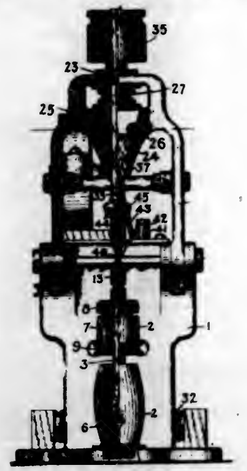
5. The combination with an alternating-current system, of a reverse-current relay controlling the same, said relay having a current-coil and a potential-coil, and a synchronously-operated source of supply for the potential-coil.

6. The combination with an alternating-current system, of a reverse-current relay controlling the same, said relay having a current-coil and a potential-coil, and a synchronous generator for energizing the potential-coil.

7. The combination with an alternating-current system, of a reverse-current relay controlling the same, said relay having a current-coil and a potential-coil, and a synchronous motor-generator for energizing the potential-coil.

8. The combination with an alternating-current system, of a reverse-current relay controlling the same, said relay having a current-coil and a potential-coil, a synchronous motor, a generator operated thereby for energizing the potential-coil, and a slip connection between the motor and generator to permit the latter to run when the former slows down or stops.

819,628. **JEWEL GRINDING AND POLISHING MACHINE.** GEORGE H. ALTON, Lynn, Mass., assignor to General Electric Company, a Corporation of New York. Filed May 10, 1904. Serial No. 207,235.



Claim.—1. A machine for grinding and polishing jewel-bearings, having two spindles, means for rotating the same, a holder for a tool on one of the spindles, means for pressing said spindle axially on a line intersecting the axis of the other spindle with a substantially constant pressure, and means carried by the latter spindle for supporting a jewel at said point of intersection.

2. A machine for grinding and polishing jewel-bearings, comprising two spindles mounted with their axes intersecting and means for rotating them, means carried by one spindle for supporting a jewel at said point of intersection, a holder for a tool on the other spindle, means for pressing said spindle axially to press the tool against the jewel, and means whereby the end of the tool is held in the bottom of the cup in the jewel.

3. A machine for grinding and polishing jewel-bearings, comprising two relatively rotatable spindles mounted with their axes intersecting, a holder for a tool on one spindle, means for pressing said spindle axially toward said point of intersection, and a plane surface on the end of the other spindle against which a jewel is held solely by the pressure of the tool thereon.

4. A machine for grinding and polishing jewel-bearings, having two spindles mounted with their axes intersecting and means for rotating them, a holder for a tool on one spindle, means for pressing said spindle axially toward said point of intersection, and a member carried by the other spindle of the same material as that of the bearing to be ground and having a plane surface transverse to the axis of the spindle against which a jewel is held solely by the pressure of the tool thereon.

5. A machine for grinding and polishing jewel-bearings, having two relatively rotatable spindles mounted with their axes intersecting, means for supporting a jewel on one spindle, a holder for a tool on the other spindle, means for pressing said spindle axially toward said point of intersection, and a device for holding said spindle in a retracted position in opposition to said pressing means.

6. A machine for grinding and polishing jewel-bearings, having two relatively rotatable spindles mounted with their axes intersecting, means for supporting a jewel on one spindle, a holder for a tool on the other spindle, means for pressing said spindle axially to hold the tool against the jewel, a receptacle for a fluid, and means for feeding the fluid from the receptacle into the cup in the jewel.

7. A machine for grinding and polishing jewel-bearings, having two relatively rotatable spindles mounted with their axes intersecting, means for supporting a jewel on one spindle and a tool on the other, means for pressing one of the spindles axially to hold the tool against the jewel, and means for separating the tool and jewel intermittently.

8. A machine for grinding and polishing jewel-bearings, having two relatively rotatable spindles mounted with their axes intersecting, means for supporting a jewel on one spindle and a tool on the other, means for pressing one of the spindles axially to hold the tool against the jewel, means for feeding a fluid into the cup in the jewel, and means for separating the tool and jewel intermittently.

9. A machine for grinding and polishing jewels, having a support for a jewel, a holder for a tool, means for rotating the holder with the tool therein engaging the jewel, means for pressing one of said engaging members forward to hold the tool against the jewel, and means for automatically varying the angle at which the tool in said holder is presented to the jewel.

10. A machine for grinding and polishing jewels, having a rotary spindle, means for supporting a jewel thereon, a holder for a tool, means for rotating said holder with the tool therein engaging the jewel, means for pressing said holder axially to hold the tool against the jewel, and means for continuously and automatically varying the angle at which the tool is presented to the jewel.

11. A machine for grinding and polishing jewel-bearings, having two relatively rotatable spindles, means for supporting a jewel on one of the spindles and a tool on the other, means for pressing one of the spindles axially to hold the tool against the jewel, and means for continuously and automatically varying the angle at which the tool is presented to the jewel.

12. A machine for grinding and polishing jewel-bearings, having a rotary spindle, means for supporting a jewel thereon, a pivoted frame carrying bearings, a spindle mounted in said bearings, a holder for a tool on said spindle, and means for simultaneously moving said frame back and forth on its pivots automatically and rotating the spindle carried thereby.

13. A machine for grinding and polishing jewel-bearings, having a rotary spindle, means for supporting a jewel thereon, a pivoted frame carrying bearings, a spindle mounted in said bearings, a holder for a tool on said spindle, means for pressing said spindle axially to hold the tool against the jewel, and means for simultaneously rocking said frame on its pivots and rotating the spindle carried thereby.

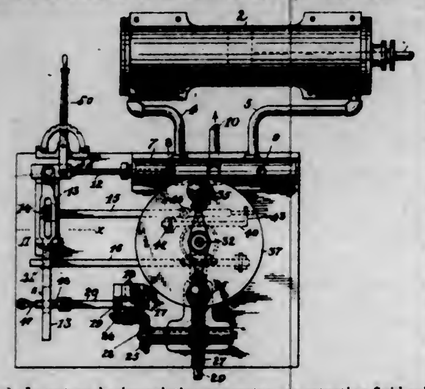
14. A machine for grinding and polishing jewel-bearings, having a support for a jewel, a frame pivoted on an axis passing through the center of the cup in a jewel held in said support, a holder for a tool carried by said frame, means for pressing said holder axially, means for rocking the frame, and means for rotating the holder.

15. A machine for grinding and polishing jewel-bearings, comprising a rotary spindle, means for supporting a jewel thereon, a frame pivoted on an axis passing through the center of the cup in a jewel supported on said spindle, a tool-holding spindle carried by the frame, means for pressing said spindle axially to hold the tool against the jewel, means for rocking the frame, and means for rotating said tool-holding spindle.

16. A machine for grinding and polishing jewels, having a support for a jewel, a holder for a tool, means for rotating the holder, means whereby the tool is pressed against the jewel, means for automatically varying the angle at which the tool is presented to the jewel, a receptacle for a polishing agent, means for feeding said agent from the receptacle to the jewel, and means for automatically separating the tool and jewel intermittently.

819,629. **REGULATOR FOR WATER-WHEELS.** GEORGE H. BAILEY, San Francisco, Cal. Filed July 31, 1905. Serial No. 272,017.

Claim.—1. In water-wheel-regulating apparatus, an actuating-fluid cylinder and piston to control the water-supply to the wheel, centrifugal devices to regulate the admission of fluid under pressure to this cylinder and automatic means to detach the centrifugal apparatus and lock the distributing-valve of the actuating-cylinder when out of action, in the manner substantially as described.

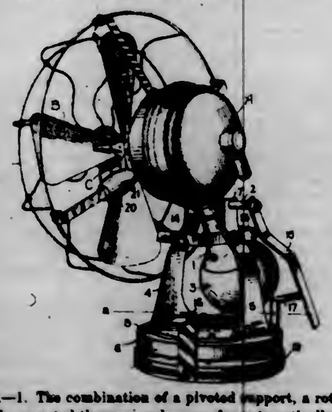


2. In water-wheel-regulating apparatus, an actuating-fluid cylinder and piston to control the water-supply to the wheel, centrifugal apparatus to regulate the admission of fluid to the actuating-cylinder, piston and automatic devices to augment or diminish the stroke of the distributing-valve for the main cylinder accordingly as the rapidity and range of the actuating-piston and change of the water-supply is required and means to automatically lock and hold the distributing-valve after its adjustment, substantially as specified.

3. In water-wheel-regulating apparatus, an actuating-cylinder and piston connected to and controlling the water-supply, a distributing-valve for the actuating-cylinder and piston having a reciprocating motion produced by a lever, a cam to move the lever and means to lock the latter when out of action, substantially as specified.

4. In water-wheel-regulating apparatus, an actuating-cylinder and piston to adjust the water-supply, a distributing-valve for this cylinder and piston moved by a cam-actuated lever, centrifugal apparatus to engage and disengage this lever and means to shift fulcrum of the same to increase and decrease the range of the distributing-valve and devices to automatically lock said valve when the required quantity of fluid is admitted to the sides of the actuating-piston, substantially as specified.

819,630. OSCILLATING MOTOR-FAN. RALPH E. BARKER, Lynn, Mass., assignor to General Electric Company, a Corporation of New York. Filed Dec. 10, 1903. Serial No. 184,579.



Claim.—1. The combination of a pivoted support, a rotary fan eccentrically mounted thereon, and means for automatically changing the eccentricity thereof.

2. The combination of a pivoted support, a rotary fan eccentrically mounted thereon, and means for periodically changing the eccentricity thereof.

3. The combination of a pivoted support, a rotary fan eccentrically mounted thereon, and means for shifting the position of the fan from side to side of the axis of the pivoted support.

4. The combination of a pivoted support, a rotary fan eccentrically mounted thereon with its axis in a plane at right angles to the axis of the pivoted support, and means for shifting the position of the axis of the fan from side to side of the axis of the pivoted support.

5. The combination of a pivoted support, a rock-shaft carried thereby, a rotary fan mounted upon said rock-shaft, and means to automatically rock said fan from side to side of the axis of the pivoted support.

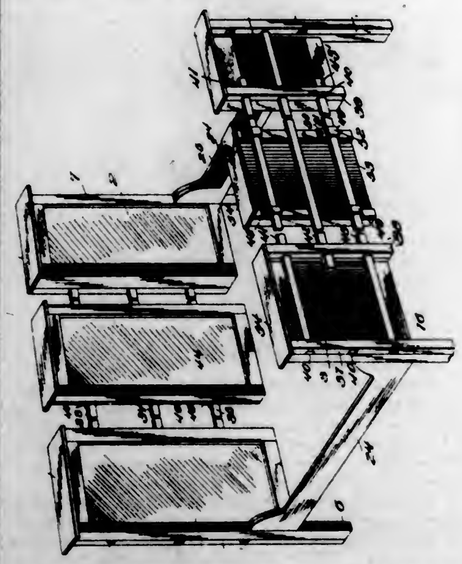
6. The combination of a pivoted support, a rotary fan mounted thereon to oscillate about an axis parallel to its axis of rotation, and means to automatically rock said fan from side to side of the axis of the pivoted support.

7. The combination of a pivoted support, a rock-shaft journaled therein at right angles to the axis of the support, a rotary fan mounted on said rock-shaft with its axis parallel thereto, and means for periodically rocking said fan from side to side of the axis of the pivoted support.

8. The combination of a pivoted support, a rock-shaft journaled therein, a rotary fan counterbalanced thereon, oppositely-disposed stops for limiting the movement of said fan from the vertical, and means for rocking said fan from one stop to the other.

9. The combination of a pivoted support, a counterbalanced motor-fan swingingly mounted thereon about a transverse axis, an arm secured to said motor-fan, and stationary abutments located in the path of travel of said arm and adapted to act thereon to rock the motor-fan from side to side of the pivoted support.

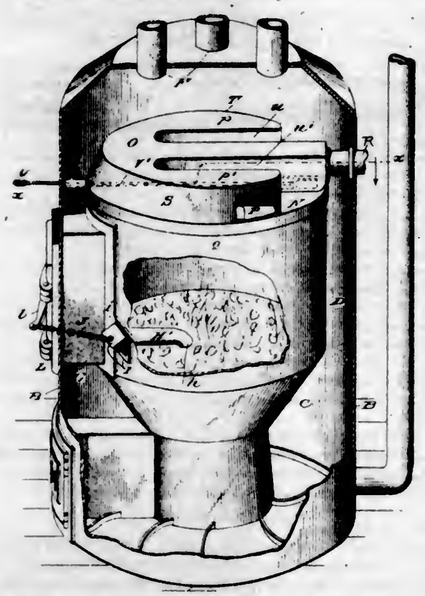
819,631. EXTENSION-BED. ROBERT BOLLINGER, Freeland, Md. Filed May 3, 1905. Serial No. 258,644.



Claim.—1. A bedstead comprising head and foot boards including end and intermediate sections, rails connecting the end sections of the head and footboards, opposing horizontal strips carried by the end sections of the head and foot boards, hooked attaching members carried by the intermediate sections of the head and foot boards for engagement with the said horizontal strips, and means carried by said strip for limiting the separation of the said end sections.

2. A bedstead comprising head and foot boards including end and intermediate sections, rails connected to the end sections of the head and foot boards, opposing horizontal strips carried by the end sections of the head and foot boards, hooked attaching-plates carried by the intermediate sections of the head and foot boards for engagement with said horizontal strips, side posts associated with said end sections, said side posts having openings therein for the passage of said strips, and shoulders formed on said strips to engage the said side posts to limit the separation of the said end sections.

819,632. FURNACE. DAVID W. BOYER, Waterloo, Iowa. Filed Dec. 30, 1904. Serial No. 239,016.



Claim.—1. A furnace of the character described, comprising an outer casing, a furnace-door carried by said casing, a fire-pot within the casing and forming a hot-air space between the fire-pot and the casing, the said fire-pot having an opening communicating with the hot-air space above the fuel, and means whereby said opening is closed when the furnace-door is open.

2. A furnace of the character described, comprising an outer casing, a furnace-door carried by the casing, a fire-pot within the casing and forming a hot-air space between the fire-pot and the casing, said fire-pot having an opening communicating with the hot-air space, a swinging damper closing said opening, and means carried by the furnace-door for holding the damper open when the door is closed.

3. A furnace of the character described, comprising an outer casing, a furnace-door carried by the casing, a fire-pot within the casing and forming a hot-air space between the fire-pot and the casing, said fire-pot having an opening communicating with the space between the casing and the fire-pot, a swinging damper closing the opening and a chain connection between said damper and the furnace-door for normally holding the damper open when the door is closed.

4. A furnace of the character described, comprising an outer casing, a furnace-door carried by the casing, a fire-pot within the casing and forming a hot-air space between the casing and the fire-pot, said fire-pot having an opening communicating with the said hot-air space, a swinging damper closing said opening, an arm carried by the furnace-door, and a flexible connection between the said arm and damper, whereby the damper is open when the door is closed.

5. A furnace comprising a fire-pot, a casing surrounding said fire-pot and forming a hot-air space between the fire-pot and the casing, an inwardly-extending pipe carried by the fire-pot and in communication with the hot-air space, a swinging damper closing said pipe, a furnace-door carried by the casing, an arm carried by the furnace-door, means for adjusting said arm, and a chain connection between said arm and damper.

6. A furnace of the character described, comprising an outer casing, a furnace-door carried by the casing, a fire-pot within the casing and forming an air-space between the casing and the fire-pot, an inwardly-extending pipe carried by the fire-pot and in communication with the space around the same, a swinging damper carried by the fire-pot within the air-space and normally closing said pipe, an arm carried by the furnace-door, a chain connection between said arm and damper, and means for adjusting said arm, whereby the movement of the damper is regulated.

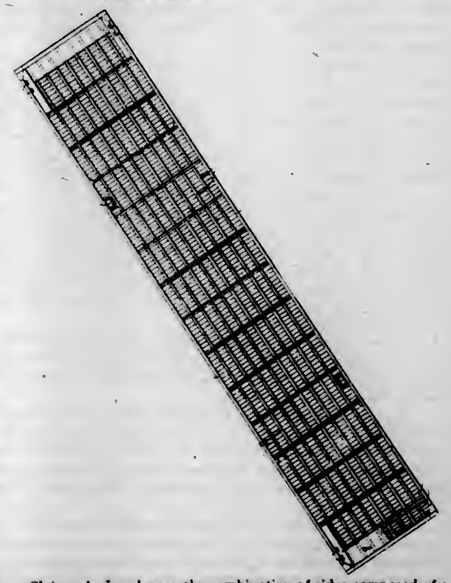
7. A furnace of the character described, comprising an outer casing, a furnace-door carried thereby, a fire-pot within the casing and forming a hot-air space between the fire-pot and the casing, an inwardly-extending pipe carried by the fire-pot above the fuel and having a downwardly-turned end at the center of the fire-pot, and its opposite end in communication with the hot-air space, a swinging damper normally closing the outer end of said pipe, an arm carried by the furnace-door, a chain connection between said arm and damper, and means for adjusting the said arm, whereby the movement of the damper is regulated.

8. A furnace of the character described, comprising an outer casing, a furnace-door carried by the casing, a fire-pot within the casing and forming a hot-air space between the casing and fire-pot, said fire-pot having an opening communicating with the hot-air space, a swinging damper closing said opening, and a flexible connection between said damper and the furnace-door for normally holding the damper open when the door is closed.

9. A furnace of the character described, comprising an outer casing, a furnace-door carried by the casing, a fire-pot within the casing and forming a hot-air space between the casing and the fire-pot, an inwardly-extending pipe carried by the fire-pot above the fuel and having a downwardly-turned end at the center of the fire-pot and in communication with the hot-air space, and means connected to the furnace-door for closing the said pipe when the door is opened.

10. A furnace of the character described, comprising an outer casing, a furnace-door carried by the casing, a fire-pot within the casing and forming a hot-air space between the casing and the fire-pot, an inwardly-extending pipe carried by the fire-pot above the fuel and having a downwardly-turned end in communication with the fire-pot, a swinging damper normally closing the outer end of said pipe, an arm pivotally connected to the furnace-door, means for holding said arm in its adjusted position, and a connection between said arm and damper, whereby the damper is closed when the door is opened.

819,633. BARGE. ARTHUR M. BOWMAN, Avalon, Pa. Filed Feb. 2, 1905. Serial No. 243,804.



Claim.—1. In a barge, the combination of sides composed of a skeleton girder-framework having upper and lower longitudinal flanged elements, intervening stud members having inner and outer parallel flanges, with side plates secured thereon, cross-connecting bracing elements, and a floor composed of wood, substantially as set forth.

2. In a barge, the combination of sides composed of a skeleton girder-framework having upper and lower longitudinal flanged elements, intervening stud members having inner and outer parallel flanges, with side plates secured thereon, cross-connecting bracing elements, and a floor composed of wood, sloping upwardly at each end and providing prow extremities, substantially as set forth.

3. In a barge, the combination of sides composed of a skeleton girder-framework having upper and lower longitudinal flanged elements, intervening stud members having inner and outer parallel flanges, with side plates secured thereon, cross-connecting bracing elements, and a floor composed of wood, sloping upwardly at each end and providing prow extremities, with supplemental prow-plates forming continuations of the bottom and curving upwardly at each end, substantially as set forth.

4. In a barge, the combination of sides composed of a skeleton girder-framework having upper and lower longitudinal flanged elements, intervening stud members having inner and outer parallel flanges, with side plates secured thereon, cross-connecting bracing elements, supplemental reinforcing head-logs made of flanged members, and a floor composed of wood, substantially as set forth.

5. In a barge, the combination of sides composed of a skeleton girder-framework having upper and lower longitudinal flanged elements, reinforcing head-logs at each end formed of flanged elements, superimposed gunwale elements tapering upwardly toward each end, vertical stud members extending from the top to the bottom elements of the side girders and provided with outer and inner attaching-flanges, side plates secured thereon, cross-connecting bracing elements, and a floor composed of wood, substantially as set forth.

6. In a barge, the combination of sides composed of a skeleton girder-framework having upper and lower longitudinal flanged elements, reinforcing head-logs at each end formed of flanged elements, superimposed gunwale elements tapering upwardly toward each end, vertical stud members extending from the top to the bottom elements of the side girders and provided with outer and inner attaching-flanges, side plates secured thereon, cross-connecting bracing elements, and a floor composed of wood, with supplemental prow-plates curving upwardly at each end, substantially as set forth.

7. In barge construction, the combination of a gunwale element consisting of a structural bar having oppositely-located vertical flanges and an intervening web portion, a lower flanged structural element, intervening connecting stud elements having outer flanges parallel with the flanges of said elements, and side plates secured thereon, substantially as set forth.

8. In barge construction, the combination of a gunwale element consisting of a structural bar having oppositely-located vertical flanges and an intervening web portion, a lower flanged structural element, intervening connecting stud elements having outer flanges parallel with the flanges of said elements, and side plates secured thereon, with a bottom composed of wood secured to the inwardly-extending flanges of said lower element, substantially as set forth.

9. In barge construction, the combination of a gunwale element consisting of a structural bar having oppositely-located vertical flanges and an intervening web portion, a lower flanged structural element, intervening connecting stud elements having outer flanges parallel with the flanges of said elements, and side plates secured thereon, and a bottom composed of wood secured to the inwardly-extending flanges of said lower element, with intervening packing-stripe, substantially as set forth.

10. In barge construction, the combination with side plates, of gunwale members consisting of structural bars having outer and inner vertical flanges, an intervening web, and a plank walkway laid thereon, substantially as set forth.

11. In barge construction, the combination with side plates, of gunwale members consisting of structural bars having outer and inner vertical flanges, an intervening web, and a plank walkway laid thereon, said outer flanges being secured to the plate, and cross-bracing elements secured to the inner flanges, substantially as set forth.

12. In barge construction, the combination with side plates and vertical Z-bar stud members, of Z-bar gunwale members secured to the plates, vertical Z-bar stud elements secured to the plate, lower longitudinal bottom members secured to said stud elements, cross-bracing elements secured to said stud members, lower longitudinal stringers, and a floor composed of wood secured to the inwardly-extending flanges of said lower longitudinal members, substantially as set forth.

13. In a barge, the combination with side members formed of structural shapes, of cross-connecting Z-bar members having lower and upper flanges, a floor composed of wood abutting against said cross members, a sheet-metal prow secured to the lower flanges of said cross members, and a supplemental cross-bracing element secured to the sides and to the upper flanges of said cross members, substantially as set forth.

819,634. **FIXED AMMUNITION.** OLIVER H. J. BRUBAKER, Allegheny, Pa. Filed July 27, 1905. Serial No. 271,581.



Claim.—1. The combination with a shell for fixed ammunition, of a powder-container therein and communicating therewith at its rear end only.

2. The combination with a shell for fixed ammunition, of a powder-container therein sustained by the shell-base, the container communicating with the shell only at its rear end.

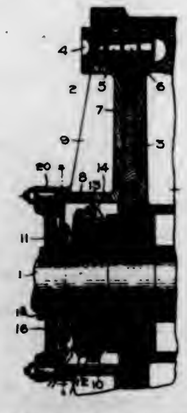
3. The combination with a shell for fixed ammunition, of a powder-container therein sustained wholly by the shell-base.

4. The combination of a casing, a powder-tube projecting into the casing from the base, a projectile, and an air-space separating the projectile and tube and surrounding the latter.

5. The combination of a casing, an explosive in the rear end thereof, a projectile, and an air-chamber separating the projectile from the explosive, said chamber being open to admit the exploding gases.

6. The combination of a casing, a powder-container therein, a projectile, an air-chamber at the rear of the projectile and open to the casing to admit the exploding gases, the casing having an air-space between said air-chamber and the powder-container.

819,635. **PACKING FOR ELASTIC-FLUID TURBINES.** JOHN G. CALLAN, Lynn, Mass., assignor to General Electric Company, a Corporation of New York. Filed Aug. 11, 1904. Serial No. 220,339.



Claim.—1. An elastic-fluid turbine, comprising a casing and a rotating element therein, in combination with a packing which is maintained in engagement with the rotating element by the pressure of fluid in the casing.

2. An elastic-fluid turbine, comprising a casing, a shaft, and a wheel mounted on the shaft within the casing, in combination with a packing maintained in constant engagement with the wheel by the pressure in the casing.

3. An elastic-fluid turbine, comprising a casing, a rotating bucket-wheel mounted therein, a shaft for the wheel, a packing, and a means subjected to the pressure of fluid in the casing which maintains the packing in constant engagement with the rotating parts.

4. An elastic-fluid turbine, comprising a casing, a rotating bucket-wheel, and a shaft therefor, in combination with a packing, and means which urges the packing against the wheel and which also contributes to prevent leakage.

5. An elastic-fluid turbine, comprising a casing, a rotating bucket-wheel, and a shaft therefor, in combination with a packing assembled around the shaft which engages the wheel, and a flexible means which is acted upon by the fluid-pressure in the casing to maintain the packing in contact with the wheel and which contributes to prevent leakage.

6. An elastic-fluid turbine, comprising a casing, a rotating bucket-wheel, and a shaft therefor, in combination with an axially-movable packing which is adapted to engage the wheel, and axially-extensible means adapted to maintain the packing in contact with the wheel and to automatically compensate for wear.

7. An elastic-fluid turbine, comprising a casing, a rotating element, and a shaft therefor, in combination with an axially-moving packing which is assembled around the shaft and is adapted to engage with the said element, and an axially-extensible means which is assembled around the shaft and is acted upon by fluid-pressure in the casing to maintain the packing in engagement with the element.

8. An elastic-fluid turbine, comprising a casing having a packing-chamber, a rotating bucket-wheel, and a shaft therefor, in combination with an annular packing which is adapted to bear upon a part moving with the wheel, and an annular carrier arranged in the chamber which is actuated by the fluid-pressure and which urges the packing against said part.

9. An elastic-fluid turbine, comprising a casing having a packing-chamber, a rotating bucket-wheel, and a shaft therefor, in combination with an annular packing which impinges upon a part moving with the shaft, a holder for the packing, and a laterally-extensible carrier or diaphragm attached to the holder and to the wall of the packing-chamber.

10. An elastic-fluid turbine, comprising a casing provided with a chamber, a rotating bucket-wheel, and a shaft therefor, in combination with an annular packing, a holder therefor, a removable abutment, and an annular diaphragm arranged between the holder and the abutment which exerts a lateral stress under the fluid-pressure in the casing to maintain the packing in engagement with its seat.

11. An elastic-fluid turbine, comprising a casing, a rotating bucket-wheel, and a shaft therefor, in combination with an annular packing which engages a part moving with the wheel, a holder for the packing, a corrugated annular diaphragm attached to a fixed part of the casing and to the holder which expands laterally under the fluid-pressure in the casing.

12. An elastic-fluid turbine, comprising a casing, a rotating bucket-wheel, and a shaft therefor, in combination with a segmental packing which engages a seat, a segmental holder for a packing, means for securing the segments of the holder together, a removable support or abutment, and an annular corrugated diaphragm secured to the support or abutment and holder which is removable with the former.

13. In combination, a movable element, a casing therefor, a packing for said element, means subjected to fluid-pressure in the casing for maintaining the packing in engagement with the movable element, a removable abutment fixed to the casing which carries said means, and a packing between the abutment and casing.

14. In combination, a casing, a rotating element therein, a packing for said element, a resilient carrier or diaphragm which is acted upon by fluid-pressure to maintain the packing in engagement with the rotating element, a removable abutment secured to the casing to which the carrier or diaphragm is attached, and gaskets between the abutment and casing.

15. The combination of a packing, with elastic means which supports the packing and is itself subjected to fluid-pressure for maintaining the packing in operative position.

16. The combination of a packing, with a stationary elastic means which movably carries the packing and is itself acted upon by the fluid-pressure to maintain the packing in operation.

17. An elastic-fluid turbine, comprising elements which are relatively movable, in combination with a packing which engages one of said elements, and a yielding support for the packing which is attached to the other element and is subjected to the working fluid-pressure for maintaining the packing in operation.

18. In combination, a casing containing fluid under pressure, a packing for preventing leakage of fluid, a seat for the packing, and an elastic means forming the sole support for the packing, which is arranged to hold the latter against its seat and also to coöperate with the packing to prevent leakage.

19. In combination, a casing containing fluid under pressure, a packing to prevent leakage of the fluid, a seat for the packing, and an elastic means coöperating with the packing to prevent leakage which is arranged to continually urge the packing toward its seat and forms a support that centers the packing and prevents it from turning.

819,636. **SUBMARINE DRAG-BUCKET.** EDWARD J. CONDLON, Ballard, Wash. Filed May 29, 1905. Serial No. 262,911.



Claim.—1. A drag-bucket having teeth projecting beyond its forward, edge, an adjustable clevis connected to the bucket at the rear portion thereof, and means for holding said clevis as adjusted.

2. A drag-bucket comprising a body portion approximately semicircular in cross-section, reinforcing-bars secured to the inner face thereof and having their forward ends projecting beyond the adjacent edge of the bucket, and means to which the draft-line is connected, said means being arranged at a point opposite the teeth.

3. A drag-bucket comprising a body portion, a cover for closing said body portion, and means for holding said cover in opened position.

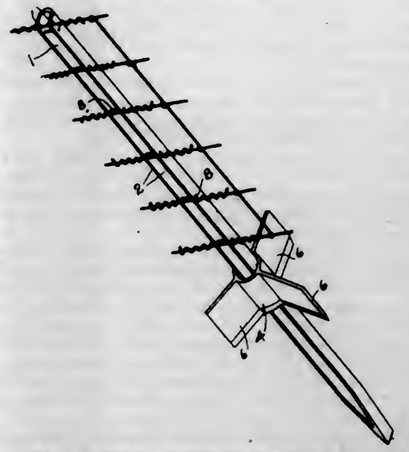
4. A drag-bucket comprising a body portion, a cover hinged thereto, said cover having its free edge formed with cut-out portions, and teeth projecting through the cut-out portions of said cover when the same is closed.

5. A drag-bucket comprising a body portion, a cover hinged at the rear edge thereof, a means for holding said cover elevated, and a cable connected to said means, for the purpose specified.

6. A drag-bucket comprising a body portion having teeth at its forward edge, and a cover hinged to the rear portion of said body portion.

7. A drag-bucket comprising a body portion approximately semicircular in cross-section, and reinforcing-bars secured to the inner face thereof and extending longitudinally thereof.

819,637. **METAL FENCE.** AUGUST P. DIESCHER, Pittsburg, Pa. Filed Jan. 24, 1905. Serial No. 242,477.



Claim.—1. In a wire fence, a post composed of a metal plate bent to channel form and the sides of the channel form at the lower portion converged downwardly to form a chisel-like end.

2. In a wire fence, a post composed of a metal plate bent to U shape with its sides forming lines of contact for the wires, the said edges being the raw edges of the plate, and the said sides at the lower portion converging downwardly to form a chisel-like end.

3. In a wire fence, a post composed of a metal plate bent to U shape with its sides forming lines of contact for the wires, the said edges being the raw edges of the plate, and the said sides at the lower converging portion downwardly to form a chisel-like end, in combination with a winged anchor, slidable and rotatable on said post.

819,638. ROTARY ENGINE. EDWARD C. DUNCAN, Jamaica Plain, Mass. Filed Aug. 16, 1905. Serial No. 274,498.



Claim.—1. A rotary engine including a piston provided with a plurality of gates arranged in pairs, the gates of each pair moving in reverse direction in operation, and manually-controlled means carried by the engine for operating said gates.

2. A rotary engine including a piston provided with a plurality of gates arranged in pairs, and means carried by the piston for supporting each pair of gates to cause reverse operation of the respective gates, and manually-controlled means carried by the engine for operating said gates.

3. A rotary engine including a piston provided with a plurality of gates arranged in pairs, and a platform pivotally supported within the piston and connected with the gate, and manually-controlled means carried by the engine for operating said gates.

4. A rotary engine including a piston provided with a plurality of gates arranged in pairs, and a platform pivotally supported within the piston and connected with the gates, said gates being arranged on opposite sides of the platform-pivot, and manually-controlled means carried by the engine for operating said gates.

5. A rotary engine including a piston provided with a plurality of recesses, platforms pivotally supported within the recesses, and gates supported by the platforms and movable radially through the piston, and manually-controlled means carried by the engine for operating said gates.

6. A rotary engine comprising a cylinder, a piston arranged therein, gates carried by the piston and arranged and operated in pairs, and manually-operable means supported by the cylinder to successively operate each gate of the pair.

7. A rotary engine comprising a cylinder, a piston arranged therein, gates carried by the piston and arranged in pairs, and manually-operable means carried by the cylinder to operate said gates, the movement of one gate in one direction causing a reverse movement of the other gate of the pair.

8. A rotary engine comprising a cylinder, a piston arranged therein, gates arranged in pairs, said gates being movably supported by the piston, and manually-operable wings supported by the cylinder and adapted to operate both gates of a pair in the revolution of the piston, said gates moving in reverse direction in operation.

9. A rotary engine comprising a cylinder, a concentric piston arranged therein, gates arranged in pairs and movably supported by the piston, wings pivotally supported by the cylinder, an abutment carried by the cylinder and contacting with the piston, said wings being arranged on opposite sides of the abutment and adapted to operate the gates in the revolution of the piston, and means for operating said wings.

10. A rotary engine comprising a cylinder, a concentric piston arranged therein, gates arranged in pairs and movably supported by the piston, wings pivotally supported by the cylinder, an abutment carried by the cylinder and contacting with the piston, said wings being arranged on opposite sides of the abutment and adapted to operate the gates in the revolution of the piston, and means for operating said wings in reverse directions.

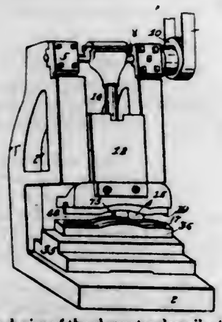
11. A rotary engine comprising a cylinder, a concentric piston arranged therein, an abutment projecting from the cylinder and contacting with the piston, said abutment being formed with a plurality of ports, gates carried by the piston, wings pivotally connected to the cylinder on opposite sides of the abutment, an inlet-valve arranged for communication with the ports in the abutment, and means for adjusting said valve and simultaneously operating the wings.

12. A rotary engine comprising a cylinder, a concentric piston arranged therein, an abutment projecting from the cylinder and contacting with the piston, said abutment being formed with a plurality of ports, gates carried by the piston, wings pivotally connected to the cylinder on opposite sides of the abutment, an inlet-valve arranged for communication with the ports in the abutment, and means for adjusting said valve and simultaneously operating the wings in reverse directions.

13. A rotary engine comprising a cylinder, a concentric piston arranged therein, an abutment projecting from the cylinder and contacting with the piston, said abutment being formed with a plurality of ports, gates carried by the piston, wings pivotally connected to the cylinder on opposite sides of the abutment, an inlet-valve arranged for communication with the ports in the abutment, a lever connected to the valve, and an arm connected to the lever and projecting in opposite directions therefrom, the terminals of said arm being respectively connected to the wings.

14. A rotary engine comprising a cylinder open at the ends, heads connected to each other and closing the ends of the cylinder, disks abutting against the ends of the cylinder and fitting within recesses formed in the heads, ball-containing cups seated in recesses in the heads beyond the disks, a shaft revolubly supported by the heads, and bearing-cones keyed on said shaft and bearing on the balls in the cups.

819,639. MACHINE FOR THE MANUFACTURE OF BANDS. DANIEL L. EUSTICE, Galena, Ill. Filed July 28, 1903. Serial No. 167,383.



Claim.—1. In a device of the character described, a frame, cutters arranged to cut out sequentially a longer blank than the completed band, and dies for forming a plurality of ears integral with the band from the extra material in the blank while and after the band is being cut out.

2. In a device of the character described, a frame, means for cutting out the blank while the ears are being partially formed, and a die for forming each ear and the opening near the end of the band and completing the ears after the band has been cut out at one operation of the machine.

3. In a device of the character described, a frame, means for cutting out a longer blank than the completed band at the same time the ears are being partially formed, and means for forming each ear integral with the band, finishing the ears after the blank has been severed and cutting the opening for the clasp at the same operation of the machine.

4. In a device of the character described, a frame, a cutter adapted to sever a longer strip from the sheet than the completed band before the ears are completed, and a die for forming each ear integral with the band and completing the ears after the band has been severed, and a die for cutting the opening near the end of the band at one operation of the machine.

5. In a device of the character described, a frame, means for cutting out a longer blank than the completed band and wider at the base of the ears at the same time the ears are being partially formed, a die for forming each ear integral with the band and taking up the extra material into the ear and completing the ears after the band has been severed, and means for operating the dies.

6. In a device of the character described, a frame, a die having curved cutting edges adapted to sever a longer blank than the completed band furnishing the extra material for the ears, a die for forming each ear integral with the band and partially completing the ears at the same time the band is being cut out and finishing the ears after the band has been severed from the sheet, and a die for cutting an opening near one end of the band.

7. In a device of the character described, a frame, cutters adapted to sever the blank from the sheet and arranged to first cut a part of division B of the band, then part of division D, then around the base of the ears, then the entire blank before the ears are finished, a die for forming each ear, a die for cutting an opening for the clasp near the end of the band, and means for operating the cutters and dies.

8. In a device of the character described, a frame, means for cutting out the band from the sheet consisting of curved cutters adapted to cut out a strip longer than the completed band and in advance of the completion of the ears, and a die for finishing the ears from the severed blank and cutting the opening for the clasp near one end of the band.

9. In a device of the character described, a frame, a cutting device for cutting the body of the band provided with two curved cutters and a horizontal cutter adapted to sever a longer blank than the completed band, two dies between the cutters for forming the ears integral with the band, and a die for forming the opening for the clasp.

10. In a device of the character described, a frame, a cutter adapted to sever from the sheet a longer blank than the completed band, a die for finishing each ear integral with the band, and means for removing the completed band from the dies.

11. In a device of the character described, a frame, a cutter adapted to sever from the sheet a blank longer than the completed band, means for operating the cutter, a die for forming each ear on the band, and a stripper for removing the completed band from the dies.

12. In a device of the character described, a frame, a cutter adapted to sever from the sheet a longer blank than the completed band, a die for forming each ear integral with the band, a stripper for removing the completed band from the dies consisting of a series of plates adapted to be operated against the under side of the completed band, and means for operating the stripper.

13. In a device of the character described, a frame, a cutter adapted to sever from the sheet a longer blank than the completed band before the ears are completed thereon, means for operating the cutter, a die for forming each ear from the blank and finishing them after the blank has been cut off, a die for forming the opening for the clasp, and means for removing the completed band from the dies.

14. In a device of the character described, a frame, cutters adapted to attack the sheet sequentially until the entire blank is severed from the sheet, a die for forming each ear from the blank and finishing it after the blank is severed from the sheet, a cutter for cutting out the opening in the band, means for operating the cutters and dies, and a stripper for removing the completed band from the machine.

15. In a device of the character described, a frame, curved cutters adapted to cut out different portions of the blank from the sheet before the whole blank is severed from the sheet, a die for forming each ear integral with the band and completing the ears at the same operation of the machine after the blank has been severed from the sheet, means for operating the cutters and die, and a stripper for removing the completed band from the cutters and dies.

16. In a device of the character described, a frame, two curved cutters adapted to cut out different portions of the blank from the sheet before the entire blank is severed from the sheet, a straight cutter, a cutter for cutting the opening for the clasp of the band, a die for forming each ear, means for operating the cutters and dies, and a stripper for removing the band from the machine after it is finished.

17. In a device of the character described, a frame, cutters adapted to sever the blank from the sheet, a die for forming each ear integral with the band, a cutter for cutting the opening for the clasp of the band, a stripper, and means for operating the stripper consisting of a series of plates adapted to engage the band after completion, a shackle pivoted to the stripper, a slide, connection between the slide and shackle, and means for operating the slide.

18. In a device of the character described, a frame, cutters adapted to sever the blank from the sheet, a die for forming each ear integral with the band, a cutter for forming the opening for the clasp of the band, a stripper for removing the band from the cutters, means for removing the ears from the dies consisting of a spring-actuated plate adapted to engage the base of the ears around the die, and means for operating the cutters the dies and stripper.

19. In a device of the character described, a frame, cutters arranged to cut out sequentially a longer blank than the completed band, a die for forming each ear integral with the band from the extra material in the blank, and a die for cutting the opening for the clasp, and a die for cutting out the tongue of the clasp.

20. In a device of the character described, a frame, cutters arranged to attack the sheet from which the blank is cut at different parts sequentially and continue cutting until the entire blank is severed, and dies for forming the ears integral with the band while the cutting of the blank is in process and after it is finished.

21. In a device of the character described, a frame cutters arranged to cut out the blank sequentially, and a die for partially forming each of the ears while the blank is being cut out and completing the ears after the blank is entirely severed.

22. In a device of the character described, a frame, cutters arranged to cut out from a sheet a longer blank than the completed band, and a die for partially forming each ear while the band is being cut out from the sheet and finishing the ear after the band has been entirely severed.

23. In a device of the character described, a frame, cutters arranged to attack sequentially the sheet from which the blank is cut and to continue the cutting until the blank is entirely severed, and a die for partially forming each of the ears integral with the band while the blank is being severed and finishing the ears after the blank has been entirely severed.

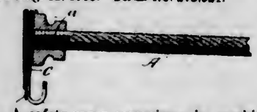
24. In a device of the character described, a frame, cutters adapted to sever sequentially a longer blank than the completed band, and a die for forming each of the ears and taking up the extra material into the ears while the blank is being cut.

25. In a device of the character described, a frame, cutters arranged to cut sequentially a longer blank than the completed band, and a die for forming each ear integral with the band out of the extra material in the blank and while the blank is being cut out and finishing the ears after the blank is severed from the sheet.

26. In a device of the character described, a frame, cutters arranged to cut out sequentially a longer blank than the completed band, a die for partially forming each ear integral with the band while the band is being cut out and finishing the ears after the band has been severed from the blank, and a die for cutting the opening for the clasp.

27. In a die of the character described, a frame, curved cutters adapted to cut out sequentially a longer blank than the completed band, a die for forming each ear from the extra material cut out in the blank, and a die for cutting the opening for the clasp near the end of the band, and a die for cutting out the tongue of the clasp.

819,640. SAFETY-RAZOR. JAMES J. PETERS, Columbiana, Ohio, assignor to The Herbrand Company, Fremont, Ohio, a Corporation of Ohio. Filed Aug. 12, 1905. Serial No. 273,921.



Claim.—1. A safety-razor comprising in combination a body portion formed of spring-sections folded one upon the other, a removable blade and guard-plate interposed between said spring-sections, and a screw-handle piercing one of said sections adapted to force said removable members into close contact with the other of said sections, substantially as described.

2. A safety-razor comprising in combination a body portion formed of front and back spring-sections folded one upon the other, a removable blade and guard-plate interposed between said spring-sections, and a screw-handle threaded through said back section and adapted to force said removable members into locking engagement with the front section aforesaid, substantially as described.

3. A safety-razor comprising in combination a body portion formed of spring-sections folded one upon the other, a removable blade and guard-plate interposed between said spring-sections, and a screw-handle having a rounded advance end threaded through one of said sections and adapted to force said removable members into locking engagement with the other of said body-sections, substantially as described.

4. A safety-razor comprising in combination a body portion formed of spring-sections folded one upon the other, a removable blade a removable blade-carrying guard interposed between said spring-sections, and a screw-handle threaded through one of said sections and bearing upon the blade-carrying guard to force the latter into locking engagement with the other of said body-sections, substantially as described.

819,641. DENTAL-PLATE MACHINE. WILLIAM S. FILLEY, Mentpelier, Ohio. Filed Nov. 23, 1904. Serial No. 234,014.



Claim.—1. A device of the kind described, a press having a bottom plate, an upright yoke carried by the plate, said yoke having its side members vertically slotted, plates pivotally secured in said slots adjacent their lower ends, the plates having outwardly-projecting lips at their upper ends, locking-pins passing through the side members of the yoke, and a receptacle adapted to rest on the bottom plate and having bifurcated lips engaged by the pivoted plates.

2. In a device of the kind described, a press comprising a plate, a yoke carried thereon and having vertically-slotted side members, adjustable plates pivoted in said slots, a screw working through the yoke, a receptacle adapted to rest on the plate and to be engaged by the adjustable plates, and a cover for the receptacle adapted to be guided into position by the said plates.

3. A device of the kind described comprising a heating-chamber, means of heating the chamber, a boiler suspended therein, a press adapted to rest in the boiler and having an upwardly-extending screw, a sectional cover carried by the chamber and adapted to cover the boiler and fit loosely around the screw, a receptacle adapted to rest in the press, adjustable plates carried by the press, and a casting having bifurcated lips adapted to be engaged by the said plates, said casting being adapted to be engaged by the screw and to be forced downward between the plates and close the receptacle, as and for the purpose set forth.

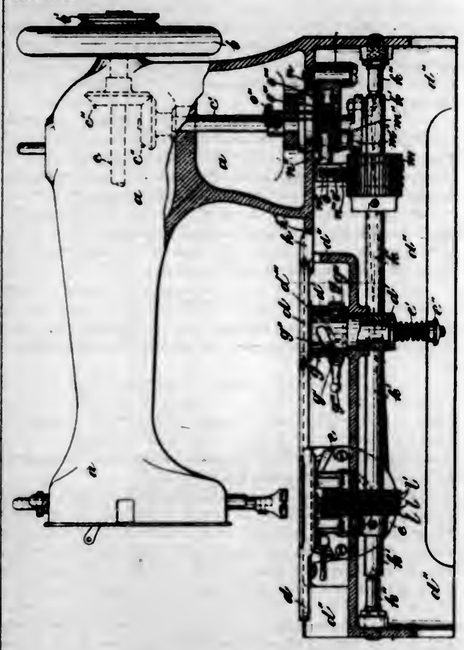
819,642. BLINDSTITCH SEWING-MACHINE. DENIS FLANAGAN, Clayton-le-Moors, England. Filed June 11, 1904. Serial No. 212,136.

Claim.—1. In a blindstitch sewing-machine a longitudinal shaft capable of intermittent rotary movement and a feed-disk mounted thereon consisting of a ratchet-wheel mounted on the shaft, a reciprocating pawl pivoted to the bed of the machine, a spring-controlled pin in the free end of the reciprocating pawl having teeth to engage with the ratchet-wheel, a lever coupled to the pawl, the opposite end of which engages with an eccentric, an eccentric mounted on one of the power-shafts of the sewing-machine and engaging with the lever coupled to the pawl-lever and a spring-controlled pawl-lever and a spring-controlled pawl carried in the bed of the sewing-machine adapted to engage with the ratchet-wheel and prevent backward movement substantially as described.

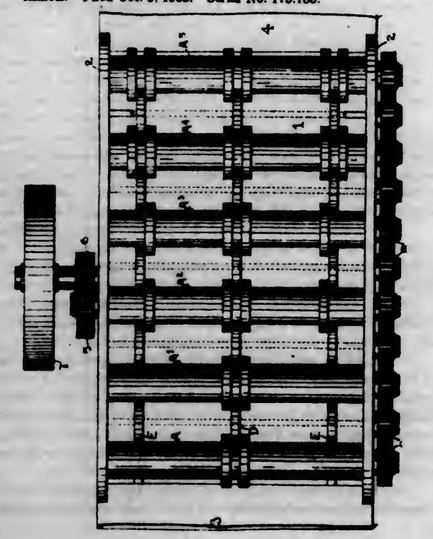
2. In a blindstitch sewing-machine a longitudinal shaft capable of intermittent rotary movement, a ratchet-wheel mounted on the feed-shaft, a tubular arm pivoted to the bed of the machine, a pawl-rod slidable in said tubular arm, means for fixing the rod in the arm in a desired position and a spring-controlled pin engaging with the ratchet-wheel on the feed-shaft substantially as described.

3. In a blindstitch sewing-machine a longitudinal shaft capable of intermittent rotary movement, a ratchet-wheel mounted on the feed-shaft, a tubular arm pivoted to the bed of the machine, a pawl-rod slidable in said tubular arm, a milled-headed setting-screw passing through the bed of the sewing-machine from the top and through a slot in the tubular arm, into the slidable rod and a loose block in the screw-hole of the slidable rod adapted to be forced against the interior of the tubular arm substantially as and for the purposes described.

4. In a blindstitch sewing-machine a longitudinal shaft capable of intermittent rotary movement, a ratchet-wheel mounted on the feed-shaft, a tubular arm pivoted to the bed of the machine, a pawl-rod slidable in said tubular arm, a milled-headed setting-screw passing through the bed of the sewing-machine from the top and through a slot in the tubular arm into the slidable rod, a loose block in the screw-hole of the slidable rod, a lever coupled to the tubular arm the opposite end of which engages with an eccentric, an eccentric mounted on one of the power-shafts of the sewing-machine and engaging with a lever coupled to the tubular arm and a spring-controlled pawl carried in the bed of the sewing-machine adapted to engage with the ratchet-wheel and to prevent backward movement substantially as described.

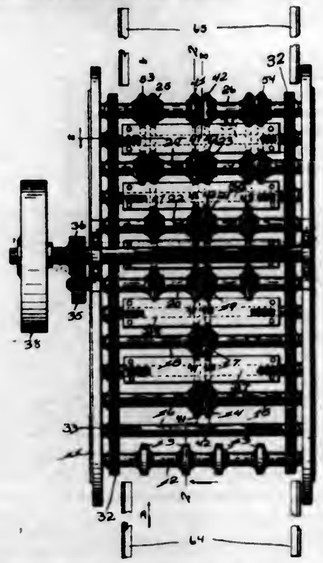


819,643. SHEET-METAL-WORKING MACHINE. LOUIS S. PLATAU, St. Louis, Mo., assignor, by direct and mesne assignments, to The Republic Railway Appliance Co., St. Louis, Mo., a Corporation of Illinois. Filed Oct. 5, 1903. Serial No. 175,755.



Claim.—In a sheet-metal-working machine; a bed-plate; bearing-blocks upon the bed-plate; a series of embossed bead-producing rollers in said bearing-blocks; the embossing on said rollers being arranged to produce beads successively; and a series of continuous guides extending upwardly from the bed-plate to engage between the beads so that the sheet of metal will travel in a straight line through the machine.

819,644. SHEET-METAL-WORKING MACHINE. LOUIS S. PLATAU, St. Louis, Mo., assignor, by mesne assignments, to The Republic Railway Appliance Co., St. Louis, Mo., a Corporation of Illinois. Filed Mar. 6, 1905. Serial No. 248,741.



Claim.—1. In a sheet-metal-working machine: a series of pairs of shafts mounted in alinement; bead-forming rollers at the centers of the first pair of shafts; intermediate bead-forming rollers upon the second pair of shafts; and a guide between the first and second pairs of shafts; said guide comprising an idler-shaft flattened on its upper face, a supporting-plate bolted to the idler-shaft, a guide-block bolted to the supporting-plate and having grooves in its face, and a cap-plate bolted to the guide-block, so that the sheet metal in passing from the first pair of rollers to the second pair of rollers must pass under the cap-plate in engagement with the guide-block; substantially as specified.

2. In a sheet-metal-working machine: a series of pairs of shafts mounted in alinement; idler-shafts rigidly mounted between the pairs of shafts; trains of gearing upon each end of each shaft, and upon each end of each idler-shaft, so as to connect the shafts all together; feed-rollers upon the first pair of shafts; central bead-forming rollers upon the second and third pairs of shafts to form the central beads progressively; central bead-forming rollers upon the fourth and fifth pairs of shafts; intermediate bead-forming rollers upon said fourth and fifth pairs of shafts to form intermediate beads progressively; outer bead-forming rollers upon the sixth and seventh pairs of shafts to form the outer beads progressively; and guides leading from one bead-forming roller to the next, each of said guides comprising a guide-block having grooves to match the beads previously formed, and a cap-plate to hold the sheet metal upon the guide-block; substantially as specified.

3. In a sheet-metal-working machine, a frame, a series of bead-forming rollers arranged in pairs in said frame, means whereby said rollers are simultaneously driven, guide-blocks extending from one pair of rollers to the other, there being grooves formed in said blocks to correspond with the ribs on the rollers, and plates removably positioned on top of the guide-blocks; substantially as specified.

4. In a sheet-metal-working machine, bead-forming rollers arranged in pairs to form beads in the sheet-metal plate progressively and successively from the longitudinal center of the plate, transverse bars arranged between each pair of bead-forming rollers, guide-blocks positioned on the transverse bars in which guide-blocks are formed grooves to correspond with the ribs on the adjacent rollers, and caps removably positioned upon the guide-blocks; substantially as specified.

5. In a sheet-metal-working machine, the combination with a series of bead-forming rollers arranged in pairs, of guide-block supports arranged between each pair of rollers, and covered guide-blocks detachably mounted on the supports, through which guide-blocks are formed grooves corresponding to the ribs on the adjacent rollers; substantially as specified.

6. In a sheet-metal-working machine, the combination with a series of bead-forming rollers arranged in pairs, of supports arranged between each pair of rollers, plates mounted upon said supports, guide-blocks rigidly fixed to said plates in which guide-blocks are formed grooves to correspond with the ribs on the adjacent rollers, and plates detachably secured to the tops of the guide-blocks; substantially as specified.

819,645. SNAP-SWITCH. HENRY GRIESHÖNER, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed May 10, 1902. Serial No. 106,751.



Claim.—1. In an electric switch, the combination of a stationary retainer, a rotary blade-support, a locking-pawl carried eccentrically by said support, and an actuating-spindle yieldingly connected to said support and provided with means for normally forcing said locking-pawl outward during its travel between stops and its engagement with said retainer.

2. In an electric switch, the combination of a stationary retainer, a rotary blade-support, a locking-pawl pivoted eccentrically upon said support, and an actuating-spindle yieldingly connected to said support and provided with a controlling-cam which operates normally to force said pawl outwardly during its travel between stops and its engagement with said retainer.

3. In an electric switch, the combination of a stationary retainer, a rotary blade-support, a locking-pawl pivoted eccentrically upon said support and having its shank extended beyond its pivot, and an actuating-spindle yieldingly connected to said support and provided with a cam adapted to bear against said pawl upon either side of its pivot and which operates normally to force said pawl outwardly during its travel from stop to stop and its engagement with said retainer.

4. In an electric switch, the combination of a stationary retainer having inclined shoulders, a rotary blade-support, a locking-pawl carried by said support and having an inclined shoulder formed at an oblique angle to the radius of the pawl at that point, and an actuating-spindle having spring connection with said support and provided with means for normally restraining the sliding tendency of the said pawl with reference to the inclined shoulders of the stationary retainer.

5. The combination of the base 2, the blade-support 7 mounted to rotate upon the upper side of said base, the stationary retainer 10 mounted upon the under side of said base, the actuating-spindle 12 extending axially through said support and connected thereto by the spring 16, a locking-pawl 20 adapted to engage said retainer, and a cam carried by said spindle and normally operating to force said pawl radially outward.

819,646. PROCESS FOR THE MANUFACTURE OF CANDLE MATERIALS. JOSEPH GLATZ, Brooklyn, N. Y. Filed June 1, 1904. Serial No. 210,725.

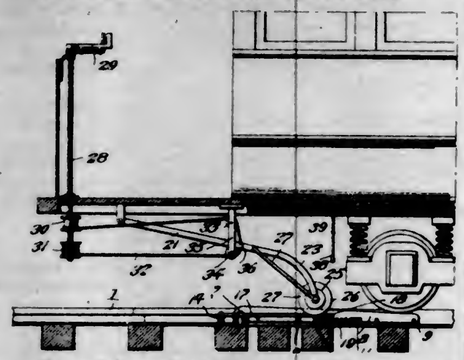
Claim.—1. The process of producing a composition of matter by the treatment of fats or fatty acids with ammonia under a pressure of from ten to fifty atmospheres for a period of two to twenty hours.

2. The process of producing a composition of matter by the treatment of fats or fatty acids with ammonia under a pressure of from ten to fifty atmospheres for a period of two to twenty hours and at a temperature varying between 150° centigrade and 250° centigrade.

3. The process of producing a composition of matter by the

treatment of fats or fatty acids with ammonia under pressure of from ten to fifty atmospheres.

819,647. SWITCH-OPERATING DEVICE. ALFRED H. GORE, Shelbyville, Ind. Filed Jan. 23, 1906. Serial No. 297,495.



Claim.—1. In switch-operating mechanism, the combination of a laterally-movable switch-rail, a switch-shifting lever located between the track-rails and operatively connected with the switch-rail, a rotary trip carried by the car and movable on its longitudinal axis, and supporting-rails on which said rotary trip bears arranged at opposite sides of the shifting-lever.

2. In switch-operating mechanism, the combination with a laterally-movable switch-rail, a switch-shifting lever located between the track-rails and operatively connected with the switch-rail, a trip-supporting rail extending alongside the switch-shifting lever, and a rotary trip carried by the car and comprising a flat tread adapted to bear on the trip-supporting rail, and a flange adapted to engage the shifting-lever while the tread bears on the supporting-rail.

3. In switch-operating mechanism, the combination of a pivoted switch-rail, a switch-shifting lever located between the track-rails and operatively connected with the switch-rails, trip-supporting rails arranged in parallel relation on opposite sides of the shifting-lever, and a rotary trip carried by the car and comprising oppositely-located flat treads and an intermediate flange adapted to engage the shifting-lever while the treads engage the supporting-rails.

4. In switch-operating mechanism, the combination of a laterally-movable switch-rail, a switch-shifting lever mounted between the track-rails and operatively connected with the switch-rail, an oscillatory trip-frame carried by the car, a rotary trip journaled on said frame and movable into and out of the plane of the shifting-lever, a guide-frame within which the trip-frame moves, guide-pulleys mounted on said guide-frame, an operating-staff on the car, and a flexible connection attached to said staff and trip-frame and passing over said guide-pulleys.

5. In switch-operating mechanism, the combination of a laterally-movable switch-rail, a switch-shifting lever mounted between the track-rails and operatively connected with the switch-rail, a rotary trip carried by the car, means for moving said trip into and out of position to engage the shifting-lever, means permitting said rotary trip to move lengthwise of its axis of rotation, and a centering device for automatically positioning said trip at a point between the limits of its axial movement.

6. In switch-operating mechanism, the combination of a laterally-movable switch-rail, a switch-shifting lever mounted between the track-rails and operatively connected with the switch-rail, a rotary trip carried by the car, means for moving said trip into and out of position to engage the shifting-lever, means permitting said rotary trip to move lengthwise of its axis of rotation, and a centering-fork secured to the car-body and having downwardly-diverging arms with which the trip engages, said arms acting to center the trip, substantially as described.

819,648. PACKAGE-TIE. JOSEPH A. GRAY, Norwalk, Conn. Filed Jan. 31, 1906. Serial No. 299,912.

Claim.—1. A package-tie consisting of a metal wire having attached at one end a metal fastening-piece composed of sheet metal bent upon itself in such shape as to form an offset at the other end thereof, said offset having an orifice distant from the ledge through which the other end of the wire is threaded, said offset forming a ledge which extends across the surface of said fastening-piece, substantially as described.



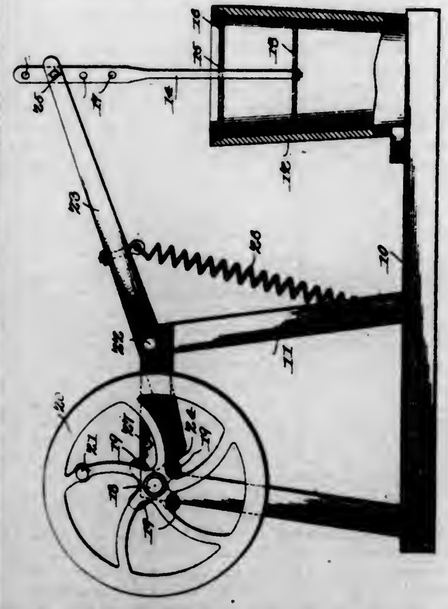
2. A package-tie consisting of a metal wire having attached to one end a metal fastening-piece composed of sheet metal bent upon itself in such shape as to form an offset forming a ledge which extends across the surface of said fastening-piece, said offset having an orifice distant from the said ledge through which the other end of the wire is threaded, said wire being provided with a knob sufficient to prevent the wire being pulled through said orifice, substantially as described.

3. A clamping-piece for metallic ties comprising a piece of metal having a thickened portion composed of sheet metal bent upon itself in such shape as to form an offset at one end forming a ledge across the surface of the plate, said offset having an orifice distant from the ledge, substantially as described.

4. A clamping-piece for metallic ties composed of sheet metal bent upon itself in such shape as to form a double thickness at one end and a substantially rectangular raised portion at the other end, with orifices through each of said ends, substantially as described.

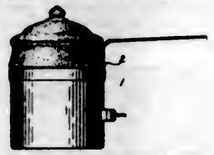
5. A package-tie consisting of a wire having attached to one end thereof a fastening-piece, said fastening-piece having an offset at the opposite end, the offset forming a ledge which extends across the surface of said fastening-piece, and said fastening-piece having an opening passing substantially at right angles therethrough and at a distance from the ledge through which the end of the wire is threaded.

819,649. CHURN-OPERATOR. JAMES T. HAM, Mineral Wells, Tex. Filed Apr. 13, 1905. Serial No. 255,424.



Claim.—The combination with a churn-body having a dasher therein; of a supporting-frame, a drive-shaft rotatably mounted on the frame, straight arms radiating from the shaft and having rounded ends, a lever fulcrumed between its ends upon the supporting-frame and between the drive-shaft and the dasher, said lever being adjustably connected at one end to the dasher, the other end of the lever projecting into the path of the arms but not past the drive-shaft and having the lower surface of said end rounded, said arms adapted to successively contact with the lever to raise the dasher, and a spring secured at one end to the supporting-frame and adjustably connected at its other end to the lever at a point between the fulcrum thereof and its connection with the dasher, said spring adapted to propel the dasher against the contents of the churn-body, and a stop upon the supporting-frame for limiting the movement of the lever when propelled by the spring.

819,650. ELECTRIC HEATER. JOHANNES HIRDEN, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Mar. 27, 1905. Serial No. 253,173.



Claim.—1. An electric heater, comprising a receptacle, and a resistance for heating the same, one portion of which has a positive and the other a negative resistance temperature coefficient, both portions being in heat-conductive relation with said receptacle.

2. An electric heater, comprising a receptacle, an electric conductor (the resistance of which varies directly as the temperature) wound around the same, and another conductor in circuit therewith and in heat-conductive relation with said receptacle, the resistance of which varies inversely as the temperature.

3. An electric heater, comprising a receptacle, a resistance-conductor wound thereon, and a granular resistance in heat-conductive relation with said receptacle and in circuit with said resistance-conductor.

4. In an electric heater, the combination of an enameled receptacle, a resistance-conductor thereon, and a powdered resistance of negative temperature coefficient in heat-conductive relation with said receptacle and in circuit with said resistance-conductor.

5. In an electric heater, the combination of a receptacle, a plurality of resistances in heat-conductive relation therewith, each comprising a conductor, one portion of which has a positive and the other a negative resistance temperature coefficient, and means whereby the relative arrangement of said conductors may be varied.

6. In an electric heater, the combination of a receptacle, a plurality of resistances in heat-conductive relation therewith, each of which comprises a resistance-wire having a positive temperature coefficient and a granular resistance having a negative coefficient, and means whereby either a series or parallel arrangement of said conductors may be effected.

7. In an electric heater, the combination of an enameled metallic receptacle of good magnetic permeability, a plurality of resistance-conductors having a positive temperature coefficient wound upon said enamel, granular resistances having a negative temperature coefficient in circuit with said conductors and in heat-conductive relation with said receptacle, and means whereby either a series or parallel arrangement of said conductors may be effected.

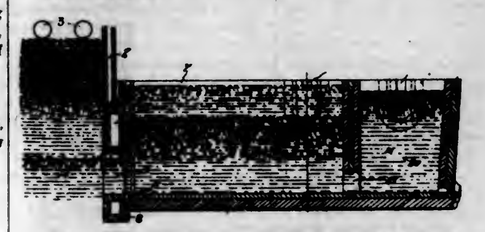
8. In an electric heater, the combination of an insulated iron receptacle, a resistance-conductor wound thereon, a coating of plastic material surrounding said winding, a casing surrounding the same but separated therefrom, and a granular resistance in circuit with said conductor and adjacent the bottom of said receptacle.

9. In an electric heater, the combination of an insulated metallic receptacle, resistance-conductors wound thereon, layers of powdered resistance containing iron-filings in heat-conductive relation with the bottom of said receptacle and in circuit with said conductors, and means for varying the direction of a current through said resistances.

10. In an electric heater, the combination of an enameled metallic receptacle, a resistance-conductor wound thereon, and a layer of powdered resistance containing iron-filings and silicon in circuit with said conductor and in heat-conductive relation with the bottom of said receptacle.

11. An electric heater comprising a receptacle of good magnetic permeability, a conductor arranged in inductive relation thereto, an ohmic heating-resistance in series with said conductor and in heat-conductive relation with said receptacle whereby the latter may be heated by both a transformer and ohmic effect.

819,651. DISTRIBUTING-BOX FOR MOLTEN MATERIAL. HENRY HARRIS, Nelson, Canada, assignor of one-third to Hall Mining and Smelting Company, Limited, Nelson, Canada. Filed Dec. 30, 1904. Serial No. 238,999.



Claim.—1. A means for maintaining the separation of two fluid materials of different specific gravities and for separately distributing the same, comprising in combination with a furnace having an outlet-aperture through which materials from the furnace are adapted to pass simultaneously in their separated condition, a trough-shaped receptacle having an open end and adapted to be secured to the furnace over the discharge-aperture thereof with its bottom on the level of the under side of the outlet from the furnace in which the materials have separated, and in free communication with each, a partition across the trough having an aperture through it at the level of the bottom, and an overflow-outlet to each compartment so divided.

2. A means for maintaining the separation of two fluid materials and for distributing them in separate streams, comprising the combination with a furnace having an outlet in which the materials have separated themselves according to their specific gravities, of a trough-shaped receptacle secured over the outlet from the furnace, the bottom of said receptacle being on the level of the under side of said furnace-outlet, a partition across the trough having an aperture through it at the level of the bottom, said aperture being of smaller dimensions than the outlet from the furnace, and an overflow-outlet for each compartment of the trough so divided, said trough and said furnace-outlet being arranged that the separated materials will pass through the furnace-outlet into one compartment of the trough simultaneously while maintaining their separation.

3. A means for maintaining the separation of slag and matte existing in a smelting-furnace and for distributing the materials in a continuous stream through separate spouts, comprising the combination with a furnace having an outlet through which the separated matte and slag are adapted to simultaneously pass, of a trough-shaped receptacle having an open end and secured at such open end to the outer side of the furnace over the outlet-aperture thereof with the bottom of the receptacle on a level with the under side of the outlet from the furnace, the receptacle-walls being sufficiently high to maintain a sufficient head to obtain the desired height of matte and slag within the furnace, a partition arranged across the receptacle having an aperture therethrough at the level of the bottom of the receptacle, and an overflow-outlet in the upper edge of the wall of each compartment of the receptacle so divided.

4. As a means for maintaining the separation of slag and matte existing in a smelting-furnace and for distributing them in separate streams; the combination with the outlet water-jacket of the furnace of an elongated trough-shaped receptacle, the bottom of which is level with the lower side of the outlet of the furnace with which it is thereby placed in free communication, a partition across the trough dividing it into two compartments, said partition having an aperture through it at the level of the bottom of the trough, an overflow-outlet in the upper edge of the wall of each compartment of the trough and an emergency-outlet to each compartment in the level of the bottom, said furnace-outlet being arranged to pass the matte and slag from the furnace into the trough at its bottom and at the end opposite the partition-aperture, simultaneously in their separated condition.

5. In a device of the class described; the combination with the outlet-jacket of a smelter-furnace, of an elongated trough-shaped receptacle removably secured thereto, of a second similarly-shaped receptacle laterally projecting from one side of said trough and having a partition adjacent to its junction, said partition having an aperture at the level of the bottom of the trough, an overflow-outlet to the first compartment in the upper edge of its wall, an emergency-outlet to the first compartment in the level of its bottom and in the

end approximately opposite to the outlet from the furnace, an overflow-outlet to the second compartment in the end opposite to the aperture in the partition, and an emergency-outlet in the level of the bottom of the second compartment.

6. In a device of the class described, the combination with a furnace having an outlet-aperture arranged to pass the matte and slag from the furnace in their separated condition, of an elongated trough-shaped receptacle having an opening at one end and adapted to be secured over the outlet of the furnace at said end with its bottom on a level with the bottom of the outlet to receive the separated matte and slag as it passes through the furnace-outlet, said receptacle having a partition dividing it into two compartments, an aperture in said partition of less dimensions than the outlet of the furnace, and an overflow-outlet in the upper edge of the wall of each compartment of the receptacle so divided, the walls of the receptacle projecting upwardly beyond the level of the top of the furnace-outlet, substantially as shown and for the purposes specified.

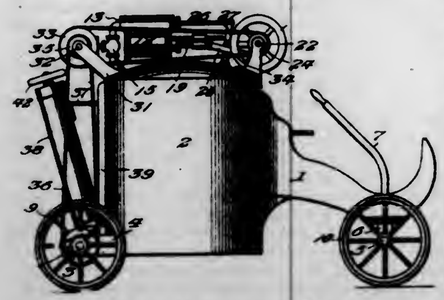
819,652. **PAVEMENT AND PROCESS OF LAYING THE SAME.** WALTER E. HASHAM, Worcester, Mass., assignor of one-half to Charles K. Pevey, Worcester, Mass. Filed June 7, 1905. Serial No. 264,188.

Claim.—1. A road or pavement consisting of a bottom layer of hard-rolled uncoated stone, a grouting of cement placed upon said stone and filling all the voids therein, and a suitable surface placed on said grout.

2. A road or pavement consisting of a bottom layer of hard-rolled uncoated stone, a grouting of cement placed upon said stone and filling all the voids therein, a second layer of grouting placed on the first layer and a top layer of smaller uncoated stone compressed into the surface of said second layer of grouting before it is set.

3. The process of constructing a road or pavement which consists in laying a layer of uncoated stone, compressing said stone until the voids are small, then grouting with a mixture of cement, sand and water until all the voids in the stone layer are filled, adding a thicker grout of cement, sand, and water, spreading fine stone upon said grout and compressing it into the surface of said grout before it is set.

819,653. **TOY MOTOR-VEHICLE.** GEORGE O. HAWER, Greenfield, Ind. Filed Nov. 11, 1905. Serial No. 286,945.



Claim.—In a device of the class described, a vehicle having a drive-shaft provided with ground-wheels, a compressed-air reservoir carried by the vehicle, a motor including a cylinder connected for communication with the reservoir, a piston arranged in the cylinder for operation by the compressed air, said piston being operatively connected with the drive-shaft, an air-compressor carried by the vehicle and connected with and for supplying air to the reservoir, and a spring-operated piston movably mounted in the reservoir for maintaining pressure on the air therein.

819,654. **FLEXIBLE SHEET RESISTANCE.** HARRY B. HEATH, Lynn, Mass., assignor to General Electric Company, a Corporation of New York. Filed Dec. 13, 1904. Serial No. 236,457.



Claim.—1. A resistance unit comprising a sheet of buttons having an electrical conductor running therethrough, and means whereby any one of said buttons may be detached from the unit without removing any of the others.

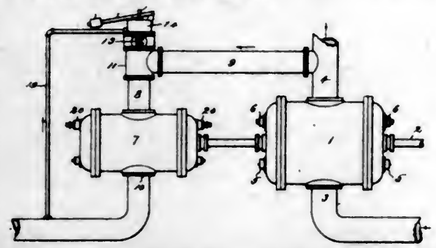
2. A resistance fabric comprising a plurality of rows of insulating apertured buttons having one face slotted to admit a conductor to the aperture, and an electrical conductor running through said aperture.

3. A resistance fabric comprising a plurality of rows of insulating apertured buttons having one face slotted to admit a conductor to the aperture, and an electrical conductor running through said aperture, said conductor engaging each button on opposite sides of its interior wall.

4. A resistance fabric comprising a plurality of rows of insulating apertured buttons having one face slotted to admit a conductor to the aperture, and a continuous electrical conductor running through said aperture, said conductor engaging each button on opposite sides of its interior wall.

5. A resistance fabric composed of a plurality of rows of insulating-buttons, and an electrical conductor in engagement with said buttons, and means whereby any one of said buttons may be removed from said engagement without removing any of the others.

819,655. **AIR-COMPRESSOR.** EBENEZER HILL, Norwalk, Conn. Filed Jan. 13, 1905. Serial No. 240,918.



Claim.—1. An apparatus for compressing air having a low-pressure compressor, a high-pressure compressor, a connection between the discharge of the low-pressure compressor and the intake of the high-pressure compressor, a valve in the connection between the compressors that is closed by an abnormally high pressure beyond the high-pressure compressor, and an inlet-valve connected with the high-pressure compressor that is held open, when the pressure between itself and the valve in the connection between the compressors drops below normal as a result of the closing of the connection-valve, so as to render the high-pressure piston ineffective for forcing air forward when the connection-valve is closed, substantially as specified.

2. An apparatus for compressing air having a low-pressure compressor, a high-pressure compressor, a connection between the discharge of the low-pressure compressor and the intake of the high-pressure compressor, a valve for closing the connection between the compressors, means for holding the valve open, a piston connected with and adapted to move the valve, a duct forming a communication between the discharge of the high-pressure compressor and the cylinder containing the valve-piston whereby excessive pressure in the discharge of the high-pressure compressor will cause the piston to move and close the valve in the connection, and an inlet-valve connected with the high-pressure compressor that is held open when the pressure between itself and the valve in the connection between the compressors drops below normal as a result of the closing of the connection-valve so as to render the high-pressure piston ineffective for forcing air forward when the connection-valve is closed, substantially as specified.

3. An apparatus for compressing air having a low-pressure cylinder, a piston in the low-pressure cylinder, a high-pressure cylinder, a piston in the high-pressure cylinder, said pistons being mechanically connected, a connection between the discharge of the low-pressure cylinder and the intake of the high-pressure cylinder, a valve in the connection between the cylinders that is closed by an abnormally high pressure beyond the high-pressure cylinder, and an inlet-valve connected with the high-pressure cylinder that is held open when the pressure between itself and the valve in the connection between the cylinders drops below normal as a result of the closing of the connection-valve so as to render the high-pressure piston ineffective for forcing air forward when the connection-valve is closed, substantially as specified.

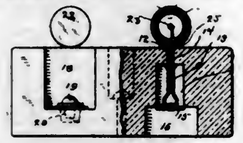
4. The combination of an air-compressing cylinder, a piston movable in the cylinder, a valve for closing the intake of the cylinder that is closed by an abnormally high pressure beyond the cylinder, and an inlet-valve connected with the cylinder that is held open when the pressure between itself and the valve in the intake drops below normal as a result of the closing of the intake-valve so as to render the piston ineffective for forcing air forward when the intake-valve is closed, substantially as specified.

819,656. **BALL-BEARING.** WILHELM HÖPFLINGER and ERNST SACHS, Schweinfurt, Germany. Filed Aug. 2, 1905. Serial No. 272,412.



Claim.—A ball-bearing comprising, in combination, concentric bearing-rings separated by an annular space or interstice and having confronting grooves or ball-races in their adjacent peripheries, an interposed series of closely-disposed balls arranged in and between said ball-races, and a ball-separator comprising two divider-rings of solid metal arranged in and closing the space or interstice between the bearing-rings at opposite sides of the balls and rigidly connected together with their inner faces in contact and having opposed spherical cavities formed in said contacting faces, which cavities provide closed chambers inclosing those parts of the balls not contained in the ball-races, the walls between adjacent cavities being relatively thin and increasing in thickness outwardly, and the outside faces of said divider-rings being closed or continuous and flush with the sides of the bearing-rings.

819,657. **CARTRIDGE-FUSE AND FUSE-BLOCK.** HARVEY HUBBELL, Bridgeport, Conn. Filed Oct. 29, 1904. Serial No. 230,433.



Claim.—1. The combination with a fuse-block provided with insulating-chambers and contracted insulating-passages leading into said chambers, plates secured to said block and terminals carried by said plates and extending into the insulating-chambers, of a cartridge-fuse block having contact-plates extending therefrom which are adapted to be passed through the contracted insulating-passages and into engagement with the terminals in the insulating-chambers.

2. A fuse-block provided with insulating-chambers, contracted insulating-passages leading into said chambers, plates secured to said block, and terminals carried by said plates and extending into the insulating-chambers and binding-screws for the attachment of electrical connections.

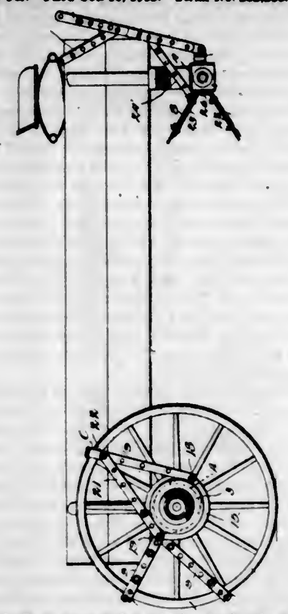
3. A fuse-block having insulating-chambers and contracted insulating-passages leading into said chambers, recesses in the under side communicating with the chambers, contiguous recesses in the ends, terminals in the insulating-chambers and plates in said recesses by which the terminals are carried.

4. A fuse-block having insulating-chambers and contracted insulating-passages leading into said chambers, recesses in the under side communicating with the chambers, contiguous recesses in the ends, terminals in the insulating-chambers, plates secured in the under side recesses to which the terminals are secured and binding-screws in the end recesses engaging the plates.

5. A fuse of the character described comprising a cartridge made of insulating material, a fuse within the cartridge and contact-plates extending from the cartridge and which are provided with coils closely fitting within the cartridge by which they are retained in place and to which the ends of the fuse are secured.

6. A fuse of the character described comprising a cartridge made of insulating material and having slots in its ends, a fuse within the cartridge, contact-plates which extend through the slots and project from the cartridge and are provided within the cartridge with coils which closely fit the interior thereof and to which the ends of the fuse are secured and caps which close the ends of the cartridge.

819,658. **SCRAPER FOR VEHICLES.** JAMES M. JOHNSON, Durant, Ind. Ter. Filed Oct. 10, 1905. Serial No. 282,906.



Claim.—1. In a scraper for vehicle-wheels, the combination with an axle and a wheel mounted thereon, of a plurality of scraping devices arranged in rear of the vertical line of the wheel in the direction of rotation thereof, a scraping device arranged in front of the vertical line of the wheel, braces connecting said front and rear scraping devices, means for supporting the scraping devices upon the inner side of the wheel from the axle, and common means for supporting the scrapers upon the outer side of the wheel from the hub thereof, said means being adapted to permit the hub to have free relative rotation.

2. In a scraper for vehicle-wheels, the combination with an axle and a wheel mounted thereon, of a plurality of scraping devices arranged in rear of the vertical line of the wheel in the direction of rotation thereof, inner and outer supporting-arms for said scrapers, braces between the arms of the scrapers, means for connecting the inner supporting-arms with the axle, and means for connecting the outer supporting-arms with the hub of the wheel, said means being adapted to permit the hub to have free relative rotation.

3. In a scraper for vehicle-wheels, the combination with an axle and wheel, of a grooved collar upon the hub of the wheel, bracket means carried by the axle, a scraper extending transversely of the wheel-rim, and inner and outer supporting members fixed to the bracket means and engaging the grooved collar to hold the scraper in operative position.

4. A scraper comprising a scraper member, arms for supporting said scraping member adapted to be arranged upon a wheel, and means for attaching said arms to an axle and the hub of a wheel, the latter being adapted to permit the hub to have free rotation.

5. In a scraper for vehicle-wheels, the combination with an axle, and a wheel mounted thereon, of a plurality of scraping devices arranged in rear of the vertical line of the wheel in the direction of rotation thereof, a scraping device arranged in front of the vertical line of the wheel, inner and outer supporting-arms for said scrapers, stays suitably connecting the arms of the scrapers, means for attaching the inner supporting-arms to the axle, and means for connecting the outer supporting-arms with the hub of the wheel, said means being adapted to permit the hub to have free relative rotation.

6. A scraper comprising a scraper member, inner and outer supporting-arms therefor, the scraper being hinged or pivoted to one of the arms, and means for respectively connecting the said inner and outer arms to an axle and wheel-hub.

7. A scraper comprising a scraper member, inner and outer supporting-arms therefor, means for connecting one of the arms to a wheel-axle, and means for connecting the other arm with the hub of a wheel, said means being adapted to permit the hub to have relatively rotary movement.

8. A scraper comprising a scraper member, inner and outer supporting-arms therefor, means for adjustably supporting the arms, means for connecting one of the arms to a wheel-axle, and means for connecting the other arm with the hub of a wheel, said means being adapted to permit the hub to have relative rotary movement.

9. In a scraper for vehicle-wheels, the combination with an axle, and a wheel mounted thereon, of a plurality of scraping devices arranged in rear of the vertical line of the wheel in the direction of rotation thereof, a scraping device arranged in front of the vertical line of the wheel, supporting-arms for said scrapers arranged upon the inner and outer sides of the wheel, means for connecting the inner arms with the axle, and a band engaging the hub of the wheel to which the outer arms are attached, said band being suitably connected with the hub to permit the latter to have free relative rotation.

10. In a scraper for vehicle-wheels, the combination with an axle, and a wheel mounted thereon, of a plurality of scrapers arranged in front and rear of the vertical line of the wheel, inner and outer supports for said scrapers, means for connecting the inner supports with the axle, and means for attaching the outer supports to the hub of the wheel, said means being adapted to permit the hub to have free relative rotation.

11. A scraper for vehicle-wheels comprising a scraper member, inner and outer supporting-arms for said scraper member, means connecting the inner arm with the wheel-axle, and means for connecting the outer arm with the wheel-hub, said means being adapted to permit the hub to have free relative rotation.

12. A scraper comprising a scraper member, inner and outer supporting-arms for said scraper member, said arms being longitudinally adjustable, means for attaching the inner arm to the vehicle-axle, and means for attaching the outer arm to the wheel-hub, said means being adapted to permit the hub to have free relative rotation.

13. A scraper for vehicle-wheels comprising a scraper member adapted to extend transversely across the wheel-rim, inner and outer supporting-arms for said scraper member, means for respectively connecting said supporting-arms with the wheel axle and hub, the latter-named means being adapted to permit the hub to have free relative rotation, the outer supporting-arm being detachably connected with said means and hinged to the scraper, whereby it may be swung out of the way of the wheel to permit the latter to be removed from the axle.

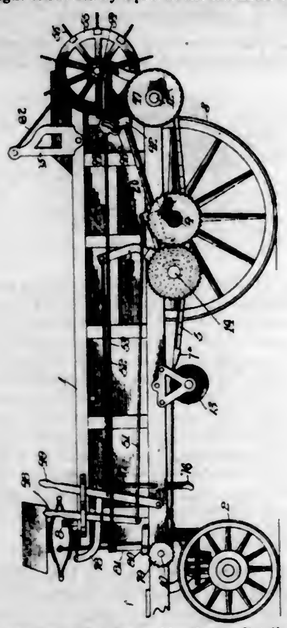
14. In a scraper attachment for vehicle-wheels, the combination with an axle and wheels, of scrapers extending transversely across the wheel-rim, inner and outer supporting-arms for the respective scrapers, said arms being longitudinally adjustable, longitudinally-adjustable bracing connections between the arms, means for connecting the inner arms with the axle, and means for connecting the outer arms with the hub of the wheel, said means being adapted to permit the hub to have free relative rotation.

819,659. **MANURE-SPREADER.** LOUIS A. KEENE, Waterman, Ill. Filed May 6, 1905. Serial No. 259,331.

Claim.—1. In a manure-spreader, in combination, a distributing mechanism; and a feeding mechanism comprising a gear-wheel having a plurality of gear-rings, a pinion adapted to mesh with any of said gear-rings and having a hub, a shaft on which said pinion is slidably mounted, a yoke comprising two widespread arms, one of which arms has an engagement with the hub of said pinion, the other arm being slidably mounted on said shaft at a distance from said pinion-hub, and means connected with said yoke for sliding said yoke and said pinion longitudinally of said shaft.

2. In a manure-spreader, in combination, a distributing mechanism; and a feeding mechanism comprising a gear-wheel having a plurality of gear-rings, a pinion adapted to mesh with any of said gear-rings, a shaft on which said pinion is slidably mounted, said pinion being provided with a hub having a peripheral groove therein, a yoke comprising two loops, one of said loops being loosely mounted on said shaft and the other loop being separable and lying in the groove in the hub of said pinion, and means connected with said yoke for sliding said yoke and said pinion longitudinally of said shaft.

3. In a manure-spreader, in combination, a distributing mechanism; and a feeding mechanism comprising a movable bottom, a drive-chain attached to said bottom, an idler-roller for supporting a portion of said chain and said bottom, said bottom comprising slats each attached to a link of said drive-chain, which slats during the travel of said bottom assume a position below said links when approaching said idler-roller, and an inclined portion on the under side of the link adjacent to the end of said bottom, said inclined portion being of a height substantially equal to the thickness of said slats.



4. In a manure-spreader, in combination, a distributing mechanism; and a feeding mechanism comprising a movable bottom, a drive-chain attached to one side of said bottom, and an idler-roller for supporting said chain and said bottom at one point, one of the links of said chain adjacent to one end of said bottom having an inclined portion of a height substantially equal to the thickness of said bottom.

5. In a manure-spreader, in combination, a distributing mechanism; and a feeding mechanism comprising a movable bottom, a drive-chain attached to one side of said bottom, an idler-roller for supporting said chain and said bottom at one point, the link of said chain adjacent to one end of said bottom having on the same side as the bottom two inclined wings, the higher ends of said wings being adjacent to the end of the bottom and being of a height substantially equal to the thickness of said bottom.

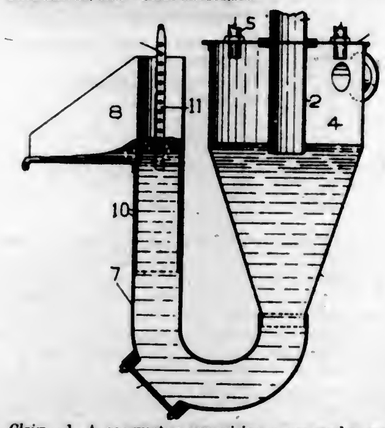
6. In a manure-spreader, in combination, a distributing mechanism; a pivotally-mounted rake adapted to coöperate with said distributing mechanism; a pivoted lever for moving said rake upon its pivot; means for locking said lever to hold said rake in the inoperative position; and means for throwing said distributing mechanism into and out of operation, said means comprising a rotatable shaft, and means moving with said shaft for releasing said locking means and moving said lever upon its pivot.

7. In a manure-spreader, in combination, a beater-cylinder; a member adapted to be moved into and out of operative position with reference to said cylinder; a lever for moving said member; means for locking said lever to hold said member in an inoperative position; and means for placing said beater-cylinder in operation, said means comprising a rotatable shaft and means connected and moving with said shaft for releasing said locking means and moving said lever upon its pivot.

8. In a manure-spreader, in combination, a distributing mechanism; a member adapted to be moved into and out of operative position; a lever for moving said member; a fixed member having a locking-opening therein; a locking-pin on said lever adapted to enter said opening; and means for placing said distributing mechanism in operation, said means comprising a rotatable shaft, and means moving with said shaft for moving said lever to withdraw said pin from its locking-opening and for moving said lever to shift said first-mentioned member.

9. In a manure-spreader, in combination, a distributing mechanism; a rake adapted to be moved into and out of operative position; a pivoted lever for moving said rake; a fixed member having a locking-opening therein; a locking-pin on said lever adapted to enter said opening; and means for placing said distributing mechanism in operation, said means comprising a rotatable shaft, and an arm fixed on said shaft, said arm having a cam portion adapted to engage said lever and move it to withdraw said pin from its locking-opening, said arm also having a shoulder adapted to engage said lever for pivotally moving said lever to move said rake.

819,660. **GAS-WASHER.** LEON P. LOWE, San Francisco, Cal. Filed Mar. 27, 1905. Serial No. 252,226.



Claim.—1. A gas-washer comprising a gas-washer proper, a gas-supply pipe, a water-inlet pipe, a water-outlet pipe connected to the bottom of said washer, said pipe extending downwardly and then bending upwardly to a point above the level of the gas-supply pipe, and means for controlling the discharge of the water from said upwardly-bending pipe except at a point above the level of the gas-supply pipe, substantially as described.

2. A gas-washer having a supply-pipe for the gas, an inlet-pipe for the water and an outlet-pipe leading downwardly from the bottom thereof of less cross-sectional area than the upper portion of the washer, substantially as described.

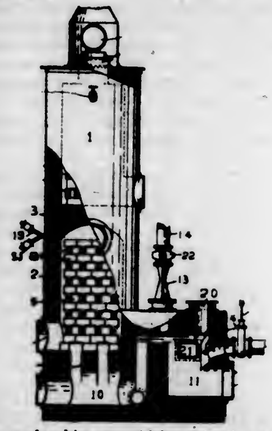
3. A gas-washer having a supply-pipe for the gas, an inlet-pipe for the water and an outlet-pipe leading downwardly from the bottom thereof of less cross-sectional area than the upper portion of the washer, said washer converging or tapering downward to said outlet-pipe, substantially as described.

4. A gas-washer comprising a gas-washer proper, a gas-supply pipe, a water-inlet pipe, a water-outlet pipe connected to the bottom of said washer, said pipe extending downwardly and then bending upwardly to a point above the level of the gas-supply pipe, and a pipe having a slidable engagement with the outlet-pipe to the discharge of the water from said upwardly-bending pipe except at a point above the level of the gas-supply pipe, substantially as described.

819,661. **METHOD OF MANUFACTURING GAS.** LEON P. LOWE, San Francisco, Cal. Filed Apr. 7, 1904. Serial No. 201,970.

Claim.—1. The method of manufacturing gas which consists in passing highly-heated products of combustion through a chamber having therein loosely-piled refractory material to highly heat the same, then shutting off the supply of air and fuel and passing steam and hydrocarbonaceous material through said highly-heated refractory material in the opposite direction, to make gas, then shutting off the supply of gas-making steam and hydrocarbonaceous material and causing a current of air to pass in the same direction as the last through said loosely-piled refractory material to burn off the carbonaceous deposits and utilize the combustion thereof to heat the refractory material, and then repeating the process of heating up preparatory to gas-making, substantially as described.

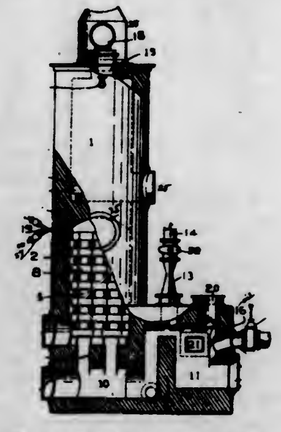
2. The process of making gas which consists in passing highly-heated products of combustion through two chambers in succession furnished with loosely-piled refractory material to highly heat the same, then shutting off the air and fuel and passing in the opposite direction steam through both chambers and hydrocarbonaceous material through the second chamber to make gas, then shutting off the gas-making steam and hydrocarbonaceous material and passing air through said chambers to burn off the carbonaceous deposit and utilize the combustion thereof to heat the refractory material, and then repeating the process of heating preparatory to gas-making, substantially as described.



3. The process of making gas which consists in burning oil to heat refractory material preparatory to gas-making, simultaneously utilizing the heat of the combustion of the oil to coke carbonaceous material, burning the gas produced by said coking to assist in heating the refractory material, and then using said highly-heated refractory material to make gas, substantially as described.

4. The process of making gas which consists in burning oil to heat refractory material preparatory to gas-making, simultaneously utilizing the heat of the combustion of the oil to coke carbonaceous material, burning the gas produced by said coking to assist in heating the refractory material, using the heat of the refractory material to make gas and adding thereto the gas obtained from the coking of the carbonaceous material, substantially as described.

819,662. **GAS-MAKING APPARATUS.** LEON P. LOWE, San Francisco, Cal. Filed Apr. 7, 1904. Serial No. 201,971.

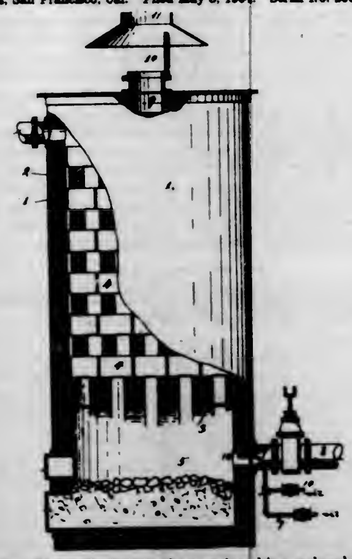


Claim.—1. In a gas-making apparatus, the combination of a gas-generating chamber furnished with loosely-piled refractory material, a coking and combustion chamber at one end and a gas-outlet at said end leading from the top of said coking and combustion chamber, means for admitting oil to said combustion-chamber and for admitting air to burn said oil therein, a flue at the opposite end of the generating-chamber, steam and oil inlets arranged to pass steam and oil through the loosely-piled refractory material to said gas-outlet, means for excluding the steam, oil and an auxiliary flue at the op-

posite end to said steam and oil, means for drawing air through the loosely-piled refractory material in the same direction as the steam and oil to burn the carbon deposits before reheating, and a door to the combustion-chamber independent of the oil-inlet therein for introducing carbonaceous material into the lower portion of the combustion-chamber, substantially as described.

2. In a gas-making apparatus, the combination of a gas-generating chamber furnished with loosely-piled refractory material, a coking and combustion chamber at one end and a gas-outlet at said end leading from the top of said coking and combustion chamber, means for admitting oil to said combustion-chamber and for admitting air to burn said oil therein, a flue at the opposite end of the generating-chamber, steam and oil inlets arranged to pass steam and oil through the loosely-piled refractory material to said gas-outlet, means for excluding the steam, oil and an auxiliary flue at the opposite end to said steam, oil and means for drawing air through the loosely-piled refractory material in the same direction as the steam and oil to burn the carbon deposits before reheating, and a door to the combustion-chamber independent of the oil-inlet therein for introducing carbonaceous material into the lower portion of the combustion-chamber, the combustion-chamber having a transverse wall against which the flames from the combustion of the oil impinge, said wall being spaced from the wall of the generating-chamber to form a passage for the products of combustion while protecting said wall of the generating-chamber from the direct impact of said flames, substantially as described.

819,663. METHOD OF COKING AND MAKING GAS. LEON P. LOWE, San Francisco, Cal. Filed May 3, 1904. Serial No. 206,345.



Claim.—The method of simultaneously coking and making gas which consists in charging hydrocarbonaceous material into a coking-chamber, then admitting oil and air into said chamber and burning the oil above said hydrocarbonaceous material and at the same time heating a body of refractory material to partly coke the hydrocarbonaceous material, and then discontinuing the admission of air but continuing the admission of oil into said chamber and passing the vapors of said oil so admitted together with the vapors or gases distilled from the hydrocarbonaceous material through the refractory material to make gas, substantially as described.

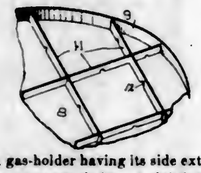
819,664. APPARATUS FOR SEPARATING RESIDUES FROM LIQUIDS. LEON P. LOWE, San Francisco, Cal. Filed May 17, 1904. Serial No. 208,344.

Claim.—1. In an apparatus of the character described, the combination of a tank, an inlet and an outlet for the liquid containing the residues, a series of vertical partitions increasing in depth according to their distances from the inlet, and a scraper scraping the residues from the surface of the liquid, substantially as described.

2. In an apparatus of the character described, the combination of a tank, an inlet and an outlet for the liquid containing the residues, a series of upwardly-extending partitions increasing in height according to their distances from the outlet, a second series of downwardly-extending partitions increasing in depth according to their distances therefrom, and scrapers moving transversely or parallel with the partitions, for scraping the residues from the surface of the liquid, substantially as described.



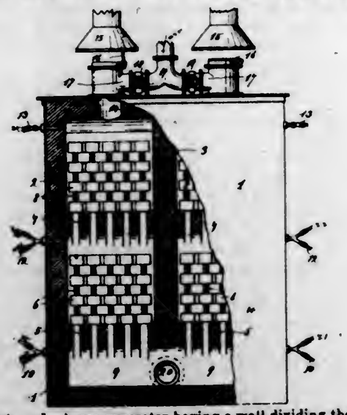
819,665. GAS-HOLDER. LEON P. LOWE, San Francisco, Cal. Filed May 17, 1904. Serial No. 208,345.



Claim.—1. A gas-holder having its side extended above the top of the tank to form a receptacle for a weighting medium, and walls on said top, independent of the structure of the casing proper of the holder, and crossing each other to form compartments for said medium, substantially as described.

2. A gas-holder having its side extended above the top of the tank to form a receptacle for a weighting medium, and walls on said top, crossing each other to form compartments for said medium, and provided with apertures at the lower portion thereof, substantially as described.

819,666. APPARATUS FOR GENERATING GAS. LEON P. LOWE, San Francisco, Cal. Filed Dec. 5, 1905. Serial No. 290,333.

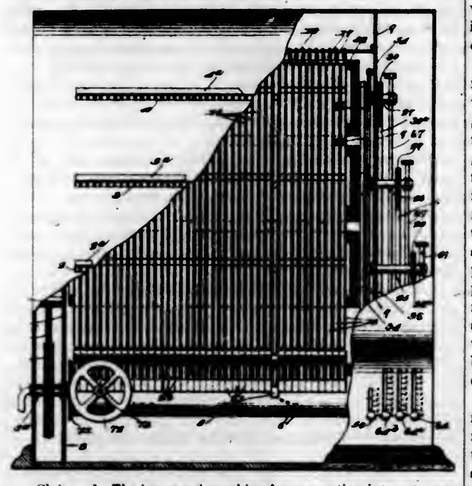


Claim.—1. A gas-generator having a wall dividing the interior centrally and extending from the top to a point near the bottom, regenerative material on each side of said wall, a gas-outlet and a fuel-inlet at the bottom of the generator, means for introducing steam and fluid fual at each side into contact with the regenerative material, a flue for the products of combustion leading from each side at the top, means for introducing an air-blast at the top on each side, and suitable valves for controlling said flues and means, substantially as described.

2. A gas-generator having a wall dividing the interior centrally, and extending from the top to a point near the bottom, an upper and a lower pile of regenerative material on each side of said wall, a gas-outlet below all the regenerative material, a fluid-fuel inlet at each side above the lower pile, a steam-inlet at each side above the upper pile, a flue for the products of combustion at each side at the top, an air-blast conduit for conducting air to the top at each side, and suitable valves for controlling said flues and conduits, substantially as described.

3. A gas-generator having a wall dividing the interior centrally, and extending from the top to a point near the bottom, an upper and a lower pile of regenerative material on each side of said wall, a gas-outlet and a fluid-fuel inlet below all the regenerative material, a fluid-fuel inlet at each side above the lower pile, a steam-inlet at each side above the upper pile, a flue for the products of combustion at each side of the top, an air-blast conduit for conducting air to the top at each side, and suitable valves for controlling said flues and conduits, substantially as described.

819,667. MACHINE FOR COMPUTING INTEREST. CHARLES A. MARBLE, Ottumwa, Iowa. Filed Jan. 4, 1905. Serial No. 239,560.



Claim.—1. The improved machine for computing interest, comprising a series of rotatable multiple-roller cylinders, each roller thereof having inscribed on its periphery numerals indicating amounts of interest on sums varying from unity upward, the said numerals being arranged progressively on successive rollers, means for rotating the rollers individually, and means for rotating the cylinders as a whole, apertured slides arranged vertically in front of the several multiple cylinders, and means for normally supporting and for pulling down the said slides to bring their apertures into coincidence with numerals on individual rollers of the multiple cylinders, substantially as described.

2. In a machine for computing interest, comprising a series of multiple-roller cylinders, arranged horizontal and in the same vertical plane, each roller thereof having inscribed on its periphery numerals indicating amounts progressing from unity upward, means for rotating the rollers individually, and means for rotating the cylinders as a whole, a casing inclosing the cylinders and provided with a corresponding series of horizontal slots, a series of vertically-adjustable slides provided with openings arranged between the cylinders and the slotted front of the casing, and a rotatable cylinder provided with teeth adapted to successively engage the said slides, for drawing them down to bring their apertures in coincidence with the slots of the casing, substantially as described.

3. In a machine for computing interest, the combination of a series of rotatable multiple-roller cylinders each roller of which is inscribed with numerals indicating amounts of interest for different times and at different rates on sums progressing from unity upward, means for rotating the rollers individually while the cylinders remain fixed as a whole, means for rotating the multiple cylinders as a whole while the individual rollers thereof are held from rotation, for the purpose of setting the cylinders corresponding to the principal on which interest is to be reckoned, a casing provided with horizontal slots in its front portion, the same corresponding in number with the multiple cylinders and arranged directly opposite the axes of the cylinders, and means connected with the several cylinders for effecting further rotation of the same bodily, whereby they are adjusted to bring the amount or amounts indicating the desired interest to the front so that it or they may be read through the slot or slots of the casing, substantially as described.

4. In a machine for computing interest, the combination of a series of rotatable multiple-roller cylinders, each roller thereof having inscribed on its periphery numerals indicating amounts of interest on sums varying progressively from unity upward, means for rotating the individual rollers for indicating interest at different rates on the different sums with reference to which each roller is inscribed, means for rotating the cylinders as a whole for setting them corresponding to the principal upon which interest is to be reckoned, a series of vertically-movable slides provided with apertures corresponding in number to the several multiple cylinders, a cylinder or roller arranged below the multiple cylinders and provided with teeth arranged spirally thereon for engagement with the slides successively, and means connected with such roller, and the several multiple cylinders for rotating them all simultaneously, in order to bring to the front the numbers indicating amounts of interest on certain individual rollers, so that said numbers may be seen through the openings of the slide or slides that may be brought down, substantially as described.

5. In machine for computing interest, the combination with a multiple-roller cylinder comprising a series of rollers duly inscribed with numerals indicating amount of interest on different sums progressing from unity upward and according to different rates and time, each of said rollers being provided with a spur-gear, a master-gear arranged within such spur-gears and meshing therewith, means for imparting rotation to such master-gear for the purpose of rotating and setting the individual rollers to indicate interest at different rates for a given time, spur-gears mounted on the shafts of the respective multiple cylinders, and means connected therewith for rotating such gears for rotating the multiple cylinders as a whole for the purpose of setting said cylinders corresponding to the amount of the principal on which interest is to be reckoned, sprocket-wheels arranged on the opposite ends of the multiple-cylinder shafts, a sprocket-chain running thereon, and a driving sprocket-wheel by whose rotation the several cylinders may be rotated as a whole, for bringing to the front for inspection numerals on the rollers which indicate the required interest, substantially as described.

6. The combination with a multiple cylinder comprising a series of rollers arranged concentrically and having inscribed thereon numerals indicating amounts of interest on sums varying from unity upward for different times and at different rates, a shaft supporting such cylinder, a master-gear mounted concentrically thereon, and a series of spur gears or pinions fixed on the extended shafts of the several rollers and meshing with such master-gear, a spur-gear mounted slidably on the shaft of the cylinder and adapted to be locked with the master-gear, means for rotating such slidable gear to impart rotation to the master-gear and the pinions meshing therewith whereby the rollers may be rotated and set individually, corresponding to the interest, substantially as described.

7. The combination with a multiple-roller cylinder, comprising a series of concentric rollers each of which is inscribed with numerals indicating amounts of interest on amounts varying progressively from unity upward, a series of pinions fixed on the journals of the several rollers, a master-gear arranged concentrically with such pinions, and the shaft of the multiple cylinder, a spur-gear which is slidable on the cylinder-shaft and adapted to lock with the master-gear which is loose on said shaft, a vertical rack-bar which engages such slidable spur-gear, means for adjusting said rack vertically according to a scale indicating varying rates of interest, and means for shifting the slidable spur-gear for locking it with and releasing it from the master-gear, substantially as described.

8. The combination with a multiple-roller cylinder, comprising a series of concentric rollers, each inscribed with numerals indicating interest on sums varying progressively from unity upward and at different rates and times, pinions mounted fast on the journals of the several rollers, a master-gear which is concentric with said pinions and the shaft of the cylinder and adapted to mesh with the pinions, a spur-gear arranged slidably on the shaft of the cylinder and adapted to lock with the master-gear, a vertical rack-bar engaging the several slidable spur-gear, a device for adjusting the rack-bar vertically according to the rate at which interest is to be computed, a rock-shaft arranged vertically and provided with a lever-arm engaging the slidable gear, and means for rotating the said shaft as required to lock the slidable gear with and release it from the master-gear, substantially as described.

9. The combination with rotatable multiple-roller cylinders, each comprising a series of rotatable rollers arranged concentrically and having inscribed on their peripheries numerals indicating amounts of interest on sums varying progressively from unity upward, a series of pinions fixed on the journals of the several rollers, a master-gear meshing with the several pinions and arranged concentrically on the shaft of the multiple cylinder, a slidable gear adapted to lock with such master-gear for imparting rotation to all the rollers

simultaneously, a vertical rack-bar engaging the series of slidable gears, a vertical rock-shaft having lever-arms loosely connected with the several slidable spur-gears, and a lower lever-arm also fixed on the said rock-shaft, and a vertically-slidable knob connected with the said rack and having a crank portion adapted to engage with the lower lever-arm of the rock-shaft, whereby the rotation of said knob effects the shifting of the slidable spur-gears with reference to the master-gear and its vertical adjustment effects the rotation of the several rollers of the multiple cylinders, as required to correspond with the different rates of interest, substantially as described.

10. The combination with multiple-roller cylinders, each comprising a series of rollers arranged concentrically and having inscribed thereon numerals indicating amounts of interest on sums varying from unity upward and at different rates, means for rotating and adjusting such rollers individually, according to the rate at which interest is to be computed, spur-gears mounted on the shafts of the multiple cylinders, a series of vertical rack-bars engaging such spur-gears, the said racks being adjustable vertically as required to rotate the multiple cylinders corresponding to the amount of the principal on which interest is to be reckoned, a vertical rock-shaft having a series of arms corresponding to the several spur-gears, locking devices applied to each spur-gear and connected with the arms of the rock-shaft, and a device for rotating the latter as required to lock and release the spur-gears substantially as described.

11. The combination with a series of multiple cylinders, each comprising rollers arranged concentrically and having inscribed thereon numerals indicating amounts of interest on sums progressing from unity upward at different rates, means for adjusting the rollers individually corresponding to a particular rate of interest, spur-gears mounted on the shafts of the multiple cylinders, movable devices adapted to engage the said gears for alternately locking them with the multiple cylinders and releasing them therefrom, vertical racks corresponding in number with the several cylinders, and adapted to engage the respective spur-gears, a vertical rock-shaft having a series of arms adapted to engage with the locking devices of the several spur-gears, a lower lever-arm fixed on such rock-shaft and having a vertical slot in its free end, vertically-slidable devices permanently attached to the lever-arms of the several racks, and also adapted to engage the lower lever-arms of the rock-shaft for shifting the same right and left, whereby the racks may be adjusted vertically according to the amounts of the principal in millions, thousands, hundreds, &c., and the rock-shaft may be rotated for locking and releasing the spur-gears preparatory to and following the operation of the racks, substantially as described.

12. The combination with a series of multiple cylinders, each comprising a series of rollers arranged concentrically and inscribed on their peripheries with numerals indicating amounts of interest on sums varying from unity upward and at different rates for different times, hollow rotatable shafts upon which the cylinders proper are fixed and supported, means for rotating the rollers of the several cylinders individually corresponding to a particular rate of interest, means arranged at one end of the several cylinders for rotating them as a whole according to the amount of the principal on which interest is to be computed, means arranged at the opposite ends of the cylinders for rotating them as a whole corresponding to the time for which interest is to be computed, and a locking device extending through the hollow shafts of the several cylinders and adapted to lock and release alternately the rotative means arranged at the opposite ends of the cylinders, substantially as described.

13. The combination with a series of rotatable multiple cylinders each comprising a series of rollers arranged concentrically and inscribed with means indicating interest on sums varying progressively from unity upward and at different rates, means for rotating and setting the individual rollers according to a particular rate of interest, hollow shafts whereon the multiple cylinders proper are mounted and fixed, spur-gears mounted on said hollow shafts at one end of the cylinders, racks engaging the same for rotating the gears, sprocket-wheels arranged on the opposite ends of the cylinder-shafts, and means engaging the same for rotating them, a rod arranged slidably in the hollow shaft, and provided with lugs at its ends which are adapted to alternately engage with and disengage from the said spur-gears and their sprocket-wheels, whereby the spur-gears are locked when the sprocket-wheels are released and vice versa, substantially as described.

14. The combination with a series of multiple cylinders, each comprising nine rollers arranged concentrically and having inscribed thereon numerals indicating amounts of interest on sums varying progressively from unity upward and at different rates for different times, means for rotating and adjusting the individual rollers corresponding to a particular rate of interest, means for rotating the cylinders as a whole corresponding to the amount of the principal on which interest is to be computed, means arranged at the opposite ends of said cylinders for rotating them as a whole, corresponding to the time at which interest is to be computed, and a movable indicator connected with such means and actuated thereby for indicating on a dial the time for which interest is to be computed, substantially as described.

15. The combination with a series of multiple-roller cylinders, each comprising a series of nine rollers arranged concentrically and inscribed on their peripheries with numerals indicating amounts of interest on sums varying progressively from unity upward, at different rates and for different times, means for adjusting the rollers individually according to a particular rate of interest, means for adjusting the multiple cylinders as a whole corresponding to the amount of the principal on which interest is to be computed, a series of vertically-adjustable slides arranged in front of the several multiple cylinders and provided with apertures corresponding in number with the cylinders, a rotatable roller arranged below the several cylinders and provided with teeth arranged spirally and adapted for engagement with the several slides, means arranged at the opposite ends of the cylinders for rotating them simultaneously acording to the time for which interest is to be computed on the entire principal, such means being connected with the toothed cylinder, a casing provided with a scale indicating days and months, an index or pointer adapted to rotate over said scale, and means connecting it operatively with the toothed cylinder whereby it moves in unison with the latter, substantially as described.

16. The combination with a series of multiple cylinders comprising rotatable rollers arranged concentrically and inscribed as set forth, of gears operatively connected with the several rollers for rotating the latter, the rack-bar adapted to engage the several gears, means for shifting the gears for engaging them with and disengaging them from the rollers, a knob provided with radial spurs set ninety degrees apart, and connected with the aforesaid rack, and means for shifting the spur-gears, the said spurs serving as means to indicate engagement or disengagement of the gears, substantially as described.

17. The combination with a casing having a slot in its front portion, of a multiple cylinder comprising a series of concentric rollers each inscribed with numerals indicating amounts of interest on sums varying progressively from unity upward, at different times, and at different rates, a vertically-movable slide arranged between such cylinder and the casing and provided with an aperture, and means for adjusting the said slide and cylinder to bring the front of one of the rollers in coincidence with the slots of the slide and casing, substantially as described.

18. The combination with a multiple cylinder, comprising a series of concentric rollers each inscribed with numerals indicating interest on different sums, for different times at different rates, of a series of slides arranged vertically and provided with apertures, levers with which said slides are connected, means for normally supporting the slides but permitting them to yield to be drawn downward, a rotatable cylinder arranged below said levers and provided with teeth arranged spirally, and catches pivoted to the levers and adapted for adjustable engagement with the teeth of the cylinder, substantially as described.

19. The combination, with a series of multiple cylinders, having their axes arranged horizontal in the same vertical plane and each comprising rollers having inscribed on their peripheries numerals indicating amounts of interest on different sums, at different rates, for different times, of means for rotating the rollers individually according to a particular rate of interest, a casing inclosing said cylinders and provided in its face with horizontal slots corresponding in number to the cylinders and arranged in the same horizontal plane with the axes of the cylinders, means for rotating the cylinders as a whole according to the principal on which interest is to be computed and also according to the time for which interest runs, a series of vertical slides arranged between the cylinders and the front of the casing and provided with apertures, means for elastically supporting the several slides, a cylinder arranged below the multiple cylinders and provided with teeth arranged spirally, devices connected with the slides and having catches adapted to engage the teeth of the lower cylinder, and a stop which such devices engage when released from the cylinder, substantially as described.

20. The combination, with rotatable cylinders having rollers inscribed as specified, and means for rotating the rollers individually and the cylinders as a whole corresponding to the rate of interest, the amount of the principal, and the time for which interest is computed, of a toothed cylinder arranged below the multiple cylinders, apertured slides arranged between the multiple cylinders and the front of the casing, levers with which the slides are pivotally connected, catches pivoted to the free ends of the levers and adapted to engage the teeth of the lower cylinder, springs pressing upon said catches for holding them in position to engage the teeth, the said catches being provided on their inner sides with swells or shoulders, which, when the levers and slides are drawn down, strike upon the periphery of the toothed cylinder and disengage the catches from the teeth substantially as described.

21. The combination, with a casing having its front slotted, of a series of multiple-roller cylinders, having their component rollers inscribed as and for the purpose specified, means for adjusting the said cylinders and their individual rollers corresponding to the amount of the principal, the rate of interest, and the time for which the latter is computed, a series of apertured slides arranged between the multiple cylinders and the front of the casing, the slides being constructed with parallel vertical flanges on their front sides, and the casing provided with vertical grooves adapted to receive such flanges, and means for drawing down the slides successively, substantially as described.

22. The combination, with a casing having its front slotted, of a series of rotatable multiple-roller cylinders, having their individual rollers inscribed as set forth, means for adjusting the individual rollers and the cylinders as a whole corresponding to the rate of interest, the amount of the principal, and the time for which interest is to be computed, a series of vertical apertured slides arranged between the multiple cylinders and the front of the casing, means for drawing down the several slides successively, spiral springs connected with the upper ends of the slides and with a fixed portion of the casing, whereby the slides are normally supported elastically, substantially as described.

23. The combination, with the multiple-roller cylinders, comprising a series of concentric rollers, parallel disks in which they are journaled, each roller being inscribed with numerals indicating amounts of interest on sums varying progressively from unity upward, at different rates for different times, of pinions fixed on the journals of such rollers, a master-gear arranged concentrically within the circle of pinions and meshing therewith, spur-gears mounted slidable on the shafts of the multiple cylinders and adapted to engage the master-gears which are rotatable on the hubs of said spur-gears, means for actuating the latter both slidably and rotatably, and springs interposed between the master-gears and the adjacent disks, the same serving to hold the master-gears by friction when the spur-gears are released therefrom, substantially as described.

24. The combination, with a casing provided with horizontal slots in its front, of a corresponding series of shutters pivoted at the several slots, means for adjusting the said shutters for opening and closing them, multiple-roller cylinders arranged in the casing directly opposite the several slots of the latter, means for rotating the cylinders bodily according to the amounts of the principal on which interest is to be computed, a device connected with the shutters and operatively connected with the means for rotating the multiple cylinders, whereby the shutters are opened or closed, substantially as described.

25. The combination, with a casing having its front provided with horizontal slots, of a series of corresponding shutters adapted to close or open said slots, rods connected with lever-arms of the shutters and extending downward, a spring connected with said rods and tending to pull the same downward for holding the shutters normally open, multiple-roller cylinders arranged in the casing, opposite the several slots in the latter, spur-gears operatively connected with the multiple cylinders for rotating them as a whole, racks arranged vertically and slidably and engaging the several spur-gears, and levers pivoted at the bottom of the casing connected with the rods that operate the shutters, and located in such relation to the several racks that they are pivoted for closing the shutters when a rack is at the lowest position, substantially as described.

26. The improved interest-computing machine comprising a casing having a series of horizontal slots in its face, a series of multiple-roller cylinders arranged horizontal therein and in the same vertical plane, each cylinder consisting of nine rollers which are severally inscribed on their peripheries with numerals indicating amounts of interest on sums varying progressing from unity upward, at different rates, and for different times, means for adjusting the several rollers of each cylinder corresponding to a particular rate of interest, other means for rotating the cylinders as a whole corresponding to the principal on which interest is to be computed, pivoted shutters for opening and closing the slots of the casing, a series of rods connected with the several shutters, the shutter-rods being operatively connected with the means for operating the cylinders, and devices for adjusting the means by which the cylinders are rotated.

819,668. **CENTRIFUGAL PERCUSSION-FUSE FOR PROJECTILES.** JOHN F. MEIGS and EMIL A. GATHMANN, South Bethlehem, Pa., assignors to Bethlehem Steel Company, South Bethlehem, Pa., a Corporation of Pennsylvania. Original application filed Dec. 5, 1904, Serial No. 235,568. Divided and this application filed July 22, 1905. Serial No. 270,796.

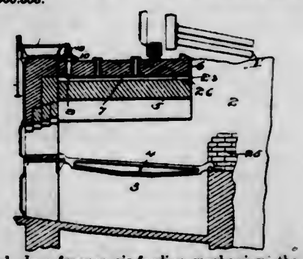


Claim.—1. The combination in a fuse, of a chambered casing, a detonator supported at one end of the chamber thereof, a hammer adapted to slide in said chamber, a U-shaped spring surrounding the hammer and detents carried by the ends of said spring and normally located between the forward end of the hammer and the end wall of the fuse-chamber.

2. The combination in a fuse, of a chambered casing, a detonator supported at one end of the chamber thereof, a hammer adapted to slide in said chamber and having oppositely-arranged longitudinal recesses and a transverse recess in its rear end, a U-shaped spring located in said recesses and extending to the forward end of the hammer, and detents carried by the ends of said spring and normally located between the hammer and the forward end wall of the fuse-chamber.

3. The combination in a fuse, of a casing having a chamber and a support for a detonator at the forward end of said chamber, a hammer movable longitudinally within the chamber, and a U-shaped spring arranged longitudinally of the hammer and provided with detents at its ends adapted normally to stand between the forward end of the hammer and the end wall of the chamber, the said hammer being adapted to move longitudinally relatively to said spring when the detents are thrown out by centrifugal force.

819,669. **FURNACE AIR-FEEDING MECHANISM.** WILLIAM MCCLAVE, Scranton, Pa., assignor to McClave-Brooks Company, a Corporation of Pennsylvania. Original application filed Mar. 16, 1905, Serial No. 250,469. Divided and this application filed Feb. 9, 1906. Serial No. 300,303.



Claim.—1. In a furnace air-feeding mechanism, the combination with a furnace-inclosure having a fire-box therein, of concentric arches spaced apart and arranged above said fire-box and forming a heating-chamber therebetween, radial passages being formed through one of said arches and communicating with the front end of said chamber, the rear end of the chamber being open to the interior of the furnace-inclosure, and a filling supported on said arch above said passages and formed with vertical passages communicating with said radial passages, and means for controlling admission of air to the said vertical passages.

2. In a furnace air-feeding mechanism, the combination with a furnace-inclosure having a fire-box, of two arches spaced from each other to form an air-chamber in communication with the fire-box, the upper arch being provided with air-admitting passages communicating with the air-chamber, a metallic bed-plate sustained by the

upper arch and formed with apertures registering with the air-admitting passages of the arch, and a metallic, apertured damper mounted on said bed-plate and adapted to be moved for causing its apertures to move into and out of register with the apertures in the bed-plate.

3. In a furnace air-feeding mechanism, the combination with a furnace-inclosure having a fire-box, of an arch arranged above the same, a superimposed arch spaced above the first-mentioned arch and forming an air-chamber between the two arches, the said air-chamber communicating at its inner end with the furnace-inclosure, air-passages being formed in the upper arch for supplying air to the air-chamber, a metallic bed-plate provided with openings registering with the said air-passages, a metallic slide formed with apertures and means for moving said slide for bringing the apertures thereof into or out of register with the openings in said bed-plate.

4. In a furnace air-feeding mechanism, the combination with a furnace-inclosure having a fire-box, of two arches spaced from each other to form an air-feeding chamber in communication with the fire-box, one of the arches being provided with air-admitting passages communicating with the air-chamber, a metallic bed-plate sustained by the arch having the air-admitting passages and formed with apertures registering with said air-admitting passages, a metallic, apertured damper slidingly engaging said bed-plate and adapted to be moved for causing its apertures to move into and out of register with the apertures of the bed-plate, and means for guiding the damper in its movement.

819,670. **MECHANISM FOR OPERATING THE RECORDING AND REPRODUCING MECHANISMS OF TELEGRAPHONES.** PEDER O. PEDERSEN, Copenhagen, Denmark. Filed June 21, 1901. Serial No. 65,423.



Claim.—1. In a phonographic apparatus, the combination with the record-receiving surface or body, and a carriage movable with respect to each other, said carriage adapted to carry a recording or reproducing device, of means independent of said recording or reproducing device, and actuated by the said record-receiving surface or body, for moving the carriage and surface or body with respect to each other.

2. In a phonographic apparatus, the combination with a record-receiving surface or body, of a recording or reproducing device acting upon one part of said surface or body, and a feeding device acting upon another part of said surface or body for the purpose of feeding the recording or reproducing device with respect to said surface or body.

3. In a phonographic apparatus, the combination with a record-receiving surface or body in the form of a spiral, a carriage for the recording and reproducing devices, devices adapted to engage with the record-receiving surface or body to cause a movement of the carriage and means for reversing the direction of movement of the carriage at the end of a traverse.

4. In a phonographic apparatus, the combination with a record-receiving surface in the form of a spiral, of a carriage, a recording or reproducing device coöperating with said surface or body and supported by said carriage, and a tooth also supported by said carriage and adapted to engage with said spiral surface or body for the purpose of moving the carriage when the surface or body rotates.

5. In a phonographic apparatus, the combination of a record-receiving surface or body in the form of a spiral, a threaded rod arranged parallel thereto, a carriage for the recording and reproducing feeding devices, devices carried by said carriage for engaging with either the recording body or surface or the threaded rod, and means for lifting the said devices out of engagement with the rod and into engagement with the surface or body and vice versa.

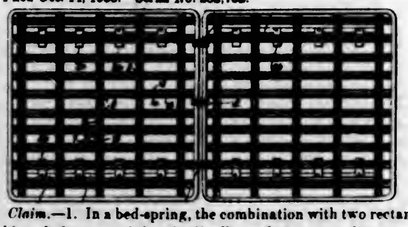
6. In a phonographic apparatus, the combination of a record-receiving surface or body, a carriage adapted to carry the recording and reproducing devices, means connected with said carriage and adapted to engage with the record-receiving surface or body to move the carriage, and means for lifting the recording or reproducing devices out of operative relation with said surface and reversing the direction of travel of the carriage.

7. In a phonographic apparatus, the combination with the record-receiving surface or body, of a carriage, two arms carried thereby and pivoted so as to rest against the record-receiving surface or body, recording and reproducing devices carried by one arm and a feeding device carried by the other arm and means for lifting said arms out of contact with said surface or body, for the purpose set forth.

8. In a phonographic apparatus, the combination with a record-receiving surface or body, a traveling carriage, two pivoted arms projecting from said carriage, one of said arms carrying the recording or reproducing devices and the other engaging with the recording-surface in order to move the carriage, a latch adapted to hold the two arms out of operative relation with the recording-surface and means located at the extremities of the record-receiving surface or body for respectively engaging and disengaging the said latch.

9. In a phonographic apparatus, the combination with a record-receiving surface or body, and a guide-rod arranged parallel thereto, of a sleeve on said guide-rod, an arm projecting from said sleeve and carrying a feeding device adapted to engage with the record-receiving surface or body for the purpose of moving the sleeve along the rod, a second arm loosely connected with said sleeve and adapted to carry the recording and reproducing devices, the said two arms projecting from opposite sides of the sleeve, a lever pivoted to the sleeve and connected with the second-mentioned arm, a latch carried by the first-mentioned arm and adapted to be engaged by said lever, whereby the two arms may be connected together so that the weight of one will offset that of the other and means for engaging and disengaging said latch.

819,671. **BED-SPRING.** HARRY W. PENNEPACKER, Allegheny, Pa. Filed Oct. 14, 1905. Serial No. 282,783.



Claim.—1. In a bed-spring, the combination with two rectangular hinged frames, of longitudinally and transversely arranged wires connected to said frames, helical springs supported by said wires, and having their largest convolutions interwoven in said wires, rectangular frames supported by said springs, slats carried by said rectangular frames and connected to said springs, stirrups pivotally mounted between said slats adjacent to the longitudinal edges of said frames, hangers carried by said stirrups, substantially as described.

2. In a bed-spring, the combination with two rectangular frames hinged together and adapted to fold upon one another, of interwoven wires carried by said frames, springs connected to said wires, transversely-disposed slats carried by said springs, rectangular frames supported by said slats, stirrups connected to said slats hangers pivotally connected to said stirrups, substantially as described.

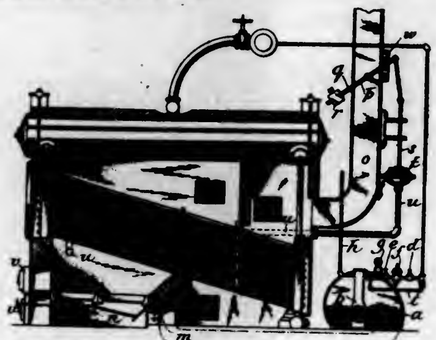
3. In a bed-spring, the combination with two hinged frames, of interwoven wires carried by said frames, springs supported by said wires, slats carried by said springs, rectangular frames carried by said slats, stirrups carried by said slats hangers connected to said stirrups adjacent to the longitudinal edges of said rectangular frames, means to prevent lateral displacement of said springs, substantially as described.

4. The combination with a bed, of hinged frames, springs carried by said frames, slats carried by said springs, frames carried by said slats, means carried by said slats adjacent to and within the longitudinal edges of said last-named frames, to support said frames upon said bed, and means to prevent lateral displacement of said springs, substantially as described.

5. A bed-spring of the type described consisting of hinged frames, springs carried by said frames, transversely-disposed slats carried by said springs, stirrups carried by said slats, and hangers pivotally connected to said stirrups, substantially as described.

819,672. **REGULATION OF FURNACES.** JOHN C. QUINN, New York, N. Y., assignor, by mesne assignments, to The Engineer Company, a Corporation of New York. Filed Aug. 3, 1904. Serial No. 219,398.

Claim.—1. The combination with a steam-boiler and its furnace, of means governed by the steam-pressure in said boiler for positively supplying air to the said furnace relatively to the steam-pressure, a damper and means governed by the pressure of the furnace-gases for controlling the damper to maintain a substantially constant predetermined pressure in said furnace.



2. The combination with a steam-boiler and its furnace, of means governed by the steam-pressure in said boiler for positively supplying air to said furnace relatively to the steam-pressure, and means governed by the pressure in the furnace for maintaining a substantially constant predetermined pressure in said furnace.

3. The combination with a steam-boiler and its furnace, of means governed by the steam-pressure in said boiler for positively supplying air to said furnace relatively to the steam-pressure, a damper and means for controlling the damper to maintain a substantially constant predetermined pressure in said furnace, such means being automatically operated independent of the steam-pressure.

4. The combination with a steam-boiler and its furnace, of means governed by the steam-pressure in said boiler for positively supplying air to said furnace, relatively to the steam-pressure, and means actuated by variations of pressure within the furnace to control the discharge of products of combustion and thereby maintain a substantially uniform pressure within the furnace.

5. The combination with a furnace, and a steam-boiler, of a blower for supplying air to the furnace governed by the pressure of steam within the boiler, and a damper controlling the exit of gases from the furnace, said damper being governed by the pressure of the furnace-gases.

819,673. **ADVERTISING APPARATUS.** FREDERICK L. REYNOLDS, Chicago, Ill., assignor of one-half to Ernst Tiefgens, Youngstown, Ohio. Filed Aug. 19, 1905. Serial No. 274,896.

Claim.—1. In an advertising apparatus, the combination with a flexible endless carrier, of guides around which said carrier travels, means for driving said carrier, and inclined signs each pivotally connected at one end to said carrier.

2. In an advertising apparatus, the combination with a flexible endless carrier, of guides around which said carrier travels, means for driving said carrier, and inclined inflexible display-surfaces each pivotally connected at one end to said carrier.

3. In an advertising apparatus, the combination with a flexible endless carrier, of guides around which said carrier travels, means for driving said carrier, inclined inflexible open frames each pivotally connected at one end to said carrier, and display-cards inclosed within said frames.

4. In an advertising apparatus, the combination with a flexible endless carrier, of guides around which said carrier travels, means for driving said carrier, inclined signs each pivotally connected at one end to said carrier, and guides for controlling the positions of said signs during their movement with said carrier.

5. In an advertising apparatus, the combination with a flexible endless carrier, of guides around which said carrier travels, means for driving said carrier, inclined signs each pivotally connected at one end to said carrier, grooved guides located above and below said signs, and projections carried by said signs engaging the grooves in said guides.

6. In an advertising apparatus, the combination with a flexible endless carrier, of guides around which said carrier travels, means for driving said carrier, inclined signs located above and each pivotally connected at one end of its lower edge to said carrier, and guides located above said signs for controlling their positions during their movement with said carrier.



7. In an advertising apparatus, the combination with an endless sprocket-chain, of sprocket-wheels engaged by said chain, means for driving said chain, and inclined inflexible signs each pivotally connected at one end to said chain.

8. In an advertising apparatus, the combination with an endless sprocket-chain, of sprocket-wheels engaged by said chain, means for driving said chain, inclined open rigid frames each pivotally connected at one end to said chain, and display-cards inclosed by said frames.

9. In an advertising apparatus, the combination with a sprocket-chain, of guides for said chain, rods secured to and projecting above predetermined links in said chain, and inclined signs each pivotally secured at one end to one of said rods.

10. In an advertising apparatus, the combination with a flexible endless carrier, of rotary guides around which said carrier travels, inclined rigid signs each pivotally connected at one end to said carrier, parallel flanges forming front and rear guides above and below said signs, the inner flanges of the guides being cut away adjcent one end thereof to permit the signs swinging by gravity from the rear guide to the front guide as the carrier passes around its adjacent rotary guide, and means located beyond the opposite rotary guide for said carrier for directing each sign from the front to the rear guide as the carrier passes around such rotary guide.

11. In an advertising apparatus, the combination with a sprocket-chain, of sprocket-wheels around which said chain travels, means for driving said chain, inclined rigid signs each pivotally connected to said chain at one of its lower edges, parallel flanges forming front and rear guides below said signs within which said sprocket-chain travels, the inner flanges of said guides being cut away adjacent one sprocket-wheel to permit the signs swinging by gravity from the rear guide to the front guide as the carrier passes around said sprocket-wheel, and means located beyond the opposite sprocket-wheel for directing each sign from the front to the rear guide as the chain passes around said sprocket-wheel.

12. In an advertising apparatus, the combination with a sprocket-chain, of sprocket-wheels around which said chain travels, means for driving said chain, inclined rigid signs each pivotally connected at one end to said sprocket-chain, parallel flanges forming front and rear guides above and below said signs, a projection in line with the axes of each sign engaging the upper guides, a shorter projection on the opposite end of each sign engaging said guides, the inner flanges of said guides being reduced in height to permit the shorter projections on the signs to pass between the same and the signs thereby swinging by gravity from the rear guide to the front guide as the chain changes its direction of movement.

819,674. ROTARY PUMP, COMPRESSOR, MOTOR, ENGINE, AND LIKE MACHINERY. FERDINAND J. ROCHOW, Brooklyn, N. Y. Filed Oct. 12, 1903. Serial No. 176,637.



Claim.—1. Rotary apparatus of the class described comprising a plurality of directly-abutting open-ended cylinders having peripheral inlet and outlet ports; a rotatable shaft extended through said cylinders respectively and provided with means to separate said cylinders respectively; piston devices rotatable with said shaft; and connections intermediate the outlet-port of one cylinder and the inlet-port of the adjacent cylinder, to operate substantially in the manner set forth.

2. Rotary apparatus of the class described comprising a plurality of open-ended abutting cylinders having respectively peripheral outlet and inlet ports, and peripheral channels connecting the outlet-port of each cylinder directly with the inlet-port of the adjacent cylinder; and rotatable separating devices intermediate said cylinders, substantially as described.

3. Rotary apparatus of the class described comprising a plurality of directly-abutting open-ended cylinders having peripheral inlet and outlet ports and integral channels in extension of said ports, said cylinders being disposed eccentrically with respect to a shaft rotatable within said cylinders, adjacent cylinders being arranged at angles of one hundred and eighty degrees to bring the mouth of the channel from the inlet-port of one cylinder opposite the mouth of the channel from the outlet-port of the neighboring cylinder; and rotatable separating devices intermediate said cylinders.

4. Rotary apparatus of the class described comprising a plurality of communicating open-ended cylinders, a shaft rotatable in said cylinders respectively and slotted for the reception of piston plates or devices to operate in each cylinder and division-pieces intermediate said plates and rotatable with said shaft, substantially as described.

5. Rotary apparatus of the class described comprising a plurality of communicating open-ended cylinders, a shaft rotatable in said cylinders respectively and slotted for the reception of piston plates or devices to operate in each cylinder and division-pieces intermediate said plates and rotatable with said shaft, and peripheral packing-rings surrounding said shaft and division-pieces between said cylinders, to prevent leakage therebetween.

6. A shaft for compound rotary apparatus having a plurality of cylinders, consisting of a cylindrical casting having a central axial bore divided by a plurality of transverse webs into a series of axial chambers, and a plurality of longitudinal slots intersecting the central chambers intermediate said webs to form transverse bearing-slots for piston devices, to operate in said cylinders.

7. A shaft for compound rotary apparatus having a plurality of cylinders, consisting of a cylindrical casting having a plurality of transverse webs, and a plurality of longitudinal slots intersecting the central chambers intermediate said webs to form transverse bearing-slots for piston devices, to operate in said cylinders, with division-pieces in said slots to separate said piston devices and maintain the same in position relatively to each other in their respective cylinders.

8. Rotary apparatus comprising a series of abutting cylinders, a rotatable shaft therein carrying piston-blades for each cylinder and means to permit expansion and contraction of said shaft without binding of said pistons.

9. Rotary apparatus of the class described comprising a plurality of cylinders; a piston device for said cylinders respectively; a shaft recessed to receive said piston devices; and a spring acting upon one end of said series of piston devices to maintain said piston device farthest therefrom in constant contact with the adjacent head of its cylinder, substantially as described.

10. Rotary apparatus of the class described, comprising a series of cylinders having at each end bearings to receive a shaft, one of said bearings being adjustable and having a tapered bore; a shaft in said bearings, having a peripheral taper to cooperate with said tapered bearing; piston devices capable of slight axial motion relative to said shaft; and a spring acting upon one end of said series of pistons to maintain the same constantly in proper position regardless of the position of said shaft, substantially as described.

11. Rotary apparatus of the class described comprising a series of open-ended cylinders having respectively an eccentric opening at one end a circular opening at the other end, said cylinders being formed separately and arranged to be fitted together; and means to secure said cylinders in assembled relation.

819,675. CAR-AXLE JOURNAL-BOX. WILBUR E. SANDERS, Helena, Mont., assignor of one-half to Tenney C. De Sollar, Denver, Colo. Filed July 27, 1905. Serial No. 271,481.



Claim.—1. In combination with an axle, a journal-box having means for attachment to the car-truck, upper terminal bearing-blocks for the axle located within and adjacent to the ends of the journal-box, a central lower bearing-block for the axle, the body of the last-mentioned block being provided with grooves for the free passage therethrough of the lubricant, supporting-seats for the block, and a bottom basin extending the length of the journal-box for supplying the lubricant, substantially as set forth.

2. In combination with an axle, a journal-box having means for attachment to the car-truck, upper terminal bearing-blocks and a lower intermediate bearing-block for the axle, suitable compartments formed in the journal-box for the housing of the bearing-blocks, and supply-reservoirs communicating with the several compartments for conducting oil thereto, substantially as set forth.

3. In combination with an axle, a journal-box having bottom inclined walls forming a common basin extending the full length of the journal-box, and a series of transverse diaphragms forming contiguous compartments in communication with said basin, substantially as set forth.

4. In combination with an axle, a journal-box having means for attachment to a car-truck, terminal compartments for the housing of suitable bearing-blocks, a central compartment for receiving a bearing-block, supporting-seats at the base of the compartment for said central bearing-block, said seats being spaced both longitudinally and in a lateral direction, and oil-receptacles formed in the bottom of the journal-box on each side of the central compartment and contiguous to the terminal compartments and in communication with the several compartments, substantially as set forth.

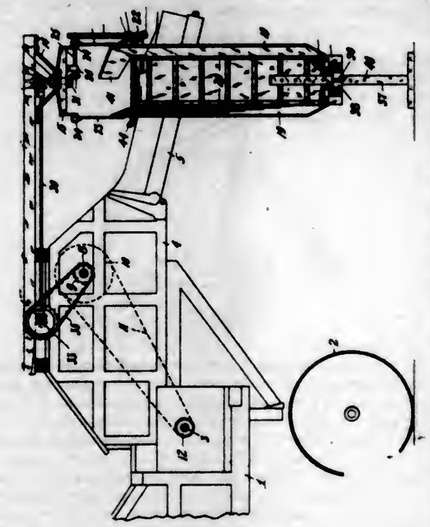
5. A journal-box for car-axles comprising a box open on top, a cover-plate therefor, terminal wings exterior to the cover-plate for attachment to a car-truck, diaphragms formed with the journal-box at each end forming terminal compartments and intermediate compartments contiguous thereto, passage-ways being formed in the diaphragms for establishing communication between the compartments, central diaphragms spaced a suitable distance to form a middle compartment, suitable passage-ways being formed at the base of the middle compartment to establish communication with the first-mentioned compartments, substantially as set forth.

6. In a journal-box, a central bearing-block compartment, seats at the bottom thereof for the support of the block, transverse diaphragms on opposite sides of the seats defining the limits of said compartment, terminal bearing-block compartments, upper bearing-blocks in said terminal compartments, and reservoirs for supplying oil to the several compartments, substantially as set forth.

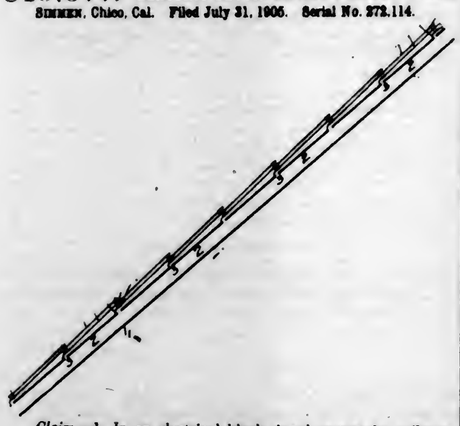
819,676. GRAIN-CONVEYER. JOHN W. SCHAUER, Kalispell, Mont., assignor to Kalispell Manufacturing & Improvement Company, a Corporation of Montana. Filed Oct. 26, 1905. Serial No. 284,813.

Claim.—1. The combination with a threshing-machine and a band-cutter and feeder applied thereto, of a supplemental frame 13 applied to the case of said band-cutter and feeder and provided, at its extended end, with a fixed bearing-yoke 14, a bearing-yoke 15 swiveled to said fixed yoke 14, an elongated frame 18 pivoted to the said yoke 15, an endless feed-belt mounted on said frame 18, and a drive for said feed-belt comprising gears, sprockets, sprocket-chains and shafts, one of which shafts extends through the swiveled connection between said yokes 14 and 15, and another of which shafts extends through the pivotal connection between said yoke 15 and parts rigid on said frame 18, substantially as described.

2. The combination with a threshing-machine and a band-cutter and feeder applied thereto, of a bundle-conveyor comprising an elongated frame having side-boards and supported at its inner end with freedom for vertical and lateral pivotal movements, one of said side-boards having a hinged deflecting-board forming an extension thereon overlying the feed-belt of said band-cutter and feeder, an endless feed-belt mounted on said elongated frame, and a drive for said latter feed-belt, substantially as described.



819,677. ELECTRIC BLOCK-SIGNAL SYSTEM. PAUL J. SIMMEN, Chico, Cal. Filed July 31, 1905. Serial No. 272,114.



Claim.—1. In an electrical block-signal system for railways, the combination of an electrically-continuous rail of a track, electrically-insulated sections of the other rail of a track, a group of contact-rails, arranged adjacent to each such section at convenient points therefor, an electrical connection between each member of said group and sections in advance of the section to which they are adjacent, a corresponding group of contact-makers carried by the locomotive, signaling devices carried by the locomotive corresponding with the respective contact-makers, circuits through the respective signaling devices to the wheel-axle, and means for supplying electricity to said circuits, substantially as described.

2. In an electrical block-signal system for railways, the combination of an electrically-continuous rail of a track, electrically-insulated section of the other rail of the track, a series of contact-rails adjacent to each such section at a convenient point thereof, an electrical connection between the first member of said series with the next section in advance, an electrical connection between each succeeding member of the series with the preceding member of the series adjacent to the section in advance, a corresponding series of contact-makers carried by the locomotive, individual circuits through said contact-makers, and signaling devices, said circuits leading through the axle of the locomotive, substantially as described.

3. In an electrical block-signal system for railways the combination of an electrically-continuous rail of a track, electrically-insulated sections of the other rail of the track, a group of contact-rails arranged to each such section at a convenient point thereof, an electrical connection between each member of said group and sections in advance of the section to which they are adjacent, a corresponding group of contact-makers carried by the locomotive, signaling devices carried by the locomotive corresponding with the respective contact-makers, circuits from said shoes through the respective signaling devices to the wheel-axle, means for supplying electricity to said circuits, a second group of contact-makers on the opposite side of the locomotive, wires severally leading therefrom to the corresponding circuits through the opposite contact-makers, and switches controlling said wires, substantially as described.

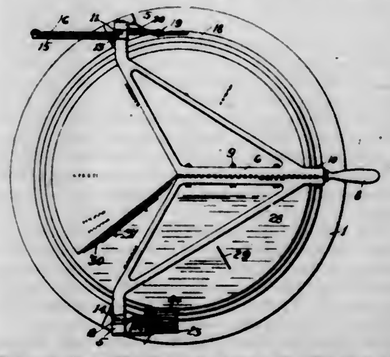
4. In an electrical block-signal system for railways, the combination of an electrically-continuous rail of a track, electrically-insulated sections of the other rail of the track, a group of rails for each section at each side of the track and transversely opposite to the corresponding section, an electrical connection between one member of the group on each side with the section in advance, an electrical connection between another member of the group and the next section but one in advance, and so on for each member of the group, the direction of such electrical connection being symmetrical in regard to the corresponding groups and sections with which they connect.

819,678. DENTAL WASTE-COTTON RECEPTACLE. BERT G. SIMMONS, New Brunswick, N. J., assignor to Johnson & Johnson, New Brunswick, N. J., a Corporation of New Jersey. Filed Nov. 11, 1905. Serial No. 286,846.



Claim.—A foldable and combustible waste-cotton receptacle consisting of a rectangular box made of a sheeet of paper creased and folded to obtain the four sides, the top and the bottom and tongues to secure said parts together, said top having a perforation with slitted edges, substantially as described.

819,679. AUTOMATIC COMPUTING CHEESE-CUTTER. FRANK F. WEAR, San Francisco, Cal. Filed May 12, 1904. Serial No. 207,634.



Claim.—1. In combination, a base, a rotating disk, a pivoted cutter-frame, a cutter carried thereby, and means operated by the upward movement of the cutter only after a constant minimum angular movement thereof for rotating the disk through an angle exactly proportionate to the excess of the angular movement of the cutter above said constant minimum angular movement, said means being inoperative to rotate the disk during the downward movement of the cutter to cut the cheese, substantially as described.

2. In combination, a base, a rotating disk, a pivoted cutter-frame, a cutter carried thereby, means operated by the upward move-

ment of the cutter for rotating the disk, said means being inoperative during the downward movement of the cutter to cut the cheese, an indicator for indicating the amount cut, and means operated by the upward movement of the cutter to actuate said indicator, substantially as described.

3. In combination, a base, a rotating disk, a pivoted cutter-frame, a cutter carried thereby, means operated by the upward movement of the cutter for rotating the disk, said means being inoperative during the downward movement of the cutter to cut the cheese, a value-chart carrier, a stationary index-pointer thereover, and means operated by the upward movement of the cutter to actuate said carrier, substantially as described.

4. In combination, a base, a rotating disk, a pivoted cutter-frame, a cutter carried thereby, means operated by the upward movement of the cutter for rotating the disk, said means being inoperative during the downward movement of the cutter to cut the cheese, indicating elements consisting of means for supporting a value-chart, an index-pointer thereover, and means operated by the upward movement of the cutter for moving one of said elements relatively to the other, substantially as described.

5. In combination, a base, a rotating disk, a pivoted cutter-frame, a cutter carried thereby, means operated by the upward movement of the cutter for rotating the disk, said means being inoperative during the downward movement of the cutter to cut the cheese, a value-chart carrier arranged to hold a plurality of charts, an index-pointer having marked thereon the price per pound, and means operated by the upward movement of the cutter for moving one of said latter elements relatively to the other, substantially as described.

6. In combination, a base, a rotating disk, a ring of vulcanized fiber thereon, a pivoted cutter-frame, a cutter carried thereby and a rack-carrier jointed to said frame and arranged to engage the ring to impart rotary motion to the disk on the upward movement of the cutter-frame, substantially as described.

7. In combination, a base, a rotating disk, a pivoted cutter-frame, a cutter carried thereby, a rack-carrier jointed to said frame, means for causing said rack to engage the disk to impart rotary motion thereto on the upward movement of the cutter-frame but only after a constant minimum movement thereof, said rack being disengaged from said disk upon the downward movement of the cutter, substantially as described.

8. In combination, a base, a rotating support, a pivoted cutter, and means operated by the movement of the cutter only after a constant minimum angular movement thereof for rotating the support through an angle proportionate to the excess of the angular movement of the cutter above said minimum, substantially as described.

9. In combination, a base, a rotating support, a movable cutter and means operated by the movement of the cutter only after a constant minimum movement thereof for rotating the support through an angle exactly proportionate to the excess of the movement of the cutter above said minimum, substantially as described.

10. In combination, a base, a rotating support, a movable cutter, means for moving said cutter, and means operated in unison with the movement of the cutter only after a constant minimum movement thereof for rotating the support through an angle exactly proportionate to the excess of the movement of the cutter above said minimum, substantially as described.

11. In combination, a fixed support, a movable support, a movable cutter, and means operated in unison with said cutter only after a constant minimum movement thereof for moving said movable support through an angle exactly proportionate to the excess of the movement of the cutter above said minimum, substantially as described.

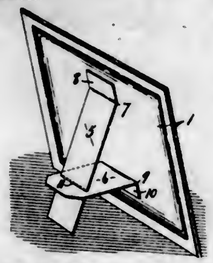
12. In combination, a fixed support, a movable support, a movable cutter, means for moving said cutter and means operatively connected with said latter means for moving said movable support only after a constant minimum movement of the cutter and through a distance exactly proportionate to the excess of movement of the cutter above said minimum, substantially as described.

13. In a cheese-cutter the combination with a pivotally-supported cutting-knife and a handle therefor, a carrier, means whereby the raising of the said knife rotates the carrier, an index-pointer operated by the motion of said handle and an indicator-card coacting with said index-pointer to indicate the amount of cheese which would be cut at any point were the knife there lowered as and for the purpose specified.

14. In a cheese-cutter in combination a pivotally-supported cutting-knife, a lever connected thereto, a cheese-carrier, and means whereby the operating of the lever rotates the cheese-carrier as and for the purpose specified.

15. In a cheese-cutter the combination with an indicator-card comprising a column giving the weight placed transversely to a column giving the price, of an indicator operated by the rotation of the cutting-knife and adapted to coact with the aforesaid indicator-card as and for the purpose specified.

819,680. **EASEL.** JOHN WEBER, Newark, N. J. Filed Dec. 13, 1905. Serial No. 291,647.

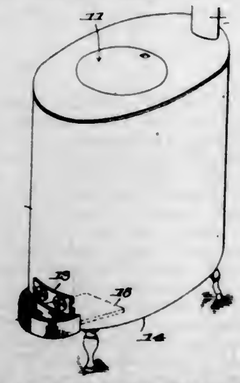


Claim.—1. In an easel of the class described, a card or plate, in combination with a brace attached at one end to the card or plate and having its other end adapted to swing to and from the plate and provided with a transverse slot of substantially the same width lengthwise of the brace as the thickness of the leg, and a leg attached to one end of the plate and having its other end passed through said slot to establish a sliding interlocking connection with the brace.

2. In an easel of the class described, a card or plate, in combination with a leg and brace, each hinged at one end to the plate, one of the parts being provided with a transverse slot receiving the other part said slot being of substantially the same width in the direction of length of the part in which it is formed as the other part which slides therein, whereby sliding interlocking connection is established between the two parts which enables them to be folded flatwise against the plate the part entering the slot being slidable endwise therein as the parts are folded and unfolded.

3. In an easel of the class described, a card or plate, in combination with a leg and brace each hinged at one end to the card or plate, the brace being provided with a transverse slot and the leg being of uniform width from end to end and substantially equal to the width of the slot, said leg being inserted through the slot in the brace to establish a sliding interlocking connection therewith, whereby said parts may be folded flatwise against the plate, or unfolded forming with the plate a triangular brace.

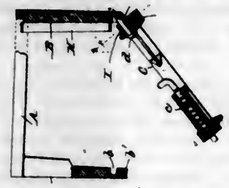
819,681. **ATTACHMENT TO STOVES.** ROBERT L. WEDDINGTON, Hugo, Ind. Ter., assignor of one-half to Clarence H. Howe, Hugo, Ind. Ter. Filed Apr. 1, 1905. Serial No. 253,296.



Claim.—1. An air-tight wood-burning stove having a draft-opening in its upright wall adjacent the bottom thereof, a seat provided upon the bottom of the stove beneath the draft-opening and open at its outer end, and an ash-receptacle having a lateral extension detachably engaged with the seat to support the receptacle in position to receive discharges of ashes from the draft-opening.

2. A stove provided with a draft-opening in one side thereof, a guideway upon the bottom of the stove beneath the draft-opening, and an ash-receptacle having an attaching element detachably engaged with the guideway, the ash-receptacle rising above the attaching element with its rear wall constituting a stove-engaging stop which is shaped to conform to the adjacent side portion of the stove.

819,682. **TOILET-PAPER FIXTURE.** HARRY J. WILLIAMS, Meriden, Conn., assignor to United States Envelope Company, Springfield, Mass., a Corporation of Massachusetts. Filed Jan. 30, 1906. Serial No. 298,661.



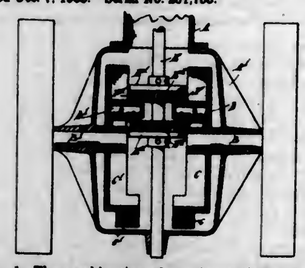
Claim.—1. In a toilet-paper fixture, the combination with the base and supporting-arms, of a core adapted to support the roll of paper, a pivot-pin on which one end of the core is inseparably journaled, said pivot-pin being itself hinged to one of the arms, whereby the pivot-pin and core may be moved in unison and means for detachably connecting the core and other arm; substantially as described.

2. In a toilet-paper fixture, the combination with the base, the forwardly-projecting supporting-arms, one of which has a socket therein, and a pivot-pin permanently hinged in the end of the other of said arms, of a core for the roll of paper inseparably pivoted on said pin, and a sliding pivot-pin on the core adapted to engage the socket in the other arm; substantially as described.

3. In a toilet-paper fixture, the combination with the base having the forwardly-extending supporting-arms, one of which is provided with a socket and a pivot-pin permanently hinged in the other of said arms, of a core inseparably pivoted on said pin, a sliding pivot-pin mounted on the core in position to enter the socket and stops coöperating to prevent the complete rotation of the core when in operative position, said stops being so positioned with relation to each other as to prevent the entry of the core between the arms in any but the correct position for operation; substantially as described.

4. In a toilet-paper fixture, the combination with the base having the forwardly-projecting arms and the leaf-spring carried thereby in proximity to one of said arms, of a core pivoted in said arms on axially-projecting pins and a projection on one end of the core having stop-faces adapted to contact with said spring to retard rotation of the core and a part intermediate said faces adapted to engage said spring to prevent the entry of the core between the arms when not in position for the spring to coöperate with said stop-faces; substantially as described.

819,683. **MECHANICAL MOVEMENT.** HARVEY D. WILLIAMS, Washington, D. C., assignor of one-half to Waterbury Tool Company, Waterbury, Conn., a Corporation of Connecticut. Filed Mar. 14, 1904. Renewed Oct. 7, 1905. Serial No. 281,753.



Claim.—1. The combination of a reciprocating part, a rotating part, means for connecting said parts so that the reciprocating part shall move with a velocity proportional to a component in one direction of the velocity of a point upon the rotating part and shall rotate with a velocity proportional to the component of the velocity of said point in a direction at an angle to the first-named component, and a counterweight upon said rotating part adapted to balance the inertia of the reciprocating part due to its change of lineal velocity.

2. The combination of a reciprocating part, and two rotating parts adapted to turn in opposite directions, and means for connecting said parts so that the reciprocating part shall move with a velocity proportional to a component in one direction of the velocity of a point upon each of said rotating parts, and shall rotate with a velocity proportional to the component of the velocity of said points in a direction at an angle to the first-named component.

3. The combination of a reciprocating part, and a rotating part upon each side of said reciprocating part, and means for connecting said parts so that the reciprocating part shall move with a velocity proportional to a component in one direction of the velocity of a point upon each of said rotating parts, and shall rotate with a velocity proportional to the component of the velocity of said points at an angle to the first-named component and a counterweight upon each of said rotating parts said counterweights being adapted to balance the lineal inertia of the reciprocating part.

4. The combination of a reciprocating part, a crank adapted to rotate, a crank-pin on said crank, means connecting said crank-pin with said reciprocating part so that the latter shall move with said crank-pin in one direction and rotate with a velocity proportional to the velocity of said crank-pin in another direction and a counterweight on said crank adapted to balance the lineal inertia of the reciprocating part.

5. The combination of a reciprocating part, a crank upon each side of said reciprocating part, said cranks being adapted to rotate in opposite directions, crank-pins upon said cranks, means connecting said crank-pins with said reciprocating part so that the latter shall move with said crank-pins in one direction and rotate with a velocity proportional to the velocity of said crank-pins in another direction and a counterweight on each of said cranks adapted to balance the lineal inertia of the reciprocating part.

6. The combination of a reciprocating part, a crank upon each side thereof, wrist-pins in said cranks, blocks pivoted upon said wrist-pins, and connected to said reciprocating part so as to rotate the same, said reciprocating part being adapted to contact the sides of said blocks, and counterweights upon said cranks adapted to balance the lineal inertia of the reciprocating part.

7. The combination of a reciprocating part, a crank upon each side thereof, wrist-pins in said cranks, blocks provided with racks upon said wrist-pins, a gear-wheel upon the reciprocating part engaging with said racks, said reciprocating part being adapted to contact the sides of said blocks, and counterweights upon said cranks adapted to balance the lineal inertia of the reciprocating part.

8. The combination of a reciprocating part, a revoluble crank on one side thereof, a wrist-pin in said crank, a block upon said wrist-pin, the reciprocating part being adapted to contact the sides of said block, said block being connected to the reciprocating part so as to rotate the same, and a counterweight adapted to balance the lineal inertia of the reciprocating part.

9. The combination of a reciprocating part, a revoluble crank on one side thereof, a wrist-pin in said crank, a block upon said wrist-pin provided with a rack, a gear-wheel upon said reciprocating part engaging said rack, said reciprocating part being adapted to contact the sides of said block, and a counterweight upon said crank adapted to balance the lineal inertia of said reciprocating part.

10. The combination of a reciprocating part, a yoke thereon, two cranks adapted to turn in opposite directions, wrist-pins on said cranks, said yoke engaging said wrist-pins at equal distances upon opposite sides of the axis of the reciprocating part.

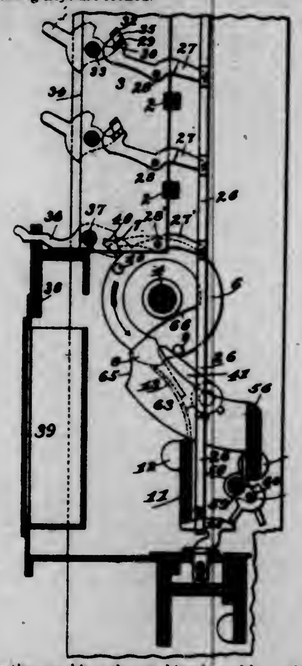
11. The combination of a reciprocating part, a crank upon each side thereof, wrist-pins on said cranks, blocks pivoted upon said wrist-pins, and connected to said reciprocating part so as to cause the same to rotate, said reciprocating part being adapted to contact the sides of said blocks.

12. The combination of a reciprocating part, a crank upon each side thereof, wrist-pins on said cranks, blocks provided with racks upon said wrist-pins, a gear-wheel upon the reciprocating part engaging with said racks, the reciprocating part being adapted to contact said blocks.

819,684. **VOTING-MACHINE.** PHILIP YOE, Dayton, Ohio, assignor to Philip Yoe, Edward W. Hanley, and Karion Fitzpatrick, Dayton, Ohio. Original application filed Mar. 9, 1905, Serial No. 249,167. Divided and this application filed June 7, 1905. Serial No. 264,094.

Claim.—1 In a voting-machine, the combination with a suit-

able supporting-frame, of a series of setting-keys mounted thereon, an oscillating key-locking bar pivoted to said supporting-frame, a positively-actuated locking member adapted to lock said key-locking bar in a key-locking position, and an oscillating operating-lever secured to a shaft supported by the supporting-frame, and means on said shaft adapted to actuate said key-locking bar and locking member successively, whereby, upon the upward stroke of the operating-lever, said setting-keys are locked.



2. In a voting-machine, the combination with a suitable supporting-frame, of an oscillating bar pivoted thereto, a positively-actuated locking member adapted to lock said bar in a key-locking position, a series of setting-keys adapted to be locked by said bar, and an oscillating operating-lever which positively actuates said bar and said locking member at the limit of its movement in either direction, whereby, upon operating said oscillating operating-lever to its limit in one direction, the keys are locked, and to its limit in the reverse direction, they are unlocked.

3. In a voting-machine, the combination with a series of setting-keys, of an exclusion mechanism to prevent the operation of more than a predetermined number of setting-keys at a time, a setting member connected to said exclusion mechanism and adapted to actuate said exclusion mechanism into and out of a setting-key-locking position, an operating-lever, and a locking member actuated by said operating-lever, whereby, upon actuating said operating-lever the setting member is locked.

4. In a voting-machine, the combination with a series of setting-keys, of an exclusion mechanism to prevent the operation of more than a predetermined number of setting-keys at a time, a setting member connected to said exclusion mechanism and adapted to actuate said exclusion mechanism, an operating-lever, a locking-arm 63 and a disk 64, arranged and operating, substantially as described.

5. In a voting-machine, the combination with a suitable supporting-frame, of a group of setting-keys, exclusion mechanism comprising a pivoted cross-bar, a rod extending across said bar and secured thereto, a series of locking members adapted to be set in different positions and mounted on said rod, means to actuate said cross-bar from the exterior of the machine, said means having indicator-tablets rigidly secured thereto to indicate the position set, and means operated by the voter to look the indicator-tablets in the set position.

6. In a voting-machine, a series of setting-keys, interlocking rods connected therewith, locking projections extending from said interlocking rods, a cross-bar having locking members pivotally secured thereto, and capable of being moved from one position to another, locking-hubs on said locking members, one of said locking members and hubs for each series of setting-keys and their interlocking rods, and a rod extending across all of said locking members and their respective hubs to lock them in their set positions.

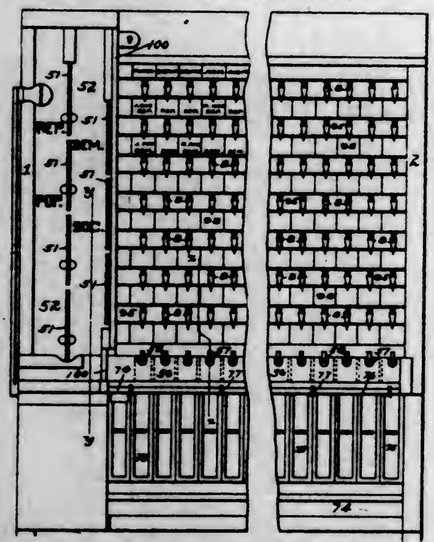
7. In a voting-machine, the combination with a suitable supporting-frame, of a series of setting-keys supported thereby, a pivoted cross-bar having locking members mounted thereon and adapted to lock a predetermined number of keys, and the projection 56 extending from said cross-bar, the locking-disk 64, and operating-lever 5, substantially as shown and described.

8. In a voting-machine, the combination of a series of setting-keys and their coöperating interlocking members, a pivoted cross-bar, a series of locking members mounted on said cross-bar, a single means to hold the entire series of locking members in position, a gear-wheel on one end of said pivoted cross-bar, and a further gear-wheel of smaller dimensions attached to the indicator-shaft.

9. In a voting-machine, the combination with a suitable supporting-frame, of exclusion mechanism comprising a series of interlocking members mounted on said frame, a pivoted cross-bar, a rod extending across said bar and secured thereto, a series of locking members adapted to be set in different positions and loosely mounted on said rod, and a rod to lock said locking members in position.

10. In a voting-machine, the combination with a suitable supporting-frame, of exclusion mechanism comprising a pivoted cross-bar, a plurality of independently-settable locking members adapted to be set and locked in different positions, said members being mounted on a rod supported by said cross-bar, and a single means to positively unlock and lock said locking members.

819,685. VOTING-MACHINE. PHILIP YOE, Dayton, Ohio, assignor to Philip Yoe, Edward W. Hanley, and Kerien Fitzpatrick, Dayton, Ohio. Filed Aug. 16, 1905. Serial No. 274,358.



Claim.—1. The combination with a rotating counter-actuator shaft having a counter-actuator rigidly secured thereto, of an independently-mounted setting-key freely movable into and out of a voting position and adapted to be engaged and actuated by said counter-actuator, of a counter adapted to be engaged and actuated by said setting-key, and means to actuate said rotating counter-actuator after said setting-key has been set into a voting position.

2. The combination with a rotating counter-actuator shaft having a counter-actuator rigidly secured thereto, of a setting-key freely movable into and out of a voting position, and adapted to be engaged and actuated by said counter-actuator, a counter adapted to be engaged and actuated by said setting-key, means to rotate said rotating counter-actuator, and means on said counter-actuator adapted to lock said counter.

3. The combination with a setting-key, of a counter, a rotating counter-actuator shaft having a counter-actuator rigidly secured thereto, means on said counter-actuator adapted to successively unlock said counter, engage and actuate said key thereby actuating said counter and finally locking said counter, and means to rotate said rotating counter-actuator.

4. The combination with an intermittent rotating counter-actuator shaft, a series of counter-actuators rigidly secured to said intermittent rotating counter-actuator, of a series of independently-mounted setting-keys adapted when set to be engaged and actuated by said counter-actuators, a series of counters adapted to be rotated by said setting-keys, and means to intermittently rotate said intermittent counter-actuator.

5. The combination with a series of setting-keys independently mounted, of a series of counters, an independently-mounted rotating shaft extending across said series of counters, of a series of counter-actuators secured to said rotating shaft adapted to engage and actuate said setting-keys and rotate said counters, an operating-lever, and connecting mechanism between said rotating shaft and said operating-lever.

6. The combination with an intermittent rotating shaft, a series of counter-actuators rigidly secured thereto, of a plurality of projections on each of said counter-actuators, a series of setting-keys one for each counter-actuator, said setting-keys being adapted to be set into the paths of said projections upon said counter-actuators, a series of counters adapted to be engaged and actuated by said setting-keys, and means to intermittently rotate said intermittent rotating shaft.

7. The combination with a plurality of rotating shafts, a series of counter-actuators rigidly secured to each of said rotating shafts, a plurality of series of setting-keys adapted to be engaged and actuated by said counter-actuators, of a plurality of series of counters adapted to be engaged and rotated by said setting-keys, a reciprocating actuating-frame adapted to actuate said rotating shafts simultaneously, and means to actuate said reciprocating actuating-frame.

8. In a voting-machine, the combination with a rotating counter-actuator shaft, of a series of counter-actuators rigidly secured thereto, of a series of setting-keys adapted to be engaged and actuated by said counter-actuator, a series of counters adapted to be engaged and actuated by said setting-keys, of an oscillating operating-lever, means to rotate said rotating counter-actuator a predetermined distance upon the operation of the operating-lever in one direction, and means to advance said rotating counter-actuator upon the actuation of the operating-lever in the reverse direction.

9. The combination with a rotating shaft, a series of counter-actuators rigidly secured thereto, of a series of setting-keys adapted to be engaged and actuated by said counter-actuators, a series of counters adapted to be engaged and actuated by said setting-keys, of an operating-lever, means to positively stop said rotating shaft after being rotated a predetermined distance by the operation of said operating-lever in one direction, and means to positively advance and lock said rotating shaft upon actuation of said operating-lever in the reverse direction.

10. In a voting-machine, the combination with a plurality of rotating shafts, a series of counter-actuators rigidly secured to said rotating shafts, a series of setting-keys adapted to be engaged and actuated by said counter-actuators, of a series of counters adapted to be engaged and actuated by said setting-keys, a reciprocating actuating-frame, means on said reciprocating actuating-frame adapted to positively actuate a plurality of said rotating shafts, an oscillating shaft, of an operating-lever mounted on said oscillating shaft, of means supported by said oscillating shaft adapted to positively actuate said reciprocating actuating-frame upon the actuation of said operating-lever in one direction, and means to positively return said reciprocating actuating-frame upon the operation of said operating-lever in the reverse direction.

11. The combination with a plurality of rotating shafts, a plurality of counter-actuators rigidly secured to each of said shafts, a plurality of setting-keys and their coöperating actuating-frames, and means on said counter-actuators, setting-key, and coöperating actuating-frames adapted to lock all unset keys, and means to rotate said rotating shafts.

12. In a voting-machine, the combination of a plurality of rotating shafts, a plurality of counter-actuators supported by each of said rotating shafts, a plurality of setting-keys and their coöperating actuating-frames, of means on said counter-actuators adapted to register all set keys, and means to lock all unset keys.

13. In a voting-machine, the combination with a plurality of rotating shafts, a plurality of counter-actuators rigidly secured to said rotating shafts, a plurality of setting-keys adapted to be engaged and actuated by said counter-actuators, a plurality of actuating-frames, of a plurality of counters, and means to lock said counter of the unset keys.

14. The combination with a series of setting-keys independently mounted, of a straight-ticket key mechanism independently mounted and adapted to engage and set a series of said setting-keys simultaneously, a series of counters adapted to be engaged and actuated by said setting-keys, of a rotating shaft, a series of counter-actuators rigidly secured to said rotating shaft, means on said counter-actuators adapted to engage and actuate said series of setting-keys, and means to rotate said rotating shaft.

15. In a voting-machine, the combination with a setting-key, of a counter adapted to be engaged and rotated by said setting-key, of a movable stop adapted to positively limit the stroke of said setting-key, a rotating shaft, a counter-actuator rigidly secured to said rotating shaft, and means to rotate said rotating shaft.

16. In a voting-machine, the combination with a rotating counter-actuator, of a counter normally locked by said rotating counter-actuator, a setting-key adapted to actuate said counter when actuated by said rotating counter-actuator, means to actuate said rotating counter-actuator, and means to return a set key to normal, whereby said key is registered and returned to normal.

17. In a voting-machine, the combination of a rotating shaft, a counter-actuator mounted thereon and having a plurality of projections from its side, an actuating-frame adapted to be locked by one of said projections on said counter-actuator, and a setting-key adapted to be locked by said actuating-frame, and means to rotate said counter-actuator.

18. In a voting-machine, the combination of a rotating shaft, a counter-actuator mounted thereon and having a plurality of locking projections on its side, an actuating-frame adapted to be locked by said projections on the counter-actuator, a setting-key adapted to be locked by said actuating-frame, and a counter by said setting-key, and means to rotate said counter-actuator.

19. The combination with an independently-mounted oscillating shaft having a longitudinal channel therein, a straight-ticket key mounted on said oscillating shaft, a series of setting-keys independently mounted having setting projections 49 thereon, said projections 49 being adapted to be engaged by one of the sides of said longitudinal channel in said setting-keys, whereby a series of said setting-keys are simultaneously set.

20. In a voting-machine, the combination with a setting-key adapted to be moved from normal to a set position or to be returned to normal at will without actuating its corresponding counter, of a counter, and a movable stop normally locked and adapted to positively stop said setting-key after it has been moved a predetermined distance, and a rotating shaft having a counter-actuator rigidly secured thereto and adapted to release said movable stop and actuate said key and counter and finally lock said counter.

21. In a voting-machine, the combination with an interlocking mechanism, of a setting-key adapted to actuate said interlocking mechanism, of a counter normally locked, a rotating shaft having a counter-actuator rigidly secured thereto and adapted to lock said counter, and a unit-wheel of said counter and its coöperating mechanism arranged to positively limit the stroke of said setting-key and interlocking mechanism.

22. In a voting-machine, the combination of a suitable supporting-frame, of a plurality of division-plates having split bearings therein, a plurality of rotating counter-actuators movable into and out of said split bearings, and a single means to lock said split bearings simultaneously.

23. In a voting-machine, the combination with a suitable supporting-frame, of a plurality of division-plates removably mounted thereon, a plurality of slotted cross-bars secured to said supporting-frame, each of said division-plates occupying one of said slots, means on said cross-bars and division-plates adapting them to be coupled, and a plurality of rods to couple said cross-bars and division-plates, and a door to hold said rods in position.

24. In a voting-machine, the combination with a suitable supporting-frame, of a plurality of oscillating shafts extending across said supporting-frame and supported thereby, a plurality of setting-keys removably mounted on said shafts, an actuating member slid on each of said shafts but prevented from rotating, and a door to prevent said shaft from moving longitudinally.

25. In a voting-machine, the combination with a suitable supporting-frame, of a plurality of oscillating shafts, each having a longitudinal channel therein, said shafts extending across said supporting-frame, a straight-ticket key slid on each of said shafts but prevented from rotating, and a door to prevent said shafts from moving longitudinally.

26. In a voting-machine, the combination of a key adapted to be moved from normal to a set position or to be returned to normal at

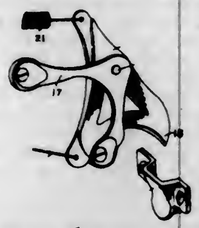
will, of a movable stop normally locked to positively stop the key when it has been moved a predetermined distance, a rotating shaft and a counter-actuator rigidly secured thereto and adapted to release said stop and actuate said key and counter successively.

27. In a voting-machine, the combination with a key adapted to be moved from a normal position to a set position and returned to said normal position at will, of a movable stop normally locked to positively stop the key when it has been moved a predetermined distance, and an intermittently-rotating shaft, and a counter-actuator rigidly secured thereto, and a plurality of projections on said counter-actuator adapted to release said stop and to actuate said key and said stop successively.

28. In a voting-machine, the combination with a setting-key, means to return said setting-key to normal, of a counter adapted to positively limit the stroke of said setting-key, a rotating shaft, a counter-actuator rigidly secured to said rotating shaft, said counter-actuator being adapted to engage and actuate said setting-key, a reciprocating frame, an operating-lever, and connecting mechanism between said reciprocating frame and operating-lever.

29. The combination with a suitable supporting-frame, of an oscillating shaft supported by said frame, a cam secured to said oscillating shaft, of an operating-lever also secured to said oscillating shaft, a reciprocating actuating-frame having actuating and locking projections thereon, a plurality of rotating shafts, a series of counter-actuators rigidly secured to each of said rotating shafts, a plurality of series of counters adapted to be locked or unlocked by said counter-actuators.

819,686. **SAFETY DEVICE FOR FOLDING BEDS.** SEVERIN B. BANKSON, San Francisco, Cal., assignor of one-half to Edward Rolkin, San Francisco, Cal. Filed Oct. 23, 1905. Serial No. 283,943.

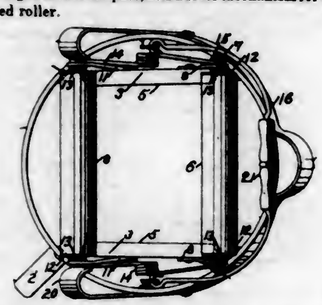


Claim.—1. In a device of the character described, the combination of a head-frame, a mattress-frame pivoted thereto, stops secured upon the sides of the head-frame, bell-crank levers pivoted to swing vertically and transversely to the bed upon the headboard of the mattress-frame and having outwardly-extending hooks adapted in their normal position to engage said stops in the descent of the headboard, resilient means for holding said hooks in said operative position, and means for withdrawing said hooks from their operative position, comprising wires connected to said levers and a wire extending therefrom to the foot of the mattress-frame, and provided at its end with means for drawing it from the head of the bed, substantially as described.

2. In a device of the character described, the combination of a head-frame, a mattress-frame pivoted thereto, stops secured upon the sides of the head-frame, bell-crank levers pivoted to swing vertically and transversely to the bed upon the headboard of the mattress-frame and having outwardly-extending hooks adapted in their normal position to engage said stops in the descent of the headboard, resilient means for holding said hooks in said operative position, brackets for supporting said levers, one member of each bracket serving for a stop for the lever against said resilient means, and means for withdrawing said hooks from their operative position, comprising wires connected to said levers, a wire extending therefrom to the foot of the mattress-frame, and a stout bar connected to its end, and extending through the footboard, substantially as described.

819,687. **MOP-WRINGER.** GROVE R. BROKAW and GEORGE R. LAWRENCE, Minneapolis, Minn., assignors to Herbert F. Williams, Minneapolis, Minn. Filed Mar. 14, 1905. Serial No. 249,997.

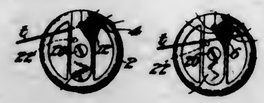
Claim.—1. The combination, with a pail, of plates secured thereon, and having inwardly-turned upper edges, a roller mounted in fixed bearings on said plates, a second roller mounted in pivoted bearings on said plates, the ends of said rollers extending outwardly beyond the inwardly-turned edges of said plates, springs for normally holding said rollers apart, and a lever mechanism for operating said pivoted roller.



2. The combination with a pail, of plates provided therein and secured to the walls thereof, a roller mounted in fixed bearings on said plates, straps pivoted at their lower ends on said plates, a second roller carried by the upper ends of said straps and adapted to move toward and from said fixed roller when said straps are oscillated, springs interposed between the walls of said pail and plates and adapted to hold said straps and said second roller away from said first-named roller, a pivoted bail, and arms pivotally connected at their lower ends to said bail near its pivot and having inwardly-turned upper ends connected with said straps and said second-named roller, substantially as described.

3. The combination with a pail, of parallel plates provided therein and secured to the walls of the pail, a roller mounted in fixed bearings on said plates, straps pivoted at their lower ends near the lower edges of said plates and projecting above the upper edges thereof, a second roller carried by said straps, springs having their ends connected respectively with the axes of said rollers and having a looped portion intermediate to their ends depending between said plates and the wall of said pail and protected thereby, a bail pivoted on said pail near the bottom thereof, and arms pivotally connected at their lower ends to said bail and attached at their upper ends to said straps whereby when said bail is depressed said second-named roller will be moved against the tension of said springs toward said first-named roller, substantially as described.

819,688. **BOBBIN-CASE FOR SEWING-MACHINES.** EDWARD L. BOWERS, Orange, Mass., assignor to The New Home Sewing Machine Company, Orange, Mass., a Corporation of Massachusetts. Filed Dec. 21, 1904. Serial No. 237,793.



Claim.—1. The combination with a bobbin-case having a thread-guiding surface, of a tension device having an open-sided thread-guiding eye and also having at one side of said eye a threading-hook the point of which is arranged in a plane behind that of the adjacent portion of the thread-guiding surface of the bobbin-case; the said tension device being arranged on the bobbin-case with a threading-space thereunder opening beneath one end of the tension device and extending to a point past the end of its threading-hook.

2. The combination with a bobbin-case having a thread-guiding surface, of a tension-spring having an open-sided thread-guiding eye and also having at one side of said eye a threading-hook arranged in a plane behind that of the adjacent portion of the thread-guiding surface of the bobbin-case; the said tension-spring arranged on the bobbin-case with a threading-space thereunder opening beneath one end of the tension-spring and extending to a point past the end of its threading-hook.

3. The combination with a cylindrical bobbin-case having a face-wall provided with a thread-guiding surface, of a tension device located on the said face-wall of the bobbin-case with one end adjacent to the peripheral edge thereof and having an open-sided thread-guiding eye and also having at one side of said eye a threading-hook the point of which is arranged in a plane behind that of the adjacent portion of the thread-guiding surface of the bobbin-case; the said tension device being arranged on the bobbin-case with a threading-space thereunder opening beneath that end of the tension device adjacent to the periphery of the bobbin-case and extending to a point past the end of its threading-hook.

4. The combination with a cylindrical bobbin-case having a face-wall provided with a thread-guiding surface, of a tension device located on the said face-wall of the bobbin-case with one end adjacent to the peripheral edge thereof and having an open-sided thread-guiding eye and also having at one side of said eye a threading-hook the point of which is arranged in a plane behind that of the adjacent portion of the thread-guiding surface of the bobbin-case and the outer thread-guiding surface of which is convex and has a guide-groove intersecting said eye in which the thread normally lies; the said tension device being arranged on the bobbin-case with a threading-space thereunder opening beneath that end of the tension device adjacent to the periphery of the bobbin-case and extending to a point past the end of its threading-hook.

5. The combination with a cylindrical bobbin-case having a face-wall provided with a thread-guidlng surface, of a tension-spring secured intermediate its ends to the said face-wall of the bobbin-case and spaced away from the bobbin-case at its thread-tensioning end and having an open-sided thread-guiding eye at said tensioning end and also having at one side of said eye a threading-hook the point of which is arranged in a plane behind that of the adjacent portion of the thread-guiding surface of the bobbin-case; the said tension-spring being arranged on the bobbin-case with a threading-space thereunder opening beneath its thread-tensioning end and extending to a point past the end of its threading-hook.

6. The combination with a cylindrical bobbin-case having a face-wall provided with a thread-guiding surface and also having a tapped bobbin-spindle, of a tension-spring having a substantially central opening and spaced away from the bobbin-case at its thread-tensioning end and having an open-sided thread-guiding eye at said tensioning end and also having at one side of said eye a threading-hook the point of which is arranged in a plane behind that of the adjacent portion of the thread-guiding surface of the bobbin-case, and a screw passed through said opening in the tension-spring and into said tapped spindle; the said tension-spring being arranged on the bobbin-case with a threading-space thereunder opening beneath its thread-tensioning end and extending to a point past the end of its threading-hook.

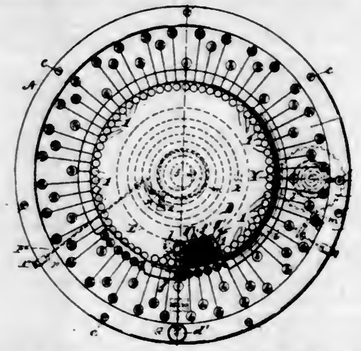
7. The combination with a bobbin-case having a thread-guiding surface, of a tension device having an open-sided thread-guiding eye and also having at one side of said eye a threading-hook the point of which is arranged in a plane behind that of the adjacent portion of the thread-guiding surface of the bobbin-case; the said tension device being arranged on the bobbin-case with a threading-space thereunder opening beneath one end of the tension device and extending to a point past the end of its threading-hook, and means for engaging with and limiting the movement of the thread subsequent to its passage beyond the threading-hook during the threading operation.

8. The combination with a cylindrical bobbin-case having a face-wall provided with a thread-guiding surface, of a tension device attached to the said face-wall of the bobbin-case and having an open-sided thread-guiding eye, and also having at one side of said eye a threading-hook the point of which is arranged in a plane behind that of the adjacent portion of the thread-guiding surface of the bobbin-case; and means for guiding the bobbin-thread across the outer face of said threading-hook from the peripheral wall of the bobbin-case to the said thread-guiding eye of the tension device and in a direction substantially at right angles to the path of the thread from the said thread-guiding eye to the work, the said eye being formed with a lower guard-wall extending beneath the thread in its passage therethrough, for the purpose set forth.

9. The combination with a bobbin-case having a countersink or recess in its face-wall one edge of which constitutes a thread-guiding surface, of a tension device located in said recess and having an open-sided thread-guiding eye and also having at one side of said eye a threading-hook arranged in a plane behind that of the adjacent portion of the said thread-guiding surface; the said tension device being arranged on the bobbin-case with a threading-space thereunder opening beneath one end of the tension device and extending to a point past the end of its threading-hook.

819,689. **INSTRUMENT FOR COMPUTING FRACTIONS.** WILLIAM T. BREWER, Syracuse, N. Y., assignor of one-half to James D. MacTaggart, Syracuse, N. Y. Filed June 2, 1905. Serial No. 263,506.

Claim.—1. In an instrument for computing fractions, the combination of a base, a plate secured stationary to the base and provided with a graduated scale of fractions to be computed arranged in annular series, and an annular series of computing-fractions disposed within the scale series and concentric therewith and including a "zero-mark," a revoluble concentric disk pivoted centrally on the base and concealing the computing series and provided with an inspection-aperture normally exposing "zero," indicators adapted to be manipulated, carried on said disk and registering with the fractions of the scale, a spiral spring for automatically rotating said disk in one direction, a movable detent supported on the case and adapted to consecutively engage and disengage the manipulated indicators of the fractions to be computed to permit the disk to be rotated intermittently whereby the aforesaid aperture will expose a fraction of the computing series representing the sum of the added fractions corresponding to the said manipulated indicators, and manually-operated means for actuating said detent to control the engagement and releasing of said indicators as set forth.



2. In an instrument for computing fractions, the combination of a base, a plate secured stationary to said base and provided with a graduated scale of fractions to be computed arranged in annular series, and an annular series of computing-fractions disposed concentric within the scale series and including a "zero-mark," a revoluble disk pivoted centrally on the case and concealing the computing series and provided with an inspection-aperture normally exposing "zero," suitably-manipulated indicators carried on said disk and registering with the fractions of the scale, a spiral spring for automatically rotating said disk, a movable detent retaining the disk in normal position and disposed in the path of the consecutively-manipulated indicators to limit the movement of the disk and operative for releasing the indicators to cause the disk to be moved intermittently and resultant exposure of increasing fractions of the computing series correspondingly with added scale-fractions represented by the manipulated indicators, and a manually-operated lever pivoted on the case for actuating said detent as set forth.

3. In an instrument for computing fractions, the combination of a base, an annular plate secured stationary to said base and provided with a graduated scale of fractions to be computed, said fractions being arranged in a number of annular series, and those of each series having like denominators, and the plate also provided with a single computing series of corresponding fractions graduated in reverse direction, a revoluble disk pivoted centrally on the base and having its peripheral portion concealing the computing-fractions and provided with an inspection-aperture disposed to expose the latter fractions one at a time and normally exposing "zero," a concealed "whole-number" wheel, the base provided with an inspection-aperture disposed to expose the numbers of said wheel and normally exposing "0," means imparting intermittent rotation from the disk to said wheel, indicators carried on the aforesaid disk and corresponding to the scale-fractions and adapted to be manipulated in accordance with the fractions to be added, means for automatically rotating said disk in one direction, a movable detent serving to restrain the disk against rotation, means for actuating said detent to release the disk to permit the latter to move intermittently whereby the indicators of the fractions to be computed are consecutively moved to a predetermined point to cause the aperture of the whole-number wheel to expose a numeral and the aperture of the disk to expose a fraction of the computing series, said exposed numeral and fraction being the sum of the added fractions represented by the corresponding manipulated indicators as set forth.

4. In an instrument for computing fractions, the combination of a base, an annular plate secured stationary to said base and provided with a graduated scale of fractions arranged in annular series

and an annular series of computing-fractions graduated in reverse direction, and including "zero," a revoluble disk pivoted centrally on the base and concealing the computing series and provided with an inspection-aperture for exposing the fractions of the latter series, one at a time, and normally exposing "zero," suitably-manipulated indicators carried on said disk and corresponding with the fractions of the scale, a spiral spring for automatically rotating the disk, a manually-actuated detent for restraining the disk against rotation and releasing the same and governed in its action by the manipulated indicators to cause the latter to be moved consecutively to a predetermined point, a concealed "whole-number" wheel including "zero" and provided with ratchet-teeth, the base provided with an inspection-aperture disposed above said wheel and normally exposing "zero," a pawl carried on the disk and adapted to engage said ratchet-teeth at every complete rotation of the disk, by which rotation a numeral is exposed at the aperture of the base and a fraction is exposed at the aperture of the disk, the combined numeral and fraction being the sum of the added fractions represented by the manipulated indicators as set forth.

5. In an instrument for computing fractions, the combination of a base, a plate secured stationary on the base and provided with a graduated scale of fractions to be computed and with a corresponding set of computing-fractions, a "whole-number" wheel concealed under said plate and provided with ratchet-teeth, the case provided with an inspection-aperture normally exposing "zero" of said wheel, a revoluble disk pivoted centrally on the base and concealing the computing set of fractions and provided with an inspection-aperture, said aperture being disposed to be moved over said computing-fractions and normally exposing "zero," a spring for automatically rotating said disk, movable indicators carried on said disk and corresponding to the fractions of the scale, a manually-actuated detent, said indicators being manipulated to coöperate with said detent to cause the disk to rotate intermittently, a pawl carried on the disk and adapted to engage the ratchet-teeth of the "whole-number" wheel at each complete rotation of the disk to intermittently rotate the wheel to consecutively expose the numerals thereof, a spiral spring moving the wheel to its normal position, a spring-pressed pawl for holding the wheel in opposition to the spring, and manually-operated means for actuating the pawl to release the same as set forth.

6. In an instrument for computing fractions, the combination of a base provided with a stationary graduated scale of fractions to be computed, and a corresponding set of computing-fractions, a revoluble disk pivoted to the base and provided with an inspection-aperture moving over the computing-fractions, a spiral spring for automatically rotating said disk in one direction, means for winding said spring, a ratchet-wheel fastened to the disk, a spring-pressed pawl engaging said ratchet-wheel to lock the disk in opposition to the spiral spring, a manually-operated detent adapted to engage the disk subsequent to the disengagement of said pawl, movable indicators carried on the disk and corresponding to the fractions of the scale, and adapted to be manipulated relatively to the fractions to be added and adapted to be consecutively engaged and released by said detent, whereby the aforesaid disk is permitted to be rotated to cause its aperture to expose a fraction of the computing set, said fraction being the sum of the fractions corresponding to the manipulated indicators as set forth.

7. In an instrument for computing fractions, the combination of a base provided with a stationary graduated scale of fractions to be computed, and a corresponding set of computing-fractions, a revoluble disk pivoted to the base and provided with an inspection-aperture normally exposing a "zero-mark" and movable over the fractions of the computing set, a spiral spring connected to the disk and base for automatically rotating the disk in one direction and wound by the reverse rotation of the disk, a ratchet-wheel secured to the disk, a pawl adapted to engage said ratchet-wheel during the winding of the spring, a detent supported movably on the base, a manually-operated primary indicating-stop on the disk arranged to engage said detent, a manually-operated push-rod for throwing the aforesaid pawl out of engagement with the ratchet-wheel to permit the engagement of the stop with the detent to set the disk in operative position, supplemental indicating-stops on the disk registering with respective fractions and manipulative so as to be consecutively engaged and released by said detent, and thereby permit the disk to rotate intermittently and cause the aperture thereof to expose a fraction of the computing set, said exposed fraction being the sum of the added fractions corresponding with the manipulated supplemental stops as set forth.

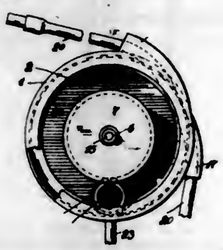
8. In an instrument for computing fractions the combination of base, a plate mounted stationary the said base being provided with a graduated scale of fractions arranged in annular series and "zero," and provided with an annular series of computing-fractions disposed concentric with the series of the scale, and graduated in reverse direction, the computing series including "zero" alined with "zero" of the scale series, a "whole-number" wheel pivoted to the base and concealed under the aforesaid plate and provided with ratchet-teeth, the base being provided with an inspection-aperture for exposing the numerals of said wheel, a revoluble disk pivoted to the base concentric with the series of fractions and concealing the fractions of the computing series and provided with an inspection-aperture normally exposing "zero," a spring for automatically rotating said disk, a manually-operated detent supported on the base, a set of indicator-stops consisting of vertically-movable pins supported on the disk and registering with the scale of fractions and normally in raised or inoperative positions, said pins adapted to be pressed down in accordance with the fractions to be added to cause the pins to consecutively engage said detent and be released thereby, a pawl carried on the disk and disposed to engage the ratchet-teeth of the "whole number" at each complete rotation of the disk, whereby a numeral of said wheel is exposed, and a continued movement of the disk causes the aperture thereof to expose a fraction of the computing series, said number and fraction being the sum of the fractions indicated by the manipulated pins as set forth.

9. In an instrument for computing fractions, the combination of a base, a stationary plate thereon consisting of an annulus and provided with a graduated scale of fractions to be computed and arranged in annular series, and provided with an annular series of computing-fractions, a "whole-number-computing" wheel concealed under said plate, the base provided with an inspection-aperture for exposing the numerals of the wheel consecutively, a revoluble disk pivoted to the base within the annulus and having its peripheral portion concealing the computing series and provided thereat with an inspection-aperture for exposing the fractions of the computing series, an annular series of vertically-movable stop-pins carried on the disk and corresponding to the respective fractions of the scale, a movable detent disposed to engage the depressed pins consecutively and to raise the pins to release the disk, a spiral spring automatically rotating said disk and controlled by the engagement and release of the pins, automatic means for locking the pins in their raised and depressed positions, a manually-operated lever for actuating said detent, a spring-pressed pawl carried on said disk to engage one of the aforesaid ratchet-teeth of the "whole-number-computing" wheel at every complete rotation of the disk to expose a numeral of said wheel, a spiral spring for returning the wheel to its normal position, a spring-pressed retaining-pawl engaging said ratchet-teeth, and a manually-operated push-rod arranged to actuate the latter pawl for releasing the wheel as set forth.

10. In an instrument for computing fractions, the combination of a base, a stationary plate thereon consisting of an annulus and provided with a graduated scale of fractions to be computed and arranged in annular series, and provided with an annular series of computing fractions, a spring-actuated revoluble disk pivoted to said base and provided with an inspection-aperture for exposing the fractions of the computing series, one at a time, and an annular series of vertical openings corresponding to the respective fractions of the scale, indicating-pins in said openings adapted to be consecutively depressed in accordance with the fractions to be added, spring-actuated bolts locking the pins in normal and depressed positions, a detent in the path of the depressed pins to limit the movements of the disk, a manually-operated lever for actuating said detent to raise the engaging pin and thereby release the disk and cause the aperture to expose a fraction of the computing series, said fraction being the sum of the added scale-fractions represented by the consecutively-manipulated pins as set forth.

11. In an instrument for computing fractions, the combination of a base, a stationary plate thereon consisting of an annulus and provided with a graduated scale of fractions to be computed and arranged in annular series, and provided with an annular graduated series of computing fractions, a spring-rotated disk pivoted to the base within the annulus and provided at its peripheral portion with a series of vertical openings disposed radially in lines with the fractions of the scale and provided with an inspection-aperture movable over the fractions of the computing series, annularly-grooved pins in said vertical openings and adapted to be depressed consecutively in accordance with the fractions of the scale to be added, a manually-operated detent supported on the case and serving to engage and release the depressed pins, whereby the disk is rotated intermittently and the inspection-aperture thereof caused to consecutively expose the increasing fractions of the computing series correspondingly with the fractions added and indicated by the depressed pins, the said disk provided with a series of radially-disposed horizontal sockets communicating with said vertical openings, spring-pressed bolts disposed in said sockets and adapted to engage the annular grooves of the said pins to lock the latter in their normal and depressed positions as set forth.

819,690. CYCLE-PUMP. DAVID K. BRYSON, Pittsburg, Pa., assignor to Bryson & Howe, Pittsburg, Pa., a Firm. Filed Apr. 26, 1905. Serial No. 257,843.



Claim.—1. A pump of the type described comprising a drum, a revoluble shaft journaled in said drum, a flanged wheel mounted upon said shaft within said drum, a collapsible tubing mounted within said drum and having its ends protruding outside of said drum, a compressing-roller mounted in said drum, and adapted to frictionally engage said wheel and said tubing, substantially as described.

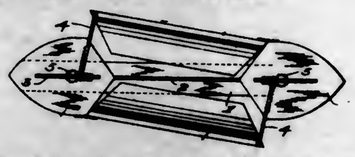
2. A pump of the type described, consisting of a stationary drum, a shaft journaled in said drum, a flanged wheel mounted upon said shaft within said drum, said drum having tangentially-disposed openings formed therein, a collapsible tubing extending into the drum through one of said openings and surrounding said wheel and protruding out of the drum through the other of said openings and a compressing-roller mounted in said drum and adapted to frictionally engage said wheel and said tubing.

3. A motor of the type described consisting of a drum, a shaft journaled in said drum, a wheel mounted upon said shaft, a collapsible tubing passing through said drum, and a roller mounted within said drum and frictionally engaging said wheel and said tubing and revolved around the shaft by the movement of the wheel to collapse said tubing.

4. In a pump, the combination with a suitable support, of a drum supported by said support, a wheel journaled in said drum and actuated from the exterior of said drum, tubing arranged within said drum, a roller mounted within said drum the periphery of the roller bearing on the periphery of the wheel and actuated by said wheel to collapse said tubing, substantially as described.

5. In a pump of the type described, the combination of a casing having an opening in one side, a shaft journaled in said casing, a disk carried on the end of said shaft and fitting the opening in the side of the casing, a wheel carried by said shaft within the casing, a tube arranged within the casing and surrounding said wheel, and having its ends extending outside the casing and a roller bearing against said tubing and against said wheel and adapted to compress the tubing when the wheel is rotated.

819,691. DUMPING VESSEL. PETER CONSTANTINE, Seattle, Wash. Filed Mar. 15, 1905. Serial No. 250,316.



Claim.—1. A vessel of the type set forth comprising end sections rigidly secured together, and intermediate sections, the last-named sections each being hinged at one end, and means for swinging the unhinged ends of said sections outwardly.

2. A vessel of the type set forth comprising end sections and opposite sections intermediate the same, said intermediate sections being hinged to fixed means, one hinged at its forward end and the other at its rear end.

3. A vessel of the type set forth comprising a hull formed of end sections and opposite intermediate sections, said intermediate sections each being hinged at one end and having their free ends normally arranged within the bounds of the hull, and means to swing the said sections outwardly.

4. A vessel consisting of end sections, and intermediate sections hinged by their ends to the ends of the sections and coöperating therewith to form a compartment.

5. A vessel consisting of end sections bearing a stationary spaced relation to one another, and intermediate sections disposed between said end sections and mounted to be swung toward and away from said end sections and forming a compartment in conjunction therewith.

6. A vessel comprising end sections and a pair of intermediate sections hinged at opposite ends to said end sections, so as to be capable of being swung outwardly away from said end sections.

7. A vessel comprising a hull, a pair of sections hinged at opposite ends to said hull, and means to swing the unhinged ends of said sections in opposite directions in unison.

8. A vessel comprising stationary end sections and hinged intermediate sections, having their inward movement restricted by engagement with said end sections.

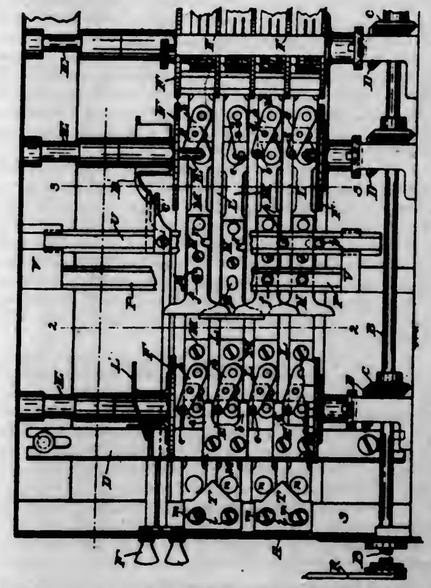
9. A vessel comprising spaced and rigidly-connected end sections, and intermediate sections hingedly supported by their ends from said end sections.

10. A vessel comprising end sections, and intermediate sections movably related thereto and having their inward movement restricted by engagement of their ends with each of said end sections and forming a compartment in conjunction therewith.

11. A vessel comprising stationary end sections and movable intermediate sections, having their ends movable outwardly from said end sections and restricted in their inward movement by engagement therewith.

12. A vessel comprising a hull, and sections hinged thereto and having their free ends movable toward and away therefrom.

819,692. VOTING-MACHINE. WILLIAM H. DANA, Dayton, Ohio, assignor to Leopold Rauh, Dayton, Ohio. Original application filed May 6, 1903, Serial No. 155,898. Divided and this application filed Feb. 4, 1904. Serial No. 192,008.



Claim.—1. In a voting-machine, voting mechanism and means for locking and releasing same, a supplemental locking mechanism for locking any desired portion of the voting mechanism and connecting mechanism intermediate said primary and supplemental locking devices normally inoperative with means operated from without the machine for setting said supplemental locking device whereby the operation of the primary device to unlock the voting

mechanism will cause the supplemental device to lock any predetermined portion thereof, substantially as described.

2. In a voting-machine, voting mechanisms and means for locking and releasing same, a supplemental locking device for locking any desired portion of the voting mechanisms normally inoperative, and connecting mechanism intermediate the primary and supplemental locking devices, with means operated from without the machine for setting said supplemental locking device, whereby the operation of the primary device to unlock the voting mechanism will cause the supplemental device to lock any predetermined portion thereof, substantially as described.

3. In a voting-machine, voting-levers, and a rotary frame, with lever operated from without the machine to rotate said frame, plates on said frame to block the movement of the voting-levers, a supplemental locking device for locking any desired portion of the voting-levers, normally inoperative, means operated without the machine for bringing said supplemental device into operative position, and actuating device on said rotary frame to operate said supplemental device to lock all predetermined voting-levers when said frame is rotated to release the voting-levers, substantially as described.

4. In a voting-machine, voting mechanisms, and means for locking and releasing same, a locking-bar normally inoperative with removable arms to lock any predetermined number of said voting mechanisms, means for bringing said locking-bar into operative position and mechanism connecting same with the primary locking device, whereby the release of the voting mechanisms thereby will actuate the locking-bar to lock the selected voting mechanisms, substantially as described.

5. In a voting-machine, a plurality of voting-levers, arranged in rows, interfering blocks to prevent the operation of more than the required number of voting-levers in any row, a locking-bar carrying arms to engage any selected number of interfering blocks and lock them from movement, lever operated from without the machine to bring said bar into operative position, locking mechanism for the voting-levers released by the voter after he enters the booth and connection therefor with said locking-bar to complete its operation in locking the selected interfering blocks when said bar has previously been brought into operative position substantially as described.

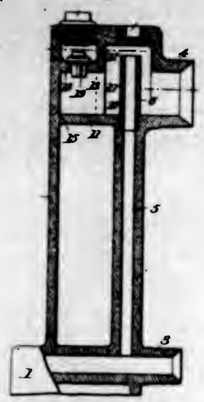
6. In a voting-machine, a plurality of voting-levers arranged in rows, interfering blocks to prevent the operation of more than the required number of voting-levers in any row, a locking-bar carrying arms to engage any selected number of interfering blocks and lock them from movement, lever operated from without the machine to bring said bar into operative position, a rotary frame, with lever operated from without the machine to rotate said frame, plates on said frame to block the movement of the voting-levers, and a cam-plate on said rotary frame to actuate said locking-bar to lock all predetermined interfering blocks when said frame is rotated to release the voting-levers, substantially as described.

7. In a voting-machine, in combination with voting mechanism therefor, a locking-bar carrying removable pins to block the movement of any predetermined voting mechanisms, a rock-shaft with means for rocking same from outside the machine, a dog secured to said rock-shaft to engage said locking-bar to shift same into operative position, a general locking device to lock all the voting mechanisms and an actuating device thereon to contact with said locking-bar when set in operative position to shift same to lock the predetermined voting mechanisms when the general locking device is released, substantially as described.

8. In a voting-machine, in combination with voting mechanisms therefor, a vertically-sliding locking-bar carrying removable pins to block the movement of any predetermined voting mechanisms, a rock-shaft, with key for rocking same from outside the machine, a dog secured to said rock-shaft and an arm on said sliding bar engaged by said dog to raise said bar to operative position, a rotating frame carrying plates to lock all the voting mechanisms, with cam-plate thereon to engage said locking-bar and shift same to lock the predetermined voting mechanisms when released by the rotating frame whereby the rock-shaft dog will be released and the sliding locking-bar will return to its normal position when released by the cam-plate, substantially as described.

819,693. **SIGHT-FEED LUBRICATOR.** FRANK W. EDWARDS, Logansport, Ind., assignor to The Chicago Lubricator Company, Chicago, Ill., a Corporation of Illinois. Filed Apr. 15, 1905. Serial No. 255,707.

Claim.—1. A lubricator of the class described, having an integral oil-bowl and condenser, the condenser having a chamber in its top, a valve-body arranged in said chamber, and a check-valve in said valve-body.



2. A lubricator of the class described, having an integral oil-bowl and condenser, the oil-bowl having an oil-pipe connection and the condenser a boiler connection, an integral communicating pipe between them, a valve-body arranged in the upper end of the condenser, and a check-valve in said body and controlling the passage of steam into the condenser.

3. A lubricator of the class described, having an integral oil-bowl and condenser, the ojl-bowl having an oil-pipe connection and the condenser a boiler connection, an integral communicating pipe between them having an overflow extension, a valve-body arranged in the upper end of the condenser, and a check-valve in said body and controlling the passage of steam into the condenser.

4. A lubricator of the class described, having a condenser provided at its top with a boiler connection, a steam-chamber adjacent to said connection and having walls closing said chamber from the condenser, one of said walls having a port in it, and a check-valve in said port opening with the steam-pressure and closing automatically against the condenser-pressure.

5. A lubricator of the class described, having a condenser provided at its top with a boiler connection, a steam-chamber adjacent to said connection, an applied valve-body arranged in said chamber and having channels for opening communication into the condenser, and a check-valve interposed in said channels and controlling the flow of fluid into and out of the condenser.

6. A lubricator of the class described, having an oil-bowl and condenser, the oil-bowl having an oil-pipe connection, and the condenser having a boiler connection, a communicating pipe between these connections, a steam-chamber adjacent to the boiler connection and having walls closing said chamber from the condenser, one of said walls having a port in it, and a check-valve in said port opening with the steam-pressure and closing automatically against the condenser-pressure.

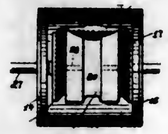
819,694. **RUNNING-GEAR FOR BABY-CARRIAGES.** KARL I. FAUST, Cleveland, Ohio. Filed Nov. 25, 1904. Serial No. 234,167.



Claim.—1. In a running-gear for baby-carriages, the combination of a frame including two transverse members, two spiral springs mounted on each such member and having their inner ends secured thereto, and a spider having its legs secured to the outer ends of said springs respectively.

2. In a running-gear for baby-carriages, the combination of a frame including two transverse members, two spiral springs mounted upon each member and having their inner extremities secured thereto, and curving inwardly toward the central plane of the frame, the outer extremities of said springs terminating in a horizontal plane above said frame; and a spider having radial legs, the extremities of the latter being secured to the outer extremities of said springs respectively.

819,695. **SPEED-CHANGING ATTACHMENT FOR TACHOMETERS.** ANTHONY FRICKER, Pittsburg, Pa. Filed Oct. 23, 1905. Serial No. 284,065.



Claim.—1. The combination in a tachometer, of a reversible attachment comprising a casing, beveled gears mounted in said casing, one gear being attached to the casing and the other free to revolve therein, independent shafts projecting from opposite ends of the casing, a rotating and revolving beveled gear-wheel engaging said first-named gears, substantially as described.

2. The combination with a tachometer, of a detachable casing, shafts carried by the casing and projecting respectively from opposite ends of the casing, and adapted to impart movement to the mechanism of the tachometer, means carried within said casing for communicating motion from one of said shafts to the other of said shafts, said means being adapted to change the rate of motion transmitted from one of said shafts to the other of said shafts and thereby providing means for changing the rate of motion of the tachometer accordingly as one or the other of said shafts is connected with the tachometer.

3. An attachment for tachometers, comprising a detachable and reversible casing, two revoluble shafts journaled in said casing and projecting respectively from opposite ends of the casing and means carried within said casing for imparting motion from one of said shafts to the other of said shafts, said means being adapted to change the speed of the motion so imparted.

4. The combination with a tachometer, of a casing detachable from and reversible relatively to the tachometer, revoluble shafts carried by said casing, said shafts being adapted to be alternatively inserted into the tachometer and connected with the mechanism thereof, means mounted within said casing for communicating motion from one of the shafts therein to the other of said shafts, said last-named means being adapted to change the speed of the motion so communicated and thereby increase or decrease the rate of motion of the tachometer mechanism, accordingly as one or the other of said shafts is connected with the tachometer.

819,696. **LINING FOR COMBUSTION-FURNACES.** WILLIAM Y. GAMBLE, New York, N. Y., assignor to Eugene J. McGuire, New York, N. Y. Filed Dec. 11, 1905. Serial No. 291,234.

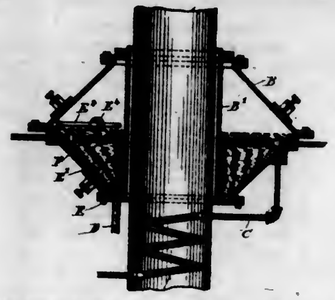
Claim.—1. A composition of matter for lining combustion-furnaces and the like, composed of cement, ground slate and cinders.

2. A composition of matter for lining combustion-furnaces and the like, composed of cement, ground slate and cinders in the proportion of one part cement, two parts ground slate and two parts cinders.

3. A composition of matter for lining combustion-furnaces and the like, composed of cement, ground slate and cinders in the proportion of one part cement, two parts ground slate and two parts cinders, the cinders being in the form of ashes taken from beneath the grate of an ordinary furnace.

819,697. **METHOD OF EVAPORATING LIQUIDS.** ALBERT P. GEER, New London, Conn. Original application filed Sept. 28, 1904, Serial No. 226,326. Divided and this application filed May 23, 1905. Serial No. 261,305.

Claim.—1. The herein-described method for evaporating liquids, consisting of heating a body of liquid having a constant supply immediately below the liquid level, and maintaining a uniform level by discharging the saturated liquid from the bottom of the said body of liquid.



2. The herein-described method for evaporating liquid, consisting of heating a body of liquid immediately below the liquid level, to evaporate a portion of the liquid and to saturate another portion, maintaining a uniform level by discharging the saturated liquid from the body of the liquid, and replenishing the said body of liquid to the aggregate amount of the evaporated and the discharged saturated water.

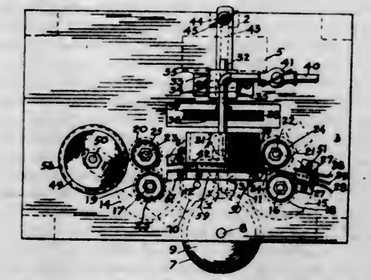
3. The herein-described method for evaporating salt water, consisting of subjecting a constant supply of salt water to the action of heat directly below the level of the water and more moderately heating it below the place at which said action of heat is applied, to allow the water at the level to evaporate and the water below the level to become saturated.

4. The herein-described method for evaporating salt water, consisting in heating salt water immediately below its level and changing the water by a constant discharge and a constant supply, the latter aggregating the amount of water discharged and evaporated.

5. A method of evaporating liquids, which comprises highly heating the liquid to be evaporated immediately below its level and moderately heating it at other points.

6. A method of evaporating and purifying liquids, which comprises passing waste heat through the liquid and applying steam heat to the liquid immediately below its level.

819,698. **STEAM-IRONING MACHINE.** RALPH L. HALL and THOMAS C. MARTIN, Oakland, Cal. Filed July 17, 1905. Serial No. 269,986.



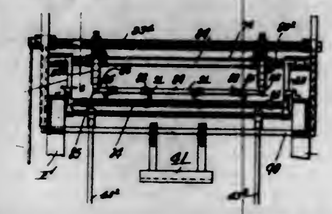
Claim.—1. In an apparatus of the character described, the combination of a pair of guide-plates, an ironing-roller supported thereover having an annular groove immediately over the space between the guide-plates, means for heating said ironing-roller, a shaper-plate for supporting a collar and means for feeding said collar between the guide-plates, substantially as described.

2. In an apparatus of the character described, the combination of a pair of guide-plates, an ironing-roller supported thereover having an annular groove immediately over the space between the guide-plates, a resilient support for said ironing-roller resisting its upward movement, means for heating said ironing-roller, a shaper-plate for supporting a collar and means for feeding said collar between the guide-plates, substantially as described.

3. In an apparatus of the character described, the combination of a pair of guide-plates, an ironing-roller supported thereover having an annular groove immediately over the space between the guide-plates, means independent of a movement of the collar for rotating

said ironing-roller, means for heating said ironing-roller, a shaper-plate for supporting a collar and means for feeding said collar between the guide-plates, substantially as described.

819,699. SHEET-MANIPULATING MECHANISM FOR PRINTING-PRESSES. LEWIS B. MORRISON, Newark, N. J. Filed Aug. 22, 1905. Serial No. 275,320.



Claim.—1. In a sheet-manipulating mechanism for printing-presses, the combination of a table over which successive sheets are passed, a frame or support, means for moving the frame or support toward and away from the table, and smoothing-fingers pivoted on the support for ironing or smoothing a sheet as the support is moved toward the table.

2. In a sheet-manipulating mechanism for printing-presses, the combination of a table over which the successive sheets are passed, a frame or support, means for moving the frame or support toward and away from the table, and smoothing-fingers pivoted on the support, part of which act to smooth the sheets longitudinally and part sidewise.

3. In a sheet-manipulating mechanism for printing-presses, the combination of a table over which successive sheets are passed, a support or frame, means for moving the support or frame toward and away from the table, foot-pieces on the frame preventing the bottom bar of the frame from engaging the sheets, and smoothing-fingers mounted on the frame.

4. In a sheet-manipulating mechanism for printing-presses, the combination of a table over which successive sheets are passed, a frame, operating connections for moving the frame toward and away from the table, blocks adjustably mounted on the bottom bar of the frame, and attachments for mounting smoothing-fingers on the blocks to act longitudinally on the sheets or sidewise thereon.

5. In a sheet-manipulating mechanism for printing-presses, the combination of a table over which successive sheets are passed, a support or frame, means for moving the support toward and away from the table, an arm pivoted in the support on an axis parallel with the direction in which the sheets are being fed, and a roller mounted on the lower end of said arm for smoothing the sheets sidewise as the support or frame approaches the table.

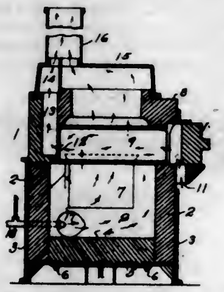
6. In a sheet-manipulating mechanism for printing-presses, the combination of a table over which successive sheets are passed, a frame, smoothing-fingers mounted on said frame, and connections for operating the frame comprising springs for normally holding the frame up, a rock-shaft, cam-actuated connections for operating the rock-shaft from the main shaft of a press, an operating-arm extending from the rock-shaft, a lost-motion connection between the arm and its rock-shaft, and a spring coiled on the rock-shaft for moving the operating-arm down when permitted by the rock-shaft.

7. In a sheet-manipulating mechanism for printing-presses, the combination of a table over which successive sheets are passed, a frame, operating connections for moving the frame toward and away from the table, blocks adjustably mounted upon the frame, smoothing-fingers, and means for mounting said smoothing-fingers on the blocks to act longitudinally and sidewise upon the sheets.

8. In a sheet-manipulating mechanism for printing-presses, the combination of a table over which successive sheets are passed, a support or frame, means for moving the frame toward and away from the table, an arm pivoted to the support on an axis parallel with the direction in which the sheets are being fed, a roller mounted on the lower end of said arm for smoothing the sheets sidewise, and smoothing-fingers pivotally mounted on the frame intermediate of the roller-smoothers for smoothing the sheets longitudinally.

819,700. FURNACE. ALBERT C. CALKINS, Los Angeles, Cal., assignor to The Calkins Company, Los Angeles, Cal., a Corporation of California. Filed Mar. 26, 1904. Serial No. 200,199.

Claim.—1. A furnace having an open upper portion and a vertical back flue, a metallic bonnet over said upper portion having a flue-chamber communicating with said flue, and constructed with a flat top, whereby the bonnet receives and is heated by the escaping products of combustion for use as an auxiliary heater and means for heating the furnace.



2. A furnace having an open upper portion and a vertical back flue, a metallic bonnet removably secured over said upper portion having a flue-chamber communicating with said flue, and having a flat heating portion, whereby the bonnet receives and is heated by the escaping products of combustion for use as an auxiliary heater and means for heating the furnace.

819,701. BEARING AND SCRAPER FOR DISK PLOWS. EDWARD FOWLER, Cedar Grove, Ga., assignor of one-fourth to Adolphus L. Fowler, one-twelfth to Oty T. Simmons, one-twelfth to Jessey L. Simmons, and one-twelfth to Byron V. Kell, Cedar Grove, Ga. Original application filed Aug. 2, 1905, Serial No. 272,382. Divided and this application filed Oct. 30, 1905. Serial No. 285,073.



Claim.—1. The combination with a disk-plow spindle having a central bore, of a plow-boss seat at one end of the spindle, having a flat bottom, and a bolt fitted in the central bore of the spindle and having a head with a flat under surface, said head being of a size to clamp a plow-boss between the walls of the plow-boss seat and the side walls and bottom of the said head.

2. The combination of a plow-disk having a central open boss, with an inwardly-extending annular flange at the base of the boss, a spindle provided with a central bore and a seat at one end to receive the boss, said seat having a flat bottom, and a bolt fitted through the perforated boss and the spindle and having a head seated within the boss and provided with a flat under surface.

3. The combination of the disk having a rearwardly-extending tapering open boss, and an inwardly-extending flange at the rear end of the boss; a bolt having a head provided with tapering side walls and a flat under surface, said bolt projecting from the rear of the disk and having its head fitting within the boss; and a spindle receiving the projecting end of the boss, and provided with a seat at one end receiving the tapering boss, said seat having a flat bottom wall and its rim curved to conform to the portion of the disk surrounding the boss, the flange being clamped between the flat bottom wall of the seat and the flat under face of the bolt-head.

4. A sheet-metal scraper for concave disks, provided with a pointed end, concaved in a direction to provide a curved scraping edge conforming to the concavity of the disk, and concaved in a direction approximately parallel to the curved edge, the curvature of the latter concave increasing from the pointed end of the scraper, and any section of the scraper transverse of the scraping edge being formed on a curve, all parts of said curve from the curved edge to the opposite edge having the same center.

819,702. LOCKING-SOCKET FOR ELECTRIC LIGHTS. JEREMIAH MURPHY, Chicago, Ill. Filed June 11, 1904. Serial No. 212,213.



Claim.—1. In a device of the class described, a lamp-socket, a lamp, a screw-thread on the socket to coöperate with a thread on the lamp, a series of teeth on the lamp, each of which is formed with one side inclined and the other side on a radial line, a spring-pressed dog normally held in the path of said teeth to positively prevent turning the lamp in one direction, a detached key, and an extension on said dog to be engaged by said key whereby the latch is moved out of the path of said teeth.

2. In a device of the class described, a lamp-socket, a lamp, a screw-thread on the socket to coöperate with a thread on the lamp, a series of teeth on the lamp, each formed with one side inclined and the other side on a radial line, a spring-pressed dog normally held in the path of said teeth to positively prevent the reverse movement of said lamp, a detached key provided with a screw-thread, and a screw-threaded extension on said latch to be engaged by said key whereby said dog is moved out of the path of said teeth.

3. In a device of the class described, a lamp-socket, a lamp, a screw-thread on the socket to coöperate with a thread on the lamp, a series of teeth on the lamp each formed with one side inclined and the other side on a radial line, a spring-pressed dog secured to the lining of said socket to positively prevent turning the lamp in one direction, a detached key, and means whereby said dog may be moved out of the path of said teeth by said key.

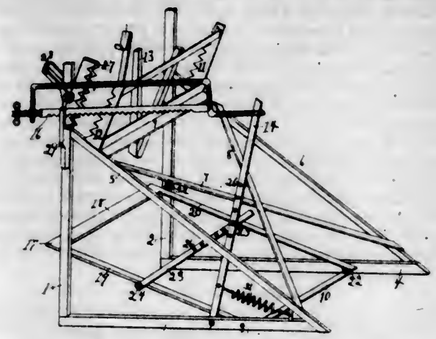
4. In a device of the class described, a lamp-socket, a lamp, a screw-thread on the socket to coöperate with a thread on the lamp, a series of teeth on the thread of the lamp each tooth formed with one side inclined and the other side on a radial line, a spring-pressed dog normally held in the path of said teeth whereby the movement of the lamp in one direction is automatically and positively prevented, a detached key provided with a screw-thread and a shoulder, a perforation radially in said socket, and a screw-threaded extension on said dog extending into said perforation, so that said key may be screwed onto said extension and thereby release said latch from said teeth.

5. In a device of the class described, a lamp-socket, a lamp, a screw-thread on the socket to coöperate with a thread on the lamp, a series of teeth on the lamp, each of said teeth formed with one side inclined and the other side on a radial line, a spring-pressed dog secured to the socket normally held in the path of said teeth, a screw-threaded stem secured to said dog extending radially outward therefrom, a perforation in the outer casing of said socket provided with a bushing of insulation, a detached key having a threaded hole in its end to fit on said screw-threaded stem and a shoulder to fit against said bushing, said parts being so constructed and arranged that when the lamp is screwed into said socket, said dog will without the aid of the key positively lock the same against a reverse movement and said lamp cannot be unscrewed from said socket without the aid of the key.

6. In a device of the class described, a lamp-socket, a lamp, a screw-thread on the socket to coöperate with a thread on the lamp, a series of teeth on the lamp, each tooth formed with one side inclined and the other side on a radial line, a spring-pressed dog secured to the socket normally held in the path of said teeth, a screw-threaded stem secured to said dog extending radially outward therefrom, a perforation in the outer casing of said socket and a detached key having a threaded end to fit said screw-threaded stem and a shoulder to fit against said socket.

819,703. PORTABLE SAWING-MACHINE. NORMAN MCASLAN, Neola, Iowa. Filed May 11, 1905. Serial No. 259,991.

Claim.—1. In a portable sawing-machine, the combination, of a saw, a saw-lever, a sawbuck, a spring, a pivotally-mounted treadle-frame, a link, and a suitable frame to sustain the parts in operative position; said saw to be pivotally mounted upon said saw-lever, said link being pivotally mounted upon the saw-lever and treadle-frame; said saw-lever being pivotally mounted upon the saw-lever, said link being pivotally mounted upon the saw-lever and treadle-frame; said saw-lever being pivotally mounted and adapted to swing upon its pivotal mounting under control of the link and treadle-frame so that a downward pressure upon said treadle-frame will produce a forward movement of the saw, and being under control of the spring so that the resiliency of said spring will produce a backward movement of the saw and an upward movement of the treadle-frame.



2. In a portable sawing-machine, the combination, of a saw, a saw-lever, a sawbuck, a spring, and a treadle-frame having a foot-piece and pivotally-mounted arms, a link, a suitable frame to sustain the coöperating parts in operative position, the saw-guide 29, the stop-block 32 upon the frame, and the saw-rest 30; said saw to be pivotally mounted upon the saw-lever, said link to be pivotally mounted upon the saw-lever and treadle-frame; said saw-lever being pivotally mounted, and adapted to swing upon its pivotal mounting under control of the link and treadle-frame to produce a forward movement of the saw, and being under control of the spring to produce a backward movement of the saw and upward movement of the treadle-frame

3. In a portable sawing-machine, the combination, of a saw, a saw-lever, a sawbuck, a spring and a treadle-frame having a foot-piece and pivotally-mounted arms, a link, a frame having base members, upright members and inclined members; said saw to be pivotally mounted upon the saw-lever, said link being pivotally mounted upon the saw-lever and treadle-frame; said saw-lever being pivotally mounted and adapted to swing upon its pivotal mounting under control of the link and treadle-frame to produce a forward movement of the saw, and being under control of the spring to produce a backward movement of the saw and upward movement of the treadle-frame.

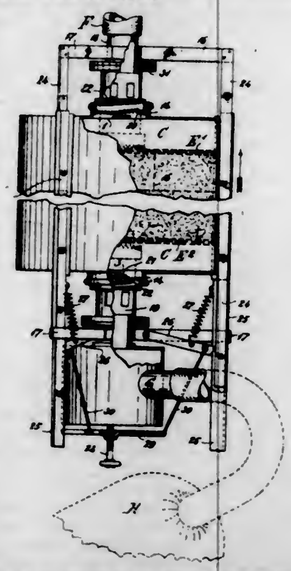
4. A sawing-machine of the class described, in combination, comprising a saw, a saw-lever, a sawbuck having supporting-arms, a spring, a pivotally-mounted treadle-frame, a link, and a frame having base members, upright members and inclined members, each upright member being rigidly connected with a base member and mounted at substantially a right angle thereon, an inclined member being rigidly mounted upon each connected base member and upright member and joined therewith to produce triangularly-formed sides of said frame, each upright member extending upward and beyond the junction of the inclined members and upright members to form substantially vertical supporting-arms for said sawbuck; said saw to be pivotally mounted upon said saw-lever, said saw-lever being pivotally mounted and adapted to swing upon its pivotal mounting under control of the link and treadle-frame so that a downward pressure upon said treadle-frame will produce a forward movement of the saw, and being under control of the spring so that the resiliency of said spring will produce a backward movement of the saw and upward movement of the treadle-frame.

5. A sawing-machine of the class described, in combination, comprising a saw, a saw-lever, a sawbuck having toothed supporting-arms, said teeth to be disposed upon the inner surface of said supporting-arms, a spring, a treadle-frame having a foot-piece and pivotally-mounted arms, a link, a frame having base members, upright members and inclined members; said saw to be pivotally mounted upon the saw-lever, said link being pivotally mounted upon the saw-lever and treadle-frame; said saw-lever being pivotally mounted and adapted to swing upon its pivotal mounting under control of the link and treadle-frame so that a downward pressure upon said treadle-frame will produce a forward movement of the saw, and being under control of the spring so that the resiliency of said spring will produce a backward movement of the saw and upward movement of said treadle-frame; means to cause a pivotal connection of the link at varying lengthwise distances upon the body of the saw-lever, for the purpose of allowing the foot-piece of the treadle-frame to move in a plane of higher or lower altitude.

6. A sawing-machine of the class described, in combination,

comprising a saw, a saw-lever, an eccentric lever, a sawbuck having toothed and stationary supporting-arms, said teeth being disposed upon the inner surface of said arms, a spring, a pivotally-mounted treadle-frame, a link, a frame having base members, upright members and inclined members; said saw to be pivotally mounted upon the saw-lever, said link to be pivotally mounted upon the saw-lever and treadle-frame; said saw-lever being pivotally mounted and adapted to swing upon its pivotal mounting under control of the link and treadle-frame so that a downward pressure upon said treadle-frame will produce a forward movement of the saw, and being under control of the spring so that the resiliency of said spring will produce a backward movement of the saw and an upward movement of the treadle-frame; a pivotally-mounted and toothed lever upon a supporting-arm of said sawbuck, said toothed lever being oppositely disposed to said toothed and stationary supporting-arms and adapted to have a swinging movement, under control of said eccentric lever, in a direction toward said oppositely-disposed toothed and stationary supporting-arms.

819,704. **APPARATUS FOR REOXYGENATING EXHALED AIR FOR RESPIRATION PURPOSES.** MAX BAMBERGER, FRIEDRICH BÖCK, and FRIEDRICH WAHL, Vienna, Austria-Hungary. Filed Nov. 22, 1905. Serial No. 288,573.



Claim.—1. In an apparatus for reoxygenating exhaled air for respiration purposes the combination of a vessel adapted to be filled with a porous layer of a peroxid or peroxids giving off oxygen on coming into contact with exhaled air, means for hermetically closing the same; a frame adapted to hold such vessel or vessels in position, such framing comprising two parts movable the one relatively to the other, means carried by one of the two parts of the framing for putting into communication the interior of the said vessel or vessels with a tube or tubes and means for connecting such tube or tubes with the breathing-space, means carried by the other of the two parts of the framing for putting into communication the interior of the said vessel or vessels with another tube or tubes and means for connecting the latter tube or tubes with a closed receptacle and means for moving the two parts relatively to each other and for locking them in position, substantially as and for the purpose described.

2. In an apparatus for reoxygenating exhaled air for respiration purposes the combination of a vessel adapted to be filled with a porous layer of a peroxid or peroxids giving off oxygen on coming into contact with exhaled air, openings on opposite ends of such vessel or vessels, sheet-metal plates normally hermetically closing such openings, a framing adapted to hold such vessel or vessels in position such framing comprising two parts movable toward and from such openings, a tube or tubes on each of such parts, a toothed crown at the end of each of such tubes opposite to the said sheet-metal plates, means for connecting the tube or tubes on one of the parts of said framing with a tube or tubes communicating with the breathing-space, means for connecting the tube or tubes on the other of the parts of said framing with a tube communicating with a closed receptacle and means for moving the two parts of the said framing toward and from such openings in the vessels and for locking them in position substantially as and for the purpose described.

3. In an apparatus for reoxygenating exhaled air for respiration purposes the combination of a plurality of vessels adapted to be filled with a porous layer of a peroxid or peroxids giving off oxygen on coming into contact with exhaled air means for hermetically closing the same, a framing adapted to hold such vessels in position, such framing comprising two parts movable the one relatively to the other, means carried by one of the two parts of the framing for simultaneously putting into communication the interiors of the said vessels with a closed receptacle, means carried by the other part of the said framing for simultaneously connecting the interior of the said vessels with a tube, means for connecting the interior of such tube with the breathing-space, means for intercepting the communication between the interior of one or more of the said vessels with the interior of the said tube and for establishing simultaneously the communication between the interior of the remaining vessels with the interior of such tube and means for moving the two parts of the said framing toward and from each other and for locking them in position substantially as and for the purpose described.

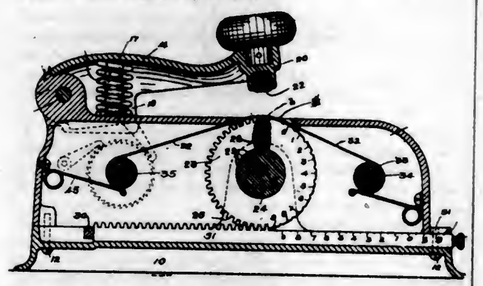
4. In an apparatus for reoxygenating exhaled air for respiration purposes the combination of a vessel adapted to be filled with a porous layer of a peroxid or peroxids giving off oxygen on coming into contact with exhaled air means for hermetically closing the same a framing adapted to hold such vessel or vessels in position such framing comprising two parts, one consisting of a frame having attached to it parallel rods and the other consisting of a frame having attached to it parallel guides for such rods, means carried by one of the two parts of the framing for putting into communication the interior of the said vessel or vessels with a tube or tubes and means for connecting such tube or tubes with the breathing-space means carried by the other of the two parts of the framing for putting into communication the interior of the said vessel or vessels with another tube or tubes and means for connecting the latter tube or tubes with a closed receptacle and means for locking against movement of the said parts relatively to each other in one direction and for locking the said two parts of the framing in position, substantially as and for the purpose described.

5. In an apparatus for reoxygenating exhaled air for respiration purposes the combination of a vessel adapted to be filled with a porous layer of a peroxid or peroxids giving off oxygen on coming into contact with exhaled air, means for hermetically closing the same, a framing adapted to hold such vessel or vessels in position, such framing comprising two parts, one consisting of a frame having attached to it parallel rods and the other consisting of a frame having attached to it parallel guides for such rods, means carried by one of the two parts of the framing for putting into communication the interior of the said vessel or vessels with a tube or tubes and means for connecting such tube or tubes with the breathing-space, means carried by the other of the two parts of the framing for putting into communication the interior of the said vessel or vessels with another tube or tubes and means for connecting the latter tube or tubes with a closed receptacle, pawls pivoted to the frame carrying the guides, springs for holding such pawls in engagement with the rods and means for bringing the said pawls out of engagement with the rods, substantially as and for the purpose described.

819,705. **CHECK-PROTECTOR.** COURTLAND S. CARRIER, Omaha, Nebr. Filed Sept. 16, 1905. Serial No. 278,515.

Claim.—1. In a machine of the class described, the combination with a suitable platen of type-wheels each having suitable characters on a portion of the peripheral face thereof and gear-teeth on the remainder of said face, a base inclosing said wheels, a subbase, a shaft carried thereby on which the type-wheels are revolubly mounted, interengaging means on the shaft and wheels for retaining the wheels in various predetermined positions, and rack-bars slidably held in the subbase, the said rack-bars having teeth engaging the teeth on the type-wheels whereby longitudinal movement of the rack-bars will rotate the type-wheels.

2. In a machine of the class described, the combination with a suitable platen of a plurality of type-wheels each having suitable characters formed on a portion of the peripheral face thereof and gear-teeth formed on the remainder of said face, a base inclosing the said wheels, a subbase, a shaft carried thereby on which the wheels are revolubly mounted, interengaging means on the shaft and the wheels for retaining the wheels in predetermined positions, rack-bars slidably held in said subbase, said rack-bars having teeth engaging the teeth on the type-wheels, and characters marked on the rack-bars, said characters corresponding to the characters on the respective type-wheels engaged by the bars, there being in the base an opening through which is exposed one of the characters on each of the rack-bars, and the arrangement being such that the characters so exposed will indicate the characters in operative position on the respective wheels engaged by the bars.



3. In a machine of the class described, a platen, a printing member comprising a plurality of type-wheels each having characters formed on a portion of the face thereof and gear-teeth on the remainder of said face, a base inclosing said printing member, a subbase, a shaft carried thereby on which the type-wheels are revolubly mounted, rack-bars slidably held in the subbase and having teeth thereon engaging the teeth on the type-wheels, and an inked ribbon carried by the base and passing between the printing member and the platen, the base carrying the ribbon and platen being removable from the subbase without disturbing the arrangement of the printing member and rack-bars.

4. In a machine of the class described, a base, a die carried thereby, a platen-arm pivotally connected therewith, and a resilient platen-block held by said arm adjacent the die, the said platen-block being in the form of a polygonal prism so that by reversing the same with relation to the platen-arm more than one of its faces may be presented to the die.

5. In a machine of the class described, the combination with a suitable platen of a printing member comprising a plurality of type-wheels, and type-slugs held adjacent said wheels, one of said type-slugs being movable parallel with the axis of the type-wheels, and the type wheels and slugs having characters thereon formed by series of rounded projections adapted to indent or emboss paper pressed thereon.

REISSUES.

12,476. **MECHANICAL MUSICAL INSTRUMENT.** CHARLES L. DAVIS, Detroit, Mich., assignor, by mesne assignments, to The Autopianist Co., Chicago, Ill., a Corporation of Illinois. Filed Mar. 24, 1905. Serial No. 251,883. Original No. 735,941, dated Apr. 21, 1903.

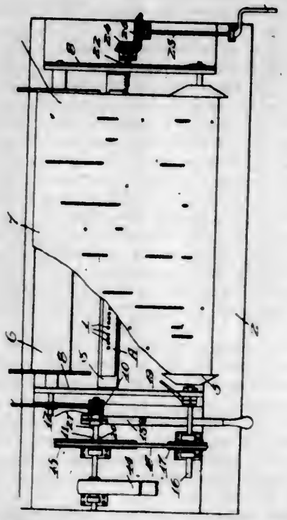
Claim.—1. The combination in a mechanical musical instrument of music-rolls, a tracker-board, and means for shifting one of said rolls longitudinally and relatively to the tracker-board.

2. In a mechanical musical instrument, the combination of music-rolls, a tracker-board and means for simultaneously shifting both of said rolls longitudinally and relatively to the openings in the tracker-board.

3. In a mechanical musical instrument, the combination of music-rolls, a tracker-board, means for shifting one of said rolls longitudinally and relatively to the tracker-board, said shifting means being capable of imparting an adjusted or variable throw to the roll.

4. In an automatic musical instrument or player, in combination with a fixed tracker-board, a platform movable longitudinally with respect to the tracker-board, take-up and rewind rolls mounted on said platform, and means for moving the platform at will.

5. The combination with the tracker-board, and means for advancing the traveling music-sheet across the same, of a carrier upon which the music-sheet-advancing means is mounted, the said carrier being arranged for movement longitudinally of the tracker-board, means for shifting the carrier to either direction, gearing for driving such music-advancing mechanism, said gearing being adapted to permit the shifting movement of the carrier and the advancing means carried thereby during operation, and means for driving said gearing, substantially as described.



6. The combination with the tracker-board and means for advancing the traveling music-sheet, of a shiftable carrier arranged for movement longitudinally of the tracker-board and carrying said music-sheet-advancing means, gearing for driving said means, the said gearing being adapted to permit the shifting of the carrier and the music-sheet-advancing means carried thereby during operation, means for connecting and disconnecting said gearing at will, and mechanism for driving said gearing, substantially as set forth.

7. The combination with the tracker-board and means for advancing a sheet or strip of music across the same, of a shiftable carrier upon which is mounted the music-sheet-advancing means, the said carrier being arranged for shifting movement longitudinally of the tracker-board, a driving-shaft stationarily mounted, and gear-wheels between said driving-shaft and the music-sheet-advancing means, one of said gear-wheels being sufficiently wide to permit the shifting of the carrier and said music-advancing means without causing the disengagement of the gear-wheels, substantially as described.

8. The combination with the tracker-board and the spools for the music-sheet, said spools being arranged on opposite sides of the tracker-board, a shiftable carrier arranged for shifting movement longitudinally of the tracker-board and supporting said spools, a gear-wheel on the driven spool, a rotary driving-shaft carrying a pinion adapted to mesh with said gear-wheel, the said pinion being sufficiently wide to permit the shifting of the carrier and the music-spools without disengaging the pinion and gear-wheel, and means for driving said driving-shaft, substantially as described.

9. The combination with the tracker-board and the spools for the music-sheet, said spools being arranged on opposite sides of the tracker-board, of a shiftable carrier upon which said spools are mounted, said carrier being arranged for movement longitudinally of the tracker-board, a driving-shaft, gearing between said driving-shaft and one of said spools, the said gearing being adapted to permit the shifting of the carrier and spools without disengaging the gearing and also adapted to permit the disengagement of the gearing when desired, and means for actuating the gearing so as to cause its disengagement, substantially as described.

10. The combination with the tracker-board and a shiftable carrier arranged for shifting movement longitudinally of the tracker-board and provided with spools situated on opposite sides of the tracker-board, of a driving-shaft, gear-wheels carried by said driving-shaft and by the driven music-spool, one of said gear-wheels being sufficiently wide to permit the shifting of the carrier without causing their disengagement and the gear-wheel upon the driving-shaft being splined thereupon, and means for shifting said gear-wheel on the driving-shaft so as to cause its disengagement from the gear-wheel carried by the driven music-spool, substantially as described.

11. The combination with the tracker-board and with means for

drawing the music-sheet across the tracker-board, of a carrier arranged for shifting movement longitudinally of the tracker-board, means for shifting said carrier, power-transmitting connection for actuating said music-drawing means so as to draw the music-sheet across the tracker-board in either direction, said power-transmitting connection being adapted to permit the shifting of the carrier with the music-drawing means thereon, irrespective of the direction in which the music-sheet is being drawn, substantially as set forth.

12. The combination with the tracker-board, and with spools for the music-sheet, the said spools being mounted upon opposite sides of the tracker-board, of a shiftable carrier arranged for movement longitudinally of the tracker-board and having the spools mounted upon it, means for shifting the shiftable carrier in either direction, a driving-shaft, power-transmitting connections between the driving-shaft and both of the spools whereby each spool can be driven, said power-transmitting connections being such that each can be broken to prevent the driving of the spool with which it is associated and being also adapted to permit the shifting of the shiftable carrier without causing their breakage, and means for causing the simultaneous engagement of one power-transmitting connection and disengagement of the other, and vice versa, substantially as set forth.

13. The combination with the tracker-board and with a shiftable carrier arranged for shifting movement longitudinally of the tracker-board and provided with spools situated on opposite sides of the tracker-board, a driving-shaft, gearing between said driving-shaft and one of said spools, the said gearing being adapted to permit the shifting of the shiftable support without causing its disengagement, power-transmitting connection between said driving-shaft and the other spool, said connection being adapted to permit the shifting of the shiftable carrier without causing its disconnection, means for connecting an disconnecting said gearing, and means for connecting and disconnecting said power-transmitting connection according as the gearing is disconnected or connected respectively, substantially as set forth.

14. The combination with the tracker-board and with mechanism for carrying the music-sheet, of a shiftable carrier upon which the music-carrying mechanism is mounted, means for shifting said carrier, and means for advancing and rerolling the music-sheet, both the advancing and the rerolling means being adapted to permit the shifting of the shiftable carrier without disconnecting them, substantially as described.

15. The combination with the tracker-board and with a shiftable carrier arranged for a shifting movement longitudinally of the tracker-board and provided with spools arranged on opposite sides of such board, of a driving-shaft, gear-wheels, one on said driving-shaft and one on one of said spools, one of said gear-wheels being sufficiently wide to permit the shifting of the carrier without causing the disconnection of said wheels and the gear-wheel on the driving-shaft being splined thereto, a supplemental shaft connected with the socket for holding the other spool, power-transmitting connection between said shaft and the driving-shaft, said connection being such as to permit the shifting of the carrier without disengaging such connection, a clutch for engaging and disengaging such connection, and means for simultaneously operating said clutch and shifting the gear-wheel on the driving-shaft in such a way as to connect the driving-shaft with the power-transmitting connection and to disconnect the gear-wheel on said shaft with the gear-wheel on the driven spool, and vice versa, substantially as described.

16. The combination with the tracker-board and with a shiftable carrier arranged for shifting movement laterally of the tracker-board and carrying a pair of spools, one arranged on each side of the tracker-board, means for shifting said shiftable carrier, a driving-shaft carrying a wide pinion splined to it, a gear-wheel carried by the driven roll and meshing with said pinion, a pulley mounted loosely on the driving-shaft and having a pin adapted to engage a pin on a collar on said pinion, a supplemental shaft connected with the socket for the other spool, a pulley loosely mounted on said shaft and splined thereto, and a lever adapted to shift the pinion on the driving-shaft so as to cause the disengagement of the pinion with the gear-wheel on said driven roll and the engagement of the said clutch-pins, and vice versa, substantially as described.

17. The combination with the tracker-board and with means for advancing the music strip or sheet across the board, of a shiftable carrier arranged for movement longitudinally of the tracker-board, the said advancing means being carried by said carrier, means for shifting the carrier in either direction, and power-transmitting connection for driving said advancing means in a backwardly direction, said power-transmitting connection being adapted to permit the shifting of the shiftable carrier without disconnecting the connection.

18. The combination with the tracker-board and with a shiftable carrier arranged for movement longitudinally of the tracker-board and provided with a music-spool on the rear side of the tracker-board, of a driving-shaft carrying a loose pulley, a clutch for engaging said pulley, a supplemental shaft connected with a socket for receiving the spindle of a music-roll, a pulley splined to said shaft, a bearing for holding said pulley in alinement with the loose pulley on the driving-shaft, and means for operating said clutch, substantially as set forth.

19. The combination with the tracker-board and with a carrier shiftable longitudinally of the tracker-board and provided with a driven spool, and also with sockets for a music-spool, and with means for shifting the shiftable carrier, of a driving-shaft having a loose pulley, a clutch for engaging said pulley with said shaft, together with means for operating said clutch, a supplemental shaft connected with said socket for a music-spool and provided with means whereby it is held against longitudinal movement relatively to said socket, a loose pulley splined upon said shaft, and a bearing holding said pulley in alinement with the loose pulley on the driving-shaft, substantially as described.

20. The combination with the tracker-board, of a shifting support arranged for movement longitudinally of the tracker-board and having an aperture through which the tracker-board projects, the portions of the support being arranged in the front and rear of the tracker-board, a pair of spools, one supported on the front portion of the support and the other on the rear portion and secured thereto so as to be moved in unison by the shifting of the support, and means for shifting the support in either direction.

21. In a mechanical musical instrument, the combination with the rigidly-mounted tracker-board extending upwardly from the top of the instrument, of a flat support arranged to slide longitudinally of the tracker-board and mounted upon the top of the musical instrument, the said flat support consisting of front and rear portions arranged in the front and rear of the tracker-board and having an opening or aperture through which the tracker-board projects, a pair of spools, one mounted on the front portion and the other on the rear portion of the support so as to be moved in unison thereby, and devices for shifting said support in either direction.

22. In a transposing apparatus for musical instruments, a traveling web mounted on rollers, said rollers being journaled in a frame which has a lateral movement.

23. In a transposing apparatus for musical instruments, a traveling web mounted on rollers, said rollers being journaled in a frame which has a lateral movement, and means whereby said roller-frame may be adjusted and held at any point.

24. The combination with the tracker-board and means for advancing the traveling music-sheet, of a shiftable carrier arranged for movement longitudinally of the tracker-board and carrying said music-sheet-advancing means, and power-transmitting connections for driving said means, the said connections being adapted to permit the shifting of the carrier and the music-sheet-advancing means carried thereby during operation.

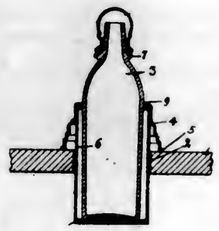
25. The combination with a tracker, of a traveling music-sheet having perforations to coöperate with ports of said tracker, and means for shifting said music-sheet longitudinally of the tracker.

26. The combination with a tracker, of a traveling music-sheet, supporting devices for carrying the music-sheet, and means for adjusting the music-sheet crosswise of its direction of movement and relatively to the tracker.

12,477. SANITARY SYRUP-RECEPTACLE FOR SODA-WATER FOUNTAINS. FREDERICK H. HECKER, Los Angeles, Cal. Filed May 23, 1905. Serial No. 261,718. Original No. 746,833, dated Dec. 15, 1903.

Claim.—1. The combination with a flat counter-top having a perforation or opening therethrough for a syrup-receptacle, of a jacket arranged to project above said perforation or opening and to rest upon said counter-top in such a manner that it serves to protect the upper portion of the body of the receptacle without interfering with the display of the top thereof, and means for supporting said receptacle in said opening.

2. The combination, with a counter-top having bottle-holes therein, of bottle-jackets removably supported above said holes, and means for supporting syrup receptacles or bottles in said holes in such a manner that said jackets form protecting-girdles for the portions of said bottles that project above the surface of the counter-top, said jackets being constructed to conform substantially to the contour of the upper portions of the bottle-bodies.



3. The combination, with a counter-top having an opening therein, of a bottle-support, a bell-shaped collar adapted to jacket a substantial portion of a bottle-body below its neck, said collar arranged to rest upon said counter and to support said bottle-support in said opening.

4. The combination, of the counter-shelf of a soda-water-dispensing apparatus provided with holes, with removable bottle-supports in said holes provided with bell-shaped collars; said supports extending above and below the top of said counter-shelf, and incasing an upper portion of the bottle; said bell-shaped collars secured to said supports and supporting the same in suspended position.

DESIGNS.

37,971. WATCHCASE. JOHN BAIN, Pittsburg, Pa. Filed Feb. 26, 1906. Serial No. 303,126. Term of patent 7 years.



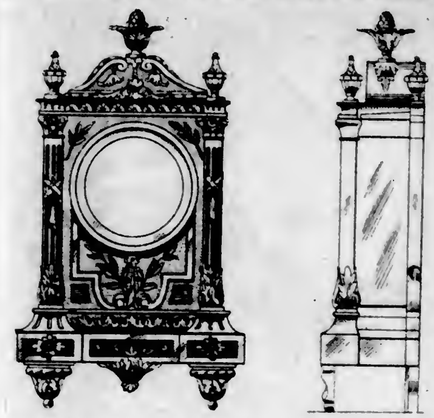
Claim.—The ornamental design for a watchcase, as shown.

37,972. CLOCK-FRAME. STANLEY M. LAWSON, Cincinnati, Ohio. Filed Mar. 12, 1906. Serial No. 305,725. Term of patent 3½ years.



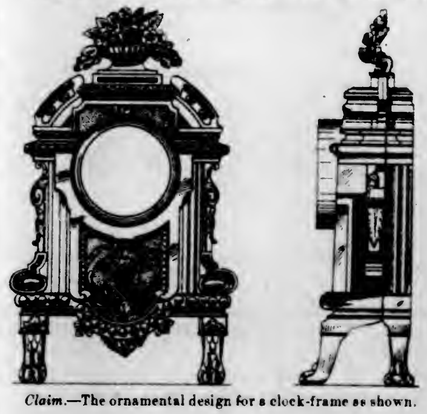
Claim.—The ornamental design for a clock-frame as shown.

37,973. CLOCK-FRAME. STANLEY M. LAWSON, Cincinnati, Ohio. Filed Mar. 16, 1906. Serial No. 306,470. Term of patent 3½ years.



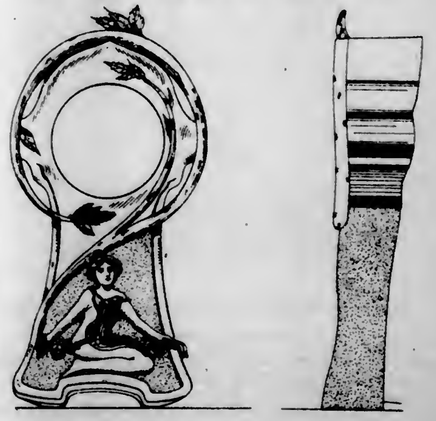
Claim.—The ornamental design for a clock-frame as shown.

37,974. CLOCK-FRAME. STANLEY M. LAWSON, Cincinnati, Ohio. Filed Mar. 19, 1906. Serial No. 306,936. Term of patent 3½ years.



Claim.—The ornamental design for a clock-frame as shown.

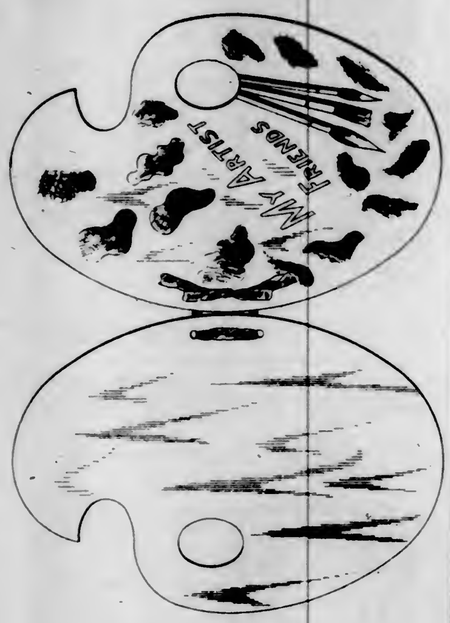
37,975. CLOCK-FRAME. STANLEY M. LAWSON, Cincinnati, Ohio. Filed Mar. 22, 1906. Serial No. 307,549. Term of patent 3½ years.



Claim.—The ornamental design for a clock-frame as shown.

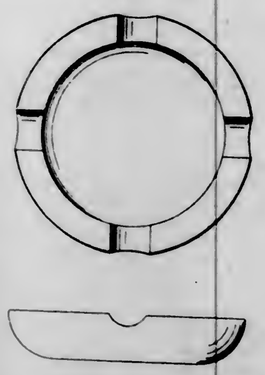
Claim.—The ornamental design for a clank-frame as shown.

37,976. BOOK-COVER. WILLIAM M. REGARS, Denver, Colo. Filed Feb. 20, 1905. Serial No. 246,639. Term of patent 7 years.



Claim.—The ornamental design for a book-cover, as shown.

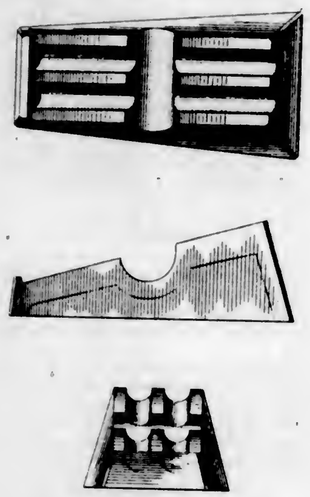
37,977. GLASS CIGAR AND ASH TRAY. EMANUEL SCHWAB, New York, N. Y. Filed Mar. 6, 1906. Serial No. 304,595. Term of patent 7 years.



Claim.—The ornamental design for a glass cigar and ash tray.

37,978. FOUNTAIN-PEN HOLDER. FRANK A. WEBER, Plainfield, N. J. Filed Mar. 10, 1906. Serial No. 305,414. Term of patent 7 years.

37,978.

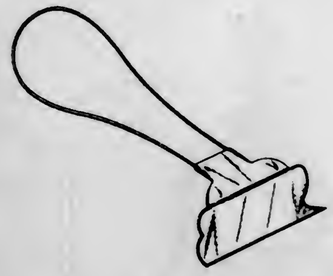


Claim.—The ornamental design for a fountain-pen holder, as shown.

37,979. HAIR-COMB. WILLIAM C. SMITH, New York, N. Y., assignor to The Celluloid Company, a Corporation of New Jersey. Filed Mar. 15, 1906. Serial No. 306,305. Term of patent 7 years.

Claim.—The ornamental design for a hair-comb, as shown.

37,980. SCRAPER. ELI R. DEMING, Alameda, Cal. Filed Aug. 15, 1905. Serial No. 274,344. Term of patent 7 years.



Claim.—The ornamental design for a scraper as shown.

37,981. PRISMATIC-GLASS REFLECTOR FOR ARTIFICIAL LIGHTS. OTIS A. MYGATT, New York, N. Y. Filed Mar. 25, 1904. Serial No. 200,041. Term of patent 14 years.

37,981.



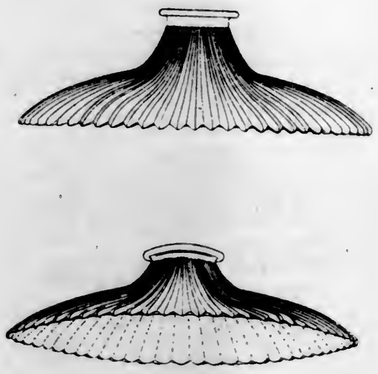
Claim.—The ornamental design for a glass reflector of the form shown having external rows of reflecting-prisms interspersed with rows of pyramids, as shown and described.

37,982. PRISMATIC-GLASS REFLECTOR FOR ARTIFICIAL LIGHTS. OTIS A. MYGATT, New York, N. Y. Filed Mar. 29, 1904. Serial No. 200,610. Term of patent 14 years.



Claim.—The ornamental design for a glass reflector, having rows of external pyramids near the base, and reflecting-prisms extending from the pyramids to the collar, as shown and described.

37,983. PRISMATIC-GLASS REFLECTOR. OTIS A. MYGATT, New York, N. Y. Filed July 31, 1905. Serial No. 272,132. Term of patent 14 years.



Claim.—The ornamental design for prismatic-glass reflector, as shown and described.

37,984. GLASS REFLECTOR. OTIS A. MYGATT, New York, N. Y. Filed July 14, 1905. Serial No. 269,729. Term of patent 14 years.

37,984.

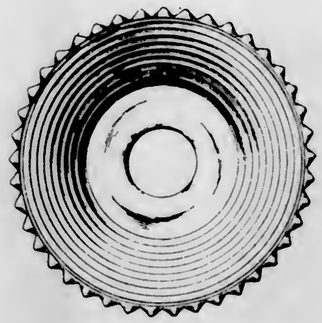


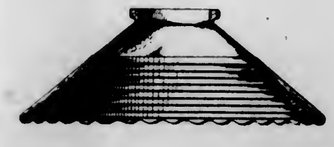


Claim.—The ornamental design for a glass reflector having its body of the form shown, and covered with prisms visible on the outside and inside of the reflector, as described.

37,985. REFLECTOR. OTIS A. MYGATT, New York, N. Y. Filed Dec. 14, 1904. Serial No. 236,898. Term of patent 7 years.







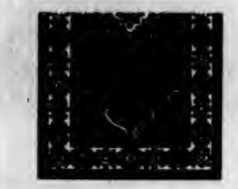
Claim.—The ornamental design for a reflector composed of transparent glass, having a top collar, the upper external portion being frosted and the interior thereof smooth, the lower external portion being covered with radial prisms and the interior with prisms arranged in concentric circles, and the lower edge beaded.

37,986. RUG. ADOLPH PETZOLD, Philadelphia, Pa., assignor to John H. Bromley and Edward Bromley, copartners, trading as John Bromley & Sons, Philadelphia, Pa. Filed Dec. 1, 1905. Serial No. 289,922. Term of patent 3½ years.



Claim.—The ornamental design for a rug, as shown.

37,987. RUG. ADOLPH PETZOLD, Philadelphia, Pa., assignor to John H. Bromley and Edward Bromley, copartners, trading as John Bromley & Sons, Philadelphia, Pa. Filed Dec. 1, 1905. Serial No. 289,923. Term of patent 3½ years.



Claim.—The ornamental design for a rug, as shown.

TRADE-MARKS

PUBLISHED MAY 1, 1906.

The following trade-marks have been adjudged entitled to registration under the act of February 20, 1905, and are published in compliance with section 6 of said act. Said section provides:

"Any person who believes he would be damaged by the registration of a mark may oppose the same by filing notice of opposition, stating the grounds therefor, in the Patent Office within thirty days after the publication of the mark sought to be registered, which said notice of opposition shall be verified by the person filing the same before one of the officers mentioned in section two of this act. If no notice of opposition is filed within said time the Commissioner shall issue a certificate of registration therefor, as hereinafter provided for."

Marks which are stated to have been "Used ten years" are registrable under the last proviso of section 5 of said act, which is as follows:

"And provided further, That nothing herein shall prevent the registration of any mark used by the applicant or his predecessors, or by those from whom title to the mark is derived, in commerce with foreign nations or among the several States, or with Indian tribes, which was in actual and exclusive use as a trade-mark of the applicant or his predecessors from whom he derived title for ten years next preceding the passage of this act."

Section 14 of said act provides for the following fee:

"On filing notice of opposition to the registration of a trade-mark, ten dollars."

SER. No. 794. COFFEE. WILLIAM B. SIBLEY, Freeport, Ill. Filed Apr. 3, 1905.

PRIDE OF THE ORIENT

The words "PRIDE OF THE ORIENT."

SER. No. 955. LAUNDRY SOAP. J. G. HAAS SOAP CO., St. Louis, Mo. Filed Apr. 10, 1905. Used ten years.



The words "WASH DAY" located on a panel, said panel being arranged diagonally across the pictorial representation of the globe.

SER. No. 961. LAUNDRY SOAP. J. G. HAAS SOAP CO., St. Louis, Mo. Filed Apr. 10, 1905.

SER. No. 961.

LOG CABIN



The words "LOG CABIN," and arranged to the left of said words appears a rustic scene, consisting of a log cabin, to which is attached a clothes-line, and on said clothes-line appear clothes. In front of the log cabin appear two cakes of log-cabin soap supporting a washtub, and a colored woman washing clothes, and to the left of said woman is a colored youth.

SER. No. 1,017. HARNESS-LEATHER. CHAS. F. STIFEL COMPANY, Allegheny, Pa. Filed Apr. 10, 1905.

SER. No. 1,017.

PHOENIX

The word "PHOENIX."

SER. No. 1,188. WHEAT-FLOUR. THE TOPEKA MILLING COMPANY, Topeka, Kans. Filed Apr. 12, 1905. Used ten years.

RALSTON

The word "RALSTON."

SER. No. 1,270. WOOLEN AND WORSTED YARNS. R. BLANKENBURG & Co., Philadelphia, Pa. Filed Apr. 12, 1905.



The words "GOLDEN FLEECE."

SER. No. 1,467. CHEWING AND SMOKING TOBACCO. SMITH & SCOTT TOBACCO CO., Paducah, Ky. Filed Apr. 14, 1905.

FORKED DEER



The words "FORKED DEER," associated with the representation of the head of a deer.

SER. No. 1,531. NIGHT-SHIRTS, PAJAMAS, NIGHT-ROBES, AND SLEEPING-GARMENTS. THE GOODWIN DUNNELL CO., Boston, Mass. Filed Apr. 14, 1905.



The picture of a cupid going upstairs carrying a lighted candle, inclosed in an oval and having across the face of the picture, in a slightly-curved ascending line from left to right, the word "DREAMLAND" and having a scroll or ribbon at the bottom of the figure.

SER. No. 2,494. LEATHER SHOES. LEWIS W. FRANKLIN, Boston, Mass. Filed Apr. 20, 1905.



A circular panel inclosing a shield having thereon stars and the words "FITS THE FOOT," and griffins upon each side of the shield, associated with the words "THE FRANKLIN SHOE."

SER. No. 2,631. SALVE FOR THE TREATMENT OF SORE EYES. THE E. E. SUTHERLAND MEDICINE CO., Paducah, Ky. Filed Apr. 21, 1905.

EAGLE EYE

The arbitrary words "EAGLE EYE."

SER. No. 2,686. BONE PHOSPHATE. BAUGH & SONS COMPANY, Philadelphia, Pa. Filed Apr. 22, 1905.



The words "DOUBLE EAGLE" and the representation of a double eagle holding scrolls in its talons, upon one of which appears the word "PLANMIUM" and upon the other the word "GUARANTY," and a shield, bearing the letter "B" and partially inclosed by a chain, appearing on the breast of the double eagle.

SER. No. 2,873. SIDE-CRANK STEAM-ENGINES. A. L. IDE & SONS, Springfield, Ill. Filed Apr. 24, 1905. Used ten years.

IDEAL

The word "IDEAL."

SER. No. 2,874. CENTER-CRANK STEAM-ENGINES. A. L. IDE & SONS, Springfield, Ill. Filed Apr. 24, 1905. Used ten years.

IDE

The word "IDE."

SER. No. 3,065. LINIMENT. FRIEDRICH ADOLF RICHTER, Rudolstadt, Germany, and New York, N. Y. Filed Apr. 26, 1905.

LOXOL

The word "LOXOL."

SER. No. 3,168. ROPES, CORDS, TWINES, AND LINES. SILVER LAKE COMPANY, Boston, Mass. Filed Apr. 26, 1905. Used ten years.

SILVER LAKE

The words "SILVER LAKE."

SER. No. 3,427. ANALGESIC AND SEDATIVE. THE DR. MILES MEDICAL CO., Elkhart, Ind. Filed Apr. 28, 1905. Used ten years.

-ANTI-
Pain Pills.

The words "ANTI-PAIN PILLS."

SER. No. 3,642. SHEETING. MINOT, HOOPER & Co., New York, N. Y. Filed Apr. 29, 1905. Used ten years.

DWIGHT
MAN'G.Co.
CABOT
A
40

The words "DWIGHT MAN'G. CO. CABOT" appear in three horizontal lines and beneath the same the letter "A," while below the whole are four rectangular figures standing side by side and just over a small scroll bearing the number "40."

SER. No. 3,786. WHISKY. W. L. WELLER & SONS, Louisville, Ky. Filed May 1, 1905.



GOLD CROWN

The words "GOLD CROWN," associated with the representation of a crown, above which appears a Maltese cross.

SER. No. 3,891. PORTLAND CEMENT. THOMAS MILLEN CO., Wayland, N. Y. Filed May 1, 1905. Used ten years.



The word "WAYLAND" upon a panel and the representation of three thistle-blooms with accompanying leaves above the panel, the whole being inclosed in a circular border.

SER. No. 3,954. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y. Filed May 2, 1905. Used ten years.

No. 42

The symbol "No. 42."

SER. No. 3,982. SPICES AND MUSTARD. E. R. DURKEE & Co., New York, N. Y. Filed May 2, 1905.



The representation of a plate with crossed knife, fork, and spoon thereupon.

SER. No. 4,010. MAPLE-SYRUP. NEW ORLEANS COFFEE CO., (LTD.,) New Orleans, La. Filed May 2, 1905.

MAPLEINE

The word "MAPLEINE."

SER. No. 4,289. MARINE PAINT. HARRY LOUDERBOUGH, Jersey City, N. J. Filed May 4, 1905.

SER. No. 4,289.



A rectangular black panel upon which appears the representation of a board, one half of which is painted, the unpainted half showing the ravages of barnacles and vegetable growth.

SER. No. 4,290. MARINE PAINT. HARRY LOUDERBOUGH, Jersey City, N. J. Filed May 4, 1905.



The representation of an iron plate, one half of which is painted and the other half unpainted, the unpainted half showing barnacles and a vegetable growth attached thereto, the whole surrounded by a rectangular black border.

SER. No. 4,311. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y. Filed May 5, 1905.



A rectangular design inclosed by a border conventionally indicating stripe bound together. On each end of a central panel is a scroll with ribbon-like ends carrying a shield with an ermine-like surface displaying three fleurs-de-lis, the shield being surmounted by a crown extending to each end of the panel. At each corner of the panel is a spray of leaves and at each side a conventional wreath, scroll, and rosettes.

SER. No. 4,387. PREPARED CEREAL BREAKFAST-FOODS. HYGIENIC FOOD CO., Battle Creek, Mich. Filed May 5, 1905.



The hyphenated word "MAPL-FLAKE," associated with the representation of a maple-leaf.

SER. No. 4,621. MEN'S, WOMEN'S, AND CHILDREN'S LEATHER BOOTS AND SHOES. THOMAS G. PLANT COMPANY, Boston, Mass. Filed May 8, 1905.

Queen

The word-symbol "QUEEN."

SER. No. 4,639. PURE RYE AND MALT WHISKIES. MEADVILLE, PENNSYLVANIA, DISTILLING COMPANY, INC., Meadville, Pa. Filed May 8, 1905. Used ten years.

Meadville

PURE RYE WHISKEY

MEADVILLE, PENNSYLVANIA DISTILLING CO

INCORPORATED



The word "MEADVILLE" and the word "PURYO," the latter being superimposed across a heart-shaped figure, upon which latter is seated an allegorical figure having wings and holding a trumpet, and between the word "MEADVILLE" and the allegorical figure are the following words: "PURE RYE WHISKEY MEADVILLE, PENNSYLVANIA DISTILLING CO. INCORPORATED."

SER. No. 4,911. RAZORS, POCKET-KNIVES, BUTCHER-KNIVES, KITCHEN-KNIVES, HUNTING-KNIVES, AND TABLE-KNIVES. ADOLPH KASTOR & BROS., New York, N. Y. Filed May 10, 1905.



The picture or representation of two swords, the blades of which are crossed.

SER. No. 4,966. COTTON PIECE GOODS. TREMONT & SUFFOLK MILLS, Lowell, Mass. Filed May 10, 1905. Used ten years.

CROYDON

The arbitrarily-selected word "CROYDON."

SER. No. 5,095. RUBBER BOOTS, SHOES, AND GALOSHES. OSTASIATISCHE HANDELS-GESELLSCHAFT, Hamburg, Germany. Filed May 11, 1905.



The representation of a porter carrying on his shoulders a yoke, to which, on both sides, several boxes are fastened by means of ropes, such representation being shown in a rectangular frame having scroll-work in the corners thereof.

SER. No. 5,121. CEMENT-PLASTER, THE BASE OF WHICH IS CALCINED GYPSUM. J. B. KING & CO., New York, N. Y. Filed May 11, 1905.

PURITAN

The word "PURITAN."

SER. No. 5,159. HARD-RUBBER SYRINGES. AMERICAN HARD RUBBER CO., New York, N. Y. Filed May 11, 1905.

ROYAL EXCELSIOR

The words "ROYAL EXCELSIOR."

SER. No. 5,165. SOFT-RUBBER BULB AND FOUNTAIN SYRINGES. AMERICAN HARD RUBBER CO., New York, N. Y. Filed May 11, 1905.

Crown

The word "CROWN."

SER. No. 5,214. BUTTER. THE FOX RIVER BUTTER COMPANY, Aurora, Ill. Filed May 11, 1905.



The representation of a circular disk surrounded by curved and radiating lines to represent the milling on a coin. Centrally of the said disk is a representation of a clover-leaf. Across the clover-leaf is a band or label on which appear the words "CLOVER HILL BUTTER." Above the figures last described, following the general outline of the circle, are the words "FOX RIVER BUTTER CO.," and below them, within the disk, are the words "AURORA, ILL."

SER. No. 5,268. COTTON PIECE GOODS. YORK MANUFACTURING CO., Saco, Me. Filed May 11, 1905. Used ten years.

MYSTIC RIVER

The words "MYSTIC RIVER," associated with a conventional scroll figure.

SER. No. 5,322. SYRUPS AND MOLASSES. PENICK & FORD LTD., Shreveport, La. Filed May 12, 1905.



The letters, character, and word "P & F BRAND" upon a circular panel of contrasting color inclosed in concentric circles.

SER. No. 5,324. SYRUP. PENICK & FORD LTD., Shreveport, La. Filed May 12, 1905.

CEROCANE

The word "CEROCANE."

SER. No. 5,334. WHISKY. THOMAS E. O'KEEFE, Oswego, N. Y. Filed May 13, 1905. Used ten years.

BEAVER RUN

The words "BEAVER RUN" above a monogram composed of the letters "T E O K."

SER. No. 5,356. HAND-MIRRORS, MANICURE SETS, TOILET AND TOOTH BRUSHES, TOILET-TRAYS, AND BOXES OF ENAMELED WARE. J. C. DOWD & Co., New York, N. Y. Filed May 12, 1906.

Ebonoid

The word "EBONOID."

SER. No. 5,468. STEEL RODS, BARS, BLOOMS, BILLETS, PLATES, SHEETS, SLABS, STRIPS, BLOCKS, AND FORGINGS. PARK STEEL COMPANY, Pittsburg, Pa. Filed May 13, 1906. Used ten years.

PARK'S

The word "PARK'S."

SER. No. 5,484. STEEL RODS, BARS, BLOOMS, BILLETS, PLATES, SHEETS, SLABS, STRIPS, BLOCKS, AND FORGINGS. SINGER, NIMICK & Co., INC., Pittsburg, Pa. Filed May 13, 1906. Used ten years.

Singer's

The word "SINGER'S."

SER. No. 5,491. STEEL RODS, BARS, BLOOMS, BILLETS, PLATES, SHEETS, SLABS, STRIPS, BLOCKS, AND FORGINGS. HOWE, BROWN & Co. Ltd., Pittsburg, Pa. Filed May 13, 1906. Used ten years.

HOWE'S

The word "HOWE'S."

SER. No. 5,533. FINGER-NAIL POLISH. DR. J. PARKER PRAY COMPANY, LIMITED, New York, N. Y. Filed May 13, 1906.

DIAMOND

The word "DIAMOND."

SER. No. 5,557. POCKET KNIVES AND RAZORS. WESTER BROS., New York, N. Y. Filed May 13, 1906. Used ten years.



The representation of an anchor having a star positioned on the shank thereof and an arrow passing through the star at its juncture with the anchor-shank.

SER. No. 5,615. CEREAL FOODS MADE FROM OATS. THE AMERICAN CEREAL COMPANY, Akron and Ravenna, Ohio; Chicago, Ill., and Cedar Rapids, Iowa. Filed May 15, 1906.

NUDAVENE

The word "NUDAVENE."

SER. No. 5,763. CANDY. THE PEPPER COMPANY, Peabody, Mass. Filed May 15, 1906. Used ten years.

GIBRALTERS

The word "GIBRALTERS."

SER. No. 5,876. CANNED CORN AND CANNED SUCCOTASH. SACO VALLEY CANNING COMPANY, Portland, Me. Filed May 17, 1905. Used ten years.

Royalty

The word or word-symbol "ROYALTY."

SER. No. 5,927. STENCIL DUPLICATING-MACHINES AND PARTS THEREOF. NEOSTYLE COMPANY, New York, N. Y. Filed May 18, 1905.

Neostyle

The word "NEOSTYLE."

SER. No. 5,929. STENCIL-PAPER. NEOSTYLE COMPANY, New York, N. Y. Filed May 18, 1905.

NEOSTYLE

The word "NEOSTYLE."

SER. No. 6,104. REFRIGERATORS AND ICE-CHESTS. THE INDIANA MFG. COMPANY, Peru, Ind. Filed May 19, 1906.



NORTH STAR

The words "NORTH STAR" and the representation of a star with the word "NORTH" appearing thereon.

SER. No. 6,188. CANNED CORN. BURNHAM & MORRILL COMPANY, Portland, Me. Filed May 20, 1905. Used ten years.

PARIS

The word or word-symbol "PARIS."

SER. No. 6,265. LINIMENT. EARL S. SLOAN, Boston, Mass. Filed May 22, 1905. Used ten years.



A panel bearing the portrait of the applicant and facsimile signature and the words "SLOAN'S NERVE & BONE LINIMENT" and other words descriptive of the goods and the applicant's place of business.

SER. No. 6,493. LAUNDRY SOAP. WILLIAM WALTKE & CO., St. Louis, Mo. Filed May 24, 1905. Used ten years.

SWISS

The word "SWISS."

SER. No. 6,497. SOAP. WILLIAM WALTKE & Co., St. Louis, Mo. Filed May 24, 1905



The pictorial representation of a portion of a locomotive, with rays of light projecting from the headlight of said locomotive, and above said pictorial representation appears the word "HEADLIGHT," and appearing in the rays of light from the headlight is the word "SOAP."

SER. No. 6,623. LIQUID PURGATIVE COMPOUNDS. CALIFORNIA FIG SYRUP CO., San Francisco, Cal. Filed May 26, 1905.

CALAFIG

The fancy word-symbol "CALAFIG."

SER. No. 6,739. CHOCOLATE CANDIES, CHOCOLATE, AND PREPARATIONS OF CHOCOLATE AND COCOAS. RUSS-SUCHARD & CIE., Neufchatel, Switzerland, assignors to Suchard Societe Anonyme. Filed May 26, 1905.

VIMA

The word "VIMA."

SER. No. 6,766. CHOCOLATE CANDIES, CHOCOLATE, AND PREPARATIONS OF CHOCOLATE AND COCOAS. RUSS-SUCHARD & CIE., Neufchatel, Switzerland, assignors to Suchard Societe Anonyme. Filed May 27, 1905.

MILKA

The word "MILKA."

SER. No. 7,147. CHOCOLATES AND COCOAS. RUSS-SUCHARD & CIE., Neufchatel, Switzerland, assignors to Suchard Societe Anonyme. Filed June 1, 1905. Used ten years.

SUCHARD

The word "SUCHARD."

SER. No. 7,154. CIGARS. CARRERAS LIMITED, Aldgate, London, England. Filed June 1, 1905.



The representation of the head of a black cat with a ribbon scroll beneath, all inclosed in a circle.

SER. No. 7,171. CANDY. REYHER & BROTHERS, INCORPORATED, Pittsburg, Pa. Filed June 1, 1905. Used ten years.

SER. No. 7,171.

Reymers

The word "REYMERS'" in characteristic script type, with a paraph extending from the letter "s" beneath the word, and the same being a simulation of the handwriting of Jacob S. Reymer, deceased.

SER. No. 7,271. NON-ALCOHOLIC SOLUTIONS OF IRON-MANGANESE-PEPTONE. CHEMISCHE FABRIK HELFENBERG, A. G. VORM. B. DIETRICH, Halfenberg, Saxony, Germany. Filed June 2, 1905.

Blutan

The word "BLUTAN."

SER. No. 7,350. VARNISHES, JAPANS, AND WATERPROOF FINISH. KEYSTONE VARNISH CO., Brooklyn, N. Y. Filed June 3, 1905.



KEYSTONE

The word "KEYSTONE" and a representation of a keystone.

SER. No. 7,807. LEATHER FOR BOOTS AND SHOES. A. C. LAWRENCE LEATHER CO., Boston, Mass. Filed June 10, 1905.

GUN METAL

The words "GUN METAL" arranged within a general lozenge-shaped figure with rectangular ends.

SER. No. 7,833. CONDENSED MILK. VERMONT CONDENSED MILK CO., Richmond, Vt., and New York, N. Y. Filed June 10, 1905.

Hero

The arbitrarily-selected word "HERO."

SER. No. 7,836. CONDENSED MILK. VERMONT CONDENSED MILK CO., Richmond, Vt., and New York, N. Y. Filed June 10, 1905.

SER. No. 7,886.

BRIDGE

The arbitrarily-selected word "BRIDGE."

SER. No. 7,974. MEDICATED STOCK AND POULTRY FOOD. MEDICURA FOOD CO., Indianapolis, Ind. Filed June 12, 1905.

MEDICURA

The word "MEDICURA."

SER. No. 8,015. SALVES, LINIMENTS, AND POROUS STRENGTHENING-PLASTERS. ELIZABETH DORT, Buffalo, N. Y. Filed June 13, 1905. Used ten years.



The words "ST. DOMINIC'S," associated with the representation of a friar having the terrestrial globe for a background and holding a bottle in one hand and a cross in the other.

SER. No. 8,144. CHEWING-GUM. AMERICAN CHICLE CO., New York, N. Y. Filed June 15, 1905.

KIS-ME

The hyphenated word "KIS-ME."

SER. No. 8,312. WHISKY. MORRIS LANGE, Cincinnati, Ohio. Filed June 16, 1905.



A monogram of the letters, abbreviation, and character "M L & Co" and the word "WATERFORD."

SER. No. 8,363. SAFES. HERRING-HALL-MARVIN SAFE COMPANY, Hamilton, Ohio, and New York, N. Y. Filed June 16, 1905.

SAFECRAFT

The word "SAFECRAFT."

SER. No. 8,796. HOPS. CHAS. L. KIEWERT CO., Milwaukee, Wis. Filed June 19, 1905.



The representation of a shield and key, the major portion of the stem of said key being beneath and hidden by the shield, thereby leaving the bow of the key and the bit of the key with small portions of the stem, extending from said bow and bit, respectively, to the shield, visible. Across the bow of the key is the name "KIEWERT," and the bit of the key contains the abbreviation "MIL."

SER. No. 8,854. COAL. EDWIN J. CUMMINGS, Philadelphia, Pa. Filed June 23, 1905.



A square-shaped figure in solid color.

SER. No. 8,962. CHEMICAL AND VEGETABLE SUBSTITUTE FOR EGG-WHITES TO BE USED ESPECIALLY IN THE MANUFACTURE OF CAKE FROSTINGS OR ICINGS. FROSTLENE MANUFACTURING COMPANY, Boston, Mass. Filed June 24, 1905.



A circular panel inclosing a triangular-shaped figure, with the head of a man wearing a baker's cap arranged on said figure. On the circular panel are the words "ALBUMEN CREAM," and within the same are the words "IMPROVED FROSTINGS ICE CREAMS MERINGUES SHERBETS KISSES."

SER. No. 9,048. HAIR-BRUSHES. HENRY L. HUGHES, Chicago, Ill. Filed June 26, 1905.

Ideal

The word "IDEAL."

SER. No. 9,158. BOOTS, SHOES, AND SLIPPERS OF LEATHER OR TEXTILE MATERIAL, OR BOTH, AND SOLES THEREFOR. MORSE & ROGERS, New York, N. Y. Filed June 27, 1905.

TUTTLE

The word "TUTTLE" printed in the particular and distinctive manner shown.

SER. No. 9,159. BOOTS, SHOES, AND SLIPPERS OF LEATHER OR TEXTILE MATERIAL, OR BOTH, AND SOLES THEREFOR. MORSE & ROGERS, New York, N. Y. Filed June 27, 1905.

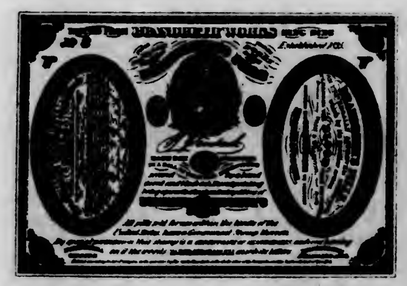
LUCKY

The word "LUCKY."

SER. No. 9,248. MEDICINAL PLASTERS. ALLCOCK MANUFACTURING CO., New York, N. Y. Filed June 27, 1905. Used ten years.

A facsimile signature of B. Brandreth, deceased.

SER. No. 9,254. PILLS. ALLCOCK MANUFACTURING CO., New York, N. Y. Filed June 27, 1905. Used ten years.



A collocation composed of two groups of words referring to the merits and uses of Brandreth's pills and Brandreth's vegetable universal pills within oval borders separated by a portrait of Benjamin Brandreth, over which appear the words "BRANDRETH WORKS," "BRANDRETH'S PILLS," and below which are the facsimile signature "B. BRANDRETH" and statements concerning Benjamin Brandreth's pills, the whole inclosed in an ornamental border with ornamental panels in the corners of the border.

SER. No. 9,274. TALKING-MACHINE RECORDS. VICTOR TALKING MACHINE CO., Camden, N. J. Filed June 27, 1905.

Red Seal

The words "RED SEAL."

SER. No. 9,307. BAR-SOAP. THE WIRELE SOAP COMPANY, Ironton, Ohio. Filed June 26, 1905. Used ten years.

BANTY

The word "BANTY."

SER. No. 9,309. BAR-SOAP. THE WIRELE SOAP COMPANY, Ironton, Ohio. Filed June 26, 1905. Used ten years.

SAFE

The word "SAFE."

SER. No. 9,519. SAWS. J. N. KERRLE & Co., Augsburg-Pfersee, Germany. Filed June 30, 1905.

Finis.

The word "FINIS."

SER. No. 9,587. WHISKY. GILLIAMS, JONES & Co., Philadelphia, Pa. Filed July 1, 1905. Used ten years.

GILLIAMS, JONES & CO. ROYAL FINE RYE WHISKY PHILADELPHIA

A broken-line border within which appear the words "GILLIAMS, JONES & Co. ROYAL FINE RYE WHISKY PHILADELPHIA."

SER. No. 9,791. COFFEE. SPRAGUE, WARNER & COMPANY, Chicago, Ill. Filed July 3, 1905.

RICHELIEU

The arbitrarily-selected word "RICHELIEU."

SER. No. 9,797. SPICES AND MUSTARD. SPRAGUE, WARNER & COMPANY, Chicago, Ill. Filed July 3, 1905.

The arbitrarily-selected word "RICHELIEU."

SER. No. 9,840. GRAVITY-CREAMERS. JACOB S. BARTH, Indianapolis, Ind. Filed July 6, 1905.

CROWN

The word "CROWN."

SER. No. 10,067. WINE. JULIUS WILE SONS & Co., New York, N. Y. Filed July 11, 1905. Used ten years.

LAGRANGE FRERES.

The words "LAGRANGE FRERES" and a fanciful coat-of-arms design showing a shield surmounted by a castellated crown and bearing a monogram of the letters "L F" and partly surrounded by fanciful scrollwork with grape-vines and bunches of grapes.

SER. No. 10,073. WHISKY. WILLIAM H. LEE & Co., St. Louis, Mo. Filed July 11, 1905. Used ten years.

PURE COPPER DISTILLED HIGH GRADE MARYLAND RYE WHISKEY W & L

The words "HIGH GRADE PURE COPPER DISTILLED MARYLAND RYE WHISKEY" and a monogram of the letters and character "W & L," all displayed on the representation of the head of a barrel.

SER. No. 10,404. COTTON AND COTTON-AND-SILK PIECE GOODS. AUSTIN, POOR & Co., New York, N. Y. Filed July 15, 1905.

A conventional representation of a fleur-de-lis and three stars, two above the fleur-de-lis and one below it, the whole being inclosed in a lenticular border.

SER. No. 10,430. TORPEDO-FIREWORKS. EDWARD H. WAGNER, New York, N. Y. Filed July 17, 1905.



The arbitrarily-selected word "CONDENSED" and the figure of Mercury, partially draped, with his garments waving, as in a breeze, mounted upon a bicycle, which is running over a bank of clouds, and represented as holding in his uplifted right hand a number of thunder bolts.

SER. No. 10,505. CARBONATED NON-INTOXICATING TONIC BEVERAGE. HEINERLING & Co., Baltimore, Md. Filed July 18, 1905.

SER. No. 10,505.

"CLUB ALE" SOLE MAKERS Heinzerling & Co. BALTIMORE, MD

A rectangular panel bearing the representation of a stag's head, the words "CLUB ALE" inclosed in quotation-marks, and words descriptive of the goods, of applicants, and of their place of business.

SER. No. 10,506. CARBONATED NON-INTOXICATING TONIC BEVERAGE. HEINERLING & Co., Baltimore, Md. Filed July 18, 1905.

"KOLA CREAM" SOLE MANUFRS. Heinzerling & Co. BALTIMORE, MD

A rectangular panel bearing the representation of a stag's head and the words "KOLA CREAM" inclosed in quotation-marks. Words descriptive of the goods of the applicants and of their places of business also appear upon the panel.

SER. No. 10,559. COFFEE. CHASE & SANBORN, Boston, Mass. Filed July 19, 1905. Used ten years.

SEAL BRAND

The words "SEAL BRAND."

SER. No. 10,763. INFANTS' FOOD. HERBERT TAYLOR, Portsmouth, England. Filed July 24, 1905.

MALTICO

The word "MALTICO" in plain block capitals printed in a horizontal line.

SER. No. 10,764. SELF-RISING FLOUR. EDWIN GILMORE RICHARDS, Sharon, Mass. Filed July 24, 1905.

RISE-O

The word "RISE-O."

SER. No. 10,561. TEA. CHASE & SANBORN, Boston, Mass. Filed July 19, 1905. Used ten years.



The words "BUFFALO CHOP" in a panel and a pictorial representation of a buffalo and the capital letters "C" and "S" and the character "&" between said letters.

SER. No. 10,773. RAZORS AND SAFETY-RAZOR BLADES. CARL FRIEDRICH ERN, Wald, Germany. Filed July 25, 1905.



The representation of a crown over a simitar or sword.

SER. No. 10,777. PORTLAND CEMENT. THE VULCANITE PORTLAND CEMENT CO., Philadelphia, Pa. Filed July 25, 1905.



A Maltese cross inclosed in a circle, the cross bearing on its face the letter "V" and rays extending therefrom on a dark background in the form of a sunburst, and above the cross the words "VULCANITE PORTLAND CEMENT."

SER. No. 10,791. NECKSCARFS. WERBER AND HEILBRONNER, New York, N. Y. Filed July 26, 1905.

SER. No. 10,791.

"MEN WHO KNOW"

The phrase "MEN WHO KNOW" inclosed in quotation-marks.

SER. No. 11,211. RIDING AND WALKING PLOWS. PARLIN & ORENDORFF CO., Canton, Ill. Filed Aug. 3, 1905. Used ten years.

CANTON PLOWS

The expression "CANTON PLOWS."

SER. No. 11,290. CIGARS, CHEROOTS, AND CIGARETTES MADE OF CIGAR-TOBACCO. CAYEY-CAGUAS TOBACCO COMPANY, New York, N. Y., and Caguas, Porto Rico. Filed Aug. 5, 1905.

AMORIFÉ

The word "AMORIFÉ."

SER. No. 11,291. CIGARS, CHEROOTS, AND CIGARETTES MADE OF CIGAR-TOBACCO. CAYEY-CAGUAS TOBACCO COMPANY, New York, N. Y., and Caguas, Porto Rico. Filed Aug. 5, 1905.

ENDORSO

The word "ENDORSO."

SER. No. 11,542. METAL-POLISH. PHILIP H. SOLOMON, St. Louis, Mo. Filed Aug. 11, 1905.



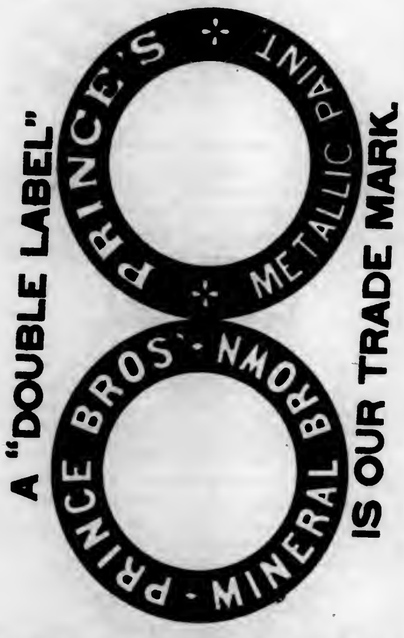
The words "HELIOS THE CLEANSER OF METALS" displayed on a background representing clouds and auroral radiations.

SER. No. 11,576. FRESCO-PAINTS. TOCH BROTHERS, New York, N. Y. Filed Aug. 12, 1905.



The representation of a palette bearing the letter "T" and inclosed within a wreath and an encircling band, on which appear the words "MILO FRESCO COLORS."

SER. No. 11,670. METALLIC PAINT IN DRY POWDER AND IN OIL. THE PRINCE M'F'G CO., New York, N. Y. Filed Aug. 15, 1905. Used ten years.



The representation of two circular bands arranged side by side, one bearing the words "PRINCE BROS' MINERAL BROWN" and the other the words "PRINCE'S METALLIC PAINT," and all associated with the words "A 'DOUBLE LABEL' IS OUR TRADE MARK," the words "DOUBLE LABEL" being inclosed in quotation-marks.

SER. No. 11,702. SHOVELS, SCOOPS, AND SPADES. ST. LOUIS SHOVEL CO., St. Louis, Mo. Filed Aug. 16, 1905.



The representation of a diamond with rays radiating therefrom and the words "SOLID BLACK DIAMOND SOCKET SHANK" inclosed with an ornamental border.

SER. No. 11,708. SHOVELS, SCOOPS, AND SPADES. ST. LOUIS SHOVEL CO., St. Louis, Mo. Filed Aug. 16, 1905.



The representation of a shield having its border ornamented by dots and inclosing the words "MADE & WARRANTED BY THE ST. LOUIS SHOVEL CO. MANUFACTURERS OF SUPERIOR SHOVELS, SPADES & SCOOPS. ST. LOUIS, U. S. A."

SER. No. 11,750. CANNED VEGETABLES AND CANNED FRUIT. ABBOTT GROCERY CO., Keene, N. H. Filed Aug. 18, 1905.



The picture of a mastiff's head, used in combination with the words "MASTIFF BRAND."

SER. No. 11,793. LEATHER SHOES. JAMES MEANS COMPANY, Kittery, Me. Filed Aug. 19, 1905. Used ten years.

James Means

The words "JAMES MEANS."

SER. No. 11,805. EDUCATIONAL BOOKS FOR RAILWAY EMPLOYEES. THE RAILWAY EDUCATIONAL ASSOCIATION, New York, N. Y. Filed Aug. 19, 1905.



The words "THE RAILWAY CORRESPONDENCE SCHOOL," associated with a view of a locomotive, a front view of which is contained within the letter "C" of the word "CORRESPONDENCE."

SER. No. 11,861. SOAP FOR TOILET, LAUNDRY, AND GENERAL USE. THE PROCTER & GAMBLE CO., Ivorydale and Cincinnati, Ohio, and Kansas City, Kans. Filed Aug. 31, 1905.

IVORY

The word "IVORY."

SER. No. 11,976. FERRUGINOUS PREPARATION. NICOLAY & Co., Zurich, Switzerland. Filed Aug. 24, 1905.

Haematogen

The word "HAEMATOGEN."

SER. No. 12,013. MEDALS AND BADGES. CALVIN W. LITTLE, Montclair, N. J. Filed Aug. 26, 1905.

LITTLE SYSTEM

The words "LITTLE SYSTEM" arranged in oppositely-curved lines.

SER. No. 12,157. GUN AND BLASTING POWDER. WINSTON T. BANKS, Bonanza, Ark. Filed Sept. 1, 1905.



A portrait of W. T. Banks inclosed in an elliptical frame, on which appear the words "SMOKELESS, FLAMELESS, SAFETY WHITE POWDER," with the facsimile signature "W. T. BANKS" on a panel above the frame and the words "FOR GUN SHOOTING AND BLASTING PURPOSES" on a panel below said frame.

SER. No. 12,176. WATCHES. WINFIELD C. BALL, Cleveland, Ohio. Filed Sept. 2, 1905.

COMMERCIAL

The word "COMMERCIAL."

SER. No. 12,227. BOAS, MUFFS, AND CAPES MADE FROM OSTRICH-FEATHERS, AND OSTRICH-PLUMES. EDWIN CAWSTON, South Pasadena, Cal. Filed Sept. 5, 1905.



The representation of two ostriches in the act of running, the same being partly within and partly without a circle.

SER. No. 12,407. ADJUSTABLE SCREW-WRENCHES. COES WRENCH CO., Worcester, Mass. Filed Sept. 9, 1905. Used ten years.

COES

The word "COES."

SER. No. 12,455. ROOFING-PAINT. ASBESTOS MANUFACTURING AND ROOFING CO., St. Louis, Mo. Filed Sept. 11, 1905.

EVER-TITE

The words "EVER-TITE," the first and last letters of which words are the longest, and the remaining letters forming said words being gradually shortened toward the hyphen between said words.

SER. No. 12,482. CARBONATED TONIC BEVERAGE. BOONVILLE MINERAL SPRING CO., Utica, N. Y. Filed Sept. 11, 1905.



A rectangular panel upon which is shown the representation of a young girl in the act of catching water from a rivulet and a monogram of the letters and abbreviation "B M S Co," across which is a ribbon bearing the words "LITHIA POLARIS," and associated with the words and abbreviation "UTICA, N. Y. LE SECRET D'UNE VIE SANTE." Below appear the words and abbreviations "BIRCH BEER. A HEALTHFUL AND DELICIOUS BEVERAGE BOTTLED WITH 'LITHIA POLARIS' PURE SPRING WATER BOONVILLE MINERAL SPRING CO. BOONVILLE, N. Y."

SER. No. 12,755. CANNED FRUITS. CALIFORNIA CANNERIES CO., San Francisco, Cal. Filed Sept. 18, 1905.

SER. No. 12,755.

Bear Brand

The words "BEAR BRAND."

SER. No. 12,835. BRANDY. JAS. HENNESSY & CO., Cognac, France. Filed Sept. 21, 1905.



A border design representing grape-vines in leaf and fruit, with the figures of a mailed arm wielding a battle-ax, and a heraldic roll below the arm incorporated in the upper part of the border, and the abbreviations, words, and character "JAS. HENNESSY & CO. COGNAC" arranged within the field.

SER. No. 12,840. WHISKY. JOSEPH F. SINNOTT, Philadelphia, Pa. Filed Sept. 21, 1905. Used ten years.



The words "MOORE & SINNOTT, SUCCESSORS TO JOHN GIBSON'S SON & CO. COPPER DISTILLED PURE RYE WHISKEY GIBSONTON MILLS PA," arranged in a circular design surrounded by an ornamental circular border.

SER. No. 12,936. LEATHER SHOES. THE AINSWORTH SHOE CO., Toledo, Ohio. Filed Sept. 23, 1905.



The representation of an air-ship having a shoe for the car thereto and associated with the words "ABOVE THEM ALL," "THE KNABEN SHOE," and "A HIGH FLIER."

SER. No. 13,000. LEATHER SHOES. F. MAYER BOOT & SHOE CO., Milwaukee, Wis. Filed Sept. 25, 1905.

HONORBILT

The word "HONORBILT."

SER. No. 13,001. LEATHER SHOES. F. MAYER BOOT & SHOE CO., Milwaukee, Wis. Filed Sept. 25, 1905.

Western Lady

The words "WESTERN LADY."

SER. No. 13,055. COTTON THREAD. THE CLARK MILE-END SPOOL COTTON CO., East Newark, N. J. Filed Sept. 27, 1905. Used ten years.

JOHN CLARK JUNR. & CO'S.

The name "JOHN CLARK JUNR. & Co's."

SER. No. 13,056. DARNING-COTTON, CROCHET-COTTON, AND COTTON THREAD. THE CLARK MILLS-THE SPOOL COTTON CO., East Newark, N. J. Filed Sept. 27, 1905. Used ten years.



A representation of an elephant standing upon a heraldic roll.

SER. No. 13,083. MECHANICAL ILLUSION APPARATUS. EDWARD RENTON, Trenton, N. J., assignor to Richard A. Boehlke, Philadelphia, Pa. Filed Sept. 27, 1905.

CREO

The word "CREO."

SER. No. 13,118. ALE. NEW ENGLAND BREWING COMPANY, Boston, Mass. Filed Sept. 26, 1905.



An oval-shaped panel bearing in its center the letter "B" printed in red and having thereon the name "HAFFENREFFER & CO. BOYLSTON BREWERY" and surrounded by ornamental panels bearing the same name and the words "BOYLSTON BOSTON STOCK ALE BOTTLED AT THE BREWERY, BOSTON."

SER. No. 13,153. SPICES AND MUSTARD. E. R. DURKEE & CO., New York, N. Y. Filed Sept. 30, 1905.



The representation of a tiger's head and the full figure of a tiger, used singly or together.

SER. No. 13,209. MEASURING-TAPES. THE LUFKIN RULE CO., Saginaw, Mich. Filed Oct. 2, 1905.

LUFKIN

The word "LUFKIN," arranged in the particular and distinctive manner shown in the drawing, with the lip of the letter "L" extended below the remaining letters of the word.

SER. No. 13,360. CLEANING AND POLISHING SOAP. MARSHALL CHEMICAL COMPANY, Marshall, Va. Filed Oct. 6, 1905.

CARBONOLA

The word "CARBONOLA."

SER. No. 13,365. PLASTERS AND PLASTIC COMPOUNDS FOR THE WALLS, CEILINGS, AND FLOORS OF DWELLINGS AND OTHER BUILDINGS. THE PARAGON PLASTER COMPANY, Syracuse, N. Y. Filed Oct. 6, 1905.



The letters "P W P" in monogram form surrounded by a wreath.

SER. No. 13,410. CANDY. HILLER CONFECTIONERY COMPANY, Canajoharie, N. Y. Filed Oct. 7, 1905.



The words "VASSAR KISSES" printed in script, one above the other, and the letter "V" having a horizontal open scroll lying above the letters "ASSAR" and within the field of which scroll appears the word "CREAM."

SER. No. 13,419. REMEDY IN TABLET, LIQUID, AND POWDER FORM FOR THE CURING OF NERVOUS DISORDERS, DYSPEPSIA, INSOMNIA, LOSS OF MEMORY, AND GENERAL DEBILITY. ADA-LUR-IEM MEDICINE COMPANY, New York, N. Y. Filed Oct. 7, 1905.

SER. No. 13,419.

ADA-LUR-IEM

THE RESTORER OF LOST VITALITY

The word "ADA-LUR-IEM," associated with the words "THE RESTORER OF LOST VITALITY."

SER. No. 13,509. EXPLOSIVES. MASURITE EXPLOSIVE COMPANY, Masury, Ohio, and New York, N. Y. Filed Oct. 12, 1905.

MASURITE

The word "MASURITE."

SER. No. 13,521. TONIC FOR RHEUMATISM. FERNEY & PALLOTTO, Carnegie, Pa. Filed Oct. 12, 1905.

SIRENN

The word "SIRENN."

SER. No. 13,528. COPYING, INDELIBLE, AND WRITING INKS. S S STAFFORD INC., New York, N. Y. Filed Oct. 12, 1905. Used ten years.

STAFFORD'S

The word "STAFFORD'S."

SER. No. 13,570. WHEAT-FLOUR. THE REA-PATTERSON MILLING COMPANY, Coffeyville, Kans. Filed Oct. 13, 1905.



BLUE JAY
HIGHEST PATENT

A circular panel bearing the words "BLUE JAY" and the representation of a blue-jay perched upon a twig and associated with the words "THE REA-PATTERSON MILLING CO. HIGHEST PATENT FULL PLANSIFTER SYSTEM COFFEYVILLE, KAS.," and the words "BLUE JAY HIGHEST PATENT" appearing below said panel.

SER. No. 13,572. WHEAT-FLOUR. THE REA-PATTERSON MILLING COMPANY, Coffeyville, Kans. Filed Oct. 13, 1905.



A circular panel bearing the word "SWEETHEART" and the representation of a heart pierced by an arrow partially inclosed in a wreath of holly, with the words "ALL FALL IN LOVE WITH ME" arranged above the heart and a row of cupids' heads extending in a semicircle above the wreath and associated with the words "THE REA-PATTERSON MILLING CO., COFFEYVILLE, KANS. HIGH PATENT."

SER. No. 13,573. WHEAT-FLOUR. THE REA-PATTERSON MILLING COMPANY, Coffeyville, Kans. Filed Oct. 13, 1905.

The REA-PATTERSON Milling Co



COFFEYVILLE, KAS.

The representation of the head of a little girl wearing a large hat and the word "JOY," with a flowering vine supporting butterflies and entertwined therewith and associated with the words "THE REA-PATTERSON MILLING CO., COFFEYVILLE, KAS."

SER. No. 13,666. MEDICAL AND SURGICAL PLASTERS. JOHNSON & JOHNSON, New Brunswick, N. J. Filed Oct. 17, 1905. Used ten years.



The representation of a red Greek cross.

SER. No. 13,669. SURGICAL DRESSINGS OF COTTON OR GAUZE. JOHNSON & JOHNSON, New Brunswick, N. J. Filed Oct. 17, 1905. Used ten years.



A representation of a red Greek cross.

SER. No. 13,670. TOILET OR NURSERY POWDER. JOHNSON & JOHNSON, New Brunswick, N. J. Filed Oct. 17, 1905. Used ten years.



The representation of a red Greek cross.

SER. No. 13,671. CATHETERS, STOMACH-TUBES, AND BOUGIES. JOHNSON & JOHNSON, New Brunswick, N. J. Filed Oct. 17, 1905. Used ten years.



A representation of a red Greek cross.

SER. No. 13,694. COTTON YARN, SEWING-COTTON, AND CROCHET-COTTON NOT ON SPOOLS OR REELS; SEWING-COTTON ON SPOOLS OR REELS. JONAS BROOK & BROS., LIMITED, Meltham, England. Filed Oct. 17, 1905. Used ten years.



A representation of a rake.

SER. No. 13,698. COTTON THREAD. JONAS BROOK & BROS., LIMITED, Meltham, England. Filed Oct. 17, 1905. Used ten years.



A collocation composed of two concentric circles separated so as to form a band, within which appear the words, letter, character, and abbreviation "J. BROOK & BROS., MELTHAM MILLS," leaving a circular central space, within which appear figures and letters indicating the length of the thread.

SER. No. 13,739. INSECTICIDES. B. G. PRATT COMPANY, New York, N. Y. Filed Oct. 19, 1905.

SCALECIDE

The word "SCALECIDE."

SER. No. 13,783. OINTMENT FOR THE COMPLEXION. JENNIE ROWELL, St. Louis, Mo. Filed Oct. 30, 1905.

CLARIA

The word "CLARIA."

SER. No. 13,798. CANNED FRUITS AND VEGETABLES. THE BOOTH PACKING COMPANY, Baltimore, Md. Filed Oct. 21, 1905.

OVAL

The word "OVAL."

SER. No. 13,799. CANNED FRUITS AND VEGETABLES. THE BOOTH PACKING COMPANY, Baltimore, Md. Filed Oct. 21, 1905.

DIAMOND

The word "DIAMOND."

SER. No. 13,819. LAWN-MOWERS. SUPPLEE HARDWARE COMPANY, Philadelphia, Pa. Filed Oct. 21, 1905. Used ten years.

QUAKER CITY

The words "QUAKER CITY."

SER. No. 13,822. LAWN-MOWERS. SUPPLEE HARDWARE COMPANY, Philadelphia, Pa. Filed Oct. 21, 1905. Used ten years.

GREAT AMERICAN

The words "GREAT AMERICAN."

SER. No. 13,823. LAWN-MOWERS. SUPPLEE HARDWARE COMPANY, Philadelphia, Pa. Filed Oct. 21, 1905. Used ten years.

CONTINENTAL

The word "CONTINENTAL."

SER. No. 13,845. POCKET-KNIVES, TABLE-KNIVES, BUTCHER-KNIVES, STICKING-KNIVES, SKINNING-KNIVES, PARING-KNIVES, CARVING-KNIVES, AND RAZORS. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill. Filed Oct. 21, 1905.



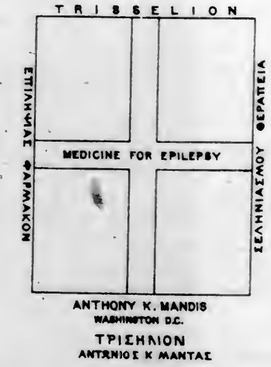
The word "AJAX" and the representation of the bust of Ajax wearing a helmet and holding in one hand a Grecian sword, all surrounded by an annular strap bearing the name "HIBBARD SPENCER BARTLETT & CO."

SER. No. 13,849. BICYCLES, TRICYCLES, VELOCIPEDES, AND PARTS THEREOF. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill. Filed Oct. 21, 1905.



The word "AJAX" and the representation of the bust of Ajax wearing a helmet and holding in one hand a Grecian sword, all surrounded by an annular strap bearing the name "HIBBARD SPENCER BARTLETT & CO."

SER. No. 13,875. MEDICINE FOR EPILEPSY. ANTHONY K. MANDIS, Washington, D. C. Filed Oct. 23, 1905.



A rectangular figure divided by a Greek cross, having its opposite arms equal, into four rectangular panels of equal size, said panels being blue in the label. In the horizontal arm of the cross appear the words "MEDICINE FOR EPILEPSY." Above the rectangular figure appears the word "TRISSELION." Below said figure are the words "ANTHONY K. MANDIS, WASHINGTON, D. C;" also, in Greek characters the word "TRISSELION" and "ANTHONY K. MANDIS." On the right of the rectangular figure are the words "EPILEPSY MEDICINE" in Greek characters, and on the left of said figure are the words "EPILEPSY CURE," also in Greek characters.

SER. No. 13,901. LEATHER BOOTS, SHOES, OXFORDS, SANDALS, AND SLIPPERS. MOORE-SHAFER SHOE MFG. CO., Brockport, N. Y. Filed Oct. 24, 1905.

THE ULTRA

The words "THE ULTRA."

SER. No. 13,997. SUSPENSORY BANDAGES. JOHNSON & JOHNSON, New Brunswick, N. J. Filed Oct. 28, 1905. Used ten years.

LONG LIFE

The words "LONG LIFE."

SER. No. 13,998. SUSPENSORY BANDAGES. JOHNSON & JOHNSON, New Brunswick, N. J. Filed Oct. 28, 1905. Used ten years.



A representation of a red Greek cross.

SER. No. 14,106. SAWS. HENRY DISSTON & SONS, INCORPORATED, Philadelphia, Pa. Filed Oct. 31, 1905.

D

The letter "D."

SER. No. 14,117. SAWS. HENRY DISSTON & SONS, INCORPORATED, Philadelphia, Pa. Filed Oct. 31, 1905.

CENTENNIAL "76"

The word "CENTENNIAL," in connection with the number "76" in quotation-marks.

SER. No. 14,196. LAMPS AND LANTERNS AND PARTS THEREOF. R. E. DIETZ COMPANY, New York, N. Y. Filed Nov. 1, 1905.

MASTERPIECE

The word "MASTERPIECE."

SER. No. 14,220. CASTOR-OIL. LAMAR & RANKIN DRUG COMPANY, Atlanta, Ga. Filed Nov. 2, 1905.



The word "CASTOR-MEL."

SER. No. 14,246. HOOF-OINTMENT, SALVE, COLIC AND COUGH REMEDIES, BLISTERS, AND ABSORBENTS. DR WILLIS A. MYERS VETERINARY MEDICAL CO. Wenona, Ill. Filed Nov. 3, 1905.



The representation of the head of a horse facing to the left and extending through an open doorway, the door forming the background for the head, and the whole being inclosed within a circular panel.

SER. No. 14,252. SHEET-MUSIC, MUSIC-INSTRUCTION BOOKS, AND OPERA-SCORES. GUS EDWARDS MUSIC PUBLISHING CO., New York, N. Y. Filed Nov. 3, 1905.



The representation of a sign-board upon which are represented a staff of musical notation on a scroll, a song-bird on a tree-bough, and the words "THE HOUSE MELODIOUS."

SER. No. 14,320. ROOT-BEER, ROOT-BEER EXTRACT, AND THE DRY INGREDIENTS FOR MAKING ROOT-BEER. THE CHARLES E. HIRES COMPANY, Philadelphia, Pa. Filed Nov. 4, 1905. Used ten years.

Hires

The word "HIRES."

SER. No. 14,418. SOLDER. NATIONAL LEAD COMPANY, Jersey City, N. J., and New York, N. Y. Filed Nov. 8, 1905.

SER. No. 14,418.



A representation of a lizard or chameleon.

SER. No. 14,508. CHEWING-GUM. BON-BON COMPANY, New York, N. Y. Filed Nov. 11, 1905.

DENTYNE

The word "DENTYNE."

SER. No. 14,546. LEATHER BOOTS AND SHOES. LYNCHBURG SHOE CO., Lynchburg, Va. Filed Nov. 13, 1905.

Runaway Girl

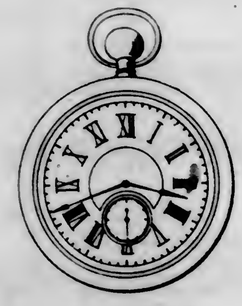
The words "RUNAWAY GIRL."

SER. No. 14,588. WHEAT-FLOUR. THE MOHNS-FRESE COMMERCIAL COMPANY, San Francisco, Cal. Filed Nov. 14, 1905.



A representation of two crossed keys.

SER. No. 14,589. WHEAT-FLOUR. THE MOHNS-FRESE COMMERCIAL COMPANY, San Francisco, Cal. Filed Nov. 14, 1905.



The representation of a watch.

SER. No. 14,592. GUARDS FOR MOWERS, BINDERS, HARVESTERS, AND HEADERS. THE WHITMAN & BARNES MANUFACTURING COMPANY, Akron, Ohio. Filed Nov. 14, 1905.

SER. No. 14,592.



A representation of a diamond-shaped figure with the letters and character "W & B Co" placed in the respective corners thereof.

SER. No. 14,595. LAWN-MOWERS. THE WHITMAN & BARNES MANUFACTURING COMPANY, Akron, Ohio. Filed Nov. 14, 1905.



A representation of a diamond-shaped figure with the letters and character "W & B Co" placed in the respective corners thereof.

SER. No. 14,603. MEN'S LEATHER BOOTS AND SHOES. SEATTLE SHOE CO., Seattle, Wash. Filed Nov. 14, 1905.

OLD OAK

The words "OLD OAK."

SER. No. 14,685. DYESTUFFS AND COLORING-MATTERS. H. A. METZ & CO., New York, N. Y. Filed Nov. 15, 1905. Used ten years.

CYANINE

The word "CYANINE."

SER. No. 14,695. ELECTROPLATED HOLLOW WARE ELECTROPLATED OR SILVER-PLATED TABLEWARE, AND ELECTROPLATED OR SILVER-PLATED FLAT WARE. GORHAM MFG CO, Providence, R. I. Filed Nov. 15, 1905. Used ten years.

GORHAM

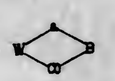
The word "GORHAM."

SER. No. 14,713. WRENCHES. THE WHITMAN & BARNES MANUFACTURING COMPANY, Akron, Ohio. Filed Nov. 16, 1905.

RAILROAD SPECIAL

The words "RAILROAD SPECIAL."

SER. No. 14,715. SPRING-COTTERS. THE WHITMAN & BARNES MANUFACTURING COMPANY, Akron, Ohio. Filed Nov. 16, 1905.



A representation of a diamond-shaped figure, with the letters and character "W & B Co" placed in the respective corners thereof.

SER. No. 14,863. VETERINARY GALL-OINTMENTS, HEALING-POWDERS, AND LINIMENTS. CHARLES LEE REA, New York, N. Y. Filed Nov. 21, 1905.



The representation of a steer branded upon the haunch with what is known as an "open A-bar."

SER. No. 14,903. WHEAT-FLOUR. LAWRENCEBURG ROLLER MILLS COMPANY, Boston, Mass. Filed Nov. 22, 1905.



The words "TOWN TALK," separated by a fancy frame containing a fleur-de-lis. Above are the words "BEST FANCY PATENT" beneath a curved border of fleurs-de-lis; below the central figure, above a curved border of fleurs-de-lis, the words and abbreviation "LAWRENCEBURG, IND.," and a diamond figure containing the words and abbreviation "LAWRENCEBURG ROLLER MILLS CO. PURITY AND QUALITY GUARANTEED."

SER. No. 14,921. VEGETABLE-FIBER ROPE, CORD, AND TWINE. RICHMOND ROCHESTER, New York, N. Y. Filed Nov. 23, 1905.

NYCORD

The word "NYCORD."

SER. No. 15,052. TEA. S. S. PIERCE CO., Boston, Mass. Filed Nov. 28, 1905.



The words "QUEEN'S OWN BLEND" arranged in a scroll-work supported by two lions rampant, said lions resting upon a sup-

port carried by an oval panel, on which is a picture of the late Queen Victoria, with a rectangular blank below, the whole inclosed in a rectangular border-line.

SER. No. 15,146. LEATHER BOOTS AND SHOES. LYNCHBURG SHOE CO., Lynchburg, Va. Filed Dec. 2, 1905.



The words "CITY PARK" arranged in a crescent-shaped figure. A straight line with a dot in the center is located below said crescent figure but within the arc of the circle forming the lower line of said crescent.

SER. No. 15,244. TOILET-PAPER. SCOTT PAPER CO., Philadelphia, Pa. Filed Dec. 7, 1905.



The arbitrary word-symbol "ZLECT" on a dark background with a fancy scroll border and the representation in one corner of a seal having on it a roll of toilet-paper in a circle charged with the monogram "S P Co" and a wreath.

SER. No. 15,245. TOILET-PAPER. SCOTT PAPER CO., Philadelphia, Pa. Filed Dec. 7, 1905.



The arbitrary word-symbol "APOLLO" on a dark background having an irregular-striped border.

SER. No. 15,247. TOILET-PAPER. SCOTT PAPER CO., Philadelphia, Pa. Filed Dec. 7, 1905.



The arbitrary word-symbol "NEWTEX" surrounded by a scroll border and in one corner the representation of a seal having in it a roll of toilet-paper in a circle charged with the monogram "S P Co" and a wreath.

SER. No. 15,258. COTTON PIECE GOODS. HERMITAGE COTTON MILLS, Camden, S. C. Filed Dec. 7, 1905.



The pictorial representation of an Indian warrior erect and in the act of walking, with a quiver of arrows at his back and with his arms outstretched holding a bow and arrow in the act of shooting the arrow.

SER. No. 15,283. DRIED FRUITS. L. OTTEN & CO INC, San Francisco, Cal. Filed Dec. 8, 1905.

BLOSSOM AND SUNSHINE

The words "BLOSSOM AND SUNSHINE."

SER. No. 15,331. HAIR-DRESSING. J. B. CLÉMENT BALME, New York, N. Y. Filed Dec. 11, 1905.

SOUPLINE

The word "SOUPLINE."

SER. No. 15,355. COTTON PIECE GOODS. MINOT, HOOPER & CO., New York, N. Y. Filed Dec. 12, 1905. Used ten years.



The representation of the sun surrounded by rays.

SER. No. 15,356. WOVEN COTTON FABRICS. MINOT, HOOPER & CO., New York, N. Y. Filed Dec. 12, 1905. Used ten years.



The word "SUN."

SER. No. 15,357. GLASS-CUTTERS. WILLIAM L. BARRETT, Bristol, Conn. Filed Dec. 12, 1905.

I. X. L.

The characters "I. X. L."

SER. No. 15,380. CHOCOLATE. JAMES DE FREMERY & COMPANY, San Francisco, Cal. Filed Dec. 13, 1905.



The name "SÉCHAUD'S."

SER. No. 15,417. SHOE-PINCERS. FRANK W. WHITCHER, Boston, Mass. Filed Dec. 14, 1905.

"KNELL"

The word "KNELL" inclosed in quotation-marks.

SER. No. 15,447. LEATHER BOOTS AND SHOES. WILLIAM EASTWOOD AND SON COMPANY, Rochester, N. Y. Filed Dec. 15, 1905.

NATURE—SHAPE

The hyphenated word "NATURE-SHAPE."

SER. No. 15,470. LEATHER SHOES. AUGUSTUS WRIGHT COMPANY, Petersburg, Va. Filed Dec. 16, 1905.

Farmers and Mechanics

The words "FARMERS AND MECHANICS."

SER. No. 15,476. COATS, VESTS, OVERCOATS, AND TROUSERS. SCHWAB CLOTHING CO., St. Louis, Mo. Filed Dec. 18, 1905.

SER. No. 15,476.

Schwab St. Louis.

A rectangular panel bearing the name "SCHWAB ST. LOUIS."

SER. No. 15,483. MUCILAGE, PASTE, AND SEALING-WAX. S. S. STAFFORD INC., New York, N. Y. Filed Dec. 18, 1905. Used ten years.

STAFFORD'S

The word "STAFFORD'S."

SER. No. 15,511. GLUE-CEMENT. LORRIN W. FERDINAND, Boston, Mass. Filed Dec. 19, 1905.

20th CENTURY

The words "20TH CENTURY."

SER. No. 15,576. CANNED FRUITS AND VEGETABLES. WAYNE COUNTY PRESERVING CO., Newark, N. Y. Filed Dec. 21, 1905. Used ten years.



The bust portrait of General Anthony Wayne in Continental costume.

SER. No. 15,594. SWEEPING COMPOUNDS WHICH, BEING PLACED ON THE FLOOR IN CONNECTION WITH THE OPERATION OF SWEEPING, PREVENT THE DUST FROM RISING AND AID IN THE CLEANSING PROCESS. GEORGE E. CAVE, Chicago, Ill. Filed Dec. 22, 1905.

DUST-TO-GO

The word "DUST-TO-GO."

SER. No. 15,610. SUGAR AND MOLASSES. ROBERT C. MARTIN, Albemarle, La. Filed Dec. 23, 1905. Used ten years.

SER. No. 15,610.



The words "ALBEMARLE PLANTATION."

SER. No. 15,613. LEAF-TOBACCO "IN THE HAND." J. M. BUCKNER, JR., & CO., Louisville, Ky. Filed Dec. 23, 1905.



The words "BLACK RAM" and a pictorial representation of the head of a ram.

SER. No. 15,638. WHISKY. S. HIRSCH & CO., Kansas City, Mo. Filed Dec. 26, 1905.



The words "CLOVER NOOK," associated with the representation of a landscape, a cabin, trees, and flowers, and a scrollwork inclosing the same, and sprays of clover having leaves and buds arranged at one side.

SER. No. 15,683. LEATHER BOOTS, SHOES, SLIPPERS, AND INSOLES. HERBERT H. ROOSA, Lincoln, Nebr. Filed Dec. 27, 1905.



The representation of a ribbon bow bearing the letters "W. C. T. U." arranged on a disk, with rays on said disk radiating from the knot of said bow.

SER. No. 15,739. GINGER-ALE. HOLMES & BARBER, Valdosta, Ga. Filed Dec. 16, 1905.



The words "RED RACE" and the representation of an adult Indian in full feather headdress having a blanket wrapped about him, in company with an Indian boy having a bow passing over one shoulder and holding a bottle in his hand.

SER. No. 15,750. SCISSORS AND SHEARS. F. A. CLAUBERG & CO., New York, N. Y. Filed Dec. 29, 1905. Used ten years.



The representation of a fish.

SER. No. 15,758. BREAD. HENRY S. LEVY, New York, N. Y. Filed Dec. 29, 1905.



A dark seal with a white circular panel showing within two concentric circles bearing a star shaped figure composed of two crossed triangles, within which appears the name "LEVY" in Hebrew characters. In the annular space between the edge of the white panel and the concentric circles appears the name "H. S. LEVY," separated by printers' decorations from the numerals and words "78 GRAHAM AVE B'KLYN."

SER. No. 15,790. LEAF-TOBACCO, SMOKING AND CHEWING TOBACCO. INDEPENDENT TOBACCO MANUFACTURERS PROMOTING COMPANY, Chicago, Ill. Filed Dec. 30, 1905.



A representation of a tobacco-leaf bearing the letters "F. A. L. C." and a crossed pipe and cigar.

SER. No. 15,844. LARDS. THE J & F SCHROTH PACKING CO, Cincinnati, Ohio. Filed Jan. 3, 1906.

SER. No. 15,844.



The word "FOUNTAIN" and a pictorial representation of a fountain comprising a statue supported upon a central column surrounded at the base by statues rising from a basin, from which water discharges in streams into a larger basin or tank having statues located on the rim.

SER. No. 15,845. CANNED MEATS. THE J. & F. SCHROTH PACKING CO., Cincinnati, Ohio. Filed Jan. 3, 1906.



The word "FOUNTAIN" and a pictorial representation of a fountain comprising a statue supported upon a central column surrounded at the base by statues rising from a basin from which water discharges in streams into a larger basin or tank having statues located on the rim.

SER. No. 15,850. PENCILS. EBERHARD FABER, New York, N. Y. Filed Jan. 3, 1906.



The representation of a five-pointed star inclosed within a diamond-shaped geometrical figure.

SER. No. 15,851. BREAD AND BISCUITS. CALLARD, STEWART & WATT, LTD., London, England. Filed Jan. 3, 1906.

CASOID

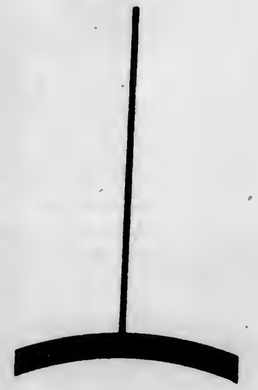
The invented word "CASOID."

SER. No. 15,872. CORDIAL. SOCIÉTÉ ANONYME DE LA DISTILLERIE DE LA LIQUEUR BÉNÉDICTINE DE L'ABBAYE DE FÉCAMP, Fecamp, France. Filed Jan. 4, 1906.



The words "LIQUOR ANTIQUORUM MONACHORUM BENEDICTINORUM ABBATIÆ FISCANENSIS" surrounded by a rectangular border composed of an inner portion formed of a series of semicircles with dotted centers and angles connecting their extremities and an outer portion formed of a plain rectangle with scalloped inner edges.

SER. No. 15,873. CORDIAL. SOCIÉTÉ ANONYME DE LA DISTILLERIE DE LA LIQUEUR BÉNÉDICTINE DE L'ABBAYE DE FÉCAMP, Fecamp, France. Filed Jan. 4, 1906.



The words "VERITABLE BENEDICTINE" with a small Latin cross between the same, with the representation of a star placed before and after said words, the whole appearing upon an arc-shaped band, from which a streamer extends radially from the upper middle portion thereof.

SER. No. 15,874. CORDIAL. SOCIÉTÉ ANONYME DE LA DISTILLERIE DE LA LIQUEUR BÉNÉDICTINE DE L'ABBAYE DE FÉCAMP, Fecamp, France. Filed Jan. 4, 1906.



A representation of the holy St. Benoit carrying an abbot's crozier, surrounded by a dotted or beaded circular border, within which are printed the words and letters "SIG. PRIOR. S S^E TRINITATIS. CONG. S. MAURI" and the letter and word "S. BENEDICTUS."

SER. No. 15,876. CORDIAL. SOCIÉTÉ ANONYME DE LA DISTILLERIE DE LA LIQUEUR BÉNÉDICTINE DE L'ABBAYE DE FÉCAMP, Fecamp, France. Filed Jan. 4, 1906.

SER. No. 15,876.

BENEDICTINE

The word "BÉNÉDICTINE" surrounded by a rectangular border composed of an inner portion formed of a series of semicircles with dotted centers and angles connecting their extremities and an outer portion formed of a plain rectangle with scalloped inner edges.

SER. No. 15,877. CORDIAL. SOCIÉTÉ ANONYME DE LA DISTILLERIE DE LA LIQUEUR BENÉDICTINE DE L'ABBAYE DE FÉCAMP, Fecamp, France. Filed Jan. 4, 1906.



The coat-of-arms of the abbe of Fecamp, consisting of a shield with three abbots' hats surrounded at the sides and bottom by an abbot's stole. Above the shield are arranged an abbot's hat and crozier. A palm branch is arranged at each side of the shield, and the whole inclosed by a dotted or beaded circular border.

SER. No. 15,923. PREPARATIONS OF COCOA AND CHOCOLATE USED AS FOODS AND BEVERAGES. THE CHAS. H. PHILLIPS CHEMICAL CO., New York, N. Y. Filed Jan. 5, 1906. Used ten years.



A monogram containing the letters of the word "PHILLIPS," said monogram being on a shield, which is surrounded by a buckled strap.

SER. No. 15,925. UNDERWAISTS FOR WOMEN AND CHILDREN. THOMAS B. FITZPATRICK, Boston, Mass. Filed Jan. 5, 1906.

E-Z

The letters "E Z," with which is associated the word "EASY," appearing between said letters.

SER. No. 16,042. ANTISEPTIC COMPOUND. HYLIN & CO. FABRIEK ARTIKELAG, Stockholm, Sweden. Filed Jan. 8, 1906.

BARBOL

The fancy word "BARBOL."

SER. No. 15,926. UNBLEACHED COTTON PIECE GOODS NOT FIGURED OR PRINTED. BUSK & JEVONS, New York, N. Y. Filed Jan. 5, 1906.



The representation of a man on horseback lassoing a bull, in which the bull is running and the man on horseback is riding alongside with one arm extended swinging the lasso.

SER. No. 15,937. CORN CURE. ELGIN CHEMICAL CO., Elgin, Ill. Filed Jan. 5, 1906.



The words "UNCLE SAM CORN CURE," accompanied by a full-length picture of a man wearing a stovepipe-hat, a dress-suit coat, striped trousers, a light vest, a high collar, and having a goatee, such man holding in his left hand a placard with the words "UNCLE SAM CORN CURE" and a side view of the head and shoulders of a man having long hair and a goatee thereon.

SER. No. 16,066. MEN'S LEATHER SHOES. E. A. WEIL & COMPANY, Savannah, Ga. Filed Jan. 9, 1906.



A pictorial representation comprising a circular figure having a decorated border disposed over two griffins, the latter being represented back to back in sitting posture on a base with their wings overlapping the circular figure. Associated with the pictorial representation are the words and letters "THE E. C. BURT $5.00 SHOE," the word "THE" appearing partially over the circular figure and the letters "E. C." appearing on and contrasting with the circular border.

SER. No. 16,087. WOVEN AND KNITTED UNDERWEAR. GEO. WM. SCHLICHTEN, New York, N. Y. Filed Jan. 10, 1906.



A steering-wheel upon which is a foul anchor at the center of concentric circles, the outer of which is of cable and the inner of which is shaded and between which appear the initials "C. T." and a star, and between the inner of which and the steering-wheel appear the letters "C C T T."

SER. No. 16,134. LIQUID ROOFING COMPOUNDS MADE FROM COAL-TAR PRODUCTS. EZEKIEL C. EVANS, Philadelphia, Pa. Filed July 1, 1906.



An arbitrary symbol—namely, a crescent—within which or across the face of which are printed the words "CRESCENT COMPOUND."

SER. No. 16,204. SALTED PEANUTS. TADS FOOD CONFECTION CO., New York, N. Y. Filed Jan. 15, 1906.

TADS

The arbitrary or fanciful word "TADS."

SER. No. 16,263. WATCHES, WATCH-MOVEMENTS, WATCH-CASES, AND WATCH PARTS. WILLIAM F. DOLL, New York, N. Y. Filed Jan. 17, 1906. Used ten years.

DOLL

The word "DOLL."

SER. No. 16,291. BABBITT AND ANTIFRICTION BEARING METALS. PALMETTO METAL COMPANY, Chicago, Ill. Filed Jan. 18, 1906.

PALMETTO

The arbitrarily-selected word "PALMETTO" written in block letters.

SER. No. 16,405. CIGARETTES. BUTLER-BUTLER, (INCORPORATED,) New York, N. Y. Filed Jan. 23, 1906.



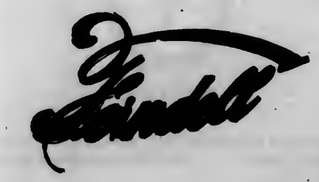
The words "EGYPTIENNE STRAIGHTS," below which is arranged the picture of an Assyrian bull standing upon a panel bearing imitation hieroglyphics.

SER. No. 16,455. OINTMENTS. PAUL LEUSCHNER, Mount Clemens, Mich. Filed Jan. 24, 1906.



The word "MER-CU-TINE" inclosed in an oval-shaped border with rays proceeding from a dark spot in the top.

SER. No. 16,471. CANNED FRUITS AND CANNED VEGETABLES. SPRAGUE, WARNER & COMPANY, Chicago, Ill. Filed Jan. 24, 1906.



The arbitrarily-selected word "FERNBELL."

SER. No. 16,526. PILLS. JOSEPH BEECHAM, St. Helens, England. Filed Jan. 26, 1906. Used ten years.



Two ellipses, between which are the name "BEECHAM" and address "ST. HELENS, LANCASHIRE." At the lower end of the ellipses is a tassel. In the center portion of the mark are the words "PATENT PILLS."

SER. No. 16,527. PILLS. JOSEPH BEECHAM, St. Helens, England. Filed Jan. 26, 1906. Used ten years.

Beecham's Pills

The words "BEECHAM'S PILLS."

SER. No. 16,532. WHISKY. JAMES F. O'TOOLE, Baltimore, Md. Filed Jan. 26, 1906.

DOCTOR'S SPECIAL RESERVE

The words "DOCTOR'S SPECIAL RESERVE."

SER. No. 16,587. CORN AND BUNION PLASTERS. BAUER & BLACK, Chicago, Ill. Filed Jan. 29, 1906.

Make Hard Roads Easy

The phrase "MAKE HARD ROADS EASY."

SER. No. 16,643. PASTRY WITH A FILLING OF CREAM OR ICES. ALBAGLI & AVATON, Philadelphia, Pa. Filed Jan. 31, 1906.



A cornucopia surmounted by a device formed by two interlooked capital letters "A." Below the cornucopia or partly surrounding it is a semicircular wreath tied at the center with a bow, the knot of which is fashioned to represent a star and two crescents.

SER. No. 16,722. OIL OF ORANGE, OIL OF BERGAMOT, AND OIL OF LEMON. GEORGE LUEDERS & Co., New York, N. Y. Filed Feb. 3, 1906.

VERA

The word "VERA."

SER. No. 16,770. CASSIMERES. JAMES IRVING & SON, LIMITED, Chester, Pa. Filed Feb. 5, 1906.

Glenside

The word "GLENSIDE."

SER. No. 16,846. SOAP IN WHICH IS INCLUDED PINE-TAR AS ONE OF ITS INGREDIENTS. THE CHARLES N. CRITTENTON COMPANY, New York, N. Y. Filed Feb. 9, 1906. Used ten years.

A. A. CONSTANTINE'S PERSIAN HEALING PINE TAR SOAP

The words "A. A. CONSTANTINE'S PERSIAN HEALING PINE TAR SOAP."

SER. No. 16,872. WHEAT-FLOUR. THE MONARCH MILLING CO., Hutchinson, Kans. Filed Feb. 9, 1906.



The representation of a medal, upon which a representation of a sheaf of wheat is produced, crossed by streamers from a bow appearing at one edge of the medal, the word "PRIZE," which appears on a streamer, and the words "KELLY'S HIGH PATENT," and the representation of a star, which matter appears upon the medal around the picture of the sheaf.

SER. No. 16,978. GAS STOVES AND HEATERS, RANGES, RANGETTES, OVENS, COOKERS, HOT-PLATES, BURNERS, AND THEIR PARTS. H ADLER COMPANY, Carnegie, Pa., and Kansas City, Mo. Filed Feb. 13, 1906.

ACME

The word "ACME."

SER. No. 17,011. PAPER BAGS. THE UNION BAG & PAPER COMPANY, New York, N. Y. Filed Feb. 14, 1906.

EMPIRE

The arbitrary word "EMPIRE."

SER. No. 17,185. AUTOMOBILES. THE HOL-TAN COMPANY, New York, N. Y. Filed Feb. 17, 1906.

FIAT

The word "FIAT."

SER. No. 17,157. COMBINED COIN AND PAPER PURSE OR A COIN-PURSE. CHESTER E. ALBRIGHT, Lewisburg, Pa. Filed Feb. 17, 1906.

COMMON SENSE

The words "COMMON SENSE."

SER. No. 17,181. BUTTER. SCOTT & COMPANY, Norfolk, Va. Filed Feb. 19, 1906.

..WILLOW FARM..

The words "WILLOW FARM."

SER. No. 17,205. MACHINES FOR EXHIBITING ADVERTISING AND DISPLAY MATTER. FLORENCE B. VAN DEUSEN, New York, N. Y. Filed Feb. 20, 1906.

PAY-U-GRAFT

The hyphenated word "PAY-U-GRAFT" arranged within a scroll.

SER. No. 17,213. WHEAT-FLOUR. THE FALK MERCANTILE CO. LT., Boise, Idaho. Filed Feb. 20, 1906.

Silverwreath



The representation of an inverted wreath of laurel-leaves having a bow of ribbon tied thereto, with the letters "F. M. Co." inclosed within, associated with the word "SILVERWREATH."

SER. No. 17,232. SURFACE AND JET CONDENSERS. WHEELER CONDENSER & ENGINEERING CO., New York, N. Y. Filed Feb. 21, 1906. Used ten years.

WHEELER

The word "WHEELER."

SER. No. 17,239. PULVERIZED GRAPHITE. THE UNITED STATES GRAPHITE COMPANY, Saginaw, Mich. Filed Feb. 23, 1906.

205

The inscription "205."

SER. No. 17,243. BLEACHED, UNBLEACHED, DYED, AND PRINTED TEXTILE FABRICS. A. G. HYDE & SONS, New York, N. Y. Filed Feb. 23, 1906.

Hydegrade

The word "HYDEGRADE."

SER. No. 17,298. FEED-WATER HEATERS. WHEELER CONDENSER & ENGINEERING CO., New York, N. Y. Filed Feb. 23, 1906. Used ten years.

WHEELER

The word "WHEELER."

SER. No. 17,802. ORNAMENTAL WATCH AND NECK CHAINS. ANNIE M. HALE and EDWIN B. HALE, North Attleboro, Mass., executors of estate of Oscar M. Draper, deceased. Filed Feb. 23, 1906. Used ten years.

NONPAREIL

The word "NONPAREIL."

SER. No. 17,830. CONDENSED MILK. PACIFIC COAST CONDENSED MILK CO., Seattle, Wash. Filed Feb. 24, 1906.

Carnation

The word-symbol "CARNATION."

SER. No. 17,864. LONG-CUT TOBACCO FOR BOTH SMOKING AND CHEWING. HANSEN-SCHMITT CO., Milwaukee, Wis. Filed Feb. 26, 1906.



The numeral "8" crossed by the word "BROTHERS" within an annular border and ornamental scrolls at the sides of the border, which border contains the phrase "MILD SMOKE" in the upper section, the phrase "PLEASANT CHEW" in the lower section, and stars at the sides between the phrases, and associated with the foregoing are the words "EIGHT BROTHERS" above and the words "LONG CUT TOBACCO" below said border.

SER. No. 17,866. STATIONARY WASHBASINS. THE CAHILL IRON WORKS, Chattanooga, Tenn. Filed Feb. 26, 1906.



The words "SOUTHERN BEAUTY" and a pictorial representation of a lady standing before a washstand and a mirror.

SER. No. 17,872. PERIODICAL DEVOTED TO THE CARE AND TRAINING OF BABIES AND CHILDREN. PAUL KRAUS, Louisville, Ky. Filed Feb. 26, 1906.

SER. No. 17,872.

BABY

The name "BABY."

SER. No. 17,885. HOSE. NEW JERSEY CAR SPRING & RUBBER CO, Jersey City, N. J. Filed Feb. 27, 1906.

SALVATOR

The word "SALVATOR."

SER. No. 17,443. HOSIERY. AMERICAN STOCKING COMPANY, New York, N. Y. Filed Mar. 1, 1906.

American Girl

The words "AMERICAN GIRL."

SER. No. 17,668. SPIRITS OF TURPENTINE. GEORGETOWN CHEMICAL WORKS, Georgetown, S. C. Filed Mar. 5, 1906.



The word "ALLPINE" on a background of three ovals.

SER. No. 17,677. SUPPLY PACKAGES FOR MUSICAL INSTRUMENTS CONTAINING STRINGS, PEGS, BRIDGES, AND PICKS. LYON & HEALY, Chicago, Ill. Filed Mar. 5, 1906.



The figure of a swan in water carrying a winged infant on its back, the infant holding a mandolin in its hand in position for playing. The word "SIMPLEX" appears above the figure, the word "OUTFIT" below, and "MUSICAL" on one side and "SUPPLY" on the other side of the figure. Conventional ornamentations appear below the words "MUSICAL" and "SUPPLY." The entire design is inclosed in a rectangle.

SER. No. 17,880. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 15, 1906.

V. C. C. CO'S

The letters "V. C. C. Co's."

SER. No. 17,838. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 15, 1906.



The words "GOOD LUCK" and the representation of a horseshoe.

SER. No. 17,853. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 15, 1906. Used ten years.



The representation of a plow, to which is hitched a horse. A plowman is shown walking behind the plow and grasping the handles thereof.

SER. No. 17,857. FERTILIZERS. NAVASSA GUANO COMPANY OF WILMINGTON, Wilmington, N. C. Filed Mar. 15, 1906. Used ten years.

WARLICK'S MIXTURE

The words "WARLICK'S MIXTURE."

SER. No. 17,870. FERTILIZERS. GEORGIA CHEMICAL WORKS, Augusta, Ga. Filed Mar. 15, 1906. Used ten years.

SER. No. 17,870.

MASTODON



The word "MASTODON" and the representation of the skeleton of a mastodon.

SER. No. 17,936. HOSIERY. PARAMOUNT KNITTING CO., Chicago, Ill. Filed Mar. 16, 1906.

YOUNG AMERICA

The words "YOUNG AMERICA."

SER. No. 17,949. SHIRTS, COLLARS, AND CUFFS. HALL HARTWELL & CO, Troy, N. Y. Filed Mar. 16, 1906.

PREMAKO SHRUNK

The words "PREMAKO SHRUNK."

SER. No. 17,954. SMOKING-TOBACCO. AXTON-FISHER TOBACCO COMPANY, Louisville, Ky. Filed Mar. 16, 1906.

Old Hill Side

The words "OLD HILL SIDE."

SER. No. 17,982. SUBSTITUTE FOR TURPENTINE FOR THINNING OR DILUTING PAINTS AND VARNISHES. UNION PETROLEUM COMPANY, Philadelphia, Pa. Filed Mar. 17, 1906.

TURPALIN

The word "TURPALIN."

SER. No. 18,108. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 23, 1906. Used ten years.

B. P.

The letters "B. P."

SER. No. 18,104. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 22, 1906. Used ten years.

STONO PHOSPHATE CO'S

The words and abbreviation "STONO PHOSPHATE CO'S."

SER. No. 18,111. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 22, 1906.

V. C. C.

The letters "V. C. C."

SER. No. 18,113. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 22, 1906.



A diamond-shaped figure in red.

SER. No. 18,115. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 22, 1906. Used ten years.

XXX

The letters "X X X."

SER. No. 18,116. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 22, 1906. Used ten years.

XXXX

The letters "X X X X."

SER. No. 18,131. FERTILIZERS. GEORGIA CHEMICAL WORKS, Augusta, Ga. Filed Mar. 22, 1906. Used ten years.

SER. No. 18,131.

MASCOT

The word "MASCOT."

SER. No. 18,132. FERTILIZERS. GEORGIA CHEMICAL WORKS, Augusta, Ga. Filed Mar. 22, 1906. Used ten years.

XX

The letters "X X."

SER. No. 18,221. COLLARS. CLUETT, PEABODY & CO., Troy, N. Y. Filed Mar. 24, 1906. Used ten years.

BISCAY

The word "BISCAY."

SER. No. 18,222. COLLARS. CLUETT, PEABODY & CO., Troy, N. Y. Filed Mar. 24, 1906.

MEYRICK

The word "MEYRICK."

SER. No. 18,223. COLLARS. CLUETT, PEABODY & CO., Troy, N. Y. Filed Mar. 24, 1906.

DONARA

The word "DONARA."

SER. No. 18,224. COLLARS. CLUETT, PEABODY & CO., Troy, N. Y. Filed Mar. 24, 1906. Used ten years.

TABHURST

The word "TABHURST."

SER. No. 18,226. COLLARS. CLUETT, PEABODY & CO., Troy, N. Y. Filed Mar. 24, 1906.

BROCKLY

The word "BROCKLY."

SER. No. 18,227. COLLARS. CLUETT, PEABODY & CO., Troy, N. Y. Filed Mar. 24, 1906. Used ten years.

TYBURN

The word "TYBURN."

SER. No. 18,228. COLLARS. CLUETT, PEABODY & CO., Troy, N. Y. Filed Mar. 24, 1906.

ALGONA

The word "ALGONA."

SER. No. 18,229. COLLARS. CLUETT, PEABODY & CO., Troy, N. Y. Filed Mar. 24, 1906. Used ten years.

LAKOTA

The word "LAKOTA."

SER. No. 18,230. COLLARS. CLUETT, PEABODY & CO., Troy, N. Y. Filed Mar. 24, 1906.

CANTARA

The word "CANTARA."

SER. No. 18,231. COLLARS. CLUETT, PEABODY & CO., Troy, N. Y. Filed Mar. 24, 1906.

CINCO

The word "CINCO."

SER. No. 18,232. COLLARS. CLUETT, PEABODY & CO., Troy, N. Y. Filed Mar. 24, 1906.

VALDORA

The word "VALDORA."

SER. No. 18,233. COLLARS. CLUETT, PEABODY & CO., Troy, N. Y. Filed Mar. 24, 1906.

AMOLEK

The word "AMOLEK."

SER. No. 18,234. COLLARS. CLUETT, PEABODY & CO., Troy, N. Y. Filed Mar. 24, 1906. Used ten years.

SER. No. 18,234.

HURLSTON

The word "HURLSTON."

SER. No. 18,235. COLLARS. CLUETT, PEABODY & CO., Troy, N. Y. Filed Mar. 24, 1906. Used ten years.

CANTAB

The word "CANTAB."

SER. No. 18,236. COLLARS. CLUETT, PEABODY & CO., Troy, N. Y. Filed Mar. 24, 1906.

ANCOVER

The word "ANCOVER."

SER. No. 18,345. STEEL IN THE FORM OF BILLETS, RODS, BLANKS, SHEETS, COILS, BARS, PARTS, STRIPS, AND WIRE. S. & C. WARDLOW, New York, N. Y. Filed Mar. 29, 1906. Used ten years.

WARDLOW'S

The word "WARDLOW'S."

SER. No. 18,394. CONDENSED MILK. MICHIGAN CONDENSED MILK Co., Lansing, Mich., and New York, N. Y. Filed Mar. 31, 1906. Used ten years.



The arbitrarily-selected word "JERSEY," associated with the words "CONDENSED MILK" and with an oval panel in solid color with serrated edges, upon which are the words "ABSOLUTELY PURE."

SER. No. 18,535. WHISKY. THE UNION DISTLG. CO., Cincinnati, Ohio. Filed Apr. 5, 1906.

FOREST HILL

The words "FOREST HILL."

SER. No. 18,427. HOSIERY. RICH. STIX DRY GOODS COMPANY, St. Louis, Mo. Filed Apr. 2, 1906.



The word "LOUISE" and the pictorial representation of a woman attired in décolleté costume with flowing skirts descending a stairway. To her right appears a banister.

SER. No. 18,428. HOSIERY. RICH. STIX DRY GOODS COMPANY, St. Louis, Mo. Filed Apr. 3, 1906.



The words "AMERICAN GENTLEMAN" and the pictorial representation of a young man attired in conventional street costume leaning against the corner of a box. His legs are crossed, the left arm akimbo and hand resting upon his side, his right hand raised, and a cigarette clasped between his fingers.

SACKETT & WILHELMS
LITHOGRAPHING & PRINTING CO
NEW YORK

TRADE-MARKS

REGISTERED MAY 1, 1906.

51,957. SILKS. ACKERMANN & GOEDECKE, New York, N. Y.
The representation of an Indian woman clothed in her native costume and engaged in a characteristic dance movement.
Filed August 4, 1905. Serial No. 11,266. PUBLISHED MARCH 6 1906.

51,958. HAND-SOAP. THE AMERICAN PERFUMER COMPANY, Springfield, Mass.
The word "INSTANTO."
Filed June 10, 1905. Serial No. 8,450. PUBLISHED MARCH 6, 1906.

51,959. NON-ALCOHOLIC TONIC BEVERAGES. CALEB D. BRADHAM, Newbern, N. C.
The hyphenated word "PEP-KOLA."
Filed June 29, 1905. Serial No. 9,403. PUBLISHED MARCH 6, 1906.

51,960. CIGARETTES. BUTLER-BUTLER (INCORPORATED,) New York, N. Y.
The word "SOVEREIGN," beneath which is the representation of the sun radiating rays of light, a liberty-cap superimposed on the sun, a wreath encircling the latter, and shields flanking the same, upon one of which three crowns appear and upon the other of which three fleurs-de-lis appear. Above the word "SOVEREIGN" appear the words "EXTRA MILD," and below the representation of the sun and shield appear the words "QUALITÉ SUPÉRIEURE. BLENDED BY BUTLER-BUTLER NEW YORK, U. S. A."
Filed June 23, 1905. Serial No. 8,829. PUBLISHED MARCH 6, 1906.

51,961. CIGARETTES. BUTLER-BUTLER (INCORPORATED,) New York, N. Y.
A representation of a carton opened out and having thereon two panels, on one of which are the words "NEW FRENCH" and on the other a representation of a number of cigarettes, said panels appearing as joined by ribbon-like bands, on one of which appear the words "NEW FRENCH" and on the other a monogram of the letters "B B" superimposed upon the word "BUTLER," and two red, white, and blue panels, and each of the cigarettes having thereon a monogram of the letters "B B" superimposed upon the word "BUTLER."
Filed August 4, 1905. Serial No. 11,280. PUBLISHED MARCH 6 1906.

51,962. HANDKERCHIEFS. COCHRANE MANUFACTURING CO., East Dedham and Malden, Mass., and New York N. Y.
The representation of a shield appearing over a longitudinal band extending across the front of a central ring, the band passing through side rings located on opposite sides of the central ring, said band and rings being ornamented with disks and crosses, respectively, and the whole appearing on an ornamental band wider than the first band and having rings at its ends, to which the first band extends.
Filed July 18, 1905. Serial No. 10,514. PUBLISHED MARCH 6, 1906.

51,963. SET-OFF LIQUOR AND PRINTER'S PASTE. GEORGE STEELE DUNCAN, Edinburgh, Scotland.
The arbitrary word "PARALOID."
Filed June 14, 1905. Serial No. 8,120. PUBLISHED MARCH 6, 1906.

51,964. WHEAT-FLOUR. EGERTON BROS., Baltimore, Md.
The words "BEST IN THE WORLD WARRANTED WM. M. POWELL & CO. BALTIMORE MD." Used ten years.
Filed April 12, 1905. Serial No. 1,197. PUBLISHED MARCH 6, 1906.

51,965. CIGARS. ELECTRIC CIGAR COMPANY, Boston, Mass.
The word "ELECTRIC," associated with a representation of a portion of a globe surrounded by clouds, with a figure representing the god Mercury with the left arm raised perpendicularly above the shoulder standing on the said globe and producing by the touch of the caduceus held in the right hand lightning to scatter in every direction from a small magneto-electric engine. Used ten years.
Filed June 3, 1905. Serial No. 7,353. PUBLISHED MARCH 6, 1906.

51,966. COLOR-VARNISH. F. O. PIERCE COMPANY, New York, N. Y
The coined word "TRIUNE."
Filed July 31, 1905. Serial No. 11,042. PUBLISHED MARCH 6, 1906.

51,967. RED PAINT. F. O. PIERCE COMPANY, New York, N. Y.
The coined word "UZATONA."
Filed July 31, 1905. Serial No. 11,044. PUBLISHED MARCH 6, 1906.

51,968. PLASTERS. ANGELICUS R. IDONE, Pittsburg, Pa.
A bust picture of myself, accompanied with the compound word "SURA-CURA."
Filed May 29, 1905. Serial No. 7,060. PUBLISHED MARCH 6, 1906.

51,969. ICE-CREAM, ICES, AND FROZEN CUSTARDS. J. M. HORTON ICE CREAM CO., New York, N. Y.
The word "HORTON'S." Used ten years.
Filed July 15, 1905. Serial No. 10,396. PUBLISHED MARCH 6, 1906.

51,970. PANAMA HATS. LUSTIG BROS., New York, N. Y.
A rectangular plate shown in perspective, the words "AMERICAN PANAMA" appearing upon the plate, while around the same are the words "SOUTH GENUINE GUARANTEED."
Filed August 2, 1905. Serial No. 11,147. PUBLISHED MARCH 6, 1906.

51,971. TIN PLATES AND ROOFING-TIN. JACOB MEURER, Brooklyn, N. Y.
The words "MEURERS GENUINE TINNED IRON SHEETS." Used ten years.
Filed April 26, 1905. Serial No. 3,092. PUBLISHED MARCH 6, 1906.

51,972. TIN PLATES AND ROOFING-TIN. JACOB MEURER, Brooklyn, N. Y.
The words "MEURER ROOFING." Used ten years.
Filed April 26, 1905. Serial No. 3,093. PUBLISHED MARCH 6, 1906.

51,973. HATS AND CAPS. FRANK SCHOBLE & CO., Philadelphia, Pa.
The arbitrary title "JAMESON & CO." Used ten years.
Filed June 14, 1905. Serial No. 8,116. PUBLISHED MARCH 6, 1906.

51,974. READY-MIXED PAINTS. TOCH BROTHERS, New York, N. Y.
The representation of a palette and brushes, associated with two longitudinal panels, branches and leaves appearing in proximity to the upper panel and the palette and flower-stalks appearing between the upper and lower panels. Used ten years.
Filed August 12, 1905. Serial No. 11,575. PUBLISHED MARCH 6, 1906.

51,976. WATERPROOFING PAINT. TOCH BROTHERS, New York, N. Y.
The word "KONKRIT."
Filed August 12, 1905. Serial No. 11,580. PUBLISHED MARCH 6, 1906.

51,976. METAL AND WOOD PRESERVATIVE PAINT. TOCH BROTHERS, New York, N. Y.
The words "KAR KOAT."
Filed August 12, 1905. Serial No. 11,583. PUBLISHED MARCH 6, 1906.

51,977. METALLIC PAINTS. TOCH BROTHERS, New York, N. Y.
The word "TOXIBARN."
Filed August 12, 1905. Serial No. 11,589. PUBLISHED MARCH 6, 1906.

51,978. CANDIES. CHARLES E. UNDERWOOD, Dayton, Ohio.
A representation of a girl and a colored boy astride a stick of candy balanced on a chocolate drop in the act of playing seesaw.
Filed June 26, 1905. Serial No. 9,127. PUBLISHED MARCH 6, 1906.

51,979. GRASS, GRAIN, TIMOTHY, CLOVER, HEMP, CANARY, AND RAPE SEEDS. ALBERT DICKINSON COMPANY, Chicago, Ill.
The word "CIRCLE." Used ten years.
Filed June 20, 1905. Serial No. 8,589. PUBLISHED MARCH 6, 1906.

51,980. STRINGS FOR VIOLINS, GUITARS, ZITHERS, AND BANJOS. SIGMUND BLUMENTHAL, New York, N. Y.
The words "OUR CHALLENGE." Used ten years.
Filed May 10, 1905. Serial No. 4,880. PUBLISHED MARCH 6, 1906.

51,981. HOSIERY. BUSTER BROWN STOCKING COMPANY, New York, N. Y.
The words "BUSTER BROWN."
Filed April 21, 1905. Serial No. 2,526. PUBLISHED MARCH 6, 1906.

51,982. HOSIERY. BUSTER BROWN STOCKING COMPANY, New York, N. Y.
The words "BUSTER BROWN'S SISTER'S."
Filed April 21, 1905. Serial No. 2,527. PUBLISHED MARCH 6, 1906.

51,983. ICE-SHAVING MACHINES. CLEMENT COLERIDGE CLAWSON, Flagtown, N. J.
The words "JACK FROST."
Filed August 16, 1905. Serial No. 11,705. PUBLISHED MARCH 6, 1906.

51,984. ICE-SHAVING MACHINES. CLEMENT COLERIDGE CLAWSON, Flagtown, N. J.
The words "SNOW KING."
Filed August 16, 1905. Serial No. 11,706. PUBLISHED MARCH 6, 1906.

51,985. WHEAT-FLOUR. P. DAUSSA & Co., Brooklyn, N. Y.
The word "GIBRALTAR."
Filed May 23, 1905. Serial No. 6,389. PUBLISHED MARCH 6, 1906.

51,986. TIN AND TERNE PLATES. ROLLANSBEE BROTHERS COMPANY, Pittsburg, Pa.
The word "PITTSBURG." Used ten years.
Filed July 3, 1905. Serial No. 9,620. PUBLISHED MARCH 6, 1906.

51,987. WOOD-PRESERVING COMPOUNDS. PHILIP H. GERHARD, Austin, Tex.
A five-pointed star inclosed in a triangle which has the letters "C A" appearing in each side of the triangle.
Filed May 15, 1905. Serial No. 5,667. PUBLISHED MARCH 6, 1906.

51,988. OIL AND VARNISH PAINTS, ENAMELS, VARNISHES, AND WOOD-STAINS. GERSTENDORFER BROS., New York, N. Y.
The word "SAPOLIN" inclosed in quotation-marks.
Filed April 28, 1905. Serial No. 3,032. PUBLISHED MARCH 6, 1906.

51,989. MEDICINAL PLASTERS. J. M. GROSVENOR & Co., Boston, Mass.
The word "BELLCAPSIC." Used ten years.
Filed August 8, 1905. Serial No. 11,314. PUBLISHED MARCH 6, 1906.

51,990. HATS AND CAPS. JOHN B. STETSON COMPANY, Philadelphia, Pa.
The name "STETSON." Used ten years.
Filed April 14, 1905. Serial No. 1,457. PUBLISHED MARCH 6, 1906.

51,991. WAX. S. C. JOHNSON & SON, Racine, Wis.
A yellow background bearing the name "JOHNSON'S" and a rectangular figure overlying a circular figure, said circular figure inclosing a serrated figure and the rectangular figure bearing the words "PREPARED WAX FOR FLOORS & INTERIOR FINISH," with a streamer below the same. Used ten years.
Filed May 2, 1905. Serial No. 4,032. PUBLISHED MARCH 6, 1906.

51,992. RAZORS. HENRY KEIDEL, Baltimore, Md.
The word "RANGOON." Used ten years.
Filed June 15, 1905. Serial No. 8,294. PUBLISHED MARCH 6, 1906.

51,993. FOUNTAIN-PENS. L. E. WATERMAN COMPANY, New York, N. Y.
The arbitrarily-associated representation of a globe, a fountain-pen extending across the same, and a line extending from the pen-point and surrounding the globe.
Filed May 5, 1905. Serial No. 4,348. PUBLISHED MARCH 6, 1906.

51,994. COTTON PIECE GOODS. MASSACHUSETTS COTTON MILLS, Lowell, Mass.
The word "ASHLAND." Used ten years.
Filed May 11, 1905. Serial No. 5,236. PUBLISHED MARCH 6, 1906.

51,995. HOLLOW-WALLED VESSELS. HERMANN FERDINAND MEIER, Dresden-Blasewitz, Germany.
The arbitrary word "FRIGORIT."
Filed July 28, 1905. Serial No. 10,965. PUBLISHED MARCH 6, 1906.

51,996. PORTLAND CEMENT. WILLIAM H. MESEROLE, New York, N. Y.
The word "TITAN" on a diametric band across a circular band and the words "PORTLAND CEMENT" on the circular band.
Filed April 18, 1905. Serial No. 2,153. PUBLISHED MARCH 6, 1906.

51,997. LAGER-BEER. OLYMPIA BREWING CO., Olympia, Wash.
The representation of a horseshoe. Within the horseshoe is shown a waterfall, and in the background is a bridge. On the toe of the horseshoe are the words "GOOD LUCK," and below the horseshoe appears the word "TUMWATER."
Filed July 8, 1905. Serial No. 9,946. PUBLISHED MARCH 6, 1906.

51,998. TURBO-COMPRESSORS AND PUMPS. CHARLES ALGERNON PARSONS, Newcastle-upon-Tyne, England.
The representation of two semicircular sections of turbine-blade rings, one superimposed upon the other, forming a central elliptical space bounded by turbine-blades fixed in the outer blade-rings.
Filed June 3, 1905. Serial No. 7,313. PUBLISHED MARCH 6, 1906.

51,999. STEAM-TURBINES AND PARTS THEREOF. CHARLES ALGERNON PARSONS, Newcastle-upon-Tyne, England.
The representation of two semicircular sections of turbine-blade rings, one superimposed upon the other, forming a central elliptical space bounded by turbine-blades fixed in the outer blade-rings.
Filed June 3, 1905. Serial No. 7,314. PUBLISHED MARCH 6, 1906.

52,000. LEATHER BOOTS AND SHOES AND LEATHER USED IN THEIR MANUFACTURE. RICE & HUTCHINS, INCORPORATED, Boston, Mass., assignor to Rice and Hutchins, Incorporated, a Corporation of Maine.
The word "EDUCATOR."
Filed June 10, 1905. Serial No. 7,781. PUBLISHED MARCH 6, 1906.

52,001. LEATHER BOOTS AND SHOES AND LEATHER USED IN THEIR MANUFACTURE. RICE & HUTCHINS, INCORPORATED, Boston, Mass., assignor to Rice and Hutchins, Incorporated, a Corporation of Maine.
The words "FIRST STEP."
Filed June 24, 1905. Serial No. 8,992. PUBLISHED MARCH 6, 1906.

52,002. CIGARS. SANCHEZ & HAYA Co., Tampa, Fla.
The word "AMERICUS" and the representation of the head and shoulders of Columbus in the foreground of a scene comprising a ship, water, and mountains, and to the sides of the portrait are arranged two groups, one representing a landing party headed by Columbus and the other a group of Indians gathered around a council-fire.
Filed May 29, 1905. Serial No. 6,913. PUBLISHED MARCH 6, 1906.

52,003. CIGARS, CHEROOTS, STOGIES, TOGETHER WITH TOBACCO USED FOR MAKING THE SAME. HENRY P. STRAUSE, New York, N. Y.
The representation of a trophy-cup of the ewer type, associated with the words "PRIZE CUP."
Filed May 23, 1905. Serial No. 6,386. PUBLISHED MARCH 6, 1906.

52,004. STRINGS FOR VIOLINS, GUITARS, ZITHERS, AND BANJOS. SIGMUND BLUMENTHAL, New York, N. Y.
The words "SILVER MEDAL." Used ten years.
Filed May 10, 1905. Serial No. 4,882. PUBLISHED MARCH 6, 1906.

52,005. CANDY. BRANDLE & SMITH Co., Philadelphia, Pa.
The fanciful title "SATIN FINISH," the representation of a dog and a child, the latter sitting on the former, and a box on which the feet of the dog are rested, said box having the words "PURITY" and "QUALITY" thereon.
Filed May 11, 1905. Serial No. 5,215. PUBLISHED MARCH 6, 1906.

52,006. OIL AND WATER-COLOR PAINTS. COLUMBIA REFINING Co., New York, N. Y.
The arbitrarily-chosen word-symbol "LINHUILE" inclosed by a diamond-shaped figure.
Filed May 11, 1905. Serial No. 5,012. PUBLISHED MARCH 6, 1906.

52,007. LUBRICATING-GREASE. ADAM COOK'S SONS, New York, N. Y.
The word "ALBANY." Used ten years.
Filed May 6, 1905. Serial No. 4,550. PUBLISHED MARCH 6, 1906.

52,008. STEEL PENS. THE DREKA COMPANY, Philadelphia, Pa.
The words "THE DREKA ENGROSSING PEN." Used ten years.
Filed May 18, 1905. Serial No. 6,016. PUBLISHED MARCH 6, 1906.

52,009. LEATHER BOOTS AND SHOES. ANNA S. FEAREY, Albany, N. Y.
The word "ECLIPSE."
Filed July 17, 1905. Serial No. 10,471. PUBLISHED MARCH 6, 1906.

52,010. HARVESTERS. INTERNATIONAL HARVESTER COMPANY OF AMERICA, Chicago, Ill.
The letter "O" in Old English surrounded by a wreath of wheat heads and stems. The stems are tied at the base.
Filed August 9, 1905. Serial No. 11,453. PUBLISHED MARCH 6, 1906.

52,011. LAGER-BEER. JOSEPH SCHLITZ BREWING COMPANY, Milwaukee, Wis.
A rhomboidal panel bearing the word "SCHLITZ" in ornamental script type with paraph beneath, the words "THE BEER THAT MADE MILWAUKEE FAMOUS," and the representation of a globe encircled by a belt having thereon the word "SCHLITZ." Used ten years.
Filed August 4, 1905. Serial No. 11,277. PUBLISHED MARCH 6, 1906.

52,012. PREPARED ROOFING-FELT. ELMYR A. LAUGHLIN, Chicago, Ill.
The representation of a swastika or four-footed cross.
Filed May 5, 1905. Serial No. 4,368. PUBLISHED MARCH 6, 1906.

52,013. AXES AND HATCHETS. NATIONAL CUTLERY Co., Detroit, Mich.
The letters and character "S & S."
Filed June 8, 1905. Serial No. 7 640. PUBLISHED MARCH 6, 1906.

52,014. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.
A panel of rectangular shape with curved corners, showing two bulldogs on their hind legs straining toward each other against chains attached to their collars. Behind each dog is a dog-house, and a bone lies on the ground between the animals. On the collar of the lower dog is the word "SQUEEZER," and on the collar of the upper dog is the word "TRIP." In the upper left-hand corner is shown a full moon with a smiling face thereon surrounded by flaky clouds. Used ten years.
Filed June 27, 1905. Serial No. 9,223. PUBLISHED MARCH 6, 1906.

52,015. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.
A rectangular panel inclosed by a conventional border displaying at the center an ornamental rosette and at each end the representation of a beehive having a bee thereon. Extending along the sides of the panel are conventional sprays of leaves and flowers. Used ten years.
Filed June 27, 1905. Serial No. 9,224. PUBLISHED MARCH 6. 1906.

52,016. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.
A rectangular design within a frame of two heavy lines having dark corners displaying light elaborate scrolls which spring from an inner frame surrounding a dark surface displaying a conventional rosette. An outer frame of scrolls surrounds the central device.
Filed July 12, 1905. Serial No. 10,131 PUBLISHED MARCH 6, 1906.

52,017. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.
A rectangular design inclosed by a conventional border in which ornamental ribbon-like bands extend from each corner, curving toward the center to form adjoining circles, within each of which is shown a conventional spray of flowers and leaves springing from a central rosette. At each side where the circles join a fan-like figure appears.
Filed July 12, 1905. Serial No. 10,134. PUBLISHED MARCH 6, 1906.

52,018. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.
A design within a conventional frame having at the center a group of globules from which extend four crown-like scrolls inclosed by an elaborate circular band. In each corner is a cornucopia full of flowers. Extending from the sides are curved scrolls which extend around the cornucopias. At each end is a small urn from which extends a five-leafed figure.
Filed July 12, 1905. Serial No. 10,146. PUBLISHED MARCH 6, 1906.

52,019. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.
A scene in which the central figure is a buffalo sniffing at the head of a huntsman who lies upon the ground. In the distance other buffaloes are shown. Beneath this scene in the foreground appears the sentence "ARE YOU A BUFFALO?"
Filed July 12, 1905. Serial No. 10,152. PUBLISHED MARCH 6, 1906.

52,020. WATER-WHEELS AND WATER-WHEEL MOTORS. THE PELTON WATER WHEEL Co., San Francisco, Cal.
The word "PELTON." Used ten years.
Filed June 8, 1905. Serial No. 7,682. PUBLISHED MARCH 6, 1906.

52,021. MANIFOLDING DEVICES. PHILIP HANO & Co., New York, N. Y.
The word "HANO." Used ten years.
Filed August 12, 1905. Serial No. 11,614. PUBLISHED MARCH 6, 1906.

52,022. CORRUGATED BRASS SHOE-NAILS. THE RIVER Co., Waterbury, Conn.
The representation of a round metallic box having the words "BRASS NAILS" upon its cover and the letters "R. C." upon its side. Used ten years.
Filed June 2, 1905. Serial No. 7,266. PUBLISHED MARCH 6, 1906.

52,023. SILK PIECE GOODS. ROGERS & THOMPSON, New York, N. Y.
The word "BURLINGHAM."

Filed June 27, 1905. Serial No. 9,213. PUBLISHED MARCH 6, 1906.

52,024. MADEIRA WINES. W. A. TAYLOR & Co., New York, N. Y.

The representation of a yoke of oxen attached to a sledge upon which are two casks and beside which is a man dressed in Portuguese costume.

Filed July 22, 1905. Serial No. 10,696. PUBLISHED MARCH 6, 1906.

52,025. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio.

The word "EMBLEM," associated with the representation of a king riding a bicycle, the word "BICYCLE" arranged on a curved panel, the abbreviation and figures "No. 808," together with a mile-stone upon which appear the figures and letter "808 M."

Filed April 15, 1905. Serial No. 1,575. PUBLISHED MARCH 6, 1906.

52,026. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio.

The word "RIDER," associated with the representation of a king riding a bicycle, the word "BICYCLE" arranged on a curved panel, the abbreviation and figures "No. 808," together with a mile-stone upon which appear the figures and letter "808 M."

Filed April 15, 1905. Serial No. 1,607. PUBLISHED MARCH 6, 1906.

52,027. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio.

The word "AUTOMOBILE," associated with the representation of a king riding a bicycle, the word "BICYCLE" arranged on a curved panel, the abbreviation and figures "No. 808," together with a mile-stone upon which appear the figures and letter "808 M."

Filed April 15, 1905. Serial No. 1,791. PUBLISHED MARCH 6, 1906.

52,028. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio.

The representation of two old-style or ordinary bicycles entwined, associated with the representation of four brownies seated on walls.

Filed July 14, 1905. Serial No. 10,297. PUBLISHED MARCH 6, 1906.

52,029. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio.

The word "PEDAL," associated with the representation of a king riding a bicycle, the word "BICYCLE" arranged on a curved panel, the abbreviation and figures "No. 808," together with a mile-stone upon which appear the figures and letter "808 M."

Filed August 2, 1905. Serial No. 11,209. PUBLISHED MARCH 6, 1906.

52,030. POWDERED STOVE-POLISH. X-RAY STOVE POLISH Co., New York, N. Y.

The word "X-RAY."

Filed May 8, 1905. Serial No. 4,649. PUBLISHED MARCH 6, 1906.

52,031. DRESSED AND DYED FURS. ATLANTIC CHEMICAL Co., New York, N. Y.

Two concentric circles, the monogram "A C Co" arranged within the inner circle, and the words "ATLANTIC DYE" produced in the space between the two circles.

Filed January 22, 1906. Serial No. 16,390. PUBLISHED MARCH 6, 1906.

52,032. CORSETS. BIRDSEY SOMERS Co., New York, N. Y.

The words "LA REINE."

Filed February 6, 1906. Serial No. 16,787. PUBLISHED MARCH 6, 1906.

52,033. SPOOL-COTTON. BLODGETT & ORSWELL Co., Pawtucket, R. I.

The monogram "B & O."

Filed January 6, 1906. Serial No. 15,952. PUBLISHED MARCH 6, 1906.

52,034. CORSETS. DOWNER, HAWES AND COMPANY, INCORPORATED, Bridgeport, Conn.

The words "LA RESISTA."

Filed January 10, 1906. Serial No. 16,096. PUBLISHED MARCH 6, 1906.

52,035. BELT AWLS AND PUNCHES. GREENE TWEED & Co., New York, N. Y.

The word "LOTHROP'S." Used ten years.

Filed December 8, 1905. Serial No. 15,265. PUBLISHED MARCH 6, 1906.

52,036. ALE. THE JAMES HANLEY BREWING Co., Providence, R. I.

The words "HANLEY'S PEERLESS" on an oval band inclosing an oval design bearing the monogram "T J H B Co," bordered at each side by a scroll and sprays of grain. Used ten years.

Filed January 8, 1906. Serial No. 16,047. PUBLISHED MARCH 6, 1906.

52,037. SHIRTS, COLLARS, AND CUFFS. MOSES H. LAMBERT, New Haven, Conn.

The word "VARSITY."

Filed January 25, 1906. Serial No. 16,480. PUBLISHED MARCH 6, 1906.

52,038. DIARIES. WILLIAM H. LEE, Chicago, Ill.

The representation of a wreath and a flaming torch which rises from the open upper side of the wreath, and directly beneath the torch, at the lower side of the wreath, is the capital letter "T."

Filed December 11, 1905. Serial No. 15,343. PUBLISHED MARCH 6 1906.

52,039. WIRE FENCING. LION FENCE Co., Adrian, Mich.

The representation of a lion.

Filed January 25, 1906. Serial No. 16,516. PUBLISHED MARCH 6, 1906.

52,040. TOILET SOAPS. MUNYONS HOMOEOPATHIC HOME REMEDY Co., Philadelphia, Pa.

A representation of a woman clad as a witch and presenting a branch of leaves to a man representing Mr. Munyon, who is holding his hands outstretched to receive said branch.

Filed September 14, 1905. Serial No. 12,563. PUBLISHED MARCH 6, 1906.

52,041. CORSETS. ROSENBAUM COMPANY, Pittsburg, Pa.

The representation of a shield quartered, the quarters being in two contrasting colors, one quarter having the representation of a rose-tree produced thereon, another quarter a representation of a rose in full bloom, the third quarter the letters "ARCO," and the fourth quarter the letter "R." and the abbreviation "Co."

Filed February 8, 1906. Serial No. 16,820. PUBLISHED MARCH 6, 1906.

52,042. LEGGINGS. ROSENWASSER BROS., New York, N. Y.

The word "RHEUMA-NOT."

Filed January 30, 1906. Serial No. 16,625. PUBLISHED MARCH 6, 1906.

52,043. COCOA. RUNKEL BROTHERS, INCORPORATED, New York, N. Y.

The word "RUNKEL'S." Used ten years.

Filed September 25, 1905. Serial No. 13,007. PUBLISHED MARCH 6, 1906.

52,044. CHOCOLATE. RUNKEL BROTHERS, INCORPORATED, New York, N. Y.

The word "RUNKEL'S." Used ten years.

Filed September 25, 1905. Serial No. 13,008. PUBLISHED MARCH 6, 1906.

52,045. FLOUR MADE FROM WHEAT. SHEFFIELD-KING MILLING Co., Minneapolis, Minn.

The words "GOLD MINE."

Filed January 22, 1906. Serial No. 16,363. PUBLISHED MARCH 6, 1906.

52,046. DAMPERS FOR HOT-AIR PIPES AND SMOKE-PIPES. THE S. M. HOWES COMPANY, Boston, Mass.

The word "YANKEE."

Filed February 6, 1906. Serial No. 16,792. PUBLISHED MARCH 6, 1906.

52,047. COTTON PIECE GOODS, SHEETINGS, SHIRTINGS, AND DRILLS. SUFFERN & Co., New York, N. Y.

The word "ALTONAH."

Filed February 1, 1906. Serial No. 16,669. PUBLISHED MARCH 6, 1906.

52,048. ROOFING, SHEATHING, AND BUILDING FELT. WARREN CHEMICAL & MANUFACTURING COMPANY, New York, N. Y.

The word "COMPOSITE" written diagonally upward in ornamental block capitals. Used ten years.

Filed September 13, 1905. Serial No. 12,537. PUBLISHED MARCH 6, 1906.

52,049. ASPHALT. WARREN CHEMICAL & MANUFACTURING COMPANY, New York, N. Y.

The word "CRYSTAL."

Filed September 13, 1905. Serial No. 12,538. PUBLISHED MARCH 6, 1906.

52,050. BUST-FORMS. WRIGHT & Co., Hoboken, N. J.

The word "FAIRY."

Filed January 10, 1906. Serial No. 16,101. PUBLISHED MARCH 6, 1906.

52,051. LUBRICATING-OILS. AMERICAN PETROLEUM PRODUCTS Co., New York, N. Y.

The representation of an owl with spread wings holding in its claws a bar from which depends an antique lamp.

Filed October 28, 1905. Serial No. 14,020. PUBLISHED MARCH 6, 1906.

52,052. WEEKLY NEWSPAPER. THE AMERICAN STANDARD PUBLISHING COMPANY, New York, N. Y.

The words "THE STANDARD AND VANITY FAIR."

Filed January 29, 1906. Serial No. 16,594. PUBLISHED MARCH 6, 1906.

52,053. COCOA AND PREPARATIONS THEREOF. ARBUCKLE BROS., New York, N. Y.; Pittsburg, Pa., and Chicago, Ill.

The word "DRINKSOME."

Filed February 2, 1906. Serial No. 16,685. PUBLISHED MARCH 6, 1906.

52,054. CHOCOLATE AND PREPARATIONS THEREOF. ARBUCKLE BROS., New York, N. Y.; Pittsburg, Pa., and Chicago, Ill.

The word "DRINKSOME."

Filed February 2, 1906. Serial No. 16,686. PUBLISHED MARCH 6, 1906.

52,055. WATERPROOF STRUCTURAL AND ROOF PAINT. THE ATLANTIC REFINING COMPANY, Cleveland, Ohio.

The fanciful word "ARCO" printed in plain letters.

Filed February 9, 1906. Serial No. 16,863. PUBLISHED MARCH 6, 1906.

52,056. MEN'S, YOUTHS', AND BOYS' LEATHER SHOES. BEALS & TORREY SHOE Co., Milwaukee, Wis.

The arbitrary word-symbol "TRINITY."

Filed November 13, 1905. Serial No. 14,570. PUBLISHED MARCH 6, 1906.

52,057. LITTLE CIGARS. BUTLER-BUTLER (INCORPORATED,) New York, N. Y.

A rectangular panel running lengthwise, on which appears the representation of two ribbons, each of which has a bow-knot, the ribbons passing over a vertical row of five cigarettes. On the upper ribbon appear the words "NEW FRENCH," and on the lower ribbon, which is broken, is shown on each part a small band in contrasting colors. The words "NEW FRENCH" also appear in one corner of the panel.

Filed November 10, 1905. Serial No. 14,484. PUBLISHED MARCH 6, 1906.

52,058. CIGARETTES. BUTLER-BUTLER (INCORPORATED,) New York, N. Y.

The word "TURCOLEAF."

Filed January 23, 1906. Serial No. 16,407. PUBLISHED MARCH 6, 1906.

52,059. CIGARETTES. BUTLER-BUTLER (INCORPORATED,) New York, N. Y.

The word "HANSOM."

Filed January 23, 1906. Serial No. 16,408. PUBLISHED MARCH 6, 1906.

52,060. LITTLE CIGARS. BUTLER-BUTLER (INCORPORATED,) New York, N. Y.

The word "BELFORT."

Filed January 23, 1906. Serial No. 16,411. PUBLISHED MARCH 6, 1906.

52,061. SMOKING-TOBACCO. BUTLER-BUTLER (INCORPORATED,) New York, N. Y.

The word "SEABOARD."

Filed January 23, 1906. Serial No. 16,413. PUBLISHED MARCH 6, 1906.

52,062. CANDY. DILLING & Co., Indianapolis, Ind.

A reclining figure of a woman in oriental costume between the words "LUCKY GYPSY" on one side and "FORTUNE TELLER" on the other, the same being inclosed within a rectangular ornamental border.

Filed February 6, 1906. Serial No. 16,793. PUBLISHED MARCH 6, 1906.

52,063. MOPS. ESTES MILLS, Fall River, Mass.

The word "SLASHER."

Filed February 2, 1906. Serial No. 16,706. PUBLISHED MARCH 6, 1906.

52,064. MOPS. ESTES MILLS, Fall River, Mass.

The word "BEE."

Filed February 2, 1906. Serial No. 16,707. PUBLISHED MARCH 6, 1906.

52,065. MOPS. ESTES MILLS, Fall River, Mass.

The word "ALPHA."

Filed February 2, 1906. Serial No. 16,708. PUBLISHED MARCH 6, 1906.

52,066. MOPS. ESTES MILLS, Fall River, Mass.

The word "ACME."

Filed February 2, 1906. Serial No. 16,709. PUBLISHED MARCH 6, 1906.

52,067. MOPS. ESTES MILLS, Fall River, Mass.

The letters "O. K."

Filed February 2, 1906. Serial No. 16,710. PUBLISHED MARCH 6, 1906.

52,068. RUBBER BELTING. GORHAM RUBBER COMPANY, San Francisco, Cal.

The word "AMAZON."

Filed October 24, 1905. Serial No. 13,904. PUBLISHED MARCH 6, 1906.

52,069. CORKS. OSCAR HEYMAN & Co., New York, N. Y.

The word "DUPLEX."

Filed January 8, 1906. Serial No. 16,051. PUBLISHED MARCH 6, 1906.

52,070. CANDY. HERBERT L. HILDRETH, Boston, Mass.

The word "VELVET."

Filed January 2, 1906. Serial No. 15,830. PUBLISHED MARCH 6, 1906.

52,071. CHOCOLATE-COATED CANDY. HOOK & CROWNFIELD, Baltimore, Md.

The word "SPONGE-ATE."

Filed January 19, 1906. Serial No. 16,314. PUBLISHED MARCH 6, 1906.

52,072. COAL AND COKE. HULL COAL AND COKE CORPORATION, Roanoke, Va.

The words "RED JACKET."

Filed April 4, 1905. Serial No. 385. PUBLISHED MARCH 6, 1906.

52,073. MONTHLY MAGAZINE. JOHN LANE COMPANY, New York, N. Y.

The words "THE INTERNATIONAL STUDIO."

Filed February 1, 1096. Serial No. 16,656. PUBLISHED MARCH 6, 1906.

52,074. REFRIGERATORS. THE LORILLARD REFRIGERATOR Co., New York, N. Y

The words "THE LORILLARD." Used ten years.

Filed September 12, 1905. Serial No. 12,489. PUBLISHED MARCH 6, 1906.

52,075. MINT-CANDY. MANUFACTURING COMPANY OF AMERICA, Philadelphia, Pa.

The words "AFTER DINNER."

Filed December 26, 1905. Serial No. 15,655. PUBLISHED MARCH 6, 1906.

52,076. SEWING-MACHINES. ALBERT G. MASON, Cleveland, Ohio.

The word "FLORENCE." Used ten years.

Filed August 24, 1905. Serial No. 11,960. PUBLISHED MARCH 6, 1906.

52,077. WRINGERS AND THE ROLLS THEREOF. METROPOLITAN MANUFACTURING COMPANY, Boston, Mass.

The word "METROPOLITAN."

Filed November 4, 1905. Serial No. 14,330. PUBLISHED MARCH 6, 1906.

52,078. BOOKS ON SALESMANSHIP. THE NATIONAL SCHOOL OF SALESMANSHIP, Minneapolis, Minn.

The representation of the world with the words "THE NATIONAL SCHOOL TEACHES" thereon and a circular shaded border

having thereon the words "WHOLESALE RETAIL SPECIAL SALESMANSHIP."
Filed October 5, 1905. Serial No. 13,330. PUBLISHED MARCH 6, 1906.

52,079. CANDLES AND TAPERS. PRICE'S PATENT CANDLE COMPANY LIMITED, London, Battersea, and Bromborough Pool Works, England.
The representation of a large ship under full sail on the sea surrounded by a border.
Filed October 14, 1905. Serial No. 13,609. PUBLISHED MARCH 6, 1906.

52,080. SOAP. R. HUDNUT'S PHARMACY, New York, N. Y.
The words "VIOLET SEC."
Filed November 13, 1905. Serial No. 14,521. PUBLISHED MARCH 6, 1906.

52,081. PEACH-TREES. JOSEPH W. ROCKEY, Miamisburg, Ohio.
The words "ROCKEY'S LATE STAR," together with the picture of a star, with the pictorial representation of a peach in the center of said star.
Filed February 1, 1906. Serial No. 16,671. PUBLISHED MARCH 6, 1906.

52,082. BONE FOR CASE-HARDENING, COLORING, AND ANNEALING. THE ROGERS & HUBBARD CO., Middletown, Conn.
The representation of a black diamond with the word "HUBBARDS" thereon.
Filed October 21, 1905. Serial No. 13,806. PUBLISHED MARCH 6, 1906.

52,083. HATS AND CAPS. FRANK SCHOBLE & Co., Philadelphia, Pa.
The fanciful title "COLWOOD" inclosed in an ornamental figure the sides of which are columns.
Filed December 14, 1905. Serial No. 15,406. PUBLISHED MARCH 6, 1906.

52,084. LEATHER BOOTS AND SHOES. E. S. WOODBURY & COMPANY, Boston, Mass.
The word, "INSTRUCTOR."
Filed February 9, 1906. Serial No. 16,875. PUBLISHED MARCH 6, 1906.

52,085. HARD-RUBBER COMBS. AMERICAN HARD RUBBER CO., New York, N. Y.
The word "MARCEL."
Filed February 6, 1906. Serial No. 16,777. PUBLISHED MARCH 6, 1906.

52,086. HARD-RUBBER COMBS. AMERICAN HARD RUBBER CO., New York, N. Y.
The words "SQUARE DEAL."
Filed February 6, 1906. Serial No. 16,778. PUBLISHED MARCH 6, 1906.

52,087. ROOF AND BUILDING PAPER. F. W. BIRD & SON, Walpole, Mass.
The word "PAROID."
Filed September 29, 1905. Serial No 13,129. PUBLISHED MARCH 6, 1906.

52,088. SPOOL-COTTON. BLODGETT & OSGWELL CO., Pawtucket, R. I.
The letters, character, and abbreviation "B. & O. Co."
Filed August 18, 1905. Serial No. 11,779. PUBLISHED MARCH 6, 1906.

52,089. MONTHLY MAGAZINES. THE BOOK-KEEPER PUBLISHING COMPANY, LTD., Detroit, Mich.
The words "THE BUSINESS MAN'S MAGAZINE & THE BOOK-KEEPER."
Filed January 29, 1906. Serial No. 16,583. PUBLISHED MARCH 6, 1906.

52,090. ANILIN DYES. CASSELLA COLOR COMPANY, New York, N. Y.
The letters "C. C. Co."
Filed January 10, 1906. Serial No. 16,086. PUBLISHED MARCH 6, 1906.

52,091. BEER IN BOTTLES. THE CLEVELAND & SANDUSKY BREWING COMPANY, Cleveland, Ohio.
The word "KELLERSAFT" in white and gold letters on a red background placed above a circular-shaped view of the roofs and steeples of an ancient German city situated on the shores of a body of water. In the foreground is a representation of a beer-cellar and the figure of a man blowing a trumpet. Below the circular-shaped view above referred to are the words in white letters on a red background "BOTTLED BY CLEVELAND & SANDUSKY BREWING CO. CLEVELAND."
Filed September 11, 1905. Serial No. 12,463. PUBLISHED MARCH 6 1906.

52,092. PLOWS AND PARTS THEREOF. THE COLLINS COMPANY, Collinsville, Conn.
The word "COLLINS" arranged on a ribbon or scroll. Used ten years.
Filed September 22, 1905. Serial No. 12,912. PUBLISHED MARCH 6, 1906.

52,093. COTTON PIECE GOODS. ISIDORO GELBTRUNK, New York, N. Y.
The words "AMOR Y TRABAJO" inclosed in quotation-marks and associated with the representation of a statuary group comprising the figures of a man and a woman standing together, with the head of the woman resting on the shoulder of the man.
Filed September 7, 1905. Serial No. 12,305. PUBLISHED MARCH 6, 1906.

52,094. VARNISH. THE GLIDDEN VARNISH COMPANY, Cleveland, Ohio.
The hyphenated word "WIND-O-SPAR," with which are associated four straight lines radiating from the letter "O."
Filed November 16, 1905. Serial No. 14,726. PUBLISHED MARCH 6, 1906.

52,095. ELASTIC FOOT-COVERINGS FOR HORSES. MICHAEL HALLANAN, New York, N. Y.
The words "PAN AMERICAN."
Filed January 12, 1906. Serial No. 16,152. PUBLISHED MARCH 6, 1906.

52,096. GINGER-ALE. ABRAHAM S. HOLBERG, Mobile, Ala.
The words "RED FEATHER" and the design of a red feather.
Filed January 23, 1906. Serial No. 16,427. PUBLISHED MARCH 6, 1906.

52,097. SELF-BINDING HARVESTERS, REAPERS, MOWERS, AND SEPARATE PARTS THEREOF. INTERNATIONAL HARVESTER CO. OF AMERICA, Chicago, Ill.
The representation of a Maltese cross made of mower-knife sections, with the words "THE MILWAUKEE LEADS" upon the arms of the cross.
Filed August 31, 1906. Serial No. 12,112. PUBLISHED MARCH 6, 1906.

52,098. SPOOL-COTTON. JOHN J. CLARK & Co., Pawtucket, R. I.
The word "ARLINGTON." Used ten years.
Filed August 18, 1905. Serial No. 11,758. PUBLISHED MARCH 6, 1906.

52,099. SPOOL-COTTON. JOHN J. CLARK & Co., Pawtucket, R. I.
The hyphenated word "MAIL-EXP'S" upon a background consisting of a disk and radiating lines of light.
Filed August 18, 1905. Serial No. 11,759. PUBLISHED MARCH 6, 1906.

52,100. SPOOL-COTTON. JOHN J. CLARK & Co., Pawtucket, R. I.
The word "REGENT."
Filed August 18, 1905. Serial No. 11,761. PUBLISHED MARCH 6, 1906.

52,101. SPOOL-COTTON. JOHN J. CLARK & Co., Pawtucket, R. I.
The word "FAVORITE."
Filed August 18, 1905. Serial No. 11,762. PUBLISHED MARCH 6, 1906.

52,102. SPOOL-COTTON. JOHN J. CLARK & Co., Pawtucket, R. I.
The words "NASSAU MILLS." Used ten years.
Filed August 18, 1905. Serial No. 11,763. PUBLISHED MARCH 6, 1906.

52,103. INTENSIFIERS FOR WEAK NEGATIVES. KIRK-GEARY & COMPANY, Sacramento and San Francisco, Cal.
The arbitrary word "MOTAX."
Filed January 22, 1906. Serial No. 16,295. PUBLISHED MARCH 6, 1906.

52,104. SELF-THREADING NEEDLES. THE LONDON NEEDLE COMPANY, New York, N. Y.
The word "UNEEDA," together with pictures of the upper parts of two notched needles, of which one shows the thread in the act of being inserted therein, all inclosed within an ornamental rectangular border.
Filed October 9, 1905. Serial No. 13,433. PUBLISHED MARCH 6, 1906.

52,105. REFRIGERATORS. MCCRAY REFRIGERATOR CO., Kendallville, Ind.
The word "MCCRAY." Used ten years.
Filed February 3, 1906. Serial No. 16,733. PUBLISHED MARCH 6, 1906.

52,106. AXES, ADZES, AND HATCHETS. FREDERICK WILLIAM PECK, Cohoes, N. Y.
The words "PECKS INVINCIBLE BRAND EDGE TOOLS" upon a diamond-shaped background.
Filed September 26, 1905. Serial No. 13,034. PUBLISHED MARCH 6, 1906.

52,107. TALCUM POWDER. POND'S EXTRACT COMPANY, New York, N. Y.
The representation of the draped head of a young lady, the same being a portrait of Miss Carrie E. Giltner, of Springfield, Ill.
Filed January 24, 1906. Serial No. 16,444. PUBLISHED MARCH 6, 1906.

52,108. CREAM FOR THE TREATMENT OF THE SKIN. POND'S EXTRACT COMPANY, New York, N. Y.
The representation of the draped head of a young lady, the same being a portrait of Miss Carrie E. Giltner, of Springfield, Ill.
Filed January 24, 1906. Serial No. 16,445. PUBLISHED MARCH 6, 1906.

52,109. DENTIFRICES IN POWDER, PASTE, OR LIQUID FORM. POND'S EXTRACT COMPANY, New York, N. Y.
The representation of the laughing face of a young lady, the same being a portrait of Miss Carrie E. Giltner, of Springfield, Ill.
Filed January 24, 1906. Serial No. 16,446. PUBLISHED MARCH 6, 1906.

52,110. GLYCERIN. PRICE'S PATENT CANDLE CO. LIMITED, London, Battersea, and Bromborough Pool Works, England.
The representation of a large ship under full sail on the sea. Another ship is seen in the distance astern. The whole is inclosed in a substantially rectangular border.
Filed January 9, 1906. Serial No. 16,063. PUBLISHED MARCH 6, 1906.

52,111. TOOL-STEEL. ROYAL METAL STEEL CO., New York, N. Y.
The word "EXCELSIOR."
Filed October 11, 1905. Serial No. 13,484. PUBLISHED MARCH 6, 1906.

52,112. FLAVORING EXTRACTS. SPRAGUE, WARNER & COMPANY, Chicago, Ill.
The arbitrarily-selected word "FERNDELL."
Filed January 31, 1906. Serial No. 16,649. PUBLISHED MARCH 6, 1906.

52,113. GRAPE-VINES, CUTTINGS, SCIONS, GRAFTS, ROOTS, AND STOCKS. STARK BRO'S. NURSERIES & ORCHARDS COMPANY, Louisiana, Mo.
The word "SUNRISE," the first and last letters of the word being larger than the other letters and having their bottoms depending below the bottoms of the remaining letters.
Filed February 6, 1906. Serial No. 16,780. PUBLISHED MARCH 6, 1906.

52,114. ELECTRICALLY-PLAYED PIANOS AND ELECTRICAL PLAYERS FOR PIANOS. STOKES & SMITH COMPANY, Philadelphia, Pa.
The word "ELECTRELLE."
Filed January 27, 1906. Serial No. 16,568. PUBLISHED MARCH 6, 1906.

52,115. CERTAIN NAMED GARMENTS. THOMPSON & CHRISTIE, New York, N. Y.
The representation of a rose and thistle surrounded by two circles, between which are the letters and word "T AND C."
Filed September 9, 1905. Serial No. 12,436. PUBLISHED MARCH 6, 1906.

52,116. PLOWS AND CULTIVATORS. THE VULCAN PLOW CO., Evansville, Ind.
The word "VULCAN."
Filed September 5, 1905. Serial No. 12,231. PUBLISHED MARCH 6, 1906.

52,117. PACKAGE-ROLLS OF GOLD, SILVER, ALUMINIUM, COMPOSITION, OR OTHER METAL LEAF. W. H. COE MFG. COMPANY, Providence, R. I.
The word "COE'S." Used ten years.
Filed February 5, 1906. Serial No. 16,740. PUBLISHED MARCH 6, 1906.

52,118. WRENCHES. WALWORTH MANUFACTURING CO., Boston, Mass.
The representation of a heraldic sword with the letter "W" thereon.
Filed September 1, 1905. Serial No. 12,147. PUBLISHED MARCH 6, 1906.

52,119. PREPARED TAPIOCA. WHITMAN GROCERY COMPANY, Orange, Mass.
The word "MINUTE." Used ten years.
Filed June 15, 1905. Serial No. 8,172. PUBLISHED MARCH 6, 1906.

52,120. LEATHER BOOTS AND SHOES. LOUIS WIEBKE, New York, N. Y.
The word "RIVERSIDE." Immediately beneath the word "RIVERSIDE" and extending from the last letter to a point somewhat below the first letter are two curved lines joined at either end, making a representation of the flourish of a pen below the word. Used ten years.
Filed February 3, 1906. Serial No. 16,736. PUBLISHED MARCH 6 1906.

52,121. LUBRICATING-OILS. WILBURINE OIL WORKS, LTD., New York, N. Y.
The word "WILBURINE."
Filed September 29, 1905. Serial No. 13,146. PUBLISHED MARCH 6, 1906.

52,122. PETROLEUM OR MINERAL JELLY. WILBURINE OIL WORKS, LTD., New York, N. Y.
The word "WILBURINE."
Filed September 29, 1905. Serial No. 13,147. PUBLISHED MARCH 6, 1906.

52,123. COCOA AND CHOCOLATE PRODUCTS. FREDERICK BISCHOFF, New York, N. Y.
The word "BISCHOFF'S." Used ten years.
Filed October 12, 1905. Serial No. 13,518. PUBLISHED MARCH 6, 1906.

52,124. GRAPE-VINES, CUTTINGS SCIONS, GRAFTS, ROOTS, AND STOCKS. STARK BRO'S. NURSERIES & ORCHARDS COMPANY, Louisiana, Mo.
The word "BANNER," the first and last letters of the word being larger than the other letters and having their bottoms depending below the bottoms of the remaining letters.
Filed February 6, 1906. Serial No. 16,779. PUBLISHED MARCH 6, 1906.

52,125. GOLF-BALLS. A. G. SPALDING & BROS., New York, N. Y.
The word "DOT."
Filed October 13, 1905. Serial No. 13,563. PUBLISHED MARCH 6, 1906.

52,126. WHISKY. BEN J. GOLDMAN CO., San Francisco, Cal.
The words "GOLDMAN'S WEDDING." Used ten years.
Filed May 11, 1905. Serial No. 5,138. PUBLISHED MARCH 6, 1906.

52,127. STOVES AND RANGES. BERGSTROM STOVE CO., Neenah, Wis.
The word "ROYAL."
Filed April 17, 1905. Serial No. 2,083. PUBLISHED MARCH 6, 1906.

52,128. CERTAIN NAMED POWDERS. EDWIN BETTS, Newark, N. J.
The hyphenated word "CON-FORMAGEN."
Filed May 29, 1905. Serial No. 7,057. PUBLISHED MARCH 6, 1906.

52,129. CANNED FRUITS AND VEGETABLES. BLOOMINGTON CANNING CO., Bloomington, Ill.
The word "TENT," associated with the representation of a tent with trees in the background and two men in the foreground cooking before a fire, cooking utensils being displayed about the fire.
Filed April 1, 1905. Serial No. 173. PUBLISHED MARCH 6, 1906.

52,130. COFFEE. THE C. S. MOREY MERCANTILE COMPANY, Denver, Colo.

The word "SOLITAIRE," in connection with the representation of a solitaire-diamond ring inclosing the said word "SOLITAIRE."

Filed August 28, 1905. Serial No. 12,063. PUBLISHED MARCH 6 1906.

52,131. WHISKY. CARSTAIRS BROS., Highlandstown, Md.

The word "STEWART," associated with the words "COPPER DOUBLE DISTILLED PURE RYE WHISKEY CARSTAIRS BROS. DISTILLERS HALTIMORE." Used ten years.

Filed October 30, 1905. Serial No. 14,073. PUBLISHED MARCH 6, 1906.

52,132. COLLARS. EARL & WILSON, Troy, N. Y.

The words "EARL OF TROY." Used ten years.

Filed October 4, 1905. Serial No. 13,275. PUBLISHED MARCH 6, 1906.

52,133. INTERNAL REMEDIES. HENRY F. EDSALL, San Francisco, Cal.

The word "FRUITOLA." Used ten years.

Filed November 1, 1905. Serial No. 14,148. PUBLISHED MARCH 6, 1906.

52,134. INTERNAL REMEDIES HAVING TONIC AND ALTERATIVE PROPERTIES. HENRY F. EDSALL, San Francisco, Cal.

The word "TRAXO." Used ten years.

Filed November 1, 1905. Serial No. 14,149. PUBLISHED MARCH 6, 1906.

52,135. ANTISEPTICS AND DEODORANTS. FARBWERKE VORM. MEISTER LUCIUS & BRÜNING, Höchst-on-the-Main, Germany.

The word "ISOFORM."

Filed September 16, 1905. Serial No. 12,710. PUBLISHED MARCH 6, 1906.

52,136. COLD-CREAM. FISCHER CHEMICAL IMPORTING CO., New York, N. Y.

The words "LA BELLE."

Filed November 1, 1905. Serial No. 14,163. PUBLISHED MARCH 6, 1906.

52,137. GLOVES. FOWNES BROTHERS & CO., London, England, and New York, N. Y.

The words "LA TOSCA."

Filed October 28, 1905. Serial No. 14,031. PUBLISHED MARCH 6, 1906.

52,138. TONIC. MARY T. GOLDMAN, St. Paul, Minn.

The representation of the figure of a nun holding in her right hand a bunch of herbs, associated with the words "MOTHER MARY'S HERB TONIC." The words "MOTHER MARY'S" appear above the figure and "HERB TONIC" below and inclosed by a rectangular diagram.

Filed November 11, 1905. Serial No. 14,504. PUBLISHED MARCH 6, 1906.

52,139. WHEAT-FLOUR. THE GOODLANDER MILLING COMPANY, Fort Scott, Kans.

A circular device containing in the central portion an irregular shield-shaped figure upon a diagonal band on which appears the word "AMBROSIA." Around the upper section are the words and abbreviation "GOODLANDER MILLING CO." and around the lower the words "FORT SCOTT, KANSAS." The words "HIGH PATENT" appear upon one side of the shield and the representation of a diminutive winged human figure upon the other.

Filed September 2, 1905. Serial No. 12,167. PUBLISHED MARCH 6, 1906.

52,140. MEDICINAL PLASTERS. J. M. GROSVENOR & CO., Boston, Mass.

The representation of a bell with the words "BELL-CAP-SIC" printed thereon. Used ten years.

Filed August 3, 1905. Serial No. 11,213. PUBLISHED MARCH 6, 1906.

52,141. FACIAL CREAM. HALDERMAN & MICHAEL, Chicago, Ill.

A representation of an automobile with a woman seated therein and with a star on the front thereof from which radiating rays of light extend, and on said rays appears the word "AUTO."

Filed May 31, 1905. Serial No. 7,296. PUBLISHED MARCH 6, 1906.

52,142. ANTISEPTIC SOLUTION. NETTIE M. HOON, Mercer, Pa.

The word "SAVOL" on an artistic scroll, and at each end of said scroll is a white cross within a dark circle.

Filed November 9, 1905. Serial No. 14,470. PUBLISHED MARCH 6, 1906.

52,143. BRUSHES. IHLE AND GRUPP, Buffalo, N. Y.

The representation of a buffalo.

Filed September 5, 1905. Serial No. 12,238. PUBLISHED JANUARY 2, 1906.

52,144. SALTED AND BONELESS FISH. J. W. BEARDSLEY'S SONS, New York, N. Y.

The words "BEARDSLEY'S SHREDDED CODFISH" and the representation of a codfish between the words "SHREDDED" and "CODFISH." Used ten years.

Filed April 11, 1905. Serial No. 1,102. PUBLISHED MARCH 6, 1906.

52,145. SALTED AND BONELESS CODFISH. J. W. BEARDSLEY'S SONS, New York, N. Y.

The representation of a box with a red band arranged centrally thereon and the words "SHREDDED CODFISH," with the picture of a codfish on the front of the box.

Filed April 11, 1905. Serial No. 1,103. PUBLISHED MARCH 6, 1906.

52,146. HAIR-NETS. ALBERT G. JENNINGS, New York, N. Y.

The arbitrarily-selected word "DIRECTOIRE."

Filed November 2, 1905. Serial No. 14,432. PUBLISHED MARCH 6, 1906.

52,147. HAIR-NETS. ALBERT G. JENNINGS, New York, N. Y.

The arbitrarily-selected word "ARENA."

Filed November 2, 1905. Serial No. 14,433. PUBLISHED MARCH 6, 1906.

52,148. SEWING COTTON AND THREAD. JONAS BROOK & BROS., LIMITED, Meltham, England.

The designation "BROOK'S." Used ten years.

Filed September 27, 1905. Serial No. 13,085. PUBLISHED MARCH 6, 1906.

52,149. LOZENGES OR TABLETS FOR FERMENTATION PURPOSES. THE KEFILAC COMPANY, Atlanta, Ga.

The word "KEFILAC."

Filed November 29, 1905. Serial No. 15,060. PUBLISHED MARCH 6, 1906.

52,150. WHISKY. ELIZABETH KUHLMANN, Cincinnati, Ohio.

The word "GOODFORU."

Filed November 9, 1905. Serial No. 14,466. PUBLISHED MARCH 6, 1906.

52,151. WHEAT-FLOUR. LAWRENCEBURG ROLLER MILLS COMPANY, Lawrenceburg, Ind., and Boston, Mass.

A circular panel bearing the words "ROYAL MAIL" and a representation of a steamship under full headway and spears of wheat tied with a ribbon on which appear the words "SPECIAL HIGH GRADE PATENT," the words "LAWRENCEBURG ROLLER MILLS CO." appearing below the spears of wheat.

Filed September 16, 1905. Serial No. 12,725. PUBLISHED MARCH 4, 1906.

52,152. WHEAT-FLOUR. LAWRENCEBURG ROLLER MILLS COMPANY, Lawrenceburg, Ind., and Boston, Mass.

The words "PAUL JONES HIGHEST GRADE WINTER WHEAT PATENT INDIANA" inclosed in an ornamental circular border.

Filed September 16, 1905. Serial No. 12,727. PUBLISHED MARCH 6, 1906.

52,153. DRESS-SILK. LIBERTY SILK COMPANY, New York, N. Y.

The word "LIBERTY."

Filed October 23, 1905. Serial No. 13,880. PUBLISHED MARCH 6, 1906.

52,154. COTTON PIECE GOODS. MASSACHUSETTS COTTON MILLS, Lowell, Mass.

The representation of three horned owls' heads partially inclosed in concentric circles, leaves being arranged above and below the circles of the central head, the lower leaves extending partially under the circles of the outer heads.

Filed May 11, 1905. Serial No. 5,257. PUBLISHED MARCH 6, 1906.

52,155. SAUER-KRAUT. JOHN G. MCCASKEY, Pittsburg, Pa.

The representation of a woman's head and a crescent on which appear the words "DUCH-ESS SAUER KRAUT." The woman's head and the crescent are surrounded by concentric circles, and at opposite sides of the crescent is the representation of a butterfly arranged on the background appearing on one of the concentric circles.

Filed November 14, 1905. Serial No. 14,636. PUBLISHED MARCH 6, 1906.

52,156. MOLASSES FOOD FOR HORSES AND CATTLE. EDWARD P. MUELLER, Milwaukee, Wis.

The sign of the United States dollar and representations of the heads of a calf and a bridled horse projecting through the scrolls of the said sign and partly obscuring the bars of the same, the calf-head being uppermost and facing in a direction opposite that of the horse-head.

Filed September 11, 1905. Serial No. 12,456. PUBLISHED MARCH 6, 1906.

52,157. COMPOUND FOR EXTERMINATING VERMIN. EDGAR A. MURRAY, Detroit, Mich.

The word "DOOM."

Filed October 26, 1905. Serial No. 14,222. PUBLISHED MARCH 6, 1906.

52,158. HOSIERY. O'CALLAGHAN & FEDDEN, New York, N. Y.

The words "MOTHERS' FRIEND HOSE" inclosed in quotation-marks.

Filed November 15, 1905. Serial No. 14,658. PUBLISHED MARCH 6, 1906.

52,159. COATS, OVERCOATS, PANTS, AND VESTS. OEHM & CO., Baltimore, Md.

The word "ACME."

Filed August 4, 1905. Serial No. 11,279. PUBLISHED MARCH 6, 1906.

52,160. TOILET POWDER AND SACHET-POWDER. R. HUDNUT'S PHARMACY, New York, N. Y.

The words "VIOLET SEC."

Filed November 13, 1905. Serial No. 14,522. PUBLISHED MARCH 6, 1906.

52,161. WHISKY. W. P. SQUIBB & Co., Lawrenceburg, Ind.

The words "OLD DEARBORN MILLS." Used ten years.

Filed November 21, 1905. Serial No. 14,890. PUBLISHED MARCH 6, 1906.

52,162. SYRUPS AND MOLASSES. STEUART, KNATZ & CO., Baltimore, Md.

The pictorial representation of a crown.

Filed April 25, 1905. Serial No. 2,959. PUBLISHED NOVEMBER 21, 1905.

52,163. CANNED FRUITS AND VEGETABLES. TORSCH PACKING CO., Baltimore, Md.

The word "PEERLESS" inclosed in quotation-marks and the word "BRAND," and the representation of a girl holding an oyster in her right hand, while the left hand is supporting the folds of her dress, in which are a number of oysters, and at the feet of the girl is a collection of fruit and a panel on which appear the words "THEY ARE PEERLESS IN NAME QUALITY AND FLAVOR" Used ten years.

Filed May 13, 1905. Serial No. 5,553. PUBLISHED MARCH 6, 1906.

52,164. WHEAT-FLOUR. WATERLOO MILLING COMPANY, Waterloo, Ill.

The word "ONEETA" and the words "WATERLOO MILLING COMPANY FANCY PATENT WATERLOO, ILLS.," all arranged in connection with the ears of wheat and flowers over the representation of a horseshoe.

Filed September 5, 1905. Serial No. 12,240. PUBLISHED MARCH 6, 1906.

52,165. LEAD-PENCILS. AMERICAN LEAD PENCIL CO., New York, N. Y.

The word "CARBON." Used ten years.

Filed December 21, 1905. Serial No. 15,572. PUBLISHED FEBRUARY 6, 1906.

52,166. FACE-POWDER. THE ARTESIA CREAM COMPANY, Waco, Tex.

The word "ARTESIA."

Filed January 24, 1906. Serial No. 16,454. PUBLISHED MARCH 6, 1906.

52,167. DENTIFRICE. BLUMENTHAL BROS., New York, N. Y.

The compound word "DENTA-ROMA."

Filed July 27, 1905. Serial No. 10,920. PUBLISHED MARCH 6, 1906.

52,168. BRAZING COMPOUND. R. Y. BOWLBY & CO., Denton, Tex.

The words "BULL DOG BRAZING COMPOUND" and the representation of a bulldog.

Filed July 14, 1905. Serial No. 10,335. PUBLISHED MARCH 6, 1906.

52,169. LIQUEURS OR CORDIALS. LEOPOLD BRUGEROLLE, Matha, France.

The word "ANGELICA" within a Greek cross. In the upper and lower arms is a landscape. Above the word "ANGELICA" is the word "VÉRITABLE," and below are the words "(ARCHANGELICA) DES PYRÉNÉES LIQUEUR STIMULANTE À BASE DE FINE CHAMPAGNE AUTHENTIQUE DISTILLERIE DE MATHA FRANCE."

Filed May 25, 1905. Serial No. 7,068. PUBLISHED MARCH 6, 1906.

52,170. STOMACHIC AND CARMINATIVE. ELIZABETH DORT, Buffalo, N. Y.

The representation of a woman in the act of comforting a child, inclosed in an oval frame on which appear the words "SZAWNY BALSAM MACIERZYŃSKI." Used ten years.

Filed June 13, 1905. Serial No. 8,016. PUBLISHED MARCH 6, 1906.

52,171. ANTISEPTIC SOLUTION. JOHN H. EBERHARDT, New York, N. Y.

The word "ALPHASOL."

Filed July 13, 1905. Serial No. 10,280. PUBLISHED MARCH 6, 1906.

52,172. CASTOR-OIL. GRIGGS, COOPER AND COMPANY, St. Paul, Minn.

The word "WHYNOT" written in script.

Filed July 3, 1905. Serial No. 9,642. PUBLISHED MARCH 6, 1906.

52,173. WHISKY. ASHER GUCKENHEIMER & BROS., Pittsburg, Pa.

The representation of a banner having thereon the words "GUCKENHEIMER PURE RYE WHISKY." Used ten years.

Filed May 22, 1905. Serial No. 6,277. PUBLISHED MARCH 6, 1906.

52,174. WATCHCASES AND WATCH-MOVEMENTS. HAYDEN W. WHEELER & CO., New York, N. Y.

The character "W," with the letters "H" and "W" within the loops thereof.

Filed April 20, 1905. Serial No. 2,378. PUBLISHED MARCH 6, 1906.

52,175. INSECT KILLER OR EXTERMINATOR. DR. HESS & CLARK, Ashland, Ohio.

The word "INSTANT." Used ten years.

Filed June 15, 1905. Serial No. 8,189. PUBLISHED MARCH 6, 1906.

52,176. WHISKY. S. HIRSCH & CO., Kansas City, Mo.

The words "KENDALL CLUB" and an ornamental panel bearing the representation of an entrance to a club-house and showing men entering the club-house and a carriage standing before the entrance.

Filed December 26, 1905. Serial No. 15,639. PUBLISHED MARCH 6, 1906.

52,177. FACE-CREAMS. FREDERICK F. INGRAM, Detroit, Mich.

The words "MILK WEED." Used ten years.

Filed July 3, 1905. Serial No. 9,636. PUBLISHED MARCH 6, 1906.

52,178. PHARMACEUTICAL PREPARATION. LLOYD BROTHERS, Cincinnati, Ohio.

The word "ASEPSIN." Used ten years.

Filed July 8, 1905. Serial No. 9,924. PUBLISHED MARCH 6, 1906.

52,179. PILLS. JOHN ARNOLD MCKEE, Toronto, Canada.

The combination of the words "DODD'S KIDNEY PILLS" in white letters on a dark surface or background, which surface is circular in form with a series of divergent short straight lines indicating serrations around the edge of the surface.

Filed July 14, 1905. Serial No. 10,318. PUBLISHED MARCH 6, 1906.

52,180. COCKTAIL-SAUCE. CHARLES I. MOREY, New York, N. Y.

The coat-of-arms and crest of the Morey family, which coat-of-arms and crest embody a shield-like figure provided with ornamental panels and surmounted by a crown, with the representation of a greyhound at opposite sides of the shield with its fore feet resting on the shield and its hind feet resting on a scroll extending underneath the shield. Above the crown is a representation of a

bird's nest containing a number of young birds and showing the parent bird standing in the nest in the act of feeding the young.
Filed July 11, 1905. Serial No. 10,078. PUBLISHED MARCH 6, 1906.

52,181. WHISKY. ANGELO MYERS, Philadelphia, Pa.
The word "SCHUYLKILL," associated with the representation of a keystone.
Filed July 15, 1905. Serial No. 10,352. PUBLISHED MARCH 6, 1906.

52,182. SYRUP AND MOLASSES. NATIONAL GROCER COMPANY, Chicago, Ill.
The words "LIGHT HOUSE" and the pictorial representation of a marine scene showing a lighthouse in the foreground on a ledge of rock, from the top of which lighthouse is shown a flash of light thrown out to sea upon a vessel, and the letters and abbreviation "N G Co" formed into a monogram.
Filed December 26, 1905. Serial No. 15,643. PUBLISHED MARCH 6, 1906.

52,183. WHISKY. A. OVERHOLT & Co., Pittsburg, Pa.
A bust portrait of Abraham Overholt, the former proprietor of the business of the present firm and who is now deceased. Used ten years.
Filed July 6, 1905. Serial No. 9,829. PUBLISHED MARCH 6, 1906.

52,184. WHISKY. FREDERICK C. RENZIEHAUSEN, Pittsburg, Pa.
The word "LARGE." Used ten years.
Filed May 23, 1905. Serial No. 6,362. PUBLISHED MARCH 6, 1906.

52,185. BAKING-POWDER. SPRAGUE, WARNER & COMPANY, Chicago, Ill.
The arbitrarily-selected word "FERNDELL."
Filed January 31, 1906. Serial No. 16,651. PUBLISHED MARCH 6, 1906.

52,186. SPICES. SPRAGUE, WARNER & COMPANY, Chicago, Ill.
The arbitrarily-selected word "FERNDELL."
Filed January 31, 1906. Serial No. 16,652. PUBLISHED MARCH 6, 1906.

52,187. SYRUP. SPRAGUE, WARNER & COMPANY, Chicago, Ill.
The arbitrarily-selected word "FERNDELL."
Filed January 31, 1906. Serial No. 16,653. PUBLISHED MARCH 6 1906.

52,188. WHISKY. THE STAR DISTILLERY Co., Cincinnati, Ohio.
The words "YORK CLIFF."
Filed June 8, 1905. Serial No. 7,661. PUBLISHED MARCH 6, 1906.

52,189. CATHARTIC MEDICINE. STERLING REMEDY COMPANY, Kramer, Ind.
The word "CASCARETS."
Filed May 27, 1905. Serial No. 6,825. PUBLISHED MARCH 6, 1906.

52,190. WHISKY. W. A. TAYLOR & Co., New York, N. Y.
The words "GOLF CLUB" and the representation of a lion rampant on an oval panel with a scroll upon which is the motto "LABORE ET HONORE" and with a monogram consisting of the letters, character, and abbreviation "W A T & Co."
Filed July 22, 1905. Serial No. 10,694. PUBLISHED MARCH 6, 1906.

52,191. RUBBER FOR DENTAL PURPOSES. TRAUN RUBBER Co., New York, N. Y.
The word "IDEAL."
Filed June 27, 1905. Serial No. 9,281. PUBLISHED MARCH 6, 1906.

52,192. COMBS. DR. HEINRICH TRAUN & SÖHNE, Hamburg, Germany.
The representation of a man sawing a log of wood with a comb.
Filed July 21, 1905. Serial No. 10,678. PUBLISHED MARCH 1906.

52,193. WHISKY. B. BONDY, New York, N. Y.
The word "PROSPECT" placed over the picture of the heads of an elk and a bear, with a mountainous landscape in the background, said picture being inclosed in a heart-shaped frame with a spray of grain on either side and a short section of an ornamental band, the whole being inclosed in a rectangular border with rounded corners.
Filed November 10, 1905. Serial No. 14,481. PUBLISHED MARCH 6, 1906.

52,194. WHEAT-FLOUR. COLLIN COUNTY MILL & ELEVATOR COMPANY, McKinney, Tex.
The words "MARECHAL NEIL."
Filed June 9, 1905. Serial No. 7,761. PUBLISHED NOVEMBER 7, 1905.

52,195. WHISKY. JOHN P. CONNOR, Lowell, Mass.
The word "FIDDLE" and a representation of a violin and bow upon a sheet of music, with a background of sprays of flowers and a circular disk crossed by a ribbon upon which appear the words "RYE WHISKEY."
Filed July 22, 1905. Serial No. 10,719. PUBLISHED MARCH 6, 1906.

52,196. WHISKY. JOHN P. CONNOR, Lowell, Mass.
A panel bearing the words "MY DOCTOR PURE RYE" and scrolls bearing the words "AGED IN WOOD" and a representation of a sick-room, showing a patient in bed and a nurse holding a glass to the patient and also showing a bottle on a table and bottles, cups, and a clock on a mantelpiece, above which appear the words "NOT IN USE."
Filed July 22, 1905. Serial No. 10,720. PUBLISHED MARCH 6, 1906.

52,197. OIL-MEAL MADE FROM LINSEED. E. F. DARRELL & Co., New York, N. Y.
The word "TAURUS," associated with the representation of a bull.
Filed October 13, 1905. Serial No. 13,556. PUBLISHED MARCH 6, 1906.

52,198. LAUNDRY STARCH. ELECTRIC LUSTRE STARCH COMPANY, Boston, Mass.
The words "ELECTRIC LUSTRE STARCH," used in connection with a cut representing a woman standing at a table, behind which is a window and upon which is a flat-iron, holding up a shirt upon the front of which the reflection of her face appears.
Filed May 27, 1905. Serial No. 6,768. PUBLISHED MARCH 6, 1906.

52,199. CANNED FISH. GENNERICH & VON BREMEN, New York, N. Y.
A representation in cherry-red color of a diamond composed of four bars intersecting each other and of the word-symbol "CHERRY DIAMOND" in connection therewith.
Filed August 2, 1905. Serial No. 11,172. PUBLISHED MARCH 6, 1906.

52,200. DRIED FRUITS. GENNERICH & VON BREMEN, New York, N. Y.
A representation in cherry-red color of a diamond composed of four bars intersecting each other and of the word-symbol "CHERRY DIAMOND" set upon a representation of a ribbon stretched across the upper part of the diamond.
Filed October 19, 1905. Serial No. 13,764. PUBLISHED MARCH 6, 1906.

52,201. CANNED OR BOTTLED VEGETABLES. GENNERICH & VON BREMEN, New York, N. Y.
A representation in cherry-red color of a diamond composed of four bars intersecting each other and of the word-symbol "CHERRY DIAMOND" set on a straight line across the upper half of the inner field of the diamond.
Filed October 19, 1905. Serial No. 13,766. PUBLISHED MARCH 6, 1906.

52,202. CANNED OYSTERS. GIBBS PRESERVING COMPANY OF BALTIMORE CITY, Baltimore, Md.
The words "THE MONKEY BRAND," associated with the representation of a monkey seated on a cut-off section of a trunk and limb of a tree, holding an oyster-shell by one hand and foot. Used ten years.
Filed August 2, 1905. Serial No. 11,142. PUBLISHED MARCH 6, 1906.

52,203. DOOR AND WINDOW SCREEN WIRE-CLOTH. THE GILBERT & BENNETT MANUFACTURING COMPANY, Georgetown, Conn.
The word "PEARL."
Filed May 18, 1905. Serial No. 5,934. PUBLISHED AUGUST 1, 1905.

52,204. WHISKY. FREDERICK GLASSUP, New York, N. Y., assignor to John Gow & Company, New York, N. Y., a Firm.
The word "ARCHER," associated with the pictorial representation of an Indian holding a drawn bow and arrow.
Filed January 12, 1906. Serial No. 16,148. PUBLISHED MARCH 6, 1906.

52,205. WOODEN TOOTHPICKS. OSCAR H. HERSEY, Portland, Me.
The arbitrary word "VELVET."
Filed September 18, 1905. Serial No. 12,741. PUBLISHED MARCH 6, 1906.

52,206. BISCUITS KNOWN AS RUSKS. HOLLAND RUSK Co., Holland, Mich.
The representation of a characteristic windmill of Holland, which is surrounded by an ornamental scroll border, within which border a Dutch landscape likewise appears, and at the lower portion of the said border a leaf scroll appears.
Filed July 8, 1905. Serial No. 9,944. PUBLISHED MARCH 6, 1906.

52,207. STEEL RANGE. FRED E. LEE and WM. G. HOWARD, Dowagiac, Mich., executors of Philo D. Beckwith, deceased.
The words "ROUND OAK CHIEF."
Filed September 11, 1905. Serial No. 12,476. PUBLISHED MARCH 6, 1906.

52,208. COGNAC BRANDY. A. C. MEUKOW & Co., Cognac, France.
An arm bare to the elbow holding a palm branch and resting on a bar.
Filed October 26, 1905. Serial No. 13,965. PUBLISHED MARCH 6, 1906.

52,209. COFFEE. MEYER BROTHERS COFFEE AND SPICE COMPANY, St. Louis, Mo.
The word "OWL" or the picture of an owl perched upon a branch.
Filed September 16, 1905. Serial No. 12,707. PUBLISHED MARCH 6, 1906.

52,210. LINIMENT. MINARD'S LINIMENT MANUFACTURING COMPANY, Boston, Mass.
The representation of a king arranged upon a circular panel, having the word "THE" at the left of said panel, the word "OF" at the right thereof, and the word "PAIN" on a scroll on the bottom of the panel. Used ten years.
Filed September 25, 1905. Serial No. 12,959. PUBLISHED MARCH 6, 1906.

52,211. BACON AND HAMS. JOHN MORRELL & COMPANY, LIMITED, Ottumwa, Iowa.
The representation of a railroad semaphore-signal standing at "clear," associated with the words "ALLEITE BRAND."
Filed December 2, 1905. Serial No. 15,260. PUBLISHED MARCH 6, 1906.

52,212. WHISKY. LOUISA NELSON, Nashville, Tenn.
The words "ROCK CORN," below which is a representation of two ears of corn and a string of rock-candy. Used ten years.
Filed May 25, 1905. Serial No. 6,601. PUBLISHED MARCH 6, 1906.

52,213. BISCUITS. JULIUS NEURIHRER, Newark, N. J.
The word "DELEKTA."
Filed September 21, 1905. Serial No. 12,896. PUBLISHED MARCH 6, 1906.

52,214. CORN-STARCH OR CORN-FLOUR. NEW YORK GLUCOSE Co., New York, N. Y.
The words "THE HARVEST QUEEN" and a circular panel upon which appear the bust form of a young lady with flowing hair and ears of corn projecting onto the panel.
Filed June 21, 1905. Serial No. 8,721. PUBLISHED MARCH 6, 1906.

52,215. HEEL-BALL, BLACK-BALL, AND POLISHING WAX FOR SHOEMAKERS' USE. PHILIPP OSTERMAYER, Jersey City, N. J.
The letters "PH. O.," which are arranged within the inner circle of two concentric circles, the word "MAINZER" being placed in the space between the two circles above the letters "PH. O." and the word "WACHS" in the space below the same. Used ten years.
Filed October 4, 1905. Serial No. 13,286. PUBLISHED MARCH 6, 1906.

52,216. FLASH-LIGHT COMPOUNDS. HUGO PFABE, Delavan, Wis.
The representation of a star with rays radiating therefrom and having thereon the word "ASTRA" and a torch.
Filed April 28, 1905. Serial No. 3,508. PUBLISHED MARCH 6, 1906.

52,217. LEATHER BOOTS AND SHOES. RANDALL-ADAMS Co., Lynn, Mass.
A heraldic figure comprising a pictorial representation of a mythical animal having the head, wings, and talons of a bird and the hind quarters, rear legs, and tail of a lion, associated with a shield bearing the name "ST. REGIS" and a starry field, said shield being surmounted by a helmet.
Filed October 16, 1905. Serial No. 13,652. PUBLISHED MARCH 6, 1906.

52,218. TONIC BEVERAGE. THE SALT LAKE CITY SODA WATER Co., Salt Lake City, Utah.
The word "KOKO-ALE."
Filed October 27, 1905. Serial No. 13,980. PUBLISHED MARCH 6, 1906.

52,219. CANNED VEGETABLES. EDWARD V. STOCKHAM, Perryman, Md.
The words "RED CRESCENT," accompanied by the figure of a crescent arranged under said words. Between the horns of the crescent occurs a five-pointed star having lines radiating therefrom, and back of the crescent occurs a section of a bordered band.
Filed August 8, 1905. Serial No. 11,439. PUBLISHED MARCH 6, 1906.

52,220. FACE-POWDER. JOSEPH TETLOW, Philadelphia, Pa.
The words "SWAN DOWN."
Filed October 13, 1905. Serial No. 13,565. PUBLISHED MARCH 6, 1906.

52,221. REMEDIES FOR DISEASES OF THE THROAT, NASAL ORGANS, AND LUNGS. CHARLES J. ULRICI, New York, N. Y.
The word "MORRHUALTA" inclosed in quotation-marks.
Filed October 9, 1905. Serial No. 13,431. PUBLISHED MARCH 6, 1906.

52,222. LEATHER BOOTS AND SHOES. V. SCHOENECKER BOOT & SHOE COMPANY, Milwaukee, Wis.
The pictorial representation of a shoe on a diamond-shaped field of red color surrounded by a black border.
Filed September 11, 1905. Serial No. 12,690. PUBLISHED MARCH 6, 1906.

52,223. DYESTUFF. BADISCHE ANILIN- & SODA-FABRIK, Ludwigshafen-on-the-Rhine, Germany.
The word "RHEONINE."
Filed September 2, 1905. Serial No. 12,182. PUBLISHED MARCH 6, 1906.

52,224. DYESTUFF. BADISCHE ANILIN- & SODA-FABRIK, Ludwigshafen-on-the-Rhine, Germany.
The word "NEPTUNE."
Filed September 2, 1905. Serial No. 12,183. PUBLISHED MARCH 6, 1906.

52,225. DYESTUFF. BADISCHE ANILIN- & SODA-FABRIK, Ludwigshafen-on-the-Rhine, Germany.
The word "ASTACINE."
Filed September 2, 1905. Serial No. 12,184. PUBLISHED MARCH 6, 1906.

52,226. DYESTUFF. BADISCHE ANILIN- & SODA-FABRIK, Ludwigshafen-on-the-Rhine, Germany.
The word "MARS."
Filed September 2, 1905. Serial No. 12,185. PUBLISHED MARCH 6, 1906.

52,227. DYESTUFF. BADISCHE ANILIN- & SODA-FABRIK, Ludwigshafen-on-the-Rhine, Germany.
The word "FLAVANTHRENE."
Filed September 2, 1905. Serial No. 12,186. PUBLISHED MARCH 6, 1906.

52,228. DYESTUFF. BADISCHE ANILIN- & SODA-FABRIK, Ludwigshafen-on-the-Rhine, Germany.
The word "SORBINE."
Filed September 2, 1905. Serial No. 12,187. PUBLISHED MARCH 6, 1906.

52,229. DYESTUFF. BADISCHE ANILIN- & SODA-FABRIK, Ludwigshafen-on-the-Rhine, Germany.
The word "KRYOGENE."
Filed September 6, 1905. Serial No. 12,264. PUBLISHED MARCH 6, 1906.

52,230. DYESTUFF. BADISCHE ANILIN- & SODA-FABRIK, Ludwigshafen-on-the-Rhine, Germany.
The word "PYRAMINE."

Filed September 6, 1905. Serial No. 12,265. PUBLISHED MARCH 6, 1906.

52,231. DYESTUFF. BADISCHE ANILIN- & SODA-FABRIK, Ludwigshafen-on-the-Rhine, Germany.
The word "CYANANTHROL."
Filed September 6, 1905. Serial No. 12,266. PUBLISHED MARCH 6, 1906.

52,232. DYESTUFF. BADISCHE ANILIN- & SODA-FABRIK, Ludwigshafen-on-the-Rhine, Germany.
The word "INDANTHRENE."
Filed September 6, 1905. Serial No. 12,267. PUBLISHED MARCH 6, 1906.

52,233. DYESTUFF. BADISCHE ANILIN- & SODA-FABRIK, Ludwigshafen-on-the-Rhine, Germany.
The word "AUTOL."
Filed September 6, 1905. Serial No. 12,268. PUBLISHED MARCH 6, 1906.

52,234. DYESTUFF. BADISCHE ANILIN- & SODA-FABRIK, Ludwigshafen-on-the-Rhine, Germany.
The word "ANTHRAZUROL."
Filed September 6, 1905. Serial No. 12,269. PUBLISHED MARCH 6, 1906.

52,235. DYESTUFF. BADISCHE ANILIN- & SODA-FABRIK, Ludwigshafen-on-the-Rhine, Germany.
The word "LITHOL."
Filed September 6, 1905. Serial No. 12,270. PUBLISHED MARCH 6, 1906.

52,236. DYESTUFF. BADISCHE ANILIN- & SODA-FABRIK, Ludwigshafen-on-the-Rhine, Germany.
The word "CORVOLINE."
Filed September 8, 1905. Serial No. 12,376. PUBLISHED MARCH 6, 1906.

52,237. DYESTUFF. BADISCHE ANILIN- & SODA-FABRIK, Ludwigshafen-on-the-Rhine, Germany.
The word "MELANTHRENE."
Filed September 8, 1905. Serial No. 12,377. PUBLISHED MARCH 6, 1906.

52,238. DYESTUFF. BADISCHE ANILIN- & SODA-FABRIK, Ludwigshafen-on-the-Rhine, Germany.
The word "TYPOPHOR."
Filed September 8, 1905. Serial No. 12,378. PUBLISHED MARCH 6, 1906.

52,239. DYESTUFF. BADISCHE ANILIN- & SODA-FABRIK, Ludwigshafen-on-the-Rhine, Germany.
The word "CYANANTHRENE."
Filed September 8, 1905. Serial No. 12,380. PUBLISHED MARCH 6, 1906.

52,240. DYESTUFF. BADISCHE ANILIN- & SODA-FABRIK, Ludwigshafen-on-the-Rhine, Germany.
The word "CORVAN."
Filed September 8, 1905. Serial No. 12,381. PUBLISHED MARCH 6, 1906.

52,241. CORDIALS. BASILEA & CALANDRA, New York, N. Y.
The representation of a triangular or pyramidal shaped figure bearing the word "BASCAL," and to each end of said word "BASCAL" is arranged a triangular ornamentation.
Filed September 29, 1905. Serial No. 13,131. PUBLISHED MARCH 6, 1906.

52,242. CANNED VEGETABLES. THE BAXTER BROS CO., Brunswick, Me.
The word "EMPRESS."
Filed June 16, 1905. Serial No. 8,350. PUBLISHED MARCH 6, 1906.

52,243. CONDENSED MILK. BORDEN'S CONDENSED MILK CO., Jersey City, N. J., and New York, N. Y.
The facsimile of the signature of Gail Borden, deceased. Used ten years.
Filed June 10, 1905. Serial No. 7,815. PUBLISHED MARCH 6, 1906.

52,244. OLIVE-OIL. CHAFFARD & COUDERC, Salon, Bouches-du-Rhone, France.
The representation of a circle inclosing a triangular shield on which is a lion rampant, with the letters "S. S. P. Co." above the shield and the words "PURITAS ET CURA" arranged in proximity to the other sides of the shield.
Filed October 9, 1905. Serial No. 13,442. PUBLISHED MARCH 6, 1906.

52,245. LEATHER LEGGINGS. CHANAVAS & SLAZENGER, INC., New York, N. Y.
The word "AUTO."
Filed February 1, 1906. Serial No. 16,666. PUBLISHED MARCH 6, 1906.

52,246. MEDICINAL PREPARATION FOR THE TREATMENT OF DISEASES OF THE BLOOD AND SKIN. THE DR. PETER FAHRNEY & SONS CO., Chicago, Ill.
The words "ALPEN KRÄUTER."
Filed May 17, 1905. Serial No. 5,918. PUBLISHED MARCH 6, 1906.

52,247. LAXATIVE. DR. SHOOP FAMILY MEDICINE CO., Racine, Wis.
The hyphenated word "LAX-ETS."
Filed October 12, 1905. Serial No. 13,508. PUBLISHED MARCH 6, 1906.

52,248. IRISH AND SWEET POTATOES. EASTERN SHORE OF VIRGINIA PRODUCE EXCHANGE, Onley, Va.
The words "RED STAR BRAND," the letters and abbreviation "E S VA PRO EX," and a pictorial representation of a red star.
Filed June 21, 1905. Serial No. 8,687. PUBLISHED MARCH 6, 1906.

52,249. BUTTER. S. T. EDEL'S SONS, Baltimore, Md.
The representation of a beehive with bees hovering about and resting upon the same and an ornamental panel at the base thereof bearing the words "EDEL'S FINE BUTTER." Used ten years.
Filed August 10, 1905. Serial No. 11,511. PUBLISHED MARCH 6, 1906.

52,250. REMEDIES FOR STOMACH, INTESTINAL, AND BOWEL DISORDERS. E. J. HART & CO. LIMITED, New Orleans, La.
The word "LAC-BISMO."
Filed August 7, 1905, Serial No. 11,387. PUBLISHED MARCH 6, 1906.

52,251. ORANGES, LEMONS, AND GRAPE-FRUIT. FERNANDO FRUIT GROWERS ASSOCIATION, Fernando, Cal.
The representation of a train entering a tunnel, associated with the word "TUNNEL."
Filed June 14, 1905. Serial No. 8,107. PUBLISHED MARCH 6, 1906.

52,252. LIQUID REMEDY FOR LIVER AND BOWEL AILMENTS. H. JAYESS REMEDY CO., Baltimore, Md.
The word "LAXATATE."
Filed August 24, 1905. Serial No. 11,981. PUBLISHED MARCH 6, 1906.

52,253. TONIC REMEDY. THOMAS A. MILLER, Toledo, Ohio.
The word "OXOGEN" and the representation of an ox-head within a wreath of wheat, upon opposite sides of which appear bunches of grapes.
Filed May 13, 1905. Serial No. 5,560. PUBLISHED MARCH 6, 1906.

52,254. CANNED SEA FOODS. SNOW FLAKE CANNING CO., Brunswick, Me.
The words "SNOW FLAKE."
Filed June 16, 1905. Serial No. 8,349. PUBLISHED MARCH 6, 1906.

52,255. CHESTNUT-OAK EXTRACT. CLINTON A. SPENCER, Boston, Mass.
The words "ACME BRAND" and the representation of a diamond figure printed in green.
Filed April 7, 1905. Serial No. 756. PUBLISHED MARCH 6, 1906.

52,256. TOILET LOTION. MERTON E. WAITE, Syracuse, N. Y.
The words "BÊRA LOTION."
Filed October 24, 1905. Serial No. 13,890. PUBLISHED MARCH 6, 1906.

LABELS

REGISTERED MAY 1, 1906.

12,819.—*Title:* "HIGH GRADE." (For Overalls.) SMITH MANUFACTURING COMPANY, Durham, N. C. Filed February 19, 1906.

12,820.—*Title:* "FLEISHER CLOTHING." (For Clothing.) FLEISHER BROTHERS, Philadelphia, Pa. Filed April 10, 1906.

12,821.—*Title:* "HAVANA SECONDS." (For Cigars.) WOHL & COMSTOCK CO., Chicago, Ill. Filed March 24, 1906.

12,822.—*Title:* "THE BLACK CAT." (For Cigars.) A. G. WIEDMANN CIGAR BOX CO., St. Joseph, Mo. Filed April 5, 1906.

12,823.—*Title:* "GUITTARD'S PURE CREAM OF YEAST." (For Baking-Powder.) E. GUITTARD & CO., San Francisco, Cal. Filed April 3, 1906.

12,824.—*Title:* "SALAM-ALAKIM." (For Turkish Coffee.) PH. EXELBIRT & CO., New York, N. Y. Filed March 23, 1906.

12,825.—*Title:* "PACIFIC EVAPORATED CREAM." (For Evaporated Cream.) OREGON CONDENSED MILK CO., Hillsboro, Oreg. Filed April 9, 1906.

12,826.—*Title:* "RADNOR CLUB PURE RYE WHISKEY." (For Whisky.) JOHN LAFFERTY, Philadelphia, Pa. Filed April 7, 1906.

12,827.—*Title:* "GLINSMANN'S HIGH GRADE CONFECTIONS." (For Confections.) THE GROSSMAN PAPER BOX CO., Cleveland, Ohio. Filed April 10, 1906.

12,828.—*Title:* "ELLIOTT'S BRAIN AND NERVE FOOD." (For Brain and Nerve Food Tablets.) S. K. ELLIOTT, Los Angeles, Cal. Filed April 2, 1906.

12,829.—*Title:* "ELLIOTT'S DIGESTIVE TABLET." (For Digestive Tablets.) S. K. ELLIOTT, Los Angeles, Cal. Filed April 2, 1906.

12,830.—*Title:* "MURO." (For Medicine.) DANIEL S. HAGER, Chicago, Ill. Filed April 4, 1906.

12,831.—*Title:* "THE STAMPEDE MIXTURE." (For Medicine.) STAMPEDE REMEDY CO., San Francisco, Cal. Filed April 6, 1906.

12,832.—*Title:* "OHLANDT'S BLACK HEADACHE POWDERS." (For Medicine.) WILLIAM M. OHLANDT, Hoboken, N. J. Filed April 9, 1906.

12,833.—*Title:* "HOLLAND'S WONDERFUL RHEUMATIC REMEDY." (For Medicine for the Cure of Rheumatism.) MARY H. HOLLAND, Grand Rapids, Mich. Filed April 5, 1906.

12,834.—*Title:* "STAR INDIAN PASTILLE." (For Pastilles.) ERNEST A. WEIGEL, New York, N. Y. Filed April 10, 1906.

12,835.—*Title:* "GREAT WESTERN." (For Embroideries.) CARSON, PIRIE, SCOTT AND COMPANY, Chicago, Ill. Filed March 23, 1906.

12,836.—*Title:* "AMERICAN BEAUTY." (For Embroideries.) CARSON, PIRIE, SCOTT AND COMPANY, Chicago, Ill. Filed March 23, 1906.

12,837.—*Title:* "MARVEL." (For Ginghams.) CARSON, PIRIE, SCOTT AND COMPANY, Chicago, Ill. Filed April 5, 1906.

12,838.—*Title:* "ACME." (For Percales.) CARSON, PIRIE, SCOTT AND COMPANY, Chicago, Ill. Filed April 5, 1906.

12,839.—*Title:* "DUNEDIN." (For Percales.) CARSON, PIRIE, SCOTT AND COMPANY, Chicago, Ill. Filed March 29, 1906.

12,840.—*Title:* "E Z FIX." (For Combination Curtain and Window-Shade Holders.) CARSON, PIRIE, SCOTT AND COMPANY, Chicago, Ill. Filed April 5, 1906.

12,841.—*Title:* "BORDERLAND COAL." (For Coal.) BORDERLAND COAL COMPANY, Borderland, W. Va. Filed April 7, 1906.

PRINTS

REGISTERED MAY 1, 1906.

1,634.—*Title:* "JUMBO INDEXES SPORTSMANS' PLAYING CARDS." (For Playing-Cards.) THE UNITED STATES PLAYING CARD COMPANY, Cincinnati, Ohio. Filed April 5, 1906.

1,635.—*Title:* "THE JONES RAFTER SQUARE." (For a Rafter-Square.) RUSSELL & ERWIN MANUFACTURING CO., New Britain, Conn. Filed April 7, 1906.

1,636.—*Title:* "THE KISMET HOLDER." (For Glass and Bottle Holders.) ARDO HERING, New York, N. Y. Filed April 2, 1906.

1,637.—*Title:* "SOO TANNERY." (For Leather.) ERNEST S. GILE, Boston, Mass. Filed April 9, 1906.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

LIPSCOMB *v.* PFEIFFER.

Decided February 1, 1906.

INTERFERENCE—MOTION TO REOPEN—JURISDICTION OF EXAMINER OF INTERFERENCES.

Where a motion is brought to restore the jurisdiction of the Examiner of Interferences for the purpose of considering a motion to reopen the interference after judgment against the moving party and after the limit of appeal has expired, *Held* that said party should have a hearing upon the question whether the showing made by him is sufficient to warrant reopening the case, and the jurisdiction of the Examiner of Interferences is therefore restored.

ON MOTION.

BOOT-CALK.

Messrs. C. A. Snow & Co. for Lipscomb.

Messrs. Sturtevant & Greeley for Pfeiffer.

ALLEN, *Commissioner:*

This is a motion by Lipscomb to restore the jurisdiction of the Examiner of Interferences for the purpose of considering a motion to reopen the above-entitled interference after judgment against him on the record and after the limit of appeal has expired.

It is very clear that a motion to reopen filed as late as the present one should not be granted except upon a showing which is very clear and satisfactory. Upon the present motion, however, it is neither necessary nor proper to consider and pass upon the sufficiency of the showing which has been made, since that is a matter to be determined by the Examiner of Interferences in case his jurisdiction is restored. The only question now presented is whether the party Lipscomb shall be given a hearing upon the question whether the showing made by him is sufficient to warrant reopening the case. It is believed that he should be permitted to present and argue that question, and therefore the motion to restore jurisdiction to the Examiner of Interferences is granted.

EX PARTE GLAFKE.

Decided February 7, 1906.

APPLICATION—NOTICE OF ALLOWANCE.

Where a showing is made that the notice of allowance of an application was not received, but it was not alleged that no notice was mailed, and the records indicate that it was mailed, *Held* that this Office has no jurisdiction to extend the time for payment of the final fee directly or indirectly, and a request that a new notice of allowance be sent cannot be granted.

ON PETITION.

BAKING AND DRYING OVEN OR CHAMBER.

Messrs. Hazard & Harpham for the applicant.

ALLEN, *Commissioner:*

This is a petition that the allowance of the above-entitled application dated October 3, 1904, be set aside and that a new notice of allowance be sent.

It appears that a notice of allowance in the case was mailed to the applicant's attorneys on October 3, 1904; but it is said in affidavits filed that the records of the attorneys' office do not show that such notice was received by them, and to the best of their information and belief it was not received. It is not alleged that no notice was mailed, and the record indicates clearly that it was mailed. Under such circumstances this Office has no jurisdiction to extend the time for the payment of the final fee, either directly or indirectly. The statute is mandatory and requires that if the final fee is not received within six months after allowance the patent shall be withheld.

The petition is denied.

EX PARTE MYERS.

Decided February 9, 1906.

AMENDMENT—CLAIMS RECOMMENDED BY EXAMINERS-IN-CHIEF REJECTED ON NEW REFERENCES.

Where claims which were recommended by the Examiners-in-Chief are rejected by the Primary Examiner on new references, the applicant is not entitled to amend the same or substitute new claims therefor.

ON REHEARING.

MOP-WRINGING MACHINE.

Messrs. Risley & Love and *Mr. Hubert E. Peck* for the applicant.

ALLEN, *Commissioner:*

This is a petition for a rehearing of a petition filed herein on September 12, 1905, and decided October 28, 1905.

The petitioner seeks to substitute new claims for claims recommended by the Examiners-in-Chief and subsequently rejected by the Examiner upon new references. He urges that he is entitled to amend because new references are cited; but if his contention were sustained it would follow that the recommendation of a claim by the Examiners-in-Chief would result in an entire reopening of the case in every instance. Such is clearly not the intent or meaning of the rule. The proper view seems to be that if the claim recommended is found to be unpatentable it was a mistake by the Examiners-in-Chief to have recommended it. That mistake does not entitle the applicant to a reopening of the case for the prosecution of other claims.

The petition is denied.

EX PARTE THEODOR AND CARL WEIL.

Decided February 24, 1906.

RENEWAL—FORFEITED APPLICATION—SECOND RENEWAL REFUSED.

The practice of the Patent Office in refusing to entertain a second renewal application is founded upon opinions of the Attorney-General and will not be departed from until such opinions are withdrawn by the Attorney-General or overruled by the courts.

ON PETITION.

EDISON SOCKET AND PLUG CONTACT.

Mr. B. Singer and *Mr. C. Le Roy Parker* for the applicants.

ALLEN, *Commissioner:*

This is a petition asking that a renewal fee be applied to an application which has been twice forfeited for failure to pay the final fee.

The practice of this Office in refusing to entertain a second renewal application is founded upon opinions of the Attorney-General, published in 69 O. G., 639, 1894 C. D., 111, and in 70 O. G., 493, 1895 C. D., 95.

Administrative officers should regard the opinions of the Attorney-General upon questions referred to him for his opinion under section 356 of the Revised Statutes as law until either withdrawn by the Attorney-General or overruled by the courts. (See 20 Op. Atty-Gen., pp. 648, 655, 1893; 20 Op. Atty-Gen., 719, 1894; also *Berger* v. U. S., 36 Ct. Claims, 247, 1901.)

The opinion of the Attorney-General is deemed to be controlling on the question presented, and it would therefore be useless to enter upon a discussion of the same.

The petition is denied.

DECISIONS OF THE U. S. COURTS.

Court of Appeals of the District of Columbia.

LAAS AND SPONENBURG *v.* SCOTT.

Decided December 5, 1905.

1. INTERFERENCE—PROVING DATES—DOCUMENTS USED TO REFRESH MEMORY—NOT ADMISSIBLE IN EVIDENCE.

Where a witness testified positively to an alleged date and stated that he was able to fix the date by the daily work record of his company, *Held* that it was not necessary to offer the record in evidence and that the record was not admissible in evidence at all. The entry could only serve to refresh the memory of the witness and enable him to explain why he could fix the date with certainty, but that if counsel had been abundantly careful he would have had the book containing the entry produced and submitted to the inspection of his opponent.

2. SAME—SAME—SAME—PREFERABLE TO FIXING DATE BY SOME OCCURRENCE OR EVENT.

There is no reasonable difference between a statement made by a witness fixing a date by reference to an original paper or to a regular business entry in a book in the possession of a person within the jurisdiction and one fixing it by reference to something calculated to fix it in mind claimed to have happened to him or in the community about the same time. A statement of the former character would be preferable, in the interests of justice, for if untrue it would ordinarily furnish ample opportunity to completely discredit the witness.

3. SAME—DILIGENCE—COMMERCIAL ACTIVITY INSUFFICIENT.

Diligence in attempting to secure capital to engage in the manufacture of the device or to exploit the invention is not the diligence in reducing to practice required of the first to conceive, but the last to reduce to practice, in order to hold the field.

4. SAME—PRIORITY OF INVENTION—LACK OF DILIGENCE.

Held that Scott, although the first to conceive the invention, was the last to constructively reduce it to practice and was not exercising diligence in perfecting it when Laas and Sponenburg entered the field and that therefore Laas and Sponenburg are to be regarded as the first inventors.

Mr. J. B. Connolly, Mr. J. H. Raymond, and *Mr. O. R. Barnitt* for the appellants.

Mr. E. H. Battam and *Mr. Wm. G. Henderson* for the appellee.

SHEPARD, *J.:*

Laas and Sponenburg appeal from the decision of the Commissioner of Patents in an interference proceeding, awarding priority to John M. Scott of the invention defined in the following issue:

1. A railway-rail stay consisting of two separate rail-gripping jaws fulcrumed on the rail-flanges and with horizontally-prolonged bottom bearings sustained out of contact with each other and abutting the side of the tie, lugs projecting from said bottom bearings, and a bolt engaging the lugs and provided with means for drawing the jaws into engagement with the rail as set forth.

2. A railway-rail stay consisting of separate laterally-movable rail-gripping jaws, each formed with a bottom portion bearing on the under side of the rail and with a depending lug, a bolt passing through the lugs and provided with a head on one end and with a nut on the opposite end, and an abutment depending from the bottom bearing of one of the jaws as set forth and shown.

The appellants were first to enter the Patent Office, having filed their joint application December 16, 1903, which was followed by a patent granted thereon April 19, 1904. Appellee's application was filed March 10, 1904. The ordinary burden of proof imposed upon the latter as junior applicant, is not increased by the patent granted his opponents while his application was pending.

Scott, in his preliminary statement, alleged conception May 5, 1902; making of patterns before May 12, 1902; manufacture and putting upon sale late in 1903.

Laas and Sponenburg alleged joint conception of the invention June 27, 1903, making of model and castings on June 29, 1903.

The Examiner of Interferences decided in favor of Scott. His conclusions were, that Scott conceived in May, 1902, but did not reduce to practice; that there was no certain date of conception proved by the appellants prior to their filing date; and that Scott was using diligence when they entered the field. The decision of the Examiners-in-Chief is in substantial agreement. The Commissioner briefly states his acceptance of the conclusions of the other tribunals, and directs his attention to the consideration of the questions, whether Scott was entitled to make the claims of the issue, or there was an interference in fact. Those are not before us.

Before entering upon the consideration of the points involved, it will not be irrelevant to give a brief history of the art and of the several inventors' connection therewith. It has been long known that the rails of a railway-track have a tendency to "creep," that is, to move longitudinally in the direction which the trains of cars take. With the great increase of weight in engines and freight-cars, and the doubling of tracks through which the pressure on each track is almost entirely in one direction, the results of "creeping" have increased to such an extent as to require frequent repairing of tracks at crossings and side tracks with switches. The difficulty is particularly great at crossings of other railways.

Laas is a railway superintendent and has been connected with steam-railway operation for about twenty-three years, as civil engineer, road-master, and superintendent of construction, successively. Sponenburg is a track-foreman and has been engaged in railway construction for twenty-five years. In 1898, the latter had his attention

specially directed to the creeping of the rails, and in October, 1900, he filed an application for a patent for his first device to meet the condition. In the latter year he showed the device to Laas and they associated themselves together for the purpose of making improvements in the same line. Jointly, they were granted patents on July 1, 1902, February 10, 1903, May 3, 1904, May 17, 1904, as well as the one in issue, April 19, 1904.

It is enough to say of the earlier patents that they show a clamping device differing, to speak in general terms, from the subject-matter of the interference, in that the connecting-bolt between the jaws of the former was formed integrally with one of the jaws, while in the latter it is separable from both jaws, but extending through each.

Scott was a mechanic and pattern-maker with an inventive talent, who had invented several different devices. Among these was a band-fastener which having been for a time exploited and sold by him in connection with a business associate named Walker, had been disposed of entirely. Other inventions consisted of "snap-flasks," ball-bearings for mowers and reapers, "car-movers," and bumping-posts for railway-tracks.

Without discussing the evidence, we are content to accept the conclusions of the Patent Office tribunals to the effect that Scott conceived the invention of the issue in May, 1902, but that his experiments therewith did not amount to actual reduction to practice. We are not satisfied, however, with the conclusion of the Examiner of Interferences that the appellants failed to show an earlier conception than is evidenced by their application for patent, which conclusion the succeeding tribunals adopted without discussing the grounds upon which it was rested. We are compelled to regard those grounds as insufficient. Laas and Sponenburg testified positively that they conceived the invention and had castings made from their model in the Belle City Malleable Iron Company's works, at Racine, Wis., on June 29, 1905. In this statement they were supported by the son of Sponenburg and by Bryan, the assistant manager of said company, Fisher, the foreman in the pattern-room, and Blatz, the shipping-clerk. These witnesses were neither impeached nor contradicted, and their testimony disclosed no inconsistencies. Bryan has some interest because his company is now manufacturing under appellants' patent through a license; but the two mechanics have no apparent interest. Moreover, none of the tribunals aforesaid has intimated a doubt of their general truthfulness. The witnesses, Sponenburg, Jr., Bryan, Fisher, and Blatz gave the date of making the castings, but their evidence was not accepted as proving it because they testified from memory alone and gave no reference to anything to fix the date. The reason for rejecting the date fixed by Laas and Sponenburg, the elder, is thus given in the decision of the Examiner of Interferences:

Sponenburg's testimony shows that in stating the date of conception of the invention he depended entirely upon what he was told by the Belle City Malleable Iron Company, and Laas also bases his testimony upon what the records of that company show. These records, as before stated, are not in evidence. It does not appear that either Laas or Sponenburg ever saw them, or that Bryan, the secretary and treasurer of the company, referred to them before testifying. It would have been an easy matter for Laas and Sponenburg, or their witness, Bryan, an officer of the Belle City Malleable Iron Company, to have produced the records of that company. Instead of doing so, they merely make vague references to these records and do not even testify that they consulted them for the purpose of refreshing their memories before testifying. In *Blatch* v. *Archer* (Cowper, 63, 65) referred to and quoted in *Kerby* v. *Tallmadge* (160 U. S., 379), Lord Mansfield laid down the rule that "all evidence is to be weighed according to the proof which it was in the power of one side to have produced and in the power of the other side to have contradicted." The failure of Laas and Sponenburg to produce the best evidence of their date of conception, when that evidence was easily accessible to them, detracts greatly from the weight of such testimony as they have produced on this point, and renders it extremely doubtful whether they are entitled to any date of conception prior to the date of their application for a patent.

The failure of Laas and Sponenburg to satisfactorily fix the date of their entry into the field renders uncertain the extent of the period during which it is incumbent upon Scott to show diligence. Under the circumstances it appears that any doubts on the subject should be resolved in Scott's favor.

Turning to the depositions, it appears that Sponenburg testified positively to the alleged date of making the castings in his direct examination. When asked, on cross-examination, what enabled him to fix the date, he said:

I got this statement from the Belle City Iron Co. or Mr. Bryan as he had the dates the day I went up there. And I got the dates through Mr. Bryan when this pattern was made. I very seldom kept dates of anything of this kind, as I knew that I could get it at the factory at any time.

Counsel for the appellee did not follow up this inquiry and abstained from making a similar inquiry of Laas or Bryan, or the two mechanics. The Examiner of Interferences treated this statement of Sponenburg as hearsay evidence upon the idea that the company's daily record of work done was the thing to be offered in evidence. This idea was a mistaken one. The record was not admissible in evidence at all. The entry could only serve to refresh the memory of the witness, and enable him to explain why he could fix a date with certainty. If the counsel representing the appellants had been abundantly careful, he would have had the book containing the entry produced, and submitted to the inspection of his opponent. As we view it, had such a book been produced, showing entries in due order and course of business, and free of suspicious circumstances, the point might have been conclusively settled. As the question was asked, it was natural for the witness to answer substantially as he did. He gave the date and referred specifically to the means of its certain establishment. If it had been shown that there was no such entry he would have been discredited. The examination was conducted in Racine, Wis., where the books, if in existence, must have been at the time. From the statement of the witness, opposing counsel might reasonably have apprehended that the books, if called for, could be produced. The course that he pursued in refraining from pursuing his inquiry concerning the book entry was one that would have suggested itself to a skilful examiner entertaining the apprehension before suggested. We see no reasonable difference between a statement made by a witness, fixing a date by reference to an original paper in the possession of a person within the jurisdiction, or to a regular business entry in such person's books, and one fixing it by reference to something calculated to fix it in mind, claimed to have happened to him or in the community about the same time. A statement of the former character would be preferable, in the interests of justice, for if untrue, it would ordinarily furnish ample opportunity to completely discredit the witness. Bryan, the assistant manager of the company, was examined at the same hearing and testified to the date, and could have been called upon to produce the record if there was reason to apprehend that it would not have supported the reference. Considering all of the circumstances, we are forced to the conclusion that the evidence was sufficient to establish June 29, 1903, as the date of the appellants' conception of the invention.

Nor are we able to perceive that appellants' failure to immediately manufacture the newly-invented railway-rail stay, and introduce it into the market, affords any

reasonable foundation for denying the date claimed for their conception. They were manufacturing the device of the former patents and disposing of them. Their manufacturer had large quantities on hand in anticipation of orders, and there was no competition then in the market. The change of devices would not only have hindered the sale of these, but also have necessitated extra expenditure in making a vast number of new patterns for casting, as testified to by Bryan. In addition it appears that a casting was sent to appellants' patent solicitor in the fall of 1903, and after some delay a patent was applied for on December 16, 1903. On the other hand, Scott, who had conceived the invention and made a casting by May 12, 1902, did nothing at all until late in the fall of 1903, when he commenced to manufacture for the market; and his application was delayed until March 10, 1904.

As it has been found that Scott was the first to conceive the invention, it remains to consider whether he was exercising diligence on June 29, 1903, when the appellants made their first casting. In deciding that he was diligent on or before December 16, 1903, the date of conception accorded to the appellants, the tribunals of the Patent Office were governed by the fact that, shortly before, he had commenced to manufacture his device and put it upon the market in quantities. The date of conception accorded by us to the appellants carries them back several months earlier than this beginning of activity on the part of Scott. During the entire time between May 12, 1902, and June 29, 1903, Scott did nothing beyond making frequent attempts, from week to week, to induce Walker to join him in the exploitation of his invention. Walker was a man of business enterprise and capital and had been interested with Scott, who gave him his implicit confidence, in the exploitation of the patent for the band-fastener which had been sold to one Tecktonius late in 1901 or early in 1902. Scott says that he did not so much need Walker's money as his business capacity and management. He wanted no one but Walker to join him, and made no effort to procure any other. Walker was not willing to undertake the matter until October, 1903, when he agreed to enter into a contract which was executed in writing in December. Scott, meanwhile, was working on other inventions. One of these was the bumping-post, before referred to, and patent therefor was applied for before this was filed—the date not given.

Scott was not penniless. He was in receipt of deferred payments on account of the sale of the band-fastener, and admits that he could have furnished the money to make application for a patent. Having taken out a patent or patents before, he had a general knowledge of the requirements and cost. To hold that Scott's efforts to secure Walker's coöperation, prolonged for more than a year before his rivals entered the field, would be in opposition to the general principle governing the rule of diligence in the Patent Office that has been approved by this court in analogous cases. (*Seeberger* v. *Dodge*, 24 App. D. C., 476, 485. The facts therein presented made out a case of waiting upon financial assistance, in some respects, stronger than in this. The subject-matter of the invention (an escalator) was a very expensive one to construct. In discussing an excuse for delay similar to that under consideration, and affirming the decision of the Commissioner of Patents, it was said:

> One having the first complete conception of an invention cannot hold the field against all comers by diligent efforts, merely, to organize and secure capital to engage in the manufacture of his device or mechanism for commercial purposes. This is a different thing from diligence in actual reduction to practice. (*Wyman* v. *Donnelly*, 21 App. D. C., 81, 87.) As said by the Commissioner of Patents in *Kasson* v. *Hetherington*, (88 O. G., 1157,) "diligence will not wait on business arrangements." (See *Paul* v. *Hess*, *ante*, 462.) Granting the contention that actual reduction to practice is preferable to that which is constructive, merely, as more to the interest of the public, and that reasonable indulgence ought to be extended to one pursuing that course in good faith, yet, when the construction of an experimental device involves so great cost and risk that an inventor, though possessed of sufficient means, may well hesitate to undertake the same entirely at his own expense, due diligence requires that he should then attempt to secure his right and promote the public interest by filing an application for a patent. (*Dodge* v. *Fowler*, 11 App. D. C., 592, 599; *Platt* v. *Shipley*, 11 App. D. C., 576, 583; *Marvel* v. *Decker*, 13 App. D. C., 562, 565; *Cross* v. *Phillips*, 14 App. D. C., 228, 240.)

The manufacture of the invention in this case to a moderate extent, at least, would not have involved great expense, and Scott was able to undertake it. Failing that, he could easily have applied for a patent before June 29, 1903.

In our opinion the appellants are entitled to the award of priority. The decision in favor of Scott will, therefore, be reversed, and the proceedings herein certified to the Commissioner of Patents in accordance with law. It is so ordered. Reversed.

Court of Appeals of the District of Columbia.

IN RE CAHN, BELT & COMPANY.

Decided March 7, 1906.

1. TRADE-MARKS—SEAL OF STATE NOT REGISTRABLE—ACT FEBRUARY 20, 1905, CONSTRUED.

A trade-mark for whisky consisting of a pictorial representation of the arms and seal of the State of Maryland, with certain additions or variations, is not entitled to registration under the last proviso of the fifth section of the Trade-Mark Act of February 20, 1905, (33 Stat. L., 724, ch. 592,) as it simulates the arms and seal of the State of Maryland and violates the express provision of such section which prohibits the registration of any mark which "consists of or comprises the flag or coat-of-arms or other insignia of the United States or any simulation thereof or of any State."

2. SAME—ACT REFERS TO MARKS WHICH ARE NOT TECHNICAL TRADE-MARKS.

The last proviso of section 5 of the Trade-Mark Act of February 20, 1905, relating to the registration of marks which had been in actual and exclusive use for ten years, was intended to provide for the registration and protection of marks which were not technical trade-marks, but which had been actually used as trade-marks by the applicants or their predecessors from whom they derived title and in which the user had acquired property rights for more than ten years next preceding the passage of the act.

3. SAME—USE OF SEAL OF A STATE CANNOT BE EXCLUSIVE.

A mark which simulates the arms or seal of the State of Maryland is not registrable under the last proviso of the fifth section of the Trade-Mark Act of February 20, 1905, providing for the registration of marks which had been in actual and exclusive use by the applicants for ten years next preceding the passage of the act, as the use was not *exclusive*. Applicants could never acquire such a property right in the seal or the coat-of-arms of the State of Maryland as to *exclude* the State from the use thereof. (*Gilman* v. *Hunnewell*, 122 Mass., 147; *Commonwealth* v. *Sherman Mfg. Company*, 75 N. E., 71.)

4. SAME—USE IN TRADE OF PUBLIC INSIGNIA AGAINST PUBLIC POLICY.

That the use of the coat-of-arms of the United States or of the flag or of armorial bearings and decorations for purposes of trade is against public policy or order has been recognized by the legislatures of various States in acts prohibiting their use, in the International Convention for the Protection of Industrial Property, concluded at Paris March 20, 1883, and by the Commissioners of Patents in refusing registration to marks of this character, and it was in recognition of this public policy that Congress inserted the provision prohibiting the registration of such marks.

Mr. Arthur Steuart and *Mr. Frank M. Phelps* for the appellant.

Mr. John M. Coit for the Commissioner of Patents.

McCOMAS, *J.*:

This is an appeal from the decision of the Commissioner of Patents affirming the decision of the Examiner of Trade-Marks refusing to register in the Patent Office an alleged trade-mark.

The application of Cahn, Belt & Company for registration was made under the act of February 20, 1905. This appeal was taken under section 9 of that act.

This act of February 20, 1905, intended to authorize the registration of trade-marks and to protect the same. It went into effect April 1, 1905, and on that day the appellants, Cahn, Belt & Company, filed in the Patent Office an application for the registration of the mark used upon whisky, the mark being thus described in the application:

> A pictorial representation of the arms and seal of the State of Maryland, with certain additions or variations, as follows: The shield bears upon its face a representation in solid black of a trefoil or clover-leaf, or the device termed a "club" used upon playing-cards. Upon the breast of the eagle, above the shield is a monogram of the letters "C. B. & Co." Within and close to a circular border which surrounds the coat-of-arms are the words "The Great Seal of Maryland" and the numbers "1632" and "1854." Between this border and an outer circle are the words "Maryland Club Pure Old Rye Whiskey, C. B. & Co. Special Trade-Mark;" but the latter words and the outer circle inclosing them may be omitted or changed at pleasure, and the monogram may be omitted or otherwise displayed without affecting the character of our trade-mark.

This mark was refused registration because the Commissioner of Patents held that it simulates the arms and seal of the State of Maryland and violates the express prohibition in section 5 of the act before mentioned, and also the provisions of the International Convention for the Protection of Industrial Property of March 20, 1883, Article VI, and is contrary to public policy as frequently declared in a series of decisions of the Commissioner of Patents refusing registration of trade-marks to public insignia.

This application admits that the mark is "a pictorial representation of the arms and seal of the State of Maryland with certain additions or variations." The Commissioner of Patents decided that the mark was for this reason properly refused registration by the Examiner of Trade-Marks because such marks belong to one of the classes forbidden by section 5, of the act of February 20, 1905, which is as follows:

> Sec. 5. That no mark by which the goods of the owner of the mark may be distinguished from other goods of the same class shall be refused registration as a trade-mark on account of the nature of such mark unless such mark—
> (*a*) Consists of or comprises immoral or scandalous matter;
> (*b*) Consists of or comprises the flag or coat-of-arms or other insignia of the United States, or any simulation thereof, or of any State or municipality, or of any foreign nation: *Provided*, That trade-marks which are identical with a registered or known trade-mark owned and in use by another, and appropriated to merchandise of the same descriptive properties, or which so nearly resemble a registered or known trade-mark owned and in use by another, and appropriated to merchandise of the same descriptive properties, as to be likely to cause confusion or mistake in the mind of the public, or to deceive purchasers, shall not be registered: *Provided*, That no mark, which consists merely in the name of an individual, firm, corporation, or association, not written, printed, impressed, or woven in some particular or distinctive manner or in association with a portrait of the individual, or merely in words or devices which are descriptive of the goods with which they are used, or of the character or quality of such goods, or merely a geographical name or term, shall be registered under the terms of this act: *Provided further*, That no portrait of a living individual may be registered as a trade-mark, except by the consent of such individual, evidenced by an instrument in writing: *And provided further*, That nothing herein shall prevent the registration of any mark used by the applicant or his predecessors, or by those from whom title to the mark is derived, in commerce with foreign nations or among the several States, or with Indian tribes, which was in actual and exclusive use as a trade-mark of the applicant or his predecessors from whom he derived title for ten years next preceding the passage of this act.

This section says that no mark shall be refused registration as a trade-mark upon account of the nature of the mark unless it—

> (*a*) Consists of or comprises immoral or scandalous matter;
> (*b*) Consists of or comprises the flag or coat-of-arms or other insignia of the United States, or any simulation thereof, or of any State.

The section declares that no mark shall be refused registration as a trade-mark on account of its nature unless by its nature it is immoral or scandalous, or is the coat-of-arms of the United States or of a State, or some simulation thereof.

While this act provided generally for the registration of trade-marks, the fifth section expressly prohibited the registration as trade-marks of immoral or scandalous matter and public insignia. The last proviso of this section which was in the bill when it passed the House of Representatives, was amended in the Senate by twice substituting the word "mark" for the word "trade-mark" and in inserting in lieu of "and lawful" the word "exclusive." It is clear to us that these changes were made for the purpose of permitting the registration of marks which were not trade-marks but which had been actually used as trade-marks by the applicants or their predecessors, from whom they derived title, and in which the user had acquired property rights for more than ten years next preceding the passage of the act.

The last proviso of section 5, as amended and passed, was not intended to provide for the registration of technical trade-marks, for such marks had been cared for elsewhere in this act. This proviso permitted the registration of marks, not in either of the classes prohibited by this section, if such marks were in actual and exclusive use as a trade-mark for ten years next preceding the passage of the act. In respect of technical trade-marks, this proviso was absolutely useless. It was intended to save the right of registration to the marks described in the proviso.

The section had prohibited the registration of immoral or scandalous matter and public insignia as trade-marks, no matter how long the same had been before registered, and the proviso only extended the right of registration to marks not within either of the prohibited classes, if such marks had been in actual and exclusive use as a trade-mark during the ten years next preceding the passage of the act.

The ten-year proviso in no wise relates to the applicants' trade-mark for whisky, for the proviso relates only to marks which are not technical trade-marks. Among such marks, the two classes prohibited by the section were not saved by the proviso, and only such marks not prohibited by the section as were in actual and exclusive use for ten years as a trade-mark were to be admitted to registration.

The act permitted the registration of all trade-marks not within the prohibited classes. It is plain this proviso in extending to marks not technical trade-marks the right to registration, intended to confine the marks permitted registration to such as would be legitimate trade-marks under this section. The fifth section, taken in its entirety, which prohibited the registration of technical trade-marks when such were scandalous or immoral or simulations of public insignia, did not at the same time permit marks in actual and exclusive use for ten years to be registered as trade-marks if such marks were either scandalous or immoral or simulations of public insignia. To permit under this proviso to the section the registration of a scandalous mark

and to prohibit under the section the registration of a technical trade-mark which was scandalous, would be absurd. The proviso which was meant to be a saving clause for certain marks cannot be construed to make the marks thus saved a preferential class of marks to which the two prohibitions of the section do not apply.

The applicants' mark would not be a mark within the meaning of this last proviso to section 5, because it was not in actual and *exclusive* use as a trade-mark for ten years next preceding the passage of this act.

The application in this case admits that the mark we are now considering is a simulation of the arms or seal of the State of Maryland, with variations it is true, but still a simulation of the coat-of-arms of Maryland. The coat-of-arms of Maryland was never in the exclusive use of the applicants during any period, nor could the applicants ever acquire an exclusive use as a trade-mark of the State coat-of-arms. In the sense of this proviso, the applicants had the actual but never had the *exclusive* use of this simulation of the Maryland coat-of-arms, and for this reason the appellants' trade-mark sought to be registered does not come within the last proviso of the fifth section. The appellants never could acquire such property right in the coat-of-arms of Maryland, or any simulation thereof, against the State of Maryland.

In the leading case of *Gilman* v. *Hunnewell* (122 Mass., 147) Chief Justice Gray said: "A trade-mark may consist of a name, or a device, or a peculiar arrangement of words, lines or figures in the form of a label, which has been adopted and used by a person in his business to designate goods of a particular kind manufactured by him, and which no other person has an equal right to use." This may be protected by injunction. Can it for a moment be said that the Commonwealth cannot use its own device, or that the defendant can obtain an injunction against the Commonwealth for so doing?

As against the Commonwealth the defendant cannot have any claim to a trade-mark. Could any one suppose that this court would allow its seal to be used as a trade-mark? And if a court's seal cannot be used, cannot the great and general court forbid the use of the great seal and the arms of the Commonwealth "for any advertising or commercial purpose?" It seems to us too clear for argument. (*Commonwealth* v. *Sherman Mfg. Co.*, Supreme Court of Mass.; 75 *Northeastern Reporter*, 71.)

The Commissioners of Patents in recent years have steadily held that the registration of the coat-of-arms of the United States or of any State should be refused registration as being against public policy. (*Ex parte Schmachtenburg Bros.*, 51 MS. Dec., 204; *New Prague Flouring Mill Co.*, 62 MS. Dec., 437.)

Commissioner Duell, now associate justice of this court, refused to register similar marks in *ex parte Penny*, (67 MS. Dec., 38;) *The Celluloid Company*, (67 MS. Dec., 136;) *ex parte Standard Fashion Co.*, (89 O. G., 189;) *ex parte Ball*, (98 O. G., 2366.)

In *ex parte Brandsville Fruit Farm Company* (103 O. G., 660) registration was refused of the United States seal for the reason "that the use of such emblems is against public policy and is not to be encouraged." In refusing registration to the appellants' mark, Commissioner Allen says:

> The public policy referred to has been recognized by the legislatures of various States and by reason thereof statutes have been passed prohibiting the use of the flag for purposes of trade. This policy and the reasons underlying it were recognized by the International Convention for the Protection of Industrial Property concluded at Paris, March 20, 1883, since in article 6 it was said: "The deposit may be refused, if the object, for which it is asked, is considered contrary to morals and to public order," and in the final protocol, it was said:
>
> "In order to avoid all misinterpretation, it is understood that the use of public armorial bearings and decorations may be considered contrary to public order in the sense of final paragraph of article 6."
>
> It was in recognition of this public policy and not as establishing it, that Congress inserted the provision in section 5 of the act of February 20, 1905, prohibiting the registration of any mark which "consists of or comprises the flag or coat-of-arms or other insignia of the United States or any simulation thereof or of any State or municipality or of any foreign nation."

In 5 Wallace, 462, 469, Chief Justice Chase, speaking for the Court said:

> This Court can know nothing of public policy except from the Constitution and the laws and the course of administration decisions. * * * Considerations of that sort must in general be addressed to the legislature. Questions of policy determined there are considered here.

For the reasons well stated by Commissioner Allen, Congress has determined by the very section of the act we are now considering to enforce a wise public policy by prohibiting the registration of the coat-of-arms of a State as a trade-mark.

The United States has united in an international convention with nearly all other nations in refusing to include public arms as trade-marks. Had the act we are now considering been silent on this subject, the international convention to which the United States had long been a party would have suggested the acquiescence of Congress in the refusal to register coats-of-arms of a State, but since in this general statute for registration of trade-marks Congress has expressly declared that registration shall be refused to trade-marks consisting of scandalous or immoral matter, or coats-of-arms of a State, or any simulation thereof, it is impossible to hold that the last proviso to section 5 in this act was intended to except one class of marks only from the unequivocal declaration of Congress against the registration of such trade-marks.

The decision of the Commissioner of Patents in this case must be affirmed.

It is not necessary to discuss the appellants' citation of rules for the construction of provisos in statutes. It is impossible to read the act of February 20, 1905, and escape conviction that Congress intended to prohibit the registration of the trade-mark which the appellants ask.

> The intent is the vital part, the essence of the law, and the primary rule of construction is to ascertain and give effect to that intent. "The intention of the legislature in enacting a law is the law itself, and must be enforced when ascertained, although it may not be consistent with the strict letter of the statute. Courts will not follow the letter of a statute when it leads away from the true intent and purpose of the legislature and to conclusions inconsistent with the general purpose of the act." (*Lewis' Sunderland Statutory Construction*, sec. 633.)

In our opinion the intent of this statute upon this point is so clearly expressed that it needs no argument.

The act of February 20, 1905, was intended to provide for the registration of marks already owned by traders. The last proviso to section 5 was intended to refer only to marks owned by the applicants and in their actual and exclusive use for ten years. A party having a technical trade-mark must apply for registration under the provisions of this act relating to technical trade-marks. This last proviso is a ten-year saving clause for another class of marks.

It is plain from this act that Congress did not intend that any of its provisions should warrant the registration of any trade-mark which is contrary to the terms of the Convention for the Protection of Industrial Property to which the United States is a party.

The case of *Ruhstrati* v. *The People* (185 Ill., 133) is not satisfactory reasoning. It appears that a strong minority of that court were also dissatisfied with the argument of the majority in favor of making merchandise of the flag.

The circumstance in this case and in several others urged upon us by the appellants, that Congress had been silent upon this subject, has lost force, since Congress in this act has expressly prohibited the registration as trade-marks of the coats-of-arms of the Nation and of the States. Other cases cited by the appellants need not be reviewed here since we hold that the act of Congress itself effectually forbids the registration of the simulation of the coat-of-arms of Maryland.

The clerk of the court will certify this opinion and the proceedings of the court in this cause to the Commissioner of Patents according to law. Affirmed.

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

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Patents	677—No.	819,706	to No.	820,382, inclusive.
Designs	22—No.	37,988	to No.	38,009, inclusive.
Trade-Marks	290—No.	52,257	to No.	52,546, inclusive.
Labels	30—No.	12,842	to No.	12,871, inclusive.
Prints	22—No.	1,638	to No.	1,659, inclusive.
Reissues	3—No.	12,478	to No.	12,480, inclusive.
Total issue	1044			

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama	1	1	Nevada	.....	.....
Alaska, District of	.....	.....	New Hampshire	1	1
Arizona Territory	1	.....	New Jersey	36	18
Arkansas	3	.....	New Mexico Ter't'y	.....	.....
California	26	7	New York	96	103
Colorado	14	1	North Carolina	3	.....
Connecticut	17	2	North Dakota	2	1
Delaware	.....	1	Ohio	61	29
District of Columbia	5	2	Oklahoma Territ'y	4	.....
Florida	1	1	Oregon	1	.....
Georgia	7	2	Pennsylvania	61	39
Hawaii Territory	.....	.....	Porto Rico	.....	.....
Idaho	.....	.....	Rhode Island	7	1
Illinois	73	31	South Carolina	2	.....
Indian Territory	.....	.....	South Dakota	4	.....
Indiana	21	3	Tennessee	2	3
Iowa	16	2	Texas	13	2
Kansas	4	3	Utah	1	1
Kentucky	9	5	Vermont	1	.....
Louisiana	6	1	Virginia	5	8
Maine	3	4	Washington	6	2
Maryland	10	8	West Virginia	7	.....
Massachusetts	35	25	Wisconsin	13	4
Michigan	22	2	Wyoming	.....	.....
Minnesota	9	7	U. S. Army	.....	.....
Mississippi	1	.....	U. S. Navy	.....	.....
Missouri	15	9			
Montana	3	.....	Total to citizens of the United States	633	329
Nebraska	5	.....			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina	.....	.....	Netherlands	.....	1
Austria-Hungary	1	.....	Newfoundland	.....	.....
Belgium	1	.....	New South Wales	.....	.....
Brazil	.....	.....	New Zealand	2	.....
British West Indies	.....	.....	Norway	.....	.....
Canada	7	.....	Persia	.....	.....
Cape Colony	.....	.....	Queensland	.....	.....
Chile	.....	.....	Roumania	.....	.....
China	.....	.....	Russia	.....	.....
Costa Rica	.....	.....	San Salvador	.....	2
Cuba	.....	.....	Scotland	.....	.....
Denmark	.....	.....	South Africa	.....	.....
Ecuador	.....	.....	Spain	.....	2
England	18	6	Sweden	1	.....
France	5	.....	Switzerland	2	.....
Germany	22	4	Transvaal, South Africa	2	.....
Guatemala	1	.....	Victoria	.....	.....
Ireland	.....	.....	Western Australia	.....	.....
Italy	3	.....			
Japan	.....	.....	Total to citizens of foreign countries	66	13
Mexico	1	.....			
Natal	.....	.....			

Drawings.

RULE 38.

38. When there are drawings the description will refer to the different views by figures and to the different parts by letters or numerals (preferably the latter).

RULE 52—EXTRACT.

(a) The different views should be consecutively numbered. Letters and figures of reference must be carefully formed. They should, if possible, measure at least one-eighth of an inch in height, so that they may bear reduction to one twenty-fourth of an inch; and they may be much larger when there is sufficient room. They must be so placed in the close and complex parts of drawings as not to interfere with a thorough comprehension of the same, and therefore should rarely cross or mingle with the lines. When necessarily grouped around a certain part, they should be placed at a little distance, where there is available space, and connected by short broken lines with the parts to which they refer. They must never appear upon shaded surfaces, and when it is difficult to avoid this, a blank space must be left in the shading where the letter occurs, so that it shall appear perfectly distinct and separate from the work. If the same part of an invention appear in more than one view of the drawing it must always be represented by the same character, and the same character must never be used to designate different parts.

It is suggested that numerals or letters be used without exponents.

Publishers' Catalogues.

This Office would be pleased to receive from manufacturers and publishers such catalogues, circulars, price-lists, or other advertisements relating to the sciences and mechanical arts as are published by them for gratuitous distribution; but notice is hereby given such manufacturers or dealers who feel disposed to send their publications that not less than three copies should be forwarded in order that the subjects may be properly indexed, classified, and subclassified in the Scientific Library for convenient and ready reference.

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business May 1, 1906.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
	In arrears—Under fifteen days.			
378	XXXVIII. Artesian and Oil Wells, Bottles and Jars, Care of Live Stock, Fishing and Trapping, Stationery, Stone-Working.	Apr. 24	Mar. 24	200
308	XV. Bread, Pastry, and Confections, Making, Coating, Laminated Sheets and Fabrics, Fuel, Glass, Hydraulic Lime and Cement, Paper-Making, Paving, and Plastics.	Apr. 20	Mar. 6	435
322	XXXVI. Curtains, Shades, and Screens, Drafting, Driers, Measuring Instruments, and Wind-Wheels.	Apr. 18	Apr. 4	261
154	XI. Boot and Shoe Making, Boots, Shoes, and Leggings, Button, Eyelet, and Rivet Setting, Leather Manufacturing, Nailing and Stapling, Check-Controlled Apparatus, Whips and Whip Apparatus.	Apr. 18	Jan. 16	318
332	X. Carriages and Wagons	Apr. 18	Nov. 23	988
321	I. Tillage, etc., Fences, and Railway Draft Appliances.	Apr. 17	Mar. 24	223
303	XVII. Linotyping, Printing, Matrix-Making, Nut and Bolt Locks.	Apr. 17	Feb. 14	332
148	XXXII. Carbonating Beverages, Dispensing Beverages, Dispensing-Cans, Metallic Shipping and Storing Vessels, Packaging Liquids, Paper Receptacles, Refrigeration, Wooden Receptacles.	Apr. 17	Dec. 6	756
105	XXVI. Electricity, Generation, Electric Heaters, Electric Railways, Motive Power.	Apr. 17	Oct. 3	776
137	VIII. Beds, Chairs, Furniture, Kitchen and Table Articles, Store Furniture.	Apr. 16	Dec. 21	615
	Under one month.			
122	XIX. Stoves and Furnaces and Steam-Boiler Furnaces.	Apr. 14	Nov. 3	700
107	XXXVII. Electricity, Conductors, Lighting, Special Apparatus.	Apr. 14	Sept. 27	825
304	XXXIV. Railways, Railway-Brakes, Rolling-Stock.	Apr. 13	Feb. 20	393
175	III. Annealing and Tempering, Coating with Metal, Electrochemistry, Metal-Founding, Metallurgy, Shaping Fluid Metal.	Apr. 12	Mar. 15	416
244	XXXV. Baggage, Buckles, Buttons, and Clasps, Card, Picture, and Sign Exhibiting, Deposit and Collection Receptacles, Package and Article Carriers, Packing and Storing Vessels, Photography.	Apr. 12	Feb. 2	644
330	XIII. Arms, Projectiles, and Explosive Charges, Making, Metal-Working, Needle and Pin Making.	Apr. 11	Sept. 19	609
167	V. Fine Arts, Bookbinding, Harvesters, Jewelry, and Music.	Apr. 9	Feb. 7	531
379	XXIII. Acoustics, Coin-Handling, Horology, Recorders, Registers, Optics, Signals, Time Controlling Mechanism.	Apr. 9	Nov. 4	724
179	XX. Artificial Limbs, Builders' Hardware, Dentistry, Locks and Latches, Safes, Undertaking.	Apr. 9	Sept. 23	458
128	II. Bee Culture, Dairy, Label-Affixers, Paper Files and Binders, Presses, Store-Service, Tobacco, etc.	Apr. 7	Jan. 23	315
164	XXXIII. Canes, Canopies, Cutlery, Domestic Cooking Vessels, Electricity, Medical and Surgical, Electric Signaling, Fireproof Buildings, Harness, Masonry, Tents, and Umbrellas.	Apr. 7	Oct. 20	745

Applications Under Examination—Continued.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of application awaiting action.
152	XXX. Fluid-Pressure Regulators, Lamps and Gas-Fittings, Type-Writing Machines.	Apr. 6	Oct. 3	702
172	XXXI. Alcohol, Charcoal and Coke, Distillation, Gas, Heating and Illuminating, Hides, Skins, and Leather, Liquid Coating Compositions, Oils, Fats, and Glue, Water Purification.	Apr. 4	Mar. 9	295
318	VI. Bleaching and Dyeing, Chemicals, Explosives, Fertilizers, Medicines, Preserving, Sugar and Salt.	Apr. 4	Jan. 12	475
327	XVIII. Steam-Engineering, etc	Apr. 4	Jan. 2	434
324	XII. Elevators, Journal-Boxes, Lubricators, Machine Elements, Pulleys and Shafting.	Apr. 2	Feb. 20	490
	Between one and two months.			
147	XXIX. Coopering, Roofs, Wheelwright-Machines, Wooden Buildings, Wood-Sawing, Wood-Turning, Woodworking-Tools.	Mar. 30	Jan. 2	465
232	IV. Bridges, Conveyers, Cranes and Derricks, Excavating, Hoisting, Hydraulic Engineering, Loading and Unloading, and Towers.	Mar. 24	Mar. 28	375
109	XVI. Telegraphy and Telephony	Mar. 24	Feb. 5	379
144	XXIV. Apparel, Apparel Apparatus, Sewing-Machines, Surgery, Toilet.	Mar. 23	Nov. 21	686
133	XXII. Air-Guns, Ammunition and Explosive Devices, Boats and Buoys, Catapults and Targets, Firearms, Marine Propulsion, Ordnance, Ships.	Mar. 23	Oct. 21	331
307	XIV. Cutting and Punching Sheets and Bars, Farriery, Metal-Bending, Metal-Ornamenting, Metal Personal Wear, Making, Sheet-Metal Ware, Making, Tools, Wire-Working.	Mar. 20	Dec. 22	409
315	XXV. Butchering, Mills, Threshing, and Vegetable Cutters and Crushers.	Mar. 20	Oct. 30	579
312	VII. Velocipedes, Clutches, Fire-Escapes, Games and Toys, Ladders, Mechanical Motors, and Paper Manufactures.	Mar. 12	Nov. 21	512
142	IX. Baths and Closets, Fire-Extinguishers, Hydraulic Motors, Pumps, Sewerage, and Water Distribution.	Mar. 12	Aug. 21	1181
375	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, Washing Apparatus.	Mar. 5	Oct. 19	831
	Between two and three months.			
382	XXVIII. Air and Gas Engines, Air and Gas Pumps, Pneumatics.	Feb. 16	July 17	1226
112	XXI. Textiles, Carding, Knitting, Spinning, Weaving, etc.	Feb. 15	Sept. 19	693
	Total number of applications awaiting action			21,417
159	TRADE-MARKS, DESIGNS, LABELS AND PRINTS.			
	Under one month.			
	Trade-Marks	Apr. 10	Feb. 16	1880
	Designs	Apr. 4	Mar. 29	64
	Under fifteen days.			
	Labels and Prints	Apr. 30	Apr. 28	13

Trade-Marks.

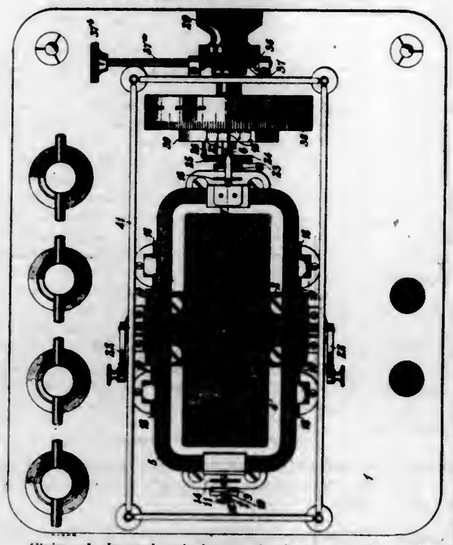
The publication of trade-marks under the act of February 20, 1905, in the OFFICIAL GAZETTE, commenced May 2, 1905, and will appear in each weekly number of the GAZETTE thereafter.

Extra copies of the trade-mark portion of the GAZETTE, which will be sold separately, may be obtained single or in quantities for five cents each. Coupons will be taken in payment therefor.

PATENTS

GRANTED MAY 8, 1906.

819,706. **ELECTRICAL MEASURING INSTRUMENT.** THEODORE ARTMEYER, Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed Sept. 10, 1904. Serial No. 223,966.



Claim.—1. In an electrical measuring instrument, the combination with a movable member, of a pointer, a spring concentric with the axis of said movable member and having one end attached thereto, an arbor to which the other end of the spring is attached, a rotatable scale carried by said arbor, and a stationary index adjacent to said rotatable scale.

2. In an electrical measuring instrument, a stationary coil and a movable coil having coincident axes, a spring concentric with said axes and having one end connected to the movable coil, an arbor to which the other end of the spring is attached, a rotatable scale carried by the arbor, and a stationary index and vernier-scale adjacent to said rotatable scale.

3. In an electrical measuring instrument, the combination with a movable member, of two oppositely-coiled spiral springs each of which has one end attached thereto, an arbor to which the other ends of the springs are attached, a rotatable scale carried by the arbor, and a stationary index adjacent to said rotatable scale.

4. In an electrical measuring instrument, the combination with a stationary coil, of a movable coil having its axis coincident with that of the stationary coil, pivots for the said movable coil, spiral springs having their inner ends attached thereto, an arbor to which the outer ends of the springs are attached, a pointer carried by the movable coil, a rotatable scale carried by the arbor, and a stationary index adjacent to said rotatable scale.

5. In an electrical measuring instrument, a stationary coil and a movable coil having coincident horizontal axes, pivots attached to said movable coil, spiral springs each having one end attached to one of said pivots, an arbor to which the other ends of the said springs are attached, a pointer carried by the movable coil, a rotatable scale carried by the arbor, and a stationary index and vernier-scale adjacent to said rotatable scale.

6. In an electrical measuring instrument, the combination with a stationary coil, and a movable coil having a pointer, of a stationary scale and a movable scale adjacent to each other and to the pointer, and a yielding, resilient connection between the movable coil and the movable scale.

7. In an electrical measuring instrument, the combination with a stationary coil and a movable coil in inductive relation to each other, said movable coil having a pointer, of a stationary scale and a movable scale adjacent to each other and to said pointer, and a yielding, resilient connection between the movable scale and the movable coil.

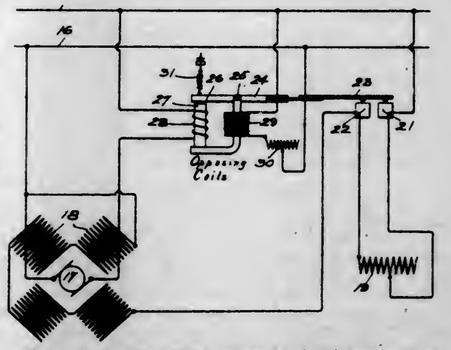
8. In an electrical measuring instrument, the combination with a stationary coil and a movable coil in inductive relation to each other, said movable coil having a pointer, of a stationary index, and a movable scale adjacent to said pointer and one or more springs connecting the movable coil and the movable scale.

9. In an electrical measuring instrument, the combination with a stationary coil and a coil supported upon knife-edge bearings in inductive relation to said stationary coil and provided with a pointer, of a stationary index, a movable scale and one or more springs connecting said movable scale to said movable coil.

10. In an electrical measuring instrument, the combination with a stationary coil, a movable coil mounted upon knife-edge bearings and provided with a pointer, and means for raising and supporting said coil independently of its bearings, of a stationary index, a movable scale and one or more springs interposed between said scale and the movable coil.

11. In an electrical measuring instrument, the combination with a stationary coil and a movable coil pivotally supported in inductive relation thereto and having a pointer, of a stationary index, a rotatable scale, one or more springs connecting said scale to said movable coil and means for rotating said scale.

819,707. **AUTOMATIC SPEED-INCREASING DEVICE.** GEORGE BAKER, McKeesport, Pa., assignor to National Tube Company, Pittsburg, Pa., a Corporation of New Jersey. Filed Sept. 17, 1904. Serial No. 224,895.



Claim.—1. A self-regulating system for electric motors whose armatures are constantly under load, comprising a motor, a source of current therefor, and automatic means controlled by the load on the motor and arranged to decrease the strength of the motor-field when the load on the motor-armature is increased, and to increase the strength of said field when the load on the motor-armature is decreased.

2. A self-regulating system for electric motors whose armatures are constantly under load, comprising a motor, a source of current therefor, and electrically-actuated means controlled automatically by the load on the motor and arranged to decrease the strength of the

motor-field when the load on the motor-armature is increased, and to increase the strength of said field when the load on the motor-armature is decreased.

3. A self-regulating system for electric motors whose armatures are constantly under load, comprising a motor, a source of current therefor, automatic means controlled by the load on the motor and arranged to increase the resistance of the motor field-circuit when the load on the armature increases, and to decrease the resistance of said field-circuit when the load on the armature decreases, and manually-controlled means for varying the higher resistance of said field-circuit.

4. A self-regulating system for electric motors whose armatures are constantly under load, comprising a motor, a source of current therefor, and means actuated by the current flowing through the motor-armature and arranged to decrease the strength of the motor-field when an increased current flows through the motor-armature, and to increase the strength of the motor-field on a decrease of said current through the armature.

5. In an electric-motor system, the combination of a motor having a shunt-field, a source of current therefor, and means for regulating the strength of the motor-field, said means comprising an electromagnet having a coil in series with the motor-armature and a balancing-coil in shunt with the motor armature and field.

6. In an electric-motor system, the combination of a motor, a source of current therefor, a resistance device, and means for cutting said resistance device into and out of series with the motor-field, said means comprising an electromagnet having a coil in series with the motor-armature and a balancing-coil in shunt with the motor armature and field.

7. In an electric-motor system, the combination of a motor having a field-magnet in shunt with its armature, a source of current therefor, a resistance device, and automatic means arranged to cut said resistance device into and out of series with said shunt-field, said means comprising an electromagnet having a coil in series with the motor-armature and a balancing-coil in shunt with the armature and field.

8. In an electric-motor system, the combination of a motor having a field-magnet in shunt with its armature, a source of current therefor, a manually-variable resistance device, and automatic means arranged to place said resistance device in series with said shunt-field magnet and to short-circuit the same, said means comprising an electromagnet having a coil in series with the motor-armature and a balancing-coil in shunt with the motor armature and field.

9. In an electric-motor system, the combination of a motor having a field-magnet in shunt with its armature, a source of current therefor, and means for varying the strength of said shunt field-magnet, said means comprising an electrically-actuated device adjusted to the friction load of the motor and having a coil in series with the motor-armature and a balancing-coil in shunt with the motor armature and field.

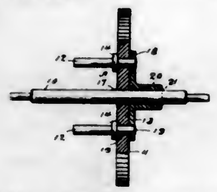
10. In an electric-motor system, the combination with a motor having a field-magnet in shunt with the armature, of a source of current therefor, a resistance device in series with the motor field-magnet, a short circuit for said resistance device which is normally maintained, a circuit-breaker in said short circuit, and means for operating said circuit-breaker, said means comprising a coil in series with the motor-armature and a balancing-coil acting in opposition to the first-named coil and in shunt with the motor armature and field.

11. In an electric-motor system, the combination with a motor having a field-magnet in shunt with the armature, of a source of current therefor, a resistance in series with the motor field-magnet, a short circuit therefor which is normally maintained, a circuit-controller in said short circuit, and means for operating said circuit-controller comprising a magnet having two coils, one coil being in series with the motor-armature and the other coil being wound in opposition thereto and being in shunt with the motor armature and field, and means for varying the strength of said balancing-coil.

12. In an electric-motor system, the combination with a motor having a field-magnet in shunt with the armature, of a source of current therefor, a circuit-controller arranged to vary the strength of said shunt field-magnet, and a magnet for operating said circuit-controller, said magnet comprising a coil in series with the motor-armature and a balancing-coil wound in opposition to said first-named coil and being in shunt with the motor armature and field.

13. In an electric-motor system, the combination with a motor having a field-magnet in shunt with the armature, of a source of current therefor, a circuit-controller arranged to vary the strength of said shunt field-magnet, a magnet for operating said circuit-controller, said magnet comprising a coil in series with the motor-armature, a balancing-coil acting in opposition thereto and in shunt with the motor armature and field, and means for varying the strength of said last-named coil.

819,708. **WHEEL FOR CLOCKS OR WATCHES.** ARCHIBALD BANNATYNE, Waterbury, Conn., assignor to The Bannatyne Watch Co., Waterbury, Conn., a Corporation. Filed June 29, 1901. Renewed Oct. 10, 1905. Serial No. 282,165.

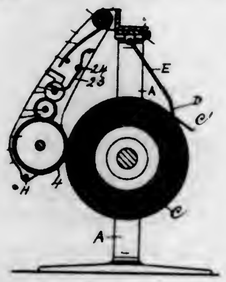


Claim.—1. A wheel of the character described comprising an arbor, a wheel and collet on the arbor, and a series of pins extending through both wheel and collet, each pin having one end headed down and having an integral shoulder, the wheel and collet being secured together between the shoulders and the headed-down ends of the pins, the other ends of the pins being free.

2. A wheel of the character described comprising an arbor, a wheel carried thereby, a collet bearing against the wheel and having a sleeve engaging the arbor, said wheel and collet having a series of holes extending through them whose centers are equidistant from each other and from the center of the arbor and pins having collars adapted to bear against the wheel, the inner ends of said pins being headed down upon the outer face of the collet.

3. A wheel of the character described, comprising an arbor, a pin-base carried thereby and having a series of holes equidistant from each other and from the arbor, and a series of pins having integral collars bearing against one side of the said pin-base and extending through said holes and having their ends riveted or headed down against the side of the said base opposite to that against which the shoulders bear, the diameter of the pins being equal on both sides of the collars.

819,709. **MACHINE FOR PRINTING ROLLER WRAPPING-PAPER.** HARRY BARNARD, Hamilton, Canada. Filed June 1, 1905. Serial No. 263,304.

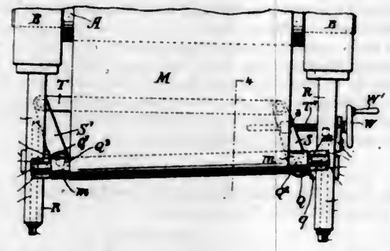


Claim.—In a printing device for paper-rolls, the combination with a frame for the paper-roll having a flat cross bar or member, of a plate resting on said cross-bar and provided with a lip which hooks over the front edge and underneath the cross-bar, whereby the plate is secured to the cross-bar so that it may be slid longitudinally of said cross-bar, lugs projecting from the plate toward the rear and opposite side of the paper-roll frame from the lip aforesaid, a depending printing-device frame pivotally connected to said lugs, and printing and inking rollers journaled in said printing-device frame, whereby the weight of the printing-device frame and said rollers holds the lipped plate slidably clamped to the paper-roll frame.

819,710. **DEVICE FOR ADJUSTING THE TENSION OF TRAVELING CONVEYING-BELTS.** WILLIAM M. BARNES, Philadelphia, Pa. Filed Apr. 14, 1903. Serial No. 152,607.

Claim.—1. In a device for adjusting the tension of a traveling conveying-belt, the combination, with a roller and a conveying-belt engaging the same, of a bearing for each end of said roller, a crank

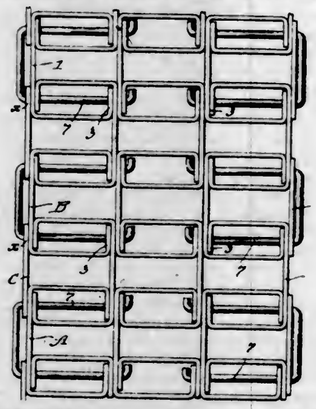
carrying each bearing, a crank-shaft for each crank, a bearing for each shaft, a second crank on each shaft, a connecting-rod connecting the last-named crank of one crank-shaft with the corresponding crank of the other crank-shaft, a threaded nut on one of the last-named cranks, a frame, and an adjusting-screw supported on said frame and engaging said nut.



2. In a device for adjusting the tension of a traveling conveying-belt, the combination, with a roller and conveying-belt engaging the same, of a bearing for each end of said roller, a crank carrying each bearing, a crank-shaft for each crank, a bearing for each crank-shaft having a threaded orifice, a frame for each crank-shaft bearing, an adjusting-screw on each frame that engages the threaded orifice of its corresponding bearing, a second crank on each shaft, a connecting-rod connecting the last-named crank of one crank-shaft with the corresponding crank of the other crank-shaft, a threaded nut pivoted on one of the last-named cranks, and an adjusting-screw engaging said nut and supported on the corresponding frame.

3. In a device for adjusting the tension of a traveling conveying-belt, the combination, with a roller and a conveying-belt engaging the same, of a bearing for each end of said roller, a crank carrying each bearing, a crank-shaft for each crank, a bearing for each crank-shaft, a frame for each crank-shaft bearing, adjusting mechanism on each frame engaging the corresponding crank-shaft bearing, a second crank on each shaft, a connecting-rod connecting the last-named crank of one crank-shaft with the corresponding crank of the other crank-shaft, and adjusting mechanism engaging the connections between the two crank-shafts.

819,711. **METALLIC FABRIC.** GEORGE H. BEDIENT, Baltimore, Md., assignor, by mesne assignments, of one-half to Francis G. Hereford, Baltimore, Md. Filed Feb. 9, 1905. Serial No. 244,964.



Claim.—1. A fabric composed of units arranged in sections, and staples extending from the opposite edges of the fabric toward the interior of the fabric with their prongs axially in line and secured within said fabric, substantially as described.

2. A fabric composed of units of substantially rectangular form each having an open side with inwardly-turned ends the adjacent units being reversed in position and intermeshing by having a portion of each entering the open side of the other and means passing through the sides and inturned ends of the units for pivotally holding them together, said means consisting of U-shaped staples extending inwardly from opposite sides of the fabric with their ends secured within the fabric, substantially as described.

3. A fabric composed of units in the form of flat strips, arranged in sections and connected by staples, the prongs of which are secured within the fabric by sleeves, substantially as described.

4. A fabric composed of edge units and interior units with staples extending from opposite edges of the fabric part way toward the center with their prongs secured within said fabric on opposite sides of the center, substantially as described.

819,712. **HORSE-DETACHER.** OSCAR VON BEGLEBERG, Brunswick, Ga. Filed June 10, 1903. Serial No. 160,912.



Claim.—1. In a horse-detacher the combination with emergency releasing means for detaching an animal from the swingletree of a vehicle, of a member having a detachable terminal section, means of separably uniting the parts, and means for automatically separating said parts by continued movement of the animal upon operation of the emergency releasing means.

2. In horse-detaching mechanism, a box securable to the tip of a swingletree, a hook hinged therein, a keeper for releasably securing the hook in a closed position, and means for actuating the keeper to release the hook.

3. In horse-detaching mechanism, a box securable to the tip of a swingletree, a hook hinged therein, a keeper for releasably securing the hook in a closed position, means for actuating the keeper to release the hook, and means of positive and automatic outthrow of the hook.

4. In horse-detaching mechanism, a box securable to the tip of a swingletree, a hook hinged therein, a keeper for releasably securing the hook in a closed position, means for actuating the keeper to release the hook, and means for preventing the accidental release of the hook.

5. In horse-detaching mechanism, a box securable to the end of a swingletree and provided with a forwardly-projecting finger, a hook hinged to the finger, a clevis-shaped keeper pivoted to the sides of the box adapted to releasably secure the hook, means for actuating the keeper to release the hook, and a spring-plate acting against the hook and tending to cause positive automatic outthrow thereof.

6. In horse-detaching mechanism, a box securable to the end of a swingletree and provided with a forwardly-projecting finger, a hook hinged to the finger, a clevis-shaped keeper pivoted to the sides of the box adapted to releasably secure the hook, means for the manual retraction of the keeper, comprising an eye upon the keeper and a pull-cord attached to the eye; ears upon opposite sides of the box, including and guarding the eye, and a spring-plate mounted in the box acting against the hook and tending to cause positive automatic outthrow thereof.

7. In horse-detaching mechanism, the combination with separable thill-sections, of detachable coupling members.

8. In horse-detaching mechanism, a detachable coupling member for separable thill-sections, comprising a pair of telescoping sleeves attached respectively to the thill-sections, and means adapted to insure positive union and ready disconnection of the sleeves as required.

9. In horse-detaching mechanism a detachable coupling member for separable thill-sections, comprising a sleeve fastened on one thill-section, provided with a spigot adapted to enter the hollow end of a corresponding sleeve secured to the end of the other section, apertures in the respective sleeves adapted to register when the parts are assembled, a spring-plate on one of the sleeves provided with a head adapted to fit said registering apertures, and means for actuating the head to fill the apertures as required.

10. In horse-detaching mechanism a detachable coupling member for separable thill-sections, comprising a sleeve fastened on one thill-section, provided with a spigot adapted to enter the hollow end of a corresponding sleeve secured to the end of the other section, apertures in the respective sleeves adapted to register when the parts are assembled, a spring-plate on one of the sleeves provided with a head adapted to fit said registering apertures, a depression across

the top of the head, and a loop pivoted to one of the sleeves and adapted to engage the depression in the head.

11. In horse-detaching mechanism a detachable coupling member for separable thill-sections, comprising a sleeve fastened on one thill-section, provided with a spigot adapted to enter the hollow end of a corresponding sleeve secured to the end of the other section, apertures in the respective sleeves adapted to register when the parts are assembled, a spring-plate on one of the sleeves provided with a head adapted to fit said registering apertures, a depression across the top of the head, a loop pivoted to one of the sleeves and adapted to engage the depression in the head, and means for automatically operating the said loop.

819,718. STEM-WINDING WATCH. NUMA BRIGUELIN, Solothurn, Switzerland. Filed Sept. 16, 1904. Serial No. 224,708.



Claim.—1. A watch hand setting and winding mechanism comprising a longitudinally-movable winding and setting pin, a rotatable sleeve, a crown-pinion loosely mounted on said sleeve, a double clutch longitudinally movable on said sleeve, a slide operated by the winding and setting pin, a pin on said slide, a strong spring acting against said pin, a pivoted clutch-operating lever and a spring acting against the tail of said lever in opposition to the first-named spring, substantially as set forth.

2. In a watch hand setting and winding mechanism the combination of a rotatable hollow sleeve of part circular and part angular bore, a winding and setting pin adapted to engage and move longitudinally in the angular portion of the bore, a pin longitudinally movable in the circular bore of said sleeve, a head on the bottom end of the pin, a crown-pinion loosely mounted upon the sleeve, a double clutch longitudinally movable on said sleeve, a slide adjusted to move in a direction parallel to the axis of the setting-pin, a projection on said slide, said projection being adapted to be engaged by the headed pin moving longitudinally in the circular bore of the sleeve, a pin on the slide, a strong spring acting on said pin and tending to move the slide upward against the headed pin, a pivoted clutch-operating lever and a spring acting against the tail of said lever in opposition to the first-named spring substantially as set forth.

819,714. STEM-WINDING MECHANISM. NUMA BÉGUELIN, Solothurn, Switzerland. Filed Sept. 16, 1904. Serial No. 224,705.



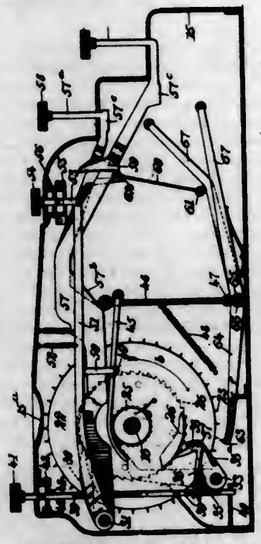
Claim.—1. In a watch-hand setting and winding mechanism, a pivoted lever, two pins thereon, a pivoted clutch-operating lever situated between the pins, and a spring acting on one pin, and a second spring acting against the tail of the clutch-operating lever, substantially as set forth.

2. In a watch-hand setting and winding mechanism comprising a longitudinally-movable winding and setting pin, a rotatable sleeve, a crown-pinion loosely mounted on said sleeve, a double clutch longitudinally movable on said sleeve, a pivoted lever operated by the winding and setting pin, two pins on said lever, a strong spring acting against one pin, a pivoted clutch-operating lever and a second spring acting against the tail of said lever in opposition to the first-named spring substantially as set forth.

3. A watch-hand setting and winding mechanism comprising a hollow sleeve A, a winding and setting pin A', a pin F, a crown-pinion B, a longitudinally-movable clutch C, a lever K, pins K' K² thereon, a pivoted lever D and springs P, N, substantially as set forth.

4. In a watch-hand setting and winding mechanism the combination of a rotatable hollow sleeve of part circular and part angular bore, a winding and setting pin adapted to engage and move longitudinally in the angular portion of the bore, a pin longitudinally movable in the circular bore of the sleeve, a head on the bottom end of the pin, a crown-pinion loosely mounted on the sleeve, a double clutch longitudinally movable on said sleeve, a pivoted lever operated by the winding and setting pin, two pins on said lever, a strong spring acting against one pin, a pivoted clutch-operating lever and a second spring acting against the tail of said lever in opposition to the first-named spring substantially as set forth.

819,715. CALCULATOR. FRANK W. BENNETT, Waterbury, Conn. Filed Jan. 18, 1905. Serial No. 241,566.



Claim.—1. A calculator comprising a case, a plurality of indicating devices therein, means for transmitting from one indicating device to the other, means for throwing the transmitting means out of operation at will, keys located outside of the case and connected with said means, means for operating the indicating device, keys in connection with the operating means and projecting outside of the case, and means for connecting the operating means with the indicating devices, and keys in connection with the last-named means and projecting outside of the case.

2. A calculator comprising a case, indicating devices therein, means for transmitting from one indicating device to the other, means for throwing the transmitting device out of action at will, keys in connection with the last-named means, operating means for the indicating devices, keys for the operating means, the keys projecting outside of the casing, means for connecting any one of the operating means with any one of the indicating devices, and keys for said connecting means, the keys projecting outside of the casing.

3. In a calculating-machine, the combination of a plurality of indicating devices, a plurality of operating members, a swinging member adapted to be moved by said operating members, devices in connection with the swinging member and respectively coacting with the indicating means, and means for throwing said devices in and out of action.

4. In a calculating-machine, the combination of a plurality of indicating devices, a plurality of operating members having cams thereon, a movable member engaged with and operated by said cams, means for operating the indicating devices, said means being connected with said movable member, and means for throwing the means for operating the indicating devices in and out of action at will.

5. In a calculating-machine, the combination of an indicating device, a ratchet in connection therewith, a ratchet-bar coacting with the ratchet, a movable member connected with the ratchet-bar, a swinging lever having a cam engaging the movable member, and means for moving said ratchet-bar in and out of action at will.

6. In a calculating-machine, the combination of a plurality of indicating devices, an operating means for each, devices for throwing the operating means in and out of action independently of each other, a movable member with which said operating means are connected, and devices for imparting variable movement to said movable member, said devices comprising swinging levers having unlike cams thereon engaged with said movable member.

7. In a calculator, the combination of a plurality of indicating devices, a ratchet in connection with each, a ratchet-bar coacting with each ratchet, means for moving the ratchet-bars in and out of action independenlty of each other, a movable member in connection with the ratchet-bars, and means for imparting variable movement to said movable member.

8. In a calculator, the combination of a plurality of indicating devices, a ratchet in connection with each, a ratchet-bar coacting with each ratchet, means for moving the ratchet-bars in and out of action independently of each other, a movable member in connection with the ratchet-bars, and means for imparting variable movement to said movable member, said means for imparting variable movement to the movable member comprising a plurality of levers having unlike cams thereon.

9. In a calculator, the combination of a plurality of indicating devices, means for operating each, a key-actuated means for throwing the operating means in and out of action independently of each other, a movable member in connection with said operating means, a key-operated means for imparting variable movement to said movable member, means for transmitting from one indicating device to the other, and devices for throwing said transmitting means in and out of action at will.

10. In a calculator, the combination of a plurality of indicating devices, an operating means for each, devices including a key for moving the operating means in and out of action independently of each other, each of said devices also including an incline shouldered part, a sliding lock coacting with the said incline shouldered parts, means for yieldingly pressing the lock in one direction, a movable member in connection with the indicating devices, operating means, and means for imparting a variable movement to said movable member.

11. In a calculator, the combination of a plurality of indicating devices, means for transmitting from one to the other, devices for throwing said transmitting means in and out of action at will, said devices including key-operating parts having inclined projections, a sliding lock coacting with said projections, and means yieldingly pressing the lock in one direction.

12. In a calculating-machine, the combination of a plurality of indicating devices, a movable member, devices in connection with the movable member and adapted respectively to operate the indicating devices, means for throwing out of action any one of said devices in connection with the movable member, and a plurality of operating-keys having unlike cams adapted to engage the movable member.

13. In an indicating-machine, the combination of a plurality of indicating devices, means for transmitting from one to the other, a movable member, ratchet-bars carried by the movable member, ratcheta in connection with the indicating devices and respectively coacting with the ratchet-bars, means for throwing any one of the ratchet-bars out of action at will, and means for imparting variable movement to said movable member.

14. In an indicating-machine, the combination of a plurality of indicating devices, means for transmitting from one to the other, a movable member, ratchet-bars carried by the movable member, ratcheta in connection with the indicating devices and respectively coacting with the ratchet-bars, means for throwing any one of the ratchet-bars out of action at will, and means for imparting variable movement to said movable member, said means comprising operating-keys having unlike cams thereon engaging the said movable member.

15. In a calculating-machine, the combination of a plurality of indicating devices, means for operating the same, means for transmitting from one indicating device to the other for the purpose specified, a key-actuated rod coacting with the second-named means to throw the same out of action, and a sliding lock-plate adapted to engage a part of said rod to hold it in active position.

16. In a calculator the combination of a plurality of indicating devices, means for transmitting from one to the other, a movable member, keys having unlike cams thereon adapted to impart unlike movements to the said member, normally inactive operating devices in connection with said member and respectively adapted to operate the indicating devices and keys for independently throwing said operating devices into action at will.

17. In a calculator the combination of a plurality of indicating devices, means for transmitting from one to the other, means for throwing the transmitting means out of action at will, a movable member, keys having unlike cams thereon adapted to impart unlike movements to the said member, normally inactive operating devices in connection with said member and respectively adapted to operate the indicating devices and keys for independently throwing said operating devices into action at will.

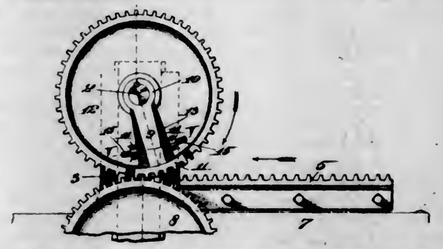
18. In a calculator the combination of a plurality of indicating devices, means for transmitting from one to the other, a ratchet in connection with each indicating device, a normally inactive ratchet-bar coacting with each ratchet, keys for independently throwing the ratchet-bars into action, a movable member to which the ratchet-bars are connected, and keys having unlike cams thereon adapted to act on and impart unlike movements to said movable members.

19. In a calculator the combination of a plurality of indicating devices, means for transmitting from one to the other, means for throwing the transmitting means out of action at will, a ratchet in connection with each indicating device, a normally inactive ratchet-bar coacting with each ratchet, keys for independently throwing the ratchet-bars into action, a movable member to which the ratchet-bars are connected, and keys having unlike cams thereon adapted to act on and impart unlike movements to said movable members.

20. In a calculator the combination of a plurality of indicating devices, means for transmitting from one to the other, keys for throwing the transmitting means out of action at will, a ratchet in connection with each indicating device, a normally inactive ratchet-bar coacting with each ratchet, keys for independently throwing the ratchet-bars into action, a movable member to which the ratchet-bars are connected, and keys having unlike cams thereon adapted to act on and impart unlike movements to said movable members.

21. In a calculator, the combination of a plurality of indicating devices, means for transmitting from one to the other, means for throwing the transmitting means in or out of action at will, a swinging member, devices in connection therewith for operating the indicating devices, means for throwing the operating devices into or out of action, and means for variably operating the said swinging member.

819,716. TWO-REVOLUTION CYLINDER PRINTING-PRESS. BENJAMIN F. BERRY, St. Louis, Mo., assignor to United Printing Machinery Company, Boston, Mass., a Corporation. Filed Feb. 16, 1905. Serial No. 245,857.



Claim.—1. In a cylinder printing-press, the combination of a cylinder, a bed adapted to move into driving connection with said cylinder, means for rotating said cylinder arranged to be periodically thrown out of driving action during the rotation of said cylinder, and means for restricting the movement of a member of said cylinder-rotating means in two directions of rotation, substantially as set forth.

2. In a cylinder printing-press, the combination of a cylinder, a bed adapted to move into driving connection with said cylinder, a driving member loosely associated with said cylinder, a driven member having fixed connection with said cylinder, and means for restricting the movement of said loosely-associated driving member in two directions of rotation with respect to said fixed driving member, substantially as set forth.

3. In a cylinder printing-press, the combination of a cylinder, a bed adapted to move into driving connection with said cylinder a driving member loosely associated with said cylinder, a crank-arm having fixed connection to said cylinder, and means for restricting the movement of said loose driving member in two directions of rotation with respect to said crank-arm, substantially as set forth.

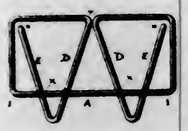
4. In a two-revolution cylinder printing-press, the combination of a reciprocatory form-bed, a rotatable impression-cylinder adapted to be thrown into gear with said form-bed, a power-wheel, a loosely-mounted gear-wheel associated with said cylinder, and a crank-arm having fixed engagement with said cylinder and mounted adjacent to said loose gear-wheel to be brought periodically into engagement with said power-wheel, substantially as set forth.

5. In a two-revolution cylinder printing-press, the combination of a reciprocatory bed, a cylinder geared to said bed, a crank-arm having fixed connection to said cylinder and provided with a toothed segment, a gear-wheel loosely associated with said crank-arm, and a power gear-wheel arranged in mesh with said loose gear-wheel, and adapted to engage said crank-arm segment, substantially as set forth.

6. In a two-revolution cylinder printing-press, the combination of a reciprocatory bed, a cylinder geared to said bed, a crank-arm having fixed connection to said cylinder, and provided with a toothed segment, a gear-wheel loosely associated with said crank-arm and provided with a pocket in which said arm is seated, and a power-wheel arranged in mesh with said loose gear-wheel and adapted to engage said crank-arm segment, substantially as set forth.

7. In a two-revolution cylinder printing-press, the combination of a reciprocatory bed, a cylinder geared to said bed, a crank-arm having fixed connection to said cylinder and provided with a toothed segment, a gear-wheel loosely associated with said crank-arm and provided with a pocket in which said arm is seated, a power-wheel arranged in mesh with said loose gear-wheel and adapted to engage said crank-arm segment, and adjustment-screws carried by said loose gear-wheel at opposite sides of said crank-arm, substantially as set forth.

819,717. **PAPER-CLIP.** ADNA G. BOWEN, New York, N. Y. Filed Mar. 11, 1903. Serial No. 147,245.



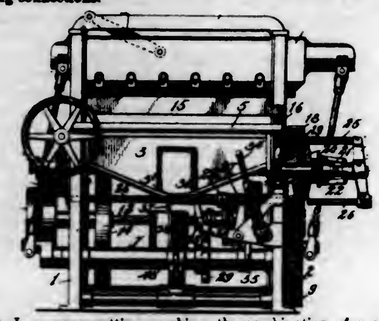
Claim.—1. A clip consisting of a single piece of wire bent to form the cross-bar A, the side bars B having their lower ends connected by said cross-bar, the shoulders C extending inwardly toward each other from the upper ends of the bars B respectively and with their inner ends normally in contact, the arms D extending downwardly from the inner ends of the shoulders respectively and below the cross-bar A, and the forearms E extending upwardly from the lower ends of the forearms D respectively to points below and adjacent respectively to the junctions of the side bars B and the shoulders C, the arms and forearms pressing against the cross-bar in spring-bearing contact therewith.

2. A clip consisting of a single piece of wire bent to form a cross-bar, the side bars B having their lower ends connected by said cross-bar, the shoulders C extending inwardly toward each other from the upper ends of the bars B respectively, the arms D extending downwardly from the inner ends of the shoulders respectively and below the cross-bar, and the forearms E extending upwardly from the lower ends of the forearms D respectively to points below and adjacent respectively to the junctions of the side bars B and the shoulders C.

819,718. **PAPER-CUTTING MACHINE.** ALFRED BRENNEISEN, Champlain, N. Y., assignor of one-half to The Sheridan Iron Works, a Corporation of New York, and one-half to T. W. & C. B. Sheridan Company, a Corporation of New York. Filed Oct. 8, 1904. Serial No. 227,631.

Claim.—1. In a paper-cutting machine, the combination of a clamp, connections including a shaft for operating said clamp, a driving-wheel loosely journaled on said shaft and forming one member of a friction driving connection, means forming another member of said friction driving connection confined to rotate with said shaft, a spring for forcing said friction driving connections into operative engagement, and means for disengaging said friction driving connections.

2. In a paper-cutting machine, the combination of a clamp, means including a shaft for operating said clamp, a driving-wheel loosely journaled on said shaft, a friction driving connection between said wheel and said shaft, a spring for forcing said friction driving connections into operative engagement, means whereby the force of said spring may be readily varied, and means for disengaging said driving connections.



3. In a paper-cutting machine, the combination of a clamp, means including a shaft for operating said clamp, a driving-wheel loosely journaled on said shaft, a friction driving connection between said wheel and said shaft, a spring for forcing said friction driving connections into operative engagement, means whereby the force of said spring may be readily varied, means for disengaging said driving connections, and means independent of said gear and friction driving connections for returning the clamp.

4. In a paper-cutting machine, the combination of a clamp, rack-bars carried by said clamp, a shaft having pinions meshing with said rack-bars, a gear loosely journaled on said shaft, a friction driving connection between said gear and said shaft, a spring for forcing said friction driving connection into operative engagement, and means for automatically controlling the action of said spring.

5. In a paper-cutting machine, the combination of a clamp, means including a shaft for operating said clamp, a driving-wheel loosely journaled on said shaft, friction driving connections between said wheel and said shaft, a plurality of oppositely-arranged levers adjustably mounted on said shaft for actuating said friction driving connections, a spring for actuating said levers, and means for automatically controlling the action of said spring.

6. In a paper-cutting machine, the combination of a clamp, means including a shaft for operating said clamp, a driving-wheel loosely journaled on said shaft, friction driving connections between said wheel and said shaft, a plurality of oppositely-arranged levers adjustably mounted on said shaft for actuating said friction driving connections, a spring for actuating said levers, means for automatically controlling the action of said spring, and means independent of said driving-wheel and friction driving connections for returning the clamp.

7. In a paper-cutting machine, the combination of a clamp, a pair of racks connected with the opposite ends of said clamp, a shaft having pinions meshing with said racks, a gear loosely journaled on said shaft, a pair of disks adapted to engage the opposite sides of said gear to form a friction driving connection between said gear and the shaft, a plurality of oppositely-arranged levers adjustably mounted on said shaft for operating said friction-disks, and means for operating said levers.

8. In a paper-cutting machine, the combination of a clamp, a pair of racks connected with the opposite ends of said clamp, a shaft having pinions meshing with said racks, a gear loosely journaled on said shaft, a pair of disks adapted to engage the opposite sides of said gear to form a friction driving connection between said gear and the shaft, a plurality of oppositely-arranged levers adjustably mounted on said shaft for operating said friction-disks, automatically-controlled means for operating said levers, and means independent of said gear and friction driving connections for returning the clamp.

9. In a paper-cutting machine, the combination of a clamp, a plurality of clamp-actuating devices adapted to apply effective clamping force, and means whereby two of said devices may be operated independently of each other or both of them operated together.

10. In a paper-cutting machine, the combination of automatically-operated clamp-actuating devices, manually-operated clamp-actuating devices operative independently of said automatically-operated clamp-actuating devices and adapted to apply effective clamping force, and means whereby the manually-operated clamp-actuating devices may be operated in conjunction with the power-operated clamp-actuating devices.

11. In a paper-cutting machine, the combination of automatically-operated clamp-actuating devices, manually-operated clamp-actuating devices operative independently of said automatically-operated clamp-actuating devices and adapted to apply effective clamping force, and means whereby the manually-operated clamp-actuating devices may be operated either singly or in conjunction with the automatically-operated clamp-actuating devices.

12. In a paper-cutting machine, the combination of a clamp, automatically-operated clamp-actuating devices, manually-operated clamp-actuating devices adapted to apply effective clamping force, and means whereby either of said clamp-actuating devices may be operated either singly or in conjunction with the other clamp-actuating device.

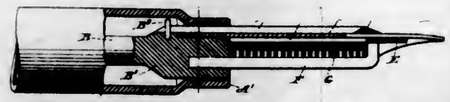
13. In a paper-cutting machine, the combination of automatically-operated clamp-actuating devices, manually-operated clamp-actuating devices operative independently of said automatically-operated clamp-actuating devices and including a worm and worm-wheel and connections between the worm-wheel and the clamp whereby the clamp is permitted to move in its clamping direction without the wheel being moved but is confined to move with the wheel when the latter is moved in one direction.

14. In a paper-cutting machine, the combination of a clamp, automatically-operated clamp-actuating devices for bringing the clamp into operation, means independent of said actuating devices for returning the clamp, manually-operated clamp-actuating devices, and means whereby the manually-operated clamp-actuating devices may be operated in conjunction with the said automatic clamp-actuating devices, said means being constructed so as not to interfere with the return movement of the clamp when the manually-operated clamp-actuating devices are not operated.

15. In a paper-cutting machine, the combination of a clamp, means including a shaft for operating said clamp, automatically-operated clamp-actuating devices connected with said shaft, manually-operated clamp-actuating devices operative independently of said automatically-operating clamp-actuating devices, said manually-operated clamp-actuating devices including a worm-wheel loosely mounted on said shaft, a hand-wheel and worm for driving said worm-wheel, and connections between said worm-wheel and said shaft, permitting free movement of the shaft in one direction independent of said worm-wheel but preventing movement of the shaft in the opposite direction with relation to the worm-wheel.

16. In a paper-cutting machine, the combination of a clamp, means including a shaft for operating said clamp, automatically-operated clamp-actuating devices connected with said shaft, manually-operated clamp-actuating devices operative independently of said automatically-operating clamp-actuating devices, said manually-operated clamp-actuating devices including a worm-wheel loosely mounted on said shaft, a hand-wheel and worm for driving said worm-wheel, and connections between said worm-wheel and said shaft, permitting free movement of the shaft in one direction independent of said worm-wheel but preventing movement of the shaft in the opposite direction with relation to the worm-wheel, and means whereby the shaft is permitted to turn freely in either direction with relation to the worm-wheel in one position of the latter.

819,719. **FOUNTAIN-PEN.** FRANCIS C. BROWN, New York, N. Y. Filed July 7, 1905. Serial No. 268,711.



Claim.—1. In a fountain-pen, the combination of the upper and lower feed-tongues adapted to receive the nib between them, the brace arranged to engage the forward portion of the lower feed-tongue, and the ink-retainer located between the lower feed-tongue and the brace and grooved transversely on the side facing said brace.

2. In a fountain-pen, the combination of the upper and lower feed-tongues adapted to receive the nib between them, the brace arranged to engage the forward portion of the lower feed-tongue, and the ink-retainer located between the lower feed-tongue and the brace and grooved lengthwise on the side facing the lower tongue and crosswise on the side facing said brace.

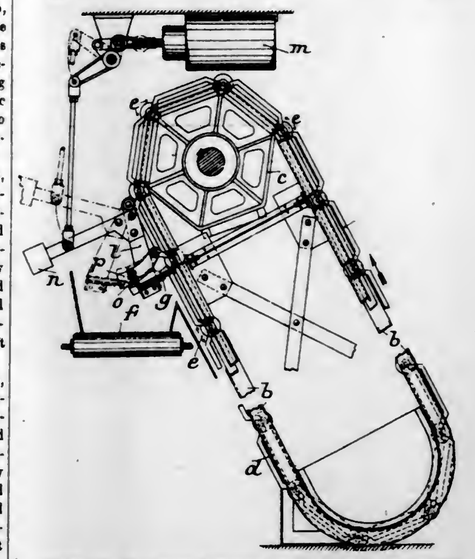
3. In a fountain-pen, the combination, with a feed-tongue one side of which is adapted to engage the nib, of an ink-retainer arranged on the other side of said tongue and separate therefrom, said ink-retainer being provided with transverse grooves on the side facing away from said tongue.

4. In a fountain-pen, the combination, with a feed-tongue one side of which is adapted to engage the nib, of an ink-retainer arranged on the other side of said tongue and grooved lengthwise on the side facing the feed-tongue and crosswise on the opposite side.

5. In a fountain-pen, the combination, with a feed-tongue one side of which is adapted to engage the nib, of an ink-retainer arranged on the other side of said tongue and grooved lengthwise on the side facing the feed-tongue and crosswise on the opposite side, the said grooves intersecting so as to form passages or openings leading through from one side of the ink-retainer to the other.

6. In a fountain-pen, the combination, with a feed-tongue one side of which is adapted to engage the nib, of an ink-retainer arranged on the other side of said tongue and separate therefrom, said ink-retainer being provided with transverse grooves on the side facing away from said tongue, and with passages or openings leading through from one side of the ink-retainer to the other.

819,720. **SCREEN FOR SEWAGE OR THE LIKE.** FRIEDRICH BRUNOTTE, Hamburg, Germany. Filed June 24, 1905. Serial No. 266,753.



Claim.—1. In a screen for sewage or the like, the combination with separate grating members connected one with the other to form an endless chain and extending out of the traveling plane of the chain throughout their entire length, of means for moving said chain of gratings.

2. In a screen for sewage or the like, the combination with separate grating members connected one with the other to form an endless chain having grating-bars extending out of the traveling plane of the chain through their entire length, of means for moving said chain of gratings continuously, and a conveyer-band for carrying away the separated material.

3. In a screen for sewage or the like, the combination with separate grating members connected one with the other to form an endless chain and having grating-bars extending out of the traveling plane of the chain throughout their entire length, of recesses between the succeeding grating members, means for moving said chain of gratings, and a conveyer for carrying away the separated material.

4. In a screen for sewage or the like, the combination with separate grating members connected one with the other to form an endless chain, means for moving said chain of gratings, a cleaning device extending between the grating-bars, and a conveyer for carrying away the separated material.

5. In a screen for sewage or the like, the combination with separate grating members connected one with the other to form an endless chain, of means for moving said chain of gratings, a cleaning-comb penetrating between the grating-bars, and a conveyer for carrying away the separated material.

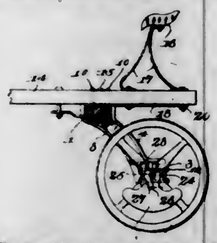
6. In a screen for sewage or the like, the combination with separate grating members connected one with the other to form an endless chain, of means for moving said chain of gratings, a cleaning-

comb extending between the grating-bars, means for rocking said comb, and a conveyer for carrying away the separated material.

7. In a screen for sewage or the like, the combination with separate grating members connected one with the other to form an endless chain, of means for moving said chain of gratings, a cleaning-comb extending between the grating-bars, means for rocking said comb, a scraper, and a conveyer for carrying away the separated material.

8. In a screen for sewage or the like, the combination with separate grating members connected one with the other to form an endless chain, of means for removing said chain of gratings, a cleaning-comb extending between the grating-bars, means for rocking said comb, a pivoted scraper, and a conveyer for carrying away the separated material.

819,721. **LAND-ROLLER.** ROYER S. BUCH, Elizabethtown, Pa. Filed Nov. 23, 1905. Serial No. 288,567.



Claim.—1. The combination with a land-roller and a shaft extending therethrough; of a sill-beam, inclined brackets at the ends of and extending downward from the sill-beam, sockets at the upper ends of the brackets to constitute seats for the ends of the sill-beam, said sockets and beam being detachably connected, a base-plate at the lower end of each bracket and having an integral depending extension at the outer side and rear end of the plate, a bearing-block seated snugly against each base-plate and the depending extensions thereof, and means within the bearing-blocks and the rear extensions of the base-plates for securing said blocks, the shaft of the roller extending through the blocks and side extensions.

2. In a land-roller, the combination with a roller and a shaft supported thereby; of bearing-blocks upon the shaft, a base-plate bearing upon the top of each bearing-block, said base-plate having a depending side and end extension overlapping the bearing-block, said side extension having an opening to receive the shaft, means for securing the bearing-blocks to the end extension, sill-beam sockets constituting seats for the ends of the beam and webs integral with and connecting the sockets and base-plates.

819,722. **BUFFING-ROLL.** JAMES BUSFIELD, Haverhill, Mass. Filed June 16, 1905. Serial No. 265,536.



Claim.—1. In a buffing-roll, a shaft, a pad-holder carried thereby, said pad-holder having an annular groove, a pad carried by the pad-holder and having a tab projecting inwardly therefrom to enter the groove, and means to clamp the tab within the groove.

2. In a buffing-roll, a shaft, a pad-holder carried thereby, said pad-holder having an annular groove, a pad carried by said pad-holder and having an inwardly-projecting tab to enter the groove, and means within the limits of the pad to clamp said tab within the groove.

3. In a buffing-roll, a pad-holder having an annular groove, one side of which groove constitutes a clamping-face, a pad encircling said pad-holder, said pad having a tab projecting from its inner surface and adapted to enter the groove, and means to clamp said tab against the clamping-face.

4. In a buffing-roll, a pad-holder having an annular groove, one side of which groove constitutes a clamping-face, a pad encircling said pad-holder and extending beyond the groove, said pad having on its inner face a tab to enter the groove, and means within the limit of the pad to clamp said tab in place.

5. In a buffing-roll, a pad-holder having an annular groove, one side of which groove constitutes a clamping-face, a pad covering the groove and provided on its inner face with a tab to enter said groove, and a clamping member to engage the tab and clamp the latter against the clamping-face.

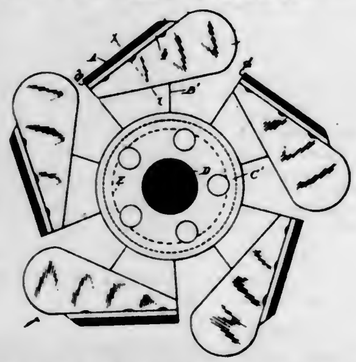
6. In a buffing-roll, a pad-holder having an annular groove between its ends, a pad extending the full length of the pad-holder and overlying the groove, a tab projecting inwardly from the pad and entering the groove, and means to clamp said tab in the groove.

7. In a buffing-roll, a pad-holder having a circumferential groove between its ends, one side of which groove constitutes a clamping-face, a pad surrounding the pad-holder and extending the full length thereof and covering the groove, a tab projecting inwardly from the inner face of the pad and adapted to enter the groove, and a clamping member to engage the tab and clamp the latter against said clamping-face.

8. In a buffing-roll, a shaft, a pad-holder loosely mounted thereon, said pad-holder having a longitudinal groove or opening, arms pivoted to the pad-holder, a swinging member sustained by said arms and adapted to move into and out of said opening, and collars carried by the shaft each having two opposed shoulders to engage said arms, whereby turning movement of the pad-holder relative to the shaft gives said arms their swinging movement in either direction.

9. In a buffing-roll, a shaft, a pad-holder loosely mounted thereon, said pad-holder having a longitudinal opening, arms pivoted to the pad-holder and each provided with a toe, a swinging member sustained by said arms and adapted to move into and out of the opening, and collars carried by the shaft, each collar having a cam-surface and two opposed shoulders, said shoulders being adapted to engage the toe of the corresponding arm when the pad-holder is turned on the shaft thereby to give the swinging member its movement and the cam-surface coacting with said toe to lock the member in the opening.

819,723. **EXCAVATING-CUTTER.** JOHN B. CANTWELL, Watertown, N. Y. Filed Mar. 8, 1905. Serial No. 249,032.



Claim.—1. The combination with a rotating cutter-blade extending substantially parallel to the axis of rotation, of a cross-cutting blade secured to the aforesaid blade, whereby the material is slit by said cross-cutting blade and subsequently in the same stroke severed by said longitudinal blade.

2. The combination with a rotary cutting-blade, extending substantially parallel to the axis of rotation, of a cross-cutting blade secured to the aforesaid blade and extending inwardly therefrom.

3. The combination with a rotary cutting-blade, extending substantially parallel to the axis of rotation, of a blade extending transverse to the axis of rotation, and inwardly from the cutting edge of said longitudinal blade.

4. The combination with a series of rotating blades arranged to extend substantially parallel to a common axis of rotation and inclining inward therefrom, cutting edges of a cross-cutting blade extending from the cutting edge of one of said longitudinal blades into proximity to the rear edge of an adjacent longitudinal blade.

5. The combination with a series of rotating blades extending substantially parallel to a common axis of rotation and spaced about said axis, of a cross-cutting blade for each of said longitudinal blades, extending inward therefrom, and arranged to slit the soil in advance of severance by the longitudinal blade, the cross-cutters of adjacent longitudinal blades being arranged in different orbits of rotation.

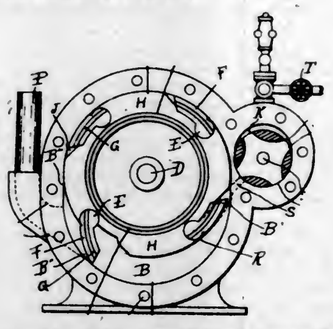
6. The combination with a series of rotating cutting-blades, spaced around a common axis of rotation, and extending substantially parallel therewith, of a cross-cutter for each blade arranged in a plane transverse to the axis and extending inward from the cutting edge of the longitudinal blade at its forward cutting edge, and tapering toward the rear end of said longitudinal blade.

7. The combination of the rotary longitudinal cutter A, of the cross-cutter F secured to the inner side of said blade by lateral wings or securing-flanges *b*, having the curved cutting edge *c*, and the tapering rearward portion, for the purpose described.

8. The combination with a rotating cutter-blade extending substantially longitudinally of the axis of rotation, of a cutting-blade secured to the aforesaid blade at an angle thereto, so positioned that their combined action in the same cutting stroke severs strips of material of lesser length than said longitudinal blade.

9. The combination with a rotating cutter-blade extending substantially longitudinally of the axis of rotation, of means secured to said blade whereby the material is subdivided before being severed by said blade in the same stroke.

819,724. **ROTARY ENGINE.** AMOS H. CARPENTER, Stockton, Cal. Filed Mar. 23, 1905. Serial No. 251,615.



Claim.—1. A hollow basin, provided with a suitable lid covering the chamber therein, a suitable entrance thereto and exit therefrom, and adapted on the inside to receive a cylindrical wheel with opening and closing blade-arms, a cylindrical hub whose axis is journaled in the lid and floor of said basin at a point a suitable distance outside of their respective centers, which is provided with floats or blade-arms, hinged in its periphery, which are designed to project therefrom on one side of the hub and which fold against its periphery on the other side leaving a small chamber or opening in the periphery of the hub at the rear end of said blade-arms which extends the entire length of said hub and under the entire rear end of said blade-arms, whereby steam may readily penetrate the same and, by its pressure against the entire end of such float, open said blade-arm and project the same across the passage-way for such steam, substantially as set forth.

2. The combination of a hollow basin, the sides of which are constructed at right angles to its floor and lid, provided with a suitable cover for the opening therein and means for fastening the same thereon, suitable entrance thereto and exit therefrom for steam that are adapted to fit and connect the same with ordinary pipes or mains, a cylindrical hub, of any suitable diameter, the length of which is equal to the depth of the basin, and the axle of which is journaled in said lid and floor of the basin, at a suitable distance outside their centers, and from the periphery of which projects a suitable number of floats or blade-arms, hinged in a cylindrical recess constructed in its periphery, by means of a post-like attachment laterally attached to an end of the float or blade-arm that works loosely in said recess and thereby to open and extend crosswise of the passage-way in the basin on one side, and to close against the periphery of the hub on the other side leaving a small chamber or opening between the rear end of said blade-arm and the periphery of said hub whereby steam may penetrate the same and by its pressure against the end of such float open said blade-arm and project the same across the passage-way for such steam, and the inner wall of said basin having a cam portion in the pathway of said blades to operate and swing the same against the periphery of said hub, and provided with a cylindrical steam-chamber adjacent thereto and connected therewith by means of a suitable passage-way, in which is incased a suitable hollow cylinder, the axis of which passes through its center and is journaled in the lid and floor of such chamber, and which has lateral openings therein running lengthwise from end to end, and extending from its periphery inward to its inside chamber, and suitable means for rotating said cylinder disposed therein in conjunction with said inside hub, substantially as set forth.

3. The combination of a hollow basin, provided with a suitable lid covering the chamber therein, a suitable entrance thereto and exit therefrom, and adapted on the inside to receive a cylindrical wheel with opening and closing blade-arms, a cylindrical hub whose axis is journaled in the lid and floor of said basin at a point a suitable distance outside of their respective centers, which is provided with floats or blade-arms, hinged in its periphery, which are designed to project therefrom on one side of the hub and which fold against its periphery on the other side leaving a small chamber or opening under the rear end of said blade-arms, whereby steam may penetrate the same and by its pressure against the end of such floats, open said blade-arms and project the same across the passage-way for such steam, and having a cylindrical steam-chamber adjacent thereto and connected therewith by means of a suitable passage-way, in which is incased a suitable hollow cylinder, the axis of which passes through its center and is journaled in the lid and floor of such chamber, and which has lateral openings therein running lengthwise from end to end, and extending from its periphery inward to its inside chamber, and which has upon the exterior end of its said shaft a cog-wheel, which intermeshes with a cog-wheel of the same size upon the shaft of the hub, and a cog-wheel upon the protruding end of the shaft of the hub, a groove encircling each end of said inside hub close to the lateral openings in its periphery, suitable rings to rest therein against the lid and floor of said basin, grooves on each side of said blade-arms, packing-strips to rest therein, and spiral springs to keep the same in place and press the same against the floor and lid of the basin, and a suitable throttle-valve, substantially as set forth.

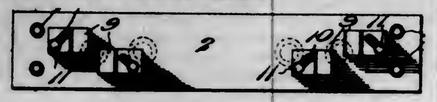
4. The combination, in rotary engines, of the basin A, the lid M, the bolt-holes N, the throttle-valve T, the steam-chamber C, the rotary valve V, with its shaft D', lateral openings K and cog-wheel L, the slot-like passage-way S, the inside hub H, with its shaft D journaled in the lid and floor of the basin at a point outside of its center, leaving the passage-way B for the steam between the periphery of the inside hub and the inside surface of the basin, the cylindrical recesses R in its periphery, the floats or blade-arms F with their cylindrical post-like attachment E and beveled rear end and hinged in the recesses R, with groove G, packing-strips Z and spiral springs I, the circular grooves W in the hub, the circular packing-rings X, the cam portion B'' to B''' on the inside surface of the basin, the exit-hole O and O' for the steam, the triangular chamber J, the cog-wheel L' on the shaft of the hub, the bolts Q, substantially as shown and described and for the purposes set forth.

5. The combination, in rotary engines, of the basin A, the lid M, the steam-chamber C, the rotary valve V, with its shaft D', lateral openings K and cog-wheel L, the passage-way S, the inside hub H, with its shaft D journaled in the lid and floor of the basin so as to leave the passage-way B for the steam between the periphery of the inside hub and the surface of the basin, the cylindrical recesses R in its periphery, the floats F with their post-like attachment E and beveled rear end, grooves G, packing-strips Z, and spiral springs I, the triangular chambers J, the cog-wheel L', the exit-hole O and O' for the steam, and the bolts Q, substantially as shown and described and for the purposes set forth.

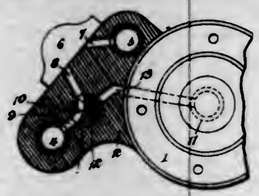
6. The combination, in rotary engines, of the hollow basin A, provided with a suitable entrance thereto and exit therefrom for the steam, and adapted on the inside to receive a cylindrical wheel with opening and closing blade-arms, the lid M, the inside cylindrical hub H, whose axis is journaled in the lid and floor of the basin at a suitable point outside of their respective centers, which is provided with the blade-arms F hinged in its periphery, which open across the passage-way B on one side thereof and fold against its periphery on the other side, leaving a small chamber or opening J in the periphery of the hub at the rear end of such blade-arms which chamber extends the entire length of said hub and under the entire rear end of said blade-arms, whereby the steam may readily penetrate the same, and by its pressure against the entire end of such floats open the same and project them across the passage-way B for the steam, substantially as shown and described and for the purposes set forth.

819,725. **RAILROAD CROSS-TIE.** ARTLEY B. CASKEY, Parkersburg, W. Va. Filed Sept. 13, 1905. Serial No. 278,263.

Claim.—A rail-tie having pairs of oppositely-disposed clamping members near the ends of the top thereof, each pair of members having flat bodies with oblique slots convergingly arranged, and upwardly-inclined arms to fit over a rail-base.



819,726. ENGINEER'S EQUALIZING AND DISCHARGE BRAKE-VALVE. DAVID M. CASKEY, Jonesboro, Ark. Filed Jan. 23, 1905. Serial No. 243,056.



Claim.—1. The combination with an engineer's equalizing and discharge brake-valve having a main train-line pipe and an extension, of an additional train-line pipe connected to the extension, and means carried by the extension for establishing a communication between the two pipes to permit both of them to be controlled by the said equalizer and discharge brake-valve, and also for cutting off the additional train-line pipe to permit only the main train-line pipe to be controlled by the said valve, said means also serving to maintain the pressure in the additional train-line pipe when the latter is cut out from the engineer's brake-valve.

2. The combination with an engineer's equalizing and discharge brake-valve having a main train-line pipe, and an extension provided with passages, of an additional train-line pipe connected to the extension, and a single valve carried by the extension for establishing a communication through the passages of the extension between the two pipes to permit both of them to be controlled by the engineer's equalizing and discharge brake-valve, and also for cutting out the additional train-line pipe to permit only the main train-line pipe to be controlled by the said brake-valve, said single valve also serving to place the additional train-like pipe in communication with the main reservoir-pipe when the said additional train-line pipe is cut out from the engineer's brake-valve.

3. The combination with an engineer's equalizing and discharge brake-valve, of a main train-line pipe, an additional train-line pipe, passages for connecting the additional train-line pipe with the said valve and with the air-supply, and a three-way cock provided with ports or passages arranged to connect the additional train-line pipe either with the air-supply or with the said valve.

4. The combination with an engineer's equalizing and discharge brake-valve, a main reservoir-pipe, and a main train-line pipe, of an additional train-line pipe, passages for connecting the additional train-line pipe with the main reservoir-pipe and with the said valve, and a three-way cock provided with ports or passages arranged to connect the additional train-line pipe with either the main reservior-pipe or the said valve.

5. The combination with an engineer's equalizing and discharge brake-valve, of a main train-line pipe, an additional train-line pipe, a feed or reducing valve, a three-way cock, a branch passage connecting the main reservoir-pipe with the feed-valve, and other passages connecting the three-way cock with the feed-valve, the engineer's equalizing and discharge brake-valve and the additional train-line pipe.

6. The combination with an engineer's equalizing and discharge brake-valve having a main train-line pipe, of an additional train-line pipe, a feed or reducing valve, and a three-way cock for establishing a communication between the said pipes to permit both of them to be controlled by the said valve and for cutting out the additional pipe to permit only the main train-line pipe to be controlled by the brake-valve, said three-way cock being arranged to connect the additional train-line pipe with the feed or reducing valve when the former is cut out from the equalizing and discharge brake-valve.

819,727. STEAM-TOOL. CHARLES L. CHARVAT, Peoria, Ill. Filed Nov. 25, 1902. Serial No. 132,720.

Claim.—1. In a device of the character described, the combination of a member having a cylinder portion and an inlet-port leading into the body of the cylinder and oppositely-disposed exhaust-ports leading from the cylinder and longitudinally disposed in the walls of said member, a piston operatively carried in the member having inlet-ports adapted to alternately communicate with the inlet of the member and a transverse exhaust-port having communication with the exhaust-ports of the member, a slide-valve controlling the inlets of the piston and means for controlling the movements of said valve substantially as specified.



2. In a device of the character described, the combination of a member having a cylinder portion and an inlet-port leading into the body of the cylinder and exhaust-ports leading from the cylinder and longitudinally disposed in the walls of said member, a piston operatively carried in the cylinder having steam-ports opening out of its side, chambers in the walls of the cylinder disposed at its ends and communicating with the ports of the piston, a valve, and a stem carrying the valve movable independent of the movement of the piston, substantially as specified.

3. In a device of the character described, the combination of a steam-cylinder having reduced chambers formed in the opposite ends thereof, a piston operating in said cylinder having ports communicating with the chambers of the cylinder, a slide-valve movable in said piston and means carried by the piston operatively connected with the valve adapted to actuate the same in advance of the return movement of the piston, substantially as described.

4. A tool for the purposes herein, comprising a member having a cylinder portion, a piston operatively carried in the member having inlet and exhaust ports communicating with chambered or recessed portions of the member, and each chamber having reduced or contracted portions, a stem reciprocally arranged in the piston and a slide-valve having a positive connection with the stem which controls the movements thereof for opening or closing the ports of the piston.

5. A tool for the purposes herein, comprising a member having a cylinder portion, a piston operatively carried in said cylinder having a stem disposed to one side of its axial center to which is designed to be attached a suitable tool, also having inlet and exhaust ports opening out of its side, recessed portions of the wall of the cylinder communicating with the inlet-ports of the piston, a stem operatively carried in the piston having protruding ends arranged for engagement with the end walls of the cylinder in advance of the piston and a slide-valve having a positive connection with the stem and controlling the ports of the piston, substantially as described.

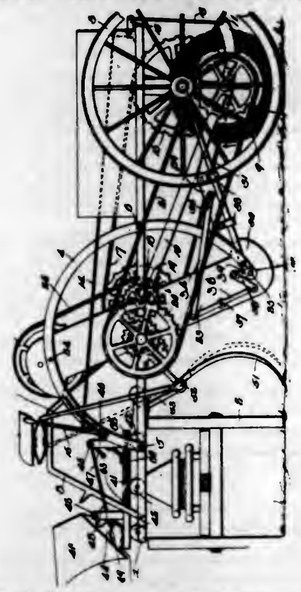
6. In a tool for the purposes described, the combination of a cylindered member having operatively carried therein a piston having inlet and exhaust ports opening out of its sides and provided with an extension disposed to one side of its axial center designed to have attached thereto a suitable tool, chambers 15 suitably disposed in the walls of the cylinder having contracted portions 16 designed to retard the motive medium as it acts on the piston during a portion of its stroke, a reciprocal stem passing through the piston carrying a slide-valve adapted to alternately open and close the ports of the piston, substantially as described.

7. The mechanism for controlling the movements of a tool of the character described, comprising a piston operatively carried in a suitable member having steam-ports opening out of its side, chambers in the walls of the member disposed at opposite ends thereof and communicating with the ports of the piston, a slide-valve, a stem, operating longitudinally in the piston having a portion overlying the valve, the ends of the stem arranged to engage the walls of the member in advance of the piston for shifting the valve for closing one inlet-port and partially opening the other whereby the piston may be returned immediately upon its reaching the end of its stroke, substantially as and for the purposes described.

8. In a device of the character described, the combination of a steam-cylinder having oppositely-disposed chambers in its wall and contracted portions of said chambers, a piston operating in said cylinder having suitable steam-ports, a valve, and a stem carrying the valve movable independent of the movement of the piston, substantially for the purposes set forth.

9. In a device of the character described, the combination of a steam-cylinder having chambers disposed in its walls at opposite ends thereof, a piston operating in said cylinder having ports communicating with the chambers of the cylinder, a slide-valve, and means for relieving the blow of the valve as it abuts with portions of the piston, and a stem carrying the valve and controlling the movements thereof, substantially as described.

819,728. STREET-SWEEPING MACHINE. JAMES P. CLARK, Dallas, Tex. Filed Nov. 15, 1904. Serial No. 232,883.

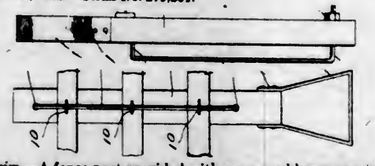


Claim.—1. In a street-sweeping machine, a rotatable brush, a conveyer, a reciprocating shovel working between the brush and the conveyer, a tiltable track, and means for reciprocating the shovel upon the track and tilting the latter at the forward limit of the shovel to dump the sweepings into the conveyer.

2. In a street-sweeping machine, a rotary brush, a conveyer, a shovel working between the brush and the conveyer, track-arms pivotally supported at their forward ends and upon which the shovel slides, connections carried by the shovel and slidably engaging the track-arms, and means to slide the shovel upon the track-arms and to tilt the latter upon their pivotal supports to dump the sweepings from the shovel into the conveyer.

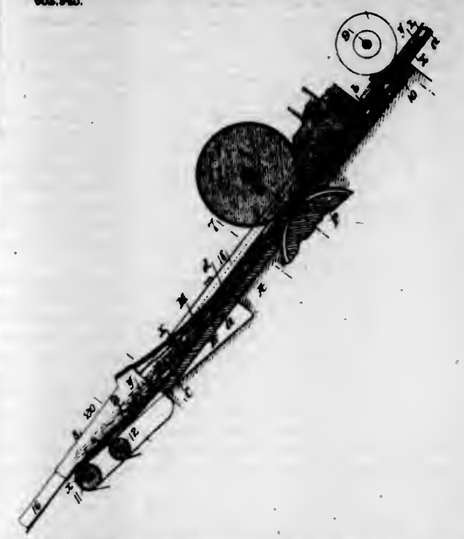
3. In a street-sweeping machine a rotary brush, an elevating-conveyer, a shovel working between the brush and the conveyer, track-arms pivotally supported at their forward ends and upon which the shovel slides, means to slide the shovel upon the track-arms and to tilt the latter upon their pivotal support to dump the sweepings from the shovel into the conveyer, and a receptacle disposed to receive the sweepings from the conveyer.

819,729. FENCE-POST. JOSEPH B. CLEVEN, Lodi, Wis. Filed Sept. 19, 1905. Serial No. 279,201.



Claim.—A fence-post provided with upper and lower apertures, and a rod having its upper end bent at right angles to its main portion and engaged through said upper aperture, the extreme end of said rod being threaded to receive a nut, the lower end of said rod being bent at right angles to its main portion and engaged through said lower aperture, the extreme ends of the last-named portion being bent downwardly at right angles to the said portion and arranged to lie against the rear face of said post, the main portion of said rod being spaced throughout its entire length from the said post.

819,730. CIGARETTE-MACHINE. WILLIAM T. COALTER, Barton Heights, Va., assignor to The American Tobacco Company, Newark, N. J., a Corporation of New Jersey. Filed Aug. 17, 1896. Serial No. 602,945.



Claim.—1. In a cigarette-machine, a former having the belt-guides c extending along the former and inclined downwardly toward each other at the rear end of the former and gradually changing to vertical position, substantially as described.

2. Former B having its side walls inclined to form a gradually-contracting channel and having the belt-guides c and wrapper-guides *d* extending along the side walls of the former and inclined downwardly toward each other at the rear end of the former and gradually changing to vertical position, substantially as described.

3. In a cigarette-machine of the class described having a tubular tobacco-receiving means, wrapper-guides inclined to form grooves for receiving the edges of the wrapper, said grooves increasing gradually in width in the direction of movement of the wrapper, substantially as described.

4. Former B having the inclined side walls forming a gradually-contracting channel and having the wrapper-guides *d* inclined to form wrapper-grooves increasing gradually in width in the direction of movement of the wrapper, substantially as described.

5. Former B having the inclined side walls forming a gradually-contracting channel and having the wrapper-guides *d* inclined to form wrapper-grooves increasing gradually in width in the direction of movement of the wrapper, in combination with the top filler-molding tongue M, substantially as described.

6. In a cigarette-machine of the class described having a tubular tobacco-receiving means, wrapper-guides inclined to form grooves for receiving the edges of the wrapper, said grooves increasing gradually in width in the direction of movement of the wrapper, in combination with a filler-molding tongue, substantially as described.

7. The combination with the wrapper-folding and seam-closing devices of a continuous-rod crimped-seam cigarette-machine, of a presser-roller above the filler adjacent to and behind the wrapper-folding devices, and the inclined top filler-molding tongue rearward of and adjacent to the presser-roller, substantially as described.

8. The combination with the wrapper-folding and seam-closing devices of a continuous-rod crimped-seam cigarette-machine, of a former provided with inclined side walls forming a gradually-contracting channel, a presser-roller adjacent to and behind the wrapper-folding devices, and an inclined top filler-molding tongue rearward of and adjacent to the presser-roller, substantially as described.

9. The combination with a former having inclined side walls forming a gradually-contracting channel with wrapper and belt guides extending through the channel, of a mouthpiece having a bottom over which the tobacco is fed in out of contact with the wrapper, and an inclined top filler-molding tongue, substantially as described.

10. The combination with the filler forming and wrapping devices of a cigarette-machine, and a belt carrying the filler and wrapper, of feeding devices engaging the filler and belt and driven by means other than the belt for securing the movement of the filler with the belt to the wrapping devices, substantially as described.

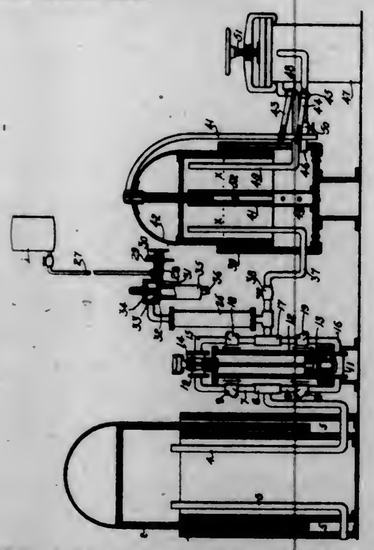
11. The combination with the filler-forming and wrapper-folding devices of a cigarette-machine, of a support within the wrapper, means coacting with said support to secure the edges of the wrapper into a seam, a belt carrying the filler and wrapper, and feeding devices engaging the filler and belt adjacent to and behind the support for securing the movement of the filler with the belt beneath the support, substantially as described.

12. The combination with the filler forming and wrapping devices of a cigarette-machine, and a belt carrying the filler and wrapper, of a feeding-roll above the filler, and feeding devices driven by means other than the belt and engaging the belt and coacting with the roll to secure the movement of the filler with the belt to the wrapping devices, substantially as described.

13. The combination with the filler forming and wrapping devices of a cigarette-machine and a belt carrying the filler and wrapper, of feeding devices for securing the movement of the filler with the belt to the wrapping devices, said feeding devices including a feeding belt or chain engaging the wrapper-belt and moving therewith to the wrapping devices, substantially as described.

14. The combination with the filler forming and wrapping devices of a cigarette-machine, printing devices for the wrapper, and a belt carrying the filler and wrapper, of feeding devices engaging the filler and belt and driven by means other than the belt for securing the movement of the filler with the belt to the wrapping devices, substantially as described.

819,731. **GAS GENERATOR AND MIXER.** JAMES B. CRAWFORD and EDWARD M. SINCLAIR, Sioux City, Iowa, assignors to The Union Gas Company, Sioux City, Iowa, a Corporation of Iowa. Filed June 9, 1905. Serial No. 264,495.



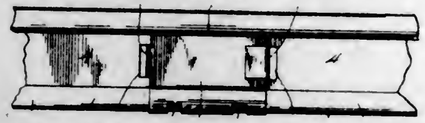
Claim.—1. In a gas generator and mixer, the combination with a mixture-holder, of a pump, an atomizer connected with said pump, a suction-valve, an oil-supply connected with said suction-valve, a needle-valve, the suction-valve arranged to be operated by the suction of the pump, the casing of the said suction-valve having the needle-valve duct opening through it and the said suction-valve being constructed and arranged to open and close the said duct, the casing of the suction-valve being connected with the said atomizer, an acetylene-generator having an outflow-pipe connected to the said pump at the same point of connection of the said atomizer, and a valve in said outflow-pipe for controlling the flow of acetylene, substantially as described.

2. In a gas generator and mixer, the combination with a mixture-holder, of a pump, a rotary atomizer connected with the pump, an oil-supply, a suction-valve arranged to be operated by the suction of the pump, the casing of the said suction-valve having a duct opening through it and connected with the said oil-supply, means for controlling the supply of oil to the said duct, the said suction-valve being constructed and arranged to open and close the said duct, the casing of the suction-valve being connected with the said atomizer, an acetylene-generator having an outflow-pipe connected with the said pump, and a valve in the said outflow-pipe for controlling the flow of acetylene gas, substantially as described.

3. In a gas generator and mixer, the combination with a mixture-holder, of a pump, an atomizer connected with the said pump, means for supplying oil to the said atomizer, an acetylene-holder having an outflow-pipe connected with the said pump, the said holder having a water seal, an acetylene-generator, a pipe connecting the water seal of the acetylene-holder with the acetylene-generator and having a cut-off valve, a pipe connecting the said acetylene-generator with the gas area of the acetylene-holder and having a cut-off valve, and attachments whereby the said valves in both said pipes are operated by the movements of the acetylene-holder bell, substantially as described.

4. In a gas generator and mixer, the combination with a mixture-holder, of a pump, an atomizer connected with the pump, a suction-valve connected with the said atomizer, an oil-supply connected with the suction-valve, means for controlling the oil-supply, and an acetylene-generator having an outflow-pipe connected with the said pump, substantially as described.

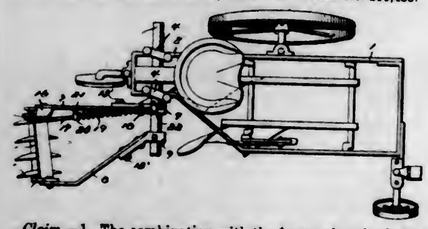
819,732. **RAILWAY-RAIL JOINT.** RANSOM D. CREAL, Singer, La. Filed Jan. 25, 1906. Serial No. 297,850.



Claim.—1. In a railway-rail joint, the combination with the rails having apertures formed through their webs near their ends, of fish-plates constructed with tongues at their ends adapted to be passed through the said apertures in opposite directions, overlapping each other in said apertures and the extended ends of the tongues being bent inward toward the joint, clenching the fish-plates in position.

2. In a railway-rail joint, the combination with the rails having apertures formed through their webs near their ends, of fish-plates constructed with tongues at their ends adapted to be passed through the said apertures in opposite directions, overlapping each other in said apertures, and the extended ends of the tongues being bent inward toward the joint, clenching the fish-plates in position, the fish-plates being, moreover, extended at their lower edges to cover the inclined sides of the base of the rail and provided with notches at their lower edges.

819,733. **HARROW ATTACHMENT FOR PLOWS.** JOSEPH L. CHANDLER, Perth, Kans. Filed Sept. 23, 1905. Serial No. 280,438.



Claim.—1. The combination with the frame of a wheeled plow comprising oppositely-arranged side bars, of a harrow-frame carrying harrow elements and connected to both side bars of the plow-frame in such manner as to permit the harrow-frame to be adjusted laterally with respect to the plow-frame.

2. The combination with the frame of a wheeled plow comprising oppositely-arranged side bars, of a harrow-frame carrying harrow elements and connected to both side bars of the plow-frame in such manner as to permit the harrow-frame to be adjusted fore and aft with respect to the plow-frame.

3. The combination with the frame of a wheeled plow, of a two-armed harrow-frame, a supporting-bar therefor connected to the plow-frame by means permitting the same to be adjusted lengthwise and laterally, and a tilting harrow-element hanger carried by the harrow-frame.

4. The combination with the frame of a wheeled plow comprising oppositely-arranged side bars, of a harrow-frame carrying harrow elements, a harrow-frame-supporting bar extending transversely across the side bars of the plow-frame, and clamping means connecting said bar to the plow-frame side bars and permitting said bar to be adjusted laterally, fore and aft and angularly with respect to said side bars.

5. The combination with a plow-frame, of a harrow-frame carrying harrow elements, a harrow-frame-supporting bar extending transversely of the plow-frame, side bars thereon, a harrow-element hanger supported at opposite sides by said side bars, and means permitting one of the side bars of the harrow-frame to be adjusted up and down independently of the other side bar.

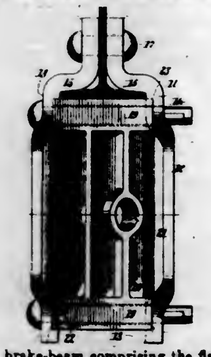
6. The combination with a plow-frame, of a harrow-frame carrying harrow elements and comprising oppositely-arranged side bars one of which has a jointed and adjustable connection with the plow-frame, and a harrow-element hanger mounted between said side bars to tilt on a substantially horizontal axis.

7. The combination with a plow-frame, of a harrow-frame carrying harrow elements and comprising oppositely-arranged side bars one of which has a head-piece connected to the plow-frame, said side bar having a jointed and adjustable connection with its head-piece, and a tilting harrow-element hanger supported at opposite sides by said side bars.

8. The combination with a plow-frame, of a harrow-frame adjustably but rigidly connected therewith, a tilting harrow-element hanger pivotally connected to and carried by the harrow-frame, a tension device connecting the hanger and harrow-frame and adjustable with the latter, and means for setting the hanger at any angle with respect to the vertical.

9. The combination with a plow-frame, of a harrow-frame adjustably but rigidly connected therewith, a tilting harrow-element hanger pivotally connected to and carried by the harrow-frame, a tension device connecting the hanger and harrow-frame and adjustable with the latter, and means on the hanger for adjusting the tension of said device and regulating the angle of the hanger.

819,734. **BRAKE-BEAM FOR RAILWAY-CARS.** SETH A. CRONE, New York, N. Y. Filed Nov. 15, 1904. Serial No. 232,788.



Claim.—1. A brake-beam comprising the flanged body-beam, and a fulcrum therefor consisting of the upper and lower side arms secured to the upper and lower faces of said beam and being opposite to each other, a fulcrum-block extending transversely of the beam and confined throughout its length between said arms, and detachable means for removably securing said block in position, whereby said block may be applied or removed without disturbing said arms, said block having the diagonally disposed slot and pin-holes; substantially as set forth.

2. A brake-beam comprising the flanged body-beam, and a fulcrum therefor consisting of the forged-metal upper and lower side arms secured to the upper and lower faces of said beam and being opposite to each other transversely of same, and a fulcrum-block extending transversely of the beam between said side arms and having corresponding ends and centrally-disposed diagonal pin-holes, whereby said block may be reversed end for end and used for either a right or left hand fulcrum; substantially as set forth.

3. A brake-beam comprising the flanged body-beam, and a fulcrum therefor consisting of the upper and lower side arms secured to the upper and lower faces of the beam and being opposite to each other transversely of same, and a fulcrum-block extending transversely of the beam between said side arms and having corresponding ends and centrally-disposed diagonal pin-holes, whereby said block may be reversed end for end and used for either a right or left hand fulcrum; substantially as set forth.

4. A brake-beam and a fulcrum therefor consisting of a frame comprising side arms opposite each other and having along their middle portions convex inner surfaces, and a fulcrum-block extending transversely of the beam between said sides and having the pin-holes and brake-lever slot; substantially as set forth.

5. A brake-beam and a fulcrum therefor consisting of a frame comprising side arms opposite each other, a fulcrum-block extending transversely of the beam between said arms and having gibs to engage said arms; substantially as set forth.

6. A brake-beam and a fulcrum therefor consisting of a frame comprising forged-metal upper and lower side arms secured to the upper and lower faces of the beam and being opposite to each other transversely of the beam, and a fulcrum-block extending transversely of the beam and confined throughout its length between said arms and having corresponding ends and the centrally-disposed brake-lever slot and pin-holes, whereby said block may be adapted, on reversing it end for end, for either a right or a left hand fulcrum; substantially as set forth.

7. A brake-beam comprising the flanged body-beam, and a fulcrum therefor consisting of the upper and lower side arms secured to the upper and lower faces of the beam and being opposite to each other transversely of same, and a fulcrum-block extending transversely of the beam between said side arms, and bolts extending transversely of the beam and through said arms and the ends of said block; substantially as set forth.

8. A brake-beam and a fulcrum therefor consisting of a frame comprising side arms opposite each other, a fulcrum-block extending transversely of the beam between said arms and having heads on whose edges are gibs to engage said arms, and bolts passing through said arms and heads; substantially as set forth.

9. A brake-beam and a fulcrum therefor consisting of a frame comprising forged-metal arms flanged at their inner ends to engage the beam, and a cast-metal fulcrum-block extending between said arms and secured thereto; substantially as set forth.

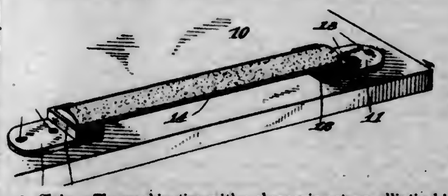
10. A brake-beam and a fulcrum therefor consisting of a frame comprising independent forged-metal arms secured at their inner ends to the beam, and a cast-metal fulcrum-block detachably secured between said arms and removable therefrom without detaching said arms; substantially as set forth.

11. A brake-beam and a fulcrum therefor consisting of a frame comprising independent forged-metal arms secured at their inner ends to the beam, and a cast-metal fulcrum-block detachably secured between said arms and removable therefrom without detaching said arms, said block having gibs to engage said arms; substantially as set forth.

12. A brake-beam and a fulcrum therefor consisting of a frame comprising independent forged-metal arms secured at their inner ends to the beam, a cast-metal fulcrum-block extending between said sides, and bolts passing through said arms and the ends of said block; substantially as set forth.

13. A brake-beam and a fulcrum therefor consisting of a frame comprising independent forged-metal arms secured at their inner ends to the beam, a cast-metal fulcrum-block extending between said sides, and bolts passing through said arms and the ends of said block, said block having gibs to engage said arms; substantially as set forth.

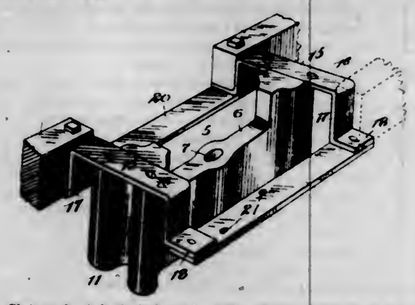
819,735. **KNIFE-SHARPENER SUPPORT.** LAWRENCE W. CRUCE, Marion, Ky. Filed Jan. 4, 1904. Serial No. 187,712.



Claim.—The combination with a sharpening-stone, elliptical in cross-section, of a support therefor comprising a pair of disconnected

plates provided with means for independent attachment to a suitable support thereby to permit of adjustments to and from each other to accommodate a sharpening-stone of any length, each plate being provided with a socket conforming in shape and adapted to receive the terminals of the sharpening-stone, the coaction between the stone and the sockets being such that the former will be permitted slightly to turn thus to accommodate itself to the different angular positions assumed by the knife when being sharpened.

819,736. **BODY-BOLSTER.** SAMUEL M. CURWEN, Haverford, Pa., assignor to John A. Brill, Philadelphia, Pa. Filed July 11, 1905. Serial No. 269,189.



Claim.—1. A body-bolster for railway-cars, comprising upper and lower bars and a central intermediate strut having a centrally-depressed portion, a bearing formed therein for the reception of the king-bolt and a transverse keyway to secure said bolt therein, the opposite ends of said strut being recessed for the reception of hangers to be secured to the car-floor sills and having apertures for bolts to secure the strut, hangers and upper and lower bars together.

2. A car-bolster comprising upper and lower longitudinal members, having an intermediate strut, hangers secured to said strut and adapted to be secured to the car-floor sills.

3. A body-bolster for railway-cars, comprising upper and lower longitudinal members, having an intermediate strut separating the two longitudinal members; hangers adapted to be secured to the floor-sills, and disposed longitudinally of the car over the said strut and secured to the latter.

4. A body-bolster for railway-cars, comprising upper and lower longitudinal members having an intermediate strut 5 which is provided with a central depressed portion, adapted to provide a space for the purposes set forth, and longitudinal hangers 15 secured upon the said strut and having outwardly-extending ends 18 adapted to be secured to the car-floor sills.

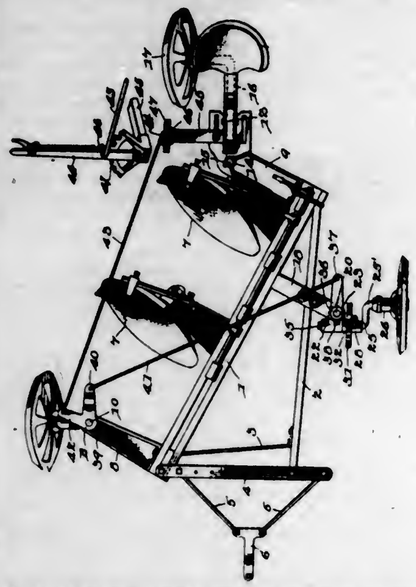
5. A body-bolster for railway-cars, comprising upper and lower longitudinal members, and an intermediate strut 5 having a depressed central portion, a king-bolt adapted to be inserted from the under side, and means for holding the same in position, hangers 15 resting on top of said strut and having outwardly and downwardly extending ends, adapted to be secured to the floor-sills of the car, said hangers being disposed longitudinally of the car and connecting-straps 20 secured to the hangers 18 and to the floor-sills.

6. A body-bolster comprising upper and lower longitudinal members, an intermediate strut, and hangers adapted to be secured to the floor-sills, said hangers, strut and bolster members all being bolted together.

819,737. **PLOW.** WILHELM G. DANIELSEN, Logan, Utah. Filed Oct. 31, 1905. Serial No. 285,282.

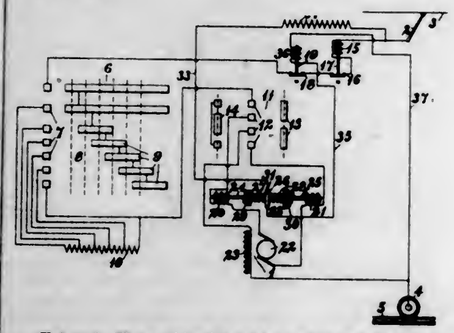
Claim.—1. In a riding-plow, a spindle supported for rotation, a land-wheel connected with said spindle and capable of adjustment independently of the spindle, an upright spindle carrying a leading furrow-wheel, a bell-crank upon the latter spindle, an arm adjustable upon the land-wheel-carrying spindle, a link-rod connecting said arm with one of the arms of the bell-crank, an operating-lever, a link-rod connecting the other arm of the bell-crank with the operating-lever, and means for retaining the latter at various adjustments.

2. In a riding-plow, an approximately vertical spindle supported for rotation and having at its lower end a head provided with a transverse bore, a shaft supported for oscillation in said bore and having a land-wheel-carrying crank, an adjusting-lever secured upon the shaft, a rack-segment supported upon the shaft between the adjusting-lever and the head constituting the bearing for the shaft and engaging said head to be thereby held against rotation upon the shaft, and means for assembling the parts.



3. In a riding-plow, a spindle supported for rotation and having at its lower end a head provided with a transverse bore and with a shoulder or offset, a rock-shaft supported in said bore and having a land-wheel-carrying crank, a rack-segment having a hub loosely engaging said shaft and provided with a recess engaging the offset upon the head of the spindle, an adjusting-lever adjustably secured upon the rock-shaft adjacent to the rack-segment, and a connecting member engaging the rock-shaft adjacent to the head of the spindle.

819,738. **ELECTRIC-MOTOR-CONTROL SYSTEM.** ADOLPH H. DAUB, Chicago, Ill., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed Mar. 17, 1905. Serial No. 250,643.



Claim.—1. The combination with a series electric motor, of normally-balanced coils in the motor-circuit, an interrupting device for said circuit, and a local governing-circuit for said interrupting device that causes said interrupting device to open the motor-circuit when the pulls of the normally-balanced coils are rendered unequal by an accidental ground connection.

2. The combination with a series electric motor, of an interrupting device in the motor-circuit, a local circuit having a controlling-coil for said interrupting device, an opening and closing device for the local circuit, and opposing coils in the motor-circuit the one or the other of which actuates the movable contact member of said opening and closing device when the motor-armature becomes grounded.

3. The combination with a series electric motor and an interrupting device for its circuit, of a local controlling-circuit for said interrupting device, a movable contact member for opening and closing the local circuit and two coils in the motor-armature circuit that act magnetically upon said movable contact member in opposition to each other and the one or the other of which actuates said movable member when the motor becomes grounded.

4. The combination with a series electric motor and an interrupting device for its circuit, of a local circuit for controlling said interrupting device and having adjacent contact-terminals, a movable bridge-piece for making and breaking contact with said terminals, springs for normally holding said bridge-piece in mid-position, oppositely-acting coils in the motor-circuit at opposite sides of the motor-armature that are normally of equal strength but are unbalanced when the armature is grounded, and cores or armatures for said coils that are connected to the movable bridge-piece.

5. The combination with a series electric motor and an interrupting device for its circuit, of a local circuit for controlling said interrupting device and having adjacent contact-terminals, a movable bridge-piece for making and breaking contact with said terminals, springs for normally holding said bridge-piece in mid-position, oppositely-acting coils in the motor-circuit at opposite sides of the motor-armature that are normally of equal strength but are unbalanced when the armature is grounded, and means for preventing automatic reclosure of the motor-circuit after it has been automatically opened.

6. The combination with an electric motor, of means for automatically opening the motor-circuit when the armature becomes grounded and means for preventing reëstablishment of the circuit so long as the grounded condition is maintained.

7. The combination with a series electric motor, of means for automatically opening the motor-circuit when the armature becomes grounded and means for preventing a reëstablishment of the circuit while the armature remains grounded.

819,739. **POST-HOLE AUGER.** JOSEPH M. DERRYBERRY, Guymon, Okla. Filed Sept. 25, 1905. Serial No. 279,974.

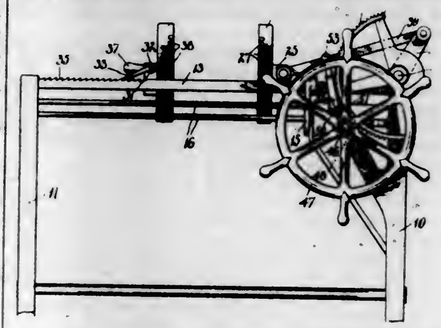


Claim.—A post-hole auger comprising a casing which is in sections, pivotally-connected shanks extending from the top of the casing-sections, a centering-rod carried by one of the sections, bottom plates secured to the sections, said plates having notches through which the centering-rod extends, and having their inner edges bent downwardly to form diametrically opposite cutting-lips, and attaching-ears extending from the bottom plates for securing said plates to the casing-sections, said ears having outwardly-projecting lips to form reamers.

819,740. **BUNDLING-PRESS.** TALBOT C. DEXTER, Pearl River, N. Y. Filed Apr. 29, 1905. Serial No. 258,034.

Claim.—1. In a bundling-press, the combination of a pair of end frames, a pair of track-bars supported in said end frames and having rack-teeth formed on them for a part of their length, a pair of compression-heads mounted to slide on said track-bars, a pair of pawls mounted on one of said heads and engaging with the rack-teeth to hold said head in adjusted position, means for forcing the second head toward the first to compress the bundle between them, and suitable trough-bars for supporting the bundle to be compressed, substantially as described.

2. In a bundling-press the combination of a pair of end frames, a pair of track-bars rigidly mounted upon and connecting said end frames, a bracket depending from said track-bars near their front end, a bifurcated supporting-brace fixed at top to the bottom of the bracket and at bottom to the front end frame, a bundling-trough consisting of bars supported in front in the said bracket and at back in the rear end frame independently of the track-bars, a pair of compression-heads movably mounted on the track-bars and supported thereby independently of the trough-bars in position to operate in the trough, means for securing one of the heads upon the track-bars and means for moving the other head toward the secured head.

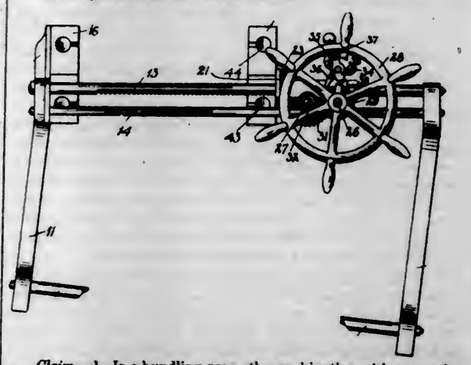


3. In a bundling-press, the combination of a suitable frame including a pair of track-bars, racks formed on a portion of said track-bars, a trough supported upon said frame parallel with the track-bars, a pair of compression-heads movably mounted upon the track-bars and supported thereby independently of the trough in position to operate in the trough, a pair of detents mounted upon one of said compression-heads in position to engage said racks, and operating means for moving the other head upon the track-bars.

4. In a bundling-press, the combination of a suitable frame including a pair of track-bars, racks formed on a portion of said track-bars, a bundling-trough supported upon said frame parallel with said track-bars, a pair of compression-heads movably mounted upon the track-bars and adapted to operate in the trough, a shaft journaled upon one of the compression-heads, pawls or detents mounted upon said shaft in position to engage the racks of said track-bars, a controlling-handle secured to said shaft, and means acting upon the other compression-head to move it upon the track-bars.

5. In a bundling-press, the combination of a pair of end frames, a pair of track-bars mounted at their ends in said end frames, a bundling-trough consisting of bars supported at their front ends from the front end frame by means of a suitable bracket and at their rear ends in the rear end frame independently of the track-bars, a pair of compression-heads supported on the track-bars independently of the bundling-trough and sliding within said trough, means for securing the rear head adjustably in position, and a hand-wheel, pinion, segment-rack, crank and pitman for forcing the front head toward the rear head to compress the bundle between them, substantially as described.

819,741. **BUNDLING-PRESS.** TALBOT C. DEXTER and CHARLES O. L. CARDELL, Pearl River, N. Y.; said Cardell assignor to said Dexter. Filed Apr. 29, 1905. Serial No. 258,035.



Claim.—1. In a bundling-press, the combination with a trough, of a pair of invertible compression-heads removably mounted in said trough and each formed in its working face with intersecting slots

and enlarged hand-channels, each of which slots is at unequal distances from opposite edges of the working face as described.

2. In a bundling-press, the combination with a trough, of a pair of invertible rectangular compression-heads removably mounted in said trough, and means for moving one of said heads toward and away from the other; each of said compression-heads being formed in its working face with intersecting slots which extend parallel with and at unequal distances from opposite edges of the working face as described.

3. In a bundling-press, the combination with a trough, of a pair of invertible compression-heads removably mounted in said trough, and formed in their working faces with intersecting slots, each slot being at unequal distances from opposite edges of the working face, means for supporting one of said heads against movement in the trough, a carriage mounted upon the trough, and means detachably connecting the other compression-head with said carriage.

4. In a bundling-press, the combination with a trough, of a pair of invertible compression-heads removably mounted in said trough, and formed in their working faces with intersecting slots, each slot being at unequal distances from opposite edges of the working face, means for supporting one of said heads against movement in the trough, a carriage mounted upon the trough, and a device arranged centrally upon the back of said other compression-head adapted for detachably connecting it with said carriage in either of the operative positions of said heads, substantially as described.

5. In a bundling-press, the combination with a trough, and a stationary rack-bar parallel therewith; of a pair of heads suitably positioned in said trough; and a pinion suitably journaled upon one of said heads and meshing with said stationary rack-bar and adapted to be rotated to move the head upon which the pinion is journaled.

6. In a bundling-press, the combination with a trough, of stationary rack-bars, coöperating heads positioned in said trough, means for securing one of said heads against movement, a carriage adapted to travel in the trough upon said rack-bars, means detachably connecting the other of said heads to said carriage, and pinions journaled upon said carriage and in mesh with said stationary rack-bars and adapted to be rotated to cause said carriage to travel.

7. In a bundling-press, the combination with a trough, a carriage movable in the trough, a pair of heads supported in the trough, means for securing one of the heads against movement, a pin-and-slot connection between the carriage and the other head, and means for moving the carriage and connected head in the trough.

8. In a bundling-press, the combination with a trough, a carriage formed with a recess or slot and adapted to move in said trough, and a pair of heads positioned in said trough; of means for fixing one of said heads in said trough, a headed bolt secured to the other of said heads and adapted to engage the recess or slot of said carriage for detachably securing said head to said carriage, and means for causing said carriage to move in said trough.

9. In a bundling-press, the combination of a trough, a pair of compression-heads supported in the trough, means for securing one of said heads against movement, and operating mechanism engaging the other head and traveling with it upon the trough, said operating mechanism including a driving-wheel which is arranged to rotate in a plane parallel with the length of the trough.

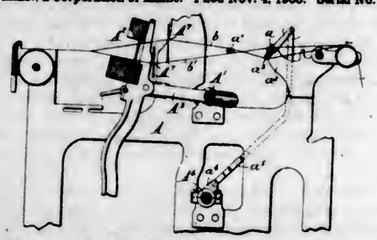
10. In a bundling-press, the combination of a trough, a rack-bar, a pair of compression-heads supported in the trough, means for securing one of said heads against motion, a carriage mounted to move in the trough and adapted to engage the other compression-head, a pinion journaled upon the carriage and meshing with said rack-bar, a driving-shaft journaled upon the carriage and extending transversely of the trough, gearing between the driving-shaft and pinion, and a hand-wheel mounted upon the driving-shaft and supported thereby to rotate in a plane parallel with the length of the trough.

11. In a bundling-press, the combination with a pair of rack-bars, a pair of trough-bars, a pair of heads positioned upon said rack-bars and trough-bars, and means for securing one of said heads stationarily upon said rack-bars and trough-bars; of a carriage adapted to slide along on said rack-bars, means for securing the other of said heads to said carriage, a pair of spur-gears journaled in said carriage meshing with said rack-bars, and means for operating said spur-gears to cause said carriage to travel along on said rack-bars.

12. In a bundling-press, the combination with a pair of rack-bars; a pair of trough-bars, a pair of heads positioned on said rack-bars, and trough-bars, and means for securing one of said heads stationarily upon said rack-bars and trough-bars; of a carriage slidably positioned upon said rack-bars, means for securing the other of said heads to said carriage, a pair of shafts journaled in said carriage, a hand-wheel and small gear-wheel fixed on one of said shafts and a large gear-wheel and a pair of spur-gears fixed on the other of said shafts, said large gear-wheel meshing with said small gear-wheel and said spur-gears meshing with said rack-bars.

13. In a bundling-press, the combination of a trough, a pair of invertible rectangular compression-heads one of them movably mounted in said trough, each of said heads having in its working face a pair of slots intersecting at a point on the vertical diagonal of the face at unequal distances from the upper and lower corners thereof so that by the inversion of the blocks, the point of intersection of the slots may be located at a higher or lower level relatively to the trough to suit bundles of different size as explained.

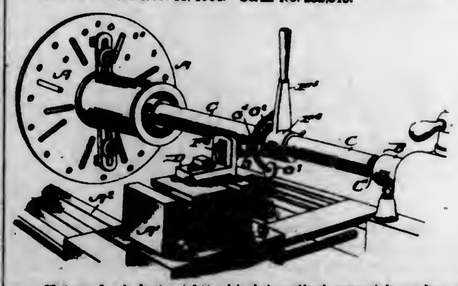
819,742. **WARP-TENSIONING MEANS FOR LOOMS.** WILLIAM F. DRAPER, Hopedale, Mass., assignor to Draper Company, Hopedale, Mass., a Corporation of Maine. Filed Nov. 4, 1905. Serial No. 285,844.



Claim.—1. In a loom for weaving with slack warp-threads, the combination of the lay and shedding mechanism, of means for tightening or taking up the slack of the warp-threads in the upper shade or plane of the shed during the picking operation and for slackening the warp-threads in said plane of the shed during the beat-up.

2. In a loom for weaving with slack warp-threads, the combination of the lay and shedding mechanism, of means for holding the warp-threads in the upper shade or plane of the shed taut during the picking operation and for slackening said warp-threads in the upper shade or plane of the shed during the beat-up.

819,743. **BORING-BAR.** SAMUEL DYER and FRANK P. DYER, Muncie, Ind. Filed Nov. 11, 1904. Serial No. 232,315.



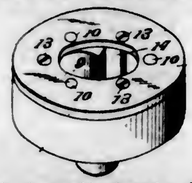
Claim.—1. A device of the kind described comprising a bar, a sleeve adapted to slide on the bar, an eccentric cutter-head carried by the sleeve and diagonally slotted, a split band, means for clamping the band adapted to be clamped on said cutter-head, said band having a longitudinally-slotted projection and apertured in alinement with the slot in the projection said aperutre and slot being adapted to aline with the slot of the cutter-head, a cutting-tool held in said slots, means for rotating the bar with reference to the sleeve, and means for moving the sleeve.

2. A device of the kind described comprising a boring-bar, having end sockets, a sleeve fitting loosely on the bar and exteriorly threaded at one end, a cutter-head carried by the opposite end of the sleeve, a collar partially threaded to fit the threaded portion of the sleeve, said collar being slidably keyed to the bar, and a handle carried by the collar

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819,744. **DRILL-CHUCK.** SOPHUS A. BIERMANN, Omaha, Nebr., assignor of one-half to Joseph C. Moore, Omaha, Nebr. Filed July 6, 1905. Serial No. 268,266.

Claim.—1. In a chuck, the combination of a shell having an annular groove and equidistant longitudinal grooves in its inner walls, an inner plate having lugs at its periphery to pass through said longitudinal grooves and enter said annular groove, an outer plate connected to the inner plate for synchronous movement therewith, and dogs arranged between the two plates and journaled thereto, and having hubs fitted in the longitudinal grooves of the shell.



2. In a chuck, the combination of a shell, clutching-pawls mounted therein, and a rotatable plate in the shell connected with said pawls to lock the same into engagement with the work, the outer face of said plate being roughened as and for the purpose set forth.

3. In a chuck, the combination of a shell having an annular groove and equidistant longitudinal grooves, an inner plate having lugs at its periphery to pass through said longitudinal grooves and enter said annular groove whereby said plate is mounted to rotate within the shell, dogs or pawls mounted upon said plate and provided with hubs seated in said longitudinal grooves whereby the rotation of the plate with respect to the shell will actuate said pawls, and an outer plate mounted on the shell to connect with the first-named plate, the outer face of the first-named plate being roughened or toothed as and for the purpose set forth.

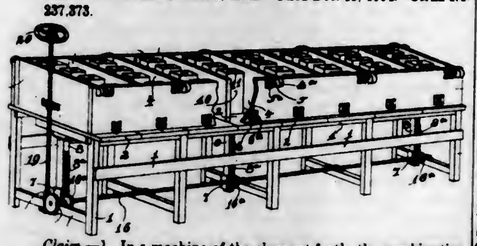
819,745. **SAW-SET.** ALEXANDER FLEMING, Davenport, Iowa. Filed Nov. 1, 1904. Serial No. 230,959.



Claim.—1. A saw-set comprising two blades pivotally connected said blades having a portion of their opposing faces beveled in cross-section, and a guide-flange carried by one of said blades and adapted to limit the closing movement of the other blade.

2. A saw-set comprising two pivoted blades having coacting beveled faces, and a guide-flange carried by the inner side of one blade, said flange diverging upwardly and outwardly from the said blade and forming a seat and stop for the other blade.

819,746. **MACHINE FOR MAKING ARTIFICIAL STONE.** ALEXANDER A. FORBES, Duluth, Minn. Filed Dec. 19, 1904. Serial No. 237,373.

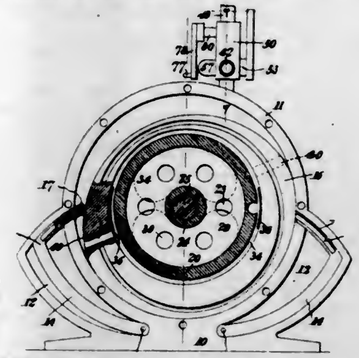


Claim.—1. In a machine of the class set forth, the combination of a supporting-frame, a plurality of platens resting upon said frame, side walls erected on said platens having notches in their upper edges and projections on their inner faces forming indents in the molded blocks and vertical channels, end and partition walls resting in said channels and extending from the one to the other of said side walls and having extensions beyond said side walls adapted to fit in said notches, bolts secured to the outer faces of said side walls and adapted to engage said extensions and platens, a bed below said platens, a plurality of core-blocks secured to said bed, a plurality of standards on the upper ends of which said bed is secured, racks on said standards, a shaft, a plurality of pinions on said shaft to engage said racks, and means for turning said shaft.

2. In a machine of the class set forth, the combination of a supporting-frame, a plurality of platens resting upon said frame, side walls erected on said platens having notches in their upper edges, end and partition walls extending from the one to the other of said side walls and having extensions beyond said side walls adapted to fit in said notches, means on said side walls for engaging said extensions and platens to hold the parts together, a bed below said platens, a plurality of core-blocks on said bed, a plurality of standards on the upper ends of which said bed is secured, racks on said standards, a shaft, a plurality of extensions on said shaft to engage said racks, means for turning said shaft, and means for contracting the depth and width of mold-spaces within the walls of the mold.

3. In a machine of the class set forth, the combination of a supporting-frame having side walls and end and partition walls extending from the one to the other of said side walls, said side walls having notches in their upper edges and said end and partition walls having extensions beyond said side walls adapted to fit in said notches, a bed, a plurality of standards on the upper ends of which said bed is secured, racks on said standards, a shaft, a plurality of pinions on said shaft to engage said racks, means for turning said shaft, indented platens on said support and below said walls, said platens loosely meshing with each other so as to leave a zigzag space between them, and a removable zigzag core conforming with the zigzag course between said platens.

819,747. **ROTARY ENGINE.** ANDREW F. FORD, Colfax, Wash. Filed Aug. 28, 1905. Serial No. 276,136.



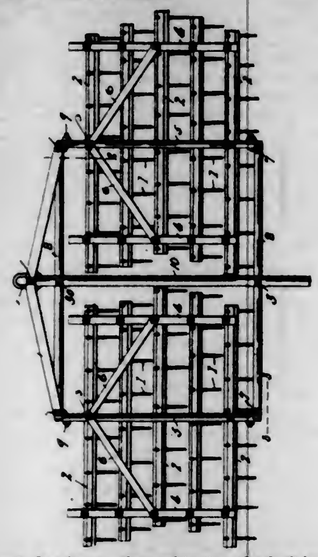
Claim.—1. The combination in a rotary engine, of a cylinder having opposite heads provided with inwardly-extending annular flanges, a piston, the opposite sides of which are recessed to form a thin central web that extends between the flanges and is provided with openings for the passage of air, a shaft to which a web is secured, the body portion of the piston on opposite sides of said web being disposed in the steam-space between the flanges and the outer wall of the cylinder, packing-rings between the ends of the piston and the cylinder-heads, a plurality of abutments arranged within the cylinder, means for operating the abutments, and ports for the admission and exhaust of an operating fluid.

2. The combination in a rotary engine, of a cylinder having an inwardly-extending flange provided with a peripheral groove forming a steam-chest, a piston having a recess for the reception of the flange and provided with ports extending from the groove to the periphery of the piston, and means for admitting steam to said groove.

3. The combination in a rotary engine, of a cylinder having an inwardly-extending annular flange, the periphery of which is grooved to form a steam-chest, plates partly covering the groove and forming valves, a piston having a recess for the reception of the flange and provided with ports extending between the groove and the periphery of the piston, the plates serving to cut off the flow of steam while the ports are passing over said plates, and means for admitting steam or other fluid to the groove.

4. In a rotary engine, the combination with a cylinder, of a pair of auxiliary heads, each provided with an annular flange, the peripheries of the flanges being grooved to form steam-chests, a revolnble piston having a central web extending between the adjacent faces of the two flanges, packing-rings carried by said flanges and bearing on the web, a shaft to which the web is secured, shaft-bearings for the flanges, ports leading through the piston for placing the grooves in communication with the steam-space of the cylinder, and means for controlling the admission of fluid to one of the grooves and the exhaust of fluid from the other groove.

819,748. HARROW. AUGUST FRIEDEMANN, Waverly, Iowa. Filed July 31, 1905. Serial No. 272,012.



Claim.—1. In a harrow the combination of a draft-bar, a front and rear hinge-bar extending transversely thereof and loosely connected thereto, a pair of section hinge-bars loosely connecting the ends of these transverse hinge-bars, tooth-bars loosely connected to these section-bars, and frame-bars connected to said tooth-bars and tooth-bars connected to these frame-bars and completing the harrow-sections.

2. In a harrow, the combination of a draft-bar, a pair of hinge-bars loosely connected thereto and extending in direction substantially transversely thereof, a pair of section-bars loosely connecting the ends of said hinge-bars, tooth-bars forming independent sections separately connected to said section-bars so that the teeth may be inclined to the front or rear, and couplings whereby the position of the draft-bar may be reversed, as set forth.

3. In a harrow, the combination with the frame-bars, of tooth-bars of polygonal form, and connecting-hinges adjustably secured to said bars, whereby the tooth-bars are permitted to swing to a greater or less distance, and find a bearing against the frame-bars.

4. In a harrow, the combination with a tooth-bar having teeth, of an eyebolt passing through said bar and having its eye countersunk therein, and a frame-bar having an eyebolt passing therethrough and the eye countersunk, the eyes of the eyebolts being connected and forming a joint-bolt, and the movement of the joint being limited by the "sink" of the eyes in the bars.

5. In a harrow, the combination with a tooth-bar having its upper edges beveled, of a frame-bar, and a flexible connection between the tooth-bar and frame-bar, whereby the beveled edge of the tooth-bar serves as a stop to limit its swing from the frame-bar.

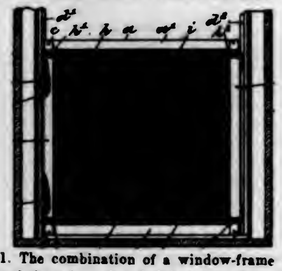
6. In a harrow, the combination of a draft-bar, a front and a rear hinge-bar loosely connected thereto and extending transversely thereto, a pair of section hinge-bars loosely connecting the ends of these transverse hinge-bars, tooth-bars near the front and rear of these section hinge-bars, extending transversely thereof, and loosely connected thereto, frame-bars connected to said tooth-bars, and other tooth-bars connected to the frame-bars, substantially as described.

819,749. TERRET. WILLIAM J. GAGNON, Everett, Mass., assignor to Peter J. Gagnon, Jr., West Everett, Mass. Filed May 11, 1904. Serial No. 207,449.



Claim.—A harness-terret having a thread-base terminating in an enlarged top portion, said top portion being flat on its under side and supporting integrally two upwardly, inwardly and downwardly curved tapering arms, said arms lying side by side, and separated where opposite each other to leave a space therebetween for the passage of a line edgewise, the ball extremities of the arms being carried below the top of the terret, and turned outwardly.

819,750. WINDOW-SCREEN. SAMUEL H. GARRETT, West Philadelphia, Pa. Filed Aug. 17, 1905. Serial No. 274,566.



Claim.—1. The combination of a window-frame with a window-screen consisting of a series of plain bars and a series of clamp-bars, the clamps of said series of clamp-bars adapted to surround the series of plain bars and to connect the same with said clamp-bars, a groove arranged in one of said clamp-bars and in one end of each of said plain bars, said grooves forming a continuous groove in one side of the frame so formed, yielding means arranged in said groove, means connected with and projecting from the ungrooved opposite side of said frame, said grooved and ungrooved sides of said screen and the means connected therewith adapted to engage the window-frame, and said yielding means by forcing said ungrooved side against the window-frame adapted to prevent a disengagement of said screen-frame from the window-frame.

2. The combination of a window-frame, with a window-screen consisting of a series of plain bars and a series of clamp-bars, the clamps of said series of clamp-bars adapted to surround the series of plain bars and to connect the same with said clamp-bars, a groove arranged in one of said clamp-bars and in one end of each of said plain bars, said grooves forming a continuous groove in one side of the frame so formed, yielding means arranged in said groove, guides connected with and projecting from the ungrooved opposite side, said grooved and ungrooved sides of said screen and said guides connected therewith adapted to engage the window-frame, and said yielding means by forcing said ungrooved side against the window-frame adapted to prevent a disengagement of said screen-frame from the window-frame by holding said guides in engagement therewith and to permit of the holding of said screen in any elevated position by the frictional contact between the ungrooved side and said guides abutting against said window-frame.

3. The combination of a window-frame with a window-screen, consisting of a series of plain bars and a series of clamp-bars, the clamps of said series of clamp-bars adapted to form projecting eyes at both ends of the same, said eyes adapted to receive and surround the other series of plain bars and to loosely connect the same with said clamp-bars to permit of the sliding of one or both of said clamp-bars on said plain bars to required position, means adapted to lock the clamps to said plain bars to form in conjunction with said clamp-bars a substantially rigid frame, a groove arranged in one of said clamp-bars and in one end of each of said plain bars, said grooves forming a continuous groove in one side of the frame so formed, yielding means arranged in the groove of said grooved side, means connected with the ungrooved side parallel to said grooved side, said grooved and ungrooved sides of said screen-frame and the means connected with the ungrooved side adapted to engage said frame, and said yielding means adapted by forcing said ungrooved side against said frame to prevent disengagement of said screen-frame from said window-frame, a flexible fabric, and means engaging said screen-frame adapted to connect the same therewith.

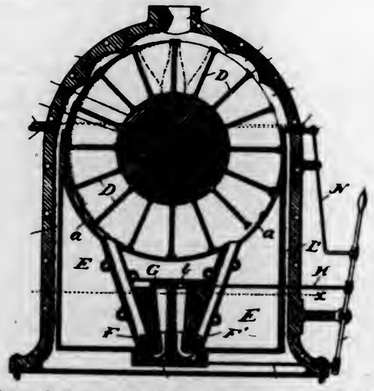
4. The combination of a window-frame with a window-screen, consisting of a series of plain bars and a series of clamp-bars, the clamps of said series of clamp-bars adapted to form projecting eyes at both ends of the same, said eyes adapted to receive and surround the other series of plain bars and to loosely connect the same with said clamp-bars to permit of the sliding of one or both of said clamp-bars on said plain bars to required position, means adapted to lock the clamps to said plain bars to form in conjunction with said clamp-bars a substantially rigid frame, a groove arranged in one of said clamp-bars and in one end of each of said plain bars, said grooves forming a continuous groove in one side of the frame so formed, springs arranged in the groove of said grooved side, shoes or guides connected with the ungrooved side parallel to said grooved side, said grooved side and ungrooved sides of said screen-frame in conjunction with said shoes adapted to engage said window-frame, and said springs adapted by forcing said shoes or guides and ungrooved side against said window-frame to prevent disengagement of said screen-frame from said window-frame, a flexible fabric, and means engaging said screen and adapted to connect the same therewith.

5. The combination of a window-frame with a window-screen, consisting of a series of plain bars and a series of clamp-bars, the clamps of said series of clamp-bars adapted to form projecting eyes at both ends of the same, said eyes adapted to receive and surround the other series of plain bars and to loosely connect the same with said clamp-bars to permit of the sliding of one or both of said clamp-bars on said plain bars to required position, means adapted to lock the clamps to said plain bars to form in conjunction with said clamp-bars a substantially rigid frame, a groove arranged in one of said clamp-bars and in one end of each of said plain bars, said grooves forming a continuous groove in one side of the frame so formed, springs arranged in the groove of said grooved side, shoes or guides connected with the ungrooved side parallel to said grooved side, said grooved side and ungrooved sides of said screen-frame in conjunction with said shoes adapted to engage said window-frame, and said springs adapted by forcing said shoes or guides and ungrooved side against said window-frame to prevent disengagement of said screen-frame from said window-frame, a flexible fabric, a groove arranged in each member of said frame adapted to receive said flexible fabric and to hold the same taut thereon, and means engaging said grooves and fabric adapted to removably connect the same with said screen-frame.

819,751. PROCESS OF CHARGING SILK. GIUSEPPE GIANOLI, Milan, Italy. Filed Jan. 4, 1905. Serial No. 239,654.

Claim.—In the process of mordanting or dyeing silk, acting on the silk with an alkaline sulfo-cyanid and an acid in solution of approximately one to three per cent., substantially as described.

819,752. STEAM-MOTOR. LYMAN GILMORE, Jr., Colfax, Cal. Filed Mar. 27, 1903. Serial No. 100,306.

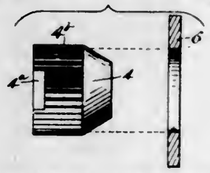


Claim.—1. In a steam-motor, a steam-chest, a cylinder having suitable induction and exhaust ports, and variable annular steam passage-ways therein, a plurality of ejectors communicating respectively with the steam-chest and the cylinder and adapted to conduct steam to opposite sides of the piston, a piston rotatably mounted in said cylinder, said piston comprising a disk having radial fins, valves controlling said cylinder passage-ways, and said ejector-passages respectively, and means for operating said valves, substantially in the manner and for the purpose set forth.

2. In a steam-motor, a steam-chest, a cylinder having suitable induction and exhaust ports, and steam passage-ways therein, a plurality of U-shaped ejectors communicating respectively with the steam-chest and the cylinder and adapted to conduct steam to opposite sides of the piston, U-shaped nozzles arranged in said ejector-passages, a piston rotatably mounted in said cylinder and comprising a disk having radial fins, valves controlling said cylinder passage-ways and said ejector-passages respectively, and means for operating said valves.

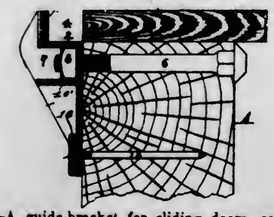
3. In a steam-motor, an annular cylinder having suitable induction and exhaust ports and having variable passage-ways leading from the exhaust downwardly on each side thereof, ejectors, conduits communicating with said ejectors and the variable passage-ways, a steam-chamber surrounding the ejectors and communicating therewith, a piston rotatably mounted in said cylinder and having radial fins adapted to fit steam-tight with portions of the walls of the cylinder, valves controlling said ejectors, the conduits and the passage-ways respectively, and means for operating said valves.

819,753. BALL-BEARING CONE. CHARLES GLOVER, New Britain, Conn., assignor to Corbin Screw Corporation, New Britain, Conn., a Corporation of Connecticut. Filed Feb. 23, 1906. Serial No. 302,377.



Claim.—In a cone-bearing, a cone member having a cylindrical portion and a tapered end, longitudinally-arranged knurls formed on the cylindrical surface, and a protecting-washer having a central aperture of less diameter than the greatest diameter of the cone measured to the apices of the knurled portion, but of greater diameter than the diameter of the cone measured from the bottom of the grooves formed by said knurled portion, said protective washer being arranged to be seated upon said knurled portion of said cone.

819,754. GUIDE-BRACKET FOR FREIGHT-CAR SLIDING DOORS. CHARLES B. HALE, Chicago, Ill., assignor of one-half to Fred J. Henderson, Chicago, Ill. Filed Oct. 24, 1904. Serial No. 229,829.

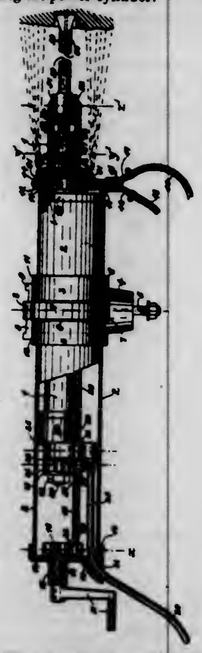


Claim.—A guide-bracket for sliding doors, consisting of a single piece of casting of substantially triangular shape having an offset at the base of the triangle; an upwardly-projecting post at the end of the offset and projecting ribs extending from the end of the post to approximately the apex of the triangle; a cross-bar connecting said ribs and forming therewith and said offset a pocket in the plate; a square-edged nut seated in said pocket, a securing-bolt having screw-threads on its inner end and secured in said nut; a circular perforated recess near the apex of the triangle having a series of obliquely-arranged passages in the recess and concentric therewith; and an auxiliary fastening device having a head adapted to engage the recess and to secure the bracket in position; a cap having prongs adapted to engage said recess and passages; said cap when in its operative position being substantially flush with the upper surface of the plate.

819,755. ROCK-DRILL. HENRY HELLMAN and LEWIS C. BAYLIS, Johannesburg, Transvaal. Filed Aug. 10, 1904. Serial No. 220,176.

Claim.—1. In a rock-drilling machine or engine, in combination, a casing, a power-cylinder therein, a cap fixed at the rear end of the power-cylinder, formed with a rearward extension, a swivel arranged on said extension and adapted to admit the motive fluid through said extension to the power-cylinder, a pipe for conducting the motive fluid to said swivel, packings arranged at either side of said swivel to prevent the escape of the motive fluid from between the swivel and the extension upon which it is arranged, and screw connections leading from the outside of the cap and passing through the swivel, for moving the power-cylinder.

2. In a rock-drilling machine or engine, in combination, a casing, a power-cylinder therein, a cap at the rear end of the power-cylinder, formed with a rearward extension, a swivel arranged on said extension formed with an internal annular recess, ports formed in said extension and placing said extension in communication with the power-cylinder and packings fitted in the swivel to prevent the escape of the motive fluid from between the swivel and extension, and means for conducting the motive fluid into said swivel, and screw connections leading from the outside of the cap and passing through the swivel, for moving the power-cylinder.



3. In a rock-drilling machine or engine, in combination, a power-cylinder, a cylindrical casing completely surrounding said cylinder and slidably and rotatably supporting the same, a drill or bit carried at the forward end of said cylinder, a feed-screw arranged longitudinally of and inside the protecting-casing, a swivel loosely embracing a part carried by the power-cylinder and having a working connection with the feed-screw, and means for rotating the screw to move the power-cylinder in the protecting-casing.

4. In a rock-drilling machine or engine, in combination, a power-cylinder, a cylindrical casing completely surrounding said cylinder and slidably and rotatably supporting the same, a drill bit or tool carried by the forward extremity of said cylinder, a swivel-piece having passages for leading the motive fluid to the power-cylinder and loosely embracing a part carried thereby and having a working connection with a feed-screw, and means for rotating the screw to move the power-cylinder in the protecting-casing.

5. In a rock-drilling machine or engine, in combination, a power-cylinder, a protecting-casing in which said cylinder is slidably and rotatably mounted, a drill bit or tool carried by the forward extremity of said cylinder, a swivel-piece having passages for leading the motive fluid to the power-cylinder and loosely connected therewith and having a working connection with a feed-screw, a pinion arranged on the rear end of said screw, a spindle carried by the protecting-casing, a toothed wheel fixed thereon and gearing with the feed-screw, to move the power-cylinder in its protecting-casing.

6. In a rock-drilling machine or engine, in combination, a protecting-casing, a power-cylinder slidably mounted therein, a cap fitted at the rear end thereof formed with a rearward extension, a swivel adapted to introduce the motive fluid into the power-cylinder through said extension, a feed-nut carried by said swivel, a feed-screw arranged longitudinally of the casing working through said nut, a toothed wheel arranged on the extension of the cylinder-cap, a rod or spindle arranged longitudinally of the casing, a pinion mounted thereon and slidable longitudinally thereof gearing the toothed wheel on the extension and means for rotating the feed-screw to feed the drill and for rotating the rod or spindle to rotate the power-cylinder, substantially as described.

7. In a rock-drilling machine or engine, in combination, a power-cylinder, a cap fitted at the rear end thereof formed with a rearward extension, a swivel mounted thereon for introducing the motive fluid to the power-cylinder, means for introducing the motive fluid to said swivel, a toothed wheel on the extension, a feed-nut carried by the swivel, a feed-screw supported longitudinally of the power-cylinder working through said nut, a rod or spindle arranged longitudinally of the power-cylinder projected through a hole in the swivel, which rod or spindle in conjunction with the feed-screw serves to support and guide the rear end of the power-cylinder, a pinion on the extension and means for compelling said pinion to rotate with said rod or spindle while permitting it to slide longitudinally thereof and for compelling it to remain in gear with the toothed wheel on the extension, and means for rotating the feed-screw and rod or spindle to advance or recede the power-cylinder and for rotating the same, substantially as described.

8. In a rock-drilling machine or engine, in combination, a power-cylinder, a protecting-casing in which said cylinder is slidably mounted, a cap fitted at the rear end thereof formed with a rearward extension, a swivel arranged on said extension, ports placing said swivel in communication with the power-cylinder, a toothed wheel on the extension, a feed-nut carried by the swivel, a feed-screw journaled in the ends of the casing working through said nut, a pinion fixed on the rear end of said screw, a rod or spindle journaled in the ends of the casing, a pinion on the rod or spindle gearing the toothed wheel on the cylinder-cap extension, means for compelling said pinion to move longitudinally of the rod or spindle to maintain it in gear with the toothed wheel, means for compelling said pinion to rotate with the rod or spindle while permitting it to slide longitudinally thereof, a spindle journaled in the rear end of the casing, a toothed wheel fitted on the inner end thereof engaging the pinions on the rear end of the feed-screw and rod or spindle and means for rotating said toothed wheel to rotate the feed-screw and rod or spindle to advance or recede the power-cylinder and to rotate the same, substantially as described.

9. In a rock-drilling machine or engine, in combination, a protecting-casing, a power-cylinder slidably mounted therein, a cap fitted at the rear end of the power-cylinder formed with a rearward extension, ports formed in said extension communicating with the interior of the power-cylinder, a swivel arranged on said extension communicating through said ports with the interior of the power-cylinder, a pipe for conducting the motive fluid to said swivel, an aperture formed in the end of the protecting casing or cover through which the motive-fluid-supply pipe projects, a feed-nut carried by the swivel, a feed-screw journaled in the ends of the protecting-casing working through said feed-nut, a pinion fixed on the rear end of said feed-screw, a rod journaled in the ends of the protecting-casing passing through a hole in the swivel, a pinion fixed on the rear end of said rod, a pinion arranged on said rod and movable longitudinally thereof in a feather way formed therein, a toothed wheel fixed on the cylinder-cap extension gearing the pinion movable longitudinally of the rod, and means for compelling the pinion to remain in gear with the toothed wheel on the extension, a spindle journaled in the ends of the protecting-casing, a toothed wheel fixed on the inner end thereof, pinions gearing the inner ends of the screw and rod and a crank for rotating said spindle to rotate the screw and rod through the toothed wheel and pinions to feed and rotate the power-cylinder, substantially as described.

10. In a rock-drilling machine or engine, in combination, a power-cylinder, a protecting-casing in which said cylinder is slidably mounted, a cap fitted at the forward end of said protecting-casing formed with an eccentric bore through which the power-cylinder works, a cap fitted at the rear end of said casing, a screw journaled longitudinally of the casing and a parallel rod journaled in the ends of the casing, means for simultaneously rotating said screw and rod, a swivel carried on the rear end of the power-cylinder, said swivel carrying a nut through which the screwed rod works and through a hole in which swivel the rod projects to support and guide the power-cylinder, means for introducing the motive fluid into said swivel, and gear-wheels on the rear end of the cylinder and longitudinal rod for rotating the cylinder, substantially as described.

11. In a rock-drilling machine or engine, in combination, a protecting-casing, a power-cylinder slidably mounted in said casing, a swivel for conducting the motive fluid to said cylinder said swivel carrying a feed-nut, a feed-screw journaled in the ends of the casing working through said feed-nut for traversing the cylinder longitudinally of the casing, a rod journaled in the ends of the casing formed with a longitudinal feather-way, a pinion fitted with a feather-key traversing said feather-way to compel the pinion to rotate with the rod while permitting it to slide longitudinally, a toothed wheel secured at the rear end of the power-cylinder constructed with a shroud or flange at one side and fitted with a ring or washer at the other side of the teeth for keeping the pinion on the rod in gear with said toothed wheel and for compelling the pinion to move longitudinally of the rod as the cylinder is advanced or receded in the protecting-casing, substantially as described.

12. In a rock-drilling machine or engine, in combination, a power-cylinder, a protecting-casing inclosing the same in which said cylinder is slidably mounted, means for mounting and securing said protecting-casing on a column-bar or other support adjustable longitudinally of said protecting-casing, means located at the rear end of the power-cylinder for admitting the motive fluid to either end of said cylinder, a feed-nut carried by said means, a feed-screw journaled longitudinally of the casing working through said nut for advancing and receding the power-cylinder, a gear-wheel carried by the rear end of the power-cylinder, a longitudinally-arranged rod journaled in the protecting-casing, a pinion mounted thereon in gear with the wheel at the rear of the power-cylinder, said pinion being movable longitudinally of said rod, and means for compelling said pinion to slide longitudinally of the rod to maintain it in gear with the toothed wheel when the cylinder is moved in either direction in its protecting-casing, and means for rotating the feed-screw and rod, substantially as described.

13. In a rock-drilling machine or engine, in combination, a power-cylinder, a protecting-casing in which said cylinder is slidably mounted, a cap fitted at the front end of said casing, a swivel mounted on said cap, apertures formed in said swivel for directing a spray or sprays around the mouth of the bore-hole, and means for conducting water and air to said swivel to form the spray or sprays, substantially as described.

14. In a rock-drilling machine or engine, in combination, a power-cylinder, a protecting-casing in which said cylinder is slidably mounted, a cap fitted at the front end of said casing formed with an extension, a swivel mounted on said extension formed with an annular hole, a piece formed with two branches attached to said swivel and communicating with the annular hole, a pipe connected to one branch for conducting compressed air or other gaseous fluid to the swivel and a pipe connected with the other branch for conducting water or liquid under pressure to the swivel, and a plurality of apertures formed in the front of the swivel for directing a spray or sprays round the mouth of the bore-hole, substantially as described.

15. In a rock-drilling machine or engine, in combination, a power-cylinder, a shank-piece fitted in the forward end thereof which receives and transmits the impacts of the reciprocating percussive member to the drilling bit or tool formed with a longitudinal hole for permitting a quantity of the motive fluid to pass from the power-cylinder through said shank-piece, a drill bit or tool carried by the forward end of said power-cylinder and constructed to rotate in unison therewith and formed with a longitudinal hole which coincides with the hole in the shank-piece for conducting a quantity of the motive fluid to the cutting end of the drill or tool to remove the rock-cuttings and for keeping the shank-piece and drilling bit or tool cool, substantially as described.

16. In a rock-drilling machine or engine, in combination, a power-cylinder, a protecting-casing in which said cylinder is slidably mounted, a cap fitted on the forward end of said power-cylinder formed with an extension, a swivel mounted on said extension constructed with an annular hole, a piece fitted to said extension-swivel formed with two branches, a pipe attached to one branch for conducting compressed air or other gaseous fluid to said swivel and a pipe attached to the other branch for conducting water under pressure to said swivel, apertures formed in the front of the swivel for directing sprays round the mouth of the bore-hole, a shank-piece fitted in the forward end of said cylinder which receives and transmits the impacts of the reciprocating percussive member to the drill-bit, said shank-piece being formed with a longitudinal hole, a cap fitted at the end of the power-cylinder formed with a hole of square or polygonal section, a drill-bit formed with a portion of its shank or corresponding section fitting said cap so that the drill or bit is compelled to rotate in unison with the power-cylinder and with a longitudinal hole for conducting the fluid passing through the shank-piece to the bottom of the hole to blow out the rock-cuttings, substantially as described.

17. In a rock-drilling machine or engine, in combination, a power-cylinder, a protecting-casing in which said cylinder is slidably mounted, a shank-piece fitted in the forward end of said cylinder formed with a hole longitudinally thereof for permitting a quantity of the motive fluid to pass through it from the power-cylinder, a drill or bit carried by the forward end of said cylinder engaging the front end of the shank-piece, means for compelling said bit to rotate in unison with the power-cylinder, said bit being formed with a longitudinal hole for conducting the motive fluid passing through the shank-piece to or in proximity to the bottom of the hole for removing the rock-cuttings, a swivel mounted on the cap or front end of the protecting-casing, pipes communicating with said swivel for conducting compressed air or other motive fluid and water or other liquid to said swivel, apertures formed in the swivel for directing sprays round the mouth of the bore-hole to saturate the particles of rock as they escape from the bore-hole, means adjustable longitudinally of the protecting-casing for mounting and securing the same, and means for simultaneously feeding and rotating the power-cylinder in its protecting-casing, substantially as described.

18. In a rock-drilling machine or engine, in combination, a power-cylinder, a protecting-casing inclosing said cylinder, a cap fitted on the front of said cylinder formed with an eccentric boss and bore in which the power-cylinder slides, a swivel mounted on said eccentric boss, pipes communicating with said swivel for conducting motive fluid and water to said swivel, apertures formed in the swivel for directing sprays around the mouth of the bore-hole, means for conducting a quantity of motive fluid to the cutting-point of the drill bit or tool for blowing out the rock-cuttings from the hole being formed, a sleeve carrying the supporting-casing, a ring for securing said protecting-casing in said sleeve, a swivel mounted on the rear end of the cylinder inside the casing for admitting the motive fluid to the cylinder, a toothed wheel at the rear of the cylinder next the swivel, a nut carried by the swivel, a feed-screw working through said nut, a rod carrying a pinion in gear with the toothed wheel at the rear of the swivel, said pinion being movable longitudinally of said rod while compelled to rotate therewith, pinions on the rear ends of said screw and rod and means for simultaneously rotating said screw and rod to move the power-cylinder in either direction in its protecting-casing and for rotating said cylinder to rotate the drilling bit or tool, and means for conveying motive fluid to the swivel at the rear end of the power-cylinder, substantially as described.

19. In a rock-drilling machine or engine, in combination, a protecting-casing, a power-cylinder slidably mounted therein, a cap fitted at the rear end thereof and formed with a rearward extension, a feed-screw arranged longitudinally of said cylinder, a toothed wheel arranged on the extension of the cylinder-cap, a rod or spindle arranged longitudinally of the casing, a pinion mounted thereon and slidably longitudinally thereof in mesh with a toothed wheel on the extension, and means for rotating the feed-screw to feed the drill, and for rotating the rod or spindle to rotate the power-cylinder, substantially as described.

20. In a rock-drilling machine or engine, in combination, a casing, a power-cylinder therein, a cap fitted at the rear end of the power-cylinder, formed with a rearward extension, a swivel mounted thereon for introducing motive fluid to said cylinder, a guide-rod for the swivel, a feed-screw supported longitudinally of the power-cylinder, and connections whereby the feed-screw will drive the swivel, said connections including a pinion on the aforesaid rear end of the cap, and means for compelling said pinion to rotate while permitting it to slide upon the guide-rod aforesaid, and for compelling it to remain in gear with the toothed wheel on the extension, and means for rotating the feed-screw and the guide-rod to advance or recede the power-cylinder and for rotating the same, substantially as described.

21. In a rock-drilling machine or engine, in combination, a power-cylinder, a protecting-casing in which said cylinder is slidably mounted, a cap fitted at the rear end thereof, and formed with a rearward extension, a swivel arranged on said extension, ports placing said swivel in connection with the power-cylinder, a toothed wheel on the extension, a feed-screw journaled in the ends of the casing and connecting with the swivel to drive the same, a pinion fixed on the rear end of said screw, a rod or spindle journaled in the ends of the casing, a pinion on the rod or spindle in mesh with the toothed wheel on the cylinder-cap extension, means for compelling said pinion to move longitudinally of the rod or spindle to maintain it in gear with the toothed wheel, means for compelling said pinion to rotate with the rod or spindle while permitting it to slide longitudinally thereof, a spindle journaled in the rear end of the casing, a toothed wheel fitted on the inner end thereof engaging the pinion on the rear end of the feed-screw, a rod or spindle and means for rotating said toothed wheel to rotate the feed-screw and a rod or spindle to advance or recede the power-cylinder and to rotate the same, substantially as described.

22. In a rock-drilling machine or engine, in combination, a protecting-casing, a power-cylinder slidably mounted therein, a cap fit-

ted at the rear end of the power-cylinder and formed with a rearward extension, ports formed in said extension connecting with interior of the power-cylinder, a swivel arranged on said extension and connecting through said parts with the interior of the power-cylinder, a pipe for conducting motive fluid to said swivel, a feed-screw journaled in the ends of the protecting-casing and connecting with the swivel to drive the same, a pinion fixed on the rear end of said feed-screw, a rod journaled in the ends of the protecting-casing, and with which the swivel has a sliding engagement, a pinion fixed on the rear end of said rod, a pinion arranged on said rod and movable longitudinally and non-rotatably thereof, a toothed wheel fixed on the cylinder-cap extension and connected with the pinion and movable longitudinally of the rod, and means for compelling the pinion to remain in gear with the toothed wheel on the extension, a spindle journaled in the ends of the protecting-casing, a toothed wheel fixed on the inner end thereof, pinions gearing the inner ends of the screw and rod, and a crank for rotating said spindle to rotate the screw and rod through the toothed wheel and pinions to feed and rotate the power-cylinder, substantially as described.

23. In a rock-drilling machine or engine, in combination, a power-cylinder, a protecting-casing, in which said cylinder is slidably mounted, a cap fitted at the forward end of said protecting-casing and provided with an eccentric bore through which the power-cylinder works, a cap fitted at the rear end of said casing, a screw journaled longitudinally of the casing, a parallel rod journaled in the ends of the casing, means for simultaneously rotating said screw and rod, a swivel carried on the rear end of said power-cylinder, connections whereby the feed-screw drives the swivel, connections whereby said swivel slidably engages the rod to support the power-cylinder, means for introducing motive fluid into said swivel, and gear-wheels on the rear end of the cylinder and a longitudinal rod for rotating the cylinder, substantially as described.

24. In a rock-drilling machine or engine, in combination, a protecting-casing, a power-cylinder slidably mounted in said casing, a swivel for conducting the motive fluid to said cylinder, a feed-screw journaled in the ends of the casing and connections whereby the feed-screw drives the swivel for traversing the cylinder longitudinally of the casing, a rod journaled in the ends of the casing, a pinion slidably and non-rotatably mounted thereon, a toothed wheel secured at the rear end of the power-cylinder, means for keeping the pinion and rod in gear with said toothed wheel and for compelling said pinion to move longitudinally of the rod as the cylinder is advanced or receded in the protecting-casing, substantially as described.

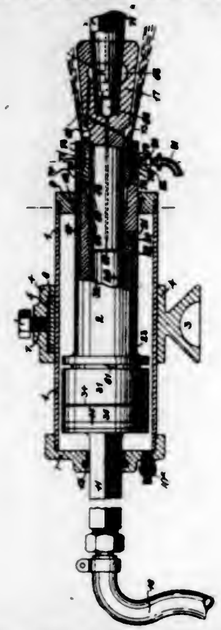
25. In a rock-drilling machine or engine, in combination, a power-cylinder, a protecting-casing inclosing the same and in which said cylinder is slidably mounted, means for mounting and securing said protecting-casing on a column-bar or other support adjustable longitudinally of said protecting-casing, means for admitting the motive fluid to either end of said cylinder, a feed-screw journaled longitudinally within the casing, and connections, engaging the means for admitting the motive fluid, whereby the feed-screw is utilized for advancing and receding the power-cylinder, a gear-wheel carried by the rear end of said cylinder, a longitudinally-arranged rod journaled within the protecting-casing, a pinion mounted thereon in gear with the wheel at the rear of the power-cylinder, said pinion being movable longitudinally of said rod, and means for compelling said pinion to slide longitudinally of the rod to maintain it in gear with the toothed wheel when the cylinder is moved in either direction in this protecting-casing, and means for rotating the feed-screw and rod, substantially as described.

819,756. ROCK-DRILLING MACHINE. Henry Hellman and Lewis C. Bayles, Johannesburg, Transvaal. Filed Aug. 13, 1904. Serial No. 220,446.

Claim.—1. A rock-drilling machine or engine, comprising a power-cylinder, a drill or bit operatively carried by the cylinder, connections for imparting rotary movements of the cylinder to the bit, and a motor carried by and rotating said cylinder.

2. A rock-drilling machine or engine, comprising a protecting-casing, a power-cylinder housed within the casing, a drill or bit operatively carried by said cylinder, connections for imparting the rotary movements of the cylinder to the drill or bit, and a motor carried by the cylinder and housed within the casing for rotating said cylinder.

3. A rock-drilling machine or engine, comprising a power-cylinder, a drill or bit operatively carried by said cylinder, connections for imparting the rotary movements of the cylinder to the drill or bit, a motor carried by and rotating said cylinder, and means carried by the cylinder for admitting motive fluid to the motor.



4. A rock-drilling machine or engine comprising a power-cylinder, means arranged in the front end of said power-cylinder for carrying the drill or bit, said means permitting the drill or bit to move longitudinally of the power-cylinder while compelling it to rotate in unison therewith, an oscillating motor carried by said power-cylinder, means for introducing the operating fluid to said cylinder, and means for admitting the fluid to the motor to rotate the power-cylinder and with it the drill or bit.

5. A rock-drilling machine or engine comprising a power-cylinder, means located at the front end of said cylinder for carrying the drill or bit and for compelling said drill or bit to rotate in unison with said cylinder, an oscillating motor carried by said cylinder, means for introducing the operating fluid to said cylinder and means for admitting the operating fluid to the motor to rotate the power-cylinder and drill-bit part of a revolution during the return stroke of the reciprocating percussive member and for permitting movement of said motor without effecting rotation of the cylinder on the forward stroke of said reciprocating percussive member.

6. A rock-drilling machine or engine comprising a power-cylinder, a drill or bit operatively carried by said power-cylinder and means for compelling said drill or bit to rotate in unison with the cylinder, an oscillating motor carried by said cylinder comprising a member connected with said power-cylinder and a member disconnected from said cylinder, means for permitting said disconnected member of the motor to rotate freely in one direction while preventing it rotating in the opposite direction so that the fixed member is compelled to rotate and carry with it the power-cylinder and drill or bit, and means for introducing the motive fluid to the power-cylinder and motor.

7. A rock-drilling machine or engine comprising a power-cylinder, a drill or bit operatively carried by said power-cylinder, means for compelling said drill or bit to rotate in unison with the power-cylinder, an oscillating motor carried by said cylinder comprising a member connected with said cylinder and a member disconnected from said cylinder, a pipe for introducing the operating fluid to said cylinder, means for preventing rotation of said pipe, pawl-and-ratchet mechanism between said pipe for preventing the disconnected member of the motor from rotating in one direction so that the other member of the motor is compelled to rotate the cylinder and drill or bit, and pawl-and-ratchet mechanism between said pipe and the connected member of said motor for preventing the connected member from moving when the disconnected member is moved.

8. A rock-drilling machine or engine comprising a power-cylinder, a support in which said cylinder is slidably mounted, a drill or bit operatively carried by said power-cylinder, means for compelling said drill or bit to rotate in unison with the power-cylinder, an oscillating motor carried by said cylinder comprising a member connected with said cylinder and a member disconnected from said cylinder, a pipe for introducing the operating fluid to said cylinder, means for preventing rotation of said pipe, pawls carried by said pipe engaging ratchet-teeth formed on the disconnected member of the motor and pawls carried by said connected member engaging ratchet-teeth formed on the pipe so that when the disconnected member of the motor is held stationary the connected member and with it the cylinder and drill-bit are rotated, and when the connected member and with it the cylinder and drill-bit are held stationary the disconnected member is free to rotate substantially as described.

9. A rock-drilling machine or engine comprising a power-cylinder, a support in which said cylinder is slidably mounted, a drill or bit operatively carried by said power-cylinder, means for compelling said drill or bit to rotate in unison with the power-cylinder, an oscillating motor carried by said power-cylinder comprising a member connected with said cylinder and a member disconnected from said cylinder, a pipe for introducing the operating fluid to said cylinder, said pipe being formed with an extension upon which the disconnected member is loosely mounted and with a flange formed with ratchet-teeth, pawls carried by the pipe engaging ratchet-teeth formed on the disconnected member of the motor and pawls carried by the connected member of the motor engaging the ratchet-teeth on the pipe so that when the disconnected member of the motor is held stationary by the pipe the connected member, cylinder and drill-bit are rotated part of a revolution and so that the disconnected member is free to rotate to allow the connected member, cylinder and bit to remain stationary, substantially as described.

10. In a rock-drilling machine or engine, a power-cylinder carrying the percussive apparatus, a drill or bit operatively carried by said cylinder in such manner that the drill or bit is compelled to rotate in unison with the cylinder, an oscillating motor carried by said cylinder comprising a member connected to said cylinder and a member disconnected therefrom, means for alternately admitting the operating fluid to either end of said cylinder and at the same time for admitting the fluid to the oscillating motor, a pipe for introducing the operating fluid to said cylinder and means between said pipe and the two members of the motor for permitting the free movement of the disconnected member and for preventing the rotation of said disconnected member and permitting the connected member and with it the drill-cylinder and drill-bit to be rotated, substantially as described.

11. In a rock-drilling machine or engine, in combination, a power-cylinder, a drill or bit operatively carried by said cylinder, an oscillating motor carried by said cylinder, means for alternately admitting the operating fluid to either end of said cylinder and at the same time to said motor, a pipe for introducing the operating fluid into the power-cylinder, means for revolubly attaching said pipe to the power-cylinder, means for preventing the rotation of said pipe, said pipe being formed with an extension carrying the disconnected member of the oscillating motor and formed with a flange provided with ratchet-teeth, pawls carried by said flange engaging ratchet-teeth formed on the disconnected member of the motor for permitting said member to rotate in one direction only, pawls carried by the other member of the motor which is connected to the power-cylinder for preventing said connected member from rotating in one direction while permitting it to rotate in the reverse direction, substantially as described.

12. In a rock-drilling machine or engine in combination, a power-cylinder, a drill or bit operatively carried by said cylinder, means for compelling said drill or bit to rotate in unison with said cylinder, means carried by said cylinder for alternately admitting the operating fluid to ports communicating with either end of said cylinder, an oscillating motor connected with and carried by said cylinder comprising a member attached to said cylinder formed with a plurality of radial wings and a disconnected member formed with a plurality of radial vanes working in the compartments formed between said radial wings, ports placing said compartments in communication with the main supply-ports at opposite sides of said radial vanes so that as the main supply-ports are each alternately opened to admit the operating fluid and to exhaust said compartments at opposite sides of the radial vanes are in like manner alternately opened to admit the operating fluid and then to exhaust, means for introducing the operating fluid into the cylinder and means for preventing the rotation of the disconnected member of the motor while permitting the rotation of the member connected to the cylinder and alternately for preventing the rotation of the connected member and permitting the rotation of the disconnected member, substantially as described.

13. In a rock-drilling machine or engine, in combination a power-cylinder, a drill or bit operatively carried by said power-cylinder, means for compelling said drill or bit to rotate in unison with said cylinder while permitting it to move longitudinally thereof within certain limits, a support in which said cylinder is slidably mounted, a pipe for introducing the operating fluid to said cylinder said pipe being revolubly connected to said cylinder, means for preventing rotation of said pipe, said pipe being constructed with a cylindrical extension and with an annular projection and flange formed with external ratchet-teeth and constructed internally to form bearings for a plurality of pawls, a cap arranged on the rear end of said cylinder, means located in said cap for alternately admitting the operating fluid to either end of said cylinder, an oscillating motor comprising a member fixed to said cap and cylinder and a member disconnected therefrom mounted on the extension on the feed-pipe next the cap, chambers formed in said connected member in which vanes formed on the disconnected member oscillate, ports formed in the cap placing the main supply-ports in communication with said chambers at opposite sides of the several vanes, spring-controlled pawls carried by the connected member in gear with the ratchet-teeth on the flange on the operating-fluid-supply pipe and spring-controlled pawls carried on the inside of said flange in gear with the ratchet-teeth formed on the hub of the disconnected member to permit the disconnected member to rotate in one direction and to prevent it moving in the reverse direction so that the connected member is compelled to rotate part of a revolution and carry with it the power-cylinder and drill or bit, substantially as described.

14. In a rock-drilling machine or engine, in combination, a power-cylinder, carrying the percussive apparatus a cap screwed on the rear end of said cylinder, means located in said cap for alternately admitting the operating fluid to either end of said cylinder, means for preventing the rotation of said cap consisting of a spring-controlled catch or detent located in a recess formed in a flange at the rear end of said cylinder, said catch engaging teeth or indentations in the front of said cap, substantially as described.

15. In a rock-drilling machine or engine, in combination, a power-cylinder carrying percussive apparatus, a protecting-casing, guides fitted in said casing and in which the cylinder is slidably mounted and supported, packings located in said guides for preventing the escape of the operating fluid, a supply-pipe passing through said guides and packings and communicating with the cylinder, for admitting operative fluid thereto, and means for admitting a quantity of the operating fluid to the protecting-casing when the drill or bit does not come into contact with the rock or the bottom of the hole being drilled.

16. In a rock-drilling machine or engine, in combination, a power-cylinder carrying the percussive apparatus, a protecting-casing, guides fitted in the ends of said casing in which the cylinder is slidably mounted and supported, packings located in said guides for preventing the escape of the operating fluid through said guides, means arranged at the forward end of the cylinder for carrying the drilling bit or tool said means operating to admit a quantity of operating fluid to the protecting-casing in the event of the bit or tool not striking the rock.

17. In a rock-drilling machine or engine, in combination, a power-cylinder carrying the percussive apparatus, a protecting-casing, guides fitted in the ends of said casing in which the cylinder is slidably mounted and supported, packings located in said guides for preventing the escape of the operating fluid through said guides, means arranged at the forward end of the cylinder for receiving and transmitting the impacts of the reciprocating percussive member to the drill bit or tool, said means controlling the admission of a quantity of the operating fluid to the protecting-casing to feed the drill when the bit or tool does not come into contact with the rock or bottom of the hole being drilled.

18. In a rock-drilling machine or engine in combination, a power-cylinder carrying the percussive apparatus, a protecting-casing, guides fitted in the ends of said casing in which the cylinder is slidably mounted and supported, packings located in said guides for preventing the escape of the operating fluid through said guides, means arranged at the forward end of the cylinder for receiving and transmitting the impacts of the reciprocating percussive member to the drill bit or tool said means controlling the passage of the operating fluid from the cylinder along a port exhausting into the protecting-casing to feed the drill when the bit or tool does not come into contact with the rock or bottom of the hole being drilled.

19. In a rock-drilling machine or engine, in combination, a

power-cylinder, a protecting-casing, a port formed in said cylinder placing the interior thereof in communication with the interior of the protecting-casing, covers forming guides fitted at either end of said protecting-casing, packings arranged in said guides for preventing the escape of the operating fluid from said casing, a drill-bit-holding device formed with an extension projected into the front end of the power-cylinder said extension serving to receive and transmit the impacts of the reciprocating percussive member to the drill bit or tool and for admitting a quantity of the operating fluid to the interior of the casing when said extension is driven forward by the reciprocating percussive member owing to the drill or bit not coming into contact with the bottom of the hole being drilled, substantially as described.

20. In a rock-drilling machine or engine, in combination, a power-cylinder carrying the reciprocating percussive member, said cylinder being formed with a port for conducting a quantity of the operating fluid to the forward end of said cylinder, means arranged at the forward end of said cylinder for carrying the drill bit or tool, a front head fitted to the front end of said cylinder, ports or passages formed in said front head communicating with the port along which the operating fluid is conducted to the front of the machine and means for introducing water or other liquid to said ports or passages to commingle with the operating fluid to form a spray or sprays which are directed around the mouth of the hole, substantially as described.

21. In a rock-drilling machine or engine, in combination, a power-cylinder formed with a port leading to the front end thereof which forms the exhaust-port and with an annular recess in the end thereof in communication with said port, a front head fitted to the forward end of said cylinder formed with an annular recess coinciding with the recess in the end of the cylinder, a plurality of ports or passages formed in the head diverging or inclined outward, and means for also conducting a quantity of water or other fluid to said ports or passages, substantially as described.

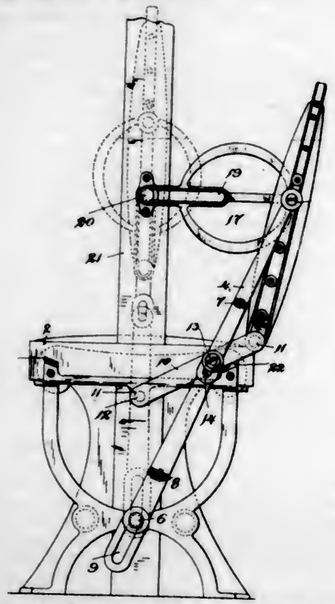
22. In a rock-drilling machine or engine, in combination, a power-cylinder carrying the reciprocating percussive apparatus, a protecting-casing in which said cylinder is slidably mounted, a sleeve for adjustably supporting said casing, a front cover for said casing forming a guide for said cylinder, a packing for preventing the egress of the operating fluid from said casing between said guide and cylinder, a fluid-supply pipe connected to the rear end of the cylinder for conducting the motive fluid thereinto, a cover forming a guide and support for said operating-fluid-supply pipe and the rear end of the cylinder, a packing in said guide for preventing the egress of the operating fluid between said guide and pipe, an oscillating motor arranged at rear end of said cylinder for rotating said cylinder part of of a revolution during the rear or return stroke of the reciprocating percussive member, means for controlling the admission of the operating fluid to either end of said cylinder said means operating to control the admission of the fluid to said motor, means for receiving and transmitting the impacts of the reciprocating percussive member to the drill bit or tool said means operating to admit a quantity of the operating fluid to the protecting-casing in the event of the drill-bit not coming into contact with the rock to automatically feed the drill forward, means for compelling the drill or bit to rotate in unison with the power-cylinder, means for conducting a quantity of the operating fluid to the cutting end of said drill or bit and means for producing and directing sprays of water or other liquid round the mouth of the hole being drilled, substantially as described.

23. In a rock-drilling machine or engine, a power-cylinder, a protecting-casing surrounding the cylinder and having a forward head through which the cylinder slidably and rotatably projects, packing fitting between said head and cylinder, a tubular motive-power-supply portion rotatably connected with the power-cylinder and extending rearwardly therefrom and slidably and non-rotatably passing through a rear head of the casing, and packing between the exterior of said tubular non-rotatable portion and the rear head.

24. In a rock-drilling machine or engine, a power-cylinder, a protecting-casing surrounding the cylinder, and having a forward head through which the cylinder slidably and non-rotatably projects, packing fitting between said head and cylinder, a tubular motive-power-supply portion rotatably connected with the power-cylinder and extending rearwardly therefrom and slidably and non-rotatably passing through a rear head of the casing, and packing between the exterior of said tubular non-rotatable portion and the rear head, in combination with a solid sleeve wherein the casing is slidably mounted, and provided with means for locking the casing within the sleeve.

819,757. **CAR-SEAT.** WILLIAM H. HEULINGS, Jr., Philadelphia, Pa., assignor to John A. Brill, Philadelphia, Pa. Filed Oct. 26, 1904. Serial No. 229,115.

Claim.—1. A car-seat having a cushion and a support, a back for the seat, a positioning-lever pivoted to the upper part of the back and to a support below the said cushion, and a carrying-lever pivoted to the lower part of the back and on its opposite end to a suitable support and provided with a stud which engages with the said positioning-lever, said positioning-lever being adapted to have longitudinal movement on its lower pivot.



2. A car-seat having a cushion and a support, a back for the seat, a positioning-lever pivoted to the upper part of the back and to a support below the said cushion, and a carrying-lever pivoted to the lower part of the back and on its opposite end to a suitable support and provided with a stud which engages with the said positioning-lever said positioning-lever being adapted to have longitudinal movement on its lower pivot, and stops to limit the movement of said carrying-lever.

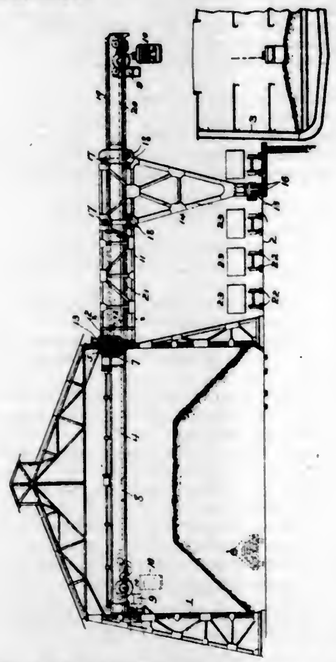
3. A car-seat having a cushion and a support, a back for the seat, a positioning-lever secured to the upper part of the back, a carrying-lever secured to the lower part of the back, said levers being pivoted to supports at their other ends so as to move in different arcs, a stud on the carrying-lever engaging with the positioning-lever, the said positioning-lever being provided with elongated apertures whereby the said lever will have vertical movement on its lower pivot and on said carrying-lever stud.

819,758. **ROPE MEASURING AND COMPUTING MACHINE.** EUGENE F. HUE, Elgin, Oreg. Filed Apr. 3, 1905. Serial No. 253,508.



Claim.—In a rope computing and measuring machine, the combination of a rope-holder comprising a plurality of rotating elements, a shaft for said holder, a dial, means operably connecting the dial with the shaft, and a pivot-lever connected with the shaft for throwing the same into and out of operable connection with the dial.

819,759. **WAREHOUSE MACHINERY FOR UNLOADING SHIPS.** GEORGE H. HULETT, Cleveland, Ohio, assignor to Wellman-Seaver-Morgan Company, Cleveland, Ohio. Filed Jan. 18, 1905. Serial No. 241,602.



Claim.—1. The combination with a warehouse, or like structure, and a traveling crane therein, of a traveling crane outside the structure, and trolley-tracks on both of said cranes adapted to aline at openings in the structure.

2. The combination with a warehouse or like structure, and a traveling crane therein, of a traveling crane outside the structure adapted to aline with the first-mentioned crane at openings in the structure, a boom on the outside crane, and a continuous trolley-track on both cranes and the boom.

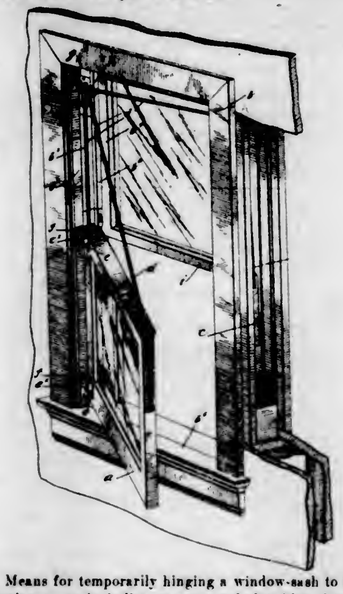
3. The combination with a warehouse or like structure, and a traveling crane therein, of a traveling crane outside the structure adapted to aline with the first-mentioned crane at openings in the structure, a boom telescoping in the outside crane, and trolley-tracks on both of the cranes and on the boom for forming a continuous track for the trolley-conveyer.

4. The combination with a warehouse or like structure, and a traveling crane therein, of a traveling crane outside the structure, wheels at one end of the outside crane supported to run on the structure, a standard supporting the outer end of the outside crane, tracks, wheels on the standard mounted on the tracks, and trolley-tracks on both cranes adapted to form a continuous track when the cranes are alined at an opening in the structure.

5. In an apparatus of the character described, the combination with a dock, a warehouse or like structure located adjacent to the dock, and a traveling crane in the structure, of a traveling crane outside the structure, supported at one end on the dock and at its other end on the structure, a telescoping boom on the outside crane adapted to be projected over a ship at the dock, trolley-tracks on the boom and cranes forming a continuous track when the cranes are in alinement, a trolley on said track and a hoisting and conveying bucket or conveyer, carried by the trolley and constructed to receive and deposit material at any points throughout the continuous track.

819,760. **WINDOW.** EDWIN W. HUMPHREYS, Chicago, Ill. Filed July 11, 1905. Serial No. 269,177.

Claim.—1. In a window the combination with the frame and vertically-movable sash of a plate attached to the window-frame, said plate having a slot therein larger at one end than at the other, a hinge attached to the sash, said hinge consisting of two leaves one of which is free from the sash and the said free leaf having a head thereon of such dimensions as to readily enter said slot at the larger part thereof and too large to be withdrawn from the smaller part thereof; and a dog attached to the plate and adapted to retain the hinge with its head in the narrow part of said slot.



2. Means for temporarily hinging a window-sash to its frame said hinging means including an apertured plate hinged to the sash whereby it may when not in use be folded against the sash, a bolt adapted to engage said apertured plate to act as a pivot, and a member *m* for carrying said bolt, said member *m* being secured in the window-frame and adapted to slide in a direction parallel with the surface of the sash when in normal position, and said member *m* being adapted to disappear in the window-frame when not in use.

3. In a window having an upper and a lower sash, each of which is vertically movable the upper sash traveling behind the lower, the combination with the sashes, of a window-frame, sash cords and weights and means for temporarily hinging the upper sash to the frame said hinging means consisting of a pivot-post on the frame, a plate on the lower portion of the upper sash adapted to bear on said post, a member on the upper portion of the upper sash and a yoke on the frame detachably attachable thereto, said yoke being slidably mounted in the window-frame and adapted to be slid into the frame sufficiently to bring the outer portion of the yoke flush with the surface of the window-frame.

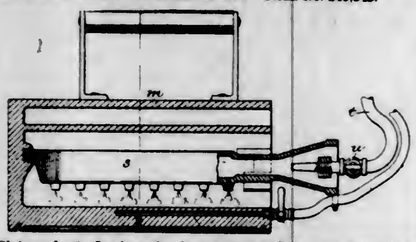
4. In a window having an upper and a lower sash, each of which is vertically movable, the upper sash traveling behind the lower, the combination with the sashes, of a window-frame, sash cords and weights and means for temporarily hinging the upper sash to the frame said hinging means consisting of a pivot-post on the frame, a plate on the lower portion of the upper sash adapted to bear on said post; an apertured plate attached to the upper portion of the upper sash; a member *m* mounted in the frame and a bolt carried in said member *m*, said bolt being adapted to engage said apertured plate for hinging the sash to the frame.

5. In a window having an upper and lower sash, each of which is vertically movable, the upper sash traveling behind the lower, the combination with the sashes, of a window-frame, sash cords and weights and means for temporarily hinging the upper sash to the frame, said hinging means consisting of a pivot-post on the frame, a plate on the lower portion of the upper sash adapted to bear on said post; an apertured plate attached to the upper portion of the upper sash; a yoke mounted in the frame and having two horizontal arms, and a bolt adapted to engage said apertured plate for hinging the sash to the frame, said bolt being vertically movable in said horizontal arms of the yoke for facilitating attachment to and detachment from the apertured plate on said upper sash.

6. In a window having an upper and a lower sash each of which is vertically movable, the upper sash traveling behind the lower, the combination with the sashes, of a window-frame, sash cords and

weights and means for temporarily hinging the upper sash to the frame said hinging means consisting of a pivot-post on the frame, a plate on the lower portion of the upper sash adapted to bear on said post, an apertured plate hinged to the upper portion of the sash whereby it may when not in use be folded against the sash, a bolt for engaging said apertured plate and a yoke carrying said bolt, said yoke being horizontally movable in the window-frame whereby it may be pushed into the frame when not in use.

819,761. **FLAT-IRON.** FRITZ JOHNSON, Racine, Wis., assignor to Johnson Combined Pressing & Refinishing Co., Racine, Wis., a Corporation of Wisconsin. Filed Mar. 3, 1905. Serial No. 248,345.



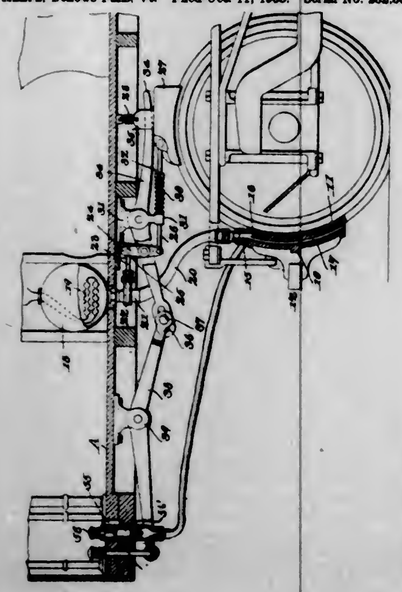
Claim.—1. A flat-iron having a recessed base, perforations opening therefrom through its smoothing-face, a separate heating-chamber within its body and a flexible connection for supplying a moistening medium to its recessed base, substantially as described.

2. A flat-iron having a heater-chamber within its body and intersecting channels in the bottom, a perforated smoothing-plate attached thereto with its perforations in communication with said channels, and a flexible connection for supplying a moistening medium to said channels, substantially as described.

3. In a flat-iron the combination of a chambered body having a perforated smoothing-face, a burner for heating the iron within its chambered body, and flexible tubes for supplying fuel and a moistening medium to the burner and to the perforated smoothing-face, substantially as described.

4. In a flat-iron the combination of a chambered body having a recessed base and a perforated bottom smoothing-surface, a burner in the chambered body for heating the iron, and flexible tubes provided with regulating-valves for supplying fuel and a moistening medium to the burner and to the recessed base of the iron, substantially as described.

819,762. **TRACK-SANDER AND BRAKE-SHOE.** EUGENE E. KREYE, Bellows Falls, Vt. Filed Oct. 11, 1905. Serial No. 282,301.



Claim.—1. A wheel-brake shoe having a grooved face, and means for feeding sand thereto.

2. A wheel-brake shoe having a grooved face and provided with a passage leading from the groove, and means for feeding sand through said passage.

3. A wheel-brake shoe, having a passage leading vertically through the shoe from the upper to the lower end thereof for conveying sand to the track, and means for directing sand into said passage.

4. In a wheel-brake shoe a track-sander, a sand-box, and a duct leading from the box to a point adjacent to the track, the brake-shoe having a passage forming a part of said duct.

5. A wheel-brake shoe having two sand-passages, one for conveying sand to the face of the shoe, and the other for directing sand to the track.

6. In combination, a wheel-brake shoe, a sand-box, and a flexible pipe connecting the two.

7. In combination, a wheel-brake shoe, a sand-box, a flexible pipe connecting the two, and a valve for controlling the flow of sand from the box.

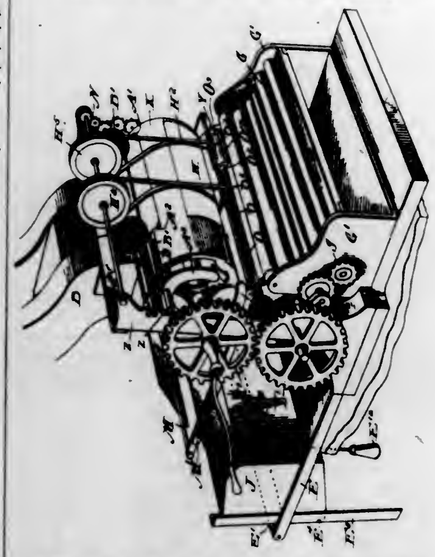
8. A brake-shoe having a passage through which a lubricating material may be fed against the flange of the wheel.

9. A brake-shoe having a lubricant-passage terminating at a discharge-point at one side of the shoe, and a reservoir to which said passage is connected.

10. The combination with a brake-shoe having a lubricant-passage, of a lubricant-reservoir, and means for forcing predetermined quantities of lubricant to said passage.

11. In combination, a sand-box, a brake-shoe having a sand-passage, a flexible tube leading from the sand-box to the brake-shoe and in communication with said passage, a valve for controlling the flow of sand through the tube, a friction-block, means for forcing said friction-block against one of the vehicle-wheels, and means whereby the movement transmitted from the wheel to the block effects opening movement of the valve.

819,763. **ENVELOP-PRINTING MACHINE.** MICHAEL P. KENNA, Dubuque, Iowa. Filed Jan. 31, 1905. Serial No. 243,486.



Claim.—1. In a machine of the character described, the combination with an envelop-receptacle and an impression-cylinder arranged in operative relation to the discharge end of said receptacle, of means for engaging the flap of the lowermost envelop contained within the receptacle, withdrawing it from the latter and feeding it around to the printing-point comprising a rock-shaft carried by the cylinder, spurs or fingers carried by said shaft, one of said fingers being adjustably mounted upon the shaft to adapt it to be adjusted toward and from the other finger, and means for rocking the shaft at a predetermined period during the rotation of the cylinder to cause the fingers to clamp down upon the flap of an envelop previously engaged by the fingers.

2. In a machine of the character described, the combination with an envelop-receptacle and an impression-cylinder arranged in operative relation to the discharge end of said receptacle, of means for engaging the flap of the lowermost envelop contained within the receptacle, withdrawing it from the latter and feeding it around to the printing-point comprising a rock-shaft carried by the cylinder, spurs or fingers carried by said shaft, one of said fingers being adjustably mounted upon the shaft to adapt it to be adjusted toward and from the other finger, and means for rocking the shaft at a predetermined period during the rotation of the cylinder to cause the fingers to clamp down upon the flap of an envelop previously engaged by the fingers, and means for rocking the shaft reversely to cause the fingers to release the flap, as described.

3. In a machine of the character described, the combination with an envelop-receptacle, and an impression-cylinder arranged in operative relation to the discharge end of said receptacle, of means for engaging the flap of the lowermost envelop contained in the receptacle, withdrawing it from the latter and feeding it around to the printing-point comprising a rock-shaft arranged within the cylinder and rotatably mounted in the heads thereof, spurs or fingers carried by the shaft, one of said fingers being adjustably mounted upon the shaft to adapt it to be adjusted toward and from the other finger, and means for rocking the shaft at a predetermined period during the rotation of the cylinder to cause the fingers to clamp down upon the flaps of an envelop previously engaged by the fingers, comprising a coiled spring mounted upon the shaft within the cylinder operating to rock the shaft to cause the fingers to clamp down upon said flap, as described.

4. In a machine of the character described, the combination with an envelop-receptacle, and an impression-cylinder arranged in operative relation to the discharge end of the receptacle, of means for engaging the flap of the lowermost envelop contained in the receptacle, withdrawing it from the latter and feeding it around to the printing-point comprising a rock-shaft carried within the cylinder and rotatably mounted in the heads the reof, one end of the shaft extending beyond a head of the cylinder, a spur or finger mounted upon said extended end of the shaft, a second spur or finger adjustably mounted upon the shaft within the cylinder and projecting through a transverse slot in the latter, and means for rocking the shaft at a predetermined period during the rotation of the cylinder to cause the fingers to clamp down upon the flap of an envelop previously engaged by the fingers.

5. In a machine of the character described, the combination with an envelop-receptacle and an impression-cylinder arranged in operative relation to the discharge end of the receptacle, of means for engaging the flap of the lowermost envelop contained within the receptacle, withdrawing it from the latter and feeding it around to the printing-point comprising a rock-shaft carried by the cylinder, spurs or fingers carried by the shaft, an arm secured to one end of the shaft, a roller on said arm, and a cam mounted independently of the cylinder and in a position to cause the roller to ride upon the edge of the cam and be operated thereby to cause the shaft to rock at a predetermined period during the rotation of the cylinder to cause the fingers to clamp down upon the flap of an envelop previously engaged by the fingers.

6. In a machine of the character described, the combination with a supporting-frame, an envelop-receptacle and an impression-cylinder arranged in operative relation to the discharge end of the receptacle, of a shaft H^4 mounted in the frame, pulleys on said shaft, a shaft *o* mounted in the frame, pulleys on the latter shaft, a shaft M, supporting-arms for the last-named shaft, a standard carried by the base of the frame, a roller on said standard, and endless tapes H, H^3, H′ running over the various pulleys in the manner described.

7. In a machine of the character described, the combination with a supporting-frame, an envelop-receptacle and an impression-cylinder arranged in operative relation to the discharge end of the receptacle, of a shaft H^4 mounted in the frame, pulleys on said shaft, a shaft *o* mounted in the frame, pulleys on the latter shaft, a shaft M, supporting-arms for the last-named shaft, said arms being adjustable in length, a standard carried by the base of the frame, a roller on said standard, and endless tapes H, H^3, H′ running over the various pulleys in the manner described.

8. In a machine of the character described, the combination with an envelop-receptacle and an impression-cylinder arranged in operative relation to the discharge end of said receptacle, of means for engaging the flap of the lowermost envelop contained within the receptacle, withdrawing it from the latter and feeding it around to the printing-point comprising a rock-shaft arranged within the cylinder and extending lengthwise thereof and having a bearing in the ends of the cylinder, spurs or fingers carried by said shaft, one of said spurs projecting through a longitudinal slot in the cylinder, and means for rocking the shaft at a predetermined period during the rotation of the cylinder to cause the fingers to clamp down upon the flap of an envelop previously engaged by the fingers.

9. In a machine of the character described, the combination with an envelop-receptacle and an impression-cylinder arranged in operative relation to the discharge end of said receptacle, of means for engaging the flap of the lowermost envelop contained within the receptacle, withdrawing it from the latter and feeding it around to the printing-point comprising a rock-shaft arranged within the cylinder and extending lengthwise thereof and having a bearing in the ends of the cylinder, spurs or fingers carried by said shaft, one of said spurs projecting through a longitudinal slot in the cylinder and the other spur being mounted upon a projecting end of the shaft exteriorly of the cylinder, and means for rocking the shaft at a predetermined period during the rotation of the cylinder to cause the fingers to clamp down upon the flap of an envelop previously engaged by the fingers.

10. In a machine of the character described, the combination with an envelop-receptacle and an impression-cylinder arranged in operative relation to the discharge end of the receptacle, of means for engaging the flap of the lowermost envelop contained within the receptacle, withdrawing it from the latter and feeding it around to the printing-point comprising a rock-shaft carried by the cylinder, spurs or fingers carried by the shaft, an arm secured to one end of the shaft, a roller on said arm, a spring arranged to exert its stress upon the shaft in the manner set forth, and a cam mounted independently of the cylinder and in a position to cause the roller to ride upon the edge of the cam and be operated thereby to cause the shaft to rock at a predetermined period during the rotation of the cylinder to cause the fingers to clamp down upon the flap of an envelop previously engaged by the fingers.

11. In a machine of the character described, the combination with an envelop-receptacle and an impression-cylinder arranged in operative relation to the discharge end of the receptacle, of means for engaging the flap of the lowermost envelop contained within the receptacle, withdrawing it from the latter and feeding it around to the printing-point comprising a rock-shaft carried by the cylinder, spurs or fingers carried by the shaft, an arm secured to one end of the shaft, a roller on said arm, a cam mounted independently of the cylinder and in a position to cause the roller to ride upon the edge of the cam and be operated thereby to cause the shaft to rock at a predetermined period during the rotation of the cylinder to cause the fingers to clamp down upon the flap of an envelop previously engaged by the fingers, and a second cam also mounted independently of the cylinder and operating upon the roller at a predetermined period to effect the reverse turning of the shaft and cause the fingers to release the flap of the envelop after the latter has been printed.

12. In a machine of the character described, the combination with a supporting-frame, printing devices carried thereby, and delivery-belts for the printed envelops, of a device for receiving the printed envelops from the delivery-belts comprising standards secured to rearwardly-extending arms of the frame, a roller rotatably mounted in said arms, a bar slidably mounted within the standards, a receptacle removably supported on said bar, a rope secured at one end to the bar and passing around the roller and a counterweight secured to the opposite end of the rope, as described.

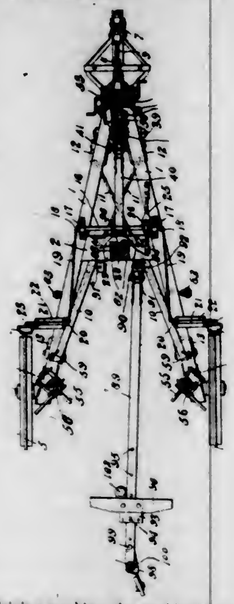
819,764. **POST-DRIVING MACHINE.** LINCOLN H. KETCHAM, Corning, Ohio. Filed Nov. 23, 1905. Serial No. 288,806.

Claim.—1. In a post-driving machine, the combination with a truck, of a turn-table thereon, a member hinged to the turn-table, a mast hinged to said member upon an axis at right angles to that of the hinged member, guys for adjusting the mast, a hammer slidable upon the mast, and means for elevating and releasing the hammer.

2. In a post-driving machine, the combination with a truck, of a turn-table thereon provided with ears at opposite sides of the center of the table, a link pivoted between the ears, a mast pivoted to the link upon an axis at right angles to that of the link, hoisting means for the mast, guys between the mast and the truck, a hammer slidable upon the mast, and means for elevating and releasing the hammer.

3. In a post-driving machine, the combination with a truck, of a mast hinged thereon and capable of being lowered to the ground, a wheel carried by the free end of the mast for engagement with the ground when the mast is lowered, a hammer slidable upon the mast, and means for elevating the hammer including a hammer-releasing

trip, the wheel upon the mast being located in the path of the trip to automatically release the hammer.



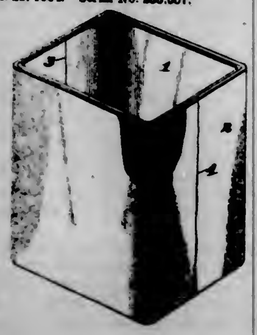
4. In a post-driving machine, the combination with a truck, of a mast thereon, a hammer slidable upon the mast, elevating and releasing means for the hammer, a gage-bar trailing from the truck, a post-engaging cross-head carried by the gage-bar, and a connection between the gage-bar and the truck which is shiftable to either side of the truck.

5. In a post-driving machine, the combination with a truck, of a mast, a hammer working thereon, means for elevating and releasing the hammer, a gage-bar trailing from the truck and shiftable from one side to the other thereof, and a post-engaging cross-head carried by the bar and projecting at opposite sides thereof.

6. In a post-driving machine, the combination with a truck, and a hammer carried thereby, of a gage-bar trailing from the truck and shiftable from one side to the other thereof, post-engaging means carried by the bar, and a trailer-wheel carried by the gage-bar and shiftable to reverse inclinations across the bar.

7. In a post-driving machine, the combination with a truck, and a hammer carried thereby, of a gage-bar trailing from the truck and shiftable from one side to the other thereof, post-engaging means carried by the bar, a trailer-wheel, a bracket carrying the wheel and pivoted to the bar, said bracket having a transverse series of openings, and a fastening carried by the bar for individual engagement with the openings of the bracket to hold the latter in adjusted positions.

819,765. **CHEMICAL VESSEL.** WILLIAM KIRK, Butler, N. J., assignor to American Hard Rubber Company, a Corporation of New York. Filed Dec. 23, 1904. Serial No. 238,057.



Claim.—1. A vessel having a wall composed of layers of vulcanizable material, one layer of which is harder than the other.

2. A vessel having a wall comprised of lavers of vulcanizable material, the inner layer of which is harder than the other.

3. A vessel having a wall comprised of layers united by vulcanizing, one of said layers containing a greater proportion of plastic material than the other.

4. A vessel having a wall comprised of layers united by vulcanizing, the inner of said layers containing a greater proportion of plastic material than the other.

5. A vessel having a wall of hard rubber covered with a relatively soft material permanently adhered thereto.

6. A vessel having a wall composed of layers of rubber compound of different grades of hardness permanently adhered together.

7. A vessel having a wall composed of layers of rubber compound of different grades of hardness vulcanized together.

8. A vessel having a wall composed of layers of rubber compound, the inner of which is harder than the outer.

9. A vessel having a wall composed of layers of rubber compound, the inner of which contains a smaller proportion of rubber than the other.

10. A vessel having walls of relatively hard material and a layer of relatively soft material covering and adhered to its side walls and extending under the periphery only of its base.

11. A vessel having walls of relatively hard material, a layer of relatively soft material covering and adhered to its side walls and extending under the periphery only of its base, and a separate portion of relatively soft material secured to its base.

12. A vessel having walls of relatively hard material, a layer of relatively soft material covering and adhered to its side walls and extending under the periphery only of its base, and a separate portion of relatively soft material secured to and covering its base.

13. A vessel having walls of relatively hard material, a layer of relatively soft material covering and adhered to its side walls and extending under the periphery only of its base, and a separate portion of relatively soft and artificially-roughened material secured to its base.

14. A vessel having an outer layer of artificially-roughened soft rubber secured to its base.

15. A vessel having an outer layer of artificially-roughened soft rubber secured to and approximately covering its base.

16. A receptacle for chemicals having its walls formed of an inner layer of hard rubber and an outer layer of soft rubber.

17. A receptacle for chemicals formed of a layer of hard-rubber compound and a layer of soft-rubber compound vulcanized together, the hard rubber being upon the interior and the soft rubber upon the exterior.

18. A receptacle for chemicals having its walls formed of composite material, namely, soft and hard rubber composition, vulcanized.

819,766. **PAPER-CLIP.** FRED J. KLEIN, New York, N. Y. Filed Mar. 27, 1905. Serial No. 252,364.



Claim.—1. A paper-clip formed from a single length of wire bent to form a straight upper member, side arms at right angles thereto and extending in the same direction, and terminal arms at the ends of said side arms, crossing each other, extending toward said upper member, and having their ends resting on said side arms just below their connections with said upper member; each side arm and the terminal arm connected therewith being on the same side of the other side arm and terminal arm, and in spring bearing contact therewith.

2. A paper-clip formed from a single length of wire bent to form an upper member, side arms extending therefrom at symmetrical angles, and terminal arms at the ends of said side arms, crossing each other, extending toward said upper member, and having their ends resting on said side arms; each side arm and the terminal arm connected therewith being on the same side of the other side arm and terminal arm, and in spring bearing contact therewith.

819,767. **GARMENT-FASTENER.** JOHN A. KNOWLTON, Boston, Mass. Filed Apr. 28, 1905. Serial No. 257,812.

Claim.—1. A garment-fastener consisting of a base-plate provided with a depression having walls on all sides, a spring-hook secured thereto and terminating in an inward bend the extreme point of which is adapted to normally rest in said depression, and an eye portion.



2. A garment-fastener consisting of a base-plate provided with a depression having walls on all sides and closed at the bottom, a spring-hook secured thereto and terminatiug in an inward bend the extreme point of which is adapted to normally rest in said depression, and an eye portion.

3. A garment-fastener consisting of a base-plate provided with a depression and securing members for said base-plate adjacent to said depression, a spring-hook secured thereto which terminates in an inward bend with its extreme end normally resting in said depression, and an eye portion.

4. A garment-fastener consisting of a base-plate provided with an indentation, a spring-hook secured thereto and having its free end in a point adapted to normally rest in said indentation, and an eye portion.

819,768. **SHEET-METAL KEG.** ALFRED T. KRUSE, Defiance, Ohio, assignor to The American Steel Package Company, Defiance, Ohio, a Corporation of Ohio. Filed Aug. 8, 1904. Serial No. 219,977.



Claim.—1. A sheet-metal keg consisting of an outer vessel having its ends bent to form a circumferential rim or flange, ends or heads provided with a corresponding rim or flange adapted to take into and be secured to said first-mentioned rim or flange, an inner vessel comprising two parts connected at the center of the keg by having the contiguous edges bent over to form a seam, a series of longitudinally-disposed brace-bars secured to said inner and outer vessel, and non-insulating material interposed between the same.

2. A sheet-metal keg, consisting of an outer vessel comprising two parts connected at the center of the keg by having the continuous edges thereof bent over to form a seam, heads secured in the ends of said outer vessel, an inner vessel comprising two parts connected at the center of the keg by having the contiguous edges thereof bent over to form a seam, and longitudinally-disposed brace-bars interposed between the same.

3. In a sheet-metal keg, the combination with an outer vessel, formed with a series of annular outwardly-extending ribs or flanges, and comprising two parts joined at the center by means of a seam, and heads secured to the ends of said outer vessel; of an inner vessel mounted therein, and a series of longitudinally-disposed U-shaped brace-bars interposed between said inner and outer vessel to hold the same in proper position.

4. A sheet-metal keg, consisting of an outer shell, separately-made flanged heads inserted and secured in the open ends of the same, an inner vessel comprising two parts connected at the center of the keg by having the contiguous edges bent over to form a seam, a series of longitudinally-disposed brace-bars secured to said outer vessel and interposed between said inner and outer vessels, and non-metallic insulating material interposed between the same.

5. A sheet-metal keg, consisting of an outer vessel connected at the center of the keg by having the contiguous edges thereof bent over to form a seam, heads secured at the ends thereof, an inner vessel comprising two parts joined at the center of the keg by having the contiguous edges bent over and about to form a seam, non-metallic insulating material interposed between said inner and outer vessel, and longitudinally-disposed brace-bars interposed between and connecting and supporting said inner and outer vessels.

6. In a sheet-metal keg, the combination with an outer vessel, and heads secured in the ends thereof; of an inner vessel comprising two parts joined at the center of the keg, insulating material interposed between said inner and outer vessel, and a series of longitudinally-disposed brace-bars interposed between and connected to said inner and outer vessel.

819,769. **MOLD FOR ARTIFICIAL STONE.** ALBERT LAKE, Washington, D. C. Filed Nov. 4, 1903. Serial No. 179,856.

Claim.—1. A plastic mold for artificial stone, composed of a plastic material mixed with a filler maintained in a plastic state and whose molding-surfaces have sand blown into them so that the particles of sand will partly project from the molding-surfaces, thereby producing a mold in which undercut surfaces can be molded, a liquid cement mixture can be used to form the stone so as not to distort the undercut molding-surfaces, to produce a stone simulating natural sandstone by reason of the projecting particles of sand from the molding-surfaces, and after the stone is set the plastic mold can be broken from the stone and reused.

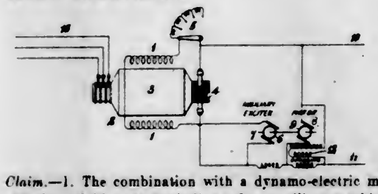
2. A mold for artificial stone, composed of an argillaceous material mixed with an absorbing and a non-absorbing filler, and chemical compound capable of retaining water, substantially as described.

3. The method of making artificial stone, which consists in forming a plastic mold of a plastic material, blowing sand into the molding-surfaces and filling in the mold to the required depth with a cement mixture capable of being poured, substantially as described.

4. The method of making artificial stone, which consists in forming a plastic mold of plastic clay, blowing sand into the molding surfaces, and pouring into the mold a suitable cement mixture, substantially as described.

5. The method of making artificial stone, which consists in forming a plastic mold of a plastic material mixed with an absorbing and a non-absorbing filler, preparing the molding surfaces to produce indented surfaces simulating natural stone, substantially as described.

819,770. **SYSTEM OF ELECTRICAL DISTRIBUTION.** BENJAMIN G. LAMME, Pittsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed June 30, 1904. Serial No. 214,823.



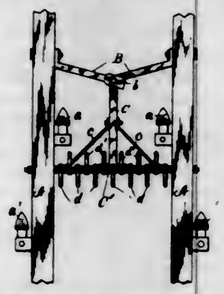
Claim.—1. The combination with a dynamo-electric machine having a shunt field-magnet winding, of an auxiliary machine having its armature in the field-magnet circuit of the main machine and its field-magnet winding in series relation to the main distributing-circuit, and a motor for driving said auxiliary machine having its armature connected across the main distributing-circuit and having a shunt field-magnet winding and an opposing series winding, the magnetic circuit of the motor being saturated under no-load conditions.

2. The combination with a main dynamo-electric machine having a shunt field-magnet winding, of an auxiliary machine having its armature in series relation to the field-magnet winding of the main machine and its field-magnet winding in series relation to the main distributing-circuit and a shunt motor for driving said auxiliary machine that is connected across the main distributing-circuit and has a field-magnet winding that is connected in series relation to the main circuit and opposes the shunt winding.

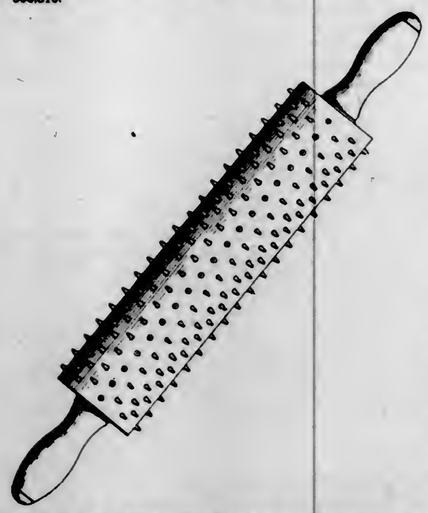
819,771. **WEEDER.** FRED LANGE, Oaklawn, Ill., assignor of one-third to Henry Koeller and one-third to J. M. Weber, Chicago, Ill. Filed Sept. 9, 1905. Serial No. 277,655.

Claim.—1. In a weeder, the combination of a cultivator-frame, shovels secured to said frame, a tooth-supporting frame, said frame comprising two sections extending transversely across said cultivator-frame, and a plurality of downwardly-extending spring-teeth arranged in staggered relation to each other and supported between the sections of said frame, substantially as described.

2. A weeder comprising a two-piece cross-arm adapted to be secured to an ordinary cultivator-frame, loop extensions upon each side of said pieces, means for securing said pieces together with the loop extensions in staggered relation to each other upon each side of said cross-arm, and downwardly-extending spring-teeth one of which is held in each of said loop extensions, substantially as described.



819,772. DOUGH KNEADING AND AERATING ROLLER. WOODVILLE LATHAM, New York, N. Y. Filed Feb. 9, 1906. Serial No. 300,310.



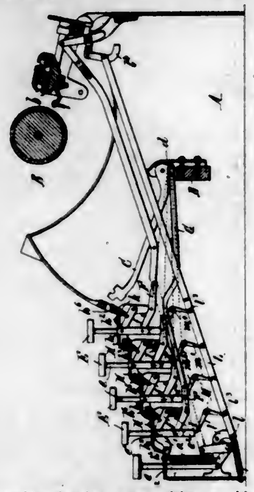
Claim.—1. In a dough-kneading roller the combination with a plain-surfaced roller of protuberances or projecting pins, substantially as described.

2. As an article of manufacture, a dough kneading and aerating roller with a studded or toothed surface substantially as described.

819,773. TYPE-WRITING MACHINE. ERNST G. LATTA, Friendship, N. Y., assignor of one-half to Harvey A. Moyer, Syracuse, N. Y. Filed Jan. 17, 1905. Serial No. 241,456.

Claim.—1. The combination in a front-strike type-writing machine, of a vertically-movable key-stem, a lever pivoted to the key-stem and fulcrumed to a fixed part of the machine in rear of the key-stem, a pivoted type-bar, and a rod connecting the type-bar and said lever, said rod being pivoted to said lever at a point normally lying substantially on a straight line joining the fulcrum of said lever and the pivot connecting said rod to said type-bar, and said rod swinging forwardly and upwardly throughout its length when the key-stem is depressed, substantially as set forth.

2. The combination in a type-writing machine having type-bars arranged to swing upwardly and rearwardly, of a series of vertically-movable key-stems, a pair of links pivotally connected to each key-stem at different elevations and to a fixed part of the machine in rear of the key-stem, and a rearwardly-extending arm on one of said links operatively connected to a type-bar, each key-stem being supported by a separate pair of links and connected to a separate type-bar, substantially as set forth.



3. The combination in a type-writing machine having a type-bar arranged to swing upwardly and rearwardly, of a vertically-movable key-stem, a pair of parallel links arranged one over the other and pivoted to the key-stem and fulcrumed to a fixed part of the frame in rear of the key-stem, a rearwardly-extending arm on one of said links, and a rod pivotally connected to the type-bar and to said arm, said rod and the pivots connecting it with said arm and with the type-bar and the fulcrum for said link normally lying substantially in the same straight line, substantially as set forth.

4. The combination in a type-writing machine, of a type-bar pivoted to swing upwardly and rearwardly, an upright finger-key, a pair of pivoted links arranged at different elevations and pivoted to and supporting the finger-key in upright position, and a one-part connection between one of said links and the type-bar, substantially as set forth.

5. The combination in a type-writing machine, of a pivoted type-bar arranged to swing upwardly and rearwardly, an upright finger-key, a pair of pivoted supporting-links for the finger-key arranged at different elevations and pivoted to the finger-key, a spring for elevating the finger-key, and a one-part connection between one of said links and the type-bar, substantially as set forth.

6. The combination in a type-writing machine, of a pivoted type-bar, an upright finger-key, a pair of pivoted supporting-links for the finger-key arranged at different elevations and pivoted to the finger-key, and a rod connecting one of said links with said type-bar and extending substantially in the direction of a straight line connecting the pivot for said link with the pivot joining said rod to the type-bar, substantially as set forth.

7. The combination in a front-strike type-writing machine, of a pivoted type-bar arranged to swing upwardly and rearwardly, a vertically-movable key-stem, a lever centrally pivoted to the frame with one arm pivoted to the key-stem, and a connecting-rod extending in a substantially direct line from the type-bar to the frame-pivot of said lever and pivotally connected to the other arm of said lever on such line, substantially as set forth.

8. The combination in a type-writing machine, having a series of type-bars pivoted on an upright segment, and a keyboard in front thereof, of a series of vertically-movable key-stems each supported by two pivoted links, the upper links for the key-stems in the side portions of the keyboard having extensions connected to the type-bars near the ends of the segment, substantially as set forth.

9. The combination in a type-writing machine having a series of type-bars pivoted on an upright segment, and a keyboard in front of the type-bars, of a series of vertically-movable key-stems each supported by two pivoted links one above the other, connections between the lower links for the central key-stems and the central type-bars, and connections between the upper links for the side key-stems and the side type-bars, substantially as set forth.

10. The combination in a type-writing machine, having a series of pivoted type-bars, and a series of vertically-movable key-stems, of a pair of pivoted supporting-links for each type-bar, all of the links being arranged at the same angle, and one link of each pair having an extension connected to a type-bar, the angularity of said extensions varying as required to connect them with the type-bars in direct lines, substantially as set forth.

11. The combination in a type-writing machine, of a vertically-movable key-stem having two pivot bearings or seats, an upright support having two corresponding bearings, a pair of interchangeable links of different form connecting the key-stem to the support, a type-bar, and operative connections between the key-stem and type-bar, substantially as set forth.

12. The combination in a type-writing machine, of a vertically-movable key-stem, a pair of parallel links pivotally supporting the key-stem, a detachable bracket pivotally supporting the parallel links, a type-bar, and operative connections between the key-stem and type-bar, substantially as set forth.

13. The combination in a type-writing machine, of a vertically-movable key-stem, a pair of parallel links pivotally supporting the key-stem, an adjustable bracket pivotally supporting the parallel links, a type-bar, and operative connections between the key-stem and type-bar, substantially as set forth.

14. The combination with a type-writing-machine frame, of a vertically movable key-stem, a connecting-bracket formed of a single piece of sheet metal and having an integral back-stop for the key-stem, a pair of supporting-arms pivoted to both the key-stem and the bracket, a type-bar, and operative connections between the key-stem and type-bar, substantially as set forth.

15. The combination of a type-writing-machine frame having a slotted keyboard-base, a series of pendent key-supporting brackets arranged in each slot and independently adjustable therein, the brackets in each slot having parts which coöperate to cover said slot, finger-keys, type-bars, and operative connections between the finger-keys and type-bars, substantially as set forth.

16. The combination with a type-writing-machine frame, having a slotted keyboard-base, of a series of key-supporting brackets arranged in said slots and having overlapping parts that cover the slots in the base, finger-keys, type-bars, and operative connections between the finger-keys and type-bars, substantially as set forth.

17. The combination with a type-writing-machine frame, having a slotted keyboard-base, of a series of key-supporting brackets, and a key-stem, lever, connecting-rod, type-bar, and type-bar hanger permanently connected with each bracket and adapted to be removed with said bracket through the slot of the base, substantially as set forth.

18. The combination in a type-writing machine, of a series of reciprocating keys arranged in banks or rows, an independent movable member for each row of keys having parts for actuation by the several keys in the row, and a universal bar which is actuated by each of said members, substantially as set forth.

19. The combination in a type-writing machine, of a series of key-stems supported to move up and down and arranged in banks or rows, a series of rock-shafts arranged one for each bank of key-stems and having an arm in position to be vibrated by each of the key-stems, and means for transmitting the movement of each rock-shaft to the carriage-escapement, substantially as set forth.

20. The combination in a type-writing machine, of reciprocating key-stems arranged in banks or rows, supporting-links pivoted to the key-stems and to fixed parts of the machine, a rock-shaft for each bank of key-stems supported directly under the pivots by which the links are secured to the frame, arms projecting from the rock-shaft substantially parallel with the supporting-links and pivotally engaging the key-stems and adapted to rock the shaft with each vibration of either key in the bank, and means for transmitting the movement of the rock-shafts to the carriage-escapement, substantially as set forth.

21. The combination in a type-writing machine having a series of reciprocating keys arranged in banks or rows, of a series of rock-shafts each in operative relation with the keys of one row, and a universal bar arranged to move with either rock-shaft of the series independently of the other rock-shafts, substantially as set forth.

22. The combination in a type-writing machine having a series of reciprocating key-stems, and type-bars operatively connected with said key-stems, of a rock-shaft for the purpose stated having arms with reduced ends bearing against the lower ends of the key-stems, substantially as set forth.

23. The combination in a type-writing machine having an upright segment for the type-bars, and a keyboard arranged in front thereof, of a universal bar passing in a direct line from the under side of the keyboard over the central part of the segment to the carriage-escapement, substantially as set forth.

24. The combination in a type-writing machine having a series of type-bars and two or more rows or banks of operating finger-keys for said type-bars, of a rock-shaft for each row of keys, and interlocking means to prevent the actuation of two adjacent shafts at the same time, substantially as set forth.

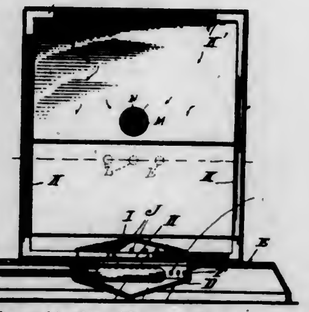
25. The combination in a type-writing machine having a series of type-bars and two or more rows or banks of operating finger-keys for said type-bars, of two or more rock-shafts each arranged to rock independently of the others upon the actuation of a key in one row, and means to cause the rock-shafts to interfere in case keys in any two adjoining rows are actuated at the same time.

819,774. SHAPE-RETAINER. ENOCH S. LEFEVRE, Littlestown, Pa. Filed May 16, 1905. Serial No. 260,711.



Claim.—A shape-retainer for coats comprising a wire, a pronged hook at one end thereof, parallel hooks at the other end constituting a stop and a prong integral with one of said parallel hooks said prongs and their hooks adapted to project into engagement with a portion of a coat.

819,775. STOVE. NELLIE D. LOUGHREY, Los Angeles, Cal. Filed Mar. 6, 1905. Serial No. 248,732.



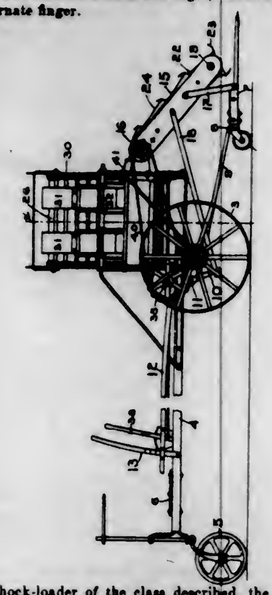
Claim.—The combination with an oven having air-flues which extend upward from a point between the center of the bottom of the oven to the sides, then upwardly and discharging into the oven at the top, of a burner and a perforated cone-shaped shield and a deflector, one above and the other below the burner, the upper one inclosing the ends of the flues whereby a portion of the products of combustion pass directly into the oven, and the remaining portion through the flues and discharging into the upper end of the oven.

819,776. SHOCK-LOADING MACHINE. ERNEL LUMATTA, Savo, S. D. Filed June 6, 1905. Serial No. 263,930.

Claim.—1. In a shock-loader of the class described, the combination with a frame supported upon wheels, of an elevator having pivotal support in said frame, sprockets supported in the ends of said elevator, endless chains running over said sprockets, gathering-fingers carried by said chains, cords connecting said fingers, and inset sprockets for said chains so arranged as to carry the chain inward after passing over the sprockets at the upper ends of the elevator.

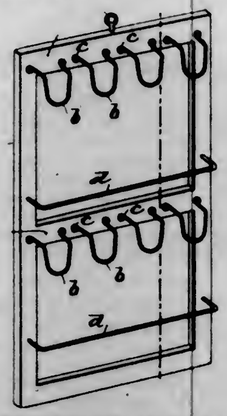
2. In a shock-loader of the class described, the combination with a frame supported upon wheels, of an elevator having pivotal support in said frame, means for turning said elevator upon said support, sprockets journaled in the ends of said elevator, chains running over said sprockets, gathering-fingers carried by said chains, inset sprockets for said chains below the upper end of said elevator, said

inset sprockets being so arranged as to carry the chains inward after passing over the adjacent sprockets in the upper end of the elevator, and cords connecting alternate fingers, said cords being each connected at one end with the base of one finger, and at its opposite end with the alternate finger.



3. In a shock-loader of the class described, the combination with a frame supported upon wheels, of an elevator having pivotal support in said frame, sprockets journaled in the ends of said elevator, a sprocket arranged within said elevator intermediate of said end sprockets, endless chains running over said end sprockets and underneath said intermediate sprocket, gathering-fingers carried by said chains, cords connecting said fingers, and a transverse wall 41 arranged at the rear of said elevator in position to be engaged by said fingers as the fingers pass over the upper end of the elevator.

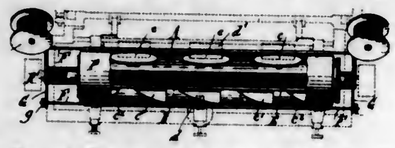
819,777. SHOE-RACK. ROBERT MACDONALD, Hope, R. I. Filed Aug. 30, 1905. Serial No. 276,484.



Claim.—1. A shoe-rack consisting of a rectangular frame having a central cross-bar, an eye attached to one end of said frame for suspending the frame from a suitable support, a plurality of clips consisting of bent loops having eyes at their extremities, screws passing through the eyes of the loops of the clips and securing the same to the upper cross-bar and the central cross-bar of the frame, said loops being adapted to be sprung apart at the opening thereof so as to accommodate the shoe-heels and supports carried by the vertical side bars of said frame and projecting forwardly from the frame to support the soles of shoes suspended in said loops.

2. A shoe-rack comprising a frame, a plurality of clips attached to the frame, each consisting of a bent wire having its ends at right angles to its central portion and a support of substantially U shape carried by the frame below said clips.

819,778. ATTACHMENT FOR TYPE-WRITING MACHINES. ARTHUR H. MARTIN, Buffalo, N. Y., assignor of one-half to C. E. B. Lamson, Toledo, Ohio. Filed Jan. 25, 1905. Serial No. 242,630.



Claim.—1. The combination with a type-writing-machine platen, and devices for pressing the record-sheets against the platen, of a guide which is stationarily supported adjacent to the platen and has a portion extending to a position to allow two record-sheets to be inserted between the platen and presser devices on opposite sides of the guide without moving the guide, an ink-ribbon supported adjacent to the platen, said guide being constructed to allow the presser devices to press the record-sheets against the platen and having parts which direct the record-sheets to opposite sides of said ink-ribbon, substantially as set forth.

2. The combination with a type-writing-machine platen, and devices for pressing the record-sheets against the platen, of a curved guide which partially surrounds the platen and separates two record-sheets, said guide providing open spaces which allow the presser devices to press the record-sheets against the platen, an ink-ribbon supported adjacent to the platen, and parts on said guide arranged to direct the record-sheets to opposite sides of said ink-ribbon, substantially as set forth.

3. The combination with a type-writing-machine platen, and devices for pressing the record-sheets against the platen, of a curved guide which partially surrounds the platen and separates two record-sheets, said guide providing open spaces which allow the presser devices to press the record-sheets against the platen, and an ink-ribbon, said guide having means for supporting said ink-ribbon adjacent to the platen, and portions arranged to direct the record-sheets to opposite sides of said ink-ribbon, substantially as set forth.

4. The combination with a type-writing-machine platen, and devices for pressing the record-sheets against the platen, of a curved guide which partially surrounds the platen and separates two record-sheets, said guide providing open spaces which allow the presser devices to press the record-sheets against the platen, an ink-ribbon, and a guard located between said ink-ribbon and the outer record sheet, said guide having portions arranged to direct the record-sheets to opposite sides of said ink-ribbon and guard, substantially as set forth.

5. In an attachment of the character described, a substantially trough-shaped guide which partially incloses the type-writer platen and has guides at its ends for an ink-ribbon, a ribbon-slot between said guides, and open spaces at opposite sides of said ribbon-slot, substantially as set forth.

6. In an attachment of the character described, a substantially trough-shaped guide which partially incloses the type-writer platen and has guides at its ends for an ink-ribbon, a ribbon-slot between said guides, oval-shaped openings at one side of said ribbon-slot, and triangular openings at the opposite side of said ribbon-slot, substantially as set forth.

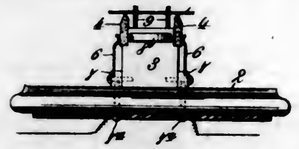
7. In an attachment of the character described, a guide which partially surrounds the type-writer platen and has a slot for an ink-ribbon, and portions at one edge of said slot which overlap the adjacent edge of the ink-ribbon to direct record-sheets to opposite sides of the ribbon, and means overlapping the opposite edge of said ribbon-slot to prevent the engagement of the latter with the record-sheets, substantially as set forth.

8. In an attachment of the character described, a guide which partially surrounds the type-writer platen and has a slot for an ink-ribbon, and portions at one edge of the slot which inclose the adjacent edge of the ribbon, and a guard which is inclosed by said portions at one edge of the ribbon-slot and overlaps the opposite edge of the ribbon-slot, substantially as set forth.

9. In an attachment of the character described, a guide which partially surrounds the type-writer platen and has a slot for an ink-ribbon, and portions at one edge of said slot which inclose the adjacent edge of the ribbon, a guard which is inclosed by said portions at one edge of the ribbon-slot and overlaps the opposite edge of the ribbon-slot, and a band which is secured to the opposite edge of said ribbon-slot and extends in between said ribbon and guard, substantially as set forth.

10. In an attachment for type-writing machines, the combination of a curved guide adapted to partially surround the platen and separate two record-sheets and provided with openings through which the presser devices press the record-sheets against the platen, an ink-ribbon retained in position by said guide, said guide having parts arranged to direct the record-sheets to opposite sides of said ink-ribbon, and means for supporting the guide in position to partially surround the platen, substantially as set forth.

819,779. OSCILLAPHONE. WALTER W. MASSIE, Providence, R. I., assignor to Massie Wireless Telegraph Company, Providence, R. I., a Corporation of Rhode Island. Filed Aug. 18, 1905. Serial No. 274,727.



Claim.—1. The combination of an insulating element, stop means upon the upper side of the insulating element, terminals between which the stop means is located, a bridging element to rest on the terimnals, and a permanent magnet, the insulating element being bored to receive the magnet.

2. The combination of an insulating element, stop-pins extended into the insulating element and above the upper surface thereof, terminals between which the stop-pins are located, a bridging element to rest on the terminals, and a permanent magnet, the insulating element being bored to receive the legs of the permanent magnet, and said legs bearing against said pins.

3. In an oscillaphone, the combination with a base-support, an insulating element, and terminals engaging the element and having a conducting element thereon, of conducting members secured to the element, and fastenings applied to the base and engaging the said terminals and constituting the sole connecting means for the apparatus with respect to the base-support.

819,780. SAFETY-RAZOR. WILLIAM J. MOORE, Washington, D. C. Filed June 9, 1905. Serial No. 264,529.

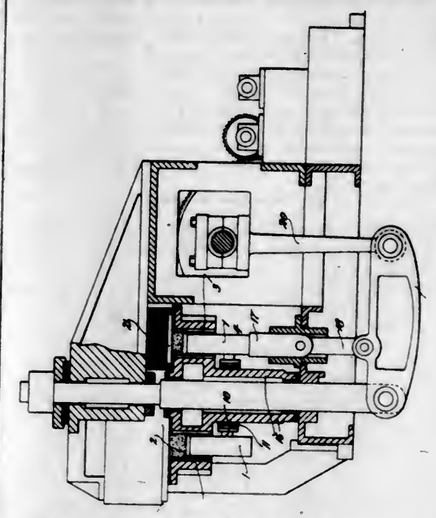


Claim.—1. In a safety-razor, the combination of a blade, a holder consisting of a base-plate forming a guard for the blade and a lip or projection extending over said blade, the blade having a lip-engaging edge or corner, and a clamping device that impinges on the side of the blade next the base-plate, at a point that rocks the blade on its lip-engaging edge or corner to press the cutting edge of the blade against the base-plate.

2. In a safety-razor, the combination of a blade, a holder consisting of a base-plate forming a guard for the blade and a lip or projection extending over the blade, the blade being thickened where it lies between said lip and said base-plate, and a screw engaging the thickened portion of the blade next the base-plate, the blade having an edge or corner that engages the lip at a point between the cutting edge of the blade and the point of contact of the screw with the blade.

3. In a safety-razor, the combination of a blade, a holder consisting of a base-plate forming a guard for the blade and a lip or projection extending over said blade, the blade having a lip-engaging edge or corner, and a screw secured to or forming part of a handle passing through the base-plate and impinging upon the surface of the blade adjacent thereto at a point to cause the blade to rock or tilt on its lip-engaging edge or shoulder and press its cutting edge against the base-plate.

819,781. BRICK MOLDING AND PRESSING MACHINE. HENRY G. MORRIS, Philadelphia, Pa. Filed Feb. 7, 1905. Serial No. 244,580.



Claim.—1. In a brick-making machine the combination of a table having an opening constituting a mold, a plunger having a top plate or part adapted to fit said opening and a reduced shank or body whereby space is afforded for the escape of material which passes the top part or plate, and a guide arranged internally of the plunger whereby it is protected from falling material, substantially as described.

2. The combination in a brick-making machine of a mold-table having an opening constituting a mold, a plunger having a top part or plate fitted to work in the opening and having a reduced body or shank, a guide arranged internally of the plunger, and a downward-limit stop for the plunger, substantially as described.

3. In combination a hollow laterally-slotted plunger having an enlarged top plate or part and a reduced shank, and a bracket provided with a guide accommodated by the hollow and slotted portions of the plunger, substantially as described.

4. In combination an internally-hollow and laterally-slotted plunger, a bracket accommodated by the slot in the plunger and adapted to collide with the top wall of the slot to constitute a limit-stop for the plunger, and a guide carried by the bracket and fitted to the internal space of the plunger and stopping short of the top thereof so as to afford a space for the reception of washers, substantially as described.

5. The combination in a brick-making machine of a mold-table having openings constituting molds, a collar clamped to said table, brackets carried by the collar and provided with guides, and internally-hollow and laterally-slotted plungers fitted to said guides and provided with top parts or plates corresponding with said openings and also provided with reduced shanks, substantially as described.

6. In combination a bracket provided with a guide fitted with an oil-chamber having communication with its exterior, and an internally-hollow and laterally-slotted plunger fitted over said guide and bracket, substantially as described.

7. In combination a bracket provided with an upright guide, and an internally-hollow slotted plunger fitted over said guide and bracket, substantially as described.

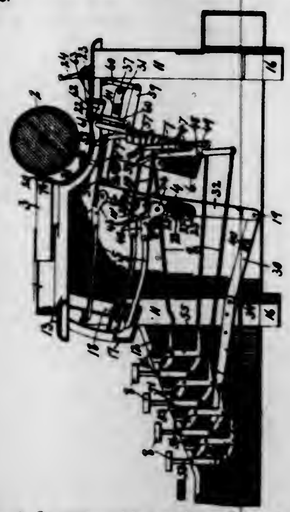
8. In a brick-making machine the combination of a table having an opening constituting a mold, a plunger adapted to work in said opening and constituting a bottom for the mold, an ejector arranged to lift the plunger, a cam, a follower engaging the cam and ejector, and an adjustable fulcrum for the follower whereby the upward ejecting throw of the plunger may be regulated, substantially as described.

9. In a brick-making machine the combination of a table having an opening constituting a mold, a plunger adapted to work in said opening and constituting a bottom for the mold, a centrally-pivoted lever for lifting the plunger to effect ejection, means for rocking the lever, and an adjustable fulcrum for the lever, substantially as described.

10. In a brick-making machine the combination of, a table having an opening constituting a mold, a plunger adapted to work in said opening and constituting a bottom for the mold, a centrally-pivoted lever for lifting the plunger to effect ejection, means for rocking the lever, a fulcrum for the lever, and slot-and-pin connections for the fulcrum, substantially as described.

11. In a brick-making machine the combination of, a table having an opening constituting a mold, a plunger adapted to work in said opening and constituting a bottom for the mold, a centrally-pivoted lever for lifting the plunger to effect ejection, means for rocking the lever, a fulcrum for the lever, slot-and-pin connections for the fulcrum, and an adjusting-screw for the fulcrum, substantially as described.

819,782. **TYPE-WRITING MACHINE.** HARVEY A. MOYER and EMMIT G. LATTA, Syracuse, N. Y. Filed Apr. 18, 1905. Serial No. 256,203.



Claim.—1. In a type-writing machine, the combination with a pair of opposed side plates, of a type-bar, an actuating member and a hanger each having one end located between the side plates, and attached thereto, said plates being united above and covering the adjacent end of the actuating member.

2. In a type-writing machine, the combination of a type-bar, its actuating member, and a hood composed of a piece of folded sheet metal rigidly connected to the bar, and pivotally connected to the actuating member, and hanger and embracing between its sides, the adjacent portion of the bar, actuating member, and hanger.

3. In a type-writing machine, the combination of a type-bar, its hanger, and actuating member, each consisting of a single piece of metal, with a sheet-metal hood rigidly connected to the bar, and pivotally connected to the hanger and actuating member said hood having opposite sides, embracing between them the bar, actuating member, and hanger.

4. In a type-writing machine, the combination with a type-bar, its hanger, and a rearwardly-extending actuating member pivoted to the type-bar, of a hood connecting the bar to its hanger, and covering the adjacent pivoted end of the actuating member.

5. In a type-writing machine, the combination with a type-bar, its hanger, and actuating member, of a sheet-metal hood connecting said parts and forming a dust-excluding cover extending over the pivot of the actuating member.

6. In a type-writing machine, the combination with a type-bar and hanger both substantially the same thickness, of a pair of opposed parallel side plates closely fitting upon the sides of the bar and hanger and pivotally connected to the hanger, and an actuating member for the bar loosely pivoted between the side plates at a point above and in front of the hanger when the parts are in their normal position, said plates being united above the pivot of the actuating member.

7. In a type-writing machine, the combination, of a type-bar, its hanger, and end actuating member pivoted to the type-bar, with a folded sheet-metal hood extending over the inner end of the type-bar and adjacent pivot of the actuating member and pivotally connected to the hanger.

8. In a type-writing machine, the combination with a type-bar and opposed side plates thereon, a hanger, a removable sheet-metal dust-guard self-retained between the side plates and projecting rearwardly over the hanger.

9. In a type-writing machine, the combination of a type-bar and opposed side plates thereon, a central hanger, a curved sheet-metal dust-guard arranged between the plates and constituting a clamp by which it is self-retained between the plates.

10. In a type-writing machine, the combination with a type-bar, of opposed circular bearings attached to the bar, a hanger located between the bearings and having a circular end of smaller diameter than that of the bearings of the bar, and a separate spring-retained sheet-metal dust-guard closely fitting between the bearings and concentric with the circular end of the hanger.

11. In a type-writing machine, the combination with a type-bar, of opposed pivot-bearings having forwardly-projecting portions secured to the bar and of less width than the pivot-bearings, a separate spring-retained sheet-metal dust-guard reduced in width between its ends to fit between the bearings and its ends of sufficient width to rest on the bearings and exclude dust from the pivot.

12. In a type-writing machine, the combination with a type-bar, of a pair of opposed ears, a hanger between the ears and a detachable curved sheet-metal dust-guard of spring temper springing against the periphery of said ears.

13. In a type-writing machine, the combination with the platen of a series of pivoted type-bars arranged to strike toward the front of the platen, a shiftable segment movable independently of the platen supporting the type-bars, opposite arms pivotally connected to the opposite ends of the segment and to the frame of the machine in rear of the segment, and means for shifting the segment.

14. In a type-writing machine, the combination of a series of pivoted type-bars arranged to strike toward the front of the platen, a movable segment supporting the type-bars, opposite arms pivotally connected to the upper part of the segment and to the frame of the machine in rear of the segment, an arm pivoted to the lower part of the segment and to the frame of the machine in front of the segment, and means for shifting the segment.

15. In a type-writing machine, the combination with a platen, of a series of pivoted type-bars arranged to strike the front of the platen, and a movable segment shiftable separately from the platen and supporting the bars, of a pair of opposite arms pivoted to the ends of the segment and to the frame of the machine in rear of the segment on a line at a right angle to the plane of the segment and midway between the upper and lower positions of the pivotal connection of the arms to the segment, and means for shifting the segment.

16. In a type-writing machine, the combination with a series of type-bars arranged to strike the front of the platen, and a movable segment supporting the bars, of a pair of arms pivoted to the upper part of the segment, and to the machine-frame in rear of the segment, one or more arms being pivoted to the lower side of the segment and to the machine-frame in front of the segment, the frame-pivots being in all cases on a line extending at right angles to the plane of the segment midway between the upper and lower positions of the segment-pivots whereby the segment is in the same plane in either position, and means for shifting the segment.

17. In a type-writing machine, the combination with a platen, of a series of pivoted type-bars arranged to strike the front of the platen, and a movable segment shiftable separately from the platen and supporting the bars, of a pair of rigidly-connected arms pivoted to the ends of the segment in a plane above its central portion and to the machine-frame in rear of the segment, and means for vibrating the segment.

18. In a type-writing machine, the combination with a platen, of a series of pivoted type-bars arranged to strike the front of the platen, and a movable segment shiftable separately from the platen and supporting the bars, of two pairs of arms, those of each pair being rigidly connected to each other and pivoted to the segment and to the machine-frame, and means for shifting the segment.

19. In a type-writing machine, the combination with a platen, of a series of pivoted type-bars arranged to strike the front of the platen, and a movable segment shiftable separately from the platen and supporting the bars, of opposite arms pivoted to the segment and to the machine-frame, a cross-bar of angular cross-section rigidly secured to the arms between their connections with the segment and frame, and means for shifting the segment.

20. In a type-writing machine, a key-stem of tubular form having its upper end expanded to form an enlarged head and its lower end flattened, a key attached directly to the enlarged head, in combination with a type-bar and connections between the key and type-bar, one of which connections is secured to the flat portion of the key-stem.

21. In a front-strike type-writing machine, a type-bar pivoted to strike upwardly and rearwardly, a bell-crank at the front of the type-bar, a manual attached to one end of the bell-crank, a pivoted link parallel with the operating end of the bell-crank, and a helical spring connecting the link and bell-crank and acting to return the bell-crank to its normal position.

22. In a front-strike type-writing machine, a type-bar pivoted to strike upwardly and rearwardly, a bell-crank at the front of the type-bar, an operating-key connected to one end of the bell-crank, a pivoted link parallel with the bell-crank, one of the last-named parts being located above the other, and a helical spring attached to one of said parts near its fulcrum and to the other of said parts farther away from its fulcrum.

23. In a front-strike type-writing machine, a type-bar pivoted to strike upwardly and rearwardly, a key and parallel levers located one above the other at the front of the type-bar and having corresponding ends connected to the keys, one of the levers being extended beyond its fulcrum and connected indirectly to its type-bar, and a helical spring having its opposite ends attached to said levers at different distances from their fulcrums.

24. In a type-writing machine, the combination with a series of type-bars and finger-keys, of separate connections between each type-bar and its key, each connection including a slotted lever and a draw-rod having one end pivoted in a slot of its lever to permit a limited endwise movement of the rod independently of the lever.

25. In a type-writing machine, the combination of a type-bar and finger-key, connections between the type-bar and key including a lever and a connecting-rod joined together with a lost motion whereby the rod may move in the direction of its length independently of the lever.

26. In a type-writing machine, a type-bar action including a lever and a draw-rod connected with a lost motion constituting a flexing joint, and a fixed stop or abutment engaged by the end of the rod to limit the movement of said rod when in its normal position.

27. In a type-writing machine, a type-bar action, including two levers and an interposed connecting-rod having pivotal connection with both levers, and a fixed abutment engaged by one end of the rod when in its normal position.

28. In a type-writing machine, a type-bar action including a key and a lever actuated by the key and having a slot in one end, a draw-rod pivoted in the slot and movable endwise therein, the slot being disposed at an angle with the direction of extension of the rod.

29. In a front-strike type-writing machine, a type-bar having a plurality of type and pivoted to strike upwardly and rearwardly, a platen and a segment, one of which parts is movable toward and from the other in combination with a vertically-movable key-stem, a lever and pivoted to the key-stem, an individual hanger for said lever, a second lever connected to the type-bar, and a connecting-rod pivoted to said levers.

30. In a front-strike type-writing machine, a type-bar action comprising a pivoted type-bar having a plurality of type, a lever fulcrumed below and at the rear of the type-bar pivot and connected to said type-bar, a vertically-movable key-stem, a second lever and having one end pivoted to the key-stem, an individual removable hanger for the second lever, a rod pivoted to the other end of the second lever and pivoted directly to the first-named lever, and a third lever pivoted to said hanger and to the key-stem to hold said stem in an upright position.

31. In a front-strike type-writing machine, a series of type-bars pivoted in a circular arc to strike upwardly and rearwardly at one and the same printing-point, in combination with a series of levers also pivoted in a circular arc at the rear of the type-bar pivots, links connected to the levers and type-bars above their fulcrums, means to actuate the levers and a universal bar disposed in a circular arc in a plane above and at the rear of the links, each lever having an extension above the link engaging and operating the universal bar when the lever is actuated.

32. In a front-strike type-writing machine, a type-bar action including a type-bar and a lever of the first order connected to the type-bar, and a universal bar above and at the rear of the fulcrum of the lever and engaged and operated by the upper end of said lever above this connection with the type-bar.

33. In a front-strike type-writing machine, the combination with the type-bar action, including a series of levers pivoted in a circular arc and a universal bar disposed in an arc concentric with, but of less radius than the arc in which the levers are pivoted, said universal bar being engaged and actuated by the upper ends of said levers.

34. In a type-writing machine, the combination with a series of type-bars pivoted in a circular arc to strike upwardly and rearwardly at one and the same printing-point, of a series of upright levers each connected to one of the type-bars and extending above its connection with the type-bar, a universal bar engaged and operated by the upward extensions of the levers and separate means for actuating the levers.

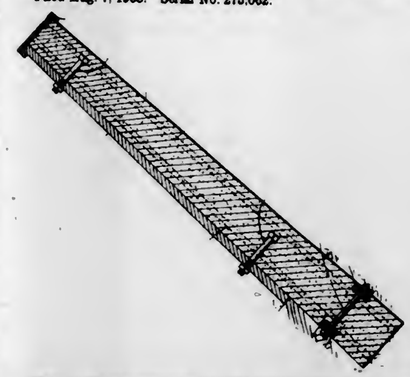
35. In a type-writing machine, a type-bar and actuating means therefor, in combination with a ribbon-vibrator and escapement-pawl both pivoted on the same axis, a universal bar actuated by said means and connected to operate the vibrator and escapement-pawl.

36. In a type-writing machine, a pair of levers fulcrumed on the frame of the machine and extending toward each other from their fulcrums in different planes, one above the other, and a type-bar-supporting segment mounted on the free ends of and supported wholly by the free ends of said levers.

37. In a type-writing machine, two levers fulcrumed on the frame of the machine and extending toward each other in different planes, one above the other, and a type-bar-supporting segment pivotally mounted upon the free ends of said levers, the lever in the lowest plane extending forwardly from its fulcrum and provided with a finger-key whereby it may be rocked to shift the segments vertically.

38. In a type-writing machine, a series of type-bars pivoted in a vertical arc, a series of upright levers pivoted in a similar arc and each connected to one of the type-bars, a system of keys for operating said levers, and a universal bar curved in a vertical arc substantially parallel with that in which the levers are pivoted but above the lever-pivots in the path of the upper ends of the levers.

819,783. **FENCE-POST.** MICHAEL J. MULLARKEY, Sharpeville, Ind. Filed Aug. 7, 1905. Serial No. 273,062.



Claim.—A post comprising a solid artificial stone body, a fibrous portion extending throughout the width of one face thereof and for a portion of the length of said face, means permanently embedded within the body and engaging the fibrous portion, a cap secured upon the body and having depending flanges overlapping the sides of said body and the fibrous portion, said body having recesses adjacent its lower end, and recessed anchoring-strips secured within the recesses in the body and extending at right angles therefrom.

819,784. **METALLIC BOAT.** WILLIAM H. MULLINS and WILL C. HARE, Salem, Ohio. Filed Dec. 26, 1904. Serial No. 238,623.

Claim.—1. In a motor-driven boat, the combination of a permanent rigid frame comprising a lower central longitudinal member or keel, top side members, and a shell covering said frame and secured to the side and lower central members only.

2. In a motor-driven boat, the combination of a permanent rigid frame comprising a lower central longitudinal member, top side members, and a metal shell or plating covering said frame and secured to the central bottom and side members only.

3. In a motor-driven boat, the combination of a permanent rigid frame comprising a keel, gunwales, and connecting-ribs, and a shell covering said framing and secured thereto at the keel and gunwales only.

4. In a motor-driven boat, the combination of a permanent rigid

frame comprising a keel, gunwales and connecting-ribs, and a metal shell covering said frame and secured thereto at the keel and gunwales only.



5. In a boat, the combination of a frame comprising a lower central longitudinal member or keel, and top side members, and a shell or plating covering said frame and comprising two sections extending from the gunwales to the keel and overlapped at the latter and secured to the framing at the gunwales and keel only.

6. In a motor-driven boat, the combination of a permanent rigid frame comprising a keel and a bow-piece and stern-pieces forming continuations thereof, gunwales and connecting-ribs, and a metal shell covering said frame and secured thereto at the gunwales and keel and bow-piece and stern-piece only.

819,785. **TYPE-WRITING MACHINE.** HARRY S. MCCORMACK, Providence, R. I., assignor to Underwood Typewriter Company, New York, N. Y., a Corporation of New Jersey. Filed Oct. 11, 1904. Serial No. 227,998.

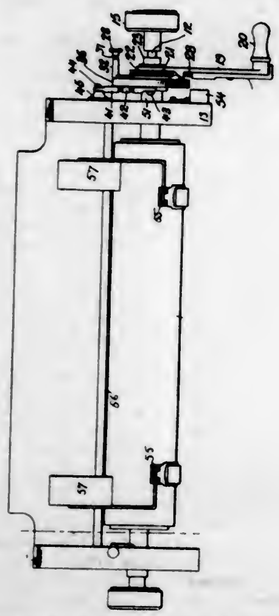
Claim.—1. In a type-writing machine, the combination with a revoluble platen, a line-space wheel, and a platen-frame, of a crank of greater radius than the platen and normally disconnected from the platen and mounted to turn about the platen-axis, means for maintaining the crank in normal position during the rotation of the platen for usual line-spacing, means for connecting the crank at will to the platen, so that it can rotate the platen both forwardly and backwardly, and an adjustable stop to limit the movement of the crank away from its normal position.

2. In a type-writing machine, the combination with a revoluble platen, line-spacing devices, and a platen-frame, of a crank normally disconnected from the platen and mounted to turn about the platen-axis, said crank extending upwardly and rearwardly from the platen-axis and being of greater radius than the platen, means for maintaining the crank in normal position during the rotation of the platen for usual line-spacing, means for connecting the crank at will to the platen, so that it can rotate the platen both forwardly and backwardly, and a stop adjustable about the platen-axis, for limiting the movement of the crank away from its normal position

3. In a type-writing machine, the combination with a revoluble platen, line-spacing devices including a toothed line-space wheel, and a platen-frame, of a crank having greater radius than the platen and normally disconnected from the platen and mounted to turn about the platen-axis, a second wheel fixed to the platen and having as many teeth as the line-space wheel, means upon said crank for engaging the teeth of said second wheel for locking the crank thereto, so that the crank can rotate the platen both forwardly and backwardly, and stops for limiting the movements of said crank in both directions.

4. In a type-writing machine, the combination with a revoluble platen, line-spacing devices including a toothed line-space wheel, and a platen-frame, of a crank having greater radius than the platen, means for maintaining said crank in normal position during the usual rotation of the platen by the line-spacing devices, a second wheel connected to the platen and having the same number of teeth as the line-space wheel, means upon said crank for engaging the teeth of said second wheel for locking the crank thereto, in such a manner that the crank may effect nearly an entire revolution of the platen both forwardly and backwardly, and an adjustable stop for limiting the movement of said crank away from normal position.

5. In a type-writing machine, the combination with a platen-frame, of a platen, a platen-axle mounted in said frame, finger-wheels upon the ends of said axle, line-spacing devices including a toothed wheel, a second wheel fixed to said axle and having the same number of teeth as said line-space wheel, a crank mounted to turn about said axle and having greater radius than the platen and normally disconnected from said second wheel, toothed means for clutching said crank to said second wheel at will, so that the crank can rotate the platen both forwardly and backwardly, and relatively adjustable stops for limiting the movements of said crank in opposite directions.



6. In a type-writing machine, the combination with a platen, of a platen-axle, a frame whereon said axle is journaled, finger-wheels fixed upon the ends of said axle, a platen-actuating member mounted to turn about said axle but normally disengaged from the platen so that the platen may be freely turned in either direction while said actuating member remains stationary, means for clutching said actuating member at will to the platen so that it can rotate the platen both forwardly and backwardly, and adjustable means for limiting the movements of said actuating member.

7. In a type-writing machine, the combination with a platen, of a platen-axle, a frame whereon said axle is journaled, finger-wheels fixed upon the ends of said axle, a platen-actuating member mounted to turn about said axle but normally disengaged from the platen so that the platen may freely turn in either direction while said actuating member remains stationary, means for clutching said actuating member at will to the platen so that it can rotate the platen both forwardly and backwardly, a stop for limiting the movement of said actuating member from normal position, and a circular rack fixed upon the platen-frame concentrically with the platen-axle and coöperating with said stop.

8. In a type-writing machine, the combination with a platen, of a platen-axle, a frame whereon said axle is journaled, finger-wheels fixed upon the ends of said axles, line-spacing devices including a toothed line-space wheel, a second wheel fixed to said axle and having the same number of teeth as said line-space wheel, a platen-actuating member having a normally disengaged toothed device to clutch the teeth of said second wheel, so that said platen-actuating member can rotate the platen both forwardly and backwardly, means for maintaining said platen-actuating member stationary during the usual line-spacing movements of the platen, a stop for limiting the movements of said platen-actuating member from normal position, and a circular rack fixed upon the platen-frame and coöperating with said stop.

9. In a type-writing machine, the combination with a platen, of a platen-axle, a frame whereon said axle is journaled, finger-wheels fixed upon the ends of said axle, line-spacing devices including a toothed line-space wheel, a second wheel fixed to said axle and having the same number of teeth as said line-space wheel, a crank of greater radius than the platen and mounted for revolution about said axle, means for maintaining said crank stationary in normal position during the usual line-spacing movements of the platen, a manually-operable clutch connected to said crank and having a tooth to engage said second wheel, so that said crank can rotate the platen both forwardly and backwardly, a rack having a fixed relation to said platen-frame and concentric with said platen-axle, and an arm adjustable about said axle independently thereof and having a stop to engage said rack, for limiting the movement of said crank from normal position.

10. In a type-writing machine, the combination with a platen, of a platen-axle, a frame whereon said axle is journaled, finger-wheels fixed upon the ends of said axle outside of said frame, line-spacing devices including a toothed line-space wheel, a second wheel fixed to said axle outside of said frame and having the same number of teeth as said line-space wheel, a circular rack concentric with said platen-axle and fixed to said frame between the latter and said second wheel, a crank having greater radius than the platen and mounted to turn about said platen-axle and provided with a normally disengaged clutch for engaging the teeth of said second wheel, means for detaining said crank in normal position during the usual line-spacing movements of the platen, and a stop-arm mounted to turn about said platen-axle and having both means to engage said rack and a part in the path of said crank.

11. In a type-writing machine, the combination with a platen and line-spacing devices inclusive of a toothed line-space wheel, of a second wheel connected to the platen and having the same number of teeth as said line-space wheel, a crank, means for maintaining said crank in normal position during the rotation of the platen by said line-spacing devices, a bar extending along said crank and having a finger-piece and provided with a tooth to engage said second wheel, a spring holding said bar out of engagement with said second wheel, and an adjustable stop for said crank.

12. In a type-writing machine, the combination with a platen of a wheel connected thereto and provided with teeth, a crank having greater radius than the platen and mounted concentrically with said wheel but normally disengaged therefrom, a member actuatable by said crank and having a tooth to engage said wheel so that said crank can rotate the platen both forwardly and backwardly, means normally holding said tooth out of engagement with said wheel, and means for limiting the forward and backward movements of said crank.

13. In a type-writing machine, the combination with a platen of a toothed wheel connected thereto, a member provided with a crank and also provided with teeth to engage said toothed wheel but normally out of engagement therewith, means maintaining said crank member in normal position, and an adjustable stop for limiting the movement of said crank member from normal position; said crank member being capable of rotating said toothed wheel together with the platen both forwardly and backwardly, and the platen being freely rotatable independently of said crank member when the latter is stationary in normal position.

14. In a type-writing machine, the combination with a platen, of a clutch member connected thereto, a normally stationary clutch member, means for engaging said clutch members at will for rotating the platen to and fro, and means mechanically maintaining the engagement of said clutch members during the excursion of the normally stationary clutch member away from and back to normal position.

15. In a type-writing machine, the combination with a revoluble platen, of a clutch member connected thereto, a second clutch member, means normally maintaining the second clutch member out of engagement with the first and stationary during the usual revolutions of the platen, means for engaging said clutch members at will, a finger-piece connected to the second clutch member for enabling the latter to rotate the platen, means for mechanically maintaining the engagement of said clutch members during the excursion of the second clutch member away from and back to normal position, and an adjustable stop for limiting the movement of the second clutch member away from normal position.

16. In a type-writing machine, the combination with a platen, of a clutch member connected thereto, a second clutch member normally disengaged from the first and provided with a finger-piece for rotating the platen, means for enabling said clutch members to be engaged at will, adjustable means for limiting the rotation of the platen by means of said second clutch member, and means mechanically maintaining the engagement of said clutch members until the platen is returned to its initial position.

17. In a type-writing machine, the combination with a revoluble platen, of a toothed clutch member connected thereto, a second toothed clutch member concentric with and normally disengaged from the first and provided with a finger-piece for rotating the platen, means for enabling said clutch members to be engaged at will, so that said finger-piece can rotate the platen both forwardly and backwardly, and means capable of maintaining mechanically the engagement of said clutch members during the movement of the platen through nearly an entire revolution.

18 In a type-writing machine, the combination with a revoluble platen, of a toothed clutch member connected thereto, a second toothed clutch member concentric with and normally disengaged from the first and provided with a finger-piece for rotating the platen, means for maintaining said second clutch member stationary during the usual revolution of the platen, means for enabling said clutch members to be engaged at will so that the platen may be rotated by means of said finger-piece, adjustable means for limiting the movement of said second clutch member away from normal position, and means mechanically maintaining the engagement of said clutch members while said second clutch member is moving away from and returning to normal position.

19. In a type-writing machine, the combination with a revoluble platen, of normally disengaged clutch members, means for effecting their engagement at will, one of said clutch members being connected to the platen and the other being provided with a finger-piece for rotating the platen, stops for limiting both forward and backward rotations of the clutch members and platen by means of said finger-piece, and means for mechanically maintaining the engagement of said clutch members only while effecting rotation of the platen through the arc determined by said stops.

20. In a type-writing machine, the combination with a revoluble platen, of a finger-piece normally disconnected from the platen, means maintaining said finger-piece normally stationary during the usual rotations of the platen, means for connecting said finger-piece to the platen at will so that it may rotate the platen in opposite directions, a stop for limiting the movement of said finger-piece away from normal position, and means mechanically maintaining the connection of said finger-piece to the platen while the former is away from normal position.

21. In a type-writing machine, the combination with a revoluble platen, of a crank normally disconnected from the platen, means maintaining the crank stationary in normal position during the usual rotation of the platen, means for connecting the crank at will to the platen, so that the crank can rotate the platen both forwardly and backwardly, an adjustable stop to limit the movement of the crank away from its normal position, and means mechanically maintaining the connection of said crank to the platen during the movement of the crank both to said stop and back to normal position.

22. In a type-writing machine, the combination with a revoluble platen and a platen-frame, of a toothed wheel connected to said platen, a crank having a toothed member, which is normally out of engagement with said wheel, means for maintaining said crank stationary in normal position during the usual rotations of the platen, means for enabling said toothed member to engage said toothed wheel, a projection upon said toothed member, and a bearing concentric with said wheel and engageable by said projection, for maintaining the engagement of said toothed member with said wheel during their rotation.

23. In a type-writing machine, the combination with a revoluble platen and a platen-frame, of a toothed wheel fixed to the platen, a crank mounted to turn about the platen-axis and having a toothed member engageable with said toothed wheel but normally out of engagement therewith, a projection upon said toothed member, a bearing concentric with said wheel and platen and engageable by said projection, for maintaining the engagement of said toothed member with said wheel during their rotation, and stops limiting both forward and backward movements of said crank.

24. In a type-writing machine, the combination with a revoluble platen and a platen-frame, of a toothed wheel fixed to the platen, a crank normally stationary during the usual line-spacing movements of the platen, and mounted to turn about the platen-axis, a member provided with a finger-piece for connecting said crank at will to said toothed wheel, so that the crank can rotate the platen both forwardly and backwardly, means coöperating with said connecting member for mechanically maintaining it in working position while said crank is away from normal position, and an adjustable stop for limiting the movement of said crank away from normal position.

25. In a type-writing machine, the combination with a revoluble platen and a platen-frame, of line-spacing devices including a

toothed line-space wheel, a second wheel concentric with the platen and fixed thereto and having the same number of teeth at the line-space wheel, a crank having greater radius than the platen and normally stationary during the usual line-spacing movements of the platen and mounted to turn about the platen-axis, a toothed member mounted upon said crank and provided with a finger-piece for connecting said crank at will to said second wheel, a bearing concentric with the platen-axis, a part being provided upon said connecting member for engaging said bearing so as to maintain the connection mechanically between said crank and said second wheel during the excursion of said crank from normal position, a stop determining the normal position of said crank, and an adjustable stop for limiting its movement away from normal position.

26. In a type-writing machine, the combination with a revoluble platen and a platen-frame, of line-spacing devices including a toothed line-space wheel, a second wheel concentric with the platen and fixed thereto and having the same number of teeth as the line-space wheel, a crank having greater radius than the platen and normally stationary during the usual line-spacing movements of the platen and mounted to turn about the platen-axis, a toothed member mounted upon said crank and provided with a finger-piece for connecting said crank at will to said second wheel, a projection upon said connecting member, a part fixed to the platen-frame and having a circular bearing concentric with the platen-axis and also having a notch normally engaged by said projection for maintaining said crank stationary in normal position, said projection being constructed to coöperate with said circular bearing to maintain said connecting member in working position during the movement of said crank away from normal position, a stop for limiting the movement of the crank away from normal position, and means for enabling said stop to be adjusted concentrically with the platen-axis.

27. In a type-writing machine, the combination with a platen and a platen-axle of a frame whereon said axle is journaled, finger-wheels secured to the ends of said axle outside of said frame, line-spacing devices including a toothed line-space wheel, a second wheel mounted upon said axle and secured thereto outside of said platen-frame and having the same number of teeth as the line-space wheel, a crank having greater radius than the platen and normally stationary during the usual line-spacing movements of the platen and mounted to turn about the platen- axis and extending upwardly and rearwardly from said axis, a toothed bar extending longitudinally of said crank and mounted to slide endwise thereon and provided with both a spring and a finger-piece, said spring normally holding said toothed bar out of engagement with said second wheel, and the bar being engageable with said second wheel by means of pressure upon said finger-piece, a stud or projection upon said bar, a disk mounted concentrically with the platen-axle between said second wheel and the end of the platen-frame and fixed to the latter and having a circular interior bearing concentric with the platen-axle, and also having a notch in which said projection is held by the action of said spring, said projection being adapted to engage said circular bearing during the rotation of said crank, to maintain said bar in engagement with said second wheel, a circular row of notches provided in said disk exteriorly of said circular bearing, an arm and stop loosely mounted to turn about said platen-axle, said stop in the path of said crank, and a pin or tooth upon said arm to engage any of said notches in said circular row.

28. In a type-writing machine, the combination with a revoluble platen and a platen-frame, of two clutching members one connected to the platen and the other provided with a finger-piece for rotating the platen, stops for limiting the forward and backward rotation of the finger-piece, means whereby the clutching members may be maintained in positive engagement during the rotation of the finger-piece both away from and back to normal position, and means for effecting automatic release of said clutching members upon the return of said finger-piece to normal rotative position.

29. In a type-writing machine, the combination with a revoluble platen and a platen-frame, of two clutching members one connected to the platen and the other provided with a finger-piece for rotating the platen, means for maintaining said clutching members in positive engagement during the rotation of the platen thereby both forwardly and backwardly, means rendered effective through the rotation of said finger-piece, for effecting the release of said clutching members, and stops for limiting the forward and backward rotation of the platen effected by said finger-piece.

30. In a type-writing machine, the combination with a revoluble platen and a platen-frame, of line-spacing devices including a line-space wheel, said wheel being provided with teeth, a second wheel connected to the platen and provided with the same number of teeth, a member having a finger-piece for rotating the platen and provided with a tooth engageable with said second wheel at will, means for arresting the forward and backward movements of said finger-piece, said arresting means including a circular rack fixed to the platen-frame and a stop adjustable along said rack, and means for effecting fine adjustments of said rack about the platen-axis.

31. In a type-writing machine, the combination with a platen and a platen-axle of a frame whereon said axle is journaled, line-spacing devices including a toothed line-space wheel, a second wheel having the same number of teeth as the line-space wheel and connected to the platen, a crank normally stationary during the usual line-spacing movements of the platen and mounted to turn about the platen-axle, a toothed member connected to said crank and engageable at will with said second wheel but normally disengaged therefrom, a circular rack mounted concentrically with the platen-axle, means for arresting the forward and backward movements of said crank, said arresting means including a stop adjustable along said rack, and an adjustable device whereby said rack is fixed to the platen-frame in a manner to permit fine rotative adjustment of the rack.

32. In a type-writing machine, the combination with a platen and a platen-axle of a frame whereon said axle is journaled, line-spacing devices including a toothed line-space wheel, a second wheel having the same number of teeth as the line-space wheel and connected to the platen, a crank or finger-piece normally stationary, a toothed member for engaging said second wheel to connect the same to said crank, a circular rack mounted concentrically with the platen-axle, a connecting-rod between said circular rack and the platen-frame and including a turnbuckle for enabling fine rotative adjustments of said rack, and means for arresting the forward and backward movements of said crank, said arresting means including a stop adjustable along said rack.

33. In a type-writing machine, the combination with a revoluble platen provided with a finger-wheel, and a platen-frame, of a revoluble member concentric with the platen and normally stationary during the revolution of the platen but connectible at will to the platen to rotate therewith, means for mechanically maintaining such connection during nearly an entire revolution of the platen both forwardly and backwardly, and a stop in the path of said member for arresting the same together with the platen.

34. In a type-writing machine, the combination with a revoluble platen provided with a finger-wheel, of a platen-frame, line-spacing devices including a toothed line-space wheel, a second wheel revoluble with the platen and connected thereto and having the same number of teeth as the line-space wheel, a revoluble member normally stationary during the revolution of the platen but provided with a tooth engageable at will with said second wheel, whereby said revoluble member is positively connected to the platen to rotate therewith in both directions, means for mechanically maintaining the engagement of said revoluble member with said second wheel, and an adjustable stop in the path of said revoluble member for arresting the same together with the platen.

35. In a type-writing machine, the combination with a revoluble platen provided with a finger-wheel, of a revoluble member normally stationary during the revolution of the platen but connectible at will to the platen to rotate therewith, means for mechanically maintaining such connection during both forward and backward revolution of the platen, a stop determining the normal position of said revoluble member, and a stop for limiting the movement of said revoluble member from normal position; one of said stops being adjustable.

36. In a type-writing machine, the combination with a revoluble platen provided with a finger-wheel, of a normally ineffective revoluble platen-arresting member and stops for limiting the rotation of said member in opposite directions, said stops being relatively adjustable, means being provided for both rendering said member effective at will and mechanically maintaining the same in effective relation to the platen during both backward and forward revolution of the latter, and means automatically effecting the release of said member from the platen when the member is arrested by one of said stops.

37. In a type-writing machine, the combination with a revoluble platen, a line-space wheel, and a platen-frame, of a circular rack concentric with the platen and fixed to the platen-frame, a stop adjustable along said rack independently of the platen, a revoluble device which is normally stationary during the usual rotation of the platen but which is provided with means whereby it may become locked to the platen during both backward and forward rotation of the latter, said revoluble device being constructed to coöperate with said stop for arresting the revolution of the platen in one direction, and means for arresting the revolution in the opposite direction of both the revoluble device and the platen.

38. In a type-writing machine, the combination with a revoluble platen and platen-axle, a line-space wheel, and a platen-frame, of a circular rack concentric with the platen-axle and fixed to the platen-frame, a stop adjustable along said rack independently of the platen-axle, a second stop, and a revoluble member normally disconnected from the platen-axis but provided with means whereby it may be positively connected thereto so as to rotate both forwardly and backwardly therewith, said revoluble member being engageable with said stops to arrest the forward and backward revolutions of the platen.

39. In a type-writing machine, the combination with a revoluble platen, of two fixed stops, whereof one is provided with means whereby it may be adjusted concentrically with the platen, and a member normally disengaged with the platen but connectible positively thereto, for coöperation with said fixed stops to arrest both the forward and backward revolutions of the platen.

40. In a type-writing machine, the combination with a revoluble platen, line-spacing devices, and a platen-frame, of a platen-axle mounted upon said frame, finger-wheels fixed to the ends of said axle, stops for arresting both forward and backward revolutions of the platen, and a crank with which said stops coact; said crank being of greater radius than the platen and rotatable about said axle but normally disconnected therefrom, and being provided with means whereby it may be locked to said axle at will so as to rotate forwardly and backwardly therewith.

41. In a type-writing machine, the combination with a revoluble platen, of a crank of greater radius than the platen and mounted to turn about the platen-axis but normally disconnected from the platen, means for maintaining the crank in normal position, means for connecting said crank to the platen at will in such a manner as to enable the crank to rotate the platen both forwardly and backwardly, and means for mechanically maintaining the connection of said crank to the platen during the entire excursion of the crank away from and back to normal position, so that the platen must rotate both forwardly and backwardly with the crank.

42. In a type-writing machine, the combination with a revoluble platen, line-spacing devices, and a platen-frame, of a platen-axle mounted in said frame, finger-wheels fixed to the ends of said axle without said frame, a circular rack concentric with the platen, a stop adjustable along said rack for arresting the revolution of the platen in one direction, a stop for arresting the revolution of the platen in the opposite direction, the platen being normally free to rotate in either direction independently of said stops, and a manually-operable device mounted independently of said finger-wheels and capable of rotating the platen either forward or backward at will and also capable of rendering said stops effective to arrest the platen.

43. In combination, a revoluble type-writer platen provided at its ends with finger-wheels whereby it may be rotated in either direction at will to an unlimited extent at any time, and also provided with a crank whereby the platen may be rotated in either direction at will at any time through any line-space arc of predetermined extent within nearly an entire revolution, means being provided for mechanically limiting the movements of said platen by said crank.

44. In combination, a revoluble type-writer platen provided with a line-space wheel and also provided with finger-wheels at its ends whereby the platen may be rotated through an unlimited number of line-spaces in either direction, and a crank provided with means whereby it may turn the platen at any time forwardly and backwardly through a predetermined number of line-spaces, stops being provided for limiting the strokes of the crank and platen, and said stops being relatively adjustable, their relative adjustment being limited to line-space intervals.

45. In a type-writing machine, the combination with a revoluble platen and line-spacing devices, of a crank normally stationary during the movements of the platen effected by said line-spacing devices, and means for enabling said crank to oscillate the platen at will through a predetermined number of line-spaces from any point to which the platen may be turned by said line-spacing devices; means being provided for mechanically limiting the extent of such oscillation in each direction, said limiting means including an adjustable member and a rack along which it may be adjusted, said rack having notches or the like at line-space intervals, for engagement by said adjustable member.

46. In a type-writing machine, the combination with a revoluble platen and line-spacing devices therefor, of a clutch capable of rotating the platen in either direction through nearly an entire revolution, and stops for limiting the movement of said clutch in each rotative direction; said clutch comprising a member fixed to the platen and a member normally stationary during the revolution of the platen by means of said line-spacing devices, and said members being normally disengaged, and a finger-piece being provided for effecting their engagement at will.

47. In a type-writing machine, the combination with a platen and a line-space wheel, of a crank normally disconnected from the platen and locked against accidental rotation, means for releasing the crank so that it may rotate, and for connecting the crank to the platen, and stops for limiting the forward and backward rotation of the crank.

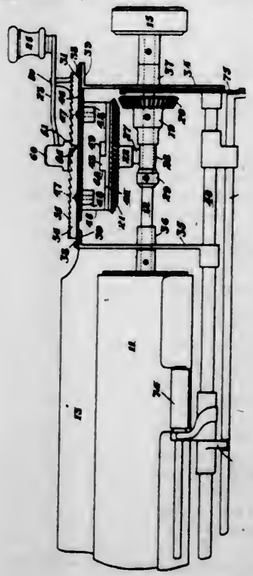
48. In a type-writing machine, the combination with a platen and a line-space wheel, of a crank normally disconnected from the platen and locked against accidental rotation, means for releasing the crank so that it may rotate, and for connecting the crank to the platen, and temporarily maintaining such connection, a stop for limiting the movement of the crank and means dependent upon the turning of the crank, for mechanically releasing the platen from the control of said crank.

49. In a type-writing machine, the combination with a platen, of a manually-operable device normally disconnected from the platen, means for connecting said device to the platen, stops for limiting the forward and backward strokes of said manually-operable device, a rack along which one of said stops is adjustable, and a scale and index for said adjustable stop.

50. In a type writing machine, the combination with a platen, of a manually-operable device normally disconnected from the platen, means for connecting said device to the platen, stops for limiting the forward and backward strokes of said manually-operable device, a rack along which one of said stops is adjustable, a scale and index for said adjustable stop, and an arm whereon said adjustable stop is mounted; said arm being pivoted concentrically with said manually-operable device, and said stop having a tooth to engage said rack and a spring for maintaining engagement of said tooth with said rack.

51. In a type-writing machine, the combination with a platen, of a normally disconnected manually-operable device for rotating the platen, means for connecting said manually-operable device to the platen at will, stops for limiting the forward and backward movements of said manually-operable device, a rack fixed upon the framework of the carriage upon which said stops are mounted, and means for enabling circular adjustment of said rack and stops.

819,786. TYPE-WRITING MACHINE. HARRY S. MCCORMACK, Providence, R. I., assignor to Underwood Typewriter Company, New York, N. Y., a Corporation of New Jersey. Filed Feb. 16, 1905. Serial No. 245,916.



Claim.—1. In a type-writing machine, the combination with a revoluble platen, a line-space wheel, and a platen-frame, of stops, means coöperating with the stops for arresting both the forward and backward revolutions of the platen; said stops being relatively adjustable to an extent to limit the movement of the platen to either more or less than an entire revolution at will; and means whereby said stops are normally silenced so that the platen may be rotated indefinitely in either direction independently of the stops.

2. In a type-writing machine, the combination with a platen, a line-space wheel, and a platen-frame, said platen being normally revoluble at will in either direction to an unlimited extent, of a manually-operable device for rotating the platen both forwardly and backwardly, and stops to coöperate with said manually-operable device for limiting the forward and backward revolution of the platen to predetermined numbers of line-spaces; said stops being relatively adjustable to an extent to limit the movement of the platen to either more or less than an entire revolution at will.

3. In a type-writing machine, the combination with a revoluble platen, of stops for arresting both the forward and backward revolutions of the platen; said platen being normally revoluble at will in either direction to an unlimited extent independently of said stops, and means being provided for rendering said stops effective at will; said stops being relatively adjustable to an extent to limit the movement of the platen to either more or less than an entire revolution.

4. In a type-writing machine, the combination with a revoluble platen provided with a pinion, of a rack to mesh with said pinion and capable by a single stroke of rotating the platen in either direction through more than an entire revolution, a finger-piece connected to said rack, means for effecting at will an operative connection between said finger-piece and platen through said rack and pinion, and relatively adjustable stops for limiting the stroke of said rack.

5. A revoluble type-writer platen provided with a finger-wheel whereby it may be rotated in either direction at will to an unlimited extent, and also provided with a manually-operable contrivance whereby the platen may be rotated in either direction at any time through an arc of predetermined extent either less or more than an entire revolution, the limits of such are being determined by mechanical means.

6. In a type-writing machine, the combination with a revoluble platen and line-spacing mechanism therefor, of a pinion connected to the platen, and a larger gear normally disengaged from said pinion; means being provided for effecting engagement between said gear and pinion at will, and relatively adjustable stops being provided for limiting the movements of said gear forwardly and backwardly.

7. In a type-writing machine, the combination with a platen and its axle, of a bevel-pinion upon said axle, a larger bevel-gear normally out of mesh with said pinion, means for holding said gear in mesh with said pinion, and stops for limiting the rotation of said bevel-gear.

8. In a type-writing machine, the combination with a platen, of a bevel-pinion concentric therewith and connected thereto, a bevel-gear normally out of mesh with said pinion, means for enabling said gear to move into mesh with said pinion, a finger-piece for said gear, and relatively adjustable stops for limiting the rotation of said bevel-gear.

9. In a front-strike writing-machine, the combination with a platen and platen-frame, of a pinion concentric with the platen and connected thereto, a larger gear overlying said pinion with its axis transverse to the pinion-axis and normally out of mesh with the pinion, a finger-piece or crank connected to said gear, a circular rack concentric with said gear, a stop adjustable along said rack for arresting said gear, and means for enabling said gear and pinion to mesh.

10. In a type-writing machine, the combination with a revoluble platen, of a finger-piece or crank mounted for rotation, relatively adjustable stops for limiting the stroke of said finger-piece, and means, including movement-multiplying gearing, for connecting or disconnecting said platen from said finger-piece and stops at will; said stops being relatively adjustable to an extent to limit the movement of the platen to either more or less than an entire revolution at will.

11. In a type-writing machine, the combination with a revoluble platen, of a crank or finger-piece mounted for rotation, relatively adjustable stops for limiting the stroke of said finger-piece in both directions, and means, including movement-multiplying gearing, for positively connecting said finger-piece at will to said platen so as to enable the finger-piece to rotate the platen both forwardly and backwardly.

12. In a type-writing machine, the combination with a platen and a line-space wheel, of a pair of normally disengaged gears whereof one is connected to the platen and the other is provided with a finger-piece, means for effecting the engagement of said gears at will, a stop for limiting the movement of the platen by means of said gear, and means for mechanically maintaining the engagement of said gears until the forward and backward strokes of the platen effected thereby are completed.

13. In a type-writing machine, the combination with a platen and a line-space wheel, of a pair of gears one connected to the platen and the other provided with a finger-piece, said gears being normally out of engagement, means for locking said gears in engagement, a stop to limit the movement of the platen effected by said gears, and means rendered effective by the return stroke of the gears, for releasing said locking means.

14. In a type-writing machine, the combination with a platen and a line-space wheel, of a pair of gears normally out of engagement, one gear being connected to the platen and the other being provided with a finger-piece, one of said gears being movable into mesh with the other, a step for said movable gear, and a foot which may bear upon said step to maintain the engagement of said gears during the platen movement effected thereby.

15. In a type-writing machine, the combination with a platen, of a pair of normally disengaged gears, one thereof being connected to the platen and the other provided with a finger-piece, one of said gears being movable axially to mesh with the other, and fixed step, and a foot upon said movable gear for bearing upon said step to maintain the engagement of said gears, said step having a depression to receive said foot when the gears are out of mesh, and a spring for holding said gears out of mesh.

16. In a type-writing machine, the combination with a platen, a platen-axle, and a line-space wheel, of a pair of relatively movable bevel-gears, said gears being normally out of engagement and one thereof mounted upon the platen-axle, a finger-piece connected to the other of said gears, relatively adjustable stops for limiting the forward and backward strokes of the platen by means of said gears, and means for mechanically maintaining the engagement of said gears during strokes of the platen and disengaging said gears at the completion of the platen movement.

17. In a type-writing machine, the combination with a platen and a line-space wheel, of normally disengaged clutch-wheels, a spring tending to maintain the disengagement of said clutch-wheels, means rendered effective by a clutching movement of one of said wheels for holding said wheels in engagement, and stops for limiting the strokes of the platen effected by said clutch-wheels.

18. In a type-writing machine, the combination with a platen and a platen-frame, of a crank mounted upon the platen-frame to swing in a horizontal plane, means, including a pair of bevel-gears, for connecting the crank to the platen at will, and stops for limiting the movements of the crank.

19. In a type-writing machine, the combination with a platen and a platen-frame, of a crank mounted upon the right-hand end of the platen-frame to swing in a horizontal plane, the platen being freely revoluble forwardly and backwardly independently of said crank, stops for limiting the strokes of said crank, and means, including a pair of bevel-gears, for connecting the crank to the platen at will and mechanically maintaining such connection during the backward and forward strokes of the crank between said stops.

20. In a type-writing machine the combination with a revoluble platen and a platen-frame, of a crank normally disconnected from the platen, means, including a bevel-pinion and a bevel-gear, for connecting the platen to the crank at will, and stops for limiting the forward and backward strokes of the crank.

21. In a type-writing machine, the combination with a platen, a platen-axle and a platen-frame, of a bevel-pinion mounted upon said platen-axle, a downwardly-movable horizontal bevel-gear mounted over said axle, a spring for lifting said gear out of engagement with said pinion, a shaft upon said gear, a crank fixed upon the upper end of said shaft, relatively adjustable stops for limiting the strokes of said crank, a step overlying said gear and having a recess, and a foot upon said gear and normally occupying said recess.

22. In a type-writing machine, the combination with a platen and a line-space wheel, of a crank normally disconnected from the platen, relatively adjustable stops for limiting the forward and backward strokes of said crank, and means rendered effective by the movement of the crank in one direction for connecting it to the platen, so that the platen can be rotated by movement of the crank in another direction.

23. In a type-writing machine, the combination with a platen, a line-space wheel and a platen-frame, of a crank mounted to swing horizontally upon the platen-frame, and means rendered effective by downward pressure upon the crank to connect the same with the platen, releasable means for mechanically maintaining connection between the crank and the platen, and stops for limiting the strokes of the crank.

24. In a type-writing machine, the combination with a platen and a platen-frame, of a crank mounted upon the platen-frame and normally disconnected from the platen, means for connecting the crank to the platen at will in such a manner that rotation of a crank effects greater angular rotation of the platen, and means for limiting the movement of the crank.

25. In a type-writing machine, the combination with a platen and a platen-frame, of a crank mounted upon the platen-frame and normally disconnected from the platen, means for connecting the crank to the platen at will in such a manner that the rotation of the crank effects greater angular rotation of the platen, means for limiting the movement of the crank, and means for mechanically maintaining the connection, and finally effecting the release of the platen from the control of the crank upon the return of the latter to normal position.

26. In a type-writing machine, the combination with a platen, of normally disengaged gears, means for effecting and maintaining engagement of the gears, means, including relatively adjustable stops coöperating with said gears, for effecting backward and forward rotation of the platen through predetermined arcs.

27. In a type-writing machine, the combination with a platen and a line-space wheel, of a crank normally disconnected from the platen and locked against rotation, means operable by a movement of the crank in axial direction for releasing the crank so that it may rotate, and for connecting the crank to the platen, and stops for limiting the forward and backward rotation of the crank.

28. In a type-writing machine, the combination with a platen and a line-space wheel, of a crank normally disconnected from the platen and locked against rotation, means operable by a movement of the crank in axial direction for releasing the crank so that it may rotate, and for connecting the crank to the platen, and temporarily maintaining such connection, a stop for limiting the movement of the crank and means dependent upon the turning of the crank, for mechanically releasing the platen from the control of said crank.

29. In a type-writing machine, the combination with a platen and a line-space wheel, of a horizontally-swinging crank normally disconnected from the platen and locked against rotation in either direction, means for releasing the crank so that it may rotate and for connecting the crank to the platen temporarily maintaining such connection, stops for limiting the forward and backward rotation of the crank, and means for mechanically releasing the platen from the control of said crank at the completion of the return swing of the latter to normal position.

30. In a type-writing machine, the combination with a revoluble platen, of a manually-operable device, means, including a pair of gears, for connecting said manually-operable device to the platen to rotate the latter either forwardly or backwardly, stops for limiting the strokes of said manually-operable device in forward and backward direction, means for mechanically maintaining the connection between said platen and said manually-operable device during the reciprocation of the latter between said stops, and line-space mechanism, whereby said platen may be rotated indefinitely independently of said stops.

31. In a type-writing machine, the combination with a platen and a line-spacing mechanism therefor, of a normally released clutch capable of rotating the platen in either direction, stops for limiting the rotation of such clutch in each direction, and means for mechanically maintaining the engagement of said clutch during the movements of the platen which are limited by said stops; said clutch being in the form of a pair of gears which are relatively movable into and out of engagement.

32. In a type-writing machine, the combination with a revoluble platen, of normally ineffective stops for arresting both the forward and backward revolutions of the platen, a crank, and normally inoperative means, including movement-multiplying gearing, for enabling said crank to rotate said platen and render said stops effective.

33. In a type-writing machine, the combination with a revoluble platen and line-spacing mechanism therefor, of a pinion connected to the platen, a larger gear to drive said pinion, means for limiting the rotation of said driving-gear in each direction, and means for silencing said gears.

34. In a type-writing machine, the combination with a platen and a platen-frame, of a crank mounted upon the platen-frame, a circular rack concentric with the axis of said crank, stops at least one of which is adjustable along the rack, and means, including normally disengaged movement-multiplying gears, for connecting said crank to said platen.

35. In a type-writing machine, the combination with a revoluble platen, a line-space wheel and a platen-frame, of a crank mounted upon the platen-frame, a circular rack concentric with the axis of said crank, a stop adjustable along said rack, and means, including movement-multiplying devices, for connecting said crank at will to the platen; the teeth of said rack being at intervals to agree with the line-spacing movements of the platen.

36. In a type-writing machine, the combination with a revoluble platen and line-space mechanism, of a hand-wheel for rotating the platen an unlimited distance in either direction at will, and means, including coöperative stops, for rotating said platen either forward or backward at will through a predetermined arc either less or greater than an entire revolution of the platen, regardless of the position to which said platen may have been adjusted by said hand-wheel.

37. In a type-writing machine, the combination with a revoluble platen, a line-spacing wheel and a platen-frame, of a normally ineffective crank, multiplying-gear between said crank and said platen, means for rendering said crank effective, and stops for limiting to a predetermined number of line-spaces the forward and backward revolutions of the platen effected by said crank.

38. In a type-writing machine, the combination with a revoluble platen, and a line-spacing mechanism therefor, of a crank, a normally disengaged pair of clutch-wheels between said crank and said platen; said crank being movable in one direction to effect the engagement of said wheels, and in another direction to effect the rotation of said wheels, and stops for limiting the movement of said wheels in each direction.

39. In a type-writing machine, the combination with a revoluble platen, of normally ineffective stops for arresting both forward and backward revolutions of the platen, a crank capable of both turning the platen in either direction more than an entire revolution and rendering such stops effective, and means normally locking said crank against rotation in either direction.

40. In a type-writing machine, the combination with a revoluble platen, and line-spacing mechanism therefor, of a normally released clutch capable of rotating the platen more than an entire revolution in either direction, stops for limiting the platen-rotating movement of clutch in each direction, said clutch comprising two members, one of which is connected to the platen, and means normally locking the other member against rotation.

41. In a type-writing machine, the combination with a platen and platen-frame, of a crank, a pair of normally disengaged gears one connected to said crank and the other to said platen, and means normally locking against rotation, said crank-gear.

42. In a type-writing machine, the combination with a platen, a platen-axle, and a platen-frame, of a bevel-pinion mounted upon the platen-axle, a bevel-gear normally out of mesh with said pinion and mounted upon the platen-frame and having a hub or shaft, a crank upon said shaft, a spring whereby said gear is held out of mesh with said pinion, relatively adjustable stops for limiting the forward and backward strokes of said crank, and means rendered effective by the movement of said gear into mesh with said pinion, for maintaining such engagement during the forward and backward strokes of the crank.

43. In a type-writing machine, the combination with a platen and a platen-frame, of a crank upon the platen-frame, at one end thereof and mounted to swing horizontally, relatively adjustable stops for limiting the forward and backward strokes of said crank; the platen being revoluble independently of said crank; means rendered effective by vertical pressure upon the said crank to connect the same with the platen, and means for maintaining such connection during the forward and backward strokes of the crank.

44. In a type-writing machine, the combination with a platen and a platen-frame, of a circular rack mounted upon the platen-frame, a crank mounted concentrically with said circular rack, stops for said crank, one of said stops being adjustable along said rack, and a pair of normally ineffective movement-multiplying bevel-gears for connecting said crank at will to said platen; said stops being relatively adjustable so as to limit the throw of the platen to a predetermined number of line-spaces either less or greater than an entire revolution of the platen.

45. In a type-writing machine, the combination with a platen, of a member capable of mechanically-limited oscillation, and connectible to the platen at will, and adjustable means for mechanically limiting the extent of forward and backward rotation of the platen to either more or less than a complete revolution at will.

46. In a type-writing machine, a platen a normally disconnect-

od manually-operable device for rotating the platen, means for connecting said manually-operable device to the platen at will, and stops for limiting the forward and backward strokes of said manually-operable device, in combination with means for causing the backward strokes to be shorter than forward strokes of the platen effected by the reciprocation of said manually-operable device between said stops.

47. In a type-writing machine, a revoluble platen, a line-space wheel, a platen-frame, and relatively adjustable stops for arresting both forward and backward revolutions of the platen, in combination with mechanism which causes the forward stroke to be greater than the backward stroke of said platen between said stops, for the purpose specified.

48. In a type-writing machine, the combination with a platen, of a platen-frame, a manually-operable device for rotating the platen, stops for limiting the forward and backward strokes of the platen, and means for causing the initial portion of the platen-retracting movement of said manually-operable device between said stops to be ineffective, for the purpose specified.

49. In a type-writing machine, the combination with a revoluble platen of a normally disconnected manually-operable device for rotating the platen forward and backward, stops limiting the strokes of said manually-operable device, means for connecting said manually-operable device to the platen, means rendered effective by the completion of the platen-advancing stroke of said manually-operable device for disconnecting the manually-operable device from the platen, and means for mechanically effecting a slight movement of said manually-operable device while so disconnected, in the direction of the platen-retracting stroke of said manually-operable device.

50. In a type-writing machine, the combination with a platen and a manually-operable rotative device movable axially and normally disconnected from the platen, of means for enabling an axial movement of said rotative device to connect the latter to the platen, a foot upon said rotative device, a latch engaging said foot to lock said rotative device in connection with the platen, a step for maintaining such connection during the rotation of the platen forwardly and backwardly by said rotative device; said step having a recess normally occupied by said foot, and a spring for effecting the return axial movement of said rotative device.

51. In a type-writing machine, the combination with a platen and a manually-operable rotative device movable axially and normally disconnected from the platen, of means for enabling an axial movement of said rotative device to connect the latter to the platen, a foot upon said rotative device, a latch engaging said foot to lock said device in connection with the platen, a step for maintaining such connection during the rotation of the platen forwardly and backwardly by said rotative device; said step having a recess normally occupied by said foot, and a spring for effecting the return axial movement of said rotative device, and a spring for rotating said rotative device slightly in the platen-retracting direction, while disconnected from the platen.

52. In a type-writing machine, the combination with a revoluble platen, of a pinion connected to the platen, a gear normally disengaged from said pinion, means for effecting engagement between said gear and said pinion at will, relatively adjustable stops for limiting the movement of said gear and platen forwardly and backwardly, and means for mechanically maintaining said gear in mesh for a greater platen-advancing than platen-retracting movement.

53. In a type-writing machine, the combination with a platen and its axle, of a bevel-pinion upon said axle, a bevel-gear normally out of mesh with said pinion, means permitting movement of said gear into mesh with the pinion, stops for limiting the rotation backward and forward of said bevel-gear, and means for mechanically holding said gear in mesh with said pinion longer during the platen-advancing stroke than during the platen-retracting stroke, for the purpose specified.

54. In a type-writing machine, the combination with a platen, of a platen-rotating gear normally disconnected from the platen, a foot provided upon said gear, a spring for keeping said gear in normally disconnected position, a pinion connected to the platen, said gear being movable axially into mesh with said pinion, a normally idle latch which engages said foot to maintain such mesh, and a step coincident with said latch and against which said foot may bear during the rotation of said gear and platen.

55. In a type-writing machine, the combination with a platen, of a platen-rotating gear normally disconnected from the platen, a foot for said gear, a pinion connected to the platen, said gear being movable into mesh with said pinion, a normally idle latch which engages said foot to maintain such mesh, a step coincident with said latch and against which said foot may bear during the rotation of said gear and platen; said foot being movable past said latch upon the return stroke of the gear and platen; and a stop for limiting the return rotation of said gear.

56. In a type-writing machine, the combination with a platen, of a platen-rotating gear normally disconnected from the platen, a foot for said gear, a spring for keeping said gear in normally disconnected position, a pinion connected to the platen, said gear being movable axially into mesh with said pinion, a normally idle latch which engages said foot to maintain such mesh a step coincident with said latch and against which said foot may bear during the rotation of said gear and platen; said foot being movable past said latch upon the return stroke of the gear and platen; and a stop for limiting the return stroke of said gear; said latch being movable to normal idle position by a forward rotation of said foot.

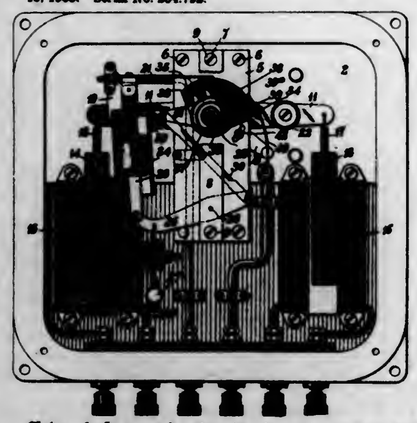
57. In a type-writing machine, the combination with a platen, of a platen-rotating gear normally disconnected from the platen, a foot for said gear, a spring for keeping said gear in normally disconnected position, a pinion connected to the platen, said gear being movable axially into mesh with said pinion, a normally idle latch which engages said foot to maintain such mesh a step coincident with said latch and against which said foot may bear during the rotation of said gear and platen; said foot being movable past said latch upon the return stroke of the gear and platen; and a stop for limiting the return stroke of said gear; said latch being movable to normal idle position by a forward rotation of said foot, a spring for effecting sufficient forward movement of the gear to enable said foot to press said latch to normal position, and a stop for limiting such movement of the gear.

58. In a type-writing machine, the combination with a platen, of a manually-operable device normally disconnected from the platen, means for connecting said device to the platen, stops for limiting the forward and backward strokes of said manually-operable device, a rack along which one of said stops is adjustable, an arm whereon said adjustable stop is pivoted, said arm being pivoted concentrically with said manually-operable device, and said stop having a tooth to engage said rack, a spring for maintaining engagement of said tooth with said rack, and an arm having a finger to engage said rack on the opposite side thereof from said stop.

59. In a type-writing machine, the combination with a platen and a platen-frame, of a normally disconnected manually-operable device for rotating the platen, means for connecting said manually-operable device to the platen at will, stops for limiting the forward and backward movements of said manually-operable device, a rack fixed upon the framework of the carriage upon which said stops are mounted and means for enabling circular adjustment of said rack and stops; said adjusting means including a set of screws which hold the rack upon the carriage, and said rack being provided with two sets of concentric slots either set of which may receive said screws.

819,787. CONTROLLER FOR SYNCHRONIZING SWITCHES.

HUGH J. MCMAHAN, Monessen, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed Apr. 10, 1905. Serial No. 254,792.



Claim.—1. In a synchronizer for alternating-current dynamo-electric machines, a switch for coupling the machines, means for automatically closing the switch when the machines come into synchronism, a normally open governing-circuit having relatively movable contact-terminals, and an electromagnetically-actuated means for operating said contact-terminals, said means comprising a time-element-controlling device which prevents closure of the governing-circuit when the electromotive forces occasionally coincide in phase but are of materially different frequency, and which adjusts the time of such closure in accordance with the rate at which the machines are approaching synchronism.

2. In a synchronizer for alternating-current dynamo-electric machines, a switch for coupling the machines, a normally open switch-governing circuit, means actuated by the main circuits when the machines are synchronized to close the said switch-governing circuit, said means comprising time-element-controlling devices which serve to prevent closure of said switch-governing circuit when coincidence in phase occurs at intervals and the electromotive-force frequencies are materially unlike, and which also serve to insure closure of the switch-governing circuit at a time that corresponds to the rate at which the machines approach synchronism.

3. In a synchronizer for alternating-current dynamo-electric machines, a switch for coupling the machines, a normally open switch-governing circuit, an electromagnet that is energized by the main circuits when synchronism occurs, relatively movable contact members that are actuated by said magnet, when energized, to close said switch-governing circuit, and a time element for automatically varying the movement of said contact members in accordance with the frequency and phase relations of said machines.

4. In a synchronizer for alternating-current machines, a switch for coupling the machines, means for controlling the switch, and means for actuating the switch-controlling means earlier when the dynamos approach synchronism faster than a predetermined rate.

5. In a synchronizer for alternating-current machines, a switch for coupling the machines, means for governing the switch, a second switch for controlling the closing of the first switch, and means whereby the second switch will be closed earlier when the dynamos are approaching synchronism faster than a predetermined rate.

6. In a synchronizer for alternating-current machines, a switch for coupling the machines, means for closing the switch, a normally open circuit having means for energizing the switch-closing means when the machines approach synchronism, and means for closing the normally open circuit which embodies a variable time element device to prevent such closure when the electromotive forces of the machines have occasional phase coincidence but differ materially in frequency, and to effect such closure at such time as corresponds to the rate at which the machines approach synchronism.

7. In a synchronizer for alternating-current dynamo-electric machines, a switch for coupling the machines, means for governing the switch, and means for automatically timing the operation of the switch-governing means in accordance with the rate of approach of the machines to synchronism.

8. In a synchronizer for alternating-current dynamo-electric machines, a switch for coupling the machines, means for governing the switch, a second switch for controlling the closing of the first switch, and means for automatically timing the operation of the second switch in accordance with the rate at which the machines are approaching synchronism.

9. In a synchronizer for alternating-current dynamo-electric machines, a switch for coupling the machines, means for governing the operation of the switch, comprising a normally open circuit, relatively movable circuit-closing members, operating-magnets, and dash-pot mechanism that regulates the movement of the circuit closing members in accordance with the rate at which the machines approach synchronism.

10. Means for connecting a dynamo-electric machine in parallel circuit with one or more other similar machines at the instant when synchronism occurs, comprising an automatic switch and a governing device therefor having a stationary contact member and two movable contact members, one or more actuating-coils, and a time element that coöperates with said coil or coils to control the operation of said movable contact members in accordance with the rate at which the machines approach synchronism.

11. Means for connecting a dynamo-electric machine in parallel circuit with one or more other similar machines when synchronous operation is attained, comprising a main switch, means for closing the same, and a governing device for said closing means having a stationary contact member and two movable contact members, actuating-coils for said movable contact members and a variable, lost-motion connection between said movable contact members, the amount of lost motion being dependent upon the rate at which the machines approach synchronism.

12. The combination with an alternating-current circuit and one or more dynamo-electric machines connected thereto, of another similar machine, a switch for connecting said machines in parallel when synchronous operation is reached, a releasing and closing means for said switch comprising an electromagnet and a normally open auxiliary circuit therefor, relatively movable contact-terminals for said auxiliary circuit, actuating-coils for said terminals that are so connected to the machines as to respond to phase coincidence of the current-waves, and a governing device that operates automatically to regulate the movement of the contact-terminals in accordance with the rate of approach to synchronism.

13. The combination with a circuit supplied with alternating current and a dynamo-electric machine to be connected thereto, of a normally open coupling-switch, means for closing the same when released, a releasing-magnet having a normally open circuit, a generator therefor, relatively movable contact-terminals for said releasing-circuit, actuating-coils for said contact-terminals that are so connected to the main alternating-current circuit and to the disconnected machine as to be responsive to phase coincidence of the two current-waves, and an automatic governor for the contact-terminals that regulates their relative movement to circuit-closing position or positions in accordance with the rate of approach of synchronism.

14. A synchronizing-governor for automatic coupling-switches, comprising a movable member having a conducting-strip, a terminal finger that normally engages said strip, a pivoted bar having a terminal finger that is normally held out of engagement with said strip, a dash-pot, one member of which is supported by said pivoted bar and the other member of which is connected to the movable member having the conducting-strip, a magnet-coil and an armature therefor that is connected to the pivoted bar.

15. A synchronizing-governor for automatic coupling-switches, comprising a switch member having a limited range of movement, a stationary terminal finger that normally engages a conducting portion of said member, a pivoted bar having a terminal finger that normally engages a non-conducting portion of said switch member, a dash-pot, one member of which is supported by said pivoted bar, a link-and-lever mechanism connecting the other member of said dash-pot with the movable switch member, a magnet-coil and an armature therefor that is connected to the pivoted bar.

16. A synchronizing-governor for automatic coupling-switches, comprising a switch member having a conducting portion and a non-conducting portion and mounted to have a limited pivotal movement, a stationary terminal finger, a pivoted bar having a terminal finger, a dash-pot, one member of which is supported by said pivoted bar, a link-and-lever mechanism connected to the other member of said dash-pot and having a lost-motion connection with said switch member, a magnet-coil and an armature therefor that is connected to said pivoted bar.

17. A synchronizing-governor for automatic coupling-switches, comprising a movable member having conducting and non-conducting contact portions, two coöperating terminal fingers, a stationary support for one of said fingers, a pivoted bar upon which the other finger is mounted, a dash-pot, one member of which is attached to said pivoted bar, a link-and-lever mechanism connected to the other member of said dash-pot, a spring and a slot-and-pin connection between said link-and-lever mechanism and the movable switch member, a magnet-coil and an armature therefor that is connected to said pivoted bar.

18. A synchronizing-governor for automatic coupling-switches, comprising a segmental insulating-block, having a surface conducting-strip, and pivotally mounted to have a limited range of movement, two coöperating contact-fingers, one of which is adjustable upon a stationary support, a pivoted bar upon which the other finger is mounted, a dash-pot, one member of which is supported by said bar, a link-and-lever mechanism connected to the other member of said dash-pot, and having a slot-and-pin and spring connection with said switch member, a magnet-coil and an armature therefor connected to said pivoted bar.

19. A synchronizing-governor for automatic coupling-switches, comprising a segmental insulating switch member having a surface contact-strip and a shoulder adjacent to one end thereof, two contact-fingers, one of which normally engages the conducting-strip adjacent to said shoulder, a pivotally-mounted bar upon which the other finger is mounted to normally engage the insulating portion of the switch member, a dash-pot, one member of which is supported by said bar, a link-and-lever mechanism connected to the other member of said dash-pot, and having a slot-and-pin and spring connection with a movable switch member, a magnet-coil and an armature therefor which is connected to said bar.

20. A synchronizing-governor for automatic coupling-switches,

comprising a segmental switch member having an arc-shaped contact-surface, a portion of which is conducting and another portion of which is non-conducting, a contact-finger with which the conducting portion of the segmental switch member makes and breaks contact, a pivoted bar having a second contact-finger that also makes and breaks contact with the conducting portion of said switch member, a dash-pot, one member of which is supported by said pivoted bar, a link-and-lever mechanism interposed between the other member of the dash-pot and the segmental switch member and having a slot-and-pin and spring connection with the latter, two magnet-coils and armatures therefor that are respectively connected to the opposite ends of the pivoted bar.

21. A synchronizing-governor for automatic coupling-switches, comprising a non-conducting segment having a surface conducting-strip, a stationary conducting-finger normally in engagement with said conducting-strip, a pivoted bar, a second contact-finger supported by said bar, and normally engaging a non-conducting portion of said segment, a dash-pot, one member of which is supported by said bar, a link-and-lever mechanism interposed between the other member of said dash-pot and said segment and having a lost-motion spring connection therewith, two solenoids and cores therefor that are respectively suspended from the ends of said pivoted bar.

22. A synchronizing-governor for automatic coupling-switches, comprising a pivoted segmental switch member having a conducting-strip and an insulating-shoulder adjacent to one end of said strip, a stationary contact-finger normally engaging said conducting-strip adjacent to said shoulder, a pivoted bar, a contact-finger supported by said bar and normally engaging the insulating-surface of the segmental switch member adjacent to the other end of the conducting-strip, a dash-pot, one member of which is suspended from one end of the pivoted bar, a link-and-lever mechanism interposed between the other member of said dash-pot and the segmental switch member, and having a lost-motion spring connection therewith, a spring tending to separate the dash-pot members, a solenoid and a core therefor which is attached to the end of the pivoted lever opposite that which supports the contact-finger and the dash-pot member.

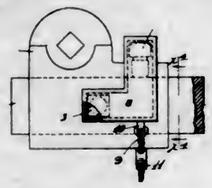
23. A synchronizing-governor for automatic coupling-switches, comprising a pivotally-mounted switch member, having an arc-shaped surface, a portion only of which is formed of conducting material, an adjustable, stationary contact-finger that normally engages the conducting portions of the pivoted switch member, a pivotally-mounted bar having a contact-finger that normally engages the non-conducting surface of the pivoted switch member, a dash-pot, one member of which is supported by one end of said bar, a link-and-lever mechanism connected to the other member of said dash-pot, and having a lost-motion spring connection to the pivoted switch member, a spring tending to normally separate the dash-pot members, a solenoid and a core therefor, that is suspended from the end of the pivoted bar which is opposite that to which the contact-finger and the dash-pot member are attached.

24. A synchronizing-governor for automatic coupling-switches, comprising a pivotally-mounted switch member having an arc-shaped contact-surface, a portion only of which is conducting and having an insulating-shoulder adjacent to one end of the conducting portion, a stationary contact-finger normally engaging the conducting portion of the switch member but adapted to engage the insulating-shoulder when the switch member is moved in one direction, a pivoted bar, a second contact-finger mounted upon said bar and normally engaging the non-conducting portion of the pivoted switch member, a dash-pot, one member of which is attached to said member, a link-and-lever mechanism connected to the other member of said dash-pot, and having a lost-motion spring connection to said pivoted switch member, means tending to separate the dash-pot members, a solenoid and a core therefor that is attached to said pivoted bar.

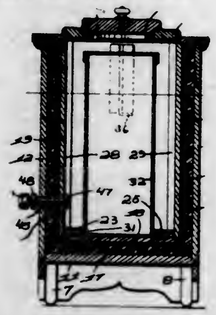
25. The combination with a main switch, and a normally open governing-circuit therefor, of means for controlling the action of said governing-circuit, comprising a segmental switch member that is mounted to have a limited degree of rotative movement, two cooperating contact-fingers, one of which is stationary and the other movable, one or more magnet-coils arranged to actuate the movable contact-finger and a dash-pot mechanism that is interposed between said finger and said segmental switch member and has a limited lost-motion connection with the latter.

819,788. **SEALING DEVICE FOR WEIGHING-SCALES.** CHARLES C. WEALE, Minneapolis, Minn. Filed July 3, 1904. Serial No. 215,727.

Claim.—In a weighing-scale, the combination with a nose-iron, a cooperating lever and a rotatable nose-iron-locking device, of a protecting-cap fitting over said rotary locking device, for preventing tampering therewith, and a frangible sealing connection normally holding said sealing-cap in working position, substantially as described.

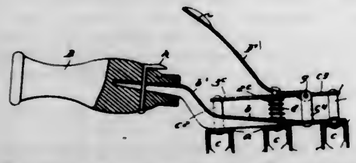


819,789. **ICE-CREAM CABINET.** CHARLES NELSON, St. Louis, Mo. Filed Jan. 6, 1905. Serial No. 239,887.



Claim.—In an ice-cream cabinet, a rectangular receptacle, retaining-strips arranged on the interior of the opposite sides of said receptacle adjacent the upper end thereof, in the faces of which strips are formed vertical slots, a receptacle removably positioned in the first-mentioned receptacle, wings carried by said last-mentioned receptacle and adapted to enter the vertical slots, and tongues formed integral with the lower ends of the wings, and which tongues normally extend beneath the retaining-strips, substantially as specified.

819,790. **CURRYCOMB.** KNUT T. NESTE, Madison township, Winneshiek county, Iowa. Filed Oct. 31, 1905. Serial No. 285,242.



Claim.—1. An improved currycomb comprising a frame having a series of transverse combing-bars, scraper-blades supported on the frame adjacent the combing-bars, means for moving said scraper-blades over and beyond the toothed bars and means for sustaining said scraper-bars with their edges beyond the toothed bars, as set forth.

2. A currycomb consisting of a plurality of fixedly-connected comb-sections each U-shaped in cross-section and having their lower edges toothed, and a handle connected to said comb-sections; of a cleaner-frame movable within each of the U-shaped comb members and adapted to move over and beyond the toothed edges of the comb members, and a means mounted on the U-shaped frame members for moving the said cleaner-frames and projecting their edges beyond the toothed portions of the U-shaped members and a locking device for holding the cleaner-frame to its outermost position as set forth.

3. In a currycomb of the character described, the combination with the transversely-disposed U-shaped comb members, and a U-shaped cleaner-frame movable within each one of the U-shaped comb members adapted to have their lower edges projected beyond the lower edges of the comb members, of a means mounted upon the comb members for imparting movement to the U-shaped cleaner-frames and for holding the said cleaner-frames to their outwardly-adjusted position, as set forth.

4. As an improvement in currycombs of the character stated, the combination with the frame consisting of a series of transversely-disposed U-shaped toothed combing members, a handle member rigidly secured thereto; cleaner devices each consisting of a U-shaped body movable within the U-shaped comb members, a spider-frame located above the comb-frame, said spider-frame having a series of pendent arms movable through the comb-frame and fixedly connected to the cleaning members, a lever pivotally connected with the combing-frame and bearing upon the upper side of the spider-frame, springs for forcing the spider-frame to its normal or upper position, and a locking device for engaging the lever and holding it to its depressed position whereby to project the cleaner-frames beyond the comb edges for the purposes described.

5. In a currycomb of the character described, a cleaner device movable over the combing edges of the comb, a means for moving said device to project beyond the combing edges of the comb and another means for holding the first means adjusted to sustain the cleaner device in a substantially rigid position when projected beyond the combing edges of the comb, as set forth.

819,791. **POST-HOLE DIGGER.** OTTO K. NESTE, Madison township, Winneshiek county, Iowa. Filed Sept. 19, 1905. Serial No. 279,104.



Claim.—1. In a post-hole digger of the character described, the combination with the handle-bar, the angle-brackets secured to the lower ends thereof, the curved band fixedly secured to the lower ends of the said brackets and the scoop or blade fixedly secured to the said band; of a second curved band pivotally supported on the lower ends of the handle-bar and the angle-brackets, the blade member fixedly secured to the pivoted band, said pivoted band having its free ends extended up to the inner face of the fixedly-held band, a pivot carried by said ends, a bell-crank lever on the upper end of the handle-bar, and a link-rod connected at its lower end to the pivot member on the outer ends of the pivoted band, and at the upper end to the bell-crank lever, substantially as shown and for the purposes described.

2. The combination with the handle-bar, the angle-brackets secured to the opposite sides of its lower end, the curved band fixedly secured to the lower ends of the said brackets and the blade or scoop member fixedly secured to the said fixedly-held band; of the second curved band having side arms pivotally mounted on the lower ends of the brackets, said arms having their ends bent inwardly toward each other to form a bifurcated bearing, a pivot-pin mounted on said bifurcated bearing, the outer end of said side arms being disposed in close relation to the inner face of the fixedly-held band and curved on an arc with the fulcrum of the said pivoted band as the center, the blade fixedly secured to the pivoted band, the bell-crank lever on the band and the link connection that joins the bell-crank lever and the bearing on the ends of the pivoted band, substantially as shown and described.

819,792. **OAR.** LEONARD B. NOBLE, Oakfield, N. Y., assignor of one half to Birdsall Briggs, Oakfield, N. Y. Filed July 31, 1905. Serial No. 272,000.



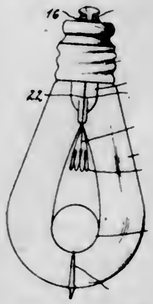
Claim.—1. A bow-facing oar comprising a pin mounted for rocking movement on the gunwale of a boat, a plate pivotally mounted upon the pin, a pair of laterally-movable oar-sections carried by the plate, and a locking member mounted on said plate and adapted to alternately engage the pin and one of the oar-sections for rigidly securing the pin and plate together and maintaining the oar-sections in alinement with each other.

2. A bow-facing oar comprising a pin mounted for rocking movement on the gunwale of a boat and having a lateral socket formed therein, a plate pivotally mounted upon the pin, a pair of laterally-movable intermeshing oar-sections carried by the plate one of which is provided with a recess, a bolt slidably mounted on the plate and adapted to alternately engage the socket in the pin and the recess in one of the oar-sections for rigidly securing the plate and pin together and maintaining the oar-sections in alinement with each other, and a spring interposed between the pin and the gunwale of the boat for yieldably supporting the plate in horizontal position.

3. A pin mounted to rock laterally upon the gunwale of a boat, a plate rigidly secured to the pin, a bow-facing oar having toothed segments pivoted upon the plate and engaging each other and means whereby the segments may be rigidly secured to the plate and the plate permitted to move pivotally upon and be slidably removed from the pin.

4. A pin mounted to rock laterally upon the gunwale of a boat, a plate mounted upon the pin, a sliding bolt carried by the plate and securing the plate rigidly to the pin, a bow-facing oar having tooth-segments pivoted upon the plate and engaging each other and means for moving the sliding bolt out of engagement with the pin and into engagement with the oar whereby the oar becomes rigid with the plate and the plate pivoted upon and removable from the pin.

819,793. **ELECTRIC INCANDESCENT LAMP.** WILLIAM J. PHELPS, Detroit, Mich. Filed June 1, 1903. Serial No. 159,547.



Claim.—An electric incandescent lamp comprising a single vacuum-bulb, two incandescing filaments therein, a stem extending within said bulb and having a flattened end portion to which the ends of the filaments are attached in substantially the same plane, said filaments having central coiled portions supported one above the other and arranged at an angle to each other and in different planes, a tip-anchor connected to the central coiled portion of the lower filament and a stem-anchor connected to the central coiled portion of the upper filament, the arrangement being such that the adjacent legs of the filaments diverge and the central coiled portions thereof are held out of contact whereby long filaments of high efficiency may be employed in a single vacuum-bulb.

819,794. **SUSPENDERS.** WILLIAM PROTT, Chicago, Ill. Filed Oct. 7, 1905. Serial No. 281,725.



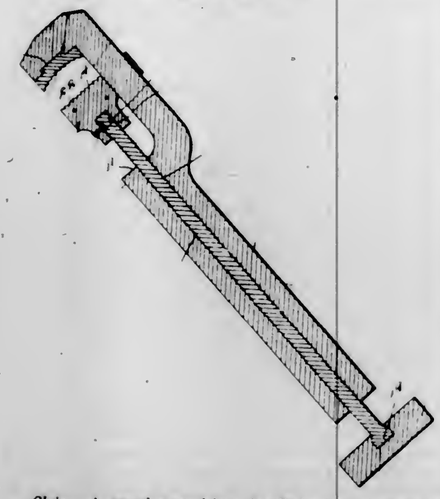
Claim.—1. The combination with a pair of suspenders, of a back clasp having guide-loops at each side thereof, the upper and lower portion of each side forming reversely-inclined portions receiving the suspenders, the edges of the guide-loops being arranged at a distance apart to permit the suspenders to be inserted in the clasp.

2. The combination with a pair of suspenders, of a back clasp formed of two sections pivoted together, each section having an upper loop at one side of its pivotal point and a lower loop at the opposite side of its pivotal point, the upper and lower loops of one section being arranged opposite the corresponding loops of the other section whereby the suspenders are adapted to lie in said loops on the same side of the pivotal point

3. The combination with a pair of suspenders, of a back clasp formed of two sections pivoted together, each section having an upper loop at one side of its pivotal point and a lower loop at the opposite side of its pivotal point, the upper and lower loops of one section being arranged opposite the corresponding loops of the other section, the opposing edges of the loops being separated to permit the insertion of the suspenders whereby the suspenders are adapted to lie in said loops on the same side of the pivotal point.

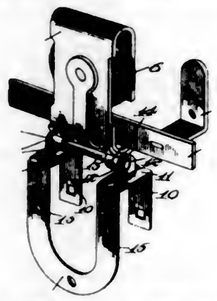
4. The combination with a pair of suspenders, of a back clasp formed of two sections, each of said sections being made from plate metal with integral upper and lower loops connected together, said two sections being pivoted, and each section having an upper loop at one side of its pivotal point and a lower loop at the opposite side of said pivotal point, the upper and lower loops of one section being arranged opposite the corresponding loops of the other section whereby the suspenders are adapted to lie in said loops on the same side of the pivotal point.

819,795. **PIPE-WRENCH.** EPHRAIM M. FOSTER, Golinza, Pa. Filed Aug. 17, 1904. Serial No. 221,109.



Claim.—A wrench comprising a handle having a threaded bore formed longitudinally therethrough, a shank formed integral with said handle and extending laterally and thence forwardly from one end thereof, the said shank having its inner edge face lying in the same plane as that occupied by the edge face of the handle from which the said shank extends, said shank having its end portion bent laterally and inwardly to lie in a plane with the said handle to form a fixed jaw, a threaded stem engaged in the threaded bore in said handle, a movable jaw slidably mounted upon said shank and provided with a recess for the reception of one end of the threaded stem, and a handle carried by the other end of said stem.

819,796. **DOOR-HANGER.** THEODORE C. PROUTY, Aurora, Ill., assignor to Wilcox Manufacturing Company, Aurora, Ill., a Corporation of Illinois. Filed Aug. 14, 1905. Serial No. 274,219.

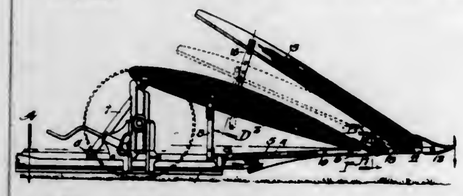


Claim.—1. In a door-hanger, the combination, with a wheel-frame, of an arm comprising a vertical portion adapted to be attached to one face of a door and a horizontal portion adapted to lie over the upper edge of the door, said horizontal portion being constructed to form a channel adapted to receive and hold the end of another arm, a second arm adapted to be attached to the opposite face of the door and having a turned end adapted to be inserted in said channel, and means for connecting said wheel-frame with the door-carrying parts, substantially as described.

2. In a door-hanger, the combination, with a wheel-frame, of an arm comprising a vertical portion adapted to be attached to one face of a door and a horizontal portion adapted to lie over the upper edge of the door, said horizontal portion having its sides turned upward and inward to form a channeled block, a second arm adapted to be attached to the opposite face of the door and having a turned end adapted to be engaged and held by said block, and means for connecting said wheel-frame with said door-carrying parts, substantially as described.

3. In a door-hanger, the combination, with a wheel-frame, of an arm comprising a vertical portion adapted to be attached to one face of a door and a horizontal portion adapted to lie over the upper edge of the door, said horizontal portion having its sides turned upward and inward to form a channeled block and having vertical ears formed with said upwardly and inwardly turned sides, and means passing through said ears for connecting said wheel-frame with said door-carrying parts, substantially as described.

819,797. **GRAIN-DIVIDER ATTACHMENT FOR HARVESTERS.** CHARLES A. A. RAND, Chicago, Ill., assignor to International Harvester Company, a Corporation of New Jersey. Filed Dec. 29, 1905. Serial No. 293,726.



Claim.—1. In a grain-divider for harvesters, the combination of a grain-platform, a relatively fixed divider comprising a forwardly-projecting and substantially horizontal member having its rear end secured to said platform, and a supplemental member connected at its forward end with said horizontal member, and extending rearward and upward and having its rear end overhanging said platform and connected therewith, a subdivider comprising a bar having its rear end pivotally connected with said fixed horizontal member intermediate its ends, and a guide secured to said pivoted member and adapted to embrace the forward end of the horizontal member in a manner to limit the pivotal movement of said bar.

2. In a grain-divider for harvesters, the combination of a grain-platform, a relatively fixed divider comprising a forwardly-projecting and substantially horizontal member having its rear end secured to said platform, and a supplemental member connected at its forward end with said horizontal member and extending rearward and upward and having its rear end overhanging said platform and connected therewith, a subdivider comprising a bar having its rear end pivotally connected with said fixed horizontal member intermediate its ends, and a guide secured to said pivoted member, said guide comprising a vertically-arranged pocket embracing the end of said horizontal member, and a bolt passing through the side walls of the pocket and adapted to lock the pivoted member against movement.

819,798. **HAY AND STRAW PULLER.** SEVRIN RAY, Racine, Wis. Filed Oct. 21, 1905. Serial No. 283,745.



Claim.—1. In a device for pulling fodder from a stack the combination of a longitudinal blade, an operating-handle and a plurality of pulling-hooks formed on one side of said longitudinal blade.

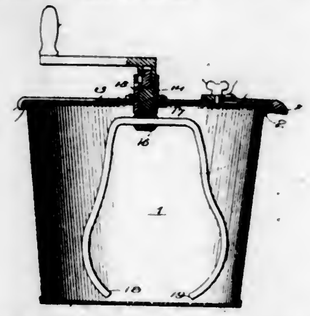
2. The combination of a longitudinal blade, an operating-handle and a plurality of pulling-hooks formed upon one side of said blade, said hooks being successively longer from the point toward the handle.

3. The combination of a longitudinal blade provided on its respective sides with longitudinal flanges; an operating-handle secured to one end of said blade and a plurality of pulling-hooks secured to one side of said blade, said hooks being successively longer from the point toward the handle, substantially as set forth.

4. The combination of a longitudinal blade provided with longitudinal strengthening-flanges, a plurality of pulling-hooks successively longer from the point toward the handle, each of said hooks being provided with strengthening-flanges and an operating-handle secured to one end of said longitudinal blade.

5. The combination of a longitudinal blade provided upon its respective sides with longitudinal flanges, formed integrally with and at right angles to said blade, an operating-handle, the shank of which is provided with longitudinal slits formed at right angles to each other for the reception of the longitudinal blade and flanges, said blade being provided with a plurality of pulling-hooks which are successively longer from the point toward the handle, all substantially as and for the purpose specified.

819,799. **DOUGH-MIXING MACHINE.** JOSEPH A. REAMS, West Norfolk, Va., assignor of one-half to Thomas K. Parrish, Richmond, Va. Filed Mar. 14, 1905. Serial No. 250,099.



Claim.—1. A mechanism-support for open receptacles, comprising a cross-head having a pivoted member extending inwardly from one of its ends and formed with a receptacle-engaging socket capable of locking the said cross-head upon the receptacle when brought to a position approximately parallel with said cross-head.

2. A mechanism-support for receptacles, comprising a cross-head having rim-engaging means at one end, an inwardly-extending catch pivoted at its outer end upon the opposite end of the cross-head, the said catch extending inwardly from its pivotal point and having a socket for receiving the rim of the receptacle, the locking means being brought to a position approximately in the plane of the cross-head for binding the same in position.

3. A mechanism-support for receptacles, comprising a cross-head having rim-engaging hooks at one end and a rim-engaging locking means at the other end, said locking means comprising a pivoted member pivoted at its outer end to the outer end of the cross-head and extending inwardly from the rim of the receptacle, the said pivoted member having a socket for receiving the rim of a receptacle and binding the cross-head in position when the said member is brought between the rim and its pivotal connection with the cross-head.

4. A mechanism-support comprising a cross-head having an end capable of overhanging a receptacle, and a vertically-movable lock pivotally mounted upon said overhanging end of the cross-head and normally wedged between said end and the rim of the receptacle for gripping said rim.

5. A mechanism-support for receptacles, comprising a cross-head having one end adapted to project beyond the end of the receptacle, a pivoted latch pivotally connected with the projecting end of said cross-head and extending backwardly to the rim of the receptacle for locking the cross-head in place.

6. A mechanism-support for receptacles, comprising a cross-head having one end projecting beyond the receptacle and depressed below the same, a pivoted latch carried by the said depressed end and extending back to the rim of the receptacle therefrom and a lever for operating the same.

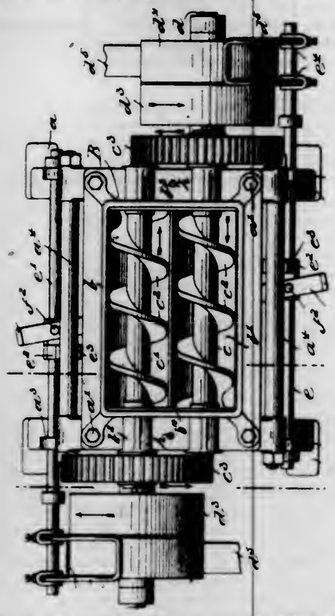
7. A mechanism-support for receptacles comprising a cross-head having one end projecting beyond the receptacle and depressed, a pivoted catch having a head pivotally secured to said depressed end of the cross-head and formed with a rim-receiving recess, the cross-head being locked in place when the catch is moved to bring the rim-receiving recess thereof slightly above the plane of the line of pull between the ends of the cross-head.

8. A mechanism-support for receptacles, comprising a cross-head having an overhanging end portion extending a little beyond the rim of the receptacle, a catch pivotally connected with the said overhanging end and engaging the rim, the cross-head, where it extends over the rim of the receptacle being limited in its downward movement by the said rim at a proper point to hold the catch in a locked position.

9. A mechanism-support for receptacles comprising a cross-head having a bifurcated end overhanging the rim of the receptacle, and a vertically-movable lock pivotally mounted upon the bifurcated

end of the cross-head and capable of being wedged between said end and the rim of the receptacle, for binding the support in position.

819,800. **MASS-MIXING MACHINE.** EMANUEL L. RICHARDS, New London, Conn. Filed Dec. 19, 1905. Serial No. 292,461.



Claim.—1. In a machine of the character described, a mixing-receptacle provided with a base having indentations arranged to form a central rib, worm-shafts mounted in the indentations of said base, and means to independently rotate said shafts to cause material moved in opposite directions in the chamber formed between said shafts to be thoroughly commingled or mixed and dried prior to the removal of the same manually from said receptacle.

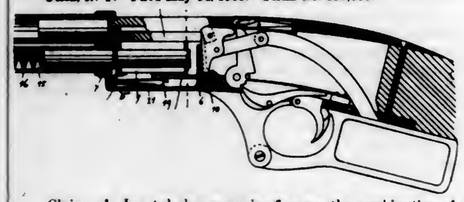
2. In a machine of the character described, a mixing-receptacle having worm-shafts for mixing materials introduced into said receptacle, said receptacle consisting of a base-plate and hopper and forming combined bearings for said worm-shafts, shafts having fixed and loose pulleys, each of said shafts, when actuated, by the fixed pulley adapted to actuate one of said worm-shafts, and means for simultaneously shifting a belt from the fixed pulley of each of said shafts to a loose pulley thereof.

3. In a machine of the character described, a standard having shafts, means for independently driving each of said shafts, a mixing-receptacle carried by said standard having worm-shafts, gear-wheels connecting one of said driven shafts to one of said worm-shafts to permit of the independent actuation of one of said worm-shafts by one of said driven shafts, and means for controlling said driving means to permit of the simultaneous stopping or starting of each of said driven shafts and by the same of each of said worm-shafts.

4. In a machine of the character described, a standard having shafts, loose and fixed pulleys arranged on each of said shafts, belts for driving said shafts when engaging the fixed pulley thereof, rods having belt-shifters engaging said belts, means for holding the belt-shifters in operative position with respect to said pulleys, means for connecting said rods with each other and when actuated to permit of the simultaneous shifting of said belts from the fixed pulley to the loose pulley of each of said shafts, a mixing-receptacle having worm-shafts for mixing material introduced into said receptacle, and gear-wheels for connecting one of said driven shafts with one of said worm-shafts to permit of the independent actuation of said worm-shafts by said driven shafts.

5. In a machine of the character described, a standard having guide-rods and shafts, fixed and loose pulleys arranged on each of said shafts, belts for driving said shafts when engaging the fixed pulley thereof, rods slidably carried by said standard having belt-shifters engaging said belts, arms secured to said rods and engaging said guide-rods to hold the belt-shifters in operative position with respect to said pulleys, a bar for connecting said belt-shifter rods with each other, means for connecting said bar with said standard, said connecting-bar arranged when actuated to simultaneously shift said belts from the fixed pulley to the loose pulley of each of said shafts, a mixing-receptacle having worm-shafts each of said worm-shafts being operatively connected with one of said driving-shafts.

819,801. **MAGAZINE IN SMALL-ARMS.** MORRIS P. RICHARDS, Utica, N. Y. Filed May 14, 1903. Serial No. 157,058.



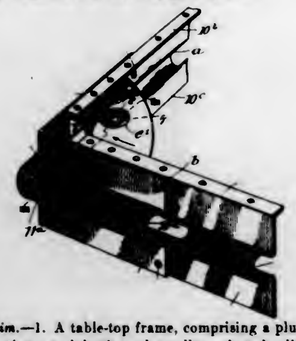
Claim.—1. In a tubular-magazine firearm, the combination of a pivoted bell-crank lever, a movable carrier-platform within the receiver, pinions rotating in unison and carried by said platform, racks supported by the gun-frame to be engaged by said pinions, and mechanism for engaging and operating the bell-crank lever for moving said carrier-platform, substantially as set forth.

2. In a bolt tubular-magazine gun, the combination of the frame recessed to receive a carrier-platform, a bell-crank lever pivoted in the frame, one arm of the lever engaging stops on the bolt and the other arm connected with the platform, the platform having pinions rotating in unison and engaging racks in the receiver, whereby the platform is elevated or depressed by opening and closing the bolt.

3. In a bolt tubular-magazine gun, having a frame, a carrier-platform below the bolt, the front end of the platform having a downwardly-projecting lug, a bell-crank lever pivoted in the frame, one arm of the lever constructed to engage stops on the bolt and the opposite arm of the lever mounted to elevate and depress the platform, pinions connected to rotate in unison and mounted on the platform to engage racks provided on the inside of the frame.

4. In a bolt tubular-magazine gun, the combination of a carrier-platform within the frame, mechanism for raising and lowering the same, pinions mounted rigidly on a shaft supported on said platform, and racks in the frame for engaging said pinions, substantially as set forth.

819,802. **EXTENSION AND OTHER TABLE.** ROBERT L. RICHARDSON, Keota, Iowa, assignor of one-half to Donald B. Howard, Keota, Iowa. Filed Jan. 18, 1905. Serial No. 241,571.



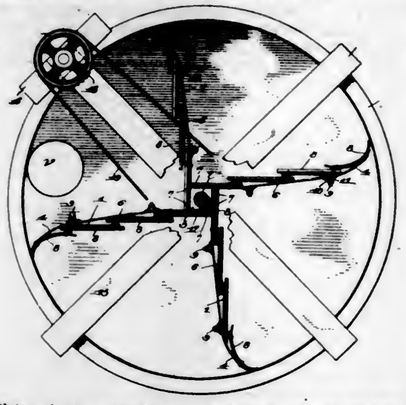
Claim.—1. A table-top frame, comprising a plurality of plate-metal sections, each having a laterally-projected cylindrical tubulation that has a slot-like opening therein, said tubulations slidably engaging one within the other through said openings, whereby they are held from lateral displacement.

2. A table-top frame, comprising a plurality of plate-metal side sections, each provided with an integral outwardly-projected cylindrical tubulation longitudinally thereon, each tubulation having a narrow gap or slot-like opening extended throughout its length, the diameters of said tubulations being varied so as to adapt one tubulation to slide in the adjacent tubulation that is of greater diameter, the inner tubulation having a neck where it joins the flat portions of

the side section it is on, said neck working in the gap or slot and thus adapting one tubulation to slide in a corresponding one.

3. In a table of the character described, the plurality of removable wooden table-leaves, each having a rectangular transverse groove near each end and in the lower side, and a thin metal shoe embedded in each groove, said channeled shoes receiving the upper edges of the top-frame section when said sections are extended.

819,803. **VAT-CLEANING APPARATUS.** ARTHUR E. RICKERD, Stanley, Wis. Filed May 23, 1905. Serial No. 261,911.

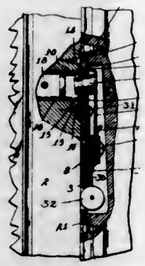


Claim.—1. A vat-cleaning apparatus embodying a driven shaft, a plurality of zigzag-shaped arms carried thereby and disposed tangentially thereto, and shovels combined with the arms and having their lower portions curved in the direction of rotation of the arms.

2. A vat-cleaning apparatus embodying a driven shaft, a plurality of rotatable zigzag-shaped arms carried thereby, shovels carried by the arms and having their lower longitudinal portions curved, the outer one of each of the shovels being transversely curved.

3. A vat-cleaning apparatus embodying a driven shaft, a plurality of rotatable zigzag-shaped arms carried thereby, shovels combined with the arms and arranged in break-joint order relatively to each other and having their lower portions longitudinally curved, braces combined with the arms, and roller-supports carried by the braces and disposed near the outer terminals of the arms.

819,804. **COMBINED SASH-LOCK AND BURGLAR-ALARM.** JAMES B. RIDGE, Brooklyn, N. Y. Filed May 20, 1905. Serial No. 261,371.

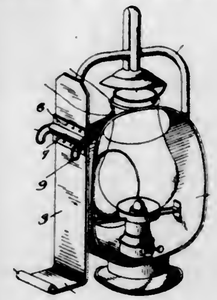


Claim.—1. In a combined window-sash lock and burglar-alarm, the combination with the window-frame and the window-sash, of a spring-actuated locking-bolt carried by one of them and adapted to positively engage or lock with the other of them, circuit-controlling contacts normally separated but adapted to engage each other when the locking-bolt is locked, and an independent retracting or releasing device for disengaging or preventing engagement of the locking-bolt.

2. In a combined window-sash lock and burglar-alarm, the combination with the window-frame and the window-sash, of a metal face-plate having an opening and secured to one of them, a leaf contact-spring secured to said face-plate and provided with a locking-bolt projecting through the opening aforesaid, insulation normally preventing electrical contact of the spring with the face-plate, and means on the other of them for disengaging or preventing engagement of the locking-bolt.

3. In a combined window-sash lock and burglar-alarm, the combination with the window-frame and the window-sash, of a metal face-plate having an opening and secured to one of them, a leaf contact-spring secured to said face-plate and provided with a locking-bolt projecting through the opening aforesaid, insulation normally preventing electrical contact of the face-plate with the spring, insulation preventing contact of the locking-bolt with the face-plate, and means on the other of them for disengaging or preventing engagement of the locking-bolt.

819,805. **LANTERN-HOLDER.** WILLIAM N. ROBERTS and HENRY B. MATHEWS, Ansonia, Ohio. Original application filed May 13, 1905. Serial No. 260,344. Patented Dec. 19, 1905, No. 807,868. Divided and this application filed Dec. 28, 1905. Serial No. 293,692.



Claim.—1. A device of the character described, comprising a plate designed for attachment to a lantern and provided at its bottom with an outwardly-extending portion finished in a roll, a transversely-extending strip secured to said plate and buckled intermediate its upper and lower edges whereby to produce a transversely-extending bearing and a wire clamp mounted to partially rotate in said bearing and bent upon itself at its ends whereby to form downwardly-facing hooks, one end of said wires being extended beyond the hooked portion thereof and constituting a spring-lever, as and for the purpose set forth.

2. The combination with a lantern of a plate secured thereto, a clamp mounted to partially rotate on said plate and provided with hooks designed to take over the brace of a buggy-top and a lever secured to said clamp and designed to actuate the same and arranged to take over a stationary portion of the lantern whereby to lock the holder and clamp in locked position.

3. The combination with a lantern, of a wire clamp and means for connecting the same to the lantern, the wire of said clamp being returned or doubled upon itself to form two downwardly-facing hooks designed to take over the brace of a buggy-top, the wire being extended beyond one of said hooks and constituting an actuating-lever designed to take over a stationary portion of the lantern, as and for the purpose set forth.

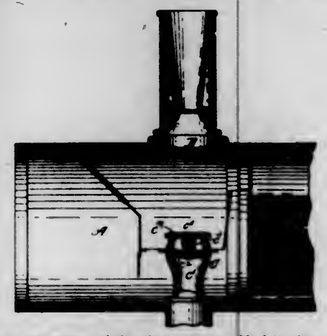
4. The combination with a lantern of a plate secured thereto and provided at its bottom with an outwardly-extending portion designed to bear against the outside of the front bow of a buggy-top, and a locking-clamp mounted on said plate and arranged to hook around the side brace of the buggy-top, as and for the purpose set forth.

5. The combination with a lantern of a plate secured thereto and provided at its bottom with an outwardly-turned portion and with a rolled edge, a metallic strip secured to said plate and provided with a transversely-extending bearing, a clamp mounted to turn in said bearing and provided with hooks designed to extend around the side braces of a buggy-top, and a spring-lever connected with said clamp to actuate the same and designed to spring over a stationary part of the lantern whereby to hold the clamp in locked position.

819,806. **EXHAUST FOR LOCOMOTIVES.** FRANK ROBINSON, New York, N. Y., assignor to The Robinson Company, Bangor, Me., a Corporation of Maine. Filed Feb. 1, 1905. Serial No. 243,606.

Claim.—1. An apparatus of the character specified having a steam expanding and holding chamber, walls forming an annular

outlet to said chamber, which walls forming the outlet are so separated and the area of said outlet so proportioned that the exhaust intermittently discharging into said chamber may be held and allowed to commingle and expand therein, and walls inclined to form a gradually-narrowing approach from said chamber to said outlet, whereby the exhaust may issue therefrom in a freely-moving, unbroken column.



2. An apparatus of the character specified having a steam expanding and holding chamber, walls forming an annular outlet to said chamber, which walls are so arranged that said annular outlet will be of relatively small diameter but large area, so proportioned, however, that the exhaust intermittently discharging into said chamber may not issue directly therefrom through said outlet, but may be held to commingle and expand therein, and walls inclined to form a gradually-narrowing approach from said chamber to said outlet, whereby the exhaust may issue therefrom in a freely-moving, unbroken column.

3. An apparatus of the character specified having a steam expanding and holding chamber, walls forming an annular, straight-walled escape opening or outlet to said chamber, which walls forming the annular outlet are so separated and the area of said outlet so proportioned that the exhaust intermittently discharging into said chamber may not escape directly therefrom through said outlet, but may be held to commingle and expand therein, and walls forming slightly-inclined guiding-surfaces extending to the walls of said outlet, whereby a gradually-narrowing approach is made to said outlet and the exhaust controlled to exit therethrough in a freely-moving, unbroken column.

4. In an exhaust apparatus, the combination of a globular-steam-expanding chamber, the upper portion of said chamber having a straight-walled opening, a V-shaped cross-bar located at the larger diameter of said chamber, an inverted cone mounted on said cross-bar having a cylindrical base adapted to form with the opening in the chamber a straight-walled annular exhaust-passage as shown.

5. The combination of a steam-expanding chamber, comprising a curved conical upper portion, an opening at the top of said chamber, a recess around said opening, a removable annular ring in said recess, forming one wall of a straight annular discharge-passage, the inner wall of said passage comprising an inverted cone suspended within said chamber, having a removable disk mounted thereon as shown.

819,807. **POLE-TIP.** THOMAS ROWE, Dollar Bay, Mich. Filed Apr. 18, 1905. Serial No. 256,249.

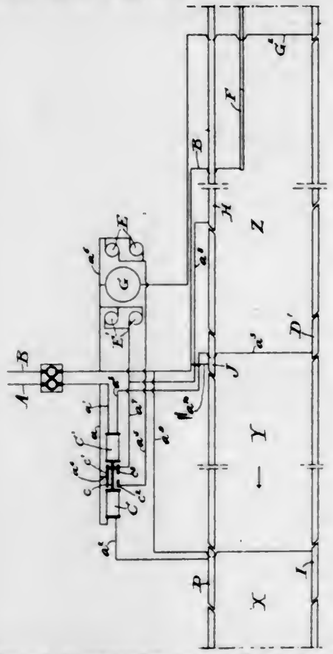


Claim.—1. In combination, a vehicle-pole provided near its tip with a transverse flange, a ferrule slipped upon the end of said pole and having a corresponding transverse flange to coöperate with the first-mentioned flange to confine the neck-yoke center, said flanges lying in planes which are inclined in opposite direction to the axis of the pole, and means for securing the ferrule upon the pole.

2. In combination, a vehicle-pole provided near its tip with a transverse flange and also with a recess, a ferrule slipped upon the end of said pole and having a corresponding transverse flange thereon to coöperate with the first-mentioned flange to confine the neck-yoke center and also having an opening therein to register with the recess in the pole-tip, and a spring-actuated stud carried by said ferrule and adapted to pass through the registering openings.

3. In combination, a vehicle-pole provided near its tip with a stop-shoulder, a ferrule slipped upon the end of said pole and having a corresponding stop-shoulder to coöperate with the first-mentioned stop-shoulder to confine the neck-yoke center, a spring-actuated stud upon the lower side of the ferrule and engaging a recess in the pole, and a handle for operating the stud, said handle extending upwardly around the side of the ferrule.

819,808. **ELECTRIC BLOCK-SIGNAL FOR RAILWAYS.** WALTER B. SANDS, Brooklyn, N. Y., assignor to The L. A. Thompson Scenic Railway Company, New York, N. Y., a Corporation of New Jersey. Filed Mar. 18, 1905. Serial No. 250,708.



Claim.—1. In combination, a source of current-supply, a railway-track having, at two points thereof, opposite rail-sections, one rail-section at each point being electrically connected to one pole of the current-supply and the other to the other pole, a solenoid for each track-point, two signals, an electric circuit for each signal, one including the armature when one solenoid is energized and the other the armature when the other solenoid is energized, the energizing of each solenoid closing the circuit to its corresponding signal.

2. In combination, a source of current-supply, a railway-track having, at two points thereof, opposite rail-sections, one rail-section at each point being electrically connected to one pole of the current-supply and the other to the other pole, a solenoid for each track-point, two signals, an electric circuit for each signal, one including the armature when one solenoid is energized and the other the armature when the other solenoid is energized, said solenoids being oppositely placed, the energizing of one solenoid closing the circuit to its corresponding signal, and opening the circuit to the other signal.

3. In combination, a source of current-supply, a railway-track having, at two points thereof, opposite rail-sections, one rail-section at each point being electrically connected to one pole of the current-supply and the other to the other pole, a solenoid for each track-point, a contact in electrical connection with one pole of source of current-supply, a second contact, a signal in electrical connection with said contact and the other pole of current-supply, a third contact, a second signal in electrical connection with the third contact and the last-mentioned pole of current-supply, the armature when one solenoid is energized being adapted to connect the first and second contacts, and the armature when the other solenoid is energized being adapted to connect the first and third contacts.

4. In combination, a source of current-supply, a railway-track having, at two points thereof, opposite rail-sections, one rail-section at each point being electrically connected to one pole of the current-supply and the other to the other pole, a solenoid for each track-point, a contact in electrical connection with one pole of source of current-supply, a second contact, a signal in electrical connection with said contact and the other pole of current-supply, a third contact, a second signal in electrical connection with the third contact and the last-mentioned pole of current-supply, the armature when one solenoid is energized being adapted to connect the first and second contacts, and the armature when the other solenoid is energized being adapted to connect the first and third contacts, said solenoids being oppositely placed and connected, whereby, when one solenoid is energized, the circuit to its corresponding signal is closed and the circuit to the other signal opened.

5. In combination, a source of current-supply and a railway-track, a contact in electrical connection with one pole of current-supply, a second contact in electrical connection with a rail-section, a signal in electrical connection with an opposite rail-section at that point and with the other pole of the current-supply, a solenoid adapted when energized to connect said contacts, an electrical circuit including said solenoid and opposite track-sections at a point in advance of the first-mentioned track-sections.

6. In combination, a source of current-supply and a railway-track, a contact in electrical connection with one pole of current-supply, a second contact in electrical connection with a rail-section, a signal in electrical connection with an opposite rail-section at that point and with the other pole of the current-supply, a solenoid adapted when energized to connect said contacts, an electric circuit including said solenoid and opposite track-sections at a point in advance of the first-mentioned track-sections, and means to release the last-mentioned solenoid-armature at the desired point on the track.

7. In combination, a railway, an electric circuit, a signal in said circuit, a switch in said circuit, an electric device controlling said switch, an electric circuit for said electric device including opposite rail-sections, a second circuit, a signal in said second circuit, a switch for said second circuit, an electric circuit for said second circuit-switch including opposite track-sections in advance of the first-mentioned track-sections, said switches being connected together so that the energizing of one electric switch-controlling device acts oppositely upon the two switches.

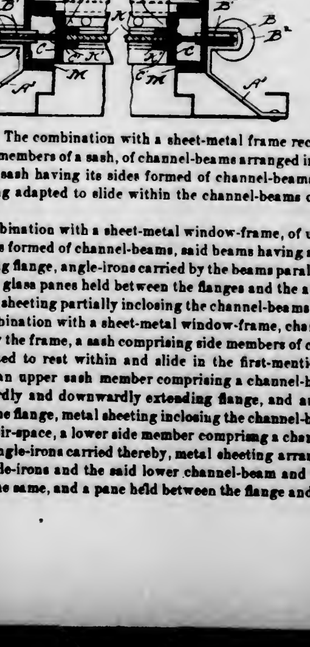
8. In combination, a source of current-supply, a railway-track, a car or cars thereon, a signal in electrical connection with a track-section and one pole of the source of current-supply, a second rail-section in electrical connection with the other pole of current-supply, a switch on said connection, an electrical device controlling said switch, an electric circuit including said electric switch-controlling device and opposite track-sections at a point in advance of the first-mentioned track-section, a device carried by the car adapted to make connection with the rail-section and electrical connections in the car, including a signal or signals between said device and the wheel adapted to travel on the first-mentioned track-section.

9. In combination, a source of current-supply, a railway-track, a car or cars thereon, a signal in electrical connection with a track-section and one pole of the source of current-supply, a second rail-section in electrical connection with the other pole of current-supply, a switch on said connection, an electrical device controlling said switch, an electric circuit including said electric switch-controlling device and opposite track-sections at a point in advance of the first-mentioned track-sections, a device carried by the car adapted to make connection with the rail-section and electrical connections in the car, including a signal or signals, between said device and the wheel adapted to travel on the first-mentioned track-section, and means at a piont in the railway in advance of the second-mentioned track-sections to release said switch.

819,809. **PENDULUM-BEAT ADJUSTER.** ERNEST W. SARTOR, Paducah, Ky. Filed July 13, 1905. Serial No. 269,533.

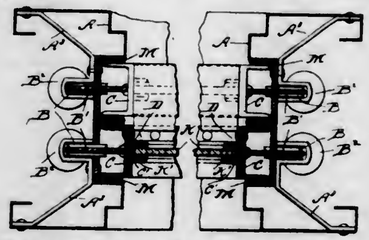
Claim.—1. In combination with an escapement-wheel and a verge controlling the same, a verge-carrier rotatably mounted coaxially with said escapement-wheel; a lever one end of which is connected with said verge-carrier and the other end of which is forked; a cam which controls the forked end of said lever; and an arm for controlling said cam.

2. In combination with an escapement-wheel and a verge controlling the same, a verge-carrier provided with a counterweight and rotatably mounted coaxially with said escapement-wheel; a lever one end of which is connected with said verge-carrier and the other end of which is forked; a cam which controls the forked end of said lever; and an arm for controlling said cam.



3. In combination with an escapement-wheel and a verge controlling the same, a two-armed verge-carrying lever the arms of which lie upon opposite sides of the fulcrum thereof; and a member mounted free to swing and formed with a cam which contacts with one of the arms of said lever.

819,810. **FIREPROOF WINDOW FRAME AND SASH.** FREDERICK W. SCHAEFFER, Chicago, Ill. Filed Feb. 25, 1905. Serial No. 247,391.



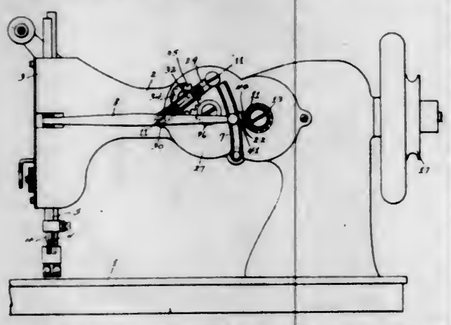
Claim.—1. The combination with a sheet-metal frame recessed to hold the side members of a sash, of channel-beams arranged in said recesses, and a sash having its sides formed of channel-beams, the said beams being adapted to slide within the channel-beams of the frame.

2. The combination with a sheet-metal window-frame, of upper and lower sashes formed of channel-beams, said beams having an inwardly-extending flange, angle-irons carried by the beams parallel to the said flanges, glass panes held between the flanges and the angle-irons, and metal sheeting partially inclosing the channel-beams.

3. The combination with a sheet-metal window-frame, channel-beams carried by the frame, a sash comprising side members of channel-beams adapted to rest within and slide in the first-mentioned channel-beams, an upper sash member comprising a channel-beam having an inwardly and downwardly extending flange, and angle-iron parallel to the flange, metal sheeting inclosing the channel-beam and forming an air-space, a lower side member comprising a channel-beam, parallel angle-irons carried thereby, metal sheeting arranged between the angle-irons and the said lower channel-beam and partially inclosing the same, and a pane held between the flange and the

angle-irons at the top of the sash and between the angle-irons at the bottom of the sash, as and for the purpose set forth.

819,811. **SEWING-MACHINE.** PAUL H. SCHOEN, Troy, N. Y., assignor to Hall, Hartwell & Company, Troy, N. Y., a Firm. Filed Sept. 15, 1904. Serial No. 224,488.



Claim.—1. In a sewing-machine of the class described, the combination with a pattern-cam; and connections whereby said cam is caused to produce relative sidewise movements between the needle and work; of a gear-wheel mounted concentrically with said cam in operative connection with the driving mechanism of the machine; means for automatically connecting said cam and gear to rotate in unison at certain times and for destroying such connection at certain other times.

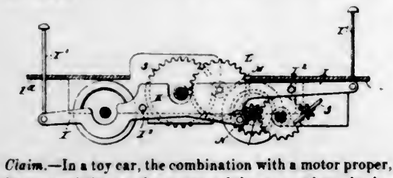
2. In a sewing-machine of the class described, the combination with a pattern-cam; and connections whereby said cam is caused to produce relative sidewise movements between the needle and work; of a gear-wheel mounted concentrically with said cam in operative connection with the driving mechanism of the machine, and provided with a pin-receiving aperture; a plunger-pin reciprocatory in an aperture in said cam and adapted in a certain position of said cam relatively to said gear-wheel to enter the pin-aperture in the latter whereby said cam and gear-wheel are connected to rotate in unison; a spring operating to withdraw said plunger-pin from said aperture in the gear-wheel; and intermittently-operating means for inducing movement of the plunger-pin in opposition to said spring.

3. In a sewing-machine of the class described, the combination with a pattern-cam; and connections whereby said cam is caused to produce relative sidewise movements between the needle and work; of a gear-wheel mounted concentrically with said cam in operative connection with the driving mechanism of the machine, and provided with a pin-receiving aperture; a plunger-pin reciprocatory in an aperture in said cam and adapted in a certain position of said cam relatively to said gear-wheel to enter the pin-aperture in the latter whereby said cam and gear-wheel are connected to rotate in unison; a spring operating to withdraw said plunger-pin from said aperture in the gear-wheel; a plate adjacent to the outer side of said cam provided with an aperture adapted to receive said plunger-pin in a certain position of said cam; a push-pin supported on the outer side of said plate adapted to engage said plunger-pin through said plate-aperture, and means for intermittently operating said push-pin.

4. In a sewing-machine of the class described, the combination with a pattern-cam; and connections whereby said cam is caused to produce relative sidewise movements between the needle and work; of a gear-wheel mounted concentrically with said cam in operative connection with the driving mechanism of the machine, and provided with a pin-receiving aperture; a plunger-pin reciprocatory in an aperture in said cam and adapted in a certain position of said cam relatively to said gear-wheel to enter the pin-aperture in the latter whereby said cam and gear-wheel are connected to rotate in unison; a spring operating to withdraw said plunger-pin from said aperture in the gear-wheel; a plate adjacent to the outer side of said cam provided with an aperture adapted to receive said plunger-pin in a certain position of said cam; a push-pin supported on the outer side of said plate adapted to engage said plunger-pin through said plate-aperture; a movable arm supporting said push-pin; a gear-wheel loosely mounted upon the outer side of said plate; a cam fixed upon said last-mentioned gear-wheel engageable with said arm; and a mutilated gear in operative connection with the driving mechanism of the machine adapted to mesh with said last-mentioned gear.

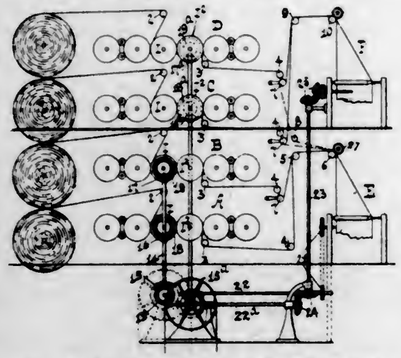
5. In a sewing-machine of the class described, the combination with a pattern-cam; and connections whereby said cam is caused to induce relative sidewise movements between the needle and work comprising in part a rocker-arm; of a gear-wheel mounted concentrically with said cam in operative connection with the driving mechanism of the machine, and provided with a pin-aperture; a plunger-pin reciprocatory in an aperture in said cam and adapted to enter the pin-aperture in said gear in a certain relative position of the cam thereto; a spring tending to move said plunger-pin outwardly from the pin-aperture in the gear-wheel; a fixed cover-plate interposed between the face of said cam and said rocker-arm, and provided with a slot adapted to receive and permit side play of said cam-follower on the rocker-arm; and an aperture adapted to receive said plunger-pin in a certain position of said cam; a washer carried by said cam-follower inside the cover-plate adapted to bridge the cam-follower slot in said plate to prevent said plunger-pin from entering said slot; and an intermittently-actuating push-pin engageable with said plunger-pin through said aperture in said plate.

819,812. **ROLLING-STOCK FOR TOY RAILWAYS.** AUGUST SCHÜTZE, Rudolstadt, Germany, assignor to Friedrich Adolf Richter, Rudolstadt, Germany. Original application filed Oct. 3, 1902, Serial No. 125,748. Divided and this application filed July 16, 1903. Serial No. 165,843.



Claim.—In a toy car, the combination with a motor proper, a device for transmitting motion to one of the supporting-wheels of the car and a reversing device which forms a connection between the motor proper and the said transmission device, said reversing device comprising a vertically-swinging lever I extending lengthwise under the car and provided with an upright operating-rod I′ at each end, each of said operating-rods extending through the platform of the car, and one of said rods during operation being always higher than the other.

819,813. **PRINTING-MACHINE.** WALTER SCOTT, Plainfield, N. J. Filed Apr. 19, 1895. Serial No. 546,316.



Claim.—1. In a printing-press, the combination with a plurality of sets of printing mechanism arranged one above another in a common frame, of a plurality of independent driving mechanisms, means for driving certain of said sets of printing mechanism by one of said driving mechanisms and certain other of said sets of printing mechanism by another of said driving mechanisms, and a plurality of folding mechanisms, substantially as described.

2. In a printing-press, the combination with a plurality of sets of printing mechanism arranged one above another in a common frame, of a plurality of independent driving mechanisms, means for driving certain of said sets of printing mechanism by one of said driving mechanisms and certain other of said sets of printing mechanism by another of said driving mechanisms, means for coupling said driving mechanisms together so that they will operate jointly, and a plurality of folding mechanisms, substantially as described.

3. In a printing-press, the combination with a plurality of sets of printing mechanism arranged one above another in a common frame, of a plurality of independent driving mechanisms, and means for driving certain of said sets of printing mechanism by one of said driving mechanisms and certain of said sets of printing mechanism by another of said driving mechanisms.

4. In a printing-press, the combination with a plurality of sets of printing mechanism, of driving-gears located at opposite sides of the press for driving the different sets of printing mechanism, and independent driving-shafts for communicating power to the driving-gears at the opposite sides of the press, whereby the different printing mechanisms may be operated as separate presses and one set of printing mechanism stopped without interfering with the other sets of printing mechanism.

5. In a printing-machine, the combination of two pairs of web-perfecting presses, the members of each pair being arranged one over the other, folding mechanism for each of said pairs of presses, independent driving mechanisms for said pairs of presses and their folding mechanisms, means for coupling said driving mechanisms together, and means for associating perfected webs, substantially as described.

6. In a printing-press, the combination with a plurality of sets of printing mechanism arranged one above another in a common frame, of a plurality of independent driving mechanisms, means for driving certain of said sets of printing mechanism by one of said driving mechanisms and certain of said sets of printing mechanism by another of said driving mechanisms, and means for coupling said driving mechanisms together, whereby the said sets of printing mechanism may be started and stopped independently one of another and may be driven together as one press or machine, substantially as described.

7. In a printing-press, the combination with a plurality of sets of printing mechanism mounted in a common frame, of a plurality of driving mechanisms independent of each other, means for driving certain of said sets of printing mechanism by one of said driving mechanisms and certain other of said sets of printing mechanism by another of said driving mechanisms, and a plurality of folding mechanisms, substantially as described.

8. In a printing-press, the combination with a plurality of sets of printing mechanism, of driving devices at each side of the press, and independent driving-shafts for operating said driving devices at opposite sides of the press, substantially as described.

9. The combination of two printing-presses for perfecting webs and arranged one over the other, two horizontal drive-shafts, mechanism for connecting one of said shafts with one of said presses and the other shaft with the other press, and means for connecting and disconnecting said shafts at will, substantially as described.

10. The combination of groups of form and impression cylinders, said groups being arranged one above another, with a horizontal and an upright shaft and connections for each of said groups for driving the said cylinders thereof, and means for connecting said independent driving mechanisms at will, substantially as described.

11. The combination of two printing-presses for perfecting each a web and arranged one above another, two horizontal shafts, an upright shaft at each side of the machine, gearing connecting one of said upright shafts with one of said horizontal shafts and one of said presses and the other upright shaft with the other horizontal shaft and the other press, and means for connecting the horizontal shafts at will, substantially as described.

12. The combination of two printing-presses for perfecting each a web and arranged one above another, two horizontal shafts tight and loose pulleys on said horizontal shafts, gearing connecting one of said shafts with one of said presses and the other of said horizontal shafts with the other of said presses, belt-shifters, and means for connecting said shafts together and the belt-shifters together at will, substantially as described.

13. The combination of two web-presses arranged one above the other, a horizontal drive-shaft for each press, an upright shaft for each press driven by the corresponding horizontal shaft, gearing for connecting one of said upright shafts with the first impression-cylinder of one of said presses and the other upright shaft with the second impression-cylinder of the other press, and means for connecting and disconnecting said horizontal shafts at will, substantially as described.

14. The combination of two web-presses arranged one over the other, a horizontal drive-shaft for each press, fast and loose pulleys on said shafts, gearing connecting one of said horizontal shafts with the first impression-cylinder of one of said presses and the other horizontal shaft with the second impression-cylinder of the other press, means for connecting and disconnecting said shafts with and from each other, belt-shifters, and means for connecting and disconnecting said shifters with and from each other, substantially as described.

15. The combination of a web-press, means for driving said press from one side of the machine, a lever at each side of the press, one of said levers throwing power on and off, and connections between said levers, whereby each may be used to throw the power on and off and the press be started and stopped from each side of the machine.

16. In a printing-press, the combination with a plurality of sets of printing mechanism, of a plurality of driving mechanisms independent of each other and driven by independent belts, means for driving certain of said sets of printing mechanism by one of said driving mechanisms and certain other of said sets of printing mechanism by another of said driving mechanisms, and means whereby all of said sets of printing mechanism may be driven from either of said belts.

17. In a printing-press, the combination with a plurality of sets of printing mechanism mounted in a common frame, of a plurality of independent driving mechanisms adapted to operate independently of each other, means for driving certain of said sets of printing mechanism by one of said driving mechanism and certain other of said sets of printing mechanism by another of said driving mechanism, means for coupling said driving devices together so that they will operate jointly to drive said sets of printing mechanism, and a plurality of folding mechanisms adapted to receive the webs from said sets of printing mechanism.

18. In a printing-press, the combination of two sets of printing mechanism arranged one above the other in a common frame, two independent driving mechanisms, and means for driving one of said sets of printing mechanism by one of said driving mechanisms and the other set of printing mechanism by the other driving mechanism.

19. In a printing-press, the combination of two sets of printing mechanism arranged one above the other on a common frame, two independent driving mechanisms driven by independent belts, means for driving one of said sets of printing mechanism by one of said driving mechanisms and the other of said sets of printing mechanism by the other driving mechanism, and means for driving both sets of printing mechanism by either of said driving-belts.

20. In a printing-press, the combination of two sets of printing mechanism arranged one above the other in a common frame, two independent driving mechanisms, means for driving one of said sets of printing mechanism by one of said driving mechanisms and the other set of printing mechanism by the other driving mechanism, and means for coupling said driving mechanisms together.

21. In a printing-press, the combination of two sets of printing mechanism arranged one above the other in a common frame, two independent driving mechanisms, means for driving one of said sets of printing mechanism by one of said driving mechanisms and the other set of printing mechanism by the other driving mechanism, means for driving both sets of printing mechanism by one set of driving mechanism, and means for coupling said driving mechanisms together.

22. In a printing-press, the combination of a plurality of sets of printing mechanism arranged one above another in a common frame, two driving-shafts for driving said sets of printing mechanism, means whereby either set of printing mechanism may be disconnected from its driving-shaft, two independent driving-belts, and means whereby said shafts may be driven from either of said belts, substantially as described.

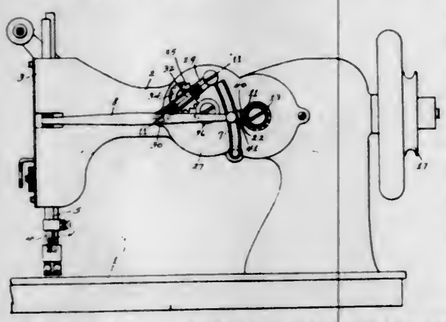
23. In a printing-press, the combination with a plurality of sets of printing mechanism arranged one above another in a common frame, of driving-gears located at opposite sides of the press for driving the different sets of printing mechanism, and independent driving-shafts for communicating power to the driving-gears at the opposite sides of the press whereby the different printing mechanisms may be operated as separate presses and one set of printing mechanism stopped without interfering with the other sets of printing mechanism.

24. In a printing-press, the combination with a plurality of sets of printing mechanism arranged one above another in a common frame, of means for starting and stopping different sets of printing mechanism independently, means for coupling, together certain of said sets of printing mechanism, a plurality of folding mechanisms arranged one above another, and means for driving said folding mechanisms independently of one another, and with their corresponding sets of printing mechanism.

25. In a printing-press, the combination with a plurality of sets of printing mechanism arranged one above another in a common

angle-iron at the top of the sash and between the angle-irons at the bottom of the sash, as and for the purpose set forth.

819,811. **SEWING-MACHINE.** PAUL H. SCHOEN, Troy, N. Y., assignor to Hall, Hartwell & Company, Troy, N. Y., a Firm. Filed Sept. 15, 1904. Serial No. 224,492.



Claim.—1. In a sewing-machine of the class described, the combination with a pattern-cam; and connections whereby said cam is caused to produce relative sidewise movements between the needle and work; of a gear-wheel mounted concentrically with said cam in operative connection with the driving mechanism of the machine; means for automatically connecting said cam and gear to rotate in unison at certain times and for destroying such connection at certain other times.

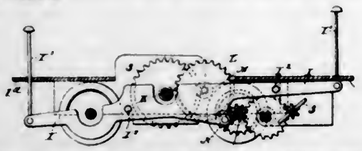
2. In a sewing-machine of the class described, the combination with a pattern-cam; and connections whereby said cam is caused to produce relative sidewise movements between the needle and work; of a gear-wheel mounted concentrically with said cam in operative connection with the driving mechanism of the machine, and provided with a pin-receiving aperture; a plunger-pin reciprocatory in an aperture in said cam and adapted in a certain position of said cam relatively to said gear-wheel to enter the pin-aperture in the latter whereby said cam and gear-wheel are connected to rotate in unison; a spring operating to withdraw said plunger-pin from said aperture in the gear-wheel; and intermittently-operating means for inducing movement of the plunger-pin in opposition to said spring.

3. In a sewing-machine of the class described, the combination with a pattern-cam; and connections whereby said cam is caused to produce relative sidewise movements between the needle and work; of a gear-wheel mounted concentrically with said cam in operative connection with the driving mechanism of the machine, and provided with a pin-receiving aperture; a plunger-pin reciprocatory in an aperture in said cam and adapted in a certain position of said cam relatively to said gear-wheel to enter the pin-aperture in the latter whereby said cam and gear-wheel are connected to rotate in unison; a spring operating to withdraw said plunger-pin from said aperture in the gear-wheel; a plate adjacent to the outer side of said cam provided with an aperture adapted to receive said plunger-pin in a certain position of said cam; a push-pin supported on the outer side of said plate adapted to engage said plunger-pin through said plate-aperture, and means for intermittently operating said push-pin.

4. In a sewing-machine of the class described, the combination with a pattern-cam; and connections whereby said cam is caused to produce relative sidewise movements between the needle and work; of a gear-wheel mounted concentrically with said cam in operative connection with the driving mechanism of the machine, and provided with a pin-receiving aperture; a plunger-pin reciprocatory in an aperture in said cam and adapted in a certain position of said cam relatively to said gear-wheel to enter the pin-aperture in the latter whereby said cam and gear-wheel are connected to rotate in unison; a spring operating to withdraw said plunger-pin from said aperture in the gear-wheel; a plate adjacent to the outer side of said cam provided with an aperture adapted to receive said plunger-pin in a certain position of said cam; a push-pin supported on the outer side of said plate adapted to engage said plunger-pin through said plate-aperture; a movable arm supporting said push-pin; a gear-wheel loosely mounted upon the outer side of said plate; a cam fixed upon said last-mentioned gear-wheel engageable with said arm; and a mutilated gear in operative connection with the driving mechanism of the machine adapted to mesh with said last-mentioned gear.

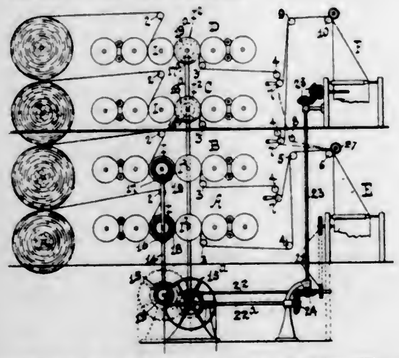
5. In a sewing-machine of the class described, the combination with a pattern-cam; and connections whereby said cam is caused to induce relative sidewise movements between the needle and work comprising in part a rocker-arm; of a gear-wheel mounted concentrically with said cam in operative connection with the driving mechanism of the machine, and provided with a pin-aperture; a plunger-pin reciprocatory in an aperture in said cam and adapted to enter the pin-aperture in said gear in a certain relative position of the cam thereto; a spring tending to move said plunger-pin outwardly from the pin-aperture in the gear-wheel; a fixed cover-plate interposed between the face of said cam and said rocker-arm, and provided with a slot adapted to receive and permit side play of said cam-follower on the rocker-arm; and an aperture adapted to receive said plunger-pin in a certain position of said cam; a washer carried by said cam-follower inside the cover-plate adapted to bridge the cam-follower slot in said plate to prevent said plunger-pin from entering said slot; and an intermittently-actuating push-pin engageable with said plunger-pin through said aperture in said plate.

819,812. **ROLLING-STOCK FOR TOY RAILWAYS.** AUGUST SCHÜTZE, Rudolstadt, Germany, assignor to Friedrich Adolf Richter, Rudolstadt, Germany. Original application filed Oct. 3, 1902, Serial No. 125,743. Divided and this application filed July 16, 1903. Serial No. 165,843.



Claim.—In a toy car, the combination with a motor proper, a device for transmitting motion to one of the supporting-wheels of the car and a reversing device which forms a connection between the motor proper and the said transmission device, said reversing device comprising a vertically-swinging lever I extending lengthwise under the car and provided with an upright operating-rod I' at each end, each of said operating-rods extending through the platform of the car, and one of said rods during operation being always higher than the other.

819,813. **PRINTING-MACHINE.** WALTER SCOTT, Plainfield, N. J. Filed Apr. 19, 1895. Serial No. 546,316.



Claim.—1. In a printing-press, the combination with a plurality of sets of printing mechanism arranged one above another in a common frame, of a plurality of independent driving mechanisms, means for driving certain of said sets of printing mechanism by one of said driving mechanisms and certain other of said sets of printing mechanism by another of said driving mechanisms, and a plurality of folding mechanisms, substantially as described.

2. In a printing-press, the combination with a plurality of sets of printing mechanism arranged one above another in a common frame, of a plurality of independent driving mechanisms, means for driving certain of said sets of printing mechanism by one of said driving mechanisms and certain other of said sets of printing mechanism by another of said driving mechanisms, means for coupling said driving mechanisms together so that they will operate jointly, and a plurality of folding mechanisms, substantially as described.

3. In a printing-press, the combination with a plurality of sets of printing mechanism arranged one above another in a common frame, of a plurality of independent driving mechanisms, and means for driving certain of said sets of printing mechanism by one of said driving mechanisms and certain of said sets of printing mechanism by another of said driving mechanisms.

4. In a printing-press, the combination with a plurality of sets of printing mechanism, of driving-gears located at opposite sides of the press for driving the different sets of printing mechanism, and independent driving-shafts for communicating power to the driving-gears at the opposite sides of the press, whereby the different printing mechanisms may be operated as separate presses and one set of printing mechanism stopped without interfering with the other sets of printing mechanism.

5. In a printing-machine, the combination of two pairs of web-perfecting presses, the members of each pair being arranged one over the other, folding mechanism for each of said pairs of presses, independent driving mechanisms for said pairs of presses and their folding mechanisms, means for coupling said driving mechanisms together, and means for associating perfected webs, substantially as described.

6. In a printing-press, the combination with a plurality of sets of printing mechanism arranged one above another in a common frame, of a plurality of independent driving mechanisms, means for driving certain of said sets of printing mechanism by one of said driving mechanisms and certain of said sets of printing mechanism by another of said driving mechanisms, and means for coupling said driving mechanisms together, whereby the said sets of printing mechanism may be started and stopped independently one of another and may be driven together as one press or machine, substantially as described.

7. In a printing-press, the combination with a plurality of sets of printing mechanism mounted in a common frame, of a plurality of driving mechanisms independent of each other, means for driving certain of said sets of printing mechanism by one of said driving mechanisms and certain other of said sets of printing mechanism by another of said driving mechanisms, and a plurality of folding mechanisms, substantially as described.

8. In a printing-press, the combination with a plurality of sets of printing mechanism, of driving devices at each side of the press, and independent driving-shafts for operating said driving devices at opposite sides of the press, substantially as described.

9. The combination of two printing-presses for perfecting webs and arranged one over the other, two horizontal drive-shafts, mechanism for connecting one of said shafts with one of said presses and the other shaft with the other press, and means for connecting and disconnecting said shafts at will, substantially as described.

10. The combination of groups of form and impression cylinders, said groups being arranged one above another, with a horizontal and an upright shaft and connections for each of said groups for driving the said cylinders thereof, and means for connecting said independent driving mechanisms at will, substantially as described.

11. The combination of two printing-presses for perfecting each a web and arranged one above another, two horizontal shafts, an upright shaft at each side of the machine, gearing connecting one of said upright shafts with one of said horizontal shafts and one of said presses and the other upright shaft with the other horizontal shaft and the other press, and means for connecting the horizontal shafts at will, substantially as described.

12. The combination of two printing-presses for perfecting each a web and arranged one above another, two horizontal shafts tight and loose pulleys on said horizontal shafts, gearing connecting one of said shafts with one of said presses and the other of said horizontal shafts with the other of said presses, belt-shifters, and means for connecting said shafts together and the belt-shifters together at will, substantially as described.

13. The combination of two web-presses arranged one above the other, a horizontal drive-shaft for each press, an upright shaft for each press driven by the corresponding horizontal shaft, gearing for connecting one of said upright shafts with the first impression-cylinder of one of said presses and the other upright shaft with the second impression-cylinder of the other press, and means for connecting and disconnecting said horizontal shafts at will, substantially as described.

14. The combination of two web-presses arranged one over the other, a horizontal drive-shaft for each press, fast and loose pulleys on said shafts, gearing connecting one of said horizontal shafts with the first impression-cylinder of one of said presses and the other horizontal shaft with the second impression-cylinder of the other press, means for connecting and disconnecting said shafts with and from each other, belt-shifters, and means for connecting and disconnecting said shifters with and from each other, substantially as described.

15. The combination of a web-press, means for driving said press from one side of the machine, a lever at each side of the press, one of said levers throwing power on and off, and connections between said levers, whereby each may be used to throw the power on and off and the press be started and stopped from each side of the machine.

16. In a printing-press, the combination with a plurality of sets of printing mechanism, of a plurality of driving mechanisms independent of each other and driven by independent belts, means for driving certain of said sets of printing mechanism by one of said driving mechanisms and certain other of said sets of printing mechanism by another of said driving mechanisms, and means whereby all of said sets of printing mechanism may be driven from either of said belts.

17. In a printing-press, the combination with a plurality of sets of printing mechanism mounted in a common frame, of a plurality of independent driving mechanisms adapted to operate independently of each other, means for driving certain of said sets of printing mechanism by one of said driving mechanism and certain other of said sets of printing mechanism by another of said driving mechanism, means for coupling said driving devices together so that they will operate jointly to drive said sets of printing mechanism, and a plurality of folding mechanisms adapted to receive the webs from said sets of printing mechanism.

18. In a printing-press, the combination of two sets of printing mechanism arranged one above the other in a common frame, two independent driving mechanisms, and means for driving one of said sets of printing mechanism by one of said driving mechanisms and the other set of printing mechanism by the other driving mechanism.

19. In a printing-press, the combination of two sets of printing mechanism arranged one above the other on a common frame, two independent driving mechanisms driven by independent belts, means for driving one of said sets of printing mechanism by one of said driving mechanisms and the other of said sets of printing mechanism by the other driving mechanism, and means for driving both sets of printing mechanism by either of said driving-belts.

20. In a printing-press, the combination of two sets of printing mechanism arranged one above the other in a common frame, two independent driving mechanisms, means for driving one of said sets of printing mechanism by one of said driving mechanisms and the other set of printing mechanism by the other driving mechanism, and means for coupling said driving mechanisms together.

21. In a printing-press, the combination of two sets of printing mechanism arranged one above the other in a common frame, two independent driving mechanisms, means for driving one of said sets of printing mechanism by one of said driving mechanisms and the other set of printing mechanism by the other driving mechanism, means for driving both sets of printing mechanism by one set of driving mechanism, and means for coupling said driving mechanisms together.

22. In a printing-press, the combination of a plurality of sets of printing mechanism arranged one above another in a common frame, two driving-shafts for driving said sets of printing mechanism, means whereby either set of printing mechanism may be disconnected from its driving-shaft, two independent driving-belts, and means whereby said shafts may be driven from either of said belts, substantially as described.

23. In a printing-press, the combination with a plurality of sets of printing mechanism arranged one above another in a common frame, of driving-gears located at opposite sides of the press for driving the different sets of printing mechanism, and independent driving-shafts for communicating power to the driving-gears at the opposite sides of the press whereby the different printing mechanisms may be operated as separate presses and one set of printing mechanism stopped without interfering with the other sets of printing mechanism.

24. In a printing-press, the combination with a plurality of sets of printing mechanism arranged one above another in a common frame, of means for starting and stopping different sets of printing mechanism independently, means for coupling, together certain of said sets of printing mechanism, a plurality of folding mechanisms arranged one above another, and means for driving said folding mechanisms independently of one another, and with their corresponding sets of printing mechanism.

25. In a printing-press, the combination with a plurality of sets of printing mechanism arranged one above another in a common

frame, of driving devices at each side of the press, and independent driving-shafts for operating said driving devices at opposite sides of the press.

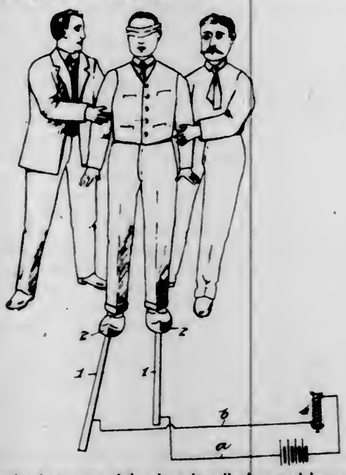
26. The combination of two printing-presses for perfecting webs and arranged one over the other in a common frame, two horizontal drive-shafts, mechanism for connecting one of said shafts with one of said presses and the other shaft with the other press, and means for connecting and disconnecting said shafts at will.

27. The combination of groups of form and impression cylinders, said groups being arranged one above another in a common frame, with a horizontal and an upright shaft and connections for each of said groups for driving the said cylinder thereof, and means for connecting said independent driving mechanisms at will.

28. The combination of two printing-presses for perfecting each a web and arranged above one another in a common frame, two horizontal shafts, an upright shaft at each side of the machine, gearing connecting one of said upright shafts and one of said presses and the other upright shaft with the other horizontal shaft and the other press, and means for connecting the horizontal shafts at will.

29. The combination of two web-presses arranged one above the other in a common frame, a horizontal drive-shaft for each press, an upright shaft for each press driven by the corresponding horizontal shaft, gearing for connecting one of said upright shafts with the first impression-cylinder of one of said presses and the other upright shaft with the second impression-cylinder of the other press, and means for connecting and disconnecting said horizontal shafts at will.

819,814. **INITIATION APPARATUS.** JOHN M. SEIBERT, Petrin, Ill. Filed July 24, 1905. Serial No. 271,063.



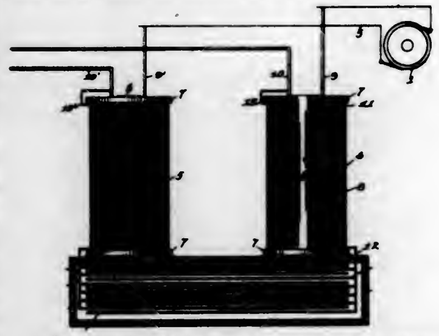
Claim.—An apparatus of the class described comprising a pair of spaced metallic rails included in an electrical shocking-circuit, and a pair of shiftable electrodes, each electrode consisting of an insulated walking-shoe provided with exterior sole and heel plates for contact with said rails, and with an interior foot-plate metallically connected with said sole and heel plates.

819,815. **ELECTRIC REGENERATOR.** JOEL C. SLAUGHTER, Dallas, Tex. Filed July 28, 1903. Serial No. 117,409.

Claim.—1. An electric regenerator, comprising two or more induction-coils, and a condenser; the delivery ends of the primary wires of said induction-coils being connected to the ends of the secondary coils, and the other ends of the primary coils adapted to be electrically connected to an alternating-current generator, and the other ends of the wire forming the secondary coils, being in electrical connection with the condensing-plates of the condenser, substantially as specified.

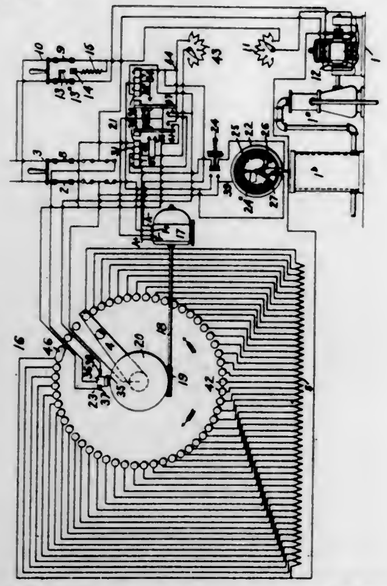
2. In an electric regenerator, an induction-coil composed of a condenser, a primary and secondary coil, one end of the secondary coil being attached to the delivery end of the primary coil and the other end of said secondary coil adapted to be attached to the condenser, substantially as specified.

3. In an electric regenerator, the combination of two induction-coils, a condenser connected to the secondary of said coils, and a source of alternating current, one of said induction-coils having its primary connected in series with one of the terminals of said source of alternating current, and the other one of said induction-coils being connected in series with another and different terminal of said source of alternating current, substantially as described.



4. In an electric regenerator, the combination of two induction-coils, a condenser and a source of alternating current, one of said induction-coils having its primary connected in series with adjacent ends of one of the conductors of said source of alternating current, and the other one of said induction-coils being connected in series with two adjacent ends of another and different conductor of said source of alternating current, and both of said induction-coils being connected in multiple with the said source of alternating current, substantially as described.

819,816. **SYSTEM OF MOTOR CONTROL.** HARVE R. STUART, Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed Jan. 20, 1904. Serial No. 189,887.



Claim.—1. The combination with a main motor for operating pressure-producing apparatus, a rheostat for varying the current delivered to said motor having an arm movable over contact-terminals, and a reversible operating-motor for said rheostat-arm, of means for automatically reversing the operating-motor when the pressure generated by said apparatus respectively falls below and rises above predetermined limits, that comprises a main relay and a pressure-switch which is adapted to select and close the proper circuit therethrough and a manually-operated switch for bringing the main motor to rest.

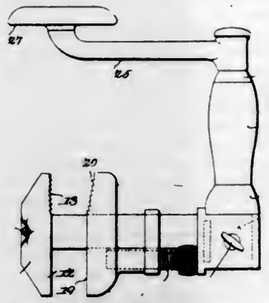
2. The combination with a main motor for operating pressure-producing apparatus, a rheostat for varying the current passing through said motor having an arm movable over contact-terminals, and an operating-motor for said rheostat-arm, of a main relay for determining the direction of rotation of the operating-motor comprising switch-levers actuated by electromagnets each having a pick-up winding, and means for automatically energizing said winding that comprises a switch which is in communication with pressure-supplied apparatus, and a retaining-winding which is energized when the corresponding switch-lever is operated.

3. The combination with a main motor for operating pressure-producing apparatus, a rheostat for varying the current passing through said motor having an arm movable over contact-terminals, and an operating-motor for said rheostat-arm, of a main relay for determining the direction of the flow of energy in the armature of the operating-motor comprising switch-levers actuated by electromagnets each having a pick-up winding and a retaining-winding, and a second relay which is in communication with pressure-supplied apparatus and which is adapted to automatically close the circuits through one of said pick-up windings according as the pressure generated exceeds or falls below predetermined limits.

4. A system of motor control comprising a motor for operating pressure-producing apparatus, a rheostat for varying the current delivered to said motor and having an arm movable over contact-terminals, an operating-motor for said rheostat-arm, a limit-switch which is actuated by said rheostat-arm, a plurality of circuits for the operating-motor, a relay for completing the proper circuit therethrough, a pressure-switch in connection with said pressure-producing apparatus and adapted to automatically select the proper circuit through the main relay, and a manually-operated switch for bringing the main motor to rest.

5. The combination with a main motor for operating pressure-producing apparatus, a rheostat for varying the current delivered to said motor, and a reversible operating-motor for said rheostat, of a relay-switch for reversing the circuits of the operating-motor and a pressure-gage switch for changing the circuits of the relay-switch that may occupy either of two predetermined positions and is dependent upon the fluid-pressure produced by the apparatus, its position being changed when said pressure falls below or rises above predetermined limits.

819,817. **COMBINED WRENCH AND BIT STOCK.** PATRICK L. SWEENEY and LEO C. JAHN, Jasper, Ind. Filed Sept. 27, 1904. Serial No. 226,180.

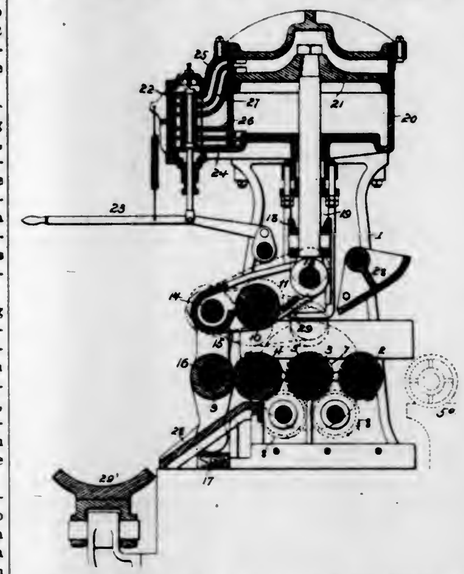


Claim.—1. A wrench-stock having a terminal longitudinal socket intersected by a lateral aperture extending therethrough, in combination with a grip portion having a tenon adapted for engagement with the socket through its terminal opening or through either end of its lateral aperture.

2. A wrench including a stock and jaws extending to opposite sides of said stock, said stock being provided with a terminal socket having a lateral aperture extending through opposite walls of the socket, in combination with a grip portion having a tenon insertible endwise and laterally into said socket.

3. A wrench-stock having a stationary and a movable jaw, said jaws extending in opposite directions from the stock, a laterally-offset socket portion at the inner end of the stock, and a screw journaled in the laterally-extended socket portion and having threaded engagement with the movable jaw, the socket portion being provided with an aperture extending laterally therethrough; in combination with a grip portion having a tenon insertible endwise and laterally into the socket.

819,818. **APPARATUS FOR BREAKING PIG-IRON.** CLARENCE L. TAYLOR, Alliance, Ohio, assignor to The Morgan Engineering Company, Alliance, Ohio. Filed Apr. 26, 1905. Serial No. 257,530.



Claim.—1. In a pig-breaker the combination with horizontally-arranged feed-rolls and a clamping or holding roll, of breaking means, and means for moving the latter vertically across the path of movement of the pig between the feed and clamping or holding rolls.

2. In a pig-breaker the combination with means for feeding the pig and a clamping-roll, of breaking means connected with the clamping-roll and means for forcing the clamping-roll against one face of the pig and the breaking means against the other face and nearer the free end of the pig.

3. In a pig-breaker the combination with means for feeding the pig, of levers carrying a clamping-roll, breaking means carried by said levers below the horizontal plane of the clamping-roll, and means for rocking the levers with the clamping-roll as their fulcrum.

4. In a pig-breaker, the combination with feed-rolls, of a frame located above the feed-rolls and carrying a clamping-roll, a breaking-roll suspended from said frame and located normally in a plane below the clamping-roll, and means for moving said frame in a direction to carry the clamping-roll onto the pig, and the breaking-roll upwardly against the free end of the pig.

5. In a pig-breaker, the combination with feed-rolls, of levers located above the feed-rolls and carrying a clamping-roll, links depending from said levers and normally resting at their lower ends on a support, a breaker carried by said links and means for depressing and elevating the front ends of said levers.

6. In a pig-breaker, the combination with feed-rolls, of a piston-rod, two levers, each connected at its front end to said piston-rod, a clamping-roll carried by said levers intermediate the ends of the latter and a breaker suspended from the rear ends of said levers, the said breaker resting normally in a plane below the horizontal plane of the clamping-roll.

7. In a pig-breaker, the combination with feed-rolls, of a pair of levers, a piston-rod connected to the latter, a clamping-roll carried by said levers in rear of the piston-rod, links depending from the rear ends of said levers and a breaking-roll carried by said links.

8. In a pig-breaker, the combination with feed-rolls, of a pair of levers, means connected to said levers for rocking same, a clamping-roll carried by said levers, links depending from said levers, and a breaking-roll carried by said links.

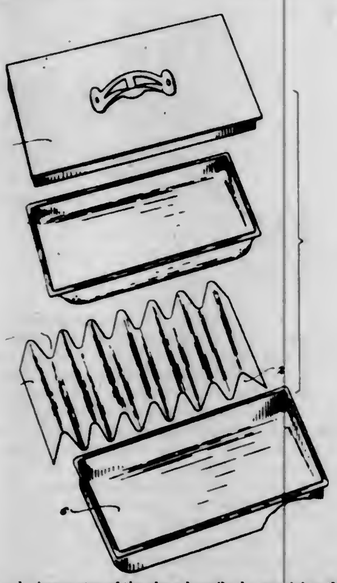
9. In a pig-breaker the combination with feed-rolls, of a clamping-roll, a support for the latter, means for rocking said support with the clamping-roll as its fulcrum, and breaking-roll suspended from said support in a plane below the clamping-roll.

10. In a pig-breaker the combination with feed-rolls, of a clamping-roll, a support for the latter, means connected to the front end of said support for rocking same, the clamping-roll forming the fulcrum on which said support rocks, and a breaking-roll suspended from the rear end of said support and normally in a plane below the clamping-roll.

11. In a pig-breaker the combination with feed-rolls, of a pair of levers, a piston-rod connected to said levers, a clamping-roll journaled to the levers in rear of the piston-rod, links depending from the levers in rear of the clamping-roll, and a breaking-roll carried by said links.

12. In a pig-breaker, the combination with feed-rolls, of a pair of levers, depending links connected to the rear ends of the levers and normally supported at their free ends, a breaking-roll carried by said links, a clamping-roll carried by the levers in a plane above and in front of the breaking-roll, and a piston connected to the forward ends of said levers.

819,819. **MEANS FOR MAKING A MILK PRODUCT.** CHARLES M. TAYLOR, Jr., Philadelphia, Pa. Filed June 28, 1905. Serial No. 267,464.



Claim.—1. Apparatus of the class described comprising the combination of a partition impermeable to the buttery or fatty constituents and permeable to the other constituents, and an absorbent spacer having openings and arranged in contact with one face of the partition, substantially as described.

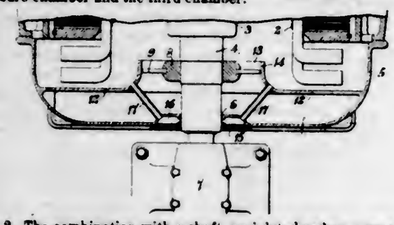
2. In apparatus of the class described the combination with a partition impermeable to the fatty or buttery constituents and permeable to the other constituents, of a corrugated absorbent sheet arranged in contact with one face of the partition, substantially as described.

3. Apparatus of the class described comprising a pan, an absorbent spacer having openings and arranged upon the bottom of the pan, and a partition arranged above and in contact with the spacer and impermeable to the fatty or buttery constituents and permeable to the other constituents, substantially as described.

4. In apparatus of the class described the combination of a dished partition impermeable to the fatty or buttery constituents and permeable to the other constituents, and an absorbent spacer having openings and arranged in contact with the bottom face of the dished partition, substantially as described.

819,820. **VENTILATING MEANS FOR INCLOSED MACHINES.** ROBERT M. TINDLEY, Pittsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed Mar. 17, 1905. Serial No. 250,615.

Claim.—1. The combination with a shaft, an inlet-chamber, a pressure-chamber, and means for effecting a circulation from the inlet-chamber to the pressure-chamber, of a third chamber surrounding the shaft, and one or more communicating passages between the pressure-chamber and the third chamber.



2. The combination with a shaft, an inlet-chamber, a pressure-chamber, and means for establishing a circulation from the inlet to the pressure chamber, of an outer chamber surrounding the shaft, and one or more communicating passages between the pressure-chamber and the outer chamber.

3. The combination with a shaft, inlet and pressure chambers, and means for establishing a circulation from the inlet-chamber to the pressure-chamber, of a third chamber surrounding the shaft and one or more communicating passages between the pressure-chamber and the third chamber.

4. The combination with a shaft, an inlet-chamber, and a pressure-chamber, of a third chamber surrounding the shaft and means for maintaining a fluid-pressure in the third chamber.

5. The combination of an inlet-chamber, a movable member that projects through the walls of the chamber, and a chamber surrounding the said movable member in which a fluid-pressure is maintained.

6. The combination of a chamber from which fluid is exhausted and having an apertured wall, a movable member that projects through the wall-aperture, and a chamber that surrounds the movable member adjacent to the aperture and in which a fluid-pressure is maintained.

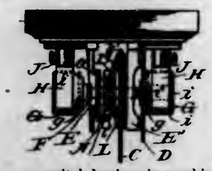
7. The combination of an apertured chamber-wall the fluid-pressures on opposite sides of which differ, a member that is movably located in the aperture in the chamber-wall, and a chamber that surrounds the movable member adjacent to the aperture and in which a fluid-pressure is maintained.

8. The combination with an apertured chamber-wall the fluid-pressures on opposite sides of which differ, of a member that is movably located in the wall-aperture and an annular cover that coöperates with the chamber-wall adjacent to the aperture to form an auxiliary chamber, and means for supplying fluid-pressure to said auxiliary chamber.

9. The combination with a shaft and a casing having two chambers between which exists a difference of fluid-pressure, of an annular chamber the inner wall of which is the shaft, and a conduit between said annular chamber and the casing-chamber in which exists the higher pressure.

10. The combination with a casing having a chamber in which the fluid-pressure exceeds that of the atmosphere, of a member that movably projects through the walls of the casing, a chamber that surrounds the movable member adjacent to the casing-wall, and one or more conduits between said surrounding chamber and the high-pressure chamber.

819,821. **ELECTRIC SWITCH.** ALLEN A. TIRRILL, Schenectady, N. Y. Filed Dec. 11, 1903. Serial No. 134,850.



Claim.—1. A snap-switch having, in combination, a shaft carrying the contact making and breaking devices; a shaft-motor spring operatively connected with the shaft; a series of stationary shaft-stops arranged peripherally around the shaft; a pawl-carrier fixed to the shaft having a shaft-locking spring-pawl coöperating in succession with said shaft-stops; a step-by-step moving ratchet-wheel loose on the shaft and connected with said shaft-motor spring to wind up the same, said ratchet-wheel having a series of pawl-lifters adapted to disengage said shaft-locking pawl from said shaft-stops respectively, each pawl-lifter acting to lift the pawl as the ratchet-wheel completes one of its steps in advance and after the shaft-motor spring has been wound up; a reciprocating actuator having a spring-pawl coöperating with said ratchet-wheel to advance the same, thereby winding up the shaft-motor spring; hand-controlled means for advancing said actuator; a spring to return the actuator, and stops to limit the movement of the actuator in both directions.

2. A snap-switch having, in combination, a shaft carrying the contact making and breaking devices; a shaft-motor spring operatively connected with the shaft; a series of stationary shaft-stops arranged peripherally around the shaft; a pawl-carrier fixed to the shaft having a shaft-locking spring-pawl coöperating in succession with said shaft-stops; a step-by-step moving ratchet-wheel loose on the shaft and connected with said shaft-motor spring to wind up the same, said ratchet-wheel having a series of pawl-lifters adapted to disengage said shaft-locking pawl from said shaft-stops respectively, each pawl-lifter acting to lift the pawl as the ratchet-wheel completes one of its steps in advance and after the shaft-motor spring has been wound up; and means for giving said ratchet advance movement.

3. A snap-switch having, in combination, a shaft carrying the contact making and breaking devices; a shaft-motor spring operatively connected with the shaft; a series of stationary shaft-stops arranged peripherally around the shaft; a pawl-carrier fixed to the shaft having a shaft-locking spring-pawl coöperating in succession with said shaft-stops; a step-by-step moving ratchet-wheel loose on the shaft and connected with said shaft-motor spring to wind up the same; means for rotating said ratchet; and means for releasing said pawl when said shaft-motor spring has been wound up.

4. A snap-switch having, in combination, a shaft carrying the contact making and breaking devices; a shaft-motor spring operatively connected with the shaft to rotate the same; a shaft-stop to arrest the rotation of the shaft; a shaft-locking pawl attached to the shaft and coöperating with said shaft-stop; means for rotating said shaft through the agency of said spring; and means for releasing said pawl from the shaft-stop.

5. A snap-switch having, in combination, a shaft carrying the contact making and breaking devices; means for rotating said shaft; a series of stationary shaft-stops arranged peripherally around the shaft; a pawl-carrier fixed to the shaft having a shaft-locking spring-pawl coöperating in succession with said shaft-stops; a step-by-step moving ratchet-wheel loose on the shaft, said ratchet-wheel having a series of pawl-lifters adapted to disengage said shaft-locking pawl from said shaft-stops respectively, each pawl-lifter acting to lift the pawl as the ratchet-wheel completes one of its steps in advance when the shaft is under a rotary impulse; a reciprocating actuator having a spring-pawl coöperating with said ratchet-wheel to advance the same; and means for reciprocating the actuator.

6. A snap-switch having, in combination, a shaft carrying the contact making and breaking devices; means for rotating said shaft; a series of stationary shaft-stops to arrest the rotation of the shaft; a pawl operatively connected to said shaft to coöperate in succession with said shaft-stops; a series of pawl-lifters adapted to disengage said pawl from said shaft-stops respectively, each pawl-lifter acting to lift the pawl when the shaft is about to be rotated; a reciprocating actuator which effects the rotation of said shaft and also operates said pawl-lifters; and means for reciprocating said actuator.

7. A snap-switch having, in combination, a contact making and breaking device comprising oppositely-disposed cylindrical contactors of insulating material; contact-plates of conducting material disposed on the peripheries of said contactors, the contact-plates being in relatively different positions on their respective contactors; spaced brushes for each carrier, one brush being at an angle to the plane of the other; a conductor between two homologous brushes of the two carriers; and means for rotating the carriers.

8. A snap-switch having, in combination, a contact making and breaking device comprising oppositely-disposed contactors of insulating material; contact-plates of conducting material on said contactors; spaced brushes for each contactor; a conductor between two homologous brushes of the two contactors, and means for rotating said contactors.

9. A snap-switch having, in combination, a contact making and breaking device, operating mechanism therefor, and an indicator, separate from and controlled by the operating mechanism, projecting through the cover to show at any time the pending condition of the switch.

10. A snap-switch having, in combination, a contact making and breaking device, operating mechanism therefor, a slotted cover for the switch, and a disk, associated with said operating mechanism, adapted to project through a slot in the cover and to indicate at any time the pending condition of the switch.

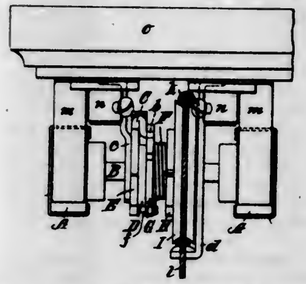
11. A snap-switch having, in combination, a shaft carrying the contact making and breaking devices, means for rotating said shaft, a cover inclosing said shaft, and an indicator upon said shaft which projects through an aperture in said cover and which is adapted to show at any time the pending condition of the switch.

12. A snap-switch having, in combination, a contact making and breaking device, a cover and operating mechanism for said device, and means separate from the operating mechanism, mounted within said cover and projecting without the same, controlled by said operating mechanism to indicate at any time the pending condition of the switch.

13. A snap-switch having, in combination, a shaft carrying contact making and breaking means, tensional driving means for said shaft; a rigid, stationary shaft-stop; yielding means mounted upon the shaft to coact with said stop to prevent rotation of the shaft in response to the action of the tensional driving means; means for actuating said stop-engaging means to cause the same to yield in its engagement with the stop, and thereby to allow rotation of the shaft in response to the action of said tensional driving means, one-way clutch mechanism mounted loosely upon the shaft for storing power in the tensional driving means and for operating the stop-engaging actuating means aforesaid.

14. A snap-switch having, in combination, a shaft carrying contact making and breaking device; tensional driving means for said shaft; a stationary shaft-stop; a resilient means mounted upon the shaft to coact with said stop to prevent rotation of the shaft in response to the action of the tensional driving means; means for actuating said resilient means to cause the same to yield in its engagement with the stop, and thereby to deliver said shaft to the action of the tensional driving means, one-way clutch mechanism mounted loosely upon the shaft for storing power in the tensional driving means and for operating the stop-engaging actuating means aforesaid.

819,822. **SNAP ELECTRIC SWITCH.** ALLEN A. TIRRILL, Schenectady, N. Y. Filed Sept. 26, 1904. Serial No. 225,960.



Claim.—1. A snap-switch having, in combination, a shaft carrying the contact making and breaking devices; a shaft motor-spring operatively connected at one end with said shaft; a series of stationary shaft-stops arranged peripherally around the shaft; a pawl-carrier fixed to the shaft having a tongue and a shaft-locking pivoted pawl coöperating in succession with said shaft-stops, said pawl having a rigid pin; a step-by-step-moving controller loose on said shaft and operatively connected with the other end of said motor-spring so as to wind up the same, said controller having a pawl-controlling closed cam-slot into which extends said pawl-pin, said pawl being thereby positively disengaged from one of said stops and subsequently positively reëngaged with the next succeeding stop at each step of said controller, said cam-slot acting to release the pawl as the controller completes one of its steps in advance and after the motor-spring has been wound up to its maximum tension, whereupon the pawl-carrier and shaft are rotated by the motor-spring until the pawl engages the next succeeding shaft-stop, said controller also having two spaced shoulders between which said tongue lies, one of said shoulders coöperating with said tongue to prevent the overwinding of the motor-spring, and the other to prevent the unwinding of the motor-spring; a step-by-step-moving ratchet loose on said shaft and rigid with said controller; a reciprocating actuator having a spring-pawl coöperating with said ratchet to advance it and the controller, thereby winding up the motor-

spring; hand controlled means to advance said ratchet; a spring to return the actuator; and stops to limit the movement of the actuator in both directions.

2. A snap-switch having, in combination, a shaft carrying the contact making and breaking devices; a shaft motor-spring operatively connected at one end with said shaft; a series of stationary shaft-stops; a pawl-carrier fixed to the shaft having a tongue and a shaft-locking pivoted pawl coöperating in succession with said shaft-stops; a step-by-step-moving controller loose on said shaft and operatively connected with the other end of said motor-spring so as to wind up the same, said controller being adapted to positively disengage said pawl from one of said stops and subsequently to positively reëngage it with the next succeeding stop at each step, said controller also having two spaced shoulders between which said tongue lies, one of said shoulders coöperating with said tongue to prevent the overwinding of the motor-spring, and the other to prevent the unwinding of the motor-spring; a step-by-step-moving ratchet loose on said shaft and rigid with said controller; a reciprocating actuator having a spring-pawl coöperating with said ratchet to advance it and the controller, thereby winding up the motor-spring; hand-controlled means to advance said ratchet; a spring to return the actuator; and stops to limit the movement of the actuator in both directions.

3. A snap-switch having, in combination, a shaft carrying the contact making and breaking devices; a shaft motor-spring operatively connected at one end with said shaft; a series of stationary shaft-stops; a pawl-carrier fixed to the shaft having a shaft-locking pivoted pawl coöperating in succession with said shaft-stops; a step-by-step-moving controller loose on said shaft and operatively connected with the other end of said motor spring so as to wind up the same, said controller being adapted to positively disengage said pawl from one of said stops and subsequently to positively reëngage it with the next succeeding stop at each step of said controller; coöperating means on said pawl-carrier and said controller to prevent the overwinding of the motor-spring and to prevent the unwinding of the motor-spring; a step-by-step-moving ratchet loose on said shaft and rigid with said controller; a reciprocating actuator coöperating with said ratchet to advance it and the controller, thereby winding up the motor-spring; means to advance said ratchet; means to return the actuator; and stops to limit the movement of the actuator in both directions.

4. A snap-switch having, in combination, a shaft carrying the contact making and breaking devices; a shaft motor-spring operatively connected at one end with said shaft; a series of stationary shaft-stops; a pawl-carrier fixed to the shaft having a shaft-locking pawl coöperating in succession with said shaft-stops; a step-by-step-moving controller loose on said shaft and operatively connected with the other end of said motor-spring so as to wind up the same, said controller having means to disengage said pawl from one of said stops and subsequently to reëngage it with the next succeeding stop at each step; coöperating means on said pawl-carrier and said controller to prevent the overwinding of the motor-spring, and to prevent the unwinding of the motor-spring; and means for moving said controller through its advance steps in succession.

5. A snap-switch having, in combination, a shaft carrying the contact making and breaking devices; a shaft motor-spring operatively connected at one end with said shaft; a series of stationary shaft-stops; a pawl-carrier fixed to the shaft having a shaft-locking pawl coöperating in succession with said shaft-stops; a step-by-step-moving controller loose on said shaft and operatively connected with the other end of said motor-spring so as to wind up the same, said controller having means to disengage said pawl from one of said stops, when said motor-spring has been wound up; means for reëngaging said pawl at the next succeeding stop; means to prevent the overwinding of the motor-spring; and means for moving said controller through its advance steps in succession.

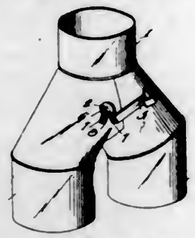
6. A snap-switch having, in combination, a shaft carrying the contact making and breaking devices; a shaft motor-spring operatively connected at one end with said shaft; a series of stationary shaft-stops; a pawl-carrier fixed to the shaft having a shaft-locking pawl coöperating in succession with said shaft-stops; a step-by-step-moving controller loose on said shaft and operatively connected with the other end of said motor-spring so as to wind up the same, said controller having means to disengage said pawl from one of said stops when said motor-spring has been wound up; means for reëngaging said pawl with the next succeeding stop; means to prevent the unwinding of the motor-spring; and means for moving said controller through its advance steps in succession.

7. A snap-switch having, in combination, a shaft for operating contact making and breaking devices; power-storing means for actuating said shaft when released; a controller for said shaft-actuating means, said controller mounted on the shaft and having means to store the power in the shaft-actuating means and then to release said means to actuate the shaft; hand-controlled means for continuously advancing said controller, said hand-controlled means having backward movement to its original position after each operation of the shaft.

8. A snap-switch having, in combination, a shaft carrying the contact making and breaking devices; means for giving the shaft advance rotation; a stationary shaft-stop adapted to arrest the advance rotation of said shaft; a pawl operatively connected with said shaft to coöperate with said shaft-stop, said pawl having a rigid pin; a tongue rigid with said shaft; a controller capable of relative motion with said shaft, for releasing said pawl from said shaft-stop, said controller having a pawl-controlling closed cam-slot into which extends said pin, said controller having also spaced shoulders between which said tongue lies, the space between said shoulders in excess of the width of said tongue, being less than the length of said cam-slot in excess of the width of said pin.

9. A snap-switch having, in combination, a shaft carrying the contact making and breaking devices; means for giving said shaft advance rotation; a stationary shaft-stop adapted to arrest the advance rotation of the shaft; a pawl operatively connected with the shaft to coöperate with said shaft-stop, said pawl having a rigid pin; a controller for releasing said pawl from said shaft-stop, said controller having a pawl-controlling closed cam-slot into which extends said pin.

819,823. **RAIN-WATER CUT-OFF.** LOUIS B. TRIGG, Wheeling, W. Va. Filed May 31, 1905. Serial No. 263,128.



Claim.—1. In a rain-water cut-off the combination of a spout provided with a clearance-opening having notches in communication therewith, a cut-off coöperating with the spout, and a flattened shaft by means of which the cut-off is operated, said flattened shaft turning freely when moved into the clearance-opening and being locked against turning when thrust into one of the before-mentioned notches in communication with the clearance-opening.

2. In a rain-water cut-off the combination of a spout provided with a clearance-opening having diverging notches in communication therewith, a cut-off coöperating with the spout, and a handle for operating the cut-off, said handle having a flattened portion which turns freely when raised into the clearance-opening, but locks the cut-off in a fixed position when thrust into one of the before-mentioned notches in communication with the clearance-opening.

819,824. **WHEEL.** CHARLES B. VAN HORN, Philadelphia, Pa., assignor, by direct and mesne assignments, to Guarantee Title and Trust Co., trustee, Pittsburg, Pa., a Corporation of Pennsylvania. Filed June 27, 1905. Serial No. 267,213.

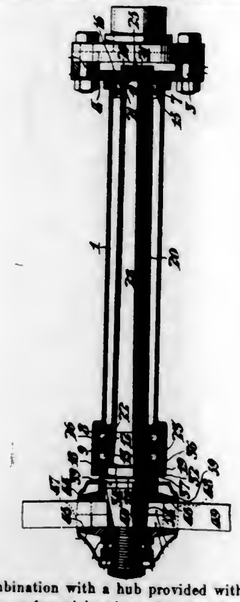
Claim.—1. The combination with a hub provided with spoke-recesses arranged in a circumferential series; of adjustable means in said hub arranged to thrust spokes outwardly in said recesses; an axle fitted in said hub; and, means securing said axle in stationary relation with said hub, substantially as set forth.

2. The combination with a hub provided with spoke-recesses arranged in a circumferential series; of an axle fitted in said hub; means securing said axle in stationary relation with said hub; and, adjustable means carried by said axle arranged to thrust spokes outwardly in said recesses, substantially as set forth.

3. The combination with a hub provided with spoke-recesses arranged in a circumferential series; of an axle fitted in said hub; means securing said axle in stationary relation with said hub; and adjustable means carried by said axle arranged to thrust spokes outwardly in said recesses, comprising a cone on said axle and a wedge bearing on said cone, substantially as set forth.

4. The combination with a hub provided with spoke-recesses

arranged in a circumferential series; of an axle fitted in said hub; means securing said axle in stationary relation with said hub; adjustable means carried by said axle arranged to thrust spokes outwardly in said recesses, comprising a cone on said axle and a wedge bearing on said cone; and a nut on said axle arranged to shift said wedge axially on said cone, substantially as set forth.



5. The combination with a hub provided with spoke-recesses arranged in a circumferential series; of an axle fitted in said hub in stationary relation therewith; a cone on said axle; wedging means arranged to be shifted axially on said cone and thrust radially in opposition to said recesses, substantially as set forth.

6. The combination with a hub comprising opposed complementary sections having spoke-recesses arranged in a circumferential series; of an axle fitted in said hub; means on said axle arranged to clamp said hub-sections and axle in relatively stationary relation; a cone on said axle; a wedge ring fitted to said cone; and, means arranged to shift said wedge ring axially on said cone and expand said ring radially in opposition to said recesses, substantially as set forth.

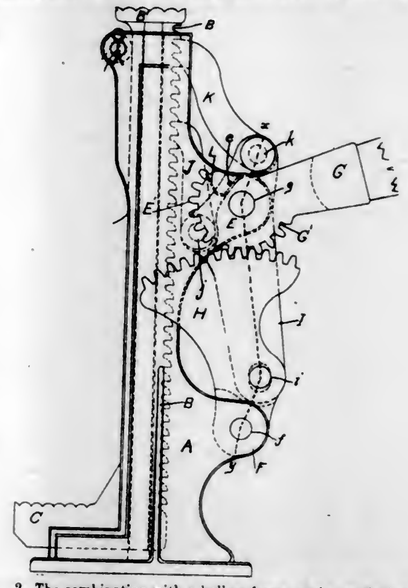
7. The combination with a hub provided with spoke-recesses arranged in a circumferential series; of an axle fitted in said hub in stationary relation therewith; adjustable means in said hub arranged to thrust spokes outwardly in said recesses; a bearing-sleeve secured on said axle in stationary relation therewith; and, a journal in which said sleeve and axle are mounted to rotate, substantially as set forth.

8. The combination with a hub provided with spoke-recesses arranged in a circumferential series; of an axle fitted in said hub in stationary relation therewith; means in said hub adjustable to thrust spokes outwardly in said recesses; and, a tubular journal in which said axle is mounted to rotate, substantially as set forth.

9. The combination with a tubular journal comprising opposite complementary sections; of bearing-sleeves mounted to rotate at the respectively opposite ends of said journal; independent axles carried by said sleeves; hubs secured in respectively stationary relation with said axles, each comprising a circumferential series of spoke-recesses; and, adjustable means in said hubs arranged to thrust spokes outwardly in said recesses, substantially as set forth.

819,825. **LIFTING-JACK.** NICHOLAS WEILER, Sioux City, Iowa. Filed Sept. 9, 1905. Serial No. 277,664.

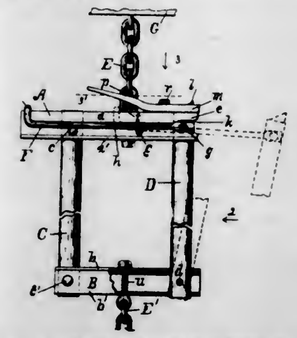
Claim.—1. The combination with a hollow frame, and a vertical, movable toothed bar in said frame, of a hand-lever having a cogged sector fulcrumed to the frame, a segment of gear having cogs adapted to mesh therewith fulcrumed to the frame underneath the hand-lever, a pawl-bearing rock-lever fulcrumed to the frame and guided by said gear, pawls one above the other fulcrumed to said rock-lever and adapted to engage the teeth of said bar, whereby when the hand-lever is operated and a reciprocating motion imparted to said gear the pawls alternately engage said bar, and means for holding said pawls in engagement, substantially as described.



2. The combination with a hollow frame, and a vertical, movable toothed bar in said frame, of a hand-lever having forked cogged sectors fulcrumed to the frame, a forked segment of gear fulcrumed to the frame underneath the sectors and having cogs to mesh with the teeth of said sectors, a triangular-shaped rock-lever fulcrumed with the forked sectors to the frame and guided within said forked segment of gear, pawls fulcrumed to the angles of said rock-lever one above the other and adapted to engage the teeth of said bar, and means for holding said pawls in engagement with said bar, substantially as described.

3. The combination with a hollow frame having an upper and lower fulcrum, and a vertical toothed bar in said frame, of a hand-lever pivoted to the upper fulcrum, a pawl-bearing lever fulcrumed with said hand-lever, pawls adapted to engage said bar pivoted to said pawl-bearing lever, and a second lever pivoted to the lower fulcrum and also to said pawl-bearing lever, substantially as described.

819,826. **STANCHION.** FRANK R. WELCHER, Newark, N. Y. Filed Dec. 14, 1905. Serial No. 291,718.



Claim.—1. A stanchion consisting of an upper and a lower horizontal bar, and rods connecting said bars, one rod being rigid with the bars and the other rod being hollow and joined pivotally to the lower bar and adapted to occupy an end opening in the upper bar, a latch within said hollow rod and a controlling-link for said pivotal rod, with branches at the sides of the upper bar and connected with

the pivotal rod the connection of said rod serving also to hold said latch in the hollow rod.

2. A stanchion comprising upper and lower bars, a pair of vertical rods connecting said bars one rod being rigidly in place and the other adapted to swing away from the upper bar and having a catch at its upper end, and a lever-latch on the upper bar to engage said catch to control the swinging rod and a suspending device passing loosely through said lever-latch.

3. A stanchion comprising upper and lower parallel bars the upper one having a cavity at one end, a pair of vertical rods connecting the bars one being rigid and the other held pivotally in the lower bar with its upper end occupying said cavity in the upper bar, a catch on the pivotal rod and a spring-controlled latch on the upper bar for said catch, said latch being lengthened and acting as a lever of the first order having fulcrum-bearing on the said upper bar, and a suspending device passed loosely through said latch.

4. A stanchion comprising upper and lower hollow bars parallel and in a plane, a pair of vertical rods joining the bars the said four parts constituting a rectangular frame, a chain for supporting the frame, one rod being rigid with the bars and the other pivoted in the lower bar and adapted to swing away from the upper bar, a catch on the pivotal rod and a lever-latch on the upper bar adapted to engage said catch, a spring in the upper bar to control the lever-latch the latter having an opening occupied by said chain, and having a fulcrum-bearing on the upper bar.

819,827. **REGISTER-CLAMP.** THEODOR WERSEL, St. Paul, Minn. Filed July 20, 1903. Serial No. 166,247.



Claim.—A register-clamp comprising, in combination, a block having a longitudinal centrally-arranged groove extending from end to end of the block, bearing register-marks in its upper surface upon each side of said groove, inclined and horizontal ways provided in the walls of said groove, said inclined ways extending from the bottom of said groove at one end of the block to a point near the top of the groove at the other end of the block, a clamping-jaw having projections to enter said horizontal ways and slide over said marks and provided in its upper surface with a scale, a block having projections to enter and slide in said inclined ways and a screw having a head to revolve over said scale and a shank to pass through said jaw and said block, substantially as described.

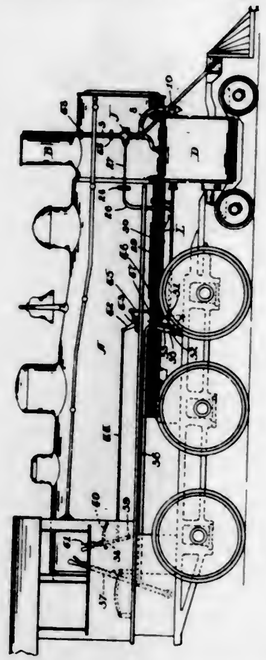
819,828. **LOCOMOTIVE.** FRANCIS O. WHEALON, St. Paul, Minn., assignor to International Railway Device Company, a Corporation of Minnesota. Filed Oct. 31, 1904. Serial No. 230,666.

Claim.—1. In combination with a locomotive, its cylinder, exhaust passage-way from the cylinder to the smoke-chamber and valve controlling its steam inlet and exhaust ports, an auxiliary passage-way leading to a point outside of said smoke-chamber for the exhaust-steam, a steam-operated valve in said auxiliary passage-way, means for controlling said valve, a connection between the valve controlling the inlet and exhaust ports and said auxiliary passage-way, and an automatic valve in said connection to open the same when the supply of live steam is checked.

2. A device of the class set forth, consisting, in combination with a locomotive having a smoke-chamber, its cylinders and a main exhaust passage-way leading from the cylinders and projecting into said smoke-chamber, of an auxiliary passage-way connected with said main exhaust passage-way having valve mechanism for modifying the size of the same, consisting of a steam-operated valve and means for controlling the operation of said valve.

3. A device of the class set forth, consisting, in combination with a locomotive having a smoke-chamber, its cylinders and a main exhaust passage-way leading from the cylinders and projecting into said smoke-chamber, of an auxiliary passage-way connected with said main exhaust passage-way having valve mechanism for modifying the size of the same, consisting of a steam-operated valve and means for controlling the operation of the same, a connection between the auxiliary passage-way and the live-steam ports in each of said cylinders, and an automatic valve in said connection.

4. In combination with a locomotive having a main passage-way forming an exhaust-outlet between the cylinders and the smoke-chamber, a branch passage-way from said main passage-way leading to a point outside of said smoke-chamber, automatic mechanism for modifying the size of said branch passage-way, a connection between the steam-inlets of said cylinders and said branch passage-ways, and automatic valve mechanism in said connection.



5. A device of the class set forth, comprising a passage-way between the cylinders and smoke-chamber of a locomotive for the exhaust-steam, a branch from said passage-way to the exterior of said smoke-chamber, an intercepting-valve, and means for opening and closing the branch passage-way to permit said cylinders to be used either in simple or compound connection.

6. A device of the class set forth, comprising a passage-way between the cylinders and smoke-chamber of a locomotive for the exhaust-steam, a branch from said passage-way to the exterior of said smoke-chamber, means for connecting said cylinders to operate either, in single or compound, and automatic valve mechanism for closing the branch passage-way leading from the high-pressure cylinder when said cylinders are connected in compound.

7. A device of the class set forth, comprising a passage-way between the cylinders and smoke-chamber of a locomotive for the exhaust-steam, a branch from said passage-way to the exterior of said smoke-chamber, means for connecting said cylinders to operate in compound, and means for closing said branch leading from the high-pressure cylinder when said cylinders are connected in compound.

8. A device of the class set forth, comprising a passage-way between the cylinders and smoke-chamber of a locomotive for the exhaust-steam, a branch from said passage-way to the exterior of said smoke-chamber, means for connecting said cylinders in compound, means for closing the branch leading from the high-pressure cylinder, and valve mechanism for modifying the outlet of said branch passage-way leading from the low-pressure cylinder.

9. A device of the class set forth, comprising a passage-way between the cylinders and smoke-chamber of a locomotive for the exhaust-steam, a branch from said passage-way to the exterior of said smoke-chamber, means for connecting said cylinders in compound or simple, means for automatically opening and closing said branch when the cylinders are changed from simple or compound connection, and valve mechanism for modifying said branch from the high-pressure cylinder.

10. A device of the class set forth, comprising a passage-way between the cylinders and smoke-chamber of a locomotive for the exhaust-steam, a branch from said passage-way to the exterior of said smoke-chamber, valve mechanism for regulating the size of the outlet of said branch passage-way, and means for connecting said cylinders in simple or compound and closing the branch leading from the high-pressure cylinder.

11. A device of the class set forth, comprising a passage-way between the cylinders and smoke-chamber of a locomotive for the exhaust-steam, a branch from said passage-way to the exterior of said smoke-chamber, valve mechanism for modifying said branch passage-way, and means for connecting said cylinders in compound and automatically closing the branch leading from the low-pressure cylinder.

12. A device of the class set forth, comprising a passage-way between the cylinders and smoke-chamber of a locomotive for the exhaust-steam, a branch from said passage-way to the exterior of said smoke-chamber, means for connecting said cylinders to operate in simple or compound, valve mechanism for modifying said branch, means for adjusting the operation of said modifying means, and means for closing said branch leading from the high-pressurre cylinder when the cylinders are connected to operate in compound.

13. A compound locomotive having high and low pressure cylinders and operating-valve mechanism for controlling their inlet and exhaust ports, passage-ways from the exhaust-ports of said cylinders to the smoke-chamber, a branch from each of said passage-ways leading to a point outside said smoke-chamber, an intercepting-valve between said cylinders, a valve in the branch leading from the high-pressure cylinder and connected with a source of steam-supply to open the same, means for closing said valve, a mechanically-operated valve in the branch leading from the low-pressure cylinder, and means for opening and closing said last-mentioned valve.

14. A compound locomotive having high and low pressure cylinders and valve mechanism for controlling their inlet and exhaust ports, passage-ways from the exhaust-ports of said cylinders to the smoke-chamber, a branch from each of said passage-ways leading to a point outside of said smoke-chamber, an intercepting-valve between said cylinders, an operating-valve in the branch leading from the high-pressure cylinder to close the same when the cylinders are connected in compound, another valve in the branch leading from the low-pressure cylinder, and means for operating said last-mentioned valve to modify the branch with which it is connected.

15. A compound locomotive having high and low pressure cylinders and valve mechanism for controlling their inlet and exhaust ports, passage-ways from the exhaust-ports of said cylinders to the smoke-chamber, a branch from each of said passage-ways leading to a point outside said smoke-chamber, an intercepting-valve between said cylinders, a valve normally closed in the branch leading from the high-pressure cylinder, means for opening said valve, another valve in the branch leading from the low-pressure cylinder, and means for opening and closing said last-mentioned valve.

16. A compound locomotive having high and low pressure cylinders and valve mechanism for controlling their inlet and exhaust ports, passage-ways from the exhaust-ports of said cylinders to the smoke-chamber, a branch from each of said passage-ways leading to a point outside said smoke-chamber, an intercepting-valve between said cylinders, a valve normally closed in the branch leading from the high-pressure cylinder, means for opening said valve, another valve in the branch leading from the low-pressure cylinder, means for opening and closing said last-mentioned valve, and adjusting mechanism for said last-mentioned valve.

819,829. **TRANSFER-PRESS.** GEORGE WHITE, Jersey City, N. J. Filed Sept. 19, 1903. Renewed Sept. 19, 1905. Serial No. 279,190.

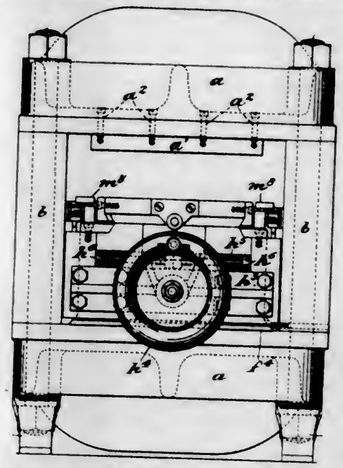
Claim.—1. A press, comprising a frame, a wedge block, a vertically-movable block, a horizontally-reciprocating block mounted on said vertically-movable block and carrying rollers, interposed between said blocks, substantially as described.

2. A press, comprising a frame, a wedge block, a vertically-movable block, a horizontally-reciprocating block mounted on said vertically-movable block, and a screw supported by said wedge block and engaging a nut carried by said reciprocating block, substantially as described.

3. A press, comprising a frame, a vertically-movable block, means to move said block, a horizontally-reciprocating block supported by said vertically-movable block, and means to reciprocate said block, substantially as described.

4. A press, comprising a frame, a vertically-movable block, means to move said block, a horizontally-reciprocating block supported by said vertically-movable block and a screw supported by said vertically-movable block and engaging a nut carried by said reciprocating block, substantially as described.

5. A press, comprising a frame, a wedge block, a nut carried by said frame, a screw engaging said wedge block and nut, a vertically-movable block and a horizontally-reciprocating block mounted on said vertically-movable block, substantially as described.



6. A press, comprising a frame, a vertically-movable block, means to move said block, a horizontally-reciprocating block supported by said vertically-movable block, means to reciprocate said block, a supporting-block mounted on said reciprocating block, and means to move said supporting-block on said reciprocating block, substantially as described.

7. A transfer-press, comprising a frame, a plate-supporting block, means to raise and lower said plate-supporting block, independent means to support the master-roll, substantially as described.

8. A transfer-press, comprising a frame, a plate-supporting block, means to raise and lower said plate-supporting block, and levers pivoted independently of the plate-supporting block to support the master-roll, substantially as described.

9. A transfer-press, comprising a frame, a plate-supporting block, means to raise and lower said plate-supporting block, master-roll-supporting blocks, guides for said master-roll-supporting blocks, and means independent of the plate-supporting block to support said master-roll-supporting blocks, substantially as described.

10. A transfer-press, comprising a frame, a plate-supporting block, means to raise and lower said plate-supporting block, master-roll-supporting blocks, guides for said master-roll-supporting blocks, and levers pivoted upon the frame to support said master-roll-supporting blocks, substantially as described.

11. A transfer-press, comprising a frame, a plate-supporting block, means to raise and lower said plate-supporting block, means to reciprocate said plate-supporting block, and independent means to support the master-roll, substantially as described.

12. A transfer-press, comprising a frame, a plate-supporting block, means to raise and lower said plate-supporting block, means to reciprocate said plate-supporting block, and levers pivoted independently of the plate-supporting block to support the master-roll, substantially as described.

13. A transfer-press, comprising a frame, a plate-supporting block, means to raise and lower said plate-supporting block, means to reciprocate said plate-supporting block, master-roll-supporting blocks, guides therefor carried with the plate-supporting block, and levers to support said master-roll-supporting blocks, substantially as described.

14. A transfer-press, comprising a frame, a plate-supporting block, means to raise and lower said plate-supporting block, means to reciprocate said plate-supporting block, master-roll-supporting blocks, carried with said plate-supporting block, levers pivoted upon the frame to support said master-roll-supporting blocks, and springs applied to said levers, substantially as described.

15. A transfer-press, comprising a frame, a wedge block, a vertically-movable block, a plate-supporting block mounted on said vertically-movable block, and independent means to support the master-roll, substantially as described.

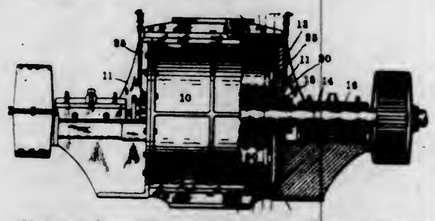
16. A transfer-press, comprising a frame, a vertically-movable block, a horizontally-reciprocating block adapted to support a plate

and mounted on said vertically-movable block, and independent means to support a master-roll substantially as described.

17. A transfer-press, comprising a frame, a vertically-movable block, means to move said block, a horizontally-reciprocating block supported by said vertically-movable block, means to reciprocate said block, a plate-supporting block carried by said reciprocating block, and independent means to support a master-roll, substantially as described.

18. A transfer-press, comprising a frame, a wedge-block, a vertically-movable block, a horizontally-reciprocating block mounted on said vertically-movable block, and independent means to support a master-roll, substantially as described.

819,830. GAS-EXHAUSTER. JOHN T. WILKIN, Connersville, Ind. Filed Jan. 30, 1905. Serial No. 243,214.



Claim.—1. In an exhauster of the two-impeller type, a by-pass chamber formed between the end of an impeller and the adjacent end plate of the casing and communicating with the suction side.

2. In an exhauster of the two-impeller type, a by-pass chamber formed between the end of an impeller and the adjacent end plate of the casing and communicating with the suction side, a stuffing-box around the shaft, and an oiling device therefor.

3. An exhauster having an inclosing casing and a pair of lobed impellers rotatably mounted therein and having an annular groove formed in the end of an impeller adjacent the end plate, and a passage leading from said groove to the suction side of the exhauster.

4. In an exhauster having an inclosing casing and a pair of lobed impellers rotatably mounted therein and having an annular groove formed in the end of the impeller adjacent each end plate, a passage leading from each groove to the suction side of the exhauster, a stuffing-box around the shaft of each impeller, and an oiling device therefor.

5. In an exhauster having an inclosing casing and a pair of lobed impellers rotatably mounted therein and having an annular groove formed in the end of the impeller adjacent each end plate, a passage leading from each groove to the suction side of the exhauster, and means permitting access to each annular groove through the casing.

6. In an exhauster of the two-impeller type, a by-pass chamber formed between the end of the impeller and an adjacent end plate of the casing, said by-pass chamber opening to a region of less pressure than that in the pressure side.

7. In an exhauster having an inclosing casing, and a lobed impeller rotatably mounted therein and having an annular groove formed in the end of the impeller adjacent the end plate, a stuffing-box around the shaft of the impeller, and a passage leading from the said annular groove to a region of less pressure than that in the pressure side.

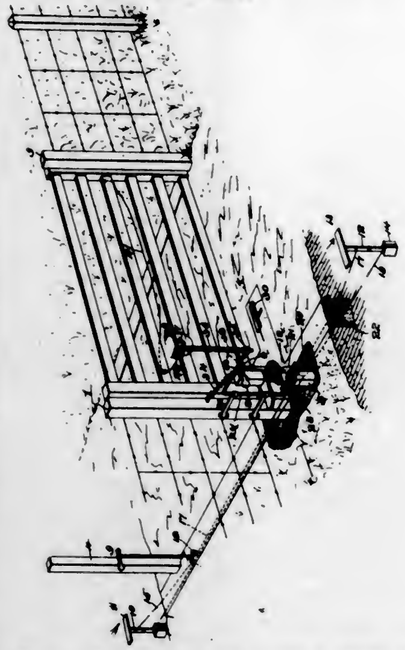
8. In a device of the class described, the combination, with a suitable inclosing casing, of a pair of coacting lobed impellers mounted therein and separating the casing-chamber into two sides, and a by-pass chamber formed between the end of an impeller and the adjacent end plate of the casing and communicating with the casing-chamber upon one side of the impellers.

9. In a device of the class described, the combination, with a suitable inclosing casing, of a pair of coacting lobed impellers mounted therein and separating the casing-chamber into two sides, and a by-pass chamber formed between each end of each impeller and the adjacent end plate of the casing, all of said by-pass chambers communicating with the casing-chamber upon one side only of the impellers.

10. In a device of the class described, the combination, with a suitable inclosing casing, of a pair of coacting lobed impellers mounted therein and separating the casing-chamber into two sides, shafts carrying said lobed impellers projecting through the end plates of the casing, and an annular by-pass chamber formed between each end of each impeller and the adjacent end plate and surrounding the adjacent shaft, all of said by-pass chambers communicating with the casing-chamber upon one side only of the impellers.

11. In a device of the class described, the combination, with a suitable inclosing casing, of a pair of coacting lobed impellers mounted therein and separating the casing-chamber into two sides, shafts carrying said lobed impellers projecting through the end plates of the casing, and an annular by-pass chamber formed between each end of each impeller and the adjacent end plate and surrounding the adjacent shaft, all of said by-pass chambers communicating with the casing-chamber upon one side only of the impellers, a stuffing-box around each shaft, and an oiling device therefor.

819,831. AUTOMATIC GATE AND DOOR. RUSSELL R. WILLIAMS, Morrison, Colo., assignor to Alice L. Williams, Morrison, Colo. Filed Jan. 13, 1905. Serial No. 240,926.



Claim.—1. The combination with a swinging element and a support therefor, of an operating-arm connected to the support, a lock therefor, means for automatically moving the arm when unlocked, a power-transmitting device connected to the arm and bearing on the swinging element, and means for holding said element normally in contact with the power-transmitting device.

2. The combination with a swinging element, and a support therefor, of a movable operating-arm, means for locking the arm against movement, means for automatically operating the arm when unlocked, a motion-transmitting device connected to the arm and bearing on the swinging element, and means connecting said element and arm for holding the element normally in contact with the power-transmitting device.

3. The combination with a swinging element and a support therefor; of an operating-arm, a lock therefor, means for automatically operating the arm when unlocked, a power-transmitting device secured to the arm and bearing on the element, means for unlocking the arm, and a catch for the swinging element.

4. The combination with a swinging element and a support therefor, and means for automatically locking said element in open position; of an operating-arm connected to the support, means for automatically operating the arm, a power-transmitting device connected to the arm and bearing on the element, and means for locking the arm against movement to hold the element in closed position.

5. The combination with a swinging element and a support therefor, and means for automatically locking the element in open position; of an operating-arm mounted upon the support, means for automatically moving the arm, a lock for holding the arm against movement, a power-transmitting device connected to the arm and bearing on the element, and means for successively unlocking said element and the operating-arm.

6. The combination with a swinging element and a support therefor, and means for locking the element in open position; of an operating-arm connected to the support, means for automatically moving the same, a lock for holding the arm against movement, an elastic connection between the element and the operating-arm for holding said element in closed position, when the arm is locked.

7. The combination with a swinging element, a support therefor, and means for locking the element in open position; of an operating-arm, means for automatically moving said arm, a lock for holding the arm against movement, a power-transmitting device connected to the arm and bearing on the element, an elastic connection between said element and the arm, and means for successively unlocking the arm and element.

8. The combination with a swinging element, a support therefor, and means for automatically locking the element in open position; of an operating-arm, means for automatically moving the same, a lock for holding the arm against movement, means connected to the arm and bearing on the element for transmitting motion to said element, an elastic connection between the element and the arm, and means removed from the element and its support for independently unlocking the element and operating-arm.

9. The combination with a swinging element, a support therefor, and means for automatically locking said element in open position, of an operating-arm, means for automatically moving the same, a lock for holding the arm against movement, means connecting the arm and element for positively opening said element in one direction, means connecting said element and arm for automatically closing the element when the same is unlocked, a device for independently operating the locks and means for moving the arm into engagement with its lock.

10. The combination with a swinging element, and a support therefor, and means for locking said element in open position; of an operating-arm, a lock therefor, a spring connection between the arm and support, means for swinging the arm into engagement with the lock, to tension the spring, and an elastic connection between said arm and the swinging element.

11. The combination with a swinging element, and a support therefor, and means for locking said element in open position; of an operating-arm, a lock therefor, a spring connection between the arm and support, means for swinging the arm into engagement with the lock to tension the spring, an elastic connection between said arm and the swinging element, and a power-transmitting device connected to the arm and bearing on the element.

12. The combination with a swinging element, a support therefor, and means for locking the element in open position; of a shaft connected to the support, an operating-arm extending therefrom, a spring connection between said arm and support, a lock for the arm, a power-transmitting device connected to the arm and bearing on the element, a spring connection between said element and arm, operating devices at opposite sides of the swinging element, means connecting said devices and the locks for independently operating said locks, and an operating device adjacent the swinging element for swinging the arm into engagement with its lock.

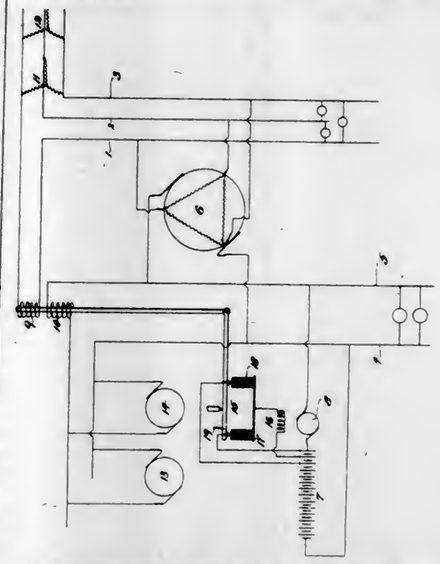
13. The combination with a swinging gate and a support therefor, of means for securing said gate in different adjusted positions, a spring coacting with said gate for moving the same to an opened position, and a spring for moving said gate from an opened to a closed position.

14. The combination with a support, of a swinging gate carried thereby, elastic means operating against said gate for moving the same to and fixedly securing it in an adjusted position, and elastic means for moving said gate from said adjusted position.

15. In combination with a support, a swinging gate carried by said support, means for securing said gate in different positions, a spring coacting with said gate for moving the same from a closed to an opened position, and automatically-actuated means for returning the said gate to its closed position.

819,832. SYSTEM OF ELECTRICAL DISTRIBUTION. JOSEPH L. WOODBRIDGE, Philadelphia, Pa. Filed Apr. 19, 1905. Serial No. 256,476.

Claim.—1. The combination of alternating and direct current circuits having an appropriate converter operatively connected between them, a battery and booster, operatively arranged in respect to the direct-current circuit, a booster-regulator, and solenoids interposed in the generator-circuits of the direct and alternating systems and operatively arranged in respect to the booster-regulator, substantially as described.



2. The combination of alternating and direct current circuits having an appropriate converter operatively connected between them, a battery and booster operatively arranged in respect to the direct-current circuit, and a booster-regulator responsive to variations of the load on either circuit, substantially as described.

3. The combination of alternating and direct current circuits having an appropriate converter operatively connected between them, a battery operatively arranged in respect to the direct-current circuit, and means adapted to cause the battery to charge and discharge and operatively arranged to respond to variations of load on either circuit, substantially as described.

819,833. COMPOSITION FOR ROOFING, PAVING, &c. EDWARD J. YETTER, Denver, Colo. Filed Apr. 12, 1904. Serial No. 202,762.

Claim.—1. A composition of matter for the purposes described having gilsonite and lime sludge as the chief ingredients and combined in suitable proportions.

2. A composition of matter for the purposes described containing gilsonite, lime sludge and a suitable oil or flux, combined in suit able proportions.

3. A composition of matter for the purposes described containing gilsonite, lime sludge and asphaltum or an equivalent, combined in suitable proportions, with an oil or flux, either incorporated in the asphaltum or as a separate ingredient.

4. A composition of matter for the purposes described containing gilsonite and lime sludge as the chief ingredients, combined in approximately any of the various proportions stated, according to inclusion or omission of other ingredients.

5. A composition of matter for the purposes described containing gilsonite, lime sludge and asphaltum or an equivalent, combined in suitable proportions, with an oil or flux added in suitable proportion to bring out the desired temperament which varies according to the nature of the asphaltum.

6. A composition of matter for the purposes described containing gilsonite, lime sludge and asphaltum combined in suitable proportions.

7. A composition of matter for the purposes described comprising gilsonite and lime sludge combined in substantially the proportions specified, oil being added for consistency.

819,834. TORPEDO-GUN. EDMUND L. ZALINSKI, New York, N. Y. Filed June 23, 1905. Serial No. 266,473.

Claim.—1. A gun having a suitable powder-chamber, a barrel for projectiles and a passage for waste gases, and means for directing

gas from the powder-chamber to the gun-barrel or to the escape-passage in definite quantities.



2. A gun having a powder-chamber, a barrel for projectiles and a by-passage, and adjustable means for directing gas from the powder-chamber to the barrel or to the by-passage in regulated proportions.

3. The combination with the powder-chamber and projectile-barrel of a gun, of intermediate mechanism whereby a regulated part of the gas-pressure in the powder-chamber may be admitted to the said barrel, and the remaining powder-pressure diverted.

4. The combination with the projectile-barrel of a gun, and a powder-chamber provided with means for exploding a powder charge therein, of adjustable means for regulating the pressure which may pass from the powder-chamber to the projectile-barrel.

5. In a gun, a projectile, barrel, a powder-chamber, and means for firing powder in the chamber and for admitting only a determined portion of the powder-gases to the barrel to develop a predetermined pressure therein.

6. In a gun, a projectile-barrel, a powder-chamber, interposed means for excluding a part of the powder-gases while permitting the remainder to pass to the barrel, and an index by which the effective amount of gas admitted to the barrel may be observed.

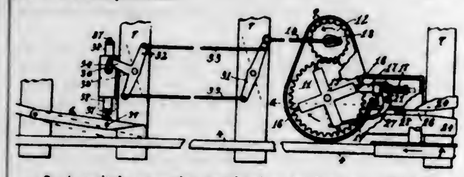
7. In a gun, a powder-chamber, a projectile-barrel and a by-passage, each communicating with said chamber, and a movable part having controlling means outside the gun by which a portion of the pressure in the powder-chamber can be directed to either the by-passage or the barrel.

8. In a gun, a powder-chamber, a projectile-barrel, and a by-passage, each communicating with said chamber, means for controlling the communications between said parts, and a range-dial and index operatively connected to said controlling means, all combined.

819,835. **SWITCH-OPERATING MECHANISM.** JOHN B. ALBRIGHT, Hamilton, Ohio. Filed Dec. 21, 1905. Serial No. 293,736.

Claim.—1. A switch-operating mechanism, having in combination, a four-armed spider, a gear secured thereto and movable therewith, a pinion one-half the size of and in mesh with the gear, a crank carried thereby and lever mechanism actuated by the crank and arranged to throw a switch-tongue.

2. A switch-operating mechanism, having in combination a gear and a pinion in the ratio of one to two, a four-armed spider on the gear, a crank on the pinion, a lever, a connecting-rod engaging the crank therewith, cables secured to the lever, and means actuated by the cables to move and yieldingly maintain a switch-tongue in predetermined positions.



3. A switch-operating mechanism having in combination, a spider, a gear-wheel and a pinion in the relation of one to two actuated thereby, a tumbler, and a dog arranged to be disengaged there by from the gear.

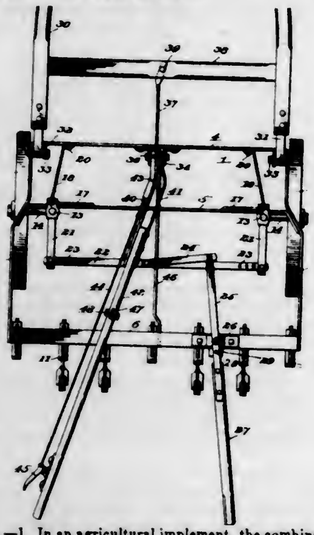
4. A switch-operating mechanism having in combination a four-armed spider, a dog arranged to prevent the rotation thereof and a tumbler arranged to move the dog and release the spider.

5. A switch-operating mechanism having in combination, a gear, stops thereon, a dog movable automatically in engagement therewith, and a tumbler arranged to disengage the dog.

6. A switch-operating mechanism having in combination with a switch-tongue, a housing, sleeves movable therein, a rod engaging with the tongue and movable through the sleeves, a spring arranged to move the sleeves in respective opposite directions, and means to move and maintain the housing in the opposite directions of the rod.

7. A switch-operating mechanism having in combination, a four-armed spider, a gear secured thereto, a pinion one-half the size of the gear meshing therewith, a crank thereon, a connecting-rod carried by the crank, a lever oscillated thereby, a bell-crank lever actuated by and connected thereto with cables, a housing movable thereby, a switch-tongue, and a rod yielding connecting the housing therewith.

819,836. **CULTIVATOR.** SAMUEL L. ALLEN, Moorestown, N. J. Filed Feb. 18, 1903. Serial No. 143,942.



Claim.—1. In an agricultural implement, the combination with a main tool-frame and a draft means hinged to the forward part of said frame, of a lever pivoted to said main frame, means for maintaining said lever in a predetermined position with respect to said draft means for adjusting the angular relation between said draft means and said tool-frame, and means connected to said lever and said tool-frame for permitting said frame and lever to yield with respect to each other.

2. In an agricultural implement, the combination with a main tool-frame, draft means hinged thereto, a lever having direct connection with the tool-frame, means connecting said draft means and said lever for fixing and for allowing adjustment of the relation between said draft means and said tool-frame, and means for allowing said tool-frame to yield in relation to said lever, said connecting means acting to vary the depth to which the tools carried by the tool-frame enter the ground.

3. In an agricultural implement, the combination with a main frame, of draft means hinged thereto, a segmental rack rigidly connected with said draft means, a lever pivoted to said frame, means to permit said frame and lever to yield with respect to each other, and means carried by said lever for engaging said rack to adjust the relation between said draft means and said frame.

4. In an agricultural implement, the combination with the main frame having a tool-gang and a plurality of tools secured to said gang, of draft means hinged to the forward part of said frame, a lever pivoted to said frame, and means for adjustably fixing angle between said draft means and said frame.

5. In an agricultural implement, the combination with a main frame, draft means hinged to the forward part of said frame, a lever pivoted to said frame, a yieldable connection between said lever and said frame, means connecting said draft means and said lever for adjusting the angle between the same.

6. In an agricultural implement, the combination with a main frame, a tool-gang secured thereto, draft means hinged to the forward part of said frame, a lever pivoted to said frame, a yielding connection between said lever and said tool-gang, and means for adjustably fixing the angle between said draft means and said frame.

7. In an agricultural implement, the combination with a main frame, a tool-gang carried thereby, draft means hinged to said main frame, a rack rigidly connected with said draft means, a lever pivoted to said frame, means for adjustably connecting said lever and said rack and a longitudinally-yieldable bar connecting said lever and said tool-gang.

8. In an agricultural implement, a main frame comprising side bars, a front bar and rear tool-carrying bars, and an intermediate cross-bar attached to the side bars, vertically-disposed bars secured to the intermediate bar and having bearings, pivoted bars carried by said bearings and wheels carried by said pivoted bars.

9. In an agricultural implement, a main frame comprising side bars, a front bar and rear tool-carrying bars, an intermediate cross-bar, attached to said side bars, vertically-disposed bars secured to the intermediate bar, having their upper and lower ends bent at right angles to form bearings, for the wheel-pivots, vertical wheel-pivots carried by said bearings, and means connecting said wheel-pivots for changing the angles of said wheels in relation to the frame.

10. In an agricultural implement, a combination with the side bars of the main frame, a tool-bar consisting of upper and lower sections of different weight, the heavier of said sections being adapted to receive the tool-clamps and the other section serving as a brace for the tool-standards.

11. In an agricultural implement, a combination with the side bars of the main frame, a tool-bar comprising upper and lower sections of different weights, tool-clamps engaging the heavier of said sections, tool-standards held in position by said clamps, the lighter of said sections being adapted to bear against said tool-standards to act as a brace therefor.

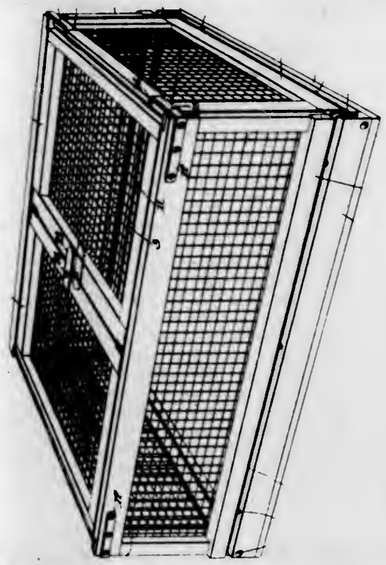
12. In an agricultural implement, the combination with the side bars of the main frame, a tool-gang comprising a lower channel-bar, said channel-bar adapted to receive the tool-clamps and a flat bar adapted to serve as a brace for the tool-standard, said channel-bar and said flat bar being fixed at their ends to the side bars.

13. In an agricultural implement, the combination of the side bars of the main frame, a tool-gang comprising a lower channel-bar having its ends bent up at angles and an upper flat bar having its ends bent down at angles and adapted to engage the bent-up ends of the channel-bar, bolts connecting the bent ends of each bar and passing through the side bars of the main frame.

819,837. **FOLDING CRATE.** OLIVER L. ANDERSON, Dallas, Tex. Filed May 11, 1905. Serial No. 259,943.

Claim.—1. In a device of the class described, a bottom member having side flanges, hinge-rods connecting said side flanges at the ends thereof, one of said rods being located in a plane above the other rod, hinge-rods supported above and adjacent to the upper edges of the side flanges, end members connected hingedly with the end rods and having notches near their upper corners, side members mounted hingedly upon the rods above the side flanges, and hook members connected with said side members and adapted for engagement with the notches near the upper corners of the end members when the device is extended and with the end-supporting hinge-rods when the device is folded.

2. In a device of the class described, a bottom member having side flanges, hinge-rods supported above and adjacent to said side flanges, transversely-disposed hinge-rods connecting the side flanges near the ends thereof, side members connected hingedly and slidably with the rods supported above the side flanges, and hooks upon said side members adapted for engagement with the transverse hinge-rods.



3. In a device of the class described, hingedly-supported side members, hingedly-supported end members, top members connected hingedly with the upper edges of the end members, keepers upon the inner sides of the side members, and locking members connected with the top members; said locking members including keeper-engaging shanks one of which is provided with a laterally-extending lug.

4. In a device of the class described, hingedly-supported side members, hingedly-supported end members, top members connected hingedly with the upper edges of the end members, keepers upon the inner sides of the side members, and locking members connected with the top members; said locking members including keeper-engaging shanks having laterally-extending lugs supported pivotally upon the abutting edges of the end members whereby said shanks may be folded under said end members.

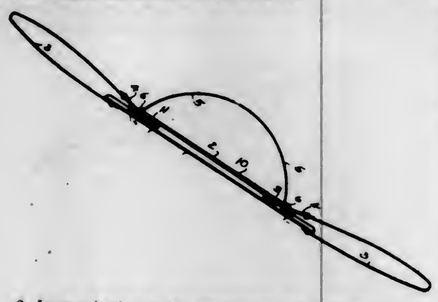
5. Side members having keepers upon their inner sides near their upper edges, hingedly-supported top members having meeting edges disposed in registry with the keepers, and locking members pivoted upon the abutting edges of the top members and capable of folding under the latter; said locking members including keeper-engaging shanks one of which is provided with a laterally-extending lug.

6. In a device of the class described, a bottom member having side flanges, hinge-rods supported above and adjacent to the upper edges of said flanges, transverse rods connecting said flanges near the ends thereof, side members hingedly supported upon the hinge-rods above the side flanges, end members hingedly supported upon the transverse rods and having recesses near their upper corners, hooks upon the side members adapted for engagement with said recesses, top members connected hingedly with the end members, keepers upon the inner sides of the side members in registry with the meeting edges of the top members, keeper-engaging locking members pivoted upon said top members, and a double turn-button connected with one of said top members.

819,838. **ANIMAL-TRAP.** PRESTON ARMSTRONG, Shelton, Wash., assignor of one-half to Lemuel R. Byrne, Shelton, Wash. Filed June 17, 1905. Serial No. 265,682.

Claim.—1. In an animal-trap, the combination of a bed-plate having an upturned edge, a pair of springs oppositely secured to said bed-plate, and a flexible loop secured to and extending between the free ends of said springs and engaging said bed-plate at points intermediate said springs and adjacent to the upturned edge of the bed-

plate whereby when said loop is pulled taut it acts in conjunction with said edge to kill the animal therebetween.

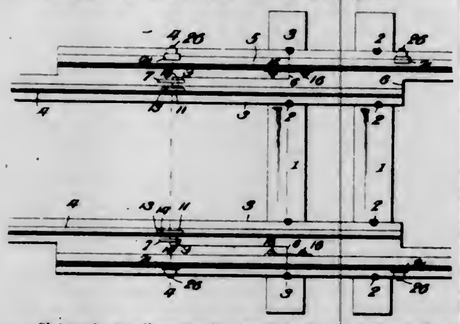


2. In an animal-trap, the combination of a bed-plate, a spring pivotally secured thereto, a head-plate pivotally secured to said spring, and a loop engaging said head-plate and adapted to be pulled thereby.

3. In an animal-trap, the combination of a bed-plate, a pair of springs pivotally secured to the ends of said bed-plate, head-plates secured to the ends of said springs, and a loop extending between said head-plates and adapted to be pulled thereby.

4. In an animal-trap, the combination of a bed-plate, opposite springs secured to the ends thereof, a flexible loop joining said springs and adapted to be pulled thereby, a pan pivoted to said plate and holding down one of said springs, and independent means for holding down the other spring and adapted to be removed by said pan after said first spring has been released.

819,839. RAILWAY. WILLIAM H. ARNOLD and HENRY SMITH, Thomasville, Ga. Filed June 29, 1905. Serial No. 267,625.



Claim.—1. A railway-track comprising a series of base-plates adapted to be spiked or otherwise secured to cross-ties, track-rail sections formed integrally upon the tops of said base-plates, guard-rail sections formed integrally upon the tops of said base-plates and extending parallel with said track-rail sections, said base-plates having their abutting ends cut away so that said track-rail sections and guard-rail sections overlap each other and break joints, substantially as described.

2. A railway-track comprising a series of base-plates adapted to be secured upon cross-ties, track-rail sections formed integrally upon said base-plates, guard-rail sections formed integrally upon said base-plates and extending parallel with said track-rail sections, locking-bars connecting said base-plates, locking-bars connecting said track-rail sections, and substantially U-shaped bolts connecting the abutting ends of the guard-rail sections, substantially as described.

3. A railway-track comprising a series of base-plates adapted to be secured upon cross-ties, track-rail sections formed integrally upon said base-plates, guard-rail sections formed integrally upon said base-plates and extending parallel with said track-rail sections, locking-bars connecting said track-rail sections, and substantially U-shaped bolts connecting the abutting ends of the guard-rail sections, a pipe or tubular conduit extending through longitudinal grooves or channels formed in said guard-rail sections, and clamping-plates for securing said conduits in said channels, substantially as described.

4. The combination of a base-plate formed upon its upper side with an integral track-rail section, and an integral guard-rail section extending parallel with said track-rail section, said guard-rail section being formed with a longitudinally-extending channel, a pipe or tubular conduit in said channel, and a clamping-plate upon said guard-rail for securing said conduit in said channel, substantially as described.

819,840. RAILROAD-TIE. GARDNER A. BELKNAP, Connoautville, Pa. Filed Jan. 3, 1906. Serial No. 294,437.



Claim.—1. A rail-fastening device for railroad-rails consisting of a cross-tie having a transversely and longitudinally slotted top, buttons to fit in said transverse slots, rods having hooks thereon projecting from said longitudinal slots, and means to secure said buttons and rods in position, substantially as shown and described.

2. A rail-fastening device for railroad-rails comprising a cross-tie having a circular hole adjacent to each end with slots extending therefrom transversely of the tie and slots extending longitudinally of the tie, buttons having round shanks to fit into said circular holes and narrow webs to fit into the slots extending from said circular holes, a rod having a hooked end projecting from each longitudinal slot, and means to secure said buttons and rods in position, substantially as shown and described.

3. A rail-fastening device for railroad-rails comprising a cross-tie having a circular hole adjacent to each end with slots extending therefrom transversely of the tie and slots extending longitudinally of the tie, buttons having round shanks to fit into said circular holes and narrow webs to fit into the slots extending from said circular holes, a rod having a hooked end projecting from each longitudinal slot, a wide portion on each rod to fit between the button-shanks, and means to secure the rods in position, substantially as shown and described.

4. A railroad-tie comprising an inverted casing, a core of plastic material in said casing, the top of said casing provided with circular holes adjacent to each end with slots extendng therefrom transversely of the tie and slots extending longitudinally of the tie, the core aforesaid channeled under said top from the longitudinal slots to the ends of the tie, buttons having round shanks to fit into said circular holes and narrow webs to fit into the slots extending from said circular hole transversely of the tie, heads on said buttons to fit the edges of the rail-base, a rod inserted in each channel in said core having a wide portion seated between the shanks on said buttons, a hook on one end of each rod projecting from the longitudinal slot in the tie and clamping the other edge of the base of the rail, a dovetail-shaped notch at each end of the top, a clip secured in said notch having a hole therein to receive the free end of the rod, said free end of the rod threaded, a nut secured on said threads, and an inverted-U-shaped member inserted in said notch and engaging the sides of the nut, substantially as shown and described.

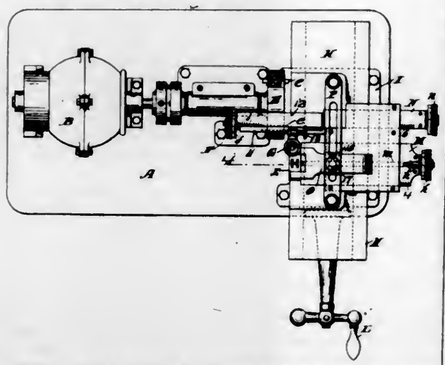
5. A railroad-tie comprising an inverted casing having inwardly-extending flanges on each base edge, a core of plastic material in said casing, the top of the casing provided with circular holes adjacent to each end with slots extending therefrom transversely of the tie, and slots extending longitudinally of the tie, the core aforesaid channeled under said top from the longitudinal slots to the ends of the tie, buttons having round shanks to fit into said circular holes and narrow webs to fit into the slots extending from said circular holes transversely of the tie, heads on said buttons to fit the edges of the rail-base, a rod inserted in each channel in the core having a wide portion seated between the shanks on said buttons, a hook on one end of each rod projecting from the longitudinal slot in the tie and clamping the other edge of the base of the rail, a dovetail-shaped notch at each end of the top, a clip secured in said notch having a hole therein to receive the free end of the rod, said free end of the rod threaded, a nut secured on said threads, and an inverted-U-shaped member inserted in said dovetail-shaped notch having beveled sides to fit said notch and engaging the sides of said nut, substantially as shown and described.

819,841. ART OF PRINTING. JAMES F. BELL, Minneapolis, Minn. Filed Dec. 9, 1905. Serial No. 291,060.



Claim.—The method of printing, which consists in printing on portions only of the face of partially-transparent material; printing or stenciling corresponding portions of the back of the material to render them opaque; and lastly printing or stenciling with translucent color or colors the blank spaces intervening the opaque portions on the back of the material.

819,842. MATRIX-TRIMMING AND SIMILAR MACHINE. LINN B. BENTON, New York, N. Y., assignor to American Type Founders Company, Jersey City, N. J., a Corporation of New Jersey. Filed June 20, 1905. Serial No. 266,168.



Claim.—1. In a machine for trimming matrices and the like, the combination with a cutter, of a microscope provided with a locator, means for adjusting the microscope to position the locator relatively to the cutting-line, and a matrix-holder by which the matrix is held in position when adjusted by the locator, said cutter and matrix-holder being relatively movable in a fixed path for trimming.

2. In a machine for trimming matrices and the like, the combination with a cutter, of a microscope provided with a locating-line, means for adjusting the microscope to position the locating-line relatively to the cutting-line, and a matrix-holder by which the matrix is held in position when adjusted by the locating-line, said cutter and matrix-holder being relatively movable in a fixed path for trimming.

3. In a machine for trimming matrices and the like, the combination with a cutter, of a microscope provided with a locating-line parallel with the cutting-line, means for adjusting the microscope to position the locating-line relatively to the cutting-line, a screw matrix-slide for positioning the matrix-block by the locating-line for trimming, and a matrix-holder by which the matrix-block is held in adjusted position, said cutter and matrix-holder being relatively movable in a fixed path for trimming.

4. In a machine for trimming matrices and the like, the combination with a cutter, of a microscope provided with a locating-line parallel with the cutting-line, means for adjusting the microscope to position the locating-line relatively to the cutting-line, a screw matrix-slide for positioning the matrix-block by the microscope locating-line for trimming, a screw-slide carried by the matrix-slide for adjusting the matrix-block at an angle to the matrix-slide, and a matrix-holder by which the matrix-block is held in adjusted position, said cutter and matrix-holder being relatively movable in a fixed path for trimming.

5. In a machine for trimming matrices and the like, the combination with a cutter, of a microscope provided with a locator, means for adjusting the microscope to position the locator relatively to the cutting-line, a screw matrix-slide for positioning the matrix-block by the microscope-locator for trimming, and a carriage for the matrix-slide and matrix-block movable transversely to the cutter and microscope and parallel with the cutting-line.

6. In a machine for trimming matrices and the like, the combination with a cutter, of a microscope provided with a locator, means for adjusting the microscope to position the locator relatively to the cutting-line, a screw matrix-slide for positioning the matrix-block by the microscope-locator for trimming, a carriage for the matrix-slide and matrix-block movable transversely to the cutter and microscope and parallel with the cutting-line, and a clamp for holding the matrix-block in position during trimming.

7. In a machine for trimming matrices and the like, the combination with a cutter, of a microscope provided with a locator, a micrometer-screw for adjusting the microscope to position the locator relatively to the cutting-line, a screw-slide for positioning the matrix-block by the microscope-locator for trimming, and a matrix-holder by which the matrix-block is held in adjusted position, said cutter and matrix-holder being relatively movable in a fixed path for trimming.

8. The combination with cutter-head E, of microscope G having cross-lines 2, means for adjusting the microscope to position the cross-lines relatively to the cutting-line, a carriage H for moving the matrix-block parallel with the cutting-line, and a clamp for clamping the matrix-block on the carriage.

9. The combination with cutter-head E, of the microscope G provided with a locator, means for adjusting the microscope to position the locator relatively to the cutting-line, carriage H for moving the matrix-block parallel with the cutting-line, a clamp for clamping the matrix on the carriage, matrix-slide M, and matrix-slide N for positioning the matrix-block for end trimming.

10. The combination with cutter-head E, of microscope G provided with a locator, means for positioning the microscope relatively to the cutter, matrix-slide M, and a screw-slide in the slide M for adjusting the matrix-block at an angle to the slide M, and a matrix-holder, said cutter-head and matrix-holder having relative movement in a fixed path for trimming the matrix-block.

11. The combination with cutter-head E, of microscope G provided with a locator, means for positioning the microscope relatively to the cutter, matrix-slide M, and a screw-slide in the slide M having a shoulder adapted to hold the corner of a matrix-block for adjusting the matrix-block at an angle to the slide M, and a matrix-holder, said cutter-head and matrix-holder having relative movement in a fixed path for trimming the matrix-block.

12. The combination with the microscope G provided with a locator, a cutter, and means for adjusting the microscope relatively to the cutter of a forked matrix-clamp, clamping-bar P, and clamping-screw 17 adjustable along said bar, and a matrix-holder, said cutter-head and matrix-holder having relative movement in a fixed path for trimming the matrix-block.

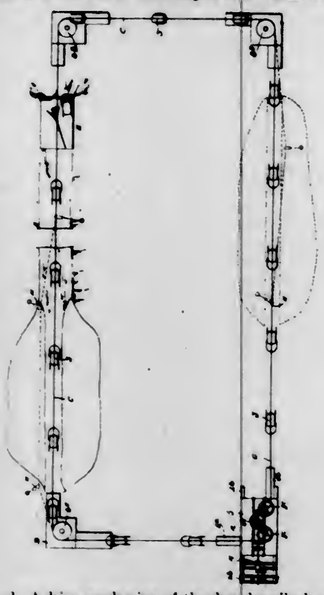
13. In a matrix-trimming machine, the combination with matrix-adjusting slide M, of small slide *m* carried by said matrix-adjusting slide, and having a shoulder adapted to receive the corner of a matrix-block for adjusting the matrix-block at an angle to the matrix-adjusting slide.

14. In a matrix-trimming machine, the combination with matrix-adjusting slide M, of small slide *m* carried by said matrix-adjusting slide, and having two shoulders adapted to receive the corner of a block on either side of the slide *m* for adjusting the matrix-block at an angle to the matrix-adjusting slide.

15. In a machine for trimming matrices and the like, the combination with a cutter, of a microscope having a cross-line 3 adjustable angularly for positioning a matrix-block with inclined design, means for adjusting said microscope to position the cross-line 3 relatively to the cutting-line, and a matrix-holder, said cutter and matrix-holder having relative movement in a fixed path for trimming the matrix-block.

16. In a machine for trimming matrices and the like, the combination with the cutter, of the microscope G having the fixed cross-lines 2 and the rotatable sleeve 14 carrying cross-line 3 for positioning the matrix-block, means for adjusting the microscope to position the cross-line relatively to the cutting-line, and a matrix-holder, said cutter and matrix-holder having relative movement in a fixed path for trimming the matrix-block.

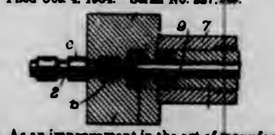
819,843. GRADING AND EXCAVATING MACHINE. STEPHEN H. BLOOMER, Seattle, Wash. Filed Aug. 9, 1905. Serial No. 273,396.



Claim.—1. A drive mechanism of the class described, comprising a base, a supporting-frame mounted thereon, a plurality of sheaves rotatably mounted on said supporting-frame and held to rotate in a horizontal plane above the base, said sheaves adapted to receive an endless conveyer-cable, gear connections between all of said sheaves, a drive-motor, gear connections between said drive-motor and said sheaves, substantially as shown and described.

2. A drive mechanism for excavating apparatus comprising a supporting-sled, a platform thereon, a horizontal frame supported above said sled, a plurality of spindles mounted in bearings in said horizontal plane, intermeshing gears on said spindles, sheaves secured to the lower end of said spindles and rotating in the same horizontal plane above the sled-platform, and a supplemental shaft mounted on said sled, gear connections between said supplemental shaft and said spindle-gears, a drive-motor, gear connections between said drive-motor and said supplemental shaft, an entrant and exit guideway for said sled, all being arranged substantially as shown and described.

819,844. MANUFACTURE OF NUTS. OTTO BRÜNE, Benrath, Germany. Filed Oct. 4, 1904. Serial No. 227,149.



Claim.—1. As an improvement in the art of manufacturing nuts, the method herein described which consists in peripherally grooving a rod or bar thereby forming a series of preliminary blanks connected by necks of metal, and enlarging said blanks by forcing thereinto a portion of the metal of the adjacent blank and the neck of metal connecting said blanks, substantially as set forth.

2. As an improvement in the art of manufacturing nuts, the method herein described which consists in forming a series of blanks smaller than the desired article and then laterally enlarging said blanks, by forcing into one blank a portion of the metal of an adjacent blank.

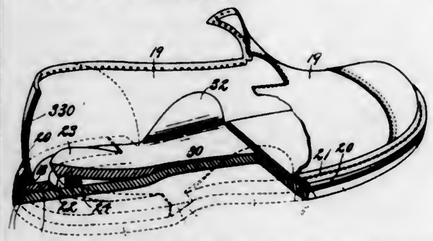
3. As an improvement in the art of manufacturing nuts, the method herein described which consists in forming a series of connected blanks having reduced connecting-necks and separating one of the blanks from the succeeding blank by forcing the connecting-neck into the succeeding blank.

4. As an improvement in the art of manufacturing nuts, the method herein described which consists in transversely grooving a rod or bar thereby forming a series of connected blanks, and by a single punch-stroke punching out the metal at the center of one blank and forcing the metal so removed into the next blank.

5. As an improvement in the art of manufacturing nuts, the method herein described which consists in transversely grooving a bar or rod thereby forming a series of connected blanks, punching out the metal at the center of one blank and forcing the metal so removed and the connecting-neck into the next blank, thereby severing the first blank from the next adjacent blank.

6. As an improvement in the art of manufacturing nuts, the method of operation herein described which consists of completing the perforation of a previously-formed and partially-perforated nut-blank, severing the same from the parent rod, and effecting the partial or preliminary perforation of another blank, and all at and by a single punch-stroke, substantially as described.

819,845. SHOE. HENRY F. BROWNE, Swampscott, Mass. Filed Jan. 25, 1905. Serial No. 242,635.



Claim.—1. A spring-heel shoe having a heel-cushion pocket, the bottom of which is located below the upper portion of the inclined breast of the spring-heel, said breast forming the front wall of the pocket, and an elastic cushion having flat substantially parallel upper and lower faces and formed to occupy said pocket and having its under side beveled at the forward end to abut against the inclined breast, the upper side of the cushion being substantially flush with the highest part of the breast, the margin of the cushion being within the area of the heel portion of the upper.

2. A spring-heel shoe having an outer sole offset at one end to form the tread portion, and the inclined breast of a spring-heel, the upper surface of the said tread portion being located below the upper portion of the inclined breast, and forming the bottom of a cushion-pocket, the front wall of which is formed by the inclined breast, and an elastic cushion formed to occupy said pocket and having its under side beveled at the forward end to abut against the inclined breast, the upper side of the cushion being substantially parallel with the tread-surface of the tread portion, and substantially flush with the highest portion of the inclined breast, the margin of the cushion being within the area of the heel portion of the upper.

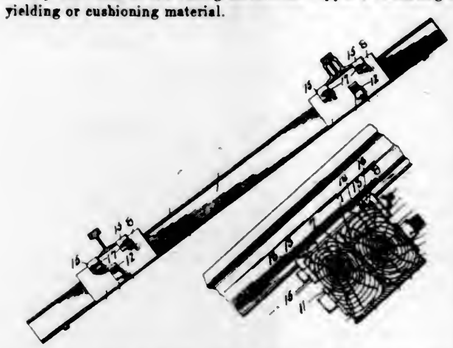
3. A spring-heel shoe having an outer sole, offset at one end to form the top lift and breast of a spring-heel, and a filling-lift comprising a U-shaped piece or portion and a central piece or portion bearing on the top lift and beveled portions bearing on the end portions of the breast.

819,846. METALLIC RAILROAD-TIE AND RAIL-FASTENING. CASPER BUHRER, Sandusky, Ohio. Filed July 12, 1905. Serial No. 269,279.

Claim.—1. A railroad-tie having a metallic element comprising a web, an enlargement at its upper edge and two bottom flanges; and cushioned supports for track-rails resting upon said flanges and extending upwardly on each side of the web to receive the track-rails.

2. A railroad-tie having a metallic element comprising a web, a flange at its top edge and two bottom flanges; and supports for track-rails resting upon said flanges and extending upwardly on each side of the web; said supports being cushioned.

3. A railroad-tie having a metallic element comprising a web, an enlargement at its top edge and two bottom flanges; and supports for track-rails resting upon said flanges and extending upwardly each side of the enlargement; said supports consisting of yielding or cushioning material.



4. A railroad-tie having a metallic element comprising a web, an enlargement at its top edge and two bottom flanges; and supports for track-rails resting upon said flanges and extending upwardly each side of the web and the enlargement; said supports consisting of wood suitably secured to the metallic element.

5. A railroad-tie having a metallic element comprising two bottom flanges, a web and an enlargement, such as a bulb or flange or flanges, at the upper edge of the web; and supports for track-rails each support made in two pieces and resting upon the bottom flanges and extending upwardly each side of the web to receive the track-rails.

6. A railroad-tie comprising a metallic element having two bottom flanges, a web and an enlargement, such as a bulb, flange or flanges, at the upper edge; and supports for track-rails resting upon said flanges; said supports being cushioned.

7. A railroad-tie having a metallic element comprising two bottom flanges, a web and an enlargement, such as a bulb, flange or flanges, at the upper edge; and supports for track-rails resting upon said flanges; said supports consisting of yielding or cushioning material extending above the top of the enlargement.

8. A railroad-tie having a metallic element comprising two bottom flanges, a web and an enlargement, such as a bulb, flange or flanges, at the upper edge; and supports for track-rails resting upon said flanges; said supports consisting of two pieces of wood suitably secured to the metallic element.

9. A railroad-tie having a metallic element comprising a web a top flange and two bottom flanges; wooden supports for the track-rails located each side of the web and extending above the top flange: and means for clamping the wooden supports to the metallic element.

10. A railroad-tie comprising a metallic element with top and bottom flanges, and rail-supports each made in two pieces secured to the metallic element adjacent the top flanges and upon each side of said metallic element.

11. A railroad-tie comprising a metallic element with top and bottom flanges, and yielding rail-supports secured to the metallic element on each side and adjacent the flanges.

12. The combination with an I-shaped metallic beam, of rail-supports located adjacent the ends of the beam and upon each side of the web; and means for uniting the supports to the I-beam.

13. The combination with an I-shaped metallic beam, of yielding rail-supports located adjacent the ends and upon each side thereof.

14. The combination with an I-shaped metallic beam, of wooden rail-supports located adjacent the ends and upon each side of the same; and means for holding the supports in place.

15. The combination with an I-shaped beam having the upper flanges of less width than the lower flanges, of wooden rail-supports secured to the said beam upon each side of the web.

16. The combination with an I-shaped metallic beam, of rail-supports located each side of the web and each secured in place by a clamp passed around the said supports and through the web of the beam.

17. The combination with an I-shaped metallic beam, of wooden rail-supports each support secured to the beam by a clamp passed around the supports, and bolts passed through the upper portion of each support.

18. The combination with an I-shaped metallic beam, of rail-supports each comprised of two blocks applied to the beam upon opposite sides and extending above the top edge of the beam; and means for securing the blocks in place.

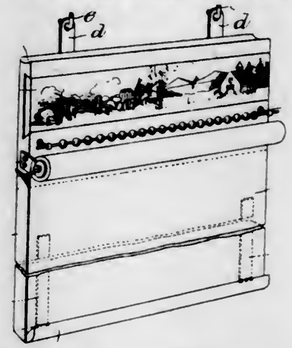
19. The combination with an I-shaped metallic beam, of rail-supports each comprised of two blocks of wood applied to the beam on opposite sides and extending above the top edge of the beam; and means for securing the blocks in place.

20. The combination with an I-shaped beam, of rail-supports each comprised of two blocks of wood located upon opposite sides of the web and resting upon the lower flanges of the beam; and means for securing the blocks in place; each of said blocks being recessed to receive the upper enlarged edge of the beam.

21. The combination with a metallic beam having bottom flanges and a web, of wooden supports at the ends; and fastening means for the rails each comprising a wooden clip, metal clip-cover, and a lag-screw.

22. The combination with a railway-tie, of fastening means for holding the rails in position, each fastening comprising a wooden clip, metal clip-cover, and a lag-screw.

819,847. EDUCATIONAL APPLIANCE. PAUL R. BULLARD, Waltham, Mass. Filed Mar. 22, 1905. Serial No. 251,412.



Claim.—1. An educational apparatus, comprising a base having a movably-connected upper and a lower portion, means for supporting a copy-sheet upon the upper portion, arms projecting from said upper portion below the copy-sheet support, a spring-roller mounted upon the arms, and a flexible blackboard carried by the roller and being movable over the lower portion of the base.

2. An educational apparatus, comprising a base having an upper and a lower portion pivotally connected to one another, means for supporting a copy-sheet upon the upper portion, arms projecting from said upper portion below the copy-sheet support, a spring-roller mounted upon the arms, and a flexible blackboard carried by the roller and being movable over the lower portion of the base.

3. An educational apparatus, comprising a base having an upper and a lower portion pivotally connected to one another, means for supporting a copy-sheet upon the upper portion, arms projecting from said upper portion below the copy-sheet support, a spring-roller mounted upon the arms, a flexible blackboard carried by the roller and being movable over the lower portion of the base, and a brace hinged to said lower portion.

4. An educational apparatus, comprising a base having a movably-connected upper and a lower portion, a roller mounted upon the upper portion, and a flexible blackboard carried by the roller and being movable over the lower portion of base, the outside of the blackboard upon the roll being tangential to said lower portion in one position.

5. An educational apparatus, comprising a base having a movably-connected upper and a lower portion, the upper portion being provided with a groove, a roller mounted upon the upper portion, and a flexible blackboard carried by the roller and being movable over the lower portion of the base, the blackboard extending into the groove when it is wound upon the roller.

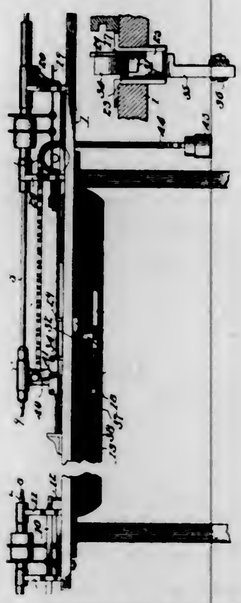
6. An educational apparatus, comprising a base having a movably-connected upper and a lower portion, the upper portion being provided with a groove, a roller mounted upon the upper portion, and a flexible blackboard carried by the roller and being movable over the lower portion of the base, the blackboard extending into the

groove in one position and having its outside tangential to the lower portion in another position.

7. The combination with a base adapted for suspension, said base being provided with a groove for holding a copy-sheet with its outer face substantially flush with the surface of the base, a roller mounted upon the base in close proximity thereto, and a flexible blackboard carried by the roller.

8. The combination with a base adapted for suspension, said base being provided with a groove and a second groove for holding a copy-sheet with its outer face substantially flush with the surface of the base, a roller extending across the base opposite the first-named groove, and a flexible blackboard carried by the roller.

819,848. **MACHINE FOR MAKING BANDS FOR SPINNING AND TWISTING MACHINES.** MISS S. BURDETTE, Greenville, S. C. Filed July 19, 1905. Serial No. 270,394.



Claim.—1. A mechanism of the class described embodying a pair of belt-shifters, a locking-bar connected with one of the shifters, a spring-retracted rod connected with the other shifter, a tripping-dog coacting with the locking-bar, and means for effecting resetting of the locking-bar when tripped.

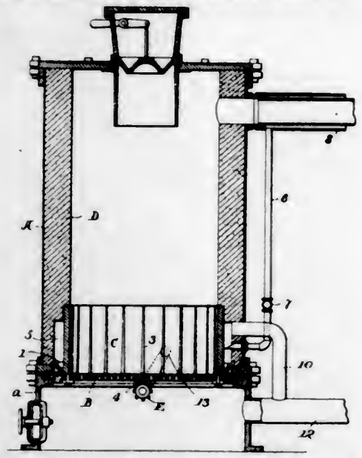
2. A mechanism of the class described embodying a pair of belt-shifters, a locking-bar coacting with one of the shifters, a spring-pressed rod coacting with the other shifter, a tripping-dog coacting with the locking-bar, a setting-dog, and means for releasing the tripping-dog, and for actuating the setting-dog.

3. A mechanism of the class described comprising a pair of belt-shifters, a shifter-rod having an offset, a locking-bar combined therewith, a tripping-dog coacting with the locking-bar, a spring-retracted rod connected with one of the shifters, a rod connecting the locking-bar and the spring-retracted rod, a locking-bar-setting dog carried by the bar, and a stop carried by the rod and adapted to engage an offset on the shifting-rod-actuating member.

819,849. **FURNACE.** FREDERICK W. BURGER, Fort Wayne, Ind., assignor to Fort Wayne Foundry and Machine Company, Fort Wayne, Ind., a Corporation of Indiana. Filed Aug. 4, 1905. Serial No. 272,771.

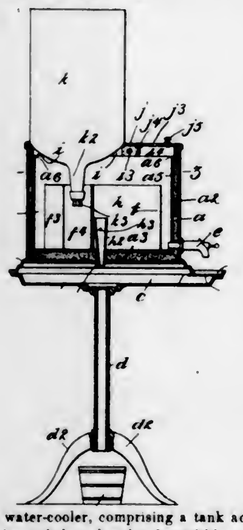
Claim.—1. The combination with the casing and lining of a gas-producing furnace, of a fire-pot, a grate, a chamber around the fire-pot, a pipe supplying moisture to said chamber, an air-duct opening into the ash-pit below the grate, and a duct between the said chamber and the ash-pit, substantially as set forth.

2. The combination in a gas-producing furnace, of a fire-pot having an external water-receptacle, a chamber inclosing said receptacle, means for supplying moisture to said receptacle, a grate, an air-duct opening below the grate, and a communication between the air-duct and said chamber, substantially as set forth.



3. A gas-producing furnace having a grate, a fire-pot, a lining recessed to receive the fire-pot and to form a chamber around the fire-pot, means for discharging moisture against the fire-pot in said chamber, an air-duct opening below the grate, and a communication between the said air-duct and said chamber, substantially as set forth.

819,850. **WATER-COOLER.** ERNEST O. BUTT, New York, N. Y. Filed Feb. 23, 1904. Serial No. 194,725.

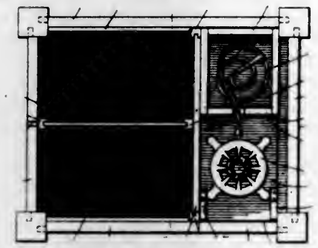


Claim.—1. A water-cooler, comprising a tank adapted to receive the water to be cooled, an ice-chamber within and of smaller diameter than said tank, the vertical wall of said ice-chamber being inwardly curved to form a cylindrical recess and a contracted passage through which the recess communicates with the annular space surrounding the ice-chamber, a draw-off from said tank, a cover for said tank having an opening concentric with the cylindrical recess and adapted to support an inverted bottle with its neck entering said recess, a drip-chamber under the tank, and a removable drip-tube passing through the bottom of the ice-chamber, and communicating with the drip-chamber, substantially as shown and described.

2. A water-cooler, comprising a tank having a frame in the top thereof provided with a band or ring, a cover resting on said frame and provided with a circular opening over said band or ring and at one side thereof with a door, an ice-receiver within said tank and around which is a main water-chamber, the vertical walls of said ice-receiver being inwardly curved to form a vertically-arranged cylindrical recess and a contracted passage through which the receiver communicates with the water-chamber, and a removable drip-pipe passing through the bottom of the ice-receiver and communicating therewith, substantially as shown and described.

3. In a water-cooler, a tank adapted to receive the water to be cooled, an ice-chamber within and smaller than said tank, the vertical wall of the ice-chamber being inwardly curved to form a vertically-arranged recess and a passage through which the recess communicates with the annular space surrounding the ice-chamber, a draw-off for said tank, and a cover for said tank having an opening concentric with the vertically-arranged recess and adapted to support an inverted bottle with its neck entering said recess, substantially as shown and described.

819,851. **LUNCH-CABINET TABLE.** THERON T. CHAMBERLAIN, Chicago, Ill., assignor of one-third to Worthington M. Lady and one-third to John W. Roney, Chicago, Ill. Filed Aug. 16, 1905. Serial No. 274,451.



Claim.—1. The combination with a table having a top slidable longitudinally and removable vertically, of a heater-tray slidable transversely and removable vertically and provided with an outer end piece and an inner partition each coextensive with the tops of the end and side rails, a rabbeted cleat positioned on the under surface of said top adapted to obstruct the movement of said inner portion to prevent withdrawal or return to closed position of the tray when said top is above the tray, and means for heating purposes carried by said tray.

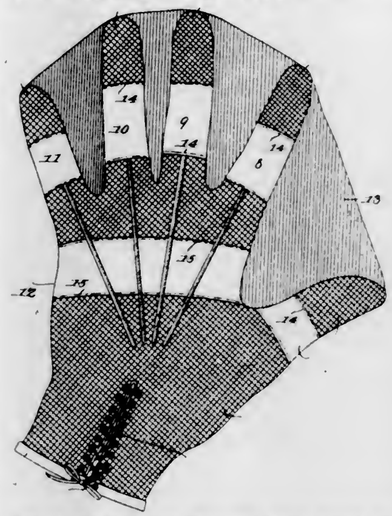
2. The combination with a table having a top slidable longitudinally and removable vertically carrying on its under surface near its lateral edges rabbeted cleats and a guide-strip centrally disposed and slidably seated in a notch in the top of the left end rail, of a heater-tray slidable transversely and removable vertically and provided with an outer end piece and an inner partition each coextensive with the tops of the end and side rails, one of said rabbeted cleats positioned to obstruct the movement of said inner partition and prevent withdrawal or return to closed position of the tray when said top is above the tray, and means for heating purposes carried by said tray.

3. The combination with a table having a top slidable longitudinally and removable vertically and carrying on its under surface near its lateral edges rabbeted cleats and a guide-strip centrally disposed and slidably seated in a notch in the top of the left end rail, relatively wide end and side rails, removable partitions forming compartments therein, of a heater-tray slidable transversely and removable vertically and provided with an outer end piece and an inner partition each coextensive with the top of the end and side rails, one of said rabbeted cleats positioned to obstruct the movement of said inner partition and prevent withdrawal or return to closed position of the tray when said top is above the tray, a cross-piece on the bottom of the tray to limit its outward movement, and turn-buttons to removably hold the tray in sliding engagement with slide-cleats upon which said tray is seated.

4. The combination with a table having a top slidable longitudinally and removable vertically and carrying on its under surface near its lateral edges rabbeted cleats and a guide-strip centrally disposed and slidably seated in a notch in the top of the left end rail, relatively wide end and side rails, removable partitions forming compartments therein, of a heater-tray slidable transversely and removable vertically and provided with an outer end piece and an inner partition each coextensive with the top of the end and side rails, one of said rabbeted cleats positioned to obstruct the movement of said inner partition and prevent withdrawal or return to closed position of the tray when said top is above the tray, a cross-piece on the bottom of the tray to limit its outward movement, and turn-buttons to removably hold the tray in sliding engagement with slide-cleats upon which said tray is seated, and means suitable for cooking purposes carried by said tray.

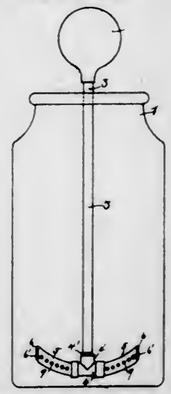
5. The combination with a table having a removable top, of a slidable heater-tray removable vertically and provided with an outer end closure and an inner partition each coextensive with the tops of the end and side rails, a rabbeted cleat on the under surface of said top positioned to obstruct the movement of said inner partition and prevent withdrawal or return to closed position of the tray when the table-top is over the tray, a cross-piece on the bottom of the tray to limit its outward movement, turn-buttons to removably hold the tray in sliding engagement with slide-cleats upon which said tray is seated, and means for heating purposes carried by said tray.

819,852. **SWIMMING-GLOVE.** MANUAL S. CHRISTOPHER, Surrey, Fla. Filed Aug. 29, 1905. Serial No. 276,272.



Claim.—A swimming-glove embodying a body portion having a thumb and fingers, flexible reinforces disposed intermediate of the thumb, fingers and the body portion, and a web secured to the thumb, fingers and reinforces.

819,853. **CLEANING DEVICE.** EMMA B. COLWELL, Medway, N. Y. Filed Mar. 27, 1905. Serial No. 252,388.

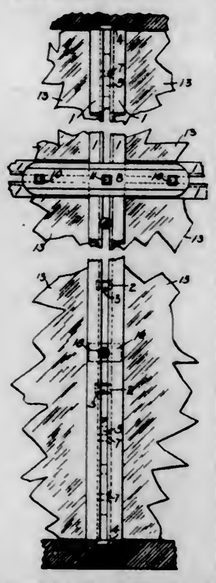


Claim.—1. In a cleaner for receptacles an elastic compressible bulb; a flexible tube consisting of a coiled spring inside a flexible impervious jacket, the bulb and the tube being in operative connection; a head-piece in operative connection with the tube, said head-piece being also flexible and having openings therein all arranged and operating so that a cleansing fluid may be forced into and out of

said head-piece and said head-piece practically conform to the surface being cleaned, substantially as described.

2. In a cleaner for receptacles an elastic compressible bulb; a tube consisting of a coiled spring inside an elastic jacket, the bulb and said tube being in operative connection; a head-piece in operative connection with the said tube and consisting of a coiled spring inside an elastic jacket said jacket having openings therein all arranged and operating so that a cleansing fluid may be forced into and out of the tube and head-piece and the head-piece practically conform to the surface being cleaned substantially as described.

819,854. SASH-BAR. JAMES P. COMSTOCK, Tacoma, Wash. Filed Aug. 25, 1905. Serial No. 275,736.



Claim.—1. In a sash-bar, the combination of a pair of parallel angle-irons placed back toward back and securely fastened together through separators, a metallic strip curved to form an ornamental exterior covering for said bar, and means for securing said metal strip to said bar.

2. In a sash-bar, the combination of a pair of parallel angle-irons placed back toward back and securely fastened together through separators, a metallic strip curved to form an ornamental exterior covering for said bar, and clips engaging the inner side of said metallic strip and having screws securing said clips to said bar.

3. In a sash-bar, the combination of a pair of parallel angle-irons placed back toward back and securely fastened together through separators, a metallic strip curved to form an ornamental exterior covering for said bar, the sides of said metallic strip being inwardly folded, and clips engaging between the curved portion and the inwardly-folded sides of said metallic strip and having screws securing said clips to said bar.

4. In a sash-bar, the combination of a pair of parallel angle-irons placed back toward back and securely fastened together through separators, and end castings adapted to be independently secured to the window-frame and having extensions engaging between said angle-irons and being secured thereto.

5. In a sash-bar, the combination of a pair of parallel angle-irons placed back toward back and securely fastened together through separators, and independent castings secured to the ends thereof between said angle-irons and having lateral flanges adapted to be screwed to the window-frame.

6. In a sash-bar, the combination of a pair of parallel angle-irons placed back toward back and securely fastened together through separators, independent castings secured to the ends of the bar between the angle-irons thereof and having lateral flanges adapted to be screwed to the window-frame, a metallic strip curved to form an ornamental exterior covering for said bar, the sides of said metallic strip being inwardly folded, and clips engaging between the curved portion and the inwardly-folded sides of said metallic strip and having screws securing said clip to said bar.

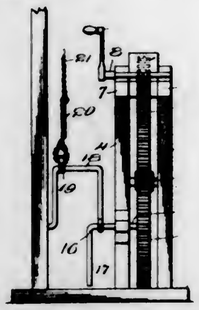
7. In a sash-bar, the combination of a pair of parallel angle-irons placed back toward back and securely fastened together through separators, and a clamp-strip adapted to press the panes of glass against the legs of said angle-irons and being formed to extend parallel with said angle-irons and on each side thereof, and screw-controlled clamping-heads engaging said clamp-strip and said angle-irons to draw said clamp-strip against the glass.

8. A transom-bar fastening, consisting of inner and outer metal plates clamped to the sash-bar at right angles thereto and engaging the transom-bars between their ends.

9. A window-frame consisting of sash-bars each formed of a pair of parallel angle-irons placed back toward back and securely fastened together and secured at their ends to the building, similarly-constructed transom-bars extending between the sash-bars, and clamping-plates clamped to the sash-bars and clamping the transom-bars.

10. In a sash-bar, the combination with a pair of angle-irons placed back toward back and securely fastened together through separators and forming a stiff support with their backs between the panes of glass and lateral supports for the glass with their legs; of a keeper adjustably secured to said angle-irons and clamping the glass between it and legs thereof.

819,855. DRILLING-MACHINE. JOHN E. CONCH, Hazard, Ky., assignor of one-half to Charles C. Dehart, Hazard, Ky. Filed Apr. 21, 1905. Serial No. 256,722.



Claim.—1. In a drilling-machine, in combination with a derrick, a shaft a yoke having one end journaled upon said derrick, the other end journaled upon said shaft, an arm carried by said shaft, adapted to control said yoke, and gearing for operating said shaft, substantially as specified.

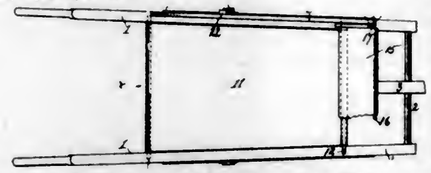
2. In a drilling-machine, the combination of a derrick, a cable passed over said derrick, a yoke attached to said cable, a shaft upon which one end of the yoke is journaled, the other end of the yoke being journaled upon the derrick an arm carried by the shaft for controlling the yoke, and a train of gearing for operating said shaft, substantially as specified.

3. In a drilling-machine, the combination of a derrick, a frame mounted adjacent to the derrick, a small gear-wheel mounted upon the top of the frame, a hand-crank for driving said gear-wheel, a large gear-wheel in mesh with the small gear-wheel, a shaft, a small gear-wheel keyed upon said shaft in mesh with the large gear-wheel, an angular arm carried by said shaft, a yoke having one end mounted upon the shaft and the other end journaled upon the derrick, said arm adapted to control said yoke, a cable connected to the yoke, a pulley in the top of the derrick, over which said cable passes, substantially as shown and for the purpose specified.

819,856. WHEELBARROW. FRANK J. COOPER, Toledo, Ohio, assignor to The Ohio Steel Wheelbarrow Company, Toledo, Ohio. Filed Oct. 18, 1905. Serial No. 283,201.

Claim.—1. In a wheelbarrow, a pair of side bars, a pair of rods extending between said side bars, and a sheet-metal bottom having its opposite ends wrapped around said two cross-rods, substantially as and for the purpose specified.

2. In a wheelbarrow, a pair of side bars, a pair of back braces springing from the side bars, a rod connecting the side bars near the bottom of the back braces, a rod extending between the top of said back braces, and a sheet of metal forming the back of the barrow, said sheet being coiled at top around the upper of said rods, and resting at bottom against the lower of said rods, substantially as and for the purpose specified.

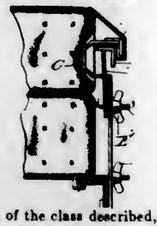


3. In a wheelbarrow, a pair of back braces disposed at opposite sides of the barrow and composed of angle-iron, a sheet-metal back for the barrow, the side margins of which are secured to the inwardly-projecting members of the back braces, said sheet of metal having, adjacent to its margin, inwardly-bent portions which coöperate with the members of the back braces to form sockets for the reception of the ends of the side-boards.

4. In a wheelbarrow, a pair of side bars, a pair of rods extending between said side bars, a sheet-metal bottom coiled at its front around one of said rods and at its rear around the other of said rods, a pair of back braces, a cross-rod extending between the tops of said back braces, a sheet-metal back coiled at its upper margin around said latter cross-rod and resting at its lower margin against said rear coil of the sheet-metal bottom.

5. In a wheelbarrow, a pair of side bars, a pair of angle-irons bent as described to form a pair of legs, leg-braces and back braces, and a sheet-metal back having its side margins secured to the transverse members of said angle-irons, said sheet-metal back having near its side margins crimps which coöperate with the other members of the angle-irons to form sockets for the reception of side-boards.

819,857. BEDCLOTHES-HOLDER. JOHN T. COWLES, Chicago, Ill. Filed Feb. 18, 1905. Serial No. 246,222.



Claim.—1. A device of the class described, comprising a supporting-bracket provided with a lateral offset portion in its body to form an opening therein, a pair of jaws operatively related to the edges of the opening, one of said jaws being adjustable, with relation to the other jaw and movable across the opening in the bracket, and means operatively related to the adjustable jaw for holding the same in its adjusted position, to clamp the bedclothes within the offset portion.

2. A device of the class described, comprising a supporting-bracket, a portion thereof intermediate its ends being disposed out of the plane in its body to form a lateral opening therein, one edge of the opening projecting beyond the other edge, jaws operatively related to the edges of said opening, the jaw on the shorter edge being adjustably mounted with relation to the other jaw, and means operatively related to the adjustable jaw for holding said jaw in its adjusted position, to clamp the bedclothes within the opening.

3. A device of the class described, comprising a supporting-bracket, provided with a laterally-open space intermediate its ends, an adjustable jaw movable in the space and adapted to coöperate with one of the edges of the opening to clamp the bedclothes therebetween and within the opening, and means operatively related to the adjustable jaw for holding the same in its adjusted position.

4. In a bedclothes-holder, the combination with a jaw adapted to extend across the foot of the bed, another similar jaw a pair of bow-shaped brackets secured to the upper of these jaws and extending below the lower jaw so as to provide a space for the bedclothes, means carried by the lower jaw and passing through the brackets to guide the lower jaw, and means for adjusting the lower jaw with reference to the upper jaw.

5. In a bedclothes-holder, the combination with two jaws each composed of an angle-iron and having a length approximately the width of the bed, two brackets respectively secured to the upper jaw and extending in bow shape back of said jaw and then vertically downward, guide-rods secured to the lower jaw and extending through openings in the horizontal portion of the bow-shaped brackets, eyebolts through the vertical portions of such brackets and receiving the rods in the eye thereof, and thumb-nuts for tightening the rods and thereby holding the lower jaw in any adjusted position with reference to the upper jaw.

6. In a bedclothes-holder, the combination with a pair of angle-iron jaws having a length approximately the width of a bed, a pair of clamping-brackets secured to the upper of these jaws and having a rearward projection of bow shape, guiding-rods passing through openings in the horizontal portions of these bow-shaped brackets, eyebolts having eyes through which these rods also pass, and thumb-nuts for securing the bolts in position at any adjusted point.

7. In a bedclothes-holder, the combination with two angle-iron jaws, of a pair of clamping-brackets secured to the upper jaw and extending rearwardly in bow shape and then vertically below the lower jaw terminating in bent ends forming hooks, guide-rods secured to the lower jaw, eyebolts passing through the vertical portions of the brackets and provided with eyes through which the rods may pass, thumb-nuts engaging such bolts and bearing on the outside of the vertical portions of such brackets for adjusting the lower jaw into any predetermined position, and additional clamping-hooks passing through the lower portions of the clamping-brackets and at right angles thereto and secured in position by the thumb-nuts, whereby the device may be securely attached to the angle-iron of a bedstead.

819,858. SELF-SECURED BUNDLE OF FLEXIBLE MATERIAL. JAMES F. CRAFT, Lincoln, Me. Filed May 19, 1905. Serial No. 261,165.



Claim.—1. An article of manufacture consisting of a strip of flexible, compressible material formed into a stiff roll, a tongue formed on the outermost convolution of the roll, the next adjacent convolution having an opening, and the tongue being passed through the opening, tucked under the adjacent convolution, and caused by the stiffness of the roll to indent the adjacent surfaces between which it lies.

2. A stiff roll of flexible fibrous, compressible material having an integral tongue formed on one convolution extended through an opening in, and extended under, the adjacent convolution, the said tongue indenting the adjacent surfaces between which it lies.

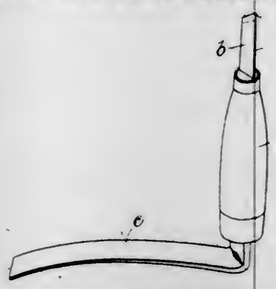
3. A stiff roll of flexible, compressible, fibrous material having an integral tongue formed on one convolution extended through an opening in the adjacent inner convolution, and doubled back and extended under such inner convolution, the said tongue indenting the adjacent surfaces between which it lies.

4. A self-secured package of flexible, compressible material

consisting of a strip of such material gathered into a compact stiff bundle surrounded by an integral enveloping portion of the strip, a tongue formed integrally on said enveloping portion and passed through a registering opening in an adjacent interior portion or ply of the package, being turned backwardly under said interior portion, the said tongue being caused by the stiffness of the body to indent the adjacent surfaces between which it lies.

5. A self-secured package of flexible, compressible material consisting of a strip of such material gathered into a compact stiff bundle surrounded by an integral enveloping portion of the strip, a tongue formed integrally on said enveloping portion and passed through a registering opening in an adjacent interior portion or ply of the package, the tongue and opening being formed simultaneously by converging slits cut in the outer surface of the package, and the tongue doubled upon itself and tucked under said adjacent portion, the tongue being caused by the stiffness of the body to indent the adjacent surfaces between which it lies.

819,859. **TOOL FOR FASTENING SELF-SECURED PACKAGES.** JAMES F. CRAFT, Lincoln, Me. Filed May 19, 1905. Serial No. 261,166.



Claim.—1. A tool comprising a handle, a cutting-blade at one end of the handle, and a tucking-blade secured to the other end of the handle and extending laterally therefrom, being curved to form therewith gradually-increasing angles.

2. A tool of the character described having a hand-engaging portion, a cutter at one end of said hand-engaging portion extending in line therewith, and a tucking member secured at the opposite end of said hand-engaging portion extending laterally at an angle thereto.

3. A tool of the character described having a hand-engaging portion, a cutter at one end of said hand-engaging portion, and a tucking member at the opposite end of said hand-engaging portion extending substantially at right angles thereto.

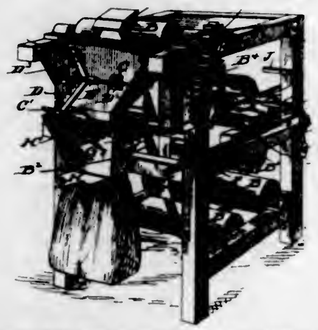
4. A tool of the character described comprising a handle, and a blade connected to one end of the handle and extending substantially perpendicular therefrom, said blade being of substantially uniform width throughout its extent and of diminishing thickness from heel to end, being formed at the end with a square blunt edge and longitudinally curved.

5. A tool of the character described comprising a handle, a cutting-knife secured to the handle at one end, and a blade connected to the opposite end of the handle and extending substantially perpendicular therefrom, said blade being of substantially uniform width throughout its extent and of diminishing thickness from heel to end, being formed at the end with a square blunt edge and longitudinally curved.

819,860. **WEIGHING AND SACKING MACHINE.** PETER L. CRIGHTON, Harrisville, R. I. Filed Jan. 17, 1905. Serial No. 241,488.

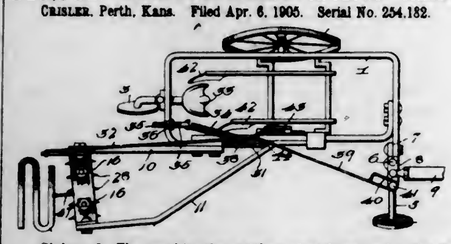
Claim.—1. In a weighing and sacking machine, a stationary hopper, a shaft mounted upon said hopper, a sleeve fixed upon said shaft, radially-extending arms carried by the sleeve, an adjustable weight upon one of said arms, a plate carried by the other arm adapted to swing into position to close the lower end of the hopper, a vertically-movable hopper arranged beneath and in alinement with the stationary hopper, an adjustable arm carried by the movable hopper and adapted to project into the path of the plate when the movable hopper is in its normal position and to prevent said plate from swinging into a closed position, and means for rotating the shaft and lifting the plate from the closing position.

2. A machine of the kind described comprising an upper hopper, a scale-beam, a lower hopper carried by the scale-beam, a slide adapted to close the bottom of the lower hopper, an angled shaft rotatably carried by the upper hopper, a sleeve mounted thereon, arms projecting from said sleeve at right angles to each other, an adjustable weight on one of said arms, a curved plate carried by the other arms and adapted to fall by gravity and close the bottom of the upper hopper, means for rocking the angled shaft and raising the curved plate, means carried by the lower hopper for holding the said plate in a raised position while the lower hopper is in its normal position, a weight on the scale-beam, means for limiting movement of said beam, and an endless conveyer adapted to feed material to the upper hopper.



3. A device of the kind described comprising a frame, an endless carrier, buckets on the carrier, a hopper carried by the frame adapted to receive the contents of the buckets, an angled shaft carried by the hopper, a sleeve on the shaft, arms carried by the sleeve, an adjustable weight on one arm, a curved plate adapted to close the lower end of the hopper on the other arm, a pivoted lever, a cord connected at one end to the lever and at the opposite end to the angled shaft, a hopper suspended below the first-mentioned hopper, a slide adapted to close the bottom of the suspended hopper, said hopper having a limited downward movement, an arm carried by the hopper and adapted when in its normal position to extend into the path of the curved plate, and means for governing the downward movement of the suspended hopper.

819,861. **HARROW ATTACHMENT FOR PLOWS.** JOSEPH L. CRISLER, Perth, Kans. Filed Apr. 6, 1905. Serial No. 254,182.



Claim.—1. The combination with a plow-frame, of a rigidly-attached harrow-supporting frame laterally offset therefrom and comprising rearwardly-extending bars spaced apart, a hanger carried by the harrow-frame and comprising a head pivotally mounted between said bars and a fork detachably connected to the head and carrying harrow elements, and lever connections for tilting the hanger.

2. The combination with a plow-frame, of a rigidly-attached harrow-supporting frame laterally offset therefrom and comprising rearwardly-extending bars spaced apart, a head pivotally mounted between said bars, lever connections for tilting said head, and a fork carrying harrow elements and having a slotted and angularly-adjustable connection with said head.

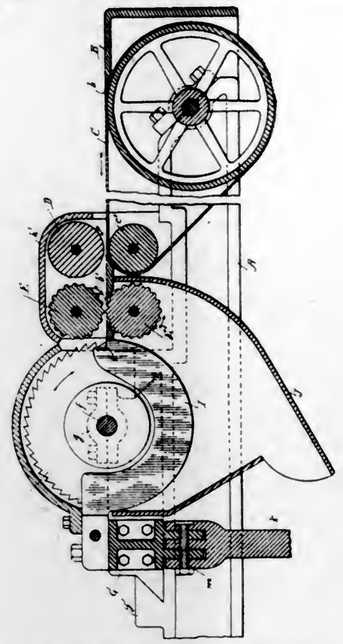
3. The combination with a plow-frame, of a laterally-offset harrow-frame connected thereto, a hanger pivotally mounted in the harrow-frame, harrow elements carried by the hanger, manually-operated means for tilting the hanger, a pivoted draft-pole or tongue, and connections between the tongue and hanger whereby the movement of the tongue serves to rock or tilt the hanger.

4. The combination with a plow-frame, of a laterally-offset harrow-frame connected thereto, a pivoted hanger carried by the harrow-frame, harrow elements carried by the hanger, a lever for tilting the hanger, a caster-standard, a draft-pole or tongue connected to said standard, and a connection between said standard and lever whereby the turning of the standard tilts the hanger and the lever is adapted to tilt the hanger without affecting the standard.

5. The combination with a plow-frame, of a laterally-offset harrow-frame connected thereto, a pivoted hanger carried by the harrow-frame, harrow elements carried by the hanger, a lever for tilting the hanger, a plow adjustable up and down, a lever for adjusting the plow, and a connection between the plow-adjusting lever and the hanger-tilting lever whereby one operates the other.

6. The combination with a plow-frame, of a rigidly-attached harrow-supporting frame laterally offset therefrom, a hanger pivotally mounted in the harrow-supporting frame, means for tilting the hanger, a rotary shaft mounted in the hanger, rotary harrow elements actuated by said shaft, and means for driving said shaft.

819,862. **LEATHER-SHREDDER.** OTIS M. CUTLER, Wakefield, Mass., assignor to Fibered Leather Manufacturing Company, a Corporation of Maine. Filed Jan. 28, 1902. Renewed Mar. 22, 1904. Serial No. 199,429.



Claim.—1. In a shredding-machine, the combination, with a shredding-cylinder, of a flat table arranged in front of the cylinder and provided with two openings, an endless conveyer-belt provided with end rollers and having its upper portion working in one of the said openings, a pair of feed and consolidating rollers arranged between the said conveyer and shredding-cylinder, the lower roller of the said pair being arranged in the other said opening of the table, a feed-roll arranged over the rear end roller of the said conveyer, and driving mechanism for the said conveyer, rollers, roll and cylinder, substantially as set forth.

2. In a shredding-machine, the combination, with feeding mechanism for the material, of a revoluble shredding-cylinder, and driving devices operating to reciprocate the said cylinder crosswise of the direction of the feed of the material, substantially as set forth.

3. In a shredding-machine, the combination, with a table, and feed mechanism for moving the material longitudinally of the table; of a revoluble shredding-cylinder, and driving devices operating to reciprocate the said cylinder crosswise of the table, substantially as set forth.

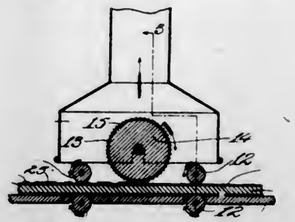
4. In a shredding-machine, the combination, with feeding mechanism for the material, of a frame supporting the said feeding mechanism and provided with guides arranged crosswise of the direction of the feed of the material, a saddle slidable in the said guides, a shredding-cylinder journaled in the said saddle, a pivoted lever for reciprocating the said saddle, and a revoluble cam for operating the said lever, substantially as set forth.

5. In a shredding-machine, the combination, with feeding mechanism for the material, of a revoluble shredding-cylinder comprising a series of saws secured at short distances apart, a series of fingers arranged between the said saws, and driving devices operating to reciprocate the said cylinder and saws crosswise of the direction of the feed of the material, substantially as set forth.

6. In a shredding-machine, the combination, with a table, and feed mechanism for moving the material over the table; of a revoluble shredding-cylinder comprising a series of saws secured at short distances apart, and a series of fingers arranged between the said saws with their free ends adjacent to the edge of the said table and operating to hold the unshredded material in engagement with the saw-teeth, substantially as set forth.

7. In a shredding-machine, the combination, with a table, and feed mechanism for moving the material over the table; of a saddle slidable crosswise of the table, driving mechanism for reciprocating the saddle, a revoluble shredding-cylinder journaled in the saddle and comprising a series of saws secured at short distances apart, and a series of fingers secured to the said saddle and projecting between the said saws with their free ends adjacent to the edge of the said table and operating to hold the unshredded material in engagement with the saw-teeth, substantially as set forth.

819,863. **METHOD OF AND APPARATUS FOR SHREDDING LEATHER.** OTIS M. CUTLER, Wakefield, Mass., assignor to Fibered Leather Manufacturing Company, a Corporation of Maine. Filed Apr. 22, 1905. Serial No. 256,851.



Claim.—1. A leather-shredding machine comprising a shredding member and a scrap-carrying member, means for positively moving one of said members relatively to and past the other member to cause the shredding member to act progressively on the leather scraps, the teeth of the shredding member being distributed to act on all portions of the upper surface of the scraps.

2. In a leather-shredding machine, the combination of leather-shredding means, a rigid continuous support for scrap-leather, and means for feeding said support to the action of the leather-shredding means, the teeth of the shredding means being distributed to act on all portions of the upper surface of the leather.

3. In a leather-shredding machine, the combination of leather-shredding means, a support having means for positively securing and carrying scraps of leather, and means for feeding said support to the action of the leather-shredding means, the teeth of the shredding means being distributed to act on all portions of the surface of the leather.

4. In a leather-shredding machine, the combination of a rotary leather-shredder having equally-distributed teeth, and means for feeding the leather positively in a direction tangent to the acting portion of said shredder.

5. In a leather-shredding machine, the combination of a shredder composed of a revolving series of equally-distributed leather-shredding teeth, and means for feeding the leather positively in a direction tangent to the acting portion of said shredder.

6. In a leather-shredding machine, the combination of a shredder comprising a cylindrical series of equally-distributed leather-shredding teeth, means for rotating said shredder, an elongated board having means for securing leather scraps thereto, and means including a pair of opposed feed-rolls for propelling said board in a direction tangent to the shredder.

7. The process of dry-shredding leather which consists in rigidly supporting leather scraps and subjecting them to the progressive action of equally-distributed shredding-teeth in a direction lengthwise of the plane or surface of the leather.

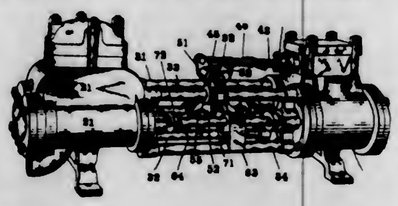
8. The process of dry-shredding of leather which consists in subjecting the leather to the action of a multiplicity of equally-dis-

tributed shredding-teeth applied simultaneously over an area of the flesh side of the leather.

9. The process of dry-shredding of leather which consists in shredding a series of scraps of leather by positively feeding them successively to a shredding device having equally-distributed teeth acting in a direction parallel to the planes of the scraps.

10. The process of dry-shredding of leather which consists in securing scraps of leather to a support, subjecting said scraps to the action of shredding means having equally-distributed teeth by relative feeding movement of said support and said means, and rigidly holding said support to the action of said shredding means.

819,864. **STEAM-PUMP.** JOHN C. DEAN, Indianapolis, Ind., assignor to Dean Brothers Steam Pump Works, Indianapolis, Ind., a Corporation of Indiana. Filed June 3, 1905. Serial No. 263,642.



Claim.—1. The combination, in a steam-pump, of the pump structure, the engine structure, each being of the duplex type, two pairs of rods connecting said two structures, pistons in the steam-cylinders of said structures, steam-valves to the two steam-cylinders, the piston-rods to said pistons, the valve-stems to said valves, stud-blocks mounted upon the rods connecting the structures, valve-operating levers carried thereby, and connections between said levers and the valve-stems at one end and between said levers and the piston-rods at the other end, said levers extending across each other, whereby the piston-rod of one engine operates the valve of the other.

2. The combination, in a duplex steam-pump, of the pump structure, the engine structure, four rods connecting said two structures arranged in pairs and each pair being in the same vertical plane as the corresponding piston-rod, the pistons, the steam-valves, duplex reversely-positioned valve-operating levers, two stud-blocks carried by the upper rods of the pairs and serving as bearings for the levers, a connection between each of said levers and the corresponding piston-rod, and a connection between each of said levers and the opposite steam-valve.

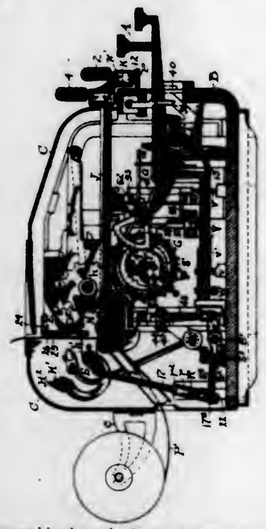
3. The combination, in a duplex steam-pump, of the pump structure, the engine structure, the pistons and piston-rods, two pairs of rods connecting said engine structure and said pump structure, the rods of each pair being arranged in the same vertical plane as one of the piston-rods, stud-blocks on the upper rods of the pairs carrying fulcrums for the levers, the steam-chest, the valves therein, and levers mounted on the fulcrums of the stud-blocks and engaging with the piston-rod of one side of the machine and with the valve-stem of the other side of the machine.

4. The combination, in a duplex steam-pump, of the pump structure, the engine structure, four rods connecting said two structures arranged in pairs, duplex reversely-positioned valve-operating levers, stud-blocks carrying the fulcrums for said levers mounted on the upper rods of the pairs, and other stud-blocks with which the lower ends of said levers engage mounted on the pistons and engaging with and guided by the lower rods of the pairs.

819,865. **COMBINED NUMBER RECORDING AND ADDING MACHINE.** ADOLPHUS S. DENNIS, Cleveland, Ohio, assignor, by mesne assignments, to The National Adding Machine Company, Cleveland, Ohio, a Corporation of Ohio. Filed Sept. 19, 1904. Serial No. 225,079.

Claim.—1. In a combined numbering and adding machine, mechanism adapted to record numbers and mechanism adapted to add, a paper-carrier, and separate selector mechanism for said carrier adapted to change the operation of said recording mechanism and said adding mechanism, respectively, according as either said recording mechanism or said adding mechanism is chosen.

2. In a combined numbering and adding machine, number-recording mechanism, adding mechanism and means to record the total, key-lever mechanism adapted to operate both said number-recording mechanism and said adding mechanism alternately, and selector devices for said recording mechanism and said adding mechanism respectively.



3. In a combined numbering and adding machine, mechanism adapted to record and mechanism adapted to add, separate selector members for each of said mechanisms, and means operatively connected with the said selector members for the numbering mechanism adapted to disconnect the adding mechanism.

4. In a combined numbering and adding machine, separate numbering and adding mechanisms adapted to record separate items, separate selector-keys for each of said mechanisms, and means operatively connected with the number selector-keys to throw the adding mechanism into and out of operation.

5. In a combined numbering and adding machine, separate mechanisms for numbering and adding and separate selector-keys for each of said mechanisms, and a single carriage in actuating relation with both said mechanisms.

6. In a combined numbering and adding machine, a mechanism to write numbers and a mechanism adapted to add, in combination with a separate printing-hammer for each mechanism and separate selectors for said mechanisms and a set of key-levers common to both.

7. In a combined numbering and adding machine, a mechanism for numbering and a mechanism for adding comprising combined adding and printing wheels, means to change the machine from adding to numbering and numbering to adding, a separate printing hammer for each mechanism and a single set of key-levers adapted to be used with both.

8. In a combined numbering and adding machine, a mechanism to write numbers and another mechanism to add comprising adding-wheels capable of printing, and a separate hammer for each mechanism, in combination with a carriage and means connected therewith to change from one mechanism to the other and a single set of key-levers adapted to be used with both mechanisms.

9. A combined numbering and adding machine comprising one mechanism for numbering and another for adding, in combination with a type-carrier having separate lines of characters for each mechanism and a separate hammer for each line of characters.

10. A combined numbering and adding machine constructed to both write numbers and to add and having a type-carrier provided with characters for each use, in combination with a separate hammer for each line of characters, a single carriage, and means connected therewith to throw one hammer out and the other in operative relations, and a single set of key-levers adapted to be used for both purposes.

11. A combined numbering and adding machine, comprising a carriage and two separate sets of selector-keys mounted thereon, a type-carrier having separate lines of type, a plurality of hammers to strike the impressions from said type, a single set of key-levers, and mechanism operatively connecting the same with said hammers successively according as one or the other has been selected.

12. In a combined numbering and adding machine, a carriage and two sets of selectors thereon, separate numbering and adding mechanisms operatively connected with said carriage, a hammer at the rear of the machine for each mechanism, and a single set of key-levers operatively connected with both said mechanisms and said hammers as one or the other has been selected.

13. In a combined numbering and adding machine, a type-plate and two separate impression-hammers, a carriage and key-levers operatively connected therewith and means to throw said key-levers into operating connection with either of the said hammers.

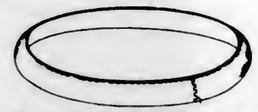
14. In a combined numbering and adding machine, a type-plate having rows of type on different horizontal planes, in combination with a hammer for each row, a single series of key-levers and means to operatively disconnect with one hammer and to operatively connect with the other successively.

15. In a combined numbering and adding machine, mechanism for numbering comprising a carriage, a set of selector-keys thereon to determine the column in which the writing shall begin, key-levers to actuate said carriage, a sliding type-plate and means operatively connecting said plate with said key-levers, an impression-hammer opposite said plate, and means operatively connecting the same with said levers, a carriage and means connected therewith to automatically throw said hammer out of action.

16. In a combined numbering and adding machine, a carriage and selector-keys thereon to determine the column in which adding shall begin, a hammer and a series of key-levers to actuate the same and a type-plate and means to move said plate operatively connected with said key-levers, a set of selector-keys on said carriage and mechanism operatively connected therewith to throw said hammer out of action.

17. A combined numbering and adding machine comprising a single carriage and a single set of key-levers, two series of selector-keys and mechanism between each set of said keys and said carriage to limit the machine to numbering or adding, according as a key in one series or the other has been actuated.

819,866. **SHEET-METAL JOINT.** JOHN E. DOBSON, Ypsilanti, Mich., assignor to Michigan Machinery Manufacturing Company, Ypsilanti, Mich., a Corporation of Michigan. Filed Jan. 24, 1905. Serial No. 242,554.



Claim.—1. In a joint for sheet-metal sections, complementary teeth on the ends of the sections intermeshing in different planes, the coaction of said teeth locking the sections from movement in any direction and forming a joint of a thickness equal to the thickness of the teeth.

2. In a joint for sheet-metal sections intermeshing complementary teeth the opposite edges of each tooth being in different planes, for the purpose described.

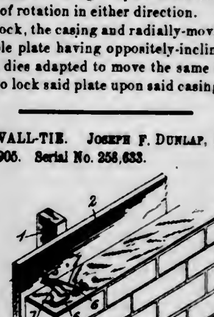
3. A joint between sheet-metal sections, consisting in intermeshing and interlocking teeth formed on the adjoining edges of the two sections, the plane of the interlocked pair of teeth in one portion of the line of joint being out of angle to the plane of the interlocked pair of teeth in another portion of the line of joint.

4. A joint for sheet-metal sections comprising intermeshing and interlocking teeth on the adjoining edges of the two sections, the longitudinal section of the line of joint being curved.

819,867. **SKIRT-GAGE.** MARIE S. DOTY, Chicago, Ill. Filed Sept. 1, 1900. Serial No. 28,758.

Claim.—1. The combination of the base A with the central ear A′; the standard B of sheet metal the edges of which are turned into flanges pivoted at *a* to the ear A′; a scale B′ inserted into the standard B; an adjustable holder formed with the elastic fingers C′, C′, to embrace the chalk or marker extending into a sleeve to embrace the standard and a lever D, with a cam, pivoted to the sleeve to clamp the holder adjustably on the standard coacting for the purpose specified.

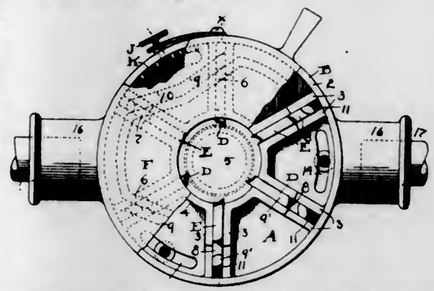
2. The combination of the base A with the central ear A′; the standard B of sheet metal the edges of which are turned into flanges secured to the ear A′; a scale B′ inserted into the standard B; an adjustable holder formed with the elastic fingers C′, C′ to embrace the chalk or marker extending into a sleeve to embrace the standard and a lever D, with a cam, pivoted to the sleeve to clamp the holder adjustably on the standard coacting for the purpose specified.



3. The combination of the base A with the central ear A′; the standard B of sheet metal the edges of which are turned into flanges secured to the ear A′; a scale B′ inserted into the standard B; an adjustable holder formed with the elastic fingers C′, C′, to embrace the chalk or marker, coacting for the purpose specified.

4. The combination of a base; a standard formed of sheet metal, the edges of which are turned into flanges, pivotally supported on said base; a scale inserted into said standard; and an adjustable marking device on said standard, for the purpose specified.

819,868. **DIE-STOCK.** FRED B. DOWNS, Warren, Ohio. Filed Jan. 26, 1905. Serial No. 242,731.

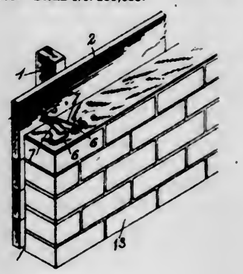


Claim.—1. In a die-stock, a casing and separate sets of radially-movable right and left threading dies therein, a single rotatable member engaged with all the dies and constructed to move said separate sets of dies in opposite directions when said member is rotated in either direction.

2. In a die-stock, a casing and separate sets of radially-movable dies therein, a rotatable plate having oppositely-inclined ribs and shoulders adapted to move the respective sets of dies in opposite directions, and means on said casing adapted to set said plate for predetermined degrees of rotation in either direction.

3. In a die-stock, the casing and radially-movable dies mounted therein, a rotatable plate having oppositely-inclined engaging portions for separate dies adapted to move the same in opposite directions, and means to lock said plate upon said casing.

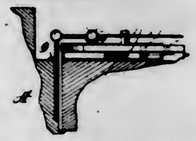
819,869. **WALL-TIE.** JOSEPH F. DUNLAP, New Brighton, Pa. Filed May 3, 1905. Serial No. 258,633.



Claim.—1. A wall-tie comprising a substantially V-shaped stem portion with its closed end provided with a dished portion or dip, and its free ends formed into substantially rectangular loops.

2. A wall-tie comprising a substantially V-shaped stem portion formed at its closed end with a dished portion or dip and provided at its free ends with arms extending at substantially right angles, said arms provided at their outer extremities with laterally-extending projections disposed substantially parallel with the side arms of the stem portion.

819,870. DOOR-CHECK. HENRY ERNST, Chicago, Ill. Filed Jan. 2, 1906. Serial No. 294,036.



Claim.—1. In a door-check, in combination, an attaching member fixed to the inner side of the door-frame and projecting therefrom; a slotted keeper member; links pivotally connected with said attaching member to swing in a horizontal plane, said keeper member being pivotally connected with said links to swing in a horizontal plane, a space being provided between said links; and a headed member carried by and projecting from the edge of the door and adapted to move through the space between said links and through the slot in said keeper member as the door is moved.

2. In a door-check, in combination, an attaching member fixed to the door-frame; a keeper member having a slot therein open at one end; two links pivotally connected with said attaching member to swing in a horizontal plane, the open end of said keeper member being pivotally connected with said links to swing in a horizontal plane, said attaching member having an opening therein wider than said slot and communicating therewith; and a headed member carried by the door and adapted to extend through said opening and said slot and to move through said slot and said opening when the door is moved.

3. In a door-check, in combination, an attaching member fixed to the inner side of the door-frame and projecting therefrom; a keeper member; a link pivotally connecting said members and permitting of a pivotal movement between said link and keeper member in a horizontal plane; means for limiting the pivotal movement between said link and said keeper member in one direction, said link and said keeper member being adapted to be swung across the face of the door in a substantially alined position; and means for securing said keeper member and said link upon the face of the door in such position.

4. In a door-check, in combination, an attaching member having an opening therein and adapted to be attached to the inner side of the door-frame; a slotted keeper member connected to said attaching member so as to allow of a swinging movement of said keeper member, the slot in said keeper member communicating with the opening in said attaching member; a lock-casing adapted to be secured to the door, said attaching member projecting beyond the face of the door to a distance substantially equal to the thickness of the lock-casing; a headed bolt slidably supported in said casing and adapted to extend into and move through the opening in said attaching member and the slot in said keeper member; a stem on said bolt for moving it; and a head on said stem adapted to engage said keeper member.

5. In a door-check, in combination, a slotted keeper member adapted to be connected to a door-jamb so as to allow of a swinging movement of said member; a casing adapted to be secured to a door; a headed bolt slidably supported in said casing and adapted to engage said keeper member; a spring in said casing tending to move said bolt, said bolt having a plurality of locking-notches therein; a spring-pressed latch-pin having a stud adapted to lie in any of said notches; a stem on said bolt for moving it; and a head on said stem adapted to engage said keeper member.

819,871. HYDRAULIC BAND-STRIPPING MACHINE. WILLIAM EVANS, Philadelphia, Pa., assignor to William Evans, Robert Evans, and John H. Evans, Philadelphia, Pa., a Firm. Filed Sept. 25, 1905. Serial No. 279,946.

Claim.—1. In a machine of the character described, a frame, two sets of beams arranged in said frame and adapted to receive and support the spring, a hydraulic cylinder having a piston adapted to actuate certain of said beams to permit of the clamping of the spring to said frame, a second hydraulic cylinder having a piston, and means carried by the same, when actuated to engage and remove the band from the spring.



2. In a machine of the character described, a frame, hydraulic cylinders arranged at right angles with respect to each other, carried by said frame, pistons arranged in and actuated by said cylinders having extensions, heads pivotally supported by said extensions, beams adapted to receive and clamp a spring introduced between the same to said frame when actuated by one of said heads carried by the piston and its extension occupying a vertical position, and said second head carried by the piston and extension occupying a horizontal position adapted to remove the band from the spring when clamped in said beams.

3. In a machine of the character described, a frame, hydraulic cylinders arranged at right angles with respect to each other, carried by said frame, pistons arranged in and actuated by said cylinders having extensions, heads pivotally supported by said extensions, beams supported respectively by one of said heads and frame adapted to receive and clamp a spring introduced between the same to said frame when actuated by one of said heads carried by the piston and its extension occupying a vertical position, and said second heads carried by the piston and extension and occupying a horizontal position adapted to remove the band from the spring, when clamped in said beams.

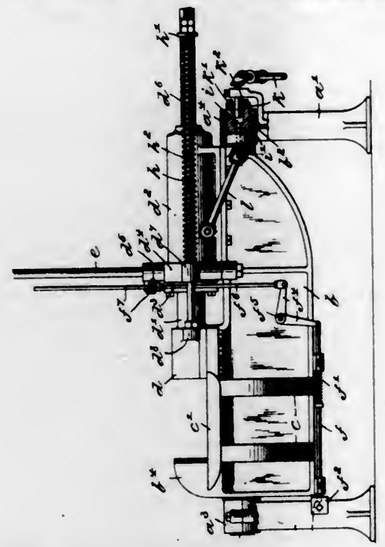
4. In a machine of the character described, a frame, beams arranged transversely and the upper ones carried by said frame, said beams adapted to engage a spring introduced between the same, a hydraulic cylinder arranged in a vertical plane below said beams having a piston, a pivotal head carried by said piston and adapted when actuated by the same to raise certain of said beams and clamp the spring between the same and to said frame, a cylinder arranged in a horizontal plane having a piston, arms carried by the piston of said horizontal cylinder each having a head adapted to directly engage and remove the band from the spring when actuated by the arms and piston of said horizontal cylinder.

5. In a machine of the character described, a frame, two sets of beams arranged transversely in said frame, whereof the upper set is carried by the same, said beams adapted to engage a spring introduced between the same, means carried by one of said beams and adapted to limit the movement of the spring into said frame between said beams, a hydraulic cylinder arranged in a vertical plane below said beams having a piston, a pivotal head carried by said piston and adapted when actuated by the same, to raise certain of said beams and clamp the spring between the same and to said frame, a cylinder arranged in a horizontal plane having a piston, arms carried by the piston of said horizontal cylinder, each having a head adapted to directly engage and remove the band from the spring when actuated by the arms and piston of said horizontal cylinder.

6. In a machine of the character described, a frame, a hydraulic cylinder having a piston arranged in said frame, two sets of beams arranged in said frame, one set movably supported by said cylinder-piston and the other set carried by said frame, the lower set of beams, when actuated by said cylinder-piston, adapted to force a spring introduced between the same against the upper set of beams to clamp the spring to said frame by engaging one or more of the upper plates of the spring, a second hydraulic cylinder having a piston, arms connected therewith, and said arms arranged, when actuated by said piston to engage and remove the band from said spring.

7. In a machine of the character described, a frame, a hydraulic cylinder carried by said frame and having a piston, a head carried by said piston, beams carried by said frame, beams carried by said head and movably arranged in said frame for supporting and forcing a spring placed thereon against said first-mentioned beams and by the same and said head to clamp the spring to said frame, a second cylinder carried by said frame having a piston, arms rigidly secured thereto, heads pivotally secured to said arms, said heads arranged when the arms are actuated by the piston of said second cylinder to force the band from the spring by engaging the same at two points.

819,872. HYDRAULIC MACHINE FOR CLAMPING PLATES IN THE MANUFACTURE OF SPRINGS. WILLIAM EVANS, Philadelphia, Pa., assignor to William Evans, Robert Evans, and John H. Evans, Philadelphia, Pa., a Firm. Filed Oct. 4, 1905. Serial No. 281,240.



Claim.—1. In a machine of the character described, a standard, movable means arranged in said standard and adapted to support a clamping means, hydraulic means carried by said movable means, said clamping means adapted when actuated by said hydraulic means to force spring-plates against each other so as to clamp the same.

2. In a machine of the character described, a standard, means arranged in said standard having a projection, hydraulic means carried by said means, said hydraulic means when actuated adapted to force spring-plates against said projection and in conjunction with said projection to then clamp the same, and means to permit said hydraulic means and the clamped spring to assume certain angular positions in said standard.

3. In a machine of the character described, a standard, means movably arranged in said standard having a projection, hydraulic means carried by said movable means, said hydraulic means when actuated adapted to force spring-plates against said projection and in conjunction with said projection to then clamp the same, means adapted to permit said movable means and by the same, said hydraulic means and the clamped spring to assume various angular positions in said standard, and means adapted to lock said swinging frame in positions given.

4. In a machine of the character described, a standard, a swinging frame arranged in said standard having a projection, a hydraulic ram carried by said swinging frame, said hydraulic ram adapted when actuated to force spring-plates against each other and said projection and in conjunction therewith to clamp and hold the same in position on said standard, and means adapted to return said ram to its normally inoperative position.

5. In a machine of the character described, a standard, a swinging frame arranged in said standard having a projection, a hydraulic ram carried by said swinging frame, said hydraulic ram adapted when actuated to force the spring-plates against each other and the projection of said frame and in conjunction therewith to clamp and hold the same in position on said standard, and means for turning and clamping said swinging frame in said standard in the position given.

6. In a machine of the character described, a standard, a frame having a projection and trunnions engaging said standard, a hydraulic cylinder carried by said frame, a piston having a head sliding on said frame, said cylinder, piston and head forming a hydraulic ram adapted when actuated to force spring-plates against each other and the projection of said frame and in conjunction therewith to clamp and hold the same in position on said standard, and means adapted to automatically return said head and piston to its normally inoperative position.

7. In a machine of the character described, a standard, a frame having a projection and trunnions engaging said standard, one of said trunnions having a chamber, a hydraulic cylinder carried by said frame, a piston having a head slidable on said cylinder, said cylinder, piston and head forming a hydraulic ram adapted when actuated to force spring-plates against each other and said projection and in conjunction therewith to clamp and hold the same in position on said standard, and pipes adapted respectively, to connect said cylinder with said chambered trunnion and the same with a source of water-supply under pressure.

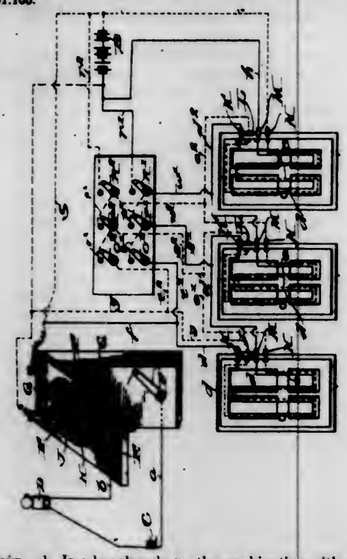
8. In a machine of the character described, a standard, a frame having a projection and trunnions engaging said standard, one of said trunnions having a chamber, a hydraulic cylinder carried by said frame, a piston having a head slidable on said frame, said cylinder, piston and head forming a hydraulic ram adapted when actuated to force the spring-plates against each other and said projection and in conjunction therewith to clamp and hold the same in position, and pipes adapted to connect respectively said cylinder with said chambered trunnion and the same with a source of water-supply under pressure, and said chambered trunnion arranged to permit of the passage of water through said pipes irrespective of their position to each other.

9. In a machine of the character described, a standard, a frame having a projection and trunnions engaging said standard, one of said trunnions having a chamber forming a passage-way, a hydraulic cylinder carried by said frame, a piston having a head slidable on said frame, said cylinder, piston and head forming a hydraulic ram adapted when actuated to force spring-plates against each other and said projection and in conjunction therewith to clamp and hold the same in position on said standard, pipes adapted to connect respectively said cylinder with said chambered trunnion and with a source of water-supply under pressure and to conduct water into and from said cylinder by the passage of the same through said chambered trunnion irrespective of the position of said frame in said standard, a spring-controlled rod connected with said frame and adapted to lock the same to said standard, and means adapted to permit of the disengagement of the rod therefrom.

10. In a machine of the character described, a standard, having a table, a frame having a projection and trunnions engaging said standard, one of said trunnions having a chamber forming a passage-way, a bracket carried by said frame adapted to support a plate forming an auxiliary table, said tables adapted to support and permit of the assembling of spring-plates thereon, a hydraulic cylinder carried by said frame, a piston having a head slidable on said frame, said cylinder, piston and head forming a hydraulic ram adapted when actuated to force the spring-plates against each other and said projection and in conjunction therewith to clamp and hold the same in position on said standard, pipes adapted to connect respectively said cylinder with said chambered trunnion and with a source of water-supply under pressure and to conduct water into and from said cylinder by the passage of the same through said chambered trunnion irrespective of the position of said frame in said standard, and a spring-controlled rod connected with said frame adapted to lock the same to

said standard, and means to permit of the disengagement of the rod therefrom.

819,873. BURGLAR-ALARM. WILLIAM H. FAHNESTY, New York, N. Y., assignor of one-third to Morris Bernhard and one-third to Marcus Burchheimer, New York, N. Y. Filed May 19, 1905. Serial No. 261,100.



Claim.—1. In a burglar-alarm, the combination with a battery and electromagnet, and a circuit including the battery and the magnet, of separate wiring for one or more separate closures included within said circuit, and a separate switch for each closure, which switches serve for closing or opening the circuits of said closures, and means operated by said magnet for closing a local battery, substantially as set forth.

2. In a burglar-alarm, the combination with a battery and an electromagnet, and a circuit, in which circuit the battery and electromagnet are included, of two separate wirings for a closure, which separate wirings are included in said circuit, and a separate switch for each wiring of each closure, which switches serve for closing or opening the circuits of said closure and means operated by said magnet for closing a local circuit, substantially as set forth.

3. In a burglar-alarm, the combination with a battery and an electromagnet, and a circuit in which the battery and magnet are included, two separate wirings for a closure, which separate wirings are both in said circuit, and a separate switch for each wiring of said closure, which switches serve for closing or opening the circuits of said closure, and means operated by said magnet for closing a local battery, substantially as set forth.

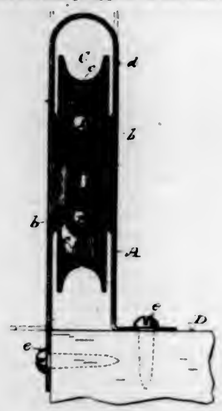
4. In a burglar-alarm, the combination with a battery and electromagnet, and a circuit including the battery and the magnet, of two independent wirings for each of a series of closures, two switches for each closure, one switch of each pair being connected with one wiring of the closure, and the other switch of the pair being connected with the other wiring of the closure, and the circuit of both wirings of the closures being within the circuit of the aforesaid battery, and means operated by said electromagnet for closing a local circuit, substantially as set forth.

819,874. GUIDE-PULLEY. ANTHONY B. FERDINAND, Wauwatosa, Wis. Filed Feb. 2, 1906. Serial No. 299,085.

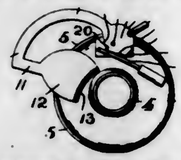
Claim.—1. A guide-pulley, the shell sides of which are provided with connected integral inwardly-extending meeting cones and opposite radial flexile branches, the sheave of the pulley being in ball-bearing support on said cones.

2. A guide-pulley, the shell sides of which are bendable at their attaching ends to various angles and provided with connected integral inwardly-extending meeting cones as well as with opposite radial flexile branches, the sheave of the pulley being in ball-bearing support on said cones.

3. A guide-pulley, the shell sides of which comprise parallel sheet-metal plates having opposite radial flexile branches, as well as connected integral inwardly-extending meeting cones, the attaching ends of said shell sides being bendable to various angles, and the pulley-sheave in ball-bearing support on said cones.



819,875. CIGAR-TIP CUTTER. LOUIS B. GARRIGUS, Newark, N. J. Filed Oct. 10, 1905. Serial No. 282,144.

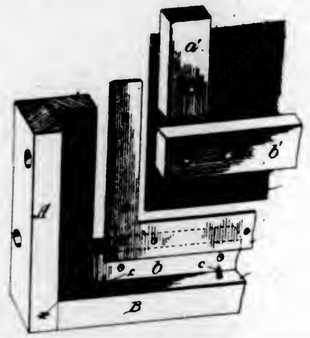


Claim.—1. A cigar-tip cutter comprising a chambered shell or box, consisting of a pair of oppositely-arranged and centrally-perforated dish-shaped disks formed with an opening in a portion of the marginal edge of said shell or box, a pin extending from disk to disk, and a cutting mechanism pivotally arranged on said pin, consisting of an enlarged portion provided with a pair of straight and angularly-arranged marginal edges, a curved or segmental arm extending from said enlarged portion, said arm conforming to the configuration of the opening in the marginal edge of the shell or box, and serving as a closure for said opening, a cutter connected with said segmental or curved arm, a spring secured between said disks, said spring having its free end portion in engagement with either of said straight marginal edge portions of the enlargement of said segmental or curved arm, and a finger-piece upon the enlargement of said segmental or curved arm, extending from the marginal opening of said shell or box, serving to open said cutting mechanism and to limit the outward movement of the same, substantially as and for the purposes set forth.

2. A cigar-tip cutter comprising a chambered shell or box, consisting of a pair of oppositely-arranged and centrally-perforated dish-shaped disks formed with an opening in a portion of the marginal edge of said shell or box, a pin extending from disk to disk, and a cutting mechanism pivotally arranged on said pin, consisting of an enlarged portion provided with a pair of straight and angularly-arranged marginal edges, a curved or segmental arm extending from said enlarged portion, said arm conforming to the configuration of the opening in the marginal edge of the shell or box, and serving as a closure for said opening, an inwardly and radially extending finger on said segmental or curved arm, a member on said finger provided with a knife-edge, a spring secured between said disks, said spring having its free end portion in engagement with either of said straight marginal edge portions of the enlargement of said segmental or curved arm, and a finger-piece upon the enlargement of said segmental or curved arm, extending from the marginal opening of said shell or box, serving to open said cutting mechanism and to limit the outward movement of the same, substantially as and for the purposes set forth.

819,876. SCREEN. ALBERT M. GUFFORD, Mancelona, Mich. Filed Apr. 15, 1905. Serial No. 255,716.

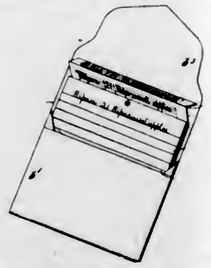
Claim.—1. In a door or window screen comprising a suitable sash or frame; a transverse metal strip; and metal strips arranged at right angles thereto, parallel with the outer faces of said sash or frame, said metal strips disconnected from each other securely clamped between the wooden members of the structure of said door or window sash.



2. In a door or window screen comprising a suitable sash or frame; a transverse metal strip, and metal strips disconnected therefrom and arranged at right angles thereto, parallel with the outer faces of said sash or frame, and which are securely clamped between the wooden members of the structure of said door or window screen.

3. In a door or window screen comprising a suitable sash or frame, consisting of vertical stiles and an upper and lower rail, the inner portions of which consist of two parallel wooden strips, a transverse metal strip arranged at right angles to the outer faces of said sash or frame, and securely clamped between the wooden strips and parallel companion stile or rail; and a metal strip securely clamped between said parallel wooden strips at right angles to said transverse metal strip parallel to and mediate the broad sides of the door.

819,877. COPY-BOOK. JONATHAN W. C. GILMAN, Boston, Mass. Filed July 17, 1905. Serial No. 269,967.



Claim.—1. A copy or writing book comprising independent copy-sheets, an independent practice-pad, and a binding one portion of which forms a pocket for holding the copy-sheets and practice-pad, one portion a rest for the same when partially or wholly withdrawn from the pocket, and one portion a hand-rest extending upon the practice-pad.

2. A copy or writing book comprising independent copy-sheets, an independent practice-pad, and a binding one portion of which forms a pocket for holding the copy-sheets and practice-pad, one portion a rest for the same when partially or wholly withdrawn from the pocket, one portion a hand-rest extending upon the practice-pad, and one portion a cover-flap.

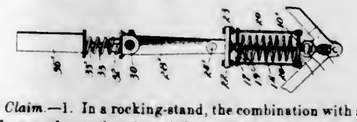
3. A copy or writing book having a number of practice-sheets and combined with said sheets a loose copy-sheet adapted to be withdrawn laterally therefrom, said copy-sheet having copies reversely arranged thereon, whereby as the copy-sheet is withdrawn the copy may show beyond the edge of said practice-sheets and said practice-sheets may act to hold the copy-sheet in place by engaging with the unwithdrawn portion thereof.

4. A copy or writing book having a number of practice-sheets and combined with said sheets a loose copy-sheet adapted to be withdrawn laterally therefrom, whereby as the copy-sheet is withdrawn the copy thereon may show beyond the edge of said practice-sheets and said practice-sheets may act to hold the copy-sheet in place by engagement with the unwithdrawn portion thereof, and means whereby the withdrawn portion of said copy-sheet with the copy thereon may be inclined to bear an angular relation with respect to the plane of the practice-sheets.

5. A copy or writing book having a binding one portion of which forms a pocket, a number of practice-sheets contained in said pocket and adapted to be laterally withdrawn so as to be written upon, a portion of said pocket acting as a rest for the hand of the writer and combined with said practice-sheets a loose copy-sheet having a copy or other matter written thereon, said copy-sheet being adapted to be withdrawn laterally from said practice-sheets so that a portion of said copy-sheet will show beyond the end of said practice-sheets.

6. A copy or writing book having a number of writing or practice sheets and combined with said sheets a loose copy-sheet adapted to be withdrawn laterally therefrom, whereby as the copy-sheet is withdrawn the copy thereon may show beyond the edge of said practice-sheets and said practice-sheets act to hold the copy-sheet in place by engagement with the unwithdrawn portion thereof.

819,878. ROCKING-STAND. FREDERICK GRINDY, Fall River, Mass. Filed July 3, 1905. Serial No. 268,267.



Claim.—1. In a rocking-stand, the combination with a supporting-frame, of a carrier pivoted thereto, a spring-tensioning mechanism pivoted to the carrier and comprising a helical spring whose coils are adapted to come together at the end of the swing of the carrier, and means for pivotally connecting said spring-tensioning mechanism with the supporting-frame at different heights in order to vary the amplitude of swing of the carrier.

2. In a rocking-stand, the combination with a supporting-frame, having an upright series of openings, of a carrier pivoted to said frame, spring-tensioning mechanism pivoted at one end to the carrier, and a cross-bar to which said mechanism is pivoted at the other end, said bar being adjustable in said series of openings in order to vary the amplitude of swing of the carrier.

3. In a rocking-stand, the combination with a supporting-frame, of a carrier pivoted thereto and having a seat, a sleeve slidable lengthwise on said carrier and having a cup, and a spring abutting between said cup and seat.

4. In a device of the class described, the combination with a supporting-frame, of a rocking carrier, a boxing slidable lengthwise on the carrier and adapted to support a hobby-horse or other similar device, and a spring interposed between the boxing and the carrier.

5. In a device of the class described, the combination with a supporting-frame, of a rocking carrier mounted thereon, a spring-tensioning device connecting the carrier to the supporting-frame, a boxing slidably mounted in relation to and supported by the carrier and adapted to support a hobby-horse or other similar device, and a spring interposed between the boxing and the carrier.

819,879. STOCK-RACK FOR PLATFORM-SCALES. HENRY C. GUMBEL and NATHAN E. TYRRELL, Kansas City, Mo. Filed Aug. 23, 1905. Serial No. 275,234.

Claim.—1. In a stock-rack for platform-scales, the combination with the scale-platform, of a base-plate secured upon the platform and having a projection extending below the upper surface of the platform, the side rack member supported on the base-plate so as to swing from a vertical position outwardly to an inclined position, and means for pivotally connecting the side rack member to the base-plate, said pivotally-connecting means having means for engaging said projection and limiting the outward swinging of the side rack-member.

2. In a stock-rack for platform-scales, the combination with the scale-platform, of a plurality of base-plates secured upon the top of the platform and each having a projection extending below the surface of the platform, the side rack member supported on said base-plates so as to swing from a vertical position outwardly to an inclined position, and a plurality of means for pivotally connecting the side rack member with each of said base-plates, and provided each with means for engaging the projection of the adjacent base-plate and limiting the outward swinging of the side rack member.

3. In a stock-rack for platform-scales, the combination with the platform, of two sets of base-plates disposed one set adjacent each side edge of and secured upon the platform each base-plate having a projection extending downwardly below the surface of the platform, two side rack members supported one on each set of base-plates so as to swing from a vertical to an outwardly-inclined position, a plurality of means for pivotally connecting each base-plate with the adjacent side rack member, each pivotally-connecting means having means for engaging the adjacent projection and limiting the outward swinging of the adjacent side rack member, two gates pivoted one to each side rack member, and means for releasably securing said gates to the opposite side rack members respectively when said members are swung to the vertical position.



4. In a stock-rack for platform-scales, the combination with the scale-platform having a vertical hole therethrough and a slot in one side edge intersecting said hole, of a base-plate secured upon the platform and having a projection disposed in said hole and opposite said slot, the side rack member supported on said base-plate so as to swing from a vertical to an outwardly-inclined position, and a plate secured to said side rack member and pivotally connected with the base-plate and disposed in said slot so as to strike said projection for limiting the outward swinging of the side rack member.

5. In a stock-rack for platform-scales, the combination with the scale-platform having suitable vertical holes and slots extending respectively therefrom to the adjacent edge of the platform, of a plurality of base-plates secured upon the platform and provided each with a projection disposed in one of said holes opposite the adjacent slot, a side rack member supported upon said base-plates so as to swing from a vertical to an outwardly-inclined position, and a plurality of plates secured to said side rack member and pivotally secured to said base-plates respectively, said side-rack-member plates being disposed respectively in said slots and adapted to strike the adjacent projections respectively for limiting the outward movement of said side rack member.

6. In a stock-rack for platform-scales, the combination with the scale-platform provided adjacent opposite side edges with a plurality of vertical holes and slots extending respectively from said holes to the adjacent side edge, of two sets of base-plates mounted upon said platform one set adjacent each side edge, said base-plates having each a projection disposed in one of said holes opposite the adjacent slot, two side rack members supported respectively upon said sets of base-plates so as to swing from a vertical to an outwardly-inclined position, a plurality of stop-plates secured upon each side rack member and pivotally connected each to an adjacent base-plate and disposed respectively in said slots so as to strike the adjacent projections for limiting the outward swinging of the side rack members, two gates pivoted one to each side rack member, and releasable means for securing said gates to the opposite side rack members respectively, when said members are swung to the vertical position.

7. In a stock-rack for platform-scales, the combination with the scale-platform provided with two vertical holes adjacent one edge and having slots extending respectively from said holes to the adjacent edge, of a base-plate secured upon the platform and provided with two projections disposed in said holes opposite said slots respectively, the side rack member supported on the base-plate so as to swing from a vertical to an outwardly-inclined position, and two stop-plates secured to said side rack member and pivotally connected with said base-plate and disposed in said slots respectively so as to strike the adjacent projection and limit the outward swinging of the side rack member.

8. In a stock-rack for platform-scales, the combination with the scale-platform provided adjacent one edge with a plurality of vertical holes and slots extending respectively from said holes to the adjacent edge, of a plurality of base-plates secured upon said platform and provided each with two projections disposed respectively in two of said holes opposite the adjacent slots, a side rack member supported on said base-plates so as to swing from a vertical to an outwardly-inclined position, and a plurality of stop-platea secured to said side rack member and pivotally connected two to each of said base-plates upon opposite sides thereof and disposed respectively in said slots so as to strike the adjacent projections respectively for limiting the outward swinging of the side rack member.

9. In a stock-rack for platform-scales, the combination with the scale-platform, of a base-plate secured upon the platform, the side rack member, a supporting-plate secured to said side rack member and resting and adapted to rock upon the base-plate to positions permitting the side rack member to swing from a vertical to an outwardly-inclined position, and means for pivotally connecting the side rack member to the base-plate and coöperating with the base-plate to limit the outward movement of the side rack member.

10. In a stock-rack for platform-scales, the combination with the scale-platform, of a base-plate secured thereon, a side rack member, a supporting-plate secured to said side rack member and mounted on the base-plate so as to oscillate laterally, the supporting-plate coöperating with the base-plate to limit the inward swinging of the side rack member, and means pivotally connecting the side rack member and the base-plate and coöperating with the base-plate to limit the outward swinging of the side rack member.

11. In a stock-rack for platform-scales, the combination with the scale-platform provided with a vertical hole and a slot extending from said hole to the adjacent edge, of a base-plate secured upon the platform and provided with a projection disposed in said hole opposite said slot, a side rack member, a supporting-plate secured to the side rack member and mounted on the base-plate so as to oscillate with the side rack member and coöperating with the base-plate to limit the inward swinging of the side rack member, a stop-plate secured to said side rack member and pivoted to the base-plate and disposed in said slot so as to strike said projection and limit the outward movement of the side rack member.

12. In a stock-rack for platform-scales, the combination with the scale-platform provided with two vertical holes and slots extending respectively from said holes to the adjacent edge of the platform, of a base-plate secured upon the platform and provided with two projections disposed in said holes respectively and opposite said slots, a side rack member, a supporting-plate secured to the side rack member and mounted on the base-plate so as to oscillate laterally with the side rack member, and two stop-plates secured to the side rack member and pivoted respectively to opposite sides of the base-plate and disposed respectively in said slots so as to strike the adjacent projections for limiting the swinging in one direction of the side rack member.

13. In a stock-rack for platform-scales, the combination with the scale-platform, of a plurality of base-plates secured thereon, a side rack member, a supporting-plate secured to the side rack member and mounted on the base-plate so as to oscillate laterally with the side rack member, and means for pivotally connecting the side rack member with the base-plates and coöperating therewith to limit the swinging in one direction of the side rack member.

14. In a stock-rack for platform-scales, the combination with the scale-platform, of two sets of base-plates secured thereon adjacent opposite edges of the platform, a plurality of supporting-plates mounted respectively upon said base-plates so as to oscillate laterally thereon, two side rack members mounted respectively upon the supporting-plates carried by the two sets of base-plates and movable laterally with the supporting-plates to which they are respectively connected, means for pivotally connecting each side rack member with the adjacent base-plates and coöperating therewith to limit the swinging in one direction of the adjacent side rack member two gates hinged one to each side rack member, and releasable means for securing said gates to the opposite side rack members respectively when the gates and said members are swung to certain positions.

15. In a stock-rack for platform-scales, the combination with the scale-platform provided adjacent opposite edges with two series of vertical holes and slots extending from said holes respectively to the adjacent edges of the platform, of two sets of base-plates mounted upon the platform adjacent opposite edges and provided with projections respectively disposed one in each of said holes opposite the adjacent slot, two laterally-swinging side rack members, two sets of supporting-plates supporting respectively the side rack members and mounted one set upon the adjacent set of base-plates so as to oscillate laterally with the side rack member connected thereto, two sets of stop-plates secured one set to each side rack member and pivotally connected respectively one set to each set of base-plates, each set of stop-plates being disposed respectively in the adjacent slots and adapted to strike respectively the projections on fe adjacent base-plates for limiting the swinging in one direction of the side rack member to which they are connected.

16. In a stock-rack for platform-scales, the combination with the scale-platform provided with a vertical hole and a slot extending therefrom toward the adjacent edge, of a base-plate provided on its under side with a projection disposed in said hole opposite said slot a tranaverse bolt extending horizontally through said base-plate the upper side of the base-plate having a partially-cylindrical portion of its surface disposed concentrically with said bolt, a supporting-plate having on its under side a recessed portion fitted to oscillate upon the partially-cylindrical portion of the base-plate, means for securing the base-plate to the platform, a side rack member mounted upon the supporting-plate and oscillatable therewith from a vertical to an outwardly-inclined position, a stop-plate having its upper end secured to the side member and having a transverse hole through which said bolt extends, the lower end of the stop-plate being disposed in said slot and adapted to strike said projection for limiting the swinging in one direction of the side rack member.

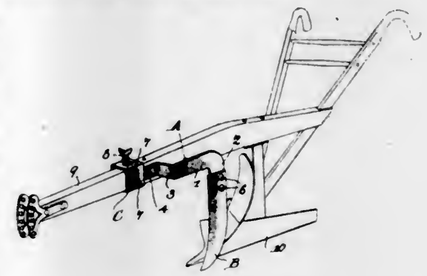
17. The combination with the base-plate provided on one side with two projections adapted to be disposed in vertical holes in the platform of the scale and having upon the opposite side a partially-cylindrical projection and having a transverse hole disposed concentrically with said partially-cylindrical projection, a supporting-plate adapted to receive upon its upper side the side rack member and having on its lower side a recessed portion fitted to said partially-cylindrical projection, two stop-plates disposed one at each end of said partially-cylindrical projection, each provided with a hole disposed opposite the hole through the base-plate, the upper ends of said stop-plates being adapted to receive between and have clamped to them the side rack member, the lower ends of said stop-plates being adapted to strike respectively said two projections, thus limiting the swinging movement in one direction of the stop-plates, and a bolt extending through the holes in the stop-plate and the base-plate.

18. The combination with the platform having two vertical holes and slots extending therefrom toward the adjacent edge, of a base-plate mounted on the platform and having on its under side two projections disposed in said holes opposite said slots respectively and having a transverse hole and a partially-cylindrical projection on its upper side disposed concentric with said hole, a supporting-plate having on its lower side a recessed portion fitted to said partially-cylindrical projection, the side rack member mounted upon the upper side of the supporting-plate, two stop-plates disposed adjacent opposite ends of said partially-cylindrical projection and having their upper ends secured to the side rack member and their lower ends mounted in said slots and adapted to strike the two projections on the under side of the base-plate when the side rack member has been swung to a certain outwardly-inclined position, and a bolt located in the opening in the base-plate and extending through said two stop-plates.

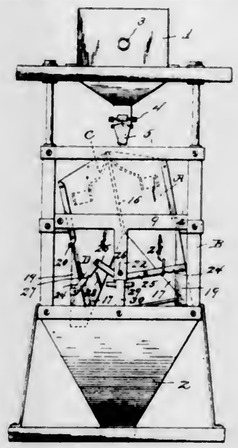
819,880. **VINE-CUTTER.** JAMES D. GUNN, Thomasville, Ga., assignor of one-half to Mary Laura Copeland, Metcalf, Ga. Filed Jan. 19, 1906. Serial No. 296,874.

Claim.—1. A supporting member having a downward-extending shank and a lateral offset with a forward extension, a rectangular clamp having a set-screw, means for securing the forward extension of the supporting member upon the inside of the clamp, and a vine-cutting blade secured upon the shank of the supporting member.

2. The combination with a plow-beam, of a clamp having a set-screw whereby it may be secured upon the beam, a supporting member having at its front end an enlargement which is secured upon the inside of the clamp, said supporting member including a lateral offset and a downward-extending shank, and a vine-cutting blade secured upon the downward-extending shank and spaced by the lateral offset from the plane of the clamp upon which the enlargement at the front end of the supporting member is secured.



819,881. **AUTOMATIC WEIGHING-SCALE.** HARRY MAGER, Chicago, Ill. Filed Dec. 13, 1905. Serial No. 291,547.



Claim.—1. In an apparatus such as stated, the combination of a main frame, a beam-frame supported by knife-edge bearings in the main frame, a bucket-frame correspondingly supported in the beam-frame, a twin bucket arranged to oscillate therein and having separate outlets for each compartment, hinged valve-gates mounted with relation to said outlets, a rod connecting said gates at one side of the bucket, a system of levers connecting the gates at the other side, and arms secured to the main frame for tripping said levers, substantially as described.

2. In an apparatus such as stated, the combination of a suitable support, of a twin bucket arranged to oscillate therein and having separate outlets for each compartment, a supply-hopper above the bucket equipped with an air-vent, a cut-off and a stream-regulating device, a funnel below the bucket, hinged valve-gates mounted with relation to said outlets, a rod connecting the gates at one side of the bucket, a system of levers connecting the gates at the other side, and arms secured to the support for tripping said levers, substantially as described.

3. In an apparatus such as stated, the combination of a main frame, a beam-frame supported by knife-edge bearings in the main frame, a bucket-frame correspondingly supported in the beam-frame, a twin bucket arranged to oscillate therein and having separate outlets for each compartment, a supply-hopper above the bucket, a distributing pan or saddle intermediate said hopper and bucket, hinged valve-gates mounted with relation to said outlets, a rod connecting said gates at one side of the bucket, a system of levers connecting the gates at the other side, and arms secured to the main frame for tripping said levers, substantially as described.

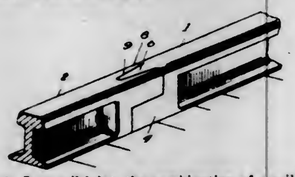
4. In an apparatus such as stated, the combination with a suit-

able support, of a twin bucket arranged to oscillate therein and having separate outlets for each compartment, hinged valve-gates mounted with relation to said outlets, a rod connecting said gates at one side of the bucket, a system of levers connecting the gates at the other side, and arms secured to the support for tripping said levers, substantially as described.

5. In an apparatus such as stated, the combination with a suitable support of a twin bucket arranged to oscillate therein and having separate outlets for each compartment, hinged valve-gates mounted with relation to said outlets, a rod connecting said gates at one side of the bucket, a system of levers connecting the gates at the other side, whereof two are notched, fingers or stops on the bucket to engage said notches, and means for tripping said levers, substantially as described.

6. In an apparatus such as stated, the combination of a main frame, a beam-frame supported by knife-edge bearings in the main frame, a bucket-frame correspondingly supported in the beam-frame and having a downwardly-extended U-shaped auxiliary frame, a slotted bar secured to the main frame and arranged to accommodate the beam, a link connecting said bar with the auxiliary frame, and a bucket mounted in trunnions in the bucket-frame, substantially as described.

819,882. RAIL-JOINT. EDGAR B. HARDMAN, Joppa, W. Va. Filed Jan. 31, 1906. Serial No. 299,834.



Claim.—1. In a rail-joint, the combination of a rail having its upper portion cut away longitudinally thereof and formed with a longitudinal extension flush with the top of said rail, the projecting lower portion of the rail aforesaid having a narrow longitudinal recess in its under side, a second rail having its lower portion cut away to receive the projecting lower portion of the first-mentioned rail, and an extension projecting from the lower cut-away portion of the second rail and in spaced relation to the upper portion of said rail, the last-mentioned extension entering the recess in the bottom of the first-mentioned rail, the second rail having a recess in its upper or ball portion to receive the extension of the first-mentioned rail.

2. In a rail-joint, the combination of the rail 1 having its upper portion cut away at the end and having its lower projecting portion formed with a tapering seat or recess on its under side and longitudinally thereof, and the rail 2 having its lower portion cut away at the end to receive the projecting portion of the rail 1, the upper portion of the rail 2 being provided with a longitudinal tapering seat or recess also, each of the rails having a longitudinal tapering extension projecting from the same at its cut-away portion and received in the longitudinal tapering recess of the other rail to establish a snug interlocking connection, as specified.

819,883. MOLDING APPARATUS. ALFRED M. HEWLETT and MADDRA J. HEWLETT, Kewanee, Ill.; said Maddra J. Hewlett assignor to said Alfred M. Hewlett. Filed Oct. 16, 1903. Serial No. 177,363.

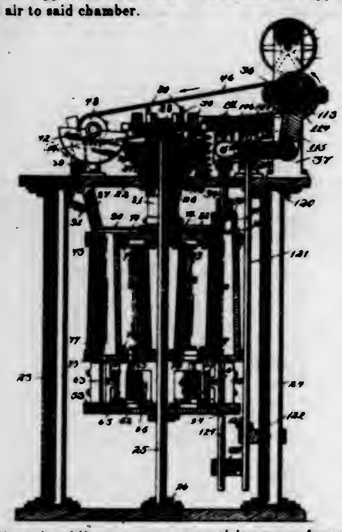
Claim.—1. A sand-molding apparatus, comprising means for supporting the mold, and means for introducing compressed air and sand together into the mold and permitting the air to expand in the mold and distribute the sand therein by its expansive force.

2. A sand-molding apparatus, comprising a mold-support, and means for introducing compressed air charged with sand into the mold, said means having a contracted discharge-passage.

3. A sand-molding apparatus, comprising means for supporting the mold, and contracted means communicating with the mold for introducing compressed air and sand together thereinto, so that the expansive force of the compressed air acts to distribute and pack the sand in the mold, substantially as described.

4. A sand-molding apparatus, comprising means for supporting the mold, a chamber adapted to contain sand, and means for introducing compressed air and sand from said chamber together into the mold and permitting the air to expand in the mold and distribute the sand therein by its expansive force.

5. In a sand-molding apparatus a sand-chamber, having a fixed partly-open bottom, whereby a mass of sand may be supported in said chamber and portions thereof intermittently discharged by compressed air supplied to said chamber and means for supplying compressed air to said chamber.



6. A sand-molding apparatus, comprising means for supporting the mold, a cylinder adapted to contain sand and having a constricted opening for the passage of sand therefrom to the mold, and means for introducing compressed air and sand from said cylinder together into the mold.

7. A sand-molding apparatus, comprising means for supporting the mold, a cylinder above said mold-supporting means and having a constricted opening for the passage of sand therefrom to the mold, and means for supplying compressed air to said cylinder, substantially as described.

8. A sand-molding apparatus, comprising a cylinder adapted to contain sand in mass, means for supporting the mold in communication with said cylinder, and means for supplying compressed air to the mass of sand in said cylinder, substantially as described.

9. A sand-molding apparatus, comprising a cylinder adapted to contain sand in mass, means for supporting the mold in communication with said cylinder, means for supplying compressed air to the mass of sand in said cylinder, and means for exhausting the compressed air from said cylinder, substantially as described.

10. A sand-molding apparatus, comprising a sand-holding receptacle having one or more constricted openings in the lower portion thereof, and means for introducing compressed air and sand from said sand-holding receptacle together into the mold.

11. A sand-molding apparatus comprising a mold-support, means arranged to support a mass of sand and having a contracted passage at the bottom for introducing sand from above into the mold, and means for introducing compressed air and sand from said mass together into the mold.

12. A sand-molding apparatus, comprising a sand-holding receptacle having one or more constricted openings at its lower end for the discharge of sand therefrom, means for supporting the mold in communication with said openings, means for supplying sand to said receptacle, and means for supplying compressed air to the sand in said receptacle, substantially as described.

13. A sand-molding apparatus, comprising a sand-holding receptacle open at its upper end and having one or more constricted openings at its lower end, means for supporting the mold in communication with said lower openings, means for closing the upper end of said receptacle, and means for supplying compressed air to the sand therein, substantially as described.

14. A sand-molding apparatus, comprising a sand-holding receptacle open at its upper end and having one or more constricted openings at its lower end, means for supporting the mold in communication with said lower openings, means for closing the upper end of said receptacle, means for supplying compressed air to the sand therein, and means for supplying sand to said receptacle, substantially as described.

15. A sand-molding apparatus, comprising a sand-holding receptacle open at its upper end and having one or more constricted

openings at its lower end, means for supporting the mold in communication with said lower openings, means for closing the upper end of said receptacle, means for supplying compressed air to the sand therein, and means for exhausting said receptacle, substantially as described.

16. A sand-molding apparatus, comprising a sand-holding receptacle open at its upper end and having one or more constricted openings at its lower end, means for supporting the mold in communication with said lower openings, means for automatically closing the upper end of said receptacle, and means for thereafter supplying compressed air to the sand therein, substantially as described.

17. A sand-molding apparatus, comprising a sand-holding receptacle open at its upper end and having one or more constricted openings at its lower end, means for supporting the mold in communication with said lower openings, means for automatically closing the upper end of said receptacle, and means for automatically supplying compressed air to the sand in said receptacle when the upper end thereof is closed, substantially as described.

18. A sand-molding apparatus, comprising a sand-holding receptacle open at its upper end and having one or more constricted openings at its lower end, means for supporting the mold in communication with said lower openings, means for automatically opening and closing the upper end of said receptacle, and means for alternately supplying compressed air to the sand in said receptacle and exhausting it therefrom while the upper end thereof is closed, substantially as described.

19. A sand-molding apparatus, comprising a sand-holding receptacle open at its upper end and having one or more constricted openings at its lower end, means for supporting the mold in communication with said lower openings, means for automatically opening and closing the upper end of said receptacle, means for alternately supplying compressed air to the sand in said receptacle and exhausting it therefrom while the upper end thereof is closed, and means for supplying sand to said receptacle, substantially as described.

20. A sand-molding apparatus, comprising a mold, a compression-cylinder adapted to supply sand to said mold, fluid-pressure mechanism for packing the sand in said mold, and means for automatically actuating said mechanism.

21. A sand-molding apparatus comprising a sand-receptacle, fluid-pressure-supplying mechanism adapted to communicate therewith, for charging the mold with sand from said receptacle and means supporting said sand-receptacle so that it may be moved into and out of operative relation to said fluid-pressure-supplying mechanism.

22. A sand-molding apparatus comprising a sand-receptacle, fluid-pressure-supplying mechanism adapted to communicate therewith for charging the mold with sand from said receptacle, a mold-support, and means supporting said sand-receptacle so that it may be moved into and out of operative relation to said fluid-pressure-supplying mechanism.

23. A sand-molding apparatus, comprising fluid-pressure-supplying mechanism, a sand-receptacle movable into and out of operative relation to said fluid-pressure-supplying mechanism, and means for automatically supplying sand to said receptacle, substantially as described.

24. A sand-molding apparatus comprising a sand-receptacle, fluid-pressure-supplying mechanism adapted to communicate therewith for charging the mold with sand from said receptacle, means supporting said sand-receptacle so that it may be moved into and out of operative relation to said fluid-pressure-supplying mechanism, and means for automatically supplying sand to said receptacle when it is out of operative relation to said fluid-pressure-supplying mechanism.

25. A sand-molding apparatus comprising a sand-receptacle having one or more openings at its lower end, fluid-pressure-supplying mechanism adapted to communicate with said receptacle for charging the mold with sand therefrom, means supporting said sand-receptacle so that it may be moved into and out of operative relation to said fluid-pressure-supplying mechanism, a mold-support, and means for moving said sand-receptacle and mold-support into and out of operative relation to said fluid-pressure-supplying mechanism.

26. A sand-molding apparatus comprising a sand-receptacle having one or more openings at its lower end, fluid-pressure-supplying mechanism adapted to communicate with said receptacle for charging the mold with sand therefrom, means supporting said sand-receptacle so that it may be moved into and out of operative relation to said fluid-pressure-supplying mechanism, a mold-support, means for moving said sand-receptacle and mold-support into and out of operative relation to said fluid-pressure-supplying mechanism, and means for supplying sand to said receptacle.

27. A sand-molding apparatus, comprising fluid-pressure-supplying mechanism, a sand-holding cylinder movable into and out of operative relation to said fluid-pressure-supplying mechanism and having one or more openings at its lower end, a vertically-movable mold-support below said cylinder, and means for raising said mold-support to press the mold carried thereby closely in contact with the lower end of said cylinder over said openings, substantially as described.

28. A sand-molding apparatus, comprising fluid-pressure-supplying mechanism, a sand-holding cylinder open at its upper end and having one or more openings at its lower end, a vertically-movable cover for said upper opening, said cover being connected with said fluid-pressure-supplying mechanism, means for supporting the mold in communication with said lower openings, and means for moving said cover into and out of engagement with said cylinder, substantially as described.

29. A sand-molding apparatus, comprising fluid-pressure-supplying mechanism, a sand-holding cylinder open at its upper end and having one or more openings at its lower end, a vertically-movable cover for said upper opening, means for supporting the mold in communication with said lower openings, means for moving said cover into and out of engagement with said cylinder, and means for automatically supplying compressed air to said cylinder when said cover is in operative position, substantially as described.

30. A sand-molding apparatus, comprising fluid-pressure-supplying mechanism, a sand-holding cylinder open at its upper end and having one or more openings at its lower end, a vertically-movable cover for said upper opening, a vertically-movable mold-support below said cylinder, means for moving said mold-support to move the mold closely into contact with the lower end of said cylinder over said openings, and means for supplying compressed air to said cylinder while the ends thereof are closed, substantially as described.

31. A sand-molding apparatus comprising means for supporting a plurality of molds, means for directing sand into said molds, fluid-pressure-supplying mechanism for carrying the sand into the molds and means for bringing the molds severally into operative relation to said fluid-pressure-supplying mechanism.

32. A sand-molding apparatus, comprising a plurality of mold supporting devices, a corresponding number of sand-receptacles for supplying sand to the molds carried by the mold-supporting devices, fluid-pressure-supplying mechanism, and means for moving said mold-supporting devices and sand-receptacles severally into and out of operative relation to said fluid-pressure-supplying mechanism, substantially as described.

33. A sand-molding apparatus, comprising a plurality of mold-supporting devices, a corresponding number of sand-receptacles for supplying sand to the molds carried by the mold-supporting devices, fluid-pressure-supplying mechanism, means for moving said mold-supporting devices and sand-receptacles severally into and out of operative relation to said fluid-pressure-supplying mechanism, and means for supplying sand to said sand-receptacles, substantially as described.

34. A sand-molding apparatus, comprising a plurality of mold-supporting devices, a corresponding number of sand-receptacles arranged respectively over the mold-supporting devices and having one or more openings at their lower ends for supplying sand to the molds carried by the mold-supporting devices, fluid-pressure-supplying mechanism, and means for moving said mold-supporting devices and sand-receptacles severally into and out of operative relation to said fluid-pressure-supplying mechanism, substantially as described.

35. A sand-molding apparatus, comprising a turn-table, a plurality of mold-holding devices carried thereby, a corresponding number of sand-receptacles rotatably supported above said mold-supports and rotating in unison therewith, fluid-pressure-supplying mechanism for supplying sand from said sand-receptacles severally to the molds, and means for connecting said fluid-pressure-supplying mechanism with the different sand-receptacles, substantially as described.

36. A sand-molding apparatus, comprising a turn-table, a plurality of mold-holding devices carried thereby, a corresponding number of sand-receptacles rotatably supported above said mold-supports and rotating in unison therewith, and stationary fluid-pressure-supplying mechanism for supplying sand to the molds from said sand-receptacles, substantially as described.

37. A sand-molding apparatus, comprising a turn-table, a plurality of mold-holding devices carried thereby, a corresponding number of sand-receptacles rotatably supported above said mold-sup-

ports and rotating in unison therewith, stationary fluid-pressure-supplying mechanism for supplying sand to the molds from said sand-receptacles, and means for supplying sand to said receptacles, substantially as described.

38. A sand-molding apparatus, comprising a turn-table, a plurality of mold-holding devices carried thereby, a corresponding number of sand-holding receptacles, having one or more constricted openings at their lower ends, rotatably supported above said mold-holding devices and rotating in unison therewith, means for intermittently rotating said turn-table and sand-holding receptacles, fluid-pressure-supplying mechanism for supplying the molds with sand from said sand-receptacles, and means for connecting said fluid-pressure-supplying mechanism with the different sand-receptacles, substantially as described.

39. A sand-molding apparatus, comprising a turn-table, a plurality of mold-holding devices carried thereby, a corresponding number of sand-holding receptacles having one or more constricted openings at their lower ends, rotatably supported above said mold-holding devices and rotating in unison therewith, means for intermittently rotating said turn-table and sand-holding receptacles, means for holding the molds while in charging position in engagement with the lower ends of said sand-holding receptacles, and means for supplying compressed air to said receptacles, substantially as described.

40. A sand-molding apparatus, comprising a turn-table, a plurality of mold-holding devices carried thereby, a corresponding number of sand-holding receptacles having one or more constricted openings at their lower ends, rotatably supported above said mold-holding devices and rotating in unison therewith, means for intermittently rotating said turn-table and sand-holding receptacles, means for holding the molds while in charging position in engagement with the lower ends of said sand-holding receptacles, and means for supplying compressed air to said receptacles and for exhausting it therefrom while the molds are in engagement with said receptacles, substantially as described.

41. A sand-molding apparatus, comprising a turn-table, a plurality of mold-holding devices carried thereby, a corresponding number of sand-receptacles rotatably supported above said mold-holding devices and rotating in unison therewith, each of said sand-receptacles consisting of a cylinder open at its upper end and having one or more constricted openings at its lower end, means for intermittently rotating said mold-holding devices and sand-receptacles, means for closing the upper ends of said receptacles when in charging position, means for moving the mold-supports to carry the molds into engagement with the lower ends of said receptacles when in charging position, and means for supplying compressed air to said receptacles for charging the molds, substantially as described.

42. A sand-molding apparatus, comprising a turn-table, a plurality of mold-holding devices carried thereby, a corresponding number of sand-receptacles rotatably supported above said mold-holding devices and rotating in unison therewith, each of said sand-receptacles consisting of a cylinder open at its uppper end and having one or more constricted openings at its lower end, means for intermittently rotating said mold-holding devices and sand-receptacles, means for closing the upper ends of said receptacles when in charging position, means for moving the mold-supports to carry the molds into engagement with the lower ends of said receptacles when in charging position, and means for supplying compressed air to said receptacles for charging the molds and for exhausting the air therefrom while the upper end thereof is closed, substantially as described.

43. A sand-molding apparatus, comprising a turn-table, a plurality of mold-holding devices carried thereby, a corresponding number of sand-receptacles rotatably supported above said mold-holding devices and rotating in unison therewith, each of said sand-receptacles consisting of a cylinder open at its upper end and having one or more constricted openings at its lower end, means for intermittently rotating said mold-holding devices and sand-receptacles, means for closing the upper ends of said receptacles when in charging position, means for moving the mold-supports to carry the molds into engagement with the lower ends of said receptacles when in charging position, means for supplying compressed air to said receptacles for charging the molds, and means for supplying sand to said receptacles before they reach the charging position, substantially as described.

44. A sand-molding apparatus, comprising a turn-table, a plurality of mold-holding devices carried thereby, a corresponding number of sand-holding receptacles for supplying sand to the molds carried by the turn-table, stationary fluid-pressure-supplying mechanism for charging the molds with sand from said receptacles, means for intermittently rotating said turn-table, and means for locking said turn-table against rotation while the molds are being charged, substantially as described.

45. A sand-molding apparatus, comprising means for supporting the mold, a sand-receptacle having a constricted opening communicating with the mold, and means for admitting compressed air directly to the sand in said receptacle, substantially as described.

46. A sand-molding apparatus, comprising means for supporting the mold, mechanism for introducing compressed air and sand together into the mold, and means for automatically operating said mechanism.

47. A sand-molding apparatus, comprising movable means for supporting a plurality of molds, sand-holding means for supplying sand thereto, fluid-pressure mechanism for charging the molds, and means for automatically operating said parts, substantially as described.

48. A sand-molding apparatus, comprising means for holding sand, means for moving a plurality of molds into and out of position to be charged with sand, fluid-pressure mechanism for charging the molds, and means for automatically operating said moving and charging mechanisms.

49. A continuously-operating molding apparatus, comprising means for supporting a plurality of molds, fluid-pressure mechanism for successively charging the molds with sand, and means for automatically operating said charging means to charge the molds successively.

50. A sand-molding apparatus, comprising means for supporting the mold, a sand-chamber having a partly-open bottom to support the sand, and means for supplying compressed air to said sand-chamber to carry sand from said sand-chamber and pack the same in the mold.

51. A sand-molding apparatus comprising means for supporting a mold and means for conducting compressed air charged with sand to and causing it to expand in the mold.

52. A sand-molding apparatus comprising a sand-holding receptacle adapted to hold a mass of sand, said receptacle having one or more contracted outlet-passages, means for supporting a mold in communication with said receptacle, and means for causing compressed air to permeate the mass of sand in said receptacle and carry particles of sand into the mold.

53. A sand-molding apparatus comprising means for supporting the mold, a receptacle adapted to hold sand in mass, and means for conducting compressed air charged with sand from said receptacle into the mold.

54. A sand-molding apparatus comprising means for supporting the mold, a compression-chamber adapted to contain sand in mass, and to be placed in communication with the mold, and means for directing compressed air through the mass of sand in said chamber into the mold, to fill the mold with sand from the mass.

819,884. **SHOESTRING-FASTENER.** THOMAS HIGGINS, Johnstown, Pa. Filed Jan. 23, 1906. Serial No. 297,476.

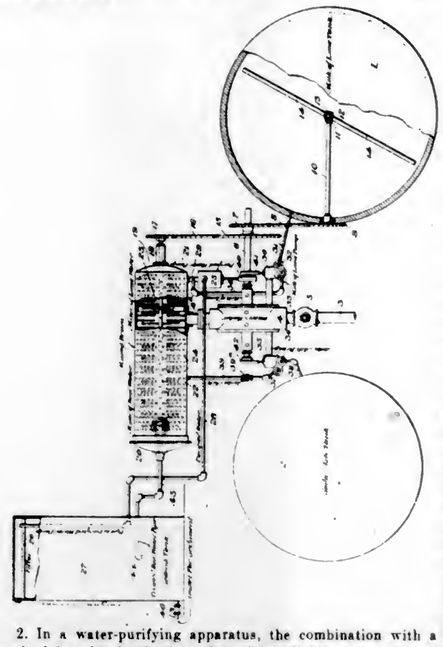


Claim.—1. A shoestring-fastener comprising a base member having spaced ribs provided with transverse depressions, a body movably connected to said base member and provided with an intermediate rib seating between said spaced ribs, and yieldable fastening means adapted to fasten said base member and movable member.

2. A shoestring-fastener comprising a base member having spaced ribs provided with transverse depressions, a body hinged at one side to said base member and provided with an intermediate rib seating between said spaced ribs, and a resilient catch upon said hinged body and adapted to yieldably engage a depression in said base member.

819,885. **APPARATUS FOR SOFTENING WATER.** AXEL R. HOLMEN, Columbus, Ohio. Filed Sept. 29, 1905. Serial No. 280,685.

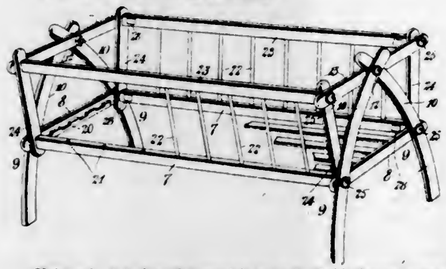
Claim.—1. In a water-purifying apparatus, the combination with a closed mixing-chamber having a foraminous dividing member and inwardly-projecting arms, of stirrers rotating between said arms, a water-supply fed to said mixer under pressure, means for regulating the amount of water supplied to said mixer, a motor in said supply, suitable sources of chemical-supply connected to said mixer, and means operated by said motor for supplying the chemicals to said mixer.



2. In a water-purifying apparatus, the combination with a closed mixing-chamber having a foraminous dividing member, and inwardly-projecting arms on each side of said member, of stirrers on a central shaft adapted to play between said arms, a water-supply fed to said mixer under pressure, means for regulating the amount of water supplied to said mixer, suitable sources of chemical-supply connected to said mixer, a motor in said supply and means between the source of chemical-supply and the mixer and driven by the motor for positively and proportionately supplying the chemicals to the mixer.

3. In a water-purifying apparatus, the combination with a closed mixing-chamber having a foraminous dividing member, and inwardly-projecting arms on each side of said member, of stirrers on a central shaft adapted to play between said arms, a water-supply fed to said mixer under pressure, means for regulating the amount of water supplied to said mixer, suitable sources of chemical-supply connected to said mixer, a motor in said supply, means between the source of chemical-supply and the mixer and driven by the motor for positively and proportionately supplying the chemicals to the mixer, a soft-water supply, and means whereby the soft water is proportionately mixed with one of the said chemicals prior to its entrance into the mixer.

819,886. **CRIB OR BED.** THOMAS J. HUME, New Rochelle, N. Y. Filed Mar. 23, 1905. Serial No. 251,620.



Claim.—1. A bedstead comprising a pair of side frames, crossbars hinged to said frames at their respective ends, and diagonally-arranged posts flexibly secured to said frames and bars whereby a truss structure is produced at the head and foot of the bed.

2. A bedstead comprising a pair of side frames, cross-bars hinged to said side frames at the respective ends of the bed, and a pair of posts at each end of the bed flexibly joined to said side frames and to said cross-bars to form a truss structure therewith.

3. The combination of a pair of end portions, each comprising a pair of posts inclined toward each other at their upper ends, an upper cross-bar to which the upper ends of the posts are attached, a lower cross-bar having its ends attached to the posts at their intermediate parts, and an upright bar attached to each end of the upper cross-bar, the lower ends of the upright bars being supported at the connections of the lower cross-bar with the posts, and a rail on each side attached to the said end portions at their intermediate parts.

4. In a device of the character specified, the combination of a pair of end portions, each comprising a pair of posts inclined toward each other at their upper ends, an upper cross-bar to which the upper ends of the posts are attached, a lower cross-bar having its ends attached to the posts midward of their ends, and an upright bar attached to each end of the upper cross-bar, the lower ends of the upright bars being supported at the connections of the lower cross-bar with the posts, and a pair of rails on each side connecting the said end portions and supported at the end connections respectively of the said upright bars.

5. In a device of the character specified, the combination of a pair of end portions each comprising a pair of posts inclined toward each other at their upper portions, an upper cross-bar to which the upper portions of the posts are attached, a lower cross-bar having its ends attached to the posts at their intermediate parts, and an upright bar having its lower end supported at the connection of the lower cross-bar and post and having its upper end attached to said upper cross-bar, a pair of rails on one side connecting the said end portions and supported at the end connections respectively of said upright bars, and a rail on the other side supported at the connection of the posts and lower cross-bars.

6. In a device of the character specified, the combination of a pair of end portions each comprising a pair of posts inclined toward each other at their upper portions, an upper cross-bar to which the upper portions of the posts are attached, a lower cross-bar having its ends attached to the posts at their intermediate parts, and an upright bar having its lower end supported at the connection of the lower cross-bar and post and having its upper end attached to said upper cross-bar, and a pair of rails on each side connecting the said end portions and supported at the end connections respectively of the said upright bars.

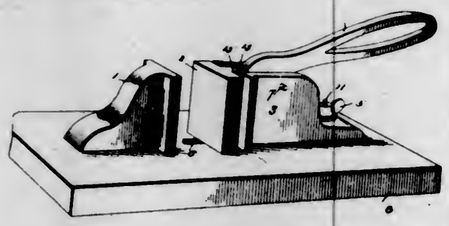
7. In a device of the character specified, the combination of a pair of end portions, each comprising a pair of posts inclined toward each other and overlapping at their upper ends, an upper cross-bar attached to the posts at such overlapping ends, a lower cross-bar having its ends attached to the posts at their intermediate parts, and an upright bar attached to each end of the upper cross-bar, the lower ends of the upright bars being supported at the connections of the lower cross-bar with the posts, and a pair of rails on each side connecting the said end portions and supported at the end connections respectively of the said upright bars.

8. The combination of a pair of end portions, each comprising a pair of posts inclined toward each other at their upper ends and overlapping, a cross-bar attached to such ends by a bolt passing through and securing cross-bar and posts, a lower cross-bar having its ends attached to the posts at their intermediate parts, and an upright bar attached to each end of the upper cross-bar, the lower ends of the upright bars being supported at the connections of the lower cross-bars with the posts, a rail on each side connected with the said end portions at the connection of the post with the ends of the upright and lower cross-bar, said connections being formed by a bolt passing through the post, cross-bar and upright and into a socket in the rail, and a nut in said socket for receiving said bolt, and a rail on each side connected to said end portions at the connection of the uprights with the upper cross-bars, such connection being formed by a bolt passing through the cross-bar and upright and into a socket in the rail, and a nut in said socket for receiving said bolt.

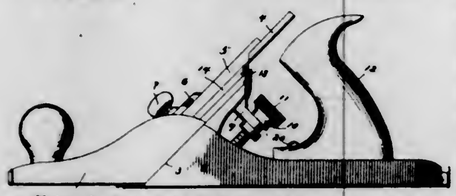
819,887. **CLAMP.** ALBERT O. JONES, East Conneaut, Ohio, assignor of one-half to Ben Kennedy, Conneaut, Ohio. Filed May 15, 1905. Serial No. 260,511.

Claim.—A clamp comprising a base having a fixed jaw thereon and a slot therethrough opposite said jaw, an adjustable block on the base opposite said jaw and having a rib in the slot and an under-

cut recess in the top, a set-screw carried by the block and extending through the slot, to bind the block at adjustment, a movable jaw having a rearwardly-projecting portion fitting and slidable in said recess and a segmental recess in the top of said portion, and a lever pivoted to the block and having a cam fitting in said segmental recess, to advance or retract the movable jaw.



819,888. PLANE. ALBERT O. JONES, East Conneaut, Ohio, assignor of one-half to Ben Kennedy, Conneaut, Ohio. Filed May 25, 1905. Serial No. 262,234.



Claim.—1. A plane the stock of which has front and rear sections, the rear section having a bed to which the blade is clamped and the front section having a recessed plate engaging the sides of the bed and extending across behind the same, a rearwardly-extending lug projecting from the portion of the plate behind the bed, and an adjusting-screw between said lug and the rear section.

2. A plane the stock of which comprises front and rear sections which meet at the throat and are adjustable with respect to each other to vary the planes of the soles of the respective sections, the rear section having a bed with a blade clamped thereon, and the front section having at its rear end a recessed plate fitting behind the bed which projects through said recess, and an adjusting-screw between said plate and the rear section.

819,889. APPARATUS FOR ASSORTING PULP-WOOD CHIPS. NATHANIEL M. JONES, Lincoln, Me. Filed Apr. 27, 1905. Serial No. 257,649.

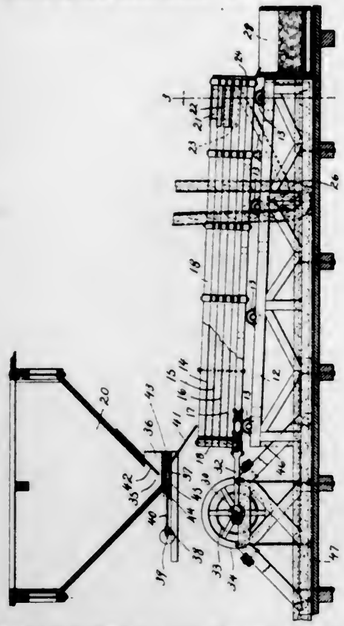
Claim.—1. A chip-assorting apparatus comprising a mechanical separator organized to subdivide the chips into a plurality of grades according to their size, and a hydraulic separator which receives the chips of the smallest size and the waste matter mixed therewith, from the mechanical separator, and separates said chips and waste matter in accordance with their respective specific gravities.

2. A chip-assorting apparatus comprising a tier of reciprocating graded screens, the openings of each screen being smaller than those of the screen above it, and a hydraulic separator which receives from the lowest screen the chips of the smallest grade, and the waste matter mixed therewith, and separates said chips and waste matter in accordance with their respective specific gravities.

3. A chip-assorting apparatus comprising a tier of reciprocating graded screens, the openings of each screen being smaller than those of the screen above it, each screen having an outlet for the chips arrested by it, a hydraulic separator which receives the chips and waste matter from the outlet of the lowest screen, and separate conductors for removing chips from the outlets of the other screens.

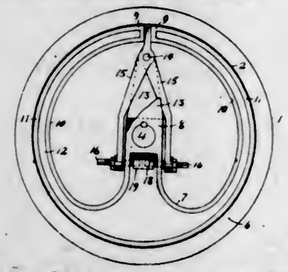
4. In a chip-assorting apparatus, the combination with a screen adapted to arrest cookable clear-wood chips of a maximum size, of an upper screen above it adapted to arrest larger non-cookable pieces, a bottom screen below the clear-wood screen adapted to arrest cookable pieces of minimum size and broken knot-wood, and a tank to receive and assort the matter arrested by said bottom screen.

5. In a chip-assorting apparatus, the combination with a screen adapted to arrest cookable clear-wood chips of a maximum size, of an upper screen above it adapted to arrest larger non-cookable pieces, a bottom screen below the clear-wood screen adapted to arrest cookable pieces of minimum size and broken knot-wood, a tank to receive and assort the matter arrested by said bottom screen, means for conveying the chips from the clear-wood screen, and means for simultaneously conveying the clear-wood chips from the tank, two clear-wood deliveries being simultaneously effected.



6. In a chip-assorting apparatus, the combination with a screen adapted to arrest cookable clear-wood chips of a maximum size, of an upper screen above it adapted to arrest larger non-cookable pieces, a bottom screen below the clear-wood screen adapted to arrest cookable pieces of minimum size and broken knot-wood, a tank to receive and as sort the matter arrested by said bottom screen, means for conveying the chips from the clear-wood screen, means for simultaneously conveying the clear-wood chips from the tank, two clear-wood deliveries being simultaneously effected, means for conveying from the upper screen the slivers and butts, and a conveyer for removing the waste matter falling through the bottom screen.

819,890. FRICTION-CLUTCH. THOMAS J. KENOE, Fort Wayne, Ind. Filed Nov. 9, 1904. Serial No. 231,980.



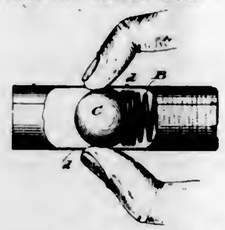
Claim.—1. In a friction-clutch, a driving member having an internal friction-face; a hub in axial alinement with the driving member; a spring-frame consisting of outer and inner curved webs, the ends of the latter being united with the corresponding ends of the former, and with its inner ends fixed to the hub, and the outer web being adapted to frictionally engage the driving member; and means in connection with the hub acting oppositely against the respective ends of the webs to expand the frame.

2. In a friction-clutch, a driving member having an internal friction-face; a spring-frame consisting of a hub and outer and inner curved webs, the latter web being secured to the hub and with its ends united with the corresponding ends of the former web, the outer web being adapted to frictionally engage the internal face of the driving member; and means in connection with the hub and acting oppositely against the respective united ends of the webs to expand the former.

3. In a friction-clutch, a driving member having an internal friction-face; a spring-frame consisting of a hub and outer and inner curved webs, the latter web being secured to the hub and with its ends united with the corresponding ends of the former web; two levers pivoted in connection with the hub, the outer ends thereof engaging respectively the united ends of said webs; and a movable wedge, in connection with the hub, adapted to engage and spread the respective inner ends of the levers, the said outer web being adapted to frictionally engage the internal face of the driving member when said levers are spread.

4. In a friction-clutch, a driving member having an internal friction-face; a spring-frame consisting of outer and inner curved webs, the latter supporting the former at its outer ends; a hub in fixed relation with the inner ends of the inner web; oppositely-disposed levers in pivotal connection with the hub and acting respectively against the corresponding ends of the webs; and means to actuate said levers.

819,891. MARBLE-SHOOTER. VALENTIN KELLER, Milwaukee, Wis. Filed Oct. 2, 1905. Serial No. 280,936.



Claim.—A marble-shooter consisting of a tube provided with opposite slots longitudinally thereof, and a spiral spring fastened at its rear end in the tube and of reduced diameter for the greater portion of its length, the coils of greater diameter being at its ends, said spring being of approximately the same length as said tube when expanded.

819,892. NON-REFILLABLE BOTTLE. SAMUEL C. KINDIG, Baltimore, Md., assignor of seven-fifteenths to Frederick Henkelman, Baltimore, Md. Filed June 15, 1905. Serial No. 265,319.



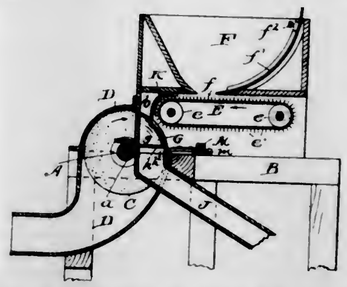
Claim.—1. A non-refillable bottle having a neck provided with an internal annular recess therein, and a seat below said recess, in combination with a valve comprising a lower member having an aperture therethrough, a disk adapted to close the aperture in said member when pressure is applied to the upper surface of the said disk, and an upper pliable perforated member having its edge extending in the recess in the bottle-neck and its lower surface normally resting upon the intermediate disk to hold it to its seat.

2. A non-refillable bottle having a neck provided with an internal annular recess therein, and a seat below said recess, in combination with a valve comprising a lower member having an aperture therethrough, a disk adapted to close the aperture in said member when pressure is applied to the upper surface of the said disk, an upper pliable perforated member having its edge extending in the recess in the bottle-neck and its lower surface normally resting upon the intermediate disk to hold it to its seat, and means to hold the pliable member in position.

3. A non-refillable bottle having a neck provided with an internal annular recess therein, and a seat below said recess, in combination with a valve comprising a lower member having an aperture therethrough, a concavo-convex disk adapted to close the aperture in the said member when pressure is applied to the upper surface of the said disk, an upper pliable member provided with a plurality of apertures therein and having its edge extending in the recess in the bottle-neck and its lower surface normally resting upon the intermediate disk to hold it to its seat, and means to hold the edge of the disk in the said recess.

4. A non-refillable bottle having a neck provided with an internal annular recess therein, and a seat below said recess, in combination with a valve comprising a lower member having an aperture therethrough, a concavo-convex disk adapted to close the aperture in said lower member when pressure is applied to the upper surface of said disk, an upper pliable member provided with a plurality of apertures therein and having its edge extending in the recess in the bottle-neck and its lower surface normally resting upon the intermediate disk to hold it to its seat, and a valve-guard having the lower outwardly-bent ends of its depending portions project into the said recess in the bottle-neck and impinge against the edge of the pliable member of the valve.

819,893. COTTON-GIN. PHINEAS F. KING, Cleveland, Ohio, assignor of one-sixth to George Hoyt, one-sixth to Worthington Hoyt, and one-third to J. D. Chambers. Filed May 19, 1905. Serial No. 261,169.



Claim.—1. In a cotton-gin, the combination of a rigid movable member having a substantially vertical plane surface with a substantially horizontal knife-bar having a plane edge which lies close to and is parallel with the vertical plane surface of said movable member, means for moving said movable member in a vertical plane to cause its plane surface to move rapidly past the edge of said knife-bar, and means for forcing seed-cotton against the said plane surface of said movable member.

2. In a cotton-gin, the combination of a rigid disk C rotatable upon a horizontal axis, a knife-bar held close to the substantially vertical end face of said disk on one side only of the axis thereof, means for rotating said disk, and means for feeding seed-cotton against the end face of said disk.

3. In a cotton-gin, the combination of a rotatable disk C, a knife-bar H held close to the end face of said disk, means for rotating said disk, an inclined plate above said knife-bar and adjacent to the end face of said disk, and means for feeding seed-cotton between said inclined plate and the end face of said disk.

4. In a cotton-gin, the combination of a rotatable shaft, and a plurality of ginning-disks secured thereto, with a knife-plate located between each pair of adjacent disks and having its edges close to and

parallel with the opposed end faces of said disks and having a central opening for the passage of the stripped seed.

5. In a cotton-gin, the combination of a rotatable shaft, and a plurality of ginning-disks secured thereto, with two knife-bars located between each pair of adjacent disks with their respective edges close to and parallel with the opposed end faces of said disks, and a wedge-shaped block secured between the disks and a short distance above said knife-bars.

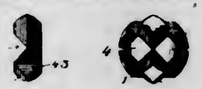
6. In a cotton-gin, the combination of a rotatable shaft, and a plurality of ginning-disks secured thereto, with a knife-plate located between each pair of adjacent disks and having its edges close to and parallel with the opposed end faces of said disks and having a central opening for the passage of the stripped seed, said plate being supported at its inner end by resting loosely upon said shaft and being supported at its outer end upon the machine-frame.

7. In a cotton-gin, the combination of a rotatable shaft, and a plurality of ginning-disks secured thereto, with a knife-plate located between each pair of adjacent disks and having its edges close to and parallel with the opposed end faces of said disks and having a central opening for the passage of the stripped seed, said plate being supported at its inner end by resting loosely upon said shaft and being supported at its outer end upon the machine-frame, and means for adjusting said knife-plate toward said shaft.

8. In a cotton-gin, the combination of a rotatable shaft, and a plurality of disks C secured thereto, with the slotted vertical partition extending down between said disks, the horizontal knife-bars *b*, and means for feeding seed-cotton into the space bounded by two disks, the partition *b* and the knife-bars.

9. In a cotton-gin, the combination of a rotatable shaft, and a plurality of disks secured to said shaft, which disks have their end faces of pyramidal form, with a knife-plate H supported in a horizontal position with its sides respectively close to and parallel with the opposed end faces of said disks, on one side of their axis, said knife-plate having a central opening, and a wedge-shaped deflector between the disks and above said knife-plate, and a partition to which said wedge-shaped block is secured and which has slots which embrace but do not touch said disks.

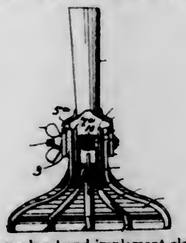
819,894. TRICK-BALL. MEDERICK T. LA PIERRE, Mount Vernon, N. Y. Filed Dec. 6, 1905. Serial No. 290,587.



Claim.—1. A trick-ball comprising only six pieces adapted to fit loosely together, so that each piece lies between the ends of two pieces and at one side of two other pieces, but to fall apart unless held by external force, two of the pieces having three notches, three pieces having two notches, and one key-piece.

2. A trick-ball comprising a base-piece having two notches, side pieces each having a central notch, an end notch at right angles to the central notch and an unnotched opposite end, front and rear pieces each having a central notch and two end notches at right angles thereto, and a key-piece

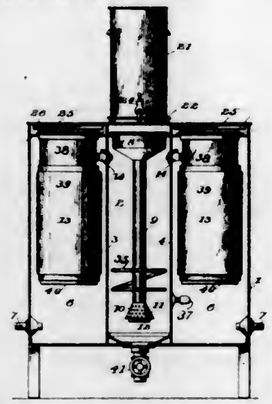
819,895. MOP-HEAD AND IMPLEMENT CLAMP. SIMEON C. LAWLOR, Duluth, Minn. Filed Oct. 4, 1904. Serial No. 227,093.



Claim.—1. In a mop-head and implement clamp, the combination of a forked handle portion, two jaws pivotally secured to the tines of said forked portion, locking means adapted to secure one of said jaws at a predetermined angle to said handle portion, a bolt secured to one of said jaws and extending through an aperture formed in the other of said jaws, at an angle to the pivotal axis thereof, and adjustable retaining means engaging said bolt and adapted to retain said jaws thereon and to lengthen or contract the space on said bolt available for the occupancy of said jaws, substantially as described.

2. In a mop-head and implement clamp, the combination of a forked handle portion, two jaws pivotally connected therewith, means for adjustably securing one of said jaws in a rigid position with relation to said handle portion, a bolt secured to one of said jaws and extending through the other said jaw in a plane at an angle to the plane of the pivotal axis of said jaws, a nut adapted in coöperation with said bolt to close said jaws and to secure said jaws in a closed position, substantially as described.

819,896. OIL-FILTER. CHARLES E. LEFEBVRE, Pittsburg, Pa. Filed Jan. 18, 1902. Serial No. 90,236.



Claim.—1. In an oil-filter, the combination of a receiving-chamber, adapted to be partially filled with water and partially with oil, a receiving-funnel for carrying the waste oil to the bottom of said chamber to allow said oil to pass upward through the water, a pivoted overflow-pipe communicating with the lower portion of said chamber for adjusting the overflow of the water to regulate its height in said chamber without disturbing the oil therein, and a stationary pipe having an open upper end located adjacent the top of the receiving-chamber and communicating with the said overflow-pipe.

2. In an oil-filter the combination of a receiving-chamber adapted to be partially filled with water, a receiving-funnel for carrying the waste oil to the bottom of the water-chamber, separate storage-chambers adjacent to the receiving-chamber having communications therewith, an overflow-pipe communicating with the water-chamber near its bottom, a branch pipe connected to said overflow-pipe, and swivel connection for said branch pipe whereby it may be adjusted to any angle and thereby vary the height of the water in the receiving-chamber, substantially as described.

3. In an oil-filter, an outer casing, a secondary chamber located centrally within said outer casing so as to leave a space between the front thereof and the outer casing, and adapted to be partially filled with water, removable means for passing oil through the water in said secondary chamber, a plurality of filters suspended adjacent said secondary chamber, each having a valved connection with the upper portions of said secondary chamber, and an auxiliary tank mounted upon said secondary chamber and provided with a projecting valve normally located over said means for passing oil through the water, said tank being rotatable to move said projecting valve out of the path of said means.

4. In an oil-filter, an outer casing forming a storage-tank, a plurality of oil-filtering chambers suspended in said tank, rotatable flanges upon said filter-chambers, by means of which they are suspended, removable filtering material surrounding said filtering-chamber, a secondary chamber located centrally of said tank so as to leave space between its walls and the walls of the casing to permit intercommunication between the different parts of said tank, means for passing oil through said secondary chamber, which is adapted to contain water, and valved connections between said filtering-chambers and said secondary chamber.

5. In an oil-filter, an outer casing forming a storage-tank, filtering-chambers suspended in said storage-tank, a secondary chamber located centrally of said tank, one of the sides of said casing forming one side of said secondary chamber, all other sides of the chamber and casing being independent of each other, means for passing oil through said secondary chamber, which is adapted to contain water, said means delivering the oil to the lower portion of said secondary chamber by means of a cone-shaped nozzle closed at its bottom and having openings in its upwardly-converging sides, and valved connections between said filtering-chambers and said secondary chamber.

6. The combination in an oil-filter, of an oil-washing chamber, a removable receiving-funnel located in said chamber adapted to discharge the uncleaned oil near the bottom thereof, storage and filtering chambers located adjacent to the washing-chambers, filtering-cylinders located in said storage-chambers having ports communicating with the receiving-chamber, an auxiliary cylindrical tank located adjacent to the top of the receiving-funnel adapted to receive the waste oil as it is delivered from its source of supply, a retaining-flange provided on the casing-top within which the auxiliary tank fits, and a spigot provided in the auxiliary tank adapted to extend over the receiving-funnel, the said tank being adapted to be turned in its retaining-flange to remove the spigot from the path of the receiving-funnel, substantially as described.

7. An oil-filter comprising a separate waste-oil-receiving chamber, separate storage-chambers adjacent thereto, filtering-cylinders in the storage-chambers, communicating ports between the receiving-chamber and the filtering-cylinders, a removable receiving-funnel in the receiving-chamber extending to a point near the bottom of said chamber, a cone-shaped lower end formed on said receiving-funnel having perforations in its walls, and a removable bottom provided for said cone-shaped end, for the purpose described.

8. The combination in an oil-filter, of a filtering element comprising a receptacle closed at its lower end and having filtering-cloth removably secured about its sides through which the oil is adapted to percolate, an oil-port near the top of the filtering element communicating with the receiving-chamber of the filter, a flange loosely secured to the top of the filtering element by means of which said element is suspended in its casing, the said element being capable of rotation in its flange for the purpose of facilitating the removal of the cloth.

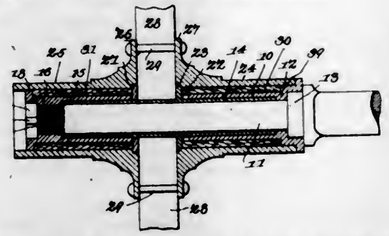
819,897. BUTTON. CLAIR H. LONSDALE, Champaign, Ill. Filed May 8, 1905. Serial No. 259,400.



Claim.—1. A button comprising separable parts provided in their meeting faces with an approximately circular tongue and groove, said circular groove having depressions in its bottom into which the material to which the button is applied is forced to prevent casual displacement of the button.

2. A button comprising separable parts provided in their meeting faces with an approximately circular tongue and groove, said circular tongue being notched at intervals in its circumferential length to provide a series of projections, and said circular groove having depressions in its bottom into which the material to which the button is applied is forced by the projections of the tongue to prevent casual displacement of the button.

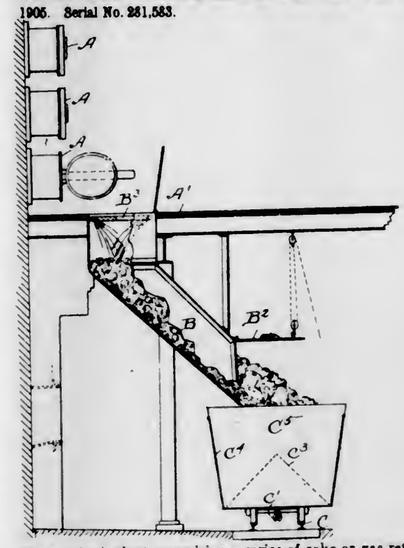
819,898. WHEEL-HUB. OLIVER LUNDIN, Ollie, Iowa, assignor of one-fourth to Robert B. Lundin and one-fourth to Robert Griffith, Brighton, Iowa. Filed Oct. 20, 1905. Serial No. 283,665.



Claim.—1. A wheel-hub comprising a box for bearing upon the axle-spindle, a thimble extending over the inner portion of said box and provided with a terminal flange for bearing against the collar of the spindle, said flange having an annular shoulder forming an external bearing, a thimble extending over the outer portion of said box and having a threaded flange engaging the threaded end of the spindle and with an outwardly-extending flange at the outer end forming an annular bearing, two sleeves extending over said thimbles and respectively bearing upon the shoulder and upon the annular bearing on the same, said sleeves having laterally-extending flanges at their inner ends bearing against opposite sides of the spokes, and means for coupling the spokes and said sleeve-flanges

2. A wheel-hub comprising a box for bearing upon the axle-spindle and with spaced flanges between the ends of the same, a thimble extending over the inner portion of said box and provided with a terminal flange for bearing against the collar of the spindle, said flange having an annular shoulder and forming an external bearing, a thimble extending over the outer portion of said box and having a threaded flange engaging the threaded end of the spindle and with an outwardly-extending flange at the outer end forming an annular bearing, two sleeves extending over said thimbles and respectively bearing upon the shoulder and upon the annular bearing thereon and provided with annular recesses in their inner ends for bearing upon said intermediate box-flanges, flanges extending laterally from the inner ends of said sleeves and bearing upon opposite sides of the spokes, and means for connecting said sleeve-flanges and spokes.

819,899. PLANT FOR DRAWING, QUENCHING, AND CONVEYING COKE. HOWARD E. MANN, Cleveland, Ohio. Filed Oct. 6, 1905. Serial No. 281,583.



Claim.—1. A plant comprising a series of coke or gas retorts, a series of chutes under said retorts, means for supplying water so that it may pass to the bottom of said chutes, said chutes being adapted to receive the charge of coke drawn from the adjacent series of retorts and being of such size and proportion as to hold the coke in a column and to confine the steam generated from water passing to the bottom thereof to cause it to rise through the column of coke.

2. A plant comprising a series of coke or gas retorts, a series of chutes under said retorts, means for supplying water to said chutes so that it may pass to the bottom thereof, said chutes being adapted to hold the coke charge from the adjacent series of retorts in a column and to confine the steam generated from the water passing to the bottom thereof to cause it to rise through the column of coke, and a closure for the lower end of the chutes adapted to permit a slow drain of water therefrom.

3. A plant comprising a series of coke or gas retorts, a series of chutes beneath said series of retorts, each chute being adapted to receive the charge of coke drawn from the adjacent retort and having a long narrow body with an angular inclination below the mouth, and a water-supply at the mouth adapted to spray water into the interior of the retort.

4. A plant comprising a series of coke or gas retorts, a series of chutes beneath said series of retorts, water-supplying means for said chutes, a screen, a conveying system beneath said chutes and alongside the screen, each of said chutes being constructed to hold the charge of coke from the adjacent retorts in a long column and to per-

mit water to pass from said water-supply to the bottom of the chute and to confine the steam generated therefrom so as to rise through the column of coke.

819,900. GOLF-CLUB. CHARLES E. R. MARTIN, Newark, N. J. Filed Apr. 19, 1904. Serial No. 203,849.



Claim.—1. A golf-club comprising a head or body having a laterally-extending opening in the front face of said body, a flexible cushion or pad in said opening, a striking-plate of substantially the same size of said opening placed in said opening and arranged over said cushion or pad, said plate having its lower marginal edge flush with the lower face of said head or body, and said plate moving inwardly when struck and assuming its normal initial position flush with the front face of said head or body immediately after impact with a ball, substantially as and for the purposes set forth.

2. A golf-club, comprising a body having an opening extending laterally across the entire face of said body, a flexible cushion or pad in said opening, a separable plate of substantially the same size as said opening placed in said opening and arranged over said cushion or pad, and means for securing said plate and said cushion or pad in position, said plate moving inwardly when struck and assuming its normal initial position flush with the face of said body immediately after impact with a ball, substantially as and for the purposes set forth.

3. A golf-club comprising a head or body having an open portion, extending laterally across the entire face of said body, a flexible cushion in said opening, a plate in said opening of substantially the same size of said opening, placed in said opening and arranged above the said cushion and between the marginal edges of the respective parts which are contiguous to the end portions of said opening, and fastening-screws arranged in the marginal edges of the said parts and said plate, said screws having their screw ends screwed into said head or body, said plate moving inwardly when struck and assuming its normal initial position flush with the face of the said body immediately after impact with a ball, substantially as and for the purposes set forth.

4. A golf-club comprising a head or body having an opening extending laterally across the entire face of said body, the face of said head or body also having countersunk receiving portions in the marginal edges of the respective parts which are contiguous to the edge portions of said opening, a flexible cushion in said opening, a plate of substantially the same size as said opening placed in said opening and arranged above the said cushion and between the marginal edges of said parts which are contiguous to the edge portions of said opening, said plate having countersunk receiving portions in its marginal edges registering with the countersunk receiving portions in the marginal edges of said parts, and screws provided with heads for fastening said cushion and plate in position, the heads of said screws being arranged in the countersunk receiving portions, and said screws having their screw ends screwed into the said head or body, said plate moving inwardly when struck and assuming its normal initial position flush with the face of said body immediately after impact with a ball, substantially as and for the purposes set forth.

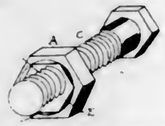
819,901. MEDICATED PENCIL. CHARLES S. MASONAL, Kingston, N. Y. Filed Mar. 3, 1905. Serial No. 248,093.



Claim.—A medicated styptic pencil comprising a stick of porous material carrying thereon a ball or pellet of slowly-soluble styptic material so attached thereto as to be removed by wetting, whereby the device is incapable of repeated use.

819,902. LOCK-NUT. WALTER C. MATTESON, Stockton, Cal., assignor of two-thirds to Edward J. Matteson and A. H. Carpenter, Stockton, Cal. Filed July 11, 1903. Serial No. 165,114.

Claim.—1. A nut provided with a screw-threaded cylindrical opening for the reception of a screw-threaded bolt, a smooth counterbored recess made in its outer end eccentric to the shank of the bolt, a circular plate adapted to turn loosely therein and around said bolt eccentric to the shank of said bolt, with a square, pentagonal or other polygonal head projecting outward from the outer surface of the plate, and a spring the tension of which between its ends fastened respectively in nut and plate forces the plate in the desired direction so that its circular opening may not be concentric with the cylindrical opening in the nut, substantially as set forth.

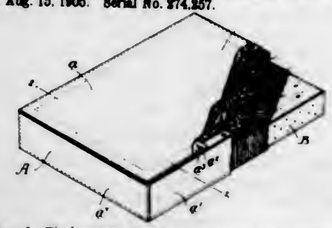


2. The combination of a screw-threaded bolt, a nut provided with a cylindrical screw-threaded opening for the reception of the bolt, and with a counterbored recess made in its outer end eccentric to the shank of the bolt, a circular plate provided with a cylindrical screw-threaded opening to receive a screw-threaded bolt, and adapted to turn loosely on said bolt and in said recess eccentric to the shank of the bolt, with a square, pentagonal or other polygonal head projecting outward from the outer surface of the plate, and a spring the tension of which between its ends fastened respectively in the nut and plate forces the circular screw-threaded opening in said plate from being concentric with the cylindrical screw-threaded opening in the nut, substantially as set forth.

3. The combination in a lock-nut of the screw-threaded bolt C, the nut A provided with the screw-threaded opening B, the smooth cylindrical counterbored recess D eccentric to the shank of the bolt C, the smooth circular cylindrical plate E, with the screw-threaded opening B', eccentric to the shank of the bolt C, with the head G, the spring H the tension of which between its ends fastened respectively in the nut and plate forces the circular screw-threaded opening in said plate from being concentric with the cylindrical screw-threaded opening in nut, all arranged and operating substantially as shown and described and for the purposes set forth.

4. The combination in a lock-nut of the bolt C, the nut A, with the opening B, the cylindrical counterbored recess D, and the circular cylindrical plate E with the head G, the opening B', and the spring H the tension of which between its ends fastened respectively in the nut and plate forces the circular screw-threaded opening in said plate from being concentric with the cylindrical screw-threaded opening in nut, all arranged and operating substantially as shown and described and for the purposes set forth.

819,903. MATTRESS. FREDERICK MAUSSNER, Philadelphia, Pa. Filed Aug. 15, 1905. Serial No. 274,257.



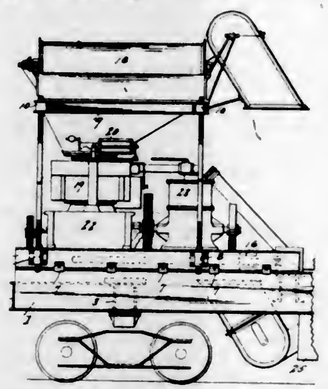
Claim.—1. The combination in a mattress, of a porous pad, a main mattress portion, a waterproof covering between said porous pad and said main mattress portion, and a tick to incase the above-mentioned parts, substantially as described.

2. The combination in a mattress, of a porous pad, a main mattress portion, a waterproof covering to incase said main mattress portion and protect the same, said porous pad being of sufficient thickness to raise the patient above said waterproof covering, and a tick to incase said above-mentioned parts to complete the mattress, substantially as described.

3. The combination in a mattress, of a porous pad, a main mattress portion, a waterproof covering between said porous pad and said main mattress portion, a tick to incase said above-mentioned parts, and said tick having a removable top, substantially as described.

819,904. RAILROAD PAVING PLANT. GEORGE MERRIMAN, Toledo, Ohio. Filed Aug. 5, 1905. Serial No. 272,846.

Claim.—1. The combination with a car-underframe, of a platform movable longitudinally thereof and beyond the end of the same; guiding means for the platform upon the underframe; and means for moving said platform comprising a plurality of screws revoluble in fixed bearings, and threaded lugs.



2. The combination with a car-underframe, of a movable platform; a sand-box; sand-box screws; and threaded lugs; the sand-box being supported by screws which when turned raise or lower the sand-box, for the purpose set forth.

3. The combination with a car-underframe, of a movable platform; a sand-box supported by the platform; means for raising and lowering the sand-box; and means for reciprocating the movable platform upon the underframe.

4. The combination with a car-underframe, of a movable platform; means for reciprocating the same; a sand-box upon the platform; means for raising and lowering the sand-box; and a housing for an elevator-chain, part of said housing being removable.

5. The combination with a car-underframe, of a movable platform carrying an asphalt and sand mixer; means for reciprocating the platform; and an asphalt-delivery pipe, a part of said pipe being removable.

6. The combination with a car-underframe, of a movable platform; a sand-box frame; sand-box screws; and threaded lugs secured to the sand-box frame and movable platform; the screws engaging the lugs and being reversely threaded.

7. The combination with a car-underframe, of a movable platform; means for guiding and restraining the platform in its movements relative to the underframe; a platform-screw having its head engaging a bearing which is secured to the underframe; and a threaded lug upon the platform.

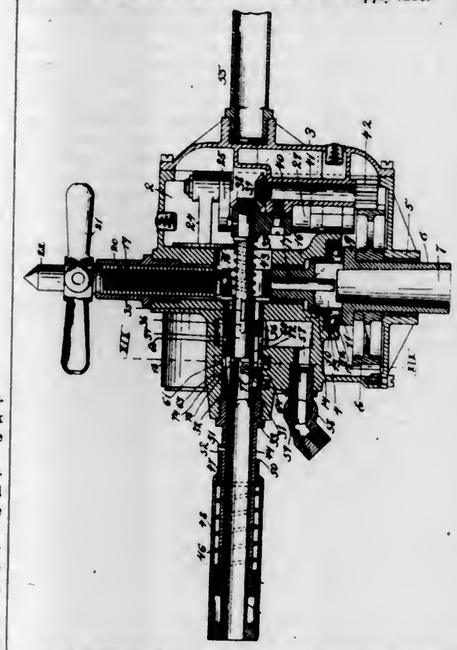
8. The combination with a car-underframe, of a movable platform; means for reciprocating the same; a sand-box supported by the platform; and means for raising and lowering the sand-box.

9. The combination with a car underframe comprised of side sills and cross-frame beams, of a platform made of longitudinal and cross-beam members and located upon and supported by the side sills, a movable sand-box supported by the platform, means for guiding the platform in its movements longitudinally of the underframe, and means for moving the platform to and from a position where a part thereof projects beyond the end of the underframe.

819,905. ENGINE. ERNEST C. MEYER, Cleveland, Ohio, assignor to The Cleveland Pneumatic Tool Company, Cleveland, Ohio, a Corporation of Ohio. Filed Dec. 26, 1902. Serial No. 136,714.

Claim.—1. In an engine, the combination with a piston-cylinder and piston therein, of a valve-chamber having an inlet-port and a distributing-port, and a revolving distributing-valve having means for longitudinally shifting it and formed with a feed-recess which may connect the inlet and distributing ports in one longitudinal adjustment of the valve, a feed and exhaust recess having an exhaust-opening and which may register with the distributing-port in such adjustment and connect the inlet and distributing ports in another longitudinal adjustment and have the exhaust-opening closed, and an exhaust-recess which may register with the distributing-port in such last adjustment.

2. In a portable engine of the character described, a main casing, an exhaust-tube upon said casing and forming one manipulating-handle and operatively connected to the distributing-valve of the engine to control the forward and reverse rotation and the stoppage of the engine and movable to be operated by the hand holding the handle, a diametrically-opposed closed handle, and an inlet-nipple upon the casing for the attachment of the motive-fluid-supply tube.



3. In a portable engine of the character described, two diametrically-opposed laterally-projecting manipulating-handles, one of said handles operatively connected to the distributing-valve of the engine to control the forward and reverse rotation and the stoppage of the engine and movable to be operated by the hand holding the handle.

4. In a portable engine of the character described, a laterally-projecting handle-tube having exhaust-passage through it, a distributing-valve having an exhaust-passage connected to the handle-tube passage and movable to cut off exhaust from the engine, and a handle-sleeve movable upon the handle-tube and constructed to move the valve with it to adjust it for distribution for forward or reverse movement or to cut off the exhaust and thus stop the engine.

5. In a portable engine of the character described, the combination of an engine-casing having an engine within it and an axial shaft rotated by the same, a distributing-valve for the engine, an inlet-nipple on the side of the casing for attachment of the motive-fluid-supply tube, a laterally-projecting handle-tube upon the casing and having exhaust-passage through it, a handle-sleeve rotatable upon such tube and connected to the distributing-valve to move the same to forward, reverse and stop positions, and a diametrically opposite handle upon the casing.

6. In an engine, the combination with a plurality of piston-cylinders and pistons therein, of a cylindrical valve-chamber having an annular set of inlet-ports and an annular set of distributing-ports communicating with the piston-cylinders, a cylindrical valve connected to be rotated from the pistons and provided with a feed-recess which may register with and connect the inlet-ports and distributing-ports, a feed and exhaust recess which may register with and connect the inlet and distributing ports and having an exhaust-opening, and an exhaust-recess which may register with the distributing-ports and formed with an exhaust-opening, and means for longitudinally sliding the valve so as to bring the feed-recess to register with the inlet-ports and distributing-ports and the feed and exhaust recess to register with the distributing-ports and have its exhaust-opening uncovered or to shift the valve to have the feed and exhaust recess register with the inlet-ports and distributing-ports and have its exhaust-opening closed and the exhaust-recess to register with the distributing-ports.

7. In an engine, the combination with a plurality of piston-cylinders and pistons therein and a rotary distributing-valve for such cylinders and longitudinally movable to place it in distributing position for forward or reverse motion of the engine or for stopping the same and having an axial exhaust-passage, of an exhaust-pipe communicating with such exhaust-passage and capable of being longitudinally adjusted to longitudinally shift the distributing-valve.

8. In an engine, the combination with a plurality of piston-cylinders and pistons therein, and a rotary valve connected to be rotated from the pistons and longitudinally movable to distribute motive fluid to the cylinders for forward and reverse movement and for stopping the engine and formed with an axial exhaust-passage, of a tubular exhaust-handle registering with the exhaust-passage of the valve, an exhaust-tube within such tubular handle, and a handle-sleeve revoluble and longitudinally movable upon the tubular exhaust-handle and connected to the exhaust-tube, whereby said tube and the distributing-valve will be longitudinally shifted to control the engine by manipulation of the handle-sleeve.

9. In an engine, the combination with a plurality of piston-cylinders and pistons therein, and a rotary valve connected to be rotated from the pistons and longitudinally movable to distribute motive fluid to the cylinders for forward and reverse movement and for stopping the engine and formed with an axial exhaust-passage, of a tubular exhaust-handle registering with the exhaust-passage of the valve, an exhaust-tube within such tubular handle, a handle-sleeve revoluble and longitudinally movable upon the tubular exhaust-handle and connected to the exhaust-tube and formed with a spiral end edge, and a stud against which such edge bears and rigid on the tubular exhaust-handle, whereby said tube and the distributing-valve will be longitudinally shifted to control the engine by manipulation of the handle-sleeve.

10. In an engine of the character described, the combination of two pairs of single-acting piston-cylinders arranged parallel and each pair in a plane parallel to the plane of the other, pistons in said cylinders and having pitmen, two crank-shafts geared together and having each two diametrically-opposed cranks and each pair of cranks at right angles to the other and having the pitmen connected to them, a cylindrical valve-chamber having four distributing-ports connected by channels to the ends of the cylinders and annularly arranged at four quarters of the cylindrical chamber and having the channels of the one pair of cylinders connected to consecutive distributing-ports in the valve-chamber and crossing each other, and a rotary valve in the valve-chamber having a feed-recess and exhaust-recess in its sides, whereby the feed to and exhaust from the cylinders in each pair is consecutive and crossing over from the last cylinder in one pair to the first cylinder in the next pair.

11. In an engine of the character described, the combination with a plurality of piston-cylinders and pistons therein, and a cylindrical valve-chamber having a circumferential series of distributing-ports to the cylinders, of a cylindrical valve in such chamber and connected to be rotated from the pistons and formed in its sides with a circumferential feed-recess and a circumferential exhaust-recess, the circumferential distance between the rear edge of the feed-recess and forward edge of the exhaust-recess being greater than between the rear edge of the exhaust-recess and the forward edge of the feed-recess, whereby the period of expansion after admission will be longer than the period between the exhaust and admission.

12. In an engine of the character described, the combination with a plurality of piston-cylinders and pistons therein, and a cylindrical valve-chamber having a circumferential series of distributing-ports to the cylinders, of a cylindrical valve in such chamber and connected to be rotated from the pistons and formed in its sides with a circumferential feed-recess and a circumferential exhaust-recess, the circumferential width of the feed-recess being less than the circumferential width of the exhaust-recess and the circumferential distance between the rear edge of the feed-recess and forward edge of the exhaust-recess being greater than between the rear edge of the exhaust-recess and the forward edge of the feed-recess, whereby the period of admission will be shorter than the period of exhaust and the period of expansion after admission will be longer than the period between exhaust and admission.

13. In an engine of the character described, the combination with a plurality of piston-cylinders, of a cylindrical distributing-valve chamber having circumferentially-arranged ports to said cylinders, and a cylindrical valve in such chamber connected to be rotated and formed with circumferential feed and exhaust recesses and constructed to be longitudinally shifted to bring such recesses in relation to said ports for forward or reverse motion or stoppage of the engine.

14. In an engine of the character described, the combination with actuating-cylinders and a rotary distributing-valve constructed to control motive fluid for such cylinders for forward or reverse movement or stoppage of the engine by being longitudinally adjusted, of a handle-tube axially arranged in its relation to such valve, an exhaust-tube within the handle-tube and having its end abutting against the valve, a handle-sleeve upon the handle-tube and connected to the exhaust-tube and formed with a spiral inner end edge notched at predetermined points of its convolution, a stud rigid in the handle-tube and having such spiral edge bearing against it and engaging the notches in the same, a spring forcing the handle-sleeve inward, and a spring forcing the valve outward.

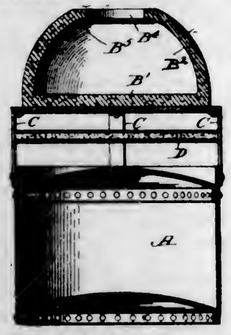
15. In an engine of the character described, the combination of the engine-casing, the rotary shaft formed with the tool-socket 7 and journaled axially within the casing, the axial feed-screw threaded in the casing, the horizontal valve-stem 34 intersecting the axial line of the casing, and the pin 17 having the yoke 18 encircling the valve-stem and capable of being engaged by the inner end of the feed-screw.

16. In an engine of the character described, the combination of the engine-casing formed with two pairs of cylinders, the cylinders of each pair being parallel to each other and the two pairs of cylinders being imposed one pair upon the other, an axial shaft journaled in the casing and carrying a cog-wheel, pistons in the cylinders and having pitmen, two crank-shafts each having diametrically opposite cranks standing at right angles to each other and having the pitmen pivoted to them, a shaft having a pinion engaging the cog-wheel and having a bevel-gear at its end, a distributing-valve for the cylinders, and a valve-stem for such valve and having a bevel gear-wheel at its end engaging the other bevel-gear.

17. In an engine of the character described, the combination of four piston-cylinders arranged in pairs, one pair imposed upon the other, a cylindrical bushing in a bore through the web between the cylinders and having four distributing-ports arranged at right angles to each other, one of said ports communicating with the first of the upper pair of cylinders, the next following port communicating with the second of said cylinders, the next following of said ports communicating with the first of the lower pair of cylinders and the next following of said ports communicating with the second of the lower pair of cylinders, and a rotary valve in said bushing rotating in the direction of the ports described and formed with a feed-recess in one side and an exhaust-recess in the other side and registering with the ports.

18. In an engine of the character described, the combination of the cylinders 1^a, 1^b, 1^c and 1^d, having the ports 30^a, 30^b, 30^c and 30^d; a valve-chamber formed with the recess 65 and channel 66, the recess 67 and channel 67^a, the recess 70 and channel 71 and the recess 68 across said recess 70 and having channel 69; the bushing 31 formed with the inlet-ports 60 and the distributing-ports 61, 62, 64 and 63, respectively communicating with said recesses, and the rotary valve within said bushing and formed with a feed-recess 72, the feed and exhaust recesses 73 75 having the exhaust-opening 74 and also formed with the axial exhaust-port 33.

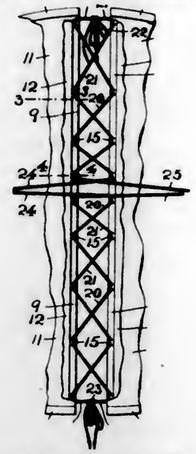
819,906. **PORTABLE LIQUID-FUEL FURNACE.** GEORGE W. MEYER and CHARLES G. CHEVALIER, Sparrows Point, Md. Filed Feb. 18, 1904. Serial No. 194,133.



Claim.—1. In a portable forging apparatus, a furnace-body provided with an opening at its top leading from its chamber to the atmosphere and having the base of its chamber formed of an uninterrupted horizontal surface and the wall of its chamber of an uninterrupted surface of revolution continually narrowing upwardly and terminating at its top in a horizontal surface, a flame-passage penetrating the furnace-body tangentially of the wall of its chamber, a burner adapted to project a flame through the flame-passage and means for conveying fuel to the burner.

2. In a portable forging apparatus, a furnace-body provided with an opening at its top leading from its chamber to the atmosphere and having the base of its chamber formed of an uninterrupted horizontal surface and the wall of its chamber of an uninterrupted surface of revolution continually narrowing upwardly, a flame-passage penetrating the furnace-body tangentially of the wall of its chamber, a burner adapted to project a flame through the flame-passage and means for conveying fuel to the burner.

819,907. **LACING FOR WEARING-APPAREL.** MAURICE MEYER, Brooklyn, N. Y. Filed Apr. 8, 1905. Serial No. 254,803.



Claim.—1. In a lacing for corsets and the like, the combination, with two members to be fastened, of a steel or stay in each member, and lacing devices secured to said steels or stays, said lacing devices having lacing-receiving loops projecting outwardly from the meeting edges of said members, and then upwardly with the central longitudinal axis of each loop lying in the plane of the upper face of the stay with which the lacing devices are connected, each receiving-loop having an interior convex surface and outwardly-flaring open ends, and a lacing in said loops having pull portions, substantially as and for the purposes set forth.

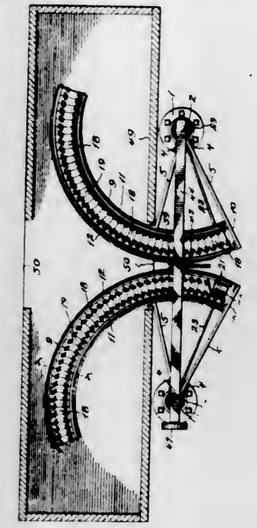
2. In a lacing for corsets, in combination, with a meeting edge, comprising, a pair of members 6 and 7 and a stay 8 between said members, a receiving-pocket connected with said member 7, a stay in said receiving-pocket, a flap connected with said member 6, an interlining pocket between said receiving-pocket and said flap, a steel or stay in said interlining pocket, and lacing devices connected with said steel or stay, substantially as and for the purposes set forth.

3. In a lacing for corsets, in combination, with a meeting edge, comprising, a pair of members 6 and 7 and a stay 8 between said members, a receiving-pocket connected with said member 7, a stay in said receiving-pocket, a flap connected with said member 6, an interlining pocket between said receiving-pocket and said flap, a steel or stay in said interlining pocket, and lacing devices connected with said steel or stay, said lacing devices having lacing-receiving loops projecting from the outer edge of said interlining pocket, and a lacing in said loops, said lacing having a pull portion, and said lacing and pull portion being located outside of and free from said members 6 and 7 and the interlining pocket, substantially as and for the purposes set forth.

4. In a lacing for corsets, in combination, with a meeting edge, comprising, a pair of members 6 and 7 and a stay 8 between said members, a receiving-pocket connected with said member 7, a stay in said receiving-pocket, a flap connected with said member 6, an interlining pocket between said receiving-pocket and said flap, a steel or stay in said interlining pocket, and lacing devices connected with said steel or stay, said lacing devices having lacing-receiving loops projecting outwardly from the outer edge of said interlining pocket and then upwardly with the central longitudinal axis of each loop lying in the plane of the upper face of the stay with which the lacing devices are connected, and a lacing in said loops, said lacing having a pull portion, and said lacing and pull portion being located outside of and free from said members 6 and 7 and the interlining pocket, substantially as and for the purposes set forth.

5. In a lacing for corsets, in combination, with a meeting edge, comprising, a pair of members 6 and 7 and a stay 8 between said members, a receiving-pocket connected with said member 7, a stay in said receiving-pocket, a flap connected with said member 6, an interlining pocket between said receiving-pocket and said flap, a steel or stay in said interlining pocket, and lacing devices connected with said steel or stay, said lacing devices having lacing-receiving loops projecting outwardly from the outer edge of said interlining pocket, each receiving-loop having an interior convex surface and outwardly-flaring open ends, and a lacing in said loops, said lacing having a pull portion, and said lacing and pull portion being located outside of and free from said members 6 and 7 and the interlining pocket, substantially as and for the purposes set forth.

819,908. **CONVEYER.** LUTHER O. MILLER, Middletown, Ohio, assignor to Industrial Engineering Company, Columbus, Ohio. Filed Apr. 19, 1905. Serial No. 256,359.



Claim.—1. A conveyer constructed to travel in an arc of a circle and in a horizontal plane and supported to be bodily movable in the arc in which it travels.

2. A conveyer constructed to have its parts traveling in opposite directions in the same arc of a circle, and in a horizontal plane.

3. A conveyer constructed to have its parts traveling in opposite directions in the same arc of a circle and in a horizontal plane and supported to be bodily movable in the arc in which it travels.

4. The combination with a central support, of a conveyer supported from the support and constructed to travel in the arc of a circle and in a horizontal plane and having its center in the central support.

5. The combination with a central support, of a conveyer supported from the support and constructed to travel in the arc of a circle and in a horizontal plane and having its center in the central support, means for imparting motion to the conveyer, and means for bodily moving the conveyer.

6. A curved conveyer supported at one end so as to have the greater portion of its length free and unobstructed and adapted to be swung in the arc of a circle, said conveyer being movable in a horizontal plane.

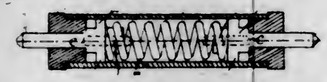
7. In a device of the character described, a central support, a curved conveyer-leg supported in concentric relation to the support, and an endless conveyer arranged to travel on the conveyer-leg in concentric relation thereto, and in a horizontal plane.

8. In a device of the character described, a central support, a

curved conveyer-leg supported in concentric relation to the support, an endless conveyer arranged to travel on the conveyer-leg in concentric relation thereto and in a horizontal plane, means for imparting motion to the endless conveyer, and means for moving the conveyer-leg.

9. In a device of the character described, the combination with a central support, of a curved conveyer-leg mounted to swing therefrom wholly within the arc of a circle having its center in the central support, a conveyer-belt arranged to travel in opposite directions on the leg, and means associated with the leg for guiding the belt and causing the same to travel concentrically to the sides thereof.

819,909. COUPLING-SLEEVE HOLDER FOR THE ROLLERS OF ROLLING-MILLS. WILHELM MÜLLER, Peine, Germany. Filed Sept. 7, 1905. Serial No. 277,412.



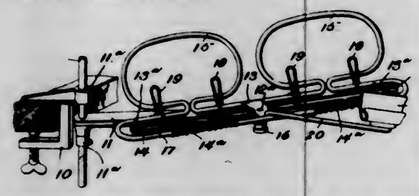
Claim.—1. In a rolling-mill the combination with a pair of rollers having trunnions, and a spindle located between said trunnions, of a pair of coupling-sleeves surrounding the abutting ends of the trunnions and spindle and provided with apertures on their adjacent faces, a tubular sleeve-holder located between said sleeve and center points in said tube adapted to engage the apertures in the sleeves substantially as described.

2. In a rolling-mill the combination with a pair of rollers having trunnions, and a spindle located between said trunnions, of a pair of coupling-sleeves surrounding the abutting ends of the trunnions and spindle and provided with apertures on their adjacent faces, a closed tube located between said sleeves, displaceable center points extending through the ends of said tube, and a spring adapted to force said center points outward to engage the apertures in the sleeves, substantially as described.

3. In a rolling-mill the combination with a pair of rollers having trunnions, and a spindle located between said trunnions, of a pair of coupling-sleeves surrounding the abutting ends of the trunnions and spindle and provided with apertures on their adjacent faces, a closed tube located between said sleeves, displaceable center points extending through the ends of said tube, and a spring adapted to force said center points outward to engage the apertures in the sleeves, the tube aforesaid having apertures in its wall for insertion of a tool to bring the center points within the tube against the action of the spring substantially as described.

4. In a rolling-mill the combination with a pair of rollers having trunnions, and a spindle located between said trunnions, of a pair of coupling-sleeves surrounding the abutting ends of the trunnions and spindle and provided with apertures on their adjacent faces, a plurality of closed tubes located between the sleeves and surrounding the spindle, displaceable spring-pressed center points extending through the ends of each of said tubes and adapted to engage the apertures in the sleeves, and means for affording access to said center points to bring them within the respective tubes substantially as described.

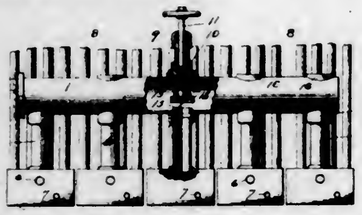
819,910. BOOK-HOLDER. EDWARD J. MYERS, Chicago, Ill. Filed June 7, 1905. Serial No. 264,126.



Claim.—1. A book-support formed of wire bent to form bottom and back rests, and a leaf and cover holder formed of wire coiled around the wire of the bottom rest and having upwardly-projecting loops.

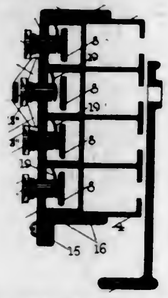
2. A book-holder comprising a support, a wire frame bent to form a bottom rest and a pair of back-rests side by side, a plate secured to said bottom rest between the back-rests and pivoted to the support, and a swinging arm pivoted at its inner end to the plate and having a clip at its outer end.

819,911. STEAM-HEATER. JOHN D. MCEACHREN, Galt, Canada. Filed June 7, 1904. Serial No. 211,500.



Claim.—The combination of a plurality of rectangular base-sections with a header located above said sections, vertical pipes supporting the header and forming communication between said header and sections, a plurality of pipes conveying fluids to one point of discharge connected to said sections, valve-seats in the upper ends of the vertical pipes, and valves projecting through said header for controlling the flow of fluids through each pipe.

819,912. LOOM-SHUTTLE BINDER HOLDING DEVICE. BENJAMIN F. MCGUINNESS, Worcester, Mass., assignor to Crompton & Knowles Loom Works, a Corporation of Massachusetts. Filed July 1, 1905. Serial No. 267,883.



Claim.—1. In a loom, the combination with shifting or drop shuttle-boxes, and shuttle-binders thereon, of spring-actuated plungers, independent of the shuttles, and not engaging therewith, but adapted to engage and move inwardly said binders, and means for moving outwardly the plunger which engages the shuttle-binder on the box in line with the raceway.

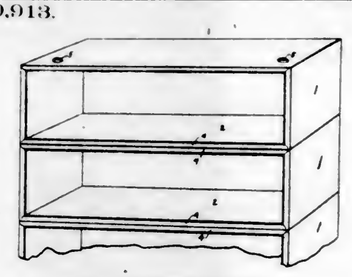
2. The combination with shifting or drop shuttle-boxes, having shuttle-binders thereon, and a protector-finger on a rock-shaft, adapted to engage the free ends of the binders, of spring-actuated plungers mounted in a stand attached to the shuttle-boxes, and movable therewith, said plungers adapted to engage and press inwardly the free ends of the binders, and a releasing-plate adapted to engage the plunger for the shuttle-binder on the shuttle in line with the raceway of the lay, to move outwardly said plunger and release the binder.

3. The combination with shifting or drop shuttle-boxes, having shuttle-binders thereon, and a protector-finger on a rock-shaft, adapted to engage the free ends of the binders, of spring-actuated plungers mounted in a stand attached to the shuttle-boxes and movable therewith, said plungers adapted to engage and press inwardly the free ends of the binders, and a releasing-plate adapted to engage with the plunger for the shuttle-binder of the box in line with the raceway of the lay, to release said binder, said releasing-plate mounted on an arm carried on the rock-shaft which carries the protector-finger.

819,913. CONNECTION FOR FURNITURE-SECTIONS. ANGUS MCKENZIE, Canton, Ohio, assignor to The Berger Manufacturing Company, Canton, Ohio. Filed Apr. 20, 1904. Serial No. 206,480.

Claim.—In sectional furniture, a series of sheet-metal sections each having a bottom and a top formed of two metal sheets spaced apart, the upper sheet of one section and the lower sheet of a superposed section having registering apertures and pins adapted to enter said apertures and be confined therein by the other sheets of the superposed section.

819,913.



819,914. BURGLAR-ALARM. IRA J. NEFF, Elkhart, Ind., assignor of one-third to Elle H. Lee and one-third to Elmer L. Lloyd, Elkhart, Ind. Filed July 6, 1905. Serial No. 268,358.



Claim.—A device of the class described comprising a vertical plate designed to be secured to a window frame or casing and having a vertical tubular cartridge-support and provided at its top and bottom with projecting horizontal arms extending from its outer edge, the upper arm being extended beyond the lower one, an approximately horizontal lever pivoted at its outer end to the said upper arm at the terminal thereof and extending across the upper end of the cartridge-support and provided at an intermediate point with means for engaging a cartridge, a spring located at the outer side of the cartridge-support and secured at its upper end to the lever and at its lower end to the short arm of the said plate, and an operating device consisting of a vertical plate pivoted at its upper end to the sash and provided at its lower end with an outwardly-projecting lip arranged to engage the inner end of the lever, said operating device being movable on its pivot to carry its lip beyond the plane of the inner end of the lever.

819,915. GAME OR AMUSEMENT DEVICE. PETER W. NELSON, New York, N. Y. Filed Aug. 2, 1905. Serial No. 272,286.



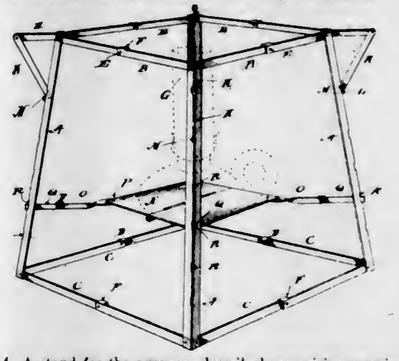
Claim.—The described amusement device consisting in a pack of separate rectangular cards, each having in one corner the representation of a part of a different object or animal, so proportioned that when the cards are indiscriminately assembled they will accurately fit together and produce the representation of a complete although heterogeneous object.

819,916. COLLAPSIBLE HEATING DEVICE. JOHN G. NEWCOMB, Peoria, Ill. Filed June 15, 1905. Serial No. 265,470.

Claim.—1. A foldable stand for the purposes described comprising the legs, jointed members for connecting all of the legs at top and bottom to form a complete frame, said jointed members permitting the legs to close together parallel with each other said members all folding in the same direction as illustrated.

2. In a stand for the purposes described, a series of legs, jointed members connecting all of the legs at top and bottom as shown, a jointed foldable arm on each leg adapted to be raised upon the leg to form a support as described.

3. In a stand for the purposes described, a series of legs forming a pyramidal frame, jointed members connecting all the legs at top and bottom and arranged to fold upon themselves as shown to permit the legs to lie parallel with one another in close order and a jointed bracket pivoted at the top of each leg and adapted to collapse or be raised for supporting purposes substantially as described.



4. A stand for the purposes described comprising a series of legs, jointed foldable members connecting all of the legs at top and bottom as shown and a collapsible member within and supported by the legs and adjustable for height and having collapsible supporting-arms by which to adjust said member within the legs as described there being a series of holes in the legs for receiving the free ends of the said supporting-arms.

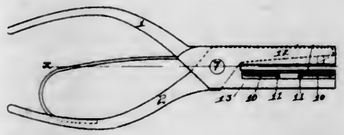
5. A stand for the purposes described comprising a series of legs arranged to form a pyramidal frame, a series of jointed connecting members for the top and bottom of the frame for holding the legs normally rigidly separated, a jointed arm pivoted to each leg at the top to form a support as described, a collapsible support adjustable within the frame, a jointed arm pivoted at each corner of the support, there being a series of holes in the legs for receiving the ends of the said jointed arm as described and shown.

6. In a device of the character described, a series of standards or uprights, a series of jointed members connecting the upper ends and a series of members for connecting the lower ends of the uprights and adapted to fold to permit the latter to approach one another in close relation for the purposes set forth, in combination with a foldable detachable member adjustable for height within the uprights substantially as set forth.

7. In a device of the character described, a series of uprights, a series of jointed members connecting the tops of the uprights, a series of jointed members connecting the lower ends thereof for permitting the uprights to fold together in the manner set forth, and a series of jointed members also for the upper ends of the uprights and pivoted thereto and adapted to form a support for an article upon the top of the standards the same being collapsible for the purposes explained.

8. In a device of the character described, a series of uprights, a series of jointed members connecting the tops and bottoms of the uprights and adapted to permit the uprights to close together in the manner explained, a collapsible bracket at the top of each upright adapted to be raised to form a support, in combination with a foldable member located within the uprights and adjustable for height, there being a series of openings in the uprights by which said foldable member may be adjusted.

819,917. TICKET PUNCH OR PERFORATER. JOHN F. OHMER, Dayton, Ohio, assignor to Ohmer Fare Register Company, Rochester, N. Y., a Corporation of New York. Filed Aug. 25, 1905. Serial No. 275,720.



Claim.—1. In a ticket punch or perforator, a punch, and a resilient member below said punch and in line therewith and adapted to coöperate with the punch in perforating a ticket.

2. In a ticket punch or perforator, a punch having a recess in its engaging end, and a yielding member below said punch and in line with the recess in said engaging end, said resilient member coöperating with the punch in perforating.

3. In a ticket punch or perforator, a punch having a recess extending centrally across its engaging end, and a resilient member mounted below said engaging end and in line with the recessed portion, said resilient member being of less width than the diameter of the engaging end of the punch.

4. In a perforator or ticket punch, a punch having a V-shaped notch in its engaging end extending centrally across said engaging end, and a yielding bar mounted below said punch and in line with the V-shaped notch therein.

5. In a ticket punch or perforator, a punch mounted upon an extended portion of the implement, said punch having its engaging end recessed, a resilient bar mounted upon the lower extension of the supporting member of the implement, said resilient bar being in line with the recessed portion of the punch, and said bar being below the ticket-slot in the implement.

6. In a ticket punch or perforator, a punch having its engaging end provided with a notch extending centrally across said engaging end, and a yielding bar mounted below said recess and parallel therewith, said bar being adapted to enter said recess in the punching operations.

7. In a ticket perforator or punch, a member supporting a resilient bar, and a member supporting a punch, said punch having its engaging end recessed centrally, and said resilient bar being in line with said recessed portion and coöperating with the engaging end of the punch.

8. In a ticket punch or perforator, a supporting member having the portion lying below the ticket-slot recessed, a resilient member lying within said recessed portion, a punch mounted upon the other member of the implement, said punch having its engaging end provided with a central recess extending entirely across said engaging end, and said recess being in alinement with the resilient member.

9. In a ticket punch or perforator, a member thereof having its surface provided with a longitudinal recess from which extends an orifice through which the punched portions of the tickets drop, a resilient member mounted within said recessed portion, a punch mounted upon the other member of the implement, the engaging end of said punch being notched, and said notch being in line with the resilient member and coöperating therewith in the punching operations.

10. In a ticket punch or perforator, a member having side walls 12, and a lower portion 13, between which portions a ticket-slot is provided, a resilient member mounted in the lower portion of said member below the ticket-slot, and a punch mounted on the other member of the implement, said punch having a V-shaped notch extending centrally across the engaging end thereof, and said notch and engaging end coöperating with the resilient member in the punching operations.

11. In a ticket punch or perforator, a supporting member having upper and lower extensions between which is provided a ticket-slot, a resilient bar mounted on the lower extension of said supporting member, a member pivoted to said supporting member, a punch on said pivotal member, said punch having a notch in the engaging end thereof adapted to engage the resilient member in the operations of punching tickets, said resilient member coöperating with said punch in such operations.

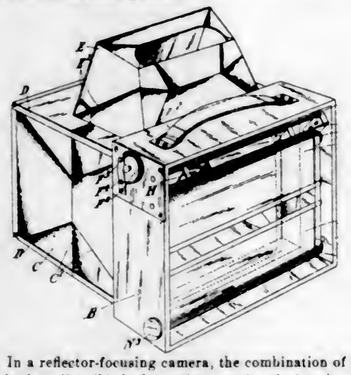
12. In a ticket punch or perforator, a supporting member having upper and lower extensions providing an intervening ticket-slot, an elongated resilient bar or member mounted on the lower extension of said supporting member, a punch mounted upon the other member of the implement, said punch having a V-shaped notch extending centrally across the engaging end thereof, the opposite sides of the engaging end of said punch being adapted to perforate the ticket in advance of the cutting operations of the punch at the ends of the V-shaped recess or notch.

819,918. HAND-CAMERA. CHARLES E. PECKHAM, London, England. Filed Oct. 1, 1904. Serial No. 226,847.

Claim.—1. In a reflector-focusing camera, the combination of the camera-back, focusing means foldable into the camera-back, and a collapsible body portion carrying the lens-board and foldable onto the camera-back.

2. In a reflector-focusing camera, a collapsible body portion interposed between the camera-back and the lens-board, and a collapsible focusing-hood supported and carried by said collapsible body portion.

3. In a reflector-focusing camera, the combination with a collapsible body portion, of a focusing-screen and reflector movable into and out of said body portion.



4. In a reflector-focusing camera, the combination of the camera-back, the collapsible body portion carrying the lens-board, a collapsible focusing-hood carried by the body portion, a focusing-screen movable from a position beneath the hood into the camera-back, and a reflector normally lying beneath the screen and movable into and out of the camera-back.

5. In a reflector-focusing camera, a collapsible body portion carrying a focusing-hood, a yieldingly-supported reflector, and a focusing-screen arranged to move against the reflector and carry the same into the camera-back.

6. In a reflector-focusing camera, a collapsible body portion carrying at the top a focusing-hood, a normally horizontal focusing-screen arranged beneath the hood and supported to swing into and out of position, a normally inclined reflector-mirror yieldingly supported in the path of movement of the screen, and a reflector-positioning device.

7. In a reflector-focusing camera, the body portion, the focusing-screen, a swinging supporting element, a normally inclined reflector having a pivotal connection with said supporting element, a pneumatically-controlled positioning device operating against said supporting element, and means for moving the reflector into the back of the camera.

819,919. REINFORCEMENT FOR CONCRETE RAILROAD-TIES. HERBERT E. PERCIVAL, Galveston, Tex., assignor of one-half to Brewer W. Key, Woodward, Okla. Filed July 17, 1905. Serial No. 269,959.



Claim.—1. A tie of the character specified having a reinforcement consisting of a plurality of rigid metal bars inserted in the head of the tie, a reinforcing-bar inserted in the base of the tie, and rods or wires connecting said top bars and each of said top bars with said bottom bar.

2. A tie of the character specified having a reinforcement consisting of a triangular frame, the same comprising a bar inserted in the base of the tie and a plurality of bars inserted in the head thereof, and means connecting said head and base bars for imparting to the base-bar a reinforcing strength and rigidity as against force or pressure acting to move or bend the same in the direction of said head-bars.

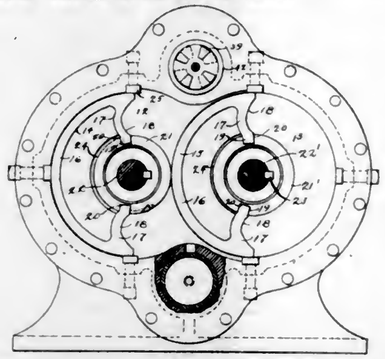
3. A tie of the character specified having a reinforcement consisting of a series of bars set into the head of the tie, a bar set into the base thereof, and separate rods or wires connecting each of said head-bars with said base-bar, each rod or wire making such connection with the bars which it connects as to be adjustable along the same.

4. A tie of the character specified having a reinforcement consisting of a plurality of rigid metal bars inserted in the head of the tie, a reinforcing-bar inserted in the base of the tie, rods or wires connecting said bars, and a screen of woven wire wound around the same, substantially as described.

5. A tie of the character specified having a reinforcement consisting of a plurality of rigid metal bars inserted in the head of the tie, a reinforcing-bar inserted in the base thereof and rods or wire connecting each of said top or head bars with said bottom or base bar for imparting added rigidity and strength thereto.

6. A tie of the character specified having a reinforcement consisting of a series of bars set into the head of the tie, a bar set into the base thereof, separate rods or wires connecting each of said head-bars with said base-bar, each rod or wire making such connection with the bars which it connects as to be adjustable along the same.

819,920. ROTARY ENGINE. WASHINGTON I. PHIFER, Edwardsville, Ill. Filed Apr. 19, 1905. Serial No. 256,422.



Claim.—1. In a rotary engine, the combination of a casing having two chambers, pistons mounted in said chambers and in contact with each other, the contact-point of said pistons being beyond the center lines of the chambers, means for introducing pressure fluid centrally of the casing for operating upon the pistons, eccentric adjusting means for the journals of said pistons to keep the pistons always in contact with each other, and a series of adjustable packings mounted in each chamber and in contact with the pistons.

2. In a rotary engine, the combination of a casing having two chambers, pistons mounted in said chambers and in contact with each other, the contact-point of said pistons being beyond the center lines of the chambers, eccentric adjusting means for keeping the pistons always in contact with each other, valves for controlling the admission and escape of the pressure fluid to said casing and a series of adjustable packings mounted in each chamber and in contact with the pistons.

3. In a rotary engine, the combination of a casing provided with a single chamber having two enlarged portions and constricted near the center thereof, pressure-fluid ducts leading to the constricted portion of said chamber, a piston mounted in each enlarged portion of the chamber, eccentric adjusting means for keeping the pistons always in contact with each other, valves for controlling the admission and escape of the pressure fluid to said chamber, and adjustable packings mounted in said chamber for engaging the surface of the pistons.

4. In a rotary engine, the combination of a casing provided with a chamber having enlarged ends and having a constricted portion longitudinal of the central portion thereof, heads for said casing one provided with an inlet and the other with an outlet, pistons rotatably mounted within said chamber and in contact with each other, a vertical duct provided in each head opposite the constricted portion of the chamber, bores through the casing in communication with the ends of said vertical duct of the head for causing communication between said ducts and the chamber, and valves located in said ducts for controlling the admission and exit of pressure fluid.

5. In a rotary engine, the combination of a casing provided with a chamber having enlarged ends and having a constricted portion longitudinal of the central portion thereof, heads for said casing one provided with an inlet and the other with an outlet, pistons rotatably mounted within said chamber, adjusting means for holding the pistons always in contact with each other, a vertical duct provided in each head opposite the constricted portion of the chamber, bores through the casing in communication with the ends of said vertical duct of the head for causing communication between said ducts and the chamber, and valves located in said ducts for controlling the admission and exit of pressure fluid.

6. In a rotary engine, the combination of a casing provided with a chamber having enlarged ends and having a constricted portion longitudinal of the central portion thereof, heads for said casing one provided with an inlet and the other with an outlet, pistons rotatably mounted within said chamber and in contact with each other, a vertical duct provided in each head opposite the constricted portion of the chamber, bores through the casing in communication with the ends of said vertical duct of the head for causing communication between said ducts and the chamber, valves located in said ducts for controlling the admission and exit of pressure fluid, and reversing mechanism connected to the valves for causing the pressure fluid to enter into the chamber in the opposite direction.

7. In a rotary engine, the combination of a casing provided with a chamber having enlarged ends, a piston mounted in the end of each chamber and adapted to be in rolling contact with each other, bores centrally arranged above and below said chamber and in communication therewith, heads secured to the ends of the casing and provided with vertical ducts in communication with said bores upon opposite sides thereof, an admission-port in communication with one of the ducts of one head, an exhaust in communication with the duct of the other head, a cylindrical valve mounted in each of said bores provided with a disk in one end thereof having a series of openings in one end thereof, an oscillating valve opposed to said disk provided with openings adapted to aline with the openings of the disk, and mechanism connected to the pistons for oscillating said valve and controlling the flow of pressure fluid to the chamber.

8. In a rotary engine, the combination of a casing provided with a chamber having enlarged ends, a piston mounted in the end of each chamber and adapted to be in rolling contact with each other, bores centrally arranged above and below said chamber and in communication therewith, heads secured to the ends of the casing and provided with vertical ducts in communication with said bores upon opposite sides thereof, an admission-port in communication with one of the ducts of one head, an exhaust in communication with the duct of the other head, a hollow cylindrical valve mounted in each of said bores provided with a disk in one end thereof having a series of openings, an oscillating valve opposed to said disk provided with openings adapted to aline with the openings of the disk, mechanism connected to the pistons for oscillating said valve and controlling the flow of pressure fluid to the chamber, and means connected to the cylindrical valves for operating the same to reverse the direction of the flow of the pressure fluid.

9. In a rotary engine, the combination of a casing having two chambers, pistons mounted in said chambers and in contact with each other, centrally-arranged rotary valves operably connected to the pistons so as to be revolved thereby, means to control the flow of pressure fluid through the valves to give a forward or reverse motion to the pistons, and means to disconnect the controlling means to allow a continuous flow of pressure fluid through the proper valve in the desired direction.

10. In a rotary engine, the combination of a casing, a pair of contacting pistons mounted therein, valves controlled by the pistons to admit pressure fluid at the proper time, means for controlling the valves to direct the pressure fluid to operate the pistons either forward or reverse, and means controlling the said last-mentioned means, whereby pressure fluid is allowed to flow continuously in the proper direction, when desired.

11. In a rotary engine, the combination of a casing having two chambers, pistons mounted in said chambers and in contact with each other, centrally-arranged rotary valves operably connected to the pistons so as to be revolved thereby, means to control the flow of pressure fluid through the valves to give a forward or reverse motion to the pistons, means to operate said controlling means and allow a continuous flow of pressure fluid in the desired direction, and a series of adjustable packings mounted in each chamber adapted to contact the pistons.

12. In a rotary engine, the combination of a casing, a pair of contacting pistons mounted therein, valves controlled by the pistons to admit pressure fluid at the proper time, means for controlling the valves to direct the pressure fluid to operate the pistons either forward or reverse, means to cause the pressure fluid to be directed continuously, and a series of adjustable packings mounted in each chamber adapted to contact the pistons.

13. In a rotary engine, the combination of a casing, coacting pistons mounted therein, valves divided centrally having an entrance and exhaust port, a slidingly-mounted rotary controlling-disk operably connected to the pistons to admit the pressure fluid as desired, and means to disconnect the disk from the valves to allow the pressure fluid to flow continuously, in the desired direction.

14. In a rotary engine, the combination of a casing, coacting pistons mounted therein, valves for controlling the admission and exhaust of pressure fluid to the pistons controlled by the pistons, means for controlling the direction of the admission of the pressure, means for disconnecting said means to cause pressure fluid to flow

continuously, and a series of adjustable packings mounted in each casing adapted to contact the pistons.

15. In a rotary engine, the combination of a casing, coacting pistons mounted therein, valves divided centrally having an entrance and exhaust port, a slidingly-mounted rotary controlling-disk operably connected to the pistons to admit the pressure fluid as desired, means to disconnect the disk from the valves to allow the pressure fluid to flow continuously in the desired direction, and a series of adjustable packages mounted in the casing adapted to contact the pistons.

16. In a roatry engine, the combination of a casing, a pair of coacting pistons mounted therein, cylindrical valves for controlling the admission and exhaust of the pressure fluid from the casing so arranged as to be given a slight turn, said valves being divided centrally so as to have an entrance and exhaust compartment, and an opening for each compartment.

17. In a rotary engine, the combination of a casing, a pair of coacting pistons mounted therein, cylindrical valves for controlling the admission and exhaust of the pressure fluid from the casing so arranged as to be given a slight turn, said valves being divided centrally so as to have an entrance and an exhaust compartment, means for controlling the admission of the pressure fluid to the proper valve to regulate the direction in which the pistons revolve, and means for disconecting said last-mentioned means so as to allow the continuous flow of pressure fluid through the casing in the proper direction.

18. In a rotary engine, the combination of a casing, coacting pistons mounted therein, cylindrical valves located above and below the central portion of the casing for controlling each an entrance and exhaust port entering the casing above and below.

19. In a rotary engine, the combination of a casing, coacting pistons mounted therein, cylindrical valves located above and below the central portion of the casing for controlling each an entrance and exhaust port entering the casing above and below, manually-operated means for simultaneously operating the valves so that their respective ports are in alinement so that one is opposite the entrance-port while the other is opposite the exhaust-port, means operably connected with the pistons for controlling the admission of the pressure fluid at the proper time to the pistons, and means for operating the last-mentioned means for disconnecting them so as to allow a continuous flow of pressure fluid to the pistons.

20. In a rotary engine, the combination of a casing, a pair of coacting pistons mounted therein, cylindrical valves for controlling the admission and exhaust of the pressure fluid from the casing so arranged as to be given a slight turn, said valves being divided centrally so as to have an entrance and exhaust compartment, an opening for each compartment, and a series of adjustable packings mounted in the casings adapted to contact the pistons.

21. In a rotary engine, the combination of a casing, a pair of coacting pistons mounted therein, cylindrical valves for controlling the admission and exhaust of the pressure fluid from the casing so arranged as to be given a slight turn, said valves being divided centrally so as to have an entrance and an exhaust compartment, means for controlling the admission of the pressure fluid to the proper valve to regulate the direction in which the pistons revolve, means for disconnecting said last-mentioned means so as to allow the continuous flow of pressure fluid through the casing in the proper direction, and a series of adjustable packings mounted in each chamber adapted to contact the pistons.

22. In a rotary engine, the combination of a casing, coacting pistons mounted therein, cylindrical valves located above and below the central portion of the casing for controlling each an entrance and exhaust port entering the casing above and below, and a series of adjustable packings mounted in the casing adapted to contact the pistons.

23. In a rotary engine, the combination of a casing, coacting pistons mounted therein, cylindrical valves located above and below the central portion of the casing for controlling each an entrance and exhaust port entering the casing above and below, manually-operated means for simultaneously operating the valves so that their respective ports are in alinement so that one is opposite the entrance-port while the other is opposite the exhaust-port, means operably connected with the pistons for controlling the admission of the pressure fluid at the proper time to the pistons, and means for operating the last-mentioned means for disconnecting them so as to allow a continuous flow of pressure fluid to the pistons and a series of adjustable packings mounted in the casing adapted to contact the pistons.

819,921. BOOK AND EYELET SETTING MACHINE. HENRY C. POMEROY, Chicago, Ill. Filed June 19, 1905. Serial No. 266,021.

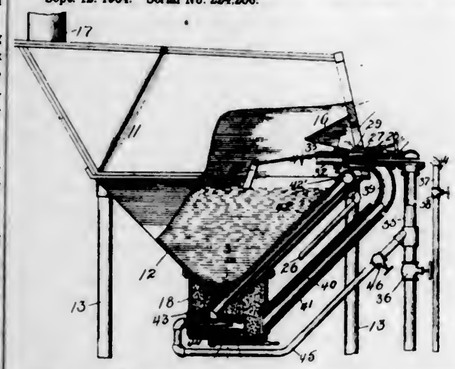
Claim.—1. A blank for a lacing-hook holder comprising a body portion with parallel edges, and lateral extensions at one free end thereof adapted to form side walls bent at an angle to the body thereof.



2. In a machine of the class described, a face-block, a lacing-hook holder comprising a base-plate having one end thereof bent into a plane parallel with the base-plate, depending walls extending from said bent portion at opposite sides and resting upon the base-plate, a post disposed centrally of said base-plate and entering said block, and a depending arm extending from one end of said plate parallel to one face of said block.

3. In a machine of the class described, a lacing-hook holder comprising a base-plate having one end thereof bent into a plane parallel with the base-plate, depending walls extending from said bent portion at opposite sides and resting upon the base-plate, a post disposed centrally of said base-plate, and a depending arm extending from one end of said plate parallel to said post.

819,922. FILE-SHARPENING APPARATUS. ANTHONY H. RADELL, Chicago, Ill., assignor to Benjamin M. Frees, Chicago, Ill. Filed Sept. 12, 1904. Serial No. 224,206.



Claim.—1. In a machine of the character described, a steam-injector having a vacuum-chamber, a chamber containing moist abrasive material, a material-conduit connecting the material-chamber and the injector vacuum-chamber, and means for supplying gaseous material in a highly-heated condition to the vacuum-chamber with the moist abrasive material.

2. In a machine of the character described, a steam-injector having a vacuum-chamber, a casing into which the injector discharges, having a portion for containing abrasive material immersed in water, a material-conduit connecting said casing portion with the injector vacuum-chamber, and means for supplying highly-heated gaseous matter to the material-conduit with the wet abrasive material.

3. In a machine of the character described, the combination with a steam-injector, of means for supplying highly-heated air and abrasive material to the injector.

4. In a machine of the character described, the combination with a steam-injector, of a material-conduit communicating with the vacuum-chamber thereof, and means for supplying air in a highly-heated condition to the material-conduit.

5. In a machine of the character described, the combination with a steam-injector, of a material-conduit communicating with the vacuum-chamber thereof, a source of supply of abrasive material for the material-conduit, and means for supplying air heated to or in excess of the boiling-point of water to the material-conduit with the abrasive material.

6. In a machine of the character described, the combination of a steam-injector, a source of supply of abrasive material therefor operatively associated with the injector to supply abrasive material to the vacuum-chamber thereof, a source of supply of highly-heated gaseous matter, and connections between said source of supply of gaseous matter and the source of supply of abrasive material, arranged to mix gaseous matter with the abrasive material being supplied to the injector.

7. In a machine of the character described, the combination of a steam-injector, a material-supply conduit operatively associated therewith, and a conduit arranged for supplying gaseous material to the material-supply conduit, the path of the gaseous matter including a highly-heated area.

8. In a machine of the character described, the combination of a steam-injector, a source of supply of abrasive material, a conduit extending from the injector to the source of abrasive-material supply, a source of heated-air supply, and an air-conduit arranged to conduct heated air from the source of heated-air supply to the source of material-supply.

9. In a machine of the character described, the combination of a casing, a steam-injector arranged to discharge into a chamber of the casing, a source of material-supply for the injector, and a conduit connecting the chamber into which the injector discharges with the source of material-supply.

10. In a machine of the character described, the combination of a casing, a steam-injector arranged to discharge into an air-chamber of the casing, a material-conduit associated with the vacuum-chamber of the injector, a source of supply of abrasive material for said material-conduit, and an air-conduit leading from the said air-chamber into operative association with the material-conduit.

11. In a machine of the character described, an injector, a material-conduit communicating with the vacuum-chamber of the injector, a source of supply of abrasive material with which said material-conduit communicates, and an auxiliary jet for gaseous matter arranged to discharge into the abrasive material to impel it through the material-conduit.

12. In a device of the character described, the combination with an injector, of a material-conduit communicating with the vacuum-chamber thereof, a source of supply of abrasive material with which the material-conduit communicates, and an auxiliary steam-jet arranged to impel abrasive material through the material-conduit.

13. In a device of the character described, the combination with an injector of a source of material-supply, a connection between the vacuum-chamber of the injector and the source of material-supply, an air-conduit arranged to supply air to the material-conduit for mixture with the abrasive material, and an auxiliary jet of gaseous material under pressure, arranged to induce a flow of air through said air-conduit toward the material-conduit.

14. In a machine of the character described, a steam-injector, a material-pipe, a source of material-supply with which said material-pipe communicates, and a means of supply of gaseous matter under pressure extending into the source of material-supply and arranged with its outlet in alinement with the opening of the material-pipe, to discharge into the material-supply pipe.

15. In a machine of the character described, a steam-injector, a source of material-supply, a material-conduit connecting the source of supply and the injector, and a steam-jet arranged within the source of material-supply and arranged to inject steam into the material-conduit with the abrasive material supplied thereto.

16. In a machine of the character described, an injector, a source of material-supply, and a conduit connecting the said source of supply and the injector, said conduit comprising telescoping pipes, one only being connected to the injector and the other extending to the source of material-supply.

17. In a machine of the character described, the combination with an injector, of a structure through which material to be supplied to the injector is drawn, comprising a pipe connected with said structure, and a second pipe telescopically associated with the first, connected with the vacuum-chamber of the injector.

18. In a device of the character described, the combination of a casing having a chamber into which an injector discharges, a well at the bottom of the casing, an injector discharging into the casing, a material-pipe leading from the injector into the well, and a conduit leading from the chamber into which the injector discharges into the well.

19. In a device of the character described, the combination of a casing having a chamber into which the injector discharges, and a material-hopper, a well below the hopper, an injector discharging into the casing, a material-pipe arranged without the casing and composed of telescoping sections, one connected with the injector and the other leading into the well, and a conduit leading from the chamber into which the injector discharges to a proper point in the well to supply air to the material-pipe.

20. In a machine of the character described, an injector, a source of material-supply operatively connected with the vacuum-chamber of the injector, and regulable means for supplying gaseous matter to the path of the material immediate the source of supply and the point of egress from the injector.

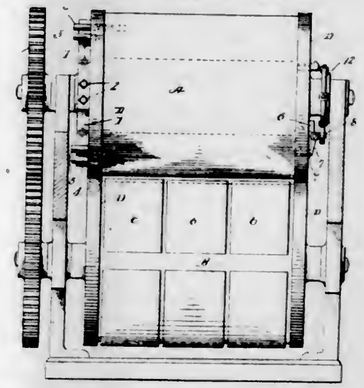
21. In a device of the character described, an injector, a source of material-supply operatively connected with the vacuum-chamber of the injector, and means for admitting gaseous material to said vacuum-chamber.

22. In a device of the character described, the combination with a casing into an air-chamber whereof an injector discharges, the injector, a source of material-supply operatively connected with the vacuum-chamber of the injector, and regulable connections between the chamber into which the injector discharges and the vacuum-chamber of the injector.

23. In a machine of the character described, an injector comprising a vacuum-chamber, a steam-nozzle, and a compressed-air nozzle, and a source of supply of abrasive material operatively connected with the vacuum-chamber of the injector.

24. In a machine of the character described, the combination of an injector comprising a vacuum-chamber, a steam-nozzle extending through the vacuum-chamber, and a nozzle for compressed air extending through the vacuum-chamber within the steam-nozzle, and a source of material-supply operatively connected with the vacuum-chamber of the injector.

819,923. PRINTING-PRESS. PHINEAS M. RANDALL, Jr., Westerly, R. I. Filed Oct. 23, 1905. Serial No. 283,946.



Claim.—1. In a printing-machine, the printing-couple geared to move at uniform speed, with a contact-piece of one of the couple held by springs so as to yield in the direction of movement under increased pressure.

2. The combination with the cylinder of a printing-press, of an impression-shell, and springs to hold the same to operative position, while permitting a circumferential yielding.

3. The combination with the printing-couple of a printing-machine, of a yielding contact-piece attached to one of the members and means to control the yielding thereof, means for positively locking such yielding piece, and means for unlocking it at a predetermined position in its movement.

4. The combination with the printing-couple of a printing-machine, of a yielding part bearing a contact-face, means for locking this part, and means for unlocking it as the member moves.

5. The combination with a cylinder of a printing-press, of a rotatively-yielding shell, springs for holding the shell in normal position, and means for locking the shell to the cylinder.

6. The combination with the cylinder of a printing-press, of a rotatively-yielding shell, means for locking the shell to the cylinder, and means for unlocking the shell by the movement of the cylinder.

7. The combination with the cylinder of a printing-press, of a rotatively-yielding shell, a friction device for obstructing the yielding of said shell, and means for applying the friction device.

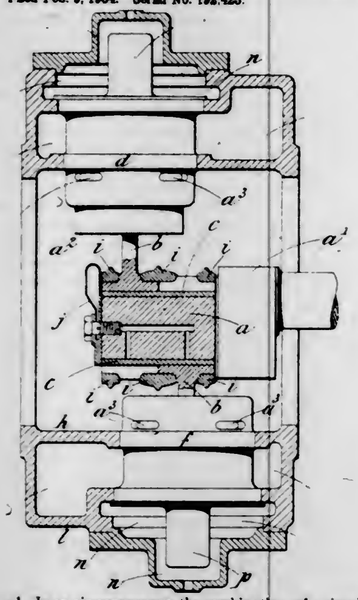
8. The combination with the cylinder of a printing-press, of a rotatively-yielding shell, a frictional holding device for said shell, and adjustable cams on the frame by which the pressure of said holding device is applied.

9. The combination with the cylinder of a printing-press, of a rotatively-yielding shell, a locking-pin in position to enter said shell, a cam to lock said pin, and means for withdrawing said pin.

10. The combination with one of the members of a printing-couple, of a yielding part bearing one of the contact-surfaces, a lock

by which said piece is held against yielding, and means for automatically unlocking said piece to permit the yield.

819,924. AIR-COMPRESSOR. WILLIAM REAVELL, Ipswich, England. Filed Feb. 6, 1904. Serial No. 192,423.



Claim.—1. In an air-compressor, the combination, of a circular-shaped frame having a cooling-chamber *m*, an air-receiver chamber *n*, and walls *h*, *k* and *l*; a plurality of main cylinders radially seated in the walls *h* and *k* on two planes within the chamber *m*; an open-ended pilot-cylinder extending from each main cylinder into the air-chamber *n*, a central revoluble crank-shaft and elongated crank-pin; a piston common to each main and pilot cylinder, and a pivoted connecting-rod bearing upon said crank-pin and adapted to transmit its motion to each of said pistons, substantially as described.

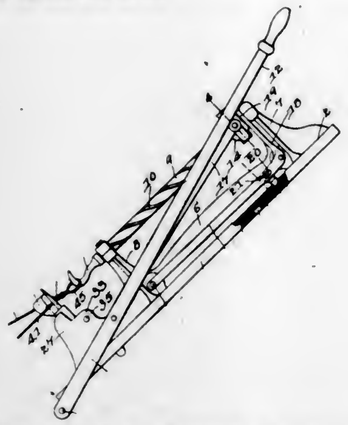
2. In an air-compressor, the combination of a circular-shaped frame having a cooling-chamber *m*, an air-receiver chambe walls *h*, *k* and *l*; a plurality of combined main and pilot cylinders radially seated in the walls *h* and *k* on two planes; a central revoluble crank-shaft and elongated crank-pin, a compound piston in each of said combined cylinders, a connecting-rod pivoted at one end in each piston, and converging axially upon said crank-pin at the other; and a communicating channel from said chamber *n* to said pilot-cylinders, whereby the pistons therein are subject to continuous air-pressure, thus maintaining constant thrust through the connecting-rods upon the crank-pin, substantially as and for the purpose described.

3. In an air-compressor, the combination of a circular-shaped frame having a cooling-chamber *m*, an air-receiver *n* and walls *h*, *k* and *l*, with a plurality of combined main and pilot cylinders radially seated in the walls *h* and *k* upon different planes, so that an unsymmetrical cooling-space surrounds the main body of each cylinder, the ends of the pilot-cylinders being exposed to the pressure from the air-chamber, and a cover seated in the wall *l*, symmetrically surrounding each pilot-cylinder in the air-chamber *n*, substantially as and for the purpose described.

819,925. BALE-TIE MACHINE. ARCHIBALD B. RHOADES, Elk Grove, Cal. Filed Nov. 6, 1905. Serial No. 286,071.

Claim.—1. A machine of the class described including a slide, wire-twisting means carried by the slide, wire-cutting means carried by the slide, means for operating the twisting means and then moving the slide to stretch the wire, and a trip in the path of the wire-cutter to actuate the latter by the movement of the slide.

2. In a machine of the class described, the combination with a bed, of a slide mounted thereon, a rotatable mandrel mounted upon the slide and having a wire-engaging element and a spiral guideway, a sleeve slidably embracing the mandrel and engaging the guideway thereof, means to move the sleeve upon the mandrel to rotate the latter and then move the slide, and means to interlock the slide with the fixed and provided with a trip portion in the path of the sleeve to release the slide from the bed.



3. In a machine of the class described, the combination with a bed having a seat, of a base mounted to slide upon the bed, a mandrel rotatably mounted upon the base and provided with a spiral guideway and a wire-engaging element, a slide working upon the mandrel and engaging the guideway thereof, means to move the slide upon the mandrel, a latch carried by the base for engagement with the seat of the bed, and a trip-lever mounted upon the base and connected to the latch, a portion of the lever lying in the path of the slide to release the latch.

4. In a machine of the class described, the combination with a bed having a seat, of a base slidable upon the bed, a rotatable mandrel carried by the base and provided with a spiral guideway and a wire-engaging element, a slide working upon the mandrel and engaging the spiral guideway, means for moving the slide upon the mandrel, a rod pivotally supported upon the base and having a latch portion to engage the seat of the bed, and a bell-crank lever connected to the rod and provided with an eye loosely embracing the mandrel and disposed in the path of the slide for releasing the latch from the bed.

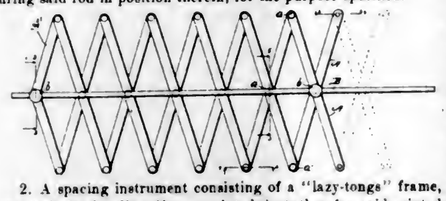
5. In a machine of the class described, the combination with a bed, of a base slidable thereon, twisting means carried by the base, means to slide the base upon the bed, a wire-cutter carried by the base and including a controlling-lever, and a stop provided upon the bed in the path of the lever to actuate the cutter.

6. In a machine of the class described, the combination with a bed, of a base slidable thereon, twisting means carried by the base, means to slide the base upon the bed, and a wire-cutter carried by the base and including a lever, the base and the bed being provided with openings receiving the lever, and the rear end of the opening in the bed lying in the path of the lever to swing the latter and operate the wire-cutter.

7. In a machine of the class described, the combination with a bed having a seat, of a base slidable thereon, a rotatable mandrel carried by the base and provided with a wire-engaging element and a spiral guideway, a slide embracing the mandrel and engaging the spiral guideway, a lever fulcrumed upon the bed, a connecting-rod between the lever and the slide, a swinging latch carried by the base for engagement with the seat of the bed, a bell-crank lever connected to the latch and having a portion lying in the path of the slide, a wire-receiving seat provided upon the base in front of the mandrel, a vertically-movable cutting-blade working across the seat, and a bell-crank lever fulcrumed upon the base and engaged with the knife-blade for elevating the same, the base and the bed having openings receiving the lever, the rear end of the opening in the bed lying in the rearward path of the lever to engage and operate the same for elevating the knife-blade.

819,926. SPACING AND DIVIDING INSTRUMENT. ALEXANDER ROBBINS, Kalamazoo, Mich. Filed Apr. 26, 1905. Serial No. 257,556.

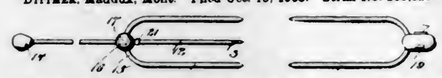
Claim.—1. A spacing instrument consisting of a "lazy-tongs" frame composed of a plurality of bars of equal length, said bars being pivoted at their mid-points and at their ends; rivets for the ends of contiguous pairs of bars along one side of the frame, having their lower part cone-shaped and pointed; eyebolts at the mid-points of the pairs of bars at each end of the frame; a rod arranged through said eyebolts; and set-screws arranged through said eyebolts for securing said rod in position therein, for the purpose specified.



2. A spacing instrument consisting of a "lazy-tongs" frame, composed of a plurality of bars; pointed rivets therefor, said pointed rivets being adapted to serve as markers; a pair of eyebolts arranged as pivots in said frame; a rod arranged through said eyebolts; and set-screws carried by the said eyebolts for securing said rod, for the purpose specified.

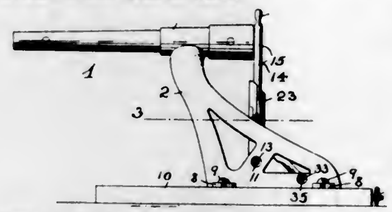
3. In a spacing instrument, the combination of a "lazy-tongs" frame, composed of a plurality of bars; rivets for one series of crossing-points of said bars, having their lower part cone-shaped and pointed to serve as markers; and means for locking said frame in its adjusted positions, for the purpose specified.

819,927. HAIR-FASTENER. FRANK B. ROGERS and CHARLES H. DITTNER, Maddux, Mont. Filed Oct. 18, 1905. Serial No. 283,323.



Claim.—A hair-fastener comprising a pair of forked pins, the prongs of which are presented toward each other, the head of one of said pins having an opening, and the head of the other pin a socket, and a pin slidably mounted in the aforesaid opening, and extensible into the socket, and removably secured therein.

819,928. DETONATING TOY. MONT RUTTER, Newark, N. J. Filed Mar. 18, 1904. Serial No. 198,732.



Claim.—1. In a detonating toy, the combination, with a cannon and its frame, of a hammer and a fulminate-tape guide forming an integral part of the hammer, substantially as and for the purposes set forth.

2. In a detonating toy, the combination, with a cannon and its frame, of a hammer and a fulminate-tape guide forming an integral part of the hammer, and means arranged to extend into said guide and feed said tape through the said guide, substantially as and for the purposes set forth.

3. In a detonating toy, the combination, with a cannon and its frame, of a hammer and a fulminate-tape guide forming an integral part of the hammer and means arranged to extend into said guide and feed said tape through the said guide, a fulminate-receiving seat connected with said hammer, and a rearwardly-extending anvil on said cannon against which the fulminate is forced and exploded, substantially as and for the purposes set forth.

4. In a detonating toy, the combination, with a cannon and its frame, of a spring-actuated hammer and a fulminate-tape guide forming an integral part of the hammer, substantially as and for the purposes set forth.

5. In a detonating toy, the combination, with a cannon and its frame, of a spring-actuated hammer and a fulminate-tape guide forming an integral part of the hammer, and a spring-controlled means arranged to extend into said guide and feed said tape through the said guide, substantially as and for the purposes set forth.

6. In a detonating toy, the combination, with a cannon and its frame, of a spring-actuated hammer and a fulminate-tape guide forming an integral part of the hammer, and a spring-controlled means arranged to extend into said guide and force said tape through the said guide, a fulminate-receiving seat connected with said hammer, and a rearwardly-extending anvil on said cannon against which the fulminate is forced and exploded, substantially as and for the purposes set forth.

7. In a detonating toy, the combination, with a cannon and its frame, of a hammer, a fulminate-tape guide, and a feeding device, comprising a forked or pronged arm having its prongs in engagement with and on opposite sides of the row of fulminates to straddle said fulminates, substantially as and for the purposes set forth.

8. In a detonating toy, the combination, with a cannon and its frame, of a hammer, a fulminate-tape guide, and a feeding device, comprising a forked or pronged arm, and a spring for forcing the prongs in engagement with and on opposite sides of the row of fulminates to straddle said fulminates, substantially as and for the purposes set forth.

9. In a detonating toy, the combination, with a cannon and its frame, of a hammer and a fulminate-tape guide forming an integral part of the hammer, and a feeding device extending into said guide, comprising a forked or pronged arm having its prongs in engagement with and on opposite sides of the row of fulminates to straddle said fulminates, substantially as and for the purposes set forth.

10. In a detonating toy, the combination, with a cannon and its frame, of a hammer and a fulminate-tape guide forming an integral part of the hammer, and a feeding device extending into said guide, comprising a forked or pronged arm, and a spring for forcing the prongs in engagement with and on opposite sides of the row of fulminates to straddle said fulminates, substantially as and for the purposes set forth.

11. In a detonating toy, the combination, with a cannon and its frame, of a hammer provided with a pair of elongated openings and a dividing-rib, a box arranged upon one side of the said hammer, forming with the body of said hammer a fulminate-tape guide, and a tape-feeding device comprising a forked or pronged arm having its prongs extending into the elongated openings of the hammer in engagement with and on opposite sides of the row of fulminates to straddle said fulminates, substantially as and for the purposes set forth.

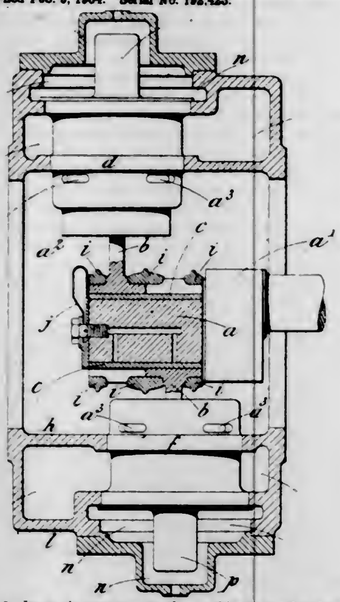
12. In a detonating toy, the combination, with a cannon and its frame, of a hammer provided with a pair of elongated openings and a dividing-rib, a box arranged upon one side of said hammer, forming with the body of said hammer a fulminate-tape guide, and a tape-feeding device, comprising a forked or pronged arm having its prongs extending into the elongated openings of the hammer in engagement with and on opposite sides of the row of fulminates to straddle said fulminates, when the hammer is lowered, and means for withdrawing said prongs from within the said elongated openings and from contact with the tape when the hammer is raised, substantially as and for the purposes set forth.

13. In a detonating toy, the combination, with a cannon and its frame, of a hammer provided with a pair of elongated openings, one of said openings being of greater width at its upper part than at its lower portion and the other opening being formed with a laterally-extending open part, and a tapering rib between the said openings, a box arranged upon one side of said hammer, and a tape-feeding device comprising a forked or pronged arm having its prongs extending into the elongated openings of the hammer in engagement with and on opposite sides of the row of fulminates to straddle said fulminates when the hammer is lowered, and means for forcing one prong of the feeding device into said laterally-extending open part to withdraw the prongs from within the said elongated openings and from contact with the tape, substantially as and for the purposes set forth.

14. In a detonating toy, the combination, with a cannon and its frame, of a hammer provided with a pair of elongated openings, one of said openings being of greater width at its upper part than at its lower portion and the other opening being formed with a laterally-extending open part, and a tapering rib between the said openings, a box arranged upon one side of the said hammer, and a tape-feeding device comprising a forked or pronged arm having its prongs extending into the elongated openings of the hammer in engagement with and on opposite sides of a row of fulminates to straddle said fulminates when the hammer is lowered, and a spring connected with the said forked or pronged arm for producing a lateral movement of the same and forcing the one prong into said laterally-extending open part to withdraw the prongs from contact with the tape, substantially as and for the purposes set forth.

by which said piece is held against yielding, and means for automatically unlocking said piece to permit the yield.

819,924. AIR-COMPRESSOR. WILLIAM REAVELL, Ipswich, England. Filed Feb. 6, 1904. Serial No. 192,423.



Claim.—1. In an air-compressor, the combination, of a circular-shaped frame having a cooling-chamber *m*, an air-receiver chamber *n*, and walls *h*, *k* and *l*; a plurality of main cylinders radially seated in the walls *h* and *k* on two planes within the chamber *m*; an open-ended pilot-cylinder extending from each main cylinder into the air-chamber *n*, a central revoluble crank-shaft and elongated crank-pin; a piston common to each main and pilot cylinder, and a pivoted connecting-rod bearing upon said crank-pin and adapted to transmit its motion to each of said pistons, substantially as described.

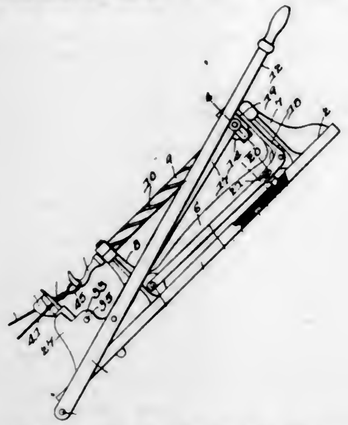
2. In an air-compressor, the combination of a circular-shaped frame having a cooling-chamber *m*, an air-receiver chambe walls *h*, *k* and *l*; a plurality of combined main and pilot cylinders radially seated in the walls *h* and *k* on two planes; a central revoluble crank-shaft and elongated crank-pin, a compound piston in each of said combined cylinders, a connecting-rod pivoted at one end in each piston, and converging axially upon said crank-pin at the other; and a communicating channel from said chamber *n* to said pilot-cylinders, whereby the pistons therein are subject to continuous air-pressure, thus maintaining constant thrust through the connecting-rods upon the crank-pin, substantially as and for the purpose described.

3. In an air-compressor, the combination of a circular-shaped frame having a cooling-chamber *m*, an air-receiver *n* and walls *h*, *k* and *l*, with a plurality of combined main and pilot cylinders radially seated in the walls *h* and *k* upon different planes, so that an unsymmetrical cooling-space surrounds the main body of each cylinder, the ends of the pilot-cylinders being exposed to the pressure from the air-chamber, and a cover seated in the wall *l*, symmetrically surrounding each pilot-cylinder in the air-chamber *n*, substantially as and for the purpose described.

819,925. BALE-TIE MACHINE. ARCHIBALD E. REOADES, Elk Grove, Cal. Filed Nov. 6, 1905. Serial No. 286,071.

Claim.—1. A machine of the class described including a slide, wire-twisting means carried by the slide, wire-cutting means carried by the slide, means for operating the twisting means and then moving the slide to stretch the wire, and a trip in the path of the wire-cutter to actuate the latter by the movement of the slide.

2. In a machine of the class described, the combination with a bed, of a slide mounted thereon, a rotatable mandrel mounted upon the slide and having a wire-engaging element and a spiral guideway, a sleeve slidably embracing the mandrel and engaging the guideway thereof, means to move the sleeve upon the mandrel to rotate the latter and then move the slide, and means to interlock the slide with the fixed and provided with a trip portion in the path of the sleeve to release the slide from the bed.



3. In a machine of the class described, the combination with a bed having a seat, of a base mounted to slide upon the bed, a mandrel rotatably mounted upon the base and provided with a spiral guideway and a wire-engaging element, a slide working upon the mandrel and engaging the guideway thereof, means to move the slide upon the mandrel, a latch carried by the base for engagement with the seat of the bed, and a trip-lever mounted upon the base and connected to the latch, a portion of the lever lying in the path of the slide to release the latch.

4. In a machine of the class described, the combination with a bed having a seat, of a base slidable upon the bed, a rotatable mandrel carried by the base and provided with a spiral guideway and a wire-engaging element, a slide working upon the mandrel and engaging the spiral guideway, means for moving the slide upon the mandrel, a rod pivotally supported upon the base and having a latch portion to engage the seat of the bed, and a bell-crank lever connected to the rod and provided with an eye loosely embracing the mandrel and disposed in the path of the slide for releasing the latch from the bed.

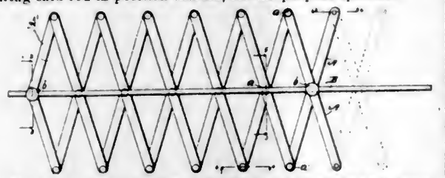
5. In a machine of the class described, the combination with a bed, of a base slidable thereon, twisting means carried by the base, means to slide the base upon the bed, a wire-cutter carried by the base and including a controlling-lever, and a stop provided upon the bed in the path of the lever to actuate the cutter.

6. In a machine of the class described, the combination with a bed, of a base slidable thereon, twisting means carried by the base, means to slide the base upon the bed, and a wire-cutter carried by the base and including a lever, the base and the bed being provided with openings receiving the lever, and the rear end of the opening in the bed lying in the path of the lever to swing the latter and operate the wire-cutter.

7. In a machine of the class described, the combination with a bed having a seat, of a base slidable thereon, a rotatable mandrel carried by the base and provided with a wire-engaging element and a spiral guideway, a slide embracing the mandrel and engaging the spiral guideway, a lever fulcrumed upon the bed, a connecting-rod between the lever and the slide, a swinging latch carried by the base for engagement with the seat of the bed, a bell-crank lever connected to the latch and having a portion lying in the path of the slide, a wire-receiving seat provided upon the base in front of the mandrel, a vertically-movable cutting-blade working across the seat, and a bell-crank lever fulcrumed upon the base and engaged with the knife-blade for elevating the same, the base and the bed having openings receiving the lever, the rear end of the opening in the bed lying in the rearward path of the lever to engage and operate the same for elevating the knife-blade.

819,926. SPACING AND DIVIDING INSTRUMENT. ALEXANDER ROBBINS, Kalamazoo, Mich. Filed Apr. 26, 1905. Serial No. 257,556.

Claim.—1. A spacing instrument consisting of a "lazy-tongs" frame composed of a plurality of bars of equal length, said bars being pivoted at their mid-points and at their ends; rivets for the ends of contiguous pairs of bars along one side of the frame, having their lower part cone-shaped and pointed; eyebolts at the mid-points of the pairs of bars at each end of the frame; a rod arranged through said eyebolts; and set-screws arranged through said eyebolts for securing said rod in position therein, for the purpose specified.



2. A spacing instrument consisting of a "lazy-tongs" frame, composed of a plurality of bars; pointed rivets therefor, said pointed rivets being adapted to serve as markers; a pair of eyebolts arranged as pivots in said frame; a rod arranged through said eyebolts; and set-screws carried by the said eyebolts for securing said rod, for the purpose specified.

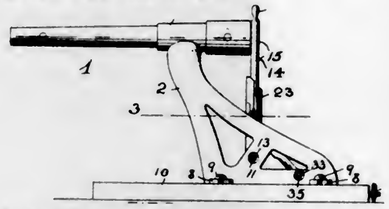
3. In a spacing instrument, the combination of a "lazy-tongs" frame, composed of a plurality of bars; rivets for one series of crossing-points of said bars, having their lower part cone-shaped and pointed to serve as markers; and means for locking said frame in its adjusted positions, for the purpose specified.

819,927. HAIR-FASTENER. FRANK B. ROGERS and CHARLES H. DITTNER, Maddux, Mont. Filed Oct. 18, 1905. Serial No. 283,323.



Claim.—A hair-fastener comprising a pair of forked pins, the prongs of which are presented toward each other, the head of one of said pins having an opening, and the head of the other pin a socket, and a pin slidably mounted in the aforesaid opening, and extensible into the socket, and removably secured therein.

819,928. DETONATING TOY. MONT RUTTER, Newark, N. J. Filed Mar. 18, 1904. Serial No. 198,732.



Claim.—1. In a detonating toy, the combination, with a cannon and its frame, of a hammer and a fulminate-tape guide forming an integral part of the hammer, substantially as and for the purposes set forth.

2. In a detonating toy, the combination, with a cannon and its frame, of a hammer and a fulminate-tape guide forming an integral part of the hammer, and means arranged to extend into said guide and feed said tape through the said guide, substantially as and for the purposes set forth.

3. In a detonating toy, the combination, with a cannon and its frame, of a hammer and a fulminate-tape guide forming an integral part of the hammer and means arranged to extend into said guide and feed said tape through the said guide, a fulminate-receiving seat connected with said hammer, and a rearwardly-extending anvil on said cannon against which the fulminate is forced and exploded, substantially as and for the purposes set forth.

4. In a detonating toy, the combination, with a cannon and its frame, of a spring-actuated hammer and a fulminate-tape guide forming an integral part of the hammer, substantially as and for the purposes set forth.

5. In a detonating toy, the combination, with a cannon and its frame, of a spring-actuated hammer and a fulminate-tape guide forming an integral part of the hammer, and a spring-controlled means arranged to extend into said guide and feed said tape through the said guide, substantially as and for the purposes set forth.

6. In a detonating toy, the combination, with a cannon and its frame, of a spring-actuated hammer and a fulminate-tape guide forming an integral part of the hammer, and a spring-controlled means arranged to extend into said guide and force said tape through the said guide, a fulminate-receiving seat connected with said hammer, and a rearwardly-extending anvil on said cannon against which the fulminate is forced and exploded, substantially as and for the purposes set forth.

7. In a detonating toy, the combination, with a cannon and its frame, of a hammer, a fulminate-tape guide, and a feeding device, comprising a forked or pronged arm having its prongs in engagement with and on opposite sides of the row of fulminates to straddle said fulminates, substantially as and for the purposes set forth.

8. In a detonating toy, the combination, with a cannon and its frame, of a hammer, a fulminate-tape guide, and a feeding device, comprising a forked or pronged arm, and a spring for forcing the prongs in engagement with and on opposite sides of the row of fulminates to straddle said fulminates, substantially as and for the purposes set forth.

9. In a detonating toy, the combination, with a cannon and its frame, of a hammer and a fulminate-tape guide forming an integral part of the hammer, and a feeding device extending into said guide, comprising a forked or pronged arm having its prongs in engagement with and on opposite sides of the row of fulminates to straddle said fulminates, substantially as and for the purposes set forth.

10. In a detonating toy, the combination, with a cannon and its frame, of a hammer and a fulminate-tape guide forming an integral part of the hammer, and a feeding device extending into said guide, comprising a forked or pronged arm, and a spring for forcing the prongs in engagement with and on opposite sides of the row of fulminates to straddle said fulminates, substantially as and for the purposes set forth.

11. In a detonating toy, the combination, with a cannon and its frame, of a hammer provided with a pair of elongated openings and a dividing-rib, a box arranged upon one side of the said hammer, forming with the body of said hammer a fulminate-tape guide, and a tape-feeding device comprising a forked or pronged arm having its prongs extending into the elongated openings of the hammer in engagement with and on opposite sides of the row of fulminates to straddle said fulminates, substantially as and for the purposes set forth.

12. In a detonating toy, the combination, with a cannon and its frame, of a hammer provided with a pair of elongated openings and a dividing-rib, a box arranged upon one side of said hammer, forming with the body of said hammer a fulminate-tape guide, and a tape-feeding device, comprising a forked or pronged arm having its prongs extending into the elongated openings of the hammer in engagement with and on opposite sides of the row of fulminates to straddle said fulminates, when the hammer is lowered, and means for withdrawing said prongs from within the said elongated openings and from contact with the tape when the hammer is raised, substantially as and for the purposes set forth.

13. In a detonating toy, the combination, with a cannon and its frame, of a hammer provided with a pair of elongated openings, one of said openings being of greater width at its upper part than at its lower portion and the other opening being formed with a laterally-extending open part, and a tapering rib between the said openings, a box arranged upon one side of said hammer, and a tape-feeding device comprising a forked or pronged arm having its prongs extending into the elongated openings of the hammer in engagement with and on opposite sides of the row of fulminates to straddle said fulminates when the hammer is lowered, and means for forcing one prong of the feeding device into said laterally-extending open part to withdraw the prongs from within the said elongated openings and from contact with the tape, substantially as and for the purposes set forth.

14. In a detonating toy, the combination, with a cannon and its frame, of a hammer provided with a pair of elongated openings, one of said openings being of greater width at its upper part than at its lower portion and the other opening being formed with a laterally-extending open part, and a tapering rib between the said openings, a box arranged upon one side of the said hammer, and a tape-feeding device comprising a forked or pronged arm having its prongs extending into the elongated openings of the hammer in engagement with and on opposite sides of a row of fulminates to straddle said fulminates when the hammer is lowered, and a spring connected with the said forked or pronged arm for producing a lateral movement of the same and forcing the one prong into said laterally-extending open part to withdraw the prongs from contact with the tape, substantially as and for the purposes set forth.

15. In a detonating toy, the combination, with a cannon and its frame, of a hammer and a fulminate-tape guide within the said hammer, a double-pronged feeding device, means for forcing the prongs of the said feeding device against the tape and on opposite sides of the row of fulminates to straddle the fulminates, and means for withdrawing said feeding device from engagement with the tape, substantially as and for the purpose set forth.

16. In a detonating toy, the combination, with a cannon and its frame, of a hammer and a fulminate-tape guide within said hammer, the said hammer being provided with a pair of elongated openings, a double-pronged feeding device, and a spring for forcing the ends of said prongs into said elongated openings and in engagement with the tape and on opposite sides of the row of fulminates to straddle the fulminates, and means for withdrawing said feeding device from engagement with the tape, substantially as and for the purposes set forth.

17. In a detonating toy, the combination, with a cannon and its frame, of a hammer and a fulminate-tape guide within said hammer, the said hammer being provided with a pair of elongated openings, a double-pronged feeding device, and a spring for forcing the ends of said prongs into said elongated openings and in engagement with the tape and on opposite sides of the row of fulminates to straddle the fulminates, and means for withdrawing said feeding device from engagement with the tape, and a tapering rib for producing a lateral movement of said pronged feeding device and bringing its prongs directly over said elongated openings, substantially as and for the purposes set forth.

18. In a detonating toy having an anvil and a hammer pivoted below said anvil, of a fulminate-tape guide, and a double-pronged feeding-arm for engagement with the tape in said guide on opposite sides of the row of fulminates in the said tape, substantially as and for the purposes set forth.

19. In a detonating toy having an anvil and a hammer pivoted below said anvil, of a fulminate-tape guide and a double-pronged feeding-arm pivoted in front of said hammer engaging with the tape in said guide on opposite sides of the row of fulminates in said tape, substantially as and for the purposes set forth.

20. In a detonating toy, the combination, of a pair of frame-sections, a cannon supported on said frame-sections, a hammer having a hollow portion forming a tape-guide, and a pivoted tape-feeding finger independent of said hammer and extending into the said tape-guide, substantially as and for the purposes set forth.

21. In a detonating toy, the combination, of a pair of frame-sections, a cannon supported on said frame-sections, a pivoted and spring-actuated hammer having a hollow portion forming a tape-guide, and a pivoted and spring-actuated finger independent of said hammer and extending into said tape-guide, substantially as and for the purposes set forth.

22. In a detonating toy, a pivoted hammer having a hollow portion forming a tape-guide, and a tape-feeding finger in slidable engagement with said hammer, substantially as and for the purposes set forth.

819,929. **COMPOUND SCALING-LADDER.** WINSLOW F. SAMPSON, Medford, Mass., assignor of one-half to Lee Seyster, Boston, Mass. Filed July 26, 1905. Serial No. 271,277.

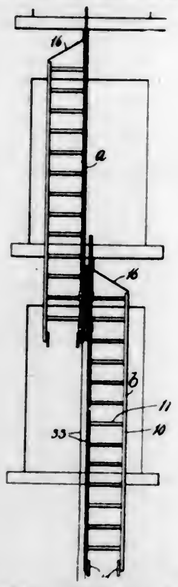
Claim.—1. A scaling-ladder comprising two ladder-sections side by side and having a pivoted connection and a resilient connection to hold said sections normally in the same plane but to permit them to yield slightly.

2. A scaling-ladder comprising two ladder-sections, and a coupling therefor, the said sections being slidably connected with said coupling and said coupling comprising two plates pivoted together and having a spring for normally holding the sections in the same plane.

3. A scaling-ladder comprising two ladder-sections and a coupling member therefor, the ladder-sections being side by side and slidingly connected with the coupling, said coupling comprising two plates, one of which has a rigid hub at its lower end and the other being pivotally connected with said hub and having an eye at its upper end, a spring rigidly connected with said hub and extending through said eye, and means for limiting the oscillatory movement of one plate relatively to the other.

4. A scaling-ladder comprising two ladder-sections having their side rails slidingly connected together, the sections being side by side, one side rail of each section having an extension and a suspension-hook removably connected with said extension.

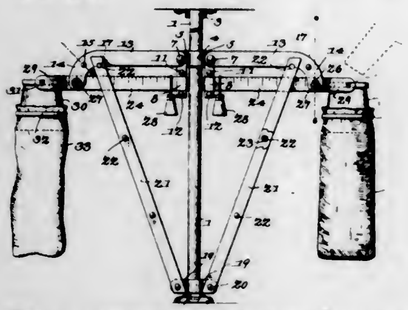
5. A scaling-ladder comprising two ladder-sections having their side rails slidingly connected together, the sections being side by side, one side rail of each section having an extension formed as a socket, and a suspension-hook having a shank removably inserted in said socket, the latter having means for engaging the hook-shank.



6. A scaling-ladder comprising two ladder-sections having their side rails slidingly connected together, the sections being side by side and each section having means for engaging a window-sill, means for hoisting one section relatively to the other, and rollers carried by the said sections, to bear on the wall of the building and reduce frictional resistance to the upward movement of the sections.

7. A scaling-ladder comprising two ladder-sections having their side rails slidingly connected together, the sections being side by side and each section having means for engaging a window-sill, means for hoisting one section relatively to the other, rollers carried by the lower ends of said sections, and shoes projecting from the upper portions of said sections, said rollers and shoes facilitating the upward movement of the sections.

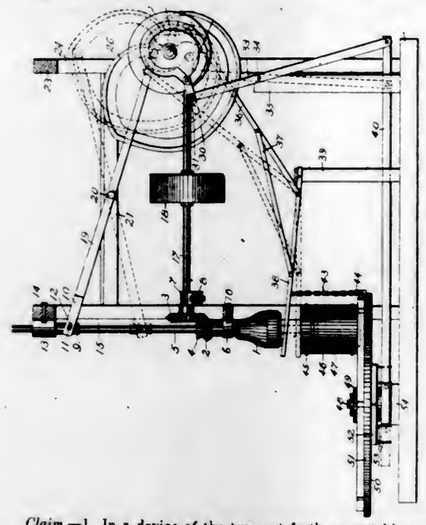
819,930. **BAGGING AND WEIGHING MACHINE.** FRED L. SAWYER and JAMES H. FULFORD, Americus, Ga. Filed May 25, 1905. Serial No. 262,279.



Claim.—1. A combined bagging and weighing device comprising a rotatable standard, a series of substantially horizontal supports carried by the standard, upwardly-diverged props extending from the standard to the outer end portions of the supports, weighing mechanisms mounted upon the supports, and bag-holders associated with the respective weighing mechanisms and located at the outer ends of the supports.

2. A combined bagging and weighing device comprising a standard, a substantially horizontal support carried by the standard with its outer end provided with a downwardly-offset fork, a scale-beam fulcrumed upon the top of the support, a balance-bar lying beneath the horizontal support with its inner end connected to the scale-beam and its outer end provided with a fork lying within and pivotally connected with the fork of the support, and a bag-holder located within and carried by the fork of the balance-bar.

819,931. **TILE-MACHINE.** JOHN M. SCHENK, Waterloo, and JOSEPH SCHENK, Emmettsburg, Iowa; said Joseph Schenk assignor to John H. Stewart, Waterloo, Iowa. Filed July 1, 1905. Serial No. 267,950.



Claim.—1. In a device of the type set forth a rotatable mold-carrier, a plunger, a pivoted element to engage the molds, and means for imparting a spiral and upward movement to said plunger and for raising said element when the plunger has been raised out of the mold.

2. In a device of the type set forth a rotatable mold-carrier, a plunger, a pivoted element to engage the molds, means operated by said element to lock said carrier in predetermined position, and means for operating said plunger and for rotating said carrier.

3. In combination with a mold-carrier and a mold thereon, a former-head having a pair of diametrically-opposed depressions formed therein, and means for moving said head upwardly through said mold and synchronously rotating the same to draw the material downwardly through said depressions.

4. In combination with a mold, a former-head for operating therein, and means for raising said head upwardly out of said mold and synchronously imparting a rotary movement thereto, and for slightly depressing said head previous to its leaving said mold.

5. In a device of the type set forth, a rotatable mold-carrier, molds thereon, a plunger for operating in said molds, means whereby said carrier may be rotated, a pivoted table for engagement with the upper ends of said molds, means for retaining the carrier in predetermined position, a connection between said last-named means and said pivoted table, and means for rotating and reciprocating said plunger, and for actuating said carrier-rotating means, and for raising said table out of engagement with said molds.

6. In a device of the type set forth, a rotatable mold-carrier, means whereby said carrier may be rotated, molds on the carrier, a plunger operating in the molds, a pivoted table for engaging the upper ends of said molds, means for retaining the table in predetermined position, means for raising said table, means for operating said carrier-rotating means, and means for simultaneously rotating and reciprocating said plunger and for operating said table-raising means, and said carrier-rotating means.

7. In a device of the type set forth, a rotatable carrier, with molds thereon, means for rotating said carrier, a pivoted lever connected to said means, a pivoted table for engagement with said mold, a lever connected to said table for raising and lowering the same, a plunger, a pivoted lever connected to said plunger, a shaft, cams on said shaft for operating said lever of the carrier-rotating means, said lever of the table, and said lever of the plunger, and means connected to the plunger and to the said shaft for rotating each of the same in synchronism.

8. In a device of the type set forth, a rotatable carrier with molds thereon, means to engage said molds and retain the same on said carrier, a plunger for operating in the molds, and means for operating said carrier and for raising and lowering said molds-engaging means, and for rotating and reciprocating said plunger.

9. In a device of the type set forth, a rotatable carrier and molds thereon, a pivoted element for engaging the tops of the molds, a plunger, and means for raising said plunger upwardly through the molds and imparting a rotary movement thereto through such movement, and for slightly depressing said plunger previous to the same leaving the molds, and for raising said pivoted element after the plunger has become free of the molds.

10. In combination with a mold, a former-head for operating therein, said former-head having depressions therein, and means for operating said head so as to draw the material downwardly through said depressions, and means for depressing said head previous to its leaving the mold.

11. In combination with a mold, a former-head for operating therein, said head being of bell shape and having diametrically-opposed depressions formed therein having their greatest depths at the base of said head, and means for spirally operating said head.

12. In combination with a mold, a former-head for operating therein, said head being of bell shape and having a portion at its base of equal diameter with depressions leading from the termination of said portion and diminishing in depth and width as they approach the top of said head, and means for operating said head.

819,932. **SUSPENSION-SUPPORT FOR HAMMOCKS.** FRANK E. SCHMIDT, Philadelphia, Pa. Filed Jan. 15, 1906. Serial No. 296,002.

Claim.—1. A support for hammocks, consisting of a bracket having arms pivotally secured thereto and oscillating on said brackets, means for supporting said arms at their free ends, said arms arranged to support a hammock and to hold the same suspended therefrom.

2. A support for hammocks, consisting of a bracket having arms pivotally secured thereto and oscillating on said bracket, and means for supporting said arms at a point beyond said bracket, said bracket and arms arranged so as to be held suspended from an elevated structure.

3. A support for hammocks, consisting of a bracket having arms pivotally secured thereto and oscillating on said bracket, means for supporting said arms at a point beyond said bracket, said bracket arranged to hold said arms at their point of junction in a fixed position with respect to an elevated structure, and said means arranged

to hold said arms at their free ends at a variable position with respect to the elevated structure.

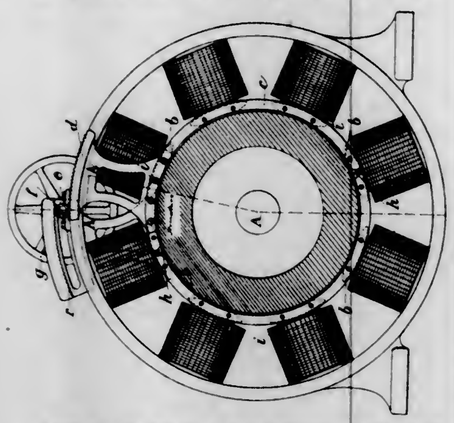
4. A support for hammocks, consisting of a bracket, two sets of arms pivotally secured thereto, each set being formed of two arms and braces connecting the same, and means for supporting said arms at their free ends, said arms arranged to support a hammock and to hold the same suspended therefrom.

5. A support for hammocks, consisting of a fixed bracket, arms pivotally connected therewith and supported by said bracket at their point of junction, means for supporting said arms at their free ends and for holding the same at varying positions with respect to their point of junction, and means for holding the hammock in a raised position, said arms arranged to support the hammock and to hold the same at varying horizontal and oblique positions, suspended therefrom.

6. A support for hammocks, consisting of a fixed bracket, a yoke pivotally connected therewith, arms pivotally connected with said yoke, flexible and extensible means for supporting said arms at their free ends, said arms arranged to support a hammock and to permit of a certain lateral movement thereof by said yoke.

7. A support for hammocks, consisting of a fixed bracket, a yoke pivotally connected therewith, arms pivotally secured thereto, sockets connected with said arms, chains engaging said sockets and adjustably supporting said arms at their free ends, cords engaging said sockets for raising and holding said arms in an elevated position, said arms arranged to support a hammock at varying horizontal and oblique positions and said yoke arranged to permit of a certain movement of said arms and hammock from said bracket.

819,933. **REGULATION OR CONTROL OF DYNAMO-ELECTRIC MACHINES OR ELECTRIC MOTORS.** CHARLES P. E. SCHNEIDER, Le Creusot, France. Filed Oct. 22, 1904. Serial No. 229,605.



Claim.—1. In a dynamo or motor regulator, the combination of an armature, a plurality of field-magnet poles, a plurality of pole extension-pieces in rows intermediate said magnet-poles and armature, guide means for said extension-pieces, and a revoluble supporting-frame for each row of said pieces.

2. In a dynamo or motor regulator, the combination of an armature, a plurality of field-magnet poles each having a fixed polar extension thereon, a plurality of pole extension-pieces in two rows intermediate said polar extensions and armature, revoluble supporting-frames for said rows of extension-pieces, and means for rotating the frames in opposite directions.

3. In a dynamo or motor regulator, the combination of an armature, a plurality of magnet-poles arranged symmetrically about the same, two series of pole extension-pieces, a pair of revolubly-mounted supporting-frames one for each of said series of pieces and intermediate said armature and poles, and means for angularly displacing said frames simultaneously in opposite directions.

4. In a dynamo or motor regulator, the combination of an armature, a plurality of field-magnet poles, pole extension-pieces in rows intermediate said magnet-poles and armature, and means for angularly displacing the pieces in one row relatively to those in another.

5. In a dynamo or motor regulator, the combination of an armature, a plurality of field-magnet poles, slotted pole extension-pieces in rows intermediate said magnet-poles and armature, and means for angularly displacing the pieces in one row relatively to those in another.

6. In a dynamo or motor regulator, the combination of an armature, a plurality of field-magnet poles, slotted pole extension-pieces in rows intermediate said magnet-poles and armature, anti-adhesion means for reducing adhesion between said poles and extension-pieces, and means for angularly displacing the pieces in one row relatively to those in another.

819,934. **BRUSH.** JOSEPH SCHREINER, Newark, N. J., assignor to Rubber and Celluloid Harness Trimming Co., a Corporation of New Jersey. Filed Sept. 29, 1905. Serial No. 280,592.



Claim.—1. As an improved article of manufacture, a brush comprising a knot of bristles, an open-ended ferrule inclosing said knot, the upper portion of said ferrule extending above the upper end of said knot of bristles so as to provide a receiving-space, a centrally-perforated disk in said space and held in position by said ferrule, a handle having its lower end portion inserted through the perforation in said disk, a series of resilient and downwardly-projecting end tongues, formed with longitudinally-extending slots, said handle being formed in its lower portion from which said end tongues project with a receiving-socket, a plug arranged between said end tongues and extending part way into said receiving-socket, said plug being adapted to spread said end tongues, to prevent the withdrawal of said handle from said disk in an outward direction, and means connected with said handle and in engagement with the upper face of said disk to prevent the separation of said handle from said disk in an inward direction, substantially as and for the purposes set forth.

2. As an improved article of manufacture, a brush comprising a knot of bristles, an open-ended ferrule inclosing said knot, the upper portion of said ferrule extending above the upper end of said knot of bristles so as to provide a receiving-space, a centrally-perforated disk in said space and held in position by said ferrule, a handle provided with a shoulder resting upon said disk and a series of resilient and downwardly-projecting end tongues, formed with longitudinally-extending slots, said handle being formed in its lower end portion from which said end tongues protect with a receiving-socket, and a plug arranged between said end tongues and extending part way into said receiving-socket, said plug being adapted to spread said end tongues, to prevent the withdrawal of said handle from said disk in an inward direction, and the shoulder on said handle preventing the separation of said handle from said disk in an inward direction, substantially as and for the purposes set forth.

819,935. **ELECTRIC INCANDESCENT LAMP.** CARL SCHÜBEL, Vienna, Austria-Hungary, assignor to The Firm of Electrische Glühlampen-Fabrik "Watt," Scharf & Co., Vienna, Austria-Hungary. Filed Sept. 25, 1905. Serial No. 280,047.

Claim.—1. The combination with an incandescent electric lamp having a bulb and leading-in wires; of a bridge at the bottom of the lamp to support the outer wires forming a free space between the end of the lamp and bridge the joint between the outer wires and leading-in wires being contained in said free space.

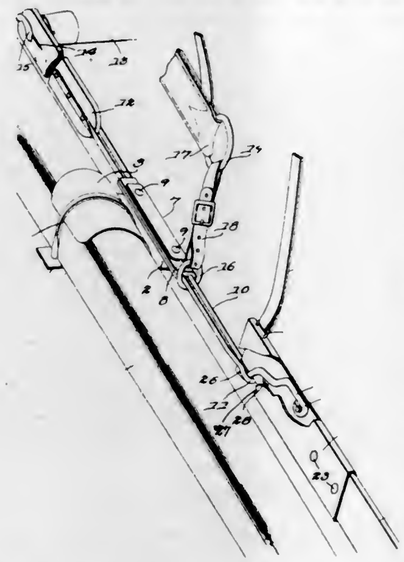


2. The combination with an incandescent electric lamp having the leading-in wires sealed therein; of a glass bridge forming part of the lamp-body to support the outer wires and forming a free space between the bridge and bottom of the lamp, the joint between the outer wires being contained in said free space.

3. The combination with an incandescent electric lamp having leading-in wires; of a T-shaped bridge at the bottom of the lamp to support the ends of the outside wires and forming a free space between said bridge and bottom of the lamp, the joint between the leading-in wires and outside wires being in said free space.

4. The combination with an incandescent electric lamp having leading-in wires; of a glass T-shaped bridge forming part of the body of the lamp leaving a free space between said body and bridge, outside wires sealed in the bridge and the joint between the outside wires and leading-in wires contained in the free space.

819,936. **DRAFT-CONNECTOR FOR VEHICLES.** VERNON O. SEARER, Wakarusa, Ind. Filed Aug. 23, 1905. Serial No. 275,420.



Claim.—1. In a draft-connector for vehicles, a thill and whiffletree, a rod slidably mounted on the thill and connected with the whiffletree, means for attaching the draft to the rod, and a holdback-ring loosely embracing the rod.

2. In a draft-connector for vehicles, a thill, a rod slidably mounted on the thill and connected with the vehicle, a trace, means connecting the trace and the rod, a holdback-ring loosely embracing the rod, and means whereby when the trace is disconnected the ring slips freely from the rod.

3. In a draft-connector for vehicles, a thill and whiffletree, a rod slidably mounted upon the thill and connected with the whiffletree, a trace, means connecting the trace and the rod, a holdback ring loosely embracing the rod, and means whereby when the trace is disconnected the ring slips freely from the rod.

4. In a draft-connector for vehicles, a thill and whiffletree, a bracket rigidly secured to the thill, a rod mounted on said bracket and slidably movable longitudinally of the thill, means connecting the rod and the whiffletree, a trace, means connecting the trace and the rod, a holdback-ring loosely embracing the rod and normally abutting the bracket, and means whereby when the trace is disconnected the ring slips freely from the rod.

5. In a draft-connector for vehicles, a loop slidably connected with the vehicle, a trace, a trace end provided with a pivoted hook for engagement with the loop, and means whereby raising the trace end moves the hook angularly upon the pivot and disconnects it from the loop.

6. In a draft-connector for vehicles, a thill, a loop mounted upon and having a limited movement longitudinally of the thill, a trace, a trace end provided with a pivoted hook for engagement with the loop, and means whereby raising the trace end moves the hook angularly upon the pivot and disconnects it from the loop.

7. In a draft-connector for vehicles, a thill, a looped rod mounted upon and having a limited movement longitudinally of the thill, a holdback-ring loosely embracing the rod and proportioned to pass freely over the loop, a trace, a trace end provided with a pivoted hook for engagement with the loop, and means whereby raising the trace end moves the hook angularly upon the pivot and disconnects the trace from the loop permitting the holdback-ring to slip freely from the rod.

8. In a draft-connector for vehicles, a loop, means attaching the loop to the vehicle, a trace, a trace end comprising a channel member, a hook member pivoted in the channel member and engaging the loop, and means whereby when the trace end is raised the hook member is moved angularly within the channel member and disengaged from the loop.

9. In a draft-connector for vehicles, a loop, means attaching the loop to the vehicle, a trace, a trace end comprising a channel member secured to the trace, a hook member pivoted in the channel member, means retaining the hook-shank normally within the channel member and the hook in engagement with the loop, and means whereby raising the trace end moves the hook angularly within the channel upon the pivot and disengages it from the loop.

10. In a draft-connector for vehicles, a thill and whiffletree, a bracket rigidly secured to the thill, a looped rod mounted on said bracket and slidably movable longitudinally of the thill, means connecting the rod and the whiffletree, a holdback-ring loosely embracing the rod and normally abutting the bracket, a trace, a trace end comprising a channel member, a hook member pivoted in the channel member, means retaining the shank of the hook normally within the channel member and in engagement with the loop of the rod, a band connected with the trace end, and means whereby raising the strap moves the hook angularly within the channel upon the pivot and disengages the trace from the loop permitting the holdback-ring to slip freely from the rod.

819,937. **MECHANICAL STOKER.** WILLIAM SEATON, Jr., New York, N. Y. Filed Apr. 14, 1903. Serial No. 152,575.

Claim.—1. In a mechanical stoker, the combination of a plurality of interleaved sets of grate-bars, with means for imparting a feeding motion simultaneously to the sets and for lowering and retracting the different sets separately.

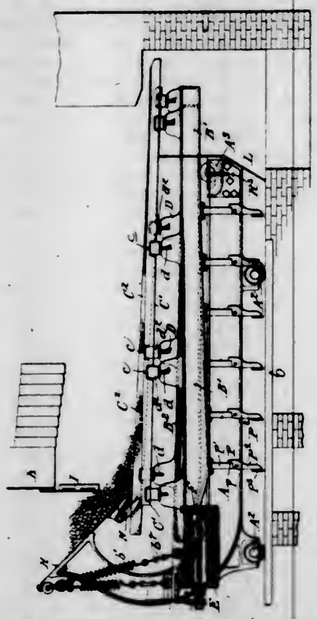
2. In a mechanical stoker, the combination of a plurality of interleaved sets of movable grate-bars with means for imparting to the sets, simultaneously, a series of distinct motions to feed the fuel, and for lowering and retracting the different sets separately.

3. In a mechanical stoker, the combination of a plurality of interleaved sets of grate-bars with means for imparting a feeding motion in a common plane, simultaneously to the sets, and for lowering and retracting the different sets separately and in alternation.

4. In a mechanical stoker, the combination of interleaved sets of fire-supports, with means for imparting to them a motion the outline of which is a substantially straight-sided closed figure, a straight side of which is coincident in plane with the bottom of the fire; the sets of fire-supports being moved forward simultaneously when thus coincident, and being lowered and retracted in alternation.

5. In a mechanical stoker, the combination of interleaved sets of fire-supporting devices with means for imparting thereto in alternation a "four-motion feed," the upper movement of one being partly coincident in plane with the upper movement of the other; the

motions of the sets being simultaneous upon their upper lines of movement and successive in the other parts of their motion.



6. In a mechanical stoker, the combination of interleaved sets of fire-supports with means for imparting to them a motion, the outline of which is substantially a straight-sided closed figure, the motions of the fire-supports overlapping longitudinally and one of the sets being stationary while the other is retracted; whereby, during the longitudinal movement of the sets, they simultaneously advance the fire, and while any set is lowered and retracted, the fire is maintained stationary.

7. In a mechanical stoker, the combination with two sets of interleaved grate-bars, of means for imparting to the sets in alternation a "four-motion" feed; the motions of the sets of bars overlapping, in the upper parts of the movement being simultaneous and substantially coincident in plane with the bottom of the fire, and one set of bars being lowered and retracted while the other is maintained stationary.

8. In a mechanical stoker, the combination with interleaved sets of grate-bars, of means for moving the sets in alternation in such manner that similar points on the fire-supporting surface of the bars in different sets substantially describe overlapping trapezoids, the upper sides of which coincide in plane with the bottom of the fire; all of the sets moving forward together, and some remaining stationary while others are lowered and retracted.

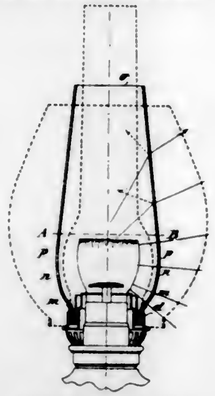
9. In a mechanical stoker, the combination of a number of interleaved sets of grate-bars, means for causing all of the sets to move forward longitudinally in a common normal plane, means for lowering one set out of contact with the fuel and retracting it while maintaining the remainder of the bars stationary in the normal plane, means for restoring the retracted bars to the normal plane and causing all of the bars to move forward therein, and means for repeating with another set of bars the movements of the first set.

10. The combination, in a mechanical stoker, of interleaved sets of grate-bars with means for advancing them all in a common plane when in contact with the fire, and means for keeping some of them stationary, and lowering and retracting others while out of contact with the fire.

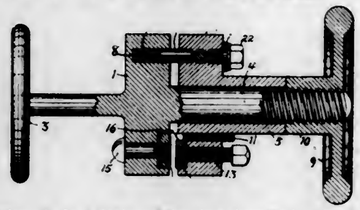
11. The combination, with a mechanically-operated grate, having a reciprocating movement, of a reciprocating ash-conveyer consisting of a series of jointed shovels attached to the grate support or supports and operated thereby.

819,938. **CHIMNEY.** LOUIS SEPULCHRE, Herstal, near Liege, Belgium. Filed Feb. 21, 1903. Serial No. 144,499.

Claim.—An eye-screen chimney for lamps having an annular wick, and a central air-current, made entirely of a translucent material, and outlined in such a way that its lower part, which immediately surrounds the flame, shall be parallel to the contours of this latter, while the upper part shall narrow gradually in a cone toward the top, that is to say toward the evacuation-orifice.



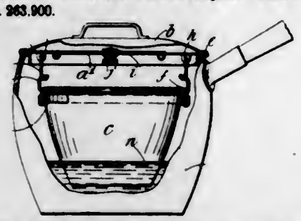
819,939. **SAW-SET.** AARON V. SHAFER and ADAY C. RUBY, Fort Wayne, Ind. Filed Feb. 27, 1905. Serial No. 247,415.



Claim.—1. In a device of the class described, a jaw having a fixed handle, and a projecting stud; a matrix-block secured in one side of said jaw; a movable jaw mounted upon said stud and having means in connection therewith to prevent said movable jaw from turning on said stud; an operating hand-wheel having connection with said stud and being adapted to actuate said movable jaw; a setting-die mounted in said movable jaw; and an adjustable gage-die mounted in said movable jaw adjacent said setting-die.

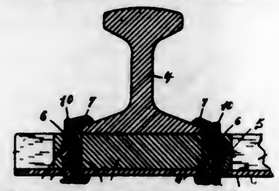
2. In a device of the class described, a jaw having a projecting stud; a matrix-block secured in one side of said jaw; a gage-plate secured to the jaw and overhanging the outer face of said block; a movable jaw mounted upon said stud; operating means to actuate said movable jaw toward and from the other jaw; a setting-die mounted in said movable jaw, its active end being in a plane beneath the overhanging portion of said gage-plate; and an adjustable gage-die mounted in said movable jaw adjacent said setting-die.

819,940. **APPLIANCE FOR USE WITH SAUCEPANS AND THE LIKE.** ALBERT J. SMITH, East Dulwich, England. Filed June 1, 1905. Serial No. 263,900.



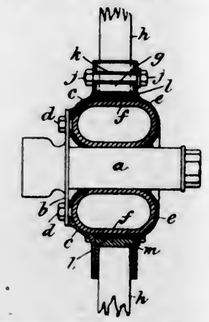
Claim.—In a cooking utensil the combination with the lid thereof of a bridge-piece formed of two members slidable one with the other, means for locking said members one with another and to the lid, a spring-band and means such as loops or hooks for readily suspending said band to bridge-piece or for disconnecting said band from bridge-piece substantially as described.

819,941. **METAL RAILWAY-TIE.** GEORGE W. SMITH, Buffalo, N. Y. Filed Aug. 24, 1905. Serial No. 275,504.



Claim.—The combination with a metal railway-tie having a flat horizontal base and a central vertical longitudinal rib and apertured supporting filling-pieces on opposite sides of the vertical longitudinal rib at the points where the rails cross, of clamps and locking-wedges in the apertures of the filling-pieces, for securing the rails to the tie.

819,942. **WHEEL.** WILLIAM S. H. SMITH, Croydon, England. Filed Nov. 2, 1905. Serial No. 285,645.



Claim.—1. The combination of an axle, two plates on it the inner face of each plate consisting of an annular groove surrounded by a plane surface, a nave free to move between the plane surfaces and a pneumatic tube of more or less oval section with its major axis parallel to the axle and wider than the nave in the space inclosed by the axle, the nave and the grooved part of the plates.

2. The combination of an axle, two plates on it the inner face of each plate consisting of an annular groove surrounded by a plane surface, one plate being fixed to the axle and the other being loose upon it, a nave free to move between the plane surfaces, such nave having tubular openings through it, bolts connecting the two plates together and passing through the tubular openings without touching the nave, and a pneumatic tube of more or less oval section with its major axis parallel to the axle and wider than the nave in the space inclosed by the axle, the nave and the grooved part of the plates.

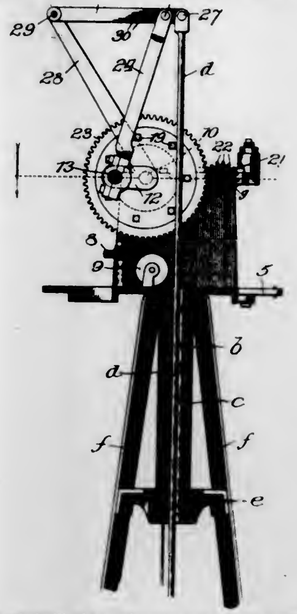
819,943. **WINDMILL.** GILBERT B. SNOW, Elgin, Ill. Filed July 22, 1905. Serial No. 270,761.

Claim.—1. In a windmill, the combination of a crank-shaft comprising a crank portion and journals both integral with the crank-shaft, and gear-wheels mounted upon the crank-shaft on opposite sides of its crank portion and connected to a portion of such crank-shaft and held in rigid relation to each other thereby.

2. In a windmill, the combination of a crank-shaft having integral crank and journal portions, gear mechanism mounted upon such crank-shaft between such crank portion and the adjacent integral journal portion, a pump-rod operatively connected with the crank portion of such shaft, and a wind-wheel shaft provided with pinion mechanism in engagement with such gear mechanism of the crank-shaft.

3. In a windmill, the combination of a crank-shaft comprising a crank portion and journal portions integral with the crank-shaft, the journal portions being arranged on opposite sides of the crank portion, a pair of gear-whels mounted on the shaft on opposite sides of its crank portion and secured to the crank-shaft, a main driving-shaft, and pinion mechanism mounted upon the main driving-shaft in toothed engagement with both of the gear-wheels.

4. In a windmill, the combination of a crank-shaft comprising a crank portion and journal portions on opposite sides o the crank portion the crank portion and journal portions being integral with the shaft, gear-wheels secured to the shaft on opposite sides of its crank portion, a main driving-shaft, pinion mechanism mounted upon the main driving-shaft in toothed engagement with both of such gear-wheels, a pitman mounted upon the crank portion of the shaft, a pump-rod, and means for connecting the pitman with the pump-rod.



5. In a windmill, the combination of a crank-shaft comprising a crank portion and journal portions on opposite sides of the crank portion the crank portion and journal portions being integral with the shaft, gear-wheels secured to the shaft on opposite sides of the crank portion and between the journal portions, a main driving-shaft, pinion mechanism mounted upon the main driving-shaft in toothed engagement with both of the gear-wheels, a pitman connected with the crank portion, a pump-rod extending between the gear-wheels and between the pinion mechanism and the crank portion, and lever mechanism connecting the pitman and pump-rod.

6. In a windmill, the combination of a crank-shaft having a crank portion and journal portions on opposite sides of such crank portion integral therewith such shaft being provided with integral disk portions each having an annular shoulder for engaging a gear-wheel, a gear-wheel mounted in engagement with each of such annular shoulder portions on opposite sides of the crank portion of such crank-shaft, and means for securing such gear-wheels in position upon such integral shoulder portions of the crank-shaft.

7. In a windmill, the combination of a framework, a crank-shaft having a crank portion and journal portions on opposite sides of such crank portion integral therewith and rotatably supported upon the framework such shaft being provided with integral disk portions which are also integral with the crank portion of the shaft each having an annular shoulder for engaging a gear-wheel, a gear-wheel mounted in engagement with each of such shouldered disk portions, means for securing such gear-wheels in position, a main driving-shaft, and a pinion mounted upon such main driving-shaft in toothed engagement with such gear-wheels.

8. In a windmill, the combination of a framework, a crank-shaft having a crank portion and journal portions on opposite sides of such crank portion integral therewith and rotatably supported upon the framework the crank portion of such shaft being provided with integral disk portions each having an annular shoulder for engaging a gear-wheel, a gear-wheel mounted in engagement with such annular shoulder portions on opposite sides of the crank portion of such crank-shaft and between the journal portions thereof, means for securing such gear-wheels in position a main driving-shaft, pinion mechanism mounted upon such main driving-shaft in toothed engagement with such gear-wheels, a reciprocating rod extending between such gear-wheels, a pitman mounted upon the crank portion

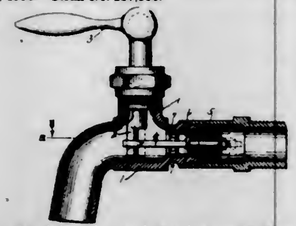
of such crank-shaft, and a walking-beam pivotally mounted in the framework and connected with such reciprocating rod and pitman.

9. In a windmill, the combination of a main driving-shaft, a wind-wheel mounted thereon, a framework in which such driving-shaft is rotatably mounted, a vane pivotally mounted in the framework, a spring secured to the outer swinging portion of the vane and connected with the framework at a point out of alinement with the axial center of the vane for swinging the vane out of operative position, and a cord operatively connected with the framework on the opposite side of the axial center of the vane and with the vane for moving it to operative position and holding it in such position.

10. In a windmill, the combination of a main driving-shaft, a wind-wheel mounted thereon, a framework in which such driving-shaft is rotatably mounted, a vane pivotally mounted in the framework, a spring secured to the outer swinging portion of the vane and connected with the framework at a point out of alinement with the axial center of the vane for swinging the vane out of operative position, and a cord in engagement with the framework at a point on the opposite side of the axial center of the vane when such vane is in operative position and connected with the spring and thereby with the vane for holding the vane yieldingly in operative position.

11. In a windmill, the combination of a main driving-shaft, a wind-wheel mounted thereon provided with a hub forming a friction brake member, a framework in which such driving-shaft is rotatably mounted, a vane pivotally mounted in the framework, a spring secured to the outer swinging portion of the vane and connected with the framework at a point out of alinement with the axial center of the vane for swinging the vane out of operative position, a cord operatively connected with the framework on the oppositeside of the axial center of the vane and with the vane for moving the vane to operative position and holding it in such position, a friction-strap in engagement with the friction brake member of the wind-wheel, and rod and lever mechanism connecting such strap with the vane whereby the brake is set when the vane is held out of operative position by the spring mechanism and released when the vane is in operative position.

819,944. BIB-COCK. JAMES A. STEVENSON, New Castle, Pa. Filed Dec. 19, 1904. Serial No. 237,586.



Claim.—In a bib-cock, a body portion, a valve movable therein, a valve-stem connected with the valve, the body portion being formed with horizontal guides, a pin arranged transversely to and extending beyond the valve-stem, the ends of said pin seating in the horizontal guides, said pin being connected to the stem wholly forward of the valve, and means for operating the valve-stem to move said stem on the pin as a pivot, whereby the valve is reciprocated and moved to one side of the body at the limit of its opening movement.

819,945. ORDER-BOX FOR TRAIN-DESPATCHERS. DANIEL O. STINSON, Falkville, Ala. Filed Apr. 12, 1905. Serial No. 255,184.

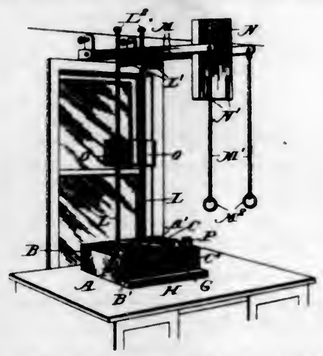
Claim.—1. The combination with an order-box, provided with a door, of a signal-lever arranged over the box, and a shaft provided with a locking-arm operative means connected to the door for locking the lever for the purpose set forth.

2. The combination with an order-box, provided with doors, of signal-levers arranged over the box, and a shaft connected to the doors of the box for locking the levers, as set forth.

3. The combination with an order-box, provided with a door, of a signal-lever arranged over the box, a bar connected to the door of the box, a lever connected to the said bar, a shaft connected to the lever, and means carried by the shaft for locking the levers, as set forth.

4. The combination with an order-box, provided with doors, of signal-levers arranged over the box, a latch for locking the doors and shafts provided with arms adapted to engage the levers and locking the same when they are in an opened position, as set forth.

5. The combination with an order-box provided with a door, of a signal-lever arranged over the box, a shaft connected to the door of the box, and a signal-card carried by the shaft for the purpose set forth.

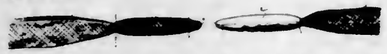


6. An order-box for train-despatcher's use, comprising a box divided into compartments, each compartment being provided with a door, said door being provided with spring fastening means for locking it in an open or closed position, together with signal devices operatively connected with the doors, as set forth.

7. An order-box for train-despatchers' use, comprising a box divided into compartments, each compartment having a door carrying a spring-actuated locking device, the shafts provided with arms for locking signal-levers, and means for connecting the said shafts with the doors, for the purpose set forth.

8. An order-box for train-despatcher use, comprising a box having a centrally-projecting portion, and provided into compartments, locks arranged in the said projecting portions, each compartment having a vertical jaw carrying a spring-catch, locking-levers arranged over said door, shafts provided with arms for locking the signal-levers, and means for connecting the said shafts to the doors, for the purpose set forth.

819,946. LACING-TIP. FRANK B. STIRCKLER, Revere, Mass., assignor to John W. Mackintosh, Sharon, Mass. Filed Nov. 7, 1904. Serial No. 231,707.

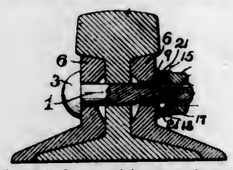


Claim.—1. In an article as described, a lacing-tip, comprising a body portion having a conoidal threading end and kerfs or splits in said body portion.

2. In an article as described, a lacing-tip comprising a body portion having a thickened conoidal threading end and kerfs or splits in said body portion.

3. In an article as described, a lacing-tip comprising a body portion having a conoidal threading end, and kerfs or splits in said body portion, said kerfs or splits running longitudinally of said body portion.

819,947. NUT-LOCK. JOHN STRACK, Newark, N. J., assignor of one-half to Frank Brabson, Newark, N. J. Filed Mar. 7, 1905. Serial No. 248,827.



Claim.—1. A nut-lock comprising a washer and a nut adapted to be screwed upon a bolt, a fixed holding-point located between the adjacent faces of said washer and nut, a vibratory holding device connected at one end with said fixed holding-point, said holding device being made from spring metal and having an engaging or retaining portion at its opposite end, said holding device being adapted to oscillate in the plane of the face of said washer, and a holding means also located between the adjacent faces of said washer and nut, with which the said engaging or retaining portion of said holding device is brought in engagement and yields during the rotative movement of the nut when screwed home, and all being arranged so that when the nut is screwed on the power exerted by the nut is greater than the resistance of the engaging or retaining portion of the holding device, but when the nut tends to unscrew, the resistance of the holding device is greater than the unscrewing power of the nut, under normal conditions, unless when additional manual power is applied to the nut, substantially as and for the purposes set forth.

2. A nut-lock comprising a washer and a nut adapted to be screwed upon a bolt, a fixed holding-point located between the adjacent faces of said washer and nut, a vibratory spring connected at its one end with said fixed holding-point, said spring having an engaging or retaining portion at its opposite end, said spring being adapted to oscillate in the plane of the face of the washer, and a holding means also located between the adjacent faces of said washer and nut, with which the engaging or retaining portion of said spring is brought in engagement and yields during the rotative movement of the nut when screwed home, and all being arranged so that when the nut is screwed on the power exerted by the nut is greater than the resistance of the engaging or retaining portion of the spring, but when the nut tends to unscrew, the resistance of said spring is greater than the unscrewing power of the nut, under normal conditions, unless when additional manual power is applied to the nut, substantially as and for the purposes set forth.

3. A nut-lock comprising a washer and a nut adapted to be screwed upon a bolt, a fluted holding means, a vibratory holding-spring oscillating in the plane of the face of the washer, said spring having one of its end portions fixed, and a V-shaped holding or retaining member on said spring adapted to be brought in engagement with said fluted holding means, substantially as and for the purposes set forth.

4. A nut-lock comprising a washer and a nut adapted to be screwed upon a bolt, said nut having a chambered portion, and a fluted holding means in said chambered portion, a vibratory holding-spring oscillating in the plane of the face of the washer, said spring having one of its end portions fixed, and a V-shaped holding or retaining member on said spring adapted to be brought in engagement with said fluted holding means, substantially as and for the purposes set forth.

5. In a nut-lock, the combination, with a bolt, of a washer on said bolt, a nut screwed on said bolt, a fixed holding-point extending laterally from the face of said washer, a vibratory holding device fixed at its one end to said fixed holding-point on said washer, said holding device being made from spring metal and having an engaging or retaining portion at its opposite and free end, said holding device being adapted to oscillate in the plane of the face of the washer, and means on said nut adapted to be moved longitudinally with the nut against and in slidable engagement with said engaging or retaining portion of said holding device, and yielding against the rotative movement of the nut when screwed home, and all being arranged so that when the nut is screwed on the power exerted by the nut is greater than the resistance of the free end of the holding device, but when the nut tends to unscrew, the resistance of the holding device is greater than the unscrewing power of the nut, under normal conditions, unless when additional manual power is applied to the nut substantially as and for the purposes set forth.

6. In a nut-lock, the combination, with a bolt, of a washer on said bolt, a nut screwed on said bolt, said nut being provided with a chamber, a fixed holding-point extending laterally from the face of said washer, a vibratory holding device fixed at its one end to said fixed holding-point on said washer, said holding device being made from spring metal and having an engaging or retaining portion at the opposite and free end, said holding device being adapted to oscillate in the plane of the face of the washer, and means within the chamber of said nut adapted to be moved longitudinally with the nut against and in slidable engagement with said engaging or retaining portion of said holding device, and yielding against the rotative movement of the nut when screwed home, and all being arranged so that when the nut is screwed on the power exerted by the nut is greater than the resistance of the free end of the holding device, but when the nut tends to unscrew, the resistance of the holding device is greater than the unscrewing power of the nut, under normal conditions, unless when additional manual power is applied to the nut, substantially as and for the purposes set forth.

7. In a nut-lock, the combination, with a bolt having a longitudinally-extending channel or groove, of a washer on said bolt, a teat on said washer projecting into said channel or groove, a nut screwed on said bolt, a vibratory holding device fixed at its one end to the face of the washer, said holding device oscillating in the plane of the face of the washer and at right angles to the plane of the longitudinal axis of the bolt, and means on said nut, adapted to be brought in slidable engagement with the free end of said vibratory holding device when the nut is screwed home, and all arranged in such a manner, so that when the nut is screwed on, the power exerted by the nut is greater than the resistance of the holding device, but when the nut tends to unscrew, such resistance of the holding device is greater than the unscrewing power of the nut, unless additional manual power is applied to the nut, substantially as and for the purposes set forth.

8. In a nut-lock, the combination, with a bolt having a longitudinally-extending channel or groove, of a washer on said bolt, a teat on said washer projecting into said channel or groove, a nut screwed on said bolt, said nut being provided with a chamber, a vibratory holding device oscillating in the plane of the face of the washer and at right angles to the plane of the longitudinal axis of the bolt, and means in the chamber of said nut, adapted to be brought in slidable engagement with the free end of said vibratory holding device when the nut is screwed home, and all arranged in such a manner, so that when the nut is screwed on, the power exerted by the nut is greater than the resistance of the holding device, but when the nut tends to unscrew, such resistance of the holding device is greater than the unscrewing power of the nut, unless additional manual power is applied to the nut, substantially as and for the purposes set forth.

9. In a nut-lock, the combination, with a bolt, of a washer on said bolt, a nut screwed on said bolt, a fixed holding-point extending laterally from the face of said washer, a vibratory spring secured at its one end to said fixed holding-point on said washer, said spring oscillating in the plane of the face of the washer, and having an engaging or retaining portion at its opposite and free end, and means upon said nut with which the said engaging or retaining portion of the said spring is adapted to be brought in slidable engagement, and yielding against the rotative movement of the nut when screwed home, and all being arranged so that when the nut is screwed on the power exerted by the nut is greater than the resistance of the free end of said spring, but when the nut tends to unscrew, the resistance of the said spring is greater than the unscrewing power of the nut, under normal conditions, unless when additional manual power is applied to the nut, substantially as and for the purposes set forth.

10. In a nut-lock, the combination, with a bolt, of a washer on said bolt, a nut screwed on said bolt, said nut being provided with a chamber, a vibratory spring secured at one end to the face of said washer, said spring oscillating in the plane of the face of the washer and at right angles to the plane of the longitudinal axis of the bolt, and means within the chamber of said nut with which the opposite and free end of said spring is brought in slidable engagement when the nut is screwed home, and all arranged in such a manner, so that when the nut is screwed on, the power exerted by the nut is greater than the resistance of the holding device, but when the nut tends to unscrew, such resistance of the holding device is greater than the unscrewing power of the nut, unless additional manual power is applied to the nut, substantially as and for the purposes set forth.

11. In a nut-lock, the combination, with a bolt having a longitudinally-extending channel or groove, of a washer on said bolt, a teat on said washer projecting into said channel or groove, a nut screwed on said bolt, a vibratory spring secured at one end to the face of said washer, said spring oscillating in the plane of the face of the washer and at right angles to the plane of the longitudinal axis of the bolt, and means upon said nut with which the opposite and free end of said spring is brought in slidable engagement when the nut is screwed home, and all arranged in such a manner, so that when the nut is screwed on, the power exerted by the nut is greater than the resistance of the holding device, but when the nut tends to unscrew, such resistance of the holding device is greater than the unscrewing power of the nut, unless additional manual power is applied to the nut, substantially as and for the purposes set forth.

12. In a nut-lock, the combination, with a bolt having a longitudinally-extending channel or groove, of a washer on said bolt, a teat on said washer projecting into said channel or groove, a nut screwed on said bolt, said nut being provided with a chamber, a vibratory spring secured at one end to the face of said washer, said spring oscillating in the plane of the face of the washer and at right angles to the plane of the longitudinal axis of the bolt, and means within the chamber of said nut with which the opposite and free end of said spring is brought in slidable engagement when the nut is screwed home, and all arranged in such a manner, so that when the nut is screwed on, the power exerted by the nut is greater than the resistance of the holding device, but when the nut tends to unscrew, such resistance of the holding device is greater than the unscrewing power of the nut, unless additional manual power is applied to the nut, substantially as and for the purposes set forth.

13. In a nut-lock, the combination, with a bolt, of a washer on said bolt, a nut screwed on said bolt, a series of corrugations and depressions on said nut, and a vibratory spring secured at its one end to the face of said washer, said spring oscillating in the plane of the face of the washer and at right angles to the plane of the longitudinal axis of the bolt, and having its opposite end in slidable engagement with said corrugations and depressions, and all arranged in such a manner, so that when the nut is screwed on, the power exerted by the nut is greater than the resistance of the holding device, but when the nut tends to unscrew, such resistance of the holding device is greater than the unscrewing power of the nut, unless additional manual power is applied to the nut, substantially as and for the purposes set forth.

14. In a nut-lock, the combination, with a bolt, of a washer on said bolt, a nut screwed on said bolt, an annular flange on said nut, a series of corrugations and depressions upon the inner face of said flange, and a vibratory spring secured at one end to the face of said washer, said spring oscillating in the plane of the face of the washer and at right angles to the plane of the longitudinal axis of the bolt, and having its opposite end in slidable engagement with said corrugations and depressions, and all arranged in such a manner, so that when the nut is screwed on, the power exerted by the nut is greater than the resistance of the holding device, but when the nut tends to unscrew, such resistance of the holding device is greater than the unscrewing power of the nut, unless additional manual power is applied to the nut, substantially as and for the purposes set forth.

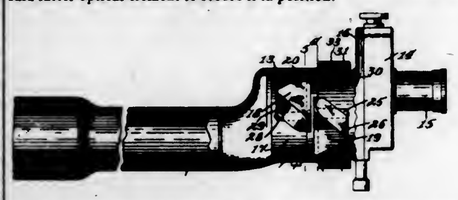
15. In a nut-lock, the combination, with a bolt having a longitudinally-extending channel or groove, of a washer on said bolt, a teat on said washer projecting into said channel or groove, a nut screwed on said bolt, an annular flange on said nut, a series of corrugations and depressions upon the inner face of said flange, and a vibratory spring secured at one end to the face of said washer, said spring oscillating in the plane of the face of the washer and at right angles to the plane of the longitudinal axis of the bolt, and having its opposite end in slidable engagement with said corrugations and depressions, and all arranged in such a manner, so that when the nut is screwed on, the power exerted by the nut is greater than the resistance of the holding device, but when the nut tends to unscrew, such resistance of the holding device is greater than the unscrewing power of the nut, unless additional manual power is applied to the nut, substantially as and for the purposes set forth.

16. In a nut-lock, the combination, with a bolt, of a washer on said bolt, a laterally-extending post on said washer, a vibratory spring connected at its one end with said post, said spring oscillating in the plane of the face of the washer and at right angles to the plane of the longitudinal axis of the bolt, and an angular holding member at the opposite end of said spring, a nut screwed on said bolt, an annular flange on said nut, and a series of corrugations and depressions upon the inner face of said flange with which the angular holding member of said spring is adapted to be brought in slidable engagement, and all arranged in such a manner, so that when the nut is screwed on, the power exerted by the nut is greater than the resistance of the holding device, but when the nut tends to unscrew, such resistance of the holding device is greater than the unscrewing power of the nut, unless additional manual power is applied to the nut, substantially as and for the purposes set forth.

17. In a nut-lock, the combination, with a bolt having a longitudinally-extending channel or groove, of a washer on said bolt, a teat on said washer projecting into said channel or groove, a laterally-extending post on said washer, a vibratory spring connected at its one end with said post, said spring oscillating in the plane of the face of the washer and at right angles to the plane of the longitudinal axis of the bolt, and an angular holding member at the opposite end of said spring, a nut screwed on said bolt, an annular flange on said nut, and a series of corrugations and depressions upon the inner face of said flange with which the angular slidable member of said spring is adapted to be brought in holding engagement, and all arranged in such a manner, so that when the nut is screwed on, the power exerted by the nut is greater than the resistance of the holding device, but when the nut tends to unscrew, such resistance of the holding device is greater than the unscrewing power of the nut, unless additional manual power is applied to the nut, substantially as and for the purposes set forth.

819,948. **OPTICAL INSTRUMENT.** AMBROSE SWASEY and GOTTLIEB L. FECHER, Cleveland, Ohio, assignors to The Warner & Swasey Company, Cleveland, Ohio, a Corporation of Ohio. Filed Nov. 23, 1905. Serial No. 288,617.

Claim.—1. In an optical instrument, the combination of a tubular body, a tube slidable in said body, but prevented from rotating therein, a wall in said tube provided with three apertures, the wall having a recess in one face including two of such apertures, an optical element seated in such recess, a post projecting from said side of the wall, a clip secured on said post and clamping said optical element in said seat, the wall having a recess on its opposite face including the third aperture, and one of said other apertures, an optical element seated in such recess, a post projecting from such latter face of the wall, and a clip secured to said latter post and engaging said latter optical element to secure it in position.



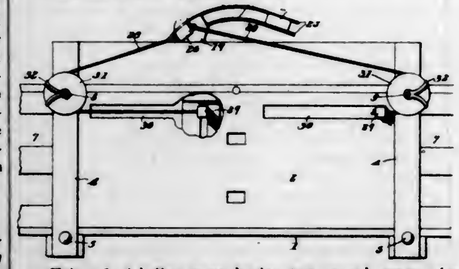
2. In an optical instrument, the combination of a tubular body portion, a tube slidable in said body portion, a micrometer-box having a rectangular outline, said tube having an extension at one end arranged to register with said rectangular box, a transverse wall on the interior of said tube, an optical element carried by said wall and arranged in focus with said eyepiece, a second optical element carried by said wall and arranged in focus with said optical element and also in focus with the tubular body portion, means for adjusting the inner tube in the body portion longitudinally, and means for preventing rotation of the inner tube in the body portion.

3. In an optical instrument, the combination of a tubular body, a tube slidable in the body, Porro prisms carried by the tube, said tube having a screw-threaded portion, a sleeve having an internal threaded portion engaging the threaded portion of the tube, a ring on the inner face of said sleeve, the body having an annular channel engaging said ring at such channeled portion.

4. In an optical instrument, the combination of a tubular body, a tube slidable in said body but prevented from rotating therein, a wall in said tube provided with three apertures, the wall having a recess in one face including two of such apertures, a Porro prism having its base seated in such recess, a post projecting from said side of the wall, a clip secured on said post and clamping said prism in said seat, the wall having a recess on its opposite face including the third aperture and one of said other apertures, a Porro prism having its base seated in such recess, a post projecting from such latter face of the wall, and a clip secured to the latter post and engaging said latter prism to secure it in position.

5. In an optical instrument, the combination of a tubular body portion, a tube slidable in said body portion, a micrometer-box having a rectangular outline, said tube having an extension at one end arranged to register with said rectangular box, a transverse wall on the interior of said tube, a Porro prism carried by said wall and arranged in focus with said eyepiece, a second Porro prism carried by said wall and arranged in focus with said prism and also in focus with the tubular body portion, means for adjusting the inner tube in the body portion longitudinally, and means for preventing rotation of the inner tube in the body portion.

819,949. **PRESS-FEEDER.** WILLIAM E. TATE, Weatherford, Tex. Filed June 16, 1905. Serial No. 265,613.



Claim.—1. A baling-press having two spaced compression-chambers; in combination with a feeding device supported for oscillation above and between said chambers and including an arm and members connected with said arm and extending laterally therefrom in opposite directions.

2. A baling-press having a plurality of compression-chambers and followers movable therein, in combination with an oscillatory feeding member provided at its free end with a cross-head adapted for alternate entrance into oppositely-disposed compression-chambers.

3. An oscillatory feeder for baling-presses comprising a pair of arms, a segment connecting said arms, and barbed strips connected with and extending from said segment.
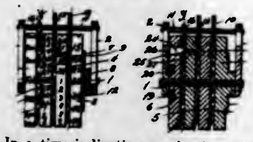
4. An oscillatory feeder for baling-presses comprising a pair of arms, a connecting member, barbed strips connected with and extending from said connecting member, and spacing-blocks connecting said strips.

5. An oscillatory feeder for baling-presses having approximately segmental pushing members, and spacing-blocks connecting said pushing members.

6. A baling-press having a pair of compression-chambers and an intermediate compartment, a pair of hoppers communicating with said intermediate compartment, a deflector separating said hoppers, compression mechanism including a pair of suitably-connected reciprocatory followers within said chamber, a supporting-plate connecting the upper edges of said followers, an oscillatory feeder having arms or sectors supported upon a rock-shaft beneath the deflector separating the hoppers, and suitably-guided flexible members connecting the followers with said feeder.

7. A press-box having a pair of compression-chambers and an intermediate compartment, compression mechanism including a pair of connected reciprocatory followers within said compartment, a supporting-plate connecting the upper edges of said followers, lugs extending from said followers through slots in the side of the press-box, an oscillatory feeder having a laterally-extending lug, and flexible members connecting the lug of the feeder with the lugs of the followers, said flexible members being suitably guided to transmit motion from the followers to the feeder.

819,950. **CALENDAR-CLOCK.** ELAH TERRELL, Columbus, Ohio. Filed Apr. 15, 1905. Serial No. 255,682.

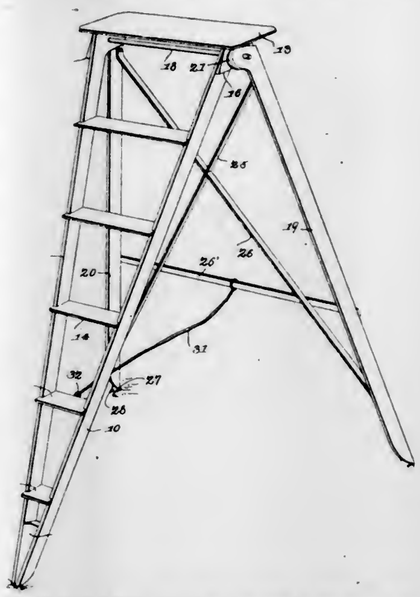


Claim.—1. In a time-indicating mechanism, the combination with a minute-wheel, an hour-wheel provided in its side with a depression, a day-wheel and a month-wheel, and a fixed projection supported in juxtaposition to the month-wheel, of a plurality of plungers carried by the month-wheel adapted to intermittently engage with the fixed projection, a pin carried by the day-wheel and arranged to be engaged by one of the plungers and forced into engagement with the depression of the hour-wheel to lock the hour-wheel to the day-wheel when the said plunger engages with the fixed projection.

2. In a time-indicating mechanism, a day-wheel formed on its periphery with symbols for indicating the days in each month and provided with a projection on its side, a month-wheel provided on its periphery with symbols for indicating the twelve months of the year and provided on its side adjacent to the day-wheel with twelve projections adapted to intermittently aline with the projection of the day-wheel, means connected to the month-wheel for imparting motion thereto, and a device arranged between the said wheels normally standing in the path of one of the projections of the month-wheel to hold the same against rotation and adapted to be engaged by the projection of the day-wheel to release the month-wheel to allow the same a partial movement, but so constructed and arranged as to prevent the month-wheel from moving more than a twelfth of a revolution.

3. In a time-indicating mechanism, a plurality of wheels comprising a day-indicating wheel having depressions in its side, an hour-indicating wheel carrying a sliding pin adapted to engage in the depressions of the day-wheel and a month-indicating wheel carrying a plurality of plungers so positioned as to operate at the end of the months of April, June, November and September and an elongated plunger so positioned as to operate at the end of the month of February, and means associated with the month-wheel to operate the plungers at the ends of the months of April, June, November and September to cause the sliding pin to engage in one of the depressions of the hour-wheel to lock the said wheel and the day-wheel together for simultaneous movement and also to operate the elongated plunger at the end of the month of February to cause the sliding pin to engage with one of the other depressions in the hour-wheel to lock the said wheel and the day-wheel together for a prolonged simultaneous movement.

819,951. **LADDER.** JOHN I. THOMPSON, Elk Grove, Cal. Filed Oct. 27, 1905. Serial No. 284,739.



Claim.—1. A ladder comprising a top step, a step-section fixedly secured thereto and having side rails converging from the top step, connected brace-rails hinged to the step-section adjacent to and overlapped by the top step.

2. A ladder comprising a top step, a step-section fixedly secured thereto, and having side rails converging from the top step, brace-rails hinged adjacent the top step and a reinforcing-block interposed within the contracted end of the step-section.

3. A ladder comprising hinged sections having the opposite side rails of opposite sections substantially parallel and wedge-shaped bearing-blocks carried by each section and producing contact-surfaces substantially parallel each with the other.

819,952. **MATTRESS-TUFTING MACHINE.** ROBERT R. THOMPSON, Chicago, Ill., assignor, by mesne assignments, to United Mattress Machinery Company, a Corporation of Maine. Filed Sept. 24, 1900. Serial No. 30,913.

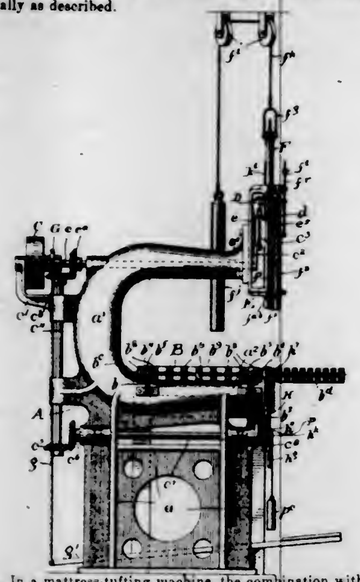
Claim.—1. The combination of compressing devices between which the work is compressed, means for carrying a length of thread through the work to form a loop at the point of compression, knotting mechanism, and means for operating the knotting mechanism to tie the knot at the point of compression before the work is released.

2. The combination of holding devices between which the work is held, means for carrying the thread through the work to form a loop, knotting mechanism, and means for operating the knotting mechanism to tie the knot close to the surface of the work before the work is released.

3. In a mattress-tufting machine, the combination with a frame, of suitable vertically-moving tufting and tying devices and a horizontal longitudinally-movable and laterally-extensible table slidingly supported upon the frame; substantially as described.

4. In a mattress-tufting machine, the combination with a compressor, having a tuft-holder on its end, of an adjacent tuft-holding barrel, a feeder reciprocating between the barrel and the holder to feed the tufts to the latter, a device upon the feeder engaging the tufts in a direction to crowd them to the holder and a device upon the

holder engaging them in a direction to prevent their return; substantially as described.



5. In a mattress-tufting machine, the combination with a suitable compressor having upon its upper end, an overhanging flange adapted to receive and hold a tuft, of an adjacent tuft-barrel parallel with said compressor, a reciprocating member adapted to transfer tufts from said tuft-barrel to said tuft-holder, a diagonally-inclined spine upon said reciprocating member extending in the direction of said tuft-holder, and means for removing a tuft from said spine and retaining it in said holder, substantially as described.

6. In a machine of the class described, the combination with a suitable framework and driving mechanism, of suitable twine-guiding and tuft-placing devices, devices for passing said twine through the tufts and the material to be tufted, devices for drawing said twine back through a different path, devices for knotting the two strands of twine thus formed, and devices for severing the twine on the side of the knot opposite the article to be tufted; substantially as described.

7. In a machine of the class described, the combination with a suitable frame and driving mechanism, of twine-guiding devices, devices for passing two substantially parallel strands of twine through the article to be tufted without changing the position of said article, said strands being connected upon one side of said article, devices for severing the twine, devices for forming, out of the ends thereof, a loop upon the opposite side of the article to be tufted, devices for drawing said ends through said loop and twisting them with respect thereto, and devices for drawing the loop tight about said ends, to form a knot; substantially as described.

8. In a machine of the class described, the combination with a suitable frame and driving mechanism, of twine-guiding devices, devices for passing two substantially parallel strands of twine through the article to be tufted without changing the position of said article, said strands being connected upon one side of said article, devices for cutting the twine, devices for forming out of the ends thereof, a loop upon the opposite side of the article to be tufted, devices for drawing said ends through said loop and rotating them about the axis of said loop, and devices for drawing the loop tight about said ends; substantially as described.

9. In a machine of the class described, the combination with a suitable framework and driving mechanism, of mechanism for placing a pair of tufts upon opposite sides of the article to be tufted, mechanism for forcing said tufts toward each other and pressing the article between them, twine-guiding devices, devices for passing said twine through both tufts, devices for drawing it backward through a different path through both tufts, devices for tying the two strands thus formed to fasten the tufts to the mattress and devices for severing the twine; substantially as described.

10. The combination, in a machine of the class described, with a suitable framework and driving mechanism, of compression devices to compress the article to be tufted, devices for feeding a pair of tufts respectively to the respective opposing faces of said compression devices, twine-guiding devices, devices for passing two substantially parallel strands of twine through said tufts and the intervening article without changing the position of said article, said strands being connected upon the outside of one of said tufts, devices for severing the twine, devices for forming out of the ends thereof, a loop outside of the other tuft, devices for drawing the ends of the twine through said loop and twisting them axially with respect to said loop, and devices for drawing the loop tight about said ends to form a knot; substantially as described.

11. In a machine of the class described, the combination with a suitable frame and driving mechanism, of a series of devices supported and operated thereby, consisting of compression devices adapted to compress between them the article to be tufted, devices for feeding a tuft to each of the opposing faces of said compression devices, prior to the compression, twine-guiding devices, devices for passing two substantially parallel strands of twine through both of said tufts and the intervening article without changing the position of said article, said strands being connected outside of one of said tufts, devices for severing the twine, devices for forming, out of the ends thereof, a loop outside of the other tuft, devices for drawing the ends of the twine through said loop and giving them a complete turn about each other in said loop, and devices for tightening the loop upon said ends to form a knot; substantially as described.

12. In a machine of the class described containing suitable means for tying the ends of the twine, the combination with a suitable frame and needle-supporting device reciprocating therein, of a pair of needles carried by said needle-support provided with eyes near their points and suitable twine guiding and handling devices adapted to carry the twine through the eye of one of said needles, whereby the reciprocation of the needles makes the necessary perforations and draws parallel strands of the twine through the needle-perforations in the work, said strands being connected by an intermediate portion of the twine upon one side of said work, and having their ends projecting from said perforations upon the opposite side thereof; substantially as described.

13. In a machine of the class described containing suitable means for tying the ends of the twine, the combination with a frame and needle-support, of a pair of parallel reciprocating needles carried by said support, provided with eyes near their points, twine guiding and holding devices adapted to keep one of the needles threaded, and means for threading the twine through the other after it has passed through the work and prior to its return, whereby the reciprocation of the needles perforates the work and draws two parallel strands of twine through the same, connected on one side and projecting from the other; substantially as described.

14. In a device of the class described containing suitable means for tying the ends of the twine, the combination with a frame and needle-support, of a pair of reciprocating parallel needles carried by said support, twine guiding and holding devices adapted to keep one needle threaded, devices for forming a loop in the thread beyond the eye of the threaded needle after both needles have passed through the work, devices for guiding said loop through the eye of the other needle, and devices for catching the loop and drawing the end of the twine through the eye of the latter, whereby one needle carries the twine through the work and the other needle brings the end of the twine back through the work by a different path; substantially as described.

15. In a device of the class described, the combination with suitable means for holding and compressing the mattress and a longitudinally-reciprocating threaded needle, of a longitudinally-reciprocating loop-guide which the needle enters and means for moving the loop-guide with the needle during a portion of its return, whereby the desired relation between the loop-guide and the eye of the needle is maintained during the throwing of the loop; substantially as described.

16. In a device of the class described, the combination with suitable means for holding and compressing the mattress and a longitudinally-reciprocating threaded needle, of loop-guiding devices which the needle enters, devices for holding the end of the twine adjacent to the eye of the needle, during the commencement of the looping operation, and devices for releasing the twine as it is required in the formation of the loop; substantially as described.

17. In a device of the class described, the combination with suitable means for holding and compressing the mattress and a longitudinally-reciprocating threaded needle having an eye near its point, of a longitudinally-reciprocating loop-guide which the needle enters, holding devices for holding the twine adjacent to the eye of the needle, means for moving the loop-guide with the needle during a portion of the return movement of the latter and devices for simultaneously releasing the twine adjacent to the eye as it is required in the formation of the loop; substantially as described.

18. In a device of the class described, the combination with suitable means for holding and compressing the mattress and two parallel longitudinally-reciprocating needles, one of which is normally threaded and both of which have eyes near their points, of a twine-holding finger yieldingly pressed against the side of the threaded needle to hold the free end of the twine against the same, and a longitudinally-reciprocating loop-guide which the needles enter, which returns with said needles during a part of their movement and drops away from said needles when the loop is formed, said loop-guide being provided with means for guiding a loop through the eye of the unthreaded needle, means for engaging the loop after it passes through the eye and means for releasing the holding-finger to free the twine along the threaded needle, as the loop approaches said finger; substantially as described.

19. In a machine of the class described, the combination with suitable means for holding and compressing the mattress and a longitudinally-reciprocating unthreaded needle having an eye near its point, of a threading device comprising a suitable guide in line with the eye of the needle and adapted to carry a loop through said eye and a hook arranged in the line of the guide, over which the loop passes by bending slightly and with which it engages by the elasticity of the twine; substantially as described.

20. In a device of the class described containing suitable means for tying the ends of the twine, the combination of a pair of longitudinally-reciprocating parallel needles, with eyes near their points, said needles being adapted to perforate the work and one of them to carry the twine through the same, devices for threading the twine through the other needle prior to the return movement and a device for engaging the twine between the two needles to hold it during the return of the needles; substantially as described.

21. In a device of the class described containing suitable means for tying the ends of the twine, the combination with a pair of longitudinally-reciprocating parallel needles having eyes near their points and being adapted to perforate the work and one of them to carry the twine through said work, of a work-compressor, which the needles enter after perforating the work, devices for passing the twine through the unthreaded needle within said compressor and a device also within said compressor operated by the movement of the same in compressing and releasing the work to engage the twine between two needles and hold it until released by the movement of the compressor away from the work; substantially as described.

22. In a device of the class described, the combination with a suitable head-frame and a suitable mattress-compressing head below said head-frame, of a longitudinally-reciprocating compressor guided in said head-frame, a longitudinally-reciprocating needle-support, also guided therein, means for reciprocating the needle-support and means for engaging the compressor with the needle-support during a portion of the movement of the latter and locking said compressor with respect to the frame during the remainder of the movement of the needle-support; substantially as described.

23. In a device of the class described, the combination with a suitable head-frame and a suitable mattress-compressing head below said head-frame, of a longitudinally-reciprocating compressor guided in said head-frame, a longitudinally-reciprocating needle-support guided within the compressor, means for reciprocating the needle-support and means for engaging it with the compressor during a portion of said movement; substantially as described.

24. In a device of the class described, the combination with a suitable head-frame, of a longitudinally-reciprocating compressor guided therein, a longitudinally-reciprocating needle-support guided within the compressor, means for reciprocating the needle-support and for carrying the compressor with it during a portion of its movement, means for locking the compressor after the compression is completed, a knotter supported in the end of the compressor and a device for operating said knotter longitudinally guided within the needle-support and rotatably guided in the compressor and coöperating means upon the said device and upon the needle-support for rotating the knotter by the reciprocation of said needle-support; substantially as described.

25. In a device of the class described, the combination with a suitable head-frame, of a longitudinally-reciprocating compressor guided therein, a longitudinally-reciprocating tubular needle-support guided in the compressor, a knotter supported in the end of the compressor, a tubular rotating device for operating said knotter longitudinally guided in the needle-support and rotatively guided in the compressor and a knot-tightener having a stem longitudinally guided within the rotating device, and means for engaging the needle-support and the knot-tightener to operate the latter by the reciprocation of the former; substantially as described.

26. In a device of the class described, the combination with a suitable head-frame, of a longitudinally-reciprocating compressor guided therein, a longitudinally-reciprocating tubular needle-support guided in the compressor, a knotter supported in the end of the compressor, a tubular rotating device for rotating said knotter longitudinally guided in the needle-support and rotatively guided in the compressor and a knot-tightener having a stem longitudinally guided within the rotating device, means for engaging the needle-support and the knot-tightener to operate the latter by the reciprocation of the former, and means for engaging the compressor with the needle-tube to effect the compression; substantially as described.

27. In a device of the class described, the combination with a suitable head-frame, of a longitudinally-reciprocating compressor guided therein, a longitudinally-reciprocating tubular needle-support guided in the compressor, a knotter supported in the end of the compressor, a tubular rotating device for operating said knotter longitudinally guided in the needle-support and rotatively guided in the compressor and a knot-tightener having a stem longitudinally guided within the rotating device, means for engaging the needle-support and the knot-tightener to operate the latter by the reciprocation of the former, and coöperating means upon the rotating device and the needle-support for effecting the rotation of said device by the reciprocation of the support; substantially as described.

28. In a device of the class described, the combination with a suitable head-frame, of a longitudinally-reciprocating compressor guided therein, a longitudinally-reciprocating tubular needle-support guided in the compressor, a knotter supported in the end of the compressor, a tubular rotating device for operating said knotter longitudinally guided in the needle-support and rotatively guided in the compressor and a knot-tightener having a stem longitudinally guided within the rotating device, means for engaging the needle-support and the knot-tightener to operate the latter by the reciprocation of the former, coöperating means upon the rotating device and the needle-support for effecting the rotation of said device by the reciprocation of the support, and means for engaging the compressor with the needle-tube to effect the compression; substantially as described.

29. In a device of the class described, the combination with a suitable head-frame and a suitable mattress-compressing head below said head-frame, of a reciprocating cross-head guided in said head-frame, a longitudinally-reciprocating compressor also guided therein, a longitudinally-reciprocating needle-support guided in the compressor, connections between the cross-head and the needle-support for reciprocating said support, connections between the needle-support and the compressor for operating the compressor, devices for releasing the compressor from the needle-support at the end of the compression, devices for locking said compressor with respect to the frame, and devices actuated by the cross-head for releasing the compressor from the frame and permitting the same to reëngage the needle-support; substantially as described.

30. In a mattress-tufting machine, the combination with a suitable frame and driving mechanism, of devices for compressing the mattress, devices for passing two parallel strands of cord through the mattress, connected on one side thereof, devices for knotting the ends of the cord on the other side thereof and devices for holding and maintaining a tension upon said ends throughout the knotting operation; substantially as described.

31. In a device of the class described, the combination with suitable devices for compressing the article to be operated upon, and devices for passing two strands of twine through the article to be operated upon, of means for forming a loop from the ends of the twine, yielding means for holding the loop in position, means for drawing the ends of the twine through the loop, and means for tightening the loop prior to the release of the article to be operated upon.

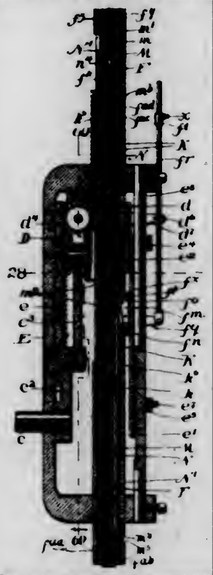
32. The combination with two needles constructed and arranged to carry two separated strands of thread through a mattress and mechanism for reciprocating said needles, of thread-carriers arranged to receive the separated ends of said strands, a knotter-tube, means for operating said carriers to wrap the thread about said knotter-tube, and means for completing the knot.

33. In a mattress-tufting machine, the combination with a suitable frame and driving mechanism, of devices for compressing the mattress, devices for passing two parallel separated strands of cord through the mattress, connected on one side thereof, devices for knotting the ends of the cord on the other side thereof and devices for

holding and maintaining a tension upon said ends throughout the knotting operation.

819,953. KNOTTER FOR MATTRESS-TUFTING MACHINES.

ROBERT R. THOMPSON, Boston, Mass., assignor, by mesne assignments, to United Mattress Machinery Company, a Corporation of Maine. Original application filed Sept. 24, 1900. Serial No. 30,913. Divided and this application filed Oct. 29, 1901. Serial No. 80,384.



Claim.—1. In a tying-machine, the combination with a suitable framework and driving mechanism provided with devices for placing the twine in the desired relation to the article to be tied and leaving the ends of said twine extending into the knotter, of a knotter comprising a knot-holder, a knot-wrapper having two sets of twine-guides for the ends of the twine, means for causing relative rotation of the knot-holder and knot-wrapper, means for shifting the twine from one set of guides to the other to vary the manner of wrapping the same, and means for drawing the ends through the portion thus wrapped to form a knot; substantially as described.

2. In a tying-machine, the combination with suitable devices for placing the twine in the desired relation to the article to be tied, leaving the ends thereof within the knotter, of a knotter comprising a mandrel about which loops are formed, and from which the loops are drawn in tightening the knot, a knot-holder coacting with said mandrel to hold the loops upon the mandrel, devices for wrapping the ends separately about the mandrel to form loops and passing them through the loops thus formed, and devices for drawing the loops between the mandrel and the knot-holder to tighten it upon said ends to form the knot; substantially as described.

3. In a tying-machine, the combination with mechanism for placing the twine in the proper position to be operated upon, of mechanism for forming loops out of the ends of the twine, yielding means for holding said loops, means for drawing the ends through said loops and tightening the loops thereon, substantially as described.

4. In a tying-machine, the combination with devices for placing the twine in the proper relation to the article to be tied and leaving the ends thereof in position to be operated upon by the knotter, of a knotter comprising a comparatively thin knot-holder disk resting upon the article to be tied, said disk being perforated to permit of the passage of the twine and the knot, posts upon opposite sides of the perforation, comparatively thin knot-holders supported by said posts substantially parallel to the knot-holder disk, a knot-mandrel resting upon said holders with sufficient force to hold the loops during the tying of the knot, devices for wrapping the ends of the twine about the mandrel and then between the holders and the knot-holder disk and devices for passing the ends of the twine through the loops formed about the mandrel, and tightening said loops about said ends between the mandrel and the holders; substantially as described.

5. In a tying-machine, the combination with suitable devices for placing the twine with regard to the article to be tied, of a knotter comprising a mandrel, about which loops are formed, a knot-holder coacting with said mandrel to hold the loops upon the mandrel, a knot-wrapper adapted to loop the ends of the twine about the mandrel, devices for drawing said ends through the loops thus formed and for rotating them relatively in the direction in which the loops were wrapped and devices for simultaneously drawing upon said ends and permitting the loops to tighten about the same between the mandrel and the knot-holder; substantially as described.

6. In a tying-machine, the combination with suitable twine-placing mechanism adapted to leave the ends of the twine in the proper relation to the knotter, of a knotter comprising a knot-mandrel, a knot-wrapper adapted to wrap the ends of the twine separately around the mandrel to form loops, a knot-holder coacting with said knot-wrapper to hold the loops upon a mandrel, devices for drawing the ends of the twine through said loops and into the mandrel and means within the mandrel coöperating with said drawing devices to grip the ends and draw the loops between the mandrel and the knot-holder to tighten them upon the ends and form a knot; substantially as described.

7. In a tying-machine the combination, with twine-placing devices adapted to leave the ends of the twine in proper relation to the knotter, of a knotter comprising a rotatable knot-mandrel, a knot-wrapper adapted to wrap the ends of the twine about said mandrel to form loops, a knot-holder coacting with said mandrel to hold the loops upon the mandrel, rotatable twine-drawing devices adapted to draw the ends of the twine through the loops and into the mandrel, devices within the mandrel coöperating with the drawing devices to grip the ends of the twine and draw the loops between the mandrel and the knot-holder, and means operating simultaneously with the drawing of the knot to rotate both the mandrel and the drawing devices; substantially as described.

8. In a tying-machine, the combination with twine-placing devices adapted to leave the ends of the twine in proper relation to the knotter, of a knotter comprising a rotatable knot-mandrel, a knot-wrapper adapted to wrap the ends of the twine about said mandrel to form loops, a knot-holder coacting with said mandrel to hold the loops upon the mandrel, rotatable twine-drawing device adapted to draw the ends of the twine through the loops and into the mandrel, devices within the mandrel coöperating with the drawing devices to grip the ends of the twine and draw the loops between the mandrel and the knot-holder and means operating simultaneously with the drawing of the knot to rotate both the mandrel and the drawing devices in the opposite direction to which the loops have been wrapped; substantially as described.

9. In a tying-machine, the combination with twine-placing devices adapted to leave the ends of the twine in proper relation to the knotter, of a knotter comprising a knot-mandrel about which loops are formed, a knot-holder holding said loops upon the mandrel, a knot-hook extending through the mandrel and the knot-holder, a knot-wrapper operating to wrap the ends of the twine first about the mandrel and then between the holder and the hook, means for drawing the hook and twine ends through the holder into the mandrel and means within said mandrel coacting with said hook to grip the twine and draw the loops off of the mandrel to tighten said loops into a knot; substantially as described.

10. In a tying-machine, the combination with twine-placing devices adapted to leave the ends of the twine in proper relation to the knotter, of a knotter comprising a rotatable knot-mandrel, about which loops may be formed, a knot-holder assisting to hold said loops upon the mandrel, a rotatable knot-hook extending through the mandrel and the knot-holder, a knot-wrapper adapted to wrap the ends of the twine about the mandrel and between the holder and the hook, means within the mandrel coacting with the hook to grip the twine, means for drawing the hook into the mandrel to carry the twine through the loops, and means for simultaneously rotating both hook and mandrel after the hook has entered the mandrel; substantially as described.

11. In a tying-machine, the combination with twine-placing devices adapted to leave the ends of the twine in proper relation to the knotter, of a knotter comprising a rotatable knot-mandrel, about which loops may be formed, a knot-holder assisting to hold said loops upon the mandrel, a rotatable knot-hook extending through the mandrel and the knot-holder, a knot-wrapper adapted to wrap the ends of the twine about the mandrel and between the holder and the hook, means within the mandrel coacting with the hook to grip the twine, means for drawing the hook into the mandrel to carry the twine through the loops, and means for simultaneously rotating both hook and mandrel after the hook has entered the mandrel, and in the opposite direction to which the twine has been wrapped about the mandrel; substantially as described.

12. In a tying-machine, the combination with twine-placing devices adapted to leave the ends of the twine in proper relation to the knotter, of a knotter comprising a knot-mandrel about which loops may be formed, a knot-holder against which the mandrel rests, coacting with the mandrel to hold the loops upon the latter, means for forming the twine into loops about the mandrel, devices for drawing the ends through the loops into the mandrel, devices connected with the mandrel coöperating with the drawing devices to grip the twine, said coöperating devices simultaneously drawing upon the twine to tighten the loops, and upon the mandrel to assist in drawing it away from the holder; substantially as described.

13. In a knotter, the combination with suitable coöperating devices adapted to tie a knot, of a knot-wrapper having two sets of guideways through it for the twine and means operated by the rotation of the knotter while wrapping the knot, to shift the twine from one set of guideways to the other; substantially as described.

14. In a knotter, the combination with suitable coöperating devices adapted to tie a knot, of a knot-wrapper provided with two sets of twine-guideways, one set of which has a movable guiding portion and means for moving said portion out of the way to permit the twine to enter the other set; substantially as described.

15. In a knotter, the combination with suitable coöperating devices to tie a knot, of a knot-wrapper having two sets of guides, one of said sets having movable guiding portions and means operated by the rotation of the wrapper to permit these guiding portions to retire from the path of the twine and allow the latter to enter the other set of guides; substantially as described.

16. In a knotter, the combination with suitable coöperating devices adapted to tie a knot, of a disk-shaped rotating knot-wrapper having arc-shaped slots through which the twine passes, dogs having teeth extending across said slots between their ends and a guide surrounding said disk and adapted to control the movement of the dogs as the wrapper rotates, whereby, during a portion of said rotation, the twine may be guided by the teeth of the dogs and thereafter the guide may permit the dogs to withdraw, allowing the twine to run through the ends of the slots beyond the teeth; substantially as described.

17. A knotter comprising the knot-holder disk, T, perforated to allow the twine and the knot to pass through, the posts, t^2, t^4, supported by the plate, the knot-holders, t^5, t^6, substantially parallel with the disk and supported by the posts, devices for placing the ends to be tied in the perforations in the disk, with their ends extending through the same on the side of the knot-holders, a knot-mandrel resting upon the knot-holders on the side opposite the disk, a knot-wrapper adapted to wrap the ends of the twine first around the mandrel, then between the knot-holders and the disks, and devices for engaging the portions of the twine between the knot-holders and the disk and drawing the ends through the loops formed about the mandrel; substantially as described.

18. A knotter comprising the knot-holder disk, T, perforated to permit of the passage of the twine and the knot, devices for placing the twine, with its ends extending through the perforations in the disk and projecting from one side thereof, the posts, t^2, t^4, projecting from the disk adjacent to the slot on the same side as the twine, knot-holders, t^5, t^6, substantially parallel with the disk, and supported by the posts, the marginal flanges, t^7, t^8, upon the knot-holders, a mandrel resting on the knot-holders, means for wrapping the ends of the twine around the mandrel and then between the knot-holders and the disk and means for drawing the ends through the loops thus formed, and drawing said loops between the knot-holders and the mandrel to tighten the knot; substantially as described.

19. In a knotter, the combination of a knot-holder disk, T, perforated to permit of the passage of the twine and of the knot, the guide-ring, S, supported upon one side of said disk, means for placing the twine in position for knotting, with its ends extending through the perforation on the same side of the disk, the posts, t^3, t^4, extending from the disk on the same side, the knot-holders, t^5, t^6, supported by the posts substantially parallel with the disk, a knot-mandrel yieldingly pressed against the sides of the knot-holders opposite the disk, a knot-wrapper within the guide-ring, having two sets of guiding devices, one set being adapted to wrap the twine about the mandrel and the other to wrap the twine between the disk and the knot-holders and devices operated by the guide-ring to shift the twine from one set of guides to the other; substantially as described.

20. In a knotter, the combination of a knot-holder disk provided with a cylindrical support and means for holding it in proper relation to the work, said disk being perforated to allow the twine and the knot to pass through, means for placing the twine in position for tying, with its ends extending through the perforations into the cylindrical support, knot-holders suitably connected with said disk to support said holders, a knot-wrapper rotatably guided within said support and operated by rotation relative thereto to form loops for the knot, devices for supporting said loops prior to the tightening of the knot, and devices for drawing the ends through the loops and tightening the loops thereon; substantially as described.

21. In a knotter, the combination of a knot-holder disk provided with a cylindrical support and means for holding it in proper relation to the work, said disk being perforated to allow the twine and the knot to pass through, means for placing the twine in position for tying, with its ends extending through the perforations into the cylindrical support, knot-holders suitably connected with said disk to support said holders, a knot-wrapper rotatably guided within said support and operated by rotation relative thereto, to form loops for the knot, a mandrel guided both rotatably and reciprocatively within the knot-wrapper, with its ends resting upon the knot-holders, means for rotating the knot-wrapper to wrap the twine around the mandrel and to cross between the knot-holders and the disks, means for drawing the ends through the loops thus formed and the loops between the mandrel and the knot-holders to tighten the knot; substantially as described.

22. In a knotter, the combination of a knot-holder disk provided with a cylindrical support and means for holding it in proper relation to the work, said disk being perforated to allow the twine and the knot to pass through, means for placing the twine in position for tying, with its ends extending through the perforations into the cylindrical support, knot-holders suitably connected with said disk to support said holders, a knot-wrapper rotatably guided within said support and operated by rotation relative thereto, to form loops for the knot, a mandrel guided both rotatably and reciprocally within the knot-wrapper, with its ends resting upon the knot-holders, a longitudinally-reciprocating hook guided within the mandrel and rotating therewith, means for rotating the knot-wrapper to carry the ends of the twine first around the mandrel and then between the hook and the knot-holders, and means for drawing the hook into the mandrel to form the knot; substantially as described.

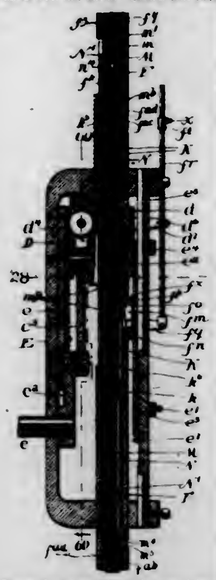
23. In a knotter, the combination of a knot-holder disk provided with a cylindrical support and means for holding it in proper relation to the work, said disk being perforated to allow the twine and the knot to pass through, means for placing the twine in position for tying, with its ends extending through the perforations into the cylindrical support, knot-holders suitably connected with said disk to support said holders, a knot-wrapper rotatably guided within said support and operated by rotation relative thereto, to form loops for the knot, a mandrel guided both rotatably and reciprocatorily within the knot-wrapper, with its end resting upon the knot-holder, a longitudinally-reciprocating hook guided within the mandrel and rotating therewith, means for rotating the knot-wrapper to carry the ends of the twine first around the mandrel and then between the hook and the knot-holders, and means for drawing the hook into the mandrel and at the same time rotating both hook and mandrel to tie the knot and rotate the ends of the twine with respect to each other within the loops; substantially as described.

24. In a knotter, the combination of a knot-holder disk provided with a cylindrical support and means for holding it in proper relation to the work, said disk being perforated to allow the twine and the knot to pass through, means for placing the twine in position for tying, with its ends extending through the perforations into the cylindrical support, knot-holders suitably connected with said disk to support said holders, a knot-wrapper rotatably guided within said support and operated by rotation relative thereto, to form loops for the knot, a mandrel guided both rotatably and longitudinally within the knot-wrapper, with its end resting upon the knot-holder, a longitudinally-reciprocating hook guided within the mandrel and rotating therewith, means for rotating the knot-wrapper to carry the ends of the twine first around the mandrel and then between the hook and the knot-holders, means for drawing the hook into the mandrel and at the same time rotating both hook and mandrel in the opposite direction to which the loops were wrapped, whereby the relative rotation of the ends of the twine, after the forming of the loops is reversed to carry said ends past each other in the opposite direction before the loops are tightened upon the knot; substantially as described.

25. In a knotter, the combination of a knot-holder disk provided with a cylindrical support and means for holding it in proper relation to the work, said disk being perforated to allow the twine and the knot to pass through, means for placing the twine in position

holding and maintaining a tension upon said ends throughout the knotting operation.

819,953. **KNOTTER FOR MATTRESS-TUFTING MACHINES.** ROBERT R. THOMPSON, Boston, Mass., assignor, by mesne assignments, to United Mattress Machinery Company, a Corporation of Maine. Original application filed Sept. 24, 1900. Serial No. 30,913. Divided and this application filed Oct. 29, 1901. Serial No. 80,384.



Claim.—1. In a tying-machine, the combination with a suitable framework and driving mechanism provided with devices for placing the twine in the desired relation to the article to be tied and leaving the ends of said twine extending into the knotter, of a knotter comprising a knot-holder, a knot-wrapper having two sets of twine-guides for the ends of the twine, means for causing relative rotation of the knot-holder and knot-wrapper, means for shifting the twine from one set of guides to the other to vary the manner of wrapping the same, and means for drawing the ends through the portion thus wrapped to form a knot; substantially as described.

2. In a tying-machine, the combination with suitable devices for placing the twine in the desired relation to the article to be tied, leaving the ends thereof within the knotter, of a knotter comprising a mandrel about which loops are formed, and from which the loops are drawn in tightening the knot, a knot-holder coacting with said mandrel to hold the loops upon the mandrel, devices for wrapping the ends separately about the mandrel to form loops and passing them through the loops thus formed, and devices for drawing the loops between the mandrel and the knot-holder to tighten it upon said ends to form the knot; substantially as described.

3. In a tying-machine, the combination with mechanism for placing the twine in the proper position to be operated upon, of mechanism for forming loops out of the ends of the twine, yielding means for holding said loops, means for drawing the ends through said loops and tightening the loops thereon, substantially as described.

4. In a tying-machine, the combination with devices for placing the twine in the proper relation to the article to be tied and leaving the ends thereof in position to be operated upon by the knotter, of a knotter comprising a comparatively thin knot-holder disk resting upon the article to be tied, said disk being perforated to permit of the passage of the twine and the knot, posts upon opposite sides of the perforation, comparatively thin knot-holders supported by said posts substantially parallel to the knot-holder disk, a knot-mandrel resting upon said holders with sufficient force to hold the loops during the tying of the knot, devices for wrapping the ends of the twine about the mandrel and then between the holders and the knot-holder disk and devices for passing the ends of the twine through the loops formed about the mandrel, and tightening said loops about said ends between the mandrel and the holders; substantially as described.

5. In a tying-machine, the combination with suitable devices for placing the twine with regard to the article to be tied, of a knotter comprising a mandrel, about which loops are formed, a knot-holder coacting with said mandrel to hold the loops upon the mandrel, a knot-wrapper adapted to loop the ends of the twine about the mandrel, devices for drawing said ends through the loops thus formed and for rotating them relatively in the direction in which the loops were wrapped and devices for simultaneously drawing upon said ends and permitting the loops to tighten about the same between the mandrel and the knot-holder; substantially as described.

6. In a tying-machine, the combination with suitable twine-placing mechanism adapted to leave the ends of the twine in the proper relation to the knotter, of a knotter comprising a knot-mandrel, a knot-wrapper adapted to wrap the ends of the twine separately around the mandrel to form loops, a knot-holder coacting with said knot-wrapper to hold the loops upon a mandrel, devices for drawing the ends of the twine through said loops and into the mandrel and means within the mandrel coöperating with said drawing devices to grip the ends and draw the loops between the mandrel and the knot-holder to tighten them upon the ends and form a knot; substantially as described.

7. In a tying-machine the combination, with twine-placing devices adapted to leave the ends of the twine in proper relation to the knotter, of a knotter comprising a rotatable knot-mandrel, a knot-wrapper adapted to wrap the ends of the twine about said mandrel to form loops, a knot-holder coacting with said mandrel to hold the loops upon the mandrel, rotatable twine-drawing devices adapted to draw the ends of the twine through the loops and into the mandrel, devices within the mandrel coöperating with the drawing devices to grip the ends of the twine and draw the loops between the mandrel and the knot-holder, and means operating simultaneously with the drawing of the knot to rotate both the mandrel and the drawing devices; substantially as described.

8. In a tying-machine, the combination with twine-placing devices adapted to leave the ends of the twine in proper relation to the knotter, of a knotter comprising a rotatable knot-mandrel, a knot-wrapper adapted to wrap the ends of the twine about said mandrel to form loops, a knot-holder coacting with said mandrel to hold the loops upon the mandrel, rotatable twine-drawing device adapted to draw the ends of the twine through the loops and into the mandrel, devices within the mandrel coöperating with the drawing devices to grip the ends of the twine and draw the loops between the mandrel and the knot-holder and means operating simultaneously with the drawing of the knot to rotate both the mandrel and the drawing devices in the opposite direction to which the loops have been wrapped; substantially as described.

9. In a tying-machine, the combination with twine-placing devices adapted to leave the ends of the twine in proper relation to the knotter, of a knotter comprising a knot-mandrel about which loops are formed, a knot-holder holding said loops upon the mandrel, a knot-hook extending through the mandrel and the knot-holder, a knot-wrapper operating to wrap the ends of the twine first about the mandrel and then between the holder and the hook, means for drawing the hook and twine ends through the holder into the mandrel and means within said mandrel coacting with said hook to grip the twine and draw the loops off of the mandrel to tighten said loops into a knot; substantially as described.

10. In a tying-machine, the combination with twine-placing devices adapted to leave the ends of the twine in proper relation to the knotter, of a knotter comprising a rotatable knot-mandrel, about which loops may be formed, a knot-holder assisting to hold said loops upon the mandrel, a rotatable knot-hook extending through the mandrel and the knot-holder, a knot-wrapper adapted to wrap the ends of the twine about the mandrel and between the holder and the hook, means within the mandrel coacting with the hook to grip the twine, means for drawing the hook into the mandrel to carry the twine through the loops, and means for simultaneously rotating both hook and mandrel after the hook has entered the mandrel; substantially as described.

11. In a tying-machine, the combination with twine-placing devices adapted to leave the ends of the twine in proper relation to the knotter, of a knotter comprising a rotatable knot-mandrel, about which loops may be formed, a knot-holder assisting to hold said loops upon the mandrel, a rotatable knot-hook extending through the mandrel and the knot-holder, a knot-wrapper adapted to wrap the ends of the twine about the mandrel and between the holder and the hook, means within the mandrel coacting with the hook to grip the twine, means for drawing the hook into the mandrel to carry the twine through the loops, and means for simultaneously rotating both hook and mandrel after the hook has entered the mandrel, and in the opposite direction to which the twine has been wrapped about the mandrel; substantially as described.

12. In a tying-machine, the combination with twine-placing devices adapted to leave the ends of the twine in proper relation to the knotter, of a knotter comprising a knot-mandrel about which loops may be formed, a knot-holder against which the mandrel rests, coacting with the mandrel to hold the loops upon the latter, means for forming the twine into loops about the mandrel, devices for drawing the ends through the loops into the mandrel, devices connected with the mandrel coöperating with the drawing devices to grip the twine, said coöperating devices simultaneously drawing upon the twine to tighten the loops, and upon the mandrel to assist in drawing it away from the holder; substantially as described.

13. In a knotter, the combination with suitable coöperating devices adapted to tie a knot, of a knot-wrapper having two sets of guideways through it for the twine and means operated by the rotation of the knotter while wrapping the knot, to shift the twine from one set of guideways to the other; substantially as described.

14. In a knotter, the combination with suitable coöperating devices adapted to tie a knot, of a knot-wrapper provided with two sets of twine-guideways, one set of which has a movable guiding portion and means for moving said portion out of the way to permit the twine to enter the other set; substantially as described.

15. In a knotter, the combination with suitable coöperating devices to tie a knot, of a knot-wrapper having two sets of guides, one of said sets having movable guiding portions and means operated by the rotation of the wrapper to permit these guiding portions to retire from the path of the twine and allow the latter to enter the other set of guides; substantially as described.

16. In a knotter, the combination with suitable coöperating devices adapted to tie a knot, of a disk-shaped rotating knot-wrapper having arc-shaped slots through which the twine passes, dogs having teeth extending across said slots between their ends and a guide surrounding said disk and adapted to control the movement of the dogs as the wrapper rotates, whereby, during a portion of said rotation, the twine may be guided by the teeth of the dogs and thereafter the guide may permit the dogs to withdraw, allowing the twine to run through the ends of the slots beyond the teeth; substantially as described.

17. A knotter comprising the knot-holder disk, T, perforated to allow the twine and the knot to pass through, the posts, t^2, t^4, supported by the plate, the knot-holders, t^5, t^6, substantially parallel with the disk and supported by the posts, devices for placing the ends to be tied in the perforations in the disk, with their ends extending through the same on the side of the knot-holders, a knot-mandrel resting upon the knot-holders on the side opposite the disk, a knot-wrapper adapted to wrap the ends of the twine first around the mandrel, then between the knot-holders and the disks, and devices for engaging the portions of the twine between the knot-holders and the disk and drawing the ends through the loops formed about the mandrel; substantially as described.

18. A knotter comprising the knot-holder disk, T, perforated to permit of the passage of the twine and the knot, devices for placing the twine, with its ends extending through the perforations in the disk and projecting from one side thereof, the posts, t^3, t^4, projecting from the disk adjacent to the slot on the same side as the twine, knot-holders, t^5, t^6, substantially parallel with the disk, and supported by the posts, the marginal flanges, t^7, t^8, upon the knot-holders, a mandrel resting on the knot-holders, means for wrapping the ends of the twine around the mandrel and then between the knot-holders and the disk and means for drawing the ends through the loops thus formed, and drawing said loops between the knot-holders and the mandrel to tighten the knot; substantially as described.

19. In a knotter, the combination of a knot-holder disk, T, perforated to permit of the passage of the twine and of the knot, the guide-ring, S, supported upon one side of said disk, means for placing the twine in position for knotting, with its ends extending through the perforation on the same side of the disk, the posts, t^3, t^4, extending from the disk on the same side, the knot-holders, t^5, t^6, supported by the posts substantially parallel with the disk, a knot-mandrel yieldingly pressed against the sides of the knot-holders opposite the disk, a knot-wrapper within the guide-ring, having two sets of guiding devices, one set being adapted to wrap the twine about the mandrel and the other to wrap the twine between the disk and the knot-holders and devices operated by the guide-ring to shift the twine from one set of guides to the other; substantially as described.

20. In a knotter, the combination of a knot-holder disk provided with a cylindrical support and means for holding it in proper relation to the work, said disk being perforated to allow the twine and the knot to pass through, means for placing the twine in position for tying, with its ends extending through the perforations into the cylindrical support, knot-holders suitably connected with said disk to support said holders, a knot-wrapper rotatably guided within said support and operated by rotation relative thereto to form loops for the knot, devices for supporting said loops prior to the tightening of the knot, and devices for drawing the ends through the loops and tightening the loops thereon; substantially as described.

21. In a knotter, the combination of a knot-holder disk provided with a cylindrical support and means for holding it in proper relation to the work, said disk being perforated to allow the twine and the knot to pass through, means for placing the twine in position for tying, with its ends extending through the perforations into the cylindrical support, knot-holders suitably connected with said disk to support said holders, a knot-wrapper rotatably guided within said support and operated by rotation relative thereto, to form loops for the knot, a mandrel guided both rotatably and reciprocatively within the knot-wrapper, with its ends resting upon the knot-holders, means for rotating the knot-wrapper to wrap the twine around the mandrel and to cross between the knot-holders and the disks, means for drawing the ends through the loops thus formed and the loops between the mandrel and the knot-holders to tighten the knot; substantially as described.

22. In a knotter, the combination of a knot-holder disk provided with a cylindrical support and means for holding it in proper relation to the work, said disk being perforated to allow the twine and the knot to pass through, means for placing the twine in position for tying, with its ends extending through the perforations into the cylindrical support, knot-holders suitably connected with said disk to support said holders, a knot-wrapper rotatably guided within said support and operated by rotation relative thereto, to form loops for the knot, a mandrel guided both rotatably and reciprocally within the knot-wrapper, with its ends resting upon the knot-holders, a longitudinally-reciprocating hook guided within the mandrel and rotating therewith, means for rotating the knot-wrapper to carry the ends of the twine first around the mandrel and then between the hook and the knot-holders, and means for drawing the hook into the mandrel to form the knot; substantially as described.

23. In a knotter, the combination of a knot-holder disk provided with a cylindrical support and means for holding it in proper relation to the work, said disk being perforated to allow the twine and the knot to pass through, means for placing the twine in position for tying, with its ends extending through the perforations into the cylindrical support, knot-holders suitably connected with said disk to support said holders, a knot-wrapper rotatably guided within said support and operated by rotation relative thereto, to form loops for the knot, a mandrel guided both rotatably and reciprocatorily within the knot-wrapper, with its end resting upon the knot-holder, a longitudinally-reciprocating hook guided within the mandrel and rotating therewith, means for rotating the knot-wrapper to carry the ends of the twine first around the mandrel and then between the hook and the knot-holders, and means for drawing the hook into the mandrel and at the same time rotating both hook and mandrel to tie the knot and rotate the ends of the twine with respect to each other within the loops; substantially as described.

24. In a knotter, the combination of a knot-holder disk provided with a cylindrical support and means for holding it in proper relation to the work, said disk being perforated to allow the twine and the knot to pass through, means for placing the twine in position for tying, with its ends extending through the perforations into the cylindrical support, knot-holders suitably connected with said disk to support said holders, a knot-wrapper rotatably guided within said support and operated by rotation relative thereto, to form loops for the knot, a mandrel guided both rotatably and longitudinally within the knot-wrapper, with its end resting upon the knot-holder, a longitudinally-reciprocating hook guided within the mandrel and rotating therewith, means for rotating the knot-wrapper to carry the ends of the twine first around the mandrel and then between the hook and the knot-holders, means for drawing the hook into the mandrel and at the same time rotating both hook and mandrel in the opposite direction to which the loops were wrapped, whereby the relative rotation of the ends of the twine, after the forming of the loops is reversed to carry said ends past each other in the opposite direction before the loops are tightened upon the knot; substantially as described.

25. In a knotter, the combination of a knot-holder disk provided with a cylindrical support and means for holding it in proper relation to the work, said disk being perforated to allow the twine and the knot to pass through, means for placing the twine in position

for tying, with its ends extending through the perforation into the cylindrical support, knot-holders suitably connected with said disk to support said holders, a knot-wrapper rotatably guided within said support and operated by rotation relative thereto, to form loops for the knot, a mandrel guided both rotatably and longitudinally within the knot-wrapper, with its end resting upon the knot-holders, a longitudinally-reciprocating hook guided within the mandrel having a flattened portion fitted thereto engaging the hook and mandrel against relative rotation, means for rotating the knotter to wrap the twine about the mandrel and between the knot-holders and the hook, means for drawing the hook into the mandrel to draw the ends of the twine through the loops and tighten the knot and means for simultaneously rotating said hook; substantially as described.

26. In a knotter, the combination with a knot-holder disk and a support therefor, said disk being suitably perforated to permit the twine and the knot to pass through, of a perforated tension and guide block, itself guided and held against relative rotation in said support, means for yieldingly pressing said block toward the disk, a perforated knot-wrapping disk between the tension-block and the knot-holder disk, means for properly placing the twine with its ends extending through the knot-holder disk, the knot-wrapping disk and the tension-block, devices for supporting the twine during the knotting operation, means for rotating the knot-wrapper disk to form loops and means for drawing the ends of the twine through the loops to form a knot; substantially as described.

27. In a knotting mechanism, a suitable knot-holder support, provided with suitable knot-holders for the loops, a knot-wrapper and a twine-cutter, both rotatably mounted in said support and rotating with respect thereto to perform their several functions, substantially as described.

28. In a knotter, the combination of a suitable support and cooperating knotting devices, of a knot-wrapper and a twine-cutter connected and operated together and a twine-holder connected with and actuated by the rotation of the cutter and wrapper; substantially as described.

29. In a knotter, the combination with a suitable support and coöperating knotting devices, of a rotating knot-wrapper, a rotating twine-cutter connected to said wrapper and rotating therewith and a rotating twine-holder provided with suitable actuating devices whereby the holder is operated by the cutter to clamp the twine previous to the cutting of the latter; substantially as described.

30. The combination with suitable knotting mechanism and a supporting device having a twine-guiding perforation, of the rotating twine-holder, o^3, pivoted to said support and moving over the perforation to engage the twine, said twine-holder being provided with suitable devices for rotating it intermittently and with devices for alternately pressing it toward the support to clamp the twine and crowding it therefrom, to release the latter; substantially as described.

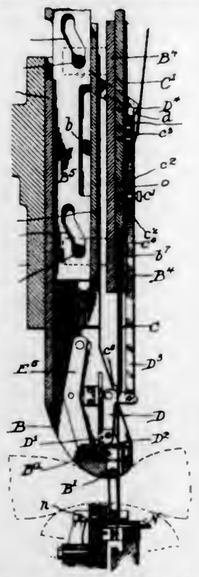
31. In a tying-machine, the combination with twine-placing devices adapted to leave the ends of the twine in proper relation to the knotter, of a knotter comprising a knot-mandrel about which loops may be formed, means for passing the ends of the twine separately about the mandrel, means for drawing said ends through the loops thus formed, and means for exerting a pull upon said ends to tighten said loops, substantially as described.

32. In a device of the class described, the combination with a knot-mandrel, of twine-placing devices adapted to leave the ends of the twine on opposite sides of the mandrel, and means for passing said ends separately about said mandrel to form loops, means for drawing said ends through said loops, and means for pulling said ends to tighten said loops, substantially as described.

819,954. **KNOTTER.** ROBERT R. THOMPSON and CHARLES F. PINKHAM, Boston, Mass., assignors, by direct and mesne assignments, to United Mattress Machinery Company, a Corporation of Maine. Filed Mar. 18, 1903. Serial No. 148,445.

Claim.—1. In a knotter, the combination with mechanism for bringing down a strand of twine, mechanism for grasping the end thereof, and moving it bodily sidewise from said first main strand, mechanism for forming a U-shaped loop from said first main strand and said end, mechanism for moving said end in the opposite direction to that of the first movement to cross the same over said U-shaped loop, a device for grasping said end and drawing it downward at right angles to the plane of said loop, a device for passing a second loop through the loop thus formed, mechanism for drawing said end through said second loop and mechanism for tightening the strands of twine.

2. In a knotter, the combination with a needle adapted to bring down a main strand terminating in a short loose end, of a clamping-hook adapted to move said loose end sidewise, keeping it substantially parallel to said main strand, mechanism for moving forward the bend of twine joining said loose end and said main strand to form a U-shaped loop in a plane substantially at right angles to said main strand and loose end, mechanism independent of said clamping-hook for crossing said loose end over said U-shaped loop and drawing it downward on the opposite side thereof to form a circular loop, mechanism for carrying a second loop through said circular loop, and mechanism for drawing said loose end through said second loop.



3. In a knotter, the combination with a device for bringing down a main strand terminating in a short loose end, of mechanism for moving said loose end bodily sidewise, keeping it substantially parallel with said main strand, a shifter adapted to engage with said loose end and said main strand to form a U-shaped loop thereof, mechanism for operating the shifter, a device for throwing the loose end over said U-shaped loop, a device independent of said throwing device for drawing said loose end downward at right angles to the plane of said loop, mechanism for carrying a second loop through the loop thus formed, and mechanism for drawing said loose end through said second loop.

4. In a knotter, the combination with a device for bringing down a main strand having a loose end connected therewith, and mechanism for shifting said loose end bodily in a plane at right angles to its length, keeping it substantially parallel to said loose end, of a shifter-plate having two suitable projections adapted to engage with said first main strand and said loose end, mechanism for operating said shifter-plate to form from said loose end and first main strand a U-shaped loop, mechanism for crossing said loose end over said U-shaped loop to form a substantially circular loop, mechanism for drawing said loose end down at right angles to the plane of said circular loop, mechanism for passing a second loop through said first loop, and mechanism for passing said loose end through said second loop.

5. In a knotter, the combination with mechanism for introducing the main strand having a loose end and mechanism for shifting said loose end, keeping it substantially parallel to said main strand, of mechanism for forming a U-shaped loop, an end-crosser independent of the mechanism for shifting the end adapted to engage said loose end, means for reciprocating said end-crosser to carry said loose end across said U-shaped loop to form a circular loop, mechanism for carrying down said loose end at right angles to the plane of said circular loop, mechanism for passing a second loop through said circular loop, and mechanism for passing said loose end through said second loop.

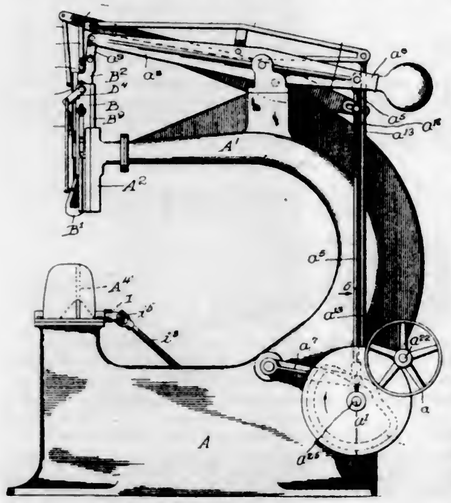
6. The combination with mechanism for introducing a main strand and loose end, of mechanism for shifting said loose end sidewise, keeping it substantially parallel to said main strand, mechanism for shifting said loose end and main strand to form thereof a U-shaped loop, mechanism for crossing said short end over said U-shaped loop, an end hook adapted to engage with said short end, mechanism for operating said end hook to draw said short end downward after it has been passed over said U-shaped loop, a device for carrying a second loop through the loop thus formed, and mechanism for carrying said loose end through said second loop.

7. In a knotter, the combination with mechanism for introducing a main strand terminating in a loose end, mechanism for forming a circular loop from the twine, said circular loop terminating at one end in said first main strand and at the other end in the loose end, and a needle adapted to carry through said circular loop a second loop having one strand outside and one strand inside said needle, of a gripping-hook adapted to pass between the needle and that portion of said second loop outside said needle, a spreader on said gripping-hook adapted to enlarge said second loop, and a mechanism for operating said gripping-hook at the proper time to draw said loose end through said second loop.

8. In a knotter, the combination with mechanism for introducing a main strand terminating in a loose end, mechanism for forming a circular loop from the twine, said circular loop terminating at one end in said first main strand and at the other end in the loose end, and a needle adapted to carry through said circular loop a second loop having one strand outside and one strand inside said needle, of a gripping-hook provided with a pointed end adapted to be introduced between said needle and that portion of said second loop outside said needle, a spreader secured to said gripping-hook, mechanism for operating said gripping-hook to force said gripping-hook between said needle and that portion of said second loop outside said needle mechanism actuating said spreader to enlarge said second loop and mechanism for operating said spreader to clamp said short end between said spreader and said gripping-hook.

9. In a knotter, the combination with mechanism for introducing a main strand terminating in a loose end, mechanism for forming a circular loop from the twine, said circular loop terminating at one end in said first main strand and at the other end in the loose end, and a needle adapted to carry through said circular loop a second loop having one strand outside and one strand inside said needle, of a reciprocating gripping-hook, mechanism for reciprocating the same, a spreader pivoted to said gripping-hook and movable therewith, cams on said spreader and in the frame of the device, whereby as said gripping-hook is reciprocated, said spreader is actuated to enlarge said second loop, subsequently actuated to clamp said short end between itself and said gripping-hook, and subsequently actuated to release said short end.

819,955. **MACHINE FOR TUFTING MATTRESSES.** ROBERT R. THOMPSON and CHARLES F. PINKHAM, Boston, Mass., assignors, by direct and mesne assignments, to United Mattress Machinery Company a Corporation of Maine. Filed Mar. 18, 1903. Serial No. 148,446.



Claim.—1. In a device of the class described, the combination with a frame and a lower compressor-head, of an upper compressor, vertically reciprocable in the frame, a shifter vertically reciprocable in the compressor, diagonal slots in the shifter, a needle-guide horizontally movable with respect to the compressor, pins secured to said needle-guide and engaging with the slots in said shifter, whereby vertical movement of said shifter will move said needle-guide horizontally, a needle-bar reciprocable in said needle-guide, a needle secured in said needle-bar, means for reciprocating the needle-bar to force the needle through the article to be tufted, means for clamping the end of the twine on the opposite side of the article to be tufted, means for moving the shifter vertically to shift the needle-guide horizontally, means for again reciprocating the needle and means for tying a knot from the ends of the strands of twine carried by said needle.

2. In a device of the class described, the combination with a frame and a lower compressor-head, of a reciprocable compressor a shifter guided in the compressor, a needle-guide, arms on said needle-gulde running in horizontal grooves in said compressor, diagonal slots in said shifter, pins on said arms engaging with said diagonal slots, whereby vertical motion of said shifter will move said needle-guide horizontally, means for reciprocating said needle-bar, means for clamping the end of the twine carried by said needle on the opposite side of the article to be tufted, means for moving said shifter to shift said needle-guide horizontally, means for again reciprocating said needle-bar, and means for tying a knot of the ends of the twine carried by said needle.

3. In a device of the class described, the combination with a frame and a lower compressor-head, of an upper compressor reciprocable in the frame, a needle reciprocable in the upper compressor, a lever pivoted to said compressor, a knife secured to said lever and a cam movable with said needle and adapted to swing said lever when said needle is raised, whereby said knife severs the strand of twine carried by said needle.

4. The combination with a frame, and a lower compressor-head, of an upper compressor reciprocable in said frame, a needle reciprocable in said upper compressor, a bell-crank lever pivoted to the lower end of said compressor, a knife secured to said bell-crank lever, and adapted to be swung across the path of said needle when said lever is actuated, a link connected to said bell-crank lever, a lug secured to said link, and a cam rigidly positioned with respect to said needle and adapted, when said needle is raised, to engage with the lug secured to said link, whereby when said needle is raised, said knife swings across the path of said needle to sever the twine carried thereby.

5. In a device of the class described, the combination with two relatively movable compressors adapted to compress the article to be tufted, means for passing two parallel strands of twine through the article to be tufted, means for tying a knot in the ends of said two strands and means for cutting the twine above the knot, of a suitable device for feeding forward a continuous strip of tuft-forming material in position for its end to be encircled by the twine, and suitable mechanism for cutting off said material to form tufts thereof.

6. In a device of the class described, the combination with two relatively movable compressors adapted to compress the article to be tufted, means for passing two parallel strands of twine through the article to be tufted, means for tying a knot in the ends of said two strands and means for cutting the twine above the knot, of a tube adapted to hold a continuous strip of worsted and a device engaging the worsted constructed and arranged to cause the same to feed through the tube into position for its end to be encircled by the twine and means for cutting off said strip of worsted to form tufts thereof.

7. In a device of the class described, the combination with two relatively movable compressors adapted to compress the article to be tufted, means for passing two parallel strands of twine through the article to be tufted, and means for tying a knot in the ends of said two strands, of means for feeding forward a continuous strip of tuft-forming material into position for its end to be encircled by the twine, means for clamping its end during the retraction of the feeding mechanism, and means for cutting off the tuft-forming material to form tufts thereof.

8. In a device of the class described, the combination with two relatively movable compressors adapted to compress the article to be tufted, means for passing two parallel strands of twine through the article to be tufted, and means for tying a knot in the ends of said two strands, of a reciprocable tube adapted to hold the end of a strand of twisted worsted and to swing the end thereof forward into position to be encircled by the twine, means for swinging the tube forward, a suitable clamping device for clamping the end of the worsted,

means for automatically operating the same, means for retracting the tube, a knife adapted to cut off a length of the worsted to form a tuft thereof, and means for automatically operating the knife.

9. In a device of the class described, the combination with two relatively movable compressors adapted to compress the article to be tufted, means for passing two parallel strands of twine through the article to be tufted, and means for tying a knot in the ends of said two strands, of a reciprocable tube adapted to hold the end of a strand of twisted worsted situated on each of said compressors, mechanism for swinging said tube forward to bring the end of said strands of worsted into position to be encircled by the twine while said compressors are separated, and mechanism for clamping the worsted, retracting the tube and cutting off the worsted while said heads are approaching each other, whereby a suitably-shaped tuft is placed in position on each side of the article to be tufted when it is compressed by the two relatively movable compressors.

10. In a device of the class described, the combination with two relatively movable compressors adapted to compress the article to be tufted, means for passing two parallel strands of twine through the article to be tufted, and means for tying a knot in the ends of said two strands, of a suitable reciprocable tube adapted to grasp the end of a strand of twisted worsted, means for reciprocating said tube, a device for clamping the end of said strand when said tube is run forward, and a knife adapted to cut off a length of said worsted when said tube is retracted.

11. In a device of the class described, the combination with a frame, a stationary compressor-head, a reciprocable compressor, means for passing two parallel strands of twine through the article to be tufted, of an arm pivoted to said reciprocable compressor, a tube adapted to grasp the end of a strand of twisted worsted secured to the arm, a cam beside said compressor adapted to engage with said tube through suitable intermediate mechanism and swing it into position to bring the end of said worsted into position to be encircled by the twine as the compressor is raised and to retract it as the compressor is lowered, a suitable clamping device adapted to grasp the end of the worsted, a stationary cam adapted to actuate said device to clamp the worsted as the compressor is lowered, a suitable knife formed to cut off a section of the worsted after the tube is retracted, and a suitable stationary cam adapted to actuate said knife before the compressor reaches the bottom of its reciprocation.

12. In a device of the class described, the combination with a frame, a stationary compressor-head, a reciprocable compressor, means for passing two parallel strands of twine through the article to be tufted, of an arm pivoted to said reciprocable compressor, a tube adapted to grasp the end of a strand of twisted worsted, and to swing its end into position to be encircled by the twine as the arm is swung upon its pivot, a lever pivoted upon said compressor, engaging with said arm, a stationary cam engaging with said lever to swing said arm forward and said tube into position for the worsted to be encircled by the twine as the compressor is raised and to retract the same as the compressor is lowered, a suitable clamping device, a stationary cam adapted to actuate the same as the compressor moves down and before the tube is retracted, a suitable cut-off mechanism and a stationary cam adapted to actuate the same as the compressor moves down and after the clamping device has been retracted.

13. In a device of the class described, the combination with a frame, a reciprocable compressor, and a stationary compressor, means for passing two parallel strands of twine through the article to be tufted, and means for tying a knot in the end of said strand, of a tuft-feeding tube pivotally secured to said stationary head adapted to grasp the end of a strand of twisted worsted, and when swung upon its pivot to place the end of said strand in position to be encircled by the twine, mechanism for clamping the end of said worsted, mechanism for cutting off said worsted to form a tuft, a plurality of circular cams adapted to actuate said tube, clamping mechanism and cut-off mechanism and means for rotating said shaft to operate said devices at proper times with reference to the movements of said reciprocable compressor-head.

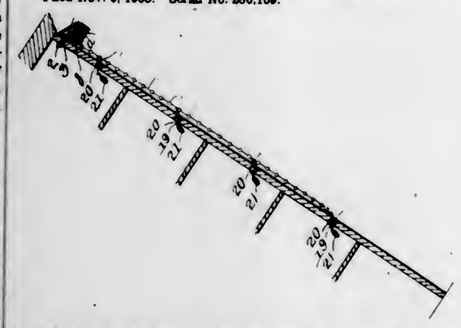
14. In a device of the class described, the combination with a frame, a reciprocable compressor, and a stationary compressor-head, means for passing two parallel strands of twine through the article to be tufted, and means for tying a knot in the end of said strand, of an arm pivoted to said stationary head, a tuft-feeding tube connected thereto adapted to grasp the end of a strand of twisted worsted and when said arm is swung upon its pivot to place the end of said strand in position to be encircled by the twine, a suitable device for clamping the end of said strand of twisted worsted, and a suitable device for cutting off said strand, and a plurality of circular cams and mechanism for rotating said cams to operate said devices at the proper time with reference to the movements of said reciprocable compressor.

15. In a device of the class described the combination with two relatively movable compressors adapted to compress the article to be tufted, means for passing two parallel strands of twine through the article to be tufted, means for tying the knot in the ends of said two strands, of a tube arranged to hold a strand of worsted, a clamp adapted to grasp the end of said strand of worsted, means for moving the clamp and tube with respect to each other to place a length of worsted in position for its end to be encircled by the twine and means for cutting off the tuft-forming material to form tufts thereof.

16. In a device of the class described, the combination with two relatively movable compressors adapted to compress the article to be tufted, means for passing two parallel strands of twine through the article to be tufted, means for tying a knot in the ends of said two strands, of a suitable device on each compressor for feeding forward a continuous strip of tuft-forming material in position for its end to be encircled by the twine, and suitable mechanism for cutting off said material to form tufts thereof.

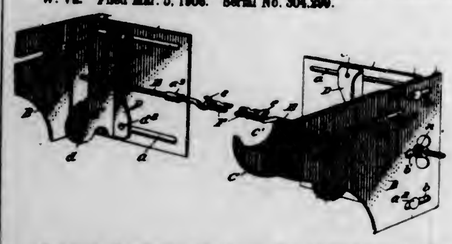
17. In a device of the class described, the combination with two relatively movable compressors adapted to compress the article to be tufted, means for passing two parallel strands of twine through the article to be tufted, means for tying a knot in the ends of said two strands, of a tube on each compressor adapted to hold a continuous strip of worsted and a device engaging the worsted and constructed and arranged to feed forward said worsted in position for its end to be encircled by the twine and means for cutting off said strip of worsted to form tufts thereof.

819,956. **FIRE-ESCAPE.** HUGO A. THOMSEN, Madison, N. J. Filed Nov. 6, 1905. Serial No. 286,109.



Claim.—In a fire-escape, a box or casing secured to the wall of a building by means of eyebolts, a rod or bar connecting said eyebolts, a flexible ladder connected at one end within the casing, a bottom hinged to said box or casing and adapted to support the folded ladder, a spring-bolt secured to said bottom, a keeper for the bolt on the front of said box, a flexible connection attached to said bolt, a pulley around which said flexible connection passes, a link chain attached to said flexible connection, chains connected to said link chain and passing through the wall of a building and provided with handles, whereby occupants of any of the floors of the building may withdraw the bolts from the keeper and permit the extensible ladder to fall to the ground, substantially as described.

819,957. **SHADE-FIXTURE.** HENRY B. TURNER, Huntington, W. Va. Filed Mar. 5, 1906. Serial No. 304,299.

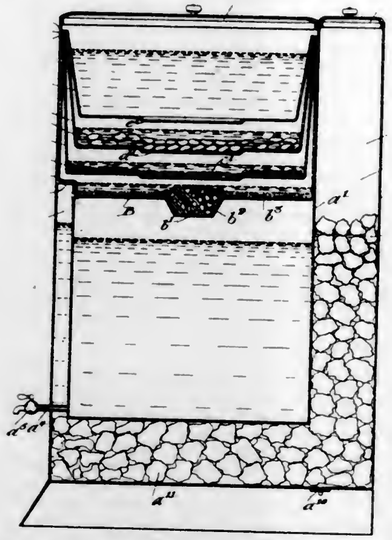


Claim.—1. In combination, a pair of main brackets consisting each of two plates attached together at a right angle with each other,

pole-supports on the forwardly-projecting plates and frame-engaging means on the rear edge of said forwardly-projecting plates, a shade-bracket slidably mounted on each of the base-plates, a threaded rod mounted in each of the main brackets and extending inwardly and engaging one of the shade-brackets, and a chain connecting the inner ends of said threaded rods.

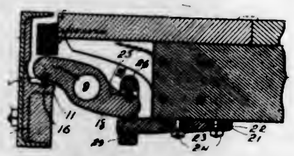
2. In combination, a pair of main brackets each consisting of a base-plate and a forwardly-projecting pole-supporting plate, the two plates being adjustably connected together and the rear edge of the pole-supporting plate being provided with window-frame-engaging means, a shade-bracket slidably mounted on each of the base-plates, a threaded rod mounted in each of the main brackets and provided with an adjusting-nut on its outer end, nuts on each threaded rod adapted to engage the adjacent shade-bracket and hold it in place, and a chain connecting the inner ends of the threaded rods.

819,958. **FILTER.** HENRY TYRELL, Ottawa, Canada. Filed Aug. 14, 1905. Serial No. 274,141.



Claim.—In a filter the combination with the outer and inner vessels of an ice-containing chamber extending between the two vessels at the back and bottom and partially up the front, the top thereof forming a shoulder and a perforated tray supported on the aforesaid shoulder and containing suitable filtering material, a perforated tray for unfiltered water resting on top of the aforesaid tray and a faucet connected to the bottom of the inner vessel as and for the purpose specified.

819,959. **WEIGHING-SCALE.** NATHAN E. TYRRELL, Kansas City, Mo., assignor to The Standard Scale and Foundry Company, Kansas City, Mo., a Corporation of Missouri. Filed Dec. 19, 1905. Serial No. 292,404.



Claim.—1. In a weighing-scale, the combination with end beams of channel form having inwardly-extending flanges, of socket-pieces bolted between the flanges to the inner sides of the channel end beams, and tubular side bars having their ends inserted respectively in the socket-pieces of opposite end beams.

2. In a weighing-scale, the combination with the end beams of channel form having inwardly-extending flanges, of socket-pieces having laterally-extending ears bolted between the flanges to the inner sides of said end beams, tubular side bars having their ends inserted respectively in the socket-pieces of opposite end beams, and means for holding said tubular side bars in said socket-pieces.

3. In a weighing-scale, the combination with end beams of channel form having inwardly-extending flanges, of socket-pieces bolted between the flanges to the inner sides of the end beams, tubular side bars inserted at their ends in the socket-pieces on opposite end beams, bearings mounted upon the inner sides of the channel end beams, the platform located between the end beams, swinging hangers supporting the platform, and means for supporting the hangers upon the said bearings.

4. In a weighing-scale, the combination with the end beams, of the platform mounted between the end beams, supporting means on which the platform may oscillate toward and from the end beams, bearings mounted on said end beams and supporting said supporting means, and guards carried by the platform and covering respectively said bearings.

5. In a weighing-scale, the combination with the end beams, of the rock-shafts having inwardly and outwardly extending arms, means for supporting the platform upon said inwardly-extending arms, bearings carried by the end beams and supporting said outwardly-extending arms respectively, and guards carried by the platform and covering respectively said bearings.

6. In a weighing-scale, the combination with the end beams, of the rock-shafts having inwardly and outwardly extending arms, hangers supported upon said inwardly-extending arms, the platform, means for supporting the platform upon said hangers so that the platform may oscillate between said end beams, bearings carried by the end beams and supporting respectively said outwardly-extending arms, and guards carried by the platform and covering respectively said bearings.

7. In a weighing-scale, the combination with the end beams of channel form having the flanges extending inwardly and the beams being supported upon the lower flanges, of the rock-shafts having inwardly and outwardly extending arms, the platform, means for supporting the platform upon said inwardly-extending arms, bearing-plates mounted upon the inner sides of said end beams and having bearings supporting respectively said outwardly-extending arms, and guards carried by the platform and extending under said upper flanges of the end beams and covering said outer arms and bearings respectively.

8. In a weighing-scale, the combination with the end beam, of the platform, supporting means on which the platform may oscillate toward and from the end beam, bearing means mounted upon said end beam and supporting said platform-supporting means, and a guard carried by the platform and covering said bearing means.

9. In a weighing-scale, the combination with the end beam of channel form having the flanges projecting inwardly and the beam being supported by the lower flange, of the platform, supporting means on which the platform may oscillate toward and from the end beam, bearing means carried on the inner side of the end beam below the upper flange and supporting said supporting means, and a guard carried by the platform, extending under the upper flange of the end beam and covering said bearing means.

10. In a weighing-scale, the combination with the end beam, of the rock-shaft having inwardly and outwardly extending arms, the platform supported by said inwardly-extending arms, bearing means carried by said end beam and supporting said outwardly-extending arms, and guards carried by the platform and covering respectively said bearing means.

11. In a weighing-scale, the combination with the end beam, of the rock-shaft having inwardly and outwardly extending arms, the platform, hangers carried by said inwardly-extending arms, means for supporting the platform upon said hangers, bearing means carried by the end beam and upon which the outwardly-extending arms are supported, and guards carried by the platform and covering respectively said bearing means.

12. In a weighing-scale, the combination with the end beam, of the rock-shaft having inwardly and outwardly extending arms, the platform, means for supporting the platform upon the inwardly-extending arms, bearing means carried by the end beam and supporting the outwardly-extending arms, and guards carried by the platform and respectively covering said outwardly-extending arms and said bearing means and having sloping sides diverging toward and extending beyond the ends of the bearing means respectively.

13. In a weighing-scale, the combination with the end beam, of the rock-shaft having inwardly and outwardly extending arms, the platform, means for supporting the platform upon said inwardly-extending arms, bearing means carried by the end beam and supporting the outwardly-extending arms respectively, and guards carried

by the platform and disposed above and having sloping sides diverging toward and extending beyond the ends of the bearing means and transversely across said outwardly-extending arms respectively.

14. In a weighing-scale, the combination with the end beams, of the rock-shafts having inwardly and outwardly extending arms, the platform, means for supporting the platform upon the inwardly-extending arms, bearing means carried upon the end beams respectively and supporting respectively the outwardly-extending arms, and gable-shaped pieces carried by the platform and disposed respectively above the outwardly-extending arms and having their sloping sides extending respectively transversely across the outwardly-extending arms and beyond the ends respectively of the bearing means.

15. In a weighing-scale, the combination with the end beam, of the platform, the rock-shaft having an inwardly and an outwardly extending arm, means adjustable toward and from the end beam for supporting the platform upon the inwardly-extending arm, bearing means carried by the end beam and supporting the outwardly-extending arm and guards carried by the platform and covering said bearing means.

16. In a weighing-scale, the combination with the end beam, of the rock-shaft having the inwardly and the outwardly extending arms, a hanger supported by the inwardly-extending arm, means adjustable toward and from the end beam for supporting the platform upon the hanger, bearing means carried by the end beam supporting the outwardly-extending arm and guards carried by the platform and covering said bearing means.

17. In a weighing-scale, the combination with the end beam, of the rock-shaft having an inwardly and an outwardly extending arm, the platform having the longitudinal supporting-beam, a hanger supported by the inwardly-extending arm, a plate secured to and adjustable lengthwise of the supporting platform-beam and supported by the hanger, bearing means carried by the end beam and supporting the outwardly-extending arm and guards carried by the platform and covering said bearing means.

18. In a weighing-scale, the combination with the end beam, of the rock-shaft having the inwardly and the outwardly extending arms, the platform having the longitudinal I-beam, a hanger supported on the inwardly-extending arm, a plate secured to the under side of the I-beam and having lateral flanges extending upwardly at opposite edges of the flanges of the I-beam and supported upon said hanger, and bearing means carried by the end beam and supporting the outwardly-extending arm.

19. In a weighing-scale, the combination with the end beam, of the rock-shaft having an inwardly and an outwardly extending arm, the platform having the supporting I-beam, a hanger supported on the inwardly-extending arm, a plate secured to and longitudinally adjustable upon the lower side of the I-beam and supported by the hanger, the plate having upwardly-extending flanges embracing opposite edges of the I-beam, and bearing means supporting the outwardly-extending arm.

20. In a weighing-scale, the combination with the end beam, of the rock-shaft having an inwardly and an outwardly extending arm, the outwardly-extending arm having a knife-edge embedded its full length in the under side of the outwardly-extending arm, a bearing-plate secured to the end beam and supporting said knife-edge, the platform, a guard carried by the platform and covering said knife-edge, a hanger supported upon the inwardly-extending arm, and means for supporting the platform from the hanger.

21. In a weighing-scale, the combination with the end beam, of the rock-shaft having an inwardly and an outwardly extending arm, the inwardly-extending arm having a knife-edge embedded its full length in the upper side of said arm, a hanger mounted on said knife-edge, the platform, means for supporting the platform upon said hanger, bearing means carried by the end beam and supporting the outwardly-extending arm and a guard carried by the platform and covering said bearing means.

22. In a weighing-scale, the combination with the end beam, of the rock-shaft having the inwardly and outwardly extending arm, the outwardly-extending arm having a knife-edge embedded its full length in the under side of said arm, a bearing-plate carried by said end beam and supporting said knife-edge, the platform, a guard carried by the platform and covering said knife-edge and means for supporting the platform upon the inwardly-extending arm.

23. In a weighing-scale, the combination with the end beam, of the rock-shaft having the inwardly-extending and the outwardly-extending arms, the outwardly-extending arm having a knife-edge embedded its full length in the under side of said arm, said knife-edge having a transverse notch in its under side, the bearing-plate secured to the end beam and supporting said knife-edge and having a projection disposed in said notch, the platform, a guard carried by the platform and covering said knife-edge and means for supporting the platform upon the inwardly-extending arm.

24. In a weighing-scale, the combination with the end beam, of the rock-shaft having inwardly and outwardly extending arms, two knife-edges, one embedded its full length in the under side of the outwardly-extending arm, the other embedded its full length in the upper side of the inwardly-extending arm, a hanger supported upon the knife-edge carried by the inwardly-extending arm, the platform, a guard carried by the platform and covering the knife-edge on the outwardly-extending arm, means for supporting the platform upon the hanger, and a bearing-plate carried by the end beam and supporting the knife-edge on the outwardly-extending arm.

25. In a weighing-scale, the combination with the end beam having inwardly and outwardly extending arms, the outwardly-extending arms having knife-edges embedded respectively their full lengths in the under sides of the outwardly-extending arms, said knife-edges each having a notch on its under side, bearing-plates supporting respectively said knife-edges and having respectively projections disposed in said notches, said bearing-plates being secured to and adjustable lengthwise of the end beam, hangers swinging from the inwardly-extending arms, the platform and means for supporting the platform upon said hangers.

26. In a pitless, protected bearing, weighing-scale, the combination with the end beams of channel form, having inwardly-extending flanges and the beams being supported upon the lower flanges and having sockets on their inner sides adjacent their ends, said sockets being closed adjacent the end beams, of side bars inserted in said sockets, the platform having longitudinal I-beams, the rock-shafts having inwardly and outwardly extending arms, means for supporting said platform I-beams upon said inwardly-extending arms, bearing-plates mounted upon the inner sides of said end beams and supporting respectively said outwardly-extending arms, and guards carried by the platform and covering respectively said outwardly-extending arms and the bearing portions of said bearing-plates, all of the parts being located above the plane of the lower sides of the end beams.

27. In a weighing-scale, the combination with the platform, of the cross-lever, a stirrup, a stirrup-support carried by the platform and upon which the stirrup is mounted so as to swing transversely relative to the cross-lever, and a loop pivotally supporting the rear end of the cross-lever and supported by the stirrup so as to swing thereon transversely relative to the platform.

28. In a weighing-scale, the combination with the platform, of the cross-lever, a stirrup, a stirrup-support adjustable longitudinally on the platform and upon which the stirrup is mounted so as to swing transversely relative to the cross-lever, and a loop pivotally supporting the rear end of the cross-lever and supported by the stirrup so as to swing thereon transversely relative to the platform.

29. In a weighing-scale, the combination with the platform having the longitudinal supporting beam, of the cross-lever, a stirrup, a bracket mounted on the said beam and upon which the stirrup is mounted so as to swing transversely relative to the cross-lever, and a loop pivotally supporting the rear end of the cross-lever and supported by the stirrup so as to swing transversely relative to the said beam.

30. In a weighing-scale, the combination with the platform having the longitudinal supporting-beam, of the cross-lever, a stirrup, a bracket mounted and adjustable lengthwise upon said beam and upon which the stirrup is mounted so as to swing transversely relative to the cross-lever, and a loop pivotally supporting the cross-lever and supported by the stirrup so as to swing transversely relative to the beam.

31. In a weighing-scale, the combination with the end beams, of the rock-shafts having inwardly and outwardly extending arms, means for supporting the outwardly-extending arms upon said beams respectively, the platform, means for pivotally supporting the platform upon said inwardly-extending arms, the inwardly-extending levers mounted respectively upon said rock-shafts, the cross-lever, hangers supporting said inwardly-extending levers respectively upon said cross-lever, a stirrup, a stirrup-support mounted on the platform and upon which the stirrup is mounted so as to swing transversely relative to the cross-lever, and a loop supporting the cross-lever intermediate said hangers and the platform and mounted on the stirrup so as to swing transversely relative to the platform.

32. In a weighing-scale, the combination with the end beams, of the rock-shafts having inwardly and outwardly extending arms, means for pivotally supporting the outwardly-extending arms upon said beams respectively, the platform, hangers supported upon said inwardly-extending arms, means for supporting the platform upon said hangers, the cross-lever, inwardly-extending levers mounted respectively upon said rock-shafts, hangers supporting said inwardly-extending levers respectively upon said cross-lever, a stirrup, a stirrup-support mounted upon the platform and upon which the stirrup is mounted so as to swing transversely relative to the cross-lever, and a loop supporting the cross-lever and mounted on the stirrup so as to swing thereon transversely relative to the platform.

819,960. **HAIR-BRUSH.** CHARLES R. UHLMANN, Peoria, Ill. Filed Aug. 15, 1904. Serial No. 220,695.



Claim.—1. In a brush a plurality of bristle-carrying strips, lateral extensions at each end of one of said strips, there being a groove in each said extension, said grooves being opposite each other and parallel with each other and at right angles to the length of the strips, the remaining strips adapted to enter the grooves and held thereby.

2. In a brush, a series of bristle-carrying strips, a transverse extension at each end of one of the strips the strip and said extensions forming an H, there being a groove in the inner opposite faces of the extensions at right angles to the length of the brush, each oppositely-placed pair of grooves adapted to receive one of the said strips substantially as described.

3. In a brush, the body thereof in the form of an H, the same having bristles thereon, and other bristle-carrying members adapted to enter the opposite recesses of the body to form a complete brush.

4. In a brush a series of separable bristle-carrying strips lying side by side to form a complete brush, a grooved lateral extension at each end of one of the strips, the other strips adapted to enter the said grooves to hold the entire series in one plane and means for preventing separation of the strips.

5. In a brush a series of separable strips provided with the usual bristles, the same lying side by side to form a complete brush, a grooved lateral extension at each end of one of the strips said grooves facing each other, the other strips adapted to enter the grooves, all the strips being prevented from moving out of a common plane relatively by such means, and a member extending across the tops of the several strips for preventing separation of the same, the ends of said member extending down at each side of the brush substantially as described and for the purposes set forth.

6. In a brush a series of separable bristle-carrying strips assembled to form a complete brush, grooved lateral extensions on one of the strips, and projections on the ends of the other strips for engaging said grooves for preventing movement of the entire series out of a common plane.

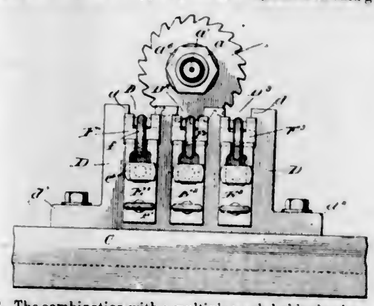
7. A hair-brush comprising the end portions held in rigid relation to one another and having parallel opposing faces, there being a groove in each said face and separable bristle-carrying strips for entering between the portions, the ends thereof adapted for engaging the opposed grooves and forming a complete brush.

8. A hair-brush comprising the end portions held in rigid relation to one another and having parallel opposing faces, there being a groove in each said face, separable bristle-carrying strips for entering between the portions, the ends thereof adapted for engaging the opposed grooves and forming a complete brush and means extending transversely of the strips for securing them in place.

9. A hair-brush comprising the end portions held in rigid relation to one another and having parallel opposing faces, there being a groove in each said face, separable bristle-carrying strips for entering between the portions, the ends thereof adapted for engaging the opposed grooves and forming a complete brush, and means for securing the strips in place.

819,961. **MAGAZINE-HOLDER FOR MILLING-CUTTERS.** HENRY H. VAUGHAN, Cleveland, Ohio, assignor to The Railroad Supply Company, Chicago, Ill., a Corporation of Illinois. Filed June 21, 1902. Serial No. 112,634.

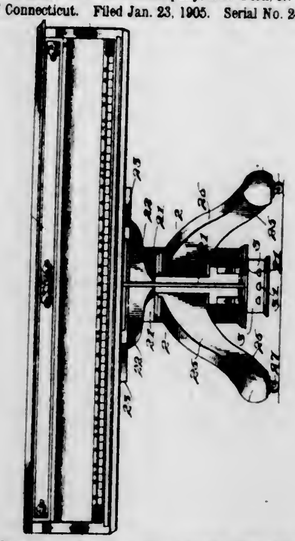
Claim.—1. The combination with a multiple work-holder for milling-machines having a channel therein extending transversely to the direction of its movement and also having a plurality of parallel grooves formed in the upper surface thereof and extending in the direction of movement of the holder, a magazine engaging said channel and adapted to support articles in register with said grooves.



2. The combination with a multiple work-holder having a channel extending transversely to its path of movement, of a magazine for removably engaging said channel, means for supporting a plurality of articles upon said magazine, a stop carried by said holder at one end of said channel, and an adjustable latch carried by said holder at the opposite end of the channel adapted to engage said magazine and retain the same in contact with said stop.

3. The combination with a multiple work-holder having a plurality of channels therein extending transversely to its direction of movement, a plurality of magazines engaging said channels and each adapted to support a plurality of articles, a stop carried by said holder at one side thereof and projecting into alinement with said channels, and an adjustable latch carried by said holder at the end of each channel opposite to said stop, said latch being adapted to engage and retain the corresponding magazine in contact with said stop.

819,962. **MUSICAL-INSTRUMENT SUPPORT.** EDWIN S. VOTEY, Summit, N. J., assignor to Aeolian Company, New York, N. Y., a Corporation of Connecticut. Filed Jan. 23, 1905. Serial No. 242,266.

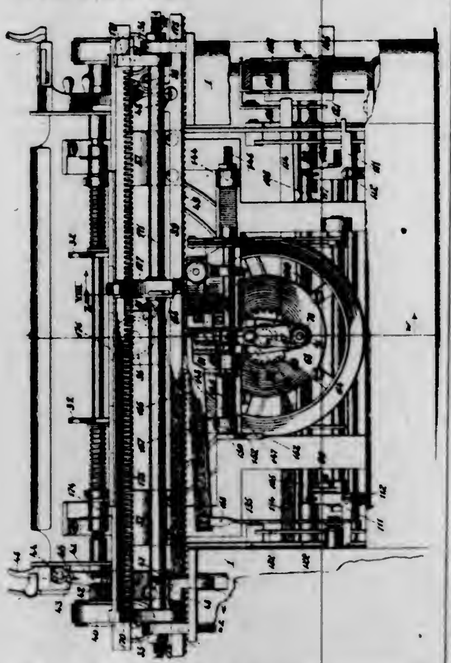


Claim.—1. In a piano, a horizontally-disposed case, and a unitary support therefor, said support being secured to said case at a plurality of points separate from each other and remote from the periphery of the case.

2. In a piano, a horizontally-disposed case and a unitary support therefor, said support having diverging arms, the outer ends of which are secured to said case at points of the latter remote from its periphery.

3. In a piano, a horizontally-disposed case and a support therefor comprising a columnar portion, diverging legs and diverging arms, the outer ends of said arms being secured to said case at points of the latter remote from its periphery.

819,963. TYPE-WRITING MACHINE. FRANK X. WAGNER, New York, N. Y., assignor, by mesne assignments, to Underwood Typewriter Company, New York, N. Y., a Corporation of New Jersey. Filed June 3, 1901. Serial No. 63,328.



Claim.—1. In a type-writing machine the combination of a frame, a carriage comprising two sections, viz: a carrying section or base connected with the frame, and a paper-holding section, alining spring-pressed bolts mounted to slide on one of said sections and adapted for detachable engagement with the other section, and handles located at the inner adjacent ends of said bolts.

2. In a type-writing machine, the combination of a frame, a carriage comprising two sections, viz: a carrying section or base connected with the frame, and a paper-holding platen-section, and mechanism for detachably connecting said sections, the said mechanism comprising two connecting members adapted to hold the platen-section and the base together at different points, said members having their inner ends located at the central portion of the carriage and in such proximity to each other as to enable them to be simultaneously actuated by the same hand of the operator.

3. In a type-writing machine the combination of the frame, a carriage comprising two sections, viz: a carrying section or base connected with the frame, and a paper-holding section, one of said sections having a socket or bearing at a distance inward from each of its ends, and the other section having connecting elements located between said sockets and adapted to enter the same, said connecting elements being movable toward and from the sockets to connect or disconnect the two carriage-sections.

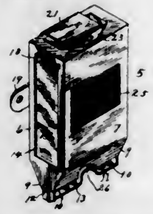
4. In a type-writing machine, the combination of the frame of the machine with the traveling carriage, a feed element carried thereby, a second coöperating feed element carried by the frame of the machine to control the feed of the carriage, one of said feed elements being provided with a socket, while the part which carries said feed element is provided with a guideway or bearing, and a spring-pressed bolt mounted to slide in such bearing and permanently movable therein, said bolt engaging the socket of the feed element to detachably connect the same with its carrier.

5. In a type-writing machine, the combination of a carriage, a feed element carried by the said carriage, a second coöperating feed element carried by the framing of the machine for affording a step-by-step feed of said carriage, and a spring-pressed hand-operated bolt for retaining one of said feed elements in place whereby a feed element of one character can be readily removed and another feed element of a different character be substituted therefor.

6. In a type-writing machine, the combination of a carriage, a feed-rack operatively connected to said carriage, a feed-dog which coöperates with said feed-rack, an oscillating carrier for said feed-dog which carrier is carried by the framing of the machine, and a spring-pressed, longitudinally-slidable bolt for supporting said carrier in the operative position.

7. In a type-writing machine, the combination of a carriage, a spring-drum therefor, a crank for regulating the tension of the spring, an abutment or projection carried by said crank and freely movable therewith for almost a complete revolution of said crank, and a stationary abutment arranged to engage said crank-abutment at one point of its revolution but clear of the path of the crank-abutment at all other points, the two abutments having at one side shoulders arranged to arrest the movement of the crank in one direction, and on the other side, surfaces coöperating with a wedge-like action to allow one abutment to pass over the other, one of the abutments being capable of a yielding movement when engaged by the other.

819,964. MATCH-BOX. FRANCIS B. WATSON, Caldwell, Kans. Filed Jan. 24, 1906. Serial No. 297,667.

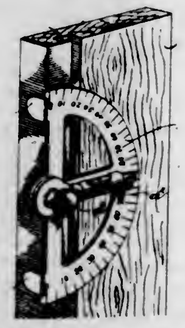


Claim.—1. A match-box comprising a casing, the lower portions of the walls of which taper toward each other, said walls having cut-away portions, retaining-springs carried by the inclined portion of one of said walls and extending across the bottom of the casing to a point adjacent the bottom of the other of said walls, and a guard-bar secured to the casing and extending therebelow in such position as to limit the movement of the retaining-springs, said bar having an upwardly-bowed portion.

2. In a match-box the combination with a receptacle of match-retaining springs normally closing the bottom of said receptacle, and a filling-slide adapted to be inserted between said springs and the base of the receptacle.

3. A match-box comprising a casing having an open bottom, springs spanning the bottom of said open casing, a filling-slide adapted to be inserted between said springs and the bottom of said casing to form a temporary bottom for the box while the same is being filled, and a retaining spring-plate formed upon the box and forming a keeper for the slide when said slide is not in use.

819,965. LEVELING INSTRUMENT. HARRY S. WILLIAMS, Springfield, Ohio, assignor to The Ridgely Trimmer Company, Springfield, Ohio, a Corporation of West Virginia. Filed Apr. 10, 1905. Serial No. 254,674.



Claim.—1. In a leveling instrument, the combination with a straight-edge of a main semicircular body portion, projections extending at right angles to the plane of said body in diametrically opposite sides thereof, a yielding guiding-surface arranged opposite

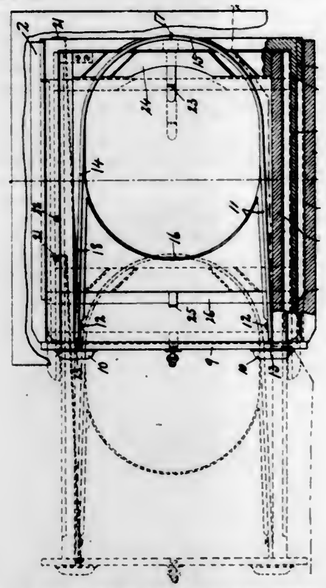
to said projections and adapted with said projections to secure said main body portion to the straight-edge, and a bubble-arm adjustably connected to said body at the center of its arc, substantially as and for the purpose specified.

2. In a leveling instrument, a straight-edge having a groove, a main semicircular body portion, holding devices formed on said body portion for yieldingly engaging said groove, and a bubble-tube-holding arm mounted on said main body portion at the center of its arc, substantially as and for the purpose specified.

3. In a leveling instrument, the combination with a straight-edge having a groove, of a main segmental body having graduations and provided with projections at right angles to the plane of said body, and yielding guiding-surfaces opposite said projections to secure said body to said straight-edge and guide the same in said groove, a pivoted bubble-tube-holding arm in the center of the arc of said segmental body, graduations on said arc, and means for securing said bubble-tube-holding arm in different positions determined by said graduations and permitting the movement of said body on said straight-edge, substantially as and for the purpose specified.

4. In a leveling instrument, the combination with a straight-edge having a flange or rib with parallel sides, a main segmental body with projections at right angles to the plane of said body to engage one side of said rib, and yielding holding devices to engage the opposite side of said rib, a bubble-tube-holding arm pivoted to said segmental body at the center of the segmental arc, and means for holding said tube-arm in different positions of adjustment.

819,966. EXTENSIBLE PHONOGRAPH-HORN SUPPORT. JOHANN K. ZIEGENHORN, Syracuse, N. Y. Filed May 11, 1905. Serial No. 260,009.



Claim.—1. An extensible phonograph-horn support comprising an inclosure, a folding horn-holder and support therefor slidable into and out of said inclosure and normally concealed therein, means brought into action by the outward movement of the sliding support for automatically unfolding the horn-holder, and means for locking said horn-holder in its unfolded position.

2. The combination with an inclosure having a top adapted to support a phonograph, of a frame slidable into and out of said inclosure and normally concealed beneath said top, a vertically-swinging horn-holder mounted on the frame, and means actuated by the frame for automatically swinging the horn-holder to and from a horizontal position as said frame is moved into and out of said inclosure.

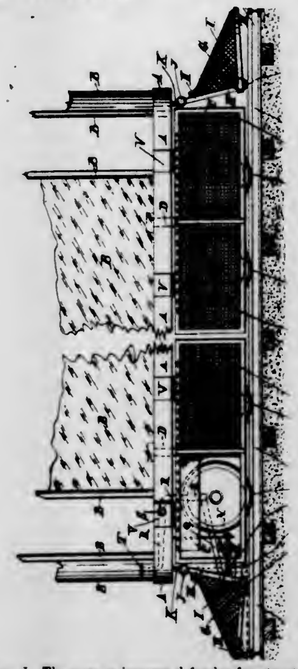
3. A table-top adapted to support a phonograph, in combination with a slidable extensible frame mounted on the under side of the table-top and composed of two frames sliding one upon the other, and a horn-holding member hinged to one of the sliding frames and movable from a horizontal to a vertical position.

4. In combination with a table-top adapted to support a phonograph, an extensible sliding shelf mounted on the under side of the table-top, a folding horn-holding member hinged to said shelf and movable to and from a vertical position, and means for holding said member in its vertical position.

5. In combination with a table-top adapted to support a phonograph, said table-top being provided with suitable ways, a sliding frame guided on said ways, a second sliding frame guided on the first-named frame, a swinging horn-holding member on the second frame and means to swing said member to its operative position as one of the sliding frames is drawn outwardly.

6. In combination with a table-top adapted to support a phonograph, said table-top being provided on its under side with parallel ways, a slidable frame mounted on said ways, a second slidable frame mounted upon the first-named frame, a swinging horn-holding member mounted upon the second frame, means for swinging said member to a vertical position as the second frame is drawn outwardly, and additional means for locking the frames and swinging member in their operative positions.

819,967. FENDER ESPECIALLY ADAPTED FOR STREET-RAILWAY CARS. MATTHEW S. AISBITT, Los Angeles, Cal. Filed Oct. 12, 1905. Serial No. 283,331.



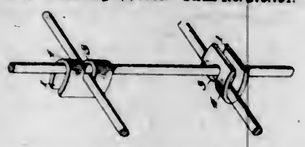
Claim.—1. The new or improved fender for street-railway cars and their analogues, consisting of a frame pivotally suspended from the under part of the end portions of the framing of the car, and extending the entire width of the said frame, the body of said fender consisting of stiff wires crossing each other and having their ends fastened to the framing of each fender; each such fender having rollers of the gage of the track at their rear portions, abutments, bolts, and springs for maintaining the fenders in their upraised position, and the crank-arm, connecting-rod, and treadle, pivotally carried in the framing of the car, for enabling the driver or motorneer to depress the end frames when required substantially as hereinbefore described.

2. The lateral fenders or shields consisting of rectangular frames connected by hinges or their equivalents to the lateral frames of the car, and so that they may be lifted upward hingewise when access is required to the parts of the car and trucks beneath the body of the car, and contained within the end and lateral fenders.

3. The combination of a street-railway or analogous car, the end fenders, the lateral fenders, the suspension-pivots of the end fenders, the hinged connections of the lateral fenders, the abutments

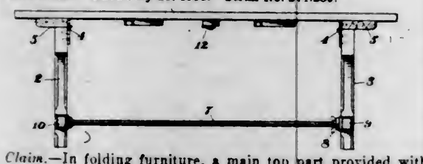
for the end fenders, the bolts and springs connecting the abutments, end fenders and the crank-arm, the coupling-rod and treadle for operating the end fenders, the rollers or running wheels of the end fenders, the whole operating together in the manner and for the purposes substantially as hereinbefore described.

819,968. LOCK FOR CROSS-WIRES. MILTON S. ANDERSON, Manistee, Mich. Filed Aug. 11, 1905. Serial No. 273,791.



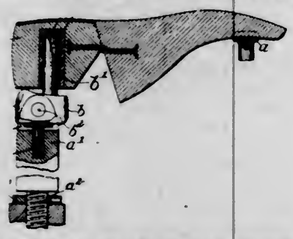
Claim.—As a new article of manufacture, wire-fence construction embodying intersecting cross-wires, and a metal clip for connecting said wires, said clip consisting of a piece of sheet metal provided with a longitudinal slot in which one of the cross-wires is received, the plate being bent upon itself to form sides between which the other of the cross-wires is received, said wires being in contact with one another, the sides of the clip aforesaid being curved in the length thereof whereby the same are caused to engage the wire in the slot thereof with a positive frictional or biting action, the engaging action of said clip with respect to the aforesaid wire being such as to hold the intersecting wires also in positive frictional contact with one another.

819,969. FOLDING FURNITURE. WILLIAM N. ANDERSON, San Rafael, Cal. Filed July 25, 1905. Serial No. 271,239.



Claim.—In folding furniture, a main top part provided with cross-rails beneath at each end to stiffen and reinforce the same, legs hinged to said cross-rails, folding inwardly against the top part, opening to a position at right angles thereto, abutting at top against said cross-rails to limit their extension to said position, and provided with inwardly-facing sockets near their lower ends, a strut-bar whose ends are adapted to be inserted in the sockets, said strut-bar being screw-threaded at one end for a suitable distance and provided with a running nut which may be advanced against the inner face of the leg when the strut is in place, to maintain said legs in rigid open position, substantially as specified.

819,970. JACK-PIN FOR HINGED LASTS. WILLIAM B. ARNOLD, North Abington, Mass., assignor to Krentler-Arnold Hinge Last Company, Detroit, Mich. Filed Mar. 28, 1904. Serial No. 200,496.



Claim.—1. A device of the kind described, comprising a support for the toe of a hinged last, and a jack-pin for supporting the heel end thereof, having a pin portion and an upwardly-projecting knob at the rear thereof, said pin portion being adapted to engage firmly against the rear side of the thimble-socket at the outer end of the latter and being shaped to permit a lateral tipping movement within said socket with reference to said engaging region as a pivotal center, said knob being arched rearwardly to span an appreciable portion of the cone of the last and engage the same solely at the rear end thereof for binding and clamping the intervening portion of the heel part between said knob and the rear, lower side of said pin portion.

2. A device of the kind described, comprising a support for the toe of a hinged last, and a jack-pin for the heel end of the last, having a pin portion shaped to tip freely forward in the thimble-socket of the last, said jack-pin extending rearwardly from the base of said pin portion and having at the rear end of said exension an upwardly-projecting knob, and being pivotally supported adjacent the top of the jack-pin and back of vertical alinement with said pin portion.

3. A device of the kind described, comprising a support, a jack-pin pivoted thereon out of vertical alinement with its engaging pin, and means tending to maintain and restore said jack-pin normally yieldingly in vertical position.

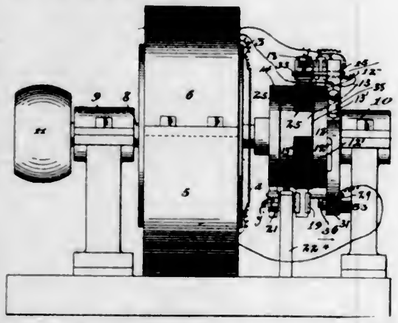
4. In a device of the kind described, the combination, with a support, of a one-piece jack-pin having an upwardly-projecting engaging pin at its forward end, and terminating at its rear end in an upwardly-projecting knob, said jack-pin being pivoted close to its upper side between said knob and engaging pin.

5. In a device of the kind described, a jack-pin having an engaging pin portion capable of entering and tipping loosely in the spindle-socket of a hinged last, said pin being smaller than said socket and an integral knob projecting upwardly from the base of said jack-pin to engage the cone of the last at the rear of said spindle-socket.

6. A jack-pin, having an upwardly-extending pin portion to enter the spindle-socket of a hinged last, said pin portion being obliquely cut away on one side to permit relative tipping movement of said spindle-socket and pin portion, turning on the rear lower side of the latter as a pivotal center, and an upwardly-projecting knob at the rear of and integral with said jack-pin and pin portion for coöperating with the latter in giving said tipping movement to the heel end of the last.

7. A jack-pin, comprising a base having an engaging pin portion extending therefrom at an acute angle to its rearward top surface, and the latter terminating in an engaging knob, for engaging the rear end of the cone of the last back of the spindle-socket.

819,971. ELECTRIC MOTOR AND GENERATOR. JOHN F. BECK, Chicago, Ill., assignor of one-half to Edward F. Hamm, Chicago, Ill. Filed Mar. 2, 1903. Serial No. 145,831.



Claim.—1. The combination with an armature-body provided with a circular series of notches or winding-recesses, of a lap-winding arranged upon said armature-body and engaging said recesses, said winding consisting of circumferentially-extending relatively short and long coils, each recess beng engaged by a plurality of coils, of which the short coils extend therefrom each way to the next circumferentially-adjacent recesses while the longer coils extend therefrom each way to other more remote recesses.

2. The combination with an armature-body provided with a circular series of notches or winding-recesses, of a lap-winding arranged upon said armature-body and engaging said recesses, said winding consisting of circumferentially-extending relatively short and long coils, each recess being engaged by a plurality of coils of whch the shorter coils extend therefrom each way to other recesses, while the longer coils extend therefrom each way to other but more remote recesses.

3. The combination with an armature-body provided with a circular series of notches or winding-recesses, of a lap-winding arranged upon said armature-body and engaging said recesses, said winding consisting of circumferentially-extending relatively short

and long coils, each recess being engaged by a plurality of coils of which the shorter coils extend therefrom each way to other recesses, while the longer coils extend therefrom each way to other but more remote recesses, the winding of the armature as a whole being symmetrical and each recess engaged by a substantially like number of turns.

4. An armature-body provided with a circumferential series of notches or winding-recesses, an uneven number of windings upon said body and engaging said recesses, each of which windings extends completely around the armature circumferentially and is composed of alternate relatively short and long coils, the coils of the several wndings being so disposed relatively to each other that each pole-piece, as defined between circumferentially contiguous notches is included within one of the shorter coils and one of the longer coils, a common connecting-ring at the electrical center of the armature with which each of said windings is connected, and a commutator mechanism coöperating with the armature and whereby the windings are severally alternately rendered active and inactive, the active windings being connected in series during their activity.

5. In an electric motor or generator, an armature provided with a plurality of windings arranged to induce magnetic poles, each winding consisting of alternated circumferentially long and short coils, a commutator mechanism coöperating therewith to alternately open and close said several windings to induce upon each commutation active poles of opposite polarity and other intervening neutral poles, the active poles of each polarity being changed to neutral poles and thereafter to poles of opposite polarity, and the neutral poles formed upon each commutation being formed at successively-advanced points around the armature, whereby a rotating magnetic field is induced.

6. An armature-body provided with a circular series of notches or winding-recesses, an uneven number of windings upon said body and engaging said recesses, each of which windings extends completely around the armature circumferentially and is composed of alternate coils unlike in circumferential reach or size, the coils of different windings being disposed in offset or overlappng relation to those of each of the other windings, and a commutator mechanism coöperating therewith.

7. An armature-body provided with a circular series of notches or winding-recesses, an uneven number of windings upon said body and engaging said recesses, each of which windings extends completely around the armature circumferentially and is composed of alternate relatively short and long coils, the coils of the several windings being so disposed relatively to each other that each pole-piece, as defined between circumferentially-contiguous notches, is included within one of the shorter coils and one of the longer coils, and a commutator mechanism coöperating therewith whereby the windings are alternately rendered active and inactive.

8. In an electric motor or generator, an armature provided with an uneven number of windings, each extending completely around the armature-body circumferentially, and each consisting of alternate relatively long and short coils arranged in overlapping relation and symmetrically as a whole, said windings being arranged to encircle pole portions, each of which is included within a short coil and a long coil, a commutator mechanism coöperating to open said windings successively and whereby the uneven windings are rendered inactive, and an even number of active magnetic poles induced and intervening inactive poles produced, and a coöperating relatively movable field element having a number of poles equal to the number of active poles of the armature.

9. In an electric motor or generator, an armature provided with an uneven number of windings each extending completely around the armature-body circumferentially and each consisting of alternate relatively long and short coils, said windings being arranged in overlapping relation and symmetrically as a whole, and a commutator mechanism operating to open the circuit of all of the uneven numbered windings, said windings being alternately opened, a common connector at the electrical center of said armature, and a relatively movable field member, substantially as described.

10. In an electric motor or generator, an armature provided with a circumferential series of winding-recesses extending entirely around the armature, disposed at equal angular distances apart and uneven in number, a plurality of windings, each consisting of alternate relatively long and short coils engaged with said winding-recesses, said windings arranged in overlapping relation relatively to each other, a field member provided with an even number of poles arranged to coöperate with said armature, a winding upon said field member arranged to induce poles of permanent polarity alternately disposed therearound, and a commutator mechanism coöperating with said armature and field member, substantially as described.

11. In an electric motor or generator, an armature provided with a circumferentially-disposed series of winding-recesses and interposed pole projections extending entirely around the armature, three separate windings engaging the recesses of said armature, each of which windings consists of alternate short and long coils of which the short coils encircle single-pole projections and the long coils encircle double-pole projections, said windings being disposed in overlapping relation relatively to each other and constituting an armature-winding symmetrical as a whole, a field member arranged to coöperate with said armature and provided with poles, disposed at uniform angular distances apart around said field member, a winding consisting of alternate right and left turns or coils encircling the pole-pieces of said field member, the number of poles of the armature and field members bearing the relation of nine to six, a commutator mechanism arranged to successively cut out of circuit each of the three windings of the armature, and electrical connections whereby two of the windings of the armature are maintained in series with each other at all times, and the winding of the field member in series with the active windings of the armature, substantially as described.

12. In an electric motor or generator, an armature provided with a circumferentially-disposed series of winding-recesses and interposed pole projections extending entirely around the armature, three separate windings engaging the recesses of said armature, each of which windings consists of alternate short and long coils of which the short coils encircle single-pole projections and the long coils encircle double-pole projections, said windings being disposed in overlapping relation relatively to each other and constituting an armature-winding symmetrical as a whole, a field member arranged to coöperate with said armature and provided with poles, disposed at uniform angular distances apart around said field member, a winding consisting of alternate right and left turns or coils encircling the pole-pieces of said field member, the number of poles of the armature and field members bearing the relation of nine to six, a commutator mechanism consisting of a circumferential series of commutator-segments of alternate positive and negative polarity, each of a circumferential width equal to three-fourths of the angular distance between the centers of adjacent winding-recesses of the armature, and three commutator-brushes arranged to coöperate with said commutator-segments, each of a circumferential width equal to one-third of the width of the commutator-segments, and two of which are disposed at an angular distance apart between centers equal to the angular distance between the centers of adjacent winding-recesses of the armature, and the third of which commutator-brushes is disposed diametrically opposite a point midway between said first two commutator-brushes, and electrical connections connecting said several windings and brushes, and whereby two of the windings of the armature are maintained in series with each other and the winding of the field member in series with the active windings of the armature, substantially as described.

13. In an electric motor or generator, means for effecting a rotating magnetic field comprising an armature-body, a plurality of part windings upon said armature-body, each of which extends from an outside terminal to the electric center of the armature, a common connecting device with which all of said part windings are connected at said electrical center, and a common commutator mechanism operating to open each winding successively and to simultaneously connect the part-winding previously idle in series with that with which the last-opened winding was last connected, said windings being arranged to induce neutral poles, and a plurality of intervening active poles and the cycle of commutation of each pole-piece being positive, neutral, negative, whereby a rotating magnetic field is induced.

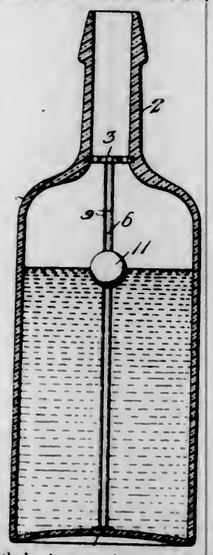
14. In an electric motor or generator, means for effecting a rotating magnetic field comprising an armature provided with a plurality of fractional windings each of which fractions extends from an outside terminal to the electric center of the armature, means connecting all of said fractional windings at the electrical center of the armature, and a commutating mechanism operating to open each fractional winding successively, and to simultaneously connect a fractional winding previously idle in series with another fractional winding, said windings arranged to induce interspersed active and neutral poles, the neutral poles being formed progressively around the armature in a direction the reverse of the direction of rotation of the inducing-field, whereby active poles of opposite polarity are alternately formed contiguous to each other and then separated by an intervening neutral pole, for the purpose set forth.

15. In an electric motor or generator, an armature provided with fractional windings, arranged in ovelapping relation and each comprising alternate short and long coils, and a commutator mechanism coöperating to open said fractional windings successively and to connect other fractional windings to induce resultant pairs of

poles of opposite sign, which poles are alternately broadened and narrowed circumferentially to produce a rotating magnetic field, which progresses with a walking movement.

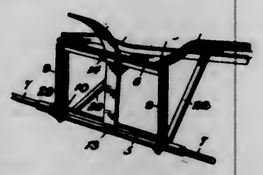
16. In an electric motor or generator, an armature provided with fractional windings, arranged in overlapping relation and each comprising alternate short and long coils, and a commutator mechanism cooperating to open said fractional windings successively and to connect other fractional windings to induce resultant pairs of poles of opposite sign, which poles are alternately broadened and narrowed circumferentially to produce a rotating magnetic field, which progresses with a walking movement, the commutation which results in broadening the poles of one sign being simultaneous with a commutation which results in narrowing the poles of the opposite sign.

819,972. BOTTLE-INDICATOR. WASHINGTON H. BIXLER, Easton, Pa. Filed July 7, 1905. Serial No. 268,596.



Claim.—A bottle having a neck, a guard member disposed in the latter and provided with radial portions terminally engaged in the neck, a hollow guide element extended longitudinally of the bottle and provided with teeth, said element having its upper end embedded in the guard member, a float arranged for movement on the guide, a block slidably disposed within the latter, fastening members extended through a slot provided in the guide and connecting the block and float, and engaging members pivoted on said fastening members for automatic engagement with the teeth to limit movement of the float in one direction.

819,973. RIDING ATTACHMENT FOR AGRICULTURAL IMPLEMENTS. NICKLAS H. BLOOM, Nashua, Iowa. Filed Feb. 9, 1905. Serial No. 244,926.



Claim.—1. In a riding attachment of the class described, the combination with a frame including an axle of angle-iron and axle-spindles projecting beyond the same, the terminals of the angle-iron being bent about and secured to the inner ends of the spindles, of wheels journaled on the spindles, a seat supported on the frame, and means for connecting the frame to an agricultural implement.

2. In a riding attachment of the class described, the combination with an axle, of wheels journaled thereon, an upright frame secured to the axle, a seat mounted on the frame, and crossed bars independently secured to the opposite side portions of the frame.

3. In a riding attachment of the class described, the combination with an axle, of wheels journaled thereon, an arch-bar mounted on the axle, a seat supported by said axle and arch-bar, and crossed reach-bars independently secured to the opposite side portions of the arch-bar.

4. In a riding attachment of the class described, the combination with a supporting-frame comprising an axle and an upright arch-bar mounted thereon, of wheels journaled on the axle, and forwardly-extending crossed reach-bars pivoted at their rear ends to the opposite portions of the arch-bar, said reach-bars being arranged to be secured at their front ends to an agricultural implement.

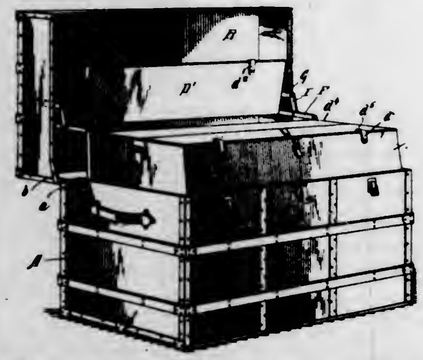
5. In a riding attachment of the class described, the combination with an axle of angle-iron having a substantially horizontal flange and also having spindles at its ends, of wheels journaled on the spindles, a substantially upright arch-bar of angle-iron having its lower ends bearing upon the horizontal flange, fastening devices passing through said ends and the upright flange of the axle, a seat having a standard connected to the arch-bar and to the axle, and means for connecting the frame to an agricultural implement.

6. In a riding attachment of the class described, the combination with a supporting-frame comprising an axle of angle-iron having rounded spindles at its ends and an arch-bar of angle-iron having its terminal portions secured to the axle between the spindles and extending above said axle, of wheels journaled on the spindles outside the arch-bar, a seat-standard secured to the axle and the upper portion of the arch-bar, and means for pivotally connecting the opposite portions of the frame to an agricultural implement.

7. In a riding attachment of the class described, the combination with an upright frame including an axle and an arch-bar located above the axle, of reach-bars independently pivoted to the arch-bar, and braces independently pivoted to the axle and connected respectively to the reach-bars.

8. In a riding attachment of the class described, the combination with a supporting-frame comprising a transverse axle of angle-iron having spindles at its end and an arch-bar of angle-iron secured at its lower ends to the axle and extending above the same, of wheels journaled on the spindles, a seat having a standard secured to the arch-bar and to the axle, crossed reach-bars having their rear ends pivoted to the opposite portions of the arch-bar, means for connecting the front ends of the reach-bars at separated points to an agricultural implement, braces secured to the reach-bars and having their lower ends located adjacent to the axle, and pivot-bolts connecting the rear ends of the reach-bars and the rear lower ends of the braces to the frame.

819,974. TRUNK. WILLIAM H. BOSCHEN, Richmond, Va. Filed Dec. 15, 1905. Serial No. 291,849.



Claim.—1. In a trunk, the combination with a tray comprising a front and rear section, of means for elevating one of said sections, the other of said sections being adapted to slide under said elevated section, substantially as described.

2. In a trunk, the combination with a tray comprising a front and rear section, of means for elevating one of said sections in the cover when raised, the other of said sections being adapted to slide into said cover under said elevated section, substantially as described.

3. In a trunk, the combination with a tray comprising a front and rear section, of means for elevating one of said sections in the cover when raised, the other of said sections being adapted to slide into said cover under said elevated section, substantially as described.

4. In a trunk, the combination with a tray comprising a front and rear section, of means for automatically elevating one of said sections in the cover when raised, the other of said sections being adapted to slide into said cover under said elevated section, substantially as described.

5. In a trunk, the combination with a tray comprising a front and rear section, of means connected with the cover of the trunk for automatically elevating one of said sections therein when raised, the other of said sections being adapted to slide under said elevated section, substantially as described.

6. In a trunk, the combination with a tray comprising a front and rear section, of means for automatically raising and lowering one of said sections, the other of said sections being adapted to slide under said elevated section, substantially as described.

7. In a trunk, the combination with a tray comprising a front and rear section, of means connected with the cover for automatically raising and lowering one of said sections, the other of said sections being adapted to slide under said elevated section, substantially as described.

8. In a trunk, the combination with a tray comprising a front section and a rear section, of connections between said rear section and the cover of the trunk whereby said section may be automatically raised and lowered and means whereby said front tray can be moved rearwardly into the cover when said rear section is elevated, substantially as described.

9. In a trunk, the combination with a body portion having its rear wall lower than the front, of a cover hinged to the rear wall, supporting-bars provided with track portions secured to the ends of said body portion and extending forward from the top of the rear side thereof, a tray comprising a front and a rear section, adapted to rest on the track portions of said supporting-bars, levers pivoted to the ends of said body portion, links connecting said levers with said rear tray-section and connections between said links and said cover whereby said rear section may be automatically raised and lowered, substantially as described.

819,975. PELVICAL BELT OR BAND. GUGLIELMO BRACCO, Sr., Turin, Italy. Filed June 8, 1904. Serial No. 211,575.

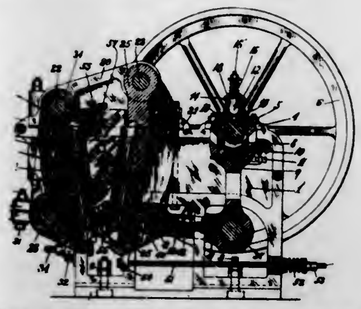


Claim.—1. A belt for supporting the abdominal viscera, composed of a central portion for the pelvis and side portions for the thighs, fastening means for the central portion, and separate means for fastening the thigh portions, the several parts being made of strips attached to each other to form a wide belt adapted to cover substantially all the abdominal viscera, said strips being arranged in lines passing spirally around the pelvis and thighs when the parts are fastened in place, so as to exert a normal pressure without any tendency to lateral displacement.

2. A belt for supporting the abdominal viscera, composed of a central portion for the pelvis and side portions for the thighs, fastening means for the central portion, and separate means for fastening the thigh portions, the several parts being made of strips attached to each other to form a wide belt adapted to cover substantially all the abdominal viscera, said strips being adapted, when the parts are fastened in place, to lie along lines passing spirally around the pelvis from a point at the back, along lines 2, 3, 4, and 10, 3, 11, thence back of the legs, thence along lines 5, 6, 7, and 9, 8, 7, approximately parallel to the lines 1, 2, 3, 4, and 1, 11, 3, 10, whereby said strips exert a normal pressure without any tendency to lateral displacement.

3. A belt for supporting the abdominal viscera, composed of a central portion for the pelvis and side portions for the thighs, fastening means for the central portion, and separate means for fastening the thigh portions, the several parts being made of strips attached to each other to form a wide belt adapted to cover substantially all the abdominal viscera, said strips being adapted, when the parts are fastened in place, to lie along lines passing spirally around the pelvis from a point at the back, along lines 2, 3, 4, and 10, 3, 11, thence back of the legs, thence along lines 5, 6, 7, and 9, 8, 7, approximately parallel to the lines 1, 2, 3, 4, and 1, 11, 3, 10, said spiral strips including also supplementary turns 4, 4', 4'', 5, and 9, 9', 9'', 10, around the thighs, whereby said strips exert a normal pressure without any tendency to lateral displacement.

819,976. CRUSHING-MACHINE. CHARLES G. BUCHANAN, Brooklyn, N. Y. Filed Dec. 11, 1903. Serial No. 184,791.



Claim.—1. In a crushing-machine, the combination of a movable and a fixed jaw, each mounted at one end, the opposite end of the movable jaw having actuating connections, and that of the fixed jaw having an eccentric, means for locking the eccentric to the jaw and the jaw to the frame, and connections between said eccentric and said movable jaw, substantially as described.

2. In a crushing-machine, the combination of a movable jaw, a toggle operating said jaw, a reversible toggle-block having opposite bearing-surfaces, a wedge having a tongue adapted to interlock with the toggle-block and prevent its displacement, and means for forcing said wedge outwardly to fasten the toggle-block, substantially as described.

3. In a crushing-machine, the combination of a movable and a fixed jaw pivoted at their upper ends in the frame, a toggle for actuating the movable jaw, an eccentric-shaft having a bearing in the lower end of the fixed jaw, means for clamping the jaw to the frame, and means whereby the movable jaw is moved toward and from the fixed jaw by turning said eccentric-shaft, substantially as described.

4. In a crushing-machine, the combination of a movable jaw, a toggle operating said jaw, a reversible toggle-block having bearing-surfaces on a plurality of its faces, and a wedge for fastening said toggle-block to the jaw, substantially as described.

5. In a crushing-machine, a movable jaw, a toggle operating said jaw, a reversible toggle-block, a wedge having a tongue interlocking with the toggle-block, and means for forcing said wedge outwardly, substantially as described.

6. In a crushing-machine, the combination with a toggle, of a pitman or jaw having a channel therein, a toggle bearing-block

adapted to fit in said channel, a wedge adapted to fit in said channel to retain the toggle-block, means whereby the wedge cannot be removed without first removing the toggle-block, and means for forcing the wedge outwardly from the channel for clamping the toggle-block in position, substantially as described.

7. In a crushing-machine, the combination with a movable jaw having a channel in the end portion thereof, of a toggle and operating means therefor, a toggle-block carried in said channel, and a wedge for retaining said block in position, said wedge fitting a groove in the toggle-block and having a screw whereby it may be forced outward to hold the toggle-block in position, substantially as described.

8. In a crushing-machine, the combination with rigid jaw-standards, of a movable and a fixed jaw carried by said jaw-standards, a pitman and a single toggle for operating said movable jaw, an eccentric-shaft carried by said fixed jaw, means for locking the eccentric, and side links connecting the pitman and the ends of the eccentric-shaft, substantially as described.

9. In a crushing-machine, the combination with rigid jaw-standards, of a movable and a fixed jaw carried by said jaw-standards, a pitman and a single toggle for operating said movable jaw, an eccentric-shaft carried by said fixed jaw, means for locking the eccentric, means for locking the jaw to the frame, and side links connecting the pitman and the ends of the eccentric-shaft, substantially as described.

10. In a crushing-machine, the combination with rigid jaw-standards, of a movable and a fixed jaw mounted on pivots in said jaw-standards, a pitman and a single toggle for operating said movable jaw, side links connecting the pitman and the fixed jaw, means carried by the fixed jaw for adjusting the distance between the jaws, without varying the inclination of the movable jaw, substantially as described.

11. In a crushing-machine, the combination with a movable and a pivotally-mounted fixed jaw, of means for operating the movable jaw, and means on the fixed jaw connected with the operating means of the movable jaw for adjusting the distance between the jaws, whereby the inclination of one jaw may be adjusted without affecting that of the other, substantially as described.

12. In a crushing-machine, the combination with a movable and a fixed jaw, of a toggle and pitman for operating the movable jaw, side links connecting the toggle and the fixed jaw, and means for adjusting the inclination of one jaw independently of that of the movable jaw, substantially as described.

13. In a crushing-machine, the combination with a movable and a fixed jaw, of means for operating the movable jaw, and means carried by the fixed jaw for adjusting the movable jaw toward and from the fixed jaw, substantially as described.

14. In a crushing-machine, the combination with a movable and a fixed jaw, of a toggle and pitman operating the movable jaw, an eccentric-shaft in said fixed jaw, and side links connecting said shaft and the pitman to adjust the distance apart of the jaws, and means for locking the shaft in adjusted position, substantially as described.

15. In a crushing-machine having a movable jaw actuated by a toggle and pitman, the pitman being connected to the fixed jaw by side links, means for adjusting one jaw toward or away from the other, without necessarily varying the inclination of the other jaw, substantially as described.

16. In a crushing-machine, the combination of a movable jaw, a toggle operating said jaw, a toggle-block having a plurality of bearing-surfaces carried by said jaw, a recess in said jaw, a wedge adapted to go in said recess, and means for forcing said wedge outwardly to lock the toggle-block in position, substantially as described.

17. In a crushing-machine, the combination with a pair of jaws, of superposed cheek-plates for each side, each set of cheek-plates being reversible, and adapted to be turned end for end, and having means interlocking with the other plate, the lower plate being smaller than the upper plate, substantially as described.

819,977. METALLIC RAILWAY-TIE. CASPER BUERER, Sandusky, Ohio. Filed Mar. 13, 1906. Serial No. 305,581.

Claim.—1. A railway-tie comprising a metallic base having a web and two bottom flanges, rail-supports of yielding material slotted to receive the web of the base, and means for securing the said supports to the base.

2. A railway-tie comprising a metallic base having a web and two bottom flanges, rail-supports of yielding material slotted to receive the web of the base and having beveled surfaces 6, 6, to match the top beveled surfaces of the flanges, and means for securing the said supports to the base.

3. A railway-tie comprising a metallic base having a web and two bottom flanges, rail-supports of yielding material slotted to receive the web of the base, means for securing the said supports to the base, and means for preventing the outward longitudinal movements of the supports relative to the base.



4. A railway-tie comprising a metallic base having a web and two bottom flanges, rail-supports of yielding material slotted to receive the web of the base, and clamps passed beneath the base and extended up the sides of the supports and secured by bolts.

5. A railway-tie comprising a metallic base having a web and two bottom flanges, rail-supports of yielding material slotted to receive the web of the base and having bolt-holes, and clamps 8 passed beneath the base and extended up the sides of the supports and held by bolts passed through the ends of the clamps and the holes in the supports.

6. A railway-tie comprising a metallic base having a web and two bottom flanges, rail-supports of yielding material slotted to receive the web of the base, means for securing the supports to the base, and clamps secured to the base and bearing against the supports to prevent longitudinal movements of the supports.

7. A railway-tie comprising a metallic base having a web and two bottom flanges, rail-supports of yielding material slotted to receive the web of the base, means for clamping the supports to the base, and angular tie-clamps 10 secured to the web by bolt 13 and the free ends of the clamps hooked over the vertical corners of the supports.

8. A railway-tie comprising a metallic base having a web with two bottom flanges and a wide metallic plate riveted to the flanges, rail-supports slotted to receive the web of the base and means for securing the supports to the base.

9. A railway-tie comprising a metallic base having a web with bottom flanges and a wide metallic plate riveted to the flanges, cushioned rail-supports resting upon the flanges and disposed each side of the web of the base, and means for clamping the supports to the base.

10. A railway-tie comprising a metallic base having a web and bottom flanges and a wide metallic plate riveted to the flanges, rail-supports located each side of the web and resting upon the flanges of the base, and clamps for securing the supports to the base; said wide metallic plate being provided with seats for the clamps.

11. A railway-tie comprising a metallic base made by cutting off the head of an old track-rail with a wide metallic plate riveted to the flanges, rail-supports disposed each side of the web and resting upon the flanges of the base, and means for securing the supports to the base.

12. A railway-tie comprising a metallic base made by cutting off the head of an old track-rail with a wide metallic plate riveted to the flanges, rail-supports of yielding materal disposed each side of the web and resting upon the flanges of the base, and clamps for securing the supports to the base.

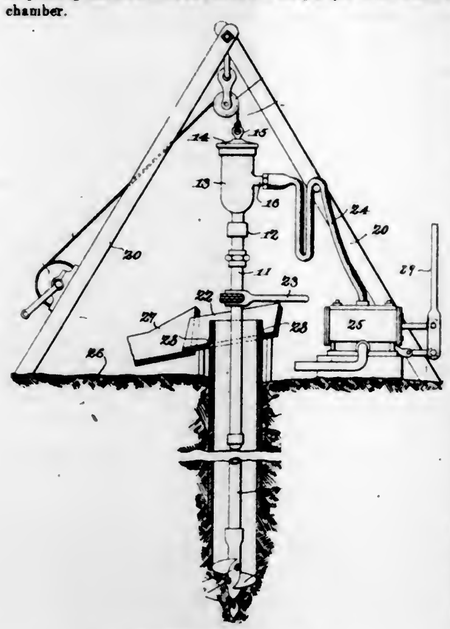
13. A railway-tie comprising a metallic base with a web and two bottom flanges, rail-supports each consisting of a block of wood slotted to receive the web of the base, and clamps for securing the supports to the base.

14. A railway-tie comprising a metallic base with a web and two bottom flanges, rail-supports each consisting of a block of wood slotted to receive the web of the base and having beveled surfaces to fit the beveled surfaces of the flanges of the base, and clamps for securing the supports to the base.

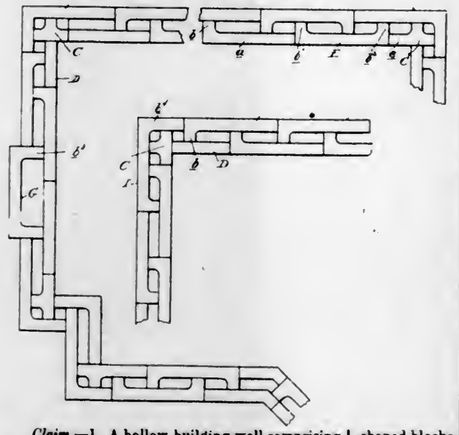
15. A railway-tie comprising a metallic base with a web and two bottom flanges, rail-supports of yielding material located each side of the web and resting upon the flanges of the base, and clamps for securing the supports to the base consisting of metallic straps passed beneath the base and secured by bolts; whereby a support may be withdrawn from the base without removing the tie from the road-bed.

819,978. DRILL. FIVER CAUDLE, Shattuck, Okla. Filed Jan. 3, 1906. Serial No. 294,441.

Claim.—In an apparatus of the class described, a tubular stock having a boring implement at one end and a water-chamber at the other end, a swivel-coupling between the water-chamber and tubular stock, a trough surrounding said stock above the ground, a casing surrounding the stock and independently thereof and slidable through said trough, means for rotating said stock, means for supplying water to said chamber and stock, and means for adjustably suspending said stock and its attached boring implement and water-chamber.



819,979. BUILDING-WALL. CLINTON A. CHAMBERLIN, Detroit, Mich. Filed Apr. 10, 1905. Serial No. 254,880.



Claim.—1. A hollow building-wall comprising L-shaped blocks arranged with their long arms to form respectively the inner and outer faces of the wall and their short arms forming bonds between said faces, the L's in different longitudinal portions of said wall being oppositely arranged and U-shaped blocks uniting said portions of the wall formed by the oppositely-arranged L's.

2. A hollow building-wall comprising L-shaped blocks arranged to form with their long arms respectively the outer and inner faces of the wall and their short arms bonds between said faces, the opposite corners of said wall being formed by oppositely-arranged L's, and U-shaped blocks arranged intermediate the L-shaped blocks extending from said opposite corners.

3. A hollow building-wall comprising L-shaped blocks arranged to form with their long arms respectively the outer and inner faces of the wall, and with their short arms bonds between said faces, the outer corner of said wall being formed by one of said L's and a T-shaped block for forming the inner corner.

4. A hollow building-wall comprising L-shaped blocks arranged to form with their long arms respectively the outer and inner faces of the wall and with their short arms bonds between said faces, an L-shaped block having the short arm thereof one-half the length of the long arm forming the outer corner of the wall and a T-shaped block forming the inner corner.

5. A hollow building-wall comprising L-shaped blocks arranged to form with their long arms respectively the inner and outer faces of the wall and their short arms bonds between said faces, an L-shaped block forming the outer corner of said wall, and an inner corner formed by a block having integral bonds extending to the outer face in line respectively with the adjoining inner faces.

6. In a hollow building-wall having its outer and inner faces formed by separate blocks connected by bonds extending across the intermediate space, a corner formed by an outer L-shaped block and an inner block having integral bonds extending to the outer face in line respectively with the adjoining inner faces of the wall.

7. In a hollow building-wall, a corner having its outer face formed by L-shaped blocks provided with long and short arms reversed in alternate courses, and T-shaped blocks forming the inner corner with bonds in line with the adjoining inner faces, said blocks being arranged in alternate courses with their heads and stems reversed.

8. In a hollow building-wall having its inner and outer faces formed by separate blocks, a corner formed by an outer L-shaped block and an inner block having integral bonds extending to the outer face in line respectively with the adjoining inner faces of the wall, said inner blocks being arranged in alternate courses to maintain said integral bonds and to alternately bond with said adjoining inner faces.

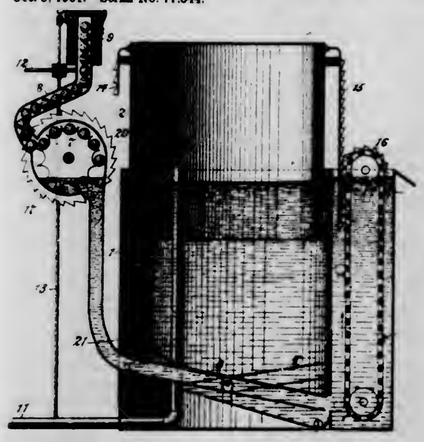
9. In a hollow building-wall having its outer and inner faces formed by separate blocks, a chimney or pilaster formed by a U-shaped block having the end of its parallel arms adjacent to the blocks of the opposite face.

10. In a hollow building-wall having its outer and inner faces formed by separate blocks, a chimney or pilaster formed by a U-shaped block, with the ends of its parallel sides adjacent to one face of said wall, and its third side projecting beyond the plane of the opposite face of the wall.

11. In a hollow building-wall having its outer and inner faces formed by separate blocks, a two-flue chimney or pilaster formed by U-shaped blocks arranged in the opposite faces of said wall, one of said blocks being flush with the face in which it is arranged, and the opposite block forming an offset in the opposite face of the wall.

12. In a hollow building-wall having its outer and inner faces formed of separate blocks, the straight portions of said wall being formed by the combination of L and U shaped blocks, and the corners being formed by a combination of L-shaped and T-shaped blocks.

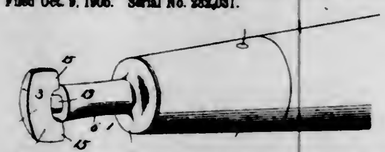
819,980. ACETYLENE-GAS GENERATOR. MELVIN D. COMPTON, New York, N. Y., assignor to Frank Fuller, New York, N. Y. Filed Oct. 3, 1901. Serial No. 77,344.



Claim.—1. The combination in a gas-generating apparatus, of a fluid-receptacle, a gas-holder operating in conjunction therewith and having an outlet, means for automatically feeding predetermined quantities of gas-generating material, a sealed delivering-chute whereof one end communicates with said means and whereof the other end is capable of being elevated to detain the gas-generating material in the fluid-receptacle, a well communicating with the fluid-receptacle and with said chute, means operatively disposed in said well for removing the residuum, and a three-way valve communicating with said chute and adapted for establishing communication with the atmosphere and with said outlet, substantially as described.

2. The combination in an acetylene-gas-generating plant, of a main gas-pipe, a sealed carbid-delivering chute, and a three-way valve communicating with said chute and adapted for establishing communication with the atmosphere and with the gas-pipe, substantially as described.

819,981. **TRACE-FASTENER.** WILLIAM N. CRISP, Baltimore, Md. Filed Oct. 9, 1905. Serial No. 282,031.



Claim.—A trace-fastener for whiffletrees comprising a tubular body having at one end a trace-receiving head and at its opposite end a fastening-shank, an annular flange at the inner end of said trace-receiving head, a boss upon the inner face of said flange and formed with a transverse slot having a recess or socket at one end, a locking-button consisting of a stem slidable in the bore of said body, and a transverse head upon the outer end of said stem, means for preventing the trace from entering between said transverse head and the end of said trace-receiving head, a spring in the bore of said body for projecting said stem, and a pin carried by said stem and coacting with the slot and recess in said boss, substantially as described.

819,982. **SPLIT BUSHING.** ROBERT CROASDALE, Syracuse, N. Y. Filed Mar. 25, 1905. Serial No. 251,866.



Claim.—1. A split bushing comprising two semicylindrical sleeve-sections of sheet metal each having its meeting edges formed with outturned radially-projecting tongues lying in substantially the same plane as, and edge to edge with those of the other section.

2. A split bushing comprising two semicylindrical sleeve-sections of sheet metal each having its meeting edges formed with outturned radially-projecting tongues lying in substantially the same plane as, and edge to edge with those of the other section, and U-shape bars fitted upon said radially-projecting tongues to clamp the sleeve-sections together.

3. A bushing comprising an inner sleeve divided longitudinally forming opposite halves, and semicylindrical sheet-metal sections inclosing the first-named sleeve and having their meeting edges formed with inturned tongues spaced apart and bearing against the adjacent meeting face of its inner sleeve-section, the tongues of one section fitting between those of the other section.

4. A split bushing comprising an inner sleeve divided longitudinally forming opposite halves, and two sheet-metal half-sections each fitted upon the outer face of one of the inner sleeve-sections and having its meeting edges formed with inturned tongues engaging and retaining its inner section, said meeting edges also having outturned clamping-tongues, and means for engaging the clamping-tongues of both sections for locking the bushing-sections together.

5. A casing for laminated semicylindrical bushing-sections, comprising opposed concavo-convex sheet-metal sections arranged base to base each section having its meeting edges formed with oppositely-projecting tongues, those projecting in one direction alternating with those which project in the opposite direction and the tongues of each section fitting between and in substantially the same plane as those of the other section.

6. A bushing comprising an inner cylindrical sleeve divided longitudinally into opposite halves, and two semicylindrical sheet-metal sections inclosing the first-named sleeve and having their meeting edges formed with outturned tongues spaced apart, the tongues of one section fitting between and lying in substantially the same plane as those of the other section.

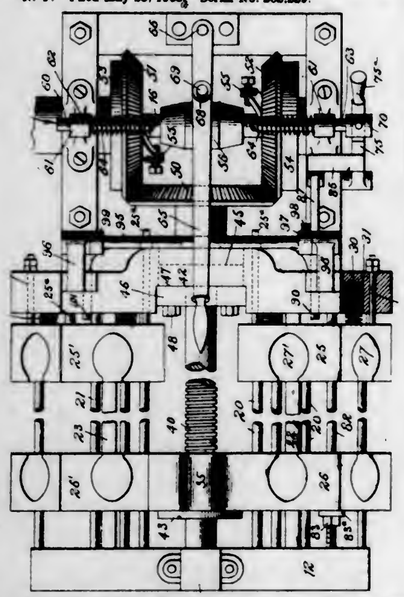
7. A split bushing comprising two semicylindrical sleeve-sections of sheet metal, and radial tongues projecting inwardly from the meeting edges of each section and spaced apart, the tongues of one section fitting between those of the other section.

8. A split bushing comprising two semicylindrical sleeve-sections, there being tongues on the meeting edges of said sections and spaced apart, the tongues of each section fitting between and lying in substantially the same plane as the tongues of the other section and means for holding the tongues of both sections in said plane.

9. A split bushing comprising two semicylindrical sleeve-sections, tongues on the meeting edges of said sections and spaced apart, the tongues of each section fitting between and lying in substantially the same plane as the tongues of the other section and opposite clamping members engaging the tongues of both sections to hold them in such plane.

10. A bushing comprising a split inner sleeve and a casing therefor consisting of sheet-metal sections inclosing the sleeve and having their meeting edges formed with outturned tongues spaced apart, those of one section fitting between those of the other section, and U-shape bars fitted upon said tongues.

819,983. **BUNDLING-PRESS.** TALBOT C. DEXTER, Pearl River, N. Y. Filed May 25, 1905. Serial No. 262,229.



Claim.—1. In a bundling-press the combination of a trough, compression-heads in said trough, operating mechanism for moving one of said heads toward the other, including a clutch, a retracting-spring holding the clutch normally in inoperative position, a latch device holding the clutch in operative position and a tripping device actuated by movement of one of the compression-heads acting on the latch to retract the latch, release the clutch and permit its automatic return to inoperative position.

2. In a bundling-press, the combination of a trough, coacting compression-heads in said trough, reversible operating mechanism for moving one of said heads toward and away from the other, including a reversing clutch and spring for holding said clutch normally in inoperative position, manually-operated means for shifting the clutch to either operative position, a latch device holding the clutch in either position of operative adjustment, and independent tripping devices suitably connected with the latch device and actuated by the movement of the respective compression-heads, to trip the latch, release the clutch device and permit automatic return of the clutch to inoperative position.

3. In a bundling-press, the combination of a trough, compression-heads in said trough, operating mechanism including a clutch, means automatically returning and normally tending to retain the clutch in inactive position, a manually-operated device for shifting the clutch into active position, a latch adapted to hold the clutch in its active position, and a trip suitably connected with and acting directly upon the latch and actuated by the press.

4. In a bundling-press, the combination of a trough, coacting compression-heads in said trough, operating mechanism for moving one of said heads toward the other for compressing a bundle between the heads, a clutch included in the operating mechanism, a manually-operated automatically-released clutch-actuating device, a latching device adapted to hold the clutch-actuating device in its operative position, and a trip suitably connected with and acting directly upon the latching device and actuated by the compression action of the press.

5. In a bundling-press, the combination of a trough, coacting compression-heads movably supported in said trough, power mechanism for moving one of said heads toward and away from the other, a reversible clutch mechanism included in said power mechanism, a manually-operated clutch-actuating device, means for automatically returning the clutch mechanism to inactive position and normally retaining it in said position, a latching device adapted to hold the clutch mechanism in either of its active shifted positions, and means adapted to be acted upon independently by the compression-heads for actuating the latching device to release the clutch mechanism.

6. In a bundling-press, the combination of a trough, coacting compression-heads in said trough, a compression-screw having a gear, a power-shaft carrying a loosely-mounted gear meshing with the gear on the compression-screw, a clutch for locking the loose gear to the power-shaft on which it is carried, a clutch-actuating spool, a spool-shifting arm mounted upon a rod, means for holding said arm and shifting rod in inactive position, a tappet upon said shifting rod, a latching-lever adapted to engage said tappet for holding the shifting rod and connected parts in shifted position, and a tripping device suitably connected with and acting directly upon the latching-lever and mounted in position to be operated by one of the compression-heads.

7. In a bundling-press, the combination of a pair of compression-heads, reversible power and screw mechanism for moving one of said heads toward and from the other, a bundling-trough for supporting matter to be compressed and in which the traveling compression-head slides, a clutch and shifting device therefor, connecting either the direct or reverse power mechanism with the operating-screw, springs automatically retracting the clutch from both the direct and reverse power mechanisms, rendering both inactive, a latch-lever retaining the clutch in either active position in which it is set and a tripping device acting directly on the latch-lever, retracting the same and permitting the automatic return of the clutch to inactive position when a predetermined degree of pressure is reached, substantially as described.

8. In a bundling-press, the combination of a trough, the coacting compression-heads mounted in said trough, a compression-screw having a gear, a power-shaft carrying two loosely-mounted reversely-arranged gears in mesh with the gear of the screw, independent clutches for locking the respective loose gears upon the power-shaft, a double-acting spool adapted to be shifted in two directions, a spool-shifting arm mounted upon a rod, means for holding said arm and shifting rod in inactive position, a tappet upon said shifting rod, a latching-lever adapted to engage said tappet for holding the shifting rod and connected parts in either of its shifted positions, a spring tending to throw said latching-lever into engagement with said tappet, and tripping devices suitably connected with and acting directly upon the latching-lever and mounted in position to be operated by the compression-heads.

9. In a bundling-press, the combination of a trough, the coacting compression-heads movably mounted in said trough, a compression-screw having a gear, a power-shaft carrying two loosely-mounted reversely-arranged gears in mesh with the gear of the screw, independent clutches for locking the respective loose gears upon the power-shaft, a double-acting spool adapted to be shifted in two directions, a spool-shifting arm mounted upon a rod, an operating-lever, automatic return-springs for holding said shifting rod and connected parts in inactive position, a tappet upon said shifting rod, a latching-lever adapted to engage said tappet for holding the shifting rod and connected parts in either of its shifted positions, a spring tending to throw said latching-lever into engagement with said tappet, and tripping devices suitably connected with and acting directly upon the latching-lever and mounted in position to be operated by the compression-heads.

10. In a bundling-press, the combination of a suitable frame, a trough supported by said frame, coöperating compression-heads movably mounted in said trough, operating mechanism including a clutch for causing one of said heads to move toward the other, suitable clutch-actuating means, a rigid abutment upon the frame, springs supported between said abutment and said other compression-head, a latching device adapted to hold the clutch-actuating means in active position, and a tripping device suitably connected with and acting upon the latching device and supported upon said abutment in position to be engaged by the movement of said other compression-head toward the abutment.

11. In a bundling-press, the combination of a suitable frame, a trough supported by said frame, coöperating compression-heads movably mounted in said trough, operating mechanism including a clutch for causing one of said heads to move toward and away from the other, suitable clutch-actuating means, a rigid abutment upon the frame, springs supported between said abutment and said other compression-head, a latching device adapted to hold the clutch-actuating means in active position, a tripping device suitably connected with and acting upon the latching device and supported upon said abutment in position to be engaged by the movement of said other compression-head toward the abutment, and a second tripping device also connected with and acting upon the latching device and arranged to be actuated by the release movement of the press

12. In a bundling-press, the combination of a suitable frame, a bundling-trough mounted upon said frame, a traveling compression-head supported in said trough, operating mechanism for said traveling compression-head including a clutch, suitable clutch-actuating means, a latching device adapted to hold the clutch-actuating means in its operative position, an abutment upon the frame, a second compression-head mounted in said trough adjacent to said abutment, springs supported between said abutment and said second compression-head, a tripping-rod supported upon said abutment and projecting into the path of said second compression-head, a suitable connection between said tripping-rod and the latching device, another tripping-rod suitably connected with the latching device, and a tappet upon said other tripping-rod supported in the path of the traveling compression-head and adapted to be actuated by the return movement of said head.

13. In a bundling-press, the combination of a suitable frame, a bundling-trough mounted upon said frame, a traveling compression-head supported in said trough, operating mechanism for said traveling compression-head including a clutch, suitable clutch-actuating means, a spring-actuated latching-lever adapted to hold the clutch-actuating means in its operative position, an abutment upon the frame, a second compression-head movably mounted in said trough adjacent to said abutment, a tripping-rod supported upon said abutment and projecting into the path of said second compression-head, a suitable connection between said tripping-rod and the latching-lever, a rock-arm connected with the latching-lever, a second tripping-rod connected with said rock-arm and projecting parallel with the trough to a point adjacent to the retracted position of the traveling compression-head, a tappet upon said second tripping-rod, a tappet upon the traveling compression-head engaging the tappet upon the tripping-rod, and an operating-lever.

14. In a bundling-press, the combination of a trough, coacting compression-heads movably mounted in the trough, power mechanism for moving one of said heads toward and away from the other, a clutch included in the power mechanism, clutch-actuating means including a shiftable tappet-rod, means for normally retaining the clutch-actuating means in inactive position, a spring-actuated latching-lever adapted to engage the tappet of said shiftable rod for holding the clutch-actuating means in active position, a trip-rod supported in the path of one of the compression-heads, and a thrust-arm connecting said trip-rod with the latching-lever.

15. In a bundling-press, the combination of a suitable frame, a bundling-trough mounted upon said frame, a traveling compression-head supported in said trough, operating mechanism for said traveling compression-head including a clutch, automatically-released clutch-actuating means, a spring-actuated latching-lever having a projecting portion suitable for a hand-grip and adapted to hold the clutch-actuating means in its operative position, a second compression-head also mounted in said trough, a tripping-rod supported in the path of one of the compression-heads, and a suitable connection between said tripping-rod and the latching-lever.

16. In a bundling-press, the combination of a suitable frame, a bundling-trough mounted upon said frame, coöperating compression-heads supported in said trough, a compression-screw arranged to move one of said heads toward and away from the other, a power-shaft, reversible gearing between said power-shaft and said screw, double-acting clutch mechanism included in said reversible gearing, a clutch-actuating mechanism including a sliding rod and a clutch-actuating arm mounted upon said rod, bearing-brackets in which said rod is mounted, springs upon said rod confined upon opposite sides of said clutch-actuating arm between said brackets, an operating-lever engaging said clutch-actuating arm, a latching device adapted to engage said rod, and a tripping device suitably connected with the latching device and arranged to be actuated by the press.

17. In a bundling-press, the combination with a pair of parallel bundling-troughs, compression-heads mounted in said troughs, power mechanism for moving the compression-heads together, throw-out mechanism for said power mechanism including independent tripping devices actuated by the compression-heads in the two troughs, and a releasing device suitably connected with both of said independent tripping devices.

18. In a bundling-press, the combination with a pair of parallel bundling-troughs, coacting compression-heads mounted in each of said troughs, a power-shaft suitably geared with one of the compression-heads in each trough, clutching mechanism for reversing the action of the power mechanism, a latching-lever adapted to hold the reversing mechanism in either of its active shifted positions, a tripping-rod suitably connected with said latching-lever and mounted in position to be actuated by a compression-head of one of the troughs, a rock-shaft having a rock-arm which engages a part connected with said latching-lever, and a second tripping-rod suitably connected with said rock-shaft and supported in position to be actuated by a compression-head in the other trough.

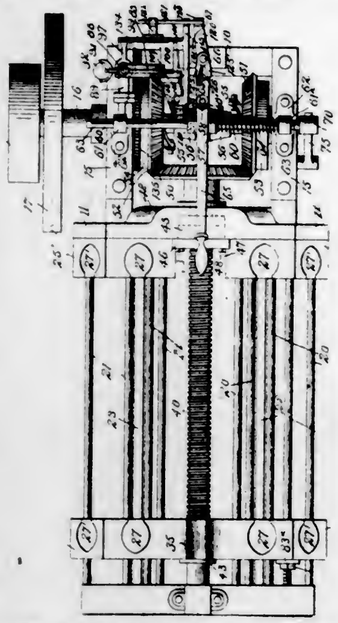
19. In a bundling-press, the combination with a pair of parallel bundling-troughs, compression-heads mounted in said troughs, power mechanism for moving the compression-heads together, throw-out mechanism for said power mechanism, two independent tripping devices actuated by the compression action of heads in the two troughs, a third tripping device actuated by the return or releasing action of a head in one trough, and a releasing device suitably connected with all of said independent tripping devices and with said throw-out mechanism.

20. In a bundling-press, the combination with a pair of parallel bundling-troughs, coacting compression-heads mounted in each of said troughs, a power-shaft suitably geared with one of the compression-heads in each trough, clutching mechanism for reversing the action of the power mechanism, a latching-lever adapted to hold the reversing mechanism in either of its active shifted positions, a tripping-rod suitably connected with said latching-lever and mounted in position to be actuated by the compression action of a head in one of the troughs, a rock-shaft having a rock-arm which engages a part connected with said latching-lever, a second tripping-rod suitably connected with said rock-shaft and supported in position to be actuated by the compression action of a head in the other trough, and a third tripping-rod suitably connected with the latching-lever and arranged to be actuated by the release or return movement of one of the compression-heads.

21. In a bundling-press, the combination of a suitable frame, two parallel bundling-troughs supported by said frame, a pair of rigidly-connected traveling compression-heads operated in said parallel troughs, a compression-screw arranged to operate said connected compression-heads, operating mechanism for said screw including a clutch, suitable clutch-actuating mechanism, means for automatically returning the clutch-actuating mechanism to inactive position, a latching device adapted to hold the clutch-actuating mechanism in its active position, an abutment upon the machine-frame, independent compression-heads mounted in said troughs adjacent to said abutment, springs supported between said abutment and said independent heads, independent tripping-rods mounted in said abutment in position to be engaged and operated by said independent heads, and suitable devices connecting said tripping-rods with the latching device.

22. In a bundling-press, the combination of a pair of parallel troughs, coacting compression-heads movably mounted in each of said troughs, power mechanism for moving one of the compression-heads of each trough toward and away from the other head of each trough, a clutch included in the power mechanism, clutch-actuating means including a shiftable rod carrying tappets, means for normally retaining the clutch-actuating means in inactive position, a spring-actuated latching-lever adapted to engage the tappet of said shiftable rod for holding the clutch-actuating means in active position, independent tripping-rods one of which is supported in the path of one of the compression-heads of each trough, a thrust-arm connecting one of said tripping-rods with the latching-lever, a rock-shaft carrying two rock-arms, a pin or lug upon said thrust-arm engaged by one of said rock-arms, and a connection between the other rock-arm and the other tripping-rod.

819,984. **BUNDLING-PRESS.** TALBOT C. DEXTER, Pearl River, N. Y. Filed June 23, 1906. Serial No. 268,458.



Claim.—1. In a bundling-press, the combination of a trough, compression-heads in said trough, normally inactive power mechanism for moving one of said heads toward the other, a friction slip-clutch included in said power mechanism, and means actuated by a part of said clutch for opening the clutch when said part is retarded.

2. In a bundling-press, the combination of a trough, compression-heads in said trough, normally inactive power mechanism for moving one of said heads toward the other, a friction slip-clutch included in said power mechanism, manually-operated means for throwing in the clutch, and means actuated by a part of said clutch for opening the clutch when said part is retarded.

3. In a bundling-press, the combination of a trough, compression-heads in said trough, normally inactive power mechanism for moving one of said heads toward the other, a friction-clutch included in said power mechanism, a stopping device geared to said clutch, and means actuated by said stopping device for throwing out the clutch.

4. In a bundling-press, the combination of a trough, compression-heads in said trough, normally inactive power mechanism for moving one of said heads toward the other, a friction-clutch included in said power mechanism, manually-operated controlling means for throwing in the clutch, a stopping device geared to said clutch, and means actuated by said stopping device for throwing out the clutch.

5. In a bundling-press, the combination of a bundling-trough, compression-heads in said trough, power mechanism, including reversing-gears and clutches for moving one of said heads toward and away from the other, manually-operated means for independently throwing in said clutches, means actuated by a part of one of said clutches for opening the clutch when the motion of said part is retarded, and a tripping device actuated by the movable compression-head to throw out the other clutch when said head has returned to its extreme outward position.

6. In a bundling-press, the combination of a bundling-trough, compression-heads in said trough, power mechanism for operating one of said heads, two reversely-acting clutches included in the power mechanism, manually-operated controlling means for throwing either of said clutches into action, a stopping device geared to a part of one of said clutches and means actuated by the stopping device for automatically throwing out said clutch, and a tripping device actuated by the movable compression-head to throw out the other clutch when said head has returned to its extreme outward position.

7. In a bundling-press, the combination of a trough, coacting compression-heads in said trough, normally inactive reversible operating mechanism for moving one of said heads toward and away from the other, a stopping device, gearing connecting the stopping device to said operating mechanism, means, connected with the stopping device, adapted to return said mechanism to inactive position from one of its operative positions, a latching device adapted to hold the operating mechanism in its other operative position, and a tripping device suitably connected with the latching device and adapted to be actuated by the release movement of the press.

8. In a bundling-press, the combination of a trough, coacting compression-heads in said trough, normally inactive operating mechanism for moving one of said heads toward the other, a friction-clutch included in the operating mechanism, a stopping device geared to a part of said clutch, a clutch-spool for actuating the clutch, and a device controlled by the stopping device for moving the said spool into inactive position.

9. In a bundling-press, the combination of a trough, coacting compression-heads in said trough, normally inactive operating mechanism for moving one of said heads toward the other, a friction-clutch included in the operating mechanism, a stopping device geared to a part of said clutch, a clutch-spool for actuating the clutch, a hand-lever for moving said spool into active position, and a device controlled by the stopping device for moving the said spool into inactive position.

10. In a bundling-press, the combination of a bundling-trough, compression-heads in said trough, power mechanism for actuating one of said heads, a friction-clutch included in said power mechanism, a clutch-actuating spool having wings, a hand-lever for moving said spool into active position, a stopping device suitably geared to the clutch, and a pin or rod suitably connected with and controlled by the stopping device and adapted to be projected into engagement with the wings of the spool for moving the spool into inactive position.

11. In a bundling-press, the combination of a bundling-trough, compression-heads in said trough, power mechanism for actuating one of said heads, a friction-clutch included in said power mechanism, a clutch-actuating spool provided with spiral rings, a stopping device suitably geared to a part of the clutch, and a pin or rod suitably connected with and controlled by the stopping device and adapted to project into the path of the spiral wings upon the spool for moving the spool into inactive position.

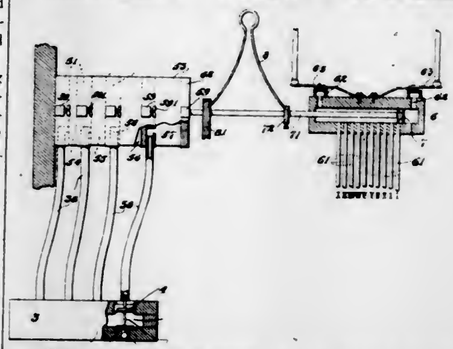
12. In a bundling-press, the combination of a trough, compression-heads in said trough, power mechanism for operating one of said heads, a friction-clutch included in said power mechanism, a clutch-actuating spool, a hand-lever adapted to move the spool into active position, a stopping device suitably geared to the clutch, a rod or pin adapted to be projected into engagement with the spool for moving it into inactive position, a rock-shaft connected with the stopping device and said rod or pin, a rock-arm projecting from said rock-shaft and carrying an antifriction-roller, a cam-bar movably supported above said antifriction-roller, and means operatively connecting said cam-bar and the operating hand-lever.

13. In a bundling-press, the combination of a trough, compression-heads in said trough, power mechanism for operating one of said heads, a friction-clutch included in said power mechanism, a clutch-actuating spool provided with spiral wings, a hand-lever adapted to move the spool into active position, a stopping device suitably geared to the clutch, a rod or pin adapted to project into the path of the spiral wings for moving the spool into inactive position, a rock-shaft connected with the stopping device and said rod or pin, a rock-arm projecting from said rock-shaft and carrying an antifriction-roller, a cam-bar movably supported above said antifriction-roller, and means operatively connecting said cam-bar and hand-lever.

14. In a bundling-press, the combination of a trough, compression-heads in said trough, power mechanism for operating one of said heads, a friction-clutch included in said power mechanism, a clutch-actuating spool, a hand-lever adapted to move the spool into active position, a stopping device suitably geared to the clutch, a device connected with and controlled by the stopping device for moving the said spool into inactive position, and means operatively connecting said device with the hand-lever.

15. In a bundling-press, the combination of a trough, compression-heads in said trough, power mechanism for operating one of said heads, a friction-clutch included in said power mechanism, a clutch-actuating spool, a hand-lever adapted to move the spool into active position, a stopping device suitably geared to the clutch, a device connected with and controlled by the stopping device for moving the said spool into inactive position, a pivoted arm operatively connected with said device, and coacting lugs upon the pivoted arm and hand-lever.

819,985. **MECHANICAL MUSICAL APPARATUS.** JOSEPH H. DICKINSON, Cranford, N. J. Filed Aug. 26, 1904. Serial No. 222,223.



Claim.—1. In musical apparatus, a tracker, means for moving a perforated music-sheet over said tracker, an adjustable part for modifying the musical effect controlled by a perforation in said sheet, a plurality of means for moving said adjustable part in one direction, and means controlled by certain perforations in such music-sheet for actuating said moving means either separately or simultaneously.

2. In musical apparatus, a tracker, means for moving a perforated music-sheet over said tracker, an adjustable part for modifying the musical effect controlled by a perforation in said sheet, a plurality of means for moving said adjustable part, each of said last-named means being constructed and fitted to move said part to a different extent, and means controllable by certain perforations in such music-sheet for actuating said moving means simultaneously or separately.

3. In musical apparatus, a tracker, means for moving a perforated music-sheet over said tracker, an adjustable part for modifying the musical effect controlled by a perforation in said sheet, a plurality of pneumatic means for moving said adjustable part, each of said last-named means being constructed and fitted to move said part to a different extent, and means controllable by certain perforations in such music-sheet for actuating said moving means either separately or simultaneously.

4. In musical apparatus, a tracker having a plurality of ducts in addition to those controlling the sound-producing devices, means for moving a perforated music-sheet over said tracker, an adjustable part for modifying the musical effect controlled by a perforation in said sheet, and a plurality of independently-operated pneumatic means for moving said part in one direction, each of said last-named means being operatively connected to one of said ducts, said pneumatic means being constructed and fitted for either separate or cumulative operation.

5. In musical apparatus, a tracker having a plurality of ducts in addition to those controlling the sound-producing devices, means for moving a perforated music-sheet over said tracker, an adjustable part for modifying the musical effect controlled by a perforation in said sheet, and a plurality of independently-operated pneumatic means for moving said part each to a different extent, each of said last-named means being operatively connected to one of said ducts, said pneumatic means being constructed and fitted for either separate or cumulative operation.

6. In musical apparatus, a tracker having a plurality of ducts in addition to those controlling the sound-producing devices, means for moving a perforated music-sheet over said tracker, an adjustable part for modifying the musical effect controlled by a perforation in said sheet, and a plurality of independently-operated pneumatic means for moving said part in one direction, each of said last-named

means being operatively connected to one of said ducts, said last-named means being constructed and fitted to operate separately or simultaneously.

7. In musical apparatus, a tracker having a plurality of ducts in addition to those controlling the sound-producing devices, means for moving a perforated music-sheet over said tracker, an accenting-valve, a plurality of collapsible sections, each operatively connected to said valve for moving said valve to a different extent, and a connection leading from each of said sections to one of said ducts, said pneumatic means being constructed and fitted for either separate or cumulative operation.

8. In musical apparatus, a tracker having a plurality of ducts in addition to those controlling the sound-producing devices, means for moving a perforated music-sheet over said tracker, an accenting-valve, a plurality of collapsible sections, each operatively connected to said valve for moving said valve in the same direction and constructed and fitted for separate or simultaneous operation, and a connection leading from each of said sections to one of said ducts.

9. In musical apparatus, a tracker having a plurality of ducts in addition to those connected with note-actuating devices, means for moving a perforated music-sheet over said ducts, an adjustable part for modifying the musical effect produced by a note-actuating perforation or group of perforations in such music-sheet, a collapsible box connected to said adjustable part and having means for moving it to each of more than two positions, and means for varying the air tension in said box controlled by the passage of air through a plurality of said ducts during such movement of the sheet.

10. In musical apparatus, a tracker having a plurality of ducts in addition to those connected to note-actuating devices, means for moving a perforated music-sheet over said ducts, an adjustable part for modifying the musical effect produced by a note-actuating perforation or group of perforations in such music-sheet, a collapsible box connected to said adjustable part and having a plurality of separate chambers, and separate means for varying the air tension in each of said chambers controlled by the passage of air through one of said ducts during such movement of said sheet.

11. In musical apparatus, a tracker having a plurality of ducts in addition to those connected with note-actuating pneumatics, means for moving a perforated music-sheet over said ducts, an adjustable part for varying the musical effect produced, a collapsible box having a plurality of separate chambers, and means connected with each of said ducts for varying the air tension in one of said chambers, whereby said adjustable part may be moved in one direction to a plurality of positions greater in number than said ducts.

12. In musical apparatus, adjustable means for varying the accentuation at different points of the musical scale, a power-actuated device having a plurality of separately-actuable sections for moving said adjusting means, and means for controlling the actuation of said sections in various combinations to effect different adjustments of said accentuating means.

13. In musical apparatus, a tracker, means for moving a perforated music-sheet over said tracker, an adjustable part for modifying the musical effect controlled by perforations of the said sheet, and a plurality of pneumatically-actuated means for moving said adjustable part either by their separate or cumulative operation.

14. In musical apparatus, a tracker having a plurality of ducts in addition to those controlling the sound-producing devices, means for moving a perforated music-sheet over said tracker, an adjustable part for modifying the musical effect controlled by a perforation in said sheet, and a plurality of independently-operated pneumatic means for moving said adjustable part either by their separate or cumulative operation.

15. In musical apparatus, a tracker, means for moving a perforated music-sheet over said tracker, an adjustable part for modifying the musical effect controlled by a perforation in said sheet, a plurality of pneumatically-actuated means having different ranges of movement for moving said part either by their separate or cumulative operation, said part having a range of movement equal to the sum of the ranges of movement of said moving means.

16. In a musical apparatus, the combination of a series of pipes or ducts, a valve mechanism therefor, and means for adjusting the said valve mechanism to control said pipes or ducts *seriatim*, said means comprising a plurality of collapsible chambers and pneumatic means for collapsing them severally or in combination.

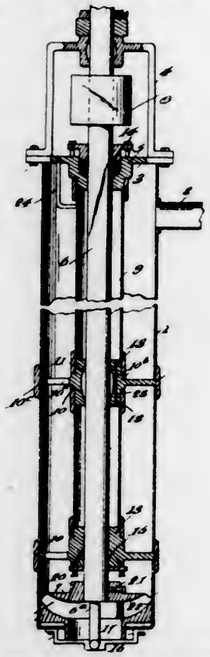
17. In a musical apparatus, the combination of a series of pipes or ducts, a valve mechanism therefor and means for adjusting the said valve mechanism to control said pipes or ducts *seriatim*, said means comprising a plurality of pneumatics and means for operating them severally or in combination to adjust the said valve mechanism.

18. In a musical apparatus, the combination of a series of pipes or ducts, a valve mechanism therefor, and cumulatively-operative pneumatic means for adjusting the said valve mechanism to control said pipes or ducts *seriatim*.

19. In musical apparatus, the combination of a series of pipes or ducts and a sliding valve for controlling them *seriatim*, and cumulatively-operative pneumatic means for shifting the said valve to any of a series of determinate positions.

20. In musical apparatus, the combination of a series of pipes or ducts and a sliding valve for controlling them *seriatim*, and cumulatively-operative pneumatic means for shifting the said valve to any of a series of determinate positions, the last said means including a pneumatic tracker-board and perforated music-sheet for controlling said valve.

819,986. **PUMP FOR WELLS.** ARTHUR N. ELLIS, San Bernardino, Cal. Filed June 2, 1905. Serial No. 263,462.



Claim.—1. In a pump for wells of the type described, the combination of a well tubing or pipe, a shaft arranged therein, a propeller or propellers carried by said shaft, bearing-brackets for the shaft in the length of the well-tubing, and oil-pipes surrounding the shaft in the length thereof.

2. In a pump for wells of the type described, the combination of a well tubing or pipe, a shaft arranged therein, a propeller or propellers carried by said shaft, bearing-brackets for the shaft in the length of the well-tubing, and oil-pipes surrounding the shaft in the length thereof, and connected with the bearing-brackets therefor.

3. In a pump for wells of the type described, a well-tubing, a shaft arranged therein, a propeller carried by the shaft, bearing-brackets within the tubing and provided with bearings for the shaft, a lubricant-receiving pipe surrounding the shaft and comprising sections connected with the bearing-brackets to protect the bearings thereof from the action of foreign matter elevated with the liquid discharge from the well, the bearing-brackets being provided with oil-passages therethrough whereby the lubricant in the lubricant-pipe may pass to the various brackets in the length of the shaft.

819,987. **SAFETY-RAZOR.** LEONARD B. GAYLOR, Stamford, Conn. Filed Sept. 21, 1905. Serial No. 279,560.

Claim.—1. In a safety-razor the combination of a handle, a centrally-perforated guard-plate, a centrally-perforated blade, a bolt, upon which the guard-plate and blade both rotate, and a thumb-nut which engages with the bolt within the handle, the bolt having a flattened head which overlaps the blade and clamps it to the guard-plate.



2. In a safety-razor the combination of a handle and a guard-plate set at an angle relative to each other, a bolt, and a thumb-nut, the bolt having a flattened head arranged at substantially the same angle relative to the axis of the bolt as that existing between the handle and the guard-plate and which overlaps the blade and clamps it to the guard-plate.

3. In a safety-razor the combination with a handle, a guard-plate, a blade and a back plate, of a bolt and a thumb-nut which engage each other within the handle, the bolt having a flattened head which overlaps the back plate and clamps it and the interposed blade against the guard-plate, and means to register the guard-plate, blade and back plate.

4. In a safety-razor the combination of a handle and a guard-plate arranged at an angle relative to each other, a blade, a back plate, a bolt and a thumb-nut, the bolt having a flattened head arranged at the same angle relative to the axis of the bolt as that existing between the guard-plate and the handle, and which overlaps the back plate and clamps it, the blade and the guard-plate together, and means to register the guard-plate, blade and back plate with each other.

5. In a safety-razor the combination with a handle of a guard-plate having a registering device for the blade at each corner, a blade which registers with the guard-plate, a bolt and a thumb-nut which engage each other within the handle, the bolt having a flattened head which overlaps the blade and clamps it to the guard-plate.

6. In a safety-razor the combination with a handle of a guard-plate having a registering device for the blade at each corner, a blade which registers with the guard-plate, a back plate which likewise registers with the guard-plate, a bolt and a thumb-nut which engage each other within the handle, the bolt having a flattened head which overlaps the back plate and clamps it and the blade to the guard-plate.

7. In a safety-razor the combination of a handle and a guard-plate, rotatably connected together, registering and corner-protecting devices for the blade located at the corners of the guard-plate, a bolt and a thumb-nut, the bolt having a flattened head arranged at substantially the same angle relative to the axis of the bolt as exists between the guard-plate and handle, the head of which overlaps the blade and clamps it to the guard-plate.

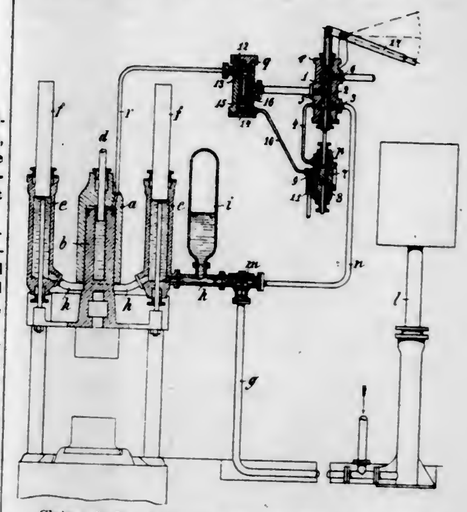
8. In a safety-razor the combination of a handle and a guard-plate rotatably connected together and arranged at an angle relative to each other, the guard-plate having registering and protecting devices for the corners of the blade located at its corners, a back plate which registers with the registering devices on the guard-plate, a bolt and a thumb-nut, the bolt having a flattened head which overlaps the back plate and clamps it and the blade to the guard-plate.

9. In a safety-razor the combination of a handle, a guard-plate having laterally projecting registering devices for the blade and back plate at each of its corners, a blade and a back plate both of which fit within the registering devices on the guard-plate and means to clamp the back plate and blade and guard-plate to the handle.

10. In a safety-razor the combination of a handle and a triangular guard-plate set at an angle relative to each other, the guard-plate having a registering device for the blade at each of its corners, a triangular blade sharpened on each edge and which rests against the guard-plate and is registered by its registering devices, a bolt located partly within the handle and a thumb-nut which engages with the bolt, the bolt having a flattened head arranged at an angle to the axis of the bolt and which overlaps the blade and clamps it to the guard-plate.

11. In a safety-razor the combination of a handle and a triangular guard-plate set at an angle relative to each other, the guard-plate having a registering device for the blade at each of its corners, a triangular blade sharpened on each edge and which rests against the guard-plate and is registered by its registering devices, a triangular back plate, the edges of which are recessed between its corners, which corners register with the registering devices on the guard-plate, a bolt located partly within the handle and a thumb-nut which engages with the bolt, the bolt having a flattened head arranged at an angle relative to its axis and which overlaps the back plate and clamps it and the blade against the guard-plate.

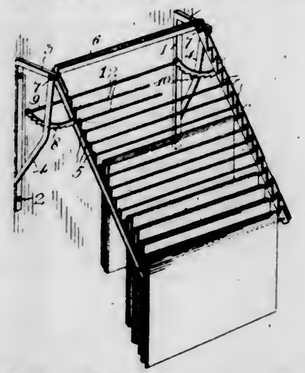
819,988. **HYDRAULIC FLY-PRESS.** BERTHOLD GERDAU, Düsseldorf, Germany. Filed Oct. 11, 1899. Serial No. 733,942.



Claim.—1. In a hydraulic press, the combination with a pressure-accumulator and withdrawal or return cylinders connected therewith, and with a pressure-ram cylinder or working piston-cylinder, of a pressure-conduit connecting the withdrawal or return cylinders with said pressure-ram, a separate pressure-chamber containing an elastic fluid on said conduit for producing pressure in said conduit to operate the pistons of the withdrawal or return cylinders, and a check-valve between the said chamber and the accumulator by which the accumulator may be cut off from said pressure-conduit, substantially as specified.

2. In a hydraulic press, the combination with a pressure-accumulator and withdrawal or return pistons rigidly connected to the working piston or ram, of a separate pressure-conduit between the working piston or ram-cylinder and the cylinders of the return-pistons, a separate chamber on said conduit filled with an elastic fluid, a pipe intermediate the said chamber and the working cylinder and connecting with the accumulator, and controlling-valve mechanism in the conduit, said valve mechanism comprising a check-valve, the check-valve having a motor-piston, and connections for lifting the valve in exhausting the press, substantially as specified.

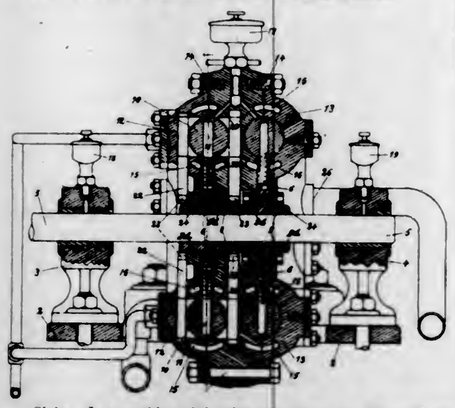
819,989. **PAPER-RACK.** CARL E. GILBERT, Foley, Minn. Filed Sept. 7, 1905. Serial No. 277,445.



Claim.—The herein-described paper-rack, comprising supporting-brackets, a rectangular frame, made of channel metal and comprising an integral inner end bar and side bars, the inner flanges of said side bars having upwardly-opening notches in their upper sides; said rack-frame being pivotally mounted near its inner corners be-

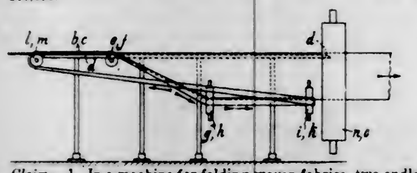
tween the said brackets, rack-bars pivoted to the side bars of the frame, a rod connecting the free ends of said rack-bars together, studs on the brackets for engagement by the rack-bars to support the frame at any desired adjustment, and paper-supporting rods having their ends in the notches of the side bars of the frame, and removable from the frame, substantially as specified.

819,990. **EXPLOSION-TURBINE.** FRITZ H. GRAWERT-ZELLIN, New York, N. Y. Filed Nov. 19, 1904. Serial No. 233,398.



Claim.—In a machine of the character described, the combination of an annular cylinder of substantially circular cross-section, rotary pistons in said cylinder, a main driving-shaft and a circular disk mounted thereon and supporting said pistons inlet and exhaust openings in the wall of said cylinder for the explosive power medium and the exhaust-gases oppositely hinged and coöperating traps forming an explosion-chamber in conjunction with said pistons, lateral projections at the hinges of said traps, rings mounted upon the main driving-shaft having circular grooves engaging said lateral projections when the traps are in closed position and cam projections interrupting said grooves and actuating said lateral projections so as to open said traps shortly prior to the passage of the pistons and sparking devices within said cylinder for igniting the explosive mixture, substantially as described.

819,991. **MACHINE FOR FOLDING WOVEN FABRICS.** MORITZ A. GUTTE, Reichenau, Germany. Filed June 27, 1905. Serial No. 267,181.



Claim.—1. In a machine for folding woven fabrics, two endless guide-chains adapted for holding the lists of the fabric and for conducting them toward each other from an upper to a lower horizontal plane, and a stretching and folding bar placed midway between the chains in the said upper plane.

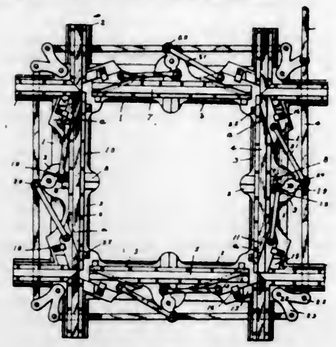
2. In a machine for folding woven fabrics, two endless guide-chains adapted for holding the lists of the fabric and for conducting them toward each other from an upper to a lower horizontal plane, a pair of pressing-rolls, and a stretching and folding bar placed midway between the chains in the said upper plane and extending to between the said rolls.

3. In a machine for folding woven fabrics, two endless guide-chains adapted for holding the lists of the fabric and for conducting them first parallel to each other in an upper horizontal plane, then toward one another in an inclined plane, and thereafter parallel again in a lower horizontal plane, and a stretching and folding bar placed midway between the chains in the said upper plane.

4. In a machine for folding woven fabrics, two endless chains adapted for holding the lists of the fabric and for conducting them toward each other from an upper to a lower plane, a pair of pressing-rolls, and a stretching and folding bar placed midway between the said chains and extending to between the said rolls.

5. In a machine for folding woven fabrics, two endless guide-chains adapted for holding the lists of the fabric, two pairs of horizontal guide-rolls arranged in one horizontal plane, two pairs of vertical guide-rolls arranged in a second horizontal plane below the first, a pair of pressing-rolls, and a stretching and folding bar placed midway between the said chains and extending in the upper horizontal plane to between the said pressing-rolls.

819,992. **FROG OR CROSSING.** CHARLES C. HARDMAN, Mansfield, Ohio. Filed Dec. 27, 1905. Serial No. 293,491.



Claim.—1. In a frog for crossings, a frame, a standard mounted on said frame, rails having beveled ends secured to the frame, reversing-levers pivotally secured to the standard or plate, movable rails having inclined ends adapted to close the opening between the intersecting track-rails, link-bars pivotally secured to the reversing-bars and means to impart movement to said bars simultaneously.

2. In a frog for crossings, a frame, a plate mounted thereon, beveled rails secured to said plate, movable rails having their ends beveled slidably secured to the plate, connecting mechanism adapted to actuate said movable rails, link-bars pivotally secured to the reversing-bars, reversing-bars pivotally secured to the frame.

3. A frog for railways comprising a frame, a plate mounted thereon, stationary rails having their ends secured to the plate and frame, a shoulder formed underneath the beveled portion of the rails, a shoe having a flange extending into said shoulder, a rail made integral with said shoe having a beveled portion adapted to contact with the beveled portion of the stationary rails, lugs and a clamp adapted to form a way for said shoe, and means to reciprocate said shoe.

4. In a railway-frog, a frame, a plate mounted thereon, stationary beveled rails, movable beveled rails adapted to reciprocate in ways, a reversing-lever, connecting mechanism connecting said movable rails and reversing-levers, angular levers secured to the frame having divergent arms made integral therewith, link-bars connected to said levers and the reversing-bar.

5. A crossing for railways, a frame, a plate mounted thereon, stationary rails secured to the plate and frame, shoes having a beveled portion of a rail secured thereto, means to impart a slidable movement to the shoes closing opening or gap to form a continuous rail, connecting-bars secured to the reversing-bars, link-bars pivotally secured to the connecting-bars.

6. A crossing for intersecting tracks, a frame, a standard mounted thereon, stationary beveled rails secured to the plate, reversing-bars pivotally secured to the plate at diametric points, movable rails having a shoe fitted to suitable ways, connecting-bars adapted to pivotally connect the reversing-bar and shoes carrying the movable rails, angular levers pivotally secured to each corner of the frame having arms diverging therefrom, link-bars connected to angular levers whereby the shoes carrying the movable rail can be actuated simultaneously.

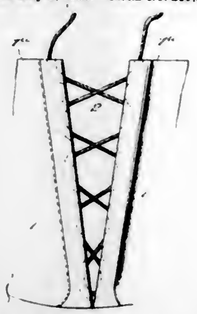
7. In a frog or crossing for intersecting tracks, a frame, a plate or standard mounted thereon for the purpose of supporting an operating mechanism, stationary rails secured to the plate having their ends beveled, movable beveled rails adapted to slidably contact with the beveled ends of the stationary rails to close or provide an opening between intersecting rails, means to operate said movable rails simultaneously.

8. In a frog or crossing for intersecting tracks, a frame, a plate mounted thereon, rails having beveled ends secured to the plate, movable rails mounted on a shoe slidably secured to the plate, reversing-bars pivotally secured to the frame, connecting-bars secured to said bars, and means to actuate the movable rods simultaneously as described.

9. In a frog or crossing for intersecting tracks, a frame, a plate mounted thereon, beveled rails secured to said plate, movable rails having their ends beveled slidably secured to said plate, link-bars pivotally attached to one end of said movable rails, reversing-bars pivotally secured to the frame and link-bars.

10. In a frog or crossing, a frame, a standard, stationary rail-sections, movable rail-sections, reversing-bars secured to the standard, link-bars connecting the reversing-bars and movable rail-sections, and means to simultaneously actuate said movable rail-sections as described.

819,993. **LACING.** WILLIAM E. HAWS and GEORGE W. HILL, New York, N. Y. Filed May 9, 1905. Serial No. 259,584.

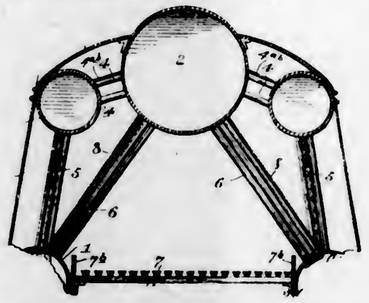


Claim.—1. In a lace-fastening, the combination of flaps, each flap composed of inner and outer plies, a filling-strip between the plies and having portions recessed to form seats, curved tubes arranged in the seats of the filling-strip between the inner and outer plies, and a lace passed through said tubes, as described.

2. In a lace-fastening, the combination of spaced parts to be secured together, a lacing therefor, and tubular engaging members at intervals in the length of the spaced parts and having the lacing passed therethrough, certain of said engaging members being provided with lacing engaging and holding devices interiorly thereof to prevent movement of the lacing through the tubular engaging members.

3. In a lace-fastening, the combination of spaced parts to be secured together, a lacing therefor, and tubular engaging members at intervals in the length of the spaced parts and having the lacing passed therethrough, certain of said engaging members being provided with lacing-engaging devices interiorly thereof, said lacing-engaging devices being composed of a movable tongue and coöperating projections adapted to engage portions of the lacing to prevent movement of the lacing through the tubular engaging members.

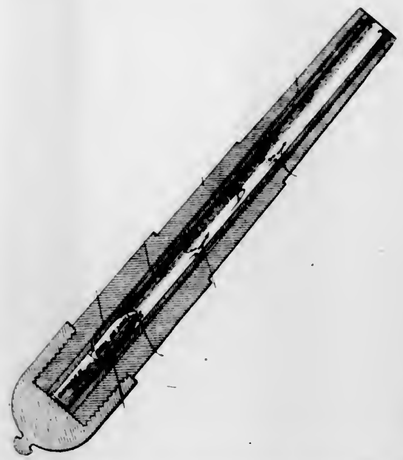
819,994. **MARINE BOILER.** BIRGER HEFTYE, Tula, Mexico, assignor of one-half to William Bradshaw, Vera Cruz, Mexico. Filed Apr. 7, 1905. Serial No. 254,381.



Claim.—1. A marine boiler comprising drums and banks of communicating tubes therebetween, the drums having sunken or depressed surfaces for the attachment thereto of said banks of tubes, with the lateral walls of the depressions extending continuously therearound and a uniform depth below the general external boiler-surface.

2. A marine or other boiler, employing a series of drums arranged in the bottom, the lateral portions and upper part of the casing, baffle-plates laterally subdividing the chamber or casing, and horizontal baffling arrangement of partitions, one of the plates of each contacting with the rear end of said casing and stopping a short distance from the front end of the latter, and a second plate serving as a damper effective to close the vacancy between the aforesaid plate and the opposite or front end of said casing and means for actuating said damper.

819,995. **SMOOTH-BORE ROTATING CANNON.** WILLIAM C. HEITKAMP, Pleasant Ridge, Ohio. Filed Aug. 3, 1904. Serial No. 219,376.



Claim.—1. A smooth-bore cannon having a series of gas-passages spirally arranged with reference to the bore of the cannon, and communicating at their ends with the said bore.

2. A smooth-bore cannon comprising inner and outer tubular sections and having a series of curved gas-passages arranged spirally with reference to the bore, the ends of said passages communicating with the bore of the cannon.

3. A smooth-bore cannon having a series of spirally-extending gas-passages, the ends of which communicate with the bore of the cannon, said gas-passages being graduated as specified.

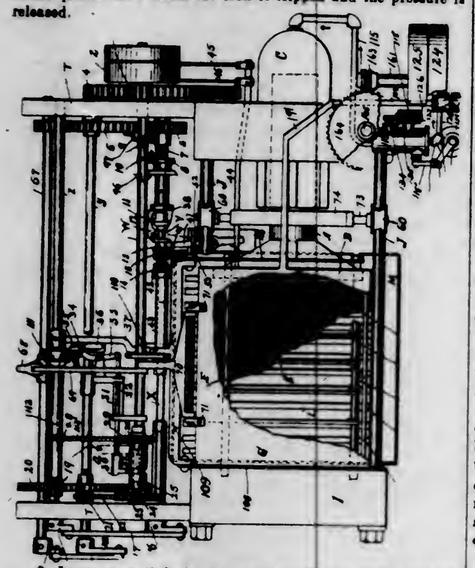
4. A smooth-bore cannon comprising the inner and outer tubular sections, the inner tubular section having a series of grooves upon the exterior thereof, each groove being spiral relative to the bore and having an inlet-passage communicating at its rear end with the bore, and an outlet-passage communicating at its forward end with the bore, said grooves being graduated in length as specified.

819,996. **AUTOMATIC PRESS.** HOMER A. HERR, Philadelphia, Pa. Filed Oct. 6, 1903. Serial No. 176,020.

Claim.—1. In an automatic press the combination of a pressing-chamber, a platen moving in the said chamber, means for actuating the platen compressively, means for arresting the compressive action of the platen at a predetermined pressure limit, an indicator, a trip and a lock, whereby the indicator indicates a time period for predetermined maximum pressure, the lock locks the elements during this period and the trip trips the lock at the expiration of this period, thus unlocking the pressure, as and for the purpose set out.

2. In an automatic press the combination of a pressing-chamber, a pressing means moving in the said chamber, means for actuating the said pressing means, an indicator, means for predetermining a maximum pressure, a lock for sustaining the said maximum pressure at maximum, an adjustable trip guided in its adjustment by the indicator and means for automatically returning the pressing means to its normal position at the expiration of its predetermined sus-

tained period after which the lock is tripped and the pressure is released.



3. In an automatic hydraulic press the combination of a hydraulic cylinder, a piston moving in the said cylinder, a pump having a fast and loose pulley, a liquid-conductor leading from the pump to the said cylinder, a belt-shifter actuating a belt from the fast to the loose pulley of the pump at maximum pressure automatically and means to force the belt automatically on the fast pulley on the fall of pressure.

4. In an automatic hydraulic press having a compression-chamber, a platen moving in the said chamber, automatic means for starting the action of the platen, automatic means for arresting the compressive action of the platen at maximum pressure, automatic means for maintaining maximum pressure for a predertemined period of time comprising a moving trip, a fixed lock, and a time-indicator for the trip whereby the indicator prescribes the position for the trip and at the expiration of the time so indicated the lock will be moved by the trip thus releasing the pressure on the platen

5. In an automatic press the combination with the pressing-chamber of a platen moving in the said chamber, means for actuating the said platen, automatic means for arresting the compressive action of the platen at predetermined maximum pressure, means for predetermining and indicating maximum pressure and automatic means for releasing pressure when it reaches its predetermined maximum, means for maintaining a maximum pressure means for varying the period of time during which maximum pressure can be maintained and means for returning the pressing means to normal thereafter.

6. The combination in an automatic press of a compression-chamber, a platen moving therein, a pump, means for actuating the pump, a hydraulic cylinder a liquid-conductor from the pump to the hydraulic cylinder, a valve in the said conductor, hydraulic means for actuating the said valve controlled by the pressure in the cylinder means for maintaining the said valve in position whereby the pressure is prolonged in the cylinder at maximum and means for automatically exhausting the liquid in the cylinder.

7. The combination in an automatic press of a compression-chamber, a platen moving in the said the chamber, a hydraulic cylinder, a pump, a conductor leading from the pump to the said cylinder, a belt-shifter, hydraulic means for actuating the belt-shifter and automatic means for exhausting the water from the said cylinder after the said belt is shifted.

8. The combination in an automatic hydraulic press of a compression-chamber, a platen moving in the said chamber, a cylinder for carrying the platen ram, a pump, a water connection between the pump and the cylinder, automatic means for stopping the pump, automatic means for sustaining the pressure in the cylinder for any predetermined time, automatic means for discharging the water from the cylinder at the limit of such time period and automatic means for starting the pump.

9. The combination in a hydraulic press of a cylinder, a pump having a fast and a loose pulley, a valve-chamber said valve-chamber having a pressure equal with that in the pump and the said cylinder, a hydraulic belt-shifter, a valve in the aforesaid chamber and means for automatically operating the said valve whereby the water is permitted to flow to the belt-shifter to shift the belt from the fast to the loose pulley of the pump thus arresting the pump action.

10. The combination in an automatic press of a compression-chamber, a series of compartments in said chamber, means for cleaning the walls of the said compartments, means for producing pressing action in said chamber to a predetermined maximum, means for sustaining said pressure at a maximum in said chamber for a predetermined time, and means for automatically releasing said pressure at the expiration of the said time.

11. The combination in an automatic press of a compression-chamber, a series of walls dividing the said chamber into a series of compartments, automatic means for cleaning the walls of the said compartments, means for producing pressing action in the said chamber to a predetermined degree, means for sustaining the pressure at maximum for a predetermined time, an adjustable mechanical device for varying the period of high pressure and automatic means for releasing the said pressure at the expiration of the time period.

12. The combination in an automatic press of a compression-chamber, means for producing compressive action in the said chamber to a predetermined high-pressure limit, a belt-shifting device on the moving of which the actuating mechanism for compression ceases, automatic means for moving the said belt-shifter, means for maintaining a uniform high pressure for a predetermined time period and means for automatically releasing the pressure at the expiration of the said period.

13. The combination in an automatic hydraulic press of a cylinder, a platen, a compression-chamber, automatic means for arresting the compressing action of the platen at a predetermined pressure limit, automatic means for sustaining the water in the cylinder for a predetermined time, automatic means for discharging the water from the said chamber at the expiration of said time limit and means to regulate the time intervening between maximum compression and the time of discharge from the said cylinder.

14. The combination in an automatic hydraulic press of a compression-chamber, a platen moving in the said chamber, means for actuating the said platen, a top for the said chamber, automatic means for actuating the said top, a pump, a connection for conveying liquid from said pump to said cylinder, means for automatically stopping the pump, means for maintaining a sustained pressure in the cylinder for a predetermined time and means for automatically starting the pump, said means controlled by the lid-moving mechanism.

15. The combination in an automatic press of a compression-chamber, a platen moving in the said chamber, a means for actuating the said platen, a top for the said chamber, automatic means for actuating the said top, a pump, a liquid-conveyer from the pump to the said cylinder, means for automatically stopping the pump, means for automatically starting the pump said means consisting of a moving element of the machine and means for sustaining the pressure in the cylinder for a predetermined time.

16. The combination in an automatic hydraulic press of a compression-chamber, a platen moving compressively therein, means for actuating the platen, a top for said chamber, a bottom for said chamber, a pump, means for automatically starting the pump means for automatically stopping the pump, means for filling the chamber while the top is open, means for sustaining the pressure in the chamber for a predetermined time while the top and bottom are closed and means for releasing the pressure thus sustained preceding the opening of the bottom, as and for the purpose set out.

17. The combination in an automatic hydraulic press of a compression-chamber, a platen moving in the said chamber, means for actuating the platen, a top for said chamber, a bottom for the said chamber, a pump, means for automatically starting the pump, means for automatically stopping the pump, means for filling the chamber while the pump is idle, means for moving the lid over the chamber also while the pump is idle, means for sustaining the pressure in the chamber after the pump has forced the pressure to a predetermined high-pressure limit, means for sustaining the pressure at this limit for a predetermined time, means for opening the bottom of the chamber after the expiration of this time and automatic means for transferring motion from the bottom-actuating mechanism to the top-actuating mechanism while the pump is idle.

18. The combination in an automatic press of a pressing-chamber, a series of walls forming a series of drainage-racks or partitions in the said chamber, means for automatically cleaning the walls of the said partitions, a pressing means moving therein, means for stopping the pressure at a predetermined time, means for sustaining the pressure for a predetermined time and means for automatically releasing the pressure at the expiration of the said time.

19. The combination in an automatic press of a pressing means, a compression-chamber in which said pressing means moves, means for automatically cleaning the said chamber, automatic means for arresting pressure at a predetermined time, means for sustaining pressure thus arrested for a certain time limit, automatic means for releasing pressure permitting the pressing elements to return to their normal position, automatic means for starting the pressure after the said elements are so returned.

20. An automatic mechanism for a hydraulic liquid-extracting press in combination with the cylinder, platen, ram, compressing-chamber, pump, connection between the pump and the cylinder of a means to stop the pressure at a predetermined time, a means to hold the pressure and automatic means to return all the pressing elements to their normal position at the expiration of time limit for pressure-sustaining comprising an exhaust-port from the cylinder, means for opening this port and a gravity device controlling the return of the platen.

21. In an automatic hydraulic press having a compression-chamber and a pump with a liquid-conductor between the pump and the said cylinder a valve-chamber located in said conductor, a conductor leading from said chamber to the pump, a conductor leading from said valve-chamber to the cylinder, a hydraulic belt-shifter, a conductor leading from the said valve-chamber to the belt-shifter chamber, a valve therebetween, an accumulator-chamber, a conductor leading from the said accumulator to the said valve-chamber the said conductor being perpetually open permitting pressure in the said actumulator of like tension with that in the hydraulic cylinder, an exhaust-port, a valve in said port, whereby the pressure in the valve-chamber between the pump and the hydraulic chamber or cylinder will at all times be equally exerted in the accumulator and the pressure on the piston in this accumulator will open the valve in the conductor leading to the belt-shifter and the action of the belt-shifter will operate the valve in the exhaust-port, as and for the purpose set out.

22. The combination in an automatic hydraulic press of a pump, a hydraulic-pressure cylinder, a conductor leading from the pump to the said cylinder, a valve-chamber in this conductor, an exhaust-port in this chamber, automatic means for actuating this port, a belt-shifter valve in this chamber controlling the hydraulic actuating of the belt-shifter, and automatic means for actuating this belt-controlling valve, as set out.

23. The combination in an automatic hydraulic press of a pump, a hydraulic-pressure cylinder, a conductor leading from the pump to the said cylinder, a valve-chamber in this conductor, an exhaust-port in this chamber, automatic means for actuating this port, a belt-shifter-controlling valve in this chamber, automatic means for opening the valve leading to the belt-shifter and means for closing the same automatically.

24. The combination in an automatic press of a substance receiving and retaining chamber, means for producing compressive action in said chamber, a lid for said chamber, a bottom for said chamber, automatic means for arresting the pressure movable while the top and the bottom are closed, means for sustaining the pressure while the top and bottom are closed, automatic means for releasing the pressure and automatic means for operating the bottom after the pressure is released, as and for the purpose set forth.

25. In an automatic press the combination of a compression-chamber, a pressing member moving in said chamber, means for actuating the said member, an inlet to said chamber, an outlet from said chamber, means to sustain the pressure in said chamber at maximum for variable time periods while the inlet and outlet are closed, a hand-controlled indicating device whereby the variable time periods for pressure-sustaining are predetermined and predeterminable and means for opening the outlet after the pressure is released from maximum.

26. In an automatic press the combination of a pressing-chamber, a pressing member moving therein, means for actuating said member, an inlet to said chamber, an outlet from said chamber, automatic means to sustain the pressure in said chamber at a predetermined maximum while the said inlet and outlet are closed, hand-controlled means to vary and indicate the maximum period for pressure-sustaining, automatic means to open and close the outlet after maximum pressure is released, automatic means to open and close the inlet after the outlet is opened and closed as and for the purpose set forth.

27. In an automatic press the combination of a pressing-chamber, a pressing member moving therein, means for actuating said member, an inlet to said chamber, an outlet from said chamber, automatic means to sustain the pressure in said chamber at maximum at a predetermined pressure limit while the inlet and outlet are closed automatic means to open and close the outlet after maximum pressure is released, automatic means to clean the chamber while the outlet is open, automatic means to open and close the inlet after the outlet is closed, as and for the purpose set forth.

28. In an automatic press the combination of a pressing-chamber a pressing member moving therein, means for actuating the said member, an inlet for said chamber, an outlet from said chamber, means for sustaining the pressure in the said chamber at maximum while the inlet and outlet are closed, a series of compartments in said chamber forming liquid-drainage members, means for opening automatically the outlet from said chamber and means for automatically cleaning the walls of said compartments while the bottom is open, as and for the purpose set forth.

29. In an automatic press the combination of a pressing-chamber, a pressing member moving therein compressively, means for actuating the said member, an inlet to said member, means for automatically closing the said inlet, an outlet from said chamber, means for opening the said outlet automatically, automatic means for sustaining the pressure in the said chamber at maximum, adjustable hand-controlled means to vary and predetermine the period of sustained high pressure and a residuum-conveyer, whereby the residuum is conveyed from the machine after the release of the high pressure and the opening of the bottom, as and for the purpose set forth.

30. In an automatic press the combination of a pressing-chamber, a pressing means moving in the said chamber, means for actuating the said compressive means, an inlet to said chamber, means for automatically feeding the material to be pressed into the said chamber, an outlet from said chamber means for automatically sustaining the pressure at maximum in said chamber for a predetermined time, adjustable means to vary predetermine and control the period of sustained high pressure after filling and before discharging, and a liquid-conveyer and collector.

31. The combination in an automatic press of a compression-chamber, automatic means for filling the said chamber, automatic means for discharging the material from the said chamber after pressure, automatic means for sustaining the pressure in the said chamber for a predetermined time, hand-controlled means to vary and predetermine the period of high pressure said pressure-sustaining means acting while the chamber is filled and a residuum-conveyer, said conveyer acting after the said chamber is empty.

32. The combination in an automatic press of a compression-chamber, automatic means for filling the said chamber, automatic means for discharging the material from the said chamber after pressure, automatic means for sustaining the pressure in the said chamber at maximum for a predetermined time, an indicator, hand-controlled means to serve as a guide in determining the period of high pressure sustaining, a water collector and conveyer and a residuum-conveyer, as and for the purpose set forth.

33. The combination in an automatic hydraulic press of a compression-chamber, a series of compartments in the said chamber, means for feeding the material into the said compartments before pressure, automatic means for discharging the material from the said compartments after pressure, means for sustaining the material in the said compartments during a predetermined time at maximum pressure, a time-pressure-sustaining gage or indicator, adjustable means coacting with the gage to predetermine the period of sustained pressure in said compartments and a residuum-conveyer, as and for the purpose set forth whereby as the adjustable means is located at a coinciding point on the pressure-sustaining gage the pressure will be sustained at maximum for the time period so indicated.

34. The combination in an automatic hydraulic press of a cylinder, ram and piston, platen and pump, a chamber accessible to the pressure in both the pump and the said cylinder, a valve in the said chamber controlled by the pressure of the water, a power-transferring device hydraulically actuated, whereby the pressure of the water operates the said power-transferring device stopping the action of the pump and transferring the power so used to an idler.

35. In an automatic hydraulic press the combination with a hydraulic cylinder, ram, platen, and compression-chamber of a valve-chamber pump, a valve in the said chamber, automatic hydraulic means for operating the said valve, a liquid-conductor, said conductor and valve-chamber being connected with both the pump and the cylinder and subject to the same pressure, a belt-shifter controlled by the said valve and an automatic exhaust valve or port automatically controlled.

36. An automatic hydraulic press having a water-conductor be

tween the pump and the cylinder of the press, a valve-chamber, a belt-shifter, a valve in the said chamber actuated automatically by liquid-pressure, automatic means for actuating the belt-shifter and automatic means for releasing the pressure on the cylinder.

37. In an automatic hydraulic press, a hydraulic cylinder having an exhaust-port, a pump, a water-conductor leading from the pump to the said cylinder, a valve in the said conductor and a belt-shifter combined with mechanism interposed between the belt-shifter mechanism and the exhaust-valve whereby the latter is controlled.

38. In an automatic hydraulic press a hydraulic cylinder, a pump, a water-conductor leading from the pump to the said cylinder, a valve in the said conductor, a belt-shifter, hydraulic means for actuating the said belt-shifter controlled by the said valve, automatic means for exhausting the water from the said cylinder consisting of an exhaust-port, a valve therefor and means for actuating the said valve and automatic means for closing the exhaust-valve after water exhaustion, as and for the purpose set out.

39. In an automatic hydraulic press the combination with the cylinder, of a pump, a conductor between the pump and the said cylinder, automatic means for starting the said pump, automatic means for stopping the said pump, automatic means for withdrawing pressure from the cylinder after the pump is stopped.

40. In an automatic hydraulic press in combination with the cylinder, a pump, automatic means for starting the pump, automatic means for stopping the pump, automatic means for sustaining the pressure in the cylinder for a predetermined time, adjustable means for predetermining and varying this time and automatic means for arresting the action of this pressure-sustaining means.

41. In an automatic hydraulic press the combination with the cylinder of the press of a pump, automatic means for starting the pump, automatic means for stopping the pump, automatic means for sustaining the pressure in the pump and cylinder at maximum for a predetermined time and automatic means for withdrawing the water from the cylinder at the expiration of this time.

42. In an automatic hydraulic press in combination with the hydraulic cylinder of the press of a pump, a conductor between the said pump and the said cylinder, an exhaust-valve communicating with the said cylinder, automatic means for operating the said exhaust-valve at a predetermined pressure whereby the pressure caused by the action of the pump is withdrawn from the cylinder.

43. The combination in a hydraulic press of a pressing-chamber, a pressing member moving in the said chamber automatically actuated and controlled, hydraulic means for automatically stopping the pressure at a predetermined maximum and automatic means supplemental to the hydraulic for sustaining the pressure for a predetermined time and means for returning the pressing elements to their normal position after having been thus sustained.

44. The combination in a hydraulic press of a compression-chamber, means for automatically feeding the said chamber, means for automatically discharging the material after pressure from the said chamber, means for automatically cleaning the said chamber, means for automatically conveying the residuum from the zone of the machine, means for automatically subjecting the substance under pressure to sustained high maximum pressure and means for returning all the coacting elements to their normal position.

45. The combination in an automatic press of a compression-chamber, a series of walls in said chamber forming compartments, means for cleaning the said walls, means for automatically producing compressive action in the said chamber, means for automatically feeding the said chamber, means for automatically forcing the said pressure to maximum, means for automatically locking the pressure at maximum, means for automatically unlocking the pressure from maximum at the end of a predetermined period and means for automatically returning the pressure-sustaining means to its normal position as and for the purpose set forth.

46. The combination in an automatic press of a pressing-chamber, a series of partitions in the said chamber thereby dividing the chamber into a series of compartments, means for automatically feeding the material into the said machine-chamber and means for evenly distributing the material over every part of the chamber consisting of means to move the said partitions.

47. The combination in an automatic press of a pressing-chamber, means for producing compressive action therein, means for automatically feeding the material into the said chamber, and means for gently agitating the material while being fed into the said chamber, whereby the said material will be evenly distributed over every part of the chamber.

48. The combination in a hydraulic liquid-extracting press of a compression-chamber, a platen moving therein, a series of drainage-racks in said chamber, means for automatically filling the said chamber and means for automatically distributing the material in said chamber to every part thereof, said means comprising an automatically-controlled rack shaking or agitating mechanism.

49. The combination in an automatic hydraulic liquid-extracting press of a compression-chamber, a platen moving therein, a series of drainage-compartments in said chamber, means for automatically filling the said compartments and means for giving to the walls forming the said compartments a gentle reciprocation during filling whereby the said compartments have the material placed therein evenly over every part of them and whereby perfect extraction of the liquids is facilitated.

50. The combination in an automatic press of a compression-chamber, a platen moving therein, means for automatically feeding the material into the said chamber, means for automatically cleaning the said chamber, means for automatically closing said chamber, means for automatically holding the pressure in said chamber at maximum for a predetermined time and means for automatically discharging the material from the said chamber at the expiration of the said time.

51. The combination in an automatic hydraulic press of a compression-chamber, means for automatically feeding the material for compression into the said chamber, means for actuating the compression elements to maximum, a time-pressure indicator, a trip and a pressure-releasing lock operated by the trip, means for sustaining the pressure in the chamber at maximum for a predetermined time, means for automatically stopping the pressure at the expiration of the said time, automatic means for returning the pressing elements to normal on the stopping of the said pressure, automatic means for starting the said pressing elements when the said elements have reached their normal, as and for the purpose set forth.

52. A pressure-sustainer in a liquid-extracting press comprising in combination with the pressing-chamber and the pressing elements, automatic means for stopping the pressure, automatic means for sustaining the pressure, the said latter comprising a moving part and a coacting trip, the said moving part moving while the pressure is sustained and the said trip actuated by the moving part at the time limit of such pressure-sustaining, and thereafter the pressing elements are free to be returned to their normal position.

53. A pressure-sustainer for a liquid-extracting press comprising in combination with the pressing-chamber and the coacting pressing elements, automatic means for stopping the pressing elements at any desired maximum in their pressing function, automatic means for sustaining the pressure, a movable indicator and a tripping device, whereby as the maximum pressure is reached the indicator is started and at the limit of its adjusted traverse it contacts with the tripping device thus arresting the movement of the indicator and tripping the maximum-pressure-sustaining means, as and for the purpose stated.

54. A pressure-sustainer in a liquid-extracting press comprising in combination with the pressing-chamber and the pressing elements coacting therewith, automatic means for stopping the pressure, automatic means for sustaining the pressure, means for predetermining the period of pressure-sustaining, automatic means for locking the pressure-sustainer during the period of its action and automatic means for unlocking the said pressure-sustainer at the expiration of predetermined time period, as and for the purpose set out.

55. A pressure-sustainer in a hydraulic liquid-extracting press in combination with the pressing-chamber, the pressing elements and means for actuating the pressing elements, of means for stopping the compressive action of the pressing elements at a predetermined pressure, means for sustaining the said elements stationary at their maximum position for a predetermined time, means for predetermining this time and means for returning the elements to their normal position at the expiration of this time.

56. The combination in an automatic hydraulic press for liquid extracting of a pressing-chamber, pressing means moving therein, consisting of a platen, automatic means for arresting the pressure on platen at a predetermined pressure, means for sustaining the platen at its maximum pressure for a predetermined time, an indicator carrying numerals to indicate the time limit of pressure desired and a tripping device controlled in its action by the position of the indicator, as and for the purpose set forth.

57. The combination in a hydraulic liquid-extracting press of a pressing-chamber, a hydraulically-actuated platen moving therein, automatic means for arresting the action of the platen, means to sustain the pressure on the platen for a predetermined time at maximum, means to fix and indicate the time period for maximum-pressure sustaining, automatic means to arrest the platen's sustaining means and automatic means for returning the platen to its normal position after the platen-sustaining pressure means is actuated, as and for the purpose set out.

58. The combination in a hydraulic press for liquid-extracting of a compression-chamber, means for producing hydraulically pressure in the said chamber, means for sustaining the pressure in the said chamber at maximum, an indicator to indicate and predetermine the period of sustained pressure, means to sustain the pressure on the platen, automatic means to arrest the platen's pressure-sustaining means and means to return the platen to its normal position.

59. The combination in a hydraulic press of a compression-chamber, a pump, an indicator-moving mechanism, an indicator to predetermine the period for maximum pressure, means for actuating the said indicator-moving mechanism, a lock for the said indicator mechanism and means for unlocking the said indicator mechanism.

60. The combination in an automatic hydraulic press of a compression-chamber for receiving the material from pressure, automatic means for holding the pressure at maximum for a predetermined time an adjustable indicator to adjust and indicate the time limit of pressure-sustaining, means for tripping this indicator at the expiration of this time and means for returning this indicator to its normal position automatically.

61. The combination in an automatic pressing mechanism of a pump, a hydraulic cylinder, a conductor leading from the pump to the said cylinder, a valve-chamber in said conductor, an accumulator-cylinder, a conductor between the valve-chamber and the accumulator-cylinder, a weighted piston in the said accumulator-cylinder, a belt-shifting chamber, a conductor leading from the valve-chamber to the belt-shifting chamber, a valve therein and means interposed between the piston in the accumulator and the said valve whereby a movement of the piston will control the movement of the said valve.

62. The combination in a hydraulic press of a pump, a cylinder, a conductor leading from the pump to the said cylinder, a valve-chamber in said conductor, a belt-shifter, an exhaust-port from the said valve-chamber, means controlled by the pressure to operate the belt-shifter and means controlled by the belt-shifter to operate the exhaust-port valve.

63. The combination in an automatic press of a compression-chamber, a pump, having a fast and loose pulley, automatic means for controlling the pump consisting of a belt-shifter, means for actuating the belt-shifter at a predetermined pressure, whereby the pump is arrested, automatic means for sustaining pumping action to a predetermined pressure limit, and automatic means to force the belt on the fast pulley of the pump on the fall of pressure, as and for the purpose set out.

64. The combination in a hydraulic press, having an automatic belt-shifting device, of a cylinder, means for sustaining the pressure in the said cylinder, a pump, a fast and loose pulley on the pump, and an exhaust-port controlled by the said belt-shifting device, whereby as the belt-shifter is automatically operated the rod will actuate the trip and the trip will permit the exhaust-port to be opened and thus relieving the pressure by discharging the water through the said valve.

65. An automatic hydraulic press having in combination with a hydraulic cylinder, a compression-chamber, a top for the said chamber, a bottom for the said chamber, automatic means for moving the top, automatic means for moving the bottom, automatic means for sustaining the pressure and means operated by the moving of the top for starting the pressure in the said compression-chamber.

66. An automatic press having a pressing-chamber, a platen moving therein and a pump with a fast and a loose pulley, a liquid-conductor between the pump and the cylinder, a pressure-sustainer, a pump with a fast and loose pulley and where the pressure is brought to maximum while the belt is on the fast pulley, means for sustaining the pressure while the belt is on the loose pulley, means for releasing the pressure after the expiration of its sustained period and means for automatically returning the belt to the fast pulley after the pressure is back to normal.

67. In an automatic hydraulic press having a cylinder, ram and platen with a compression-chamber in combination with a means to sustain the pressure in the cylinder comprising a pump having a fast and a loose pulley, a conductor between the pump and the cylinder an exhaust-port from the cylinder, means for transferring motion from the fast to the loose pulley and a mechanical connection from the loose pulley to the said exhaust-port whereby the latter is opened at a predetermined number of revolutions of the said loose pulley.

68. The combination in a hydraulic liquid-extracting machine having a compression-chamber, a movable lid on said chamber, a movable bottom to said chamber, means to automatically sustain the pressure, means to automatically withdraw the pressure, means for varying and adjusting, controlling and predetermining the time period for pressure-sustaining, automatic means to move the top when the pressure is withdrawn, automatic means for moving the bottom after the pressure is withdrawn, means for locking the top and bottom closed while the pressure is sustained and means for automatically starting the pressure after the top and bottom have been moved.

69. An automatic hydraulic press having a cylinder, ram and platen in combination with a time-indicator and pressure-sustaining device and comprising an indicator, an exhaust-valve, a lock for said valve, a trip for said lock and an automatic means for operating the lock-trip, whereby the indicator indicates the period for pressure-sustaining and the lock is unlocked by the trip at the expiration of this period, as and for the purpose set out.

70. The combination in a hydraulic press of a pressing-chamber, an outlet from said chamber, an inlet to said chamber, means for closing the outlet automatically, means for closing the inlet automatically, after feeding material into the said chamber, means for opening the outlet of the said chamber automatically after pressure, means for predetermining the degree of pressure comprising an adjustable trip, an indicator and means interposed between the trip and the source of power for pressure whereby the trip is thrown into action and causes the pressure to be withdrawn and means for sustaining the pressure for a predetermined time.

71. The combination in a hydraulic press of a compression-chamber, a pressing means operating in the said chamber, an inlet to said chamber, an outlet from said chamber, means for feeding material into the said chamber automatically, a pump, a conductor leading from the pump to the pressing means when the chamber is closed, an exhaust-port in the said conductor, means for arresting the pump's action at a predetermined pressure and means for sustaining the pressure for a predetermined time thereafter, comprising an indicator and an adjustable valve-trip coacting with and operating said valve at the expiration of its preindicated traverse but while the pump is out of action.

72. An automatic liquid-extracting press having a pressing-chamber and the pressure automatically controlled in the said chamber, an inlet to said chamber, an outlet from the said chamber, means for predetermining the degree of pressure, consisting of an adjustable indicator and a coacting trip, means for sustaining the pressure for a predetermined time at its predetermined maximum and means for arresting the pressure at the expiration of the said time comprising a locking means for the pressure-sustaining elements whereby the said trip coacts with the said locking means releasing the pressure in the pressing-chamber.

73. An automatic liquid-extracting press having a pressing-chamber, means for producing and controlling the pressure in the said chamber automatically, comprising in combination with the elements for actuating the pressing means, a lock, a lock-trip, and an adjustable indicator, means for automatically confining the substance to be pressed in the said chamber, means for predetermining the degree of pressure, means for arresting the pressure at a predetermined maximum and means for sustajning the pressure at maximum for a predetermined time whereby the indicator predetermines the period for maximum-pressure sustaining and the coacting of the trip with the said lock unlocks the pressure-producing elements from their source of action thus releasing the pressure.

74. An automatic liquid-extracting press having a pressing-chamber, means for producing and controlling the pressure in the said chamber automatically, means for automatically confining the material in the said chamber during pressure, means for predetermining the degree of pressure, comprising a lock, a lock-trip and an indicator whereby the indicator prescribes the position for the tripping predetermining the time limit for maximum pressure and the trip unlocks the pressure-producing elements from their source of action, permitting said elements to return to their normal position, means for sustaining the pressure at its predetermined maximum for a predetermined time and means for arresting the pressure at the expiration of the said time, and means for opening the said chamber at the expiration of the time limit.

75. In an automatic hydraulic press for liquid-extracting having a pressing-chamber, means for producing pressure in said chamber, an inlet to said chamber, an outlet from said chamber, independent mechanical means for opening and closing the inlet and outlet alternately, means for varying the maximum, comprising an indicator and an adjustable trip-pressure, means for sustaining the pressure at this maximum for a predetermined time comprising a lock whereby the trip can be adjusted to the indicator for any desired period of pressure-sustaining at maximum and at the expiration of this

time period the lock is engaged by the trip, the pressure thus released and the parts returned to their normal position.

76. In an automatic press for liquid-extracting having a pressing-chamber, means for opening the chamber automatically, means for filling the chamber automatically, means for discharging the chamber of the residuum automatically, means for predetermining the degree of pressure for maximum automatically, comprising a trip and an indicator, means for sustaining the pressure at maximum for a predetermined time comprising a pressure-retaining lock, whereby at the expiration of the time limit preindicated for high-pressure sustaining the said trip contacts with the lock and thus unlocks the pressure-sustaining elements and whereby the indicator indicates this time period for high-pressure sustaining.

77. The combination in a liquid-extracting press of a compression-chamber, a series of partitions forming a series of walls for a series of compartments in said chamber, strainers carried by the said walls, a liquid-collector, means for producing pressure in the said chamber from zero to maximum, means for holding the said pressure at maximum for a predetermined time limit, means for preindicating this time limit and means for withdrawing the pressure at the expiration of the said time limit.

78. The combination in a liquid-extracting press of a compression-chamber, a series of partitions forming compartments in the said chamber having walls, means for moving the said walls forming the said compartments independent of the sides and ends of the chamber, liquid-strainers carried by the said walls, as and for the purpose set out.

79. The combination in a liquid-extracting press of a compression-chamber, means for producing compressive action in the said chamber, means for feeding the said chamber with material for pressure, means for holding the pressure in the said chamber at a fixed maximum for a fixed period of time, means for mechanically predetermining this time, means for preindicating this time period during which all the elements for producing pressure are locked whereby after the material is fed into the chamber the entrance thereto is closed and locked, pressure is then applied automatically and after reaching a predetermined maximum is held for a predetermined time at maximum and at the expiration of this time the mechanism is unlocked.

80. The combination in a liquid-extracting press of a compression-chamber, means for producing compressive action in the said chamber, a series of partitions forming a series of compartments in said chamber, strain-clothes carried by the said partitions means for indicating a time period for high, uniform pressure sustaining, means for locking the mechanism during this period and means for unlocking the mechanism at the expiration of this period whereby as the material is fed into the chamber the pressing elements are inoperative, thereafter become operative automatically and force the pressure up to a predetemined maximum, and whereby the pressure is held at this maximum for a predetermined time and during this time the pressing elements are locked against a return movement, but at the expiration of this time they are automatically unlocked and then return to their normal position, as and for the purpose set out.

81. In an automatic press having a compression-chamber, a movable bottom for the said chamber, a movable top for the said chamber, automatic means for moving the top, automatic means for moving the bottom, a prime shaft, means for automatically engaging the said shaft with the bottom-moving mechanism, means for locking the said shaft with the bottom-moving mechanism during the opening and closing of the bottom, means for unlocking the said bottom-moving mechanism after the bottom is closed, means for locking the top-actuating mechanism to its actuating mechanism after the bottom is closed and means for unlocking the said top from its actuating mechanism after the top is closed, as and for the purpose set out.

82. In an automatic hydraulic press having a compression-chamber, a movable top and a movable bottom with actuating mechanism therefor, a prime shaft, a compound clutch on the said prime shaft, automatic means for engaging the said top-actuating means with the said clutch, automatic means for disengaging the said clutch with the said top-actuating means, automatic means for engaging the said clutch with the said bottom-actuating mechanism and automatic means for disengaging the said clutch with the said bottom-actuating means, as and for the purpose set out.

83. In an automatic press having a compression-chamber with an inlet thereto and an outlet therefrom, means to open and close the inlet, means to open and close the outlet, an automatic mechanism interposed between the outlet-closing mechanism and the inlet-opening mechanism, whereby as the former is automatically closed the latter is automatically opened by the said mechanism becoming unlocked from the outlet-closing mechanism and locked to the inlet-opening mechanism, as set out.

84. The combination in an automatic press for liquid-extracting and having a compression-chamber with an inlet thereto and an outlet therefrom, a prime mover, means to automatically operate the inlet and outlet and a power-shifting mechanism automatically controlled, whereby as the pressure is completed in the said chamber the outlet will be opened by a moving part of the machine contacting with and locking the prime shaft with the outlet-operating mechanism, and as the outlet is closed the inlet-operating mechanism will be automatically locked to the said prime shaft and the outlet-operating mechanism will be unlocked therefrom.

85. An automatic press having a compression-chamber with a top and a bottom therefor and means for automatically moving the top, means controlled by a moving part of the machine for engaging the bottom-actuating mechanism with its source of power and motion at a predetermined time, means for locking this mechanism so engaged at a predetermined time, means for unlocking this mechanism and means for automatically engaging the said mechanism with the lid-actuating mechanism for the purpose set out.

86. In an automatic press having a compression-chamber with an inlet thereto and an outlet therefrom, means to open and close the inlet, means to open and close the outlet, and an automatic mechanism interposed between the outlet-closing and inlet-opening mechanism whereby as the former is closed the latter is opened by the said mechanism becoming unlocked from the outlet-closing and locked to the inlet-opening mechanism, as and for the purpose set out.

87. In an automatic press having a compression-chamber, ram, platen, and pump with a movable top and movable bottom and a prime mover, automatic means for operating the bottom means for withdrawing the compressive action of the ram and platen after a predetermined pressure on the material in the chamber, means connected with a moving part of the machine and operated after the withdrawal of the ram for connecting the said prime mover with the bottom-actuating mechanism whereby the bottom is opened and closed; means for disconnecting the bottom-actuating mechanism with the prime mover on the closing of the bottom, means for connecting the top-actuating mechanism with the said prime mover after the bottom is closed whereby the top is opened and closed.

88. An automatic press having a compression-chamber with means for producing pressure therein, in combination with an automatic means for predetermining a maximum pressure in said chamber and means for automatically sustaining the said pressure at maximum.

89. An automatic press having a compression-chamber with means for producing pressure therein, in combination with an automatic means for arresting pressure at a predetermined maximum, means for varying this maximum and means for automatically releasing the pressure at maximum.

90. An automatic press having a compression-chamber with means for producing pressure therein, in combination with an automatic means for arresting pressure at maximum, means for sustaining the said pressure at maximum for a predetermined time and means for arresting the pressure at the expiration of this time.

91. In an automatic press having a compression-chamber, an inlet to the said chamber, an outlet from the said chamber, means to open and close the inlet, means to open and close the outlet, a prime mover, automatic means interposed between the prime mover and the outlet-operating mechanism whereby the same is operated, automatic means interposed between the said prime mover and the inlet-operating mechanism whereby the latter is operated and whereby after compression the chamber is opened at its outlet and then closed, and thereafter it is opened at its inlet and then closed, as and for the purpose set out.

92. In an automatic press having a compression-chamber, pressing means actuated therein, an inlet to said chamber automatic means to open the inlet, means to fill the chamber while the inlet is open, means to close the inlet after chamber filling and automatic means to start compressive action likewise after chamber filling.

93. In an automatic press having a compression-chamber, pressing means actuated in the said chamber, means for holding the pressure at a fixed predetermined maximum, an inlet to the said chamber, automatic means to open and close the inlet, means to fill the chamber while the chamber is open and means connected with a moving part of the machine to start compressive action automatically after the said chamber is filled, as and for the purpose set out.

94. In an automatic press having a compression-chamber, an inlet to the said chamber, means for producing compressive action in the said chamber to a variable fixed predetermined maximum, an outlet from the said chamber and automatic means for actuating the outlet after compression.

95. In an automatic press having a compression-chamber, an inlet to the said chamber, means for producing compressive action in the said chamber, an outlet from the said chamber, means for actuating the outlet, but disengaged therefrom during compression, and means controlled by a moving part of the mechanism for controlling the outlet-operating mechanism and connecting it with its operating means after compression.

96. In an automatic press having a compression-chamber, an inlet thereto, an outlet therefrom, means for producing compressive action in the said chamber, means for filling the chamber with the substance to be pressed while the inlet is open, means operated by a moving part of the machine for controlling the outlet-operating mechanism after compression and automatic means for automatically controlling the pressure-controlling means operated by a moving part of the mechanism, after chamber filling.

97. In an automatic press having a compression-chamber, an inlet thereto, an outlet therefrom, means for producing compressive action in the said chamber while the inlet and outlet are closed, means for controlling the degree of pressure at maximum, and means for varying this degree and making this variable pressure automatic in its action, means for automatically opening and closing the outlet after pressure and means for automatically opening and closing the inlet after the outlet is opened and closed.

98. In an automatic press having a compression-chamber with an inlet thereto and an outlet therefrom, means for producing pressure in the said chamber while the inlet and outlet are closed, automatic means for predetermining a predetermined maximum pressure, means for automatically opening and closing the outlet after pressure, means for automatically opening and closing the inlet after the outlet is closed and means for automatically starting the pressure after the inlet is closed.

99. In an automatic press having a compression-chamber, an inlet thereto and an outlet therefrom, means for producing compressive action in the said chamber while the inlet and outlet are closed, means for predetermining the degree of this pressure at maximum, means for holding this pressure at maximum for a predetermined time period, means for opening the outlet from the chamber at the expiration of this period.

100. In an automatic press having a compression-chamber, an inlet thereto, an outlet therefrom, means for producing compressive action in the said chamber from zero to maximum, means for holding this pressure at maximum in the said chamber for a predetermined time, means for releasing the pressure at the expiration of this time, means for opening the outlet automatically at the expiration of the time limit for maximum pressure, means for discharging the said chamber of residuum, means for automatically closing the said outlet after such discharge, means for opening the inlet after the closing of the outlet, means for filling the chamber after inlet-opening, means for closing the said chamber after filling and means for starting compressive action automatically thereafter.

101. The subcombination in an automatic hydraulic press comprising in combination with the cylinder of the press of an exhaust port or valve, a pump having a fast and a loose pulley, a lock for the valve, a rack, means for controlling the return of the rack automatically, a lock-trip carried by the said rack, means connected with a moving part of the pump whereby the rack is actuated when the pump-actuating belt is on the loose pulley, whereby as the pump forces the pressure in the cylinder from zero to maximum the said lock holds the valve closed but thereafter the action of the rack, through its connection with the loose pulley of the pump, trips the valve-lock and the valve is opened, as and for the purpose set out.

102. A subcombination an automatic hydraulic press comprising a valve-actuating means and consisting in combination with the cylinder of the press of a pump, a conductor between the pump and the said cylinder, a valve in the said conductor, means connected with a moving part of the pump for opening the valve at a predetermined maximum pressure in the clyinder and means connected with a moving part of the machine for closing the said valve at a predetermined point in the cycle of the machine, as and for the purpose set out.

103. A subcombination in an automatic press comprising a valve-actuating means and consisting in combination with the cylinder of the press of a pump, a conductor between the said pump and the said cylinder, a valve, means for automatically opening the said valve at a predetermined pressure at maximum and means connected with a moving part of the machine for automatically closing the said valve at a predeternfined point in the cycle of the machine.

104. A subcombination in an automatic hydraulic press comprising a pressure-producing means, means for arresting the pressure at a predetermined maximum and means connected with a moving part of the machine for automatically starting the pressure at a predetermined point in the cycle of the machine.

105. A subcombination in an automatic hydraulic press comprising a valve-actuating means and consisting in combination with the cylinder of the press of a pump, said pump forcing water into the said cylinder during its pressing moments, a valve, means for opening the said valve at a predetermined maximum pressure thereby exhausting the water from the said cylinder, and means for closing the said valve at a predetermined point in the cycle of the machine, thus permitting the said pump to again force the water into the said cylinder.

106. A subcombination in an automatic press having a compression-chamber in combination with a pressure-producing means, a variable time-indicator indicating variable time units for pressure sustaining at maximum and means for automatically arresting and withdrawing the pressure at the or any of the time periods predetermined by the said time-indicator.

107. A subcombination in an automatic press comprising a pressure-producing means, means for arresting the pressure at a predetermined maximum, means for sustaining the pressure at maximum for a predetermined time, means connected with a moving part of the machine for starting the pressure at a predetermined point in the cycle of the machine.

108. In an automatic press having a compression-chamber with pressing means acting therein and having a series of partitions in the said chamber forming thereby a series of compartments, in combination with means for evenly filling the said compartments before pressure and means for cleaning the said compartments after pressure.

109. In an automatic press having a compression-chamber with compartments therein formed by a series of partitions and a compression means acting the said chamber in combination with means for evenly filling the said compartments before pressing and consisting of mechanism for slowly reciprocating the said racks, or shaking them and means for cleaning the said racks after chamber-pressure, consisting of mechanism for rapidly shaking the said partitions, as and for the purpose set out.

110. In an automatic press having a pressing-chamber and means for producing pressure therein in combination with a series of drainage-racks forming thereby a series of compartments in the said chamber, means for shaking the said racks transversely to their movement during pressing.

111. In an automatic press having a compression-chamber with a series of drainage-racks in said chamber forming thereby a series of compartments, a prime mover, means for shaking the said racks whereby the said racks are cleaned and a mechanical connection between the said prime mover and the said racks.

112. In an automatic press having a compression-chamber with a series of drainage-racks in the said chamber forming thereby a series of compartments and an eccentrically-actuated rack-shaking mechanism, as and for the purpose set out.

113. A subcombination to a hydraulic press comprising in combination with the cylinder of the press, an automatic pressure-controller and a time-recorder for maximum-pressure sustaining whereby the pressure in the cylinder is controlled and a time period for high pressure predetermined.

114. A subcombination to a hydraulic press comprising in combination with the cylinder of the press of a maximum-pressure sustaining means, means for predetermining maximum pressure in the said cylinder, means for predetermining a time period for maximum pressure and means for arresting the pressure at the expiration of this period.

115. A subcombination to a hydraulic press comprising in combination with the cylinder of the press of a means to predetermine a maximum pressure in the said cylinder, means to arrest the pressure at the said predetermined maximum, means to predetermine a time period for maximum-pressure sustaining, means to hold the pressure during the said time period and means to arrest the pressure at the expiration of this period.

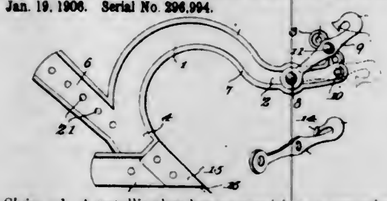
116. A subcombination to a hydraulic press in combination with the cylinder of the press, the pump, a conductor between the pump and the said cylinder, an exhaust-valve, means to operate the said valve automatically, a pressure-controller, a pressure-predetermining indicator whereby maximum pressure is indicated and predetermined, a lock for the said valve and means for operating (opening) the said valve at maximum pressure.

117. A subcombination to a hydraulic press in combination with the cylinder of the press, the pump, the conductor from the

pump to the said cylinder, an exhaust-valve of means to operate the said valve automatically, a pressure-controller, a pressure-predetermining indicator whereby maximum pressure is predetermined, a lock for the said valve, a time-indicator for maximum-pressure sustaining and a movable lock-trip, whereby the said trip is stationary while pressure is going up to maximum and during the after maximum pressure is reached the said trip is moved for a time period indicated by the time-indicator for maximum-pressure sustaining, and at the expiration of this time trips the lock permitting the exhaust-valve to be opened.

118. A subcombination to a hydraulic press in combination with the cylinder of the press, the pump, conductor between the pump and the said cylinder of an exhaust-valve, means to operate the said valve automatically, a pressure-controller, a pressure-predetermining indicator, whereby maximum pressure is predetermined, a lock for the said valve and means for operating the said lock at maximum pressure, whereby the said valve is opened and water thus discharged from the cylinder, as set out.

819,997. **PLOW-BEAM.** ROBERT T. HUGGINS, Venters, S. C. Filed Jan. 19, 1906. Serial No. 296,994.



Claim.—1. A metallic plow-beam comprising an approximately semicircular body having a forwardly-extending arm provided with an upturned terminal bracket, a downwardly-extending standard and an upwardly and rearwardly extending bracket member; said plow-beam and related parts being provided with reinforcing-flanges and with a downward extension of the web constituting a foot; in combination with a wear-plate secured upon one side of the foot and a flanged plate secured upon the opposite side of the foot.

2. A metallic plow-beam provided with reinforcing-flanges and having a downward extension of the web constituting a foot; in combination with a plate or supporting member having beveled or inclined flanges secured upon one side of the foot, and a wear-plate secured upon the opposite side of the foot.

819,998. **TYPE-WRITING MACHINE.** HAROLD JARVIS, Buffalo, N. Y. Filed Jan. 2, 1904. Serial No. 187,440.

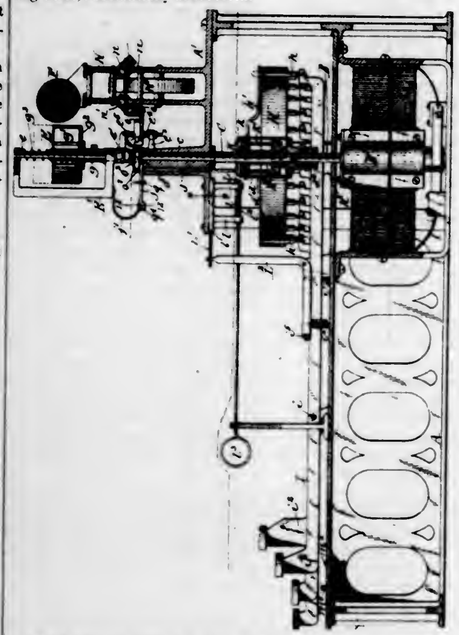
Claim.—1. In a type-writing machine, the combination with a platen, of a continuously-rotating driving-shaft, a driven shaft, a friction-clutch constantly connecting said shafts, a type-carrier bodily movable toward and from the platen and rotated from said driven shaft, stop mechanism for arresting said driven shaft at different points in the rotation of the type-wheel, and keys for controlling said stop mechanism, substantially as set forth.

2. In a type-writing machine, the combination of a continuously-rotating driving-shaft, a driven shaft, means for transmitting motion from the driving to the driven shaft, a vibratory type-carrier rotated from said driven shaft and pivotally connected therewith, means for stopping said driven shaft at different points in the rotation of the type-carrier, and means for vibrating said carrier, substantially as set forth.

3. In a type-writing machine, the combination of a continuously-rotating driving-shaft, a driven shaft, power-transmitting means for causing the driven shaft to rotate constantly with the driving-shaft except when arrested, a vibratory type-carrier connected with said driven shaft to turn therewith, means for stopping said driven shaft at different points in the rotation of the type-carrier, and vibrating means for the type-carrier actuated from said driving-shaft, substantially as set forth.

4. In a type-writing machine, the combination of a continuously-rotating driving-shaft, a vibratory frame movable relatively to said shaft, a rotary shaft journaled in said frame, a type-carrier mounted on the last-named shaft, power-transmitting means for causing said type-carrier shaft to rotate constantly with said driving-shaft except when arrested, means for stopping the type-carrier shaft at different points in the rotation of the type-carrier, keys for controlling said stop mechanism, and means for vibrating said frame, substantially as set forth.

5. In a type-writing machine, the combination with a driven shaft having a stop-arm, a driving-shaft and a clutch connecting said shafts, of a vibratory frame, a type-carrier journaled in said frame and rotated by said driven shaft, movable stops adapted to project into the path of said stop-arm, keys for operating said stops, and mechanical means for vibrating said frame actuated from said driving-shaft, substantially as set forth.



6. In a type-writing machine, the combination with an operating-shaft, of a vibrating frame, a type-carrier shaft journaled at both ends in said frame and pivotally connected with said operating-shaft, a type-carrier mounted on the second-named shaft between the bearings thereof, and means for vibrating said frame, substantially as set forth.

7. In a type-writing machine, the combination of a continuously-rotating driving-shaft, a driven shaft carrying a stop, a clutch connecting said shafts, a type-carrier rotated from said driven shaft, a series of stops or abutments movable into and out of the path of said shaft-stop, means for actuating said abutments and a carriage carrying a platen arranged opposite the type-carrier, substantially as set forth.

8. In a type-writing machine, the combination of a continuously-rotating driving-shaft, a driven shaft carrying a radial stop-arm, a friction-clutch constantly connecting said shafts, a type-carrier rotated from said driven shaft, a series of stops or abutments surrounding the driven shaft and individually movable into and out of the path of said arm, and means for projecting and retracting said abutments, substantially as set forth.

9. In a type-writing machine, the combination of a continuously-rotating driving-shaft, a driven shaft having a radial stop-arm, a friction-clutch constantly connecting said shafts, a type-carrier rotated from said driven shaft, an annular row of stops or abutments arranged concentrically with the driven shaft and individually movable into and out of the path of said stop-arm, and keys for actuating said abutments, substantially as set forth.

10. In a type-writing machine, the combination of a continuously-rotating driving-shaft, an upright driven shaft, a friction-clutch constantly connecting said shafts, a type-carrier rotated from the driven shaft, an annular frame surrounding said shaft, a stop-arm rotating with said driven shaft and arranged to sweep over said annular frame, upright stop-pins guided in said frame and adapted to be projected into the path of said stop-arm, and operating-keys connected with said stop-pins, substantially as set forth.

11. In a type-writing machine, the combination with a driving-shaft and a driven shaft, of a friction-clutch connecting said shafts and comprising a clutch member carried by one of said shafts and elastic members carried by the other shaft and bearing against said clutch member, a type-carrier rotated from said driven shaft, and means for stopping the driven shaft at different points in the rotation of the type-carrier, substantially as set forth.

12. In a type-writing machine, the combination with a driving-shaft and a driven shaft, of a friction-clutch connecting said shafts and comprising an annular head secured to one of said shafts and a head secured to the other shaft and carrying spring-tongues which are arranged lengthwise of the shaft and bear at their free ends against the periphery of said annular head, a type-carrier rotated from said driven shaft, and stop mechanism for arresting said driven shaft at different points in the rotation of the type-carrier, substantially as set forth.

13. In a type-writing machine, the combination of a continuously-rotating driving-shaft, a driven shaft, means for transmitting motion from the driving to the driven shaft, a vibratory frame, a type-wheel journaled in said frame and rotated from said driven shaft, an actuating member for said vibratory frame movable lengthwise of said driven shaft, and means for operating said actuating member, substantially as set forth.

14. In a type-writing machine, the combination of a continuously-rotating driving-shaft, a driven shaft, means for transmitting motion from the driving to the driven shaft, a vibratory frame, a type-wheel journaled in said frame and rotated from said driven shaft, an actuating-slide for said vibratory frame, and coöperating cams mounted on said driving-shaft and said slide, substantially as set forth.

15. In a type-writing machine, the combination of a continuously-rotating driving-shaft, a driven shaft, means for transmitting motion from the driving to the driven shaft, a vibratory frame, a type-wheel journaled in said frame and rotated from said driven shaft, an actuating-slide for said vibratory frame, means for moving said slide in one direction, and a spring for moving the same in the opposite direction, substantially as set forth.

16. In a type-writing machine, the combination with a continuously-rotating driving-shaft and a driven shaft, of a friction-clutch connecting said shafts and consisting of a head secured to the driving-shaft and a head secured to the driven shaft and having spring-tongues arranged lengthwise of said shafts and bearing against the first-named head, a vibratory type-carrier rotated from said driven shaft, a slide for vibrating the type-carrier guided on said driven shaft, coöperating cams arranged on the slide and said annular clutch-head for shifting the slide in one direction, a spring for shifting said slide in the opposite direction, and means for stopping the driven shaft at different points in the rotation of the type-carrier, substantially as set forth.

17. In a type-writing machine, the combination with a shaft and a vibratory type-carrier rotated therefrom, of a sliding actuating-rod for vibrating the carrier arranged substantially parallel with said shaft, and means for operating said rod, substantially as set forth.

18. In a type-writing machine, the combination with a continuously-rotating driving-shaft, a driven shaft and a clutch connecting said shafts, of a vibratory type-carrier rotated from said driven shaft, means for stopping the driven shaft at different points in the rotation of the type-carrier, a sliding actuating-rod for vibrating the type-carrier arranged substantially parallel with the driven shaft, a slide acting upon said actuating-rod, and means for operating said slide, substantially as set forth.

19. In a type-writing machine, the combination with a continuously-rotating driving shaft, a driven shaft and a clutch connecting said shafts, of a vibratory type-carrier rotated from said driven shaft, means for stopping the driven shaft at different points in the rotation of the type-carrier, a sliding actuating-rod for vibrating the type-carrier, a slide acting upon said rod, and coöperating cams for actuating said slide mounted on the driving-shaft and the slide, substantially as set forth.

20. The combination of a shaft, a vibratory frame carrying a type-wheel which is rotated from said shaft, an actuating member for said frame arranged to reciprocate lengthwise of said shaft, and a spring arranged to transmit motion from said actuating member to the type-wheel frame, substantially as set forth.

21. In a type-writing machine, the combination with a continuously-rotating shaft, a driven shaft and a clutch connecting said shafts, of a vibratory frame, a type-wheel having its shaft journaled in said frame, a universal joint connecting the type-wheel shaft with said driven shaft, stop mechanism for arresting said driven shaft at different points in the rotation of the type-wheel, and means for vibrating said frame, substantially as set forth.

22. In a type-writing machine, the combination with a continuously-rotating driving-shaft, a driven shaft and means for transmitting motion from the driving to the driven shaft, of a vibratory type-carrier rotated from said driven shaft, an actuating member for vibrating the type-carrier operated from the driving-shaft, a keyboard, and means controlled by the keys for preventing more than one operation of said actuating member for each depression of a key, substantially as set forth.

23. In a type-writing machine, the combination with a continuously-rotating driving-shaft, a driven shaft and means for transmitting motion from the driving to the driven shaft, of a vibratory type-carrier rotated from said driven shaft, a reciprocating member for vibrating the type-carrier operated from the driving-shaft, a keyboard, and locking mechanism controlled by the keys for temporarily holding said reciprocating member out of engagement with the driving-shaft, substantially as set forth.

24. In a type-writing machine, the combination with a continuously-rotating driving-shaft, a driven shaft and means for transmitting motion from the driving to the driven shaft, of a vibratory type-carrier rotated from said driven shaft, a reciprocating member for vibrating the type-carrier, actuating means for said member operated by the driving-shaft, a keyboard, a bolt or catch adapted to interlock with said reciprocating member, and actuating means for said bolt controlled by the keys, substantially as set forth.

25. In a type-writing machine, the combination with a continuously-rotating driving-shaft, a driven shaft and means for transmitting motion from the driving to the driven shaft, of a vibratory type-carrier rotated from said driven shaft, a reciprocating member for vibrating the type-carrier, actuating means for said member operated by the driving-shaft, a keyboard, a universal bar operated by the keys, and a bolt or catch controlled by said universal bar and adapted to interlock with said reciprocating member, substantially as set forth.

26. In a type-writing machine, the combination with a continuously-rotating driving-shaft, a driven shaft and means for transmitting motion from the driving to the driven shaft, of a vibratory type-carrier rotated from said driven shaft, a reciprocating member for vibrating the type-carrier having a beveled face, a spring-bolt arranged to interlock with said member and having a beveled nose adapted to be engaged by the corresponding face of the reciprocating member during the effective stroke of the latter, a keyboard, and a carriage for said spring-bolt controlled by the keys, substantially as set forth.

27. In a type-writing machine, the combination with a continuously-rotating driving-shaft, a driven shaft and means for transmitting motion from the driving to the driven shaft, of a vibratory type-carrier rotated from said driven shaft, a reciprocating member for vibrating the type-carrier having a beveled face, a spring-bolt arranged to interlock with said member and having a beveled nose adapted to be engaged by the corresponding face of the reciprocating member during the effective stroke of the latter, a keyboard, a universal bar operated by the keys, and an elbow-lever connecting said carriage with the universal bar, substantially as set forth.

28. In a type-writing machine, the combination with a continuously-rotating driving-shaft, a driven shaft and means for transmitting motion from the driving to the driven shaft, of a vibratory type-carrier rotated from said driven shaft, a reciprocating member for vibrating the type-carrier operated from the driving-shaft, a keyboard, locking mechanism controlled by the keys for temporarily holding said reciprocating member out of engagement with the driving-shaft, and a manual releasing device for said locking mechanism, substantially as set forth.

29. The combination with a vibratory type-wheel frame, a paper-carriage and a feed device for the carriage, of a common actuating mechanism for the type-wheel frame and said feed device, a space bar or key, and means controlled by the space-bar for disconnecting the type-wheel frame from said actuating mechanism, substantially as set forth.

30. The combination with a vibratory type-wheel frame, a paper-carriage and a feed device for the carriage, of a driving-shaft, a common actuating mechanism for the type-wheel frame and said feed device operated from the driving-shaft, a space bar or key, and means controlled by the space-bar for disconnecting the type-wheel frame from said actuating mechanism, substantially as set forth.

31. The combination with a vibratory type-wheel frame, a paper-carriage and a feed device for the carriage, of a driving-shaft, a common actuating member for the type-wheel frame and said feed device operated from said shaft and capable of a reciprocating move-

ment for actuating both said parts and a lateral movement for clearing the type-wheel frame, and a space bar or key operatively connected with said actuating member, substantially as set forth.

32. The combination with a vibratory type-wheel frame, a paper-carriage and feed device for the carriage, of a driving-shaft, a common actuating-arm for the type-wheel frame and said feed device capable of a reciprocating movement for actuating both of said parts and a swinging movement for clearing the type-wheel frame, a slide for reciprocating said arm, coöperating cams carried by said slide and the driving-shaft, and a space bar or key operatively connected with said actuating-arm, substantially as set forth.

33. The combination with a vibratory type-wheel frame, a paper-carriage and feed device for the carriage, of a driving-shaft, a common actuating-arm for the type-wheel frame and said feed device capable of a reciprocating movement for actuating both of said parts and a swinging movement for clearing the type-wheel frame, a slide for reciprocating said arm, actuating means for said slide operated by said driving-shaft, a shipper-bar connected with said actuating-arm, and a space bar or key operatively connected with said shipper-bar, substantially as set forth.

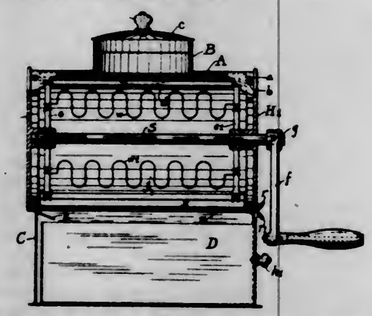
34. The combination with a vibratory type-wheel frame provided at its lower end with a spring, a paper-carriage and a feed device for the carriage, of a driving-shaft, an actuating-arm for said feed device and said type-wheel frame bearing against the lower end of said spring and capable of a combined reciprocating and lateral movement, means for reciprocating said arm actuated from the driving-shaft, and a space bar or key for swinging said arm out of engagement with said spring, substantially as set forth.

35. The combination with a continuously-rotating driving-shaft, a driven shaft and a clutch connecting said shafts, of a vibratory frame, a type-wheel having its shaft journaled in said frame and rotated from said driven shaft, a paper-carriage, a feed device for the carriage, and a common actuating mechanism for said feed device and said type-wheel frame operated from said driving-shaft, substantially as set forth.

36. The combination with a continuously-rotating driving-shaft, a driven shaft and a clutch connecting said shafts, of a vibratory frame, a type-wheel having its shaft journaled in said frame and rotated from said driven shaft, a paper-carriage, a feed device for the carriage, a sliding rod arranged to actuate both said feed device and said vibratory frame, a reciprocating member acting upon said rod, and guided on said driven shaft, and coöperating cams mounted on said slide and said driving-shaft, substantially as set forth.

37. The combination with a continuously-rotating driving-shaft, a driven shaft and a clutch connecting said shafts, of a vibratory frame, a type-wheel having its shaft journaled in said frame and rotated from said driven shaft, a paper-carriage, a feed device for the carriage including a pawl-lever, a sliding rod provided with an arm which engages said lever, a spring interposed between said arm and said vibratory frame, and actuating mechanism for said rod operated from said driving-shaft, substantially as set forth.

819,999. **DRUG-MIXER.** MARCENUS J. JONES, Rochester, N. Y. Filed Apr. 13, 1905. Serial No. 255,068.



Claim.—1. In a mixing and sifting machine, a receiving-case with rubbing and brushing arms operating therein, a screen for permitting the egress therethrough of the mixed product, a removable cut-off, and an elastic support for such screen operating normally to hold such removable cut-off in place above such screen to constitute practically a continuation of the wall of the receiving-case.

2. In a mixing and sifting machine, a receiving-case with rubbing and brushing arms operating therein, a removable screen for permitting the egress therethrough of the mixed product, a removable cut-off, and an elastic guide and support for such screen and such cut-off adapted to normally hold such screen in place to constitute practically a continuation of the wall of the receiving-case and also adapted to yield to permit the insertion of such cut-off and hold the same in place above the screen to constitute also when thus in place practically a continuation of the wall of the receiving-case.

820,000. **PROCESS FOR RECOVERING PRECIOUS METALS.** JOHN A. JUST, Pulaski, N. Y., assignor to The Just Mining & Extraction Co., Syracuse, N. Y., a Corporation of New York. Original application filed Mar. 25, 1905, Serial No. 251,992. Divided and this application filed Aug. 19, 1905. Serial No. 274,910.

Claim.—1. The process of extracting precious metals from ores or materials containing said metals, which consists in treating said ores or materials with nitro sulfonic acid.

2. The process of extracting a precious metal from ores or materials containing said metal, which consists in treating said ores or materials with nitro sulfonic acid to obtain the metal in solution and recovering the precious metal from the solution in any suitable known manner.

3. The process of extracting silver and gold from ores or materials containing said metal, which consists in treating said ores or materials with nitro sulfonic acid.

4. The process of extracting silver from ores or materials containing said metal, which consists in treating said ores or materials with nitro sulfonic acid.

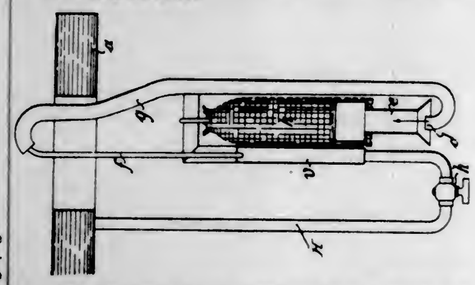
820,001. **SPRING HAND-TRUCK.** THOMAS KENDRICK, Caversham, New Zealand. Filed Apr. 25, 1905. Serial No. 257,383.



Claim.—1. For the purpose indicated, a truck having side pieces, springs between the side pieces and the axle of the truck, each of said springs being secured to one of the side pieces at one end and having its other end received by a bracket bolted to the side piece, a wheel mounted upon arms, a bracket upon the truck to which the arms are pivoted, a chain attached at one end to the axle of the truck, a hook to which the other end of the chain is attached, a screw-threaded shank to the hook, a nut upon the shank, a flexible band surrounding the said arms, a distance-piece between the arms, the shank of the hook passing through the band and distance-piece, substantially as set forth.

2. In a truck, a hook having a screw-threaded shank and a nut, a flexible band surrounding rods to which the hook is attached, and a distance-piece between the rods, substantially as set forth.

820,002. **INCANDESCENT SPIRIT-LAMP.** WILLIBALD LIEDKE and OTTO RABENHORST, Charlottenburg, Germany. Filed May 20, 1905. Serial No. 261,367.



Claim.—In an incandescent spirit-lamp, the combination, with a burner, and a mantle; of a reservoir for spirit arranged above the said burner, a feed-pipe, an enlarged main vaporizing-chamber arranged at one side of the mantle and having its lower end connected with the said feed-pipe, an enlarged vapor-conducting tube connected with the said burner and projecting above the level of the said reservoir, and a pipe of much smaller area than the said vaporizing-chamber and vapor-conducting tube and connecting their upper ends.

820,003. **WOVEN PILE FABRIC.** WALTER V. LOWE, Worcester, Mass., assignor to Crompton & Knowles Loom Works, a Corporation of Massachusetts. Filed June 12, 1905. Serial No. 264,828.



Claim.—1. In a woven pile fabric, the combination with stuffer-warps, filling-threads or wefts above and below the stuffer-warps, binding-warps, and pile-warps, of filling-threads or wefts between the stuffer-warps and the pile-warps, and under the upper filling-threads or wefts.

2. In a woven pile fabric, the combination with stuffer-warps, filling-threads or wefts above and below the stuffer-warps, binding-warps, and pile-warps, of filling-threads or wefts between the stuffer-warps and the pile-warps, and directly under the upper filling-threads or wefts.

820,004. **FECAL-ANALYZER.** JAMES A. MACMILLAN, Detroit, Mich., assignor to William M. Swan, Detroit, Mich. Filed Jan. 15, 1906. Serial No. 296,057.



Claim.—1. In an analyzer, in combination with an inclosing vessel, a longitudinally-extending stem therewithin, a plurality of screens engaging about said stem, and sleeve members rigidly attached to said screens and engaging about said stem, adapted to hold said screens accurately in position with respect to said stem and vessel, substantially as described.

2. In an article of the class described, in combination with a transparent casing, a stem extending longitudinally thereof, a plurality of screens of varying mesh adapted to be spaced from one another and to be supported in a position transverse of said casing by said stem, a cover for the large end of said casing having extending through it an agitating-needle, and a cap member for the top of said casing, substantially as described.

3. In an analyzer, in combination with an inclosing vessel, a plurality of screens disposed therein in parallel planes, means for spacing said screens, and means adapted to be manually actuated from without said vessel whereby the contents of any of said screens may be spread thereover, substantially as described.

4. In an article of the class described, in combination with an inclosing casing open at the ends, one of said ends being contracted to form a delivery-nozzle, a cover for the other end, agitating-needles extending therethrough, a spraying-nozzle for introducing water into the interior of the casing, a plurality of screens adapted to extend entirely across the casing, and a stem lengthwise of said casing for supporting said screens in transverse position and for spacing the screens from one another, substantially as described.

5. In an article of the class described, the combination of a transparent vessel having plane parallel sides, a plurality of screens of varying degrees of fineness of mesh within the same, means for holding them in position across the vessel and spaced from one another, and means for rinsing matter placed upon any one of said screens, substantially as described.

6. In an article of the class described, in combination with an inclosing casing, a plurality of screens lying transversely thereof, means for holding the same in place, means for rinsing said screens and their contents and for carrying away fluids not retained thereby, and means for agitating the contents of any screen separately, substantially as described.

7. In an analyzer, in combination with a vessel, a screen located therewithin in a plane perpendicular to the axis of the vessel, means for directing a flow of water upon said screen, and means adapted to be manually manipulated whereby matter supported upon said screen may be agitated, substantially as described.

8. In an analyzer, in combination with a system of screens disposed in parallel planes, a sleeve member rising perpendicularly from each screen and registering with a perforation therein, a stem passing through each of said screens and sleeve members, means for directing a stream of water upon said screens, and inclosing means for limiting the lateral extent of the diffusion of the water, substantially as described.

9. In an analyzer, the combination of a vessel, a cover, screens disposed within said vessel in parallel planes to that of said cover, means for directing a flow of water upon said screens from the same end as that closed by the cover, agitating-needles extending through said cover to points adjacent to the top surface of one of the screens, and means whereby the vessel may be supported in upright position, substantially as described.

10. In a device of the class described, in combination with a vessel open at both ends, a discharge-nipple located at the delivery end thereof, a longitudinally-extending standard therein having its base portion resting on an inclined portion of the walls of said vessel, a series of screens engaging about said standard, spacing-pieces carried by each screen for regulating its proximity to those adjoining, a cover member for the receiving end of said vessel, and means extending through said cover for spreading and rinsing matter spread upon said screens, substantially as described.

11. In a device of the class described, the combination of an inclosing vessel, a removable framework, a plurality of screens carried thereby in parallel planes and spaced from one another, each screen being adapted to be removed from said vessel and from engagement with said framework independently of the screens below it, substantially as described.

12. In an analyzer, the combination of a supporting-stem, a plurality of sieve members arranged thereon in parallel planes, means carried by each of said sieve members whereby it is spaced from the one adjoining, and transparent inclosing walls about the sieves, substantially as described.

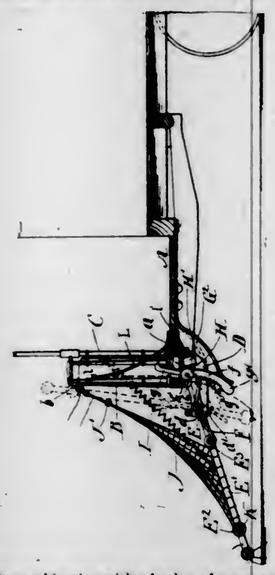
820,005. **FENDER FOR STREET-CARS.** ANTON L. MASLANOVICH, New York, N. Y. Filed May 5, 1903. Renewed Nov. 17, 1905. Serial No. 287,847.

Claim.—1. The combination in a car-fender, of a frame pivotally supported at its rear, means for upwardly swinging said frame, a pawl carried by the latter, and a spring-pressed ratchet-lever operable from the car-platform and adapted to engage the pawl and hold the fender in a lowered position.

2. The combination in a car-fender, of a frame comprising a pivotally-supported rear bar and adjacent mediate bar E^2, a pawl-arm secured to said bar E^2, and extending rearwardly above and in bearing contact with the rear bar, means for upwardly swinging said frame, and a spring-pressed ratchet-lever operable from the platform and adapted to engage the pawl-arm and hold the fender in a lowered position.

3. The combination in a car-fender, of a frame, comprising a rear pivotal bar, weighted arms and springs for upwardly swinging said frame, a rope or cable connected to one of said arms and extending to the platform for lowering said frame, and provision for automatically latching the latter in a lowered position.

4. The combination with a fender, of arms pivotally supported at the front and carrying a transverse flexible fore-guard, and means for spreading said arms to tighten the same upon the depression of the arms but resist upward movement of the same.



5. The combination with a fender, of arms supported by revoluble and laterally-movable cam-clutch members normally spring-engaged with fixed members, said arms carrying a transverse flexible fore-guard, the arrangement being such that with the depression of the guard and arms, the movable members will be turned to cause their cams to spread the arms and tighten the guard.

6. In a car-fender the combination with a supporting-frame, comprising the bar E^2, projecting beyond the side rails of said frame, of the sleeves K, revolubly mounted on said projections, the arms K′ integral with said sleeves, the braces K^3 holding said arms in position, the cable k', stretched between said arms K′, and secured thereto, the tubular sections K^4, mounted on said cable, and the washers k^5 on said cable between said tubular sections.

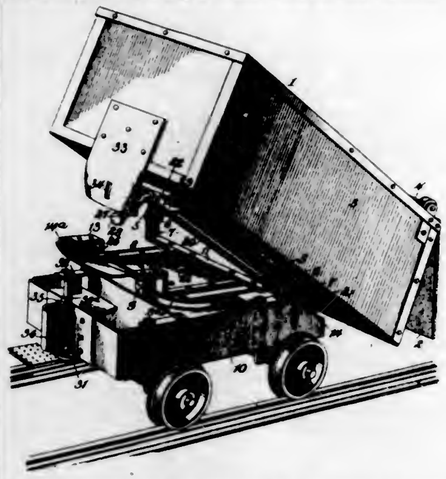
7. In a car-fender, the combination with a supporting-frame, comprising the bar E^2, projecting beyond the side rails of said frame, of the sleeves K revolubly mounted on said projections, the arms K′, integral with said sleeves, the braces K^3, holding said arms in position, the sleeves k^3, integral with said braces having serrated edges and revolubly mounted on the said bar E^2, the clutch-sections k^4 also having serrated edges, mounted on said bar E^2, and engaging the sleeves k^3, the springs k^4, on said bar E^2, between the said sleeves k^3, and the side rails of said frame, the cable k', stretched between the arms K′ and secured thereto, the tubular sections K, on said collar, and the washers k^5 on said cable between said tubular sections.

8. The combination with a fender, of arms supported by revoluble and laterally-movable cam-clutch members normally spring-engaged with fixed members, said arms carrying a tranaverse flexible fore-guard, embodying a transverse rope or cable, and a series of tubular rubber sections thereon with interposed spacing-disks, the arrangement being such that with the depression of the guard and arms, the movable members will be turned to cause their cams to spread the arms and tighten the guard.

820,008. DUMPING-CAR. ADAM MIEDEN, Seattle, Wash. Filed Sept. 14, 1905. Serial No. 278,442.

Claim.—1. In a device of the class described, the combination of a truck-frame having a turn-table or support provided with a horizontal supporting-plate, a transverse bar mounted on the plate at the front of the same and having upwardly-extending arms, a tilting body having a door and pivoted to the said arms, rearwardly-extending arms projecting from the back of the plate, locking mechanism mounted on the body for holding the door in its closed position, and means carried by the rearwardly-extending arms for operating the locking mechanism.

2. In a device of the class described, the combination of a dumping-body having a door, and a shaft provided with a catch consisting of a short straight arm, said arm being arranged at an inclination with relation to the free edge of the door when the latter is closed.



3. In a device of the class described, the combination of a dumping-body having a door, a shaft provided with a catch consisting of a short straight arm arranged at an inclination with relation to the free edge of the door when the latter is closed and disposed transversely of the same, said arm also diverging upwardly from the door.

4. In a device of the class described, the combination of a dumping-body having a door provided with a substantially triangular flange or lug, and a shaft having a catch engaging the lug or flange and consisting of a straight arm arranged at an inclination with relation to the free edge of the door when the latter is closed.

5. In a device of the class described, the combination of a dumping-body having a door provided with a substantially triangular flange or lug, and a shaft having a catch engaging the lug or flange and consisting of a straight arm arranged at an inclination with relation to the free edge of the door when the latter is closed, said arm being also disposed transversely of the body and being also extended outwardly from the door.

6. In a device of the class described, the combination of a dumping-body having a door arranged between the sides of the body when closed, a plate secured to the door and engaging the bottom of the body to limit the inward movement of the door, said plate being provided with a projecting lug or flange, and a shaft having a catch engaging the lug or flange.

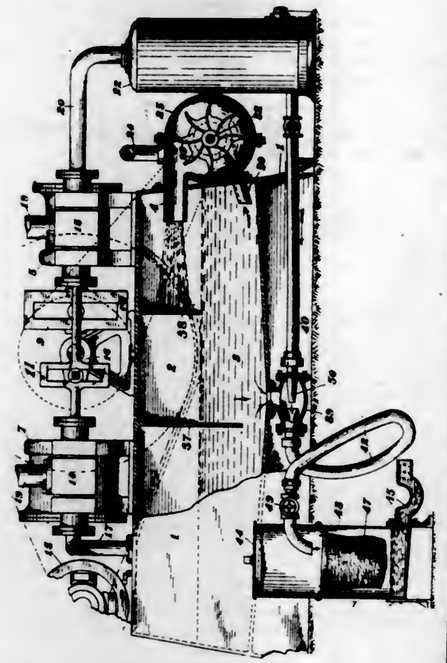
7. In a device of the class described, the combination of a dumping-body having a hinged door arranged between the sides of the body when closed, a plate secured to the door and extended beyond the lower edge thereof to form a stop for limiting the inward movement of the door, said plate being provided at its lower end with a projecting substantially triangular flange, and a shaft having a catch consisting of a straight arm extending upwardly at an inclination when the door is closed and disposed in a direction transversely of the body, said arm being also extended outwardly from the door.

820,007. PNEUMATIC CLEANSING APPARATUS. ALBERT E. MOORHEAD, Oakland, Cal. Filed June 6, 1905. Serial No. 263,973.

Claim.—1. In pneumatic cleansing apparatus, a hollow base, having a collecting-tank or receiver therein, an air-exhaust pump mounted thereon, a pipe connection between said exhaust-pump and said tank, an outlet from said exhaust-pump, an inlet-pipe for dust and refuse from carpet cleansing connected with said tank, to discharge into the same, and a device for agitating said dust and refuse mixed with the air and liquid, and forcing it into said tank, located between said inlet-pipe and the tank, substantially as specified.

2. In pneumatic cleansing apparatus, a hollow base, having a collecting-tank or receiver therein, an air-compressor pump and an air-exhaust pump mounted thereon, a compressed-air receiver, a pipe connection between said compressor-pump and said receiver, a pipe connection between said exhaust-pump and said tank, an outlet

for said exhaust-pump, an air-outlet for said compressor-pump, an outlet in the bottom of said tank, an ejector connected with said outlet, and a pipe connection between said ejector and a store of compressed air, with means for cutting off said connection, substantially as specified.



3. In pneumatic cleansing apparatus, a hollow base, having a collecting-tank or receiver therein, an air-compressor pump and an air-exhaust pump mounted thereon, a compressed-air receiver, a pipe connection between said compressor-pump and said receiver, a pipe connection between said exhaust-pump and said tank, an outlet for said exhaust-pump, an air-inlet for said compressor-pump, an inlet-pipe for dust and refuse connected with the tank, into which it discharges, and a device for agitating and forcing said refuse into said tank between the tank and said inlet-pipe, substantially as specified.

4. In pneumatic cleansing apparatus, a hollow base, having a collecting-tank or receiver therein, an air-compressor pump and an air-exhaust pump mounted thereon, a compressed-air receiver, a pipe connection between said compressor-pump and said receiver, a pipe connection between said exhaust-pump and said tank, an outlet for said exhaust-pump, an air-inlet for said compressor-pump, an inlet-pipe for dust and refuse connected to discharge into the tank, and a device for agitating and forcing said refuse into said tank between the tank and said inlet-pipe, said tank and agitating device containing an antiseptic solution for sterilizing said refuse, substantially as specified.

5. In pneumatic cleansing apparatus, a hollow base, having a collecting-tank or receiver therein, an air-compressor pump and an air-exhaust pump mounted thereon, a compressed-air receiver, a pipe connection between said compressor-pump and said receiver, a pipe connection between said exhaust-pump and said tank, an outlet for said exhaust-pump, an air-inlet for said compressor-pump, an inlet-pipe for dust and refuse connected to discharge into the tank, an agitating-chamber between said inlet-pipe and said tank, containing an antiseptic solution, and rotatory helical impellers for moving said refuse toward and delivering it to said tank, substantially as specified.

6. In pneumatic cleansing apparatus, a hollow base, having a collecting-tank or receiver therein, an air-compressor pump and an air-exhaust pump mounted thereon, a compressed-air receiver, a pipe connection between said compressor-pump and said receiver, a pipe connection between said exhaust-pump and said tank, an outlet for said exhaust-pump, an air-inlet for said compressor-pump, an elongated agitating-chamber connected with said tank, an inlet-pipe for dust and refuse connected with said agitating-chamber at its ends, said chamber containing an antiseptic solution, rotatory helical impellers in said chamber for agitating said refuse and moving it mechanically toward the center, and a central fan-impeller for discharging said refuse into said tank, substantially as specified.

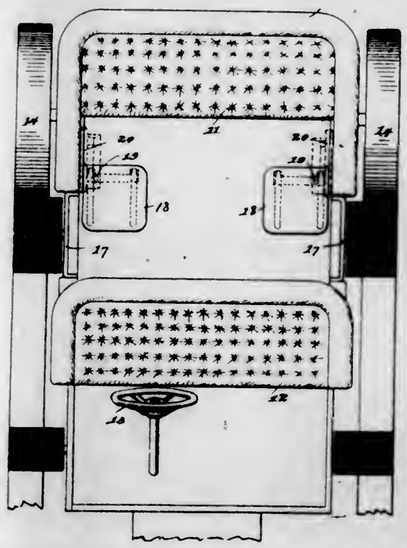
7. In pneumatic cleansing apparatus, a collecting-tank, an air-exhaust pump, a pipe connection from the tank to said exhaust-pump, an elongated agitating-chamber connected with said tank, an antiseptic solution in said tank and chamber, inlet-pipes at the ends of said agitating-chamber for induction of dust and refuse, a rotatory shaft within said agitating-chamber with helical impeller-blades for moving said dust and refuse toward the center of the chamber, and a fan-impeller at the middle of the shaft for discharging said refuse into the tank, substantially as specified.

8. In pneumatic cleansing apparatus, a collecting-tank for dust and refuse, an air-exhaust pump connected therewith, an agitating-chamber communicating with said tank, an antiseptic liquid in said tank and chamber, an inlet-pipe for dust and refuse to said chamber, and rotatory mechanical impellers in said chamber for agitating and moving the refuse, said chamber having an interior involute contour in cross-section, substantially as specified.

9. In pneumatic cleansing apparatus, a hollow base having a collecting-tank or receiver therein, an air-compressor pump and an air-exhaust pump mounted thereon, an agitating and mixing chamber connected with said tank, rotatory agitators in said chamber, a compressed-air receiver, a pipe connection between said compressor-pump and said receiver, a pipe connection between said exhaust-pump and said tank, and a common cross-shaft mounted on said base, with operative connections for working said pumps and the said rotatory agitators, substantially as specified.

10. In pneumatic cleansing apparatus, a collecting-tank for dust and refuse, means for exhausting air therefrom, an elongated agitating and mixing chamber connected with said tank, said tank and chamber containing an antiseptic liquid, inlet-pipes for dust and refuse at the ends of said chamber, rotatory helical impellers within said chamber for agitating and moving said refuse, and a rotatory fan of larger diameter than the impellers for discharging the refuse into said tank, substantially as specified.

820,008. VEHICLE-SEAT. DONALD G. MCDIARMID, Chicago, Ill. Filed Sept. 23, 1905. Serial No. 279,809.



Claim.—1. In a device of the character described, the combination of a vertical pivot-stud adapted to be secured to a vehicle, an arm pivoted on said stud and adapted to swing in a horizontal plane, and a seat hinged to said arm adapted to be swung horizontally on said pivot-stud and turned into a vertical plane by means of said hinges, substantially as described.

2. In a device of the character described, the combination of a stationary pivot-stud having a stop, an arm pivoted on said stud, said arm being provided with a lug adapted to coöperate with said stop, and a seat hinged to said arm, substantially as described.

3. In a device of the character described, the combination of a pivot-stud, an arm pivoted on said stud, a seat hinged to said arm, and locking means which prevents said arm turning on said pivot-stud when said seat is in its lowered position and allows said arm to turn on said stud when the seat is raised, substantially as described.

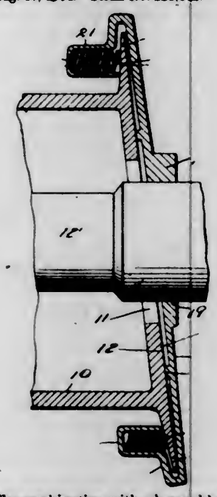
4. In a device of the character described, the combination of a pivot-stud provided with a stop, an arm pivoted on said stud, said arm having a lug to coöperate with said stop, a seat hinged to said arm, and locking means which prevents said arm turning on said stud when said seat is in operative position and allows said arm to turn on said stud when the seat is raised, substantially as described.

5. In a device of the character described, the combination of a pivot-stud having a slot, an arm pivoted on said stud, said arm having a slot, a seat hinged to said arm, said seat having a rib adapted to fit in said slots to prevent said arm turning on said pivot-stud, substantially as described.

6. In a device of the character described, the combination of a pivot-stud having a slot and a stop, an arm pivoted on said stud, said arm having a slot and a lug adapted to coöperate with said stop, a seat hinged to said arm, said seat having a rib adapted to engage said slots to prevent said arm turning on said stud, said rib and slots being in the same vertical plane when said lug engages said stop, substantially as described.

7. In a device of the character described, a pivot-stud comprising a supporting portion adapted to be secured to a vehicle, a stop, and a cylindrical projection having a slot on its end, in combination with an arm having a sleeve rotatable on said stud, said arm having a slot and a lug adapted to engage said stop, a plurality of straps hinged to said arm, one of said straps having a rib adapted to fit in said slots when said lug engages said stop and the strap is in its lowered position, and a seat fastened to said straps, substantially as described.

820,009. JOURNAL-BOX AND DUST-GUARD. JAMES S. PATTEN, Baltimore, Md., assignor, by direct and mesne assignments, to Baltimore Journal Box Company, Baltimore, Md., a Corporation of Maryland. Filed Aug. 17, 1904. Serial No. 221,043.



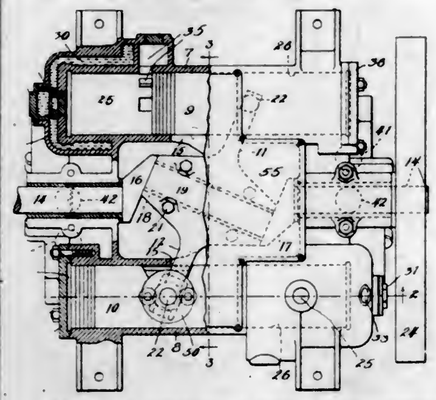
Claim.—1. The combination with a journal-box having a slanting inner end face and an opening therethrough to receive the journal, of a dust-guard plate disposed upon such slanting face and a spring for holding the plate against movement from contact with said end face.

2. The combination with a journal-box having a slanting inner end face and an opening therethrough to receive the journal, of a dust-guard plate disposed slidably against and supported in part upon said face and means for holding the plate yieldably against movement from contact with the slanting face, said plate having a boss upon its outer face surrounding the opening, said face having its outer end face vertical.

3. The combination with a journal-box and flanges carried by the box, of a dust-guard plate disposed against the box and springs carried by the plate and engaging the flanges at their opposite sides from the plate that carries the springs.

4. The combination with a journal-box for railway-cars provided with pairs of flanges on opposite faces, of a dust-guard plate disposed against the inner end of the journal-box and having offset portions each extending between and beyond a pair of flanges, and a leaf-spring carried by each of said offset portions and bearing with its ends against the front faces of flanges.

820,010. GASOLENE-MOTOR. LUDWIG PETTERSON, Chicago, Ill. Filed June 6, 1904. Serial No. 211,233.



Claim.—1. The combination of companion simultaneously-exploding cylinders, each having an explosion-chamber at one side of the piston and an air-compression chamber at the other side thereof, the explosion-chamber of each cylinder being connected by a valved passage to the air-compression chamber of the other cylinder.

2. The combination of companion simultaneously-exploding cylinders each having an explosion-chamber at one side of the piston and air-compression chamber at the other side thereof, cross-passages connecting the explosion-chamber of each cylinder with the air-compression chamber of the other cylinder, and valves in said passages regulating the entrance of fresh air to the air-compression chambers and permitting the forcing of the air from the air-compression chambers to the explosion-chambers.

3. The combination of companion simultaneously-exploding cylinders each having an explosion-chamber at one side of the piston and air-compression chamber at the other side thereof, cross-passages connecting the explosion-chamber of each cylinder with the air-compression chamber of the other cylinder, and automatic valves 41 and 42 controlling such passages.

4. A two-cycle gasolene-engine having companion simultaneously-exploding cylinders, each embodying an explosion-chamber and a compression-chamber, the compression-chamber of one cylinder supplying the explosion-chamber of the other with air and gasolene, and pistons in said cylinders whereby the air and gasolene are simultaneously compressed and forced into the explosion-chambers.

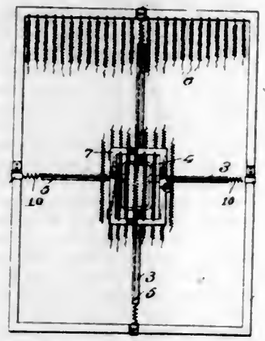
5. A double two-cycle engine embodying cylinders which explode simultaneously and which simultaneously compress air charges, the compression-chamber of each cylinder being connected with the explosion-chamber of the other cylinder.

6. A double two-cycle engine, one end of each cylinder of which is utilized to compress the air charges of the other cylinder, the cylinders being exploded simultaneously and acting simultaneously to compress the air charges.

820,011. BED-SPRING. EDITH B. PRESTON, Mexico, Mo. Filed July 20, 1905. Serial No. 270,547.

Claim.—1. A device of the character described comprising a framework in which the sides are formed in two sections which are pivotally connected so that each half of the framework can be folded over on the other half, and transverse metal strips connecting the lower edges of the sides and pivotally joined to a metal ring at the center of the frame.

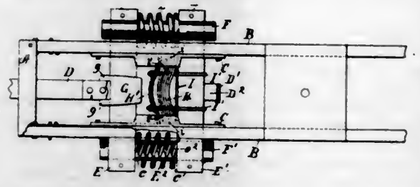
2. The combination of a framework for bed-springs, and transverse metal strips connecting the lower edges of the opposite sides of the framework, said metal strips being provided with a longitudinal corrugation or groove for the purpose described.



3. A device of the character described comprising a framework, transverse strips connecting the lower edges of the opposite sides and joined to a metal ring at the center of the frame, and springs connecting the upper edges of the framework, said springs being formed with an opening located directly over the before-mentioned metal ring.

4. A device of the character described comprising a framework the sides of which are made in two sections which are pivotally connected so that each half of the framework can be folded over upon the other half, transverse metal strips connecting the lower edges of the opposite sides of the framework and pivotally connected to a metal rod at the center thereof, and springs joining the upper edges of the sides and formed with an opening located directly over the before-mentioned ring.

820,012. DRAFT-GEAR. HERMAN C. PRIESS, Blue Island, Ill. Filed Sept. 15, 1905. Serial No. 278,542.



Claim.—1. In a draft-gear the combination with draft-sills, a draw-bar movable in said sills, cushioning-springs at the rear of and normally out of contact with the draw-bar, said cushioning-springs arranged transversely of the draft-sills, and means for limiting the movement thereof in either direction.

2. In a draft-gear, the combination with draft-sills, a draw-bar movable in said draft-sills, cushioning-springs supported transversely of the draft-sills at the rear of the draw-bar, said springs normally out of contact with the draw-bar, and insulating material between said cushioning-springs, substantially as described.

3. In a draft-gear, the combination with draft-sills provided with elongated forward and rear openings, a draw-bar movable in said draft-sills, follower-bars extending through the aforesaid openings, and cushioning-springs supported transversely of the draft-sills, substantially as described.

4. In a draft-gear, the combination with the draft-sills having elongated forward and rear openings, a draw-bar movable in said draft-sills, follower-bars extending through the aforesaid openings, and a plurality of sets of cushioning-springs supported transversely of the draft-sills and between the follower-bars, substantially as described.

5. In a draft-gear, the combination with draft-sills having elongated forward and rear openings, a draw-bar movable in said draft-sills, follower-bars extending through the aforesaid openings, coiled springs supported between said follower-bars ontside of the draft-sills, and leaf-springs supported in line with the follower-bars upon the inside of the draft-sills, substantially as described.

6. In a draft-gear, the combination with draft-sills having elongated forward and rear openings, a draw-bar and yoke movable in said draft-sills, follower-bars extending through the aforesaid openings, a plurality of cushioning-springs disposed transversely of the draft-sills, means for separating said cushioning-springs into sets, and U-bolts passing through said cushioning-springs and around the rear follower-bar, substantially as described.

7. In a draft-gear, the combination with the draft-sills forming part of the underframing of a car, a draw-bar and yoke movable in said draft-sills, a reinforcing-plate provided with flanges upon the inner face thereof, coincident elongated openings through said draft-sills and reinforcing-plates, follower-bars extending through said openings, and a plurality of cushioning-springs transversely disposed between said draft-sills and reinforcing-plates, substantially as described.

8. In a draft-gear, the combination with the draft-sills, a draw-bar and yoke movable in said draft-sills, reinforcing-plates secured to the inner faces of said draft-sills, inwardly-projecting flanges upon said reinforcing-plates, coincident openings through said draft-sills and reinforcing-plates, follower-bars extending through said openings, cushioning-springs supported between said follower-bars outside of the draft-sills, and a plurality of sets of cushioning-springs supported transversely of the draft-sills inside of the reinforcing-plates, substantially as described.

9. A draft-gear comprising in combination the draft-sills with reinforcing-plates secured thereto, a draw-bar and yoke movable in said draft-sills, coincident openings through said draft-sills and reinforcing-plates, follower-bars extending through said openings, cushioning-springs supported transversely of the draft-sills, and means for separating said springs into sets, substantially as described.

10. A draft-gear comprising in combination draft-sills with reinforcing-plates secured thereto, a draw-bar and yoke movable therein, coincident openings through said draft-sills and reinforcing-plates, follower-bars extending through said openings, a plurality of sets of cushioning-springs supported transversely of the draft-sills, and insulating material between the aforesaid springs, substantially as described.

11. A draft-gear comprising in combination the draft-sills and reinforcing-plates secured thereto, a draw-bar and yoke movable therein, inwardly-projecting flanges upon said reinforcing-plates, coincident openings through said plates and draft-sills, follower-bars extending through said openings, cushioning-springs supported between said follower-bars outside of the draft-sills, a plurality of sets of cushioning-springs supported transversely of the draft-sills and inside of the reinforcing-plates, and means for holding said transverse springs in line with the rear follower-bar, substantially as described.

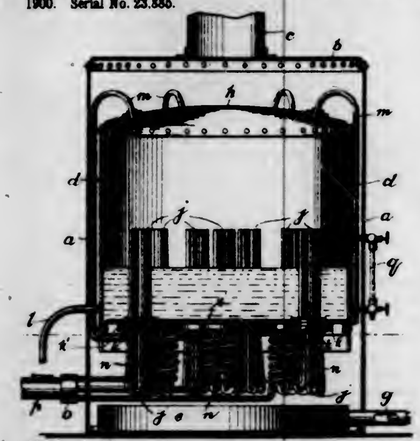
12. A draft-gear comprising channel-shaped draft-sills, a draw-bar and yoke movable in said sills, reinforcing-plates upon the inside of said draft-sills, inwardly-projecting flanges upon said reinforcing-plates, cushioning-springs transversely disposed between said reinforcing-plates and means for limiting the movement of said cushioning-springs and normally out of contact with the draw-bar, the end of said springs supported by the aforesaid inwardly-projecting flanges, substantially as described.

13. A draft-gear comprising channel-shaped draft-sills, a draw-bar and yoke movable in said sills, reinforcing-plates upon the inside of said draft-sills, inwardly-projecting flanges upon said reinforcing-plates, cushioning-springs transversely disposed between said reinforcing-plates and normally out of contact with the draw-bar, the ends of said springs supported by the aforesaid flanges, and insulating material between the aforessid transverse cushioning-springs, substantially as described.

14. In a draft-gear comprising channel-shaped draft-sills, a draw-bar and yoke movable therein, reinforcing-plates upon the inside of the draft-sills, inwardly-projecting flanges upon said reinforcing-plates, coincident openings through said plates and draft-sills, follower-bars extending through said openings, a draw-bar-centering device supported upon the forward follower-bar, transverse cushioning-springs supported between said reinforcing-plates, and means for maintaining said cushioning-springs in line with the rear follower-bar, substantially as described.

15. A draft-gear comprising draft-sills having elongated forward and rear openings, a draw-bar and yoke movable in said draft-sills, follower-bars extending through the aforesaid openings, a draw-bar-centering device supported upon the forward follower-bar, springs transversely disposed between said draft-sills inside of the aforesaid yoke, and U-bolts passing through said cushioning-springs and around the rear follower-bar, substantially as described.

820,013. **STEAM-GENERATOR.** HERBERT E. RIDER, New York, N. Y., assignor to George A. Walton, New York, N. Y. Filed July 17, 1900. Serial No. 23,885.



Claim.—1. The combination, in a steam-generator, of an outer casing having a combustion-chamber formed therein, a boiler arranged within such casing and above the combustion-chamber and constructed so as to provide a flue-opening between the outer periphery of the boiler and the wall of the casing, such flue-opening being contiguous with the crown-sheet formed by the bottom of the boiler, the boiler having a plurality of plugs arranged in the shell thereof, the plugs carrying a plurality of generator-tubes having looped portions extending into the combustion-chamber and exposed freely on all sides to the heated gases therein from the points where they leave the plugs to the points where they again enter the plugs, the tubes having ends of unusual length which project through the plugs into the interior of the boiler, their shorter ends terminating below the water-line and their longer ends terminating above the water-line.

2. The combination, in a steam-generator, of an outer casing having a combustion-chamber formed therein, a boiler arranged within such casing and above the combustion-chamber and constructed so as to provide a flue-opening between the outer periphery of the boiler and the wall of the casing, such flue-opening being contiguous with the crown-sheet formed by the bottom of the boiler, a plurality of plugs arranged in such crown-sheet, the said plugs carrying U-shaped generator-tubes having ends of unequal length, the said generator-tubes arranged in the said plugs so that their looped portions are below said plugs and are within the combustion-chamber and that their end portions project through the said plugs into the interior of the boiler, their shorter ends terminating below the water-line and their longer ends terminating above the water-line.

3. A steam-generator comprising a combustion-chamber and a boiler, the boiler having a plurality of plugs arranged in the shell thereof, each of said plugs carrying a plurality of generator-tubes having looped portions extending into the combustion-chamber and having ends of unequal length which project through the plugs into the interior of the boiler, their shorter ends terminating below the water-line, and their longer ends terminating above the water-line, substantially as set forth.

4. The combination in a steam-generator, of a combustion-chamber, a shell arranged above the said combustion-chamber, and a plurality of plugs arranged in the crown-sheet of the said shell, each of the said plugs carrying a plurality of generator-tubes having ends of unequal length, the said generator-tubes arranged in the said plugs so that their looped portions are below the said plugs and are within the combustion-chamber and their end portions project through the said plugs into the interior of the shell, their shorter ends terminating below the water-line, and their longer ends terminating above the water-line, substantially as set forth.

5. A generating unit for a steam-boiler comprising a plug adapted to be secured in the shell of the boiler and having one or more generator-tubes with a looped portion or portions at one side of the plug and ends of unequal length at the other side of said plug, substantially as set forth.

6. A generating unit for a steam-boiler comprising a plug adapted to be secured in the shell of the boiler and having one or more generator-tubes, the generator-tube or each generator-tube consisting of one part having a looped portion at one side of the plug and ends expanded into the plug at the other side of the plug, and another part fitted into one of said ends to provide an elongated end for such generator-tube, substantially as set forth.

7. A generating unit for a steam-boiler comprising a plug adapted to be secured in the shell of the boiler and having a plurality of generator-tubes therein each generator-tube having a U-shaped portion with ends expanded into the plug and another portion fitted into one of said ends to provide an elongated end for such generator-tube, and the generator-tubes being arranged closely together with their U-shaped portions overlapping, substantially as set forth.

8. The combination in a steam-generator, of a shell, a combustion-chamber below the said shell, a U-shaped generator-tube arranged with its looped portion within the said combustion-chamber, said generator-tube having ends of unequal length which project through the crown-sheet of said shell into the interior thereof and terminate the one below the water-line therein and the other above the water-line therein, a burner arranged within the combustion-chamber, and a superheating-coil arranged in the path of the flame of the burner and connecting upon one side with the steam-space within the said shell, and upon the other side with a steam-supply pipe, substantially as set forth.

9. The combination in a steam-generator, of an outer casing the top portion of which communicates with an uptake and the lower portion of which forms a combustion-chamber, a shell arranged within the upper portion of said casing, the crown-sheet of said shell being provided with a plurality of U-shaped generator-tubes having ends of unequal length whose looped portions project into the combustion-chamber and whose ends project within the said shell, the shorter ends thereof terminating below the water-line and the longer ends terminating above the water-line, a burner arranged within the combustion-chamber, a plurality of superheating-coils arranged in the path of the flame of the said burner, the said superheating-coils connected upon one side with the steam-space within the shell and upon the other side with a steam-supply pipe, substantially as set forth.

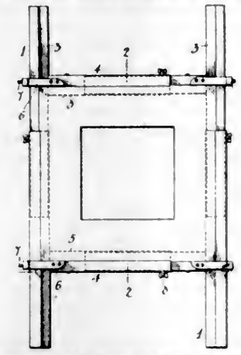
10. The combination in a steam-generator, of a combustion-chamber, a shell arranged above the combustion-chamber, a plurality of plugs arranged in the crown-sheet of the shell, each of the plugs having a plurality of generator-tubes therein, each of said generator-tubes having a looped portion extending into the combustion-chamber, a plurality of superheating-coils each arranged about a group of generator-tubes on a plug, each of said superheating-coils being connected to the steam-space in the shell, and a main steam-supply pipe with which all of said superheating-coils are connected at their discharge ends, substantially as set forth.

11. The combination in a steam-generator of a combustion-chamber, a shell arranged above the combustion-chamber, a plurality of plugs arranged in the crown-sheet of the shell, each of the plugs having a plurality of generator-tubes therein, each of said generator-tubes having a looped portion extending into the combustion-chamber, and the generator-tubes on each plug being arranged closely together with their looped portions overlapping, a plurality of superheating-coils each arranged about a group of generator-tubes on a plug, each of said superheating-coils being connected to the steam-space in the shell, and a main steam-supply pipe with which all of said superheating-coils are connected at their discharge ends, and a burner arranged within the combustion-chamber in proximity to such groups and coils, substantially as set forth.

12. The combination in a steam-generator, of an outer casing the top portion of which communicates with an uptake and the lower portion of which forms a combustion-chamber, a shell arranged within the upper portion of said casing, a plurality of plugs arranged in the crown-sheet of the shell, each of the plugs having a plurality of generator-tubes therein, each of said generator-tubes having a looped portion extending into the combustion-chamber and having ends of unequal length, projecting within the shell, the shorter ends terminating below the water-line and the longer ends terminating above the water-line, a plurality of superheating-coils each arranged about a group of generator-tubes on a plug, each of said superheating-coils being connected to the steam-space in the shell, and a main steam-supply pipe with which all of said superheating-coils are connected at their discharge ends, substantially as set forth.

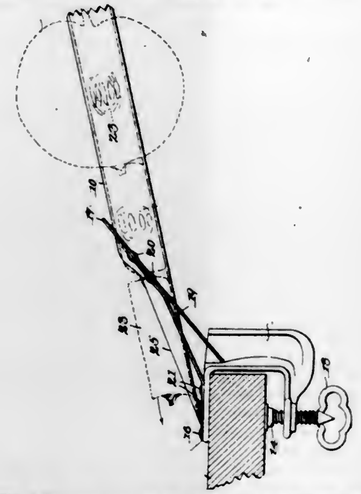
820,014. **MOLD.** OSCAR M. RIBB, Toledo, Ohio. Filed Jan. 22, 1906. Serial No. 297,312.

Claim.—1. A mold comprising hollow metallic side pieces having formed on their inner lower sides an offset portion and provided with a filling, hollow metal end pieces formed in two sections adapted to telescope into each other to adjust the length of the same, screw-clamps secured to the ends of said end pieces whereby the same may be adjustably connected to the side pieces of the mold, and a core-piece arranged within the mold, substantially as described.



2. A mold comprising hollow metallic side pieces provided with a filling and having formed on their lower inner sides an offset portion, hollow metallic end pieces having similar offset portions and formed in two sections adapted to telescope into each other to adjust their length, means to hold said sections in their adjusted positions, screw-clamps secured to the outer ends of said sections whereby the same may be adjustably connected to said side pieces, a core-block adapted to be arranged within said mold, and means whereby the size of said core-block may be varied, substantially as described.

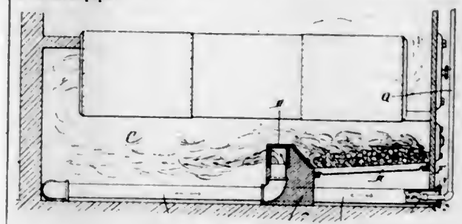
820,015. **APPLE-CORER.** CHARLES F. ROBERTS, Colorado Springs, Colo. Filed July 29, 1905. Serial No. 271,800.



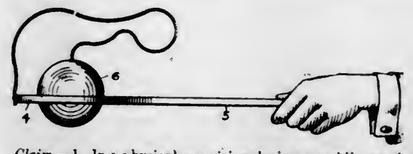
Claim.—An apple-corer comprising, a clamp adapted to be secured upon a table, a shield provided with an opening, and secured to the clamp, a tube having one end opening formed by a cut oblique to the axis, and with the obliquely-open end inserted through the opening in the shield and secured to the clamp and the opposite end of the tube, formed with cutting-teeth arranged about the edge.

820,016. **SMOKE-CONSUMER.** WILLIAM H. ROSTRON, Germantown, Pa. Filed Mar. 29, 1905. Serial No. 252,650.

Claim.—In combination with a furnace having a bridge-wall, the upper rear portion of said wall being provided with a transverse shoulder, a hollow tile resting on the shoulder, and extending entirely across the wall, the upper surface of the tile being flush with the body of the bridge-wall, the rear face of the tile being provided with a series of longitudinal rows of perforations, a pipe extending from the front of the furnace to one side thereof through the ash-pit to the rear of the combustion-chamber and leading back to and communicating with the interior of the hollow tile approximately centrally thereof, said pipe resting on the bed of the furnace and passing up vertically through the bridge-wall, a steam-pipe extending within the outer end of the first-named pipe and a damper for the outer end of the first-named pipe the shutter of the damper being mounted on the steam-pipe.



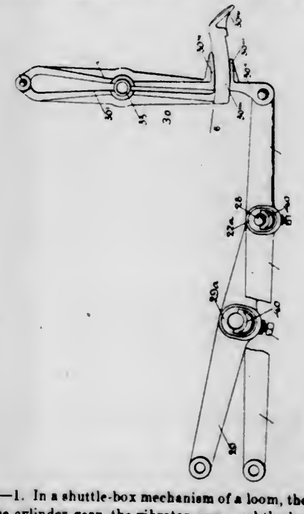
820,017. **PHYSICAL EXERCISING DEVICE.** ISAAC O. RUSSELL, Indianapolis, Ind., assignor to James T. Horn, Indianapolis, Ind. Filed Jan. 12, 1906. Serial No. 295,826.



Claim.—1. In a physical exercising device, a paddle, an elastic ball, an elastic string connecting the ball with the paddle, said paddle having a perforation slightly less in diameter than the diameter of the ball adapted to catch and hold the ball.

2. In a physical exercising device, a paddle, a hollow rubber ball, a rubber string connecting the ball with the end of the paddle, said paddle having a hole slightly less in diameter than the ball to catch and hold the ball.

820,018. **SHUTTLE-BOX MOTION FOR LOOMS.** EPPA H. RYON, Worcester, Mass., assignor to Crompton & Knowles Loom Works, a Corporation of Massachusetts. Filed May 8, 1905. Serial No. 259,296.



Claim.—1. In a shuttle-box mechanism of a loom, the combination with the cylinder-gear, the vibrator-gear, and the box-lever, of intermediate connections, comprising a vibrator-connector, a pivoted lever connected therewith, a link connected with said lever, a pivoted gear-segment connected with said link, a bevel-gear meshing with said gear-segment, a rotary shaft or sleeve carrying said

bevel-gear, a crank connected with said shaft or sleeve, and a connector therefrom to the box-lever.

2. In a shuttle-box mechanism of a loom, the combination with the cylinder-gear, the vibrator-gear, and the box-lever, of intermediate connections, comprising a vibrator-connector, a pivoted lever connected therewith, an adjustable link connected with said lever, a pivoted gear-segment connected with said link, a bevel-gear meshing with said gear-segment, a rotary shaft or sleeve carrying said bevel-gear, a crank connected with said shaft or sleeve, and a connector therefrom to the box-lever.

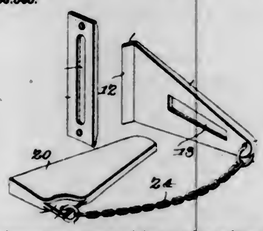
3. In a shuttle-box mechanism of a loom, a give-way mechanism for the shuttle-box rod, comprising two arms pivoted together and yieldingly held together, and one of said arms having an extension thereon adapted to be engaged by the foot of the weaver, to move apart the arms and release the shuttle-box rod.

4. In a shuttle-box mechanism of a loom, the combination with the shuttle-boxes, and a tubular vertically-moving rod connected therewith, of an expansion-spring extending within said tubular rod, and having a bearing at its upper end, and a bearing at its lower end against the upper end of a second rod, and said second rod secured at its lower end, and extending loosely within the lower end of the tubular rod.

5. In a shuttle-box mechanism of a loom, the combination with a vertically-moving shuttle-box rod, of a shuttle-box lever, connected with said shuttle-box rod, and having an opening therethrough for a removable bearing for the pivot-support of said lever, and said bearing, and an adjusting bolt or set-screw turning in a threaded hole in said lever, and engaging said bearing.

6. In a shuttle-box mechanism of a loom, the combination with a vertically-moving shuttle-box rod, of a shuttle-box lever, pivotally connected with said shuttle-box rod, and having an opening therethrough for a removable bearing, and said bearing, having projections thereon which may be reduced in case of looseness of the bearing, and an adjusting bolt or set-screw turning in a threaded hole in said lever, and adapted to engage and adjust said bearing.

820,019. **DOOR-SECURER.** EDWARD J. SEYLER, Erie, Pa., assignor of one-half to Harry J. Frisbie, Erie, Pa. Filed Nov. 22, 1905. Serial No. 288,565.



Claim.—A door-securer comprising a triangular plate having a sharpened flange at one end and gradually thickened toward its other end, said plate being slotted longitudinally, the rear wall of said slot constituting a broad bearing, a triangular key similar in outline to the plate and adapted to be inserted into the slot, said key having a broad edge constituting a base and gradually decreasing in thickness toward its opposite edge, the narrow edge of the key being adapted to bear against the broad wall of the slot, said key having one corner reduced in thickness, and a flexible device connected to one end of the base-plate and to the reduced corner of the key.

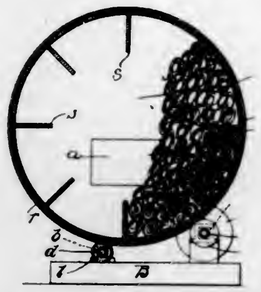
820,020. **CAR-DOOR APPARATUS.** JOHN SHAFFER, Forbes Road, Pa. Filed Oct. 5, 1905. Serial No. 281,416.



Claim.—1. The combination with a car having a door-opening, of a vertical guideway at each side of said opening, each guideway having a rib projecting from the car side and transversely thereto, and a web extending parallel to the car side and spaced therefrom, and a series of unconnected bars extending across the door-opening and having end portions which project into the spaces between the parallel webs of the guideways and the car sides, said end portions being provided at their ends with angle portions extending transversely of the car and lying beyond the transversely-projecting ribs of the guideways.

2. The combination with a car having a door-opening, of a vertical guideway at each side thereof, said guideways being formed of Z-shaped bars having one flange secured to the car side and the other flange projecting away from the door-opening, and a series of unconnected bars extending across the door-opening and having hooked end portions engaging with the outwardly-projecting flange of the guide-bars and sliding thereon.

820,021. **TUMBLING-DRUM.** WILLIAM R. SMITH, Buffalo, N. Y., assignor to Buffalo Leather Co., Buffalo, N. Y., a Corporation of West Virginia. Filed Aug. 25, 1905. Serial No. 275,726.



Claim.—1. A leather-treating apparatus comprising a drum, bands surrounding the drum, a plurality of wheels or rolls arranged beneath and near the center line of the drum for supporting the greater part of the weight thereof, driving wheels or rolls on the other side of the center line and at a greater distance therefrom than the supporting-rolls, in frictional engagement with the bands, and means for rotating said driving-wheels.

2. The combination of a drum, wheels or rolls arranged in two sets beneath the drum, the drum resting thereon and one set of wheels being higher than the other, whereby the greater proportion of the weight of the drum is supported on the lower set, bands surrounding the drum having inclined-sided ribs projecting into and frictionally engaging the sides of tapered grooves in the upper wheels, and means for rotating said upper wheels.

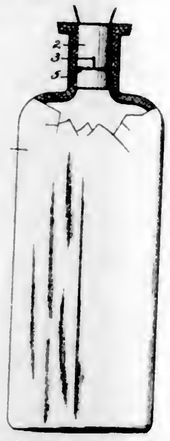
3. The combination of a drum having surrounding bands, each formed with a longitudinal rib wedge-shaped in cross-section, a set of supporting-wheels, driving-wheels beside and at a higher elevation than the supporting-wheels and having grooves with inclined sides complemental to the ribs, and means for rotating the driving-wheels.

4. The combination of a drum, bands having longitudinal ribs wedge-shaped in cross-section surrounding the drum, driving and idle wheels supporting the drum, the driving-wheels having grooves with inclined sides embracing and frictionally engaging the sides of the ribs, and the idle wheels having a free rolling engagement with the drum, said wheels being so arranged that the proportion of the weight of the drum borne by the idle, is greater than that supported by the driving wheels.

5. The combination of a drum, bands surrounding the drum, each formed with a longitudinal rib wedge-shaped in cross-section, and cylindrical flanges on each side of the rib, idle rolls beneath the drum having grooves to receive the ribs without engaging the sides thereof, and cylindrical surfaces at the bottoms of the grooves engaging and supporting the outer surfaces of the ribs, and driving-rolls having grooves with flaring sides in frictional engagement with the sides of the ribs, the idle rolls being located nearer than the driving-rolls to a vertical plane extending through the axis of the drum.

6. The combination of a drum, bands surrounding the drum, each formed with a longitudinal rib wedge-shaped in cross-section and cylindrical flanges on each side of the rib, idle rolls having grooves to receive the ribs without engaging the sides thereof, and supporting the outer surfaces of the ribs on the surfaces at the bottoms of the grooves, and driving-rolls having grooves with flaring sides in frictional engagement with the sides of the ribs, said rolls being arranged to support the entire weight of the drum in unequal proportions, the idle rolls receiving the greater part, and the driving-rolls but a fraction, of such weight.

820,022. **CORK-EXTRACTOR.** WILLIAM H. SMITH, Morton, Pa. Filed Mar. 5, 1906. Serial No. 304,406.



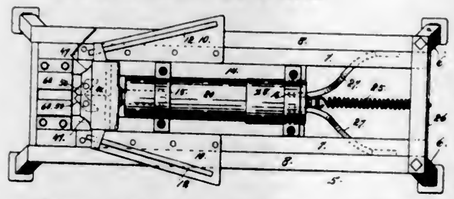
Claim.—1. In combination with a cork, an extractor comprising a loop engaging the periphery of said cork, a spur on said loop for securing it against accidental shifting on the cork, and a pair of attachments extending from diametrically opposite portions of said loop, substantially as described.

2. In combination with a cork, an extractor comprising a double length of wire having its end portions twisted to provide a loop therebetween for engaging the periphery of the cork, said twisted portions extending from diametrically opposite portions of the loop and constituting attachments for drawing the cork, substantially as described.

3. In combination with a cork, an extractor comprising a double length of wire with its two ends twisted together to constitute a securing-spur, the end portions of said band being twisted to provide a medial loop and two end eyes, substantially as described

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820,023. **DRILL-SHARPENER.** GEORGE S. SPREYER, Elkton, Colo., assignor of one-half to Edward M. de la Vergne, Colorado Springs, Colo. Filed Dec. 14, 1904. Serial No. 236,803.



Claim.—1. In a drill-sharpener, the combination with a frame, of a spring-held support slidable thereon, a hammer mounted to reciprocate in the support, a chuck supported to be acted on by the hammer, laterally-movable sharpening-dies carried by the chuck, and means for causing the dies to recede from each other as the chuck and hammer-support are moved rearwardly, and arranged to be rendered effective by the rearward movement.

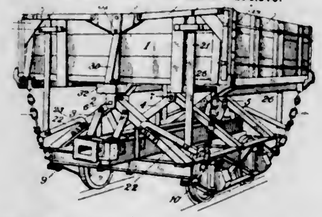
2. The combination with a suitable frame, of a spring-held casing, a slidable support therefor movable back and forth on the frame, yielding means connected to act on the support whereby the casing is normally held at its forward limit of movement, a hammer mounted to reciprocate in the casing, means for imparting a reciprocating movement to the hammer through the instrumentality of a suitable operating fluid, a chuck connected with the casing and arranged to be acted on by the hammer, the chuck having a limited movement in the casing, sharpening-dies laterally movable in the chuck, and means connected with the dies for causing the latter to recede from each other as the chuck and casing are moved rearwardly in opposition to the yielding means acting thereon, and arranged to be rendered effective by the rearward movement.

3. The combination with a support, of a chuck, sharpening-dies mounted to have lateral movement in the chuck, means for imparting the lateral movement to the dies as they are moved rearwardly with the chuck, said means being arranged to be rendered effective by the rearward movement, a reciprocating hammer mounted to act on the chuck, and a connection between the chuck and the hammer whereby the two elements are adapted to be simultaneously moved rearwardly by pressure upon the sharpening-dies, said connection being slidable on the support.

4. The combination of a relatively stationary frame provided with separated guide-tongues which diverge from each other as they extend rearwardly, a casing slidable longitudinally on the frame, a reciprocating hammer carried by the casing, a chuck connected with the casing to be acted on by the hammer, and sharpening devices carried by the chuck and laterally movable therein, the said devices protruding from the chuck laterally, their protruding extremities having openings which the inclined guide-tongues engage, whereby the dies are separated from each other as the chuck and casing are moved rearwardly.

5. In a drill-sharpener, the combination with a frame, of a spring-held support slidable thereon, a chuck, laterally-movable sharpening-dies carried by the chuck, and means for causing the dies to recede from each other as the chuck is moved rearwardly, said means being arranged to be rendered effective by the rearward movement.

820,024. **DUMPING-CAR.** THOMAS H. STAGG, Columbus, Ohio, assignor to The Kilbourne and Jacobs Manufacturing Company, Columbus, Ohio. Filed Jan. 3, 1906. Serial No. 294,370.



Claim.—1. In a side-dumping car a side door pivotally suspended to swing freely and to tend to swing inwardly, means for maintaining said door in elevated position when the car is dumped, in combination with a member positioned between said door and said means, which member is adapted to prevent the inward swing of said door beyond a predetermined point, said door engaging with said member by gravity alone and being free to swing outwardly.

2. In a side-dumping car, a laterally-extending bar, a door pivoted at its outer side to said bar, a plate interposed between said bar and said door to limit the inward swing of said door, said door being adapted to engage against said plate through gravity alone and being free to swing outwardly, in combination with means to maintain said door in an elevated position when said car is dumped.

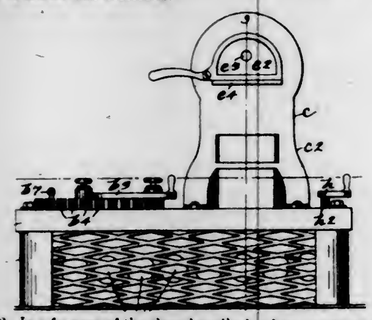
3. In a side-dumping car a side door, a substantially horizontal bar mounted pivotally from which said door is pivotally suspended and arranged to tend to swing inwardly, means adapted to maintain the door in elevated position when the car is dumped, a rigid lock for said door on the bottom of the bed of said car, a member secured to said horizontal bar against which said door engages by gravity alone, whereby said door is left free to swing outwardly but is so held against inward movement by said member as to be automatically returned into locking engagement with said locking member when the car is righted.

4. In a side-dumping car, a bracing construction at the end thereof comprising a vertical bar pivoted thereto, a horizontal bar pivoted to the car-bed and pivotally attached to said vertical bar, a side door pivotally suspended from the outer end of said horizontal bar and adapted to swing freely thereon, a rigid locking member on the bottom of said car-bed, a member carried by said horizontal bar with which said door engages through gravity; whereby said door is caused to fall into locking engagement with said locking member when the car-bed is returned to its normal position.

820,025. **ELECTRIC DENTAL FURNACE.** DANIEL G. STEINECKE, New York, N. Y.; Samuel Steinecke and William Steinecke administrators of said Daniel G. Steinecke, deceased. Filed May 23, 1905. Serial No. 261,783.

Claim.—1. In a furnace, a base having electric contacts forming terminals of an electric circuit, standards secured to the base, a casing open at its top between said standards, a metal cylinder resting

in the open end of said casing, said cylinder being filled with refractory material and said refractory material being provided with a central opening, a muffle in said central opening and an electric heating-circuit in the walls of said muffle and terminating in electric contacts to complete the circuit with the source of electricity of making electrical connection with the said electric contacts of the base, substantially as shown and described.



2. In a furnace of the class described, a base, contacts forming terminals of an electric circuit on said base, vertical standards on said base, a casing open at its top and connecting said standards, an oven of refractory material resting in the open end of said casing and an electric heating-circuit arranged in said oven and in electrical communication with said terminals of said electric circuit, substantially as shown and described.

3. In a furnace, a base, vertical standards secured thereto, a casing open at its top and connecting said standards, a cylinder filled with refractory material resting in the open top of said casing, said refractory material being provided with a central segmental opening, a muffle detachably mounted in said opening, said muffle being composed of an upper and lower member, an electric heating-circuit arranged in the walls of said upper member, an electric heating-circuit arranged in the walls of said lower member, and means for energizing said electric heating-circuits, substantially as shown and described.

4. In a furnace, a base, vertical standards secured thereto, a casing open at its top and connecting said standards, a cylinder filled with refractory material resting in the open top of said casing, said refractory material being provided with a central segmental opening, a muffle detachably mounted in said opening, said muffle being composed of an upper and lower member, an electric heating-circuit arranged in the walls of said upper member, an electric heating-circuit arranged in the walls of said lower member, and means for energizing said electric heating-circuits independently of each other, substantially as shown and described.

5. A heater, comprising a muffle composed of two detachably-connected parts, an electric heating-circuit in the walls of one of said parts, an electric heating-circuit in the walls of the other of said parts, and means for energizing said circuits independently of each other, substantially as shown and described.

6. In a furnace, a muffle composed of an upper and lower member, an electric heating-circuit arranged in the walls of the upper of said members, an electric heating-circuit formed in the walls of the lower of said members, the terminals of said electric heating-circuits being connected at one end and being provided with independent contacts at the other end, and devices communicating with said terminals and contacts for completing an electric circuit through said electric heating-circuits, substantially as shown and described.

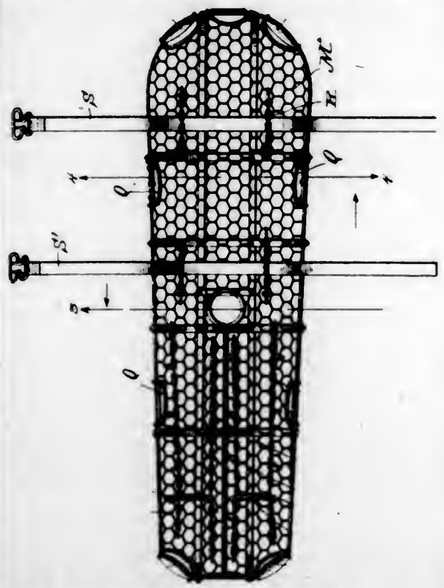
7. In an electric heater of the class described, a casing of refractory material provided with an opening therein, a muffle in said opening and removable therefrom, said muffle being composed of independent members having independent heating-circuits, substantially as shown and described.

8. An electric heating-furnace provided with a muffle composed of separate detachable top and bottom parts, having independent circuits, substantially as shown and described.

9. An electric heating-furnace provided with a muffle composed of top and bottom parts, and means for heating either or both of said parts separately, substantially as shown and described.

820,026. SPLINT-STRETCHER. CHARLES F. STOKES, Washington, D. C., assignor to Charlotte B. Stokes, Washington, D. C. Filed July 21, 1905. Serial No. 270,703.

Claim.—1. A splint-stretcher, comprising a suitable frame, provided with a meshwork secured thereto and having leg-gutters, and means for fastening a patient to said stretcher, as set forth.



2. A splint-stretcher, comprising a suitable frame, provided with a meshwork secured thereto and having leg-gutters, a foot-piece mounted in each of said gutters, and means for fastening a patient to said stretcher, as set forth.

3. A splint-stretcher, comprising a suitable frame, provided with a meshwork secured thereto and having leg-gutters, adjustable foot-pieces, one mounted within each gutter, and means for fastening a person to said stretcher, as set forth.

4. A splint-stretcher, comprising a suitable frame, provided with a meshwork secured thereto and having leg-gutters, foot-pieces, one mounted within each gutter, and provided with rigid snap-hooks, designed to engage said meshwork and slotted to receive bandages, as set forth..

5. A splint-stretcher, comprising a frame made up of longitudinal strips, which are curved to form runners, a marginal bar having handle-grips thereon, a rod extending centrally partially the length of the stretcher, and a meshwork over said rod, thereby forming leg-gutters, as set forth.

6. A splint-stretcher, comprising a frame made up of longitudinal strips with their ends curved, forming runners, a marginal bar to which the ends of said runners are fastened, handle-grips upon said marginal bar, cross-pieces connecting the opposite portions of the latter and fastened to said runner-strips, leg-gutters formed in a portion of said stretcher, a meshwork secured to said frame, and bandages secured to said stretcher, adapted to fasten a person thereto, as set forth.

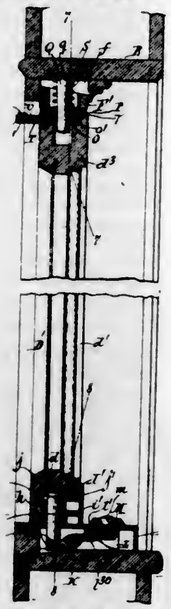
7. A splint-stretcher, comprising a frame made up of metallic strips, their ends curved and forming runners, a marginal bar, cross-pieces fastened to said runner-strips and to said marginal bar, leg-gutters extending partially the length of said stretcher, mesh splints anchored to said gutters, and means for fastening a person to said stretcher, as set forth.

8. A splint-stretcher, comprising a frame made up of longitudinal strips with their ends curved, forming runners, a marginal bar to which the ends of said strips are fastened, a rod extending partially the length of the stretcher, and dividing a portion of the stretcher into leg-gutters, and having cross-bars fastened at their middle portions to said rod and at their ends to the marginal bar of the stretcher, and a meshwork fastened to said frame and forming a bottom for the stretcher, as set forth.

9. A splint-stretcher, comprising a frame made up of longitudinal strips, the ends of which are curved to form runners, a marginal bar connected to the ends of said runners, cross-pieces fastened to said runner-strips and marginal bar, a rod fastened at one end to said marginal bar and bent at a right angle, with its other end bent to form a ring, curved cross-bars which are bent at their middle portions and fastened to said rod, with their ends secured to said marginal bar, a meshwork covering said rod and frame and secured to the marginal edge of said ring, splints secured to said meshwork, and bands fastened to said splints, as set forth.

10. A splint-stretcher, comprising a frame, a meshwork secured thereto, a portion of said frame being formed into leg-gutters, a marginal bar upon said frame, loops secured to said marginal bar, and to which loops portions of the edge of said meshwork are fastened, and handle-grips mounted upon the marginal bar of said frame between the ends of said loops, as set forth.

820,027. CASEMENT AND SIMILAR WINDOW. CLINTON D. TABOR, Newark, N. J., assignor to Tabor Sash Company, Newark, N. J. Filed Oct. 3, 1904. Serial No. 226,952.



Claim.—1. The combination with a window comprising a frame member and a sash member capable of turning horizontally and also moving vertically, of a lifting device for the sash comprising a lever mounted on one of said members and operatively connected with the other member, and a cam for actuating said lever, substantially as set forth.

2. The combination with a window comprising a frame member and a sash member capable of turning horizontally and also moving vertically, of a lifting device for the sash comprising a lever mounted on one of said members, a lifting-rod connecting said lever with the other member, and a cam for actuating said lever, substantially as set forth.

3. The combination with a window comprising a frame member and a sash member capable of turning horizontally and also moving vertically, said members having their lower parts constructed to interlock in the lowered position of the sash, of a hollow stud arranged on one of said members and engaging with a socket in the other member for pivotally connecting the same, a lifting-rod sliding vertically in said stud and operatively connected at one end with one of said members and actuating means connected with the opposite end of said rod, substantially as set forth.

4. The combination with a window comprising a frame member and a sash member capable of turning horizontally and also moving vertically, said members having their lower parts constructed to interlock in the lowered position of the sash, of a hollow stud arranged on one of said members and engaging with a socket in the other member for pivotally connecting the same, a rock-lever mounted on one of said members, a lifting-rod arranged in said stud and connecting said lever with the other member, and a cam for actuating said lever, substantially as set forth.

5. The combination with a window comprising a frame member and a sash member capable of turning horizontally and also moving vertically, said members having their lower parts constructed to interlock in the lowered position of the sash, of a pivotal connection between said members comprising a stud secured to one of said members and a socket which receives said stud consisting of an inner section or box opening downwardly and laterally and seated in a downwardly and laterally opening recess in the lower end of the other member, and an outer section or plate secured over the lateral opening of said box, substantially as set forth.

6. The combination with a window comprising a frame member and a sash member capable of turning horizontally and also moving vertically, said members having their lower parts constructed to interlock in the lowered position of the sash, of a pivotal connection between said members comprising an upright stud secured to the lower part of the frame, and a socket consisting of a box secured to the lower part of said sash and having a rounded back which receives one side of the stud and a plate secured to the side of said box and having a lug bearing against the opposite side of said stud, substantially as set forth.

7. The combination with a window comprising a frame member and a sash member capable of turning horizontally and also moving vertically, said members having their lower parts constructed to interlock in the lowered position of the sash, of a pivotal connection between said members comprising a hollow stud secured to the frame, a socket secured to the sash and receiving said stud, and a lifting device for said sash comprising a rod movable vertically in said stud and bearing at its upper end against the top of said socket, a lug arranged in said socket and engaging underneath a shoulder or collar on said rod, and actuating means connected with the lower end of said rod, substantially as set forth.

8. The combination with a window comprising a frame member and a sash member capable of turning horizontally and also moving vertically, said members having their lower parts constructed to interlock in the lowered position of the sash, of a pivotal connection between said members comprising a hollow stud secured to the frame, a socket secured to the sash and receiving said stud, and a lifting device for said sash comprising a rod movable vertically in said stud and engaging its upper end with the top of said socket, a rock-lever pivoted on the frame and bearing with one arm against a shoulder on the lower part of said rod and also provided on said arm with a pin which projects laterally through a horizontal slot in the lower part of said rod, and a cam engaging with the opposite arm of said rock-lever, substantially as set forth.

9. The combination with a window comprising a frame member and a sash member capable of turning horizontally and also moving vertically, said members having their lower parts constructed to interlock in the lowered position of the sash, of a pivotal connection between said members comprising a hollow stud secured to the frame, a socket secured to the sash and receiving said stud, and a lifting device for said sash comprising a rod movable vertically in said stud and engaging its upper end with the top of said socket, a rock-lever connected at one end with said rod, a cam engagement over the opposite arm of said lever, and a locking-lip moving with said cam and arranged to engage with the under side of said last-mentioned arm when the latter has been turned into the position for lowering the sash, substantially as set forth.

10. The combination with a window comprising a frame member and a sash member capable of turning horizontally and also moving vertically, said members having their lower parts constructed to interlock in the lowered position of the sash, of a pivotal connection between said members comprising a hollow stud secured to the frame, a socket secured to the sash and receiving said stud, and a lifting device for said sash comprising a rod movable vertically in said stud and engaging its upper end with the top of said socket, a rock-lever connected at one end with said rod, a cam engaging over the opposite arm of said lever, and a handle secured to said cam and interlocked therewith by a coöperating groove and feather formed respectively on the same, substantially as set forth.

11. The combination with a window comprising a frame member and a sash member capable of turning horizontally and also moving vertically, said members having their lower parts constructed to interlock in the lowered position of the sash, of a pivotal connection between said members comprising a hollow stud secured to the frame, a socket secured to the sash and receiving said stud, and a lifting device for said sash comprising a rod movable vertically in said stud and engaging its upper end with the top of said socket, a rock-lever engaging one of its arms with the lower end of said rod, a rotary cam engaging with the opposite arm of said lever, a handle se-

cured to said cam, a casing supporting said stud, lever and cam, and a stop device for limiting the movement of said cam consisting of a lug formed on the handle and coöperating with shoulders formed by a segmental recess in the bearing in which the cam is journaled, substantially as set forth.

12. The combination of a frame, a sash turning horizontally in said frame, a weather-strip interposed between the top of the sash and the frame, and a segmental row of teeth mounted on the upper part of the sash and adapted to be engaged by a tooth on said strip upon turning the sash, substantially as set forth.

13. The combination of a frame, a sash turning horizontally in said frame, a weather-strip interposed between the top of the sash and the frame, a shelf arranged on the upper part of the sash and provided with a recess in its top, and a plate arranged in said recess and provided with a segmental row of teeth which are adapted to be engaged by a tooth on the weather-strip, substantially as set forth.

14. The combination of a frame, a sash turning horizontally in said frame, a weather-strip interposed between the top of the sash and the frame, a pivot connecting the lower parts of the sash and frame, coöperating plates applied to the faces of the sash and weather-strip, a pivot-pin secured to the top of the frame and extending downwardly through openings in the strip and sash-plates, a shelf projecting outwardly from the sash-plate and having a recess in its upper side, a plate seated in said recess and provided on its upper side with a segmental row of teeth arranged concentrically relative to said pivot-pin, a tooth arranged on the strip-plate and constructed to coöperate with the row of teeth mounted on the sash, and a teat projecting upwardly from said shelf through an opening in said tooth-plate and having its upper end riveted over said plate, substantially as set forth.

15. The combination of a frame, a sash pivoted in the frame and also movable lengthwise of its pivot, a weather-strip interposed between the frame and sash and interlocking with the latter by a groove-and-rib joint, and a locking device constructed and operating to couple said sash and strip when these parts are moved in one direction lengthwise of said pivot and to uncouple said parts when the same are moved in the opposite direction lengthwise of said pivot, substantially as set forth.

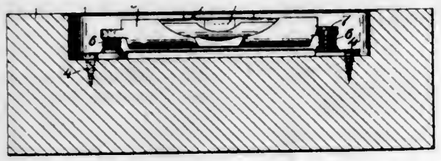
16. The combination of a frame, a sash pivoted in the frame and also movable lengthwise of its pivot, a weather-strip interposed between the frame and sash and interlocking with the latter by a groove-and-rib joint, and a locking device for coupling and uncoupling the sash and strip comprising a lever pivoted on said strip and having one of its arms constructed to engage with a recess in the sash and its opposite arm constructed to engage said frame, substantially as set forth.

17. The combination of a frame, a sash pivoted in the frame and also movable lengthwise of its pivot, a weather-strip interposed between the frame and sash and interlocking with the latter by a groove-and-rib joint, and a locking device for coupling and uncoupling the sash and strip comprising a rock-lever pivoted on said strip and provided on one arm with a pin adapted to engage with a recess in the sash while its opposite arm is provided with a screw adapted to engage with said frame, substantially as set forth.

18. The combination of a window-frame having a channel in the under side of its head, a sash pivoted thereto at one edge to turn horizontally and also capable of vertical movement, the lower parts of said frame and sash being constructed to interlock by a groove-and-rib joint in the lowered position of the sash, a weather-strip arranged with its upper part in said channel and coöperating on its under side with the top of the sash by a groove-and-rib joint, and a device for coupling the strip with the free upper part of the sash comprising a casing secured in a recess in the strip and having openings at opposite ends, a locking-lever pivoted in said casing to turn in a vertical plane and having one of its arms provided with a locking-pin which normally projects downwardly through one of said openings in the casing and into a recess in the adjacent upper part of the sash while its opposite arm is provided with a screw arranged in line with the other opening of the casing and bearing against the bottom of the channel in the frame-head, substantially as set forth.

820,028. LEVEL. JUSTUS A. TRAUT, New Britain, Conn., assignor to Stanley Rule & Level Company, New Britain, Conn., a Corporation of Connecticut. Filed Oct. 23, 1905. Serial No. 283,930.

Claim.—1. A level construction comprising a beam, a recess therein, a single base-plate adapted to said recess, a level-glass carrier, said carrier being adjustably connected at its ends only to said base-plate, said connection comprising adjusting-screws passing through the ends of said carrier and into said base-plate, a spiral spring adjacent to one of said screws and near the end of said carrier and arranged to press the carrier into intimate contact with the under side of said adjusting-screw head, screw-passages extending vertically through the base-plate and arranged outside of that part of the base-plate covered by the carrier whereby said base-plate may be secured to said beam after the base, carrier and adjusting devices have been assembled, and a protective removable cover overstanding and protecting all parts of the carrier and base, said cover-plate having a central perforation to allow of the inspection of the level-glass.



2. A level construction comprising a beam, a recess therein, a single base-plate adapted to said recess, a level-glass carrier, said carrier being adjustably connected at its ends only to said base-plate, said connection comprising adjusting-screws passing through the ends of said carrier and into said base-plate, a spiral spring adjacent to each of said adjusting-screws and near the ends of said carrier and arranged to press the carrier into intimate contact with the under side of said adjusting-screw heads, screw-passages extending vertically through the base-plate and arranged outside of that part of the base-plate covered by the carrier whereby said base-plate may be secured to said beam after the base, carrier and adjusting devices have been assembled, and a protective removable cover overstanding and protecting all parts of the carrier and base, said cover-plate having a central perforation to allow of the inspection of the level-glass.

820,029. BOTTLE-HEATER. HENRY H. WAUGH, Brooklyn, N. Y. Filed Mar. 21, 1905. Serial No. 251,216.



Claim.—1. A bottle-heater having a relatively wide base member composed of plate-like members spaced apart to form a water-chamber, and provided with a corrugated portion, and a relatively narrow tubular member connected to said base, and communicating therewith.

2. A bottle-heater having a relatively wide base member formed with a water-chamber, a tubular member connected to and in communication with said base and adapted to receive a bottle, and means on the interior of the tubular member for preventing the bottle from contacting or lying flat against the side walls of the tubular member, and to partially confine steam passing between the sides of the bottle and the sides of the tubular member.

3. A bottle-heater having a relatively wide base portion provided with a corrugated surface on which the base of the bottle is adapted to rest, a relatively narrow tubular member carried by the base and in communication therewith and adapted to receive a bottle, and means for partially confining or obstructing the passage of steam between the bottle and the sides of the tubular member.

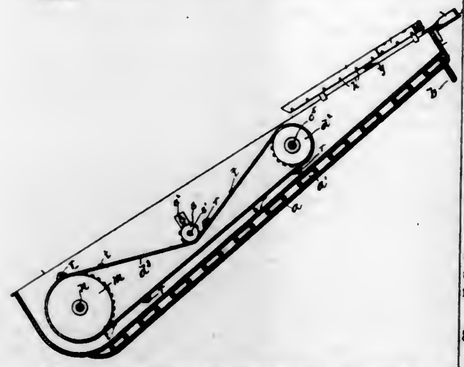
4. A bottle-heater having a relatively wide base formed of plate-like members spaced apart, the lowermost of said members having projecting surfaces extending inwardly therefrom, and a relatively narrow tubular member connected to the uppermost plate, and communicating with said base.

5. A bottle-heater having a base formed of plate-like members spaced apart, the lowermost of said members having projecting surfaces extending inwardly therefrom, a tubular member connected to the uppermost plate and communicating with the base, and means projecting inwardly from the tubular member to prevent a bottle or the like lying flat against the sides of the tubular member.

6. A bottle-heater having a base portion formed of a plurality of plates designed to form a water-chamber, one of said plates having an indented surface, a tubular bottle-containing member connected to the base and communicating therewith and ribs or beads extending inward from the wall of the tubular member designed to partially confine steam passing through the space between the bottle and the tubular member.

7. A bottle-heater having a base formed of plate-like members spaced apart to form a water-chamber, a relatively narrow tube extending upward from said base and communicating therewith, and a rib or bead extending inward from the tubular member.

820,030. MACHINE FOR COATING CONFECTIONERY. WILLIAM H. WEEKS, Philadelphia, Pa. Filed Feb. 9, 1906. Serial No. 300,214.



Claim.—1. In a machine for coating cores by a sidewise dipping, the combination with a suitable solution-containing receptacle, of a movable dipping-frame adapted to support and carry a detached core-holding tray, means to direct the path of movement of said dipping-frame through the solution-receptacle in a downwardly and then an upwardly inclined horizontal direction, and a tray-receiving frame mounted upon the solution-receptacle and in such relation to the movable dipping-frame that the latter will be brought into horizontal parallelism with the tray-receiving frame and automatically discharge the dipped tray thereon.

2. In a machine for coating cores by dipping them into a coating solution by a downwardly-inclined horizontal dipping of the core-holding tray, the combination with a suitable solution-receptacle having an inclined basal interior, of a movable dipping-frame therein adapted to support a series of detached core-holding trays, a tray-receiving frame mounted over and near the shallow end of the receptacle, actuating and guiding devices operating to carry the dipping-frame and the trays supported thereon into, through and out of the solution in the receptacle in an inclined horizontal direction, and bring each tray, after dipping, into position adjacent to and in the same horizontal plane with the tray-receiving frame and automatically discharge them successively thereon.

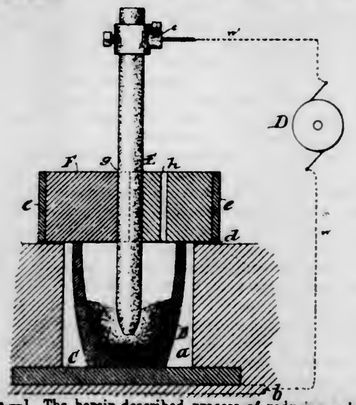
3. In a machine for coating cores by dipping, the combination of the following instrumentalities, namely a solution-receptacle of substantially oblong rectangular form in planular outline and having an inclined basal interior, a tray-receiving frame mounted over the shallower end thereof, a movable dipping-frame comprising a pair of oppositely-disposed endless chains carrying connecting-bars and projecting lugs adapted to support and discharge a detached core-holding tray, and actuating and guiding devices for the dipping-frame adapted and operating to receive said tray thereon at the deep end of the solution-receptacle, carry it in a downwardly-inclined direction through the solution, and bring it therefrom into horizontal parallelism with said receiving-frame and automatically discharge it thereon.

4. In a machine for coating cores by dipping, the combination with a substantially oblong rectangular solution-receptacle having an inclined basal interior, of means to dip the cores therein in an inclined horizontal direction, said means consisting of a pair of transversely-disposed shafts within the receptacle carrying oppositely-disposed sprocket-wheels, a pair of endless chains driven thereby, guiding devices within the tank operating to control the direction of movement of said chains, first in a downwardly-inclined and then in an upwardly-inclined direction, devices mounted upon said chains adapted to support thereon a series of detached core-holding trays, by gravity, and a tray-receiving frame mounted upon the rearward end of said solution-receptacle, adapted to receive said trays successively discharged from the endless chain on the terminus of their upwardly-inclined travel.

5. In a machine of the character recited, the combination with a solution-receptacle having an inclined basal interior, a tray-receiving frame mounted over the shallower end thereof, an endless-chain dipping-frame mounted and operating within the deeper portion of the receptacle and forward of the tray-receiving frame, means to removably support thereon one or more detached core-holding trays, means to actuate said chain dipping-frame, consisting of a pair of oppositely-disposed sprocket-wheels at the extreme deep end of the tank, a shaft therefor, another pair of oppositely-disposed sprocket-wheels parallel with those first recited, a driven shaft upon which the same are mounted, means to drive said shaft, means to connect and disconnect said shaft with the driving means, and guiding devices within the tank operating to direct the path of movement of the dipping-frame in an inclined horizontal direction.

6. In a machine of the class recited, comprising a solution-receptacle, a movable dipping-frame adapted to support a detached core-holding tray, and means to direct the path of movement of said dipping-frame through the coating solution in a horizontally-inclined direction and automatically discharge therefrom the supported tray after dipping, of a yieldingly-supported tray-receiving frame mounted over the solution-receptacle rearwardly adjacent to and in the same horizontal plane with the discharge end of the dipping mechanism, vibrating devices with which said yieldingly-supported frame is operatively engaged by a weight or load on the frame, and a supplemental tray-receiving frame hinged to the main frame and adapted to support and invert a core-holding tray slid thereon from the main frame.

820,031. PROCESS OF REDUCING CALCIUM OXID. THOMAS L. WILLSON, New York, N. Y., assignor, by mesne assignments, to Union Carbide Company, a Corporation of Virginia. Filed Jan. 28, 1896. Serial No. 577,117.



Claim.—1. The herein-described process of reducing calcium oxid by the action of carbon commingled therewith and the heat generated by an electric arc, which consists in establishing an electric arc between suitable poles, embedding the arc within a charge of calcium oxid and carbon, reducing portions of the charge, accumulating the product into a mass, thereafter employing said mass as one pole of the arc and maintaining the arc as the mass accumulates by gradually moving one of the poles of the arc, keeping unreduced portions of the charge around the arc, thereby retaining the heat of the arc and concentrating it upon the work to be done, and substantially excluding the air from the zone of reduction and permitting the escape of the gases produced by the reduction.

2. The herein-described process of reducing calcium oxid by the action of carbon commingled therewith and the heat generated by an electric arc, which consists in establishing an electric arc between suitable poles, one of said poles being the end of a carbon electrode, embedding the arc in a charge of calcium oxid and carbon, reducing portions of the charge, accumulating the product into a mass, thereafter employing said mass as one electrode and maintaining the arc between said mass and said carbon electrode by gradually moving one of said electrodes, keeping unreduced portions of the charge in contact with the carbon electrode and around the arc, thereby retaining the heat of the arc and concentrating it upon the work to be done, and substantially excluding the air from the zone of reduction and permitting the escape of the gases produced by the reduction.

3. The herein-described process of reducing calcium oxid by the action of carbon commingled therewith and the heat generated by an electric arc, which consists in establishing an electric arc between suitable poles, embedding the arc within a charge of calcium oxid and carbon, reducing portions of the charge, accumulating the product into a mass, thereafter employing said mass as one pole of the arc and maintaining the arc as the mass accumulates by gradually moving one of the poles of the arc, keeping unreduced portions of the charge around the arc and around the hot portions of said mass, thereby retaining the heat of the arc and concentrating it upon the work to be done, and substantially excluding the air from the zone of reduction and permitting the escape of the gases produced by the reduction.

4. The herein-described process of reducing calcium oxid by the action of carbon commingled therewith and the heat generated by an electric arc, which consists in establishing an electric arc between suitable poles, one of said poles being the end of a carbon electrode, embedding the arc in a charge of calcium oxid and carbon, reducing portions of the charge, accumulating the product into a mass, thereafter employing said mass as one electrode and maintaining the arc between said mass and said carbon electrode by gradually moving one of said electrodes, keeping unreduced portions of the charge in contact with the carbon electrode and around the arc and the hot portions of said mass, thereby retaining the heat of the arc and concentrating it upon the work to be done, and substantially excluding the air from the zone of reduction and permitting the escape of the gases produced by the reduction.

5. The herein-described process of reducing calcium oxid by the action of carbon commingled therewith and the heat generated by an electric arc, which consists in establishing an electric arc between suitable poles, one of said poles being the end of a depending carbon electrode, embedding the arc in a charge of calcium oxid and carbon, reducing portions of the charge, accumulating the product into a mass, thereafter employing said mass as one electrode and maintaining the arc between said mass and said depending carbon electrode by gradually moving one of said electrodes, keeping unreduced portions of the charge in contact with the depending carbon electrode and around the arc, thereby retaining the heat of the arc and concentrating it upon the work to be done, and substantially excluding the air from the zone of reduction and permitting the escape of the gases produced by the reduction.

6. The herein-described process of reducing calcium oxid by the action of carbon commingled therewith and the heat generated by an electric arc, which consists in establishing an electric arc between suitable poles, one of said poles being the end of a depending carbon electrode, embedding the arc in a charge of calcium oxid and carbon, reducing portions of the charge, accumulating the product into a mass, thereafter employing said mass as one electrode and maintaining the arc between said mass and said depending carbon electrode by gradually moving one of said electrodes, keeping unreduced portions of the charge in contact with the depending carbon electrode and around the arc of the hot portions of said mass, thereby retaining the heat of the arc and concentrating it upon the work to be done, and substantially excluding the air from the zone of reduction and permitting the escape of the gases produced by the reduction.

7. The herein-described process of continuously reducing calcium oxid by the action of carbon commingled therewith and the heat generated by an electric arc, which consists in establishing an electric arc between suitable poles, embedding the arc within a charge of calcium oxid and carbon, reducing portions of the charge, accumulating the product into a mass, thereafter employing said mass as one pole of the arc and maintaining the arc as the mass accumulates by gradually moving one of the poles of the arc, feeding in additional material as required and keeping unreduced portions of the charge around the arc, thereby retaining the heat of the arc and concentrating it upon the work to be done, and substantially excluding the air from the zone of reduction and permitting the escape of the gases produced by the reduction.

8. The herein-described process of continuously reducing calcium oxid by the action of carbon commingled therewith and the heat generated by an electric arc, which consists in establishing an electric arc between suitable poles, one of said poles being the end of a carbon electrode, embedding the arc in a charge of calcium oxid and carbon, reducing portions of the charge, accumulating the product into a mass, thereafter employing said mass as one electrode and maintaining the arc between said mass and said carbon electrode by gradually moving one of said electrodes, feeding an additional material as required and keeping unreduced portions of the charge in contact with the carbon electrode and around the arc, thereby protecting said electrode and retaining the heat of the arc and concentrating it upon the work to be done, and substantially excluding the air from the zone of reduction and permitting the escape of the gases produced by the reduction.

9. The herein-described process of continuously reducing calcium oxid by the action of carbon commingled therewith and the heat generated by an electric arc, which consists in establishing an electric arc between suitable poles, one of said poles being the end of a depending carbon electrode, embedding the arc in a charge of calcium oxid and carbon, reducing portions of the charge, accumulating the product into a mass thereafter employing said mass as one electrode and maintaining the arc between said mass and said depending carbon electrode by gradually moving one of said electrodes, feeding in additional material as required and keeping unreduced portions of the charge in contact with the depending carbon electrode and around the arc and the hot portions of said mass, thereby protecting said electrode and mass, retaining the heat of the arc and concentrating it upon the work to be done, and substantially excluding the air from the zone of reduction and permitting the escape of the gases produced by the reduction.

10. The herein-described process of producing calcium carbid which consists in establishing an electric arc between suitable poles embedding the arc within a charge of calcium oxid and carbon using suitable proportions for the production of calcium carbid, reducing portions of the charge, accumulating the carbid into a mass thereafter employing said mass as one pole of the arc and maintaining the arc as the mass accumulates by gradually moving one of the poles of the arc, keeping unreduced portions of the charge around the arc, thereby retaining the heat of the arc and concentrating it upon the work to be done, and substantially excluding the air from the zone of reduction and permitting the escape of the gases produced by the reduction.

11. The herein-described process of producing calcium carbid, which consists in establishing an electric arc between suitable poles, one of said poles being the end of a carbon electrode, embedding the arc in a charge of calcium oxid and carbon, using suitable proportions for the production of calcium carbid, reducing portions of the charge, accumulating the carbid into a mass, thereafter employing said mass as one electrode and maintaining the arc between said mass and said carbon electrode by gradually moving one of said electrodes, keeping unreduced portions of the charge in contact with the carbon electrode and around the arc, thereby protecting said electrode and retaining the heat of the arc and concentrating it upon the work to be done, and substantially excluding the air from the zone of reduction and permitting the escape of the gases produced by the reduction.

12. The herein-described process of producing calcium carbid, which consists in establishing an electric arc between suitable poles, embedding the arc within a charge of calcium oxid and carbon, using suitable proportions for the production of calcium carbid, reducing portions of the charge, accumulating the carbid into a mass, thereafter employing said mass as one pole of the arc and maintaining the arc as the mass accumulates by gradually moving one of the poles of the arc, keeping unreduced portions of the charge around the arc and around the hot portions of said mass, thereby retaining the heat of the arc and concentrating it upon the work to be done, and substantially excluding the air from the zone of reduction and permitting the escape of the gases produced by the reduction.

13. The herein-described process of producing calcium carbid, which consists in establishing an electric arc between suitable poles, one of said poles being the end of a carbon electrode, embedding the arc in a charge of calcium oxid and carbon, using suitable proportions for the production of calcium carbid, reducing portions of the charge, accumulating the carbid into a mass, thereafter employing said mass as one electrode and maintaining the arc between said mass and said carbon electrode by gradually moving one of said electrodes, keeping unreduced portions of the charge in contact with the carbon electrode and around the arc and the hot portions of said mass, thereby retaining the heat of the arc and concentrating it upon the work to be done, and substantially excluding the air from the zone of reduction and permitting the escape of the gases produced by the reduction.

14. The herein-described process of producing calcium carbid, which consists in establishing an electric arc between suitable poles, one of said poles being the end of a depending carbon electrode, embedding the arc in a charge of calcium oxid and carbon, using suitable proportions for the production of calcium carbid, reducing portions of the charge, accumulating the carbid into a mass, thereafter employing said mass as one electrode and maintaining the arc between said mass and said depending carbon electrode by gradually moving one of said electrodes, keeping unreduced portions of the charge in contact with the depending carbon electrode and around the arc, thereby retaining the heat of the arc and concentrating it upon the work to be done, and substantially excluding the air from the zone of reduction and permitting the escape of the gases produced by the reduction.

15. The herein-described process of producing calcium carbid, which consists in establishing an electric arc between suitable poles, one of said poles being the end of a depending carbon electrode, embedding the arc in a charge of calcium oxid and carbon, using suitable proportions for the production of calcium carbid, reducing portions of the charge, accumulating the carbid into a mass, thereafter employing said mass as one electrode and maintaining the arc between said mass and said depending carbon electrode by gradually moving one of said electrodes, keeping unreduced portions of the charge in contact with the depending carbon electrode and around the arc and the hot portions of said mass, thereby retaining the heat of the arc and concentrating it upon the work to be done, and substantially excluding the air from the zone of reduction and permitting the escape of the gases produced by the reduction.

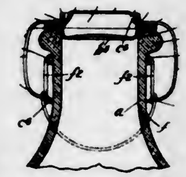
16. The herein-described process of producing calcium carbid, which consists in establishing an electric arc between suitable poles, embedding the arc within a charge of calcium oxid and carbon, using suitable proportions for the production of calcium carbid, reducing portions of the charge, accumulating the carbid into a mass, thereafter employing said mass as one pole of the arc and maintaining the arc as the mass accumulates by gradually moving one of the poles of the arc, feeding in additional material as required and keeping unreduced portions of the charge around the arc, thereby retaining the heat of the arc and concentrating it upon the work to be done, and substantially excluding the air from the zone of reduction and permitting the escape of the gases produced by the reduction.

17. The herein-described process of producing calcium carbid, which consists in establishing an electric arc between suitable poles, one of said poles being the end of a carbon electrode, embedding the arc in a charge of calcium oxid and carbon, using suitable proportions for the production of calcium carbid, reducing portions of the charge, accumulating the carbid into a mass, thereafter employing said mass as one electrode and maintaining the arc between said mass and said carbon electrode by gradually moving one of said electrodes, feeding in additional material as required and keeping unreduced portions of the charge in contact with the carbon electrode and around the arc, thereby protecting said electrode and retaining the heat of the arc and concentrating it upon the work to be done, and substantially excluding the air from the zone of reduction and permitting the escape of the gases produced by the reduction.

18. The herein-described process of producing calcium carbid, which consists in establishing an electric arc between suitable poles, one of said poles being the end of a depending carbon electrode, embedding the arc in a charge of calcium oxid and carbon, using suitable proportions for the production of calcium carbid, reducing portions of the charge, accumulating the carbid into a mass, thereafter employing said mass as one electrode and maintaining the arc between said mass and said depending carbon electrode by gradually moving one of said electrodes, feeding in additional material as required and keeping unreduced portions of the charge in contact with the depending carbon electrode and around the arc and the hot portions of said mass, thereby protecting said electrode and mass, retaining the heat of the arc and concentrating it upon the work to be done, and substantially excluding the air from the zone of reduction and permitting the escape of the gases produced by the reduction.

820,032. **BOTTLE-CLOSING DEVICE.** ANDREW C. WITZEL, New York, N. Y. Filed May 31, 1905. Serial No. 262,987.

Claim.—1. A closure device for bottles and other vessels which comprises a circular body portion open at the top and closed at the bottom and provided with an annular flange or rim adapted to rest on the neck of the vessel, a bail passed through the top portion of the closure device and on which said closure device is adapted to turn, said bail being provided between the opposite sides of the closure device with an offset or yoke-shaped portion, substantially as shown and described.



2. A closure device for bottles and other vessels, comprising a circular hollow body portion open at the top and provided at a predetermined distance below the top with an annular flange or rim adapted to rest on the neck of the vessel, a bail passed through the top portion of the closure device above said flange or rim and on which the closure device is adapted to rotate, said bail being provided between the opposite side walls of the closure device with an offset or yoke-shaped portion, and the bottom of the closure device being depressed below said flange or rim and adapted to fit within the neck of the vessel, substantially as shown and described.

3. A closure device for bottles and other vessels, comprising an annular top portion and a closed bottom portion, each of said parts being provided with a flange one of which is wider than and folded around the other so as to form an annular rim around the closure device, and the bottom portion being depressed below said annular rim and adapted to fit within the neck of the vessel, and a bail passed through the annular top portion of the closure device and provided between the opposite sides thereof with an offset or yoke-shaped portion, substantially as shown and described.

4. A closure device for bottles and other vessels, said closure device being composed of an annular top portion and a closed bottom portion, said annular top portion and said bottom portion being provided with flanges one of which is folded around the other to form an annular rim which is adapted to rest on the top of the neck of the vessel and below which the bottom portion is depressed, and a bail passed through the top portion and provided between the opposite side walls thereof with an offset or yoke-shaped portion, substantially as shown and described.

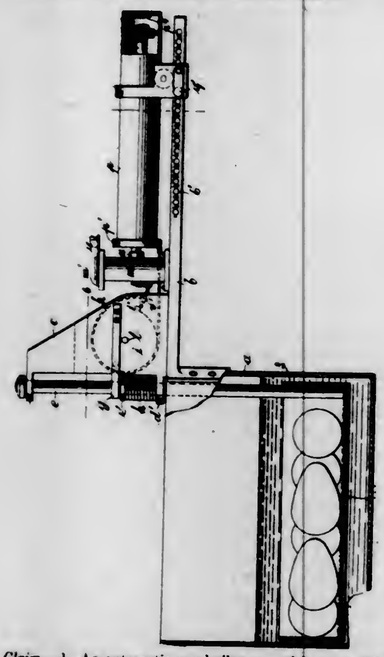
820,033. **SECURING DEVICE FOR RUBBER SHOES.** CLINTON A. WOOLLEN, Mattoon, Ill., assignor of one-half to Ernest W. Bareuther, Mattoon, Ill. Filed Aug. 14, 1905. Serial No. 274,076.



Claim.—A securing device for rubber shoes, formed of a single piece of metal having upper, lower and intermediate connecting portions, the upper and lower portions being arranged in substantially parallel relation to one another and the intermediate connecting portions being in a diagonal position with respect to the upper and lower portions, the jointure H of the upper and intermediate connecting portions forming a catch adapted to be normally held in a forwardly-sprung position and to engage a niche or recess formed at the juncture of the heel and body portion of the shoe, the jointure F of the intermediate and lower sections forming a bearing against the face of the overshoe, the catch H adapted to be withdrawn from the niche or recess by pressure exerted on the upper portion, and the upper and

lower ends of the upper and lower portions respectively having a fixed connection with the rubber to hold the device in place, substantially as described.

820,034. TIME EGG-BOILER. FREDERICK F. ANDERSON, New York, N. Y. Filed Feb. 15, 1905. Serial No. 245,674.



Claim.—1. An automatic egg-boiler comprising a cooking vessel with a handle, a frame attached to the front end of said handle, a rod movably attached in said frame and extending down nearly to the bottom of the cooking vessel, an egg-container permanently fixed to the bottom portion of said rod and a spring with a fixed ring provided on its upper portion, a horizontal lever on the frame holding down the spring, a cam mounted within the frame, a spring in said cam and a wedge thereon so arranged that upon turning the cam the wedge will release the spring-lever, and means for operating said cam.

2. An automatic egg-boiler comprising a cooking vessel with handle, a frame attached to the front end of said handle, a rod movably attached in said frame and extending down nearly to the bottom of the cooking vessel, an egg-container permanently fixed to the bottom portion of said rod and a spring with a fixed ring provided on its upper portion, a horizontal lever on the frame holding down the spring, a cam mounted within the frame, a spring in said cam and a wedge thereon so arranged that upon turning the cam the wedge will release the spring-lever, a cable surrounding said cam secured with one end to its shoulder and means for actuating the cable and cam.

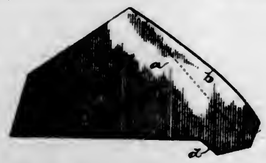
3. An automatic egg-boiler comprising a cooking vessel with handle, a frame attached to the front-end of said handle, a rod movably attached in said frame and extending down nearly to the bottom of the cooking vessel, an egg-container permanently fixed to the bottom portion of said rod and a spring with a fixed ring portion, a horizontal lever on the frame holding down the spring, a cam mounted within the frame, a spring in said cam and a wedge thereon so arranged that upon turning the cam the wedge will release the spring-lever, a cable secured with one end to the shoulder of the cam, a cylinder mounted on the rear of the handle with a cap on its front end wherein the other end of the cable is secured, a hollow piston-rod stationarily mounted having a piston on its rear end within said cylinder and a small opening with a valve in its rear end so that upon drawing out the cylinder the cam is actuated and its return retarded by partially-compressed air.

4. An automatic egg-boiler comprising a cooking vessel, with handle, a frame attached to the front end of said handle, a rod movably attached in said frame and extending down nearly to the bottom of the cooking vessel, an egg-container permanently fixed to the bottom portion of said rod and a spring with a fixed ring provided on its upper portion, a horizontal lever on the frame holding down the spring, a cam mounted within the frame, a spring in said cam and a wedge thereon so arranged that upon turning the cam the wedge will release the spring-lever, a cable secured with one end to the shoulder of the cam, a cylinder mounted on roller-bearings in a movable support on the rear portion of the handle, a cap on the front end of said cylinder wherein the other end of the cable is secured, a hollow piston-rod stationarily mounted having a piston on its rear end within said cylinder, a small hole with a valve in its rear end so that upon drawing out the cylinder the cam is actuated and its return retarded by partially-compressed air, a scale representing minutes on the rear portion of the handle having indentations between the numbers wherein the movable support locates, and adjusting thereby the distance for which the cylinder may be drawn out.

5. An automatic egg-boiler comprising a cooking vessel with handle, a frame attached to the front end of said handle, a rod movably attached in said frame and extending down nearly to the bottom of the cooking vessel, an egg-container permanently fixed to the bottom portion of said rod and a spring with a fixed ring provided on its upper portion, a horizontal lever on the frame holding down the spring, a cam mounted within the frame, a spring in said cam and a wedge thereon so arranged that upon turning the cam the wedge will release the spring-lever, a cable secured with one end to the shoulder of the cam, a cylinder mounted on a movable support on the rear portion of the handle, a cap on the front end of said cylinder wherein the other end of the cable is secured, a hollow piston-rod stationarily mounted having a piston on its rear end within said cylinder, a small hole with a valve in its rear end so that upon drawing out the cylinder the cam is actuated and its return retarded by partially-compressed air, a scale representing minutes on the rear portion of the handle having indentations between the numbers wherein the movable support locates, and an adjustable air-escape valve permanently secured to the hollow piston-rod.

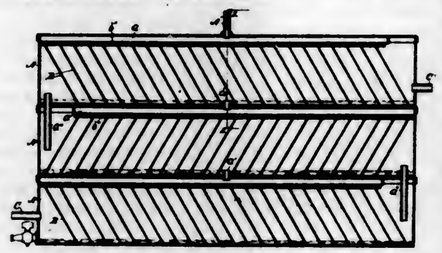
6. An automatic egg-boiler comprising a cooking vessel with handle, a frame attached to the front end of said handle, a rod movably attached in said frame and extending down nearly to the bottom of the cooking vessel, an egg-container permanently fixed to the bottom portion of said rod and a spring with a fixed ring provided on its upper portion, a horizontal lever on the frame holding down the spring, a cam mounted within the frame, a spring in said cam and a wedge thereon so arranged that upon turning the cam the wedge will release the spring-lever, a cable secured with one end to the shoulder of the cam, a cylinder mounted on roller-bearings in a movable support on the rear portion of the handle, a cap on the front end of said cylinder wherein the other end of the cable is secured, a hollow piston-rod stationarily mounted having a piston on its rear end within said cylinder, a small hole with a valve in its rear end so that upon drawing out the cylinder the cam is actuated and its return retarded by partially-compressed air, a scale representing minutes on the rear portion of the handle having indentations between the numbers wherein the movable support locates, an adjustable air-escape valve, a channel below same connecting it with the hollow piston-rod, and a spring-valve at the other end of said channel provided with a lever which is actuated by the shoulder of the same.

820,035. PLOW-POINT. JOHN L. BRINLY, Louisville, Ky., assignor to Brinly-Hardy Company, Louisville, Ky., a Corporation of Kentucky. Original application filed May 23, 1904, Serial No. 209,943. Divided and this application filed Sept. 11, 1905. Serial No. 277,847.



Claim.—As an article of manufacture, a plow-point comprising a rib and plate formed integrally from a single piece, a portion of the operating-surface of the rib being above and substantially parallel with the surface of the plate, a lip formed from a separate piece secured to the plate below the rib portion and forming the bottom of the point, the sides of the lip and rib being substantially flush and together constituting the landside of the point, substantially as specified.

820,036. CARBURETER. HERBERT A. BURCH, Kalamazoo, Mich. Filed Mar. 25, 1905. Serial No. 251,965.



Claim.—1. The combination of a plurality of carbureter-chambers, arranged in a horizontal position, one above another; liquid-hydrocarbon-delivery troughs having a plurality of delivery-openings therein, arranged in the tops of said chambers; a liquid-hydrocarbon-supply pipe adapted to deliver to the delivery-trough of the upper carbureter-chamber; a pipe extending upwardly into the upper carbureter-chamber opening into the delivery-trough of the carbureter-chamber next below; an air-pipe connecting the rear end of the lower carbureter-chamber to the forward end of the chamber next above; a plurality of carbureting devices consisting of frames having carbureting-screens of textile fabric secured thereon; U-shaped holders for said carbureting devices arranged in pairs in a forwardly-inclined position on the side walls of said carbureter-chambers; and distributers of textile fabric adapted to receive the liquid from said delivery-troughs resting upon the upper edges of said carbureting devices, for the purpose specified.

2. The combination of a plurality of carbureter-chambers, arranged in a horizontal position, one above another; liquid-hydrocarbon-delivery troughs having a plurality of delivery-openings therein, arranged in the tops of said chambers; a liquid-hydrocarbon-supply pipe adapted to deliver to the delivery-trough of the upper carbureter-chamber; a pipe extending upwardly into the upper carbureter-chamber opening into the delivery-trough of the carbureter-chamber next below; an air-pipe connecting the rear end of the lower carbureter-chamber to the forward end of the chamber next above; a plurality of carbureting devices consisting of frames having carbureting-screens of textile fabric secured thereon; U-shaped holders for said carbureting devices arranged in pairs on the side walls of said carbureter-chambers; and distributers of textile fabric adapted to receive the liquid from said delivery-troughs resting upon the upper edges of said carbureting devices, for the purpose specified.

3. The combination of a plurality of carbureter-chambers, arranged in a horizontal position, one above another; liquid-hydrocarbon-delivery troughs having a plurality of delivery-openings therein, arranged in the tops of said chambers; a liquid-hydrocarbon-supply pipe adapted to deliver to the delivery-trough of the upper carbureter-chamber; a pipe extending upwardly into the upper carbureter-chamber opening into the delivery-trough of the carbureter-chamber next below; an air-pipe connecting the rear end of the lower carbureter-chamber to the forward end of the chamber next above; a plurality of carbureting devices, consisting of frames having carbureting-screens of textile fabric secured thereon; and U-shaped holders for said carbureting devices arranged in pairs in a forwardly inclined position on the side walls of said carbureter-chambers, for the purpose specified.

4. The combination of a plurality of carbureter-chambers, arranged in a horizontal position, one above another; liquid-hydrocarbon-delivery troughs having a plurality of delivery-openings therein, arranged in the tops of said chambers; a liquid-hydrocarbon-supply pipe adapted to deliver to the delivery-trough of the upper carbureter-chamber; a pipe extending upwardly into the upper carbureter-chamber opening into the delivery-trough of the carbureter-chamber next below; an air-pipe connecting the rear end of the lower carbureter-chamber to the forward end of the chamber next above; a plurality of carbureting devices consisting of frames having carbureting-screens of textile fabric secured thereon; and U-shaped holders for said carbureting devices arranged in pairs on the side walls of said carbureter-chambers, for the purpose specified.

5. The combination of a plurality of carbureter-chambers, arranged in a horizontal position, one above another; liquid-hydrocarbon-delivery troughs having a plurality of delivery-openings therein, arranged in the tops of said chambers; a liquid-hydrocarbon-supply pipe adapted to deliver to the delivery-trough of the upper carbureter-chamber; a pipe extending upwardly into the upper carbureter-chamber opening into the delivery-trough of the carbureter-chamber next below; an air-pipe connecting the rear end of the lower carbureter-chamber to the forward end of the chamber next above; a plurality of carbureting devices having carbureting-screens of textile fabric; U-shaped holders for said carbureting devices arranged in pairs in a forwardly-inclined position on the side walls of said carbureter-chambers; and distributers of textile fabric adapted to receive liquid from said delivery-troughs resting upon the upper edges of said carbureting devices, for the purpose specified.

6. The combination of a plurality of carbureter-chambers, arranged in a horizontal position, one above another; liquid-hydrocarbon-delivery troughs having a plurality of delivery-openings therein, arranged in the tops of said chambers; a liquid-hydrocarbon-supply pipe adapted to deliver to the delivery-trough of the upper carbureter-chamber; a pipe extending upwardly into the upper carbureter-chamber opening into the delivery-trough of the carbureter-chamber next below; an air-pipe connecting the rear end of the lower carbureter-chamber to the forward end of the chamber next above; a plurality of carbureting devices having carbureting-screens of textile fabric; U-shaped holders for said carbureting devices arranged in pairs in a forwardly-inclined position on the side walls of said carbureter-chambers; and distributers of textile fabric adapted to receive liquid from said delivery-troughs resting upon the upper edges of said carbureting devices, for the purpose specified.

7. The combination of a plurality of carbureter-chambers, arranged in a horizontal position, one above another; liquid-hydrocarbon-delivery troughs having a plurality of delivery-openings therein, arranged in the tops of said chambers; a liquid-hydrocarbon-supply pipe adapted to deliver to the delivery-trough of the upper carbureter-chamber; a pipe extending into the upper carbureter-chamber opening into the delivery-trough of the carbureter-chamber next below; an air-pipe connecting the rear end of the lower carbureter-chamber to the forward end of the chamber next above; a plurality of carbureting devices having carbureting-screens of textile fabric; and U-shaped holders for said carbureting devices arranged in pairs in a forwardly-inclined position on the side walls of said carbureter-chambers; for the purpose specified.

8. The combination of a plurality of carbureter-chambers, arranged in a horizontal position, one above another; liquid-hydrocarbon-delivery troughs having a plurality of delivery-openings therein, arranged in the tops of said chambers; a liquid-hydrocarbon-supply pipe adapted to deliver to the delivery-trough of the upper carbureter-chamber; a pipe extending upwardly into the upper carbureter-chamber opening into the delivery-trough of the carbureter-chamber next below; an air-pipe connecting the rear end of the lower carbureter-chamber to the forward end of the chamber next above; a plurality of carbureting devices having carbureting-screens of textile fabric; and U-shaped holders for said carbureting devices arranged in pairs on the side walls of said carbureter-chambers; for the purpose specified.

9. The combination of a plurality of carbureter-chambers, arranged in a horizontal position, one above another; liquid-hydrocarbon-delivery troughs arranged in the tops of said chambers; a liquid-hydrocarbon-supply pipe adapted to deliver to the delivery-trough of the upper carbureter-chamber; a pipe opening into the upper carbureter-chamber and into the delivery-trough of the carbureter-chamber next below; an air-pipe connecting the rear end of the lower carbureter-chamber to the forward end of the chamber next above; a plurality of carbureting devices consisting of frames having carbureting-screens of textile fabric secured thereon, arranged transversely in said chambers and forming complete partitions therein; and distributers adapted to receive the liquid from said delivery-troughs resting upon the upper edges of said carbureting devices, for the purpose specified.

10. The combination of a plurality of carbureter-chambers, arranged in a horizontal position, one above another; liquid-hydrocarbon-delivery troughs arranged in the tops of said chambers; a liquid-hydrocarbon-supply pipe adapted to deliver to the delivery-trough of the upper carbureter-chamber; a pipe opening into the upper carbureter-chamber and into the delivery-trough of the carbureter-chamber next below; an air-pipe connecting the rear end of the lower carbureter-chamber to the forward end of the chamber next above; a plurality of carbureting devices having carbureting-screens of textile fabric arranged transversely in said chambers and forming complete partitions therein; and distributers adapted to receive the liquid from said delivery-troughs resting upon the upper edges of said carbureting devices, for the purpose specified.

11. The combination of a plurality of carbureter-chambers ar-

ranged in a horizontal position, one above another; liquid-hydrocarbon-delivery troughs arranged in the tops of said chambers; a liquid-hydrocarbon-supply pipe adapted to deliver to the delivery-trough of the upper carbureter-chamber; a pipe opening into the upper carbureter-chamber and into the delivery-trough of the carbureter-chamber next below; an air-pipe connecting the rear end of the lower carbureter-chamber to the forward end of the chamber nex above; and a plurality of carbureting devices consisting of frames having carbureting-screens of textile fabric secured thereon, arranged transversely in said chambers forming complete partitions therein, for the purpose specified.

12. The combination of a plurality of carbureter-chambers arranged in a horizontal position, one above another, liquid-hydrocarbon-delivery troughs arranged in the tops of said chambers; a liquid-hydrocarbon-supply pipe adapted to deliver to the delivery-trough of the upper carbureter-chamber; a pipe opening into the upper carbureter-chamber and into the delivery-trough of the carbureter-chamber next below; an air-pipe connecting the rear end of the lower carbureter-chamber to the forward end of the chamber next above; and a plurality of carbureting devices having carbureting-screens of textile fabric arranged transversely in said chambers and forming complete partitions therein, for the purpose specified.

13. The combination of a plurality of carbureter-chambers arranged in a horizontal position, one above another, the lower portions of said chambers being adapted to serve as liquid-reservoirs; an air-pipe connecting the rear end of the lower carbureter-chamber to the forward end of the chamber next above; a plurality of carbureting devices having carbureting-screens of textile fabric arranged transversely in said chambers and forming complete partitions therein, the said carbureting devices being arranged in forwardly-inclined positions; distributers arranged over the said carbureting devices and resting thereon; and connections for delivering the liquid hydrocarbon from the upper carbureter-chambers to the distributers of the chambers next below, for the purpose specified.

14. The combination of a plurality of carbureter-chambers arranged in a horizontal position, one above another, the lower portion of said chambers being adapted to serve as liquid-reservoirs; an air-pipe connecting the rear end of the lower carbureter-chamber with the forward end of the chamber next above; a plurality of carbureting devices having carbureting-screens of textile fabric arranged transversely in said chambers and forming complete partitions therein; distributers arranged over the said carbureting devices and resting thereon; and connections for delivering the liquid hydrocarbon from the upper carbureter-chambers to the distributers of the chambers next below, for the purpose specified.

15. The combination of a plurality of carbureter-chambers arranged in a horizontal position, one above another; an air-pipe connecting the rear end of the lower carbureter-chamber to the forward end of the next chamber above; a plurality of carbureting devices having carbureting-screens of textile fabric arranged transversely in said chambers and forming complete partitions therein, the said carbureting devices being arranged in forwardly-inclined positions; distributers arranged over the said carbureting devices and resting thereon; and connections for delivering the liquid hydrocarbon from the upper carbureter-chambers to the distributers of the chambers next below, for the purpose specified.

16. The combination of a plurality of carbureter-chambers arranged in a horizontal position, one above another; an air-pipe connecting the rear end of the lower carbureter-chamber with the forward end of the chamber next above; a plurality of carbureting devices having carbureting-screens of textile fabric arranged transversely in said chambers and forming complete partitions therein; distributers arranged over the said carbureting devices and resting thereon; and connections for delivering the liquid hydrocarbon from the upper carbureter-chambers to the distributers of the chambers next below, for the purpose specified.

17. The combination of a plurality of carbureter-chambers arranged in a horizontal position, one above another; the lower portions of said chambers being adapted to serve as liquid-reservoirs; an air-pipe connecting the rear end of the lower carbureter-chamber with the forward end of the chamber next above; a plurality of carbureting devices arranged transversely in said chambers and forming complete partitions therein; distributers arranged over the said carbureting devices and resting thereon; and connections for delivering the liquid hydrocarbon from the upper carbureter-chambers to the distributers of the chambers next below, for the purpose specified.

18. The combination of a plurality of carbureter-chambers arranged in a horizontal position, one above another; an air-pipe connecting the rear end of the lower carbureter-chamber with the forward end of the chamber next above; a plurality of carbureting devices arranged transversely in said chambers and forming complete partitions therein; distributers arranged over the said carbureting devices and resting thereon; and connections for delivering the liquid hydrocarbon from the upper carbureter-chambers to the distributers of the chambers next below, for the purpose specified.

19. The combination of a plurality of carbureter-chambers arranged in series in a horizontal position, the lower portions of said chambers being adapted to serve as liquid-reservoirs; air connections for the rear end of each carbureter-chamber to the forward end of the chamber next in series; a plurality of carbureting devices having carbureting-screens of textile fabric arranged transversely in said chambers and forming complete partitions therein, the said carbureting devices being arranged in forwardly-inclined positions; distributers arranged over the said carbureting devices and resting thereon; and means for delivering the liquid hydrocarbon to said distributers, for the purpose specified.

20. The combination of a plurality of carbureter-chambers arranged in series in a horizontal position, the lower portions of said chambers being adapted to serve as liquid-reservoirs; air connections for the rear end of each carbureter-chamber to the forward end of the chamber next in series; a plurality of carbureting devices having carbureting-screens of textile fabric arranged transversely in said chambers and forming complete partitions therein; distributers arranged over the said carbureting devices and resting thereon; and means for delivering the liquid hydrocarbon to said distributers, for the purpose specified.

21. The combination of a plurality of carbureter-chambers arranged in series in a horizontal position; air connections for the rear end of each carbureter-chamber to the forward end of the chamber next in series; a plurality of carbureting devices having carbureting-screens of textile fabric arranged transversely in said chambers and forming complete partitions therein, the said carbureting devices being arranged in forwardly-inclined positions; distributers arranged over the said carbureting devices and resting thereon; and means for delivering the liquid hydrocarbon to said distributers, for the purpose specified.

22. The combination of a plurality of carbureter-chambers arranged in series in a horizontal position; air connections for the rear end of each carbureter-chamber to the forward end of the chamber next in series; a plurality of carbureting devices having carbureting-screens of textile fabric arranged transversely in said chambers and forming complete partitions therein; distributers arranged over the said carbureting devices and resting thereon; and means for delivering the liquid hydrocarbon to said distributers, for the purpose specified.

23. The combination of a plurality of carbureter-chambers arranged in series in a horizontal position, the lower portions of said chambers being adapted to serve as liquid-reservoirs; air connections for the rear end of each carbureter-chamber to the forward end of the chamber next in series; a plurality of carbureting devices arranged transversely in said chambers and forming complete partitions therein; distributers arranged over the said carbureting devices and resting thereon; and means for delivering the liquid hydrocarbon to said distributers, for the purpose specified.

24. The combination of a plurality of carbureter-chambers arranged in series in a horizontal position; air connections for the rear end of each carbureter-chamber to the forward end of the chamber next in series; a plurality of carbureting devices arranged transversely in said chambers and forming complete partitions therein; distributers arranged over the said carbureting devices and resting thereon; and means for delivering the liquid hydrocarbon to said distributers, for the purpose specified.

25. The combination of a carbureter-chamber arranged in a horizontal position, the lower portion of said chamber being adapted to serve as a liquid-hydrocarbon reservoir: a plurality of carbureting devices consisting of frames having carbureting-screens of textile fabric secured thereon; holders for said carbureting devices arranged in pairs in a forwardly-inclined position on the side walls of said carbureter-chamber; a liquid-hydrocarbon-delivery trough arranged above said carbureting devices; and a distributer adapted to receive the liquid from said delivery-trough resting upon the upper edges of said carbureting devices, for the purpose specified.

26. The combination of a carbureter-chamber arranged in a horizontal position, the lower portion of said chamber being adapted to serve as a liquid-hydrocarbon reservoir; a plurality of carbureting devices consisting of frames having carbureting-screens of textile fabric; holders for said carbureting devices arranged in pairs in a forwardly-inclined position on the side walls of said carbureter-chamber; a liquid-hydrocarbon-delivery trough arranged above said carbureting devices; and a distributer adapted to receive the liquid from said delivery-trough resting upon the upper edges of said carbureting devices, for the purpose specified.

27. The combination of a carbureter-chamber arranged in a horizontal position, the lower portion of said chamber being adapted to serve as a liquid-hydrocarbon reservoir; a plurality of carbureting devices consisting of frames having carbureting-screens of textile fabric secured thereon; holders for said carbureting devices arranged in pairs in a forwardly-inclined position on the side walls of said carbureter-chamber; and a liquid-hydrocarbon-delivery trough arranged above said carbureting devices, for the purpose specified.

28. The combination of a carbureter-chamber arranged in a horizontal position; a plurality of carbureting devices consisting of frames having carbureting-screens of textile fabric secured thereon; holders for said carbureting devices arranged in pairs in a forwardly-inclined position on the side walls of said carbureter-chamber; a liquid-hydrocarbon-delivery trough arranged above said carbureting devices; and a distributer adapted to receive the liquid from said delivery-trough resting upon the upper edges of said carbureting devices, for the purpose specified.

29. The combination of a carbureter-chamber arranged in a horizontal position; a plurality of carbureting devices consisting of frames having carbureting-screens of textile fabric; holders for said carbureting devices arranged in pairs in a forwardly-inclined position on the side walls of said carbureter-chamber; a liquid-hydrocarbon-delivery trough arranged above said carbureting devices; and a distributer adapted to receive the liquid from said delivery-trough resting upon the upper edges of said carbureting devices, for the purpose specified.

30. The combination of a carbureter-chamber arranged in a horizontal position, the lower portion of said chamber being adapted to serve as a liquid-reservoir; a plurality of carbureting devices consisting of frames having carbureting-screens of textile fabric secured thereon, arranged transversely in said chamber, forming complete partitions therein, said carbureting devices being inclined forwardly; a liquid-hydrocarbon-delivery trough arranged above said carbureting devices; and a distributer adapted to receive the liquid from the said delivery-trough arranged over the said carbureting devices, for the purpose specified.

31. The combination of a carbureter-chamber arranged in a horizontal position, the lower portion of said chamber being adapted to serve as a liquid-reservoir; a plurality of carbureting devices consisting of frames having carbureting-screens of textile fabric secured thereon, arranged transversely in said chamber, forming complete partitions therein; said liquid-hydrocarbon-delivery trough arranged above said carbureting devices; and a distributer adapted to receive the liquid from the said delivery-trough arranged over the said carbureting devices, for the purpose specified.

32. The combination of a carbureter-chamber arranged in a horizontal position, the lower portion of said chamber being adapted to serve as a liquid-reservoir; a plurality of carbureting devices having carbureting-screens of textile fabric arranged transversely in said chamber, forming complete partitions therein, said carbureting devices being inclined forwardly; a liquid-hydrocarbon-delivery trough arranged above said carbureting devices; and a distributer adapted to receive the liquid from the said delivery-trough arranged over the said carbureting devices, for the purpose specified.

33. The combination of a carbureter-chamber arranged in a horizontal position, the lower portion of said chamber being adapted to serve as a liquid-reservoir; a plurality of carbureting devices having carbureting-screens of textile fabric arranged transversely in said chamber, forming complete partitions therein; a liquid-hydrocarbon-delivery trough arranged above said carbureting devices; and a distributer adapted to receive the liquid from the said delivery-trough arranged over the said carbureting devices, for the purpose specified.

34. The combination of a carbureter-chamber arranged in a horizontal position; a plurality of carbureting devices consisting of frames having carbureting-screens of textile fabric secured thereon, arranged transversely in said chamber, forming complete partitions therein, said carbureting devices being inclined forwardly; a liquid-hydrocarbon-delivery trough arranged above said carbureting devices; and a distributer adapted to receive the liquid from the said delivery-trough arranged over the said carbureting devices, for the purpose specified.

35. The combination of a carbureter-chamber arranged in a horizontal position; a plurality of carbureting devices consisting of frames having carbureting-screens of textile fabric secured thereon, arranged transversely in said chamber, forming complete partitions therein; a liquid-hydrocarbon-delivery trough arranged above said carbureting devices; and a distributer adapted to receive the liquid from the said delivery-trough arranged over the said carbureting devices, for the purpose specified.

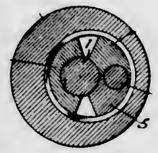
36. The combination of a carbureter-chamber arranged in a horizontal position; a plurality of carbureting devices having carbureting-screens of textile fabric arranged transversely in said chamber, forming complete partitions therein; a liquid-hydrocarbon-delivery trough arranged above said carbureting devices; and a distributer adapted to receive the liquid from the said delivery-trough arranged over the said carbureting devices, for the purpose specified.

37. The combination of a carbureter-chamber arranged in a horizontal position, the lower portion of said chamber being adapted to serve as a liquid-reservoir; a plurality of carbureting devices arranged transversely in said chamber, forming complete partitions therein and depending into said reservoir; a liquid-hydrocarbon-delivery trough arranged above said carbureting devices; and a distributer adapted to receive the liquid from the said delivery-trough arranged over the said carbureting devices, for the purpose specified.

38. The combination of a carbureter-chamber arranged in a horizontal position, the lower portion of said chamber being adapted to serve as a liquid-reservoir; a plurality of carbureting devices arranged transversely in said chamber, forming complete partitions therein and depending into said reservoir; a liquid-hydrocarbon-delivery trough arranged above said carbureting devices; and a distributer adapted to receive the liquid from the said delivery-trough arranged over the said carbureting devices, for the purpose specified

39. The combination of a carbureter-chamber, the lower portion of said chamber being adapted to serve as a liquid-hydrocarbon reservoir; a plurality of carbureting devices arranged in said chamber having their lower edges extending into the said liquid-reservoir; a distributer of fibrous material arranged upon said carbureting devices; and means for supplying liquid hydrocarbon to said distributer, for the purpose specified.

820,037. CLAMPING DEVICE FOR TAPPETS, WHEELS, OR SHAFT-COUPLINGS. CHARLES A. CANDA, Roselle, N. J. Filed Oct. 28, 1905. Serial No. 284,641.



Claim.—1. In a clamping device such as described, the combination with an inclosing member, of a plurality of wedges at least three in number within the same having inner and outer curved surfaces which are relatively eccentric, the intermediate wedge secured to said inclosing member and the others movable with respect thereto, and means independent of said intermediate wedge for forcing said latter wedges apart.

2. In a clamping device such as described, the combination with an inclosing member, of a plurality of wedges at least three in number within the same having inner and outer curved surfaces which are relatively eccentric, the intermediate wedge secured to the inclosing member and the others movable with respect thereto, and a longitudinal wedge between said latter wedges for forcing the same apart.

3. In a clamping device such as described, the combination with an inclosing member having a grooved bore, of a plurality of wedges within said bore having shoulders within and fitted to said grooves, the portions of the surfaces of said wedges intermediate said shoulders being out of contact with said inclosing member, and having inner and outer surfaces which are relatively eccentric, and means for forcing said wedges apart.

4. In a clamping device such as described, the combination with an inclosing member having an eccentric bore, of a plurality of wedges at least three in number having outer surfaces fitting said bore and inner surfaces adapted to fit the object to be held, the intermediate wedge secured to said inclosing member, and means independent of said intermediate wedge for operating said wedges.

5. In a clamping device such as described, the combination with an inclosing member having an eccentric bore, of a plurality of wedges at least three in number having outer surfaces fitting said bore and inner surfaces adapted to fit the object to be held, the inter-

mediate wedge secured to said inclosing member, and a longitudinal wedge between said other wedges.

6. In a clamping device such as described, the combination with an inclosing member having a grooved eccentric bore, of a plurality of wedges having shoulders on their outer surfaces fitting such grooves, the portions of the surfaces of said wedges intermediate said shoulders being out of contact with said inclosing member, and inner surfaces adapted to fit the object to be held, and means for operating said wedges.

820,038. **DRIVING MECHANISM FOR BICYCLES, &c.** JAMES S. COPELAND, Hartford, Conn., assignor to Pope Manufacturing Company, Jersey City, N. J., and Hartford, Conn., a Corporation of New Jersey. Filed July 5, 1904. Serial No. 215,261.



Claim.—1. The combination of a driven member provided with pockets for free-moving pawls, a driving member, a pawl-carrying clutch member rotatable with the driving member and movable to shift its pawls into and out of line with the pawl-pockets of the driven member to drive the same and to permit its free rotation and means operated by the relative rotation of the driving member and the clutch member to move said clutch member, substantially as described.

2. The combination of a driven member provided with pockets for free-moving pawls, a driving member, a pawl-carrying clutch-sleeve rotatable with the driving member and movable longitudinally to shift its pawls into and out of line with the pawl-pockets of the driven member to drive the same and to permit its free rotation and means operated by the relative rotation of the driving member and the clutch member to move said sleeve, substantially as described.

3. The combination of a driven member, a driving member and a clutch-sleeve, said driving member and said clutch-sleeve having a cam-and-toe engagement whereby said sleeve is moved longitudinally upon relative rotation of said driving member, and said sleeve having pawl-pockets carrying free-moving pawls for engagement with pockets in the driven member, substantially as described.

4. The combination of a driven member, a sleeve-like driving member, a rotary oscillating brake-actuator, a brake-lever engaged thereby, brake mechanism operated by said lever, a sleeve-like clutch member of the same diameter as the driving member and having endwise engagement therewith and moving longitudinally toward and from the driving member in endwise relation therewith, and means to effect operative engagement and disengagement of said clutch member with and from said driven member and said brake-actuator, substantially as described.

5. The combination of a driven member, a sleeve-like driving member, a rotary oscillating brake-clutch, a brake-lever engaged thereby, a brake mechanism operated by said lever, a sleeve-like clutch member of the same diameter as the driving member and having endwise engagement therewith and moving longitudinally toward and from the driving member in endwise relation therewith, and means operated by the relative rotation of the driving member and the clutch member to move said clutch member into and out of engagement with and from said driven member and said brake-actuator, substantially as described.

6. The combination of a driven member, a driving member, a rotary oscillating brake-actuator provided with pawl-pockets, a pawl-carrying clutch member rotatable with the driving member, and means to move said clutch member longitudinally to shift its pawls into and out of line with the pawl-pockets of the brake-actuator, substantially as described.

7. The combination of a driven member, a driving member, a rotary oscillating brake-actuator provided with pawl-pockets, a pawl-carrying clutch member rotatable with the driving members, and means operated by the relative rotation of the driving member and the clutch member to move said clutch member longitudinally to shift its pawls into and out of line with the pawl-pockets of the brake-actuator, substantially as described.

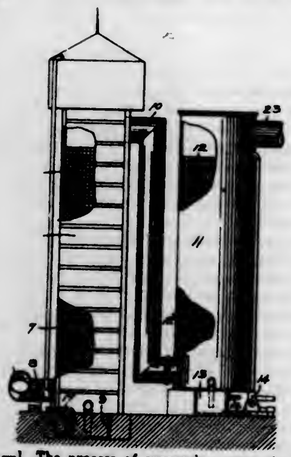
8. The combination with a driven member provided with pawl-pockets, a driving member, a brake-actuator provided with pawl-pockets, a pawl-carrying clutch member and means to move the clutch member longitudinally to shift its pawls into and out of line with the pawl-pockets of the driven member and the pawl-pockets of the brake-actuator, substantially as described.

9. The combination of a driven member, a driving member, a brake-actuator, a clutch-pawl carrier rotatable with the driving member, said wheel-hub and said brake-actuator having pockets for engagement with the pawls, and means to shift its carrier longitudinally to effect engagement and disengagement of said pawls with and from said driven member and said brake-actuator, substantially as described.

10. The combination of a driven member, a driving member, a brake-actuator and a longitudinally-movable pawl-carrying sleeve having a loose cam engagement with said driving member, said driven member and said brake-actuator having pockets for engagement respectively with the pawls of said pawl-carrying sleeve, substantially as described.

11. The combination of a driven member, a driving member and a clutch-sleeve, said driving member and said clutch-sleeve having operative engagement whereby said sleeve is moved longitudinally upon relative rotation of said driving member, and said sleeve having pawl-pockets carrying free-moving pawls for engagement with pockets in the driven member, substantially as described.

820,039. **PROCESS OF RECOVERING AMMONIA FROM GAS.** EDWARD J. DUFF, Liverpool, England. Filed Feb. 10, 1905. Serial No. 245,116.



Claim.—1. The process of recovering ammonia from coal or fuel gas, which consists in passing the gas through or in contact with water to scrub the same, then passing the same through and in contact with ammonia-absorbing liquor in circulation, and mingling said scrubbing-water with said liquor, thereby to recover the ammonia absorbed by the scrubbing-water.

2. The process of recovering ammonia from coal or fuel gases, which consists in subjecting the gas to an ammonia-absorbing liquor in circulation, thereafter passing the gas through or in contact with water in circulation to cool and wash the same, and mingling said water and liquor, whereby the ammonia in said water is recovered.

3. The process of recovering ammonia from coal and fuel gases, which consists in passing the gas through or in contact with water in circulation to scrub the same, then subjecting the gas to an ammonia-absorbing agent, again passing the gas through or in contact with water in circulation to cool the same, passing the excess of cooling-water to the scrubber, and subjecting the excess of water from the scrubber to the action of an ammonia-absorbing agent.

4. The process of recovering ammonia from coal or fuel gases, which consists in passing the gas through or in contact with water in circulation to scrub the same, then passing the same through or in contact with an ammonia-absorbing liquor, again passing the same through or in contact with water in circulation to cool the same, and causing a portion of water from the cooler to flow to the scrubber, and a portion of the water from the scrubber to flow to and be mingled with the ammonia-absorbing liquor.

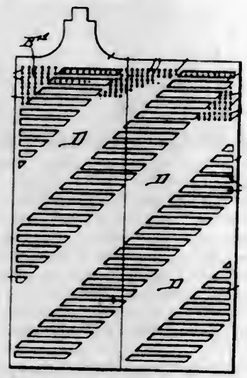
5. The process of recovering ammonia from coal or fuel gas, which consists in passing the gas through or in contact with water to scrub the same, then passing the same through or in contact with an ammonia-absorbing liquor in circulation, again passing the same through or in contact with water in circulation to cool the same, thereby condensing the moisture contained in the gas, returning the excess of water from the cooler to the scrubber, and causing the excess of water from the scrubber to flow to and mingle with the ammonia-absorbing liquor.

6. The process of cleaning gas which consists in passing the gas through or in contact with water in circulation to scrub the same, then subjecting said gas to a cooling process and thereby condensing the moisture contained therein, and returning the water of condensation to the scrubber.

7. The process of cleaning gas, which consists in passing the gas through or in contact with water in circulation to scrub the same, and then through or in contact with water in circulation to cool the same, thereby condensing the moisture contained in the gas, and returning the excess of water from the cooler to the scrubber.

8. The process of recovering ammonia from coal or fuel gases, which consists in passing the gas through or in contact with water to scrub the same, and then through and in contact with water containing sulfuric acid to absorb the ammonia therefrom, and conducting the excess of the scrubbing-water to and mingling the same with the ammonia-absorbing water.

820,040. **BATTERY-PLATE.** OWEN H. FAY, Chicago, Ill. Filed Aug. 19, 1904. Serial No. 221,384.



Claim.—1. A battery-plate comprising end bars, a series of longitudinal bars provided with a series of rearwardly-flaring grooves, and a series of strips extending across the opposite faces of the plate, and in staggered relation to each other.

2. A battery-plate comprising end bars, a series of longitudinal bars, a series of strips extending across the faces of the plate, the strips on the opposite sides being in staggered relation to each other, and a series of pockets formed between said bars, the strips forming the bottoms of the pockets.

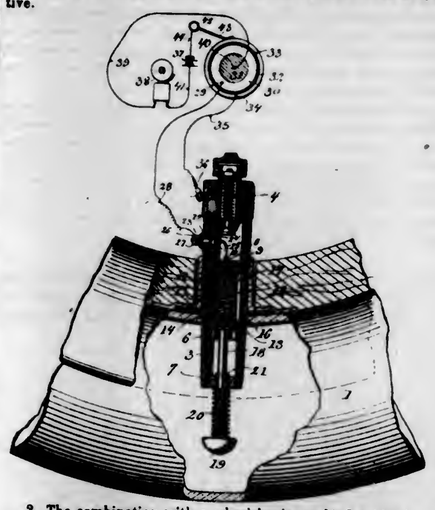
3. A battery-plate comprising end bars, a series of longitudinal bars, a series of perforated strips extending across the faces of the plate, the strips on the opposite sides being in staggered relation to each other, and a series of pockets formed between said bars, the strips forming the bottoms of the pockets.

4. A battery-plate comprising end bars, a series of longitudinal bars provided with a series of rearwardly-flaring grooves, a series of strips extending across the faces of the plate, the strips on the opposite sides being in staggered relation to each other, and a series of pockets formed between said bars, the strips forming the bottoms of the pockets.

5. A battery-plate comprising end bars, a series of longitudinal bars provided with a series of rearwardly-flaring grooves, a series of perforated strips extending across the faces of the plate, the strips on the opposite sides being in staggered relation to each other, and a series of pockets formed between said bars, the strips forming the bottoms of the pockets.

820,041. **MEANS FOR ACTUATING SIGNALS.** ANTHONY B. FERDINAND, Milwaukee, Wis. Filed Sept. 8, 1903. Serial No. 172,192.

Claim.—1. The combination with a wheel having an inflatable tire, of signal mechanism associated with said tire, a casing projected into said tire and forming a part of said signal mechanism, and a rod mounted in said casing and adapted to be actuated by said tire when the latter is partially deflated to render the signal mechanism operative.

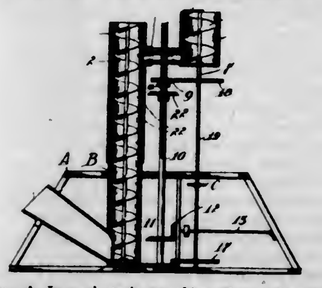


2. The combination with a wheel having an inflatable tire, of electrical signal mechanism associated with said tire, a casing projected into said tire and forming a part of said signal mechanism, and a rod mounted in said casing and adapted to be actuated by said tire when the latter is partially deflated, said rod serving to close the circuit of said signal mechanism to render the latter operative.

3. The combination with a wheel having an inflatable tire, of electrical signal mechanism associated with said tire, a casing projected into said tire and forming a part of the circuit of said signal mechanism, a contact arranged in said casing but insulated therefrom, and a rod mounted in said casing and adapted to be actuated by said tire when the latter is deflated, said rod coöperating with said contact to close the circuit of said signal mechanism to render the latter operative.

4. The combination with a wheel having an inflatable tire, of electrical signal mechanism associated with said tire, a casing projected into said tire and forming a part of the circuit of said signal mechanism, a contact yieldingly mounted in said casing but insulated therefrom, and a rod mounted in said casing and adapted to be actuated by said tire when the latter is deflated, said rod coöperating with said contact to close the circuit of said signal mechanism to render the latter operative.

820,042. **MORTAR-SPREADING MACHINE.** CHARLES W. FERTICK, Baltimore, Md. Filed Oct. 3, 1905. Serial No. 281,014.



Claim.—1. In a plastering-machine, the combination with a hopper and means for supplying the hopper, of a conveyer screwed therein, said screw terminating at its outer end in a plastering-trowel.

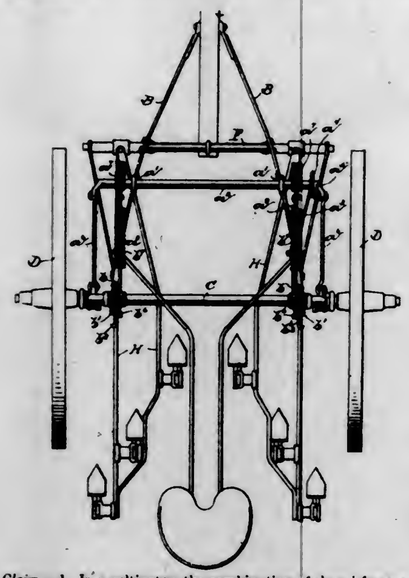
2. In a plastering-machine, the combination with a frame and stand-pipe and feed-spout of an adjustable hopper, a conveyer-screw

in the stand-pipe and hopper and means for turning said screw, the screw in the hopper terminating in a plastering device.

3. The combination with a suitable frame and stand-pipe having a plurality of holes therein, of a conveyer screwed in the stand-pipe, a sleeve fitted to the stand-pipe, a hopper, a branch pipe extending from the hopper and removably connected with the sleeve, a conveyer screwed in the hopper terminating in a plastering-trowel at its outer end, and means for raising and lowering the hopper and revolving the screws.

4. The combination with a suitable frame and stand-pipe and feed-spout leading to the lower end of the latter, of a conveyer-screw in the stand-pipe, a hopper, a branch pipe leading therefrom, a sleeve fitted to the conveyer and to which the branch pipe is connected, means for raising and lowering the hopper, a branch pipe, a sleeve, a driving-shaft and vertical shaft and gearing for communicating motion from the driving-shaft to the vertical shaft and conveyer screw.

820,043. **COMBINED RIDING AND WALKING CULTIVATOR.** WILLIAM S. GRAHAM, Canton, Ill., assignor to Parlin & Orendorff Company, Canton, Ill., a Corporation of Illinois. Filed Oct. 7, 1905. Serial No. 281,794.



Claim.—1. In a cultivator, the combination of shovel-frames, a main operating-lever; connections between the shovel-frames, a main operating-spring, connections between the spring and lever, means for moving the connecting-point of said lever and spring from a position above the pivotal point of said operating-lever to a position below the same, for the purpose specified.

2. In a cultivator, the combination of shovel-frames, a main operating-spring, means connecting one end of said spring with said shovel-frames and the other end of said spring with said operating-lever above the pivotal point of said lever when said lever is in elevated position, and means for lowering the end of said spring below the pivotal point of said lever when said lever is in depressed position, for the purpose specified.

3. In a cultivator, the combination of a pair of shovel-frames, a rock-shaft, adjustable couplings secured to said rock-shaft, connections between said couplings and said shovel-frames, a main controlling-lever secured at one end to one of said couplings, and a main operating-spring normally secured at its opposite end to said controlling-lever above its pivotal point, but adapted when said lever is depressed to be connected to said lever below its pivotal point, for the purpose specified.

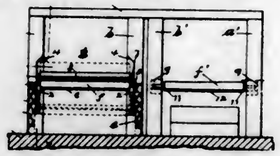
4. In a cultivator, the combination of a pair of shovel-frames with a main operating-spring connected at one end to said shovel-frames, an operating-lever, and an intermediate device connected therewith, means for connecting said spring direct to said intermediate device and arranged to hold said intermediate device and said lever in elevated position when the shovel-frames are depressed, and to hold said frames in elevated position when said lever is depressed, for the purpose specified.

5. In a cultivator, the combination of a machine-frame, axle and carrying wheels, with a main operating-spring, a rock-shaft, couplings in said shaft, an operating-lever for said shaft, connections between said shaft and said operating-lever, and connections between said main spring and said couplings, shovel-frames, connections between said shovel-frames and said couplings, a segment, a lever therefor, means for connecting said segment and said spring normally above the pivotal point of said segment and lever, but adapted to move to a point below said pivotal point, for the purpose specified.

6. In a cultivator, shovel-frames, raising and lowering devices for each of said shovel-frames, comprising a bifurcated bell-crank lever, pivoted on a support, and a collar adjustably secured to said support within the bifurcation of said lever, substantially as and for the purpose specified.

7. In a cultivator, shovel-frames, raising and lowering devices for each of said shovel-frames comprising a bell-crank lever, and a spring connected to one arm of said lever, said arm being provided with different points of attachment for said spring, substantially as and for the purpose specified.

820,044. **CIGAR-MARKER.** AARON GRUENBERG, New York, N. Y. Filed Jan. 2, 1906. Serial No. 294,073.



Claim.—1. A cigar-marker comprising a frame, a marker vertically movable in said frame, means for yieldingly supporting the marker, a moistener and hinges connecting the ends of the marker and moistener so that the former is reversible and may have either of its faces brought into contact with said moistener.

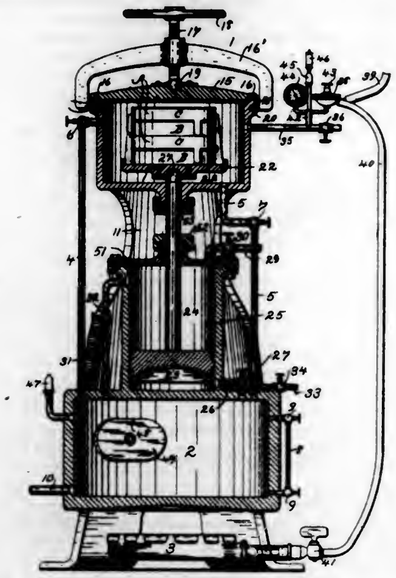
2. A cigar-marker comprising a frame, a vertically-movable marker, springs within said frame and upon which the marker is yieldingly supported, means for guiding the marker in its vertical movement, a moistener and means for connecting said moistener to said marker so that either face of the marker may be brought against the moistener.

3. A cigar-marker comprising a frame, a vertically-movable marker, springs within said frame and upon which the marker is yieldingly supported, means for guiding the marker in its vertical movement, a moistener and hinges connecting the ends of the marker and moistener so that the former is reversible and may have either of its faces brought into contact with said moistener.

820,045. **DENTAL VULCANIZER.** VALENTINE A. GUDEX, Milwaukee, Wis. Filed June 18, 1904. Serial No. 213,061.

Claim.—1. In an apparatus of the described class, the combination of a steam-generator; a burner located beneath said generator; a steam-chest provided with a removable cover; means for hermetically closing the cover of said steam-chest; a steam-cylinder; a piston located in said cylinder; a piston-rod communicating from said piston with said steam-chest; a platform pivotally supported upon said piston-rod; a separable vulcanizing-flask located upon said platform; means for conducting steam from said steam-generator to said steam-chest around said vulcanizing-flask; means for controlling the passage of steam from said generator to said steam-chest and from said steam-chest to the exterior air; means for controlling the return of the condensed steam from the steam-chest to the steam-generator; means for controlling the admission of steam at will from the steam-generator to the steam-cylinder beneath the piston and from the steam-generator to the cylinder above the piston and means for controlling the escape of steam from beneath the piston to the exterior air, all substantially as and for the purpose specified.

2. In an apparatus of the described class, the combination of a steam-generator; a steam-cylinder; a steam-chest; means for controlling the passage of steam from the steam-generator to and from the steam-cylinder and to and from the steam-chest; a piston located in said cylinder; a separable vulcanizing-flask located in said steam chest; means for communicating motion from said piston under steam-pressure to said vulcanizing-flask; a burner located beneath said steam-generator; a pressure-regulator connected with said steam-chest; a gas-duct communicating from the supply through said pressure-regulator with said burner and means for controlling the passage of gas through said pressure-regulator by the pressure of the steam in said steam-chest, substantially as and for the purpose specified.



3. In a dental vulcanizer the combination of a steam-generator; a burner located beneath said generator; a steam-chest provided with a removable cover; means for hermetically closing the cover of said steam-chest; a steam-cylinder; a piston located in said cylinder; a piston-rod communicating from said piston to said steam-chest; a platform supported upon said piston-rod, a separable vulcanizing-flask located in said steam-chest on said platform; means for communicating motion from said piston under steam-pressure to said vulcanizing-flask; means for controlling the passage of steam from said steam-generator to and from said steam-chest, and to and from said steam-cylinder, all substantially as and for the purpose specified.

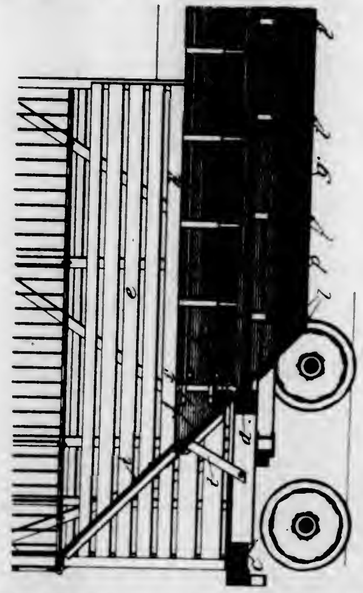
820,046. **DUMP-CAR.** ELI S. HART, Chicago, Ill., assignor, by mesne assignments, to National Dump Car Company, a Corporation of Maine. Filed Mar. 14, 1904. Serial No. 197,933.

Claim.—1. In a dump-car of the class described, the combination of a supporting-frame portion, a V-shaped dumping-bottom portion extending longitudinally of the car and having two swinging dumping-sections movable into and out of engagement with each other, and mechanism for operating such dumping-sections independently so that either or both may be opened or closed, substantially as described.

2. In a dump-car of the class described, the combination of a supporting-frame portion, a V-shaped hopper extending longitudinally thereof with its apex arranged at or near the longitudinal center of the car and formed of two swinging dumping-sections, a rock-shaft and chain mechanism for each set of dumping-sections, and idler-pulleys over which the said chain mechanisms are passed, substantially as described.

3. In a dump-car of the class described, the combination of a supporting-framework, a V-shaped hopper portion extending longitudinally of the car with its apex at or near the longitudinal center thereof and having two lower swinging dumping-doors pivotally secured to the framework of the car, a rock-shaft for each of said dumping-doors rotatably mounted in the framework at each side of the car, chain mechanism leading from each of said rock-shafts to the swinging dumping-door on the opposite side of the car, and idler-pulley mechanism over which said chains are passed, substantially as described.

4. In a dump-car of the class described, the combination of a supporting-framework, a V-shaped hopper portion formed of a plurality of swinging sections—one set forming lower dumping-doors and secured to the framework of the car below the same and extending longitudinally thereof and the other set pivotally secured to the framework of the car so as to form the upper inclined sides of the hopper when in one position and a portion of the flat floor of the car when in a second position, and two movable sections at each end of the car, both of which when arranged in one position form the inclined end walls of the hopper and one forming when in another position a portion of the floor and the other a portion of the end walls of the car, substantially as described.



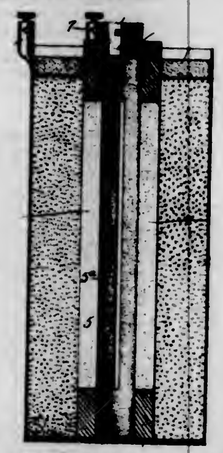
5. In a dump-car of the class described, the combination of a supporting-framework, a V-shaped hopper portion extending longitudinally of the car and formed of two sets of swinging sections—one set forming dumping-doors pivotally secured to the framework of the car and extending below the same and the other pivotally secured to the framework of the car above the same so as to form the upper inclined sides of the hopper when in one position and a portion of the flat floor of the car when in a second position, end walls for the car formed of swinging portions pivotally secured at their upper edges and adapted to form a portion of the inclined end walls of the hopper in one position and the vertical end walls of the car when in a second position, substantially as described.

6. In a dump-car of the class described, the combination of a supporting-framework, a V-shaped hopper-bottom extending longitudinally thereof and formed of a plurality of movable sets or sections—one set forming dumping-doors pivotally secured to the framework of the car and extending below the same and the other set pivotally secured to the framework of the car and extending above the same and forming the upper portion of the inclined sides of the hopper when in one position and a portion of the flat floor of the hopper when in another position, and two movable sections at each end of the car—one set pivotally secured at its upper edges to the framework of the car so as to form the vertical end walls of the car when in one position and a portion of the inclined end walls of the hopper when in a second position and the other set movably secured in position so as to form a portion of the flat floor of the car when in one position and a portion of the inclined end walls of the hopper when in the second position, substantially as described.

7. In a dump-car, the combination of a supporting-framework, a depending central hopper portion provided with dumping-door mechanism, swinging bottom sections pivotally mounted on opposite sides of such hopper portion movable to horizontal position to form flat bottom portions and inclined position to form hopper portions, end sections movably mounted at each end of the hopper, and hinged flaps movable into and out of inclined position between such

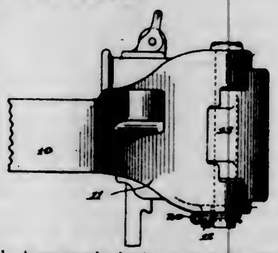
movable end sections and the inclined side hopper portions formed by such swinging bottom sections.

820,047. DRY BATTERY. CHARLES J. HIRLIMANN, Port Lee, N. J. Filed May 26, 1905. Serial No. 262,171.



Claim.—A dry battery comprising a zinc cup or outer casing containing absorbent material, a carbon element therein having a straight cylindrical hole throughout its length and having narrow radial slots in the wall thereof, said slots extending from a point near the top of the carbon element to a point near the bottom thereof and of a width insufficient to permit the entrance of the sawdust or similar material therethrough, whereby the exciting material or reagent may be run into the hole to fill the same and afterward pass through the slot to impregnate the absorbent material to a predetermined degree of saturation, and a stopper or closure inserted into the upper end of the hole in said carbon element.

820,048. PIVOT-PIN-RETAINING MEANS FOR CAR-COUPLINGS. ROBERT E. L. JANNEY, Chicago, Ill., assignor to The American Steel Foundries, New York, N. Y., a Corporation of New Jersey. Filed Jan. 5, 1906. Serial No. 294,764.



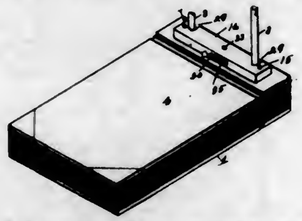
Claim.—1. A car-coupler having a pivot-pin with a transverse hole therein, a slotted lug adjacent to the hole in said pin, and a cotter-pin adapted to fit in the hole of said pin and in the slot of said lug to maintain said pivot-pin in place if it becomes broken and by its position in the slot indicating the condition of the pivot-pin, substantially as described.

2. A car-coupler having a pivot-pin with a transverse hole therein near its lower end, a slotted lug on the under side of the head of said car-coupler, a cotter-pin adapted to fit in the hole of said pin and in the slot of said lug to maintain said pivot-pin in place if it becomes broken and by its position in said slot indicating the condition of said pin, substantially as described.

3. A car-coupler having a knuckle pivot-pin, a lug on the lower portion of the coupler-head, one of said parts having a hole therein, the other part having a slot, and a cotter-pin adapted to fit in said hole and slot to maintain said pivot-pin in place if it becomes broken and by its position in said slot indicating the condition of said knuckle pivot-pin, substantially as described.

4. A car-coupler having a knuckle pivot-pin, a lug on the lower portion of the coupler-head, one of said parts having a hole therein, the other part having a slot, and a cotter-pin adapted to fit in said hole and slot to maintain said pivot-pin in place if it becomes broken, whereby the condition of said knuckle pivot-pin is indicated by the relative position of the parts of the device, substantially as described.

820,049. TEMPORARY BINDER. CHRISTIAN KECK, Crescent Springs, Ky., assignor to The Globe-Wernicke Company, Cincinnati, Ohio, a Corporation of Ohio. Filed Jan. 3, 1905. Serial No. 239,399.

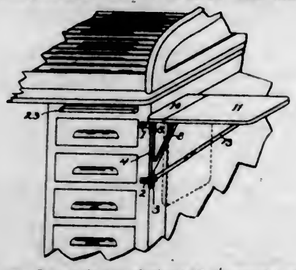


Claim.—1. In a temporary binder, the combination of a bottom filing-base, a pair of filing-posts extending therefrom at right angles thereto and parallel to each other, a clamping-piece with slots in its upper edge registering with the binding-posts, slides upon said clamping-piece provided with gripping-jaws registering with said slots, a housing for said slides covering the same secured to the clamping-piece and provided on its upper side with slots registering with the slots in the clamping-piece, and a cam-piece, whose cam is confined in openings in the slides with a projecting portion by which it can be vibrated and whereby when turned in one direction it causes the gripping-jaws of the slides to bind upon the posts, substantially as described.

2. In a temporary binder, the combination of a bottom filing-base, a pair of filing-posts extending therefrom at right angles thereto and parallel to each other, a clamping-piece with slots in its upper edge registering with the binding-posts, slides upon said clamping-piece provided with gripping-jaws registering with said slots, guides for said slides securing them to the clamping-piece and free to be moved endwise from the posts, and a cam-piece, whose cam is confined in openings in the slides with a projecting portion by which it can be vibrated and whereby when turned in one direction it causes the gripping-jaws of the slides to bind upon the posts, substantially as described.

3. In a temporary binder, the combination of a bottom filing-base 2, a pair of filing-posts 3 extending therefrom at right angles thereto and parallel to each other, a clamping-piece 5 with slots 6 in its upper edge registering with the binding-posts, a guide-housing 16 secured to the clamping-piece 5 and provided with slots 29 registering with the slot 6, slides 9 and 10 provided with gripping-jaws guided within said housing said gripping-jaws registering with the aforesaid slots, and exteriorly-operated cam mechanism for causing said slides to grip the posts and for permitting said slides to be freed from the posts, substantially as described.

820,050. SWINGING DESK-SHELF. CHRISTIAN KECK, Crescent Springs, Ky., assignor to The Globe-Wernicke Company, Cincinnati, Ohio, a Corporation of Ohio. Filed Jan. 26, 1905. Serial No. 243,740.



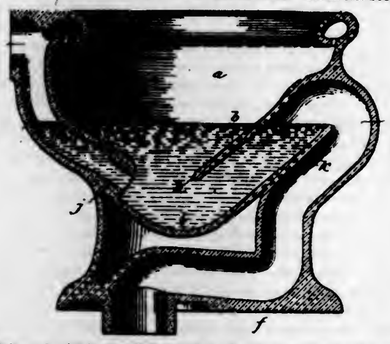
Claim.—1. In a swinging desk-shelf, the combination of a vertical spindle, with a horizontal extension, journaled at the corner of the desk, a stub-shelf secured to the top of said horizontal extension, a shelf hinged to said stub-shelf, means for locking said hinged shelf when raised to a horizontal position and for permitting the shelf to be lowered, and locking means between said spindle and one of its journals, substantially as described.

2. In a swinging desk-shelf, the combination of a supporting-spindle journaled to the corner of the desk and having longitudinal as well as rotary movement, a horizontal stub-shelf secured to the top of said spindle, a shelf hinged to said stub-shelf, means for locking said hinged shelf when raised to a horizontal position and for permitting the shelf to be lowered, and locking means between said spindle and one of its journals, substantially as described.

3. In a swinging desk-shelf, the combination of a supporting-spindle journaled to the corner of the desk and having longitudinal as well as rotary movement, a horizontal stub-shelf secured to the top of said spindle, a shelf hinged to said stub-shelf, means for locking said hinged shelf when raised to a horizontal position and for permitting the shelf to be lowered, and a disk fast upon said spindle with notches to engage a locking member on the desk, substantially as described.

4. The herein-described swinging desk-shelf comprising the supports 1 and 2, the spindle 4 journaled therein with slight longitudinal movement, the arm 8 projecting from said spindle, the notched disk 6 fast upon said spindle and engaging the support 2, the stub-shelf 10 fast upon the top of the spindle and arm 8, the shelf 11 hinged to the stub-shelf 10 and the knuckle-jointed arms 13 and 16 hinged at their upper ends to the shelf 11 and at their lower ends to the disk 6, substantially as and for the purpose specified.

820,051. WATER-CLOSET BOWL. JOHN F. KELLY, Trenton, N. J., assignor to Thomas Maddock's Sons Company, Trenton, N. J., a Corporation of New Jersey. Filed June 22, 1905. Serial No. 266,428.



Claim.—1. An integral water-closet bowl, comprising a hopper having its sides gradually inclined to a central outlet, a siphon-discharge passage on one side of the bowl, and a water-passage terminating in a jet-orifice on the opposite side of the bowl, said jet being directed toward the bottom of the bowl.

2. An integral water-closet bowl, comprising a hopper having its sides gradually inclined to a central outlet, a siphon-discharge passage on one side of the bowl, and a downwardly-directed water-passage terminating in a jet-orifice on the opposite side of the bowl, said jet-orifice being below the lowest water-level in the bowl and delivering the jet against the bottom of the bowl, whence it is deflected into the siphon-discharge passage.

3. An integral water-closet bowl, comprising a hopper having its sides gradually inclined to the central outlet, a flushing-rim around the upper edge thereof, a siphon-discharge passage on one side of the bowl, and a downwardly-directed water-passage terminating in a jet-orifice on the opposite side of the bowl, said jet-orifice being below the lowest water-level in the bowl and delivering the jet against the bottom of the bowl, whence it is deflected into the siphon-discharge passage.

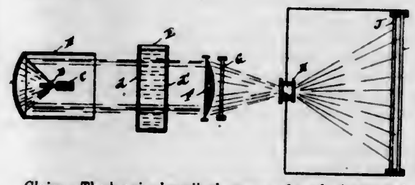
820,052. VIOLET-COLOR LAKE AND PROCESS OF MAKING SAME. RICHARD KIRCHHOFF, Gross-Lichterfelde, and LEO KERKOVIUS, Friedenau, Germany, assignors to Actien Gesellschaft fur Anilin Fabrikation, Berlin, Germany. Filed Oct. 17, 1905. Serial No. 283,193.

Claim.—1. The process for the manufacture of new violet-color lakes which process consists in converting the alkali salts of the dyestuff which is obtained by combining the diazo compound of the para-amido-phenyl-1.2-naphthyl-triazol-3.8-disulfonic acid with beta-naphthol-3.6-disulfonic acid, into difficultly-soluble metal salts, preferably in the presence of a substratum.

2. As new articles of manufacture the new violet-color lakes prepared by converting an alkali—salt of the azo color as defined in the foregoing specification, into an insoluble salt, said lakes being distinguished by a clear violet color, a great insolubility in water and a good fastness to light, these lakes being split up by the action of a strong reducing agent yielding thereby para-amido-phenyl-1.2-naphthyl-triazol-3.8-disulfonic acid besides an amido-naphthol-disulfonic acid.

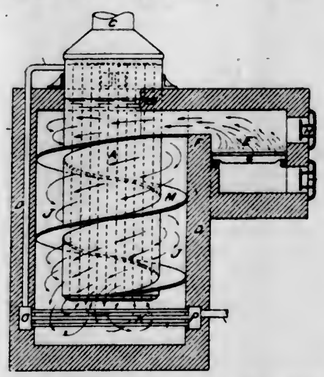
3. As a new article of manufacture the new violet-color lake prepared by converting the azo dyestuff: para-amido-phenyl-1.2-naphthyl-triazol-3.8-disulfonic acid-azo-2-naphthol-3.8-disulfonic acid into an insoluble salt by means of barium chlorid in the presence of aluminium hydroxid, said lake being a violet powder practically insoluble in water and insoluble in alcohol, which powder when applied to a surface yields clear violet coatings and which powder when treated with the solution of an alkali in the heat is decomposed and converted into the corresponding alkali salt of the said dyestuff and from which solution of the alkali salt, by a treatment with strong reducing agents, para-amido-phenyl-1.2-naphthyl-triazol-3.8-disulfonic acid is obtained besides amido-naphthol-disulfonic acid.

820,053. PROCESS FOR MAKING HALF-TONE ENLARGEMENTS. VIRGIL LAND, Cincinnati, Ohio. Filed Dec. 23, 1904. Serial No. 238,044.



Claim.—The herein-described process of producing an enlarged half-tone printing-plate from an ordinary photograph which consists in projecting a photograph through a magnifying-lens upon a metal plate, the surface of which has been coated with an emulsion adapted to harden upon exposure to the light, interposing a half-tone screen between the lens and plate, and finally treating such plate to produce thereon a printing-surface, substantially as described.

820,054. STEAM-BOILER. LEON B. LENT, Brewster, N. Y. Filed July 8, 1905. Serial No. 268,825.



Claim.—1. The combination of a boiler and a furnace therefor, located near one end thereof and to one side of the longitudinal axis of the boiler, and a casing surrounding the boiler forming a chamber connected with said furnace whereby the gases pass in a tangential whirl through the chamber and about the boiler, substantially as described.

2. The combination of a boiler provided with flues, a casing forming a chamber about the boiler, a furnace located near one end of the boiler, to one side of the longitudinal axis thereof and communicating with said chamber, whereby the furnace-gases are forced to travel in a tangential whirl or helix about the exterior of the boiler and then through the flues or tubes, substantially as described.

3. The combination of a boiler, a casing surrounding the same and forming a chamber, a furnace, a passage connecting the furnace with the chamber near one end, tangentially, whereby the furnace-gases are forced to take a helical course about the boiler and through said chamber, substantially as described.

4. The combination of a vertical tubular boiler, a casing surrounding same, and a furnace communicating tangentially with said chamber near the upper end thereof, whereby the furnace-gases are caused to take a helical downward course about the boiler and through said chamber before passing upwardly through the boiler-tubes, substantially as described.

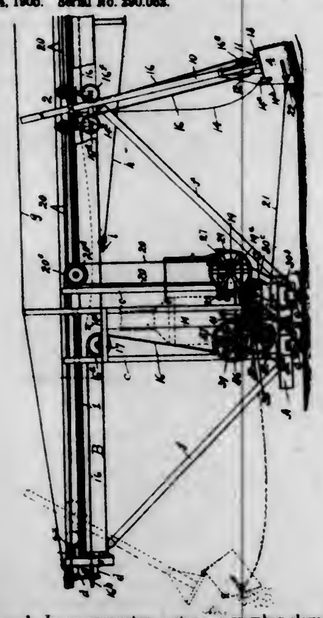
5. The combination of a boiler and a furnace therefor located near one end thereof and to one side of its longitudinal axis, a casing surrounding the boiler and leaving an intervening space, a helical septum in said space, said space communicating with the furnace, whereby the furnace-gases are forced to pass about the boiler in a helical path, substantially as described.

6. The combination of a boiler provided with flues, a casing forming a chamber about the boiler, a helical septum in said chamber, a furnace located near one end of the boiler and to one side of the longitudinal axis thereof and communicating with said chamber, whereby the gases are forced to pass about the boiler in a helical path and then through the tubes, substantially as described.

7. The combination of a boiler, a casing surrounding the same and forming a chamber, a furnace, a passage connecting the furnace with the chamber near one end tangentially, and a helical septum in said chamber whereby the gases are forced to take a helical path about the boiler, substantially as described.

8. The combination of a vertical tubular boiler, a casing surrounding same and forming a chamber, a furnace communicating tangentially with the upper end of said chamber and a helical septum in said chamber whereby the gases are forced to take a helical, downward course about the boiler and then pass upward through the tubes of the boiler to the smoke-stack, substantially as described.

820,055. **EXCAVATOR.** JOHN H. W. LIBBE, Toledo, Ohio. Filed Dec. 4, 1905. Serial No. 290,062.



Claim.—1. In an excavator, a stage, a member elevated above and having its ends extended in opposite directions from the stage, a dipper carried by said member and movable over the stage in its discharging movement whereby its load is secured on one side and discharged on the other side of the stage, and mechanism for causing the dipper to dig and discharge its load.

2. In an excavator, a stage, a horizontal member supported over and having its ends extended in opposite directions from the stage, a dipper suspended from said member and movable both at right angles to and in parallelism therewith and operative to secure its load on one side of the stage and to travel over and have its discharge on the other side of the stage, and mechanism for causing the dipper to dig and discharge its load.

3. In an excavator, a frame comprising two spaced stages or trucks, and a spanning member connecting said stages or trucks and having one end extended on the opposite side of one stage or platform to its central portion, a dipper freely suspended from the spanning member and adapted to have swinging, vertical and horizontal movements and operative to secure its load on one side of the stage or truck contiguous to the extended end of the spanning member and have its discharge over on the other side of said stage or truck, and mechanism for communicating the digging and discharging movements to the dipper.

4. In an excavator, a frame comprising spaced stages or platforms, and a spanning member connecting the stages or platforms, a dipper freely suspended from the spanning member and operative to secure its load from between the stages or platforms and to have its discharge over and on the opposite side of one of the stages or platforms, and mechanism for causing the dipper to dig and discharge its load.

5. In an excavator, a frame having spaced trucks, and a spanning member connecting said trucks, two dippers movably carried by the spanning member and having their discharging movements in opposite directions longitudinally of the spanning member, said dippers being also movable vertically of the spanning member, and mechanism mounted on each truck for communicating said movement to the associated dipper.

6. In an excavator, a frame, having spaced stages or platforms, and a spanning member connecting the stages or platforms, two dippers carried by the spanning beams and operative to alternately dig and discharge their loads, the discharge taking place adjacent the ends of the spanning beams, said dippers having swinging and vertical movements relative to said beam and independent mechanism for each dipper for causing it to dig and discharge its load.

7. In an excavator, a frame having stages or platforms, and a straight horizontal spanning member connecting the stages or platforms and having its ends extending beyond the same, two dippers freely suspended from the spanning member and operative to alternately secure and discharge their loads, the discharge thereof taking place at the opposite extended ends of the spanning member and beyond the associated stage or platform, and independent mechanism for each dipper for causing it to dig and discharge its load.

8. In an excavator, a channel-spanning frame mounted for locomotion on the banks of the channel and having a horizontal spanning beam extended at its ends, two dippers movably carried by the spanning beam and having their discharging movements in opposite directions relative to the channel, said dippers being also movable vertically and pivotally of the spanning beam, independent mechanism for communicating the discharging movements to each dipper and independent means for elevating each dipper after securing its load.

9. In an excavator, the combination with a horizontal beam, of a carriage movable on said beam and having a variously-pivoted head, a dipper carried by and having its dipper-stick in connection with and movable relatively to said head, and mechanism for communicating motion to the carriage and imparting vertical and horizontal movements to the dipper.

10. In an excavator, the combination with the spanning beam, of a dipper carried by said beam and mounted to have vertical longitudinal, vertical swinging and horizontal pivotal movements relative to the beam, mechanism for communicating the swinging and vertical movements to the dipper, and mechanism for communicating the longitudinal movement thereto.

11. In an excavator, the combination with the spanning beam, of a carriage mounted for longitudinal movement thereon, a dipper carried by and movable both pivotally and radially of the carriage, mechanism for communicating motion to the carriage, and mechanism for communicating both the pivotal and the radial movements to the dipper.

12. In an excavator, the combination with the spanning beam, of a carriage mounted for movement longitudinally of the beam and having a horizontally-disposed variously-pivoted part, a dipper carried by and having a movement relative to said pivotal part, means for communicating motion to the carriage, means for communicating a pivotal movement to the dipper, and means for communicating a movement to the dipper relative to the pivotal part.

13. In an excavator, the combination with the spanning beam, of a carriage mounted for movement longitudinally of the beam, a dipper suspended from and having its stick passed loosely through the carriage whereby to permit it to have a vertical and a lateral swinging movement relative to the carriage, draft mechanism for communicating a direct digging pull to the dipper, means for hoisting the dipper, and means for imparting movement to the carriage.

14. In an excavator, the combination with the channel-spanning member, of two dippers carried by the spanning member, each being mounted to have a swinging, a vertical and a horizontal movement relative to the beam, mechanism for imparting horizontal movement to each dipper, mechanism for swinging each dipper to secure its load, and mechanism for elevating each dipper after it has secured its load.

15. In an excavator, a stage or platform, a beam elevated above the stage or platform and having a portion of its length disposed over the channel to be worked and a portion extending over the channel-bank on the opposite side of the contiguous stage to the major portion of the beam, a carriage mounted on and movable lengthwise of the beam, a dipper carried by the carriage and mounted to have both a vertical and a digging movement relative thereto, mechanism for communicating the digging movement to the dipper, mechanism for elevating the dipper, and mechanism for driving the carriage in reverse directions whereby the dipper is caused to have a movement longitudinally of the beam and to swing out to discharge its load from the bank end thereof at the limit of outward movement of the carriage and then return to reload.

16. In an excavator, a stage or platform, a beam supported thereby and disposed transversely of the ditch or canal over the channel and bank thereof, a carriage mounted on and movable longitudinally of the beam, a dipper carried by the carriage and mounted to have both a vertical and swinging movement relative thereto, mechanism for elevating the dipper after it has secured its load, mechanism for driving the carriage longitudinally of the beam, and a bumper with which the carriage has contact on its outward or discharging movement whereby to cause an abrupt stopping of the same and an outward swinging of the dipper to discharge its load from the mouth or open end thereof.

17. In an excavator, the combination of a stage, a horizontal track supported thereover and having its end extending beyond the stage, a carriage movable on the track and over the stage, a dipper pivotally carried by the carriage and movable to secure its load on one side of the stage and discharge it on the other side thereof, a yielding bumper with which the carriage has contact at a predetermined point in its outward or discharging movement whereby to cause an abrupt stopping of the same and a consequent outward swinging movement of the dipper to effect a discharge of its load from the side thereof disposed in the direction of its discharging movement, and mechanism for driving the carriage and imparting digging and vertical movements to the dipper.

18. In an excavator, the combination with the beam and carriage movable thereon, of a dipper movably suspended from the carriage, a winding-drum, mechanism for operating the drum, a cable extending to each side of the dipper from the drum whereby a direct and even pull is communicated from the drum to each side of the dipper, said cables having their dipper ends in pivotal connection with the dipper sides, and means for elevating the dipper relative to its carriage.

19. In an excavator, the combination with a horizontally-disposed member, of a carriage mounted on and movable longitudinally of the member, said carriage having a head turnable on a horizontal axis disposed transversely of the member and also turnable on a vertical axis relative to the carriage, a dipper movably suspended from the carriage and having a plurality of sticks loosely extending through said head, means for imparting a digging movement to the dipper, and means for elevating it relative to the carriage.

20. In an excavator, a stage mounted for locomotion on the bank of the channel to be worked, parallel beams supported by the stage to form a track and having their ends extending in opposite directions from the stage, a carriage mounted for movement longitudinally of the beams, a dipper suspended from the carriage and movable relative thereto, draft mechanism for the dipper in the line of its digging movement, means for elevating the dipper to enable it to pass over the draft mechanism, and means for imparting movement to the carriage whereby the dipper is caused to travel over the draft mechanism and to have its discharge on the opposite side of the stage to the point of digging.

21. In an excavator, the combination with the beam, of a carriage movable thereon, a dipper movably carried by the carriage, means for imparting the digging movement to the dipper, means for elevating the dipper, and means for moving the carriage to a point where the dipper discharge takes place, the dipper in such movement passing over the means for imparting the digging movement thereto.

22. In an excavator, the combination with the beam, of a carriage movable thereon, a dipper movably carried by the carriage, and means for imparting movement to the dipper relative to its carriage, said means comprising a drum, mechanism for imparting rotation thereto, a cable having one end secured to the drum and thence having its course guided up to and around one end of the beam, thence parallel therewith through the carriage and to the opposite end of the beam where its other end is fixed, the portion passing through the carriage being looped and in engagement with the dipper, whereby a shortening of the cable effects an elevation of the dipper.

23. An excavator, comprising two stages mounted for locomotion on opposite channel-banks, a spanning truss supported by the stages and having its ends projecting beyond the respective stages, two carriages movable on the truss and over their associated stages, a dipper carried by each carriage and having a vertical and swinging movement relative thereto, and each having its discharge away from the associated stage and on the bank side thereof, and mechanism on each stage for driving the associated carriage and imparting vertical and swinging movements to the attached dipper.

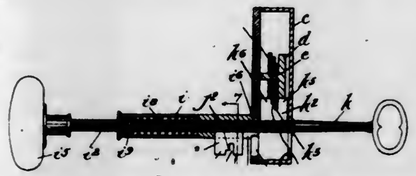
24. In an excavator, the combination with a beam, and a carriage movable thereon, of a dipper carried by the carriage and movable therewith and relative thereto, and direct draft means for the dipper over which it is caused to pass in its discharging movement.

25. In an excavator, the combination with a horizontally-movable carriage, of a dipper having its stick in loose pivotal engagement with the carriage, said dipper being movable to discharge its load outwardly and away from itself in the line of its digging movement, and draft means for imparting a direct digging pull to the dipper, said means being disposed intermediate of the digging and discharging positions of the dipper.

26. In an excavator, a pivotally-suspended dipper, a draft mechanism disposed in the line of digging movement of the dipper, and a draft-cable leading from each side of the dipper to the draft mechanism, whereby a direct pull is communicated to each side of the dipper from such draft mechanism.

27. In an excavator, a pivotally-suspended dipper, a draft mechanism disposed in the line of movement of the dipper, and a draft-cable leading from each side of the dipper to the draft mechanism, said cables being spaced throughout their lengths whereby a substantially direct pull is communicated to each side of the dipper.

820,056. **DOOR LATCH AND LOCK.** GUSTAV A. LINDSTRÖM, Stamford, Conn. Filed Apr. 6, 1905. Serial No. 254,071.



Claim.—1. A door latch and lock, comprising a casing, a spring-projected bolt mounted therein and adapted to serve as a latch-bolt, tumblers operating in connection with said bolt, a key-knob connected with one side of the casing and movable toward and from the casing, a key connected with said knob and adapted to operate in connection with said bolt and said tumblers and the turning of which in one direction will withdraw the bolt when serving as a latch-bolt and the turning of which in the opposite direction will project said bolt to serve as a lock-bolt.

2. A door latch and lock, comprising a casing, a spring-projected bolt mounted therein and adapted to serve as a latch-bolt, spring-operated tumblers operating in connection with said bolt, a knob connected with one side of said casing and movable toward and from said casing, a key-stem connected with said knob and provided with a bit adapted to be inserted into the casing, and the turning of which in one direction will withdraw the bolt when serving as a latch-bolt, said bolt and said tumblers being also provided with means whereby the turning of said knob and the key-bit connected therewith in one direction will project said bolt and lock it in its projected position, and in the opposite direction will withdraw said bolt.

3. A combined latch and lock, comprising a casing provided

with a bolt adapted to serve both as a latch and lock bolt, a spring for projecting said bolt to serve as a latch-bolt, pivoted spring-operated tumblers at one side of said bolt, and means whereby the tumblers may be operated and the bolt projected and locked in the projected position by different keys inserted from the opposite sides of the casing, one of said keys being permanently connected with said casing and being provided with a knob-handle.

4. A door latch and lock, comprising a casing, a bolt mounted therein and adapted to serve both as a latch and lock bolt, a spring for projecting said bolt to serve as a latch-bolt, tumblers operating in connection with said bolt, a knob connected with one side of the casing and movable toward and from the casing and provided with a key stem and bit adapted to be inserted into said casing, said bit being adapted to operate said tumblers and said bolt so as to project said bolt and lock it in its projected position, and to withdraw said bolt, said key stem and bit being also adapted to prevent the insertion of a key from the opposite side of the door.

5. A door latch and lock, comprising a casing, a bolt mounted therein, a spring for projecting said bolt to serve as a latch-bolt, tumblers in operative connection with said bolt, a knob connected with one side of said casing and movable toward and from said casing, means for moving said knob from said casing, and a key stem and bit connected with said knob and operating in connection with said tumblers and said bolt to withdraw said bolt when serving as a latch-bolt, and to project said bolt beyond its latch-bolt position to serve as a lock-bolt, said bolt and said tumblers being also adapted to be operated by an independent key inserted from the opposite side of the casing, substantially as shown and described.

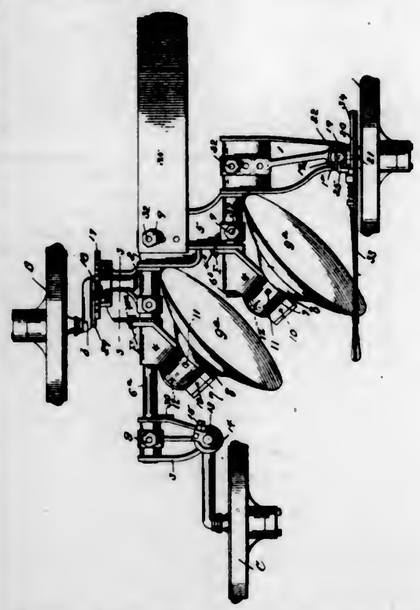
6. A combined latch and lock for doors, comprising a casing, a bolt mounted therein and adapted to serve both as a latch and lock bolt, a spring for projecting said bolt to serve as a latch-bolt, pivoted and spring-depressed tumblers operating in connection with said bolt, a permanent key connected with one side of said casing and movable toward and from said casing and provided with a bit adapted to be inserted into said casing and to operate in connection with said tumblers and said bolt, said bit and said tumblers and said bolt being provided with means whereby the turning of said key in one direction will withdraw the bolt when serving as a latch-bolt, and in the opposite direction will project said bolt into its lock-bolt position and lock it in said position and the turning of which again in the opposite direction will withdraw said bolt from its lock-bolt position and leave it free to serve as a latch-bolt.

7. A combined latch and lock for doors, comprising a casing, a bolt mounted therein and adapted to serve both as a latch and lock bolt, means for normally projecting said bolt to serve as a latch-bolt, a pivoted spring-held tumbler mounted in connection with said bolt, a permanent key connected with one side of said casing and movable toward and from the same and provided with a bit adapted to be inserted in said casing and to operate in connection with said bolt and said tumbler, said bolt and said tumbler being provided with means whereby the turning of said key in one direction will withdraw said bolt from its latch-bolt position and in the opposite direction will project said bolt into its lock-bolt position and lock it in such position, and the turning of which again in the opposite direction will unlock and withdraw said bolt, substantially as shown and described.

8. A combined latch and lock for doors, comprising a casing, a bolt mounted therein and adapted to serve both as a latch and lock bolt, a spring for projecting said bolt to serve as a latch-bolt, a key permanently connected with one side of said casing and movable toward and from said casing and adapted to be inserted thereinto, and means whereby the turning of said key in one direction will withdraw the bolt from its latch bolt position and in the opposite direction will project said bolt into its lock-bolt position and lock it in such position, and the turning of which again in the opposite direction will unlock said bolt and withdraw it from its lock-bolt position, substantially as shown and described.

9. A combined latch and lock for doors, comprising a casing, a bolt mounted therein and adapted to serve both as a latch and lock bolt, a spring for projecting said bolt to serve as a latch-bolt, a key permanently connected with one side of said casing and movable toward and from said casing and adapted to be inserted thereinto, and means whereby the turning of said key in one direction will withdraw the bolt from its latch-bolt position and in the opposite direction will project said bolt into its lock-bolt position and lock it in such position, and the turning of which again in the opposite direction will unlock said bolt and withdraw it from its lock-bolt position, said bolt being also adapted to be operated by an independent key inserted from the opposite side of the casing, substantially as shown and described.

820,057. DISK PLOW. MARTIN LUNDIN, Chattanooga, Tenn., assignor of one-third to Charles B. Hoover, Kansas City, Mo. Filed May 4, 1905. Serial No. 258,817.



Claim.—1. A gang-plow comprising a plurality of bars detachably connected together and having plow-brackets and wheel-brackets mounted thereon, all of the brackets having sleeves in which the bars fit, and changeable from one bar to another.

2. A gang-plow built up of a plurality of units the number of which may be increased or diminished, each unit having a bar and a tubular plow-bracket sleeved thereon, the bars being similar in shape and the brackets being interchangeable thereon, and tubular wheel-brackets interchangeably sleeved on the bars.

3. In a plow, in combination, a bar, and a plow-bracket and furrow and land-wheel brackets having sleeves fitting over the bar and adjustably secured thereto.

4. In a gang-plow, in combination, a plurality of similar round bars connected together, and a plurality of plow-brackets and wheel-brackets having sleeves fitting and interchangeable upon said bars and adjustable thereon to vary the inclination of the plows and the land and furrow wheels.

5. In a plow, in combination, a wheel-bracket, an axle having a vertical portion extending through the bracket, a collar rotatably mounted on the bracket, a notched segment pivotally supported on the collar and having a projection engageable with the bracket to prevent relative rotation of the collar thereon, and a lever connected to the axle and pivoted to the segment and having a latch engageable therewith.

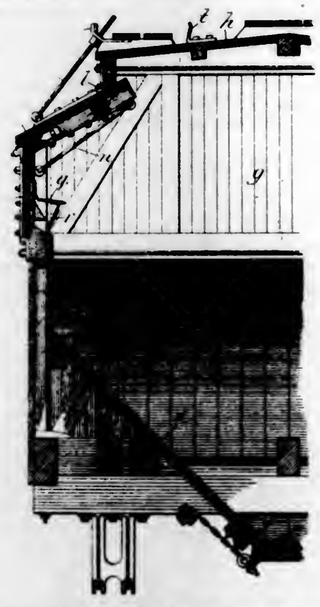
6. In a plow, in combination, a wheel-bracket, an axle having a vertical portion extending through the bracket, a collar rotatably mounted on the bracket and having an extension extending vertically beside the axle, a segment pivoted to said extension, and a lever pivoted to the segment and connected to the axle.

7. In a plow, in combination, a longitudinal bar of circular cross-section, land and furrow wheel brackets and a plow-bracket having sleeves which fit over the bar and are adjustable thereon, and clamps holding the brackets on the bar.

8. In a gang-plow, in combination, longitudinal bars of similar circular cross-section, wheel-brackets and plow-brackets attached to the respective bars, a spacing-block between the bars, said brackets and block having sleeves fitting over the bars and changeable from one to another and adjustable to vary the angles of inclination of the brackets, and clamps holding the sleeves and bars together.

9. In a plow, in combination, a longitudinal bar having circular cross-section, wheel-brackets mounted thereon, and a plow-bracket having a sleeve which fits over the bar and may be turned thereon to adjust the plow, and a clamp between the plow-bracket and one of the wheel-brackets to hold the former at adjustment.

820,058. RAILWAY FREIGHT-CAR. OTTO W. MEISSNER and WINFIELD YOST, Chicago, Ill., assignors to Rodger Ballast Car Company, Chicago, Ill., a Corporation of Illinois. Filed July 5, 1904. Serial No. 215,275.



Claim.—1. A box-car having the usual sides, ends and roof, the roof being provided with an upwardly-swinging hinge-section, and the side at a point adjacent with a downwardly-swinging hinge-section, and means for successively opening and closing the swinging sections.

2. In a car of the class described, the combination of a supporting-frame portion, a superstructure extending upwardly therefrom composed of side and end portions and an inclosing roof, swinging sections pivotally secured to the roof and side portions at the meeting angle thereof to open and close the loading-opening, and a connecting-rod pivotally connected to both of such swinging sections so that the same may be opened and closed by and during the same operation, substantially as described.

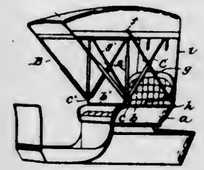
3. In a car of the class described, the combination of a supporting-frame portion, a superstructure therefor composed of upwardly-extending side and end portions and an inclosing roof, swinging sections pivotally secured to the side and roof portions at the meeting angle thereof with their free edges overlapping, and overlapping flap portions secured to the side swinging sections so as to cover a joint between such side swinging sections and the side of the car, substantially as described.

4. In a car of the class described, the combination of a supporting-frame portion, a superstructure therefor composed of side and end portions and an inclosing roof, swinging sections pivotally secured to said side and roof portions at the meeting angle thereof and with their free edges adapted to engage and overlap one the other, connecting-rod mechanism pivotally secured to both of such sets of swinging sections so as to open and close the same by and during one operation, and operating-lever mechanism secured to the roof swinging sections so as to operate the same and hold it in open or closed position, substantially as described.

5. In a car of the class described, the combination of a supporting-frame portion, a superstructure therefor composed of outwardly-extending side and end portions and an inclosing roof, two sets of swinging sections, one set pivotally secured to the lateral edges of the roof portion and the other to the upper edges of the side portions of the car at the meeting angles thereof so as to open and close the loading-opening, connecting-rod mechanism pivotally secured to the side swinging sections near their free edges and to the roof swinging sections near the heel thereof so that both of such sections may be opened and closed by and during the same operation, operating-lever mechanism pivotally secured to the roof swinging sections for operating the same, and latch mechanism adapted to engage and hold such operating-rod mechanism and thereby such swinging sections in open and closed position, substantially as described.

6. In a car of the class described, the combination of a supporting-frame portion, a superstructure therefor composed of outwardly-extending side and end portions and an inclosing roof, two sets of swinging sections, one set pivotally secured to the lateral edges of the roof portion and the other to the upper edges of the side portions of the car at the meeting angles thereof so as to open and close the loading-angle, connecting-rod mechanism pivotally secured to the side swinging sections near their free edges and to the roof swinging sections near the heel thereof so that both of such sections may be opened and closed by and during the same operation, operating-lever mechanism pivotally secured to the roof swinging sections for operating the same, latch mechanism adapted to engage and hold such operating-rod mechanism and thereby such swinging sections in open and closed position, and flap mechanism composed of metal plates pivotally secured to the inner lower portions of the side swinging sections and side framework of the car so as to cover the joint between such swinging sections and the side of the car, substantially as described.

820,059. FOLDING VEHICLE-TOP. RICHARD B. MILES, Indianapolis, Ind. Filed Aug. 18, 1905. Serial No. 274,661.



Claim.—1. A vehicle-top including a pivoted main bow having two pairs of spreader-bars pivotally supported thereby, with two contractible bows pivoted to the main bow and also to the pairs of spreader-bars.

2. A vehicle-top including a pivoted main bow having ears attached to the front and rear sides thereof, a pair of spreaders pivoted to the forward ears, a pair of spreaders pivoted to the rearward ears, contractible bows each pivoted to a different pair of the spreaders, and a cover extending over the spreaders.

3. A vehicle-top including a pivoted main bow, two pairs of spreader-bars pivoted to the main bow and swinging to or from the side parts of the bow, front and rear pivoted bows having each a relatively movable upper part pivoted to and supported by a pair of the spreader-bars, and means for supporting the movable parts of the bows independently of the spreader-bars.

4. A vehicle-top comprising a non-contractible main bow having forward and rearward ears attached thereto, two pairs of bow side parts each slitted at an end thereof and pivoted at the opposite end thereof to the main bow, binding-nuts screwed over the slitted ends of the side parts and extending appreciably beyond the ends of the slits, a pair of bow-arches having ears attached thereto and having end parts extending through the slitted ends of the side parts, two pairs of spreader-bars, one pair pivoted to the forward ears of the main bow and also to the ears of one of the bow-arches and the other pair pivoted to the rearward ears of the main bow and also to the ears of the other one of the bow-arches, and a cover extending over the ears and the spreader-bars.

820,060. GRATE-BAR. ROBERT C. MONTEAGLE, New York, N. Y. Filed May 3, 1904. Serial No. 206,197.



Claim.—As an improvement in grate-bars, a plurality of spaced bars each having its top edge provided with a longitudinal series of spaced projections which are convex or rounded in the direction of the longitudinal plane of the bar, the top edge of each bar having said convex or rounded projections being also convex or rounded

transversely with respect to the direction of the longitudinal plane of the bar, whereby each projection forms a mount having rounded surfaces extending from its apex at all sides, the bars being relatively arranged so that the rounded mounts or projections of one bar are staggered with relation to the corresponding mounts or projections of the adjoining bar, substantially as and for the purpose set forth.

820,061. **ICE-CREAM SPOON.** Dosier H. Mostellar, Chicago, Ill., assignor of one-fourth to Ritley N. Bayliss and one-fourth to Fred N. Bayliss, Chicago, Ill. Filed Sept. 26, 1905. Serial No. 280,174.



Claim.—1. In an ice-cream spoon, the combination with the bowl and handle of the spoon of a scraper located and operating in the bowl, a rock-shaft extending longitudinally of and parallel with and carrying the scraper, a return-spring for the rock-shaft, a winding-spool fixed on the outer end of the shaft and a cord, and a lever having the cord attached to its outer end for operating the scraper within the bowl of the spoon, substantially as described.

2. In an ice-cream spoon, the combination of the bowl, the handle consisting of an upper rail and a lower rail, a rock-shaft mounted in the handle and bowl, a scraper within the bowl and carried by the rock-shaft, a return-spring encircling the rock-shaft, a winding-spool and cord fixed on the rock-shaft, and a lever pivotally mounted on the handle for operating the scraper within the bowl of the spoon, substantially as described.

820,062. **DISPENSING DEVICE FOR RECEPTACLES.** August J. Mottlau, New York, N. Y., assignor to Bordens Condensed Milk Co., a Corporation of New Jersey. Filed Feb. 25, 1905. Serial No. 247,241.

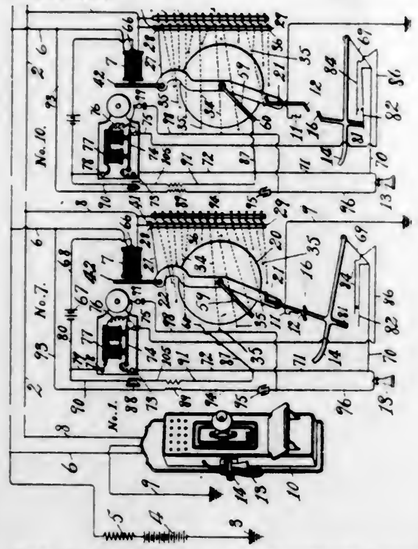


Claim.—1. The combination of a receptacle having its interior uniformly downwardly contracted to its minimum diameter at an outlet downwardly disposed, a reservoir of greater internal diameter at its juncture with said receptacle connected therewith through said opening and having another, or delivery, opening upwardly disposed, a movable cover normally closing said delivery-opening of said reservoir and a dispensing implement rigidly secured to said cover and having a spoon member normally disposed within said reservoir and underlying the central vertical longitudinal axis of said receptacle.

2. The combination of a receptacle having its interior uniformly downwardly contracted to its minimum diameter at an outlet downwardly disposed, a reservoir disposed beneath said receptacle connected therewith through said opening and having a delivery-opening upwardly disposed, a movable cover normally closing said delivery-opening of said reservoir and a dispensing implement rigidly secured to said cover and having a spoon member normally disposed within said reservoir and underlying the central vertical longitudinal axis of said receptacle.

3. The combination of a reservoir having two upwardly-extending separate openings, a longitudinal vertically-disposed receptacle uniformly tapering to its minimum diameter at a bottom outlet concentric with and communicating with one of said openings of said reservoir, and, on another opening of said reservoir a cover comprising a dispensing implement having a spoon element normally disposed within said reservoir directly and under the central vertical axes of said receptacle and of said opening connecting therewith.

820,063. **SELECTIVE TELEPHONE SYSTEM.** Noble S. McKinsey, and Anton R. Nelson, Susanville, Cal. Filed June 15, 1904. Serial No. 212,648.



Claim.—1. A selective telephone system comprising a series of telephones, two line-wires, one connected to the ground, a resistance therein to kill the ground when the metallic talking-circuit is closed, bridges between the line-wires at the respective telephones of the system, means in each bridge for controlling its telephone, and means at each telephone for connecting the other line-wire with the ground, whereby all the bridges are placed in multiple on a circuit through the line-wires and ground, substantially as described.

2. A selective telephone system comprising a series of telephones, two line-wires, one connected to the ground, a resistance therein to kill the ground when the metallic talking-circuit is closed, bridges between the line-wires at the respective telephones of the system, means in each bridge for controlling its telephones, and means at each telephone for connecting the other line-wire with the first line-wire through the ground, whereby all the bridges are placed in multiple on a circuit through the line-wires and ground, substantially as described.

3. A selective telephone system comprising a series of telephones, two line-wires, one connected to the ground, a resistance therein to kill the ground when the metallic talking-circuit is closed, bridges between the line-wires at the respective telephones of the system, magnets in said bridges controlling the telephones, and means at each telephone for connecting the other line-wire with the first line-wire through the ground, whereby a current through the line-wires energizes all the magnets, substantially as described.

4. A selective telephone system comprising a series of telephones, two line-wires, one connected to the ground, a resistance therein to kill the ground when the metallic talking-circuit is closed, bridges between the line-wires at the respective telephones of the system, means in each bridge for controlling its telephone, a broken line at each telephone from the other line-wire to the first line-wire through the ground, and means, actuated by the removal of the receiver from the hook, for closing a break in said line, substantially as described.

5. A selective telephone system comprising a series of telephones, two line-wires, one connected to the ground, a resistance therein to kill the ground when the metallic talking-circuit is closed, bridges between the line-wires at the respective telephones of the system, a magnet in each bridge, clockwork mechanism controlled by said magnet, a broken line at each telephone from the other line-wire to the ground, means, actuated by the removal of the receiver from the hook, for closing a break in said line, thereby controlling the magnets and starting the clockwork mechanisms, and means, operated by the initial movement of said mechanisms, for preventing the like closure in the other telephones by the removal of the receiver from the hook, substantially as described.

6. In an apparatus of the character described, a series of telephones, two line-wires, one connected to the ground, a resistance therein to kill the ground when the metallic talking-circuit is closed, bridges between the line-wires at the respective telephones of the system, means operatable at each telephone when said bridge is closed for controlling said telephone, and means at each telephone for connecting the other line-wire with the first line-wire through the ground, substantially as described.

7. In an apparatus of the character described, the combination of two line-wires, one of which is connected to the ground, a resistance therein to kill the ground when the metallic talking-circuit is closed, the other of which has a broken connection with the ground at each telephone of the system, a line-controller at each station, means operated by the release of the automatic hook for rendering said line-controller operative to close a break in the broken line to the ground, and means actuated with the closing of said break for rendering all the other line-controllers unresponsive to the corresponding automatic hooks, substantially as described.

8. A selective telephone system comprising two line-wires, bridges therebetween at the several stations to form the secondary talking-circuit, each bridge having two breaks therein, a receiver and secondary coil in each bridge, means for closing one of said breaks in any bridge by the removal of the receiver from its hook, means for closing the other break in the bridge at the calling-subscriber's station by the said removal of the receiver, and means for closing said other break at the called-subscriber's station controllable selectively from a distant station, substantially as described.

9. A selective telephone system comprising two line-wires, bridges therebetween at the several stations to form the secondary talking-circuit, each bridge having two breaks therein, a receiver and secondary coil in each bridge, means for closing one of said breaks in any bridge by the removal of the receiver from its hook, means for closing the other break in the bridge at the calling-subscriber's station by the said removal of the receiver, and clockwork mechanism at each station, and means operated thereby and selectively controllable at the calling-subscriber's telephone, for closing said other break at the called-subscriber's station, substantially as described.

10. A selective telephone system comprising two line-wires, bridges therebetween at the several stations, an electromagnet in each bridge, a bell-ringing circuit at the bridge at each station having a break therein, and having also two parallel branches, each having a break therein, means for closing the former break by the energizing of the magnet, means for closing one of the latter breaks by the removal of the receiver from its hook, and means for closing the other of the latter breaks controllable from a distant station, substantially as described.

11. A selective telephone system comprising two line-wires, bridges therebetween at the several stations, an electromagnet in each bridge, a bell-ringing circuit at the bridge at each station having a break therein, and having also two parallel branches, each having a break therein, means for closing the former break by the energizing of the magnet, means for closing one of the latter breaks by the removal of the receiver from its hook, means, actuated by the said removal, for preventing the like closure in the other telephones of the system, and means for closing the other of the latter breaks controllable from a distant station, substantially as described.

12. A selective telephone system comprising two line-wires, bridges therebetween at the several stations, an electromagnet in each bridge, a primary talking-circuit at the bridge at each station having a break therein and having also two parallel branches, each having a break therein, means for closing the former break by the energizing of the magnet, means for closing one of the latter breaks by the removal of the receiver from its hook, and means for closing the other of the latter breaks controllable from a distant station, substantially as described.

13. A selective telephone system comprising two line-wires, bridges therebetween at the several stations, an electromagnet in each bridge, a primary talking-circuit at the bridge at each station having a break therein and having also two parallel branches, each having a break therein, means for closing the former break by the energizing of the magnet, means for closing one of the latter breaks by the removal of the receiver from its hook, means, actuated by the said removal, for preventing the like closure in the other telephone of the system, and means for closing the other of the latter breaks controllable from a distant station, substantially as described.

14. A selective telephone system comprising two line-wires, bridges therebetween at the several stations, an electromagnet in each bridge, a primary talking-circuit at the bridge at each station having a break therein, and having also two parallel branches, each having a break therein, means for closing the former break by the energizing of the magnet, means for closing one of the latter breaks by the removal of the receiver from its hook, means for closing the other of the latter breaks controllable from a distant station, a bell-ringing circuit parallel with the primary talking-circuit and a common battery therein, and a shunt through the bell-magnet coils closed by the removal of the receiver from its hook, substantially as described.

15. In a selective telephone system, a shunt around the receiver, a circuit passing in parallel through the bell-magnet coils and the transmitter, and means for closing said circuit and opening the shunt, substantially as described.

16. A selective telephone system comprising in each telephone a button-carrier having fixed buttons thereon, one for each telephone of the system, a corresponding series of push-buttons, means whereby the pressure upon any push-button locks it to its corresponding stationary button thereby closing a break in a circuit to place the telephone on the line, and means for completing the circuit, substantially as described.

17. A selective telephone system comprising in each telephone a button-carrier having fixed buttons thereon, one for each telephone of the system, a corresponding series of push-buttons, means whereby the pressure upon any push-button locks it to its corresponding stationary button, thereby closing a break in a circuit to place the telephone on the line, and means, controlled by the pressure of the button, for subsequently completing the line through another telephone of the system, substantially as described.

18. A selective telephone system comprising in each telephone a button-carrier having fixed buttons thereon, one for each telephone of the system, a corresponding series of push-buttons, means whereby the pressure upon any push-button locks it to its corresponding stationary button thereby closing a break in a circuit to place the telephone on the line, and means, controlled by the pressure of the button, for closing in the telephone selected a break in the line, substantially as described.

19. A selective telephone system comprising in each telephone a button-carrier having fixed buttons thereon, one for each telephone of the system, clockwork, a rotating contact-maker driven thereby, a series of contacts corresponding to the other telephones, and successively touched by said contact-maker, wires from said contacts to said fixed buttons, a series of push-buttons corresponding to the stationary buttons, means for contacting each push-button with its corresponding stationary button, thereby closing a break in a circuit to place the telephone on the line, and means for completing said circuit, substantially as described.

20. A selective telephone system comprising telephones each having a button-carrier with a metallic rim, buttons carried by said carrier, clockwork mechanism, contact-pins corresponding to the other telephones and to the buttons, wires from said contact-pins to the buttons, a wire from the clockwork to the button-carrier, means whereby the movement of the button-carrier closes a break in a circuit, means whereby the contacts of the device with the pins successively close circuit-breaks, and means whereby said closures control the talking-circuit, substantially as described.

21. A selective telephone system comprising two line-wires one of them connected to the ground, telephones each having clockwork mechanism, all of said mechanisms revolving synchronously, a wheel revolved by said clockwork mechanism, a stop-pin thereon, a hook engaging said stop-pin, a magnet, and an armature therefor operatively connected with said hook, a bridge between the line-wires, means for connecting the other line-wire to the ground, and means whereby the movement of the clockwork mechanism controls the talking-circuit, substantially as described.

22. A selective telephone system comprising two line-wires one of them connected to the ground, telephones each having clockwork mechanism, all of said mechanisms revolving synchronously, a

wheel revolved by said clockwork mechanism, a stop-pin thereon, a hook engaging said stop-pin, a magnet, and an armature therefor operatively connected with said hook, a bridge between the line-wires, means for connecting the other line-wire to the ground, means for arresting the wheels after they have advanced a short distance, and means operatable only in the telephone in which the second line-wire was connected to the ground for restarting said wheels, substantially as described.

23. In an apparatus of the character described, a bell-circuit, a circular series of contact-pins, a wire connecting one of said pins with the bell-circuit to close the same, push-buttons, wires connecting said contact-pins with the respective push-buttons, and a revolving contact-maker making contact with said pins, substantially as described.

24. In an apparatus of the character described, the combination of a bell-circuit, magnets the energizing of which closes the bell-circuit, and means operated by the taking down of the receiver for preventing the bell ringing in said circuit, said means comprising a shunt through the coils of the magnet, substantially as described.

25. In an apparatus of the character described, the combination of a bell-circuit, magnets, the energizing of which closes said circuit, a receiver, an automatic hook therefor, and a shunt through the coils of the magnet, said shunt being closed by the rise of the automatic hook, substantially as described.

26. In an apparatus of the character described, the combination of two line-wires, a shunt for the receiver at each telephone in the system, means operated by the calling subscriber for opening said shunt, a series of selective devices at each telephone of the system, means operated by the calling subscriber on selecting one of said devices for opening the shunt in a selective telephone of the system, and means whereby the opening of the shunt in any other telephone is automatically prevented simultaneously with the opening of the shunt in the selected telephone, substantially as described.

27. In an apparatus of the character described, the button-carrier having a yoke-shaped rim, said rim having lateral arms suitably guided in the movement of the button-carrier, buttons carried by said carrier, and means operated by the closure of a circuit through a selected button of the series for controlling the line, substantially as described.

28. In an apparatus of the character described, the combination of the push-buttons and the flanges, the stationary buttons also having flanges, the button-carrier carrying said stationary buttons, said stationary buttons being so located with reference to the push-buttons that when any one of the latter is pushed in, and the button-carrier is moved from an inoperative to an operative position the flange of the push-button interlocks with the flange of the corresponding stationary button and prevents withdrawal of the push-button, substantially as described.

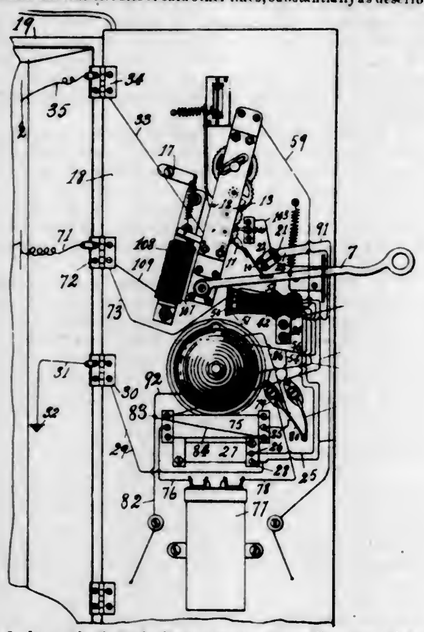
820,064. SELECTIVE TELEPHONE. NOBLE S. MCKINSEY and ANTON R. NELSON, Susanville, Cal. Filed Dec. 27, 1904. Serial No. 238,276.

Claim.—1. In a selective telephone system, a party-line of which one wire grounds at central, a resistance therein at central greater than that of any talking-circuit in the system, means for connecting at central the other wire of said line with the corresponding wire of any other party-line of the system, selector-magnets at each station bridging the wires of the party-line, and means at each station for grounding said other wire, substantially as described.

2. In a selective telephone system, a party-line of which one wire grounds at central, a resistance therein at central greater than that of any talking-circuit in the system, means for connecting at central the other wire of said line with the corresponding wire of any other partly-line of the system, selector-magnets at each station bridging the wires of the party-line, and means at each station for grounding said other wire, means, controlled by said magnets for throwing out all other talking-circuits except that of the station so grounded, substantially as described.

3. In a selective telephone system, a party-line of which one wire grounds at central, a resistance therein at central greater than that of any talking-circuit in the system, means for connecting at central the other wire of said line with the corresponding wire of any other party-line of the system, selector-magnets at each station bridging the wires of the party-line, and means at each station for grounding said other wire, means, controlled by said magnets preventing grounding at any other station, substantially as described.

4. In a selective telephone system, a party-line of which one wire grounds at central, a resistance therein at central greater than that of any talking-circuit in the system, means for connecting at central the other wire of said line with the corresponding wire of any other party-line of the system, selector-magnets at each station bridging the wires of the party-line, and means at each station for grounding said other wire, means, controlled step by step by successive energizations of magnets of the other line, for closing in succession the bell-circuits of said other lines, substantially as described.



5. In a selective telephone system, a party-line, one wire of which grounds at central, a resistance therein at central greater than that of any talking-circuit in the system, magnets at each station bridging said wire with the other wire of the line, means at each station for grounding said other wire, and means at central for connecting said other wire through an interrupter with the corresponding wire of any other party-line and also for inserting in the first wire at central an interrupter, whereby the magnets on either line can be intermittently energized by central, substantially as described.

6. In a selective telephone system, a party-line of which one wire grounds at central, a resistance therein at central greater than that of any talking-circuit in the system, magnets at each station bridging said wire with the other wire, means at each station for grounding said other wire, and means at central for inserting in said first wire an interrupter whereby the magnets can be intermittently energized, substantially as described.

7. In a selective telephone system, a party-line of which one wire grounds at central, a resistance therein at central greater than that of any talking-circuit in the system, magnets at each station bridging said wire with the other wire, means at each station for grounding said other wire, and means for inserting in said first wire an interrupter whereby the magnets can be intermittently energized, substantially as described.

8. In a selective telephone system, controlling mechanism comprising magnets and a rotating device advanced a short distance when a weak current passes through the magnets and a long distance in the same direction when a strong current passes therethrough and means for throwing a resistance into the line through the magnets by taking down the receiver, substantially as described.

9. In a selective telephone system, controlling mechanism comprising magnets and a rotating device advanced a short distance in the same direction when a weak current passes through the magnets and a long distance when a strong current passes therethrough and means operatable by the calling party for throwing a resistance into the line through the magnets, substantially as described.

10. In a selective telephone system, controlling mechanism comprising a rotating device, clockwork mechanism for rotating the same, stops for the same arresting the device, the one after a long movement thereof and the other after a short movement, a magnet, means whereby the first stop is brought into action by a strong current through said magnet, and the second stop by a weak current therethrough, and means operated by taking down the receiver for throwing a resistance into circuit with the coil through the magnet, substantially as described.

11. In a selective telephone system, controlling mechanism comprising a rotating device, clockwork mechanism for rotating the same, stops for the same arresting the device, the one after a long movement thereof and the other after a short movement, a magnet, means whereby the first stop is brought into action by a strong current through said magnet, and the second stop by a weak current therethrough, and means operatable by the calling party for throwing a resistance into circuit with the coil through the magnet, substantially as described.

12. In a selective telephone system, controlling mechanism comprising a rotating device, clockwork mechanism for rotating the same, arresting means therefor, a magnet for operating the latter, means for interrupting the currents through the magnet repeatedly in succession with a weak current, a circuit closed after a predetermined number of such interruptions, and means whereby a strong current through the magnet removes the arresting means to break said circuit, and arrests the rotating device in a subsequent position thereof, substantially as described.

13. In a selective telephone system, party-lines, one wire of each of which is grounded at central, a resistance therein at central greater than that of any talking-circuit in the system and the other wire of any line can be connected at central with the corresponding wire of any other line, means for grounding said other wire at any station of the line, and means whereby central can connect the two wires at any station on any line, to form a complete talking-circuit, substantially as described.

14. In a selective telephone system, a step-by-step rotating device, clockwork mechanism for rotating the same, a magnet controlling the same by interrupted weak currents therethrough, means for simultaneously closing the circuit through said magnet and throwing a resistance into said circuit to weaken the current to be subsequently so interrupted, means for shunting the resistance to pass a strong current through the magnet, means whereby said strong current returns the rotating device to its initial position, and means for holding the line closed upon operating said shunting means until said rotating device has returned to its initial position, substantially as described.

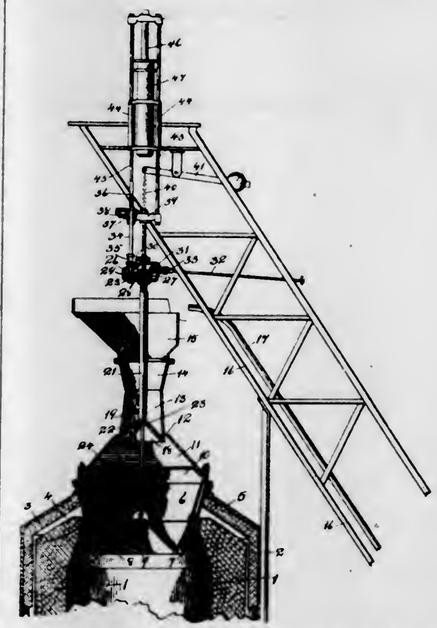
15. In a selective telephone system, a line-controller at each station, means for closing the circuit by said line-controller, means whereby the rise of the automatic hook operates the line-controller to close the circuit, means for supporting the line-controller in a position to be so operated by the rise of the automatic hook, and means whereby the closing of the circuit influences all the supporting means on the line to withdraw the controllers except the one already operated out of position to be so operated by the rise in the corresponding automatic hook, substantially as described.

16. In a selective telephone system, a line-controller at each station, means for closing the circuit by said line-controller, means whereby the rise of the automatic hook operates the line-controller to close the circuit, means for supporting the line-controller in a position to be so operated by the rise of the automatic hook, and means whereby the closing of the circuit influences all the supporting means on the line to withdraw the controllers except the one already operated out of position to be so operated by the rise in the corresponding automatic hook, and a busy signal brought into signaling position by such actuation of the supporting means, substantially as described.

820,065. DISTRIBUTER FOR BLAST-FURNACES. ALBRECHT B. NEUMANN, Joliet, Ill., assignor of one-half to David Baker, Philadelphia, Pa. Filed Jan. 19, 1905. Serial No. 241,818.

Claim.—1. A distributer for blast or similar furnaces consisting of a discharging-hopper, a bell adapted when raised to close the mouth of the discharging-hopper, a chute leading into the discharging-hopper, a bell adapted when raised to close the mouth of the chute, a flat oval distributing-plate abutting against and extending diagonally upward from the bell across the chute and serving to provide a continuously-sloping deflecting-surface, a tubular shaft to which the last-mentioned bell and distributing-plate are secured, means for imparting a reciprocating movement to the upper bell and automatically imparting an intermittent rotation to the deflecting-plate, and a second shaft passing through the tubular shaft and connected with the discharging-bell and adapted to be raised and lowered, substantially as described.

2. A distributer for blast or similar furnaces consisting of a discharging-hopper, a bell adapted when raised to close the mouth of the discharging-hopper, a chute leading into the discharging-hopper, a bell adapted when raised to close the mouth of the chute, a flat oval distributing-plate abutting against and extending diagonally upward from the bell across the chute, a tubular shaft to which the last-mentioned bell and distributing-plate are secured, a gear-wheel on the end of the tubular shaft, a casing within which the gear-wheel is rotatably mounted, a second gear-wheel meshing with the first-mentioned gear-wheel, a shaft having therein a spiral formation to which the last-mentioned gear-wheel is connected, means for raising and lowering the casing, a second shaft passing through the tubular shaft and connected with the discharging-bell, a cross-head on said shaft, means for raising and lowering the cross-head, and a clutch member secured to the cross-head through which the spiral shaft extends, said clutch member being rotatable as the spiral shaft is moved in one direction and being held against rotation as the spiral shaft is moved in the opposite direction for compelling rotation of the spiral shaft and imparting such rotation through the gears to the tubular shaft, substantially as described.



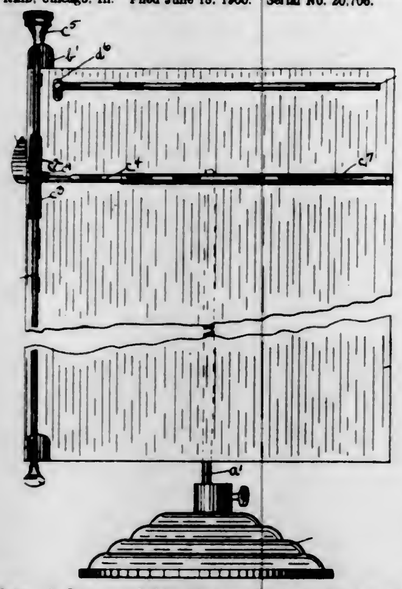
3. A distributer for blast or similar furnaces consisting of a discharging-hopper, a lower bell adapted when raised to close the mouth of the discharging-hopper, a chute opening into the discharging-hopper, a bell adapted when raised to close the mouth of the chute, a distributing-plate secured to the bell and extending diagonally upward therefrom across the chute and having the same deflecting-angle as the surface of the bell and forming a continuously-sloping deflecting-surface, a tubular shaft to which the deflecting-plate and bell are secured, an inner shaft extending through the tubular shaft for raising and lowering the lower bell, means for reciprocating the inner shaft and means for reciprocating and automatically rotating the tubular shaft, substantially as described.

4. A distributer for blast or similar furnaces consisting of a discharging-hopper, a lower bell adapted when raised to close the mouth of the discharging-hopper, a chute opening into the discharging-hopper, a bell adapted when raised to close the mouth of the chute, an oval-shaped flat distributing-plate extending diagonally upward from the bell and across the chute and forming a continuously-sloping deflecting-surface, a tubular shaft to which the deflecting-plate and bell are secured, an inner shaft extending through the tubular shaft for raising and lowering the lower bell, means for reciprocating the inner shaft and means for reciprocating and automatically rotating the tubular shaft, substantially as described

5. A distributer for blast or similar furnaces consisting of a discharging-hopper having downwardly-converging walls and opening into the mouth of the furnace, a discharging-bell of conical shape

adapted to close the mouth of the discharging-hopper and adapted to deflect material to the sides of the hopper, a chute opening into the discharging-hopper, a distributing-bell adapted when raised to close the mouth of the chute, a deflecting-plate of oval shape secured to the sloping surface of the distributing-bell and extending diagonally upward from the bell across the hopper and serving to provide a continuously-sloping flat deflecting-surface, a tubular shaft to which the distributing-bell and plate are secured, a gear mechanism for imparting a partial revolution to the tubular shaft, means for raising and lowering the tubular shaft, an inner shaft secured to the discharging-bell and passing through the tubular shaft, and a piston for raising and lowering said shaft, substantially as described.

820,066. **STENOGRAPHER'S COPY-HOLDER.** ARTHUR B. REID, Chicago, Ill. Filed June 18, 1900. Serial No. 20,706.



Claim.—1. In a copy-holder, the combination with a suitable support for the copy of a rod arranged at the left-hand side of said support and extending from the bottom to the top thereof, a line-indicator slidably mounted upon said rod, means for operating said line-indicator from the left-hand side of said support, and a clamping-rod arranged upon the front of said support and to the right of the first-mentioned rod, said clamping-rod being provided with an operating-handle arranged in rear of said support at the left-hand side thereof, whereby said clamping-rod and said means may both be operated by the left hand and the first-mentioned rod will not interfare with the operation of the clamping-rod.

2. In a copy-holder, the combination with a supporting-plate, of a clamping-rod consisting of a part in front of said plate, a second part journaled upon the back of said plate and parallel to said first part, and an intermediate handpiece connecting the two parts and projecting from the back of said plate, said handpiece having two parts, one extending radially with said journal as a center, and the other in a direction tangential to said radius, substantially as described.

3. In a copy-holder, the combination with a supporting-plate having a portion at the corner bent to form a bearing, a reciprocating rod mounted in said bearing, and a line-indicator operated by the rod, of a clamping-rod having one part in front of said plate, another part fixedly journaled to the rear thereof, and an intermediate portion extending through a hole in said plate, said hole being situated in proximity to the bearing at the upper end of said plate whereby the rod may pass through the plate at a distance from the edge thereof without weakening said bearing, substantially as described.

4. In a copy-holder, the combination with a supporting-plate, of a clamping-rod having a part upon the front of said plate, a second part parallel thereto and upon the rear of said plate, and an intermediate part acting as a handpiece and projecting to the rear of said plate, substantially perpendicular to the plane passing through said two first-mentioned parts substantially as described.

5. In a copy-holder, the combination with a suitable support, of a longitudinally-extending rod mounted thereon, and a line-indicator having a pair of spiral coils of wire on the end thereof extending in opposite directions and adapted to surround said rod, and being laterally deflected so as to frictionally engage said rod, whereby said springs coöperate by their deflection to hold the line-indicator in any adjusted position substantially as described.

6. In a copy-holder, the combination with a suitable support, of a longitudinally-extending rod mounted thereon, a line-indicator having two spiral coils of wire on the end thereof adapted to surround said rod, and a clutch having a part surrounding said rod and situated between said spirals, substantially as described.

7. In a copy-holder, the combination with a stationary part, of a separate operating-rod, a clutch associated with said rod, means to cause the clutch to frictionally engage or grip said stationary part when said rod is moved in one direction, and to be released when said rod is moved in the opposite direction, and a line-indicator moving with said clutch, substantially as described.

8. In a copy-holder, the combination with a stationary part, of a reciprocating operating-rod mounted thereon and adapted to be moved in one direction by hand and in the opposite direction by gravity, a line-indicator mounted on said rod, and a clutch operated by said rod and adapted to engage said part when said rod is moved in one direction and released when said rod is moved in the opposite direction, substantially as described.

9. In a copy-holder, the combination with a supporting-plate, of an operating-rod mounted thereon, a line-indicator having a pair of spiral coils of wire on the end thereof, adapted to surround said rod and frictionally engage the same, a clutch adapted to surround said rod between said spirals and to engage said plate when said rod is moved in one direction and released when said rod is moved in the opposite direction, substantially as described.

10. In a line-indicator for copy-holders, the combination with a reciprocating rod, of a line-indicator carrying at the end a pair of spirals of wire extending in opposite directions and inclosing and frictionally engaging said rod, a clutch, a strip extending parallel to said rod with which said clutch is adapted to engage, said clutch being adapted to prevent the upward movement of said line-indicator when the rod is raised, while permitting the downward movement of said line-indicator when the rod descends, substantially as described.

11. In a copy-holder, the combination with a stationary part, of a reciprocating rod, a line-indicator, a clutch moving with said line-indicator and a frictional part moving with said clutch and line-indicator adapted to be frictionally engaged by said rod when the latter is moved in one direction to actuate said clutch and thereby cause it to grip said stationary part, whereby said rod is permitted to move relatively to said line-indicator and clutch, said frictional part serving to frictionally engage said rod when the same is moved in the opposite direction to cause said line-indicator to partake of the movement of said rod, substantially as described.

12. In a copy-holder, a copy-support, a reciprocating feed-rod arranged thereon, means to reciprocate said rod, a line-indicator carried by said feed-rod and moved thereby in one direction and means to prevent opposite movement of said line-indicator with the return movement of the feed-rod, substantially as described.

13. In a copy-holder, the combination with a copy-support, of a reciprocating feed-rod arranged thereon, a line-indicator carried by said feed-rod, means to lock the line-indicator to the feed-rod during the movement of said feed-rod in one direction and means independent of the feed-rod and coöperating with said indicator to normally prevent movement of the latter with the movement of said feed-rod in the opposite direction, substantially as described.

14. In a copy-holder, the combination with a suitable support for the copy, a single smooth reciprocating rod adapted to drop by gravity and means for raising it, and a line-indicator movable downward with said rod, and a clutch operated by said rod and adapted to engage a stationary part to hold said indicator while the rod is being raised, substantially as described.

15. In a copy-holder, in combination, a suitable support for the copy, a reciprocating rod, a line-indicator solely supported by said rod, a means for causing the line-indicator to move with said rod in one direction and for preventing movement of the line-indicator with the rod in the opposite direction.

16. In a copy-holder, a suitable support for the copy, a line-indicator, a reciprocating rod for operating the same and having a limited movement in bearings and having a threaded end, and a split nut engaging said threaded end and provided with means for resiliently pressing the two parts of the nut against said threaded end, whereby the length of movement of the rod may be adjusted by said nut and the nut securely held in the adjusted position, substantially as described.

17. The combination with a line-indicator and a stationary part, of a reciprocating rod for operating said line-indicator, and a clutch having the arm c^3 and the gripping-jaw c^9, said gripping-jaw adapted to engage one side of said plate when rocked in one direction, and said arm c^3 adapted to engage the opposite side of said plate to limit the rocking movement of the clutch and to guide the same in returning it to its initial position at the top of the plate, substantially as described.

18. The combination with a line-indicator and a stationary part having a substantially smooth surface, of a smooth reciprocating rod for operating said line-indicator, and a clutch associated with said indicator and rod, said clutch being actuated by said rod to grip the stationary part when said rod is moved in one direction whereby the rod may move relatively to the indicator, said rod when moved in the other direction being adapted to ungrip said clutch and to cause said line-indicator to move therewith, substantially as described.

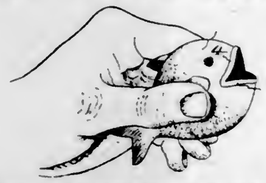
19. The combination with a reciprocating rod, of a stationary part adjacent and parallel to said rod, a clutch member consisting of a strip of metal having an enlarged aperture through which said rod passes and a notch in one edge adapted to fit over the edge of the stationary part, and a jaw projecting from one side of said strip to engage said stationary part when the member is rocked in one direction in the reciprocation of the said rod and means to prevent the clutch from slipping upon the rod, substantially as described.

20. The combination with a reciprocating rod, of a stationary part adjacent and parallel to said rod, a clutch member consisting of a piece of metal having an opening through which the said rod passes and a notch adapted to fit over the edge of said stationary part, the said clutch being adapted to engage the stationary part during movement of the rod in one direction of its movement and to release the same and travel with the rod during its other movement and means to prevent the clutch from slipping upon the rod, substantially as described.

21. The combination with a reciprocating rod, of a plate-holder, a line-indicator mounted on the rod, a clutch comprising a strip of metal having a slot through which the said rod passes, the clutch and indicator-rod being arranged to move together, the said strip having a notch cut in its edge adapted to fit over the edge of the said plate, the metal of the strip above the plate being bent out of the plane of the strip, and a tailpiece formed on the strip and bent in the same direction as the jaw and adapted to engage the under side of the plate when the clutch is rocked in one direction, substantially as described.

22. In a copy-holder, the combination with a suitable support for the copy, of a reciprocating rod, a line-indicator solely supported by said rod, means for causing the line-indicator to move with said rod in one direction and for preventing movement with the line-indicator in the opposite direction, and a supporting-base for said support.

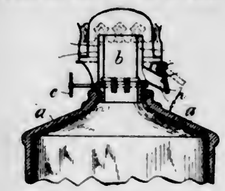
820,067. **POCKET ASH-RECEPTACLE.** LAVINIA D. RICHARDSON, Fredericksburg, Va. Filed June 22, 1905. Serial No. 266,511.



Claim.—A device of the class described fashioned to simulate a living creature, comprising a unitary hollow elastic body substantially circular in cross-section and provided with a slit in its wall serving as the mouth of such creature, said body being otherwise imperforate, said slit being reinforced about its edges and being normally closed and adapted to be opened by compressing the walls of said body.

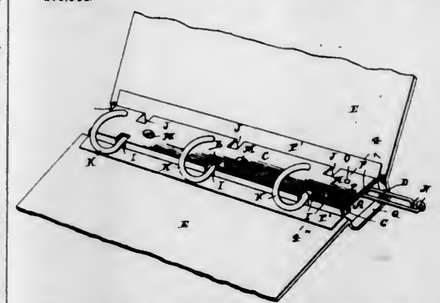
820,068. **BURNER FOR OIL-LAMPS.** JAMES SHARPLES, Birmingham, England. Filed Oct. 3, 1905. Serial No. 281,155.

Claim.—1. A burner comprising a wick-tube, an imperforated funnel surrounding the same so as to form an air-chamber, a passage leading to the lower part of said chamber and means closing said passage to the outside atmosphere, said means opening said passage automatically when the lamp is tilted or upset.



2. In an oil-lamp burner of the kind herein referred to which has a funnel closed at the bottom and surrounding the upper part of the wick-tube above the winder and forming a narrow opening all round the top of the wick-tube with a side air-inlet tube at the bottom of said funnel, the combination with said air-inlet tube and funnel of a flap-valve hanging loosely from a hinge above the inlet end of said tube so as to close the same and adapted to automatically open the passage when the lamp is tilted, substantially as set forth.

820,069. **BLANK-CHECK FILE.** GEORGE W. SHERIDAN and WILLIAM A. WHEELER, Bridgeport, Conn. Filed July 29, 1905. Serial No. 271,844.



Claim.—1. In a blank-check file, the combination with a solid back having a longitudinal groove therein, a rocker-shaft mounted in the groove and having a series of fingers, a plate having a depending edge inclosing the rocker-shaft and face and edge of back and having pockets to receive the ends of said fingers, and a locking device to engage one of the fingers and lock the same and its shaft in a closed position.

2. In a blank-check file, the combination with a solid back having two longitudinal pockets therein, a rocker-shaft mounted in one of the pockets and bearing fingers, a locking device mounted in the other pocket, a plate covering the two pockets to close the same, and pockets in the back of plate to receive the ends of the fingers when in a closed position.

3. In a blank-check file, the combination with a solid back having longitudinal and transverse pockets therein, a rocker-shaft journaled in one of said longitudinal pockets and having fingers to engage the transverse pockets, a plate to inclose said rocker-shaft, a locking-slide adjacent to one of the transverse pockets and adapted to operate in the line of travel of one of the fingers to lock the same in a closed position.

4. In a blank-check file, the combination with a solid back having longitudinal and transverse pockets, a rocker-shaft mounted in one of said longitudinal pockets and a locking-slide in the other of said longitudinal pockets, a plate inclosing said pockets, shaft and slide and a binder's cloth intermediate of the back and plate for attachment to a cover.

5. In a blank-check file, the combination with a back of a series of fingers connectibly pivoted within the edge of said back and below the face thereof, a series of pockets in the face of the opposite edge of said back to receive the ends of the fingers, a slide beneath the face of the back to engage the end of one of said fingers to lock it in a closed position, and a cover attached to said back having one of its sides hinged adjacent to the edge of the face of the back and the other below the pivotal point of the rocker-shaft.

6. In a blank-check file, the combination with a back, a rocker-shaft mounted below the face thereof adapted to operate from a ver-

tical to a horizontal position, a cover attached to the back, one side of said cover being hinged adjacent to the face of the back and the other below the pivotal line of the rocker-shaft, pockets in the back to receive the ends of the fingers and a slide for engaging and locking the same.

7. In a blank-check file, the combination with a back having suitable pockets therein, a plate inclosing said pockets, a rocker-shaft operatively contained within one of said pockets and having a series of curved fingers, pockets in the back to receive the ends of the fingers, a locking-slide to engage one of such ends of the fingers to hold the same in a closed position a cloth secured intermediate of the back and plate having parallel side edges disposed for engagement with a cover.

8. In a blank-check file, the combination with a back, of a rocker-shaft pivoted therein below the face of the back bearing a series of curved fingers adapted to open and shut with the movement of the rocker-shaft, a cover secured to the back one of its sides being hinged intermediate of the face and bottom of the back to allow the fingers to be opened to a right angle to the face of the back.

820,070. **REPEATING EXPLODER.** ROBERT D. SIMPSON, Columbus, Ohio, assignor, by direct and mesne assignments, to The Berea Novelty Company, Berea, Ohio, a Corporation of Ohio. Filed Oct. 17, 1903. Serial No. 177,387.



Claim.—1. A repeating exploder comprising a magazine, a casing having a passage therein communicating with said magazine, having a plunger-tube intersecting said passage, and having an explosion-chamber at the upper end of said tube provided with a downwardly-extending rib, constituting an anvil, and a plunger movable in said tube having a notch in its upper end adapted to receive said anvil, as and for the purpose set forth.

2. A repeating exploder comprising a magazine, a casing having a passage therein communicating with said magazine, having a plunger-tube intersecting said passage which is rectangular in cross-section and has a shoulder therein, and having an explosion-chamber at the upper end of said tube provided with a downwardly-extending rib, constituting an anvil, and a plunger movable in said tube, having a notch in its upper end adapted to receive said anvil, the said plunger corresponding in size and shape with said tube and having a shoulder thereon coöperating with the shoulder in said tube for limiting its downward movement, as and for the purpose set forth.

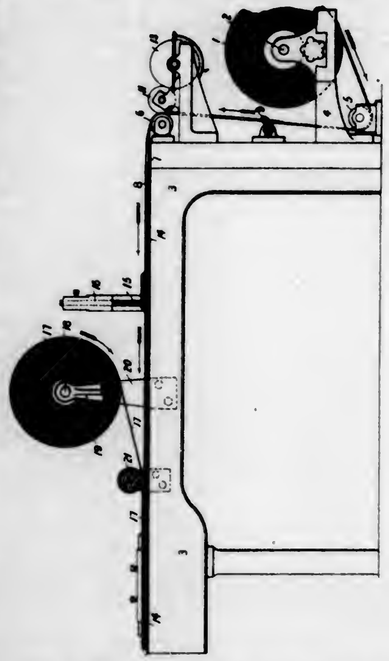
3. A repeating exploder comprising a magazine, a casing having a passage therein communicating with said magazine, having an open, unconfined explosion-chamber located on one side of said passage above the discharge end thereof, having a laterally-extending web provided with beveled or flaring walls separating said chamber from said passage, and having a plunger-tube intersecting said passage and leading into said explosion-chamber, and a plunger fitting and movable in said tube, and cutting off communication between said chamber and said passage when the parts are in position to effect the explosion, as and for the purpose set forth.

4. A magazine-torpedo-cane head comprising a ferrule or socket to receive the cane proper, a body offset laterally to one side of the axis of the cane and provided with a magazine-passage having a lateral discharge-mouth, guide projections extending from the lower part of the head on each side of the discharge-mouth and forming a receiving-chamber, a lateral projection from the body of the head located some distance above said guide projections and above the mouth of the chamber, and a plunger movable vertically in said chamber toward and from the anvil projection, and having the upper end of its body portion normally below the discharge-mouth of the magazine-passage.

5. A head for magazine torpedo-canes, provided with a longitudinal magazine-passage, said head comprising two separate members divided longitudinally with respect to said passage, the plane of division being partially central and partially offset, and means for securing said members together.

6. A head for magazine torpedo-canes, provided with a longitudinal magazine-passage, said head comprising two separate members divided longitudinally with respect to said passage, the plane of division being partially central and partially offset, said offset portion being located adjacent to the point of explosion.

820,071. **PAPER-BAG-MAKING MACHINE.** THOMAS P. SMITH, Erdington, England. Filed June 21, 1905. Serial No. 266,316.



Claim.—1. In a paper-bag-making machine of the kind herein referred to, the herein-described improved means for forming the continuous paper tube which by the machine is divided and formed into the bags, consisting of means for supporting two continuous rolls of paper one of which is somewhat wider than the required paper tube and bags and the other is about the same width as same, means for carrying and feeding the papers from said rolls, means adapted to fold over the two edges of the wider paper, paste-rollers adapted to paste the two folded edges, a dividing-plate and means for carrying the same, said dividing-plate being situated above the wider paper and under the folded and pasted edges of the same, means for feeding the continuous paper from the narrow roll and for pressing the same onto the folded and pasted edges of the paper from the wider roll, substantially as set forth.

2. In a paper-bag-making machine of the kind herein referred to, the combination with the dividing-plate and means for carrying the same, means for supporting a paper-roll the continuous paper of which travels underneath said dividing-plate, means for folding the edges of the continuous paper, said folded edges passing over the edges of the dividing-plate, paste-rollers which paste the said folded edges, means for supporting a second continuous roll of paper above the dividing-plate and means for feeding and pressing the paper from the second roll onto the pasted and folded edges of the paper from the first roll thereby forming a thin flat paper tube for the purpose and in the manner substantially as set forth.

820,072. **METHOD FOR ATTACHING EXTRACTORS TO CORKS.** WILLIAM H. SMITH, Morton, Pa. Filed Mar. 5, 1906. Serial No. 304,405.

Claim.—1. The method of attaching extractors to corks, which consists in securing the extractor firmly to the cork, subjecting the cork to moist heat for expanding it, and compressing the expanded cork, substantially as described.

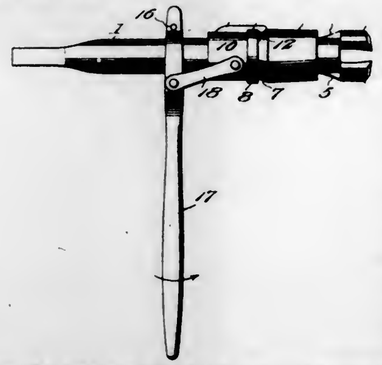
2. The method of attaching extractors to corks, which consists in securing the extractor firmly to the cork, subjecting the cork to the action of hot water for expanding it, and compressing the expanded cork, substantially as described.

3. The method of attaching extractors to corks, which consists in securely looping the extractor about the periphery of the cork, subjecting the cork to moist heat for expanding it, and compressing the expanded cork, substantially as described.



4. The method of attaching extractors to corks, which consists in securely looping the extractor about the periphery of the cork, subjecting the cork to moist heat for expanding it, and compressing the expanded cork to a diameter slightly greater than that of its initial condition, substantially as described.

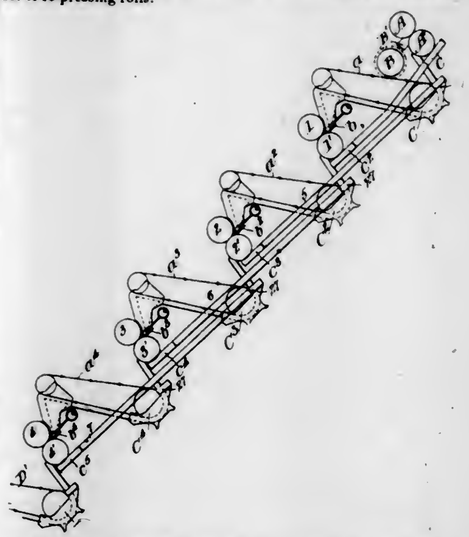
820,073. **RIVET-CUTTER.** HARRY H. SPANOGLE, Altoona, Pa., assignor of one-third to Frank C. Keith, Altoona, Pa. Filed Apr. 3, 1905. Serial No. 253,535.



Claim.—In a device of the class described, a rotary shank, a plurality of relatively movable coöperating cutters carried thereby and having cam-faces, a sleeve slidably disposed upon the shank and adapted to act upon said cam-faces for moving the cutters toward each other, a collar fixed against longitudinal movement upon and adapted for free rotation on the shank, an operating-lever pivotally engaged with the collar, a second sleeve slidably and rotatively mounted on the shank and operatively engaged with the first-named sleeve, and links connecting the lever and second sleeve.

820,074. **SUGAR-CANE MILL.** MARK R. SPELMAN, New York, N. Y. Filed Feb. 4, 1905. Serial No. 244,300.

Claim.—1. A sugar-cane mill having, in combination, crushing-rolls adapted to crush and flatten the cane and to express a portion of its juice, a cutter-table arranged to receive upon it the flattened cane as discharged by said crushing-rolls, a cutter coacting with said cutter-table and adapted therewith to reduce the flattened cane to chips in the form of short pieces having ends at right angles to the length of the cane so as to expose the cellular tissue at both ends of each chip, a series of diffusion-wells supplied with liquid, a series of conveyers constructed and arranged to positively immerse the cane chips in flattened condition within the respective diffusion-wells and to elevate the saturated and expanded chips therefrom, mechanical feeders having feed-tables arranged to receive upon them the saturated cane chips as discharged by said conveyers, a series of sets of re-pressing rolls each of which is arranged to be fed by one of said feeders, and a bagasse-hopper arranged to receive the chips from the last set of re-pressing rolls.



2. A sugar-cane mill having, in combination, crushing-rolls adapted to crush and flatten the cane and to express a portion of its juice, a cutter-table arranged to receive upon it the flattened cane as discharged by said crushing-rolls, a cutter coacting with said cutter-table and adapted therewith to reduce the flattened cane to chips, a series of diffusion-wells, a series of conveyers constructed and arranged to positively immerse such cane chips in flattened condition within the respective diffusion-wells and to elevate the saturated and expanded chips therefrom, mechanical feeders having feed-tables arranged to receive upon them the cane chips as discharged by said conveyers, a series of sets of re-pressing rolls, each of which is arranged to be fed by one of said feeders, catch-basins beneath each set of rolls, juice-troughs arranged to conduct the juice from all except the first two catch-basins into preceding diffusion-wells, a main juice-trough common to all, and juice-troughs directly connecting the first two catch-basins with said main juice-trough.

3. A sugar-cane mill having, in combination, a set of crushing-rolls adapted to crush and flatten the cane and to express a portion of its juice, means for reducing the flattened cane to chips in the form of short pieces having ends at right angles to the length of the cane, a series of diffusion-wells, a series of conveyers constructed and arranged to positively immerse such cane chips in flattened condition within the respective diffusion-wells and to elevate the saturated and expanded chips therefrom, mechanical feeders arranged to act upon such cane chips as discharged by said conveyers, four sets of re-pressing rolls parallel with said crushing-rolls and each set arranged to be fed by one of said feeders, catch-basins beneath the several sets of rolls, a main juice-trough common to all, juice-troughs directly connecting the catch-basins of said crushing-rolls and the first set of re-pressing rolls with said main juice-trough, juice-troughs connecting the respective ends of the third catch-basin with the first diffusion-well, juice-troughs connecting the respective ends of the fourth catch-basin with the second diffusion-well, and juice-troughs connecting the respective ends of the fifth catch-bas in with the third diffusion-well.

4. In a sugar-cane mill, a crusher composed of two rolls placed one above the other, both of them fluted longitudinally, and the lower roll having V-shaped grooves cut circumferentially.

5. In a sugar-cane mill, the combination with a crusher composed of two crushing-rolls placed one above the other, and the lower roll provided with circumferential V-shaped grooves, of a cutter-table constructed with V-shaped projections arranged to project into said V-shaped grooves of the lower roll and to act as scrapers.

6. In a sugar-cane mill, the combination with crushing-rolls adapted to flatten the cane and express a portion of its juice, of a

cutter-table arranged to receive the flattened cane from said rolls, a cutter interacting with said cutter-table and adapted to reduce the flattened cane to chips in the form of short pieces having ends at right angles to the length of the cane so as to expose the cellular tissue at both ends of each chip, re-pressing rolls parallel with said crushing-rolls, diffusion-wells supplied with liquid and arranged to receive the cane chips as they come from said cutter and the successive sets of said re-pressing rolls, and means for positively immersing such chips within the respective wells so as to permit them to expand beneath the surface of the liquid and thus become fully saturated preliminary to the succeeding re-pressing operation.

7. In a sugar-cane mill, the combination with a crusher adapted to flatten the cane and express a portion of its juice, and means for reducing the flattened cane to chips in the form of short pieces having ends at right angles to the length of the cane, of a diffusion-well supplied with liquid and arranged to receive such chips in flattened condition, and a conveyer comprising a horizontal drum immersed at bottom within said diffusion-well and sprocket-chains carrying flights of such dimensions as to fit the space between said drum and the bottom of the well, whereby the chips are positively immersed within said well and permitted to expand beneath the level of the liquid within the well.

8. In a sugar-cane mill, the combination with a crusher adapted to flatten the cane and express a portion of its juice, means for reducing the flattened cane to chips in the form of short pieces having ends at right angles to the length of the cane, and a diffusion-well arranged to receive the cane chips in flattened condition and provided with a partially-immersed horizontal drum, of a conveyer comprising sprocket-chains parallel with each other running around said drum, and provided with flights of proper dimensions arranged in staggered sections, whereby the cane chips are positively immersed within the well and are elevated therefrom, and a forwardly-extending chute interacting with said flights for elevating the cane chips.

9. In a sugar-cane mill, the combination with a crusher adapted to flatten the cane and express a portion of its juice, means for reducing the flattened cane to chips, and a diffusion-well arranged to receive the cane chips in flattened condition and provided with a partially-immersed horizontal drum, of a conveyer comprising sprocket-chains parallel with each other running around said drum and provided with flights of proper dimensions carried by said sprocket-chains and having notches in their outer edges, and an upwardly-extending chute interacting with said flights for the elevation of the cane chips and the return of the non-absorbed liquid to the diffusion-well.

10. In a sugar-cane mill, the combination with means for crushing the cane and thereby flattening it and expressing a portion of its juice, means for reducing the flattened cane to chips, a series of diffusion-wells, means for positively immersing the cane chips within said wells to saturate them and for elevating the chips therefrom and a series of sets of re-pressing rolls to which the saturated cane chips are so elevated, of a cane-chip feeder composed of a series of sections of hard wood or other suitable material, a feed-table beneath the same, and means for successively advancing said feed-sections so that the thrust of each feeder-section pushes the cane chips in contact with its inner end between the succeeding set of re-pressing rolls.

11. In a sugar-cane mill, the combination with means for crushing the cane and thereby flattening it and expressing a portion of its juice, means for reducing the flattened cane to chips, means for saturating the flattened chips, and re-pressing rolls for completing the expression of the juice, of a cane-chip feeder composed of a series of sections of hard wood or other suitable material, a table beneath the same, and means for successively advancing said feeder-sections including a series of eccentrics behind the respective sections.

12. In a sugar-cane mill, the combination with means for crushing the cane and thereby flattening the same and expressing a portion of its juice, means for reducing the flattened cane to chips, means for saturating the flattened chips, and re-pressing rolls for completing the expression of the juice, of a cane-chip feeder composed of a series of sections of hard wood or other suitable material, a table beneath the same, a series of eccentrics behind the respective feeder-sections, a shaft octagonal in cross-section common to said eccentrics, upon which the same are arranged on eighths, and means for transmitting motion from the respective eccentrics to the respective feeder-sections.

13. In a sugar-cane mill, the combination with means for crushing the cane and thereby flattening the same and expressing a portion of its juice, means for reducing the flattened cane to chips, means for saturating the flattened chips, and re-pressing rolls for completing the expression of the juice, of a cane-chip feeder for each set of re-pressing rolls composed of a series of feeder-sections, means for reciprocating said feeder-sections and a table beneath the feeder-sections having its delivery edge close to the periphery of the lower roll and constructed with juice-conducting grooves in its upper surface extending in the direction of the feed to said delivery edge.

14. In a sugar-cane mill, the combination with means for crushing the cane and thereby flattening the same and expressing a portion of its juice, means for reducing the flattened cane to chips, means for saturating the flattened chips and re-pressing rolls for completing the expression of the juice, of a cane-chip feeder for each set of re-pressing rolls composed of a series of feeder-sections, means for reciprocating said feeder-sections and a table beneath the feeder-sections having its delivery edge close to the periphery of the lower roll and constructed with juice-conducting grooves in its upper surface extending in the direction of the feed to said delivery edge, and of increasing capacity as they approach said edge.

15. In a sugar-cane mill, the combination of means for crushing the cane and thereby flattening the same and expressing a portion of its juice, means for reducing the flattened cane to chips, re-pressing rolls for completing the expression of the juice, and means for saturating the flattened chips in advance of each re-pressing operation, such saturating means comprising diffusion-wells constructed with trough-terminals leading to openings in the front walls of the wells and means for collecting the juice from said re-pressing rolls including troughs some of which communicate with such trough-terminals.

16. In a sugar-cane mill, the combination of means for crushing the cane and thereby flattening the same and expressing a portion of its juice, means for reducing the flattened cane to chips, re-pressing rolls for completing the expression of the juice, and means for saturating the flattened chips in advance of each re-pressing operation, such saturating means comprising diffusion-wells constructed with trough-terminals leading to openings in the front walls of the wells, means for collecting the juice from said re-pressing rolls including troughs some of which communicate with such trough-terminals, a partially-immersed horizontal drum within each diffusion-well, sprocket-chains parallel with each other running around said drum, and flights connecting pairs of said chains with each other and adapted to carry the cane chips beneath said drum and to mix with the liquid contents of the well the juice so introduced.

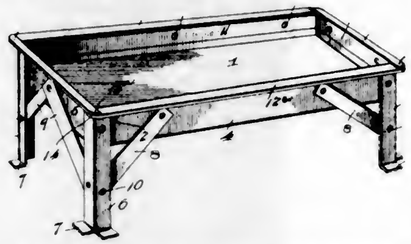
17. A sugar-cane mill having, in combination, a set of crushing-rolls and several sets of re-pressing rolls, each set being composed of two rolls fast on horizontal shafts one above the other and all the lower rolls having their bearings in one and the same horizontal plane, and means for driving said rolls in unison composed of an engine and a longitudinal shaft to which said engine is directly coupled, common to all, worms fast on said longitudinal shaft, worm-wheels meshed by said worms and fast on the shafts of said lower rolls, respectively, and spur-gearing connecting the shafts of each set of rolls.

18. A sugar-cane mill having, in combination, a set of crushing-rolls and several sets of re-pressing rolls, each set being composed of two rolls fast on horizontal shafts one above the other and all the lower rolls having their bearings in one and the same horizontal plane, means for driving said rolls in unison comprising an engine and a horizontal shaft common to all and worm-gearing transmitting motion from said longitudinal shaft to the several sets of rolls, a high-speed cutter arranged between said crushing-rolls and the first set of re-pressing rolls for reducing the flattened cane to chips, an independent high-speed motor, and means for transmitting motion from said independent motor to said cutter.

19. A sugar-cane mill having, in combination, a set of crushing-rolls and several sets of re-pressing rolls each set being composed of two rolls fast on horizontal shafts one above the other and all the lower rolls having their bearings in one and the same horizontal plane, means for driving said rolls in unison comprising an engine and a horizontal shaft common to all and worm-gearing transmitting motion from said horizontal shaft to the several sets of rolls, means for reducing to chips the flattened cane as discharged by said crushing-rolls, diffusion-wells in a lower plane between the successive sets of rolls, intermediate conveyers for immersing the cane chips in said wells and reelevating the same therefrom, and sprocket-chain gearing transmitting motion to said conveyers from the shafts of the several upper re-pressing rolls.

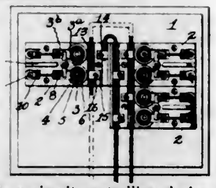
20. A sugar-cane mill having, in combination, a set of crushing-rolls and several sets of re-pressing rolls each set being composed of two rolls fast on horizontal shafts one above the other and all the lower rolls having their bearings in one and the same horizontal plane, means for driving said rolls in unison comprising an engine and a horizontal shaft common to all and worm-gearing transmitting motion from said horizontal shaft to the several sets of rolls, means for reducing to chips the flattened cane as discharged by said crushing-rolls, means for saturating the cane chips between the successive sets of rolls, mechanical cane-chip feeders for the successive sets of re-pressing rolls, and mechanism transmitting motion to said feeders from the shafts of the several upper re-pressing rolls, substantially as hereinbefore specified.

820,075. METALLIC FEED-BOX. HARRY M. THAYER, Woodhull, Ill. Filed Aug. 18, 1905. Serial No. 274,732.



Claim.—A metallic feed-box comprising a body portion pressed from a single blank of sheet metal and having overlapping riveted corner-flaps, upright metallic angle-strips fitting about the corners of the body on the exterior thereof and receiving the rivets for the overlapping corner-flaps, said upright angle-strips constituting legs for the body, and angled guard-strips riveted to the upstanding walls of the box-body at the sides and ends thereof, and overhanging the top edges of said walls.

820,076. PANEL SWITCH AND CUT-OUT. JOHN H. TRUMBULL, Plainville, Conn., assignor to the Trumbull Electric Manufacturing Company, Plainville, Conn., a Corporation of Connecticut. Filed May 25, 1904. Serial No. 209,674.



Claim.—1. In a circuit-controlling device, in combination, a base or panel, separately formed, and removable bases or panels mounted thereon in extension one of another each having grooves for line-wires arranged transversely thereof near their adjoining ends, circuit-wire terminals at opposite ends of each of said removable bases from said grooves, and electrical connections between the circuit-wire terminals and line-wire grooves for conducting a current from the line-wires to the circuit-wires.

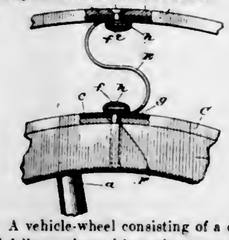
2. In combination in a circuit-controlling device, a panel, a plurality of removable insulating-bases mounted side by side thereon with transversely-arranged registering line-wire grooves, means for securing line-wires in the said grooves, circuit-wire terminals at the opposite end of each of the removable insulated bases from the grooves, and electrical connections between the circuit-terminals and line-wire grooves for conducting a flow of current from the line-wires to the circuit-wires.

3. In a circuit-controlling device, in combination, a base or panel, a plural number of removable insulated bases arranged on said panel side by side and in rows touching each other, the adjacent ends of the panels in each row having transversely-arranged line-wire grooves, circuit-wire terminals at the opposite end of each of the removable bases, electrical connections between the circuit-wire terminals and line-wire grooves for controlling the flow of current from the line-wires to the circuit-wires.

4. In a circuit-controlling device, a base of insulating material, cup-like recesses formed on said base, open on one side and communicating with a pocket in the base, switch-contacts arranged in said pockets, a pair of contact members insulated one from the other arranged in each of the cup-like recesses, conductors extending from one of said contact members to the switch-contacts and from the other to wire-clamping devices, and line-wire grooves extending parallel to each other transversely across the base.

5. In a circuit-controlling device, a base of insulating material having circuit-contact-wire recesses formed at one end and transversely-arranged parallel line-wire grooves extending thereacross, cup-like recesses formed on the base and open on one side communicating with pockets in the base, a projection from the upper surface of the base extending from between the circuit-wire recesses to a point between the switch-contact pockets, terminals secured within the circuit-wire recesses, knife-switch contacts within their pockets, a knife-switch pivoted to the circuit-wire contacts, a pair of contact members arranged in the cup-like recesses, conductors extending from one of said contact members to the switch-contacts and from the other of said contact members to wire-clamping devices in the line-wire grooves, and the wire-clamping devices.

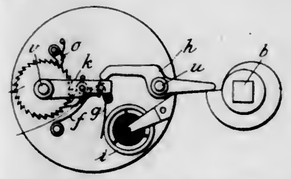
820,077. VEHICLE-WHEEL. GEORGE S. WHITELEY, Baltimore, Md. Filed May 31, 1905. Serial No. 263,146.



Claim.—1. A vehicle-wheel consisting of a central wheel having spokes and felly, a channel-iron rim secured to said felly, an outer channel-iron rim distant from the inner one and a series of S-shaped springs interposed and having their ends secured to both rims with bolts and nuts, and rubber-cap cushions over said nuts, substantially as described.

2. In a vehicle-wheel the combination of a central wheel having spokes and felly, a rim secured to said felly, an outer channel-iron rim distant from the inner one, a series of S-shaped springs interposed and having their ends secured to both rims and elastic washers interposed between the ends of the spring and each rim, substantially as described.

820,078. TIMING MECHANISM FOR ELECTRIC CIRCUITS. AUGUST R. L. WILLE, Leipsic, Germany. Filed Sept. 18, 1903. Serial No. 173,703.

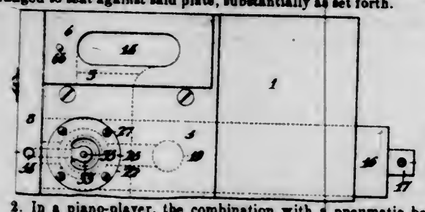


Claim.—An improved check or indicator for determining the time that the current is used in vehicles driven by electricity, consisting in the combination with the controller, of a clock, and means for connecting the wheelwork of the clock with the controller in such a manner that when the current to the motor is switched off the clock is stopped, and when the motor is running the wheelwork is set free and the clock started, said means comprising a cam fixed on the controller-shaft, a two-armed lever arranged with one arm bearing against said cam, a spring-pressed single-armed lever bearing against the other arm, and a spring on the single-armed lever arranged to normally bear on the balance-wheel of the clock but capable of being removed therefrom to release said balance-wheel, substantially as described.

820,079. MUSICAL INSTRUMENT. PHILIP WURST, Jr., Philadelphia, Pa., assignor to The Auto-Manual Piano Action Company, Philadelphia, Pa., a Corporation of New Jersey. Filed July 15, 1903. Serial No. 165,550.

Claim.—1. In a piano-player, the combination with a pneumatic bellows-motor; of a valve mechanism arranged to control said

motor, comprising a metal plate having a plane portion arranged as a valve-seat and an offset portion comprising a bearing for a valve-stem; a valve-stem entered in said bearing; and, a valve on said stem arranged to seat against said plate, substantially as set forth.



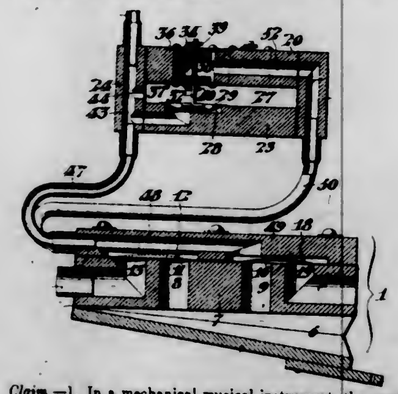
2. In a piano-player, the combination with a pneumatic bellows-motor; of a valve mechanism arranged to control said motor, comprising a stamped sheet-metal plate having a portion arranged as a valve-seat and an offset portion arranged as a bearing for a valve-stem; a port in said plate adjacent to said bearing; a stem entered in said bearing; and, a valve on said stem arranged to seat against said plate in operative relation to said port, substantially as set forth.

3. In a musical instrument, the combination with a pneumatic motor; of a valve mechanism arranged to control said motor, comprising a metal plate having an annular rim provided with screw-apertures; a port through said plate surrounded by a valve-seat; a lug on said plate stamped from said port and provided with a bearing for a valve-stem; a valve-stem entered in said bearing; and, a valve on said stem arranged to contact with said seat, substantially as set forth.

4. In a piano-player, a plurality of separable valve-shelves each comprising a series of pneumatic motors, a series of valve-chambers, a series of individual valve mechanisms, respectively mounted in said chambers and arranged to control said motors; and pins and thimbles on said shelves adapted to engage each other and insure the accurate location of said shelves in relative position, substantially as set forth.

5. In automatic playing mechanism, the combination with a valve mechanism comprising a metal plate having a plane portion arranged as a valve-seat, and an offset portion comprising a bearing for a valve-stem; of a valve-stem entered in said bearing; and, a valve on said stem arranged to seat against said plate, substantially as set forth.

820,080. MECHANICAL MUSICAL INSTRUMENT. PHILIP WURST, Jr., Philadelphia, Pa., assignor to The Auto-Manual Piano Action Company, Philadelphia, Pa., a Corporation of New Jersey. Filed Sept. 13, 1904. Serial No. 224,265.



Claim.—1. In a mechanical musical instrument, the combination with a pneumatic-motor comprising a bellows provided with an exhaust-port and an air-inlet port; of a port adjoining said exhaust-port and leading to the exhauster; a port adjoining said air-inlet port and leading to the atmosphere; and, diaphragms respectively common to said pairs of ports, arranged to alternately open and close them, substantially as set forth.

2. In a mechanical musical instrument, the combination with a pneumatic-motor comprising a bellows provided with an exhaust-port and an air-inlet port; of diaphragms respectively local to said ports; and, means arranged to alternately raise and lower said diaphragms, substantially as set forth.

3. In a mechanical musical instrument, the combination with a pneumatic-motor comprising a bellows provided with an exhaust-port and an air-inlet port; of a cover-board provided with diaphragms respectively local to said ports; and, means arranged to alternately open and close said ports by said diaphragms, substantially as set forth.

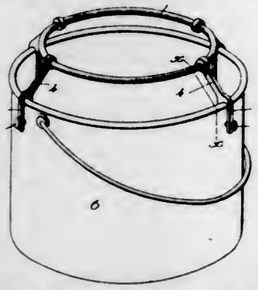
4. In a mechanical musical instrument, the combination with a pneumatic-motor comprising a bellows; of a port-board forming one leaf of said bellows, provided with an exhaust-port and an air-inlet port leading to the interior of said bellows; a port in said port-board adjoining said exhaust-port and leading to the exhauster; a port in said port-board adjoining said air-inlet port and leading to the atmosphere; two diaphragms respectively local to said pairs of exhaust and inlet ports; and, pneumatically-controlled means arranged to alternately operate said diaphragms and alternately collapse and inflate said bellows, substantially as set forth.

5. In a mechanical musical instrument, the combination with a pneumatic-motor comprising a bellows; of a port-board forming one leaf of said bellows, provided with an exhaust-port and an air-inlet port leading to the interior of said bellows; a port in said port-board adjoining said exhaust-port and leading to the exhauster; a port in said port-board adjoining said air-inlet port and leading to the atmosphere; two diaphragms respectively local to said pairs of exhaust and inlet ports; and, valve mechanism pneumatically controlled by a tracker-bar, arranged to alternately operate said diaphragms and alternately collapse and inflate said bellows, substantially as set forth.

6. In a mechanical musical instrument, the combination with a pneumatic-motor comprising a bellows provided with an inlet-port and an exhaust-port; of diaphragms respectively local to said ports; and, means whereby the diaphragms open and close their respective ports in alternation, substantially as set forth.

7. In a mechanical musical instrument, the combination with a pneumatic-motor comprising a bellows provided with a plurality of separate ports; of flexible diaphragms respectively local to said ports; and, means whereby the diaphragms open and close their respective ports in alternation, substantially as set forth.

820,081. PAINT AND VARNISH BRUSH CLEANER. EUGENE B. ALLEY, Watertown, and MANUEL J. SOUSA, Cambridge, Mass. Filed Apr. 11, 1903. Serial No. 152,170.



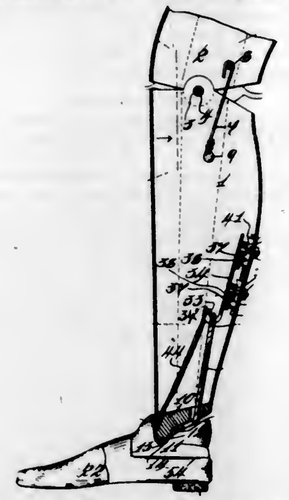
Claim.—1. A cylindrical pail having vertical sides, a wiping-ring having a diameter smaller than that of the pail, and arms or supports adjustably mounted on the wiping-ring and depending therefrom, said arms or supports being detachably secured to the rim of the pail.

2. In a device of the class described, an annular wiping-ring having a diameter smaller than the rim of the pail to which it is attached, and arms adjustably mounted on said ring and provided at their lower ends with jaws to set over the edge of the pail.

3. In a device of the class described, a wiping-ring having a smaller diameter than the rim of the pail, and arms pivoted to said ring and having jaws to set over the rim of the pail.

820,082. ARTIFICIAL LEG. JOHN T. APGAR, New York, N. Y. Filed Feb. 8, 1906. Serial No. 300,025.

Claim.—1. An artificial leg, comprising a foot-piece and a leg-piece, a heel-cord anchored to said foot-piece, at the lower end thereof, a plate carried by said leg-piece provided with a rack, said heel-cord being attached, at the upper end thereof, to an adjustable plate provided with a rack for engaging the rack upon the plate first named, and means, operable from the exterior of said leg-piece, adapted to secure the said plates in a locked position.



2. An artificial leg comprising a foot-piece provided with a socket in its upper side, for a portion of its length, said socket being deeper at one side than at the other, the side of said foot-piece adjacent to the shallow side of said socket being higher than the side adjacent to the deeper side of said socket, an ankle-block pivotally mounted in said socket adapted for a transverse rocking movement, a leg-piece carried by said ankle-block and detachable therefrom, and an adjustable heel-cord adapted to secure said foot-piece, ankle-block and leg-piece together.

3. An artificial leg, comprising an upper leg-piece, a lower leg-piece pivotally attached thereto, a foot-piece, a transversely-movable ankle-block carried by said foot-piece, a heel-cord adapted to hold said leg-pieces, foot-piece and ankle-block together, adjustable interlocking fastening means carried by said lower leg-piece, and having attached thereto said heel-cord, a flexible cord attached to said fastening means comprising plates provided with interlocking racks at one end thereof and said ankle-block at the other end thereof.

4. An adjustable fastening device for the heel-cord of artificial legs, comprising an anchor-plate provided with a rack, a movable plate having means for receiving said heel-cord, independent racks interposed between said anchor-plate and said movable plate, means for holding said racks in position, and releasable means for holding the teeth of said racks interlocked.

5. An artificial-limb member provided with stays or side bars, combined with bolts or the like having shanks of suitable length passing through the stays and extending into the interior of the limb member, and a supporting-cord arranged to be anchored to said shanks and to a support above said bolts.

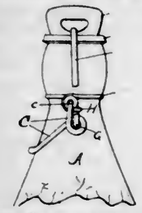
6. The combination with an artificial leg, of an ankle-block, and a foot-piece, the foot-piece having a cut-out portion in the top thereof in which the ankle-block is fitted, one side of said cut-out portion being deeper than the other side, so that the ankle-block will be inclined outwardly as the pressure of the body comes upon the limb, thereby turning the leg-stump inwardly to keep the gravity of the body in proper line.

7. In an artificial leg, the combination of a foot-piece and an ankle-block movably fitted thereto, the bottom of the ankle-block being inclined transversely, substantially as and for the purpose described.

8. In an artificial leg, the combination of a foot-piece having a cut-out upper portion, one of the sides of the foot-piece being higher than the other side, and an ankle-block fitting in said cut-out portion and adapted for a transverse rocking movement therein.

820,083. BOTTLE-STOPPER FASTENER. JOSEPH A. ASTARITA, New York, N. Y. Filed July 8, 1905. Serial No. 268,779.

Claim.—1. In a bottle-stopper fastener, the combination with a wire ring and an operating-lever pivoted thereon, of a laterally-extending bight of wire formed from the wire ring and adapted to act as a stop for the parts when they pass the dead-center in rocking.

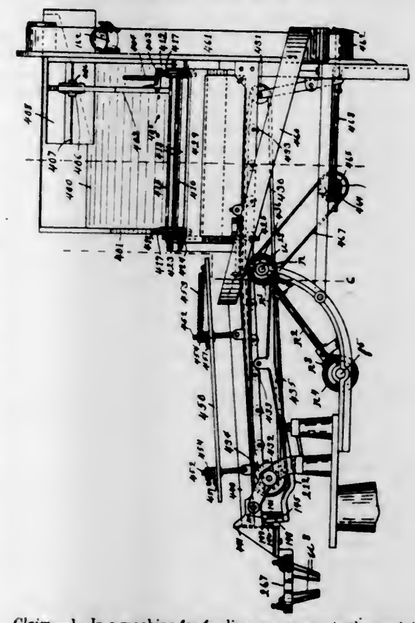


2. In a bottle-stopper fastener, a wire ring upon the bottle-neck, having a double twist or turn to form an eye, and a laterally-extending bight or loop forming a stop and interposed between the loops or turns forming the eye.

3. In a bottle-stopper fastener, a wire ring, having a double turn or loop to form an eye, and a bight intermediate to said turns adapted to form a stop, the continuation of wire between the said bight and ring being located intermediate the ring and the first turn or twist which forms the eye, as and for the purpose described.

4. In a bottle-stopper fastener, a wire ring having a twist which forms an eye and a laterally-projecting loop merging into the eye and forming a stop, as and for the purpose described.

820,084. FEEDING MECHANISM FOR ORANGES AND OTHER ARTICLES. MILTON H. BALLARD, Lynn, Mass., assignor to Tripp Fruit Wrapping Machine Company, Lynn, Mass., a Corporation of Maine. Filed Dec. 30, 1904. Serial No. 239,055.



Claim.—1. In a machine for feeding oranges and other articles, the combination of a declining chute, a conveyer moving at right angles thereto, a rotating device at the lower end of said chute, next the conveyer, for removing the endmost row of oranges from said chute and for delivering said row to said conveyer, and means for removing the oranges from said conveyer singly, substantially as described.

2. In a machine for feeding oranges and other articles, the combination of a declining chute, a conveyer moving at right angles thereto, a rotating device at the lower end of said chute, next the conveyer, having radially-adjustable engaging portions for removing the endmost row of oranges from said chute, and for delivering said row to said conveyer, and means for removing the oranges from said conveyer singly, substantially as described.

3. In a machine for feeding oranges and other articles, the combination of a declining chute having an extensible bottom wall, a conveyer moving at right angles thereto, a rotating device at the lower end of said chute, next the conveyer, having radially-adjustable orange-engaging portions, for removing the endmost row of oranges from said chute and for delivering said row to said conveyer, and means for removing the oranges from said conveyer singly, substantially as described.

4. In a machine for feeding oranges and other articles, the combination of a declining chute, a conveyer moving at right angles to the chute, a rotating device at the lower end of said chute for successively removing the endmost row of oranges therefrom and for delivering said row to said conveyer, a shoulder at the end of said conveyer, a lifter for lifting the endmost orange to the top of said shoulder, and means for operating said lifter, substantially as described.

5. In a machine for feeding oranges and other articles, a trough having a shoulder at the end, a lifter for lifting the endmost orange of the row in the trough to the top of said shoulder, consisting of a rocking plate having a toe, a ledge on the shoulder adapted to be engaged by said toe and an arm supporting said rocking plate, substantially as described.

6. In a machine for feeding oranges and other articles, a trough having a shoulder at the end, a lifter for lifting the endmost orange of the row in the trough to the top of said shoulder, consisting of a rocking plate having a toe, a ledge on the shoulder adapted to be engaged by said toe, means for limiting the descent of the rear end of said plate, and an arm supporting said rocking plate, substantially as described.

7. In a machine for feeding oranges and other articles, a trough having a shoulder at the end, a lifter for lifting the endmost orange of the row in the trough to the top of said shoulder, consisting of a rocking plate having a toe, a ledge on the shoulder adapted to be engaged by said toe, arms extending downward beneath said plate, and an arm supporting said rocking plate, substantially as described.

8. In a machine for feeding oranges and other articles, a trough having a shoulder at the end, a lifter for lifting the endmost orange of the row to the top of said shoulder, means for operating said lifter, a longitudinally-movable plate located above said trough, the front end of which terminates near the lifter, substantially as described.

9. In a machine for feeding oranges and other articles, a trough having a shoulder at the end, a lifter for lifting the endmost orange of the row to the top of said shoulder, means for operating said lifter, a longitudinally-movable plate located above said trough, the front end of which terminates near said lifter, and means for varying the position of said plate relative to the lifter, substantially as described.

10. In a machine for feeding oranges and other articles, a trough having a shoulder at the end, a lifter for lifting the endmost orange of the row to the top of said shoulder, means for operating said lifter, a longitudinally-movable plate located above said trough, the front end of which terminates near said lifter, and means for varying the elevation of said plate above the trough, substantially as described.

11. In a machine for feeding oranges and other articles, a feeding-trough, a declining chute, means for delivering oranges from the chute to the feeding-trough, a declining trough leading from one side of said feeding-trough near its top, to receive the superimposed oranges and means for conveying the oranges from said declining trough to said declining chute, substantially as described.

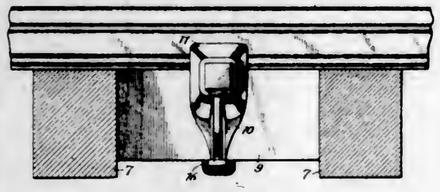
12. In a machine for feeding oranges and other articles, the combination of a declining chute, made wide enough to provide for the simultaneous passage of several oranges, arranged side by side, in rows extending transversely across it, a conveyer moving at right angles thereto adapted to receive the oranges, a row at a time, means controlling the delivery of the oranges, a row at a time, from the chute to the conveyer and means controlling the delivery of the oranges from said conveyer singly, substantially as described.

13. In a machine for feeding oranges and other articles, the combination of a declining chute, made wide enough to provide for the simultaneous delivery of several oranges, arranged side by side in a row extending transversely across it, a conveyer adapted to receive the oranges, a row at a time, and means controlling the delivery of the oranges, a row at a time, from the chute to the conveyer, substantially as described.

14. In a machine for feeding oranges and other articles, the combination of a declining chute, made wide enough to provide for the simultaneous delivery of several oranges, arranged side by side in a row extending transversely across it, a conveyer adapted to receive the oranges, a row at a time, and a rotating device controlling the delivery of the oranges, a row at a time, from the chute to the conveyer, substantially as described.

15. In a machine for feeding oranges and other articles, the combination of a delining chute, made wide enough to provide for the simultaneous delivery of several oranges, arranged side by side in a row extending transversely across it, a conveyer adapted to receive the oranges, a row at a time, and a rotating device adapted to receive the endmost row of oranges from said chute and to deliver the same to said conveyer, substantially as described.

820,085. **RAIL-HOLDING MEANS.** JAMES G. BARRETT, Williamstown, Mass. Filed Oct. 31, 1905. Serial No. 285,283.



Claim.—1. In a device of the character described, the combination with anchoring means, including an upstanding device having a socket in its inner end, of a freely-swinging cam element having its outer end pivotally mounted in the socket and having a rail-engaging surface that is disposed eccentrically to the axis of movement of said element.

2. In a device of the character described, the combination with anchoring means including a clamping-jaw, of a cam element having a pivoted bearing on the jaw and an edge that is disposed eccentrically to the bearing and is arranged to engage a rail.

3. In a device of the character described, the combination with anchoring means including a clamping-jaw having an overhanging rail-engaging bill, said bill being provided with a socket, of a tapering cam element having one end fitted in the socket and its opposite end provided with a cam-surface arranged to bear against the rail-web.

4. In a device of the character described, the combination with rail-embracing jaws, of freely-swinging cam elements mounted on the jaws and having rail-engaging surfaces disposed eccentrically to the axes of movement of said elements, the opposing ends of said surfaces thus moving toward each other upon the swinging movement of the elements in either direction.

5. In a device of the character described, the combination with rail-embracing jaws having inwardly-extending bills provided with sockets, of freely-swinging cam elements having their outer ends pivotally mounted in the sockets and having eccentrically-disposed inner surfaces arranged to engage the opposite sides of a rail-web.

6. In a device of the character described, the combination with rail-embracing jaws having depending portions arranged to extend below the rail, of rail-engaging means carried by the jaws, and spaced upper and lower devices separately connecting the depending portions of the jaws and arranged to extend beneath the rail.

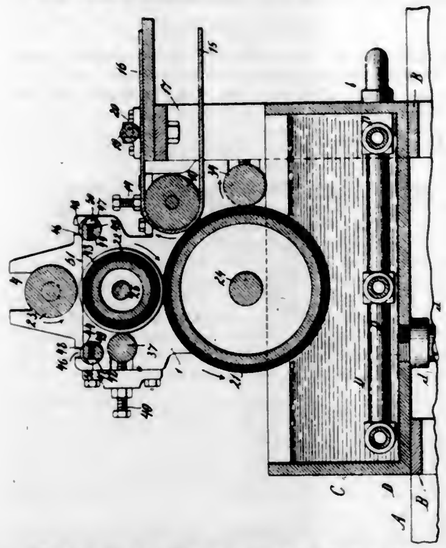
7. In a device of the character described, the combination with rail-embracing jaws, of rail-engaging means mounted movably thereon, and spaced devices separately connecting the jaws, one of said devices being adjustable to draw the jaws toward each other.

8. In a device of the character described, the combination with rail-embracing jaws, of rail-engaging means movably mounted on the upper ends of the jaws, a device connecting the lower ends of the jaws, and a tie-bolt connecting intermediate portion of the jaws.

9. In a device of the character described, the combination with rail-embracing jaws, of rail-engaging means carried by the upper ends of the jaws, a device connecting intermediate portions of the jaws, and a connecting-plate having openings at its ends, said jaws having heads at their lower ends that pass through the openings and interlock with the connecting-plate.

10. In a device of the character described, the combination with an anchor-block arranged to be placed between two ties, of rail-embracing jaws located on opposite sides of the block and having sockets in the inner sides of their upper end, cam elements pivotally mounted in the sockets and arranged to engage the opposite sides of a rail-web, a tie-bolt connecting the jaws below the sockets, a connecting-plate extending beneath the anchor-block and having longitudinally-disposed slots, and transversely-disposed heads carried by the lower ends of the jaws, said lower ends passing through the slots with the heads located transversely beneath the same.

820,086. **MACHINE FOR APPLYING ADHESIVES TO PAPER, &c.** JAMES G. BEATTIE, New York, N. Y., assignor to Robert Gair Company, Brooklyn, N. Y., a Corporation of New York. Filed Apr. 11, 1905. Serial No. 255,029.



Claim.—1. In a machine for applying adhesives to paper and other materials a single adhesive-applying roll having an unbroken surface, and stationary means embedded in the roll for stripping the coated blank from the roll, substantially as specified.

2. In a machine for applying adhesives to paper and other materials a single adhesive-applying roll made of an elastic material and having an unbroken surface, and stationary means embedded in the roll for stripping the coated blank from the roll, substantially as specified.

3. In a machine for applying adhesives to paper and other materials a single adhesive-applying roll having an unbroken surface, and stationary means embedded below the surface of the roll at the top thereof and extending rearward beyond the roll to form a support for the coated blank and to strip it from the roll, substantially as specified.

4. In a machine for applying adhesives to paper and other materials a single adhesive-applying roll having an unbroken surface, and stationary means embedded below the surface of the roll at the top or upper side thereof and extended from front to rear of the roll in the same horizontal plane for supporting the coated blank and stripping it from the roll, substantially as specified.

5. In a machine for applying adhesives to paper and other materials a single adhesive-applying roll having an unbroken surface, stationary means embedded below the surface of the roll at the top thereof for supporting the coated blank and stripping it from the roll, and a single feed-roll that coacts with the single adhesive-applying roll, substantially as specified.

6. In a machine for applying adhesives to paper and other materials the combination of an adhesive-applying roll having peripheral slits therein parallel to one another and at right angles to the axis of the roll, wires inserted in said slits at the top of the roll and extended from front to rear of the roll the said slits adapted to open in line with the wires and to close together when they pass the wires as the roll rotates, substantially as specified.

7. A machine for coating one surface of sheet material or a blank made therefrom with an adhesive comprising means for applying an unbroken pellicle of the adhesive to one surface of a moving sheet or blank during its movement in one direction, and means embedded within the adhesive-applying means for supporting the sheet or blank while moving and separating or stripping it from the adhesive-applying means after it has received the adhesive coating, substantially as specified.

8. A machine for coating one surface of sheet material or a blank made therefrom comprising an adhesive-applying roll, and a feed-roll between which the sheet or blank is passed and coated with the adhesive by the adhesive-applying roll and transverse supports for the sheet or blank extending from front to rear between the rolls and below the surface of the adhesive-applying roll, substantially as specified.

9. A machine for coating one surface of sheet material or a blank made therefrom comprising an adhesive-applying roll having an unbroken surface, a feed-roll, and transverse supports for the sheet or blank extending from front to rear between the rolls and below the surface of the adhesive-applying roll, substantially as specified.

10. A machine for coating one surface of sheet material or a blank made therefrom comprising an elastic adhesive-applying roll having parallel circumferential slits therein, a feed-roll, and supports for the sheet or blank extending from front to rear between the rolls through the slits and below the bite of the adhesive-applying and feed rolls, substantially as specified.

11. A machine for coating one surface of sheet material or a blank made therefrom comprising an adhesive-applying roll having parallel circumferential slits therein, a feed-roll and transversely-arranged wires passed between the rolls from front to rear and through the slits and below the surface of the adhesive-applying roll, substantially as specified.

12. A machine for coating one surface of sheet material or a blank made therefrom comprising an adhesive-applying roll having parallel circumferential slits therein, a feed-roll, and transversely-arranged wires passed between the rolls from front to rear through the slits and tangential to the bottom of the slits in the adhesive-applying roll to form a support for the blank moving from between the rolls after the adhesive is applied and to support or strip the sheet or blank from the adhesive-applying roll, substantially as specified.

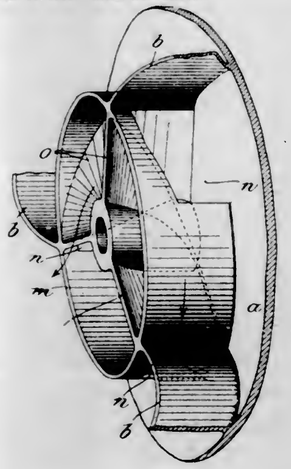
13. A machine for coating one surface of sheet material or a blank made therefrom comprising an adhesive-applying roll and feed-roll, supports for the moving blank passed between the said rolls below the surface of the adhesive applying roll, a ductor or fountain roll, a supply-regulating roll to scrape or remove the redundant adhesive from the fountain-roll, and a supply-regulating roll for removing the redundant adhesive from the adhesive-applying roll, substantially as specified.

14. A machine for coating one surface of sheet material or a blank made therefrom with an adhesive, comprising a single elastic adhesive-applying roll having peripheral slits therein, horizontal wire supports for the paper embedded in the slits the sides of which close tightly above the wire supports, and bars, on opposite sides of the adhesive-applying roll, to which the ends of the wires are fastened, substantially as specified.

15. In a machine for applying adhesives to paper and other materials the combination of an adhesive-applying roll, supports embedded therein extending horizontally from front to rear to support the coated blank and separate and strip the same from the roll, a revolving belt or apron, and a single ductor-roll for supplying the adhesive simultaneously to the adhesive-applying roll and the belt or apron, substantially as specified

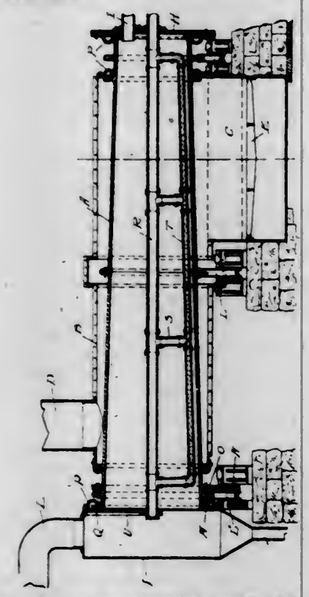
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820,087. **DRUM-MILL.** RICHARD BENEKE, Bromberg, Germany. Filed Jan. 18, 1905. Serial No. 241,608.



Claim.—In a drum-mill having a casing at the drum end, communicating with the outer shell of the drum, and presenting blades running from the periphery toward the center; in combination, a central boss for the drum-shaft, having a perforated rim, communicating peripherally with the casing and laterally with the grinding-drum; and spirally-curved vanes in the interior of the boss said vanes forming the arms of the boss, rotating against the direction of fall of material through the perforated rim, located one below each aperture in the latter, substantially as described.

820,088. **ORE-ROASTER.** JAMES W. BOILEAU, Detroit, Mich., assignor to Louis C. Sherwood, Detroit, Mich. Filed June 13, 1903. Serial No. 161,947.



Claim.—1. A roaster comprising a retort, a furnace for heating the same externally a receptacle arranged outside of but adjacent to the wall of the furnace and means for simultaneously introducing within said retort a gaseous agent generated within said receptacle for chemically treating the material roasted.

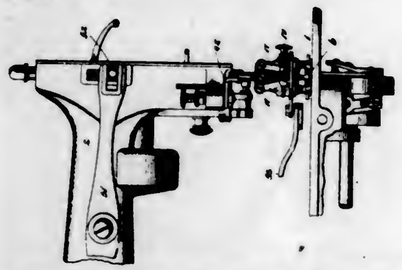
2. A roaster comprising a rotary retort, a surrounding cylindrical casing having at one end a combustion-chamber whereby the products of combustion may surround said retort, a conduit extending centrally through said retort and having apertured branches communicating with the interior surface of the retort, gas-generators secured respectively to the outer surface of the sides of the casing surrounding the combustion-chamber, said generators having communication with said conduit.

3. A roaster comprising a rotary retort revoluble about a substantially horizontal axis, a surrounding combustion-chamber, generators associated with the opposite sides of said combustion-chamber, and a conduit communicating with said generators and extending into said retort having jet-apertures directed against the material on the bottom of said retort.

4. A roaster comprising a rotary retort, tapering from its forward smaller end rearwardly, a combustion-chamber arranged adjacent said smaller end and terminating at its upper portion in an elongated rearwardly-extending cylindrical casing surrounding the retort, and directing the products of combustion around the latter, rectangular gas-generators arranged at the respective sides of the combustion-chamber whereby the heat therefrom will generate the gas in said generators, and conduits connected to the generators, said conduits being connected at their upper ends and terminating in an apertured elongated conduit extending centrally within said retort.

5. A roaster comprising a rotary retort, a combustion-chamber having a portion surrounding the retort, whereby the products of combustion will pass therearound, a gas-generator attached to the outer surface of the wall of the combustion-chamber, said wall of the combustion-chamber constituting one wall of the gas-generator, whereby the material in said generator will be in direct contact with the wall of the combustion-chamber to be generated thereby, and a conduit connected to the generator and terminating in an apertured elongated conduit extending centrally within said retort.

820,089. **BUTTON-SEWING MECHANISM.** ARTHUR A. BOUTON, Cleveland, Ohio, assignor to Standard Sewing Machine Company, Cleveland, Ohio, a Corporation of Ohio. Filed Nov. 20, 1901. Serial No. 83,969.



Claim.—1. In a button-sewing machine, the combination with a vertically-movable support and a vertically-stationary support, of a button-holder comprising two main parts or sections hinged together, one of said parts being attached to and carried by the said vertically-movable support and the other carrying a pair of button-holding jaws and being connected with the said stationary support, for the purpose set forth.

2. In a button-sewing machine, the combination with a vertically-movable support and a vertically-stationary support, both being carried by the overhanging arm of the machine in a position above the work-plate thereof, of a button-holder comprising two main parts or sections hinged together, one of said parts being attached to and carried by the said vertically-movable support and the other carrying a pair of button-holding jaws and being connected with the said stationary support, for the purpose set forth.

3. In a button-sewing machine, the combination with a movable support, of a button-holder carried by said support and having a pair of button-holding jaws tiltable relatively to the work, and adjustable means coöperative with said support for tilting the jaws, for the purpose set forth.

4. In a button-sewing machine, the combination with a movable support, of a button-holder carried by said support and having a pair of button-holding jaws tiltable relatively to the work, and adjustable means, embodying an eccentric-lever, coöperative with said support for tilting the jaws, for the purpose set forth.

5. In a button-sewing machine, the combination with a movable support and a stationary support, of a button-holder comprising two main parts or sections hinged together, one of said parts being attached to the said movable support and the other being provided with a pair of button-holding jaws and having an adjustable connection with the said stationary support, for the purpose set forth.

6. In a button-sewing machine, the combination with a vertically-movable support, of a button-holder carried by said support and having a pair of button-holding jaws tiltable relatively to the work, means coöperative with said support for tilting the jaws, and jaw-spreading means carried by and vertically movable with the said support.

7. In a button-sewing machine, the combination with a movable support, of a button-holder carried by said support and having a pair of button-holding jaws tiltable relatively to the work, means coöperative with said support for tilting the jaws, and jaw-spreading means disposed between said jaws and being carried by and vertically movable with the said support.

8. In a button-sewing machine, the combination with a vertically-movable support, of a button-holder carried by said support and having a pair of button-holding jaws tiltable relatively to the work, means coöperative with said support for tilting the jaws, and adjustable jaw-spreading means disposed between said jaws and being carried by the said vertically-movable support.

9. In a button-sewing machine, the combination with a vertically-movable support and a vertically-stationary support, of a button-holder comprising two main parts or sections hinged together, one of said parts having a jaw-spreading device normally stationary with respect thereto and being attached to the said vertically-movable support, and the other having a pair of button-holding jaws and being connected with the said stationary support, for the purpose set forth.

10. In a button-sewing machine, the combination with the vertically-movable presser-bar thereof, of a button-holder carried by said presser-bar and having a pair of button-holding jaws movable both horizontally and vertically relatively thereto, means coöperative with the presser-bar for tilting the jaws vertically, and means carried by and vertically movable with the presser-bar for controlling the horizontal or spreading movement of the jaws.

11. In a button-sewing machine, the combination with the presser-bar thereof, of a button-holder carried by said presser-bar and having a pair of button-holding jaws tiltable relatively to the work, and a vertically-movable jaw-spreading cam carried by the presser-bar and being coöperative with one of the said jaws.

12. In a button-sewing machine, the combination with a button-holder movable toward and from the work and having a pair of button-holding jaws one of which is adjustable toward and from the other, of a jaw-spreading cam vertically movable between said jaws and being coöperative with one of the same and operative immediately on the withdrawal of the button-holder from the work.

13. In a button-sewing machine, the combination with a button-holder movable toward and from the work and having a pair of button-holding jaws adjustable toward each other, of a jaw-spreading cam vertically movable between said jaws and being coöperative with one of the same.

14. In a button-sewing machine, the combination with a button-holder movable toward and from the work and having a pair of button-holding jaws adjustable toward and from each other, of a jaw-spreading cam vertically movable between said jaws and being cooperative with both of the same and adjustable for openings of different widths.

15. The combination with a button-holder vertically movable toward and from the work and having a pair of button-holding jaws, of means normally tending to close such jaws, and a jaw-spreading cam vertically movable between said jaws and being in normal engagement therewith.

16. The combination with a button-holder vertically movable toward and from the work and having a pair of button-holding jaws, of means normally tending to close said jaws, and a combined jaw-spreading and jaw-adjusting device vertically movable between said jaws and engaging therewith.

17. The combination with a button-holder having a pair of button-holding jaws movable toward and from each other, of a linkage connecting said jaws, one of the members of which is provided with a cam-slot, a slide supported independent of the jaws and having a pin extending into the said cam-slot to effect connection with the linkage and be controlled thereby, and a button-stop carried by said slide.

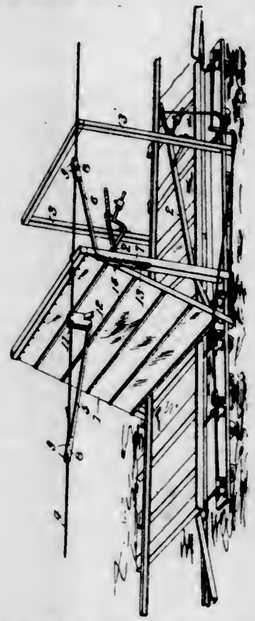
18. The combination with a pair of associated button-holding jaws movable in a horizontal plane toward and from each other, of a pair of pivoted coacting button-gripping members carried respectively by said jaws and being movable in a direction transversely to the plane of movement of the said button-holding jaws.

19. The combination with a pair of associated button-holding jaws movable in a direction toward and from each other and each being provided with a fixed button-engaging face, of a pair of pivoted spring-pressed button-gripping members carried respectively by said jaws and being movable in a direction transversely to the plane of movement of the said button-holding jaws and toward and from the said fixed button-engaging faces thereof.

820,090. **MINE-GATE.** NEWTON K. BOWMAN, North Lawrence, Ohio. Filed Mar. 10, 1905. Serial No. 249,488.

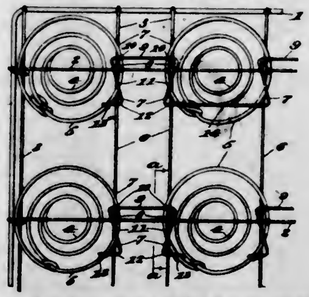
Claim.—1. In electric haulage lines or systems and in combination with the trolley-line gate and gate-actuating mechanism operated by means of the approaching car, a spanner or bridge located upon one side of the gate and in electrical connection with the trolley-line and adapted to be tripped and swung across the path of the gate and make electrical connection with the trolley-line upon the opposite side of said gate to safely carry the trolley-wheel thereby without necessitating interruption of the electrical current.

2. In electric haulage lines or systems and in combination with the trolley-line and gate, oppositely-inclined approaches located upon opposite sides of the gate, clips at the outer ends of the approaches embracing opposite sides of the trolley-line, fastenings connecting opposite side members of the clips and confining the trolley-line therein, hangers at the inner ends of the approaches, and a bridge pivoted to one of the approaches and adapted to be tipped upon opening of the gate to close the gap or space between the approaches for carrying the trolley-wheel thereby and maintaining continuity of the electric current.



3. In electric haulage means or systems, and in combination with the trolley-line and gate, oppositely-inclined approaches spaced apart at their inner ends and secured at their outer ends to the trolley-line, hangers connecting the inner ends of the approaches with the trolley-line, one of said hangers having oppositely-inclined guides at its lower end, a bridge pivoted to the other hanger and adapted to be tripped upon the approach of a car to safely carry the trolley by the space formed between the inner ends of said approaches, and a wedge-shaped piece attached to the free end of the approaches for coöperation with the oppositely-inclined guides of the first-mentioned hanger, substantially as set forth.

820,091. **SPRING BED-BOTTOM.** CHARLES D. BROUYETTE, Cincinnati, Ohio, assignor of one-half to M. A. Hunt & Co., Cincinnati, Ohio, a Firm. Filed May 17, 1905. Serial No. 260,809.



Claim.—1. A spring structure of the character described comprising a series of parallel wires having bends extended in one direction, links extended between the wires of said series with end portions each of which intersects one wire in said series at two points at opposite sides of one of the bends therein and other wires in series at angles to the first-named series and intersecting the same and at such intersections extended within the bends of the wires of the first-named series and between said wires and the end portions of the links at points between the intersections of such end portions of the links with each wire of the first-named series.

2. A spring structure of the character described comprising

two series of wires, the wires of one series intersecting those of the other series and having at their points of intersection therewith bends in which the wires of such other series are received and links extended at angles between the wires of one series with end portions each of which has engagement with a wire of such series at two points at opposite sides of the intersection of said wire with a wire of the other series and is, adjacent to such intersection, interlocked between the wires of the respective series.

3. A spring structure of the character described comprising two series of wires, the wires of one series intersecting those of the other series and having at their points of intersection therewith bends in which the wires of such other series are received, the wires of one series being also provided with other bends arranged at opposite sides of their points of intersection with wires of the other series and links extended at angles between the wires wherein said last-named bends are produced with end portions each of which has engagement with the bends of such a wire at opposite sides of the intersection of such wire with a wire of the other series and is, between such bends and adjacent to such intersection, interlocked between the wires of the respective series.

4. A spring structure of the character described comprising a series of parallel wires having bends produced in them, a series of straight wires at angles to said first-named series and engaged with the bends thereof, springs in rows beneath said straight wires with end coils interlocked with the wires of the respective series and links extended between the first-named series of wires and parallel with said straight wires with end portions each of which has engagement with a wire of the first-named series at two points at opposite sides of the bend wherein is engaged a wire of the other series and has, between such points of engagement, a portion interlocked between the wires of the respective series.

5. A spring structure of the character described comprising two series of wires, the wires of one series intersecting those of the other series and having at their points of intersection therewith bends in which the wires of such other series are received, the wires of one of the series being also provided with other bends arranged at opposite sides of their points of intersection with the wires of the other series, springs having end coils engaged with said oppositely-arranged bends with intermediate portions interlocked between the wires of the respective series at points adjacent to their intersections and links extended between the wires of one series and parallel with the wires of the other series and having end portions each of which is engaged in the bends of a wire at opposite sides of the intersection of such wire with a wire of the other series and has, between such bends and adjacent to such intersection, a portion interlocked between the wires of the respective series.

6. A spring structure of the character described comprising a series of parallel wires, links at angles to and between wires of said series with end portions each intersecting one of said wires at two points on opposite faces of such wire, other wires in series at angles to the first-named wires and intersecting the same and at such intersections passed between the wires of the first-named series and the end portions of said links at points between the intersections of each such end portion with a wire of the first-named series and a connection for the exremity of each such end portion to hold said links in position.

7. A spring structure of the character described comprising a series of parallel wires, links at angles to and between wires of said series with end portions each intersecting one of said wires at two points on opposite faces of such wire, other wires in series at angles to the first-named wires and intersecting the same and at such intersections passed between the wires of the first-named series and the end portions of said links at points between the intersections of each such end portion with a wire of the first-named series and connections between the extremities of the end portions of the links and extended in the direction of the wires of the last-named series.

8. A spring structure of the character described comprising a series of parallel wires, links at angles to and between wires of said series with end portions each intersecting one of said wires at three points two of which are on opposite faces of such wire, other wires in series at angles to the first-named series and intersecting the same and at such intersections passed between the wires of the first-named series and the end portions of said links at points between the intersections of each such end portion with a wire of the first-named series and connections between the extremities of the end portions of the links and extended in the direction of the wires of the last-named series.

820,092. GLAZIER'S TOOL. BERT A. BROWN, Bristol, Conn. Filed Apr. 14, 1905. Serial No. 255,881.

Claim.—1. A glazier's tool having a head with a socket extending through one end, a housing with its peripheral wall fitting and supported by the wall of the socket, a single cutting-roll carried by the housing, and a pin holding the housing in the socket, substantially as specified.



2. A glazier's tool having a head with a circular socket extending through one end, a circular housing with its peripheral wall fitting and supported by the wall of the socket, a single cutting-roll carried by the housing, and a pin holding the housing in the socket, substantially as specified.

3. A glazier's tool having a head with a socket extending through one end, a housing with its peripheral wall fitting and supported by the wall of the socket, a single cutting-roll carried by the housing and a pin adapted to be thrust into the head for holding the housing and to be turned over for tightening the housing in its socket, substantially as specified.

4. A glazier's tool having a head with a socket in one end and a slot in one face, a housing occupying the socket, a cutting-roll carried by the housing, and a pin adapted to be thrust into the head for holding the housing and to be turned down into the slot so that it will not project above the face of the head, substantially as specified.

5. A glazier's tool having a head with a socket in one end and a slot in one face, a housing occupying the socket, a cutting-roll carried by the housing, a pin extending into the head and holding the housing in place, and a cam on the pin for tightening the housing in its socket, substantially as specified.

6. A glazier's tool having a head with a socket in one end and a slot in one face, a housing occupying the socket, a cutting-roll carried by the housing, a pin extending into the head and holding the housing in the socket, said pin having a shank that is bent at an angle greater than the angle of the slot with relation to the pin-hole so that when the end of the pin is turned into the slot it will be bound in position, substantially as specified.

820,093. BOTTLE. LAURA A. CALHOUN, Oceanpark, Cal. Filed Aug. 7, 1905. Serial No. 273,175.

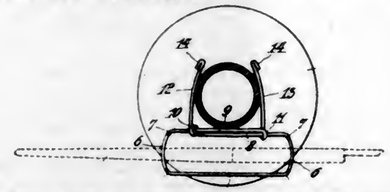


Claim.—1. A bottle provided with a removable top having recesses on the outside thereof and screw-threaded as shown, and having an extension on the neck thereof for the reception of the top, the said neck being internally screw-threaded and having apertures therethrough to register with the recesses in the top and cement in the recesses the neck being provided with an annular groove therein.

2. The herein-described bottle provided with an extension A' on the neck thereof and an annular groove extending around the neck of the bottle at the top thereof and below the extension thereon, the said extension being provided with internal threads, in combination with a stopper B provided with external threads on the bottom thereof and having recesses therein for the reception of a sealing substance, the extension on the neck having apertures therethrough adapted to register with the recesses in the top substantially as herein shown and described.

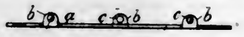
3. A bottle having internal threads in the neck thereof to engage threads on a removable top and an annular groove thereon, the neck being also provided with apertures in the sides thereof adapted to register with recesses in the top, in combination with a removable top provided with threads on the bottom thereof to engage the threads in the neck of the bottle and having recesses therein for the reception of sealing material; a stopper for said bottle having a screw-threaded cork-retainer; a cork therein adapted to project downwardly past the retainer and bulge outwardly and adapted thereby to engage the inner walls of the neck of the bottle.

820,094. PEN-RACK. DANIEL CAMPBELL, Fairville, Canada. Filed June 15, 1905. Serial No. 265,390.



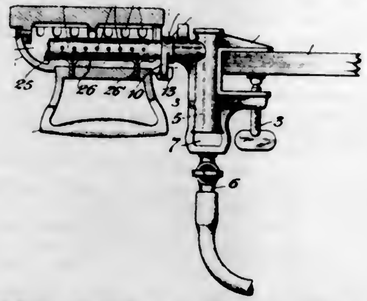
Claim.—A pen-rack comprising a main body portion having V-shaped bent portions at each end of said body portion and having parallel arms thereon slidably interlocked by bending said arms around each other, and having said arms provided with bowed extensions.

820,095. CYCLE PEDAL-PLATE. ALBERT W. CHESTERMAN, Sparkhill, England. Filed June 6, 1905. Serial No. 263,963.



Claim.—A cycle pedal-plate provided at its edges with lugs or projections turned at right angles to the plate and with hard-steel conical spikes fixed in holes in said lugs to engage in the sole of the cyclist's boot or shoe, substantially as set forth.

820,096. HEATER. AMALIE VON CHIGOR, New York, N. Y., assignor to Margaret Kussner, New York, N. Y. Filed Feb. 19, 1904. Serial No. 194,346.



Claim.—1. In a heater, the combination of a burner-tube, an element mounted on said tube and adjustable longitudinally thereof, said element carrying a locking device and an abutment, and a sad-iron having a longitudinal opening to receive said burner-tube, and provided with means coöperative with said device to lock the sad-iron in position on the tube, said means constructed to engage said abutment and limit relative movement of the iron.

2. In a heater, the combination of a burner-tube, an element mounted on said tube and adjustable longitudinally thereof, said element carrying a locking device and an abutment, and a sad-iron having a longitudinal opening to receive said burner-tube, and provided with means coöperative with said device to lock the sad-iron in position on the tube, said sad-iron being also provided with an abutting face to engage the abutment on the burner to limit rotative movement of the iron.

3. In a heater, the combination of a burner-tube, an element mounted on said tube and adjustable longitudinally thereof, said element carrying a locking device and an abutment, and a sad-iron having a longitudinal opening to receive said burner-tube, and provided with means coöperative with said device to lock the sad-iron in position on the tube, said means being formed with an abutting face to engage said abutment to limit rotative movement of the sad-iron.

4. In a heater, the combination of a burner-tube, a collar mounted on said tube and adjustable longitudinaliy thereof, said collar carrying a locking device, and a sad-iron having a longitudinal opening to receive said burner-tube and provided with means coöperative with said locking device to lock the iron in position on the burner.

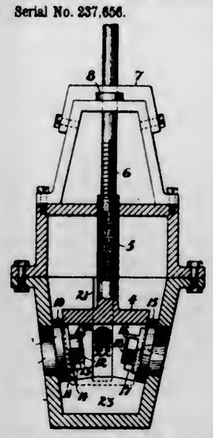
5. In a heater, the combination with a burner-tube, of a collar mounted on said tube and adjustable longitudinally thereof, said collar being provided with a locking-flange and an abutment, the face of the latter being in a plane at right angles to the face of said flange, and a sad-iron having a longitudinal opening to receive said burner-tube and provided with a projecting arm to engage said flange to lock the iron on the tube and an abutting face to engage the abutment on the collar to limit rotative movement of the iron.

6. In a heater, the combination of a burner-tube, a locking-flange projecting beyond the periphery of said burner-tube adjacent to one end thereof, and a sad-iron having a longitudinal opening to receive said burner-tube and provided at its rear end with a rearwardly-projecting locking-arm for coöperation with the said locking flange.

7. In a heater, the combination of a burner-tube, a locking-flange projecting beyond the periphery of said burner-tube adjacent to one end thereof, a portion of said flange being formed to constitute an abutment projecting beyond the body of the flange, the face of the abutment being at right angles to the flange, and a sad-iron having a longitudinal opening to receive said burner-tube and provided with a hook-shaped arm to hook over said flange to lock the iron on the burner, the side face of said arm engaging said abutment when the iron is in locked position to limit rotative movement of the latter.

8. In a heater, the combination of a burner-tube, an element mounted on said tube, said element carrying a locking device including in its construction an abutment, and a sad-iron having a longitudinal opening to receive said burner-tube, and provided with means coöperative with said device to lock the sad-iron in position on the tube, said means being constructed to engage said abutment to limit rotative movement of the iron.

820,097. WATER-GATE. ADONIRAM J. COLLAR, Yreka, Cal. Filed Dec. 20, 1904. Serial No. 237,656.



Claim.—1. The combination in a water-gate of a casing having openings in opposite sides, a carrier-block, means for vertically moving it within said casing, disks loosely carried and slidable with relation to opposite faces of the block and closable against the openings, said disks having slotted shanks and rollers passing through said shanks.

2. In a water-gate, a casing having inclined opposed faces with inlet and discharge passages, disks adapted to close outwardly against said openings and having inwardly-projecting guides and

vertically-slotted shanks, a wedge-shaped block or carrier, channels to receive said shanks, said carrier also having horizontal channels parallel with the disk-faces, rollers lying within said channels and passing through the slots in the disk-shanks, said roller contacts upon opposite sides whereby the disks are closed or released by the movements of the carrier-block.

3. In a water-gate, a casing having oppositely-inclined faces with inlet and outlet openings substantially in line, a similarly-inclined carrier-block having guide-channels in its opposite faces and channels with rollers contained therein at right angles with the guide-channels, guides and shanks projecting from the backs of the disks and entering the guide-channels of the block, said shanks having vertical slots transverse to the roller-channels, through which slots the rollers pass and a centrally-disposed vertical channel within the carrier-block, a roller located in said channel and with the ends projecting, and vertical guide-channels in the casing, in which said roller ends are movable.

4. In a water-gate, a casing having oppositely-inclined faces with inlet and outlet openings therethrough, a carrier-block having correspondingly-inclined faces and means whereby it is vertically movable, disks having inwardly-projecting and vertically-slotted shanks extending into corresponding channels in the faces of the block, transverse channels intersecting the slots of the disk-shanks, and rollers extending therethrough and forming bearings for the disks, a central vertical channel made through the block, a roller having a corrugated surface and ends extending beyond the sides of the block, corrugated guide-channels in the casing into which the ends of said rollers extend, the bottom of said channels forming stops upon which the ends of the roller rest when the gate is closed.

5. In a water-gate, a casing having oppositely-inclined faces with inlet and outlet openings therethrough, a wedge-shaped block, and means whereby it is vertically movable in said casing, said block having a vertical central channel and guide-roller with projecting ends, slots in the casing sides into which the ends of the roller extend, disks having inwardly-extending vertically-slotted shanks projecting into corresponding channels in the inclined faces of the block, rollers extending through channels transverse to said shanks and movable therein, one of said disks forming a closure for the inlet-opening and the other for the outlet-opening, by-pass openings made through the outlet-disk, valves carried by the block and adapted to close over said by-pass openings when the valve is closed and to uncover said openings when the block commences to rise.

6. In a water-gate, a casing having oppositely-inclined faces with inlet and outlet openings therethrough, a wedge-shaped block and means for moving it vertically in the casing disks loosely carried upon the inclined faces of the block and closable against the inlet and outlet openings, antifrictional rollers forming bearings between the disks and the block having stops to terminate the rolling movement and to afterward lift the disks in unison with the movement of the block, by-pass openings through the discharge-disk, loosely-mounted spring-pressed, valves carried by the block closable over the by-pass openings when the block is depressed, said valves being moved to uncover the by-pass openings with the first upward movement of the block.

7. In a water-gate, a casing having oppositely-inclined faces with inlet and outlet openings therethrough, the face containing the outlet-opening having a greater inclination than that containing the inlet-opening, a block having correspondingly-inclined faces coincident with those of the casing and means by which said block is raised or depressed, loosely-mounted disks carried by said inclined faces and antifrictional rollers forming bearings between the disks and the block, by-pass openings through the discharge-disk, loosely-mounted spring-pressed valves carried by the block and closable over the by-pass openings when the block is depressed, contact-surfaces upon which the disks rest when depressed so that the continued downward movement of the block will force them against their seats, said movement also carrying the valves to close the by-pass openings, a central vertical channel through the block, an antifrictional roller in said channel having its ends projecting beyond the block, guide-slots in the sides of the casing to receive the ends of said roller, and stops upon which the roller rests when the valve is fully closed.

8. In a water-gate a casing interposed in the conductor said casing having the egress-seat at a greater inclination than the ingress-seat, disks closable against each seat and a transversely-movable carrier-block with which the disks are connected, said egress-disk having a valve for relieving pressure within the block before the main discharge-passage is opened.

9. In a water-gate, a casing interposed in the conductor said casing having the egress-seat at a greater incline than the ingress-seat, disks closable against each seat, a transversely-movable carrier-block with which the disks are connected, and by-pass valves in the egress-disk adapted to be opened before the main discharge-passage.

10. In a water-gate, a casing interposed in the conductor, said casing having inclined seats, disks closable against each seat, a transversely-movable carrier-block with which the disks are connected, by-pass openings in the egress-disk and spring-pressed valves carried by the block and controlling the by-pass openings.

11. In a water-gate, a casing interposed in the conductor and having the egress-seat at a greater incline then the ingress-seat, disks closable against each seat, a transversely-movable carrier-block with which the disks are connected, by-pass openings in the egress-disk, valves carried by the block and opened thereby, and before the disk, to relieve internal pressure therefrom.

12. In a water-gate, a casing interposed in the conductor and having inclined ingress and egress seats and disks closable thereon, a transversely-movable carrier with which the disks are connected, by-pass openings in the egress-disk, valves controlling said openings, springs mounted upon the carrier and pins connecting the valves with the springs.

13. In a water-gate, a casing interposed in the conductor, with ingress and egress seats upon opposite sides, and disks closable thereon, a transversely-movable carrier-block and means whereby the disks are carried thereby, said carrier-block provided with channels, and antifriction-rollers within the channels of the carrier-block, the end walls of said channels forming stops against which the rollers contact at the termination of the travel of the carrier-block.

14. In a water-gate, a casing interposed in the conductor and having an inclined seat, a carrier and means by which it may be reciprocated within the casing, a roller interposed between the carrier and the casing, a disk closable against the seat, said disk having a slotted shank extending into the carrier, and a roller passing through a slot in the carrier and through the shank of the disk.

15. In a water-gate, a casing interposed in the conductor and having an inclined seat, a transversely-slotted carrier and means by which it may be reciprocated within the casing, a roller interposed between the carrier and casing, a disk with a vertically-slotted shank entering the carrier and a roller movable against one side of the carrier-slot, and forming a rolling bearing for the opposite side of the slot in the disk-shank.

16. In a water-gate, a casing interposed in the conductor and having an inclined seat, a transversely-slotted carrier, and means by which it may be reciprocated within the casing, a roller interposed between the carrier and casing, a disk closable against the egress-seat and having ports made through it, with controlling-valves upon the carrier, a vertically-slotted shank connecting the disk with the carrier and a roller forming an antifrictional bearing and connection between the disk and the carrier.

17. In a water-gate, a casing interposed in the conductor and having an inclined seat, a transversely-slotted carrier, and means by which it may be reciprocated within the casing, a roller interposed between the carrier and casing, a disk closable against the seat and having a vertically-slotted shank connecting the disk with the carrier, a roller forming an antifrictional bearing and connection between the disk-shank and the carrier, and stops to limit the travel of the rollers in either direction.

820,098. **CEMENT-BLOCK MACHINE.** JAMES J. COX, Jackson, Mich. Filed Nov. 17, 1905. Serial No. 287,795.

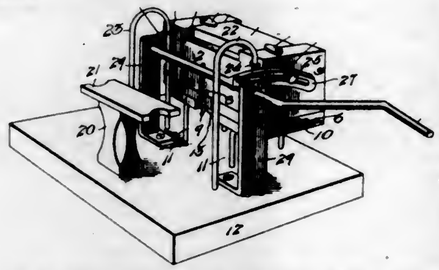
Claim.—1. In a block-molding machine, a stationary molding-table, a fixed delivery-platform, and a mold-box shiftable bodily from one to the other of said elements and movable over and past the delivery-platform.

2. In a block-molding machine, a stationary molding-table, a fixed delivery-platform, a mold-box having opposite openings respectively for the reception and delivery of the material, and means for shifting the mold-box from the table to the platform and vice versa.

3. In a block-molding machine, a stationary molding-table, a fixed delivery-platform, a mold-box having top and bottom openings and shiftable bodily from the table to the platform and vice versa, said mold-box being arranged to move over and past the delivery-platform to discharge the molded article thereon.

4. In a block-molding machine, a fixed platform, a mold-box open at top and bottom, temporary closures for the box, and means for shifting the mold-box bodily over and past the delivery-platform to discharge the molded article thereon.

5. In a block-molding machine, a fixed delivery-platform, and a mold having an opening therethrough, and shiftable directly over and past the platform to provide for discharging the molded article thereon.



6. In a block-molding machine, a stationary molding-table, a fixed delivery-platform, a mold-box open at top and bottom and supported in one position on the molding-table, and means for shifting the mold-box bodily into the plane of the stationary platform and over and past said platform to discharge the molded article thereon.

7. In a block-molding machine, a mold-box having a fixed body-wall, a detachable face-plate releasably held over the bottom opening of the mold-box, and a troweling-pallet movable laterally in a position over the top opening of the mold-box against the top portion of the molded article.

8. In a block-molding machine, a stationary molding-table, a fixed delivery-platform, a shiftable mold-box open at top and bottom, a detachable face-plate releasably held over the bottom opening of the mold and resting in one position on the molding-table, and a pallet removably fitted over the top opening of the mold-box and arranged to pass through the latter when arrested upon the delivery-platform.

9. In a block-molding machine, a base, a molding-table supported above the base, a fixed delivery-platform also supported above the base, an arched guide-frame arranged between the table and the platform, a shiftable mold-box slidably connected with said frame and provided at its ends with trunnions, a rock-shaft provided with slotted shifting levers engaging said trunnions, a detachable face-plate releasably held over the bottom opening of the mold-box and resting in one position on the molding-table, and a pallet removably placed over the top opening of the mold-box and adapted to pass through the latter when arrested upon the delivery-platform.

820,099. **POWDER FOR DUSTING PATTERNS.** FRANZ DANNORST, AUGUST KEMPER, and ERNST UTKE, Berlin, Germany. Filed June 29, 1905. Serial No. 267,618.

Claim.—Powder for dusting patterns, containing powdery pulverized calcium carbid.

820,100. **NON-REFILLABLE BOTTLE.** JAMES DE HAVEN, Roanoke, Va., assignor of one-half to Robert W. Higdon, Roanoke, Va. Filed June 24, 1905. Serial No. 266,775.



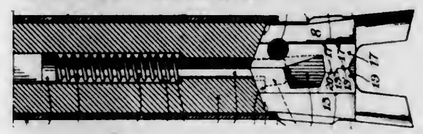
Claim.—1. In a non-refillable bottle, the combination of a neck provided internally with an inverted-cone-shaped valve-seat and a circumferential groove above the seat, a spherical valve in the seat, a perforated disk of relatively large diameter resting on the lower edge of the groove, a pin depending centrally therefrom, a cup-shaped disk of relatively small diameter secured to the pin, and a split ring resting in the groove above the perforated disk.

2. In a non-refillable bottle, the combination of the neck provided internally with a valve-seat, and having a circumferential groove above the seat, a valve in the seat, a perforated disk of relatively large diameter resting on the lower edge of the groove, a pin depending centrally therefrom, a cup-shaped disk of relatively small diameter secured to the pin, and a split ring resting in the groove above the perforated disk.

3. In a non-refillable bottle, the combination of the neck, provided internally with a valve-seat, and having a circumferential groove above the seat, a valve in the seat, a perforated disk resting in the groove, means connected with the disk and normally out of contact with the valve for restraining the upward movement thereof, and a split ring resting in the groove above the perforated disk.

4. In a non-refillable bottle, the combination of a neck, provided internally with a valve-seat and having a circumferential groove above the valve-seat, a valve on the seat, a perforated disk in the groove, means connected with the disk and normally out of contact with the valve for restraining the upward movement thereof, and means for retaining the disk in position.

820,101. **UNDERREAMER.** EDWARD DOUBLE, Los Angeles, Cal. Filed Mar. 25, 1905. Serial No. 251,981.



Claim.—1. An underreamer characterized by a mandrel, a reaming bit or jaw pivoted in the lower end thereof and held from longitudinal movement with respect to the mandrel and a second reaming bit or jaw tiltingly and spring-actuatedly mounted in said mandrel to move longitudinally with respect to said mandrel and first-named jaw, the inner faces of said jaws provided with contacting surfaces for expanding said jaws.

2. An underreamer characterized by a mandrel, a reaming bit or jaw pivoted at the lower end of said mandrel and held against longitudinal movement with respect to the mandrel, a spring-actuated rod slidable in said mandrel, and a second reaming bit or jaw tiltingly mounted on said spring-actuated rod and adapted to longitudinal movement with respect to said first-named jaw, the inner surfaces of said jaws contacting during the movement of said second jaw to expand said jaws.

3. An underreamer comprising a mandrel, a spring-actuated rod slidable longitudinally of said mandrel, a reaming bit or jaw tiltingly mounted on said spring-actuated rod and a second reaming bit or jaw pivoted on said mandrel, said bits or jaws provided with inner shoulders or surfaces adapted to contact to cause said jaws to expand when in one position, and to permit said jaws to collapse when in another position.

4. An underreamer comprising a mandrel, a spring-actuated rod slidable longitudinally in said mandrel, a reaming bit or jaw tiltingly mounted on said spring-actuated rod and a second reaming bit or jaw pivoted on said mandrel, said bits or jaws provided with inner shoulders or surfaces adapted to contact to cause said jaws to expand when in one position and to permit said jaws to collapse when in another position, said bits provided with shoulders for contacting with the end of the mandrel when in expanded position.

5. An underreamer comprising a mandrel having a hollow slotted extension, a spring-actuated rod slidable longitudinally in said mandrel, a reaming bit or jaw tiltingly mounted on said spring-actuated rod and adapted to project through one side of the slot of said mandrel, and a second reaming bit or jaw pivoted on said mandrel and projecting through the other side of said slot, said bits or jaws provided with inner shoulders or surfaces adapted to contact to cause said bits to expand and provided with shoulders adapted to contact with shoulders at the mouths of said slot.

6. An underreamer having a mandrel, a transversely-pivoted longitudinally-immovable jaw projecting from the bottom of said mandrel, a longitudinally-moving and transversely-pivoted jaw projecting from the bottom of said mandrel, and means for automatically moving said second jaw to cause said jaws to expand, said jaws provided with inner surfaces which bear against each other when the jaws are expanded.

7. An underreamer having a transversely-pivoted jaw and a longitudinally-moving and transversely-pivoted jaw, means for automatically moving said second jaw to cause said jaws to contact and thereby expand, said underreamer provided with inwardly-inclined abutments against which the ends of said jaws bear when in expanded position.

8. An underreamer having a mandrel, a transversely-pivoted longitudinally-immovable jaw projecting from the bottom of said mandrel, a longitudinally-moving and transversely-pivoted jaw projecting from the bottom of said mandrel, means for automatically moving said jaws to expand and contract, said jaws provided with

inner surfaces for contacting with each other to cause the jaws to expand and bearing against each other when the jaws are expanded, said mandrel provided with inwardly-inclined abutments against which the ends of said jaws bear when in expanded position.

9. An underreamer having a mandrel, a reaming bit or jaw pivoted at the lower end of said mandrel and held against longitudinal movement with respect to said mandrel, a spring-actuated rod slidable in said mandrel, a second reaming bit or jaw tiltingly mounted on said spring-actuated rod and adapted to longitudinal movement with respect to said first-named jaw, the inner surfaces of said jaws contacting during the movement of said second jaw to expand the jaws, portions of the inner surfaces of said jaws bearing against each other when the jaws are expanded, said jaws being provided with shoulders for contacting with the ends of said mandrel.

10. An underreamer comprising a mandrel having a slotted portion having shoulders at the sides of the mouths of the slots, a jaw transversely pivoted in and longitudinally immovable with respect to said mandrel, a longitudinally-moving jaw and means for moving said second jaw to cause said jaws to expand, said jaws having shoulders for contacting with said first-named shoulders when expanded.

11. An underreamer comprising a mandrel having a slotted lower portion having shoulders at the inner edges of the mouths of said slots, a jaw transversely pivoted in and longitudinally immovable with respect to said mandrel, a longitudinally-moving jaw, and means for moving said second jaw to cause said jaws to expand, said mandrel having inwardly-inclined abutments against which the jaws bear when in expanded position and said jaws having shoulders for contacting with the first-named shoulders.

12. An underreamer having a mandrel, a transversely-pivoted longitudinally-immovable jaw projecting from the bottom of said mandrel, a longitudinally-moving and transversely-pivoted jaw projecting from the bottom of said mandrel, means for automatically moving said jaws to cause said jaws to expand and contract, said jaws provided with shoulders for abutting against the end of the mandrel when said jaws are expanded.

13. An underreamer having a mandrel provided with depending portions, a transversely-pivoted jaw and a longitudinally-moving and transversely-pivoted jaw, said jaws being free of connections with each other, means for automatically moving said second jaw to cause said jaws to expand, and shoulders on the sides of said jaws for abutting against said depending portions of said mandrel.

14. An underreamer having a mandrel provided with depending portions, a transversely-pivoted jaw and a longitudinally-moving and transversely-pivoted jaw, and means for automatically moving said second jaw longitudinally of said mandrel to cause said jaws to expand, said jaws provided with shoulders on their sides for abutting against depending portions of said mandrel, and with side shoulders on their shanks, and said mandrel provided with longitudinal shoulders against which said side shoulders bear when the jaws are expanded.

15. An underreamer having a mandrel, a transversely-movable longitudinally-immovable jaw, a longitudinally and transversely movable jaw, said jaws provided with shoulders or abutments on their inner faces, one of said jaws provided with a socket above such shoulder or abutment into which the shoulder of the other jaw projects when the jaws contract or collapse, and means for automatically moving said second jaw to expand said jaws.

16. An underreamer having a mandrel, a transversely-movable longitudinally-immovable jaw, a longitudinally and transversely movable jaw, said jaws provided with shoulders or abutments on their inner faces, one of said jaws provided with a socket above such shoulder into which socket the shoulder of the other jaw projects when the jaws contract or collapse, and means for automatically moving said second jaw to expand said jaws, said mandrel provided with longitudinal shoulders and said jaws provided with longitudinal shoulders abutting theresagainst when said jaws are expanded.

17. An underreamer having a mandrel, a transversely-movable longitudinally-immovable jaw, a longitudinally and transversely movable jaw, said jaws provided with shoulders or abutments on their inner faces, one of said jaws provided with a socket into which the shoulder of the other jaw projects when the jaws contract or collapse, and means for automatically moving said second jaw to expand said jaws, said jaws provided with longitudinal shoulders and with horizontal shoulders, said mandrel provided with longitudinal shoulders and with depending portions against which respectively said jaw longitudinal and horizontal shoulders abut when said jaws are expanded.

18. An underreamer having a mandrel open at its lower end, a jaw pivoted upon and in said mandrel and projecting from the lower end thereof, a spring-operated longitudinally-moving jaw carried in said mandrel and projecting from the lower end thereof, said bits contacting, upon the movement of said second jaw to expanded position, to expand the bits, said pivoted jaw having means coacting with said second jaw and preventing said second jaw passing out said mandrel.

19. An underreamer having a mandrel provided with a hollow slotted extension at its lower end, the end of said extension being open, a jaw pivoted within said mandrel and projecting from the lower end thereof, a longitudinally-moving jaw tiltingly supported within said mandrel, means for automatically moving said second jaw to expand said jaws, said pivoted jaw having means coacting with said second jaw and preventing said second jaw passing out the end of said hollow extension, said hollow extension provided with longitudinally-extending shoulders, and said jaws extending laterally through the sides of said slotted extension, and provided with longitudinal shoulders contacting with said first-named longitudinal shoulders when the bits are in expanded position.

20. An underreamer having a mandrel, a jaw pivoted on said mandrel, a second jaw, and automatic means, whereon said second jaw is pivotally carried for normally holding said second jaw in raised or expanded position, said jaws free from each other and expanding upon the upward movement of said second jaw.

21. An underreamer having a mandrel, a jaw pivoted on said mandrel, a second jaw sliding longitudinally of said mandrel, automatic means whereon said second jaw is tiltingly mounted, said jaws free of each other and normally held expanded by said means operating said second jaw.

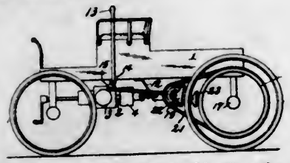
22. An underreamer characterized by a mandrel, a reaming bit or jaw pivoted on said mandrel and held from longitudinal movement with respect thereto and a second jaw free from said first jaw and tiltingly and spring-actuatedly mounted in said mandrel to move longitudinally with respect to said mandrel and first-named jaw, said jaws expanding during said movement.

23. An underreamer characterized by a mandrel, a reaming bit or jaw pivoted on said mandrel and projecting from the lower end thereof and held from longitudinal movement with respect thereto and pivotally movable transversely thereof, and a second reaming bit tiltingly and spring-actuatedly mounted within said mandrel to move longitudinally with respect to the mandrel and first-named jaw, said jaws expanding during said movement.

24. An underreamer having a mandrel, a jaw transversely pivoted on said mandrel, and a longitudinally-moving and transversely-pivoted jaw, and means for automatically moving said second jaw causing said jaws to expand, said jaws abutting against each other within said mandrel when in expanded position.

25. An underreamer having a hollow mandrel, a transversely-pivoted jaw, a longitudinally-moving and transversely-pivoted jaw, and automatic means for moving said second jaw to cause said jaws to expand, the inner surfaces of said jaws bearing against each other in expanded position.

820,102. AUTOMOBILE. CHARLES W. DUER, Chicago, Ill. Filed Oct. 23, 1905. Serial No. 283,873.



Claim.—1. In an automobile, the combination of a transverse driving-shaft, means for driving it, pulleys upon the driving-shaft, a rear or traction axle and traction-wheels thereon, pulleys on the traction-wheels registering with the pulleys on the driving-shaft, belts connecting the pulleys on the wheels and shaft, self-adjusting brake-shoes registering with the tires of the traction-wheels, and means for causing relative movement of the shaft and axle in parallelism and simultaneously of the brake-shoes and traction-wheels toward and from each other, to slacken the belts and apply the brakes, or to tighten the belts and disengage the brakes.

2. In an automobile, the combination of a transverse driving-shaft, means for driving it, pulleys upon the driving-shaft, a rear or traction axle and traction-wheels thereon, pulleys on the traction-wheels registering with the pulleys on the driving-shaft, belts connecting the pulleys on said shaft and traction-wheels, brake-shoes loosely hung on the ends of the driving-shaft and registering with the tires of the traction-wheels, and means for causing a relative movement of the driving-shaft and the traction-axle toward and from each other in parallelism, to slacken the belts and apply the brakes, or to disengage the brakes and tighten the belts.

3. In an automobile, the combination of a transverse driving-shaft, means for driving it, a rear or traction axle and traction-wheels thereon, releasable driving mechanism between the driving-shaft and the traction-wheels, brake-shoes loosely hung on the ends of the driving-shaft and registering with the tires of the traction-wheels, and means for causing a relative movement of the driving-shaft and the traction-axle toward and from each other in parallelism, to release the driving mechanism and apply the brakes, or to disengage the brakes and engage the driving mechanism.

4. In an automobile, the combination of a power-shaft, a laterally-movable driving-shaft, means for driving the latter from the former, pulleys on the driving-shaft, a rear or main axle and traction-wheels thereon, pulleys on the traction-wheels registering with the pulleys on the driving-shaft, belts connecting said pulleys, brake-shoes loosely hung on the ends of the driving-shaft and registering with the tires of the traction-wheels, and means for causing a relative movement between the driving-shaft and main axle toward and from each other in parallelism, to slacken the belts and apply the brakes, or to disengage the brakes and tighten the belts.

5. In a machine of the character described, the combination of a transverse driving-shaft, means for driving said shaft, a rear or main axle and traction-wheels thereon, means for driving the traction-wheels from the driving-shaft, means for applying a preliminary braking to the traction-wheels, means for concurrently releasing the drive between the driving-shaft and said wheels, and means for applying a final braking to the wheels concurrently with continued and increased effect of the preliminary braking.

6. In a machine of the character described, the combination of a drving-shaft, means whereby it is driven, a rear or main axle and traction-wheels thereon, pulleys and belts connecting the driving-shaft with the traction-wheels, means for tensioning and releasing said belts, mechanism for preliminarily braking the wheels when the belts are slackened, and means for succeedingly applying other and more powerful braking mechanism.

7. In a machine of the character described, the combination of a traction-axle, traction-wheels thereon, mechanism for driving said wheels, means for engaging and releasing said driving mechanism, mechanism for preliminarily braking the traction-wheels when the driving mechanism is released, and means for succeedingly applying other and more powerful braking mechanism.

8. In a machine of the character described, the combination of a transverse driving-shaft, fixed horizontal ways by which it is supported, means whereby it is driven, a rear or main axle and traction-wheels thereon, pulleys and belts connecting the driving-shaft with the traction-wheels, and means for moving said shaft in parallelism along its ways to tension and release said belts.

9. In a machine of the character described, the combination of a fore-and-aft power-shaft, a motor for driving it, a transverse driving-shaft, pulleys upon its ends, a main axle and traction-wheels thereon, pulleys on the traction-wheels registering with the aforesaid pulleys, rope belts connecting the opposing pulleys, gearing connecting the power-shaft and the driving-shaft, and means in the train whereby the speed is variable by changing the degree of frictional connection.

10. In a machine of the character described, the combination of a fore-and-aft power-shaft, a motor for driving it, a transverse driving-shaft, pulleys upon its ends, a main axle and traction-wheels thereon, pulleys on the traction-wheels registering with the aforesaid pulleys, rope belts connecting the opposing pulleys, guides on which the driving-shaft is supported in such manner that it can be moved laterally so as to allow said belts to slip to change speed, means for moving said shaft in parallelism along said guides, means for maintaining its connection with the power-shaft, and bevel-gearing permanently connecting the two shafts.

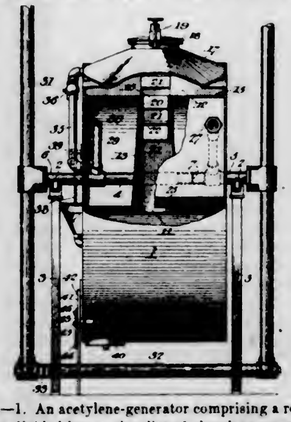
11. In a machine of the character described, the combination of an extensible and contractible fore-and-aft power-shaft and a motor for driving it, a transverse driving-shaft and means for moving it backward and forward in parallelism, gearing connecting the two shafts, a main axle and traction-wheels thereon, and driving mechanism connecting the driving-shaft and traction-wheels.

12. In a machine of the character described, the combination with an extensible and contractible fore-and-aft power-shaft and a motor for driving it, of a transverse driving-shaft and means for moving it backward and forward in parallelism, bevel-gearing directly connecting the two shafts, a main axle and traction-wheels thereon, and belts connecting the driving-shaft to pulleys upon the traction-wheels.

13. In a machine of the character described, the combination of a power-shaft, a laterally-movable transverse driving-shaft, means for driving the latter from the former, pulleys on the driving-shaft, a rear or main axle and traction-wheels thereon, pulleys on the traction-wheel registering with the pulleys on the driving-shaft, belts connecting said pulleys, brake-shoes loosely hung on the ends of the driving-shaft and registering with the tires of the traction-wheels, and means for moving the driving-shaft laterally in parallelism toward and from the main axle, to slacken the belts and apply the brakes, or to release the brakes and tighten the belts.

14. In a machine of the character described, the combination of a power-shaft, a driving-shaft, means for driving the latter from the former, a rear or main axle and traction-wheels thereon, means for driving the traction-wheels from the driving-shaft, means for applying a preliminary braking to the traction-wheels, means for concurrently releasing the drive between the driving-shaft and the traction wheels, and means for applying a final braking to the traction-wheels concurrently with the continued and increased effect of the preliminary braking.

820,103. ACETYLENE-GENERATOR. ADELBERT L. EASTMAN, Bridgeport, Conn., assignor of one-half to William H. Locke, Jr., New York, N. Y. Filed June 30, 1905. Serial No. 267,754.



Claim.—1. An acetylene-generator comprising a rotatably-supported body divided into a plurality of chambers one of said chambers being adapted to form a generating-chamber, the parts being so arranged with relation to each other that the pressure of the gas in the generating-chamber causes the body to rotate.

2. An acetylene-generator comprising a rotatably-supported body divided into a plurality of chambers, one of said chambers being adapted to form a generating-chamber, and a carbid-receptacle adapted to communicate with the generating-chamber, the parts being so arranged with relation to each other that the pressure of the gas in the generating-chamber causes the body to rotate.

3. An acetylene-generator comprising a rotatably-supported body divided into a plurality of chambers, one of said chambers being adapted to form a generating-chamber and another a displacement-chamber, means for communicating between said chambers and a carbid-receptacle adapted to communicate with the generating-chamber the parts being so arranged with relation to each other that the pressure of the gas in the generating-chamber causes the body to rotate.

4. An acetylene-generator comprising a rotatably-supported body divided into a plurality of chambers, one of said chambers being adapted to form a generating-chamber and another being adapted to form a displacement-chamber, means for communicating between said chambers and a carbid-receptacle adapted to carry carbid into intermittent contact with the water in the generating-chamber, the parts being so arranged with relation to each other that the pressure of the gas in the generating-chamber causes the body to rotate.

5. An acetylene-generator comprising a rotatably-supported body divided into a plurality of chambers, one of said chambers being adapted to form a generating-chamber and another being adapted to form a displacement-chamber, means for communicating be-

tween said chambers, means for venting the displacement-chamber, and a carbid-receptacle adapted to discharge intermittently into the generating-chamber, the parts being so arranged with relation to each other that the pressure of the gas in the generating-chamber causes the body to rotate.

6. An acetylene-generator comprising a rotatably-supported body, a generating-chamber and a displacement-chamber within said body in communication with each other and a carbid-receptacle adapted to discharge into the generating-chamber, the generating-chamber, displacement-chamber and carbid-receptacle being in fixed relation to each other and so arranged that the pressure of the gas in the generating-chamber will cause the body to rotate and carry the carbid-receptacle alternately toward and away from the water in the generating-chamber.

7. An acetylene-generator comprising a body rotatably supported at a point above its center of gravity, within said body and supported in fixed relations to each other thereby a generating-chamber, a displacement-chamber in communication with the generating-chamber, a carbid-receptacle and a drying-chamber in communication with the generating-chamber and without said body and supported independently thereof a gas-outlet pipe and a blow-off pipe, means for communication between the generating-chamber and the gas-outlet pipe and between the displacement-chamber and the blow-off pipe, the parts being so arranged with relation to each other that the pressure of gas in the generating-chamber causes the body to rotate and the carbid-receptacle to discharge intermittently into the generating-chamber.

8. An acetylene-generator comprising a body rotatably supported at a point above its center of gravity, within said body and supported in fixed relation to each other thereby a generating-chamber, a displacement-chamber in communication with the generating-chamber, a carbid-receptacle and a drying-chamber in communication with the generating-chamber, and without said body and supported independently thereof a gas-outlet pipe and a blow-off pipe, means for communication between the generating-chamber and the gas-outlet pipe and between the displacement-chamber and the blow-off pipe, and means mounted on said body for venting from the displacement-chamber into the carbid-receptacle, the parts being so arranged with relation to each other that the pressure of gas in the generating-chamber causes the body to rotate and the carbid-receptacle to discharge intermittently into the generating-chamber.

9. An acetylene-generator comprising a rotatably-supported body, a generating-chamber and a displacement-chamber within said body, means for partially filling said body with water and a carbid-receptacle, the parts being so arranged with relation to each other that the pressure of gas in the generating-chamber will cause the body to rotate and the carbid-receptacle to intermittently bring its carbid into contact with the water in the generating-chamber.

10. An acetylene-generator comprising a rotatably-supported body adapted to receive less than its full capacity of water, a diaphragm within said body and extending partly across the same, a carbid-receptacle adapted to communicate with the water on one side of said diaphragm and a chamber on the other side of said diaphragm, the parts being so arranged that the pressure of the gas acting against the diaphragm will cause the body to rotate and the water to flow to the other side of said diaphragm.

11. An acetylene-generator comprising a rotatably-supported body, a diaphragm within said body extending partly across the same, a carbid-receptacle adapted to bring its carbid into contact with the water on one side of said diaphragm, the parts being so arranged that the pressure of the gas acting against the diaphragm will cause the body to rotate intermittently bringing carbid into contact with the water on one side of said diaphragm and means for limiting the amount of rotation of said body.

12. An acetylene-generator comprising a movable container eccentrically pivoted and adapted to hold carbid and water and means within the container whereby an increase in gas volume will swing the container on its pivots to stop the generation of gas.

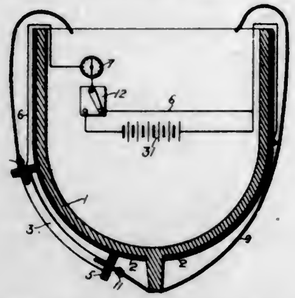
820,104. PNEUMATIC TIRE. PERCY W. FAWCETT and EDWARD L. W. BULLNOUGH, Sheffield, England. Filed Oct. 25, 1904. Serial No. 230,260.

Claim.—A flexible metallic tread for pneumatic tires of wheels consisting of a plurality of sections, each section having a central tongue at one end and a corresponding recess at its other end and recesses on each side of the central recess on the upper side of the section and overhanging portions at its other end on each side of the tongue, the tongues and overhanging portions engaging the corresponding recesses in the adjacent sections.

820,104.



820,105. ELECTROLYTIC SHIP-BOTTOM CLEANER. GEORGE W. FRASER, Allegheny, Pa., assignor to Pittsburgh Electrolytic Manufacturing Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed Oct. 30, 1903. Renewed Mar. 20, 1906. Serial No. 307,064.



Claim.—1. In an electrolytic ship-bottom cleaner, the combination of a conducting-plate, tackle constructed to suspend said plate from the vessel movably contiguous to the side of the vessel below the water-line, insulating-fenders arranged to prevent contact between said plate and the sheathing or hull of the vessel, a conductor leading aboard from said plate, a source of electricity having one pole connected with said conductor and the remaining pole connected with the sheathing of the vessel, substantially as described.

2. In an electrolytic ship-bottom cleaner, the combination of a zinc plate, tackle constructed to suspend said plate from the vessel movably contiguous to the side of the vessel below the water-line, insulating-fenders arranged to prevent contact between said plate and the sheathing or hull of the vessel, a conductor leading aboard from said plate, a conductor leading inboard from the sheathing of the vessel, the said conductors being adapted for connection with each other, substantially as described.

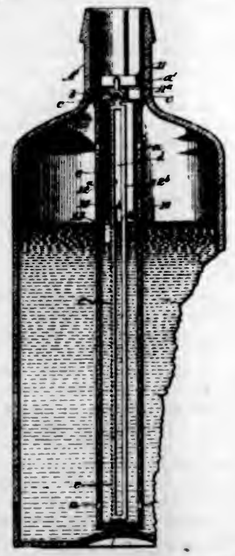
3. In an electrolytic ship-bottom cleaner, the combination of a zinc plate, a rope connected with one end of said plate and passing upward aboard the vessel, a rope connected with the opposite end of said plate and passing beneath the vessel and aboard up the other side, a conductor leading aboard from said plate, a conductor leading inboard from the sheathing of the vessel, the said conductors being adapted for connection with each other, and insulating-fenders arranged to prevent contact between the said plate and sheathing, substantially as described.

4. In an electrolytic ship-bottom cleaner, the combination of a chain of zinc plates in metallic and pivotal connection with each other, a rope connected with one end of said chain and passing upward aboard the vessel, a rope connected with the opposite end of said chain and passing beneath the vessel and aboard up the other side, a conductor leading aboard from said chain of plates, a conductor leading inboard from the sheathing of the vessel, the said conductors being adapted for connection with each other, and insulating-fenders arranged to prevent contact between the said plates, and sheathing, substantially as described.

5. In an electrolytic ship-bottom cleaner, the combination of a chain of zinc plates in metallic and pivotal connection with each other, a rope connected with one end of said chain and passing upward aboard the vessel, a rope connected with the opposite and of said chain and passing beneath the vessel and aboard up the other side, a conductor leading aboard from said chain of plates, a conductor leading inboard from the sheathing of the vessel, the said conductors being adapted for connection with each other, insulating-fenders arranged to prevent contact between the said plates and sheathing, and a float secured to said chain of plates, substantially as described.

6. In an electrolytic ship-bottom cleaner, the combination with a conducting-plate supported contiguous to the side of the vessel below the water-line, of insulating-fenders arranged to prevent contact between said plate and the sheathing or hull of the vessel, a conductor leading aboard from said plate, a source of electricity having one pole connected with the said conductor and the remaining pole connected with the sheathing of the vessel, substantially as described.

820,106. INDICATOR FOR BOTTLES. FRANK A. FEKOVIC, Galveston, Tex., assignor of twenty-five one-hundredths to Joseph H. Hawley, Galveston, Tex. Filed June 24, 1903. Renewed Oct. 14, 1905. Serial No. 283,806.



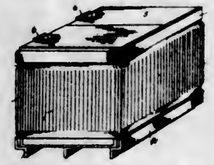
Claim.—1. An indicator for bottles, comprising a transparent cylindrical casing, a longitudinally-slotted holder-bar having downwardly-hooking teeth on one outer edge, a fragile ring secured in the bottle-neck, means to suspend the bar in the casing, and both hung pendent from the fragile ring, a float, a pawl carried by the float and engaging the teeth on the holder-bar, which permits the downward movement of the float in the casing but prevents its upward movement therein.

2. An indicator for bottles, comprising a transparent cylindrical casing, a glass ring cemented in the bottle-neck and from which the casing is hung, a longitudinally-slotted holder-bar, having teeth that hook downward and arranged on one outer edge of said bar, a float within the casing, and a pawl having two spaced teeth which engage the teeth of the holder-bar and carried by the float, whereby the float may descend in the casing when unsupported by liquid in the bottle, but is held from upward movement therein.

3. The combination with a bottle, a glass ring cemented in the neck of the bottle, a glass casing hung in the bottle pendent from the glass ring, and a longitudinally-slotted holder-bar hung in the casing from said ring and having downwardly-hooking teeth on one outer edge, of a kidney-shaped float, and a pawl-supporting means carried by the float, comprising a guard-ring, a slotted bracket-frame below the ring and a pawl secured between spaced members of the bracket-frame, said pawl having two spaced teeth that are adapted to engage with teeth on the holder-bar and slide down over said teeth, but interlock therewith to prevent an upward movement of the float in the casing.

820,107. BASKET. HENRY J. GERBER, Vandergrift, Pa. Filed Dec. 16, 1904. Serial No. 237,142.

Claim.—1. As an article of manufacture, a metallic bread-basket comprising side and end walls made from a single sheet of metal, having vertical corrugations and having plain uncorrugated portions at the upper and lower edges respectively, a bottom having an upturned flange fitting within the body, angle-strips having one flange engaging the uncorrugated lower edge of the sides and the other flange thereof extending below the bottom, and means securing the said angle-strips, the body and the bottom together, substantially as described.



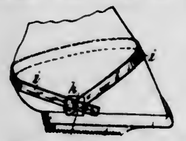
2. As an article of manufacture, a metallic bread-basket, comprising a bottom having an upwardly-extending flange, supporting-strips engaging the bottom and having downwardly-extending flanges projecting below the bottom and having upwardly-extending flanges, and a body comprising side and end walls and having the lower edge of the side walls received between the upwardly-extending flanges of the bottom and supporting-strips respectively, and means for securing said flanges and side walls together.

3. As an article of manufacture, a metallic bread-basket comprising a substantially rectangular bottom provided with an upturned flange, a body of rectangular form having its lower end fitting over the flange of the bottom, supporting-strips having upwardly-projecting and downwardly-projecting flanges, the bottom resting on said supporting-strips, and the upwardly-projecting flanges thereof being secured to the body, and to the flange of the bottom.

4. As an article of manufacture, a metallic bread-basket comprising a bottom having an upturned flange, supporting-strips on which the bottom is seated and which have upwardly-projecting flanges, a body having the lower edge of its side walls received between the upwardly-projecting flanges of the bottom and the supporting-strips, respectively, and secured thereto, and a metallic binding on the upper edge of said body.

5. A metallic bread-basket composed of a corrugated body portion having plane zones at its lower edge, a bottom composed of a single sheet of metal having upturned sides and upturned ends overlapping and secured to the sides at their extremities, angle-bars having upwardly-extending flanges riveted to the sides of the body and to the sides of the bottom, said angle-bars extending under the bottom and serving to support the same.

820,108. HOOF-PAD FOR HORSESHOES. BERTRAM P. GRAY, Birmingham, England. Filed Dec. 26, 1905. Serial No. 293,673.



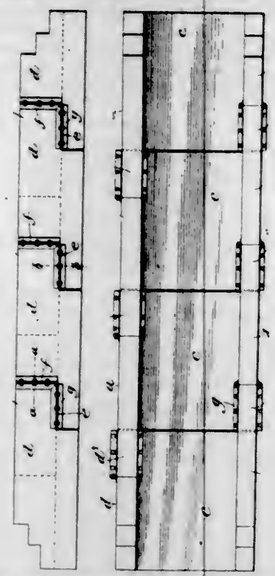
Claim.—In combination, a horseshoe, a detachable hoof-pad adapted to be fitted within the shoe after the latter has been nailed to the hoof, one or more metal cross strips or bars adapted to be inserted endwise in side slots in the shoe and pad or to be removed endwise therefrom, the said metal cross strip or bar having at one end a head so formed as to enable a strap, cord or the like passing round the hoof to be attached thereto to secure the cross strip or bar in position, substantially as set forth.

820,109. FLOATING DOCK. JOHN H. HANSSON, Sparrows Point, Md., assignor to Henrik Florentin Hansson, Baltimore, Md. Filed Mar. 8, 1905. Serial No. 249,078.

Claim.—1. A floating dock, composed of sections that are separable from and attachable to each other, each section consisting of a pontoon having integral vertical side walls, the joints between the opposite walls of the sections breaking joints with each other and with those between the pontoons.

2. A floating dock, composed of sections that are separable from and attachable to each other, each section consisting of a pontoon having integral vertical side walls, the joints between the walls

of the sections on one side of the dock breaking joints with those between the walls of the sections on the opposite side.



3. A floating dock, composed of sections that are separable from and attachable to each other, each section consisting of a pontoon having integral vertical side walls, each of the walls extending beyond one end only of the pontoon, the extensions being at opposite ends of the pontoon.

4. A floating dock, composed of sections that are separable from and attachable to each other, each section consisting of a pontoon having integral vertical side walls, one wall extending beyond one end only of the pontoon, and the other wall extending beyond the other end only.

5. A floating dock, composed of sections that are separable from and attachable to each other, each section consisting of a pontoon having integral vertical side walls, each of the walls extending beyond one end of the pontoon, and a portion of each wall being cut away or omitted from the opposite end of the pontoon, the extensions of the respective walls being at opposite ends of the pontoon so as to permit one of the sections to overlap and be supported by those ends of the other sections where the walls are cut away.

820,110. **MEANS FOR REPAIRING PUNCTURES IN PNEUMATIC TIRES.** HARRY HARRISON, Erdington, England. Filed Oct. 4, 1904. Serial No. 227,150.



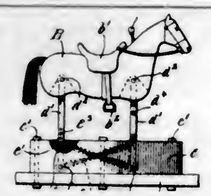
Claim.—An appliance for closing a puncture in an air-tube of a pneumatic tire, consisting essentially of two metal or other suitable disks with means for pressing and securing them together, one of said disks having a slot to facilitate its being passed through the puncture into the interior of the air-tube, substantially as set forth.

820,111. **ROUNDABOUT.** GEORGE HERMANN, Chicago, Ill. Filed Nov. 17, 1905. Serial No. 287,227.

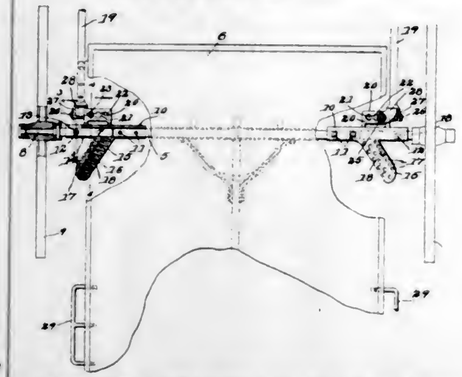
Claim.—1. In a device of the kind stated, the combination of a body, front and rear legs pivoted to the body, a base to which the lower ends of the legs are pivoted, springs supporting the legs, and projections extending sidewise from the front legs and arranged to receive the foot-pressure of a rider.

2. In a device of the kind stated, the combination of parallel base-beams, rock-shafts extending across between the beams, front and rear legs mounted on the shafts and carrying a body at the top, and crossed springs connected between the shafts and legs.

820,111.



820,112. **VEHICLE-AXLE.** MARTIN W. HEYENGA, Hartsburg, Ill. Filed July 15, 1905. Serial No. 269,847.



Claim.—1. An axle for vehicles having laterally-movable spindles, means for yieldably supporting the spindles in alinement with the axle, and means for adjusting the extent of lateral movement of said spindles.

2. An axle for vehicles provided with independently-pivoted spindles movable laterally in the direction of the length of the vehicle, means for yieldably supporting said spindle in alinement with the axle, and means for adjusting the extent of lateral movement of the spindles.

3. An axle for vehicles comprising a body portion provided with laterally-movable stub-axles, detachable coupling members connecting the stub-axles to the body portion and means interposed between the walls of the coupling members and the pivoted ends of the stub-axles for yieldably supporting said stub-axles in alinement with the body portion.

4. An axle for vehicles comprising a body portion provided with pivoted stub-axles movable laterally in the direction of the length of the vehicle, detachable coupling members connecting the stub-axles to the body portion and springs interposed between the coupling members and bearing against the stub-axles for maintaining the latter in alinement with the body of the axle.

5. An axle for vehicles comprising a body portion provided with laterally-movable stub-axles, coupling members for connecting the stub-axles to the body portion, means for yieldably supporting said stub-axles in alinement with the body portion, and means carried by the coupling members for adjusting the extent of lateral movement of the stub-axles.

6. An axle for vehicles comprising a body portion provided with laterally-movable stub-axles, coupling members connecting the stub-axles to the body portion and provided with perforated housings, springs seated in said housings and bearing against the stub-axles and pins engaging the perforations in the housing for limiting the lateral movement of said stub-axles.

7. An axle for vehicles comprising a body portion provided with opposite-disposed coupling members, stub-axles pivoted to the coupling members and movable laterally in the direction of the length of the vehicle, springs carried by the coupling members and adapted to bear against the stub-axles, and thill-supporting brackets extending from said coupling members.

8. An axle for vehicles comprising a body portion provided with oppositely-disposed coupling members, stub-axles pivoted to the coupling members and capable of independent lateral movement in the direction of the length of the vehicle, springs carried by the coupling members and adapted to bear against the stub-axles, and means for adjusting the extent of lateral movement of said stub-axles.

9. An axle for vehicles comprising a body portion provided with oppositely-disposed coupling members, laterally-movable stub-axles pivoted to said coupling members, springs adapted to bear against the stub-axles for maintaining the same in alinement with the body portion, thill-supporting brackets extending laterally from the coupling members, and the blocks adjustable longitudinally in said brackets.

10. An axle for vehicles comprising a body portion provided with oppositely-disposed coupling members laterally-movable stub-axles pivoted to said coupling members, springs adapted to bear against the stub-axles for yieldably supporting the latter in alinement with the body portion, thill-supporting brackets secured to the coupling members and provided with longitudinal slots having lateral recesses communicating therewith, and thill-blocks adjustable longitudinally in said brackets and provided with laterally-extending lugs adapted to engage the lateral recesses in the supporting-brackets.

11. An axle for vehicles comprising a body portion provided with laterally-movable stub-axles, coupling members connecting the stub-axles to the body portion and provided with laterally-extending thill-supporting brackets, said brackets being provided with longitudinal slots having spaced laterally-extending recesses communicating therewith adjustable thill-blocks provided with lateral lugs adapted to engage the recesses in the brackets and having a threaded extension passing through the longitudinal slots in said brackets, nuts engaging the threaded extensions for clamping the blocks in adjusted position, and flat springs interposed between said nuts and brackets and having their free ends bent downwardly for engagement with the thills.

820,113. **WATER-PURIFIER.** FRANK B. HINKSON, New Castle, Pa., assignor to The Electric Liquid Purifying and Filtering Company, Pittsburg, Pa. Filed May 31, 1905. Serial No. 263,136.

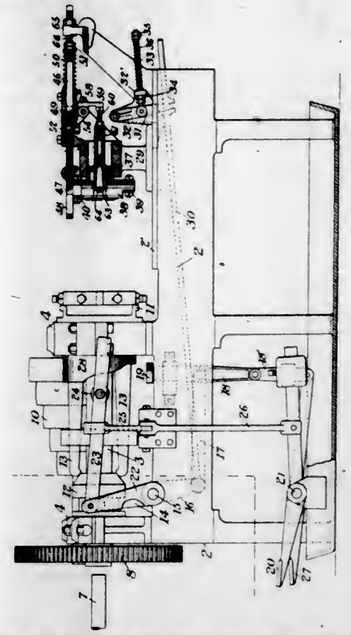


Claim.—1. In a water-purifier, the combination with a shell or casing having a water-inlet at one end and a water-outlet at the other end, of a series of annular electrodes located within the shell or casing and disposed, one within another, means for insulating said electrodes from each other and from the shell or casing, and electrical onductors connected, respectively with the inner and outer electrodes.

2. In a water-purifier, the combination with a shell or casing having a water-inlet and a water-outlet, of insulating-frames located therein and spaced apart, a series of annular electrodes disposed one within another and held between said frames, a rod passing through said frames and the inner electrode, said rod electrically connected with said inner electrode, means for connecting one terminal of an electric generator to said rod, and means for connecting the other terminal of the electrical generator with the outer annular electrode.

3. In an apparatus of the character described, the combination with a cylindrical closed casing having an insulating internal coating and having water inlets and outlets in its ends, of a series of nested cylinders of conducting material, located in the casing and insulated from each other and from the casing, a positive conductor connected with the inner cylinder, and a negative conductor with the outer cylinder.

820,114. **PIPE-THREADING MACHINE.** JOHN A. HOCK and ERNST BERNHEIM, Pittsburg, Pa., assignors to The National Tube Company, Pittsburg, Pa., a Corporation of New Jersey. Filed June 20, 1905. Serial No. 266,095.



Claim.—1. In a pipe-threading machine, the combination of a reciprocable die-carrying carriage, non-rotatable threading-dies carried thereby, a reciprocating die-opener mounted on the carriage, a spring for actuating the die-opener, a reamer-controlled holding device for the die-opener, and means on the frame for preventing movement of the die-opener when the carriage is retracted; substantially as described.

2. In a pipe-threading-machine, the combination with a reciprocable die-carrying head or carriage, of a die-opening member mounted to slide thereon, a spring for actuating said member in one direction to open the dies, and a fixed stop on the machine-frame adapted for contact with said member when the head or carriage is retracted, to thereby hold said member against movement and close the dies; substantially as described.

3. A pipe-threading machine having a reamer, a die-opener, a trigger against which the reamer presses, and a spring by which the reamer and trigger are yieldingly held; substantially as described.

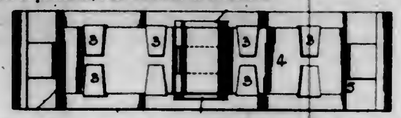
4. A pipe-threading machine having a reamer, a spring for holding it against the pipe and an arm between the reamer and spring, said arm being removable from the path of the reamer to permit removal thereof; substantially as described.

5. In a pipe-threading machine the combination with pipe-gripping jaw-levers and a cam by which the levers are operated, of mechanism connected with said levers and adapted to be moved into the path of the cam to be actuated thereby to actuate the gripping-jaws; substantially as described.

6. In a pipe-threading machine, the combination with pipe-grips, an actuating-cam for said grips, means connected with said grips and arranged to be moved into the path of the cam to open and close the grips, a movable die-head, and a connection between the said head and the grip-operating means; substantially as described.

820,115. **BRAKE-SHOE.** HENRY T. HORNSBY and THOMAS R. WESTON, Springfield, Mo., assignors to United Iron Works Company, Springfield, Mo., a Corporation of Missouri. Filed Dec. 23, 1905. Serial No. 293,009.

Claim.—1. A brake-shoe having a removable backing formed of sheet metal and following the shape of the shoe, in combination with fastening devices embedded in the back of the body portion of the shoe and adapted to be bent to engage a portion of the backing to hold it in position; substantially as described.



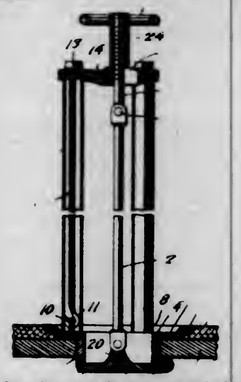
2. In a brake-shoe, the combination with a body portion having flexible fastening-tongues embedded in the back thereof, and a removable sheet-metal backing having a raised portion for engagement with a brake-key and adapted to be held in position by the flexible tongues which are bent to engage the same; substantially as described.

3. In a brake-shoe, the combination with a body portion, of fastening devices permanently connected therewith, a sheet-metal backing having a raised portion for coöperation with the brake-key, and legs or extensions formed integral with the back of the body portion and extending into the raised portion of the sheet-metal back; substantially as described.

4. The herein-described brake-shoe, the same having flexible tongues embedded into the body portion thereof, shoulders on the back of the body portion adjacent its ends, and a removable backing engaging said shoulders and held in position by said flexible tongues; substantially as described.

5. The herein-described brake-shoe, the same having wedge-shaped flexible tongues arranged in the back thereof, the larger parts of said tongues being embedded in the body of the shoe; substantially as described.

820,116. CYANID-TANK GATE. JOHN IKE, Deadwood, S. D., assignor to Herbert Z. Peters, Deadwood, S. D. Filed Sept. 27, 1905. Serial No. 280,331.

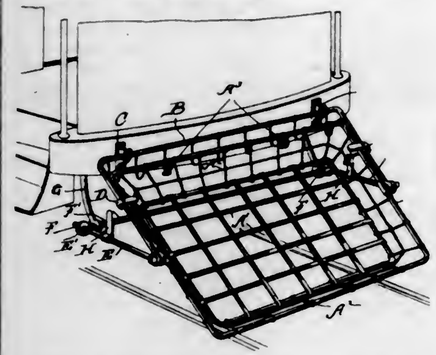


Claim.—1. In a device of the class described, a pair of spaced bearing-heads, one of said heads having a slot, and the other being provided with a tubular extension constituting a seat, tie elements operatively engaged with and for connecting said heads, a gate pivoted to the tubular extension and adapted to close on the seat, a stem operatively connected with the gate and designed for entrance into said slot, and a hand-wheel having a tubular hub threaded onto the stem and designed for engagement with the adjacent bearing-head.

2. In a device of the class described, a pair of relatively spaced bearing-heads, one of said heads being provided with a slot and the other with a tubular extension constituting a seat, tie elements operatively engaged with and for connecting said heads, tubular casings inclosing said elements, a valve pivotally mounted to close on the seat, a stem engaged with the valve and adapted to enter the slot, and a member threaded onto the stem for engagement with the adjacent head to maintain the valve in closed position.

3. In a device of the class described, a pair of relatively spaced heads, elements operatively engaged with and connecting the heads, one of the heads having a slot, and the other being provided with a tubular portion constituting a seat, a valve pivoted to close on said seat, a stem engaged with the valve and having a relatively movable section adapted to enter the slot, and a member threaded onto said section and operable for engagement with the adjacent head to maintain the valve in closed position.

820,117. CAR-FENDER. ERNEST A. JOHNSON, Brooklyn, N. Y. Filed Jan. 11, 1905. Serial No. 240,694.



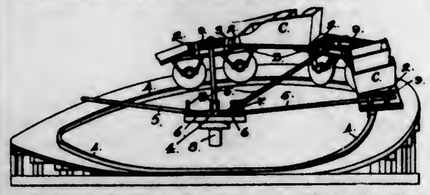
Claim.—1. In combination with a fender adapted to remain normally in an inclined position, clamps adapted to engage the fender and hold the same under its own weight, and spring hook members adapted to engage the fender when released by the clamps and hold the fender against vertical movement.

2. A fender comprising a basket, a bail pivoted thereto, brackets carried by a car-platform adapted to engage the bail, clamps carried by the bail adapted to engage the rim of the basket, and hooks adapted to engage the rim when released from engagement with the clamps.

3. A fender comprising a rectangular frame, a reticulated bottom, a side network connecting the frame and bottom, a bail, U-shaped clamps carried by the bail and adapted to engage the frame, and means for locking the frame in a lower plane when released by the clamps.

4. A fender comprising a frame forming a basket-rim, a bottom, flexible sides connecting the bottom and rim, a pivoted bail connected to the rim and carried by a car-platform means for locking the rim to the bail, and means for locking the rim against vertical movement when released from the bail, as and for the purpose set forth.

820,118. AMUSEMENT APPARATUS. FRANK J. JOHNSTON, Sacramento, Cal. Filed Oct. 4, 1905. Serial No. 281,262.



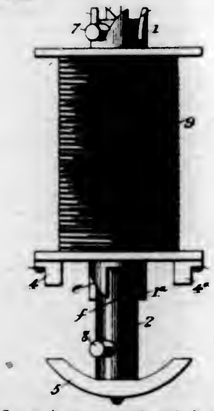
Claim.—1. In an amusement apparatus, the combination of a continuous track, trucks adapted to run on said track, a carriage longitudinally in front of and a carriage longitudinally in rear of each truck, and pivotal connections between the adjacent ends of the truck and carriages.

2. In an amusement apparatus the combination of an undulating continuous single track, trucks on said track, carriages supported on said trucks with each truck partly supporting two adjacent carriages, pivotal connections between the trucks and carriages, and pivotal connections between the trucks and a central source of power to propel the carriages.

3. In an amusement apparatus the combination with a continuous trackway, of trucks on said trackway, carriages supported on said trucks and arranged substantially horizontally in line therewith, with each truck supporting the adjacent ends of two adjacent carriages, flexible connections between each truck and the carriages in front and rear thereof, a central rotary support, and radially-extending hinged members on the support and pivotally connected with the trucks to propel the carriages.

4. In an amusement apparatus the combination of an undulating continuous track, trucks thereon, carriages pivotally supported on the trucks with each truck supporting the adjacent ends of two adjacent carriages, a central rotary support, and radially-extending members hinged to said support to turn in vertical planes and movable with the support and pivotally connected with the trucks.

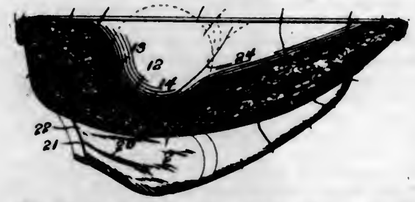
820,119. AUTOMATIC ELECTRIC CIRCUIT CHANGER OR SWITCH. FREDERICK T. KITT, Denver, Colo. Filed Feb. 15, 1904. Serial No. 193,645.



Claim.—1. In an electromagnetic switch, a solenoid, a sliding core therefor, a contact fastened to said core, stationary contacts, a lug projecting from said core, a stationary cam with angular surfaces coöperating with said lug, so combined that upon the energization of the solenoid with the consequent movement of the core the movable contact is given a partial rotary movement to engage a stationary contact.

2. In an electromagnetic switch, a solenoid a sliding core therefor, a contact fastened to said core, stationary contacts, lugs projecting from said core, angularly-disposed stationary cams with angular surfaces, each cam coöperating with one of said lugs, so combined that upon the energization of said solenoid the core and movable contact are partially rotated because of the engagement of one lug with one of the said cams, and upon the deënergization of said solenoid the core and movable contact are given a further partial rotation because of the engagement of another of said lugs with its coöperating cam.

820,120. BASE-BALL GLOVE OR MITT. RAOUL F. LE MAT, Washington, D. C. Filed Oct. 14, 1905. Serial No. 282,780.



Claim.—1. In a glove of the character described, the combination with a glove-piece, of a rigid body portion forming the front of the glove.

2. A glove of the character described, comprising a scoop-shaped rigid body portion and means for attaching same to the hand.

3. A glove of the character described comprising a rigid body portion having a central opening therein, and a glove-piece carried by said body portion.

4. A glove of the character described comprising a scoop-shaped rigid frame having a central opening therein, a padded covering for same, and a glove-piece carried by the frame.

5. A glove of the character described comprising a rigid frame, a flange carried by the outer edge of said frame, a covering having its outer edge crimped under said flange, and a glove-piece carried by the frame, substantially as described.

6. A glove of the character described comprising a rigid body portion having a laterally-turned heel portion, and a glove-piece carried thereby.

7. A glove of the character described, comprising a scoop-shaped rigid frame, a flange carried by the outer edge of said frame, a rawhide strip crimped under said flange, a palm-covering secured to said rawhide strip, padding between said covering and frame, and a glove-piece carried by the frame.

8. A glove of the character described, comprising a scoop-shaped rigid frame having a central opening therein and a laterally-turned heel portion, a covering for said frame, a padding between said frame and covering and a glove-piece carried by the frame.

9. A glove of the character described, comprising a scoop-shaped rigid frame having a central opening and a laterally-turned heel portion, a covering secured to the edge of said frame and having a ball-receiving depression therein, a padding between said frame and covering and a glove-piece carried by the frame.

10. A glove of the character described, comprising a scoop-shaped rigid frame, a padding carried thereby, and a glove-piece secured to the frame and having a gathered inner end whereby the hand cannot be removed when in its normal position corresponding with the curve of the frame.

11. A glove of the character described, comprising a scoop-shaped rigid body portion, a covering secured to the outer edges of the frame, a sheepskin padding secured to the inside of the covering with the wool side adjacent to the covering, and a glove-piece carried by the frame.

12. A glove of the character described, comprising a scoop-shaped rigid frame having a central opening therein, a flange carried by the outer edge of said frame, a covering stretched over the convex side of said frame and having its edges turned parallel with the flange, a rawhide strip extending around the flange and crimped between the flange and said frame, and a palm-covering stitched to said rawhide strip and having a central depression opposite to the opening in the frame, a padding between the palm-covering and the frame, and a glove-piece secured to the convex side of the frame, substantially as described.

13. A glove of the character described, comprising a scoop-shaped rigid frame made of papier-mâché, a padded covering carried thereby, and a glove-piece carried by the frame.

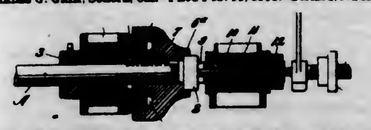
820,121. COMPOSITION OF MATTER FOR SOFTENING AND BLEACHING SOLE-LEATHER. WILLIAM F. MORANG, Manchester, N. H., assignor to Morang Chemical Company, Manchester, N. H. Filed Jan. 16, 1906. Serial No. 296,384.

Claim.—1. The herein-described composition of matter, resulting from mixing of Epsom salts, hyposulfite of soda, borax, permanganate of potash, oil of mirbane, as described and for the purpose specified.

2. The herein-described composition of matter for softening and bleaching sole-leather, resulting from mixing Epsom salts, one pound thirteen ounces; hyposulfite of soda, one pound thirteen ounces; borax, one pound four and one-half ounces; permanganate of potash, one ounce; oil of mirbane, one-half ounce, substantially as described.

3. The herein-described composition of matter for softening and bleaching sole-leather, resulting from mixing Epsom salts, one pound thirteen ounces; hyposulfite of soda, one pound thirteen ounces; borax, one pound four and one-half ounces; permanganate of potash, one ounce; oil of mirbane, one-half ounce; water, luke-warm, one hundred gallons to each five pounds of the above-named composition.

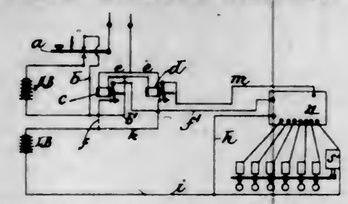
820,122. POWER TRANSMISSION. GEORGE MORRICE and CHARLES G. GRIM, Sonora, Cal. Filed Feb. 10, 1905. Serial No. 245,155.



Claim.—The combination of an engine-shaft, a gear loose on said shaft and having a member of a clutch, a female clutch member slidable on the shaft and adapted to engage the clutch member of the loose gear said shaft having a central passage-way, a rod slidably mounted in said passage-way of the shaft, and provided with a cross-

piece, a screw in line with the rod and made separate therefrom and bearing endwise thereon, and means for adjusting the screw, said slidable clutch member having an integral flange for housing the ends of the cross-piece.

820,123. SPEED-TIMING APPARATUS. ALDEN L. MCMURTRY, New York, N. Y. Filed June 8, 1904. Serial No. 211,685.



Claim.—1. In a speed-timing apparatus, the combination of a main electric circuit and source of energy, a series of stop-watches grouped at a desired point, means for simultaneously starting all the watches, local means controlled by impulses of current in the main circuit for independently stopping the respective watches, and means located at any desired point or points in the main circuit for controlling it to thereby actuate said local means to successively stop the watches.

2. In a speed-timing apparatus, the combination of a main electric circuit and source of energy, two or more stop-watches, means for simultaneously starting them, two or more electromagnetic watch-stopping devices, their local circuits, and a local circuit-distributer controlled by current in the main circuit for successively connecting the respective local circuits for operation of their watch-stopping devices.

3. In a speed-timing apparatus, the combination with an electric circuit and source of energy, two or more stop-watches, means for simultaneously starting them, two or more corresponding electromagnetic watch-stopping devices, their respective circuits, and local means controlled by impulses of current in said electric circuit and adapted when operated to successively effect energization of the respective electromagnetic devices to thereby successively stop the respective stop-watches.

4. In a speed-timing apparatus, the combination of a single main electric circuit, means adapted to be located at a desired point with reference to the course to be traversed, comprising electromagnetic means for simultaneously starting two or more stop-watches or time-indicators, electrically-controlled means for at will independently stopping the respective watches and means located at the finish end of the course for independently controlling the electromagnetic watch-stopping apparatus to at will separately stop the respective watches.

5. In a speed-timing apparatus, the combination of a single main electric circuit, means adapted to be located at a desired point with reference to the course to be traversed, comprising electromagnetic means for simultaneously starting two or more stop-watches or time-indicators, electrically-controlled means for at will independently stopping the respective watches and means located at the finish end and at intermediate points of the course for at will independently controlling the electromagnetic watch-stopping apparatus to at will separately stop the respective watches.

6. A speed-timing apparatus comprising the combination of the line-circuit, its source of energy, a local circuit and its source of energy, two electromagnets or relays included in the line-circuit, an electromagnetic watch-starting device, and a series of electromagnetic watch-stopping devices included in a circuit of the local battery controlled by one of the relays, an electromagnetic circuit-distributing device in another circuit of the local battery controlled by the other relay and means controlled by the last-named electromagnetic device for successively transferring the local circuit from the electromagnetic watch-starting to the electromagnetic watch-stopping devices.

7. A speed-timing apparatus, comprising the combination of the line-circuit, its source of energy, a local circuit and its source of energy, two electromagnets or relays included in the line-circuit, an electromagnetic watch-starting device and a series of electromagnetic watch-stopping devices included in a circuit of the local battery controlled by one of the relays, an electromagnetic device in a local circuit controlled by the other relay, and a circuit-distributer controlled by the last-named electromagnetic device and comprising switch-contacts by which the first-named local circuit is on each movement of the circuit-distributer transferred from one electromagnetic watch-stopping device to another.

8. In a speed-timing apparatus, the combination of a series of stop-watches stopping devices, their circuits, a circuit-distributer adapted to control said circuits and comprising two members movable one relatively to the other, one member carrying the switch-contacts of the several circuits of the several watch-stopping devices and the other member adapted to carry means for completing said circuits at their switch-contacts.

9. In a speed-timing apparatus, a series of watch-stopping devices, local circuits in which they are respectively included, a circuit-distributer controlling the local circuits comprising switch-contacts by which the respective circuits are closed when the distributer is at rest, an electromagnetic device controlling the movement of the distributer, and means whereby the distributer is advanced from one position to the next when its controlling electromagnetic device is deënergized.

10. In a speed-timing apparatus, the combination of a normally open line-circuit normally including in metallic connection the windings of two relays and a main-line battery, means for closing the circuit at any desired point or points in its length to thereby energize the relays, a local battery whose circuits are controlled by the relays, a series of electromagnetic stop-watch-stopping devices in branch or derived circuits in one circuit of the local battery, a circuit-distributer for transferring the circuit of the battery from one watch-stopping device to another, and an electromagnetic device governing the movement of the distributer and controlled by the other relay.

11. A speed-timing apparatus, comprising the combination of a series of stop-watches, a local battery, an electromagnetic device and its circuit adapted to simultaneously start the stop-watches, a series of corresponding electromagnetic watch-stopping devices and their circuits, a circuit-distributer controlling the circuits of the watch-starting and watch-stopping devices, an electromagnetic device governing step-by-step movement of the circuit-distributer, and circuit-distributing contacts whereby by the movement of the distributer, the circuit of the local battery is transferred from the starting electromagnetic device step by step to the respective watch-stopping electromagnetic devices.

12. A speed-timing apparatus comprising the combination of a line and local circuit with appropriate sources of energy, and a circuit-distributer comprising a step-by-step rotatable table having therein radially-disposed series of switch-plug sockets, a series of switch-contacts arranged opposite the face of the rotatable table, a series of electromagnetic watch-stopping devices whose circuits are respectively connected with such switch-contacts, an electromagnetic device governing the step-by-step movement of the circuit-distributer and controlled by line impulses, means for advancing the distributer when its controlling electromagnetic device is deënergized, and a second electromagnetic controlling device energized by line impulses and controlling the local circuit including in derived circuit the respective electromagnetic watch-stopping devices.

820,124. GLASS-POT FURNACE AND POT AND METHOD OF MAKING THE SAME. WILLIAM T. NICHOLLS, Wellsburg, W. Va. Filed Jan. 11, 1904. Serial No. 188,439.

Claim.—1. A pot-furnace in the form of a segment of an annulus having a row of pots set therein, and fuel inlet and outlet openings at opposite ends of the tunnel; substantially as described.

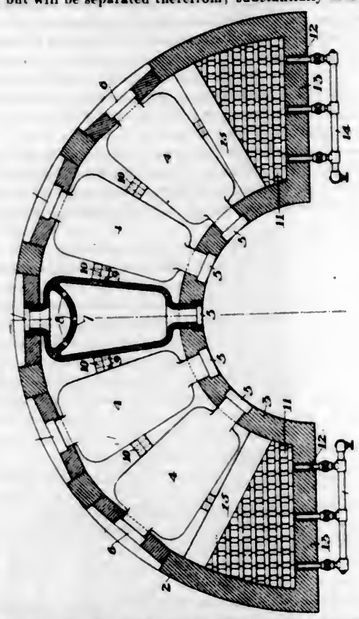
2. A pot-furnace in the form of a segment of an annulus having a series of substantially radial transverse pots set therein, said pots having work-out openings at the outer side of the tunnel, and fuel inlet and outlet openings at opposite ends of the tunnel; substantially as described.

3. A pot-furnace in the form of a segment of an annulus having a row of pots set therein and extending transversely of the furnace-chamber, each pot having a charging-opening leading through the inner side wall of the chamber, and a work-out opening leading through the opposite wall, and fuel inlet and outlet openings at opposite ends of the furnace-chamber; substantially as described.

4. A pot-furnace in the form of a segment of an annulus having a row of pots set transversely therein, each pot having an intermediate partition with a lower opening and feed-out openings leading through the inner side wall of the chamber and work-out openings leading through the outer side wall, and fuel inlet and outlet openings at opposite ends of the chamber; substantially as described.

5. The art of manufacturing partitioned glass-melting pots of refractory material, which comprises interposing a layer of foreign material between the bottom of the partition and the bottom of the

pot, whereby the partition will substantially rest upon the pot-bottom, but will be separated therefrom; substantially as described.



6. The art of manufacturing partitioned glass-melting pots of refractory material, which comprises forming a portion of the partition with a curve transverse of its length and interposing a layer of foreign material between the bottom of the partition and the bottom of the pot to provide for differential contraction and drying between the partition and the walls of the pot; substantially as described.

7. A glass-melting pot provided with an integral partition which substantially seats against the bottom of the pot and extends upwardly therefrom, but which is entirely structurally disconnected from the bottom throughout its whole extent to allow for independent contraction and expansion of the partition and bottom; substantially as described.

8. A glass-melting pot, provided with an integral partition curved transversely of its horizontal length to provide for independent lateral expansion and contraction thereof, said partition resting upon the bottom of the pot, but entirely structurally separate from the bottom throughout its whole extent to allow for independent contraction and expansion of the partition and bottom; substantially as described.

9. In a glass-furnace, a melting-pot provided with an integral partition which extends upwardly from the bottom of the pot, but is not connected with the pot-bottom at any point, and which extends across the pot from wall to wall, said partition being curved transversely of its horizontal length the transverse curvature of said partition permitting contraction and expansion thereof independently of the lateral walls of the pot and its structural disconnection from the pot-bottom providing for independent expansion and contraction of the partition and bottom; substantially as described.

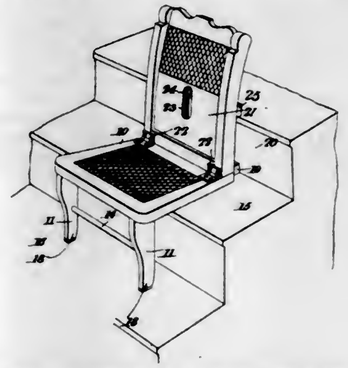
10. A glass-melting pot having a feed-in opening at one end, and a work-out opening at the opposite end, and a perforated partition arranged transversely of the work-out opening and nearer to said opening than to the feed-in opening; substantially as described.

11. A pot-furnace of tunnel form having transverse pots with closed tops, each pot having a feed-in opening at one side of the tunnel and a work-out opening at the opposite side and bracing projections between the sides of the pots; substantially as described.

12. In a pot-furnace, a pair of pots, each having a projection formed on one side and a brace between the pots coacting with the projections; substantially as described.

820,125. STAIR-CHAIR. WILLIAM J. PENNINGTON, Brooklyn, N. Y. Filed Oct. 31, 1905. Serial No. 285,334.

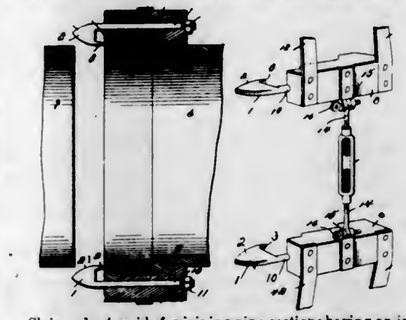
Claim.—1. A folding chair comprising a seat, a back hinged to the seat, a cleat disposed transversely across the back and having a straight edge adapted to contact throughout its length with the tread of a stair, means for adjustably securing said cleat to the back, and means to support the front of the chair.



2. A stair-chair comprising a seat proportioned to bear upon a stair-tread, legs hinged to the seat and arranged to bear upon a lower stair, a back carried by the seat, a cleat extending transversely across the back and positioned to engage the edge of a stair above the seat.

3. A stair-chair comprising a seat proportioned to bear upon a stair-tread, legs hinged to the under side of the seat adjacent the front edge and proportioned to bear upon a lower stair, a button pivoted to the under side of the seat and arranged to bear against and hold the leg members in operative position, a back hinged to the seat, a cleat extending transversely across the back, and vertically movable and means to hold the cleat at the proper position to bear upon the edge of a stair above the seat.

820,126. GUIDE FOR JOINING PIPE-SECTIONS. HIRAM W. PHILLIPS, Quincy, Mass. Filed Sept. 22, 1905. Serial No. 279,704.



Claim.—1. A guide for joining pipe-sections having an inclined face extending inwardly into alinement with the inner face of the opening at one end of said pipe, and means for rigidly supporting said guide upon a pipe.

2. A guide for pipe-sections having an inclined face disposed in alinement and contact with one wall of said pipe, means for rigidly supporting said guide upon a pipe, and means for adjusting said guide longitudinally upon its supporting means.

3. A guide for joining pipe-sections comprising a hooked member having an inclined face and engaging point, a shank extending from said face and provided with adjusting means, and means for supporting said guide upon a pipe.

4. A guide for joining pipe-sections comprising a hooked member having an inclined face, a shank extending from said face, a block for supporting said shank, means for drawing said hooked member into engagement with the end of a pipe, and a band disposed upon a pipe for supporting said block.

5. A guide for joining pipe-sections comprising a hooked member having an inclined face, a shank extending from said face, a block for supporting said shank, a band disposed upon a pipe for supporting said block, and an adjustable connection between the free ends of said band for clamping the same in position.

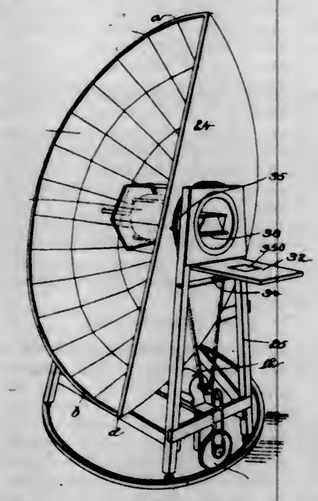
6. A guide for joining pipe-sections comprising a hooked mem-

ber having an inclined face, a shank extending from said face, a block for supporting said shank, a band disposed upon a pipe for supporting said block, a turnbuckle disposed at the free ends of said band, and a removable coupling-pin for connecting said buckle to said band.

7. In a guide for joining pipe-sections, a hooked member having an inclined face at one side thereof, a shank extending inward from said member, a block in which said shank is mounted, and means carried by the inner end of said shank for adjusting said shank in said block to bring said member into contact with a pipe-section.

8. The combination with a pipe-section having a packing disposed within the bell portion thereof, of a plurality of guides in engagement with the packing and having inclined faces disposed in alinement with the inner face of said packing to guide therein a companion section.

820,127. APPARATUS FOR THE UTILIZATION OF SOLAR HEAT. CHARLES H. POPE, Cambridge, Mass. Filed Feb. 13, 1905. Serial No. 245,338.



Claim.—1. In an apparatus for the utilization of solar heat, a hollow axle open at one end for the reception of the material to be heated, and concentrating means mounted on said axle to turn thereabout, the bearings of the concentrating means on the axle being entirely exterior to said concentrating means, and the axle passing through the focal region of the concentrating means.

2. In an apparatus of the class described, a reflector having bearings exterior to the reflecting-surface, a hollow axle passing through the bearings and through the focal region of the reflecting-surface, and means exterior to said reflecting-surface to support the hollow axle.

3. In an apparatus of the class described, a horizontal hollow open-ended reflector-support, a reflector provided with bearings to turn on said support, and means entirely exterior to the reflector for supporting the hollow reflector-support, said hollow support passing through the focal region of the reflector, and the bearings of the reflector on said support being exterior to the reflector.

4. In an apparatus of the class described, a reflector provided with bearings entirely exterior to the reflecting-surface, an open-ended horizontal hollow axle extending through the bearings and projecting beyond the same, and a stand for supporting the hollow axle, said stand being entirely exterior to the reflector and mounted to turn about a vertical axis.

5. In an apparatus of the class described, an open-ended hollow axle, a reflector pivotally mounted on said axle, said reflector having a parti-parabolic reflecting-surface, which merges into a cylindrical surface said axle passing through the focal region of the reflector.

6. In an apparatus of the class described, a stand or support mounted to turn about a vertical axis, an open-ended hollow axle fixedly secured to said stand or support, and a reflector pivotally mounted on said hollow axle, said reflector having a reflecting-surface, part of which is semiparabolic, and part of which is cylindrical.

7. In an apparatus for the utilization of solar heat, a hollow open-ended axle, and a reflector mounted thereon to turn thereabout, said reflector having a side extending at right angles to the axle and the open end of said axle projecting through said side.

8. In an apparatus for the utilization of solar heat, a horizontal hollow open-ended support for a reflector, a reflector mounted on said support to turn thereabout, and having a side extending at right angles to its axis of movement the open end of said support extending through said side, and a door provided with a window or sight-opening to close the open end of the support.

9. In an apparatus for the utilization of solar heat, a horizontal hollow open-ended support for a reflector, and a semiparabolic reflector mounted on said support to turn thereabout, said reflector having a side parallel to its axis through which the open end of the support extends.

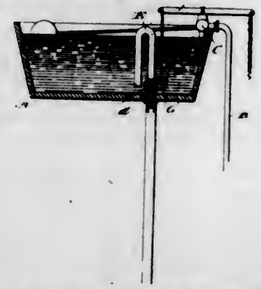
10. In an apparatus for the utilization of solar heat, a horizontal hollow open-ended support for a reflector, a reflector mounted on said support to turn thereabout the bearing of the reflector on said support being exterior to the reflector, said reflector having a side perpendicular to its axis of motion about the support through which the open end of the support extends, and a door for said open end, said door being provided with a window or sight-opening.

11. In an apparatus for the utilization of solar heat, a hollow open-ended reflector-support, a reflector mounted on the support to turn thereabout, said reflector having a parti-parabolic reflecting-surface, and a side extending perpendicular to its axis of motion through which side the open end of the support extends.

12. In an apparatus of the class described, a rotatable reflector having an end or side perpendicular to its axis of motion, and provided with bearings exterior to the reflecting-surface, one of said bearings being on the exterior of said side, a hollow open-ended reflector-support extending through the bearings and through the focal region of the reflector, the open end of said support being exterior to the bearings on the side of the reflector.

13. In an apparatus of the class described, a rotatable reflector having an end or side perpendicular to its axis of motion and provided with bearings exterior to the reflecting-surface, one of said bearings being on the exterior of said side, a hollow open-ended reflector-support extending through the bearings and through the focal region of the reflector, the open end of said support being exterior to the bearings on the side of the reflector, and a stand for sustaining the reflector-support, said stand being entirely exterior to the reflector.

820,128. WATER-CLOSET. MICHAEL J. QUINN, Chicago, Ill. Filed May 4, 1905. Serial No. 258,907.



Claim.—1. In a water-closet, the combination of a flushing-tank, an outlet-pipe, a siphon arranged in the tank with its receiving-leg in direct communication with the interior thereof and its discharge-leg above the outlet-pipe, a chamber connecting the discharge-leg of the siphon and the outlet-pipe and having a water way or passage extending around the discharge end of the siphon and also having an inlet in direct communication with the interior of the tank, a valve controlling the said inlet, and means connected with the said valve through the medium of which the valve may be opened.

2. In a water-closet, the combination of a tank, an outlet-pipe, a siphon arranged to receive from the tank, a chamber connecting one leg of the siphon and the outlet-pipe and having a water way or passage extending around the discharge end of the siphon and provided with a lower contracted portion extending below said end of the siphon and merging into the outlet-pipe and further having an inlet arranged to receive from the tank, and a valve controlling the said inlet.

3. In a water-closet, the combination of a tank, an outlet-pipe, a siphon arranged to receive from the tank, a chamber connecting the siphon and the outlet-pipe and having a water way or passage extending around the discharge end of the siphon and also extending inwardly below said end and merging into the outlet-pipe, and further having an inlet arranged to receive from the tank, and a valve controlling the said inlet.

4. In a water-closet, the combination of a tank, an outlet-pipe, a siphon arranged to receive from the tank, a chamber connecting the siphon and the outlet-pipe and having a water way or passage extending around the discharge portion of the siphon and provided with a lower contracted portion extending inwardly below the lower end of the siphon and merging into the outlet-pipe, and further provided with a valve-seat in its upper side in communication with the interior of the tank, and a valve removably arranged in said seat.

5. In a water-closet, the combination of a tank, a siphon arranged in and adapted to receive from the tank, an outlet-pipe extending downwardly from the tank and arranged below and in alinement with the discharge-leg of the siphon, a chamber connecting the alined siphon-leg and outlet-pipe and having an inlet disposed in the tank in a plane above that of the receiving end of the outlet-pipe and arranged to receive from the tank, a water way or passage extending around the discharge end of the siphon, and a lower contracted portion interposed between said water way or passage and the outlet-pipe.

820,129. CONCRETE-BLOCK-MAKING MACHINE. MARION RICE, Los Angeles, Cal. Filed May 31, 1905. Serial No. 263,149.



Claim.—1. In a molding-machine, the combination with a base having transverse grooves therein and provided with corner-posts erected on the base, corner-posts having their lower ends located in grooves in the base and adjustable therein and bolts extending through opposite corner-posts and providing means for adjusting and bracing them apart, of a body-plate, standards adjustable in grooves in the base and to which the body-plate is removably secured, sliding side boards guided by the corner-posts, and means for moving said side boards simultaneously.

2. In a molding-machine, the combination with a base having transverse grooves therein and provided with corner-posts erected on the base, corner-posts having their lower ends located in grooves in the base and adjustable therein and bolts extending through opposite corner-posts and providing means for adjusting and bracing them apart, of a body-plate, standards adjustable in grooves in the base and to which the body-plate is removably secured, sliding side boards guided by the corner-posts, and means for moving said side boards simultaneously, said means consisting of racks on the side boards, shafts journaled in boxes on the corner-posts, pinions on these shafts engaging the racks, and means for transmitting motion from one shaft to the other whereby they are simultaneously rotated in opposite directions.

3. In a molding-machine, the combination with a base, corner-posts and standards extending upwardly therefrom and supported thereby and means extending across from one corner-post to another for maintaining their relative positions, of side plates guided by and having vertically-sliding connection with the corner-posts, end plates connected with the side plates, means for securing the side plates together, the side plates having vertically-disposed racks on their outer sides, shafts journaled in boxes on the corner-posts and provided with pinions which mesh with the racks, and means for turning the shafts simultaneously in opposite directions whereby to slide the side and end plates in one direction or the other.

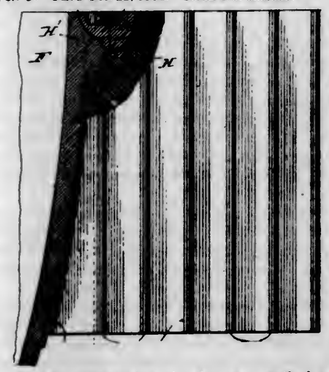
4. In a molding-machine, the combination with a base, corner-posts and standards extending upwardly therefrom and supported thereby and means extending across from one corner-post to another for maintaining their relative positions, of side plates guided by and having vertically-sliding connection with the corner-posts, end plates connected with the side plates, means for securing the side plates together, the side plates having vertically-disposed racks on their outer sides, shafts journaled in boxes on the corner-posts and provided with pinions which mesh with the racks, and means for turning the shafts simultaneously in opposite directions whereby to slide the side and end plates in one direction or the other, and a body-plate secured on the upper ends of the standards and a facing-plate resting on the body-plate.

5. In a molding-machine, the combination with a base, corner-posts and standards extending upwardly therefrom and supported thereby and means extending across from one corner-post to another for maintaining their relative positions, of side plates guided by and having vertically-sliding connection with the corner-posts, end plates connected with the side plates, means for securing the side plates together, the side plates having vertically-disposed racks on their outer sides, shafts journaled in boxes on the corner-posts and provided with pinions which mesh with the racks, and means for turning the shafts simultaneously in opposite directions whereby to slide the side and end plates in one direction or the other, a body-plate secured to the upper ends of the standards, and hollow core-boxes comprising two halves, the side boards of which are V-shaped and provided at their meeting edges with offsets to prevent lateral play of said edges upon each other, said core-boxes extending across from one side plate to the other.

6. In a molding-machine, the combination with a base, corner-posts, standards, a body-plate supported at the upper ends of the standard, of side plates guided by and having sliding connection with end posts, means for moving them up and down, with respect to the body-plate, and core-boxes made in two halves having V-shaped sides, said core-boxes extending from one side to the other and the sections removable from the block formed from both sides thereof.

7. A molding-machine comprising a base; two vertical corner-posts rigidly secured to said base; two movable corner-posts adjustably secured to said rigid corner-posts, each of said corner-posts having vertical grooves in their opposite faces, the grooves in the rigid posts facing each other, and the grooves in the movable posts facing each other; a mold-box having side boards whose ends project into the grooves in said corner-posts; end boards secured between said side boards; an elevated stationary supporting bed-plate; a facing-plate on said bed-plate adapted to form a closure for the opening between the side and end boards; racks secured to said side boards; shafts mounted in bearings secured to the outer sides of said corner-posts; pinions on said shafts adapted to mesh with said racks; and means to cause the simultaneous and equal rotation of said shafts.

820,130. HEATING-FURNACE. DWIGHT S. RICHARDSON, New York, N. Y. Filed Oct. 23, 1904. Serial No. 229,595.

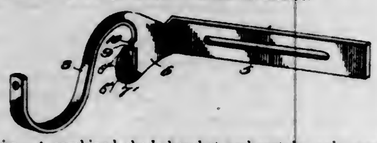


Claim.—1. The combination of a fire-pot, vertical radiating-plates arranged radially with respect to the fire-pot and means for suspending the plates in contact with the outer surface of the fire-pot, said suspending means being connected with the said plates above and on the fire-pot side of the center of gravity thereof, whereby said plates will be held by gravity in close contact with said fire-pot.

2. The combination of a fire-pot, vertical radiating-plates arranged radially with respect to the fire-pot and means interposed between the top portion of the fire-pot and plates for suspending the plates in contact with the outer surface of the fire-pot, said suspend-

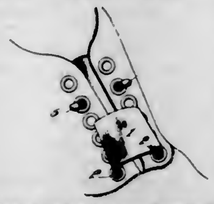
ing means being connected with the plates on the fire-pot side of the center of gravity thereof, whereby said plates will be held by gravity with one edge in close contact with the fire-pot.

820,131. CURTAIN-FIXTURE. RICHARD M. RIGGS, South Norwalk, Conn. Filed Apr. 15, 1905. Serial No. 255,753.



Claim.—A combined shade-bracket and curtain-pole support formed from a single strip of flat metal comprising a slotted base-plate, a clip having corner-prongs for securing the base-plate in position, said clip having a central opening which registers with said slot of the plate, a screw passing through said opening and slot which serves to give the base-plate longitudinal adjustment, a head bent at right angles to the base-plate having a slot therein, a curtain-pole support extending beyond the head and having a twisted bend at its intersection with the head which serves to form a curved flat bearing-seat for the curtain-pole, substantially as specified.

820,132. SHOE-FASTENER. EDWARD D. RITCHEY, Jr., Kahoka, Mo. Filed Oct. 21, 1905. Serial No. 283,861.



Claim.—1. A device of the character described, provided at one end with downwardly and outwardly extending lugs designed to be inserted in the eyelets of shoe-uppers near the vamp of the shoe and also provided at its opposite end with upwardly and laterally extending hooks designed to be inserted in opposite eyelets of the uppers from underneath the same so as to project upwardly through said eyelets.

2. A device of the character described, comprising a plate provided at one edge with downwardly and outwardly extending lugs and provided at its other edge with a tongue formed with lateral arms, said arms being formed with upwardly and outwardly extending hooks, as and for the purpose set forth.

3. A device of the character described, comprising a plate provided at one edge with downwardly and outwardly extending lugs designed to be inserted in a downward direction in two opposite eyelets of shoe-uppers near the vamp of the shoe and said plate being arranged to lie over and upon the two flaps of the uppers, said plate being also provided at its opposite edge with two lateral upwardly-extending hooks designed to be inserted through opposite eyelets in the uppers from underneath the same and projected upwardly through said eyelets.

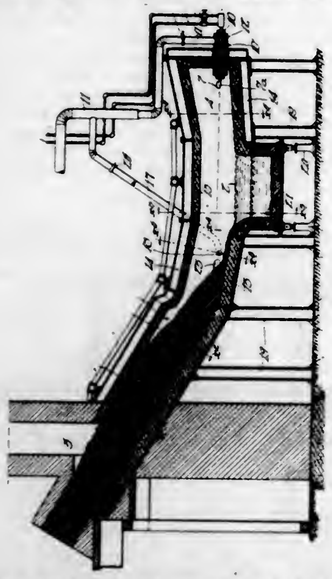
4. A device of the character described comprising a single integral piece of metal or the like embodying a transversely-curved plate provided at one edge with downwardly and outwardly extending lugs and at its opposite edge with a tongue having laterally-extending hooks thereon.

5. A device of the character described comprising a single integral piece of metal or the like embodying a transversely-curved plate provided at one end with downwardly and outwardly extending lugs and at its opposite end with a downwardly and outwardly extending tongue having laterally-extending hooks thereon.

6. A device of the character described comprising a plate provided at one end with downwardly and outwardly extending lugs and at its opposite end with a downwardly and outwardly extending tongue having lateral arms thereon, said arms being provided with upwardly and outwardly facing hooks.

820,133. FURNACE FOR SMELTING ORES. ELFEGO RIVEROLL, Los Angeles, Cal. Filed Oct. 10, 1905. Serial No. 282,097.

Claim.—1. An ore-smelting furnace comprising an inclined ore-chute having a charging-opening at its upper end and an outlet-stack opening from the chute below the upper end thereof, a combustion-chamber communicating with the lower end of the chute and closed to permit pressure to be developed therein, means for supplying combustible under pressure to said chamber, means for supplying air under pressure to said chamber, the inclination of the chute being such as to enable downward movement of the ore therein by gravity, means for arresting such downward movement of the ore at a definite position in the chute, the chute being unobstructed between said arresting position and the ore-charging inlet at the upper end of the chute, to permit the ore to feed by gravity in solid state from the upper end of the chute to said arresting position, and means for drawing away the fused ore at the lower portion of the chute.



2. An ore-smelting furnace comprising an inclined ore-chute having a charging-opening at its upper end and an outlet-stack opening from the chute below the upper end thereof, a combustion-chamber communicating with the lower end of the chute and closed to permit pressure to be developed therein, means for supplying combustible under pressure to said chamber, means for supplying air under pressure to said chamber, the inclination of the chute being such as to enable downward movement of the ore therein by gravity, means for arresting such downward movement of the ore at a definite position in the chute, the chute being unobstructed between said arresting position and the ore-charging inlet at the upper end of the chute, to permit the ore to feed by gravity in solid state from the upper end of the chute to said arresting position, means for drawing away the fused ore at the lower portion of the chute, and a supplementary air-blast means directed into the ore-chute from a point between the combustion-chamber and the stack.

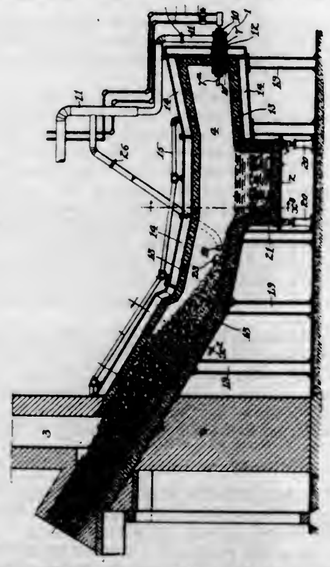
3. An ore-smelting furnace comprising an inclined ore-chute having a charging-opening at its upper end and an outlet-stack opening from the chute below the upper end thereof, a well at the lower end of the chute to receive the fused material from the chute, a combustion-chamber communicating with the lower end of the chute and extending above the well, a burner directed to project its blast through the combustion-chamber over the well and into the lower end of the chute, said combustion-chamber being closed to permit pressure to be developed therein, means for supplying air under pressure to said chamber, the inclination of the lower end of the chute being such as to arrest movement of ore thereon by gravity and the inclination of the chute above said arresting portion being sufficient to enable movement of the ore thereon by gravity so that the ore can be charged into the chute to choke the same and to accumulate on the lower portion thereof in the path of the blast from the burner-jet.

4. An ore-smelting furnace comprising an inclined ore-chute having a charging-opening at its upper end and an outlet-stack opening from the chute below the upper end thereof, a well at the lower end of the chute to receive the fused material from the chute, a combustion-chamber communicating with the lower end of the chute and extending above the well, a burner directed to project its blast through the combustion-chamber over the well and into the lower end of the chute, said combustion-chamber being closed to permit pressure to be developed therein, means for supplying air under pressure to said chamber, the inclination of the lower end of the chute being such as to arrest movement of ore thereon by gravity and the inclination of the chute above said arresting portion being sufficient to permit movement of the ore thereon by gravity so that the ore can be charged into the chute to choke the same and to accumulate on the lower portion thereof in the path of the blast from the burner-jet, and air-blast means opening into the chute at the point thereof of less inclination.

5. An ore-smelting furnace comprising a well, an ore-chute extending upwardly at an inclination from one side of said well and having a charging-opening at its upper end and an outlet-stack between said charging-opening and the well, a combustion-chamber extending over the well and to one side thereof opposite the ore-chute and in line therewith, forming an unobstructed chamber extending from one side of the well and over the well and into the chute on the other side, burner means directed to project its blast through said chamber, over the well and into the lower end of the chute, said lower end of the chute having its floor at such inclination as to arrest movement of solid ore thereon, but to allow melted material to flow therefrom into the well, and the upper part of the chute being of greater inclination to enable ore to pass down thereon until it is arrested by the portion of less inclination so as to present the lower end of the ore in the path of the blast from the burner, the said combustion-chamber being closed to permit pressure to be developed therein, and means for supplying air under pressure to said chamber and directed to project a blast of air in the same direction and along with the burner-blast.

6. In an ore-smelting furnace, an inclined ore-chute, having an upper part of greater and a lower part of less inclination, the upper part of the chute having an ore-charging opening to enable the chute to be choked with ore, and the lower end of the chute being formed with a well and a combustion-chamber closed to retain gas under pressure, and with burner and blast means for supplying and directing a hot blast within said chamber over said well and toward the body of ore in the chute, the fuel and air supply means being regulable to control the oxidizing or reducing action of said blast, and a supplementary air-blast means directed into the ore-chute.

820,134. PROCESS OF SMELTING ORES. ELFEGO RIVEROLL, Los Angeles, Cal. Filed Oct. 12, 1905. Serial No. 282,375.



Claim.—1. The process for treating ores which consists in feeding and supporting the ore on an inclined surface, allowing the ore to move downward by gravity on said surface to a definite position thereon, arresting the downward movement of the ore in such definite position, passing a current of hot gas or gases through said ore to heat and melt the same and allowing the fused ore to drain away from the unfused ore to maintain the latter in condition for passage of the current of gases therethrough and withdrawing the hot gases from the body of ore before they reach the point at which the ore is fed to the inclined surface.

2. The process for treating ore which consists in feeding and supporting the ore on an inclined surface, allowing the ore to move downward on said surface by gravity, arresting the downward movement of the ore at a definite position, applying a blast of hot gases against the lower end of the body of ore, confining said hot gases to cause them to pass upwardly through the body of ore, withdrawing the hot gases from the body of ore before they reach the point at which the ore is fed to the inclined surface and allowing the fused ore at the lower end of the body of ore to drain from the unfused ore.

3. The process for treating ores which consists in charging the ore into an inclined chamber or chute and allowing the ore to feed downwardly into the chute by gravity, applying hot gases under pressure at the lower end of the chute, thereby forcing said gases through the body of ore in the chute, withdrawing the hot gases before they reach the point at which the ore is charged thereinto and applying a supplementary blast of air to the body of ore between the point of application of the hot gases and the point of withdrawal of such gases.

4. The process of treating ores which consists in charging the ore into an inclined chute in such manner as to block or choke the chute, allowing the ore to move downwardly into the chute by gravity, applying a current of hot gases under pressure to the lower end of said body of ore in the chute, confining said current to cause it to force its way through the body of ore and withdrawing the hot gases from the chute before they reach the point at which the ore is charged thereinto.

5. The process for treating ore which consists in feeding and supporting the ore on an inclined surface, allowing the ore to move downward on said surface by gravity, arresting the downward movement of the ore at a definite position, applying a blast of hot gases against the lower end of the body of ore, confining said hot gases to cause them to pass upwardly through the body of ore, withdrawing the hot gases from the body of ore before they reach the point at which the ore is fed to the inclined surface, and applying a supplementary blast of air to the body of ore between the point of application of the hot gases and the point of withdrawal of the hot gases and allowing the fused ore at the lower end of the body of ore to drain from the unfused ore, and maintaining the fused ore in heated condition to enable the metallic portion thereof to separate from the slag.

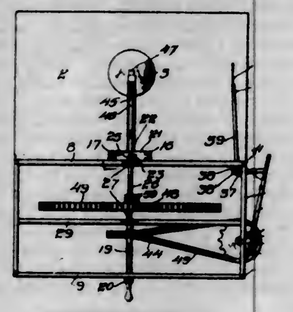
6. The process for treating ore which consists in feeding and supporting the ore on an inclined surface, allowing the ore to move downward on said surface by gravity, arresting the downward movement of the ore at a definite position, applying a burning blast of oil and air against the lower end of the body of ore, confining the hot gases from said blast to cause them to pass upwardly through the body of ore, withdrawing the hot gases from the body of ore before they reach the point at which the ore is fed to the inclined surface, and applying a supplementary blast of air to the body of ore between the point of application of the hot gases and the point of withdrawal of the hot gases and allowing the fused ore at the lower end of the body of ore to drain from the unfused ore.

820,135. CHURNING-MACHINE. FREDDIE F. RUSSELL, Daniel, Miss. Filed Sept. 7, 1905. Serial No. 277,387.

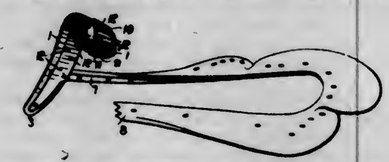
Claim.—1. A device of the character described comprising a base having a frame mounted upon one end, a horizontal shaft mounted in the frame, a guide mounted upon the frame, a slide-block mounted for movement in said guide, an arm connected to the slide-block for connection with a dasher-shaft, a second shaft mounted in the frame, a crank-arm associated with said second shaft, said crank-arm being provided with a series of openings, a pitman, a pin carried by said pitman at one of its ends and interchangeably engaged through the openings in said crank-arm, said pitman being pivoted at the other of its ends to the slide-block to cause vertical movement of the same when the said first-named shaft is rotated.

2. A device of the character described, comprising a base having a frame mounted upon one end thereof, a shaft mounted within the frame, a guide mounted upon the frame, a slide-block mounted in the guide and provided with means for connection with a dasher-shaft, a second shaft mounted above the first-named shaft, a connection between the second shaft and the slide-block, a connection between the first-named shaft and the second-named shaft to cause a

reciprocation of the slide-block upon rotation of the first-named shaft, a rock-shaft and a rotatable shaft mounted within the frame, crank-arms carried by said shafts, a pitman connecting said crank-arm, a connection between the first-named rotatable shaft and the vertical rotatable shaft to operate the said shaft and the said rock-shaft, and a fan-arm connected to said rock-shaft for lateral swinging movement simultaneously with a vertical reciprocation of the slide-block.



820,136. RIDING AND DRIVING SADDLETREE. ROBERT A. C. RUSSELL, Stafford, England. Filed Mar. 11, 1905. Serial No. 249,694.



Claim.—1. In a saddletree, the combination with the head, the top plate and the gullet-plate, of an arch-shaped metal plate or strip fixed in said head, substantially as described.

2. In a saddletree, the combination with the arch-shaped head having a slot formed lengthwise thereof, of a metal plate or strip secured in said slot, substantially as described.

3. In a saddletree, the combination with the arch-shaped head having a slot formed lengthwise thereof, the head-plate and the gullet-plate, of a metal plate or strip secured in said slot between said plates, substantially as described.

4. In a saddletree, the combination with the arch-shaped head having a slot formed lengthwise thereof, the head-plate and the gullet-plate, of a metal plate or strip in said slot and means extending through said head for securing said plates together, substantially as described.

5. In a saddletree, the combination with the arch-shaped head, the head-plate and the gullet-plate, of a metal strip secured in said head between said plates, a boss formed near the center of said strip having an opening therein, and vertically-arranged lugs on the opposite ends of said strip, substantially as described.

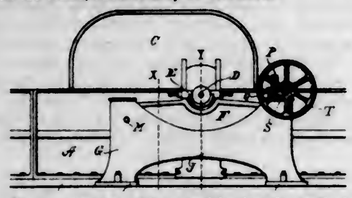
6. In a saddletree, the combination with the head having a slot formed lengthwise thereof, the head-plate and the gullet-plate, of a metal strip secured to one of said plates and extending into said slot, and means for connecting said plates, substantially as described.

7. In a saddletree, the combination with the head having a longitudinal slot extending through the same, of a head-plate, a gullet-plate, metal strips secured to said plates and extending into said slot, and means for securing said plates together, substantially as described.

820,137. LIGHTER-BAR STAND. MORTIMER B. RUST, Fulton, N. Y., assignor to The Dilts Machine Works, Fulton, N. Y. Filed Nov. 9, 1905. Serial No. 286,464.

Claim.—1. In a lighter-bar stand, the combination with a stand comprising the foot-plates, the vertical ends, and the body portion joining the said ends and extending between them, the said foot-plates, ends and body being formed in a single piece, of means for pivotally supporting one end of a lighter-bar upon said stand, and adjusting devices adapted to support the remaining end of the lighter-bar upon the stand, substantially as described.

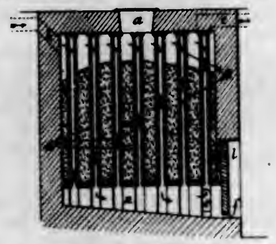
2. In a lighter-bar stand, the combination with a stand comprising the foot-plates, the vertical ends, and the body portion joining the said ends and extending between them, of means for pivotally supporting one end of the lighter-bar upon said stand, and adjusting devices adapted to support the remaining end of the lighter-bar upon the stand, substantially as described.



3. The combination with a stand having the vertical ends and the body portion joining the said ends and extending between them, of a lighter-bar and devices adapted to support it upon the said stand, the said lighter-bar having a middle dropped or downwardly-projecting portion arranged in contact with the inner surface of the said body portion of the stand, as and for the purpose described.

4. The combination in a beating-engine, of the tub, and a lighter-bar stand having vertical ends and a body portion joining the said ends and extending between them, the said vertical ends of the lighter-bar stand being constructed and arranged to support the said stand independently of the said tub, substantially as described.

820,138. ORE-ROASTING FURNACE. IGNAZIO SANFILIPPO, Casteltermini, Italy. Filed Sept. 10, 1903. Serial No. 173,541.



Claim.—1. In an ore-roasting furnace, two divided and superposed compartments and hollow pillars extending from the lower through the upper compartment and perforated throughout their length.

2. In an ore-roasting furnace, two divided and superposed compartments, and hollow pillars extending from the lower through the upper compartment and having transverse openings at the top of the upper compartment.

3. In an ore-roasting furnace, two divided and superposed compartments, hollow pillars extending from the lower through the upper compartment and perforated throughout their length, and means for introducing gaseous currents to the upper compartment.

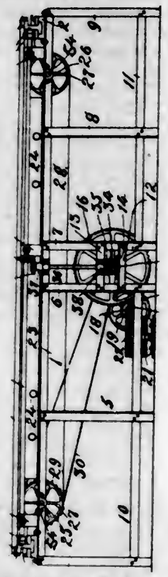
4. In an ore-roasting furnace, two divided and superposed compartments, hollow pillars extending from the lower compartment and through the upper, and having transverse openings, and means for introducing gaseous currents into the upper compartment and discharging the same through the lower compartment.

5. In an ore-roasting furnace, two divided and superposed compartments, and hollow pillars exteading upward through the compartment containing the ore to be treated and perforated throughout their entire length.

6. In an ore-roasting furnace, an upper and a lower compartment the former containing the ores to be treated, and hollow transversely-perforated pillars traversing the same from top to bottom, and an under compartment communicating with the hollows of the said pillars and means for introducing gaseous currents into the upper compartment and discharging the same through the lower compartment.

820,139. BALL-ROLLING MACHINE. ADDISON T. SAUNDERS, Akron, Ohio, assignor of one-half to Frank A. Seiberling, Akron, Ohio. Filed Nov. 20, 1905. Serial No. 288,196.

Claim.—1. A machine of the class described comprising a constantly-traveling instrumentality, means for loosely confining articles thereon, means for operating said confining means whereby said articles are prevented from progressive movement on said instrumentality but are constantly rotated on constantly-changing axes by the movement of said instrumentality.



2. A machine of the class described comprising a constantly-traveling instrumentality, means for loosely confining articles thereon, means for independently operating said confining means and means for controlling the temperature of said articles during their confinement.

3. A machine of the class described comprising a constantly-traveling instrumentality, means for loosely confining articles thereon, and means for reciprocating said confining means transversely to the movement of said instrumentality.

4. A machine of the class described comprising a constantly-traveling instrumentality, means for loosely confining articles thereon, means for reciprocating said confining means transversely to the movement of said instrumentality, and means for controlling the temperature of said articles during their confinement.

5. The combination in a machine of the class described, of a constantly-traveling instrumentality, means for imparting motion to said instrumentality, means for loosely confining articles on said instrumentality and means for actuating said confining means.

6. A machine of the class described comprising in combination a constantly-traveling instrumentality, means for imparting motion to said instrumentality, means for loosely confining articles on said instrumentality, and means for imparting a transverse reciprocal movement to said articles on said instrumentality during their confinement.

7. A machine of the class described, comprising in combination a constantly-traveling instrumentality, means for imparting motion to said instrumentality, means for loosely confining articles on said instrumentality, means for imparting a transverse reciprocal movement to said articles during their confinement, and means for controlling the temperature of said articles when on said instrumentality.

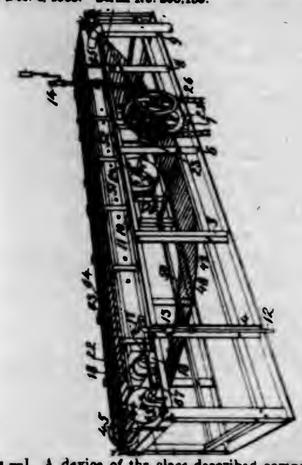
8. The combination in a device of the class described, of a temperature-controlling means, a conveying-belt arranged to travel along one face of said first-named means, and means to reciprocate articles across said belt.

9. The combination in a device of the class described, of a temperature-controlling means, a conveying-belt arranged to travel along one face of said first-named means, means to impart a continuous movement to said belt, and means to reciprocate articles across said belt.

10. The combination in a device of the class described, of a temperature-controlling means, a member arranged to support articles within the influence of said first-named means, and an openly-divided horizontal frame arranged to reciprocate said articles across said supporting means.

11. The combination in a device of the class described, of a temperature-controlling means, a member arranged to convey articles in juxtaposition to said first-named means, means to reciprocate said articles across said member, and means to raise and lower said reciprocatory means.

820,140. BALL-ROLLING MACHINE. ADDISON T. SAUNDERS, Akron, Ohio, assignor of one-half to Frank A. Seiberling, Akron, Ohio. Filed Dec. 4, 1905. Serial No. 290,159.



Claim.—1. A device of the class described comprising a temperature-controlling means, means to sustain articles within the influence of said temperature-controlling means, said sustaining means being capable of a simultaneous longitudinal and transverse reciprocal motion, whereby said articles are constantly rotated on different axes.

2. A device of the class described comprising a temperature-controlling means, means to sustain articles within the influence of said temperature-controlling means, said sustaining means being capable of a simultaneous longitudinal and transverse reciprocal motion, whereby said articles are constantly rotated on different axes, and means for loosely confining articles while so sustained.

3. A device of the class described comprising a temperature-controlling means, means to sustain articles within the influence of said temperature-controlling means, said sustaining means being capable of a simultaneous longitudinal and transverse reciprocal motion, and independent means to feed articles over said sustaining means.

4. A device of the class described comprising a temperature-controlling means, means to sustain articles within the influence of said temperature-controlling means, said sustaining means being capable of a simultaneous longitudinal and transverse reciprocal motion, means to feed articles over said sustaining means, and means for loosely confining said articles while so fed.

5. A device of the class described comprising a temperature-controlling means, means to sustain articles within the influence of said temperature-controlling means, said sustaining means being capable of a simultaneous longitudinal and transverse reciprocal motion, means to feed articles over said sustaining means, and means for loosely confining said articles in operative relation with said sustaining means while being fed thereover.

6. A device of the class described comprising a temperature-controlling means, a belt arranged to travel within the influence thereof, means to impart a simultaneous longitudinal and reciprocal motion to said belt whereby said articles are constantly rotated on different axes and means for loosely confining articles thereon.

7. A device of the class described comprising a temperature-controlling means, a belt arranged to travel within the influence thereof, and guides for loosely confining the movements of articles whereby said articles are constantly rotated on different axes while fed over said belt.

8. A device of the class described comprising a temperature-controlling means, a belt arranged to travel within the influence thereof, means to impart to said belt a simultaneous longitudinal and reciprocal motion, means to feed articles over said belt, and means for loosely confining said articles in their transit thereover.

9. A device of the class described comprising a temperature-

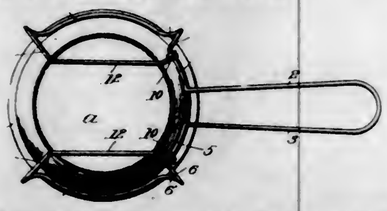
controlling means, a belt arranged to travel within the influence thereof, means to impart to said belt a reciprocal motion, means to feed articles over said belt, and means for loosely confining said articles during their transit thereover.

10. A device of the class described comprising a conveying means, means for rotating articles sustained on said conveying means, means for loosely confining articles on said conveying means, and means to control the temperature of articles while sustained on said conveying means.

11. A device of the class described comprising a conveying means, means for imparting to said conveying means a simultaneous longitudinal and reciprocal motion, whereby articles sustained thereon are constantly rotated on different axes.

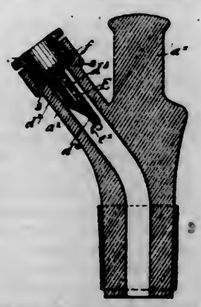
12. A device of the class described comprising a conveying means, means for imparting to said conveying means a simultaneous longitudinal and reciprocal motion, a feeding device to feed articles over said conveying means, means for loosely confining articles on said conveying means, and means to control the temperature of said articles while on said conveying means.

820,141. PLATE, PAN, OR POT LIFTER. WILLIAM L. SCHAFER, Star, Ill. Filed Oct. 2, 1905. Serial No. 281,058.



Claim.—A device of the character described, comprising a single piece of material bent intermediate its ends to form spaced handle members, the inner end of each of said members being directed outwardly and then upwardly and forwardly upon a compound curve to form spaced clamping members, the outer ends of said clamping members being directed downwardly beneath the plane of the handle members and then directed beneath the aforesaid clamping members to form supporting members and then directed upwardly for engagement with the aforesaid outwardly-directed portions of the handle members adjacent the inner ends of the clamping members.

820,142. VALVE FOR VENTS. BERNHARD SCHLEGEL, New York, N. Y. Filed Oct. 20, 1904. Renewed Sept. 13, 1905. Serial No. 279,049.



Claim.—1. A valve for vents, comprising a body provided with a longitudinal opening or bore and with perforations connecting said opening or bore with one side of said body, means for attaching said body in a vent, and a flap or tongue adapted to cover said perforations.

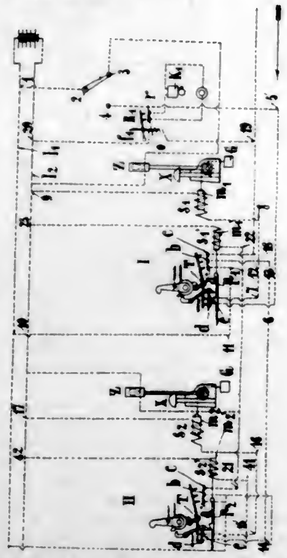
2. A valve for vents, comprising a body provided with a longitudinal opening or bore and with perforations connecting said opening or bore with one side of said body, a head at one end of said body for attaching the same in a vent, and a flap or tongue attached at one end to said body adjacent said head and adapted to cover said perforations, said body being provided with means for retaining the opposite end of said flap or tongue.

3. A valve for vents, comprising a body provided with a longitudinal opening or bore and with a flattened face approximately parallel thereto, said body being provided in said face with perforations communicating with said opening or bore, a head at one end of said body for attaching the same in a vent, and a flap or tongue attached adjacent said head and adapted to cover said perforations, said body being provided at the end opposite said head with means for retaining the opposite end of said flap or tongue.

4. A valve for vents, comprising a body provided with a valve-seat and an adjacent slitted portion, and a flap or tongue attached at one end to said body for coöperating with said valve-seat and adapted to have the opposite end thereof retained by said slitted portion.

5. A valve for vents, comprising a flat hollow body, a disk-shaped end or head at one end of the same, a slitted extension at the opposite end, said body being provided with a flat perforated valve-seat, and an elastic flap or tongue attached at one end to the valve-seat and provided with a narrow extension-strip for insertion into the slit in said extension.

820,143. RAILWAY SIGNALING AND SAFETY SYSTEM AND APPARATUS. GEORGES M. SCHREIBER, Roubaix, France. Filed Nov. 15, 1904. Serial No. 232,821.



Claim.—1. In an electric signaling system for railways, a track divided between stations into a number of blocks by signals which are normally maintained in position to indicate danger, electrical devices for shifting said signals to safety position, a train-operated contact device in each block, the contact device of the block in which the station is included being normally included in the circuit of the signal-shifting device of that block but cut off when said contact device is operated by the train, and a switch in the station also included in the circuit of said signal-shifting device.

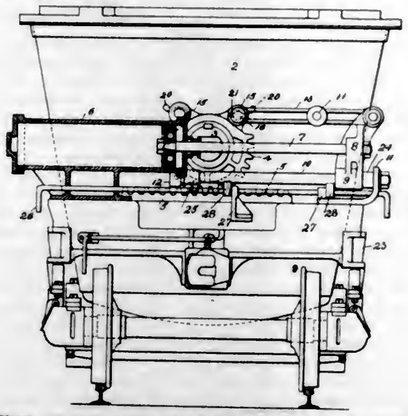
2. In an electric signaling system for railways, a line divided into a number of blocks and having a signal in each block, said signals being normally maintained in a position to indicate danger, electrical devices for shifting said signals to safety position, a train-operated contact device in each block and normally included in the circuit of the signal in the same block, but opening said circuit and thereby permitting the signal to shift back to danger when said contact device is operated by a train, a relay device in the station the circuit of which is closed by the contact device in the station-block in being so operated, and a station-signal actuated by said relay.

3. In an electric signaling system for railways, a line divided into blocks by a plurality of signals normally set to indicate danger, electrically-operated means to shift each signal to a position to indicate safety, a contact device in each block and each embodying: an intermediately-pivoted lever adapted to be rocked by the train, three contacts carried at one end of said lever and in electrical connection with each other, two contacts carried at the opposite end of said lever and in electrical connection with each other, but not with said first-mentioned contacts, fixed contacts to coöperate with all of said movable contacts, and means for normally maintaining said two

movable contacts in engagement with their corresponding fixed contacts; electrical means for returning said lever to normal position after actuation by the train, a main circuit, an electrical connection between one of said three fixed contacts and said circuit, a connection between another of said set of three contacts in the same contact device and one of the fixed contacts of the contact device in the block in advance, an electrical connection between the third of said three contacts and the electrical returning means of the contact device at the immediate rear and also with said main circuit, an electrical connection between one of said two fixed contacts in each contact device with the signal-operating device in the same block and also with the main circuit, and an electrical connection between the second of said two fixed contacts in each contact device with one of the set of three contacts of the contact device in the preceding block.

4. In an electric signaling apparatus for railways, a plurality of signals arranged along the track and normally set to indicate danger, electrically-operated means to shift each signal to a position to indicate safety, a train-operated contact device in each block, the contact device of the station-block being normally included in a circuit openable and closable by the station-master and serving when actuated by the train to open said circuit so that the same cannot be closed from the station, a relay device in said station included in a circuit which is closed when said contact device in the station-block is actuated, a station-signal in the circuit of said relay, and electrical connections between said contact devices whereby when one is actuated the signal in the block in advance is switched in and moved to indicate safety.

820,144. DUMPING-CAR. ERWIN C. SHERMAN and WILLIAM W. MCKELVEY, Youngstown, Ohio, assignors to The William B. Pollock Company, Youngstown, Ohio, a Corporation of Ohio. Filed Mar. 9, 1905. Serial No. 249,175.



Claim.—1. A tipping car having a stationary motor, a cross-head actuated thereby, and a link connected with the cross-head and having two points of connection with the trunnion; substantially as described.

2. A tipping car having a motor with its stationary portion stationary at all times, the movable portion of the motor having connections arranged to tilt the car, and means for adjusting the connections to different relative positions while the stationary motor portion remains in its fixed position; substantially as described.

3. A rolling and tipping car having a motor with its stationary part stationary at all times, the movable portion of the motor having connections arranged to tilt the car, and means for adjusting the connections to different relative positions; substantially as described.

4. A tipping car having a movable cross-head, a link pivoted to the cross-head and having a plurality of points of connection to the trunnion, and means for moving the cross-head endwise; substantially as described.

5. A tipping car having a movable cross-head, a link pivoted to the cross-head and having a plurality of points of connection to the trunnion, means for moving the cross-head endwise, and means for locking the car-body in vertical position; substantially as described.

6. A tilting car or ladle having a horizontally-extending pivotal link connected to its trunnion above the axis of rotation, and connections for moving said link in a general horizontal direction; substantially as described.

7. A rolling and tilting car having a trunnioned body, a reciprocating element and a pivoted link connection from said element leading to the trunnions above the axis of rotation, and a motor having its stationary parts stationary at all times, the connections being arranged to tilt the car in either direction; substantially as described.

8. A tilting car having a trunnioned body and an actuating connection comprising a reciprocating element and a pivotal link extending therefrom and leading to the trunnion above the axis of rotation and arranged to be shifted to change its connection to the trunnions; substantially as described.

9. A rolling and tilting ladle supported on trunnions, a stationary motor, a link connected to one of the ladle-trunnions and having two points for connection with the trunnion, and a connection between the motor and the link arranged to either push or pull the link to tilt the ladle in opposite directions, without moving the stationary portion of the motor; substantially as described.

10. A ladle-car having a trunnioned ladle, a motive cylinder having one part stationary and a movable bar connected to a cross-head and a link extending from the cross-head and having shiftable connection with the trunnions, the stationary part of the motor remaining in its fixed position during shifting of the link connection; substantially as described.

11. A ladle-car having a movable cross-head with a shiftable link connected to the trunnions, and locking means arranged to engage the cross-head to lock the ladle upright when arranged for tilting in either direction; substantially as described.

12. A ladle-car having a trunnioned ladle, a cross-head having a lock with a shifting connection to the trunnions, and a tilting shaft having latches arranged to lock the cross-head with the ladle upright, when arranged for tilting in either direction; substantially as described.

13. A ladle-car having a motive cylinder with one element stationary, a cross-head connected to the movable element, and a link pivoted to the cross-head and having two points of connection either of which may be removably connected to the trunnion; substantially as described.

14. A car having a tilting ladle mounted on trunnions, a motive cylinder having one element stationary at all times, a cross-head connected to its movable element, and a link connected to the cross-head and pivoted to the trunnion above its center of rotation, said link having two interchangeable points of connection; substantially as described.

820,145. COMBINED MOP HEAD AND WRINGER. JACOB S. SHOBE, Columbus, Ohio, assignor to William S. S. Rodgers, Columbus, Ohio. Filed June 23, 1905. Serial No. 266,589.



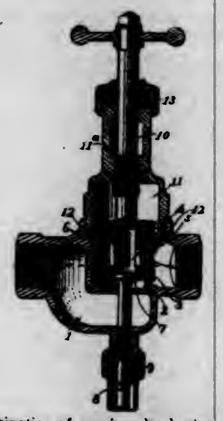
Claim.—1. In a mop head and wringer, an open metalliic frame provided with inwardly-extending projections, a mop-cloth-supporting bail removably engaging with the projections, a handle connected with the frame, and means for supporting one end of a mop-cloth and twisting the same carried by the handle.

2. In a mop head and wringer, an open metallic frame provided with inwardly-projecting lugs, a bail for supporting one end of a mop-cloth having removable engagement with the lugs, a handle-bar pivotally connected with the frame, a crank-hanger supported from the handle-bar, and a crank-shaft supported in the hanger having an open looped end adapted to receive and support the other end of the mop-cloth.

3. In a mop head and wringer, the combination with an open metallic mop-frame having a grooved under side and provided with inwardly-projecting lugs and a handle-bar pivotally connected to the frame, of a wire bail removably engaging with the lugs of the metallic frame, an open crank-hanger supported from the mop-handle, and a crank-shaft supported in the hanger and having a loop on its end.

820,146. DRAIN-VALVE FOR RADIATORS. FRANK A. SIMONDS, Grand Rapids, Mich., assignor of one-third to Clara D. Burnop, Albany, N. Y. Filed May 6, 1904. Renewed Sept. 11, 1905. Serial No. 278,034.

Claim.—1. In a valve, a main valve having a central opening, means for opening and closing said main valve, and an independently-adjustable valve to partially or wholly close the opening in the main valve when the main valve is seated and independently supported by the case.



2. The combination of a main valve having a central opening, an auxiliary valve to partially or wholly close said opening when the main valve is seated, and independently adjustable, a disk connected to the main valve, a valve-stem attached to the disk, and a tubular screen surrounding the disk and valve and attached thereto.

3. The combination of a valve-body, a valve therein and having a central opening, an auxiliary valve to partially or wholly close said opening when the main valve is seated, and independently adjustable, a disk above the main valve and connected thereto, a tubular screen surrounding the disk and valve and attached thereto, a chamber in the body to receive the screen and closely surrounding the same, and means for moving the screen into the chamber.

4. The combination of a valve-body having a seat opposite the lower side of the inlet-opening, a valve having a central opening and engaging said seat, an auxiliary valve to partially or wholly close said opening when the main valve is seated and independently adjustable, a disk above the valve and connected thereto, a screen surrounding the disk and valve and attached thereto, a stem connected to the disk to raise and lower the disk together with the screen and valve, and a chamber above the body to receive the disk and screen.

5. In a valve, a body having inlet and exit openings and a seat opposite the lower side of the inlet-opening, a valve to engage said seat and having a central opening, a valve to partially or wholly close said central opening when the main valve is seated, oppositely-projecting stems attached to the respective valves, and arranged in axial alinement, a screw-thread and gland for each stem, and means for rotating said stems.

6. In a valve, a body having an upwardly-facing seat, a main valve to engage said seat and having a central opening and a downwardly-facing seat, an upwardly-projecting stem on the valve and extending through the top of the body, a drain-valve to engage the seat in the main valve and partially or wholly close the said opening when the main valve is seated, a downwardly-projecting stem on the drain-valve and extending through the bottom of the body, and means for independently adjusting the valves.

820,147. **PLOW ATTACHMENT.** FLETCHER SMITH, Mertens, Tex., assignor of one-half to Joe Vane Smith, Mertens, Tex. Filed Apr. 20, 1905. Serial No. 256,094.

Claim.—1. In a plow attachment, an inverted-U-shaped frame having detachable axles, wheels thereon, spaced parallel bars connected to said frame, a vertically and laterally shiftable coupling-section mounted between said bars for detachably connecting the plow, toothed segments carried by said frame, levers connected to the respective segments and to the coupling-section for vertically and laterally moving the same, and catch devices carried by the lever for engaging the segments to lock the coupling-section in an adjusted position.

2. In a plow attachment, an inverted-U-shaped frame having detachable axles, wheels thereon, spaced parallel bars connected to said frame, a vertically and laterally shiftable coupling-section mounted between said bars for detachably connecting the plow, toothed segments carried by said frame, levers connected to the respective segments and to the coupling-section for vertically and laterally moving the same, catch devices carried by the lever for engaging the segments to lock the coupling-section in an adjusted position, and a detachable means for elevating and lowering one of the wheels.



3. In a plow attachment, sections having detachable axles, wheels on the latter, an inverted-U-shaped frame connected to the sections, spaced parallel bars connecting said sections, a shiftable coupling-section in the space between the bars for detachably connecting the plow, a frictional wheel supported by the bars and forming a guide for said shiftable section, means for shifting the latter, and means for raising and lowering the plow-beam.

4. In a plow attachment, sections having detachable axles, wheels thereon, means for vertically adjusting one of said axles, an inverted-U-shaped frame connected to said sections, bars arranged in parallelism for connecting the sections, a coupling-section supported between the bars, a friction-wheel for the coupling-section, a rod carried by the coupling-section, a shiftable block engaging the rod, means connected to the block for actuating the same, and independent means for raising and lowering the beam of the plow.

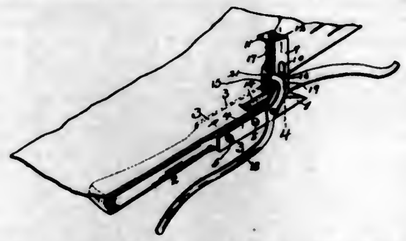
5. In a plow attachment, an inverted-U-shaped frame having socket-sections for detachably receiving wheeled axles, spaced parallel bars connected to said frame, a coupling device shiftable between said bars, a frictional wheel for the coupling device and adjustably connected to the bars, toothed segments carried by the said frame, levers pivotally connected to the said segments and to the coupling device for actuating the latter, means carried by the levers for engaging the toothed segments to lock the coupling device in an adjusted position, and independent means connected to the frame and one of the axles for adjusting the same.

6. In a plow attachment, an inverted-U-shaped frame having spaced parallel bars, a frictional wheel adjustably mounted between said bars, a shiftable coupling device straddling said frictional wheel and detachably connected to the plow at one end thereof, a shiftable means engaging the other end of said coupling device for moving the same in a lateral direction, and means for raising and lowering said coupling device.

820,148. **LEATHER-CUTTING MACHINE.** JUDD SMITH, Cleveland, Ohio. Filed Oct. 3, 1905. Serial No. 281,206.

Claim.—1. In a machine of the character indicated, a body portion, a handle secured to said body portion, a standard, a presser-foot mounted in said standard, a spring arranged to hold said presser-foot against the upper surface of said body portion, a cutting-blade arranged at the side of said presser-foot and means for adjusting said cutting-blade vertically so as to bring a new portion of the cutting-blade in contact with the material which is being cut.

2. In a machine of the character indicated, a body portion, bolts passing through said body portion, a plate supported by said bolts, springs arranged between said plate and the side of said body portion, a standard secured to said plate, a presser-foot mounted in said standard, springs for holding said presser-foot against the surface of said body portion, means for lifting said presser-foot, a cutting-blade arranged at the side of said presser-foot and means for adjusting said cutting-blade vertically.



3. In a machine of the character indicated, a body portion, a handle secured to said body portion, a plate, bolts for securing said plate to said body portion, springs arranged between the plate and the side of said body portion, a standard arranged on said plate and provided with a vertical slot and a horizontal flange at its upper end, a presser-foot, a stem secured to said presser-foot and arranged to extend through the flange on said standard, an arm secured to said stem and extending through the slot in the standard, a spring arranged between said arm and said flange, and a lever secured to the body portion and provided with a cam-shaped end arranged to engage with the arm on the presser-foot, substantially as described and for the purpose set forth.

820,149. **PACKER.** GEORGE A. SPANG, Butler, Pa. Filed Feb. 17, 1906. Serial No. 301,586.



Claim.—1. As an article of manufacture, a rubber packer-sleeve, a device carried by the sleeve for detachably connecting with the packer-frame, and flexible reinforcements secured to said device and embedded in the rubber sleeve.

2. As an article of manufacture, a rubber packer-sleeve, an annular device at the end of the sleeve for detachably connecting with the packer-frame, and flexible reinforcements secured to said device and embedded in the rubber sleeve.

3. As an article of manufacture, a rubber packer-sleeve, an annular securing device at the end of and partially embedded in the rubber sleeve, and flexible reinforcements embedded in the sleeve and secured to the embedded portion of said device.

4. As an article of manufacture, a rubber packer-sleeve, an annular device at the end of the sleeve for detachably connecting with the packer-frame, and strips of flexible material extending longitudinally of and embedded in the rubber sleeve and secured to said device.

5. As an article of manufacture, a rubber packer-sleeve, an annular device at the end of the sleeve and embedded therein, said device having a series of transverse openings, and flexible strips embedded in the rubber sleeve and secured in said openings.

6. As an article of manufacture, a rubber packer-sleeve, annular devices at opposite ends of the sleeve for detachably connecting with a packer-frame, and flexible reinforcements extending longitudinally through and embedded in the sleeve and secured at their opposite ends to said annular devices.

7. The combination with a tubular packer-body, and a collar therefor, of a rubber sleeve embracing the body, an annular device at the end of the sleeve and embedded therein, means for securing the devices to said collar, and flexible reinforcements embedded in the rubber and secured to said annular device.

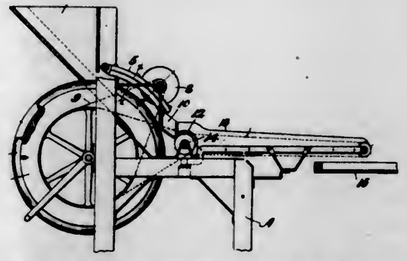
8. The combination with a packer-body and a collar therefor having a reduced inner end, of a rubber sleeve embracing the packer-body, an annular device secured to the end of the sleeve and fitting said reduced portion of the collar, and flexible reinforcements embedded in the rubber and secured to said annular device.

9. The combination with a tubular packer-body, and a collar therefor reduced exteriorly at its inner end, a rubber sleeve embracing the tubular body, an annular device carried by the sleeve and adapted to be secured to the reduced portion of the collar, said device having a reduced inner portion embedded in the rubber, the outer portion of the edge of the sleeve abutting against the unreduced portion of said annular device and the inner portion of the edge abutting against the extremity of the collar, and flexible reinforcements embedded in the rubber sleeve and secured to the embedded reduced portion of the annular device.

10. The combination of a tubular packer-body, separated collars therefor—one movable with relation to the other, a rubber sleeve, an annular device carried by each end of the sleeve, means for securing said devices to the packer-collars, and flexible reinforcements embedded in the rubber sleeve and secured to said annular devices.

11. The combination of a tubular packer-body, collars therefor—one movable with relation to the other, a rubber sleeve, annular devices carried by opposite ends of the sleeve, means for securing said devices to the packer-collars, and flexible strips extending longitudinally of and embedded in the rubber sleeve and at their opposite ends secured to said annular devices.

820,150. **FRUIT CUTTING, PITTING, AND SPREADING DEVICE.** ABEL M. STRIPLIN, Escondido, Cal. Filed Apr. 24, 1905. Serial No. 257,196.



Claim.—1. In an apparatus for separating fruit from pits, the combination of a receiver or hopper having a bottom delivery-opening, cutters between which the fruit is delivered from the receiver and caused to roll, elastic cushions fixed upon the sides of the cutters to guide and support the passing fruit, and means for separating the pit from the fruit after the cutting has been effected.

2. In an apparatus for separating fruit from pits, the combination of a revoluble cutter, means for delivering the fruits singly into contact with its edge, cushions upon each side of the cutter upon which the two sides of the fruit are supported, a spreader located in line with the cutter, and a saw disposed in the path of the fruit and by which the stone is ejected from the fruit.

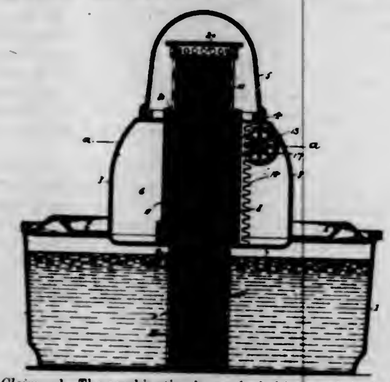
3. An apparatus for pitting fruit, said apparatus comprising a cutter by which the fruit is split, cushions located upon each side of the cutter, means for delivering fruits singly and causing them to roll over the cutter-surface whereby they are split, a revoluble saw in the path of the fruit and beneath which the cut fruit is passed, said saw acting to disengage the pit from the fruit, and distributers upon which the separated fruit is delivered.

4. In a fruit-pitting apparatus, the combination of a revolable knife having cushions upon each side, means for delivering fruits singly in line with the knife, a second knife and spreader concentric

with the first-named knife, a saw revoluble through a slot in the spreader and acting to reject the pit after the fruit is cut, distributing-belts located upon each side and beyond the saw and guides by which the fruit is delivered upon said belts

5. A fruit pitting and distributing apparatus having in combination a revoluble cutter with cushions located upon each side, a stationary cutter and spreader concentric with and above the revoluble cutter, said stationary cutter having cushions located upon each side and in line with the revoluble cushions, a saw revoluble in line with the interior cutter to engage and eject the pits after the fruit is cut, divergent guides located below the saw, distributers consisting of endless traveling belts upon the inner ends of which the halves of the fruit are delivered, and from the outer ends of which the fruit may be discharged.

820,151. ALCOHOL-LAMP. GILBERT T. SUTTERLEY, Bordentown, N. J., assignor to himself, and George H. Sutterley, Philadelphia, Pa. Filed Feb. 3, 1905. Serial No. 243,992.



Claim.—1. The combination in an alcohol-lamp, of the font, the wick-tube, a sliding regulator-sleeve outside of said tube, said font having a chamber hermetically sealed from the alcohol-chamber and containing the regulator-sleeve, operating mechanism for said sleeve extending into said sealed chamber including a rotatable spindle operatively connected to the sleeve, a tube extending completely through the chamber and serving as a bearing for said spindle, there being an opening in the tube through which connection is made between the spindle and the regulator-sleeve, with means for retaining the spindle in the tube, substantially as specified.

2. The combination, in an alcohol-lamp, of the font having a dome thereon, a plate hermetically sealing the bottom of the outside of said dome and having an upwardly-projecting tube, a wick-tube fitted internally to the latter, and a sliding regulator-sleeve, mounted externally upon said projecting tube, and having at the top an inwardly-projecting rib which contacts with the wick-tube, substantially as specified.

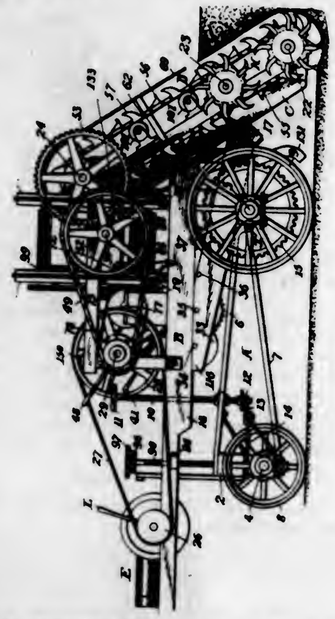
3. The combination, in an alcohol-lamp, of the wick-tube, the regulating-sleeve having a rack thereon, a spindle forming a pinion to engage said rack, and having a reduced and threaded stem beyond said pinion, and a plug engaging said stem, substantially as specified.

4. The combination, in an alcohol-lamp, of the font having a dome above the same, the wick-tube, the regulating-sleeve having a rack thereon, a tube passing through the dome and cut away for the reception of said rack, a spindle having its bearing in one end of said tube and having a pinion for engaging said rack, and a threaded stem beyond said pinion, and a plug fitted to the other end of the tube and engaging said stem, substantially as specified.

820,152. EXCAVATING AND DITCHING MACHINE. JAMES K. SWEENY, Pueblo, Colo. Filed Dec. 20, 1905. Serial No. 293,811.

Claim.—1. The combination in an excavating apparatus, of a frame, wheels supporting the same, and a second frame extending over the first and supporting the working parts and pivoted on the front axle of the running-gear frame to permit the forward end of the supporting-frame to be raised and lowered, the pivotal point being about midway of the weight of the frame and apparatus, substantially as set forth.

2. The combination with the running-gear frame of an excavating apparatus, of a frame supporting the excavating and driving means and above and pivoted to the running-gear frame so as to be counterbalanced on opposite sides of the pivotal point, with means whereby the upper frame may be tilted and secured in position, substantially as set forth.



3. The combination with the running-gear frame, of a frame supporting the driving and excavating means, horizontally pivoted to the running-gear frame, and the excavating means provided with an inclined frame projecting downward and forward at the lower end, substantially as set forth.

4. The combination with the running-gear frame, of a frame supporting the driving and excavating means, horizontally pivoted to the running-gear frame, and the excavating means provided with an inclined frame projecting downward and forward at the lower end and carrying a series of chains with excavating appliances, substantially as set forth.

5. The combination with the frame of an excavating apparatus, of an excavating device consisting of an inclined frame projecting forward at its lower end and downward below the main frame, and carrying a series of endless chains and excavating devices, with excavating-wheels arranged between the chains, substantially as set forth.

6. The combination in an excavating device, of a central portion and side portions, the latter constructed and arranged to excavate at a less depth than the central portion, substantially as set forth.

7. The combination with the supporting-frame of an excavating apparatus, of shafts 22, 23 carrying sprocket-wheels, excavating chains and appliances supported by the sprocket-wheels, and other chains and excavating appliances arranged at the sides of the first to excavate to a less depth than the first, substantially as set forth.

8. The combination with the main frame and inclined excavating-frame with its chains and buckets, of a shield extending over the upper portion of the excavating appliances, substantially as set forth.

9. The combination with the main frame and excavating chains and buckets, of a conveyer extending transversely of the apparatus, and an inclined shelf arranged to receive the material discharged from the excavating devices and to discharge it onto the conveyer, substantially as set forth.

10. The combination with the main frame and excavating chains and buckets, of a conveyer extending transversely of the apparatus, an inclined shelf arranged to receive the material discharged from the excavating devices and to discharge it onto the conveyer, and a guard 71, substantially as set forth.

11. The combination with the main frame and excavating chains and buckets, of a conveyer extending transversely of the apparatus, an inclined shelf arranged to receive the material discharged from the excavating devices and to discharge it onto the conveyer, and guards 71 and 72, substantially as set forth.

12. The combination with the main frame and working appliances of an excavating apparatus, of a running-gear frame provided with axles and wheels, the rear axle pivoted to the frame and provided with a toothed arc, and a hand-shaft having a pinion engaging said arc, substantially as set forth.

13. The combination with the running-gear frame and the main frame pivoted thereto and carrying the operating parts of an excavating apparatus, of screw-shafts connected to but turning in the running-gear frame and passing through nuts upon the main frame and geared to turn together, substantially as set forth.

14. The combination with the running-gear frame and the main frame pivoted thereto and carrying the operating parts of an excavating apparatus, of screw-shafts connected to but turning in the running-gear frame and passing through pivoted nuts upon the main frame and geared to turn together, whereby the main frame and the excavating apparatus thereon is adjusted to excavate to the desired vertical grade-lines, substantially as set forth.

15. The combination with the wheel-supported frame and operating devices of an excavating apparatus, of means whereby a portion of the material excavated may be discharged in front of either of the forward wheels, for the purpose set forth.

16. The combination with the wheel-supported frame and excavating and elevating devices of an excavator, of conduits arranged to receive a portion of the material excavated and each extending to a position in front of the front wheels, substantially as set forth.

17. The combination with the wheel-supported frame and excavating and elevating devices of an excavator, of conduits arranged to receive a portion of the material excavated and each extending to a position in front of one of the front wheels, and wings adjustable to permit or prevent the material from being received by the conduits, substantially as set forth.

820,153. CAR-DOOR. CHARLES W. TEFFT, Toledo, Ohio. Filed Sept. 25, 1905. Serial No. 279,878.



Claim.—1. In a car, a door-frame having runways provided in its sides flush with the outer edges thereof and continued under the car-roof, said runways each having a break or recess in the outer sides thereof adjacent the top of the door-frame whereby the upper edge of a door mounted in the runways is enabled when closed to abut the under side of the top of the door-frame flush with its outer edge and completely close the door-opening, a door mounted for movement in said runways and comprising a series of flexibly-connected sections, and means for normally retaining the top door-sections within the recesses or breaks in the runways and flush with the outer edge of the door-frame.

2. In a car, a door-frame having vertical runways in its sides, which runways curve inwardly adjacent the top of the door-frame and continue in horizontal position under the car-roof, said runways being formed with an outer recess at their point of curve to enable the top of a door to abut against the top of the door-frame in flush position with its outer edge, a door mounted for movement in said runways and having its outer face flush with the outer side of the door-frame and comprising a series of flexibly-connected sections, means for normally retaining the top door-section within the recesses in the runways and in abutment with the under side of the top of the door-frame in flush position with the outer side of said frame when the door is closed whereby to completely close the door-opening, and means for locking the top door-sections against an inward movement,

3. A car-door, comprising a series of flexibly-connected sections of sufficient number to entirely close a door-opening, a door-casing, runways for permitting a raising of the door to horizontal position directly under the car-roof, said runways having depressions or recesses formed in their outer portion adjacent to the top of the door-opening whereby the upper edge of the top door-section may abut against the under side of the top of the door-casing and in flush position with its outer surface, means for normally retaining the top door-sections in erect position, and means for counterbalancing the weight of the door as it is raised.

4. In a car a door-casing having runways therein which continue under the car-roof, a door mounted for movement in said runways and comprising a series of flexible sections standing flush with the outer side of the car when the door is closed, the upper one of which fits closely under the upper portion of the door-casing when the door is closed whereby to completely close the door-opening, means for yieldingly retaining the top door-sections in the said position, and means for locking the top door-sections against an inward movement and consequent opening of the door.

5. In a car, the combination with the door-casing having runways therein for a door to slide in, said runways continuing under the car-roof and having an outward break or recess adjacent the top of the casing and extending thereunder, of a door comprising a series of flexibly-connected sections mounted for movement in said runways and adapted when closed to stand flush with the outer side of the car and to have the top sections thereof seat within the recesses or breaks in the runways and the upper edge of the top section abut the top of the door-casing whereby to completely close the door-opening, means for yieldingly retaining the top door-sections within said recesses or breaks, and means for locking the top door-sections against an inward depression whereby to prevent an unauthorized opening of the door.

6. In a car, a door-frame having runways provided in its sides and continued under the car-roof, said runways having a break or depression in one side thereof adjacent to the top of the door-frame, a door mounted for movement in said runways and comprising a series of flexibly-connected sections, means for normally moving the top door-sections within the depressions or breaks in the runways, and means within the car and controlled from without the same for locking the top sections in such position.

7. In a car, a door-frame, runways provided in said frame and extending under the car-roof, a door movable in said runways and comprising a series of flexibly-connected sections adapted to entirely close the door-opening when the door is in closed position, means within the car at the top of the door for locking it in closed position, and means extending from said locking means and through the lower portion of the door whereby an opening of the door may be effected.

8. In a car, the combination with the door-frame, of guideways provided thereon and diverging from the upper part thereof under the car-roof, a door comprising a series of flexibly-connected sections mounted for movement in said guideways, means within the car for locking the top section of the door in abutment with the top of the door-frame, means without the lower portion of the door for controlling said locking means, and means for sealing the lock-controlling means against being tampered with.

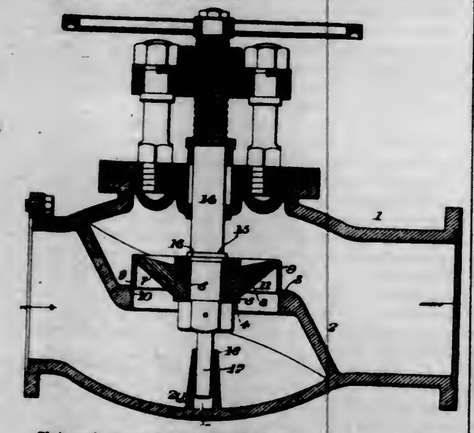
9. In a car, the combination with the door-frame, of guideways provided therein and continuing therefrom at an angle, a door movable in said guideways comprising a series of flexibly-connected sections the upper one of which abuts against the top of the door-frame when the door is closed, a top lock on the door for locking the uppermost sections thereof to the door-frame, a cord or the like for operating said lock having one end extended through the bottom of the door.

10. In a car, the combination with the door-frame, of guideways provided therein and continuing therefrom at an angle, a door movable in said guideway comprising a series of flexibly-connected sections the upper one of which abuts against the top of the door-frame when the door is closed, a top lock on the door for locking the uppermost sections thereof to the door-frame, a cord or the like for operating said lock having one end extended through the bottom of the door, and means without the door for sealing the end of the cord.

11. In a car, the combination with the door-frame, of guideways provided therein and continuing at an angle from the upper part thereof, a flush door movable in said guideways comprising a series of flexibly-connected sections the upper one of which normally abuts against the under side of the top of the door-frame when the door is closed whereby to prevent a raising of the door, and means controlled from without the car for locking the top door-sections against lateral movement relative to the door-frame.

12. A door-casing having vertical guideways in its sides, which guideways continue at an angle from the upper part of the casing, a door comprising a series of flexibly-connected sections mounted in said guideways with its outer surface in substantially flush position with the outer side of the casing when in closed position and having its upper section normally in abutment with the under side of the top of the casing in vertical alinement with its major portion whereby a raising of the door is prevented except when the top section is pressed inwardly, and means for locking the top door-section against such inward depression.

820,154. VALVE. NATHAN P. TOWER, Philadelphia, Pa. Filed July 13, 1905. Serial No. 269,288.



Claim.—1. As an improved article of manufacture, a valve having an outer, depending, resilient ring with its acting edge beveled to engage an interior surface of a valve-seat, said ring being of such thickness that the pressure of the fluid being throttled will force said ring against the valve-seat.

2. As an improved article of manufacture, a valve comprising a body portion, and an outer, depending, flexible ring with its free end extending toward the valve-seat and having a pressure-chamber intermediate said ring and said body, the lower portion of said ring being adapted to contact at its free end with an interior surface of the valve-seat.

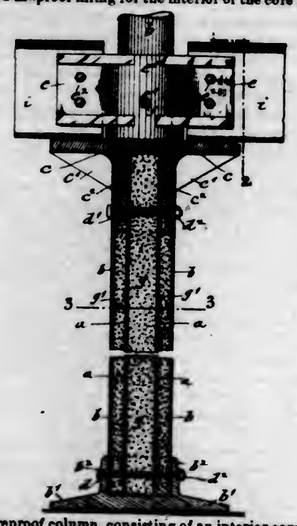
3. In a device of the character named, a casing having a valve-seat, a valve, means for actuating said valve and an outer resilient ring depending from said valve with its free end bearing upon an interior surface of the valve-seat, whereby a pressure-chamber is formed within said ring, and said ring having its free end extended toward the valve-seat, said ring being of such thickness that the fluid being throttled will force said ring against said seat.

4. The combination of a body, a disk valve having an internal pressure-chamber, and an outer, depending, resilient ring with its free end bearing upon an interior surface of the valve-seat, a valve-stem for said valve, said pressure-chamber being adapted to receive the pressure of the fluid being throttled, whereby the pressure of the valve against its seat caused by the valve-stem is increased by the pressure of the steam, gas or other fluid underneath the valve.

5. In a device of the character described, the combination of a valve-casing having a valve-seat therein, a valve comprising a body 5 having an upwardly-inclined inner wall 8 and a depending, outer, flexible ring 9, whereby a pressure-chamber 11 is formed between said body and ring, said chamber being adapted for the reception of the pressure medium, whereby said ring with its free end bearing upon an interior surface of the valve-seat is pressed against the valve-seat proportionately to the distortion of the latter under pressure.

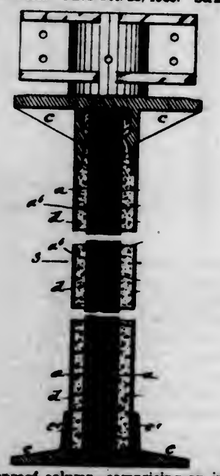
820,155. COLUMN AND COLUMN-CAP. JOHN J. TREMDOEN, New York, N. Y., assignor to American Column Company, Brooklyn, N. Y., a Corporation of New York. Filed Oct. 23, 1905. Serial No. 283,913.

Claim.—1. A fireproof column, consisting of an interior core or shell, an exterior shell or jacket, a base for supporting the lower ends of the core and jacket, a column-cap provided with a socket for the upper ends of the core and jacket, transversely-extending bolts for connecting the walls of the base and column-cap with the core and jacket, and a fireproof filling for the interior of the core and jacket.



2. A fireproof column, consisting of an interior core or shell, an exterior shell or jacket, a base for supporting the lower ends of the core and jacket, a column-cap provided with a socket fitting over the upper end of the core and an exterior circumferential shoulder for the exterior jacket or shell, the wall of said socket being reduced in thickness at its lower portion and spaced from the wall of said interior core means for attaching the core and jacket to the sockets of the base and column-cap, and a filling of fireproof material for the interior of the core and jacket.

820,156. FIREPROOF COLUMN. JOHN J. TREMDOEN, New York, N. Y., assignor to American Column Company, Brooklyn, N. Y., a Corporation of New York. Filed Oct. 23, 1905. Serial No. 283,916.



Claim.—A fireproof column, comprising an interior pillar or core embodying superposed upright sections of cross-shaped cross-section having lateral webs at their meeting ends, bolts for connecting said adjacent webs, a shell or jacket surrounding said pillar or core, a column-cap to which the upper end of said jacket is attached and which is supported on the upper end of said pillar or core, a base for said pillar and jacket, and a fireproof filling between said pillar and said jacket.

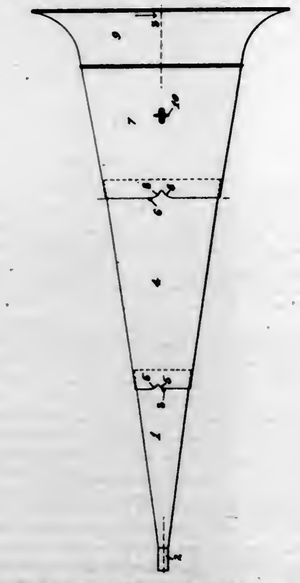
820,157. WAGON-BRAKE. HENRY C. WARNUTH, Landis Store, Pa. Filed Apr. 27, 1905. Serial No. 257,974.

Claim.—1. In combination, a brake-block having a curved rear wall and sides forming a chamber open at the front, the sides terminating respectively below and above the upper and lower ends of the rear wall, wear-strips secured to said upper and lower ends of the rear wall and extending beyond the sides and provided with forwardly-projecting inclined or dovetailed lugs, and a brake-block seated against said strips and closing the open side of the chamber, said block having inclined or dovetailed sides engaging said lugs, said sides being cut away adjacent their lower ends to form stop-shoulders resting upon the lower set of lugs.



2. The combination with a supporting-spindle, of a hollow or chambered brake-block comprising a rear and side walls, said side walls having openings for the passage of the spindle, wear-strips at the top and bottom of the block and having forwardly-projecting inclined or dovetailed lugs, a brake-shoe having inclined or beveled sides slidably engaging said lugs, said sides being cut away adjacent their lower ends to form shoulders resting on the lower set of lugs, and a spring disposed in the block and fixed intermediately to the spindle and having its ends bearing against the shoe above and below said spindle.

820,158. PHONOGRAPH-HORN. PETER WEBER, Orange, N. J., assignor to New Jersey Patent Company, West Orange, N. J., a Corporation of New Jersey. Filed Feb. 21, 1905. Serial No. 246,669.



Claim.—1. In a device of the character described, a tapered section whose limiting edge is inclined with respect to a plane perpendicular to its axis and a second tapered section having a projection adapted to press against said inclined edge, whereby relative rotary movement of the sections causes relative longitudinal movement thereof and locks them rigidly together, substantially as set forth.

2. In a device of the character described, a tapered section whose limiting edge comprises a plurality of shoulders each of which is inclined with respect to a plane perpendicular to its axis and a second tapered section having a plurality of projections adapted to press against said inclined shoulders, whereby relative rotary movement of the sections causes relative longitudinal movement thereof and locks them rigidly together, substantially as set forth.

3. In a device of the character described a tapered section provided with a pair of shoulders oppositely inclined with respect to a plane perpendicular to its axis and a second tapered section having a projection adapted to press against either of said inclined shoulders whereby relative rotary movement of the sections in either direction causes relative longitudinal movement thereof and locks them rigidly together, substantially as set forth.

4. In a device of the character described, a tapered section whose limiting edge comprises a pair of shoulders oppositely inclined with respect to a plane perpendicular to its axis and a second tapered section having a projection adapted to press against either of said inclined shoulders, whereby relative rotary movement of the sections in either direction causes relative longitudinal movement thereof and locks them rigidly together, substantially as set forth.

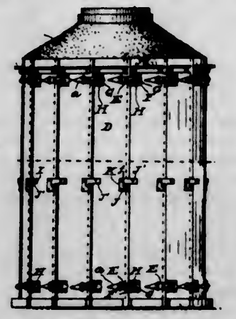
5. In a device of the character described, a tapered section whose limiting edge comprises a plurality of pairs of shoulders oppositely inclined with respect to a plane perpendicualr to its axis and a second tapered section having a plurality of projections adapted to press against similarly-inclined shoulders of each pair, whereby relative rotary movement of the sections in either direction causes relative longitudinal movement thereof and locks them rigidly together, substantially as set forth.

820,159. PROCESS OF MAKING FORMATES. JULIUS WEISE, FRIEDRICH RIECHE, and ADOLF BARTH, Oestrich-on-the-Rhine, Germany, assignors to The Firm of Rudolph Koepp & Co., Oestrich-on-the-Rhine, Germany. Filed Apr. 11, 1904. Serial No. 202,661.

Claim.—1. The herein-described process of manufacturing formates, which consists in making an aqueous solution of an alkali, heating the aqueous solution to a high temperature in a closed vessel, admitting thereto carbon monoxid and by agitation causing the two agents to act upon each other.

2. The herein-described process of manufactuing formates, which consists in making an aqueous solution of an alkali, heating the aqueous solution to a temperature above the boiling-point in a closed vessel, admitting thereto carbon monoxid, and by agitation causing the two agents to act upon each other.

820,160. FORM FOR MOLDING CONCRETE CISTERNS. JONAS H. WIEST, Indianapolis, Ind. Filed Sept. 30, 1905. Serial No. 280,745.



Claim.—1. A cistern-form including side sections, a rafter-ring having apertures therein, rafters comprising each a stationary part for engagement with a side section and a relatively movable part having a projection insertible into the apertures of the rafter-ring, and means for fixing the two parts of the rafter one to the other.

2. A cistern-form including side sections provided with rafter-supports, a rafter-ring having apertures therein, rafters comprising each a stationary part having a lug for engagement with a rafter-support and a relatively movable part telescoping into the stationary part and provided with a projection insertible into the apertures of the rafter-ring, and a pin removably connected with the two parts of the rafter.

3. A cistern-form including side sections provided near the tops thereof with rafter-supports, a rafter-ring having apertures therein, rafters each comprising a stationary part having a lug for engagement with the rafter-supports, and a relatively movable part having a projection provided with a keyhole and insertible into the apertures of the rafter-ring, and keys for insertion into the keyholes.

4. A cistern-form including side sections, a rafter-ring, contractible rafters for engagement with the side sections and also with the rafter-ring, roof-plates having gages for engagement with the side sections, and roof-plates having spring-clips for engagement with adjacent roof-plates.

5. A cistern or silo form including interior side sections, gages secured to the side sections and having stationary coupling devices attached thereto, movable coupling devices attached also to the side sections for engagement with the stationary devices of the gages of adjacent sections, spacing-blocks secured to the sections, and rafter-supports attached to the spacing-blocks.

6. In a cistern-form, the combination of side sections each having a foot attached thereto provided with a pin-hole, spacing-blocks secured to the side sections, supports attached to the spacing-blocks, and pins insertible through the holes in the feet of the side section and into the spaces between the spacing-blocks, a rafter-ring, a plurality of rafters, and a plurality of roof-plates.

7. In a cistern-form, the combination of side sections, a rafter-ring, a plurality of rafters, a plurality of roof-plates for the rafters having each a plurality of spring-clips secured thereto formed with a portion thereof curved against the roof-plate, and a plurality of roof-plates having each a spring-clip and also a gage secured thereto.

8. In a cistern-form, the combination of side-form sections, a rafter-ring having openings in the wall thereof, rafters comprising each a stationary part having a pin-hole therein and having also a bearing end for engagement with a side section, a pair of wings attached to the stationary part and having bearing ends also for engagement with a side section, a relatively movable part having a pin-hole therein and telescoping with the stationary part and provided with a projection insertible in an opening of the rafter-ring, and a pin insertible into the pin-holes of the two parts of the rafter.

9. In a cistern-form, the combination of side-form sections, a rafter-ring, rafters comprising each a stationary part for connecting with a side section and having a wing adjustably attached thereto also for connecting with a side section, a relatively movable part telescoping with the stationary part for engagement with the rafter-ring, and a pin connected removably with the two parts of the rafter.

10. In a cistern-form, the combination of a plurality of inner side sections, rafter-supports attached to the side sections, a rafter-ring having inclined sides and apertures therein, rafters having each a projection insertible into the apertures of the rafter-ring and having also a lug for engagement with the rafter-supports, a bail connected to the rafter-ring, roof-plates to be supported by the rafters, and neck-forms to be supported by the roof-plates.

11. In a cistern-form the combination of side-form sections provided each with a rafter-support, a rafter-ring having inclined sides and apertures therein, rafters each comprising a stationary part for connection with a rafter-support and a part telescoping in the stationary part and having a projection insertible in either one of the apertures of the rafter-ring, and roof-plates to be supported by the rafters.

12. In a cistern-form, the combination of side-form sections, a rafter-ring, a plurality of rafters, and a plurality of roof-plates to be supported by the rafters and provided each with a gage attached to the under side thereof for engagement with the side-form sections.

13. In a cistern-form, the combination of side-form sections, a rafter-ring, a plurality of rafters for connecting to the side-form sections and the rafter-ring, and a plurality of roof-plates to be supported by the rafters and provided each with a spring-clip secured at one end thereof thereto and having a portion thereof curved against the roof-plate for engaging an adjacent roof-plate.

14. In a cistern-form, the combination of side-form sections, with couplers therefor, a rafter-ring, rafter-supports attached to the side-form sections, rafters each comprising a part for engagement with the rafter-supports and having a pin-hole therein, a part movably connected with the stationary part for engagement with the rafter-ring and having a pin-hole therein, and a pin insertible into the pin-holes of the two parts of the rafter.

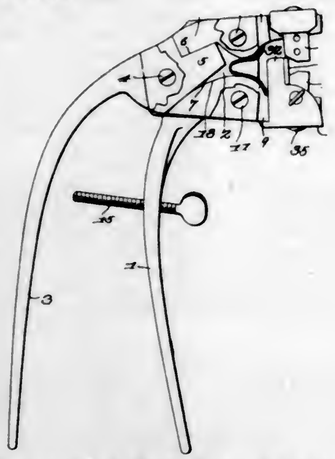
15. In a cistern or silo form, the combination of a rafter comprising a part having a pin-hole therein and provided with a lug on an end thereof, a part telescoping with the other part and having a pin-hole therein and provided at an end thereof with a projection having a keyhole therein, a pin insertible in the pin-holes of the two parts, and a key insertible in the keyhole.

16. In a cistern or silo form, the combination of a plurality of rafters having each a telescoping part provided at an end thereof with a projection having a keyhole therein, a rafter-ring having the wall thereof inclined to the planes of the ends of the ring and provided with openings in the wall thereof receiving the projections of the rafter parts, and keys in the keyholes of the projections and bearing against the inclined wall of the ring, the axes of the rafters being approximately at right angles to the contiguous inclined wall of the ring.

17. In a cistern or silo form, the combination with a plurality of telescoping rafters each having a part provided with a projection at an end thereof provided with a keyhole, of a rafter-ring having openings in the wall thereof receiving the projections removably and provided with a bail for the temporary support thereof, and keys removably inserted in the keyholes of the projection bearing against the wall of the ring.

18. In a cistern or silo form, the combination of a plurality of lower inner side sections with couplers therefor, rafter-supports attached to the side sections, a plurality of upper inner side sections with coupless therefor and resting on the rafter-supports and having rafter-supports attached thereto, a rafter-ring having openings therein, rafters having lugs engaging the rafter-supports of the upper inner side section and having also projections inserted removably in the openings of the rafter-ring, roof-plates supported by the rafters, and neck-forms supported by the roof-plates, with outer side sections arranged about the lower and upper inner side sections.

820,161. SAW-SET. HARRY WISE, Houston, Tex., assignor of one-half to Andrew H. Gembler, Houston, Tex. Filed June 29, 1905. Serial No. 267,609.



Claim.—1. A saw-set embodying coöperating yieldably-supported anvils, coöperating plungers carried by the anvils, abutments adapted to engage the plungers, means for adjusting one anvil longitudinally, with respect to the other, and means for forcing the anvils together.

2. A saw-set embodying coöperating jaws, mating anvils yieldably supported on the jaws, plungers piercing the anvils and adapted to engage the jaws when the latter are moved to closed position, means for adjusting one of the anvils longitudinally with respect to the other, and means for operating the jaws.

3. A saw-set embodying coöperating jaws, mating anvils yieldably mounted on the jaws, plungers carried by the anvils and adapted to engage the jaws when the latter are moved to operative position, a guide secured to one of the jaws, means carried by the guide for adjusting one of the anvils longitudinally with respect to the other, and means for operating the jaws.

4. A saw-set embodying coöperating jaws, mating anvils yieldably mounted on the jaws, plungers carried by the anvils and provided with inclined faces, a guide mounted for lateral movement on one of the jaws and provided with terminal arms embracing said jaws, and adjusting-screws threaded in the arms and adapted to engage one of the anvils for adjusting the same longitudinally with respect to the other.

5. A saw-set embodying coöperating jaws, anvils yieldably mounted on the jaws and movable in a plane at substantially right angles thereto, plungers carried by the jaws and extending through the anvils, a laterally-adjustable guide mounted on one of the jaws and provided with angularly-disposed arms embracing said jaw, means carried by the arms for adjusting the adjacent anvil longitudinally with respect to the opposite anvil, and means for clamping the guide in adjusted position.

6. A saw-set embodying coöperating jaws provided with transverse recesses defining inwardly-extending retaining-lips, an anvil mounted for reciprocation in the recess of one of the jaws, a mating anvil mounted in the recess of the adjacent jaw and adjustable longitudinally with respect to the opposite anvil, plungers carried by the anvils and adapted to bear against the walls of said recesses, means for yieldably supporting the anvils in said jaws, and means carried by the anvils and engaging the lips for limiting the reciprocating movement of said anvils.

7. A saw-set embodying coöperating jaws provided with transverse recesses defining inwardly-extending lips, mating anvils yieldably mounted for reciprocation in said recesses and provided with laterally-projecting flanges adapted to engage the lips for limiting the movement of the anvils, plungers carried by the anvils, and flanges secured to the anvils and bearing against the walls of the transverse recesses, one of said anvils being adjustable longitudinally with respect to the other.

8. A saw-set embodying coöperating jaws provided with transverse recesses defining inwardly-extending lips, mating anvils mounted for reciprocation in said recesses and provided with lateral flanges adapted to engage the lips, springs for normally holding the flanges in engagement with the lips, plungers carried by the anvils and having their adjacent ends beveled and their opposite ends bearing against the walls of the recesses, and means for adjusting one of the anvils longitudinally with respect to the other.

9. A saw-set comprising coöperating jaws each provided with a groove having inturned lips, an anvil with outturned flanges mounted in each groove, resilient members within the grooves and disposed to hold the flanges normally in contact with the lips, plungers inserted through the anvils and abutting the bottoms of the grooves, means for moving one anvil and its associated plunger and resilient member longitudinally relative to the other anvil and means for operating the jaws.

10. A saw-set comprising coöperating pivoted jaws each provided with a groove having inturned lips an anvil with outturned flanges mounted in each groove, resilient members within the grooves and disposed to hold the flanges normally in contact with the lips, plungers inserted through the anvils, springs engaging the plungers to hold them against the bottom of the groove and normally within the anvils, a gage secured to one jaw and held from longitudinal movement relative thereto, screws inserted through opposite arms of the gage and abutting opposite ends of one anvil and whereby such anvil may be moved longitudinally together with its associated plunger and resilient members, and means for operating the jaws.

820,162. COMPOSITION FOR ROOFING, PAVING, &c. EDWARD J. YETTER, Denver, Colo. Filed Apr. 12, 1904. Serial No. 202,763.

Claim.—1. A composition of matter for purposes such as described having elaterite and lime sludge as chief ingredients combined in suitable proportions.

2. A composition of matter for purposes such as described containing elaterite, lime sludge, and a suitable oil or flux, combined in suitable proportions.

3. A composition of matter for purposes such as described containing elaterite, lime sludge, and asphaltum or an equivalent, with a suitable oil or flux either incorporated in the asphaltum or as a separate ingredient, combined in suitable proportions.

4. A composition of matter for purposes such as described containing elaterite and lime sludge as chief ingredients combined in proportions substantially as herein set forth.

820,163. COMPOSITION FOR ROOFING, PAVING, &c. EDWARD J. YETTER, Denver, Colo. Filed Apr. 12, 1904. Serial No. 202,764.

Claim.—1. A roofing or paving composition containing elaterite, gilsonite and lime sludge combined in suitable proportions.

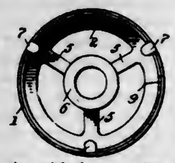
2. A roofing or paving composition containing elaterite, gilsonite and lime sludge combined in suitable proportions, together with a suitable oil or flux.

3. A roofing composition containing elaterite, gilsonite, carbonate of lime, and asphaltum, with a suitable oil or flux either incorporated in the asphaltum or as a separate ingredient.

820,164. SHADE-HOLDER. WILLIAM W. ABBOTT, Ingram, Pa. Filed Dec. 8, 1905. Serial No. 290,927.

Claim.—1. The combination with a fixture, having a supporting-band, inwardly-extending rigid lugs carried by said band, of a ring slidably mounted upon said band, an inwardly-extending rigid lug carried by said ring, a handle carried by said ring, a sleeve supported by said ring, substantially as described.

2. The combination with a fixture having a band, inwardly-extending rigid lugs carried by said band, a ring mounted in said band, arms carried by said ring, a sleeve supported by said arms, an inwardly-extending rigid lug carried by said ring, substantially as described.



3. The combination with the supporting-band of a fixture, and rigid inwardly-extending lugs carried by said band, of a ring movably mounted in said band, a lug carried by said ring, a handle carried by said ring, substantially as described.

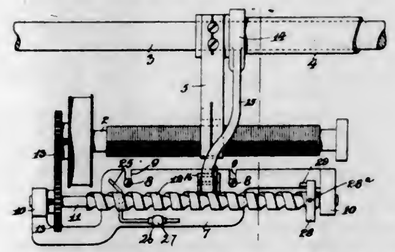
4. The combination with the supporting-band of a fixture, and rigid lugs carried by said band, of a fractional part of a ring mounted in said band, a rigid lug carried by said ring to hold a globe therein, and a handle carried by said ring, substantially as described.

5. In a device of the type described, the combination with a band, inwardly-projecting rigid lugs carried by the band and means carried by the band for attaching the band to a fixture, of a ring supported by the band and revoluble relatively thereto and an inwardly-projecting rigid lug carried by said ring, substantially as described.

6. The combination with a fixture, rigid lugs carried by said fixture, of a ring revolubly mounted upon said fixture, a rigid lug carried by said ring and acting in conjunction with said lugs to retain a globe in engagement with said fixture, substantially as described.

7. In a device for supporting globes or shades, the combination with a member provided with means for attaching the same to a fixture, of inwardly-projecting rigid lugs carried by said member, a revoluble ring mounted on said member, and provided with an inwardly-extending lug, the lugs on the first-named member and the lugs on the ring being adapted when the ring is rotated to be spaced at equidistant points around the ring, substantially as described.

820,165. REPEATING ATTACHMENT FOR PHONOGRAPHS. EDWARD L. AIKEN, East Orange, N. J., assignor to New Jersey Patent Company, West Orange, N. J., a Corporation of New Jersey. Filed Oct. 31, 1905. Serial No. 285,232.



Claim.—1. In a phonograph, the combination of the traveling carriage and means for progressively moving the same when in its operative position, of a rotary lifting member, and a contact member carried by said carriage for engaging the lifting member, said contact member being capable of oscillation on a universal joint, substantially as set forth.

2. In a phonograph, the combination of the traveling carriage and means for progressively moving the same when in its operative position, of a rotary lifting member, and a contact member carried by said carriage for engaging the lifting member, said contact member being capable of oscillation on two axes, one of which is substantially perpendicular to the axis of rotation of the lifting member and the other of which is substantially parallel thereto, substantially as set forth.

3. In a phonograph, the combination of the traveling carriage, and means for progressively moving the same when in its operative position, of a rotary lifting member for effecting the elevation of said carriage, and a contact member traveling with said carriage toward said lifting member, said contact member being capable of oscillation on two axes substantially at right angles to each other, substantially as set forth.

4. In a phonograph, the combination of the traveling carriage and means for progressively moving the same when in its operative

position, of a lifting member for effecting the elevation of said carriage, and a contact member traveling with said carriage toward said lifting member, one of said members being mounted to turn on two axes which are substantially at right angles to each other, and the other member being mounted to turn on an axis substantially parallel to one of said first axes, substantially as set forth.

5. In a phonograph, the combination of the traveling carriage and means for progressively moving the same when in its operative position, of the return-screw and lifting member carried thereby for effecting the elevation of said carriage, and a contact member traveling with said carriage toward said lifting member, one of said members being mounted to turn on two axes which are substantially at right angles to each other and the other member being mounted to turn on an axis substantially parallel to one of said first axes, substantially as set forth.

6. In a phonograph, the combination of the traveling carriage and means for progressively moving the same when in its operative position, of the return-screw and lifting member carried thereby and adjustable along the thread thereof for effecting the elevation of said carriage, and a contact member traveling with said carriage toward said lifting member, one of said members being mounted to turn on two axes which are substantially at right angles to each other and the other member being mounted to turn on an axis substantially parallel to one of said first axes, substantially as set forth.

7. In a phonograph, the combination with the traveling carriage and means for progressively moving the same when in its operative position, of an arm extending from said carriage and provided with a pivot-pin the axis of which is parallel to the direction of movement of the carriage, and a contact-dog provided with upwardly-extending ears loosely fitting on said pin, the bearing-aperture of one of the ears being considerably greater than the diameter of the pin, whereby the dog is capable of a limited oscillation on an axis at right angles to the axis of the pin, substantially as set forth.

8. In a phonograph, the combination with the traveling carriage and means for progressively moving the same when in its operative position, of a contact member carried by said carriage and capable of oscillation on two axes at substantially right angles to each other, said contact member being provided with a shoulder projecting in the direction of travel of said carriage, the material above said shoulder being cut away, substantially as set forth.

9. In a phonograph, the combination with the traveling carriage and means for progressively moving the same when in its operative position, of a rotary lifting member for effecting the elevation of said carriage and a contact member traveling with said carriage toward said lifting member, said contact member being capable of oscillation on two axes substantially at right angles to each other, and said lifting member being adjustable toward and away from said contact member, substantially as set forth.

10. In a phonograph, the combination with the traveling carriage and means for progressively moving the same when in its operative position, of a return-screw and projection carried thereby for effecting the elevation of said carriage, said projection being adjustable along the line of the thread of said return-screw, and a contact member traveling with said carriage toward said lifting member, said contact member being capable of oscillation on two axes substantially at right angles to each other, substantially as set forth.

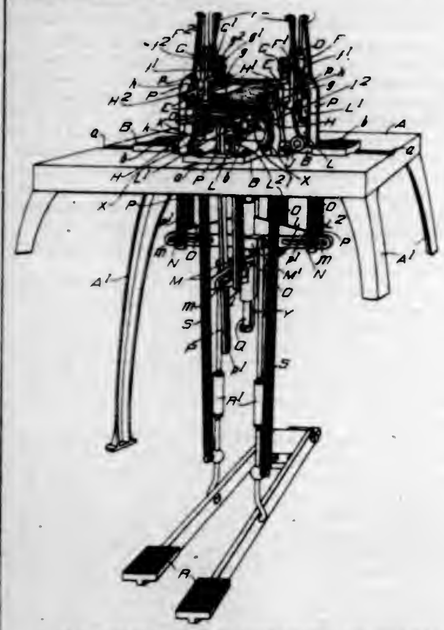
820,166. BOX-COVERING MACHINE. JOSEPH ALGER, Brockton, Mass. Filed May 10, 1904. Serial No. 207,226.

Claim.—1. In a machine for covering paper boxes, a support for the box and covering-paper, side-folders hinged to said support, rolls slidably mounted upon said side-folders, means to swing said folders into position, a second means to operate the rolls, and a single means to furnish movement to said folder and said roll-operating means successively and a yielding connection between said means to furnish movement and said folder-operating means.

2. In a machine for covering paper boxes, a support for a box and covering-paper, side-folders mounted to be moved relatively thereto to fold and press said paper against the side of said box, rolls movably mounted upon said side-folders and means to move said rolls over the inner face of said folders to press the paper against the inside of the box.

3. In a machine for covering paper boxes, a support for the box and covering-paper, side-folders mounted to be moved relatively thereto to fold and press said paper against the side of said box, spring-pressed rolls movably mounted upon said side-folders and means to move said rolls over the inner face of said folders to press the paper against the inside of the box.

4. In a machine for covering paper boxes, a support for the box and covering-paper, side-folders mounted to be moved relatively thereto to fold and press said paper against the side of said box, adjustable rolls movably mounted upon said side-folders and means to move said rolls over the inner face of said folders to press the paper against the inside of the box.



5. In a machine for covering paper boxes, a bed carrying a removable box-support, adjustably-mounted side-folders carrying removable folder-blocks, and extensible edge-turning rolls movably mounted upon said side-folders.

6. In a machine for covering paper boxes, a bed carrying a removable box-support, adjustably-mounted side-folders carrying removable folder-blocks, and spring-pressed extensible edge-turning rolls movably mounted upon said side-folders.

7. In a machine for covering paper boxes, a bed carrying a removable box-support, adjustably-mounted side-folders carrying removable folder-blocks, and spring-pressed extensible edge-turning rolls movably mounted upon said side-folders, said rolls being adjustable.

8. In a machine for covering a paper box, a support for the box and covering-paper, side-folders hinged to said support, edge-turning members slidably mounted upon said folders, a reciprocating slide to move said parts, links connecting said slide, and the folders, and edged turning members, said folder-link including a yielding connection.

9. In a machine for covering paper boxes, a support for the box and covering-paper, side-folders hinged to said support, edge-turning members slidably mounted upon said folders, a reciprocating slide to move said parts, slotted links connecting said slide, and the folders and edge-turning members, and a spring to retain the said slide at the upper end of the slot of said folder-links.

10. In a machine for covering paper boxes, a support for the box and covering-paper, side-folders hinged to said support, edge-turning members slidably mounted upon said side-folders, a reciprocating slide to move said parts, a stud on said slide, links connecting said slide and the folder and edge-turning members, said links being slotted to move thereon and yielding means to restrain the movement of the stud in the folder-link.

11. In a machine for covering paper boxes, a support for the box and covering-paper, side-folders hinged to said support, rolls slidably mounted upon said side-folders, a reciprocating slide to remove said part, said slide having a stud, a link operatively connecting said slide and the folder member, said link being slotted to inclose the said stud, and a yielding connection between said link and said slide.

12. In a machine for covering paper boxes, a support for the box and covering-paper, side-folders hinged to said support, rolls slidably mounted upon said side-folders, a reciprocating slide to move said parts, links connecting said slide and the folder and roll members, said folder-member link having a yielding connection to said slide whereby said slide may continue to move to operate the roll member.

13. In a machine for covering paper boxes, a support for the box and covering-paper, side-folders hinged to said support, edge-turning means slidably mounted upon said side-folders, a reciprocating slide to move said parts said slide having a stud, a link operatively connecting said slide and the folder member, operative connections between said slide and roll members, said folder-member link being slotted to receive said stud and having a yielding connection to said slide whereby said slide may continue to move to operate the roll member after said folder member is closed.

14. In a machine for covering paper boxes, a support for a box and the covering-paper, side-folders hinged thereto, edge-turning means slidably mounted on said side-folders, a spring for pressing said means against the face of said side-folders, means to close the folder and means to operate the edge-turning member.

15. In a machine for covering paper boxes, a support for the box and covering-paper, side-folders hinged thereto, turning-rolls slidably mounted on said side-folders, a reciprocating slide, means connecting said slide and side-folders, to operate the latter, means connecting said slide and the turning-rolls to move said rolls on said side-folders, said folder-connecting means including a yielding member to permit the complete movement of the slide.

16. In a machine for covering paper boxes, a support for the box and covering-paper, side-folders hinged thereto, edge-turning members slidably mounted on said side-folders, means to yieldingly press said members against the face of said folders, a reciprocating slide, means connecting said slide and said side-folders, to operate the latter, means connecting said slide and said edge-turning members to move said member on said side-folder, the folder connecting means including a yielding member to permit the complete movement of the slide.

17. In a machine for covering paper boxes, a support for the box and covering-paper, side-folders hinged thereto, edge-turning members slidably mounted on said side-folders, a reciprocating slide, a stud on said slide, a link having a slot embracing said stud and connecting said slide and side-folder, yielding means to hold said stud in the upper end of said slot, and a link having a slot also embracing said stud and connecting said slide with said edge-turning member.

18. In a machine for covering paper boxes, a support for the box and covering-paper, side-folders hinged thereto, edge-turning members slidably mounted on said side-folders, a reciprocating slide, a slot in said slide and a stud adjustably mounted in said slot, a link having a slot embracing said stud and connecting said slide with said side-folder, yielding means to hold said stud in the upper end of said slot, and a link having a slot also embracing the said stud and connecting said slide with the edge-turning members.

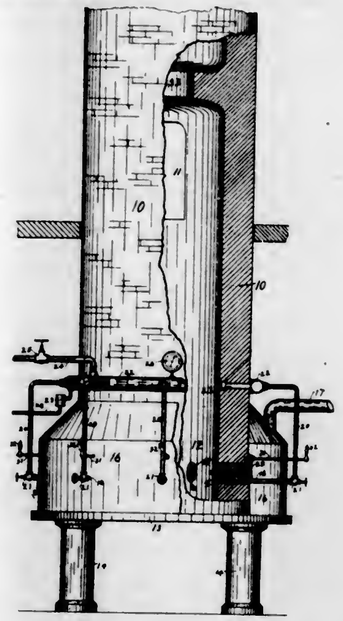
19. In a machine for covering paper boxes, a bed carrying a stationary, removably-mounted support for the bottom of the box and covering-paper attached thereto, adjustable side-folders having removable folder-blocks, mounted to swing relatively thereto to fold and press the covering-paper against the box, and means mounted on said side-folders to turn the paper over the edge of the box.

20. In a machine for covering an extension-edge box, a bed carrying a removable support for the box and covering-paper, adjustable side-folders mounted to move relatively thereto, to fold and press the covering-paper against the box, and removable folder-blocks mounted on said side-folders having portions to press the covering-paper against the side of the box and against the extension edge of the box.

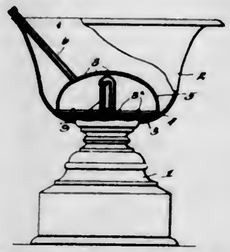
820,167. CUPOLA. WINFIELD S. ANDERSON, Cincinnati, Ohio. Filed Aug. 28, 1905. Serial No. 276,034.

Claim.—1. In a cupola or similar device fitted for using liquid fuel, the combination of a working chamber, a fuel-heating pipe arranged around the wall which surrounds this working chamber and provided with communicating, inwardly-projecting heating-spurs which are embedded into this wall so as to derive heat therefrom, means to supply a hydrocarbon to this pipe and its spurs so as to be preheated therein, burner-nozzles arranged to discharge into the working chamber and feed-pipes connecting them with the fuel-heating pipe.

2. In a cupola or similar device fitted for using liquid fuel, the combination of a working chamber, a fuel-heating pipe around the outside of the same which has inwardly-projecting, communicating pipe-spurs which are embedded in the adjacent chamber-wall for the purpose of supporting the fuel-heating pipe which surrounds this wall so as to derive heat therefrom, means to convey a hydrocarbon to this heating-pipe to be preheated therein, burner-nozzles arranged to discharge into the working chamber and feed-pipes connecting them with the fuel-heating pipe.



820,168. LAWN-VASE. JOHN K. ANDREWS, Elgin, Ill. Filed Dec. 1, 1905. Serial No. 289,886.



Claim.—1. The combination of a lawn-vase having within the bowl thereof a water-reservoir, said reservoir being provided with perforations through which the water passes into the soil.

2. The combination of a lawn-vase having within the bowl thereof a water-reservoir, said reservoir being provided with lower perforations through which the water passes into the soil and upper perforations through the medium of which air is drawn down through the soil.

3. The combination of a lawn-vase having within the bowl thereof a water-reservoir, said reservoir being provided with perforations through which the water passes into the soil and other perforations through the medium of which air is drawn down through the soil, and a trap located within the reservoir.

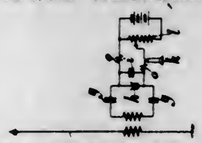
4. In a device of the character described, the combination of a bowl, a dome-shaped member positioned within the bowl so as to provide the same with a reservoir, a supply-pipe for the reservoir, and a trap located within the reservoir.

5. In a device of the character described, the combination of a bowl provided with an upstanding flange on the bottom thereof, a dome-shaped member positioned within the bowl and engaging said

flange, said member providing the bowl with a reservoir, a feed-pipe for the reservoir, and a trap located within the reservoir.

6. The combination of a lawn-vase having the bowl thereof provided with a flange, and a member positioned within the bowl and engaging the flange, said member providing the bowl with a reservoir.

820,169. **RESONANCE-CIRCUIT.** GEORG VON ARCO, Berlin, Germany. Filed Oct. 4, 1905. Serial No. 281,318.



Claim.—1. A resonance-circuit containing a conductor consisting of a stranded wire composed of a plurality of insulated strands the conductive material of each strand being .2 millimeter or less in diameter, substantially as described.

2. A resonance-circuit containing a conductor consisting of a wire formed of a plurality of strands, the conductive material of each strand being .2 millimeter or less in diameter and each strand being coated with an insulating coating or varnish, substantially as described.

3. A resonance-circuit containing a conductor consisting of a plurality of insulated strands the conductive material of each strand being .2 millimeter or less in diameter and means for perceiving the oscillations in said resonance-circuit, substantially as described.

4. A resonance-circuit containing a self-induction coil, said coil consisting of a conductor composed of a plurality of insulated strands of .2 millimeter or less in diameter and means for perceiving the oscillations in the resonance-circuit, substantially as described.

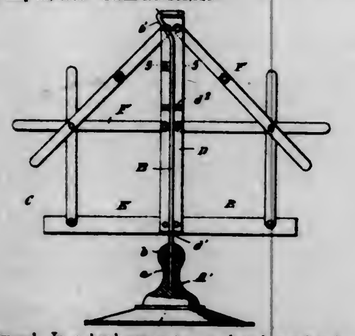
5. In a receiver for wireless telegraphy, a resonance-circuit containing a conductor consisting of a wire composed of a plurality of insulated strands of .2 millimeter or less in diameter, substantially as described.

6. In a receiver for wireless telegraphy, a resonance-circuit containing a conductor consisting of a wire composed of a plurality of insulated strands of .2 millimeter or less in diameter and a detector for perceiving the oscillations in the circuit substantially as described.

7. In a receiver for wireless telegraphy, a resonance-circuit containing a conductor consisting of a wire composed of a plurality of insulated strands of .2 millimeter or less in diameter, a detector for perceiving the oscillations in said circuit and a condenser in parallel with the detector, substantially as described.

8. In a receiver for wireless telegraphy, a resonance-circuit containing an induction-coil consisting of a wire composed of a plurality of insulated strands of .2 millimeter or less in diameter, a detector for perceiving the oscillations in said circuit and a condenser in parallel with the detector, substantially as described.

820,170. **BOOK-SUPPORT.** ENOCH W. BARKER, Woodstock, Ill. Filed May 23, 1905. Serial No. 261,333.



Claim.—1. In a book-support, a socketed member having a notch arranged at an angle with relation to said socket, a rack for holding books, and a supporting-rod for the book-rack having its lower end positioned in said socket and bent to provide an offset to engage in said notch.

2. In a book-support, a socketed member having a notch arranged at an angle with relation to said socket, a rack for holding books having its central bar provided with attaching means, and a supporting-rod for the book-rack having its lower end positioned in said notch, said supporting-rod being secured to the central bar through the medium of said attaching means.

3. In a book-support, a socketed member provided with a notch arranged at an angle with relation to said socket, a rack for holding books having the central bar thereof provided with an eye and a perforated foot-piece, and a supporting-rod for the book-rack having its lower end positioned in said socket and provided with an offset positioned in said notch, said supporting-bar being passed through the perforation of said foot-piece and having its upper end positioned in said eye.

4. In a book-support, a socketed member provided with a notch arranged at an angle with relation to said socket, a rack for holding books having a transverse eye and a perforated foot-piece, and a supporting-rod for the book-rack having its lower end positioned in said socket and provided with an offset positioned in said notch, said supporting-rod being passed through the perforation of said foot-piece and having its upper end disposed horizontally and mounted in said eye.

820,171. **FENCE-POST.** JOHN W. BARNES, Mount Gilead, Ohio. Filed Aug. 23, 1905. Serial No. 275,412.

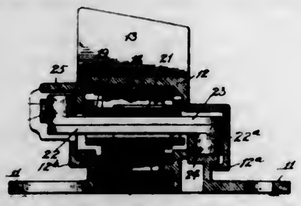


Claim.—1. A fence-post formed of plate metal which is bent longitudinally to produce an angle-post, the bottoms of the sides of the post being bent at substantially right angles thereto and overlapped to form an anchoring-base, the longitudinal edges of the post being provided with angle-notches, the back of the post being provided with perforations between notches, hooked bolts adjustable endwise through certain of the openings, and nuts applied to the bolts and bearing against the back of the post.

2. A fence-post formed of plate metal which is bent longitudinally to form an angle-post, the bottoms of the sides of the post being bent at substantially right angles thereto and overlapped to form an anchoring-base, the longitudinal edges of the post being provided with alined angle-notches, the back of the post being provided with perforations alined between the notches, and fence-fasteners adjustable endwise through the perforations.

3. A fence-post blank provided in its longitudinal edges with transversely-alined wire-receiving notches, there being a longitudinal series of perforations formed through the middle of the blank and located between the notches, one end of the blank being provided with a central longitudinal slit dividing said end of the blank into wings, said wings being provided with perforations disposed to come into alinement when the blank is folded longitudinally to form an angle-post with the wings overlapped.

820,172. **TRUCK SIDE BEARING.** CARL E. BAUER and FRANK L. SUERMIEL, Hammond, Ind., assignors to Simplex Railway Appliance Company, Chicago, Ill., a Corporation of Illinois. Filed Nov. 18, 1904. Serial No. 233,334.



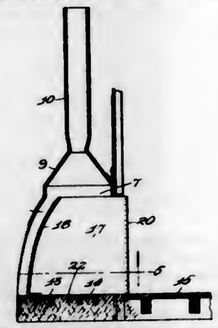
Claim.—1. In a truck bearing in combination, an upper bearing member provided with upstanding brackets to loosely engage the car bolster, a lower bearing member provided with means for positively securing it to a car member, interlocking means on the two bearing members adapted to permit a sliding motion and to prevent a relative vertical movement of such members, and rollers interposed between the members.

2. In combination in a truck bearing, a casing comprising a lower bearing member provided with means for fixing it on a truck and an upper bearing member slidingly attached thereto and provided with means for loosely engaging a car bolster, and rollers inclosed in said casing.

3. In a truck bearing in combination, a casing composed of two slidably attached parts, one part fixed on the truck and one part loosely engaging the car bolster, a set of rollers carried between and engaging said casing parts means for limiting the travel of the parts of the casing, and means for holding the parts of the casing together.

4. In combination in a truck bearing, rollers, and an inclosed casing therefor, said casing composed of two parts slidable on one another and confined together and one of said parts having side brackets to loosely engage and seat the car bolster, whereby the whole bearing may be carried on the truck or bolster and is readily removable from the corresponding member.

820,173. **FIREPLACE.** SAMUEL BENDER, Shreveport, La. Filed Dec. 1, 1904. Serial No. 234,989.



Claim.—The improved metallic fireplace, comprising the side walls, 6 and 7, the forwardly-curved back wall, 8, a tapered hood mounted at the upper end of said forwardly-curved wall, the chimney mounted upon said hood, the fireplace sides 16 and 17 extending parallel with the said side walls 6 and 7, and the forwardly-curved fireplace-back 18, conforming to the curve of the said curved back wall, 8, and connecting said sides 16 and 17; substantially as specified.

820,174. **LENS-MOUNTING.** VINCENT BERTOLINI, Chicago, Ill., assignor to F. A. Hardy & Co., Chicago, Ill., a Corporation. Filed Dec. 19, 1904. Serial No. 237,536.



Claim.—1. As a new article of manufacture, a lens-mounting having a post comprising a pair of parallel arms located one above the other, and a portion connecting them and forming the inner end of the post, a pair of straps proceeding outward from said arms, respectively, and a pair of bracing-tongues directly joining the outer extremities of the arms and proceeding upward and outward therefrom, substantially as described.

2. As a new article of manufacture, a lens-mounting having a post comprising a pair of parallel arms and a portion connecting them and forming the inner end of the post, a pair of straps proceeding outward from said arms, respectively, and portions joining edgewise the opposite side of the inner end of the post, respectively, and proceeding therefrom, substantially as described.

3. As a new article of manufacture, a lens-mounting having a post and a pair of straps integral therewith, the broader faces of the post being horizontal and the broader faces of the straps being vertical and united to the opposite sides of the post by bends or twists, substantially as described.

4. As a new article of manufacture, a lens-mounting having a post, a pair of straps, and a pair of bracing-tongues, all integral, the broader faces of the post being horizontal, the broader faces of the straps being vertical, the straps being united to the posts through bends or twists and the bracing-tongues proceeding upward and downward from the outer end of the post, substantially as described.

5. As a new article of manufacture, a lens-mounting having a post, and a pair of straps integral therewith, the post comprising a pair of arms located one above the other and the straps joining said arms, respectively, through bends or twists, substantially as described.

6. As a new article of manufacture, a lens-mounting having a post and a pair of straps integral therewith, the post comprising a pair of arms located one above the other and with their broader faces horizontal, and the straps joining the arms through bends or twists, substantially as described.

7. As a new article of manufacture, a lens-mounting having a post and a pair of straps integral therewith, the post comprising a pair of arms located one above the other and an end portion connecting the arms, and the straps joining the sides of the arms through bends or twists, substantially as described.

8. As a new article of manufacture, a lens-mounting having a post, a pair of straps and a pair of bracing-tongues all integral, the post comprising a pair of arms located one above the other, the straps joining the arms through bends or twists, and the tongues joining the arms, respectively, and extending upward and downward, substantially as described.

9. As a new article of manufacture, a lens-mounting formed of an integral sheet-metal blank and having a post, a pair of straps and a pair of bracing-tongues, said posts comprising two flat arms located one above the other and with their broader faces horizontal and a vertical end portion connecting them, the straps joining the arms, respectively, through bends or twists and being located with their broader faces vertical, and the tongues joining the arms, respectively, and extending upward and downward, substantially as described.

10. As a new article of manufacture, a lens-mounting having a post and a pair of straps, said post comprising a pair of flat arms located one above the other and with their broader faces horizontal and the straps joining the opposite sides of the arms, respectively, through bends or twists, one of said straps extending upward from the plane of the bottom arm and the other extending downward from the plane of the top arm of the post, substantially as described.

11. A blank for lens-mountings having a central portion adapted to form the end of the post, arms of equal length proceeding in opposite directions from said central portion and adapted to form the arms of the post, and portions proceeding side by side from the outer end of each of said arms and adapted to form the straps and bracing-tongues respectively, substantially as described.

12. A blank having a central portion adapted to form the end of the post, arms of equal length proceeding in opposite directions from the sides of said central portion and adapted to form the arms of the post and the straps, and portions proceeding in opposite directions from said central portion and at right angles to the arms aforesaid, substantially as described.

13. A blank for lens-mountings having the central portion 2, arms 1, proceeding in opposite directions from said central portion, portions B forming continuations of said arms and portions F lying beside the portions B and also forming continuations of said arms, substantially as described.

14. A blank for lens-mountings having the central portion 2 adapted to form the end of the post arms 1 proceeding from the opposite sides of said central portion and adapted to form the arms of the post, and a portion 4 proceeding from said central portion at an angle to said arms, substantially as described.

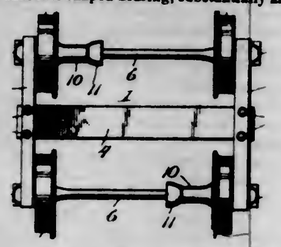
15. A blank for lens-mountings having a central portion 2, arms proceeding from opposite sides of said central portion and adapted to form the arms of the post and a portion proceeding from said central portion, at an angle to the arms 1, and adapted to form the spring, substantially as described.

16. A blank for lens-mountings having a central portion 2 adapted to form the end of the post, arms, 1, proceeding from the opposite sides of said central portion and adapted to form the arms of the post, and a portion proceeding from said central portion at an angle to the arms, 1, and adapted to form the shank of the guard, substantially as described.

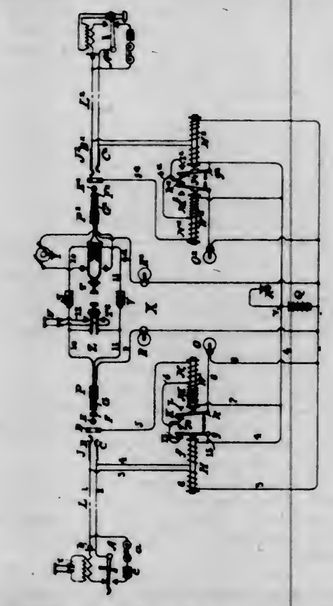
820,175. **SAFETY CAR-TRUCK AXLE.** BENTON S. BOWMAN, Millersburg, Pa., assignor of one-half to Samuel S. Johnson, Millersburg, Pa. Filed June 21, 1905. Serial No. 266,304.

Claim.—A structure of the character described combrising an axle having a solid fixed collar thereon, a wheel fixed on one end of the axle, a wheel mounted on the other end of the axle having a hub provided with a bell-shaped bearing formed on its inner face, an en-

larged portion on the other end of the hub having a socket therein, a reduced portion between the enlarged and bell-shaped portions, the collar of the axle being rotatably mounted in the socket, the outer end of the axle being also rotatably mounted in the reduced portion of the hub and said bell-shaped bearing, substantially as specified.



820,176. **TELEPHONE SYSTEM.** CHARLES L. BOYCE, Detroit, Mich., assignor to American Telephone and Telegraph Company, a Corporation of New York. Filed Mar. 7, 1903. Serial No. 97,025.



Claim.—1. The combination in a telephone central-station switchboard apparatus, of a line-relay in a main telephone-circuit; a supervisory signal associated with a switch-cord; a local supervisory circuit containing said signal; an auxiliary relay with a winding of high resistance also included in said local supervisory circuit to reduce the strength of current therein and prevent the operation of said signal; and a shunt or short circuit round a portion of said high-resistance winding leading through contacts of said line-relay, and controlled by said line-relay, to cut out said portion, and permit the display of said supervisory signal when said relay is unexcited, and to leave said portion in said circuit and prevent the display of said signal, when the same is excited; substantially as described.

2. The combination in a telephone-exchange system, of a main substation-circuit controlled by a switch at the substation; a switch-socket for said main circuit and a switch-plug adapted to be inserted therein, the said socket and plug having registering main and local circuit contacts; a local supervisory circuit at said central station adapted to be completed through the local contacts of said socket and plug; a local call-circuit at the central station; a supervisory-signal device in the supervisory circuit; a call-signal device in the local call-circuit; and two relays, one a line-relay having its winding in the main substation-circuit at the central station and the other an auxiliary relay having its winding in the supervisory circuit, said relays coöperating to control the supervisory circuit and the local call-circuit and the operation of the supervisory and call signals therein.

3. The combination in a telephone-exchange system, of a main substation-circuit controlled by a switch at the substation; a switch-socket for said main circuit and a switch-plug adapted to be inserted therein, the said socket and plug having registering main and local circuit contacts; a local supervisory circuit at said central station adapted to be completed through the local contacts of said socket and plug; a local call-circuit at the central station; a supervisory-signal device in the supervisory circuit; a call-signal device in the local call-circuit; and two relays, one a line-relay having its winding in the main substation-circuit at the central station and the other an auxiliary relay having its winding in the supervisory circuit, said relays having associated armature-contacts in the local call and supervisory circuits respectively whereby said circuits are controlled to effect the operation of the supervisory and call signals therein.

4. The combination in a telephone-exchange system, of a main substation-circuit controlled by a switch at the substation; a switch-socket for said main circuit and a switch-plug adapted to be inserted therein, the said socket and plug having registering main and local circuit-contacts; a local supervisory circuit at said central station adapted to be completed through the local contacts of said socket and plug; a local call-circuit at the central station; a supervisory-signal device in the supervisory circuit; a call-signal device in the local call-circuit; and two relays, one a line-relay having its winding in the main substation-circuit at the central station, its forward contacts in the local call-circuit and its back contacts in the local supervisory circuit, and the other an auxiliary relay having its winding in the local supervisory circuit and its back contact in the local call-circuit, whereby said relays coöperate to control the local call and supervisory circuits and the operation of the call and supervisory signals therein.

5. The combination in a telephone-exchange system, of a main substation-circuit controlled by a switch at the substation; a switch-socket for said main circuit and a switch-plug adapted to be inserted therein, the said socket and plug having registering main and local circuit contacts; a local supervisory circuit at said central station adapted to be completed through the local contacts of said socket and plug; a local call-circuit at the central station; a supervisory-signal device in the supervisory circuit; a call-signal device in the local call-circuit; and two relays, one a line-relay having its winding in the main substation-circuit at the central station, its forward contacts in the local call-circuit and its back contacts in the local supervisory circuit, and the other an auxiliary relay having its winding in the local supervisory circuit, and a shunt or short circuit of the supervisory circuit round a portion of the winding of the auxiliary relay and through the back contacts of the line-relay, to cut out said portion and permit the operation of the supervisory signal when said line-relay is unexcited and to leave said portion in said circuit and prevent the operation of said signal when the same is excited.

6. In a telephone-exchange system, the combination with a telephone-line extending from a substation to an exchange, of a line-relay at the exchange, a source of current adapted to be closed through said line-relay through the agency of substation apparatus, cord connecting apparatus for connecting said line with another for conversation, a cut-off relay included in a high-resistance circuit controlled by the cord connecting apparatus, a line-signal jointly controlled by said line and cut-off relays, a supervisory signal included in said high-resistance circuit, and means whereby the deënergization of said line-relay causes a decrease in the resistance of the circuit through said supervisory signal.

7. In a telephone-exchange system, the combination with a telephone-line extending from a substation to an exchange, of a line-relay at the exchange, a source of current adapted to be closed through said line-relay through the agency of substation apparatus, cord connecting apparatus for connecting said line with another for conversation, a cut-off relay included in a high-resistance circuit controlled by the cord connecting apparatus, a line-signal in a local circuit including the armatures of said relays, the circuit through said line-signal being closed when the line-relay is energized and the cut-off relay is deënergized, a supervisory signal included in said high-resistance circuit, and means whereby the deënergization of said line-relay causes a decrease in the resistance of the circuit through said supervisory signal.

8. In a telephone-exchange system, the combination with a telephone-line extending from a substation to an exchange, of a line-relay at the exchange, a source of current adapted to be closed through said line-relay through the agency of substation apparatus, cord connecting apparatus for connecting said line with another for conversation, a cut-off relay included in a circuit controlled by the cord connecting apparatus, a resistance in said circuit, a line-signal jointly controlled by said line and cut-off relays, a supervisory signal included in the circuit controlled by the cord connecting apparatus, and means whereby the deënergization of said line-relay closes a low-resistance shunt-circuit about said resistance.

9. In a telephone-exchange system, the combination with a telephone-line extending from a substation to an exchange, of a line-relay at the exchange, a source of current adapted to be closed through said line-relay through the agency of substation apparatus, cord connecting apparatus for connecting said line with another for conversation, a cut-off relay included in a circuit controlled by the cord connecting apparatus, a resistance in said circuit, a line-signal included in a local circuit containing the armatures of said relays, the circuit through said line-signal being closed when the line-relay is energized and the cut-off relay is deënergized, a supervisory signal included in the circuit controlled by the cord connecting apparatus, and means whereby the deënergization of said line-relay causes the closure of a low-resistance shunt-circuit about said resistance.

10. In a telephone-exchange system, the combination with a telephone-line extending from a substation to an exchange, of a line-relay at the exchange, a source of current adapted to be closed through said line-relay through the agency of substation apparatus, cord connecting apparatus for connecting said line with another for conversation, a cut-off relay included in a circuit controlled by the cord connecting apparatus, a line-signal included in a local circuit containing the armatures of said relays, the circuit with said line-signal being closed when the line-relay is energized and the cut-off relay is deënergized, and a supervisory signal included in the circuit controlled by the cord connecting apparatus, the operation of said supervisory signal being controlled by said line-relay, substantially as described.

820,177. **CLOTHES-LINE PIN.** DEMPSEY T. BRYAN and OCTAVIUS SADLER, Rocky Mount, N. C. Filed Aug. 31, 1905. Serial No. 276,546.

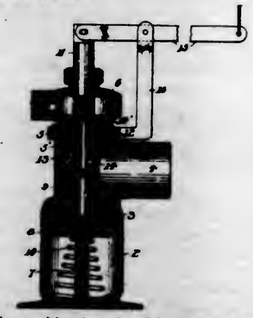


Claim.—1. A pin of the character described, comprising a single piece of wire formed into a coil, and the ends of the wire formed into loops and having ends of the wire forming the loops wound around the coil and one arm of one loop passing between the arms of the other loop.

2. A pin of the character described, comprising a single piece of wire having a coil formed in the center, and ends formed into loops, the coil between the ends forming the loops being of a single coil of wire, and the free ends of the wire forming the loops wound around a single portion of the coil, one arm of one of the loops passing between the arms of the other loop.

3. A pin of the character described, comprising a single piece of wire having a coil formed in the center, and the ends formed into loops having their outer ends diverging, one arm of each loop passing between the arms of the other loop.

820,178. **VALVE.** AUGUST BUERKLE, Allegheny, Pa. Filed Nov. 5, 1904. Serial No. 231,530.

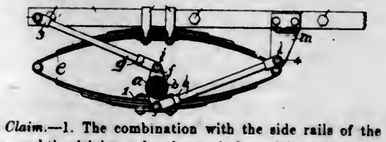


Claim.—1. The combination of an inlet-fitting open at its upper end, a service-fitting open at its lower end and at said end uniting with the open upper end of the inlet-fitting, a drain-fitting uniting with the service-fitting, a downwardly-opening spring-held valve in the inlet-fitting and adapted normally to close the lower end of the service-fitting, a stem extending through the service and drain fittings and at its lower end connected to the valve, a passage at the juncture of the service and drain fittings which the stem closely fits, the stem being formed with an elongated port having its lower end in communication with the service-fitting and its upper end normally in register with the drain-fitting, and means for depressing the stem for the purpose of opening the valve and simultaneously placing the upper end of the stem-port out of register with the drain-fitting.

2. The combination of an inlet-fitting open at its upper end, a service-fitting open at its lower end with said end uniting with the open end of the inlet-fitting, a downwardly-opening spring-held valve within the inlet-fitting and normally closing communication between the inlet and service fittings, an upward projection on the valve extending into the service-fitting, a drain-outlet for the service-fitting, a stem extending vertically through the service-fitting and drain-outlet and at its lower end formed with a socket which loosely embraces said valve projection, the stem being formed with an elongated port having its lower end in register with the drain-fitting, a passage connecting the service-fitting and drain-outlet which said stem closely fits, and means for depressing the stem and thereby opening said valve and moving the upper end of the stem-port out of register with the drain-outlet.

3. The combination of an inlet-fitting, a downwardly-opening spring-held valve therein, the valve having an upward projection, a service-fitting uniting with the inlet-fitting, a drain connection having a passage-way communicating with the service-fitting, a stem extending through the service-fitting and drain connection and closely fitting said connecting passage, the stem being recessed upwardly from its lower end to embrace said valve projection, the upper portion of said recess forming an elongated port having lateral outlets, the lower of which registers with the service-fitting and the upper outlet normally with the drain connection, and means for depressing the stem.

820,179. **MECHANISM FOR CONNECTING VEHICLE AXLES AND BODIES.** JOHN F. BYERS, Ravenna, Ohio; Kate Byers administratrix of said John F. Byers, deceased. Filed Dec. 26, 1903. Serial No. 186,616.



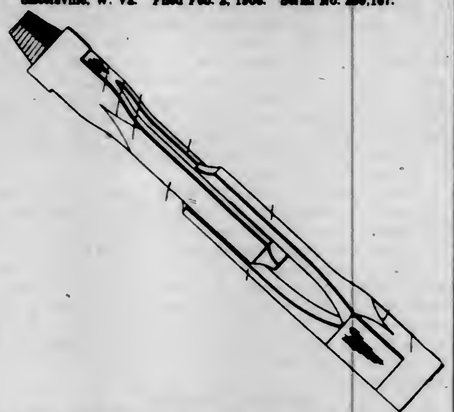
Claim.—1. The combination with the side rails of the body-frame, and the driving-axle, of oppositely-positioned springs having their upper members secured to the body-frame, equalizers pivotally mounted on the axle and formed with oppositely-extending radial arms, connecting-rods at one side of the springs, and having their lower ends pivotally connected to the ends of the upper arms of the equalizers and their upper ends pivotally secured to the side bars of the body-frame, connecting-rods pivoted to the ends of the lower arms of the equalizers and to said body portion in different horizontal plane, and rigidly-depending arms secured to the side rails and their lower ends pivotally secured to the upper end of the second set of connecting-rods.

2. The combination with the side rails of the body-frame, and the driving-axle, of oppositely-positioned springs having their upper members secured to the side rails of the body-frame, equalizers pivotally mounted on the axle and formed with oppositely-extending radial arms standing to the sides of and away from the springs, connecting-rods lying parallel with and outside of the springs, and having their inner ends pivotally connected to the ends of the upper arms of the equalizers and their outer ends pivotally secured to the side bars of the body-frame, connecting-rods pivoted to the ends of the lower arms of the equalizers and lying parallel with and outside of the springs, and rigidly-depending arms secured to the side rails and their lower ends pivotally secured to the outer ends of the second set of connecting-rods.

3. The combination with a body-frame, oppositely-positioned springs having their upper members secured to the side bars of the body-frame, a stationary tubular axle-sleeve carried by the lower members of the springs, and an axle rotatably mounted in the bore of the axle-sleeve, of equalizers pivotally mounted on the axle-sleeve and formed with oppositely-extending radial arms disposed at right angles to the axis of the axle, and standing to the sides of and away from the springs, connecting-rods lying parallel with and outside of the springs and having their inner ends pivotally secured to the ends

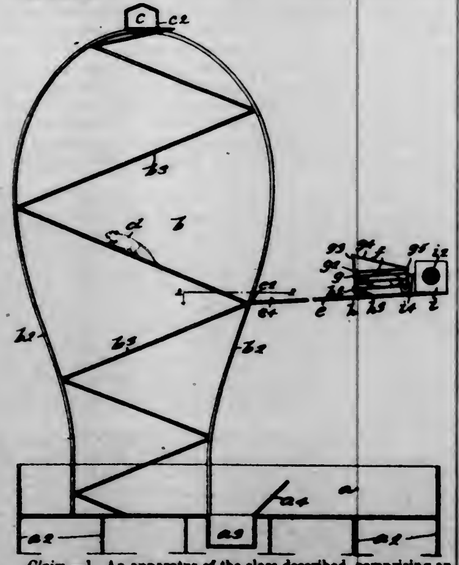
of the upper arms of the equalizers and their outer ends bent at right angles to their body and pivotally secured to the side bars of the body-frame, connecting-rods having their inner ends pivotally secured to the ends of the lower arms of the equalizers and lying parallel with and outside of the springs, and having their outer ends bent at right angles to their bodies, rigidly-depending arms secured to the side rails, and bearing-bolts extending from their lower ends and adapted to pivotally engage and support the outer ends of the second set of connecting-rods.

820,180. JAR OF DRILLING-TOOLS. ERASTUS L. CLEVELAND, Sisterville, W. Va., assignor of one-half to Robert Leslie Lamberton, Sisterville, W. Va. Filed Feb. 2, 1903. Serial No. 140,167.



Claim.—The combination with the upper part of a pair of jars of a cap and reins adapted to be connected to the said upper part, said reins having tongue-shaped ends, a plate interposed between said ends, said cap having a wedge-shaped recess formed therein, to receive the tongues of said reins and said plate, the ends of the reins and the said plate being welded, with the said cap, into a solid mass, substantially as described.

820,181. MEANS FOR PROMOTING ACCURATE SHOOTING. FRANÇOIS COURTINADE, New York, N. Y. Filed June 28, 1905. Serial No. 268,930.



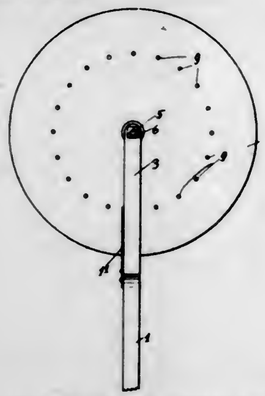
Claim.—1. An apparatus of the class described, comprising an open base box or receptacle, and an upright open frame placed therein, said upright frame being provided with a winding track or way which extends from the bottom to the top thereof, and said base box or receptacle being provided with a trap-box having a hinged door, substantially as shown and described.

2. An apparatus of the class described, comprising an open base box or receptacle, and an upright open frame placed therein, said upright frame being provided with a winding track or way which extends from the bottom to the top thereof, and said base box or receptacle being provided with a trap-box having a hinged door, and the top of the frame being also provided with a box having an opening with which said track or way connects, substantially as shown and described.

3. An apparatus of the class described, comprising a base box or receptacle, an upright frame mounted therein and provided with an inclined and winding track or way which extends from the bottom to the top thereof, an incline track or way at one side of said frame which connects with said first-named track or way, a target placed on said incline track or way, a car movable on said track or way, and means whereby the car may be detachably connected with said target and released when the center of the target is hit, said car being also provided with a door which is automatically opened when the car reaches said frame, substantially as shown and described.

4. In an apparatus of the class described, an upright frame, an incline track or way at one side of said frame and connecting therewith, a car placed on the incline track or way, a target also placed on said incline track or way, and means for detachably connecting the car with the target and releasing the car when the center of the target is hit, said car being also provided with a door which is automatically opened when the car reaches said frame, substantially as shown and described.

820,182. TOY. JAMES R. CRISTE, Braddock, Pa. Filed Apr. 20, 1905. Serial No. 256,584.



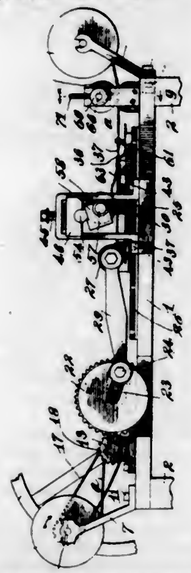
Claim.—A toy of the character described consisting of a pole, a disk journaled at the end of the pole, a plurality of outwardly-extending pins circumferentially arranged in the disk, said pins being each formed of a different material from the others and adapted when struck to produce each a tone different from the tones of the other pins and a spring attached to the pole and adapted to successively contact with said pins when the disk is revolved.

820,183. MACHINE FOR MAKING METAL TAGS. FREDERICK C. CROWE, Chicago, Ill., assignor to Crowe Name Plate & Engraving Company, Chicago, Ill., a Corporation of Illinois. Filed Mar. 27, 1905. Serial No. 252,330.

Claim.—1. In a printing-machine, in combination, a reciprocating form-carriage; means for supporting a continuous strip of material along the line of movement of said form-carriage; and means for recurrently moving said strip into and out of contact with a form on said carriage.

2. In a printing-machine, in combination, a reciprocatory form-carriage; means for supporting a continuous strip of material along the line of movement of said form-carriage; and a roller movable toward and from said carriage for recurrently moving said strip into contact with a form on said carriage.

3. In a printing-machine, in combination, a reciprocatory form-carriage; means for supporting a continuous strip of material along the line of movement of said form-carriage; a roller movable toward and from said carriage for recurrently moving said strip into contact with a form on said carriage; and an arm carried by said carriage adapted to engage and move said roller.



4. In a printing-machine, in combination, a reciprocatory form-carriage; means for supporting a continuous strip of material along the line of movement of said carriage; means for preventing free movement of said strip; and means for recurrently moving said strip into and out of contact with a form on said carriage, said last-mentioned means and said carriage being arranged to grip and feed forward said strip.

5. In a printing-machine, in combination, a reciprocatory form-carriage; an impression-roller mounted to oscillate toward and away from said carriage; and a spring-arm carried by said carriage adapted to engage and oscillate said roller.

6. In a printing-machine, in combination, a reciprocatory form-carriage; an impression-roller mounted to oscillate toward and away from said carriage; and a spring-arm carried by said carriage, the forward end of which arm is adapted to engage said roller for oscillating it, said arm having a curved portion conforming to the periphery of said roller.

7. In a printing-machine, in combination, a supporting-frame; a reciprocatory form-carriage on said frame; housings on said frame; a bearing-block in each of said housings; a bearing member pivotally connected with each of said blocks, said member having a portion adapted to contact said housing to limit the movement of said bearing member; a roller carried by said bearing members; and means for pivotally moving said roller.

8. In a printing-machine, in combination, means for preventing free movement of the material operated upon; and a printing-couple arranged to travel and to grip and feed forward the material against the action of the means for preventing free movement of the material.

9. In a printing-machine, in combination, a form-bed provided with a plurality of openings; posts adapted to be connected with said bed by means of said openings; and set-screws having a screw-thread engagement with said posts for clamping a chase in position on said bed.

10. In a printing-machine, in combination, a reciprocatory form-bed; means for pressing the material operated upon into contact with a form on said form-bed; and a yieldingly-supported frame carried by said form-bed comprising spring-supported cross-bars for supporting said material adjacent to the form.

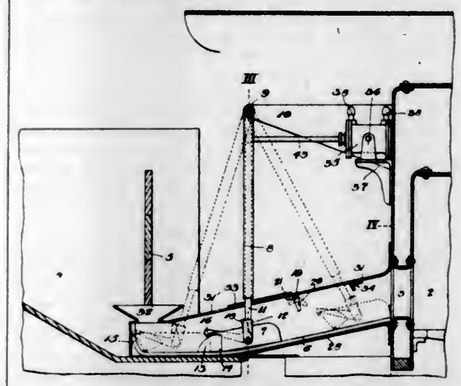
11. In a printing-machine, in combination, a reciprocatory form-bed; means for recurrently pressing the material operated upon into contact with a form on said form-bed; said pressing means and form-bed being adapted to advance the material through the machine and spring-actuated means on said form-bed for moving the material out of contact with the form.

12. In a printing-machine, in combination, a form-bed, spring-supported cross-bars for supporting a strip of material above the form; and guide-bars carried by said cross-bars for guiding the strip.

13. In a printing-machine, in combination, a form-bed; pins fixed to said bed; cross-bars slidably mounted upon said pins; springs surrounding said pins and supporting said cross-bars; and guide-bars adjustably secured to said cross-bars.

14. In a printing-machine, in combination, a form-bed; a yielding support carried by said form-bed for the material; and guide-bars for the material, carried by said support.

820,184. STOKER. PATRICK J. DUFFY, Freedom, Pa. Filed Apr. 20, 1905. Serial No. 256,649.



Claim.—1. A fuel-supply apparatus for furnaces consisting of a downwardly-depending swinging frame provided with a telescoping extension, a scoop connected with said extension, a guiding-track for the scoop, and means for actuating the swinging frame, substantially as set forth.

2. A fuel-supply apparatus for furnaces consisting of a downwardly-depending swinging frame provided with a telescoping extension, a scoop connected with said extension having a hinged end-gate, a guiding-track for the scoop, and means for actuating the swinging frame, substantially as set forth.

3. In a fuel-feeding apparatus, a reciprocating scoop provided with a hinged end-gate, a locking-latch for the end-gate, means for automatically detaching said latch, bearing-tracks having upwardly-turned extremities adapted to engage and close the gate, and means for propelling the scoop forwardly and backwardly, substantially as set forth.

4. In a fuel-feeding apparatus, a reciprocating scoop provided with a hinged end-gate, a locking-latch for the end-gate, means for automatically detaching said latch, bearing-tracks having upwardly-turned extremities adapted to engage and close the gate, means for propelling the scoop forwardly and backwardly, and an inclosing conduit surrounding the trackway and scoop, said conduit having a coal-receiving opening, substantially as set forth.

5. In a fuel-feeding apparatus, a reciprocating scoop provided with a hinged end-gate, a locking-latch for the end-gate, means for automatically detaching said latch, bearing-tracks having upwardly-turned extremities adapted to engage and close the gate, means for propelling the scoop forwardly and backwardly, and an inclosing conduit surrounding the trackway and scoop, said conduit having a coal-receiving opening, the top of said conduit also having a clearance-slot for a portion of the actuating mechanism, substantially as set forth.

6. In a fuel-feeding apparatus, the combination with scoop-supporting tracks, a downwardly-depending swinging frame provided with a telescoping extension and a coal-scoop connected with said extension; of a cylinder having a piston connected with said frame, supply and exhaust connections for said cylinder, and a controlling-valve, substantially as set forth.

7. The combination with a furnace, tracks leading thereto, a coal-delivery scoop, and operating means therefor; of interfering devices adapted to engage one or the other edge of the scoop to deflect it to one side or the other, substantially as set forth.

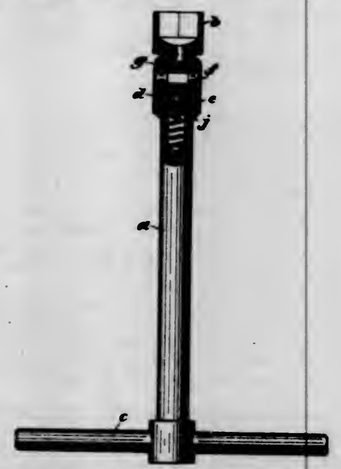
8. In a fuel-feeding apparatus, the combination with a swinging frame having a telescoping extension, a coal-scoop actuated

thereby, means for actuating the frame, and a trackway for the scoop; of adjustable deflecting devices adapted to engage one or the other edge of the scoop to deflect it to one side or the other or to be located in an inoperative position to provide for delivery directly in line with the trackway, substantially as set forth.

9. In an apparatus of the class described the combination with a furnace-chamber, of inclined tracks leading thereto provided with upwardly-turned back extremities in the path of the closing door of the scoop, an inclosing conduit having a receiving-opening, a traveling scoop mounted therein upon said tracks and provided with an opening and closing door adapted to make contact with said track extremities, a shifting-frame having a portion extending into the said conduit and engaging the scoop, a steam-cylinder and a piston connected with said frame, and valve mechanism for controlling the supply thereto, substantially as set forth.

10. In an apparatus of the class described, the combination with a furnace-chamber, of inclined tracks leading thereto provided with upwardly-turned back extremities in the path of the closing door of the scoop, an inclosing conduit having a receiving-opening, a traveling scoop mounted therein upon said tracks and provided with an opening and closing door adapted to make contact with said track extremities, a shifting-frame having a portion extending into the said conduit and engaging the scoop, a steam-cylinder and a piston connected with said frame, valve mechanism for controlling the supply thereto, and means for deflecting the scoop to the right or left respectively, substantially as set forth.

820,185. TOOL. JOHN W. EDMANDS, Newton Center, Mass. Filed Aug. 4, 1904. Serial No. 219,573.

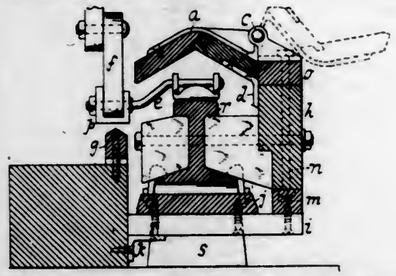


Claim.—1. A wrench comprising a holding member provided with means for twisting or turning it axially, a head or socket member provided with a nut-engaging portion, and means for connecting said holding member and head or socket member, comprising a pair of ears connected to one of said members, a lug connected to the other of said members and adapted to fit between the ears of the other member, a pivot-pin secured to one of said members, and an open-sided eye formed in the other member and adapted to detachably engage said pivot-pin, to thereby pivotally connect said holding member and socket member, whereby said socket member may be rotated axially in any of a plurality of selected positions by the twisting or turning of the holding member, and the socket member readily detached from the holding member.

2. A wrench comprising a holding member provided at one end with holding-ears, a spring-pin projecting between said ears, and a pivot-pin rigidly secured in said ears, a head or socket member having a nut-engaging portion and a lug projecting from the back of said nut-engaging portion and provided with an eye open to one edge of said lug and adapted to removably engage the pivot-pin of said holding member, and a series of holes in the opposite edge of said lug adapted to engage the spring-pin of said holding member, whereby said head or socket member may be adjusted to different operative positions upon one side of its axial center and be removed from the holding member by movement to the opposite side of its axial center.

3. As a new article of manufacture, a wrench-head having a nut-engaging portion and a lug projecting from the back of said nut-engaging portion and provided with an eye open to one edge of said lug and a series of holes upon the opposite edge of said lug, whereby said wrench-head may readily be secured to an axially-rotatable holding member having a pivot-pin to engage the open eye, and capable of adjustment to different operative positions upon one side of its axial center and of removal from the holding member by movement to the other side of its axial center.

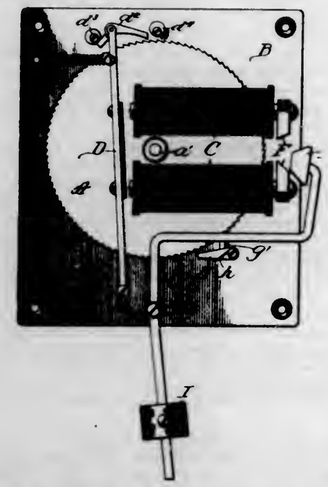
820,186. DEVICE FOR COVERING AND PROTECTING CHARGED RAILS. GUSTAVE BERNOLF, New York, N. Y. Filed Nov. 26, 1904. Serial No. 234,274.



Claim.—1. A charged rail with support therefor, a board or shield under the rail, a bracket for supporting the shield, a strip made to rise from the shield, and a cover hinged to the strip and made to overhang the rail when closed.

2. A railroad structure comprising a rail-guard, a bracket secured to the rail-guard, a shield carried by the bracket, a charged rail supported over the shield, a lateral guard for the charged rail secured to the first-named rail-guard, a lateral guard for the opposite side of the charged rail and secured to the underlying shield and a cover hinged to a lateral guard and made to overhang the charged rail.

820,187. AUTOMATIC EXCHANGE-SELECTOR. CLAUDE D. ENOCHS, La Crosse, Wis., assignor to Western Electric Company, Chicago, Ill., a Corporation of Illinois. Filed Oct. 16, 1905. Serial No. 283,985.



Claim.—1. In a selector for an automatic telephone-exchange, the combination with a rotatably-mounted ratchet-wheel, of a stepping-pawl and a retaining-pawl for controlling the rotation of said wheel, and an electromagnet having a quick-acting armature and an armature possessing considerable inertia for controlling the operation of said pawls.

2. The combination with a rotatably-mounted ratchet-wheel, of an electromagnet, an armature for said magnet, a pawl actuated thereby for stepping said wheel, a second armature for said magnet, means whereby said second armature is caused to act sluggishly when the magnet is deënergized, and a retaining-pawl controlled by said second armature and adapted to engage the teeth of the ratchet-wheel when said armature is in its attracted position.

3. The combination with a rotatably-mounted ratchet-wheel, of an electromagnet having a divided yoke, an armature for said magnet provided with a pawl for stepping said wheel when the armature is operated, a retaining-pawl for holding said wheel in its advanced position, a second armature normally holding said retaining-pawl out of engagement with the teeth of the ratchet-wheel and adapted to engage with said divided yoke, whereby said armature is held in its attracted position while an interrupted current is sent through said magnet.

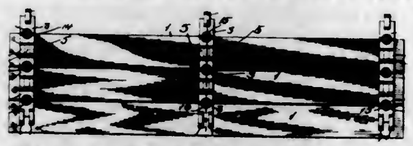
4. The combination with a rotatably-mounted ratchet-wheel, of an electromagnet having a divided yoke, an armature for said magnet provided with a pawl for stepping said wheel when the armature is attracted, a retaining-pawl for holding said wheel in its advanced position, a pivoted lever normally holding said retaining-pawl out of engagement with the teeth of the ratchet-wheel, a weight carried by said lever, and an armature carried by said lever adapted to engage with said divided yoke, whereby said lever is held out of engagement with said retaining-pawl while an interrupted current is sent through said magnet.

5. In a selector for an automatic telephone-exchange, the combination with a ratchet, of a stepping and a retaining pawl for controlling the movement of said ratchet, an electromagnet, a quick-acting armature adapted to control the movement of the stepping-pawl and a slow-acting armature adapted to control the movement of the retaining-pawl, and a weight for said slow-acting armature having its center of gravity but slightly displaced from a vertical line through its support.

6. In a selector for an automatic telephone-exchange, the combination with a ratchet, of a stepping and a retaining pawl for controlling the movement of said ratchet, an electromagnet, a quick-acting armature adapted to control the movement of the stepping-pawl and an armature adapted to control the movement of said retaining-pawl, said armature having considerable inertia.

7. In a selector for an automatic telephone-exchange, the combination with a ratchet, of a stepping and a retaining pawl for controlling the movement of said ratchet, an electromagnet, a quick-acting armature adapted to control the movement of the stepping-pawl and an armature adapted to control the movement of said retaining-pawl, said armature having considerable inertia but having slight retractive force.

820,188. CONCRETE-MOLD. AARON T. FOSTER and MARTIN L. JONES, Chillicothe, Ohio. Filed Apr. 1, 1905. Serial No. 253,223.

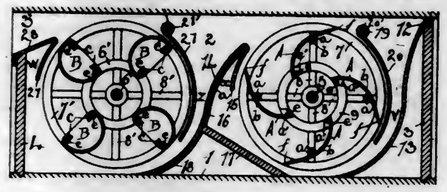


Claim.—1. In a device of the character described, the combination with a plurality of superimposed side boards of a plurality of clamping members located upon the exterior faces of said side boards and adapted to interlock with each other, a plurality of flexible connecting members engaging the clamping members upon one side of the mold, said flexible members passing between the adjacent edges of the said side boards and being engaged by members upon the opposite side of said mold adapted to place said connecting members under tension, said flexible connecting members being adapted to remain in the said monolithic structure and to form a part thereof.

2. A clamping device for monolithic molds comprising opposed clamp members each having two projections at one end and a single projection at the other end, said projections adapted to interlock when the clamp members are assembled, and means for drawing the clamp members into clamping relation.

3. In a device of the character described, the combination with a plurality of superimposed side boards, of a plurality of clamping members located upon the exterior of said side boards and adapted to interlock with each other, a plurality of connecting members engaging the clamping members upon one side of the mold, said connecting members passing between the adjacent edges of the side boards and being engaged by devices upon the opposite side of said mold adapted to place said connecting members under tension, said connecting members being adapted to remain in the said monolithic structure and to form a part thereof.

820,189. AMALGAMATOR. CHARLES E. GARD, Ord, and JOHN W. LYNN, Omaha, Nebr. Filed Nov. 23, 1903. Serial No. 182,288.



Claim.—1. A housing provided with an intake-opening and an exit-opening, a curved end plate secured near the intake-opening of said housing, a curved guard-plate placed adjacent to said end plate to form a channel, a shaft passing transversely through said housing, a plurality of perforated agitating-knives secured to said shaft and rotating adjacent to the end of said channel, a curved partition provided with a downwardly-extending apron, a second curved guard-plate positioned adjacent said partition to form a second channel, a second shaft passing through said housing, a plurality of troughs secured to said shaft, said troughs having opposite edges recurved, an inclined tail-plate secured adjacent the exit-opening within said housing provided with a downwardly-extending apron, and means to operate said shafts.

2. The combination with a sluice provided with an intake-opening and an exit-opening, a curved end plate secured near the intake-opening of said sluice, a curved guard-plate spaced adjacent to said end plate to form a channel, a shaft passing transversely through said sluice, a plurality of perforated agitating-knives secured to said shaft, and a curved partition provided with a downwardly-extending apron, substantially as set forth.

3. In an amalgamator, the combination with revoluble shafts, of a plurality of plates secured thereto, a series of finger-knives on the outer edges of said plates, a sluice and mercury-holding pockets.

4. In an amalgamator, the combination with revoluble shafts, of a plurality of perforated plates secured thereto and a series of finger-knives on the outer edges of said plates and a sluice.

5. In an amalgamator, the combination with a sluice provided with an intake and an exit opening, a curved guard-plate forming a channel, a shaft passing transversely through said sluice, a plurality of perforated agitating-knives secured to said shaft, and a curved partition provided with a downwardly-extending apron.

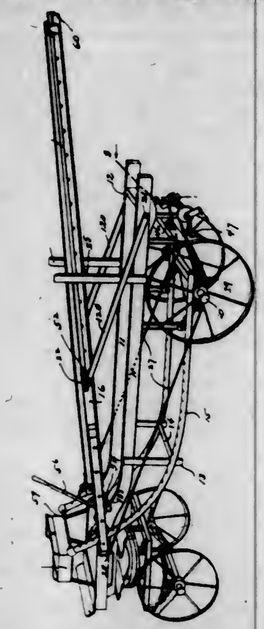
6. A housing provided with an intake-opening, and an exit-opening, a curved end plate secured near the intake-opening of said housing, a curved guard-plate placed adjacent to said end plate to form a channel, a shaft passing transversely through said housing, and a plurality of perforated agitating-plates secured to said shaft and rotating adjacent to the end of said channel, a curved partition provided with a downwardly-extending apron, a second shaft passing through said housing, a plurality of plates secured to said shaft, and a plurality of agitating-knives secured to said plates, said plates having opposite edges recurved, an inclined tail-plate secured adjacent to the exit-opening within said housing provided with a downwardly-extending apron, and means to operate said shafts.

7. In an amalgamator, a housing provided with an intake-opening and an exit-opening, a curved end plate secured near the intake-opening of said housing, a curved guard-plate placed adjacent to said end plate to form a channel, a curved partition provided with a downward-extending apron, a second curved guard-plate positioned adjacent to said partition to form a second channel, and a plurality of shafts positioned within said housing, each shaft being provided with a plurality of perforated agitating plates and knives secured to said shaft and rotated thereon and adjacent to said partition, and means to operate said shafts.

8. In an amalgamator, the combination with a housing provided with an intake and an exit opening, a curved end plate secured near said intake-opening, a curved guard-plate placed adjacent to said end plate to form a channel, a curved partition provided with a downwardly-extending apron, a second curved guard-plate positioned adjacent to said partition to form a second channel, a plurality of shafts passing through said housing, a plurality of plates having opposite edges recurved and secured to said shafts, an inclined tail-plate secured adjacent to said exit-opening within said housing pro-

vided with a downwardly-extending apron, and means to operate said shaft, all arranged substantially as and for the purpose set forth.

820,190. LADDER OR TOWER WAGON. GEORGE A. HARRISON, La Fayette, Ind. Filed Oct. 20, 1904. Serial No. 229,246.



Claim.—1. In a wagon of the class described, the combination with the wagon-frame, of a ladder or tower mounted thereon, rollers at the lower end of each side of the ladder or tower, a supporting-bar at each side of the wagon on which said rollers run, brace-rods pivoted at one end to the wagon-frame and at the other end to the ladder or tower above said supporting-bars, a cable connected with the lower end of the ladder or tower at each side of the wagon, and means for winding and unwinding said cables so as to draw the end of the ladder or tower toward said braces whereby the ladder or tower may be elevated.

2. In a wagon of the class described, a ladder or tower mounted thereon, a supporting-bar at each side of the wagon that are curved upward at their forward ends, rollers at the lower end of the ladder or tower which run upon said supporting-bars, braces pivoted at one end to the rear of the wagon-frame and at the other end to the ladder or tower above the lower end thereof, a cable secured to each side of the ladder or tower at the lower end thereof, and a drum mounted at the rear end of the wagon on which said cables are wound, so that said cables may be drawn rearward in elevating the ladder or tower.

3. In a wagon of the class described, a ladder or tower mounted thereon, a supporting-bar at each side of the wagon that is curved upward at its forward end, rollers at the lower end of the ladder or tower which run upon said supporting-bars, braces pivoted at one end to the rear of the wagon-frame and at the other end to the ladder or tower above the lower end thereof, a cable secured to each side of the ladder or tower at the lower end thereof, a drum mounted at the rear end of the wagon on which said cables are wound so that said cables may be drawn rearward in elevating the ladder or tower, and pulleys mounted under the wagon under which said cables wind so that they will draw the lower end of the ladder or tower downward as well as rearward.

4. In a wagon of the class described, a ladder or tower mounted thereon, a supporting-bar at each side of the wagon that is curved upward at its forward end, rollers at the lower end of the ladder or tower which run upon said supporting-bars, braces pivoted at one end to the rear of the wagon-frame and at their other end to the ladder or tower above the lower end thereof, a cable secured to each side of the ladder or tower at the lower end thereof, a drum mounted at the rear end of the wagon on which said cables are wound so that said cables will be drawn rearward in elevating the ladder or tower, and a pulley-and-ratchet mechanism for holding said drums in position after the cables have been wound thereon and thereby holding the ladder or tower in its elevated position.

5. In a wagon of the class described, a ladder or tower mounted thereon, a supporting-bar at each side of the wagon that is curved upward at its forward end, rollers at the lower end of the ladder or tower which run upon said supporting-bars braces pivoted at one end to the rear of the wagon-frame and at the other end to the ladder or tower above the lower end thereof, a cable secured to each side of the ladder or tower at the lower end thereof, a drum mounted at the rear end of the wagon on which said cables are wound so that said cables may be drawn rearward in elevating the ladder or tower, and a brake mechanism for regulating the unwinding action of the drums while the ladder or tower is being lowered.

6. In a wagon of the class described, a ladder or tower mounted thereon, a supporting-bar at each side of the wagon that is curved upward at its forward end, rollers at the lower end of the ladder or tower which run upon said supporting-bars, braces pivoted at one end to the rear of the wagon-frame and at the other end to the ladder or tower above the lower end thereof, a cable secured to each side of the ladder or tower at the lower end thereof, a drum mounted at the rear end of the wagon on which said cables are wound so that said cables may be drawn rearward in elevating the ladder or tower, a shaft on which said drum is mounted, a friction-wheel mounted rigidly on said shaft, a fulcrum-bracket secured to the rear end of the wagon, and a lever adapted to rest upon said friction-wheel and catch under said fulcrum to serve as a brake for regulating the unwinding action of the drum.

7. In a wagon of the class described, a ladder or tower mounted thereon, a supporting-bar at each side of the wagon that is curved upward at its forward end, rollers at the lower end of the ladder or tower which run upon said supporting-bars, braces pivoted at one end to the frame of the wagon and slotted at their other ends, pivot-pins extending from each side of the ladder or tower above the lower end thereof loosely through said slots in said braces, a cable secured to each side of the ladder or tower at the lower end thereof, and a drum mounted at the rear end of the wagon on which said cables are wound, so that said cables may be drawn rearward in elevating the ladder or tower.

8. In a wagon of the class described, a ladder or tower mounted thereon, a supporting-bar on the lower end of the ladder or tower, one bar on each side of the wagon, a pair of oppositely-placed rollers mounted on the lower end at each side of the ladder or tower, one of said rollers being above the supporting-bar and the other below, said pair of rollers hugging and traveling on said supporting-bar, braces pivoted at one end to the frame of the wagon and at the other end pivoted to the inside of the ladder or tower above the lower end thereof, and means for moving the lower end of the ladder or tower toward and away from said braces.

9. In a wagon of the class described, a ladder or tower mounted thereon with extensions at each side from the lower end thereof, a pair of oppositely-placed inwardly-extending brackets secured to said extensions, a supporting-bar mounted at each side of the wagon, a roller mounted in each of said inwardly-extending brackets, one above and one below each of said supporting-rods so as to hug and ride upon the same, braces pivoted at one end to the frame of the wagon and at the other end pivoted to the inside of the ladder or tower above the lower end thereof, and means for moving the lower end of the ladder or tower toward and away from said braces.

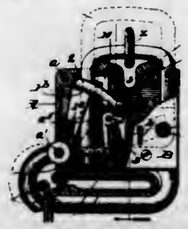
10. In a wagon of the class described, the combination with a wagon-frame, of a ladder or tower mounted thereon, a roller at the lower end of each side of the ladder or tower, a supporting-bar on which said rollers run, said supporting-bars being toothed to form a rack, braces pivoted at one end to the wagon-frame above said supporting-bars, means connected with the lower end of the ladder or tower for moving the same upon said supporting-bars toward said brace-bars, and a pawl pivotally mounted in connection with each side of the ladder or tower at the lower end that engages the racks on the supporting-bars and prevents the returning movement at the lower end of the ladder, and causes the ladder or tower to be maintained in its elevated position.

11. In a wagon of the class described, the combination with the wagon-frame, of a ladder or tower mounted thereon, a roller at the lower end of each side of the ladder or tower, a supporting-bar on which said rollers run, said supporting-bars being toothed to form a rack, braces pivoted at one end to the wagon-frame above said supporting-bars, means connected with the lower end of the ladder or tower for moving the same upon said supporting-bars toward said brace-bars, a pawl pivotally mounted in connection with each side of the ladder or tower at the lower end that engages the racks on the supporting-bars and prevents the returning movement at the lower end of the ladder and causes the ladder or tower to be maintained in its elevated position, and means for releasing said pawls when it is desired to lower the ladder or tower.

12. In a wagon of the class described, the combination with the wagon-frame, of a ladder or tower mounted thereon, a roller at the lower end of each side of the ladder or tower, a supporting-bar at each side of the wagon on which said rollers run, brace-rods pivoted at one end to the wagon-frame and at the other end to the ladder or tower above said supporting-bars, means connected with the lower ends of the ladder or tower for moving the same on said supporting-bars toward said brace-bars whereby the ladder or tower may be elevated, and means for supporting the lower end of the ladder or tower when the same is collapsed.

13. In a wagon of the class described the combination with a wagon-frame, of a ladder or tower mounted thereon with each side extending down beside the wagon-frame and below the top thereof, a supporting-bar mounted at each side of the wagon-frame on which the lower ends of the ladder or tower are supported and move, a pair of bars slidably mounted on top of the wagon-frame with their outer ends adapted to support the sides of the ladder or tower when the ladder is in a collapsed position, and a lever pivotally connected with the inner ends of said bars for moving them whereby they may be drawn inward to release the ladder or tower or forced outward to support the same when desired.

820,191. COAT, HAT, AND UMBRELLA LOCK. RALPH H. HERBERLING, Wilmerding, Pa., assignor of one-half to Martin L. Jennings, Pittsburg, Pa. Filed Dec. 26, 1905. Serial No. 293,272.



Claim.—1. The improved lock for the purpose specified, comprising a body having at its lower side a fixed lateral arm, a curved arm pivoted in the side of the casing and adapted to coact with said fixed arm for clamping a garment, the same having a toothed shank extended upward within the casing, a pivoted toothed pawl adapted to engage such toothed shank and extended downward in position for engagement of a key, an umbrella-lock consisting of a U-shape bar which is pivoted in the face of the casing, its opposite end being toothed and adapted to pass through a slot in the casing, a pivoted pawl which engages the toothed end of the lock and having a shank extended and adapted for engagement with a key, and a U-shape hasp whose legs enter openings in the casing, one of them being provided with teeth, and a pivoted pawl adapted for engaging such toothed portion and having a shank which is coincident with the shanks of the first-named pawls, and a spring bearing upon the shanks of the several pawls, and thus holding them normally in engagement, but adapted to be released by a key, substantially as described.

2. The combination, with the lock-case having a rigid arm spaced therefrom, of a pivoted arm projecting from the lock-casing, and adapted to coact with said rigid arm for holding hats and coats, and having a toothed shank projecting within the casing, a pawl pivoted in the casing and engaging the aforesaid shank, one arm of the pawl extending downward, an umbrella-lock comprising a hasp 4 pivoted at one end to the casing and extending laterally therefrom and having its free end provided with teeth, an angular pawl within the casing, one end engaging the toothed portion of said hasp within the casing and the other extending alongside the first-named pawl so that both may be acted upon simultaneously by a key, and a spring bearing upon both pawls for holding them duly engaged, substantially as described.

3. The combination, with the casing provided with a fixed arm at its lower side and with openings in its upper end, of a U-shape hasp whose longer leg is provided with notches and also at its extremity with a laterally-projecting lug, a pivoted pawl which engages the hasp and is provided with a laterally-extended shank adapted for the action of a key thereon, a pivoted arm projecting from the lock-casing and adapted to engage the aforesaid fixed arm and provided with a toothed shank that extends upward within the casing alongside the longer leg of the hasp and at a slight angle thereto, and a pivoted pawl for engaging the shank, whereby when the hasp is partly withdrawn and rotated, its lug engages the shank of the pivoted arm and forces the latter into closer engagement with the articles of clothing, substantially as described.

4. The improved lock comprising a casing having a fixed and laterally-extended arm, a movable arm which is pivoted in the casing and extends outward for engagement with such fixed arm, the movable arm having an upwardly-extended toothed shank within the casing, a securing-hasp which is U shape and slidable in the casing, its longer leg being toothed and provided with a lug extending laterally, an umbrella-lock comprising a U-shape bar which is pivoted in the face of the lock and whose free end is notched and adapted to slide through a slot in the face, and toothed pawls pivoted within the casing and adapted to severally engage with and lock the pivoted arm, the hasp and the umbrella-lock as described, such pawls having laterally and downwardly extended shanks whose outer sides are coincident or flush, a spring acting upon such shanks and tending to hold the several pawls in their several engagements, the lock-casing having a keyhole adjacent to such shanks, whereby a key introduced thereinto will act on the several shanks simultaneously for effecting simultaneous release of the several locking devices, substantially as described.

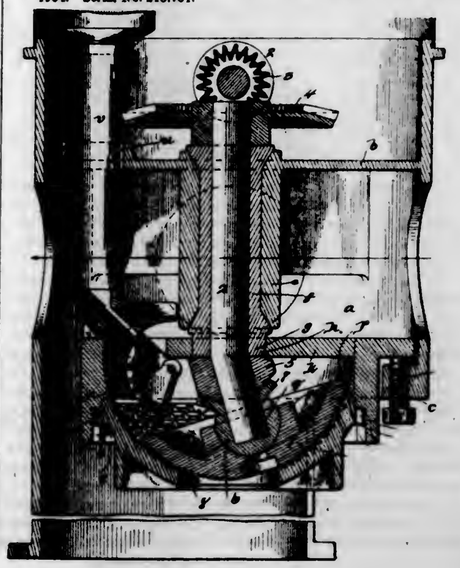
820,192. GLAZIER'S POINT. ROBERT J. HENDERSON, Philadelphia, Pa. Filed June 17, 1905. Serial No. 265,694.



Claim.—1. A glazier's point formed of sheet metal and consisting of a head and a prong both angular in cross-section, said prong extending centrally from said head, the limbs of said head and prong being in the same plane and the limbs of said head extending laterally beyond those of said prong and adapted to overhang adjacent panes.

2. A glazier's point formed of sheet metal and comprising a head of angular form, a longitudinally-extending prong projecting centrally from said head, said head having limbs extended beyond the sides of the prong and in the same plane and a spur on the inner portion of a limb of the head extending toward the point of the prong, the limbs of said head adapted to overhang adjacent panes.

820,193. GRINDING-MACHINE. HARRIET A. HIGBEE, Worcester, Mass., assignor to Henry D. Perky, Glencoe, Md. Filed July 8, 1904. Serial No. 215,781.



Claim.—1. In a grinding-machine, the combination with an adjustable spherically-concave grinding-plate having a center discharge-opening, of the upper spherically-convex grinding-plate, the vertical bearing of the frame, the bent shaft, its gear, and the spherical joint-socket loosely engaging said bent shaft, substantially as specified.

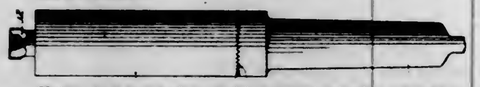
2. In a grinding-machine, the combination with a frame and an adjustable spherically-concave lower grinding-plate attached thereto, of a bent shaft, and a spherically-convex upper grinding-plate loosely connected to said bent shaft by a spherical joint-socket, substantially as specified.

3. In a grinding-machine, the combination with a frame and a detachable and adjustable spherically-concave lower grinding-plate, of a bent shaft, and a spherically-convex upper grinding-plate loosely connected to the lower oblique portion of said bent shaft, substantially as specified.

4. In a grinding-machine, the combination with an open-bottom frame, and a detachable lower concave grinding-plate, in connection therewith of a convex upper grinding-plate, the flanged spherical socket and the inclined conical collar, substantially as specified.

5. A grinding-machine, consisting of the open-bottom frame bent shaft, and gearing, the detachable and adjustable spherically-concave center discharge lower grinding-plate, the spherically-convex upper grinding-plate, the peripheral feed, and the adjustable feed-gate, substantially as specified.

820,194. TAP-STOCK. GEORGE A. HOFFMAN, Philadelphia, Pa., assignor to Joseph Hill Brinton, Philadelphia, Pa. Filed June 20, 1905. Serial No. 266,108.



Claim.—1. A tap-stock comprising a member having a clutching device rigidly fixed thereto, a second member having a clutching device rigidly fixed thereto and engaging said first clutching device, a stem connected to one of said members and having the other of said members sleeved thereon, and a spring within and engaged to said last-named member and said stem for pressing said members together, said construction permitting one of said members to reciprocate longitudinally with reference to the other.

2. A stock comprising a shank having a threaded stem and a clutching member fixed thereto, a recessed sleeve revoluble on said stem and having a clutching member fixed thereto for engaging said first clutching member, a coiled spring in the recess of said sleeve and engaging the bottom thereof, a nut adjustable on said stem and engaging said spring, and a chuck engaged to said sleeve.

820,195. CURTAIN FOR VESTIBULE-CARS. EDWARD C. HOLMES, Ludlow, Ky. Filed Dec. 21, 1905. Serial No. 293,876.



Claim.—1. The combination with a curtain-roller and curtain, of a handle for holding the curtain, with a releasing device for the handle, and connection therefor with the curtain-roller of shorter length than the curtain, whereby upon drawing out the curtain beyond its normal extension the releasing device will be actuated.

2. The combination, with a curtain-roller and curtain, of a handle for holding the curtain, with a releasing device for the handle, and connection therefor with the curtain-roller of shorter length than the curtain, and a pivoted catch to retain the handle, held in operation by said releasing device, until said device is actuated by drawing out the curtain beyond its normal extension.

3. The combination with a curtain-roller and curtain, of a handle for holding the curtain, a bar slidingly mounted on said handle, and flexible connection therefor, with the curtain-roller of shorter length than the curtain, and a pivoted catch with prongs in opposite direction, one prong engaging the handle and the other the sliding bar whereby said handle is locked until the bar is withdrawn.

4. In combination with abutting car-vestibules, with a curtain-roller and curtain secured on one car, and a pivoted catch for holding the curtain secured on the other car, of means for locking the catch in operative position, and a flexible strip of shorter length than the curtain connecting said locking means with said curtain-roller for shifting said locking means to release the catch when the cars are cut apart.

5. In combination with abutting car-vestibules, with a curtain-roller and curtain secured on one car, and a handle for the curtain, of a pivoted catch for engaging said handle secured to the other car, sliding bar mounted on the handle engaged by said catch to hold same in operative position, and a flexible strip of shorter length than the curtain connecting said sliding bar with the curtain-roller to shift said locking-bar to release said catch when the cars are cut apart.

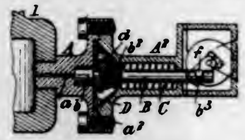
820,196. ARTIFICIAL FUEL AND PROCESS FOR MAKING SAME. STANISLAUS J. HON, South Bend, Ind. Filed Oct. 6, 1905. Serial No. 281,628.

Claim.—1. An artificial fuel consisting of earth, crude oil, rosin, oxid of lead and ground iron ore.

2. An artificial fuel consisting of earth, two thousand pounds, crude oil thirteen gallons, rosin five gallons oxid of lead five pounds and ground iron ore thirteen pounds.

3. The process of making an artificial fuel which consists in mixing crude oil, rosin, oxid of lead and ground iron ore and heating the mixture until it is reduced to liquid form, then adding earth to the first-mentioned mixture to reduce the whole to a putty-like consistency, and then forming the mass into the briquets, substantially as set forth.

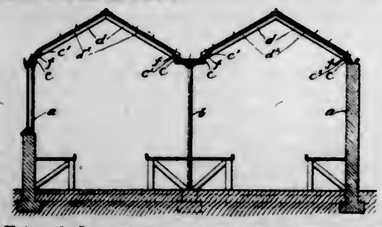
820,197. COUNTING DEVICE. WILLIAM HUCKS and WILLIAM HUCKS, Jr., London, England. Filed Aug. 8, 1905. Serial No. 273,303.



Claim.—1. In combination with an apparatus for aerating liquids and the like, means for actuating a counter to denote the number of operations effected, said means comprising a chamber with a connecting-passage into which the aerating-gas passes in drawing off, a piston in said chamber acted on by the pressure of the gas, an elastic diaphragm separating said piston from the connecting-passage to prevent the gas from entering the chamber, and a counter actuated by the reciprocations of the piston.

2. In combination with an apparatus for aerating liquids and the like, means for actuating a counter to denote the number of operations effected, said means comprising a chamber with a connecting-passage into which the aerating-gas passes in drawing off, a piston in said chamber acted on by the pressure of the gas, an elastic diaphragm separating said piston from the connecting-passage, a spring for returning the piston to its closed position when the pressure of the gas is relieved, and a counter at the end of the piston-rod and actuated thereby.

820,198. GREENHOUSE. CARL ICKES, Chicago, Ill. Filed June 19, 1905. Serial No. 266,063.



Claim.—1. In a roof, the combination of a horizontal member; rafters running transverse thereto; a pane of glass disposed substantially parallel to the rafters and having its lower edge a slight distance from said horizontal member; and a metal roof-plate interposed between the glass and the horizontal member, a portion of said plate being exposed to the air on both sides, on the outside to the air outside of the structure and on the inside to the air inside of the structure.

2. In a roof, the combination of a sill at the lower edge of the roof; panes of glass the lower edges whereof are remote from said sill, and a piece of metal covering the interval between the glass and the sill for conducting the heat within to the lower edge of the roof.

3. In a roof the combination of a horizontal member, rafters running transverse thereto, a pane of glass lying substantially parallel to the rafters and having its lower edge a slight distance above and away from the nearest portion of said horizontal member, whereby a space is left between them, and a metal roof-plate extending from the glass to the horizontal member to fill the space between them, a portion of said plate being exposed both top and bottom, the top surface to the outer air and the bottom surface to the air within the structure.

4. A roof comprising rafters, a sill at the lower edge of the roof for supporting said rafters, a metal strip running lengthwise of the sill and projecting upward from the same, panes of glass supported on said rafters and overlapping said strip, and means on said strip for maintaining the lower edge of the glass at a point remote from the sill.

5. A greenhouse-roof comprising rafters, a sill at the lower edge of the roof for supporting said rafters, a metal roof-plate running lengthwise of the sill and projecting upward from the same, panes of glass supported on said rafters and overlapping said roof-plate there being a space between the lower edge of the glass and adjacent portion of the sill, and a portion of said plate being exposed to the air on both sides, on the outside to the air ontside of the structure and on the inside to the air inside of the structure, and a rib formed in said roof-plate longitudinally thereof constituting a stop for holding the glass up away from the sill.

6. In a roof, the combination of a sill having a shoulder formed on the upper portion thereof, rafters running to said sill, glass extending between said rafters, and a roof-plate running lengthwise of the sill and held in place by the shoulder thereon, there being a space intervening between the glass and the sill and said space being covered by said plate.

820,199. FENCE-POST. GEORGE M. JACKSON, Wickliffe, Ky. Filed June 24, 1905. Serial No. 266,774.



Claim.—1. A fence-post having an anchor-rod embedded therein, eye-rods secured to said anchor-rod and formed with receiving-eyes beyond the surface of the post, said receiving-eyes being open to the introduction of a line-wire when in a plane approximately parallel to the plane of the eye.

2. A fence-post eye comprising a body portion terminally bent to provide an eye, and an additional eye member secured in said eye, said eye member being formed at its free end with an eye, the free end of the material comprising said latter eye being spaced laterally from and projected beyond the body portion thereof.

3. A fence-post eye comprising a body portion, an eye formed in the outer end thereof, and an eye member loosely engaging said eye and provided at its free end with an open eye to receive and engage a line-wire.

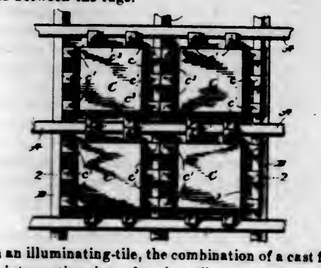
4. A fence-post eye comprising a body portion terminally bent to provide a receiving-eye, the terminal of the material forming said receiving-eye being spaced laterally from and projected beyond the body portion.

5. A fence-post eye comprising a body portion bent to provide a receiving-eye, said receiving-eye being open to the introduction of the line-wire when in a plane parallel to the plane of the eye.

6. A fence-post eye comprising a body-portion formed with an eye, and an eye member loosely engaging said eye, and formed at its free end with a wire-receiving eye, said receiving-eye being open to the introduction of the line-wire when in a plane parallel to said receiving-eye and closed against said wire when in any other plane.

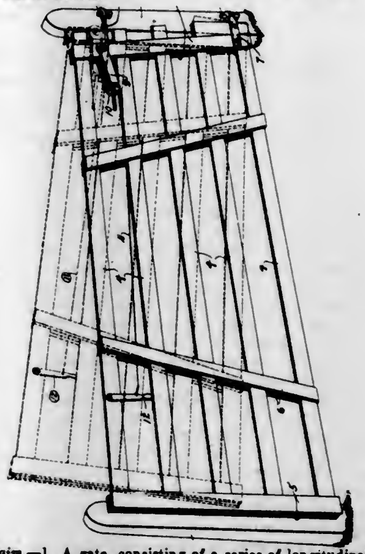
820,200. ILLUMINATING-TILE. JACOB JACOBS, Brooklyn, N. Y. Filed July 20, 1905. Serial No. 270,574.

Claim.—1. In an illuminating-tile, the combination of a frame composed of intersecting bars that form tile-receiving openings with straight sides, a tile in each opening having a body with straight sides conforming to the shape of the openings, and having on each side separated lugs that rest upon the bars, no portion of the body of the tile resting upon the bars, but only said lugs, said lugs being thickened vertically and having inclined upper sides, and a filling of concrete or cement between the tiles and above the lugs and entering the spaces between the lugs.



2. In an illuminating-tile, the combination of a cast frame composed of intersecting bars forming tile-receiving openings with straight sides, integral strengthening-lugs being provided where the bars intersect, tiles in such openings conforming in shape thereto, and having on each side separated lugs that rest upon the bars, no portion of the body of the tile resting upon the bars, but only said lugs, said lugs being thickened vertically and having inclined upper surfaces, and a concrete or cement filling between the tiles and above the lugs and filling the space between the lugs thereof.

820,201. GATE. JOSEPH S. JOHNSON, Lodi, Ohio, assignor of one-half to H. M. Myers, Lodi, Ohio. Original application filed Jan. 2, 1906, Serial No. 294,107. Divided and this application filed Feb. 16, 1906. Serial No. 301,353.



Claim.—1. A gate, consisting of a series of longitudinal bars secured at their ends by means of vertical members, hinge members secured at the rear thereof, one of the hinge members consisting of a horizontal hinge-rod and a pivotally-mounted clutch member having its free end provided with an opening taking over said hinge-rod, a wire secured to the free end of said clutch member and extending forwardly toward the free end of the gate, and a depending operating-lever pivotally secured to one of the horizontal bars and connected to the end of said wire.

2. In a gate adapted for vertical adjustment at its free end, a hinge connection connecting its upper rear end to a post and consisting of a hinge-rod suitably mounted, a pivotally-mounted clutch member having its free end provided with an opening taking over and adapted to grip said hinge-rod, and means for releasing said clutch member from said hinge-rod.

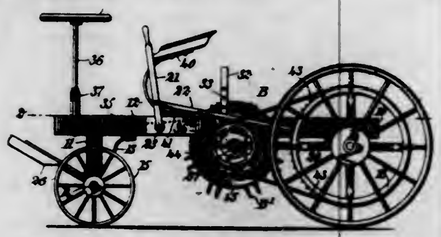
3. In a gate adapted for vertical adjustment at its free end, a hinge connection consisting of a hinge-rod suitably mounted, a horizontally-arranged clutch member pivotally secured at the upper rear end of the gate and provided with an opening taking over and adapted to grip said hinge-rod, and means connected to said clutch member whereby the same is released from said hinge-rod.

4. In a gate adapted for vertical adjustment at its free end, a hinge connection consisting of a hinge-rod suitably mounted, a clutch member pivotally secured to the gate and provided with an opening at its free end taking over said hinge-rod and adapted to automatically grip the same when the free end of the gate is elevated, and means connected to said clutch member whereby the same may be released from said hinge-rod.

5. In a gate adapted for vertical adjustment at its free end, the combination with a pivotally-mounted hinge-rod; of a pivotally-mounted clutch member having its free end provided with an opening taking over said hinge-rod and adapted to automatically grip the same when the free end of the gate is elevated and means connected to the free end of said clutch member whereby the same may be released.

6. In a gate adapted for vertical adjustment at its free end, a hinge connection connecting its upper rear end to a post and consisting of a horizontal hinge-rod and a pivotally-mounted clutch member having its free end provided with an opening taking over said hinge-rod, a wire secured to the free end of said clutch member and extending forwardly toward the free end of the gate, and an operating-lever pivotally secured to the gate and connected to said wire whereby said clutch member may be manipulated.

820,202. PLOW. JOHN Q. A. JOHNSTON, Newburyport, Mass. Filed Dec. 1, 1905. Serial No. 289,791.



Claim.—1. In agricultural implements, a wheel-supported frame, a shaft operated by the movement of the supporting-wheels of the frame, and a plow operatively carried by said shaft, which plow consists of opposing heads, an endless chain fixedly carried by the heads, concentric with the shaft, a ring eccentric to the shaft and having free movement thereon, and blades the shanks of which have end movement in the links and are engaged by the said ring.

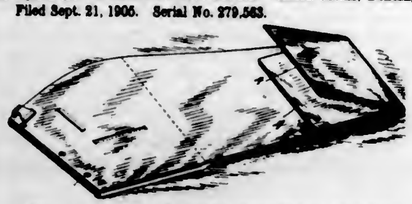
2. In agricultural implements, a wheel-supported frame, a shaft operated by the movement of the supporting-wheels of the frame, and a rotary plow secured to said shaft, consisting of opposing heads, an endless circular chain of links held concentric with the shaft between the heads, which links are in longitudinal and transverse series, rings loosely mounted on the shaft, one for each longitudinal series of links, which rings are eccentric to the shaft and are within the circle of the links, digging-blades, and shanks for the blades, which shanks have sliding movement in the links and at their inner ends engage the said rings.

3. In agricultural implements, a wheel-supported frame, a shaft operated by the movement of the supporting-wheels of the frame, and a rotary plow secured to the said shaft, which plow consists of opposing heads provided with circular marginal cutting-blades, an endless circular chain of links held concentric with the shaft between its heads, which links are in longitudinal and transverse series, each link in the chain being provided with an opening, the openings in the transverse series of links being in staggered order, independent rings loosely mounted on the shaft within the circle of the said links, a ring being provided for each longitudinal series of links, digging-blades, and shanks for the blades, which shanks are loosely passed through the openings in the said links and have bearing at their inner ends upon the said rings.

4. In agricultural implements, a wheel-supported frame, a shaft operated by the movement of the wheel-supported frame, and a rotary plow secured to the said shaft, consisting of opposing heads secured to the shaft, circular cutters secured to the outer marginal portion of each head, a chain of links carried by the said heads at a point adjacent to their outer margins, the said chain of links being concentric to the said shaft and comprising longitudinal and transverse series of links, each link being provided with an opening surrounded by a collar located at the outer face of the links, the openings in the transverse series of links being staggered with relation to each other, independent rings, one being provided for each longitudinal series of links, which rings have play upon the said shaft and are eccentric thereto, shanks mounted to slide in the openings of the said links, the inner ends of which shanks are engaged by the said rings, stops at the inner ends of the said shanks, and blades removably attached to the outer ends of the said shanks.

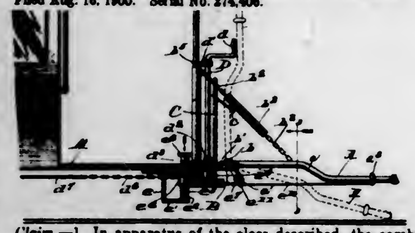
5. In agricultural implements, a wheel-supported frame, a shaft operated by the movement of the wheel-supported frame, and a rotary plow secured to said shaft, consisting of opposing heads secured to the shaft, circular cutters secured to the outer marginal portion of each head, a chain of links carried by the said heads at a point adjacent to their outer margins, the said chain of links being concentric to the said shaft and comprising longitudinal and transverse series of links, each link being provided with an opening surrounded by a collar located at the outer face of the links, openings in the transverse series of links being staggered with relation to each other, independent rings, one being provided for each longitudinal series of links, which rings have play upon the said shafts and are eccentric thereto, shanks mounted to slide in the openings of the said links, the inner ends of which shanks are engaged by the said rings, stops at the inner ends of the said shanks and blades removably attached to the outer ends of the said shanks, and means for throwing the plow-shaft into and out of operative connection with the supporting-wheels of the frame, and means for raising and lowering the said plow-shaft and adjustably supporting the same.

820,203. FORM FOR TROUSERS. ALICE JONES, Dehesa, Cal. Filed Sept. 21, 1905. Serial No. 279,563.



Claim.—A trouser-form having substantially the outline of a pair of trousers and adapted to be inserted in the leg thereof, said form comprising a body-piece, a hip-piece and a bottom piece, said hip-piece and bottom piece having a flexible connection with said body-piece whereby they may be folded thereupon.

820,204. CAR-FENDER. JOACHIM C. JORGENSEN, Washington, D. C., assignor of one-half to Jacob C. Donaldson, Washington, D. C. Filed Aug. 16, 1905. Serial No. 274,406.



Claim.—1. In apparatus of the class described, the combination of the car, brackets secured to the front end thereof, an upright fender secured to the brackets, a horizontal fender comprising a substantially rectangular frame, composed of side and end members and provided with elastic netting and journaled in the brackets by one of its side members, a rotatable sleeve on the opposite side member, coil-springs connecting the end members to the car-body and normally retaining the fender in a horizontal position, a crank-arm arranged centrally on the rear side member of the fender, a brake-shaft journaled on the car and provided with a sleeve on the lower end thereof, a pinion on the sleeve, a bracket depending from the car-body adjacent to the pinion, a stud-shaft projecting upwardly from the bracket, a coil-spring encircling the stud-shaft, a depressible sleeve slidably mounted on the stud-shaft, and provided with a seat for engaging the spring, a pinion on the sleeve normally out of mesh with the pinion on the brake-shaft, a foot-plate on the upper end of the sleeve whereby to depress the same to throw the pinion into mesh with the pinion on the brake-shaft, and flexible connections between the depressible sleeve and the crank-arm of the fender.

2. In apparatus of the class described, the combination with a car-body of a fender journaled on the front end thereof and provided with a depending arm adjacent to the car-body, springs for normally retaining the fender in a horizontal position, a brake-shaft journaled on the car-body, a sleeve secured to the lower end of the brake-shaft, a pinion on the sleeve, a bracket adjacent to the brake-shaft and provided with an upwardly-projecting stud-shaft, a sleeve slidably mounted on the stud-shaft, means for normally retaining the sleeve in elevated position, a pinion on the sleeve, means for depressing the sleeve to throw the pinion in mesh with the pinion on the brake-shaft, and a connection between the sleeve and the depending arm of the fender whereby the rotation of the sleeve will depress the free edge of the fender into contact with the track.

3. In apparatus of the class described, the combination with a car-body, of a fender journaled on the end thereof, means for normally retaining the fender in a horizontal position, a brake-shaft journaled on the car-body, a sleeve secured to the lower end of the brake-shaft, a pinion on the sleeve, a stud-shaft mounted adjacent to the brake-shaft, a depressible sleeve slidably mounted on the stud-shaft, means for normally maintaining the sleeve in an elevated position, a pinion on the sleeve, means for depressing the sleeve whereby to throw the pinion in mesh with the pinion on the brake-shaft, and means whereby the rotation of the sleeve may depress the free edge of the fender.

4. In apparatus of the class described, the combination with the car-body, of a fender journaled on the end thereof, means for normally retaining the fender in a horizontal position, a brake-shaft journaled on the car-body, a stud-shaft mounted adjacent to the brake-shaft, a depressible sleeve mounted upon the stud-shaft and normally retained in elevated position, means whereby the brake-shaft may impart rotation to the sleeve when the same is in its depressed position, and connections between the sleeve and the fender whereby rotation of the sleeve may depress the free edge of the fender.

5. In apparatus of the class described, the combination with the car-body, of a fender journaled on the end thereof, means for normally retaining the fender in horizontal position, a brake-shaft journaled on the car-body, a depressible sleeve mounted adjacent to the brake-shaft, means for normally retaining the sleeve in elevated position, means whereby the brake-shaft may impart rotation to the sleeve when the sleeve is depressed, and means whereby the rotation of the sleeve may depress the free edge of the fender.

6. In apparatus of the class described, the combination with the car-body, of a fender hinged to the end thereof, means for normally retaining the fender in horizontal position, a brake-shaft journaled on the car-body, means normally disconnected from the brake-shaft for depressing the free end of the fender into contact with the track, and means whereby to connect said depressing means with the brake-shaft.

7. In apparatus of the class described the combination with the car-body, of a fender hinged to the end thereof, means for normally retaining the fender in horizontal position, a brake-shaft journaled on the car-body, means normally disconnected from the brake-shaft for depressing the free edge of the fender into contact with the track, and means whereby the brake-shaft may operate said depressing means.

8. In an apparatus of the class described, the combination with the car-body, of a spring-supported fender hinged thereto, a brake-shaft journaled on the car-body, means normally disconnected from the brake-shaft for depressing the free end of the fender, and means whereby the brake-shaft may operate said depressing means.

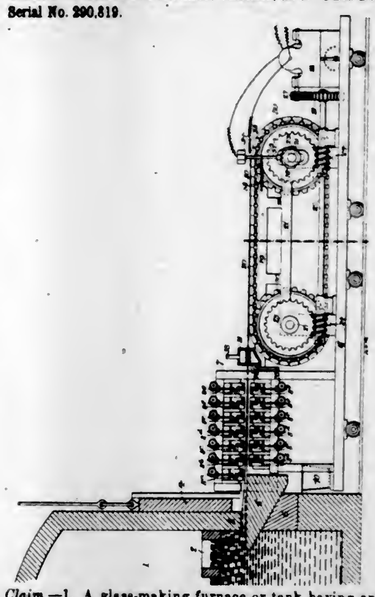
9. In apparatus of the class described, the combination with the car-body, of a spring-supported fender hinged thereto, a rotatable brake-shaft journaled on the car-body, means for depressing the free edge of the fender, and means for connecting said depressing means and said brake-shaft whereby rotation of the latter will actuate the former.

10. In apparatus of the class described, the combination with the car-body of a spring-supported fender hinged thereto, a rotatable brake-shaft journaled on the car-body, rotatable means normally disconnected from the brake-shaft for depressing the free edge of the fender, and means for connecting the brake-shaft and said depressing means.

11. In apparatus of the class described, the combination with a car-body having a brake-shaft, of brackets secured to the end thereof, a vertical fender secured to the brackets, a horizontal fender comprising a substantially rectangular frame journaled in the brackets, a rotatable sleeve on the free edge of the fender, an elastic connection between the fender and the car-body for maintaining the fender in a horizontal position, means for depressing the free edge of the fender, and means whereby the brake-shaft may actuate said depressing means.

12. In an apparatus of the class described, the combination with the car-body having a brake-shaft, of a normally horizontal fender hinged to the car-body, means normally disconnected from the brake-shaft for depressing the fender and maintaining the same in contact with the track, and means whereby the brake-shaft may operate said depressing means.

820,205. APPARATUS FOR THE MANUFACTURE OF SHEET-GLASS. WILLIAM B. KEIGHLEY, Vineland, N. J. Filed Dec. 7, 1905. Serial No. 290,819.



Claim.—1. A glass-making furnace or tank having an adjustable block for varying the area of the discharge-outlet from said tank said block having a wedge bearing on the tank, whereby it will be raised and lowered by movement in a direction at right angles to the vertical.

2. A sheet-glass machine having a tank and means located near the outlet of the tank for projecting upon the sheet of glass emerging from the tank a stream of ignited gas or vapor in a direction transverse to the direction of flow of the sheet.

3. A sheet-glass machine having a tank and means for projecting repeated streams of ignited gas or vapor upon the sheet of glass issuing from the tank, said streams being separated from one another in order to permit of a cooling of the sheet of glass between the successive heatings.

4. A sheet-glass machine having a tank and means located near the outlet of the tank for projecting streams of ignited gas or vapor and of air or other fluid successively upon the sheet of glass issuing from the tank.

5. A sheet-glass machine having a tank and means for projecting repeated streams of ignited gas or vapor, alternating with streams of air or other fluid, upon the sheet of glass issuing from the tank.

6. A sheet-glass machine having a tank and means for providing fluid under pressure to the under side of the sheet of glass issuing from the tank, to buoy up or support the same in its passage.

7. A sheet-glass machine provided with a tank and means located near the outlet of the tank for projecting streams of ignited gas or vapor upon opposite sides of a sheet of glass issuing from the tank.

8. A sheet-glass machine having a tank and means located near the outlet of the tank for projecting, first a heating fluid and then a cooling fluid, upon a sheet of glass issuing from the tank.

9. A sheet-glass machine having a tank and means located near the outlet of the tank for projecting, first a heating fluid and then a cooling fluid, upon opposite sides of a sheet of glass issuing from the tank.

10. A sheet-glass machine having a tank, and means for pro-

jecting upon a sheet of glass issuing from the tank, first, a heating fluid, then a cooling fluid, then a further heating fluid, and then a further cooling fluid.

11. A sheet-glass machine having a tank, means for drawing a sheet of glass from said tank, a pair of wooden tension-blocks between which said sheet of glass is caused to pass by said draft appliances and means for supplying watery vapor to the surfaces of said blocks.

12. A sheet-glass machine having a tank, means for drawing a sheet of glass from the tank, and a pair of hollow wooden tension-blocks between which the sheet of glass is caused to pass by said draft appliance, said blocks being provided with means for supplying watery vapor to the surfaces of the same.

13. A sheet-glass machine having a tank, means for drawing a sheet of glass from the tank, a pair of tension-blocks between which the sheet of glass is drawn by said draft appliance, and means located near the outlet of the tank for projecting streams of ignited gas upon said sheet of glass before it reaches said tension-blocks.

14. A sheet-glass machine having a tank, means for drawing a sheet of glass from the tank, a pair of tension-blocks between which the sheet of glass is drawn by said draft appliance, and means located near the outlet of the tank for projecting streams of cooling fluid upon the sheet of glass before it reaches said tension-blocks.

15. A sheet-glass machine having a tank, means for drawing a sheet of glass from the tank, a pair of tension-blocks between which the sheet of glass is drawn by said draft appliance, and means for heating and cooling said sheet of glass before it reaches said tension-blocks.

16. A sheet-glass machine having a tank, means for drawing a sheet of glass therefrom, and an electrically-heated severing device operating in conjunction with said draft mechanism.

17. A sheet-glass machine having a tank, means for drawing a sheet of glass therefrom and supporting the same during its travel, and an electrically-heated severing device movable from and toward said conveyer to contact with the sheet of glass at successive points in the length of the same.

18. A sheet-glass machine having a tank, means for drawing a sheet of glass therefrom and supporting the same during its travel, an electrically-heated severing device for said sheet of glass, and means for opening and closing the electric circuit through said severing device at intervals.

19. A sheet-glass machine having a tank, means for drawing a sheet of glass therefrom and supporting it during its travel, an electrically-heated severing device movable from and toward said supporting-conveyer to contact with the sheet of glass at different points in its length, and means whereby movement of said severing device is caused to open and close the electric circuit through the electrical member of the same.

20. A sheet-glass machine having a tank, means for drawing a sheet of glass therefrom, and an electrically-heated severing device movable from and toward said sheet of glass and also movable forwardly with the same.

21. A sheet-glass machine having a tank, means for drawing a sheet of glass therefrom, and an electrically-heated severing device movable from and toward said sheet of glass and also movable forwardly with the same, and a spring for returning said device to its normal position.

22. A sheet-glass machine having a tank, a mechanical device for supporting and carrying forward a sheet of glass issuing from the tank, and means located near the outlet of the tank for projecting a heating fluid against said sheet of glass before it comes into contact with said mechanical conveying device.

23. A sheet-glass machine having a tank and a mechanical device for supporting and carrying forward a sheet of glass issuing from said tank, and means for projecting heating and cooling fluids alternately against said sheet of glass before it comes into contact with the said mechanical conveying device.

24. A sheet-glass machine having a tank, means for feeding forwardly a sheet of glass issuing horizontally from said tank, and means for projecting fluid under pressure onto the under side of said sheet of glass to buoy up or support the same before it reaches said mechanical conveyer.

25. A sheet-glass machine having a tank, means for conveying forwardly in a horizontal direction a sheet of glass issuing from said tank, means for projecting fluid under pressure onto the under side of the sheet of glass issuing from the tank to buoy up or support the same before it reaches said mechanical conveyer, and a pair of tension-blocks interposed between said mechanical conveyer and said fluid-supporting means.

26. A sheet-glass machine having a tank, and means located near the outlet of the tank for projecting upon the sheet of glass issuing from the tank, a spray of fluid extending across said sheet of glass and of uniform temperature and pressure throughout.

27. A sheet-glass machine having a tank, and means located near the outlet of the tank for projecting upon the sheet of glass issuing from said tank, a spray of fluid extending across said sheet and of uniform temperature throughout, which temperature is lower than that of the said sheet of glass.

28. A sheet-glass machine having a tank, and means located near the outlet of the tank for projecting upon each side of the sheet of glass issuing from said tank, a spray of fluid extending across said sheet, and of uniform temperature and pressure throughout.

29. A sheet-glass machine having a tank, and means located near the outlet of the tank for spraying upon each side of the sheet of glass issuing from said tank, a spray of fluid extending throughout the width of the sheet and of equal temperature throughout, which temperature is less than that of the sheet of glass.

820,206. CASING-BOWL. WILLIAM H. KEMMELMAN, Parkersburg, W. Va. Filed July 1, 1905. Serial No. 267,397.



Claim.—1. A casing-bowl having a removable lining provided with an interior concave surface.

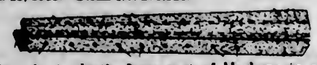
2. A casing-bowl having a removable lining provided with an interior concave surface, and resilient means for supporting said lining.

3. In a casing-bowl, the combination of an outer shell having a shoulder at the lower portion thereof, a rubber ring supported by said shoulder, and a removable lining supported above said rubber ring within the outer shell.

4. A casing-bowl having an expansible packing-ring to prevent the passage of water into the casing when in use, and a lining bearing on the ring to expand the ring and force it against a tool.

5. A casing-bowl having an expansible packing-ring to prevent the passage of water into the casing when in use.

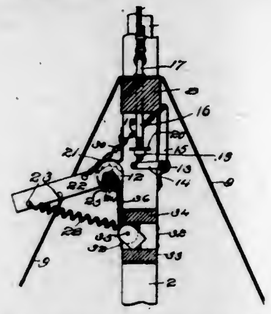
820,207. FENCE-POST. WILLIAM H. KIMBALL, Tallapoosa, Ga., assignor of one-half to William C. Kimball, Tallapoosa, Ga. Filed Sept. 13, 1905. Serial No. 278,316.



Claim.—1. A plastic fence-post of U shape in cross-section, comprising two upwardly-tapering flanges having strengthening-wires embedded therein, a connecting-bar having a face and provided with a plurality of transverse openings, and means for securing the fence to the face of said connecting-bar.

2. A plastic fence-post of U shape in cross-section, comprising two upwardly-tapering flanges having strengthening-wires embedded therein, a connecting-bar having an inner and an outer face and provided with a plurality of transverse openings, and members for securing the fence-rails or line-wires of the fence to the outer face of the connecting-bar, and additional means for fastening said securing member to the inner face of the connecting-bar.

820,208. ELEVATOR. BURTON H. KINGSLEY, Scranton, Pa. Filed Aug. 15, 1905. Serial No. 274,318.



Claim.—1. In a mechanism of the class described, the combination with parallel guides, of a car provided with movable uprights positioned between said guides, a toggle-bar secured to said uprights, a rotatable shaft carried by said uprights, flexible means connecting diametrically opposite parts of said toggle-bar and fixedly secured to said shaft, and means for rotating said shaft and thereby winding said flexible means thereon, for compressing said toggle-bar.

2. In a mechanism of the class described, the combination with guides, of a car provided with laterally-movable uprights positioned between said guides, a toggle-bar positioned between and connected to said uprights, a rotatable shaft carried by said uprights, flexible means connecting diametrically opposite parts of said toggle-bar and fixedly secured to said shaft, a roller fixedly secured to said shaft, and means for moving said roller to an engaging position with a guide, whereby movement of the car will cause rotation of said roller and shaft and compression of said toggle-bar, through the medium of said flexible means.

3. In a mechanism of the class described, the combination with vertical guides, of a car provided with a cross-head positioned between said guides, said cross-head provided with bifurcated ends, laterally-movable uprights carried by said car and positioned within the bifurcated ends of said cross-head, a toggle-bar connected to said uprights, primary and auxiliary, revoluble shafts positioned upon opposite sides of said uprights, said auxiliary shaft provided with primary and auxiliary arms positioned at substantially right angles to each other, a bracket formed upon one of said uprights, an eccentric provided with a lever, loosely mounted upon said primary shaft, within said bracket, a toothed roller fixedly secured to one end of said primary shaft and contiguous to said eccentric, a spring secured at one end to said lever and at its opposite end to an upright, means connecting said lever and auxiliary arm, flexible means connected to diametrically opposite parts of said toggle-bar and fixedly secured to said primary shaft, a vertically-movable member positioned within said cross-head and secured to said auxiliary arm, and a spring secured at its end to said uprights and in engagement with said vertically-movable member.

4. In a mechanism of the class described, the combination with vertical guides, a car positioned between said guides, of substantially parallel, movable members carried by said car, a toggle-bar secured to said movable members, a shaft provided with an eccentric carried by said car, a flexible member connected to diametrically opposite parts of said toggle-bar and fixedly secured to said shaft, a toothed member fixedly secured to said shaft and adapted to engage one of said guides, and means for moving said eccentric for adjusting said toothed member.

5. In a mechanism of the class described, the combination with guides, of a car provided with parallel, laterally-movable means, a toggle-bar connected to said laterally-movable means, a shaft provided with an eccentric carried by said car, a pulley secured upon one side of said toggle-bar, a flexible member secured to one side of said toggle-bar and passed around said pulley and fixedly secured to said shaft, a toothed member fixedly secured to one end of said shaft, and means for moving said eccentric, and thereby adjusting the toothed member.

6. In a mechanism of the class described, the combination with guides, of a car provided with movable guide-engaging means, a toggle-bar carried by said car, a shaft provided with toothed means carried by said car, a flexible member connected to said toggle-bar and shaft, and means for adjusting the shaft for placing the toothed portion in different positions for controlling movement of said flexible member and toggle-bar.

7. The combination with vertical guides, of a car provided with movable uprights, positioned between said guides, a toggle-bar mounted upon said uprights, rotatable means carried by said car, and flexible means connected to said toggle-bar and rotatable means and capable of being wound upon said rotatable means for compressing said toggle-bar and thereby causing said uprights to clamp upon the guides.

8. The combination with guides, of a car provided with laterally-movable uprights positioned between said guides, a toggle-bar engaging said uprights, means engaging diametrically opposite parts of said toggle-bar and being capable of compressing said toggle-bar for causing said uprights to clamp the guides.

9. The combination with guides, of a car provided with laterally-movable uprights, constituting sides, positioned between said guides, a toggle-bar engaging said uprights, a rotatable member carried by said car, and flexible means connecting said toggle-bar and rotatable member and capable of compressing said toggle-bar when movement is imparted to said rotatable member.

10. The combination with vertical guides, of a car provided with laterally-movable uprights, positioned between said guides, a toggle-bar carried entirely by said uprights, said toggle-bar comprising sets of members, and means for closing said sets together for causing said uprights to clamp the guides.

11. The combination with guides, of a car provided with laterally-movable uprights, positioned between said guides, a toggle-bar pivotally mounted at each end upon said uprights, said toggle-bar comprising sets of members, and means engaging diametrically opposite portions of said toggle-bar and capable of drawing the sets of members of said toggle-bar together for moving said uprights outward.

12. The combination with guides, of a car provided with movable uprights, constituting the sides of said car, positioned between said guides, a revoluble shaft carried by said car, means connected to said shaft and being capable of separating said uprights, when rotary movement is imparted to said shaft.

13. The combination with guides, of a car provided with movable uprights, positioned between said guides, a toggle-bar pivotally secured at each end to said uprights, said toggle-bar comprising sets of members, and means for simultaneously drawing the sets of members of said toggle-bar together for moving the uprights into engagement with said guides.

14. The combination with guides, a car provided with laterally-movable members positioned between said guides, a toggle-bar positioned between said uprights, said toggle-bar comprising sets of members, and means for compressing said sets of members for moving said laterally-movable members against said guides.

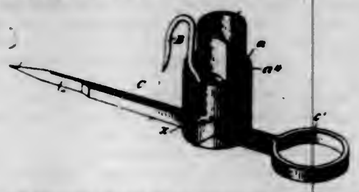
15. The combination with guides, of a car provided with movable guide-engaging means, a toggle-bar carried by said car, a shaft provided with toothed means carried by said car, means connecting said toggle-bar and shaft, and capable of compressing said toggle-bar when rotary movement is imparted to said toothed means and shaft.

16. The combination with guides, a car positioned between said guides, of guide-engaging members carried by said car, a toggle-bar engaging said guide-engaging members, said toggle-bar comprising sets of members, and means connected to and being capable of drawing said sets of members together for moving said guide-engaging members.

820,209. CANDLE HOLDER AND STICK. PHILIP M. KNIPPENBERG, Oshkosh, Wis. Filed Jan. 18, 1905. Renewed Oct. 2, 1905. Serial No. 281,061.

Claim.—1. An improved holder for the purposes described consisting of a tubular metal section, the upper end of which is slit horizontally nearly its entire transverse width, the said upper portion being vertically slitted and bent to form a spring-socket, one end of the vertically-slitted portion being bent radially outward, a hanger-hook secured to the rear of the lower part of the tube, said lower part of the tube having a pair of alining horizontally-elongated openings

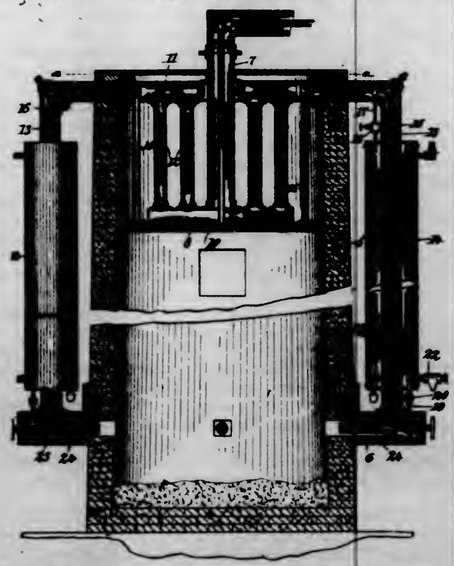
and a combined stick or picker device, which includes an expansible member vertically recessed and adapted to be passed through the two openings in the tube and to interlock therewith when the recessed portion registers therewith substantially in the manner shown and for the purposes described.



2. An improved holder for the purpose described; which comprises a tubular metal section whose upper end is formed to frictionally engage a candle or similar torch and whose lower part has a pair of alining horizontal openings, and a picker-stick which includes an expansible member vertically recessed and adapted to be passed through the openings in the tubular metal section to interlock therewith when the recessed portion of the stick registers therewith, as set forth.

3. A holder of the character described; formed of a tubular section of spring metal, the upper part of which is cut in the horizontal plane and vertically, whereby the said upper end is bendable to form a spring-socket of less diameter than the body portion and located wholly within the circumference of the said body portion, the lower end of the main body portion having alining horizontal openings adapted to receive a picker-stick.

820,210. CUPOLA. JOHN H. KOONS, Delphos, Ohio. Filed Mar. 22, 1904. Renewed Sept. 14, 1905. Serial No. 278,481.



Claim.—1. The combination with a cupola and twyer-boxes communicating therewith, of a heater comprising low-pressure pipes arranged in the cupola and communicating with the twyer-boxes, high-pressure air-pipes arranged in the heater and communicating with the twyer-boxes, oil-tanks communicating with the twyer-boxes, and means for heating the oil therein.

2. The combination with a cupola and twyer-boxes arranged at the lower portion thereof, of a heater comprising low-pressure air-pipes arranged in the heater and communicating with the twyer-boxes, high-pressure air-pipes arranged in the heater and communicating with the twyer-boxes, and oil-supply tanks surrounding the air-pipes at the outer side of the cupola.

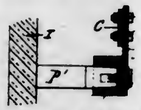
3. The combination with a cupola and twyer-boxes arranged at the lower portion thereof, of a heater comprising a low-pressure air-pipe leading through the top of the cupola, branch pipes with which the lower end of said low-pressure pipe communicates, branch pipes at the upper portion of the heater, pipes connecting the lower and upper branch pipes, a low-pressure pipe leading from the upper branch pipes to the twyer-boxes, a high-pressure pipe leading through the low-pressure pipe, branch pipes with which the lower end of the high-pressure pipe communicates, low-pressure pipes leading from said branches through the low-pressure pipes and communicating with the twyer-boxes, and oil-tanks surrounding the pipes at the outer side of the cupola and communicating with the twyers.

4. The combination with a cupola and twyer-boxes at the lower portion thereof, of a heater comprising low-pressure air-pipes arranged in the cupola, high-pressure air-pipes having portions arranged in the heater and portions extended through the low-pressure pipes at the lower side of the cupola, all of said pipes communicating with the twyer-boxes, oil-tanks surrounding the pipes at the outer side of the cupola, and air-supply pipes leading from the high-pressure pipes into the upper portions of the tanks.

5. The combination with a cupola and twyer-boxes arranged at the lower portion thereof, of a heater comprising low-pressure air-pipes arranged in the cupola and communicating with the twyer-boxes, high-pressure air-pipes passing through the first-named pipes and communicating with the twyer-boxes, oil-tanks surrounding the pipes at the outer side of the cupola and communicating with the twyer-boxes, valve-controlled tubes leading from the high-pressure pipes into the tanks at the upper portion, and steam-supply pipes leading into the tanks.

6. A heating apparatus for a cupola, comprising an oil-supply tank, means for heating the oil in the tank, and means for supplying air to the burners under high and low pressures independently one of the other.

820,211. ELECTRICAL CONNECTION FOR SWITCHBOARDS. HUBERT KRANTZ, Brooklyn, N. Y. Filed July 21, 1903. Serial No. 166,488.



Claim.—In combination with the insulating-plate of a switchboard and the bus-bar therefor, means for supporting the bus-bar comprising a post projecting from the said plate, a bushing forced onto said post, and having an integral blade abutting against and mechanically and electrically secured to said bus-bar for supporting the same.

820,212. DEVICE FOR SWINGING HAMMOCKS. WILLITTS A. KRESS, Arkansas City, Kans. Filed Nov. 23, 1905. Serial No. 288,753.

Claim.—1. As an article a lever provided with a foot at one end and a handhold at the other end and with eyes spaced longitudinally thereof and means engaging one of the eyes for attachment to a hammock.

2. As an article a lever provided with an elastic foot at one end and a handhold at the other end, screw-eyes inserted in the lever adjacent the handhold and in a series spaced longitudinally of the lever, a snap-hook engaged in one of the eyes, a cord connected to the snap-hook and a clasp carried by the cord proportioned to engage the edge of a hammock.

3. As a new article of manufacture a hammock-propelling attachment comprising a lever having a handhold, a flexible device adjustably connected to the lever and means for securing said device to a hammock.

4. As a new article of manufacture a propelling attachment for hammocks comprising a lever having a handhold, a flexible device adjustably connected to the lever and clasps carried by said device and adapted to be secured to a hammock.

5. As an article of manufacture a propelling attachment for hammocks comprising a lever having a handhold at one end, a plurality of alining eyes extending from the lever, a flexible device detachably secured to one of said eyes and clasps for fastening said device to a hammock.

6. As a new article of manufacture a propelling attachment for hammocks comprising a lever having a handhold at one end, a plurality of eyes extending from the lever, a flexible device, means secured thereto for detachably engaging any one of the eyes, and clasps upon the flexible device for engaging a hammock.

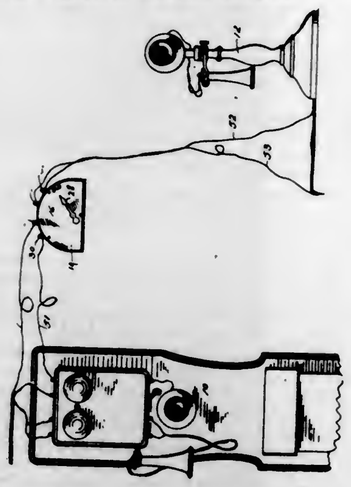
7. The combination with a hammock; of a propelling device therefor comprising a flexible device, means for securing the same to a hammock, a lever adapted to contact at one end with the ground and having a handhold at its other end, and means for adjustably securing the lever to the flexible device.



8. As a new article of manufacture a hammock-propelling device comprising a lever having a handhold, a connecting device adjustably fastened to the lever, and means for securing said device to a hammock.

9. As a new article of manufacture a propelling attachment for hammocks comprising a lever having a handhold, a connecting device adjustably and detachably fastened to the lever and means for securing said device to a hammock.

820,213. SIGHT-INDICATOR FOR TELEPHONES. FRANK R. LAY, Greenfield, Ind., assignor of one-half to Walter W. McCole, Greenfield, Ind. Filed Apr. 22, 1905. Serial No. 256,882.



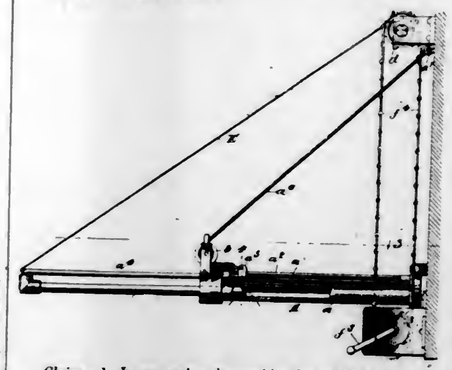
Claim.—1. The combination with a plurality of telephones having bell-circuits, of a sight-indicator, electrical means for controlling said sight-indicator, and electrical connection with the bell-circuits for indicating the telephone over which a call has been made.

2. The combination with a plurality of telephones, of a sight-indicator with a pair of oppositely-located magnets, separate electrical connection between the bell-circuit of each telephone and one of said magnets, a core for the two magnets, an indicator-finger, and means actuated by the movement of said core for moving said finger.

3. The combination with two telephones, of a sight-indicator with a pair of oppositely-located magnets, an electrical connection between the bell-circuit of each telephone and one of said magnets, a core for said magnets, an oscillatory plate mounted near said core, an arm connected with said core adapted to oscillate said plate when the core is moved by a magnet, a crank-shaft operated by said plate, and an indicator-finger secured on said crank-shaft.

4. The combination with two telephones, of a sight-indicator having a face-plate with a symbol representing each telephone, a finger adapted to point to one or the other of said symbols, and electrical means in said indicator for actuating said finger, said electrical means being connected with said telephones.

820,214. AWNING. FRANK A. LEARNED, Chicago, Ill. Filed June 13, 1905. Serial No. 265,040.



Claim.—1. In an awning the combination of side arms, comprising each a tube of relatively large diameter adapted to be hinged to a building, and a longitudinally-slotted tube of relatively small diameter supported on the first tube, a cross-bar connecting the outer ends of the side arms, pulleys at the ends of the cross-bar, rods sliding in the respective tubes of the side arms, the rods in the tubes of relatively small diameter being provided with lugs for engaging the slots, a cross-bar connecting the free ends of the rods, a winding-roller journaled above the side arms and provided with a sprocket-wheel, ropes secured to the lugs and passing over the pulleys and secured at points below the winding-roller, an awning extending from the winding-roller to the outer cross-bar and means engaging the sprocket-wheel for actuating the winding-roller.

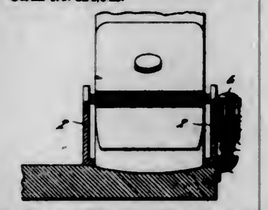
2. In an awning, the combination of side arms, comprising each a longitudinally-slotted tube adapted to be hinged to a building, and rods sliding in the tubes and provided with lugs for engaging the slots, a cross-bar connecting the outer ends of the tubes, a cross-bar connecting the free ends of the rods, a flexible strand secured to the lugs and adapted to be engaged with a building, a winding-roller journaled above the side arms and provided with a sprocket-wheel, an awning extending over the winding-roller to the outer cross-bar, and means engaging the sprocket-wheel for actuating the winding-roller.

3. In an awning, the combination of a frame provided with extensible side arms, each comprising a longitudinally-slotted tube adapted to be hinged to a building, and a rod sliding in the tube and provided with a lug for engaging the slot, a cross-bar connecting the ends of the tubes, a cross-bar connecting the ends of the rods, pulleys journaled in the ends of the first cross-bar, ropes secured to the lugs and passing over the pulleys and secured at points above the side arms, whereby when the frame is lowered the side arms may be extended.

4. In an awning the combination of a frame comprising extensible side arms adapted to be hinged to a building each of the side arms comprising a longitudinally-slotted tube, and rods sliding in the tubes and provided with lugs for engaging the slots, a cross-bar connecting the ends of the tubes, a cross-bar connecting the free

ends of the rods, pulleys on the ends of the first cross-bar, and a rope secured to the lugs, passing over the pulleys and secured at points above the side arms whereby when the frame is lowered the side arms may be extended.

820,215. **PLANE.** JOHN D. LEVEL, Johnstown, Pa. Filed Sept. 17, 1904. Serial No. 224,842.



Claim.—1. The combination with a plane, of a tubular sleeve carried thereby and slotted longitudinally, a longitudinally-movable plunger mounted in the sleeve, a guide member carried by the plunger, a stud provided on the latter and adapted to engage the end edge of the sleeve for maintaining the plunger in normal retracted position, and a spring acting upon and to project the plunger for moving the guide member to active position, the stud being adapted during such movement of the plunger to travel in the slot.

2. The combination with a plane, of a guide member operatively connected therewith and adapted to normally lie in a plane above and to be projected below the sole of the plane for and to bear upon the side of a body for guiding the plane in its movements thereover, means for moving the guide member to active position, and means for locking the member in inactive position.

3. The combination with a plane, of a guide member operatively connected therewith and adapted to be projected below the sole of the plane in position to bear upon the side of the body for guiding the plane in its movement thereover, a spring for automatically moving the member to active projected position, and means for locking the member in normal, inactive position in a plane above the sole of the plane.

820,216. **TUBE-COMPRESSOR.** EVERETT K. LEFFINGWELL and HARRY B. ELTONHEAD, West Haven, Conn. Filed Mar. 31, 1905. Serial No. 253,176.



Claim.—A tube-compressor having two jaws connected by a spring, said jaws being provided with longitudinal correspondingly-shaped corrugations, upright lugs on one of said jaws and a compressing-lever fulcrumed in said lugs, said lugs being provided with apertures adapted to hold the tube to be compressed between the jaws and in a position transverse thereto.

820,217. **VEHICLE ATTACHMENT.** JAMES LEITH, Sherbrook, Canada, assignor of one-half to Napoleon Labrecque, Sherbrook, Canada. Filed June 9, 1905. Serial No. 264,516.

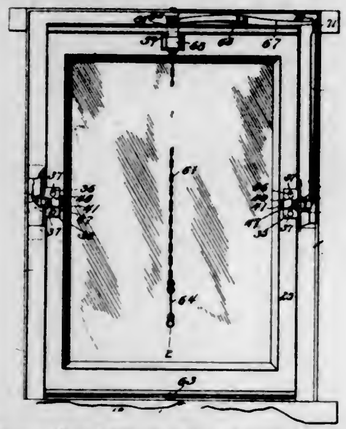


Claim.—1. The combination with a vehicle, of a brake for the rear wheels, and flexible connections intermediate the brake mechanism and the front axle of the vehicle to prevent turning of the axle when the braking mechanism has been operated.

2. The combination with a vehicle, of a braking means mounted on the rear axle and adapted to coöperate with the rear wheels, a brake-rod for operating said braking means, and flexible connections extending from the front axle to said braking-rod, whereby said connections are tightened in the operation of the rod.

3. The combination with a vehicle, of braking-disks adapted for coöperation with the rear wheels, levers connected to said disks and projecting toward the longitudinal center of the vehicle, a braking-rod slidably supported on the reach-bar of the vehicle, and chains connected with said brake-rod and with the front axle.

820,218. **WINDOW.** BENJAMIN J. LESLIE, Chicago, Ill. Filed Oct. 11, 1905. Serial No. 282,337.



Claim.—1. The combination with a window-frame and a swinging sash, the adjacent faces of the sash and frame being grooved, of packing-strips normally held within one set of grooves and movable into the other set of grooves when the sash is closed, and means connected to both strips for simultaneously moving them to sash-releasing position.

2. The combination with a window-frame and a swinging sash, both of which are provided with grooves in their adjacent faces, of vertically and laterally movable packing-strips normally retained within the grooves of the frame and movable into the grooves of the sash when the latter is closed, and packing-strip supports arranged to permit free movement of the strips in the direction of the sash.

3. The combination with a window-frame and a swinging sash, both of which are provided with grooves in their adjacent faces, of packing-strips arranged in one set of grooves and movable automatically into a second set of grooves when the sash is closed, one edge of each of the packing-strips being beveled to facilitate its entrance into its receiving-groove.

4. The combination with a window frame and sash, both of which are provided with grooves in their adjacent faces, of packing-strips movable into both grooves to close the spaces between the sash and frame, said strips being formed of sheet metal having a filling of asbestos.

5. The combination with a window frame and sash, of packing-strips for closing the spaces between the sash and frame, and supporting members pivotally connected to the strips at points about midway of the length of the latter to permit close contact between the strip and sash.

6. The combination with a window frame and sash, the adjacent faces of both being grooved, of packing-strips normally held within the grooves of the frame, strip-sustaining bars having cam-shaped end portions to which the strips are pivoted, guiding members having openings for the passage of such cam-shaped end portions, and means for operating said sustaining members to withdraw the strips from engagement with the sash.

7. The combination with a window-frame and a swinging sash, of packing-strips, and a sash-opening means connected to and arranged to move the strips from the sash in advance of the opening movement of the latter.

8. The combination with a window-frame and a swinging sash, of packing-strips for closing the spaces between the sash and frame, a sash-opening means, and mechanism for operatively connecting the same to the strips, whereby said strips may be moved from the sash in advance of the opening movement of the latter.

9. The combination with a window-frame, of a swinging sash, packing-strips carried by the frame and arranged to engage the sash, levers carried by the frame-lintel, and means for connecting the outer ends of the levers to the strips, and a sash-opening means arranged to engage the inner ends of said levers to effect movement of the levers and strips in advance of the opening movement of the sash.

10. The combination with a window frame and sash, of packing-strips carried by the frame, levers pivoted to the frame-lintel, suspension-bars connecting the outer ends of said levers to the strips, cam-shaped lugs projecting from the inner ends of said levers, a slidable dog carried by the sash and arranged to engage said lugs, and means for moving said dog during opening movement of the sash to effect movement of the strips in advance of the opening movement of the sash.

11. The combination with a window-frame, of a pivoted sash, packing-strips supported by the frame, levers pivoted to the frame-lintel, the outer ends of said levers being notched, strip-suspension bars having hooked upper ends entering said notches, cam-shaped lugs projecting from the inner ends of said levers, a slidable dog carried by said sash and having an inbent arm arranged to engage said lugs, whereby on downward movement of said dog the strips will be moved in advance of the opening movement of the sash.

12. The combination with a window frame and sash, of packing-strips carried by the frame and arranged to engage the sash, levers pivoted to the frame-lintel and counterweighted at their inner ends, the outer ends of said levers being notched, suspension-bars hooked at their upper ends and engaging said notches, the lower ends of said bars being pivotally connected to the strips, lugs projecting from the inner ends of the levers, a slidable dog carried by the sash and provided with an opening for the passage of said lugs, and an arm projecting from said dog and arranged to engage with said lugs to effect movement of the strips in advance of opening movement of the sash.

13. The combination with a window-frame having a slotted block, of a swinging sash, a plate carried thereby, a pivot-pin supported by said plate and having a threaded inner end, and a nut arranged on the threaded end of the pin and entering said slotted block to permit adjustment of the sash with respect to the frame, and the locking of the pin in adjusted position.

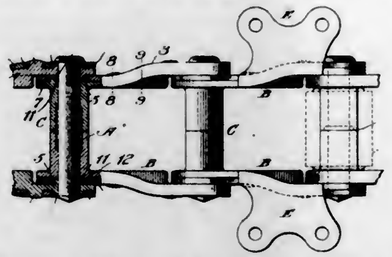
14. The combination with a window-frame, of a slotted block carried thereby, a swinging sash, a plate carried thereby, a pivot-pin carried by said plate, a stop-block carried by the pivot-pin, and a nut mounted on the threaded inner end of the pin and entering the slotted block to permit adjustment of the sash with respect to the frame, and the locking of the pivot-pin in adjusted position.

15. The combination with a frame, of a slotted block carried by the frame, a swinging sash, a plate carried thereby, a pivot-pin supported by the plate and having a threaded inner end, a nut carried by the threaded inner end of the pin and arranged to enter said slotted block, and a stop-block also supported by the pin and serving in connection with the nut to clamp said pin in adjusted position.

16. The combination with a metallic window-frame having a slotted inner face, of a slotted block arranged within the frame, a swinging sash, a plate secured thereto, a pivot-pin carried by said plate and having a threaded inner end, a nut mounted on the threaded end of the pin and entering said slotted block, a sash stop-block also carried by the pin and having a rectangular end entering the slotted frame, said block being held from rotative movement by the walls of the slot and serving, in connection with the nut, to clamp the pin in adjusted position.

17. The combination with a metallic window-frame having a slotted inner face, of a slotted block arranged within the frame, a swinging sash, a plate adjustably secured to the sash, a pivot-pin supported by said plate and having a threaded inner end, a nut mounted on the threaded end of the pin and entering said slotted block, and a sash stop-block arranged to be engaged by the plate, said block being mounted on the pin and having a projecting rectangular portion entering the frame-slot, and serving in connection with the nut to clamp the pivot-pin in adjusted position.

820,219. **CHAIN.** CHRISTOPHER W. LEVALLEY, Milwaukee, Wis. Filed July 19, 1905. Serial No. 270,403.



Claim.—1. A chain composed of links connected by cross-bars, each link having a tubular end bar and perforated side bars, whereby are formed pintle-seats, and the side bars of the links being composite and formed of metal of different qualities, substantially as and for the purpose set forth.

2. A chain formed of articulated links having side bars and end bars, the end bars and portions of the side bars being of malleable metal, and the side bars being strengthened by steel strips secured to the malleable portions of the side bars, substantially as set forth.

3. A chain formed of links united by pintles, each link having a hollow end bar and side bars, the end bar and side bars being formed together of malleable cast-iron, and each side bar being strengthened by a strip of steel secured to one face thereof, substantially as set forth.

4. A chain having side bars formed of malleable cast-iron and strips of steel secured to the outer faces thereof, said strips being flanged and such flanges overlying edges of the side bars, substantially as set forth.

5. A chain having composite side bars formed of inner portions of malleable cast-iron and strengthening-bars of steel, the steel bars being of channel form and secured to the outer faces of the malleable portions of the side bars with the flanges of the steel strengthening-bars overlying the opposite edges of the malleable portions of the side bars, substantially as set forth.

6. A chain having composite side bars formed of the malleable cast-iron portions 2 provided with studs 8, and the strengthening steel strips 3 arranged to lie close against the faces of the parts 2 and formed with apertures through which the studs extend, the studs serving as rivets for uniting the two parts of the side bars, substantially as set forth.

7. A chain formed of articulated links, the articulated portions being formed of malleable cast-iron and the side bars being composite and formed in part of steel, substantially as set forth.

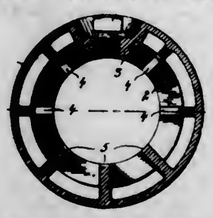
8. A chain formed of links and connecting-pintles, each link having a tubular end bar of malleable metal and a pair of malleable-metal side bars, the side bars being strengthened by pieces of steel secured to the outer faces thereof, such strengthening-pieces being perforated in line with the pintle-openings through the side bars, whereby such strengthening-pieces extend beyond the pintles in both directions, substantially as set forth.

9. A chain formed of links and connecting-pintles, each link having a tubular end bar of malleable metal and a pair of malleable-metal side bars, each side bar being provided near one end with an outward-extending hollow hub or boss concentric with the opening for the pintles, and strengthening-pieces for the side bars secured to the outer faces thereof, such strengthening-pieces being perforated near their ends to fit over the said projections or bosses of the side bars, substantially as set forth.

10. A chain formed of links and connecting-pintles, the side bars of the links being provided with interlocking parts at the joints of the chains, and the articulating parts of the links including the said interlocking parts being formed of malleable metal, while the longitudinal parts of the links between the joints are formed in part of steel, substantially as set forth.

11. A chain formed of links having hollow end bars, side bars and connecting-pintles passing through the end bars and side bars, the side bars being provided with outward-projecting hubs or bosses 5 concentric with the pintle-openings through the end bars and such hubs being internallly recessed as at 11, and the opposite ends of the side bars being provided with inward-extending hubs or bosses 12 adapted to fit into the recesses 11 of the links to which they are coupled, and strengthening-pieces secured to the outer faces of the side bars, substantially as set forth.

820,220. **SET-COLLAR FOR SHAFTS.** CHRISTOPHER W. LEVALLEY, Milwaukee, Wis. Filed Dec. 13, 1905. Serial No. 291,597.



Claim.—1. A set-collar comprising a pair of rings internally shaped to fit the shaft to which the collar is applied, these rings being spaced apart, and a series of spoke-like connecting parts arranged

between said rings and uniting them, one of said parts being provided with a seat for the set-bolt, substantially as set forth.

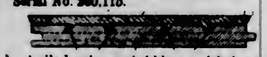
2. A set-collar comprising a pair of rings internally shaped to fit the shaft to which the collar is applied, these rings being spaced apart, and a series of spoke-like connecting parts arranged between said rings and uniting them, one of said ring-connecting parts being enlarged and provided with a seat for a set-bolt and the diametrically opposite connecting parts being constructed to counterbalance the part in which the set-bolt is seated, substantially as set forth.

3. A set-collar of skeleton construction comprising a pair of separated rings that fit the shaft, spoke-like or radiating parts connecting the rings and extending beyond their outer edges, and a peripheral rim supported upon the ends of the said spoke-like connecting parts, substantially as set forth.

4. A set-collar for shafting having opposite abutting faces, radiating spoke-like parts extending outward beyond the edges of such faces, and a peripheral rim supported on the ends of said radiating parts, substantially as set forth.

5. A set-collar comprising a pair of rings 2 shaped to fit the shaft and spaced apart, the radiating connecting parts 3, 4, 5, situated between and uniting the rings, the part 3 being provided with a seat for the set-bolt, the parts 4 being disposed to counterbalance the part 3 and the parts 5 disposed to counterbalance each other, and the peripheral rim 7 supported upon the ends of the connecting parts beyond the outer edges of the rings 2, substantially as set forth.

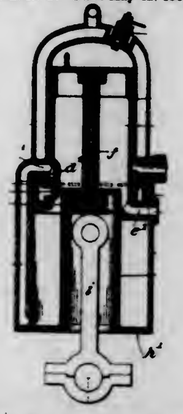
820,221. TILING. LOWELL F. LINDLEY, Chicago, Ill. Filed May 12, 1905. Serial No. 260,115.



Claim.—1. A tile having a rigid base with depressions in the top and a resilient cap composed of material which softens under heat, said cap being engaged by the top portion of said base, and the cap projecting slightly over the edge of the base for preventing the appearance of cracks when laid in a floor or wall.

2. As an article of manufacture, a tile having a wooden base, and a resilient cap vulcanized onto the base and projecting beyond the edge thereof for the purpose described.

820,222. INTERNAL-COMBUSTION ENGINE. D. MCRA LIVINGSTON, New York, N. Y. Filed May 13, 1904. Serial No. 207,531.



Claim.—1. An internal-combustion engine having a power cylinder and piston and means forming a compressor communicating with the power-cylinder and operating in unison with the power-piston, said compressor having ports leading into the compressor-chamber at opposite points therein and respectively serving to introduce the combustible mixture and scavenger-air whereby to maintain said elements in stratification in the compressor-chamber and to discharge said elements in said relation to the power-cylinder.

2. An internal-combustion engine having a power cylinder and piston, a compressor including a piston-like part carried by said piston, and means comprising valveless registering ports for introducing scavenger-air into one portion of the compressor and a combustible mixture into the other portion and for successively leading the scavenger-air and fuel mixture to the power-cylinder.

3. An internal-combustion engine having a power cylinder and piston, a compressor-cylinder forming an enlarged continuation of the power-cylinder, the power-piston having an enlarged portion forming a compressor-piston, and means for introducing scavenger-air into one portion of the compressor-cylinder and a combustible mixture into the other portion of the compressor-cylinder and for successively leading the scavenger-air and combustible mixture to the power-cylinder, said means comprising valveless registering ports in several of the engine parts.

4. An internal-combustion engine having a power cylinder and piston, a compressor-cylinder forming an enlarged continuation of the power-cylinder, the power-piston having an enlarged portion forming a compressor-piston, and means for introducing scavenger-air into one portion of the compressor-cylinder and a combustible mixture into the other portion of the compressor-cylinder and for successively leading the scavenger-air and combustible mixture to the power-cylinder, the power-piston being hollow and the compressor-cylinder having an internal dome covered by the hollow piston when at the limit of the power-stroke.

5. An internal-combustion engine having a power-cylinder and a hollow power-piston, a compressor-cylinder forming a continuation of the power-cylinder, the power-piston working in the compressor-cylinder and forming therewith a compressor, an internal dome in the compressor-cylinder covered by the hollow power-piston when at the limit of its stroke, and means for introducing strata of combustible mixture and scavenger-air into said compressor-cylinder and for controlling the movement of said mixture and air to the power-cylinder.

6. An internal-combustion engine having a power-cylinder and a hollow piston, a compressor-cylinder forming a continuation of the power-cylinder, the power-piston working in the compressor-cylinder and forming therewith a compressor, an internal dome in the compressor-cylinder covered by the hollow piston when at the limit of its power-stroke, and means for controlling the gas movement in the engine, said means including devices for introducing scavenger-air into one portion of the compressor and a combustible mixture into the other and for successively leading the scavenger-air and combustible mixture into the power-cylinder.

7. An internal-combustion engine having a power-cylinder and a hollow piston, a compressor-cylinder forming a continuation of the power-cylinder, the power-piston working in the compressor-cylinder and forming therewith a compressor, an internal dome in the compressor-cylinder covered by the hollow piston when at the limit of its power-stroke, and means for controlling the gas movement in the engine, said means including valveless registering ports in several of the parts, for introducing scavenger-air into one portion of the compressor and a combustible mixture into the other portion of the compressor and for successively leading the scavenger-air and combustible mixture to the power-cylinder.

8. An internal-combustion engine having a power-cylinder with an inlet and an exhaust port, a hollow trunk power-piston having an enlargement at its lower portion forming a compressor-piston, the power-piston having a scavenger-air port at its lower portion and the compressor-piston having a combustible-mixture port leading upward into the hollow power-piston, and a compressor-cylinder in which the compressor-piston operates, the compressor-cylinder having a combustible-mixture port adapted to register with the combustible-mixture port of the compressor-piston, the compressor-cylinder also having a transfer-port running to the power-cylinder-inlet port and adapted to be connected through the medium of the said inlet-port and the scavenger-air port of the power-piston with the upper part of the compressor-cylinder above the compressor-piston, and the compressor-cylinder having atmospheric communication above the compressor-piston.

9. An internal-combustion engine having a power-cylinder with an inlet and an exhaust port, a hollow trunk power-piston having an enlargement at its lower portion forming a compressor-piston, the power-piston having a scavenger-air port at its lower portion and the compressor-piston having a combustible-mixture port leading upward into the hollow power-piston, and a compressor-cylinder in which the compressor-piston operates, the compressor-cylinder having a fuel-mixture port adapted to register with the combustible-mixture port of the compressor-piston, the compressor-cylinder also having a transfer-port running to the power-cylinder-inlet port and adapted to be connected through the medium of the said inlet-port and the scavenger-air port of the power-piston with the upper part of the compressor-cylinder above the compressor-piston and the compressor-cylinder having atmospheric communication above the compressor-piston, and an internal dome in the compressor-cylinder and adapted to be covered by the hollow power-piston when at the limit of its power-stroke.

10. An internal-combustion engine, having a power cylinder and piston, a compressor acting in unison with the power-piston, and means comprising valveless registering ports for introducing scavenger-air into one portion of the compressor, and a combustible mixture into another portion of the compressor, and for successively leading the scavenger-air and combustible mixture to the power-cylinder.

11. An internal-combustion engine having a power cylinder and piston, a compressor acting in unison with the power-piston, and means comprising valveless registering ports for introducing stratified scavenger-air and combustible mixture into the compressor, and for leading the said mixture and air in said strata to the power-cylinder.

12. An internal-combustion engine having a power or working cylinder with an enlarged compressor-cylinder at the outer end thereof, a hollow piston of two diameters operating respectively within the power and compressor cylinders, a dome projecting into the compressor-cylinder and adapted to be inclosed by the piston when in its outer position, and means comprising valveless registering ports for introducing scavenger-air into the compressor-cylinder and a combustible mixture into the hollow piston when the piston is in its inner position, and for leading said air and combustible mixture successively into the power-cylinder when the piston is in its outer position.

13. An internal-combustion engine having a power-cylinder, a compressor-cylinder at the outer end thereof, a hollow piston of two diameters operating respectively in the power and compressor cylinders, a dome projecting into the compressor-cylinder and adapted to be inclosed by the piston when at its outer position, and means comprising valveless registering ports for introducing stratified scavenger-air and combustible mixture into the compressor-cylinder and hollow piston, and for leading said mixture of air in said strata to the power-cylinder.

14. An internal-combustion engine having a power-cylinder, a compressor-cylinder at the outer end thereof, a hollow piston of two diameters operating respectively in the power and compressor cylinders, a dome projecting into the compressor-cylinder and adapted to be inclosed by the piston when at its outer position, means comprising valveless registering ports for introducing stratified scavenger-air and combustible mixture into the compressor-cylinder and hollow piston, and for leading said mixture of air in said strata to the power-cylinder, a piston-rod connected to the piston and extending through the inner end of the dome, and a connecting-rod joined to the piston-rod and operating within the said dome.

15. An internal-combustion engine having a power or working cylinder with an enlarged compressor-cylinder at the outer end thereof, a hollow piston of two diameters operating respectively within the power and compressor cylinders, a dome projecting into the compressor-cylinder and adapted to be inclosed by the piston when in its outer position, means comprising valveless registering ports for introducing scavenger-air into the compressor-cylinder and a combustible mixture into the hollow piston when the piston is in its inner position, and for leading said air and combustible mixture successively into the power-cylinder when the piston is in its outer position, a piston-rod attached to the piston and extending through the inner end of the dome, and a connecting-rod attached to the piston-rod and operating within the dome.

16. An internal-combustion engine having a power cylinder and piston, a compressor acting in unison with the power-cylinder, and means comprising valveless registering ports for introducing stratified scavenger-air and a mixture of fuel and air into the compressor and for leading said scavenger-air and said mixture when compressed directly from the compressor into the power-cylinder.

17. An internal-combustion engine having a working or power cylinder with an enlarged continuation forming a compressor-cylinder, a hollow piston operating in the working cylinder and having an enlarged portion operating in said compressor-cylinder, and means comprising valveless registering ports for introducing a combustible mixture into the hollow piston and a volume of scavenger-air into the compressor-cylinder, and for leading said air and combustible mixture in successive strata into the working cylinder, the engine having an exhaust-port arranged to permit the escape of said scavenger-air after performing its function in the working cylinder and before the ignition of the working charge.

18. An internal-combustion engine having a power cylinder and piston, a compressor acting in unison with the power-cylinder, and means comprising valveless registering ports for introducing stratified scavenger-air and a mixture of air and fuel into the compressor and for leading said scavenger-air and said mixture when compressed directly from the compressor into the power-cylinder, said cylinder having an exhaust-port arranged to permit the escape of said scavenger-air after performing its function in the working cylinder, and before the ignition of the working charge.

820,223. SASH-LOCK. RICHARD D. LOGAN, St. Louis, Mo. Filed July 20, 1905. Serial No. 270,455.



Claim.—1. The combination with a window-frame and lower and upper sashes therein having grooves in their stiles, of a pair of rockable lock-bars arranged parallel to each other and adapted to enter the grooves in said stiles, the grooves in the upper sash being located on the lower end of the stiles, and the grooves in the lower sash being located on the upper end of the stiles, substantially as set forth.

2. The combination with a window-frame and lower and upper sashes therein having grooves in their stiles, of a pair of spring-controlled rockable lock-bars arranged parallel to each other and adapted to enter the grooves in the stiles of said sashes, the grooves in the upper sash being located on the lower end of the stiles, and the grooves in the lower sash being located on the upper end of the stiles, substantially as set forth.

3. The combination with a window-frame, and lower and upper sashes therein having grooves in their stiles, of a pair of rockable lock-bars arranged parallel to each other and adapted to enter the grooves in the stiles of said sashes, and a pull-bar connected to said lock-bars, the grooves in the upper sash being located on the lower end of the stiles, and the grooves in the lower sash being located on the upper end of the stiles, substantially as set forth.

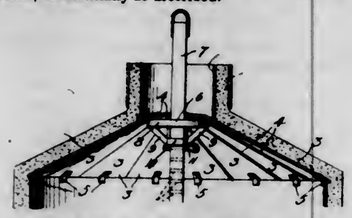
4. The combination with a window-frame and lower and upper sashes therein having grooves in their stiles, of a pair of rockable lock-bars arranged parallel to each other and adapted to enter the grooves in the stiles of said sashes, a pull-bar connected to said lock-bars, and a retractable spring connected to said pull-bar, substantially as set forth.

5. The combination with a window-frame and lower and upper sashes therein having grooves in their stiles, of a pair of pivotally-supported lock-bars having fingers at their free ends arranged to enter the grooves in said stiles, a pull-bar connected to said lock-bar, and a controlling-spring connected to said pull-bar, substantially as set forth.

820,224. MOLD-TOP. WILLIAM H. LUCAS, Newark, Ohio. Filed Jan. 8, 1906. Serial No. 295,179.

Claim.—1. In a mold of the character described, the combination with a body and a central support or upright therein, of a top composed of a plurality of wedge-shaped metal plates arranged around said body and each having one side overlapping the adjacent

side of the next adjacent plate, so that said plates brace one another, angle-metal stops upon the under side of said plates at their lower ends for supporting them upon the upper edge of said body, and a head upon said upright for supporting the upper and inner ends of said plates, substantially as described.



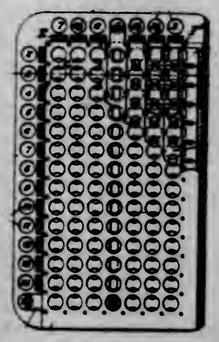
2. In a mold of the character described, the combination with a body and a central support or upright therein, of a top composed of a plurality of wedge-shaped metal plates arranged around said body and each having one side overlapping the adjacent side of the next adjacent plate, so that said plates brace one another, angle-metal stops upon the under sides of said plates at their lower ends for supporting them upon the upper edge of said body, a head slidable upon said upright for supporting the upper and inner ends of said plates, and means to adjustably secure said head upon said upright, substantially as described.

820,225. CLAMP FOR HOLDING PLATES OF GLASS ASSEMBLED. HERMANN MANN, St. Louis, Mo. Filed July 10, 1905. Serial No. 269,603.



Claim.—The combination of an outer clamping member, a stem consisting of a strip or ribbon of sheet metal folded intermediate of its ends and having arms cohesively secured to the arms of said outer clamping member, a screw-shank secured to said stem, an inner clamping member movably fitted to said screw-shank, and a nut on said screw-shank for imparting movement to said inner clamping member, substantially as set forth.

820,226. CALCULATOR. KARL H. J. MARCKWORDT, Guatemala, Guatemala. Filed Oct. 9, 1905. Serial No. 282,672.

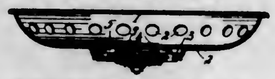


Claim.—1. A calculating device comprising a plate having calculation-apertures arranged in transverse and longitudinal rows, for disclosing the calculation, the plate also having marginal rows of factor-apertures for disclosing factors, a second plate having apertures corresponding to the calculation-apertures on the first plate and secured thereto, sets of transverse and longitudinal slides for opening and closing the said apertures and arranged between the plates, the slides having apertures adapted to register with the calculation-apertures, and a table adapted to be placed on the rear face of the plate and having marginal factors appearing through the factor-openings and calculations registering with the calculation-apertures.

2. A calculating device comprising a pair of plates hinged together and each having calculation-apertures arranged in transverse and longitudinal rows for disclosing the calculation, each plate also having marginal rows of factor-apertures for disclosing factors, a second plate having apertures corresponding to the calculation-apertures of the first plate and secured thereto, sets of aperture transverse and longitudinal slides mounted to slide between the plates, the slide-openings being adapted to register with the factor-apertures when drawn into an outermost position, means for limiting the outward motion of the slides, and tables placed on the rear faces of the first-named plate, each table having marginal factors appearing through the factor-openings and calculations registering with the calculation-apertures.

3. A calculating device comprising a pair of plates hinged together and each having calculation-apertures arranged in transverse and longitudinal rows for disclosing the calculation, each plate also having marginal rows of factor-apertures for disclosing factors, sets of apertured transverse and longitudinal slides mounted to slide on the outer face of each plate, the slide-openings being adapted to register with the factor-apertures when drawn into an outermost position, tables placed on the rear faces of the said plates, each table having marginal factors appearing through the factor-openings and calculations registering with the calculation-apertures, and a partition between the said tables for separating the same and holding the tables against the corresponding faces of the plates.

820,227. PRESSED-METAL SEAT. ROBERT T. J. MARTIN, Elyria, Ohio. Filed Mar. 13, 1905. Serial No. 249,946.



Claim.—1. A seat made from sheet material, provided with a reinforcing-plate beneath the central portion, and eyelets formed from said central portion extending through said plate and upset against the surface thereof, substantially as specified.

2. A seat made from sheet material the central portion of which is surrounded by a depressed portion, said seat being provided with a reinforcing-plate below the depressed portion having openings therethrough and eyelets formed from said depressed portion, extending through said openings and upset against the surface of said plate, substantially as specified.

3. A seat made from sheet material having a central portion at a lower level than the body thereof, said seat being provided with a reinforcing-plate for such portion, and eyelets uniting said portion and said reinforcing-plate, substantially as specified.

4. A seat made from sheet material, the central portion of which is surrounded by a depressed annular portion, said seat being provided with a reinforcing-plate below such depressed portion and eyelets formed from such annular portion, extending through said plate and secured thereto, substantially as specified.

5. A seat made from sheet material, the central portion of which is surrounded by an annular depressed portion, said seat being provided with a reinforcing-plate engaging such annular portion, a seat-support engaging said reinforcing-plate, a bolt extending through the central portion, the reinforcing-plate and the seat-support, and and eyelets formed in said depressed annular portion, extending through said reinforcing-plate and secured thereto, substantially as specified.

6. A seat made from sheet material provided with a reinforcing-plate beneath the central portion thereof, eyelets formed from said central portion extending through said plate and upset against the surface thereof, and projections struck from said central portion of the seat to form guides for the seat-support, substantially as specified.

7. A seat made from sheet material having a central portion at a lower level than the body thereof, said seat being provided with a reinforcing-plate for such portion, eyelets uniting said plate and said portion, and projections struck from said seat to form guides for the seat-support, substantially as specified.

8. A seat made from sheet material the central portion of which is surrounded by a depressed portion, said seat being provided with a reinforcing-plate below the depressed portion having openings therethrough, eyelets formed from said depressed portion extending through said openings and upset against the surface of said plate, and projections struck from said depressed portion to form guides for the seat-support, substantially as specified.

9. A seat made from sheet material the central portion of which is surrounded by a depressed annular portion, said seat being provided with a reinforcing-plate below such depressed annular portion, eyelets formed from said depressed annular portion extending through said plate and secured thereto, and alined projections cut from said plate and said depressed annular portion to form guides for the seat-support, substantially as specified.

10. A seat formed from a sheet of material having a raised bead that is substantially concentric with the point of attachment and a plurality of raised ribs extending from the said bead, a reinforcing-plate below said seat, projections that are struck from the seat to form guides for the seat-support, and eyelets struck from said seat between said ribs extending through said reinforcing-plate and upset against the lower surface thereof, substantially as specified.

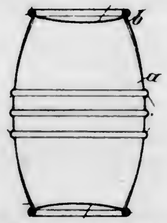
11. A seat made from sheet material provided with a reinforcing-plate beneath the central portion thereof, eyelets formed from said central portion extending through said plate and upset against the surface thereof, and projections struck from said plate to form guides for the seat-support, substantially as specified.

12. A seat made from sheet material the central portion of which is surrounded by a depressed annular portion, said seat being provided with a reinforcing-plate for such depressed annular portion, eyelets formed from said depressed annular portion extending through said plate and secured thereto, and projections struck from said plate to form guides for the seat-support, substantially as specified.

13. A seat made from sheet material and provided with circular perforations extending therethrough, the metal surrounding some of said perforations being swaged downwardly to form eyelets, substantially as specified.

14. A seat made from sheet material and provided with a reinforcing-plate beneath the same, said seat having a plurality of circular perforations therein, the metal surrounding some of said perforations being swaged downwardly to form eyelets extending through said plate and upset against the surface thereof, substantially as specified.

820,228. CASK, BARREL, DRUM, AND THE LIKE. ALFONS MAUSER, Cologne, Germany. Filed Apr. 4, 1904. Serial No. 201,439.



Claim.—1. A sheet-metal barrel having a central bilge portion bounded by strengtheping-ribs, both the bilge and ribs being polygonal, the walls of the barrel from the ribs toward the ends being circular in form.

2. A sheet-metal barrel having at one end an inwardly-extended grooved ring, a removable head or cover, having a beaded edge seated therein and pivotally-mounted clamping-arms carried by said head and arranged to engage below the ring for locking said head or cover in position.

820,229. RAIL-JOINT. WILLIAM MEARS, Cleveland, Ohio. Filed Feb. 19, 1906. Serial No. 301,827.



Claim.—1. The combination with two abutting rails, each rail at its end having its tread and the lower portion of its web cut away forming a tongue on the upper part of the web, of a plate provided with two tongues arranged to receive the tongues on the abutting ends of the rails between them, the upper tongue being arranged to fit into the depression where the treads of the rails are cut away and the lower tongue being arranged to fit into the depression where the webs of the rails are cut away and means for securing said plate to the ends of the rails.

2. The combination with two abutting rails, each rail at its end having its tread and the lower portion of its web cut away forming a tongue on the upper part of the web and a horizontal surface on the base of the rail, below the tongue, of a plate provided with two tongues arranged to receive the tongues on the abutting ends of the rails between them, the upper tongue being arranged to fit into the depression where the treads of the rails are cut away and the lower tongue being arranged to fit into the depression where the webs of the rails are cut away, said lower tongue having a horizontal lower surface adapted to rest on the horizontal surface on the base of the rails, and means for securing said plate to the end of the rails.

3. The combination with two abutting rails, each rail at its end having its tread and the lower portion of its web cut away forming a tongue on the upper part of the web and a horizontal milled surface on the base of the rails, below the tongue, of a plate provided with two tongues arranged to receive the tongues on the abutting ends of the rails between them, the upper tongue being arranged to fit into the depression where the treads of the rails are cut away and the lower tongue being milled on its bottom surface and arranged to fit into the depression where the webs of the rails are cut away and rest on the milled surface on the base of the rails, and means for securing said plate to the end of the rails.

820,230. INTAKE-VALVE FOR EXPLOSIVE-ENGINES. ALBERT C. MENGES, Grand Rapids, Mich., assignor to William Harrison, Grand Rapids, Mich. Filed Sept. 14, 1904. Serial No. 224,457.



Claim.—1. In a valve for explosive-engines, the combination of the valve and valve-stem, a casing formed of a lower section and an upper section rotatable thereon, the lower section provided with beveled projections and the upper section with openings having inclined sides adapted to engage with the projections as the upper section is rotated for the purpose of lengthening or shortening the throw of the valve.

2. The combination in a valve for explosive-engines, of a casing formed of an upper and a lower section, the lower of which is secured to the engine and provided with ports, the upper of which is secured to the lower section and provided with ports adapted to register with the ports of the lower section, a series of projections upon the lower section, said upper section having a plurality of openings provided with inclined or wedge-shaped sides adapted to engage with the projections on the lower section when the upper section is turned, whereby the upper section may be raised and lowered for the purpose of shortening or lengthening the throw of the valve, a spring adapted to automatically close the valve and a cap on the stem for retaining said spring in position.

3. An intake-valve comprising a pair of sections, one of said sections provided with a valve-seat and upwardly-extending projections and the other of said sections provided with openings having inclined sides engaging with the upward projections on the other of said sections, a valve provided with an upwardly-extending valve-stem, a spring surrounding the valve-stem, a cap on the upper end of the valve-stem, a suitable bearing for the valve-stem, one of said sections being rotatable for the purpose of raising and lowering the same with respect to the other of said sections, whereby the stroke of the valve and the tension of the spring may be adjusted, substantially as described.

820,231. HANDLE ATTACHMENT FOR WINDOW-SASHES. CHARLES A. MERRYWEATHER, Brooklyn, N. Y. Filed Feb. 5, 1906. Serial No. 299,389.



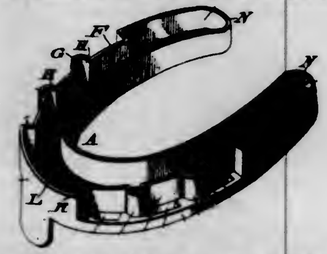
Claim.—1. The combination with the top sash of a window, of handle-plates which are secured to the side and bottom rails of said sash and to the outer side thereof and which overlap the joint be-

tween said rails, said handle-plates being provided at their bottom edges with downwardly-directed handles in the same plane as said plates, substantially as shown and described.

2. The combination with the top sash of a window, of handle-plates secured to the side rails and bottom rail thereof, said handle-plates being L-shaped in form and the longer arms thereof being secured to the side rails, and the shorter arms of said plates being provided at their bottom edges with downwardly-directed handles in the same plane as said plates, substantially as shown and described.

3. A handle-plate for window-sashes, said plate being L-shaped in form and the bottom portion thereof being provided with a handle, substantially as shown and described.

820,232. **HORSESHOE.** BENJAMIN MESSINGER and AARON MESSINGER, Philadelphia, Pa. Filed Jan. 16, 1906. Serial No. 296,269.



Claim.—1. An animal-shoe having a recess in its sides and front, a toe portion extending forwardly from the front portion of said recess, a side rim, piers in the outer walls of said recess, said piers having on their inner sides tapering channels, and a cushion adapted to occupy said recess and channels and wedge in the latter.

2. An animal-shoe having recesses in its sides and front, a cushion adapted to occupy said recesses, outturned shoulders on the front and rear ends of the outer walls of the side recesses, outturned piers on said outer walls intermediate of said shoulders, said piers having on their inner faces tapering channels, and circular walls joining the heel-terminals of the side walls.

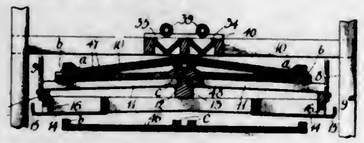
3. An animal-shoe having recesses in its sides and front, a cushion adapted to occupy said recesses, outturned shoulders on the front and rear ends of the outer walls of the side recesses, outturned piers on said outer walls, intermediate of said shoulders, and a rim at the top joining said shoulders, said piers and adjacent portions of said outer walls being set back from the outer face of said rim.

820,233. **WINDOW-SCREEN.** GEORGE D. MORCHEF, Memphis, Tenn. Filed Dec. 1, 1905. Serial No. 289,810.



Claim.—The improvement herein described consisting in the combination with the window-frame and a screen having at its upper end hanger-plates projecting beyond the screen and perforated for the passage of pivot-screws, pivot-screws passing through said perforations in the window-frame and forming pivots for the upper end of the screen, a latch pivoted in connection with the screen at the inner lower edge thereof and having a hooked end, a spring actuating said latch, a catch portion on the window-frame for engagement by the latch, the latter being arranged for operation by its spring to draw the screen inwardly, and stop devices extending laterally from the screen adjacent the lower edge thereof and adapted to limit the inward movement of the screen and to coöperate with the spring-actuated latch in holding the screen against rattling when in use, all substantially as and for the purpose set forth.

820,234. **ORE-SLIMER.** IRA F. MOWELL, Boulder, Colo. Filed Mar. 9, 1905. Serial No. 249,312.



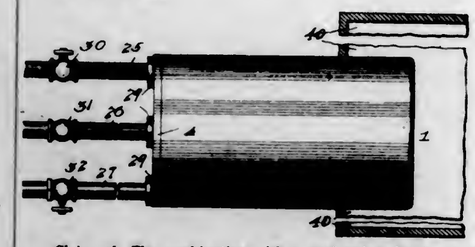
Claim.—1. In a machine of the character described, an endless apron or belt having its upper stretch inclined from its longitudinal center outwardly, strips secured underneath the edges of said apron to form pockets along the upper edges of said apron, strips secured underneath the longitudinal center of said apron, in combination with oppositely-tapered rollers over which said belt travels, an oppositely-inclined flooring having an elevated crown-strip, over which the center strips of the belt pass, and means for discharging pulp upon the opposite sides of the longitudinal center of the belt.

2. In a machine of the character described, a main frame, a longitudinally-oscillating frame suspended from the main frame, a bed consisting of yielding boards arranged on said oscillating frame, said boards being inclined downward from the center, the incline diminishing from one end to the other thereof, rollers tapered from their centers toward their ends, an endless apron movable around said rollers and over the bed, and means for feeding pulp near the transverse center of the upper stretch of said apron.

3. In a machine of the character described, a main frame, a frame having longitudinal oscillating movement in said main frame, bottom boards extended lengthwise of the main frame and inclined downward from the center outward in both directions, a central longitudinal upwardly-extended crown-piece, and an endless apron engaging said crown-piece and passing over the bottom boards, the edges of said apron being raised to form pockets.

4. In a machine of the character described, a main frame, a reciprocating frame therein, pans arranged at the under side of said frame and having trough portions extended outward from the sides of the frame, the side walls of said frame being provided with discharge-ports leading to said troughs, and an endless apron arranged to travel over the reciprocating frame.

820,235. **APPARATUS FOR THE COMBUSTION OF PULVERULENT FUEL.** AMAN MOORE, Portland, Colo. Filed July 12, 1905. Serial No. 269,403.



Claim.—1. The combination with a combustion-chamber and stationary means for the discharge of pulverulent fuel into the combustion-chamber, of fluid means for directing the same to any point within said chamber.

2. The combination with a combustion-chamber and stationary means for the discharge of pulverulent fuel and combustion-supporting fluid into the combustion-chamber, of controllable fluid-pressure means for directing the same to any point within said chamber.

3. The combination with a combustion-chamber and stationary means for the discharge of pulverulent fuel into the combustion-chamber, of dirigible fluid means for directing the same to any point within said chamber.

4. The combination with a combustion-chamber and stationary means for the discharge of pulverulent fuel and combustion-supporting fluid into the combustion-chamber, of dirigible controllable fluid-pressure means for directing the same to any point within said chamber.

5. The combination with a combustion-chamber and stationary means for the discharge of pulverulent fuel and combustion-supporting fluid into the combustion-chamber, of means for discharging a dirigible fluid in the form of an envelop about the fuel in a current athwart that of the fuel-discharge.

6. The combination with a combustion-chamber and means for the discharge of pulverulent fuel into the combustion-chamber, of a dirigible fluid envelop about said fuel for directing the same to any point within said chamber.

7. The combination with a combustion-chamber and means for the discharge of pulverulent fuel into the combustion-chamber, of a fluid envelop about said fuel, dirigible by fluid means for directing the fuel to any point within said chamber.

8. The combination with a combustion-chamber and means for the discharge of pulverulent fuel into the combustion-chamber, of a fluid envelop about said fuel dirigible through variation of the relative pressures of its parts for directing the fuel to any point within said chamber.

9. The combination with a combustion-chamber and means for the discharge of pulverulent fuel and combustion-supporting fluid into the combustion-chamber, of a fluid envelop about said fuel dirigible through variation of the relative pressures of its parts for directing the fuel and combustion-supporting fluid to any point within said chamber.

10. In an atomizer for the purpose specified the combination with a barrel provided with a center bore for delivery of pulverulent fuel, of a plurality of fluid-supply chambers having means of discharge about the center bore, and independent means of fluid-supply to said chambers respectively.

11. In an atomizer for the purpose specified the combination with a barrel provided with a center bore for delivery of pulverulent fuel, of a plurality of fluid-supply chambers having means of discharge about the center bore, and independently-controllable means of fluid-supply to said chambers respectively.

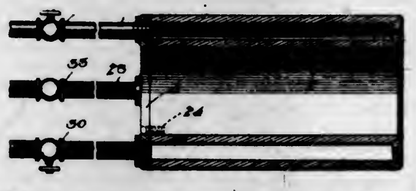
12. In an atomizer for the purpose specified the combination with a barrel provided with a center bore for delivery of pulverulent fuel, of a plurality of fluid-supply chambers having means of discharge about the center bore, and independent means for control of the pressure and volume of the fluid which passes through them respectively.

13. The combination with a combustion-chamber and means for the discharge of pulverulent fuel and combustion-supporting fluid to a focal point within the combustion-chamber, of fluid means for shifting, at will, the focal point of such discharge.

14. In apparatus of the kind described the combination with inner, outer, and two end walls constituting a barrel provided with a center bore, of septa between the walls aforesaid defining a plurality of fluid-supply chambers, and means of discharge therefrom about the center bore.

15. In apparatus of the kind described the combination with inner, outer, and two end walls constituting a barrel provided with a center bore, of septa between the walls aforesaid defining a plurality of fluid-supply chambers, and convergent means of discharge therefrom about the center bore.

820,236. **PROCESS FOR THE UTILIZATION OF PULVERULENT FUEL.** AMAN MOORE, Portland, Colo. Filed July 12, 1905. Serial No. 269,404.



Claim.—1. A process for the utilization of fuel in pulverulent form which consists in discharging such fuel into a combustion-chamber along with a combustion-supporting fluid, and in distributing the same by means of a dirigible fluid-current to any point within the combustion-chamber desired.

2. A process for the utilization of fuel in pulverulent form which consists in distributively discharging such fuel into a combustion-chamber along with and by the aid of an inherently dirigible current of combustion-supporting fluid.

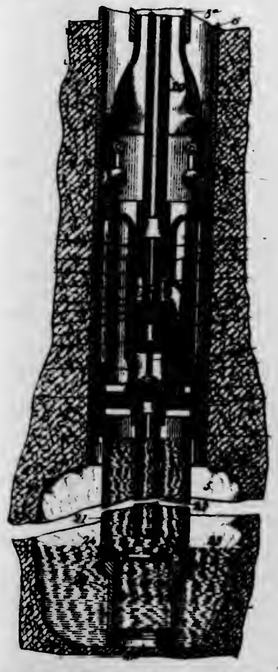
3. A process for the utilization of fuel in pulverulent form which consists in distributively discharging such fuel into a combustion-chamber along with and by the aid of a dirigible combustion-supporting envelop.

4. A process for the utilization of fuel in pulverulent form which consists in distributively discharging such fuel into a combustion-chamber along with and by the aid of a dirigible envelop constituted of an oxygenous fluid.

5. A process for the utilization of fuel in pulverulent form which consists in the discharge thereof along with and by the aid of an envelop of oxygenous fluid to a focal point within a combustion-chamber variable at the will of the operator.

6. A process for the utilization of fuel in pulverulent form which consists in discharging the fuel into a combustion-chamber by a plurality of fuel-impelling fluid-currents the ratio of pressures of the several currents being variable.

820,237. **GAS-WELL APPARATUS.** FRED J. MOSER, Kane, Pa. Filed Apr. 8, 1905. Serial No. 254,601.



Claim.—1. The combination of a hollow member provided with a partition whereby it is divided into separate compartments, one being above the other, tubing connected with the upper of said compartments, means for admitting an aeriform body under pressure into the lower of said compartments, a valve mechanism for opening and closing the connection between said compartments, and means for admitting natural gas into the upper of said compartments.

2. In a device of the character described, the combination of an upper cylinder provided with inlet-valves adapted to open automatically, a lower cylinder provided with inlet-valve mechanism, also adapted to open automatically, a partition normally closing the connection between said upper cylinder and said lower cylinder, a valve coacting with said partition and adapted to control communication between said upper and lower cylinders, and tubing connected with said upper cylinder, for carrying to the surface of the earth quantities of gas and water.

3. In a device of the character described, the combination of a hollow member provided with a partition whereby it is separated into upper and lower compartments, pressure-controlled valves for

admitting natural gas into the upper of said compartments, pressure-controlled valve mechanism for admitting a liquid into the lower of said compartments, a supply-pipe leading downward and provided with means for supplying an aeriform body under pressure into the lower of said compartments, valve mechanism for preventing retrogression of said liquid from the upper of said compartments to the lower compartment, and tubing connected with the upper of said compartments for discharging both said natural gas and said liquid.

4. In a device of the character described, the combination of an upper cylinder provided with pressure-controlled valves for admitting therainto natural gas, a lower cylinder provided at a point adjacent to its bottom with inlet mechanism for permitting a liquid to enter under pressure and for preventing the retrogression of said liquid, a partition disposed intermediate of said upper cylinder and said lower cylinder, a conductor-pipe mounted upon said partition and depending therefrom to a comparatively low point relatively to said lower cylinder, a valve for opening and closing said conductor-pipe, and tubing connected with said upper cylinder for the purpose of discharging said natural gas or said liquid therefrom.

5. In a device of the character described, the combination of an upper cylinder provided with a sleeve concentric therewith and also provided with a passage, inlet-valves connected with said upper cylinder for admitting thereinto a supply of natural gas under pressure, a supply-pipe provided at its lower end with a core for entering said sleeve and further provided with packings disposed upon opposite sides of said passage, said core being also provided with a second passage forming virtually, when said core is in position, a continuation of said passage within said cylinder, a lower cylinder connected with said upper cylinder and separated therefrom, valve mechanism for opening and closing communication between said upper cylinder and said lower cylinder, means for admitting a liquid into said lower cylinder and for preventing the retrogression of said liquid therefrom, and tubing connected with the upper end of said upper cylinder for the purpose of discharging said natural gas and said liquid from the same.

6. The combination of tubing, a packer for rendering the same gas-tight, an upper cylinder in communication with said tubing, inwardly-opening valves mounted upon said upper cylinder for the purpose of admitting natural gas into the same, a lower cylinder connected with said upper cylinder and separated therefrom by a partition, valve mechanism for admitting a liquid into the said lower cylinder, a valve mounted upon said partition and adapted to open upwardly, so as to permit the discharge of said liquid from said lower cylinder into said upper cylinder, said liquid being adapted, by its entrance into said upper cylinder, to close the valves thereof, and means, controllable at will, for supplying an aeriform body under pressure into said lower cylinder.

7. In a device of the character described, the combination of tubing, a packer for rendering the same gas-tight, a hollow member connected with said tubing and adapted to store a supply of a liquid, means for admitting said liquid into said member, and mechanism for relieving pressure upon said liquid within said member, so as to cause the same to rise to a considerable height within said hollow member.

8. In a device of the character described, the combination of a hollow member provided with an upper compartment and with a lower compartment, means for permitting natural gas to enter said upper compartment, tubing connected with said upper compartment and adapted to permit the flow of gas therefrom, means for forcing water into said lower compartment, valve mechanism for preventing retrogression of water into said lower compartment, and means for occasionally establishing communication between said lower compartment and said upper compartment for the purpose of removing said water from said lower compartment.

9. In a device of the character described, the combination of tubing, a packer encircling the same, mechanism having an upper compartment connected with the lower end of said tubing and provided with valves disposed above the upper level of the liquid in the well so as to admit natural gas into the upper portion of said mechanism, said mechanism being further provided with a lower compartment, means for admitting a liquid into the lower compartment, valve mechanism connecting said upper and lower compartments together so that said liquid may be ejected from said lower compartment through said upper compartment without retrogression, and means for applying an aeriform body to the liquid contained within said lower compartment.

10. The combination of a hollow member provided with two compartments, means for admitting a liquid from the well into one of said compartments and for preventing retrogression of said liquid therefrom, tubing connected with the other of said compartments, valve mechanism for allowing a portion of liquid to pass from the lower compartment to the upper compartment and for preventing retrogression of said portion of liquid thus elevated, means for applying an air-pressure to the liquid within said lower compartment so as to eject said liquid through the upper compartment, and means for normally admitting natural gas into said upper compartment and said tubing.

11. In a device of the character described, the combination of tubing, a packer for rendering the same tight so as to accumulate the pressure of natural gas into the well, a hollow member connected with said tubing for admittting thereinto a liquid pressed upon by natural gas, means for relieving pressure upon said liquid within said hollow member, valve mechanism for admitting said natural gas directly into said tubing, and mechanism controllable at will for raising said liquid from said hollow member to the surface of the earth.

12. In a device of the character described, the combination of tubing adapted to conduct a liquid to the surface of the earth, means for continuously admitting natural gas from the well directly into said tubing, a supply-pipe mounted within said tubing and adapted to conduct an aeriform body into said well for the purpose of flowing the same, a gas-discharge pipe connected with said tubing for the purpose of saving any natural gas accumulating in the well, and means controllable at will for venting said supply-pipe into said gas-discharge pipe so as to save the gas contents of said supply-pipe.

13. The combination of a hollow member provided with a partition whereby it is divided into separate compartments one above the other, tubing connected with the upper of said compartments, means for continuously admitting natural gas into said tubing, valve mechanism for opening and closing communication between said compartments, a sleeve mounted within the upper compartment and in communication with the lower compartment, a hollow core mounted within said sleeve and provided with apertures, and a pipe connected with said hollow core for discharging an aeriform body thereinto.

14. The combination of a hollow member provided with a partition whereby it is divided into separate compartments one located above the other, tubing connected with the upper of said compartments, means for continuously admitting natural gas from the well into said tubing, a sleeve mounted within the upper compartment and in communication with the lower compartment, a hollow core mounted within said sleeve and provided with apertures, annular packings encircling said hollow core and engaging said sleeve so as to render said hollow core gas-tight relatively thereto, and means controllable from the surface of the earth for discharging an aeriform body into said hollow core.

15. The combination of a hollow member provided with a partition whereby it is divided into separate compartments one above the other, tubing connected with the upper of said compartments, means for automatically admitting natural gas from the well into said tubing, valve mechanism for opening and closing communication between said compartments, a sleeve mounted within the upper compartment and in communication with the lower compartment, a hollow core mounted within said sleeve and provided with apertures and with annular beads, annular packings encircling said core and engaging said annular beads, said packings also engaging said sleeve and forming an air-tight connection therewith, and means controllable at will from the surface of the earth for discharging an aeriform body into said hollow core.

16. The combination of a water-barrel having means for admitting water thereinto adjacent to its lower end, tubing communicating with said water-barrel and leading to the surface of the earth, a packer encircling said tubing, means for admitting the normal flow of gas from the well into said tubing at a point beneath said packer, a valve to prevent the said gas from passing downward into the water-barrel, means for venting said water-barrel at the surface of the earth so that the pressure of the natural gas within the well may form a column of water within the water-barrel, and means for applying an aeriform body under pressure to said water within said water-barrel for the purpose of raising said water to the surface of the earth.

17. A gas-well apparatus of the character described, comprising a system of piping disposed within the well, said piping being provided with inlet mechanism for admitting water at a point adjacent to the bottom of the well, and also provided with inlet mechanism for admitting gas at a level higher than the normal water-level of the well, a member disposed between said inlet for the water and said inlet for the gas, said member separating the interior of the piping into lower and upper compartments to enable the apparatus to convey the normal flow of gas to the surface of the earth under pressure through the upper compartment while relieving pressure from the lower compartment, thereby enabling a column of water to form therein and to stand higher than the normal water-level of the well, a packer for confining natural gas within the well, and means for applying a compressed medium to the water in said lower compartment.

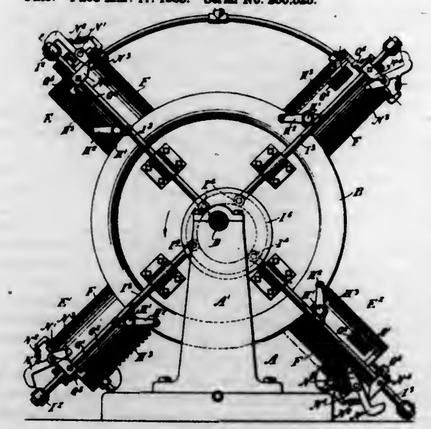
18. In a device of the character described, the combination of tubing, a packer connected therewith for preventing the escape of the natural gas from the well, a hollow member provided with upper and lower compartments, said hollow member being connected with said tubing so that one of said compartments is always in communication therewith, valves for admitting natural gas into the compartment thus communicating with said tubing, said valves being adapted to prevent the escape of water passing upwardly therethrough, means for admitting a liquid into the other of said compartments, and mechanism for applying an air-pressure to said liquid thus admitted.

19. The combination of a water-barrel having means adjacent to its lower end for admitting water thereinto, a partition for preventing the ingress of gas into the water-barrel from the upper end thereof, means for venting said water-barrel at the surface of the earth to relieve it of internal pressure so that the pressure of the natural gas in the well may force water into said water-barrel to a level higher than that of the water in the well, tubing connected to the water-barrel for the purpose of conducting both the gas and the water to the surface of the earth, a packer for preventing the escape of said natural gas, valve mechanism for admitting said gas to said tubing, and means controllable at will for admitting an aeriform medium under pressure from the surface of the earth to the water-barrel for the purpose of displacing the water in said water-barrel and forcing the same through said tubing to the surface of the earth.

20. The combination of a tube continuous from a point adjacent to the bottom of the well to the surface of the earth, means for admitting gas into said tube, means for admitting water into said tube, a partition within said tube disposed at a point between the inlet for the gas and the inlet for the water, said partition having a conductor-pipe attached thereto, a valve for preventing gas or water from passing downwardly from the tube above said partition, and means for applying an aeriform body to the water in the tube below said partition for the purpose of raising said water to the surface of the earth.

21. The combination of a tube continuous from a point adjacent to the bottom of the well to the surface of the earth, said tube having means for separating the interior into compartments, the upper of which normally conducts the gas from the well to the surface of the earth while that portion below the separation is used as a receptacle for water, means for admitting water from the well into said tube below said separation, means for admitting gas from the well into said tube above said separation, means for preventing gas or water from passing downward into the receptacle for the water from the upper separated interior, and means for applying an aeriform body to the water in the lower portion of the tube for the purpose of raising said water to the surface of the earth.

820,238. **EXPLOSION-TURBINE.** AUGUSTUS L. MOSS, Sandusky, Ohio. Filed Mar. 17, 1905. Serial No. 250,523.



Claim.—1. An explosion-turbine comprising a cylinder, a turbine-wheel mounted to turn in said cylinder and provided with peripheral buckets, an explosion-chamber having a discharge-nozzle for discharging a motive agent against the buckets in the direction of rotation of the turbine-wheel, a piston in said explosion-chamber, operating means for the piston controlled from the said turbine-wheel for drawing in an explosive charge and for compressing the same previous to ignition, and means operated by the piston-operating means for locking the piston during the explosion period.

2. An explosion-turbine comprising a cylinder, a turbine-wheel mounted to turn in said cylinder and provided with peripheral buckets, an explosion-chamber having a discharge-nozzle for discharging a motive agent against the buckets in the direction of rotation of the turbine-wheel, a piston in the explosion-chamber controlled from said turbine-wheel for drawing in an explosive charge and for compressing the same previous to ignition, a valve in said nozzle for opening and closing the latter, and means operated by the piston-operating means for locking the piston during the explosion period.

3. An explosion-turbine comprising a cylinder, a turbine-wheel mounted to turn in said cylinder and provided with peripheral buckets, an explosion-chamber having a discharge-nozzle for discharging a motive agent against the buckets in the direction of rotation of the turbine-wheel, a piston in the explosion-chamber controlled from said turbine-wheel for drawing in an explosive charge and for compressing the same previous to ignition, means operated by the piston-operating means for locking the piston during the explosion period, and a valve operating in conjunction with said piston and opening quickly at the end of the compression period of said piston.

4. An explosion-turbine comprising a cylinder, a turbine-wheel mounted to turn in said cylinder and provided with peripheral buckets, an explosion-chamber having a discharge-nozzle for discharging a motive agent against the buckets in the direction of rotation of the turbine-wheel, a piston in the explosion-chamber controlled from said turbine-wheel for drawing in an explosive charge and for compressing the same previous to ignition, means operated by the piston-operating means for locking the piston during the explosion period, and a valve operating in conjunction with the said piston and opening quickly at the end of the compression period of said piston and remaining open until after the beginning of the return stroke of the piston whereby the turbine-wheel may create a suction in the said working chamber to clear the same of the products of combustion.

5. An explosion-turbine comprising a cylinder, a turbine-wheel having peripheral buckets and arranged to turn in said cylinder, an explosion-chamber having a nozzle for discharging a motive agent against the buckets of the turbine-wheel, a piston reciprocating in the said explosion-chamber and controlled from said turbine-wheel, means for supplying said explosion-chamber with an explosive charge, an ignition device for igniting the said explosive charges, means operated by the piston-operating means for locking the piston during the explosion period, and a valve in the said device operating in unison therewith.

6. An explosion-turbine, comprising a cylinder, a turbine-wheel having buckets and mounted to turn in said cylinder, an explosion-chamber having a nozzle for discharging a motive agent against the buckets of the turbine-wheel, a piston reciprocating in the said explosion-chamber and controlled from the said turbine-wheel, means for supplying the said explosion-chamber with an explosive charge, a valve in the said nozzle and operating in unison with said piston, an automatic locking device for said piston, and means whereby the piston-operating means may control the operation of said locking device.

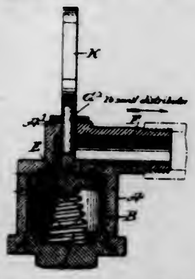
7. An explosion-turbine, comprising a cylinder, a turbine-wheel having peripheral buckets mounted to turn in the said cylinder, a plurality of explosion-cylinders spaced apart from each other and grouped around the said cylinder, each explosion-cylinder comprising an explosion-chamber having a nozzle for discharging an explosive charge against said buckets means for supplying an explosive charge to said explosion-chamber, an igniting device in the explosion chamber, a reciprocating piston in the explosion-chamber for drawing in an explosive charge and for compressing the same immediately previous to the ignition of the charge by said igniting device, means connected with the turbine-wheel for operating the piston, and means operated by the piston-operating means for locking the piston during the explosion period.

8. An explosion-turbine, comprising a cylinder, a turbine-wheel having peripheral buckets mounted to turn in the said cylinder, a plurality of explosion-cylinders spaced apart from each other and grouped around said cylinder, each explosion-cylinder comprising an explosion-chamber and having a nozzle for discharging an ex-

plosive charge against the said buckets, means for supplying an explosive charge to said explosion-chamber, an igniting device in the explosion-chamber, a reciprocating piston in the said explosion-chamber for drawing in a charge and compressing the same immediately previous to the ignition of the charge by said igniting device, means connected with the turbine-wheel for operating the piston, means operated by the piston-operating means for locking the piston during the explosion period, and an automatic valve in said discharge-nozzle.

9. An explosion-turbine comprising a cylinder, a turbine-wheel having peripheral buckets and mounted to turn in the cylinder, a plurality of explosion-cylinders spaced apart from each other and grouped around the cylinder, each explosion-cylinder comprising an explosion-chamber having a nozzle for discharging an explosive charge against said buckets, means for supplying the explosive charge to said explosion-chamber, an igniting device in the explosion-chamber, a reciprocating piston in the said explosion-chamber for drawing in a charge and compressing the same immediately previous to the ignition of the charge by said igniting device, means for locking the piston against movement during the explosion period, an automatic valve in said discharge-nozzle, means for operating the said piston, and the said valve in unison from the turbine-wheel, and means whereby the piston-operating means may operate the locking device.

820,239. VALVE. AUGUSTUS L. MOSS, Sandusky, Ohio. Filed Feb. 6, 1906. Serial No. 299,715.



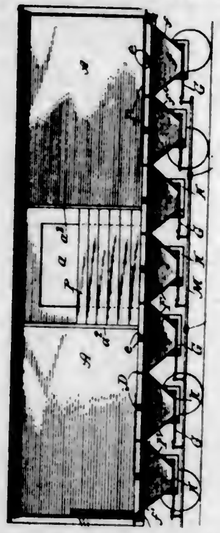
Claim.—1. A valve comprising a valve-casing having an inlet for connection with a pressure-supply and an outlet for the discharge of the fluid-pressure, a valve-seat in the said valve-casing between the inlet and outlet, the said valve-seat having an opening and an annular groove, a bearing on the said valve-casing, a valve-disk having a stem engaging the said bearing, the said valve-disk having an annular groove registering with the said valve-seat groove, a rubber gasket fitting the said registering grooves, and a spring pressing the said valve-disk.

2. A controller-valve for pneumatic sanding devices, comprising a valve-casing having a chamber, inlets, of which one is connected with an air-compressor and the other with an air-reservoir, an outlet on the said valve-casing, a valve-seat between the said chamber and the said outlet, a valve proper within the said chamber and adapted to be seated on the said valve-seat, the stem of the valve extending to the outside of the said valve-casing, a spring within the said chamber and pressing the said valve proper to hold it to its seat, and manually-controlled means engaging the outer end of the said valve-stem for moving the valve off its seat against the tension of its spring.

3. A controller-valve for pneumatic sanding devices, comprising a valve-casing having a chamber, inlets, of which one is connected with an air-compressor and the other with an air-reservoir, an outlet on the said valve-casing, a valve-seat between the said chamber and the said outlet, a valve proper within the said chamber and adapted to be seated on the said valve-seat, the stem of the valve extending to the outside of the said valve-casing, a spring within the said chamber and pressing the said valve proper to hold it to its seat, a plug for closing the said chamber and supporting the said spring, and manually-controlled means engaging the outer end of the said valve-stem for moving the valve off its seat against the tension of its spring.

4. A controller-valve for pneumatic sanding devices, comprising a valve-casing having a chamber, inlets, of which one is connected with an air-compressor and the other with an air-reservoir, an outlet on the said valve-casing, a valve-seat between the said chamber and the said outlet, a valve proper within the said chamber and adapted to be seated on the said valve-seat, the stem of the valve extending to the outside of the said valve-casing, the said valve proper having a valve-disk and a rubber gasket fitting with one face into an annular groove in the valve-disk and fitting with the opposite face an annular recess in the said valve-seat, a spring within the said chamber and pressing the said valve proper to hold it to its seat, and manually-controlled means engaging the outer end of the said valve-stem for moving the valve off its seat against the tension of its spring.

820,240. RAILWAY FREIGHT-CAR. WILLIAM R. MULOCK, Winnipeg, Canada. Filed Dec. 11, 1905. Serial No. 291,362.



Claim.—1. A railway freight-car provided with a skeleton bottom, with a series of hoppers beneath said bottom and with a removable floor formed of interchangeable sections substantially equal in length to the distance between the car-walls.

2. A railway freight-car comprising a skeleton bottom, a flooring formed of removable sections and a plurality of conoidal hoppers located beneath the floor-line of the car, the sloping side walls of said hoppers extending substantially to the side walls of the car-body.

3. A railway freight-car provided with a skeleton bottom, with a floor formed of separate interchangeable sections substantially equal in length to the distance between the car-walls and with a plurality of conoidal hoppers located below the floor-line of the car, said hoppers having their sloping side walls extending substantially to the line of the side walls of the car-body, and the end hoppers having their sloping end walls extending substantially to the end walls of the car-body.

4. A railway freight-car provided with a skeleton bottom formed of narrow, longitudinal and transverse metal bars, a plurality of conoidal hoppers located beneath said skeleton bottom, the sloping walls of adjacent hoppers being secured to transverse bars of the skeleton bottom and the sloping side walls of said hoppers extending substantially to the side walls of the car-body.

5. A railway freight-car having its lower portion formed of side and end sills of angle-bars and having a skeleton bottom comprising longitudinal and transverse bars united to said side and end sills, and having a plurality of conoidal hoppers located beneath said skeleton bottom, the side walls of said hoppers being united to the side sills, and a removable flooring formed of detachable sections adapted to rest upon said skeleton bottom.

6. A railway freight-car having a bottom portion formed of side and end sills and having a skeleton bottom formed of longitudinal and transverse metal bars riveted to said side and end sills, a removable floor formed of detachable sections adapted to rest upon said skeleton bottom, and a plurality of hoppers located entirely beneath said removable floor, the side walls of said hoppers being secured to the side sills of the car-bottom and the end walls of said hopper being secured to the transverse bars of said skeleton bottom.

7. A railway freight-car comprising a skeleton bottom and a floor formed of removable sections adapted to extend transversely of the car and substantially equal in length to the distance between the car-walls, the body of the car being formed with a doorway and with vertical battens at the sides of said doorway, the battens being separated a distance substantially equal to the length of the removable floor-sections, whereby one of said floor-sections will be set between said battens to serve as a door.

8. A railway freight-car comprising a skeleton bottom, a plurality of conoidal hoppers located beneath the floor-line of the car, each of said hoppers being provided at its discharge-opening with a slideway, individual gates for closing the hopper-bottoms, said gates fitting in said slideways, and an operating-rod whereby said gates can be shifted simultaneously.

9. A railway freight-car comprising a skeleton bottom, a plurality of conical hoppers located beneath the floor-line of the car, each of said hoppers being provided at its discharge-opening with a slideway, individual gates for closing the hopper-bottoms, said gates fitting in said slideways, a supporting-bracket extending beneath and across each of said hopper-bottoms, and an operating-rod connected to said several gates.

10. A railway freight-car comprising a skeleton bottom, a plurality of conical hoppers located beneath the floor-line of the car, each of said hoppers being provided at its discharge-opening with a slideway, said gates fitting in said slideways and being provided with angular flanges at their front ends to close said slideways.

11. A railway freight-car having a plurality of hoppers located beneath the floor-line, each of said hoppers being provided at its discharge-opening with a slideway, individual gates arranged within said slideways, a common operating-rod for said gates and yielding or spring connections between said gates and said operating-rod.

12. A railway freight-car comprising a skeleton bottom, a plurality of hoppers located beneath the floor-line of the car, gates for closing the lower ends of said hoppers, a removable floor comprising a number of sections arranged to be supported upon said skeleton bottom and means for jamming said floor-sections together.

13. A railway freight-car comprising a skeleton bottom, a plurality of hoppers located beneath the floor-line of the car, gates for closing the lower ends of said hoppers, a removable floor comprising a number of sections arranged to be supported upon said skeleton bottom, a movable cross-bar at one end of the car for forcing the floor-sections together, screws for operating said cross-bar and common actuating means for said screws.

820,241. FIRE-ESCAPE. DAVID M. MCCATHIE, WESLEY R. CAIN, and NAPOLEON B. CAIN, Port Jervis, N. Y., assignors to The Momentum Regulator, Inc. Filed Aug. 10, 1905. Serial No. 273,648.

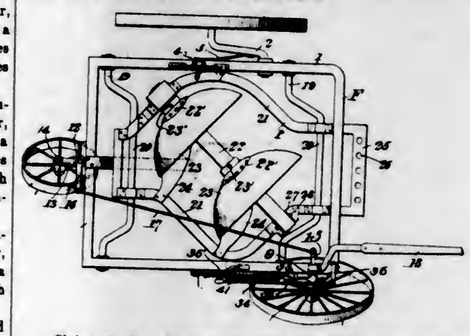


Claim.—1. The combination of a casing having a friction-surface, a wheel revoluble in said casing, a chain engaging said wheel, centrifugally-acting weights revoluble with the wheel, to coact with the friction-surface of the casing to regulate the speed of rotation of the wheel, and a pair of crossed levers also revoluble with the wheel and connected to the weights, for the purpose set forth.

2. The improved fire-escape comprising a casing having a circular portion, a shaft journaled concentrically in said portion, a sprocket-wheel upon said shaft, friction-surfaces arranged in said casing, a chain engaged with said surfaces and adapted to travel on said wheel, a radial arm upon said shaft, and a weight of substantially semicircular form provided with a slot to receive said arm, said slot being tapered outwardly to permit said weight to have an angular movement thereon, whereby a portion of its curved periphery is adapted to frictionally engage the inner wall of said casing, substantially as described.

3. The combination of a casing having a circular portion, a shaft rotatably journaled therein, a chain passed around said sprocket-wheel, oppositely-projecting radial arms upon said shaft, sliding weights upon said arms, and a pair of crossed levers pivotally mounted upon said shaft and having their ends loosely connected to said weights, substantially as described.

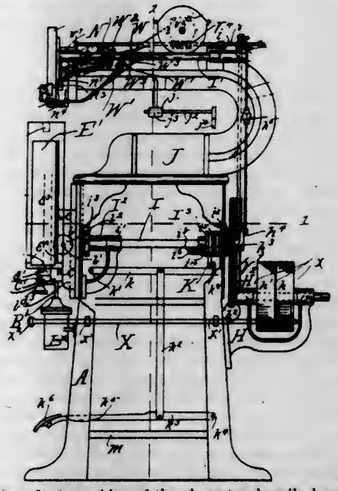
820,242. DISK BREAKING-PLOW. PERRY MCPHERSON, Revere, Mo. Filed Feb. 8, 1906. Serial No. 300,140.



Claim.—1. In a device of the class described, a carrying-frame, rotary supporting means for said frame, crank-shafts supported by the side members of said frame, a plow-frame journaled upon the cranks of said shafts and having bulging side members, a diagonally-disposed shaft journaled in ball-bearings upon said side members, deeply-cupped disks upon said shaft, and scrapers or sod-turners supported upon one of the side members of the plow-frame and engaging the disks.

2. In a device of the class described, a carrying-frame having a land-wheel-carrying crank, means for adjusting said crank and for retaining it in various positions, approximately vertical shafts supported by a side member and by the rear cross-bar of the frame, furrow-wheels carried by spindles connected with said shafts, means for adjusting said shafts to guide the carrying-frame, crank-shafts supported by the side members of the carrying-frame, a plow-frame journaled upon the cranks of said shafts and having bulging side members, a diagonally-disposed shaft supported for rotation upon said side members, disks upon said shafts, and scrapers or sod-turners supported upon one of the side members of the plow-frame and engaging the disks.

820,243. MACHINE FOR FEEDING AND DRIVING STAPLES. WILLIAM MCMURRAY, New York, N. Y., assignor to Williams Wire-Hinging Machine Company, a Corporation of New York. Filed May 26, 1902. Serial No. 109,054.



Claim.—1. A machine of the character described comprising staple-carriers, a staple-impressing device having a plurality of impressors and a plurality of members movably connected together and actuated with said impressors, said carriers leading to said members

to deliver staples thereto, said impressors being disposed at an angle with relation to each other, means to clench the points of an impressed staple, a gage against which boards may be clamped, and means supporting said gage to permit it to have adjustment vertically and laterally with respect to boards, substantially as described.

2. A machine of the character described comprising staple-carriers, a staple-impressing device, guideways therefor, said guideways each comprising a stationary member and a movable member, said movable members having movement toward the impression-point coincident with the movement of the associate impressing member, said carriers leading to the guideways to deliver staples thereto, means to clench the points of an impressed staple, a gage against which boards may be clamped, means supporting said gage to permit it to have adjustment vertically and laterally with respect to boards, and means to operate said machine, substantially as described.

3. A machine of the character described comprising a staple-carrier, a staple-impressor, a guideway therefor comprising a stationary member and a movable member supported in alinement, said movable member having movement toward the impression-point coincident with the movement of said impressor, said carrier leading to said stationary member to deliver staples thereto, means to clench the point of an impressed staple, a gage against which boards may be clamped, means supporting said gage to permit it to have adjustment vertically and laterally with respect to boards, and means for operating said impressor and said movable member, substantially as described.

4. A machine of the character described, comprising, a staple-impressing device, guideways therefor, the said guideways comprising double guides arranged parallel to each other, a staple-impressor in one of said guideways, a movable staple-feed member in the other of said guideways, and means to move said member toward the staple-impressing point coincident with the movement of said impressing member, means to cause said impressor to drive a staple, and means to operate said machine, substantially as set forth.

5. A machine of the character described, comprising a staple-impressing device, guideways therefor, the said guideways comprising double guides arranged parallel to each other, a staple-impressor in one of said guideways, a movable staple-feed member in the other of said guideways, said member having a groove, and means to move said member toward the staple-impressing point coincident with the movement of said impressing member, means to feed staples into said groove in said movable member, said impressor being arranged to move staples from said groove to impress them in stock, and means to operate said machine, substantially as set forth.

6. A machine of the character described, comprising a staple-impressing device, guideways therefor, the said guideways comprising double guides arranged parallel to each other, a staple-impressor in one of said guideways, a movable staple-feed member in the other of said guideways, means to move said member toward the staple-impressing point coincident with the movement of said impressing member, and means to operate said machine, substantially as set forth.

7. A machine of the character described, comprising a staple-impressing device, guideways therefor, the said guideways comprising double guides arranged parallel to each other, a staple-impressor in one of said guideways, a movable staple-feed member in the other of said guideways, means to move said member toward the staple-impressing point coincident with the movement of said impressing member, a lock to hold said movable feed member at the extremity of its forward movement while the staple is being impressed, and means to operate said machine, substantially as set forth.

8. A machine of the character described, comprising a staple-impressing device, guideways therefor, the said guideways having a plurality of impressors, said impressors being disposed at an angle with relation to each other, the said guideways comprising double guides arranged parallel to each other, a staple-impressor movable in one of said guideways, and a movable feed member movable in the other of said guideways, means whereby the said movable feed member is moved toward the staple-impressing point coincident with the motion of its impressor, means to lock said movable feed member at the extremity of its movement during the impression of staples, means to release said member, one impression member and its movable feed member having movable connection with the other movable feed member and impressor, means to automatically operate said members, a table for box parts, means to move said table and said member toward each other, and means to operate said machine, substantially as set forth.

9. A machine of the character described, comprising a staple-impressing device, guideways therefor, the said guideways having a plurality of impressors, said impressors being disposed at an angle with relation to each other, the said guideways comprising double guides arranged parallel to each other, a staple-impressor movable in one of said guideways, and a movable feed member movable in the other of said guideways, means whereby the said movable feed member is moved toward the staple-impressing point coincident with the motion of its impressor, means to lock said movable feed member at the extremity of its movement during the impression of staples, means to release said member, one impression member and its movable feed member having movable connection with the other movable feed member and impressor, means to automatically operate said members, a table for box parts, means to move said table and said member toward each other, and means to operate said machine, substantially as set forth.

10. A machine of the character described, comprising a staple-carrier, means to operate the machine, staple-impressing members, a plurality of stationary members, and a plurality of movable staple-feed members, disposed at an angle to each other, said movable members each having a groove, said impressing members being movable in the corresponding grooves in said staple-feed members, and a cut-off movable in said stationary members to intermittently stop the feeding of staples from the carrier substantially as set forth.

11. A machine of the character described comprising a staple-carrier, staple-impressing members, a stationary and a movable staple-feed member having a groove formed therein, said impressing member being movable in said groove in said staple-feed members, and a cut-off movable in one of said feed members to intermittently stop the feeding of said staples from the carrier, said cut-off comprising a body movable in and out of the path of said carrier coincident with the movement of the impression members, substantially as set forth.

12. A machine of the character described, comprising a staple-carrier, staple-impressing members, a stationary and a movable staple-feed member, said impressing member being movable in a groove in said staple-feed members, a cut-off movable in one of said feed members to intermittently stop the feeding of staples from the carrier, said cut-off comprising a body movable in and out of the path of said carrier coincident with the movement of said impression member, a tension device to actuate said cut-off, and means to return said cut-off with the return of said impressing member, substantially as set forth.

13. A machine of the character described comprising a staple-carrier, a movable feed member, means to actuate the movable member, and a lock for locking said movable member in its forward position during the driving of a staple therefrom, substantially as set forth.

14. A machine of the character described, comprising a staple-feed mechanism, means to operate same, an impressing mechanism having a member comprising two parts adjustable in the direction of their travel with relation to each other, and means to operate said member, substantially as set forth.

15. A machine of the character described, comprising a staple-feed mechanism, and means to operate same, an impressing mechanism having impressing members, means to operate same, said members comprising a main actuated body and a secondary body, said bodies being adjustable in the direction of their travel with relation to each other, and adjusting means comprising a screw, carried by one of said bodies and movably engaging the other of said bodies, substantially as set forth.

16. A machine of the character described, comprising a staple-feed mechanism, and means to operate same, an impressing mechanism having impressing members, means to operate same, said members comprising a main actuated body and a secondary body, said bodies being adjustable in the direction of their travel with relation to each other, and adjusting means, comprising a screw, carried by one of said bodies and movably engaging the other of said bodies, and means whereby said bodies are securely and adjustably bound together, substantially as set forth.

17. A machine of the character described, comprising sets of staple-impressing and staple-feeding members and having mechanism to actuate said sets of members alternately to and from the staple-impression point, means to lock said feeding members alternately in impression position, and means to release said members alternately from said position and from said lock, in combination with staple-carriers leading to the feeding members, means for picking staples from a mass and transferring them to said carriers, and means for operating the staple-pickers independently of the impressing members, substantially as set forth.

18. A machine of the character described, comprising means for feeding staples, means for impressing staples, a table having an anvil, said anvil constituting a clench-block, means for causing the impressing means and the table to have movement toward and from each other, means for automatically starting and stopping the table-operating means and the impressor, guides to direct the movement of said table, a rotatable body to impart movement to said table, and a catch and release arranged between said rotatable body and an actuating means, substantially as set forth.

19. A machine of the character described, comprising means for feeding staples, means for impressing staples, a table having an anvil, said anvil constituting a clench-block, means for causing the impressing means and the table to have movement toward and from each other, means for automatically starting and stopping the table-operating means and the impressor, guides to direct the movement of said table, a rotatable body to impart movement to said table, a catch and release arranged between said rotatable body and an actuating means, and a cam carried by said rotatable body, said cam having movable connection with said table, substantially as set forth.

20. A machine of the character described, comprising means for feeding staples, means for impressing staples, a table having an anvil, said anvil constituting a clench-block, means for causing the impressing means to have movement toward the table, means for automatically starting and stopping the impressor, guides to direct the movement of said table, a rotatable body to impart movement to said table, a catch and release arranged in connection with said rotatable body, a cam connected with said rotatable body, said cam having movable connection with said table, said table having a vertically-disposed guideway, and a projection carried by said table, said projection having movable connection with and operated by said cam, substantially as set forth.

21. A machine of the character described, comprising means for feeding staples, means for impressing staples, a table, means for causing the impression means to have movement toward the table, means for automatically starting and stopping the impressor, guides to direct the movement of said table, a rotatable body to impart movement to said table, and a catch and a release arranged in connection with said rotatable body, a cam carried by said rotatable body, a projection carried by said table, said projection having movable connection with and operated by said cam, the said catch constituting a clutch carried between and alternately connecting and releasing said rotatably body and a power driving device, and means to actuate at will said clutch, substantially as set forth.

22. A machine of the character described, comprising means for feeding staples, means for impressing staples, means for operating the impressing means, means for automatically starting and stopping the impressor, a table, guides to direct the movement of said table, a rotatable body to impart movement to said table, a cam carried by said rotatable body, said cam having movable connection with said table, a clutch carried between and alternately connecting and releasing said rotatable body and a power driving device, and comprising a body carried by said power driving device, said body being turnable independently of said rotatable body, a spur carried by said independently-turnable body, and a plunger carried by said rotatable body, said plunger having movement across the path of movement of said spur to engage and release same during movement of said power driving device, substantially as set forth.

23. A machine of the character described comprising means for picking staples, means for feeding staples, means for impressing staples, a table, guides to direct the movement of said table, a rotatable body to impart movement to said table, a cam having movable connection with said table and carried by said rotatable body, a clutch carried between and alternately connecting and releasing said rotatable body and a power driving device, said clutch comprising a member carried by said power driving device and rotative independently of said rotatable body, a spur carried by said member, a plunger carried by said rotatable body, said plunger having movement across the path of movement of said spur to engage and release same during movement of said member, a release to automatically force said plunger out of the path of the spur of said member, a spring to actuate said plunger, a lug on said plunger, said release having an inclined surface to actuate said lug, and means to operate the release, substantially as described.

24. A machine of the character described, comprising means for feeding staples, staple-carriers leading thereto, means for placing staples upon the carriers means for impressing staples, a table, means for causing the impressing means and the table to have movement toward and from each other, means for automatically starting and stopping the table-operating means and the impressor, power driving mechaniam to operate said machine, a crank connected with and rotated by said driving mechanism, a rock-shaft turnable with relation to the movement of said driving mechanism to operate said staple-impressing mechanism, and a movable connection between said shaft and said driving mechanism, substantially as set forth.

25. A machine of the character described, comprising means for feeding staples, means for impressing staples, a table having an anvil, said anvil constituting a clench-block, means for causing the impressing means and the table to have movement toward and from each other, means for automatically starting and stopping the table-operating means and the impressor, power driving mechanism to operate said machine, a crank connected with and rotated by said driving mechanism, a rock-shaft turnable with relation to the movement of said driving mechanism to operate said staple-impressing mechanism, a movable connection between said shaft and said driving mechanism, said movable connection comprising a connecting-rod and a turnbuckle, a lever carried by said rock-shaft, a slide in connection with said rod and said lever, and a screw to adjust said slide on said lever, substantially as set forth.

26. A machine of the character described, comprising means for picking staples, means for feeding staples, means for impressing staples, a table having an anvil, said anvil constituting a clench-block, means for causing the impressing means and the table to have movement toward and from each other, means for automatically starting and stopping the table-operating means and the impressor, power driving mechanism to operate said machine, a crank connected with and rotated by said driving mechanism, a rock-shaft turnable with relation to the movement of said driving mechanism to operate said staple-impressing mechanism, a movable connection between said shaft and said driving mechanism, said movable connection comprising a connecting-rod and a turnbuckle, a lever carried by said rock-shaft connected with said rod, a bell-crank carried by said shaft, and a movable connection formed between a staple-impressing mechanism and each respective arm of said bell-crank to alternately move the staple-impressors to and from the impressing-point, substantially as set forth.

27. In a machine of the character described the combination of staple-picking devices, staple-driving devices, carriers leading from the picking to the driving devices, a driving member, means for operating the picking devices continuously by the driving member, and means detachably connecting the driving member with the staple-driving devices for permitting said driving devices to be intermittently operated by said member while the picking devices continue to operate, substantially as set forth.

28. In a machine of the character described the combination of staple-picking devices, staple-driving devices, carriers leading from the picking to the driving devices, a table to receive box parts, a driving member, means for operating the picking devices continuously by the driving member, means for operating the table, and means detachably connecting the staple-driving devices and the table-operating means with said driving member for causing the table and the staple-driving devices to operate intermittently while the picking devices continue to operate, substantially as set forth.

29. In a machine of the character described the combination of staple-picking devices, staple-driving devices, a carrier leading from the picking to the driving devices, a table to receive box parts, a rotative element, means connecting the same with the staple-driving devices and with the table for operating them, a driving member, means connecting said member with the picking devices, and means for detachably connecting said rotative element with said driving member for causing the driving devices and the table to be operated intermittently while the picking devices may be operated continuously, substantially as set forth.

30. In a machine of the character described the combination of staple-picking devices, staple-driving devices, carriers leading from the picking to the driving devices, a table to receive box parts, a shaft, a cam for operating the table by said shaft, connections between said shaft and the staple-driving devices for operating the latter, a driving member rotative independently of said shaft and connected with the picking devices, and a clutch adapted to connect said shaft with said driving member to cause said shaft to operate the table and the staple-driving devices intermittently while the picking devices may be operated continuously by said driving member, substantially as set forth.

31. In a machine of the character described the combination of staple-picking devices, staple-driving devices, tracks leading from the picking devices to the driving devices, a table to receive box

parts, means for bringing the box parts and the driving devices together, and means for operating the driving devices with an adjustable gage above the table to aline with one of the driving devices and against which boards may be clamped by the table, substantially as set forth.

32. In a machine of the character described the combination of staple-picking devices, tracks leading therefrom to carry staples, staple-driving devices to which the tracks lead, said staple-driving devices having a plurality of movable members to receive staples and to be pressed against box parts, said drivers and movable members being disposed at an angle to each other, means for operating said movable members with the associate drivers, means to support box parts adjacent to the drivers, and means to move the box parts and the drivers toward each other, substantially as set forth.

33. In a machine of the character described the combination of staple-picking devices, tracks leading therefrom to carry staples, staple-driving devices to which the tracks lead, said staple-driving devices having a plurality of drivers and a plurality of movable members to receive staples from the tracks and to be pressed against box parts, said drivers and movable members being disposed at an angle to each other, means for operating said movable members with the associate drivers, means to intermittently operate said drivers, and means to continuously operate the staple-picking devices, substantially as set forth.

34. The combination of staple-picking devices, tracks leading therefrom to carry staples, staple-driving devices to which the tracks lead, guideways to receive the staples, said guideways each comprising a stationary and a movable member, located at an angle to each other, the movable members having movement toward the staple-impression point, the staple-drivers associated with each movable member having movement coincident therewith, a table to support box parts adjacent to the drivers, and means for clenching staples, substantially as set forth.

35. The combination of staple-picking devices, tracks leading therefrom to carry staples, staple-driving devices to which the tracks lead, guideways to receive the staples, said guideways each comprising a stationary and a movable member, the movable members having movement toward the staple-impression point, the staple-drivers associated with each movable member having movement coincident therewith, a table to support box parts adjacent to the drivers, means for clenching staples, means to intermittently operate said table and said driving devices, and means to continuously operate the staple-picking devices, substantially as set forth.

36. The combination of a table to hold box parts, staple-guideways each having a movable member adapted to be moved toward the box parts, a staple-driver for each guideway, means to move each movable member toward a box coincident with the corresponding movements of its associate driver, and an adjustable gage above the table to aline with one of the feed members and against which boards may be clamped by the table, means for selecting and feeding staples, and tracks leading therefrom to said guideways respectively, substantially as set forth.

37. The combination of a table to receive box parts, a pair of guideways for staples, each guideway having a movable member, tracks to deliver staples to the guideways, a driver for each guideway adapted to drive staples from the corresponding movable member, means connecting said movable members together to simultaneously move them in opposite directions, and means connected with each driver to operate and lock the movable-member-operating means, substantially as set forth.

38. In a machine of the character described the combination of a pair of movable staple-feed members carried in guides arranged at an angle to each other, means for supplying staples to said members, means for driving staples from said members, a rotary body connected with said members to reciprocate them, means for operating said body coincidently with the movement of the staple-driving means, and means for locking said body to hold the movable members in their forward position of adjustment during the staple-driving operation, substantially as set forth.

39. In a machine of the character described, the combination of a frame provided with a rigid head having guideways disposed at right angles to each other, staple-driving devices mounted to reciprocate upon said head and located in said guideways and comprising a pair of drivers and a pair of movable staple-feed members having grooves to receive staples, means to operate said drivers, a table to receive box parts, and an adjustable gage above the table to aline with one of the feed members and against which boards may be clamped by the table, substantially as set forth.

40. The combination of a table to receive box parts, a staple-guideway above the same, a driver to drive staples from said guideway, a support for the driver, means to adjust the driver with respect to its support, a track for staples leading to said guideway, a follower behind the driver to retain staples on the track after the driver passes the track, and means for feeding staples to the track, substantially as set forth.

41. The combination of a table, means for operating the same, a head above the table provided with a pair of guideways, the table having a staple-clenching portion opposite one guideway, an anvil above the table opposite the other guideway, means for adjusting said anvil to accommodate boards of different thickness, tracks to conduct staples to said guideways, and means to successively drive staples from each guideway, substantially as set forth.

42. The combination of a main frame, a table guided vertically thereby, a shaft, means for raising the table by said shaft, a gear rotated independently of the shaft, a clutch, means for operating the same for connecting the shaft and gear operatively, a plurality of staple-driving devices above the table, a shaft connected with said devices for operating the same, and means connecting said shaft with said gear, whereby when the clutch is operated the table will rise and the staple-driving devices will operate successively to drive staples in boards on said table, and an adjustable gage above the table to aline with one of the feed members and against which boards may be clamped by the table, substantially as set forth.

43. A machine of the character described comprising a movable staple-feed member, a driver, an oscillatory member connected with said feed member, and means for operating said oscillatory member by said driver, substantially as described.

44. A machine of the character described comprising movable feed members located at an angle to each other, drivers to act with said members, an oscillatory member movably connected with said feed members, and means for oscillating said member by and during the reciprocations of said drivers to move the feed members toward and from the staple-impressing point, substantially as described.

45. A machine of the character described comprising movable feed members located at an angle to each other, drivers to act with said members, an oscillatory member movably connected with said feed members, and bars connected with said drivers having faces to engage extensions on said oscillatory member to rock said member to move the feed members toward and from the impressing-point, substantially as described.

46. In a machine of the character described, the combination of a frame, a vertically-movable slide guided thereby, means to operate the same, a table, means adjustably connecting said table with said slide to permit the table to be adjusted vertically and laterally with respect to said slide, and an abutment and adjustable gage above the table whereby the table may be adjusted to different positions for clamping boards of various thickness between the table and said abutment and gage, substantially as set forth.

47. In a machine of the character described, the combination of a head and an adjustable gage maintained adjacent thereto providing an abutment against which boards may be clamped, with a table beneath said abutment, means for raising and lowering the table, and means to permit the table to be adjusted vertically and laterally with respect to said abutment to accommodate boards of different thickness, substantially as set forth.

48. The combination of a frame, a head carried thereby, an adjustable gage located adjacent to said head, said head and gage providing a recessed abutment of angular form having one side adjustable, a table beneath said abutment having an angular form with its apex pointing toward the recess of said abutment, and means for adjusting the table vertically and laterally with respect to said abutment to accommodate boards of different thickness, substantially as described.

49. The combination of a frame having a head, staple-driving devices carried thereby and disposed at an angle to each other, and an adjustable gage supported adjacent to said head and having a portion adapted to aline with part of said driving devices to serve as an anvil for clenching staples, with a table to support boards beneath said head, and means for causing boards to be clamped between said table and said gage, substantially as described.

50. The combination of a frame, a head carried thereby, an adjustable gage located adjacent to said head, said head and gage providing an abutment of angular form having one side adjustable, a vertically-movable slide guided by said frame, means to operate the slide, a transversely-adjustable slide connected with the first-named slide, a table beneath said abutment, guides for connecting the table with the transversely-adjustable slide, and means to lock the parts in adjusted position, substantially as set forth.

51. In a machine of the character described, the combination of a frame, a vertically-movable slide guided thereby, means to operate said slide, a transversely-adjustable slide guided on the first-named slide, means to secure said slides together in adjusted positions, a vertically-movable table guided by said transversely-adjustable slide, means for adjusting said table to, and holding it in, different positions of vertical adjustment, and an abutment and adjustable gage above said table, whereby boards of different thickness may be clamped between the table and said abutment, substantially as set forth.

52. The combination of a frame having a head provided with a surface located at an angle to the vertical and an adjustable gage located adjacent to said head having a surface located at an angle to said surface of said head forming a recessed abutment to receive boards, with a table of angular form having the apex pointed upwardly and located beneath said abutment, means to operate said table, and means for adjusting said table to, and holding it in, different vertical and transverse positions with respect to said abutment, substantially as set forth.

53. In a machine of the character described, the combination of a table having angular form with the apex pointed upwardly, an abutment for boards above the apex of the table provided with a member adjustable toward and from the table, means for moving the table toward and from the abutment to clamp boards and box parts therebetween, and means for adjusting said table to, and holding it in, different vertical and lateral positions with respect to said abutment, substantially as set forth.

54. The combination of a table having angular form, an abutment for boards opposed to the table, means for operating the table to clamp boards against said abutment, gages for boards carried by the leaves of said table, means to permit adjustment of said gages along said leaves, spring-pressed pins against which said leaves bear, and means for holding said pins upon the leaves and adjusting them along the latter, substantially as set forth.

55. The combination of a table having leaves, an abutment opposed to the table, wing-gages loosely mounted upon the leaves of said table, slides adjustable along said leaves, means for adjusting and holding said slides, and spring-pressed pins interposed between said slides and said gages adapted to permit said gages to have oscillatory movement with respect to said leaves to accommodate boards of varying shapes, substantially as set forth.

56. The combination of a table to receive box parts, and an arm movably connected therewith and having an anvil adapted to enter a box part and bear against the same, substantially as set forth.

57. The combination of a table to receive box parts, and an arm movably connected therewith and having an anvil adapted to enter a box part and bear against the same, said anvil being adjustably connected with said arm, substantially as set forth.

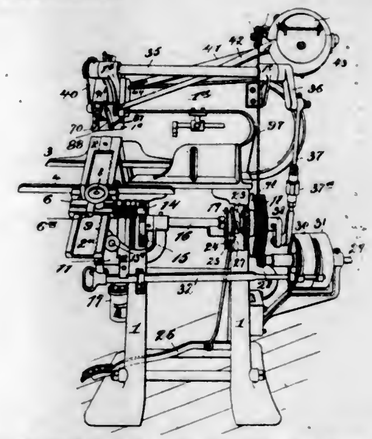
58. The combination of a table to receive box parts, a slide adjustable along said table, an arm pivotally connected with said slide, and an anvil movably connected with said arm, whereby the anvil may enter and bear upon box parts of varying dimensions, substantially as set forth.

59. The combination of a table having sides disposed at substantially right angles to each other, with the apex pointing upwardly, an arm movably supported upon one of said sides and extending upwardly along said side, with an anvil located near the upper end of said arm above the point of connection of said arm with the table, whereby the arm may extend over the box parts on the table to enable the anvil to bear against the inner side of an outwardly-extending wall of a box part, substantially as described.

60. The combination of a frame, a vertically-movable slide guided thereby, means to operate the same, a transversely-adjustable slide connected with the first-named slide, a table and guides for connecting the same with the transversely-adjustable slide, means to lock the parts in adjusted positions, a gage above the table, and staple-driving devices above said table whereby said table may be adjusted vertically and laterally with respect to the staple-driving devices to accommodate boards of different dimensions between the table and the staple-driving devices, substantially as set forth.

820,244. BOX-HINGING MACHINE. WILLIAM MCMURRAY, New York, N. Y., assignor to Williams Wire Hinging Machine Company, a Corporation of New York. Filed Aug. 20, 1903. Serial No. 170,175.

Claim.—1. The combination of a staple-delivering track, a driver to drive staples therefrom, an arm arranged to push staples along the track, a spring to move the arm in one direction, a stop to limit such movement of the arm, said arm having an extension, and means connected with the driver for operating said extension, substantially as described.



2. The combination of a head or support, with staple-carriers arranged at an angle to each other, and means for guiding the same on said support to travel toward a common point, with drivers to drive staples from said carriers, an oscillatory member having arms certain of which respectively movably engage said carriers, said drivers being provided with means for oscillating said member by and during the movement of said drivers, substantially as described.

3. The combination of a head or support, with staple-carriers arranged at an angle to each other, and means for guiding the same on said support to travel toward a common point, with drivers to drive staples from said carriers, an oscillatory member having arms respectively movably engaging said carriers, means operated with one driver for rocking said member in one direction, a rocker to move said member in the reverse direction, and means operated with the other driver for actuating said rocker, substantially as described.

4. The combination of a movable staple-carrier and means for guiding the same, with a driver, an oscillatory member movably connected with said carrier, said member having an arm or extension, and a block operative with the driver and provided with an inclined face to act on said arm to rock said member, substantially as described.

5. The combination of a movable staple-carrier and means for guiding the same, with a driver, an oscillatory member movably connected with said carrier, said member having an arm or extension, and a block operative with the driver and provided with a groove and an inclined face arranged to act on said arm or extension and to receive the same to rock said member to move the carrier toward the staple-impressing point and lock it in such position, substantially as described.

6. The combination of a staple-delivering track and a staple-receiving guideway, with a movable member provided with means to transfer staples from said track to a position in line with said guideway, means to support said member so it may move transversely to the plane of said track, a driver to drive staples from said guideway, and means to operate said movable member coincidently with the operation of said driver, substantially as described.

7. The combination of a staple-delivering track and a staple-receiving guideway, with a movable member provided with a staple-receiving finger adapted to pick staples off the end of said track and transfer them to a position in line with said guideway, means to support said member so it may move transversely to the plane of said track, a guideway and driver located at an angle to the first-named guideway, whereby interlocked staples may be driven, and means to operate said movable member, substantially as described.

8. The combination of a staple-delivering track and a staple-receiving guideway located at a distance from said track, with an oscillatory member provided with a staple-receiving finger adapted to pick staples off the end of said track and transfer them to a position to enter said guideway, means for releasing staples from said finger, means to support said member so it may move transversely to the plane of said track, a driver to drive staples from said guideway, and means to operate said movable member coincidently with the operation of said driver, substantially as described.

9. The combination of a staple-delivering track and a staple-

receiving guideway located at an angle to the plane of travel of staples along said track, with an oscillatory member provided with means for picking staples from said track and presenting them in line with said guideway, a staple-driver alined with said guideway to push staples therethrough, and means for operating said member coincidently with the operation of said driver, substantially as described.

10. The combination of a staple-delivering track, and a staple-guideway, with a movable member provided with a movable finger adapted to enter staples and move them from the end of said track to alinement with said guideway, and means for releasing staples from said finger to permit them to travel through said guideway, substantially as described.

11. The combination of a staple-delivering track, and a staple-guideway located at an angle to the plane of travel of staples along said guideway, with a movable member provided with a movable finger adapted to move staples from the end of said track to alinement with said guideway, means for releasing staples from said finger to permit them to travel through said guideway, and a driver to travel through said guideway, substantially as described.

12. The combination of a staple-delivering track, and a guideway, with a movable member adapted to travel across the end of said track and provided with a finger to enter the endmost staple on the track and push the same sidewise from the track into alinement with said guideway, a slide guided by said member and carrying said finger, means for moving said slide transversely of the plane of the staple to cause the finger to release the staple, and a driver to push staples through said guideway, substantially as described.

13. The combination of a track, and a guideway, with an oscillatory member provided with a slide, a spring-acting finger carried by said slide to aline with the end of the track, the oscillatory member having a cam or inclined surface arranged to release the finger from a staple when the slide is moved inwardly, and a driver arranged to push staples through said guideway and to operate said slide, substantially as described.

14. The combination of a staple-delivering track, and a guideway, with an oscillatory member, a slide carried thereby and provided with a finger adapted to enter a staple on said track, means for moving said slide forwardly to bring the finger in line with said track, means to move the slide backwardly to release the finger from a staple, and means to drive staples through said guideway, substantially as described.

15. The combination of a staple-delivering track, and a guideway, with an oscillatory member, a slide carried thereby, a finger carried by said slide to aline with said track to engage a staple thereon, a stop to engage said slide and push the finger in line with said track when the member is in the staple-receiving position, whereby when said member is turned the staple will be carried by the finger into line with the guideway, and means for pushing said slide back to release the finger from the staple, substantially as described.

16. The combination of a staple-delivering track, and a guideway located at an angle thereto, with an oscillatory member provided with a finger to engage staples at the end of the track, means to support said member so it may move transversely to the plane of said track, a guide concentric to the axis of said member to resist the outward movement of staples, means for driving said staples through said guideway and for releasing them from said finger, a driver to drive staples from said guideway, and means to operate said movable member coincidently with the operation of said driver, substantially as described.

17. The combination of a staple-delivering track, and a guideway, with a movable member provided with a finger to engage and push staples from the end of said track, a guide carried by said member adjacent to said finger providing a space between the member and the guide to receive staples, means for releasing staples from said finger, and means for driving staples through said guideway, a driver to drive staples from said guideway, and means to operate said movable member coincidently with the operation of sad driver, substantially as described.

18. The combination of a staple-delivering track and a guideway, with a movable member provided with a finger to engage and push staples from the end of said track, a guide movably connected with said member and located adjacent to said finger providing a space between the guide and member to receive staples, a way or track for said guide, and means for releasing the finger from the staples and for driving staples through said guideway, substantially as described.

19. The combination of a staple-delivering track, and a guideway, with an oscillatory member provided with a finger adapted to pick staples from the end of the track, a guide pivotally connected with said member and provided with a relatively wide part located at a distance from said member to receive staples in the space therebetween, said guide having a relatively narrow portion, and a driver adapted to pass across the narrow portion of said guide to push staples through said guideway, means for releasing said finger from staples, and a track or way for said guide, substantially as described.

20. In a staple-picking device a pivoted plate provided with a transverse guide, a slide carried in said guide, a spring carried by said slide and provided with a finger extending transversely thereto, and means for causing the finger to move laterally when the slide moves longitudinally, substantially as described.

21. The combination of a track and a guideway located at an angle thereto, with an oscillatory member extending transversely of the delivery end of said track and provided with means for picking staples from said track and carrying them into line with the guideway, a driver alined with said guideway, means for reciprocating said driver, a crank connected with said member, and means connected with said crank and operated during the forward movement of the driver for moving a staple in line with the guideway in position to be pushed therethrough by the driver during its continued forward movement, substantially as described.

22. The combination of a track and a guideway located at an angle thereto, with an oscillatory member provided with means for picking staples from said track and carrying them into line with the guideway, a driver alined with said guideway, means for reciprocating said driver, a reciprocative slide carrying said driver, a crank connected with said member, a rock-arm connected with said crank, and means connected with said slide for rocking said arm when the slide moves in one direction for causing said member to transfer a staple from the track to alinement with the guideway, substantially as described.

23. The combination of a track and a guideway located at an angle thereto, with an oscillatory member provided with means for picking staples from said track and carrying them into line with the guideway, a crank connected with said member, a driver alined with said guideway, means for reciprocating said driver, a rock-arm connected with said crank, a slide connected with said driver and provided with two guideways, said arm having a lug to enter said guideways, and a dog pivoted between said guideways adapted to engage said lug to rock said arm when moving in one direction and to permit the lug to travel thereunder when moving in the opposite direction for oscillating said member, substantially as described.

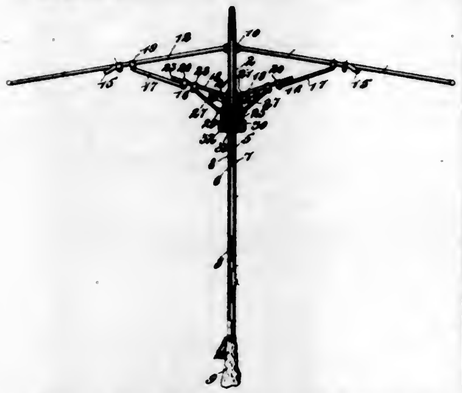
24. The combination of a track and a guideway located at an angle thereto, with an oscillatory member provided with means for picking staples from said track and carrying them into line with the guideway, a crank connected with said member, a driver alined with said guideway, a slide connected with said driver, means for reciprocating said slide, a rock-arm connected with said crank, a slide connected with said driver, a spring to actuate said arm, said slide having a dog to engage a lug on said arm to operate the arm against the tension of said spring, said dog being adapted to travel over said lug when moving in a reverse direction, substantially as described.

25. The combination of a head provided with staple-receiving guideways located at an angle to each other, a track leading to one guideway to deliver staples thereto, a driver to drive staples from said track, another track located at an angle to the plane of the other guideway, and means for transferring staples from said track to a position in line with said guideway, substantially as described.

26. The combination of a head provided with staple-receiving guideways located at an angle to each other, a track leading to one guideway to deliver staples thereto, a driver to drive staples from said track, another track located at an angle to the plane of the other guideway, a movable member adapted to move in a plane transverse to the plane of said track and provided with means to transfer staples from said track to a position in line with said guideway, means to operate said movable member to cause it to place staples from said track in line with said guideway, and a driver to drive staples through said guideway, substantially as described.

27. The combination of a head provided with staple-receiving guideways located at an angle to each other, a track leading to one guideway to deliver staples thereto, a driver to drive staples from said track through said guideway, another track located at an angle to the plane of the other guideway, a movable member provided with a staple-receiving finger adapted to pick staples off the end of said track, means to operate said movable member to cause the finger to turn the staples from the plane of the track to the plane of the guideway and in line therewith, and a driver to drive staples from said movable member through said guideway, substantially as described.

820,245. **FOLDING UMBRELLA.** NATHAN I. NEWLIN, Indianapolis, and STRANDA L. NEWLIN, Rockville, Ind. Filed Aug. 17, 1905. Serial No. 274,590.



Claim.—1. An umbrella comprising a rod, ribs mounted thereon, a runner slidable upon said rod and comprising telescoping sleeves, a spring for forcing said sleeves apart, folding rib-braces, each comprising outer and inner pivotally-connected sections, said outer sections being pivoted to said ribs and said inner sections to one of the sleeves of said runner, and brace-bars pivotally connected to said inner sections and to the other sleeve of said runner, substantially as described.

2. A folding umbrella comprising a rod composed of detachably-connected sections, folding sectional ribs mounted upon said rod, a runner slidably mounted upon said rod and comprising an inner sleeve and an outer slidable sleeve, a coil-spring disposed between said sleeves, folding braces pivotally connected to said inner sleeve and to said ribs and links pivotally connected to said folding braces and to said sliding sleeve, substantially as described.

3. In a folding umbrella, the combination with a rod and ribs connected thereto, of a runner slidably engaged with said rod, and consisting of an inner sleeve, an upper sleeve fixed to said inner one, an outer slidlng sleeve adapted to telescope said upper sleeve and a cap upon the lower end of said inner sleeve, rib-braces each consisting of an outer section and an inner section, said outer brace-section being pivoted to said ribs and adjacent to the outer ends of said inner brace-sections, said inner brace-sections being pivotally connected at their inner ends to the said inner sleeve and having their outer ends adapted to engage said outer brace-sections, links pivotally connecting said inner brace-sections with said sliding sleeve and a coil-spring disposed within said upper and outer sleeves, substantially as described.

4. In an umbrella, the combination of a rod, a rib pivotally connected thereto, a runner on the rod and having a spring-pressed slidable member movable toward and from the upper end of the runner, a brace comprising an outer and an inner section pivotally connected together, the outer end of the outer brace-section being pivotally connected to the rib and the inner end of the inner brace-section being pivotally connected to the runner, and a brace-link having its outer end pivotally connected to the inner brace-section and its inner end pivotally connected to the spring-pressed slidable member of the runner, substantially as described.

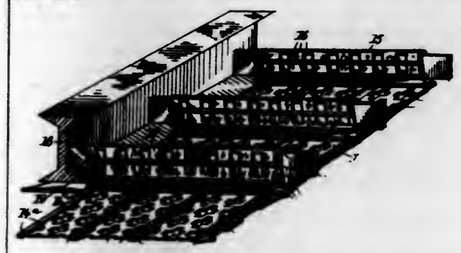
820,246. **LATHING SYSTEM.** EDWARD NIDDS, New York, N. Y., assignor of one-half to Michael H. Callan, Brooklyn, N. Y. Filed May 9, 1905. Serial No. 259,525.

Claim.—1. A lathing system, comprising bars, and laths having portions surrounding and extending beyond the bars at one edge, and having interlocking engagement with similar portions of the laths.

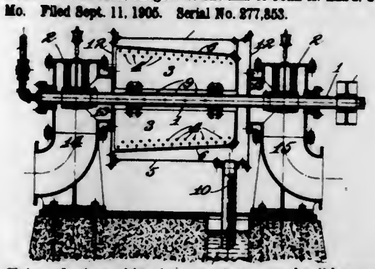
2. A lathing system comprising bars, and laths having portions coöperating with the bars, said laths being provided with locking-tongues.

3. A lathing system comprising bars, and laths having portions coöperating with the bars, said laths being provided with tongues extending over the bars.

4. A lathing system, comprising a series of laths each provided with cross-shaped key-openings, the arms of each opening of one series having portions extending between those of an adjacent series, transverse corrugations extending between the key-openings, longitudinal corrugations extending between the series of key-openings, transverse index-marks extending between the sets of openings, and a series of tongues extending transversely across the laths between the index-marks, said laths having portions adapted to surround and extend beyond the edges of a supporting-bar and interlocking with each other.



820,247. **MACHINE FOR CLEANING GAS.** CARL O. NORDENSON, Scane, Sweden, assignor of one-half to John A. Laird, St. Louis, Mo. Filed Sept. 11, 1905. Serial No. 277,853.



Claim.—1. A machine for removing tar and solid matter from gas consisting of a framework, a hollow shaft mounted in said framework and having radial perforations therein and having beater-blades thereon, a casing mounted on said framework and surrounding said beater-blades, a perforated shell inside of said casing, an inlet-pipe connected with said hollow shaft and an outlet-pipe connected with the lower end of said casing, said machine being provided with two passage-ways one of which opens into the interior of said shell and the second of which opens into said casing at a point outside of said shell.

2. A machine for removing tar and solid matter from gas consisting of a framework, a hollow shaft mounted in said framework and having radial perforations therein and having beater-blades thereon, a casing mounted on said framework and surrounding said beater-blades, a perforated shell inside of said casing adjacent to the edges of said blades, an inlet-pipe connected with said hollow shaft and an outlet-pipe connected with the lower end of said casing, said machine having two passage-ways one of which opens into the interior of said shell and the second of which opens into said casing at a point outside of said shell, and said beater-blades being wider at the inlet end than at the outlet end of said casing.

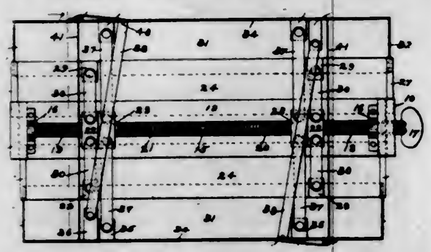
3. A machine for removing tar and solid matter from gas consisting of a framework, a hollow shaft mounted in said framework and having radial perforations therein and having beater-blades thereon, an elongated casing mounted on said framework and surrounding said beater-blades, an elongated perforated conical shell inside of said casing, an inlet-pipe connected with said hollow shaft and an outlet-pipe connected with the lower end of said casing, said machine having two passage-ways one of which opens into the interior of said shell and the second of which opens into said casing at a point outside of said shell, and said beater-blades having their outer margins inclined to conform to the inner surface of the conical shell.

4. A machine for removing tar and solid matter from gas consisting of a framework, a hollow shaft mounted in said framework and having radial perforations therein and having beater-blades thereon, an elongated casing mounted on said framework and surrounding said beater-blades, an elongated perforated conical shell inside of said casing, an inlet-pipe connected with said hollow shaft and an outlet-pipe connected with the lower end of said casing, said machine having two passage-ways one of which opens into the interior of said shell and the second of which opens into said casing at a

point outside of said shell, and said beater-blades having their outer margins inclined to conform to the inner surface of the conical shell and having perforations therein.

5. A machine for removing tar and solid matter from gas consisting of a framework, a hollow shaft mounted in said framework and having radial perforations therein and beater-blades thereon, an elongated cylindrical casing mounted on said framework and surrounding said beater-blades, an elongated perforated conical shell inside of said casing, an inlet-pipe connected with said hollow shaft and an outlet-pipe connected with the lower end of said casing, said machine having two passage-ways one of which opens into the interior of said shell and the second of which opens into said casing at a point outside of said shell, and said beater-blades having their outer margins inclined to conform to the inner surface of the conical shell.

820,248. **LOOSE-LEAF BINDER.** ARTHUR OPALLA, Chicago, Ill. Filed May 13, 1905. Serial No. 260,070.



Claim.—1. In a loose-leaf binder, the combination with the back, of an auxiliary plate and a cover-plate in telescopic engagement with one another, a shaft rotatably mounted on the back and having right and left handed screw-threads, nuts engaging said screw-threads, and links connecting the nuts with said plates.

2. In a loose-leaf binder, the combination with a back having right-angled extensions at its ends and provided with a way, a channeled auxiliary plate having channeled right-angled extensions at its ends and located in the way or channel of the back, a cover-plate having at its ends right-angled extensions and located in the channel of the auxiliary plate, a shaft rotatably mounted on the back and having right and left handed screw-threads, nuts engaging said screw-threads, and links connecting the nuts with said plates.

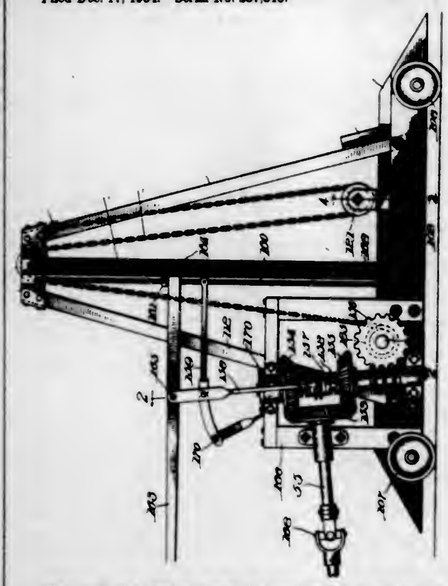
3. A loose-leaf binder comprising a back, auxiliary plates and cover-plates in telescopic engagement with one another, a shaft mounted to turn on the back and having right and left hand screw-threads, nuts engaging said screw-threads, and links connecting the nuts with the auxiliary plates and cover-plates.

4. A loose-leaf binder comprising a channeled back having channeled extensions at its ends, channeled auxiliary plates having channeled extensions at their ends and located in the channels of the back, cover-plates having extensions at their ends and located in the channels of the auxiliary plates, a shaft rotatably mounted on the back and having right and left hand screw-threads, nuts engaging said screw-threads, and links connecting the nuts with the auxiliary plates and cover-plates.

5. In a loose-leaf binder, the combination with the back of an auxiliary plate and a cover-plate in telescopic engagement with one another, said cover-plate having an inwardly-projecting portion provided with a longitudinal slot, a bar pivoted at one of its ends and having its other end projecting into said slot and provided with a check-pin to restrict its movement, a flexible and extensible retainer for the leaves connected at one of its ends to the free end of said bar and suitably secured at its other end, a shaft rotatably mounted on the back and having right and left handed screw-threads, nuts engaging said screw-threads, and links connecting the nuts with said plates.

6. In a loose-leaf binder, the combination with the back, of auxiliary plates and cover-plates in telescopic engagement with one another, a bar pivotally connected at one of its ends to each of the cover-plates and having its other end extended toward the opposite cover-plate, a flexible and extensible retainer for the leaves secured at one of its ends to the free end of each of said bars and at its other end to the cover-plate opposite the free end of said bar, a shaft rotatably mounted on the back and having right and left handed screw-threads, nuts engaging said screw-threads, and links connecting the nuts with said plates.

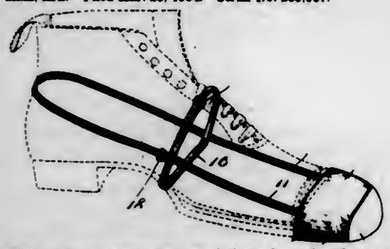
820,249. **CORN-ELEVATOR.** AUGUST OTTO, Jr., Sandwich, Ill. Filed Dec. 17, 1904. Serial No. 237,318.



Claim.—1. In a wagon-dump, in combination, a suitable frame, a traveling platform, a hoisting-drum, flexible connection between the drum and platform, a power-shaft, operative connection between the shaft and the drum, a reversing-clutch interposed in such connection, a reciprocable rod, adjustable stops carried by the rod and projecting into the path of an appurtenance of the platform, a shipper-rod for controlling the clutch, a lever fulcrumed on an appurtenance of the frame and pivotally attached to the reciprocable rod and being operatively engaged with the shipper-rod, and a hand-lever fulcrumed on an appurtenance of the frame and being operatively connected with the shipper-rod.

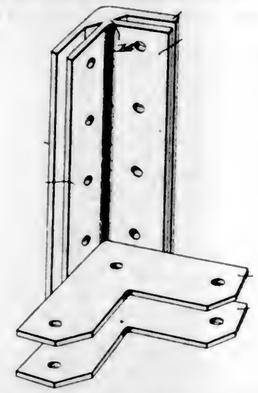
2. In a wagon-dump, in combination, a suitable frame, a traveling platform, a hoisting-drum, flexible connection between the drum and platform, a power-shaft, operative connection between the shaft and the drum, a reversing-clutch interposed in such connection, a reciprocable rod, stops carried by the rod and projecting into the path of an appurtenance of the platform, a shipper-rod for controlling the clutch, a lever fulcrumed on an appurtenance of the frame and pivotally attached to the reciprocable rod and being operatively engaged with the shipper-rod, and a hand-lever fulcrumed on an appurtenance of the frame and being operatively connected with the shipper-rod.

820,250. **SHOE-PROTECTOR.** FREDERIC N. PATTERSON, Marianna, Ark. Filed Mar. 25, 1904. Serial No. 200,067.



Claim.—A shoe-protector consisting of a sole, the rear edge portion of the sole being tapered, a metal binding secured upon the rear edge portion of the sole, an upper member let into the front and side edges of the sole, a metal tip secured over the front portion of the upper member and against the bottom of the front edge of the sole, straps secured immovable to the inner rear edge portion of the upper member at opposite sides thereof, one of said straps having a buckle for engagement by the other strap, and a strap secured to opposite inner faces of the first-named strap with its free end portions above the latter and a buckle at one free end of the last-named strap arranged for engagement by the other free end, said second strap also extending beneath the first strap.

820,251. **CORNER-SUPPORT FOR VEHICLES.** WILLIAM G. PERSING, Braman, Okla. Filed Sept. 18, 1905. Serial No. 279,032.



Claim.—As a new article of manufacture a corner for vehicle-bodies consisting of two L-shaped plates vertically disposed and spaced apart and connected by an integral web at their elbow portions and forming vertical recesses for the terminals of the sides and end members of the body open at the ends and extending the whole width of said side and end members, and L-shaped clamp-plates horizontally disposed and integral with the inner vertical L-shaped plate, one of said horizontal plates flush with the bottoms of said vertical plates for bearing beneath the floor member of the vehicle-body and the other of said horizontal plates spaced from the first-mentioned horizontal plate for bearing above said floor member.

820,252. **WATCH-BARREL ARBOR.** WILSON E. PORTER, New Haven, Conn., assignor to New Haven Clock Co., New Haven, Conn., a Corporation. Filed June 19, 1905. Serial No. 265,855.



Claim.—A one-piece spring-barrel arbor for timepieces, having an annular flange transversely broken for the production of a hook to be engaged by the inner end of a coiled spring formed at its inner end with a hole for the reception of the hook which is narrower than the width of the spring and also having two annular shoulders corresponding to each other in diameter but smaller in diameter than the said flange which is located between them, and the said arbor also having two journals on which it runs and being adapted to have a spring-barrel applied to it and the said shoulders preventing the extreme inner end of the spring from tilting and being disengaged from the hook.

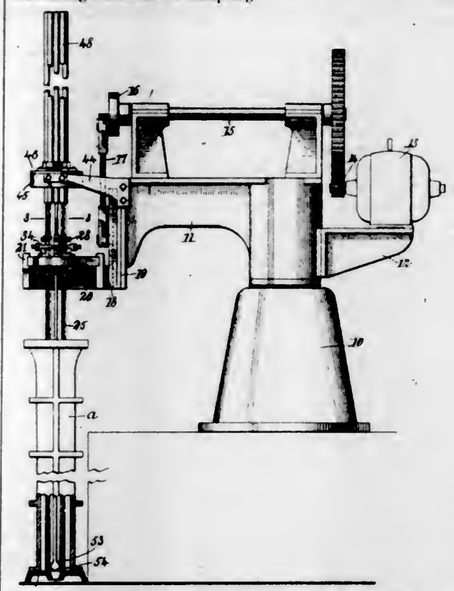
820,253. **MOLD-RAMMING MACHINE.** JOSEPH POULSON, Philipsburg, N. J. Filed June 12, 1905. Serial No. 264,900.

Claim.—1. The combination of a frame, a clamping-bar thereon, a clamping member engaging said clamping-bar and adapted to force the same toward the frame, and means for regulating the pressure exerted by the clamping member on the bar.

2. The combination with a ramming-bar, of a gripping device, comprising a frame, a clamping-bar mounted on said frame and adapted to engage the ramming-bar, a clamping member connected with said clamping-bar and means for forcing the clamping member toward the clamping-bar.

3. The combination with a series of ramming-bars, of a series of gripping devices each comprising a frame, a clamping-bar mounted on said frame and adapted to engage a ramming-bar, a clamping member connected with said clamping-bar, and resilient means for forcing said clamping member toward the clamping-bar to secure the ramming-bar in position upon the gripping device.

4. The combination of a frame, a clamping-bar mounted thereon, a clamping member engaging said clamping-bar and adapted to force it toward the frame, a spring for operating said clamping member, means for adjusting the tension on said spring, and means for overcoming the tension of the spring.



5. The combination of a frame, a clamping-bar mounted thereon, a clamping member engaging said clamping-bar and adapted to force it toward the frame, a spring for operating said clamping member, means for adjusting the tension on said spring, and means for overcoming the tension of the spring; said last-named means comprising a pivoted lever having means for engaging said clamping member, and means for moving said lever.

6. The combination of a gripping-plate having a series of perforations therein for ramming-bars, a gripping device located adjacent to each of said perforations, said gripping devices each comprising a clamping member, a spring for operating said member, a projection on said member, a pivoted lever having a projection adapted to engage the first-mentioned projection and overcome the force of said spring, and an adjustable contact-point located upon said lever, with a screw mounted upon said gripping-plate, and a plate or disk on said screw in position to engage all of said contact-points.

7. The combination of a gripping-plate having a perforation therein for a ramming-bar, and a gripping device located adjacent to said perforation; said gripping device comprising a clamping member, a projection on said member, a lever having a projection adapted to engage the first-mentioned projection, a screw mounted upon the gripping-plate, and a plate or disk on said screw in position to engage said lever.

8. The combination of a frame, a clamping-bar mounted thereon, a clamping member engaging said clamping-bar and adapted to force it toward the frame, a lever having means for engaging the clamping member, and means for moving said lever to disengage the clamping member from said bar.

9. A molding-machine having a gripping-plate in sections adjustable toward and from each other, each section having means for supporting rammers.

10. The combination of a gripping-plate in sections adjustable toward and from each other, a series of gripping devices on each section for holding rammers, a series of guide-plates mounted above said gripping-plates, means for adjusting the guide-plates toward and from each other, and a series of guides mounted upon each guide-plate and adapted to register with the gripping devices.

11. The combination of a gripping-plate in sections adjustable toward and from each other, a series of gripping devices on each section for holding rammers, and means for adjusting the gripping devices toward and from each other.

12. The combination of a gripping-plate in sections adjustable toward and from each other, a series of gripping devices on each sec-

tion for holding rammers, a series of guides for the rammers, and means for adjusting the guides toward and from each other.

13. The combination of a gripping-plate in sections, means for adjusting said sections toward and from each other, a series of plates above said sections, means for adjusting said last-named plates toward and from each other, and a series of guides located on said last-named plates.

14. The combination of a gripping-plate in sections adjustable toward and from each other, a series of gripping devices on each section for holding rammers, means for adjusting the gripping devices toward and from each other, a series of guide-plates mounted above said gripping-plates, means for adjusting said guide-plates toward and from each other, and a series of guides mounted upon each guide-plate and adapted to register with the gripping devices, said guides being radially adjustable upon the guide-plates.

15. The combination of a gripping-plate in sections adjustable toward and from each other, a series of gripping devices on each section for holding rammers, means for adjusting the gripping devices toward and from each other, a series of guide-plates mounted above said gripping-plates, means for adjusting said guide-plates toward and from each other, a series of guides mounted upon each guide-plate, and means for reciprocating the gripping-plates and rammers.

16. The combination of a gripping-plate in sections adjustable toward and from each other, a series of gripping devices on each section for holding rammers, means for adjusting the gripping devices toward and from each other, and a rammer connected with each gripping device; said rammers being arranged in a circle and each rammer having bits provided with slanting sides.

17. The combination of a gripping-plate in sections adjustable toward and from each other, a series of gripping devices on each section for holding rammers, and a rammer connected with each gripping device; said rammers being arranged in a circle.

18. The combination of a gripping-plate in sections adjustable toward and from each other, a series of gripping devices on each section for holding rammers, a series of guide-plates mounted above said gripping-plates, means for adjusting said guide-plates toward and from each other, a series of guides mounted upon each guide-plate, and means for reciprocating the gripping-plates and rammers.

820,254. **MIXING DEVICE.** SARAH E. POWELL, Fort Worth, Tex. Filed Dec. 13, 1904. Serial No. 236,606.



Claim.—1. A mixer comprising a compartment, a plurality of resilient cradles mounted therein, horizontally-arranged receptacles supported in the cradles, mixing devices within the receptacles, and means for simultaneously operating said mixing devices.

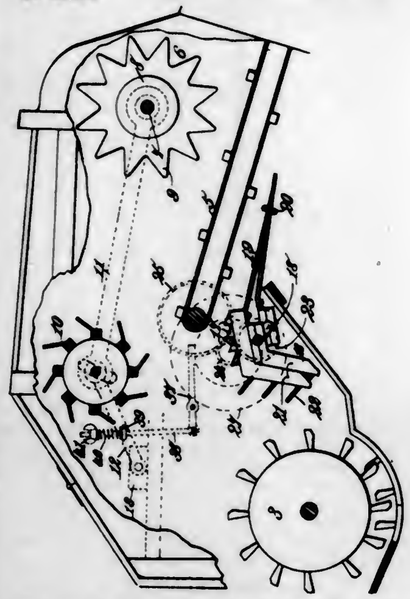
2. A mixer comprising a compartment, a plurality of mixing devices contained therein, means for operating said mixing devices and a lever pivoted to the compartment and adapted to removably engage all of said mixing devices.

3. In an apparatus of the character described, the combination of a receptacle having a plurality of downwardly-extending slots therein, a plurality of resilient cradle members supported by said compartment, a plurality of cylindrical receptacles having covers, each of said receptacles being supported in the resilient cradle members, a stirrer-shaft in each of said receptacles, each of said stirrer-shafts fitting into the slots of said compartment and being provided with an annular groove, stirrer-blades on each of said shafts, a gear-wheel on each of said shafts, a crank on one of said shafts, a lever connected with said compartment and adapted to fit into the annular grooves of the several shafts, and a pivotal catch for holding said lever in position.

4. A mixer comprising a compartment, a plurality of mixing devices arranged within said compartment, each of said mixing devices including a shaft projected longitudinally beyond the one wall of the compartment and formed with an annular groove, and a lever pivotally connected to the compartment and adapted to engage all of said grooves.

5. A mixer comprising a compartment, a plurality of mixing devices arranged within said compartment, each of said mixing devices including a shaft projected longitudinally beyond the one wall of the compartment and formed with an annular groove, a lever pivotally connected to the compartment and adapted to engage all of said grooves, and means to secure the lever in operative position.

820,255. **BAND-CUTTER AND FEEDER FOR THRESHING-MACHINES.** JAMES T. RAMSDEN, Leeds, Iowa, assignor of one-half to John C. Gabel, Leeds, Sioux City, Iowa. Filed July 11, 1905. Serial No. 269,216.



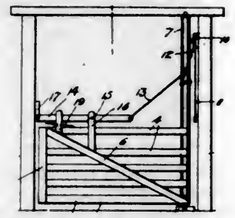
Claim.—1. In a device of the class described, the combination of a carrier, feed-pans located at the delivery end of the carrier and each consisting of two sections angularly disposed, one of the sections having teeth and the other vertically-separated projections, means for operating the feed-pans, a cylinder and a concave, the toothed portions of the feed-pans being adapted to supply grain to the cylinder and concave, and the projections thereon serving to retard the feed of the grain sufficiently to permit the cylinder to thresh out grain before the final action thereupon by the combined action of the cylinder and concave.

2. In a device of the class described the combination of a carrier, a band-cutter coöperative with the carrier, a beater located at the delivery end of the carrier and arranged to be elevated by and on the accumulation of grain at such end, arms pivotally supported by the shaft of the band-cutter and carrying said beater, other arms also supporting the beater, bearings for supporting said other arms and longitudinally movable to raise and lower the beater, and means operative by the beater for arresting the motion of the carrier on the elevation of the former.

3. In a device of the class described the combination of a carrier, a beater located at the delivery end of the carrier, pivotally-mounted arms for supporting the beater for upward and downward movement, other arms arranged for upward and downward movement with the beater, bearings for supporting said other arms, said bearings being mounted for longitudinal movement on the framework of the device, a rod, one of said second arms having a perforated lug, through the perforation of which said rod extends, a coiled spring surrounding the upper end of the rod, a thumb-screw engaging the rod and pressing against the spring to regulate the tension thereof, said rod being arranged for upward movement on the upward movement of the beater by and on the accumulation of grain at the delivery end of the carrier, and means actuated by said rod for arresting the motion of the carrier on the elevation of the beater.

4. A device of the class described involving a carrier, a beater located at the delivery end of the carrier and arranged to be elevated by and on the accumulation of grain at such end, a friction-clutch, a pulley coöperative with the friction-clutch, a driving device arranged to be actuated by the pulley through the intervention of the friction-clutch, means actuated by the driving device for moving the carrier, a brake-wheel coöperative with the friction-clutch, and means connected with the beater for stopping the motion of the brake-wheel on the elevation of the beater.

820,256. **GATE.** JAMES T. REBER, Roane, Tex. Filed Jan. 4, 1906. Serial No. 294,609.



Claim.—The herein-described gate comprising the uprights and cross-bar, a pivoted stile, a gate-frame connected to said stile, an operating-bar, pivotally connected to one of the uprights, flexible connections extending from the operating-bar to the stile and secured at opposite sides thereon, a latch pivoted to the gate-frame, cords attached to the latch, said cords being connected at their opposite ends to the flexible connections intermediate their ends, a catch on one of the uprights for engaging the latch-bar, and operating-cords depending from the operating-bar, substantially as described.

820,257. **CURTAIN-POLE RING.** CHARLES RENNOF, New York, N. Y. Filed Feb. 10, 1906. Serial No. 300,485.



Claim.—1. As an improved article of manufacture, a curtain-pole ring having in it a circumferentially-indented V-shaped keeper-journal, and a roller rotatively mounted on said journal, said roller being formed of a single piece of metal of angular cross-section bent into a ring-like form, the inner V-shaped angle of said piece engaging the said V-shaped journal.

2. As an improved article of manufacture, a hollow curtain-pole ring of thin metal having in it two circumferential indentations forming recessed keeper-journals, and provided with rollers rotatively mounted on the respective journals, said rollers being made each from a single piece of metal of substantially triangular cross-section bent to an annular form about the ring with one of the angles thereof so disposed as to engage the indentation in the pole-ring which forms said journal.

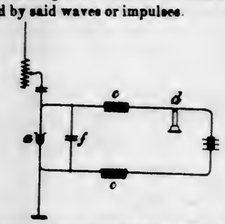
3. The herein-described method of providing a hollow curtain-pole ring of thin metal with a roller to roll on the pole, which consists in first forming in said ring a circumferential indentation, and then bending about said ring at said indentation a bar of metal to form a roller, the said bar having a triangular cross-section, the thin edge of which is made to engage the indentation.

820,258. **DETECTOR FOR ELECTROMAGNETIC WAVES OR THE LIKE.** RAGNAR H. RENDAHL, Berlin, Germany, assignor to Gesellschaft für Drahtlose Telegraphie M. B. H., Berlin, Germany. Filed Apr. 18, 1905. Serial No. 256,290.

Claim.—1. In apparatus of the character described, the combination with an electrolytic detector, of means for varying of adjusting the non-energy-consuming property or factor of said detector independently of the energy-consuming properties thereof.

2. In a detector of electromagnetic waves or other feeble electrical impulses, the combination of an electrolytic cell, means for polarizing such cell, a condenser parallel to said cell, means for passing the waves or impulses through the cell and means for observing increases in current caused by said waves or impulses.

3. In a detector of electromagnetic waves or other feeble electrical impulses, the combination of an electrolytic cell having a minute anode and a cathode of greater surface, means for polarizing such cell, a condenser parallel to said cell, means for passing the waves or impulses through the cell and means for observing increases in current caused by said waves or impulses.



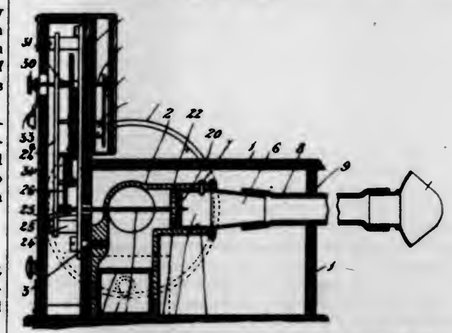
4. In a detector of electromagnetic waves or other feeble electrical impulses, the combination of an electrolytic cell, a source of electromotive force for polarizing such cell and producing at the cell a voltage above the decomposition voltage of the cell, a condenser parallel to said cell, means for passing the waves or impulses through the cell and means for observing increases in current caused by the cell by the influence of said waves or impulses.

5. In a detector of electromagnetic waves or other feeble electrical impulses, the combination of an electrolytic cell having a minute anode, a local circuit connected across the cell and including a source of direct electromotive force having its positive pole connected with the minute anode and acting to polarize the cell, a condenser parallel to said cell, means for passing the waves or impulses through the cell and means for observing increases in current caused by a depolarization of the cell by the influence of said waves or impulses.

6. In a receiver for space telegraphy the combination of an electrolytic cell conductively connected with the receiving-circuit, a local circuit connected across the cell and including a source of direct electromotive force for polarizing such cell and producing at the cell a voltage above the decomposition voltage of the cell, a condenser of a variable capacity parallel to the cell and means for observing increases in current caused by depolarization of the cell by the influence of the waves produced in the receiving-circuit.

7. In a receiver for space telegraphy the combination of an oscillating circuit including a self-induction, a condenser and an electrolytic cell in series and inductively connected with the receiving-circuit, a source of electromotive force for polarizing the said cell and producing at the cell a voltage above the decomposition voltage of the cell, a condenser of a variable capacity parallel to the cell and means for observing increases in current caused by a depolarization of the cell by the influence of the waves produced in the said oscillating circuit.

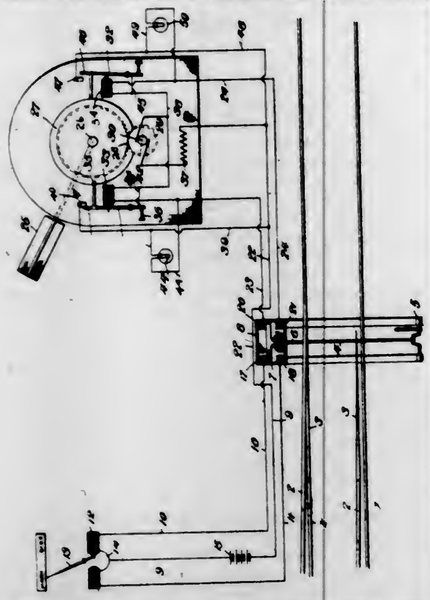
820,259. **SPIROMETER.** JAMES S. RENVOIZE, London, England. Filed Jan. 29, 1906. Serial No. 298,528.



Claim.—1. The improved construction of apparatus for exercising the lungs and indicating the cubic air capacity of same, consisting of a box, containing a casting having four openings, one for connection of a flexible tube, two leading to the atmosphere, and being controlled by non-return valves, and the other opening to a box adapted to contain chemicals for inhaling purposes, a fan or vane in such casting and operating a train of gear-wheels for moving a pointer around a dial on the revolving of the fan in either direction, substantially as described and shown on the accompanying drawings.

2. A spirometer comprising a casing having a plurality of openings, two of the openings provided with means having non-return valves for communication with the atmosphere, a flexible tube having a mouthpiece having communication with one of the remaining openings, a drawer in said casing adapted to contain chemicals and having communication with the other of said openings, a rotatable vane-wheel, gear mechanism having connection with said wheel and adapted to be actuated thereby, a dial on said casing, and a pointer actuated by the gear mechanism.

820,260. ELECTRICAL SWITCH-INDICATOR. William A. Rideout, Sr., Oshkosh, Wis. Filed Dec. 11, 1905. Serial No. 291,306.



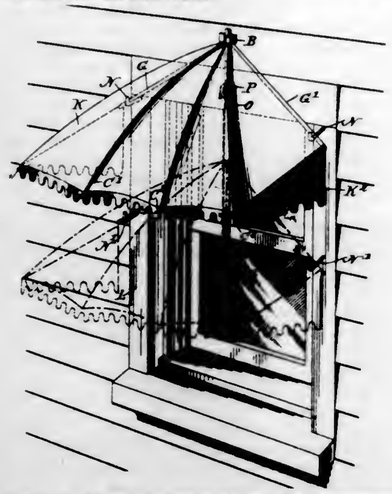
Claim.—1. The combination with a switch-indicating device comprising a pivotally-mounted pointer adapted to be moved in one direction or the other by electromagnets, and a signaling device comprising a motor-operated vane or signal-board and varicolored lights, of electric conductors connected with the operating mechanism of said indicating device and signal, stationary contact-blocks connected with the terminals of said conductors, a connecting rod or bar secured to the switch-points of a railway, a contact-point carried by said rod or bar whereby when said switch is moved in one direction or the other the circuit through said conductors will be completed thus energizing the operating mechanism of said indicating device and said signal to cause them to display the proper sign and signal, substantially as described.

2. A switch-indicating device comprising a switch, a contact-block connected to said switch, an indicating-board, a pivotally-mounted indicating-pointer, electromagnets arranged to attract said pointer thereby turning the same in one direction or the other, means whereby an electric circuit is completed to energize one or the other of said magnets thus causing the pointer to be swung in one direction or the other, and a signaling device, the operating mechanism of which is energized by the motive power of said indicating device, substantially as described.

3. A switch-indicating mechanism comprising an indicating-board, a pivotally-mounted indicating-pointer, electromagnets arranged to attract and swing said pointer, electric-circuit wires connected with said magnets, stationary contact-points arranged on the ends of said circuit-wires, a movable contact-block operated by the movement of the switch to close one or the other of said circuits, thereby energizing one or the other of said magnets and causing said pointer to be attracted and swung in one direction or the other, a motor-operated signaling device, electric-circuit wires connected with said motor and contact-points arranged on the ends of said wires, said contact-point being adapted to be engaged by said movable contact-block, substantially as described.

4. A switch-indicating mechanism comprising an indicating-board having thereon inscriptions indicating main and side tracks, a pivotally-mounted pointer adapted to be swung to point to one or the other of said inscriptions, electromagnets arranged to attract and swing said pointer in one direction or the other, electric-circuit wires connected with said magnets, stationary contact-points arranged on the opposite ends of said wires, a battery arranged in said circuit-wires, a cross-bar connecting the points of said switch, a contact-block secured to the extended end of said cross-bar, and adapted to be shifted by the movement of said switch to engage said contact-points and close one or the other of the circuits passing through said wires, a motor-operated switch signaling device, electric-circuit wires connected to said motor and to varicolored lights arranged on said signal, and stationary contact-points connected to said circuit-wires, said points being adapted to be engaged simultaneously with the contact-points on said indicator-circuit by the contact-point on said cross-rod, substantially as described.

820,261. AWNING. Charles W. Russell, Louisville, Ky. Filed Jan. 30, 1906. Serial No. 298,631.



Claim.—1. An awning comprising a post, a crown secured to the upper end of the post, upper and lower runners mounted to slide on the said post, ribs pivoted on the said crown and radiating outwardly on the front of the post, stretcher-bars connecting the said ribs with the lower runners, side arms fulcrumed on the said crown, stretcher-bars connecting the said side bars with the said upper runner, and a fabric cover extending over the said ribs and the said side bars.

2. An awning comprising a post, a crown secured to the upper end of the post, upper and lower runners mounted to slide on the said post, ribs pivoted on the said crown and radiating outwardly on the front of the post, stretcher-bars connecting the said ribs with the lower runners, side arms fulcrumed on the said crown, stretcher-bars connecting the said side bars with the said upper runner, and a fabric cover extending over the said ribs and the said side bars and provided with depending side flaps extending from the said side arms to the tips of the outermost ribs.

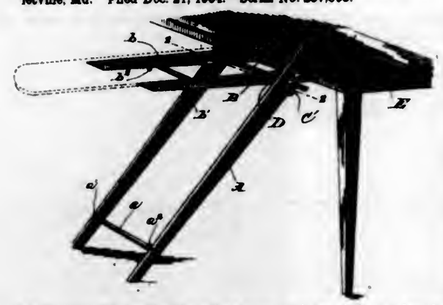
3. An awning comprising a post, a crown secured to the upper end of the post, upper and lower runners mounted to slide on the said post, ribs pivoted on the said crown and radiating outwardly on the front of the post, stretcher-bars connecting the said ribs with the lower runner, a pivot extending rearwardly from the said crown, side arms fulcrumed on the said pivot, stretcher-bars connecting the said side arms with the upper runner, and a cover extending over the said ribs and secured at its edges to the said side arms.

4. An awning comprising a post, a crown secured to the upper end of the post, upper and lower runners mounted to slide on the said post, ribs pivoted on the said crown and radiating outwardly on the front of the post, stretcher-bars connecting the said ribs with the lower runner, a pivot extending rearwardly from the said crown, side arms fulcrumed on the said pivot, stretcher-bars connecting the said side arms with the said upper runner, a cover extending over the said ribs and secured at its edges to the said side arms, and flaps depending from the side edges of the said cover and extending from the terminals of the side arms to the tips of the outermost ribs.

5. An awning comprising a post, a crown secured to the upper end of the post, upper and lower runners mounted to slide on the said post, ribs pivoted on the said crown and radiating outwardly on the front of the post, stretcher-bars connecting the said ribs with the lower runners, side arms fulcrumed on the said crown, stretcher-bars connecting the said side bars with the said upper runner, a fabric cover extending over the said ribs and the said side bars, and hooks on the window-frame for securing the said bars.

6. An awning comprising a post, a crown secured to the upper end of the post, upper and lower runners mounted to slide on the said post, ribs pivoted on the said crown and radiating outwardly on the front of the post, stretcher-bars connecting the said ribs with the lower runners, side arms fulcrumed on the said crown, stretcher-bars connecting the said side bars with the said upper runner, a fabric cover extending over the said ribs and the said side bars, a hook on the upper end of the post, and an eye on the window-frame engaged by the said post-hook.

820,262. IRONING-BOARD SUPPORT. Charles Schafer, Violetville, Md. Filed Dec. 21, 1904. Serial No. 237,800.



Claim.—1. An ironing-board support substantially as herein described, comprising the props notched in their upper ends near one edge to receive the edge of a table-top, the top bars, rods secured at one end to one of the top bars and to one of the props and movable freely through the opposite top bar and prop respectively, screw-eyes for securing the rods to their respective top bars and props, the cross-bolt forming a pivot between the top bars and props at a point below the notches in the props, the nut on said bolt and the clamping-plates secured to the outer sides of the top bars and projecting above the same and having at their upper ends inwardly-projecting lips or flanges, all substantially as and for the purpose set forth.

2. An ironing-board support comprising a pair of props, a pair of top bars pivoted to the props, a board resting on the top bars and removable freely therefrom and means for adjusting the props toward each other to correspondingly adjust the top bars, substantially as set forth.

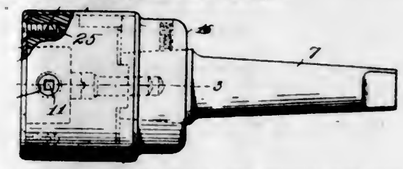
3. An ironing-board support comprising a pair of props adjustable toward each other, top bars between said props for supporting a table-top, clamping-plates on the top bars for engaging the table-top and means for forcibly adjusting the props toward each other, substantially as set forth.

4. The combination in an ironing-board support of a pair of props, a cross-bolt between the props, a pair of top bars pivoted on said cross-bolt between the props, a nut on the bolt for pressing the props and the intermediate top bars toward each other, and rods connecting the opposite props and the opposite top bars and slidable through one of the two members they respectively connect, substantially as set forth.

5. The combination of the pair of props, a clamping-bolt extending between the props near one end, a nut on the bolt, the cross-rod secured to one of the props and extending through the other prop, a screw for securing the cross-rod to said other prop, the pair of top bars pivoted on the bolt, and the cross-rod extending between the cross-bars and secured at one end to one of the bars, and a screw for securing the said rod to the other bar, substantially as set forth.

820,263. CHUCK. William A. Schmid and Charles J. Macomber, Muncie, Ind., assignors to The Wide Range Drill-Chuck & Tool Co., Muncie, Ind., a Corporation of Indiana. Filed Aug. 16, 1905. Serial No. 274,457.

Claim.—1. A chuck having a casing, two apertured jaws located one above the other and movable in directions at right angles to each other, a spring located at one end of each jaw and tending to press the same constantly in one direction, and an adjusting-screw associated with the opposite end of each jaw.



2. A chuck having a casing, two apertured jaws located one above the other and movable in directions at right angles to each other, a spring located at one end of each jaw and tending to press the same constantly in one direction, and an adjusting-screw associated with the opposite end of each jaw and projecting within the aperture thereof.

3. A chuck comprising a jaw-guide having guideways formed therein extending at right angles to each other and having superposed relation, a jaw located in each guideway, a casing inclosing said jaw-guide, a spring associated with each jaw and bearing against said casing, and an adjusting-screw mounted in each jaw opposite said spring, each of said screws having one end projecting within the aperture of the jaw and the other end abutting against the casing.

4. A chuck comprising a jaw-guide, a pair of jaws mounted therein and movable in directions at right angles to each other, each of said jaws having an aperture one side of which is V-shaped in contour, a casing surrounding said jaw-guide, a spring mounted in each jaw opposite the apex of said aperture and bearing against said casing, and an adjusting-screw mounted in the opposite side of each of said jaws and projecting within said aperture and having its outer end abutting against said casing.

5. A chuck comprising a jaw-guide, a pair of jaws mounted therein and movable in directions at right angles to each other, each of said jaws being tapered on opposite faces, for the purpose described.

820,264. CARRIAGE-CURTAIN. Charles W. Schreiter, Wimbledon, N. D. Filed Jan. 27, 1906. Serial No. 298,280.



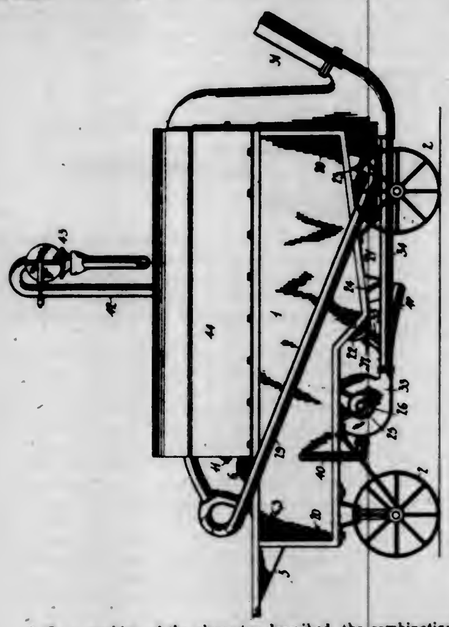
Claim.—1. The combination of a carriage-curtain having a layer turned and secured against its major portion to present two thicknesses of material, and an eyelet comprising a retaining-ring disposed against one thickness of material, a flexible disk arranged against the other side of the other thickness of material and having a buttonhole, and a ring arranged over the disk and having barbs extending through the two thicknesses presented by the major portion and layer of the curtain and clenched over the retaining-ring.

2. The combination of a carriage-curtain having a layer turned and secured against its major portion to form a fold and present two thicknesses of material, an edge-cord contained in the bight of the fold, and an eyelet comprising a retaining-ring disposed against one side of one thickness of material, a flexible disk arranged against the other side of the other thickness of material and having a buttonhole, and a ring arranged over the disk and having barbs extending through the two thicknesses presented by the major portion and layer of the curtain and clenched over the retaining-ring.

820,265. GRAIN-SEPARATOR. Thomas W. Sluts and Knute O. Lee, Aberdeen, S. D. Filed Apr. 10, 1905. Serial No. 254,803.

Claim.—1. In a machine of the character described, the combination with a threshing mechanism, of a separating-drum having open-work sides, a revoluble shaft arranged in said drum, a series of curved feeding and beating arms projecting from said shaft, grain-tables arranged below said threshing mechanism and the separating-cylinder, an endless slatted conveyer adapted to remove the grain from said tables, a grain-shoe to receive the grain from said tables, a grain-conveyer and a tailings-conveyer arranged on said shoe, a perforated air-discharge cylinder arranged in front of said grain-shoe to discharge a blast of air over the same, a pneumatic stacker-tube arranged at the discharge end of the drum, air-blast fans mounted on the frame of the machine, and air-blast tubes connecting said fans with the stacker-tube, the discharge-cylinder of the grain-shoe,

the tailings-conveyer and the separator-drum, substantially as described.



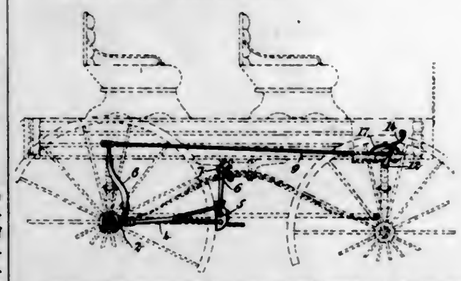
2. In a machine of the character described, the combination with a threshing mechanism, of a separating-drum having open-work sides, a revoluble shaft arranged in said drum, a series of curved feeding and beating arms projecting from said shaft, grain-tables arranged below said threshing mechanism and the separating-cylinder, an endless slatted conveyer adapted to remove the grain from said tables, a grain-shoe to receive the grain from said tables, a grain-conveyer and a tailings-conveyer arranged on said shoe, a perforated air-discharge cylinder arranged in front of said grain-shoe to discharge a blast of air over the same, a pneumatic stacker-tube arranged at the discharge end of the drum, perforated air-discharge tubes arranged beneath the separator-drum, means whereby the discharge of air from said tubes may be regulated, air-blast fans mounted on the frame of the machine, and air-blast tubes leading from the casings of said fans to the stacker-tube, the discharge-cylinder of the grain-shoe, the tails-conveyer, the air-discharge tubes for the separator-drum and to said drum, substantially as described.

3. In a machine of the character described, the combination with a threshing mechanism, of a separating-drum having open-work sides, a revoluble shaft arranged in said drum, a series of curved feeding and beating arms projecting from said shaft, grain-tables arranged below said threshing mechanism and the separating-cylinder, an endless slatted conveyer adapted to remove the grain from said tables, a grain-shoe to receive the grain from said tables, a grain-conveyer and a tailings-conveyer arranged on said shoe, a perforated air-discharge cylinder arranged in front of said grain-shoe to discharge a blast of air over the same, a pneumatic stacker-tube arranged at the discharge end of the drum, double, perforated air-tubes arranged beneath and at each side of the separator-drum, the inner member of said double tubes being adapted to be turned within the outer thereby varying the size of the discharge-openings in the same, air-blast fans mounted on said frame, air-blast tubes leading from the casings of said fans to the stacker-tube, branch pipes leading from said tubes to the discharge-cylinder of the grain-shoe, regulating-dampers arranged in said branch pipes, an air-blast tube leading from said fans to the tailings-conveyer and from thence to the threshing-cylinder, a branch pipe leading from said tube to the front end of the separator-drum, a screen arranged in said branch pipe, and air-blast tubes leading from the fans to the double perforated air-discharge tubes beneath said drum, substantially as described.

4. In a machine of the character described, the combination with a threshing mechanism, of a separating-drum having open-work sides, a revoluble shaft arranged in said drum, a series of curved feeding and beating arms projecting from said shaft, grain-tables arranged below said threshing mechanism and the separating-cylinder, an endless slatted conveyer adapted to remove the grain from said tables, a grain-shoe to receive the grain from said tables, a grain-conveyer and a tailings-conveyer arranged on said shoe, a perforated air-discharge cylinder arranged in front of said grain-shoe to discharge a blast of air over the same, a pneumatic stacker-tube arranged at the discharge end of the drum, a grain elevator and weigher arranged on the machine, a revolubly-mounted fan-shaft, a series of fans arranged on said shaft, casings arranged on said fans, air-blast tubes connecting said fan-casings with the stacker-tube and with the various parts of the separating mechanism whereby blasts of air will be discharged upon the same, substantially as described.

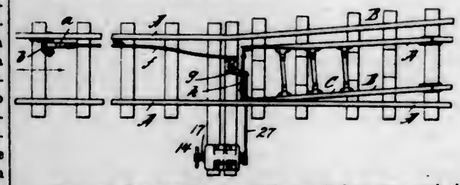
5. In a machine of the character described, the combination with a threshing mechanism, of a separating-drum having open-work sides, a revoluble shaft arranged in said drum, feeding and beating arms projecting from said shaft, a series of radially-disposed segmental blades arranged around said shaft between said feeding and beating arms to form stops, and a pneumatic stacker-tube arranged on the machine and in communication with the discharge end of the drum, substantially as described.

820,266. **VEHICLE-BRAKE.** JOHN W. SMITH, Congress, Ariz. Filed Oct. 25, 1905. Serial No. 284,315.



Claim.—In a vehicle-brake, a rock-shaft supported on the rear axle of the vehicle and having downwardly-exten ed ends, a rock-bar supported underneath the vehicle-body, brake-shoes having swinging connection with said rock-bar, rod connection between the downwardly-extended ends of the rock-shaft and said shoes, an upwardly-extended lever on one end of the rock-shaft, a crank-shaft, a draw-rod connection between the crank of said crank-shaft and the lever on the rock-shaft, a lever extended from said crank-shaft through the bottom of the vehicle-body, said lever having lateral swinging motion on the crank-shaft, and a segment-rack for engaging with said lateral swinging lever.

820,267. **RAILWAY-SWITCH.** GEORGE W. SNOW, Holyoke, Mass. Filed Feb. 7, 1906. Serial No. 299,918.



Claim.—1. The combination with a switch-tongue, and the main-track rails, of an angular lever pivotally mount d at the side of one of the track-rails at a point to the rear of the switch, and said lever comprising a member having a position normally above the adjacent portion of the track-rail, and a depending arm, a connection between said depending arm and the switch for closing the latter on the movement of the lever, a movable member connected with and to be moved by the switch, and a lock automatically operative to confine said member in the position in which it is set by the closed switch.

2. The combination with a switch-tongue, and the main-track rails, of an angular lever pivotally mounted at the side of one of the track-rails at a point to the rear of the switch, and said lever comprising a member having a position normally above the adjacent portion of the track-rail, and a depending arm, a connection between said depending arm and the switch for closing the latter on the movement of the lever, a movable member connected with and to be moved by the switch, a lock automatically operative to confine said member in the position in which it is set by the closed switch, and means for moving said member and the switch to their open positions.

3. The combination with a switch and the main-track rails, of an angular lever pivotally mounted at the side of one of the track-rails at a point to the rear of the switch, and said lever comprising a member having a position normally above the adjacent portion of the track-rail, and a depending arm, a connection between said depending arm and the switch for closing the latter on the movement of the lever, a movable member connected with and to be moved by the switch, a lock automatically operative to confine said member in the position in which it is set by the closed switch, and a device adapted to be mounted on a locomotive, and movable into and out of positions for impingement against said lever, for the purposes set forth.

4. The combination with a switch and the main-track rails, of a lever pivotally mounted at the side of one of the track-rails at a point to the rear of the switch, a connection between said lever and the switch for closing the latter on the movement of the lever, a movable member connected with and to be moved by the switch, a lock automatically operative to confine said member in the position in which it is set by the closed switch, a locomotive wheel-axle, a lever mounted for an oscillatory movement thereon provided with a roller for impingement against said pivotally-mounted lever, and a rod connected to, and for positioning said oscillatory lever.

5. The combination with the switch and the main-track rails, of a lever pivotally mounted at the side of one of the track-rails at a point to the rear of the switch, a connection between said lever and the switch for closing the latter on the movement of the lever, a rocking shaft having two lever-arms, a connection between the switch and one of said lever-arms, a slidable block with which the other of said lever-arms engages, and an automatic lock to hold said block and the connected switch in their closed position.

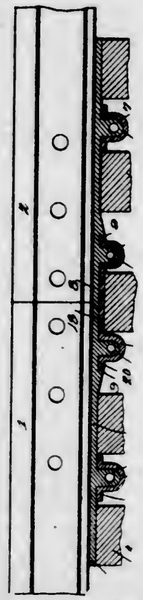
6. The combination with a switch and the main-track rails, of a lever pivotally mounted at the side of one of the track-rails at a point to the rear of the switch, a connection between said lever and the switch for closing the latter on the movement of the lever, a stationary casing opposite the switch, a horizontal shaft rotatable in said casing, having at its end outside of the casing a lever-arm, and at an intermediate portion thereof, within the casing, another lever-arm, and having also a hand-wheel, a connection between the switch and said outside lever-arms, a slidable block having an aperture within which the said intermediate lever-arms engage, and an automatic lock comprising a spring-pressed bolt to engage the end of said block and to hold the latter and the connected switch in their closed positions, and said casing having a keyway to permit by a key the withdrawal of said bolt from its engagement with said slidable block.

7. The combination with a main-track rail and a switch in advance thereof, of a lever pivotally mounted at the side of the track-rail, an angular lever adjacent and connected with the switch, and a rod connecting said angular lever and the first-named lever, a casing provided with an internal horizontal ledge 19 having one or more marginal retaining-lugs 20, a block slidable on said ledge made with an intermediate aperture 22 and members 23 provided in the casing for constraining and guiding said block, a rock-shaft horizontally journaled through the casing and provided intermediately with a lever-arm 24 engaging in said aperture of the block, having at one end outside of the casing a hand-wheel and having at its opposite end outside of the casing a lever-arm 26, a rod 27 connected to the switch and to said arm 26, and an automatic lock the bolt of which is operative to confine said block and the switch in their closed position.

820,268. **RAIL-JOINT.** LESLIE M. SOBER, Oklahoma, Okla., assignor of one-half to Joseph A. Walsh, Oklahoma, Okla. Filed Sept. 12, 1905. Serial No. 278,114.

Claim.—1. In a rail-joint, a bed-plate adapted to be secured to the ties and provided with coupling members, joint-plates adapted to be arranged on opposite sides of the rails and secured thereto and provided with coupling members to interlock with those on the bed-plate, and fastenings for holding said coupling members in connected relation.

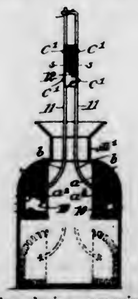
2. In a rail-joint, a bed-plate adapted to be secured to the ties and provided with a recess having undercut side walls, joint-plates adapted to be arranged on opposite sides of and secured to the rails and provided with chair portions having dovetailed edges to engage the undercut edges of the recess, and means for connecting the chair portions of the joint-plates with the recessed portion of the bed-plate to hold them connected.



3. In a rail-joint, a bed-plate provided with terminal lugs, attaching-flanges, and a central portion formed with a recess having convergent dovetailed edges on opposite sides of its longitudinal center and interposed lugs, joint-plates adapted to be arranged on opposite sides of and secured to the rails and provided with terminal base projections having recesses to receive the terminal lugs on the bed-plate, said joint-plates also being formed with central chair portions having dovetailed edges to engage the said dovetailed edges of the recess, and recessed members to receive the said interposed lugs and bolts passing through the lugs and recessed portions of the plates connecting them together.

4. In a rail-joint, a bed-plate provided with transverse lugs, joint-plates provided with coacting recessed lugs to receive the same and interlock therewith, and bolts passing through said lugs and holding them assembled.

820,269. **IMPLEMENT FOR CLEANING RECEPTACLES.** PERRY H. TALLMAN, Blooming Prairie, Minn., assignor to Johnson & Tallman, St. Charles, Minn., a Firm. Filed Oct. 4, 1905. Serial No. 281,265.



Claim.—1. A brushing device, comprising two body-blocks having brush-filaments on their edges, a handle-rod pivoted to each body-block, and spacing means whereon the handle-rods are mounted, one rod being adapted to turn on said spacing means.

2. A brushing device, comprising two body-blocks, brush-filaments on certain edges of said blocks, a handle-rod for each body-block, each rod being curved near one end and pivoted at said curved end upon the respective body-block, and spacing means whereon the

handle-rods are mounted and on which one of said rods is adapted to turn.

3. A brushing device, comprising two body-blocks having parallel sides, one edge of each block being curved near the upper end and extended straight below said curve, a lower edge at a right angle to said straight extension of the curved edge, brush-filaments projected from said edges of each body-block, a resilient metal handle-rod for each brush, having a curved end portion and pivoted thereat upon the side of a respective body-block, a spacing-block between the straight portions of the handle-rods, means for holding the handle-rods on the parallel edges of said spacing-block and permitting one rod to rock thereon, and means for holding the brushes in the same plane.

4. A brushing device, comprising two body blocks having parallel sides, one edge of each block being curved near the upper end, a lower edge at a right angle to said straight extension of the curved edge, brush-filaments projected from the said edges of each body-block, a resilient metal handle-rod for each brush having a curved portion and pivoted thereat upon the side of a respective body-block, a spacing-block having parallel grooved side edges wherein the straight portions of the handle-rods are embedded, means for rotatably securing one rod in a respective groove, an arm bent upon the upper end of said handle-rod, and a hook on the end of the arm for engaging the other handle-rod and holding the brushes spread apart.

5. A brushing device, comprising two similar brushes, two handle-rods formed of resilient wire and having laterally-curved end portions upon which the brushes are pivotally mounted, a spacing-block having parallel side edges on which the rods are secured, one rod being mounted to rock on said spacing-block, an arm on the end of said rockable handle-rod, and a hook on the end of said arm, the brushes being spread apart when the hook is engaged with the end of the other handle-rod, and said brushes being foldable toward each other when the hook is released.

6. A brushing device, comprising two similar brushes, two handle-rods formed of resilient wire and having laterally-curved end portions upon which the brushes are mounted, the main portions of the handle-rods being straight, a spacing-block located between the straight portions of the handle-rods and having parallel side edges, and means for holding the handle-rods on the side edges of the spacing-block, one of said rods being held loosely to permit of turning the same.

820,270. ANIMAL-RELEASING MECHANISM. JOHN A. TAYLOR, Saco, Mont. Filed Nov. 16, 1905. Serial No. 287,630.



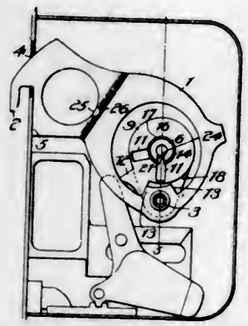
Claim.—1. A releasing device for animals in stalls, comprising a shaft extending across the inner ends of the stalls and mounted to rotate, the said shaft having one end extended through the outer wall of the barn or stable and provided with a handle, and a loop removably engaging with the shaft, in each stall.

2. An animal-releasing mechanism for animals in stalls, comprising a shaft extended across the inner ends of the several stalls in a row, the said shaft being provided with perforations at the portions within the stalls, loops engaging removably in said perforations, an inner end wall for the stalls, having notches for receiving said loops.

3. The combination with a series of stalls in a row, of a rotary shaft extending across the inner ends of said stalls, and detachable loops carried by the shaft.

820,271. GRAVITY-LOCK FOR SLIDING DOORS. LUCIUS A. TURNER, Denver, Colo. Filed Oct. 12, 1905. Serial No. 282,444.

Claim.—1. In a gravity-lock, a casing each side whereof having an inward-projecting keyhole-collar, the keyhole-slot opening into the wall of the collar, a pair of gravity-bolts pivoted at their inner ends, the free end of each bolt having a locking-hook, a dey-barrel rotatable within said collars and having a longitudinal slot, a tumbler fitted to rotate upon each collar and having a pair of radial slots and a recess into which said slots open, each bolt having an opening and shoulders projecting therein on each side of its pivot, each tumbler having a radial arm between said slots adapted to engage the opposite edges of said bolt-opening and the said shoulders by the turning of the tumblers to project and to retract the bolts and to lock them in either position.



2. In a gravity-lock, a casing each side whereof having an inward-projecting keyhole-collar the keyhole-slot opening into the wall of the collar, a pair of gravity-bolts pivoted at their inner ends, the free end of each bolt having a locking-hook, a key-barrel rotatable within said collars and having a longitudinal slot, a tumbler fitted to rotate upon each collar and having a pair of radial slots and a recess into which said slots open, each bolt having an opening and shoulders projecting therein on each side of its pivot, each tumbler having a radial arm between said slots adapted to engage the opposite edges of said bolt-opening and the said shoulders by turning the tumblers to project and to retract the bolts and to lock them in either position, means for supporting and separating the pivoted ends of the bolts, the hooked ends of said bolts having their walls joining whereby they are projected as a single bolt in their locking function.

3. In a gravity-lock, a casing each side whereof having an inward-projecting keyhole-collar the keyhole-slot opening into the wall of the collar, a pair of gravity-bolts pivoted at their inner ends, the free end of each having a locking-hook, a key-barrel having a longitudinal slot and fitted to rotate within said collars, a tumbler fitted to rotate upon each collar and having a pair of radial slots, a recess into which said slots open and a radial arm between said slots, a fixed ward mounted on said barrel between said tumblers and having radial slots, the slots of the fixed ward corresponding with the keyhole-slots and the said bolts having each an opening formed for engagement of its opposite sides with each tumbler-arm as it is rotated to cause each bolt to be projected to lock the door and to be retracted, each bolt having a pair of shoulders projecting within said opening on each side of the pivots of said bolts adapted for engagement by the radial arms to lock the bolts either in their projected or in their retracted positions.

4. A lock, comprising a casing having keyholes, a pair of gravity-bolts each pivotally mounted on the same fixed stud, in contact with the inner wall of each lock-plate, each bolt formed with a locking-hook end, their hook ends in contact side by side, each bolt having an opening near its pivoted end, a key-barrel mounted within said opening in registering relation with the keyholes, a pair of tumblers each mounted on a collar of the casings and each adapted to engage the edges of the bolt-opening to lock and to unlock the bolts in their projected and in their retracted positions, and a fixed ward upon said barrel between the tumblers the latter and the ward having slots corresponding with the keyholes.

5. In a gravity-lock, a casing having registering keyholes, a pair of gravity-bolts mounted on the same fixed stud at their inner ends, the swing end of each having a locking-hook, each bolt having an opening at its pivoted end, a rotatable key-barrel mounted to register with the keyholes in the lock-plates, a pair of tumblers each having a radial arm and a recess, a ward on said barrel between the tumblers, the ward and the tumblers having registering keyhole-slots, a shoulder on each bolt to limit the rotation of said arms at the limit of the outward and inward movements of the bolts, and a key adapted to engage said bolts, tumblers, and ward to actuate the bolts.

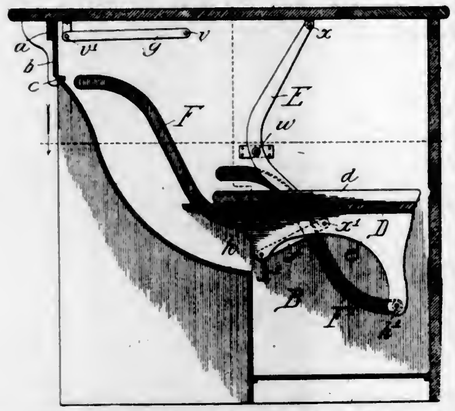
6. In a gravity-lock, a casing having registering keyholes, a pair of gravity-bolts mounted on the same fixed stud at their inner ends, the swing end of each having a locking-hook, each bolt having

an opening at its pivoted end, a rotatable key-barrel mounted to register with the keyholes in the lock-plates, a pair of tumblers each having a radial arm and a recess, a ward on said barrel between the tumblers, the key-barrel, the ward and the tumblers having registering keyhole-slots, a shoulder on each bolt to limit the rotation of said arms at the limit of the outward and inward movements of the bolts, means for connecting the swing ends of the bolts to cause them to be projected and retracted as a single bolt, and a key adapted to engage the bolts, the tumblers and ward to actuate the bolts.

7. In a gravity-bolt, a casing having registering keyholes, a pair of gravity-bolts mounted on the same fixed stud at their inner ends the swing end of each having a locking-hook, each bolt having an opening at its pivoted end, a rotatable key-barrel mounted to register with the keyholes in the lock-plates, a pair of tumblers each having a radial arm and a recess, a ward on said barrel between the tumblers, the key-barrel, the ward and the tumblers having registering keyhole-slots, a shoulder on each bolt to limit the rotation of said arms at the limit of the outward and inward movements of the bolts, means for connecting the swing ends of the bolts consisting of a stud on one member entering a hole in the other member to cause them to be projected and retracted as a single bolt, and a key adapted to engage the bolts, the tumblers and ward to actuate the bolts.

8. In a gravity-lock, a casing, a pair of gravity-bolts mounted therein on the same fixed stud and their swing ends terminating in hooks, means for connecting their swing ends for unitary movement, means for actuating the bolts, means for locking them both in their projected and in their retracted positions, and a key adapted to actuate the bolt-actuating means and to actuate the bolt-locking means, substantially as described.

820,272. TYPE-WRITER DESK. JENS VAALER, Chicago, Ill., assignor to The Clemetsen Company, Chicago, Ill., a Corporation of Illinois. Filed July 20, 1905. Serial No. 270,533.



Claim.—1. In a type-writer desk, the combination with a shelf for supporting a type-writing machine in the desk-well, of mechanism for raising and lowering the shelf in horizontal position, comprising a hinged lid, levers at the opposite sides of the shelf fulcrumed between their ends and connecting the lid with the shelf to be turned for raising and lowering it by opening and closing the lid, and guides of substantially inverted-S shape in said well engaging the shelf and directing its movements therein.

2. In a type-writer desk, the combination with a shelf for supporting a type-writing machine in the desk-well, of mechanism for raising and lowering the shelf in horizontal position, comprising a hinged lid, levers at opposite sides of the shelf fulcrumed between their ends and pivotally connected at corresponding ends to the lid, with links connecting their opposite ends to said shelf to raise and lower the latter by opening and closing the lid and thereby turning said levers, and corresponding guides of substantially inverted-S shape in said well engaging the shelf and directing its movements therein.

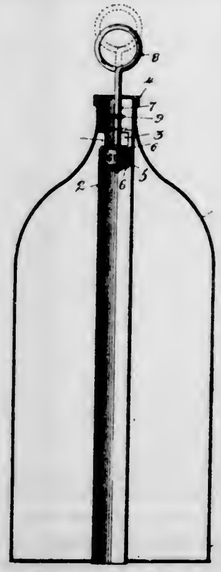
3. In a type-writer desk, the combination with a shelf for supporting a type-writer machine in the desk-well, of mechanism for raising and lowering the shelf in horizontal position, comprising a lid having link connections with the desk, levers at opposite sides of the shelf fulcrumed between their ends and connecting the lid with the shelf to be turned for raising and lowering it by opening and closing the lid, and corresponding guides of substantially inverted-S shape in said well engaging the shelf and directing its movements therein.

4. In a type-writer desk, the combination with a shelf for supporting a type-writing machine in the desk-well, of mechanism for raising and lowering the shelf in horizontal position, comprising a hinged lid, levers at opposite sides of the shelf fulcrumed between their ends and connecting the lid with the shelf to be turned for raising and lowering it by opening and closing the lid, and a pair of guides of substantially inverted-S shape on each side of the shelf with the members of each pair extending one lower than the other and inclining upwardly toward the front of the desk, said guides engaging the shelf and directing its movements in said well.

5. In a type-writer desk, the combination with a shelf for supporting a type-writing machine in the desk-well, and provided with depending bearings, of mechanism for raising and lowering the shelf in horizontal position, comprising a lid having link connections with the desk, levers at opposite sides of the shelf fulcrumed between their ends and pivotally connected at corresponding ends to the lid, with links connecting their opposite ends to said bearings to raise and lower the shelf by opening and closing the lid and thereby turning said levers, a pair of guide-tracks of substantially inverted-S shape on each side of the shelf with the members of each pair extending one lower than the other and inclining upwardly toward the front side of the desk, and antifriction-rollers projecting from said bearings into engagement with said tracks.

6. In a type-writer desk, the combination with a shelf for supporting a type-writing machine in the desk-well and provided with depending bearings, of mechanism for raising and lowering the shelf in horizontal position, comprising a lid having link connections with the desk, bent levers fulcrumed between their ends to the desk sides and pivotally connected at corresponding ends to the lid, with links connecting their opposite ends to said bearings to raise and lower the shelf by opening and closing the lid and thereby turning said levers, a pair of channeled guide-tracks of substantially inverted-S shape on each side of the shelf with the members of each pair extending one lower than the other and inclining upwardly toward the front of the desk, and antifriction-rollers projecting from said bearings into the channels of said tracks.

820,273. CAN, JAR, &c. WILLIAM B. WALKER, New York, N. Y. Filed Aug. 3, 1905. Serial No. 272,551.



Claim.—1. A jar, can or bottle, provided with a central tube, forming the mouth of the vessel and extending inwardly, said tube having an inlet to the body of the vessel, in combination with a stopper fitting said tube and adapted to be moved below said inlet during

filling and emptying and to be moved up and close said inlet when the vessel is filled, substantially as described.

2. A jar, can or bottle provided with a central tube forming the mouth of the vessel and extending inwardly, said tube having an inlet to the body of the vessel, in combination with a stopper fitting said tube, and means for moving said stopper over and away from said inlet, substantially as described.

3. A jar, can or bottle provided with a central tube forming the mouth of the vessel and extending inwardly, said tube having an inlet to the body of the vessel, in combination with a stopper fitting said tube, means for moving said stopper to different positions in said tube and means for closing the mouth of the vessel, substantially as described.

820,274. HAND-TRUCK. WILLIS M. B. WATLEY, Chicago, Ill. Filed Aug. 29, 1905. Serial No. 276,237.



Claim.—The combination with a hand-truck, of a pair of swinging side bars pivoted at one end thereto and carrying rollers at their free ends, a head sliding in guides on the frame of the truck and connected to the bars, and a notched adjusting-bar connected to the head and engageable with the truck, to hold the arms and rollers in extended or retracted position.

820,275. OIL-PRESS MAT. ROBERT F. WEBB, New Orleans, La. Original application filed Sept. 10, 1901, Serial No. 74,906. Divided and this application filed June 26, 1903. Serial No. 113,260.



Claim.—1. An oil-press mat, consisting of warp-threads and weft-threads, the warp-threads and the weft-threads both being composed of long animal hair which is hard, stiff and coarse, said warp-threads being greatly in excess per square inch of the weft-threads, and disposed in close proximity to each other to entirely conceal and protect the weft-threads; the weft-threads being thicker than the warp-threads, and the warp-threads forming the selvage consisting of soft pliable hair.

2. An oil-press cloth consisting of warp-threads and weft-threads, both threads being composed of long animal hair, the warp-threads forming the middle portion of the cloth being composed of longer hair than the hair composing the warp-threads at and near the edges of the cloth.

3. An oil-press cloth consisting of warp-threads and weft-threads, both threads being composed of long animal hair, the hair forming the warp-threads at and near the middle portion of the cloth being longer than the hair at and near the edges of the cloth, and the warp-threads forming the selvages being composed of soft pliable hair.

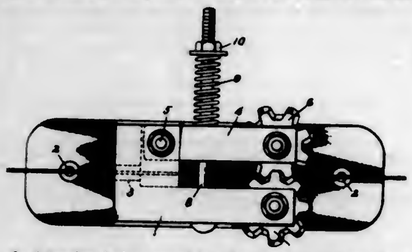
4. An oil-press cloth consisting of warp-threads and weft-threads, both threads being composed of long animal hair which is hard, stiff and coarse, the warp-threads at the center portion of the cloth being of longer hair than the hair forming the warp-threads at and near the edges of the cloth.

5. An oil-press mat consisting of warp-threads and weft-threads, both of the said threads being composed of hard hair.

820,276. SELF-BINDING HARVESTER. ANDREW H. WILSON, Winkler, Canada. Filed Dec. 26, 1904. Serial No. 238,694.

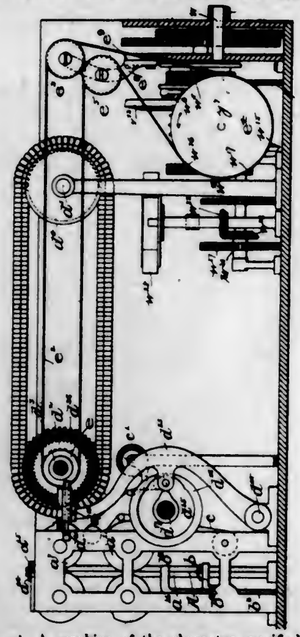
Claim.—1. A tension device comprising a pair of intermeshing V-toothed gears, and means for directing a cord therebetween, substantially as described.

2. A tension device comprising a pair of intermeshing V-toothed gears, means for directing a cord therebetween, and means for yieldingly maintaining said gears in mesh, substantially as described.



3. A tension device comprising a bracket provided with a guide-aperture for directing a cord, a frame pivotally supported on said bracket, a pair of intermeshing V-toothed gears journaled, respectively, in said bracket and frame with their pitch-circles substantially in the line of said guide-aperture, and yielding means for maintaining said gears in mesh, substantially as described.

820,277. TICKET PRINTING AND AUDITING MACHINE. FRANK J. WILLS, Winchester, Mass., assignor of one-half to George Francis Topliff, Boston, Mass. Filed Jan. 14, 1898. Serial No. 666,661.



Claim.—1. A machine of the character specified comprising printing mechanism including two coacting members adapted to receive between them the material to be printed, a series of type-bars, and manually-controlled mechanism for selecting any one of said type-bars and automatically transferring it into printing position in one member of said printing mechanism including a plurality of keys equal in number to said type-bars.

2. A machine of the character specified comprising printing mechanism including two coacting members adapted to receive between them the material to be printed, a series of type-bars adapted to be moved into printing position in one member of said printing mechanism, and mechanism including a series of manually-operatable keys for selecting any one of said type-bars, and moving it into printing position.

3. A machine of the character specified comprising ticket-printing mechanism including two coacting members adapted to receive between them the material to be printed, a series of movably type-bars, mechanism adapted to insert any one of said type-bars in one member of the printing mechanism, and devices, one for each type-bar, for controlling the insertion of a type-bar in the said printing mechanism.

4. A machine of the character specified comprising printing mechanism including two coacting members adapted to receive between them the material to be printed, a series of movable type-bars each adapted to be inserted in one member of said mechanism, a carrier for said type-bars, automatic mechanism for inserting a type-bar into the printing mechanism, and a series of keys, one for each type-bar, for selecting a type-bar to be inserted by said automatic mechanism.

5. A machine of the character specified comprising printing mechanism including two coacting members adapted to receive between them the material to be printed, a series of type-bars each adapted to be inserted in one member of the printing mechanism, a carrier for said type-bars, power devices for moving said carrier, automatic mechanism for inserting any one of said type-bars in the printing mechanism, and a series of keys, one for each type-bar, each controlling the said power devices, and the said type-bars.

6. A machine of the character specified, comprising printing mechanism, a carrier having a series of removable type-bars, transferring mechanism for carrying a type-bar from the carrier to the printing mechanism and back again, and manually-controllable means for moving said carrier to present any one of said type-bars to said transfer mechanism.

7. A machine of the character specified, comprising a printing-cylinder, a carrier or support for a type-bar, mechanism for moving said type-bar to the printing-cylinder, and subsequently back to the carrier, and mechanism for imparting a rotation to said printing-cylinder when the type-bar is therein.

8. A machine of the character specified, comprising printing mechanism, an endless carrier having a series of type-bars, each adapted to form a part of said printing mechanism, normally locked power devices for moving the carrier, and a series of keys each arranged to release the power devices, and arrest the carrier at a predetermined point.

9. A machine of the character specified, comprising printing mechanism, a series of type-bars for said printing mechanism, an endless carrier for said type-bars, power devices having a predetermined movement, means for connecting said carrier with said power devices, and a series of manually-controlled keys each arranged to disconnect the carrier from the power devices at a predetermined point.

10. A machine of the character specified, comprising printing mechanism, a carrier having a series of type-bars, means for transferring a type-bar to the printing mechanism and subsequently back again, power devices for shifting said carrier, and a series of manually-controlled keys each adapted to arrest the carrier at a predetermined point, and mechanism for holding the key in its operative position until the type-bar has been transferred from the printing mechanism to the carrier.

11. A machine of the character specified, comprising printing mechanism, a series of type-bars, manually-controlled mechanism for selecting any one of said type-bars and moving it into operative position as a part of said printing mechanism, and a carrier for said type-bars having provisions for receiving said type-bars, and wheels or pulleys for supporting said carrier.

12. A machine of the character specified, comprising a carrier having a series of printing devices, a power-wheel, parallel endless belts one driven by the wheel and the other connected to the carrier, and manually-controlled mechanism for temporarily connecting the two belts together.

13. A machine of the character specified, comprising a carrier having a series of printing devices, suitable power devices, two endless belts, one connected to the carrier and the other connected to the power devices, a carriage having means for temporarily connecting the belts together, and a series of manually-controlled keys each arranged to operate the mechanism on the carriage to connect the belts together and then to arrest the carriage at a predetermined point.

14. A machine of the character specified, comprising a carrier having a series of printing devices, suitable power devices, two disconnected endless belts one connected to the carrier and the other connected to the power devices, a carriage connected to the carrier-belt, and having mechanism for connecting it to the power-devices belt, and a series of keys each adapted to temporarily operate the mechanism on the carriage to connect the two belts together, and each arranged to project into the path of the carriage.

15. A machine of the character specified, comprising a carrier having a series of printing devices, a belt, automatic devices for moving said belt in one direction, an arbitrary distance and then returning it to original position, and manually-controlled devices arranged to connect the carrier and the belt temporarily until the carrier reaches a predetermined point, when the belt is moving forward, and then connecting it to said belt whereby it is returned to original position.

16. A machine of the character specified, comprising a carrier having a series of printing devices, a positively-driven belt, a carriage connected to the carrier in proximity to said belt, grippers carried by the carriage for engaging the belt, means for normally holding the gripper open, and a series of keys each operating said means to cause it to allow the grippers to close on the belt, each of said keys arranged to open the grippers when the carriage reaches a predetermined point.

17. A machine of the character specified, comprising a carrier having a series of detachable type-bars, printing mechanism arranged to receive any one of said type-bars, mechanism for transferring any one of said type-bars from the carrier to the printing mechanism and back again, a belt positively driven first in one direction and then in the other, grippers connected to the carriers and adapted to close upon the belt to connect the carrier therewith, means for normally holding the grippers open, a series of depressible keys to operate the said means to allow the grippers to close on the belt, and each arranged to open the grippers when they have traveled with the belt a predetermined distance, said keys being automatically held depressed by the said means, and devices carried by the said transferring mechanism for operating the said means to release the keys, when said transferring mechanism is returning the type-bar to the carrier.

18. A machine of the character specified, comprising a carrier having a series of printing devices, controlling mechanism for arresting the carrier at a predetermined point, and automatic devices for moving said carrier to said predetermined point and then returning it to original position, said devices including a belt, means for temporarily connecting the belt and carrier, a shaft operatively connected to said belt, and power devices for rotating said shaft first in one direction and then in the other direction.

19. A carrier for printing devices having apertures consisting of a belt, and a series of spring-pins projecting therefrom to enter said apertures in said printing devices.

20. In a machine of the character described, a series of type-bars, a printing-cylinder adapted to receive any one of said bars, and a carrier for said type-bars, said carrier and said cylinder having spring-pins adapted to be in alinement whereby the type-bars may be transferred from one to the other.

21. In a machine of the character described, printing mechanism, a series of printing devices, each adapted to be moved into printing position in said printing mechanism, an automatically-operated carrier adapted to present any one of the devices to the printing mechanism, and means for centering the carrier.

22. A ticket-printing machine comprising printing mechanism, a series of keys controlling said mechanism, and devices for holding each key depressed after it has been operated, until the ticket is printed, said devices comprising a projection on each key and a slotted tube with which said projection may engage.

23. A machine for printing tickets comprising printing mechanism having provisions for receiving a type-bar, said printing mechanism having ticket-numbering devices actuated by the type-bar.

24. A machine for printing tickets comprising a series of type-bars, provisions for moving any one of said type-bars in printing position, numbering-disks and means engaged by the type-bar whereby the disks are moved each time a type-bar is moved into printing position.

25. A machine of the character described, comprising an impression-cylinder, a coacting printing-cylinder provided with a socket to receive a type-bar, numbering-disks mounted on said printing-cylinder, and disk-actuating mechanism having a portion extending normally into the socket whereby the insertion of a type-bar into the socket operates the disk-actuating mechanism.

26. A machine of the character described comprising printing-cylinders for printing the end of a strip of paper, means for severing the printed end, and means for automatically withdrawing the strip after the severing of the end.

27. A machine of the character described, comprising printing mechanism, means for feeding a strip of paper thereto, means for severing the printed ticket from the end of the paper strip, and means for automatically withdrawing the strip after the severing of the end.

28. A machine of the character described, comprising printing mechanism, means for feeding a strip of paper thereto, means for severing the printed ticket from the end of the paper strip and a ten-

sion device for the said strip, constructed and arranged to partially withdraw it after the end thereof has been severed.

29. A machine of the character described, comprising printing mechanism, means for feeding a strip of paper thereto, means for severing the printed ticket from the end of the paper strip, and a weight frictionally engaging the strip and adapted to be carried along therewith, said weight partially withdrawing the said strip when the end thereof has been severed.

30. A machine of the character described, comprising printing mechanism means for feeding a strip of paper thereto, means for severing the printed ticket from the end of the paper strip, a weight having means for frictionally engaging the paper strip whereby it is carried along with said strip, and stops for limiting the movement of the said weight, whereby when the strip is released by the feeding means, the weight withdraws it a predetermined distance.

31. A machine of the character described comprising mechanism for printing and consecutively numbering tickets, recording means including numbering mechanism for permanently recording the numbers of the tickets, and a plurality of keys or selectors, each controlling the ticket printing and numbering mechanism, and the recording mechanism.

32. A machine of the character specified, comprising printing mechanism for the tickets, means for feeding the tickets means for supporting and feeding a record-sheet, and mechanism for automatically recording the total of sales of the tickets on said record-sheet.

33. A machine of the character specified, comprising ticket-printing mechanism, and means for severing each ticket means for supporting a record-sheet, and auditing or recording mechanism for recording the total of sales of the tickets on the record-sheet.

34. A machine of the character described, comprising devices for printing the names of different stations on a series of tickets, means for feeding the tickets means for feeding a record-sheet, and mechanism for indicating and classifying on said sheet the destinations on said tickets.

35. A machine of the character described, comprising devices for printing and numbering consecutively a series of tickets, means for feeding said tickets mechanism for feeding a record-sheet, mechanism for recording on the said sheet the destination printed on each ticket, mechanism for printing on said sheet the number of each ticket, and the summation of sales of the tickets, and mechanism for supplying power to the said parts.

36. A machine of the character described, comprising devices for printing and consecutively numbering a series of tickets, means for feeding said tickets means for feeding a record-sheet, mechanism for recording the destination of each ticket on the record-sheet, mechanism for recording the number of each ticket on the record-sheet, and mechanism for recording the summation of sales of the tickets.

37. A machine of the character described, comprising devices for printing the names of different stations on a series of tickets, a series of manually-operated keys, one for each station for controlling the printing mechanism, means for feeding a record-sheet, and mechanism controlled by the said keys for indicating on the record-sheet the name of each ticket, as it is printed.

38. A machine of the character described, comprising devices for printing the names of different stations on a series of tickets, a series of keys, one for each station, for controlling the printing mechanism, and means for making a permanent record of each ticket and the destination printed thereon.

39. A machine of the character described, comprising devices for printing the names of different stations on a series of tickets, a series of keys each controlling the printing mechanism, means for feeding a record-sheet, and a marking device for recording on the sheet the printing of each ticket, said marking device being positioned by each of said keys.

40. A machine of the character described, comprising devices for printing the names of different stations on a series of tickets, means for feeding said tickets and auditing mechanism consisting of means for supporting a record-sheet having a space for each station and means for indicating the names of each station in its own space.

41. A machine of the character described, comprising means for feeding a record-sheet, a marking device movable over the said sheet, means for causing the engagement of the marking device and the sheet and a series of keys, each arranged to arrest the marking device at a predetermined point, on said sheet.

42. A machine of the character described, comprising means for feeding a record-sheet, a marking device, means for automatically moving the marking device transversely of the said sheet, a series of keys each arranged to arrest the marking device at a predetermined point, and means for bringing the record-sheet and the marking device into engagement.

43. A machine of the character described, comprising means for feeding a record-sheet, a marking device, means for moving the marking device transversely of the record-sheet, a series of keys each arranged to arrest the marking device at a predetermined point relatively to the sheet, and a movable platen operated automatically to thrust the record-sheet against the marking device.

44. A machine of the character described, comprising means for feeding a record-sheet, numbering devices for the record-sheet, a marking device, means for moving the marking device transversely of the sheet, and a series of keys, each controlling the marking device and the numbering device.

45. A machine of the character described, comprising a series of printing devices, a carrier for said devices, power devices for moving said carrier, a series of keys each arranged to arrest the carrier at a predetermined point, means for feeding a record-sheet, and a marking device connected to said carrier and movable over the record-sheet.

46. Recording mechanism for a ticket-printing machine, comprising means for supporting a record-sheet, devices for printing the number of each ticket on said sheet, devices for adding and printing the total of sales of tickets on the said sheet, a marking device movable across the record-sheet for indicating the destination of each ticket, power devices for imparting movement to the said parts, and a series of keys each controlling all of the said devices.

47. A machine of the character described, comprising mechanism for printing the names of a series of different stations on a series of tickets, and automatically-operated mechanism controlled by the printing mechanism including means for supporting a record-sheet for recording the summation of sales of the tickets.

48. A machine of the character described, comprising mechanism for printing the names of a series of different stations on a series of tickets, means for feeding said tickets and automatic auditing mechanism including a record-sheet, and devices for adding and indicating on the record-sheet the summation of the sales of the tickets.

49. A machine of the character described, comprising mechanism for printing the names on a series of tickets, means for feeding said tickets a series of keys, each causing the printing of a particular name on a ticket, means for supporting a record-sheet, mechanism for indicating the summation of the sales of the tickets on the record-sheet.

50. A machine of the character described, comprising printing mechanism including a series of type-bars, each adapted to be moved into printing position, mechanism for causing any one of said bars to assume a printing position, means for supporting a record-sheet, and automatic mechanism controlled by said type-bars for making a record on said record-sheet of the prices of the tickets.

51. A machine of the character described, comprising printing mechanism including a series of interchangeable type-bars, a series of keys, one for each type-bar, for causing any particular one of said type-bars to assume a printing position, means for supporting a record-sheet, and automatic mechanism controlled by said type-bars and set in motion by said keys for recording the price of each ticket on the record-sheet.

52. A machine of the character described, comprising printing mechanism including a series of interchangeable type-bars, each formed to indicate the price of the ticket printed thereby, and automatic mechanism controlled by said type-bars for recording the price of each ticket printed.

53. A type-bar formed with a series of stops each indicative of a number from 0 to 9.

54. A machine of the character described, comprising a series of type-bars, each having a portion thereof formed to indicate the price of the ticket printed thereby, and auditing mechanism for recording the price of the ticket, said mechanism including adding devices controlled by the type-bars.

55. A machine of the character described, comprising printing mechanism, and auditing mechanism, said auditing mechanism including numeral-bearing disks, means for actuating said disks, and mechanism controlled by the printing mechanism for determining the degree of movement of said disks.

56. A machine of the character described, comprising a series of type-bars, each having a portion thereof formed to indicate the price of the ticket printed thereby, adding devices comprising a series of numeral-bearing disks, and means movable a predetermined distance to operate said disks, and hoods or shields controlled by said type-bars and adapted to be inserted between the disks and the said operating means, for limiting the degree of movement of the said disks.

57. A machine of the character described, comprising printing mechanism, means for feeding tickets thereto a series of keys controlling said printing mechanism, and auditing mechanism controlled by the printing mechanism and released by said keys.

58. A machine of the character described, comprising a series of printing devices and auditing mechanism, said auditing mechanism including a series of adding numeral-bearing disks, a ratchet operatively connected to each disk, a pawl for actuating each ratchet, a shield or hood adapted to be inserted between each pawl and its ratchet for determining the extent of movement of the ratchet, and automatic devices controlled by said printing devices for operating said hoods or shields.

59. A machine of the character described, comprising a series of printing devices, each having stops, and auditing mechanism including adding devices, and a series of automatically-operating fingers limited in movement by the said stops, for controlling the adding devices.

60. A machine of the character described, comprising a series of type-bars, each having stops on its end, printing mechanism adapted to receive any one of said type-bars, and auditing mechanism, said auditing mechanism including adding devices, means for actuating said devices, and a series of automatically-operating fingers each adapted to engage a stop on the operating type-bar to determine the movement of the adding devices.

61. A machine of the character described, comprising a series of type-bars each having stops on its end, printing mechanism adapted to receive any one of said type-bars, and auditing mechanism, said auditing mechanism including adding devices, means for actuating said devices, a series of automatically-operating fingers each adapted to engage a stop on the operating type-bar to determine the movement of the adding devices, mechanism for automatically releasing said fingers to engage said stops, and mechanism for automatically returning said fingers to inoperative position.

62. Auditing mechanism comprising a supporting-shaft, a series of cams rigid on said shaft, a series of numeral-disks loose on the shaft and alternated with said cams, said disks having teeth, and a pawl carried by each of said disks and adapted to ride upon one of said cams to engage the teeth of the next succeeding disk.

63. Auditing mechanism comprising a supporting-shaft, a series of numeral-disks each mounted on the shaft and provided with ratchet-teeth, and a yielding pawl to engage the teeth of the next adjacent disk, and stationarily-mounted arms or fingers to engage the pawls once during each revolution thereof to engage them with the next adjacent disk to impart a movement thereto.

64. A machine of the character described, comprising mechanism for printing a ticket, mechanism for making a record of the price and destination of each ticket, power devices for operating the said mechanism, a governor for regulating the speed of said devices, a series of keys each controlling the printing and auditing mechanism and devices operated by any one of the keys for releasing the power devices.

65. A machine of the character described, comprising mechanism for printing a ticket, mechanism for making a record of the price and destination of each ticket, a weight raised manually for furnishing power to said mechanism, a stop for holding the mechanism against movement, and a series of keys each controlling the printing and auditing mechanism, and each adapted to displace said stop.

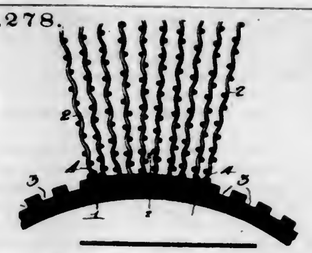
66. A machine of the character described, comprising mechanism for printing the names of any one of a series of stations on a series of tickets, a series of depressible keys controlling said printing mechanism, power devices, and mechanism for causing the printing mechanism to print the names of the same station on a series of tickets.

67. A machine of the character described comprising a plurality of ticket-printing type-bars, a similar number of keys for controlling the operation of said bars, and recording mechanism for recording each operation of each bar.

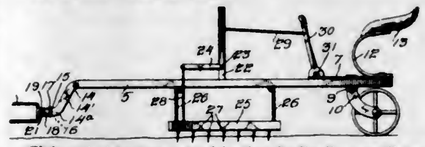
820,278. COOLING DEVICE FOR ENGINE-CYLINDERS. LEWIS D. ZENT, Bellefontaine, Ohio. Filed Nov. 10, 1904. Serial No. 232,205.

Claim.—In a device of the character described, the combination of a cylinder having a series of grooves formed therein, pairs of heat-radiating strips of reticulated material having their inner edges flattened and bearing against the walls of said groove, and a fastening-strip inserted in each groove between the flattened ends of the strips and expanded to fill the spaces between the flattened ends of the heat-radiating strips and to retain the latter in the groove, said strips extending radially from the cylinder, substantially as described.

820,278.



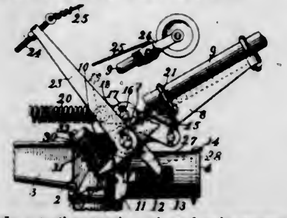
820,279. HARROW. NICHOLAS C. ALLEN, Houghton, S. D. Filed Aug. 19, 1905. Serial No. 274,860.



Claim.—1. A harrow comprising longitudinally-extending rearwardly-convergent sills, a plate secured to the rearward ends of the sills, a shaft journaled in the plate, downwardly-extending forks carried by the shaft, a ground-wheel journaled between the forks, a seat connected with the plate, clevises located at the forward ends of the sills, universal connections between the clevises and the sills, harrow-frames located beneath the sills and pivotally connected therewith for vertical movement into and out of operative position, levers pivotally connected with the sills, connections between the levers and harrow-frames for movement of the latter when the levers are moved pivotally, ground-treating devices carried by the frame, hand-levers pivoted upon the plate and connections between the hand-levers and the first-named levers for simultaneous movement thereof.

2. A harrow comprising spaced sills, a ground-wheel connected with the sills at the rearward ends thereof and lying in a plane therebelow, downwardly-extending arms carried by the forward ends of the sills, forwardly-extending clevises carried by the lower ends of the arms, universal joints between the clevises and the arms, a seat connected with the sills, harrow-frames carried by the sills therebelow and ground-treating devices carried by the frames.

820,280. TROLLEY-STAND. WARREN W. ANNABLE, Grand Rapids, Mich. Filed Jan. 31, 1905. Serial No. 243,577.



Claim.—1. In a trolley-stand, a pivoted pole-support, springs to yieldingly elevate the pole, and means for automatically reducing the tension of said springs when the said means strikes an obstruction.

2. In a trolley, a pivoted pole-support, springs attached to the pole-support and means for automatically reducing the leverage and tension of said springs when the said means strikes an obstruction.

3. In a trolley, a pole, pole-supporting springs, cams adapted to increase and decrease the tension of the said springs, a lever to turn the cams, and a wire or cord attached to the lever and carried in advance of the pole.

4. In a trolley, a pole, pole-supporting springs, means for increasing and decreasing the tension of said springs, and a wire carried in advance of the pole and operating said means to reduce the tension of the springs when said wire contacts an obstruction.

5. In a trolley, a pole, a pivoted pole-support, links pivoted at one end and movable at the other end, springs connected to the links, cams to move the links, stops to limit the movement of the cams in one direction, a lever to move the cams, and a cord attached to the lever and supported in advance of the pole.

6. In a trolley, a pole, a pivoted pole-support, links pivoted to the pole-support at one end and movable toward and from the pivot of the pole-support at the other end, rolls connected to the links, cams engaging the rolls, adjustable stop-screws to limit the movement of the cams, a lever to trip the cams, and a wire connected to the lever at one end and to the upper part of the trolley-pole at the other end.

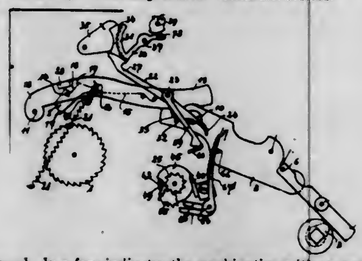
7. In a trolley, the combination of a rock-shaft, a pole, a pole-support pivoted on the rock-shaft, cams fixed on the rock-shaft, arms on the cams, adjustable stops to engage the arms, a lever journaled on the rock-shaft and engaging one of the arms, a wire connected to the lever and to the upper part of the pole, links pivoted to the pole-support, rolls connected to the links and engaged by the cams, and springs connected to the links.

8. In a trolley, a pole, a pivoted pole-support links pivoted to the pole-support at one end, rolls and springs connected to the other end of the links, cams provided with eccentric surfaces and end recesses to engage the rolls, a lever to trip the cams, and a wire extended in advance of the pole and attached to the lever to operate the same.

9. In a trolley, a pole, a pole-support, springs connected to the support, a rock-shaft, cams fixed on the rock-shaft and adapted to increase or decrease the tension of the springs, a stop to limit the movement of the cams, a lever to turn the cams toward the stop, an arm on the lever, a spring-seat on the pole-support, a spring between the arm and seat and a wire connected to the lever and to the upper part of the pole, and also carried in advance of the pole.

10. In a trolley-stand, a pole, a rotative head, a rock-shaft journaled in the head, a bifurcated pole-support journaled on the rock-shaft and extended below the same, a spring-tube on the head and having slots in its opposite sides, a bar slidable in the slots and engaged by the support, a spring in the tube and engaging the bar, cams fixed on the rock-shaft, links pivoted to the support and moved by the cams, springs connected to the links, a lever journaled on the rock-shaft, an arm on the lever, a spring engaging the arm, a seat on the support engaged by the lever, a bolt in the seat and arm, and a wire connected to the lever and to the upper part of the pole.

820,281. TAXOMETER OR FARE-INDICATOR. GUSTAV BAUM, Breslau, Germany. Filed Aug. 3, 1905. Serial No. 272,613.



Claim.—1. In a fare-indicator the combination with an operating-wheel and counting mechanism, of means for operating said counting mechanism from the operating-wheel comprising a rocking lever normally drawn toward the operating-wheel, means for limiting the movement of said lever, a dog pivoted on said lever and adapted to be swung into a position to engage said operating-wheel and means for holding said dog in its operative position when the rocking lever is in coöperation with the operating-wheel.

2. In a fare-indicator the combination with an operating-wheel and counting mechanism, of means for operating said counting mechanism from the operating-wheel comprising a rocking lever normally drawn toward the operating-wheel, means for limiting the movement of said lever, a dog pivoted on said lever a spring for throwing said dog out of engaging position and a fixed stop for swinging the dog into engaging position as the rocking lever approaches the operating-wheel.

3. In a fare-indicator the combination with an operating-wheel and counting mechanism, of means for operating said counting mechanism from the operating-wheel comprising a rocking lever normally drawn toward the operating-wheel, means for limiting the movement of said lever, a dog pivoted on said lever and adapted to engage said operating-wheel, means for locking said dog in its operative position and a double-armed lever also pivoted to the rocking lever and in indirect connection with the counting mechanism, substantially as described.

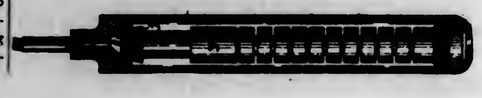
4. In a fare-indicator the combination with an operating-wheel and counting mechanism, of means for operating said counting mechanism from the operating-wheel comprising a rocking lever normally drawn toward the operating-wheel, means for limiting the movement of said lever, a dog pivoted on said lever and adapted to engage said operating-wheel, means for locking said dog in its operative position and a double-armed lever also pivoted to the rocking lever and in indirect connection with the counting mechanism and means for throwing said counter-operating mechanism with small movement thereof out of gear with the operating-wheel comprising a pair of pivoted coacting levers adapted to act on the rocking lever, a cam operating said levers and means for holding the dog aforesaid out of engagement with the operating-wheel.

5. In a fare-indicator the combination with an operating-wheel and counting mechanism of means for operating said counting mechanism from the operating-wheel comprising a rocking lever normally drawn toward the operating-wheel, a pawl pivoted on said lever and adapted to engage said operating-wheel, an abutment for locking said pawl in its operative position and a double-armed lever also pivoted to the rocking lever and adapted to indirectly actuate the counting mechanism; means for throwing said counter-operating mechanism with small movement thereof out of gear with the operating-wheel comprising a pair of pivoted coacting levers adapted to act on the rocking lever, a cam operating said levers and means for holding the pawl aforesaid out of engagement with the operating-wheel and means for holding said double-armed lever out of engagement with the counting mechanism until the operating-wheel has made a predetermined movement comprising an adjustable toothed segment adapted to be operated by said double-armed lever and a catch adapted to hold said segment in the position given it by said lever substantially as described.

6. In a fare-indicator the combination with an operating-wheel and counting mechanism of means for operating said counting mechanism from the operating-wheel comprising a rocking lever normally drawn toward the operating-wheel, a dog pivoted on said lever and adapted to engage said operating-wheel an abutment for locking said dog in its operative position and a double-armed lever also pivoted to the rocking lever and adapted to indirectly actuate the counting mechanism; means for throwing said counter-operating mechanism with small movement thereof out of gear with the operating-wheel comprising a pair of pivoted coacting levers adapted to act on the rocking lever, a cam operating said levers and means for holding the dog aforesaid out of engagement with the operating-wheel, means for holding said double-armed lever out of engagement with the counting mechanism until the operating-wheel has made a predetermined movement comprising an adjustable toothed segment adapted to be operated by said double-armed lever and a catch adapted to hold said segment in the position given it by said lever and means for returning the counter-operating mechanism to its original position comprising a projection on the aforesaid double-armed lever and a fixed abutment coacting with said projection substantially as described.

7. In a fare-indicator the combination with an operating-wheel and counting mechanism of means for operating said counting mechanism from the operating-wheel comprising a rocking lever normally drawn toward the operating-wheel, a dog pivoted on said lever and adapted to engage said operating-wheel an abutment for locking said dog in its operative position and a double-armed lever also pivoted to the rocking lever and adapted to indirectly actuate the counting mechanism; means for throwing said counter-operating mechanism with small movement thereof out of gear with the operating-wheel means for holding said double-armed lever out of engagement with the counting mechanism until the operating-wheel has made a predetermined movement comprising an adjustable toothed segment adapted to be operated by said double-armed lever and a catch adapted to hold said segment in the position given it by said lever, means for returning the counter-operating mechanism to its original position comprising a projection on the aforesaid double-armed lever and a fixed abutment coacting with said projection and means for returning the counting mechanism to zero when disengaged from its operating mechanism.

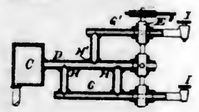
820,282. ELECTRICAL WATER-HEATER. WILLIAM A. BROWN, Oakland, Cal. Filed Apr. 6, 1905. Serial No. 254,143.



Claim.—1. An improved water-heater consisting of a perforated tube having a bottom substantially closed and having an open top portion, a head fitting the open top portion of the tube said head provided with a socket, a bar within said tube said bar having a non-conducting portion at its lower end adapted to rest upon the bottom of the tube, and having a non-conducting portion at its upper end adapted to fit the socket of said head and electrical connections between the bar and head.

2. An improved water-heater consisting of a perforated tube having a bottom substantially closed and having an open top portion, a head fitting the open top portion of the tube said head provided with a socket, a bar within said tube said bar having a non-conducting portion at its lower end adapted to rest upon the bottom of the tube, and having a non-conducting portion at its upper end adapted to fit the socket of said head and electrical connections between the bar and head, said bar being grooved or channeled to increase the contact-surface for the water, and electrical connections between the bar and head.

820,283. PROCESS AND APPARATUS FOR SEPARATING MIXED GASES. CHARLES CLAMOND, Paris, France. Filed Aug. 31, 1905. Serial No. 276,626.



Claim.—1. The process of separating from each other the constituents of mixed gases, which consists in causing the mixture to flow through a conduit and periodically arresting the flow of the mixture, substantially as described.

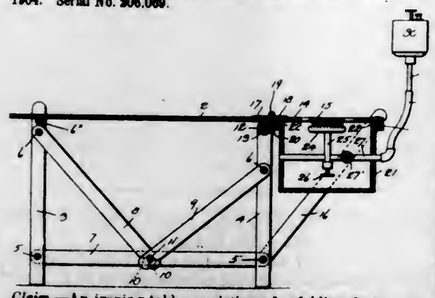
2. The process of separating from each other and separately discharging the constituents of mixed gases which consists in causing the mixture to flow through a conduit, periodically arresting the flow of the mixture whereby the separation within the conduit is produced, and separately withdrawing each or any of the constituents from the point or points of accumulation in the conduit, substantially as described.

3. The process of separating and separately discharging the constituents of a gas mixture, which consists in causing the mixture to flow through a conduit, periodically arresting the flow of the gas mixture whereby each gas separately accumulates at a different point or points of the conduit, and periodically withdrawing each or any of the constituent gases from the point or points of maximum accumulation, substantially as described.

4. An apparatus for separating the constituents of a gas mixture, consisting of a conduit, means for passing through the same a gas mixture, and means for periodically arresting the flow of gas through the conduit, substantially as described.

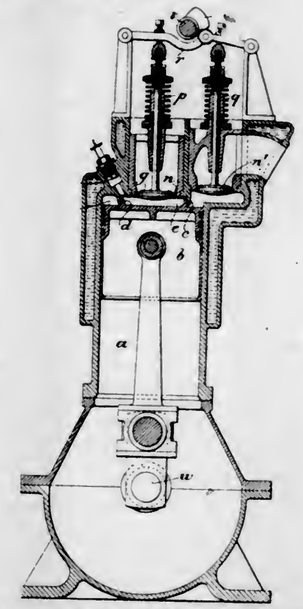
5. An apparatus for separating and separately discharging the constituents of a gas mixture, consisting of a conduit, means for passing through the same a gas mixture, means for periodically arresting the flow of the mixture through the conduit and means for periodically tapping the conduit at one or more points for the discharge of the separated gases, substantially as described.

820,284. IRONING-TABLE. BENJAMIN S. CROSS, Lima, Ohio, assignor of one-half to William E. Garling, Degraff, Ohio. Filed May 2, 1904. Serial No. 206,069.



Claim.—An ironing-table consisting of a folding frame, comprising uprights and side rails and two hinged bars to hold the frame extended, a table-top removably supported thereon, a folding shelf hinged to one end of the frame and connected to one end of the table-top by a separable hinge-joint, supports under the shelf, a removable casing or box fitted to slide upon the supports and provided with a door, substantially as described.

820,285. OIL-ENGINE. JAMES W. CROSS, London, England. Filed Feb. 11, 1905. Serial No. 245,295.



Claim.—1. In an oil-engine, a power chamber and piston so relatively shaped that just before the piston completes its compression-stroke it will divide the air-space within the combustion end of said chamber into two separate closed compartments, that will be again placed in communication with each other only after the piston has made part of its working outstroke, a valve adapted to admit air to said chamber on the suction-stroke of the piston, an oil-pump, means arranged to cause said pump to inject oil into one of said compartments after the same has been separated from the other compartment by said piston, and means for igniting the mixture of oil and air in the first compartment before this compartment is again placed by the movement of the piston in communication with the second compartment.

2. In an oil-engine, a power-chamber having at the combustion end thereof two air spaces or compartments that communicate with each other only through said chamber, a piston adapted, just before the completion of its inward or compression stroke, to close the communication between said spaces or compartments and thereby divide the air compressed therein on the compression-stroke of the piston into two separate confined portions, an air-inlet valve arranged to open on the suction-stroke of said piston, means arranged to force oil into one of the portions of compressed air while it is separated from the other portion, and means adapted to ignite the mixture of oil and compressed air while the same is separated from the second portion of air, said piston acting to place the second air space or compartment in connection with the first one shortly after commencing its working outstroke.

3. An oil-engine having an engine cylinder and piston so relatively constructed that upon the piston nearing the end of its compression-stroke it will divide the interior of the combustion-chamber end of the cylinder into separate and disconnected compartments and thus divide the compressed air therein into separate portions but will place said compartments in communication with each other after it has partially effected its following outstroke, an oil-pump and means for causing the same to force a charge of oil into one of the said compartments after the air compressed therein has been completely separated from the remaining portion of compressed air, and an igniting device adapted to fire the mixture of oil and air in one compartment while still separated from the second portion of com-

pressed air, the said piston after partly effecting its working outstroke acting to open the second compartment and allow the portion of compressed air therein to become afterward mixed with the gases resulting from the ignition of said mixture af air and oil and complete the combustion thereof.

4. An oil-engine comprising a cylinder having at its combustion end an inlet for air and an outlet for spent gases, valves normally closing said inlet and outlet, means for automatically opening the inlet-valve on the suction-stroke of the piston, means for automatically opening the outlet-valve on the exhaust-stroke of the engine, a piston adapted to divide the combustion-chamber end of the cylinder into two separate and disconnected compressed-air compartments one of which contains the air inlet and valve and the other the gas outlet and valve, an oil-pump arranged to deliver oil in the former compartment, means for operating said pump after said piston has separated the said compartments from each other and for thereby injecting oil into the said former compartment, and igniting means adapted to fire the mixture of air and oil in the said former compartment while the same is disconnected from the second compartment, said piston acting to place the two compartments in communication with each other shortly after commencing to make its working outstroke.

5. In an oil-engine, a cylinder having at its inner or combustion chamber end, an outwardly-extending wall or partition, a piston adapted on nearing the end of its compression-stroke and in conjunction with said cylinder and wall or partition to form two completely separated and disconnected compartments, an oil-pump, means adapted to cause said pump to force a charge of oil into the separated portion of compressed air in one of said compartments after such compartment has been separated from the other compartment, and means for igniting the mixture of air and oil while still separated from the other compartment, the two compartments being placed in communication with each other after the mixture of air and oil has been ignited and after the working stroke of the piston has been partially effected.

6. An oil-engine wherein the combustion-chamber end of the engine-cylinder and the inner end of the piston are constructed with extensions adapted to slide one past the other when the piston arrives near the end of its compression-stroke and form two completely separated and disconnected compartments, an air-inlet with non-return valve for admission of air to the cylinder on the suction-stroke of the piston, an oil-pump and means arranged to cause the same to force a charge of oil into one of the said compartments after the same has been separated from the other compartment by said piston, and means for igniting the mixture of oil and air in the first-mentioned compartment while still separated from the other compartment, the two compartments being placed in communication with each other after the mixture of air and oil has been ignited and after the working stroke of the piston has been partially effected.

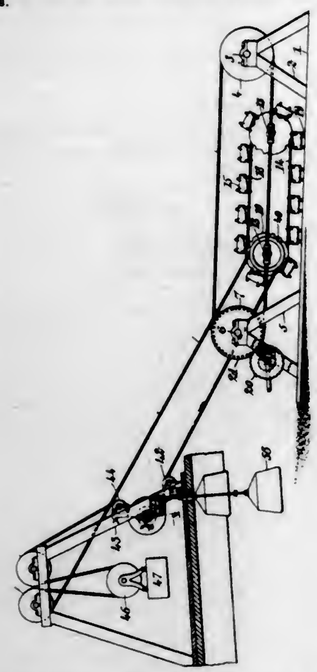
7. In an oil-engine, a cylinder and piston the adjacent inner ends of which are provided with tu'ular extensions adapted to take one into the other when the piston arrives near the end of its compression-stroke and form completely separated and disconnected concentrically-arranged compressed-air compartments, means for admitting air to the inner end of the cylinder on the suction-stroke of the engine, an oil-pump, means for causing the same to force a charge of oil into one of the compartments after the same has been separated from the other compartment by said piston, and means for igniting the mixture of oil and air in such compartment while still separated from the other compartment, the two compartments being placed in communication with each other after the mixture of air and oil has been ignited and after the working stroke of the piston has been partially effected.

820,286. SURF-ACTUATED MOTOR. TAD DANFORD, Boulder, Colo. Filed May 13, 1905. Serial No. 260,242.

Claim.—1. A surf-actuated motor comprising a plurality of buckets, endless cables to which the buckets are secured, endless adjusting-cables carrying the buckets by means of which the buckets may be moved inward and outward with relation to the shore line, and transmission-gearing operated by movements of the buckets.

2. A surf-actuated motor comprising two endless cables, sheaves around which the cables pass, sheaves mounted on the lower stretches of said cables, bucket-carrying cables extending around said last-named sheaves, buckets on said cables, a pair of winding-drums, cables extending around said drums, weights on the cables, a clutch-wheel adapted for engagement with either one of said drums, and a driving-cable connection between one of said last-named sheaves and said clutch drum or wheel.

3. A surf-actuated motor comprising sheaves, cables extending around said sheaves, other sheaves supported on the lower stretches of said cables, cables extending around said other sheaves, buckets mounted on said cables, means for adjusting the first-named cables, a pair of winding-drums, cables extending around the winding-drums, weights on said cables, clutch-teeth on the inner sides of said drum, a clutch-drum having teeth for engaging with the teeth of either one of the said drums, a shaft on which the several drums are loosely mounted rigid connections between said shaft and the winding-drums, means for automatically shifting the clutch-drum into engagement alternately with the winding-drums, and a cable having connection with the clutch-drum and operated by means of the buckets.



4. A surf-actuated motor comprising a pair of endless cables, sheaves supported on the lower stretches of said endless cables, bucket-carrying cables extending around said last-named sheaves, buckets on said cables, swinging connections between the buckets and cables, and a transmission-gearing actuated by movements of the buckets.

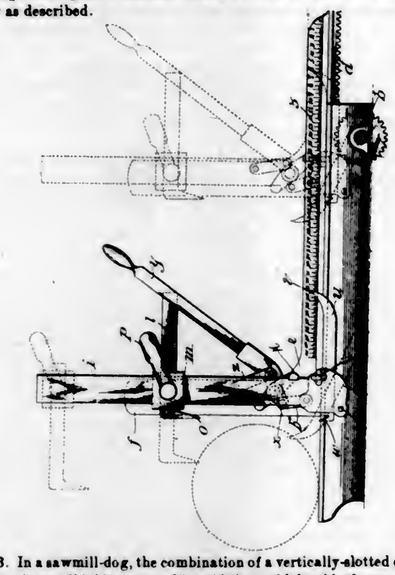
5. A surf-actuated motor comprising a plurality of buckets, endless cables on which the buckets are mounted, each bucket being of box-like construction, rollers carried by the buckets, a track on which said rollers are adapted to engage, means for adjusting the buckets as to their position in the water, and a transmission-gearing actuated by movements of the buckets.

6. In a surf-actuated motor, a tubular shaft, winding-drums loosely mounted on said shaft, weighted cables having connection with the drums, a clutch-drum loosely mounted on the tubular shaft and adapted for engagement with either one of the winding-drums, means actuated by water-pressure for causing movements of the clutch-drum, a rod mounted to move lengthwise through the bollow shaft, lever mechaniam causing longitudinal movements of said rod, ratchet-wheels secured to the bollow shaft, and pawls carried by the winding-drums for engaging with said ratchet-wheels.

820,287. SAWMILL-DOG. ALONZO A. DE LOACH, Atlanta, Ga. Filed Oct. 16, 1905. Serial No. 283,010.

Claim.—1. The combination with a supporting-knee, of a dog-block, a dog-bit, and means for adjusting the dog-bit at different angles within said dog-block, substantially as described.

2. The combination with a supporting-knee, of a dog-bit, a dog-block, comprising permanent and removable parts, and means for holding said dog-bit at different angles between said parts, substantially as described.



3. In a sawmill-dog, the combination of a vertically-slotted dog-block, a beam slidably mounted in said slot, said dog-block comprising permanent and removable parts, a two-pointed dog-bit, and means for clamping said dog-bit at different angles between said parts of said dog-block, substantially as described.

4. In a sawmill-dog, the combination with a beam, a dog-block and a dog-bit mounted near the upper end of said beam, a dog-block near the other end of the beam, having a slot through which said beam passes, a lever, links connecting said lever to the beam and to the dog-block at the lower end of the beam and means within the lower dog-block for adjusting and clamping a dog-bit at different angles, as shown and described.

5. In a sawmill-dog, the combination of a beam carrying a dog-block and a dog-bit thereon, a second dog-block carrying a dog-bit, through which second block said beam passes, a lever, and connecting means whereby the movement of the lever in one direction causes said bits to approach each other and a movement in the opposite direction causes them to recede from each other, and means whereby a two-pointed dog-bit may be reversed and clamped at different angles in the lower dog-block, substantially as described.

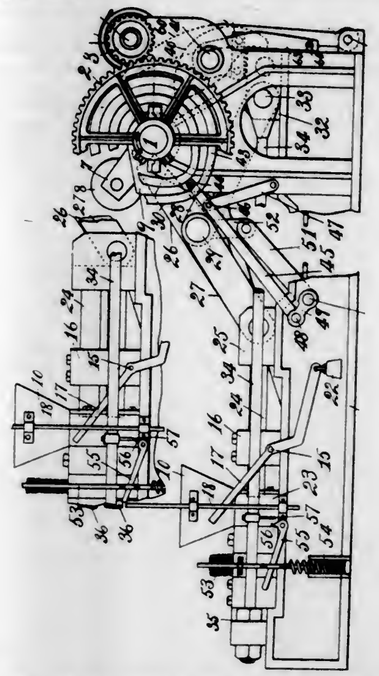
6. The combination with a supporting-knee, of a dog-block, comprising a permanent part and a removable part, said parts being cut away on their inner faces to form oppositely-faced steps, substantially as described.

7. The combination with a supporting-knee, of a vertically-slotted dog-block, comprising a permanent part and a casing or removable part, said parts being cut away to form steps, a two-pointed reversible dog-bit adapted to be inserted in said dog-block and to rest upon said steps and means whereby the removable portion of said dog-block may be rigidly clamped in engagement with the permanent part and with the dog-bit, substantially as described.

8. The combination with a supporting-knee, of a vertically-slotted dog-block, comprising a permanent part and a casing or removable part, said parts being cut away on their inner faces to form steps, said steps being constructed slantingly at different angles, and means whereby the casing or removable part may be tightly clamped to the permanent part, substantially as described.

9. In a sawmill-dog, the combination of a beam carrying a dog-block and a dog-bit thereon, a second dog-block carrying a dog-bit, through which said beam passes, a lever, and connecting means whereby the movement of the lever in one direction causes said bits to approach each other and a movement in the opposite direction causes them to recede from each other, said second dog-block comprising a permanent part and a casing or removable part, said parts being cut away on their inner faces to form steps, said steps being constructed slantingly at different angles, the steps upon the permanent part alternating with those upon the casing or removable part, and means for clamping said removable part to said permanent part, substantially as described.

820,288. BRIQUETING-MACHINE. CONSTANTINE DEMETRAK, San Francisco, Cal., assignor to American Briqueting Co., San Francisco, Cal., a Corporation of California. Filed Sept. 30, 1903. Serial No. 175,122.



Claim.—1. In a briqueting-machine, the combination of a hopper, a box thereunder, a horizontal piston moving through said box to feed the material therefrom, a die into which the material is fed, a second horizontal piston moving through the die, a horizontal toggle-lever the ends of which are connected with said pistons respectively, one arm of said lever having an extension beyond the toggle-joint, a main shaft, a crank-arm thereon, and a roller carried by said crank-arm engaging said extension to straighten the lever, substantially as described.

2. In a briqueting-machine, the combination of a hopper, a box thereunder, a horizontal piston moving through said box to feed the material therefrom, a die into which the material is fed, a second horizontal piston moving through the die, a horizontal toggle-lever the ends of which are connected with said pistons respectively, one arm of said lever having an extension beyond the toggle-joint, a main shaft, a crank-arm thereon, a roller carried by said crank-arm engaging said extension to straighten the lever, a plate having a cam-groove on said shaft, an arm operatively connected with said toggle-lever to bend the same, and a roller carried by said arm moving in said cam-groove, substantially as described.

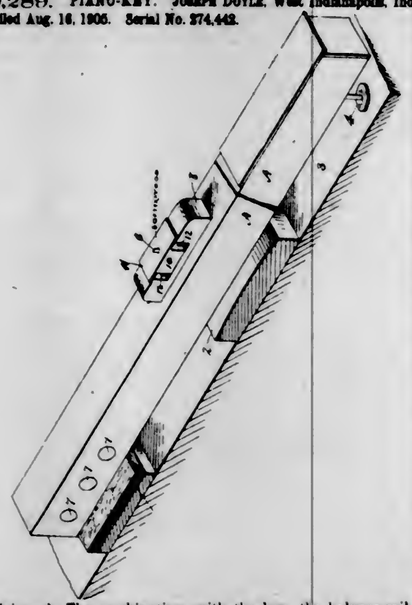
3. In a briqueting-machine, the combination of a hopper, a box thereunder, horizontal pistons moving through said box to feed the material therefrom, dies into which the material is so fed, horizontal pistons moving through said dies, heads for said pistons, springs between one of the heads and the corresponding pistons, a toggle-lever the ends of which are operatively connected to said heads, and means for straightening said toggle-lever, substantially as described.

4. In a briqueting-machine, the combination of a die, horizontal pistons moving in opposite directions therein, a horizontal toggle-lever the ends of which are operatively connected with said pistons, means for moving the toggle-joint vertical to straighten the toggle-lever, means for moving the whole system of pistons and toggle-lever horizontally to move the briquets out of the die, and auxiliary means for bending the toggle-lever after it has been so moved to release the briquets and allow them to fall, substantially as described.

5. In a briqueting-machine, the combination of a hopper, a box thereunder, horizontal pistons moving through said box to feed the material therefrom, dies into which said material is so fed, pistons moving through the dies, a toggle-lever the ends of which are opera-

tively connected to said pistons, a shaft provided with means for engaging said toggle-lever to straighten the same, agitators in the hopper, and an arm on said main shaft actuating said agitator as the shaft revolves, substantially as described.

820,289. PIANO-KEY. JOSEPH DOYLE, West Indianapolis, Ind. Filed Aug. 16, 1905. Serial No. 274,442.



Claim.—1. The combination, with the key, the balance-rail, and the pivot-pin, of a fixed notched block on the key, and a block adapted to slide in the said notch, the said pivot-pin extending vertically through both of said blocks.

2. The combination, with the key, the balance-rail, and the pivot-pin of a fixed notched block on the key, and a flanged block adapted to slide in said notch with the flanges resting on the upper outer surface of the first-mentioned block, the said pivot-pin extending vertically through both blocks.

3. The combination, with the key, the balance-rail and the pivot-pin, of a fixed notched block on the key, a block adapted to slide in the said notch, a wire extending through the ends of the fixed block and through the sliding block in said notch, the said pivot-pin extending vertically through both blocks.

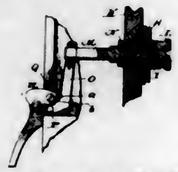
4. The combination, with the key, the balance-rail and the pivot-pin, of a fixed notched block on the key, a block adapted to slide in the said notch, a plurality of wires, spaced and lying in the same horizontal plane, extending through the ends of the fixed block and through the sliding block in said notch, the said pivot-pin extending vertically through both blocks.

5. The combination, with the key, the balance-rail and the pivot-pin, of a fixed notched block on the key, a block adapted to slide in the said notch and having flanges extending from its upper side and lapping on the upper face of the fixed block, two spaced wires lying in the same horizontal plane, extending through the ends of the fixed block and through the sliding block in said notch, the said pivot-pin extending vertically through both blocks.

6. The combination, with the key, the balance-rail and the pivot-pin, of a fixed notched block on the key, a block of softer wood than the fixed block adapted to slide in the said notch and having flanges extending from its upper side and lapping on the upper face of the fixed block, two spaced wires lying in the same horizontal plane, extending through the ends of the fixed block and through the softer-wood sliding block in said notch, the said pivot-pin extending vertically through both blocks.

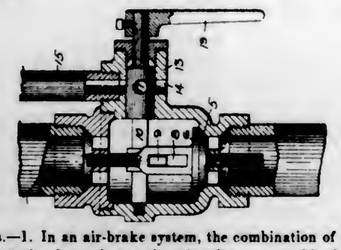
820,290. TENSION DEVICE FOR SEWING-MACHINES. DAVID S. DETDALE, Newark, N. J., assignor to Domestic Sewing Machine Company, Newark, N. J., a Corporation of New Jersey. Filed Aug. 7, 1903. Renewed Jan. 7, 1906. Serial No. 240,805.

Claim.—1. The combination with a presser-foot, and a lifting-lever pivoted to the frame and having a two-cam surface, one of which acts to raise the presser-foot, of a vertically-disposed tension-actuating lever pivoted at its lower end in the same plane with the lifting-lever and engaged near its lower end by the other cam-surface of the lifting-lever, and a tension device having a plunger in the plane of and engaged by the upper end of the tension-actuating lever.



2. In a sewing-machine, a presser-foot-lifting lever having a cam to raise the presser-foot said cam having near one extremity a projection, a tension device, a lever controlling the same, and having a recess adapted to be engaged by the projection on the cam when the cam proper has practically completed its presser-foot-lifting action; substantially as described.

820,291. EMERGENCY CUT-OUT COCK FOR AIR-BRAKES. FRANK H. DUKESMITH, Meadville, Pa. Filed Dec. 11, 1905. Serial No. 291,255.



Claim.—1. In an air-brake system, the combination of a main reservoir, a train-pipe and an engineer's valve connected in the usual way, said engineer's valve being provided with a service exhaust-port and an emergency exhaust-port and arranged to connect the train-pipe to either of said exhaust-ports, and cut-out-valve mechanism in the train-pipe connected to the service exhaust-port of the engineer's valve, and arranged in one position to hold the train-pipe and service exhaust-port open through the engineer's valve, and in another position to hold the train-pipe closed against main-reservoir pressure, and to hold the service exhaust-port of the engineer's valve closed, while leaving the emergency exhaust-port open.

2. In an air-brake system, the combination of a main reservoir, a train-pipe and an engineer's valve connected in the usual way, said engineer's valve being provided with a service exhaust-port and emergency exhaust-port and arranged to connect the train-pipe to either of said ports, and cut-out-valve mechanism in the train-pipe including a check-valve seating away from the engineer's valve and a part controlling the service exhaust-port of the engineer's valve and arranged in one position to hold said service exhaust-port open with the check-valve locked in open position, and in another position to hold said service exhaust-port closed with the check-valve free to seat itself.

3. In an air-brake system, the combination of a main reservoir, a train-pipe and an engineer's valve connected in the usual way, said engineer's valve being provided with a service exhaust-port and an emergency exhaust-port and arranged to connect the train-pipe to either of said ports, and cut-out-valve mechanism in the train-pipe connected to the service exhaust-port of the engineer's valve, said valve mechanism comprising a check-valve seating away from the engineer's valve, and means for locking said check-valve in open position and simultaneously opening the service exhaust-port, and arranged when said check-valve is unlocked to close the service exhaust-port.

820,292. GRIP. JAMES DUNBAR, Invercargill, New Zealand. Filed Aug. 2, 1905. Serial No. 272,330.

Claim.—1. The combination with a handle or shank of a grip having two separable main parts each half-tubular where contacting with handle or shank, and having interior pin-like projections, each main part having a web with a hole through same, a bolt to fit said holes and nut for fastening, each main part having two arms, extending from the web with ends shaped to form a polygonal grip.



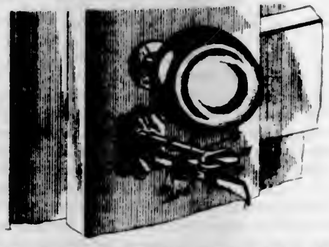
2. A grip having two separable main parts each half-tubular and having interior pin-like projections means for securing main parts together, arms extending from web within shaped to form a polygonal grip.

3. The combination with a tool-head of a grip having two separable identical main parts each half-tubular, and having interior pin-like projections, a handle with holes to receive said pins, a web on each main part having a hole through same, a bolt to fit said hole and nut for securing same, each part having two arms extending from web, with ends shaped to form a polygonal grip, the portion of the tool-head shaped to fit said polygonally-shaped grip.

4. The combination with a tool-head of a grip having two separable identical main parts each half-tubular and having interior pin-like projections a handle with holes to receive said pins, a web on each said main part having a hole through same, a bolt to fit said hole, and nut for securing same, each main part having two arms extending from web with ends shaped to form a polygonal grip, portions of the tool-head shaped to fit said polygonally-shaped grip, the inside parts of said gripping ends having pin-like projections and parts of said tool-head with which they contact having holes to receive them.

5. The combination of a grip having two separable main parts, each main part being provided with a perforated web, means passing through the perforations in the webs for securing the two main parts together, and projections extending from each of the webs, said projections being provided with portions of a polygonal figure which when placed together constitute a grip.

820,293. KEY-FASTENER. LEROY A. FOSTER, Lagrange, Ind. Filed Feb. 23, 1905. Serial No. 246,866.



Claim.—1. A key-fastener substantially as herein described, comprising in combination a rack-bar adapted at its inner end to enter a keyhole and having on its lower edge teeth facing outwardly or toward its outer end, a key-section having a main plate extending longitudinally above the rack-bar and having at its inner end a depending lug embracing the rack-bar and provided beneath the same with a foot portion elongated in the direction of length of the rack-bar and made of such length as to extend between two of the teeth of said rack-bar, a pawl or plate depending from the outer end of the main plate and embracing the rack-bar and engaging at its lower end with the teeth thereof, an upwardly-projecting key-plate adapted to project through the key-loop and having a forwardly-projecting tongue to overlie the said loop, and a spring on the upper side of the main plate in rear of the key-plate and adapted to bear between the same and the loop of the key when the fastener is applied to the key in use, substantially as set forth.

2. The combination of a rack-bar adapted at its inner end to enter a keyhole and having its teeth facing outwardly or toward its outer end, a key-section having a main plate provided with a member for engagement with a key-loop and with a depending pawl or plate engaging with the teeth of the rack-bar, a spring on the main plate on the opposite side of the rack-bar from the teeth thereof, and arranged to bear beneath the key-loop in rear of the means engaging therewith, and a bearing portion at the inner end of the main plate and bearing upon the rack-bar, substantially as set forth.

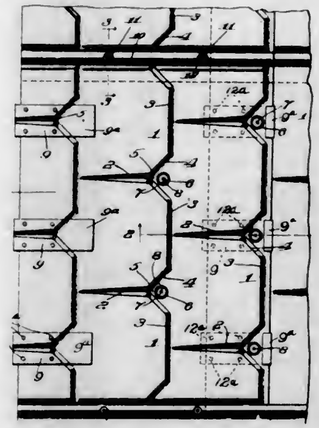
3. A key-fastener comprising a rack-bar and a key-section comprising a main plate having key-engaging means provided at one end with a depending pawl or plate embracing the rack-bar and at its other or inner end with a bearing-lug embracing the rack-bar and provided beneath the same with a foot portion overlapping two of the teeth of the rack-bar, and a spring to bear between the main plate and the key-loop, substantially as set forth.

4. A key-fastener comprising a main plate having key-engaging means provided at its opposite ends with depending lugs having openings for a rack-bar and one of said lugs having at its lower side a pawl portion and the other having a projecting foot, and a rack-bar movable freely through the openings in said front and rear lugs when the parts are free of tension, and a spring acting upon the main plate and operated to draw the pawl into engagement with the rack-bar, substantially as set forth.

5. A key-fastener comprising a rack-bar, a key-section having a main plate provided at its front ends with means for engaging the key-loop and with lugs projecting from the opposite side, one of them having a pawl portion that engages the rack-bar, the said main plate bearing at its inner end upon the rack-bar and the latter being slidable in the lugs, and a spring in rear of the key-engaging means, and arranged on the side of the key-section which is opposite the lugs.

6. A key-fastener comprising a rack-bar, a key-section having a main plate provided with a pawl engaging with the rack-bar, and also having means for engagement with the key-loop, and a spring on the opposite side of the rack-bar from the teeth thereof, and arranged to bear between the said key-section and a key when the fastener is applied for use, substantially as set forth.

820,294. METAL SHINGLE. ALBERT FRIEDLEY, Chicago, Ill., assignor of one-half to Herman F. Voshardt, Chicago, Ill. Filed June 23, 1905. Serial No. 266,614.



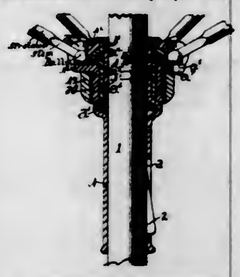
Claim.—1. In a metal roof comprising metal shingles successively overlapped, such shingles being struck up to form panels in rows, the lower row of panels of each shingle overlapping, matching and seating upon the upper row of panels or partial panels of the next lower shingle, the successive panels in each row being separated from each other by depressions which are widened at the lower end and which in the lower row extend thus widened to the edge of the shingle, and cleats shaped to fit the shingle lodged between the overlapped margins of the shingle at such channels having their lower ends projecting beyond the lower edge of the overlapping shingle and clenched back thereonto at the widened lower end of the depressions between the panels.

2. A sheet metal struck up for subdivision in panels separated by intervening depressions, such depressions being widened at the lower edge of each shingle, an annular boss being formed in the widened portion for the purpose set forth.

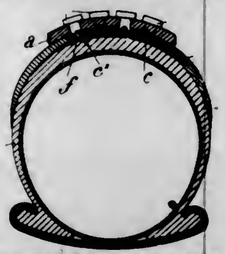
3. A sheet-metal shingle having lateral marginal V-shaped ribs adapted to be successively interlapped, the outerlapping rib having cylindrical bosses at intervals in the length of such ribs depressed at their upper ends to form gasket-pockets.

820,295. WIRELESS UMBRELLA-RUNNER AND UPPER NOTCH. HOWARD L. PURLOW, Lancaster, Pa. Filed July 22, 1905. Serial No. 270,575.

Claim.—In a wireless umbrella-runner, in combination, the umbrella-stick 1 provided with the spring-catch 2; the tube A sleeved upon said stick and having in the lower portion thereof the slot *a* to be engaged by said catch, and having at the required point above said slot *a* the surrounding circular rib *a'*; the tube A' having the surrounding circular rib a^3 sleeved upon the upper portion of said tube A with the lower end thereof seated on top of the rib *a'*; the retaining-plate A^2 with the central downwardly-projecting tube a^5 sleeved upon the convex surface of the tube A' and having its lower end in engagement with the top surface of the rib *a'* and the upper end thereof at its juncture with the top surface of the plate A^2 in engagement with the under surface of the rib a^3, with the external screw-thread a^6 in the convex surface of the tube a^5, and the ball-receiving aperture a^7 through the body of the plate A^2 with the stem passing slot a^8 opening through the peripheral edge thereof; the plate A^3 surrounding the tube A' with the upper portion thereof in engagement with the top surface of the surrounding rib a^3 and its under surface in engagement with the top surface of the plate A^2, and having the ball-seating groove a^2 with the stem-engaging slots a^4 opening through the peripheral edge thereof, as shown, with the stretcher-balls seated in said groove and their stems in engagement with said slots; and the securing-ring screw with the internal screw-thread a^9 in engagement with the external screw-thread a^6 of the tube a^5 and screwed home thereon, thus completing the runner, all substantially as described and for the purpose hereinbefore set forth.



820,296. METHOD OF MAKING ARMORED TIRES. VALERY GALLIEN, Paris, France, assignor to Société Anonyme des Pneumatiques Cuir "Samson," Paris, France. Filed Jan. 26, 1903. Serial No. 140,634.



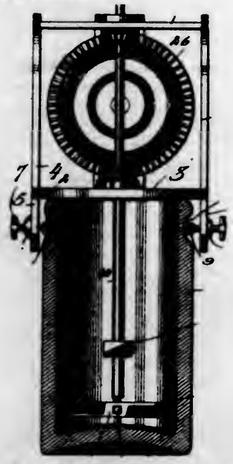
Claim.—1. The method of making armored tires which consists in cold-vulcanizing the flesh side of chrome-tanned leather to rubber tires, substantially as set forth.

2. The method of making armored tires which consists in cold-vulcanizing the flesh side of chrome-tanned leather to rubber tires under pressure, substantially as set forth.

3. The method of making armored tires, which consists in furring or roughening the surface of the rubber tire, similarly preparing both sides of a chafing-strip, coating the prepared surfaces with rubber solution, applying to the coated proximate surfaces a mixture of carbon bisulfid and protochlorid of sulfur, uniting the parts under pressure, uniting a chrome-tanned leather tread to the hair side of a strip of similar leather wider than the chafing-strip, studding the united tread and strip with armor-rivets, roughening the flesh side of the latter strip, coating it, the chafing-strip and part of the tire beyond the chafing-strip with rubber solution, and then with the aforesaid protochlorid of sulfur and carbon bisulfid and uniting the parts by pressure.

820,297. CHURN. ROY H. GARNER and KENYON T. HENLEY, Bay City, Ill. Filed Jan. 6, 1906. Serial No. 294,983.

Claim.—1. In a churn, the combination of a casing, a cover therefor having an opening and an enlarged recess below the opening forming an interposed shoulder, a supporting-frame carried by the cover and having a superposed portion formed with a bearing-opening having a counterpart recess and shoulder at the upper end thereof, bearing-sleeves extending through said opening and provided at their respective lower and upper ends with flanges occupying said recesses and bearing against said shoulders, beveled pinions in threaded engagement with the upper end of the lower bearing-sleeve and the lower end of the upper bearing-sleeve and having shoulders respectively engaging the upper surface of the cover and lower surface of the said superposed portion of the frame, a drive-gear mounted on the frame and meshing with said pinion, a hollow shaft extending through and fixed to the lower sleeve and carrying a dasher, a shaft extending through and fixed to the upper bearing-sleeve and projecting downward through and below the hollow shaft and carrying at its lower end a dasher, and means for securing the cover to the churn-casing, substantially as described.

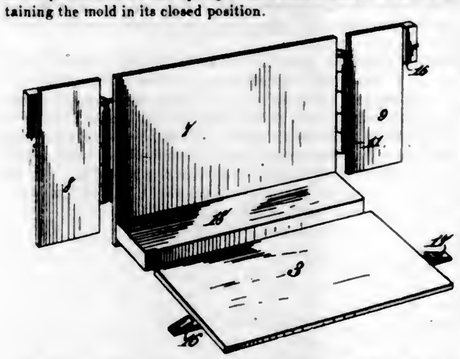


2. In a churn, the combination of a casing, a cover therefor having an opening and an enlarged recess below the opening forming an interposed shoulder, a supporting-frame carried by the cover and having a superposed portion formed with a bearing-opening with a counterpart recess and shoulder at the upper end thereof, bearing-sleeves extending through said opening and provided at their respective lower and upper ends with flanges occupying said recesses and bearing against said shoulders, beveled pinions in threaded engagement with the upper end of the lower bearing-sleeve and the lower end of the upper bearing-sleeve and having shoulders respectively engaging the upper surface of the cover and lower surface of the said superposed portion of the frame, a drive-gear mounted on the frame and meshing with said pinion, a hollow shaft extending through and fixed to the lower sleeve, and dashers carried by said shafts and having obliquely-disposed blades arranged to respectively force the cream up and down the casing, the dasher upon the hollow shaft being adjustable to operate at different elevations.

3. In a churn, the combination of a casing, a cover therefor, a continuous hollow shaft, a second continuous hollow shaft extending through and above and below the first-named hollow shaft, said shafts having their lower ends arranged in juxtaposition, the lower end of the inner shaft opening directly into the casing, dashers independently fixed upon the lower ends of said shafts, and gearing acting upon the upper ends of the shafts for driving them in opposite directions.

820,298. MOLD FOR MANUFACTURING BRICKS AND ARTIFICIAL STONE. GEORGE A. GOULD, Davenport, Iowa. Filed Dec. 4, 1905. Serial No. 290,242.

Claim.—1. A mold consisting of a base of greater width than the mold proper and projecting forwardly from the mold, a front wall hinged to the projecting portion of the base, a rear wall fixed to the base, a pair of side walls hinged to said fixed walls, each of said side walls having the front thereof at its top provided with a forwardly-projecting protuberance having an inwardly-extending shoulder adapted when the mold is closed to be positioned in the path of the front wall, and spring-catches carried by the front wall and adapted to engage the side walls below the protuberances for automatically locking said side and front walls in position, said shouldered protuberances and spring-catches constituting a lock for retaining the mold in its closed position.



2. A mold consisting of a base of greater width than the mold proper and projecting forwardly from the mold, a front wall hinged to the projecting portion of the base, a rear wall fixed to the base, a pair of side walls hinged to said fixed wall, each of said side walls having the front thereof at the top provided with a forwardly-projecting protuberance having an inwardly-extending shoulder adapted when the mold is closed to be positioned in the path of the front wall, and spring-catches carried by the front wall and adapted to engage the side walls below the protuberances for automatically locking said side and front walls in position, said shouldered protuberances and spring-catches constituting a lock for retaining the mold in its closed position, combined with a removable pallet supported upon the base of the mold.

3. A mold comprising a base, a front wall hinged thereto, a rear wall fixed to the base, a pair of side walls, means for hinging and suspending the side walls a suitable distance from the rear wall so that when said side walls are moved to closure position, the inner face of the side walls will abut against the side edges of the rear wall, and means carried by the side walls and the front wall for automatically locking the walls of the mold together when the mold is closed.

4. A mold comprising a base, a front wall, means secured to the base and to the front wall for hinging said front wall to the base, spring-catches secured to the front wall, a rear wall fixed to the base, a pair of side walls provided at the top with forwardly-extending shouldered protuberances, and means secured to the rear wall, projecting laterally therefrom and secured to the side walls for hinging and suspending the side walls to and from said rear wall, said shouldered protuberances adapted to engage the front wall and said spring-catches adapted to engage the side walls below said protuberances when the mold is closed, thereby constituting a lock for retaining the mold in position when closed.

5. A mold comprising a base, a front wall hinged thereto, a rear wall fixed to the base, a pair of side walls, means for hinging and suspending the side walls a suitable distance from the rear wall so that when said side walls are moved to closure position, the inner face of the side walls will abut against the side edges of the rear wall, and means carried by the side walls and the front wall for automatically locking the walls of the mold together when the mold is closed, combined with a removable pallet mounted upon the base of the mold.

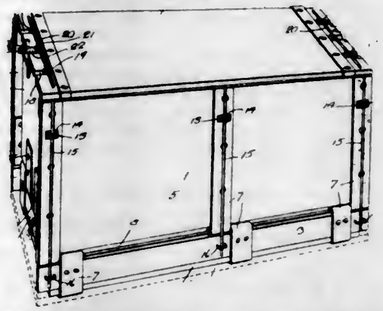
6. A mold comprising a base, a front wall, means secured to the base and to the front wall for hinging said front wall to the base, spring-catches secured to the front wall, a rear wall fixed to the base, a pair of side walls provided at the top thereof with forwardly-extending shouldered protuberances, and means secured to the rear wall, projecting laterally therefrom and secured to the side walls for hinging and suspending said side walls to and from said rear wall, said shouldered protuberances adapted to engage the front wall and said spring-catches adapted to engage the side walls below the protuberances when the mold is closed, thereby constituting a lock for retaining the mold in position when closed, combined with a removable pallet supported upon the base of the mold.

820,299. BRUSH. HARRY W. GOWEN, Halifax, N. C. Filed Mar. 8, 1905. Serial No. 249,117.

Claim.—In a brush, a central body covered with bristles, said central body provided with holes adapted to receive a holder, said hair around said holes of a different color to the rest of said hair.



820,300. FOLDING CRATE. GEORGE F. GREEN, Bazette, Tex., assignor of one-half to Joseph Pitts Ellett, Fort Worth, Tex. Filed Aug. 28, 1905. Serial No. 276,134.



Claim.—1. In a crate of the character described, the combination, with a bottom, having upwardly-projecting side and end flanges, of apertured side pieces hinged to said side flanges, end pieces hinged to the end flanges, a partition removably secured in said crate, bail-shaped fastening devices pivotally connected to said end and partition pieces, said devices being adapted to project through the apertures in said side pieces, locking-rods adapted to be inserted through the projecting ends of said bail-shaped fastening devices, the upper ends of said rods having hook-shaped ends to engage the upper edge of said side pieces, guide loops or staples arranged on the side flanges of the bottom to receive the lower ends of said locking-rods, a top piece having recessed ends, fastening-loops arranged in said end pieces to engage the recesses in the ends of said top piece, locking-rods to engage the projecting ends of said fastening-loops, said rods having a right-angularly-projecting arm adapted to engage a notch in the ends of said top piece to hold said rod in place, substantially as described.

2. In a crate of the character described, the combination, with a bottom, having upwardly-projecting side and end flanges, of apertured side pieces 1, hinged to said side flanges, end pieces hinged to the end flanges, a removable partition secured in said crate, bail-shaped fastening devices pivotally connected to said end and partition pieces, said devices projecting through the apertures in said side pieces, locking-rods inserted through the projecting ends of said bail-shaped fastening devices, the upper ends of said rods hooking over said side pieces, guide-loops arranged on the side flanges of the bottom to receive the lower ends of said locking-rods, a top piece having recessed ends, fastening devices arranged on said end pieces to engage said notched ends, locking-rods to engage said fastening devices, eyes secured to the ends of said top piece, hooks secured to one of said side pieces to engage said eyes when the crate is in folded position, and hooks arranged on the flanges of said end pieces to engage the eyes in said top piece to hold the same on the bottom of the crate when the latter is in open position for use, substantially as described.

820,301. FOLDING BOX. LAWRENCE F. HALE, Santa Anna, Tex. Filed Apr. 25, 1904. Serial No. 204,564.

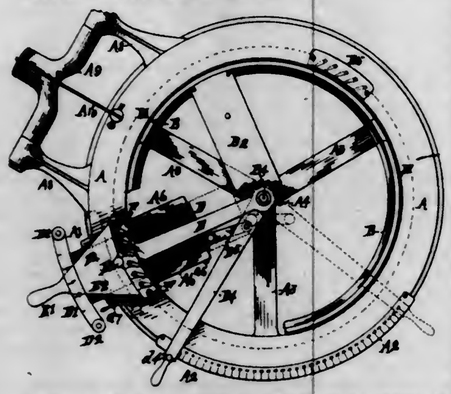
Claim.—1. A folding box having the sides thereof flexibly connected one to the other to form a completed side structure and having two opposite sides of said side structure adapted to fold inwardly between the other two sides thereof, a bottom connected to one of the non-folding sides and adapted to be folded thereon, a top connected to one of said non-folding sides and adapted to be folded about the

top edges of the collapsed side structure and against the front side thereof, securing means carried by said top, means carried by the front side of said structure adapted to engage said securing means when the said structure is extended, and means carried by the rear side of said structure adapted to engage said securing means when said structure is collapsed.



2. A folding box comprising a collapsible side structure having two opposite sides thereof adapted to fold between the other two sides, a bottom connected to one of the non-folding sides and adapted to be folded thereon, a top connected to one of said non-folding sides and adapted to be folded about the top edges of the collapsed side structure and onto the front side thereof, and a securing-strap connected to the top adapted to engage fastening means on the front side of the box when the box is distended and to engage fastening means on the rear side of the box when the box is collapsed, substantially as and for the purpose set forth.

820,302. **CHEESE-CUTTER.** JOHN HALLIDAY, Detroit, Mich. Filed Nov. 21, 1903. Serial No. 182,161.



Claim.—1. In a cheese-cutter, the combination of a support for the cheese, a knife adapted to move in a plane radial to the cheese when on said support, an oscillating part adapted to change the relative angular position of said knife and support in proportion to the extent of its travel, a stop to limit the motion of said oscillating part, a scale and a lever-arm adapted to move over said scale and to adjust the position of said stop.

2. In a cheese-cutter, the combination of a support for the cheese, a knife adapted to move in a plane radial to the cheese when on said support, an oscillating part adapted to change the relative angular position of said knife and support in proportion to the extent of its travel, a stop upon each side of said oscillating part, means for varying the positions of said stops proportionally to limit the motion of the oscillating part, and means for indicating a proportional part of the travel of the oscillating part at all positions of the stops.

3. In a cheese-cutter, the combination of a support for the cheese, a knife adapted to move in a plane radial to the cheese when on said support, an oscillating part adapted to change the relative angular position of said knife and support in proportion to the extent of its travel, a stop upon each side of said oscillating part, means for varying the relative position of said stops to an equal extent relative to said oscillating part, and means for indicating the position of mid-travel of said oscillating part.

4. In a cheese-cutter, the combination of a support for the cheese, a knife adapted to move in a plane radial to the cheese when on said support, an oscillating part adapted to change the relative angular position of said knife and support in proportion to the extent of its travel, a stop adapted to limit the movement of said oscillating part, a cam-surface adapted to coact with said stop to limit the motion of the oscillating part, and means for varying the relative position of said stop and cam-surface to adjust the extent of travel of said oscillatory part.

5. In a cheese-cutter, the combination of a support for the cheese, a knife adapted to move in a plane radial to the cheese when on said support, an oscillating part adapted to change the relative angular position of said knife and support, in proportion to the extent of its travel, a stop adapted to limit the movement of said oscillating part, a cam-surface adapted to coact with said stop to limit the motion of the oscillating part, a scale, a lever-arm moving over said scale, and means by which the movement of said lever shall adjust the relative position of said stop and cam-surface.

6. In a cheese-cutter, the combination of a support for the cheese, a knife adapted to move in a plane radial to the cheese when on said support, an oscillating part adapted to change the relative angular position of said knife and support in proportion to the extent of its travel, a stop adapted to limit the movement of said oscillating part, a cam-surface adapted to coact with said stop to limit the motion of the oscillating part, means for varying the relative position of said stop and cam-surface to adjust the extent of travel of said oscillating part, and a second cam-surface, and a stop adapted to coact therewith, the relative position of the second cam-surface and its stop being adjustable by the same means that adjust the relative position of the first cam-surface and stop, said second cam-surface being arranged to indicate by its contact with its stop an aliquot part of the travel of said oscillating part.

7. In a cheese-cutter, the combination of a pivoted support for the cheese, a knife adapted to move in a plane radial to the cheese when on said support, a lever adapted to oscillate about the same center as the cheese-support, and to change the relative position of said knife and support in proportion to the extent of its travel, and provided with a cam-surface varying in width in a direction radial to said cheese-support, a stop adapted to contact said cam-surface, and means for adjusting said stop toward and away from said pivot.

8. In a cheese-cutter, the combination of a pivoted support for the cheese, a knife adapted to move in a plane, radial to cheese when on said support, a lever adapted to oscillate about the pivot of the cheese-support and provided with a pawl acting to turn said cheese-support, a cam-surface upon said lever, a plate adapted to travel toward and from said pivot, and provided with a stop adapted to coact with said cam to limit the motion of said lever, grooves in the upper surface of said plate, and a pin on said lever adapted to engage with said grooves, for the purpose set forth.

9. In a cheese-cutter, the combination of a pivoted support for the cheese, a knife adapted to move in a plane radial to said support, a lever adapted to oscillate about the pivot of said support and provided with a pawl acting to turn said cheese-support, a cam-surface upon said lever, a slide adapted to reciprocate toward and away from said pivot and provided with a stop adapted to coact with said cam-surface to limit the motion of said lever, a scale, a lever-arm adapted to travel over said scale, and means for connecting said lever-arm and slide so that a movement of the former shall adjust the latter.

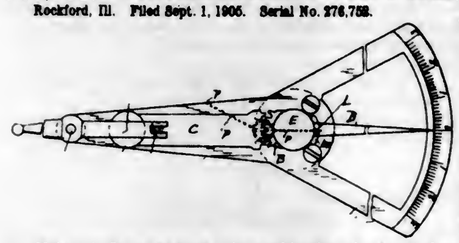
10. In a cheese-cutter, the combination of a pivoted support for the cheese, a knife adapted to move in a plane radial to said support, a lever pivoted upon the pivot of said support, and provided with a pawl acting to turn said cheese-support, a cam-surface upon said lever, a slide adapted to reciprocate toward and away from said pivot and provided with a stop adapted to coact with said cam-surface to limit the motion of said lever, a scale, a lever-arm pivoted upon the pivot of said support and adapted to travel over said scale, and means for connecting said lever-arm and slide so that a movement of the former shall adjust the latter.

11. In a computing cheese-cutter, the combination of a cheese-table, a cutting means, table-adjusting means having a limiting member and a lever member, one of said members having a cam-surface, and adjustable means upon the other said member and cooperating with said first-named member to vary the operation of said table-adjusting means.

12. In a cheese-cutter, the combination of a support for the cheese, a knife adapted to move in a plane radial to the cheese when on said support, an oscillating part adapted to change the relative angular position of said knife and support in proportion to the extent of its travel, a stop upon each side of said oscillating part, means for varying the position of one of said stops to limit the motion of the oscillating part, and means for indicating a proportional part of the travel of the oscillating part at all positions of the movable stop.

13. In a cheese-cutter, the combination of a rotatable cheese-carrier, a handle-lever connected to rotate said carrier, and a stop member movable with respect to the handle member and provided with a plurality of stop portions for limiting the movement of the handle-lever.

820,303. **MEASUREMENT-INDICATOR.** GUSTAF L. HANSEN, Rockford, Ill. Filed Sept. 1, 1905. Serial No. 276,758.



Claim.—1. In an indicator, the combination of a frame-plate having thereon a scale, multiplying-levers having at their proximate ends gears that mesh with each other, a pivoted arm connected to one of said levers and adapted to move them by contact of its free end with work whose variations from a true form are to be indicated, said frame-plate being parallel to the levers and arm and the arm and levers pivoted to the plate.

2. In an indicator, the combination of a frame-plate having thereon a scale, multiplying-levers having at their proximate ends gears that mesh with each other, a pivoted arm connected to one of said levers and adapted to move them by the contact of its free end with work whose variations from a true form are to be indicated, said frame-plate being slotted, a pin fixed to one of the levers and movable in the slot whereby its path is limited, and a spring tending to hold said lever, being an indicator, in either of two normal positions, and said scale being in duplicate for right and left hand work.

3. In an indicator, the combination of a frame or support, a scale on said support, multiplying-levers having at their proximate ends gears that mesh with each other, a pivoted arm connected to one of said levers and adapted to move them by the contact of its free end with work whose variations from a true form are to be indicated, said scale being in duplicate, and a spring one end operatively connected to one of the levers and the other bearing on the frame, each end being movable with respect to the frame, and reversible for right and left hand work.

4. In an indicator, the combination of a scale, multiplying-levers having at their proximate ends gears that mesh with each other, a pivoted arm connected to one of said levers and adapted to move them by contact of its free end with work whose variation from a true form is to be indicated, said levers and their gears being adapted to be alined in the same plane, and a frame having thereon said scale, the arm and levers being pivoted to said frame and the arm loosely connected to the proximate lever.

5. In an indicator, the combination of the frame-plate having thereon a scale, the lever-pointer, the coacting lever, and the arm loosely connected to the said latter lever, said lever being pivotally supported on the frame and situated in the same plane as the pointer, and washers adjacent the pivots to prevent contact of the levers and frame.

6. In an indicator, the combination of the slotted frame-plate having a scale, a pointer, a spring, the post fixed to the plate and having a recess for the spring, a pin fixed to the pointer movable in the frame-slot, said spring bearing at one end on the frame and at the other on the pin and having both ends movable with respect to the frame, and a fixed point on the frame to hold the intermediate part of the spring.

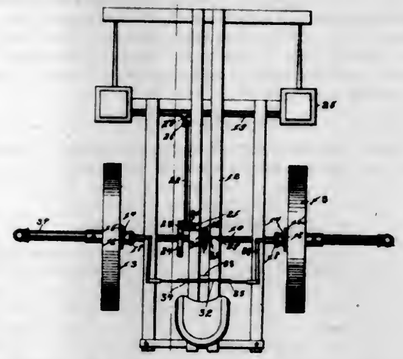
820,304. **METAL PILING.** JAMES J. HAROLD, Jersey City, N. J., assignor, by mesne assignments, to Emma Harold, Jersey City, N. J. Filed Dec. 23, 1904. Serial No. 237,874.

Claim.—1. In piling, flanged beam members and interlocking members, said interlocking members tapered toward the bottom of the piling and provided with projecting flanges adapted to retain said flanged beam members in place.

2. In piling, flanged beam members and interlocking members, said interlocking members tapered from the center toward the top and bottom of the piling and provided with flanges adapted to retain said flanged beam members in place.

3. In piling, flanged beam members and reinforced tapered interlocking members, said interlocking members provided with projecting flanges adapted to retain said flanged beam members in place.

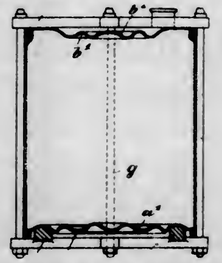
820,305. **AUTOMATIC CHECK-ROW CORN-PLANTER AND MARKER.** REBA HERRON, Winterset, Iowa. Filed Sept. 2, 1905. Serial No. 276,880.



Claim.—1. In a check-row corn-planter and marker, a rotatable bearing-axle, markers connected with the ends of the axles, bearing-wheels loosely mounted on the axles, clutch members fixed to the hubs of the bearing-wheels, ratchet-wheels fixed to the bearing-wheels, pawls connected with the bearing-wheels to engage the ratchet-wheels, clutch members slidably connected with the axles and means for simultaneously moving the sliding clutch members in reverse ways, arranged and combined in the manner set forth for the purposes stated.

2. A check-row corn-planter and marker comprising a rock-shaft having an arm, a bar pivoted at its top to a fixed bearer and provided with a stud at its lower end to extend laterally, a rod connected with the lever and with the arm of the rock-shaft and a duplex cam on a rotatable bearing-axle and means to prevent the axle from rotating while the carriage is advancing, a rotatable bearing-axle, markers connected with the ends of the bearing-axle, bearing-wheels loosely mounted on the axle, clutch members fixed to the hubs of the bearing-wheels, ratchet-wheels fixed to the bearing-wheels, pawls connected with the bearing-wheels, clutch members slidingly connected with the axle and means for simultaneously moving the clutch members in reverse ways, arranged and combined as set forth.

820,306. **METAL CASK.** ARTHUR HOLLE, Munich, Germany. Filed Feb. 6, 1905. Serial No. 244,386.



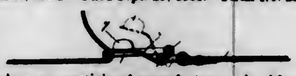
Claim.—1. A metal cask comprising a substantially cylindrical body, and expansible metal ends, in combination with means for reinforcing the body against internal pressure, and means preventing the outward expansion of the ends near their periphery while leaving the central portion thereof free to expand.

2. A metal cask comprising a substantially cylindrical body, and expansible ends secured thereto, in combination with a support resting against the peripheral portion of the end and leaving the central portion free to expand, and means connecting the two supports.

3. A metal cask comprising a substantially cylindrical body, and concentrically-corrugated ends, in combination with star-shaped frames arranged adjacent to the ends, an annular support between one of the frames and the peripheral portion of the cask end leaving the central portion free, and rods connecting the frames and holding the same firmly against the cask ends.

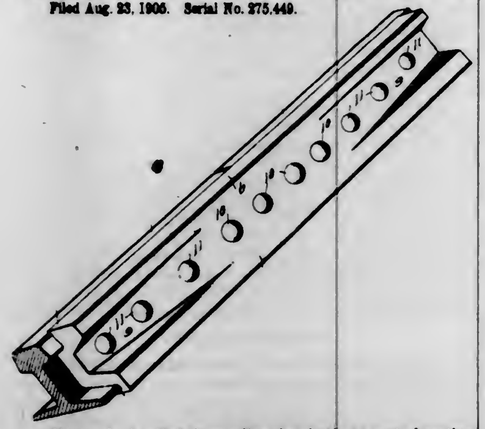
4. A metal cask comprising a substantially cylindrical body and expansible ends, the top end having a plane peripheral portion flush with the body wall and a central corrugated portion, and the bottom end inset and also corrugated, in combination with an annular support bearing against the peripheral portion of the bottom end leaving the central portion free to expand, star-shaped frames one bearing directly upon the plane peripheral portion of the top end and the other against the annular support, and rods lying closely against the cylindrical body and connecting the two frames to hold the same firmly in position.

820,307. BUCKLE. HENRY D. JACOBSON and CHARLES F. JACOBSON, Atlantic, Iowa. Filed Sept. 29, 1905. Serial No. 280,658.



Claim.—As a new article of manufacture, a buckle comprising a frame, a strap-engaging plate having one end thereof formed with a loop receiving an end of the frame and affording pivotal connection therewith, the plate being curved downwardly from the loop thereof and thence upwardly toward its free end, lugs projecting laterally from the free end of the plate and forming finger-pieces and stops as specified, and a loop arranged between the frame and the curved portion of the engaging plate and adapted to be connected to a strap part.

820,308. RAIL-JOINT. ALLINGTON H. KRAMER, Monte Vista, Colo. Filed Aug. 23, 1905. Serial No. 275,449.



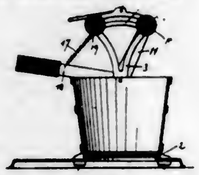
Claim.—1. A rail chair or splice-plate having a central portion of maximum thickness and ends channeled at their outer sides substantially as described.

2. A rail chair or splice-plate having a central portion of maximum thickness and ends channeled at their outer sides, the vertical walls of the channels being gradually inclined, substantially as described.

3. A rail chair or splice-plate having a central portion of maximum thickness and ends formed with channels in their outer sides increasing gradually in depth from said central portion to the extremities of the plate, the plate having at its upper edge a head provided with a lip to overlap the curved outer edge of the head of the rails.

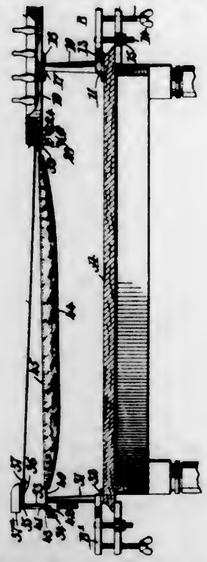
820,309. MOP-WRINGING MACHINE. DANIEL F. MYERS, New Hartford, N. Y. Filed Apr. 22, 1903. Serial No. 104,121.

Claim.—1. The combination in a mop-wringing machine of a pair of vertically-disposed standards mounted on a movable base, a roller rigidly secured on a shaft extending entirely through the roller, the said roller and shaft being rotatably mounted in the standards, a pair of elbow-levers arranged at the outside of the standards and fulcrumed at their angles to the standards, each lever being composed of an upright arm and a forwardly-extending lateral arm rigid therewith, the lateral arms being connected together at the front of the machine, a roller mounted upon a shaft and rigidly secured thereto, the shaft extending centrally through the roller and mounted in the upper ends of the upright arms so as to be rotated, one end of the shaft extending beyond the arm, a crank arm or handle rigidly secured to the extension end of the shaft whereby the mop-cloths can be tightly compressed between said rollers, and while held tightly compressed, can be moved upwardly by the said rolls by the rotation of the crank-handle, substantially as set forth.



2. In a mop-wringer, the combination of a pair of standards bifurcated at their upper and lower ends, the standards being secured separately on the base to allow a mop-pail to stand between the standards, mop-wringing rolls carried by the standards, and a metal base having a raised or embossed surface between the vertically-supported standards for engaging the bottom and chimes of the pail, substantially as set forth.

820,310. GAME APPARATUS. BERNHARD NOREN and WILLIAM SANDBERG, Chicago, Ill. Filed Nov. 26, 1904. Serial No. 234,376.



Claim.—1. The combination with a loosely-mounted bar and a piece-support, of an inclined flexible ribbon connecting said bar and support and furnishing an inclined way, and means on the piece-support for tensioning the ribbon.

2. The combination with a piece-support, of a flexible ribbon furnishing an inclined way leading downwardly to said support, and means for varying the tension of the way.

3. The combination with a piece-support, of a reel rotatable thereon in proximity to the supporting-surface, and a flexible way carried by the reel.

4. The combination with a piece-support, of a reel rotatable thereon, a standard, and a flexible ribbon carried by the reel and standard, and forming a way to the piece-support.

5. The combination with a piece-support, of an inclined way leading to said support, and a wider oppositely-inclined way situated below that first named.

6. The combination with a piece-support of a standard, a flexible ribbon connecting the support and the standard and forming a way to the support, and a reel for tensioning the ribbon.

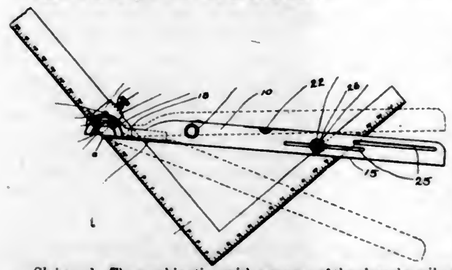
7. The combination with a piece-support, of a sectional standard, and a flexible way connecting the support and the upper section of the standard.

8. The combination with a piece-support, of a standard, a flexible way connecting the support and standard, and a delivery-chute carried by the standard and having one end extending over the way in proximity to the way.

9. The combination with a piece-support, of a standard, a flexible way connecting the support and standard, and a delivery-chute carried by the standard and having one end extending over the way in proximity to the way and being movable on said standard.

10. The combination with a piece-support, of a standard, a way connecting the support and standard, flexible members leading from the support to the standard, and a second flexible way movable along said members.

820,311. SQUARE AND LEVEL. EMANUEL OEHRLE, Omaha, Nebr. Filed Aug. 1, 1905. Serial No. 272,236.

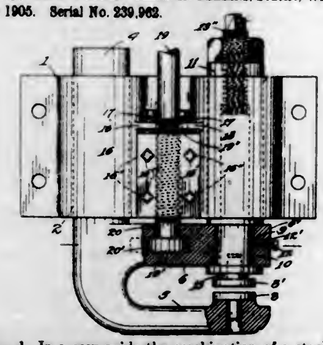


Claim.—1. The combination with a square of the class described of a head adjustably attachable to one blade of the square, a straight-edged arm, and an arcuate tongue and groove pivotally connecting the said head and arm, the pivotal center being at the intersecting edges of the arm and the square-blade to which the head is attached.

2. The combination with a square of the class described of a head adjustably attached to one blade of the square, an arcuate member on said head, a straight-edged arm, means on said arm engaging said arcuate member to pivotally connect the arm with the head, the pivotal center being at the intersection of the working face of the arm and the edge of the square-blade to which the head is attached, and graduations on the said working face of the arm, the graduations starting from said pivotal center.

3. The combination with a square of the class described of a straight-edged arm carrying levels disposed at right angles to each other, one of the levels being parallel with the working face of the arm, a head adjustably connected with one blade of the square, and means forming a pivotal connection between the said arm and head, said connecting means lying entirely behind the working face of the arm, and the pivotal center being at the intersection of the said working face of the arm and the edge of the square blade to which the head is attached.

820,312. SAW-GUIDE. JAMES H. PERKINS, Seattle, Wash. Filed Jan. 6, 1905. Serial No. 239,962.



Claim.—1. In a saw-guide the combination of a stock having two chambers extending longitudinally therethrough, two arms located at the same end of the stock and integrally connected to a shank which is positioned in one of said chambers, a sleeve seated in the other of said chambers and detachably connected with the inner of said arms, a bar movable longitudinally in said sleeve, means to impart such movement to the said bar, means to lock said bar in a set position, a set-rod having an end detachably engaged with said inner arm, said set-rod being provided with a screw-thread which registers with a like thread of a box having its under portion integral with the said stock and a removable cap, means for adjustably moving said cap longitudinally of the bottom part, and means for securing said cap in its adjusted position.

2. In a saw-guide, the combination of a stock having two longitudinal chambers, two arms both disposed at one end of the stock and integrally connected to a shank extending through one of said chambers, said shank, a sleeve provided with internal screw-threads seated in the other said chamber and normally connected with one of said arms, a bar provided with a screw-thread engaging with the screw-thread of the sleeve and movably seated in the latter, a jam-nut engaging with the said thread of the jaw, a screw-threaded box intermediate of the said chambers, and a screw set-rod passing through the said box and engaging with one of the arms.

3. In a saw-guide the combination, with the stock, the arms which are integrally connected with each other and with a shank and located at the same end of the stock, said shank being slidingly positioned in a chamber of the body, and a movable bar extending through the stock and one of the said arms, of a screw set-rod adapted to be rotatably engaged with one of said arms, and passing through a two-part screw-threaded box, said box, one of the said box parts being right with the stock and the other part being movable relatively of the first-named part, means adjustably moving said movable box part, and means for securing the same in its adjusted position.

4. In a saw-guide, the combination of a stock having two longitudinal chambers, a shank extending through one of said chambers and rotatable therein, two laterally-extending arms carried by said shank, one of said arms being formed with two slots, a sleeve seated in the other of said chambers, said sleeve being adapted to fit in one of the slots in the said slotted arm, a movable jaw carried by said sleeve, a guide-block carried by said jaw, a screw-threaded set-rod carried by the stock and seating in the other of the slots in said arm.

820,313. SKIRT-SUPPORTER. LUCY A. PHILLIPS, Lucca, N. D. Filed July 7, 1905. Serial No. 268,678.



Claim.—1. A skirt-supporter, comprising a plate having a pin on its rear face for securing it to a garment and provided with two pairs of openings below the pin, and a piece of wire passed through the upper pair of openings from front to rear, then bent downward along the rear face of the plate and then passed through the lower pair of openings and having its terminals bent outwardly and upwardly to form hooks on the front face of the plate.

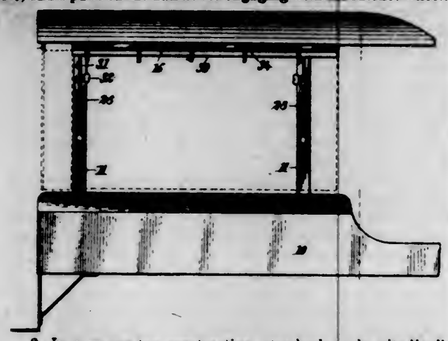
2. A skirt-supporter, comprising a plate having means for securing it to a garment and provided with two pairs of openings below the securing means, and a piece of wire passed through one pair of openings, then bent to extend vertically along the rear face of the plate and then passed through the other pair of openings and having its terminals bent outwardly and upwardly to form hooks on the front face of the plate.

3. A skirt-supporter comprising a plate, a single length of wire having a portion extended along the front of the plate, thence through the plate and formed in a coil terminating in a pin member, the other end of said wire also being extended through the plate and formed into a keeper for the pin member, another length of wire having a portion extended along the front of the plate, thence having portions passing through the plate and downward at the inner side thereof, thence outward and upward, forming skirt-engaging hook members.

820,314. WAGON-TOP. JOHN POHLIG, New Orleans, La. Filed Apr. 27, 1905. Serial No. 257,602.

Claim.—1. In a wagon-top construction, a side top rail having a longitudinal slot through which a curtain may pass, a raised nosing at the inner edge of said rail, a roller arranged inward of the nosing, a curtain on said roller, the said curtain passing over said nosing

and through said slot, a ratchet-wheel on the roller, a swinging handle, and a pawl on the handle for engaging with the ratchet-wheel.



2. In a wagon-top construction, standards, a longitudinally-slotted top rail supported by the standards, a nosing at the upper ends of the standards, a curtain-roller, a bracket in which the pintle at one end of the roller has a bearing, a bracket secured to the top rail and having an outwardly-opening slot for receiving the pintle at the opposite end of the roller, means for preventing accidental outward movement of said pintle, a pawl and ratchet for holding the curtain-roller as adjusted, and a curtain extended from the roller over said nosing, and through the slot in the top rail.

3. In a wagon-top construction, standards, a curtain-roller arranged at the upper ends of the standards, a curtain attached to the roller, a frame mounted to swing on the standards and comprising arms, and a cross-bar having swinging connection with said arms, and devices for engaging said cross-bar with the curtain.

4. In a wagon-top construction, standards extended upward from the wagon-top, a longitudinally-slotted top rail attached to the upper ends of said standards, a nosing on the upper ends of the standards, a curtain-roller arranged inward of the standards, a curtain passing from said roller over said nosing and through said slot, a frame mounted to swing on the standards and comprising arms, a cross-bar having swinging connection with the arms, and means for connecting the curtain with the cross-bar.

5. In a wagon-top construction, a rear curtain, a roller to which the curtain is attached, side flaps on said curtain, and stitching passing through said flaps and curtain near the outside edges.

820,315. **PROCESS FOR PRODUCING WHALEBONE OR RUBBER SUBSTITUTES.** William Polatsik, Chicago, Ill., assignor to himself and Joseph L. Bloom, Chicago, Ill. Filed Aug. 18, 1905. Serial No. 274,773.

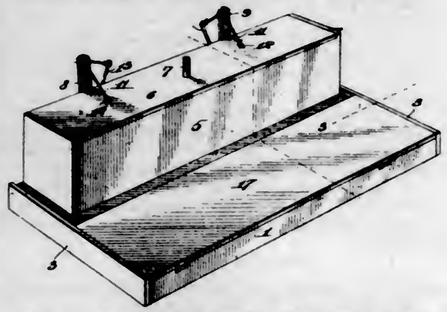
Claim.—1. The herein-described process of treating animal waste which consists primarily in immersing said waste in a bath consisting of water and acetate of lime, for a period of forty-eight hours more or less, then immersing said waste in a both consisting of water and chlorid of strontium having sulfate of iron added thereto, for a period of forty-eight hours more or less, then stretching said waste over boards and drying the same in the presence of mechanically-applied high pressure.

2. The herein-described process of treating animal waste which consists primarily in subjecting said waste to the action of an acidulous calcic bath to eliminate the fatty constituents, then subjecting said defatted waste to the action of dilute chlorid or strontium and iron sulfate, then stretching the same, and drying the same under compression.

3. The herein-described process of treating animal waste which consists in first subjecting said waste for a period of forty-eight hours, more or less to the action of a dilute acidulous calcic bath, then subjecting the same for a similar period to the action of dilute chlorid of strontium and sulfate of iron, and subsequently drying and compressing the same.

4. The herein-described process of treating animal waste which consists in first immersing one hundred parts by weight thereof in a solution consisting approximately of eighty parts by weight of water and four parts acetate of lime, for a period of forty-eight hours more or less, then subjecting said waste for a period of forty-eight hours more or less to the action of two parts by weight chlorid of strontium dissolved in eighty parts water and having one part, more or less, of sulfate of iron added thereto, and subsequently drying the resulting product under compression.

820,316. **AUTOMATIC WATERING OR FEED TROUGH.** Charles B. Richmond, St. Louis, Mo., assignor of one-half to John H. Tolman, St. Louis, Mo. Filed May 15, 1905. Serial No. 260,601.

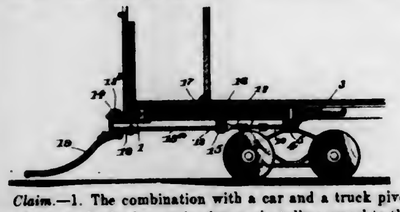


Claim.—1. In a combined watering or feed trough, a base, a step-board hinged thereto, a pair of rock-shafts journaled in said base, cranks formed on the forward ends of said rock-shafts upon which the step-board rests, a trough mounted upon the base, a cover for normally closing said trough, and connections from the rock-shafts to the cover; substantially as specified.

2. In a watering-trough, a base, a trough mounted on the rear end of said base, a lid hinged to the rear wall of the trough, means whereby the upward swing of the lid is limited, a pair of rock-shafts journaled beneath the frame, flexible connections from said rock-shafts to the lid, and a step-board hinged to the frame in front of the trough and arranged to actuate the rock-shafts; substantially as specified.

3. In a watering or feed trough, a base, a trough mounted on the rear end thereof, a lid hinged to the rear wall of the trough, means whereby the upward swing of the lid is limited, a pair of rock-shafts journaled in the base beneath the trough, arms integral with the rear ends of the rock-shafts which project upwardly beyond the trough, flexible connections from the upper ends of said arms to the top of the lid, cranks formed integral with the forward ends of the rock-shafts, a step-board hinged at its front edge to the front of the base, its rear edge resting upon the cranks of the rock-shafts, and blocks secured to the base for limiting the downward movement of the step-board; substantially as specified.

820,317. **CAR-FENDER.** Jearum A. Sage, Stryker, Ohio. Filed Mar. 31, 1905. Serial No. 253,007.



Claim.—1. The combination with a car and a truck pivotally hung thereto, of a fender-carrier frame pivotally secured to the car in advance of the pivotal connection of the car and truck and supported at its upper end on the front end of the car, and means connecting said fender-carrier frame with the truck to cause the carrier-frame to swing in unison with the truck.

2. The combination with a car and a truck pivotally hung thereto, of a fender-carrier frame supported at front end on the front end of the car-body and pivotally secured at its rear end to the car in advance of the pivotal connection of the car and truck, and means connecting said carrier-frame with the truck to cause the carrier-frame to swing in unison with the truck.

3. The combination with a car and a truck pivotally hung thereto, of a fender supported at its upper end on the front of the car, a plate or bar rigidly connected at its front end to the fender and pivotally connected at its rear end to the under side of the car, a side extension or arm at the rear end of said plate or bar, and a link pivotally connecting said side extension with the car-truck.

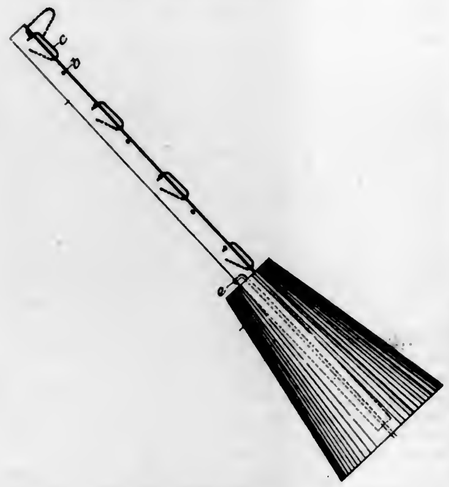
4. The combination with a car and a truck pivotally hung thereto, a curved sill at the front end of the car, of a fender supported on said sill, a bell-crank lever pivoted to the under side of the car or its frame and rigidly connected at its front end to the fender, a link pivotally connecting said bell-crank lever with the pivoted truck.

5. The combination with a car and a truck pivotally hung thereto, a curved sill at the front of the car forming a track, of a fender having upward extensions bearing on said sill or track, a bell-crank lever rigidly secured at its forward end to said fender and at its apex to the under side of the car or its frame and an adjustable link pivotally connecting the arm of the bell-crank lever with the pivoted truck.

6. The combination with a car and a truck pivotally hung thereto, a curved sill or track at the front of the car, an angled lever pivotally secured at its apex to the under side of the car, and having its forward end extended upwardly to form a hanger, an antifriction-roller carried by said hanger and bearing on the curved sill or track, an adjustable link pivotally secured at one end to the arm of the angled lever and its opposite end adjustably secured to the pivoted truck, and a fender rigidly secured to the forward portion of the angled lever.

7. The combination with a car and truck pivotally hung thereto, of a fender-carrier frame pivoted at its rear end to the car and overhung and supported at its front end on the front of the car, and antifriction-rollers interposed between the overhanging portion of the fender-frame and the front of the car.

820,318. **FENCE-POST.** Frederick C. Schwen, Tripoli, Iowa. Filed July 6, 1905. Serial No. 268,419.



Claim.—1. A fence-post, comprising a concrete base, an angle-bar post embedded therein and provided with opposite vertical series of perforations near its vertical edges, and movable inwardly-bent hooked wire-clips whose ends are pivoted in oppositely-placed perforations in the opposite flanges of said post and being adapted to suspend and hold fence-wires from displacement in any direction than vertically upward.

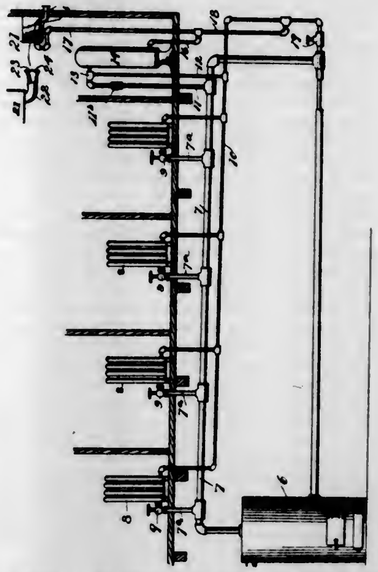
2. A fence-post, comprising a conical non-conducting concrete base, an angle-bar post of conducting material embedded therein and provided with opposite vertical series of perforations near its vertical edges, a conducting-wire in electrical contact with said post extending through said non-conducting base and projecting therefrom its lower surface adapted to convey electrical current to the surrounding earth, and movable inwardly-bent hooked wire-clips whose ends are pivoted in oppositely-placed perforations in said post and being adapted to suspend and hold fence-wires from displacement in any direction than vertically upward.

820,319. **METALLIC POST.** Lee C. Sharp, Omaha, Nebr. Filed Mar. 24, 1905. Serial No. 251,805.



Claim.—A metallic fence-post made up of a vertically-flanged base and a vertically-flanged post abutted therewith, the flanges of the posts being upset at their lower end throughout their width to form swellings and oppositely-disposed lips for engagement upon the sides of the corresponding flanges of the base, the upsetting of the post-flanges being done while the base and post are in abutting relation to effect a permanent connection therebetween.

820,320. **HEATING SYSTEM.** Frank Shurtleff, Moline, Ill., assignor of one-half to Edward H. Sleight, Moline, Ill. Filed May 1, 1905 Serial No. 258,251.



Claim.—1. The combination with a steam-heating system having a pipe connected to the bottom of all of the radiators for the return of the water of condensation and the discharge of air therefrom, of an air-riser pipe connected to said pipe for separating the air from the water therein, a condenser through which said air-pipe extends, an air-vent connected to said air-pipe beyond the condenser, and a water-return pipe also connected to said air-pipe beyond the condenser and leading back to the boiler.

2. The combination with a steam-heating system having a common return-pipe connected to the radiators, of an air-venting pipe connected to said return-pipe beyond the radiators, an ejector in said air-pipe to suck air therethrough, and a condenser beyond the ejector through which said vent-pipe extends.

3. The combination with a steam-heating system having a common return-pipe connected to the radiators, of an air-venting pipe connected to said return-pipe beyond the radiators, an ejector in said air-vent pipe operated by steam from the boiler of the system, a condenser through which said vent-pipe extends beyond the ejector, and a water-of-condensation-return pipe connected to said vent-pipe beyond the condenser and leading back to the boiler.

4. The combination with a steam-heating system having a common return-pipe connected to the radiators, of an ejector having its suction-pipe connected to said return-pipe above the water-level in the boiler, said ejector operating by steam from the boiler, a condenser having a pipe into which said ejector discharges leading to an air-vent, and a water-return pipe connecting said condenser-pipe and back to the boiler.

5. The combination with a steam-heating system having a common return-pipe leading from the radiators, of a plurality of air-vents connected to said pipe, and an inclosed casing for the vents, provided with a discharge-pipe.

6. The combination with a vacuum steam-heating system, of a plurality of air-vents common to the radiators thereof, an inclosed casing over said vents having a discharge-pipe with an outlet-valve, and a tank containing liquid in which the end of the pipe is sealed, having a float therein controlling said valve.

820,321. **OUTLET OR JUNCTION BOX.** CLARENCE C. SIBLEY, Perth Amboy, N. J., and GEORGE A. LUTZ, New York, N. Y. Filed Dec. 21, 1903. Serial No. 186,980.



Claim.—1. An electrical outlet or junction box provided with holes, channel-like members entering said holes to embrace the end portions of correspondingly-shaped conduits, means to detachably receive conduits in said members, and means for detachably connecting said members with said box, said members being provided with prongs bent into connection with a conduit to hold the members and conduits together, substantially as described.

2. An electrical outlet or junction box provided with holes, channel-like members having a bottom and two sides, open opposite the bottom, and opposed grooved portions on said sides, said members entering the holes in the box, and means for connecting said members with said box, said members being provided with prongs bent into connection with a conduit to hold the members and conduits together, substantially as described.

3. An outlet or junction box provided with holes, combined with members entering said holes to connect with conduits, said members having extensions passing into the box along its bottom, and means for detachably connecting said extensions with the bottom of the box, substantially as described.

4. An electrical outlet or junction box provided with holes, and members entering said holes and provided with prongs bent into connection with conduits through slots in said conduits to hold the members and conduits together, substantially as described.

5. An electrical outlet or junction box provided with holes, members entering said holes to receive conduits, said members having extensions passing into the box along its bottom, a plate held on the bottom of the box, and means for detachably connecting said plate with said extensions, substantially as described.

6. An electrical outlet or junction box provided with holes, members entering said holes and provided with extensions having lugs, a plate provided with slots to receive said lugs, and means for holding said plate upon the box, whereby said plate may retain several of said members in position, substantially as described.

7. An electrical outlet or junction box having holes and having intersecting grooves in its bottom alined with said holes, combined with members entering said holes to connect with conduits, said members being provided with extensions that are located in said grooves, and means for holding said members upon the box, substantially as described.

8. A bond-like member for holding a conduit to an outlet or junction box comprising a channel-like piece having a bottom and sides provided with opposed grooves to receive a conduit and provided with lugs adapted to be bent against the inner wall of a junction-box, substantially as described.

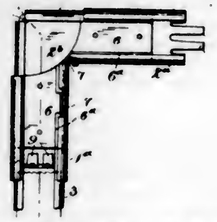
9. The combination of a box provided with holes, with a bond-like member having a bottom, and sides provided with grooved portions entering said holes, a conduit entering said member and provided with a slot, said member having a prong passing through said slot, and means for attaching said member to the box, substantially as described.

10. A bond-like member for holding a conduit to an outlet or junction box comprising a channel-like piece having a bottom, and sides provided with grooved portions, said member being provided with an extension adapted to be secured to a junction-box, said member also having a prong adapted to be bent into connection with a conduit through a slot in said conduit to hold the member and conduit together, substantially as described.

11. A bond for connection with a conduit comprising a channel-like piece having a bottom and sides provided with grooved portions and a prong adapted to be bent through a slot in a conduit, substantially as described.

820,322. **ELBOW FOR CONDUITS FOR ELECTRIC WIRES.** CLARENCE C. SIBLEY, Perth Amboy, N. J., and GEORGE A. LUTZ, New York, N. Y. Filed Dec. 21, 1903. Renewed Oct. 23, 1905. Serial No. 284,096.

Claim.—1. An elbow for conduits comprising a pair of members having channels and provided with grooved portions and movably connected together, and independent sections within said members provided with grooved portions entering the grooves of said members adapted to aline with the grooves of corresponding conduits and to receive the covers therefrom, substantially as described.



2. An elbow for conduits comprising a pair of members having channels and provided with opposed grooves and movably connected together, and independent sections within said members provided with grooved portions entering the grooves of said members adapted to aline with the grooves of corresponding conduits and to receive the covers therefrom, said sections having extended sides provided with grooves, substantially as described.

3. An elbow for conduits for electric wires comprising members having bottom and side walls, the latter being provided with opposed grooves, said members being movably connected together, correspondingly-shaped sections located in said members and provided with grooved portions entering the grooves of said members, said members being pivotally connected together, and said sections having sides extended to a point adjacent to said pivot, substantially as described.

4. An elbow for conduits comprising members movably connected together, means for closing the openings adjacent to the adjacent ends of said members, and sections located in said members and having their outer ends at a distance from the ends of the members to permit the entrance of the ends of conduits into said members, substantially as described.

5. An elbow for conduits comprising a pair of channel-like members provided with opposed grooves and pivotally connected together, correspondingly-shaped sections located in said members and having grooved portions entering the grooves of said members, the main portions of the members terminating at a distance from the pivot, and one side of the sections also terminating at a distance from the pivot to permit the members to be turned at angles, said sections having extended portions on the same side as the pivot to close the corresponding side of the channel in the various positions of adjustment of the members, and means to close the space between the opposite sides of the members and the sections, substantially as described.

6. An elbow for conduits comprising a pair of channel-like members movably connected together and adapted to receive correspondingly-shaped conduits said members having means for firmly connecting them with said conduits, to prevent movement of the conduits in a longitudinal direction, substantially as described.

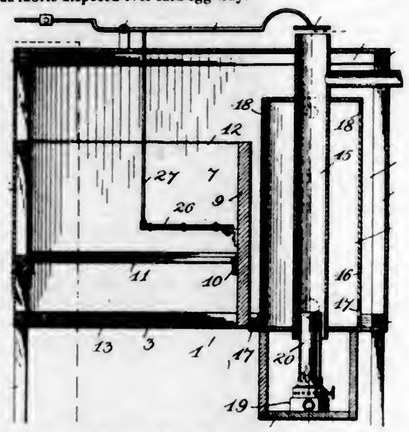
7. An elbow for conduits comprising a pair of channel-like members movably connected together and adapted to receive correspondingly-shaped conduits, said members being provided with prongs adapted to enter slots in the conduits and to be bent to lock the conduits to the members, substantially as described.

8. An elbow for conduits comprising channel-like members pivotally connected together and provided with opposed grooves, correspondingly-shaped sections located in said members and having grooved portions entering the grooves of the members, a guide or pocket being formed between the wall of the member and the corresponding wall of a section, and a flexible strip attached to the opposite member and adapted to slide in said guide or pocket to close the space between the corresponding ends of the members, substantially as described.

9. An elbow of the character described comprising a pair of channel-like members movably connected together and having opposed grooves, combined with correspondingly-shaped conduits having their end portions inclosed in said members to cover the ends of the conduit like a bond, and means for securing the members and conduits together from lengthwise displacement, substantially as described.

820,323. **INCUBATOR.** JOHN M. SONTAG, St. Charles, Ill. Filed Aug. 31, 1906. Serial No. 276,577.

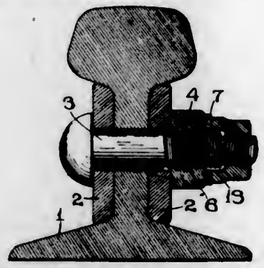
Claim.—1. An incubator comprising an open frame, a covering therefor, of porous material, a vertical partition in said frame, of less height than the depth of the latter, a heater on one side of the said partition, an egg-tray on the other side thereof, and a diaphragm of porous fabric disposed over said egg-tray.



2. An incubator comprising a casing, a vertical partition therein, of less height than the depth of said casing, dividing the latter into an egg-chamber and a heated chamber, an egg-tray in said egg-chamber, diaphragms of cloth closing the top and bottom of the egg-chamber, and a heater disposed in the heater-chamber.

3. A hot-air heater for incubators or the like comprising an inner cylinder or flue adapted to extend through the casing of an incubator, a damper for opening and closing the upper end of said flue, a branch outlet-flue adjacent to the upper end of the latter, a cylindrical jacket surrounding said pipe or flue within the incubator and having air inlet and outlet openings at its opposite ends, the lower open end of said pipe or flue being adapted to receive the chimney of a lamp or similar heater, substantially as described.

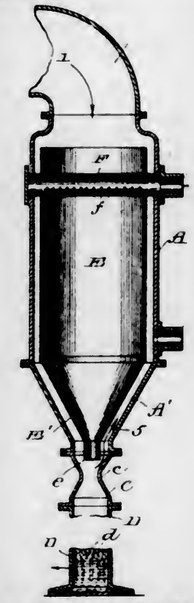
820,324. **NUT-LOCK.** JAMES B. TAYLOR, Sandoval, Ill., assignor of one-half to Sherman Dodge, Sandoval, Ill. Filed Nov. 16, 1905. Serial No. 287,733.



Claim.—In a nut-lock, the combination with a bolt provided with a right-hand-threaded portion and a left-hand-threaded portion, of a nut located on the right-hand-threaded portion, a washer positioned against the face of said nut, rearwardly-projecting ears integral with the upper corners of said washer for engaging the sides of the nut, a spring-lip integral with and projecting forwardly from the face of the washer, a lock-nut constructed to be positioned on the left-hand-threaded portion of the bolt, a cylindrical head integral with the rear side of the lock-nut, and there being a series of teeth formed on the rear face of the cylindrical head to be engaged by the spring-lip of the washer when the lock-nut is tightened; substantially as specified.

820,325. **JET-CONDENSER.** LEO VON TRESCKOW, New Orleans, La. Filed Mar. 5, 1906. Serial No. 304,400.

Claim.—1. A condenser comprising a cylindrical shell terminating in a funnel-shaped bottom with a water-leg mounted beneath said bottom, and a vapor-pipe connected to the top of said shell, a hollow cylinder mounted concentric with said shell, and provided with a funnel-shaped bottom, the said cylinder and its bottom being spaced away from the interior of the shell, a pipe for supplying water extending through said shell and said hollow cylinder, and provided with a plurality of perforations opening into said hollow cylinder, and an exhaust-pipe connected to the annular space between said cylinder and said shell, substantially as described.



2. A condenser comprising a cylindrical shell terminating in a funnel-shaped bottom with a water-leg mounted beneath said bottom, and a vapor-pipe connected to the top of said shell, a hollow cylinder mounted concentric with said shell, and provided with a funnel-shaped bottom, the said cylinder and its bottom being spaced away from the interior of the shell, a pipe for supplying water extending through said shell and said hollow cylinder, and provided with a plurality of perforations opening into said hollow cylinder, and an exhaust-pipe connected to the annular space between said cylinder and said shell, substantially as described.

3. A condenser comprising an outer shell, an inner shell mounted in said outer shell but spaced apart from the inner walls of said outer shell, the said inner shell being open at the top and provided with a tapered bottom with an opening therethrough, means for carrying the vapors to the top of said inner shell, means for spraying water into said inner shell, and a suction-pipe opening into the interior of said outer shell exterior to said inner shell, substantially as described.

4. A condenser comprising an outer shell, an inner shell mounted in said outer shell but spaced apart from the inner walls of said outer shell, the said inner shell being open at the top and provided with a tapered bottom with an opening therethrough, means for carrying the vapors to the top of said inner shell, means for spraying water into said inner shell, means for carrying off the liquids from the base of the inner shell, and a suction-pipe opening into the interior of said outer shell exterior to said inner shell, substantially as described.

5. A condenser comprising a cylindrical shell terminating in a funnel-shaped bottom with means for carrying off the liquids from the bottom of said shell, a vapor-pipe connected to the top of said shell, a hollow cylinder mounted concentric with said shell, and provided with a funnel-shaped bottom, the said cylinder and its bottom being spaced away from the interior of the shell, means for spraying water into the upper portion of said cylinder, and an exhaust-pipe connected to the annular space between said cylinder and said shell, substantially as described.

6. A condenser comprising a cylindrical shell terminating in a funnel-shaped bottom, with means for carrying off the liquids from the bottom of said shell, and a vapor-pipe connected to the top of said shell, a hollow cylinder mounted concentric with said shell, and provided with a funnel-shaped bottom, the said cylinder and its bottom being spaced away from the interior of the shell, means for spraying water into the upper portion of said cylinder, and an exhaust-pipe connected to the annular space between said cylinder and said shell, substantially as described.

vided with a plurality of perforations opening into said hollow cylinder, and an exhaust-pipe connected to the annular space between said cylinder and said shell, substantially as described.

7. A condenser comprising a shell, a hollow cylinder mounted in said shell but spaced apart from the inner walls of said shell, the said hollow cylinder being open at the top and provided with a funnel-shaped bottom, means for carrying the vapors to the top of said hollow cylinder, and for carrying off the liquids from the base of said shell, means for spraying water into said hollow cylinder, and a suction-pipe opening into the interior of said shell exterior to said hollow cylinder, substantially as described.

8. A condenser comprising a cylindrical shell terminating in a funnel-shaped bottom with a water-leg mounted beneath said bottom, and a vapor-pipe connected to the top of said shell, a hollow cylinder open at the top mounted concentric with said shell, and provided with a funnel-shaped bottom, the said cylinder being mounted beneath said vapor-pipe, and having a diameter greater than that of said vapor-pipe, the said cylinder and its bottom being spaced away from the interior of the shell, means for spraying water into the upper portion of said cylinder, and an exhaust-pipe connected to the annular space between said cylinder and said shell, substantially as described.

9. A condenser comprising a cylindrical shell terminating in a funnel-shaped bottom with a water-leg mounted beneath said bottom, and a vapor-pipe connected to the top of said shell, a hollow cylinder open at the top mounted concentric with said shell, and provided with a funnel-shaped bottom, the said cylinder being mounted beneath said vapor-pipe, and having a diameter greater than that of said vapor-pipe, the said cylinder and its bottom being spaced away from the interior of the shell, a pipe for supplying water extending through said shell and said hollow cylinder, and provided with a plurality of perforations opening into said hollow cylinder, and an exhaust-pipe connected to the annular space between said cylinder and said shell, substantially as described.

10. A condenser comprising an outer shell, an inner shell mounted in said outer shell but spaced apart from the inner walls of said outer shell, the said inner shell being open at the top and provided with a tapered bottom with a downwardly-disposed nozzle, means for carrying the vapor to the top of said inner shell, means for spraying water into said inner shell, and a suction-pipe opening into the interior of said outer shell exterior to said inner shell, substantially as described.

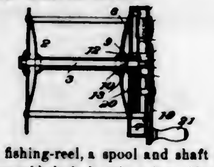
11. A condenser comprising an outer shell, an inner shell mounted in said outer shell but spaced apart from the inner walls of said outer shell, the said inner shell being open at the top and provided with a tapered bottom with a downwardly-disposed nozzle, means for carrying the vapor to the top of said inner shell, means for spraying water into said inner shell, means for carrying off the liquids from the base of the outer shell, and a suction-pipe opening into the interior of said outer shell exterior to said inner shell, substantially as described.

12. A condenser comprising a cylindrical shell terminating in a funnel-shaped bottom with means for carrying off the liquids from the bottom of said shell, a vapor-pipe connected to the top of said shell, a hollow cylinder mounted concentric with said shell, and provided with a funnel-shaped bottom, and a nozzle opening downward from said bottom, the said cylinder and its bottom being spaced away from the interior of the shell, means for spraying water into the upper portion of said cylinder, and an exhaust-pipe connected to the annular space between said cylinder and said shell, substantially as described.

13. A condenser comprising a cylindrical shell terminating in a funnel-shaped bottom, with means for carrying off the liquids from the bottom of said shell, and a vapor-pipe connected to the top of said shell, a hollow cylinder mounted concentric with said shell, and provided with a funnel-shaped bottom, and a downwardly-disposed nozzle, the said cylinder and its bottom being spaced away from the interior of the shell, a pipe for supplying water extending through said shell and said hollow cylinder, and provided with a plurality of perforations opening into said hollow cylinder, and an exhaust-pipe connected to the annular space between said cylinder and said shell, substantially as described.

14. A condenser comprising a shell, a hollow cylinder mounted in said shell but spaced apart from the inner walls of said shell, the said hollow cylinder being open at the top and provided with a funnel-shaped bottom with a downwardly-disposed nozzle, means for carrying the vapors to the top of said hollow cylinder, and for carrying off the liquids from the base of said shell, means for spraying water into said hollow cylinder, and a suction-pipe opening into the interior of said shell exterior to said hollow cylinder, substantially as described.

820,326. FISHING-REEL. GEORGE W. UPTON, Warren, Ohio. Filed Dec. 30, 1903. Serial No. 187,196.



Claim.—1. In a fishing-reel, a spool and shaft therefor, a sliding pinion mounted on said shaft, bearings for said pinion independent of the shaft, a clutch for locking said pinion to said shaft, and an actuating gear-wheel in mesh with said pinion.

2. In a fishing-reel, a spool and shaft therefor, a sliding pinion mounted on said shaft, inner and outer bearings for said pinion independent of said shaft, a clutch for locking said pinion to said shaft, and an actuating gear-wheel in mesh with said pinion.

3. In a fishing-reel, a spool and shaft therefor, a sliding pinion having a sleeve mounted on said shaft, an inner bearing having an opening through which the shaft and sleeve extend, an outer bearing having a hollow boss into which the end of the shaft projects, said pinion also fitting on said boss, a clutch for locking said sleeve to said shaft, and an actuating-gear-wheel in mesh with said pinion.

4. In a fishing-reel, a spool and shaft therefor, said shaft having a pin projecting therefrom, a sliding pinion having a cylindrical sleeve mounted on said shaft and formed with recesses or cut-outs, means for normally holding the recessed portion of such sleeve in engagement with said pin, and an actuating gear-wheel in mesh with said pinion.

5. A fishing-reel comprising a casing, a spool and pinion therefor, a gear-wheel in mesh with said pinion, and a crank fitted against the side of said casing and carrying said gear-wheel, said crank being eccentric to said spool.

6. A fishing-reel comprising a casing, a spool and pinion therefor, a gear-wheel in mesh with said pinion and a crank-disk fitted against the side of said casing and carrying said gear-wheel, said disk being eccentric to said spool.

7. A fishing-reel having its casing formed with a recess, a spool and pinion therefor, a gear-wheel in mesh with said pinion, and a crank-disk fitted in said recess and carrying said gear-wheel, said disk being located eccentrically to the said spool.

8. A fishing-reel having its casing formed with a recess, a spool and pinion therefor, a gear-wheel in mesh with said pinion, and a crank-disk fitted in said recess and carrying said gear-wheel, said disk being located eccentrically to the said casing and to said spool.

9. A fishing-reel having a cylindrical casing formed with a recess in one end, a spool mounted eccentrically to said casing and having a gear-pinion, a gear-wheel in mesh with said pinion, a disk fitted in said recess carrying said gear-wheel, said disk being located eccentrically to said casing, and a handle carried by said disk, as set forth.

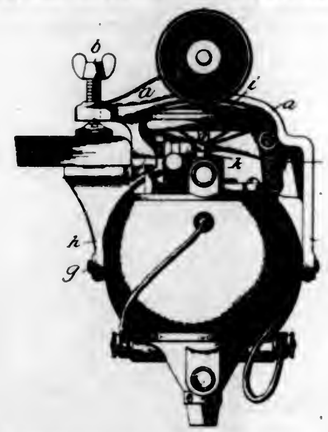
10. A fishing-reel comprising a spool, and shaft therefor having a laterally-extended pin, a pinion and sleeve fitted on said shaft, bearings for said pinion and sleeve independently of said shaft, means engaging said pinion for normally holding said sleeve in locked relation to the pin on said shaft, a device for disengaging said sleeve from said pin, a gear-wheel, and a crank-disk for actuating the latter, as set forth.

11. A fishing-reel comprising a casing, a spool and shaft therefor, a pinion normally held locked to said shaft, a gear-wheel with which said pinion meshes, a plate engaging said pinion for locking it to and unlocking it from said shaft, and a sliding button having a hooked portion and a thickened portion for alternately engaging said plate for moving it in opposite directions.

320,327. SEWING-MACHINE MOTOR. HAROLD R. WELLMAN, Riverside, Ill., assignor to Western Electric Company, Chicago, Ill., a Corporation of Illinois. Filed Aug. 17, 1905. Serial No. 274,608.

Claim.—1. The combination with a sewing-machine table, of a bracket secured to said table and having arms depending beneath the table, a driven wheel mounted on said bracket, a motor device pivotally mounted beneath the table on said depending arms, a driving-wheel of said motor angularly disposed to the driven wheel and having frictional engagement therewith, and means for varying the speed of rotation of the driven wheel.

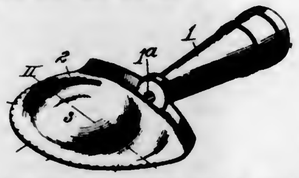
2. In a sewing-machine motor, the combination with a table, of a bracket secured to said table, a counter-shaft having bearings in said bracket and carrying a driving-pulley and a driven wheel for imparting a rotary motion to said shaft and pulley, a motor mounted in said bracket beneath said counter-shaft and below said table, a driving-wheel operated by said motor and having angularly-disposed frictional engagement with the driven wheel, and means for placing said driving-wheel into operative relation with the driven wheel.



3. The combination with an electric motor carrying a driving-wheel, of a supporting-bracket in which said motor is pivotally mounted, a counter-shaft having bearings in said bracket and carrying a driven wheel, a spring normally holding said driving-wheel out of operative relation to the driven wheel, a switch mounted on the frame of the motor for closing the circuit of the motor, and means whereby said switch is first operated and said motor then tilted to place the driving and driven wheels into operative engagement.

4. In a sewing-machine motor, the combination with a table, of a bracket secured to said table and having depending arms, an electric motor pivotally mounted on said depending arms beneath the table, a counter-shaft having bearings in said bracket and carrying a driving-pulley, a driven wheel keyed to said counter-shaft for imparting a rotary motion to said shaft and pulley, a driving-wheel adapted to be operated by said motor, a spring normally holding said driving-wheel out of operative relation to the driven wheel, a switch mounted on the frame of the motor for closing the circuit of the motor, and means whereby said switch is first operated and said motor then tilted to place the driving and driven wheels into operative relation.

820,328. HOSE-NOZZLE. CHARLES S. ALDERMAN, St. Louis, Mo. Filed July 27, 1905. Serial No. 271,397.



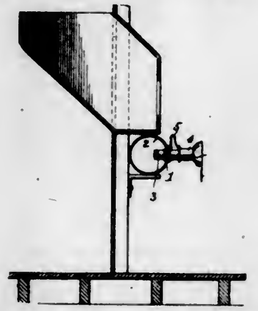
Claim.—1. A hose-nozzle comprising a nozzle proper and a deflector at the forward end of said nozzle having an arch centrally located therein.

2. A hose-nozzle comprising a nozzle proper and a deflector at the forward end of said nozzle having an arch centrally located therein; said deflector having its edge curved upwardly from the base of said arch.

3. A hose-nozzle comprising a nozzle proper and a deflector at the forward end of said nozzle having an arch centrally located therein; said deflector having its edge curved upwardly from the base of said arch and provided with serrations.

820,329. CORN-HUSKING MACHINE. OSCAR ALLEN, Mount Morris, N. Y. Filed Nov. 17, 1905. Serial No. 287,886.

Claim.—1. A device of the character described, comprising a hollow cylindric knife effective to receive the stem portion of a corn-ear, means for incasing said knife, means arranged in connection with said knife, adapted to receive the butt-end of a corn-ear and means for delivering fluid under pressure into said cylinder or knife against the cut end of the corn-ear and against the knife-head for removing the husks, detached or severed by said knife.



2. A device of the character described, comprising a hollow cylindric knife or cutter adapted to receive the stem portion of a corn-ear, means for incasing said knife or cutter, and means for delivering fluid under pressure against the head of said knife for the retention thereof in its effective position and against the cut end of the corn-ear.

3. A device of the character described, comprising a hollow cylindric knife or cutter adapted to receive the stem portion of a corn-ear, means for incasing said knife or cutter, a yielding sleeve or cuff arranged in connection with said cylindric knife and adapted to be engaged by the butt-end of a corn-ear, and means for delivering liquid under pressure against the head of said knife for the retention thereof in its effective position and against the cut end of the corn-ear.

4. A device of the character described, comprising a hollow cylindric knife or cutter adapted to receive the stem portion of a corn-ear and having ports near its headed end, means for incasing said cutter, a yielding sleeve or cuff arranged in connection with said knife or cutter and adapted to receive the butt-end of a corn-ear, and means for delivering liquid under pressure against the head end of said knife, or through said ports into the interior of the latter and against the cut end of the corn-ear.

5. A device of the character described, comprising a fixed nozzle, a hollow cylindric knife or cutter for receiving the stem portion of a corn-ear, having a headed end and arranged within said nozzle and equipped with ports just inward from its headed end, a yielding cuff or sleeve arranged in connection with said cutter or knife and adapted to receive the butt-end of a corn-ear, and means for delivering liquid under pressure against said headed end of the knife, or through said ports thereof and against the cut end of the corn-ear.

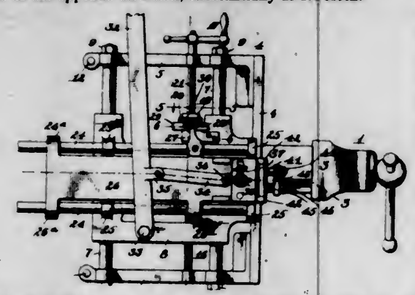
6. A device of the character described, comprising a fixed nozzle, a hollow cylindric knife having a headed end and ports near said headed end and arranged within said nozzle, a yielding cuff or sleeve arranged upon said nozzle and having forward end cup-shaped terminal adapted to receive the butt-end of a corn-ear, a spring interposed between said nozzle and cuff or sleeve to hold said cuff or sleeve upon said knife or cylinder, normally in a forwardly-projected position, and means for delivering liquid under pressure against the headed end of said knife or cylinder or through its ports into the interior of the latter and against the cut end of the corn-ear.

7. A device of the character described, comprising a knife adapted to sever the corn-ear husks, and a compressed-air-pressure-delivering chamber or receptacle having an adjunctive part effective as a guide for said knife, said knife also being adapted to deliver the liquid under pressure to the corn-ear for the removal of the severed husks and against the cut end of the corn-ear.

820,330. PLANING-MACHINE. CHARLES H. AMIDON, Buffalo, N. Y. Filed June 26, 1902. Serial No. 113,359.

Claim.—1. In a hand planing-machine, the combination with the frame having a revoluble screw arranged therein, of a transversely-movable feed-carriage having threaded connection with said feed-screw, feeding mechanism carried by said feed-carriage and adapted for engagement with said feed-screw, a tool-holding carriage located on the feed-carriage and being longitudinally movable thereon, a trip-bar adjustably secured to said tool-holding carriage

and adapted to actuate the feed mechanism on operating the said tool-holding carriage to cause the feeding mechanism to move lengthwise on the feed-screw and move the feed-carriage in one direction, and means for revolving said feed-screw to cause the feed-carriage to move in the opposite direction, substantially as set forth.



2. In a hand planing-machine, the combination with an open frame having its front end adapted to be held in a vise, means for supporting the rear end of the frame and adjusting the same vertically, a feed-carriage movable transversely on the frame, and a tool-holding carriage movable longitudinally on the feed-carriage, substantially as set forth.

3. In a hand planing-machine, the combination with the frame having its front end adapted to be held in a vise, means for adjusting the front end of the frame, means for supporting the rear end of the frame and adjusting the same vertically, a feed-carriage laterally movable on said frame, and a tool-holding carriage longitudinally movable on the feed-carriage, substantially as set forth.

4. In a hand planing-machine, the combination with the frame having its front end adapted to be held between the jaws of a vice, an adjusting-screw operatively connected to the front end of the frame to adjust the same vertically, adjusting and supporting screws operatively connected to the rear end of the frame, a feed-carriage movable in one direction, and a tool-holding carriage movable in another direction, substantially as set forth.

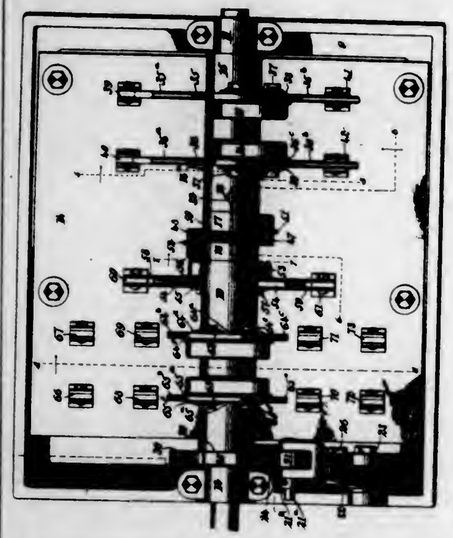
5. In a hand planing-machine, the combination with an open frame having its front end adapted to be held in a vise, vertical adjusting and supporting screws having threaded connection with the rear end of the frame, a feed-carriage movable transversely on the frame, and a tool-holding carriage movable lengthwise on the feed-carriage, substantially as set forth.

6. In a hand planing-machine, the combination with the frame, of a transverse feed-screw revolubly secured in said frame, a feed-carriage having a threaded transverse opening with which said feed-screw engages, a ratchet-wheel splined to said feed-screw so as to move lengthwise thereon but turn with the same, a ratchet-arm held loosely on said screw, said ratchet-wheel and ratchet-arm being connected to the feed-carriage so as to move with the same, a pawl pivotally held on said ratchet-arm, a reciprocating tool-holding carriage located on the feed-carriage and being movable at an angle to the movement of the latter, and an adjustable trip secured to said tool-holding carriage to actuate the ratchet-arm, substantially as set forth.

820,331. **REVERSING-SWITCH.** JOHN N. ANDERSON, New York, N. Y., assignor to Charles W. Hoffman, New York, N. Y. Filed June 23, 1905. Serial No. 266,561.

Claim.—1. In a reversing-switch, the combination of an actuating-shaft, a quick-break sleeve mounted thereupon and provided with contact-blades, stationary contact members disposed within the paths of said contact-blades, spring-tensioned mechanism connected with said quick-break sleeve for causing said contact-blades to snap into and out of engagement with said stationary contact members, a sleeve connected with said actuating-shaft and actuated thereby but having a motion relatively thereto so as to move immediately when said actuating-shaft begins to move, and contact members to be opened and closed by movements of said last-mentioned sleeve.

2. In a reversing-switch, the combination of an actuating-shaft, a quick-break sleeve mounted loosely thereupon, contacts to be opened and closed by movements of said sleeve, spring-controlled mechanism connected with said quick-break sleeve for turning the same rapidly, another sleeve mounted upon said actuating-shaft, contacts controllable by movements of said last-mentioned sleeve, a cam engaging said first-mentioned sleeve and provided with notches, a member engaging said notches and adapted to hold the cam in certain predetermined positions, and a spring for forcing said member against said cam.



3. In a reversing-switch, the combination of an actuating-shaft, a sleeve mounted rigidly thereupon, another sleeve mounted loosely upon said shaft, spring mechanism connecting said sleeves together so as to allow said last-mentioned sleeve to be actuated by the tension of said spring, a cam connected with said last-mentioned sleeve, spring-controlled mechanism for holding said cam in predetermined positions until said spring acquires a certain tension and then causing the release of said cam, quick-break contacts connected with said last-mentioned sleeve and with said cam to be actuated when said cam is thus released, and other contacts controllable by movements of said actuating-shaft, said contacts last mentioned coacting electrically with said contacts first mentioned.

4. In a reversing-switch, the combination of an actuating-shaft, a quick-break sleeve mounted thereon, contacts connected with said quick-break sleeve and opened and closed by movements thereof, a spring-tensioned mechanism for rapidly turning said quick-break sleeve, a sleeve connected with said actuating-shaft and operated thereby but having a limited movement relatively thereto, and contacts to be opened and closed by said last-mentioned sleeve.

5. In a reversing-switch, the combination of stationary contact members, wiring connected thereto, a quick-break sleeve provided with contact-blades for engaging and disengaging said stationary contact members, a spring-controlled mechanism for actuating said quick-break sleeve, an actuating-shaft provided with means for restraining quick-break sleeve while under tension from said spring-controlled mechanism, and means controllable by movements of said actuating-shaft for suddenly releasing quick-break sleeve while the same is thus under tension.

6. In a reversing-switch, the combination of an actuating-shaft, contact members disposed adjacent thereto, mechanism controllable by movements of said actuating-shaft for opening and closing said contacts, a sleeve connected with said actuating-shaft and controllable by movements thereof, said sleeve having a lost motion relatively to said actuating-shaft so as not to move immediately when said actuating-shaft begins to move, spring-controlled mechanism connected with said shaft and with said sleeve so as to tension said sleeve relatively to said shaft, mechanism for temporarily restraining movements of said sleeve relatively to said shaft, and means for suddenly releasing said sleeve while same is thus under tension.

7. In a reversing-switch, the combination of an actuating-shaft, a quick-break sleeve mounted loosely thereon, contacts to be opened and closed by movements of said sleeve, a pair of sleeves journaled loosely upon said shaft and connected together by a spring mechanism controllable by said shaft for turning one of said last-mentioned sleeves while holding the other stationary, mechanism for connecting together said sleeve thus turned and said quick-break sleeve, contacts to be opened and closed by said quick-break sleeve, and other contacts to be opened and closed by movements of said actuating-shaft independently of the movements of said quick-break sleeve, said contacts last mentioned coacting electrically with said contacts first mentioned.

8. In a reversing-switch, the combination of an actuating-shaft, a quick-break sleeve mounted loosely thereon, contacts to be opened and closed by movements of said sleeve, a pair of sleeves mounted loosely upon said shaft and connected together by a spring mechanism controllable by said shaft for turning one of said last-mentioned sleeves while holding the other one stationary, mechanism for connecting together said sleeve thus turned and said quick-break sleeve, and contacts to be opened and closed by said quick-break sleeve.

820,332. **IRRIGATION-DAM.** ALBERT W. APPLEGATE, Brawley, Cal., assignor of one-half to Charles F. Eckert, Adolph F. Eckert, and Henry Eckert, Brawley, Cal. Filed Aug. 3, 1905. Serial No. 272,518.

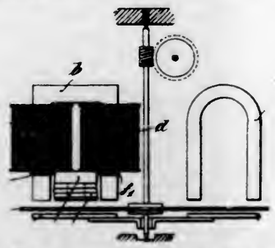


Claim.—1. An irrigation-dam comprising a sluiceway, a weir board or gate mounted to swing in said sluiceway, and means for holding the gate in closed position, the said means being of a material adapted to be washed away by the water whereby the water-pressure may open the weir-board.

2. An irrigation-dam comprising a frame having a sluiceway, a bar extending across the upper portion of the sluiceway and having a downward projection, a weir-board pivoted at its lower edge in said sluiceway and having at its top edge a notch for receiving said projection and means engaging with said projection and board for temporarily holding the board in closed position.

3. An irrigation-dam comprising a casing having a sluiceway, a bar extending across the upper portion of the sluiceway, a weir-board pivoted at its lower edge in the sluiceway, and means for temporarily sealing the weir-board to said bar.

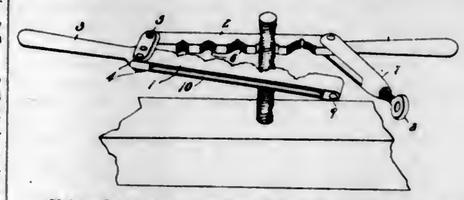
820,333. **ELECTRICITY-METER FOR ALTERNATING CURRENTS.** HERMANN ARON, Charlottenburg, Germany. Filed May 27, 1904. Serial No. 210,022.



Claim.—1. In an alternating-current electricity-meter, the combination with a rotary member and an armature disposed on one side of the same, of a pair of shunt magnet-coils upon the opposite side of said rotary member provided with cores magnetically connected at the ends farthest from said rotary member, one or more short-circuited coils for varying the relative phases of current in said magnet-coils, a bridge-piece between the opposite ends of said magnet-cores adapted to form therewith an imperfect magnetic circuit, and a series magnet-coil carried by said bridge-piece.

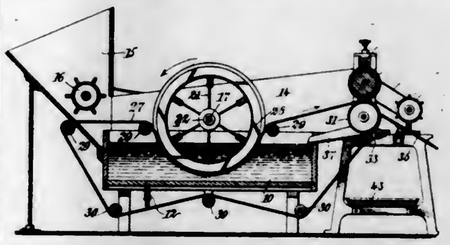
2. In an alternating-current electricity-meter, the combination with a rotary member and an armature disposed on one side of the same, of a pair of shunt magnet-coils upon the opposite side of said rotary member provided with cores magnetically connected at the ends farthest from said rotary member, one or more short-circuited coils for varying the relative phases of current in said magnet-coils, a bridge-piece between the opposite ends of said magnet-cores adapted to form therewith an imperfect magnetic circuit, a series magnet-coil carried by said bridge-piece, and a magnetic brake comprising a permanent magnet and an armature disposed on opposite sides of said rotary member.

820,334. **SCREW-CUTTING PLATE.** PETTER BACKSTRÖM, Minneapolis, Minn. Filed Sept. 18, 1905. Serial No. 278,920.



Claim.—In a device of the class described, a plate member having a longitudinal groove and laterally-extending lugs, a mating plate member pivoted between said lugs and having a pivoted screw-carrying clip, said p ate members being provided with oppositely-extending handles; in combination with an auxiliary clamp having a groove-engaging claw and a plate-engaging flange, and a plate-engaging set-screw in said flange.

820,335. **MACHINE FOR DIPPING TOBACCO.** REGINALD BAILEY, Winston Salem, N. C. Filed June 30, 1905. Serial No. 267,739.



Claim.—1. In a machine for dipping tobacco the combination of a vat, a drum having annular rims spaced apart from each other to form flanges and mounted over the vat, and an endless apron having one of its runs passing into the vat beneath the drum and coacting with the flanges thereof.

2. In a machine for dipping tobacco the combination of a vat, a drum having annular rims spaced apart from each other to form flanges and mounted over the vat, an endless apron having one of its runs passing into the vat beneath the drum and coacting with the flanges thereof, means at one end of the machine for delivering the tobacco to the apron, and pressing-rollers at the other end of the machine through which the apron and the tobacco pass to extrude the superfluous liquid.

3. In a machine for dipping tobacco the combination of a vat, a drum having annular rims spaced apart from each other to form flanges and mounted over the vat, an endless apron having one of its runs passing into the vat beneath the drum and coacting with the flanges thereof, the lower run of the apron passing under the vat, feeding means at one end of the machine for delivering tobacco to the apron, and pressing means at the other end of the machine for extruding the superfluous liquid from the tobacco.

4. In a machine for dipping tobacco the combination of a vat, a drum having annular rims spaced apart from each other to form flanges and mounted over the vat, an endless apron having one of its runs passing into the vat beneath the drum and coacting with the flanges thereof, a feed-hopper located at one end of the machine over the said run of the apron and discharging the tobacco therein, and means at the other end of the machine for extruding the superfluous liquid from the tobacco.

5. In a machine for dipping tobacco the combination of a vat, a drum having annular rims spaced apart from each other to form flanges and mounted over the vat, an endless apron having one of its runs passing into the vat beneath the drum and coacting with the flanges thereof, a feed-hopper located at one end of the machine over the said run and discharging the tobacco thereon, and means at the other end of the machine for extruding the superfluous liquid comprising two vertical rollers between which the apron and tobacco pass.

6. In a machine for dipping tobacco, the combination of a vat, a drum operating therein, an endless apron having one run adapted to move into the vat under the drum, a feed-hopper located at one

end of the machine over the said run of the apron and discharging the tobacco thereon, a means at the other end of the machine for extruding the superfluous liquid from the tobacco, and means for removing the tobacco from the apron after the operation of said means for extruding the superfluous liquid.

7. In a machine for dipping tobacco, the combination of a vat, a drum operating therein, an endless apron having one run adapted to move into the vat under the drum, a feed-hopper located at one end of the machine over the said run of the apron and discharging the tobacco thereon, a means at the other end of the machine for extruding the superfluous liquid from the tobacco, means for removing the tobacco from the apron after the operation of said means for extruding the superfluous liquid, and a scraper coacting with the apron and serving to remove the tobacco from the apron after the operation of said means for extruding the superfluous liquid.

8. In a machine for dipping tobacco, the combination of a vat, a drum operating therein, an apron adapted to run under the drum into the vat, a means at one end of the machine for feeding the tobacco onto the apron, a means at the other end of the machine for extruding the superfluous liquid from the tobacco, and means for removing the tobacco from the apron.

9. In a machine for dipping tobacco the combination of a vat for containing liquid, means for moving the tobacco through the vat, means whereby to form an inclosed passage-way for the tobacco through the liquid in the vat, means for feeding the tobacco to said moving means, and means for pressing the superfluous liquid from the tobacco.

10. In a machine for dipping tobacco, the combination with a vat for containing liquid, of means for moving tobacco through the vat, means whereby to form an inclosed passage-way for the tobacco through the liquid in the vat, a feeding means located at the receiving end of the machine, pressing-rollers at the discharge end of the machine, and means whereby said rollers may operate the feeding means and the moving means.

11. In a machine for dipping tobacco, the combination of a vat, a drum operating therein, an endless apron adapted to run into the vat under the drum, pressing-rolls at the discharge end of the machine between which rolls the apron and tobacco pass to extrude the superfluous liquid from the tobacco, said rolls driving the said apron and the apron driving the drum, a feeding means located at the receiving end of the machine and including a moving part, devices for driving said moving parts from said drum, a scraper adapted to remove the tobacco from the apron after it passes said pressing-rolls, a device coacting with the scraper to remove the tobacco from the same, and means for driving the last-named device from said pressing-rolls.

12. In a machine for dipping tobacco, the combination of a vat, a drum operating therein and having an annular cavity or groove extending around its periphery, and a tobacco-carrying apron adapted to run into the vat under the drum, the apron engaging the face of the drum to form with said groove or cavity an inclosure for the tobacco.

13. In a machine for dipping tobacco, the combination of a vat, a drum operating therein and having an annular cavity or groove extending around its periphery, and a tobacco-carrying apron adapted to run into the vat under the drum, the apron engaging the face of the drum to form with said groove or cavity an inclosure for the tobacco, the face of the drum having a reticulated web to permit the circulation of the liquid into said inclosure, for the purpose specified.

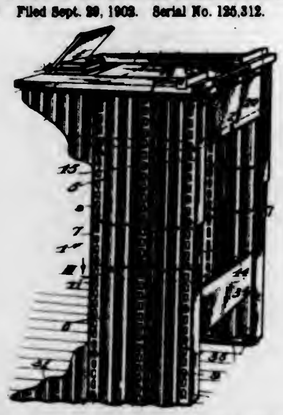
14. In a machine for dipping tobacco, the combination of a vat, a drum operating therein and having an annular cavity or groove extending around its periphery, a tobacco-carrying apron adapted to run into the vat under the drum, the apron engaging the face of the drum to form with said groove or cavity an inclosure for the tobacco, and a paddle carried by the drum and extending across said groove or cavity.

15. In a machine for dipping tobacco, the combination of a vat, a drum operating therein and having an annular cavity or groove extending around its periphery, a tobacco-carrying apron adapted to run into the vat under the drum, the apron engaging the face of the drum to form with said groove or cavity an inclosure for the tobacco, and a paddle carried by the drum and extending across said groove or cavity, the paddle lying in a plane essentially tangential to the drum to avoid picking up the tobacco from the apron.

16. A machine for dipping tobacco, comprising a vat, a drum operating therein, said drum having annular rims spaced from each other to form a groove or inclosure around the face of the drum, and also having a reticulated web extending between said rims at the inner peripheries thereof, and an apron adapted to run into the vat under the drum and engaging said rims to form with the drum an inclosure for the tobacco.

17. A machine for dipping tobacco, comprising a vat, a drum operating therein, said drum having annular rims spaced from each other to form a groove or inclosure around the face of the drum, and also having a reticulated web extending between said rims at the inner peripheries thereof, an apron adapted to run into the vat under the drum and engaging said rims to form with the drum an inclosure for the tobacco, and peripheral flanges projecting from the outer sides of the rims between which flanges the apron runs whereby to hold the apron in engagement with the drum.

820,336. SCHOOL DESK AND SEAT AND OTHER FURNITURE. ALBERT L. BANCROFT and GEORGE H. BANCROFT, Los Angeles, Cal. Filed Sept. 20, 1902. Serial No. 125,312.



Claim.—1. A standard for school furniture and the like comprising a plurality of overlapped, interlapping pieces of longitudinally-corrugated sheet metal, the upper end of the top piece and the lower end of the bottom piece being each provided with a flange, and means for securing the overlapping ends of said pieces together.

2. An adjustable standard for furniture and the like comprising a plurality of overlapped, interlapping pieces of longitudinally-corrugated sheet metal, the upper end of the top piece and the lower end of the bottom piece being each provided with a flange, and the overlapping portions of said pieces being provided with registering perforations, and bolts through said perforations.

3. An adjustable standard for furniture and the like comprising a plurality of overlapped, interlapping pieces of longitudinally-corrugated sheet metal, the upper end of the top piece and the lower end of the bottom piece being each provided with a flange, and the overlapping portions of said pieces being perforated, the perforated portions of said pieces being flat or standing in the planes of the sheets, and bolts through said perforations.

4. An adjustable standard for furniture and the like comprising a plurality of overlapped, interlapping pieces of longitudinally-corrugated sheet metal, one edge of each of which pieces is flanged lengthwise at substantially right angles to the plane of the sheet, and the upper end of the top piece and the lower end of the bottom piece being each provided with a flange, and the overlapping portions being perforated, and bolts through said perforations.

5. An adjustable standard for furniture and the like comprising a plurality of overlapped, interlapping pieces of longitudinally-corrugated sheet metal, each of uniform width throughout its length, brackets of corrugated metal secured to the end pieces of the standard to extend laterally in the plane of said sheets, and means for securing the overlapped ends of the main pieces together.

6. A desk comprising two perforated sheet-metal standards, a top member fastened to said standards and a shelf member having perforated flanges at its ends, bolts through the perforations and the standards of the shelf member, and a brace fastened to the standards and closing the space between the front edges of the top member and shelf member.

7. A desk comprising two longitudinally-corrugated sheet-metal standards spaced apart and each provided at its front edge with perforations, two braces secured in said perforations, one above the other, the upper brace forming a shelf and the lower brace forming a foot-rest, and a top and bottom for the shelf at the tops of said standards.

8. A desk comprising standards, each of which is formed of a plurality of sheets having straight longitudinal edges and connected for vertical adjustment, bracket extensions fastened to a longitudinal edge of the standards respectively, and a top member fastened to the tops of the standards.

9. A desk comprising standards each formed of corrugated sheets, the corrugations being of a determined depth, corrugated brackets, one on the edge of each standard, the corrugations of the brackets being of less depth than the corrugations of the standards, and a top member fastened to the standards and their brackets.

10. A desk-standard, comprising a plurality of sheets having vertical rows of slots, the upper and lower of said sheets being provided at top and bottom respectively, with flanges, a bracket fastened to the edge of the upper sheet and provided with a flange, and a foot fastened to an edge of the lower sheet.

11. A desk-top, flanged sheets forming supporting-standards therefor, a shelf member having downturned portions fastened to the standards below the desk, and a sheet fastened to the standards and forming the front of a book-box.

12. A desk-top, standards formed of flanged sheets supporting said desk-top, a shelf member fastened to the standards and having a flange at its front edge and a sheet fastened to said flange and to the standards to form the front of a book-box.

13. A desk-top, standards formed of corrugated, perforated and flanged sheets fastened to said top, a perforated flanged sheet, and bolts through the perforations of the standards to hold the flanged sheet in position to form a shelf under the desk-top.

14. A composite desk-standard constructed of corrugated sheets fitted together and having longitudinal rows of perforations, triangular top brackets and foot-pieces perforated along one edge, and bolts through the perforations of the several pieces to adjustably fasten the same together.

15. A desk comprising two standards at a distance apart, each formed from a plurality of overlapped, interlapping pieces of perforated, longitudinally-corrugated sheet metal, bolts for securing the overlapped pieces of metal together, a top secured to the tops of said standards, a foot-rest having its ends each provided with a plurality of perforations registering with the perforations of the standards, and bolts through said registering perforations for securing the foot-rest in position.

16. A desk provided with longitudinally-corrugated sheet-metal standards, the front edge of each standard being flanged lengthwise and perforated adjacent to the flange, and a foot-rest secured by said perforations and engaging with said flanges.

17. A composite desk-standard formed of longitudinally-corrugated and perforated sheets flanged at one end having longitudinal rows of bolts through said perforations for fastening the sheets together, the upper and lower ends of the standards thus formed being bent to form horizontal flanges, and flanged bracket and foot pieces perforated along one edge and fastened to the upper and lower sheets by means of bolts.

18. A desk-top, standards formed of sheet metal bent over at the top to form horizontal flanges, wedges between the desk-top and flanges, and means for fastening the top flanges and wedges in place.

19. A desk having its top channeled transversely, a slidable, reversible and invertible member in said channel, one side of said member comprising two pieces pivotally secured at their opposite ends to the ends of the other member so as to be stood at an angle to the plane of said member, and having their adjacent ends abutting each other when said members are in their normal position.

20. A desk having its top channeled transversely at one side of the center, a slidable, reversible and invertible member in said channel, one side of said member comprising two pieces pivotally secured at their opposite ends to the ends of the other member so as to be stood at an angle, and having their adjacent ends abutting each other when in their normal position, one of said two members being longer than the other.

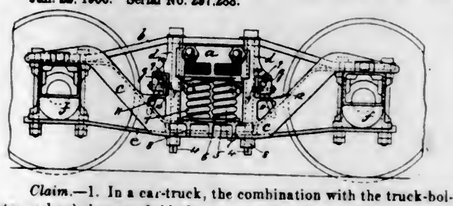
21. In school furniture, a desk having a top furnished with a channel and with grooved cleats on opposite sides of said channel, and a member sliding in said channel and furnished with a corresponding grooved cleat.

22. In school furniture, a desk having a top furnished with a channel and grooved cleats at the opposite sides of said channel, and a sliding member having a hinged leaf provided with a grooved cleat adapted to form a continuation of the first-mentioned cleats when the sliding member is in one position and to form a ledge for a book-rest when the sliding member is in another position.

23. A desk having a channeled top and a sliding member in said top one side of which is hard-finished to form the top of the desk and the other is composed of soft wood to form a drawing-board.

24. A desk having a channeled top and a sliding member to fit the channel thereof, one side of said sliding member being formed of a soft-wood portion and the other side formed of two leaves of hard-finished wood hinged to the soft-wood portion.

820,337. CAR-TRUCK. JOSHUA B. BARNES, Springfield, Ill. Filed Jan. 22, 1906. Serial No. 297,288.

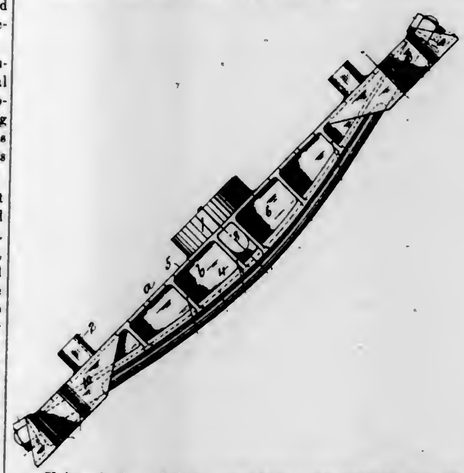


Claim.—1. In a car-truck, the combination with the truck-bolster and axle-boxes, of side frames comprising respectively an arch-bar, an inverted arch-bar consisting of an integral casting having the truck-columns and bolster spring-seat integral therewith, and a bottom tie-bar, means for fixing the said bars and axle-boxes together, and transoms connecting the side frames to each other at a suitable distance above the said seat, substantially as described.

2. In a car-truck, the combination with the truck-bolster, the transoms, and the axle-boxes, of side frames comprising respectively an arch-bar, an inverted arch-bar consisting of an integral casting having the truck-columns and bolster spring-seat integral therewith, brackets integral with the truck-columns at a suitable distance above the said seat and adapted for the attachment thereto of the transoms, and means for fixing the said bars and axle-boxes together, substantially as described.

3. In a car-truck, an inverted arch-bar consisting of an integral casting having the truck-columns and bolster spring-seat integral therewith, the said bar being channeled at the top and bottom, substantially as described.

820,338. CAR-TRUCK BOLSTER. JOSHUA B. BARNES, Springfield, Ill. Filed Feb. 1, 1906. Serial No. 299,002.

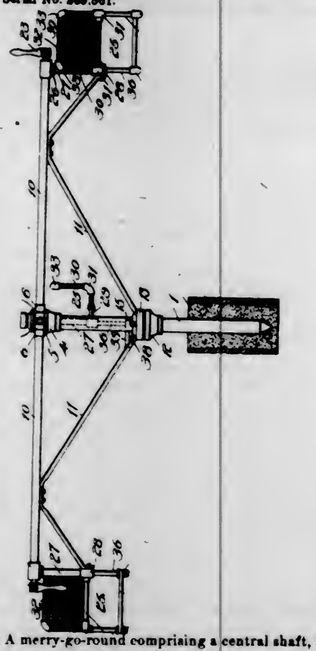


Claim.—1. A car-bolster, comprising a cast-steel body having the center plate, side bearings, and spring-seats integral therewith, and having a channel formed in its under side, a truss-bar adapted to bear within the channel against the said body for its entire length, and projecting through each end thereof, and means for securing and tightening the truss-bar to the said body, substantially as described.

2. A car-bolster, comprising a cast-steel body, having the center plate, side bearings, and spring-seats integral therewith, and having a channel formed in its under side, the middle and end portions of the said body being T-shaped and box-shaped respectively, in cross-section, upright ribs between, and integral with the top flanges and web of the said middle portion, a truss-bar adapted to bear within the channel against the said body for its entire length, and pro-

jecting through each end thereof, and means for securing and tightening the truss-bar to the said body, substantially as described.

820,339. MERRY-GO-ROUND. JOHN B. BARNETT, Fort Worth, Tex., assignor of one-half to W. C. Forbess, three-eighths to William Capps, and one-eighth to G. H. Clifford, Fort Worth, Tex. Filed July 15, 1905. Serial No. 269,861.



Claim.—1. A merry-go-round comprising a central shaft, a collar rigidly mounted on said shaft and having a circular cog-rack thereon, a spider rotatably mounted on said collar and provided with a plurality of radiating bearing-arms, frame-arms secured in said bearing-arms, power-transmitting shafts mounted in said frame-arms and engaging the bearings of said bearing-arms, bevel-pinions carried by said shafts and engaging said rack, means for driving said shafts, chairs suspended from said frame-arms, braces for said frame-arms and chairs, and brace-supports engaging said central shaft and consisting of a rotatable collar and a non-rotating collar and ball-bearings interposed.

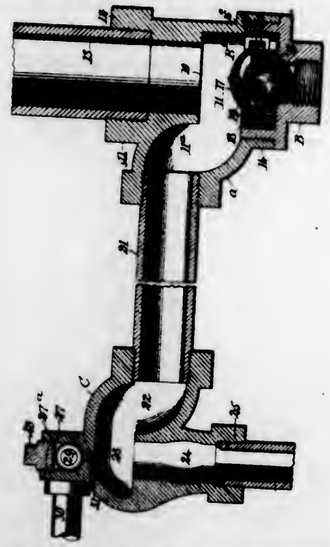
2. A merry-go-round having a central shaft, a collar rigidly mounted on said shaft and provided with a circular rack thereon, a spider mounted on said collar and provided with a plurality of radiating bearing-arms, hollow frame-arms screwed into said bearing-arms, power-transmitting shafts journaled in said frame-arms and the bearings of said bearing-arms, beveled pinions carried by said shafts and engaging said rack, and ball-bearings mounted on said central shaft to prevent friction caused by the upward pressure of said spider.

3. In a merry-go-round provided with a central stationary shaft and collar rigidly mounted thereon and carrying a circular rack; a spider mounted on said collar and provided with a plurality of radiating bearing-arms, radiating frame-arms secured in the bearings of said bearing-arms, power-transmitting shafts journaled in said frame-arms and in said bearing-arms and carrying pinions meshing with said rack, a plate mounted on said spider and rotating with said spider, a stationary plate above said rotating plate and rigid with said central shaft, ball-bearings interposed between said plates, and a cap screwed on said central shaft and made stationary therewith.

4. In a merry-go-round provided with a central stationary shaft and radiating arms carrying seats at the outer ends thereof operatively mounted on said shaft; gearing for driving said arms, hollow braces attached to said arms and said seats, supports for said braces consisting of a rotating collar and a non-rotating collar with ball-bearings interposed mounted on said shaft, and lugs formed integral with said rotating collar and projecting within the lower ends of said braces.

5. In a merry-go-round provided with a central stationary shaft and a circular rack stationary on said shaft; a spider mounted above said rack and provided with a plurality of bearing-arms, hollow radiating frame-pieces carried by said arms, said frame-pieces being provided with bearings in their outer ends, power-transmitting shafts journaled in said bearings and in the bearings of said bearing-arms and carrying beveled pinions meshing with said rack, means for driving said shafts, and ball-bearing devices for holding said spider in place.

820,340. TRACK-SANDING DEVICE. FREDERICK BASON, Chicago, Ill. Filed Oct. 18, 1905. Serial No. 283,256.

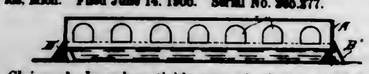


Claim.—1. In a track-sanding device, an ejector or jet-pump, a source of sand-supply, and a connection between the ejector and sand-supply, the sand-supply being provided with a valved air-inlet adjacent to said connection.

2. In a track-sanding device, a receptacle for sand, means for connecting the said receptacle with a source of sand-supply, the said receptacle having a valve-controlled opening at its bottom portion below the sand-supply, which opening is in communication with the outside atmosphere, an ejector, means for connecting said ejector with a source of fluid-supply under pressure, and a tubular connection between the said sand-receptacle and the ejector.

3. In a track-sanding device, an ejector having a curved side passage in communication with its main chamber, means for connecting the said ejector with a source of fluid-supply under pressure, a casing, means for supplying sand to the said casing, the said casing having a curved side passage and an opening in the bottom in communication with the outside atmosphere, a ball-valve located at said opening, normally closing the same, an apertured jacket extending over the said valve and the opening at which it is located, a shield attached to the said jacket and having a flanged portion extending down around the apertured portion of the jacket and spaced the re-from, and a tubular connection between the side passage of the ejector or jet-pump and the said passage of the said casing.

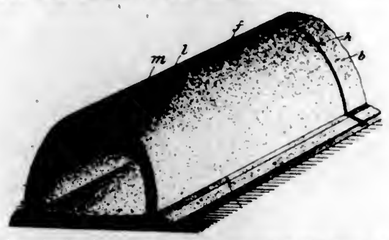
820,341. INSECTICIDE-TRAP. EBENEZER S. BEDFORD, Grand Rapids, Mich., assignor of one-half to John R. Hunsicker, Grand Rapids, Mich. Filed June 14, 1905. Serial No. 265,277.



Claim.—1. In an insecticide-tray, a basin formed of sheet metal, with upwardly-projecting inclined walls having a shoulder thereon, and a screen resting upon said shoulder and having openings in its sides, substantially as and for the purpose set forth.

2. In an insecticide-tray, a basin having upwardly-projecting inclined walls, a shoulder formed in the inner incline, a screen having a flat top and downwardly-projecting sides arranged to rest on said shoulder and having openings immediately above the upper edge of the inclined wall, and with small apertures through the top of the screen, substantially as and for the purpose set forth.

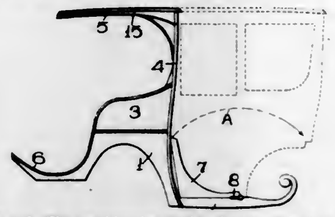
820,342. CULVERT CONSTRUCTION. HERMAN BESSER, Alpena, Mich. Filed May 4, 1905. Serial No. 258,768.



Claim.—1. A culvert construction comprising side pieces meeting at their upper edges and having strengthening elements embedded therein, the strengthening elements in one projecting beyond the edge thereof and overlapping a strengthening element in the other; said side pieces each being provided with a groove along its upper edge, said grooves registering with each other and constituting a receptacle for a plastic joint.

2. A culvert construction comprising side pieces meeting at their upper edges and having strengthening elements embedded therein, the strengthening elements in one projecting beyond the edge thereof and overlapping a strengthening element in the other; said side pieces each being provided with a groove along its upper edge, said grooves registering with each other and constituting a receptacle for a plastic joint; and a strengthening-bar located in said joint and engaging said projecting portions of the strengthening elements.

820,343. VEHICLE-BODY. WILLIAM H. F. BLUME, St. Louis, Mo. Filed July 24, 1905. Serial No. 271,059.



Claim.—1. The combination with a Stanhope body, of a supporting-bracket hinged to the rear side of said Stanhope body, and a coupé-body constructed to be positioned on the bracket against the Stanhope body; substantially as specified.

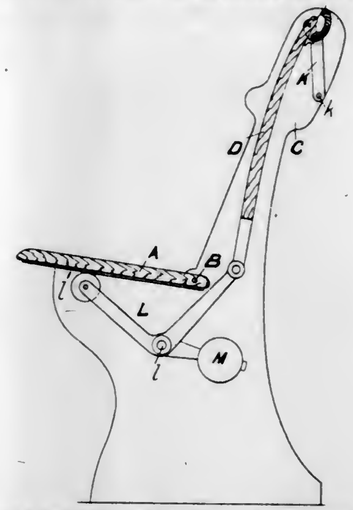
2. The combination with a Stanhope body, of a supporting-bracket hinged to the rear end of said Stanhope body, and a coupé-body detachably secured to the Stanhope body and supported by the bracket; substantially as specified.

3. A vehicle-body comprising a Stanhope body, a bracket hinged to the rear side of said Stanhope body, a coupé-body adapted to be positioned against the rear side of the Stanhope body upon the bracket, and locking devices for securing the bodies together; substantially as specified.

820,344. FOLDING SEAT APPLICABLE FOR OUTDOOR USE, THEATERS, AND OTHER PURPOSES. THOMAS BRIERLEY, Blackpool, England, assignor of one-half to Henry Heap, Blackpool, England. Filed Feb. 24, 1906. Serial No. 303,743.

Claim.—1. The combination with a seat-frame, of a seat pivoted thereto, a vertically-movable back member arranged between the frame, and a bell-crank lever fulcrumed to the frame below the seat and having the rear arm thereof pivotally connected to said member and its front arm extending in the path of the seat and adapted to shift the seat against said movable member when the latter moves downwardly and to elevate said member when the seat is lowered.

2. The combination with a seat-frame, of a seat pivoted thereto, a vertically-movable back member arranged between the frame, a bell-crank lever fulcrumed to the frame below the seat and having the rear arm thereof pivotally connected to said member and its front arm extending in the path of the seat and adapted to shift the seat against said movable member when the latter moves downwardly and to elevate said member when the seat is lowered; and a guard member automatically movable to inclose the top of said back member and a portion of the seat when the said back member is lowered.



3. The combination with a seat-frame, of a seat pivoted thereto, a vertically-movable back member arranged between the frame, a bell-crank lever fulcrumed to the frame below the seat and having the rear arm thereof pivotally connected to said member and its front arm extending in the path of the seat and adapted to shift the seat against said movable member when the latter moves downwardly and to elevate said member when the seat is lowered, guides for said vertically-movable back member, and a guard member automatically movable to inclose the top of said back member and a portion of the seat when said back member is lowered.

4. The combination with a seat-frame, of a seat pivoted thereto, a vertically-movable back member arranged between the frame, a bell-crank lever fulcrumed to the frame below the seat and having the rear arm thereof pivotally connected to said member and its front arm extending in the path of the seat and adapted to shift the seat against said movable member when the latter moves downwardly and to elevate said member when the seat is lowered, a guard member automatically movable to inclose the top of said back member and a portion of the seat when the said back member is lowered, and a cushioning means carried by the said guard member.

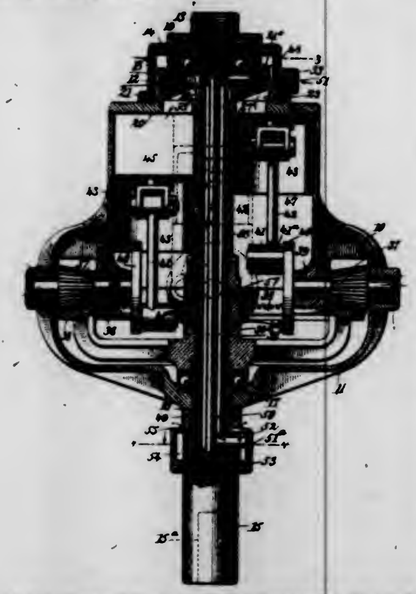
5. The combination with a seat-frame, of a seat pivoted thereto, a counterweighted back member automatically lowered when weight is removed from the seat and automatically elevated when weight is applied to the seat, and a bell-crank lever pivoted to the seat-frame below the seat and having its rear arm pivoted to said back member and its forward arm projecting in the path of the seat and adapted to elevate the seat when the said back member lowers and to elevate the back member when the seat is lowered.

6. The combination with a seat-frame, of a seat pivoted thereto, a counterweighted back member automatically lowered when weight is removed from the seat and automatically elevated when weight is applied to the seat, a bell-crank lever pivoted to the seat-frame below the seat and having its rear arm pivoted to said back member and its forward arm projecting in the path of the seat and adapted to elevate the seat when the said back member lowers and to elevate the back member when the seat is lowered, and a guard member automatically movable to inclose the top of said member and a portion of the seat when the said back member is lowered.

820,345. PNEUMATIC DRILL. HARRY BROUSSEAU, New York, N. Y. Filed Oct. 5, 1904. Serial No. 227,675.

Claim.—1. The combination of a revoluble sleeve provided with a shank for connecting the same with a member to be driven, and

also provided with a sleeve having an exhaust-passage, a shaft journaled within said exhaust-passage and free to rock relatively to said sleeve, manually-operated mechanism for causing said shaft to rock, a valve-seat disposed adjacent to said sleeve and provided with ports, a revoluble valve mounted upon said valve-seat and provided with passages for registering with said ports, mechanism connecting said shaft with said valve for the purpose of adjusting the same relatively to said ports, and means for admitting an expansible medium to said valve and through the same to said ports.



2. The combination of a revoluble member provided with a shank and with an exhaust-passage, a shaft journaled within said exhaust-passage and free to rock within certain limits relatively to said revoluble member, a handle for turning said shaft within said limits, a valve-seat, a valve fitted thereupon and movable relatively thereto, and a pin connected with said shaft and with said valve for the purpose of adjusting the same relatively to said seat.

3. The combination of a revoluble spindle, a disk rigidly mounted thereupon and provided with a packing, a rotary balanced valve loosely encircling said spindle and engaging said packing so as to form an air-tight connection, and pneumatic mechanism provided with ports coacting with said revoluble valve.

4. The combination of a revoluble spindle, a disk mounted rigidly thereupon and provided with a ball-bearing, a revoluble valve partially encircling said disk, means for forming an air-tight connection between said disk and said valve, a valve-seat adjacent to said valve and provided with ports, and means for supplying an aeriform body through said valve and into said ports.

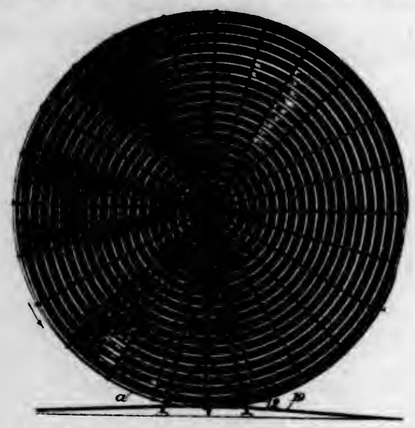
5. The combination of a valve-seat provided with ports, a revoluble valve mounted upon said seat, mechanism connected with said valve-seat and adapted to be driven by pressure of an aeriform body flowing through said valve, a revolubly-driven member connected with said mechanism thus driven, and a manually-operated member encircling said revolubly-driven member and provided with connections extending to said revoluble valve for reversing the direction of rotation thereof.

6. The combination of pneumatically-driven mechanism provided with a revoluble member having an exhaust-passage, and an oil-receptacle encircling said exhaust-passage.

7. The combination of rotary motor mechanism provided with a reversible valve and with a revoluble driven member, a manually-operated member of substantially cylindrical form encircling said revoluble driven member and concentric thereto, and connections from said manually-operated member to said revoluble valve for reversing the latter.

820,346. AMUSEMENT APPARATUS. CHARLES D. BUNNELL, New York, N. Y. Filed Feb. 6, 1906. Serial No. 299,734.

Claim.—1. An amusement apparatus comprising a wheel having a spiral track thereon leading from the periphery to the center of the wheel, and means for revolubly mounting the wheel whereby to cause a vehicle to move from one end to the other of the track.



2. An amusement apparatus comprising a wheel having a spiral track thereon leading from the periphery to the center of the wheel, and means for revolubly mounting the wheel whereby to cause a vehicle to move from one end to the other of the track, the said wheel being mounted in a vertical plane to rotate around a horizontal axis whereby to raise or lower the vehicle.

3. An amusement apparatus having a wheel provided with two oppositely-disposed spiral tracks leading from the center to the periphery of the wheel, a switch connecting said tracks at the center of the wheel, and means for mounting the wheel to rotate whereby a vehicle running on one track may be moved by the rotation of the wheel to the center thereof, and switched over to the second track to be returned to the starting-point by the continued rotation of the wheel in the same direction.

4. An amusement apparatus having a wheel provided with two oppositely-disposed spiral tracks leading from the center to the periphery of the wheel, a switch connecting said tracks at the center of the wheel, and means for mounting the wheel to rotate whereby a vehicle running on one track may be moved by the rotation of the wheel to the center thereof, and switched over to the second track to be returned to the starting-point by the continued rotation of the wheel in the same direction, said wheel running in a vertical plane around a horizontal axis.

820,347. FIELD OR HUNTING FLASK. REINHOLD BURGER and ALBERT ASCHENBRENNER, Berlin, Germany. Filed Sept. 3, 1904. Serial No. 223,254.



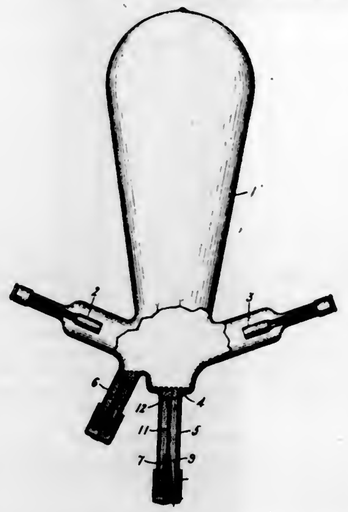
Claim.—1. A flask, comprising separated receptacles connected at their necks and inclosing a vacuum-chamber between their bodies, heat-insulating members annularly disposed in the chamber, and means embracing the neck of the inner receptacle and holding the said members in position, substantially as described.

2 A flask, comprising separated receptacles connected at their necks and inclosing a vacuum-chamber between their bodies, horizontal and vertical heat-insulating members annularly disposed in the chamber, and a wire structure suspended from the neck of the inner receptacle and holding the said members in position, substantially as described.

3. A flask, comprising an inner receptacle, and an outer receptacle connected thereto at the neck and presenting in conjunction with the first a vacuum-chamber and having two sealing-teats one at each side of the bottom, heat-insulating members annularly disposed in the chamber, and means for holding the said members in position, substantially as described.

4. A flask, comprising an inner receptacle, and an outer receptacle connected thereto at the neck and presenting in conjunction with the first a vacuum-chamber and having two sealing-teats one at each side of the bottom, heat-insulating members annularly disposed in the chamber, means for holding the said members in position, a jacket inclosing the outer receptacle, and a filling interposed between the outer receptacle and its jacket at the neck and foot, substantially as described.

820,348. VAPOR ELECTRIC APPARATUS. WILLIAM R. BURROWS, Newark, N. J., assignor to General Electric Company, a Corporation of New York. Filed Mar. 10, 1905. Serial No. 249,340.



Claim.—1. A frangible vessel having a leading-in conductor, said conductor consisting in part of platinum embedded in the wall of said vessel, said conductor having another part consisting of non-amalgamating metal, and a body of mercury surrounding said last-named part and contacting therewith.

2. A frangible vessel containing mercury, and a leading-in conductor comprising two parts, one of said parts being of non-amalgamating metal and contacting with said mercury, the second part being of material subject to amalgamation and completely embedded in the wall of the frangible vessel.

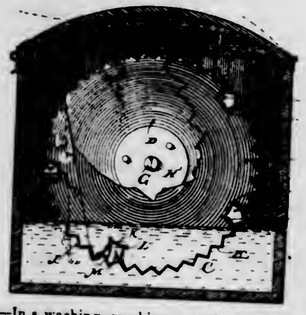
3. A fragile vessel having a leading-in conductor, said conductor consisting in part of platinum embedded in the wall of said vessel, and having another part consisting of iron surmounted by an iron disk, and a body of mercury surrounding said disk and contacting therewith.

4. A fragile vessel having a leading-in conductor, said conductor consisting in part of a metal whose coefficient of heat expansion is substantially equal to that of the wall of said vessel in which it is embedded, said conductor having another part consisting of a non-amalgamating metal surmounted by a metal disk, and a body of mercury surrounding said disk and in contact therewith and also in contact with said non-amalgamating metal.

5. A vapor electric apparatus having an evacuated chamber of fragile material, a mercury electrode therein, a plurality of leading-in conductors making electrical contact with said mercury, and a metal disk mounted on said conductors and rigidly supported thereby, said disk and the inner wall of said chamber forming a restricted passage-way to retard the flow of said mercury from its normal position.

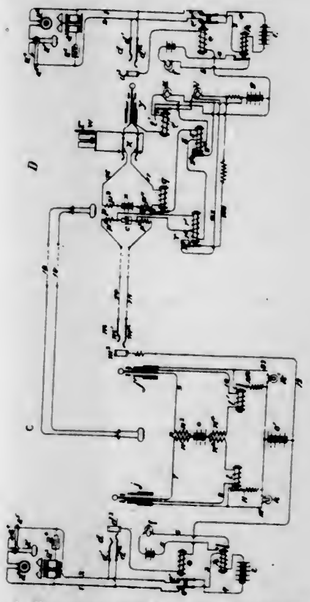
6. A vapor electric apparatus having an evacuated chamber, a mercury electrode therein, a plurality of leading-in conductors having extensions of non-amalgamating metal immersed in said mercury electrode and making electrical contact therewith, and an iron disk rigidly secured to said leading-in conductors, said disk and the inner wall of said chamber forming a restricted passage-way to retard the flow of said mercury from its normal position.

820,349. WASHING-MACHINE. CHARLES A. CHURCH, Peoria, Ill. Filed May 16, 1904. Serial No. 208,297.



Claim.—In a washing-machine, a stationary suds-box, a revoluble cylinder therein having a perforated, corrugated rubbing-surface, a series of hollow ribs disposed at intervals around the inner surface of the said cylinder on certain of the corrugations, said ribs being substantially square in cross-section, there being apertures in the three walls that extend into the interior of the cylinder, the cylinder-wall to which the ribs are secured being imperforate within said rib, and a valve within each rib for each aperture of the side wall, the valves of one side being hung oppositely from those of the other side for the purposes set forth.

820,350. SIGNALING SYSTEM FOR TELEPHONE TRUNK-LINES. MERRITT S. CONNER, Chicago, Ill., assignor to Western Electric Company, Chicago, Ill., a Corporation of Illinois. Filed Apr. 9, 1900. Renewed Oct. 5, 1905. Serial No. 282,063.



Claim.—1. The combination with telephone-lines and a trunk-line for uniting them, of a signal in the trunk-line and a source of current in a bridge thereof at one terminal station; a repeating-coil

at the other terminal, said trunk-line being severed and having its severed terminals united through the windings of the repeating-coil to form two conductively-separated but inductively-continuous circuits, and a high-resistance signal-controlling magnet in the portion of the trunk-line leading to the first-mentioned office, the said resistance being sufficient to prevent the operation of the signal in the circuit therewith; a source of current and a relay-magnet in the other portion of the trunk-line adapted for connection with the called line, and a shunt of the high-resistance signal-controlling magnet controlled by said relay, as described.

2. The combination with telephone-lines having switches adapted to close the line-circuits while the telephones are in use, said lines entering different central offices, and a trunk-line for uniting said lines; a supervisory signal in the trunk-line and a source of current in a bridge thereof at one of the offices; a repeating-coil at the other office, the trunk-line thereat being severed, the terminals of the wires leading to the first-mentioned station being united through one set of windings of the repeating-coil, and the terminals of the wires adapted for connection with the called line being united through the other set of windings of the repeating-coil, and a source of current and a relay in the last-mentioned portion of the trunk-line; a high-resistance magnet in the trunk-line in circuit with the aforesaid supervisory signal, a clearing-out signal controlled by said high-resistance magnet, a shunt about said high-resistance magnet, and an auxiliary winding of the magnet therein, said shunt being controlled by the relay in the other portion of the trunk-circuit, substantially as described.

3. The combination with a trunk-line having a source of energy, a signaling instrument and means for closing the circuit at one terminal station, of a high-resistance signaling instrument bridged across the line at another terminal station, a telephone-line, provided with a switch at the substation for closing the line, in connection with the trunk-line, and a shunt-circuit controlled by the switch at the telephone-substation around the winding of said high-resistance signaling instrument, whereby the signaling instrument at the first terminal station of the trunk-line is responsive to the opening and closing of the switch at the subscriber's substation without interfering with the operation of the high-resistance signaling instrument, substantially as described.

4. The combination, with a connecting-cord containing a source of energy, a signaling instrument and a terminal plug, a trunk-line terminating in a spring-jack at the same station with the connecting-cord, a plug at another station, a repeating-coil having its windings interposed in the trunk-line between said plug and spring-jack, a high-resistance signaling instrument in circuit with the portion of the trunk-line extending to said spring-jack, a shunt-circuit around said high-resistance signaling instrument, and means for controlling said shunt to control the signaling instrument at the distant station of the trunk-line, substantially as described.

5. The combination with a telephone-line, of a trunk-line and a switch for uniting said trunk-line with the telephone-line, a signaling instrument at one terminal of the trunk-line, a source of current connected with the trunk-line, a high-resistance signaling instrument in a bridge of the trunk-line at the other terminal thereof, a shunt about said high-resistance signaling instrument, said shunt controlling the operation of the first-mentioned signaling instrument, and a switch at the substation of said line controlling said shunt.

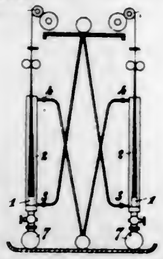
6. The combination with a telephone-line, of a trunk-line, a switch for uniting said trunk-line with said telephone-line, a source of current in a bridge of the trunk-line at one terminal thereof, a high-resistance signaling instrument *r* in a bridge of the trunk-line at the other terminal, a signal instrument *l'* in said trunk-line between the source of current and the signaling instrument *r*, a shunt around said high-resistance signal instrument, a switch at the substation of said telephone-line controlling said shunt, and a signaling instrument *s* in the shunt; whereby both signaling instruments *l'* and *s* are excited when said shunt is closed.

7. The combination with a signaling-circuit including a source of current, a relay *l'* and a switch for closing said circuit, a signal *k'* and a circuit therefor, controlled by relay *l'*, a high-resistance relay *r* included in said signaling-circuit, a signal *v*, a circuit therefor, controlled by said high-resistance relay, a shunt around the winding of said high-resistance relay, a relay *s* in said shunt, a signal *u*, a circuit therefor, controlled by said relay, a relay *q* adapted when energized to close the shunt about relay *r*, a circuit for said relay *q*, and a switch controlling said circuit; whereby upon the closure of the shunt about said high-resistance relay, both relays *s* and *l'* are excited to shunt out the signals associated therewith.

8. The combination with a telephone-line, of a trunk-line having a source of current connected therewith, a switch for uniting said trunk-line with said telephone-line, a signal instrument at one terminal of the trunk-line, a high-resistance signaling instrument in the trunk-line for controlling the operation of the first-mentioned signaling instrument, a shunt about said high-resistance signaling instrument, and a switch at the substation for controlling said shunt.

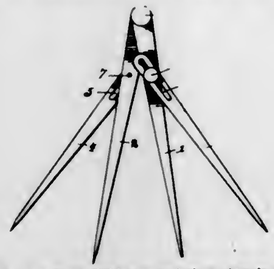
9. The combination with telephone-lines and a trunk-line for uniting them, said trunk-line having a source of current connected therewith, of a signal in the trunk-line at one terminal station, means for conductively separating said trunk-line into inductively-continuous parts, a high-resistance signal-controlling magnet in the trunk-line, said resistance being sufficient to prevent the operation of said signal, a shunt of said magnet, and a relay in the trunk-line adapted when said trunk-line is connected with the called line to control said shunt.

820,351. **PROCESS IN THE MANUFACTURE OF ARTIFICIAL SILK.** LUCIEN CRESPIN, Paris, France. Original application filed Feb. 4, 1905, Serial No. 244,186. Divided and this application filed Dec. 2, 1905. Serial No. 289,983.



Claim.—The process for the production of artificial silk and the like or equivalent, which consists in dissolving nitrocellulose in a mixture of ethylic alcohol methylic alcohol and sulfuric ether with castor-oil, palm-oil or glycerin expressing the dissolved nitrocellulose through a suitable nozzle into a water-bath where part of the solvent is dissolved, winding up the threads or the like, and treating the water from the bath for the recovery of the contained solvent, substantially as and in the manner described.

820,352. **DIVIDERS.** HARRY DUNDAS, Oil City, Pa., assignor of one-half to S. C. Allerbach, Oil City, Pa. Filed July 8, 1905. Serial No. 268,850.

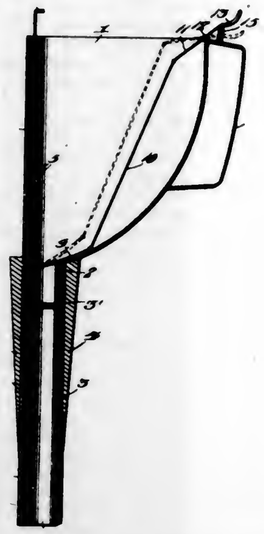


Claim.—1. A pair of dividers consisting of main legs pivotally connected together, auxiliary legs slidably mounted upon said main legs, said auxiliary legs having elongated openings formed therein, set-screws passing through said openings and engaging said main legs whereby said auxiliary legs are attached to said main legs and may be moved in planes parallel to the plane of movement of said main legs, substantially as described.

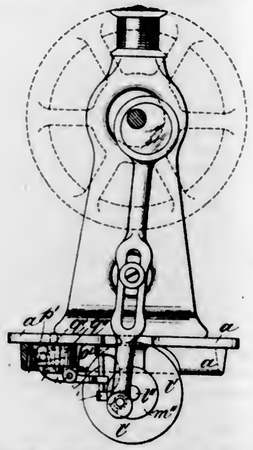
2. A pair of dividers consisting of two main legs of equal length, each terminating in a pointed end, auxiliary legs carried by said main legs, said auxiliary legs being adjustable longitudinally upon said main legs, and movable in substantially the plane of movement of said main legs, and means for fixing the auxiliary legs at adjusted positions.

820,353. **FUNNEL.** PERRIN EPPERSON, Belt, Mont., assignor to Arthur B. Chamberlain, Belt, Mont. Filed Apr. 17, 1905. Serial No. 256,091.

Claim.—A funnel comprising a body provided with a handle and having a discharge-outlet and a stem communicating therewith, a vent-tube extending through said outlet and into the body and stem, an automatic valve governing said tube, a pivoted valve controlling the discharge-outlet, a lever pivoted to the body, a link connecting said lever with the pivoted valve, and a spring disposed between the handle and lever and acting on the latter and normally holding the pivoted valve closed.



820,354. **CLOTH-FEEDING MECHANISM FOR SEWING-MACHINES.** DENIS FLANAGAN, Clayton-le-Moors, England. Original application filed May 20, 1904, Serial No. 208,987. Divided and this application filed June 17, 1905. Serial No. 265,676.



Claim.—1. In a cloth-feeding device for two-reel or other sewing-machines having a rotatable shaft, an eccentric mounted on the shaft, an eccentric-ring on the eccentric, arms carried by the eccentric-ring, a pin mounted between the arms, a lever having slidable connection with the pin, whereby movement of the arms is limited, means for adjusting the lever, and a feed member carried by one of the arms.

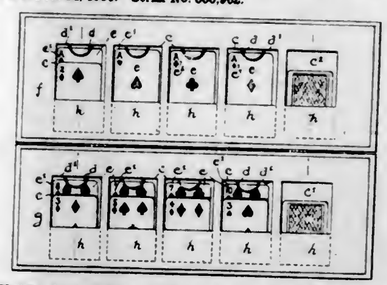
2. In a feeding device for sewing-machines, a shaft, an eccentric thereon, an eccentric-ring on the eccentric, arms projecting from the eccentric-ring, a pin carried between the arms, a lever slidably connected to the pin, a pin carried by the lever, a disk having a camslot in which the pin is situated, to adjust the lever, and a feed member carried by one of the arms.

820,355. **SEWING-MACHINE REEL-CASE.** DENIS FLANAGAN, Clayton-le-Moors, England. Original application filed May 20, 1904, Serial No. 208,987. Divided and this application filed June 17, 1905. Serial No. 265,678.



Claim.—In combination with a reel-case, a cover therefor, a lug on the cover, a plate having an opening therethrough, a screw passing through the lug and engaging the plate, and a spring embracing the screw and bearing against the lug and the head of the screw, whereby the tension of the plate is regulated.

820,356. **GAME-BOARD.** ALBERT G. GEDNEY, New York, N. Y. Filed Feb. 14, 1906. Serial No. 300,962.



Claim.—1. A playing-card board having a plurality of pockets adapted to loosely hold cards, and edge-clasping means to retain a bottom card in an exposed position in the pocket.

2. A playing-card board having a plurality of pockets closed at the bottom and upon four sides, and having partial covers, and means for clasping a marginal portion of the bottom card to retain it in an exposed position in the pocket.

3. A playing-card board having a plurality of pockets adapted to loosely hold cards, closed at the bottom and sides and having partial covers, and means engaging a bottom card to retain it in an exposed position in the pocket.

4. A playing-card board having a plurality of pockets, adapted to loosely hold cards and edge-engaging means for a bottom card to retain it in an exposed position in the pocket.

5. A playing-card board having card-holding pockets closed at the bottom and upon four sides and having partial covers, said pockets being provided with clasp devices to retain the bottom cards in position.

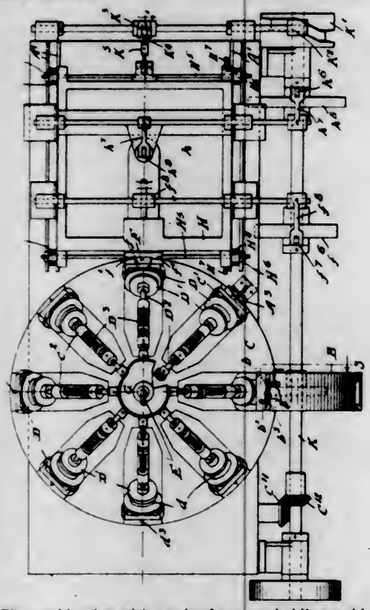
6. A playing-card board having card-holding pockets of greater length than the length of the cards and provided with clasp devices to retain the bottom cards in position, said pockets being closed at the bottom and upon four sides and having partial covers.

820,357. **SOLDER-EDGED-CAP MACHINE.** JOHN G. HODGSON, Maywood, Ill., assignor to American Can Company, New York, N. Y., a Corporation of New Jersey. Filed Nov. 20, 1905. Serial No. 288,150.

Claim.—1. In a machine for applying or casting annular beads of solder upon the rims of can-caps, the combination with a can-cap feeder, of a movable carrier, a plurality of can-cap-holding molds mounted on the carrier, a molten-solder pot or vessel, a piston or plunger therein; a solder-discharge nozzle, a valve-chamber, a discharge-valve and a choker-valve, substantially as specified.

2. In a machine for applying or casting annular beads of solder upon the rims of can-caps, the combination with a can-cap feeder, of a movable carrier, a plurality of can-cap-holding molds mounted on the carrier, a molten-solder pot or vessel, a piston or plunger therein, a solder-discharge nozzle, a valve-chamber, a discharge-valve and a

choker-valve, the molds on the carrier having can-cap ejectors, substantially as specified.



3. The combination with a pair of can-cap-holding molds, of a can-cap feeder, means for automatically opening and closing the molds, and means for automatically forcing molten solder into the mold upon the rim of the can-cap, substantially as specified.

4. The combination with a pair of can-cap-holding molds, means for automatically opening and closing the molds, a molten-solder pot or vessel, a discharge-nozzle and a piston or plunger for forcing molten solder from the solder-pot through the discharge-nozzle into the mold upon the rim of the can-cap, and a discharge valve for the nozzle, substantially as specified.

5. The combination with a pair of can-cap-holding molds, means for automatically opening and closing the molds, a molten solder pot or vessel, a discharge-nozzle and a piston or plunger for forcing molten solder from the solder-pot through the discharge-nozzle into the mold upon the rim of the can-cap, a discharge-valve for the nozzle, and a valve-chamber and a choker-valve, substantially as specified.

6. The combination with a pair of can-cap-holding molds, means for automatically opening and closing the molds, a molten-solder pot or vessel, a discharge-nozzle, a piston or plunger for forcing molten solder from the solder-pot through the discharge-nozzle into the mold upon the rim of the can-cap, and a can-cap feeder, substantially as specified.

7. The combination with a pair of can-cap-holding molds, means for automatically opening and closing the molds, a molten-solder pot or vessel, a discharge-nozzle and a piston or plunger for forcing molten solder from the solder-pot through the discharge-nozzle into the mold upon the rim of the can-cap, a discharge-valve for the nozzle, and a can-cap feeder, substantially as specified.

8. The combination with a pair of can-cap-holding molds, means for automatically opening and closing the molds, a molten-solder pot or vessel, a discharge-nozzle and a piston or plunger for forcing molten solder from the solder-pot through the discharge-nozzle into the mold upon the rim of the can-cap, a discharge-valve for the nozzle, a valve-chamber and a choker-valve, and a can-cap feeder, substantially as specified.

9. The combination with a pair of can-cap-holding molds, means for automatically opening and closing the molds, a molten-solder pot or vessel, a discharge-nozzle and a piston or plunger for forcing molten solder from the solder-pot through the discharge-nozzle into the mold upon the rim of the can-cap, one of said molds having a can-cap ejector, substantially as specified.

10. The combination with a can-cap feeder, of an intermittently-moving carrier, a plurality of can-cap-holding molds mounted on the carrier each having an annular recess to receive molten solder upon the rim of the can-cap thereon, and a molten-solder pot or vessel having a discharge-nozzle, substantially as specified.

11. The combination with a can-cap feeder, of an intermittently-moving carrier, a plurality of can-cap-holding molds mounted on the carrier each having an annular recess to receive molten solder upon the rim of the can-cap thereon, a molten-solder pot or vessel having a discharge-nozzle, and means for forcing molten solder through the discharge-nozzle into the mold upon the rim of the can-cap, substantially as specified.

12. The combination with a can-cap feeder, of an intermittently-moving carrier, a plurality of can-cap-holding molds mounted on the carrier, each having an annular recess to receive molten solder upon the rim of the can-cap thereon, a molten-solder pot or vessel having a discharge-nozzle, and a discharge-valve, substantially as specified.

13. The combination with a can-cap feeder, of an intermittently-moving carrier, a plurality of can-cap-holding molds mounted on the carrier each having an annular recess to receive molten solder upon the rim of the can-cap thereon, a molten-solder pot or vessel having a discharge-nozzle, a discharge-valve, a valve-chamber and a choker-valve, substantially as specified.

14. In a machine for applying or casting molten solder on can-caps, the combination of separable can-cap-holding molds, a movable carrier upon which they are mounted, and means for forcing molten solder into said molds upon the rim of the can-cap, substantially as specified.

15. In a machine for applying or casting molten solder on can-caps, the combination of separable can-cap-holding molds, a movable carrier upon which they are mounted, means for forcing the molten solder into said molds upon the rim of the can-cap, and a can-cap feeder, substantially as specified.

16. In a machine for applying molten solder to the rims of can-caps, the combination of a can-cap-holding mold having an annular recess to receive and confine under pressure the solder upon the rim of the can-cap, a movable solder-discharge nozzle, the solder being confined by the mold, the can-cap and the nozzle when the latter is moved into contact with the mold, and a solder-pot communicating with said nozzle, substantially as specified.

17. In a machine for applying molten solder to the rims of can-caps, the combination of a can-cap-holding mold having an annular recess to receive and confine under pressure the solder upon the rim of the can-cap, a movable solder-discharge nozzle, a solder-pot communicating with said nozzle, and a discharge-valve for said nozzle, the solder being confined by the mold, the can-cap and the nozzle when the latter is moved into contact with the mold, substantially as specified.

18. In a machine for applying molten solder to the rims of can-caps, the combination of the can-cap-holding mold having an annular recess to receive the solder upon the rim of the can-cap, a movable solder-discharge nozzle, a solder-pot communicating with said nozzle, a discharge-valve for said nozzle, a valve-chamber, and a choker-valve, substantially as specified.

19. In a machine for applying molten solder to the rims of can-caps, the combination of a can-cap-holding mold having an annular recess to receive and confine under pressure the solder upon the rim of the can-cap, a movable solder-discharge nozzle, a solder-pot communicating with said nozzle, and a piston, the solder being confined by the mold, can-cap and the nozzle when the latter is moved into contact with the mold, substantially as specified.

20. In a machine for applying molten solder to the rims of can-caps, the combination of a can-cap-holding mold having an annular recess to receive and confine under pressure the solder upon the rim of the can-cap, a movable solder-discharge nozzle, a solder-pot communicating with said nozzle, a discharge-valve for said nozzle, and a piston, the solder being confined by the mold, the can-cap and the nozzle when the latter is moved into contact with the mold, substantially as specified.

21. In a machine for applying molten solder to the rims of can-caps, the combination of a can-cap-holding mold having an annular recess to receive and confine under pressure the solder upon the rim of the can-cap, a movable solder-discharge nozzle, a solder-pot communicating with said nozzle, and a can-cap feeder, the solder being confined by the mold, the can-cap and the nozzle when the latter is moved into contact with the mold, substantially as specified.

22. In a machine for applying molten solder to can-caps, the combination with a can-cap-holding mold having an annular recess to receive and confine under pressure the solder upon the rim of the can-cap, of a can-cap feeder, means for forcing molten solder into the annular recess of the mold upon the rim of the can-cap, the solder being confined by the mold, the can-cap and the nozzle when the latter is moved into contact with the mold, substantially as specified.

23. In a machine for applying molten solder to can-caps, the combination with a can-cap-holding mold having an annular recess to receive the solder upon the rim of the can-cap, of a can-cap feeder, means for forcing molten solder into the annular recess of the mold upon the rim of the can-cap, substantially as specified.

24. In a machine for applying molten solder upon the rims of can-caps, the combination with a can-cap feeder, of an intermittently-moving carrier, a plurality of can-cap-holding molds on the carrier, and means for forcing molten solder into each mold in turn upon the rim of the can-cap, substantially as specified.

25. In a machine for applying molten solder upon the rims of can-caps, the combination with a can-cap feeder, of an intermittently-moving carrier, a plurality of can-cap-holding molds on the carrier, means for forcing molten solder into each mold in turn upon the rim of the can-cap, comprising a solder-pot and a solder-discharge valve communicating with said pot, substantially as specified.

26. In a machine for applying molten solder upon the rims of can-caps, the combination with a can-cap feeder, of an intermittently-moving carrier, a plurality of can-cap-holding molds on the carrier, means for forcing molten solder into each mold in turn upon the rim of each can-cap, comprising a solder-pot and a solder-discharge valve and nozzle communicating with said pot, the solder-pot being provided with a piston-chamber and piston, substantially as specified.

27. In a machine for applying molten solder upon the rims of can-caps, the combination with a can-cap feeder, of an intermittently-moving carrier, a plurality of can-cap-holding molds on the carrier, means for forcing molten solder into each mold in turn upon the rim of the can-cap, comprising a solder-pot and a solder-discharge nozzle communicating with said pot, the solder-pot being provided with a piston-chamber and piston, and a valve-chamber and choker-valve, substantially as specified.

28. In a machine for applying molten solder upon the rims of can-caps, the combination with a can-cap feeder, of an intermittently-moving carrier, a plurality of can-cap-holding molds on the carrier, means for forcing molten solder into each mold in turn upon the rim of the can-cap, comprising a solder-pot and a solder-discharge nozzle communicating with said pot, the solder-pot being provided with a piston-chamber and piston, and the discharge-nozzle having a discharge-valve, substantially as specified.

29. In a machine for applying molten solder upon the rims of can-caps, the combination with a can-cap feeder, of an intermittently-moving carrier, a plurality of can-cap-holding molds on the carrier, means for forcing molten solder into each mold in turn upon the rim of the can-cap, comprising a solder-pot and a solder-discharge nozzle communicating with said pot, the solder-pot being provided with a piston-chamber and piston, a valve-chamber and choker-valve, and the discharge-nozzle having a discharge-valve, substantially as specified.

30. In a machine for applying molten solder to can-caps, the combination with a plurality of can-cap holders, a carrier upon which they are mounted, a can-cap feeder, and means for applying molten solder upon the rims of the can-caps in the holders, substantially as specified.

31. In a machine for applying molten solder to can-caps, the combination with a plurality of can-cap holders, a carrier upon which they are mounted, a can-cap feeder, and means for applying molten solder under pressure upon the rims of the can-caps in the holders, substantially as specified.

32. In a machine for applying molten solder to can-caps, the combination with a plurality of can-cap holders, of a carrier upon which said holders are mounted, and means for applying molten solder under pressure upon the rims of the can-caps in the holders, said holders operating in conjunction with the can-caps to confine the solder under pressure on the caps, substantially as specified.

33. The combination with a pair of can-cap-holding molds, devices for automatically opening and closing the molds, a molten-solder pot or vessel, a discharge-nozzle for the molten solder, means for forcing molten solder from the solder-pot through the discharge-nozzle into the mold upon the rim of the can-cap, and a can-cap feeder for delivering caps successively between the two molds of said pair of molds, substantially as specified.

34. In an apparatus for applying molten solder upon the rims of can-caps, the combination with a plurality of can-cap holders, of a carrier upon which they are mounted, and a reciprocating solder-pot and solder-discharge nozzle, substantially as specified.

35. In an apparatus for applying molten solder upon the rims of can-caps, the combination with a plurality of can-cap holders, of a carrier upon which they are mounted, and a reciprocating solder-pot and solder-discharge nozzle, said solder-pot having a piston, substantially as specified.

36. In an apparatus for applying molten solder upon the rims of can-caps, the combination with a plurality of can-cap holders, of a carrier upon which they are mounted, a reciprocating solder-pot and solder-discharge nozzle having a piston and provided with a discharge-valve, substantially as specified.

37. In an apparatus for applying molten solder upon the rims of can-caps, the combination with a plurality of can-cap holders, of a carrier upon which they are mounted, a reciprocating solder-pot and solder-discharge nozzle, said solder-pot having a piston, and said discharge-nozzle being provided with a discharge-valve, and a valve-chamber and a choker-valve, substantially as specified.

38. In a machine for applying molten solder upon the rims of can-caps, the combination with a carrier, a plurality of lower molds D mounted on the carrier, a plurality of opening and closing upper molds mounted on the carrier, and a can-cap feeder, substantially as specified.

39. In a machine for applying molten solder upon the rims of can-caps, the combination with a carrier, a plurality of lower molds D mounted on the carrier, a plurality of opening and closing upper molds mounted on the carrier, a can-cap-feed chute, and means for vibrating the lower end of the feed-chute to press the caps against the lower face of the upper mold, substantially as specified.

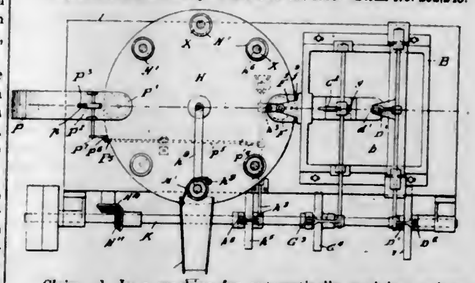
40. In a machine for applying molten solder upon the rims of can-caps, the combination with a carrier, a plurality of lower molds D mounted on the carrier, a plurality of opening and closing upper molds mounted on the carrier, a can-cap-feed chute, and means for vibrating the lower end of the feed-chute to press the caps against the lower face of the upper mold, the upper mold of each pair of molds having means for causing the can-cap to adhere thereto, substantially as specified.

41. In a machine for applying molten solder upon the rims of can-caps, the combination with a carrier, a plurality of lower molds D mounted on the carrier, a plurality of opening and closing upper molds mounted on the carrier, a can-cap-feed chute, and means for vibrating the lower end of the feed-chute to press the caps against the lower face of the upper mold, the upper mold of each pair of molds having a suction device for causing the can-cap to adhere thereto, substantially as specified.

42. In a machine for applying molten solder to can-caps, the combination with a pair of opening and closing can-cap-holding molds, of means for automatically feeding or delivering can-caps between the molds, and means for automatically applying molten solder to the can-caps in the molds, substantially as specified.

43. In a machine for applying molten solder to sheet-metal articles, the combination with a pair of opening and closing molds for holding the article and exposing a portion thereof to the molten solder, and means for automatically applying molten solder upon the article in the molds, substantially as specified.

820,358. MACHINE FOR AUTOMATICALLY APPLYING MOLTEN SOLDER TO RIMS OF CAN-CAPS. JOHN G. HODGSON, Maywood, Ill., assignor to American Can Company, New York, N. Y., a Corporation of New Jersey. Filed Dec. 18, 1905. Serial No. 292,245.



Claim.—1. In a machine for automatically applying molten solder to the rims of can-caps, the combination with a molten-solder pot or vessel, a pump piston or plunger therein, a valve-chamber having a solder-discharge orifice or nozzle, a discharge-valve, a choker-valve, a mold having a can-cap-receiving recess to receive the molten solder and apply it to the rim of the can-cap, an intermittently-mov-

ing carrier, a series of can-cap holders, chucks or plungers mounted on said carrier to force and clamp in turn the can-caps against said mold and a can-cap feeder for delivering the can-caps to said holders on the carriers, substantially as specified.

2. In a machine for applying molten solder upon the rims of can-caps, the combination of a molten-solder pot or vessel, of a mold connecting therewith, means for forcing the molten solder from said pot or vessel into said mold and an intermittently-moving can-cap carrier having a series of movable can holders or chucks mounted thereon to force the can-caps each in turn against said mold, substantially as specified.

3. In a machine for applying molten solder upon the rims of can-caps, the combination of a molten-solder pot or vessel, of a mold connecting therewith, means for forcing the molten solder from said pot or vessel into said mold and an intermittently-moving can-cap carrier having a series of movable cap holders or chucks mounted thereon to force the can-caps each in turn against said mold, and a can-cap feeder for delivering the can-caps upon said holders or chucks of the carrier, substantially as specified.

4. In a machine for automatically applying molten solder to the rims of can-caps, the combination with a molten-solder pot or vessel, of a mold communicating therewith and having on its lower face a can-cap-receiving seat or recess, and provided with an annular solder-receiving recess, a valve-chamber and discharge-valve interposed between said mold and solder pot or vessel, means for forcing the solder from said pot or vessel into said mold and an intermittently-moving can-cap carrier furnished with a plurality of can-cap holders or chucks to force and clamp the can-caps each in turn against said mold, substantially as specified.

5. In a machine for automatically applying molten solder to the rims of can-caps, the combination with a molten-solder pot or vessel, of a mold communicating therewith and having on its lower face a can-cap-receiving seat or recess, and provided with an annular solder-receiving recess, a valve-chamber, a discharge-valve interposed between said mold and solder pot or vessel, means for forcing the solder from said pot or vessel into said mold, and an intermittently-moving can-cap carrier furnished with a plurality of can-cap holders or chucks to force and clamp the can-caps each in turn against said mold, and a can-cap feeder for automatically delivering the can-caps upon said can-cap holders or chucks of the carrier, substantially as specified.

6. In a machine for applying molten solder to the rims of can-caps, the combination with a molten-solder pot or vessel, of a mold immovably connected thereto and in communication with the molten solder in said pot or vessel, means for forcing the molten solder into said mold, a can-cap carrier and a plurality of movable can-cap holders on the carrier arranged to deliver the can-caps successively to the mold, substantially as specified.

7. In a machine for applying molten solder to the rims of can-caps, the combination with a molten-solder pot or vessel, of a mold immovably connected thereto and in communication with the molten solder in said pot or vessel, means for forcing the molten solder into said mold, a can-cap carrier and a plurality of movable can-cap holders on the carrier arranged to deliver the can-caps successively to the mold, and a can-cap-feed chute, substantially as specified.

8. In a machine for applying molten solder to the rims of can-caps, the combination with a molten-solder pot or vessel, of a mold immovably connected thereto and in communication with the molten solder in said pot or vessel, means for forcing the molten solder into said mold, a can-cap carrier and a plurality of movable can-cap holders on the carrier arranged to deliver the can-caps successively to the mold, and a can-cap-feed chute provided with a movable escapement, substantially as specified.

9. In a machine for applying molten solder to the rims of can-caps, the combination with a molten-solder pot or vessel, of a mold immovably connected thereto and in communication with the molten solder in said pot or vessel, means for forcing the molten solder into said mold, a can-cap carrier and a plurality of movable can-cap holders on the carrier arranged to deliver the can-caps successively to the mold, and a can-cap-feed chute provided with a movable escapement, and a guide-ring, substantially as specified.

10. In a machine for automatically applying molten solder to the rims of can-caps, the combination with a stationary mold having a can-cap seat in its under face and an annular recess to receive the solder, of an intermittently-moving carrier having a plurality of movable can-cap holders or chucks to force and clamp the can-caps in turn against said mold, substantially as specified.

11. In a machine for automatically applying molten solder to the rims of can-caps, the combination with a stationary mold having a can-cap seat in its under face and an annular recess to receive the solder, of an intermittently-moving carrier having a plurality of movable can-cap holders or chucks to force and clamp the can-caps in turn against said mold, and a can-cap feeder, substantially as specified.

12. In a machine for automatically applying molten solder to the rims of can-caps, the combination with a stationary mold having a can-cap seat in its under face and an annular recess to receive the solder, of an intermittently-moving carrier having a plurality of movable can-cap holders or chucks to force and clamp the can-caps in turn against said mold, and means for forcing molten solder into said mold, substantially as specified.

13. In a machine for automatically applying molten solder to the rims of can-caps the combination with a stationary mold having a can-cap seat in its under face and an annular recess to receive the solder, of an intermittently-moving carrier having a plurality of movable can-cap holders or chucks to force and clamp the can-caps in turn against said mold, a molten-solder pot or vessel in communication with said mold, and a piston or plunger for forcing molten solder from the solder-pot into said mold upon the rim of the can-cap, substantially as specified.

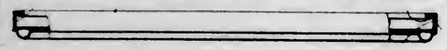
14. In a machine for automatically applying molten solder to the rims of can-caps, the combination with a stationary mold having a can-cap seat in its under face and an annular recess to receive the solder, of an intermittently-moving carrier having a plurality of movable can-cap holders or chucks to force and clamp the can-caps in turn against said mold, a molten-solder pot or vessel in communication with said mold, and a piston or plunger for forcing molten solder from the solder-pot into said mold upon the rim of the can-cap, and a valve-chamber and a discharge-valve, substantially as specified.

15. In a machine for automatically applying molten solder to the rims of can-caps, the combination with a stationary mold having a can-cap seat in its under face and an annular recess to receive the solder, of an intermittently-moving carrier having a plurality of movable can-cap holders or chucks to force and clamp the can-caps in turn against said mold, a molten-solder pot or vessel in communication with said mold, and a piston or plunger for forcing molten solder from the solder-pot into said mold upon the rim of the can-cap, a valve-chamber, a discharge-valve, and a choker-valve, substantially as specified.

16. In a machine for automatically applying molten solder to the rims of can-caps, the combination with a stationary mold having a can-cap seat in its under face and an annular recess to receive the solder, of an intermittently-moving carrier having a plurality of movable can-cap holders or chucks to force and clamp the can-caps in turn against said mold, a molten-solder pot or vessel in communication with said mold, and a piston or plunger for forcing molten solder from the solder-pot into said mold upon the rim of the can-cap, and a valve-chamber and a choker-valve, substantially as specified.

17. In a machine for automatically applying molten solder to the rims of can-caps, the combination with a stationary mold having a can-cap seat in its under face and an annular recess to receive the solder, of an intermittently-moving carrier having a plurality of movable can-cap holders or chucks to force and clamp the can-caps in turn against said mold, a molten-solder pot or vessel in communication with said mold, and a piston or plunger for forcing molten solder from the solder-pot into said mold upon the rim of the can-cap, and a can-cap feeder, substantially as specified.

820,359. METALLIC SIGN. WILLIAM F. HUTCHINSON, Nyack, N. Y., assignor to Metals Manufacturing Company, Nyack, N. Y., a Corporation of New York. Filed Aug. 23, 1905. Serial No. 275,356.

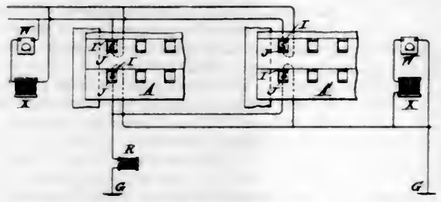


Claim.—1. As an improved article of manufacture, a metallic sign, comprising a sheet of metal formed to produce a generally flat body portion, and shaped to produce a frame-like structure which borders the body portion, the said frame-like structure being raised or pressed forward from the body and then bent back and provided with stiffening means additional to the back-bent portion.

2. A sign of a single sheet comprising a sheet-metal body portion merging at the edges in a part which is bent forward and back to simulate a frame, said bent frame portion having a stiffening means on its back side additional to the back-bent portion.

3. A metallic sign, comprising a generally flat body portion, a frame part bordering the body portion and made from the same sheet of metal, the said frame portion being doubled over at the back, and an independent stiffener secured to the back part of the frame portion.

820,360. MULTIPLE SWITCHBOARD FOR TELEPHONE-EXCHANGES. MILO G. KELLOGG, Chicago, Ill. Filed Feb. 13, 1902. Serial No. 421,461.



Claim.—1. In a telephone-exchange system, two metallic-circuit lines, each permanently closed at the central office through the helices of a polarized call-annunciator and the two lines temporarily switched together for conversation into a single metallic circuit with the annunciators connected so as to respond to the same polarity of current, in combination with a clearing-out annunciator in a bridge or cross connection to said metallic circuit and responding to a current of the other polarity, calling and commutator apparatus at each subscriber's station to send at will calling-currents of either polarity, and an operator's cord system including plugs and a calling-generator adapted to send to line a current of such polarity only as not to operate the line-annunciators, substantially as set forth.

2. In a telephone-exchange system, two telephone-lines, each permanently closed at the central office through the helices of a polarized call-annunciator and the two lines temporarily switched together for conversation into a single circuit with the annunciators connected so as to respond to the same polarity of current, in combination with a clearing-out annunciator in a bridge or cross connection to said circuit and responding to a current of the other polarity, calling and commutator apparatus at each subscriber's station to send at will calling-currents of either polarity, and an operator's cord system including plugs and a calling-generator adapted to send to line a current of such polarity only as not to operate the line-annunciators, substantially as set forth.

3. The combination of two telephone-lines, a switchboard having a switch for each line with two contacts to which contacts the two sides of each line-circuit are respectively permanently connected, a polarized line-annunciator and retardation-coil permanently connected between the two sides of each line-circuit, a generator at each subscriber's station from which, at the will of the subscriber, either a calling-current of one polarity only to operate the subscriber's line-annunciator or a clearing-out current of opposite polarity only may be sent, an operator's cord system including switching-plugs and a clearing-out annunciator adapted to be operated by said clearing-out current, and an operator's calling-generator adapted to send into a line a current of one polarity only and of such polarity as to not operate the line-annunciator of said line.

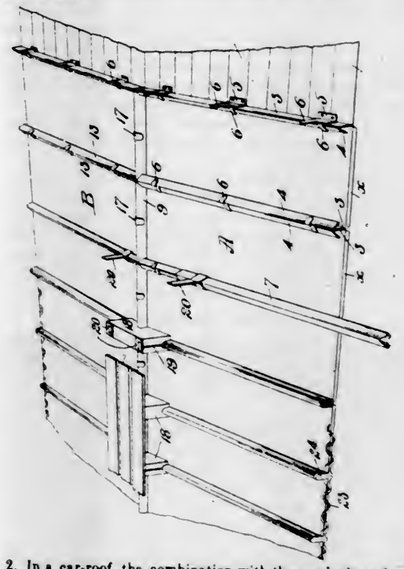
820,361. PAPER-CLIP. FRED J. KLEIN, New York, N. Y. Original application filed Mar. 27, 1905, Serial No. 252,364. Divided and this application filed Oct. 6, 1905. Serial No. 281,695.



Claim.—A paper-clip formed from a single length of wire bent to form an upper member, side arms extending from the same side thereof at symmetrical angles, fore arms at the ends of said side arms, crossing and pressing against each other, extending toward said upper member and ending in terminal arms, the terminal arms resting on the side arms in parallel spring-bearing contact; each side arm, fore arm and terminal arm connected therewith being on the same side of the other side arm, fore arm and terminal arm.

820,362. CAR-ROOF. OLIVER LINK, St. Charles, Mo., assignor to St. Louis Car Roof Company, St. Louis, Mo., a Corporation. Filed Apr. 17, 1905. Serial No. 255,986.

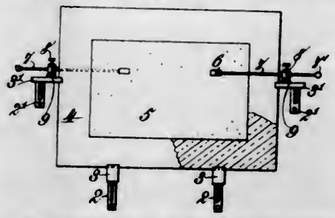
Claim.—1. In a car-roof, the combination of roofing-sheets, seam members uniting said sheets transversely of the roof, running-board saddles surmounting said seam members, and saddle-retaining clips for securing the saddles to the seam members; each of said clips consisting of a single sheet of metal folded at the middle to provide a tongue for engagement with the saddles and having inturned wings provided with lips for interlocking engagement with said seam members.



2. In a car-roof, the combination with the car-body and roof-sheathing, of roofing-sheets applied to said sheathing, and retaining-strips secured to said car-body and overlapping said roofing-sheets; said retaining-strips being of serpentine form, substantially as set forth.

3. In a car-roof, the combination with the car-body and roof-sheathing, of roofing-sheets applied to said sheathing, and retaining-strips of serpentine form having their dips secured to the car-body and their crowns bent at an angle to the dips and resting upon the roofing-sheets, substantially as set forth.

820,363. CONDENSER. WALTER W. MASSIE, Providence, R. I. Filed Mar. 2, 1905. Serial No. 248,132.



Claim.—1. A condenser comprising glass plates arranged side by side and provided with tin-foil sheets upon opposite sides thereof, and two sets of rods provided with contacts, the rods being adjustable to carry the contacts into and out of engagement with the tin foil sheets.

2. A condenser comprising glass plates arranged side by side and provided with tin-foil sheets upon opposite faces thereof, two sets of rods provided with contacts, and conducting-strips for adjustably supporting the two sets of rods to permit the contacts to be moved into and out of engagement with the coöperating tin-foil sheets.

3. A condenser comprising base and side branches, glass plates arranged side by side and provided with tin-foil sheets upon opposite faces thereof, said plates being held in operative positions by the base and side brackets, conducting-strips supported by the side brackets, and rods longitudinally adjustably supported by the con-

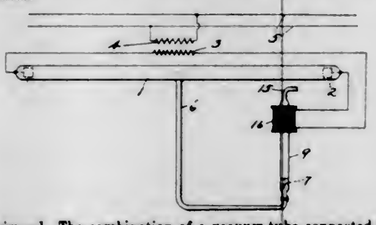
ducting-strips and provided with contacts to engage the tin-foil sheets.

4. A condenser involving a plurality of glass plates having tin-foil sheets upon opposite faces thereof, and suitably-mounted rods, some arranged between the plates and others outside of the plates, the intermediate rods having bifurcated resilient portions, the branches of which bear against the intermediate tin-foil sheets, and the outer rods having single resilient portions to bear against the outer tin-foil sheets.

5. A condenser involving a plurality of glass plates having tin-foil sheets upon opposite faces thereof, rods, some arranged between the plates and others outside of the plates, the intermediate rods having bifurcated resilient portions, the branches of which bear against the intermediate tin-foil sheets, and the outer rods having single resilient portions to bear against the outer tin-foil sheets, and carrying means for supporting and maintaining in parallelism the plates, also adapted to carry said rods.

6. A condenser involving a plurality of glass plates arranged in parallelism and having tin-foil sheets upon opposite faces thereof, suitably-mounted notched base and side blocks of insulating material, the notches in which receive the plates, binding-posts upon the side blocks, and rods adjustably related with the binding-posts, having enlargements at their outer ends and resilient portions at their inner ends to engage against the tin-foil sheets.

820,364. VACUUM-TUBE REGULATOR. DANIEL M. MOORE, Newark, N. J., assignor to Moore Electrical Company, New York, N. Y., a Corporation of New York. Filed Aug. 21, 1905. Serial No. 275,003.



Claim.—1. The combination of a vacuum-tube connected to a body of gas of greater density than that in the tube, and means responsive to changes in the gaseous condition within the tube for automatically feeding gas from such body of gas into the tube in determinate or regulated amounts proper for maintaining the gaseous contents of the tube in the standard or normal condition.

2. The combination of a vacuum-tube connected with a body of gas of greater density than that in the tube, a mass of porous material interposed in the passage between the tube and such body of gas, and means for varying the extent of surface of porous material exposed to the pressure of said body of gas in order to regulate the flow of gas to the tube.

3. The combination of a vacuum-tube, a source of gas, a valve between the source and tube and an actuating-magnet for said valve responsive to changes in the gaseous condition within the tube.

4. The combination of a vacuum-tube, a source of gas of greater density than that in the tube, and a body of porous material interposed in a passage between the source and the tube, as and for the purpose described.

5. The combination of a vacuum-tube, a source of gas of greater density than that in the tube, and a body of carbon interposed in a passage between the source and the tube, as and for the purpose described.

6. The combination of a vacuum-tube, a source of gas of greater density than that in the tube, a body of porous material interposing an obstacle to the free flow of the gas, and means for varying the amount of material in action, as and for the purpose described.

7. The combination with a vacuum-tube of a source of gas of greater density than that in the tube, a mass of porous material interposing an obstacle to the free flow of the gas, a body of liquid, and means for varying the extent of the porous material exposed above the liquid to vary the flow of gas.

8. The combination of a vacuum-tube, a source of gas of greater density than that in the tube, a mass of porous material having a tapered terminal and interposing an obstacle to the free flow of gas to the tube, a body of liquid surrounding said terminal, and means for varying the exposure of the terminal above the liquid.

9. The combination of a vacuum-tube, a source of gas of greater density than that in the tube, a mass of porous material restricting the free flow of gas to the tube and having a tapered terminal, a body of liquid surrounding said terminal, and means for varying the height of the liquid.

10. The combination of a vacuum-tube, a source of gas of greater density than that in the tube, a gas-valve between the source and the tube, and means responsive to variations in the gaseous condition within the tube for actuating the valve.

11. The combination of a vacuum-tube, a source of gas of greater density than that in the tube, a gas-valve between the source and the tube, and means responsive to changes of electric resistance between the two electrodes for actuating the valve.

12. The combination of a vacuum-tube, a source of gas of greater density than that in the tube, a valve for governing the flow of such gas to the tube, and an electromagnet responsive to changes of the electric resistance of the tube for actuating the valve.

13. The combination of a vacuum-tube, a source of gas of greater density than that in the tube, a mass of porous material interposing resistance to the free flow of gas, and means responsive to changes of gaseous condition in the tube for varying the resistance.

14. The combination of a vacuum-tube, a source of gas of greater density than that in the tube, a mass of porous material interposing resistance to the free flow of gas, and means responsive to variations in the electric resistance of the tube for determining the effective resistance of the mass of porous material.

15. The combination of a vacuum-tube, a source of gas of greater density than that in the tube, a mass of porous material interposing resistance to the free flow of gas, an electromagnet and means actuated thereby for varying the effective resistance of the mass of porous material.

16. The combination of a vacuum-tube, a source of gas of greater density than that in the tube, a mass of porous material surrounded by a liquid and adapted to restrict the free flow of gas, an electromagnet and means actuated thereby for varying the exposure of the porous material above the level of the liquid.

17. The combination of a vacuum-tube, a source of gas of greater density than that in the tube, a body of porous material, restricting the free flow of gas and having a pointed terminal, and a body of liquid in which the terminal is immersed.

18. The combination of a vacuum-tube, a mass of porous material interposed in a gas connection of said tube, a body of liquid surrounding the terminal of said mass, an electromagnet, and means for varying the exposure of the terminal above the liquid.

19. The combination of a vacuum-tube, a mass of porous material interposed in a gas connection of said tube, a body of liquid in which the mass of porous material is immersed, and means for displacing the liquid to vary the exposure of the porous material.

20. The combination of a vacuum-tube, electric terminals therefor, an adjustable gas-valve in a passage communicating with the tube and means responsive to variations in resistance between the terminals of the tube for actuating the valve.

21. The combination with a vacuum-tube, a gas-valve comprising porous material and liquid, a displacer in the body of liquid, an actuating-electromagnet and means for insulating the displacer and magnet.

22. The combination with a vacuum-tube and a gas-valve provided with a body of mercury by whose rise and fall the flow of gas is determined, a liquid-displacer of insulating material and an actuating-electromagnet.

23. A vacuum-tube lamp containing air in a rarefied condition as a luminous agent combined with means responsive to variations in the degree of rarefaction for admitting air to the tube in regulated amounts to maintain a normal luminosity.

24. A vacuum-tube lamp containing a gas in a rarefied condition acting as the luminous agent combined with means responsive to variations in the degree of rarefaction for admitting gas to the tube in regulated amounts to maintain a normal luminosity.

25. A vacuum-tube containing a gas in a rarefied condition combined with means responsive to variations in the degree of rarefaction for admitting gas to the tube in regulated amounts to maintain the desired degree of vacuum.

26. The combination with a vacuum-tube of a source of gas of greater density than that in the tube, a mass of porous material between the tube and source, a body of mercury and means for varying the extent of porous material exposed above the mercury to vary the flow of gas.

27. The combination with a vacuum-tube lamp, of a piece of porous arc-light carbon interposed in a passage between the tube and a body of gas under pressure, a body of mercury in contact with the carbon, and means for adjusting or regulating the extent of contact.

28. The combination of a vacuum-tube and a piece of porous arc-light carbon interposed in a passage leading to the tube and acting as a resistance to the free flow of a gas.

29. The combination of a vacuum-tube lamp and a plug or pencil of porous carbon through whose pores gas can leak to the tube.

30. The combination of a vacuum-tube lamp, a porous plug, mercury in contact with said plug, and means for changing the level of the mercury with relation to the plug.

31. The combination of a vacuum-tube lamp, a porous plug, mercury in contact with said plug and means for automatically changing the level of the surface of the mercury with relation to the plug when the condition of the vacuum in the tube changes.

32. The combination of a vacuum-tube lamp, a porous plug, immersed in mercury and an electromagnet varying in strength with variations in the electrical condition of the tube for changing the level of the surface of the mercury.

33. The combination of a vacuum-tube lamp, a porous plug, a body of mercury in contact with said plug and a displacer to raise or lower the surface of the mercury.

34. The combination of a vacuum-tube lamp, a body of mercury whose changes of level regulate the flow of gas to the lamp, and a displacer of mercury for adjusting its level.

35. The combination of a vacuum-tube lamp, a body of mercury by whose changes of level the flow of gas to the tube may be changed, and means for regulating the level of the mercury.

36. The combination of a vacuum-tube lamp, and means for regulating the vacuum comprising a transformer, a magnet connected to the secondary circuit of said transformer and a valve actuated by the magnet and controlling the flow of gas to the tube.

37. The combination of a vacuum-tube, a chamber containing mercury and communicating with a source of gas of greater density than that in the tube, a porous plug immersed in the mercury of said chamber and through which the air or gas under pressure may pass from said chamber to the tube, and a liquid-displacer working in the mercury to allow the whole surface of the mercury to be exposed to the gas-pressure, as and for the purpose described.

38. The combination of a vacuum-tube, a porous plug in a passage leading to the tube, a body of mercury in which the plug is immersed, a displacer of the mercury, and an actuating-magnet adjustable for the purpose of adjusting the level of the liquid, and consequently the flow of gas.

39. The combination of a vacuum-tube, a valve operating by changes of liquid-level and controlling the admission of gas to the tube, a liquid-displacer for changing the level of the liquid and an actuating-magnet therefor adjustable in position for the purpose of adjusting the position of the displacer and thereby adjusting the degree of vacuum maintained in the tube.

40. The combination of a vacuum-tube lamp, a valve operating by changes of a liquid-level and connected to the lamp, a liquid-displacer for changing the level of the liquid, and an actuating-magnet therefor adjusted in position for the purpose of controlling the intensity of the light.

41. The combination of a vacuum-tube and means automatically responsive to changes in the vacuum for admitting gas to the tube from a body of gas of greater density than that of the gas within the tube.

42. The combination of a vacuum-tube lamp and means automatically responsive to changes in the vacuum for admitting gas to the lamp from a body of gas of greater density than the gas within the lamp so as to keep the luminosity practically constant.

43. The combination of a vacuum-tube and a valve comprising a containing-chamber, porous material in a passage leading from the chamber to the tube and adapted to allow gas to percolate from the chamber, a suitable liquid in said chamber and a displacer for varying the level of the liquid.

44. The combination of a vacuum-tube, and automatic magnetic means for feeding gas to the tube.

45. The combination of a vacuum-tube lamp and automatic magnetic means for feeding gas to the lamp to keep the luminosity constant.

46. The combination of a vacuum-tube, devices for feeding gas to the tube and electromagnetic means acting in response to changes in the vacuum for bringing the feeding devices into action in order to admit gas to the tube.

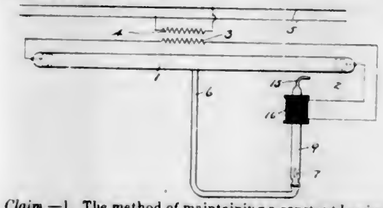
47. The combination of a vacuum-tube, a valve, and means responsive to changes in the electrical resistance of the gas in the tube for feeding gas into the tube through the valve.

48. The combination of a vacuum-tube lamp, a valve, and means responsive to changes in the electrical resistance of the gas in the lamp for feeding gas into the lamp through the valve.

49. The combination of a vacuum-tube and means for feeding gas to the tube automatically when the electrical resistance of the gas in said tube decreases.

50. The combination of a vacuum-tube lamp and means for feeding gas to the lamp automatically in response to decrease of the electrical resistance of the gas in the lamp.

820,365. VACUUM-TUBE REGULATOR. DANIEL M. MOORE, Newark, N. J., assignor to Moore Electrical Company, New York, N. Y., a Corporation of New York. Original application filed Aug. 21, 1905, Serial No. 275,003. Divided and this application filed Feb. 7, 1906. Serial No. 299,883.



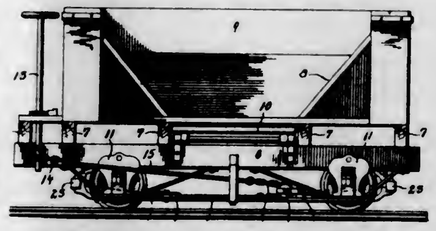
Claim.—1. The method of maintaining a constant luminosity in a vacuum-tube by feeding gas thereto from a body of gas maintained at a density greater than that within the tube and regulating the amount fed by changes of the density of gas within said tube.

2. The method of maintaining the vacuum in a vacuum-tube at any desired tension by feeding gas thereto from a body of gas maintained at a density greater than that within the tube and adjusting the admission of gas from said body of gas by variations in the electrical resistance of the gas within the tube.

3. The method of maintaining the luminous condition of a vacuum-tube lamp at its normal by regulating the admission of gas to said lamp through variations in the electrical resistance of the gas within the tube accompanying changes in luminosity.

4. The herein-described method of maintaining a constant luminosity in a vacuum-tube lamp, consisting in maintaining the vacuum at such degree of tension or density that a decrease of density will have the effect of decreasing the resistance of the gas to the passage of an electric current, utilizing the decrease of resistance to effect a change in the flow of an electric current and employing the changed strength of current to regulate the flow of gas to the tube.

820,366. RAILWAY CAR AND BRAKE. ROBERT F. PIERCE, Shaw, Ga. Filed Nov. 23, 1905. Serial No. 288,708.



Claim.—1. The combination with a dumping-car having doors which drop between the trucks, of a brake-gear having a part for each truck, including a lever which extends crosswise under the body of the car and connections between the respective levers, said connections being located at the side of the car outside of the wheels and out of the way of the doors.

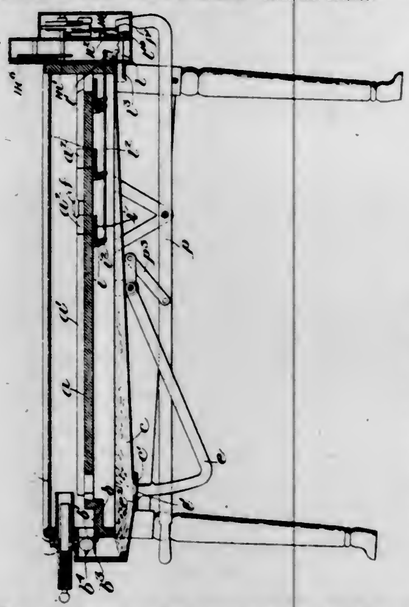
2. The combination with a dumping-car having bottom doors, of a brake-gear having opposite brake-levers which are fulcrumed at one side of the car and extend across under the body of the car between the trucks to the other side where they are connected to the brake-rod, said levers being located toward the ends of the cars respectively, with a space therebetween under said doors.

3. The combination of a car having side bars extending lengthwise between the trucks, brake-levers fulcrumed on one of said bars and extending across and resting at their free ends upon the other bar, and a power device connected to said levers.

4. A car having side bars connecting the pedestals of trucks at the opposite ends, a brake-beam for each truck, levers connected to the respective beams and fulcrumed at one end upon one bar and supported at the other end upon the other bar, and a brake-rod and power device connected to the levers, to operate the same.

5. The combination of a car having side bars extending along under the body thereof, a pair of brake-levers fulcrumed upon one of said bars and connected to brakes for opposite trucks, said levers extending across under the body of the car and resting at their free ends upon the other bar, a chain connected to one lever and to the brake-shaft, and a pulley connected to the other lever and around which the chain extends.

820,367. GAME-TABLE. SAMUEL C. ROBERTS, Springfield, Mass., assignor to Automatic Game Table Company, Springfield, Mass., a Corporation of Maine. Filed Dec. 30, 1903. Serial No. 187,148.



Claim.—1. A game-board embracing in its construction, a table provided with a series of pockets for receiving the ball, a dial-indicator adapted to register the score for the various pockets, locking means for holding the dial-indicator mechanism against movement, means adapted to be actuated by the ball after it enters a pocket for releasing said locking means in order to permit the dial-indicator to register, substantially as described.

2. A game-board embracing in its construction, a table provided with a series of pockets, an indicator-dial for registering the score when the ball enters the respective pockets, a series of spring-actuated slide-bars arranged to set the indicator mechanism in operation, a series of detents for said slide-bars to hold them normally against movement, and movable members adjacent to the respective pockets adapted to be actuated by the ball passing through the pocket to release said detents, substantially as described.

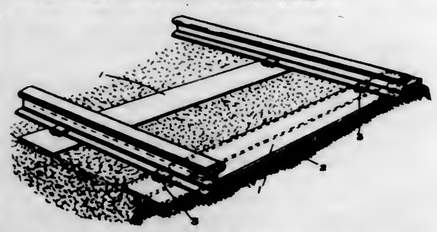
3. A game-board provided with a series of pockets, movable ball-actuated members adjacent thereto, a series of independent slide-bars connected with the ball-actuated members of the respective pockets, a register for recording the scores, a detent for preventing the action of said register, each of said slide-bars being arranged to release said detent and to arrest the movement of the register at a predetermined point, substantially as described.

4. A game-board embracing in its construction, a table provided with pockets the receptacle arranged beneath the table by which the ball may be returned to a uniform position from all the pockets, said table being provided at its lower end with a passage-way through which communication may be had with said receptacle beneath the table, means for retaining said ball to prevent it from rolling through said passage-way, and mechanism for releasing said retaining means, substantially as described.

5. A game-board embracing in its construction, a table, a ball-impelling device arranged to impel the ball over the table, a cup or holder arranged below the ball-impelling device, means for conducting the ball to the cup after it has rolled over the table, an actuating-lever for lifting said cup to the level of the ball-impelling device, said cup being pivotally mounted upon said lever so that it may be tipped up to deposit the ball in the ball-impelling device, substantially as described.

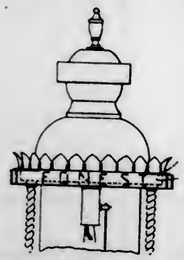
6. A game-board embracing in its construction, a table provided with a series of pockets adapted to receive a ball, an impelling device for rolling a ball across the table, an indicating device for registering the scores assigned to the various pockets, means adjacent to said pockets for setting in motion said indicating device, a lever arranged to reset said indicating device, and mechanism connected with said lever for depositing the ball in operative position to be again impelled across the table, substantially as described.

820,368. METALLIC RAILWAY-TIE. LEE C. SHARP, Omaha, Nebr. Filed Dec. 16, 1904. Serial No. 237,162.



Claim.—A metallic railway-tie comprising a body having a longitudinal rib upon one face, the opposite side of the body forming a rail-bearing surface, and a pair of tongues struck up from said body at each end thereof and intermediate its edges, the tongues of each pair being arranged out of alinement one with the other for engagement with the base-flange of the corresponding rail upon opposite sides of the aforesaid rib, the corresponding rail being disposed over the openings formed by striking up of the metal to form said tongues.

820,369. STREET-LIGHT. ARTHUR E. SHAW, Philadelphia, Pa., assignor to Pennsylvania Globe Gas Light Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Apr. 8, 1905. Serial No. 254,513.



Claim.—1. A sign-holder comprising two pairs of parallel walls having end closures and arranged at right angles and whereof the inner walls do and the outer walls do not meet at the apex, and a stop detachably arranged at the apex between the end closures, substantially as described

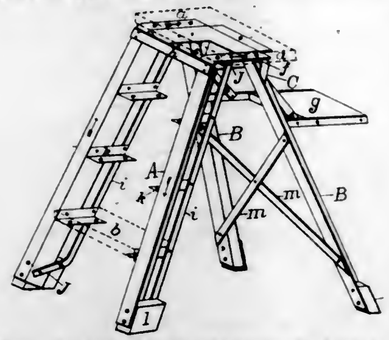
2. A sign-holder comprising two pairs of parallel walls having end closures and arranged at right angles and whereof the inner walls do and the outer walls do not meet at the apex, a stop detachably arranged at the apex between the end closures, and a supporting-arm applied to one of said end closures and extending away from the apex, substantially as described.

3. A sign-holder comprising two pairs of parallel walls having end closures and arranged at right angles and whereof the inner walls do and the outer walls do not meet at the apex, a stop detachably arranged at the apex between the end closures, a tapped projection at the end closure between the meeting walls, an arm applied to said end closure and ranging away from the apex, and a screw penetrating the arm and engaging the projection, substantially as described.

4. A sign-holder comprising two pairs of parallel walls having end closures and arranged at right angles and whereof the inner walls do and the outer walls do not meet at the apex, a stop detachably arranged at the apex between the end closures, a tapped projection at the end closure between the meeting walls, an arm having its end irregularly faced to form a flange for accommodating the meeting walls and projection, and means for attaching the arm, substantially as described.

5. In combination the ring or crown of a lantern, arms radiating therefrom, a plurality of straight signs, and sign-holders depending from said arms and having sign-receiving open-sided pockets disposed at right angles to each other and each receiving the end of a different sign, substantially as described.

820,370. STEP-LADDER. FRED W. SHOECRAFT and HOMER L. ALLARD, Sturgis, Mich.; said Allard assignor to said Shoecraft. Filed July 25, 1904. Serial No. 218,175.



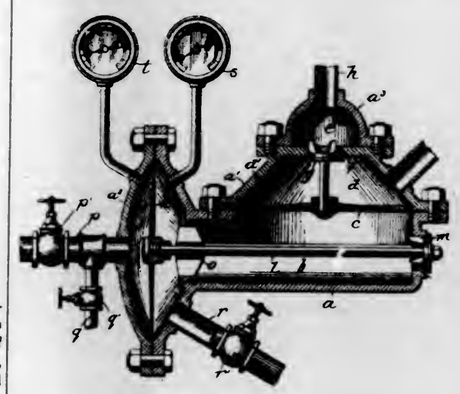
Claim.—In a step-ladder the combination of a frame A composed of two standards and a rectangular portion on the upper ends thereof, shaped to support a platform, all formed of a single piece of flanged metal, a bar connecting the upper ends of said standards, metal strips secured to frame, brackets attached to said strips and frame for the support of ladder-steps, struts pivoted on rear of upper end of said frame with triangular braces bolted thereto to limit extension of struts and to assist in support of platform, all as hereinbefore described and for the purposes set forth.

820,371. SAFETY-BUNG ATTACHMENT. ORSON F. SKINNER, Hastings, Mich., assignor of one-half to Frank W. Collins, Hastings, Mich. Filed Mar. 2, 1905. Serial No. 248,090.



Claim.—In a device of the class described, a hollow bung adapted to be driven into a receptacle, a detachable perforated plug threaded in the driving end of the bung and having its upper end provided with a reduced threaded extension defining an annular shoulder and its lower end formed with a laterally-extending flange for engagement with the adjacent end of the bung, and a draft-tube spaced from the interior walls of the bung and provided with terminal threads adapted to engage the threa ed extension and annular shoulder for releasing the plug when the draft-tube is rotated, said plug being provided with a plurality of openings extending transversely of the plug at the laterally-extending flange and having a longitudinal passage communicating with said openings and with the draft-tube to thereby permit the discharge of the contents of the receptacle through said draft-tube when the plug is released by rotating the latter.

820,372. AUTOMATIC SAFETY-DEPTH-REGULATING VALVE FOR SUBMARINE OR SUBMERGIBLE BOATS. LAWRENCE Y. SPEAR and THEODORUS S. BAILEY, Quincy, Mass., assignors to Electric Boat Company, Bayonne, N. J., a Corporation of New Jersey. Filed June 26, 1905. Serial No. 267,018.



Claim.—1. A submergence-regulator for submarine boats, comprising a casing, a pressure-chamber therein having movable walls, one of which is subject to pressure from the water of submergence, a valve connected to said latter wall and controlling communication between said chamber and the atmosphere, a valve controlling communication between a source of fluid-pressure and a water-ballast tank and operatively connected to the other movable wall, whereby opening of the first-named valve will cause the latter valve to open.

2. A submergence-regulator for submarine boats, comprising a casing, a valve therein controlling communication between a source of fluid-pressure and a water-ballast tank, a diaphragm supporting said valve, a valve controlling communication between a pressure-chamber in said casing and the atmosphere, and a diaphragm controlling the movement of said valve and open to pressure from the water of submergence, the space between said diaphragms forming the pressure-chamber aforesaid connected to a source of regulable fluid-pressure.

3. A submergence-regulator for submarine boats, comprising a casing, two diaphragms in said casing forming a pressure-chamber therein connected to a source of fluid-pressure to hold said diaphragms distended, a valve connected to one diaphragm controlling communication between a source of fluid-pressure and a water-ballast tank, a valve connected to the other diaphragm controlling communication between the pressure-chamber and the atmosphere, said latter diaphragm having connection with the water of submergence on the side opposite its valve, and means for regulating the pressure in said chamber.

4. A submergence-regulator for submarine boats, comprising a casing, two diaphragms in said casing forming a pressure chamber therein connected to a source of fluid-pressure to hold said diaphragms distended, a valve connected to one diaphragm controlling communication between a source of fluid-pressure and a water-ballast tank, a valve connected to the other diaphragm controlling communication between the pressure-chamber and the atmosphere, said latter diaphragm having connection with the water of submergence on the side opposite its valve, means for excluding the water of submergence from said diaphragm, means for admitting fluid-pressure

to said diaphragm in lieu of the water of submergence, and means for regulating the pressure in said chamber.

5. A submergence-regulator for submarine boats, comprising a pressure-chamber having a movable wall subject to pressure from the water of submergence, a valve connected to said wall and controlling communication between said chamber and the atmosphere, a valve controlling the amount of water in a ballast-tank, and means operated by reduction of pressure in said chamber to open said latter valve.

6. A submergence-regulator for submarine boats, comprising a pressure-chamber having movable walls, one of which is subject to pressure from the water of submergence, a valve connected to said wall and controlling communication between said chamber and the atmosphere, and a valve controlling the amount of water in a ballast-tank and operatively connected to another of said movable walls so as to be opened upon reduction of pressure in said chamber.

7. A submergence-regulator for submarine boats, comprising a pressure-chamber having a movable wall subject to pressure from the water of submergence, a valve connected to said wall and controlling communication between said chamber and the atmosphere, a valve controlling communication between a source of fluid-pressure and a water-ballast tank, and means operated by reduction of pressure in said chamber to open said latter valve.

8. A submergence-regulator for submarine boats, comprising a pressure-chamber having movable walls, one of which is subject to pressure from the water of submergence, a valve connected to said wall and controlling communication between said chamber and the atmosphere, and a valve controlling communication between the source of fluid-pressure and a water-ballast tank and operatively connected to another of said movable walls, whereby the ballast-controlling valve will be opened upon the reduction of pressure in said chamber.

820,373. **PROCESS OF MAKING FORMATES.** JULIUS WEISE, FRIEDRICH RIECHE, and ADOLF BARTH, Oestrich-on-the-Rhine, Germany, assignors to The Firm of Rudolph Koepp & Co., Oestrich-on-the-Rhine, Germany. Original application filed Apr. 1, 1904. Serial No. 202,661. Divided and this application filed Mar. 15, 1905. Serial No. 250,697.

Claim.—1. The herein-described process of manufacturing formates, which consists in making an aqueous solution of an alkaline earth, heating the aqueous solution to a high temperature in a closed vessel, admitting thereto carbon monoxid, and by agitation causing the two agents to act upon each other.

2. The herein-described process of manufacturing formates, which consists in making an aqueous solution of an alkaline earth, heating the aqueous solution to a temperature above the boiling-point in a closed vessel, admitting thereto carbon monoxid, and by agitation causing the two agents to act upon each other.

3. The herein-described process of manufacturing formates, which consists in making an aqueous solution of a salt of an alkali and an alkaline earth, heating the aqueous solution to a temperature above the boiling-point in a closed vessel, admitting thereto carbon monoxid, and by agitation causing the two agents to act upon each other.

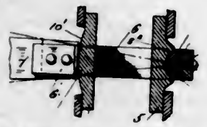
820,374. **PROCESS OF MAKING FORMATES.** JULIUS WEISE, FRIEDRICH RIECHE, and ADOLF BARTH, Oestrich-on-the-Rhine, Germany, assignors to The Firm of Rudolph Koepp & Co., Oestrich-on-the-Rhine, Germany. Original application filed Apr. 1, 1904. Serial No. 202,661. Divided and this application filed Mar. 15, 1905. Serial No. 250,698.

Claim.—1. The herein-described process of manufacturing formates, which consists in making an aqueous solution of an alkali carbonate, heating the aqueous solution to a high temperature in a closed vessel, admitting thereto carbon monoxid, and by agitation causing the two agents to act upon each other.

2. The herein-described process of manufacturing formates, which consists in making an aqueous solution of an alkali carbonate, heating the aqueous solution to a temperature above the boiling-point in a closed vessel, admitting thereto carbon monoxid, and by agitation causing the two agents to act upon each other.

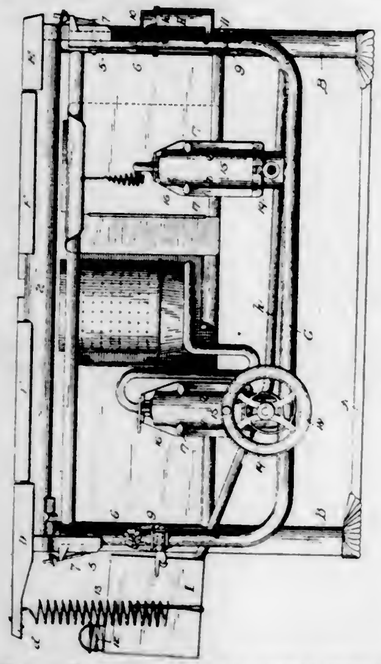
3. The herein-described process of manufacturing formates, which consists in making an aqueous solution of sodium carbonate, heating the solution to a high temperature in a closed vessel, admitting thereto carbon monoxid, and by agitation causing the two agents to act upon each other.

820,375. **DRAFT-GEAR FOR LOCOMOTIVES AND RAILROAD-CARS.** CHARLES T. WESTLAKE, St. Louis, Mo., and ALBERT R. THOMAS, Granite City, Ill., assignors to Davis Locomotive Wheel Company, St. Louis, Mo., a Corporation of Delaware. Filed Mar. 8, 1906. Serial No. 304,951.



Claim.—In draft-gear of the character described, the combination with the yoke and the shank of the coupler, of a front follower-plate, a back follower-plate, a spring between the said plates, a block interposed between the rear side of the back follower-plate and the corresponding inner face of the yoke, and a projection on the front side of the front follower-plate, the said block and projection having their outer upright faces respectively curved radially to the pivotal center of the yoke, and adapted respectively to engage in a corresponding recess in the back follower-plate, and with the inner end of the said shank, substantially as described and for the purpose set forth.

820,376. **RESERVOIR FOR OIL AND VAPOR STOVES.** WILLIAM H. WILDER, Gardner, Mass. Original application filed Apr. 26, 1901. Serial No. 57,559. Divided and this application filed Jan. 2, 1902. Serial No. 88,220.



Claim.—1. In combination with an oil burner or burners of the oil-bowl type, a balanced reservoir maintaining oil therein at a predetermined level and freely movable to discharge oil to the burners or take up oil therefrom, substantially as described.

2. In an oil-stove, a balanced reservoir freely movable vertically and a discharge-pipe connected therewith rigidly at one end and having a loose connection at its opposite end, substantially as described.

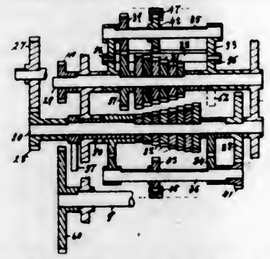
3. In an oil-stove, a burner comprising a bowl means for raising and lowering the same, and a reservoir supported by automatically-movable means controlled by the amount of oil within the reservoir, whereby the oil-line is made constant and the burner may be moved in relation to said line, substantially as described.

4. An oil-stove comprising an oil-burning bowl and a single-chamber balanced reservoir, the oil in the reservoir being below the top of the burner-bowl, substantially as described.

5. An oil-stove comprising an oil-burning bowl and a balanced reservoir, the level of oil in the reservoir being the level of oil in the burner-bowl and below the top of the same, substantially as described.

6. An oil-stove, comprising an oil-burning bowl and an automatically-movable reservoir, the oil in the reservoir being automatically maintained below the top of the burner-bowl, substantially as described.

820,377. **GEARING.** HANS BARRBALCK, Hamilton, Ohio, assignor to The Hamilton Machine Tool Company, a Corporation of Ohio. Filed Apr. 3, 1905. Serial No. 253,714.



Claim.—1. The combination of a pivotally-supported frame, a shaft carried thereby, means to rotate the shaft, a pinion splined on the shaft, means to adjust and maintain the pinion longitudinally thereon, a second shaft journaled in fixed bearings and parallel with said first shaft, a cone of gears secured thereon to turn in unison, and means to move and maintain said pinion into engagement with either gear of the cone.

2. The combination of two primary shafts journaled parallel with each other in fixed bearings, a cone of gears secured on each shaft, a frame pivotally mounted on each shaft, respective secondary rotative shafts carried thereby in an arc concentric with the corresponding primary shafts, pinions splined thereon, a rack-and-pinion mechanism arranged to simultaneously move and maintain the pinions in the planes of the gears on the cones, and a lever mechanism arranged to alternately move and maintain the pinions in engagement with either gear of the opposite cone of gears.

3. The combination of two cones of gears, the gears of each cone arranged to turn in unison, two pinions in constant communication with the respective cones and movable longitudinally in registration with the gears of the opposite cone, and lever mechanism arranged to alternately engage said pinions therewith.

4. The combination of a driving and a driven cone of gears, respective pinions communicating therewith, rack-and-pinion mechanism arranged to simultaneously move and maintain the pinions longitudinally in registration with either gear of either cone, and lever mechanism arranged to engage either pinion with the gear of the opposite cone in registration therewith.

5. The combination of a cone of gears arranged to turn in unison, a pivotally-mounted frame, a driven shaft carried thereby parallel with the axis of the cone, a pinion splined thereon, means to move and maintain the pinion longitudinally in registration with either gear of the cone, and lever mechanism arranged to move the frame with the pinion in engagement with said gear.

6. The combination of parallel rotative shafts, respective series of gears secured thereon, each series being graduated in size to a different predetermined ratio from the other, a frame hinged on each shaft, respective pinions carried threby and movable into engagement with the respective gears of the opposite series.

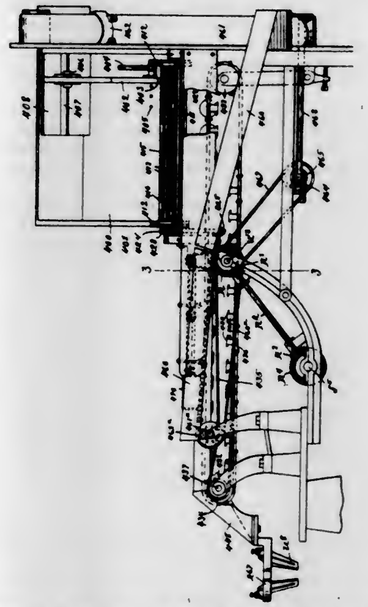
7. The combination of parallel rotative shafts, respective cones of gears secured thereon, frames hinged on the respective shafts, corresponding pinions thereon engaging with the respective shafts, means arranged to move and maintain the pinions in registration with either gear of the cones, and lever mechanisms arranged to move and maintain either pinion in engagement with either gear on the opposite shaft.

8. The combination of driven cone of gears, a primary shaft journaled parallel with the axis thereof in fixed bearings, a frame pivotally mounted thereon, a secondary shaft carried thereby, gears communicating therewith and with the primary shaft, a pinion splined and movable longitudinally on the secondary shaft in registration with either gear of the cone of gears, and lever mechanism arranged to move and maintain the frame with the pinion in engagement with said gear.

9. The combination of a driven gear, two series of driving-gears, the gears of each series being differentiated in size in a ratio different from those of the other series, and appropriate mechanism arranged to communicate motion from either gear of either series to said driven gear.

10. The combination of a driving and a driven series of gears each graduated in size to a different ratio, the gears of each series arranged to turn in unison, pinions communicating with the respective series and movable longitudinally in registration with either gear of the opposite series, and lever mechanism arranged to move and maintain said pinions alternately in engagement with corresponding gears in the respective opposite series.

820,378. **FEEDING DEVICE FOR ORANGES AND OTHER ARTICLES.** MILTON H. BALLARD, Lynn, Mass., assignor to Tripp Fruit Wrapping Machine Company, Lynn, Mass., a Corporation of Maine. Filed Nov. 8, 1905. Serial No. 286,343.



Claim.—1. In a machine for feeding oranges and other articles, the combination of a declining chute made wide enough to provide for the simultaneous delivery of several oranges arranged side by side in a row extending transversely across it, means for controlling the delivery of the oranges therefrom, a row at a time, a conveyer having pockets, and means for moving it to bring the pockets thereof into position to receive the oranges a row at a time, substantially as described.

2. In a machine for feeding oranges and other articles, the combination of a declining chute, made wide enough to provide for the simultaneous delivery of several oranges, arranged side by side in a row, extending transversely across it, a rotating device controlling the delivery of the oranges therefrom, a row at a time, a conveyer having pockets, and means for moving it relative to the rotating device to bring the pockets thereof into position to receive the oranges a row at a time, substantially as described.

3. In a machine for feeding oranges and other articles, the combination of a declining chute made wide enough to provide for the simultaneous delivery of several oranges, arranged side by side in a row extending transversely across it, a conveyer having pockets, a rotating device adapted to receive the endmost row of oranges from said chute and to deliver the same to the conveyer, and means for moving said conveyer relative to the rotating device to bring the pockets thereof into position to receive the oranges from said rotating device, substantially as described.

4. In a machine for feeding oranges and other articles, the combination of a declining chute made wide enough to provide for the simultaneous delivery of several oranges arranged side by side in a

row extending transversely across it, a conveyer having pockets, moving at right angles thereto, means for controlling the delivery of the oranges, a row at a time from the chute to the conveyer and means for moving the conveyer relative to the controlling means to bring the pocket thereof into position to receive the oranges a row at a time, substantially as described.

5. In a machine for feeding oranges and other articles, the combination of a declining chute made wide enough to provide for the simultaneous delivery of several oranges arranged side by side in a row extending transversely across it, an endless conveyer having pockets, passing around sprocket-wheels, a chute leading from one end of said conveyer into which the oranges fall as the pockets are inverted when passing around the sprocket-wheels, and means for moving said conveyer, substantially as described.

6. In a machine for feeding oranges and other articles, the combination of a conveyer having pockets, means for delivering oranges thereto, and means for holding one or more supplementary oranges in position to enter a vacant pocket in said conveyer, substantially as described.

7. In a machine for feeding oranges and other articles, the combination of a conveyer having pockets, means for delivering oranges thereto, and means for holding one or more supplementary oranges above the conveyer in position to drop into a vacant pocket therein when said vacant pocket arrives beneath it, substantially as described.

8. In a machine for feeding oranges and other articles, the combination of a conveyer having pockets, means for delivering oranges thereto, and means for supporting one or more supplementary oranges on top of the row of oranges carried by the conveyer, substantially as described.

9. In a machine for feeding oranges and other articles, the combination of a conveyer having pockets, means for delivering oranges thereto, and means for supporting one or more supplementary oranges on top of the row of oranges carried by the conveyer and for turning them, substantially as described.

10. In a machine for feeding oranges and other articles, the combination of a conveyer having pockets, means for delivering oranges thereto, and means for independently supporting supplementary oranges on top of the row of oranges carried by the conveyer and for continuously turning them, substantially as described.

11. In a machine for feeding oranges and other articles, the combination of a conveyer having pockets, means for delivering oranges thereto, side walls for holding one or more supplementary oranges on top of the row of oranges carried by the conveyer, a stop for checking the progress of each supplementary orange, whereby each supplementary orange is held at a predetermined point, substantially as described.

12. In a machine for feeding oranges and other articles, the combination of a conveyer having pockets, means for delivering oranges thereto, side walls for holding one or more supplementary oranges on top of the row of oranges carried by the conveyer, a rotating stop for checking the progress of each supplementary orange and for turning it, substantially as described.

13. In a machine for feeding oranges and other articles, the combination of a conveyer having pockets, means for delivering oranges thereto, side walls for holding one or more supplementary oranges on top of the row of oranges carried by the conveyer, a stop for checking the progress of each supplementary orange, made of considerable less height than the diameter of the orange which engages it, substantially as described.

14. In a machine for feeding oranges and other articles, the combination of a conveyer having pockets, means for delivering oranges thereto, side walls for holding one or more supplementary oranges on top of the row of oranges carried by the conveyer, a rotating stop for checking the progress of each supplementary orange and for turning it, made of less diameter than the diameter of the orange which engages it, and so located with respect to the oranges as to permit the orange to pass over it, substantially as described.

15. In a machine for feeding oranges and other articles, the combination of a conveyer having pockets, means for delivering oranges thereto, side walls for holding one or more supplementary oranges on top of the row of oranges carried by the conveyer, a rotating fluted roller for each supplementary orange, extending transversely across the path of progress of said supplementary oranges, which checks their progress and also turns them, substantially as described.

16. In a machine for feeding oranges and other articles, the combination of a conveyer having pockets, means for delivering oranges thereto, side walls for holding one or more supplementary oranges on top of the row of oranges carried by the conveyer, a rotating fluted roller for each supplementary orange, which checks their progress and also turns them, said roller being made of considerable less diameter than the diameter of the supplementary oranges, substantially as described.

17. In a machine for feeding oranges and other articles, the combination of a conveyer having pockets, means for delivering oranges thereto, side walls for holding one or more supplementary oranges on top of the row of oranges carried by the conveyer, a stop extending transversely across the path of progress of each supplementary orange and a yielding support for said stop, substantially as described.

18. In a machine for feeding oranges and other articles, the combination of a conveyer having pockets, means for delivering oranges thereto, side walls for holding one or more supplementary oranges on top of the row of oranges carried by the conveyer, a roller for each supplementary orange, extended transversely across the path of progress of said supplementary orange, a yielding support for each roller, and means for rotating the rollers to turn the supplementary oranges, substantially as described.

19. In a machine for feeding oranges and other articles, the combination of a conveyer having pockets, means for delivering oranges thereto, means for holding one or more supplementary oranges on top of the row of oranges carried by the conveyer, and means for removing the surplus oranges, substantially as described.

20. In a machine for feeding oranges and other articles, the combination of a conveyer having pockets, means for delivering oranges thereto, means for holding one or more supplementary oranges on top of the row of oranges carried by the conveyer, and means for removing the surplus oranges and for returning them to the means employed for delivering the oranges to the conveyer, substantially as described.

21. In a machine for feeding oranges and other articles, the combination of a conveyer having pockets, means for delivering oranges thereto, means for holding one or more supplementary oranges on top of the row of oranges carried by the conveyer, and a declining chute adapted to receive the surplus oranges, substantially as described.

22. In a machine for feeding oranges and other articles, the combination of a conveyer having pockets, means for delivering oranges thereto, means for holding supplementary oranges on top of the row of oranges carried by the conveyer, a declining chute adapted to receive the surplus oranges, and means for conveying them from said chute to the means employed for delivering them to the conveyer, substantially as described.

23. In a machine for feeding oranges and other articles, the combination of a conveyer having pockets, means for delivering oranges thereto, means for holding one or more supplementary oranges on top of the row of oranges carried by the conveyer, a declining chute adapted to receive the surplus oranges, and a conveyer for returning said oranges to the chute from whence they came, substantially as described.

24. In a machine for feeding oranges and other articles, the combination of a conveyer having pockets, means for delivering oranges thereto, means for holding one or more supplementary oranges in position to enter a vacant pocket in said conveyer, and means for removing the surplus oranges, substantially as described.

25. In a machine for feeding oranges and other articles, the combination of a conveyer having pockets, means for delivering oranges thereto, means for holding one or more supplementary oranges on top of the row of oranges carried by the conveyer, a stop for checking the progress of each supplementary orange over which the oranges may pass, and means for removing the surplus oranges, substantially as described.

26. In a machine for feeding oranges and other articles, the combination of a conveyer having pockets, means for delivering oranges thereto, means for holding one or more supplementary oranges on top of the row of oranges carried by the conveyer, a stop for checking the progress of each supplementary orange over which the oranges may pass, and means for removing the surplus oranges and for returning them to the chute from whence they came, substantially as described.

27. In a machine for feeding oranges and other articles, the combination of a conveyer having pockets, means for delivering oranges thereto, means for holding one or more supplementary oranges on top of the row of oranges carried by the conveyer, a roller for checking the progress of each supplementary orange over which the orange may pass, means for rotating said roller, and a declining chute adapted to receive the surplus oranges, substantially as described.

28. In a machine for feeding oranges and other articles, the combination of a conveyer having pockets, means for delivering oranges thereto, means for holding one or more supplementary oranges on top of the row of oranges carried by the conveyer, a roller for checking the progress of each supplementary orange over which the oranges may pass, means for rotating said roller, a declining chute adapted to receive the surplus oranges and means for conveying the oranges from said chute to the chute from whence they came, substantially as described.

29. In a machine for feeding oranges and other articles, the combination of a declining chute made wide enough to provide for the simultaneous delivery of several oranges arranged side by side in a row extending transversely across it, means for controlling the delivery of the oranges therefrom, a row at a time, a conveyer having pockets, and means for moving it to bring the pockets thereof into position to receive the oranges a row at a time, and to invert the pockets successively to discharge the oranges singly, substantially as described.

820,379. **ANTHRACENE DYE AND PROCESS OF MAKING SAME.** OSCAR BALLY and MAX H. ISLER, Mannheim, Germany, assignors to Badische Anilin & Soda Fabrik, Ludwigshafen-on-the-Rhine, Germany, a Corporation. Original application filed Jan. 31, 1906, Serial No. 243,571. Divided and this application filed Oct. 11, 1905. Serial No. 282,356.

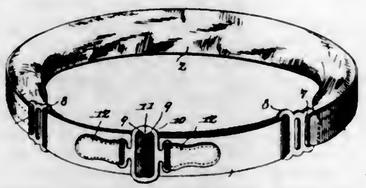
Claim.—1. The process for the production of anthracene coloring-matters by treating with caustic alkali a hereinbefore-defined benzanthrone compound obtainable by condensing together a naphthanthraquinone body and glycerin.

2. The process for the production of anthracene coloring-matters by treating with caustic alkali a hereinbefore-defined benzanthrone compound obtainable by condenaing together naphthanthraquinone and glycerin.

3. As new articles of manufacture, the anthracene coloring-matters which can be obtained by treating with caustic alkali a benzanthrone obtainable from a naphthanthraquinone body, which coloring-matters dissolve in concentrated sulfuric acid yielding olive-green solutions, and which dissolve in alkaline hydrosulfite yielding reddish-brown vats which dye vegetable fiber substantively giving red-blue to green-blue shades.

4. As a new article of manufacture the anthracene coloring-matter which can be obtained by treating with caustic alkali the benzanthrone obtainable from naphthanthraquinone, which coloring-matter dissolves in concentrated sulfuric acid yielding an olive-green solution, and which dissolves in alkaline hydrosulfite, yielding a reddish-brown vat which dyes vegetable fiber substantively yielding blue to green-blue shades.

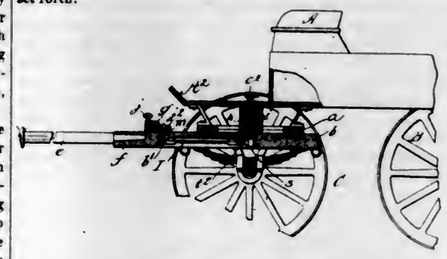
820,380. **GARTER.** JOHN H. BEATTY, Amite City, La., assignor of one-half to Russel E. Stone, Amite City, La. Filed May 27, 1905. Serial No. 262,630.



Claim.—A garter embodying a multi-ply flexible band, a resilient reinforcing member secured between the plies of the band, an air-cushion secured to the inner ply of the band, and an elastic adjusting member combined with the terminals of the band.

820,381. **MEANS FOR FREEING HORSES FROM VEHICLES.** DANIEL BOLDOC, New York, N. Y., assignor of one-half to Johann Melga, New York, N. Y. Original application filed Apr. 26, 1905, Serial No. 257,405. Divided and this application filed Nov. 9, 1905. Serial No. 286,478.

Claim.—In a carriage-team-releasing mechanism, the combination, with the forward end of the pole, of a two-part neck-yoke G G¹, arranged and operating so that upon releasement from the carriage of the traces of the harnessed team, the freed horses will each carry off, one of the parts of said two-part neck-yoke, to which the pole-straps are fastened; substantially as described and for the purpose set forth.



820,382. **SAFETY-PIN.** THERON S. CARROLL, Winsted, Conn. Filed Dec. 24, 1898. Serial No. 700,198.



Claim.—1. A safety-pin comprising a pin-bar and a pin-point shield for the pointed end of the pin-bar, the pin-bar having a segmental bend without a coil, the pointed end of the pin-bar normally tending to move away from the pin-point shield when disengaged therefrom, and means engaging the pin-bar at the segmental bend and acting to limit said movement of the pointed end of the pin-bar and also acting as a stop to prevent fabric through which the pin-bar is inserted passing to and around said bent part of the pin-bar.

2. A safety-pin comprising a pin-bar and a pin-point shield for the pointed end of the pin-bar, the pin-bar having a bend without a coil, the pointed end of the pin-bar normally tending to spring or move away from the pin-point shield when disengaged therefrom, and a part that extends across the pin-bar in advance of the bend therein such part having integral therewith an embracing portion, said part acting to limit the movement of the pointed end of the pin-bar and as a stop to prevent fabric through which the pin-bar is inserted passing to and around the bent part of the pin-bar.

3. A coilless safety-pin embodying a pin-bar formed of spring-wire which is bent segmentally upon itself to form normally diverging members which lie in the same plane, and a back member having at one end a pin-point shield and at the other end a reinforcing part which extends in advance of the segmentally-bent part across the space between the members of the pin-bar and engages such part of the pin-bar to reinforce its segmentally-bent portion.

4. In a safety-pin, a pin-bar having a bent portion, a sheet-metal back to which the bent portion of the pin-bar is attached, a flat brace on said back which extends in the same direction as the bent portion of the pin-bar, a stop or lug formed by bending the end of the brace to overlie a portion of the pin-bar; whereby the pin-bar is sustained and movement at its bent portion is limited.

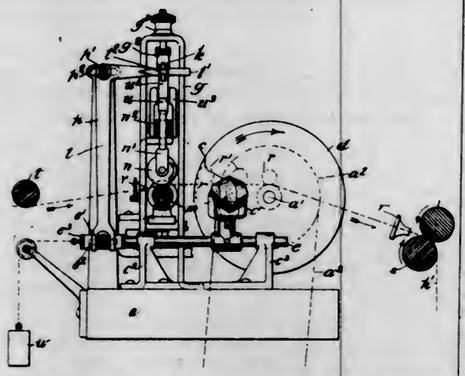
5. In a safety-pin, the combination with a pin-bar which is bent back upon itself to form two members which lie in the same plane, of a back member which is bent upon itself to provide at one end a pin-point shield, one member of the pin-bar being attached to the end of the back farthest from the shield, a brace which projects from one side of the back and parallels the bent portion of the pin-bar, the brace having its end bent toward the back to form a stop or lug which overlies that bent portion of the pin-bar which is farthest from the back, for the purpose set forth.

6. A safety-pin embodying a pin-bar formed of spring-wire which is bent upon itself to form normally diverging members which lie in the same plane and a back member having at one end a pin-point shield and at the other end a part the end of which is bent toward the back member to overlie the pin-bar and limit its spring movement away from the back.

REISSUES.

12,478. **SLIVER EVENING DEVICE FOR DRAWING-FRAMES.** VALORUS S. WESTCOTT, Pawtucket, and FRANK W. POTTER, Central Falls, R. I. Filed Mar. 23, 1906. Serial No. 307,745. Original No. 786,942, dated Mar. 28, 1905.

Claim.—1. In a sliver-evening device for drawing-frames, having front or delivery drawing-rolls, driving mechanism for revolving them at a substantially uniform rate of speed, and rear rolls r' for feeding a plurality of independent slivers between them to said front rolls, the combination therewith of sliver-evening mechanism comprising a revoluble evener-roll m, a revoluble yieldingly-mounted wheel for each sliver, said wheel being actuated by said roll m, variable driving means taking its motion from the said front driving mechanism for rotating the said rear and evener rolls, and an automatic equalizing device having its movements controlled by variations in the thickness of any one of the slivers while the latter are passing between the said evener-roll and wheels.



2. In a drawing-frame having front drawing-rolls and mechanism for rotating them at a uniform or invariable rate of speed, said mechanism including a driving-disk d revolving in unison with the same, the combination therewith of a plurality of pairs of rear rolls which deliver the slivers to said front drawing-rolls, a yieldingly-mounted oppositely-disposed fellow disk d' revolvable in the same direction as the said driving-disk, a freely-turning bevel-faced wheel c interposed between and in frictional engagement with the working faces of both the said disks, an evener-roll and revolvable independent wheels n coacting therewith, between the adjacent peripheral surfaces of which the slivers pass to the said rear rolls, means connected with the disk d' for rotating said evener and rear rolls, and a device operatively connected with said revoluble members c and n for automatically changing the speed of said rolls, substantially as hereinbefore described and for the purpose set forth.

3. In a drawing-frame, the combination with the front drawing-rolls and driving mechanism therefor arranged to revolve them at a uniform rate of speed, of a plurality of pairs of rear rolls between which the sliver passes, means for revolving said rear rolls, said means being operatively driven by the first-named driving mechanism, and suitably-mounted compound or multiple levers adapted in their movements to automatically change the speed of the said mechanism which rotates the rear rolls, one of the latter rolls being provided with a guided and weighted freely-turning wheel for each sliver, whereby variations in the thickness of the slivers while passing between the adjacent peripheral surfaces of said roll and wheels cause the levers and connected mechanism to become operative.

4. In a sliver-evening device for drawing-frames, the combination with the evener-roll m and mechanism adapted for driving the same at variable rates of speed, of a plurality of independent freely-turning yieldingly-mounted wheels between the peripheral surfaces of which and the said roll the slivers pass, and a speed-changing device operatively connected with said wheels and with the roll-driving mechanism for automatically changing the speed of rotation of the roll, slower or faster as the case may be, whenever the thickness of any of the passing slivers varies from the normal.

5. In a drawing-frame provided with uniformly-driven front drawing-rolls between which the slivers pass, and rear sliver-feeding rolls adapted to be driven at varying rates of speed, the combination therewith of a friction driving-disk d revolving in unison with said first-named rolls, a spring-pressed endwise-movable revolvable fellow disk d' oppositely disposed with respect to said disk d, said two disks being arranged to turn in one direction, a freely-revolvable wheel c interposed between and in continuous frictional engagement with the working faces of both disks, and means including independent yieldingly-mounted disks n arranged with respect to said rear rolls and operatively connected with the wheel c, whereby variations in the thickness of the passing slivers, greater or less than the normal thickness, causes the said wheel to be automatically advanced or retracted, thereby respectively decreasing or increasing the speed of the rear rolls, substantially as described.

6. In a sliver-evening mechanism, means for feeding the sliver, a detector device having members movable relative to each other the movable member thereof being adapted to rest or bear directly on the sliver, and means to change the rate of feed of the sliver said means being actuated by the detector device when the sliver varies in thickness.

7. In a sliver-evening device, means for equalizing the varying thickness of the sliver, said means consisting of a detector having two members, one vertically fixed and one vertically movable, said movable member resting or bearing directly upon the sliver, and means actuated by said movable member to change the rate of feed of said sliver when required.

8. In a sliver-evening mechanism, means for feeding the sliver, a detector device having two rotating members, means to change the rate of feed of the sliver, said means being actuated by the detector device when the sliver varies in thickness.

9. In a sliver-evening device, the combination of means for confining the sliver, a movable detector at all times resting or bearing on said sliver, and adapted to be moved when the sliver varies in thickness, and means actuated by the movement of the detector to vary the rate of feed of the sliver.

10. In a sliver-evening device, the combination of means to feed the sliver, a rotary detector adapted to be moved by the varying size of said sliver, and means actuated by movements of said detector to change the rate of feed of the sliver.

11. A sliver-evening device comprising relatively fixed and movable members between which the sliver is at all times confined on all sides, and means actuated by said movable member when the sliver varies from a normal thickness to vary the rate of feed of the sliver.

12. A sliver-evening device comprising two members movable relative to each other for confining the sliver on all sides at all times, and means actuated by the movement of one of said members upon a variation in thickness of the sliver from a normal to correspondingly vary the rate of feed of the sliver.

13. A sliver-evening device comprising members movable relative to each other one of said members being grooved and the other fitting therein whereby the sliver is confined on all sides at all times, and means actuated by the movement of one of said members when the sliver varies from a normal thickness to vary the rate of feed of the sliver.

14. In a sliver-evening device the combination of means for confining a sliver on all sides comprising a detector bearing upon and adapted to be moved by the sliver when it varies from a normal thickness, and means actuated by the movement of the detector to vary the rate of feed of the sliver.

15. In a sliver-evening device the combination of means for confining a sliver on all sides comprising a yieldingly-mounted detector, and means actuated by the movement of the detector when the sliver varies from a normal thickness to correspondingly vary the rate of feed of the sliver.

16. In a sliver-evening device the combination of a member having a groove therein in which the sliver is confined laterally, a detector resting within said groove and adapted to bear upon the sliver, and means actuated by the movement of the detector when the sliver varies from a normal thickness to vary the rate of feed of the sliver.

17. In a sliver-evening device the combination of means to unyieldingly confine a sliver in one direction, a movable detector adapted to bear upon the sliver and operating in a plane transverse to the plane of fixed confinement, and means actuated by the movement of the detector when the sliver varies from a normal thickness to vary the rate of feed of the sliver.

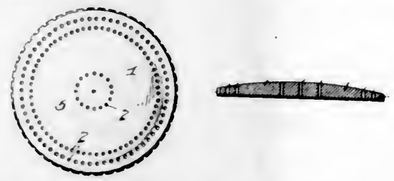
18. In a sliver-evening device the combination of a roll having a groove therein, means to rotate said roll, a detector seated within the groove and coacting with the roll to confine the sliver on all sides, and means actuated by the movement of said detector when the sliver varies from normal thickness to vary the speed of rotation of said roll.

19. In a sliver-evening device the combination of a roll having a groove therein, a detector consisting of a rotatable disk seated within said groove and mounted so as to yield upon a variation of the sliver from a normal thickness, and means actuated by the movement of said detector to vary the rate of feed of the sliver.

20. In a drawing-frame the combination of drawing-rolls, an evener-roll, all of said rolls being geared together, a detector adapted to bear upon the sliver, and means actuated by the movement of said detector upon a variation of the sliver from a normal thickness to vary the speed of said rolls.

21. In a drawing-frame the combination of front drawing-rolls and means to rotate the same at a uniform rate of speed, back drawing-rolls, an evener-roll, said back rolls and evener-roll being geared together, a detector coacting with said evener-roll to confine the sliver on all sides, and means actuated by the movement of said detector upon the variation of the sliver from a normal thickness to vary the speed of said back drawing-rolls and evener-roll.

12,479. HOLDER FOR LACEWORK. AUGUSTA PROCTOR, Viroqua, Wis. Filed Dec. 11, 1905. Serial No. 292,103. Original No. 744,610, dated Nov. 17, 1903.



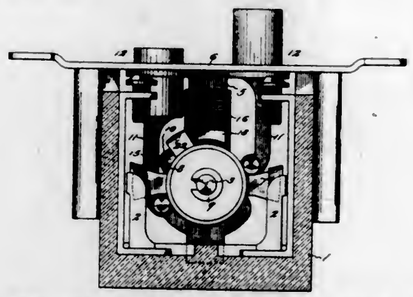
Claim.—1. As an article of manufacture, a holder for lacework, in the form of a plate, having a convex upper surface and also having a series of pin-receiving means extending throughout its thickness and grouped about its center.

2. As an article of manufacture, a holder for lacework, in the form of a plate, having a convex upper surface and also having a series of apertures extending throughout its thickness and arranged adjacent to and grouped about its center, and a second series of apertures extending throughout its thickness, grouped about its center and arranged adjacent to its periphery.

3. A patterning-holder for making lacework consisting of a plate convexed on its upper side and having a plurality of pin-receiving holes therethrough, the plate being notched at its peripheral edge.

4. A patterning-holder for making lacework consisting of a plate convexed on its upper side, a plurality of concentrically-arranged series of pin-receiving hooles, one of said series of holes arranged at or near the center of the body, and the plate provided with a peripheral series of edge notches.

12,480. PUSH-BUTTON ELECTRIC SWITCH. WILLIAM C. TREGONING, Hackensack, N. J., assignor, by mesne assignments, to The Perkins Corporation, Hartford, Conn., a Corporation of Connecticut. Filed Apr. 16, 1906. Serial No. 312,040. Original No. 741,853, dated Oct. 20, 1903.



Claim.—An electric switch having a frame-plate, a spindle supported by the frame-plate, oscillatory poles mounted on the spindle, an escape-plate mounted on the spindle and connected with the poles and having an escape-arm and a spring-arm, a cam-plate mounted concentric of the spindle and having a cam-slot and a spring-arm, a slide movable upon the frame-plate and having a stud extending into the cam-slot and a lug extending into the path of the escape-arm, a spring coiled about the spindle and having its ends extending on opposite sides of the spring-arms projecting from the cam-plate and the escape-plate, and push-buttons connected with the cam-plate, substantially as specified.

DESIGNS.

37,988. NAIL-FILE. ERNST RUETTGERS, New York, N. Y. Filed Mar. 19, 1906. Serial No. 306,935. Term of patent 7 years.



Claim.—The ornamental design for a nail-file, as shown.

37,989. SPOON OR SIMILAR ARTICLE. GEORGE CHAMBERS and ROBERT J. STEWART, Mount Clemens, Mich. Filed Apr. 7, 1906. Serial No. 310,580. Term of patent 14 years.



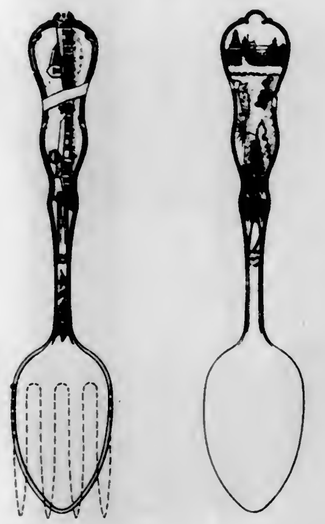
Claim.—The ornamental design for a spoon or similar article, as shown.

37,990. HANDLE FOR FORKS, SPOONS, AND SIMILAR ARTICLES. JOHN LEECH, Bridgeport, Conn., assignor to International Silver Company, Bridgeport, Conn., a Corporation. Filed Mar. 31, 1906 Serial No. 309,226. Term of patent 7 years.



Claim.—The ornamental design for a handle for forks, spoons and similar articles, as shown.

37,991. HANDLE FOR SPOONS, FORKS, AND SIMILAR ARTICLES. CHARLES T. PAYE, North Attleboro, Mass., assignor, by mesne assignments, to Chris W. Ernsting, San Diego, Cal. Filed Apr. 5, 1906 Serial No. 310,181. Term of patent 7 years.



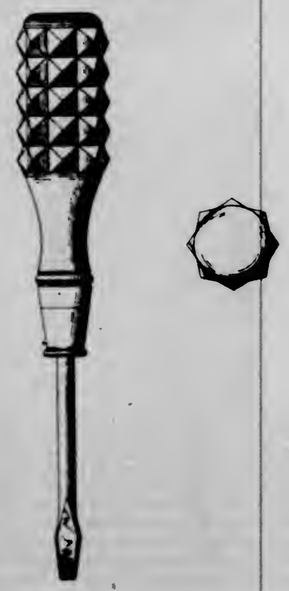
Claim.—The ornamental design for a handle for spoons, forks, and similar articles, as shown.

37,992. HANDLE OF SCREW-DRIVERS OR SIMILAR ARTICLES. JOHN J. TOWER, Montclair, N. J. Filed Mar. 28, 1906. Serial No. 308,617. Term of patent 14 years.



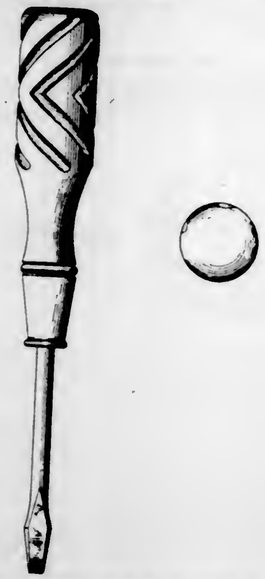
Claim.—The ornamental design for the handle of a screw-driver or similar article as herein shown.

37,993. HANDLE OF SCREW-DRIVERS OR SIMILAR ARTICLES. JOHN J. TOWER, Montclair, N. J. Filed Mar. 28, 1906. Serial No. 308,618. Term of patent 14 years.



Claim.—The ornamental design for the handle of a screw-driver or similar article as herein shown.

37,994. HANDLE FOR SCREW-DRIVERS OR SIMILAR ARTICLES. JOHN J. TOWER, Montclair, N. J. Filed Mar. 28, 1906. Serial No. 308,619. Term of patent 14 years.



Claim.—The ornamental design for the handle of a screw-driver or similar article as herein shown.

37,995. HANDLE OF SCREW-DRIVERS OR SIMILAR ARTICLES. JOHN J. TOWER, Montclair, N. J. Filed Mar. 28, 1906. Serial No. 308,620. Term of patent 14 years.



Claim.—The ornamental design for the handle of a screw-driver or similar article as herein shown.

37,996. HANDLE OF SCREW-DRIVERS OR SIMILAR ARTICLES. JOHN J. TOWER, Montclair, N. J. Filed Mar. 28, 1906. Serial No. 308,621. Term of patent 14 years.



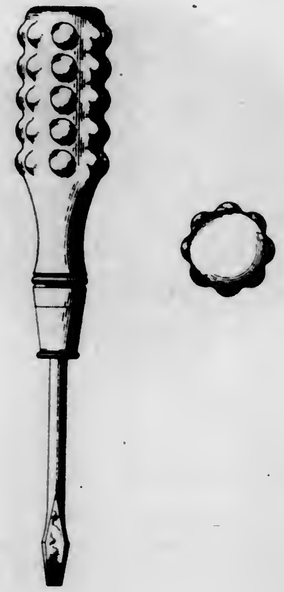
Claim.—The ornamental design for the handle of a screw-driver or similar article as herein shown.

37,997. HANDLE OF SCREW-DRIVERS OR SIMILAR ARTICLES. JOHN J. TOWER, Montclair, N. J. Filed Mar. 28, 1906. Serial No. 308,622. Term of patent 14 years.



Claim.—The ornamental design for the handle of a screw-driver or similar article as herein shown.

37,998. HANDLE OF SCREW-DRIVERS OR SIMILAR ARTICLES. JOHN J. TOWER, Montclair, N. J. Filed Mar. 28, 1906. Serial No. 308,623. Term of patent 14 years.



Claim.—The ornamental design for the handle of a screw-driver or similar article as herein shown.

37,999. GLASS VESSEL. BENJAMIN FRANKLIN DAVIES, West Hoboken, N. J., assignor to L. Straus & Sons, New York, N. Y. Filed Mar. 15, 1906. Serial No. 306,303. Term of patent 7 years.

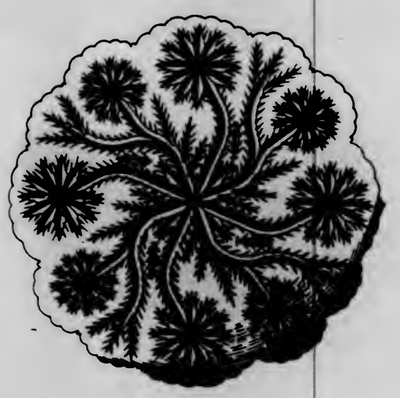


37,999.



Claim.—The ornamental design, as herein shown, for a glass vessel.

38,000. CUT-GLASS VESSEL. WILLIAM C. ANDERSON, Lansing, Mich., assignor to The Libbey Glass Company, Toledo, Ohio, a Corporation of Ohio. Filed Mar. 26, 1906. Serial No. 306,181. Term of patent 7 years.



Claim.—The ornamental design for a cut-glass vessel, as shown.

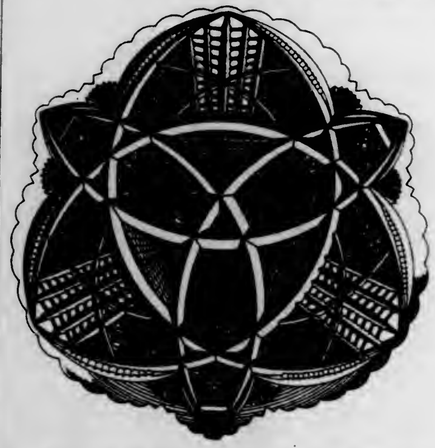
38,001. CUT-GLASS VESSEL. DENNIS F. SPILLANE, Toledo, Ohio, assignor to The Libbey Glass Company, Toledo, Ohio, a Corporation of Ohio. Filed Mar. 26, 1906. Serial No. 306,182. Term of patent 7 years.

38,001.



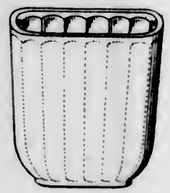
Claim.—The ornamental design for a cut-glass vessel, as shown.

38,002. CUT-GLASS VESSEL. DENNIS F. SPILLANE, Toledo, Ohio, assignor to The Libbey Glass Company, Toledo, Ohio, a Corporation of Ohio. Filed Mar. 26, 1906. Serial No. 306,183. Term of patent 7 years.



Claim.—The ornamental design for a cut-glass vessel, as shown.

38,003. DRINKING-TUMBLER. HUGO THUEMLER, Pittsburg, Pa. Filed Mar. 23, 1906. Serial No. 307,737. Term of patent 3½ years.



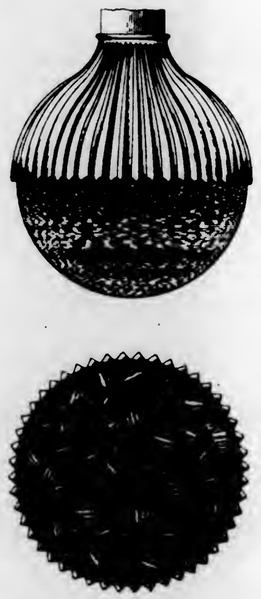
Claim.—The ornamental design for a drinking-tumbler as shown.

38,004. HANGING FLOWER-POT. WILLIAM WIESLER, Cleveland, Ohio. Filed Mar. 20, 1906. Serial No. 307,120. Term of patent 7 years.



Claim.—The ornamental design of a hanging flower-pot, as shown.

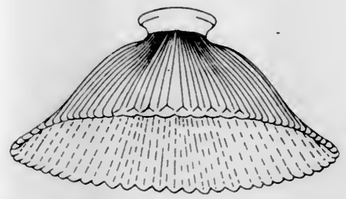
38,005. INCANDESCENT ELECTRIC-LAMP BULB. OTIS A. MYGATT, New York, N. Y. Filed Jan. 29, 1904. Serial No. 191,222. Term of patent 14 years.



Claim.—The ornamental design for a spherical lamp-bulb, having the upper hemisphere covered with reflecting-prisms arranged as lunes, and the lower hemisphere frosted, as shown and described.

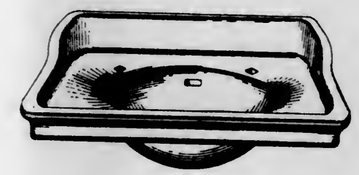
38,006. PRISMATIC-GLASS REFLECTOR. OTIS A. MYGATT, New York, N. Y. Filed Aug. 1, 1905. Serial No. 272,263. Term of patent 14 years.

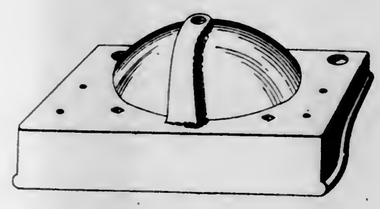




Claim.—The ornamental design for a priamatic-glass reflector of the form shown, having external reflecting-prisms visible on the interior as shown and described.

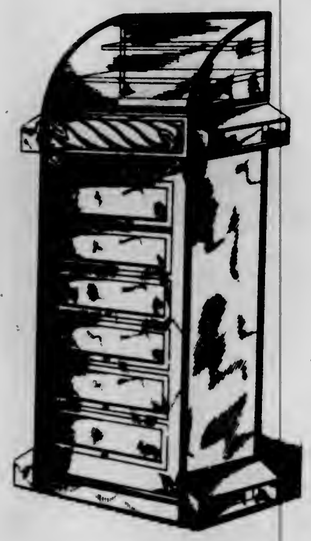
38,007. LAVATORY. HENRY PODMORE, Trenton, N. J., assignor to Trenton Potteries Company, Trenton, N. J., a Corporation of New Jersey. Filed Mar. 21, 1906. Serial No. 307,286. Term of patent 7 years.





Claim.—The ornamental design for a lavatory, as shown.

38,008. CABINET. HUGH V. CROSIER, Merrillan, Ark. Filed Mar. 20, 1906. Serial No. 307,118. Term of patent 14 years.



Claim.—The ornamental design for cabinet as shown.

38,009. DELIVERY-WAGON BODY. CHARLES H. T. PETERS, Baltimore, Md. Filed Jan. 10, 1906. Serial No. 295,506. Term of patent 14 years.



Claim.—The ornamental design for a delivery-wagon body, as shown.

TRADE-MARKS

PUBLISHED MAY 8, 1906.

The following trade-marks have been adjudged entitled to registration under the act of February 20, 1905, and are published in compliance with section 6 of said act. Said section provides:

"Any person who believes he would be damaged by the registration of a mark may oppose the same by filing notice of opposition, stating the grounds therefor, in the Patent Office within thirty days after the publication of the mark sought to be registered, which said notice of opposition shall be verified by the person filing the same before one of the officers mentioned in section two of this act. If no notice of opposition is filed within said time the Commissioner shall issue a certificate of registration therefor, as hereinafter provided for."

Marks which are stated to have been "Used ten years" are registrable under the last proviso of section 5 of said act, which is as follows:

"And provided further, That nothing herein shall prevent the registration of any mark used by the applicant or his predecessors, or by those from whom title to the mark is derived, in commerce with foreign nations or among the several States, or with Indian tribes, which was in actual and exclusive use as a trade-mark of the applicant or his predecessors from whom he derived title for ten years next preceding the passage of this act."

Section 14 of said act provides for the following fee:

'On filing notice of opposition to the registration of a trade-mark, ten dollars."

SER. No. 20. COMPOUNDS OF CHLORIDS AND FORMALDEHYDES USED AS ANTISEPTICS AND DISINFECTANTS. SHOEMAKER & BUSCH, Philadelphia, Pa. Filed Apr. 1, 1905.



A red star.

SER. No. 379. CANNED FRUITS. GRIFFIN & SKELLEY COMPANY, San Francisco, Cal. Filed Apr. 6, 1905.

GRIFFIN 

The arbitrarily-selected word "GRIFFIN" and the representation of a griffin rampant upon a shield.

SER. No. 841. PORTLAND CEMENT. THE WHITEHALL PORTLAND CEMENT CO., Cementon, Pa. Filed Apr. 8, 1905.



The word "WHITEHALL," which is displayed on a circular red ground.

SER. No. 1,001. GRASS-SEED AND FIELD-SEED ADAPTED FOR BEING SOWN OR PLANTED FOR REPRODUCTION. LUDWIG TEWELES, Milwaukee, Wis. Filed Apr. 10, 1905.

BADGER BRAND 

The words "BADGER BRAND" and the representation of a badger.

SER. No. 1,024. HOLDERS FOR SOAP, SPONGES, BRUSHES, TOWELS, COMBS, TUMBLERS, AND PAPER-HOLDERS. J. P. BUSTIS MFG. CO., Portland, Me. Filed Apr. 10, 1905.

The Brasscrafters

The words "THE BRASSCRAFTERS."

SER. No. 1,296. LEATHER SHOES. PETERS SHOE CO., St. Louis, Mo. Filed Apr. 12, 1905.

Peters SPARKLER

The words "PETERS SPARKLER" printed in the center of a rectangular space surrounded by a border-line.

SER. No. 1,391. HAIR-TONIC. WEINDORF & CO., Long Island City, N. Y. Filed Apr. 13, 1905.



A representation of an open razor, associated with the words "WEINDORF'S RAISER," the word "RAISER" appearing on the handle of the razor, being interlocked with the word "HAIR."

SER. No. 1,408. LIQUID LOTION OR EMULSION FOR THE SKIN. AURELIUS S. HINDS, Portland, Me. Filed Apr. 13, 1905. Used ten years.

HONEY AND ALMOND CREAM

The words "HONEY AND ALMOND CREAM."

SER. No. 1,829. WHISKY. BROWN-FORMAN CO., Louisville, Ky. Filed Apr. 17, 1905.

RUSSETT

The word "RUSSETT."

SER. No. 1,911. HAND-KNIVES OF ALL KINDS, RAZORS, NAIL-CUTTERS, CHAMPAGNE-WIRE CUTTERS, AND TABLE-CUTLERY, EXCEPT OF PRECIOUS METAL. ANDREW J. JORDAN, St. Louis, Mo. Filed Apr. 17, 1905.

AAA1

Three letters "A" followed by the numeral "1," the first "A" being a capital letter "A" followed by a capital letter "A" of smaller dimensions, which in turn is followed by a capital letter "A" of equal size with the first.

SER. No. 2,022. MACHINES FOR PRINTING ADDRESSES OR OTHER MATTER. ADDRESSOGRAPH COMPANY, Chicago, Ill. Filed Apr. 17, 1905. Used ten years.

Addressograph

The word "ADDRESSOGRAPH."

SER. No. 2,220. LAUNDRY STARCH. TROY LAUNDRY MACHINERY COMPANY LIMITED, Chicago, Ill. Filed Apr. 19, 1905.

TROJAN

The word "TROJAN."

SER. No. 2,309. OATMEAL, ROLLED OATS, CRACKED WHEAT, ROLLED WHEAT, FARINA, HOMINY GRITS, PEARLED BARLEY, PREPARED RICE, AND BREAKFAST-FOODS. THE AMERICAN CEREAL COMPANY, Akron and Ravenna, Ohio; Chicago, Ill., and Cedar Rapids, Iowa. Filed Apr. 19, 1905.

QUAKER



The word "QUAKER" and the pictorial representation of the figure of a man clothed in Quaker garb bearing in one hand a scroll with the word "PURE" appearing thereon.

SER. No. 2,310. OATMEAL, ROLLED OATS, CRACKED WHEAT, ROLLED WHEAT, FARINA, HOMINY GRITS, PEARLED BARLEY, PREPARED RICE, AND BREAKFAST-FOODS. THE AMERICAN CEREAL COMPANY, Akron and Ravenna, Ohio; Chicago, Ill., and Cedar Rapids, Iowa. Filed Apr. 19, 1905.



The pictorial representation of the figure of a man clothed in Quaker garb bearing in one hand a scroll with the word "PURE" appearing thereon.

SER. No. 2,429. GLASS CHIMNEYS, LANTERN-GLOBES, AND REFLECTORS. GILL BROTHERS COMPANY, Steubenville, Ohio. Filed Apr. 20, 1905. Used ten years.



An oval-shaped figure having two cross-bands, in one of which appears the word "BESSEMER" and in the other the words "FIRE PROOF;" in the upper part of the oval, between the bands, the word "BEST;" between the bands on the left the word "LEAD," between the bands on the right the word "FLINT," and below, between the bands, a star with a dash on each side.

SER. No. 2,508. BAKING-POWDER. THE HOWELL MFG. CO., Hamilton, Ohio. Filed Apr. 20, 1905. Used ten years.



The words "AUNT JEMIMA'S BAKING POWDER" and the bust of a negress carrying a pan of biscuits.

SER. No. 2,633. DRESS-SHIELDS. THE KORA CO., New York, N. Y. Filed Apr. 21, 1905.

KORA

The word "KORA."

SER. No. 3,254. STERLING-SILVER HOLLOW WARE, STERLING-SILVER FLAT WARE, AND STERLING-SILVER TOILET ARTICLES. R. WALLACE & SONS MFG. CO., Wallingford, Conn. Filed Apr. 27, 1905.

RW&S

A stag's head, heraldic roll, and the letters "R W & S."

SER. No. ,634. BEER. THE HOSTER-COLUMBUS ASSOCIATED BREWERIES CO., Columbus, Ohio. Filed Apr. 29, 1905.

Born's

The name "BORN'S" in heavy shaded script with an underscoring mark.

SER. No. 3,635. BEER. THE HOSTER-COLUMBUS ASSOCIATED BREWERIES CO., Columbus, Ohio. Filed Apr. 29, 1905.

Schlee's

The name "SCHLEE'S" in heavy shaded script with a bar beneath the name.

SER. No. 3,983. SPICES AND MUSTARD. E. R. DURKEE & CO., New York, N. Y. Filed May 2, 1905.



The representation of the heads, shoulders, and outstretched wings of three birds, the wings forming a triangular figure surrounded by two concentric circles.

SER. No. 4,097. ROASTED COFFEE AND ROASTED AND GROUND COFFEE. THE ENTERPRISE COFFEE COMPANY OF BALTIMORE CITY, Baltimore, Md. Filed May 3, 1905.

SER. No. 4,097.

Gold Star

The representation of a gold star associated with the words "GOLD STAR."

SER. No. 4,136. WINE. ISAAC GOLDOFT, El Paso, Tex. Filed May 3, 1905.



The words "NATIVE SUN" and a picture of a sun with radiating lines, underneath which is a Southern scene with a man carrying a basket of grapes or other fruit, with the representation of a vineyard behind him.

SER. No. 4,138. BLADES FOR POCKET-KNIVES, RAZORS, BUTCHER-KNIVES, CARVERS, TABLE-CUTLERY, AND KITCHEN-KNIVES. A. BALDWIN & CO. LIMITED, New Orleans, La. Filed May 3, 1905.

I CUT KEEN
CUT KEEN

The representation of an arrow spanned by the capital letters "I C K," with the letters "UT" and "EEN" above and below the shaft of the arrow, which together form the sentence "I CUT KEEN."

SER. No. 4,149. FOOTWEAR WITH LEATHER SOLES. CHAS. W. STROHBECK, New York, N. Y. Filed May 3, 1905.

High Art

The words "HIGH ART" and a shield flanked by griffins with their tails above scrolls on opposite sides of the lower part of the shield, an eagle with outstretched wings appearing perched on the top of the shield.

SER. No. 4,169. LEATHER SHOES. WILBUR E. CUMMINGS, Los Angeles, Cal. Filed May 3, 1905.

So-Z

The word-symbol "So-E-Z."

SER. No. 4,548. ATTACHMENT FOR CLOSET-SEATS. THE SPECIALTIES SALES CO., Chicago, Ill. Filed May 6, 1905.

THE BABICHAIR

The words "THE BABICHAIR," the letters of the word "BABICHAIR" being of gradually-decreasing height at either side of the central letter "C," the general arrangement being in the form of a diamond with its greatest width located horizontally.

SER. No. 4,995. COTTON PIECE GOODS. MASSACHUSETTS COTTON MILLS, Lowell, Mass. Filed May 10, 1905. Used ten years.

WYANDOTTE

The arbitrarily-selected word "WYANDOTTE."

SER. No. 5,045. WHEAT-FLOUR. THE NORTHWESTERN CONSOLIDATED MILLING CO., Minneapolis, Minn. Filed May 11, 1905. Used ten years.

Christian's Superlative

The words "CHRISTIAN'S SUPERLATIVE."

SER. No. 5,108. COTTON SHEETING AND DRILLING. THE ABE STEIN CO., New York, N. Y. Filed May 11, 1905.



M.K.

The representation of an aboriginal carrying a spear and shield in the foreground of a desert scene showing a mound, a tree, and two huts, associated with the letters "M. K."

SER. No. 5,249. SHEETINGS, SHIRTINGS, DRILLINGS, DUCKS, OSNABURGS, DENIMS, CANTON-FLANNEL, AND COTTON PIECE GOODS. MASSACHUSETTS COTTON MILLS, Lowell, Mass. Filed May 11, 1905.

SER. No. 5,249.

B

The letter "B" in gold color.

SER. No. 5,298. WHISKY. STRAUS GUNST & CO., Richmond, Va. Filed May 12, 1905.

POWHATAN CLUB

The words "POWHATAN CLUB."

SER. No. 5,300. GIN. STRAUS GUNST & CO., Richmond, Va. Filed May 12, 1905.



The word "TURKEY," under which is a picture of a turkey gobbler.

SER. No. 5,323. SUGAR-CANE SYRUPS AND MOLASSES. PENICK & FORD LTD., Shreveport, La. Filed May 12, 1905.

Penick & Ford

The facsimile signature "PENICK & FORD."

SER. No. 5,330. WHISKY. OSCAR TAUSSIG, New York, N. Y. Filed May 12, 1905.



The words "BLACK AND RED," around which is a scroll design with the picture of a squirrel above.

SER. No. 5,440. WHISKY. ELIAS HYMAN & SON, Cincinnati, Ohio. Filed May 13, 1905.

CUPID



The word "CUPID," below which is a picture of a cupid holding in its left hand a bow and in its right hand three arrows, the picture surrounded by an oval-shaped border.

SER. No. 5,509. STEEL RODS, BILLETS, BARS, BLOOMS, PLATES, SHEETS, SLABS, STRIPS, BLOCKS, AND FORGINGS. CRUCIBLE STEEL COMPANY OF AMERICA, Pittsburg, Pa. Filed May 13, 1905. Used ten years.

Atha

The word "ATHA."

SER. No. 5,939. ANTIFRICTION OR BEARING METALS. WILLIAM A. HARDY & SON'S CO., Fitchburg, Mass. Filed May 18, 1905. Used ten years.

HARDY'S

The name "HARDY'S."

SER. No. 5,986. STENCIL-PAPER. A. B. DICK COMPANY, Chicago, Ill. Filed May 18, 1905.

MIMEOGRAPH

The word "MIMEOGRAPH."

SER. No. 5,987. DUPLICATING-INK. A. B. DICK COMPANY, Chicago, Ill. Filed May 18, 1905.

MIMEOGRAPH

The word "MIMEOGRAPH."

SER. No. 6,067. MUSLIN UNDERWEAR. NATICK UNDERWEAR COMPANY, Springfield, Mass. Filed May 19, 1905.

Priscilla

The word "PRISCILLA."

SER. No. 6,189. CANNED SUCCOTASH. BURNHAM & MORRILL COMPANY, Portland, Me. Filed May 20, 1905. Used ten years.

PARIS

The word or word-symbol "PARIS."

SER. No. 6,364. TRACK-BOLT NUTS. AMERICAN IRON & STEEL M'F'G CO., Lebanon and Reading, Pa. Filed May 23, 1905. Used ten years.

IDEAL

The word "IDEAL."

SER. No. 6,394. RUBBER BOOTS AND RUBBER SHOES. GOODYEAR RUBBER COMPANY, New York, N. Y. Filed May 23, 1905.



The representation of a gold seal bearing the name of the applicant, "GOODYEAR RUBBER CO.," and the words and figures "GOLD SEAL 1872."

SER. No. 6,417. FAUCETS. E. STEBBINS MANUFACTURING COMPANY, Springfield, Mass. Filed May 23, 1905. Used ten years.



The words "STEBBINS SPECIAL" arranged within an oblong or rectangular border, the word "STEBBINS" beginning with a high initial letter and terminating in a comparatively small letter and the word "SPECIAL" beginning with a small initial letter and ending with a letter of greater height than the initial.

SER. No. 6,423. CHLORID OF LIME. A. MENDLESON'S SONS, Albany, N. Y. Filed May 23, 1905.

ACME

The word "ACME."

SER. No. 6,542. MEDICINAL PILLS, MEDICINAL TABLETS, AND CAPSULES CONTAINING MEDICINE, ALL INTENDED FOR HUMAN USE. THE LABORATORY COMPANY, Leeds, England. Filed May 24, 1905.

VITALOIDS

The word "VITALOIDS."

SER. No. 6,568. SILVER-PLATED FLAT WARE, HOLLOW WARE, AND TABLEWARE. WM. A. ROGERS LIMITED, New York, N. Y. Filed May 26, 1905. Used ten years.

EXTRA {COIN SILVER} PLATE

A pair of opposed braces. Arranged upon either side of the braces are the words "EXTRA" and "PLATE," and within the braces are the words "COIN SILVER."

SER. No. 6,819. LEATHER BOOTS, SHOES, AND SLIPPERS OF ALL KINDS AND UPPER AND SOLE LEATHER USED IN THEIR MANUFACTURE. FRED F. FIELD CO., Brockton, Mass. Filed May 27, 1905.

SKREEMER

The word "SKREEMER."

SER. No. 6,827. DRY MILK AND DRY-MILK PRODUCTS IN POWDER FORM. G. KAMMERMANN & CO. SCHWEIZERISCHE TROCKENMILCHGESELLSCHAFT, Glockenthal, Switzerland. Filed May 27, 1905.



An ornamental panel bearing the representation of three stars with rays radiating therefrom and the words "THREE STAR SWISS DRY MILK G. KAMMERMANN & CO. SWISS DRY MILK CO. GLOCKENTHAL NEAR THOUNE (SWITZERLAND.)"

SER. No. 6,904. CIGARS. CHARLES B. PERKINS, Boston, Mass. Filed May 29, 1905.



The word-symbol "ELENA" and the pictorial representation of the head and bust of a handsome Spanish woman in evening dress and wearing in her hair a band surrounded by an ornamental border and harmonizing design, on either side of which appears ornamentation comprising fans, scrolls, tropical foliage, and various devices and the representation of a Spanish boy suspended in vines and playing upon a guitar.

SER. No. 6,906. CIGARS. CHARLES B. PERKINS, Boston, Mass. Filed May 29, 1905.



The words "LA ROSA DE SAN JUAN" and the representation of the head and shoulders of a young woman of the blond type, wearing upon her head a red Gainsborough plumed hat and around her throat a necklace of jewels, the head being surrounded by a circular draped border of harmonizing design, together with scrolls and flowers, devices, and tropical foliage.

SER. No. 7,170. DEPILATORY POWDERS. FERDINAND T. HOPKINS, New York, N. Y. Filed June 1, 1905.



The name "T. FELIX GOURAUD, M. D.," associated with the representation of a pair of disks ornamented with scrollwork and connected by a bar, the name being displayed in white on said bar.

SER. No. 7,349. BUTTER. H. C. CHRISTIANS CO., Johnson Creek, Wis. Filed June 3, 1905. Used ten years.

AYRSHIRE

The word "AYRSHIRE."

SER. No. 7,609. GASOLENE-MOTORS, EITHER STATIONARY OR IN MOTOR-CARS, AND MOTOR MACHINERY AND PARTS OF MOTOR MACHINERY. WILLIAM HENRY BARRETT, Southport, England. Filed June 7, 1905.

BARCAR

The word "BARCAR."

SER. No. 7,700. BLACKBERRY CORDIAL. HENRY R. MYERS, Covington, Ky. Filed June 8, 1905. Used ten years.

FULTON

The word "FULTON."

SER. No. 7,622. LINIMENT. WILLIAM P. WARD, New York, N. Y. Filed June 8, 1905. Used ten years.



The words "MEXICAN MUSTANG LINIMENT." These words are arranged in prominent letters upon a band or circlet and which incloses, as in a frame, the representation of a female figure reclining beside a rock and holding a jar or vase from which issues a stream of water, which occupies and forms the foreground of the picture. In the background appears a volcano in a state of eruption. Across the face of the picture is written the signature "G. W. WESTBROOK CHEMIST." Beneath the words "MUSTANG LINIMENT" is a representation of a party of hunters, lassoing wild horses. At each side of the central circle are circular panels, and the whole is inclosed in a rectangular border.

SER. No. 7,782. RUBBER BOOTS AND SHOES OF ALL KINDS. RICE & HUTCHINS, INCORPORATED, Boston, Mass., assignor to Rice and Hutchins, Incorporated, a Corporation of Maine. Filed June 10, 1905.

EDUCATOR

The word "EDUCATOR."

SER. No. 7,794. LEATHER BOOTS AND SHOES AND LEATHER USED IN THEIR MANUFACTURE. RICE & HUTCHINS, INCORPORATED, Boston, Mass., assignor to Rice and Hutchins, Incorporated, a Corporation of Maine. Filed June 10, 1905.



The word "GRIPSOLE," with the representation of a man riding a bicycle.

SER. No. 7,832. CONDENSED MILK. VERMONT CONDENSED MILK CO., Richmond, Vt., and New York, N. Y. Filed June 10, 1905.

Pennant

The arbitrarily-selected word "PENNANT."

SER. No. 8,041. STEEL IN BARS AND SHEETS. HAMMACHER, DELIUS & CO., New York, N. Y. Filed June 13, 1905.



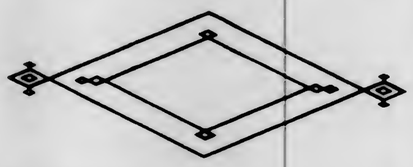
A semicircular figure bearing the word "OYSINGS" and forked arrows, which are arranged radially to the figure.

SER. No. 8,152. CHEWING-GUM. AMERICAN CHICLE CO., New York, N. Y. Filed June 15, 1906. Used ten years.

PRIMLEY'S

The word "PRIMLEY'S."

SER. No. 8,290. SAWS OF ALL KINDS. E. C. ATKINS & COMPANY, Indianapolis, Ind.; New York, N. Y.; Memphis, Tenn.; Atlanta, Ga.; Minneapolis, Minn.; Portland, Oreg.; Seattle, Wash.; San Francisco, Cal.; Chicago, Ill., and Toronto, Canada. Filed June 15, 1906.



The conventional mark or symbol usually known as a "diamond."

SER. No. 8,333. TURPENTINE. STANDARD OIL CO. OF NEW YORK, New York, N. Y. Filed June 16, 1906. Used ten years.



A triangular figure bearing thereon the name, words, numbers, and abbreviation, "PRATT'S TURPENTINE, STANDARD OIL CO., OF NEW YORK, 26 BROADWAY, N. Y." and a coat of arms comprising a human head and the numerals "1770" inclosed in a circle of stars and surmounted by an eagle, with rampant tigers on the respective sides of said circle and standing on a scroll, on which appear the words "POUR PARVENIR A BONNE FOI."

SER. No. 8,388. SALT. WILKINSON, GADDIS & CO., Newark, N. J. Filed June 17, 1906.

IDEAL

The word "IDEAL."

SER. No. 8,393. ROLLED OATS. WILKINSON, GADDIS & CO., Newark, N. J. Filed June 17, 1906.

IDEAL

The word "IDEAL."

SER. No. 8,414. MEDICAL COMPOUND USED AS A REMEDY FOR DYSMENORRHEA, MENORRHAGIA, CONVULSIONS, RIGORS, THREATENED ABORTION, AFTERPAINS, INSOMNIA, OVARITIS, NERVOUS EXCITABILITY AND IRRITABILITY, MENTAL DEPRESSION, UTERINE DEBILITY, AND ALL INTERNAL PAIN OF THE STOMACH AND BOWELS. SARAH HOLDEN EVERETT HAYDEN, Bedford Springs, Mass. Filed June 17, 1906.

HVC

The letters "H V C."

SER. No. 8,620. CREAM CHEESE. W. A. LAWRENCE & SON, Chester, N. Y. Filed June 19, 1906.



The representation of a star and the word "STAR."

SER. No. 8,697. COFFEE. MERCHANTS COFFEE COMPANY OF NEW ORLEANS, LTD., New Orleans, La. Filed June 21, 1906.

CUPID

The word "CUPID."

SER. No. 9,078. HOUSEHOLD AND COOKING UTENSILS MADE OF ENAMELED STEEL. THE CENTRAL STAMPING COMPANY, New York, N. Y. Filed June 26, 1906.



The representation of a wheel having the word "STERLING" on the hub thereof and the words "THE CENTRAL STAMPING COMPANY" upon the felly.

SER. No. 9,093. MEN'S, WOMEN'S, AND CHILDREN'S HATS. YOUMANS, New York, N. Y. Filed June 26, 1906.



The representation of a lion couchant upon an ornamental support, upon which there are arranged garlands of flowers and the representations of two crowns, one at either side of the figure of the lion, the lion being at the base of a border formed of two concentric circles and confining the word "YOUMANS," the said border being surmounted by a crown which forms the background of the letters "Y D D," which are in turn surmounted by a scroll bearing the Latin motto "NULLI SECUNDUS."

SER. No. 9,270. TALKING-MACHINE RECORDS. VICTOR TALKING MACHINE CO., Camden, N. J. Filed June 27, 1905.

VICTOR

The word "VICTOR."

SER. No. 9,271. TALKING-MACHINE RECORDS. VICTOR TALKING MACHINE CO., Camden, N. J. Filed June 27, 1905.

MONARCH

The word "MONARCH."

SER. No. 9,278. REMEDY FOR PNEUMONIA. GOWAN MEDICAL CO., Durham, N. C. Filed June 27, 1905.



The word "GOWAN" arranged in a diamond field, said name being a facsimile signature of the given name of Gowan Dusenbery, president of the corporation.

SER. No. 9,350. RUBBER TIRES FOR VEHICLES. BAKER & HAMILTON, San Francisco, Cal. Filed June 28, 1905.

SAVAGE

The word "SAVAGE" and the representation of a bow and crossed arrows thereon.

SER. No. 9,406. LOTION TO REMOVE GREASE, PAINT, BURNED CORK, SOOT, OR DUST FROM THE FACE AND TO CLEANSE AND SOFTEN THE SKIN IN GENERAL. EDGAR J. M. HART, New York, N. Y. Filed June 29, 1905.

ALLOFF

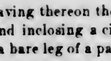
The word "ALLOFF."

SER. No. 9,517. STAMPS FOR STAMPING TRADE-MARKS UPON TEXTILES. KAUMAGRAPH CO., New York, N. Y. Filed June 30, 1905.

Kaumagraph

The word "KAUMAGRAPH."

SER. No. 9,595. PAPER-MAKER'S FELTINGS. JOSEPH PORRITT & SONS, Helmshore, England. Filed July 1, 1905.



The representation of an arrow.

SER. No. 9,600. ANTISEPTIC AND EMOLLIENT MEDICINE. INEEDA-COFFHO COMPANY, Louisville, Ky. Filed July 1, 1905.



A rectangular panel having thereon the word "INEEDARUB" and scroll ornamentation and inclosing a circular panel showing a nurse in the act of rubbing a bare leg of a patient.

SER. No. 9,744. TOILET POWDER. WALTHAM NOVELTY COMPANY, Waltham, Mass. Filed July 3, 1905.

Ab·sor·ben·tene

The hyphenated word "AB-SOR-BEN-TENE."

SER. No. 9,788. AUTOMOBILES. ST. LOUIS MOTOR CARRIAGE CO., St. Louis, Mo. Filed July 3, 1905. Used ten years.

The Saint Louis

The words "THE SAINT LOUIS."

SER. No. 10,151. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y. Filed July 12, 1905. Used ten years.

SER. No. 10,151.



The representation of an ace of spades having a dark center displaying a light scroll on each side and the figure of an elf standing on one leg holding extended in his left hand a bauble. On the light border of the ace appear the words "CONSOLIDATED CARD COMPANY." Near the top is a horizontal panel extending under the apex of the ace displaying the words "NEW YORK." A wreath of leaves and berries is shown surrounding the ace, and at the bottom a two-part ribbon-like scroll displays the word, abbreviation, and numeral "ELF No. 93."

SER. No. 10,161. CANNED CORN AND CANNED SAUER-KRAUT. P. HOHENADEL, Jr., Janesville, Wis., and Rochelle, Ill. Filed July 12, 1905.

MAPLE LEAF

The words "MAPLE LEAF."

SER. No. 10,162. CANNED CORN AND CANNED SAUER-KRAUT. P. HOHENADEL, Jr., Janesville, Wis., and Rochelle, Ill. Filed July 12, 1905.



The picture of a badger holding an ear of corn and surrounded by foliage, the whole being bordered by a panel.

SER. No. 10,168. WATCHES AND PARTS THEREOF. ADOLPH SCHWOB, New York, N. Y. Filed July 12, 1905. Used ten years.

Tavannes Watch Co

The name "TAVANNES WATCH CO."

SER. No. 10,170. WATCHES AND PARTS THEREOF. ADOLPH SCHWOB, New York, N. Y. Filed July 12, 1905. Used ten years.

Bijou Watch Co

The words "BIJOU WATCH CO."

SER. No. 10,181. REMEDIES FOR COLDS, COUGHS, AND AFFECTIONS OF THE THROAT AND LUNGS. A. WATLING & Co. New York, N. Y. Filed July 12, 1905.



The representation of an owl standing on a perch and holding a pair of balance-scales in its mouth.

SER. No. 10,245. COTTON SHEETINGS AND DRILLS. KENZO IWAHARA, New York, N. Y. Filed July 13, 1905.



A representation of a deer shown as lying down and a bald and bearded man reclining upon the deer, a small tree or shrub being shown in the background and a geometrical design beneath the deer, all displayed in the typical Chinese style.

SER. No. 10,265. POULTRY-FOODS. ALBERT EDWARD TATE, High Point, N. C. Filed July 13, 1905.

SUNNY SOUTH

The words "SUNNY SOUTH."

SER. No. 10,510. CARBONATED TONIC BEVERAGE. JACOB RIES, Shakopee, Minn. Filed July 18, 1905.



A rhomboidal panel, upon which appears a disk bearing the words ""JACOB RIES" above and "SHAKOPEE, MINN." below a monogram of the letters "J" and "R," said disk being associated with the words "ROCK SPRING."

SER. No. 10,278. CIGARETTES. HENRY P. STRAUSS, New York, N. Y. Filed July 13, 1905.



The pictorial representation of a yacht scene. In the approximate center of the mark is the representation of a yacht floating in water more or less broken up in waves, and to the left of the yacht, in the distance, is seen another vessel. Above the yacht, in script type, are the words "YACHT SCENE," ending in a paraph. Encircling the figure just mentioned is the representation of an endless rope.

SER. No. 10,507. CARBONATED NON-INTOXICATING TONIC BEVERAGE. HEINZERLING & Co. Baltimore, Md. Filed July 18, 1905.



The representation of a stag's head.

SER. No. 10,543. CERESIN. ERNST SCHLIEMANN'S EXPORT CERESIN FABRIK GESELLSCHAFT M. B. HAFTUNG, Hamburg, Germany. Filed July 18, 1905.

Crème-Carnaubit

A design consisting of the representation of two conventional castles separated by a tower above an archway, all appearing above a crenelated wall resting upon an oblong panel containing three anchors, each intertwined with a letter "S," associated with the hyphenated words "CRÈME-CARNAUBIT," appearing above the design and arranged in the form of an arc.

SER. No. 10,573. HAND STICK-FIREWORKS. EDW. H. WAGNER, New York, N. Y. Filed July 19, 1905. Used ten years.

The Brilliant Star Sticks

The words "THE BRILLIANT STAR STICKS."

SER. No. 10,636. REMEDY FOR SKIN DISEASES. JAMES P. MORRIS, Paris, Tex. Filed July 18, 1905.

BUR-IN



The word "BUR-IN," employed in connection with a human head having skin eruptions indicated thereon.

SER. No. 10,772. HENRIETTA, VOILES, CRÊPE DE CHINE, MOHAIR, SUBLIME, AND BATISTE. OTTO SEYD, New York, N. Y. Filed July 22, 1905.



The initial letters "O S" intertwined as a monogram.

SER. No. 10,849. WAGONS. THE EAGLE WAGON WORKS, Auburn, N. Y. Filed July 26, 1905.



The representation of an eagle with outspread wings carrying in its beak a streamer, upon which is inscribed the legend "THE EAGLE WAGON WORKS." A smaller streamer is caught in the talons of the eagle. Below the right wing of the eagle and between the two streamers is the word "AUBURN," and below the left wing are the words "NEW YORK."

SER. No. 10,986. DRIED FIGS. PROTOPAZZI BROTHERS, London, England. Filed July 28, 1905.

PROTOBEN

The word "PROTOBEN."

SER. No. 11,086. CORSETS. FELLHEIMER AND COMPANY, New York, N. Y. Filed Aug. 1, 1905.



The representation of a ring and the word "RINGWAIST" on the ring.

SER. No. 11,171. MACARONI AND SPAGHETTI. GENNERICH & VON BREMEN. New York, N. Y. Filed Aug. 2, 1905.



A representation in cherry-red color of a diamond composed of four bars intersecting each other and surrounded by a wreath.

SER. No. 11,215. CAPSULES. J. M. GROSVENOR & Co., Boston, Mass. Filed Aug. 3, 1905. Used ten years.

KONSEALS

The word "KONSEALS."

SER. No. 11,252. HAIR-PINS. S. BEAUMONT & FILS. Roubaix, France. Filed Aug. 4, 1905.

LE ZÉPHYR

The arbitrary words "LE ZÉPHYR."

SER. No. 11,358. GUITARS AND ZITHERS. LYON & HEALY, Chicago, Ill. Filed Aug. 7, 1905.

Arion

The word "ARION."

SER. No. 11,374. SUPPLY-PACKAGES FOR MUSICAL INSTRUMENTS CONTAINING BRIDGES, PICKS, PEGS, AND STRINGS. LYON & HEALY, Chicago, Ill. Filed Aug. 7, 1905.

SIMPLEX

The word "SIMPLEX."

SER. No. 11,508. WHISKY. CLOVER LEAF WINE Co., New York, N. Y., assignor to Jaros Importing and Distributing Co., New York, N. Y., a Corporation. Filed Aug. 10, 1905.



The word "TAMMANY," associated with the representation of a tiger.

SER. No. 11,537. RAZORS. F. A. CLAUBERG & Co., New York, N. Y. Filed Aug. 11, 1905. Used ten years.

MIKADO

The word "MIKADO."

SER. No. 11,579. COATING FOR WALLS, CONSISTING OF A TRANSPARENT COLORLESS FLUID DESIGNED TO HARDEN BUILDING MATERIALS, OVERCOME LIME-STAINS, AND PREVENT DISINTEGRATION AND FLUORESCENCE. TOCH BROTHERS. New York, N. Y. Filed Aug. 12, 1905.

LOCKPORE

The word "LOCKPORE."

SER. No. 11,633. POWDERS FOR INDIGESTION AND KINDRED AFFECTIONS. C. V. CROSS, San Francisco, Cal. Filed Aug. 14, 1905.

TYOGA

The word "TYOGA."

SER. No. 11,639. PIANOS. W. W. KIMBALL COMPANY, Chicago, Ill. Filed Aug. 14, 1905. Used ten years.

KIMBALL

The word "KIMBALL."

SER. No. 11,678. MEN'S, WOMEN'S, AND CHILDREN'S HATS. YOUMANS. New York, N. Y. Filed Aug. 15, 1905. Used ten years.

YOUMANS

The name "YOUMANS."

SER. No. 11,701. CRACKERS, BISCUITS, AND CAKES. CRESCENT MACARONI & CRACKER Co., Davenport, Iowa. Filed Aug. 16, 1905.



A star and crescent, the star being placed partly within the crescent.

SER. No. 11,745. WHEAT-FLOUR. JOHN F. MEYER & SONS MILLING Co., St. Louis and Springfield, Mo. Filed Aug. 17, 1905. Used ten years.



The pictorial representation of a white crane standing in a marsh, which representation appears on a panel inclosed by a curved border-line, and above said representation appear the words "WHITE CRANE," and to the left of the said representation is printed the word "HIGH," and on the right hand of the representation is printed the word "PATENT," and below the representation appear the words and letters "JOHN F. MEYER & SONS, SPRINGFIELD, MO.," all of which words and pictorial representation are inclosed in a circular border-line.

SER. No. 11,823. BEER. MINNEAPOLIS BREWING Co., Minneapolis, Minn. Filed Aug. 19, 1905.



The letter "M" on a central disk and surrounded by a bunch of hop-leaves, hop-buds, and barley-stalks, all inclosed in concentric circles.

SER. No. 11,825. BEER. MINNEAPOLIS BREWING Co., Minneapolis, Minn. Filed Aug. 19, 1905.



The words "GOLDEN GRAIN BELT" upon a representation of a field of grain and inclosed in a diamond-shaped figure. Within said figure is shown the letter "M" on a circular central field of disk like form surrounded by hop-leaves, hop-buds, and barley-stalks and inclosed in concentric circles.

SER. No. 11,948. PRESS-BOARD OR PRESS-PAPER. THE ROGERS PAPER MFG Co. INC, South Manchester, Conn. Filed Aug. 23, 1905.

SER. No. 11,948.

Extra No. 1



A rectangular panel bearing a representation of a fleur-de-lis and in its upper corners the representation of a shield having thereon the capital letter "R" and between the same the numerals "1832" and associated with the word, abbreviation, and figure "EXTRA No. 1."

SER. No. 11,949. PRESS-BOARD OR PRESS-PAPER. THE ROGERS PAPER MFG Co. INC, South Manchester, Conn. Filed Aug. 23, 1905.

Silk Finished



A rectangular panel bearing a representation of a fleur-de-lis and in its upper corners the representation of a shield having thereon the capital letter "R" and between the same the numerals "1832," associated with the words "SILK FINISHED."

SER. No. 12,042. SILVER HOLLOW WARE, FLAT WARE, AND TABLEWARE. WILCOX & WAGONER COMPANY, New York, N. Y. Filed Aug. 26, 1905.



A circular wreath and upon it a conventional sword.

SER. No. 12,075. COUGH CURE. FRED L. GRAY, Montpelier, Vt. Filed Aug. 29, 1905.

LIX-ALL

The word "LIX-ALL."

SER. No. 12,090. WHISKY. MILTON S. LOWENTHAL, Niagara Falls, N. Y. Filed Aug. 30, 1905.

SER. No. 12,090.



The words "TRIGO PURE RYE," the word "PURE" being on a paraph of the word "TRIGO," and a monogram of the letters and abbreviation "T D Co" partially surrounded by a wreath tied with a streamer.

SER. No. 12,139. WEEKLY PERIODICAL. WILLIAM J. JOHNSTON, New York, N. Y. Filed Sept. 1, 1905.

AMERICAN EXPORTER

The words "AMERICAN EXPORTER."

SER. No. 12,156. PINCERS, NIPPERS, AND HOOF-TRIMMERS. WASHINGTON TOOL CO., Owatonna, Minn. Filed Sept. 1, 1905.



The letters "W T Co" arranged within a rhombus or diamond-shaped figure.

SER. No. 12,175. PERFUMES AND TOILET WATERS. LAZELL, DALLET & CO., INCORPORATED, New York, N. Y. Filed Sept. 2, 1905. Used ten years.

LAZELL'S

The word "LAZELL'S."

SER. No. 12,216. ANALGESICS. EL ZERNAC CO., New York, N. Y. Filed Sept. 5, 1905.



The letters "E L Z" surrounded by a circle.

SER. No. 12,304. RAZORS AND POCKET, BUTCHER, AND TABLE KNIVES. KEITH, SIMMONS & CO., Nashville, Tenn. Filed Sept. 7, 1905.

KEEN EDGE.

A symbol comprising a disk from which extend, at equidistant points, four bell-shaped figures with concave sides and convex bases and intercepting two concentric rings, equal arcs or segments, which appear in the spaces between said figures and arranged between the words "KEEN" and "EDGE."

SER. No. 12,244. BLEACHED, GRAY, PRINTED, AND FANCY DAMASKS. NEUSS HESSLEIN & CO., New York, N. Y. Filed Sept. 5, 1905.



The words "ROYAL TIGER" and the representation of a walking tiger.

SER. No. 12,340. INTERNAL REMEDY, BEING A DIURETIC MEDICINE. ACTIEN-GESELLSCHAFT FÜR ANILIN-FABRIKATION, Berlin, Germany. Filed Sept. 7, 1905.

Barutin

The word "BARUTIN."

SER. No. 12,427. PREPARED FOOD, PRIMARILY FOR INFANTS AND INVALIDS. WELLS & RICHARDSON COMPANY, Burlington, Vt. Filed Sept. 9, 1905.

Cereal



Milk

The words "CEREAL MILK" and the representation of the head of a cow partially inclosed in a wreath of ears and stalks of grain.

SER. No. 12,428. PREPARED FOOD, PRIMARILY FOR INFANTS AND INVALIDS. WELLS & RICHARDSON COMPANY, Burlington, Vt. Filed Sept. 9, 1905. Used ten years.

SER. No. 12,428.

Cereal
Milk

The words "CEREAL MILK."

SER. No. 12,487. INDURATED FIBER WARE, COMPRISING ARTICLES MADE FROM WOOD-PULP AND WATERPROOFED. UNITED INDURATED FIBRE CO. OF NEW JERSEY, Lockport, N. Y. Filed Sept. 12, 1905. Used ten years.

"FIBROTTA"

The word "FIBROTTA" flanked by quotation-marks.

SER. No. 12,488. INDURATED FIBER WARE, COMPRISING ARTICLES MADE FROM WOOD-PULP AND WATERPROOFED. UNITED INDURATED FIBRE CO. OF NEW JERSEY, Lockport, N. Y. Filed Sept. 12, 1905. Used ten years.



The representation of a fleur-de-lis.

SER. No. 12,501. PEACH BITTERS. HILARIUS KLAS, San Francisco, Cal. Filed Sept. 12, 1905.



A portrait of the applicant.

SER. No. 12,520. PIANOS. KROEGER PIANO CO., New York, N. Y. Filed Sept. 13, 1905. Used ten years.

Kroeger

The word "KROEGER."

SER. No. 12,530. PLUMBAGO (OR GRAPHITE) AXLE-GREASE. THE UNITED STATES GRAPHITE COMPANY, Saginaw, Mich. Filed Sept. 13, 1905. Used ten years.

MEXICAN



The representation of the head and bust of a man in Mexican costume, associated with the word "MEXICAN."

SER. No. 12,532. STOVE-POLISH. THE UNITED STATES GRAPHITE COMPANY, Saginaw, Mich. Filed Sept. 13, 1905. Used ten years.



The word "RAVEN" and the representation of a raven perched upon a branch.

SER. No. 12,554. SOLE-LEATHER, CUT AND UNCUT. ALBERT F. SCHENKELBERGER, Boston, Mass. Filed Sept. 14, 1905. Used ten years.

III

An arbitrary symbol composed of three lines or bars arranged side by side.

SER. No. 12,558. SMOKING OR CHEWING TOBACCO. NASHVILLE TOBACCO WORKS, Nashville, Tenn. Filed Sept. 14, 1905. Used ten years.

THE OLD STATESMAN

The words "THE OLD STATESMAN."

SER. No. 12,559. SMOKING OR CHEWING TOBACCO. NASHVILLE TOBACCO WORKS, Nashville, Tenn. Filed Sept. 14, 1905.

CREAM
NUT

The words "CREAM-NUT."

SER. No. 12,560. SMOKING AND CHEWING TOBACCO. NASHVILLE TOBACCO WORKS, Nashville, Tenn. Filed Sept. 14, 1905.

CURB STONE

The words "CURB STONE."

SER. No. 12,561. SMOKING OR CHEWING TOBACCO. NASHVILLE TOBACCO WORKS, Nashville, Tenn. Filed Sept. 14, 1905.

YELLOW TAG

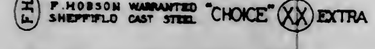
The words "YELLOW TAG."

SER. No. 12,603. STEEL AND IRON IN BAR, ROD, RAIL, SHEET AND WIRE. SHEBOHM & DICKSTAEL LD., Sheffield, England. Filed Sept. 14, 1905. Used ten years.



The representation of an eagle with uplifted wings standing upon a globe.

SER. No. 12,610. STEEL IN BARS, PLATES, RODS, AND WIRE. HOBSON HOUGHTON & CO. LTD., Sheffield, England. Filed Sept. 14, 1905. Used ten years.



The words "F. HOBSON WARRANTED" above the words "SHEFFIELD CAST STEEL," the whole preceded by the letters "F. H.," inclosed in an ellipse, and followed by the quoted word "CHOICE," the letters "XX," inclosed in a circle, and the word "EXTRA."

SER. No. 12,645. BISCUITS, CRACKERS, AND CAKES. A. J. MEDLAR COMPANY, LIMITED, Philadelphia, Pa. Filed Sept. 15, 1905.

SER. No. 12,645.



The representation of a circular figure appearing on a background of blue and the word "MEDLAR" in script with a wedge-shaped dash beneath within said figure.

SER. No. 12,748. LAGER-BEER. THE PETER SCHOENHOFEN BREWING COMPANY, Chicago, Ill. Filed Sept. 18, 1905.



The word "SCHOENHOFENBRÄU" printed in a peculiar and distinctive style.

SER. No. 12,772. MIXED PAINTS. THE PATTERSON SARGENT COMPANY, Cleveland, Ohio. Filed Sept. 18, 1905. Used ten years.



A yellow disk bearing the letters "B P S."

SER. No. 12,775. CIGARS. SAMUEL SPIEGEL, New York, N. Y. Filed Sept. 18, 1905.



The word "FLORADALE" and the bust picture of a young girl in fancy dress inclosed within an oval frame.

SER. No. 12,798. SMOKING-TOBACCO. BLACKWELL'S DURHAM TOBACCO CO., New York, N. Y. Filed Sept. 20, 1905. Used ten years.

SER. No. 12,798.

DURHAM



The word "DURHAM," accompanied by the representation of a bull.

SER. No. 13,074. WALL-TIES. THE BRAUN MANUFACTURING CO., Pittsburg, Pa. Filed Sept. 27, 1905.

WHALE BONE

The words "WHALE BONE."

SER. No. 13,110. BEER. SUFFOLK BREWING COMPANY, Boston, Mass. Filed Sept. 28, 1905. Used ten years.



The words "SUFFOLK BREWING CO'S NON-INTOXICATING UNO BEER."

SER. No. 13,340. CANNED FRUITS AND VEGETABLES. PLATT & COMPANY, Baltimore, Md. Filed Oct. 5, 1905.



The words "TIGER BRAND" and the representation of a tiger's head.

SER. No. 13,380. CROUP MIXTURE OR COMPOUND, A REMEDY FOR THE CROUP, COUGHS, COLDS, HOARSENESS, WHOOPING-COUGH, AND BRONCHITIS. WILCOX & GODDING, Eaton Rapids, Mich. Filed Oct. 6, 1905.



The representation of a nude infant holding in its hands a bottle and spoon seated in the clouds and partially surrounded by a crescent of stars, associated with the name and words "DR. W. DERBY'S CROUP MIXTURE."

SER. No. 13,414. SALTED AND BONELESS FISH. J. W. BEARDSLEY'S SONS, New York, N. Y. Filed Oct. 7, 1905.



A rectangular panel having a red strip arranged centrally thereon and extending longitudinally thereof.

SER. No. 13,453. LAUNDRY STARCH. NEW ORLEANS COFFEE CO. LT'D, New Orleans, La. Filed Oct. 9, 1905.



The words "WHITE RABBIT" and the representation of a white rabbit upon a shield, the upper and lower parts of the shield being of contrasting colors.

SER. No. 13,478. REMEDIES FOR DISEASES OF WOMEN, MORE PARTICULARLY DISEASES OF THE GENITAL AND URINARY ORGANS, CATARRHAL AND OTHER CONDITIONS. HARTLAND LAW, HERBERT E. LAW, San Francisco, Cal. Filed Oct. 10, 1905.



The word "VIAVI" inclosed in a rhomb or diamond shaped figure standing on one of its obtuse angles.

SER. No. 13,524. COATS, VESTS, TROUSERS, AND OVERCOATS FOR MEN, YOUTHS, AND CHILDREN. BROKAW BROS., New York, N. Y. Filed Oct. 13, 1905. Used ten years.

BROKAW

The word "BROKAW."

SER. No. 13,586. MIXED PAINTS. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill. Filed Oct. 13, 1905.

H.S.B. & CO.
REV-O-NOC

The word "REV-O-NOC" and the letters, character, and abbreviation "H. S. B. & Co."

SER. No. 13,594. BOLTED WOOLEN DRESS GOODS. JOHN LONER, New York, N. Y. Filed Oct. 14, 1905.

GOLD CAP BOARD

The words "GOLD CAP BOARD."

SER. No. 13,598. SOLE-LEATHER. WM. F. MOSSER & CO., Boston, Mass. Filed Oct. 14, 1905. Used ten years.

MOSSER SOLE Leather

The words "MOSSER SOLE LEATHER" inclosed in an oval-shaped border.

SER. No. 13,610. HAIR-PINS. GEORGE LITTLEFORD, Cincinnati, Ohio. Filed Oct. 14, 1905.

Stay-in

A representation of a twisted hair-pin having coiled about the limbs thereof the word "STAY-IN," said word being of script and formed of strands of hair.

SER. No. 13,677. COTTON THREAD OF ALL KINDS. THE CLARK THREAD CO., Newark, N. J. Filed Oct. 17, 1905. Used ten years.

O.N.T.

The letters "O. N. T."

SER. No. 13,678. COTTON THREAD OF ALL KINDS. THE CLARK THREAD CO., Newark, N. J. Filed Oct. 17, 1905. Used ten years.

CLARK'S

The designation "CLARK'S."

SER. No. 13,695. SEWING-COTTON ON SPOOLS OR REELS. JONAS BROOK & BROS., LIMITED, Meltham, England. Filed Oct. 17, 1905. Used ten years.

1851. LONDON. 1862. EXHIBITION. 1865. PARIS. 1867. PRIZE MEDAL. 200 YDS.

A collocation composed of two bands formed by concentric circles, the outer band bearing the words and figures "1851, LONDON, 1862. 1865, PARIS, 1867," the inner band bearing the words "EXHIBITION PRIZES," and the circular space within the inner band bearing figures indicating the length of the thread.

SER. No. 13,697. COTTON THREAD. JONAS BROOK & BROS., LIMITED, Meltham, England. Filed Oct. 17, 1905. Used ten years.



A representation of a goat's head issuing from a heraldic roll.

SER. No. 13,781. PRINTING AND LITHOGRAPHING INKS, PRINTING-INK VARNISHES, AND PRINTING-INK DRY COLORS. THE JAENECKE PRINTING INK CO., Newark, N. J. Filed Oct. 20, 1905. Used ten years.

JAENECKE'S

The word "JAENECKE'S."

SER. No. 13,843. HOUSEHOLD UTENSILS MADE OF ENAMELED STEEL OR IRON WARE. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill. Filed Oct. 21, 1905.

CHRYSOLITE

The arbitrarily-selected word-symbol "CHRYSOLITE."

SER. No. 13,862. BEER. CURRAN AND JOYCE CO., Lawrence, Mass. Filed Oct. 23, 1905.



A heraldic device consisting of a two-headed eagle bearing a shield upon its breast, upon which shield is the letter "A," and surrounded by a wreath, one half of which is formed of blades of wheat and the other half of grape-vine, said halves being shown as tied together with ribbon, and the representation of two red Greek crosses, associated with the words "ANZER BRÄU."

SER. No. 14,026. COAL. ALEXANDER Y. MALCOMSON, Detroit, Mich. Filed Oct. 26, 1905.

SER. No. 14,026.



The representation of a sunburst or circle with lines radiating therefrom, with the words "HOTTER THAN SUNSHINE" MALCOMSON'S COAL within the sunburst or circle.

SER. No. 14,171. MATTRESSES AND PILLOWS. CHITTENDEN & EASTMAN CO., Burlington, Iowa. Filed Nov. 1, 1905. Used ten years.

Square Brand

The words "SQUARE BRAND."

SER. No. 14,255. VARNISH-HARDENERS. TOUSEY VARNISH CO., Chicago, Ill. Filed Nov. 3, 1905.

Elasti-Hard

The word "ELASTI-HARD."

SER. No. 14,387. TOMATO SAUCE. LOI BALBI & CO., New York, N. Y. Filed Nov. 7, 1905.



A panel bearing a representation of a woman holding on one arm a basket of tomatoes, and a large tomato lying on the ground to one side, and an ornamental panel bearing the words "ESIGERE LA VERA SCATOLA DEL GAIZO," to which the woman is pointing.

SER. No. 14,512. TOILET PREPARATION CONSISTING OF A SKIN-FOOD OR MASSAGE-CREAM. ERIE H. RICE, Jamestown, N. Y. Filed Nov. 11, 1905.

BEETALL



The word "BEETALL" above the representation of a vegetable beet.

SER. No. 14,554. EARTHENWARE VESSELS. E. J. SAMSON & CO., Chicago, Ill. Filed Nov. 13, 1905.

PAINTOGRAPHY.

The word "PAINTOGRAPHY."

SER. No. 14,607. ELECTRIC SWITCHES, PUSH-BUTTONS, AND FITTINGS FOR ELECTRIC CIRCUITS AND LIGHTS. RALPH A. SCHOENBERG, New York, N. Y. Filed Nov. 14, 1905.



The word "SARCO" in white letters on a triangular field with the letters tapering from the base of the field to the point or apex. Above and extending along the top edge of the field is the word "ELECTRICAL" and in like manner at the bottom edge the word "SPECIALTIES."

SER. No. 14,643. HOSE-SUPPORTERS. PIONEER SUSPENDER COMPANY, Philadelphia, Pa. Filed Nov. 15, 1905.

HOLDFAST

The word "HOLDFAST."

SER. No. 14,667. COMBINATION LEATHER WRITING SETS OR SECRETARIES, LEATHER-BOUND BLOTTING-PADS, AND LEATHER WRITING-PADS. GORHAM MFG. CO., Providence, R. I. Filed Nov. 15, 1905. Used ten years.

GORHAM

The word "GORHAM."

SER. NO. 14,711. GUARD-PLATES FOR MOWERS, REAPERS, HARVESTERS, AND HEADERS. THE WHITMAN & BARNES MANUFACTURING COMPANY, Akron, Ohio. Filed Nov. 16, 1905.



A representation of a diamond-shaped figure with the letters and character "W" "&" "B" "Co" placed in the respective corners thereof.

SER. NO. 14,718. FLOURS MADE FROM WHEAT, OATS, RYE, CORN, AND BUCKWHEAT AND MEALS MADE FROM RYE, CORN, AND OATS. THE AMERICAN CEREAL COMPANY, Akron and Ravenna, Ohio; Chicago, Ill., and Cedar Rapids, Iowa. Filed Nov. 16, 1905.



The pictorial representation of the figure of a man clothed in Quaker garb bearing in one hand a scroll with the word "PURE" appearing thereon.

SER. NO. 14,720. FLOURS MADE FROM WHEAT, OATS, RYE, CORN, AND BUCKWHEAT AND MEALS MADE FROM RYE, CORN, AND OATS. THE AMERICAN CEREAL COMPANY, Akron and Ravenna, Ohio; Chicago, Ill., and Cedar Rapids, Iowa. Filed Nov. 16, 1905.

QUAKER



The word "QUAKER" and the pictorial representation of the figure of a man clothed in Quaker garb, bearing in one hand a scroll with the word "PURE" appearing thereon.

SER. NO. 14,722. OLIVE-OIL. THOMAS MARTINDALE & CO., Philadelphia, Pa. Filed Nov. 16, 1905.

ROYAL

The word "ROYAL."

SER. NO. 14,735. LEATHER BOOTS AND SHOES. WHITE-DUNHAM SHOE CO., Brockton, Mass. Filed Nov. 16, 1905.



The words "TOP ROUND," associated with the outline of a terrestrial globe. Leaning against the globe is a ladder, climbing which are a number of winged figures carrying shoes, the figure on the top "round" or rung of the ladder holding its shoe over one of the poles of the globe.

SER. NO. 14,742. BLEACHED AND UNBLEACHED SHIRTINGS AND SHEETINGS, CAMBRICS, AND LONG CLOTH. GRINNELL WILLIS & CO., New York, N. Y. Filed Nov. 17, 1905.



The representation of a spool, from which some thread is unwound and looped so as to form the letter "W."

SER. NO. 14,785. SCISSORS AND SHEARS. HEINR. BÖKER & CO., Solingen, Germany. Filed Nov. 18, 1905. Used ten years.



The representation of a leafless tree.

SER. NO. 14,793. FINISH-NAILS. ANDREW J. CHASE, Melrose, Mass. Filed Nov. 18, 1905.



The representation of a shield having thereon an eye placed between the letters "O" and "C," and the words "CHASE IMPROVED NAIL," with crossed nails behind the shield and a section of a nail shank and head above the shield.

SER. NO. 14,966. BOILERS FOR HEATING PURPOSES. KELLOGG-MACKAY-CAMERON CO., Chicago, Ill. Filed Nov. 24, 1905. Used ten years.



The arbitrarily-selected word "AMERICAN" inclosed in a rectangular border.

SER. NO. 14,999. LIQUID ANTISEPTIC COMPOUND INTENDED FOR EXTERNAL APPLICATION TO THE SCALP FOR THE PURPOSE OF REMOVING AND ERADICATING DANDRUFF. PHYSICIANS MEDICAL SUPPLY CO. Chicago, Ill. Filed Nov. 25, 1905.

EPTONE

The word "EPTONE."

SER. NO. 15,048. SHIP-LOGS AND SOUNDING-MACHINES. THOMAS WALKER & SON LTD., Birmingham, England. Filed Nov. 28, 1905.

TRIDENT

The word "TRIDENT."

SER. NO. 15,104. GLUE. AMERICAN GLUE CO. Boston, Mass. Filed Dec. 1, 1905.



The representation of a shield, the word "UNION" in the upper portion of the shield and the representation of a five-pointed star below, a line dividing the shield into two unequal areas.

SER. NO. 15,112. OUTER SHIRTS. THE PAUL E. WOLFF SHIRT COMPANY, St. Louis, Mo. Filed Dec. 1, 1905.



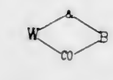
The pictorial representation of the head of a wolf, associated with the word "UNIQUE."

SER. NO. 15,113. OUTER SHIRTS. THE PAUL E. WOLFF SHIRT COMPANY, St. Louis, Mo. Filed Dec. 1, 1905.

UNIQUE

The word "UNIQUE."

SER. NO. 15,115. CHISELS AND PUNCHES. THE WHITMAN & BARNES MANUFACTURING COMPANY, Akron, Ohio. Filed Dec. 1, 1905.



A representation of a diamond-shaped figure, with the letters and character "W" "&" "B" "Co" placed in the respective corners thereof.

SER. NO. 15,122. CASTOR-OIL. CH DELACRE & CIE. Brussels, Belgium. Filed Dec. 1, 1905.



The word "RICINILE," associated with the name "DELACRE," arranged within inwardly-extending scrolls forming a panel, below which are representations of branches of the castor-oil plant, the said branches being fancifully shown as pendent from the border or scrollwork immediately below the panel.

SER. NO. 15,158. KNITTED UNDERWEAR AND HOSIERY. MARSHALL FIELD & COMPANY, Chicago, Ill. Filed Dec. 4, 1905.



The representation of a shield divided by a chevron into an upper and a lower field, the shield being surmounted by a bar and having in its upper field, on either side of the apex of the chevron, a sheaf of wheat, and in the lower field also a sheaf of wheat centrally located in the field.

SER. NO. 15,159. QUILTS. MARSHALL FIELD & COMPANY, Chicago, Ill. Filed Dec. 4, 1905.



The representation of a shield divided into an upper and lower field by a chevron, there being in the upper field, on either side of the

apex of the chevron, a sheaf of wheat and in the lower field a single sheaf. The shield is surmounted by a crest comprising an old-fashioned spinning-wheel, and below the shield a scroll appears.

SER. NO. 15,166. HYDRAULIC CEMENT. UTICA HYDRAULIC CEMENT CO., Utica, Ill. Filed Dec. 4, 1905. Used ten years.

UTICA

The word "UTICA."

SER. NO. 15,217. LADIES' WIRE HAT-FRAMES MADE WITHOUT TIE-WIRES. THE TOTEM MACHINE CO., New York, N. Y. Filed Nov. 8, 1905.

NONTIE

The word "NONTIE."

SER. NO. 15,218. REMEDY FOR CHILLS AND FEVER. JAMES P. SMITH, Augusta, Ga. Filed Dec. 5, 1905.

SMITH'S
ELECTRIC
Chill and Fever
CURE

The representation of a human hand in a clouded background with lightning flashes radiating therefrom and the words "SMITH'S ELECTRIC CHILL AND FEVER CURE."

SER. NO. 15,255. CARRIAGES AND WAGONS. THE I. S. REMSON MFG. CO., Brooklyn, N. Y. Filed Dec. 7, 1905.

Remson

The name "REMSON" printed in the particular or distinctive style shown in the drawing.

SER. NO. 15,337. SELTOGENES AND ANALOGOUS VESSELS FOR AERATED LIQUIDS. AERATORS LIMITED, London, England. Filed Dec. 11, 1905.

SER. NO. 15,337.

SPARKLOGENE

The word "SPARKLOGENE."

SER. NO. 15,386. PREPARATION FOR EXTERNAL AND INTERNAL APPLICATION FOR CROUP, COUGHS, COLDS, THROAT AND LUNG AFFECTIONS IN GENERAL, AND ALSO FOR USE AS AN OINTMENT. BERNARD HENRY GERTZEN, Hudson, N. Y. Filed Dec. 13, 1905.

KROUPOL

The arbitrary and fanciful word "KROUPOL."

SER. NO. 15,392. COMPOUNDS FOR FILLING TEETH AND CURING TOOTHACHES. ABRAM E. PRATT, New York, N. Y. Filed Dec. 13, 1905.

HA-ZEL-ITE

The hyphenated word "HA-ZEL-ITE."

SER. NO. 15,408. PORTLAND CEMENT. PACIFIC PORTLAND CEMENT CO., San Francisco, Cal. Filed Dec. 14, 1905.



The words "GOLDEN GATE" and a representation of the Golden Gate, with the sun in the background and ships in the foreground, surrounded by an annular band, on which appear the words "PACIFIC PORTLAND CEMENT CO. SAN-FRANCISCO, CAL."

SER. NO. 15,456. LEAD-PENCILS. A. W. FABER, Stein, Germany. Filed Dec. 16, 1905.

A. W. F.

The letters "A. W. F."

SER. NO. 15,463. WHEAT-FLOUR. NEW LONDON MILLING COMPANY, New London, Minn. Filed Dec. 16, 1905.



The word "XCLSALL" arranged both horizontally and vertically in such a way that the letter "a" is common upon a white Greek cross on a blue field inclosed in an annular border of red.

SER. NO. 15,465. WHISKY. THOMAS J. RYAN, Nashville, Tenn. Filed Dec. 16, 1905.

STRING WHISKEY

"Straight as a String"

The words "STRING WHISKEY," associated with the words "STRAIGHT AS A STRING."

SER. NO. 15,501. PHOTOGRAPHIC PAPERS. FARBENFABRIKEN OF ELBERFELD CO., New York, N. Y. Filed Dec. 18, 1905.

Autan

The word "AUTAN."

SER. NO. 15,537. MUSIC-BOXES. FRIEDRICH ADOLF RICHTER, Rudolstadt, Germany, and New York, N. Y. Filed Dec. 20, 1905.

IMPERATOR

The word "IMPERATOR."

SER. NO. 15,548. TEA. A. SCHILLING & CO., San Francisco, Cal. Filed Dec. 21, 1905. Used ten years.

Schilling's
Best

The words "SCHILLING'S BEST."

SER. NO. 15,550. TEA. A. SCHILLING & CO., San Francisco, Cal. Filed Dec. 21, 1905. Used ten years.



The pictorial representation of a white Greek cross surrounded by a wreath of leaves and berries tied by a ribbon formed into a bow with scroll-like free ends.

SER. NO. 15,552. WHISKY. S. HIRSCH & CO., Kansas City, Mo. Filed Dec. 21, 1905.



The words "QUAKER MAID" and the bust representation of a maiden dressed in Quaker garb having on a bonnet and wearing a flower at her neck and with two braids of hiar extending across her shoulders and down in front.

SER. NO. 15,561. LINEAL MEASURES OF ALL KINDS. C. BUBE, (a Firm), Hanover-Bothfeld, Germany. Filed Dec. 21, 1905.



The representation of a boy with open arms and the letters "C" and "B" under the arms.

SER. NO. 15,620. WHEAT BREAKFAST-FOOD. PILLSBURY-WASHBURN FLOUR MILLS COMPANY LIMITED, Minneapolis, Minn. Filed Dec. 23, 1905.

SER. No. 15,620.



A rectangular figure divided into four panels, on two of which are the representation of a pyramid and the words "PILLSBURY'S VITOS THE IDEAL WHEAT FOOD STERILIZED." On one of the other panels is the representation of a wheat-field with the sun in the background, a pyramid in the foreground and the words "PILLSBURY'S VITOS MEAT OF THE WHEAT THE IDEAL WHEAT FOOD STERILIZED MADE FROM THE BEST NORTHWESTERN HARD WHEAT PILLSBURY WASHBURN FLOUR MILLS CO. LTD., MINNEAPOLIS, MINN. U. S. A.," and on the other panel the representation of a wheat-field with the sun in the background and a triangle in the foreground, a partial view of the globe in a wheat-field, and the words "PILLSBURY'S VITOS THE IDEAL WHEAT FOOD STERILIZED PILLSBURY'S BEST XXXX MINNEAPOLIS, MINN. PILLSBURY'S DIETETIC GERMOS FLOUR MINNEAPOLIS, MINN. THE WORLD'S STANDARD BRANDS."

SER. No. 15,651. COMPOUND EMPLOYED IN SKIN AND BLOOD DISEASES AND AN ANTIDOTE FOR MOSQUITO AND OTHER INSECT BITES. OLIVER P. G. CONLEY, Troup, Tex. Filed Dec. 26, 1905.

MOSQUITOS TERROR



The representation of a skull and crossbones and the representation of a mosquito, associated with the numerals "77" and the words "MOSQUITOS TERROR."

SER. No. 15,667. ARTIFICIAL FERTILIZERS. CLOVERINE FERTILIZER CO., Mount Pleasant, Tenn. Filed Dec. 26, 1905.

SER. No. 15,667.



The words "CLOVERINE HONEST FERTILIZER," appearing upon the sides of a triangular figure, are associated with a representation of a clover-leaf.

SER. No. 15,721. KID GLOVES. CHARLES PERRIN & CIE, Grenoble, France. Filed Dec. 28, 1905.



A winged star with rays radiating therefrom, a scroll below the star with the words "MONSTRANT ASTRA VIAM" on the same, and a monogram formed of the letters "P J" within the star.

SER. No. 15,745. PREPARATION FOR INTERNAL USE FOR THE CURE OF NERVOUSNESS, HEADACHE, NEURALGIA, BRAIN FATIGUE FOLLOWING ALCOHOLIC AND OTHER EXCESSES, MENTAL EXHAUSTION, SEASICKNESS, AND KINDRED DISORDERS. EDWARD L. BALDWIN CO., San Francisco, Cal. Filed Dec. 29, 1905.



The representation of a seal bearing the monogram "E L B" inclosed within a circle and having thereon in circular form the name and abbreviations "EDWARD L. BALDWIN CO. S. F. CAL.," the representation of the seal being associated with a scroll containing the words "BALDWIN'S CELERY SODA."

SER. No. 15,753. PREPARATION FOR INTERNAL AND EXTERNAL USE FOR THE CURE OF NASAL, THROAT, AND STOMACH CATARRH AND ALL DISEASES AFFECTING THE MUCOUS MEMBRANE, PUT UP IN THE FORM OF AN AQUEOUS SOLUTION. FERRY DRUG CO., San Francisco, Cal. Filed Dec. 29, 1905.

Ka-Taro

The hyphenated coined word "KA-TARO."

SER. No. 15,754. CENTRIFUGAL CREAM-SEPARATORS. INTERNATIONAL HARVESTER COMPANY OF AMERICA, Chicago, Ill. Filed Dec. 29, 1905.

SER. No. 15,754.



The words "CREAM HARVESTER" appearing on a panel inclosed in an elliptical ornamental border.

SER. No. 15,773. MEDICINES FOR BRONCHIAL AND PULMONARY AFFECTIONS. THE CHOATE DRUG AND CHEMICAL COMPANY, Boston, Mass. Filed Dec. 30, 1905.



A circular border having a picture of an owl within the same, the words "BLACK BOTTLE" partly surrounding the border, and another circular border surrounding the words "BLACK BOTTLE," the latter circular border having lines radiating therefrom.

SER. No. 15,779. CALCIMINE. THE TRIPOD PAINT CO., Atlanta, Ga. Filed Dec. 30, 1905.

Deco-Mura

The arbitrarily-selected fanciful word "DECO-MURA."

SER. No. 15,781. PEROXID OF HYDROGEN. AMERICAN PEROXIDE AND CHEMICAL CO., New York, N. Y. Filed Dec. 30, 1905.

SOLOX

The word "SOLOX."

SER. No. 15,792. PISTON, ROD, AND JOINT PACKINGS. THE MECHANICAL RUBBER CO., New York, N. Y. Filed Dec. 30, 1905.

MARCO

The word "MARCO."

SER. No. 15,852. PICTORIAL POST-CARDS, CONGRATULATORY CARDS, FANCY CARDS, AND POSTERS. CHROMOLITHOGRAPHISCHE KUNSTANSTALT PAUL FINKENRATH, GESELLSCHAFT MIT BESCHRÄNKTER HAFTUNG, Berlin, Germany. Filed Jan. 3, 1906.

SER. No. 15,852.



The representation of two pairs of compasses intersecting each other and the alphabetical letters "P F B."

SER. No. 16,043. COMIC SECTIONS OR PAGES OF NEWSPAPERS. THE NEW YORK HERALD COMPANY, New York, N. Y. Filed Jan. 8, 1906.

BUSTER BROWN AND TIGE

The words "BUSTER BROWN AND TIGE."

SER. No. 16,056. SHIRT-WAISTS AND SHIRT-WAIST SUITS. HOLEMAN MFG. CO., Baltimore, Md., and New York, N. Y. Filed Jan. 8, 1906.

The Marquise

The words "THE MARQUISE." The word "MARQUISE" in script is preceded by the article "THE" in plain type.

SER. No. 16,120. AUTOMOBILE VEHICLES. REO CAR CO, Lansing, Mich. Filed Jan. 11, 1906.

REO

The word "REO."

SER. No. 16,188. REPAIR-LINKS FOR LINK CHAINS. DIAMOND CHAIN & MANUFACTURING CO. Indianapolis, Ind. Filed Jan. 13, 1906.

HEAR IT SNAP.

The words "HEAR IT SNAP."

SER. No. 16,193. WHISKY. ELY OPPENHEIMER, Cincinnati, Ohio. Filed Jan. 15, 1906.

OLDFIELD

The word "OLDFIELD."

SER. No. 16,217. SERUMS. PAUL YVON, Paris, France, assignor to Institut Pasteur, Paris, France, a Firm. Filed Jan. 16, 1906.

I. P.

The letters "I. P.," being printed or painted in plain block type. Above and below the letters is a horizontal arrow, the upper one pointing to one side and the lower one to the other side. At each side of the letters is an upright line, these two lines, together with arrows, forming a rectangle inclosing the letters.

SER. No. 16,270. LARD. GOLDEN AND COMPANY, Washington, D. C. Filed Jan. 18, 1906.

CAPITOL COMPOUND LARD

The representation of the dome of the Capitol at Washington, District of Columbia, beneath which are arranged the words "CAPITOL COMPOUND LARD."

SER. No. 16,276. SAFETY-MATCHES, PHOSPHORIC MATCHES, AND MATCHES OF OTHER KINDS. AKTIEBOLAGET SÖDERTELJE TÄNDSTICKSFABRIK, Södertelje, Sweden. Filed Jan. 18, 1906.



The representation of a ship under full sail, on each side of which are shown two medals. Above these are the words "SÄKERHETS-TÄNDSTICKOR" in curved line the word "PARAFFINERADE," and the words "SÖDERTELJE TÄNDSTICKSFABRIKS" in the order named. Below the representation of the ship the words "TÄNDAS MOT LÅDANS PLAN" are shown. Above the medals on the right appear the words "UTAN SVAFVEL" and below these medals "MOSKWA 1872." Above the medals on the left appear the words "OCH FOSFOR" and below "PARIS 1878." The whole mark is inclosed by a double-lined rectangle.

SER. No. 16,328. SARDINES AND LIKE FISH. ANGUS WATSON & Co, Newcastle-on-Tyne, England. Filed Jan. 18, 1906.

SENATOR

The word "SENATOR."

SER. No. 16,330. HOSIERY. MARSHALL FIELD & COMPANY, Chicago Ill. Filed Jan. 20, 1906.

OLD IRONSIDES

The arbitrarily-selected words "OLD IRONSIDES."

SER. No. 16,338. WOOLEN PIECE GOODS. THE BEEBE-WEBBER COMPANY, Holyoke, Mass. Filed Jan. 20, 1906.

STARBECK Quality MILLS

The words "STARBECK MILLS" arranged between the lines of two concentric circles and associated with the word "QUALITY" in script type on a band and horizontally arranged within the inner circle, and arranged diagonally to the word "QUALITY" and back of the band is a representation of the Roman fasces.

SER. No. 16,348. INK-ERADICATORS. BERTHA R. THOMAS, New York, N. Y. Filed Jan. 20, 1906.

IN IN — K — OFF OFF

The word "INKOFF" displayed in the form of a cross, with the letter "K" forming the center thereof, being common to each word, and the syllables "IN" and "OFF" of the word being separated from the letter "K" by dashes.

SER. No. 16,392. CONTAINERS FOR OYSTERS, CLAMS, FISH, AND OTHER SEA-FOODS. NATIONAL OYSTER CARRIER COMPANY, Albuquerque, N. Mex. Filed Jan. 22, 1906.

SEALSHIPT

The word "SEALSHIPT." Said word is inclosed in a quadrilateral, arranged with the vertices of two of its opposite angles in a vertical line. The figure is crossed by a vertical band and a substantially horizontal band, on the latter of which bands the word "SEALSHIPT" appears.

SER. No. 16,410. CIGARETTES. BUTLER-BUTLER, (INCORPORATED,) New York, N. Y. Filed Jan. 23, 1906.

UMBELONG

The word "UMBELONG."

SER. No. 16,417. FLAVORING EXTRACTS. OKLAHOMA WHOLESALE GROCER CO., Oklahoma City, Okla. Filed Jan. 23, 1906.

QUAIL



The word "QUAIL" and the picture of a quail inclosed in a circle, with grass in the background.

SER. No. 16,439. TONIC PREPARATION FOR THE PRESERVATION OF THE HAIR AND THE NUTRIMENT OF THE SCALP. LEWIS S. WANDELL. New York, N. Y. Filed Jan. 23, 1906.

"Dandrocide"

The word "DANDROCIDE" inclosed in quotation-marks and arranged between two parallel lines.

SER. No. 16,464. STEAM HOISTING, MINING, STATIONARY, AND DREDGING ENGINES. JOSEPH S. MUNDY, Newark, N. J. Filed Jan. 24, 1906. Used ten years.

THE MUNDY

The words "THE MUNDY."

SER. No. 16,504. PREPARATION FOR USE AS A MOTHER'S MILK-PRODUCING AND RECONSTRUCTING REMEDY. SALVATOR PENNY. New York, N. Y. Filed Jan. 25, 1906.

LACTOGEN.

The word "LACTOGEN."

SER. No. 16,522. CHLORID OF AMMONIUM, MURIATE OF AMMONIA, OR SAL-AMMONIAC IN FORM OF TABLETS. BRUNNER, MOND & Co., LIMITED. Northwich, England. Filed Jan. 26, 1906.

VOLTOID

The invented word "VOLTOID."

SER. No. 16,531. GIN. JAMES F O'TOOLE, Baltimore, Md. Filed Jan. 26, 1906.

Vigor Gin

The words "VIGOR GIN."

SER. No. 16,548. SHAVING-SOAP AND TOILET SOAPS. JOHN KNIGHT & SONS, LIMITED, London, England. Filed Jan. 26, 1906.

SHAVALLO

The word "SHAVALLO."

SER. No. 16,571. WINE. JAMES F O'TOOLE, Baltimore, Md. Filed Jan. 27, 1906.

DOCTOR'S SPECIAL RESERVE

The words "DOCTOR'S SPECIAL RESERVE."

SER. No. 16,605. ANTISEPTICS AND WASHES FOR THE MOUTH AND TEETH. FRIEDRICH ADOLPH SCHULZ, Leipsic, Germany. Filed Jan. 29, 1906.



The representation of two baby mermaids resting on a block floating on the water, a bottle of the preparation also floating on the water, a waterspout, and the word "DENSOS," the whole inclosed in a rectangle on a black background.

SER. No. 16,657. COCOANUT-BUTTER. OIL SEEDS COMPANY, New York, N. Y. Filed Feb. 1, 1906.

OS-CO

The hyphenated word "OS-CO."

SER. No. 16,723. LADIES' DRESS-WAISTS. JUDA BROS., San Francisco, Cal. Filed Feb. 3, 1906.

J.B. Beauty J.B.

The word "BEAUTY" and the letters "J. B." inclosed in rhomboidal outlines at each end of the word.

SER. No. 16,789. SMOKING-TOBACCO, CHEWING-TOBACCO, AND TOBACCO USED FOR MAKING CIGARETTES. ALEXANDER A. KOHARY, Pittsburg, Pa. Filed Feb. 6, 1906.

SER. NO. 16,789.



The representation of a man on horseback holding in his left hand an upright spear and in his right hand a club, below which are the words "DUHAN KRALJEVIĆA MARKA," the whole inclosed in a rectangular border.

SER. NO. 16,799. WHISKY. SHOWELL & FRYER, LIMITED, Philadelphia, Pa. Filed Feb. 6, 1906.

BELLEROSE

The word "BELLEROSE."

SER. NO. 16,817. PREPARED AND UNPREPARED PAPER FOR BLUE AND OTHER PROCESS PRINTING. EUGENE DIETZGEN CO. Chicago, Ill. Filed Feb. 7, 1906.

Radiant

The word "RADIANT."

SER. NO. 16,826. CHOCOLATE, COCOA, SWEET CHOCOLATE, MILK-CHOCOLATE, CHOCOLATE COATINGS, CHOCOLATE LIQUORS, AND CHOCOLATE POWDER. MILTON S. HERSHEY, Derry Church, Pa. Filed Feb. 8, 1906.



The representation of a portion of a vine bearing a broken cocoa-bean, with the head, arms, and shoulders of an infant projecting therefrom holding a cup in one hand.

SER. NO. 16,833. REMEDIES FOR CATARRH. CHARLES E. SCHINDLER, Coldwater, Ohio. Filed Feb. 8, 1906.

GEN-TO-NA

The hyphenated syllables "GEN-TO-NA."

SER. NO. 16,867. LIQUID PREPARATION FOR DEODORIZING, DISINFECTING, INSECT-DESTROYING, AND DUST-LAYING PURPOSES. LA-LO MANUFACTURING COMPANY, Boston, Mass. Filed Feb. 9, 1906.

LA-LO SPRAY

The words "LA-LO SPRAY."

SER. NO. 16,899. LEATHER BOOTS AND SHOES. LOCKE SHOE COMPANY, Wheeling, W. Va. Filed Feb. 10, 1906.

BETSY ROSS

The words "BETSY ROSS."

SER. NO. 16,905. PIANOS. M. STEINERT & SONS CO., Boston, Mass. Filed Feb. 10, 1906. Used ten years.

Steinert & Sons.

The name "STEINERT & SONS."

SER. NO. 16,979. GAS-BURNERS. H. ADLER COMPANY, Carnegie, Pa., and Kansas City, Mo. Filed Feb. 13, 1906.

VICTOR

The word "VICTOR."

SER. NO. 16,986. MEDICINE FOR TREATMENT OF APPENDICITIS. CHARLES WESCHCKE, Springfield, Minn. Filed Feb. 13, 1906.



The representation of the human organ called the "appendix" inclosed within a circle.

SER. NO. 17,027. LADIES' SHIRT-WAISTS. EDWARD FAST, New York, N. Y. Filed Feb. 14, 1906.

"THE Coronet" SHIRT WAIST

The word "CORONET" within quotation-marks and arranged between the words "THE" and "SHIRT WAIST" and associated with a representation of a coronet or crown and a monogram composed of the letters "E F."

SER. NO. 16,995. SAFES. HERRING-HALL-MARVIN SAFE COMPANY, Hamilton, Ohio, and New York, N. Y. Filed Feb. 14, 1906. Used ten years.

HERRING-HALL-MARVIN

The name "HERRING-HALL-MARVIN."

SER. NO. 17,042. WHISKY. THE ALBERT M. GUGENHEIM CO., Cincinnati, Ohio. Filed Feb. 15, 1906.

RYELAND

The word "RYELAND."

SER. NO. 17,063. MEDICINAL PLASTERS. J. ELLWOOD LEE COMPANY, Conshohocken, Pa. Filed Feb. 16, 1906. Used ten years.

Mack's

The word "MACK'S."

SER. NO. 17,162. IRON OR OTHER METAL HEADS OF GOLF-CLUBS. THOMAS STEWART, St. Andrews, Scotland. Filed Feb. 15, 1906.



The representation of a pipe for smoking tobacco.

SER. NO. 17,169. HOSIERY FOR BOTH LADIES AND GENTLEMEN. WAYNE KNITTING MILLS, Fort Wayne, Ind. Filed Feb. 19, 1906.

SER. NO. 17,169.



The words "WAYNE KNIT FLARE TOP HOSIERY" inclosed by scrollwork, foliage, and flowers.

SER. NO. 17,204. BACK-PEDALING COASTER-BRAKES AND PARTS THEREOF. ECLIPSE MACHINE CO., Elmira Heights, N. Y. Filed Feb. 20, 1906.



A representation of a crescent and an arrow arranged with the head and shaft projecting beyond the points of the crescent, together with the word "ECLIPSE" upon the crescent.

SER. NO. 17,359. DRESSED-SKIN UNDERWEAR. THADDEUS C. JONES, St. Paul, Minn. Filed Feb. 26, 1906.



The representation of an arctic landscape surrounded by a circle. A chamois, a pole supporting a signboard, and a hunter upon snowshoes appear in the foreground. Upon the pole above the sign the letter "X" is shown and below the sign the word "POLE." The words "THAD. C. JONES BUCKSKIN UNDERWEAR" are displayed upon the signboard.

SER. NO. 17,389. ANTIFRICTION METALS OR ALLOYS. MAGNOLIA METAL COMPANY, New York, N. Y. Filed Feb. 28, 1906. Used ten years.

MAGNOLIA

The word "MAGNOLIA."

SER. NO. 17,406. GASOLENE-ENGINES. DEERE & WEBBER CO., Minneapolis, Minn. Filed Feb. 28, 1906.

REINDEER

The word "REINDEER."

SER. No. 17,440. WHISKY. FOUR OAKS DISTILLING CO., Birmingham, Ala. Filed Mar. 1, 1906.

ROYAL WORCESTER

The words "ROYAL WORCESTER."

SER. No. 17,442. HAVANA CIGARS. HAVANA COMMERCIAL COMPANY, Jersey City, N. J., and New York, N. Y. Filed Mar. 1, 1906. Used ten years.



The representation of a streamer with the words "PEDRO MURIAS Y CA" thereon and with the words "FABRICANTES DE TABACOS" and "HABANA" below said streamer. A representation of two crossed sprays is below the word "HABANA."

SER. No. 17,469. SHIRTS, COLLARS, AND CUFFS. INTERNATIONAL SHIRT AND COLLAR COMPANY, Troy, N. Y. Filed Apr. 26, 1905. Used ten years.

International

The word "INTERNATIONAL."

SER. No. 17,572. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 6, 1906. Used ten years.

BRIGHT LEAF

The words "BRIGHT LEAF."

SER. No. 17,630. STERLING AND SOLID SILVER HOLLOW WARE, FLAT WARE, AND TABLEWARE. GORHAM MFG. CO., Providence, R. I. Filed Mar. 7, 1906. Used ten years.

GORHAM

The word "GORHAM."

SER. No. 17,638. FLUID-METERS. HERSEY MANUFACTURING COMPANY, Boston, Mass. Filed Mar. 7, 1906. Used ten years.

SER. No. 17,638.

HERSEY

The word "HERSEY."

SER. No. 17,646. RAZORS. SMITH & HEMENWAY COMPANY, New York, N. Y. Filed Mar. 8, 1906.

RED-MAN

The hyphenated word "RED-MAN."

SER. No. 17,654. LEATHER BOOTS AND SHOES. CAMBLOR, MUNTANER & CO., San Juan, Porto Rico. Filed Mar. 8, 1906.



The representation of a devil, his head resting on his right arm, his left arm extended and holding a frame inclosing the words "EL DIABLO," and a triangle in the said frame, beneath it being the tail of the devil.

SER. No. 17,656. LADIES' SHIRT-WAISTS. THE BELLE WAIST CO., Boston, Mass. Filed Mar. 8, 1906.

The Belle

The words "THE BELLE."

SER. No. 17,670. CANDY. THE LIPPS-MURBACH CO. OF BALTIMORE CITY, Baltimore, Md. Filed Mar. 8, 1906.

SWISS BUTTER "SOLFERENO"

The arbitrarily-selected words "SWISS BUTTER SOLFERENO," the word "SOLFERENO" being within quotation-marks.

SER. No. 17,769. PEACH-TREES. MILTON E. FOWLER, Lindale, Tex. Filed Mar. 12, 1906.

Augbert

The word "AUGBERT."

SER. No. 17,775. BROOMS. AMERICAN BROOM & BRUSH CO., Amsterdam, N. Y. Filed Mar. 12, 1906.

METRIC

The arbitrarily-selected word "METRIC."

SER. No. 17,799. PLANTERS, TRANSPLANTERS, HARROWS, DRILLS, AND SEEDERS OR DISTRIBUTERS, ALSO THE PARTS THEREOF. FETZER & COMPANY, Middletown, Ohio. Filed Mar. 14, 1906. Used ten years.

PLYMOUTH

The word "PLYMOUTH."

SER. No. 17,800. PLANTERS, TRANSPLANTERS, HARROWS, DRILLS, AND SEEDERS OR DISTRIBUTERS, ALSO THE PARTS THEREOF. FETZER & COMPANY, Middletown, Ohio. Filed Mar. 14, 1906. Used ten years.

COLUMBIA

The word "COLUMBIA."

SER. No. 17,818. LEATHER BELTING. THE REPUBLIC BELTING & SUPPLY CO, Cleveland, Ohio. Filed Mar. 14, 1906.

REPUBLIC

The word "REPUBLIC."

SER. No. 17,835. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 15, 1906.

MOBILE DOUBLE



EAGLE GUANO

The representation of two coin-like disks, one overlapping the other, each having a circular series of stars near the edge. Within the stars on one disk is the representation of a sheaf of wheat and within the stars on the other a double eagle. Above the pictorial feature are the words "MOBILE DOUBLE" and below it the words "EAGLE GUANO."

SER. No. 17,891. TYPE-WRITER RIBBONS. THE CARTER'S INK COMPANY, Boston, Mass., and New York, N. Y. Filed Mar. 15, 1906. Used ten years.

CARTER'S

The word "CARTER'S."

SER. No. 17,892. CARBON-PAPER. THE CARTER'S INK COMPANY, Boston, Mass., and New York, N. Y. Filed Mar. 15, 1906.

SER. No. 17,892.

IDEAL

The word "IDEAL."

SER. No. 17,903. CUT GLASS. RICHARD MURR, San Francisco, Cal. Filed Mar. 15, 1906.

KOH-I-NOOR

The word "KOH-I-NOOR."

SER. No. 17,958. ADJUSTABLE CORN-HUSKERS. F. D. KREE MANUFACTURING CO., Beatrice, Nebr. Filed Mar. 16, 1906.

Twelve-in-One

The words "TWELVE-IN-ONE."

SER. No. 17,978. CANDIED POPCORN. WILLIAM J. MADDEN, New York, N. Y. Filed Mar. 17, 1906.

C.C.C

The letters "C. C. C." having periods placed therebetween.

SER. No. 18,010. INKED PADS FOR TYPE-WRITERS. JOHN R. KEATINGE, New York, N. Y. Filed Mar. 19, 1906.



A black diamond-shaped figure, upon which appear the words "DIAMOND BRAND," and upon which is outlined a diamond-shaped figure divided into halves by a horizontal line, the upper half being equally divided by a vertical line and the lower half containing the letter "S."

SER. No. 18,011. CARBON-PAPERS. JOHN R. KEATINGE, New York, N. Y. Filed Mar. 19, 1906.



A black diamond-shaped figure, upon which appear the words "DIAMOND BRAND," and upon which is outlined a diamond-shaped figure divided inio halves by a horizontal line, the upper half being equally divided by a vertical line and the lower half containing the letter "S."

SER. No. 18,018. MACHINE-NEEDLES. UNION SPECIAL MACHINE COMPANY, Chicago, Ill. Filed Mar. 19, 1906. Used ten years.



The words "UNION SPECIAL," associated with the words "MACHINE NEEDLES" arranged below it. Below the words "MACHINE NEEDLES" is a horizontal line, and in the space between this and a lower horizontal line are the words "NONE GENUINE WITHOUT OUR TRADE MARK "UNION SPECIAL"" and the words "UNION SPECIAL MACHINE COMPANY." The whole mark is applied to a rectangular label containing border-lines, and at the bottom are the words "IN ORDERING RETURN EMPTY PACKAGE."

SER. No. 18,108. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 22, 1906.

PLANT SYSTEM

The words "PLANT SYSTEM."

SER. No. 18,143. FIBROUS AND TEXTILE ROPE AND TWINE. PLYMOUTH CORDAGE COMPANY, Plymouth, Mass. Filed Mar. 23, 1906. Used ten years.

PLYMOUTH

The word "PLYMOUTH."

SER. No. 18,184. TOMATO CATSUP, RELISH, AND CHILI SAUCE. EDWARD PRITCHARD, New York, N. Y. Filed Mar. 23, 1906.

PRIDE of FARM

The words "PRIDE OF THE FARM."

SER. No. 18,251. HORSE-NAILS. THE CAPEWELL HORSE NAIL COMPANY, Hartford, Conn. Filed Mar. 24, 1906. Used ten years.



The representation of an alligator.

SER. No. 18,349. HEATING AND COOKING STOVES. JOLIET STOVE WORKS, Joliet, Ill. Filed Mar. 29, 1906. Used ten years.

MOORE'S

The word "MOORE'S."

SER. No. 18,393. MATERIAL FOR CLEANING AND POLISHING METAL, GLASS, MARBLE, AND THE LIKE. THE MATCHLESS METAL POLISH CO., New York, N. Y., and Chicago, Ill. Filed Mar. 31, 1906. Used ten years.



The words "CHAMPION BAR POLISH" appearing on a circular field.

SER. No. 18,431. SNAP-SWITCHES. THE PERKINS CORPORATION, Hartford, Conn. Filed Apr. 2, 1906.



The letter "P," with an arrow extending across the "P."

SER. No. 18,483. WHEAT-FLOUR. JOHN H. EDELINE MILLING COMPANY, Green Bay, Wis. Filed Apr. 3, 1906.



The words "THE CREAM OF WHEAT," associated with wheat-stalks.

SER. No. 18,573. TACKLE AND HOISTING BLOCKS AND SHEAVES FOR THE SAME. BOSTON AND LOCKPORT BLOCK COMPANY, Lockport, N. Y., and Boston, Mass. Filed Apr. 6, 1906.

METALINE

The word "METALINE."

SER. No. 18,666. WHEAT-FLOUR. WASHBURN CROSBY COMPANY, Minneapolis, Minn. Filed Apr. 10, 1906. Used ten years.

Supreme

The word "SUPREME."

TRADE-MARKS

REGISTERED MAY 8, 1906.

52,257. CALICOES. AMERICAN PRINTING COMPANY, Fall River, Mass.
The word "AMERICAN." Used ten years.
Filed May 1, 1905. Serial No. 3,852. PUBLISHED MARCH 13, 1906.

52,258. TOILET-PAPER. ARCHIE F. BAIRD, Boston, Mass.
The word-symbol "RED CROSS" printed in red.
Filed May 31, 1905. Serial No. 7,071. PUBLISHED MARCH 13, 1906.

52,259. CERTAIN NAMED CONFECTIONERY. C. POYET, INC., New York, N. Y.
The representation of a globe having the name "C. POYET" thereon in script.
Filed June 10, 1905. Serial No. 7,882. PUBLISHED MARCH 13, 1906.

52,260. STEEL. CRUCIBLE STEEL COMPANY OF AMERICA, Pittsburg, Pa.
A representation of a diamond-shaped figure in outline and inclosing the character "J."
Filed May 13, 1905. Serial No. 5,502. PUBLISHED MARCH 13, 1906.

52,261. STEEL. CRUCIBLE STEEL COMPANY OF AMERICA, Pittsburg, Pa.
The word "MOHAWK." Used ten years.
Filed May 13, 1905. Serial No. 5,513. PUBLISHED MARCH 13, 1906.

52,262. CARBON-PAPER. DE-FI MANUFACTURING CO., New York, N. Y.
The arbitrary quoted hyphenated word "DE-FI."
Filed May 2, 1905. Serial No. 4,053. PUBLISHED MARCH 13, 1906.

52,263. STOVES AND FURNACES FOR HEATING BUILDINGS. THE FIEBEGER HEATING COMPANY, Akron, Ohio.
The words "ATHANOR HEATERS."
Filed June 12, 1905. Serial No. 7,971. PUBLISHED MARCH 13, 1906.

52,264. BEARING METAL. FRICTIONLESS METAL COMPANY, Richmond, Va.
The representation of a nude figure of a child holding in its right hand a ladle and holding above its head in its left hand a bar of bearing metal, together with the representation of an open box containing bearing metal, said box containing the words "FRICTIONLESS BEARING METAL" on one side and "50L" on the other side, while the bar of bearing metal held in the left hand of the child contains the word "FRICTIONLESS."
Filed May 10, 1905. Serial No. 4 901. PUBLISHED MARCH 13, 1906.

52,265. BEARING METAL. FRICTIONLESS METAL COMPANY, Richmond, Va.
The word-symbol "SUBURBAN."
Filed May 10, 1905. Serial No. 4,908. PUBLISHED MARCH 13, 1906.

52,266. BEARING METAL. FRICTIONLESS METAL COMPANY, Richmond, Va.
The representation of a man holding a bar of metal above his head, upon which bar of metal is the word "FRICTIONLESS."
Filed May 10, 1905. Serial No. 4,909. PUBLISHED MARCH 13, 1906.

52,267. LEATHER BOOTS AND SHOES. GEO. E. KEITH COMPANY, Brockton, Mass.
The words "HIGH LIFE."
Filed June 10, 1905. Serial No. 7,847. PUBLISHED MARCH 13, 1906.

52,268. RUBBER PACKING. GORHAM RUBBER COMPANY, San Francisco, Cal.
The figure of a black person seated upon a section of spiral packing and holding in one hand a spear. Above the figure is the word "AMAZON," and the words "SPIRAL" and "PACKING" appear respectively at the left and right of the figure.
Filed May 11, 1905. Serial No. 5,169. PUBLISHED MARCH 13, 1906.

52,269. NAILS PROVIDED WITH A NON-METALLIC COATING. J. C. PEARSON CO., Boston Mass.
The words "CEMENT COATED NAILS."
Filed April 27, 1905. Serial No. 3,222. PUBLISHED JUNE 27, 1905.

52,270. WHISKY. L. KAHN & Co., Cleveland, Ohio.
The words "DRIVING CLUB."
Filed May 1, 1905. Serial No. 3,724. PUBLISHED MARCH 13, 1906.

52,271. COTTON PIECE GOODS. MASSACHUSETTS COTTON MILLS, Lowell, Mass.
The word "PRESCOTT," which appears above a foliate scroll. Used ten years.
Filed May 11, 1905. Serial No. 5,245. PUBLISHED MARCH 13, 1906.

52,272. COTTON PIECE GOODS. MASSACHUSETTS COTTON MILLS, Lowell, Mass.
The arbitrarily-selected word "GUARDIAN."
Filed May 11, 1905. Serial No. 5,250. PUBLISHED MARCH 13, 1906.

52,273. AIR-HEATING FURNACES FOR BUILDINGS. MAY AND FIEBEGER, Akron, Ohio.
The words "AKRON AIR BLAST." Used ten years.
Filed June 12, 1905. Serial No. 7,972. PUBLISHED MARCH 13, 1906.

52,274. WATER-PUMPS. F. E. MYERS & BROTHER, Ashland, Ohio.
The word "BULLDOZER."
Filed May 29, 1905. Serial No. 6,900. PUBLISHED MARCH 13, 1906.

52,275. SPECIALLY-PREPARED RAWHIDE. THE NEW PROCESS RAW HIDE CO., Syracuse, N. Y.
The representation of a pair of wings, associated with the initials "N. P. R. H." and the abbreviation "Co."
Filed May 31, 1905. Serial No. 7,113. PUBLISHED MARCH 13, 1906.

52,276. CERTAIN NAMED FURNITURE. THE OSCAR ONKEN CO., Cincinnati, Ohio.
The words "SHOP OF THE CRAFTERS AT CINCINNATI" and the representation of a suspended lantern from which rays of light radiate.
Filed May 5, 1905. Serial No. 4,396. PUBLISHED MARCH 13, 1906.

52,277. STEEL. PARK STEEL COMPANY, Pittsburg, Pa.
The word "CALUMET" inclosed in quotation-marks. Used ten years.
Filed May 13, 1905. Serial No. 5,471. PUBLISHED MARCH 13, 1906.

52,278. STEEL. PARK STEEL COMPANY, Pittsburg, Pa.
The word "ATLAS." Used ten years.
Filed May 13, 1905. Serial No. 5,472. PUBLISHED MARCH 13, 1906.

52,279. ELASTIC STOCKINGS. POMEROY COMPANY, New York, N. Y.
The representation of a boy seated in a chair and pulling on a stocking and the phrase "IT PULLS ON LIKE A BOOT."

Filed May 27, 1905. Serial No. 6,830. PUBLISHED MARCH 13, 1906.

52,280. WHISKY. THE STAR DISTILLERY CO., Cincinnati, Ohio.

The word "SHENANDOAH." Used ten years.

Filed May 24, 1905. Serial No. 6,488. PUBLISHED MARCH 13, 1906.

52,281. APPARATUS FOR ADMINISTERING MAGNETIC CURRENTS TO INVALIDS. JOHN W. STEEVES, Baltimore, Md.

The word "VORTEXIA."

Filed May 11, 1905. Serial No. 5,099. PUBLISHED MARCH 13, 1906.

52,282. COATS, PANTS, AND OVERALLS. SYRACUSE DRY GOODS CO., Syracuse, N. Y.

The words "THE EMPIRE."

Filed May 19, 1905. Serial No. 6,102. PUBLISHED MARCH 13, 1906.

52,283. CIGARS. JOSEPH WEINREICH, Dayton, Ohio.

The representation of a scale-balance in equipoise and a monogram of the letters "J W," all inclosed in two concentric circles, with the words "SCALE OF JUSTICE" appearing at the top between the two circles.

Filed June 12, 1905. Serial No. 7,953. PUBLISHED MARCH 13, 1906.

52,284. ANTIFRICTION AND BEARING METALS. WILLIAM A. HARDY & SON'S CO., Fitchburg, Mass.

The word and letters "HARDY'S O. K."

Filed May 18, 1905. Serial No. 5,937. PUBLISHED MARCH 13, 1906.

52,285. ANTIFRICTION AND BEARING METALS. WILLIAM A. HARDY & SON'S CO., Fitchburg, Mass.

The word "HARDY" printed vertically, with a hyphen and the letters "S S" at right angles thereof.

Filed May 18, 1905. Serial No. 5,940. PUBLISHED MARCH 13, 1906.

52,286. BELTING. THE AKRON BELTING COMPANY, Akron, Ohio.

The word "IDEAL."

Filed June 22, 1905. Serial No. 8,790. PUBLISHED MARCH 13, 1906.

52,287. DISPENSING-CABINETS. ALBANY PERFORATED WRAPPING PAPER CO., Albany, N. Y.

The arbitrary word "ONLIWON." The word "THE" appears in the first letter "O."

Filed July 8, 1905. Serial No. 9,941. PUBLISHED MARCH 13, 1906.

52,288. BROOMS. AMERICAN BROOM & BRUSH CO., Amsterdam, N. Y.

The word "ROYAL."

Filed September 7, 1905. Serial No. 12,354. PUBLISHED MARCH 13, 1906.

52,289. CANNED LOBSTERS. BURNHAM & MORRILL COMPANY, Portland, Me.

The word-symbol "RED JACKET." Used ten years.

Filed May 20, 1905. Serial No. 6,184. PUBLISHED MARCH 13, 1906.

52,290. CANNED LOBSTERS. BURNHAM & MORRILL COMPANY, Portland, Me.

The word-symbol "MACHIAS BAY." Used ten years.

Filed May 20, 1905. Serial No. 6,185. PUBLISHED MARCH 13, 1906.

52,291. CANNED LOBSTERS. BURNHAM & MORRILL COMPANY, Portland, Me.

The word-symbol "DE LA REINE." Used ten years.

Filed May 20, 1905. Serial No. 6,187. PUBLISHED MARCH 13, 1906.

52,292. BAKING-SODA AND BAKING-POWDER. CHURCH & DWIGHT COMPANY, New York, N. Y.

The representation of the head of a bulldog inclosed in an annular strap.

Filed April 11, 1905. Serial No. 1,106. PUBLISHED MARCH 13, 1906.

52,293. METALLIC RIMS FOR VEHICLE-WHEELS. THE CLINCHER AUTOMOBILE TIRE MANUFACTURERS' ASSOCIATION, Akron, Ohio.

A conventional representation of a bifurcated section of a clincher-rim for a wagon-wheel and a bifurcated monogram of the letters "A T M A."

Filed May 22, 1905. Serial No. 6,220. PUBLISHED MARCH 13, 1906.

52,294. DRY PASTE. CROWN OIL & WAX COMPANY, Wilmington, Del., and Baltimore, Md.

The word "ANCHOR." Used ten years.

Filed September 5, 1905. Serial No. 12,243. PUBLISHED MARCH 13, 1906.

52,295. PRINTING-PAPER. DILL & COLLINS CO., Philadelphia, Pa.

The words "QUAKER FINISH."

Filed July 20, 1905. Serial No. 10,609. PUBLISHED MARCH 13, 1906.

52,296. SPICES AND MUSTARD. E. R. DURKEE & CO. New York, N. Y.

The representation of two ostriches and an egg, one of the ostriches being represented as standing and the other in a sitting position.

Filed May 2, 1905. Serial No. 3,965. PUBLISHED MARCH 13, 1906.

52,297. BUTTER. THE FOX RIVER BUTTER COMPANY, Aurora, Ill.

The representation of a clover-leaf with the words "FOX RIVER BUTTER CO." arranged above the same, the words "CLOVER HILL BRAND" below the representation, and the words and representation inclosed by a circular border. Used ten years.

Filed April 7, 1905. Serial No. 676. PUBLISHED MARCH 13, 1906.

52,298. HORNS FOR MOTOR-VEHICLES. ALBERT H. FUNKE, New York, N. Y.

The representation of an arrow and the word "SIGNAL," the shaft of the arrow extending through the word.

Filed August 19, 1905. Serial No. 11,807. PUBLISHED MARCH 13, 1906.

52,299. BURNING FLUIDS FOR USE IN LAMPS. GENERAL SAFETY MANTLE LIGHT CO., New York, N. Y.

The fanciful word "LUMINOL" contained within an aureole.

Filed July 26, 1905. Serial No. 10,829. PUBLISHED MARCH 13, 1906.

52,300. LAUNDRY AND TOILET SOAP. GRAND UNION TEA CO., Brooklyn, N. Y.

The representation of a triangle upon a red disk within a circular border of blue. Around the sides of the triangle the words "GRAND UNION COMPANY" appear, while within the triangle the letter "T" appears, with the letters "E" and "A" on either side thereof, the "E" and "A" being smaller than the "T."

Filed July 7, 1905. Serial No. 9,863. PUBLISHED MARCH 13, 1906.

52,301. METAL-POLISH. JAMES B. HILL, Los Angeles, Cal

The words "METAL LIFE."

Filed July 3, 1905. Serial No. 9,745. PUBLISHED MARCH 13, 1906.

52,302. BOOK OF DIRECTIONS FOR TECHNICAL INSTRUCTIONS. THE LODGE AND SHIPLEY MACHINE TOOL COMPANY, Cincinnati, Ohio.

The motto or legend "MORE LATHE WORK WITH FEWER LATHES."

Filed May 24, 1905. Serial No. 6,440. PUBLISHED MARCH 13, 1906.

52,303. BOOKS ON SALESMANSHIP. THE NATIONAL SCHOOL OF SALESMANSHIP, Minneapolis, Minn.

The representation of a horseshoe having thereon the letters "M M W R C" and the letters "N S S" within the horseshoe and suspended by a chain from the center.

Filed October 5, 1905. Serial No. 13,351. PUBLISHED MARCH 13, 1906.

52,304. LAUNDRY STARCH. NEW ORLEANS COFFEE CO. LTD., New Orleans, La.

The representation of a rabbit in a squatting position and upon an ornamental panel.

Filed May 2, 1905. Serial No. 4,001. PUBLISHED MARCH 13, 1906.

52,305. LEDGERS. THE RICHMOND & BACKUS CO., Detroit, Mich.

The phrase "ARE-AND-BE" inclosed in quotation-marks.

Filed July 3, 1905. Serial No. 9,729. PUBLISHED MARCH 13, 1906.

52,306. CLOCK-MOVEMENTS. SCHLENKER & KIENZLE, Schwenningen, Germany.

A representation of a wheel having twelve spokes, each of which spokes bears a number inclosed in a circle, such numbers running consecutively from "1" to "12," inclusive. At each side of said wheel is an extended wing. Used ten years.

Filed June 29, 1905. Serial No. 9,390. PUBLISHED MARCH 13, 1906.

52,307. GINGER-ALE. STANDARD BOTTLING & EXTRACT CO., Boston, Mass.

The word-symbol "WHITE HOUSE," used in connection with the picture-symbol of the White House at Washington.

Filed August 7, 1905. Serial No. 11,326. PUBLISHED MARCH 13, 1906.

52,308. ILLUMINATING-PETROLEUM. STANDARD OIL CO. OF NEW YORK, New York, N. Y.

The representation of a cock.

Filed June 26, 1905. Serial No. 11,718. PUBLISHED MARCH 13, 1906.

52,309. CARPET-SWEEPERS. STREATOR METAL STAMPING CO., Streator, Ill.

The word "SANITAIRE."

Filed August 26, 1905. Serial No. 12,021. PUBLISHED MARCH 13, 1906.

52,310. CYLINDER AND VALVE OIL. J. D. STREETT & COMPANY, St. Louis, Mo.

The word "RUBY."

Filed July 13, 1905. Serial No. 10,859. PUBLISHED MARCH 13, 1906.

52,311. CIGARS. JOSEPH WEINREICH, Dayton, Ohio.

The words "SCALE OF JUSTICE," associated with a picture of a female in sitting posture with eyes blindfolded. One hand of the figure holds an evenly-balanced scale, one pan of which contains the picture of a cigar and the other pan of which contains a weight with "5¢" appearing above it. The other hand of the figure supports a shield upon which appear the letters "W J" in monogram. Below the figure appear the words "WORTH FOR VALUE."

Filed June 19, 1905. Serial No. 8,529. PUBLISHED MARCH 13, 1906.

52,312. POLISH FOR SHOES. WHITTEMORE BROTHERS AND COMPANY, Cambridge, Mass.

The representation of a five-pointed star, half of each ray of which is printed black, and at the center of the star is a disk bearing the letter "W."

Filed July 20, 1905. Serial No. 11,528. PUBLISHED MARCH 6, 1906.

52,313. CARAMELS AND CANDIES. AMERICAN CARAMEL CO., Lancaster, Philadelphia, and York, Pa.

The rectangular label having marginal border-lines and bearing the words "CRYSTAL A CONFECTIONS," extending lengthwise of the label, and in the upper left-hand corner a disk of contrasting color bearing a fancy letter "A," with a band across the upper part of the disk and letter bearing the word "CRYSTAL."

Filed May 25, 1905. Serial No. 6,552. PUBLISHED MARCH 13, 1906.

52,314. CIGARS. AMERICAN CIGAR COMPANY, New York, N. Y.

A capital letter "A" inclosed in a triangular-shaped figure.

Filed June 2, 1905. Serial No. 7,380. PUBLISHED MARCH 13, 1906.

52,315. CONDENSED MILK. BORDEN'S CONDENSED MILK CO., Jersey City, N. J., and New York, N. Y.

The arbitrarily-selected word "PERFECT," associated with the word "BRAND." Used ten years.

Filed August 1, 1905. Serial No. 11,101. PUBLISHED MARCH 13, 1906.

52,316. MONTHLY MAGAZINE. WILLIAM GEORGE BRUCE, Milwaukee, Wis.

The words "THE AMERICAN SCHOOL BOARD JOURNAL."

Filed June 30, 1905. Serial No. 9,538. PUBLISHED MARCH 13, 1906.

52,317. JOURNAL-BEARINGS. CHAPMAN DOUBLE BALL BEARING CO. OF AMERICA, New York, N. Y.

A group of spheres or balls, one of which is smaller than two others, with the smaller sphere between the larger ones, in connection with a representation of clouds and light-rays directed on the spheres.

Filed September 13, 1905. Serial No. 12,541. PUBLISHED MARCH 13 1906.

52,318. CONFECTIONERY. C. POYET, INC., New York, N. Y.

The word "GLOBE."

Filed May 27, 1905. Serial No. 6,821. PUBLISHED MARCH 13, 1906.

52,319. CERTAIN NAMED GLASSWARE. THE CREAMERY PACKAGE MFG. COMPANY, Chicago, Ill.

The representation of a butter-tub surrounded by a horizontal ellipse, the center of the tub being also the center of the ellipse, with a horizontal bar extending from end to end of the ellipse across the face of the butter-tub.

Filed May 20, 1905. Serial No. 6,143. PUBLISHED AUGUST 15, 1905.

52,320. INCANDESCENT ELECTRIC LAMPS AND FITTINGS OF ORDINARY METAL FOR THE SAME. THE EDISON AND SWAN UNITED ELECTRIC LIGHT COMPANY LIMITED, London, England.

The word "EDISWAN."

Filed June 28, 1905. Serial No. 9,366. PUBLISHED MARCH 13, 1906.

52,321. HAMS, SHOULDERS, AND BACON. E. GODEL AND SONS, Peoria, Ill.

An oval-shaped panel surmounted by a crown over which extend standards bearing banners on which are printed, respectively, the words "ROYAL BRAND." On the panel is the monogram "E G & S." Below the panel are streamers on which are rampant lions. Above the words "ROYAL BRAND" is the name "GODEL'S," there being a space below the panel upon which the name of the goods is printed, below which are the words "PEORIA, ILL." Branches of evergreen extend upwardly from the streamers, the whole being inclosed in an oval border.

Filed June 16, 1905. Serial No. 8,306. PUBLISHED MARCH 13, 1906.

52,322. CANNED VEGETABLES AND FRUITS. FRANCIS H. LEGGETT & COMPANY, New York, N. Y.

The word "PREMIER."

Filed June 19, 1905. Serial No. 8,495. PUBLISHED MARCH 13, 1906.

52,323. GIN. J. & A. FREIBERG, Cincinnati, Ohio.

The word "ELK," associated or in combination with the head of an elk.

Filed August 31, 1905. Serial No. 12,118. PUBLISHED MARCH 13, 1906.

52,324. PLASTER. GLENCOE LIME & CEMENT COMPANY, St. Louis, Mo.

The representation of a star and the words "WHITE STAR PLASTER," the words "WHITE STAR" appearing above the star and the word "PLASTER" beneath it. Beneath the word "PLASTER" an oblong panel is shown. Used ten years.

Filed May 29, 1905. Serial No. 6,926. PUBLISHED MARCH 13, 1906.

52,325. BAKING-POWDER. GRAND UNION TEA CO., Brooklyn, N. Y.

The representation of a triangle upon a red disk within a circular blue border. Around the sides of the triangle the words "GRAND UNION COMPANY" appear, while within the triangle a capital "T" with the letter "E" on one side and "A" on the other appear. the letters "E" and "A" being smaller than the "T."

Filed July 7, 1905. Serial No. 9,866. PUBLISHED MARCH 13, 1906.

52,326. SYRUP. GRIGGS, COOPER & CO., St. Paul, Minn.

The words "KING CORN."

Filed July 1, 1905. Serial No. 9,543. PUBLISHED MARCH 13, 1906.

52,327. CANNED LOBSTER. GRIGGS, COOPER & COMPANY, St. Paul, Minn.

The arbitrary word "WHYNOT."

Filed July 3, 1905. Serial No. 9,643. PUBLISHED MARCH 13, 1906.

52,328. NEEDLES FOR HAND AND MACHINE SEWING. HENRY MILWARD & SONS, LIMITED, Redditch, England.

The figure of a mailed arm holding in the hand a falchion supported upon a heraldic wreath. Used ten years.

Filed October 2, 1905. Serial No. 13,197. PUBLISHED MARCH 13, 1906.

52,329. FRUIT-JUICE BEVERAGE. RUSSELL M. HUGHES, Louisville, Ky.
The word "JOY."
Filed May 17, 1905. Serial No. 5,896. PUBLISHED MARCH 13, 1906.

52,330. STOVES AND FURNACES. F. & L. KAHN & BROS., Hamilton, Ohio.
The word "ESTATE."
Filed June 19, 1905. Serial No. 8,544. PUBLISHED MARCH 13, 1906.

52,331. STEEL AXES AND HATCHETS. HENRY KEIDEL, Baltimore, Md.
The words "THE EAGLE AXE" upon a ribbon-like scroll, beneath which is the figure of an eagle with an ax in his talons and the representation of a ribbon in his bill, upon which is the word "UNEXCELLED."
Filed August 19, 1905. Serial No. 11,827. PUBLISHED MARCH 13, 1906.

52,332. WHISKY. LANG, SCHENCK & Co., Columbus, Ohio.
The words "OLENTANGY CLUB" between the circumferences of two ovals, the inner one of which contains a triangle and the outer oval wreathed in branches of leaves and berries, with a panel extending from each side.
Filed June 30, 1905. Serial No. 9,440. PUBLISHED MARCH 13, 1906.

52,333. STOVES AND RANGES. THE LATTIMER-WILLIAMS MANUFACTURING COMPANY, Columbus, Ohio.
The hyphenated letters "L-W," which are printed across the representation of a globe, the latter being surrounded by a circular border, including ornamental designs at each side. In the upper portion of the border the words "LEADERS OF THE WORLD" are arranged.
Filed September 1, 1905. Serial No. 12,153. PUBLISHED FEBRUARY 20, 1906.

52,334. LITHIA-SPRING WATER. LONDONDERRY LITHIA SPRING WATER COMPANY, Nashua, N. H.
An equilateral triangle bearing a monogram of the letters "L S W" and the words "LONDONDERRY LITHIA" and inclosed in concentrically-arranged triangular-shaped borders, upon which appear the name of the applicant, "LONDONDERRY LITHIA SPRING WATER CO.," and the place of doing business, "NASHUA, N. H., U. S. A.," and the words "LAY ON SIDE IN A COOL PLACE. SEE THAT THE CORK IS BRANDED 'LONDONDERRY LITHIA.'"
Filed May 23, 1905. Serial No. 6,422. PUBLISHED MARCH 13, 1906.

52,335. GREASE-CUPS. THE LUNKENHEIMER COMPANY, Cincinnati, Ohio.
The word "MARINE." Used ten years.
Filed July 26, 1905. Serial No. 10,793. PUBLISHED MARCH 13, 1906.

52,336. BLOW-OFF VALVES. THE LUNKENHEIMER COMPANY, Cincinnati, Ohio.
The word "DURO."
Filed July 26, 1905. Serial No. 10,798. PUBLISHED MARCH 13, 1906.

52,337. INSULATED WIRE AND ADHESIVE TAPES COMMONLY USED FOR INSULATING. NEW YORK INSULATED WIRE COMPANY, New York, N. Y.
A central disk surrounded by concentric circular bands, all of contrasting colors, with the words "WHITE CORE" upon the intermediate band, the words "INSULATED WIRE" on the outer band, and the word "GRIMSHAW" half in light on the outer band and half in dark on the inner band.
Filed July 15, 1905. Serial No. 10,371. PUBLISHED MARCH 13, 1906.

52,338. HOUSE-PAINTS. PIMBLEY PAINT & GLASS CO., St. Joseph, Mo.
The representation of a cannon, the representation of a man firing the cannon, and the words "WEARS LIKE IRON" in the smoke at the mouth of the cannon. There is a representation of a pile of cannon-balls to one side of the cannon.
Filed June 6, 1905. Serial No. 7,538. PUBLISHED MARCH 13, 1906.

52,339. SILK DRESS GOODS. WM. H. ROE, New York, N. Y.
The hyphenated word "RO-E-NA."
Filed June 5, 1905. Serial No. 7,510. PUBLISHED MARCH 13, 1906.

52,340. CANNED FRUITS. SCHWABACHER BROS. & CO. INC., Seattle, Wash.
The words "QUAIL BRAND."
Filed August 21, 1905. Serial No. 11,830. PUBLISHED MARCH 13, 1906.

52,341. CANNED FRUITS AND VEGETABLES. SCHWABACHER BROS. & CO. INC., Seattle, Wash.
The representation of a bordered silver shield, upon which the words "SILVER SHIELD BRAND" appear.
Filed August 21, 1905. Serial No. 11,831. PUBLISHED MARCH 13, 1906.

52,342. RAZORS AND POCKET-KNIVES. ALBERT L. SILBERSTEIN, New York, N. Y.
The word "CARBO," associated with the representation of flashes of lightning.
Filed June 23, 1905. Serial No. 8,808. PUBLISHED MARCH 13, 1906.

52,343. HORSE-NAILS. STANDARD HORSE NAIL COMPANY, New Brighton, Pa.
The arbitrary word "STANDARD." Used ten years.
Filed June 27, 1905. Serial No. 9,170. PUBLISHED MARCH 13, 1906.

52,344. HORSE-NAILS. STANDARD HORSE NAIL COMPANY, New Brighton, Pa.
The facsimile signature of C. M. Russell.
Filed July 7, 1905. Serial No. 9,898. PUBLISHED MARCH 13, 1906.

52,345. PURIFYING-PUMPS, OTHERWISE KNOWN AS BUCKET OR CHAIN PUMPS. ST. JOSEPH PUMP CO., St. Joseph, Mo.
The word-symbol "PERFECTION." Used ten years.
Filed June 20, 1905. Serial No. 8,596. PUBLISHED MARCH 13, 1906.

52,346. NEEDLES OF ALL KINDS. THÜRINGISCHE NADEL & STAHLWAAREN FABRIK WOLFF, KNIPPENBERG & CO., ACTIEN GESELLSCHAFT, Ichtershausen, Germany.
The representation of an eagle-head, associated with the words "WOLFF & KNIPPENBERG," inclosed within a circular eight-pointed shaded border.
Filed May 16, 1905. Serial No. 5,825. PUBLISHED MARCH 13, 1906.

52,347. METAL MANUFACTURES. U. T. HUNGERFORD BRASS & COPPER CO., New York, N. Y.
The representation of a star having the words "STAR BRAND" thereon.
Filed October 3, 1905. Serial No. 13,246. PUBLISHED MARCH 13, 1906.

52,348. BITUMINOUS PAVEMENTS AND COMPOSITIONS OR CEMENTS FOR MAKING THE SAME. WARREN BROTHERS COMPANY, Boston, Mass.
The word "BITROCK."
Filed June 9, 1905. Serial No. 7,728. PUBLISHED MARCH 13, 1906.

52,349. RAZORS. ALEXIS WITTE, New York, N. Y.
The letter and figure "A1." surrounded by a circle. Used ten years.
Filed July 26, 1905. Serial No. 10,831. PUBLISHED MARCH 13, 1906.

52,350. CANDY. PHILIP WUNDERLE, Philadelphia, Pa.
The words "THE BEST." Used ten years.
Filed June 1, 1905. Serial No. 7,181. PUBLISHED MARCH 13, 1906.

52,351. SEEDING-MACHINES. AMERICAN SEEDING MACHINE COMPANY, Jersey City, N. J.; Springfield, Ohio; Richmond, Ind.; Louisville, Ky., and Shortsville and Macedon, N. Y.
The word "SUCCESS," the upper portions of the letters composing the word being red and the lower portions of the letters being black in color.
Filed February 15, 1906. Serial No. 17,049. PUBLISHED MARCH 13, 1906.

52,352. SHOVELS, SPADES, AND SCOOPS. THE AVERY STAMPING COMPANY, Cleveland, Ohio.
The word "TROPIC."
Filed February 14, 1906. Serial No. 16,993. PUBLISHED MARCH 13, 1906.

52,353. SHOVELS, SCOOPS, AND SPADES. THE AVERY STAMPING COMPANY, Cleveland, Ohio.
The word "BUCKEYE."
Filed February 14, 1906. Serial No. 16,994. PUBLISHED MARCH 13, 1906.

52,354. CORSETS. BIRDSEY & SOMERS, New York, N. Y.
The word "CZARINA."
Filed November 8, 1905. Serial No. 14,404. PUBLISHED MARCH 13, 1906.

52,355. COTTON THREAD. THE CLARK MILE-END SPOOL COTTON CO., East Newark, N. J.
The word "CORONA."
Filed September 27, 1905. Serial No. 13,053. PUBLISHED MARCH 13, 1906.

52,356. PACKING GAGES AND CUTTERS. DEMAREST AND CARVER, New York, N. Y.
The word "EXACTO."
Filed February 8, 1906. Serial No. 16,832. PUBLISHED MARCH 13, 1906.

52,357. VELVETS. A. L. DREYFUSS & Co., New York, N. Y.
The words "PREMIER VELVET," the word "PREMIER" being surrounded by ornamental leafwork and the word "VELVET" appearing on an ornamental panel.
Filed September 12, 1905. Serial No. 12,495. PUBLISHED MARCH 13, 1906.

52,358. ART DRAPERY-ROBES. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa.
The representation of a four-leaf clover on a circular field of white centrally arranged on a light-green square having in the respective corners representations of flowers and below the circular field a representation of a lighthouse surrounded by circles with stars above and branches crossed below, the whole surrounded by a border of four-leaf clovers and associated with the words "¼ ELYSIAN ART DRAPERY ROBES."
Filed July 21, 1905. Serial No. 10,649. PUBLISHED MARCH 13, 1906.

52,359. BELT-FASTENERS. GREENE TWEED & Co., New York, N. Y.
The word "EMPIRE." Used ten years.
Filed November 24, 1905. Serial No. 14,968. PUBLISHED MARCH 13, 1906.

52,360. WATERPROOF TEXTILE FABRICS AND GARMENTS MADE THEREFROM. HIRSH BROTHERS, New Haven, Conn.
The word "ANTIWET" upon the representation of a seal, the letter "I" of the word occupying a circle in the central portion of the seal.
Filed August 21, 1905. Serial No. 11,840. PUBLISHED MARCH 6, 1906.

52,361. DRILLS AND DRILLING-MACHINES. HOWELLS MINING DRILL CO., Plymouth, Pa.
The representation of an owl perched upon two crossed auger-bits. On one side of the representation of the owl appears the letter "H" and on the other side the letter "S."
Filed November 9, 1905. Serial No. 14,468. PUBLISHED MARCH 13, 1906.

52,362. WRAPPING CORD AND TWINE. HUBBS & CORNING CO., Baltimore, Md.
The representation of an oriole bird resting on the limb of a tree.
Filed February 8, 1906. Serial No. 16,828. PUBLISHED MARCH 13, 1906.

52,363. ELASTIC HOSIERY. J. ELLWOOD LEE COMPANY, Conshohocken, Pa.
The letters "J. P." Used ten years.
Filed February 2, 1906. Serial No. 16,689. PUBLISHED MARCH 13, 1906.

52,364. CUSHION FINGER-KEYS. MUNSON SUPPLY COMPANY, New York, N. Y.
The representation of a cross and key, and associated therewith are the words "THE KEY WITH THE CROSS."
Filed February 10, 1906. Serial No. 16,908. PUBLISHED MARCH 13, 1906.

52,365. HAY-CARRIERS. F. E. MYERS & BRO., Ashland, Ohio.
The word "MYERS." Used ten years.
Filed November 29, 1905. Serial No. 15,082. PUBLISHED MARCH 13, 1906.

52,366. LOCK-WASHERS AND NUT-LOCKS. THE NATIONAL LOCK WASHER COMPANY, Newark, N. J.
The word "NATIONAL." Used ten years.
Filed October 27, 1905. Serial No. 13,977. PUBLISHED MARCH 13, 1906.

52,367. BURGLAR-ALARMS. THE NORFOLK NOVELTY CORPORATION, Norfolk, Va.
The words "20TH CENTURY."
Filed November 15, 1905. Serial No. 14,646. PUBLISHED MARCH 13, 1906.

52,368. TRUNKS, VALISES, AND SATCHELS. P. C. MURPHY TRUNK COMPANY, St. Louis, Mo.
The representation of a star and crescent, the star shown upon a stippled background and partly inclosed by the crescent.
Filed December 19, 1905. Serial No. 15,515. PUBLISHED MARCH 13, 1906.

52,369. SILK PIECE GOODS. PASSAVANT & Co., New York, N. Y.
The word "SERICA," printed in fancy letters, crossing the representation of a branch of a tree or bush containing leaves. Above the word "SERICA" is the representation of a butterfly with spread wings, and below the word is the representation of another butterfly on one of the leaves. The whole is inclosed by a border-line.
Filed October 7, 1905. Serial No. 13,404. PUBLISHED MARCH 13, 1906.

52,370. BROADCAST SEEDING-MACHINES. PEORIA DRILL AND SEEDER CO., Peoria, Ill.
The word "PEORIA." Used ten years.
Filed November 20, 1905. Serial No. 14,859. PUBLISHED MARCH 13, 1906.

52,371. SUSPENDERS. PIONEER SUSPENDER COMPANY, Philadelphia, Pa.
The word "PIONEER."
Filed September 15, 1905. Serial No. 12,646. PUBLISHED MARCH 13, 1906.

52,372. PISTON WELL-PUMPS. RED JACKET MANUFACTURING COMPANY, Davenport, Iowa.
The words "RED JACKET" arranged below the representation of the head of the Indian chief known as "Red Jacket," attired in native costume, and having the words "RED JACKET (SA-GO-YE-WAT-HA)" arranged in a curve above the head, the words "CHIEF OF THE SENECAS" on opposite sides of the said head, and the words "CHIEF OF PUMPS" below the same, the whole being inclosed within an oval border that is provided with a series of ornamental scrolls.
Filed October 13, 1905. Serial No. 13,544. PUBLISHED MARCH 13, 1906.

52,373. CARPET-WARPS. JAMES E. REYNOLDS, New York, N. Y.
The word "EUREKA."
Filed November 1, 1905. Serial No. 14,153. PUBLISHED MARCH 13, 1906.

52,374. INCUBATORS AND BROODERS. MARION W. SAVAGE, Minneapolis, Minn.
The representation of a jewel with lines radiating therefrom and the words "THE JEWEL HOT AIR INCUBATOR."
Filed February 12, 1906. Serial No. 16,963. PUBLISHED MARCH 13, 1906.

52,375. CORDS, LINES, TWINES, AND ROPES. SILVER LAKE COMPANY, Boston, Mass.
The letter "C" printed in red. Used ten years.
Filed February 15, 1906. Serial No. 17,036. PUBLISHED MARCH 13, 1906.

52,376. CORDS, LINES, TWINES, AND ROPES. SILVER LAKE, COMPANY, Boston, Mass.
The letter "A" printed in red. Used ten years.
Filed February 15, 1906. Serial No. 17,037. PUBLISHED MARCH 13, 1906.

52,377. KNITTED UNDERWEAR. CHARLES E. SMITH, Reading, Pa.
The words "COTTONETTE MILLS."
Filed August 21, 1905. Serial No. 11,865. PUBLISHED MARCH 13, 1906.

52,378. RIBBONS. SMITH & KAUFMANN, New York, N. Y.
The words "MERRIE CHRISTMAS."

Filed December 8, 1905. Serial No. 15,277. PUBLISHED MARCH 13, 1906.

52,379. KNIT JACKETS AND SWEATERS. STEPHENSON & Co., Woodbine, N. J., and Philadelphia, Pa.
The words "LITTLE ADMIRAL."
Filed August 16, 1905. Serial No. 11,692. PUBLISHED MARCH 13, 1906.

52,380. MAGAZINE. CHARLES D. STEURER, New York, N. Y.
The words "THE AMERICAN BANK REPORTER" between the circumference of two outer and one inner circle. Used ten years.
Filed September 15, 1905. Serial No. 12,638. PUBLISHED MARCH 13, 1906.

52,381. SPECTACLES AND EYEGLASSES AND THEIR MOUNTINGS AND PARTS. STEVENS AND COMPANY, Providence, R. I.
The letters "S Q."
Filed November 21, 1905. Serial No. 14,879. PUBLISHED MARCH 13, 1906.

52,382. SHIPS' LOGS AND SOUNDING-MACHINES. THOMAS WALKER & SON LTD., Birmingham, England.
The representation of an anchor, the letters "T" and "W," and a period interposed between said letters.
Filed November 28 1905. Serial No. 15,049. PUBLISHED MARCH 13, 1906.

52,383. PAPER BAGS. THE UNION BAG & PAPER COMPANY, New York, N. Y.
The pictorial representation of a shield with the word "UNION" thereon.
Filed February 14, 1906. Serial No. 17,001. PUBLISHED MARCH 13, 1906.

52,384. PAPER BAGS. THE UNION BAG & PAPER COMPANY, New York, N. Y.
The word "CLARENCE."
Filed February 14, 1906. Serial No. 17,013. PUBLISHED MARCH 13, 1906.

52,385. PAPER BAGS. THE UNION BAG & PAPER COMPANY, New York, N. Y.
The pictorial representation of a shield.
Filed February 14, 1906. Serial No. 17,016. PUBLISHED MARCH 13, 1906.

52,386. PAPER BAGS. THE UNION BAG & PAPER COMPANY, New York, N. Y.
The arbitrary word-symbol "PEERLESS." Used ten years.
Filed February 14, 1906. Serial No. 17,021. PUBLISHED MARCH 13, 1906.

52,387. LATHES. VANDYCK CHURCHILL COMPANY, New York, N. Y.
A Maltese cross having the letters "V C" in the center.
Filed November 16, 1905. Serial No. 14,732. PUBLISHED MARCH 13, 1906.

52,388. WIRE CLOTHS AND SCREENS. THE W. S. TYLER COMPANY, Cleveland, Ohio.
The word "TYLER." Used ten years.
Filed February 12, 1906. Serial No. 16,971. PUBLISHED MARCH 13, 1906.

52,389. CERTAIN NAMED DRY GOODS. ANTON WEDL, New York, N. Y.
The arbitrary word-symbol "AWNYC."
Filed October 21, 1905. Serial No. 13,818. PUBLISHED MARCH 13, 1906.

52,390. SILK NETS FOR THE HAIR. A. HERBERT WOOLLEY & Co., Nottingham, England.
The representation of a heart, on which appears the word "EROS."
Filed October 10, 1905. Serial No. 13,474. PUBLISHED MARCH 13, 1906.

52,391. FERTILIZERS. THE AMERICAN AGRICULTURAL CHEMICAL CO., New York, N. Y.
The representation of an ox-head surrounded by two concentric circles, between which appears the word "AMERICUS."
Filed July 6, 1905. Serial No. 9,861. PUBLISHED MARCH 13, 1906.

52,392. CONDENSED MILK. BORDEN'S CONDENSED MILK CO., Jersey City, N. J., and New York, N. Y.
The arbitrarily-selected word "ADVANCE," associated with the word "BRAND" and the words "UNSWEETENED MILK."
Filed January 3, 1906. Serial No. 15,838. PUBLISHED MARCH 13 1906.

52,393. LIQUID POLISH FOR WOOD AND METALS WILLIAM J. BUSSEY, Albany, N. Y.
The word "SAFEALL."
Filed February 9, 1906. Serial No. 16,865. PUBLISHED MARCH 13, 1906.

52,394. MOREENS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa.
The words "IMPERIAL MOREENS," associated with a draped crown.
Filed July 3, 1905. Serial No. 9,656. PUBLISHED MARCH 13, 1906.

52,395. BLEACHED, UNBLEACHED, PRINTED, AND DYED TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa.
The words "THE EDDYSTONE MFG. CO. SOLE MANUFACTURERS" in the facsimile handwriting of William Simpson, the founder of the company.
Filed July 6, 1905. Serial No. 9,808. PUBLISHED MARCH 13, 1906.

52,396. WOMEN'S, MISSES', AND CHILDREN'S OUTER SKIRTS. M. GOLDMAN & Co., New York, N. Y., and Cleveland, Ohio.
The words "GOLD QUALITY" upon an oval-shaped background.
Filed October 28, 1905. Serial No. 14,032. PUBLISHED MARCH 13 1906.

52,397. SWEETENED CHOCOLATE AND CANDY OF ALL KINDS. MILTON S. HERSHEY, Derry Church, Pa.
The representation of the side of a mail-pouch, a lock thereon bearing the letters and abbreviation "H. C. Co.," and the representation of a shipping-tag or label, said tag or label bearing the inscription "FROM HERSHEY CHOCOLATE CO. HERSHEY, PA. TO YOU."
Filed February 6, 1906. Serial No. 16,773. PUBLISHED MARCH 13, 1906.

52,398. SWEETENED CHOCOLATE AND CANDY OF ALL KINDS. MILTON S. HERSHEY, Derry Church, Pa.
The representation of the end of a railroad mail-car having the door thereof open and showing a man within said car holding a mail-pouch.
Filed February 6, 1906. Serial No. 16,774. PUBLISHED MARCH 13 1906.

52,399. SWEETENED CHOCOLATE AND CANDY OF ALL KINDS. MILTON S. HERSHEY, Derry Church, Pa.
The representation of a mail-car having an opening in one side thereof.
Filed February 6, 1906. Serial No. 16,775. PUBLISHED MARCH 13, 1906.

52,400. CIGARS. CHARLES B. PERKINS, Boston, Mass.
A fanciful design comprising a shield presenting a blue field, upon which are arranged three fleurs-de-lis in triangular form, the shield being surmounted by a crown and partially surrounded by a laurel wreath, the shield being further flanked by white flags bearing fleur-de-lis and draped to a common point below the shield, the staffs of the flags being extended outwardly from the upper corners of the shield and each having a tassel suspended therefrom. The flagstaff on either side of the shield is tipped with a spear, while the other staffs are tipped with fleurs-de-lis. Across the lower ends of the flags a panel appears, bearing the word "CATINAT."
Filed February 6, 1906. Serial No. 16,783. PUBLISHED MARCH 13, 1906.

52,401. CIGARS. CHARLES B. PERKINS, Boston, Mass.
The arbitrarily-selected words "EL VIVERO."
Filed February 9, 1906. Serial No. 16,873. PUBLISHED MARCH 13, 1906.

52,402. SILK BRAIDS AND MOHAIR BRAIDS. WILLIAM SKINNER MANUFACTURING CO., Holyoke and Boston, Mass.; New York, N. Y.; Chicago, Ill., and Philadelphia, Pa.
The representation of the bust of an Indian, the Indian presenting a three-quarter face view and having a head-dress of feathers and a necklace, the representation of a strap extending over one of the shoulders and resting on a pad on said shoulder. Used ten years.
Filed July 1, 1905. Serial No. 9,582. PUBLISHED MARCH 13, 1906.

52,403. BAGS. SAMUEL NUSBAUM, Albany, N. Y.
The word-symbol "SATCHEL-LET."
Filed November 25, 1905. Serial No. 14,976. PUBLISHED MARCH 13, 1906.

52,404. COMPOSITION USED AS A FOOT-POWDER. EUGENE E. AMBROSE, Denver, Colo.
The fanciful word "EXUDO."
Filed September 30, 1905. Serial No. 13,177. PUBLISHED MARCH 13, 1906.

52,405. BROOMS. AMERICAN BROOM & BRUSH CO., Amsterdam, N. Y.
The representation of a padlock, upon which appears the word "SECURE," and a chain having one end attached to the hasp of the padlock and its other end attached to a disk partially overlying a sheaf of grain tied with a ribbon. Upon the disk are the letters and character "A B & B Co."
Filed February 5, 1906. Serial No. 16,747. PUBLISHED MARCH 13, 1906.

52,406. CLOTHES-WRINGERS AND THE PARTS COMPOSING THE SAME. THE AMERICAN WRINGER COMPANY, New York, N. Y.
The word "ROYAL."
Filed October 14, 1905. Serial No. 13,624. PUBLISHED MARCH 13, 1906.

52,407. CONDENSED MILK. BORDEN'S CONDENSED MILK CO., Jersey City, N. J., and New York, N. Y.
The representation of a flying dove and the word "PALOMA," associated with the words "CONDENSED MILK."
Filed January 3, 1906. Serial No. 15,840. PUBLISHED MARCH 13, 1906.

52,408. CONDENSED MILK. BORDEN'S CONDENSED MILK CO., Jersey City, N. J., and New York, N. Y.
The words "NATIONS PRIDE," associated with the representation of a completely-equipped battle-ship under full headway and the words "CONDENSED MILK."
Filed January 3, 1906. Serial No. 15,841. PUBLISHED MARCH 13, 1906.

52,409. CONDENSED MILK. BORDEN'S CONDENSED MILK CO., Jersey City, N. J., and New York, N. Y.
The representation of a white top with the word "BRAND" thereon in the center of a dark background inclosed in scrollwork, and the words "WHITE TOP," associated with the words "CONDENSED MILK."
Filed January 3, 1906. Serial No. 15,842. PUBLISHED MARCH 13, 1906.

52,410. CONDENSED MILK. BORDEN'S CONDENSED MILK CO., Jersey City, N. J., and New York, N. Y.
The representation of a Rob Roy shield between two thistle branches, with a sword resting horizontally across the back of the shield, and the words "ROB ROY," associated with the words "CONDENSED MILK."
Filed January 3, 1906. Serial No. 15,843. PUBLISHED MARCH 13, 1906.

52,411. STEEL AND PLATED PENS. C. HOWARD HUNT PEN CO., Camden, N. J.
The phrase "A PEN IS ONLY AS GOOD AS ITS POINT," which is shown inclosed in quotation-marks.
Filed January 16, 1906. Serial No. 16,221. PUBLISHED MARCH 13, 1906.

52,412. DAVENPORT-BEDS. THE C. J. KINDEL BEDDING COMPANY, St. Louis, Mo.
The word "SOMERSAULTIC."
Filed February 12, 1906. Serial No. 16,988. PUBLISHED MARCH 13, 1906.

52,413. LEATHER BOOTS AND SHOES. CROWDER-MASON SHOE CO., Indianapolis, Ind.
The words or letters "O-SO."
Filed January 31, 1906. Serial No. 16,641. PUBLISHED MARCH 13, 1906.

52,414. MACHINERY-PACKING. CHARLES A. DANIEL, Philadelphia, Pa.
The representation of a shield, a representation of a piece of steam-packing inclosed within said shield and marked with the three letters "P. P. P.," and the facsimile signature of the applicant extending across the piece of packing. Inside the border of the shield are lines following the contour of the upper and side portions of the same, said side lines terminating in curls, while the upper lines are joined by straight lines with the points of the shield.
Filed November 17, 1905. Serial No. 14,759. PUBLISHED MARCH 13, 1906.

52,415. LIQUID ANTISEPTIC AND DISINFECTANT. CARRIE V. DORMAN, Washington, D. C.
The word "ASEPTOS."
Filed November 11, 1905. Serial No. 14,495. PUBLISHED MARCH 13, 1906.

52,416. BAKING-PANS. THE EDWARD KATZINGER COMPANY, Chicago, Ill.
The arbitrary word "NUTRO."
Filed February 15, 1906. Serial No. 17,041. PUBLISHED MARCH 13, 1906.

52,417. RUBBER ERASERS. EBERHARD FABER, New York, N. Y.
The representation of a circumferential band of yellow or gold color contrasting with a darker color on each side thereof and produced upon a metallic band or holder.
Filed October 11, 1905. Serial No. 13,489. PUBLISHED MARCH 13, 1906.

52,418. REMEDIES FOR CERTAIN NAMED DISEASES. MAX GEBAUER, New York, N. Y.
The representation of a bell with an eagle perched thereon and an oval-shaped shield rising from the body of the eagle, the whole appearing upon a vertical panel-like background with ornamental side borders. Associated with said representation are the words "GEBAUER'S BELLEVUE COUGH MIXTURE," and across the bell is the word "VIEW."
Filed November 15, 1905. Serial No. 14,640. PUBLISHED MARCH 13, 1906.

52,419. SMOKING AND CHEWING TOBACCO. GILBERT, SON & Co., Murray, Ky.
The words "CUMBERLAND RIVER TWIST." Used ten years.
Filed February 12, 1906. Serial No. 16,950. PUBLISHED MARCH 13, 1906.

52,420. INSECT-POWDER. GILPIN, LANGDON & COMPANY, INCORPORATED, Baltimore, Md.
The words "BLACK FLAG" and the representation of a black flag bearing the letters "I. P."
Filed November 6, 1905. Serial No. 14,361. PUBLISHED MARCH 13, 1906.

52,421. TOILET-PAPERS. HUBBS & CORNING CO., Baltimore, Md.
The word "ORIOLE," associated with the pictorial representation of an oriole bird resting on the limb of a tree.
Filed February 8, 1906. Serial No. 16,829. PUBLISHED MARCH 13, 1906.

52,422. SUSPENSORY BANDAGES AND TRUSSES. J. ELLWOOD LEE COMPANY, Conshohocken, Pa.
The word "JELCO."
Filed February 16, 1906. Serial No. 17,057. PUBLISHED MARCH 13, 1906.

52,423. PIANOS. JEWETT PIANO CO., Leominster, Mass.
The word "JEWETT." Used ten years.
Filed February 10, 1906. Serial No. 16,904. PUBLISHED MARCH 13, 1906.

52,424. ELECTRIC LAMPS OF ALL KINDS. KÖRTING & MATHIESEN AKTIENGESELLSCHAFT, Leutzsch, Germany.
The word "EXCELLO" arranged within a toothed wheel.
Filed February 14, 1906. Serial No. 16,999. PUBLISHED MARCH 13, 1906.

52,425. DYESTUFF. KUTTROFF, PICKHARDT & COMPANY, New York, N. Y., assignor to Continental Color and Chemical Co., New York, N. Y., a Corporation of New York.
The word "INDOINE." Used ten years.
Filed November 23, 1905. Serial No. 14,914. PUBLISHED MARCH 13, 1906.

52,426. DYESTUFF. KUTTROFF, PICKHARDT & COMPANY, New York, N. Y., assignor to Continental Color and Chemical Co., New York, N. Y., a Corporation of New York.
The word "OXAMINE." Used ten years.
Filed November 23, 1905. Serial No. 14,915. PUBLISHED MARCH 13, 1906.

52,427. DYESTUFF. KUTTROFF, PICKHARDT & COMPANY, New York, N. Y., assignor to Continental Color and Chemical Co., New York, N. Y., a Corporation of New York.
The word "THIAZINE." Used ten years.
Filed November 23, 1905. Serial No. 14,916. PUBLISHED MARCH 13, 1906.

52,428. DYESTUFF. KUTTROFF, PICKHARDT & COMPANY, New York, N. Y., assignor to Continental Color and Chemical Co., New York, N. Y., a Corporation of New York.
The word "NILE." Used ten years.
Filed November 23, 1905. Serial No. 14,917. PUBLISHED MARCH 13, 1906.

52,429. REFRIGERATORS. THE LORILLARD REFRIGERATOR Co., New York, N. Y.
The words "THE ALLEGRETTI REFRIGERATOR." Used ten years.
Filed October 26, 1905. Serial No. 13,961. PUBLISHED MARCH 13, 1906.

52,430. RUBBER CEMENT. MONTGOMERY BROS. INC., Philadelphia, Pa.
The word "PARAGON."
Filed November 13, 1905. Serial No. 14,575. PUBLISHED MARCH 13, 1906.

52,431. RUBBER CEMENT. MONTGOMERY BROS. INC., Philadelphia, Pa.
The word "RELIANCE."
Filed November 13, 1905. Serial No. 14,576. PUBLISHED MARCH 13, 1906.

52,432. HARMONICAS. NATIONAL MUSICAL STRING Co., New Brunswick, N. J.
The words "BELL BRAND."
Filed February 6, 1906. Serial No. 16,795. PUBLISHED MARCH 13, 1906.

52,433. LEATHER BOOTS AND SHOES. SMITH-BRISCOE SHOE COMPANY, Lynchburg, Va.
The words "WAR EAGLE."
Filed November 25, 1905. Serial No. 14,986. PUBLISHED MARCH 13, 1906.

52,434. CERTAIN NAMED BEVERAGES AND FRUIT-JUICES. SUNLIT FRUIT COMPANY, San Francisco, Cal.
The arbitrary word "SUNLIT."
Filed October 12, 1905. Serial No. 13,538. PUBLISHED MARCH 13, 1906.

52,435. CERTAIN NAMED CHEMICAL COMPOUND. BARRETT-WHITE COMPANY, Springfield, Ohio.
The word "BARITE."
Filed September 27, 1905. Serial No. 13,071. PUBLISHED MARCH 13, 1906.

52,436. ABSORBENT PAINTS OR STAINS. THE BAUMANN-KLAGE Co., Chicago, Ill.
The representation of a bunch of shingles placed on a board pedestal, the pedestal having inscribed thereon the words "WOOD EMBALMO."
Filed November 18, 1905. Serial No. 14,781. PUBLISHED MARCH 13, 1906.

52,437. ROTARY WASHING-MACHINES. BENBOW-BRAMMER MANUFACTURING COMPANY, St. Louis, Mo.
The words "SNOW" and "WHITE" separated by the capital letter "E."
Filed November 27, 1905. Serial No. 15,018. PUBLISHED MARCH 13, 1906.

52,438. CANDY. WALTER BROWNLEY, Washington, D. C.
The name "BROWNLEY'S" printed in script in a distinctive manner.
Filed January 27, 1906. Serial No. 16,567. PUBLISHED MARCH 13, 1906.

52,439. COMPOUND FOR TREATING WASTE MATERIALS CONTAINING CARBON TO RENDER THEM COMBUSTIBLE. THE COALITE COMPANY, Boston, Mass.
The word "COALITE."
Filed January 26, 1906. Serial No. 16,543. PUBLISHED MARCH 13, 1906.

52,440. REMEDY FOR CERTAIN NAMED DISEASES. SANFORD J. DALSELLE, Beaumont, Tex.
The word "UTAKA."
Filed September 26, 1905. Serial No. 12,958. PUBLISHED MARCH 13, 1906.

52,441. METALLIC WATER-COLORS. GERSTENDORFER BROS., New York, N. Y.
The representation of a star and the word "STAR." Used ten years.
Filed November 20, 1905. Serial No. 14,840. PUBLISHED MARCH 13, 1906.

52,442. WOOLEN, WORSTED, AND MOHAIR YARNS. HENRY E. FRANKENBERG COMPANY, New York, N. Y.
A representation of a winged cupid seated astride a lion and in the act of playing a lyre.
Filed October 21, 1905. Serial No. 13,815. PUBLISHED MARCH 13, 1906.

52,443. WOOLEN, WORSTED, AND MOHAIR YARNS. HENRY E. FRANKENBERG COMPANY, New York, N. Y.
The arbitrary word "UTOPIA."
Filed October 21, 1905. Serial No. 13,816. PUBLISHED MARCH 13, 1906.

52,444. MINERAL COMPOUND FOR CLEANING BRASS AND OTHER METALS. HARRY A. LAWTON, Cleveland, Ohio.
The words "MINERAL MOSS."
Filed November 14, 1905. Serial No. 14,611. PUBLISHED MARCH 13, 1906.

52,445. RUBBER CEMENT. MONTGOMERY BROS. INC., Philadelphia, Pa.
The word "ARROW."
Filed November 13, 1905. Serial No. 14,577. PUBLISHED MARCH 13, 1906.

52,446. RUBBER CEMENT. MONTGOMERY BROS. INC., Philadelphia, Pa.
The word "VICI."
Filed November 13, 1905. Serial No. 14,578. PUBLISHED MARCH 13, 1906.

52,447. RUBBER CEMENT. MONTGOMERY BROS. INC., Philadelphia, Pa.
The word "AJAX."
Filed November 13, 1905. Serial No. 14,579. PUBLISHED MARCH 13, 1906.

52,448. RUBBER CEMENT. MONTGOMERY BROS. INC., Philadelphia, Pa.
The word "ANCHOR."
Filed November 13, 1905. Serial No. 14,580. PUBLISHED MARCH 13, 1906.

52,449. LINENS AND LINEN PIECE GOODS. ANTON WEDL, New York, N. Y.
The arbitrary word-symbol "AWNYC."
Filed October 21, 1905. Serial No. 13,817. PUBLISHED MARCH 13, 1906.

52,450. MEDICINE FOR HORSES, CATTLE, AND POULTRY. ASCHENBACH & MILLER, Philadelphia, Pa., assignors to Aschenbach & Miller, Incorporated, a Corporation of Pennsylvania.
The representation of a running bull with a man grasping its horns, as if attempting to stop the bull, a dog, and a man's hat being shown in the foreground.
Filed July 8, 1905. Serial No. 9,933. PUBLISHED MARCH 13, 1906.

52,451. TONIC FOR THE REGULATION OF THE ALIMENTARY ORGANS. BRAND BROTHERS COMPANY, Chicago, Ill.
A spray of a tree or bush having thereon leaves, berries, and flowers across which extend oblique panels bearing the words "STUTTGARTER MAGEN BITTER," and the word "FEINSTER" appearing above said panels, while below said panels is a shield-like figure flanked by scrolls and bearing thereon a shield on which appear the monogram "B B C" and a hand holding an inverted cornucopia from which fruit is falling, the whole being inclosed within a border.
Filed July 1, 1905. Serial No. 9,584. PUBLISHED MARCH 13, 1906.

52,452. HAIR-DYES. ALEXANDER CRISTADORO, New York, N. Y.
The representation of an eagle with outspread wings, carrying in his talons a branch of foliage and a scroll bearing the word "EXCELSIOR," together with a series of stars arranged in a segmental line about the figure. Used ten years.

Filed September 25, 1905. Serial No. 12,955. PUBLISHED MARCH 13, 1906.

52,453. DISINFECTANTS, ANTISEPTICS, AND GERMICIDES. THE GEO. F. EBERHARD COMPANY, San Francisco, Cal.
The word "PUROZONE" printed in Roman capitals inside the outlines of a rectangular figure, having in the background a representation of the sun partly concealed by a body of water.
Filed July 6, 1905. Serial No. 9,855. PUBLISHED MARCH 13, 1906.

52,454. REMEDY FOR DROPSY. ELIZABETH HENKE, Stanley, Wis.
The representation of a swallow in the act of dipping into a body of water.
Filed July 11, 1905. Serial No. 10,056. PUBLISHED MARCH 13, 1906.

52,455. SPECIFIC FOR THE TREATMENT OF WHOOPING-COUGH. THE KROTO PHARMACEUTICAL COMPANY, Albany, N. Y.
The word "KROTO."
Filed July 13, 1905. Serial No. 10,250. PUBLISHED MARCH 13, 1906.

52,456. SARSAPARILLA. LANMAN & KEMP, New York, N. Y.
The representation of a phenix surrounded by rays and a landscape below the phenix in which are represented the figure of an Indian, mountains, trees, and a plain, the entire landscape being surrounded by a rectangular fanciful border. The word "BRISTOL'S" and the words "ESTABLISHED IN 1832" appear above the phenix, the words "THE ONLY TRUE EXTRACT" appear on the scroll, and the word "SARSAPARILLA" is produced below the scroll. Below the word "SARSAPARILLA" an ornamental panel is seen bearing the words "LANMAN & KEMP SOLE AGENTS, NEW YORK," all the above matter being contained within a border of rosette figures of linear type and connecting-scrolls.
Filed November 29, 1905. Serial No. 15,088. PUBLISHED MARCH 13, 1906.

52,457. TOOTHACHE-WAX. OSCAR F. LEONHARDT, Baltimore, Md.
The representation of a three-prong molar tooth having printed thereon the words "'BEST' TOOTHACHE WAX STOPS PAIN," the word "BEST" being inclosed in quotation-marks.
Filed August 4, 1905. Serial No. 11,263. PUBLISHED MARCH 13, 1906.

52,458. LIQUID PREPARATION FOR THE COMPLEXION TO BE USED EXTERNALLY. MAY SECOR, Weehawken, N. J.
The words "CHARM OF YOUTH" appearing above a portrait of the applicant.
Filed July 21, 1905. Serial No. 10,668. PUBLISHED MARCH 13, 1906.

52,459. MEDICINE FOR INDIGESTION. STERLING REMEDY COMPANY, Kramer, Ind.
The word "JAPONETA" and a bar bearing the words "DIGEST WHAT YOU EAT!" with an exclamation point after the said words.
Filed June 30, 1905. Serial No. 9,536. PUBLISHED MARCH 13, 1906.

52,460. WHISKY. BLUTHENTHAL & BICKART, Atlanta, Ga.
The words "OLD JOE," accompanied by the pictorial representation of Joseph Groeschel and the words "RYE WHISKEY" inclosed within an ornamental scroll and by the letters "V. O. S." "V. O. S.," the monogram "B & B," and the words and character "BLUTHENTHAL & BICKART SOLE PROPRIETORS. ATLANTA AND CINCINNATI."
Filed April 4, 1905. Serial No. 343. PUBLISHED MARCH 13, 1906.

52,461. WORM MEDICINES. BENJAMIN S. FAHNESTOCK, Pittsburg, Pa.
A rectangular panel on which is a representation of a female figure seated beside a table on which are dishes and holding an infant in her lap, in the act of giving medicine thereto, with a female child standing at one side holding a bottle and a male child standing at the opposite side, and the name "B. L. FAHNESTOCK'S" and a portrait of B. L. Fahnestock, deceased, with stamp-like representations at each side of the portrait, the portrait and said representations being surrounded by scroll and floral ornamentation. Used ten years.

Filed April 27, 1905. Serial No. 3,696. PUBLISHED MARCH 13, 1906.

52,462. OLIVES. FRANCIS H. LEGGETT & COMPANY, New York, N. Y.
The word "PREMIER."
Filed June 19, 1905. Serial No. 8,487. PUBLISHED MARCH 13, 1906.

52,463. ROOT-CANAL FILLING. WILLIAM H. LEAK, Watertown, N. Y.
The word "AMOBILIS."
Filed June 15, 1905. Serial No. 8,262. PUBLISHED MARCH 13, 1906.

52,464. SUMAC, GAMBIER, OAK, AND HEMLOCK EXTRACTS. GEORGE H. LEONARD & Co., Boston, Mass.
A five-pointed star and a crescent. Used ten years.
Filed June 24, 1905. Serial No. 9,008. PUBLISHED MARCH 13, 1906.

52,465. HAIR-TONIC. BENJAMIN F. MINER, Montague, Mass.
The word "EVAROSA." Used ten years.
Filed April 28, 1905. Serial No. 3,447. PUBLISHED MARCH 13, 1906.

52,466. REMEDY FOR INFLAMMATION. BENJAMIN F. MINER, Montague, Mass.
The word "TOILETINE." Used ten years.
Filed April 28, 1905. Serial No. 3,448. PUBLISHED MARCH 13, 1906.

52,467. MEDICINE FOR THE CURE OF CONSTIPATION AND BOWEL AND STOMACH AILMENTS. FREDERICK MULLER, Jr., Hoboken, N. J.
The representation of the leaf of a castor-oil plant and the words "MULLER'S CASTOR OIL TABULES" thereon. Used ten years.
Filed June 16, 1905. Serial No. 8,367. PUBLISHED MARCH 13, 1906.

52,468. BITTERS. AARON P. ORDWAY, New York, N. Y.
The expression "DR. KAUFMANN'S SULPHUR BITTERS," having a shield bearing the monogram "A P O" between the words "DR. KAUFMANN'S" and "SULPHUR BITTERS." Used ten years.
Filed April 29, 1905. Serial No. 3,685. PUBLISHED MARCH 13, 1906.

52,469. ALE. THE ROBERT SMITH ALE BREWING Co., Philadelphia, Pa.
The words, letters, and figures "ROBERT SMITH'S INDIA PALE ALE BREWERY ESTABLISHED IN PHILADELPHIA, A. D. 1774" and the representation of the head of a tiger. Used ten years.
Filed April 5, 1905. Serial No. 414. PUBLISHED MARCH 13, 1906.

52,470. MEDICINAL OIL FOR EXTERNAL USE. CHARLES WALTER SMITH, Warren, Pa.
The word "WANO."
Filed May 9, 1905. Serial No. 8,475. PUBLISHED MARCH 13, 1906.

52,471. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio.
The words "NATIONAL ARROWS." Used ten years.
Filed April 15, 1905. Serial No. 1,579. PUBLISHED MARCH 13, 1906.

52,472. CERTAIN NAMED MEDICINE. DR. A. GUDE & Co., G. M. B. H., Leipsic, Germany.
The arbitrarily-coined and fanciful words "PEPTO-MANGAN," the name "GUDE" inclosed in quotation-marks, and all arranged on a panel on a rectangular background. Used ten years.
Filed September 1, 1905. Serial No. 12,152. PUBLISHED MARCH 13, 1906.

52,473. CERTAIN NAMED MEDICINE. LEVI J. KNEER, Philadelphia, Pa.
The words "LEE'S VIGOR-WORKERS FOR WEAK MEN."
Filed September 5, 1905. Serial No. 12,236. PUBLISHED MARCH 13, 1906.

52,474. FOOT-POWDER. RICE, STEARNS & Co., Hanford, Cal.
The word "KISMET."
Filed July 10, 1905. Serial No. 9,984. PUBLISHED MARCH 13, 1906.

52,475. LINEN, LINEN AND COTTON PIECE GOODS. GEORGE C. RIGGS, New York, N. Y.
The arbitrarily-chosen word-symbol "HOUSEWIFE."

Filed April 20, 1905. Serial No. 2,482. PUBLISHED MARCH 13, 1906.

52,476. CERTAIN NAMED MEDICINAL REMEDIES. JOHN BELLAMY STARKEY, San Diego, Cal.

The representation of the soles of two feet with a laughing face on each inclosed in a fancy border, associated with the word "LIQUID-ESE."

Filed September 9, 1905. Serial No. 12,413. PUBLISHED MARCH 13, 1906.

52,477. RAZORS. CHALLENGE CUTLERY CORPORATION, Bridgeport, Conn.

The words "HAMBURG HOLLOW GROUND" and the representation of a plurality of interlocked chain-links. Used ten years.

Filed April 15, 1905. Serial No. 1,777. PUBLISHED MARCH 13, 1906.

52,478. CLARET IN BOTTLES. COMPAÑIA VINICOLA DEL NORTE DE ESPAÑA, Bilbao, Spain.

A representation of a rectangular panel having thereon the words "RIOJA CLARETE COMPAÑIA VINICOLA DEL NORTE DE ESPAÑA BILBAO ALMACENES EN HARO," a striped shield, the outer stripes being red and the central stripe yellow, crossed by a diagonal band in silver having thereon the letters "C. V. N. E.," one corner of the panel being folded over and bearing the words "FUNDADA EN 1879."

Filed August 8, 1905. Serial No. 11,428. PUBLISHED MARCH 13, 1906.

52,479. WHISKY. FAIRFAX & Co., Alexandria, Va.

The words "LORD FAIRFAX" and the portrait of Lord Fairfax in an oval frame with bow-knots at each side.

Filed May 11, 1905. Serial No. 5,199. PUBLISHED JULY 18, 1905.

52,480. DRIED FRUITS. FRANCIS H. LEGGETT & COMPANY, New York, N. Y.

The word "PREMIER."

Filed June 28, 1905. Serial No. 9,316. PUBLISHED MARCH 13, 1906.

52,481. MEN'S AND BOYS' STIFF, SOFT, AND STRAW HATS. FREEMAN BROTHERS, New York, N. Y.

A coat-of-arms comprising a quartered shield having thereon the representation of a harp, three fleurs-de-lis, a lion rampant, and three horizontal leopards and surmounted by a mailed hand grasping a pennant, with an eagle and a lion rampant supporting the shield and rays radiating from the shield. Below the shield are the words "DE LUXE," on a scroll, and the whole associated with the word "DAWSON."

Filed April 10, 1905. Serial No. 1,002. PUBLISHED MARCH 13, 1906.

52,482. TWINE. FULTON BAG & COTTON MILLS, Atlanta, Ga.

The word "EAGLE."

Filed April 28, 1905. Serial No. 3,364. PUBLISHED MARCH 13, 1906.

52,483. GLOVES FOR ATHLETIC SPORTS. P. GOLDSMITH'S SONS, Cincinnati, Ohio.

The representation of a Maltese cross inclosed in a circle, and associated with the said mark is the name "GOLDSMITH," appearing within the cross.

Filed April 26, 1905. Serial No. 3,140. PUBLISHED MARCH 13, 1906.

52,484. BEER AND LAGER-BEER. HARVARD BREWING Co., Lowell, Mass.

The representation of a seal having serrated edges with a flag thereon, a letter "H" on the flag, and the word "HARVARD" in small letters on the seal under the flag.

Filed June 26, 1905. Serial No. 9,056. PUBLISHED MARCH 13, 1906.

52,485. FISH-HOOKS. HENRY MILWARD & SONS, LIMITED, Redditch, England.

The representation of a fish. Used ten years.

Filed October 2, 1905. Serial No. 13,192. PUBLISHED MARCH 13, 1906.

52,486. CHEWING AND SMOKING TOBACCO. HOFFMAN AND Co., Red Hook, N. Y.

A rectangular panel containing in its upper portion a bracket bearing the word, character, and abbreviation "HOFFMAN & Co." and to which is attached a hook upon which is suspended a bucket bearing on its top the words and letters "RED HOOK N. Y." and upon its side the words "EXTRA CHEWING TOBACCO," the bucket being suspended between ornamental segments, which appear in the lower opposite corners of the rectangular panel.

Filed April 15, 1905. Serial No. 1,708. PUBLISHED MARCH 13, 1906.

52,487. LAXATIVES. W. S. JOHNSON & SON, Henderson, Ky.

The words "LITTLE BROWN LIVER TABLETS." Used ten years.

Filed June 12, 1905. Serial No. 7,946. PUBLISHED MARCH 13, 1906.

52,488. WHEAT-FLOUR. R. U. KEVIL & SONS, Princeton, Ky.

The word "ARISTOCRAT" on a band spanning a circular design, the border of which contains a wreath of clover-leaves and the characters "196 LBS." Within the border also appear the words "PRINCETON ROLLER MILLS KEVIL'S FLOUR" and ornamental scrollwork.

Filed May 29, 1905. Serial No. 7,026. PUBLISHED MARCH 13, 1905.

52,489. SEMIBITUMINOUS COAL USED FOR WELDING AND FORGING IRON AND STEEL. LILLY COAL Co., Altoona, Pa.

The representation of a keystone with the words "KEYSTONE SMITHING COAL" printed across the same.

Filed April 17, 1905. Serial No. 2,035. PUBLISHED MARCH 13, 1906.

52,490. ANODYNES. LLOYD BROTHERS, Cincinnati, Ohio.

The word "LIBRADOL."

Filed June 9, 1905. Serial No. 7,734. PUBLISHED MARCH 13, 1906.

52,491. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.

The word "ELF." Used ten years.

Filed June 27, 1905. Serial No. 9,220. PUBLISHED MARCH 13, 1906.

52,492. AGRICULTURAL AND HORTICULTURAL SEEDS. PETER HENDERSON & Co., New York, N. Y.

The name "PETER HENDERSON."

Filed April 8, 1905. Serial No. 826. PUBLISHED JUNE 6, 1905.

52,493. BREAKFAST-FOOD AND FARINA MADE FROM WHEAT. SLEEPY EYE MILLING COMPANY, Sleepy Eye, Minn.

The words "GOLDEN HARVEST." Used ten years.

Filed June 17, 1905. Serial No. 8,385. PUBLISHED MARCH 13, 1906.

52,494. WHISKY. W. SCHNEIDER W. W. & L. Co., St. Louis, Mo.

The number "905." Used ten years.

Filed April 26, 1905. Serial No 3,142. PUBLISHED MARCH 13, 1906.

52,495. BEER. WESTERN BREWERY Co., Belleville, Ill.

The letters and numeral "A A 1" disposed upon a seal on a plain ground extending across the central portion of the seal, and above and below said plain ground are segmental-shaped grounds in colors, the words "WESTERN BREWERY CO. BELLEVILLE, ILL." being arranged in concentric circles on the seal.

Filed May 20, 1905. Serial No. 6,178. PUBLISHED MARCH 13, 1906.

52,496. POCKET-KNIVES. WIEBUSCH & HILGER, LIMITED, New York, N. Y.

The words and abbreviation "WESTERN CUTLERY Co GERMANY." Used ten years.

Filed April 15, 1905. Serial No. 1,783. PUBLISHED MARCH 13, 1906.

52,497. LAXATIVES. BRISTOL-MYERS COMPANY, Brooklyn, N. Y.

The words "CLINTON CASCARA ACTIVE," the representation of an oblong panel forming a background for said words, and a representation of a circular piece partly superimposed upon the panel and bearing the letters "C P Co" arranged as a monogram. Used ten years.

Filed May 25, 1905. Serial No. 6,554. PUBLISHED MARCH 13, 1906.

52,498. MEDICINE FOR POULTRY. FRANK LEE, Newport News, Va.

The word "CHICKICURA."

Filed May 5, 1905. Serial No. 4,414. PUBLISHED MARCH 13, 1906.

52,499. MICROBE-KILLER. IDA RADAM, New York, N. Y.

A white rectangular panel surrounded by a rectangular red border in which are delineated figures of an approximately cylindrical form representing a species of bacteria or microbes many times magnified. Within the border are two vertically-disposed lines, between which is the representation of a shield, and upon the shield are depicted a skeleton and a man wielding a club as if striking the skeleton, the club bearing the words "MICROBE KILLER." Upon the shield also appears the representation of a broken scythe. The words "WM RADAM'S MICROBE KILLER" appear upon the upper portion of the shield, and above the shield is a ring. Within the border and above the shield and vertical lines appear the words "WM RADAM'S MICROBE KILLER" and also the words "GERM, BACTERIA OR FUNGUS DESTROYER."

Filed May 10, 1905. Serial No. 5,001. PUBLISHED MARCH 13, 1906.

52,500. POWDERED NERVE AND MUSCLE TONIC. ED. T. RICHARDS, Chicago, Ill.

The representation of an "S" within the loop of the letter "U" and a "T" over an "E," the vertical height of the letters "T" and "E" combined being equal to the vertical height of the letter "U" and the letters "T" and "E" being separated from the letters "S" and "U" by a hyphen.

Filed May 31, 1905. Serial No. 7,075. PUBLISHED FEBRUARY 13, 1906.

52,501. WATERPROOF SHEETINGS. THE STORK COMPANY, Boston, Mass.

Two storks holding in their beaks a piece of fabric on which appears the word "STORK," associated with a fleur-de-lis.

Filed April 8, 1905. Serial No. 778. PUBLISHED MARCH 13, 1906.

52,502. REMEDY FOR BALDNESS AND FALLING OFF OF THE HAIR. WILLIAM P. WARD, New York, N. Y.

The words "LYON'S KATHAIRON FOR THE HAIR" inclosed in a frame or border of scrollwork, leaves, and flowers. Used ten years.

Filed June 8, 1905. Serial No. 7,623. PUBLISHED MARCH 13, 1906.

52,503. BALM FOR BEAUTIFYING THE COMPLEXION. WILLIAM P. WARD, New York, N. Y.

The words "HAGAN'S MAGNOLIA BALM" and the representation of a magnolia blossom and leaves. Used ten years.

Filed June 8, 1905. Serial No. 7,624. PUBLISHED MARCH 13, 1906.

52,504. MALT WHISKY. SIMON BINSWANGER & BRO., St. Joseph, Mo.

A diamond-shaped parallelogram printed in red and having in its center a pictorial representation of a distilling plant. Above the picture is the word "MELVIN," and below the picture are the words "PURE MALT WHISKEY."

Filed November 29, 1905. Serial No. 15,066. PUBLISHED MARCH 13, 1906.

52,505. CLAMS, CLAM-JUICE, AND CLAM-CHOWDER. BURNHAM & MORRILL COMPANY, Portland, Me.

The words or word-symbol "SCARBORO BEACH." Used ten years.

Filed June 6, 1905. Serial No. 7,558. PUBLISHED MARCH 13, 1906.

52,506. COTTON FABRIC HAVING AN OLD IRISH-LINEN FINISH. BURTON BROS. & Co., New York, N. Y.

The arbitrarily-selected word "AUTO."

Filed October 5, 1905. Serial No. 13,306. PUBLISHED MARCH 13, 1906.

52,507. LAGER-BEER. CHRISTIAN FEIGENSPAN, A CORPORATION, Newark, N. J.

The letters "P. O. N."

Filed January 5, 1906. Serial No. 15,927. PUBLISHED MARCH 13, 1906.

52,508. TOILET SOAP. THE CINCINNATI SOAP COMPANY, Cincinnati, Ohio.

The word "TOYLAND."

Filed November 20, 1905. Serial No. 14,846. PUBLISHED MARCH 13, 1906.

52,509. WHITE WINE IN BOTTLES. COMPAÑIA VINICOLA DEL NORTE DE ESPAÑA, Bilbao, Spain.

A representation of a rectangular panel having thereon the words "RIOJA BLANCO COMPAÑIA VINICOLA DEL NORTE DE ESPAÑA BILBAO ALMACENES EN HARO," a striped shield, the outer stripes being red and the central stripe yellow, crossed by a diagonal band in silver having thereon the letters "C. V. N. E.," one corner of the panel being folded over and bearing the words "FUNDADA EN 1879."

Filed August 8, 1905. Serial No. 11,427. PUBLISHED MARCH 13 1906.

52,510. LAGER-BEER. THE CONSUMERS PARK BREWING Co., New York, N. Y.

The representation of an irregular triangular figure composed of three individual diamond-shaped figures arranged with adjacent points or apices touching, surmounted by a scroll bearing the words "IN TRINITATE ROBUR," the described matter being inclosed within a circular border or band bearing the words "THE CONSUMERS PARK BREWING CO. BROOKLYN, N. Y."

Filed December 1, 1905. Serial No. 15,129. PUBLISHED MARCH 13, 1906.

52,511. COUGH MIXTURE. COUGH CHECKER MANUFACTURING Co., Newburgh, N. Y.

The words "COUGH CHECKERS" and the representation of two playing-checkers.

Filed April 26, 1905. Serial No. 3,166. PUBLISHED MARCH 13, 1906.

52,512. ICE-MACHINES. THE DAVENPORT ICE CHIPPING MACHINE Co., Davenport, Iowa.

The words "LITTLE GIANT."

Filed September 11, 1905. Serial No. 12,452. PUBLISHED FEBRUARY 20, 1906.

52,513. CONDIMENTAL FOODS FOR HORSES, CATTLE, SWINE, AND OTHER STOCK. THE DAVID E. FOUTZ Co., Baltimore, Md.

The representation of a shield bearing the word "FOUTZ," which appears upon an oblique panel on the shield, and the representation of a cow and the head of a horse, the whole being inclosed within a circular border, the upper part of which is formed of a heavy band extending partly around said border.

Filed June 13, 1905. Serial No. 8,043. PUBLISHED MARCH 13, 1906.

52,514. TEA. THE DOLAN MERCANTILE Co., Atchison, Kans.

The word "ELK," associated with the representation of an elk-head.

Filed August 1, 1905. Serial No. 11,097. PUBLISHED MARCH 13, 1906.

52,515. RICE. THE DOLAN MERCANTILE Co., Atchison, Kans.

The words "SUN FLOWER" and the representation of a sunflower.

Filed August 1, 1905. Serial No. 11,100. PUBLISHED MARCH 13, 1906.

52,516. COTTON PIECE GOODS. EVERETT MILLS, Lawrence, Mass.

The representation of a circular casement at which appears the representation of the head, neck, and shoulders of a tiger, the fore paws of which animal rest upon the casement.

Filed November 4, 1905. Serial No. 14,344. PUBLISHED MARCH 13, 1906.

52,517. FLAVORING EXTRACTS. FRANCIS H. LEGGETT & COMPANY, New York, N. Y.

The word "NABOB."

Filed September 25, 1905. Serial No. 12,971. PUBLISHED MARCH 13, 1906.

52,518. PREPARED CEREAL BREAKFAST-FOODS. FRANCIS H. LEGGETT & COMPANY, New York, N. Y.

The word "PREMIER."

Filed September 25, 1905. Serial No. 12,977. PUBLISHED MARCH 13, 1906.

52,519. BELT-FASTENERS. GREENE TWEED & Co., New York, N. Y.

The representation of a star. Used ten years.

Filed November 24, 1905. Serial No. 14,969. PUBLISHED MARCH 13, 1906.

52,520. LAGER-BEER. HUDSON COUNTY CONSUMERS BREWING Co., West Hoboken, N. J.

A circular band or border bearing the words "HUDSON COUNTY CONSUMERS BREW'G CO. WEST HOBOKEN: N. J." and inclosing the representation of a four-leaf clover.

Filed December 1, 1905. Serial No. 15,128. PUBLISHED MARCH 13, 1906.

52,521. HARVESTERS, MOWERS, AND REAPERS AND PARTS THEREOF. INTERNATIONAL HARVESTER CO. OF AMERICA, Chicago, Ill.

A facsimile of the autograph of the surname of William H. Jones, one of the vice-presidents of the said International Harvester Co. of America.

Filed August 31, 1905. Serial No. 12,106. PUBLISHED MARCH 13, 1906.

52,522. WINE. W. H. JONES & Co., Boston, Mass.

The word "RUTHVEN." Used ten years.

Filed January 8, 1906. Serial No. 16,007. PUBLISHED MARCH 13, 1906.

52,523. GINGER-SNAPS. PENNSYLVANIA BAKING COMPANY, Scranton, Pa.

A conventional representation of a keystone bearing the word "KEYSTONE," associated with the name and address of the applicant.

Filed October 2, 1905. Serial No. 13,208. PUBLISHED MARCH 13, 1906.

52,524. OLIVES. AKERMAN & TUFFLEY, North San Diego, Cal.

The words "OLD MISSION" on a scroll-like panel with a beaded border appearing on and partly covering a landscape consisting of an old mission building in the background beneath an azure and white sky, an uncultivated grassy area in the middle distance, and three palm-trees in the foreground in front of an old stone wall.

Filed November 23, 1905. Serial No. 14,911. PUBLISHED MARCH 13, 1906.

52,525. WHEAT-FLOUR. THE ALLIANCE MILLING COMPANY, Denton, Tex.

The words "PEACE MAKER."

Filed May 29, 1905. Serial No. 7,061. PUBLISHED MARCH 13, 1906.

52,526. CONDENSED MILK. BORDEN'S CONDENSED MILK Co., Jersey City, N. J., and New York, N. Y.

The representation of a cut stone or jewel with divergent rays and the word "JEWEL," associated with the word "BRAND" and on an oval panel the words "CONDENSED MILK," the whole partially inclosed in scrollwork.

Filed January 3, 1906. Serial No. 15,839. PUBLISHED MARCH 13, 1906.

52,527. POWDERED PAPER, BEING A PREPARATION FOR THE SKIN OR TOILET USE. ANNIE SARAH BUTLER, London, England.

The bust picture of a lady in evening dress, together with the representation of a powder-puff. Above and below the representation of the powder-puff is a band or garter, and between the representation of the powder-puff and the lower band or garter is a vertical line of Chinese characters representing the name of the applicant, ANNIE S. BUTLER.

Filed July 21, 1905. Serial No. 10,664. PUBLISHED MARCH 13, 1906.

52,528. CIGARS, CHEROOTS, AND CIGARETTES MADE OF CIGAR-TOBACCO. CAYEY-CAGUAS TOBACCO COMPANY New York, N. Y.

The word "ALOMINO."

Filed February 12, 1906. Serial No. 16,915. PUBLISHED MARCH 13, 1906.

52,529. CIGARS, CHEROOTS, AND CIGARETTES MADE OF CIGAR-TOBACCO. CAYEY-CAGUAS TOBACCO COMPANY, New York, N. Y., and Caguas, Porto Rico.

The representations of a man and woman in Grecian costume standing on either side of a seal having thereon a representation of a tobacco-plant, there being above the seal a representation of a crown.

Filed February 12, 1906. Serial No. 16,916. PUBLISHED MARCH 13, 1906.

52,530. CRACKERS. CHATLAND & LENHART, Brownsville, Pa.

The word "BROWNSVILLE." Used ten years.

Filed February 16, 1906. Serial No. 17,095. PUBLISHED MARCH 13, 1906.

52,531. CORNMEAL. THOMAS P. DAVIE, Rio Vista, Va.

The representation of a tub containing ears of corn, associated with the words "DAVIE'S OLE-FASHUN METHOD UNBOLTED WATER GROUND CORN MEAL."

Filed June 7, 1905. Serial No. 7,607. PUBLISHED MARCH 13 1906.

52,532. PREPARED CEREAL FOOD. EMERALD MANUFACTURING Co., Superior, Wis.

The word "EMERALD."

Filed May 29, 1905. Serial No. 7,065. PUBLISHED MARCH 13 1906.

52,533. FOODS FOR LIVE STOCK AND OTHER ANIMALS. FRED H. ERB, Jr., La Fayette, Ind.

The representation of a hunter holding a gun, and dogs in the act of retrieving, all in the foreground, with a landscape forming the background.

Filed January 12, 1906. Serial No. 16,140. PUBLISHED MARCH 13, 1906.

52,534. WHEAT-FLOUR. LEDEBOER & VAN DER HELD, Rotterdam, Netherlands.

The word "PATRIA."

Filed November 27, 1905. Serial No. 15,022. PUBLISHED MARCH 13, 1906.

52,535. WHEAT-FLOUR. LIBERTY MILLS, Nashville, Tenn.

The words "GOLD HUNTER."

Filed February 3, 1906. Serial No. 16,712. PUBLISHED MARCH 13, 1906.

52,536. WHEAT-FLOUR. LIBERTY MILLS, Nashville, Tenn.

The word "MAJESTIC."

Filed February 3, 1906. Serial No. 16,715. PUBLISHED MARCH 13, 1906.

52,537. WHEAT-FLOUR. LIBERTY MILLS, Nashville, Tenn.

The word "ALLISTA."

Filed February 3, 1906. Serial No. 16,716. PUBLISHED MARCH 13, 1906.

52,538. GELATIN. MICHIGAN CARBON WORKS, Detroit, Mich.

The words "KEYSTONE SILVER WHITE." Used ten years.

Filed June 10, 1905. Serial No. 7,851. PUBLISHED MARCH 13, 1906.

52,539. WHEAT-FLOUR. MISSOURI VALLEY MILLING COMPANY, Mandan, N. D.

A heart-shaped figure formed of outer and inner lines with numerous small heart-shaped figures in the space between the lines.

Filed February 13, 1906. Serial No. 16,984. PUBLISHED MARCH 13, 1906.

52,540. SELF-RISING FLOUR. SLEEPY EYE MILLING COMPANY, Sleepy Eye, Minn.

The word "PANKAKO." Used ten years.

Filed June 17, 1905. Serial No. 8,384. PUBLISHED MARCH 13, 1906.

52,541. FLAVORING EXTRACTS. ULLMANN DREIFUS & Co. Cincinnati, Ohio.

The words "GOLDEN ROD," associated with the representation of a sprig of golden-rod appearing on top of and across the representation of a disk.

Filed June 15, 1905. Serial No. 8,240. PUBLISHED MARCH 13, 1906.

52,542. PUDDINGS AND CUSTARDS. WILLIAM P. WARD, New York, N. Y.

The representation of a sea scene, wherein Neptune stands erect in a shell drawn by horses and mermaids, with a background of cliffs against which the sea dashes, with an arch of hanging moss above the words "SEA MOSS FARINE" thereon, with a panel beneath the representation having side and central scrollwork. Used ten years.

Filed June 8, 1905. Serial No. 7,625. PUBLISHED MARCH 13, 1905.

52,543. BLACK GRAHAM BREAD. HARRIS HIRSCHMAN, Baltimore, Md.

A design of a bound sheaf of wheat with the name "HIRSCHMAN" at the top of said design printed in English and the name "HIRSCHMAN" at the bottom thereof printed in Hebrew and on the right side of said design of wheat the number "107," while on the left the word "ALBEMARLE" appears.

Filed September 26, 1905. Serial No. 13,042. PUBLISHED MARCH 13, 1906.

52,544. FOOD FOR POULTRY AND PIGEONS. CAMPBELL, MORRELL & Co., Passaic, N. J.

The letters, abbreviation, character, and words "C. M. & Co's EUREKA POULTRY AND PIGEON FOODS," the word "EUREKA" being arranged upon a band surmounted by the head of a rooster with streamers extending therefrom held in the beaks of pigeons

Filed August 30, 1905. Serial No. 12,084. PUBLISHED MARCH 13, 1906.

52,545. WHISKY. THE STAR DISTILLERY Company, Cincinnati, Ohio.

The word "OAKDALE."

Filed May 22, 1905. Serial No. 6,285. PUBLISHED MARCH 13, 1906.

52,546. MILK, CONDENSED MILK, CREAM, AND EVAPORATED CREAM. BORDEN'S CONDENSED MILK Co., New York, N. Y.

The words "SWEET BRIAR," associated with the picture of a rural scene, in the foreground of which stands a milkmaid carrying a pail in one hand, while her other hand rests upon a cow, another cow reclining at her feet, and in the background a house, trees, and a lake.

Filed June 10, 1905. Serial No. 7,823. PUBLISHED OCTOBER 24, 1905.

LABELS

REGISTERED MAY 8, 1906.

12,842.—*Title:* "EL SCIENTIFICO." (For Cigars.) O. L. SCHWENCKE LITHOGRAPHIC Co., Brooklyn, N. Y. Filed April 12, 1906.

12,843.—*Title:* "CLAY-OLA." (For Cigars.) O. L. SCHWENCKE LITHOGRAPHIC Co., Brooklyn, N. Y. Filed April 12, 1906.

12,844.—*Title:* "WILLIAM BOND." (For Cigars.) O. L. SCHWENCKE LITHOGRAPHIC Co., Brooklyn, N. Y. Filed April 12, 1906.

12,845.—*Title:* "LITTLE VICTOR." (For Cigars.) O. L. SCHWENCKE LITHOGRAPHIC Co., Brooklyn, N. Y. Filed April 12, 1906.

12,846.—*Title:* "KNOCH." (For Cigars.) WILLIAM KNOCH, Naperville, Ill. Filed March 10, 1906.

12,847.—*Title:* "MERCEDES." (For Cigars.) SCHMIDT & Co., New York, N. Y. Filed March 30, 1906.

12,848.—*Title:* "CLEVERETTES." (For Cigars.) SCHMIDT & Co., New York, N. Y. Filed March 10, 1906.

12,849.—*Title:* "GREATER THAN KING." (For Cigars.) B. LYON, Chicago, Ill. Filed January 6, 1906.

12,850.—*Title:* "LA MERTINA." (For Cigars.) ADOLF MERTENS, Chicago, Ill. Filed April 11, 1906.

12,851.—*Title:* "MASHALLAH COFFEE." (For Coffee.) M. HOROWITZ, New York, N. Y. Filed March 28, 1906.

12,852.—*Title:* "INDIAN." (For Cocoa.) PENNSYLVANIA CHOCOLATE COMPANY, Pittsburg, Pa. Filed April 14, 1906.

12,853.—*Title:* "INDIAN." (For Chocolate.) PENNSYLVANIA CHOCOLATE COMPANY, Pittsburg, Pa. Filed April 14, 1906.

12,854.—*Title:* "INDIAN." (For Chocolate.) PENNSYLVANIA CHOCOLATE COMPANY, Pittsburg, Pa. Filed April 14, 1906.

12,855.—*Title:* "INDIAN." (For Chocolate.) PENNSYLVANIA CHOCOLATE COMPANY, Pittsburg, Pa. Filed April 14, 1906.

12,856.—*Title:* "ELEGANT." (For Flour.) THE PENSACOLA GROCERY COMPANY, Pensacola, Fla. Filed March 19, 1906.

12,857.—*Title:* "STAR TEA MATZOTHS." (For Biscuits.) HENRY S. LEVY, Brooklyn, N. Y. Filed April 12, 1906.

12,858.—*Title:* "STAR BABY EGG MATZOTHS." (For Biscuits.) HENRY S. LEVY, Brooklyn, N. Y. Filed April 12, 1906.

12,859.—*Title:* "CHOCKORN." (For a Bonbon.) LILIAN C. PASCHAL, New York, N. Y. Filed March 31, 1906.

12,860.—*Title:* "AMBROSIA PURE CHOCOLATE WAFERS." (For Confectionery.) AMBROSIA CHOCOLATE COMPANY, Milwaukee, Wis. Filed December 26, 1905.

12,861.—*Title:* "ROYAL CREAM FOR SHAVING." (For Shaving-Cream.) ROYAL CREAM COMPANY, Chicago, Ill. Filed April 12, 1906.

12,862.—*Title:* "TURTLE EGG SHAMPOO." (For a Hair-Wash.) ANDERSON K. REX, Chicago, Ill. Filed April 12, 1906.

12,863.—*Title:* "ST. BERNARD EXTRACT OF BARK." (For Extract of Bark.) ST. BERNARD MEDICINE Co., Montgomery, Ala. Filed April 13, 1906.

12,864.—*Title:* "MENTHO CAMPH." (For an Ointment.) M. G. SLOCUM, Wichita, Kans. Filed March 12, 1906.

12,865.—*Title:* "CIRCLEANUM." (For a Cancer Remedy.) A. V. H. WAKEMAN, New York, N. Y. Filed March 6, 1906.

12,866.—*Title:* "KERMER'S 'E. T.' (EVERY TIME)." (For a Medicine.) CHARLES F. MERKER, East St. Louis, Ill. Filed April 11, 1906.

12,867.—*Title:* "RED SEAL BRAND MEDICINE DROPPER." (For a Medicine-Dropper.) AMERICAN LITHOGRAPHIC Co., New York, N. Y. Filed April 12, 1906.

12,868.—*Title:* "RED SEAL BRAND MEDICINE DROPPER." (For Medicine-Droppers.) AMERICAN LITHOGRAPHIC Co., New York, N. Y. Filed April 12, 1906.

12,869.—*Title:* "NAUVOO BRAND GARMENTS." (For Knitted Combination Union Suits.) ENSIGN KNITTING Co., Salt Lake City, Utah. Filed February 20, 1906.

12,870.—*Title:* "THE AMERICAN GIRL SKIRT." (For Ladies', Misses', and Children's Skirts.) AMERICAN SKIRT MFG. Co. INC., Louisville, Ky. Filed April 12, 1906.

12,871.—*Title:* "PRIME." (For Thread and Cotton.) ISAAC J. SILVERSTEIN, New York, N. Y. Filed May 23, 1905.

PRINTS

REGISTERED MAY 8, 1906.

1,638.—*Title:* "PLAID TRIMMED." (For Millinery and Straw Hats.) GAGE BROTHERS & Co., Chicago, Ill. Filed April 12, 1906.

1,639.—*Title:* "PICTURESQUE CHAPEAU." (For Millinery and Straw Hats.) GAGE BROTHERS & Co., Chicago, Ill. Filed April 12, 1906.

1,640.—*Title:* "ROSE GARLANDED." (For Millinery and Straw Hats.) GAGE BROTHERS & Co., Chicago, Ill. Filed April 12, 1906.

1,641.—*Title:* "WINGS AND BOWS." (For Millinery and Straw Hats.) GAGE BROTHERS & Co., Chicago, Ill. Filed April 12, 1906.

1,642.—*Title:* "A TRICORNE." (For Millinery and Straw Hats.) GAGE BROTHERS & Co., Chicago, Ill. Filed April 12, 1906.

1,643.—*Title:* "RIBBON STREAMERS." (For Millinery and Straw Hats.) GAGE BROTHERS & Co., Chicago, Ill. Filed April 12, 1906.

1,644.—*Title:* "PEACOCK FEATHER." (For Millinery and Straw Hats.) GAGE BROTHERS & Co., Chicago, Ill. Filed April 12, 1906.

1,645.—*Title:* "VELVET-BOX-PLAIT." (For Millinery and Straw Hats.) GAGE BROTHERS & Co., Chicago, Ill. Filed April 12, 1906.

1,646.—*Title:* "PLATEAU DRAPE." (For Millinery and Straw Hats.) GAGE BROTHERS & Co., Chicago, Ill. Filed April 12, 1906.

1,647.—*Title:* "MUSHROOM FASHION." (For Millinery and Straw Hats.) GAGE BROTHERS & Co., Chicago, Ill. Filed April 12, 1906.

1,648.—*Title:* "AMERICAN BEAUTY." (For Millinery and Straw Hats.) GAGE BROTHERS & Co., Chicago, Ill. Filed April 12, 1906.

1,649.—*Title:* "PANAMA SAILOR." (For Millinery and Straw Hats.) GAGE BROTHERS & Co., Chicago, Ill. Filed April 12, 1906.

1,650.—*Title:* "FLORAL EFFECT." (For Millinery and Straw Hats.) GAGE BROTHERS & Co., Chicago, Ill. Filed April 12, 1906.

1,651.—*Title:* "BLACK AND WHITE." (For Millinery and Straw Hats.) GAGE BROTHERS & Co., Chicago, Ill. Filed April 12, 1906.

1,652.—*Title:* "THE SINGER FASHION SERIES." (For Corset-Covers and Petticoats.) SINGER SEWING MACHINE Co., New York, N. Y. Filed January 22, 1906.

1,653.—*Title:* "THE SINGER FASHION SERIES." (For Wedding-Gowns.) SINGER SEWING MACHINE Co., New York, N. Y. Filed February 7, 1906.

1,654.—*Title:* "THE SINGER FASHION SERIES." (For Tailored Traveling Costumes.) SINGER SEWING MACHINE Co., New York, N. Y. Filed February 7, 1906.

1,655.—*Title:* "THE SINGER FASHION SERIES." (For Afternoon Gowns.) SINGER SEWING MACHINE Co., New York, N. Y. Filed February 7, 1906.

1,656.—*Title:* "THE SINGER FASHION SERIES." (For Shirt-Waist Costumes.) SINGER SEWING MACHINE Co., New York, N. Y. Filed February 7, 1906.

1,657.—*Title:* "FATHER OF WATERS." (For Flour.) LUTHER PRESCOTT HUBBARD, Minneapolis, Minn. Filed March 15, 1906.

1,658.—*Title:* "SAPOLIN GLOSS CARRIAGE COLORS." (For Carriage-Colors.) GERSTENDORFER BROS., New York, N. Y. Filed April 12, 1906.

1,659.—*Title:* "RUSSELL'S REGULARS." (For Playing-Cards.) WILLIS W. RUSSELL CARD Co., Milltown, N. J., and New York, N. Y. Filed March 30, 1906.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

KILBOURN v. HIRNER.

Decided February 2, 1906.

1. INTERFERENCE—PRIORITY—RIGHT TO MAKE THE CLAIMS IN ISSUE CONSIDERED ON APPEAL.

Where a decision awarding priority of invention is based upon the date of constructive reduction to practice obtained by a party through filing his application in interference and upon appeal the opposing party attacks the sufficiency of the disclosure in the application to support a judgment upon the subject-matter of the issue, *Held* that the question raised by the attack is one properly considered in determining the question of priority.

2. SAME—SAME—REMANDED TO PRIMARY EXAMINER TO CONSIDER QUESTION OF PARTY'S RIGHT TO MAKE THE CLAIMS OF THE ISSUE.

Where the question of a party's right to make the claims in issue is raised on appeal on priority and it is decided to entertain that question and the machines upon which the issue is drawn and those of the prior art are complex and intricate and their operation involved and no written opinion upon the question has been made by the Primary Examiner, *Held* that the interference will be remanded to the Primary Examiner, who will hear the parties and furnish his opinion as to the question raised, together with a statement of the reasons for his conclusions.

APPEAL from Examiners-in-Chief.

KNITTING-MACHINE.

Messrs. Whitaker & Prevost for Kilbourn.

Messrs. Fraley & Paul for Hirner.

ALLEN, *Commissioner:*

This case is before me upon appeal by Kilbourn from the decision of the Examiners-in-Chief awarding priority of invention to Hirner upon each count in the issue of the above-entitled interference.

The Examiner of Interferences and the Examiners-in-Chief based their decisions awarding priority of invention to Hirner upon the date of constructive reduction to practice obtained by Hirner through filing his application in interference. Kilbourn upon this appeal strenuously attacks the sufficiency of the disclosure in Hirner's application as filed to support a judgment against Kilbourn upon the subject-matter of the issue. I am of the opinion that the question raised by this attack is one properly considered in determining the question of priority in those cases where, as seems to be the case here, a holding that a party is entitled to make the claims in issue results in a judgment against a party who, if that holding be in error, appears to be the true inventor of the matter in issue and entitled to a patent thereon. My reasons for this conclusion are similar to those given in the decision *Pohle* v. *McKnight* (119 O. G., 2519) for making there an award of priority instead of dissolving the interference. It is also believed that this conclusion is in keeping with the spirit of the recent decision of the Court of Appeals of the District of Columbia in the case of *Podlesak and Podlesak* v. *McInnerney*, (as yet unpublished.)

Upon taking up the question of the sufficiency of the original Hirner disclosure I find that the issue includes an element which does not appear to have been specifically referred to or to have been illustrated by Hirner in his application when filed. This element is described in count 1 as "means for narrowing and widening the back of the knit tube," and in count 2 as "cam mechanism * * * to coöperate with each needle, of a continuous portion of said needles to form narrowed and widened fabric." The Examiners-in-Chief in their decision upon priority refused to include a statement under Rule 126 that the Hirner disclosure was insufficient. They apparently took the position presumably taken by the Primary Examiner in declaring the interference that certain general statements in Hirner's specification and certain cams shown upon his drawing, together with the state of the art, established that the Hirner device was intended to be used in connection with the elements whose disclosure in Hirner's case is in dispute. No motion for dissolution was made by Kilbourn, and no statement upon the record appears to have been made by the Primary Examiner of his reasons for holding that the issues are properly grounded upon Hirner's disclosure. The machines upon which the issue is drawn and those of the prior art are complex and intricate and their operation involved. The Primary Examiner is the technical expert of this Office as to those arts in which he examines. He should through his special experience be peculiarly fitted to determine the meanings of the terms used in the specifications of the parties and to determine the relations of their disclosures to prior devices. I am unwilling to pass upon the question of disclosure by Hirner without the benefit of the opinion and reasons of the Primary Examiner based upon discussion of the question by the parties in case they desire to be heard.

The interference is remanded to the Primary Examiner, who will hear the parties and furnish me with his opinion as to the question raised, together with a statement of the reasons for his conclusion. The Examiner's opinion will be placed in the interference file, copies thereof sent to the parties, and the case returned to me for decision upon the appeal.

EX PARTE ASTON.

Decided February 14, 1906.

1. PUBLIC USE—INSTITUTION OF PROCEEDINGS—ORDER UPON APPLICANT TO SHOW CAUSE.

Where an applicant is ordered to show cause why public-use proceedings should not be instituted against him and no showing is made save an argument that the depositions and affidavit filed do not so identify the complete invention of the claim as to make out a *prima facie* case of public use, *Held* that testimony will be taken in regard to the question of public use.

2. SAME—SAME—PRELIMINARY CONSIDERATION.

Where upon consideration of the affidavit and testimony referred to by the protestant it seems probable that the bar of public use of the invention exists, *Held* that it is not necessary to analyze that testimony to determine whether it is technically sufficient if true to prove public use.

3. SAME—SAME—NOTICE OF TAKING TESTIMONY BY PROTESTANT—NOTICE OF NAMES OF WITNESSES, TIMES WHEN AND PLACE WHERE EXAMINED.

Where it is ordered that testimony be taken in regard to the question of public use, *Held* that the protestant should promptly notify this Office of the names of the witnesses and the times when and place where they will be produced for examination.

ON public use.

GARMENT-SUPPORTER.

Messrs. Bacon & Milans for the applicant.

Messrs. Seymour & Earle for the appellee.

ALLEN, *Commissioner:*

The applicant Aston was ordered to show cause why proceedings should not be instituted to investigate the allegation by the protestant of public use of the invention more than two years before his filing date. No showing has been made save an argument that the depositions and affidavit filed do not so identify the complete invention of the claim as to make out a *prima facie* case of public use.

The only question presented for determination at the present time is whether this Office believes that there is sufficient probability that the bar of public use exists to warrant it in investigating the matter. A consideration of the affidavit and testimony referred to by the protestant makes it seem probable that such bar does exist. It is not necessary to analyze that testimony to determine whether it is technically sufficient if true to prove public use.

It is ordered that testimony be taken in regard to the question of public use. The protestant should promptly notify this Office of the names of the witnesses and the time when and place where they will be produced for examination. A deposit should be made to cover the expense incident to taking the testimony.

MILLER *v.* MANN.

Decided March 1, 1906.

INTERFERENCE—MOTION TO DISSOLVE—INTERFERENCE IN FACT—MOTION INDEFINITE.

A motion to dissolve on the ground of lack of interference in fact which alleges merely that there is no interference in fact as to either count, because they do not mean the same thing when read on the constructions of both parties, is not sufficiently definite, as it fails to specify the element or elements of the counts wherein the different meanings are supposed to reside, and should not be transmitted to the Primary Examiner.

APPEAL on motion.

DAMPENING-MACHINE.

Mr. John Imirie for Miller.

Messrs. Alexander & Dowell for Mann.

ALLEN, *Commissioner:*

This is an appeal from a decision of the Examiner of Interferences refusing to transmit that part of a motion to dissolve, alleging lack of interference in fact.

The Examiner of Interferences denied the transmission of this part of the motion on the ground that it did not definitely state the points to be argued. The allegation is, in substance, that there is no interference in fact as to either count, because they do not mean the same thing when read on the construction of both parties. It is to be noted that the motion does not specify the element or elements of the counts which cannot be read on the two devices with the same meaning and gives no information to the opposing party with respect to the points to be argued, except that the allegation applies to both counts of the issue. This obviously does not comply with the requirements laid down in *Dunker* v. *Reist* (119 O. G., 1925) and is insufficient.

The decision of the Examiner of Interferences is affirmed.

NEWELL *v.* CLIFFORD *v.* ROSÉ.

Decided March 8, 1906.

JURISDICTION—RESTORING, TO EXAMINER OF INTERFERENCES TO CONSIDER MOTION TO REOPEN PROOFS.

On a motion to restore jurisdiction to the Examiner of Interferences of an interference, pending on appeal before the Examiners-in-Chief on the question of priority, for the consideration of a motion to reopen to admit newly-discovered evidence the only questions for consideration are whether the motion to reopen is in proper form and whether, so far as can be seen, without going into the merits of the motion, it is brought in good faith.

ON MOTION.

WATER-COOLER.

Mr. A. S. Pattison for Newell.

Messrs. Griffin, Bernhard & Cavanagh and *Messrs. Griffin & Bernhard* for Clifford.

Mr. Willis Fowler for Rose.

ALLEN, *Commissioner:*

This is a motion by Newell seeking restoration of jurisdiction to the Examiner of Interferences and other action.

The case is now before the Examiners-in-Chief upon appeals by Newell and Rose from the decision of the Examiner of Interferences awarding priority of invention to Clifford. Newell desires the return of the case to the Examiner of Interferences for consideration of a motion that the interference be reopened to admit alleged newly-discovered evidence. The case is not before me upon the merits of the motion to reopen. That question is for the Examiner of Interferences to decide, if it is decided at all, uninfluenced by any suggestion from me in this decision. The only apparent questions for consideration here are whether the motion to reopen is in proper form and whether, so far as can be seen, without going into the merits of that motion, it is brought in good faith. I find no objection to the form of the motion, and there appears to be no reason sufficiently evident upon the face of the motion or record for deciding here that the same is not presented in good faith.

Clifford and Rose in opposing the transmission of Newell's motion deny that it is brought in good faith. To prove their position, they desire to present and have considered here the very matters which must be considered by the Examiner of Interferences in the event that the motion is transmitted to him. I am of the opinion that the double presentation and consideration of such matters

serve no useful purpose and result in useless delay and labor.

The case is transmitted to the Examiner of Interferences. He is authorized to suspend proceedings, hear the parties, and to reopen the interference if, in his opinion, such action would be proper. The motion is granted to this extent and denied as to the further action requested therein.

DECISIONS OF THE U. S. COURTS.

Court of Appeals of the District of Columbia.

GILMAN AND BROWN *v.* HINSON.

Decided January 4, 1906.

INTERFERENCE—PRIORITY—REDUCTION TO PRACTICE—WHAT IS NOT.

Where the invention is the knuckle of a car-coupler and the evidence relied upon to establish reduction to practice showed the making of a knuckle consisting of a crude brass casting, which was broken when tested, and a knuckle consisting of a gray-iron casting, which was never actually tested, *Held* that the knuckles were made of metals not suitable for practical use, but were models, and that they did not prove a satisfactory reduction to practice.

2. SAME—SAME—SAME—ABANDONED EXPERIMENT.

Where the device was tested and broken during the test and the parts were destroyed or lost and nothing more was done on the invention until more than five years later, when an application was filed, but in the meantime an earlier device for the same purpose, patented by the same party, was placed on the market in large quantities, and it appears that an application for the later device was only filed after learning that his opponent was selling a similar device, *Held* that the conduct of the party indicates that the device was unsatisfactory and that what was done amounted to nothing more than an abandoned experiment.

3. SAME—SAME—SAME—EQUITABLE ESTOPPEL.

Where G. and B. slept on their rights and for more than five years failed to bring their invention to a complete and operative form, *Held* that by their *laches* they lost rights which for a long time they little valued and which they cannot now successfully assert.

4. SAME—PRIOR USE—REDUCTION TO PRACTICE.

The rules of law as to what constitutes a "prior use" and what constitutes a "reduction to practice" are the same, and as there is not sufficient proof of reduction to practice so also there is not sufficient proof of "prior use."

Mr. W. H. Chamberlin and *Mr. G. L. Wilkinson* for the appellants.

Mr. C. C. Poole for the appellee.

MCCOMAS, *J.:*

This is an appeal from a decision of the Commissioner of Patents in an interference. The subject is emergency-knuckles for car-couplers.

The issues of the interference are as follows:

1. In automatic car-couplers, an emergency coupling attachment designed to closely and interchangeably fit at one end in coupling engagement with all forms of the vertical-plane type of coupler having a rotative hook or knuckle and provided at its other end with an opening to receive a vertical pivot-pin by which it is adapted to be connected with another coupler, a coupling-knuckle or analogous coupling device.

2. In automatic car-couplers, an emergency coupler attachment designed to be hinged at one end to the draw-head in place of the usual swinging knuckle, and provided at its other end with a hook and with a guard-arm, the hook being adapted to closely and interchangeably fit and to be automatically coupled to all forms of the vertical type of coupler having a rotative hook or knuckle.

3. In automatic car-couplers, an emergency coupler attachment designed to be hinged at one end to the draw-head in place of the usual knuckle, and provided at its other end with a knuckle adapted to automatically intercouple with the rotating knuckle of an adjacent coupler in a manner to retain the intercoupled draw-heads in substantial alinement with each other.

4. In automatic car-couplers, an emergency coupler attachment designed to be hinged at one end to the draw-head in place of the usual knuckle, and provided at its other end with a rigid knuckle and in rear of said knuckle with a guide-arm, said rigid knuckle and guide-arm being adapted to automatically intercouple with the rotating knuckle of an adjacent coupler in a manner to retain the draw-heads in substantial alinement with each other.

5. An emergency car-coupler knuckle comprising a lug adapted to be pivoted between the ears of a coupler-head, a guard member extending from the lug and forming with the knuckle-head a space to receive the head of the knuckle of a coöperating coupler, and a web extending between said lug and the rear surface of said guard member.

All of the Patent Office tribunals decided this interference in favor of Hinson, the appellee, and from the final decision of the Commissioner of Patents Gilman and Brown have taken their appeal to this court.

The appellee filed his application on August 19, 1903.

The appellants filed their application March 14, 1904.

The appellee died in May of the last-mentioned year, and his case rests upon the record date of the filing of his application and no testimony has been taken to show the date of the appellee's conception and reduction to practice of the invention. It appears from the record that the appellee's emergency-knuckle was placed on the market about the time his application was filed.

The testimony in behalf of the appellants tends to show conception and reduction to practice in 1898, although they have neither manufactured the device nor placed it on the market.

The subject of this interference is a knuckle for car-couplers to be used in emergencies in place of a broken knuckle of any Master Car-Builders' type.

The act of Congress of March 2, 1893, passed in compliance with President Harrison's earnest urgency upon Congress, and the act of March 2, 1903, amending the prior act, greatly stimulated the production of such devices, for the first act plainly forbade the use of cars which could not be coupled together automatically by impact by means of the couplers actually used on the cars to be coupled. (*Johnson v. Southern Pacific Co.*, 196 U. S., 16.)

In accordance with this legislation the Master Car-Builders adopted regulations with which all car-couplers must conform. More than a hundred different types of automatic car-couplers, all conforming to the Master Car-Builders' requirements, having knuckles adapted to swing in a horizontal plane upon a vertical axis, each of which is capable of interlocking with the knuckles of all other Master Car-Builders' types of couplers, testify to the zealous interest of inventors in this field. The knuckle of each type of coupler is of special construction capable of use only with a coupler of its own special type. It is characteristic of the knuckles of the several types that they are capable of interlocking with all other types of couplers, and also that whatever may be the material out of which they may be made, they are very liable to break. The latter characteristic led to the invention involved in this controversy.

A train of cars contains cars equipped with various types of Master Car-Builders' couplers. It is impossible for each train to carry a supply of knuckles of all types. Prior to 1898, when the appellants first marketed their original type of emergency-knuckle, when a knuckle was broken it was usual to connect the broken coupler with the coupler on the adjoining car by means of a link and pin and this required the brakeman to go between the cars. This proved a very unsatisfactory and dangerous substitute; therefore, the purpose of the invention in issue is to provide a knuckle to coact with any of the various

forms of knuckles in use, and which can be substituted for any of those forms in case of breakage, and it is one of great importance to the railway industry.

The appellants, both practical railroad men, devised an emergency-knuckle to interlock with all types of Master Car-Builders' knuckles and capable of instant use in lieu of a broken knuckle on all forms of Master Car-Builders' couplers, and obtained a patent for their invention on August 16, 1898.

The adoption and operation of the knuckle covered by that patent is not material here. It suffices to notice that in using that type of emergency-knuckle it becomes necessary to remove some of the parts of the locking mechanism in most of the different types of Master Car-Builders' couplers. This fact led the appellee to seek to devise an emergency-knuckle which would replace a broken knuckle without necessitating the removal of any of the parts of locking mechanism.

The testimony in behalf of the appellants shows the conception of their device in July, 1898; the making of a sketch and the completion of a rough wooden pattern in September of that year, and about the same time the making of a brass casting from such pattern, and later of a finished wooden pattern and the making therefrom of a gray-iron casting. In September of the same year they made a test of the brass casting, which casting appellants claim was substantially the same in construction as the emergency-knuckle described and claimed in the appellants' application involved in this interference. It was substituted for a knuckle upon a car in the yards of the Northern Pacific Railroad Company, at South Tacoma, Wash., and coupled with a car provided with a standard Master Car-Builders' coupler. A train composed of a number of cars back of the brass casting was hauled by an engine several miles, around curves and over switches in those yards. During the test the brass casting was coupled and uncoupled a number of times with the knuckle of the adjacent coupler and never accidentally uncoupled. Before the conclusion of the test, however, the brass coupler broke. A wooden pattern in evidence was then made from the rough wooden pattern previously used in making the brass casting. From this later pattern a gray-iron casting was made which casting was placed upon a car to demonstrate that it was interchangeable with Master Car-Builders' knuckles. The appellants appear to have been convinced that this knuckle so constructed was indeed operative and practical but would not prove as satisfactory as their emergency-knuckle covered by their Patent No. 609,095, because their patented knuckle could be used when one of the ears of the draw-bar had been broken, as the shank bearing against the inner wall of the draw-bar, together with the remaining ear on the coupler, afforded a sufficiently secure support for the knuckle, while an emergency-knuckle of the brass-casting type could only be used when both ears of the coupler were intact. The appellants, therefore, proceeded to the manufacture and marketing of the emergency-knuckles covered by their patent, of which, through their assignees, the Railway Appliance Company, about fifty thousand had been sold during the five years prior to the taking of testimony upon this interference. Nothing more was done by the appellants respecting the invention involved in this interference until they learned that the appellee's emergency-knuckle had been placed on the market. The Railway Appliance Company finding that the appellee's knuckle was selling in competition with the appellants' patented knuckle, which this company was then manufacturing, the former for $3.50 each, while they were selling the appellants' patented knuckle for $4 each, were much concerned.

It appears that the appellee, as we have said, filed his application on August 19, 1903, for an emergency-knuckle of the same type as the brass and gray-iron casting made by the appellants in 1898, and commenced the manufacture and sale of his device soon thereafter. Thereupon the appellants on March 14, 1904, filed an application covering the same invention which was on May 17, 1904, placed in interference with the application of the appellee.

The errors assigned are that the Commissioner erred in holding that the appellants did not actually reduce the invention to practice in September, 1898, and in holding that appellants were estopped from claiming priority of invention by reason of their delay in filing their application, and in determining to grant a patent to appellee in view of the prior knowledge and use of the invention by appellant, and to award priority of invention to appellee.

The appellant contends that section 4886 of the Revised Statutes requires that an applicant can only obtain a patent for his invention "not known or used by others in this country, before his invention or discovery thereof;" that of several distinct inventors of the same invention one only is entitled to receive a grant of the exclusive right, namely, the original, the first inventor.

> The first inventor is that original inventor whose inventive act, in point of time, precedes the inventive act of others. (*1 Robinson on Patents*, 91.)

The appellants object that the Commissioner of Patents against the plain intent of the law decided that their right to a patent becomes subordinate to another inventor whose efforts have given to the public the benefit of the invention.

The appellants say the object of the interference proceeding is to determine which of two or more claimants is the first inventor and to establish thereby the statutory bar of prior knowledge and use, to serve as the basis for rejecting the application of the later inventor, and insists that appellants have proved that they knew of and used the invention prior to the appellee's conception, August 19, 1903. The testimony on behalf of appellants is that of both Gilman and Brown, the appellants, of Anslow who made the brass casting, of Lister who made the pattern in evidence, of Yorktheimer who made the gray-iron casting, and of Cook who saw the brass and gray-iron casting, the rough pattern and the finished pattern, and also witnessed the test of the brass casting. This testimony constitutes a qualified prior knowledge and use, that is, the very limited use before stated, of the appellants' invention.

However, on behalf of the appellee it is important to consider whether such knowledge and use of the appellants is adequate to show any such reduction to practice as is required in this interference to entitle the appellants to a patent for this invention. It does not appear from the record that the gray-iron casting was subjected to an actual test. The brass casting, though claimed then to work satisfactorily, was broken in the only test made of it. The rough wooden model of it was lost or destroyed,

and the broken parts of the brass casting discarded. The proof is not quite clear as to whether the brass casting was like the knuckles shown in appellants' drawing accompanying their application. No casting has been made from the wooden pattern submitted in this case.

The Master Car-Builders' couplers are made of malleable iron and cast-steel and the Gilman and Brown emergency-knuckles, already patented, are made of steel. It is settled that to constitute a reduction to practice, the device constructed must be fashioned out of a material capable of actual use for the intended purpose.

In *Paul* v. *Hess* (24 App. Cas. D. C., 467) it is said:

> It was therefore necessary for the inventor to show that a typewriting machine supplied with the new bars had been constructed and tested sufficiently to show that it was capable of successfully performing the work for which it was intended. * * * Notwithstanding Paul's statement that he was satisfied with the practical success of the new bar, his action thereafter, and that of the company with which he was engaged, point to a different conclusion.

The Commissioner of Patents, in his decision said:

> I agree with the Examiner of Interferences and the Examiners-in-Chief in their opinion that the tests given to the brass knuckle in 1898, establishes the fact that that knuckle was not adapted for practical use. Both the material of which it was made and the shape of the knuckle had to be changed. The only fact which is positively established is that the knuckle would break after a short test on an improvised train of cars hauled by a switching-engine in the freight-yards.

The tribunals of the Patent Office appear justified in concluding that the brass casting was unlike the wooden pattern exhibited and did not afford satisfactory evidence of its exact construction. If that casting had been successfully used, it would not, therefore, establish a reduction to practice of the knuckle shown in appellants' drawings. The brass casting, made from a crude wooden pattern, was correspondingly crude, and was broken in the test and obviously possessed such defects that it could not be considered a reduction to practice. The brass casting and the gray-iron casting were made of metals not suitable for practical use, rather they were models. The gray-iron casting was not actually tested, while the brass casting broke in the test. These did not prove a satisfactory reduction to practice.

The conduct of the appellants after the tests suggests that the results of the tests were unsatisfactory and that this device was abandoned. They did not further proceed to develop their conception until they filed their application more than five years later, while at the same time their emergency-knuckle which had been patented was manufactured and sold by the thousands. The appellant, Gilman, does not know what became of the gray-iron casting and did no further experimenting until Hinson's device came to his notice. This gray-iron casting, having been once placed in a coupling-head, "to show people how it would work," thereafter disappeared. Appellant, Gilman, frankly says:

> I made a test of it myself and it did not prove as satisfactory as I expected and I stayed with the old one.

It appears that appellants proceeded to develop a third plan of an emergency-knuckle and dropped that. They believed the old one, which had been patented, answered all purposes. They considered the old one better than their invention in this interference. Nor did the Railway Appliances Company, which had bought the appellants' right to the use of the invention, take any action until they learned of the appearance of Hinson's knuckle placed on the market by the National Car Coupler Company. After that, this company, the assignee, spurred up the appellants to make an application and the appellant, Gilman, frankly admits that the appearance of Hinson's emergency-knuckle hurried the appellants' application. The Hinson knuckle was sold for $3.50 and the appellants' patented knuckle for $4. Secretary Manchester, of the Railway Appliances Company, says, that he endeavored to induce the National Car Coupler Company to sell the Hinson knuckle for the same price Manchester obtained for the Gilman and Brown patented knuckle.

There is much evidence besides to show that the appellants did not, in 1898, reduce their conception to a practical form. The burden of proof is upon the appellants to show not only a complete reduction to practice, but also to account for their long period of delay and inaction.

In *Fefel* v. *Stocker* (17 App. Cas. D. C., 321) this court said:

> Moreover its apparent abandonment by Stocker, and the long and wholly-unexplained delay of more than four years in the application for a patent, are strongly indicative of the fact that the original machine of Stocker was not a successful reduction to practice, and was no more than an abandoned experiment. Long and unexplained delay in the application for a patent is always significant in such cases, especially when, as here, the parties in interest were actively engaged in the prosecution of other similar applications; and such delay raises a presumption which it is incumbent on the applicant to rebut by clear and satisfactory proof.

And again in *Funk* v. *Haines and Matteson*, (20 App. Cas. D. C., 288:)

> The onus of proof is upon any junior applicant to show, not only priority of invention, but he must also show that he has used reasonable diligence in adapting and perfecting his invention; for, in such case, without actual reduction to practice within a reasonable time, does not avail a junior party making the claims.

We agree with the Commissioner of Patents that the facts of this case bring it within the scope of those decisions of this court in which it was held that what was done by the claimants falls short of a reduction to practice and amounted to nothing more than an abandoned experiment.

The appellants' device appears to have been an experimental model abandoned or laid aside and lost by its makers and recalled to mind afterward by the advertisement of the appellee's similar device.

The decisions upon this point are very numerous and among them we only cite: *Glidden* v. *Noble*, (5 App. Cas., D. C., 480;) *Guilbert* v. *Killinger*, (13 App. Cas. D. C., 107;) *in re Mower*, (15 App. Cas. D. C., 144;) *Paul* v. *Hess*, (24 App. Cas. D. C., 462.)

In *Paul* v. *Hess* (24 App. Cas. D. C., 468) this court said:

> Long delay in making use of an invention claimed to have been reduced to practice, or in applying for a patent, have always been regarded as potent circumstances tending to show that the alleged reduction to practice was nothing more than an unsatisfactory or abandoned experiment, and this is specially the case where, in the meantime, the inventor has been engaged in the prosecution of similar inventions, or others, without reasonable explanation, have been adopted for manufacture and commercial use.

The device of the appellants in 1898 was neglected while its inventors sought to devise other devices for the same purpose, and they developed commercially their prior patented device for such purpose. They did nothing toward obtaining a patent until after Hinson had marketed his device and the appellants then only applied on March 14, 1904. The appellants slept on their rights, and for more than five years they failed to bring their invention to a complete and operative form. The cases strongly urged by the appellants mostly relate to a completed invention known already, before the discovery thereof by the rival inventor.

We concur with the Examiners-in-Chief in this case.

The rules of law as to what constitutes a "prior use" and what constitutes a "reduction to practice" are the same.

As there is not sufficient proof of a reduction to practice, so, also, there is not sufficient proof of "prior use."

By their *laches* the appellants lost rights, which for a long time they little valued and which, therefore, they cannot now successfully assert.

The decision of the Commissioner of Patents in this case is affirmed. The clerk of this court will certify this opinion and the proceedings in this cause according to law to the Commissioner of Patents to be entered of record in his Office. Affirmed

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Court of Appeals of the District of Columbia.

MARTIN *v.* MARTIN AND BOWNE COMPANY.

Decided February 6, 1906.

TRADE-MARKS—OPPOSITION—VERIFICATION OF NOTICE—SECTION 6 TRADE-MARK ACT CONSTRUED.

Section 6 of the Trade-Mark Act of February 20, 1905, providing that the affidavit in support of the notice of opposition shall be made by the person who would be damaged by the registration, is not satisfied by the affidavit of the attorney or agent of such party.

2. SAME—SAME—FAILURE TO OPPOSE DOES NOT DEPRIVE OWNER OF PROPERTY RIGHT.

Where the owner of a trade-mark is deprived of his right to oppose registration thereof by another by the enforcement of the letter of the statute, he is not thereby deprived of his right of property in the trade-mark. Aside from the usual remedies at law and in equity for the protection or recovery of property rights, he may possibly obtain a remedy through a declaration of interference under section 7 or by a cancellation under section 13.

Mr. J. L. Levy for the appellant.

Mr. Clifford E. Dunn for the appellee.

SHEPARD, *J.*:

This appeal has been prosecuted by William L. Martin from the decision of the Commissioner of Patents quashing his opposition to the registration of a trade-mark applied for by Martin and Bowne Company.

On April 7, 1905, Martin and Bowne Company filed an application for the registration of the word "Marguerite" a trade-mark for tooth-brushes.

This application conformed to the requirements of the Trade-Mark Act approved February 20, 1905, and the required notice thereof was given.

Within the time limited by the law, an opposition thereto was filed by William L. Martin, through his attorney Joseph L. Levy. The grounds of this motion were in substance, that William L. Martin was an incorporator and president of the Martin and Bowne Company. That prior to the incorporation said William L. Martin had adopted and used the word "Marguerite" as a trade-mark for tooth and toilet brushes and had registered the same. That said Martin has not abandoned his exclusive ownership of the mark and is now the owner of the legal title thereto. That the said Martin and Bowne Company is not the owner of the trade-mark, and that a certificate of registration cannot legally be issued to it as against the said William L. Martin.

This opposition was supported by the following affidavit:

UNITED STATES OF AMERICA,
CITY, COUNTY & STATE OF NEW YORK, } ss:

JOSEPH L. LEVY, being duly sworn deposes as follows:

I am the attorney for the said William L. Martin, the opponent herein. The said William L. Martin is in Europe, and will not, I am informed return to the United States until the latter part of June 1905. That the above-recited allowed application for registration by the Martin & Bowne Co. was published in the OFFICIAL GAZETTE of the United States Patent Office, on the 16th day of May 1905. That the allegations made in paragraphs 1, 2, 3, & 4 of the foregoing opposition are true to the best of his knowledge and belief, and as to those alleged on information and belief, I believe them to be true. That said information is derived from statements made to me by others who allege they have knowledge of the facts. That the absence from this country of the said William L. Martin is the reason why I make this verification.

The Martin and Bowne Company moved to quash this opposition, on the grounds: first, that the same had not been verified by the said Martin; second, that the attorney had no authority to file the same on behalf of William L. Martin; and, third, that the grounds of the application are insufficient.

The Examiner of Interferences sustained the motion to quash on the first and third grounds.

On appeal, the Commissioner held that the application set forth sufficient grounds of opposition, but affirmed the decision because the opposition had not been verified by the party.

Section 6 of the act contains the following provision:

Any person who believes he would be damaged by the registration of a trade-mark may oppose the same by filing notice of opposition, stating the grounds therefor, in the Patent Office, within thirty days after the publication of the mark sought to be registered, which said opposition shall be verified by the person filing the same before one of the officers mentioned in section 2 of this act.

Construing this provision, the Commissioner said:

It thus appears that the person making the opposition must be the one who would be damaged by registration, and that such person must sign and verify the notice of opposition. The general principle that what a party may do in person he may do by agent has no application here since the statute requires the personal oath of the party. The making of an oath to a statement of facts cannot be delegated.

We agree with the Commissioner of Patents that where a statute requires an oath to be made by a party, as in this instance the one who may believe himself damaged, it is not satisfied by the affidavit of his attorney or agent.

The intent of the law-makers is to be found in the plain language of their enactment. Considerations of inconvenience and hardship growing out of the brief period allowed for the opposition, or the absence of the damaged party, as was the case here, may well operate upon the makers of the law, but cannot justify a judicial addition to the letter of the statute. (*Ohio Nat. Bank* v. *Berlin*, 33 W. L. R., 726, and cases cited.)

The practice acts of the States which have come under our observation generally provide that a required oath, particularly in the case of ancillary proceedings and remedies, may be made by the party, his agent or attorney. Such as do not in terms authorize it to be made by the agent or attorney have generally, if not uniformly, been held to exclude them. (*Huthsing* v. *Means*, 36 Mo., 101, 107; *Levin* v. *Dille*, 17 Mo., 64, 69; *Davis* v. *Monat Lumber Co.*, 2 Colo. App., 381, 387.) The following cases while not directly in point are governed by the same principle: *Fernandez* v. *Miller*, (26 La. Ann., 120;) *Dodge* v. *New Union Packet Co.*, (13 Minn., 458;) *Wheeler & W. M'f'g. Co.* v. *Lawson*, (57 Wis., 400;) *Clark* v. *Miller*, (88 Ky., 108, 112;) *Bruff* v. *Stern*, (81 N. C., 183, 190;) *Weaver* v. *Roberts*, (84 N. C., 493, 495.) In the two cases last named an ancillary remedy in a pending action, obtained upon the oath of the attorney familiar with the facts, was upheld because the statute required that the facts authorizing the same "shall appear by affidavit," without naming any particular person who should make it. In some instances, where the statute required an oath to be made by a party, it has been held that in case of a corporation the oath might be made by its duly-authorized agent who had personal knowledge of the facts. Of this nature is the single authority relied on by the appellant. (*In re Chequosett Lumber Co.*, 112 Fed. Rep., 56, 58; see also *Wheeler & W. M'f'g. Co.* v. *Lawson*, 57 Wis., 400.) The reason on which these decisions rest is, that while the corporation, as the party to the proceeding, is entitled to the benefit of the statute it can only act by agent, and hence that the power to obtain the conferred benefit through the oath of its agent must be inferred.

The conclusion seems to be a reasonable one, but the question is not involved in this case, and we express no opinion in respect of it.

The right to oppose the registration of a trade-mark conferred by the section under consideration is a special one, and though deprived of its assertion by the enforcement of the letter of the statute, the appellant is not deprived of his right of property in the trade-mark sought to be registered by the appellee, if as a matter of fact and law he is the true owner. Aside from the usual remedies at law and in equity for the protection or recovery of property rights, he may possibly obtain a remedy through a declaration of interference under section 7, or by a preceeding for cancellation under section 13.

However this may be, the decision appealed from was right, and must therefore be affirmed. It is so ordered, and the clerk will certify this decision to the Commissioner of Patents as the law requires. Affirmed.

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

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Trade-Marks	278	No. 52,547 to No. 52,824, inclusive.
Labels	11	No. 12,872 to No. 12,882, inclusive.
Prints	6	No. 1,660 to No. 1,665, inclusive.
Reissues	3	No. 12,481 to No. 12,483, inclusive.
Total issue	868	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama	1	.....	Nevada	.....	.....
Alaska, District of	.....	.....	New Hampshire	.....	1
Arizona Territory	.....	.....	New Jersey	27	10
Arkansas	1	.....	New Mexico Ter't'y	1	.....
California	10	9	New York	106	38
Colorado	5	.....	North Carolina	2	1
Connecticut	9	7	North Dakota	5	1
Delaware	.....	.....	Ohio	39	14
District of Columbia	3	3	Oklahoma Territ'y	5	1
Florida	2	2	Oregon	3	.....
Georgia	6	5	Pennsylvania	52	24
Hawaii Territory	.....	.....	Philippine Islands	.....	.....
Idaho	.....	.....	Rhode Island	9	5
Illinois	3	1	South Carolina	1	.....
Indian Territory	54	40	South Dakota	3	.....
Indiana	.....	1	Tennessee	2	1
Iowa	7	3	Texas	9	4
Kansas	8	.....	Utah	1	1
Kentucky	1	.....	Vermont	.....	1
Louisiana	3	3	Virginia	5	2
Maine	5	.....	Washington	6	.....
Maryland	2	1	West Virginia	3	1
Massachusetts	6	8	Wisconsin	15	2
Michigan	34	21	Wyoming	.....	.....
Minnesota	24	2	U. S. Army	.....	.....
Mississippi	11	6	U. S. Navy	.....	.....
Missouri	.....	.....			
Montana	23	14	Total to citizens of the United States	513	285
Nebraska	1	.....			
	3	1			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina	.....	.....	Netherlands	.....	.....
Austria-Hungary	4	.....	Newfoundland	.....	.....
Belgium	1	.....	New South Wales	1	.....
Brazil	.....	.....	New Zealand	2	.....
British West Indies	.....	.....	Norway	.....	.....
Canada	9	1	Persia	.....	.....
Cape Colony	.....	.....	Queensland	.....	.....
Chile	1	.....	Roumania	.....	.....
China	.....	.....	Russia	.....	.....
Costa Rica	.....	.....	San Salvador	.....	.....
Cuba	.....	.....	Scotland	1	.....
Denmark	.....	.....	South Australia	.....	.....
Ecuador	.....	.....	Spain	.....	.....
England	9	6	Sweden	.....	.....
France	6	1	Switzerland	1	1
Germany	16	1	Tasmania	.....	.....
India	.....	.....	Transvaal, South Africa	.....	.....
Ireland	3	.....	Victoria	.....	.....
Italy	3	.....			
Japan	.....	.....	Total to citizens of foreign countries	57	10
Java	.....	.....			
Mexico	.....	.....			

Notice.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., May 10, 1906.

Notice is hereby given that no cases will be docketed or heard by the Commissioner or the Assistant Commissioner in the months of July and August, 1906, except when required to avoid irreparable injury.

F. I. ALLEN,
Commissioner.

Non-Withdrawal of Allowed Cases for the Purpose of Suggesting Claims for Interference.

Hereafter applications will not be withdrawn from the issue for the purpose of suggesting claims for interference. When an application is pending before the Examiner which contains a claim which may be made in a case in issue, the Examiner may write a letter suggesting such claim to the applicant whose application is in issue, stating that if such claim is made within a certain specified time the case will be withdrawn from issue, the amendment embodied, and the interference declared. Such letter must have the approval of the Commissioner.

When the Examiner suggests a claim appearing in a case in issue to an applicant whose application is pending before him, the case in issue will not be withdrawn for the purpose of interference unless the suggested claim shall be made in the pending application within the time specified by the Examiner.

In either of the above cases the Issue and Gazette Division should be notified when the claim is suggested, so that in case the final fee is paid during the time in which the suggested claim may be made proper steps may be taken to prevent the final fee from being applied.

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business May 8, 1906.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
	In arrears—Under fifteen days.			
378	XXXVIII. Artesian and Oil Wells, Bottles and Jars, Care of Live Stock, Fishing and Trapping, Stationery, Stone-Working.	Apr. 30	Apr. 2	279
322	XXXVI. Curtains, Shades, and Screens, Drafting, Driers, Measuring Instruments, and Wind-Wheels.	Apr. 25	Apr. 11	260
154	XI. Boot and Shoe Making, Boots, Shoes, and Leggings, Button, Eyelet, and Rivet Setting, Leather Manufacturing, Nailing and Stapling, Check-Controlled Apparatus, Whips and Whip Apparatus.	Apr. 25	Jan. 31	306
303	XVII. Linotyping, Printing, Matrix-Making, Nut and Bolt Locks.	Apr. 24	Feb. 16	340
244	XXXV. Baggage, Buckles, Buttons, and Clasps, Card, Picture, and Sign Exhibiting, Deposit and Collection Receptacles, Package and Article Carriers, Packing and Storing Vessels, Photography.	Apr. 24	Feb. 9	677
148	XXXII. Carbonating Beverages, Dispensing Beverages, Dispensing-Cans, Metallic Shipping and Storing Vessels, Packaging Liquids, Paper Receptacles, Refrigeration, Wooden Receptacles.	Apr. 24	Dec. 15	723
105	XXVI. Electricity, Generation, Electric Heaters, Electric Railways, Motive Power.	Apr. 24	Oct. 9	776
179	XX. Artificial Limbs, Builders' Hardware, Dentistry, Locks and Latches, Safes, Undertaking.	Apr. 24	Sept. 26	469
321	I. Tillage, etc., Fences, and Railway Draft Appliances.	Apr. 23	Mar. 28	249
304	XXXIV. Railways, Railway-Brakes, Rolling-Stock.	Apr. 23	Feb. 20	391
332	X. Carriages and Wagons.....	Apr. 23	Dec. 4	986
	Under one month.			
175	III. Annealing and Tempering, Coating with Metal, Electro-chemistry, Metal-Founding, Metallurgy, Shaping Fluid Metal.	Apr. 21	Mar. 19	391
308	XV. Bread, Pastry, and Confections, Making, Coating, Laminated Sheets and Fabrics, Fuel, Glass, Hydraulic Lime and Cement, Paper-Making, Paving, and Plastics.	Apr. 20	Mar. 6	463
107	XXXVII. Electricity, Conductors, Lighting, Special Apparatus.	Apr. 19	Sept. 27	825
379	XXIII. Acoustics, Coin-Handling, Horology, Recorders, Registers, Optics, Signals, Time Controlling Mechanism.	Apr. 18	Nov. 10	719
128	II. Bee Culture, Dairy, Label-Affixers, Paper Files and Binders, Presses, Store-Service, Tobacco, etc.	Apr. 17	Feb. 5	299
122	XIX. Stoves and Furnaces and Steam-Boiler Furnaces.	Apr. 17	Nov. 3	719
164	XXXIII. Canes, Canopies, Cutlery, Domestic Cooking Vessels, Electricity, Medical and Surgical, Electric Signaling, Fireproof Buildings, Harness, Masonry, Tents, and Umbrellas.	Apr. 17	Nov. 1	711
137	VIII. Beds, Chairs, Furniture, Kitchen and Table Articles, Store Furniture.	Apr. 16	Jan. 2	630
152	XXX. Fluid-Pressure Regulators, Lamps and Gas-Fittings, Type-Writing Machines.	Apr. 16	Oct. 10	705
330	XIII. Arms, Projectiles, and Explosive Charges, Making, Metal-Working, Needle and Pin Making.	Apr. 13	Sept. 26	619

Applications Under Examination—Continued.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
318	VI. Bleaching and Dyeing, Chemicals, Explosives, Fertilizers, Medicines, Preserving, Sugar and Salt.	Apr. 11	Jan. 19	447
167	V. Fine Arts, Bookbinding, Harvesters, Jewelry, and Music.	Apr. 10	Feb. 7	483
327	XVIII. Steam-Engineering, etc ...	Apr. 10	Jan. 4	424
172	XXXI. Alcohol, Charcoal and Coke, Distillation, Gas, Heating and Illuminating, Hides, Skins, and Leather, Liquid Coating Compositions, Oils, Fats, and Glue, Water Purification.	Apr. 9	Mar. 9	304
324	XII. Elevators, Journal-Boxes, Lubricators, Machine Elements, Pulleys and Shafting.	Apr. 9	Mar. 3	493
147	XXIX. Coopering, Roofs, Wheelwright-Machines, Wooden Buildings, Wood-Sawing, Wood-Turning, Woodworking-Tools.	Apr. 9	Jan. 13	499
	Between one and two months.			
133	XXII. Air-Guns, Ammunition and Explosive Devices, Boats and Buoys, Catapults and Targets, Firearms, Marine Propulsion, Ordnance, Ships.	Apr. 6	Oct. 21	321
144	XXIV. Apparel, Apparel Apparatus, Sewing-Machines, Surgery, Toilet.	Apr. 4	Nov. 21	665
232	IV. Bridges, Conveyers, Cranes and Derricks, Excavating, Hoisting, Hydraulic Engineering, Loading and Unloading, and Towers.	Mar. 30	Apr. 5	408
109	XVI. Telegraphy and Telephony..	Mar. 27	Feb. 10	399
307	XIV. Cutting and Punching Sheets and Bars, Farriery, Metal-Bending, Metal-Ornamenting, Metal Personal Wear, Making, Sheet-Metal Ware, Making, Tools, Wire-Working.	Mar. 26	Dec. 22	372
315	XXV. Butchering, Mills, Threshing, and Vegetable Cutters and Crushers.	Mar. 21	Mar. 27	584
312	VII. Velocipedes, Clutches, Fire-Escapes, Games and Toys, Ladders, Mechanical Motors, and Paper Manufactures.	Mar. 14	Nov. 21	515
142	IX. Baths and Closets, Fire-Extinguishers, Hydraulic Motors, Pumps, Sewerage, and Water Distribution.	Mar. 12	Sept. 8	1150
375	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, Washing Apparatus.	Mar. 9	Oct. 23	846
	Between two and three months.			
112	XXI. Textiles, Carding, Knitting, Spinning, Weaving, etc.	Feb. 26	Sept. 19	706
382	XXVIII. Air and Gas Engines, Air and Gas Pumps, Pneumatics.	Feb. 24	July 28	1261

Total number of applications awaiting action 21,414

159	TRADE-MARKS, DESIGNS, LABELS AND PRINTS.			
	Under one month.			
	Trade-Marks.....	Apr 16	Feb. 20	1746
	Designs.....	Apr. 14	Mar. 29	61
	Under fifteen days.			
	Labels and Prints.....	May 7	May 5	6

Trade-Marks.

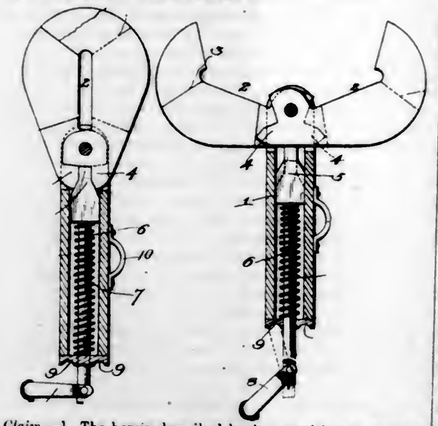
The publication of trade-marks under the act of February 20, 1905, in the OFFICIAL GAZETTE, commenced May 2, 1905, and will appear in each weekly number of the GAZETTE thereafter.

Extra copies of the trade-mark portion of the GAZETTE, which will be sold separately, may be obtained single or in quantities for five cents each. Coupons will be taken in payment therefor.

PATENTS

GRANTED MAY 15, 1906.

820,383. **TOGGLE-HOOK.** JAMES ASHLAND, Escanaba, Mich. Filed Jan. 19, 1906. Serial No. 241,910.



Claim.—1. The herein-described hook comprising a casing, a pair of hooks pivotally mounted in one end of said casing, locking members 4 projecting from said hooks, a locking-bolt 5 mounted in the casing and provided with a spring surrounding its shank, said bolt adapted to hold the hooks in locked position, and a ring secured to said bolt and adapted to be moved into engagement with the casing to hold said bolt in retracted position, substantially as described.

2. In a hook of the character described, the combination with a casing, of a pair of hooks pivotally mounted in the end of the same, said hooks being recessed or cut away to permit the same to overlap, locking members formed on the pivoted ends of said hooks, a spring-projected locking-bolt adapted to engage said locking members to hold said hooks in closed position, and a ring pivotally connected to the outer end of said bolt whereby an operating-cord may be attached thereto, said ring being adapted to be turned down into engagement with the outer end of said casing to hold said bolt in a projected position, substantially as described.

820,384. **MATCH-SCRATCHER AND ADVERTISING ATTACHMENT.** JOHN R. BROWN, China Grove, N. C. Filed Jan. 19, 1906. Serial No. 296,850.



Claim.—1. The combination of a lamp-burner, a plate having a match-scratching surface thereon, and extensions projecting from the plate, the ends of said projections being split to form tongues, one of which fits over the spring members upon the burner, while the opposite tongue is twisted around the spring members to form a permanent connection.

2. The combination of a lamp-burner, a plate having a match-scratching surface thereon, an extension projecting from the upper edge of the plate and engaging with the spring members upon the burner, and ears projecting from the plate and engaging with the rim around the gallery of the burner.

3. The combination of a lamp-burner, a plate having a match-scratching surface thereon, an extension projecting from the upper edge of the plate at an intermediate point, said extension being split to form tongues, one of which is adapted to engage with the spring members upon the burner, while the opposite tongue is adapted to be twisted around one of the spring members to secure a permanent connection, and ears projecting from the plate and adapted to engage with the rim of the gallery around the lamp-burner.

4. The combination of a lamp-burner, a plate having a match-scratching surface thereon and provided with advertising matter, an extension projecting from the upper edge of the plate at an intermediate point, said extension being split to form tongues, one of which is adapted to engage with the spring members of the burner, while the opposite tongue is twisted around the spring members to secure a permanent connection, and ears projecting from the plate and engaging with the rim of the burner.

5. The combination of a lamp-burner, a plate having a match-scratching surface thereon, and spaced extensions projecting from the upper edge of the plate at an intermediate point, the extremities of the projections being provided with oppositely-extending transverse arms which are adapted to engage with the spring members upon the burner.

6. The combination of a lamp-burner, a plate having a match-scratching surface thereon and spaced extensions projecting from the upper edge of the plate at an intermediate point, the extremities of the projections being provided with oppositely-extending lateral arms which are split to form tongues, one of the tongues on each of the arms being adapted to hook over one of the spring members upon the burner, while the opposite tongue is twisted around the spring member to form a permanent connection.

7. The combination of a lamp-burner, a plate having a match-scratching surface thereon, spaced extensions projecting from the upper edge of the plate at an intermediate point, the extremities of the projections being provided with oppositely-extending transverse arms which are adapted to engage with the spring members upon the burner, and ears at the end of the plate which project upwardly and engage with the rim of the burner.

8. The combination of a lamp-burner, a plate having a match-scratching surface thereon, spaced extensions projecting from the upper edge of the plate at an intermediate point, the extremities of the projections being provided with oppositely-extending lateral arms which are split to form tongues on each of the arms being adapted to hook over one of the spring members upon the burner, while the opposite tongue is twisted around the spring member to form a permanent connection, and ears at the end of the plate which project upwardly and engage with the rim of the burner.

9. The combination of a lamp-burner, a plate having perforated matter therein which is illuminated by the light from the lamp, extensions projecting from the edge of the plate and adapted to engage with the spring members upon the burner, and ears projecting from the plate and adapted to engage with the rim of the burner.

10. The combination of a lamp-burner, a plate having perforated matter therein which is illuminated by the light of the lamp, and spaced extensions projecting from the upper edge of the plate, the extremities of the projections being provided with oppositely-extending transverse arms which are adapted to engage with the spring members upon the burner.

820,385. BEET-TOPPING MACHINE. PETER BROWN, Greeley, Colo. Filed Feb. 24, 1902. Serial No. 95,274.



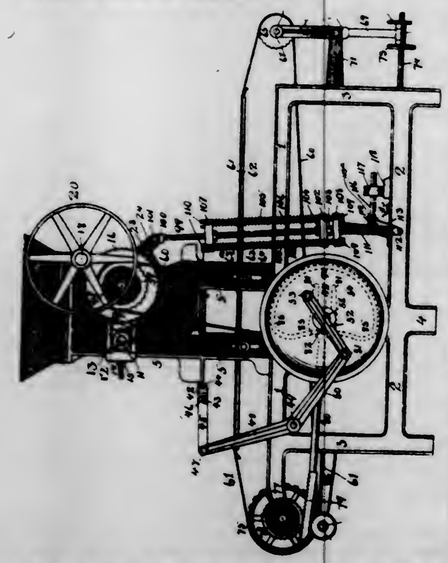
Claim.—1. A beet-topping device comprising a frame formed with an opening in its side and having an opening extending laterally thereto provided with a cutting edge along the same, a knife movable across the laterally-extending opening having the cutting edge to remove the top of a beet-crown, and a rotatable member in the other opening, said member having a cutting edge set at an angle oblique to the axis of rotation of said member to remove the sides of the crown of a beet after the beet is received from the knife of the laterally-extending opening, substantially as described.

2. In a beet-topping machine, the combination with the frame, of the rotatable shaft, the yokes carried at the ends of the shaft, the rings supported from the yokes, and the slicing-knives and dish-shaped paring-cutters supported from the rings, substantially as described.

3. In a beet-topping machine, the combination with the frame, of the hanger-brackets and support for the same, the rotatable shaft journaled in said brackets the yokes at the ends of the shaft, and the slicing-knives and dish-shaped paring-cutters carried by the yokes, substantially as described.

4. A beet-topping machine comprising a frame provided at one end, on opposite sides, with hoppers having grated bottoms, a rotatable shaft supported in suitable bearings at the opposite end of the frame, slicing-knives and dish-shaped paring-cutter.. carried by the shaft at opposite ends thereof, said knives standing substantially at right angles to the shaft, and the paring-cutters at an angle oblique to their axes of rotation, a portion of the frame between the hoppers and knives being removed for the transfer of the beets from the hopper to the knives, a ledger-blade located in the opening between the hoppers and knives to receive a portion of the beets to have the tops sliced by a shearing cut of the knives, and means for transmitting power to the rotatable shaft, substantially as described.

820,386. MACHINE FOR MOLDING, DIVIDING, AND SHAPING DOUGH. ROBERT M. BRYCE, Chicago, Ill. Filed Dec. 31, 1903. Renewed Mar. 14, 1906. Serial No. 306,015.



Claim.—1. In a machine for molding, dividing and shaping dough, the combination of a hopper for containing dough, means for feeding the dough from the hopper, a dough-box into which the dough is fed from the hopper, a cutting device at the discharge end of the dough-box, consisting of a fixed member provided in its body with a hole, and a slidable cutting member provided with a hole having two cutting edges and adapted to close the hole in the fixed member at the beginning and end of each forward slide and each return slide and have the hole therein pass over and register with the hole in the fixed member on each forward and each return slide for cutting off with each forward and each return slide the quantity of dough projected through both holes while partially and entirely in register with one another and preventing the projection of dough at the end of the forward and return slides respectively, substantially as described.

2. In a machine for molding, dividing and shaping dough, the combination of a hopper for containing the dough, means for feeding the dough from the hopper, a cutting device consisting of a fixed member provided in its body with a symmetrical hole and a slidable cutting member provided with a symmetrical hole having two cutting edges and adapted to close the hole in the fixed member at the beginning and end of each forward slide and each return slide and have the hole therein pass over and register with the hole in the fixed member on each forward and each return slide for cutting off with each forward and each return slide the quantity of dough projected through both holes while partially and entirely in register with one another and prevent the projection of dough at the end of the forward and return slides respectively, substantially as described.

3. In a machine for molding, dividing and shaping dough, the combination of a dough-box into which the dough is fed, a cutting device at the discharge end of the dough-box consisting of a fixed member provided in its body with a hole and a slidable cutting member located below and in facial contact with the fixed member and provided with a hole having two cutting edges and adapted to close the hole in the fixed member at the beginning and end of each forward slide and each return slide and have the hole therein pass over and register with the hole in the fixed member on each forward and each return slide for cutting off with each forward and each return slide the quantity of dough projecting through both slides while partially and entirely in register with one another and preventing the projection of dough at the end of the forward and return slides respectively, substantially as described.

4. In a machine for molding, dividing and shaping dough, the combination of a hopper for containing the dough, feed-rolls at the mouth of the hopper carrying the dough to the hopper, a dough-box into which the dough is fed by the feed-rolls from the hopper, and a cutting device at the discharge end of the dough-box consisting of a fixed member provided in its body with a symmetrical hole and an automatically-actuated slidable cutting member provided with a symmetrical hole having two cutting edges and adapted to close the hole of the fixed member at the beginning and end of each forward and each return slide and have the hole therein pass over and register with the hole in the fixed member on each forward and each return slide for cutting off with each forward and return slide the quantity of dough projected through both holes while partially and entirely in register with one another and preventing the projection of dough at the end of the forward and return slides respectively, substantially as described.

5. In a machine for molding, dividing and shaping dough, the combination of a hopper for containing the dough, means for feeding the dough from the hopper, a dough-box into which the dough is fed from the hopper, and a cutting device at the discharge end of the dough-box consisting of a fixed member provided in its body with a plurality of shaping-holes and a slidable cutting member exterior of and lying in facial contact with the fixed member and provided with a plurality of cutting-holes corresponding to and adapted to coincide with the holes of the fixed member and adapted to close the holes in the fixed member at the beginning and end of each forward slide and each return slide and have the holes therein pass over and register with the holes in the fixed member on each forward and each return slide for cutting off with each forward and each return slide the quantity of dough projected through both sets of holes while partially and entirely in register with each other and preventing the projection of dough at the end of the forward and return slides respectively, substantially as described.

6. In a machine for molding, dividing and shaping dough, the combination of a hopper for containing the dough, means for feeding the dough from the hopper, a dough-box into which the dough is fed from the hopper, and a swing-door in one wall of the dough-box and yieldably supported for the door to open and prevent the transmission of overpressure in feeding the dough, substantially as described.

7. In a machine for molding, dividing and shaping dough, the combination of a hopper for containing the dough, means for feeding the dough from the hopper, a dough-box into which the dough is fed from the hopper and having on one side in its wall an opening, a yieldable swing-door for the opening, a slidable rod connected at one end with the door and at the other end with a cross-head, guide-rods for the cross-head, and springs engaging the cross-head for allowing the door to yield under an excess of pressure and closing the door with the removal of the pressure, substantially as described.

8. In a machine for molding, dividing and shaping dough, the combination of a hopper for containing the dough, means for feeding the dough from the hopper, a dough-box into which the dough is fed from the hopper and having on one side in its wall an opening, a yieldable swing-door for the opening, a slidable rod connected at one end with the door and at the other end with a cross-head, guide-rods for the cross-head, cross-heads fixedly attached to the guide-rods and forming a frame with the guide-rods for the slidable rod, a stem on the lower fixed cross-head, and an oscillating support for the stem, substantially as described.

9. In a machine for molding, dividing and shaping dough, the combination of a hopper for containing the dough, means for feeding the dough from the hopper, a dough-box into which the dough is fed from the hopper and having on one side in its wall an opening, a spring-controlled support for the door, a crank having the stem pivotally connected thereto, a shaft for the crank, and a weight-rod for the shaft, substantially as described.

10. In a machine for molding, dividing and shaping dough, the combination of a hopper for containing the dough, means for feeding the dough from the hopper, a dough-box into which the dough is fed from the hopper, a cutting device at the discharge end of the dough-box, the cutting device consisting of a fixed member and an automatically-actuated movable member operative in both directions of travel across the fixed member, a carrier traveling below the cutting device, and means for giving the carrier a step-by-step advance in cooperative relation with the movements in both directions of travel of the movable member of the cutting device, substantially as described.

11. In a machine for molding, dividing and shaping dough, the combination of a hopper for containing the dough, means for feeding the dough from the hopper, a dough-box into which the dough is fed from the hopper, a cutting device at the discharge end of the dough-box, the cutting device consisting of a fixed member and an automatically-actuated movable member, a carrier traveling below the cutting device, a roller at one end of the carrier, a shaft on which the roller is mounted, a pinion loosely mounted on the shaft, a rack coöperating with the pinion, and a ratchet and pawl operated from the rack and pinion to give the carrier a step-by-step advance, substantially as described.

12. In a machine for molding, dividing and shaping dough, the combination of a hopper for containing the dough, means for feeding the dough from the hopper, a dough-box into which the dough is fed from the hopper, a cutting device at the discharge end of the dough-box, the cutting device consisting of a fixed member and an automatically-actuated movable member, a carrier traveling below the cutting device, a roller at one end of the carrier, a shaft on which the roller is mounted, a pinion loosely mounted on the shaft, a rack coöperating with the pinion, an arm connected with the pinion, pawls one at each end of the arm, and a disk fixed to the roller-shaft and having notches in its periphery engaged by the pawls, for giving the carrier a step-by-step advance, substantially as described.

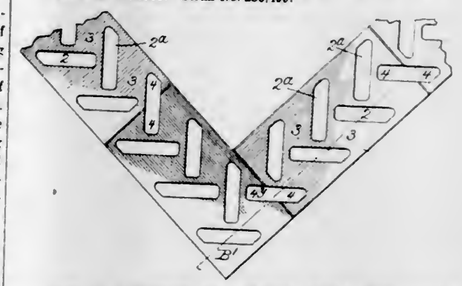
13. In a machine for molding, dividing and shaping dough, the combination of a hopper for containing the dough, means for feeding the dough from the hopper, a dough-box into which the dough is fed from the hopper, a cutting device at the discharge end of the dough-box, the cutting device consisting of a fixed member and an automatically-actuated movable member, a carrier traveling below the cutting device, a roller at one end of the carrier, a shaft on which the roller is mounted, a pinion loosely mounted on the shaft, a rack coöperating with the pinion, a rod carrying the rack, a pin on the rod, and a disk having a cam-groove engaging with the pin, substantially as described.

14. In a machine for molding, dividing and shaping dough, the combination of a hopper for containing dough, means for feeding the dough from the hopper, a dough-box into which the dough is fed from the hopper, having in one of its walls an opening, a swinging door for the opening in the wall of the hopper, and resistance-springs connected with the door and operating to maintain a constant pressure on the door in opening without affecting the direct feed of the dough from the dough-box, substantially as described.

15. In a machine for molding, dividing and shaping dough, the combination of a hopper for containing dough, means for feeding the dough from the hopper, a dough-box into which the dough is fed from the hopper having in one of its walls an opening, a swinging door for the opening in the wall of the hopper, resistance-springs connected with the door and operating to maintain a constant pressure on the door in opening without affecting the direct feed of the dough from the dough-box, and cutting devices located at the discharge end of the dough-box and through which the dough is fed under a regulated pressure for projecting, dividing and shaping the dough, substantially as described.

16. In a machine for molding, dividing and shaping dough, the combination of a hopper for containing the dough, feed-rolls at the mouth of the hopper carrying the dough from the hopper, a dough-box into which the dough is fed by the rolls from the hopper, a revoluble shaft for driving the feed-rolls, a cutting device at the discharge end of the dough-box consisting of a fixed member and a movable member with the movable member operative in both directions of travel across the fixed member, a revoluble shaft driven from the shaft of the feed-roll, a disk on the revoluble shaft, means operated from the disk for actuating the movable member of the cutting device, a carrier for the dropped dough having a step-by-step advance given thereto coincident with the movements in both directions of the movable member of the cutting device, and means actuated from the revoluble disk to give the carrier its step-by-step advance, substantially as described.

820,387. BUILDING-BLOCK. CHARLES S. BURTON, Oak Park, Ill., assignor to Miracle Pressed Stone Company, Minneapolis, Minn. Filed Mar. 17, 1905. Serial No. 250,499.



Claim.—1. A concrete building-block having interposed between its inner and outer surfaces a system of air-spaces, all inclined to the inner and outer walls, the portions of such system proximate to the respective walls being oppositely inclined, each air-space being intruded into the angle between the next two oppositely-inclined portions of the system.

2. A concrete building-block having interposed between its inner and outer surfaces air-spaces which are narrow relatively to their length and have their length inclined to the inner and outer surfaces, such air-spaces being in two rows proximate to the two surfaces respectively and oppositely inclined, those of each row having their length extending crosswise past the end of the corresponding space of the other row.

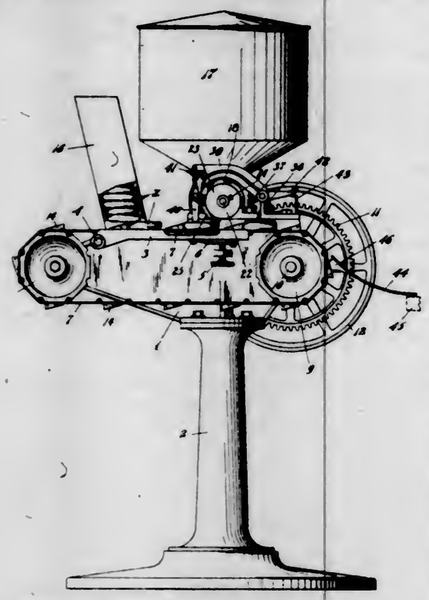
3. A concrete building-block having interposed between its inner and outer surfaces two rows of air-spaces, those of each row extending across the ends of corresponding spaces of the other row, each of said spaces having its inner end extending within the triangle defined by the next two relatively transverse spaces.

4. In a wall, in combination with concrete building-blocks having interposed between their inner and outer surfaces air-spaces which are narrow relatively to their length and which are inclined to said inner and outer surfaces respectively and lap by each other successively, and which have the end air-space of the series opening through the ends of the block and forming a notch or fractional space; a corner-block having in lieu of such end fractional space a lateral fractional space or notch adapted to register with the fractional end space of the regular blocks.

820,388. CAKE-ICING MACHINE. CLARENCE W. CARTER, Minneapolis, Minn., assignor of one-third to Emil Zimmerman, St. Paul, Minn. Filed June 9, 1905. Serial No. 264,407.

Claim.—1. In an icing-machine, a rotary die having a peripheral die-opening and arranged to apply the icing to the cake, with a rolling action, substantially as described.

2. In an icing-machine, the combination with means for supplying the icing, of a rotary die having a peripheral discharge-opening and arranged to open and close the discharge-orifice for the icing, and to apply the icing to the cakes, with a rolling action, substantially as described.



3. In an icing-machine, the combination with means for feeding the cakes, of means for supplying the icing, and a rotary die having a peripheral discharge-opening and arranged to open and close the discharge-orifice for the icing, and to apply the said icing to the cakes, substantially as described.

4. The combination with cake-supplying means and die mechanism for applying icing to the cakes, of means operating to automatically stop the action of said die mechanism whenever a cake is omitted from proper position, and to again throw said die mechanism into action, whenever a cake is again in proper position, substantially as described.

5. The combination with cake-supplying means, of means for automatically stopping the action of said die mechanism whenever a cake is omitted from proper position, and without stopping said cake-supplying means, substantially as described.

6. In an icing-machine, the combination with die mechanism, of a receptacle for the icing having a delivery-passage extending to said die, and means for automatically stopping said die whenever a cake is omitted from proper position, substantially as described.

7. The combination with a conveyer for the cakes, of die mechanism for applying icing to the cakes, and an automatic controller for said die mechanism, arranged to trip said die out of action, when a cake is omitted from its proper position on said conveyer, and to again throw said die mechanism into action, whenever a cake is again in proper position on the conveyer, substantially as described.

8. In an icing-machine, the combination with a rotary die and a coöperating delivery-tube, the former being mounted on the latter and operating to apply the icing to the cakes, substantially as described.

9. The combination with a conveyer for the cakes to be iced, of a rotary die and coöperating delivery-tube, the former being mounted on the latter and operating to apply the icing to the cakes while the same are being moved by said conveyer, and means for supplying the icing to said delivery-tube, substantially as described.

10. The combination with a conveyer for the cakes to be iced, of a rotary sleeve-like die and a coöperating delivery-tube, the former being mounted on the latter, and means for supplying the icing to said delivery-tube, substantially as described.

11. The combination with a supply-hopper for the icing having a slit delivery-tube, of a sleeve-like die rotatively mounted on said delivery-tube and operating to open and close the discharge-slit thereof and to apply the icing to the cakes, a drive for said sleeve involving a clutch, an intermittently-released trip for said clutch, and a trip-intercepting device, arranged to act on the cakes as they are presented to said die, substantially as described.

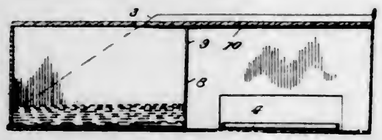
12. The combination with a conveyer for the cakes, of a supply-hopper for the icing, having a slit delivery-tube, a sleeve-like die rotatively mounted on the said delivery-tube and operating to open and close the discharge-slit thereof and to apply the icing to the cakes, a drive for said sleeve, involving a clutch, an intermittently-released trip for said clutch, and a trip-intercepting device, arranged for action on the cakes, as they are brought to the said die, by said conveyer, substantially as described.

13. The combination with a conveyer for the cakes to be iced, of a supply-hopper for the icing, having a slit delivery-tube, a sleeve-like die rotatively mounted on the said delivery-tube and operating to intermittently open and close the discharge-slit of said delivery-tube and to apply the icing to the cakes, a drive for said rotary die involving a clutch, a trip for said clutch, a trip-detainer, operating to intermittently release said trip, and a trip-intercepting device arranged to act upon the cakes as they are delivered to said die, substantially as described.

14. The combination with a conveyer for cakes to be iced, of a slit delivery-tube for the icing, a sleeve-like die rotatively mounted on said delivery-tube, a drive for said sleeve involving a clutch, an intermittently-released trip for action on said clutch, and a trip-intercepting device, holding said trip out of action, when a cake is in proper position on the said conveyer, for icing, but permitting said trip to throw said clutch out of action, when the cake is not in proper position for icing, substantially as described.

15. The combination with a magazine for the cakes, of a hopper for the icing, said hopper having a slit delivery-tube, a sleeve-like die rotatively mounted on said delivery-tube, a feed-belt for feeding the cakes one at a time from said magazine to said die, a trip for said rotary die, and means under the control of the cakes on the said conveyer, for throwing said die out of action whenever a cake is omitted from proper position on said feed-belt, substantially as described.

820,389. **FLY-TRAP.** THOMAS M. CASE, Sutherland, Mo. Filed Sept. 22, 1905. Serial No. 279,665.

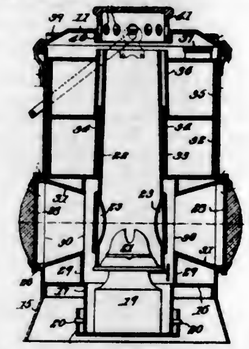


Claim.—1. A fly-trap comprising a casing having one end closed and provided in its sides near said end with entrance-openings, a box in said casing and extending from side to side thereof, the outer wall of said box constituting the other end of the casing and the inner wall of said box constituting a partition dividing the casing into compartments and said partition formed in its upper edge with a recess establishing communication between said compartments, and a pan removably disposed in the compartment which contains the entrance-openings and designed to receive a supply of food, the box or other compartment being designed to receive an insecticide.

2. A fly-trap comprising a casing closed at one end and provided near said end with entrance-openings, the other end of said casing being open, a box designed to be slid into and out of the open end of said casing, the outer walls of said box constituting the other end of said casing and the inner walls of the box constituting a partition dividing the casing into two compartments, and said partition being formed in its upper edge with a shallow recess establishing communication between the compartments, a food-pan located in one of said compartments and the other being designed to receive an insecticide, and a translucent cover forming a top for both of said compartments.

3. A fly-trap comprising a casing provided at its upper edge with inwardly-extending flanges, a translucent cover for said casing resting upon said flanges, and a box slidably held in the casing with its upper edges engaging under the said flanges whereby it is retained in position, said box dividing the casing into two compartments of which one is constituted by the box, there being provided entrance-openings in the other compartment and a recess in one wall of the box establishing communication between the two compartments.

820,390. **LUNCH-PAIL AND LANTERN.** THOMAS D. CONNER, Norton, Va., assignor of one-half to William A. Cardin, Norton, Va. Filed June 22, 1905. Serial No. 266,481.



Claim.—1. In a device of the class described, an inclosing casing having a tubular member rising from its bottom, and with transversely-disposed light-apertures in the casing and tubular member, reflector members having walls diverging outwardly and extending between the tubular-member apertures and the casing-apertures, a lamp disposed in said tubular member with its flame in alinement with said apertures, and a receptacle supported upon said tubular member and provided with a central tubular shell above said tubular member for permitting the passage of the heat from the lamp.

2. In a combined lantern and lunch-receptacle, an inclosing casing having an air-outlet in its upper part and light-apertures in the lower part, a tubular member within said receptacle and provided with light-apertures opposite the light-apertures in said casing, a lamp within said tubular member with its flame opposite said light-apertures, a receptacle supported upon said tubular member and provided with a central tubular shell above said tubular member, and means for increasing or decreasing the area of said air-outlet to correspondingly increase or decrease the flame of said lamp.

3. In a device of the class described, an inclosing casing having a tubular member rising from its bottom, a lamp disposed within said tubular member, a lower receptacle supported upon said tubular member and provided with a central tubular shell extending above said lower receptacle, an upper receptacle supported upon said lower receptacle and provided with a tubular shell engaging the extended portions of the tubular shell of the lower receptacle.

4. In a device of the class described, an inclosing casing having a tubular member rising from its bottom, a lamp disposed within said tubular member, and a receptacle supported upon said tubular member and provided with a central tubular shell above said tubular member, and a chimney to said lamp and extending through the shell.

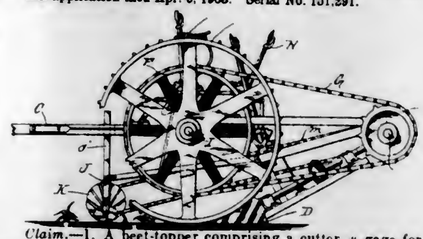
5. In a device of the class described, an inclosing casing having a tubular member rising from its bottom, and with an air-outlet aperture in its upper part, a lamp disposed within said tubular member, a receptacle supported upon said tubular member and with a central tubular shell corresponding to said tubular member, and a sleeve having spaced transverse apertures and adjustable vertically through said air-outlet for increasing or decreasing the area of the exposed portions of said apertures, to correspondingly increase or decrease the air-discharge.

6. In a device of the class described, an inclosing casing having a tubular member rising from its bottom, and with an air-outlet aperture in its upper part, a lamp disposed within said tubular member, a receptacle supported upon said tubular member and with a central tubular shell corresponding to said tubular member, a chimney upon said lamp and extending through said shell and spaced from the same, and a sleeve having spaced transverse apertures and adjustable vertically through said air-outlet for increasing or decreasing the area of the exposed portions of said apertures, to correspondingly increase or decrease the air-discharge.

7. In a device of the class described, an inclosing casing having a tubular member rising from its bottom, and with a threaded air-outlet in the upper part, a lamp disposed within said tubular member, a receptacle supported upon said tubular members and with a central tubular shell corresponding to said tubular member, and a threaded sleeve having spaced transverse apertures and engaging said threaded aperture.

8. In a device of the class described, an inclosing casing having a tubular member rising from its bottom, a lamp disposed within said tubular member, a lower receptacle supported upon said tubular member and provided with a central tubular shell in alinement with said tubular member and extending above said lower receptacle, an upper receptacle of less length than said lower receptacle and bearing upon the same at one side, said upper receptacle having a tubular shell at one side bearing over the extending portion of the tubular shell of said lower receptacle.

820,391. **BEET-TOPPER.** GEORGE F. CONNER, Port Huron, Mich. Original application filed Feb. 2, 1903, Serial No. 141,453. Divided and this application filed Apr. 6, 1903. Serial No. 151,291.



Claim.—1. A beet-topper comprising a cutter, a gage for the cutter riding on the beet-crowns, and means for driving said gage, said gage being adapted to coact with the cutter to shear off tops drawn between them by the rotation of the gage.

2. A beet-topper comprising a fixed cutting-blade, a rotatable gage maintaining the cutter in the proper vertical relation to the beet-crowns and means for rotating the gage, the surface of the gage being adapted to draw tops between the gage and cutter, and to coact with the cutter to shear them off.

3. A beet-topper comprising cutting means and a cone-roller gaging the vertical position of the cutting means.

4. A beet-topper comprising cutting means and a positively-driven cone-roller gaging the vertical position of the cutting means.

5. A beet-topper comprising cutting means and a cone-roller gaging the vertical position of the cutting means positively driven at a speed not less than the speed of its small end when said small end is maintaining normal rolling contact with the ground.

6. A beet-topper comprising cutting means, and a cone-roller traversing the ground in advance of the cutter adapted to maintain said cutter in proper vertical position and to draw beet-tops across the cutting means.

7. A beet-topper comprising a vertically-movable frame, a cutter secured thereto, and a coned roller journaled in said frame, in advance of the cutter, adapted to gage the vertical position of the cutter, and positively driven at a speed not less than the speed of its small end when the latter is maintaining normal rolling contact with the ground.

8. A beet-topper comprising a vertically-movable frame, a cutter secured thereto, and a coned roller journaled therein slightly in advance of the cutter, adapted to gage the vertical position of said cutter, and means operatively connecting said cone to traction-wheels, adapted to positively rotate said cone at a speed not less than the speed of its small end when the latter is maintaining normal rolling contact with the ground.

9. A beet-topper comprising a frame vertically movable in a frame supported on traction-wheels, a coned rotatable roller supporting said frame by contact with the ground throughout its length, a cutter secured to said frame in close proximity to and behind said roller, an adjustable universal-joint connection between said roller and a drive-wheel and operative connections between said wheel and the traction-wheels of the machine.

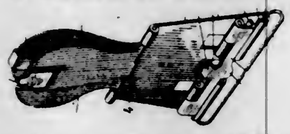
10. A beet-topper comprising a frame held in horizontal alinement in a frame supported on traction-wheels and vertically supported by a cone-roller journaled therein engaging with the ground, a cutter secured to said frame in close proximity to and behind said roller, driving mechanism adapted to rotate said roller at a speed not less than the speed of its small end when the latter is maintaining normal rolling contact with the ground, whereby said roller engages and carries beet-tops diagonally across the cutter and discharges them from the machine at the rearward end of said cutter.

820,392. **SHOE-POLISHING COMPOUND.** EDWARD A. COOK, Gatto, W. Va., assignor of one-third to Timothy W. Patton, Bluefield, W. Va. Filed Oct. 14, 1905. Serial No. 282,848.

Claim.—1. The herein-described compound for polishing and preserving boots and shoes the same consisting of castor-oil, sperm-oil, extract of lemon and powdered charcoal, combined in the manner specified.

2. The herein-described compound for polishing and preserving boots and shoes, the same consisting of castor-oil seven pints, sperm-oil one pint, extract of lemon two ounces, and powdered charcoal six ounces.

820,393. GARMENT-SUPPORTER. HENRY P. COULTER, Philadelphia, Pa. Filed June 22, 1905. Serial No. 266,441.

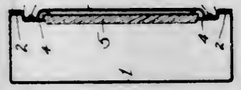


Claim.—1. A device for the purpose specified, comprising a plate, means for detachably connecting said plate to suspenders and a device for supporting drawers detachably connected to said plate.

2. A device for the purpose specified, comprising a plate, means for detachably connecting the same to suspenders, an upwardly-turned flange on the lower end of said plate, a pin member for removably engaging with said flange, and a keeper-plate mounted to swing on the main plate for holding said pin member in place.

3. A device for the purpose specified, comprising a main plate, means for detachably engaging said plate with suspenders, an upwardly-turned flange on the lower end of said plate, a pin member for engaging the said flange, a keeper-plate mounted to swing on the main plate, a tongue extended from said keeper-plate through the main plate, and a spring engaging with said tongue at the inner side of the main plate.

820,394. MAIL-CHUTE. JOSEPH W. CUTLER, Rochester, N. Y. Filed Aug. 9, 1905. Serial No. 273,345.



Claim.—1. The combination with a mail-receptacle forming a passage for postal matter, and provided with an aperture therein, of a panel fitted within said aperture having its upper edge inclined and its inner surface below said edge projecting inwardly beyond the inner wall of the receptacle.

2. The combination with a mail-chute provided with an aperture therein, of a panel fitted within said aperture having its upper edge inclined inwardly toward the interior of the chute, and its inner surface below said edge extending inwardly beyond the inner wall of the chute.

3. The combination with a mail-receptacle provided with an aperture in one of its walls, of a panel fitted within said aperture having its upper edge adjacent said aperture extending inwardly beyond the inner surface of said wall and inclined downwardly toward the interior of the receptacle and also inclined downwardly toward the side of the receptacle.

4. The combination with a mail-receptacle provided with an aperture in one of its walls, of a panel fitted within said aperture having its edges inclined toward the center of the inner face of the panel and with its inner surface smaller and its outer surface larger than the aperture, and a holding device engaging the outer face of the panel to secure it in position.

5. The combination with a mail-receptacle having a plurality of apertures in one wall thereof, of a corresponding plurality of transparent panels for said apertures having their edges inclined, and their inner faces being the smaller and arranged inwardly beyond the wall of the receptacle and a securing-frame engaging the outer faces of the panels near their edges.

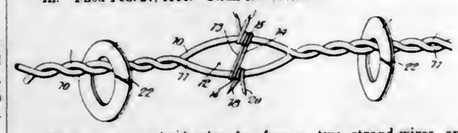
6. The combination with a mail-chute having an aperture in the wall thereof, of a transparent panel for said aperture having the beveled edges and arranged with its smaller surface within the chute, and a securing device engaging the outer surface of the panel.

7. The combination with a mail-chute having an aperture in the wall thereof, of a transparent panel for said aperture having the beveled edges and arranged with its smaller surface within the chute and a frame secured to the chute and having the curved flanges at the inner side for engaging the outer surface of the panel.

8. The combination with a mail-chute having a plurality of apertures in the wall thereof, of a plurality of transparent panels for said aperture provided with beveled edges and having their smaller inner surfaces near their edges arranged within the chute, and a securing-frame for the panels having apertures and the flanges at the edges thereof extending over and engaging the outer surfaces of the panels.

9. The combination with a mail-chute having a plurality of apertures in the wall thereof, of a plurality of transparent panels for said apertures provided with beveled edges and having their smaller inner surfaces near said edges arranged within the chute and a securing-frame for the panels having apertures and the curved flanges at the edges thereof extending over and engaging the outer surfaces of the panels.

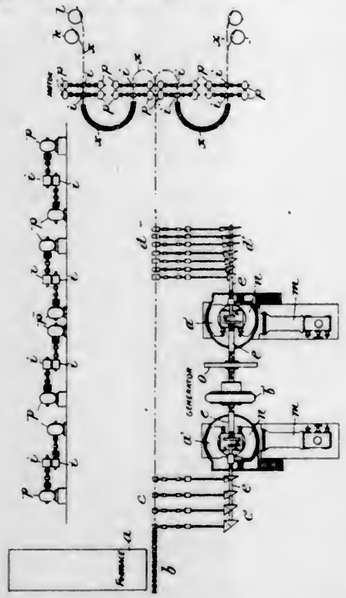
820,395. BARBED FENCE-WIRE. JOHN C. DAMERON, Weston, Ill. Filed Feb. 27, 1906. Serial No. 303,239.



Claim.—1. In a barb-wire for fences, two strand-wires entwisted at intervals and with the wires spaced apart between the entwisted portions, and barb-wires pointed at the ends and disposed in pairs and coiled together near the ends around said separated strand-wires with their terminals extending in opposite directions.

2. In a barb-wire for fences, two strand-wires entwisted at intervals and with the wires spaced apart between the entwisted portions, barb-wires pointed at the ends and disposed in pairs and coiled together near the ends around said separated strand-wires with their terminals extending in opposite directions, and rings slidable upon said strand-wires between said barbs.

820,396. ROD-ROLLING MILL. FRED H. DANIELS, Worcester, Mass. Filed Aug. 1, 1902. Serial No. 117,978.



Claim.—1. In a rod-rolling mill, the combination of a plurality of coöperating rolls, an electric generator, and motors applied directly to the spindles upon which said rolls are mounted, said motors being operatively connected to said generator.

2. In a rod-rolling mill, the combination of a plurality of coöperating rolls, an alternating-electric-current generator, and an electric motor connected thereto and corresponding approximately to the speed of said generator, the armature of said motor being an extension of the spindle of one of said rolls.

3. In a rod-rolling mill, the combination of a plurality of coöperating rolls with an electric motor applied directly to the spindle of each of said rolls and a common source of electric power connected to all of said motors.

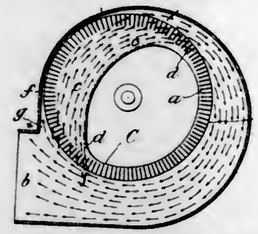
4. In a rod-rolling mill, the combination of reducing-rolls, an engine for driving said rolls, finishing-rolls, an electric generator, and a motor operated by said generator for driving the finishing-rolls, said generator being operated by the engine that drives the reducing-rolls.

5. In a rod-rolling mill, the combination of roughing-rolls, and intermediate reducing-rolls, with a line-shaft to which both sets of rolls are geared, a pair of engines connected to drive said shaft, a set of finishing-rolls, an electric generator driven by the line-shaft, and a motor operated by said generator for driving the finishing-rolls.

6. In a rod-rolling mill, the combination of a set or train of three-high rolls, with electric motors located at opposite ends of the rolls, the top and bottom rolls being driven by one motor, and the intermediate rolls being driven by the other motor.

7. In a rod-rolling mill, the combination of a set or train of three-high rolls, with electric motors located at opposite ends of the rolls, the rolls in the top and bottom sets having their spindles in line with one another, and the spindles of said top and bottom sets being connected to and driven directly by the motor at one end of the rolls, and the spindles of the intermediate set being connected to and driven directly by the motor at the other end of the rolls.

820,397. CENTRIFUGAL FAN OR PUMP. SAMUEL C. DAVIDSON, Belfast, Ireland. Filed Oct. 24, 1904. Serial No. 229,875.



Claim.—1. A centrifugal fan or pump comprising a snail-casing, and a fan-wheel mounted eccentrically therein, whereby when operating against a pressure or suction, there is established a current of fluid reëntering said fan-wheel and moving across the intake-chamber thereof, that portion of said intake-chamber traversed by said current being practically unobstructed, and said fan or pump having its eye disposed with its greatest area of inlet on the side of the intake-chamber which is opposite to that across which said current passes.

2. A centrifugal fan or pump, comprising a snail-casing, and a fan-wheel mounted eccentrically therein adjacent to one side thereof, said fan-wheel having a practically unobstructed intake-chamber, and said casing having an eye disposed eccentrically to the axis of rotation of the fan-wheel, and adapted to deliver a larger proportion of fluid to that side of the fan which is farthest from the casing.

3. A centrifugal fan or pump comprising a snail-casing, and a fan-wheel mounted eccentrically therein, adjacent to the discharge side thereof, said fan-wheel having an unobstructed intake-chamber, and said casing having an eye disposed eccentrically to the axis of the fan-wheel, and with its greatest area on the side of the casing which is opposite the discharge side thereof.

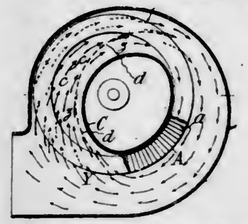
4. A centrifugal fan or pump comprising a snail-casing, and a fan-wheel mounted eccentrically therein, adjacent to the discharge side thereof, said fan-wheel having an unobstructed intake-chamber, and said casing having an eye disposed eccentrically to the axis of the fan-wheel, and with its greatest area on the side of the casing which is opposite the discharge side thereof, and said eye having a substantially straight portion *h h* on such discharge side.

5. A centrifugal fan or pump comprising a snail-casing, and a fan-wheel mounted eccentrically therein, adjacent to the discharge side thereof, said fan-wheel having an unobstructed intake-chamber, and said casing having an eye disposed eccentrically to the axis of the fan-wheel, and with its greatest area on the side of the casing which is opposite the discharge side thereof, and said eye having a substantially straight portion *h h* on such discharge side, and on its opposite side a portion *i i* substantially coincident with the path of the inner edges of the blades.

6. A centrifugal fan or pump comprising a casing, and a fan-wheel mounted eccentrically therein, said fan or pump having its eye disposed eccentrically to the axis of rotation of the fan-wheel, and said fan-wheel so constructed that its blades do not extend within the periphery of the eye on the side of the latter which is nearest the fan-wheel axis.

7. A centrifugal fan or pump comprising a casing, and a fan-wheel mounted therein, said fan or pump having its eye disposed eccentrically to the axis of rotation of the fan-wheel, and said fan-wheel so constructed that its blades do not extend within the periphery of the eye.

820,398. CENTRIFUGAL FAN OR PUMP. SAMUEL C. DAVIDSON, Belfast, Ireland. Filed Oct. 25, 1904. Serial No. 229,896.



Claim.—1. A centrifugal fan or pump comprising a snail-casing, and a fan-wheel mounted eccentrically therein, said fan-wheel being formed of blades of a length materially less than the depth of the casing, and arranged to form a space between the blades and casing through which fluid may flow past the ends of the blades, said fan-wheel having a practically unobstructed intake-chamber, and said fan having an eye disposed eccentrically to the axis of the fan-wheel.

2. A centrifugal fan or pump, comprising a snail-casing, and a fan-wheel mounted eccentrically therein, said fan-wheel being formed of blades of a length materially less than the depth of the casing, and arranged to form a space between the blades and the casing through which fluid may flow past the ends of the blades, said fan having an eye disposed eccentrically to the axis of the fan-wheel, and said eye being formed as a throat having a portion extending across said space to the plane of the end of the fan-wheel.

3. A centrifugal fan or pump, comprising a snail-casing, and a fan-wheel mounted eccentrically therein, said fan-wheel being formed of blades of a length materially less than the depth of the casing, and arranged to form a space between the blades and the casing through which fluid may flow past the ends of the blades, said fan having an intake-chamber, and having an eye disposed eccentrically to the axis of the fan-wheel, and said eye being formed as a throat having a portion extending across said space into said intake-chamber.

4. A centrifugal fan or pump, comprising a snail-casing, and a fan-wheel mounted eccentrically therein, said fan-wheel being formed of blades of a length materially less than the depth of the casing, and arranged to form a space between the blades and the casing through which fluid may flow past the ends of the blades, said fan having an intake-chamber, and having an eye disposed eccentrically to the axis of the fan-wheel, and said eye being formed as a throat having a portion extending across said space into said intake-chamber, such portion at its inner end being curved toward the center of the fan-wheel.

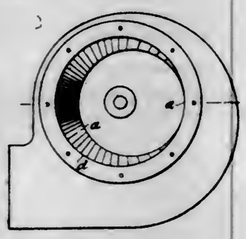
5. A centrifugal fan or pump, comprising a snail-casing, and a fan-wheel mounted eccentrically therein, said fan-wheel being formed of blades of a length materially less than the depth of the casing, and arranged to form a space between the blades and the casing through which fluid may flow past the ends of the blades, said fan having an eye disposed eccentrically to the axis of the fan-wheel, and said eye being formed as a throat having a portion extending across said space, said throat being of less depth on the side most remote from fan-wheel axis.

6. In a centrifugal fan or pump, a fan-wheel having a practically unobstructed intake-chamber, and an eye disposed eccentrically to the axis of said fan-wheel, and formed as a throat extending into said intake-chamber.

7. In a centrifugal fan or pump, a snail-casing, a fan-wheel mounted eccentrically therein adjacent to one side thereof, said fan-wheel having a practically unobstructed intake-chamber, and an eye

disposed eccentrically to the axis of said fan-wheel, and adapted to deliver a larger proportion of fluid to that side of the fan-wheel which is farthest from the casing, said eye formed as a throat extending into said intake-chamber.

820,399. INLET-OPENING OR EYE OF CENTRIFUGAL FANS OR PUMPS. SAMUEL C. DAVIDSON, Belfast, Ireland. Filed Jan. 27, 1905. Serial No. 243,971.



Claim.—1. In a centrifugal fan or pump, a fan-wheel, and an eye leading thereto constructed in the form of a throat, the inner termination thereof being eccentric to the axis of the fan-wheel

2. In a centrifugal fan or pump, a fan-wheel, and an eye leading thereto constructed in the form of a throat, the inner termination thereof being eccentric to the axis of the fan-wheel, and the entrance thereof being concentric with such axis.

3. In a centrifugal fan or pump, a fan-wheel, and an eye leading thereto constructed in the form of a throat, the inner termination of said throat being smaller than the entrance thereto, and being eccentric to the axis of the fan-wheel.

4. In a centrifugal fan or pump, a fan-wheel, and an eye leading thereto constructed in the form of a throat, the inner termination of said throat being smaller than the entrance thereto, and being eccentric to the axis of the fan-wheel, and the entrance thereof being concentric with such axis.

5. In a centrifugal fan or pump, a fan-wheel, and an eye leading thereto constructed in the form of a throat, the inner termination thereof being eccentric to the entrance thereof.

6. In a centrifugal fan or pump, a fan-wheel, and an eye leading thereto constructed in the form of a throat, the inner termination thereof being smaller than its entrance, and being eccentric thereto.

7. In a centrifugal fan or pump, a fan-wheel, and an eye leading thereto constructed in the form of a throat, the inner termination thereof being smaller than its entrance, and being eccentric thereto, and said entrance being concentric with the fan-wheel axis.

8. In a centrifugal fan or pump, a fan-wheel, and an eye leading thereto, constructed in the form of a throat, the inner termination thereof being smaller than the circle described by the fan-blades, and eccentric thereto, and the entrance thereof being larger than the said inner termination and concentric with such circle.

9. In a centrifugal fan or pump, a snail-shaped casing, a fan-wheel mounted to rotate therein, and an eye constructed in the form of a throat leading from said casing to said fan-wheel, said throat having its inner termination smaller than its entrance and eccentric to the axis of the fan-wheel.

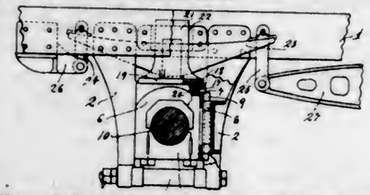
10. In a centrifugal fan or pump, a snail-shaped casing, a fan-wheel mounted to rotate therein, and an eye constructed in the form of a throat leading from said casing to said fan-wheel, said throat having its inner termination smaller than its entrance and eccentric to the axis of the fan-wheel, and said entrance being concentric to said axis.

11. In a centrifugal fan or pump, a snail-shaped casing, a fan-wheel mounted to rotate therein, and an eye constructed in the form of a throat leading from said casing to said fan-wheel, said throat having its inner termination smaller than its entrance and eccentric to the axis of the fan-wheel, and having its wall on the side which is nearest the fan-blades extended substantially at right angles to the plane of rotation of the fan-wheel, and on the opposite side inclined thereto.

12. In a centrifugal fan or pump, a snail-shaped casing, a fan-wheel mounted to rotate therein; said fan-wheel being formed of blades of a length materially less than the depth of the casing, whereby there is left a space between the casing and the fan-wheel at the intake end of the latter, and an eye constructed in the form of a throat extending inwardly from said casing across said space, said throat having its inner termination smaller than its entrance and eccentric to the axis of the fan-wheel.

13. In a centrifugal fan or pump, a snail-shaped casing, a fan-wheel mounted to rotate therein, said fan-wheel being formed of blades of a length materially less than the depth of the casing, whereby there is left a space between the casing and the fan-wheel at the intake end of the latter, and an eye constructed in the form of a throat extending inwardly from said casing across said space, said throat having its inner termination smaller than its entrance and eccentric to the axis of the fan-wheel, the side of such inner termination which is nearest such axis being extended into the fan-wheel to a point beyond the plane of the intake ends of the blades.

820,400. TRAILING TRUCK. JAMES F. DE VOY, Milwaukee, Wis. Filed Apr. 17, 1905. Serial No. 255,912.



Claim.—1. In a truck, the combination with a main frame, having guide-pedestals at its sides, of a pair of rigidly-connected axle-boxes working between said pedestals, transversely of said frame, a wheel-equipped axle journaled in said boxes, a pair of rigidly-connected roller-caps, held against movement transversely of said main frame, and bearing-rollers interposed between said journal-boxes and said roller-caps, substantially as described.

2. In a truck, the combination with a main frame, having guide-pedestals at its sides, of a pair of rigidly-connected axle-boxes working between said pedestals, transversely of said frame, said axle-boxes having concave roller-seats on their upper portions, a wheel-equipped axle journaled in said box, rigidly-connected roller-bearing caps held against movement transversely of said frame, said caps having concave roller-seats, and bearing-rollers interposed between said journal-boxes and said caps, and working in the concave seats thereof, said rollers and seats tending to maintain said axle in an intermediate position transversely of the truck, substantially as described.

3. In a truck, the combination with a main frame having guide-pedestals at its sides, of a pair of rigidly-connected axle-boxes working between said pedestals, transversely of said frame, said boxes having concave roller-seats in their top plates, a wheel-equipped axle journaled in said boxes, a pair of rigidly-connected roller-bearing caps held against movement transversely of said main frame, said caps having concave roller-seats, bearing-rollers interposed between said journal-boxes and said roller-caps and working in the concave seats thereof, and a spring-rigging supporting said main frame, certain members of which rest directly upon said roller-caps, substantially as described.

820,401. NON-REFILLABLE BOTTLE. ERNEST L. DIMITRY, New Orleans, La. Filed July 18, 1904. Serial No. 217,141.



Claim.—1. In a bottle-closure, a bottle-neck provided with a valve-seat, and an enlarged portion above said seat and having a partition provided with openings and vertical guideways, a valve, adapted to normally occupy said seat and provided with a pendent portion having openings, said valve being provided with guide portions adapted to engage the guideways, and a guard adapted to seat above the valve, and provided with pendent members adapted to occupy said guideways for limiting the movement of the valve.

2. In a bottle-closure, a bottle-neck provided with a valve-seat, and having openings leading from a point above said valve-seat to the exterior of the bottle-neck, said neck being also provided with a dome-shaped portion and a shoulder located above said portion, a partition arranged within said dome-shaped portion and provided with openings and vertically-arranged grooves, a valve provided with a pendent portion having openings, said valve being provided with lugs adapted to occupy said grooves, a guard designed to seat upon said shoulder and provided with pendent members adapted to fit within said grooves to limit the movement of the valve, and means for retaining said guard in applied position.

3. In a bottle, a bottle-neck and a valve mounted therein, said bottle-neck being provided with a plurality of openings leading downwardly from a point above the valve when seated.

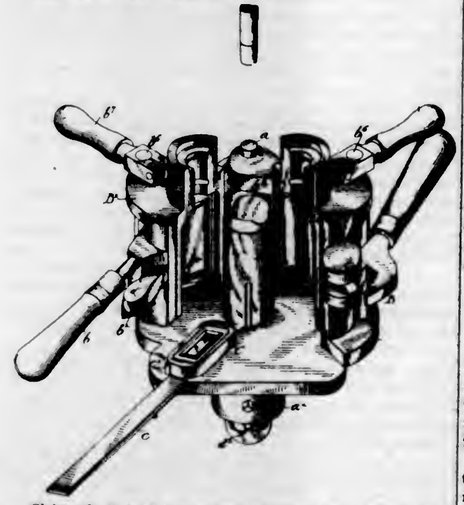
4. In a bottle-closure, a bottle-neck provided with longitudinal guideways, a valve having portions engaged with the guideways, and a guard having projections seated in the ways above the valve.

820,402. SAW-SWAGE. ODEY DION, Portland, Oreg. Filed Aug. 4, 1904. Serial No. 219,519.



Claim.—The combination with a slotted head having an anvil and a cam carried by the head, of a band rotatably adjustable about said head, arms connected to said band in front and rear of the head, and separate gages to rest on the saw-teeth, adjustably connected to said arms.

820,403. BOTTLE-MOLD. THOMAS C. DUFFIELD, Elmer, N. J. Filed May 25, 1905. Serial No. 262,232.



Claim.—1. A mold having two side members, a bottom member, structures respectively movable into the mold from its top and bottom, a movable section for each of said side members, said sections being placed to be forced outwardly by one of the structures and having means whereby they may be forced inwardly, substantially as described.

2. A mold having a supporting structure, two side members hinged thereto, a relatively movable section forming a part of each side member, a form movable into and out of the mold and of such dimensions as to force said sections outwardly when the mold is closed, and cams for forcing said sections into position when the form is withdrawn from the mold, substantially as described.

3. A mold having two side members and a bottom member, a form recessed at its upper end and movable into the mold, each of the side members having a portion movable relatively to the remainder in a line substantially at right angles to the line of motion of said form to permit of its entrance into the mold, the bottom portion of the mold being also movable, substantially as described.

4. A mold including two side members, a bottom member, a form movable into the mold and having a recess in its upper end, a plunger movable into the mold and into the recess of the form, and movable sections for the side members of the mold, said sections being movable outwardly by the form and having means whereby they may be moved inwardly when said form is removed, substantially as described.

5. A mold including side members each carrying a section movable in and out of the mold, a bottom member, a plunger movable into and out of the mold, and means for operating said sections of the side members to cause them to enter and be withdrawn from the mold, substantially as described.

6. A mold including a side member carrying a section movable in and out of the mold, a bottom member, a plunger entering the mold, and means for moving said side section in and out of the mold, substantially as described.

7. A mold including side members, movable sections for said side members, means for forming the neck of a bottle, with means for forcing said movable sections of the side members inwardly after the neck of the bottle has been formed, substantially as described.

8. A bottle-mold including side members having movable sections for molding a portion of the body of the bottle, a movable bottom section, a form movable into and out of the mold having a recess at its upper end, a plunger movable into said recess, and cams for moving said side sections of the mold inwardly when the form is withdrawn, substantially as described.

9. A bottle-mold including side members, and means for forming the neck of the bottle before the body is blown, said means including a plunger and a structure in addition thereto movable into the mold, and said mold having relatively movable portions to permit of the entrance of said structure, substantially as described.

10. A bottle-mold including side members, a form movable into the mold, said form having a recess in its upper end and having said upper end formed to engage the upper portion of the interior of the mold, the side panels of the body of the mold being movable outwardly to permit the mold to be closed with the form within it, and having means whereby they are forced inwardly to their proper positions after said form has been withdrawn, substantially as described.

11. A mold having sections shaped to form a cavity when in a closed position, means movable into and out of the cavity for shaping a charge of glass after its introduction into the mold, and means for changing the position of certain portions of the side of the mold to alter the shape of said cavity after said charge has been shaped, substantially as described.

12. A mold having sections shaped to form a cavity when in a closed position, means movable into and out of the cavity for shaping a charge of glass after its introduction into the mold, and means for diminishing the size of said cavity after said charge has been shaped substantially as described.

820,404. BOTTLE-MOLD. THOMAS C. DUFFIELD, Elmer, N. J. Filed July 1, 1905. Serial No. 267,966.

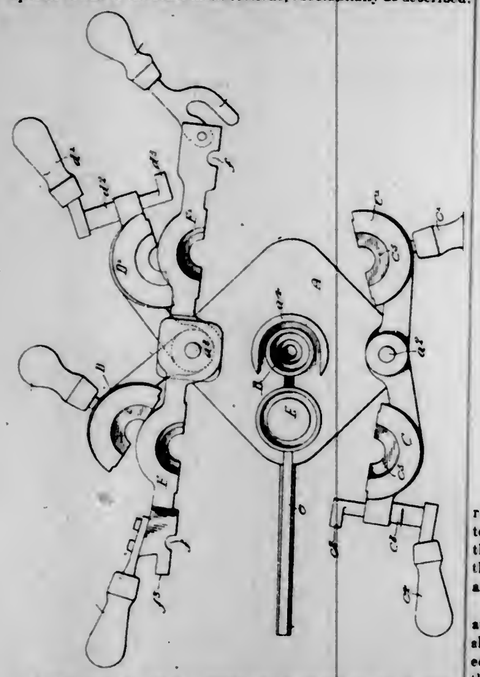
Claim.—1. The combination of a supporting structure, a recessed blank movable therein, means constructed to form the neck of a bottle, a bottom section for the mold movable in a line substantially at right angles to the line of movement of the blank, a main mold independent of said neck-forming means, and other means for forming the upper portion of the bottle, substantially as described.

2. The combination of a supporting structure, two pivot-pins thereon, a reciprocable blank movable between said pins, a dummy mold having its sections mounted upon one of the pins and designed to coact with the blank to form the upper portion of a bottle, and a main mold mounted upon the other pivot-pin designed to form the finished bottle, with a neck-mold having sections mounted upon one of said pins and having means whereby it may be locked to the second pin, substantially as described.

3. The combination of a supporting structure, a dummy mold for forming a portion of a bottle and mounted on said structure, a blank and a plunger coacting with said dummy mold, a main mold, and a neck-mold, the parts of said neck-mold coacting with the parts of the dummy mold so as to be moved thereby to their closed positions by the act of closing the dummy mold, substantially as described.

4. A mold consisting of two pivotally-mounted sections, a neck-mold also made in sections, with means whereby said first mold is made to coact with the neck-mold to move the sections of the latter to their closed positions when said first mold is closed, and means for locking the neck-mold to the pivot of one of the said mold-sections, substantially as described.

5. The combination of a supporting structure, a dummy mold and a main mold having their sections pivotally mounted thereon, and a neck-mold also having pivotally-mounted sections, with a collar on one of the two members comprised by the dummy mold and the neck-mold, placed to engage the other of said members to cause closing of the same when the other is moved to its closed position, with locking means on the neck-mold whereby it may be held to the spindle of one of the other mold-sections, substantially as described.



6. The combination of a supporting structure having an opening, a blank movable in said opening, two pivot-pins carried by the supporting structure, a dummy mold having sections recessed to receive the blank and having portions for forming the upper portion of a bottle, a main mold recessed to form the finished bottle, and a neck-mold for forming the upper portion of a bottle, said neck-mold having means whereby it may be locked with its neck-forming recess in line with the line of motion of the blank, substantially as described.

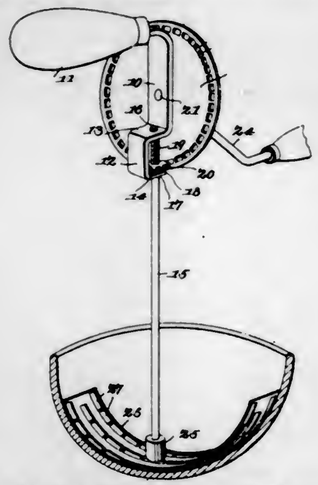
7. The combination of a supporting structure having a blank movable through it, a projecting flange placed concentrically with the line of motion of said blank, a bottom section movable in a line at right angles to the line of movement of the blank and adjacent to the opening therefor, said section having its movement limited by the said flange, a main mold for forming a finished bottle, and a dummy mold for forming a portion of the bottle prior to its completion in the main mold, substantially as described.

8. The combination of a supporting structure having a blank movable through it, a projecting flange placed concentrically with the line of motion of said blank, a bottom section movable adjacent to the opening for the blank, and having its movement limited by the said flange, a main mold for forming a finished bottle, a dummy mold for forming a portion of the bottle prior to its completion in the main mold, with a neck-mold having pivotally-supported sections movable so as to bring their neck-forming recess in line with the line of motion of the blank, substantially as described.

9. The combination of a supporting structure, a dummy mold thereon for forming the upper portion of a bottle, a neck-mold, a main mold, a blank, a plunger for forcing glass in the blank into the dummy and neck molds, and a bottom section for the device movable in a line substantially at right angles to the line of motion of said plunger, substantially as described.

10. The combination of a supporting structure, a dummy mold thereon for forming the upper portion of a bottle, a neck-mold, a main mold, a blank, a plunger for forcing glass in the blank into the dummy and neck molds, and a bottom section for the device, with means consisting of a device carried by the neck-mold for locking said mold to the pivot-spindle of one of the other molds independently of said other molds, substantially as described.

820,405. **EGG-BEATER.** JOHN S. DUNLAP, Chicago, Ill. Filed Oct. 2, 1905. Serial No. 280,936.



Claim.—1. An egg-beater comprising a shaft having a perforated dasher secured thereto and normally disposed at right angles to the shaft, said dasher being relatively thin and flexible to permit the opposite ends thereof to be deflected upwardly in contact with the interior walls of a containing vessel when placed within the latter, and means for rotating the shaft.

2. An egg-beater comprising a bar having a handle at one end and with the opposite end bent to form a U-shaped bracket, a dasher-shaft journaled in the opposite arms of the bracket, a pinion mounted upon the shaft within the bracket, a resilient blade mounted upon the shaft and adapted to conform substantially to the interior of a containing vessel, a disk mounted upon the bar and provided with an annular ball-race, a gear-wheel provided with an opposing ball-race and mounted to rotate adjacent the disk and in engagement with the pinion and means for rotating the gear.

3. An egg-beater comprising a shaft, a dasher secured to the shaft and normally disposed at substantially right angles thereto, said dasher being relatively thin and flexible to permit the arms of the dasher to conform to the interior walls of a containing vessel, and means for rotating the shaft.

4. An egg-beater comprising a shaft, a dasher secured to the shaft and normally disposed at substantially right angles thereto, said dasher being relatively thin to permit the arms of the dasher to conform to the interior walls of a containing vessel, and means for rotating the shaft.

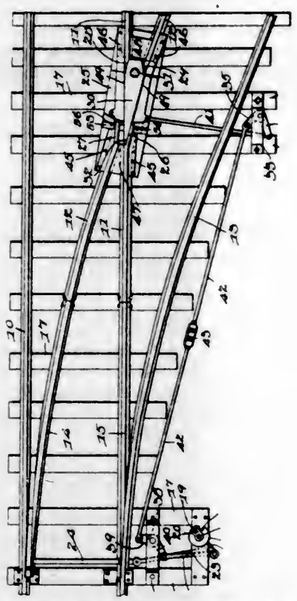
5. An egg-beater comprising a shaft, a dasher secured to the shaft and consisting of a flat relatively thin cutting-blade the front and rear edges of which are disposed in the same horizontal plane, said dasher having its major axis disposed substantially parallel with the plane of its movement, and means for rotating the shaft.

820,406. **RAILROAD-FROG.** JAMES G. FLUGAN, Sr., Lisbon, Ohio. Filed Dec. 9, 1905. Serial No. 291,127.

Claim.—1. A movable rail-frog, consisting of a rail-section swinging from one end between the terminals of two adjacent track-rails to fill the intervening gap and produce a continuous line of rails, said rail-section having a laterally-extending base of greater width than the height of the rail, whereby the tendency to overturn is obviated.

2. In a railway-frog, a base-plate disposed between the terminals of two adjacent track-rails with said terminals bearing thereon and with a transverse intermediate recess and longitudinal recesses communicating with said transverse recess, and a rail-section movably disposed within said transverse recess and extending at the ends into said longitudinal recesses.

3. In a railway-frog, a base-plate disposed between the terminals of two adjacent track-rails with said terminals bearing thereon and with a transverse intermediate recess overhanging at the ends and with longitudinal recesses extending through the overhanging portions, and a rail-section movably disposed in said recess and extended at the ends into said longitudinal recesses and with a laterally-extending base projecting at the ends beneath said overhanging portions.



4. In a railway-frog, a base-plate disposed between the terminals of two adjacent track-rails with said terminals bearing thereon and with a transverse intermediate recess overlapping at the ends and with longitudinal recesses extending through the overhanging portions, a rail-section movably disposed in said transverse recess and extending at the ends into said longitudinal recesses and with a laterally-extending base projecting into said overhanging portions, and a guide-bar connected to said terminals and extending through said rail-section.

820,407. **ELECTRIC RAILWAY.** JOHN A. GAREY, Tarkio, Mo., assignor of one-fourth to George G. Garey, Indianapolis, Ind. Filed May 23, 1905. Serial No. 261,883.

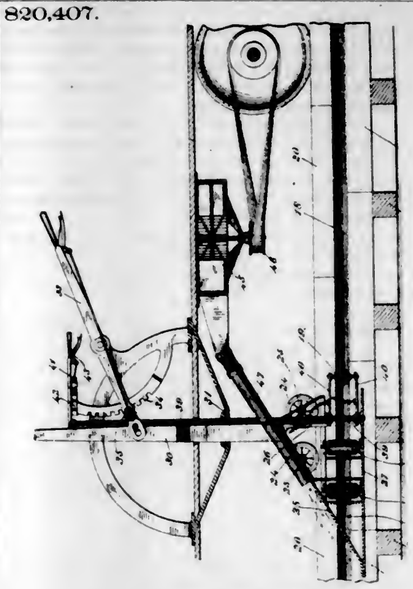
Claim.—1. In apparatus of the class described, the combination with a pair of sills, of a third rail supported by one of the sills, a plow disposed between the sills, a vertical spindle journaled in the plow, rocker-arms extending from the spindle, a current-collecting wheel carried by the arms and engaging the third rail, and means at the upper end of the spindle for rocking the same to permit adjustment of the current-collector from side to side of the space between the sills.

2. In apparatus of the class described, the combination with a pair of sills, of a plow arranged between the sills, supporting-wheels carried by the plow and running on the sills, and guard-rollers carried by the plow and arranged to engage the adjacent vertical faces of the sills.

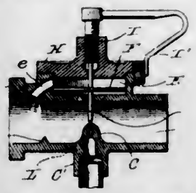
3. In apparatus of the class described, the combination with a pair of spaced sills, of a third rail supported by one of the sills, a plow, a current-collector carried thereby and engaging the third rail, supporting-wheels carried by the plow and running on the sills, and antifriction-rollers supported by the plow and adapted to engage the adjacent vertical faces of the sills.

4. In apparatus of the class described, the combination with a pair of spaced sills having metal sheathing on their inner and upper faces, a third rail supported by one of the sills, a plow, wheels carried by the plow and running on the upper inner edges of the sills, guard-rollers carried by the plow and arranged to engage the adjacent vertical walls of the sill, and a current-collector supported by the plow.

820,407.



820,408. **VAPORIZING DEVICE FOR INTERNAL-COMBUSTION ENGINES.** BERNT GARLLUS, Madison, Wis. Filed July 21, 1904. Serial No. 217,574.



Claim.—1. In a mixer for internal-combustion engines, the combination with the body having the substantially straight inlet-passage therethrough and the nozzle for the admission of hydrocarbonaceous material, projecting transversely into said passage and having its discharge-opening in the end thereof, of a valve having its end fitting in said discharge-opening, a stem on said valve extending across the inlet-opening, a diaphragm connected centrally, directly to said stem and operated by the inspiration of the engine to lift the valve and open the nozzle and means for regulating the inflow of carbonaceous material; substantially as described.

2. In a mixer for internal-combustion engines, the combination with the body having a substantially straight passage therethrough, a nozzle for the admission of hydrocarbonaceous material projecting transversely into said passage, and a valve for said nozzle, of a diaphragm controlling said valve, a chamber at one side of the said passage through the body and in which said diaphragm is mounted, the chamber being open to the atmosphere on one side of the diaphragm and open to the passage in the mixer on the other side of the diaphragm; substantially as described.

3. In a mixer for internal-combustion engines, the combination with the body having the substantially straight inlet-passage therethrough and the nozzle for the admission of hydrocarbonaceous material projecting transversely into said passage and a valve for closing said nozzle having a stem extending through the wall of the passage opposite the nozzle, of a chamber outside of the passage, a diaphragm in said chamber extending in a plane at right angles to and directly connected centrally to the valve-stem, and a port leading from the chamber above the diaphragm communicating with the passage forward of the nozzle; substantially as described.

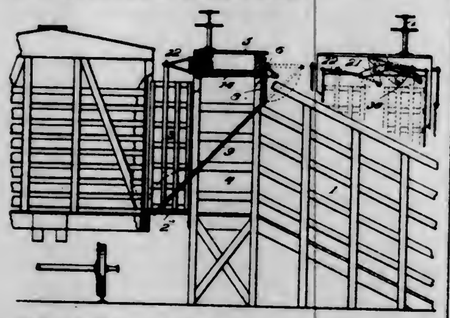
4. In a mixer for internal-combustion engines the combination with the body having the intake-passage therethrough, the nozzle for the admission of hydrocarbonaceous material projecting transversely into said passage from the under side and the chamber formed

in an enlargement on the body opposite said nozzle and above the passage, of a valve for the nozzle having its stem extending across the passage and into the chamber, a diaphragm on said valve-stem within the chamber, an adjustable stop for limiting the upward movement of the valve and a port in said chamber above the diaphragm open to the passage; substantially as described.

5. In a mixer for internal-combustion engines, the combination with the body having the substantially straight intake-passage therethrough, the nozzle for the admission of hydrocarbonaceous material projecting into said passage from the under side and the chamber formed in an enlargement of the body above the passage, the upper part of the chamber being open to the passage, of a valve for the nozzle having its stem extending across the passage and into the chamber, a diaphragm in the chamber to which the valve-stem is connected a removable cover for the chamber and a stop-screw in the cover for limiting the movement of the valve; substantially as described.

6. In a mixer for internal-combustion engines, the combination with the body having the intake-passage therethrough, the nozzle projecting into said passage from the under side, a chamber formed in an enlargement of the body opposite said nozzle and open near the top to the passage forward of the nozzle and a wall in the bottom of the passage, of a valve for the nozzle having its stem extending across the passage and into the chamber a diaphragm in the chamber to which the valve is connected, a removable cover for the chamber, a screw in said cover for limiting the opening of the valve and an index connected with said screw for indicating its adjustment; substantially as described.

820,409. **STOCK-CHUTE.** WILSON S. GILLELAND, Wichita, Kans., assignor, by direct and mesne assignments, of one-half to Ed M. Markel, Sr., Des Moines, Iowa, and one-half to Edgar B. Gilleland, St. Louis, Mo. Filed Jan. 4, 1905. Serial No. 239,680.

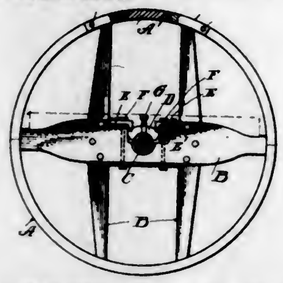


Claim.—1. The combination with a vertically-swinging platform and a horizontally-swinging guard or the like, of a horizontal crank-shaft provided at its ends with arms, rods connecting said arms with opposite sides of the platform, a vertically-rocking lever fulcrumed intermediate its ends, means for connecting the ends of said lever with the respective guards, two concentric shafts adapted to be independently operated, two independent shafts at right angles to said concentric shafts and each having crank-arms, gearing respectively connecting each of said last-named shafts with one of the concentric shafts, a rod 30 connecting one of said crank-arms to the vertically-rocking lever, and a rod 14 connecting the other of said crank-arms with the crank of the first-mentioned shaft.

2. The combination with a vertically-swinging platform and horizontally-swinging guards or the like, of a horizontal crank-shaft provided at its ends with arms, rods connecting said arms with opposite sides of the platform, a vertically-rocking lever fulcrumed intermediate its ends, means for connecting the ends of said lever with the respective guards, two concentric shafts adapted to be independently operated, two independent shafts at right angles to said concentric shafts and at right angles to each other, and each having crank-arms, gearing respectively connecting each of said last-named shafts with one of the concentric shafts, a rod 30 connecting one of said crank-arms to the vertically-rocking lever, and a rod 14 connecting the other of said crank-arms with the crank of the first-mentioned shaft.

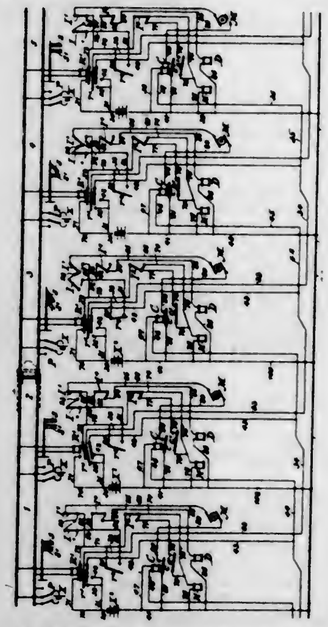
3. In a stock-chute or similar device, the combination with a vertically-swinging platform and horizontally-swinging doors or guards of a horizontal crank-shaft 6 provided at its ends with arms 8 and rods 9 connecting said arms with the platform, a lever 21 operatively connected with the guards to open and close the same, two concentric shafts arranged to be independently rotated, and two shafts 10 and 27 mounted at right angles to each other and each provided at one end with a pinion meshing with a similar pinion on the respective concentric shafts and at the other end with a crank-arm, one of said crank-arms being connected with the crank of the shaft 6 and the other of said crank-arms being operatively connected with the lever 21.

820,410. **PULLEY.** HENRY C. GRANNATT, Los Angeles, Cal., assignor of one-half to J. H. Waddingham, Los Angeles, Cal. Filed Apr. 11, 1905. Serial No. 255,001.



Claim.—A pulley comprising a split rim, spokes, the hub portion of the pulley fashioned to receive a shaft, a cap fitted thereto and to one side of the shaft, said cap having grooves at each edge, blocks secured to certain of the spokes and provided with lugs which enter the grooves in the cap for holding the latter in place against the shaft, and means for closing the split portion of the pulley.

820,411. **RAILWAY SIGNALING SYSTEM.** HENRY W. GRIFFIN, New York, N. Y., assignor to The Union Switch and Signal Company, Swissvale, Pa., a Corporation of Pennsylvania. Filed Jan. 18, 1905. Serial No. 241,546.



Claim.—1. In combination with a railway-signal comprising a signal device constructed to usually give a danger indication, an operating mechanism for moving it from danger indication to safety indication, means for at times holding it in its safety indication, and an electric circuit for the holding means usually closed; of a clearing-circuit usually open and closed by the action of a train on a track-circuit, a motive-power circuit usually open and closed by and upon the closure of said clearing-circuit, and another track-circuit for controlling the motive-power circuit and the electric circuit of the holding means.

2. The combination with an automatically-operating railway-signal comprising a signal device usually indicating danger, and a holding means for at times retaining the signal device in its safety position when moved to safety, of a system for controlling said railway-signal comprising a plurality of track-circuits, a clearing-circuit usually open and closed by the action of a train on one of said track-circuits whereby the signal device is permitted to be moved, from its danger position to its safety position and there retained by said holding device, and a holdiug-circuit which is usually closed and is opened by the action of a train on another of said track-circuits.

3. A railway signaling system for railway-signals comprising a signal device usually indicating danger, automatically-operating mechanism for moving from danger to safety and other automatic means for at times retaining it in its safety position, which comprises a plurality of closed track-circuits, a clearing-circuit controlled by one of said track-circuits, a motive-power circuit usually open and closed by said clearing-circuit whereby the signal device is moved to safety, and a holding-circuit usually closed and opened by the action of a train on another of said track-circuits whereby the signal is permitted to move to danger from safety.

4. The combination with a railway-signal comprising a signal device usually indicating danger, an automatically-operating mechanism the supply of motive power to which is electrically controlled, a holding means comprising an electrically-operated device for at times retaining the signal device in its safety position and a circuit including said electrically-operated device which is usually closed and is opened by the action of a train to release the signal device from its safety position whereby it may return to its danger position; of a system for controlling the operation of said mechanism to move the signal device from danger to safety comprising a closed track-circuit, a clearing-circuit usually open and closed by said track-circuit through the operation of a train on said closed track-circuit, and a motive-power circuit usually open and closed by said clearing-circuit upon the closure of said clearing-circuit.

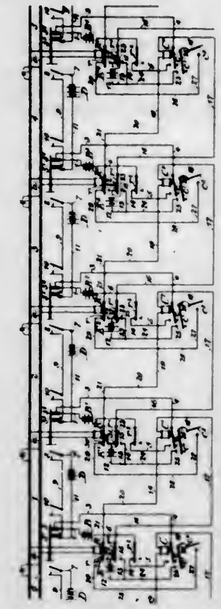
5. The combination with a railway-signal comprising a signal device usually indicating danger, an automatically-operating mechanism the supply of motive power to which is electrically controlled, and a holding means comprising an electrical device for at times retaining the signal device in its safety position when moved to safety; of a system for automatically controlling the positions of said signal device comprising a plurality of closed track-circuits; a clearing-circuit usually open and closed by the action of a train on one of the track-circuits; a motive-power circuit for controlling the motive power to the operating mechanism usually opened and closed by the closing of the clearing-circuit, whereupon the operating mechanism will move the signal device from danger to safety; and a circuit including the electrically-operated device of the holding means which is usually closed and which is opened by the action of a train on another of said track-circuits.

6. In combination with a railway-signal comprising a signal device constructed to usually give a danger indication, an operating mechanism for moving it from danger indication to safety indication, means for at times holding it in its safety indication, and an electric circuit for the holding means usually closed; of a clearing-circuit affected by the action of a train on a track-circuit, a motive-power circuit usually disabled and energized by a change in the clearing-circuit, and another track-circuit for controlling the motive-power circuit and the circuit of the holding means.

7. In combination with a railway-signal comprising a signal device constructed to usually give a danger indication, an operating mechanism for moving it from danger indication to safety indication, means for at times holding it in its safety indication, and an electric circuit for the holding means usually closed; a motive-power circuit usually disabled and energized by the action of a train on a track-circuit, and another track-circuit for controlling the motive-power circuit and the circuit of the holding means.

820,412. **RAILWAY SIGNAL SYSTEM.** HENRY W. GRIFFIN, New York, N. Y., assignor to The Union Switch and Signal Company, Swissvale, Pa., a Corporation of Pennsylvania. Filed Jan. 31, 1905. Serial No. 243,526.

Claim.—1. In combination with railway-signals, each comprising a signal device constructed to usually or normally give a danger indication and an operating mechanism for moving it from danger indication to safety indication, a signaling system for controlling such signals, comprising a series of closed track-circuits, each including a track-relay, a series of open local signal-circuits, and a series of clearing-circuits, each containing a polarized relay, the arrangement being such that each track-relay when deënergized acts to control a clearing-circuit to have current flow therein in a direction to produce a movement of the polarized armature of the relays to close a circuit which latter circuit acts to close a local signal-circuit.



2. In combination with railway-signals, each comprising a signal device constructed to usually or normally give a danger indication and an operating mechanism for moving it from danger indication to safety indication, a signaling system for controlling such signals comprising a series of closed track-circuits, each including a track-relay, a series of local signal-circuits, and a series of clearing-circuits each containing a polarized relay, the arrangement of the circuits being such that each track-relay when deënergized acts to control a clearing-circuit to have current flow therein in a direction to produce movement of both its neutral and polarized armatures to close a local signal-circuit and a circuit on another clearing-relay to have the last-mentioned relay close a local signal-circuit.

3. A signaling system for railway-signals comprising a series of closed track-circuits, each including a track-relay, a series of local signal-circuits, and a series of clearing-circuits each containing a polarized relay, the arrangement of the circuits being such that each track-relay when deënergized acts to control a clearing-circuit to have current flow therein in a direction to produce movement of both its neutral and polarized armatures to close a local signal-circuit and a circuit on another clearing-relay to have the last-mentioned relay close a local signal-circuit.

4. A signaling system for railway-signals which comprises a series of track-circuits each containing a track-relay, a series of local open signal-circuits, and a series of clearing-circuits each including a polarized relay for affecting a local signal-circuit and the next clearing-circuit, the arrangement being such that the clearing-circuits are controlled from the track-circuits.

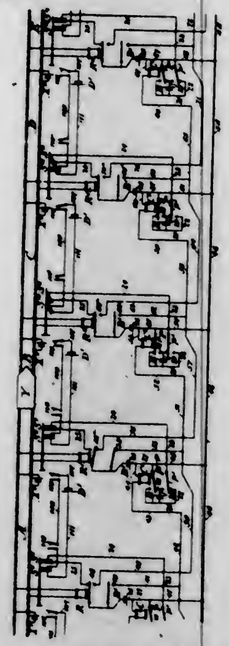
5. A signaling system for railway-signals which comprises a series of track-circuits each containing a track-relay, a series of local signal-circuits, and a series of clearing-circuits each containing a polarized relay, source of current and pole-changing means for the source of current which pole-changing means are controlled as to their operation from or by the track-relays.

6. In combination with railway-signals usually giving danger

indications, a signaling system therefor, comprising a series of track-circuits, clearing-relays with neutral and polarized contacts at each signal to affect the clearing of such signal, polarized circuits for controlling and operating said clearing-relays, said circuit being opened or closed or the flow of current reversed as to direction to affect the next clearing-relay in advance by the action of a train on the track-circuits.

7. In combination with railway-signals usually giving danger indications, a signaling system therefor comprising a series of track-circuits, a clearing-relay with neutral and polarized contacts at each signal to affect the clearing of such signal, a polarized circuit for controlling and operating said clearing-relays, said circuit being opened or closed or the flow of current therein reversed by track-relays to affect the next clearing-relay in advance.

820,413. **RAILWAY SIGNALING SYSTEM.** HENRY W. GRIFFIN, New York, N. Y., assignor to The Union Switch and Signal Company, Swissvale, Pa., a Corporation of Pennsylvania. Filed Feb. 28, 1905. Serial No. 247,736.



Claim.—1. A signaling system, the signal devices in which are normally in their "danger" position of indication, comprising a series of closed track-circuits, a series of closed signal-circuits, one for each signal device, in which are included opposing batteries so that no current will flow therein, said signal-circuits each including means controlled from one track-circuit to cause current to flow in said signal-circuit, and means controlled from another track-circuit for opening said signal-circuit.

2. A signaling system, the signal devices in which are normally in their "danger" position of indication, comprising a series of closed track-circuits, a series of closed signal-circuits, one for each signal device, in which opposing batteries are included and in which no current is flowing, means in each of said signal-circuits for affecting one of said batteries to have current flow, a clearing-circuit and relay controlled from one of the track-circuits for operating said means, and means also included in each signal-circuit operated by the action of a train on a track-circuit for opening its signal-circuit.

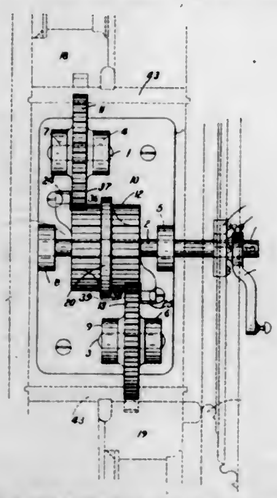
820,414. **LAMP-PENDANT.** HERBERT W. HANWELL, Northampton, England. Filed Dec. 9, 1904. Serial No. 236,216.

Claim.—1. In a lamp-pendant, the combination with a hollow fixable support, of a lamp-holder, a rotatable grooved pulley constituting a counterbalance and arranged at a lower level than that of the said support, the grooved pulley having an open trough for the flexible conduit, a conduit-guide attached to the fixable support, and a flexible conduit connected to the hollow support and extending down from it to and around the pulley and thence up to one end of and along the conduit-guide and thence down from the other end of the conduit-guide to the lamp-holder.



2. In a lamp-pendant, the combination with a hollow fixable support, of a lamp-holder, a rotatable grooved pulley constituting a counterbalance and arranged at a lower level than that of the said support, the grooved pulley having an open trough for the flexible conduit, a conduit-guide constituted by an open curved trough rigidly secured to the fixable support, and a flexible conduit connected to the hollow support and extending down from it to and around the pulley and thence up to one end of and along the conduit-guide and thence down from the other end of the conduit-guide to the lamp-holder.

820,415. **SASH MOVER AND LOCK.** ALFRED R. HARDY and ROBERT N. ADAMS, Dunedin, New Zealand. Filed Apr. 4, 1905. Serial No. 253,788.



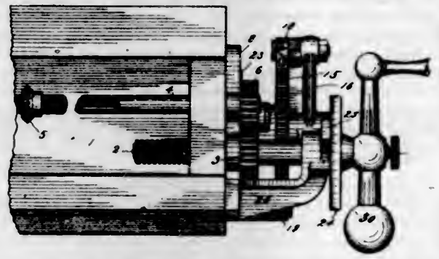
Claim.—1. A sash-fastener consisting of a base-plate having two pinions mounted thereon one at each end thereof, a larger pinion intermediate of the outer two pinions mounted on a sliding spindle and divided into two portions by a central flange each one of said portions being adapted to mesh with a pinion respectively, a slotted locking-plate for said flange provided with projecting pieces adapted to engage said two pinions respectively, and means for rotating and locking said sliding spindle substantially as and for the purposes set forth.

2. A sash-fastener consisting of an upper and lower window-sash having their adjoining side rails each provided with a rack, a pinion meshing with each rack a middle pinion divided into two portions by a central flange mounted on a sliding spindle, said portions being adapted to mesh with said two pinions respectively, a slotted locking-plate for said flange provided with projecting pieces adapted to engage said two pinions respectively, and means for rotating and locking said sliding spindle, substantially as and for the purposes set forth.

3. A sash-fastener consisting of racks secured to the sash, pinions engaging with said racks, a central pinion adapted to engage with the beforementioned pinions to rotate the same, a sliding spindle for said central pinion whereby said pinion may be moved out of engagement with either one of the beforementioned pinions and a locking-plate having a slot therein in which a part of the central pinion engages to move said plate and projecting pieces on said plate adapted to engage with the first-mentioned pinions to lock the same against movement.

4. A sash-fastener consisting of racks secured to the sash, pinions 11 13 engaging with said racks, a central pinion 12 adapted to engage with the pinions 11 13 to rotate the same, a sliding spindle for the pinion 12 whereby said pinion may be moved out of engagement with either one of the pinions 11 13, means for locking the pinions 11 13 against movement and means for preventing movement of the sliding pinion, said means consisting of a key pivoted to the outer end of said spindle, said spindle having a channel in said end in which said key fits, a spring in said channel for forcing the key out of the channel, a washer having a slot therein and secured to the frame, said key engaging in said slot when forced out of the channel and a removable handle having means thereon for keeping the key in its channel, substantially as described.

820,416. **TOOL-FEED FOR PLANING-MACHINES.** FRANK HARRINGTON and CHARLES L. SMITH, Hartford, Conn., assignors to The Sigourney Tool Company, Hartford, Conn., a Joint Stock Corporation of Connecticut. Filed Dec. 13, 1904. Serial No. 236,742.



Claim.—1. A feed for a planer-tool having a horizontal-feed screw, a gear on the horizontal-feed screw, a vertical-feed rod, a gear on the vertical-feed rod, a ratchet, a gear connected with the ratchet, a pawl for giving the ratchet a rotary movement, a shipper-lever, a shipper-pinion carried by the shipper-lever and meshing with the ratchet-gear and adapted to mesh with either the vertical-feed gear or the horizontal-feed gear, a handle for moving the shipper-lever, and a pin-and-slot connection between the handle and the shipper-lever, substantially as specified.

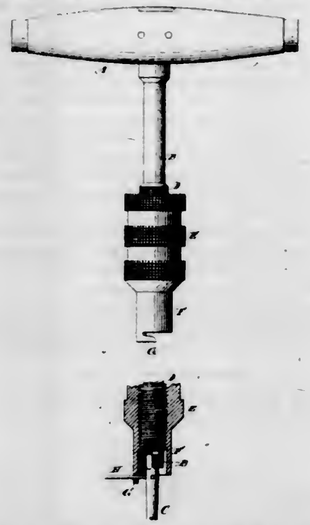
2. A feed for a planer-tool having a horizontal-feed screw, a gear on the horizontal-feed screw, a vertical-feed rod, a gear on the vertical-feed rod, a ratchet, a gear connected with the ratchet, a pawl for giving the ratchet a rotary movement in either direction, a drag-pawl arranged to prevent accidental movement of the ratchet, a shipper-lever, a shipper-pinion carried by the shipper-lever and meshing with the ratchet-gear and adapted to mesh with either the vertical-feed gear or the horizontal-feed gear, a handle for moving the shipper-lever, and a pin-and-slot connection between the handle and the shipper-lever, substantially as specified.

820,417. **BOX CONSTRUCTION.** CHRISTIAN A. HERR, Osborn, Ohio. Filed Apr. 21, 1905. Serial No. 256,739.

Claim.—A box for the purpose described comprising end frames 4 rabbeted on all four edges, a panel of pasteboard or the like secured to the rabbeted portions with its edges flush therewith, side frames 5 provided with top and bottom rabbets, similar panels 2 secured thereto with their edges flush with the rabbeted portions, and with their ends fitting within the rabbeted portions of the end frames 4, and top and bottom frames 6 fitted within the rabbeted portions of the end frames 4 and lying flush with the outer edges of the side frames 5, and top and bottom panels 3 attached to said top and bottom frames 6, the end edges of said top and bottom panels lying flush with the edges of the frames and the side edges of the said top and bottom panels terminating short of the side edges of their frames, and lying within the top and bottom rabbets of the frames 5, whereby all of the panels will form overlapping joints with each other and be entirely covered at their edges by the framework constituted by the respective frames.

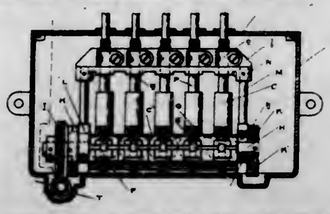


820,418. **PIANO-STRINGING HAMMER.** CARLOS J. HINDMAN, Marion, Iowa. Filed Sept. 14, 1905. Serial No. 278,518.



Claim.—An improved stringing-hammer, having a socket-wrench to engage the tuning-pegs, a screw-threaded portion thereon, and a handpiece correspondingly screw-threaded to run thereon, the handpiece having a hook at its lower end to engage the string, and whereby a uniform coil is made as the wrench is turned and the handpiece held.

820,419. **FORCE-FEED LUBRICATOR.** FREDERICK W. HODGES, Detroit, Mich. Filed Mar. 11, 1905. Serial No. 249,591.



Claim.—1. In a lubricating device, the combination of an oil-reservoir, a pump therein, inlet and discharge pipes on opposite sides at the end of the pump-cylinder, and a double-ported rotary valve at the juncture of the cylinder, and the inlet and discharge passages, for the purpose described.

2. In a lubricating device, the combination of a pump, a rotary valve having a multiple of ports, each port adapted to successively

connect the inlet-passage with the pump and the pump with the exit-passage.

3. In a lubricating device, a pump, a rotary valve for the pump having a multiple of circumferential ports, and means for rotating the valve to cause the ports to each successively act as the inlet-port and as the outlet-port for the pump.

4. In a lubricating device, the combination of a multiple of separate pump-casings, arranged side by side, having valve-casings with alined valve-seats, inlet and outlet passages leading to said valve-casings, a valve for each valve-casing, and a common actuating device for all the valves.

5. In a lubricating device, the combination of a multiple of separate casings, each having a cylinder, a valve-casing, and inlet and outlet passages, rotary valves in the valve-casings arranged in line, a common actuating device for all the valves, and pistons for the cylinders.

6. In a lubricating device, the combination of a multiple of cylinders, pistons therein, valve-casings on the cylinders having inlet and outlet ports, a shaft passing through all the casings and having ports for each cylinder, means for rotating the shaft and for reciprocating the pistons.

7. In a lubricating device, a series of pumps each comprising a cylinder-piston and a rotary controlling-valve, a common actuating device for all the pumps, and means for varying the pumping capacity of each pump separately.

8. The combination of a cylindrical valve-casing having an outlet-port, a rotary ported valve in the casing, a split extension forming the inlet-passage, means for compressing the two members of said extension to form a tight joint between the valve-casing and valve, a cylinder connecting to the valve-casing and the piston therein.

9. In a lubricating device, the combination of a series of cylinders, a rotary ported valve for each cylinder having inlet and outlet ports, a common actuating-head for all the pistons, means for adjusting the pistons to have different pumping capacity, and an actuating device for the head.

10. In a lubricating device, a reservoir, a pump therein, the piston of the pump projecting outside of the reservoir, and means in the interior of the reservoir for adjusting the piston to vary its throw said means being operated from the exterior.

11. In a lubricator, the combination of a series of pumps, a valve-shaft having a controlling-port for each pump, means for driving the shaft, and a drive connection from the shaft to the pumps.

820,420. LACING-HOOK. CHARLES E. HODSON, Bourne, England. Filed Mar. 16, 1904. Serial No. 198,494.



Claim.—1. In combination with an eyelet, a lacing device formed of a single piece of wire, the same bent on itself to form a hook and a loop, said hook lying within the area of said loop, the terminals of the wire passed through the eyelet and secured to the material.

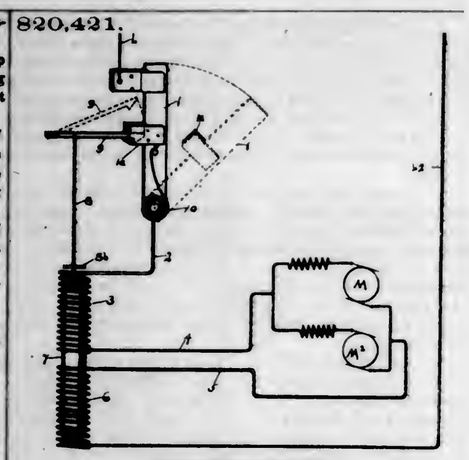
2. In combination with an eyelet, a lacing device formed of a single piece of wire, the same bent to form a loop and an overhanging hook, the latter lying within the area of said loop and in close proximity to the material, the terminals of the wire passed through the eyelet and secured to the material.

3. A lacing device formed of a single piece of wire, the same bent on itself to form a hook and a loop, said hook lying within the area of said loop.

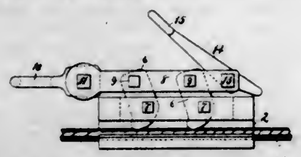
820,421. ELECTRICAL-CIRCUIT BREAKER. CHARLES F. HUTCHINGS, Bay City, Mich. Filed Oct. 14, 1903. Serial No. 177,073.

Claim.—In a device of the class described, the combination with a source of current, the device to be protected, and circuit connections: of a circuit-breaker comprising a latch having a rod suspended therefrom; a magnetizable core slidably mounted on said rod; a stop on said rod adapted to be actuated by said core in its upward movement; a solenoid surrounding the upper end of said core and having one end electrically connected to said circuit-breaker and having its other end connected to the electrical device to be protected; a second solenoid surrounding the other end of said core and connected to one end of said device, whereby current is carried through the circuit-breaker, first solenoid, device to be protected, second solenoid and thence back to the source of current.

820,421.

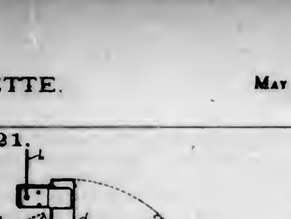


820,422. CABLE-CLUTCH. SEAVER A. JOHNSON, Oroville, Cal. Filed Jan. 5, 1906. Serial No. 294,733.



Claim.—In a cable-clutch, a block or frame provided in one side with a longitudinal channel, and having a groove formed at the bottom of the channel to receive a cable, and provided with a slot opening into the channel opposite the groove; pawls pivotally mounted in said slot; an actuating-bar connecting the pawls; and a lever for operating the bar.

820,423. TROLLEY FOR OVERHEAD-TROLLEY SYSTEMS. EZRA F. LANDIS, La Salle, N. Y. Filed Feb. 20, 1905. Serial No. 246,509.



Claim.—1. The combination with a trolley-pole having a trolley-head, a trolley-wheel revolubly mounted in said trolley-head, and a rope connected to said pole, of retaining means to prevent accidental disengagement of the trolley-wheel from a trolley-wire, and an actuating-rope attached to said retaining means for actuating the same and being loosely held to said rope on the trolley-pole to permit of independent movement.

2. The combination with a trolley-pole having a trolley-head, and a trolley-wheel revolubly mounted in said head, of a rope secured to said pole and having a series of loops thereon, retaining means to prevent accidental disengagement of the trolley-wheel from a wire, and a rope attached to said retaining means for actuating the same and passing through said loops on the first-mentioned rope.

3. The combination with a trolley-pole having a trolley-head, of a trolley-wheel revolubly mounted in said head, and retainer-arms lying lengthwise within said head and above the trolley-wheel and being pivotally supported at their front ends.

4. The combination with a trolley-pole having a trolley-head, of a trolley-wheel revolubly mounted in said head, and curved companion retainer-bars lying within said head and above the trolley-wheel and having their inner edges curved to approach each other

mid-length, said retainer-bars being supported on vertical pivots at one of their ends for lateral swinging movement.

5. The combination with a trolley-pole, of a trolley-head comprising a shank, and two side members separated by a space and having slotted inward extensions at the upper marginal portions thereof with inclined inner faces, a trolley-wheel revolubly mounted in said head and having the sides of its groove in line with the inclined sides of said extensions, and retainer-bars passing through the slots in said inward extensions and lying above the trolley-wheel to prevent accidental disengagement of the trolley-wheel from a trolley-wire.

6. The combination with a trolley-pole, of a trolley-head having a trolley-wheel revolubly mounted therein, said head extending above the periphery of said wheel and being provided with a slot having its direction of length in line with the direction of travel, and a similarly-disposed retainer-bar movable in said slot and having a vertical rock-shaft at one end, said bar lying above the trolley-wheel.

7. The combination with a trolley-pole, of a trolley-head, having slots arranged lengthwise therein; a trolley-wheel revolubly mounted in said head, and companion retainer-bars lying over the trolley-wheel within the slots in said trolley-head and being pivotally supported at one of their ends, said retainer-bars having their opposing edges converging from their front ends toward the center and diverging toward the rear ends from an intermediate point.

8. The combination with a trolley-pole, of a trolley-head comprising a shank, two side members, and a web at the upper end of said shank, said web connecting the side members and having a transverse slot, a trolley-wheel revolubly mounted in said trolley-head, retaining devices at opposite sides of the trolley-head to prevent accidental disengagement of the trolley-wheel from a trolley-wire, and actuating-ropes connected to said retaining devices and passing through the transverse slot in said web and down within convenient reach to actuate the same.

9. The combination with a trolley-pole, of a trolley-head having circular sides and curved slots near the periphery of said sides, a trolley-wheel of smaller diameter than the circular sides of the trolley-head, and curved companion retainer-bars movable in said slots and lying outside the periphery of the trolley-wheel.

10. The combination with a trolley-pole, of a trolley-head having a trolley-wheel revolubly mounted therein and having its sides extending beyond the periphery of said wheel, said head having curved slots at opposite sides outside the periphery of said wheel, retaining devices on opposite sides of the head comprising rock-shafts journaled in bearings on the sides of said head, rearwardly-extending curved retainer-bars at the upper ends of said shafts and extending through said slots to lie above the trolley-wheel in opposing relation, and actuating-arms at the lower ends of said shafts, means for holding the retainer-bars yieldingly above the trolley-wheel, and means for actuating said retaining devices.

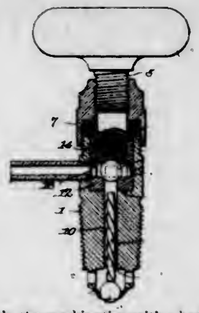
11. The combination with a trolley-pole, of a trolley-head having a flanged trolley-wheel revolubly mounted therein and having the side members thereof extending beyond the periphery of said wheel, extensions on the inner sides of the side members to form ledges overhanging the flanges of the trolley-wheel and having inclined inner faces, and companion retainer-bars lying above the trolley-wheel and having grooves on their inner sides.

12. The combination with a trolley-pole, a trolley-head, and a trolley-wheel revolubly mounted in said trolley-head, of retaining devices on opposite sides of said trolley-head comprising rock-shafts and retainer-bars, bearings on the sides of said head in which said rock-shafts are journaled, each bearing consisting of two parts, one of which is formed on said head and comprises an elevation having a semicylindrical groove and outstanding lugs having their opposing inner sides inclined upward and downward from the longitudinal center, and the other part of each of said bearings fitting between said lugs and comprising a cap having a coöperating semicylindrical groove and complementary inclined sides to fit the inclined inner sides of said lugs, and suitable means for actuating said retaining devices.

820,424. GAGE-COCK. FRANK W. LEIDECKER, Marietta, Ohio, assignor to Leidecker Gauge Company, Marietta, Ohio. Filed Aug. 18, 1906. Serial No. 274,759.

Claim.—1. In a gage-cock, the combination with a body provided at one end with a chamber, of a seat arranged within the chamber, a ball-valve to engage the seat, a cage housing the ball-valve and carrying spaced lugs to permit passage of liquid, a combined cap and stuffing-box carried by the body to hold the cage in position, and a valve-stem working within the stuffing-box and adapted to engage the valve.

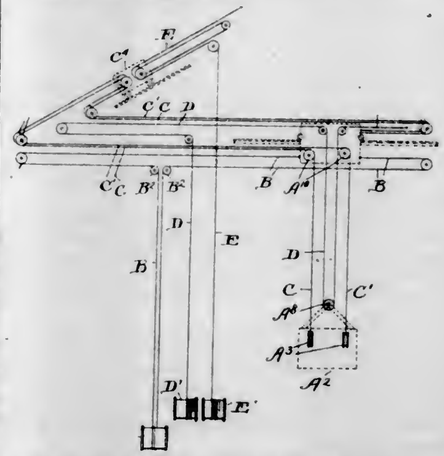
2. In a gage-cock, the combination with a body provided at one end with a chamber, of a reversible seat arranged in the chamber, a ball-valve to engage the seat, a cage housing the ball-valve and carrying spaced lugs to permit passage of liquid, a combined cap and stuffing-box carried by the body to hold the cage in position, and a valve-stem working within the stuffing-box and adapted to engage the valve.



3. In a gage-cock, the combination with a body provided at one end with a chamber, of a reversible seat arranged within the chamber, a ball-valve to engage the seat, a cage housing the valve and carrying lugs the exterior surfaces of which are flattened to permit passage of liquid, a combined cap and stuffing-box carried by the body for holding the cage in position, and a valve-stem working within the stuffing-box.

4. In a gage-cock, the combination with a body provided at one end with a cage integral therewith and of less diameter than the body, of a ball-valve arranged within the cage, a twisted valve-stem arranged in the path of movement of the ball-valve, a second ball-valve arranged within the chamber at the other end of the body, a cage housed in the second valve and carrying lugs to permit passage of liquid, a combined cap and stuffing-box carried by the body to hold the cage in position, and a valve-stem working within the stuffing-box.

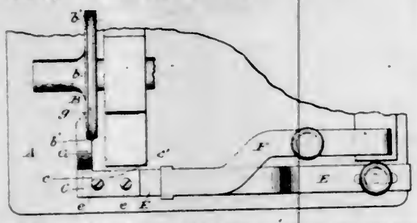
820,425. HOISTING MECHANISM. FREDERICK W. LOVELL, Cleveland, Ohio, assignor to John McMyler, Cleveland, Ohio. Filed July 27, 1905. Serial No. 271,422.



Claim.—In hoisting and conveying apparatus, a supporting-truss, a trolley-carriage, a clam-shell bucket having means thereon operable to open and close the same, a pair of cables attached to said means and passed over sheaves in the trolley-carriage and led therefrom at one side thereof to sheaves beyond the path of movement of the carriage back to and around sheaves at the opposite end of the said path and brought back to and secured to the carriage, bights in said cables, a hoisting-block in said bights, and an operating-cable connected with said hoisting-block, a racking-cable having its ends attached to the carriage and led therefrom in opposite directions around sheaves beyond the ends of the trolley-path to and around a

rack-drum, a holding-cable attached at one end to a drum and passed over supporting-sheaves on the derrick and over sheaves on the trolley-carriage around a supporting-sheave on the bucket-frame, its dead end being attached to the derrick structure.

820,426. MACHINE FOR DAMPENING COLLARS AT THE LINES OF THEIR FOLDING. HENRY A. MANN, Albany, N. Y. Filed Sept. 14, 1903. Serial No. 173,152.



Claim.—1. In combination with mechanism for applying moisture to the folding-line of collars, and a collar-guide, means attached to the collar-guide adapted to deflect the tab ends of the collars away from said moistening devices.

2. In combination with devices for applying moisture to the folding-lines of collars, a collar-guide in advance of such devices, and a tab end guide or deflector attached to the collar-guide and operating between the collar-guide and moistening devices, substantially as described

3. In combination with rotary devices for applying moisture to the folding-lines of collars, an adjustable collar-guide in advance of such devices, and a tab-end guide or deflector attached to the collar-guide and located between the collar-guide and moistening-devices, substantially as described.

4. In combination with mechanism for applying moisture to the folding-line of foldable or turn-down collars, and a collar-guide adapted to engage the seams of the collars and direct them to the moistening devices, of a tab-end guide attached to the collar-guide and adapted to deflect the tab ends of the collars away from said moistening devices.

5. In combination, means for applying moisture to the folding-line of collars, a spring-pressed collar-guide adapted to direct them to the moistening devices, and a tab-end guide attached to the collar-guide and interposed between the collar-guide and the moistening devices, and adapted to deflect the tab ends out of the line of the moistening devices, substantially as described.

6. The combination of means for applying moisture to the folding-line of collars, and an adjustable spring-pressed collar-guide adapted to engage the seams thereof to direct them to the moistening devices; with a tab-end guide attached to the collar-guide and interposed between the collar-guide and the moistening devices, and adapted to deflect the tab ends out of the line of the moistening devices, substantially as described.

7. In a machine for dampening collars at their folding-line, the combination with a supporting-bed, a guide for guiding a collar in its lengthwise movement, and an arm connecting said guide with said bed, of a tab-edge guide, attached to said arm and located relatively rearward of said collar-guide, substantially as and for the purpose set forth.

8. In a machine for dampening collars at their folding-lines, the combination of a supporting-bed, means for dampening and moving a collar lengthwise over said bed, and a collar-guide operating with the seam which unites the collar top with the band; with an arm connecting said guide with said bed, and a tab-edge guide attached to said arm and by which the tabs of the collar are turned away from the dampening devices.

9. In a machine for dampening a collar at its folding-line, the combination of a collar-supporting bed, a revolving device for moving said collar lengthwise over said bed, and a collar-guide directing the lengthwise movement of the collar by contact with the collar-seam; with an arm yieldingly holding said guide in contact with said collar, and a tab-end guide attached to said arm and arranged between said collar-guide and said revolving device.

10. In a machine for dampening a collar at its folding-line, the combination of a collar-supporting bed, a revolving device for moving said collar lengthwise over said bed, a guide for directing the collar in its lengthwise movement by engaging the collar-seam, and means exerting a downward pressure on said guide; with a tab-end guide connected to said guide and operating with the end tabs of a collar to turn the collar to an angle in relation to the line of its lengthwise movement.

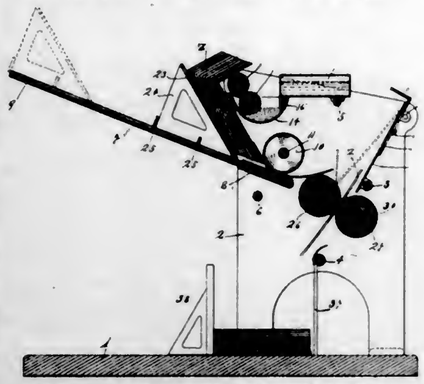
11. In a machine for dampening collars at their folding-line, the combination of a collar-supporting bed, means for moving the collars lengthwise on said bed, a collar-guide engaging the seam which unites the collar-top with the neckband, an arm connecting said guide with the said bed, and a spring imposing pressure on said arm; with a tab-guide attached to said arm and adapted to engage the edge of the end tab of a collar.

12. In a seam-dampener of the character described, the combination with the wetting device, of a collar-guide mounted on a movable member, a tab-end guide attached to said member and means for adjusting said member, substantially as specified.

13. In a seam-dampener of the character described, the combination with the wetting devices, of a collar-guide mounted on a movable member, a tab-end guide attached thereto and means connected with said member for adjusting it laterally with reference to the wetting devices at the dampening-point, substantially as specified.

14. In a collar-dampening machine, the combination with two dampening-wheels between which collars are to be passed, of a collar-guiding device provided with a seam-receiving groove located in front of said dampening-wheels and adapted to guide the collar in its passage to and between said wheels, and a tab-end guide attached to said collar-guide.

820,427. ENVELOP-SEALING MACHINE. JOHN A. MARROE, White Bear, Minn. Filed Apr. 1, 1905. Serial No. 253,265.



Claim.—1. The combination with a feed-roller and a moistening device located the latter over the former, of a follower movable transversely of said feed-roller and moistening device to deliver the bodies of the envelops to said feed-roller and the open flaps thereof to said moistening device, and a sealing device receiving the moistened envelops from said feed-roller, substantially as described.

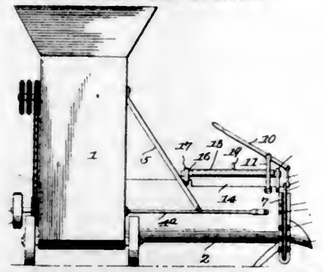
2. The combination with an inclined feed-deck and a follower movable thereon for feeding the envelops, of a feed-roll overlying said feed-deck and serving to feed, one after another, the envelops delivered thereto by said follower, a moistening-roller overlying and extending parallel to said feed-roller in position to engage the open flaps of the envelops as they are fed by said feed-roller, and a sealing device receiving the moistened envelops from said feed-roller, substantially as described.

3. The combination with an inclined feed-deck, and a follower mounted to move thereon for feeding envelops, of a feed-roller overlying a portion of said feed-deck and serving to feed, one after another, the envelop delivered thereto by said follower, of a pair of sealing-rollers arranged to feed the envelops transversely of the plane of said feed-deck, and a deflecting-plate positioned to engage the envelops as they are delivered from said feed device, and to reverse and deliver the same to said sealing-rollers, substantially as described.

4. The combination with an inclined feed-deck for envelops made up of a plurality of inclined rods, a follower mounted to slide on said rods, under the action of gravity, a water-trough above said feed-deck, a moistening device working in said trough and operative on the flaps of the envelops, a sectional feed-roller made up of a plurality of wheels, said wheels working in vertical planes between the lower ends of the rods of said feed-deck, a pair of sealing-rollers having their axes substantially in the plane of said feed-deck, and a deflecting-plate standing in position to engage the envelops delivered from said feed-roller, and to reverse and deliver the same between said sealing-rollers, substantially as described.

5. The combination with an inclined feed-deck for envelops made up of inclined guide-rods 7, of a follower-head detachably and slidably mounted on said guide-rods and having an inclined plate 23, a water-trough secured above said feed-deck, a roller water-distributer working in said trough and adapted to act upon the flap of the envelops, a plurality of rubber-faced feed-wheels 10 constituting a sectional feed-roller, and working in planes intermediate of said guide-rods 7, the sealing-rollers 26 27, having their axes in approximately the plane of said feed-deck, a fixed deflecting-plate 32 extending above said roller 27, a stop-plate 34 adjustably secured to the upper portion of said deflecting-plate, and means for driving all of the rollers noted from a common source, substantially as described.

820,428. CONCRETE-MIXER. WILLIAM B. MARTIN, Bloomington, Ill. Filed Oct. 10, 1905. Serial No. 282,172.



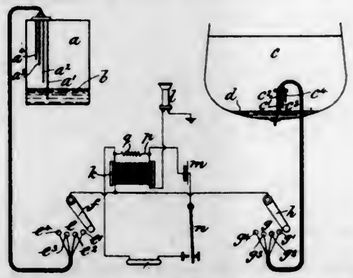
Claim.—1. In a concrete-mixer, the combination with a spout, of guides disposed at the discharge end thereof and provided with roller-bearings, a cut-off plate having its ends working between the bearings, a lip secured to the plate, and means for raising and lowering the plate.

2. In a concrete-mixer, the combination with a spout, of guides disposed at the discharge end thereof and occupying a plane at right angles to its length, roller-bearings carried by the guides, a cut-off plate having its ends working between the bearings, a lip secured to the plate, and means for raising and lowering the plate.

3. In a concrete-mixer, the combination with a spout, of guides disposed at the discharge end thereof and occupying a plane at right angles thereto, roller-bearings carried by the guides, a cut-off plate having its ends working between the bearings, a lip carried by the plate, and means for raising and lowering the plate.

4. In a concrete-mixer the combination with a spout having its upper portion open for a part of its length and a mixing-worm arranged within the spout; of guides disposed at the discharge end of the spout and provided with roller-bearings, a cut-off plate having its ends working between the bearings, a lip secured to the plate, and means for raising and lowering the plate.

820,429. APPARATUS FOR ASCERTAINING THE LEVEL OF LIQUIDS. CHARLES MAY, London, England. Filed July 25, 1904. Serial No. 218,161.



Claim.—1. Apparatus for ascertaining the level of liquids, consisting of a series of contacts at different levels, a corresponding series of terminals, each connected to one of the contacts, a switch free to move over the terminals, an indicator and an induction-coil, to the secondary winding of which is connected the switch and the indicator, the primary winding being in circuit with a source of electricity, and means for opening and closing the circuit.

2. Apparatus for ascertaining the level of liquids, consisting of a series of contacts at different levels, a corresponding series of terminals, each connected to one of the contacts, a switch free to move over the terminals, an indicator and an induction-coil, to the secondary winding of which is connected the switch and the indicator, the primary winding being in circuit with a source of electricity, a mercury-level in the primary circuit, and means for opening and closing the circuit.

3. Apparatus for ascertaining the level of liquids, consisting of a series of insulated rods of different lengths, a corresponding series of terminals, each connected to one of the rods, a switch free to move over the terminals, an indicator and an induction-coil, to the secondary winding of which is connected the switch and the indicator, the primary winding being in circuit with a source of electricity, and means for opening and closing the circuit.

4. Apparatus for ascertaining the level of liquids, consisting of a series of insulated rods of different lengths, a corresponding series of terminals, each connected to one of the rods, a switch free to move over the terminals, an indicator and an induction-coil, to the secondary winding of which is connected the switch and the indicator, the primary winding being in circuit with a source of electricity, a mercury-level, and means for opening and closing the circuit.

5. Apparatus for ascertaining the level of liquids, consisting of a series of contacts at different levels, a corresponding series of terminals, each connected to one of the contacts, a switch free to move over the terminals, an indicator and an induction-coil, to the secondary winding of which is connected the switch and the indicator, the primary winding having in its circuit a source of electricity, means for opening and closing the circuit, a shunt across the terminals of the induction-coil, and a resistance in the shunt.

6. Apparatus for ascertaining the level of liquids, consisting of a series of contacts at different levels, a corresponding series of terminals, each connected to one of the contacts, a switch free to move over the terminals, an indicator and an induction-coil, to the secondary winding of which is connected the switch and the indicator, the primary winding having in its circuit a source of electricity, a mercury-level, means for opening and closing the circuit, a shunt across the terminals of the induction-coil, and a resistance in the shunt.

820,430. PROCESS OF TREATING METAL-BEARING MATERIALS. CHARLES W. MERRILL, Lead, S. D. Filed July 7, 1905. Serial No. 268,729.

Claim.—1. The improvement in treating a precious-metal-bearing material with cyanogen-bearing solutions in a closed container after preliminary contact with such solution consisting in removing the cyanogen-bearing solutions from the interstitial spaces of the crushed material, applying an oxidizing agent under pressure greater than that of the atmosphere to said material, and subsequently applying a cyanogen-bearing solution to said material.

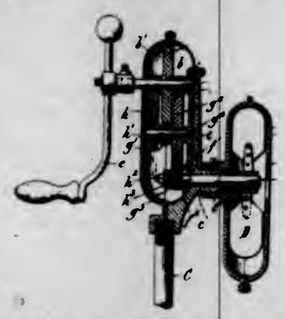
2. The improvement in treating a precious-metal-bearing material with cyanogen-bearing solutions in a closed container after preliminary contact with such solution consisting in removing the cyanogen-bearing solutions from the interstitial spaces of the crushed material applying air under pressure greater than that of the atmosphere to said material and subsequently applying a cyanogen-bearing solution to said material.

3. The improvement in treating a precious-metal-bearing material with cyanogen-bearing solutions in a closed container after preliminary contact with such solution consisting in removing the cyanogen-bearing solutions from the interstitial spaces of the crushed material applying air under pressure greater than that of the atmosphere to said material and subsequently applying a cyanogen-bearing solution to said material in one and the same container.

4. The improvement in treating precious-metal-bearing material containing reducing agents with cyanogen-bearing solutions consisting in first collecting the crushed material in a closed container, applying a cyanogen-bearing solution to said material, subsequently removing said cyanogen-bearing solution from the interstitial spaces of said material, applying air under pressure greater than that of the atmosphere, and subsequently applying a cyanogen-bearing solution to said material in one and the same closed container.

820,431. FAN-BLOWER. FRANK X. MÜLLER, Buffalo, N. Y., assignor to Buffalo Forge Company, Buffalo, N. Y. Filed Mar. 22, 1905. Serial No. 251,417.

Claim.—1. The combination of a fan, a fan-shaft, a drive-shaft, speed-gearing connecting said fan-shaft and drive-shaft, a gear-casing inclosing said speed-gearing comprising separable stationary and cover parts, and a bracket secured in the stationary part of said gear-casing and entirely supporting said speed-gearing, substantially as set forth.



2. The combination of a fan-shaft, a fan secured thereto, a drive-shaft parallel with said fan-shaft, speed-gears connecting said fan and drive shafts and all arranged with their axes parallel with each other and with said fan and drive shafts, a gear-casing comprising separable stationary and movable parts inclosing said gears and having holes through which said fan and drive shafts project, and a bracket secured in the stationary part of said gear-casing and entirely supporting said speed-gears, substantially as set forth.

3. The combination of a supporting-standard, a gear-casing comprising separable parts, one of which is secured to said standard, a fan, a fan-shaft to which said fan is connected and which extends into said gear-casing, a drive-shaft, speed-gearing connecting said fan and drive shafts and inclosed within said gear-casing, and a bracket in said gear-casing which is secured to said standard and which supports said speed-gearing independently of said cover part, substantially as set forth.

4. The combination of a supporting-standard, a fan-casing supported thereby, a gear-casing comprising separable parts, one of which is secured to said standard, a fan in said fan-casing, a fan-shaft to which said fan is attached and which extends into said gear-casing, a drive-shaft, speed-gearing connecting said fan and drive shafts and inclosed within said gear-casing, and a bracket in said casing which is secured to said standard and which wholly supports said speed-gearing, substantially as set forth.

5. The combination of a supporting-standard, a gear-casing comprising a stationary part secured to said standard, and a part removably attached to said stationary part, a fan-casing arranged parallel with said gear-casing and supported by said standard, a fan in said fan-casing, a fan-shaft connected to said fan and extending into said gear-casing, a drive-shaft, gearing inclosed in said gear-casing and connecting said fan and drive shafts, and a bearing-bracket secured in the stationary part of said gear-casing and supporting said gearing, substantially as set forth.

6. The combination of an upright support, a fan-casing arranged on one side of and attached to said support, a gear-casing arranged parallel with said fan-casing on the opposite side of and secured to said support, a fan in said fan-casing, a fan-shaft extending into said gear-casing, a drive-shaft extending from said gear-casing, and speed-gearing inclosed in said gear-casing and connecting said fan and drive shafts, substantially as set forth.

7. The combination of an upright supporting-standard, a fan-casing supported by said standard, a gear-casing arranged beside said standard, a bearing-bracket in said gear-casing and attached to said standard, one part of said gear-casing being clamped between said standard and said bearing-bracket, a fan in said fan-casing, a fan-shaft therefor extending into said gear-casing, a drive-shaft, and gearing supported by said bracket in said gear-casing and connecting said fan and gear shafts, substantially as set forth.

820,432. TELEPHONE-SWITCH. WILLIAM B. MCCORMICK, Chicago, Ill., assignor to International Telephone Manufacturing Company, Cicongo, Ill., a Corporation of Illinois. Filed Aug. 28, 1901. Serial No. 73,362.

Claim.—1. In a telephone-switch, in combination, a pivoted switch-hook, a spring-terminal engaging and tending to elevate the hook, a lower terminal with which the spring is in contact when the hook is depressed and upper terminals which are out of contact at such time, the said spring when the hook is released breaking contact with the lower terminal and elevating the hook sufficiently to cause the upper terminals to engage.

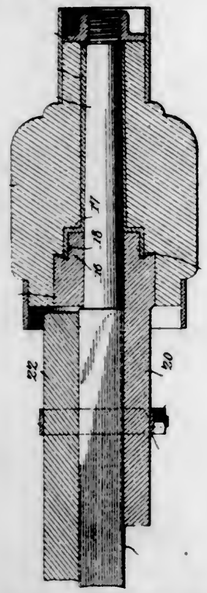


2. In a telephone-switch, in combination, a base, a switch-hook pivoted thereto, a series of four resilient terminals on the base and insulated from each other, one of said terminals being a normally depressed switch-spring in electrical contact with the lower terminal and adapted to elevate the hook when the latter is unencumbered and to rise from contact with the lower terminal and force the upper terminals into electrical contact.

3. In a telephone-switch, in combination, a base composed of a plate having a standard, a switch-hook pivoted to the standard, a block in the plate having lateral slits, a series of spring-contacts in the slits and having lateral ears embracing the block, one of the contacts extending beyond the others to support the hook and being normally in contact with another terminal and adapted to raise the hook when the latter is unencumbered and to electrically connect the other terminals with itself and with each other.

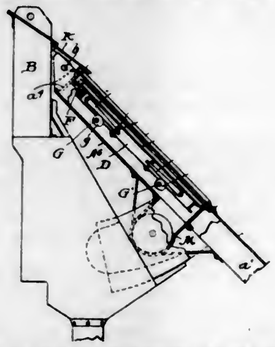
4. In a telephone-switch, in combination, a base having a seat and a standard, a switch-hook pivoted to the standard, an insulating-block in the seat and provided with kerfs, a series of four resilient terminals in the kerfs, one of the said terminals being normally depressed into contact with one of the other terminals and having an arm engaging the hook to raise the same when the receiver is removed and coincidently breaking contact with the terminal with which it is normally in contact and pressing the other two terminals into contact.

820,433. VEHICLE-AXLE. JAMES L. MCFARLANE, Georgetown, Ill., assignor of one-half to James M. Frazier, Georgetown, Ill. Filed Sept. 25, 1905. Serial No. 279,997.



Claim.—In a vehicle-axle, a spindle, a hub, mounted upon the spindle and provided with a concentric cavity within its inner end, a collar mounted and longitudinally movable upon the spindle and contained wholly within the cavity a shank carried rigidly by the collar and in contact with the axle, and means to connect the shank rigidly and adjustably to the axle.

820,434. APRON FOR CAR-DUMPING MACHINES. JOHN MCMYLER, Cleveland, Ohio. Filed Sept. 29, 1904. Serial No. 226,445.



Claim.—1. In a car-dumping machine, the combination of an inclined apron which includes in its construction a plurality of parallel longitudinal beams, floor-plates secured upon the lower parts of said beams, and a plurality of parallel longitudinal bars secured between the upper parts of said longitudinal beams at substantially the level of said floor-plates, with a plurality of frames located severally between said longitudinal beams and below said bars, a plurality of longitudinal bars secured to each of said frames, and means for supporting said frames and adjusting them toward and from said upper bars.

2. In a car-dumping machine, the combination of an inclined apron which includes in its construction a plurality of parallel longitudinal beams, floor-plates secured upon the lower parts of said beams, and a plurality of parallel longitudinal bars secured between the upper parts of said longitudinal beams at substantially the level of said floor-plates, with a plurality of frames located severally between said longitudinal beams and below said bars, a plurality of longitudinal bars secured to each of said frames, shafts extending transversely of the apron and mounted in bearings supported by said longitudinal beams, and means carried by said shafts for adjustably supporting said frames.

3. The combination with the vertically-movable apron-supporting girder of a car-dumping machine, an apron hinged thereto and capable of being held at various inclinations, which apron has a floor over its lower part, and an upwardly-extended transverse flange near its upper end, a plurality of longitudinal bars whose rear upper ends pass through holes in said flange and whose front lower ends are fixed upon the floor of the apron, a bridge-plate pivoted at its upper end to said girder and having its lower end supported on the apron and extended over the upper ends of said bars, and a plurality of longitudinal bars located below the spaces between the bars first named.

4. In a car-dumping machine, the combination of an inclined apron, whose floor at the upper part of said apron is composed of a plurality of parallel longitudinal bars, a plurality of frames located beneath said bars, and having each a plurality of longitudinal bars secured to it, shafts extending transversely of the apron, and a plurality of cams secured thereto engaging said frames, and links connecting the upper end of said frame with the apron.

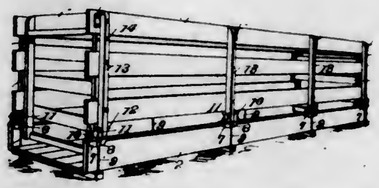
5. In a car-dumping machine, the combination of an inclined apron, whose floor at the upper part of said apron is composed of a plurality of parallel longitudinal bars, a plurality of frames located beneath said bars, and having each a plurality of longitudinal bars secured to it, bars adjustably secured to said frames, shafts extending transversely of the apron, and cams secured to said shafts engaging with said adjustable bars, and means for simultaneously rotating the shafts.

820,435. HAY-RACK. EDMUND NEVILLE, Dixon, Ill. Filed June 13, 1905. Serial No. 265,062.

Claim.—1. A wagon-body bracket for hay and stock racks comprising a saddle formed to fit down on and straddle a wagon-body side and on its top formed with adjacent sockets, substantially as described.

2. A hay-rack bracket comprising an elongated saddle approximately U-shaped in cross-section and having securing-bolt-receiving vertical perforations at its opposite sides and at the top formed with means to receive parts of the hay-rack.

3. A hay-rack bracket comprising upwardly-projecting top lugs forming adjacent sockets to receive parts of a hay-rack and to support the rack-side sections.



4. A hay-rack bracket comprising a body adapted to be secured to a wagon-body side and provided with upwardly-projecting spaced lugs forming two adjacent sockets.

5. A hay-rack bracket comprising a body having upwardly-projecting end lugs and an intermediate upwardly-projecting lug spaced from the end lugs and dividing the space between the end lugs into two sockets.

6. A hay-rack bracket comprising a saddle having at its top surface a plurality of upright spaced lugs forming sockets, a pair of said lugs being inclined outwardly, and a transverse pivot mounted in their upper ends to confine a rack-section cross-bar between said inclined lugs.

7. A hay-rack comprising a wagon-body, series of similar brackets secured along the top edges of the wagon-body sides, each bracket formed with a pair of adjacent top sockets, and adjustable rack-side sections supported thereby.

8. A hay-rack comprising a wagon-body, series of brackets secured along the top edges of the wagon-body sides and formed with top sockets, adjustable rack-side sections having cross-bars pivotally joined to the brackets, and side-section-supporting means adapted to extend transversely of the wagon-body and removably fit in the sockets of opposite brackets.

9. A hay-rack comprising a wagon-body, series of similar brackets secured along the top edges of the wagon-body side, each bracket formed with adjacent top sockets, adjustable rack-side sections and means adapted to extend transversely of the wagon-body and removably fit in sockets of opposite brackets to support said sections in hay-rack position.

10. In combination, a wagon-body having bottom cross-bars, series of brackets arranged along the opposite wagon-body sides and over the opposite ends of said cross-pieces, each bracket comprising a saddle straddling the top edge of a side and provided with a top socket and vertical bolts arranged at the opposite vertical faces of the side and passing down through the cross-bar and up through the opposite side portions of the saddle, and rack-side sections.

11. In combination, a wagon-body, brackets secured along the top edges of the wagon-body sides and formed with upwardly-extending lugs above the wagon-body sides, rack-side sections, transverse pivot-bolts pivotally joining the side sections to said lugs, and removable supporting cross-bars adapted to extend transversely of the wagon-body and rest between lugs of opposite brackets and upholding said side sections.

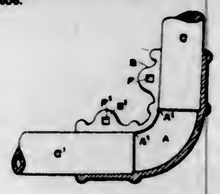
12. In combination, a wagon-body, saddles secured along the opposite sides thereof and having upwardly-extending lugs, each saddle having a pair of spaced lugs inclined outwardly, rack-side sections having cross-bars at their lower ends pivotally joined between said lugs, and removable supporting-bars to extend transversely of the wagon-body and saddles to support the side sections in lowered position.

13. A hay-rack comprising in combination, a wagon-body, rack-side sections having cross-bars pivotally connected with the wagon-body, whereby said sections can swing vertically, said sections comprising longitudinal planks secured to the cross-bars, and transverse removable supporting cross-bars extending transversely of the wagon-body and projecting beneath both side sections to engage the under faces of the sections and support them in the horizontal position.

14. A hay-rack comprising swinging side sections, and removable cross-bars to support the same in lowered position, and means to stop said bars against longitudinal movement.

15. A hay-rack bracket formed to fit on the top edge of a wagon-body side and having securing means to pass down on opposite sides of the wagon-body side, said bracket provided with three vertically-disposed portions placed to form sockets above the wagon-body side.

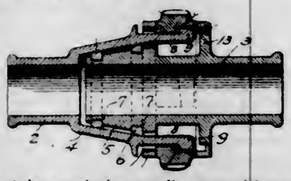
820,436. CLAMPING-ELBOW FOR TUBULAR FARM-GATES. THOMAS PATTERSON, Toronto Junction, Canada. Filed June 23, 1905. Serial No. 266,656.



Claim.—1. A clamping-elbow having a longitudinal slot therein, an internal shoulder against which the pipes are designed to abut and lugs formed on each side of the slot opposite the enlarged ends of the elbow and bolts extending through such lugs as specified.

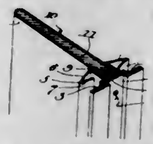
2. A clamping-elbow having a longitudinal slot therein and internal shoulders against which the pipes are designed to abut, as and for the purpose specified.

820,437. HOSE AND PIPE COUPLING. JONAS PEERSON, Willowbrook, Canada, assignor to Ingmer T. Aveisgard, Yorkton, Canada. Filed Mar. 18, 1905. Serial No. 250,795.



Claim.—A hose and pipe coupling comprising two members provided with ends adapted to abut on one another, one of said members having a series of arms provided with cam-surfaces, the other member being provided with webs spaced from one another and one of them having apertures through which said arms are inserted, a locking-ring loosely mounted between said webs and into which said arms are thrust, said ring being provided with a series of lugs at intervals provided with cam-surfaces to engage the corresponding surfaces on said arms and draw said members together, and a retaining-collar on one of said webs, substantially as described.

820,438. STORE-FRONT CONSTRUCTION. FRANCIS J. PLYM, Kansas City, Mo. Filed July 8, 1905. Serial No. 268,833.



Claim.—1. A sash-bar or mullion, comprising a face-piece, a back-piece having a forwardly-projecting rib secured centrally to the face-piece and provided at opposite sides and inward of the face-piece with resilient flanges, and means for stiffening said rib to prevent its sides from moving inwardly or toward each other.

2. A sash-bar or mullion, comprising a face-piece, a back-piece secured to the rear side of the face-piece and provided at opposite sides with resilient flanges substantially V shape in cross-section and disposed rearward of the face-piece, and means for stiffening the back-piece to prevent said resilient flanges moving inwardly or toward each other.

3. A sash-bar or mullion, comprising a face-piece, a back-piece secured to the rear side of the face-piece, and flanges projecting outwardly from said back-piece and consisting of arms projecting outwardly from the back-piece, and arms projecting inwardly from the outer edges of the first-named arms.

4. A sash-bar or mullion, comprising a face-piece provided with a longitudinal rib at its rear side, a back-piece secured to the rear side of said rib, and a resilient flange projecting outwardly or laterally from the back-piece and disposed rearward of and contiguous to the face-piece.

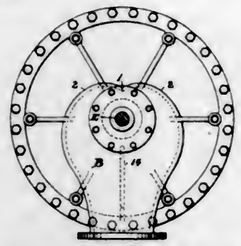
5. A sash-bar or mullion, comprising a face-piece, a back-piece comprising a hollow forwardly-projecting rib secured to the rear side of the face-piece, a flange projecting laterally or outwardly from said hollow rib, and means to stiffen said hollow rib to prevent its sides from moving inwardly or toward each other.

6. A sash-bar or mullion, comprising a face-piece, a back-piece comprising a hollow forwardly-projecting rib secured to the rear side of the face-piece, a flange projecting laterally or outwardly from said hollow rib, and a stiffening bar or rib fitting in the hollow rib of the back-piece to prevent its sides from moving inwardly or toward each other.

7. A sash-bar or mullion, comprising a face-piece provided with a longitudinal rib at its rear side, and a recess at one side of the same, a back-piece comprising a forwardly-projecting hollow rib secured to the rear side of the rib of the face-piece and a laterally-projecting flange disposed rearwardly of such recess of the face-piece, and a stiffening bar or rib engaging said hollow rib to prevent its sides from moving inwardly or toward each other.

8. A sash-bar or mullion, comprising a face-piece provided with a longitudinal rib at its rear side, and a recess at one side of the same, a back-piece comprising a forwardly-projecting hollow rib secured to the rear side of the rib of the face-piece and a laterally-projecting flange disposed rearwardly of such recess of the face-piece, and a stiffening-bar engaging said hollow rib to prevent its sides from moving inwardly or toward each other; said stiffening-bar comprising a wood strip provided with a sheet-metal cover.

820,439. CENTRIFUGAL, TURBINE, AND SIMILAR PUMP. FREDERICK RAY, East Orange, N. J., assignor to Henry R. Worthington, New York, N. Y., a Corporation of New Jersey. Filed May 6, 1905. Serial No. 259,250.



Claim.—1. In a centrifugal, turbine or similar pump, the combination with the impeller and its suction-opening, of a suction-passage formed in two volutes on opposite sides of and transverse to the impeller suction-opening.

2. In a centrifugal, turbine or similar pump, the combination with the impeller and its suction-opening, of a suction-passage formed in two volutes on opposite sides of and transverse to the impeller suction-opening, the inner walls of said volutes being formed with surfaces curving from the outer walls of the volutes to the impeller-suction.

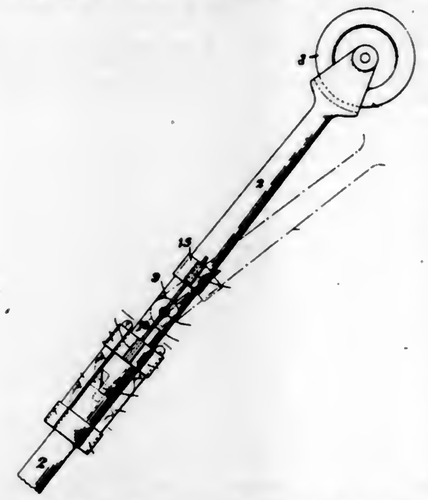
3. A centrifugal, turbine or similar pump having the suction-head B provided with the suction-volutes 11, 12 on opposite sides of and meeting above the impeller suction-opening.

4. A centrifugal, turbine or similar pump having the suction-head B provided with the suction-volutes 11, 12 having the curved guiding-surfaces 2 on their inner walls said volutes being formed on opposite sides of and meeting above the impeller suction-opening.

820,440. TROLLEY-POLE. ROBERT P. REVER, Newark, N. J., assignor of one-half to Everett Irving Rever, Newark, N. J. Filed Feb. 18, 1905. Serial No. 246,351.

Claim.—1. A trolley-pole having sections normally lying in the same straight line with their abutting ends hinged together and adapted to bend with respect to each other in a plane of the pole, a pair of leaf-springs for said joint arranged on diametrically opposite sides of the pole and edgewise with respect thereto in substantially the plane determined by the hinge-pin and the pole, and means upon said sections for securing the ends of said springs thereto on opposite sides of the said hinge-joint of the pole, while permitting said springs to slide longitudinally at one end with respect to the adjacent pole-section.

2. A trolley-pole having sections normally lying in the same straight line with their abutting ends hinged together to bend in a plane passing through the pole, collars upon said pole at opposite sides of said joint providing radial extensions with seats therein at diametrically opposite sides of the pole and in a plane thereof substantially at right angles to the plane of bending of the pole-sections, and a pair of flection-springs arranged one on each side of the pole on the said seats of the extensions of the collars one end of each spring being free to slide with respect to its supporting-collar.

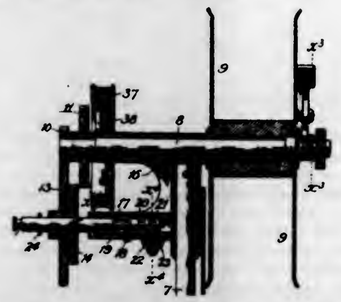


3. A trolley-pole having intermediate of its ends a hinge-joint, collars upon said pole at opposite sides of said joint and providing radial extensions with slots therein, and leaf-springs arranged at their opposite ends in said slotted extensions of the collars and lying at opposite sides of the trolley-pole in a plane substantially at right angles to the plane of bending of the joint.

4. A trolley-pole having intermediate of its ends two hinge-joints arranged in planes substantially at right angles to each other, a pair of leaf-springs for each joint, the springs of each pair being arranged on opposite sides of the trolley-pole in a plane substantially at right angles to the plane of bending of said joint, and means for securing said springs to the pole on opposite sides of the hinge-joint, said means permitting the springs to slide longitudinally on one side of the joint.

5. A trolley-pole having two adjacent hinge-joints at substantially right angles to each other, one of them being in the plane of the trolley-wheel, collars arranged one above said joints, one below and one intermediate of said joints, and leaf-springs mounted upon said collars in pairs each pair extending across a joint and lying in a plane substantially at right angles to the plane of bending of said joint with its members on opposite sides of the trolley-pole.

820,441. FILM-REELING MECHANISM. ALVAH C. ROEBUCK, Chicago, Ill. Filed Jan. 3, 1905. Serial No. 239,358.



Claim.—1. In a kinetoscope, the combination of a casing, a bearing-bracket arranged above said casing, a lateral shaft journaled in said bracket and adapted to support the film-carrying reel, a secondary shaft journaled in said bracket, pairs of gears on said shafts, one pair being in separated and the other pair in adjacent relation, means for affording a lengthwise adjustment of one shaft and the gears carried thereby, means for locking said shaft at its adjustment, and means for manually operating the secondary shaft, substantially as set forth.

2. In a kinetoscope, the combination of a casing, a bearing-bracket arranged above the casing, a lateral shaft journaled in said bracket and adapted to support the film-carrying reel, a pair of gears secured in separated relation on said shaft, a secondary shaft arranged for rotary movement and lengthwise adjustment in said bracket, a pair of gears secured in close relation on said shaft, means for locking said shaft at its adjustment, and means for manually operating said shaft, substantially as set forth.

3. In a kinetoscope, the combination of a casing, a bearing-bracket arranged above the casing, a lateral shaft journaled in said bracket and adapted to support the film-carrying reel, a pair of gears secured in separated relation on said shaft, a secondary shaft arranged for rotary movement and lengthwise adjustment in said bracket and having a pair of circumferential recesses in spaced relation, a pair of gears secured in close relation on said shaft, a transversely-moving spring-bolt adapted for alternate engagement in said recesses, and means for manually operating the secondary shaft, substantially as set forth.

4. In a kinetoscope, the combination of a casing, a bearing-bracket arranged above the casing, a lateral shaft journaled in said bracket and adapted to support the film-carrying reel, a pair of gears secured in separated relation on said shaft, a secondary shaft arranged for rotary movement and lengthwise adjustment in said bracket and having a pair of circumferential recesses in spaced relation, a pair of gears secured in close relation on said shaft, a transversely-moving spring-bolt adapted for alternate engagement in said recesses, a stop-pin on the bracket engaging an elongated recess in the secondary shaft to limit the lengthwise movement of the same, and means for manually operating the secondary shaft, substantially as set forth.

5. In a kinetoscope, the combination of a casing, a bearing-bracket arranged above said casing, a lateral shaft journaled in said bracket and provided with a recess at one end, a film-carrying reel arranged on said shaft, and a latch mechanism carried on said reel and adapted to engage the recess of said shaft, and comprising a hub secured to the reel and formed with a side recess, a spring-latch pivoted on said reel and having a semicircular portion at one end adapted to fit the side recess of the hub, and a radial pin carried by the semicircular portion and adapted for locking engagement in the recess of the shaft aforesaid, substantially as set forth.

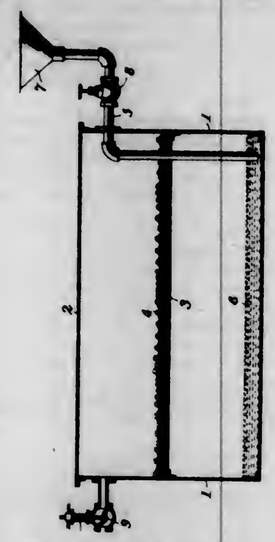
6. In a kinetoscope, the combination of a shaft adapted for manual actuation and provided with a cross-pin and a recess at one end, an operating-handle having a sleeve portion formed with longitudinal recesses for engaging the cross-pin aforesaid, and a sliding spring-bolt moving in said handle and provided with a catch-hook adapted for engagement in the recess of the shaft, substantially as set forth.

7. In a kinetoscope, the combination of a shaft adapted for manual actuation and provided with a cross-pin and a recess at one end, an operating-handle having a sleeve portion formed with longitudinal recesses engaging the cross-pin aforesaid, a sliding spring-bolt moving in said handle and provided with a catch-hook adapted for engagement in the recess of the shaft and with an elongated recess, and a stop-pin engaging an elongated recess in the spring-bolt to limit the movement of the same, substantially as set forth.

820,442. APPARATUS FOR PRESERVING BY LIQUID AIR. WALTER T. SCHEELE, Baltimore, Md., assignor to William J. Hooper, Baltimore, Md. Filed June 17, 1905. Serial No. 265,752.

Claim.—The herein-described preserving apparatus comprising a vessel normally closed to the outer air, a perforated tray or partition extending centrally across said vessel and providing an upper and lower compartment therein, a pipe extending into the upper compartment through the partition into the lower compartment, said pipe provided with a valve and an upwardly-projecting filling device, an outlet-pipe communicating with the upper compartment and provided with a spring-seated valve, so disposed that it may be overcome by the pressure from within the casing to unseat said valve, said perforated partition or tray serving to support the material to be treated in contact with the gasified liquid air in the lower compartment, substantially as described.

820,442.



shafts in coupled position relative to said drums, and means for simultaneously rotating said drums.

3. In a device of the class described, an inclosing casing, oppositely-disposed drums spaced apart and mounted for rotation in said casing and with journals extending through the same, a belt connected respectively to said drums for winding from one to the other, gears upon said drums for rotating said drums simultaneously in the same direction, one of said gears having spaced recesses radially disposed, an arm pivoted upon the journal of the gear carrying the recesses, a spring-controlled pawl carried by said arm for consecutive engagement with said recesses, spaced stop members carried by said arm for alternate engagement with the teeth of one of said gears, a retracting spring connected to said arm, and means for moving said arm against the force of said spring.

4. In a device of the class described, the combination with a pair of drums, a train of gears connecting the drums for simultaneous rotation in the same direction, and a web wound upon the drums, of operating means consisting of a ratchet-lever coöperating with one of the gears and provided with stop elements disposed for alternate engagement with one of the other gears at opposite limits of the lever to lock the train of gears at each limit of movement of the lever.

5. In a device of the class described, the combination with a pair of drums, a train of gears connecting the drums, and a web wound upon the drums, of an operating-lever fulcrumed upon the axis of one of the gears and provided with a ratchet-pawl coöperating with one face of the adjacent gear, and stop projections carried by the lever at opposite sides of the pawl for alternate engagement with one of the other gears at opposite limits of the lever to lock the train of gears.

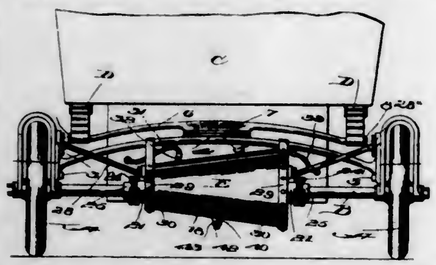
820,443. STREET AND STATION INDICATOR. FERDINAND SCHUBERT, Cincinnati, Ohio. Filed June 8, 1906. Serial No. 264,323.



Claim.—1. In a device of the class described, the combination with a case having a sight-opening, of a pair of drums contained within the case at opposite sides of the sight-opening, a backing-plate mounted within the case in rear of the sight-opening, guide members located at opposite sides of the sight-opening, one of the guides being adjustable toward and away from the other, a supplemental guide located between the adjustable guide and the adjacent drum, and a web extending from one of the drums to the adjacent guide, thence between the sight-opening and the backing-plate, thence to the adjustable guide, thence to the supplemental guide and finally to the other drum.

2. In a device of the class described, an outer casing having spaced transverse bearings, an inner casing spaced from said outer casing and having bearings in alinement with the bearings in said outer casing and leading rearwardly, drums having journals engaging the bearings in said inner casing, the journals at corresponding ends of the drums being provided with sockets adjacent to the outer casing-bearings, a belt connected at the ends respectively to said drums for winding from one to the other, stub-shafts rotatively engaging said outer casing-bearings and detachably engaging the sockets of said drum-journals, means for yieldably maintaining said

820,444. MOTOR-VEHICLE. HORATIO W. SOUTHWORTH, Mittineague, Mass. Filed Aug. 16, 1904. Serial No. 220,956.



Claim.—1. In combination, an axle, a non-reciprocating engine mounted thereon, a cross-bar above said axle, wheels on said axle, and means supporting said cross-bar on said axle at both sides of each of said wheels, said engine passing between said cross-bar and said axle.

2. In combination, an axle, a turbine mounted thereon, a cross-bar above said axle, wheels on said axle, and means supporting said cross-bar on said axle at both sides of said wheels.

3. In combination, an axle, a turbine mounted upon said axle, a cross-bar above said axle, wheels on said axle, and means supporting said cross-bar on said axle at points adjacent said wheels, said turbine passing between said axle and said cross-bar.

4. In combination, an axle, a turbine mounted thereon, a cross-bar above said axle, wheels on said axle, and means supporting said cross-bar on said axle at both sides of each of said wheels, said turbine being connected to said cross-bar.

5. In combination, an axle, wheels mounted thereon, supporting members extending over said wheels and resting on said axle at either side thereof, a cross-bar detachably connecting said supporting members, and a source of power adapted to drive said wheels.

6. In combination, an axle, wheels mounted thereon, supporting members extending over said wheels and resting on said axle at either side thereof, a cross-bar detachably connecting said supporting members, and a source of power mounted on said axle.

7. In combination, an axle, a vehicle running-gear, a source of heat mounted adjacent said axle, and a plurality of connections between said axle and said running-gear, each connection being so proportioned and related to the associated parts and to said source of heat as to increase and diminish the distance between the parts of the axle and the running-gear with which they are connected under the varying influence of said source of heat in a substantially equal degree.

8. In combination, an axle, a cross-bar, a source of heat mounted adjacent said axle, and a plurality of connections between said axle and said cross-bar and related to the associated parts and to said source of heat so as to increase and diminish the distance between the parts of the axle and of said cross-bar with which they are connected under the varying influence of said source of heat in a substantially equal degree.

9. In combination, an axle, vehicle running-gear, a source of heat mounted on said axle, and a plurality of connections between said axle and running-gear, each connection being so proportioned and related to the associated parts and to said source of heat as to increase and diminish the distance between the parts of the axle and of said running-gear with which they are connected under the varying influence of said source of heat in a substantially equal degree.

10. In combination, an axle, a turbine mounted thereon, and dust-protectors mounted on said axle at points outside said turbine.

11. In combination, an axle, a turbine mounted thereon, stuffing-boxes on said turbine, and dust-protectors mounted on said axle at points outside said stuffing-boxes.

12. In combination, an axle, a turbine mounted thereon, stuffing-boxes at each end of said turbine, sleeves adapted to vary the pressure from the packing in said stuffing-boxes, and collars secured to said sleeves and adapted to retain dust-excluding means in operative position on said axle.

13. In a motor-vehicle, in combination, a plurality of axles, and a turbine mounted on each of said axles, each turbine being adapted to run at a speed different from the others when all of said turbines are working at a maximum of efficiency.

14. In combination, an axle, a turbine mounted thereon having a plurality of chambers, connections between said chambers outside the shell of said turbine, and an outer casing adapted to cover said shell and said connections.

15. In combination, an axle, a turbine mounted thereon having a plurality of chambers, connections between said chambers outside the shell of said turbine, and an outer casing fitting said shell and having an outward projection inclosing said connections.

16. In combination, an axle, a source of power connected therewith, a cross-bar mounted above said axle, wheels on said axle, means supporting said cross-bar on said axle at both sides of each of said wheels, a vehicle-body mounted on said cross-bar, and flexible connections between said body and said source of power.

17. In combination, an axle, a turbine mounted thereon, a cross-bar above said axle, wheels on said axle, means supporting said cross-bar on said axle at both sides of each of said wheels, a vehicle-body mounted upon said cross-bar, and flexible connections between said body and said turbine.

18. In combination, an axle, wheels mounted thereon, supporting members extending over said wheels and resting on said axle at either side of each of the same, a cross-bar detachably connecting said supporting members, a turbine mounted on said axle, and an extensible connection between said turbine and said cross-bar.

19. In combination, an axle, wheels on said axle, a cross-bar mounted adjacent said axle and supported thereon at each side of each of said wheels, a source of heat mounted adjacent said axle, and a plurality of connections between said axle and said cross-bar, each connection being so proportioned and related to the associated parts and to said source of heat as to increase and diminish the distance between the parts of the axle and of the cross-bar with which it is connected under the varying influence of said source of heat in a substantially equal degree.

20. In combination, an axle, a turbine mounted thereon, dust-protectors mounted on said axle at points outside said turbine, wheels on said axle, a cross-bar above said axle, and means supporting said cross-bar on said axle at both sides of each of said wheels.

21. In a motor-vehicle, in combination, a plurality of axles, a turbine of different construction mounted upon each of said axles, a cross-bar mounted above one of said axles, wheels on said axle, and means for supporting said cross-bar on said axle at both sides of each of said wheels.

22. In combination, an axle, a turbine mounted thereon having a plurality of chambers, connections between said chambers outside the shell of said turbine, an outer casing fitting said shell and having an outward projection extending over said connections, a cross-bar above said axle, wheels on said axle, and means supporting said cross-bar on said axle at both sides of each of said wheels.

23. In combination, an axle, a vehicle running-gear, a turbine mounted on said axle, dust-protectors on said axle at points outside of said turbine, and a plurality of connections between said axle and said running-gear, each connection being so proportioned and related to the associated parts and to said turbine as to increase and diminish the distance between the parts of the axle and of said running-gear with which they are connected under the varying influence of the heat of said turbine in a substantially equal degree.

24. In combination, an axle, a turbine mounted thereon, dust-protectors on said axle at points outside said turbine, wheels on said axle, a cross-bar adjacent said axle and supported thereon at both sides of each of said wheels, and a plurality of connections between said axle and said cross-bar, each connection being so proportioned and related to the associated parts and to said turbine as to increase and diminish the distance between the parts of the axle and of said cross-bar with which they are connected under the varying influence of the heat of said turbine in a substantially equal degree.

25. In a motor-vehicle, in combination, a plurality of axles, a turbine of different construction mounted upon each of said axles, wheels on said axles, a cross-bar mounted upon one of said axles at both sides of said wheels, and a plurality of connections between said axle and said cross-bar, each connection being so proportioned and related to the associated parts and to said turbine as to increase and diminish the distance between the parts of the axle and of said cross-bar with which they are connected under the varying influence of the heat of said turbine in a substantially equal degree.

26. In a motor-vehicle, in combination, a plurality of axles, a turbine of different construction mounted upon each of said axles, each turbine having a plurality of chambers, connections between said chambers outside the shell of one turbine, an outer casing fitting said shell and having an outward projection extending over said connections, and a cross-bar mounted adjacent one of said axles and supported thereon at both sides of each of said wheels.

27. In combination, an axle, a turbine mounted thereon having a plurality of chambers, connections between said chambers outside the shell of said turbine, an outer casing fitting the shell of said turbine and having an outward projection extending over said connections, dust-protectors mounted on said axle at points outside of said turbine and adapted to coact therewith, a cross-bar mounted adjacent said axle, and a plurality of connections between said axle and said cross-bar, each connection being so proportioned and related to the associated parts and to said turbine as to increase and diminish the distance between the parts of the axle and of said cross-bar with which they are connected under the varying influence of the heat of said turbine in a substantially equal degree.

28. In a motor-vehicle, in combination, a plurality of axles, a turbine of different construction mounted upon each of said axles, dust-protectors on said axles outside of said turbines and adapted to coact therewith, wheels on said axles, a cross-bar adjacent one of said axles and supported thereon at both sides of said wheels, and a plurality of connections between said axle and said cross-bar, each connection being so proportioned and related to the associated parts and to said turbine as to increase and diminish the distance between the parts of the axle and of said cross bar with which they are connected under the varying influence of the heat of said turbine in a substantially equal degree.

29. In combination, an axle, a turbine mounted thereon, dust-protectors on said axle outside of said turbine and adapted to coact therewith, said turbine being divided into a plurality of chambers, connections between said chambers outside the shell of said turbine, an outer casing fitting said turbine and having an outward projection extending over said connections, wheels on said axle, a cross-bar adjacent said axle and supported thereon at both sides of each of said wheels, and a plurality of connections between said axle and said cross-bar, each connection being so proportioned and related to the associated parts and to said turbine as to increase and diminish the distance between the parts of said axle and of said cross-bar with which they are connected under the varying influence of the heat of said turbine in a substantially equal degree.

30. In a motor-vehicle, in combination, a plurality of axles, a turbine of different construction mounted upon each of said axles, dust-protectors on said axles at points outside of one turbine and adapted to coact therewith, said turbine comprising a plurality of chambers, connections between said chambers outside the shell of said turbine, an outer casing fitting the shell of said turbine and having an outward projection adapted to extend over said connections, wheels on said axles, a cross-bar mounted adjacent one of said axles and supported thereon at points adjacent each of said wheels, and a plurality of connections between said axle and said cross-bar, each connection being so proportioned and related to the associated parts and to said turbine as to increase and diminish the distance between the parts of the axle and of said cross-bar with which they are connected under the varying influence of the heat of said turbine in a substantially equal degree.

31. In a motor-vehicle, in combination, a vehicle-body, an axle, a turbine mounted on said axle, and vertically-alined pivotal connections between said axle and said vehicle-body.

32. In a motor-vehicle, in combination, a vehicle-body, an axle, a cross-bar mounted upon said axle, a pivotal connection between said vehicle-body and said cross-bar, a turbine mounted on said axle, and a pivotal connection between said turbine and said vehicle-body substantially vertically alined with said first-mentioned pivotal connection.

33. In a motor-vehicle, in combination, a vehicle-body, an axle, a turbine mounted on said axle and adapted to drive the same, a cross-bar mounted adjacent said axle and supported thereon at both sides of each of the wheels thereof, a pivotal connection between said cross-bar and said vehicle-body, and a second pivotal connection between said vehicle-body and the lower side of said turbine.

34. In combination, a vehicle-body, an axle, a cross-bar mounted adjacent said axle, a transverse spring-bar, springs adapted to support said vehicle-body upon said spring-bar, a pivotal connection between said spring-bar and said cross-bar, a source of power mounted on said axle, and a pivotal connection between a part of said source of power and said vehicle-body substantially vertically alined with said first-mentioned pivotal connection.

35. In a motor-vehicle, in combination, an axle, wheels upon said axle, supporting members resting upon said axle at points adjacent said wheels, a cross-bar mounted upon said supporting members and adapted to transmit thereto a portion of the weight of the vehicle-body, braces secured to the inner sides of said supports, and means upon said axle against which said braces are adapted to abut.

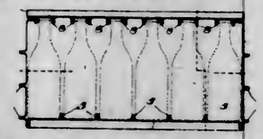
36. In a motor-vehicle, in combination, an axle, wheels upon said axle, supporting members engaging said axle at points adjacent said wheels, a cross-bar secured to said supporting members and adapted to transmit thereto a portion of the weight of the vehicle-body, sockets mounted upon said supports, braces resting in said sockets, and means upon said axle against which said braces are adapted to abut.

37. In a motor-vehicle, in combination, an axle, wheels mounted upon said axle, supporting members extending on either side of said wheels and resting upon said axle, a cross member mounted upon said supporting members and adapted to transmit a portion of the weight of the vehicle-body thereto, sockets upon the inner sides of said supporting members, elastic means inclosed in said sockets, braces adapted to rest in said sockets and engage said elastic means, and means upon said axle against which said braces are adapted to abut.

38. In a motor-vehicle, in combination, an axle, wheels mounted upon said axle, supporting members extending on either side of said wheels and resting upon said axle, a cross member mounted upon said supporting members and adapted to transmit a portion of the weight of the vehicle-body thereto, sockets upon the inner sides of said supporting members, elastic means inclosed in said sockets, braces adapted to rest in said sockets and engage said elastic means, and a turbine mounted upon said axle against the heads of which said braces are adapted to abut.

39. In combination, an axle, a non-reciprocating engine thereon, a vehicle-body, a cross-bar connected with said vehicle-body and supported upon said axle at each side of said engine, and means connecting said engine with said cross-bar.

820,445. **PACKING-CASE.** ARTHUR R. SPEER, Pittsburg, Pa. Filed Mar. 28, 1905. Serial No. 252,446.



Claim.—1. A bottle-case composed of sheet metal and provided with upwardly-pressed holding projections in its bottom portion arranged to intervene between adjacent bottles and to provide limiting lateral bearings therefor at various points surrounding the bottle-base, and corresponding downwardly-pressed holding portions in the top portion of the case, substantially as set forth.

2. A bottle-case provided on its bottom with a plurality of integral longitudinally and transversely arranged upwardly-projecting portions adapted to embrace the base of the bottle, and provided with a lid having corresponding neck-embracing projections, substantially as set forth.

3. A bottle-case composed of sheet metal and provided with upwardly-pressed holding projections in its bottom portion arranged to intervene between the bottles lengthwise and crosswise of the case, and corresponding downwardly-pressed holding portions in its top portion, substantially as set forth.

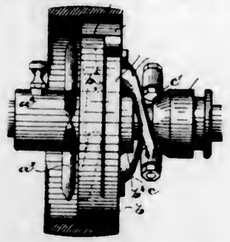
4. A sheet-metal bottle-case having series of inwardly-pressed projecting ridges adapted to intervene between adjacent bottles lengthwise and crosswise of the case and to hold them against movement, with a top having similarly-arranged projections, substantially as set forth.

5. A bottle-case composed of sheet metal and provided in its bottom with a plurality of upwardly-pressed projections arranged to intervene between the bottles both longitudinally and transversely of the case, substantially as set forth.

6. A bottle-case composed of sheet metal and provided in its bottom with a plurality of upwardly-pressed projections arranged to intervene between the bottles, said projections being arranged in rows at right angles to each other, substantially as set forth.

7. A bottle-case composed of sheet metal and provided in its bottom with a plurality of upwardly-pressed projections arranged to intervene between the bottles, said projections being arranged in rows at right angles to each other, with a top having a plurality of downwardly-pressed holding projections, substantially as set forth.

820,446. **FRICTION-CLUTCH.** GEORGE STAHL, Dayton, Ohio, assignor of one-third to William P. Coffman and one-third to John I. Coffman, Dayton, Ohio. Filed Dec. 14, 1904. Serial No. 236,783.



Claim.—1. The combination with the outer revolving part of an inner friction device consisting of a rim split transversely and circumferentially as set forth and means for forcing the parts on each side of said transverse slot in opposite directions to cause them to impinge the outer revolving part, substantially as described.

2. The combination with the wheel or pulley, of the inner friction device having a rim split transversely in one or more places and having a circumferential slot extending to a point adjacent to where said rim is split transversely, a depression or socket between the free ends of the rim-sections formed by said longitudinal slot, and a pivoted lever located in said depression, and means for operating said lever, substantially as and for the purpose set forth.

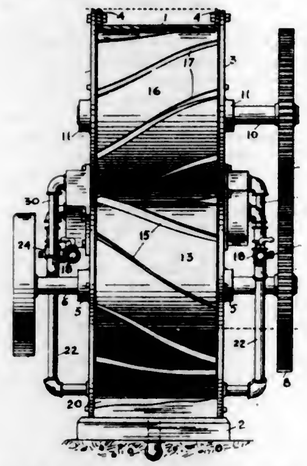
3. In a friction device, an outer clutch member, an inner clutch member within the periphery of said outer clutch member, the periphery of said inner clutch member being divided by transverse slots into a plurality of segments, a tongue formed on each of said segments by the intersection of a circumferential slot in each segment with one of said transverse slots, and means for forcing said tongues outward to frictionally engage said outer clutch member, substantially as specified.

4. The combination with the outer wheel or pulley having a hub offset as set forth, of an inner device located within said wheel consisting of a rim split transversely and circumferentially, pivoted operating-arms to engage the rim-sections formed by said transverse and longitudinal splitting, and a sliding member adapted to contact with the inner ends of said operating-levers as set forth.

5. The combination with the outer pulley or wheel, of an inner friction device having a transversely-split rim, operating-arms adapted to move the sections of said rim on each side of said split, said operating-arms extending inwardly and provided with adjustable contacting devices, and a sliding member adapted to engage with said contacting devices, as and for the purpose specified.

6. The combination with a shaft and pulley turning loosely thereon, a friction device secured to said shaft consisting of a rim fitting within the rim of said pulley and split transversely and circumferentially, operating-arms to engage the sections of said rim on each side of said split, adjustable contacting devices in the ends of said arm, and a movable member on said shaft adapted to be moved to and from said arms and contact with the same, substantially as and for the purpose specified.

820,447. **ROTARY ENGINE.** HENRY E. THOMAS, San Francisco, Cal., assignor of one-half to George Tressler, San Francisco, Cal. Filed Aug. 28, 1905. Serial No. 276,043.



Claim.—1. In a rotary engine, the combination of a main driving-shaft, a drum thereon, a second shaft, and a second drum thereon contacting with the first drum, a casing surrounding said drums, one of the drums having formed or secured thereon vanes, and the other drum having formed therein grooves into which said vanes enter on the plane where the drums contact with each other, the vanes and grooves being arranged upon the surfaces of the respective drums at an angle with lines thereon parallel with the shafts, the casing fitting closely around the drum having the grooves and also fitting closely around the outer edges of the vanes, means for admitting steam into the space between the drum carrying the vanes, and the casing around the vanes at a point adjacent to the plane of contact between the two drums, and means for exhausting the steam at a point of the casing remote from said plane of contact, substantially as described.

2. In a rotary engine, the combination of a main driving-shaft, a drum thereon, a second shaft, and a second drum thereon contacting with the first drum, a casing surrounding said drums, one of the drums having formed or secured thereon vanes, and the other drum having formed therein grooves into which said vanes enter on the plane where the drums contact with each other, the grooves being substantially V-shaped in cross-section and the vanes corresponding therewith in cross-section but tapering more sharply than the grooves, the vanes and grooves being arranged on the surfaces of the respective drums at an angle with lines thereon parallel with the shafts, the casing fitting closely around the drum having the grooves and also fitting closely around the outer edges of the vanes, means for admitting steam into the space between the drum carrying the vanes, and the casing around the vanes at a point adjacent to the plane of contact between the two drums, and means for exhausting the steam at a point of the casing remote from said plane of contact, substantially as described.

3. In a rotary engine, the combination of a main driving-shaft, a drum thereon, a second shaft, and a second drum thereon contacting with the first drum, a casing surrounding said drums, one of the drums having formed or secured thereon vanes, and the other drum having formed therein grooves into which said vanes enter on the plane where the drums contact with each other, the casing fitting closely around the drum having the grooves and also fitting closely around the outer edges of the vanes, means for admitting steam into the space between the drum carrying the vanes, and the casing around the vanes at a point adjacent to the plane of contact between the two drums, the steam-chamber to which the steam is admitted to pass into said space being curved to conform to the path of the vanes and extending substantially over the space between, and occupied by, two adjacent vanes, and means for exhausting the steam at a point of the casing remote from said plane of contact, substantially as described.

4. In a rotary engine, the combination of a main driving-shaft, a drum thereon, a second shaft, and a second drum thereon contacting with the first drum, a casing surrounding said drums, one of the drums having formed or secured thereon vanes, and the other drum having formed therein grooves into which said vanes enter on the plane where the drums contact with each other, the vanes and groove being arranged on the surfaces of the respective drums at an angle with lines thereon parallel with the shafts, the casing fitting closely around the drum having the grooves and also fitting closely around the outer edges of the vanes, means for admitting steam into the space between the drum carrying the vanes, and the casing around the vanes at a point adjacent to the plane of contact between the two drums, the engine being provided with steam-ports symmetrical end for end, of the cylinder, whereby the engine may be driven in either direction as may be desired, and means for exhausting the steam at a point of the casing remote from said plane of contact, substantially as described.

5. In a rotary engine, the combination of a main driving-shaft, a drum thereon, a second shaft, and a second drum thereon contacting with the first drum, a casing surrounding said drums, one of the drums having formed or secured thereon vanes, and the other drum having formed therein grooves into which said vanes enter on the plane where the drums contact with each other, the casing fitting closely around the drum having the grooves and also fitting closely around the outer edges of the vanes, means for admitting steam into the space between the drum carrying the vanes, and the casing around the vanes at a point adjacent to the plane of contact between the two drums, means for exhausting the steam at a point of the casing remote from said plane of contact, and a suitably-controlled drain-pipe connected with each steam-inlet pipe and adapted to be used in conjunction with the steam-inlet pipe at the opposite end, substantially as described.

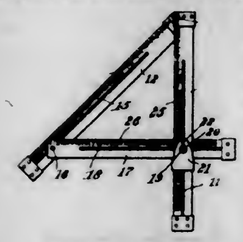
6. In a rotary engine, the combination of a main driving-shaft, a drum thereon, a second shaft, and a second drum thereon contacting with the first drum, a casing surrounding said drums, one of the drums having formed or secured thereon vanes, and the other drum having formed therein grooves into which said vanes enter on the plane where the drums contact with each other, the casing fitting closely around the drum having the grooves and also fitting closely around the outer edges of the vanes, the inner end of the casing-head against which the vane-carrying drum abuts being cut away opposite to the lower portion of the drum to permit the water of condensation to drain therefrom, means for admitting steam into the space between the drum carrying the vanes, and the casing around the vanes at a point adjacent to the plane of contact between the two drums, and means for exhausting the steam at a point of the casing remote from said plane of contact, substantially as described.

7. In a rotary engine, the combination of a main driving-shaft, a drum thereon, a second shaft, and a second drum thereon contacting with the first drum, a casing surrounding said drums, one of the drums having formed or secured thereon vanes, and the other drum having formed therein grooves into which said vanes enter on the plane where the drums contact with each other, the casing fitting closely around the drum having the grooves and also fitting closely around the outer edge of the vanes, a steam-inlet pipe at each end of the engine for admitting steam into the space between the drum carrying the vanes and the casing around the vanes at a point adjacent to the plane of contact between the two drums, means for exhausting the steam at a point of the casing remote from said plane of contact, means for controlling the passage of steam through each steam-pipe, and a pipe at each end of the engine leading from each steam-inlet pipe between the valve and the cylinder, and a valve controlling each of said latter pipes, whereby when steam is admitted at either end the exhaust trapped steam may be released at the opposite end, substantially as described.

820,448. **MEASURE.** THOMAS L. TURPIN, Aubrey, Tex. Filed Nov. 22, 1905. Serial No. 288,564.

Claim.—1. A measuring instrument comprising a slotted bar, a slotted blade pivoted to one end thereof, a slotted brace extending across the bar and blade, said brace being slidable for the greater part of its length upon the bar, adjustable binding means within the registering portions of the slots in the bar and brace, a non-rotatable slide upon the bar and having one edge at right angles to the edge of the bar, said slide having a slot open at one end for receiving the binding means, said brace adapted to bind against the edge of the slide and to be held at right angles to the bar by said edge.

2. A measuring instrument comprising a bar longitudinally slotted, a longitudinally-slotted blade pivoted to one end of the bar, a screw to clamp the blade and bar at a pivotal adjustment, a longitudinally-slotted brace-piece provided at one end with a pivot-pin slidably engaged within the slot of the blade and extending across the bar, a pivot-pin extending through the slots of the bar and brace-piece, a slide mounted upon the bar and provided with a slot positioned to embrace the pivot through the bar and brace and having a surface to contact with and by which the brace may be adjusted at a perpendicular to the bar and a screw upon the pivot and arranged to clamp the brace-piece and slide firmly upon the box.



820,449. RAKE. HENRY VESPERMAN, Steubenville, Ohio. Filed Feb. 3, 1906. Serial No. 299,262.



Claim.—1. In a rake-head, a bar having openings therethrough and U-shaped teeth extending through said openings from the upper side of said bar, said teeth having projections thereon, the cross-diameter of each tooth and its projection being greater than the diameter of the openings, for the purpose described.

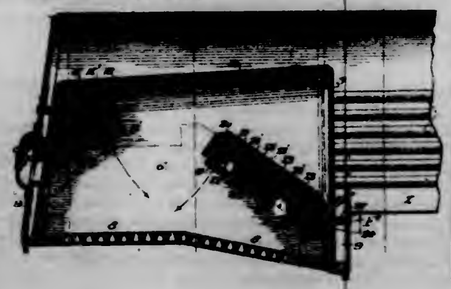
2. In a rake-head, a bar having depressions in its upper side and having openings at the ends of said depressions, and U-shaped teeth having their bent portions seated in said depressions, and their tines extending through said openings, said tines having projections bearing against the under side of said bar adjacent to said openings.

3. In a rake-head, a bar having openings therethrough, and U-shaped teeth having tines extending through said openings, said tines having longitudinal projections bearing against the under side of the bar adjacent to said openings.

4. In a rake-head, a bar having openings therethrough, and teeth extending through said openings, said teeth consisting of a metal bar bent into U shape and having tapering ribs on its outer sides, substantially as described.

5. In a rake-head, a bar having rectangular recesses in its upper face and rectangular holes at the ends of said recesses, teeth rectangular in cross-section, having a back portion fitting said recesses, and having tines fitting said holes, each tine having a shouldered and tapering rib on its outer face, for the purpose set forth.

820,450. LOCOMOTIVE-BOILER FURNACE. EVAN H. WADE and JOHN L. NICHOLSON, Chicago, Ill., assignors to American Locomotive Equipment Co., Chicago, Ill., a Corporation of Illinois. Filed Sept. 13, 1904. Serial No. 224,305.



Claim.—1. A furnace-chamber, having a suitable grate and provided with a fuel-opening and a smoke-outlet, in combination with a partition or arch extending from side to side and from end to end of said chamber, above said fuel-opening and below said smoke-outlet, said partition or arch having an intermediately-located opening or throat and dividing said furnace into fire and combustion spaces or chambers, means for admitting air into said furnace-chamber from points adjacent to the walls of said opening or throat and for directing the admitted air downwardly from such points and thereby maintaining a barrier of air across said throat and within said fire-chamber, through which barrier the combustibles must all pass to reach said combustion-chamber, substantially as described.

2. A furnace-chamber having a grate, a fuel-opening and a smoke-outlet, in combination with arches arranged transversely in said chamber and dividing it into fire and combustion chambers, there being a relatively small opening or throat between the adjacent ends or edges of said arches through which substantially all of the combustibles from the fire-chamber must pass to reach the combustion-chambers and means for projecting streams of hot air toward the grate and thereby maintaining a barrier of hot air across said throat beneath said arches, substantially as and for the purpose specified.

3. A furnace-chamber having a suitable grate, and provided with a fuel-opening and a smoke-outlet, in combination with an arch or partition of refractory material, extending from side to side and from end to end of said chamber and containing an intermediate opening or throat through which substantially all of the combustibles must pass, said arch being provided with downwardly-opening air-passages in its under side adjacent to said throat and said passages being arranged to direct streams of air across said throat in both directions to form and maintain a complete barrier of air beneath the same for enriching the combustibles before the same pass through said throat, substantially as described.

4. A furnace-chamber having a grate, a fuel-opening and a smoke-outlet, in combination with a refractory arch arranged between said grate and said outlet, and provided with a relatively small throat for the passage of combustibles therehetween, and means for forcibly projecting streams of hot fresh air downwardly from said arch and completely across said throat to constitute and maintain an air barrier, through which all the combustibles must pass before entering said throat, substantially as described.

5. A furnace, having a grate, a fuel-opening and a smoke-outlet, in combination with an arch of refractory material arranged in said furnace and dividing the same into fire and combustion chambers, and provided with a restricted throat or passage, said arch being provided with air-heating ducts and openings adapted to direct currents of air downwardly in opposite directions across said throat, in such manner as to cause said currents to converge within the fire-chamber and form a complete air barrier coextensive with said throat, substantially as described.

6. A furnace-chamber, provided with a grate, a fuel-entrance and an outlet, in combination with arches arranged in said chamber and provided with air-entrance channels, means at the inner ends of said arches for deflecting the air admitted therethrough toward said grate and transversely across and beneath the throat between the arches, substantially as described.

7. A furnace having a grate, a fuel-opening and a smoke-outlet, in combination with an arch or partition dividing the furnace into fire and combustion chambers and containing an opening or throat, forming communication between said chambers, and means for heating air and from numerous points, adjacent to said throat, directing the same forcibly into said fire-chamber, said means being such that a barrier of hot air is formed and maintained in the fire-chamber, tending to repress the flow of gases through said throat and compelling the enrichment of the combustibles prior to their entrance to the combustion-chamber, substantially as described.

8. A furnace-chamber, having a grate, a fuel-opening and an outlet, in combination with arches of refractory material, extending transversely of said furnace, there being a throat or opening between said arches and said arches being provided with air passages and deflectors adapted to cause the streams of air to impinge, thus forcibly maintaining a complete hot-air barrier across the furnace beneath said throat, when the furnace is in operation, substantially as described.

9. A furnace-chamber, having a grate, a fuel-opening and an outlet, in combination with arches extending transversely of said chamber and having a throat between them, such arches having longitudinal air-channels and transversely-disposed downwardly-inclined air-deflectors adjacent to said throat, adapted to so direct air-currents that the same will converge below the arch and together form a continuous air barrier across and beneath said throat, substantially as and for the purpose specified.

10. A furnace-chamber, having a grate, a fuel-opening and an outlet, in combination with front and rear arches arranged in said chamber, separated by a throat, composed of refractory bricks, and containing air-heating channels and also openings for directing converging currents of air into the space beneath said arches, and means for supplying air to the outer ends of the arch-channels, substantially as described.

11. A furnace-chamber, having a grate, a fuel-opening and an outlet, wherein a partial vacuum is maintained by draft through said outlet, and the walls of which chamber are provided with air-admission openings, in combination with transverse arches arranged in said chamber, separated by a throat and having channels communicating with said openings, and said arches being provided at their inner ends only with rearwardly-inclined deflecting-surfaces adapted to direct the currents of air against the outflowing gases and maintain an air barrier upon the inner side of said arches, across said throat.

12. A furnace-chamber, having a grate, a fuel-entrance and an outlet, in combination with supports upon the walls of said chamber, arches separated by a throat and composed of curved bricks arched against one another and sustained by said supports and walls, said bricks containing air-heating conduits or channels communicating with the external atmosphere, and the inner end bricks of both arches having inclined deflecting surfaces or walls, adapted to cause the streams of air to converge beneath the arches, substantially as and for the purpose specified.

13. A furnace-chamber, having a grate, a fuel-opening and an outlet, in combination with refractory arches extending from the vertical walls of said furnace toward the middle of the fire-chamber and providing a restricted throat, and means at the inner ends of said arches for directing currents of heated air toward the fire and causing the same to converge beneath said throat; whereby an air barrier is maintained across said throat, substantially as and for the purpose specified.

14. A furnace-chamber, having a grate, a fuel-entrance and an outlet, in combination with arches of refractory material, extending from the vertical walls of said chamber toward the middle thereof and providing a restricted throat, deflectors upon the under sides of said arches, said deflectors extending from wall to wall of the furnace and being inclined downwardly and toward said throat, and means for directing rapidly-moving currents of air against said deflectors to maintain the herein-described air barrier beneath said throat, within the fire-chamber, substantially as described.

15. A furnace-chamber, having a grate, a fuel-entrance and an outlet, in combination with arches of refractory material extending from the front and rear walls of said chamber and providing a restricted throat in a plane substantially parallel with said grate, said arches being provided with air-entrance channels and having downwardly-inclined deflecting-surfaces, for forcibly maintaining a barrier of air beneath said throat, substantially as and for the purpose specified.

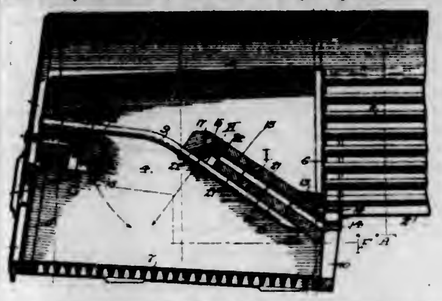
16. A locomotive-boiler furnace, in combination with a hollow inclined air-feeding arch extending from the lower portion of the flue-sheet of said furnace, said arch being curved in cross-section and having the middle portion of its lower end relatively depressed or straightened to avoid closing the lower flues in said flue-sheet, substantially as described.

17. The cross-sectional curved lower bricks, 23", presenting a curved surface at one edge and a straight surface at the other edge and provided with openings or channels, substantially as described.

820,451. LOCOMOTIVE-FURNACE. EVAN H. WADE and JOHN L. NICHOLSON, Chicago, Ill., assignors to American Locomotive Equipment Co., Chicago, Ill., a Corporation of Illinois. Filed Sept. 13, 1904. Serial No. 224,306.

Claim.—1. A locomotive-boiler having a furnace provided with arch-tubes connecting its front and rear water-legs, in combination with a front arch supported upon said arch-tubes, and a rear arch suitably supported beneath said arch-tubes, both said arches having passages for supplying heated air to the furnace and adapted to project the currents of air from each arch below the other and hence across the opening or throat between said arches, substantially as described

2. A locomotive-boiler having a furnace provided with arch-tubes connecting its front and rear water-legs, in combination with a front arch supported upon said arch-tubes, and a rear arch suitably supported beneath said tubes, both said arches having air-passages communicating with the outer air and deflectors for projecting air-currents from both arches across and beneath the opening between said arches, substantially as and for the purpose specified.



3. A locomotive-boiler having a furnace provided with arch-tubes that connect the front and rear water-legs of the boiler, said furnace having a door, air-entrance tubes extending through the rear water-leg, an arch of refractory material arranged beneath said arch-tubes, said arch having passages communicating with said air-tubes, and also provided with a bottom cavity and a downwardly-inclined deflecting-surface, air-entrance tubes arranged in said front water-leg, beneath the cylindrical part of the boiler, a front arch composed of refractory bricks resting upon said arch-tubes, passages or channels in said bricks, communicating with the air-tubes in the front water-leg, and said arch having a discharge-cavity and an inclined deflecting-surface at its upper end, substantially as described.

4. A locomotive-boiler and its furnace, in combination with an arch composed of refractory bricks suitably supported and separated by non-fusible material, substantially as and for the purpose specified.

5. A locomotive-boiler and its furnace, in combination with an arch arranged in said furnace and composed of refractory bricks, and non-fusible material arranged between said bricks, and permitting the removal of certain bricks, to afford access to the boiler flue-sheet, substantially as described.

6. A locomotive-boiler and its furnace, in combination with an arch arranged in said furnace, and composed of refractory bricks, certain of which resemble keystones, and non-fusible material provided in the joints between the latter and the other bricks of the arch, substantially as and for the purpose specified.

7. A locomotive-boiler and its furnace, in combination with an arch composed of outer rows of bricks having beveled inner ends, and a middle row of bricks resembling keystones and adapted to fit between the outer rows of bricks, non-fusible material in the joints between said bricks, and all said bricks being in substantially the same plane, substantially as described.

8. A locomotive-boiler and its furnace, in combination with a front arch, in said furnace, composed of a plurality of rows of bricks, the bricks of one row resembling keystones and adapted to be removed without disturbing the other bricks, to permit access to the boiler flue-sheet, substantially as described.

9. A boiler-furnace, its flue-sheet and arch-tubes, in combination with a substantially flat arch composed of refractory bricks resting upon said arch-tubes, and the middle row of bricks being separated from the others and from each other by non-fusible material, substantially as and for the purpose specified.

10. A boiler and its furnace, having a flue-sheet and arch-tubes, in combination with an arch resting upon said arch-tubes and composed of a plurality of channeled bricks and a set of recessed deflector-bricks, the channels of said bricks communicating with the outer air and non-fusible material separating the several bricks, substantially as described.

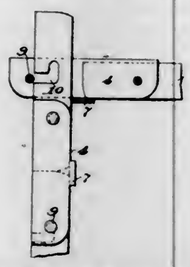
11. A locomotive-boiler and its furnace, flue-sheet and flues, in combination with air-entrance tubes arranged at different elevations in the front water-leg of the boiler, and an arch composed of channeled refractory bricks, forming extensions of said air-tubes and the bottom of said arch being lower at the middle than at other points, to avoid interference with said flues, substantially as described.

12. A locomotive-boiler having the usual furnace, water-legs, flue-sheet and flues, in combination with arch-tubes arranged in the

furnace and connecting the front and rear water-legs, air-entrance tubes arranged in the front water-leg at different elevations beneath the cylindrical portion of the boiler, an arch composed of refractory bricks resting upon said arch-tubes and provided with air-channels and deflecting-surfaces, and the bricks of the lower tier in said arch conforming in shape to the positions of respective air-tubes, substantially as described.

13. A locomotive-boiler, containing a furnace and flues and having the usual water-legs, in combination with arch-tubes arranged in the furnace and communicating with the front water-leg, beneath said flues, air-entrance tubes extending through said front water-leg the middle air-tubes being lower than the others, and a hollow brick arch arranged on said arch-tubes, and having a bottom, middle brick which hangs between said arch-tubes and the air-channels of which communicate with said middle air-tubes, substantially as described.

820,452. CHAIN. JOHN A. WALLER, Chicago, Ill., assignor of one-third to Henry O. Anderson, Chicago, Ill. Filed Sept. 24, 1904. Serial No. 225,850.



Claim.—1. In a chain of the class described, the combination of a section comprising a pair of parallel plates spaced apart and connected by a transverse pivot; a link fitting between said plates and having therein an elongated slot open toward one side for detachably engaging said pivot; and stops for limiting the relative movement of said link and section and thereby preventing the pivot from becoming disengaged from said slot except through relative movement longitudinally of the link when said link and section are turned on the pivot to a certain relative angular position, substantially as described.

2. As an article of manufacture, a chain comprising a series of alternate links and sections, each of said sections comprising a pair of plates spaced apart for receiving the ends of the adjacent links, a pair of pivots extending transversely between said plates, each of said links being mounted in fixed pivotal relation to one of the adjacent sections and having an elongated slot open toward one side for detachably engaging one of the pivots on the other adjacent section; and stops adapted to limit the movement of the links and prevent the pivot from being shifted along said slot for separating the link and section except when said link and section are turned to an angle to each other, substantially as described.

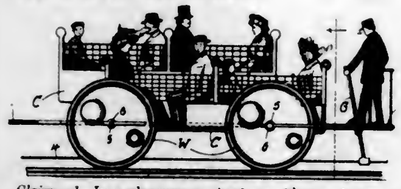
3. In a device of the class described, the combination of a section comprising a piece of sheet metal bent upon itself to form a pair of parallel plates spaced apart and having a cross-piece extending between them at one side; a pivot extending transversely between said plates; and a link having therein a slot extending inward from one side of the same for detachably engaging said pivot; said cross-piece being adapted to engage said link and prevent the same from becoming disengaged from the pivot, except when the link and section are turned to a certain relative angular position, substantially as described.

4. In a device of the class described, the combination of a section comprising a pair of parallel plates spaced apart, a pivot extending transversely between said plates, a link fitting between said plates and having therein an elongated slot extending toward one side and adapted for detachable engagement with said pivot, and a stop on said section adapted to engage the link and prevent the same from becoming disengaged from the pivot except when said link and section are turned to a certain relative angular position, substantially as described.

5. As an article of manufacture, a chain comprising a series of alternate links and sections, each of said sections comprising a piece of metal bent upon itself to form a pair of parallel plates connected together by a transverse part at one edge and spaced apart for receiving the ends of the adjacent links, pivots transverse to said plates and connecting the adjacent links and sections, and said links being extended beyond their pivotal axes to engage the transverse part of said sections, for limiting the bending of said chain, substantially as described.

6. As an article of manufacture, a chain comprising a series of alternate links and sections, each of said sections comprising a piece of metal bent upon itself to form a pair of parallel plates connected together by a transverse part at one edge and spaced apart for receiving the ends of the adjacent links, pivots transverse to said plates and connecting the adjacent links and sections, and said links being extended beyond their pivotal axes to engage the transverse part of said sections, for limiting the bending of said chain, and each of said links having therein an elongated slot for detachably engaging the adjacent pivot, said slot being open toward the side of the link which is opposite the transverse part of the corresponding section, substantially as described.

820,453. PLEASURE-CAR. JAMES D. WALSH, St. Louis, Mo. Filed Oct. 30, 1905. Serial No. 285,062.



Claim.—1. In a pleasure-car having a front and a rear truck, wheels for said trucks, a compound crank-arm comprising two component crank-arms connecting the wheels of each truck, the crank-pins of said components being coupled to their respective wheels at points on opposite sides of their common axis of rotation, substantially as set forth.

2. In a pleasure-car, a truck having two wheels and a compound crank-arm between them having the crank-pins of its component crank-arms coupled to the wheels on opposite sides of the common axis of rotation of the wheels, substantially as set forth.

3. In a pleasure-car, a front and rear truck, wheels for the trucks, a compound crank-arm comprising two component crank-arms connecting the wheels of each truck at points on opposite sides of their common axis of rotation, the crank-pins of the crank-arms on one side of the vehicle being coupled to the adjacent wheels above the plane of their axes of rotation, while the crank-pins on the opposite side are coupled to their wheels below said plane, and cars mounted on the crank-pins on opposite sides of the vehicle, whereby upon rotation of the truck-wheels the car on one side will be up while that on the opposite side is down, and vice versa, the parts operating substantially as and for the purpose set forth.

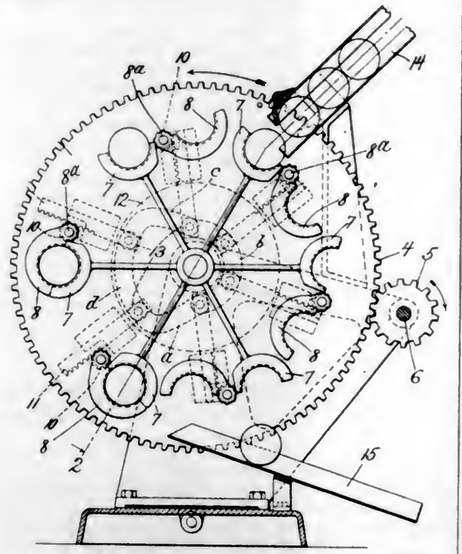
4. In a pleasure-car having a front and a rear truck, wheels for said trucks, a compound crank-arm comprising two component crank-arms connecting the wheels of each truck at points on opposite sides of their common axis of rotation, the points of connection of the crank-arms with the adjacent wheels of the respective trucks on one side of the car being on one side of the plane of the axes of rotation of the wheels of the trucks, while those on the other side are on the opposite side of said plane, cars mounted on the crank-pins of the arms at opposite ends of the respective trucks, cylindrical connections between the centers of rotation of the component members of the compound crank-arms, said centers being disposed on the axes of rotation of the truck-wheels, a coupling-pole connecting said cylindrical connections and a platform at one end of the pole, substantially as set forth.

5. In a pleasure-car having a front and rear truck, a coupling-pole connecting the trucks, and a frame connecting the coupling-pole with the wheels of the trucks, substantially as set forth.

6. In a truck for cars, a pair of wheels, and a compound crank-arm composed of two component arms extending in opposite directions and united at their common center of rotation, the ends of the component arms being coupled to the wheels of the truck at points eccentric to their axes of rotation, substantially as set forth.

820,454. CAN-HEADING MACHINE. HARRY C. H. WALSH, Chicago, Ill., assignor to Consolidated Press and Tool Company, Chicago, Ill., a Corporation of Illinois. Filed May 1, 1905. Serial No. 258,168.

Claim.—1. In a machine for the purpose indicated, in combination with the two headers facing each other and means for synchronously revolving them, graspers mounted at opposed positions on the headers respectively, each comprising two jaws, one of the jaws being journaled in the header, and having about its pivotal axis a pinion rigid with it; a rack-bar meshing with the pinion and guided for reciprocation on the header, and a fixed cam with which the rack-bar is engaged at its inner end for reciprocating the latter as the header revolves.



2. In a machine for the purpose indicated, in combination with the two headers facing each other and means for synchronously revolving them, graspers at opposed positions on the headers respectively, each comprising a fixed jaw and a pivoted jaw, the pivoted jaw having a pinion; a rack-bar mounted on the header engaging the pinion, and a fixed cam which engages the rack-bar for reciprocating it as the header revolves.

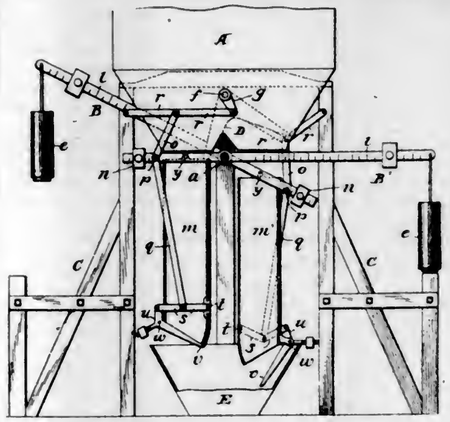
3. In a machine for the purpose indicated, in combination with the headers facing each other and means for synchronously rotating them, graspers at opposed positions on the two headers respectively, each comprising a fixed jaw and a rocking jaw, the latter having a shaft journaled in the header; a pinion rigid with the shaft at the outer side of the header; a rack mounted for guidance on the outer side of the header engaging the pinion; a cam fixed on the header bearing at the outer side of the header and engaging the rack-bar for reciprocating it as the header revolves.

4. In a machine for the purpose indicated, in combination with the rotating header, a grasper mounted thereon comprising two jaws, one of the jaws being journaled in the header and having about its pivotal axis a pinion rigid with it; a rack-bar meshing with the pinion and guided for reciprocation on the header, and a fixed cam with which the rack-bar is engaged for reciprocating the latter as the header revolves.

5. In a machine for the purpose indicated, in combination with two headers facing each other and means for synchronously revolving them; graspers for the can-heads mounted at opposed positions on the headers respectively, each comprising two jaws, one of which is fixed on the header, the other being pivoted for swinging substantially in the plane of rotation of the header, each of said jaws being semicircular, and means for rocking the pivoted jaw to close and open it.

6. In a machine for the purpose indicated, in combination with two headers facing each other and means for synchronously revolving them; can-head graspers mounted at opposed positions on the headers respectively, each of said graspers comprising one jaw which is fixed on the header and another jaw which is pivoted thereon, the two jaws when close together constituting a completely-circular ring for grasping the head, the pivoted jaw being adapted to swing through one hundred and eighty degrees from closed to open position, and means operated by the rotation of the header for opening and closing it.

820,455. AUTOMATIC WEIGHING AND DUMPING MACHINE. ROBERT D. WEBB, Minden, La. Filed Apr. 8, 1905. Serial No. 254,547.



Claim.—1. The combination in an automatic weighing-machine, of a chute, a valve at the mouth of the chute, two scale-beams having a common pivot below said valve and supporting receptacles, two toggles, each connected to operate the valve, and a link between each toggle and the scale-beam supporting the receptacle below said toggle, substantially as set forth.

2. The combination in a weighing-machine, of a chute, a valve at the mouth of the chute, two scale-beams pivoted at their inner ends and extending outward in opposite directions, toggles connected with the frame and with the valve, and links connecting the joint of each toggle with the adjacent scale-beam, substantially as set forth.

3. The combination with a chute and with a valve hinged in the mouth of the chute to open and close opposite sides thereof alternately, of two scale-beams, each having a long and short arm, the short arm of each beam supporting a receptacle, a toggle, and a link connecting the same with each short arm, said toggle connected to the frame and to the valve, substantially as set forth.

4. The combination with the valve and scale-beams of an automatic weighing and dumping machine, of a receptacle supported by each scale-beam, and provided with a movable bottom or valve, a toggle connecting the valve to the receptacle, and connections between the toggle and scale-beam whereby to open said valve as the receptacle begins to descend when filled, substantially as set forth.

5. The combination with the chute, valve and scale-beams and receptacles of a weighing-machine, of connections between the beams and valve for shifting the latter to open and close the mouth of the chute at opposite sides alternately, a bottom hinged to each receptacle and provided with an arm and with a toggle extending between said arm and a point on the receptacle, and connections between the toggles and the beams whereby the sections of each toggle are brought into line as the receptacle rises and are carried out of line as the receptacle descends, substantially as set forth.

6. The combination of the chute, valve, scale-beams, toggles *r r* connected by links to the beams, receptacles provided with pivoted bottoms, toggles *s* and connections between the toggles *s* and the scale-beams, substantially as set forth.

7. In an automatic weighing and dumping machine, the combination with scale-beams, of a receptacle supported by each scale-beam and provided with a movable bottom or valve, and toggles connecting the receptacle and valve, and connections between the toggles and scale-beams whereby the valve is opened on the descent and closed on the ascent of each receptacle, substantially as set forth.

8. In an automatic weighing and dumping machine, the combination of the scale-beams, receptacles, a bottom hinged to each receptacle and provided with an arm and with a toggle extending between said arm and a point on the receptacle, and connections between the toggles and beams whereby the sections of each toggle are brought into line as the corresponding receptacle rises and are carried out of line as the corresponding receptacle descends, substantially as set forth.

9. In an automatic weighing and dumping machine, the combination with the main inlet-valve and scale-beams, of a receptacle, supported by each scale-beam, provided with a movable bottom or

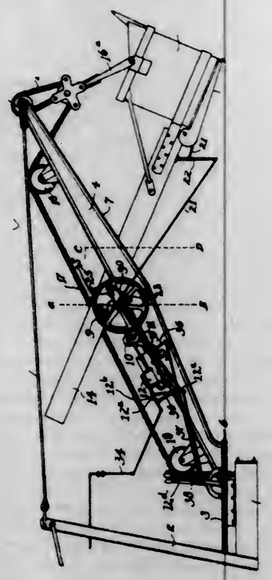
valve, toggles connecting the valve to the receptacle, and connections between the scale-beams and the toggles whereby the bottom of each receptacle is opened when the inlet-valve is closed and vice versa alternately, substantially as set forth.

10. In an automatic weighing and dumping machine, the combination of the scale-beams, receptacles supported by said scale-beams and provided with movable bottoms or valves having toggle connection with the receptacles, and connections between the toggles and the beams whereby the members of each toggle are brought into line as the corresponding receptacle rises, thereby closing the valve and locking it in closed position, substantially as set forth.

11. In an automatic weighing and dumping machine, the combination of the scale-beams, receptacles supported by said scale-beams and provided with movable bottoms or valves having toggle connections with the receptacles, and connections between the toggles and the beams whereby the members of each toggle are carried out of line as the corresponding receptacle descends thereby opening the valve and holding it in opened position, substantially as set forth.

820,456. LATCH-OPERATING MECHANISM FOR DREDGES.

HENRY J. WESSINGER, Duluth, Minn. Filed Jan. 22, 1906. Serial No. 297,224.



Claim.—1. In a latch-operating mechanism, the combination with a dredge, or analogous hoisting apparatus, having a boom, a dipper or load-containing device carried thereby, a latch or draw bolt on said dipper or device, and a line for retracting said latch or bolt, of a shaft mounted on said boom, a wheel mounted on said shaft, a motor carried by said wheel, a loose winding-drum attached to said line and mounted on said shaft, means governed by said motor and connecting said motor to said drum and adapted when at rest to hold said drum in stationary relation to said wheel and when in independent motion with relation to said wheel to turn said drum independently of said wheel, and means adapted to rotate said wheel in either direction.

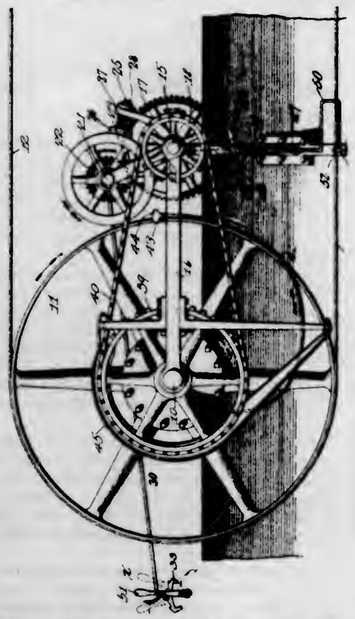
2. In latch-operating mechanism, the combination, with a hoisting apparatus having a boom, a load-containing device carried thereby, a latch or draw bolt carried by said device, and means including a line for retracting said latch or bolt, of a shaft mounted on said boom, a wheel mounted on said shaft, a motor carried by said wheel, a loose winding-drum attached to said line and mounted on said shaft, means governed by said motor and connecting said motor to said drum and adapted when at rest to hold said drum in stationary relation with respect to said wheel, and adapted when in independent motion with relation to said wheel to turn said drum independently of said wheel, and means adapted to rotate said wheel in either direction, or to prevent the rotation thereof, as desired.

3. In latch-operating mechanism, the combination with a dredge or analogous apparatus, having a boom, a shaft mounted thereon, a load-gathering device provided with a handle supported on said shaft, a latch or draw bolt carried by said device, a line for retracting said latch or bolt, a gear-wheel on said shaft and adapted to rotate the same, and means for operating said gear, of a loose drum mounted on said shaft and connected to said line, a pinion loosely mounted on said shaft and adapted to turn said drum, a motor carried by said gear, and a rack engaging said pinion and adapted to be operated by said motor.

4. In latch-operating mechanism, the combination with a dredge or analogous hoisting apparatus, having a boom, a load-gathering device provided with a handle, a latch or draw bolt on said device, and a line for retracting said latch or bolt, of a shaft, mounted on said boom and having an axial tunnel formed therein at one end, said tunnel connecting at its inner end with a radially-extending tunnel formed in said shaft; a winding-drum, provided with a pinion at one end, loosely mounted on said shaft, said drum being connected with said line; a gear mounted on said shaft, and adapted to rotate the same; means adapted to operate said gear intermittently; a motor carried by said gear; a rack adapted to be operated by said motor intermittently, and engaging said pinion; a pipe connection from said radially-extending tunnel to said motor; a stuffing-box secured in the outer end of said axial tunnel; a nipple extending through said stuffing-box; a pipe connection from said nipple to a source of power-supply; a power-supply-governing valve interposed in the latter said pipe connection; and means adapted to operate said valve.

820,457. BELT SHIFTER AND REPLACER.

GEORGE A. WESTOVER, Westhope, N. D. Filed Jan. 4, 1905. Serial No. 239,658.



Claim.—1. The combination with a pulley, of a belt-replacing means, and mechanism operable from the pulley for rotating the same at a speed different from the peripheral speed of the pulley.

2. The combination with a pulley, of a belt-replacing means operable from the pulley for revolving the replacing means at a speed less than the peripheral speed of the pulley.

3. The combination with a pulley, of a belt-replacing strip disconnected from the pulley and having one of its ends extending over the periphery of the pulley, and means for transmitting rotative movement from the pulley to the strip.

4. The combination with a pulley, of a belt-replacing means normally disconnected from the pulley, and means movable into engagement with the periphery or belt-surface of the pulley for imparting movement from the pulley to the replacing means.

5. The combination with a pulley, of a belt-replacing strip, and means operable from the periphery of the pulley for revolving the strip at a speed different from the peripheral speed of the pulley.

6. The combination with a pulley, of a belt-replacing strip, and means operable from the periphery of the pulley for revolving such strip at a speed less than the peripheral speed of the pulley.

7. The combination with a pulley, of a belt-replacing strip having oppositely-directed lugs, one for engaging the side of the pulley-rim, and the other for engaging the side of the belt.

8. The combination with a pulley, of a revoluble belt-replacing strip having its axis of rotation coincident with that of the pulley, and means operable from the periphery of the pulley for revolving said strip at a speed different from the peripheral speed of the pulley.

9. The combination with a pulley, of a revoluble belt-replacing strip, a friction-roller movable into contact with the periphery of the pulley, and gearing connections between the friction-roller and the strip.

10. The combination with a pulley, of a revoluble belt-replacing strip, a friction-roller movable into engagement with the pulley, gearing connections between the friction-roller and the strip, said strip serving to remove the roller from engagement with the pulley at the end of each operation.

11. The combination with a pulley, of a friction-roller movable into contact with the periphery of the pulley, means normally holding said friction-roller in inoperative position, a belt-replacing strip, and gearing connections between the roller and the strip.

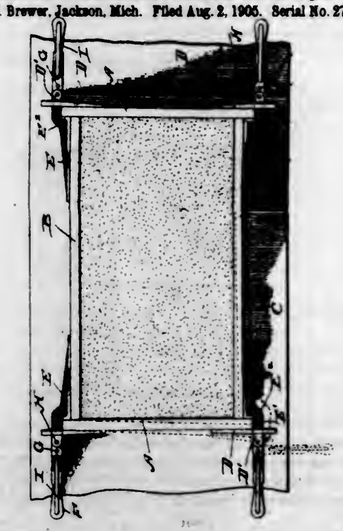
12. The combination with a pulley, of a revoluble belt-replacing strip, a pivotally-mounted frame, a friction-roller supported thereby and movable into engagement with the periphery of the pulley, means for supporting the frame in inoperative position, and gearing connections between the friction-roller and the strip.

13. The combination with a pulley, of an independently-revoluble belt-replacing device, a shaft, a pair of rocker-arms supported thereon, a second shaft carried by the rocker-arms, gears between the two shafts, a friction-wheel mounted on the second shaft and movable into contact with the pulley, and gearing connections for transmitting the movement of the first shaft to the belt-replacing strip.

14. The combination with a main shaft, of a pulley mounted thereon, a second shaft parallel with the first, a belt-replacing strip having its axis of rotation coincident with the main shaft, a sprocket-wheel secured to said replacing-strip, a sprocket-wheel and gear-wheel carried by said second shaft, a link belt connecting the two sprocket-wheels, a pair of rocker-arms mounted on the second shaft, an auxiliary shaft carried by the rocker-arms, a friction-wheel and a pinion carried by said auxiliary shaft, means for holding the friction-wheel from contact with the face of the pulley, and an operating-lever connected to said auxiliary shaft.

820,458. CEMENT BLOCK AND POST MACHINE.

COREY O. WHITE and RAY WILCOX, Jackson, Mich.; said Wilcox assignor to William E. Brewer, Jackson, Mich. Filed Aug. 2, 1905. Serial No. 272,377.



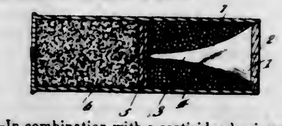
Claim.—1. In a device of the kind described the combination with end castings, said castings being adapted to extend beyond each other, and a lever pivotally connected to the extending portion of one of the castings and also pivotally connected to the other casting.

2. In a device of the kind described the combination with a casting adapted to be secured to the side of a flask and provided with a projection extending beyond the end of said side, a casting adapted to be attached to the end of the flask and having a bifurcated end portion, a lever pivotally connected to the extended portion of the first-named casting and also pivotally connected to the bifurcated end of the second casting.

3. In a device of the kind described the combination with the side casting having a projecting arm, of the end casting bifurcated and provided with lugs, a bifurcated lever pivotally connected to the arm, and also pivotally connected to the lugs and a spring-latch for holding the lever in a locked position.

820,459. SHOT-SPREADER.

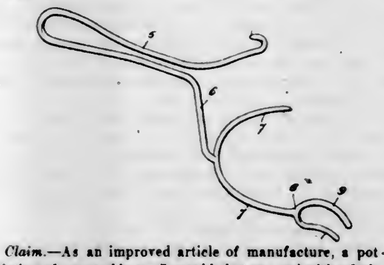
JOHN M. WHITE, Ware Shoals, S. C. Filed Apr. 11, 1905. Serial No. 254,989.



Claim.—In combination with a cartiridge having the powder 6 in its powder-space, the powder-wads 5, the shot 4, the spreader 1 comprising a conical body, the sides of which are concaved or curve inwardly toward the vertex thereof to form a long tapering tail, the vertex of the body terminating in contact with the powder-wads 5, the base of the spreader being arranged toward the mouth of the cartridge, the shot 4 surrounding the body of the spreader 1 throughout the length of the same, and the wad 2 for preventing displacement of the spreader and closing the mouth of the cartridge.

820,460. POT-LIFTER.

WESTON WHITTEN, Unity, Me., assignor of one-half to Albert Bacon, Unity, Me. Filed Jan. 26, 1905. Serial No. 242,793.



Claim.—As an improved article of manufacture, a pot-lifter consisting of a curved brace 7 provided at one end with a fork, and a bar having one end connected to the curved brace at the middle thereof, and said bar extending from said brace substantially perpendicularly to the plane of said brace whereby to form a shank 6, and said bar further extending in an angular direction from the upper end of said shank and in a direction outwardly from the said curved brace whereby to form one member of a handle and being returned upon itself whereby to form the other member of said handle, the other end or extremity of said bar being returned upon itself in a plane approximately parallel with the plane of the brace to form a side entering hook designed to engage a handle of a pot, whereby said brace will coact with said hook to lift the top bodily, and whereby also the fork end of said brace will engage the pot-lid and the other end of said brace rest against the side of a pot and constitute a fulcrum upon which the lifter may be moved to tilt the lid to an open position, preparatory to moving it bodily from the pot.

820,461. BUILDING CONSTRUCTION AND THE LIKE.

WILLIAM N. WIGHT, New York, N. Y. Filed Apr. 11, 1903. Serial No. 153,142.

Claim.—1. A fireproof structure comprising in combination a concrete body and a wire fabric embedded therein, said fabric being composed of strands crossing each other and the set of strands in at least one direction being composed each of a plurality of wires which

are comparatively close together and straight between the crossing-points, and the strands in at least one direction being separated by a comparatively great distance.



2. A fireproof structure comprising in combination a concrete body and a wire fabric embedded therein, said fabric being composed of strands crossing each other, each strand comprising a plurality of wires comparatively close together and the parallel strands being separated by a comparatively great distance.

3. A fireproof structure comprising in combination a concrete body and a wire fabric embedded therein, said fabric being composed of strands crossing each other, each strand comprising a plurality of wires comparatively close together and the parallel strands being separated by a comparatively great distance, and the wires of one strand being interwoven with those of the other at the crossing-points.

4. A fireproof structure comprising in combination a concrete body and a wire fabric embedded therein, said fabric being composed of strands crossing each other, each strand comprising a plurality of wires comparatively close together and the parallel strands being separated by a comparatively great distance, and binders binding the crossing strands together at their crossing-points.

5. A fireproof structure comprising in combination a concrete body and a wire fabric embedded therein, said fabric being composed of strands crossing each other, each strand comprising a plurality of wires comparatively close together and the parallel strands being separated by a comparatively great distance, the wires of one strand being crimped around those of the other at the crossing-points.

6. A fireproof structure comprising in combination a concrete body and a wire fabric embedded therein, said fabric being composed of strands crossing each other, each strand comprising a plurailty of wires comparatively close together and the parallel strands being separated by a comparatively great distance, and the wires of one strand being interwoven with those of the other at the crossing-points, and binders binding the crossing strands together at their crossing-points.

7. A fireproof structure comprising in combination a concrete body and a wire fabric embedded therein, said fabric being composed of strands crossing each other, each strand comprising a plurality of wires comparatively close together and the parallel strands being separated by a comparatively great distance, the wires of one strand being interwoven with and crimped around those of the other at the crossing-points.

8. A fireproof structure comprising in combination a concrete body and a wire fabric embedded therein, said fabric being composed of strands crossing each other, each strand comprising a plurality of wires comparatively close together and the parallel strands being separated by a comparatively great distance, the wires of one strand being crimped around those of the other at the crossing-points, and binders binding the crossing strands together.

9. A fireproof structure comprising in combination a concrete body and a wire fabric embedded therein, said fabric being composed of strands crossing each other, each strand comprising a plurality of wires comparatively close together and the parallel strands being separated by a comparatively great distance, the wires of one strand being interwoven with and crimped around those of the other at the crossing-points, and binders binding the crossing strands at their crossing-points.

10. A fireproof structure comprising in combination a concrete body and a wire fabric embedded therein, said fabric being composed of strands crossing each other, the set of strands in at least one direction being composed each of an odd-numbered plurality of wires comparatively close together and the strands in at least one direction being separated by a comparatively great distance.

11. A fireproof structure comprising in combination a concrete body and a wire fabric embedded therein, said fabric being composed of strands crossing each other, each strand comprising a plurality of wires comparatively close together and straight between the crossing-points and the parallel strands being separated by a comparatively great distance.

12. A fireproof structure comprising in combination a concrete body and a wire fabric embedded therein, said fabric being formed in continuous sheets to facilitate the building of the structure and being composed of continuous longitudinal and transverse strands crossing each other at right angles, said strands in at least one direction being separated by a comparatively great distance and being each composed of a plurality of slender flexible wires (as distinguished from rigid rods or bars) arranged comparatively close together so as to obtain a reinforce of great tensile strength and at the same time reduce to a minimum the weakening of the concrete along the lines of the wires and the distortion of the metal under heat and to facilitate the manipulation of the fabric in use.

13. A fireproof structure comprising in combination a concrete body and a wire fabric embedded therein, said fabric being composed of strands crossing each other and the set of strands in at least one direction being composed each of a plurality of wires which are comparatively close together, and the strands in at least one direction being separated by a comparatively great distance, the wires of one set of strands being interwoven with those of the other set at the crossing-points.

14. A fireproof structure comprising in combinationa concrete body and a wire fabric embedded therein, said fabric being composed of strands crossing each other and the set of strands in at least one direction being composed each of a plurality of wires which are comparatively close together, and the strands in at least one direction being separated by a comparatively great distance, the wires of one set of strands being crimped around those of the other set at the crossing-points.

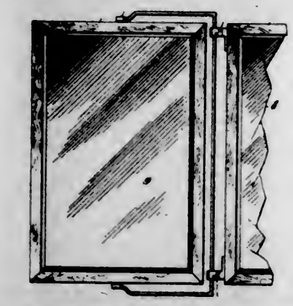
15. A fireproof structure comprising in combination a concrete body and a wire fabric embedded therein, said fabric being composed of strands crossing each other and the set of strands in at least one direction being composed each of a plurality of wires which are comparatively close together, and the strands in at least one direction being separated by a comparatively great distance, and binders binding the crossing strands together at their crossing-points.

16. A floor or similar structure comprising in combination a concrete plate and a wire fabric embedded in the portion thereof subjected to tensile strain and extending to the supports thereof, said fabric being formed in continuous sheets and composed of strands crossing each other, the set of strands in at least one direction being composed each of a plurality of fine wires with comparatively narrow spaces between them sufficient to permit the passage of concrete therethrough, and the strands in at least one direction being separated by a comparatively great distance.

17. A fireproof structure comprising in combination a concrete body and two substantially parallel sheets of wire fabric embedded therein, said fabric being composed of strands crossing each other, the set of strands in at least one direction being composed each of a plurality of fine wires with comparatively narrow spaces between them sufficient to permit the passage of concrete therethrough, and the strands in at least one direction being separated by a comparatively great distance, and strands in one sheet of fabric being staggered relatively to the similar strands in the other.

18. A fireproof structure comprising in combination a concrete body and a wire fabric embedded therein, said fabric being composed of strands crossing each other at right angles, the set of strands in at least one direction being composed each of a plurality of wires which are comparatively close together and straight between the crossing-points, and the strands in at least one direction being separated by a comparatively great distance.

820,462. **HINGE.** JOHN B. WILLARD, New York, N. Y. Filed Sept. 7, 1905. Serial No. 277,231.



Claim.—1. A hinge member comprising an attaching-plate having an arm portion projecting substantially at right angles from one end, said arm portion being, also, inclined transversely and having one face recessed for a portion of its length, said recessed portion having a segmental groove, and a binding-plate of less length than the arm, fitting within the recessed portion of said arm and having a segmental groove in its inner face adapted to register with the like groove in the arm and form a bearing for the pintle, and means for securing the plate to the arm.

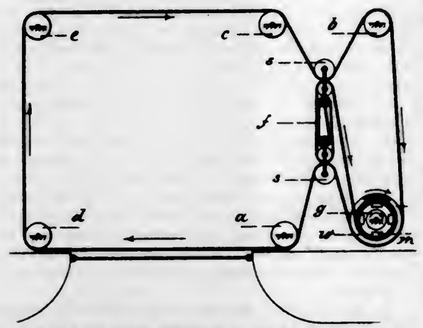
2. A hinge member comprising an attaching-plate having an arm projecting in a plane substantially at right angles thereto, said arm being, also, inclined in a plane substantially at right angles to the plane of its projection, and having a segmental groove in its inner face, and a binding-plate fitting against the arm and having a segmental groove adapted to register with the groove in the arm and thereby form a bearing for the pintle member of the hinge.

820,463. **ATTACHMENT FOR TELEPHONE-RECEIVERS.** CASPER ZIMMERMAN, Aberdeen, S. D. Filed Nov. 4, 1905. Serial No. 285,901.



Claim.—In combination with a telephone-receiver, a cup of pliable material with a fabric about the marginal edge thereof, a strap of resilient metal fastened to the bottom of said cup, one end of said strap being angled, a resilient ring fastened to said angled end, said ring having a flange upon one side thereof, the inner marginal outline of the opening in said ring being concaved and adapted to receive the flaring end of a receiver, said flange serving to prevent the receiver from passing through the opening in the ring, as set forth.

820,464. **SELF-ACTING ELECTRICAL ROPE-STRAINING DEVICE.** OTTO ADAM, Dresden, Germany. Filed Feb. 16, 1905. Serial No. 245,871.

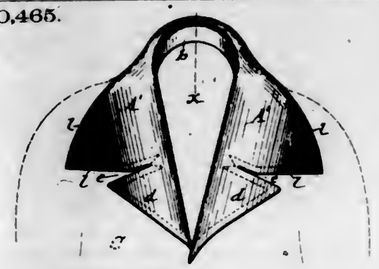


Claim.—In an automatic electric cable-tightener the combination with the endless band or cable, idle pulleys or drums located in proximity to each other over which said cable passes, a take-up pulley riding on said cable between said first-mentioned pulleys, and electric means for automatically drawing upon said take-up pulley or releasing it according to whether the tension upon the cable decreases or increases, substantially as described.

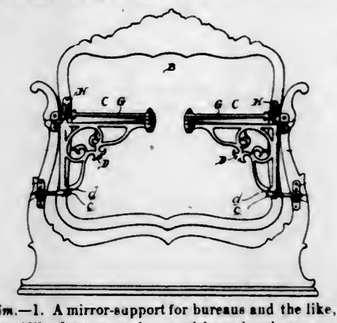
820,465. **STORM-COLLAR.** SOLOMON S. ALEXANDER, Syracuse, N. Y. Filed Dec. 21, 1904. Serial No. 237,790.

Claim.—A storm-collar provided with an imperforate and even-surfaced broad supporting-base formed separate from the collar, the collar and the base being sewed together on a line with the fold of the collar, said base extending beyond the ends of the collar and formed with integral laterally-extending flaps, said flaps being sewed to the collar near their base and separated from the collar from near the bases of the flaps to the points thereof, the whole being so constructed as to be sustained on the wearer by frictional adhesion between the coat and the base, substantially as described.

820,465.



820,466. **ADJUSTABLE MIRROR-SUPPORT.** CHARLES H. AYER, FRANKLIN J. HOLE, and RALPH E. OLNEY, Mount Clemens, Mich. Filed Nov. 23, 1905. Serial No. 288,646.



Claim.—1. A mirror-support for bureaus and the like, comprising a pair of like fixtures, each comprising a bracket, an arm hinged to the bracket, a universal-hinge connection between the arm and the mirror-frame, and supports hingedly connecting the bracket at its upper and lower ends with one of the supporting-standards of the mirror, the lower support being laterally adjustable.

2. A mirror-support for bureaus and the like comprising a pair of like fixtures, each comprising a bracket, an arm hinged to the bracket and adapted to fold on top of the bracket, a universal-hinge connection between the arm and the mirror-frame and supports hingedly connecting the bracket at its upper and lower ends with one of the supporting-standards of the mirror, the lower support being laterally adjustable and provided with stops to limit the swing of the bracket thereon.

820,467. **STEP-LADDER.** WILLIAM F. BEALE, Los Angeles, Cal. Filed Aug. 17, 1904. Serial No. 221,125.



Claim.—1. The combination with an upright of a step-ladder having a head-plate thereon, said head-plate provided with an aperture, the top and bottom of the aperture provided with notches, of a strut having a lug at its upper end which enters the aperture the upper end of the lug received in the upper notch and resting against the upper side of the aperture, and the other end against the opposite lower side when the ladder is in extended position.

2. In a step-ladder, the combination of a head-plate secured to the top of the ladder, said head-plate provided with an aperture whose center is of a less width than its ends, of a strut having a lug secured at its upper end which enters the aperture, the lug being of greater length than the width of the aperture whereby it is capable of only a limited turn therein.

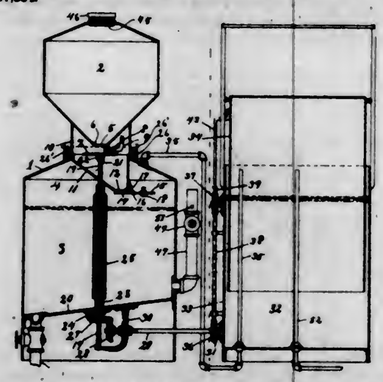
3. In a step-ladder, the combination of a head-plate secured at the top of the ladder, said head-plate provided with an aperture whose center is of a less diameter than its ends, and a strut having a lug at its upper end which enters the aperture, said lug swinging on the points at the center of the aperture as a pivot for adjusting the ladder in its open and closed positions.

4. In a step-ladder, the combination of a head-plate secured at the top of the ladder, said head-plate provided with an aperture

whose center is of less diameter than its ends, said aperture having notches at its upper and lower ends, of a lug on the upper end of the strut which enters the aperture, and is received in the upper notch of the aperture when in its extended position.

5. In a step-ladder, the combination with a head-plate having integral brads projecting from one side and an edge to enter different parts of a step-ladder, the head-plate having an aperture, an edge of which is in the form of an obtuse angle with notches at each end thereof, of a strut having a lug adapted to enter the aperture and its ends to enter one or the other of said notches, whereby the strut is locked in one or the other of its extreme adjustments.

820,468. ACETYLENE-GAS GENERATOR. CHARLES W. BECK, New York, N. Y., assignor, by mesne assignments, to Electrolite Gas Lamp Company, New York, N. Y. Filed Nov. 23, 1900. Serial No. 37,554.



Claim.—1. A carbid-feeding mechanism for feeding loose carbid, comprising a suitable hopper or source of carbid-supply formed with a discharge-opening, a horizontal feed-table located a short distance below said discharge-opening, a stationary wiper mounted to brush the carbid from the table as the latter is rotated relatively thereto, a housing inclosing said feed mechanism and provided at a point vertically below the point of discharge of the feed-table with a trap-door, and means for rotating said feed-table intermittently, substantially as described.

2. A carbid-feeding mechanism for feeding loose carbid comprising a carbid-hopper provided with a conical lower end portion terminating in a circular horizontally-arranged feed-aperture, a circular horizontally-disposed feed-table supported a short distance below the lower end of said aperture, a stationary wiper supported above said table so as to brush the carbid therefrom as the latter is rotated, a housing mounted upon the lower side of the hopper inclosing the feed mechanism and provided in its lower side at a point vertically beneath the discharge-point of the feed-table with an opening and a pivoted trap-door closing said opening, an adjustable weight arranged to regulate the opening of said door, and means for rotating said feed-table intermittently, substantially as described.

3. In an acetylene-generator, the combination of an upper hopper provided with a feed-opening, a horizontally-disposed feed-table mounted below said feed-opening and coöperating with the latter to control the flow of carbid from the hopper, a liquid-reservoir below said feed mechanism, and means for supporting and operating said feed-table, comprising a shaft arranged to rise vertically through the bottom wall of said liquid-reservoir and engaging and supporting said table at its upper end, and a liquid seal surrounding said shaft without changing its angular relation or position with respect to the wall of the feed-opening of the carbid-holder, substantially as described.

4. In an acetylene-generator, the combination of a suitable hopper or source of carbid-supply formed with a discharge-opening, a horizontal feed-table located at a short distance below said discharge-opening, a wiper mounted above said feed-table in position to brush the carbid therefrom as the table is rotated, a yieldably-mounted support upon which the carbid is discharged from the feed-table and from which it is dumped in accumulated quantities, and mechanism operated automatically by the volume of gas generated, operating to rotate said feed-table intermittently, substantially as described.

5. In an acetylene-generator, the combination of a suitable hopper or source of carbid-supply formed with a discharge-opening, a horizontal rotary feed-table located at a short distance below said discharge-opening, a casing below said feed-table having inclined side walls adapted to direct the carbid discharged from the feed-opening to the lowest part of said casing, a discharge-opening being formed through said casing at its lowest point, and a downwardly-opening, yieldingly-mounted, trap-door controlling said discharge-opening and from which the carbid is dumped in accumulated quantities, substantially as described.

6. In an acetylene-generator, the combination of a suitable hopper or source of carbid-supply formed with a discharge-opening, a horizontal rotary feed-table located at a short distance below said discharge-opening, a casing below said feed-table having inclined side walls adapted to direct the carbid discharged from the feed-opening to the lowest part of said casing, a discharge-opening being formed through said casing at its lowest point, and a downwardly-opening, pivotally-mounted, trap-door provided with a counter-balance-arm, and a weight adjustably mounted upon said counter-balance-arm, as and for the purpose set forth.

7. In combination with an acetylene-generator, provided with an intermittently-operated feed mechanism, means for actuating said feed mechanism controlled by the consumption of gas generated, comprising a gasometer provided with a rising and falling bell, an operating-arm carried by said bell, a spring-returned plunger adapted to be engaged by said operating-arm during the descent of the bell, a sprocket-belt mounted adjacent to said spring-returned plunger, having one of its laps parallel with the path of movement of the plunger, a pawl-hook upon said plunger adapted to positively engage and operate the belt during the descent of the plunger and to slide past the links of the belt, ratchet fashion, during its return movement, and a driving-shaft actuated by said sprocket-belt and operatively connected with the feed mechanism, substantially as described.

8. A carbid-feed mechanism for feeding lump-carbid comprising a carbid-hopper provided with a downward-inclined lower portion adapted to direct the carbid toward a feed-aperture and to sustain the greater part of the weight of the carbid, a horizontal feed-table supported a short distance below the feed-aperture, a wiper supported above said table so as to brush the carbid from the table as the latter is rotated, a gas-tight tank inclosing the table and the wiper and adapted to contain the liquid-supply, and means actuated by variations in gas-pressure to rotate said table.

9. An acetylene-generator comprising a liquid-holder, a carbid-holder having a feed-opening, a two-part feed mechanism located below the feed-opening so that a mass of carbid will extend from the feed mechanism to the feed-opening, the parts of the feed mechanism being a fixed distance from the feed-opening, means actuated by variations in gas-pressure for operating the feed mechanism without varying the distance between the members of the feed mechanism and the feed-opening.

10. In an acetylene-gas generator, the combination of a liquid-holder, a carbid-holder above the liquid-holder and provided with a feed-opening, and a two-part feed mechanism consisting of a support below the feed-opening and adapted to sustain a mass of carbid below the wall of the feed-opening, a stationary device between the support and the feed-opening, and means operated by variations in the gas-pressure for actuating the feed mechanism without changing the angular position of said support with respect to the wall of the feed-opening.

11. In an acetylene-gas generator, the combination of a liquid-holder, a carbid-holder above the liquid-holder and provided with a feed-opening, and a two-part feed mechanism consisting of a table below the feed-opening and adapted to sustain a mass of carbid below the wall of the feed-opening, a device between the table and the feed-opening, and means operated by variations in the gas-pressure for actuating one of the parts of the feed device to cause the carbid to be moved from the support.

12. In an acetylene-generator, the combination of a liquid-holder, a carbid-holder above the liquid-holder and provided with a feed-opening, a rotatable feed-table below said feed-opening, a non-rotary feed device between the feed-table and the feed-opening, and means actuated by the variations in gas-pressure for rotating the feed-table.

13. In an acetylene-generator the combination, of a suitable hopper or source of carbid-supply provided with a suitable discharge, a horizontal feed-table located at a short distance below said discharge, a yieldingly-mounted support below the table and adapted to receive the carbid therefrom and which is adapted to discharge, the carbid in quantities into the generating-chamber, and a mechanism operated automatically by gas-pressure to rotate said feed-table intermittently, and a wiper arranged between the feed-table and the carbid-discharge and adapted to engage the carbid and cause it to fall from the table.

14. In an acetylene-generator the combination, of a hopper formed with a contracted lower end and provided with a discharge-opening at the bottom of said contracted portion, whereby the weight of the mass of carbid will not be supported by the feed-table, a horizontal feed-table located a suitable distance below said discharge, said feed-table being larger in diameter than the discharge-opening, whereby the carbid will not flow while the table is stationary but will be discharged over the edge of the table when the same is rotated, and a mechanism operated by variations in gas-pressure to intermittently rotate said table without altering its distance from the discharge-opening, whereby the carbid-passage will be at all times open and unobstructed and of the same dimensions.

15. In an acetylene-generator the combination, of a hopper provided with a discharge-opening at its bottom, a horizontal feed-table located a suitable distance below said discharge, said feed-table being larger in diameter than the discharge-opening whereby the carbid will not flow when the table is stationary, but will be discharged over the edges of the table when the same is rotated, and a mechanism operated by variations in gas-pressure to intermittently rotate said table without causing it to approach the discharge-opening, whereby the path of the carbid from the hopper to the generating-chamber will be at all times open and unobstructed and of the same dimensions.

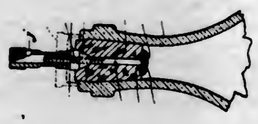
16. An acetylene-gas generator comprising a gas-tight liquid-holder and generating-tank, a carbid-holder above the liquid-holder and provided with a feed-opening in its bottom adapted to discharge carbid into the liquid-holder, a two-part feed mechanism consisting of a support directly below the feed-opening and adapted to sustain a mass of carbid below the wall of the feed-opening, and a feed device between the support and the feed-opening, a gas-holder, and means operated by variations in the volume of gas in the gas-holder for operating one of the parts of the feed device to cause carbid to drop from the support into the liquid-holder to generate gas.

17. An acetylene-generator comprising a gas-holder, a gas-tight liquid-holder, a carbid-holder above the liquid-holder and provided with a feed-opening, said carbid-holder being constructed to discharge the carbid in a continuous stream, means below the discharge-opening for sustaining a loose mass of carbid below and outside the carbid-holder but in contact with the carbid in the carbid-holder, and means for intermittently discharging a portion of said loose mass into the liquid-holder, said means being operated automatically by variations in volume of gas in the gas-holder, whereby the continuity of the stream of carbid from the carbid-holder is maintained.

18. An acetylene-generator comprising a gas-holder, a gas-tight liquid-holder, a carbid-holder above the liquid-holder and provided with a feed-opening, said carbid-holder being constructed to discharge the carbid in a continuous stream, a table below the discharge-opening for sustaining a loose mass of carbid below and outside the carbid-holder but in contact with the carbid in the carbid-holder, means for discharging a portion of said loose mass over the edge of the table and into the liquid-holder, and means operated automatically by variations in the volume of gas in the gas-holder for rotating said table, substantially as and for the purpose set forth.

19. An acetylene-gas generator comprising a gas-holder, a gas-tight liquid-holder, a carbid-holder above the liquid-holder and provided with a feed-opening in its bottom and adapted to automatically discharge the carbid, feed mechanism consisting of two members, one member being a table supported below the feed-opening at a point where it will sustain a loose mass of carbid below the feed-opening and the other member being a feed device located between the table and the feed-opening and adapted to engage into the loose mass of carbid, and means for moving one of the members whereby the carbid will be moved off the edge of the table, said means being automatically operated by the changes in volume of the gas in the gas-holder.

820,469. STOPPER EXPANDING AND EXTRACTING DEVICE. EDWIN W. BENNETT, Springfield, Mass. Filed Oct. 21, 1904. Serial No. 229,434.



Claim.—1. An attachment for bottle-stoppers comprising a stem adapted to extend axially through the stopper and adapted to have an interlocking engagement therewith, said stem having a threaded portion adapted to project above the stopper, and an expanding-nut mounted on the threaded portion of the stem and having a tapered body arranged to be forced into the stopper-body.

2. An attachment for bottle-stoppers comprising a stem adapted to extend axially through the stopper-body and provided at its lower end with a head having a plurality of shoulder projections arranged to be drawn into interlocking engagement with the stopper-body, said stem also having a threaded portion, and a tapered nut mounted on the threaded portion of the stem and adapted to engage in the top portion of the stopper-body.

3. An attachment for bottle-stoppers comprising a stem adapted to be arranged axially through the stopper-body and provided with holding projections adapted to be interlocked with the stopper-body, said stem being further provided with a threaded portion adapted to project above the top of the stopper-body, an expanding device carried by the threaded portion of the stem, and an extracting device rotatably engaging the threaded portion of the stem above, the extracting device adapted to have a bearing on the bottle-neck.

820,470. ROOFING MATERIAL. REGINALD W. BIRD, Boston, Mass., assignor to Flintkote Manufacturing Company, Rutherford, N. J., a Corporation of New Jersey. Filed June 30, 1905. Serial No. 267,701.

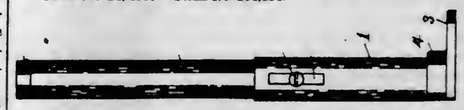
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Claim.—1. A roofing material comprising a body of suitable substance saturated with a water-proofing compound, an exposed layer of waterproofing compound of sticky consistency, and an outer coating of textile fabric united to the body by a layer of waterproofing compound.

2. A roofing material comprising a body of suitable substance saturated with a waterproofing compound, an exposed layer of waterproofing compound of sticky consistency, an outer coating of textile fabric united to the body by a layer of a waterproofing compound, and a coating of paint covering the textile covering, substantially as described.

3. A roofing material comprising a body of felt saturated with a waterproofing compound, a layer of asphaltum or analogous substance of sticky consistency on both faces of said body, a layer of canvas or other closely-woven textile fabric upon one of the asphaltum layers and completely covering and concealing the same, the other sticky face being exposed all substantially as described.

820,471. BOOK-SUPPORT. ANNIE B. BROWN, Franklin, Mass. Filed Oct. 24, 1905. Serial No. 284,134.

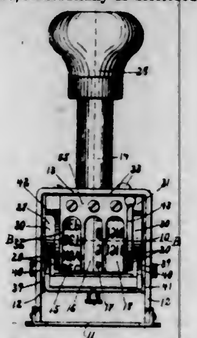


Claim.—A device for supporting books against lateral dislodgment, comprising a base substantially semicircular in form, a socket rising from the diametrical side of said base, a tubular standard fixed in said socket and closed at its lower end by said socket, a rod slidable in said standard, a coiled spring between the inner end of said rod and socket, means for limiting the longitudinal play of said rod, and a soft, friction-tip fixed upon the upper end of said rod, whereby said device can be located close beside a book between the shelves engaged by said base and tip, and the semicircular part of said base insure against the overturn of the device, substantially as described.

820,472. PRINTING-MACHINE. WILLIAM H. BROWN, Syracuse, N. Y., assignor to H. H. Franklin Manufacturing Company, Syracuse, N. Y., a Corporation of New York. Filed Feb. 2, 1903. Serial No. 141,425.

Claim.—1. In a printing-machine, a plurality of type-wheels having their peripheries provided with printing characters for successively presenting the numbers 1 to 31 inclusive in the printing plane, teeth on the interior of the type-wheels, a part movable successively, and feeding members movable relatively to each other and

movable by the successively-movable part, said feeding members coöperating with the internal teeth for advancing the type-wheels to successively present the numbers 1 to 31 in the printing plane, and to then present the number 1 in said plane and thereafter the numbers 2 to 31 inclusive, substantially as described.



2. In a printing-machine, a plurality of type-wheels, each having internal teeth, means for moving the type-wheels into and out of operative position, a plurality of feeding members movable independently of each other toward and from the axis of the type-wheels, and movable in reverse directions in a line substantially concentric with the type-wheels, said feeding members when movable in one of the reverse directions coöperating with the internal teeth for arranging the predetermined characters at the printing-surfaces of the type-wheels, and means provided on the type-wheels for forcing the feeding members toward the axis of said wheels when the feeding members are moving in the other of said reverse directions, substantially as described.

3. In a printing-machine, a plurality of type-wheels, each having internal ratchet-teeth, means for moving the type-wheels into and out of operative position, a plurality of feeding members movable independently of each other for forcing engaging faces thereof toward and from the axis of the type-wheels, and movable in reverse directions in a line substantially concentric with the type-wheels, said feeding members when movable in one of the reverse directions coöperating with the internal ratchet-teeth for arranging the predetermined characters at the printing-surfaces of the type-wheels, and when moving in the other of said directions coöperating with the inclined surfaces of the ratchet-teeth for forcing said engaging faces of the feeding members toward the axis of the type-wheels, springs for engaging said faces of the feeding members with the ratchet-teeth, and means independent of the feeding members for holding the type-wheels in their adjusted position, substantially as described.

4. In a printing-machine, a rocking part, a type-wheel arranged substantially concentric with the rocking part and turning on the periphery thereof, and a feeding member movable by the rocking part for actuating the type-wheel to arrange a predetermined character at the printing-surface of the type-wheel, substantially as and for the purpose described.

5. In a printing-machine, a rocking part, a type-wheel arranged substantially concentric with the rocking part and turning on the periphery thereof, said type-wheel having internal teeth, means for moving the type-wheel into and out of operative position, and a feeding member coöperating with the internal teeth of the type-wheel and movable by the rocking part independently of said means for actuating the type-wheel to arrange a predetermined character at the printing-surface of the type-wheel, substantially as and for the purpose specified.

6. In a printing-machine, a rocking part, a type-wheel arranged substantially concentric with the rocking part and turning on the periphery thereof, said type-wheel having internal teeth, means for moving the type-wheel into and out of operative position, a feeding member coöperating with the internal teeth of the type-wheel and movable by the rocking part independently of said means for actuating the type-wheel to arrange a predetermined character at the printing-surface of the type-wheel, and a spring for forcing the feeding member into operative position, substantially as and for the purpose set forth.

7. In a printing-machine, a rocking part having a guide, a type-wheel arranged substantially concentric with the rocking part and turning on the periphery thereof, and a feeding member movable by the rocking part for actuating the type-wheel to arrange a predetermined character at the printing-surface of the type-wheel, said feeding member being movable lengthwise of the guide relatively to the rocking part, substantially as and for the purpose described.

8. In a printing-machine, a rocking part having a substantially radial guide, a type-wheel arranged substantially concentric with the rocking part and having internal ratchet-teeth, a feeding member movable longitudinally in the guide and movable by the rocking part for actuating the type-wheel to arrange a predetermined character at the printing-surface of the type-wheel, and a spring for moving the feeding member in the guide and yieldingly engaging the feeding member with said ratchet-teeth, substantially as and for the purpose specified.

9. In a printing-machine, a rocking part having a guide, a type-wheel arranged substantially concentric with the rocking part, a feeding member movable by the rocking part for actuating the type-wheel to arrange a predetermined character at the printing-surface of the type-wheel, said feeding member being formed with an opening extending inwardly from one end toward the other end and through its sides, and a spring arranged in said opening for moving the feeding member in the guide, substantially as and for the purpose set forth.

10. In a printing-machine, a type-wheel having teeth, one group of said teeth being arranged one in advance of the other and formed of greater depth than the next adjacent teeth, a second type-wheel having teeth, and feeding means coöperating with the teeth of the first type-wheel for moving said type-wheel step by step for a predetermined distance, said feeding means coöperating with teeth of the second type-wheel when coöperating with said group of deeper teeth of the first type-wheel, and thereby moving the second type-wheel a plurality of steps during the movement of the first type-wheel, substantially as and for the purpose described.

11. In a printing-machine, a type-wheel having teeth, one group of said teeth being arranged one in advance of the other and formed of greater depth than the next adjacent teeth in advance and at the rear of said group of teeth, a second type-wheel having teeth, and feeding means coöperating with the teeth of the first type-wheel for moving said type-wheel step by step for a complete revolution, said feeding means coöperating with teeth of the second type-wheel when coöperating with said group of deeper teeth of the first type-wheel, and thereby moving the second type-wheel a plurality of steps during the complete revolution of the first type-wheel, substantially as and for the purpose specified.

12. In a printing-machine, a type-wheel having teeth, one group of said teeth being arranged one in advance of the other and formed of greater depth than the next adjacent teeth, a second type-wheel having two series of teeth, said series being separated dissimilar radial distances from the axis of the second type-wheel, and feeding means coöperating with the teeth of the first type-wheel for moving said type-wheel step by step for a predetermined distance, said feeding means coöperating with members of the series of teeth of the second type-wheel nearer its axis when coöperating with the teeth of lesser depth of the first type-wheel, and coöperating with members of the series of teeth of the second type-wheel farther from its axis when coöperating with said group of deeper teeth of the first type-wheel, substantially as and for the purpose set forth.

13. In a printing-machine, a type-wheel having teeth, one group of said teeth being arranged one in advance of the other and formed of greater depth than the next adjacent teeth in advance and at the rear of said group of teeth, a second type-wheel having two series of teeth, said series being separated dissimilar radial distances from the axis of the second type-wheel, and feeding means coöperating with the teeth of the first type-wheel for moving said type-wheel step by step for a plurality of revolutions, said feeding means coöperating with members of the series of teeth of the second type-wheel nearer its axis when coöperating during the first revolution of the first type-wheel with the teeth of lesser depth of said first type-wheel, and coöperating with members of the series of teeth of the second type-wheel farther from its axis when coöperating with said group of deeper teeth of the first type-wheel, substantially as and for the purpose described.

14. In a printing-machine, a type-wheel having internal teeth, some of said teeth being formed of greater depth than others, a second type-wheel having internal teeth, some of said teeth being separated from the axis of the type-wheels a greater radial distance than other teeth of the second type-wheel, and feeding means coöperating with the internal teeth of the type-wheels, substantially as and for the purpose set forth.

15. In a printing-machine, a type-wheel having internal teeth, a group of said teeth being arranged one in advance of the other and

formed of greater depth than the next adjacent teeth in advance and at the rear of said group of teeth, a second type-wheel having two series of internal teeth, said series being separated dissimilar radial distances from the axis of the second type-wheel, and feeding means coöperating with the internal teeth of the first type-wheel for moving said type-wheel step by step for a plurality of revolutions, said feeding means coöperating with members of the series of internal teeth of the second type-wheel nearer its axis when coöperating during the first revolution of the first type-wheel with the internal teeth of lesser depth of said first type-wheel, and coöperating with members of the series of internal teeth of the second type-wheel farther from its axis when coöperating with said group of deeper teeth of the first type-wheel, substantially as and for the purpose described.

16. In a printing-machine, a type-wheel, and a plurality of feeding members alternately coacting with the type-wheel, whereby one feeding member advances the type-wheel a predetermined distance and the other feeding member advances the type-wheel an additional distance, substantially as and for the purpose described.

17. In a printing-machine, a type-wheel, a plurality of feeding members alternately coacting with the type-wheel, whereby one feeding member advances the type-wheel a predetermined distance and the other feeding member advances the type-wheel an additional distance, and means provided on the type-wheel for holding either feeding member out of operative position when the other feeding member is in operative position, substantially as and for the purpose specified.

18. In a printing-machine, a plurality of type-wheels, a rocking part, a plurality of feeding members alternately coacting with one of the type-wheels, said feeding members being arranged radially relatively to the rocking part and being movable endwise relatively thereto, substantially as and for the purpose set forth.

19. In a printing-machine, a plurality of type-wheels having internal teeth, a plurality of feeding members coöperating with the internal teeth for advancing the type-wheels, means for moving the feeding members relatively to each other into operative position, and means for forcing one of the feeding members from operative position, the movement of said latter means into operative position being controlled by the rotation of one of the type-wheels, substantially as and for the purpose described.

20. In a printing-machine, a type-wheel having teeth, one group of said teeth being arranged one in advance of the other and formed of greater depth than the next adjacent teeth in advance and at the rear of said group of teeth, a second type-wheel having two series of teeth said series being separated dissimilar radial distances from the axis of the second type-wheel, a feeding member coöperating with the teeth of the first type-wheel for moving said type-wheel step by step for a plurality of revolutions, said feeding member coöperating with members of the series of teeth of the second type-wheel nearer its axis when coöperating during the first revolution of the first type-wheel with the teeth of lesser depth of said first type-wheel, and coöperating with members of the series of teeth of the second type-wheel farther from its axis when coöperating with said group of deeper teeth of the first wheel, means on the second type-wheel for forcing said feeding member from operative position, and a second feeding member for operating the second type-wheel, said second feeding member being movable relatively to the first feeding member, substantially as and for the purpose specified.

21. In a printing-machine, a plurality of type-wheels, and feeding means for advancing one type-wheel step by step independently of the remaining type-wheels, for moving a second type-wheel a plurality of steps during each revolution of the first type-wheel, and for advancing a third type-wheel relatively to the first type-wheel, substantially as and for the purpose set forth.

22. In a printing-machine, a plurality of type-wheels, and means for advancing one type-wheel step by step, for moving the first type-wheel and a second type-wheel together a plurality of immediately consecutive steps, and for advancing the second type-wheel and a third type-wheel relatively to the first type-wheel, substantially as and for the purpose described.

23. In a printing-machine, a plurality of type-wheels, a feeding member for advancing two of the type-wheels, a second feeding member for advancing an additional type-wheel and one of the type-wheels advanced by the first member, relatively to the other of said two type-wheels advanced by the first member, said second feeding member being movable relatively to the first member, substantially as and for the purpose specified.

24. In a printing-machine, a type-wheel having internal teeth, a group of said teeth being arranged one in advance of the other and formed of greater depth than the next adjacent teeth in advance and at the rear of said group of teeth, a second type-wheel having two series of internal teeth, said series being separated dissimilar radial distances from the axis of the second type-wheel, a third type-wheel having internal teeth, a feeding member coöperating with the internal teeth of the first and second type-wheels to advance the first type-wheel a plurality of rotations and the second type-wheel a partial revolution, means on the second type-wheel for preventing said feeding member from operating the first type-wheel, and a second feeding member for advancing the second and third type-wheels, substantially as and for the purpose set forth.

25. In a printing-machine a rocking part, a plurality of type-wheels provided with peripheral printing-surfaces and having their inner faces journaled on the rocking part and provided with teeth, and having opposing side surfaces provided with laterally-projecting annular shoulders engaging each other, and feeding means coöperating with said teeth, substantially as and for the purpose described.

26. In a printing-machine, a plurality of type-wheels, each having external teeth and internal ratchet-teeth, means for moving the type-wheels into and out of operative position, feeding members coöperating alternately with the internal ratchet-teeth of one of the type-wheels and movable independently into engagement with said internal teeth and movable by the inclined faces of said teeth from operative position, said feeding members being movable independently of said means for actuating the type-wheels to arrange predetermined characters at the printing-surfaces of the type-wheels, springs for yieldingly forcing the feeding members into engagement with the ratchet-teeth, means provided on said one of the type-wheels for holding either feeding member out of operative position when the other feeding member is in operative position and means for engaging the external teeth and holding the type-wheels in their adjusted position, substantially as described.

27. In a printing-machine, a plurality of type-wheels having internal and external teeth, a feeding member coöperating with the internal teeth of two of the type-wheels for advancing said two type-wheels, a second feeding member coöperating with the internal teeth of one of the type-wheels advanced by the first feeding member, and with the internal teeth of a third type-wheel for advancing said one of the first type-wheels and the third type-wheel relatively to the other of said two type-wheels advanced by the first member, and means for engaging the external teeth and holding the type-wheels in their adjusted position, substantially as described.

28. In a printing-machine, a frame having a guide, a type-wheel, means for reciprocating the type-wheel in a plane substantially parallel to the guide, a rocking part provided with means for advancing the type-wheel, and a pivot for the rocking part projecting into the guide, substantially as and for the purpose specified.

29. In a printing-machine, a frame formed with guides, a movable head having opposite portions, a rocking part arranged between said opposite portions and formed with pivot-sockets in its ends, a type-wheel journaled on the rocking part, means for advancing the type-wheel, connecting-pieces having their intermediate parts secured to the opposite portions of the head, their outer ends movable in the guides of the frame, and their inner ends arranged in the pivot-sockets of the rocking part, substantially as and for the purpose set forth.

30. In a printing-machine, a frame formed with a guide, a movable head, a rocking part formed with a socket, a type-wheel supported by the movable head, means for advancing the type-wheel actuated by the rocking part, a connecting-piece secured to the movable head and having a part thereof movable in the guide and a second part arranged in the socket, a movable inker-support, and means between said connecting-piece and the inker-support for moving said inker-support, said last-mentioned means being movable on the connecting-piece relatively to the rocking part substantially as described.

31. In a printing-machine, a type-wheel having its periphery provided with characters from 0 to 9 inclusive, a tens type-wheel having its periphery provided with characters 1, 1, 2, 2, 3, 3, and a space between the centers of the first 1 and the last 3, substantially five times as great as the space between the centers of any other two contiguous characters on said tens type-wheel, and feeding means for advancing the type-wheels to successively present the numbers 1 to 31 in the printing plane, and to then present the number 1 in said plane and thereafter the numbers 2 to 31 inclusive, substantially as described.

32. The combination of the main frame, the fixed vertical tubular extension from the top thereof, the vertically-reciprocable wheel-frame provided with a plunger passing through such tubular extension, a handpiece attached to the plunger and provided with a socket

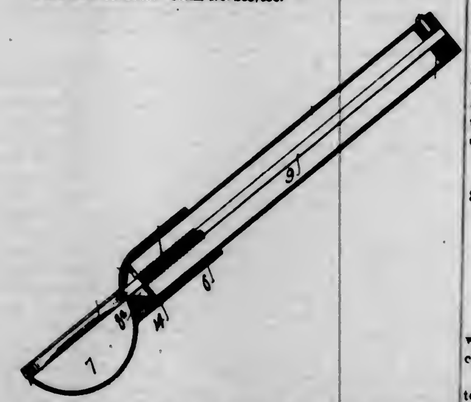
inclosing the outer end of the tubular extension and a stop located in the socket and abutting against the tubular extension, and a spring for normally holding the wheel-frame in elevated position, substantially as described.

33. The combination of the main frame, the fixed vertical and imperforate tubular extension from the top thereof, the vertically-reciprocable wheel-frame provided with a plunger passing through such tubular extension, and having a peripheral enlargement fitting the interior thereof, and a handpiece attached to the plunger and provided with a socket encircling the upper ends of the plunger and the tubular extension, substantially as described.

34. The combination of the main frame having a fixed, imperforate tubular extension, the vertically-reciprocable wheel-frame provided with a plunger movable in such tubular extension and having a head formed with a socket encircling the end of said extension, and a locking member pivoted to the main frame, said member being movable laterally into and out of engagement with the plunger, substantially as and for the purpose specified.

35. The combination of the main frame having a tubular extension, the vertically-reciprocable wheel-frame provided with a plunger movable in said tubular extension, and a laterally-movable locking member supported by the main frame and provided with an aperture through which the plunger passes, means for detachably engaging the plunger and with hand engaging means, substantially as described.

820,473. **ICE-CREAM DIPPER.** REA BUCHANAN, Peoria, Ill. Filed June 15, 1905. Serial No. 265,408.



Claim.—1. In a device of the character described, the combination of a handle, a rod fixedly carried in the handle and having a bowed scraping portion projecting without the same, and a bowl carried by the handle and adapted to rotate about the axis thereof and also the scraper aforesaid.

2. In a device of the character described, the combination of a handle, a rod fixedly carried in the handle and having a bowed scraping portion projecting without the same, a semispherical bowl carried by the handle adapted to rotate about the axis thereof and also the scraper aforesaid, and means for rotating the bowl, which said means is movable in the direction of movement of the said bowl.

3. In a device of the character described, the combination of a handle, a sleeve rotatably carried on one end of the said handle and provided with a semispherical bowl, scraping means carried within the bowl aforesaid, means for rotating the sleeve, and means for limiting such rotation.

4. In a device of the character described, the combination of a handle, a rod secured in the handle and having a scraping portion, a sleeve carried on one end of the handle, a substantially semispherical bowl connected with the sleeve, and means for rotating the sleeve on the handle and with it the bowl which rotates about the scraping portion of the rod aforesaid.

5. In a device of the character described, the combination of a handle, a rod secured in the handle and having a scraping portion, a sleeve carried on one end of the handle, a substantially semispherical bowl connected with the sleeve, means for rotating the sleeve on the handle, and with it the bowl which rotates about the scraping portion of the rod aforesaid, and means for automatically returning the sleeve and bowl to their normal positions on the handle.

6. In a device of the character described, the combination of a tubular handle, a rod fixedly carried in said handle, a semicircular scraper integral with said rod, a sleeve revolubly carried on one end of the handle, a bowl connected with the said sleeve, and a thumb-piece projecting laterally from the said sleeve to adapt the rotation of the sleeve and the bowl, the latter movable about the scraper aforesaid.

7. In a device of the character described, the combination of a tubular handle, a sleeve revolubly carried on the handle, a bowl attached to the sleeve, scraping means secured to the handle and protruding through the sleeve into the bowl, and means for rotating the sleeve and thereby the bowl about the scraper aforesaid.

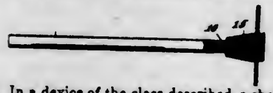
8. In a device of the character described, the combination of a handle, a sleeve revoluble on one end of the handle, a bowl attached to the sleeve, a scraper fixedly secured against movement and carried in the bowl, means for rotating the sleeve and bowl, means for automatically returning the sleeve and bowl to their normal positions, and means for limiting the movement of the said sleeve and bowl.

9. In a device of the character described, the combination of a handle, a sleeve revoluble on one end of the handle, a bowl integral with the sleeve, a scraper held against movement and carried in the bowl, a spring for returning the sleeve and bowl to their normal positions, and means for limiting the movement of the bowl.

10. In a device of the character described, the combination of a handle, a rod secured against rotation in the handle and having a bowed scraping portion, and a sleeve revoluble on the handle provided with a bowl revoluble about the scraper aforesaid.

11. In a device of the character described, the combination of a tubular handle having a front open end the wall surrounding which is recessed, a sleeve revolubly carried on said handle and having a substantially semispherical bowl, a rod fixedly carried in said handle, the same carried into the bowl aforesaid and forming a scraper therein, a coil-spring encircling the said rod in the handle, one end secured to the rod and its opposite end passing through the recess of the handle and secured in said sleeve, means for rotating the sleeve on the handle, and means for limiting the movement of the said sleeve.

820,474. **MANDREL FOR DENTAL ENGINES.** WILLIAM C. K. BUCHANAN, Kansas City, Mo. Filed Dec. 5, 1905. Serial No. 290,362.



Claim.—1. In a device of the class described, a shank provided with threaded portions, separated by a smooth bearing-surface and clamping members carried by said threaded portions.

2. In a device of the class described, a shank provided with exterior threaded portions, separated by a smooth bearing-surface and clamping members and carried by said threaded portions.

3. In a device of the class described, the combination of a shank having a pair of exterior clamp-bearing portions separated by a disk-bearing portion, and suitable disk and clamp members.

4. In a device of the class described, the combination of a clamp-bearing portion, an adjacent disk-bearing portion of less diameter than said clamp-bearing portion, and a second clamp-bearing portion of less diameter than, and extending from said disk-bearing portion, and suitable clamp and disk members carried by said shank.

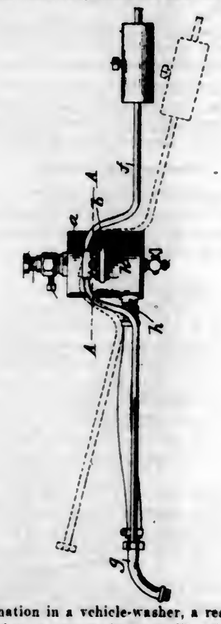
820,475. **ROTARY WASHER FOR VEHICLES.** JAY D. CHAPMAN and WILLIAM R. MCATEE, Oil City, Pa. Filed June 21, 1905. Serial No. 266,335.

Claim.—1. In combination in a rotary washer for vehicles, a reservoir rotatable upon a supply-pipe leading thereinto; said supply-pipe; a valve controlling the outlet end of said supply-pipe within said reservoir; a hose leading from said reservoir; and automatic mechanism connected with said hose and controlling said valve.

2. In combination in a rotary washer for vehicles, a reservoir rotatable upon a supply-pipe leading thereinto; said supply-pipe; a valve controlling the outlet end of said supply-pipe within said reservoir; a hose leading from said reservoir; and mechanism controlled by said hose for controlling said valve.

3. In combination in a washer for vehicles, a reservoir; a supply-pipe leading thereinto; a valve controlling the outlet from said supply-pipe into said reservoir; a hose leading from said reservoir; and mechanism connected with said hose for controlling said valve.

4. In combination in a vehicle-washer, a reservoir; a supply-pipe leading thereinto; a valve controlling the outlet from said supply-pipe into said reservoir; a hose leading from said reservoir; a counterweighted lever controlled by said hose for controlling said valve; and means connecting said lever and valve.

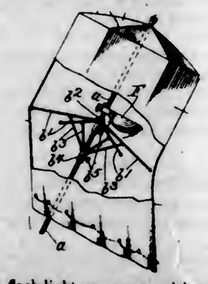


5. In combination in a vehicle-washer, a reservoir; a supply-pipe leading thereinto; a rotary valve controlling the outlet from said supply-pipe into said reservoir; a rock-shaft connected with said valve; a hose leading from said reservoir; and a counterweighted lever mounted upon said rock-shaft and connected with said hose.

6. In a vehicle-washer, a fixed water-supply; a conduit rotatably mounted thereon; a hose connected with said conduit; a rotary valve in said conduit; a rock-shaft controlling said valve; and a counterweighted lever mounted upon said rock-shaft and controlled by said hose.

7. In a vehicle-washer, a supply-pipe provided with an outwardly-projecting flange; a reservoir provided with a pipe connection extending upwardly into said supply-pipe; a sleeve secured to said pipe connection and provided with an inwardly-projecting flange which coacts with the flange upon said supply-pipe to form a swivel-joint; an inlet-pipe projecting from said pipe connection into said reservoir; means controlling the outlet from said inlet-pipe; a hose leading from said reservoir; and mechanism controlled by said hose for controlling said means.

820,476. **FLASH-LIGHT SCREEN.** FRANK L. CROCKER, Chicago, Ill. Filed Dec. 14, 1905. Serial No. 291,696.



Claim.—1. A flash-light screen comprising an umbrella-top, a flexibe textile fabric curtain pendent from the periphery of said top, the rear portion of the curtain being adapted to reflect and the forward portion being adapted to transmit the light, both portions being fireproofed and substantially impermeable to gases.

2. A flash-light screen comprising an umbrella-top and a flexible textile fabric screen pendent from the periphery of such top, the top and the rear portion of the curtain being opaque and interiorly adapted to reflect the light, and the forward portion of the curtain being adapted to transmit the light.

3. A flash-light screen comprising a collapsible umbrella-top of flexible textile fabric, a flexible textile fabric curtain pendent from the entire periphery of the top, the rear portion of the curtain being opaque and interiorly adapted to reflect the light, and the forward portion being adapted to transmit the light; an interior stem for carrying the device; means mounted on the stem for holding the combustibles to produce the flash, the curtain having a draw-string at its lower edge below such pan for closing it up about the stem.

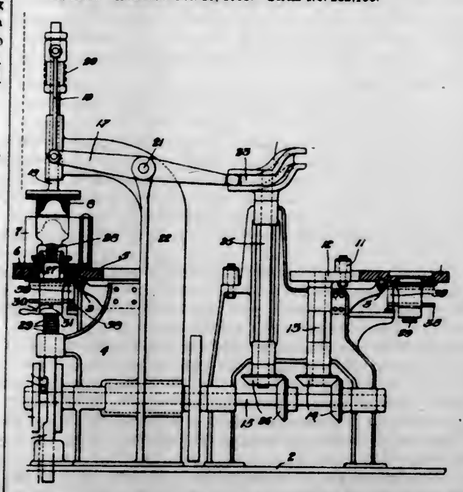
4. A flash-light screen comprising a top provided with a collapsible frame adapted when extended to support a cover and inclosing curtain of flexible material, such frame consisting of bows and braces and a central stem for the same; a pan mounted on the stem for holding combustibles; a spreader mounted on the stem below the pan consisting of a second set of bows and braces and their respective runners, provided, each, with means for clamping them to the stem.

5. A flash-light screen comprising a top having a collapsible frame and a cover of flexible material; a flexible textile fabric curtain pendent from the periphery of the top upon all sides, the rear portion of the curtain being reflective and the forward portion translucent, and both portions being fireproof and substantially impermeable to gases.

6. A flash-light screen comprising a top having a collapsible frame and a cover for the same of flexible material; a curtain made of flexible textile fabric pendent from the entire periphery of the top; an interior stem supporting the top frame, and means mounted on the same for holding the combustibles to produce the flash, said pendent curtain being long enough to be gathered together about the stem below the pan, and a draw-string for so gathering it.

7. A flash-light screen comprising a collapsible top frame consisting of bows and braces and a central stem for the same; a pan mounted on the stem for holding combustibles; a spreader mounted on the stem below the pan consisting of a second set of bows and braces and their respective runners, provided, each, with means for clamping them to the same, in combination with a cover for the top of flexible textile fabric, and a curtain pendent from the periphery of the top on all sides inclosing the pan and spreader, such curtain being translucent at the forward side and opaque and interiorly reflective at the rear part and throughout fireproofed and substantially impermeable to gases.

820,477. **APPARATUS FOR MANUFACTURING GLASS ARTICLES.** JOHN H. CROSKEY, Pittsburg, Pa., assignor to Duquesne Glass Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed June 10, 1904. Renewed Oct. 10, 1905. Serial No. 282,166.



Claim.—1. Apparatus for forming articles of glassware consisting of a rotatable mold-carrier provided with a circularly-arranged series of molds, a pressing-plunger arranged to cooperate with said

molds in rotation, and a series of oppositely-disposed threaded plungers mounted in the mold-carrier, with an independent plunger-raising spindle and means for unscrewing the threaded plungers operated by rotation of the mold-carrier, substantially as set forth.

2. Apparatus for forming articles of glassware consisting of a rotatable mold-carrier provided with a circularly-arranged series of molds, a pressing-plunger arranged to coöperate with said molds in rotation, and a series of oppositely-disposed threaded plungers mounted in the mold-carrier, with means for unscrewing the threaded plungers operated by rotation of the mold-carrier, means for moving the pressing-plunger vertically, and an independent plunger-raising spindle, substantially as set forth.

3. Apparatus for forming articles of glassware consisting of a rotatable mold-carrier provided with a circularly-arranged series of molds, a pressing-plunger arranged to coöperate with said molds in rotation, and a series of oppositely-disposed threaded plungers mounted in the mold-carrier, with means for unscrewing the threaded plungers operated by rotation of the mold-carrier, means for moving the pressing-plunger vertically, an independent plunger-raising spindle, and means for intermittently rotating the mold-carrier, substantially as set forth.

4. The combination with an upper vertically-operating pressing-plunger and a rotatably-traveling mold; of a lower plunger incorporated with the mold having a threaded terminal and provided with an unscrewing device, means adapted to engage said device and become operative upon rotatory travel of the mold, and an independent relatively stationary plunger-raising spindle adapted to abut underneath the plunger, substantially as set forth.

5. The combination with a rotatably-traveling mold, of a traveling vertically-movable spindle provided with a threaded terminal having spiral ratchet-teeth, an arresting-pawl, an independent raising-spindle, and means for unscrewing the threaded terminal of the first spindle from the molded article, substantially as set forth.

6. The combination with a non-traveling pressing-plunger and a rotatably-traveling mold, of a traveling vertically-movable spindle provided with a threaded terminal and having spiral ratchet-teeth, an arresting-pawl, an independent raising-spindle, and means for unscrewing the threaded terminal of the first spindle from the molded article, substantially as set forth.

7. In apparatus for forming articles of glassware, the combination of a rotatable mold-carrier, a series of molds mounted thereon, a pressing-plunger, a series of rotatable threaded plungers mounted on the mold-carrier, an independent raising-spindle therefor, and means for rotating the threaded plungers to unscrew from the molded article, operated by rotation of the mold-carrier, substantially as set forth.

8. In apparatus for forming articles of glassware, the combination of a rotatable mold-carrier, a series of molds mounted thereon, a pressing-plunger, a series of rotatable threaded plungers mounted on the mold-carrier provided with toothed wheels, an independent raising-spindle for the threaded plungers, and a series of stationary rack-abutments adapted to engage the wheel of the threaded plungers to unscrew them from the molded articles, substantially as set forth.

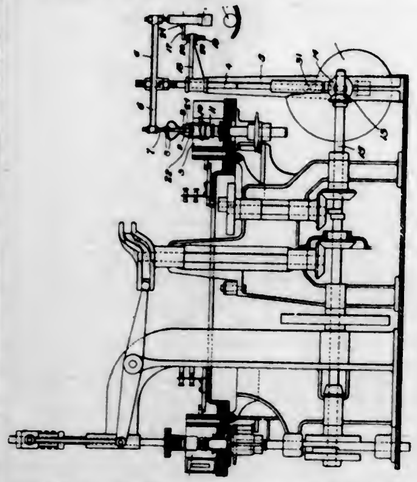
9. In apparatus for forming articles of glassware, the combination of a foundation-frame, a rotatable mold-carrier mounted thereon provided with a series of molds, a vertically-movable pressing-plunger and actuating means therefor mounted on the frame, a vertically-movable threaded plunger mounted in the mold-carrier and projecting upwardly into the mold-cavity, an independent raising-spindle for the threaded plunger and actuating means therefor mounted in the frame, and means for unscrewing the threaded plunger dependent upon movement of the mold-carrier, substantially as set forth.

10. In apparatus for forming articles of glassware, the combination of a foundation-frame, a rotatable mold-carrier mounted thereon provided with a series of molds, a vertically-movable pressing-plunger and actuating means therefor mounted on the frame, a vertically-movable threaded plunger mounted in the mold-carrier and projecting upwardly into the mold-cavity, an independent raising-spindle for the threaded plunger and actuating means therefor mounted in the frame, and means for unscrewing the threaded plunger dependent upon movement of the mold-carrier, with means for intermittently partially rotating the mold-carrier, substantially as set forth.

11. In apparatus for forming articles of glassware, the combination of a stationary frame, a rotatable mold-carrier mounted thereon provided with a series of molds, a pressing-plunger and actuating means therefor mounted on the frame, a series of vertically movable rotating threaded plungers mounted in the mold-carrier and provided with toothed wheels, an independent raising-spindle and actuating means therefor mounted in the frame, and a series of stationary rack-abutments adapted to engage the toothed wheels of the plunger upon movement of the mold-carrier to withdraw the plungers, substantially as set forth.

12. The combination with a rotatable mold-carrier and a mold thereon, of a vertically-movable threaded plunger projecting into the mold-cavity and provided with annularly-arranged screw ratchet-teeth and a toothed actuating-wheel, a dependent bracket, a pivoted pawl, an independent raising-spindle, and a series of rack-abutments adapted to engage the toothed wheel, with means for imparting motion to said parts, substantially as set forth.

820,478. APPARATUS FOR MANUFACTURING GLASS ARTICLES. JOHN H. CROSKEY, Pittsburg, Pa., assignor to Duquesne Glass Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed May 10, 1905. Serial No. 259,753.



Claim.—1. The combination with a traveling mold, of a vertically-movable device arranged to enter downwardly within the mold and to grip the molded article, with means for raising said device and article and for swinging them laterally away from the mold, substantially as set forth.

2. The combination with a traveling mold, of a vertically-movable device arranged to enter downwardly within the mold and to grip the molded article, with means for raising said device and article and for swinging them laterally away from the mold, with automatic devices for disengaging the molded article, substantially as set forth.

3. The combination with a rotatable mold-carrier and molds thereon; of a vertically-reciprocating framework provided with clutch devices adapted to enter downwardly within the mold-cavity and to grasp the finished article, raise it, and swing it laterally away from the mold, substantially as set forth.

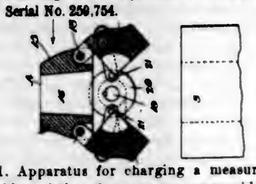
4. The combination with an intermittently-rotatable mold-carrier and molds thereon; of a vertically-reciprocating framework provided with clutch devices adapted to enter downwardly within the mold-cavity and to grasp the finished article, raise it, and swing it laterally away from the mold, with means for actuating said mechanism during the stationary period of the mold-carrier, substantially as set forth.

5. Apparatus for removing finished articles from glass-molds consisting of vertically-disposed spring-arms having gripping-terminals, a vertically-movable supporting-frame therefor, means for raising said frame, and means for partially rotating it, substantially as set forth.

6. In apparatus for forming articles of glassware, the combination with a rotatable mold-carrier and means for intermittently rotating said carrier; of a vertically-movable spindle, means for raising and lowering said spindle, means carried on said spindle for engaging the finished article, and means for actuating said mechanism in conformity with the travel of the mold-carrier, substantially as set forth.

7. Mechanism for grasping and raising a molded insulator consisting of a vertically-movable periodically-rotatable spindle provided with an arm, a stem secured on said arm, downwardly-extending spring-arms provided with gripping-terminals, a vertically-adjustable opening device for the terminals, and an abutment adapted to engage said opening device, substantially as set forth.

820,479. APPARATUS FOR MANUFACTURING GLASS ARTICLES. JOHN H. CROSKEY, Pittsburg, Pa., assignor to Duquesne Glass Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed May 10, 1905. Serial No. 259,754.



Claim.—1. Apparatus for charging a measured quantity of glass into a mold consisting of an open-top cup provided with a hinged bottom portion adapted to lower downwardly and outwardly away from the contents, and means for opening and closing said bottom portion, substantially as set forth.

2. Apparatus for charging a measured quantity of glass into a mold consisting of an open-top cup provided with a hinged bottom portion, means for opening and closing said bottom portion, and means for shearing off the surplus glass from the top of the cup, substantially as set forth.

3. The combination with a swinging frame, of an open-top cup provided with a hinged bottom portion, a crank-shaft provided with connections to said hinged bottom portion, with means for intermittently partially rotating said crank-shaft to open the bottom, substantially as set forth.

4. The combination with a swinging frame, of an open-top cup provided with a hinged bottom portion, a crank-shaft provided with connections to said hinged bottom portion, with means for intermittently partially rotating said crank-shaft to open the bottom, and means for automatically reversing the movement of said shaft to close the bottom, substantially as set forth.

5. The combination with a traveling intermittently-stationary mold, of a swinging frame carrying an open-top measuring-cup provided with a hinged bottom portion, means for rotating said framework to position the cup beneath a glass-supply opening and over the mold respectively, means for shearing off the surplus glass, and means for opening the hinged bottom portion of the cup, substantially as set forth.

6. The combination with a traveling intermittently-stationary mold, of a swinging frame carrying an open-top measuring-cup provided with a hinged bottom portion, means for rotating said framework to position the cup beneath a glass-supply opening and over the mold respectively, means for shearing off the surplus glass, and means for opening the hinged bottom portion of the cup, with gearing in engagement with the driving mechanism of the mold adapted to intermittently actuate said measuring mechanism in conformity with the movement thereof, substantially as set forth.

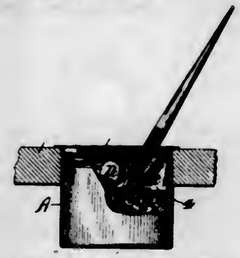
7. The combination with a stationary shearing-blade located adjacent to the supply-opening of a glass-tank, of a laterally-traveling open-top measuring-cup having a hinged bottom and adapted to travel underneath said blade to shear off the surplus glass, substantially as set forth.

8. The combination with a stationary shearing-blade located adjacent to the supply-opening of a glass-tank, of a laterally-traveling open-top measuring-cup adapted to travel underneath said blade to shear off the surplus glass, said cup being provided with a hinged bottom portion, and means for opening and closing said bottom portion, substantially as set forth.

820,480. CLOSURE FOR RECEPTACLES. ERNEST G. DANN, Chicago, Ill. Filed Nov. 24, 1903. Serial No. 132,694.

Claim.—1. A device of the class described, comprising a guide-piece provided with an opening, a rolling stopper arranged to normally close said opening, a longitudinal runway for guiding said stopper to a position to close said opening whenever removed therefrom, and means for confining said stopper.

2. A device of the class described, comprising a guide-piece provided with two converging walls, an opening through said guide-piece at the point of convergence of said walls, a rolling stopper arranged to normally close said opening, and means for confining said stopper within said guide-piece.



3. A device of the class described, a guide-piece comprising two converging walls and provided with an opening at the point of convergence, a ball normally closing said opening, and a guard for confining said ball within said guide-piece.

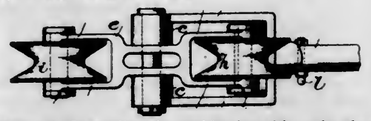
4. In a device of the class described a guide-piece provided with two converging walls arranged to form the bottom of a runway, said guide-piece being provided with an opening at the bottom of the runway, a ball arranged to roll freely within said runway, and means for confining said ball to said runway.

5. In a device of the class described, a guide-piece provided with two converging walls arranged to form the bottom of a runway, said guide-piece being provided with an opening at the bottom of the runway, a ball arranged to roll freely within said runway, and a cover arranged to fit over said guide-piece so as to confine said ball within said runway, said cover being provided with an opening arranged to register with said runway.

6. In a device of the class described, a guide-piece provided with two converging walls arranged to form the bottom of a runway, said guide-piece being provided with an opening at the bottom of the runway, a ball arranged to roll freely within said runway, and a cover arranged to fit over said guide-piece so as to confine said ball within said runway, said cover being provided with an opening arranged to register with said runway and being further provided with a downwardly-depending lip arranged at one edge of said opening.

7. A device of the class described, comprising a guide-piece provided with an opening, upwardly-extending walls arranged to provide a longitudinal runway extending upwardly in opposite directions from said opening, said runway extending upwardly in one direction from said opening at a sharper angle than in the opposite direction, a rolling stopper arranged to normally close said opening.

820,481. TROLLEY. JACOB R. DEILY, Philadelphia, Pa. Filed Sept. 5, 1905. Serial No. 276,953.

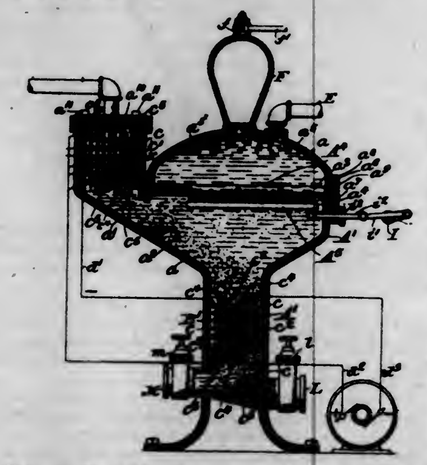


Claim.—1. In a trolley, the combination with a pole, of a wheel-frame pivoted thereto at about its center of gravity and freely revoluble completely around the same, and grooved trolley-wheels pivoted at opposite ends of the wheel-frame and adapted to normally simultaneously engage the conducting-wire, the pivotal connections being so arranged that a straight line connecting the axes of the trolley-wheels intersects the pivot of the wheel-frame.

2. In a trolley, the combination with a pole having a forked outer end, a wheel-frame within the fork of the pole reversible and freely revoluble in bearings on the outer ends of the pole-fork, and grooved trolley-wheels pivoted at the opposite ends of the wheel-frame, the pivotal connections being so arranged that a straight line connecting the axes of the trolley-wheels intersects the pivot of the wheel-frame.

3. In a trolley, the combination with a pole having a forked outer end, a wheel-frame within the fork of the pole and reversible and freely revoluble in bearings on the outer end of the pole-fork, grooved trolley-wheels pivoted at opposite ends of the wheel-frame and adapted to normally simultaneously engage the conducting-wire, and a control-cord secured at the outer part of the pole, the arrangement being such that the wheel-frame is pivoted at about its center of gravity and that a straight line connecting the axes of the trolley-wheels intersects the pivot of the wheel-frame.

820,482. APPARATUS FOR TREATING LIQUIDS. LÉON DION, New York, N. Y., assignor to The American Electro-Hermatic Company, New York, N. Y., a Corporation of Arizona. Filed May 24, 1904. Serial No. 209,567.



Claim.—1. The combination, with a vessel or reservoir constructed with a contracted lower body portion A′, an upper globular portion A^2 and with a contracted chamber portion A^4 near its top, a group of coöperating positive and negative electrodes arranged within the contracted chamber portion A^2, and means for supplying an electric current to the electrodes, of means through which the liquid to be treated may be supplied to the vessel or reservoir in contact with the electrodes and caused to pass between them, and a compartment into which the material separated out from the liquid may descend, substantially as described.

2. The combination, with a vessel or reservoir constructed with a contracted lower body portion, an enlarged upper portion, and with a contracted chamber portion above the contracted body portion, a group of coöperating positive and negative electrodes arranged within the said contracted chamber portion, and means for supplying an electric current to the electrodes, of means through which the liquid to be treated may be supplied to the vessel or reservoir in contact with the electrodes and caused to pass between them, a compartment into which the materials separated out from the liquid may descend, a filter arranged across the enlarged upper portion of the vessel or reservoir, and means for conducting the purified and filtered liquid away from the apparatus extending from the enlarged upper portion of the vessel or reservoir above the filter, substantially as described.

3. The combination, with a vessel or reservoir constructed with a contracted lower body portion, an enlarged upper portion and with a contracted chamber portion above the contracted body portion, a group of coöperating positive and negative electrodes arranged within said contracted chamber portion, and means for supplying an electric current to the electrodes, of means through which the liquid to be treated may be supplied to the vessel or reservoir in contact with the electrodes and caused to pass between them, a compartment into which the materials separated out from the liquid may descend, a filter arranged across the enlarged upper portion of the vessel or reservoir, means for conducting the purified and filtered liquid away from the apparatus extending from the enlarged upper portion of the vessel or reservoir above the filter, and mechanism by which the cleaning of the filter may be effected, substantially as described.

4. The combination, with a vessel or reservoir constructed with a contracted lower body portion, an upper portion and with a contracted chamber portion above the contracted body portion, a group of coöperating positive and negative electrodes arranged within said contracted chamber portion, and means for supplying an electric current to the electrodes, of means through which the liquid to be treated may be supplied to the vessel or reservoir in contact with the electrodes and caused to pass between them, and a chamber located upon the vessel or reservoir and communicating with its interior for receiving the gas or gases set free by the action of the electric current in passing through the liquid, substantially as described.

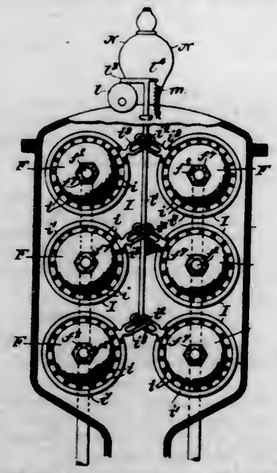
5. The combination, with a vessel or reservoir constructed with a lower main body portion A′, an upper enlarged portion A^3 and a contracted chamber portion A^4 above said lower main body portion, a group of coöperating positive and negative electrodes arranged within the contracted chamber portion, and means for supplying an electric current to the electrodes, of means through which the liquid to be treated may be supplied to the vessel or reservoir in contact with the electrodes and caused to pass between them, a chamber located upon the upper enlarged portion of the vessel or reservoir and communicating with its interior for receiving the gas or gases set free by the action of the electric current in passing through the liquid, a discharge-pipe, and a pressure-valve located upon the gas-receiving chamber, substantially as described.

6. The combination, with a reservoir or receptacle, of a group of positive and negative electrodes constructed in the form of corrugated plates, with the members of the positive electrodes arranged between and alternating with the negative electrodes, whereby a sinuous passage-way is formed between them, and means through which the liquid to be treated may be supplied to such reservoir or receptacle, and, after passing between the members of the electrodes, discharged from the reservoir or receptacle, substantially as described.

7. The combination, with a vessel or reservoir constructed with a contracted lower body portion and with a contracted chamber portion above its lower contracted body portion, a coöperating group of positive and negative electrodes arranged within the contracted chamber portion, and means through which the liquid to be treated may be supplied to the vessel or reservoir above the electrodes and caused to flow down between such electrodes, of a second group of coöperating positive and negative electrodes arranged within the contracted body portion of the vessel or reservoir, and means for supplying an electric current to both groups of electrodes, whereby the materials separated out from the liquid undergoing treatment by the first group of electrodes is acted upon by the second group of electrodes, substantially as described.

8. The combination, with a vessel or reservoir, a group of coöperating positive and negative electrodes arranged within its upper portion, and means through which the liquid to be treated may be supplied to such vessel or reservoir above the electrodes and caused to pass down between them, of a second group of coöperating positive and negative electrodes arranged within the lower portion of the vessel or reservoir for acting upon the materials separated out from the liquid by the first-mentioned electrodes, means for supplying an electric current to both groups of electrodes, and means through which the purified liquid may be discharged from the vessel or reservoir, substantially as described.

820,483. APPARATUS FOR SEPARATING METALS AND OTHER SUBSTANCES FROM LIQUIDS. LÉON DION, New York, N. Y., assignor to The American Electro-Hermatic Company, New York, N. Y., a Corporation of Arizona. Filed June 3, 1904. Serial No. 210,980.

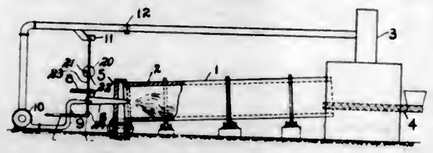


Claim.—1. The combination, with a plurality of horizontally-disposed cylindrical filter-cages arranged in vertical rows, and filtering material applied to their surfaces, of a cylindrical brush applied to each of these cages over its coöperating filtering material with its bristles extending inward, rotating cams and vertically-moving rods coöperating with such cams and connected through pin-and-slot connections with each of the brushes, substantially as described.

2. The combination, with a plurality of horizontally-disposed cylindrical filter-cages arranged in rows, and filtering material applied to their surfaces, of a cylindrical brush applied in connection with each of the cages over its coöperating filtering material with its bristles extending inward in contact with such material, rotating cams, vertically-moving rods coöperating with such cams and connecting through a pin-and-slot connection with each of such brushes, and springs, substantially as described.

3. In an apparatus of the character described, the combination, with a receptacle or reservoir, means through which the liquid to be treated may be supplied thereto, a plurality of horizontally-disposed cylindrical filter-cages arranged in vertical rows, and means through which the liquid after having been treated may be conducted from the interior of the fiter-cages to the place of discharge, of filtering material applied to the surfaces of the filter-cages, a cylindrical brush applied to each of such filter-cages over the filtering material thereon with its bristles extending inward, rotating cams and devices intermediate the brushes and cams whereby the brushes are oscillated from such cams, substantially as described.

820,484. PROCESS OF BURNING CEMENT CLINKER. HENRY L. DOHERTY, Madison, Wis. Filed Dec. 12, 1905. Serial No. 291,450.



Claim.—1. Process of burning cement in rotary kilns which consists in conducting combustion of a carbonaceous fuel with air impoverished with respect to its content of oxygen, and in varying the content of oxygen periodically, whereby kiln incrustations are eliminated.

2. Process of burning Portland cement in inclined rotary kilns, said process consisting in burning a stream of carbonaceous fuel in an oxygenated draft; in varying the proportion of oxygen intermittently, and in impinging the resulting flame upon the cementitious material.

3. Process of burning Portland cement in inclined rotary barrels which consists in mixing a stream of powdered fuel with a stream of supporter of combustion under pressure; in varying the composition of said supporter of combustion from time to time, whereby the formation of obstructions in the path of travel of the flame is eliminated, and in bringing the mixture into contact with the cement material at an igniting temperature.

4. Process of burning Portland cement in inclined rotary kilns which consists in passing a stream of cement-forming material continuously through said kiln from its upper to its lower end; in injecting a predetermined amount of powdered coal into said kiln in company with a predetermined amount of air containing products of combustion; in periodically varying proportion of said products of combustion in a predetermined manner; in subjecting the combustible to an igniting temperature; and in bringing the flame produced thereby into intimate contact with said material.

5. Process of burning Portland cement in inclined rotary cement-kilns which consists in introducing a stream of cement-forming material into the upper part of said kiln, and in causing same to travel downwardly to the lower end of said kiln; in mingling at the lower end of said kiln a stream of powdered coal with a predetermined amount of air containing products of substantially complete combustion; and periodically varying the composition of said products of combustion whereby the shifting of the clinkering zone is periodically effected; in causing the flame produced by the combustion of said fuel to impinge upon the material; and in preventing the introduction of air from extraneous sources.

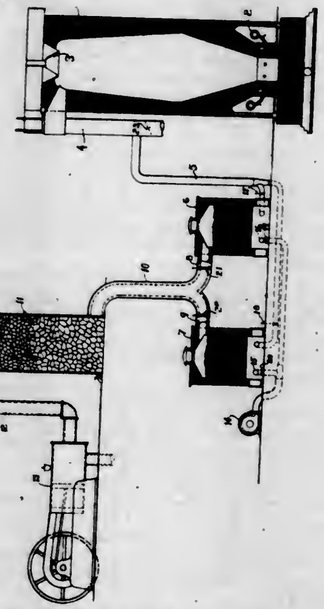
6. Process of burning Portland cement in inclined rotary cylindrical kilns; said process consisting in subjecting the cement material to an impinging flame produced by injecting a mixture of powdered coal and diluted air as a single jet against said meterial; and in periodically varying the degree of dilution of said diluted air.

7. Process of burning Portland cement in inclined rotary cylindrical kilns which consists in conducting the combustion of carbonaceous fuel with a supporter of combustion; and in periodically varying the composition of said supporter of combustion.

8. Process of burning Portland cement which consists in burning carbonaceous fuel in contact with the cement material with a supporter of combustion containing carbon dioxid; and in intermittently varying the proportion of said carbon dioxid whereby kiln incrustations are minimized.

9. Process of burning Portland cement in inclined rotary cylindrical barrels, said process consisting in exposing a flattened stream of cement-forming material to the calcining and clinkering action of a blast of powdered coal, said coal being introduced as a single jet with sufficient oxygen to complete combustion, and with other gases of an inert character; in subjecting the fuel mixture to an igniting temperature whereby a flame of high temperature is developed; in causing said flame to impinge upon said flattened stream of cement material; in periodically varying the proportion of inert gases introduced with said coal; and in preventing the admission of air from extraneous sources.

820,485. PROCESS OF PRODUCING GAS. BYRON E. ELDRED, New York, N. Y., assignor to Combustion Utilities Company, New York, N. Y., a Corporation of New York. Filed May 11, 1905. Serial No. 259,939.



Claim.—1. The process of producing gas which consists in transmitting unmixed blast-furnace gases through a deep bed of incandescent fuel and collecting the resultant gas.

2. The process of manufacturing gas which consists in alternately blasting a deep bed of hot fuel with air and with waste gases from a blast-furnace and in collecting for use the gas from the latter operation.

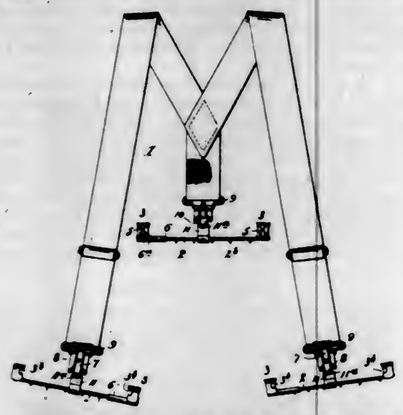
3. The process of manufacturing and using gas which consists in alternately blasting a deep bed of hot fuel with air and with waste gases from a blast-furnace, in collecting the gas from the latter operation, purifying the same and delivering to a gas-engine.

4. The process of manufacturing and using gas which consists in alternately blasting a deep bed of hot fuel with air and with waste gases from a blast-furnace, in collecting the gas from the latter operation, cooling and washing the same and delivering to a gas-engine.

820,486. SUSPENDERS. HENRY J. GARMAN, New York, N. Y. Filed July 17, 1903. Serial No. 165,931.

Claim.—1. In suspenders the combination of the straps, with

bars, means for connecting the bars with the straps, clamps or grips carried by the bars for connection with trousers, said clamps or grips being provided with sockets in their edges adapted to receive the shanks or holding-threads of buttons on trousers, substantially as described.



2. In suspenders the combination of the straps, with bars, means for connecting the bars with the straps, clamps or grips carried by the bars for connection with trousers, said clamps or grips having sockets located on the side edges of their outer walls to receive the shanks or holding-threads of buttons, substantially as described.

3. In suspenders the combination of the straps, with bars, loops for connecting the bars with the straps, means interposed between the bars and loops for holding the loops in adjusted positions along the bars, and clamps or grips carried by said bars and adapted to grip trousers, one of said clamps or grips being adjustably connected with said bar to permit adjustment of the same along the bar, substantially as described.

4. In suspenders the combination of the straps, with bars, means for connecting the bars with the straps, clamps or clips carried by said bars to engage trousers, one of said clamps or clips being mounted to slide adjustably upon the corresponding bar by means of a pin-and-slot connection between the bar and said clamp or clip, substantially as described.

5. In suspenders the combination of the straps, with bars, means for connecting the bars with trousers, means for connecting the bars with the straps, and means to permit adjustment of the bars laterally with respect to the straps and for maintaining the bars in such adjusted positions, substantially as described.

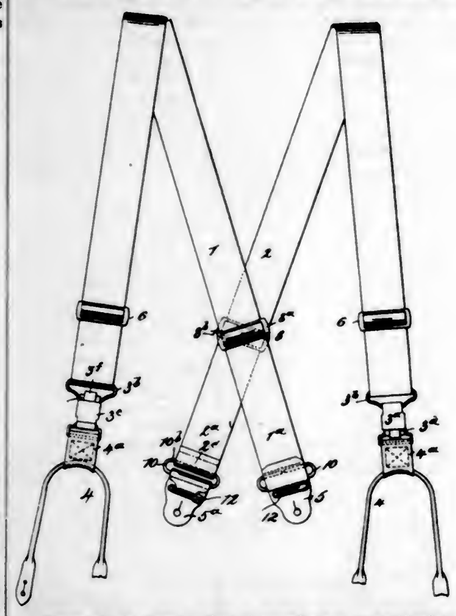
6. In suspenders the combination of the straps with bars provided with projections, loops mounted movably upon the bars and adapted to rest between a pair of projections and provided with means to permit the loop to be slid along the bar past the projections and to be retained in adjusted position on the bar by the projections, and means for connecting said loops with said straps, substantially as described.

7. In suspenders the combination of the straps, with bars provided with means for attachment to trousers and having a plurality of projections, a loop mounted to slide upon each bar, said loop having a slot to permit the passage of the loop along the bar past the projections when the loop is turned in one position, said projections being arranged to limit the movement of the loop along the bar when the loop is turned in another position, and means for connecting said loops with said straps, substantially as described.

8. In suspenders the combination of the straps, with bars, means for connecting the straps with the bars, clamps or grips carried by the bars comprising yoke-like members provided with a spring and with a clamping-lever, whereby the clamps may be attached to trousers, said members being connected with the bars at their lower portions so that the bars will be connected when the members are on a waistband, substantially as described.

9. In suspenders the combination of the straps, with bars provided with means for attachment to trousers, loops carried by said bars and provided with eyes, and clips pivotally carried by the straps adapted to enter the eyes of said loops for detachably connecting the straps with the bars, said bars having projections to limit the movement of the loops along the bars, substantially as described.

820,487. COMBINED SUSPENDERS AND WAIST-BELT. HENRY J. GARMAN, New York, N. Y. Filed July 24, 1903. Serial No. 166,803.



Claim.—1. As a new article of manufacture, a combined suspender and belt comprising a pair of straps pivotally and adjustably connected together at the back portion and provided with means at the front portion for connection with the waistband of trousers in the manner of suspenders, means at the front ends of the straps for connecting them together in the manner of a waist-belt, and means at the back ends of said straps for permitting said ends to be connected with the waistband when said straps are placed parallel in the manner of a belt and when used as suspenders, substantially as described.

2. An article of the character described comprising a pair of straps pivotally and adjustably connected together near their back portions and provided at their front ends with clasps or frames for connection with suspender-ends, said clasps or frames being adapted to be connected together in the manner of a buckle, the back ends of said straps being provided with means for connection with a waistband, and means to connect the back end of a strap with the main portion of an adjacent strap to retain said parts from edgewise movement with respect to each other, substantially as described.

3. An article of the character described comprising a pair of straps pivotally connected at the back portions at a distance from their ends and provided at the front ends with means for connecting the ends together in the manner of a belt, said straps being provided at their back ends with means for connection with a waistband, said straps being adapted to be arranged in parallel relation at the back portion, and a frame carried by the back end portion of a strap beyond the pivot adapted to receive the main portion of an adjacent strap, whereby the adjacent parts of the straps will be retained from edgewise movement with respect to each other, substantially as described.

4. An article of the character described comprising a pair of straps provided at the back portions with a pair of frames pivotally connected together at a distance from their ends and each arranged to adjustably connect with a strap, the front ends of said straps being provided with means for supporting suspender-ends and for connecting together the ends of the straps in the manner of a belt, tabs connected with the straps at the back ends and provided with means for connection with a waistband, and means for connecting the back ends of the straps beyond the pivot with the adjacent main parts thereof to retain the parts from edgewise movement with respect to each other, substantially as described.

5. An article of the character described comprising a pair of straps provided with means at their front ends for supporting suspender-ends and for connecting the straps together in the manner of a belt, means at the back portion of the straps at a distance from their ends for adjustably connecting them together so that they may extend in substantially parallel relation, button-tabs at the back ends of said straps beyond their point of connection, and a frame at the back end of a strap having means to permit the adjacent strap to be passed through said frame to retain the parts from edgewise movement with respect to each other, substantially as described.

6. An article of the character described comprising a pair of straps pivotally connected together at a distance from their back ends and provided at their front ends with means for sustaining suspender-ends and for connecting the ends of the straps together in the manner of a belt, tabs at the back ends of the straps beyond the pivots provided with means for connection with a waistband, frames connected with said tabs and means for connecting said frames with the corresponding strap ends, and means to permit a portion of a strap to enter the adjacent frame when the straps are placed in substantially parallel relation, substantially as described.

7. An article of the character described comprising a pair of straps pivotally connected together at a distance from their back ends and provided at their front ends with means for sustaining suspender-ends and for connecting the ends of the straps together in the manner of a belt, means at the back ends of the straps beyond the pivot for connection with a waistband, and a frame carried by a strap and having a space adapted to receive the adjacent strap to retain said parts together, substantially as described.

8. An article of the character described comprising a pair of straps pivotally connected together near their back portions and provided at their front ends with means for sustaining suspender-ends and for connecting the ends of the straps together in the manner of a belt, means at the back ends of the straps for connection with a waistband, and a frame carried by a strap and having an opening in its side to receive between its sides the adjacent strap, substantially as described.

9. An article of the character described comprising a pair of straps pivotally connected together near their back portions and provided at their front ends with means for sustaining suspender-ends and for connecting the ends of the straps together in the manner of a belt, tabs at the back ends of the strap for connection with a waistband, one of the tabs being detachably connected with its strap, and a frame having means to connect the strap and tab and to receive the adjacent portion of a strap to permit the tab to lie on the inner face of the strap, substantially as described.

10. An article of the character described comprising a pair of straps provided with means at their front ends for supporting suspender-ends and for connecting the straps together in the manner of a belt, a pair of frames at the back portion of said straps at a distance from the ends pivotally connected together and arranged to permit sliding adjustment along said straps respectively, tabs at the back ends of the straps, and means for detachably connecting one of said tabs with the strap to cause both tabs to lie on the inner face of the straps when arranged as a belt, substantially as described.

11. An article of the character described comprising a pair of straps pivotally connected together at a distance from their back ends, said straps having at their front ends male and female complemental clasps for connecting the ends of the straps in the manner of a belt, and suspender-ends provided with male and female clasps adapted to engage the corresponding clasps on the straps, with tabs at the back ends of the straps, and a frame detachably connecting a strap with one tab, said frame having an opening in one side to permit the passage of a strap into the space between its sides, substantially as described.

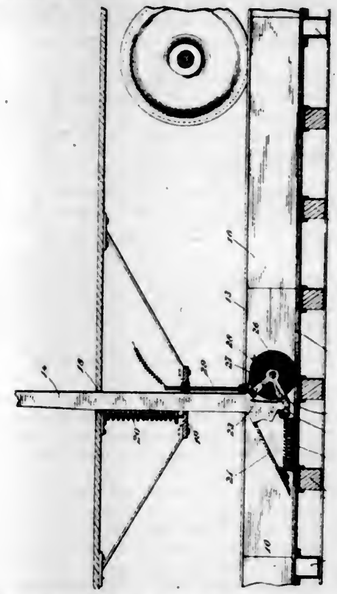
820,488. ELECTRIC RAILWAY. JOHN A. GAREY, Tarkio, Mo., assignor of one-fourth to George G. Garey, Indianapolis, Ind. Filed May 25, 1905. Serial No. 262,242.

Claim.—1. In apparatus of the class described, third-rail supports including hollow cross-ties arranged at intervals, and means for forcing accumulations of dirt and foreign matter into such cross-ties.

2. In apparatus of the class described, third-rail supports including hollow cross-ties arranged at intervals and serving as dirt-receptacles, and means carried by the car or other vehicle for forcing dirt from the conduit into such cross-ties.

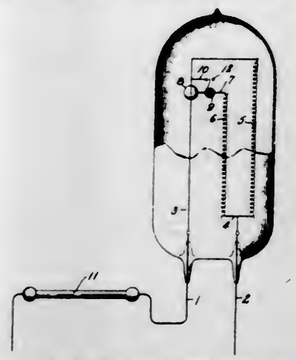
3. In apparatus of the class described, a third-rail support including hollow cross-ties arranged at intervals and forming dirt-receptacles, a plow, a current-collector supported thereby, and means carried by the plow for cleaning the rail in advance of the collector, and forcing the dirt and other foreign matter into said hollow cross-ties.

4. In apparatus of the class described, a third-rail support including hollow cross-ties arranged at intervals and forming dirt-receptacles, a supporting-sill for the third rail, and means carried by the car or other vehicle for forcing accumulations of dirt and foreign matter from the rail into such cross-ties.



5. In apparatus of the class described, a third-rail support, and cross-ties or troughs forming dirt-receptacles arranged at intervals and disposed below the level of the third-rail support.

820,489. BALLAST DEVICE FOR NERNST LAMPS. LUDWIG GLASER, Berlin, Germany. Filed June 8, 1905. Serial No. 264,263.



Claim.—1. A ballast for second-class conductors comprising a resistance having a high-temperature coefficient, a second resistance operatively related thereto, and automatic means for connecting said second resistance in shunt with said first resistance after the latter has attained a suitable temperature.

2. A ballast device for a conductor of the second class including as a part thereof a resistance having a high-temperature coefficient, and automatic means for connecting said resistance in circuit with said second-class conductor after current begins to flow through said conductor.

3. A ballast device for a conductor of the second class including as a part thereof a high-resistance filament, and thermostatic means for electrically connecting said filament to said conductor and for disconnecting it therefrom.

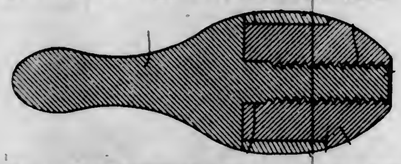
4. A ballast device for electrical apparatus comprising a filament having a high-temperature coefficient, a second filament opera-

tively related thereto, and means operated by heat from one of said filaments for connecting the two filaments in parallel.

5. A ballast for conductors of the second class comprising an evacuated chamber, a high-resistance filament therein, means for supplying current thereto, a second filament therein, and automatic means in said chamber for connecting said filaments in parallel after one of said filaments has been heated by the flow of current therethrough.

6. A ballast for electric apparatus comprising an evacuated chamber, a high-resistance filament therein, a second resistance opertively related thereto, and a heat-actuated spiral for connecting said resistances in parallel when said chamber has reached a predetermined temperature.

820,490. **TENPIN.** FREDERICK K. GOFF and HENRY P. SIMMONS, East Providence, R. I. Filed Mar. 22, 1905. Serial No. 251,494.

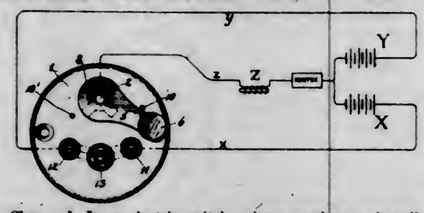


Claim.—1. A tenpin comprising a neck member, a body member detachably connected to the neck member and having a circumferential channel in its side extending to its upper end, and an auxiliary band removably arranged in the channel of the body member and against the neck member.

2. A tenpin comprising a neck member having a central, depending and threaded projection, a body member having a central threaded opening receiving the threaded projection of the neck member and also having a circumferential channel in its side extending to its upper end, and an auxiliary band removably arranged in the channel of the body member and against the neck member.

3. A tenpin comprising a body of wood, and a band of compressed paper, surrounding the body of wood and arranged to receive the impact of a ball rolled against the pin.

820,491. **ELECTRIC SWITCH.** DAVID B. GRAY, New York, N. Y. Filed Feb. 21, 1905. Serial No. 246,650.



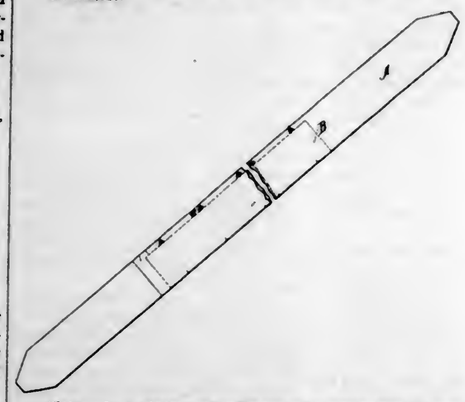
Claim.—1. In an electric switch, a base member, a pivotally-mounted switch-arm, three contact members having heads projecting above said base, and means for electrically connecting two of said contact members together only when said third contact is engaged by said switch-arm.

2. In an electric switch the combination of an insulating-base, a main contact, a switch-arm removably mounted with relation to said contact and rotatable in a plane parallel to said base, a pair of contacts carried by said base and extending above the surface thereof, with either one of which the said arm is adapted to engage for throwing either one of two batteries in circuit, a third contact carried by said base with connections for automatically throwing the two batteries in multiple only when said switch-arm engages said third contact.

3. In an electric switch the combination of an insulating-base, a main contact, a switch-arm pivotally carried thereby, a pair of contact members projecting above the surface of said base and adapted to be engaged by said switch-arm, and another contact movable in said base with means for connecting said pair of contacts automatically when engaged by said switch-arm.

4. In an electric switch the combination of an insulating-base, a main contact, a pivotally-mounted switch-arm connected thereto, a stationary contact having its head projecting above said base, a movable contact carried by the said base, a spring for holding said contact in its normal position, a member projecting in line with said movable contact and connected with said stationary contact and adapted to be engaged by said movable contact when the same is depressed by said switch-arm.

820,492. **PHOTOGRAPHIC-FILM CARTRIDGE.** HARRY LE B. GRAY, Rochester, N. Y., assignor to Eastman Kodak Company, Rochester, N. Y., a Corporation of New York. Filed Feb. 4, 1905. Serial No. 244,120.



Claim.—1. A photographic-film cartridge embodying a covering-strip of flexible opaque material having indicating-marks near one edge and a superposed strip of sensitized flexible photographic film attached thereto, said film being shorter and narrower than the covering-strip and arranged at the side thereof so as to be clear of the markings thereon when the film and covering-strip are wound into a coil.

2. A photographic cartridge embodying a spool having flanged ends, a covering-strip of flexible opaque material and a strip of flexible sensitized film connected to the covering-strip and wound therewith on the spool, said covering-strip being longer and wider than the film and having at one edge suitable indicating-markings beyond the edge of the film and not covered by the latter when wound on the spool.

3. A photographic-film cartridge embodying a strip of flexible sensitized photographic film, and a covering-strip of flexible opaque material attached thereto at one end, said covering-strip being wider and longer than the film and having at one edge suitable markings located out of contact with the film when the strips are wound together.

820,493. **BLACKING-GUARD.** ELBERT A. HAWKINS, Rochester, N. Y. Filed Apr. 28, 1905. Serial No. 257,932.



Claim.—1. As a new article of manufacture, a blacking-guard consisting of two pieces of suitably flexible and elastic material adapted to be inserted within the upper edge of the shoe of the user, one of such pieces adapted to fit around the instep and the other around the back of the ankle, the free ends of such pieces overlapping more or less according to the size of the shoe and foot therein.

2. As a new article of manufacture, a blacking-guard consisting of two pieces of suitably flexible and elastic material adapted to be inserted within the upper edge of the shoe of the user, one of such pieces adapted to fit around the instep and the other around the back of the ankle, and the free ends of such pieces overlapping more or less according to the size of the shoe and foot therein, such pieces widened and rounded at their free ends.

3. As a new article of manufacture, a blacking-guard consisting of two pieces of suitably flexible and elastic material adapted to be inserted within the upper edge of the shoe of the user, one of such pieces adapted to fit around the instep and the other around the back of the ankle, the free ends of such pieces overlapping more or less according to the size of the shoe and foot therein, such free and overlapping ends widened out and having rounded corners.

4. As a new article of manufacture a blacking-guard of suitably flexible and elastic material adapted to be inserted within the upper edge of the shoe of the user and extending above the upper edge of the shoe and adapted to protect the stocking therein while exposing the entire outer surface of the upper edge of the shoe, such guard having free ends arranged to overlap more or less according to the size of the shoe and foot therein.

820,494. **EYEGLASS-MOUNTING.** CHARLES A. HOFFMAN, Minneapolis, Minn. Filed Nov. 14, 1904. Serial No. 232,576.



Claim.—1. In an eyeglass-mounting, a bridge and nose-guards formed from a single piece of metal, the middle portion of which is curved to form the bridge and provided with forwardly-extending end loops, the ends of said loops being inwardly turned and extended rearwardly substantially parallel with one another to form the guards and finger-pieces projecting forwardly from said ends, substantially as described.

2. In an eyeglass-mounting, a bridge and nose-guards formed from a single piece of metal, the middle portion of which is curved to form the bridge and provided with forwardly-extending end loops, the ends of said loops being inwardly turned and extended rearwardly and straddling the bridge to form the nose-guards, finger-pieces projecting forwardly from said ends and lens-clamps wherein the said loops are slidably secured to permit the horizontal adjustment of the bridge and guards with respect to the vertical plane of the lens.

3. In an eyeglass-mounting, a bridge and nose-guards formed from a single piece of metal, the middle portion of which is curved to form the bridge, and the ends are inwardly turned and extended rearwardly substantially parallel with one another to form the guards, and finger-pieces projecting forwardly from said ends, substantially as described.

4. In an eyeglass-mounting, the combination, with a bridge and nose-guards formed in one piece, the middle portion of which is bowed or curved to form the bridge and the ends inwardly turned and rearwardly extended to form the guards, and clamps secured to the lens and wherein the bridge and guards are slidably supported to permit their horizontal adjustment with respect to the vertical plane of the lens.

5. In an eyeglass-mounting, a lens-clamp comprising a plate having one end folded over upon the other and adjustably secured thereto, a space being provided between said ends wherein the bridge is clamped, and straps provided on opposite sides of said plate and adapted to be bent toward each other to straddle the lens and be secured thereto, substantially as described.

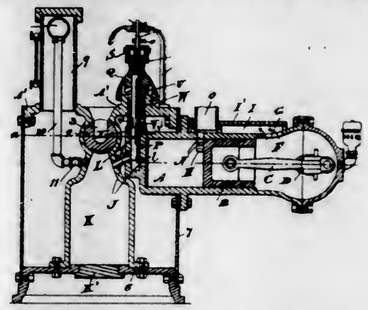
6. In an eyeglass-mounting, a lens-clamp comprising a plate having its ends folded together with a space between them, a series of teats or points being formed on one end of the plate to enter depressions in the other end and form guides for the bridge, means for drawing the ends of said plate together to clamp the bridge, and straps provided on said plate and adapted to straddle the lens and be secured thereto, substantially as described.

820,495. **HOT-AIR ENGINE.** WILLIAM R. HONEYWELL, Toronto, Canada. Filed July 14, 1904. Serial No. 216,515.

Claim.—1. In a hot-air engine, the combination with the cylinder provided with air-intake ports and an exhaust-port and a motive-fluid feed-port, and piston working in the cylinder, of means for heating air fed into said cylinder through said feed-port, and a valve controlling said feed-port and opened by the pressure of air in said cylinder.

2. In a hot-air engine, the combination with the cylinder provided with air-intake ports and an exhaust-port and a motive-fluid feed-port, and piston working in the cylinder, of means for heating air fed into said cylinder through said feed-port, and a spring-controlled valve controlling said feed-port, and opened by the pressure of air in said cylinder.

3. In a hot-air engine, the combination with the cylinder provided with air-intake ports and an exhaust-port and a motive-fluid feed-port and piston working in the cylinder, of means for heating air fed into said cylinder through said feed-port, and a valve controlling said feed-port and opened by the pressure of air in said cylinder, the lower end of said valve normally resting above the part of said feed-port immediately leading from said cylinder, and normally below the other part of said feed-port between same and said heating means.



4. In a hot-air engine, the combination with the cylinder provided with air-intake ports and an exhaust-port and a motive-fluid feed-port and piston working in the cylinder, of means for heating air fed into said cylinder through said feed-port, and a spring-controlled valve controlling said feed-port and opened by the pressure of air in said cylinder, the lower end of said valve normally resting above the part of said feed-port immediately leading from said cylinder, and normally below the other part of said feed-port between same and said heating means.

5. In a hot-air engine, the combination with the cylinder provided with air-intake ports and an exhaust-port, and a motive-fluid feed-port opening from its head, the piston in said cylinder, and the crank-case provided with a valve-controlled intake-port and a feed-port communicating with the intake-ports of said cylinder, of a combustion-chamber connected to said cylinder by said first-mentioned feed-port; a spring-controlled valve for controlling said first-mentioned feed-port, the lower end of said valve normally resting above the part of said first-mentioned feed-port immediately leading from said cylinder, and normally below the other part of said first-mentioned feed-port between same and said combustion-chamber, and means for feeding fuel into said combustion-chamber.

6. In a hot-air engine, the combination with the cylinder provided with air-intake ports and an exhaust-port, and a motive-fluid feed-port opening from its head, the piston in said cylinder, and the crank-case provided with a valve-controlled intake-port and a feed-port communicating with the intake-ports of said cylinder, of a combustion-chamber connected to said cylinder by said first-mentioned feed-port; a spring-controlled valve for controlling said first-mentioned feed-port, the lower end of said valve normally resting above the part of said first-mentioned feed-port immediately leading from said cylinder, and normally below the other part of said first-mentioned feed-port between same and said combustion-chamber; means for limiting the movement of said spring-controlled valve and means for feeding fuel into said combustion-chamber.

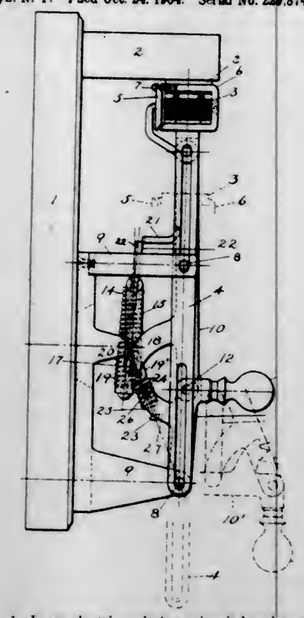
7. In a hot-air engine, the combination with the cylinder provided with air-intake ports and an exhaust-port, and a motive-fluid feed-port opening from its head, the piston in said cylinder, and the crank-case provided with a valve-controlled intake-port and a feed-port communicating with the intake-ports of said cylinder of a combustion-chamber connected to said cylinder by said first-mentioned feed-port; casing surrounding said combustion-chamber and designed to contain water; a spring-controlled valve for controlling said first-mentioned feed-port, the lower end of said valve normally resting above the part of said first-mentioned feed-port immediately leading from said cylinder, and normally below the other part of said first-mentioned feed-port between same and said combustion-chamber; means for limiting the movement of said spring-controlled valve, and means for feeding fuel into said combustion-chamber.

8. In a hot-air engine, the combination with the cylinder provided with air-intake ports and an exhaust-port, and a motive-fluid feed-port opening from its head, the piston in said cylinder, and the crank-case provided with a valve-controlled intake-port and a feed-port communicating with the intake-ports of said cylinder, of a combustion-chamber connected to said cylinder by said first-mentioned feed-port; a casing surrounding said combustion-chamber and designed to contain water; a spring-controlled hollow valve provided

with openings through which the water may pass thereinto, for controlling said first-mentioned feed-port, the lower end of said valve normally resting above the part of said first-mentioned feed-port immediately leading from said cylinder, and normally below the other part of said first-mentioned feed-port between same and said combustion-chamber; means for limiting the movement of said spring-controlled hollow valve, and means for feeding fuel into said combustion-chamber.

9. In a hot-air engine, the combination with the cylinder provided with air-intake ports and an exhaust-port, and a motive-fluid feed-port opening from its head, the piston in said cylinder, and the crank-case provided with a valve-controlled intake-port and a feed-port communicating with the intake-ports of said cylinder, of a combustion-chamber connected to said cylinder by said first-mentioned feed-port; a casing surrounding said combustion-chamber and designed to contain water; a spring-controlled hollow valve provided with openings through which the water may pass thereinto for controlling said first-mentioned feed-port, the lower end of said valve normally resting above the part of said first-mentioned feed-port immediately below the other part of said first-mentioned feed-port between same and said combustion-chamber; means for limiting the movement of said spring-controlled hollow valve; means for feeding fuel into said combustion-chamber, and a pipe opening into said combustion-chamber from said casing containing the water, and a check-valve in said pipe.

820,496. AUTOMATIC CIRCUIT-BREAKER. DAG HOYEM, Brooklyn, N. Y. Filed Oct. 24, 1904. Serial No. 229,874.



Claim.—1. In an electric switch or circuit-breaker, the combination with a toggle for holding the switch closed, of a swinging frame connected with said toggle, a spring connected to said frame, means for normally holding said frame in position where the line of strain of the spring will be ineffective to knee the toggle and means for releasing the frame to permit it to turn in a direction to change the direction of the line of strain of the spring so that it will knee or bend the toggle.

2. In an electric switch or circuit-breaker, the combination of a toggle for holding the switch closed, a swinging frame, a spring mounted thereon, links connecting said frame and toggle and means for swinging the frame to bring the line of strain of the spring across the line connecting the pivotal point of a toggle member and the pivotal point of connection of said links with said member.

3. In an electric switch or circuit-breaker, the combination of a toggle for holding the switch closed, a swinging frame, a spring mounted thereon, links connecting the spring and toggle and a detent normally holding the frame in position to render the spring ineffective and prevent it from turning to position to knee or bend the toggle.

4. In an electric switch or circuit-breaker, the combination of a toggle for holding the switch closed, a pivoted frame, a spring mounted thereon and connected with the toggle, a detent for holding the frame in ineffective position and means connected with the toggle for assisting to swing the frame into effective position.

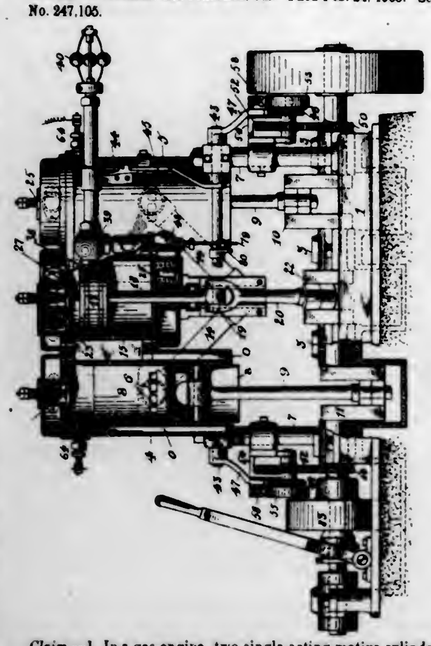
5. In an electric switch or circuit-breaker, the combination of a switch-carrying slide, a toggle for holding the slide in circuit-closing position, a swinging frame carrying an actuating-spring connected with the toggle through suitable links, and a spring interposed between a member of the toggle and said frame and acting thereon in a manner to swing said frame into position for efficient operation of the toggle-actuating spring.

6. In an electric switch or circuit-breaker, the combination of a toggle for holding the switch closed, a slide connected to said toggle, a spring, links connecting the spring and toggle, means for causing the end of the spring, which is connected to the toggle to swing outward away from the base on which the parts are mounted and a detent responsive to changes of load for normally holding the spring against swinging movement.

7. In an electric switch or circuit-breaker, the combination of a toggle for holding the switch closed, a detent-controlled swinging frame, a spring mounted on said frame and connected with the toggle so as to tend to knee or bend the same when the frame swings, and a spring for swinging the frame into position for efficient operation of the toggle-actuating spring.

8. In an electric switch or circuit-breaker, the combination with a detent-controlled actuating mechanism normally held by said detent in ineffective position for opening the switch, manual devices for restoring the switch to closed position, a supplemental spring, adapted to operate on the actuating mechanism to assist in throwing the same into position for efficient operation, and means connected with the manual restoring devices for putting said spring into condition for operation in the act for closing the switch.

820,497. GAS-ENGINE. FREDERICK H. HURLBUT, Alameda, and THOMAS W. MUNROE, San Francisco, Cal. Filed Feb. 24, 1905. Serial No. 247,105.



Claim.—1. In a gas-engine, two single-acting motive cylinders, with pistons connected to oppositely-placed cranks on a common shaft, a double-acting compression-cylinder between said motive cylinders, having a displacement volume greater than either of said motive cylinders, a piston in said compressing-cylinder connected to a crank on the common shaft at an angle to the motive-piston cranks,

inlet-valves in said compressing-cylinder at both ends, pipes and passages from a fuel-supply to said inlet-valves, a valve at each end of said compressing-cylinder with passages leading to each motive cylinder respectively, a check-valve in each motive cylinder at the terminus of each of said passages, circulatory passages between the compression-cylinder and the motive cylinders, and a regulating-valve in said circulatory passages, substantially as specified.

2. In a gas-engine, two single-acting motive cylinders, with pistons connected to oppositely-placed cranks on a common shaft, a double-acting compressing-cylinder between said motive cylinders, having a displacement volume greater than either of said motive cylinders, a piston in said compressing-cylinder connected to a crank on the common shaft at an angle to the motive-piston cranks, inlet-valves in said compressing-cylinder at both ends, pipes and passages from a fuel-supply to said inlet-valves, a valve at each end of said compressing-cylinder with passages leading to each motive cylinder respectively, a check-valve in each motive cylinder at the terminus of each of said passages, circulatory passages between the compressing-cylinder and the motive cylinders, a regulating-valve in said circulatory passages, igniting means, and a double-acting regulating-valve operating in connection with said igniting means, substantially as specified.

3. In a gas-engine, two single-acting motive cylinders, with pistons connected to oppositely-placed cranks on a common shaft, a double-acting compressing-cylinder between said motive cylinders, having a displacement volume greater than either of said motive cylinders, a piston on said compressing-cylinder connected to a crank on the common shaft at an angle to the motive-piston cranks, inlet-valves in said compressing-cylinder at both ends, pipes and passages from a fuel-supply to said inlet-valves, a valve at each end of said compressing-cylinder with passages leading to each motive cylinder respectively, a check-valve in each motive cylinder at the terminus of each of said passages, circulatory passages between the compressing-cylinder and the motive cylinders, a regulating-valve in said circulatory passages, igniting means, a double-acting regulating-valve operating in connection with said igniting means, and a reversing-gear in connection with said igniting means, substantially as specified.

4. In a gas-engine, two single-acting motive and a double-acting charge-compressing piston connected to a common crank-shaft, a second shaft connected to and driven by the same crank-shaft at half its speed, around this second shaft an adjustable insulated disk or collar provided with oppositely-placed pairs of electrodes or contacting pins, electric wires connecting from these pins to an electric battery and to the combustion-chambers of the motive pistons, means to connect the inner ends of these contacting pins and close the circuit at different points of the stroke of the motive pistons, substantially as specified.

5. In a gas-engine, two single-acting motive pistons, a double-acting charge-compressing piston, all connected to a common crank-shaft, means to supply and regulate fuel charges for the motive engines, a second shaft geared to the crank-shaft to revolve at half its rate, on this shaft a revolving insulated disk provided with two diametrically opposite circuit-closing bars 61, concentric with this insulated disk a segmental insulated member, wires therefrom to an electric battery, spark-coils and the combustion-chambers of the motive cylinders and between the rotary insulated disk and concentric insulated member 58, pairs of movable contacting and circuit-closing pins 59 mounted radially and oppositely in a revoluble insulated disk and adjustable by hand, substantially as specified.

6. In a gas-engine, two single-acting motive pistons and a double-acting charge-compressing piston connected to a crank-shaft, second shafts for each motive piston geared to revolve at half the speed of the crank-shaft, a gear-wheel and connected insulated disks 55 arranged to turn loosely about the axis of this second shaft, two pairs of electric contacting pins oppositely placed in these disks adapted to move outward and inward, a fixed insulated segmental guide and a revolving contact to close the circuit between the contact-pins in each pair and between electric wires to transmit electric current through these pairs of pins connected thereto, thereby igniting charges in the motive cylinders, in the manner substantially as specified.

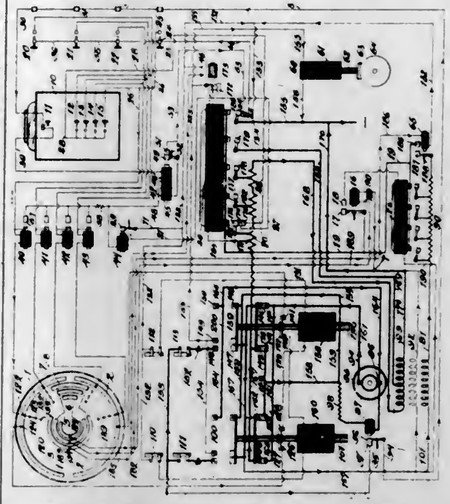
7. In a gas-engine, two single-acting motive pistons, a double-acting charge-compressing piston, all connected to a common crank-shaft, means to reverse the motion of the crank-shaft consisting of the revoluble disk or member 55 containing two pairs of diametrically opposite electric contacting pins 59, a gear-wheel to turn this disk and change its relation to the cranks of the engine, segmental toothed racks to engage this gear-wheel and a shaft on which these racks are held to produce coincident action of the parts for each motive engine, a hand-lever and notched segmental bar to lock the lever, reverse the engine and indicate the point of ignition, arranged and operating substantially as described.

8. In a gas-engine, two single-acting motive pistons and a double-acting charge-compressing piston connected to one crank-shaft, pipes and passages connected to these, adjustable electric devices to ignite the charges in the motive cylinders, producing rotation of the engine either way, a cross-shaft to adjust the electric igniting devices simultaneously for each motive engine and connections from this shaft to a valve that permits circulation and attenuation of the fuel-gas when stopping, starting and reversing the engine, substantially as shown and described.

9. In a gas-engine, two single-acting motive pistons and a double-acting charge-compressing piston connected to one crank-shaft by cranks that permit revolution of the engine each way, electric devices to ignite the charges in the motive engines, these devices dual, and the electric contacts adjustable by means of an oscillatory cross-shaft and connections for each motive engine that acts simultaneously, a connection from this shaft to a valve that opens each way and permits circulation and attenuation of the fuel-gas, a hand-lever to adjust this oscillating shaft and a spaced scale to indicate the points of electric contact and ignition each way and at various points, substantially as specified.

10. In a gas-engine, two single-acting motive pistons and a double-acting charge-compressing piston, all connected to a crank-shaft and operating in definite relation one to the other, the charge-compressing piston displacing a volume in excess of the required supply in the motive cylinders respectively, a hand-adjusted valve to permit circulation and return of a portion of the fuel charges and supplementary thereto a second valve with like functions, controlled by centrifugal apparatus and by the engine's speed of revolution, substantially as specified.

820,498. ELEVATOR-CONTROL SYSTEM. JOHN D. ILDER, New York, N. Y., assignor to Otis Elevator Company, East Orange, N. J., a Corporation of New Jersey. Filed Feb. 16, 1905. Serial No. 245,964.



Claim.—1. The combination with a motor, car and stations, of motor-controlling means connected to reduce the speed of the same before stopping at the limits of travel of said car and at any intermediate point and to vary such reduction of speed in accordance with the load whether descending or ascending.

2. The combination with a motor, car and stations, of automatic motor-controlling means connected to reduce the speed of the same before stopping at the limits of travel of said car and at any intermediate point and to vary such reduction of speed in accordance with the load whether descending or ascending.

3. The combination with a motor, car and stations, of motor-controlling device connected to the car and stations, and means for automatically stopping the car at any predetermined point interme-

diate the upper and lower limits of travel regardless of the load, direction of travel or speed of said car.

4. The combination with a motor, of a car and a plurality of controlling-stations, of motor-controlling means connected to reduce the speed of said motor before stopping at any floor-level and to vary such reduction of speed by an amount proportionate to the load.

5. The combination with a motor, of a car and a plurality of controlling-stations, of automatic motor-controlling means connected to reduce the speed of said motor before stopping at any floor-level and to vary such reduction of speed by an amount proportionate to the load.

6. The combination with a motor, of a car and a plurality of controlling-stations, of motor-controlling means connected to reduce the speed of said motor before stopping at any floor-level and to automatically vary such reduction of speed by an amount proportionate to the load.

7. The combination with a motor, car and a station, of means for excluding control of said car after being started from said station, and means for automatically stopping said car gradually regardless of its load or the skill of the operator, at any desired floor-level.

8. The combination with a motor, car and a station of means for excluding control of said car after being started from said station, and means for automatically stopping said car gradually regardless of its load or the skill of the operator or direction of travel at any desired floor-level.

9. The combination with a motor, car and a station of means for excluding control of said car after being started from said station, and means for automatically stopping said car gradually regardless of its load or the skill of the operator, direction of travel or speed.

10. The combination of a car and motor, with push-butttons, one at each floor or station, means for controlling said motor from one of said push-buttons to the exclusion of the others, and means for automatically reducing the speed of said motor before stopping and to vary such reduction of speed in accordance with the load.

11. The combination of a car and motor, with switches at a plurality of floors or stations, means for controlling said motor from any one of said stations to the exclusion of the other stations, and automatic means for stopping the car at the same point with varying loads.

12. The combination of a car and its motor, with switches at various landings or stations, means for controlling said motor from any one of said stations, to the exclusion of the switches at the other stations, and means for automatically reducing the speed of said motor as the car reaches predetermined points in its traverse, and vary such reduction of speed in accordance with the load.

13. In an elevator system, the combination with a motor and car, of switches at the various floors or landings, switches on the car, electrical motor-controlling means for preventing subsequent control of the motor from a floor or station after it has been operated from the car, and means for gradually stopping the car at a predetermined point by automatically changing the speed and varying such change of speed in proportion to the duty.

14. The combination of a car and its motor, with circuits and connections for an automatic push-button-controlled elevator system, and means for automatically stopping the car at the same point with varying loads.

15. The combination of a car and its motor, with motor-controlling means for automatically stopping said car at the limits of its travel or at any predetermined intermediate point regardless of its load and the skill of the operator.

16. In an elevator system, the combination of a car and its motor, with motor-controlling means for automatically reducing the speed of the same, to vary such speed in accordance with the load whether ascending or descending and stopping said car at any predetermined point in its travel.

17. In an elevator system, the combination with a car and its motor, of motor-controlling means for automatically stopping said car at any predetermined point in the travel of said car regardless of the load, direction of travel or speed or the skill of the operator.

18. The combination with a car and its motor, of automatic motor-controlling means for gradually stopping the car at the limits of its travel or at any intermediate point regardless of its load whether ascending or descending or speed.

19. The combination with a car and its motor, of motor-controlling means for automatically reducing the speed of said motor in proportion to the load and stopping the same at the limits of the travel of said car or at any intermediate point whether the car is ascending or descending.

20. The combination of a car and its motor, with automatic motor-controlling means connected to reduce the speed of said motor at any predetermined point in the traverse of said car, and automatic means operating with said motor-controlling means for proportioning such reduction of speed to the load whether the car is ascending or descending.

21. The combination of a car and its motor, with motor-controlling means connected to reduce the speed of said motor at any predetermined point in the traverse of said car, and automatic means operating with said motor-controlling means for proportioning such reduction of speed to the load whether the car is ascending or descending.

22. The combination of a car and its motor, with motor-controlling means connected to automatically reduce the speed of said motor and thus gradually stopping the same at any predetermined point in the traverse of said car, and means operating in conjunction with said motor-controlliug means for varying such reduction of speed by an amount proportional to the load whether the car is ascending or descending.

23. The combination with the car and its motor, of means for introducing variable resistance in series and in shunt with the armature at the limits of the traverse of said car or at any intermediate point, and means for varying said resistance automatically in accordance with the speed of the motor.

24. In an elevator system, the combination with a car and its motor, of motor-controlling means connected to change the speed of the motor at the limits of traverse of said car or at any predetermined intermediate point, and means operating in conjunction with said motor-controlling means for regulating said reduction of speed in accordance with the potential developed by the armature after the initial change of speed at a predetermined point.

25. The combination with the car and its motor, of motor-controlling means connected to change the speed of the motor at the limits of traverse of said car or at any intermediate point, and means operating in conjunction with said motor-controlling means for regulating said change of speed in accordance with the load whether ascending or descending.

26. In an elevator system, the combination with the car and its motor, of motor-controlling means connected to be governed by the load whether ascending or descending for reducing the speed of said car at the limits of its travel and at any predetermined intermediate point.

27. The combination with the motor and car, of means connected to the motor and a station for starting the motor in either direction, and controlling means connected to operate automatically to reduce the speed of the motor in proportion to the load whether ascending or descending at the limits of the travel of said car or at any predetermined point between said limits.

28. In a hoist, the combination with the cage and its motor, of motor-controlling means connected to automatically reduce the speed of the cage at the ends of its travel or at any predetermined intermediate point and to vary such reduction of speed in proportion to the load whether ascending or descending.

29. In an electric elevator system, the combination with an electric motor, of a car mechanically connected to the same, means connected to start and stop said motor from any landing, and motor-controlling means connected to automatically reduce the speed of said motor before stopping at the limits of travel of said car or at any predetermined intermediate point and to vary such reduction of speed by an amount determined by the load.

30. In a push-button elevator system, the combination of a car and its motor, means connected to control the starting, stopping and reversing of said motor from any landing or from the car, and motor-controlliug means connected to automatically reduce the speed of the motor before stopping and to proportion such reduction of speed by an amount determined by the load.

31. In an elevator system, the combination with a car and its motor, of motor-controlling means connected to reduce the speed of the motor at the limits of travel of the car or at any predetermined intermediate point in the traverse of the car and to vary such reduction of speed inversely to the load whether ascending or descending.

32. The combination with a car, of an electric motor for operating same, electric circuits and connections of an automatic push-button-controlled elevator system, means operating in conjunction therewith for automatically stopping said car substantially level with any predetermined floor without shock or jar regardless of the load whether ascending or descending, direction of travel or speed of the said car.

33. In a push-button-controlled elevator system, the combination of a car and its motor, with electrical circuits and connections for operating same, a floor-controller, a resistance for the armature, an electromagnet for gradually cutting said resistance out of circuit with said armature, normally closed contacts in series with said electromagnet, a magnet adjacent said contacts and electrically connected to said floor-controller, all so constructed and arranged that at a predetermined point said floor-controller will close the circuit to the magnet last mentioned thus breaking the circuit through the first-mentioned magnet.

34. In apparatus for controlling elevators, the combination of a car, motor and stations, with circuits and connections of an automatic push-button-controlled system, electromagnetic means for gradually short-circuiting resistance and a series field from in circuit with the armature of the motor, contacts adjacent said means adapted to be opened thereby just before the said field is entirely short-circuited thus breaking the circuit to the floor push-buttons.

35. In an electric elevator system, the combination of a car and motor, with circuits and connections of an automatic push-button-controlled system, resistance in series with the armature, electromagnetic means for short-circuiting said resistance, contacts adjacent said means and electrically connected to push-buttons in the said car, all so constructed and arranged that at a time just before any of said resistance is short-circuited the said contacts are separated, thus breaking the circuit to said push-buttons on the car.

36. In a motor-controlling apparatus, the combination with a motor, of a normally open variable-resistance circuit in shunt to the armature, a floor-controller, means electrically connected with said floor-controller for closing said normally open circuit, and means for closing a circuit to said floor-controller.

37. In a motor-controlling apparatus, the combination with a motor, of a normally open variable-resistance circuit in shunt to the armature, a magnet for closing said circuit, electromagnetic means for short-circuiting said resistance, said means being in a normally open shunt-circuit to the armature, and means for closing said last-mentioned circuit.

38. In a motor-controlling apparatus, the combination with a motor, of an extra field and variable resistance in series with each other but in shunt to the armature, the circuit of said field and resistance being normally open, electromagnetic means for short-circuiting said resistance, said means being in a normally open circuit, magnets for closing said normally open circuits, a floor-controller electrically connected to said magnets at predetermined points in its operation, and means for closing the main circuit to said floor-controller.

39. In a push-button elevator system, the combination with a car and its motor, of means comprising a floor-controller for gaining exclusive control of said car, an extra field and variable resistance, means connected with said controller for throwing said field and resistance in shunt to the armature, electromagnetic means for short-circuiting said resistance, means operated from the controller after the field and resistance have been thrown in shunt to the armature for throwing said electromagnetic means in shunt to the armature-terminals.

40. In a push-button elevator system, the combination with a car and its motor, of means including a floor-controller for gaining exclusive control of said car, means comprising an extra field and variable resistance in circuit therewith for gradually stopping said motor, electromagnetic means electrically connected with said controller for throwing said field in shunt with the armature, means in a normally open circuit for varying said resistance in accordance with the speed of the armature, and means connected with the controller for closing the last-mentioned circuit.

41. In a push-button elevator system, the combination with a car and its motor, of means comprising a floor-controller for gaining exclusive control of said car, means for gradually stopping the car, said means comprising an extra field, a variable resistance in series therewith, an electromagnet connected electrically with the floor-controller and adapted to close the circuit of said field and resistance and throw the same in shunt with the armature, an electromagnet for gradually short-circuiting the said resistance, an electromagnet also connected to said floor-controller and adapted to close the circuit of said resistance-controlling magnet and throw the same in shunt to the armature.

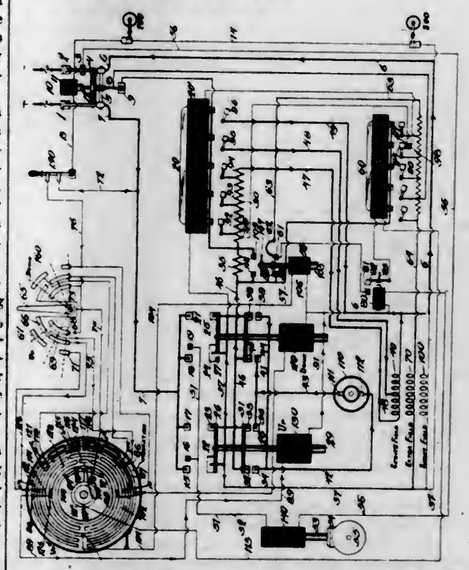
42. The combination with a motor, of an operating-circuit therefor, a relay, and automatic means for operating said relay upon interruption of the main-line circuit to the motor to effect an opening of said operating-circuit.

43. In a push-button elevator system, the combination of a car, with an electric motor to operate same, circuits and connections for gaining exclusive control of said car, an electromagnet and resistance, means for automatically placing said electromagnet in series with said armature and energizing said electromagnet, a main line for supplying current to said motor, a circuit in shunt to said motor, normally closed contacts in said shunt-circuit and adjacent said electromagnet, all so constructed and arranged that when said contacts are separated to break said shunt-circuit all the push-button-controlling circuits and connections are restored to normal.

44. In a push-button elevator, the combination with an electric motor, a car operated thereby, circuits and connections for gaining exclusive control of said car, a magnet, a resistance, means for placing said magnet and resistance in series with the armature, a main line for supplying current to the motor, a circuit in shunt to the motor, means in said shunt-circuit adapted to be operated upon by said magnet when sufficiently energized to restore the circuits and connections of the push-button system to normal.

45. In a push-button elevator system, the combination with an electric motor, a car operated thereby, circuits and connections for gaining exclusive control of said car, a magnet, means for placing said magnet in series with the armature, a main line for supplying current to the motor, a circuit in shunt thereto, means in said shunt-circuit adapted to be operated upon by said magnet when sufficiently energized to restore the circuits and connections of the push-button system to normal.

820,499. **ELECTRIC-ELEVATOR-CONTROL SYSTEM.** JOHN D. IHLDER, New York, N. Y., assignor to Otis Elevator Company, East Orange, N. J., a Corporation of New Jersey. Filed Mar. 13, 1905. Renewed Nov. 24, 1906. Serial No. 288,853.



Claim.—1. The combination with a car and its motor, of motor-controlling means, automatic means for stopping the car with varying loads at the limits of its travel and at any predetermined intermediate point, and means for rendering inoperative only that part of said automatic means by which the car is stopped at any predetermined intermediate point.

2. The combination with a car and its motor, of motor-controlling means, automatic means for stopping the car with varying loads at the limits of its travel and at any predetermined intermediate point, and means for rendering inoperative at will only that part of said automatic means by which the car is stopped at any predetermined intermediate point.

3. The combination of a car and its motor, of motor-controlling means, automatic means for gradually stopping the car with varying loads at the limits of its travel and at any predetermined intermediate point, and means for rendering inoperative at will only that part of said automatic means by which the car is stopped at any predetermined intermediate point.

4. The combination of a car and its motor, of motor-controlling means, automatic means for stopping the car with varying loads at the limits of its travel and at any floor-level in the traverse of said car,

and means for rendering inoperative only that portion of said automatic means by which the car is stopped at any floor-level.

5. The combination of a car and its motor, of motor-controlling means, automatic means for gradually stopping the car with varying loads at the limits of its travel and at any floor-level in the traverse of said car, and means for rendering inoperative only that portion of said automatic means by which the car is stopped at any floor-level.

6. The combination of a car and its motor, of motor-controlling means, automatic means connected to reduce the speed of said motor before stopping and to vary such reduction of speed in accordance with the load so that the car will stop at the limits of its travel and at any floor-level desired, and means for rendering inoperative only that portion of said automatic means by which the car is made to stop at a desired floor-level.

7. The combination of a car and its motor, of motor-controlling means, automatic means for reducing the speed of said motor as the car reaches either limit of its travel and also as it reaches any desired floor-level and to vary such change of speed in proportion to the duty, and means for rendering inoperative at will only that portion of said automatic means by which the car is stopped at a floor-level.

8. The combination of a car and its motor, of motor-controlling means, automatic means for gradually stopping said car at the limits of its travel and at the same predetermined intermediate point regardless of the load, direction of travel or speed, and means for rendering inoperative at will that portion of said automatic means by which said car is stopped at the intermediate point.

9. The combination of a car and its motor, of motor-controlling means, automatic means for gradually stopping said car at the limits of its travel and at the same predetermined intermediate point regardless of the load, direction of travel or speed, and manually-operable means for rendering inoperative at will that portion of said automatic means by which said car is stopped at the intermediate point.

10. The combination of a car and an electric motor for operating same, with electric circuits and connections for gradually and automatically stopping said car with varying loads at the limits of its travel and at any intermediate point, means for changing the relation of said circuits and connections at will so that said car will stop automatically only at the limits of its travel.

11. The combination with a car and its motor, of means for controlling the starting, stopping or reversing of said motor, motor-controlling means connected to reduce the speed of the motor at the limits of its travel and at predetermined intermediate points and to vary such reduction of speed inversely to the load, and means for preventing the stopping of the car at any of said intermediate points.

12. The combination with a car and its motor, of means for controlling the starting, stopping or reversing of said motor, motor-controlling means connected to automatically reduce the speed of the motor at the limits of its travel and at predetermined intermediate points and to vary such reduction of speed inversely to the load, and means for preventing the stopping of the car at any of said intermediate points.

13. The combination of an elevator-car and a motor for operating same, with motor-controlling means, automatic means for gradually stopping said car with varying loads at the limits of its travel and at any floor-level, and means comprising a switch for rendering said automatic means inoperative except at the limits of travel of said car.

14. The combination of a car and its motor, with motor-controlling means, automatic means for gradually stopping said car with varying loads at the limits of its travel and at same intermediate points, electric circuits and connections comprising an electric switch for rendering said automatic means inoperative at will except at the limits of travel of said car.

15. The combination of a car and its motor, with motor-controlling means, automatic means for gradually stopping said car with varying loads at the limits of its travel and at same intermediate points, electric circuits and connections comprising a manually-operable electric switch for rendering said automatic means inoperative at will except at the limits of travel of said car.

16. The combination with a car and its motor, of motor-controlling means, means comprising a floor-controller, a single switch connected thereto, and electric circuits and connections to gradually and automatically stop said car at the limits of its travel, and at a plurality of floor-levels by the operation of said switch while the car is in motion and at a sufficient time before said car reaches a desired floor-level.

17. The combination with a car and its motor, of motor-controlling means, means comprising a floor-controller, a plurality of contacts therron for a plurality of floors, a switch comprising a plurality of contacts and an arm adapted to engage therewith, and electric circuits and connections, to gradually and automatically stop said car with varying loads when the said switch is in one position and to operate said car to the limit of its travel when said switch is in another position.

18. The combination with a car and its motor, of motor-controlling means, means comprising a switch and floor-controller for gradually and automatically stopping said car with varying loads substantially at the level of any floor when said switch is in one position and to operate the car at a slow speed and to thus stop the car only at the limits of ita travel when said switch is in another position.

19. The combination of a car and its motor, with motor-controlling means, means comprising a switch and floor-controller for gradually and automatically stopping said car with varying loads at any desired floor-level when the switch is in one position and to operate said car at a maximum speed and to thus gradually and automatically stop the car only at the limits of its travel when the switch is in another position.

20. The combination with an elevator-car and its motor, of motor-controlling means, means, comprising a floor-controller and a switch having a plurality of operative positions, for gradually and automatically stopping the said car with varying loads at any floor-level after the switch is moved to one position, to operate the car slowly and thus stop the same only at the limits of its travel when said switch is moved to another position, and to operate said car at a maximum speed and thus stop the same only at the limits of its travel.

21. The combination with a car and its motor, of motor-controlling means, means comprising a switch for operating said car at a maximum speed and gradually and automatically stopping said car with varying loads at the limits of its travel when the switch is in one position and for thus stopping a car with varying loads at a same predetermined position.

22. In a motor-controlling apparatus, the combination with a motor, of an extra field and variable resistance in shunt with the armature terminals, a load-magnet to coöperate with said variable resistance, an extra resistance in series with the armature and means for simultaneously short-circuiting said resistance, break the extra field-circuit, and prevent the said load-magnet from being energized.

23. In a motor-controlling apparatus, the combination with a motor, of an extra field and variable resistance in shunt to the armature-terminals, a load-magnet for short-circuiting said variable resistance, and means for simultaneously breaking the circuit of the extra field and variable resistance and a circuit leading to said load-magnet.

24. The combination with a car and its motor, of motor-controlling means, automatic means for gradually stopping the car with varying loads at the limits of its travel, circuits and connections and means for changing the relation thereof when desired for automatically and gradually stopping the car with varying loads substantially level with any intermediate floor.

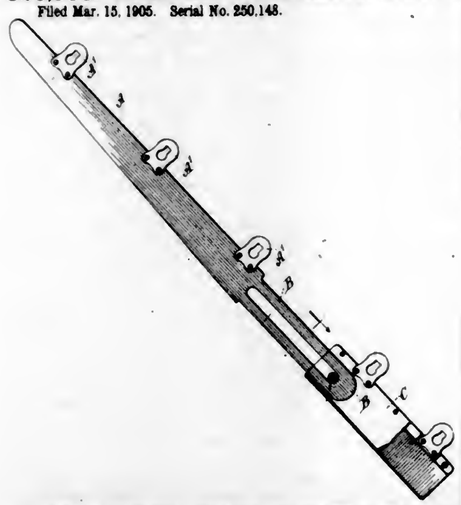
25. The combination with a car and its motor, of motor-controlling means connected to automatically reduce the speed of the car with varying loads before stopping substantially level with the top or bottom floors, circuits and connections and means for changing the relation thereof to automatically reduce the speed of the car and stopping the same substantially level with any intermediate floor.

26. The combination with a car and its motor, of motor-controlling means, means connected thereto for automatically changing the speed of the motor as the car reaches the top or bottom floor and to vary such change of speed in proportion to the load so that the car shall stop substantially at the floor-level, circuits and connections and means for changing the relation thereof so that the speed of the motor shall be automatically reduced and the car stopped at any desired intermediate floor.

27. The combination with a car and its motor, of motor-controlling means connected to automatically change the speed of the motor as the car reaches the top or bottom floor and to vary such change of speed in proportion to the load until the car stops substantially level with the floor, circuits and connections comprising an electric switch so constructed and arranged that the speed of the car shall be automatically reduced and stopped level with any intermediate floor dependent upon the position of said switch.

28. The combination with a car and its motor, of motor-controlling means connected to automatically change the speed of the car as the car reaches the top or bottom floor and to vary such change of speed in proportion to the load so that the car shall stop substantially level with the floor, a floor-controller connected to automatically control said motor-controlling means, and electric circuits and connections including an electric switch connected to said floor-controller so constructed and arranged that said floor-controller shall automatically control said motor-controlling means to thus stop the car substantially level with any intermediate floor when the switch is moved to automatic position.

820,500. CORSET-STEEL. EMMA M. JORDAN, New York, N. Y. Filed Mar. 15, 1905. Serial No. 250,148.



Claim.—A corset-steel comprising two sections, having limited but free sliding movement lengthwise of each other, the lower one of said sections being hollow or double throughout its length, forming a sheath to receive a portion of the other section, freely movable therein, and fastening devices A' secured directly to said sheath and also to the other section of the corset-steel, and adapted to connect said steel with a companion steel.

820,501. GREEN-BLUE SULFUR DYE AND PROCESS OF MAKING SAME. PAUL JULIUS and EDUARD MÜNCH, Ludwigshafen-on-the-Rhine, Germany, assignor to Badische Anilin & Soda Fabrik, Ludwigshafen-on-the-Rhine, Germany, a Corporation. Filed Dec. 4, 1905. Serial No. 290,204.

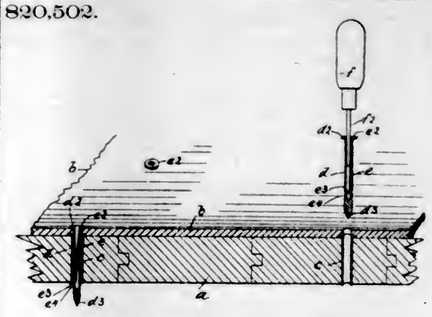
Claim.—1. The process for the production of green-blue coloring-matters containing sulfur by allowing chloranil and unsymmetrical dialkyl-para-phenylene-diamin-thiosulfonic acid and a sulfurizing agent to act upon one another.

2. As new articles of manufacture the green-blue coloring-matters containing sulfur which can be obtained by allowing chloranil and unsymmetrical dialkyl-para-phenylene-diamin-thiosulfonic acid and a sulfurizing agent to act upon one another, which coloring-matters consist of violet-black powders which are slightly soluble in hot water, yielding blue solutions, and are easily soluble in concentrated sulfuric acid, yielding blue-green solutions, which are easily soluble in hot sodium sulfid, yielding yellowish-brown solutions, which are very slightly soluble in anilin, yielding green solutions, and in phenol, yielding green-blue solutions, which are insoluble in glacial acetic acid, in alcohol and in acetone, and which do not contain copper, and which produce on unmordanted cotton green-blue shades which are fast against the action of washing, light and chlorin.

820,502. CARPET-FASTENER. WILLIAM KERNOCHAN, Brooklyn, N. Y. Filed Jan. 19, 1906. Serial No. 296,768.

Claim.—The herein-described means for securing carpets and other material to floors, stairs and the like, comprising a tube adapted to be secured in the floor or stairs, a hollow pin adapted to be passed through the carpet or other material and through said tube and provided at one end with a head and at the other end with a point, said pin being also provided near the pointed end with a hole in one side thereof, and a spring secured in said pin and provided with a hook which normally projects outwardly through said hole, said hook being adapted to be forced inwardly by a device inserted into said pin, substantially as shown and described.

820,502.



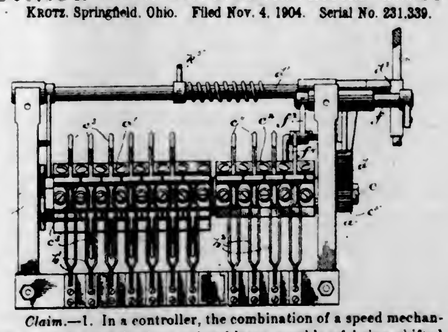
820,503. COLD-AXLE SETTER. ERNEST E. KRENGEL and WILLIAM G. MCLENNAN, Nezperce, Idaho. Filed Jan. 23, 1906. Serial No. 297,718.



Claim.—1. In a device of the class set forth, the combination of a bar having oppositely-extending longitudinal flanges along its upper edge and a central depending longitudinal flange, a hook slidably attached to the opposite longitudinal flanges, a fulcrum-block also slidably attached to said flange, and a spindle-engaging device consisting of a loop having vertical side bars embracing the side flanges of the bar and a reduced lower end embracing the central flange of the bar, a pivot-bolt extending through the reduced portion and the intermediate flange, a slidable bearing-block adapted to slide vertically between the side members of the loop, and a screw mounted in the upper end of the loop.

2. In a device of the class set forth, the combination of a bar carrying a slidable fulcrum-block and a slidable hook for the purposes set forth, a spindle-engaging member consisting of a loop pivoted to the forward end of the bar and having parallel side members, a pressure-block working between the side members and a screw for operating this block, and a gage-finger extending across the loop under the bearing-block and adjustable longitudinally on one of the side members of the loop.

820,504. CONTROLLER FOR ELECTRIC MOTORS. ALVARO S. KROTZ, Springfield, Ohio. Filed Nov. 4, 1904. Serial No. 231,339.



Claim.—1. In a controller, the combination of a speed mechanism, reversing mechanism, a hand-lever capable of being shifted longitudinally to different operative positions and adapted to operate by said longitudinal movement the reversing mechanism, and means connecting said hand-lever with the speed mechanism whereby the hand-lever will operate the speed mechanism in either position of adjustment, substantially as specified.

2. In a controller, the combination of speed mechanism, reversing mechanism, a hand-lever capable of being shifted independent of its movement about its pivotal connection and adapted when oscillated about its pivotal connection to operate one set of said mechanism, and when shifted independent of its oscillatory movement to

operate the other set of said mechanism, and means for locking said hand-lever against movement to operate the speed mechanism until it has completed the operation of the reversing mechanism, substantially as specified.

3. In a controller, the combination of a speed-drum, a reversing drum or switch, a hand-lever, said hand-lever being adapted to operate the said speed-drum when given a backward-and-forward movement and to operate the said reversing-drum when given a vertical movement.

4. In a controller, the combination of a speed-drum, a reversing drum or switch, a hand-lever, said hand-lever being adapted to operate the said speed-drum when given a backward-and-forward movement, and to operate the said reversing-drum when given a longitudinal movement, and means whereby the said hand-lever will only operate the said reversing-drum when said speed-drum is in its off position.

5. In a controller, the combination of a speed-drum having a plurality of contacts arranged in sets, a reversing-drum, having contacts thereon arranged in sets, and connected in reverse order by use of which the polarity of the motor may be changed; a battery having two or more sections, a motor having two or more field-windings, said speed-drum being adapted to connect the said battery and motor through various multiple and series combinations of battery and field, and means for operating said speed-drum independent of said reversing-drum, whereby said various multiple and series combinations of battery and motor may be made irrespective of the particular set of reversing-drum contacts connecting the motor, thereby permitting a variable speed in either direction and a single operating-lever capable of movement independent of its oscillatory movement adapted to control the movements of both the speed and reversing drums, substantially as specified.

6. In a controller, the combination of a speed-drum, a reversing-drum, an operating-handle, a motor and a battery, said handle being adapted to operate the said speed-drum by a horizontal movement and the said reversing-drum by a vertical movement, the said reversing movement operating only when said speed-drum is in off position, the said motor-field being arranged in two or more sections, and said battery arranged in two or more sections, whereby the said speed-drum can connect the said battery and field circuits in series or multiple, substantially as and for the purpose specified.

7. In a controller, the combination of a speed-drum, a reversing-drum, an operating-handle, said operating-handle being slidingly mounted in a head, said head being adapted to operate said speed-drum, a reverse-drum-operating arm, means whereby the said operating-handle can operate the said speed-drum without changing the position of the said reversing-drum, and the said reversing-drum operating by a vertical or raising movement of said operating-handle when the said speed-drum is in its off position.

8. In a controller, the combination of a speed-drum, a reversing-drum, a supporting-frame, contact-fingers and contacts, a motor, a battery, an electric circuit, a running-plug, charging-plug contacts, said contact-fingers mounted on said frame, two of said contacts being adjacent to each other and adapted to close said electric current through said running-plug, and two of said contact-fingers adapted to be connected to said battery when said speed-drum is in the off position, substantially as and for the purpose specified.

9. In a controller, the combination with a speed-drum and a reversing-drum, of a hand-lever capable of a forward and a back movement and also of an up-and-down movement, means connected with said lever to operate said speed-drum by the forward-and-back movement and for operating said reversing-drum by the up-and-down movement, the connection between said lever and said speed-drum being such that said speed-drum will be operated by said lever in either the up or down position thereof, and locking means to prevent the forward-and-back movement of said lever except when said lever is at the limit of its movement up or down, substantially as specified.

10. In a controller, the combination of the speed-drum and reversing-drum, a hand-lever for operating said speed-drum by a forward-and-back movement and connections between said hand-lever and said reversing-drum for operating said reversing-drum by an up-and-down movement, and locking means to prevent said lever from operating said reversing-drum when said speed-drum has been thrown into operation, substantially as specified.

11. The combination of the speed-drum, the reversing-drum, and a hand-lever capable of an up-and-down and a forward-and-back movement, the forward-and-back movement being adapted to operate one of said drums and the up-and-down movement to operate the other of said drums, means for preventing the forward-and-back movement except when the lever is at the limit of its up or down stroke, and means for preventing the up-and-down movement except when the lever is in its normal or off position, substantially as specified.

12. In a controller, a controlling-frame having electrical controller-contacting devices connected respectively to the terminals of a battery, field-coils, and the armature respectively of a motor, and charging-plug contacts on said frame for charging said battery, a connecting device independent of the controller-contacts also on said frame adapted to open and close the circuit between the battery and motor, substantially as specified.

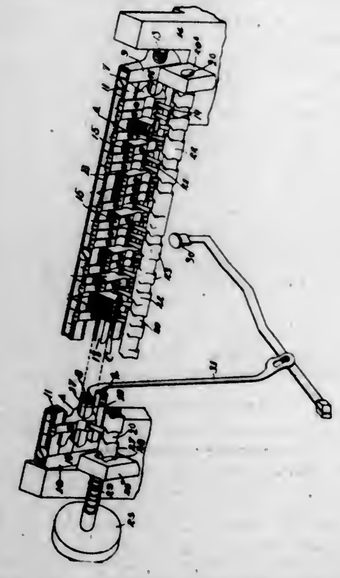
13. In a controller for electric vehicles, a speed-drum having electrical contacts adapted to control the speed to the motor, a ratchet-wheel on said speed-drum, a brake-lever, a ratchet-pawl, means for causing said pawl to engage said ratchet-wheel upon the operation of said brake-lever, whereby movement of the speed-drum only toward "off" position will be permitted, substantially as specified.

14. The combination with a controller and controlling-drum, of a hand-lever for operating said drum, a brake-lever connected to said hand-lever, and means for locking said hand-lever against forward movement when said brake-lever is moved to an operative position, substantially as specified.

15. The combination with the controller and the controlling-lever, of a brake-lever, means for connecting said brake-lever and said controlling-lever which will permit an independent movement of said controlling-lever when said brake-lever is in off position and an independent movement of said brake-lever when said controlling-lever is in off position but adapted to return said controller-lever to its normal position when the brake-lever is operated, and a yielding or breakable connection between said brake-lever and said controlling-lever, substantially as specified.

16. The combination of a controlling-lever and a brake-lever, a connection between said brake-lever and controlling-lever adapted to return said controlling-lever to normal position when the brake-lever is applied, and a yielding or breakable connection between said brake-lever and said controlling-lever, substantially as and for the purpose specified.

820,505. TYPE-WRITING MACHINE. EDWARD F. KUNATH, Jersey City, N. J., assignor to Underwood Typewriter Company, New York, N. Y., a Corporation of New Jersey. Filed May 29, 1905. Serial No. 262,833.



Claim.—1. The combination with a carriage and a letter-feeding mechanism, of a stop, a single row of column-stops to coöperate with said stop, a revoluble selector-bar extending along said row,

and means for enabling a rotative movement of said bar to select and move different sets of stops.

2. The combination with a carriage and a letter-feeding mechanism, of a stop, a row of column-stops to coöperate with said stops, a selector-bar extending along said row, and having wholly independent and distinct rows of stop-controllers thereon, and means for enabling said controllers to select and effect the movement of different sets of stops into idle position.

3. The combination with a carriage and a letter-feeding mechanism, of a stop, a row of column-stops to coöperate with said stop, and a revoluble selector-bar extending along said row and provided with wholly independent and distinct sets of controllers for selecting and moving different sets of stops.

4. The combination with a carriage and a letter-feeding mechanism, of a stop, a row of column-stops to coöperate with said stop, means tending constantly to hold said stops in effective position, a selector-bar extending along said row and provided with wholly independent and distinct rows of controllers for selecting and moving different sets of stops into idle position and holding them there, and means for detaining said bar in different predetermined positions.

5. The combination with a carriage and a letter-feeding mechanism, of a stop, a single row of column-stops to coöperate with said stop, a revoluble selector-bar or drum extending along said row, projections upon said bar, and means upon said stops engageable by said projections for controlling the positions of different predetermined sets of said stops.

6. The combination with a carriage and a letter-feeding mechanism, of a stop, a row of independently-movable column-stops to coöperate with said stop, a movable selector-bar having thereon a plurality of rows of projections, one row behind another, and means upon said column-stops engageable by said projections for controlling the positions of different predetermined sets of the column-stops.

7. The combination with a carriage and a letter-feeding mechanism, of a stop, a single row of column-stops to coöperate with said stop, said column-stops being movable independently of one another into effective position, a revoluble selector-bar, means for detaining said bar in a plurality of rotative positions, and means controlled by the bar for selecting and moving different sets of stops at different points in the revolution of the bar.

8. The combination with a carriage and a letter-feeding mechanism, of a stop, a single row of column-stops to coöperate with said stop, a selector-bar extending along said row, and separate and distinct rows of controllers, each row complete in itself, and one row behind another, for enabling said bar to move either of a plurality of previously-selected sets of stops, and means for holding the stops in and out of effective position.

9. The combination with a carriage and a letter-feeding mechanism, of a stop, a row of pivoted column-stops to coöperate with said stop, springs tending constantly to move said stops to effective position, a bar having separate and distinct rows of projections to engage and move said stops into idle position, each row complete in itself, and one row behind another, and releasable means for holding said bar in a plurality of predetermined positions.

10. The combination with a carriage and a letter-feeding mechanism, of a stop, a rod, column-stops pivoted side by side upon said rod, a spring for turning each column-stop upon the rod, a rotative bar having means to select and turn different sets of column-stops, a finger-piece connected to said bar, and means for detaining said bar in a plurality of rotative positions.

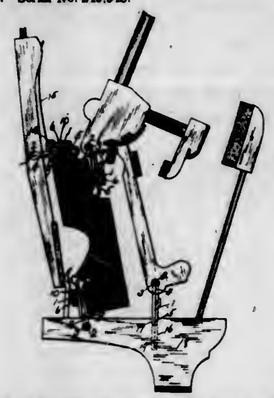
11. The combination with a carriage and a letter-feeding mechanism, of a stop, a single row of column-stops having projections, and a bar having different and distinct rows of projections, one row behind another, for engaging the projections upon said column-stops, and moving different sets thereof, each row of projections complete in itself and independent of the remaining rows.

12. The combination with a carriage and a letter-feeding mechanism, of a stop, a row of column-stops, a revoluble bar having sets of projections to engage different sets of stops and move them from normal position, a detent for preventing rotation of said bar, the latter being movable endwise to become released from said detent, and a spring to move the bar endwise and render said detent effective.

13. The combination with a carriage and a letter-feeding mechanism, of a stop, a row of column-stops, a bar having sets of projections to engage different sets of stops and move them from normal position, bearings in which said bar is mounted for both rotation and endwise movement, an angular shoulder upon said bar, a recess in one of said bearings to receive said shoulder and prevent the bar from rotating, and a spring to hold said shoulder within said recess.

14. The combination with a carriage and a letter-feeding mechanism, of a stop, a row of pivoted column-stops to coöperate with said stop, springs tending constantly to hold said stops in effective position, a revoluble bar having sets of projections to engage and move said stops into idle position, a finger-piece upon said bar, and means releasable by said finger-piece for holding said bar in a plurality of relative positions.

820,506. PIANO-ACTION. CLAYTON A. LAMBERT, Cincinnati, Ohio, assignor to The Baldwin Company, Cincinnati, Ohio. Filed Mar. 10, 1905. Serial No. 249,345.



Claim.—1. The combination with an action-rail, of a flange comprising a metal blank, one end of which is bent upon itself to form a pivotal bearing and the opposite end bent upon itself to form a spring-clamp, said flange having two opposed openings in the clamping member for a screw by which the flange is attached to the action-rail, substantially as described.

2. The combination with an action-rail, of a flange comprising a metal blank, one end of which is bent upon itself to form a pivotal bearing and the opposite end bent upon itself to form a spring-clamp; the end of the clamping member overlapping the end of the bearing member; said flange having two opposed openings in the spring member for a screw whereby the flange is attached to the action-rail, substantially as described.

3. The combination with an action-rail, of a flange comprising a metal blank with a narrow end portion bent upon itself to form a pivotal bearing, and a wide end portion bent upon itself to form a spring-clamp; said wide member overlapping and clamping the free end of said narrow member; said flange having two opposed openings in the wide member for a screw, whereby the flange is attached to the action-rail, substantially as described.

4. The combination with an action-rail, of a flange comprising a metal blank with a narrow end portion bent upon itself to form a pivotal bearing and a wide end portion bent upon itself to form a spring-clamp; said wide member overlapping and clamping the free end of said narrow member; said flange having a shoulder projecting from the wide member on each side of the narrow member; said shoulders being bent at right angles to the face of said flange and adapted to bear on the edge of said action-rail; and two opposed openings in said wide member for a screw whereby said flange is attached to said action-rail, substantially as described.

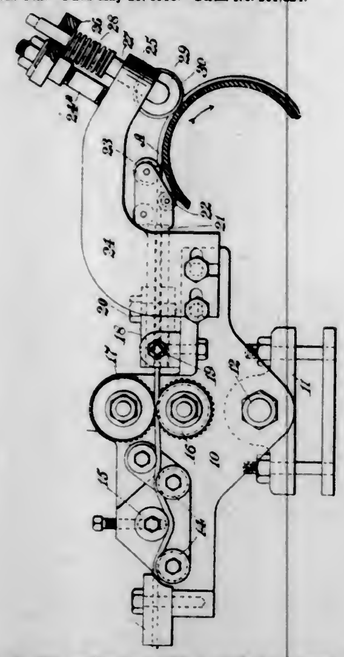
5. The combination with an action-rail of a flange comprising a metal blank, one end of which is bent upon itself to form a pivotal bearing and the opposite end bent upon itself to form a spring-clamp; the end of the clamping member overlapping the end of the bearing member; said flange having the middle portion thereof shaped with an inward curve, adapting it to rest on an outwardly-curved bearing on the action-rail; and two opposed openings in the clamping member for the screw whereby said flange is attached to said action-rail, substantially as described.

6. The combination with an action-rail 8 of a flange 1, comprising a metal blank, one end of which is bent upon itself to form a bearing member 4, having a pivotal bearing 2 adapted to hold the center-pin 3; the opposite end bent upon itself to form a clamping member 5, said clamping member overlapping and clamping said bearing member; said flange having a shoulder 9 formed on each side of the bearing member, adapted to rest in contact with the edge of the action-rail 8; and a middle portion 10 formed with an inward curve, a

raised bearing 11 on said action-rail upon which the curved portion of said flange rests; said flange having two opposed openings 7 in the clamping member 5 for the screw 6, whereby said flange is attached to said action-rail and held in contact with the bearing 11 and edge of said rail, substantially as described.

7. The combination with an action-rail of a flange comprising a metal blank, one end of which is bent upon itself to form a pivotal bearing and the opposite end bent upon itself to form a spring-clamp; the clamping member overlapping and clamping the bearing member; the end of the blank forming said clamping member having extensions from each side of the same bent to form loops; said clamping member having two openings for a screw whereby said flange is attached to the rail and the clamping member clamped upon the bearing member, substantially as described.

820,507. **WIRE-WINDING MACHINE.** MARLON E. LAYNE, Houston, Tex. Filed May 20, 1905. Serial No. 261,324.



Claim.—1. The combination with a revolving support, of a wire winding machine provided with means thereon for engaging several turns of the already wound helix of wire and thereby advancing the machine along the helix by contact with said turns, substantially as described.

2. In a wire winding machine, a spacing and actuating means serving to advance the machine along the helix as it is wound, said device engaging several turns of the helix, substantially as described.

3. A wire winding machine comprising a movable carriage having tension rolls and guiding rolls thereon for direction of the wire upon a revolving support, and a spacing device adapted to advance the machine along the helix and engaging several turns of the previously wound wire.

4. In a wire winding machine, a spacer comprising a flexible disk engaging the helix of wire.

5. In a wire winding machine, a guide adapted to advance the carriage along the helix of wire and having duplicate laterally yielding devices for engaging several turns of the helix of wire.

6. A guide roll for wire winding machines comprising a series of flexible disks engaging the helix of wire, substantially as described.

7. In a wire winding machine, a spacing guide adapted also to advance the carriage, and comprising a series of disks having provision for lateral resiliency, substantially as described.

8. In a wire winding machine, a guide roller comprising a series of resilient disks and blocks for holding them in position engaging them along a single circumferential line of their surface, substantially as described.

9. In a wire winding machine, a guide roll comprising a series of flexible disks mounted upon a hub and spaced apart by rings which have a rounded contour in a radial direction, substantially and for the purpose described.

10. In a wire winding machine, a spacer comprising the flexible disk 30 held in position by the rounded rings 31 engaging the disk along a single circumferential line, substantially as described.

11. In a wire winding machine, a feed guide for placing the wire upon its support, comprising a jaw having rollers to engage the wire and said rollers being mounted so that they may be laterally rotated in its supporting socket in order to twist and place the wire upon the support in any desired angular position, substantially as described.

12. The combination with a rocking carriage, of a series of tension rolls thereon, and a feeding guide pivotally mounted and having means to rotate it in a plane parallel with the axis of the helix of wire, whereby to twist the wire as it is fed to the support of the helix, substantially as described.

13. In a wire winding machine, the feeding guide-arm 21 pivotally mounted upon its support and having means to rotate it in its support for twisting the wire to direct it upon its support, substantially as described.

14. In a wire winding machine, the feeding guide 21 having grooved rollers in its jaws to engage the wire and being mounted for vertical oscillation and capable of adjustment in a rotary direction around the axis of the wire as it is being fed upon its support, substantially as described.

15. In a wire winding machine, the combination with a vertically-adjustable feeding guide, and a spacer engaging the previously wound turns of the helix of wire adapted to advance said guide with the mean position of several turns of wire, substantially as described.

16. The combination in a wire winding machine, of rolls having means for punching and spreading spacing spurs upon the wire, substantially as described.

17. In a wire winding machine, the combination with means for forming lateral spurs upon the side of the wire as it is being fed to its support, and a guide to advance the carriage along the helix adapted to engage the wire upon several of its turns and advance the machine by the mean position of said turns, substantially as described.

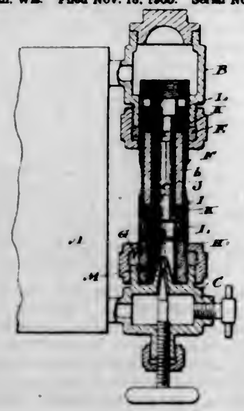
18. A wire winding machine having a guiding feed-jaw provided with means for vertical movement and resilient lateral movement in placing the wire upon the support of the helix, whereby to allow for the unevenness of the shape of the wire, substantially as described.

19. In a wire winding machine, the combination with feeding means and tension mechanism and spacing devices, of a guiding jaw to place the wire upon its support having a resilient lateral pressure upon the previously wound turns of the helix, and means to advance the machine thereby, substantially as described.

20. In a wire winding machine, a spacer comprising a laterally yielding rotary disk for engaging a helix of wire

21. In a wire winding machine, a spacer comprised of a plurality of parallel resilient rotary disks for engaging a helix of wire.

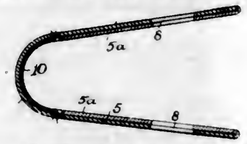
820,508. **SIGHT-FEED LUBRICATOR.** FREDERICK LEONHARDT, Sheboygan, Wis. Filed Nov. 18, 1905. Serial No. 287,933.



Claim.—1. A sight-feed tube for a lubricator comprising an outer metallic jacket having the ends thereof interiorly screw-threaded, a glass shell within the jacket visible through apertures in the same, packing-gaskets opposing ends of the shell, and hollow nuts that engage the screw-threads of said jacket against the gaskets and have hollow shanks extending through said gaskets to bush the same and project into said shell.

2. A lubricator having packing-rings opposing ends of its feed-tube holders, sleeve-nuts in connection with said holders against the packing-rings, and a sight-feed tube comprising an outer metallic jacket extending in opposite directions through said rings and having its ends interiorly screw-threaded, a glass shell within the jacket visible through apertures in the same, packing-gaskets opposing ends of the shell, and hollow nuts that engage the screw-threads of said jacket against the gaskets and have hollow shanks extending through said gaskets to bush the same and project into said shell.

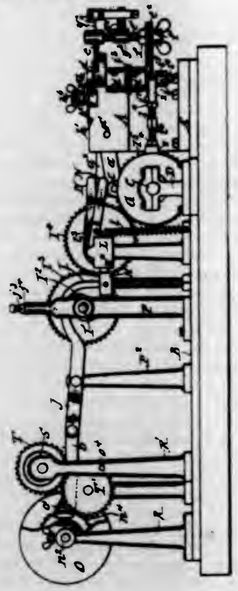
820,509. **CONNECTING-ROD BEARING-BOX.** HOMER F. LIVERMORE, Brookline, Mass. Filed Jan. 10, 1905. Serial No. 240,414.



Claim.—1. The combination with a pin, of a wooden connecting-rod fitted to abut against the curved surface of said pin, a strap passing about said pin and having its ends fixed to said rod, and a semi-annular bearing-box located between said pin and strap; the lateral edges of said strap and box being substantially flush, and one of said members being formed with projections entering openings in the other, substantially as described.

2. The combination in a loom, of a crank-pin, a wooden connecting-rod terminally fitted to said pin, a strap passing about said pin and having its ends secured to said rod, and a bearing-box located between said pin and strap; said box being formed with an outwardly-projecting lug bent up from each edge, and said strap being formed with openings to receive said lugs, substantially as described.

820,510. **MACHINE FOR FORMING METALLIC STAYS FOR GARMENTS.** FRANCIS W. MALLETT, Meadville, Pa., assignor to The Spirella Company, Meadville, Pa., a Corporation of Pennsylvania. Filed July 6, 1905. Serial No. 268,382.



Claim.—1. In combination with the alternately-oscillating wire-carrying bars, vertical shafts at opposite sides of said bars and adjustable in their distances from the same, wire-bending fingers attached to said shafts, and mechanisms imparting alternate oscillatory motion to the shafts as set forth.

2. In combination with the alternately-oscillating wire-carrying bars, pivotally-supported eccentrics at opposite sides of said bars, means for locking said eccentrics adjustably in position, shafts pivoted in the eccentrics, wire-bending fingers attached to said shafts, and mechanism imparting alternate oscillatory motion to the shafts as set forth.

3. In combination with the pivotally-supported wire-carrying bars, wire-bending fingers disposed at opposite sides of said bars, and means imparting alternate oscillatory motion to said fingers, a rotary horizontal shaft disposed at right angles to the wire-carrying bars, grooved cams attached to said shaft and reversed in their contours, arms pivoted to the said bars and engaging said cams to impart alternate oscillating motion to said bars as set forth.

4. In combination with the alternately-oscillating wire-carrying bars- vertical shafts at opposite sides of said bars, wire-bending fingers attached to said shafts, a rotary horizontal shaft disposed at right angles to the aforesaid bars, reversely-disposed grooved cams attached to said horizontal shaft, arms attached to the vertical shafts, and rods connected to said arms and receiving reciprocating motion from the grooved cams as set forth.

5. In combination with the pivotally-supported wire-carrying bars, vertical shafts at opposite sides of scid bars, wire-bending fingers attached to said shafts, a rotary horizontal shaft disposed at right angles to the wire-carrying bars, two sets of grooved cams attached to said horizontal shaft, the contours of the cams of each set being reversed to each other, arms connected to the wire-carrying bars and receiving reciprocating motion from one set of said cams, arms attached to the vertical shafts, and rods connected to said arms and receiving reciprocating motion from the other set of cams as set forth and shown.

6. In combination with the alternately-oscillating wire-carrying-bars, vertical shafts at opposite sides of said bars, and provided with laterally-projecting arms, and wire-bending fingers attached to said shafts, a rotary horizontal shaft disposed at right angles to the aforesaid bars, grooved cams of reversed contours attached to said horizontal shaft, and rods transmitting motion from said cams to the arms of the vertical shafts and each of said rods composed of two end sections provided with sockets and intermediate sections having right and left threaded ends screwed adjustably into the aforesaid sockets to adjust the length of the rod as set forth.

7. The combination with the wire-carrying bars, and alternately-oscillating wire-bending fingers, of a wire-guide leading to said bars and pivoted to swing laterally within limits of the sweeps of said fingers as set forth.

8. In combination with the wire-carrying bars and alternately-oscillating wire-bending fingers, a wire-guide leading to said bars and supported yieldingly to the thrust of the wire, tensioning-plates disposed at opposite sides of the path of the wire to said guide, and means for adjustably pressing said plates into contact with the wire as set forth.

9. The combination with the wire-carrying bars and wire-bending fingers, of an anvil located beyond said bars and in line therewith to receive the bent wire, a hammer over said anvil, and mechanisms actuating said hammer to successively strike the said bent wire in transit on the anvil.

10. The combination, with the wire-carrying bars and wire-bending fingers, of an anvil located beyond said bars and in range therewith to receive the bent wire, a guide leading said wire to the anvil, a hammer over said anvil, and mechanisms actuating said hammer to successively strike the wire in transit on the anvil.

11. The combination, with the wire-carrying bars and wire-bending fingers, of an anvil located beyond said bars and provided with a longitudinal wire-receiving groove in its top and with a depression in said groove, a hammer over said depression, and mechanisms actuating said hammer to successively strike the wire in transit as set forth.

12. The combination, with the wire-carrying bars and wire-bending fingers, of an anvil located beyond said bars and provided with a longitudinal groove in its top, push-bars forcing the bent wire into said groove, mechanisms actuating said push-bars, a hammer over the groove of the anvil and mechanisms actuating said hammer.

13. The combination, with the wire-carrying bars and wire-bending fingers, of an anvil located beyond said bars and provided

with a longitudinal groove in its top, a block formed with a guide-groove leading the bent wire to the groove of the anvil, levers pivoted to said block, wire-pushing dogs pivoted to said levers and riding in the guide-groove of the block, springs depressing said dogs, mechanisms imparting oscillatory motion to said levers, a hammer over the groove of the anvil, and mechanisms actuating said hammer.

14. The combination, with the wire-carrying bars and wire-bending fingers, of an anvil located beyond the said bars and in range therewith, a hammer over said anvil, a spring depressing the hammer, and a rotary cam lifting the hammer as set forth.

15. The combination, with the wire-carrying bars and wire-bending fingers, of an anvil located beyond said bars and in range therewith, a hammer over the anvil and pivoted beyond the same, a post between the anvil and the pivot of the hammer and provided with a vertical guide-slot receiving the hammer through it, a horizontal shaft extending through said slot under the hammer and journaled in the post, a hammer-lifting cam-wheel attached to said shaft within the slot of the post, a spring supported in the post and bearing on the top of the hammer, a screw connected to the post and pressing on the top of the spring, and mechanisms transmitting rotary motion to the aforesaid shaft as set forth.

16. The combination, with the pivoted wire-carrying bars and wire-bending fingers, of an anvil located beyond said bars and in range therewith, a hammer over said anvil and actuated to successively strike the bent wire in transit, a block interposed between the anvil and aforesaid bars and provided with a guide-groove leading to the anvil, wire-pushing levers pivoted to the interposed block, a rotary horizontal shaft disposed at right angles to the wire-carrying bars, cams of reverse contours mounted on said shaft and imparting oscillatory motion to said bars and to the wire-pushing levers.

17. The combination, with the pivoted wire-carrying bars and wire-bending fingers, of an anvil located beyond said bars and in range therewith, a hammer over said anvil and pivoted beyond the same, a post between the anvil and the pivot of the hammer and provided with a vertical guide-slot receiving the hammer through it, a horizontal shaft extending through said slot and journaled in the post, a hammer-lifting cam-wheel attached to said shaft a block interposed between the anvil and the wire-carrying bars and provided with a guide-groove leading to the anvil, wire-pushing levers pivoted to the interposed block, a rotary horizontal shaft disposed at right angles to the wire-carrying bars, cams of reverse contours mounted on said shaft and imparting oscillatory motion to said bars and to the wire-pushing levers, and a train of gears transmitting motion from said shaft to the shaft of the hammer-lifting cam-wheel as set forth and shown.

18. In combination with the wire-carrying bars, wire-bending fingers, wire-band-straightening hammer, the driving-shaft and mechanisms transmitting motion from said shaft to the aforesaid parts, a reel mounted on mandrels, a wheel fastened to one of said mandrels and provided with means for imparting rotary motion to the reel, a ratchet-wheel mounted loosely on said mandrel, a friction-disk interposed between said wheels, and a lever actuated by the oscillations of the hammer and imparting rotary motion to the aforesaid ratchet-wheel as set forth.

19. In combination with the alternately-oscillating wire-carrying bars provided with upwardly-projecting pins on their front end, the wire-bending fingers movable across the ends of said bars and provided with wire-engaging notches lower than the top of the bar in raised position to bend the wire partly down on the top edge of the bar as and for the purpose set forth.

20. In combination with the wire-carrying bars and oscillatory wire-bending fingers, a laterally-yielding wire-feed guide leading the wire to the path traversed by the aforesaid fingers.

21. In combination with the wire-carrying bars and oscillatory wire-bending fingers, a laterally-yielding wire-feed guide supported adjustably in elevation and leading the wire to the path traversed by said fingers.

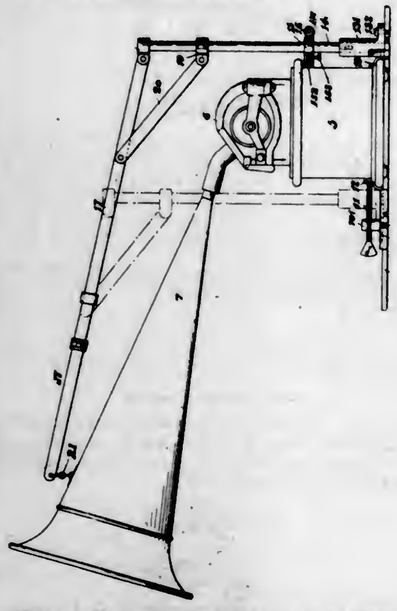
22. In combination with the wire-carrying bars and oscillatory wire-bending fingers, a post supported adjustably in elevation, and a wire-feed guide pivotally supported on said post.

23. In combination with the wire-carrying bars and wire-bending fingers, a post supported adjustably in elevation, a wire-feed guide pivotally supported on said post, a sleeve embracing the post and provided with a screw-threaded perforation in its side, an arm screwed into said perforation and engaging the post, a post secured to the free end of the arm, and wire-tensioning plates attached to the latter post as set forth.

24. In combination with the reel, a roller parallel with the said reel and provided with right and left grooves in its periphery, a ring surrounding said roller and movable toward and from the same, tongues in opposite sides of the interior of the ring and inclined corresponding to the aforesaid grooves, means for shifting the ring toward and from the roller at opposite ends thereof, a guide on the aforesaid ring carrying the wire band toward the reel, and means for transmitting motion to the aforesaid roller.

25. In combination with the reel, a roller parallel with said reel and provided with right and left grooves in its periphery, a ring surrounding said roller and movable toward and from the same, tongues in opposite sides of the interior of said ring and inclined corresponding to the aforesaid grooves, a lug in each of the grooves and disposed at opposite ends of the roller to throw the ring alternately toward and from the roller, a track parallel with the roller, a stem extending from the ring and disposed to engage the track alternately at opposite sides, a guide on the ring carrying the wire band toward the reel, and means for transmitting motion from the reel to the roller as set forth.

820,511. **HORN-SUPPORT.** ALBERT S. MARTEN, East Orange, N. J. Filed Nov. 19, 1904. Serial No. 233,473.



Claim.—1. The combination with a base-piece adapted to extend beneath and out beyond the sides of a talking-machine case, of a post arranged on said base-piece and having means for supporting a horn and having a lip or bearing against which one side of the case may bear, a slotted sliding plate also arranged on said base-piece and having a lip to engage the opposite side of the case, a post 10, extending through the slot in said slotted plate and serving as a set-screw adapted to fix the sliding plate in its relation to the base-piece, said post having, through the head thereof, a horizontal threaded perforation, and a screw arranged in said perforation and engaging the lip of the sliding plate, substantially as set forth.

2. The combination with a base-piece adapted to extend beneath and out beyond the sides of a talking-machine case, of a vertical post arranged on said base-piece and having means to support a horn, means for clamping said base-piece to the opposite sides of the box, and a steady-rest arranged directly on said post free and independent of said base-piece and consisting of two sections, one of which is directly slidable and free of any base-piece connections to slide on the post and has a set-screw for fixing it to said post, and the other section of which is horizontally adjustable on said slidable section, and means for setting one section in its relation to the other section.

3. The combination with a base-piece adapted to extend beneath and out beyond the sides of a talking-machine case, of a vertical post arranged on said base-piece and having means to support a horn, means for clamping said base-piece to the opposite sides of the box, and a steady-rest vertically adjustable on said post and consisting of two sections one slidable on said post and having a set-screw, and a threaded arm, and the other arranged on said threaded arm and having a set-screw for fixing it thereon, substantially as set forth.

820,512. **MACHINE FOR MOISTENING AND SEVERING STRIPS OF GUMMED PAPER.** LYMAN W. MERRIAM, Fitchburg, Mass. Filed Dec. 18, 1905. Serial No. 292,384.



Claim.—1. A device of the character described, adapted to hold a roll of paper, a moistening device, means to guide a strip of paper from said roll toward said moistening device, and a cutter adapted to sever a portion of said paper from said strip between said roll and said moistening device substantially on a line dividing the portion of said paper moistened by said moistening device and the dry portion of said paper.

2. A device of the character described, adapted to hold a roll of paper arranged with its axis of rotation in a substatially vertical plane, means for imparting a quarter-turn to a strip of said paper after it is unwound from said roll, a receptacle adapted to contain fluid, a moistening device adapted to be partly submerged in said fluid, and means for guiding said strip.

3. A device of the character described, adapted to hold a roll of paper arranged with its axis of rotation in a substantially vertical plane, means for imparting a quarter-turn to a strip of said paper after it is unwound from said roll, a receptacle adapted to contain fluid, a moistening device adapted to be partly submerged in said fluid, means for guiding said strip, and means for severing the free end of said strip.

4. In a device of the character described, means for holding the roll of paper with its axis of rotation in a substantially vertical plane, means for imparting a quarter-turn to a strip of said paper after it is unwound from said roll, a vertical pin around which said strip passes before reaching said means for imparting a quarter-turn, a receptacle adapted to contain fluid, a moistening device adapted to be partly submerged in said fluid, and means for guiding said strip.

5. A machine for moistening and severing strips of gummed paper, adapted to hold a roll of paper arranged with its axis of rotation in a substantially vertical plane, means for imparting a quarter-turn to a strip of said paper after it is unwound from said roll, a moistening device, a severing device, and means for guiding said strip toward said moistening device.

6. A machine for moistening and severing strips of gummed paper, adapted to hold a roll of paper arranged with its axis of rotation in a substantially vertical plane, means for imparting a quarter-turn to a strip of said paper after it is unwound from said roll, a moistening device, a severing device, and means for holding the free end of said strip normally out of contact with said moistening device.

7. A machine for moistening and severing strips of gummed paper, adapted to hold a roll of paper arranged with its axis of rotation in a substantially vertical plane, means for imparting a quarter-turn to a strip of said paper after it is unwound from said roll, a moistening device, a severing device, a paper-guide located adjacent to said moistening device, and means for holding in a substantially vertical plane a portion of said strip which intervenes between said paper-guide, and means for imparting a quarter-turn to said strip.

8. A machine for moistening and severing strips of gummed paper, adapted to hold a roll of paper arranged with its axis of rotation in a substantially vertical plane, means for imparting a quarter-turn to a strip of said paper after it is unwound from said roll, a receptacle for water, a moistening device adapted to be partly submerged in said water, a guide through which said strip may be drawn across said moistening device, and a severing device located adjacent to said guide.

9. A machine for moistening and severing strips of gummed paper, adapted to hold a roll of paper arranged with its axis of rotation in a substantially vertical plane, means for imparting a quarter-turn to a strip of said paper after it is unwound from said roll, a receptacle for water, a moistening device adapted to be partly submerged in said water, a guide through which said strip may be drawn across said moistening device formed integral with said receptacle, and a knife also formed integral with said receptacle.

10. In a machine for moistening and severing strips of gummed paper, a base, a central post extending vertically therefrom, a reel pivoted on said post adapted to hold a roll of paper, a casing surrounding said roll provided with an orifice one edge of which forms an angle of substantially forty-five degrees with a plane intersecting said orifice and in which the median axial line of said post lies, a receptacle for water mounted on said casing, a moistening device adapted to be partly submerged in said water, a guide through which said strip may be drawn across said moistening device, and a device for severing the free end of said strip.

11. In a machine for moistening and severing strips of gummed paper, a base, a central post extending vertically therefrom, a reel pivoted on said post adapted to hold a roll of paper, a casing surrounding said roll provided with an orifice, means for imparting a quarter-turn to a strip of said paper after it is unwound from said roll, a receptacle for water mounted on said casing, a moistening device adapted to be partly submerged in said water, a guide through which said strip may be drawn across said moistening device, and a device for severing the free end of said strip.

12. A machine for moistening and severing strips of gummed paper, adapted to hold a roll of paper arranged with its axis of rotation in a substantially vertical plane, a vertical pin around which a strip of paper passes after it is unwound from said roll, means for imparting a quarter-turn to said strip after it leaves said pin, a moistening device, a severing device, and means for guiding said strip toward said moistening device.

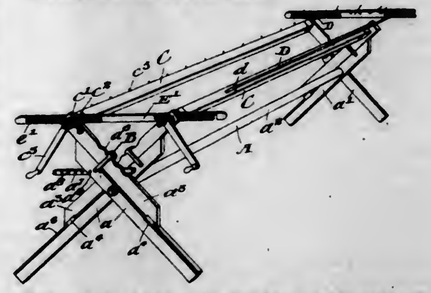
13. A machine for moistening and severing strips of gummed paper, adapted to hold a roll of paper arranged with its axis of rotation in a substantially vertical plane, a vertical pin around which a strip of said paper passes after it is unwound from said roll, means for imparting a quarter-turn to said strip of paper after it leaves said pin, a moistening device, a severing device, and means for holding the free end of said strip normally out of contact with said moistening device.

14. A machine for moistening and severing strips of gummed paper, adapted to hold a roll of paper arranged with its axis of rotation in a substantially vertical plane, means for adjusting the friction on said roll, means for imparting a quarter-turn to a strip of said paper after it is unwound from said roll, a moistening device, a severing device, and means for guiding said strip toward said moistening device.

15. A machine for moistening and severing strips of gummed paper, adapted to hold a roll of paper arranged with its axis of rotation in a substantially vertical plane, means for imparting a quarter-turn to a strip of said paper after it is unwound from said roll, a receptacle for water, an endless belt of fabric adapted to be partly submerged in said water, a removable frame around which said belt extends, a severing device, and means for guiding said strip toward said belt.

16. A machine for moistening and severing strips of gummed paper, adapted to hold a roll of paper arranged with its axis of rotation in a substantially vertical plane, means for imparting a quarter-turn to a strip of said paper after it is unwound from said roll, a water-receptacle provided with a guide-slot in one wall thereof, a knife integral with said wall, and a moistening device adapted to be partly submerged in said water, the nearest point of contact of said strip of paper with said moistening device being equal in distance from said slot to the distance of the edge of said knife from said slot.

820,513. **COMBINED QUILTING-FRAME AND CURTAIN-STRETCHER.** JOHN R. MONAGHAN, North Temiscamingue, Canada. Filed Sept. 18, 1905. Serial No. 278,811.



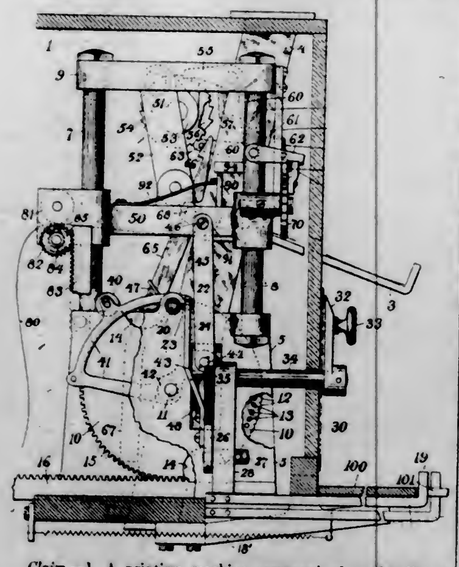
Claim.—1. In a device of the class described the combination with a plurality of suitably-supported roller-bars of extension-bars

parallel to the roller-bars, and slidably secured to the sides thereof, means for locking the said extension-bars in any desired position, and a stretcher-bar secured to the ends of the extension-bars as and for the purpose specified.

2. A combined quilting-frame and curtain-stretcher comprising a trestle having two pairs of crossed legs pivotally secured to the end of the central shaft, a locking-arm pivoted to one leg of the trestle and provided with a plurality of holes, a pin provided in the opposite leg of the trestle adapted to extend through the holes in said arm, a plurality of substantially square roller-bars journaled in the ends of said trestle, means for preventing rotation of the roller-bars except in an outward direction, extension-bars slidably secured to the same, means for holding the extension-bars in any position to which they have been adjusted, and an end stretcher-bar secured to the ends of said extension-bars as and for the purpose specified.

3. A combined quilting-frame and curtain-stretcher comprising a trestle having two pairs of crossed legs pivotally secured to the ends of the central shaft, extension-bars slidably secured to said legs provided with corrugations in their upper surfaces, clevises pivotally secured to the legs of the trestle adapted to coact with the corrugations in the extension-bars to secure the latter in any position to which they have been adjusted, roller-bars pivotally secured to the ends of the extension-bars, ratchet-wheels secured to the same, pawls pivotally secured to the frame and coacting with the ratchet-wheels to prevent rotation except in an outward direction, extension-bars slidably secured to said roller-bars, means for holding the last-mentioned extension-bars in any position to which they have been adjusted, an end stretcher-bar suitably secured to the ends of said extension-bars, and a second end stretcher provided with slots adapted to engage reduced portions on the ends of the rollers opposite the first-mentioned stretcher-bar as and for the purpose specified.

820,514. **COIN-OPERATED PRINTING-MACHINE.** GEORGE A. MOORE, New York, N. Y., assignor to The Card Printer Company, New York, N. Y., a Corporation of New York. Filed June 18, 1904. Serial No. 213,073.



Claim.—1. A printing-machine composed of a plurality of type-carrying devices, each containing substantially an entire alphabet, an impression member coöperating with the same, inking devices, means for presenting material to be printed on thereby and for delivering the same in separate slips each containing one impression of the matter set up on said type-carrying devices, and a lock automatically terminating further operations of the machine upon the printing and delivery of a predetermined plural number of said slips.

2. A printing-machine comprising devices for setting up a line of type, an impression member coöperating therewith, inking devices, means for presenting a length of paper and cutting the same into duplicate lengths corresponding in number to the printing operations of the machine, and a lock automatically acting to terminate further printing after a predetermined plural number of impressions.

3. A printing-machine comprising devices for setting up a line of type, an impression member coöperating therewith, inking devices, paper feeding, cutting and delivery mechanism, and a lock automatically acting to terminate further operation after a predetermined plural number of prints have been made and delivered.

4. A printing-machine comprising type-selecting devices, a reciprocating impression member, type-inking devices operated by the movement of said member toward the type, paper-feeding mechanism operated by the opposite motion of said member, a paper-cutter operated by the latter part of this last-named motion, and a locking device for said member automatically acting after a predetermined plural number of movements of said impression member.

5. The combination with a reciprocating impression member and a lock therefor, of a toothed wheel carried by said member, an arm rigid with said wheel and constructed to engage said lock at a designated point in said wheel's rotation and put the same into control of said impression member, and a fixed pawl constructed to be met by the teeth of said wheel and to thereby intermittently rotate the latter.

6. The combination with a reciprocating member and a shaft for its actuation, of a ratchet-disk fixed on said shaft, a pawl engaging said disk, a second disk fixed on said shaft and having one or more notches in its periphery, a dog normally out of engagement with said notched disk, a lever constructed to hold said dog in engagement with said notched disk, a lock for said lever, and means operated by a predetermined number of movements of said reciprocating member for forcing said lever into the control of said lock and for moving said dog into engagement with said notched disk.

7. The combination with a cylindrical printing-surface and an impression member coöperating therewith, of a swinging frame mounted slightly eccentric to said cylindrical printing-surface, an inking-roll loosely carried by said frame normally out of contact with the printing-surface, and means operating said frame by the reciprocation of said impression member to carry said inking-roll into contact with the printing-line of said surface and then beyond and out of the way of the impression member when the latter meets the printing-surface.

8. The combination with a printing-surface and a frame provided with a plurality of vertical rods, an impression member slidable on said rods, a shaft having means for its rotation and revolubly supported by said frame, a ratchet-wheel fixed on said shaft, a fixed pawl engaging with said ratchet-wheel to prevent a backward turn to said shaft, a crank-arm fixed on said shaft, and a pitman between said crank-arm and impression member.

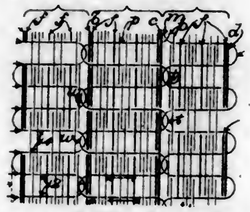
9. In a printing-machine, the combination of a series of type-disks mounted side by side, a closed case for said parts, external keys for individually setting said disks, a rod movable in supports parallel with the axis of said disks, and external means for its operation; said disks having each a row of openings concentric with its center and corresponding in number and arrangement with the type on its periphery; whereby, as each disk is set to present a determined character, said rod is advanced to enter one of the holes therein and thereby locks it against displacement.

10. In a printing-machine, the combination of a series of type-disks mounted side by side, a closed case for said parts, external means for individually setting said disks, a rod longitudinally movable in supports parallel with the axis of said disks, an external pointer connected with said rod for its operation, and a dial provided with characters designating each of said disks; each of said disks having a row of openings concentric with its axis and corresponding in number and arrangement with the type on its periphery; whereby, as each disk is set to present a determined character on its periphery, said pointer is turned to the proper character on said dial to cause said rod to enter an opening in such disk and thereby lock it in position.

11. In a printing-machine, the combination of a series of type-disks mounted on a common axis, each having a row of openings concentric with such axis and corresponding in number and position to the type on its periphery, a slotted tubular support parallel with the axis of said disks and in alinement with said openings, a rod slidable in said tube and having a pin projecting through said slot, a swinging arm engaging said pin, a segmental gear rigid with said arm, a pinion meshing with said segmental gear, and a pointer connected with said pinion.

12. In a printing-machine, the combination of a series of comparatively thin type-disks mounted side by side on a common axis, each disk having type upon a portion of its periphery and gear-teeth upon the remainder thereof, a rack for each disk, a shelf having parallel slots through it at substantial distances apart, keys rising through said slots, and rigid connections between said keys and racks; said connections being offset as described to avoid mutual interference.

820,515. **WOVEN FABRIC.** GEORGE C. MOORE, Revere, Mass. Filed Nov. 23, 1904. Serial No. 234,059.



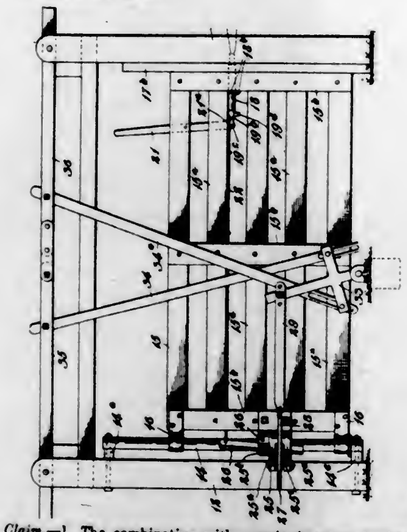
Claim.—1. A double-faced elastic woven fabric comprising fibrous and rubber warps, a body-section composed of a weft-thread interwoven with a portion of said warps, and a side section composed of a portion of said warps and a separate weft interlocked with the weft of the said body-section.

2. A double-faced elastic woven fabric comprising fibrous and rubber warps, a central or body section composed of a weft-thread interwoven with a portion of said warps, and two side sections each of which is composed of a portion of said warps and a separate weft-thread interlocked with the weft of the said central or body section.

3. A double-faced elastic woven fabric comprising fibrous and rubber warps, a body-section composed of a weft-thread interwoven with a portion of said warps, and a side section composed of a portion of said warps and a separate weft interlocked with the weft of the said body-section, the outer rubber warp of said side section being at the extreme edge of the fabric next the overlying side-section weft.

4. A double-faced elastic woven fabric comprising fibrous and rubber warps, a central or body section composed of a weft-thread interwoven with a portion of said warps, and two side sections each of which is composed of a portion of said warps and a separate weft-thread interlocked with the weft of the said central or body section, the outer rubber warps of said side sections being at the extreme edges of the fabric next the overlying side-section wefts.

820,516. **GATE.** EDGAR T. MORRIS, Elburn, Ill. Filed Jan. 18, 1906. Serial No. 296,643.



Claim.—1 The combination with a swinging gate having a projecting arm at the hinged end thereof extending longitudinally to the opposite side of the hinge from the gate, and also having a latch, of a gate-opening device connected to said arm, to operate the gate, an upright lever supported upon said arm and connected to the latch, and a cam operated by the gate-opening device and having a sliding bearing against the lever.

2. The combination with a swinging gate having at the hinged end thereof a projecting arm, and also having a latch, of a lever pivoted on the arm and connected to the latch, a rod having a slot-and pin connection with the arm and having its end shaped at an angle to form a cam-surface having a sliding bearing against the lever to swing the same and draw the bolt, and gate-opening levers operatively connected to the rod.

3. The combination with a swinging gate having at the hinged end thereof a projecting arm with crossed horizontal and vertical slots, and also having a latch, of a lever pivoted in the vertical slot and connected at one end to the latch, a sliding rod having a slot-and-pin connection to the arm and having a cam slidable in the horizontal slot and bearing against the other end of the lever, and gate-opening devices connected to the rod, to operate the same.

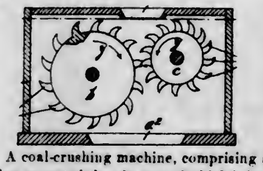
820,517. **GLASS PROTECTOR FOR FAUCETS.** CHARLES E. MCKENNA, Albany, N. Y. Filed July 9, 1904. Serial No. 215,954.



Claim.—1. The combination of a faucet; an elastic thimble; a series of thin projecting lateral ribs tapering outwardly and upwardly forming rigidly-supported flexible guards on said thimble; said thimble placed on the spout of said faucet, substantially as described.

2. The combination of a faucet; an elastic thimble; a series of wedge-shaped ribs extending from one end of the thimble toward the other end tapering outwardly and upwardly, forming a series of guards about the thimble, substantially as described.

820,518. **COAL-CRUSHER.** GEORGE W. PERRY, Tuscarora, Pa. Filed Apr. 29, 1905. Serial No. 258,016.



Claim.—1. A coal-crushing machine, comprising a casing and two parallel rollers mounted therein, one of which is larger than the other, said rollers being geared in connection so as to turn synchronously, and each of said rollers being provided with longitudinally-arranged parallel rows of teeth which are also arranged in circumferential and parallel rows, the circumferential and parallel rows of teeth on one roller coming between the circumferential and parallel rows of teeth on the other roller, and the longitudinally-arranged and parallel rows of teeth on one roller coming between the longitudinally-arranged and parallel rows of teeth on the other roller, substantially as shown and described.

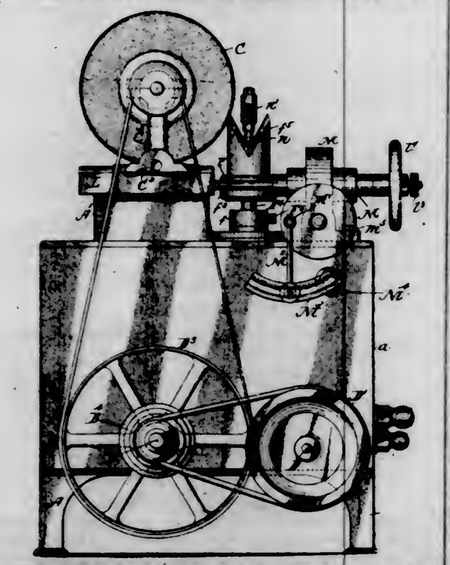
2. A coal-crushing machine, comprising a casing and two parallel rollers mounted therein, one of which is larger than the other, said rollers being geared in connection so as to turn synchronously, and each of said rollers being provided with longitudinally-arranged parallel rows of teeth which are also arranged in circumferential and parallel rows, the circumferential and parallel rows of teeth on one roller coming between the circumferential and parallel rows of teeth on the other roller, and the longitudinally-arranged and parallel rows of teeth on one roller coming between the longitudinally-arranged and parallel rows of teeth on the other roller, and said longitudinally-arranged and parallel rows of teeth on both of said rollers being also

arranged spirally thereon the direction thereof being opposite on the separate rollers, substantially as shown and described.

3. A coal-crusher, comprising a casing having parallel rollers mounted therein, one of said rollers being larger than the other, and the tops of said rollers being in the same horizontal plane, said rollers being each provided with parallel and longitudinally-arranged rows of teeth, said teeth being also arranged in circumferential and parallel rows, said rollers being geared in connection so as to turn synchronously, and the longitudinally-arranged rows of teeth on one roller coming between the longitudinally-arranged rows of teeth on the other roller, and the circumferentially-arranged rows of teeth on one roller coming between the circumferentially-arranged rows of teeth on the other roller, substantially as shown and described.

4. A coal-crusher, comprising a casing having parallel rollers mounted therein, one of said rollers being larger than the other, and the tops of said rollers being in the same horizontal plane, said rollers being each provided with parallel and longitudinally-arranged rows of teeth, said teeth being also arranged in circumferential and parallel rows, said rollers being geared in connection so as to turn synchronously, and the longitudinally-arranged rows of teeth on one roller coming between the longitudinally-arranged rows of teeth on the other roller, and the circumferentially-arranged rows of teeth on one roller coming between the circumferentially-arranged rows of teeth on the other roller, and the longitudinally-arranged rows of teeth on each roller being the same in number, substantially as shown and described.

820,519. TOOL-GRINDING MACHINE. JOHN G. POOL, Lynn, Mass., assignor to National Bung Manufacturing Company, Portland, Me., a Corporation of Maine. Filed Apr. 20, 1905. Serial No. 256,047.



Claim.—1. In a machine for grinding a rounding-tool provided with a serrated or V-shaped cutting edge, a continuously-rotary tool-holder for grasping and holding the said tool by the non-cutting end or edge thereof, a rotary grinder and means for reciprocating said grinder and tool-holder with relation to one another whereby the grinder may continuously follow the toothed or serrated edge of said tool as it is turned by the tool-holder.

2. In a machine for grinding a rounding-tool provided with a serrated or V-shaped cutting edge, a continuously-rotary tool-holder for grasping and holding said tool by the non-cutting end thereof, a rotary grinder and means for reciprocating said tool-holder whereby the cutting edge of said tool is made to describe a path of movement corresponding with the shape of the tooth or teeth and the same is presented continuously to the edge of said grinder.

3. In a machine for grinding a rounding-tool provided with a serrated or V-shaped cutting edge, a continuously-rotary tool-holder for grasping and holding said tool by the non-cutting end thereof, a rotary grinder, means for reciprocating said tool-holder whereby the cutting edge of said tool is made to describe a path of movement corresponding with the shape of the tooth or teeth and the same is presented continuously to the edge of said grinder, and means for automatically and positively changing the operative position of said grinder.

4. In a machine for grinding a rounding-tool provided with a serrated or V-shaped cutting edge, a continuously-rotary tool-holder for grasping and holding said tool by the non-cutting end thereof, a rotary grinder, means for reciprocating said tool-holder whereby the cutting edge of said tool is made to describe a path of movement corresponding with the shape of the tooth or teeth and the same is presented continuously to the edge of said grinder, and means for adjustably determining the amount of said reciprocation.

5. In a tool-grinding machine, a continuously-rotating tool-holder, a rotary grinder, means for reciprocating the one with relation to the other, and means for intermittently feeding the one toward the other.

6. In a tool-grinding machine, a continuously-rotating tool-holder, a rotary grinder, means for reciprocating said tool-holder, means for adjustably determining the amount of its reciprocation, and means for intermittently changing the operative position of said grinder.

7. In a tool-grinding machine, a continuously-rotating tool-holder, a rotary grinder, means for reciprocating said tool-holder in a line parallel with the axis of its rotation, means for intermittently feeding said grinder for changing the operative position of the same, and means for adjustably determining the amount of said feed.

8. In a tool-grinding machine, a continuously-rotating tool-holder, and a rotary grinder, and means for reciprocating the one with relation to the other in a line parallel to the axis of rotation of the tool, as set forth.

9. In a tool-grinding machine, a continuously-rotating tool-holder and a rotary grinder, and adjustable means for reciprocating the tool-holder and grinder with relation to each other and in a line parallel to the axis of rotation of said tool-holder, as set forth.

10. In a tool-grinding machine, a rotary tool-holder, and a rotary grinder, and means for reciprocating said tool-holder comprising an angular frame adapted to be reciprocated at right angles to the axis of the tool-holder, and means connecting said angular frame with the tool-holder, as described.

11. In a tool-grinding machine a rotary tool-holder and a rotary grinder, means for reciprocating said tool-holder comprising a slide moving at right angles to the axis of said tool-holder and carrying an inclined frame adapted to engage said tool-holder, as and for the purposes described.

12. In a tool-grinding machine a rotary tool-holder, a rotary grinder and means for reciprocating said rotary tool-holder in a line parallel with its axis comprising a horizontal reciprocating carriage, an inclined frame carried thereby, the angle of its inclination being adjustable with relation to the carriage, said inclined frame being adapted to engage said tool-holder, as set forth.

13. In a tool-grinding machine a rotary tool-holder and a rotary grinder, and means for giving said tool-holder a movement parallel with its axis comprising a carriage and means for connecting said carriage and said tool-holder and means for reciprocating said carriage comprising a slide adapted to move in a direction parallel with said carriage and connections between said slide and said carriage whereby a movement of the one will cause a corresponding parallel movement of the other, and means for operating said slide, as described.

14. In a tool-grinding machine a rotary tool-holder, a rotary grinder, and means for automatically reciprocating said tool-holder in a line parallel with its axis comprising a carriage moving at right angles to the axis of said tool-holder and means connecting said carriage and said tool-holder, whereby the movement of said carriage will cause the reciprocation of said tool-holder, and means for reciprocating said carriage, comprising a slide, connections between said slide and said carriage whereby the movement of the one will cause a corresponding parallel movement of the other, and a cam, and connections between said cam and said slide whereby the rotation of said cam will cause the reciprocation of said slide, as set forth.

15. In a tool-grinding machine a rotary grinder, and a rotary tool-holder, and means adapted to cause the reciprocation of said tool-holder comprising pivoted ways mounted on the sides of said tool-holder, a carriage and means for reciprocating it at right angles to the axis of said tool-holder, a frame connected to said carriage and adapted to run in said ways, and means whereby said frame is set at a predetermined angle to said carriage, as set forth.

16. In a tool-grinding machine, a tool-holder comprising a shaft, a sleeve surrounding and supporting said shaft, means for rotating said shaft within said sleeve, and means whereby said sleeve and said shaft may be moved together in a line parallel with the axis of said shaft, as described.

17. In a tool-grinding machine, a tool-holder comprising an adjustable shank, a shaft carrying said shank, a sleeve surrounding said shaft, and means whereby said shaft is rotated in said sleeve, and said sleeve and shaft are reciprocated in combination with a rotary grinder, as described.

18. A tool-grinding machine having a tool-holder, means whereby said tool-holder may be reciprocated, said means comprising a carriage having a movement at right angles to the axis of said tool-holder, and yielding means tending to counteract the weight of said tool-holder, as described.

19. In a tool-grinding machine, a tool-holder, a horizontally-moving carriage supporting said tool-holder, and means whereby the movement of said carriage is communicated to and results in a vertical movement of said tool-holder, and yielding means whereby the weight of said tool-holder is more or less counteracted, as described.

20. In a tool-grinding machine, a tool-holder adapted to be reciprocated, a carriage adapted to be moved horizontally, connections between said carriage and said tool-holder whereby said tool-holder will be reciprocated vertically, and means for counterbalancing the weight of the vertically-moving parts, comprising a rocking frame, means for connecting said rocking frame with said tool-holder, and a lifting-spring connected to said rocking frame, as and for the purposes described.

21. In a grinding-machine, a tool-holder adapted to be reciprocated vertically, horizontal ways, a carriage adapted to run in said ways, connections between said carriage and said tool-holder whereby said tool-holder will be reciprocated with the reciprocation of said carriage and at right angles thereto, a rocking frame connected to said tool-holder, and a spring adapted to lift said tool-holder, one end of said spring being connected with said rocking frame, means for supporting the other end of said spring, and means for adjusting its tension, as described.

22. In a grinding-machine, a rotary grinder, a tool-holder and means whereby said tool-holder is rotated and reciprocated in a line parallel with its axis of rotation, and means whereby said grinder is fed toward and from said tool-holder, as described.

23. In a grinding-machine, a grinder mounted on a carriage, said carriage being provided with an adjusting-nut, a screw passing through said nut, means whereby said screw is rotated, a tool-holder, and means connecting said tool-holder with said screw-rotating means, whereby the movements of said tool-holder will cause the feeding of said grinder, as set forth.

24. In a grinding-machine, a grinder mounted on a carriage, said carriage being provided with an adjusting-nut, a screw passing through said nut, means whereby said screw is rotated, a tool-holder, and means whereby said screw-rotating means is operated to feed the carriage automatically and said tool-holder is reciprocated, as set forth.

25. In a tool-grinding machine, a rotary tool-holder, a rotary grinder, a feed adapted to feed said grinder toward said tool-holder, and means connecting said grinder and said tool-holder, whereby the rotation of said tool-holder and the feed of said grinder will take place simultaneously, as described.

26. In a grinding-machine, the grinder mounted upon a carriage, means for adjusting said carriage, and also for feeding said carriage, said means comprising a nut attached to said carriage, a screw working therein and common to both feeding and adjusting mechanisms, an automatic mechanism adapted to be connected with said screw to turn it, a hand turning mechanism also adapted to be connected to said screw and a clutch connecting said screw and said automatic turning mechanism whereby by disengaging said clutch the turning of said screw may be accomplished by hand and upon engagement of said clutch the turning of said screw will be accomplished automatically, as described.

27. In combination with a rotary tool-holder and a grinder, a feeding mechanism for said grinder comprising a feed-screw, a gear free to turn thereon and forming one member of a clutch mechanism, a second member of said clutch mechanism connected with said feed-screw to turn therewith, and means whereby said clutch and said gear are clamped together, as set forth.

28. In combination with a rotary tool-holder and a grinder, a feeding mechanism for said grinder comprising a feed-screw, a gear free to turn thereon and forming one member of a clutch mechanism, a second member of said clutch mechanism connected with said feed-screw to turn therewith, and means whereby said clutch and said gear are clamped together, said means comprising a clutch-rod entering the end of said feed-screw and pinned therein, and capable of a limited longitudinal movement with relation thereto, a clutch member attached to said clutch-rod, and a set-nut on said clutch-rod adapted to bind said clutch member against said gear, as described.

29. In a tool-grinding machine, a tool-grinder and means whereby it is fed automatically toward and from the tool comprising a feed-nut, a screw, a gear mounted on said feed-screw, a worm engaging said gear, and means for giving said worm an intermittent rotary motion, a rotary tool-holder, and means connecting said tool-holder and said intermittent worm-rotating means whereby it is operated, as described.

30. In a tool-grinding machine, means for feeding said tool-grinder comprising a feed-screw, a gear mounted thereon, a worm adapted to engage said gear, a clutch on said worm, means for operating said clutch to rotate said worm intermittently comprising a rocking frame, and means whereby said rocking frame is rocked, and an adjustable connection between said rocking frame, and said clutch, as set forth.

31. In a tool-grinding machine, a tool-grinder mounted on the carriage, means for feeding the said carriage comprising a screw, a gear upon said screw, a worm engaging said gear, a wheel located on the worm-shaft, a disk free to turn on said shaft, pawls connecting said disk and said wheel, and rocking frame, and means whereby it is rocked, and means for adjustably connecting said rocking frame with said disk, as described.

820,520. BALL-BEARING. AUGUST RIEBE and PAUL BRÜHL, Berlin, Germany. Filed Jan. 19, 1905. Serial No. 241,770.

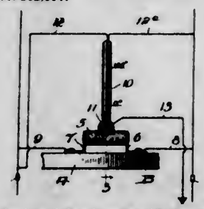


Claim.—1. In a ball-bearing, an intermediate piece having a plate formed with a recess shaped to receive a portion of the ball.

2. In a ball-bearing, an intermediate piece having end plates and an interposed spring, and a C-shaped casing disconnected from the spring and extending over the spring and expansible to permit its withdrawal sidewise from this spring.

3. In a ball-bearing, an intermediate piece having end plates separated by a spring, one of said plates having a recess to receive a part of the ball and the recess adapted to receive an end of the spring and to permit a limited movement of such end therein.

820,521. ELECTRICAL PROTECTIVE DEVICE. CHARLES A. ROLFE, Adrian, Mich., assignor, by mesne assignments, to Rolfe Electric Co., Rochester, N. Y., a Corporation of New York. Filed June 22, 1903. Serial No. 162,507.



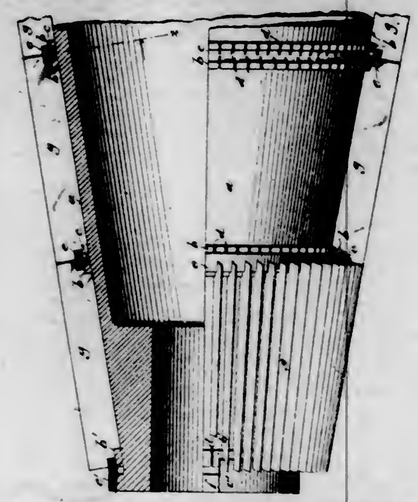
Claim.—1. A device of the class specified, comprising a graphite stick, a tube containing mercury and having its lower end resting upon said graphite stick, and circuit connections controlled by said mercury.

2. A device of the class specified, comprising a graphite stick, a tube containing mercury and having its lower end resting upon said graphite stick, and ground and line connections controlled by the mercury in the tube.

820,522. PAPER-STOCK-REFINING ENGINE. HERMAN G. SARGENT, Appleton, Wis. Filed Oct. 9, 1905. Serial No. 282,068.

Claim.—1. In a paper-stock-refining engine, a conical core formed with outwardly-projecting annular belts which are grooved

at intervals lengthwise of the core, annular bands fitted on said belts, and knives fitting into the grooves in said belts and notches in the ends to engage with said bands, substantially as described.



2. In a paper-stock-refining engine, a conical core formed at intervals in its length with outwardly-projecting annular belts which are formed with longitudinal channels in their outer faces and on opposite sides thereof with grooves running lengthwise of the core, grooves on opposite sides of the channel in each ring breaking joints with each other, annular knife-retaining bands fitted on said belts, and knives fitting at their backs and ends into grooves in said belts, and notched in the ends to engage with said bands, substantially as described.

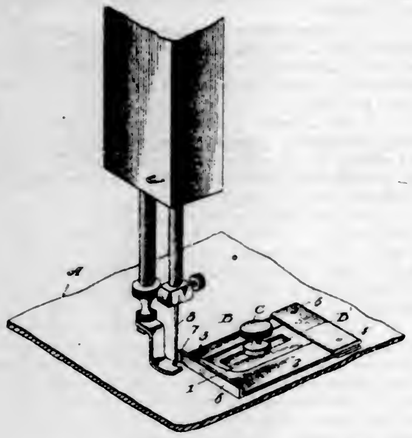
3. In a paper-stock-refining engine, a conical core formed at intervals in its length with outwardly-projecting annular belts which are formed at intervals with cross-grooves running lengthwise of the core and extending to the depth of the surface of the core between said belts, annular knife-retaining bands fitted upon said belts, and knives fitting at their backs and ends into said grooves and notched at the ends to engage with said bands, the backs of the knives bearing against the surface of the core between the belts and bands, substantially as described.

4. In a paper-stock-refining engine, a conical core formed at intervals in its length with outwardly-projecting annular belts which are formed at intervals with cross-grooves running lengthwise of the core, annular bands fitted on said belts, knives fitting at their backs and ends into said grooves and notched in the ends to engage with said bands, and spacing-pieces fitted between the knives and supporting them laterally between said bands, substantially as described.

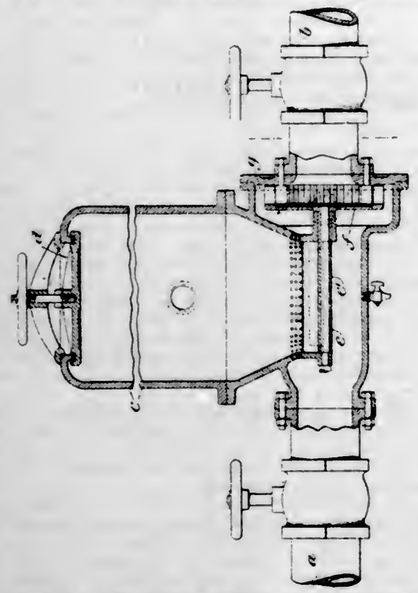
5. In a paper-stock-refining engine, the combination of a conical core formed at the smaller end with a plain cylindrical belt and at intervals between the ends and adjacent to the cylindrical belt with tapering belts, which are formed with radial cross-grooves running lengthwise of the core, the intermediate belts each having a longitudinal channel in its outer face and cross-grooves on opposite sides of the channel out of line with each other, annular bands fitted on said belts, the band at the smaller end of the core being fitted on the cylindrical belt and the adjacent tapering belt which it overlaps, and knives fitting at their backs and ends into corresponding grooves in adjacent belts and being notched in the ends to engage with corresponding bands, substantially as described.

820,528. SEWING-MACHINE GUIDE. PHILIP SANDLER, Los Angeles, Cal. Filed July 20, 1905. Serial No. 271,826.

Claim.—In a device of the character herein described, a fabric-guide for sewing-machines, comprising a body member having a slot centrally and longitudinally arranged therein; and two guide members pivotally connected to the body member at the rear end thereof, one on each side, both members projecting in front of said body member when closed upon the same, one of said members having an upwardly-projecting stud forming the front edge thereof, the other member having an upwardly-turned flange forming the front edge of said member, said members being adapted to be swung toward the body member in contact therewith.



820,524. TREATMENT OF REFRACTORY WATER. JOSEPH SCHNEIBLE, Weehawken, N. J. Filed May 3, 1905. Serial No. 258,619.



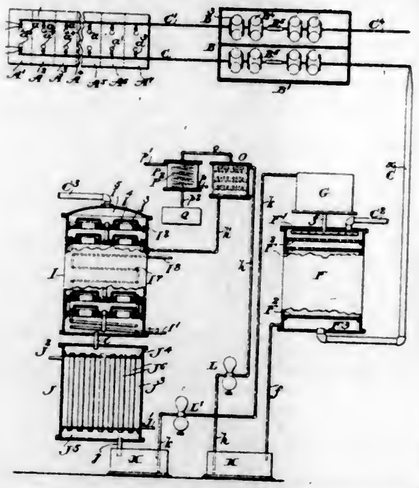
Claim.—1. An apparatus for the treatment of refractory water comprising a container for talc-like material, means to supply the water in a flowing stream and devices to disintegrate and transfer talc-like material in a finely-divided condition from the container to the flowing stream of water, substantially as shown and described.

2. An apparatus for the treatment of refractory water comprising a container for talc-like material in communication with the water-supply, devices for disintegrating and transferring talc-like material in a finely-divided condition from the container to the flowing stream of water, and means operated by the water as it passes from the source of supply to the place of use to operate said disintegrating devices, substantially as shown and described.

3. An apparatus for the treatment of refractory water comprising a container for talc-like material in communication with the water-supply, a disintegrating and transferring roll to act upon the talc-like material, and means operated by the flowing water as it passes from the source of supply to the place of use to drive said roll, substantially as shown and described.

4. An apparatus for the treatment of refractory water comprising a container for the reception of talc-like material in communication with the water-supply, a disintegrating and transferring roll to act upon the talc-like material and transfer it in a finely-divided condition from the container to the water-supply, and a turbine operatively connected with said roll and driven by the water in its passage from the source of supply to the place of use, substantially as shown and described.

820,525. METHOD OF TREATING AND UTILIZING GASES. FREDERIC W. C. SCHNIEWIND, Everett, Mass., assignor to The United Coke and Gas Company, Charleston, W. Va., a Corporation of West Virginia. Filed Jan. 22, 1900. Serial No. 2,313.



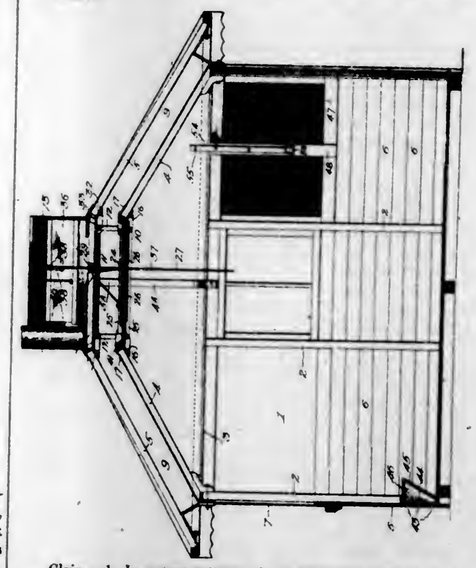
Claim.—1. The method of utilizing the gases generated in carbonizing carbonaceous fuels in closed externally-heated retorts, which consists in drawing off the richer gases generated in the first part of the carbonizing process for separate uses as illuminating-gas or otherwise, said fraction of gas containing not only the larger percentage of total illuminants but also a larger relative percentage of the more gaseous illuminants, then drawing off the poorer gases generated during the later stages of the carbonizing operation into separate receptacles, said gases having a larger relative percentage of extractable illuminants and treating said poorer fraction for the removal of its said more condensable illuminants.

2. The method of utilizing the gases generated in carbonizing carbonaceous fuels in closed externally-heated retorts, which consists in drawing off the richer gases generated in the first part of the carbonizing process for separate uses as illuminating-gas or otherwise, said fraction of gas containing not only the larger percentage of total illuminants, but also a larger relative percentage of the more gaseous illuminants, then drawing off the poorer gases generated during the later stages of the carbonizing operation into separate receptacles, said gases having a larger relative percentage of extractable illuminants, treating said poorer fraction for the removal of its said more condensable illuminants, and then utilizing said poorer gases after their condensable illuminants have been extracted, for heating the gas-generating retorts.

3. The method of utilizing the gases generated in carbonizing carbonaceous fuels in closed externally-heated retorts, which consists in drawing off the richer gases generated in the first part of the carbonizing process for separate uses as illuminating-gas or otherwise, said fraction of gas containing not only the larger percentage of total illuminants, but also a larger relative percentage of the more gaseous illuminants, then drawing off the poorer gases generated during the later stages of the carbonizing operation into separate receptacles, said gases having a larger relative percentage of extractable illuminants, washing said poorer gases with oil in order to separate the more condensable illuminants and removing said extracted illuminants by distillation.

4. The method of utilizing the gases generated in carbonizing carbonaceous fuels in closed externally-heated retorts, which consists in drawing off the richer gases generated in the first part of the carbonizing process for separate uses as illuminating-gas or otherwise, said fraction of gas containing not only the larger percentage of total illuminants but also a larger relative percentage of the more gaseous illuminants, then drawing off the poorer gases generated during the latter stages of the carbonizing operation into separate receptacles, said gases having a larger relative percentage of extractable illuminants, subjecting said poorer gases to a condensing and washing treatment in order to remove tars and other impurities and then to a washing treatment with oils in order to remove its more extractable illuminants.

820,526. TENT-COTTAGE AND VENTILATOR THEREFOR. CHRISTOPHER SCHRAM, Denver, Colo. Filed Dec. 15, 1905. Serial No. 291,901.

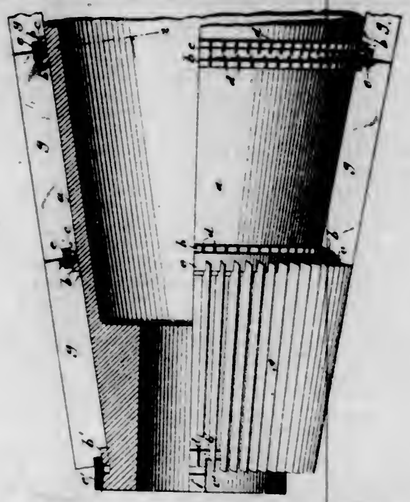


Claim.—1. In a tent-cottage, the combination with an inner and outer set of rafters, of frames clamped to the upper ends of the rafters, each comprising side strips, and a pair of plates at each end, between which the ends of the rafters are clamped, one plate in each pair being in the form of a ring, while the other is in the form of a half-ring; swinging covers above the ring-plates of the inner frame, which normally close the openings therein; outwardly-swinging ventilating-doors in said frame, and means for opening said doors; a housing upon the outer frame, having outwardly-swinging doors; means for opening and closing the doors, and a chimney-pipe at the end of the housing, above the openings in the ring-plates of the two frames.

2. The combination with a tent-cottage of the character described, having inner and outer rafters and a canvas covering for each, of a ventilator therefor, comprising inner and outer frames, which are clamped respectively to the upper ends of the inner and outer rafters, each frame comprising side strips and a pair of rafter-clamping plates at each end, one of which is in the form of a ring while the other is in the form of a half-ring; hinged covers which normally close the openings in the rings of the inner frame; outwardly-swinging doors in said frame communicating with the space between the two sets of rafters, and means comprising rope and pulleys for operating the doors; a housing on the outer frame having outwardly-swinging doors, and means for operating the doors comprising arms pivoted at their outer ends to the doors; a rod extending up through the frames, to the upper end of which the inner ends of the arms are pivotally secured, and chimney-pipes at the ends of the housing, in line with the ring-plates.

3. In a tent-cottage of the character described, the combination with the inner and outer rafters, of frames secured at the upper ends of the rafters, comprising side strips and end clamping-plates, which clamp the rafters, and which are provided with stovepipe-openings; hinged covers which normally close the said openings; a cross-bar

at intervals lengthwise of the core, annular bands fitted on said belts, and knives fitting into the grooves in said belts and notches in the ends to engage with said bands, substantially as described.



2. In a paper-stock-refining engine, a conical core formed at intervals in its length with outwardly-projecting annular belts which are formed with longitudinal channels in their outer faces and on opposite sides thereof with grooves running lengthwise of the core, grooves on opposite sides of the channel in each ring breaking joints with each other, annular knife-retaining bands fitted on said belts, and knives fitting at their backs and ends into grooves in said belts, and notched in the ends to engage with said bands, substantially as described.

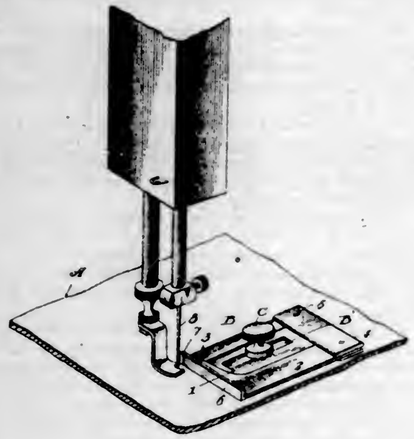
3. In a paper-stock-refining engine, a conical core formed at intervals in its length with outwardly-projecting annular belts which are formed at intervals with cross-grooves running lengthwise of the core and extending to the depth of the surface of the core between said belts, annular knife-retaining bands fitted upon said belts, and knives fitting at their backs and ends into said grooves and notched at the ends to engage with said bands, the backs of the knives bearing against the surface of the core between the belts and bands, substantially as described.

4. In a paper-stock-refining engine, a conical core formed at intervals in its length with outwardly-projecting annular belts which are formed at intervals with cross-grooves running lengthwise of the core, annular bands fitted on said belts, knives fitting at their backs and ends into said grooves and notched in the ends to engage with said bands, and spacing-pieces fitted between the knives and supporting them laterally between said bands, substantially as described.

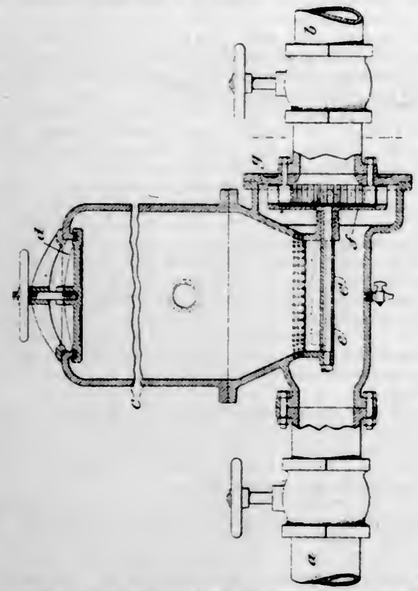
5. In a paper-stock-refining engine, the combination of a conical core formed at the smaller end with a plain cylindrical belt and at intervals between the ends and adjacent to the cylindrical belt with tapering belts, which are formed with radial cross-grooves running lengthwise of the core, the intermediate belts each having a longitudinal channel in its outer face and cross-grooves on opposite sides of the channel out of line with each other, annular bands fitted on said belts, the band at the smaller end of the core being fitted on the cylindrical belt and the adjacent tapering belt which it overlaps, and knives fitting at their backs and ends into corresponding grooves in adjacent belts and being notched in the ends to engage with corresponding bands, substantially as described.

820,528. SEWING-MACHINE GUIDE. PHILIP SANDLER, Los Angeles, Cal. Filed July 30, 1905. Serial No. 271,825.

Claim.—In a device of the character herein described, a fabric-guide for sewing-machines, comprising a body member having a slot centrally and longitudinally arranged therein; and two guide members pivotally connected to the body member at the rear end thereof, one on each side, both members projecting in front of said body member when closed upon the same, one of said members having an upwardly-projecting stud forming the front edge thereof, the other member having an upwardly-turned flange forming the front edge of said member, said members being adapted to be swung toward the body member in contact therewith.



820,524. TREATMENT OF REFRACTORY WATER. JOSEPH SCHNEIBLE, Weehawken, N. J. Filed May 3, 1905. Serial No. 258,619.



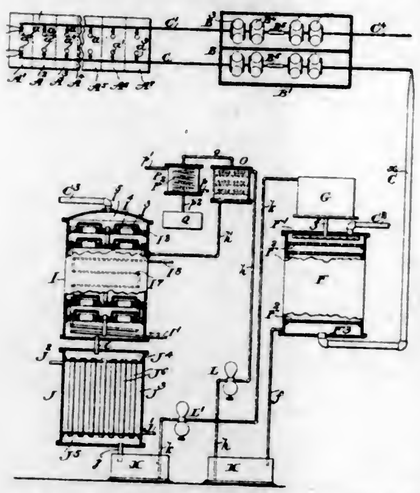
Claim.—1. An apparatus for the treatment of refractory water comprising a container for talc-like material, means to supply the water in a flowing stream and devices to disintegrate and transfer talc-like material in a finely-divided condition from the container to the flowing stream of water, substantially as shown and described.

2. An apparatus for the treatment of refractory water comprising a container for talc-like material in communication with the water-supply, devices for disintegrating and transferring talc-like material in a finely-divided condition from the container to the flowing stream of water, and means operated by the water as it passes from the source of supply to the place of use to operate said disintegrating devices, substantially as shown and described.

3. An apparatus for the treatment of refractory water comprising a container for talc-like material in communication with the water-supply, a disintegrating and transferring roll to act upon the talc-like material, and means operated by the flowing water as it passes from the source of supply to the place of use to drive said roll, substantially as shown and described.

4. An apparatus for the treatment of refractory water comprising a container for the reception of talc-like material in communication with the water-supply, a disintegrating and transferring roll to act upon the talc-like material and transfer it in a finely-divided condition from the container to the water-supply, and a turbine operatively connected with said roll and driven by the water in its passage from the source of supply to the place of use, substantially as shown and described.

820,525. METHOD OF TREATING AND UTILIZING GASES. FREDERIC W. C. SCHNIEWIND, Everett, Mass., assignor to The United Coke and Gas Company, Charleston, W. Va., a Corporation of West Virginia. Filed Jan. 22, 1900. Serial No. 2,313.



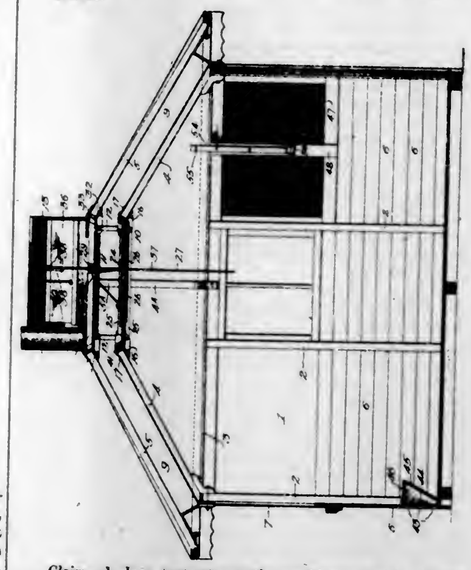
Claim.—1. The method of utilizing the gases generated in carbonizing carbonaceous fuels in closed externally-heated retorts, which consists in drawing off the richer gases generated in the first part of the carbonizing process for separate uses as illuminating-gas or otherwise, said fraction of gas containing not only the larger percentage of total illuminants but also a larger relative percentage of the more gaseous illuminants, then drawing off the poorer gases generated during the later stages of the carbonizing operation into separate receptacles, said gases having a larger relative percentage of extractable illuminants and treating said poorer fraction for the removal of its said more condensable illuminants.

2. The method of utilizing the gases generated in carbonizing carbonaceous fuels in closed externally-heated retorts, which consists in drawing off the richer gases generated in the first part of the carbonizing process for separate uses as illuminating-gas or otherwise, said fraction of gas containing not only the larger percentage of total illuminants, but also a larger relative percentage of the more gaseous illuminants, then drawing off the poorer gases generated during the later stages of the carbonizing operation into separate receptacles, said gases having a larger relative percentage of extractable illuminants, treating said poorer fraction for the removal of its said more condensable illuminants, and then utilizing said poorer gases after their condensable illuminants have been extracted, for heating the gas-generating retorts.

3. The method of utilizing the gases generated in carbonizing carbonaceous fuels in closed externally-heated retorts, which consists in drawing off the richer gases generated in the first part of the carbonizing process for separate uses as illuminating-gas or otherwise, said fraction of gas containing not only the larger percentage of total illuminants, but also a larger relative percentage of the more gaseous illuminants, then drawing off the poorer gases generated during the later stages of the carbonizing operation into separate receptacles, said gases having a larger relative percentage of extractable illuminants, washing said poorer gases with oil in order to separate the more condensable illuminants and removing said extracted illuminants by distillation.

4. The method of utilizing the gases generated in carbonizing carbonaceous fuels in closed externally-heated retorts, which consists in drawing off the richer gases generated in the first part of the carbonizing process for separate uses as illuminating-gas or otherwise, said fraction of gas containing not only the larger percentage of total illuminants but also a larger relative percentage of the more gaseous illuminants, then drawing off the poorer gases generated during the latter stages of the carbonizing operation into separate receptacles, said gases having a larger relative percentage of extractable illuminants, subjecting said poorer gases to a condensing and washing treatment in order to remove tars and other impurities and then to a washing treatment with oils in order to remove its more extractable illuminants.

820,526. TENT-COTTAGE AND VENTILATOR THEREFOR. CHRISTOPHER SCHRAM, Denver, Colo. Filed Dec. 15, 1905. Serial No. 291,901.



Claim.—1. In a tent-cottage, the combination with an inner and outer set of rafters, of frames clamped to the upper ends of the rafters, each comprising side strips, and a pair of plates at each end, between which the ends of the rafters are clamped, one plate in each pair being in the form of a ring, while the other is in the form of a half-ring; swinging covers above the ring-plates of the inner frame, which normally close the openings therein; outwardly-swinging ventilating-doors in said frame, and means for opening said doors; a housing upon the outer frame, having outwardly-swinging doors; means for opening and closing the doors, and a chimney-pipe at the end of the housing, above the openings in the ring-plates of the two frames.

2. The combination with a tent-cottage of the character described, having inner and outer rafters and a canvas covering for each, of a ventilator therefor, comprising inner and outer frames, which are clamped respectively to the upper ends of the inner and outer rafters, each frame comprising side strips and a pair of rafter-clamping plates at each end, one of which is in the form of a ring while the other is in the form of a half-ring; hinged covers which normally close the openings in the rings of the inner frame; outwardly-swinging doors in said frame communicating with the space between the two sets of rafters, and means comprising rope and pulleys for operating the doors; a housing on the outer frame having outwardly-swinging doors, and means for operating the doors comprising arms pivoted at their outer ends to the doors; a rod extending up through the frames, to the upper end of which the inner ends of the arms are pivotally secured, and chimney-pipes at the ends of the housing, in line with the ring-plates.

3. In a tent-cottage of the character described, the combination with the inner and outer rafters, of frames secured at the upper ends of the rafters, comprising side strips and end clamping-plates, which clamp the rafters, and which are provided with stovepipe-openings; hinged covers which normally close the said openings; a cross-bar

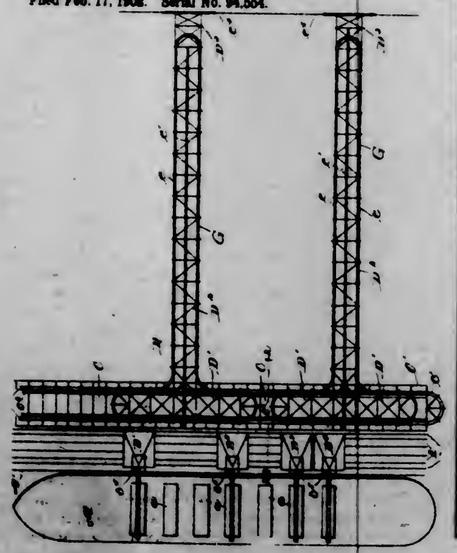
midway of the inner frame; doors hinged to the cross-bar, and a screen-cloth below the doors; a cross-bar midway of the upper frame and a pair of pulleys secured thereto; a flexible connection secured at its ends to the doors, the remaining portion being passed over the pulleys and extending in a loop into the interior of the house; a housing upon the upper frame, having outwardly-swinging doors, and a chimney-pipe at each end of the housing in line with the openings in the clamping-plates; a rod which passes up through openings in the cross-bars, and into the housing; arms pivoted at their inner ends to the rod, and at their outer ends to the doors in the housing, said arms being adapted to push the doors open when the rod is pulled down, and springs for insuring the closing of the doors.

4. In a tent-cottage, having an inner and outer set of rafters, a ventilator therefor, comprising horizontal frames, each comprising side strips, and a pair of clamping-plates at each end, one of each pair being in the form of a ring, while the other is in the form of a half-ring, the said plates being adapted to be clamped upon the ends of the rafters, while those of the upper frame are provided on their edges with introverted lips which cut into the rafters; hinged doors upon the lower frame, and means for operating them; a housing on the upper frame having outwardly-swinging doors, and means for operating them; a chimney-pipe at each end of the housing in line with the ring-plates; hinged covers which normally close the ring-plates of the lower frame, and semicircular plates which rest upon the said ring-plates and close the openings at the ends of the frame.

5. In a ventilator for tent-cottages, a horizontal frame, comprising side strips and a pair of clamping-plates at each end; a cross-bar in said frame, outwardly-swinging doors hinged to said cross-bar, means for operating the doors, and a spring for insuring the closing of the doors.

6. In a ventilator for tent-cottages, a horizontal frame comprising side strips, connected at their ends by pairs of dished clamp-plates, the lower plates being in the form of rings, while the upper plates are in the form of half-rings; hinged covers for the openings in the ring-plates; outwardly-swinging doors hinged to the frame and means for operating them; standards secured to the frame, and a similar frame secured to the top of the standards, the clamp-plates of which are reversed in position; a housing upon the upper frame having outwardly-swinging doors; chimney-pipes secured to the ends of the housing and resting upon the ring-plates; a rod extending into the housing, having arms pivoted thereto, which extend downward and outward, and are pivoted at their opposite ends to the doors; a pin in the bar, and an abutment with which said pin contacts, to limit the downward movement of the bar, and a spring for normally holding the doors in a closed position.

820,527. **APPARATUS FOR UNLOADING, STORING, AND RELOADING MATERIAL.** WILLIAM J. SELLECK, Riverside, Conn. Filed Feb. 17, 1903. Serial No. 94,554.



Claim.—1. In an apparatus of the character described, the combination with movable unloading mechanism, of a series of pockets, located adjacent to the path of movement of the movable unloading mechansim; and conveying means located above and extending longitudinally with respect to said pockets for receiving said material directly from the unloading mechanism, carrying the same to points above the pockets and depositing it in any desired pocket.

2. In an apparatus of the character described, the combination with movable unloading mechanism, of a series of stationary pockets, a track supported longitudinally above said pockets, located adjacent to the path of movement of the movable unloading mechanism; and cars engaging said track for receiving material directly from the unloading mechanism, conveying the same to points above the pockets and depositing it in any desired pocket.

3. The combination with a vessel, of a plurality of movable towers each carrying unloading mechanism, a series of stationary pockets located adjacent and parallel to the bath of movement of the towers, a track supported longitudinally above said pockets, and cars engaging said track for receiving material directly from the towers, conveying the same to points above the pockets and depositing it in any desired pocket.

4. In an apparatus of the character described, the combination with a plurality of unloading mechanisms, of a traveling crane having an extended portion adapted to be located parallel with and opposite said plurality of unloading mechanisms and extending over a storage area, and conveying means supported upon said crane for receiving material from said plurality of unloading mechanisms and carrying the same to points above the storage area.

5. In an apparatus of the character described, the combination with unloading mechanism, comprising a trolley, a bucket depending from the trolley and hoisting means for the bucket, of a pocket located adjacent thereto, a traveling crane extending from a point above said pocket over a storage area, and conveying means supported upon said crane for receiving material from the unloading mechanism and carrying the same to points above the storage area.

6. In an apparatus of the character described, the combination with unloading mechanism, of pockets located adjacent thereto, a traveling crane extending from a point above said pockets over a storage area, conveying means supported upon said crane for receiving material from the unloading mechanism and carrying the same to points above the storage area, and conveying means located above said pockets for receiving material from said unloading mechanism and carrying the same to points above the pockets.

7. In an apparatus of the character described, the combination with movable unloading mechanism, of a series of stationary pockets, a track supported above said pockets, cars engaging said tracks for receiving material from the unloading mechanism and conveying the same to points above the pockets, a traveling crane extending from a point above said pockets over a storage area, and conveying means supported upon said crane for receiving material from the unloading mechanism and carrying the same to points above the storage area.

8. The combination with a plurality of towers each provided with unloading mechanism, of a traveling crane having an extended portion adapted to be located parallel with and opposite said plurality of towers, said crane projecting over a storage area, and conveying means supported upon said crane for receiving material from said plurality of towers and carrying the same to points above the storage area.

9. The combination with a vessel having a plurality of hatches, of a plurality of movable towers provided with unloading mechanism and adapted to be located opposite said plurality of hatches, a traveling crane having an extended portion adapted to be located parallel with said vessel and opposite said plurality of towers, said crane projecting over a storage area, and conveying means supported by said crane for receiving material from said plurality of towers and carrying the material to points above the storage area.

10. The combination with a plurality of movable towers each provided with unloading mechanism, of a series of stationary pockets located adjacent and parallel with the path of movement of said towers, a traveling crane having an extended portion supported above said pockets and located opposite said plurality of towers, said crane projecting over a storage area, and conveying means supported by said crane for receiving material from said plurality of towers and carrying the material to points above the storage area.

11. The combination with a plurality of movable towers each provided with unloading mechanism, of a series of stationary pockets located adjacent and parallel with the path of movement of said towers, conveying means located above said pockets for receiving material from said towers and carrying the same to points above the pockets, a traveling crane having an extended portion supported above said pockets and located opposite said plurality of towers, said crane projecting over a storage area, and conveying means supported by said crane for receiving material from said plurality of towers and carrying the material to points above the storage area.

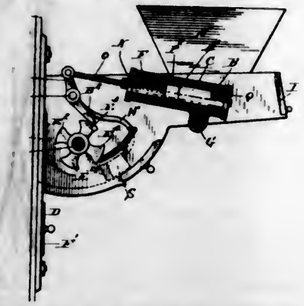
12. The combination with a vessel having a plurality of hatches, of a plurality of movable towers each provided with unloading mechanism and adapted to be located opposite said plurality of hatches, a series of stationary pockets located adjacent to and parallel with the path of movement of said towers, conveying means located above said pockets for receiving material from said plurality of towers and carrying the same to points above the pockets, a traveling crane having an extended portion supported above said pockets and adapted to be located opposite said plurality of towers, said crane projecting over a storage area, and conveying means supported upon said crane for receiving material from said plurality of towers and carrying the material to points above the storage area.

13. In an apparatus of the character described in combination, a movable unloading tower, a bridge movable independently of said unloading tower, a continuous loop-track extending across said bridge and into proximity with said tower, and an endless traction-cable for said loop-track.

14. In an apparatus of the character described, the combination with a storage area, of a movable unloading-tower, a continuous loop-track extending into proximity with said tower, and a movable bridge upon which said track is supported above the storage area.

15. In an apparatus of the character described, the combination with a storage area, of a continuous loop-track comprising a transverse portion above said area and a longitudinal portion, an unloading-tower located adjacent and movable with respect to the longitudinal portion of said track, and a movable bridge extending across said area upon which the transverse portion of said track is supported.

820,528. **OVERFEED-STOKER.** ARTHUR D. SOUTHAM, New York, N. Y. Filed Nov. 2, 1903. Serial No. 179,568.



Claim.—1. In a mechanical stoker the combination of a casing adapted to be secured to the front wall of a furnace, a hopper at the upper outer end thereof and in communication with the interior of said casing, a feed-table dividing said casing into an upper and a lower compartment the lower compartment being in communication with the furnace through an opening in the front wall of the casing, a reciprocating feed-ram working on the feed-table, an adjustable dead-plate movable over the ram, a shovel in the lower part below the feed-table, means for pivotally mounting said shovel, means for swinging said shovel rearward, a spring for projecting the shovel forward.

2. In an overfeed-stoker the combination of a main reservoir, a casing located below said reservoir, a feed-table in said casing and partially dividing the same, a number of jagged teeth or projections on the upper surface of said table, a feed-ram adapted to slide on said feed-table, means for operating said feed-ram, means for regulating the throw of the ram, an adjustable dead-plate above the ram, an inclined scraper-plate pivotally supported near the top of the divided casing its lower edge being beveled and resting on the dead-plate, a swinging shovel or sprinkler below the feed-table, a spring for moving said shovel forward, and means for retracting the shovel.

3. In a mechanical stoker the combination of a hopper, a ram-compartment connected therewith and adapted to receive fuel therefrom, a ram therein, means for operating said ram, a feed-table in the bottom of said ram-compartment, a shovel-compartment below the ram-compartment and adapted to receive fuel from the inner end of the feed-table, a scraper-plate mounted above the ram, its lower end extending near to the upper surface of the ram and preventing fuel moving rearward on the ram, a dead-plate above the ram and adapted to slide under the scraper-plate a shovel in the shovel-compartment, and means for operating the shovel to force fuel from the shovel-compartment.

4. In a mechanical stoker the combination of a main fuel-reservoir, a casing below said reservoir, a feed-table located in said casing and dividing the same into a shovel-compartment and a ram-compartment and provided with upward-extending projections on its inner end, a ram above said table, means for operating said ram to force the fuel inward on said table, and over the upward-extending projection thereon, an adjustable dead-plate above the ram at the outer end thereof, a scraper-plate pivotally supported above the dead-plate, its lower edge resting on said plate, a shovel mounted to move in the shovel-compartment, and means for operating said shovel.

5. In a mechanical stoker the combination of a hopper, a ram-compartment connected therewith, a ram in said compartment, means for operating said ram, a feed-table at the bottom of said ram-compartment, a shovel-compartment below the said table and adapted to receive fuel from the inner end thereof, a shovel in the shovel-compartment, means for pivotally mounting said shovel, a lever connected to the shovel and movable therewith, means for moving said lever in one direction to swing the shovel rearward in its compartment, a cylinder pivotally mounted, a piston therein, a piston-rod connected to said piston and to the lever, a spring within said cylinder and adapted to be compressed by the piston when the shovel is moved rearward, a buffer-spring in said cylinder said cylinder being formed with an aperture in its side wall whereby one end of the cylinder will be in open communication with the atmosphere when the shovel is in its rearward position.

6. In a mechanical stoker the combination of a hopper, a ram-compartment connected therewith, a ram in said compartment formed with a sharp cutting edge on its forward striking-face, means for operating said ram, a feed-table at the bottom of said ram-compartment, upward-extending teeth formed on said table near its inner end, a swinging yieldable check-arch above the feed-table, a shovel-compartment below the ram-compartment and receiving fuel from the inner end of the feed-table, a scraper-plate mounted above the ram, a shovel in the shovel-compartment, means for operating the shovel to force fuel from the shovel-compartment.

7. In a mechanical stoker the combination of a ram-compartment, a fuel-container connected therewith, a ram therein, means for operating the ram, a feed-table at the bottom of said ram-compartment, a shovel-compartment below the ram-compartment and adapted to receive fuel from the inner end of the feed-table, a shovel in the shovel-compartment its front edge being V-shaped in plan view and provided with a top plate whose forward edge extends beyond the front face of the shovel, said front edge being curved downward whereby said projecting top plate will prevent fuel being thrown back on the shovel, and means for operating the shovel to force fuel from the shovel-compartment.

8. In a mechanical stoker the combination of a casing adapted to be secured to the front wall of a furnace, a hopper at the upper outer end thereof and in communication with the interior of said casing, a feed-table dividing said casing into upper and lower compartments, the lower compartment being in communication with the furnace through an opening in the front wall of the casing, a reciprocating feed-ram working on the feed-table, an adjustable dead-plate movable over the ram, a scraper-plate adapted to work on the dead-plate, a shovel in the lower compartment below the feed-table, and means for pivotally mounting said shovel, means for swinging said shovel rearward, a spring for projecting the shovel forward, and means for providing an air-cushion to bring the shovel to a stop without a jar.

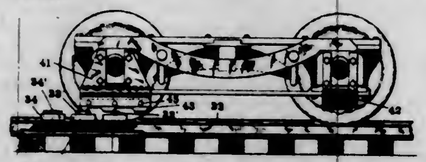
9. In a mechanical stoker the combination of a casing adapted to be secured to the front wall of a furnace, a feed-hopper in communication with the upper outer end of said casing, a feed-table dividing said casing into an upper and a lower compartment, the lower compartment being in communication with the furnace through an opening in the front wall of the casing, a reciprocating ram mounted on the feed-table, means for reciprocating said feed-ram, a swinging shovel mounted in the lower compartment, means for forcing said shovel rearward, a cylinder provided with an air-release hole or port, a piston therein, and means operatively connecting said piston to the shovel whereby when the shovel is moved rearward the spring will be placed under tension, means for providing a cushion to receive the piston when the spring is released to swing the shovel forward,

and a cushioning-spring in the cylinder to receive the impact of the piston.

10. In a mechanical stoker the combination of a casing adapted to be secured to the front wall of a furnace, a feed-hopper in communication with the outer upper end of said casing, a feed-table dividing said casing into an upper and a lower compartment, the lower compartment being in communication with the furnace through an opening in the front wall of the casing, a reciprocating feed-ram mounted on the feed-table, means for reciprocating said feed-ram, an adjustable dead-plate movable over the outer end of said ram, a scraper-plate pivoted in the top of the casing and inclining inward and downward, its lower edge resting on the dead-plate, a swinging shovel mounted in the lower compartment, means for forcing said shovel rearward, a cylinder, a piston therein, a spring interposed between said piston and one end of the cylinder, and means operatively connecting said piston to the shovel whereby when the shovel is moved rearward the spring will be placed under a tension, means for providing a cushion to receive the piston when the spring is released to swing the shovel forward, a door closing the outer end of the upper compartment and a door in the bottom of the lower compartment.

11. In a mechanical stoker the combination of a casing adapted to be secured to the front wall of a furnace, a feed-hopper in communication with the upper outer end of said casing, a feed-table dividing said casing into an upper and a lower compartment, the lower compartment being in communication with the furnace through an opening in the front wall of the casing, teeth or projections on the upper surface of said table near the front end thereof to retard the movement of the fuel, a reciprocating feed-ram mounted on the feed-table, means for reciprocating said feed-ram, a swinging shovel mounted in the lower compartment, means for forcing said shovel rearward, a cylinder, a piston therein, a spring interposed between said piston and one end of the cylinder, means operatively connecting said piston to the shovel whereby when the shovel is moved rearward the spring will be placed under tension, and means for providing a cushion to receive the piston when the spring is released to swing the shovel forward.

820,529. AUTOMATIC TRAIN-REPORTING SYSTEM. ELMER E. STEINER, Knightstown, Ind. Filed July 10, 1905. Serial No. 269,058.



Claim.—1. An automatic train-reporting system comprising an electrical circuit, a duplex series of push-buttons at the station, and a duplex set of strikes on the train.

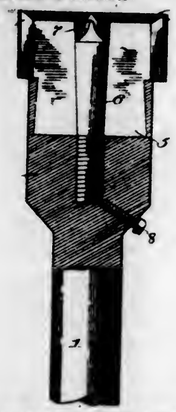
2. An automatic train-reporting system comprising an electrical circuit, a duplex set of push-buttons at the station, and a duplex set of strikes on the train, one set of the push-buttons consisting of a single button and the other set of a plurality of buttons, and one of the strikes on the train having a plurality of contacts and the other strike having a single contact.

3. In an automatic train-reporting system, a section signal-box containing two sets of push-buttons, one set consisting of a single button and the other set consisting of a plurality of buttons, and strikes carried by the train adapted to contact with and operate said push-buttons as the train passes, whereby two signals (one indicating the train and the other the station) are transmitted by the passage of the train.

820,530. ROCK-DRILL. WILLIAM STURM, Chicago, Ill. Filed Mar. 11, 1905. Serial No. 249,602.

Claim.—1. A rock-drill comprising a shank, a plurality of removable cutters arranged on opposite sides of the center of the drill, said cutters being provided with peripheral cutting edges, and a central locking device for locking said cutters in their sockets, said locking device being also provided with a cutting edge located between oppositely-disposed cutters.

2. A rock-drill comprising a shank, a plurality of removable cutters arranged radially on opposite sides of the center of rotation of the drill, and a central locking device for locking said cutters in their sockets, said locking device having a cutting edge which extends between oppositely-disposed radial cutters, and thereby forms a continuous or substantially continuous straight cutting-surface from one edge of the drill to the other.



3. A rock-drill comprising a shank provided with a plurality of sockets or slots flared outwardly in a radial direction at their inner ends, in combination with a corresponding number of cutters adapted to fit in said slots, and similarly flared, and a centrally-disposed locking device for forcing said cutters outwardly and thereby locking them in their sockets.

820,531. BOX-FASTENER. HENRY C. SUMMERS, Townsend, Mont. Filed Sept. 1, 1905. Serial No. 276,754.



Claim.—1. A box having two opposite members provided with orifices, a cover provided with attached elements having orifices to aline with those in the box members, and a detached locking member insertible through the two sets of orifices and adapted to exert a downward pressure upon the cover thereby to cause it tightly to engage with the box.

2. A box having two opposite members provided with orifices, a cover provided with cleats having orifices to aline with those in the box members, and a detached tapered locking member insertible through the two sets of orifices.

3. A box having two of its members provided with orifices of different diameters, a cover carrying cleats provided with orifices slightly larger in diameter than those in the box members and alining therewith, and a tapered locking member adapted to engage the two sets of orifices.

4. A box having two of its members provided with orifices, in combination with a cover having cleats provided with orifices alining with those in the members, stops secured to the cover on the outer sides of the cleats to hold the cover against endwise movement, and a detached locking member insertible through the two sets of orifices.

5. A box having two of its members provided with orifices, one of the orifices having a recess adjacent thereto and with a staple seated in the recess, a cover having cleats provided with orifices adapted to aline with those in the members of the box, and a locking member adapted to engage the two sets of orifices and provided with a hasp to engage the staple.

6. A box having two of its members provided with orifices, a cover having cleats provided with orifices adapted to register with those of the members, a detached tapered locking member insertible through the two sets of orifices, and means for locking the member against movement relatively to the box.

7. A box having two of its members provided with orifices, a cover having cleats provided with orifices adapted to register with those of the members, a tapered locking member adapted to engage the two sets of orifices and provided near one end with a circumferential seat, and a lock secured to the inner side of one of the ends and positioned to have its bolt engage the said seat.

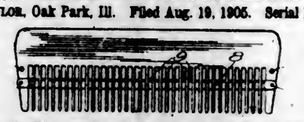
820,532. BUTTON. IRVING M. SYLVESTER, Providence, R. I., assignor to Parks Brothers and Rogers, Providence, R. I., Copartners. Filed Jan. 17, 1906. Serial No. 296,459.



Claim.—1. In a button of the type set forth, the combination with the base, of a bar provided with a knurled upper end, a sleeve frictionally mounted upon the knurled end of the bar, and a hollow button-head provided with an opening in its lower wall, into which said sleeve is received and forced as a driving fit.

2. In a button of the type set forth, the combination with a base, of a bar fixed thereto and provided with a knurled end, a sleeve mounted upon the knurled end of the bar whose lower end forms a shoulder in conjunction with the bar, and a hollow button-head inclosing said sleeve and against the inner face of the outer wall of which the inner end of said sleeve and bar engage, said head frictionally engaging said shoulder.

820,533. COMB AND COMB-CLEANER COMBINED. CLARENCE W. TAYLOR, Oak Park, Ill. Filed Aug. 19, 1905. Serial No. 274,948.



Claim.—1. The combination with a comb having a depression in one surface near each end thereof, of a cleaner the major portion of its length embracing only one side of the comb and having projections disposed between the teeth of the comb, the end portions of said cleaner being suitably formed to bear only upon the opposite side of the comb and removably engage said depressions to secure the cleaner to the comb.

2. The combination with a comb having a depression near each end thereof, of a cleaner the major portion of its length embracing only one side of the comb and having projections disposed between the teeth of the comb and having its end portions adapted to pass between the teeth of the comb near the ends thereof and bear only upon the opposite side of the comb and having its ends suitably formed for spring engagement with said depressions to secure the cleaner to the comb.

820,534. COMB AND COMB-CLEANER COMBINED. CLARENCE W. TAYLOR, Oak Park, Ill. Filed Nov. 8, 1905. Serial No. 286,350.

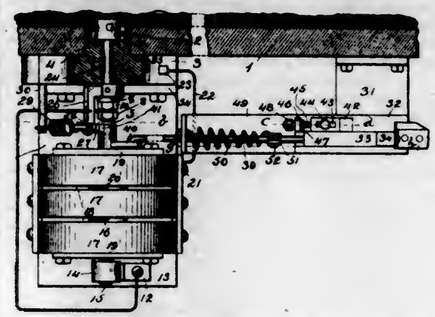


Claim.—1. The combination with a comb having a depression in one lateral surface near each end thereof, of a cleaner comprising a side-embracing member the major portion of its length embracing only one side of the comb and a perforated member adapted to receive the teeth of the comb, said cleaner having its entire end portions 11 formed to pass between the end and first tooth of the comb, and the end portions 12 formed to bear only upon the opposite side of the comb and having beads 13 for spring engagement with said depressions to removably secure the cleaner to the comb.

2. The combination with a comb having a cut-away portion between the end and first tooth and extending a short distance above the base of the teeth into the body of the comb near each end thereof, of a cleaner comprising an embracing part and a perforated part and having its end portions suitably formed to pass between the end and first tooth of the comb near each end thereof and bear only upon the side of the comb opposite to that on which the embracing part is mounted and engaging means to secure the cleaner to the comb.

820,535. ELECTRIC IGNITER FOR EXPLOSIVE-ENGINES. GEORGE J. WEBER, Kansas City, Mo. Filed Feb. 16, 1903. Serial No. 143,661.

Claim.—1. In igniters for explosive-engines, the combination with an electric circuit having included therein two electrodes, of means for normally holding the electrodes in contact with each other, a magnetic field, an oscillatory armature located in said field and included in said circuit, a reciprocating slide, means controlled by the running of the engine for moving the slide in one direction, means for moving the slide in the opposite direction, means for oscillating the armature by means of the slide, means for separating the electrodes when the slide is moved in said opposite direction, and means for timing the movement of the said slide in said opposite direction.



2. In igniters for explosive-engines, the combination with an electric circuit having included therein two electrodes, of means for normally holding the said electrodes in contact with each other, a magnetic field, an oscillatory armature located in said field and included in said circuit, a reciprocating slide, means controlled by the running of the engine for moving the slide in one direction, a spring for retracting the slide, means for oscillating the armature by means of the slide, adjustable timing means for determining the time of retracting the slide, and means for separating the electrodes when the slide is retracted.

3. In igniters for explosive-engines, the combination with an electric circuit having included therein two electrodes, one of which is movable, of means for normally holding the said electrodes in contact with each other, a magnetic field, an oscillatory armature located in said field and included in said circuit, a reciprocating slide, means controlled by the running of the engine for moving the slide in one direction, a spring for retracting the slide, means for oscillating the armature by means of the slide, timing means adjustable independently of the running of the engine for determining the time of retracting the slide, and adjustable means for separating the electrodes when the slide is retracted.

4. In igniters for explosive-engines, the combination with an electric circuit having included therein two electrodes one of which is movable relative to the other, of means for normally holding the electrodes in contact with each other, a magnetic field, an oscillatory armature located in said field and included in said circuit, a reciprocating slide, means by which the armature is oscillated by means of the slide, means controlled by the running of the engine for moving the slide in one direction, means for retracting the slide in the opposite direction and two arms, one oscillatory with the armature and the other mounted on the movable electrode the said two arms being so disposed that the arm carried by the armature will strike the electrode-arm and cause a separation of the electrodes when the slide is retracted.

5. In igniters for explosive-engines, the combination with an oscillatory armature-shaft, of a hammer-arm oscillatory therewith, a reciprocating slide, means controlled by the running of the engine for moving the slide in one direction, spring-actuated mechanism for retracting the slide, timing means controlling the retraction of the slide, means for oscillating the armature-shaft by means of the slide, two electrodes, one fixed and the other movable, the movable electrode being provided with an arm, an adjusting-screw rotatably mounted in said arm and adapted to be struck by the hammer-arm when the armature-shaft is retracted, and means for normally holding the two electrodes in contact with each other.

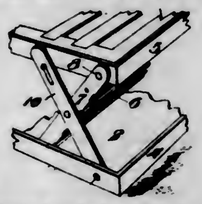
6. In igniters for explosive-engines, the combination with an electric circuit having included therein two electrodes, of means for holding the electrodes normally in contact with each other, an oscillatory armature, a reciprocating slide, means for oscillating the armature by means of the slide, a reciprocating actuating device reciprocated by the running of the engine and provided with means for engaging and moving the slide in one direction, a tripping device for releasing the slide from the actuating device, means for retracting the slide, and means for separating the electrodes when the slide is retracted.

7. In igniters for explosive-engines, the combination with an

electric circuit having included therein two electrodes, of means for holding the electrodes normally in contact with each other, an oscillatory armature included in the said circuit, a reciprocating slide, means for oscillating the armature by means of the slide, a reciprocating actuating device reciprocated by the running of the engine and provided with means for engaging and moving the slide in one direction, an adjustable tripping device for releasing the slide from the actuating device, means for retracting the slide when the same is released from the actuating device, and means for separating the electrodes when the slide is retracted.

8. In igniters for explosive-engines, the combination with an electric circuit of two electrodes one of which is movable toward and from the other, means for normally holding the electrodes in contact with each other, an oscillatory armature provided with a winding included in the said circuit, an oscillatory shaft on which the armature is mounted, a crank carried by said shaft, a reciprocating slide, a rod connecting said slide and said crank, a magnetic field in which the armature is located, means controlled by the running of the engine for moving the slide in one direction, means for retracting the slide in the opposite direction, adjustable timing means for determining the time of retraction of the slide, and means for separating the electrodes when the slide is retracted.

820,536. **SHIPPING-CRATE.** GEORGE H. WHEELER, Burlington, Iowa, assignor of one-third to W. W. Copeland and one-third to H. G. Shelby, Burlington, Iowa. Filed Oct. 19, 1905. Serial No. 283,493.



Claim.—The herein-described box or crate comprising the top and bottom, the pairs of connecting-bars 7, 10 at the corners thereof, said bars 7 being pivotally connected at their upper ends to the top, said bars 10 being pivotally connected at their lower ends to the bottom, and one of each pair of said bars having a locking device to engage and lock the other to detachably secure said bars together in overlapped vertical position, the sides attached to the bars 7 and foldable between the top and bottom when said pairs of bars 7, 10 are in folded position, and ends, hinged to the top and foldable thereunder, substantially as set forth.

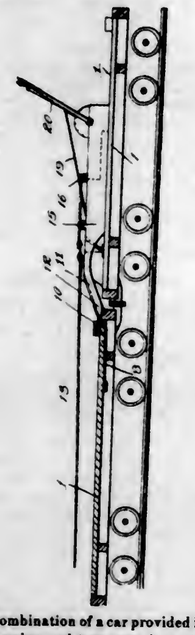
820,537. **CULTIVATOR.** EVANDER WILLIAMS, Memphis, Tenn. Filed Aug. 1, 1905. Serial No. 272,236.



Claim.—1. The combination with a beam, of a cross-head extending laterally from opposite sides of the beam and provided at the central portion with front and rear projecting flanges having curved series of perforations, said cross-head being also provided with sockets, standards secured in the sockets and provided with cultivating blades or shovels, and front and rear fastening devices passing through front and rear perforations of the cross-head and securing the same to the beam and permitting the cross-head to have a pivotal or rotary adjustment on the beam.

2. The combination with a beam, of a cross-head extending laterally from opposite sides of the beam and provided with longitudinal side flanges and having front and rear centrally-arranged segmental flanges disposed horizontally and provided with curved series of perforations, said cross-head being also provided with sockets, front and rear fastening devices piercing the beam and arranged in front and rear perforations of the cross-head, and standards provided with blades or shovels and secured in the sockets of the cross-head.

820,538. **MEANS FOR UNLOADING GRAVEL.** CHARLEY H. WILLIAMSON, Blissfield, Ohio. Filed Oct. 13, 1905. Serial No. 282,636.



Claim.—1. The combination of a car provided in its bottom with a central discharge-opening and two spaced-apart laterally-adjustable plows designed to be drawn over the bottom of the car on opposite sides of said opening.

2. The combination of a car provided in its bottom with a central discharge-opening, a frame arranged to be drawn along the bottom of the car, and two plows hinged at opposite sides of said frame with their apexes free from attachment to each other and arranged to be laterally adjusted, as and for the purpose set forth.

3. An unloading device for gravel-cars or the like comprising a frame designed to be drawn over the bottom of the car, two spaced-apart laterally-adjustable plows carried by said frame, and means for holding said plows in different lateral positions with respect to each other, and means for drawing said frame over the bottom of a car.

4. An unloading device for gravel-cars or the like comprising a frame, means for drawing said frame over the bottom of the car two angular plows hinged to said frame at opposite sides thereof with their front ends free from connection with each other, and means connected with said frame for holding said two plows in different angular positions.

5. An unloading device for gravel-cars or the like, comprising a frame designed to move over the bottom of the car, means for drawing said frame forwardly, two spaced-apart angular plows hinged at opposite sides of said frame at one end only, and means connected to the other end of each of said plows for adjusting the same laterally.

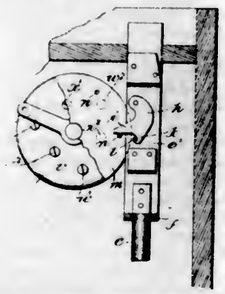
6. The combination with a car provided with a tilting discharge-section, of a plunger designed to be drawn over the bottom of the car and arranged to automatically unlock and tilt said section, and a scraping device operatively connected with said plunger to move therewith, as and for the purpose set forth.

7. The combination with a car having a tilting bottom section of a frame designed to move over the bottom of the car and provided with a scraping device, and a plunger carried by said frame and extending beyond said scraping device and arranged to automatically unlock the said tilted section, as and for the purpose set forth.

8. The combination with a car of the character described, embodying a tilted bottom section, of an unloading device comprising a frame, means for moving the frame over the bottom of the car, laterally-adjustable plows carried by said frame and said plows being angular and means for holding said plows in different lateral positions with respect to the frame said means including a hand-operated lever and links connecting the same with the plows and means for automatically unlocking and tilting said section in advance of the movement of the plows and frame in alinement with said section.

9. An unloading device for gravel-cars or the like, comprising a frame, two angular plows hinged at one end to opposite sides of said frame, links connected to the other ends of said plows and arranged to move said plows laterally with respect to each other, and a hand-operated lever carried by said frame and connected to said links whereby to hold said plows in different angular positions with respect to each other.

820,539. **RAILWAY.** ALPHEUS H. WOOD, Ann Arbor, Mich. Filed Sept. 11, 1905. Serial No. 277,980.



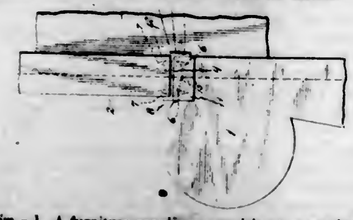
Claim.—1. In a railway, a fixed obstacle, in combination with car mechanism comprising a vertical rectilinearly-movable bar arranged to be engaged and raised by the obstacle, an electric switch having a lever, and a connection between the bar and the lever for moving the latter by the former.

2. In a railway, a fixed obstacle, in combination with car mechanism comprising an electric switch having a circular series of contact-pieces and a rotary lever arranged to sweep over the contact-pieces, a vertical, rectilinearly-movable bar arranged to be engaged and raised by the obstacle, a gear-wheel fixed with respect to the lever of the switch, and a dog carried by the bar and arranged on one movement thereof to turn the gear-wheel through a partial revolution.

3. In a railway, a fixed obstacle, in combination with car mechanism comprising an electric switch, a vertical, rectilinearly-movable bar arranged to be engaged and raised by the obstacle, and a connection between the switch and the bar for operating the former by the latter incident to the movement of the bar in one direction.

4. In a railway, a fixed obstacle, in combination with car mechanism comprising a vertical, rectilinearly-movable bar arranged to be engaged and raised by the obstacle, means for moving said bar downwardly when the same is released from the obstacle, an electric switch having a circular series of contact-pieces and also having a rotary lever arranged to sweep over and engage the contact-pieces, a basket-wheel fixed to and arranged to move with the said lever, means for preventing retrograde movement of the said wheel, and a pendent dog carried by the vertical bar and having a lateral arm arranged to impart movement to the basket-wheel on the downward movement of the bar and also having a lower end portion arranged to bring up against the stop on the bar.

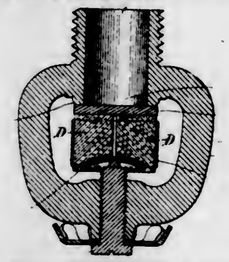
820,540. **FURNITURE-COUPLING.** CHARLES W. ZIMMERMAN and MORGAN E. BURKE, Columbus, Ohio, assignors to Frank G. Barnes, Columbus, Ohio. Filed Dec. 23, 1904. Serial No. 238,155.



Claim.—1. A furniture-coupling comprising two members each formed with an opening extending entirely through the same and a flange, and each member also provided with a lug extending upwardly therefrom at substantially right angles thereto and also at right angles to the opening thereof.

2. A furniture-coupling comprising a pair of plates each of said plates having a vertical lug upstanding therefrom and an opening therethrough, said plates lying face to face and both lying in a horizontal plane, each of said lugs being perpendicular to the face of the plate by which it is carried, with the lugs of each plate engaging the openings of the other plate, the said lugs being parallel with each other when the parts are in their assembled position.

820,541. **SPRINKLER-HEAD.** PHILIP ALLEN, Providence, R. I. Filed Jan. 28, 1905. Serial No. 243,039.

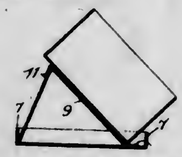


Claim.—1. A sprinkler-head comprising a nozzle provided with a valve-seat, a valve, a heat-insulating strut formed of longitudinal segments, a holding-band surrounding the strut provided with hooked ends, a plate between the ends of the band soldered to the band, and means for applying a longitudinal and lateral pressure on the strut-segments, substantially as described.

2. A sprinkler-head comprising a nozzle provided with a valve-seat, a valve, a strut consisting of segmental blocks, a band surrounding the strut provided with hooked ends, a plate between the ends of the band soldered to the band, and an abutment for applying pressure to the outer end of the strut, substantially as described.

3. A sprinkler-head comprising a nozzle provided with a valve-seat, a valve, a strut consisting of segmental blocks, a holding-band provided with hooked ends, a plate between the ends of the band soldered to the band, an abutment, and a spring-plate between the abutment and the ends of the strut-segments, substantially as described.

820,542. **DISPLAY-BOX.** JOSEPH S. AUERBACH, New York, N. Y., assignor to D. Auerbach & Sons, New York, N. Y., a Firm. Filed June 30, 1905. Serial No. 267,710.

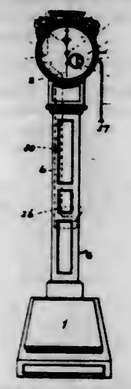


Claim.—The combination of a box comprising a body, and a cover therefor, a hinged member 9, secured to the inside face of the top of the cover, near one side thereof, and a second member 10 hinged to the member 9 but free from the box-body whereby when the cover is inverted, the two parts 9 and 10 may be made to form an inclined stand for the body, and whereby the edge of the cover will form a stop for the said member 10.

820,543. **COIN-CONTROLLED APPARATUS.** EMIL A. BARTESKI, St. Louis, Mo., assignor to E. A. Barteski Amusement Company, St. Louis, Mo., a Corporation of Missouri. Filed Feb. 6, 1905. Serial No. 244,291.

Claim.—1. In combination with a scale and lung-tester each embodying a vertically-movable element and indicating mechanism, means for retaining said lung-tester in locked position, a pivoted element having a plurality of arms at its upper end, one of said arms engaging said scale element, a spring-retracted pivoted element composed of two arms one for engagement with said locking means of the lung-tester, and means on the scale element for engagement with the other arm to normally support the first-named one out of engagement with said locking means of the lung-tester.

2. In combination with a scale and lung-tester, and indicating mechanism for each, a slidable element for retaining said lung-tester mechanism in locked position, a vertically-movable element for operating said scale indicating mechanism, and means for engaging said slidable element normally supported by said vertically-movable element out of engagement therewith to disengage said first-named slidable element and unlock said lung-tester mechanism.



3. In combination with a scale having indicating mechanism, and a lung-tester embodying indicating mechanism and a notched piston-rod, a spring-held slidable element to engage in said notch of the piston-rod, a vertically-movable element for actuating said scale indicating mechanism, and spring-pressed means to engage said slidable element and actuate the same from engagement with said piston-rod, said means being normally supported by said vertically-movable element out of engagement with said slidable element.

4. In combination with the scale and lung-tester each embodying a vertically-movable element and indicating mechanism, means for locking said lung-tester element against movement, means normally supported by said scale element to engage said locking means and release said lung-tester element when said scale element is operated, and means for engaging said scale element to retain the same in locked position.

5. In combination with a scale and a lung-tester each embodying a vertically-movable element and indicating mechanism, spring-pressed slidable means for normally engaging said lung-tester element to retain the same in locked position, spring-pressed means normally supported by said scale element out of engagement with said lung-tester-locking means, and released to engage said lung-tester-locking means when said scale element is released.

6. In combination with a scale and a lung-tester, each embodying a vertically-movable element and indicating mechanism, means for retaining said scale element in locked position, means for retaining said lung-tester element in locked position, means for engagement with said last-named means to actuate the same to unlock said lung-tester, normally supported out of engagement therewith by said scale element, and a lever engaging said means for retaining the scale element in locked position to actuate the same to unlock the scale element and thereby allow said scale element to release said locking means of the lung-tester.

7. In combination with a scale embodying a vertically-slidable toothed element, with indicating mechanism operated thereby, and a lung-tester embodying a notched piston-rod and indicating mechanism operated thereby, a spring-pressed double-armed element one of the arms of which is in engagement with said toothed element, a lever for engagement with the other of said arms to operate the first-named arm thereof out of engagement with said notched element, a spring-pressed plate slidable into and out of engagement with said notched piston-rod, a spring-pressed arm for engagement with said plate, and a stud carried by said toothed element to engage said last-named arm and normally sustain the same out of engagement with said plate.

8. In combination with the scale embodying a vertically-movable element and the lung-tester embodying a notched vertically-movable element, indicating mechanisms operated by said elements, a slidable spring-held element to engage the notched element to lock the same, a pivoted double-armed spring-held element having one of its arms engaging said vertically-movable scale element, a lever for engaging the other arm of said element, a spring-held arm to engage said slidable element, and a pin carried by said vertically-movable scale element to engage said spring-held arm and normally hold said arm out of engagement with said slidable element.

9. In combination with a scale and a lung-tester and indicating mechanism for each, means actuated by the scale mechanism for preventing or allowing movement of said scale indicating mechanism, means for retaining such lung-tester and its indicating mechanism positively locked, means for releasing said preventing mechanism, and means operated by and at the inception of the movement of said scale-actuated preventing mechanism to release said lung-tester and its indicating mechanism.

10. In combination with a scale and lung-tester, and indicating mechanism for each, means normally supported by the scale mechanism in elevated and inoperative position whereby said lung-tester mechanism is retained in locked position and released to unlock said lung-tester mechanism when said scale mechanism is operated.

11. In combination with a scale and lung-tester, and indicating mechanism for each, means for controlling the lung-tester indicating mechanism to hold the same in locked position, and means dependent on, and released at the inception of the initial movement of, said scale mechanism to unlock the lung-tester and the indicating mechanism thereof.

12. In combination with a scale and lung-tester and indicating mechanism for each, means whereby said lung-tester indicating mechanism may be held in locked and unlocked position, means whereby said scale indicating mechanism may be held in locked and unlocked position, and means whereby at the inception of movement of said scale mechanism said means for holding the lung-tester and its indicating mechanism is automatically released.

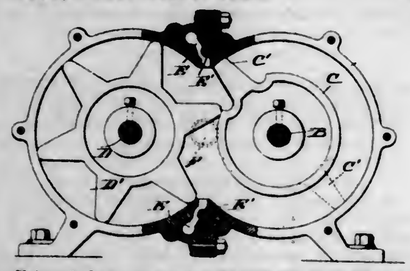
13. In combination with a scale and lung-tester, and indicating mechanism for each, means for retaining said lung-tester mechanism in locked position, a vertically-movable element for operating said scale-indicating mechanism, and means supported by said element normally in inoperative position for engagement with said locking means to release said locking means at the inception of the movement of said element during the weighing operation.

14. In combination with a scale and lung-tester, and indicating mechanism for each, means to independently operate said indicating mechanisms, and a connection between said means whereby said lung-tester mechanism is released at the inception of initial movement of the scale mechanism.

15. In combination with a scale and lung-tester, and indicating mechanism for each, means to independently operate said indicating mechanisms, and means engaged by said scale indicating operating means and normally held thereby in elevated and inoperative position out of engagement with said lung-tester-operating means to be actuated at the inception of movement of said scale indicating operating means to release said lung-tester and the indicating mechanism thereof.

16. In combination with a scale and lung-tester and indicating mechanism for each, means for controlling the locked position of said lung-tester and the indicating mechanism thereof, means for controlling the locked position of said scale and the indicating mechanism thereof, and means for releasing said scale-controlling means in advance of said lung-tester and the indicating mechanism thereof.

820,544. ROTARY ENGINE. CHARLES G. BAUER, Brooklyn, N. Y. Filed Apr. 12, 1905. Serial No. 255,134.



Claim.—1. In a rotary engine, the combination with a rotatable piston, of a rotatable abutment coöperating therewith, and means for effecting the step-by-step rotation of the abutment, said means including a ratchet-wheel associated with the abutment and a dog movable back and forth and operating on the wheel, said dog having connection with the piston.

2. In a rotary engine, the combination with a rotatable piston having a shaft, of a rotatable abutment coöperating with the piston and having a shaft, and means for effecting the step-by-step rotation of the abutment, said means including a ratchet-wheel mounted on the abutment-shaft, a dog movable back and forth and operating on the wheel, and means connected to the piston-shaft for effecting the back-and-forth movement of the dog.

3. In a rotary engine, the combination with a rotatable piston having a shaft, of a rotatable abutment coöperating with the piston, means for effecting a step-by-step movement of the abutment, said means including a cam mounted on the shaft, and a reciprocatory element operated by the cam.

4. In a rotary engine, the combination with a rotatable piston, of a rotatable abutment coöperating therewith, means for effecting a step-by-step movement of the abutment, said means including a ratchet, an oscillatory dog operating on the ratchet, and means operated by the piston for oscillating the dog.

5. In a rotary engine, the combination with a rotatable piston having a shaft, of a rotatable abutment coöperating with the piston and having a shaft, a ratchet-wheel carried by the abutment-shaft, a dog movable back and forth and operating on the ratchet-wheel, and a cam mounted on the piston-shaft and having a connection with the dog for operating the same.

6. In a rotary engine, the combination with a rotary piston having a shaft, of a rotary abutment having a shaft, a crank-arm loosely journaled on the abutment-shaft, a ratchet-wheel secured to the abutment-shaft, a dog carried by the crank-arm and operating on the ratchet-wheel, a cam carried by the piston-shaft, and a link connection between the cam and crank-arm.

7. A device of the kind described, comprising a piston-shaft having a piston thereon, an abutment-shaft having a toothed abutment, a crank carried by the abutment-shaft, a ratchet on the said shaft, a spring-pressed dog adapted to engage said ratchet and carried by the crank, an eccentric on the piston-shaft, and an eccentric-link pivotally connected to the said crank.

8. A rotary engine comprising a casing divided into two compartments, an engine-shaft extending through both compartments, a piston fixed to said shaft in each compartment, a blade carried by each piston, movable valves adapted to admit steam into each compartment on opposite sides of the casing, an abutment-shaft rotatably journaled in each compartment and parallel to the engine-shaft, a toothed abutment mounted on each abutment-shaft, a crank mounted loosely midway its ends upon each abutment-shaft, a ratchet secured adjacent each crank, a reversible dog pivotally carried by each crank and adapted to engage its coacting ratchet, a crank-arm connected to each valve, links connecting said arms to the crank, and means carried by the drive-shaft adapted to rock the said cranks.

9. In a rotary engine, the combination with a rotatable piston, of a movable abutment coöperating therewith, means for effecting a predetermined intermittent movement of the abutment in one direction said means including a ratchet-wheel connected to the abutment and an oscillatory dog operated from the piston, and means associated with the ratchet-wheel for resisting a further movement of said abutment.

10. In a rotary engine, the combination with a rotatable piston, of a movable abutment coöperating therewith, means movable back and forth for effecting a predetermined intermittent rotation of the abutment in one direction, and means for maintaining the abutment against movement and in coöperation with the piston during the intervals between its movements by said operating means.

11. In a rotary engine, the combination with a rotatable piston, of a movable abutment coöperating therewith, means for effecting a predetermined intermittent movement of the abutment in one direction, and frictional means for resisting a further movement of the abutment.

12. In a rotary engine, the combination with a rotatable piston, of a movable abutment coöperating therewith, means for effecting a predetermined intermittent movement of the abutment in one direction, and frictional means operating upon the abutment-moving means for maintaining the abutment against movement and in cooperation with the piston during the intervals between the movements of said abutment.

13. In a rotary engine, the combination with a rotatable piston, of a movable abutment coöperating therewith, ratchet mechanism operated by the piston for intermittently moving the abutment, and a friction or resistance device engaging the ratchet mechanism to prevent an abnormal movement of said abutment.

14. In a rotary engine, the combination with a rotatable piston, of a rotatable abutment coöperating therewith and having a shaft, ratchet mechanism including a crank-arm loosely journaled on the shaft, means operated by the piston for oscillating said arm, a cap secured to the abutment-shaft and bearing against the crank-arm, and means for maintaining a frictional engagement between said cap and crank-arm.

15. In a rotary engine, the combination with a casing having a partition and a plurality of piston and abutment chambers located on opposite sides of the partition, of an engine-shaft extending through the piston-chambers and through the partition, pistons mounted on the shaft on opposite sides of the partition, a plurality of independently-movable abutments mounted in the abutment-chambers on opposite side of the partitions and coöperating respectively with the pistons, and means operated from the engine-shaft for effecting independent intermittent rotations of the abutments.

16. In a rotary engine, the combination with a casing, of a partition separating the same into different compartments, each of said compartments having a piston-chamber and an abutment-chamber, of an engine-shaft extending through both piston-chambers, pistons separately mounted on the shaft and operating respectively in the chambers, separate abutment-shafts extending through the abutment-chambers and having separate inner ends alined and journaled in the partition, abutments carried by the shafts and coöperating with the pistons, said abutments being located in the abutment-chambers, and means mounted on the outer ends of the abutment-shafts and connected to the ends of the piston-shaft for effecting independent step-by-step movements of the abutments.

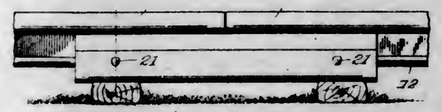
17. In a rotary engine, the combination with a casing having a motive-fluid inlet, of an oscillatory valve controlling said inlet, an engine-shaft, a piston operating in the casing and carried by the shaft, a rotary abutment located in the casing and coöperating with the piston, a cam mounted on the engine-shaft, a link connected to the cam, ratchet means for operating the abutment, said means being connected to and operated by the links, and a connection between the ratchet means and the valve for oscillating the latter upon the movement of said ratchet means.

18. In a rotary engine, the combination with a casing having a piston-chamber, an abutment-chamber, and a motive-fluid inlet, of an oscillatory valve controlling the motive-fluid inlet, a piston operating in the piston-chamber and having a shaft, an abutment operating in the abutment-chamber and having a shaft, ratchet mechanism mounted on the abutment-shaft and including an oscillatory crank-arm, a cam mounted on the piston-shaft and having a link connection with the crank-arm, and a link connection between the crank-arm and the valve.

19. In a rotary engine, the combination with a casing having a motive-fluid inlet, of a movable valve controlling said inlet, a piston operating in the casing and having a shaft, an abutment coöperating with the piston, ratchet means for operating the abutment with a step-by-step movement, a link, connecting the shaft and ratchet means and another link connecting said first-mentioned link and the valve for operating said valve.

20. In a rotary engine, the combination with a casing having a motive-fluid inlet, of a valve controlling said inlet, a piston operating in the casing and having a shaft, an abutment coöperating with the piston, means for effecting a step-by-step rotation of the abutment, said means including ratchet mechanism, a link connecting the shaft and mechanism, and means connected to the ratchet mechanism for operating the valve.

820,545. RAIL-CHAIR. ALBERT BELLAMY, Fort William, Canada, assignor, by direct and mesne assignments, of one-eighth to Thomas P. Kelly, one-eighth to Alexander Sneigrove, one-eighth to Peter McQuaig, one-sixteenth to William A. Matheson, and one-sixteenth to Robert S. World, all of Fort William, Canada. Filed July 24, 1905. Serial No. 270,938.

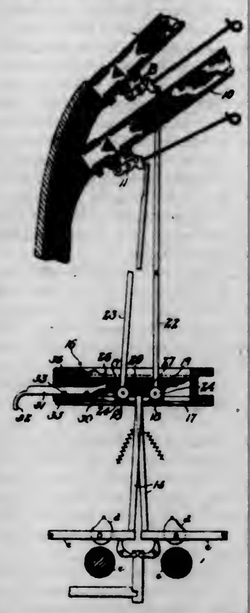


Claim.—1. A railway-chair for supporting the contiguous ends of railway-rails, comprising an inner metallic casing having an interior shaped to contact closely with the bottom and top of the rail-flanges and having vertical flanges adapted to rise at each side of the web of a rail to the under side of the ball thereof, in combination with an outer shell adapted to wholly inclose the lower portion of said inner shell with the upper flanges of said outer shell extending near to the vertical flanges of said inner shell.

2. A railway-chair for supporting the contiguous ends of railway-rails, comprising an inner metallic casing formed of an integral member having an interior shaped to contact closely with the bottom and top of the rail-flanges and having vertical flanges adapted to rise at each side of the web of a rail to the under side of the ball thereof, in combination with an outer shell adapted to wholly inclose the lower portion of said inner shell with the upper flanges of said outer shell extending near to the vertical flanges of said inner shell.

3. A railway-chair for supporting the contiguous ends of railway-rails, comprising an inner metallic casing having an interior shaped to contact closely with the bottom and top of the rail-flanges and having vertical flanges adapted to rise at each side of the web of a rail, in combination with an outer shell adapted to wholly inclose the lower portion of said inner shell with the upper flanges of said outer shell extending near to the vertical flanges of said inner shell.

820,546. **LINOTYPE-MACHINE.** MARY A. BENJAMIN, Fredonia, N. Y., administratrix of Augustus J. Benjamin, deceased. Filed Dec. 30, 1905. Serial No. 293,967.



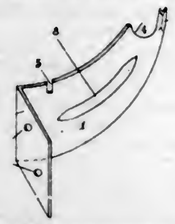
Claim.—1. In a machine of the class described, a plurality of magazines, independent escapement mechanisms for controlling the discharge of matrices from said magazine, a keyboard-controlled actuating mechanism having a permanent connection with said escapement mechanisms, and an adjustable means for rendering one of the connections idle, and permitting the transmission of operative movement to the other mechanism.

2. In mechanism of the class described, a plurality of reservoirs, escapement mechanisms for controlling the discharge of matrices from the reservoirs, escapement-rods, a cross-bar forming a linked connection between the lower portions of said escapement-rods, a keyboard-controlled escapement-actuating mechanism connected to said cross-bar, and an adjustable means for holding one or other end of the bar and permitting movement of the opposite end thereof to operate one or other of the escapement-rods.

3. In mechanism of the class described, the combination with a plurality of reservoirs, of independent escapements for controlling the discharge of matrices therefrom, independent escapement-rods for transmitting movement to said escapements, a cross-bar forming a linked connection between the lower portions of said rods, an adjustable means for holding one or other end of the cross-bar stationary and forming a fulcrum for movement of the other end of the bar, and a keyboard-controlled actuated mechanism connected to said cross-bar.

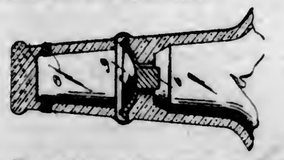
4. In mechanism of the class described, the combination with a plurality of reservoirs, of independent escapements for controlling the discharge of matrices from said reservoirs, a frame, a pair of opposed angle-bars supported thereby and provided with ribs or partitions dividing the angle-bars into pockets, cross-bars having their opposite ends arranged in the pockets, escapement-actuating bars pivotally connected to the opposite ends of the cross-bars, disks carried by the pivots and resting against the walls of the angle-bars, a keyboard-controlled actuating mechanism connected to the central portions of said cross-bars, a pair of spaced slides, a fulcrum-bar carried thereby and extending above the cross-bars, and a latch-lever for moving the slides and fulcrum-bar to adjust the latter into engagement with one or other set of disks.

820,547. **CURTAIN AND SHADE SUPPORT.** ORA L. BIXLER, Springfield, Ill. Filed Nov. 20, 1905. Serial No. 288,207.



Claim.—In a bracket, the combination of a member attachable to the window-casing an upwardly-exending member at right angles to said first-named member and extending above same, a notch at the upper end of said upwardly-extending member, and an expansible finger on said upwardly-extending member and contiguous to said notch.

820,548. **NON-REFILLABLE BOTTLE.** JOSEPH BURKE, Victoria, Tex. Filed June 23, 1905. Serial No. 266,600.



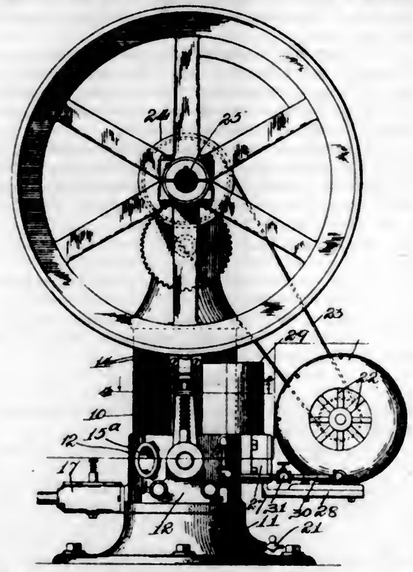
Claim.—1. The combination of a bottle-neck provided with a contracted portion the upper side of which is curved downward to form a concave surface, and also provided with an annular groove immediately above the contracted portion, said annular groove forming square and approximately horizontal shoulders when the bottle is in an upright position, a valve comprising a disk having a convex lower surface corresponding to the concave surface of the contracted portion, the outer edge of said disk having a guide and stop-flange projecting therefrom which operates within the annular groove, and a series of lugs projecting upwardly from the guide and stop-flange to engage with the upper side of the before-mentioned annular groove and holding the valve spaced therefrom when the bottle is inserted.

2. The combination of a bottle-neck provided with a contracted portion the upper side of which is curved downward to form a concave surface, and also provided with an annular groove immediately above the contracted portion, said annular groove forming square and approximately horizontal shoulders when the bottle is in an upright position, a valve comprising a disk having a convex lower surface corresponding to the concave surface of the contracted portion and also having a guide-stem pendent therefrom, said disk being provided around its edge with an outwardly-projecting guide and stop-flange which operates within the annular groove, and a series of lugs projecting upwardly from the guide and stop-flange to engage with the upper side of the before-mentioned annular groove and holding the valve spaced therefrom when the bottle is inverted.

820,549. **MEANS FOR COOLING ENGINE AND OTHER CYLINDERS.** EDWARD P. CALDWELL, Chicago, Ill., assignor to Charles W. Caldwell, Waterloo, Iowa. Filed Dec. 23, 1904. Serial No. 238,080.

Claim.—1. The combination with a cylinder provided on its upper portion with longitudinally-arranged fins, and a jacket surrounding the lower portion of said cylinder, said jacket having an upper end wall portion in which is a series of openings registering with the

spaces between said fins, of means for admitting a cooling agent to the space between said cylinder and jacket, substantially as specified.



2. The combination with a cylinder provided on its upper portion with longitudinally-arranged fins, and a jacket surrounding the lower portion of said cylinder, said jacket having an upper end wall portion in which is a series of openings registering with the spaces between said fins, of means for forcing a cooling agent into the space between said cylinder and jacket and out of said openings to direct it between said fins and against the surface of the upper portion of the cylinder, substantially as specified.

3. The combination with a cylinder provided on its upper portion with longitudinally-arranged fins, and a jacket surrounding the lower portion of said cylinder, said jacket having an upper end wall portion in which is a series of openings registering with the spaces between said fins, of means for producing a vapor, and means for forcing said vapor into the space between said cylinder and jacket and out of said openings so that it will be directed between said fins and against the surface of the upper portion of the cylinder, substantially as specified.

4. The combination with a cylinder and a jacket surrounding the lower portion thereof, said jacket having an apertured wall at its upper end through which a cooling agent is adapted to be directed against the upper portion of the cylinder, of a hollow base for said cylinder, the interior of said base communicating with the space between the cylinder and the jacket, and means for forcing a cooling agent through said base and the space between the cylinder and jacket, substantially as specified.

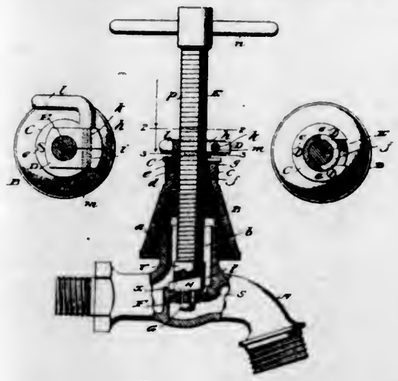
5. The combination with a cylinder and a jacket surrounding the lower portion thereof, said jacket having an apertured wall at its upper end through which a cooling agent is adapted to be directed against the upper portion of the cylinder, of a hollow base for said cylinder, the central portion of the top of the base fitting within the cylinder and the interior of the base communicating with the space between the cylinder and the jacket, and means for forcing a cooling agent through said base and the space between the cylinder and jacket, substantially as specified.

6. The combination with a cylinder and a jacket surrounding the lower portion thereof, said jacket having an apertured wall at its upper end through which a cooling agent is adapted to be directed against the upper portion of the cylinder, of a hollow base for said cylinder, the interior of said base communicating with the space between the cylinder and the jacket, and means for forcing a cooling agent through said base and the space between the cylinder and jacket, said cooling agent having an exit in addition to the openings in the upper wall of the jacket, such additional exit being of less size than the opening through which the cooling agent enters the jacket, substantially as specified.

7. The combination with a cylinder provided on its upper portion with a series of fins, and a jacket surrounding the lower portion of said cylinder, said jacket having an upper end wall portion in which is a series of openings, of a fan-blower, means of driving said fan-blower, a liquid-reservoir, and means for conducting liquid from said reservoir into the path of the air-current created by said fan, substantially as specified.

8. The combination with a cylinder provided on its upper portion with a series of fins, a jacket surrounding the lower portion of said cylinder, said jacket having upwardly-directed discharge-openings, and a hollow base, the interior of which communicates with the space between said cylinder and jacket, of a fan-blower, means for driving said fan-blower, a liquid-reservoir, and means for conducting liquid from said reservoir into the path of the air-current created by said fan, substantially as specified.

820,550. **DEVICE FOR RECUTTING VALVE-SEATS.** CYRILLE CARTIER, Woonsocket, R. I., assignor of one-half to William H. Williams, Woonsocket, R. I. Filed Oct. 9, 1905. Serial No. 281,971.



Claim.—1. In a valve-seat-recutting device, the combination of a rotary device having a diametrical slot, a boring-tool removably arranged on the rotary device, means for holding the boring-tool on the rotary device, and a seat-cutting tool removably arranged in the slot and clamped between the end wall thereof and the boring-tool.

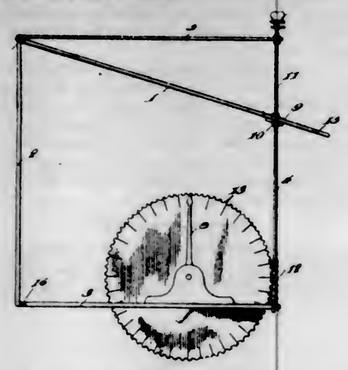
2. In a valve-seat-recutting device, the combination of a suitable body adapted to be attached to a valve-casing, a plate attached to the said body, a clamp comprising an interiorly-threaded sleeve journaled in the body and having a circumferential groove receiving the plate, a lateral split portion and means connecting the arms of said split portion, a feed-screw extending through and engaging the thread in the sleeve of the clamp, and means carried by the feed-screw for recutting valve-seats.

3. In a valve-seat-recutting device, the combination of an interiorly tapered and threaded body adapted to be screwed on a valve-casing, a plate attached to the said body, a clamp comprising an interiorly-threaded sleeve journaled in the body and having a circumferential groove receiving the plate, a lateral split portion and a screw connecting the arms of said spilt portion, a feed-screw extending through and engaging the thread in the sleeve of the clamp, and means carried by the feed-screw for recutting valve-seats.

4. In a valve-seat-recutting device, the combination of a body adapted to be attached to a valve-casing, a feed-screw, means carried by the feed-screw for recutting valve-seats, a clamp having an interiorly-threaded sleeve journaled in the body and receiving the feed-screw and also having means for fixing the sleeve to the feed-screw, means on the body, and means on the sleeve coöperating with said means on the body to hold the sleeve against endwise movement in the body.

5. In a valve-seat-recutting device, the combination of a suitable body adapted to be attached to a valve-casing, a rotary device carried by said body and having a diametrical slot in its lower portion and also having a reduced and interiorly-threaded lower end, a seat-cutting tool removably arranged in the slot of the rotary device, a boring-tool removably arranged on the reduced lower end of the rotary device and against the lower edge of the seat-cutting tool, and a screw arranged in the said reduced lower end and having a head bearing against the boring-tool.

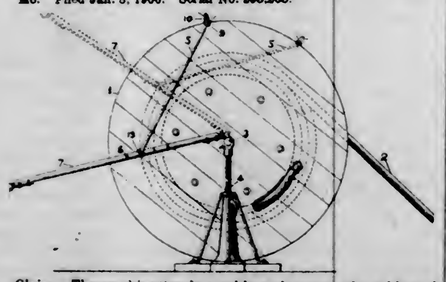
820,551. **SURVEYING INSTRUMENT.** JAY CHUBB and MILO W. CATRON, Helmick, Ohio; said Catron assignor to said Chubb. Filed Feb. 11, 1905. Serial No. 245,278.



Claim.—1. A surveying instrument comprising two right-angularly-disposed bars or rods, a swinging bar or rod pivotally connected at one end to one of said right-angular bars, and having its other end bifurcated, a block 9 mounted to slide in said bifurcated end, a set-nut pivotally mounted in said block, a set-screw mounted in one of the first-named bars and working in said nut whereby to adjust the angular position of the swinging bar, and means for indicating the different angular positions of said bar.

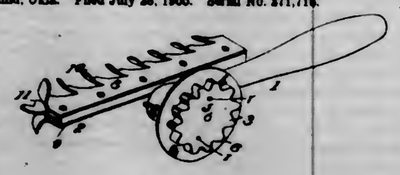
2. A surveying instrument comprising two fixed bars 2 and 3 arranged at right angles to each other, a bar 5 secured to the outer end of one of said bars and paralleling the other, a set-screw connecting the opposite end of the bar 5 with the bar 3, a swinging bar or rod pivotally mounted ta one end at the juncture of the bars 2 and 5 and having its opposite end bifurcated, a block 9 mounted to slide in said bifurcated end, a set-nut pivotally mounted in said block and accommodating said set-screw whereby to adjust the angular positions of the swinging bar, and means for indicating the different positions of said bar.

820,552. **CABLE-REEL TURNER.** JOHN CLEELAND, St. Louis, Mo. Filed Jan. 8, 1906. Serial No. 295,203.



Claim.—The combination in a cable-reel turner, of a cable-reel and a T-iron lever, with a vertical rod connected thereto stationary but not rigid, the other end of said vertical rod being hooked, which is hooked into the socket of a socket-bolt, and a socket-bolt, together with an angle-iron, with teeth or notches in both legs, resting firmly or rigidly on said socket-bolt by means of a washer and nut screwed onto the threaded end of the socket-bolt, all substantially as set forth.

820,553. **PIE-CRIMPER AND CRUST-CUTTER.** NANCY H. CLEM, Enid, Okla. Filed July 28, 1905. Serial No. 271,710.



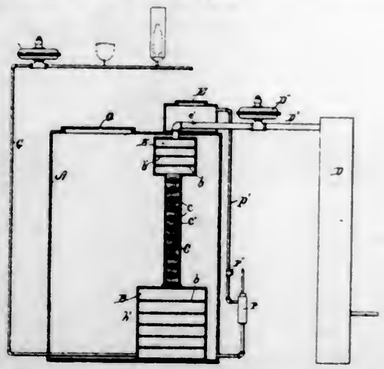
Claim.—1. In a device of the class described, the combination of a handle, a spindle mounted in the handle, rotary crimping and cutting disks carried by one end of the spindle, and a stationary cutter composed of a plurality of blades mounted upon the opposite end of the spindle.

2. In a device of the class described, the combination of a handle, a spindle mounted in the handle, rotary crimping and cutting disks carried by one end of the spindle, a stationary cutter composed of a plurality of blades mounted upon the opposite end of the spindle, and means for adjusting the stationary cutter.

3. In a device of the class described, the combination of a handle, a spindle mounted in the handle, rotary crimping and cutting disks carried by one end of the spindle, and a stationary cutter composed of a plurality of blades extending in opposite directions and mounted upon the opposite end of the spindle.

4. In a device of the class described, the combination of a handle, a spindle mounted in the handle, rotary crimping and cutting disks carried by one end of the spindle, a stationary cutter composed of a plurality of blades extending in opposite directions and mounted upon the opposite end of the spindle, and a set-screw carried by the handle and adapted to engage the spindle to hold the stationary cutter at a predetermined adjustment.

820,554. **CARBURETER.** MONROE D. COLBATH, Hampden, Me. Filed Dec. 14, 1904. Serial No. 236,891.



Claim.—1. In a carbureter, the combination of an oil-storage tank or reservoir; an oil-supply tank supported above said storage-tank; a pump for delivering oil to said supply-tank a carbureter arranged within said oil-storage tank, connected to said oil-supply tank; consisting of a main carbureter-chamber and an auxiliary carbureter-chamber, connected by a vertical pipe or tube; perforated baffle-plates arranged in said chambers, the perforations of the adjacent plates being zigzagged; screens *c* forming partitions in said connecting-tube for said carbureter-chambers; a packing of absorbent material between said partitions; a service-pipe connected to said main carbureter-chamber toward the bottom thereof; an air-supply pipe arranged through said oil-supply tank; a valve-casing connected to said oil-supply tank, arranged in said air supply pipe; an inwardly-opening oil-valve having a suitable stem; an air-valve for the said supply-pipe, carried by said stem; a spring on the said stem for holding said valves nomally in their seats; and pressure-regulators for said air-supply and service pipes, all coacting for the purpose specified.

2. In a carbureter, the combination of an oil-storage tank or reservoir; an oil-supply tank supported above said storage-tank; a pump for delivering oil to said supply-tank; a carbureter arranged within said oil-storage tank, connected to said oil-supply tank; a service-pipe connected to said carbureter; an air-supply pipe arranged through said oil-supply tank; a valve-casing connected to said oil-supply tank, arranged in said air-supply pipe; an inwardly-opening oil-valve having a suitable stem; an air-valve for the said supply-pipe, carried by said stem; a spring on the said stem for holding said valves normally in their seats; and pressure-regulators for said air-supply and service pipes, all coacting for the purpose specified.

3. In a carbureter, the combination of an oil-storage tank or reservoir; an oil-supply tank supported above said storage-tank; a pump for delivering oil to said supply-tank; a carbureter arranged within said oil-storage tank, connected to said oil-supply tank; consisting of a main carbureter-chamber and an auxiliary carbureter-chamber, connected by a vertical pipe or tube; perforated baffle-plates arranged in said chambers, the perforations of the adjacent plates being zig zagged; screens *e* forming partitions in said connecting-tubes for said carbureter-chambers; a packing of absorbent material between said partitions; a service-pipe connected to said main carbureter-chamber toward the bottom thereof; an air-supply pipe; a valve-casing connected to said oil-supply tank; an inwardly-opening oil-valve having a suitable stem; an air-valve for the said supply-pipe, carried by said stem; a spring on the said stem for holding said valves normally in their seats; and pressure-regulators for said air-supply and service pipes, all coacting for the purpose specified.

4. In a carbureter, the combination of an oil-storage tank or reservoir; an oil-supply tank supported above said storage-tank; a pump for delivering oil to said supply-tank; a carbureter arranged within said oil-storage tank, connected to said oil-supply tank; a service-pipe connected to the said carbureter; an air-supply pipe; a valve-casing connected to said oil-supply tank; an inwardly-opening oil-valve having a suitable stem; an air-valve for the said supply-pipe, carried by said stem; a spring on the said stem for holding said valves normally in their seats; and pressure-regulators for said air-supply and service pipes, all coacting for the purpose specified.

5. In a carbureter, the combination of an oil-supply tank; a carbureter connected thereto consisting of a main carbureter-chamber and an auxiliary carbureter-chamber, connected by a vertical pipe or tube; perforated baffle-plates arranged in said chambers, the perforations of the adjacent plates being zigzagged; screens *c* forming partitions in said connecting-tube for said carbureter-chambers; a packing of absorbent material between said partitions; a service-pipe connected to said main carbureter-chamber toward the bottom thereof; an air-supply pipe arranged through said oil-supply tank; a valve-casing connected to said oil-supply tank, arranged in said air-supply pipe; an inwardly-opening oil-valve having a suitable stem; an air-valve for the said supply-pipe, carried by said stem; a spring on the said stem for holding said valves normally in their seats; and pressure-regulators for said air-supply and service pipes, all coacting for the purpose specified.

6. In a carbureter, the combin. ion of an oil-supply tank; a carbureter connected thereto; a service-pipe connected to said carbureter; an air-supply pipe arranged through said oil-supply tank; a valve-casing connected to said oil-supply tank, arranged in said air-supply pipe; an inwardly-opening oil-valve having a suitable stem; an air-valve for the said supply-pipe, carried by said stem; a spring on the said stem for holding said valves normally in their seats; and pressure-regulators for said air-supply and service pipes, all coacting for the purpose specified.

7. In a carbureter, the combination of an oil-supply tank; a carbureter connected thereto consisting of a main carbureter-chamber and an auxiliary carbureter-chamber, connected by a vertical pipe or tube; perforated baffle-plates arranged in said chambers, the perforations of the adjacent plates being zigzagged; screens *c* forming partitions in said connecting-tube for said carbureter-chambers; a packing of absorbent material between said partitions; a service-pipe connected to said main carbureting-chamber toward the bottom thereof; an air-supply pipe; a valve-casing connected to said oil-supply tank; an inwardly-opening oil-valve having a suitable stem; an air-valve for the said supply-pipe, carried by said stem; a spring on the said stem for holding said valves normally in their seats; and pressure-regulators for said air-supply and service pipes, all coacting for the purpose specified.

8. In a carbureter, the combination of an oil-supply tank; a carbureter connected thereto; a service-pipe connected to said carbureter; an air-supply pipe; a valve-casing connected to said oil-supply tank; an inwardly-opening oil-valve having a suitable stem; an air-valve for the said supply-pipe, carried by said stem; a spring on the said stem for holding said valves normally in thir seats; and pressure-regulators for said air-supply and service pipes, all coacting for the purpose specified.

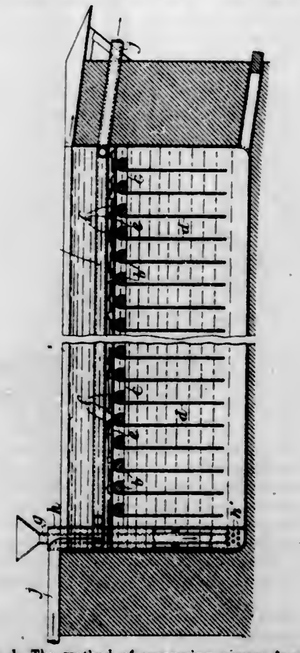
9. In a carbureter, the combination of an oil-storage tank or reservoir; an oil-supply tank supported above said storage-tank; a pump for delivering oil to said supply-tank; a carbureter arranged within said oil-storage tank, connected to said oil-supply tank; consisting of a main carbureter-chamber and an auxiliary carbureter-chamber, connected by a vertical pipe or tube; perforated baffle-plates arranged in said chambers, the perforations of the adjacent baffle-plates being zigzagged; screens *e* forming partitions in said connecting-tube for said carbureter-chambers; a packing of absorbent material between said partitions; a service-pipe connected to the said main carbureter-chamber toward the bottom thereof; an air-supply pipe; a valve therefor; an oil-valve; connections for said air and oil valves, whereby said oil-valve is controlled by the opening and closing of said air-valve; and pressure-regulators for said air-supply and service pipes, all coacting for the purpose specified.

10. In a carbureter, the combination of an oil-storage tank or reservoir; an oil-supply tank supported above said storage-tank; a pump for delivering oil to said supply-tank; a carbureter arranged within said oil-storage tank, connected to said oil-supply tank; a service-pipe connected to said carbureter; an air-supply pipe; a valve therefor; an oil-valve; connections for said air and and oil valves whereby said oil-valve is controlled by the opening and closing of said air-valve; and pressure-regulators for said air-supply and service pipes, all coacting for the purpose specified.

11. In a carbureter, the combination of an oil-storage tank or reservoir; an oil-supply tank supported above said storage-tank; a pump for delivering oil to said supply-tank; a carbureter arranged within said oil-storage tank, connected to said oil-supply tank; consisting of a main carbureter-chamber and an auxiliary carbureter-chamber, connected by a vertical pipe or tube; perforated baffle-plates arranged in said chambers, the perforations of the adjacent baffle-plates being zigzagged; screens *c* forming partitions in said connecting-tube for said carbureter-chambers; a packing of absorbent material between said partitions; a service-pipe connected to said main carbureter-chamber toward the bottom thereof; and an air-supply pipe, all coacting for the purpose specified.

12. In a carbureter, the combination of an oil-storage tank or reservoir; an oil-supply tank supported above said storage-tank; a pump for delivering oil to said supply-tank; a carbureter arranged within said oil-storage tank, connected to said oil-supply tank; a service-pipe connected to said carbureter; and an air-supply pipe, all coacting for the purpose specified.

820,555. **RECOVERY OF COPPER FROM SOLUTIONS CONTAINING IT.** BENVENUTO COMBA, Turin, Italy, assignor to Edward Casper, London, England. Filed Sept. 14, 1903. Serial No. 173,185.



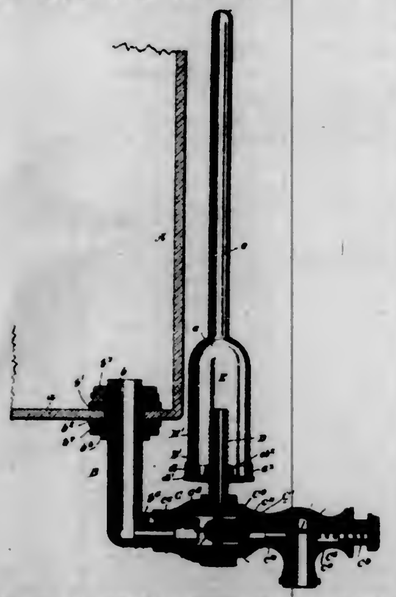
Claim.—1. The method of recovering copper from solutions containing it, which consists in placing the solution in a suitable vessel, immersing a cathode therein, superimposing a liquid of less specific gravity upon the surface of the copper solution, and supporting an anode in said supernatant liquid, in direct contact with the cathode, whereby an electric current is generated and pure copper is deposited upon the cathode, substantially as described.

2. The method of recovering copper from solutions containing it, which consists in placing the solution in a suitable vessel immersing a cathode therein prepared for the deposition of copper thereon, superimposing an acidulated liquid of less specific gravity than the copper solution, supporting an anode in said supernatant liquid out of contact with the copper solution and in contact with the cathode, supplying additional copper solution adjacent to the bottom of the solution in said receptacle, to maintain the line of separation between the liquids substantially constant and drawing off the excess of supernatant liquid, as the action progresses, substantially as described.

3. The method of recovering copper from solutions containing it, which consists in placing the solution in a suitable vessel, immersing a cathode therein, superimposing a liquid of less specific gravity upon the surface of the copper solution, and supporting an anode in said supernatant liquid and connecting it electrically with the cathode, and applying heat artificially to the supernatant liquid, substantially as described.

4 The method of recovering copper from solutions containing it which consists in placing the copper solution in a suitable receptacle, and immersing therein a cathode adapted to receive a deposition of copper thereon, superimposing acidulated water upon the copper solution and immersing iron in said acidulated water, out of contact with the copper solution and in contact with the cathode, substantially as described.

820,556. **MEASURING-FAUCET.** GEORGE K. COOKE, Jamaica, N. Y. Filed Mar. 26, 1904. Serial No. 200,121.



Claim.—1. In means of the character described, the combination with a dispensing device and a connection, the latter adapted for communication with a liquid-supply, of a valve provision coactive both with the said device and the said connection for opening the one and closing the other, a measuring-chamber, said valve provision being located one part on each side of the inlet from the measuring-chamber, and means for normally holding said valve provision closed with respect to the outlet from the device, substantially as described.

2. In means of the character described, the combination with a dispensing device and a connection, the latter adapted, for communication with a liquid-supply, of valve provision coactive both with the said device and the said connection for opening the one and closing the other, a tube coöperative with said connection and dispensing device, and a measuring-chamber adjustable on said tube.

3. In means of the character described, the combination with a dispensing device and a connection, both containing valve-seats and the connection adapted for communication with a liquid-supply, of valve provision coactive with both seats for closing one and opening the other, a measuring-chamber common to both seats, and means for adjusting one of said valve-seats, substantially as described.

4. In means of the character described, the combination with a dispensing device and a connection, the latter adapted for communication with a liquid-supply, of suitable valve provision, and a measuring-chamber in coöperative relation with said dispensing device and connection, said measuring-chamber comprising a body portion and elongated transparent extension, the latter of reduced diameter and containing a vent-opening, and means for varying the quantity to be delivered from said measuring-chamber separate from said valve provision.

5. In means of the character described, the combination with a dispensing device and a connection, the latter adapted for communication with a liquid-supply, of suitable valve provision, said valve provision comprising two valves mounted on a stem and means for operating them simultaneously in such a manner as to close one and open the other by moving said stem, a measuring-chamber comprising a glass body and elongated extension, the latter of reduced diameter and containing a vent-opening, and a metal shell incasing said body and extension and providing a sight-opening, and means for varying the quantity to be delivered from said measuring-chamber separate from said valve provision.

6. In means of the character described, the combination with a dispensing device and a connection, the latter adapted for communication with a liquid-supply, of suitable valve provision, threaded tube coöperative with both said device and the connection, and a measuring-chamber comprising a base mounted on said tube and adjustable thereon for the purpose set forth, and a glass body on said base and provided with an elongated extension containing a vent-opening.

7. In means of the character described, the combination with a dispensing device and a connection, of valve provision and valve-seats controlling said device and the connection, a measuring-chamber in coöperative relation with the device and connection, and a plug coactive with one of said valve-seats for adjusting the same.

8. In means of the character described, the combination with a dispensing device and a connection, the latter adapted for communication with a liquid-supply, of valve provision coactive both with said device and with said connection for opening the one and closing the other, a measuring-chamber coöperative with said connection and dispensing device, a rear tubular seating for the valve provision and forwardly projecting relative to its supporting part.

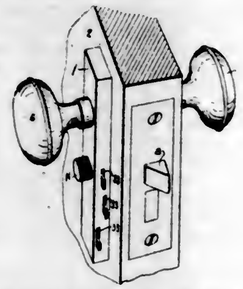
9. In means of the character described, the combination with a dispensing device and a connection, the latter adapted for communication with the liquid-supply, of manually-operable valve provision coactive both with said device and said connection for opening the one and closing the other, and a liquid-measuring chamber coöperative with said connection and dispensing device, and vent-tube leading from the chamber, and means for changing the quantity of liquid to be delivered from said measuring-chamber, exclusive of said valve provision.

10. In means of the character described, the combination with a dispensing device and a connection, of valve provision and valve-seats controlling said device and the connection, a measuring-chamber in coöperative relation with the device and connection, and a plug coactive with one of said valve-seats for adjusting the same, said plug containing a passage adapted to maintain communication between the connection and measuring-chamber irrespective of the plug adjustment.

11. In means of the character described, the combination with a dispensing device, a connection adapted for communication with a liquid-supply, and an intermediate chamber, of manually-operable valve provision within said chamber and coactive both with said connection and dispensing device and normally closing the latter and opening the communication of the connection, a tube communicating with said chamber, a glass measuring-chamber adjustable on said tube and provided with an upper extension, and a guard for said measuring-chamber and extension and containing a sight-opening.

820,557. **COMBINATION-LOCK.** JOSIAH J. DEAL, Canton, Ohio. Filed Aug. 12, 1905. Serial No. 273,993.

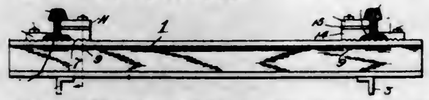
Claim.—1. In a combination-lock a casing, separable knob-spindles and knobs connected thereto, one of the knob-spindles having connected thereto a notched head adapted to rotate with the spindle, a gravity-bar provided with a T-head, a spindle located in a plane below the knob-spindles, and in a hollow bearing, a series of lock-disks and counting-disks mounted upon the hollow bearing and concentric with the spindle located therein, and each lock-disk provided with a notch adapted to receive the lower end of the T-head, said counting-disks provided with tangs, and a disk rotatable with the spindle and provided with a pin adapted to engage the tangs of the counting-disks, counting-bars provided with knobs extended beyond the lock-case, means for actuating the counting-disks by the movement of the counting-bars, and means for connecting the counting-disks and lock-disks together at predetermined points, substantially as and for the purpose specified.



2. In a combination-lock of the class described, a casing, divided knob-spindles, a notched head operatively connected to one of the knob-spindles, a spindle located below the plane of the divided knob-spindle and in a hollow bearing, a series of counting and lock disks adapted to be separably connected one to the other, means for changing the point of connection between the lock-disks and counting-disks, means for actuating the counting-disks, a pivoted bar provided with a T-head, said lock-disks provided with notches adapted to receive the lower end of the T-head when said notches are brought into alinement, and a disk secured to the spindle located in a plane below the knob-spindles, said disk provided with a pin, said counting-disks provided with tangs adapted to be engaged by said pin, a friction-spring adapted to bear against the peripheries of the lock-disks, and dividing-plates located between the lock-plates, substantially as and for the purpose specified.

3. In a combination-lock of the class described, a knob-spindle provided with a notched head, a series of counting-disks and lock-disks located in a plane below the knob-spindle, a spindle located in a hollow bearing, a setting-disk secured to the spindle, a gravity-bar located intermediate the knob-spindle, and counting-disk spindle, and provided with a T-head, a pin secured to the setting-disk, said counting-disks provided with tangs adapted to be actuated by the rotations of the setting-disk, and the setting-disk provided with a notch having an inclined edge, means for connecting the counting-disks and lock-disks together, and means adapted to operate the counting and lock disks substantially as and for the purpose specified.

820,558. **RAILROAD-TIE.** ERNEST S. DE VOE, Allenwood, N. J. Filed Mar. 1, 1906. Serial No. 303,695.

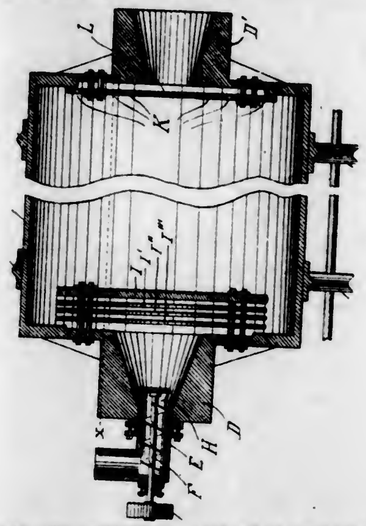


Claim.—1. The combination of a tie, a track-rail thereon, a fastening block or cleat composed of superposed sections adapted to fit between the base-flange and head of said rail, and a bolt or the like passed through the sections of said block for securing the latter upon said tie.

2. The combination of a tie, a track-rail thereon, the securing-block 11 having an apertured lower section 14 to engage the base-flange of the rail, an apertured upper section 13 to engage the under side of the head of the rail and a slotted intermediate section 15, and a bolt or the like passed through an opening in said tie and the alining openings and slot in the sections of said block, substantially as shown and described.

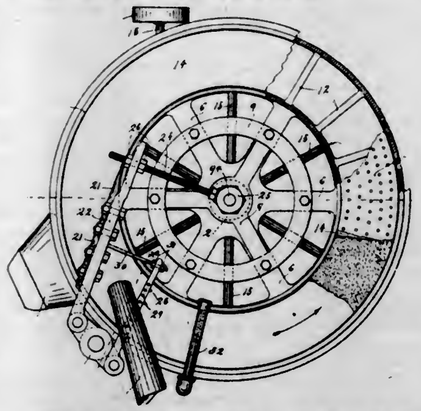
3. The combination of a metallic tie of I form in cross-section, having slots formed in its upper flanges and transverse corrugations adjacent to said slots, a track-rail having corrugations upon its base to engage the corrugations upon said tie, securing blocks or cleats engaged with the rail and having corrugations upon their bottoms to engage the corrugations on said tie and openings to aline with the slots in said tie, and fastening-bolts or the like passed through said slots and openings to secure said blocks upon the tie, substantially as described.

820,559. **PEBBLE-MILL.** GEORGE S. HENRICK, Philadelphia, Pa. Filed June 26, 1905. Serial No. 266,971.



Claim.—The combination in a ball-mill of a feed mechanism therefor, consisting of a non-perforated plate or disk and a ring-shaped plate or disk spaced between the said non-perforated plate and the feed end of the mill-cylinder, said non-perforated plate and ring-shaped plate being parallel each to each substantially as described.

820,560. **ROTARY FILTER.** FRANK A. EVANS, Redwood Falls, Minn. Filed Apr. 29, 1905. Serial No. 258,009.



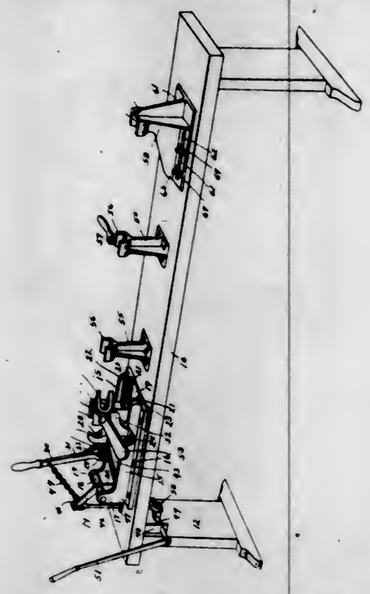
Claim.—1. The combination with a rotary annular filter, and means for supplying the solid and liquid materials thereto, of an adjustable scraper working over the upper open portion of said filter for scraping off therefrom, the solid materials from which the liquid has been drained, substantially as described.

2. The combination with a rotary annular filter and means for supplying the liquid and solid materials thereto, of a scraper mounted for longitudinal and angular adjustments and working over the open portion of said filter, for scraping therefrom the solid materials from which the liquid has been drained, substantially as described.

3. The combination with an annular filter and arranged for supplying the liquid and solid materials thereto, of an obliquely-set scraper, working over the upper open portion of said filter, and a

rake or leveling device, working over the upper open portion of said filter, substantially as described.

820,561. MACHINE FOR MAKING MOPS. EPHRAIM H. FENTON, Kansas City, Mo. Filed May 29, 1905. Serial No. 262,916.



Claim.—1. The combination in a machine for making mops, of supporting devices for the mop, and a ferrule-holder slidingly connected with the mop-supporting devices, and power-actuated devices acting independently upon the ferrule-holder to move said ferrule-holder toward the mop-supporting devices.

2. The combination in a machine for making mops, with a sliding mop-supporting device, a ferrule-holder slidingly connected with the said mop-supporting device, and movable in the direction thereof, and power-actuating devices acting to communicate a sliding and a compressing movement to said parts simultaneously.

3. The combination in a machine for making mops, of a slidable plate, a jaw thereon, a ferrule-holder, and sliding supporting devices connecting said ferrule-holder with the said jaw, a lever connected with said supporting devices for moving the ferrule-holder to and from said jaw, and a separate lever actuating said jaw.

4. The combination in a machine for making mops, with a sliding plate, a jaw thereon, a ferrule-holder, sliding supporting devices connecting said ferrule with the said jaw, a lever on the sliding plate connected with the slidable supporting devices for said ferrule-holder, and power-actuated devices moving said sliding plate and jaw.

5. The combination in a machine for making mops with a sliding supporting-plate of a ferrule-holder, supporting devices for holding the mop-handle in the line of movement of the ferrule-holder, and compressing devices acting to compress the mop within the ferrule and the ferrule upon the handle.

6. The combination in a machine for making mops, with a sliding supporting-plate, of a mop-compressing device, a ferrule-holder and sliding supporting devices connecting said ferrule-holder with the mop-compressing devices, means for holding the mop-handle in the line of movement of the mop-compressing devices, and power-actuated devices for moving said sliding plate and mop-compressing devices in the direction of the supporting devices for the mop-handle, and a lever on the said plate connected with the sliding supporting devices for the ferrule-holder.

7. In a machine for making mops, the combination with a sliding supporting-plate of a post having mop-compressing jaw, a ferrule-holder, supporting-rods connected with the ferrule-holder and slidingly connected with said post, and a lever pivotally connected with the said plate and one of said sliding rods on the ferrule-holder.

8. In a machine for making mops, the combination with a sliding supporting-plate of a post having a mop-holding jaw, a ferrule-holder, supporting-rods connected with the ferrule-holder and slidingly connected with the said post, an operating-lever pivotally connected with said sliding plate and also with one of said slidable rods on the ferrule-holder, a ratchet on said lever, and a pawl on said post.

9. In a machine for making mops, the combination with a sliding supporting-plate on said machine of a post having a mop-holding jaw, a ferrule-holder, supporting-rods connected with the ferrule-holder and slidingly connected with the said post, a lever pivotally connected with said plate and also with one of said slidable rods, a ratchet on said lever, and a pawl on the said post engaging with the ratchet, a crank-shaft on the machine, and crank-arms, bars pivotally connected with one of the crank-arms and the said post, and connecting devices connecting the said lever with the other crank-arm, and means for operating the latter arm.

10. In a machine for making mops, the combination with a suitable supporting-platform, of compressing means for the mop, a ferrule-holder movably supported thereby, and adjustable securing means on the said platform for the mop-handle.

11. In a machine for making mops, the combination with a sliding plate of a post having a mop-carrying jaw, a ferrule-holder, supporting-rods therefor slidingly connected with said post, and compound levers acting simultaneously to move said sliding plate, and the rods supporting the ferrule-holder.

12. The combination in a machine for making mops, with the side plates having grooves, of a sliding plate, a post thereon having a mop-holding jaw, a ferrule-holder and rods connected therewith and extending slidingly through said post, a lever having a slot pivotally connected with said sliding plate, a pin connecting one of said rods on said ferrule-holder with the slot in said lever, a ratchet on said lever and a pawl on said post, a crank-shaft and crank-arms, bars connected pivotally with said post and one of said crank-arms, a chain connected with said lever and with the other crank-arm, a separate crank-shaft and arm, and a connecting-rod connected therewith, and the crank-arm on said machine with which the said chain is connected, and a main operating-lever on said separate crank-shaft.

13. In a machine for making mops, the combination with the ferrule-holder, of compressing means for compressing the mop and the securing-strip within the ferrule, and the ferrule upon the handle, and means upon the machine for upsetting the ends of the securing-strips.

14. The combination with the ferrule-holder, of a handle, and forked extensions thereof adapted to be moved in position toward the ferrule.

15. The combination with the ferrule-holder, of an arm or support thereon, an upsetting fork and handle pivotally connected with said support.

16. In a machine for making mops, the combination with power operating devices, of a sliding plate and post, a mop-holding jaw provided with a recess in its upper end for the mop-securing strip, of a ferrule-supporting block, and supports therefor slidingly connected with said post, said block having a slot for the ferrule in its upper end, and power operating devices connected with said sliding supports.

820,562. SUSPENDERS. WILLIAM FREEMAN, New York, N. Y. Filed Sept. 28, 1905. Serial No. 280,487.



Claim.—1. In suspenders, the combination of a metal loop, shoulder-straps passing freely through said loop, a back strap passing over the bottom bar of the loop and overlapped, and a plate attached to said bottom bar of the loop and secured between the overlapping portions of the back strap.

2. A loop for connecting the back and shoulder straps of suspenders, comprising three parallel bars, the center bar being projected outward from the plane of the upper and lower bars, and a plate secured to the lower bar and constructed to be secured between the back straps to prevent them from crowding into the loop.

3. In a suspender, the combination with two shoulder-straps and back straps, of a metal loop comprising three parallel bars, the center bar being projected outward in a different plane from the top and bottom bars, and said shoulder-straps being passed around the top and center bar respectively and secured to each other, and a metal plate secured to the lower bar and secured between the back straps by stitching, to prevent crowding in the loop.

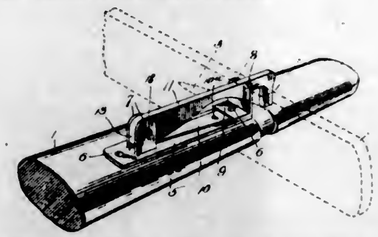
820,563. GAS-METER. JAMES GREN, Brooklyn, N. Y. Filed July 10, 1905. Serial No. 268,939.



Claim.—1. In a gas-meter, a diaphragm including a stationary and a movable ring, a flexible connection of material impervious to gas, a pivotally-mounted flag-wire, the intermediate portion of said flag-wire being offset to form a crank, an end disk, and a connection between the crank portion of said flag-wire and said disk, said connection including a bridge composed of parallel members arranged horizontally on the back of said disk and a pivotal connection midway in said bridge for the flag connection.

2. In a gas-meter, a bellows including a movable disk-like head, a carriage therefor comprising two bridge members spaced apart and raised horizontally on the back of the disk, a flag-wire and a link affixed to said flag-wire at one end and pivotally connected with said bridge members intermediate of the length of the latter.

820,564. WHIFFLETREE-HOOK. CHARLES H. GERRY, Columbia, Mo. Filed July 20, 1905. Serial No. 270,555.



Claim.—1. A whiffletree-hook embodying a plate secured to the whiffletree and having spaced upstanding lugs and a hook member pivoted upon the plate and arranged to hook over and retain a trace and held from displacement by the lugs.

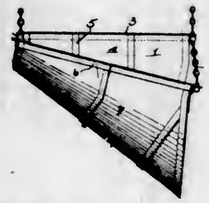
2. A whiffletree-hook embodying a plate secured to the whiffletree and having spaced upstanding lugs at one end, a hook member pivoted to the plate at the end opposite the lugs and arranged to hook over a trace and be retained between the lugs.

3. A whiffletree-hook embodying a plate secured to the whiffletree and having spaced upstanding lugs at one end, a trace provided with an opening disposed upon the whiffletree adjacent the lugs, an arm pivoted to the plate opposite the lugs and having a hook at the end opposite proportioned to hook over the trace and to be retained between and from lateral displacement by the lugs.

4. A whiffletree-hook comprising a plate having upstanding spaced lugs at one end and upstanding spaced ears adjacent the opposite end, an arm pivoted between the ears and provided with a shoulder proportioned and disposed for engagement between the lugs, a hook carried by the arm and spaced from the lugs and shoulder and a resilient member arranged to hold the arm in operative position.

820,565. MACHINE FOR LOADING COAL FROM THE TIPPLES INTO CARS. ALBERT T. GOFF, Montooth borough, Pa. Filed Jan. 4, 1905. Serial No. 239,678.

Claim.—1. A chute comprising a substantially rectangular angle-metal frame, a longitudinally-tapered sheet-metal body of substantially semiconical form in cross-section secured upon said rectangular frame, angle-metal brace-bars secured upon the outer face of said body and to said frame, said braces being arranged at the ends of said body and at intermediate points, a substantially semicircular head closing the small end to said body, and means for suspending said body.



2. A chute comprising upper and lower pivotally-connected telescoping sections, said upper section consisting of a frame and sides carried thereby, and said lower section consisting of a frame and a tapered body carried by said frame, and means for suspending said chute.

3. A chute comprising upper and lower pivotally-connected sections, the upper section consisting of a rectangular frame and longitudinally-tapered depending parallel sides, and the lower section consisting of a rectangular frame pivoted at one end to one end of the upper section, a longitudinally-tapered substantially semiconical body, means for limiting the swinging movement of said lower section, and means for suspending said upper section.

4. A chute comprising upper and lower telescoping sections pivoted together at one end, said upper section consisting of a frame and depending sides, and said lower section consisting of a frame and a body having an inclined bottom, flexible connection between the free ends of said sections to limit the downward swinging movement of the lower section, and means for suspending said upper section.

5. The combination with a suitable support and a substantially rectangular horizontally-disposed track-frame suspended therefrom, of a chute comprising a substantially rectangular angle-metal frame, a longitudinally-tapered sheet-metal body of substantially semiconical form in cross-section secured upon said rectangular frame, angle-metal brace-bars secured upon the outer face of said body and to the said frame, said braces being arranged at the ends of said body and at intermediate points, a substantially semicircular head closing the small end of said body, and supporting-wheels upon said chute adapted to run upon said track-frame, substantially as shown and described.

6. The combination with a suitable support of a chute comprising upper and lower telescoping sections pivotally connected at one end, said upper section consisting of a frame and depending sides and said lower section consisting of a frame and a body having an inclined bottom, a connection between the frame of the upper section and said support for supporting the chute, a flexible connection between said sections for limiting the swinging movement of the lower section, and means for supporting said lower section in an adjusted position.

820,566. MUFFLER. ENNET P. GRAY, Detroit, Mich., assignor to Gray Manufacturing Company of Detroit, Detroit, Mich., a Corporation of Michigan. Filed June 28, 1905. Serial No. 267,360.

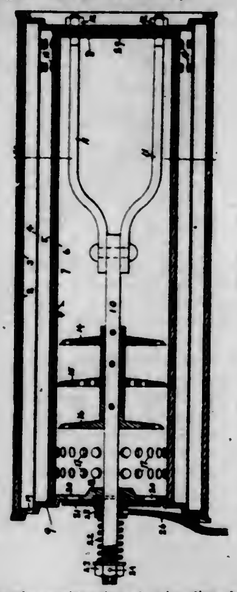
Claim.—1. A muffler for exhaust-gases, comprising a non-resonant cylinder, heads closing the ends of the same having passages for admitting the gases to said muffler and permitting their escape through the heads, and a plate to close passages in one of the heads.

2. A muffler for exhaust-gases, comprising a non-resonant cylinder, heads closing the ends of the same and having passages for admitting their escape, and means for closing the escape-openings, and means to operate said closing means.

3. A muffler for exhaust-gases, comprising a non-resonant cylinder, heads closing the ends of the same, one head having a passage for admitting the gases to said cylinder the other head having passages for permitting the escape of the gases from the cylinder, a plate for closing the escape-passages, and means to move said plate.

4. A muffler for gas-engine exhaust, comprising a plurality of concentric cylinders, heads for closing the ends of the same, said cylinders having ports connecting the spaces between the cylinders to the space within the inner cylinder, one of said heads having an opening

to permit the entrance of the gases, the other head having openings connecting with the interior of the inner cylinder, outwardly-movable means for closing said openings, means to normally hold said movable means in closing position, and manually-operable means for causing the closing means to move outwardly.



5. In a muffler, the combination of a plurality of shells, one outside of the other, heads for closing the ends of the shells, said heads having passages for admitting gases to the inner shell and for permitting the escape of the gases from the inner shell and from between the shells, and outwardly-movable means for closing the outlet-passages opening into the inner shell.

6. In a muffler, the combination of a shell, a head at each end of the shell, one of said heads having an opening to admit exhaust-gases, a bolt passing through the other head, a pin engaging said head, means to secure the end of said bolt to the opposite head, a spring on the end of said bolt, a nut to regulate the tension of said spring, a plate pressed against the adjacent head by said spring, said head having openings for the escape of the exhaust-gases normally closed by the plate.

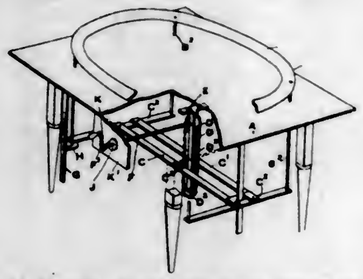
7. In a muffler, the combination of a plurality of shells, one without the other, heads to close the ends of the shells, a bolt to hold the heads in position, one of the heads having an opening to admit the exhaust-gases, plates mounted on the bolt for the purpose of breaking the flow of the gases, and means to regulate the pressure of the gases in the inner shell.

8. In a muffler, the combination of a plurality of concentric cylinders, each comprising two thicknesses of sheet metal and a thickness of fibrous non-resonant material between them, the fibrous material projecting beyond the ends of the metal shells, heads to close the ends of the cylinders, and means to draw the heads against the ends of the cylinders whereby the fibrous material will become upset to form tight joints between the ends of the cylinders and the heads.

9. In a muffler, the combination of a cylinder comprising two thicknesses of sheet metal and a thickness of non-combustible material between them, the fibrous material projecting beyond the ends of the metal shells, heads to close the ends of the cylinder, and means to draw the heads against the ends of the cylinder whereby the fibrous material will become upset to form tight joints between the ends of the cylinder and the heads.

820,567. **SKIRT EVENER AND MEASURER.** SUSAN GREIG and MARY MAWSON, Toronto, Canada: Filed July 3, 1905. Serial No. 268,196.

Claim.—1. In a device of the class described, the combination with a stool, of a flat oval ring above the top of the stool, supports extending down through the top of the stool to support the ring, bars fastened to the lower end of the supports, cross-pieces connecting the bars and a chain-gear fastened to the cross-pieces to lift or lower the supports, as and for the purpose specified.

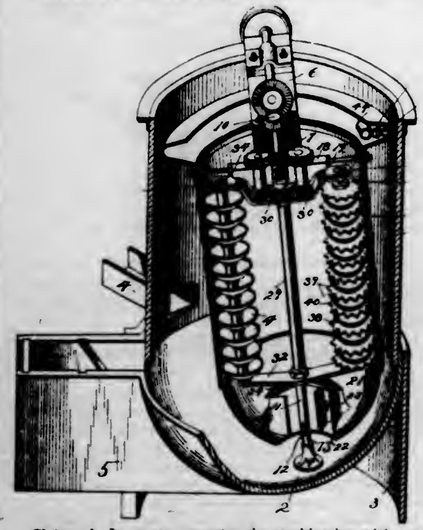


2. In a device of the class described, the combination with a stool, of a flat oval ring, supports to hold the ring above and in a plane parallel to the top of the stool, a frame to which the supports are fastened, a chain-gear to lift the frame so that the oval ring shall always be in a plane parallel to the top of the stool, and a registering device to register the height to which the ring has been lifted, as and for the purpose specified.

3. In a device of the class described, the combination with a stool, of a flat oval ring, supports to hold the ring, a frame to which the supports are fastened, a chain fastened to the frame, sprocket-wheels to engage with the chain, supports to hold the lower sprocket-wheel, a crank and shaft to turn the upper sprocket-wheel, a ratchet-wheel secured to the shaft, and a stop to hold the ratchet-wheel in any position, as and for the purpose specified.

4. The combination with the substantially flat oval ring having a fine outer edge and adjustably supported, of the stool proper arranged to extend laterally beyond the outer edge of the ring, whereby the height of the skirt above the floor, when marked, may be seen as specified.

820,568. **ORE-SEPARATOR.** HIRAM C. GROVES, Woodward, Okla. Filed Apr. 3, 1906. Serial No. 311,477.



Claim.—1. In an ore-separator the combination with a casing having an inlet; of an inclined bowl rotatably mounted within the casing and having an inlet in the bottom thereof, curved means for whirling liquid upward through the opening and against the wall of the bowl, agitating devices at one side of and staggered in relation to the axis of the bowl and movably mounted within the bowl and means for operating said bowl and the agitating devices.

2. In an ore-separator the combination with a casing having an inlet; of an inclined bowl rotatably mounted within the casing and having an inlet-opening in the bottom thereof, curved means surrounding the opening for whirling water upward therefrom into and against the wall of the bowl, a series of agitating devices at one side of and staggered in relation to the axis of the bowl and movably mounted within the bowl and extending longitudinally thereof, and means for operating said series and the bowl at different speeds.

3. In an ore-separator the combination with a casing having an inlet; of a bowl rotatably mounted therein and having an inlet in its lower end, curved means adjacent and extending upward from the inlet for whirling liquid upward against the wall of and through the bowl during the rotation thereof, series of agitating devices movably mounted within the bowl and extending longitudinally thereof adjacent opposite portions of the axis of the bowl, one of said series being staggered in relation to said axis, and means for moving the bowl and agitating devices at different speeds.

4. In an ore-separator the combination with a casing having an inlet; of an inclined bowl rotatably mounted within the casing and having an inlet in its lower end, means adjacent and extending upward from the inlet for whirling liquid upward against the wall of and through the bowl during the rotation thereof, laterally-movable series of agitating devices rotatably mounted within, and extending longitudinally of the bowl at opposite sides of the axis thereof, one of said series being staggered in relation to said axis, and means for rotating the bowl and agitating devices at different speeds.

5. In an ore-separator the combination with a casing having an inlet; of an inclined bowl rotatably mounted within the casing and having an inlet in the bottom thereof, means adjacent the inlet for drawing liquid upward through the bowl during its rotation, a series of agitators mounted and adapted to travel within the bowl, such series comprising alternately-arranged smooth and toothed disks, and means for operating the bowl and agitators at different speeds.

6. In an ore-separator the combination with a casing having an inlet; of an inclined bowl rotatably mounted within the casing and having an inlet in the bottom thereof, means adjacent the inlet for directing liquid upward through the bowl during its rotation, a series of agitators adapted to travel within the bowl, said series comprising disks having teeth at different distances apart, and means for operating the agitators and bowl at different speeds.

7. In an ore-separator the combination with a casing having an inlet; of an inclined bowl rotatably mounted within the casing and having an inlet in the bottom thereof, means adjacent the inlet for directing liquid upward through the bowl during its rotation, a series of agitators adapted to travel within the bowl, said series comprising disks having staggered teeth upon their peripheries at different distances apart, and means for operating the agitators and bowl at different speeds.

8. In an ore-separator the combination with a casing having an inlet; of an inclined bowl rotatably mounted within the casing and having an inlet in the bottom thereof, means adjacent the inlet for directing liquid upward through the bowl during its rotation, a series of agitators adapted to travel within the bowl, said series comprising alternately-arranged smooth and toothed disks, the teeth being staggered and at different distances apart, and means for operating the agitators and bowl at different speeds.

9. In an ore-separator the combination with a casing having an inlet; an inclined bowl rotatably mounted within the casing and having an inlet in the bottom thereof, means adjacent the inlet for directing liquid upward through the bowl during the rotation thereof, oppositely-disposed series of agitators within the bowl, one of said series comprising alternately-arranged smooth and toothed disks and the other series comprising concavo-convex disks, and means for operating the agitators and bowl at different speeds.

10. In an ore-separator the combination with a casing having an inlet; an inclined bowl rotatably mounted within the casing and having an inlet in one end thereof, means for whirling liquid against the wall of and upward through the bowl from said end during the rotation thereof, agitating devices within the bowl at one side of the axis thereof and staggered in relation thereto, a head upon the bowl at the end farthest removed from the inlet, and a multiplicity of horizontally-disposed outlet devices within the head and at different distances from the center thereof.

11. In an ore-separator the combination with a casing having an inlet; of an inclined bowl therein and having an inlet in its lower end, blades within the bowl and adjacent the inlet, a cap connecting the blades, a shaft extending through the bowl and cap and secured to the bowl, means for rotating the shaft, connected arms rotatably mounted on the shaft, means for transmitting rotary motion thereto from the shaft, and oppositely-disposed series of agitating devices mounted within the arms.

12. In an ore-separator the combination with a casing having an inlet; of an inclined shaft rotatably mounted therein, a bowl surrounding and connected to the shaft, said bowl having an inlet in its lower end, blades adjacent the inlet and within the bowl, a sleeve rotatably mounted upon the shaft, arms extending therefrom, oppositely-disposed series of agitating disks connected to the arms and movable laterally therein, outlet devices within and adapted to receive material from the upper portion of the bowl, a power-shaft and mechanism operated thereby for rotating the shaft and sleeve at different speeds.

13. In an ore-separator the combination with a casing having a concave bottom and an inlet; of an inclined shaft within the casing, arms extending therefrom, a bowl surrounding the shaft and connected to the arms, said bowl having an inlet in the bottom thereof, blades within the bowl and adjacent the inlet, a cap therein surrounding the shaft, agitating devices movably mounted within the bowl, a power-shaft, and means operated by the shaft for driving the bowl and agitating devices at different speeds.

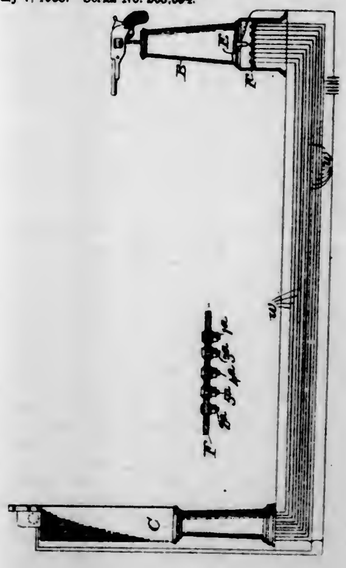
14. In an ore-separator the combination with a casing having a concave bottom portion; of a shaft mounted upon and bearing on the bottom portion, a rotatable bowl secured to said shaft, a sleeve loosely surrounding the shaft, a plurality of agitating devices carried by the sleeve, a plurality of blades adjacent to an inlet-opening in the bowl, a series of discharge-pipes coöperating with the upper portion of the bowl, and means for rotating the bowl and agitating devices at different speeds.

15. In an ore-separator the combination with a casing; of a rotatable bowl, a shaft rotatably mounted within the casing, means for securing the bowl to the shaft, a sleeve loosely surrounding the shaft, a plurality of arms radiating from the sleeve, said arms being grouped in pairs, a shaft rotatably secured between each pair of arms, disks carried by said shafts, a portion of said arms being staggered whereby the shaft interposed between will rest at an angle, and means for rotating the shaft and bowl at different speeds.

16. In an ore-separator the combination with a casing; of a shaft rotatably mounted therein, a bowl rigidly secured to said shaft, a sleeve loosely mounted upon the shaft, arms radiating from said sleeve and arranged in pairs, a shaft interposed between each pair of arms, one of said shafts being staggered in relation to the first-mentioned shaft, and disks secured to said shafts in close proximity to the inner surfaces of the bowl.

17. In an ore-separator the combination with a casing and a revoluble bowl mounted therein; of an elevating device within the bowl and comprising a rotatable shaft disposed at an oblique angle to the plane of the bowl's axis, and disks secured to said shaft and disposed in proximity but out of contact with the inner surface of the bowl.

820,569. **TARGET APPARATUS.** GEORGE M. HAAS, New York, N. Y., assignor to The Automatic Target Machine Company. Filed July 7, 1905. Serial No. 268,894.



Claim.—1. A target apparatus, having a universally-mounted simulated firearm, a target-field, a group of objects on said field each of which forms a target capable of being aimed at with said firearm, and electrical means, made operative by actuating the trigger of the firearm, for indicating a "hit" when the firearm is aimed at any target on the field, and also electrical means for indicating by a special signal a "miss" when the firearm is not aimed at a target on the field.

2. A target apparatus, having a universally-mounted simulated firearm, an object to be aimed at therewith, and electrical means made operative by actuating the trigger of the firearm, which signalizes the result when the marksman shall have aimed at said object, and also electrical means which signalizes the result by illumination when the marksman shall have missed the said object.

3. A target apparatus, having a universally-mounted simulated firearm, a target to be aimed at therewith, an electric-light circuit having a lamp or lamps near the target and adapted to be completed through said lamps by pulling the trigger of said firearm, and a sign, illuminated by said lamps, said sign having on it an inscription signalizing to the marksman that he has missed the target.

4. A target apparatus, having a universally-mounted simulated firearm, a target to be aimed at, electrically-operated means adjacent to the target for signalizing to the marksman his failure to aim correctly at the target, electrically-operated means at the target to signalize to the marksman his success in aiming correctly thereat, circuit-closing devices adjacent to the firearm and made operative by pulling the trigger of the firearm, and circuits connecting the respective circuit-closing devices with the signalizing devices at the target.

5. The combination with the simulated firearm and its stand, the target-stand, and targets mounted on said stand, of a selecting-contact E, movable with the firearm in aiming, a metal plate F below the selecting-contact, contact-disks set in said plate and insulated therefrom, conductors connecting the said contact-disks with the respective targets, an electrically-operated device adjacent to the targets for signalizing a miss, a conductor connecting said device with the plate F, a battery or generator, and a return-conductor connecting the said miss-signalizing device and the targets with the contact E.

820,570. CIGAR AND CIGARETTE HOLDER. WILLIAM R. HAMMOND, Atlanta, Ga. Filed July 28, 1905. Serial No. 271,643.



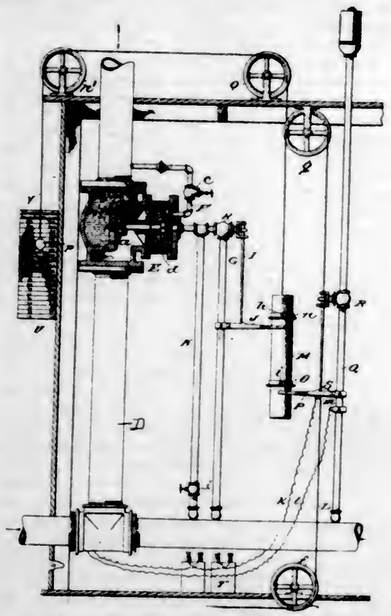
Claim.—A combined cigar and cigarette holder, consisting of a single piece of resilient metal having its ends bent to form two U-shaped loops of different size, the smaller loop being adapted to serve as a cigarette-holder, and the loop not in use being adapted to serve as a handle for the implement, substantially as described.

820,571. TEMPERATURE-INDICATOR AND AUTOMATIC FIRE-EXTINGUISHER FOR DRYING-KILNS AND THE LIKE. LAMBERT HARLOW, Vancouver, Canada. Filed June 30, 1904. Serial No. 214,748.

Claim.—1. In a fire-extinguisher, a wire fixed at one end and carried through the area to be protected; a sheave over which the wire passes; and a weight secured to the end of the wire, in combination with a sprinkler mechanism; controlling means therefor, adapted to be operated by the said weight when the latter is lowered by the expansion of the wire under the influence of undue heat; an indicator-wire connected with the main wire; means for tensioning the said wire; an index carried by the indicator-wire; and a scale suitably supported adjacent to the index, substantially as described.

2. In a fire-extinguisher, a wire fixed at one end and carried through the area to be protected; a sheave over which the wire passes; a weight secured to the end of the wire; a vertically-adjustable contact-piece carried by the weight, in combination with a sprinkler mechanism; controlling means therefor, adapted to be operated by the said contact-piece when the latter is lowered by the extension of the wire under the influence of undue heat; an indicator-wire connected with the main wire; means for tensioning the said wire; an index carried by the indicator-wire; and a scale suitably supported adjacent to the index, substantially as described.

3. In a fire-extinguisher, a sprinkler system located within the area to be protected; a supply-pipe for the sprinkler system; a differential valve therein having connected valve-disks of different areas, the smaller disk controlling the water-supply and the larger fitting a chamber connected behind the disk with the supply-pipe at the inlet side of the valve; a pipe communicating with said chamber behind the larger disk; a valve in said pipe; means operated by a rise of temperature in the kiln for opening the said valve; a second pipe communicating with the said chamber behind the disk; and a controlling-valve in said pipe, substantially as described.



4. In a fire-extinguishing apparatus, the combination of a discharge pipe normally empty of liquid, and provided with a plurality of sprinkler-orifices; a valve controlling the flow through said pipe to all the sprinkler-orifices; a wire stretched in proximity to the sprinkler-orifices; and means whereby the expansion of the wire by heat opens said valve and permits the flow of fluid to all the sprinkler-orifices, substantially as described.

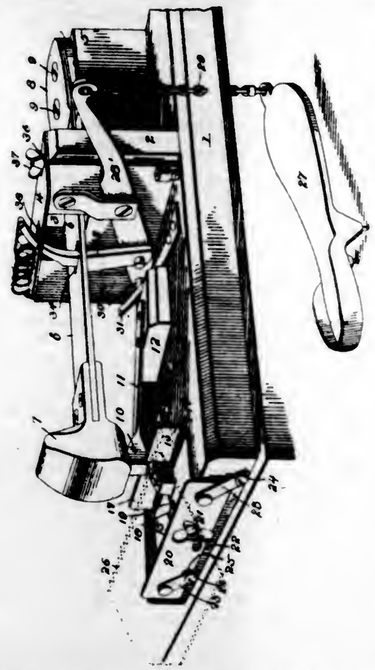
820,572. SAW-SETTING DEVICE. SAMUEL L. HAWN, Crisman, Colo., assignor of one-half to Abraham S. Coan, Crisman, Colo. Filed Jan. 24, 1905. Serial No. 242,480.

Claim.—1 In a setting device, a hammer, a spring-handle therefor, a controlling-lever, a trigger pivotally mounted on said lever and having a shoulder to engage with the handle, a plate having a slot therein within which the trigger is arranged to travel, and a spring secured to said plate and aranged to hold the trigger against one wall of the slot whereby the trigger is caused to disengage the hammer.

2. In a saw-setting device, the combination, with a suitable support, and an anvil carried by said support, of a leaf-spring having one end mounted on the support, a saw-setting tool formed integral with the other end of said leaf-spring and thereby held suspended over the anvil, a second leaf-spring having one end mounted on the support, a hammer carried by said second leaf-spring, and means for automatically raising and releasing said second leaf-spring and hammer.

3. In a saw-setting device, a hammer, a spring-handle therefor, a controlling-lever, a spring for returning the lever to its starting position, a trigger pivotally mounted on said lever and having a shoulder engaging with the handle whereby said handle is raised and released, a plate having a slot within which the trigger is arranged to travel, and a spring arranged to hold the trigger against one wall of the slot whereby the trigger is caused to disengage the hammer.

4. In a saw-setting device, an anvil, a saw-setting tool movably mounted above said anvil, a hammer mounted above the saw-setting tool and adapted to engage therewith, a hammer-head, a flexible handle for said hammer-head, a support having one end of said handle rigidly secured thereto, a second support, a lever mounted thereon, a spring actuating said lever, a trigger pivotally mounted on the lever and arranged to operate the handle, a plate adjustably mounted on said second support and having a slot therein within which the upper end of the trigger is arranged to travel, and a spring secured to said plate and arranged to hold said trigger in place.



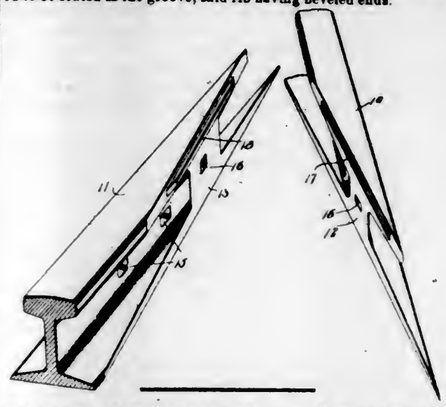
5. In a saw-setting device, a suitably-mounted bed-plate, a vertical cross-piece secured thereto, an anvil secured thereto, a setting-tool movably mounted above the anvil, a hammer-head mounted above the anvil, a flexible handle for said hammer-head, a lever pivoted on the cross-piece, a spring secured to the bed-plate and arranged to control one end of the lever, a trigger pivotally mounted on said lever and arranged to throw the handle into and out of operation, a plate adjustably mounted on said cross-piece and overhanging the same, a slot in said plate within which the upper end of the trigger is arranged to travel, a support rigidly secured to the bed-plate and having one end of the flexible handle rigidly mounted thereon, and a spring secured to said plate and to the upper end of said trigger and adapted to control the same.

6. In a saw-setting device, an anvil mounted on a suitable support, a hammer-head mounted above said anvil, a spring-handle having the hammer-head secured to one end thereof, a rigid support having the other end of the handle mounted thereon, a second support, a lever pivotally mounted on said second support, a spring controlling one end of the lever, a trigger pivotally mounted on said lever and adapted to raise and release the handle, a plate adjustably mounted on the top of said second support and having a slot therein within which the upper end of the trigger is arranged to travel, a spring secured to said plate and arranged to control the upper end of said trigger, and means for actuating said lever.

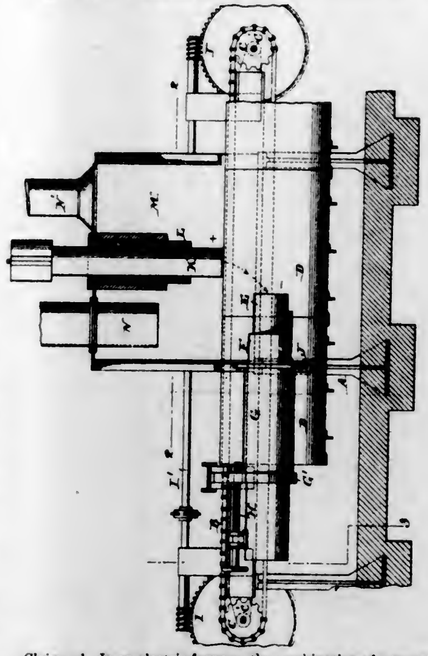
820,573. RAIL-JOINT. WILLIAM M. HEUN, McCook, Nebr. Filed Oct. 26, 1905. Serial No. 284,503.

Claim.—1. A T-rail having oblique parallel ends, a groove within one end of the head of the rail and parallel with the rail-base, and a rib of uniform width and thickness upon the other end of the head of the rail and parallel with the rail-base, said rib and groove being of substantially the same proportions.

2. A rail-joint comprising T-rail ends having oblique meeting ends, one of said ends having a groove in the head thereof parallel with the rail-base and the other rail end having a similarly-disposed supporting and centering rib of uniform width and thickness adapted to be seated in the groove, said rib having beveled ends.



820,574. ELECTRIC FURNACE. JAMES E. HEWES, Plattsburg, N. Y., assignor of one-half to Charles H. Boone, Baltimore, Md. Filed July 18, 1905. Serial No. 270,184.



Claim.—1. In an electric furnace, the combination of a trough-like hearth for the materials to be smelted having side flanges, two electrodes arranged at an angle to each other one of said electrodes being in alinement with the length of the trough-like hearth, two side guides B' on each side of the hearth, endless traveling chains or conveyers B B traveling over and resting above said guides and directly supporting the flanges of the hearth.

2. In an electric furnace the combination of a trough-like hearth for the materials to be smelted, two electrodes arranged at an angle to each other one of said electrodes being in alinement with the length of the trough-like hearth, and means for causing a relative movement between the electrodes and the hearth whereby the smelted materials are conveyed away from the electrodes.

3. In an electric furnace the combination of a trough-like hearth for the materials to be smelted, two electrodes arranged at an angle to each other one of said electrodes being in alinement with the length

of the trough-like hearth, and means for feeding the hearth longitudinally and relatively to the electrodes.

4. In an electric furnace the combination of a longitudinally-traveling trough-shaped hearth, a horizontal electrode arranged within the hearth, a vertical electrode at a higher elevation than the horizontal electrode so as to leave a space below the vertical electrode in alinement with the horizontal electrode, a hood surrounding the electrodes and the hearth adjacent to them and a depending shield J fitting down into the trough-shaped hearth and around the horizontal electrode to close the hearth and yet permit it to be moved forward.

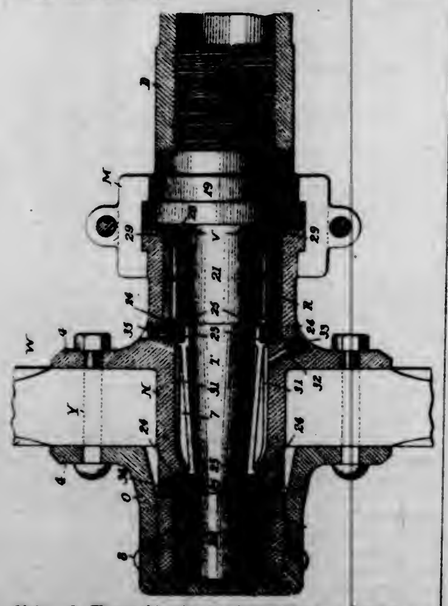
5. In an electric furnace the combination of a hearth, a horizontal electrode arranged at a higher elevation than the horizontal electrode so as to leave a space below the vertical electrode in alinement with the horizontal electrode and means for feeding the hearth longitudinally under the electrodes.

6. In an electric furnace, the combination of a hearth, a horizontal electrode arranged above the hearth, a vertical electrode at a higher elevation than the horizontal electrode so as to leave a space below the vertical electrode in alinement with the horizontal electrode, means for feeding the hearth longitudinally under the electrodes, and stationary means for feeding the materials to be smelted to the electrodes.

7. In an electric furnace the combination of two electrodes with a sectional hearth formed of a series of trough-like plates detachably abutting and forming a rectilinear trough, and a common carrier for holding the plates in alinement and conveying them past the electrodes, consisting of two traveling chains and guides therefor whereby they form traveling rectilinear supports.

8. In an electric furnace the combination of two electrodes with a sectional hearth formed of a series of trough-like plates detachably abutting and forming a rectilinear trough, a common carrier for holding the plates in alinement and conveying them past the electrodes, consisting of two traveling chains and guides therefor whereby they form traveling rectilinear supports, and means for operating the common carrier or conveyer.

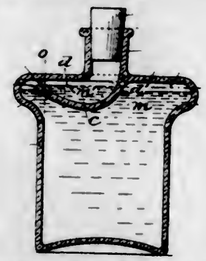
820,575. **WHEEL-BEARING.** FREDERICK G. HUGHES and ROBERT P. STOUT, Bethlehem, Pa., assignors to Bethlehem Steel Company, South Bethlehem, Pa., a Corporation of Pennsylvania. Filed Dec. 10, 1903. Serial No. 134,665.



Claim.—1. The combination of a journal having a bearing portion, a hub, an internal removable sleeve therein, having an end flange with an annular groove therein, a detachable cap having an annular groove, antifriction-rolls between said bearing portion and sleeve and extending at their ends into said grooves, and means to prevent the sleeve from turning while permitting its longitudinal withdrawal, substantially as set forth.

2. The combination of the hub having a fixed flange and movable flange, a journal provided with a sleeve, bearing-rollers between said journal and sleeve, and a cap P bearing on and confining both the sleeve and the movable flange, substantially as set forth.

820,576. **AUTOMATIC DOSE-MEASURING BOTTLE OR VESSEL.** ARTHUR W. HUTCHINS, Providence, R. I., assignor to Measuring Appliance Company, Providence, R. I., a Corporation of Rhode Island. Filed June 30, 1905. Serial No. 267,717.



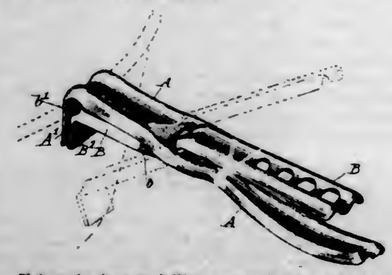
Claim.—1. As a new and improved article of manufacture a bottle or vessel for holding liquids, the same having a dose-measuring partition or member located in the upper interior portion of the vessel contiguous to and communicating with the latter's neck or discharge-outlet, and having an open aperture or passage for the flow of the liquid formed between the outer edge of said partition and the adjacent wall, the latter extending diametrically beyond and forming a continuation of the normal wall of the vessel's body.

2. A bottle or vessel provided with a discharge-outlet, and having the upper portion of the body enlarged in a lateral direction beyond the vertical plane of its normal wall and provided interiorly with an integral dose-measuring partition or member having its outer edge extending to or into said enlarged portion and forming an open passage past said edge between the discharge-outlet and the main body of the bottle, said partition completely separating the neck or outlet portion from the body or reservoir and preventing circulation of the liquid except through said open passage.

3. A bottle or vessel having its upper portion enlarged circumferentially to increase its capacity, a nozzle or neck member integral therewith adapted to receive a suitable stopper, an integral interior dose-measuring partition forming an upper passage for the liquid to and from said nozzle and extending into said enlarged part, and also forming a passage *c* between the edge of said partition and the outer wall in continuous open communication with said upper passage and the main body, all constructed, arranged and adapted for use substantially as hereinbefore described.

4. In a bottle or vessel, an interior dose-measuring partition communicating with the discharge-outlet and extending in a lateral direction beyond the normal vertical plane of the vessel's wall, and having the latter enlarged adjacent the outer edge of said partition to form a continuously-open passage past said edge and between the nozzle and body portions of the vessel.

820,577. **PAN-LIFTER.** ALBERT G. JOHNSON, Chicago, Ill. Filed Feb. 5, 1904. Serial No. 192,060.



Claim.—An improved lifter comprising two members and a pivot-pin, each of which members is formed complete of a piece of

sheet metal, one comprising a lower handle portion and upper jaw portion lying substantially in a single plane, the end of the jaw extending down approximately at right angles to the main portion of the jaw in the form of a flat lip, said member having an opening and two pivot-lugs projecting down from the sides of the opening substantially midway between the ends of said member, the other member comprising an upper handle and lower jaw extending substantially in two planes connected by diagonal portions which extend through the opening in the first-mentioned member, the end of the lower jaw also being formed with a flat lip extending along the lip on the upper jaw and coacting therewith to grasp a vessel, the handle and jaw portions of both members being approximately of the same lateral extent, except at the pivot-point where the lower handle and upper jaw member is widened to receive the other member, the side edges of both members being bent upward and down in the form of round flanges and that portion of the flange on the lower handle being turned inward to form a smooth grip

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820,578. **WIRE-STRETCHER.** ARTHUR A. KEMP and WILLIAM B. KEMP, Guymon, Okla. Filed Jan. 30, 1906. Serial No. 298,660.



Claim.—1. A wire-stretcher comprising a chain, grips adjacent the ends of the chain, a detachable lever arranged to draw in the chain to shorten the interval between the grips and means whereby the loop of the chain may be engaged to maintain the grips in such relation after the lever is removed.

2. A wire-stretcher comprising, a chain, grips adjacent the ends of the chain, a detachable lever arranged to draw in the chain to shorten the interval between the grips, a hook adjacent one end adapted to engage the loop of the chain to maintain the grips in the obtained relation after the lever is removed.

3. A wire-stretcher comprising a chain, fence-engaging grips at the ends of the chain, a lever extending across the chain, means upon the lever for engaging the chain, said means constituting a fulcrum, and hooks carried by the lever at opposite sides of its fulcrum and adapted to successively engage links of the chain to decrease the interval between the grips.

4. A wire-stretcher comprising a chain, fence-engaging grips at the ends of the chain, a lever extending across the chain, a hook pivoted to and extending from the lever and adapted to engage a chain-link, a hook pivoted to the lever at each side of the first-mentioned hook, said hooks adapted to successively engage the links of the chain to decrease the intervals between the grips.

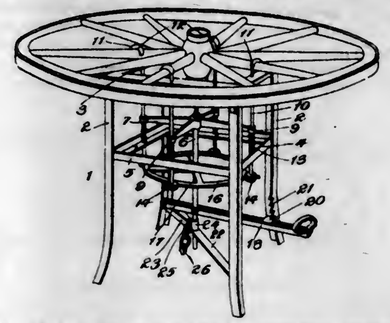
5. A wire-stretcher comprising a chain, grips adjacent the ends of the chain, a detachable lever, a hook pivoted to and extending laterally from the lever and arranged to engage a link, a hook pivoted upon each side of and extending opposite the first hook and to progressively engage other links to draw in the chain step by step and decrease the interval between the grips and a hook adjacent one end of and to engage the loop of the chain to maintain the grips in the obtained relation when the lever is removed.

820,579. **WHEEL-HOLDER.** OTTO G. KLEIN, Barron, Wis. Filed Oct. 31, 1905. Serial No. 285,339.

Claim.—1. In a device of the character described, the combination of a supporting-framework, clamping-arms longitudinally movable and rotatable in said framework, and an actuating-rod arranged to move said arms both longitudinally and also rotate the same.

2. In a device of the character described the combination of a supporting-framework, clamping-arms mounted therein, an actuating rod or spindle operatively connected to said clamping-arms and arranged to move the same both longitudinally and in a rotary manner at right angles to the longitudinal movement, and means for depressing and rotating said rod.

3. A device of the character described comprising a support for a wheel, a longitudinally movable and rotatable actuating-rod mounted in said support, rotatable clamping-arms carried by said rod, and gearing connecting said rod with said arms, whereby the arms may be depressed and rotated by the said rod.



4. A device of the character described comprising a supporting-framework, an actuating-rod mounted therein and movable longitudinally and rotatable and provided with a gear-ring, a spider mounted on said rod, clamping-arms carried by said spider and rotatable therein, said arms carrying pinions meshing with said gear-ring, and a lever arranged to depress and turn said actuating-rod for the purpose set forth.

5. A device of the character described comprising a supporting-framework, an actuating-rod mounted therein and movable longitudinally and rotatable and provided with a gear-ring, a spider mounted on said rod, clamping-arms carried by said spider and rotatable therein, said arms carrying pinions meshing with said gear-ring, a lever arranged to depress and turn said actuating-rod, and springs designed to press said actuating-rod upwardly for the purpose set forth.

6. A device of the character described comprising a supporting-framework, a longitudinally movable and rotatable actuating-rod mounted therein, a gear-ring carried by said rod, a spider mounted on said rod above the gear-ring, clamping-arms provided at their upper ends with hooks and mounted to move vertically with said spider and rotatable therein, the lower ends of said arms being provided with pinions meshing with said gear-ring, a foot-treadle designed to move said actuating-rod longitudinally and rotatably and designed for locking engagement with the framework, and springs encircling said arms and located between said spider and an adjacent portion of the framework whereby to press the spider and actuating-rod upwardly.

7. A device of the character described comprising a framework, transverse braces secured to said framework and provided with laterally-extending apertured portions, an actuating-rod in said framework, said rod being movable longitudinally and rotatable, a gear-ring secured to said rod, a spider also secured to said rod above said gear-ring, clamping-arms carried by said framework and rotatable therein, the lower ends of said arms being provided with pinions meshing with said gear-ring and said arms passing through the apertures of the laterally-extending portions of the transverse braces and provided at their outer ends with hooks, helical springs encircling said arms and bearing against the arms of the spider and the laterally-extending portions of the braces, a lever connected to said actuating-rod and designed to move the same, and a dog secured to said lever, there being provided means on the framework to engage said dog whereby to hold the lever locked.

8. In a device of the character described, the combination of a supporting-framework, clamping-arms longitudinally movable and rotatable in said framework and designed to secure a wheel thereon, and means for simultaneously moving said arms longitudinally.

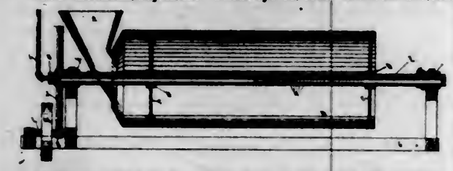
9. In a device of the character described, the combination of a supporting-framework, clamping-arms longitudinally movable and rotatable in said framework and designed to secure a wheel thereon, and means for simultaneously rotating said arms.

10. In a device of the character described, the combination of a supporting-framework, a plurality of clamping-arms longitudinally movable and rotatable in said framework, an actuating-rod arranged to move both rotatably and longitudinally, means for moving said rod in both directions, a connection between said clamping-arms and said rod arranged to move said arms and rod together in a longitudinal direction, and another connection between said arms and rod.

said latter connection being arranged to rotate said arms by the rotation of said rod.

11. In a device of the character described, the combination of a supporting-framework, one or more clamping-arms longitudinally movable and rotatable in said framework, an actuating-rod also movable longitudinally and in a rotary manner in said framework, a gearing connection between said actuating-rod and clamping-arms and arranged to move the rod and arms in both directions simultaneously and a foot-treadle operatively connected to said rod to actuate the same and arranged for locking engagement with the framework.

820,580. MORTAR AND CONCRETE MIXING MACHINE. ALVIN F. KOEHLER, Joplin, Mo. Filed Sept. 11, 1905. Serial No. 277,932.



Claim.—A concrete-mixing machine comprising the combination of a stationary hopper; a cylinder provided at its front end with a top formed with a hole into which fits the lower end of said hopper; the rear end of said cylinder being entirely open for the discharge of the material; a supporting-frame; a tubular shaft journaled in said frame and having its rear end closed and its front end provided with a gasket, the front half of said shaft within said cylinder being imperforate while the rear half thereof within said cylinder is perforated; a water-supply pipe which fits into said gasket; driving mechanism for rotating said shaft; and spiders fast to said shaft and the inside of said cylinder, the openings between the arms of said spiders permitting the free discharge of the material therethrough.

820,581. DOOR CHECK AND STOP. MOSES LA LONDE, Indian Orchard, Mass., assignor of one-half to John W. Superneau and one-fourth to Elmer Patenaude, both of Springfield, Mass. Filed July 31, 1905. Serial No. 271,878.

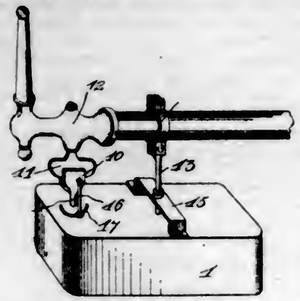


Claim.—1. In a door-check, members for attachment respectively to a door-jamb and to a door, a rod, swiveled to one of said members to swing in a horizontal plane, and having a guiding engagement horizontally through the other member, and a friction device associated with the member relatively to which the rod is guided, comprising a saddle-shaped shoe having opposite rod-bearing members, a spring for pressing the shoe against the rod and a nut-screw engaging an extension of the rod-engaging member and coacting with said spring.

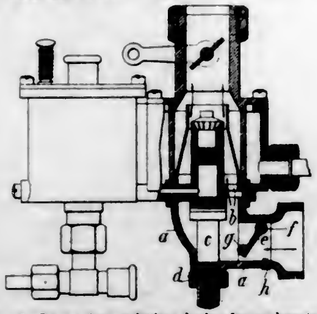
2. In an appliance of the character described, in combination, members for attachment to a door and a door-jamb, a rod pivotally connected to one of said members, and the other of said members having a perforation for the engagement of the rod horizontally therethrough, and provided with an angularly-extending screw-stud, a saddle or yoke-shaped shoe, intermediately vertically apertured, engaging about said screw-stud having the opposite members thereof grooved at their under side, and in frictional bearing against the rod at opposite sides of said perforated member, a spiral spring encircling the screw-stud and reacting downwardly against the saddle-shoe, and a nut engaging the screw-stud, and for tensioning the spring, and constructed with a cup-shaped downwardly-open lower portion for enveloping the spring.

820,582. TIME VALVE MECHANISM. MAURICE LAUCHER, Jersey City, N. J. Filed Oct. 27, 1905. Serial No. 284,719.

Claim.—The herein-described time valve mechanism having the casing provided with the bracket 15 on one side, the hanger-rod attached to said bracket and provided with a clamp, for the purpose set forth, said casing being further provided with the curved slot 17, the stop-pin 16 adjustable in said slot and having means to secure it at any desired adjustment, and the alarm-spring shaft having its ends projecting from opposite sides of said casing, provided at one end with a key, and having the valve-engaging socket 10 at the opposite end, substantially as specified.



820,583. CARBURETER FOR HYDROCARBON-ENGINES. AMÉLIE A. LONGUEMARE, FERNAND LONGUEMARE, and GEORGES LONGUEMARE, Paris, France; said Fernand Longuemare and Georges Longuemare assignors to said Amélie A. Longuemare. Filed Mar. 4, 1904. Serial No. 196,633.



Claim.—1. In an air-regulating device for carbureters for motor-vehicles, an air-inlet conduit for communicating with an air-passage in which the fuel-duct empties, in combination with a freely-suspended flap-valve weighted at its lower end in said conduit adapted to open in the direction of the motion of the vehicle, substantially as set forth.

2. In an air-regulating device for carbureters for motor-vehicles, an air-inlet conduit for communicating with an air-passage in which the fuel-duct empties, in combination with a freely-suspended flap-valve weighted at its lower end in said conduit adapted to open in the direction of the motion of the vehicle and a valve-stop, substantially as set forth.

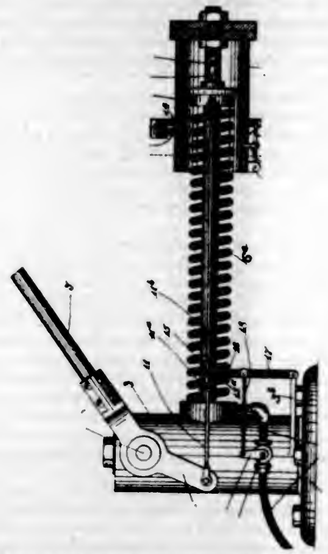
820,584. TROLLEY-POLE CONTROLLER. JOSEPH F. MACKIN, Columbus, Ohio. Filed Aug. 21, 1905. Serial No. 275,110.

Claim.—1. In a trolley-retriever, the combination with the trolley-pole and stand therefor, of a tube supported near the base of the pole, a cylinder surrounding the outer end of said tube, a piston in the cylinder on the tube, means connecting the piston and pole, a spring acting on the piston tending to raise the pole and means for admitting fluid-pressure to the cylinder through the tube to depress the pole.

2. In a trolley-retriever, the combination with the trolley-pole and stand therefor, of a tube supported near the base of the pole, a cylinder supported near the outer end of said tube, a piston in the cylinder, means connecting the piston and pole, a spring acting on the piston tending to raise the pole and means for admitting fluid-pressure to the cylinder operative by the means connecting the piston and pole.

3. In a trolley-retriever, the combination with the trolley-pole and stand therefor, of a tube supported near the base of the pole, a cylinder supported near the outer end of said tube, a piston in the cylinder, means connecting the piston and pole, a spring acting on the piston tending to raise the pole, means for admitting fluid-pressure to the cylinder through the tube operative by the means for connecting the piston and pole to depress the pole and an exhaust for limiting the pole-depressing action of the piston.

4. In a trolley-retriever, the combination with the trolley-pole and stand therefor, of a tube supported near the base of the pole, a cylinder supported near the outer end of said tube, a piston in the cylinder, means connecting the piston and pole, a spring acting on the piston tending to raise the pole, means for admitting fluid-pressure through the tube to the cylinder to depress the pole, an exhaust for limiting the pole-depressing action of the piston and a latch for holding the piston when it reaches the limit of its pole-depressing action.



5. In a trolley-retriever, the combination with the trolley-pole and stand therefor, of a tube supported near the base of the pole, a cylinder supported near the outer end of said tube, a piston in the cylinder, means connecting the piston and pole, a spring acting on the piston tending to raise the pole, means for admitting fluid-pressure through the tube to the cylinder to depress the pole, an exhaust for limiting the pole-depressing action of the piston, a latch for holding the piston when it reaches the limit of its pole-depressing action adapted to be operated by manipulating the pole.

6. In a trolley-retriever, the combination of the trolley-pole, a turn-post on which the same is mounted, a stand for the turn-post, a tube extending from the turn-post, a cylinder supported near the outer end of said tube, a piston in the cylinder, means connecting the piston and pole, a spring acting on the piston tending to raise the pole and means for admitting fluid-pressure to the cylinder through the tube to depress the pole.

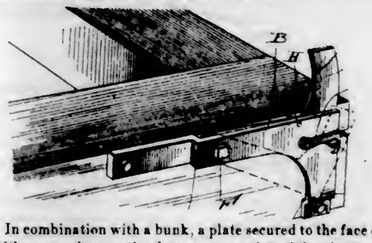
7. In a trolley-retriever, the combination with the trolley-pole and stand therefor, of a tube supported near the base of the pole, a cylinder supported near the outer end of said tube, a piston in the cylinder, a flexible rod connecting the piston and pole, a spring acting on the piston tending to raise the pole, means for admitting fluid-pressure to the cylinder through the tube to depress the pole, a valve for controlling the fluid-pressure, a friction-sleeve on said flexible rod, and means connecting said valve and friction-sleeve.

8. In a trolley-retriever, the combination with the trolley-pole and stand therefor, of a tube supported near the base of the pole, a cylinder supported near the outer end of said tube, a piston in the cylinder, means connecting the piston and pole, a spring acting on the piston tending to raise the pole, means for admitting fluid-pressure through the tube to the cylinder to depress the pole, and a port in the cylinder for releasing the pole-depressing pressure.

820,585. STANDARD FOR LUMBER-CARS, &c. JOSEPH MALONE, Muscogee, Fla. Filed Feb. 12, 1906. Serial No. 300,705.

Claim.—1. In combination with a bunk, a plate secured to the face thereof and having a slot in its edge, a standard pivotally mounted upon the bunk, a pivotal standard-support mounted upon the bunk and adapted to swing underneath the standard and into said slot, and means for holding said bar in said slot, as set forth.

2. In combination with a bunk, a plate secured to the face of the bunk with a space intervening between a portion of the plate and the bunk, a pin passing through said plate and secured to the bunk, an angled standard pivotally mounted upon said pin and between the plate and face of the bunk, and a horizontally-pivoted standard-supporting bar carried by the bunk and adapted to swing underneath the standard and support the latter, as set forth.



3. In combination with a bunk, a plate secured to the face of the bunk with a space intervening between a portion of the plate and the bunk, a pin passing through said plate and secured to the bunk, an angled standard pivotally mounted upon said pin and between the plate and face of the bunk, a pivotal and horizontally-swinging bar mounted in a recess in the bunk and adapted to swing into a slot in the edge of said plate to form a support to the standard, and a hook pivotally mounted upon the plate and adapted to hold said bar within the slot of the plate, as set forth.

820,586. MANUFACTURE OF RIVETS. NORMAN MARSHALL, Newton, Mass. Filed Oct. 26, 1903. Serial No. 178,459.



Claim.—1. A metal plate provided with an integral imperforate cylindrical rivet on one side and a conical-shaped recess on the opposite side from which the metal has flowed to form the rivet, substantially as described.

2. A metal plate provided with an integral imperforate rivet on one side and a recess on the opposite side, the cross-sectional area of which gradually increases from the surface of the plate toward the rivet and from which the metal has been forced outwardly and laterally to form the rivet, substantially as described.

820,587. PHOSPHOROUS COMPOUND AND METHOD OF MAKING SAME. GUSTAV MARTELL, Glauchau, Germany. Filed Mar. 10, 1905. Serial No. 249,495.

Claim.—1. The process of manufacturing a preparation of organic phosphorus, consisting in removing the skin from the marrow and brain of cattle, washing this marrow and brain in a solution of common salt, comminuting them, stirring them to a pasty condition with the spirit of ether, known as "*spir. aether*" of the *Pharmacopœia Germanica*, forming an extraction thereof with spirit of ether of the said kind, filtering the mass, driving off the ether from the filtrate, and mingling the product with blood-serum, spermin, and phosphate of sodium, until the mass has hardened and is in a readily-pulverizable condition, all substantially as described.

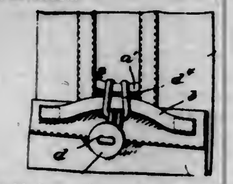
2. The herein-described organic phosphorous compound, consisting of a dry, readily-pulverizable mass obtained from mingled marrow and brain of cattle, blood-serum, spermin, and sodium phosphate, substantially as described.

820,588. DETACHABLE BUTTON. IONE MILLER, Bradford, Pa. Original application filed May 9, 1905. Serial No. 259,505. Divided and this application filed Sept. 1, 1905. Serial No. 276,745.

Claim.—1. A detachable button consisting of a head or disk provided with an attaching-loop of flexible material, for connection with a loop-engaging device on a garment, said loop being of sufficient length to pass over the head or disk and extend beyond the periphery thereof, for detachably securing the button to a garment, substantially as described.

2. A detachable button consisting of a disk or head provided with a pair of apertures and an endless attaching-loop of flexible material extending loosely through both of said apertures and of sufficient length to pass over the head or disk and extend beyond the pe-

riphery thereof for detachably securing said button to a garment, substantially as described.

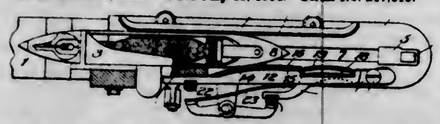


3. A detachable button for garments comprising a head, a loop of flexible material secured thereto, and a cross-piece secured to said loop between the head and the opposite end of the loop, substantially as described.

4. A detachable button for garments comprising a head or disk having two apertures therein, a loop of flexible material passing through said apertures, and having its ends meeting at a point between the head and the opposite end of the loop, and a cross-piece secured to said loop at the meeting-point of the end of the same, and uniting said meeting ends, substantially as described.

5. A detachable button for garments comprising a head or disk having two apertures therein, a loop of flexible material passing through said apertures, and having its ends meeting at a point between the head and the opposite end of the loop, and a cross-piece of fabric placed across said loop at the point where the ends thereof meet, and stitched to said loop, thus securing the cross-piece to the loop and also uniting the ends of the loop, substantially as described.

820,589. SHUTTLE CHECK AND LOCK FOR LOOMS. FRANCIS A. MILLS, Lawrence, Mass., assignor of one-half to Grosvenor B. Emmons, Methuen, Mass. Filed July 18, 1904. Serial No. 217,010.



Claim.—1. In a loom, the lay, the shuttle-box having a shuttle-binder, the shuttle and picking mechanism therefor, a binder-actuating lever device having a shuttle impact-face in the path of and operated by a side of the shuttle, and another part of said device operating on a movable part of the shuttle-binder, and yielding means located between the shuttle impact-face of said device and the impact part of said device on the shuttle-binder for causing said binder to be yieldingly pressed on the shuttle at or near the limit of its travel in the shuttle-box and throughout the remaining extent of its travel in the box.

2. In a loom, the lay, the shuttle-box having a shuttle-binder, the shuttle and picking mechanism therefor, a binder-actuating lever device having a shuttle impact-face in the path of and operated by a side of the shuttle, and another part of said device operating on the shuttle-binder, said lever device and said binder each having yielding contacts, and said binder having a flexible impact-face to coact with said yielding contacts for causing the shuttle to be yieldingly checked and locked by a yielding pressure in the shuttle-box by the impact of the shuttle upon said device.

3. In a loom, the lay, the shuttle-box, the shuttle-binder, the shuttle and picking mechanism therefor, a binder-actuating lever device composed of coacting lever members, including cushioning contacts for the shuttle and for the binder, located between the meeting ends of the lever members and between one of said lever members and the movable end of the shuttle-binder.

4. In a loom, the lay, the shuttle-box having a shuttle-binder, the shuttle and picking mechanism therefor, a binder-actuating lever device, having a shuttle impact-face in the path of and operated by a side of the shuttle, and another portion of said device operating on said binder, and both said lever device and said binder having yielding means located between the shuttle impact-face of said device and the shuttle impact-face of said binder, for causing both said lever device and said binder to yieldingly press upon the shuttle by the impact of said shuttle on said lever device.

5. In a loom, the lay, the shuttle-box, the shuttle-binder, the shuttle and picking mechanism therefor, a binder-actuating lever device including yielding contacts for the shuttle and for the binder, said yielding contacts being located outside of the binder, and a blade-spring connected to the binder, and with said lever device.

6. In a loom, the lay, the shuttle-box having a shuttle-binder, the shuttle and picking mechanism therefor, a binder-actuating lever device, having a shuttle impact-face in the path of and operated by a side of the shuttle, and another portion of said device operating on the shuttle-binder, the said lever device and said binder, each having yielding means for causing both said lever device and said binder to be yieldingly pressed on the shuttle by the impact of the shuttle on said lever device.

7. In a loom, the lay, the shuttle-box, a shuttle-binder, the shuttle and picking mechanism therefor, a binder-actuating lever device having a shuttle impact-face in the path of and operated by a side of the shuttle, and having a connection with a movable part of said shuttle-binder, and said binder having a flexible impact-face for the shuttle and means for causing said device to press said binder on the shuttle by the impact of the shuttle on said device.

8. In a loom, the lay, the shuttle-box having a pivoted shuttle-binder, the shuttle and picking mechanism therefor, a binder-actuating lever device having an impact-face in the path of and operated by a side of the shuttle, and said device having a yielding connection with the free end of the shuttle-binder, and said binder having a flexible impact-face adapted to yield upon the shuttle for the purpose stated.

9. In a loom, the lay, the shuttle-box, the shuttle-binder, the shuttle and picking mechanism therefor, a binder-actuating lever device composed of coacting lever members, including yielding contacts for said shuttle and for said binder, one of said lever members having its fulcrum in common with the fulcrum of said binder.

10. In a loom, the lay, the shuttle-box having a shuttle-binder and a protector device operated by said binder, the shuttle and picking mechanism therefor, a frictional shuttle-lock comprising lever members, one of which is spring-pressed on said binder and yieldingly connected to another, having a shuttle impact-face in the path of and operated by a side of the shuttle, for causing said binder to be yieldingly pressed on the shuttle by the impact of a side of the shuttle on said lever device.

11. In a loom, the lay, the shuttle-box having a shuttle-binder, the shuttle and picking mechanism therefor, a lever device having an impact-face in the path of and operated by a side of the shuttle, and having a yielding connection with said shuttle-binder and protector mechanism operated by said binder, and means independent of said protector mechanism and operated by said lever device for causing said binder to be yieldingly pressed on the shuttle throughout the remaining portion of its travel in the box, and operated by the impact of a side of the shuttle directly on said device.

12. In a loom, the lay, the shuttle-box, the shuttle and picking mechanism therefor, a shuttle-binder pivotally mounted at or near the outer end of the lay and protector mechanism operated by said binder, and means for causing said binder to be yieldingly pressed on the shuttle by the impact of a side of the shuttle on said means throughout the remaining portion of the travel of the shuttle in the box.

13. In a loom, the lay, the shuttle-box, the shuttle and picking mechanism therefor, and a shuttle-binder, a binder-actuating lever device having yielding means acting between the impact of said shuttle upon said lever device and the impact of said lever device upon said shuttle-binder, and means for adjusting said lever device laterally to cause it to act with more or less pressure upon the binder to check and lock the shuttle.

14. In a loom, the lay, the shuttle-box having a shuttle-binder, the shuttle and picking mechanism therefor, a binder-actuating lever device having a shuttle impact-face in the path of and operated by a side of the shuttle, and another portion of said device operating on a shuttle-binder, and said device having yielding means acting between the shuttle impact-face of said device and the impact of said device upon said binder, and an adjustable eccentric fulcrum on which said binder-lever is loosely mounted, for causing more or less yielding pressure of the binder on the shuttle by the impact of the shuttle upon said lever device.

15. In a loom, the lay, the shuttle-box having a shuttle-binder, the shuttle and picking mechanism therefor, a binder-actuating lever device composed of coacting lever members, including yielding contacts for the shuttle and for said binder, and an adjustable eccentric fulcrum on which said binder-lever member is loosely mounted for the purpose stated.

16. In a loom, the lay, a shuttle-box thereon, a shuttle-binder, the shuttle and picking mechanism therefor, a binder-actuating lever device composed of coacting members including yielding contacts for said shuttle and for said binder, one of said lever members mounted upon an adjustable eccentric fulcrum, the other of said lever members having its fulcrum in common with the fulcrum of said binder.

17. In a loom, the lay, the shuttle-box thereon, the shuttle and picking mechanism therefor, and a shuttle-binder, a binder-actuating lever device for coacting members, one of said lever members mounted upon a laterally-adjustable fulcrum, a plate supporting said adjustable lever member, and means for adjusting said plate for the purpose stated.

18. In a loom, the lay, the shuttle-box thereon, a shuttle-binder, the shuttle and picking mechanism therefor, a binder-actuating-lever device of coacting members, a plate supporting one of said lever members, means for adjusting said plate with its lever member horizontally, and means for adjusting said lever member laterally on said plate.

19. In a loom, the lay, the shuttle-box, the shuttle and picking mechanism therefor, a shuttle-binder pivotally mounted on the lay and protector mechanism operated by said binder, and means for yieldingly pressing said binder upon said shuttle, operated by the impact of a side of the shuttle upon said means for yieldingly checking and locking the shuttle in the shuttle-box.

20. In a loom, the lay, the shuttle-box having a shuttle-binder, the shuttle and picking mechanism therefor, a binder-actuating lever device having a shuttle impact-face in the path of and operated by a side of the shuttle, and another portion of said device operating on a shuttle-binder, and said device having rubber contacts located between the shuttle impact-face of said device and the shuttle impact-face of said binder, for yieldingly checking and locking the shuttle in the shuttle-box by the impact of the shuttle upon said device.

21. In a loom, the lay, the shuttle-box having a shuttle-binder, the shuttle and picking mechanism therefor, a binder-actuating lever device having a shuttle impact-face in the path of and operated by a side of the shuttle, and said device having a connection with the shuttle-binder, the said lever device and the said binder each having rubber contacts for causing the shuttle to be yieldingly checked and locked in the shuttle-box by the impact of the shuttle upon said device.

22. In a loom, a lay, a shuttle-box, a shuttle-binder, the shuttle and picking mechanism therefor, a binder-actuating lever device comprising a pair of coacting lever members, one of said lever members acting with a yielding impact upon the shuttle, and the other acting with a yielding impact on the shuttle-binder to cause the binder to yieldingly press on the shuttle.

23. In a loom, the lay, the shuttle-box, the shuttle-binder, the shuttle and picking mechanism therefor, a binder-actuating lever device comprising coacting lever members, one of said lever members having an impact-face acting upon the shuttle at the inner side of said binder, and the other lever member delivering a yielding impact upon the outer side of said binder, both said lever members meeting with a yielding contact.

24. In a loom, the lay, the shuttle-box, the shuttle and picking mechanism therefor, a binder-actuating lever device comprising coacting lever members one of which has an impact-face yieldingly acting upon the shuttle, and means at the end of the other lever member for delivering a yielding impact on the binder, and a yielding impact facing on the shuttle-binder.

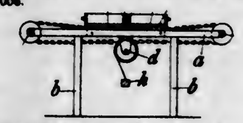
25. In a loom, the lay, the shuttle-box, a pivotally-mounted shuttle-binder, the shuttle and picking mechanism therefor, a binder-actuating lever device comprising coacting lever members, one having an impact-face adjacent the pivoted end of said binder, and a yielding contact at its other end, the other of said levers engaging a yielding contact upon the free end of said shuttle-binder, and yielding contacts at the meeting ends of said lever members.

26. In a loom, the lay, the shuttle-box, the shuttle and picking mechanism therefor, a pivotally-mounted shuttle-binder having a yielding impact-face for the shuttle and an external yielding contact at its free end, a binder-actuating lever device comprising coacting members, one of which has a shuttle impact-face and a yielding contact connecting it with the binder-actuating lever, the binder and the shuttle-lever member mounted upon the same fulcrum.

27. In a loom, the lay, the shuttle-box, the shuttle-binder, the shuttle and picking mechanism therefor, a binder-actuating lever device comprising coacting lever members, and a plurality of contacts whereby said lever members are caused to apply a yielding pressure to check and stop the shuttle, one of said contacts acting upon the shuttle within the box, and the other of said contacts acting upon the back of the binder with a yielding pressure.

28. In a loom, the lay, the shuttle-box, the shuttle and picking mechanism therefor, a shuttle-binder pivotally mounted on the lay, a protector device operated by said binder, a lever device having a shuttle impact-face in the path of and operated by a side of the shuttle, and means external to the binder for yieldingly pressing said binder upon the shuttle during the remaining portion of its travel in the box.

820,590. MOLDING-MACHINE FOR BUILDING-BRICKS. ANDREAS C. MÜLLER, Mögeltondern, Germany. Filed Apr. 17, 1905. Serial No. 256,056.



Claim.—In a molding-machine for building-bricks the combination with a suitable framework of a molding-frame, comprising a central longitudinal rib, lateral ribs starting therefrom and hinged longitudinal side walls, metal squares, supporting planks and adapted to be laterally slid in the mold, slots provided in the vertical flanges intended to be engaged by the lateral ribs of the mold, chains attached to the outside of the squares, grooved guide-pulleys for the chains, chain-drums mounted upon a shaft and to which the chains are connected and means for rotating the said shaft substantially as and for the purpose set forth.

820,591. MOLDING FLASK OR BOX. DAVID MCLAIN, Milwaukee, Wis., assignor of one-half to Niels Auton Christensen, Milwaukee, Wis. Filed Aug. 17, 1900. Serial No. 27,117.



Claim.—1. Molding-flasks each consisting of a frame whose sides are formed of channel-bars with their flanges outermost and provided with registering holes in their flanges, and pins entering the holes of the flanges of the lowermost flask and projecting above the upper flange to receive the lower or meeting flange of a similar superimposed flask.

2. A molding-flask consisting of a frame formed of channel-bars with their flanges outermost and provided with registering holes in such flanges, pins entering the holes of the flanges of the lowermost flask and projecting above the upper flange to receive the lower or meeting flange of a similar and superimposed flask, and means for holding the pins in place.

3. Molding-flasks each consisting of a frame whose sides have top and bottom outwardly-extending flanges provided with registering holes and straight pins supported from below and entering the holes in both of the flanges of the lowermost flask and projecting above the top flange thereof, and also entering the hole of the meeting or lower flange of a superimposed flask, as such latter flask is placed in position, the upper end of the pins being tapered, and means for holding the pins in place.

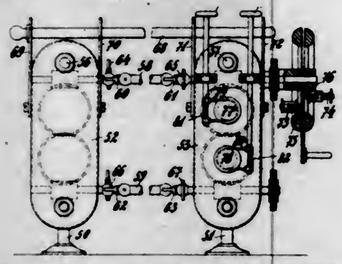
820,592. CAN. JAMES J. MCLINDEN, Waterbury, Conn. Filed Sept. 14, 1905. Serial No. 278,503.



Claim.—The herein-described can consisting of a can-body having a centrally-apertured bottom, a plunger-disk 5 mounted to slide within the can-body and provided with a removable plunger-rod 8 extending through the aperture in the bottom of the can and provided with a head 9, a fixed cap arranged on the upper end of the can-body and provided with a concentrically-arranged cutting-ring

scored into the top of said cap to facilitate the cutting of different-sized discharge-holes therein, and a removable cap adapted to fit over the fixed cap, essentially as described.

820,593. APPARATUS FOR LOWERING COFFINS. FRANTIŠEK J. NEJEDLO, Vinoradý-Prague, Austria-Hungary, assignor to Julius Skall, Prague, Austria-Hungary. Filed Apr. 13, 1905. Serial No. 255,410.



Claim.—1. An apparatus for lowering coffins comprising pairs of longitudinally-parallel forward and rearward lowering-shafts, a pair of pulleys for each shaft, a single operating-crank, and means connecting said crank with said forward or rearward shafts or both.

2. An apparatus for lowering coffins comprising forward lowering-shafts, a pulley for each of said shafts, a main shaft for operating said forward shafts, a crank loosely mounted on said main shaft, rearward shafts telescoping said forward shafts, pulleys for said rearward shafts, a counter-shaft geared to said main shaft and driving said rearward shafts, and means connecting said crank with said forward or rearward shafts or both.

3. An apparatus for lowering coffins comprising forward lowering-shafts, a pulley for each of said shafts, a main shaft for operating said lowering-shafts, a crank loosely mounted on said main shaft, rearward lowering-shafts, pulleys therefor, a counter-shaft geared to said main shaft for operating said rearward shafts, and means for connecting said crank with said forward or rearward shafts or both.

4. A crank mechanism for devices of the class described comprising a main driving-shaft, a crank loosely mounted thereon, loose and fixed members for said shaft, and means for engaging said crank with said loose or fixed members or both.

5. A crank mechanism for devices of the class described comprising a main driving-shaft, a crank loosely mounted thereon, a sectional wheel mounted on said shaft, one section being loose and the other being fixed on said shaft, and catch devices for each section whereby said crank may be connected with either one or both of said sections.

6. An apparatus for lowering coffins comprising pairs of longitudinally-parallel lowering-shafts each pair being independently rotatable, a single operating-crank, and means for connecting said crank with one or more pairs of said shafts.

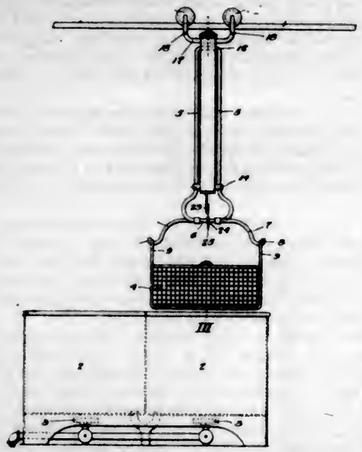
820,594. DISH-WASHING APPARATUS. WILLIAM B. NIECE, Sandy Lake, Pa. Filed May 4, 1905. Serial No. 258,764.

Claim.—1. The combination with a water-tank, of a perforated rectangular basket adapted to fit non-rotatably within the tank, and supporting means for the basket provided with a suspended spring shell or casing, a compression-spring supported thereby, and supporting devices for the basket depending from and supported upon said spring, substantially as set forth.

2. The combination with a water-tank, of a perforated rectangular basket adapted to fit non-rotatably within the tank, and supporting means for the basket provided with a suspended spring shell or casing, a compression-spring supported thereby, and supporting devices for the basket depending from and supported upon said spring, with a wheeled carriage therefor, substantially as set forth.

3. The combination with a water-tank, of a perforated rectangular basket adapted to fit non-rotatably within the tank, and supporting means for the basket provided with a suspended spring shell or casing, a compression-spring supported thereby, and supporting devices for the basket depending from and supported upon said spring, provided with basket-carrying terminals, and a latch attached to said case, substantially as set forth.

4. A basket-support consisting of a casing provided with a compression-spring, a depending framework supported upon the spring having a basket-carrying terminal, and a latch attached to the casing, substantially as set forth.



5. A basket-support consisting of a casing provided with a compression-spring, a depending framework supported upon the spring having basket-carrying terminals, a supporting wheeled carriage therefor, and means adapted to support the basket directly from the casing, substantially as set forth.

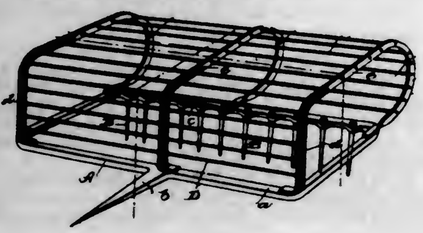
6. In a basket-support, the combination of a casing provided with a supporting wheeled frame, a spring mounted in the casing, a framework depending upon the spring provided with oppositely-disposed basket-supporting terminal hooks, and a downwardly-extending locking-latch attached to the casing, substantially as set forth.

7. In a basket-support, the combination of a casing provided with a supporting wheeled frame, a spring mounted in the casing, a framework supported by the spring provided with oppositely-disposed basket-supporting terminal hooks, and a downwardly-extending locking-latch, with a supplemental basket-supporting hook attached to the casing, substantially as set forth.

8. A basket-carrier consisting of a tubular shell provided with oppositely-located slots for a portion of its length, a trolley-bracket connected with the upper portion of the shell provided with centrally-arranged trolley-wheels, a framework of rods extending through the casing, resting upon the spring, the rods being crossed below the casing to provide a handle and oppositely-located basket-supporting hooks, a bottom plug-support for the spring, and a spring-latch depending downwardly therefrom and provided with a hook adapted to engage the handle, substantially as set forth.

9. A basket-carrier consisting of a tubular shell provided with oppositely-located slots for a portion of its length, a trolley-bracket connected with the upper portion of the shell provided with centrally-arranged trolley-wheels, a framework of rods extending through the casing, resting upon the spring, the rods being crossed below the casing to provide a handle and oppositely-located basket-supporting hooks, a bottom support for the spring, a spring-latch depending downwardly therefrom and provided with a hook adapted to engage the handle, and laterally-disposed guiding devices on the casing engaging the vertically-traveling frame, substantially as set forth.

820,595. QUAHOG-RAKE. ORIN NORTON, Edgartown, Mass. Filed Sept. 18, 1905. Serial No. 278,959.



Claim.—1. A rake for the purpose described comprising a foraminous frame in the form of a cage, a forward bar arranged at the bottom of said cage and having teeth depending therefrom, and a rigid pocket formed integral with said cage extending forwardly beyond the forward bar and open at its rear side.

2. In a rake for the purpose described, the combination of a rectangular main frame, teeth depending from the forward bar of the main frame, and a cage arranged directly over the said main frame and having a rigid pocket extending forwardly beyond the forward bar of the main frame and open at its rear side.

3. In a rake for the purpose described, the combination of a rectangular main frame, teeth carried by and depending from the forward bar of said frame, and a cage arranged on and connected to the main frame and having a pocket extending forwardly beyond the forward bar of the frame and open at its rear side; the said frame comprising metallic straps fixedly connected at their ends to the rear and forward bars of the main frame, and rods extending between and connected to the said straps.

820,596. SPOOL-HOLDING BOX. GEORGE NORWOOD, Winthrop, Mass., assignor of one-third to John S. Richardson, Boston, Mass. Filed May 1, 1905. Serial No. 258,181.



Claim.—1. A spool-holding box comprising in combination, a box having orifices in its sides, spool-holders consisting of pairs of flat spring-arms secured to the bottom of the box and projecting perpendicularly therefrom, and having shallow rounded protuberances on their adjacent sides, the arms of said holders being adapted to extend by the ends of the spools and the protuberances to enter the bores of the spools and support them, and thread holding and breaking devices secured to the outside of the box adjacent each orifice, each such device consisting of a flat plate having an integral tongue struck out at an acute angle from the surface thereof, the threads being led from each spool through the nearest orifice and under the tongue of the adjacent holding and breaking device.

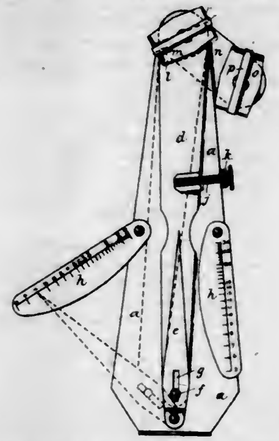
2. A spool-holding box comprising in combination, a box having orifices in its sides, spool-holders consisting each of two spring-strips bent at right angles and secured by screws to the bottom of the box, one portion of each strip lying flat on the bottom of the box, such portion of one strip overlapping that of the other and having slots receiving the fastening screws for adjustment, the other portions of the strip being upright, forming holding-arms; shallow rounded protuberances on the adjacent sides of the upright arms; the arms of said holders being adapted to extend by the ends of the spools and the protuberances to enter the bores thereof and support them; and thread holding and breaking devices secured to the outside of the box adjacent each orifice, each such device consisting of a flat plate having an integral tongue struck out at an acute angle from the surface between the side edges thereof, the threads being led from each spool through the nearest orifice and under the tongue of the adjacent holding and breaking device.

3. A holder for spools comprising a box or casing, spool-holders consisting each of a pair of flat spring-strips bent so as to extend perpendicularly, and secured adjustably, to the bottom of said casing whereby the distances between the members of each pair may be varied, and said arms having protuberances adapted to enter the opposite ends of the bore of a spool.

820,597. APPLIANCE FOR USE IN ASCERTAINING DISTANCES OR ALTITUDES. ROBERT H. OWEN, Wellington, New Zealand. Filed Aug. 29, 1905. Serial No. 276,288.

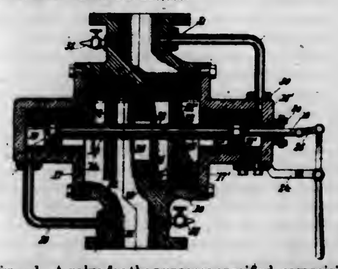
Claim.—1. In appliances for use in ascertaining distances and altitudes, a base-plate, a pair of mirrors mounted in a vertical position thereon and the reflecting-surfaces of which are adjustable in regard to the horizontal angle between them, an arm pivoted upon the base-plate and extending longitudinally along its top face and adapted to turn one of the mirrors in a horizontal plane when it is moved, a pointer operated by the free end of the pivoted arm, a plate bearing scale-markings of a direct ratio between a measured base and the distance to be computed, over which the pointer passes, and a sight at one end of the base-plate in a line with the center line thereof, substantially as herein specified.

2. In appliances for use in ascertaining distances or altitudes, a base-plate the back end of which is provided with a sight in a line with the center line thereof, a pointer carried by said base-plate, plates bearing scale-markings over which said pointer passes, a mirror pivotally held in a vertical position, a second mirror also pivotally held in vertical position, and means whereby the reflecting-surfaces of the two mirrors may be made parallel or caused to assume any desired angle to each other, and which operate also to move the pointer over said scale-markings, substantially as herein specified.



3. In appliances for use in ascertaining distances or altitudes, a base-plate the back end of which is provided with a sight, an arm pivoted on the top face of the base-plate at its fore end and extending to its back end, means whereby such arm may be moved in either direction, a mirror supported in a vertical position upon the fore end of the arm and capable of being adjusted to any angle with regard to the center line thereof, a plate pivoted to the fore end of the base-plate, a second mirror carried upon such plate and capable of being adjusted to any angle with regard thereto, a pointer connected to the free end of the pivoted arm and adapted to be operated thereby, and an appliance bearing scale-markings over which the pointer passes, substantially as herein specified.

820,598. VALVE. HENRY A. F. PETERSEN, New York, N. Y. Filed June 20, 1905. Serial No. 266,068.



Claim.—1. A valve for the purposes specified, comprising a casing, a plurality of valves therein, and means adapted to operate under variation of pressure of the operating fluid to actuate certain of said valves to prevent the passage of said fluid therethrough in either direction, substantially as specified.

2. A valve for the purposes specified, comprising a casing, auxiliary means connecting said casing with the line adjacent to the inlet and outlet portions of said casing, a plurality of valves therein, and means therein operating in response to variations in the pressure of the operating fluid to actuate said valves to control the passage of said fluid therethrough, substantially as specified.

3. A valve for the purposes specified, comprising a casing, a plurality of connected valves therein, and means adapted to operate under influence of the operating fluid to actuate a part of said valves to prevent the passage of fluid therethrough as the pressure thereof is caused to vary in the line to either side of said casing, substantially as specified.

4. A valve for the purposes specified, comprising a casing, auxiliary means connecting said casing with the line adjacent to the inlet and outlet portions of said casing, valves arranged therein, a stem for said valves, pistons on said stem adapted to work in said casing under influence of the operating fluid, and actuate said valves to control the passage of said fluid therethrough, substantially as specified.

5. A valve for the purposes specified, comprising a casing having cylinders therein, communicating with the inlet and outlet portions of said casing, a stem arranged in said casing, pistons on said stem, adapted to work in said cylinders, valves arranged upon said stem intermediate said pistons, said pistons being adapted to operate under influence of the operating fluid to actuate certain of said valves to control the passage of fluid therethrough in either direction, substantially as specified.

6. A valve for the purposes specified, comprising a casing having cylinders at its opposite ends communicating with the inlet and outlet portions of said casing, a stem arranged in said casing, pistons secured upon said stem and adapted to work in said cylinders, valves arranged upon said stem intermediate said pistons, and means arranged without said casing for actuating said pistons and valves, substantially as specified.

7. A valve for the purposes specified, comprising a casing having cylinders arranged at its opposite ends communicating with the inlet and outlet portions of said casing, a stem arranged in said casing having pistons arranged thereon upon the portions within the cylinders, and valves upon said stem intermediate said cylinders and pistons thereon, substantially as specified.

8. A valve for the purposes specified, comprising a casing having cylinders arranged at its opposite ends in alinement with each other and communicating with the inlet and outlet portions of said casing, valve-seats in said casing intermediate said cylinders, a stem arranged in said casing and cylinders, having pistons arranged thereon upon the portions within said cylinders, and valves intermediate said pistons and seats, substantially as specified.

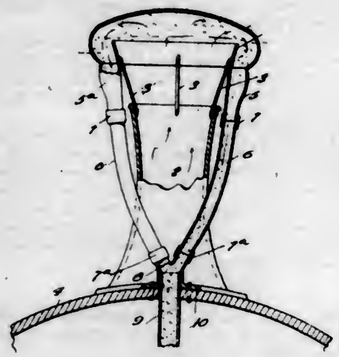
9. A valve for the purposes specified, comprising a casing having cylindrical heads secured to its opposite ends communicating with the inlet and outlet portions of said casing, a partition in said casing having valve-seats therein, a stem arranged in said casing and extending through the partition therein and into the cylindrical heads and adapted for longitudinal movement therein, pistons arranged upon said stem within the cylindrical ends, and valves fixed upon said stem intermediate the pistons thereon, and the sides of the partition aforesaid, substantially as specified.

10. A valve for the purposes specified, comprising a casing having cylindrical heads secured to its opposite ends communicating with the inlet and outlet portions of said casing, a transverse partition in said casing having an opening therein, a bearing arranged in said opening, a stem arranged partly within and partly without said casing and cylindrical heads, pistons arranged thereon within said cylindrical heads, and a valve fixed on said stem intermediate each piston and the partition aforesaid, and means arranged without said casing connected to the projecting end of the stem for actuating and adjusting the same, substantially as specified

11. A valve for the purposes specified, comprising a casing having hollow cylindrical heads bolted to its opposite ends, pipes secured thereto and the inlet and outlet portions of the casing, a transverse partition in said casing having an opening therein, an annular bearing secured in said opening, a stem arranged partly within and partly without said casing and cylindrical heads having pistons arranged thereon within said cylindrical heads, and a valve fixed on said stem intermediate each piston and the partition aforesaid, a bracket secured to the outer side of said casing, a lever pivotally mounted therein, and a link connecting one end of said lever with the projecting end of the stem extending through said casing, substantially as specified.

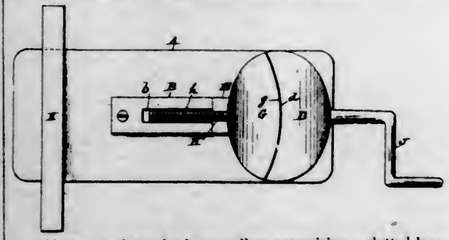
820,599. SPARK-ARRESTER. FRANK P. PRENDERGAST, Dague Mines, Pa. Filed Dec. 13, 1905. Serial No. 291,606.

Claim.—1. The combination with a smoke-stack, of a dome-shaped plate provided with an inner annular rim spaced from its outer rim and concentric therewith, supporting-rods secured at their lower ends to the upper edge of the stack, and at their upper ends to the said inner annular rim, whereby the outer rim of said plate will extend around or outside of the margin of said supporting-rods, conducting-pipes secured at their upper ends to the dome-shaped plate between the inner and outer rims thereof, and extending downwardly outside of the supporting-rods and to one side of the stack, and a pipe 9 to which the lower ends of the said conducting-pipes are connected, the said conducting-pipes being provided at their upper ends with sloping portions 5*.



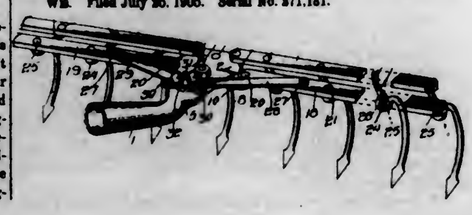
2. The combination with a smoke-stack and a smoke-box of a locomotive, of a dome-shaped plate secured in an elevated position over the upper edge of the stack and provided with an inner annular rim, downwardly-extending pipes 5 secured to said plate between the said inner rim and the outer wall thereof, conducting-pipes connected to the lower end of the first-named pipes, said conducting-pipes converging at their lower ends, a plate secured to the smoke-box and interiorly screw-threaded, a pipe 9 inserted in said plate and secured therein and having a screw-threaded end projecting thereabove, and a three-way coupling having a screw-threaded engagement with the projecting end of said pipe, the branches of said coupling being respectively connected to the lower converging ends of the said conducting-pipes.

820,600. CLAMP FOR HORSE-COLLARS. JOHN REEDER, Colleges-view, Nebr. Filed May 7, 1903. Serial No. 156,063.



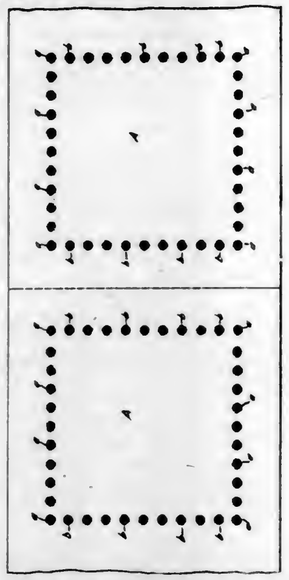
Claim.—A clamp for horse-collars comprising a slotted base, a slotted base-plate secured over the slot in the base, a standard secured to said plate, having a smooth bore therethrough, a curved plate secured to said standard having a segmental edge, a standard slidably mounted in the slot in said base-plate, having a screw-threaded bore therethrough, a curved plate secured to said slidable standard and having a curved edge to fit the segmental edge on the other plate, the two curved plates, when brought together, resembling a substantially circular plate bent downwardly on one of its diameters, a shaft journaled in the smooth bore in said secured standard and having screw-threads to mesh with a screw-threaded bore in the other standard, and a rest secured to the base, substantially as shown and described.

820,601. GARDEN IMPLEMENT. GRANT W. ROBINSON, Lodi, Wis. Filed July 26, 1905. Serial No. 271,181.



Claim.—A device of the class described comprising a handle-socket, a head-plate, a pair of tooth-bars pivotally mounted upon each side of the head-plate, said bars being each provided with a series of perforations, a series of teeth, each including shanks bent upon themselves to form eyes and having their extreme end portions turned upwardly and engaged in the openings in one of the bars of each pair, and fastening means engaged through the openings in the other bars of said pairs and through said eyes.

820,602. TEXTILE ARTICLE PROVIDED WITH LAPPET FIGURES AND THE METHOD OF PRODUCING THE SAME. WILLIAM A. ROBINSON, Woonsocket, R. I., assignor to Manville Company, Providence, R. I., a Corporation of New Jersey. Filed May 9, 1904. Serial No. 206,999.



Claim.—1. The method of producing articles provided with lappet patterns or designs, which consists in weaving successive articles in a continuous fabric, and providing each article with a unitary lappet pattern or design pertaining to said article, substantially as described.

2. The method of producing articles provided with lappet patterns or designs which consists in weaving successive articles in a continuous fabric, and providing each article with a unitary lappet pattern or design, said lappet pattern and the article to which it pertains being produced by a single repeat, substantially as described.

3. The method of producing articles provided with lappet patterns or designs which consists in weaving successive articles in a continuous fabric, and providing each article with a unitary lappet pattern or design, a portion of which is produced by one pattern-surface, and another portion of which is produced by a second pattern-surface, the two portions being matched together to form the complete unitary design, substantially as described.

4. The method of producing articles provided with lappet patterns or designs, which consists in weaving successive articles in a continuous fabric, and providing each article with a unitary lappet pattern or design, the two succeeding lappet designs serving as guides for the separation of the articles, substantially as described.

5. An article, such as a handkerchief or the like, provided with a unitary lappet pattern or design, substantially as described.

6. An article, such as a handkerchief or the like, provided with a unitary lappet pattern or design composed of individual lappet figures, substantially as described.

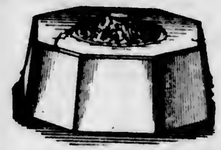
7. An article, such as a handkerchief or the like, provided with a unitary lappet pattern or design composed of individual lappet figures symmetrically arranged, substantially as described.

8. An article, such as a handkerchief or the like, provided with a unitary lappet pattern or design produced at one repeat, substantially as described.

9. An article, such as a handkerchief or the like, provided with a unitary lappet pattern or design, said lappet pattern and the article to which it pertains being produced at one repeat, substantially as described.

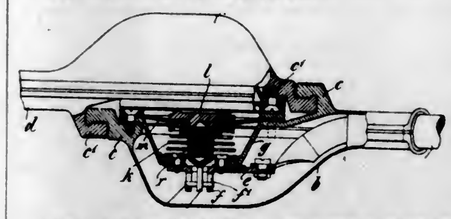
10. An article, such as a handkerchief or the like, provided with a unitary lappet pattern or design, a portion of which is produced by one pattern-surface, and another portion of which is produced by a second pattern-surface, the two portions being matched together to form the complete unitary design, substantially as described.

820,603. DIE. JOHN ROTH, Jersey City Heights, N. J. Filed Mar. 11, 1905. Serial No. 249,567.



Claim.—A die comprising a die-block provided with a top recess, a die proper seated in said recess and abutting at its upper side edge substantially throughout its perimeter against the upper edge of said recess, said die being undercut at its circumference, and a layer of fusible metal between the side and bottom of said die and the side and bottom of said recess for uniting said die and die-block in one structure.

820,604. ELECTRIC COUPLING. OTTO SCHALLER, Steglitz, near Berlin, Germany, assignor to The Firm of Julius Pintsch, Berlin, Germany. Filed June 1, 1905. Serial No. 263,211.



Claim.—1. A coupling for electric conductors for railway and other cars consisting of two similar single-pole coupling members having bayonet-clutches, each member constituting a hermetically-sealed chamber having a projecting contact-piece normally devoid of current and means within each chamber for circuiting-in said contact-piece when the coupling members are in engagement.

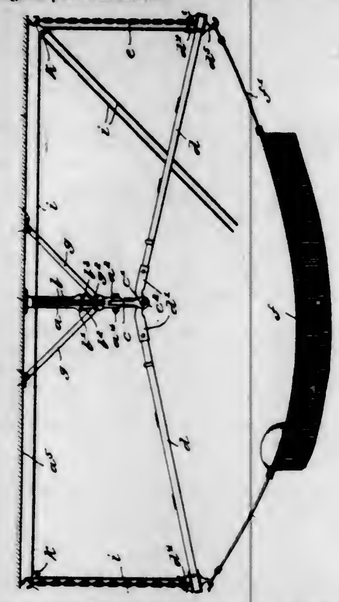
2. A coupling for electric conductors for railway and other cars consisting of two similar single-pole coupling members having bayonet-clutches, each member constituting a hermetically-sealed chamber having a projecting contact-piece normally devoid of current a movable contact within each chamber connected up to the line-wire and adapted to connect with the projecting contact when the coupling members are in engagement.

3. A coupling for electric conductors for railway and other cars, consisting of two similar single-pole coupling members having bayonet-clutches, each member constituting a hermetically-sealed chamber, having a movable face to contact with the other member, a contact-piece projecting from said movable face a contact-piece within the chamber of each member adapted to complete the connection to the projecting contact-piece, when the members are in engagement and means for holding the inner and outer contacts apart on the disengagement of the members.

4. A coupling for electric conductors for railway and other cars, consisting of two similar single-pole coupling members having bayonet-clutches, each member constituting a hermetically-sealed chamber, having a movable face to contact with the other member, a contact-piece projecting from said movable face a contact-piece within the chamber of each member adapted to complete the connection to the projecting contact-piece, when the members are in engagement and a strong spring for holding the inner and outer contacts apart on the disengagement of the members.

820,605. SUSPENSION-SUPPORT FOR HAMMOCKS. FRANK H. SCHMIDT, Philadelphia, Pa. Filed Jan. 10, 1906. Serial No. 295,762.

Claim.—1. A support for hammocks, &c., consisting of a bracket, a support from which said bracket is suspended, and means connecting said bracket with said support and arranged to assume varying angular positions thereto.



2. A support for hammocks, &c., consisting of a bracket, a support from which said bracket is suspended, and means arranged to connect said bracket with portions of said support, differing in elevation and in angular position with respect to said support.

3. A support for hammocks, &c., consisting of a bracket, means connected with said bracket forming hooks, an elevated support from which said bracket is suspended and braces engaging said hooks and said elevated support and arranged to assume varying angular positions to said bracket.

4. A support for hammocks, &c., consisting of a bracket provided with strengthening-ribs having slots formed therein, an elevated support from which said bracket is suspended and braces having forked ends for engaging said ribs and for connecting the same with said support.

5. A support for hammocks, &c., consisting of a bracket provided with strengthening-ribs having slots formed therein, an elevated support from which said bracket is suspended, braces having forked ends, a bolt arranged in said forked ends, the forked end of each of said braces arranged to engage a rib of said bracket from opposite sides and to hold the bolt in engagement with the slot thereof and said braces adapted to connect said bracket with said support.

820,606. **EMBALMING INSTRUMENT.** WILLIAM O. SCHROTER, Cincinnati, Ohio. Filed Sept. 13, 1905. Serial No. 278,296.



Claim.—1. A device for draining blood from the venous system of a human body, consisting of a tube, having a wire open-work at one end adapted to be inserted into a vein of the body and to withdraw the blood therefrom, as set forth.

2. A device for draining blood from the venous system of a human body, consisting of a tube having a wire open-work at one end adapted to be inserted into a vein of the body and to withdraw the blood therefrom, and means for preventing the escape of the blood through the open-work at the end thereof, as set forth.

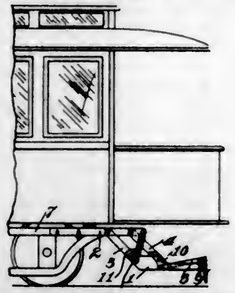
3. A device for draining blood from the venous system of a human body, consisting of a tube, having a wire open-work at one end adapted to be inserted into a vein of the body and to withdraw the blood therefrom, a shell mounted upon said tube and adapted to telescope over said open-work, as set forth.

4. A device for draining blood from the venous system of the human body, comprising a tube having wires projecting from one end thereof, spaced apart, said wires being outwardly flaring to form means for distending a vein, as set forth.

5. A device for draining blood from the venous system of the human body, comprising a tube having wires projecting from one end thereof, spaced apart, said wires being outwardly flaring to form means for distending a vein, and a shell mounted upon said tube, and adapted to slide over said wires and limited in its movement in one direction by the flaring portions of the wire, as set forth.

6. A device for draining blood from the venous system of the human body, consisting of a tube having wires which are bent at their longitudinal center, forming a blunt point, and flared adjacent to said point, the ends of said wires being fastened to said tube and spaced apart, and a shell telescoping over said tube, and adapted to slide over said wires and against the flaring portions thereof to prevent the escape of blood between the open spaces between the wires, as set forth.

820,607. **CAR-FENDER.** FRANK A. SEELEY, New York, N. Y. Filed Dec. 8, 1905. Serial No. 290,863.



Claim.—1. A fender for cars consisting of a swinging, horizontal platform suspended from the car, having a backward and downward movement, whereby the fender throughout its whole extent is brought down near the pavement in a plane parallel with the surface of the street by impact with the person struck, substantially as set forth.

2. A fender for cars having a horizontal, downward movement from impact with the body, whereby the fender is brought down near the pavement in a plane parallel with the surface of the street; and provided with a swinging guard turned up by the downward movement of the fender substantially as described.

3. In a fender for cars, in combination, a fender suspended from the car; and means for attaching the fender to the car, whereby the fender is swung back and down throughout its whole extent in a plane parallel to the surface of the street by impact with the person struck, substantially as set forth.

4. In a fender for cars, in combination, a fender connected to the car; mechanism for attaching the fender to the car, whereby the fender is moved horizontally down in a plane parallel to the surface of the street; a swinging guard on the end of the fender, and means connecting the fender and guard whereby the latter is turned up by the downward movement of the fender, substantially as described.

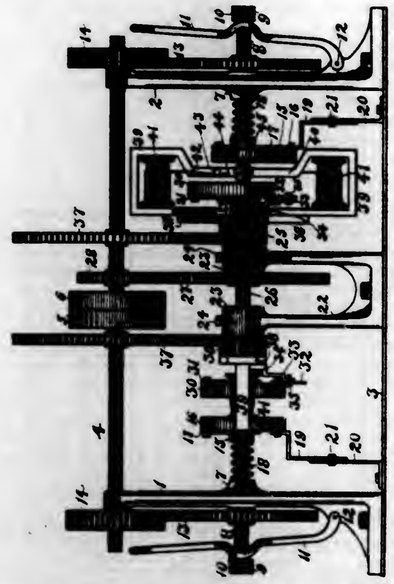
5. In a fender for cars, in combination, a fender moved down by impact with the person struck, a swinging guard at the end of the fender, and means connecting the fender and guard whereby the latter is turned up by the downward movement of the fender, substantially as described.

6. In a fender for cars, in combination, a fender suspended from the car; means for attaching the fender to the car, whereby the fender is swung back and down throughout its whole extent in a plane parallel to the surface of the street; and other yielding means by which the fender is held in a raised position, substantially as and for the purpose set forth.

7. In a fender for cars, in combination, the fender 1 suspended from the car; parallel links 3 and 4 by which the fender is attached to the car; and springs 11 by which the fender is held in a raised position, whereby the fender is swung back and down in a plane parallel to the surface of the street, substantially as and for purpose set forth.

8. In a fender for cars, in combination, the fender 1 suspended from the car; parallel links 3 and 4 by which the fender is attached to the car; springs 11 by which the fender is held in a raised position, whereby the fender is swung back and down in a plane parallel to the surface of the street; swinging guard 6 on the end of the fender; and means connecting the fender and guard whereby the guard is turned up by the downward movement of the fender, substantially as and for the purpose set forth.

820,608. **MACHINE FOR WINDING BALLS.** MITCHELL J. SELZER, Akron, Ohio, assignor to Harry C. Clippinger and Jacob Dettling, Akron, Ohio. Filed Mar. 2, 1904. Serial No. 196,159.



Claim.—1. The combination in a machine of the class described of two oppositely-disposed plates, eccentric heads, within said plates, revoluble shafts to support said heads, means to cause said plates to hold an object between them and means to wrap about said object a layer of cord or thread.

2. The combination in a machine of the class described, of two oppositely-disposed plates, eccentric heads within said plates, rotatable shafts to support said heads, a spring on one of said shafts to cause said plates to hold an object between them, hand-levers arranged in connection with said shafts to move one of them in a direction opposite to that caused by said spring, and means to wind on said object a layer of cord or thread.

3. The combination in a machine of the class designated, of two oppositely-disposed plates, eccentric heads within said plates, rotatable shafts to support said heads, means to rotate said shafts, means to cause said plates to hold an object between them, means to hold said plates from revolving with said heads yet permitting a circular movement thereof, and means to wrap a layer of cord or thread about said object.

820,609. **FISHING-REEL.** WILLIAM SHAKESPEARE, Jr., Kalamazoo, Mich. Filed July 31, 1905. Serial No. 272,038.

Claim.—1. In a fishing-reel frame, the combination of the pillars B, having shoulders at each end; heads A A′ consisting of outer and inner metallic plates *a a′*, and intermediate rings *a″*, perforated to receive said pillars; screws tapped into said pillars at one end, for securing the head A′ thereto, and for securing the parts of the said head together; and coupling-pillars B′ arranged through said head-plates and rings, threaded to engage the outer plate *a* of said head A and revolubly secured to said head A′, for the purpose specified.



2. In a fishing-reel frame, the combination of the pillars B, having shoulders at each end; heads A A′ consisting of outer and inner metallic plates *a a′*, and intermediate rings *a″*, perforated to receive said pillars; screws tapped into said pillars at one end, for securing the head A′ thereto; and coupling-pillars B′ arranged through said head-plates and rings, threaded to engage the outer plate *a* of said head A and revolubly secured to said head A′, for the purpose specified.

3. In a fishing-reel frame, the combination of the pillars B, having shoulders at each end; heads perforated to receive said pillars; screws tapped into said pillars at one end for securing one of said heads thereto, the other head being removably arranged thereon; and coupling-pillars B′ revolubly secured to said head secured to said pillars B, and threaded to engage the other head, for the purpose specified.

4. In a fishing-reel frame, the combination of the fixed pillars; a head secured thereto; a head removably arranged thereon; and a coupling-pillar revolubly secured to said fixed head and threaded to engage said removable head, for the purpose specified.

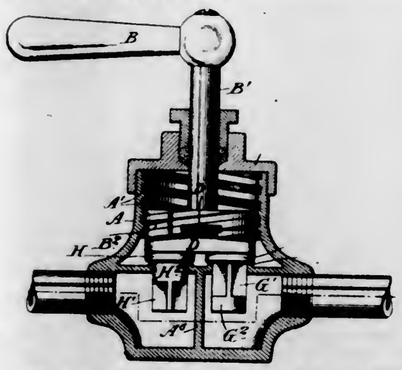
5. In a fishing-reel frame, the combination of the fixed pillars; a head secured thereto; a head removably arranged thereon; and a coupling-pillar revolubly connected to said fixed head and detachably connected to said removable head, for the purpose specified.

6. In a fishing-reel frame, the combination of the fixed pillars; heads arranged thereon; and a coupling-pillar revolubly connected to one of said heads and detachably connected to the other, for the purpose specified.

7. In a fishing-reel frame, the combination of the fixed pillars; heads arranged thereon; and a coupling-pillar arranged to secure said heads together, for the purpose specified.

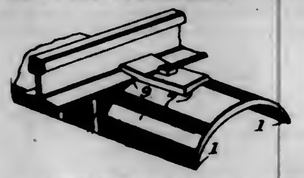
8. In a fishing-reel frame, the combination with the heads, of an adjustable or coupling pillar arranged to detachably connect said heads, whereby said heads may be secured together or released as desired by the manipulation of said pillar, as specified.

820,610. **VALVE.** OTTO A. SORENSEN, New York, N. Y. Filed Nov. 23, 1904. Serial No. 233,926.



Claim.—A valve-casing having a chambered portion divided into receiving-chambers and a discharge-chamber, the former located on opposite sides of a wall common to both and provided with adjacently-placed outlets in the decks thereof and the latter located at the side of the said receiving-chambers with which it communicates through said outlets, and also having an internally-threaded portion of sufficient diameter inside to surround said outlets threaded nearly to the plane of said decks, in combination with a screw which engages said threaded portion, a yoke which is connected by button and groove with said screw and whose length is less than the diameter of said screw, and winged puppet and piston valves in said outlets, which valves are eccentrically placed within the peripherical limits of said screw and are connected by button and groove with said yoke, substantially as described.

820,611. METALLIC RAILWAY-TIE. HENRY F. UHRI, Lake City, Fla. Filed June 9, 1905. Serial No. 264,460.



Claim.—1. A metallic railway-tie having a segmental form in cross-section, said tie being formed integral with flat seats to receive the rails, said seats being coextensive with the full width of the tie.

2. A metallic railway-tie having an arcuate or segmental form in cross-section and provided with depressed rail-seats, rail-clamps located at opposite sides of each seat and openings beyond the clamps, substantially as and for the purpose set forth.

3. A metallic railway-tie having an arcuate or segmental form in cross-section and provided with depressed rail-seats in its convex surface, and rail-clamps having body portions which conform in shape to the convex surface of the tie, substantially as described.

4. A metallic railway-tie having an arcuate or segmental form in cross-section and provided with depressed rail-seats in its convex surface, bolt-holes at opposite sides of said seats, and notches adjacent to the bolt-holes, rail-clamps, and clamp-securing bolts having wings which engage said notches, substantially as described.

820,612. SNAP-FASTENER. FRANK E. WARNER, Waterbury, Conn., assignor to Scovill Manufacturing Company, Waterbury, Conn., a Corporation of Connecticut. Filed July 25, 1905. Serial No. 271,215.



Claim.—1. A snap-fastener socket-piece, provided with a base having a central opening for the passage of the head or stud, said opening surrounded by a stud-engaging resilient fold comprising a flared standing fold member and an inturned outwardly-projecting free fold member, and means to secure the socket-piece to an article.

2. A snap-fastener, having a socket-piece provided with a central opening for the passage of the head or stud, said opening surrounded by a stud-engaging device composed of a flared standing fold member and an inturned outwardly-projecting free fold member slitted radially, said free fold member having an inwardly-projecting lip, and means to attach the socket-piece to an article.

3. A snap-fastener, having a socket-piece composed of a base having a central opening for the passage of the head or stud, said opening surrounded by a stud-engaging device composed of a flared standing fold member and a free fold member slitted radially, the fold members being integral with the base, and the free fold member having an inwardly-projecting lip.

4. A snap-fastener, having a socket-piece provided with a central opening for the passage of the head or stud, said opening surrounded by a stud-engaging device composed of a flared standing fold member and a free fold member slitted radially, said free fold member having an inwardly-projecting lip, a dome attached to said socket-piece, a fastening-cap and means to connect the dome and fastening-cap.

820,613. LADLE. BRUCE C. WHITE, Mosgrove, Pa. Filed Aug. 12, 1905. Serial No. 273,902.

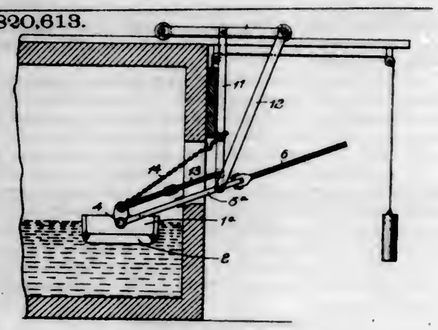
Claim.—1. A ladle having in combination two trough-like sections, means for moving said sections toward and from each other and means for holding the sections in a horizontal position.

2. A ladle having in combination two trough-like sections, arms having a pivotal connection to the sections and having a pivotal connection to a support and means for limiting the movement of the arms and ladle-sections on its connection with the support.

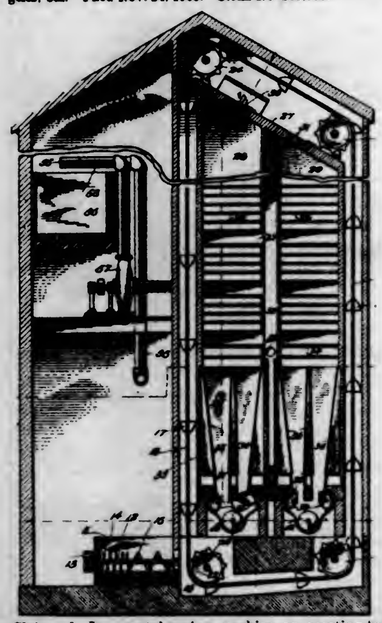
3. A ladle having in combination two trough-like sections, arms having pivotal connections to the sections, a trolley, connections from the trolley pivotally connected to the arms, and a brace extending from the trolley connection to a point on the ladle outside of its pivotal connection to the arms.

4. A ladle having in combination two trough-like sections, arms pivotally connected to the sections, pivotally-connected links having pivotal connections to the arms, and an adjustable connection between the pivot-pins and the links.

820,613.



820,614. METAL-SAVING MACHINE. JOHN B. ALBERS, Los Angeles, Cal. Filed Nov. 24, 1905. Serial No. 288,550.



Claim.—1. In a metal-saving machine an aerating-tank provided with a plurality of triangular-shaped agitating-bars arranged in stepped relation to those immediately above; air-tubes having ports therein extending across the aerating-tank; and filtering-screens at the bottom of said tank.

2. In a metal-saving machine an aerating-tank provided with a plurality of triangular-shaped agitating-bars arranged transversely the tank in stepped relation to those immediately above; air-tubes extending across the aerating-tank said tubes having ports therein; filtering-screens at the bottom of said tank; and means to elevate and discharge the material to be treated into the top of the tank.

3. In a metal-saving machine an aerating-tank provided with a plurality of triangular-shaped agitating-bars arranged in stepped relation to those immediately above; triangular-shaped air-tubes having ports therein extending across the aerating-tank; filtering-screens at the bottom thereof having passages therebetween; and regulating-valves on said passages.

4. In a metal-saving machine, an aerating-tank provided with a plurality of triangular-shaped agitating-bars arranged transversely the tank in stepped relation to those immediately above; triangular-shaped air-tubes extending across the aerating-tank; filtering-screens at the bottom of said tank having passages therebetween; regulating-valves on said passages; a conveyer-screw below said valves; and means to carry material from the end of said conveyer-screw to the top of the tank.

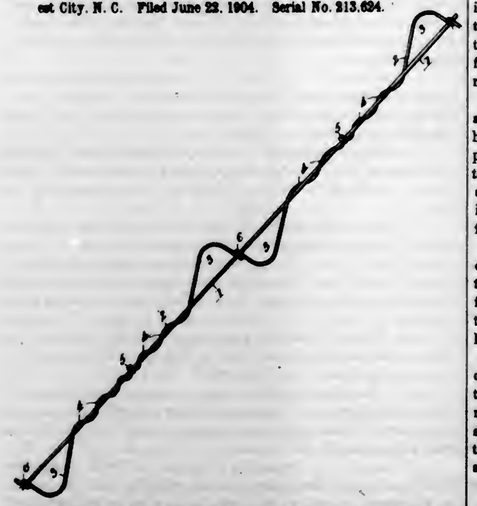
5. In a metal-saving machine; an aerating-tank provided with a plurality of triangular-shaped agitating-bars arranged transversely the tank in stepped relation to those immediately above; means to elevate and discharge the material to be treated into the top of the tank; triangular-shaped air-tubes having ports therein, said tubes extending across the aerating-tank; filtering-screens at the bottom of said tank having passages therebetween; regulating-valves on said passages; a conveyer-screw below said regulating-valve; and means to carry marerial from the end of said conveyer-screw to the top of the tank.

6. In a metal-saving machine, an aerating-tank provided with a plurality of triangular-shaped agitating-bars arranged in rows, those in one row being arranged in stepped relation to those in the row immediately above; means to elevate and discharge the material to be treated into the top of said tank; means to convey the material to said conveyer; triangular-shaped air-tubes extending across the aerating-tank, said tubes having ports therein; filtering-screens at the bottom of said tank having passages therebetween; regulating-valves on said passages; screw conveyers beneath said valves; and means to carry the material from said screw conveyers to the top of the tank.

7. A metal-saving machine comprising a plurality of aerating-tanks, each tank being provided with a plurality of triangular-shaped agitating-bars arranged in rows, those in one row being arranged in staggered relation to those in the row immediately above; means to elevate and discharge the material to be treated into the top of said tank; a cover for said tanks upon which said material is received; doors in said cover, one for each tank; means to convey material to said conveyer; triangular-shaped air-tubes extending across the aerating-tanks, said tubes having ports therein; filtering-screens at the bottom of each of said tanks, said screens having passages therebetween, regulating-valves on said passages; screw conveyers beneath said valves; and means to carry the material from said conveyers to the top of the tanks; a settling-tank; and means to convey liquid filtered through said screen into said settling-tank.

8. In a metal-saving machine; a plurality of aerating-tanks; a plurality of triangular-shaped agitating-bars arranged in rows in each tank, those in one row being arranged in staggered relation to those in the row immediately above; means to elevate and discharge the material to be treated into the top of said tanks; means to convey the material to said conveyer; triangular-shaped air-tubes extending across the aerating-tanks; said tubes having ports therein; filtering-screens at the bottom of said tanks having passages therebetween; regulating-valves on said passages; screw conveyers beneath said valves; means to carry the material from said screw conveyers to the top of the tanks; and means to carry the material from the conveyers to any of the tanks as desired.

820,615. PINLESS CLOTHES-LINE. EDWARD J. BARNETTE, Forest City, N. C. Filed June 22, 1904. Serial No. 213,624.



Claim.—1. The combination with a supporting-line, of a device for attaching clothes thereto, consisting of a piece of wire formed with lateral bends or loops disposed on opposite sides of the supporting-line to receive the clothes and adjacent to each bend or loop and at a point between the same with coils in alinement to receive the supporting-line, and a series of extended coils between each loop and the intermediate coil.

2. A pinless clothes-line comprising a supporting-line, and a wire formed into clothes-attaching devices consisting of loops disposed in pairs, with the loops of each pair positioned on the opposite sides of the supporting-line, said wire forming the attaching device being twisted around the supporting-line between the loops of each pair and centrally between the pairs of loops in tight twists, and formed between each central coil and the adjacent loops with extended twists passing about the supporting-line.

3. A pinless clothes-line comprising a supporting-wire and a wire formed into clothes-attaching devices consisting of loops disposed in pairs with the loops of each pair positioned on the opposite sides of the supporting-wire, said wire forming the attaching devices and the supporting-wire being intertwisted between the loops of each pair, and centrally between the pairs of loops, the wire forming the attaching device being formed between each central twist and the adjacent loops with extended twists or coils passing about the supporting-wire.

820,616. CENTERING DEVICE FOR STOP-COCK BOXES. JOHN B. BATT, North Tonawanda, N. Y. Filed June 5, 1905. Serial No. 263,734.



Claim.—1. The combination of a stop-cock, a box inclosing the same, a centering device for the box consisting of a pair of plates or disks each having a slot which receives the neck of the stop-cock, said slots being of sufficient length to pass over the head of the cock and arranged to bear at their inner ends against different sides of the neck, and means for locking the plates against rotation relatively to each other, substantially as set forth.

2. The combination of a stop-cock, a box for inclosing the same, a centering device for the box consisting of a pair of plates each having a slot or recess which receives the neck of the stop-cock and extends inwardly beyond the center of the plate, and means for preventing relative rotation of the plates, substantially as set forth.

3. The combination of a stop-cock, a box for inclosing the same, a centering device for the box consisting of a pair of plates each having a slot or recess which extends inwardly from the edge of the plate to a point beyond its center, the slots of the two plates being arranged to face in opposite directions and their overlapping inner portions forming an opening which receives the neck of the stop-cock and means for interlocking said plates, substantially as set forth.

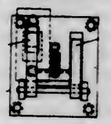
4. The combination of a stop-cock, a box for inclosing the same, and a centering device for the box consisting of a pair of plates, each having a slot which extends inwardly from the edge of the plate to a point beyond its center, and a stop-lug arranged to interlock with the slot of the other plate, the slots of the two plates facing in opposite directions and their overlapping inner portions forming an opening which receives the neck of the stop-cock, substantially as set forth.

5. A centering device for a stop-cock box, consisting of a pair of disks constructed to fit into the box and each having a slot which extends inwardly beyond the center of the disk, said slots being of sufficient width to receive the neck of the stop-cock, but narrower than the length of its head, the disks being provided with means for interlocking the same, substantially as set forth.

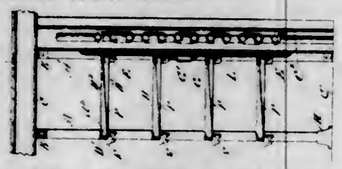
6. A centering device for a stop-cock box, consisting of a pair of disks constructed to fit into the box and each having a slot which extends inwardly beyond the center of the disk, and a stop-lug arranged at the inner end of the slot and adapted to interlock with the slot of the other disk, said slots being of sufficient width to receive the neck of the stop-cock but narrower than the length of its head, substantially as set forth.

820,617. WINDOW-SASH FASTENER. HENRY L. BENNER, Philadelphia, Pa. Filed Nov. 7, 1905. Serial No. 286,206.

Claim.—The combination in a window-frame and its upper and lower sash mounted therein of a keeper vertically arranged upon the upper sash, a rectangular plate secured to the window-frame said plate being provided with slots that extend entirely through the same, a pair of lugs extending rearwardly of the plate, a pair of generally rectangular detents having pivotal relation with said lugs and extending obliquely in parallelism from the rear of said plate forward through said slots into the path of the respective sash, a member located between and carried by the detents and a spring one end of which is secured to the member and the other end thereof to the plate, substantially as described.



820,618. MEAT-RACK. LOUIS I. BERKOWITZ, Boston, Mass. Filed Oct. 23, 1905. Serial No. 283,910.



Claim.—1. In a meat-rack, a frame, and shelves, each shelf composed of an angle-iron rectangle and slats secured to the angle-irons and offset, so as to be flush with the tops of the angle-irons.

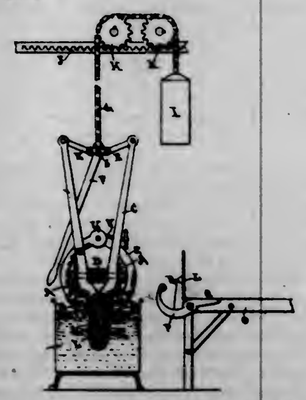
2. In a meat-rack, a frame, supporting-brackets, drip-cups secured to the frame and having supporting-bearings, shelves resting on the brackets and the bearings on the cups, and drip-pans beneath the shelves with delivery-openings to the cups.

3. In a meat-rack, a frame, shelves having apertures therein, clips at the under side of the shelves at the rear thereof, and drip-pans, flanged in front and inclined upward from front to rear, fitting in said clips, and front supports for said pans.

4. In a meat-rack, a frame, shelves having apertures therein, clips at the under side of the shelves at the rear thereof, drip-pans, inclined from front to rear upward and fitting in said clips, a movable supporting-bar for the middle of each pan, and means to support the bars at front and rear, upon the shelves.

5. In a meat-rack, a frame, shelves therein, drip-cups provided with reëntrant slots which fit said frames, the shelves provided with inclined drip-pans, said shelves and pans supported at the corners by said cups.

820,619. APPARATUS FOR TEMPERING OR HARDENING STEEL. HIRAM H. BICKFORD, Elmira, N. Y. Filed June 6, 1905. Serial No. 263,970.

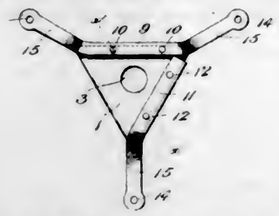


Claim.—1. In combination with a tempering or hardening bath, means for protecting certain portions of a plate, bar or other body of metal, while subjected to the bath, from contact with the liquid of the bath and excluding said liquid from said protected portions by air delivered to the protected surfaces from a source of supply.

2. The combination, with a tempering or hardening bath, of a hollow shield adapted to form an air-chamber when in contact with the surface of a plate, bar or other body of metal, which is to be subjected to the bath, and means for supplying said chamber with air, at such a pressure that the liquid of the bath will be excluded therefrom.

3. The combination, with a tempering or hardening bath, of a plurality of hollow shields, means for clamping said shields upon opposite sides of the plate, bar or other body of metal which is to be subjected to the bath, and means for delivering air to the chambers so formed at a pressure sufficient to exclude therefrom the liquid of the bath.

820,620. CHAIR-IRON. HARRY W. BOLENS, Port Washington, Wis. Filed June 22, 1905. Serial No. 266,430.



Claim.—1. A chair-iron, comprising a spreader composed of a plurality of plates arranged vertically one above the other, connections between the plates, and spider-arms extending from the spreader.

2. A chair-iron, comprising a spreader composed of a pair of plates arranged vertically one above the other, connections between the plates, and spider-arms extending from the spreader.

3. A chair-iron, comprising a plurality of triangular plates arranged one above the other and in alinement, means for connecting the plates, and spider-arms mounted upon and projecting from the spreader.

4. A chair-iron, comprising a triangular spreader, a spider-arm disposed along and secured to one side of said spreader and terminating in opposite attaching ends, and a second shorter spider-arm disposed along and secured to an adjacent side of the spreader and having its outer end extending beyond the same and terminating in an attaching end.

5. A chair-iron, comprising a triangular spreader, a spider-arm disposed along and secured to one side thereof and having opposite attaching ends, and a second shorter spider-arm disposed along and secured to an adjacent side of the spreader, the said attaching ends of the two arms being disposed in radial alinement with the angles of the spreader.

6. A chair-iron, comprising a pair of upper and lower plates combining to form a spreader, a spacing means therefor, spider-arms mounted upon and extending from the upper plate, and rivets connecting the spider-arms and plates.

7. A chair-iron comprising upper and lower plates provided with alining holes of different diameters, spider-arms mounted upon the upper plate, and a swivel-post reduced at its upper end to fit said holes.

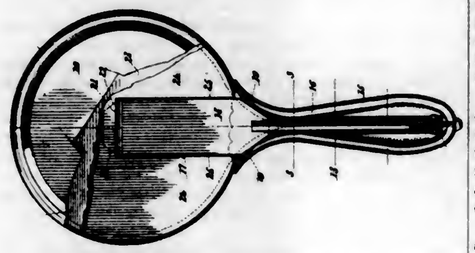
8. A chair-iron, comprising upper and lower angular plates, each having a central hole, the upper hole being the smaller, the post reduced at its upper end to fit the two holes and producing upper and lower shoulders 7 and 8 to support the plates, angular spider-arms mounted upon the upper plate and terminating beyond the same in attaching ends, and rivets extending through said arms and plates.

9. A chair-iron, comprising upper and lower integrally-formed plates, a post secured centrally therein, and spider-arms secured to and extending from the upper plate.

10. A chair-iron, comprising a triangular spreader, a supporting-post, the double attaching spider-arm 9 secured to one edge of the spreader, and the single attaching spider-arm 11 secured to one of the adjacent edges of the spreader.

11. A chair-iron, comprising the upper and lower integrally-formed plates 1 and 2 and vertical connecting portion 5, the holes 3 and 4 formed in the plates, the swivel having the shoulders 7 and 8 entering the holes and supporting the plates, and the arms 9 and 11 terminating in attaching ends, rivets 10 and 12 passing through the arms and plates.

820,621. MIRROR. CARL BOHNISLER, New York, N. Y. Filed Feb. 27, 1906. Serial No. 303,423.



Claim.—1. A holder for mirrors and similar articles comprising a frame adapted to hold a mirror and a back, a handle for said frame, and a reinforcement secured to said handle having its free end extending into said frame and bearing against the opposing surfaces of said mirror and back, substantially as specified.

2. A holder for mirrors and similar articles, comprising a frame adapted to hold a mirror and a back, a handle for said frame, and a reinforcement secured to said handle having its free end extending into said frame and bearing against the opposing surfaces of said mirror and back near the center thereof to maintain the same separated, substantially as specified.

3. A holder for mirrors and similar articles comprising a frame adapted to hold a mirror and a back, a handle for said frame, and a reinforcement secured to said handle having its free end extending into said frame and maintained under pressure against the opposing surfaces of said mirror and back, substantially as specified.

4. A holder for mirrors and similar articles comprising a frame adapted to hold a mirror and a back, a handle for said frame, and a reinforcement secured to said handle having its free end extending into said frame and maintained under pressure against the opposing surfaces of said mirror and back near the center thereof, substantially as specified.

5. A holder for mirrors and similar articles comprising a frame adapted to hold a mirror and back, a handle for said frame, and a reinforcement arranged partly within said handle, and partly within said frame and terminating between said mirror and back at a point near the center thereof, and tending to hold said mirror and back separated, substantially as specified.

6. A holder for mirrors and similar articles comprising a frame adapted to hold a mirror and a back, a handle for said frame, and a reinforcement arranged partly within said handle and partly within said frame, and having its free end bearing against the opposing faces of said mirror and back, and tending to separate the same, substantially as specified.

7. A holder for mirror and similar articles comprising a frame adapted to hold a mirror and a back, a handle for said frame, and a reinforcement secured to said handle, consisting of a body portion extending into said frame in contact with said mirror and a portion arranged at an angle to the body portion adapted to bear against the back, substantially as specified.

8. A holder for mirrors and similar articles comprising a frame adapted to hold a mirror and a back, a handle for said frame, and a reinforcement secured to said handle consisting of a body portion extending into said frame, and bearing against the inner surface of said mirror, and an end portion bent at an angle to the body portion, and adapted to bear against the inner surface of said back, substantially as specified.

9. A holder for mirrors and similar articles comprising a frame adapted to hold a mirror and a back, a handle for said frame, a reinforcement arranged partly within said handle, and having a body portion extending into said frame and bearing against the inner surface, and an end portion bent at an angle to said body portion adapted to bear against the inner surface of said back, and means for securing said frame and reinforcement to said handle, substantially as specified.

10. A holder for mirrors and similar articles comprising a frame adapted to hold a mirror and a back, a handle for said frame and a reinforcement adapted to be engaged by said handle having a body portion extending into said frame between said mirror and back to a point near the center thereof, and an end portion bent rearwardly from said body portion and adapted to bear against the inner surface of said back, substantially as specified.

11. A holder for mirrors and similar articles comprising a frame adapted to hold a mirror and a back, a handle for said frame, a reinforcement adapted to be engaged by said handle having a body portion extending into said frame between said mirror and back to a point near the center thereof, and its upper end bent rearwardly from and at an angle to said body portion and adapted to bear against the inner surface of said back, and means for securing said frame and reinforcement to said handle, substantially as specified.

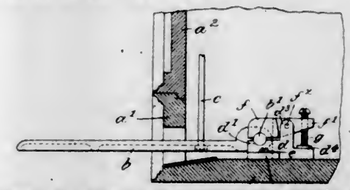
12. A holder for mirrors and similar articles comprising a frame adapted to hold a mirror and a back, a handle for said frame, and a reinforcement secured to said handle consisting of a body portion extending into said frame intermediate the mirror and back to a point near the center thereof, and means interposed between said mirror and back for maintaining the body portion of said reinforcement duly in position, substantially as specified.

13. A holder for mirrors and similar articles comprising a frame adapted to hold a mirror and a back, a plate interposed between said mirror and back having a cut-out portion extending from its edge to a point near its center, a handle for said frame and a reinforcement secured to said handle consisting of a body portion extending into said frame between said mirror and back and confined within the cut-out portion of the plate, substantially as specified.

14. A holder for mirrors and similar articles comprising a frame adapted to hold a mirror and a back, and terminating in parallel members, a handle for said frame adapted to receive and hold said parallel members, and a reinforcement comprising a stem adapted to be engaged and held by said parallel member, a body portion extending therefrom and into the frame intermediate the mirror and back to a point near the center thereof, and having its upper end bent at an angle to said body portion and adapted to bear against the inner surface of said back, substantially as specified.

15. A holder for mirrors and similar articles comprising a frame adapted to hold a mirror and a back, and terminating in two parallel members, a handle for said frame adapted to receive and hold said parallel members, a reinforcement comprising a stem adapted to be inserted within and held by said parallel members, a flat body portion extending from the upper end of said stem into the frame between the mirror and back to a point near the center thereof, and having its upper end bent at an angle to the body portion and adapted to bear against the inner surface of said back, and a plate interposed between said mirror and back having a cut-out portion adapted to receive and confine the body portion of said reinforcement, substantially as specified.

820,622. PIANO-PEDAL. EDWARD BORNHOEFT, New York, N. Y. Filed Jan. 23, 1906. Serial No. 297,413.



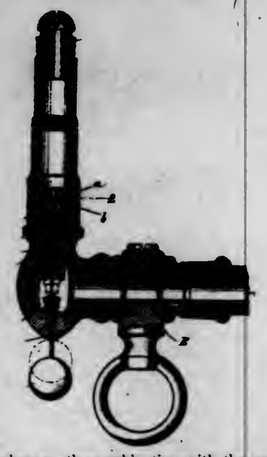
Claim.—In a piano-pedal, the combination of a pedal-foot having a trunnion with a slotted block having a trunnion-bearing, a pair of uprights, and a rest back of the uprights, and with a slotted cap pivoted to the uprights, and a set-screw tapped into said cap and engaging the rest, substantially as specified.

820,623. GAS-BURNER. FRANS O. CARLSON, New York, N. Y. Filed July 15, 1905. Serial No. 269,758.

Claim.—1. In a gas-burner, the combination with the seat for the burner-shell, said seat having perforations and gas-channels, of a valve adapted and arranged to automatically close the gas-channel in said seat when the gas-pressure is reduced, said valve being held open by the gas-pressure and provided with a projecting stem extending through the valve-seat, and a sliding rod for manually opening the valve from the exterior, after it has been seated, by contacting directly with said projecting stem, substantially as set forth.

2. The combination with the seat for the burner-shell, said seat having perforations and gas-channels, of the valve having a projecting stem, a seat for the valve, a sliding rod for manually opening said

valve from the exterior by contacting directly with the said projecting stem, and a perforated stop located in the burner-seat above the uppermost position of the valve, substantially as and for the purposes set forth.



3. In a gas-burner, the combination with the automatically-closing valve located in the burner, a seat for said valve, and a stop-plug for limiting the upward travel of the valve, said stop-plug being perforated to permit escape of gas, substantially as and for the purposes set forth.

4. In a gas-burner, the combination of the burner-shell, the seat therefor having perforations and gas-channels, an interior valve having a depending stem, a plug forming a seat for said valve, and means for manually raising the valve from the exterior by contacting with the projecting valve-stem, substantially as and for the purposes set forth.

820,624. **SUSPENDERS.** BURTON H. COOK, New York, N. Y. Filed Apr. 7, 1905. Serial No. 254,330.



Claim.—1. In a suspender, the combination with a suspender strap and tab, of a yielding connection interposed between said parts, said connection comprising a spring having its ends pivotally connected to said parts so as to swing in all directions without distorting itself or said strap and tab.

2. In a suspender, the combination with a suspender strap and tab, of a yielding connection interposed between said parts, said connection comprising a flattened helical spring having its ends pivotally connected to said parts so as to swing in all directions without distorting itself or said strap and tab.

3. In a suspender, the combination with a suspender strap and tab, of a yielding connection interposed between said parts, said connection comprising a plurality of helical springs having their ends pivoted to said parts, so as to swing in all directions without distortion.

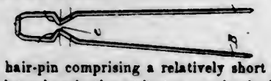
4. In a suspender, the combination with a suspender strap and tab, of a yielding connection interposed between said parts, said connection comprising a plurality of flattened helical springs arranged with their flat sides in the plane of said strap, and having their ends pivoted to said parts so as to swing in all directions without distortion.

5. In a suspender, the combination with a suspender strap and tab, of a yielding connection interposed between said parts, said connection comprising a spring having its ends pivotally connected to said parts so as to swing in all directions without distorting itself or said strap and tab, and a flexible stop for limiting the stress upon said spring.

6. In a suspender, the combination with a suspender strap and tab, of a yielding connection interposed between said parts, said connection comprising a plurality of flattened helical springs arranged with their flat sides in the plane of said strap, and having their ends pivoted to said parts, so as to swing in all directions without distortion, and a flexible stop for limiting the stress upon said springs.

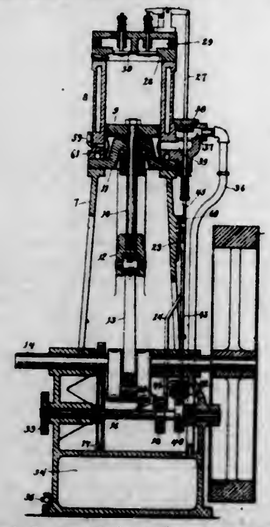
7. In a suspender, a strap, a tab, plates attached to said strap and tab respectively, perforated lugs formed on said plates, a plurality of flattened helical springs having their opposite ends pivoted in said lugs, and a flexible stop adapted to limit the stress upon said springs, said stop being connected at its opposite ends to said plates.

820,625. **HAIR-PIN.** JUDSON COOK, Philadelphia, Pa. Filed June 19, 1905. Serial No. 265,897.



Claim.—A hair-pin comprising a relatively short loop-shaped shank having a lateral projection at its top, a pair of relatively long and straight tines, and a pair of V-shaped projections connecting the said shank with the said tines, said projections being arranged opposite each other in the same plane and having a narrow space between their apices, and the lower parts of the said projections being straight and arranged at an acute angle with each other.

820,626. **EXPLOSIVE-ENGINE.** JOHN F. CROWLEY, Milwaukee, Wis., assignor of three-fourths to Marguerite Pauli, Milwaukee, Wis. Filed Nov. 2, 1903. Serial No. 179,534.



Claim.—1. In an explosive-engine a compressed-air tank having connection with the cylinder, an air-valve controlling the passage through said connection, a slide operated by the engine, a spring-pressed trigger-arm pivoted to the slide, a roller carried by the trigger-arm, a plate guiding the roller so that the trigger-arm will engage and operate the air-valve, said plate having a recess into which the roller may pass, and a slidable plate controlled by the engine-governor and having a recess to register with the recess of the first-named plate to allow the roller to enter said recesses when the governor operates upon said second plate.

2. In an explosive-engine, a slide operating the exhaust-valve and actuated by the engine, a dog controlled by the governor of the engine for locking the slide, a compressed-air tank in connection with the cylinder, an air-valve controlling the passage through said connection, a second slide operated by the engine, a spring-pressed trigger-arm pivoted to the second slide, a roller carried by the trigger-arm, a stationary plate guiding the roller so that the trigger-arm will engage and operate the air-valve, said plate having a recess into which the roller may pass, and a second plate carried by the first-named slide and having a recess to register with the recess of the stationary plate when said first-named slide is in its locked position, said roller being adapted to enter the recesses and swing the trigger-arm only when said recesses register.

3. In an explosive-engine, a compressed-air tank having connection with the cylinder, an air-valve controlling the passage through said connection, a slide operated by the engine, a spring-pressed trigger-arm pivoted to the slide, a plate guiding the trigger-arm so that it will engage and operate the air-valve, said plate having a recess into which the trigger-arm may pass, and a slidable plate controlled by the engine-governor and having a recess to register with the recess of the first-named plate to allow the trigger-arm to enter said recesses when the governor operates upon said second plate.

4. In an explosive-engine, a slide operating the exhaust-valve and actuated by the governor of the engine a dog controlled by the governor of the engine for locking the slide, a compressed-air tank in connection with the cylinder, an air-valve controlling the passage through said connection, a second slide operated by the engine, a spring-pressed trigger-arm pivoted to the second slide, a stationary plate guiding the trigger-arm so that it will engage and operate the air-valve, said plate having a recess into which the trigger-arm may pass, and a second plate carried by the first-named slide and having a recess to register with the recess of the stationary plate when said first-named slide is in its locked position, said trigger-arm being adapted to enter the recesses and swing only when said recesses register.

5. In an explosive-engine, a valve having a projecting stem, a slide actuated by the engine, an arm carried by the slide and adapted to engage the valve-stem, a guide for normally leading the arm into engagement with the valve-stem but being capable of permitting a displacement of the arm whereby it will avoid the valve-stem, a guard also actuated by the engine and adapted to normally prevent the displacement of the arm, and means controlled by the governor of the engine for rendering the guard ineffective.

6. In an explosive-engine, a valve having a projecting stem, a slide actuated by the engine, an arm carried thereby and adapted to normally engage the valve-stem, a guide adapted to lead the arm into engagement with the valve-stem but being capable of permitting the displacement of the arm whereby it will not engage the valve-stem, a second slide actuated by the engine, a guard carried by the second slide and adapted to normally prevent the displacement of the arm, and a catch controlled by the governor of the engine for preventing the movement of the second slide whereby the displacement of the arm will be permitted.

7. In an explosive-engine, a valve having a projecting stem, a slide actuated by the engine, an arm carried by the slide and adapted to normally engage the valve-stem, a projection on the arm, a guide against which the projection bears having a recess into which the projection may move to displace the arm so that it will not engage the valve-stem, a guard actuated by the engine and adapted to normally prevent the projection entering the recess, and means controlled by the governor of the engine for rendering said guard ineffective.

8. In an explosive-engine, a valve having a projecting stem, a slide actuated by the engine, an arm carried by the slide and adapted to normally engage the valve-stem, a projection on the arm, a guide against which the projection bears having a recess into which the projection may move, a second slide actuated by the engine, a guard carried thereby having a guide-surface to bridge over the recess of the guide, and a catch controlled by the governor of the engine for preventing the movement of the second slide, thereby leaving the recess exposed and permitting the projection to move therein to prevent the operation of the valve by the arm.

820,627. **DUST-PAN.** JOHN T. CURTIS, Orrville, Ohio. Filed Feb. 27, 1905. Serial No. 247,626.



Claim.—As an improved article of manufacture, a dust-pan, provided with a convexo-concaved bottom, the upper or convexed face constituting the floor of the pan and the under or concaved portion the contact portion, a diverging flange extended upward and rearward over a part of the convexo-concaved bottom, a flange extended downward from the upper rear edge of the rearward-extended diverging flange, and said flange located forward of the uppermost point of the convexo-concaved bottom, and contact-points located at the rear edge of the bottom, substantially as and for the purpose specified.

820,628. **ROTARY RING-SPINNING APPARATUS.** GEORGE O. DRAPER and CLARENCE E. METCALF, Hopedale, Mass., assignors to Draper Company, Hopedale, Mass., a Corporation of Maine. Filed Aug. 26, 1905. Serial No. 275,557.



Claim.—1. The combination with a rotary spinning-ring having a downturned flange and a concentric depending annular downhold provided with a lateral lip, of a fixed cylindrical casing to vertically sustain the ring, an inturned flange on the casing to coöperate with the lip of the downhold and limit axial movement of the ring, and an annular contact member loosely interposed between the casing and the downturned flange.

2. The combination with a rotary spinning-ring having an annular, transversely-convex bearing, of a casing having a beveled seat to coöperate therewith and sustain the ring vertically, means to limit axial movement of the ring, and an annular contact member loosely surrounding the casing and interposed between it and an adjacent portion of the ring.

3. The combination with a rotary ring having an outer downturned flange and an inner depending downhold provided with a lateral lip, of a fixed annular casing between said flange and downhold, an inturned flange on the casing to coöperate with the lip and limit axial movement of the ring-carrier, and an annular contact member loosely interposed between the casing and the downturned flange on the ring-carrier.

4. The combination with a rotary ring having an outer downturned flange and an inner depending downhold provided with a lateral lip, of a fixed annular casing between said flange and downhold, inner and outer flanges on the casing, the former coöperating with the lip to limit axial movement of the ring, and a contact-ring loosely surrounding the casing between it and the flange of the ring and vertically sustained by the outer flange on the casing.

5. The combination, with a spinning-ring, of a detachably-connected ring-carrier having an outer downturned flange and an inner, depending annular downhold, a fixed cylindrical casing having at its top a seat to vertically sustain the ring-carrier, and a contact-ring loosely interposed between the flange of the ring-carrier and the casing.

6. The combination, with a spinning-ring, of an attached rotary ring-carrier having an annular, transversely-convex bearing and a downturned concentric flange, a fixed annular casing having a beveled seat to coöperate with the bearing, and a contact member rotatably mounted on the casing and loosely interposed between it and said flange.

7. The combination, with a spinning-ring, of an attached rotary ring-carrier having an annular, transversely-convex bearing and a downturned concentric flange, a fixed annular casing having an inverted conical seat for the bearing and to permit slight tipping of the ring-carrier, means, including a compressible member on the latter, to limit axial movement of the ring-carrier, and a rotatable contact-ring

loosely interposed between the casing and the flange on the ring-carrier.

8. The combination with a spinning-ring, of an attached rotary ring-carrier, a fixed casing to vertically support the ring-carrier, means to limit axial movement thereof, and means, including a contact-ring loosely surrounding the casing and coöperating with the ring-carrier, to limit radial movement thereof.

9. In ring-spinning apparatus, in combination, a ring, a rotary carrier therefor having a downturned outer flange, a fixed annular casing to vertically sustain the ring-carrier, and a contact member loosely interposed between the casing and the flange, to limit radial movement of the ring-carrier.

10. The combination with a rotary ring-carrier having a depending, slotted downhold provided with a lateral lip, and a downturned annular flange, of a fixed cylindrical casing adapted to engage and vertically sustain the ring-carrier between the downhold and flange, and an internal flange on the casing to overlap the lip of the downhold.

11. The combination, with a spinning-ring, of an attached rotary ring-carrier haivng an annular, transversely-convex bearing and a downturned, concentric flange, a fixed annular casing having a beveled seat to coöperate with the bearing, and a contact member loosely mounted on the casing between it and said flange.

12. The combination with a rotary spinning-ring provided with an annular, transversely-convex bearing, of a casing having a seat to coöperate tangentially with the bearing and sustain the ring vertically, coöperating devices on the casing and movable with the ring, respectively, to limit axial movement of the latter, and an annular contact member loosely surrounding the casing and between it and an adjacent portion of the ring.

820,629. RING SPINNING OR TWISTING APPARATUS.

GEORGE O. DRAPER and CLARENCE E. METCALF, Hopedale, Mass., assignors to Draper Company, Hopedale, Mass., a Corporation of Maine. Filed Sept. 15, 1905. Serial No. 278,539.



Claim.—1. The combination, with a rotary ring provided with an annular, beveled bearing, a concentric and transversely-convex seat to tangentially engage the bearing, and means to control the lift of the ring.

2. The combination, with a rotary ring provided with an annular bearing, of an antifriction, wooden seat surrounding the bearing and adapted to engage tangentially therewith.

3. The combination, with a rotary ring provided with an annular bearing, a fixed, annular casing, a wooden seat carried thereby concentric with and to coöperate with the bearing, to vertically sustain and limit radial movement of the ring, and means below the bearing and seat to limit lifting movement of the ring.

4. The combination, with a rotary ring provided with an annular bearing, a fixed, annular casing having an inturned flange, a non-metallic and transversely-convex seat carried by the casing to coöperate with and tangentially engage the bearing, and a downhold depending from the bearing and having an external annular lip to cooperate with the under side of said flange and limit lifting movement of the ring.

5. A rotary spinning-ring, combined with an annular, beveled bearing connected therewith and having a depending circular extension provided with an external lip, a fixed casing, a transversely-convex annular seat of wood carried by the casing to coöperate with the bearing, the lip on the extension having a continuous circular engagement with the casing when the ring lifts, to limit such movement.

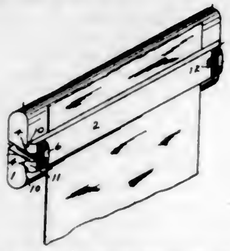
6. The combination, with a rotary ring-carrier having an inverted frusto-conical bearing and a downhold depending therefrom, of a ring fixedly mounted on the ring-carrier, a surrounding and transversely-convex wooden seat for and to tangentially engage the bearing, and fixed annular means below said seat to coöperate with the downhold and thereby limit lifting movement of the ring.

7. The combination, with a rotary ring provided with a beveled, annular bearing, of a fixed casing having a seat for the bearing and having an external annular groove and an intersecting notch, and an upturned traveler-clearer having a resilient curved base to snap into the groove in the casing, the clearer resting in the notch.

8. The combination, with a rotary ring provided with a beveled, annular bearing, of a fixed casing having an annular downhold member, a coöperating annular member movable with the ring, and a concentric, non-metallic seat for the bearing, to limit radial movement of and also sustain the ring, the fixed and movable downhold members having a circular engagement and limiting lifting movement of the ring.

820,630. GRIP FOR SHOE-POLISHING CLOTHS.

CHARLES L. DURBORAW, Baltimore, Md., assignor to Meyer Metzger, Baltimore, Md. Filed Sept. 12, 1903. Renewed Oct. 13, 1905. Serial No. 282,603.



Claim.—1. As an article of manufacture, a grip comprising two sections, and two approximately T-shaped fastenings pivoted to one section and adapted to fit over the other section, as and for the purpose described.

2. As an article of manufacture, a grip comprising two sections each having a slot in each end thereof, and means fitted in the slots of one section and adapted to operate in the slots of the other section to lock the said sections together.

3. As an article of manufacture, a grip comprising two sections each having a slot in each end thereof, and an approximately T-shaped fastening pivoted in each slot of one section and adapted to take into the slots of the other section to lock the said sections together.

4. As an article of manufacture, a grip comprising two sections, one of said sections having a concavity extending the entire length thereof and an approximately V-shaped groove on each side of, and running parallel with, the said concavity, and the other section having a convexity extending the entire length thereof and an approximately V-shaped projection on each side of and running parallel with the said convexity, and means for locking the said sections together.

5. As an article of manufacture, a grip comprising two sections, one of said sections having a concavity extending the entire length thereof and an approximately V-shaped groove on each side of, and running parallel with, the said concavity, and the other section having a convexity extending the entire length thereof and an approximately V-shaped projection on each side of and running parallel with the said convexity, each of said sections having a slot in each end thereof, and means pivoted in the slots of one section and adapted to be forced into the slots of the other section to lock the said sections together.

6. As an article of manufacture, a grip comprising two sections, one of which is provided with a concavity extending the entire length thereof and an approximately V-shaped groove on each side of and running parallel with said concavity, and a slot in each end thereof, and the other section having a convexity extending the entire length thereof and an approximately V-shaped projection on each side of and running parallel with said convexity, and a slot in each end thereof, and an approximately T-shaped fastening pivoted in each slot of one section and adapted to be forced over the other section, to lock the sections together.

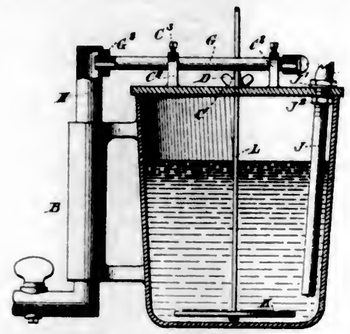
820,631. SPRAYING DEVICE.

EDMUND ECKART, New Rochelle, N. Y., assignor to Gerstendorfer Bros., New York, N. Y., a Corporation of New York. Filed Dec. 30, 1905. Serial No. 293,937.

Claim.—1. A spraying device comprising a receptacle, an air-nozzle and a liquid-nozzle arranged adjacent to each other, the liquid-nozzle having a connection dipping into said receptacle and having two inclines arranged stepwise and facing the air-nozzle, the higher incline being farther away from the air-nozzle, and the outlet of the liquid-nozzle being between said two inclines.

2. A spraying device comprising a receptacle, a liquid-nozzle and an air-nozzle arranged adjacent to each other, the said liquid-nozzle having an incline facing the air-nozzle and an outlet located beyond the upper end of said incline, but at a lower level.

3. A spraying device comprising a receptacle, a liquid-nozzle and an air-nozzle arranged adjacent to each other and one adjustable relatively to the other, the said liquid-nozzle having two inclines facing the air-nozzle and an outlet located between said two inclines.



4. A spraying device comprising a receptacle, a liquid-nozzle and an air-nozzle arranged adjacent to each other and one adjustable relatively to the other, the said liquid-nozzle having an incline facing the air-nozzle and an outlet located beyond the upper end of said incline, but at a lower level.

5. The combination of the receptacle, the liquid-nozzle having a tube dipping into said receptacle, the stirrer movable adjacent to the inlet end of said tube, and the air-nozzle adjustable toward and from the liquid-nozzle, the said liquid-nozzle having inclines arranged stepwise and facing the air-nozzle, and a depressed outlet arranged between said inclines.

6. A spraying device comprising a receptacle, a liquid-nozzle and an air-nozzle arranged adjacent to each other, the said liquid-nozzle being provided with two inclines and an outlet located between said inclines.

820,632. SLAT FOR ENDLESS APRONS.

EDWARD F. FATKINGER, Springfield, Ohio. Filed Oct. 16, 1905. Serial No. 282,926.



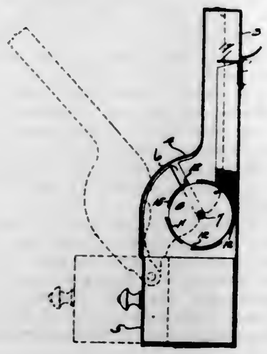
Claim.—1. The slat formed of a strip of metal folded on itself with flanged portions at a right angle to the folded portion, and these flanges provided with a series of clenchers cut from the metal and adapted to bind said slat to a belt, substantially as described.

2. The slat formed of a strip of metal folded at its longitudinal center, having flanges at a right angle to said folded part and the ends flattened and adapted to be secured by rivets, substantially as described.

3. The slat formed of a strip of metal bent at its longitudinal center, the sides being divergent and flanges formed at a right angle to a central line, and provided with clenchers cut out of said flanges adapted to engage a belt, substantially as described.

820,633. CHOCOLATE-CUTTER.

LOUIS H. FINNEGAN and FRANK J. FINNEGAN, Minneapolis, Minn. Filed July 5, 1904. Serial No. 215,206.



Claim.—1. In a chocolate-cutter, the combination with a casing having an upright contracted neck provided with a vertical centrally-arranged slot, of an angle-plate 17 extending transversely with respect to said slot and having a flange extending partially across said neck toward the front thereof and adapted to overhang the upper end of a cake of chocolate therein, and the other flange fitting against the rear wall of said neck on the inside and slidable thereon, a clip 20 fitting the rear wall of said neck on the outside and connected to the last-named flange through said slot and slidable therewith and having an outwardly-turned finger-piece, and a revoluble cutter arranged below said neck, substantially as described.

2. In a chocolate-cutter, a knife-cylinder comprising a shaft, heads mounted thereon, knives secured at their ends at intervals to the peripheries of said heads and having a longitudinal cutting edge on one side, a throat-plate pivoted at the rear edge of one of said knives adapted to swing down when on the drum side of said cylinder, the rest of said knives having each a series of extensions on its rear side partially bridging the space between the back edge of one knife and the corresponding edge of the contiguous one to prevent the cake of chocolate from becoming wedged in the cylinder, but allowing the shaved portions thereof to fall through.

820,634. MATTRESS OR CUSHION COVERING.

CHARLES A. FISHER, Chicago, Ill. Filed Mar. 18, 1905. Serial No. 250,825.



Claim.—1. As a new article of manufacture, a mattress or cushion comprising a top, a bottom and a reinforced side, comprising strips of fabric with filling material therebetween, the strips and material being secured together.

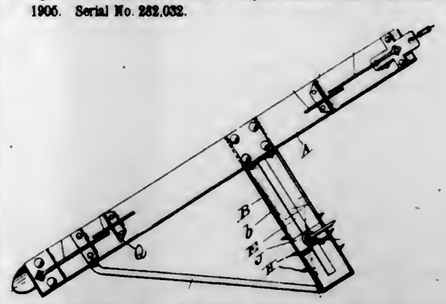
2. As a new article of manufacture, a mattress or cushion comprising a top, a bottom and a reinforced side, comprising strips of fabric with filling material therebetween, the strips and material being secured together by means of stitching.

3. As a new article of manufacture, a stiffened side strip comprising strips of fabric, a filling material between said strips, said strips and filling material being stitched together, and said side strip being adapted to be secured to the top and bottom of a mattress or cushion.

4. As a new article of manufacture, a stiffened side strip comprising strips of fabric, a filling material between said strips, said strips and filling material being sewed together by means of horizontal rows of stitching.

820,635. ORCHARD-PLOW.

CHARLES A. FOX, Hanford, Cal., assignor of one-half to Alexander V. Taylor, Hanford, Cal. Filed Oct. 9, 1906. Serial No. 282,032.

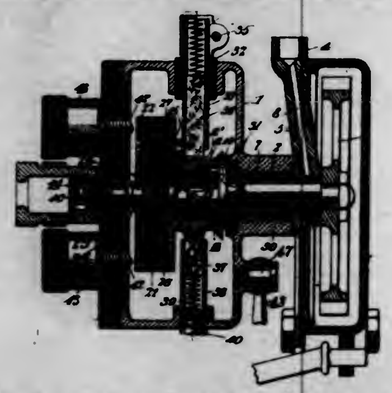


Claim.—1. In an orchard-plow, a beam, a cross-beam secured thereto and extending laterally from one side thereof, the plowshare secured to said cross-beam, and guiding-disks secured adjacent to the ends of said beams, one of said disks being set at an angle to the perpendicular, substantially as shown and described.

2. In an orchard-plow, a beam, a slotted cross-beam secured thereto and extending laterally from one side thereof, the plowshare secured to said cross-beam and adjustably mounted in the slot thereof, and guiding-disks secured adjacent to the ends of said beams, one of said disks being set at an angle to the perpendicular, substantially as shown and described.

3. In an orchard-plow, a beam, a slotted cross-beam secured thereto and extending laterally from one side thereof, a block having a screw-bolt secured thereto and adapted to be secured in the slot in said cross-beam, arms secured to said block, a shaft journaled in said arms, and disks secured to said shaft, a disk secured adjacent to each end of the beam and revolubly mounted therein, a lever for adjusting the direction of travel of each disk, and notched bars to receive the ends of said levers and lock them in adjusted positions, the disk at the rear of the beam being set at an angle to the perpendicular, substantially as shown and described.

820,636. ELECTRIC IGNITION APPARATUS. GUSTAVE R. FRANQUIST, New York, N. Y. Filed June 24, 1905. Serial No. 266,751.



Claim.—1. A circuit-controller for hydrocarbon-motors comprising a frame or support having a fixed journal, a shaft journaled in said journal and having a collar thereon, a primary timer and a rotating secondary switch on said shaft, a casing having an annular collar disposed to engage said first-named collar and journaled on said fixed journal, a brush mounted in said casing and bearing on the timer, and conductors supported adjacent to said switch.

2. In a circuit-controller for hydrocarbon-motors, a frame or support having a fixed journal, a shaft having a collar thereon journaled in said journal, a casing revolubly supported on said fixed journal and having a part engaging said first-named collar, and spring means for maintaining said collar and part in engagement.

3. In a circuit-controller for hydrocarbon-motors, a frame or support having a shaft journaled therein, a casing revolubly supported on said frame or support and having a shoulder to limit the endwise movement of said shaft, and spring means for maintaining said shaft in engagement with said shoulder.

4. In a circuit-controller for hydrocarbon-motors, a shaft having a stud and a pin 14 thereon, a sleeve formed to slide upon said stud and engage said pin, a collar having notches formed to slide upon said sleeve, and trapezoidal-shaped insulating-sections in said notches engaging the same on their inclined faces, the end faces being square or normal thereto.

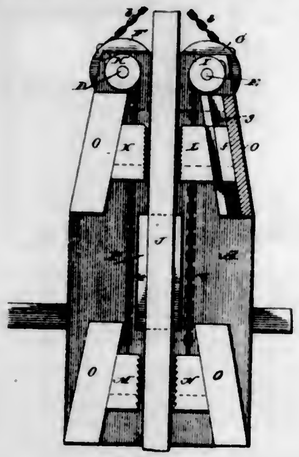
5. In a circuit-controller for hydrocarbon-motors, a shaft having a stud and a projection or pin thereon, a primary timer, carrying a rotating secondary switch, disposed upon said stud and engaging said projection, and spring means for retaining said timer in position.

6. In a circuit-controller for hydrocarbon-motors, a collar having wedge-shaped notches in its face, trapezoidal insulating-sections in said notches, and a part formed to fit within said collar and having a shoulder to abut against the end faces of said insulating-sections and hold them in position.

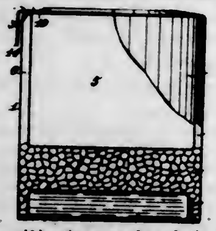
7. In a circuit-controller for hydrocarbon-motors, a shaft having a stud and a pin thereon, a sleeve upon said shaft engaging said pin, and a collar having notches with intermediate insulating-sections, fitted upon said sleeve, and a screw for holding said parts together.

820,637. SAFETY DEVICE FOR ELEVATORS. AUGUSTUS D. GAMBLE and JOHN BRADLEY, Shenandoah, Pa. Filed Feb. 9, 1906. Serial No. 300,944.

Claim.—A safety device for elevators, comprising a suitable cab or cage, spring-actuated rotatable shafts, pulleys upon said shafts between the side walls of the cab or cage, flexible connections engaging the pulleys, pulleys upon the outer ends of the shafts, grooved cam-brackets arranged in vertical pairs upon each side of the walls of the cab or cage, clutches arranged in pairs at the upper and lower ends of the cab or cage upon both sides thereof, each pair of said clutches being connected with each other and the several pairs to the pulleys upon the ends of the rotatable shafts whereby the clutches will operate simultaneously, substantially as and for the purpose set forth.



820,638. HEATING PRESERVES. STEFAN GÁBRIEL, Budapest, Austria-Hungary, assignor of one-third to The Firm of Leiner Brothers, Upjest, Austria-Hungary, and one-third to Otto Friedmann, Budapest, Austria-Hungary. Filed July 10, 1905. Serial No. 269,054.

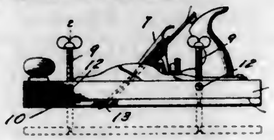


Claim.—1. In a self-heating canned-goods tin, the combination of an inner cylindrical receptacle and an outer one to inclose the same and leave an annular space around and a cylindrical space below it, the said spaces being air-tightly closed against the interior of the inner receptacle, means inclosed in the cylindrical space for generating heat when in contact with a liquid, a fragile sealed receptacle containing a liquid, and mounted within the said cylindrical space in proximity to the bottom and adapted to be broken to release the liquid when a sharp blow is directed against the bottom of the tin, so that the heating-space of the tin remains air-tightly closed during the development of the heat substantially as described.

2. In a self-heating canned-goods tin the combination of an inner receptacle for the goods, an outer receptacle to inclose the former and leave an annular space around the same and a cylindrical space below the bottom thereof, the said space being air-tightly closed against the interior of the inner receptacle, pieces of lime within the cylindrical space, too large in size to enter the annular space, a fragile sealed receptacle within the cylindrical space close to the bottom of the outer tin, said receptacle to contain water and adapted to be broken by a blow directed against the bottom of the can without however breaking the seal of the space between the cans substantially as described.

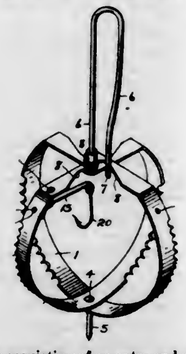
3. In a self-heating canned-goods tin, the combination of an inner receptacle for the goods and outer receptacle to inclose the same leaving an annular space around its sides and a cylindrical space below the bottom, means inclosed in the said cylindrical space adapted to generate heat when in contact with a liquid, a fragile liquid-containing receptacle mounted in the said cylindrical space in proximity to the bottom of the outer receptacle, and adapted to be broken by a blow directed against the said receptacle-bottom, without perforating the tin, a cover to air-tightly seal the said spaces against the interior of the inner receptacle, and a cover to the said interior receptacle and means for securing the same to enable it to be removed without breaking the seal of the spaces between the two receptacles, substantially as described.

820,639. PLANE. ANDREW N. GABRIELSON, Mount Iron, Minn. Filed Dec. 18, 1905. Serial No. 292,303.



Claim.—In a plane, the combination with a body having longitudinal rabbets at its lower side angles and having vertical threaded passages communicating with the rabbets, of set-screws engaged in the passages, guides connected with the lower ends of the set-screws for rotation of the latter with respect thereto, said set-screws being operable to move the guides into and out of the rabbets, and means for holding the set-screws with the guides at different points of their movement.

820,640. ANIMAL OR FISH TRAP. WILLIAM GABRIELSON, Kansas City, Mo., assignor of one-sixth to William D. Boyle, one-sixth to Erick Lason, and one-sixth to Pitt Lason, Kansas City, Mo. Filed Mar. 20, 1905. Renewed Nov. 11, 1905. Serial No. 286,792.



Claim.—A trap consisting of an outer and an inner jaw, the ends of each jaw being brought together and pivotally connected, a spring, one end of which forms such pivotal connection, the opposite end of said spring terminating in an eye which loosely embraces both jaws in the manner shown, a spring 9 secured to the inner jaw and provided with a lug which projects outwardly through said jaw, the outer jaw having an opening therein adapted to receive said lug when the trap is set, a trigger supported by said spring 9, and a bait-holder supported by the trigger; substantially as specified.

820,641. PROTECTOR FOR INSULATORS. JOHN L. GLEASON, Boston, Mass. Filed Feb. 17, 1904. Serial No. 194,009. (Model.)

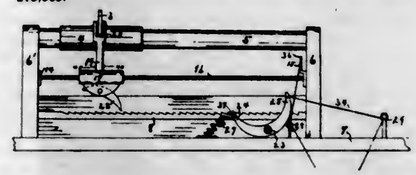


Claim.—1. A molding-box presenting a body portion constructed to extend across the angle of two adjacent sides of a room and having one side cut away to fit around the molding in which wires are placed, said body portion having integral therewith at each end a flange to fit the angle of the room and affording beneath itself sufficient room to accommodate any splicing in the wires.

2. A molding-box for covering the ends of moldings and insulating-bushings inserted through walls and floors, said molding-box comprising a body portion constructed to extend across the corner of a room and having end flanges to fit said corner, said body portion being formed with lines of weakness inclosing a portion of the material thereof, whereby when said inclosed portion of material is struck, it is broken from the main body on the lines of weakness, thus forming a recess or recesses in the sides of the body portion to fit around the moldings.

3. A molding-box for electrical moldings comprising a curvilinear body portion having integral therewith at each end a quadrant-shaped end flange extending at right angles from the body portion, said body portion having a recess in one side, the contour of which is such as to fit the molding, and having apertured side flanges projecting from the longitudinal edges of the body portion, said side flanges standing at right angles to each other.

820,642. GRAPHOPHONE ATTACHMENT. MATTHEW J. GREEVY and JULES GREEVY, Omaha, Nebr. Filed Aug. 7, 1905. Serial No. 273,065.



Claim.—1. In a graphophone attachment, the combination with a reproducer of a graphophone, of a link adapted to control said reproducer; a pawl adapted to control said link, a stationary rack engaged by said pawl; mechanism adapted to control said pawl, and means to control said mechanism.

2. In a graphophone attachment, the combination with the reproducer of a graphophone, of a link adapted to control said reproducer; a pawl adapted to control said link; a stationary rack engaged by said pawl; a slide-rod adapted to control said pawl; mechanism adapted to control said slide-rod; and means to control said mechanism.

3. In a graphophone attachment, the combination with a reproducer of a graphophone, of a link adapted to control said reproducer; a pawl adapted to control said link; a stationary rack engaged by said pawl, a slide-rod adapted to control said pawl; pivotally-mounted arms adapted to control said slide-rod; mechanism adapted to control said pivotally-mounted arms, and means to control said mechanism.

4. In an attachment of the class described, the combination with a reproducer of a graphophone, of a link adapted to control said reproducer; a pawl adapted to control said link; a stationary rack engaged by said pawl, a slide-rod adapted to control said pawl, pivotally-mounted arms adapted to control said slide-rod; a flexible member adapted to control said pivotally-mounted arms, and means to control said flexible member.

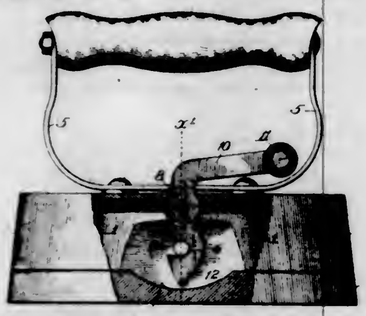
5. In an attachment of the class described, in combination with the reproducer and the vertical alining-bar of a graphophone, of a link adapted to control said reproducer; a pawl adapted to control said link, a stationary rack engaged by said pawl; mechanism adapted to control said pawl; means to control said mechanism; a horizontally-disposed alining-bar mounted upon said vertical alining-bar, and making contact with said link.

6. In an attachment of the class described, in combination with the reproducer and the vertical alining-bar of a graphophone, of a link adapted to control said reproducer; a pawl adapted to control said link; a stationary rack engaged by said pawl, a slide-rod adapted to control said pawl; mechanism adapted to control said slide-rod; means to control said mechanism; a horizontally-disposed alining-bar mounted upon said vertical alining-bar, and making contact with said link.

7. In an attachment of the class described, in combination with the reproducer and the vertical alining-bar of a graphophone; of a link adapted to control said reproducer; a pawl adapted to control said link; a stationary rack engaged by said pawl; a slide-bar adapted to control said pawl; pivotally-mounted arms adapted to control said slide-rod; a flexible member adapted to control said pivotally-mounted arms; means to control said flexible member; a horizontally-disposed alining-bar mounted upon said vertical alining-bar, and making contact with said link.

820,643. SAD-IRON. JAMES M. HARPER, Chicago, Ill., assignor to Harper Supply Co., Chicago, Ill., a Corporation of Illinois. Filed Mar. 20, 1905. Serial No. 251,039.

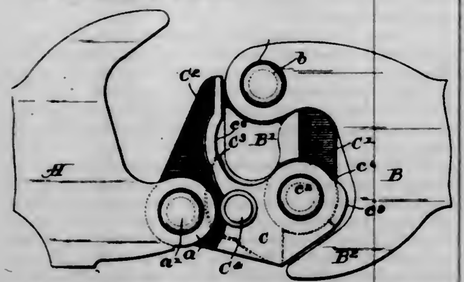
Claim.—1. The combination of a sad-iron body provided with lateral studs on its sides, the said body having a lower marginal ledge formed with recesses in its upper side midway the length of the body, a handled cap adapted to envelop said body, and a pair of counterpart hooks pivoted at the mid-length of the cap with their lower ends adapted for engagement with the aforesaid recesses, the said hooks having near their lower ends open-sided slots for engagement with the aforesaid studs and at their upper ends angular extensions and an operating-handle, substantially as set forth.



2. The combination of a sad-iron body provided with lateral studs on its sides, a handled cap adapted to envelop said body, and a pair of counterpart hooks pivoted inside the cap midway the length of the same, said hooks having near their lower ends open-sided slots for engagement with the aforesaid studs and at their upper ends angular extensions and an operating-handle, substantially as set forth.

3. The combination of a sad-iron body provided with lateral studs on its sides, the said body having a lower marginal ledge formed with recesses in its upper side midway the length of the body, a handled cap adapted to envelop said body, and a pair of counterpart hooks pivoted inside the cap midway the length of the same with their lower ends adapted for engagement with the aforesaid recesses, the said hooks having near their lower ends open-sided slots for engagement with the aforesaid studs and at their upper ends angular extensions and an operating-handle, substantially as set forth.

820,644. **EMERGENCY ATTACHMENT FOR AUTOMATIC CAR-COUPLINGS.** JAMES A. HINSON, Chicago, Ill.; Margaret Hinson, administratrix of said James A. Hinson, deceased, assignor to National Car Coupler Company, Chicago, Ill., a Corporation of Illinois. Filed Aug. 19, 1903. Serial No. 169,995.



Claim.—1. In automatic car-couplers, an emergency coupling attachment designed to closely and interchangeably fit at one end in coupling engagement with all forms of the vertical-plane type of coupler having a rotative hook or knuckle and provided at its other end with an opening to receive a vertical pivot-pin by which it is adapted to be connected with another coupler, a coupling-knuckle or analogous coupling device.

2. In automatic car-couplers, an emergency coupler attachment designed to be hinged at one end to the draw-head in place of the usual swinging knuckle, and provided at its other end with a hook and with a guard-arm, the hook being adapted to closely and interchangeably fit and to be automatically coupled to all forms of the vertical type of coupler having a rotative hook or knuckle.

3. In automatic car-couplers, an emergency coupler attachment designed to be hinged at one end to the draw-head in place of the usual knuckle, and provided at its other end with a knuckle adapted to automatically intercouple with the rotating knuckle of an adjacent coupler in a manner to retain the intercoupled draw-heads in substantial alinement with each other.

4. In automatic car-couplers, an emergency coupler attachment designed to be hinged at one end to the draw-head in place of the usual knuckle, and provided at its other end with a rigid knuckle and in rear of said knuckle with a guide-arm, said rigid knuckle and guide-arm being adapted to automatically intercouple with the rotating knuckle of an adjacent coupler in a manner to retain the draw-heads in substantial alinement with each other.

5. In automatic car-couplers an emergency coupler attachment designed to be loosely connected with the draw-head to swing laterally and provided at its outer end with a knuckle and in rear of said knuckle with a guard-arm, the inner face of said guard-arm being provided with a rearwardly-curved notch.

6. In automatic car-couplers an emergency coupler attachment designed to be loosely connected with the draw-head and provided at its outer end with a knuckle, said attachment being provided at its forward end with an extension adapted for contact with the guard-arm of an interlocking coupler to prevent said parts from uncoupling.

7. In automatic car-couplers an emergency coupler attachment designed to be loosely connected with the draw-head and provided at its outer end with a knuckle and in rear of said knuckle with a guard-arm, said attachment being provided at its forward end with an extension adapted for contact with the guard-arm of an interlocked coupler to prevent said parts from uncoupling.

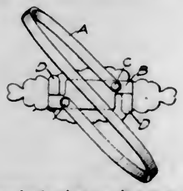
8. In automatic car-couplers, an emergency coupling attachment designed to be loosely connected with the draw-head and provided with a knuckle and in rear of said knuckle with a guard-arm, said guard-arm being provided on its inner face with a rearwardly-curved notch and the attachment being provided at its front end with a forward extension adapted for contact with the guard-arm of an intercoupled draw-head to prevent separation of said coupled parts.

9. In automatic car-couplers an emergency coupling attachment designed to be loosely connected with the draw-head and provided with a knuckle and with a guard-arm, said guard-arm being formed to provided a handle by which the link may be carried.

10. In automatic car-couplers, an emergency coupling attachment designed to be loosely connected with the draw-head to swing freely laterally and provided with a knuckle designed to closely interlock with the knuckle of an adjacent coupler, said attachment being provided with a thickened part having an inclined guide-surface which engages the guard-arm of said adjacent coupler and acting to prevent lateral separation of said attachment and coupler so long as the knuckle of said coupler is locked closed.

11. An emergency car-coupler knuckle comprising a lug adapted to be pivoted between the ears of a coupler-head, a guard member extending from the lug and forming with the knuckle-head a space to receive the head of the knuckle of a coöperating coupler, and a web extending between said lug and the rear surface of said guard member.

820,645. **BRACELET.** ROY W. INMAN, Attleboro, Mass., assignor to John T. Inman, Attleboro, Mass. Filed May 24, 1905. Serial No. 263,010.



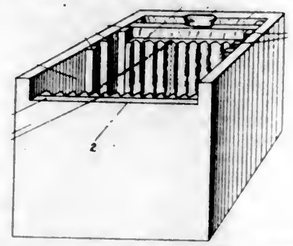
Claim.—1. A bracelet having overlapping ends connected by a link hinged thereto, and means for holding each overlapping end portion in engagement with both ends of said link, substantially as described.

2. A bracelet having overlapping ends connected by a link hinged thereto, said link being provided with means for holding each overlapping end portion in engagement with the link at the end opposite to the hinge, substantially as described.

3. A bracelet having overlapping ends connected by a link hinged thereto, said link being provided with spring-tongues adapted to be engaged by the overlapping end portions and to hold the same in closed position, substantially as described.

4. A bracelet having overlapping ends connected by a link hinged thereto, said link being provided with a stop for limiting the movement of said bracelet to extended position, substantially as described.

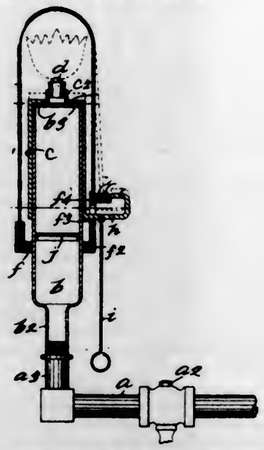
820,646. **WASHING-BOX FOR PHOTOGRAPHIC PLATES.** DAVID S. JACOBUS, Jersey City, N. J., assignor to Martin R. Jacobus, Ridgefield, N. J. Filed July 21, 1905. Serial No. 270,673.



Claim.—1. A washing-box for photographic plates, comprising a narrow receiving-compartment adapted to receive the incoming liquid, an inlet to said receiving-compartment, a washing-compartment communicating with said receiving-compartment through an opening extending along the bottom of said compartments, an outlet at the opposite side of said washing-compartment at a level below that of said inlet to the receiving-compartment and adjustable means to retain a number of plates in planes at right angles to the partition separating the receiving-compartment from the washing-compartment.

2. A washing-box for photographic plates comprising a rectangular box divided into two compartments, a narrow receiving-compartment adapted to receive the incoming liquid, and a washing-compartment adjacent to and communicating with the former compartment at the bottom thereof through an opening extending along the length of the washing-compartment; an outlet at the top and opposite side of said washing-compartment and at a level below that of the inlet to said receiving-compartment and extending the length of the washing-compartment; and corrugated side pieces in said washing-chamber adapted to retain plates in planes at right angles to the partition separating the receiving-compartment from the washing-compartment.

820,647. **SAFETY GAS-BURNER.** SAMUEL KATZ, New York, N. Y. Filed Jan. 15, 1906. Serial No. 296,129.



Claim.—1. A gas-burner of the class described, comprising a tube adapted at its lower end to be connected with a gas-supply pipe, said tube being closed at its upper end and provided with concentrically-arranged ports or passages, a sleeve mounted on said tube and closed at its upper end and provided centrally with a burner-tip, a collar secured to said tube below said sleeve, a yoke-shaped thermostat one arm of which is secured to said collar and the other arm of which is provided with an outwardly-directed finger, and an arm connected with the lower end of said sleeve and provided with an inwardly-directed hook member in connection with which said finger operates, substantially as shown and described.

2. A gas-burner of the class described, comprising a tube adapted at its lower end to be connected with a gas-supply pipe, said tube being closed at its upper end and provided with concentrically-arranged ports or passages, a sleeve mounted on said tube and closed at its upper end and provided centrally with a burner-tip, a collar secured to said tube below said sleeve, a yoke-shaped thermostat one arm of which is secured to said collar and the other arm of which is provided with an outwardly-directed finger, an arm connected with the lower end of said sleeve and provided with an inwardly-directed hook member in connection with which said finger operates, and means for raising said sleeve, substantially as shown and described.

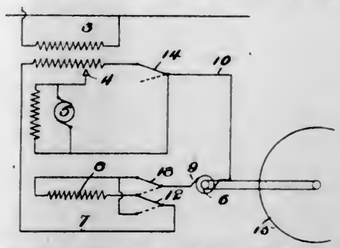
3. A gas-burner of the class described, comprising a tube the lower end of which is adapted to be connected with a gas-supply pipe, said tube being closed at its upper end and provided with concentrically-arranged ports or passages, a vertically-movable sleeve mounted on and movable on said tube and the upper end of which is closed and provided centrally with a burner-tip, said sleeve being adapted in its lowest position to cut off the flow of gas from the burner-tip and in its raised postition to permit of said flow, and a thermostat connected with said tube and adapted to operate in connection with a part connected with said sleeve to hold said sleeve in its raised position, substantially as shown and described.

820,648. **PROCESS FOR PURING HIDES AND SKINS.** EMILE F. KICK, New York, N. Y., assignor to American Chemical Products Company, a Corporation of New York. Filed Aug. 16, 1904. Serial No. 220,957.

Claim.—1. The within-described process for removing the lime from limed hides or skins, at the same time purifying, cleansing, swelling, and softening the said hides or skins, said process consisting in subjecting the limed hides or skins to the action of a soluble salt of a sulfoleate, either sodium, potassium or ammonium, or a mixture of them, in combination with an ammonium salt, or a mixture of ammonium salts, substantially as herein set forth.

2. The within-described process for removing the lime from limed hides or skins, at the same time purifying, cleansing, swelling and softening the said hides or skins, said process consisting in subjecting the limed hides or skins to the action of a soluble salt of sulforicinoleate of sodium, in combination with chlorid of ammonium, substantially as herein set forth.

820,649. **ELECTRIC MACHINE AND SYSTEM.** FREDERICK W. KNOPFF, St. Louis, Mo. Filed Aug. 25, 1904. Serial No. 222,097.



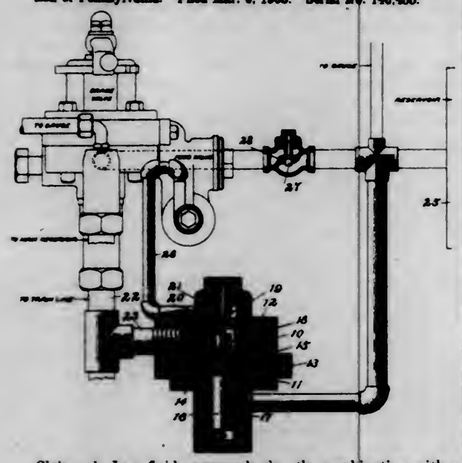
Claim.—1. A system comprising in combination a conductor carrying an alternating electric current, a transformer located in said circuit capable of regulating said alternating current and a machine capable of being operated as a motor by said alternating current to store mechanical energy and of alternatively being operated by the mechanical energy so stored to generate electrical energy which is added to the electrical energy from the transformer to operate a motor intermittently.

2. A system comprising in combination a conductor carrying an alternating electric current, a transformer located in said circuit capable of regulating said alternating current, an electric motor capable of being transformed into a generator while running, means whereby when running as a motor mechanical energy is stored, capable of operating the machine when running as a generator and means whereby the electrical energy so generated is added to the electrical energy from the transformer to operate a motor intermittently.

3. A system comprising in combination a conductor carrying an

alternating electric current, a transformer located in said circuit capable of regulating said alternating current, an electric motor, a fly-wheel mechanically connected with and operated by the motor, means whereby the motor may be transformed to a generator continuing to move in the same direction and operated by the mechanical energy stored in the fly-wheel while running as a motor and means whereby the electrical energy so generated is added to the electrical energy from the transformer to operate a motor intermittently.

820,650. **FEED-CONTROL VALVE DEVICE FOR FLUID-PRESSURE BRAKES.** LEOPOLD KREMENEZKY, Baltimore, Md., assignor to The Westinghouse Air Brake Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed Mar. 6, 1903. Serial No. 146,455.



Claim.—1. In a fluid-pressure brake, the combination with a valve for controlling the supply of fluid under pressure from the main reservoir to the train-pipe and a piston for operating said valve, of a regulating-valve operated by the opposing pressures of the train-pipe on one side and a varying fluid-pressure on the other side for controlling the pressure on one side of said piston.

2. In a fluid-pressure brake, the combination with a valve for controlling the supply of fluid under pressure from the main reservoir to the train-pipe and a piston for operating said valve, of a regulating-valve operated by the opposing pressures of the train-pipe and a variable fluid-pressure for controlling the release of fluid-pressure from one side of said piston.

3. In a fluid-pressure brake, the combination with a valve for controlling the supply of fluid under pressure from the main reservoir to the train-pipe and a piston for operating said valve, of a regulating-valve for controlling the pressure on one side of said piston, a movable abutment exposed on one side to train-pipe pressure for operating said regulating-valve, and means for varying the pressure on the other side of said abutment at a predetermined rate.

4. In a fluid-pressure brake, the combination with a valve for controlling communiction from the main reservoir to the train-pipe and a piston for operating said valve, of a regulating-valve for controlling the pressure on one side of said piston, a movable abutment for operating said regulating-valve, and a chamber having a restricted inlet-passage, said abutment being exposed on one side to train-pipe pressure and on the opposite side to the pressure of said chamber.

5. In a fluid-pressure brake, the combination with a train-pipe, engineer's brake-valve and equalizing-reservoir, of a valve for controlling communiction from the main reservoir to the train-pipe, a check-valve having a restricted port or groove located in the passage leading to the equalizing-reservoir, and means subjected to the opposing pressures of the train-pipe and the equalizing-reservoir for governing the operation of said valve.

6. In a fluid-pressure brake, the combination with a main reservoir, engineer's brake-valve and train-pipe, of a valve for controlling the supply of fluid to the train-pipe, a piston for operating said valve, a regulating-valve governed by the pressures of the train-pipe and a chamber for controlling the pressure on said piston, and means operated by the movement of the engineer's brake-valve for varying the pressure in said chamber at a predetermined rate.

7. In a fluid-pressure brake, the combination with a main reservoir, engineer's brake-valve and train-pipe, of a valve for controlling the supply of fluid to the train-pipe, a piston for operating said valve, a regulating-valve for controlling the pressure on said piston, a movable abutment subject to the opposing pressures of the train-pipe and a chamber for operating said regulating-valve, and means operated by the movement of the engineer's brake-valve for increasing the pressure in said chamber at a predetermined rate.

8. In a fluid-pressure brake, the combination with a main valve for controlling the supply to the train-pipe and a regulating-valve governed by the train-pipe pressure for controlling the operation of the main valve, and another regulating device subject to opposing fluid-pressures for also governing said main valve.

9. In a fluid-pressure brake, the combination with a main valve for controlling the supply to the train-pipe and a piston for operating said valve, of a regulating-valve normally governed by the train-pipe pressure for controlling the pressure on said piston, and another regulating-valve governed by the train-pipe pressure on one side and a variable pressure upon the other for also controlling the pressure on said piston.

10. In a fluid-pressure brake, the combination with a main valve for controlling the supply to the train-pipe and a piston for operating said valve, of a regulating-valve normally governed by the train-pipe pressure for controlling the pressure on said piston, another regulating-valve having an abutment subject to the opposing pressures of the train-pipe and a chamber for also controlling the pressure on said piston, and means for increasing the pressure in said chamber at a predetermined rate.

11. In a fluid-pressure brake, the combination with a main reservoir, engineer's brake-valve, and train-pipe, of a valve for controlling the supply to the train-pipe, a regulating device governed by the train-pipe pressure for controlling said valve, another regulating device subject to the opposing fluid-pressures of the train-pipe and a chamber for also controlling said valve, and means operated by the movement of the engineer's brake-valve for varying the pressure in said chamber.

12. In a fluid-pressure brake, the combination with a main reservoir, engineer's brake-valve and train-pipe, of a feed-valve device comprising a main valve and piston, a regulating-valve for normally governing the pressure on said piston, and another regulating-valve controlling communication from the piston through the first regulating-valve to the train-pipe.

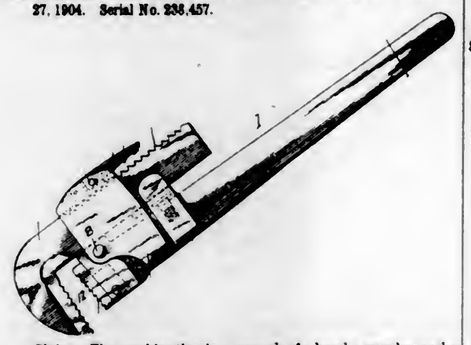
13. In a fluid-pressure brake, the combination with a main reservoir, engineer's brake-valve and train-pipe, of a feed-valve device comprising a main valve and piston, a regulating-valve for releasing fluid from said piston to the train-pipe, and another regulating-valve operated by the opposing pressures of the train-pipe and a chamber for controlling communication through the first regulating-valve.

14. In a railway fluid-pressure brake system, the combination of a train-line; a brake-valve; a feed-valve designated to maintain the air in the train-line at a predetermined limit; and a regulating-valve provided with a chamber in communication with the train-line, another chamber in communication with the regulating-chamber of the feed-valve and also having a port communication with said first-named chamber; a valve controlling said port; and a device arranged to hold said valve open and also arranged to yield at a predetermined pressure whereby to permit said valve to close, for the purpose set forth.

15. In a railway fluid-pressure brake system, the combination of a train-line; a brake-valve; a feed-valve designated to maintain the air in the train-line at a predetermined limit; and a regulating-valve provided with a chamber in communication with the train-line, another chamber in communication with the regulating-chamber of the feed-valve and also having a port communication with said first-named chamber; a yielding device forming one side of said first-named chamber and arranged to yield at a predetermined pressure; a valve controlling said port and normally held open by said yielding device; and a drum back of said yielding device whereby to increase the space, as set forth.

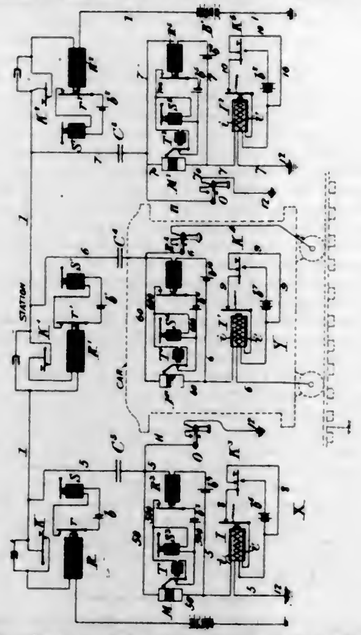
16. In a railway fluid-pressure brake system, the combination of a train-line; a brake-valve; a feed-valve designed to maintain the air in the train-line at a predetermined limit; and a regulating-valve provided with a chamber in communication with the train-line, another chamber in communication with the regulating-chamber of the feed-valve and also having a port communication with said first-named chamber; a yielding device forming one side of said first-named chamber and arranged to yield at a predetermined pressure; a valve controlling said port and normally held open by said yielding device; a drum back of said yielding device, as set forth; a connection between said drum and the brake-valve; and a leaking check-valve in said connection, for the purpose described.

820,651. **WRENCH.** JOHN W. LANHAM, Danville, Ill. Filed Dec. 27, 1904. Serial No. 238,457.



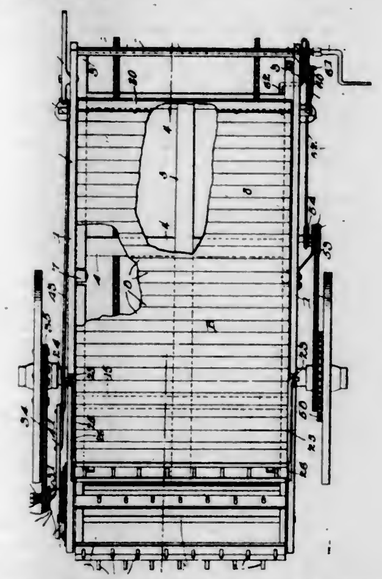
Claim.—The combination in a wrench of a handle member and a jaw at its end, a yoke pivoted on said member provided with a transverse plate, a spring-pressed pawl between said plate and the handle member; a second jaw located in the yoke and provided with teeth at its outer side, a spring-pressed lever pivoted in the yoke, a pivoted pawl on said lever to engage said teeth, and guiding-lugs for the second member, formed on the handle member.

820,652. **TELEGRAPHIC SYSTEM.** JACOB W. LATTIG, West Bethlehem, and CHARLES L. GOODRUM, Philadelphia, Pa., and EDWARD E. CLEMENT, Washington, D. C. Filed June 9, 1903. Serial No. 160,750.



Claim.—In a system of railway communication, the combination with the following instrumentalities: a continuous conductor and a line of rails in proximity thereto, means to produce rapidly-changing electromotive forces in said conductor, a vehicle adapted to move upon said rails, a normally open signal-circuit containing a battery and a signal-receiving device, together with a coherer or similar radiosensitive device, a conducting body mounted upon said vehicle and moving therewith in constant inductive relation to the fixed conductor, a connection from said body to the radiosensitive device and to ground, a telephone instrument on the vehicle also connected to said body and to ground, and means carried on the vehicle to impress rapidly-changing electromotive forces on said body, whereby the occupants of the vehicle may call or be called by means of the coherer and signal device, and may thereafter communicate by means of the telephone while the vehicle is in motion, substantially as described.

820,653. **MANURE-SPREADER.** CHARLES F. LEE, Astoria, Ill., assignor of one-half to John B. Harris, Astoria, Ill. Filed Oct. 11, 1905. Serial No. 282,294.



Claim.—1. In a manure-spreader, a receptacle, supporting-flanges upon said receptacle, a flexible bottom, supporting means for the same, a front bolster connected permanently with the receptacle and spaced from the under edges of the side members of the receptacle and shouldered blocks secured upon the under edges of the side members and adapted to engage the rear bolster of a running-gear.

2. In a manure-spreader having a traveling bottom, a shaft having a crank, a tail-gate suspended upon said crank, an auxiliary crank extending from the crank-shaft at an angle to the gate-supporting crank, an operating-lever, and a link-rod connected with said lever; in combination with a movable member connecting the end of the link-rod with the auxiliary crank.

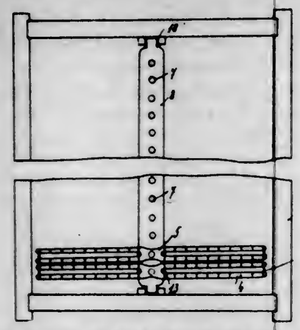
3. In a manure-spreader having a traveling bottom, a distributing-cylinder supported for rotation, driving means for said cylinder including a pair of clutch members, a slidable wedge member movable between the clutch members, a shaft having a crank, a tail-gate supported upon said crank, an auxiliary crank upon said shaft having pivotal connection with the slidable wedge member, an operating-lever, and a link connecting said lever with the slidable wedge member to simultaneously operate said wedge and the crank-shaft with which it is connected.

4. In a manure-spreader, a traveling bottom including endless flexible members, supporting-shafts for the endless members, a ratchet-wheel on one of the supporting-shafts, a gravity-pawl slidably engaging the shaft and the ratchet-wheel, an eccentric-rod connected with the pawl, a shaft having a crank adapted to engage the eccentric-rod to elevate the pawl from engagement with the ratchet-spring means for holding the crank out of engagement with the eccentric-rod, and an arm extending from the crank-shaft in the path of the lower lead of the traveling bottom.

820,654. **APPARATUS FOR DYEING.** HENRI L'HUILLIER, Paris, France. Filed July 6, 1905. Serial No. 268,455.

Claim.—1. In an apparatus for dyeing threads on spindles in order to have a circulation of liquid, the combination of rectilinear pipes, perforated spindles fitted thereon, cops mounted on said spindles with blades making contact with the head of the cops for pre-

venting the cops being lifted on the spindles, substantially as described.



2. In an apparatus for dyeing threads and yarns in cops, the combination of a conduit, spindle-carrying pipes arranged at an angle to said conduit and parallel to each other, and strips adapted to prevent the cops of the same row from being lifted, substantially as described.

3. In an apparatus for dyeing threads in cops, the combination of spindle-carrying pipes connected in pairs, cross-pieces connecting the ends of the pipes of each pair, rods mounted on said cross-pieces, strips for preventing the cops from being lifted on the spindles, plates connecting the ends of the strips, and hollow rods fixed at one end on said plates and at their other ends telescoping onto the first-named rods.

4. In an apparatus for dyeing threads and yarns in cops, the combination of a vat, a removable rectilinear conduit therein, rectilinear pipes fixed to and connecting with said conduit in pairs and arranged transversely thereto and parallel to each other, hollow perforated spindles carried by said pipes, cross-pieces connecting the ends of the pipes of each pair, guide-pieces projecting from said cross-pieces, thin flexible strips in contact at a single point with the heads of the rows of cops for retaining the cops upon the spindles, other cross-pieces connecting together the ends of the strips, and other guide-pieces projecting from the last-named cross-pieces and telescoping with the first-named guide-pieces.

5. In an apparatus for dyeing threads and yarns in cops, the combination of spindles arranged in rectilinear rows, and a thin flexible blade contacting at a single point with the head of each cop in a row for retaining the cops upon the spindles.

6. In an apparatus for dyeing threads and yarns in cops, the combination of hollow perforated upwardly-projecting spindles arranged in rectilinear rows, a thin flexible blade resting with its weight upon the heads of the cops in a row and making contact with each cop at a single point, and means for guiding said blades.

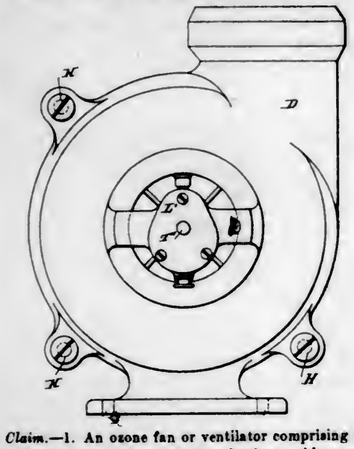
820,655. STAGE-SCREW. FRANK T. LIPPINCOTT, Newark, Ohio. Filed Mar. 6, 1905. Serial No. 248,719.



Claim.—1. In a stage-screw, the combination with a screw having a groove, of a handle having one or more openings and provided with a shank carrying a projection adapted to enter the groove of the screw, and a coupling in which the screw is supported having movable engagement with the shank to removably connect the shank and the screw and hold the projection of the shank in the groove of the screw, the said coupling being arranged to hold the parts in rigid relation to each other.

2. In a device of the character described, the combination with a screw having a groove, of a handle, a threaded shank provided on the handle having a lug adapted to enter the groove of the screw, and a nut engaging with the shank for coupling the handle and screw together formed with an opening through which the screw passes.

820,656. OZONE-VENTILATOR. FREDERIC DE MARE, Brussels, Belgium. Filed Sept. 23, 1904. Serial No. 225,647.



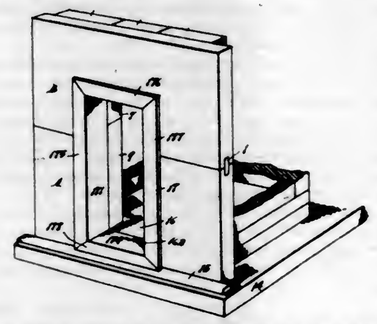
Claim.—1. An ozone fan or ventilator comprising a casing of two separable sections, each section having a side opening or inlet communicating with the interior of the casing and an outlet, a dielectric diaphragm or partition interposed between the two separable sections and dividing the casing into two chambers, a shaft-bearing on each section, a rotary shaft of insulated material, means for supporting the said shaft in the bearings, a fan or set of wings attached to said rotary shaft and in each of the chambers or separable sections insulated from each other and separated by the dielectric partition, and means for conducting a current of electricity of high voltage and frequency between the two separated and insulated fans.

2. An ozone fan or ventilator comprising a casing of two separable sections, each section having a side opening or inlet communicating with the interior of the casing and an outlet, a dielectric diaphragm or partition interposed between the two separable sections and dividing the casing into two chambers, a shaft-bearing for each section, a frame attached to each bearing, means for securing said frame to a separate section at its side opening, a rotary shaft of insulating material, means for supporting the said shaft in the bearings, a fan or set of wings attached to the rotary shaft and in each of the chambers or separable sections, the fans or sets of wings insulated from each other and separated by the dielectric partition and means for conducting a current of electricity of high voltage and frequency between the two insulated and separated fans.

3. An ozone fan or ventilator comprising a casing of two separable sections of insulating material, each section having a side opening or inlet communicating with the interior of the casing and an outlet, a dielectric diaphragm or partition interposed between the two separable sections and dividing the casing into two chambers, a shaft-bearing for each section, a frame attached to each bearing, means for securing each frame to a separable section at its side opening, a rotary shaft of insulating material, an independent shaft or rod in each of the bearings for supporting the rotary shaft of insulating material, a fan or set of wings attached to the rotary shaft and in each of the chambers or separable sections, the fans or sets of wings insulated from each other and separated by the dielectric partition, means for independently or electrically connecting each of the fans or sets of wings with one of the independent shafts or rods in the bearings and means for conducting a current of electricity of high voltage and frequency to each of the bearings and to the two separated and insulated fans.

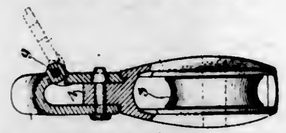
820,657. DOOR-FRAME FOR COOLING-ROOMS. HENRY MARTEN, Toledo, Ohio. Filed Sept. 9, 1905. Serial No. 277,797.

Claim.—1. In combination with a laminated wall provided with apertures of different size in adjacent layers, and with a floor portion arranged to be supported above the foundation-floor portion, there being an air-space therebetween, a door-frame having facing-pieces adapted to engage over the edges of the opening in the outer layer of the wall, and inwardly-extending portions complementary to said facing-pieces, adapted to occupy the space intervening between the edges of the opening in the outer layer and the edges of the opening in the inner layer of the wall, and to lie with their exposed surfaces flush with the edges of the opening through the inner layer of the wall, substantially as described.



2. In combination with the laminated front wall of a refrigerator-building, a floor portion spaced from the foundation of the structure, a door-frame set in an opening in said wall, having facing portions adapted to engage over the edges of said opening, and inwardly-extending portions of less depth than the thickness of the wall, the exposed faces of three of said inwardly-extending portions being arranged to lie in the same plane with the exposed edge of the opening through the inner layer of the wall, and the exposed edge of the remaining inwardly-extending portion being in the same plane and continuous with the floor portion, substantially as described.

820,658. BRIDLE ATTACHMENT. EDWARD B. MERRIMAN, Boston, Mass. Filed Mar. 27, 1905. Serial No. 252,130.



Claim.—1. In a device of the character described, the combination with an attaching-lug of a saddle or hook shaped member having its longer side pivoted thereto, the opposite side of said lug being provided with a projection, a cover hinged to said saddle member and perforated to receive said projection, and means for normally holding said cover in its closed position.

2. In a device of the character described, the combination with an attaching-lug of a U-shaped member comprising two parts hinged together and adapted to embrace said lug at their free ends, one of said parts being secured to the lug at one side of the same, and means for normally holding the other part against the opposite side of said lug.

3. In a device of the character described, the combination with an attaching-lug of a U-shaped member pivoted thereto and comprising two parts hinged together, one of said parts being movable toward the lug, and interlocking means for normally holding the latter part against the lug.

4. In a device of the character described, the combination with an attaching-lug of a saddle or hook shaped member pivoted thereto and having a side opening, and interlocking means for closing said opening when said parts are in normal relative position.

5. In a device of the character described, the combination with an attaching-lug having a locking-shoulder, of a saddle or hook shaped member pivoted to said lug, and a cover hinged to said member and provided with a lip adapted to pass behind said shoulder when the parts are moved into normal position.

6. In a device of the character described, the combination with an attaching-lug of a saddle or hook shaped member pivoted thereto, the opposite side of said lug being provided with a projection, and a cover hinged to said saddle member and perforated to receive said projection, said cover and lug being provided with means adapted to interlock when the parts are in normal relative position.

7. In a device of the character described, the combination with an attaching-lug having a locking-shoulder, of a saddle or hook shaped member connected with said lug by a pivot-pin having a projecting free end, and a cover hinged to said saddle member and perforated to receive the free end of said pin, said cover being provided with a curved lip adapted to engage said shoulder, and to pass from under the same in an abnormal relative position of said parts.

8. In a device of the character described, the combination with an attaching-lug having its opposite sides flat and parallel, of a saddle or hook shaped member pivoted to one side of said lug in contact therewith, said member having a side opening, a cover for said opening and means for locking said cover in its closed position.

9. In a device of the character described, the combination with an attaching-lug having its opposite sides flat and parallel, of a U-shaped member comprising two parts hinged together and adapted to embrace the flat sides of said lug at their ends, one of said parts being pivoted to one side of the lug, and means for normally holding the other part against the opposite side of said lug.

10. In a device of the character described, the combination with an attaching-lug having its opposite sides flat and parallel, of a U-shaped member comprising two parts hinged together and adapted to embrace the flat sides of said lug at their ends, a pivot-pin extending through said lug and projecting from each side of the same, one of the parts of the U-shaped member being pivoted on said pin and the other part having a perforation in its free end, and interlocking means for normally holding the latter part of said member against the lug, with the pivot-pin passing through said perforation.

11. In a device of the character described, the combination with an attaching-lug having its opposite sides flat and parallel, of a pin passing through said lug and projecting from each side of the same, a saddle or hook shaped member pivoted on one end of said pin, and a cover hinged to said saddle member and perforated to receive the other end of said pin, said cover and lug being provided with means arranged to interlock when the parts are in normal relative position.

820,659. RING SPINNING OR TWISTING APPARATUS. CLARENCE R. METCALF, Hopedale, Mass., assignor to Draper Company, Hopedale, Mass., a Corporation of Maine. Filed Sept. 11, 1905. Serial No. 277,816.



Claim.—1. The combination, with a rotary ring having a beveled bearing, of a fixed casing having a seat for said bearing, and means to limit upward axial movement of the ring, comprising a loose member confined within the casing below the seat, and a co-operating member rotatable with the ring.

2. The combination, with a rotary ring having a beveled bearing, of a fixed casing having a non-metallic seat for said bearing, and means to limit upward axial movement of the ring, comprising a loose member confined within the casing below the seat, and a co-operating member rotatable with the ring.

3. The combination, with a rotary ring having a beveled bearing, of a fixed casing having a non-metallic, transversely convex seat for said bearing, and means to limit upward axial movement of the ring, comprising a loose member confined within the casing below the seat, and a coöperating member rotatable with the ring.

4. The combination, with a rotary ring, having a beveled bearing, of a fixed casing having a seat for said bearing, and means to limit upward axial movement of the ring, comprising a loose non-metallic member confined within the casing below the seat, and a co-operating metallic member rotatable with the ring.

5. The combination, with a rotary ring having a beveled bearing, of a fixed casing having a seat for said bearing, and means to limit upward axial movement of the ring, comprising a loose wooden ring confined within the casing below the seat, and a coöperating annular member depending from the bearing and having an outturned lip to project beneath said wooden ring.

6. The combination, with a rotary spinning-ring having an attached inverted frusto-conical bearing provided with a depending cylindrical sleeve, of a fixed casing having an annular seat for and concentric with the bearing, a loose non-metallic ring confined within the casing below the seat, and a collar adapted to fit tightly within the sleeve and having a flange on its lower end to extend beneath the said loose ring, the flange vertically supporting the latter and by its coöperation therewith limiting lifting movement of the spinning-ring.

7. The combination, with a rotary ring having an attached beveled bearing, and a downhold device depending from the latter, of a fixed casing having an annular seat for and concentric with the bearing, said casing being internally conical below the seat, and a non-metallic ring having a conical outer face interposed loosely between

the conical portion of the casing and the downhold device to coöperate therewith and limit upward axial movement of the rotary ring.

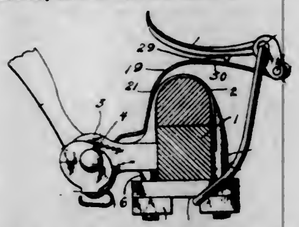
8. The combination, with a rotary ring having a traveler-raceway, of a ring-carrier connected with the ring and having an annular, beveled bearing, a downhold device depending from the bearing, a fixed casing having a seat for and concentric with the bearing, and a loose non-metallic ring interposed between the downhold device and the casing and limited by the latter in its axial and radial movement, the said non-metallic ring coöperating with the downhold device to limit the lifting of the ring-carrier.

9. The combination, with a rotary ring, of a fixed casing therefor permitting limited axial and radial movement of the ring and a holder to secure the casing to the ring-rail, the holder having a continuous annular retaining engagement with the casing.

10. The combination, with a rotary ring, of a casing therefor permitting limited axial and radial movement of the ring, said casing having a lateral flange adapted to rest on the ring-rail and beveled at its periphery, and a flat holding-plate having a circular opening beveled to fit the periphery of the flange and form annular retaining engagement therewith.

11. The combination, with a rotary ring, of a bearing, and means to limit upward axial movement of the ring, comprising a loose member revolving with the ring.

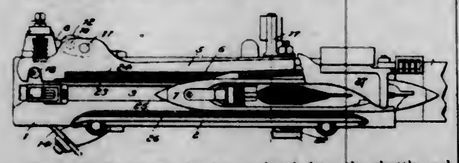
820,660. **THILL-COUPLING.** ROBERT B. MILLER, Russellville, Ark. Filed July 25, 1905. Serial No. 271,179.



Claim.—1. A thill-coupling comprising a draft-eye provided with spaced ears, a shaft disposed with its inner end between said ears, a bolt piercing said ears and said shaft to secure the latter within the former, a plate having spaced ears for connection with the respective ends of said bolt to prevent turning of the latter, the said plate having a projection intermediate its ends, a spring having one end constructed and arranged for detachable engagement with said projection, a lever connected to the opposite end of the spring, and a support for the lever.

2. A thill-coupling comprising a draft-eye having spaced perforated ears, a bolt engaging the perforations of the ears, a plate having slotted ears between which the ears of the eye are received and in the slots of which the ends of the bolt are held, such plate having a depending portion, a spring-plate bearing at one end against the under side of the first-named plate and having an opening through which the depending portion of the first-named plate is received, said spring-plate extending upwardly and over the draft-eye, and means for placing said spring-plate under tension.

820,661. **SHUTTLE CHECK AND LOCK FOR LOOMS.** FRANCIS A. MILLS, Lawrence, Mass., assignor of one-half to Grosvenor B. Emmons, Methuen, Mass. Filed Nov. 6, 1903. Serial No. 180,121.



Claim.—1. In a loom, the lay, a shuttle-box, the shuttle and picking mechanism therefor, a shuttle-binder pivotally mounted on the lay, means for causing it to be yieldingly pressed inwardly toward the opposite side of the shuttle-box throughout its entirety, for the purpose stated.

2. In a loom, the lay, a shuttle-box, a binder pivotally mounted or the lay, spring-pressed throughout its entirety toward the opposite wall of the shuttle-box and free to be moved outwardly by the ingoing shuttle throughout its entirety against spring-pressure, for the purpose stated.

3. In a loom, the lay, the shuttle-box, the shuttle and picking mechanism therefor, a pivotally-mounted shuttle-binder, and means for causing the binder including its pivot to be spring-pressed inwardly and movable laterally.

4. In a loom, the lay, the shuttle-box, the shuttle-picking mechanism therefor, a shuttle-binder pivotally mounted on the lay, and means for causing the shuttle-binder to be spring-pressed inwardly and movable laterally at both its ends, for the purpose stated.

5. In a loom, the lay, a shuttle-box, the shuttle, picking mechanism therefor, an inwardly-spring-pressed shuttle-binder and fulcrum therefor, and means for adjusting the degree of pressure of the binder and its fulcrum, for the purpose stated.

6. In a loom, the lay, the shuttle-box, the shuttle and picking mechanism therefor, a shuttle-binder, means for causing it to be yieldingly pressed inwardly throughout its entirety to gradually check and stop the shuttle, in combination with means for locking the shuttle.

7. In a loom, the lay, a shuttle-box, the shuttle and picking mechanism therefor, a shuttle-binder spring-pressed inwardly throughout its entirety toward the opposite wall of the box and having a movable fulcrum at both ends.

8. In a loom, the lay, a shuttle-box, the shuttle and picking mechanism therefor, a shuttle-binder movable and spring-pressed inwardly throughout its entirety toward the opposite wall of the shuttle-box and having an inwardly-spring-pressed fulcrum at each end, means for adjusting the degree of pressure inwardly upon the binder and its primary or pivot fulcrum.

9. In a loom, the lay, a shuttle-box, the shuttle and picking mechanism therefor, a shuttle-binder movable and spring-pressed inwardly throughout its entirety toward the opposite side of the shuttle-box and having an inwardly-spring-pressed movable fulcrum at each end, the protector-finger forming the bearing-fulcrum for the binder when the binder and its primary or pivot fulcrum are being moved outward against spring-pressure by the ingoing shuttle.

10. In a loom, the lay, a shuttle-box, the shuttle and picking mechanism therefor, a shuttle-binder movable and spring-pressed throughout its entirety toward the opposite side of the shuttle-box, a lever device for locking the binder upon the shuttle having a pivot forming the fulcrum for the binder.

11. In a loom, and in combination, the lay, a shuttle-box, the shuttle and picking mechanism therefor, a shuttle-binder, a movable pivot-fulcrum therefor, a spring maintaining an inward pressure upon the binder and its movable pivot-fulcrum toward the opposite side of the shuttle-box, the binder and its fulcrum adapted to yield in a direction opposite to the pressure of the spring by the ingoing shuttle.

12. In a loom, a lay having shuttle-box and a laterally-movable binder, a laterally-movable fulcrum for the binder mounted on the lay and a spring at the fulcrumed end of the binder constantly pressing the latter and its fulcrum inward toward the opposite side of the shuttle-box, the lever carrying the fulcrum, having means actuated by the impact of the shuttle to cause the said lever and its fulcrum to force the binder against the shuttle.

13. In a loom, the lay, a shuttle-box, the shuttle and picking mechanism for the shuttle, a shuttle-binder movable and spring-pressed inwardly at both ends, and mounted between its spring-pressed ends upon a fulcrumed lever movable inward and outward.

14. In a loom, the lay, a shuttle-box, the shuttle and picking mechanism for the shuttle, a shuttle-binder including a spring for pressing the shuttle-binder inward, an adjustable eccentric stop for limiting the inward movement of the binder, a lever device upon which the shuttle-binder is mounted and movable with it, and an adjustable impact-strap connected to said lever device.

15. In a loom, the lay, a shuttle-box, the shuttle and picking mechanism for the shuttle, a shuttle-binder, a lever device consisting of a shaft, a lever on the upper end thereof having a fulcrum-pin on which the binder is mounted, a lever on the lower end of the shaft, an adjustable impact-strap connected to said lower lever, and springs arranged to press the binder and its connected lever inward throughout the entirety of the binder for the purpose stated.

16. In a loom, the lay, a shuttle-box, the shuttle and picking mechanism for the shuttle, a shuttle-binder including a spring for pressing and moving its outer end inward, the protection-finger and a spring for pressing and moving it inward upon the other end of the shuttle-binder, and a lever device on which the shuttle-binder is pivotally mounted and an adjustable impact-strap connected to said lever device.

17. In a loom, the lay, a shuttle-box, the shuttle and picking mechanism for the shuttle, a shuttle-binder including means for causing it to be movable and spring-pressed inwardly throughout its entirety and free to be moved outwardly against spring-pressure at every point, including a fulcrum movable with the shuttle-binder.

18. In a loom, the lay having a shuttle-box, the shuttle and picking mechanism for the shuttle, an inwardly-spring-pressed shuttle-binder an adjustable impact-strap and a lever device adapted to control the inward movement of the binder and its fulcrum for the purpose stated.

19. In a loom, the lay, its shuttle-box, the shuttle and picking mechanism therefor, a movable shuttle-binder having a facing on its contact side and a cushion or yielding substance between the facing and the movable binder throughout the contact-face thereof, and the protection mechanism operated by the latter, for the purpose stated.

20. In a loom, the lay, the shuttle-box, the shuttle, and picking mechanism therefor, said shuttle-box wall having a facing on its contact side, and a cushion or yielding means located between said facing and said box-wall throughout the entire contact length of said box-wall.

21. In a loom and in combination, the lay having a shuttle-box, the shuttle and picking mechanism for the shuttle, a shuttle-binder, including a movable fulcrum therefor and a spring for pressing and moving the binder and its fulcrum inward, means governed by the impact of the shuttle to actuate the binder-fulcrum and an adjustable stop to limit the inward movement of the binder when the shuttle is out of the box.

22. In a loom, a lay having a shuttle-box wall, an opposite laterally-movable binder, a shaft having a lever on its upper end provided with a pin which forms a laterally-movable fulcrum for the binder, a spring on the lay pressing the outer end of the binder inward, a lever on the lower end of the shaft standing inward, and an adjustable impact-strap connected to said lever the lever having the fulcrum-pin standing toward the inner end of the binder and in advance of the strap-connected lever.

23. In a loom, and in combination, the lay, a shuttle-box, the shuttle and picking mechanism therefor, the shuttle-binder, the spring-pressed protection-finger forming a fulcrum for the inner end of the binder, a spring pressing the outer end of the binder inward, a lever having a fulcrum-pin for the binder between the spring and the protection-finger whereby the entire binder is free to be moved outward against spring-pressure by the ingoing shuttle and inward by spring-pressure by the outgoing shuttle to cause the entire binder to have an outward and an inward movement, and an adjustable impact-strap to force the fulcrum laterally inward and the binder against the shuttle to lock it.

24. In a loom, a lay having a shuttle-box, a shuttle-binder and a fulcrum-lever for and laterally movable with the binder and causing the binder to have an outer short end and an inner long end and a spring constantly pressing and moving the short end toward the opposite wall of the shuttle-box.

25. In a loom, a lay, a shuttle-box, the shuttle-picking mechanism therefor, a shuttle-binder pivotally mounted on the lay means causing it to be pressed inward while being forced outward by the ingoing shuttle throughout the entire binder including its swinging pivot the same means causing the binder to be pressed to its normal position as the shuttle is being thrown out of the box.

26. In a loom, the lay, a shuttle-box, the shuttle and picking mechanism therefor, a shuttle-binder spring-pressed inwardly and movable from and toward the opposite side of the shuttle-box throughout the entire binder, and protection mechanism operated thereby, and means for causing the shuttle-binder to be yieldingly pressed inwardly throughout its entirety, for the purpose stated.

27. In a loom, the lay, having a shuttle-box, the shuttle and picking mechanism for the shuttle, a pivoted shuttle-binder having an unyielding facing on its contact side and a yielding material between the facing and the shuttle-binder, and protection mechanism actuated by the pivoted binder.

28. In combination in a loom, the lay, a shuttle-box, the shuttle and picking mechanism therefor, a shuttle-binder, a fulcrum therefor adapted to have a free swinging movement and dividing the binder in a short and a long arm, and means for causing the shuttle-binder to be spring-pressed inwardly and movable at both ends with an increasing spring force upon the ingoing shuttle at the short arm or outer end of the binder.

29. In a loom, the lay and the shuttle-box, the shuttle and picking mechanism therefor, a shuttle-binder laterally movable at its outer end and means for causing said binder to apply a continually gradually increasing spring-pressure upon the shuttle from the time the shuttle strikes the binder until it reaches the limit of its travel in the shuttle-box.

30. In a loom, and in combination, the lay, the shuttle-box, a binder having a long and a short arm, and a laterally-movable fulcrum for the binder independent of the protection-finger near its short arm and spring-pressed inward at its short arm.

31. In a loom, the lay, the shuttle-box, the shuttle and picking mechanism therefor, a shuttle-binder movable from and toward the opposite side of the shuttle-box throughout its entirety including its pivot or fulcrum and means to cause said binder to apply a gradually-increasing inward pressure upon the shuttle from the time the shuttle strikes the binder to the limit of its travel in the box.

32. In a loom, the lay, the shuttle-box, the shuttle and picking mechanism therefor, a shuttle-binder laterally movable at its outer end having means for causing said binder to apply a continually-increasing inward pressure upon the shuttle during its travel in the box in contact with said binder and thereby stop the same.

33. In a loom, the lay, the shuttle-box, the shuttle and picking mechanism therefor, a shuttle-binder forming a side of the shuttle-box and laterally movable at its outer end, and means operated by the ingoing shuttle to thereby stop the same to apply an inwardly-increasing pressure of the binder upon the shuttle throughout the length of the binder and a gradually-decreasing pressure upon the outgoing shuttle throughout the length of said binder.

34. In a loom, the lay, a shuttle-box, the shuttle and picking mechanism therefor, a laterally-movable and inwardly spring-pressed shuttle-binder having three fulcrums or pivots, one stationary at the outer end of the lay, one spring-pressed inwardly and movable with the inner end of the binder, and one located between the two laterally movable and spring pressed inwardly with the binder toward the opposite side of the shuttle-box.

35. In a loom, the lay, a shuttle-box, the shuttle and picking mechanism therefor, a pivoted laterally-movable shuttle-binder and also its fulcrum or pivot spring-pressed inwardly upon the shuttle near the outer end when at the limit of its travel in the box.

36. In a loom and in combination the lay, the shuttle-box the shuttle and picking mechanism therefor, a shuttle-binder forming a side of the shuttle-box and having connection to operate the protection device at or near the inner end of the binder, and means at the outer end of the shuttle-box to cause said binder to be yieldingly pressed inwardly at its outer end for the purpose stated.

37. In a loom, a lay, the shuttle-box, a shuttle and picking mechanism therefor, a shuttle-binder forming the side of the shuttle-box and laterally movable at its outer end, and means coacting with said binder to cause the latter to gradually and increasingly resist and reduce the speed of the shuttle until it stops in the shuttle-box.

38. In a loom, the lay, the shuttle-box, the shuttle, picking mechanism therefor, and a shuttle-lock, the said shuttle-box having yielding means coacting upon said shuttle throughout the contact length of said shuttle-box.

39. In a loom, the lay, the shuttle-box, the shuttle and picking mechanism therefor, an inwardly spring-pressed shuttle-binder having three pivots or fulcrums, one at the outer end of the binder, one at the inner end of said binder and one located between the two yieldingly pressed inward with the binder for the purpose stated.

40. In a loom, the lay, the shuttle-box, the shuttle, picking mechanism therefor, and means for causing a yielding pressure upon said shuttle operated by the impact of said shuttle upon the picker of said picking mechanism for yieldingly checking and locking said shuttle.

41. In a loom, the lay, the shuttle-box, the shuttle and picking mechanism therefor, a shuttle-binder movable from and toward the opposite side of the shuttle-box throughout its entirety, said binder having a facing on its contact side and a cushion or yielding means between said facing and said binder.

42. In a loom, the lay, the shuttle-box, the shuttle, picking mechanism therefor, a shuttle-lock, and a binder having a cushioning means coacting upon the shuttle throughout the contact length of said binder.

43. In a loom, the lay, the shuttle-box having a shuttle-binder, the shuttle and picking mechanism therefor, said shuttle-binder and said shuttle-box, each having a yielding material coacting upon the shuttle, in combination with means for locking the shuttle by the impact of said shuttle upon the picker.

44. In a loom, the lay, the shuttle-box, the shuttle, and picking mechanism therefor, a shuttle-binder movable from and toward the opposite side of the shuttle-box throughout its entirety, including its pivot or fulcrum, said shuttle-binder and said shuttle-box, each having a yielding means to coact upon the shuttle in combination with means for locking the shuttle by the impact of said shuttle.

45. In a loom, the lay, the shuttle-box, the shuttle and picking mechanism therefor, a shuttle-binder spring-pressed inwardly at or near its outer end, movable laterally throughout its entirety, said binder caused to be moved outwardly at its outer end by the ingoing shuttle, in combination with means for yieldingly pressing the outer end of said binder inwardly upon said shuttle to lock it.

46. In a loom, the lay, the shuttle-box, the shuttle and picking mechanism therefor, a shuttle-binder movable from and toward the opposite side of the shuttle-box throughout its entirety, and means for causing said binder to apply a gradually-increasing pressure upon the ingoing shuttle from the time the shuttle strikes the binder to the limit of its travel in the box, said binder having a yielding means coacting upon the shuttle and said shuttle-box having a cushioning means coacting upon the shuttle.

47. In a loom, the lay, the shuttle-box, the shuttle and picking mechanism therefor, a shuttle-binder movable from and toward the opposite side of the shuttle-box throughout its entirety, and means for causing said binder to apply a gradually-increasing pressure upon the shuttle from the time the shuttle strikes the binder.

48. In a loom, the lay, the shuttle-box, the shuttle and picking mechanism therefor, a shuttle-binder movable from and toward the opposite side of the shuttle-box throughout its entirety, and means for causing said binder to apply a gradually-increasing pressure upon the shuttle from the time the shuttle strikes the binder to the limit of its travel in the box, said binder having a yielding means coacting upon the shuttle throughout its contact length.

49. In a loom, the lay, the shuttle-box, the shuttle and picking mechanism therefor, a shuttle-binder pivotally mounted on the lay and having a yielding or cushioning means for the shuttle, in combination with means for pressing said binder upon said shuttle by the impact of the shuttle upon the picker.

50. In a loom, the lay, the shuttle-box, the shuttle and picking mechanism therefor, a shuttle-binder pivotally mounted on the lay, having a yielding or cushioning means and an opposite shuttle-box wall having coacting yielding means in combination with means for yieldingly pressing said binder upon the shuttle and the shuttle upon said opposite wall by the impact of said shuttle.

51. In a loom, the lay, the shuttle-box, a shuttle-binder, the shuttle and picking mechanism therefor, a lever device to force the binder against the shuttle, said binder having yielding means at or near its outer end to yield upon the shuttle by the impact of the shuttle upon said lever device.

52. In a loom, the lay, the shuttle-box, the shuttle and picking mechanism therefor, a shuttle-binder having means to yield upon said shuttle in combination with means to force said binder upon said shuttle by the impact of the shuttle upon the picker.

53. In a loom, the lay, the shuttle-box, the shuttle-picking mechanism therefor, a shuttle-binder and means for causing it to be yieldingly pressed upon said shuttle by the impact of said shuttle upon the picker to yieldingly lock said shuttle at the end of its flight in said shuttle-box.

54. In a loom, the lay, the shuttle-box, the shuttle-picking mechanism therefor, a shuttle-binder and means operated by the impact of the shuttle for causing said binder to be yieldingly pressed upon the shuttle, and the box-wall having a yielding face against which the shuttle is yieldingly pressed by the impact of the shuttle upon the picker.

55. In a loom, the lay, the shuttle-box having a shuttle binder, the shuttle and picking mechanism therefor, a shuttle check or lock having yielding means located between the contact-face of the picker and the contact-face of said binder to cause said binder to be yieldingly pressed upon said shuttle by the impact of said shuttle upon said picker.

56. In a loom, the lay, the shuttle-box, the shuttle and picking mechanism therefor, a shuttle-binder including its pivot or fulcrum movable from and toward the opposite side of the shuttle-box throughout its entirety, said binder having a facing on its contact side and a yielding means located between said facing and said binder throughout its contact length to coact upon said shuttle.

57. In a loom, the lay, the shuttle-box having a shuttle-binder, the shuttle and picking mechanism therefor, said shuttle-binder and said shuttle-box wall each having coacting means to yield upon said shuttle, in combination with means to press said binder upon said shuttle to lock it by the impact of the shuttle upon said picker.

58. In a loom, the lay, the shuttle-box, the shuttle and picking mechanism therefor, a shuttle-binder movable from and toward the opposite side of said box throughout its entirety including its pivot or fulcrum, said binder having means for causing a yielding pressure upon said shuttle when pressed upon the shuttle by means operated by the impact of said shuttle.

59. In a loom, the lay, the shuttle-box, the shuttle and picking mechanism therefor, a shuttle-binder movable from and toward the opposite side of said box throughout its entirety, including its pivot or fulcrum, said binder having means to yield upon said shuttle, in combination with means for pressing said binder upon said shuttle by the impact of the shuttle.

60. In a loom, the lay, the shuttle-box having a shuttle-binder, the shuttle and picking mechanism therefor, a shuttle-box wall having means for causing a yielding pressure upon said shuttle, in combination with means to force said shuttle upon said box-wall by the impact of the shuttle.

61. In a loom, the lay, the shuttle-box, the shuttle and picking mechanism therefor, a shuttle-binder movable from and toward the opposite side of the shuttle-box throughout its entirety and means for causing said binder to be yieldingly pressed upon said shuttle by the impact of the shuttle upon the picker.

62. In a loom, the lay, the shuttle-box, the shuttle and picking mechanism therefor, a shuttle-binder movable from and toward the opposite side of the shuttle-box throughout its entirety and having means to cause said binder to apply a gradually-increasing spring-pressure upon the ingoing shuttle and means for causing said binder to be yieldingly pressed upon said shuttle by the impact of the shuttle upon the picker.

63. In a loom, the lay, the shuttle-box, the shuttle, and picking mechanism therefor, a shuttle-binder movable from and toward the opposite side of the shuttle-box throughout its entirety, and means for causing said binder to apply a gradually-increasing spring-pressure upon said shuttle by the ingoing shuttle and means for causing said binder to be yieldingly pressed upon said shuttle by the impact of said shuttle upon the picker.

64. In a loom, the lay, the shuttle-box, the shuttle, and picking mechanism therefor, a shuttle-binder movable from and toward the opposite side of said shuttle-box throughout its entirety, said binder having a facing on its contact side and yielding means located between said facing and said binder throughout its contact length to coact upon said shuttle.

65. In a loom, the lay, the shuttle-box, the shuttle and picking mechanism therefor, a shuttle-binder pivoted at or near its outer end, and means for causing said binder to be yieldingly pressed upon said shuttle by the impact of the shuttle upon the picker.

66. In a loom, the lay, the shuttle-box, the shuttle and picking mechanism therefor, a pivoted shuttle-binder having a facing on its contact side and a rubber cushion between said facing and said binder.

67. In a loom, the lay, the shuttle-box, the shuttle and picking mechanism therefor, a shuttle-binder spring-pressed inwardly and movable from and toward the opposite side of the shuttle-box at its outer end and means for causing said binder to apply a gradually-increasing spring-pressure upon the shuttle by the ingoing shuttle to thereby stop the same.

68. In a loom, the lay, the shuttle-box, the shuttle and picking mechanism therefor, a shuttle-binder spring-pressed inwardly and movable from and toward the opposite side of the shuttle-box at its outer end and means for causing said binder to apply a gradually-increasing spring-pressure upon the shuttle by the ingoing shuttle to thereby stop the same and a gradually-decreasing spring-pressure upon the outgoing shuttle.

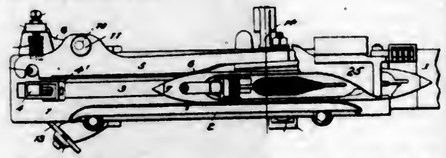
69. In a loom, a lay, a shuttle and shuttle-binder, and picking mechanism for the shuttle, a strap connected at one end to the lay, a lever upon the lay, said strap passing back of the picker and having its other end connected to said lever, and means permitting a yielding action of said lever when said strap receives the impact of the picker-stick.

70. In a loom, a lay, a shuttle, and shuttle-binder, and picking mechanism for the shuttle, a strap connected to a bracket on the lay, a lever upon the lay, said strap passing back of the picker or picker-stick and having its other end connected to said lever and a rubber cushion permitting a yielding action of said lever when said strap receives the impact of the picker or picker-stick.

71. In a loom, a lay, a shuttle-box, a shuttle and picking mechanism for the shuttle, a strap connected at one end to a bracket on the lay, a lever loosely mounted on a bracket on the lay, said strap passing back of the picker-stick and having its other end connected to said lever and means for causing spring action to said lever and said strap when said strap receives the impact of the picker-stick.

820,662. **SHUTTLE-LOCK FOR LOOMS.** FRANCIS A. MILLS, Lawrence, Mass., assignor of one-half to Grosvenor B. Emmons, Methuen, Mass. Filed Nov. 9, 1903. Serial No. 180,456.

Claim.—1. In a loom, the lay, the shuttle-box, the shuttle and picking mechanism therefor, a shuttle-binder, means for causing it to be yieldingly pressed inwardly throughout its entirety, a shaft terminating at its upper end in an eccentric device forming the fulcrum for the binder and adjustable means connected to the eccentric device for checking, stopping and locking the shuttle at a predetermined position in the shuttle-box.



2. In a loom and in combination, the lay, the shuttle-box, the shuttle and picking mechanism therefor, a shuttle-binder, means for causing it to be yieldingly pressed throughout its entirety toward the opposite wall of the box, a shaft terminating at its upper end in an eccentric forming the fulcrum for the binder, an adjustable strap actuated by the impact of the incoming shuttle to actuate said eccentric and lever device to force said binder against the shuttle.

3. In a loom and in combination, the lay, a shuttle-box, the shuttle and picking mechanism therefor, means for causing the binder including its fulcrum to be pressed inwardly throughout the entirety of the binder, a shaft terminating at its upper end in an eccentric device forming the fulcrum for the binder and an adjustable strap actuated by the impact of the incoming shuttle to actuate said eccentric and lever device to force the binder against the shuttle.

4. The combination in a loom, the lay, a shuttle-box, the shuttle and picking mechanism therefor, a pivotally-mounted shuttle-binder, means for causing the shuttle-binder including its pivot to be pressed inwardly at both ends of the binder, a shaft terminating at its upper end in an eccentric device forming the pivot of the binder, and an adjustable strap to receive the impact of the incoming shuttle to actuate the eccentric and lever device to force the binder against the shuttle.

5. In combination in a loom, the lay, a shuttle-box, the shuttle and picking mechanism therefor, a shuttle-binder, means for pressing it inward throughout its entirety, a shaft terminating at its upper end in an eccentric forming the fulcrum for the binder, means for adjusting the degree of pressure on the binder including its fulcrum, and an adjustable strap actuated by the impact of the incoming shuttle to actuate said eccentric and lever device to force the binder against the shuttle.

6. In a loom, the lay, a shuttle-box, the shuttle and picking mechanism therefor, a shuttle-binder, means for causing it to be yieldingly pressed inwardly throughout its entirety, in combination with a shaft terminating at its upper end in an eccentric forming a movable fulcrum for the binder and means governed by the impact of the shuttle to actuate said eccentric and lever device to force the binder against the shuttle.

7. In a loom, the lay, a shuttle-box, the shuttle and picking mechanism therefor, a shuttle-binder spring-pressed inwardly throughout its entirety toward the opposite wall of the box, in combination with a shaft terminating at its upper end in an eccentric forming the fulcrum for the binder, and an adjustable strap to receive the impact governed by the incoming shuttle to actuate said eccentric and lever device to force the binder against the shuttle.

8. In a loom, the lay, a shuttle-box, the shuttle and picking mechanism therefor, a shuttle-binder spring-pressed inward throughout its entirety toward the opposite wall of the box, in combination with a shaft terminating at its upper end in an eccentric forming the fulcrum for the binder, and an adjustable strap to receive the impact of the incoming shuttle to actuate said eccentric and lever device to force the binder against the shuttle.

9. In a loom, the lay, a shuttle-box, the shuttle and picking mechanism therefor, a shuttle-binder spring-pressed inwardly throughout its entirety toward the opposite wall of the box, in combination with a shaft terminating at its upper end in an eccentric forming a primary fulcrum for the shuttle-binder, the protector-finger forming the secondary fulcrum for the binder when the primary fulcrum is being moved outward by the incoming shuttle and an adjustable strap connected to and actuating the eccentric and lever device to force the binder against the shuttle.

10. In a loom and in combination, the lay, a shuttle-box, the shuttle and picking mechanism therefor, a shuttle-binder, an adjustable spring maintaining an inward pressure upon the binder an eccentric and lever device for locking the binder upon the shuttle consisting of a shaft terminating at its upper end in an eccentric fulcrum for the shuttle-binder, said shaft having a lever, and an adjustable strap connected to said lever to receive the impact of the incoming shuttle to actuate said eccentric and lever device to force the binder against the shuttle.

11. In a loom, the lay having a shuttle-box, a shuttle and picking mechanism therefor, a binder, a shaft terminating at its upper end in an eccentric forming a fulcrum for the binder, a lever on said shaft and an adjustable strap connected to said lever to receive the impact of said shuttle to actuate the eccentric to force the binder against the shuttle.

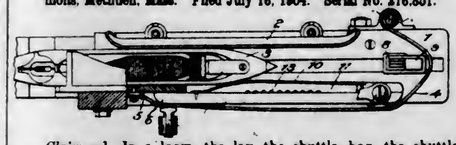
12. In a loom, the lay having a shuttle-box, a shuttle and picking mechanism therefor, a shuttle-binder, a shaft terminating at its upper end in an eccentric forming a fulcrum for the binder, a spring on the lay pressing the outer end of the binder inward and means for adjusting it, a lever on the shaft, an adjustable impact-strap connecting the lever, and an adjustable eccentric-stop for limiting the inward movement of the outer end of the binder against the pressure of the spring, the fulcrum of the binder being between the spring and the inner end of the binder.

13. In a loom and in combination, the lay, a shuttle-box, the shuttle and picking mechanism therefor, a binder, a shaft terminating in an eccentric and having a lever arranged in relation to each other as described, said eccentric forming the fulcrum for the shuttle-binder, and an adjustable impact-strap connected to said lever.

14. In a loom, the lay, the shuttle-box, the shuttle and picking mechanism therefor, a shuttle-binder having an eccentric fulcrum spring-pressed inwardly with the binder in the manner substantially shown and described.

15. In a loom, the lay, the shuttle-box, the shuttle and picking mechanism therefor, a shuttle-binder spring-pressed inwardly at or near its outer end, movable laterally throughout its entirety, said binder caused to be moved outwardly by the ingoing shuttle and inwardly at its outer end by the outgoing shuttle, in combination with means for actuating the eccentric including a vertical rod terminating at its upper end in an eccentric fulcrum for the binder.

820,663. **SHUTTLE-CHECKING MEANS FOR LOOMS.** FRANCIS A. MILLS, Lawrence, Mass., assignor of one-half to Grosvenor B. Emmons, Methuen, Mass. Filed July 16, 1904. Serial No. 216,851.



Claim.—1. In a loom, the lay, the shuttle-box, the shuttle-binder, the shuttle, and picking mechanism therefor, an impact-strap connected at one end to said box or lay, passing over a movable part of the binder, crossing the path of the picker or picker-stick and connected at its other end to the said box or lay.

2. In a loom, the lay, the shuttle-box, the shuttle-binder, the shuttle and picking mechanism therefor, an impact-strap connected at one end to the box or lay, passing over a movable part of the binder, crossing the path of the picker or picker-stick and connected at its other end to said box or lay, and means for adjusting said strap.

3. In a loom, the lay, the shuttle-box, the shuttle-binder, the shuttle and picking mechanism therefor, an impact-strap connected at one end to the box or lay, passing over a movable part of the binder, crossing the path of the picker or picker-stick and connected at its other end to said box or lay, and means for adjusting said strap, consisting of a revoluble stud or post to which the strap is fastened and around which the strap is wound and a nut clamping said post to a bracket bolted on the lay.

4. In a loom, the lay, the shuttle-box, a binder pivoted at or near the outer end of the lay, the shuttle and picking mechanism therefor, an impact-strap having unyielding connections at both ends with the lay and acting on the free end of said binder for the purpose stated.

5. In a loom, the lay, the shuttle-box, the shuttle and picking mechanism therefor, and pneumatic checking and locking means to act upon and conform to the shape of the shuttle when boxed.

6. In a loom, the lay, the shuttle-box, the shuttle and picking mechanism therefor, and a pivoted binder having a rubber facing chambered to provide a pneumatic function upon the shuttle.

7. In a loom, the lay, the shuttle-box, the shuttle and picking mechanism therefor, and a shuttle-binder having a rubber body chambered to provide a pneumatic function upon the shuttle and having a corrugated seating upon the binder.

8. In a loom, the lay, the shuttle-box, the shuttle and picking mechanism therefor, and a pivoted binder having a rubber body, a wear-facing therefor, the seating-face of said rubber body corrugated and air-chambers between the corrugated seating and the wear-facing.

9. In a loom, the lay, the shuttle-box, the shuttle and picking mechanism therefor, a rubber body, a wear-facing therefor, the seating-face of said rubber body corrugated.

10. In a loom, the lay, the shuttle-box, the shuttle and picking mechanism therefor, a pneumatic shuttle-binder and an impact-strap having connections to force said binder against said shuttle.

11. In a loom, the lay, the shuttle-box, the shuttle and picking mechanism therefor, a shuttle-binder pivoted at or near the outer end of the lay, an impact-strap connected at one end to said lay or box and passing over a movable part of said binder and crossing the path of the picker or picker-stick and connected at its other end to said lay or box and means for adjusting said strap.

12. In a loom, the lay, the shuttle-box, the shuttle and picking mechanism therefor, a pneumatic shuttle-binder and an impact-strap having connections to force said binder against said shuttle and means for adjusting said strap.

13. In a loom, the lay, the shuttle-box having a shuttle-binder, the shuttle and picking mechanism therefor, a revoluble post adjustably fixed to said lay or box, an impact-strap fastened at one end to said post and crossing the path of the picker or picker-stick and passing along the back of and crossing the free or movable end of said binder and fastened to said box or lay.

14. In a loom, the lay, the shuttle-box having a shuttle-binder, protection mechanism having a protection-finger operated by said binder, the shuttle and picking mechanism therefor, an impact-strap fastened to said lay or box crossing the back of said protection-finger and passing to and around the picker or picker-stick and adjustably connected to said lay or box, whereby the impact of the shuttle will cause said strap to force said protection-finger against said binder and said binder against the shuttle to check and lock the shuttle in the shuttle-box in a predetermined position.

15. In a loom, the lay, the shuttle-box the shuttle and picking mechanism therefor, said shuttle-box having laterally-movable pneumatic means to cause pneumatic resistance upon the ingoing shuttle to check it.

16. In a loom, the lay, the shuttle-box, the shuttle and picking mechanism therefor, and means for pneumatically checking said shuttle while traveling in said box including means for locking said shuttle at the end of its travel in said box under a pneumatic pressure.

17. In a loom, the lay, the shuttle-box, the shuttle and picking mechanism therefor, said shuttle-box having pneumatic means to act upon the side of the ingoing and outgoing shuttle.

18. In a loom, the lay, the shuttle-box, the shuttle and picking mechanism therefor, a shuttle-binder pivoted at or near the outer end of the lay, an impact-strap acting upon the free end of said binder and crossing around the picker or picker-stick and adjustably connected at or near the outer end of the lay or box, the other end of said strap connected to the lay or box at or near the inner free end of said binder.

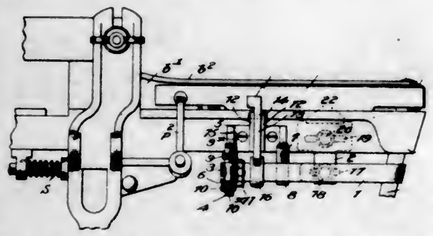
19. In a loom, the lay, the shuttle-box having a shuttle-binder, protection mechanism operated by a protection-finger pressing on a movable part of said binder, the shuttle and picking mechanism therefor, an impact-strap having one end fastened to said lay or box and passing across the back of said protection-finger and across the path of the picker or picker-stick and adjustably secured at its other end to said lay or box.

20. In a loom, the lay, the shuttle-box having a shuttle-binder pivoted at or near the outer end of the lay, the shuttle and picking mechanism therefor, an impact-strap acting directly on the free end of said binder and crossing the path of the picker or picker-stick and having connections with said lay or box to cause said binder to be forced against the shuttle by the impact of the shuttle.

21. In a loom, a lay, a shuttle-box having a shuttle-binder, a protection mechanism having a protection-finger operated by said binder, a shuttle and picking mechanism therefor, an impact-strap fastened to said lay or box passing over said finger and connected to receive the impact of the picker or picker-stick caused by the impact of the shuttle.

820,664. **SHUTTLE CHECK AND LOCK FOR LOOMS.** FRANCIS A. MILLS, Lawrence, Mass., assignor of one-half to Grosvenor B. Emmons, Methuen, Mass. Filed July 26, 1904. Serial No. 218,266.

Claim.—1. A shuttle-box, a pivoted binder, a picker-stick, a strap passed around it and fixed to its ends, a fixed abutment adjacent one of the ends of the strap, a spring to form a bend in the strap therebetween, and a lever fulcrumed adjacent to the shuttle-box and at one end coöperating with the binder, the other end of the lever crossing the bent part of the strap, tightening of the latter due to boxing of the shuttle flattening the band and rocking said lever to force the binder inward, and including adjustable means for the strap for causing the shuttle to be stopped at a predetermined position in said box.

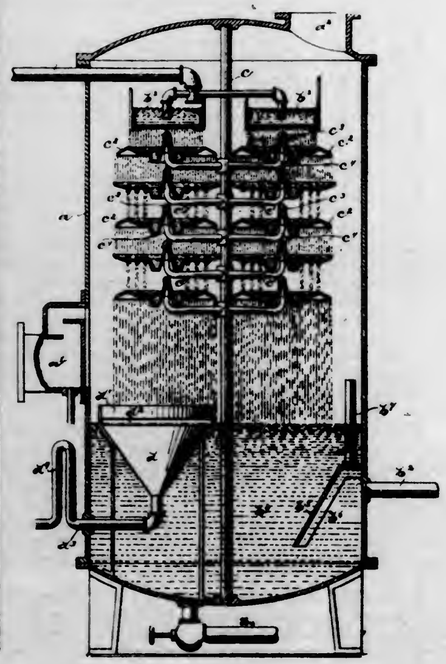


2. In a loom, the lay, the shuttle-box thereon, the shuttle and checking mechanism therefor, a pivoted binder, a picker-stick, an impact-strap looped around the picker-stick, and having both ends fixed, and a lever fulcrumed on the lay connected with the binder and with the strap, in combination with means for adjusting said strap, consisting of a hanger having a slot by which it is adjusted on the lay, that end of said strap bolted to the hanger having a slot by which it is adjusted on the hanger.

3. In a loom, the lay, the shuttle-box thereon, the shuttle and checking mechanism therefor, a pivoted binder, a picker-stick, an impact-strap looped around the picker-stick and having both ends fixed, and a lever fulcrumed on the lay connected with the binder and with the strap, in combination with a hanger, means for adjusting it on the lay, and means for adjusting the strap on the hanger.

4. In a loom, the lay, the shuttle-box, the shuttle and picking mechanism therefor, and means for checking and locking the shuttle substantially as shown and described, in combination with means for taking up the strap to stop the shuttle at a predetermined position in the shuttle-box.

820,665. **FEED-WATER HEATER.** HENRY C. MOORE, Atlanta, Ga. Filed June 23, 1905. Serial No. 266,653.



Claim.—1. In a feed-water heater, a series of pans or shelves supported centrally by a single support which permits the pan to level itself, substantially as and for the purpose specified.

2. In a feed-water heater, a series of pans each supported centrally on an arm having an extended trunnion, the bearing for said pan being arranged above the water-line thereof, substantially as specified.

3. The combination with a supporting-shaft and arms movable thereon of a series of pans, each having a central extended bearing, and a trunnion on said arms to fit in said bearings, substantially as specified.

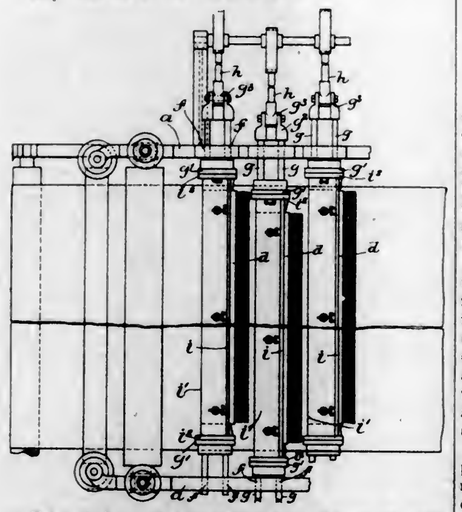
4. The combination with a central shaft, a series of arms thereon, each having a plurality of extended trunnions, and pans having central bearings adapted to fit in said trunnions, substantially as and for the purpose specified.

5. In a feed-water heater, a series of pans, a support for each of said pans, upon which the respective pans are balanced and which permits the pans to level themselves, the point of support being located above the center of gravity of the respective pans, substantially as specified.

6. In a feed-water heater, a series of pans, a single support upon which the respective pans are balanced, and means for varying the relation of said pans with a given point of the heater-shell, substantially as specified.

7. In a feed-water heater, a series of pans, a single support for each of said pans, the bearing between the support and pan being located above the water-line of the pan, substantially as specified.

820,666. **ADJUSTABLE BRUSH-CARRIER FOR WEB-COATING MACHINES.** HARRY D. NEWELL and ASA T. BRYANT, Lawrence, Mass. Filed Jan. 24, 1906. Serial No. 297,551.



Claim.—1. In a web-coating machine a reciprocating brush-carrier comprising an adjustable holder having a plurality of brushes which are interchangeable into operative position by movements of the holder.

2. In a web-coating machine, a reciprocating brush-carrier comprising end portions, and a brush-holder adjustably connected with the said end portions, and having a plurality of brushes which are interchangeable into opposite position by movements of the holder.

3. In a web-coating machine, a reciprocating brush-carrier comprising end portions, and a multiple brush-holder pivoted to the said end portions.

4. In a web-coating machine, a reciprocating brush-carrier, comprising end portions, a brush-holder adjustably connected with the said end portions, and having a plurality of brushes which are interchangeable into operative position by movements of the holder, and means for securing the brush-holder to the end portions in different positions.

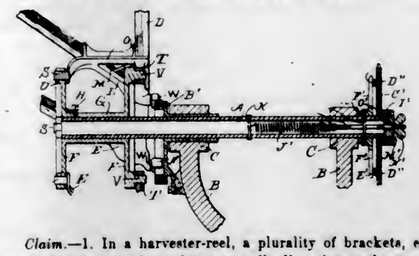
5. In a web-coating machine, a reciprocating brush-carrier comprising end portions having locking members, and a multiple brush-holder pivoted to the end portions, and provided with complemental locking members adapted to engage the locking members of the end portions.

6. In a web-coating machine, a reciprocating brush-carrier comprising end portions, a brush-holder, formed as an angle-bar having a plurality of brush-supporting faces, and end pieces or heads which are pivoted to the end portions, and means for locking said heads to the end portions in different positions.

7. In a web-coating machine, a reciprocating brush-carrier comprising end portions, a brush-holder adjustably connected with the end portions, and having a plurality of faces, and a corresponding plurality of brushes detachably secured to said faces.

8. In a web-coating machine, a reciprocating brush-carrier comprising guide-engaging end portions, each including parallel slide-rods, heads attached to the inner ends of said rods, a brush-holder having segmentally-slotted end heads pivoted to the heads of the end portions, bolts engaged with the heads of the end portions and passing through the segmental slots, said bolts having clamping-nuts, the brush-holder having a plurality of faces, and brushes detachably secured to said faces.

820,667. **HARVESTER-REEL.** GUSTAVUS A. PADDOCK, Beaver Dam, Wis. Filed Apr. 27, 1903. Serial No. 154,404.



Claim.—1. In a harvester-reel, a plurality of brackets, each comprising two arms formed at outwardly-diverging angles to each other and the longitudinal axis of the reel; a reel-arm secured to each of said bracket-arms, and a single arm-retaining bolt extending across the converging ends of said reel and bracket-arms, said bolts lying respectively approximately in planes radiating from the axis of the reel-shaft, and adapted to draw both of said reel-arms to their seats and hold them in place against the arms of said supporting-brackets.

2. In a harvester-reel; a plurality of brackets, each comprising two arms, one at an angle to the other, each provided with openings for the reception of the arm-retaining bolt and with angular side flanges for engaging the respective sides of the reel-arms; a reel-arm secured to each of said bracket-arms, and a single arm-retaining bolt extending across and through the converging ends of said reel-arms and bracket at an oblique angle to the reel-arms, and adapted, as the retaining-nut is turned down thereon, to draw both of said reel-arms to their seats and retain them in place against the arms of said supporting-bracket.

3. In a harvester-reel; the combination of a hollow reel-supporting shaft; a hub comprising two wheels, and a connecting-sleeve formed intergally, secured to one end of said shaft; a plurality of brackets, each comprising two arms, one a radial arm formed at nearly right angles to the longitudinal axis of the reel, and the other at an oblique angle to such axis, said brackets being each pivotally connected at their respective sides with the respective sides of said hub; a reel-arm secured to each of said bracket-arms, and a single arm-retaining bolt extending across the converging ends of said reel and bracket-arms, and adapted to draw both of said arms to their seats and hold them in place against the arms of said supporting-bracket; a sprocket-wheel revolubly supported upon the opposite end of said hollow shaft from said reel; radial arms rigidly connected to said shaft in close proximity to one side of said sprocket-wheel, the opposing surfaces of said sprocket-wheel and radial arms being provided with contact-bearing lugs, by which motion is communicated from said sprocket-wheel to said arms and hollow shaft as the same is revolved; a spiral spring centrally located in said hollow shaft, said spring being connected at one end at a fixed point to said shaft, and at its opposite end with the hub of said sprocket-wheel through an adjustable bolt or rod, and means for adjusting and applying the tension of said spring to the face of the hub of said sprocket-wheel, whereby said bearing-lugs are yieldingly retained in contact, substantially as, and for the purpose specified.

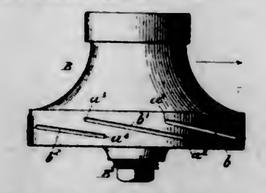
4. In a harvester-reel; the combination of a reel-supporting shaft; a hub comprising two wheels having radial arms, and a connecting-sleeve formed integrally, secured to one end of said shaft; the respective arms of one of said wheels being provided with trunnions, and the arms of the other wheel being provided with sockets; a plurality of brackets, each comprising two arms, one a radial arm formed at nearly right angles to the longitudinal axis of the reel, and the other at an oblique angle to such axis, one side of each of said brackets being provided with a trunnion adapted to engage in the sockets formed on the arms of said wheel and the other side of said brackets being provided with sockets for the reception of the trunnions formed on the arms of the other wheel, whereby said brackets are each adapted to be pivotally connected at their respective sides with the respective sides of said hub; a reel-arm secured to each of said bracket-arms, and a single arm-retaining bolt extending across the converging ends of said reel and bracket-arms, and adapted to draw both of said arms to their seats and hold them in place against the arms of said supporting-bracket.

5. In a harvester-reel, a plurality of brackets each comprising two arms, each of said arms furnishing a seat for a reel-arm, said seats each being on the side of the bracket-arm farthest from the other bracket-arm.

6. In a harvester-reel, the combination of a reel-supporting shaft, a hub comprising two star-wheels secured on said shaft, the respective arms of one of said wheels being provided with trunnions, and the arms of the other wheel being provided with sockets, brackets pivoted to said arms, one side of each of said brackets being provided with sockets for the reception of said trunnions, and the other side of said brackets being provided with trunnions adapted to engage the first-mentioned sockets, and reel-arms secured to said brackets.

7. In a harvester-reel, two star-wheels rigidly secured to the reel-shaft, one of said wheels bearing trunnions; a bracket pivoted to arms upon said wheels, a pair of reel-arms secured to said bracket by means of a bolt passing through them and through the bracket, a wheel rigidly secured to the shaft, another wheel pivoted on said shaft and a spring secured inside the shaft and adapted to hold the two wheels yieldingly in engagement.

820,668. **NOZZLE.** CHARLES K. PICKLES, St. Louis, Mo. Filed Oct. 5, 1905. Serial No. 281,405.



Claim.—1. A nozzle for street flushing or washing machines, comprising a casing, a series of discharge-slots arranged about the longitudinal axis of the nozzle, said discharge-slots being inclined upwardly from front to rear of said nozzle.

2. A nozzle for street flushing or washing machines, comprising a casing, a series of discharge-slots arranged about the longitudinal axis of the nozzle, said discharge-slots being inclined upwardly at different angles from front to rear of said nozzle.

3. A nozzle for street flushing or washing machines, comprising a casing, a wall or face disposed about the longitudinal axis thereof, said wall or face being provided with a series of discharge-slots inclined upwardly from front to rear of said nozzle, the rear slot being less inclined to the horizontal than the remaining slots so that the flat stream of water discharged upon the surface of the roadway may meet the surface close to the nozzle in the line of movement of the machine and be spread out to cover a large area to the side thereof.

4. A nozzle for street flushing or washing machines comprising a casing, a wall or surface disposed about the longitudinal axis of said nozzle, said wall or casing having a plurality of discharge-slots inclined upwardly from front to rear and said slots having portions thereof overlapping each other.

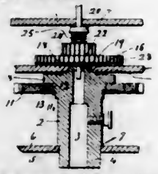
5. A nozzle for street flushing or washing machines comprising a casing having a wall or face disposed about the longitudinal axis of the nozzle, said wall or face being provided with a plurality of discharge-slots inclined upwardly from front to rear of the nozzle, said discharge-slots overlapping each other, the inclination of the rear slot being less than that of the other slots.

6. In a nozzle for street flushing or washing machines, the combination of a casing, a wall or face disposed circularly about the longitudinal axis of the casing and provided with a plurality of discharge-slots, said slots being inclined upwardly from front to rear at different angles, said slots having portions overlapping each other.

7. A nozzle for street flushing or washing machines, comprising a casing, a series of discharge-slots arranged about the longitudinal axis of the nozzle, said discharge-slots being inclined upwardly from front to rear of said nozzle, the walls of the slots being directed radially of the nozzle at different angles.

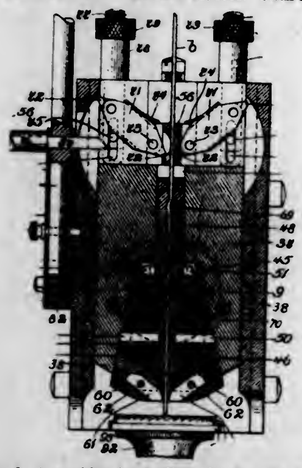
8. A nozzle for street flushing or washing machines, comprising a casing, a wall or face disposed about the longitudinal axis of the casing and provided with a plurality of discharge-slots, said slots being inclined upwardly from front to rear of the nozzle, and the walls of the slots being directed radially at different angles to the horizontal.

820,669. **CLOCK.** WILSON E. PORTER, New Haven, Conn., assignor to New Haven Clock Co., New Haven, Conn., a Corporation. Filed Sept. 11, 1905. Serial No. 277,917.



Claim.—In a clock-movement, the combination with front, rear and intermediate movement-plates, of a center arbor journaled at its front end in the said front movement-plate, a mainspring-arbor arranged concentrically with the said center arbor and having its rear end journaled in the said rear movement-plate and its forward end formed with a trunnion journaled in the said intermediate movement-plate, the said trunnion being formed with a bearing-opening for the reception of the rear end of the said center arbor which is thus journaled directly in the said mainspring-arbor which has a longitudinal passage to the center arbor for setting the hands and which is adapted to be rotated for winding the mainspring.

820,670. **MACHINE FOR DRIVING FASTENERS.** ALBERT F. PRESTON, Boston, Mass. Filed Nov. 21, 1901. Serial No. 83,175.



Claim.—1. A machine for feeding, driving and severing fasteners simultaneously in two rows comprising means for reciprocating said fasteners toward and from the work, means for preventing retrograde movement of said fasteners to effect the feeding thereof in relation to said reciprocating means, and means for rendering said preventing means inactive to an extent to prevent the feeding, driving and severing of fasteners in one row while it is continued in the other.

2. A machine of the character described having a single pair of jaws for feeding, driving and severing fasteners from two strips simultaneously in two separate rows, and means whereby said mechanism may be rendered inoperative with respect to one strip at will without affecting its operative relation to the other strip.

3. A machine of the character described having a single mechanism for simultaneously severing and driving fasteners from two strips in two rows with provisions for varying the lengths of the severed fasteners in said rows, and means whereby said mechanism may be rendered inoperative with respect to one strip at will without affecting its operative relation to the other strip.

4. A machine of the character described, comprising a pair of jaws constructed to feed, drive and sever fasteners from the end of a strip, with provisions for varying the length of the severed fasteners, and means for operating the jaws.

5. A machine of the character described, comprising a carrier having a recess with upwardly-converging walls, wedge-shaped jaws fitting said recess, coacting cutters on said jaws for feeding, driving and severing fasteners from a strip, and means for operating said jaws and cutters.

6. A machine of the character described, comprising two movable jaws, coacting cutters on said jaws, means including inclined guides for wedging said jaws together to grip the wire, the inclination of said guides being equal to insure the meeting of the cutters at the center of the wire, and means for actuating said jaws to cause the feeding, driving and severing of fasteners from the end of the wire.

7. A machine of the character described, comprising a combined feeding, driving and severing mechanism for feeding, driving and severing fasteners from a strip, a dog to engage the strip and prevent retrograde movement thereof, and means for rendering said dog inoperative.

8. A machine of the character described, comprising a combined feeding, driving and severing mechanism for feeding, driving and severing fasteners from a strip, a dog to engage the strip and prevent retrograde movement thereof, and means for providing a predetermined retrograde movement of the strip.

9. A machine of the character described, comprising a reciprocatory carrier, actuating means on said carrier, coacting cutting-jaws on said carrier adapted to be actuated by said actuating means for feeding, driving and severing fasteners from the end of a strip, and a wire-guide, the said guide and cutting-jaws being vertically movable with respect to said carrier and connected together whereby independent movement of the guide imparts similar movement to said cutting-jaws, the carrier being formed to cause the jaws to approach and recede from each other during their vertical movements relatively to the carrier.

10. A machine of the character described comprising a reciprocatory carrier, actuating means on said carrier, coacting cutting-jaws on said carrier adapted to be actuated by said actuating means for feeding, driving and severing fasteners from the end of a strip, and a wire-guide, the said guide and cutting-jaws being vertically movable with respect to said carrier and connected together whereby independent movement of the guide imparts similar movement to said cutting-jaws, the said guide having provisions for frictionally retarding the passage of the wire therethrough.

11. A machine of the character described comprising a single machanism for feeding, driving and severing fasteners from the end of a metallic strip, said mechanism consisting of coacting cutters, a reciprocatory cutter-carrier, the cutters being capable of vertical movement independently of the carrier, means for holding the cutters against movement with the carrier during a portion of the movement of the latter, and provisions on said carrier for causing the cutters to be wedged together to bite into the strip when the movement of the strip is retarded and for causing said cutters to sever the end of the strip when they are held against movement relatively to the said carrier.

12. A machine of the character described comprising a movable carrier, jaws on said carrier in wedging relation thereto, whereby when said carrier is moved in one direction, the jaws are wedged together to drive a strip into the work, and when it is moved in the opposite direction, the jaws are separated to get a fresh bite on the strip, and means for retarding the initial movement of the jaws longitudinally of the path of movement of the carrier, to cause the jaws to approach or recede from each other.

13. A machine of the character described comprising a movable carrier, cutting-jaws on said carrier for gripping, driving and cutting fasteners from the end of a wire, said jaws having a longitudinal movement independently of the carrier, means whereby when the carrier is moved toward the work the cutting-jaws grip the work, and when it is moved in the opposite direction the jaws are separated to get a fresh bite on the wire, and provisions for retarding the movement of the jaws longitudinally of the path of movement of the carrier to cause said jaws to approach or recede from each other.

14. In a machine of the character described, a movable carrier, coacting jaws on said carrier in wedging relation thereto, friction devices for retarding the movement of said jaws longitudinally of the path of movement of the carrier, and provisions for permitting a limited free movement of said friction devices.

15. A machine of the character described, comprising a movable carrier having converging guides, wedge-shaped jaws loose in said guides and adapted to be wedged toward and from each other thereby as the carrier is moved relatively to said jaws, and a stop in the path of said jaws to hold them against movement whereby the continued movement of said carrier causes the guides to complete the closing movement of said jaws.

16. A machine of the character described, comprising a movable carrier having converging guides, wedge-shaped jaws loose in said guides and adapted to be wedged toward and from each other thereby as the carrier is moved relatively to said jaws, friction devices for retarding the movement of said jaws to effect a partial closing thereof, and a stop in the path of said jaws to effect a final closing thereof.

17. A machine of the character described comprising a carrier adapted to reciprocate a strip, coacting jaws on said carrier to feed, drive and sever fasteners from said strip, a device for preventing retrograde movement of the strip, the failure of said movement being equivalent to a feeding of said strip with relation to said carrier, and provisions whereby said device may be rendered inoperative.

18. A machine of the character described, comprising mechanism for setting fasteners, a shaft for actuating said mechanism, a clutch, a work-support movable laterally to bring the work under said mechanism, and means for controlling said clutch and yieldingly moving said work-support to and holding it in operative position.

820,671. **ATTACHMENT FOR INK BOTTLES OR STANDS.** DAVID J. ROGERS, Lexington, Ky. Filed Feb. 9, 1906. Serial No. 300,264.



Claim.—1. An attachment for ink-receptacles, comprising means for engaging the neck of the receptacle, and a yoke formed of a single strand of wire, the arms thereof being separated a sufficient distance from each other throughout their length to admit of a pen being inserted between said arms when dipping for ink, the upper ends of the arms attached to the engaging means at points diametrically opposite each other near the outer edge thereof, substantially as and for the purpose set forth.

2. An attachment for ink-receptacles, consisting of a bucket or cup for containing the ink, means for engaging the neck of the receptacle, and a slidable connection from which said bucket or cup is suspended, substantially as and for the purpose described.

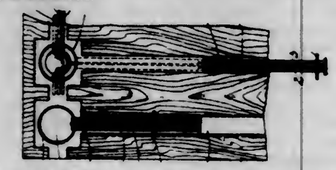
3. An attachment for ink-receptacles, comprising means for engaging the neck of the receptacle, a bucket or cup for containing the ink, and a slidable connection consisting of a wire yoke between the engaging means and the bucket or cup, substantially as and for the purpose specified.

4. An attachment for ink-receptacles, comprising means for engaging the neck thereof, a bucket or cup for containing the ink, a connection between the engaging means and the bucket or cup consisting of a wire yoke having its lower end extending at right angles to the body thereof and having a sliding movement, substantially as and for the purpose set forth.

820,672. **APPARATUS FOR CONSTRUCTING CONDUITS FOR WIRES, CABLES, &c.** HEINRICH ROSNER, Lemberg, Austria-Hungary. Filed Mar. 1, 1905. Serial No. 247,972.

Claim.—1. A core of the class described comprising separate lateral core members provided with flanges extending beyond the body portions of said cores, and an interposed spacing member flush with said flanges, substantially as described.

2. A core of the class described comprising separate lateral core members, and an interposed spacing member, in combination with resilient means engaging said members to hold them in an assembled position, said means also serving as a support for said cores, substantially as described.

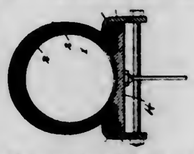


3. A core of the class described comprising separate lateral core members, and an interposed spacing member, in combination with a spring-clip surrounding and holding said core members in an assembled position and provided with laterally-extending arms for suspending said cores, substantially as described.

4. The combination of a mold structure provided with a mold-channel, a spring-clip supported on said structure and bridging said channel, and a core seated in said clip, substantially as described.

5. The combination of a mold structure provided with mold-channels, a spring-clip supported on said structure and bridging said channel, and a core seated in said clip and comprising separable core members, substantially as described.

820,673. **TIRE FOR VEHICLES.** THOMAS C. SANDERSON, West New Brighton, N. Y. Filed July 14, 1905. Serial No. 269,575.



Claim.—1. A vehicle-tire comprising an elastic annular tube made of steel strands woven spirally in opposite directions and subsequently tempered, substantially as set forth.

2. A vehicle-tire comprising an elastic annular tube made of steel strands woven spirally in opposite directions and subsequently tempered, combined with a covering of suitable material, substantially as set forth.

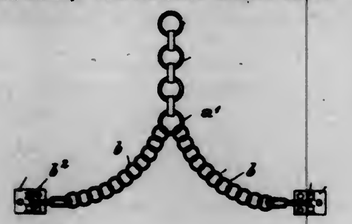
3. A vehicle-tire comprising an elastic annular tube made of steel strands woven spirally in opposite directions and subsequently tempered combined with a separable covering of suitable material substantially as set forth.

4. A vehicle-tire comprising an elastic annular tube made of steel strands woven spirally in opposite directions and subsequently tempered so that the annular diameter is less than that of the rim to which it shall be applied, substantially as set forth.

5. A vehicle-tire comprising an elastic annular tube made of steel strands woven spirally in opposite directions and subsequently tempered so that the annular diameter is less than that of the rim to which it shall be applied and combined with a covering of suitable material.

6. A vehicle-tire comprising an elastic annular tube made of steel strands woven spirally in opposite directions and subsequently tempered so that the annular diameter is less than that of the rim to which it shall be applied, combined with a separable covering of suitable material.

820,674. **DEVICE FOR HANGING WALL-MIRRORS, PICTURES, AND THE LIKE.** HERMANN SAUER and CONSTANZE SAUER, Lübeck, Germany. Filed Oct. 6, 1904. Serial No. 227,594.



Claim.—In a device for hanging mirrors, pictures and the like, in combination three chains united at one of their ends, two of which chains are of equal length, means adapted to be secured to a frame and connections pivoted to said means and connected to said chains, substantially as and for the purpose set forth.

820,675. **FOLDING-MACHINE.** RALPH C. SEYMOUR, New York, N. Y., assignor to C. B. Cottrell & Sons Company, New York, N. Y., a Corporation of New Jersey. Filed Oct. 25, 1905. Serial No. 284,298.



Claim.—1. A sheet-folding mechanism comprising a tucking-cylinder, its tucking-blade having a recess in its edge, a folding-cylinder and its folding-gripper arranged to grip the sheet within said recess.

2. A sheet-folding mechanism comprising a tucking-cylinder, its tucking-blade having recesses along its edge, a folding-cylinder and its folding-grippers arranged to grip the sheet within said recesses.

3. A sheet-folding mechanism comprising a tucking-cylinder, its tucking-blade having a recess in its edge, a folding-cylinder and its folding-gripper having its jaws arranged to grip the sheet within said recess.

4. A sheet-folding mechanism comprising a tucking-cylinder, its tucking-blade having recesses along its edge, a folding-cylinder and its folding-grippers having their jaws arranged to grip the sheet within said recesses.

5. A sheet-folding mechanism comprising a tucking-cylinder, its tucking-blade having a recess in its edge, a folding-cylinder and its folding-gripper having its jaws arranged to grip the sheet within said recess, one of the jaws having an offset gripping-face.

6. A sheet-folding mechanism comprising a tucking-cylinder, its tucking-blade having recesses along its edge, a folding-cylinder and its folding-grippers having their jaws arranged to grip the sheet within said recesses, one of the jaws of each gripper having an offset gripping-face.

7. A sheet-folding mechanism comprising a tucking-cylinder, its tucking-blade having a recess in its edge, a folding-cylinder and its folding-gripper having its jaws arranged to grip the sheet within said recess, both of the jaws having offset gripping-faces.

8. A sheet-folding mechanism comprising a tucking-cylinder, its tucking-blade having recesses along its edge, a folding-cylinder and its folding-grippers having their jaws arranged to grip the sheet within said recesses, both of the jaws of each gripper having offset gripping-faces.

9. A sheet-folding mechanism comprising a tucking-cylinder, its tucking-blade having a recess in its edge, a folding-cylinder and its folding-gripper having its jaws arranged to grip the sheet within the recess while the blade and gripper are being separated and means for controlling the operation of the gripper-jaws.

10. A sheet-folding mechanism comprising a tucking-cylinder, its tucking-blade having recesses along its edge, a folding-cylinder and its folding-grippers having their jaws arranged to grip the sheet within the recesses while the blade and gripper are being separated and means for controlling the operation of the jaws of the grippers.

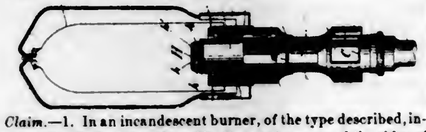
11. A sheet-folding mechanism comprising a tucking-blade having a recess in its edge, a folding-gripper having its jaws arranged to grip the sheet within the recess while the blade is being withdrawn from the gripper, means for controlling the opening and closing of the gripper-jaws and means for controlling the movement of the tucking-blade.

12. A sheet-folding mechanism comprising a tucking-blade having recesses along its edge, folding-grippers having their jaws arranged to grip the sheet within the recesses while the blade is being withdrawn from the grippers, means for controlling the opening and closing of the jaws of the grippers and means for controlling the movements of the tucking-blade.

13. A sheet-folding mechanism comprising a tucking-blade having a recess in its edge, a folding-gripper, means for opening the gripper to receive the sheet, means for closing the gripper to cause it to grip the sheet within the recess in the tucking-blade, means for advancing the tucking-blade into the gripper, said means being arranged to withdraw the blade while the sheet is engaged by the gripper and means for opening the gripper to release the folded sheet.

14. A sheet-folding mechanism comprising a tucking-blade having recesses along its edge, folding-grippers, means for opening the grippers to receive the sheet, means for closing the grippers to cause them to grip the sheet within the recesses in the tucking-blade, means for advancing the tucking-blade into the grippers, said means being arranged to withdraw the blade while the sheet is engaged by the grippers and means for opening the grippers to release the folded sheet.

820,676. **INCANDESCENT BURNER.** JAMES B. SHEEHY, New York, N. Y., assignor of one-third to Philip C. Peck, New York, N. Y. Filed June 9, 1905. Serial No. 264,380.



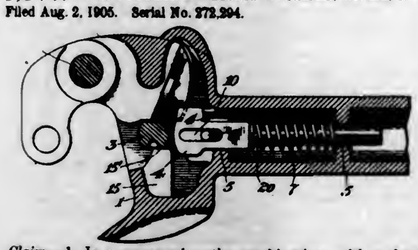
Claim.—1. In an incandescent burner, of the type described, intermediate the discharge-orifice of its Bunsen burner and the sides of its mantle, a screen containing perforations of a given diameter and also interspersed among, and surrounded by, said perforations other perforations of a substantially larger diameter disposed and proportioned to project the gases passing therethrough in streams the central longitudinal axes of which are angularly disposed to that of the burner.

2. In an incandescent burner, of the type described, intermediate the discharge-orifice of its Bunsen burner and the sides of its mantle a screen containing perforations of a given diameter and also, interspersed among and surrounded by said perforations, other perforations of a substantially larger diameter disposed so as to project the gases from said burner horizontally in streams the central longitudinal axes of which are at an angle to the proximate surface of the sides of said mantle.

3. In an incandescent burner the combination of a mantle, a Bunsen burner, an auxiliary tube concentric with and removably secured to said Bunsen burner, disposed over the discharge-orifice of said auxiliary tube a screen containing perforations disposed to project the most part of the gases horizontally in streams the central longitudinal axes of which are at a right angle to the proximate surface of the sides of said mantle, and below said screen and concentric with said tube and said cylinder, another burner of greater diameter, open at the top and closed at the bottom.

4. In an incandescent burner of the type described the combination of a mantle, a Bunsen burner, an auxiliary tube concentric with and removably secured to said Bunsen burner, disposed over the discharge-orifice of said auxiliary tube a screen, and below said screen and concentric with said tube and said burner another cylinder of greater diameter, open at the top, closed at the bottom, and so shaped, supported and disposed relatively to said tube as to admit disposition between them of the lower portion of said mantle, said screen containing perforations of a given diameter and also, interspersed among and surrounded by said perforations, other perforations of a substantially larger diameter disposed so as to project the gases from said burner horizontally in streams the central longitudinal axes of which are at an angle to the proximate surface of the sides of said mantle, substantially as described.

820,677. **CAR-COUPLING.** GEORGE W. SHILLIE, Newark, N. J. Filed Aug. 2, 1905. Serial No. 272,294.



Claim.—1. In a car-coupler, the combination, with a draw-head, a swinging knuckle, and a coupling-pin for the knuckle, of a pin-support movable to and from an operative position for supporting the said coupling-pin, and means for limiting the movement of the pin-support and from which the latter may be disengaged by movement in a direction other than its normal path of movement.

2. In a car-coupler, the combination, with a draw-head, a swinging knuckle, and a coupling-pin for the knuckle, of a pin-support movable to and from an operative position for supporting the said coupling-pin, and a fixed pin or stud for engaging with and limiting the movement of the pin-support and from which the latter may be disengaged by movement in a direction other than its normal path of movement.

3. In a car-coupler, the combination, with a draw-head, a swinging knuckle, and a coupling-pin for the knuckle, of a spring-actuated pin-support located within the draw-head and being movable therein to and from an operative position for supporting the said coupling-pin, and means for limiting the movement of the pin-support under the action of its spring and from which the pin-support may be disengaged by movement in a direction other than its normal path of movement.

4. In a car-coupler, the combination, with a draw-head, a swinging knuckle, and a coupling-pin for the knuckle, of a pin-support located within the draw-head and being longitudinally movable therein to and from an operative position for supporting the said coupling-pin, and a fixed pin or stud for engaging with and limiting the longitudinal movement of the pin-support and from which the latter may be raised from engagement, for the purpose set forth.

5. In a car-coupler, the combination, with a draw-head, a swinging knuckle, and a coupling-pin for the knuckle, of a pin-support located within the draw-head and being longitudinally movable therein to and from an operative position for supporting the coupling-pin, the said pin-support being provided with a longitudinal slot therein, and a fixed pin or stud projecting into the said slot in the pin-support for limiting the longitudinal movement of the latter and from which the pin-support may be raised from engagement, for the purpose set forth.

6. In a car-coupler, the combination, with a draw-head, a swinging knuckle, and a coupling-pin for the knuckle, of a pin-support removably located within the draw-head and being normally retained against removal therefrom by the knuckle.

7. In a car-coupler, the combination, with a draw-head, a swinging knuckle, and a coupling-pin for the knuckle, of a pin-support located within the draw-head and being movable therein to and from an operative position for supporting the coupling-pin, and a stop for limiting the movement of the pin-support and from which the latter may be disconnected by movement in a direction other than its normal path of movement, the said pin-support being normally retained by the knuckle against removal from the draw-head subsequent to its disconnection from the said stop.

8. In a car-coupler, the combination, with a draw-head, a swinging knuckle, and a coupling-pin for the knuckle, of a pin-support located within the draw-head and being movable therein to and from an operative position for supporting the coupling-pin, means for limiting the movement of the pin-support and from which the latter may be disconnected by movement in a direction other than its normal path of movement, and means carried by the pin-support for engagement with the knuckle to prevent removal of the pin-support from the draw-head.

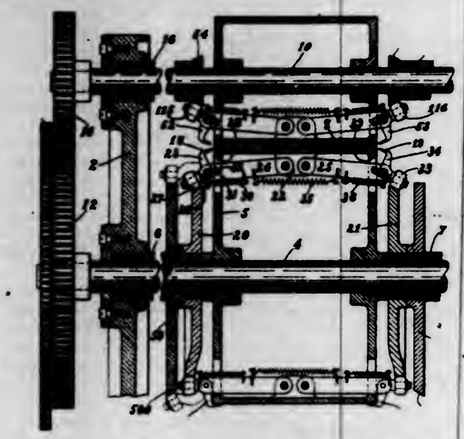
9. In a car-coupler, the combination, with a draw-head, a swinging knuckle, and a coupling-pin for the knuckle, of a pin-support removably located within the draw-head, an actuating-spring for said pin-support, and means for retaining said spring in connection with the pin-support, for the purpose set forth.

10. In a car-coupler, the combination of a draw-head, a swinging knuckle, a coupling-pin for the knuckle, a pin-support located within the draw-head and being movable therein to and from an operative position for supporting the coupling-pin, and means for automatically moving the pin-support forward to an operative position upon the raising of the coupling-pin, the said knuckle having a raised portion or flange on the upper side of its inner arm for limiting the forward movement of the said pin-support.

820,678. **PAPER-BAG MACHINE.** WILBUR M. STONE, New York, N. Y., assignor to Continental Paper Bag Company, Rumford Falls, Me., a Corporation of Maine. Filed June 3, 1905. Serial No. 263,611.

Claim.—1. The combination of a folding-bed, a lever pivoted thereunder, a side clip pivoted in the free end of the lever and disposed normally below the face of the folding-bed means to swing the lever on its pivot to bring the side clip into operative position above

the face of the folding-bed and to swing the side clip on its pivot to grip a bag-blank to the folding-bed, all combined and operating together substantially as described.



2. The combination of a revoluble folding-bed, a lever pivoted thereunder for revolution therewith and for oscillation substantially normal to the face of the folding-bed, a side clip pivoted in the free end of said lever, a cam to oscillate the lever and to oscillate the side clip to grip a bag-blank to the folding-bed, and means to return the lever and side clip to their inoperative positions respectively, all combined and operating together substantially as described.

3. In a paper-bag machine a revoluble folding-bed, an arm pivoted thereunder and for revolution therewith and having its free end projecting beyond the edge of the folding-bed, a side clip pivoted in the free end of said arm, means to swing the arm to move the side clip into operative position above the face of the folding-bed and to operate the side clip to grip a bag-blank to the folding-bed, all combined and operating together substantially as described.

4. The combination of a folding-bed, a lever 24 pivoted thereunder, a side clip 18 pivoted in the free end of the lever, a cam 20 for oscillating the lever and for swinging the side clip into engagement with the folding-bed and means to return the side clip to its idle position with respect of the lever, all combined and operating together substantially as described.

5. The combination of a revoluble folding-bed, a pair of levers pivoted thereunder for revolution therewith, a side clip pivoted in the free end of each lever, and means to oscillate the levers to present their respective side clips in operative position and to swing the side clips to grip a bag-blank to the folding-bed, all combined and operating together substantially as described.

6. The combination of a folding-roll, a lever pivoted therein, a side clip pivoted in the free end of the lever, means for oscillating the lever toward and away from the plane of the face of the roll and for oscillating the side clip into and out of engagement with the face of the roll, all combined and operating together substantially as described.

7. The combination of a revoluble folding-bed, means for holding a bag-blank thereon, a revoluble pasting-wheel, a front finger eccentrically pivoted therein, means for moving the front finger into engagement with the bag-blank, and means for timing the folding-bed and the pasting-wheel, all combined and operating together substantially as described.

8. In a paper-bag machine the combination of means for supporting a bag-blank, a revoluble paste-roll, a front finger pivotally mounted therein and means for moving the front finger into and out of engagement with the bag-blank, all combined and operating together substantially as described.

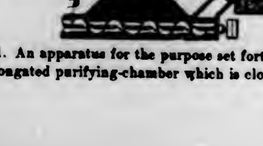
9. In a paper-bag machine the combination of means for supporting a bag-blank, a revoluble creaser, a front finger pivotally mounted therein and means for moving the front finger into and out of engagement with the bag-blank, all combined and operating together substantially as described.

10. The combination of a revoluble folding-bed means to grip a bag-blank thereto, a rotatable carrier adjacent to the folding-bed a front finger pivoted in said rotatable carrier, a blade mounted in the free end of the front finger and adapted to present its face in contact with the bag-blank throughout the operation of said front finger, all combined and operating together, substantially as described.

11. The combination of a revoluble folding-bed, means for holding a diamond-folded bag-blank thereon, oppositely-disposed flap-folders so mounted for rotation that their operative edges, during their period of coaction with the folding-bed will travel substantially concentric with the path of said folding-bed and means to move the flap-folders so that their operative edges will travel first, relatively faster than the folding-bed, then at a decreasing speed and finally at an equal speed with said folding-bed, all combined and operating together substantially as described.

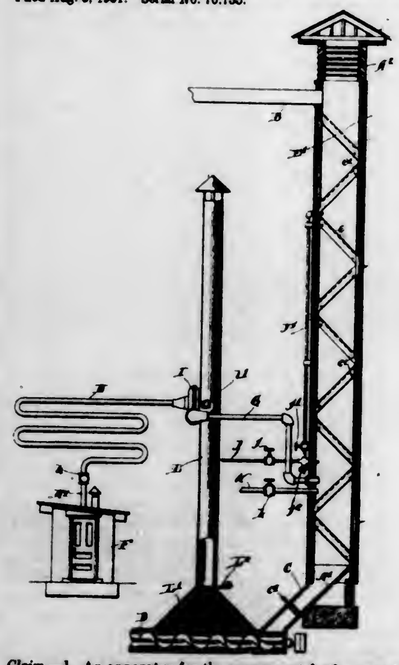
12. The combination of a revoluble folding-bed, means for holding a diamond-folded bag-blank thereon, oppositely-disposed flap-folders, so mounted for rotation that their operative edges, during their period of coaction with the folding-bed will travel substantially concentric with the path of the folding-bed, and means to move the flap-folders so that their operative edges will travel first at a speed relatively faster than the folding-bed, to turn over the rear flap and then at a speed synchronous with the folding-bed to fold the front flap and to deliver the folded bag to the ironing means, all combined and operating together substantially as described.

820,679. **ATTACHMENT FOR BOTTLES.** HERVEY B. STUDLEY, Corona, N. Y. Filed Nov. 11, 1905. Serial No. 286,882.



Claim.—A measuring attachment for bottles comprising a bulb having an opening at one end, a screw-cap normally closing the opening, and a tubular neck integral with the bulb and extending from the other end thereof at an acute angle thereto.

820,680. **APPARATUS FOR PURIFYING GRAIN, &c.** DAVID H. STURR, Davenport, Iowa, assignor to American Grain Purifier Constructing Company, Pierre, S. D., a Corporation of South Dakota. Filed Aug. 3, 1901. Serial No. 70,735.



Claim.—1. An apparatus for the purpose set forth, comprising a vertically-elongated purifying-chamber which is closed at its bottom and open at its top, means for continuously supplying grain to the top, and withdrawing it from the bottom, of said chamber, means for supplying sulfur fumes to the lower part of said chamber and means for supplying a dampening agent to the said chamber near the top or receiving end thereof, whereby the grain entering the chamber is subjected to the action of the dampening agent before the said grain reaches the part of the chamber in which it is more directly acted upon by the sulfur fumes.

2. An apparatus for the purpose set forth, comprising a vertically-elongated purifying-chamber, means for continuously supplying grain to the top, and withdrawing it from the bottom, of said chamber, means for supplying sulfur fumes to the lower part of said chamber, means for supplying a dampening agent to the said chamber near the top or receiving end thereof and means for separately controlling the supply of the sulfur fumes and of the dampening agent to said chamber.

3. An apparatus for the purpose set forth comprising a vertically-elongated purifying-chamber, means for continuously supplying grain to the upper part and withdrawing it from the bottom of said chamber, a furnace for generating sulfur fumes connected with the lower part of said chamber by a passage, means in said passage for withdrawing the fumes from the furnace and forcing them into the chamber and a valved steam-supply pipe discharging into the chamber between the outlet end of said passage and the upper part of the chamber.

4. An apparatus for the purpose set forth comprising a vertically-elongated purifying-chamber, means for continuously supplying grain to the top and withdrawing it from the bottom of said chamber, a furnace for generating sulfur fumes and connected with the lower part of said chamber by a passage, means in said passage for withdrawing the fumes from said furnace and forcing them into the chamber, a cooling-pipe forming part of said passage, means for introducing a dampening agent into said chamber between said passage and the upper part of the chamber and means for separately controlling the supply of the sulfur fumes and of the dampening agent to said chamber

5. An apparatus for the purpose set forth, comprising a vertically-elongated purifying-chamber, means for continuously supplying grain to the upper and withdrawing it from the lower part of the chamber, a furnace for generating sulfur fumes, connected with the purifying-chamber by a passage, means in said passage for withdrawing fumes from the furnace and forcing them into the chamber and means for moistening or dampening the grain before it is acted upon by the fumes entering the chamber.

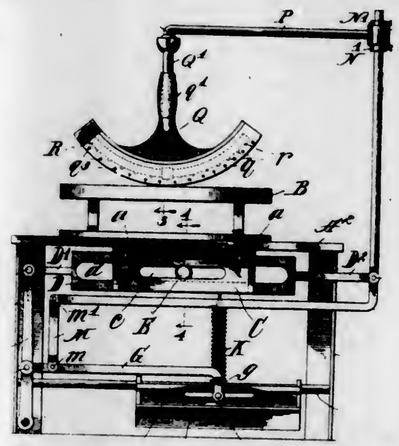
6. An apparatus for the purpose set forth comprising a purifying-chamber, means for continuously delivering the product to be purified to, and withdrawing it from said chamber, means for introducing a dampening agent into said chamber to moisten the product, a furnace for generating sulfur fumes, means for cooling the fumes, and means for conducting the cooled fumes to the said chamber.

7. An apparatus for the purpose set forth comprising a chamber through which the products to be purified are passed, and provided at its upper end with an inlet and at its lower end with an outlet, a conveyer communicating with said outlet, means for delivering the purifying fumes to said chamber, means for dampening the product preparatory to the action thereon by the fumes and means for withdrawing the fumes which escape from the purifying-chamber to the conveyer and discharging the same at a point above the level of the base of the apparatus.

8. An apparatus for the purpose set forth comprising a chamber through which the product to be purified is passed and provided at its upper end with an inlet and at its lower end with an outlet, a conveyer communicating with said outlet, means for delivering the purifying fumes to said chamber, means for dampening the product preparatory to the action thereon by the fumes, and a ventilating-stack communicating at its lower end with the interior of said conveyer for carrying the fumes from said conveyer which escape from the purifying-chamber, said stack being made of considerable height and provided with a regulating-valve.

820,681. **CLOTH-PRESSING MACHINE.** LAWRENCE SVOBODA and JAROSLAV KUDELE, Chicago, Ill. Filed Mar. 15, 1905. Serial No. 250,156.

Claim.—1. In a cloth-pressing machine, the combination with a support for the work to be pressed, of a sad-iron having a rounded pressing-surface, a support on which the sad-iron is suspended to adapt it to be freely turned about a vertical axis and rocked radially relative to said axis against the surface of the work, a reciprocating carriage connected with the sad-iron support to be reciprocated by rocking the sad-iron, and means for pressing the iron against the work.



2. In a cloth-pressing machine, the combination of a frame on which to impose the work to be pressed, an upwardly and downwardly movable sad-iron support, a sad-iron having a rounded pressing-surface and suspended on its support to adapt it to be rocked, a roller-guided reciprocable carriage mounted on the frame and with which said support is connected to reciprocate it by rocking the sad-iron, and lever mechanism connected with said support for lowering and raising the sad-iron relative to the work.

3. In a cloth-pressing machine, the combination of a stationary support for the work to be pressed, a sad-iron having a rounded pressing-surface, a reciprocating carriage, lever mechanism connected with said carriage to reciprocate it and by which said iron is suspended to adapt it to be freely turned about a vertical axis and rocked radially relative to said axis against the surface of said work, and means for actuating said lever mechanism to depress the iron against said support.

4. In a cloth-pressing machine, the combination with a support for the work to be pressed, of a sad-iron having a rounded pressing-surface adapting it to be rocked, a reciprocably-supported carriage mounted on a roller-bearing, lever mechanism connecting said carriage and sad-iron, and means for depressing the iron to force it against said support.

5. In a cloth-pressing machine, the combination with a support for the work to be pressed, of a sad-iron having a rounded pressing-surface adapting it to be rocked, a carriage reciprocably mounted below said support, a bell-crank lever fulcrumed on the carriage, carrying a bar at one end with which the sad-iron is flexibly connected, and means connected with the opposite end of said lever for operating it to depress the iron against said support.

6. In a cloth-pressing machine, the combination with a support for the work to be pressed, of a sad-iron having an arc-shaped pressing-surface adapting it to be rocked, a carriage reciprocably supported below said support, lever mechanism for depressing the iron against said support, comprising a lever pivoted at its lower end to the frame of the machine and pivotally connected at its upper end with the carriage, a horizontal lever pivoted at one end to said first-named lever, a treadle operatively connected with said horizontal lever at its opposite end, a link connected with said last-named lever, a bell-crank lever fulcrumed at its upright arm to the opposite end of the carriage and pivotally connected at its horizontal arm with the link, and a bar carried by the upright arm of said bell-crank lever, on which the sad-iron is flexibly mounted.

820,682. **BUTTON OR STUD.** IRVING M. SYLVESTER, Providence, R. I., assignor to Parks Bros. & Rogers, Providence, R. I., a Firm. Filed June 12, 1905. Serial No. 264,843.

Claim.—1. A stud comprising a head, a tubular L-shaped stem and shoe formed integral with one another and secured to said head, said stem being formed with an opening *c'*, adjacent its juncture with the shoe, a locking-bar slidably mounted in the shoe, said locking-bar having a pointed end projecting beyond the end of the shoe and having its other end projecting through opening *c'*, said bar hav-

ing a longitudinal flattened surface formed with notches, a plunger slidably mounted in the stem and having its end shaped to engage in said notches of the bar, and a coil-spring seating on the end of the plunger and engaging said head.



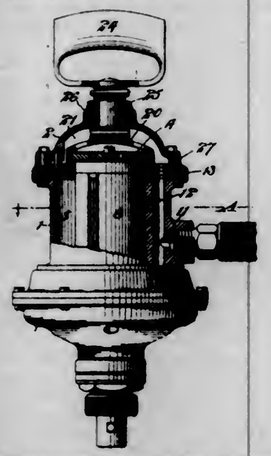
2. A stud consisting of an integral tubular L-shaped shoe and stem, said shoe being formed with an opening adjacent its juncture with the stem, a disk having its base projecting in said stem and closing the end thereof, a head secured to the disk, a notched locking-rod in the shoe having its end projecting through said opening, a plunger of slightly less cross-section than the inner circumference of said stem slidably mounted in said stem and having its end shaped to engage in said notches of the locking-rod, and a coil-spring seating on the opposite end of said plunger and abutting said projecting portion of the disk.

820,683. STUD OR BUTTON. IRVING M. STLVESTER, Providence, R. I., assignor to Parks Bros. & Rogers, Providence, R. I., a Firm. Filed June 12, 1905. Serial No. 264,844.



Claim.—In a pipe-stem stud, a head, a hollow L-shaped shank forming a tubular stem and shoe, a locking-bar formed with annular grooves extending in said shoe, said shoe being formed with a pair of longitudinal parallel closely-associated slits intermediate its length, which slits extend to points adjacent the ends of said shoe, the material between said slits forming a snap supported by each of its ends from said shoe, said snap having an inwardly-transverse rib formed central of its length to engage in said grooves of the locking-bar.

820,684. REVERSING MECHANISM FOR ROTARY MOTORS. ALBERT H. TAYLOR, Easton, Pa., assignor to The Ingersoll-Sergeant Drill Company, New York, N. Y., a Corporation of West Virginia. Filed Aug. 1, 1905. Serial No. 272,173.



Claim.—1. The combination with the cylinder of a rotary motor, its top and bottom outer cylinder-heads and its top inner cylinder-head, a piston-chamber, a rotary piston mounted eccentricelly therein, said cylinder having therein a fluid-inlet passage, two piston-passages and two exhaust-passages, of a manually-operated reversing-valve mounted on the inner top cylinder-head arranged to direct the motive fluid from the fluid-inlet passage to one of the piston-passages and from the other piston-passage to one of the exhaust-passages.

2. The combination with the cylinder of a rotary motor, its top and bottom outer cylinder-heads and its top inner cylinder-head, a piston-chamber, a rotary piston mounted eccentrically therein, said cylinder having therein a fluid-inlet passage, two piston-passages, and two exhaust-passages communicating with the interior of the bottom outer cylinder-head, of a manually-operated reversing-valve mounted on the top inner cylinder-head arranged to direct the motive fluid from the fluid-inlet passage to one of the piston-passages and from the other piston-passage to one of the exhaust-passages.

3. The combination with the cylinder of a rotary motor, its top and bottom outer cylinder-heads and its top inner cylinder-head, a piston-chamber, a rotary piston mounted eccentrically therein, said cylinder having a fluid-inlet passage, two piston-passages and two exhaust-passages, of a manually-operated reversing-valve having a port for opening the fluid-inlet passage to the one or the other of the piston-passages and also having two bridge-ports for opening the one or the other of the piston-passages to the one or the other of the two exhaust-passages.

820,685. REEL-CLAMP FOR FISHING-RODS. CHARLES H. TERRY, Bristol, Conn. Filed July 29, 1905. Serial No. 271,735.



Claim.—1. A fishpole-butt having a fixed handle and a slidable collar for the reception of the reel, and clamping means for securing the collar directly on the butt including a rotatable nut whereby the collar may first be forced onto the reel, and the collar then secured to the butt independent of said reel.

2. A fishpole-butt having a slidable collar for the reception of the reel, one or more wedges carried by said collar and means for clamping said wedges on the butt to lock the collar thereto.

3. A fishpole-butt having a slidable collar for the reception of the reel, one or more wedges carried by said collar, and a screw-threaded means for clamping said wedges on the butt to lock the collar thereto.

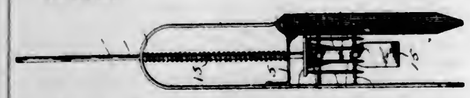
4. A fishpole-butt having a slidable collar for the reception of the reel, one or more screw-threaded wedges carried by the collar and means for clamping said wedges on the butt to lock the collar thereto.

5. A fishpole-butt having a slidable collar for the reception of the reel, one or more perforations through the body of the collar and a wedge in each perforation in combination with a threaded hand-nut for clamping the wedges upon the butt to lock the collar thereto.

6. A fishpole-butt having a slidable collar for the reception of the reel, one or more perforations through the body of the collar and a screw-threaded wedge in each perforation in combination with a threaded hand-nut for clamping the wedges upon the butt to lock the collar thereto.

7. The combination of a rod, a socket element slidable thereon, a clamping-jaw upon said element, and means upon said element for forcing said jaw into frictional engagement with said rod.

820,686. TRAP. JOHN D. WALKER, Pineridge, La., assignor to Pine Ridge New Idea Company, Pineridge, La. Filed Sept. 19, 1905. Serial No. 279,154.

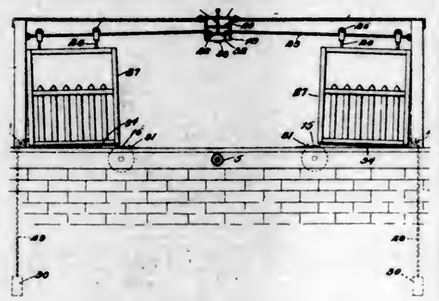


Claim.—1. A device of the class described comprising a frame, a spring-actuated plunger mounted in the frame, an impalement element carried by the plunger and extending rearwardly of the frame, and means located forwardly of the frame to hold the plunger in elevated position and to release it.

2. A device of the class described comprising a frame, a spring-pressed plunger mounted in the frame, a plate carried at the lower end of said plunger and extending rearwardly of said casing, impalement-tines carried by the plate, and means located forward of the casing and engaged with the plate to hold the said plunger in elevated position and to release it.

3. A device of the class described comprising a frame, a spring-pressed plunger mounted in the frame, a plate carried at the lower end of said plunger and extending rearwardly of said casing, impalement-tines carried by the plate, and plates mounted forwardly of said frame and having interlocking meeting ends, one of said plates having a portion extending rearwardly for engagement beneath said first-named plate when the plunger is in elevated position.

820,687. DRAWBRIDGE. BENJAMIN F. WILLIAMS, Chicago, Ill. Filed Oct. 26, 1905. Serial No. 284,519.



Claim.—1. The combination with closures; of rails thereabove and supporting the same, said rails being pivoted at one end and vertically movable at their adjoining ends, and means operated by the draw for simultaneously raising the vertically-movable ends of the rails for directing the closures longitudinally thereon in opposite directions.

2. The combination with a draw; of supporting-rails pivoted at their opposite ends and having their adjoining ends connected and movable in a vertical plane, closures suspended from and adapted to travel upon the rails, means for engaging the closures to positively actuate them in one direction, means upon the draw for operating the actuating means when the draw is moving in one direction, and means upon the draw for simultaneously raising the adjoining ends of the rails to actuate the closures by gravity.

3. The combination with a draw; of a closure, mechanism operated by the opening of the draw for positively actuating the closure in one direction, and means operated by the draw for automatically moving the closure in the opposite direction upon the completion of the closing of the draw.

4. The combination with a draw; of a hanging closure, a movable track therefor, mechanism operated by the opening of the draw for positively moving the closure in one direction, and means actuated by the draw upon the completion of its closing movement for returning said closure to its initial position.

5. The combination with a draw; of a hanging closure, a movable track supporting the same, mechanism beneath and adapted to engage the closure, a rack upon the draw for actuating said mechanism when the draw is opened to move the closure in one direction, and means operated by the draw at the completion of its closing movement for automatically moving the rail to return the closure by gravity to its initial position.

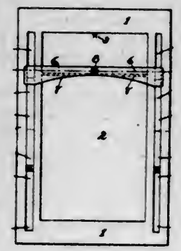
6. The combination with a draw having a rack and a lifting device at one end thereof; of a hanging closure, a movable rail supporting the same, and gearing extending under the closure and adapted to move it in one direction, said gearing and rail being adapted to be operated by the rack and lifting device, respectively, for moving the closure in opposite directions.

7. The combination with a draw having a rack and a lifting device thereon; of standards, connecting means upon the standards, slotted hangers depending from said means, oppositely-extending rails movably mounted within the hangers, a connecting device interposed between the rails, hanging closures suspended from the rails, racks upon the bottoms thereof, gearing engaging and adapted to actuate the racks and their inclosures, said gearing and the rails being adapted to be moved by the rack and lifting device, respectively, for closing and opening the closures, respectively.

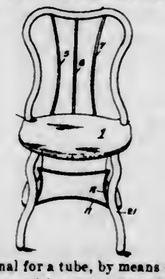
820,688. WINDOW-CLEANER. ROBERT J. WILLIAMS, Cincinnati, Ohio. Filed Oct. 26, 1905. Serial No. 284,430.

Claim.—In a window-cleaner of the class described, a window-sash each of the side rails whereof is provided with a slot and with grooves forming a continuation of said slot, cross-heads on each side of window, wipers on said cross-heads, cross-head connecting-blocks reciprocable in said slots, stripe on said blocks and cross-heads and reciprocable in said slots and grooves, a handle on one of said cross-heads, and means to hold the stripe and cross-heads in an elevated position when not in use, substantially as described and for the purposes set forth.

820,688.



820,689. JOINT FOR FURNITURE. JOHN F. WILMOT, Detroit, Mich. Filed Dec. 26, 1903. Serial No. 186,595.



Claim.—1. A terminal for a tube, by means of which it may be secured to a flat object, comprising a plurality of bracket-arms, each arm made from two opposite stave-like parts of the tube, of which one part is bent outward from the axis of the tube, and the other part is bent across the axis of the tube, substantially as described.

2. A terminal for a tube, by means of which the tube may be secured to a flat object, comprising a plurality of bracket-arms, each arm made from two opposite stave-like parts of the tube, one of said parts being bent outward from the axis of the tube, and the other of said parts being bent across the axis of the tube into contact with the first part, substantially as described.

3. A terminal for a tube, by means of which the tube may be secured to a flat object, comprising a plurality of bracket-arms, each arm made from two stave-like parts of the tube, of which one part is bent outward from the axis of the tube, and the other part bent across the axis of the tube, and the faces of the two parts are brought to contact, and the two parts are provided with registering perforations, substantially as described.

4. A means for securing a tube to another part, consisting of a terminal having a plurality of stave-like parts, arranged in pairs, each pair of staves having the inner faces of the members thereof in contact, and with the several pairs spreading to brace the tube in a plurality of directions, substantially as described.

5. A means for securing a spindle to a tubular frame part of a chair-back, comprising the combination of a tubular frame part provided with an opening through a wall thereof, a spindle having its end curved to a hook form and having the curve of the hook engaging against the wall of the tube opposite the opening, and the point of the hook engaging against the wall of the tube on the same side thereof with the opening, and a seat part to which both the tubular frame and the spindle are secured, substantially as described.

6. A joint for securing brace-rods to a tube, comprising in combination, a tube provided with diametrically opposite holes, a plurality of rods with their ends made half-round in shape and with the half-round ends assembled to completely fill the holes, with the rods beyond the half-round spreading, and with the assembled half-round parts of the rods engaging through said holes in the walls of the tube, and with means for securing the assembled half-round ends external to the tube, substantially as described.

7. In a chair, in combination with tubular leg-standards each of which is provided with diametrical holes for the engagement therethrough of a chair-rung, rungs equal in number to the leg-standards, the ends of adjacent rungs being of a size and shape to fill, when assembled, the holes in a leg-standard and the assembled ends of adjacent rungs engaging through the leg-standard and secured by means of the projecting ends thereof, substantially as described.

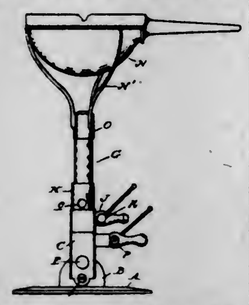
8. A chair-seat having a rounded seat portion with notched ex-

tensions for the engagement therein of a bent tube comprising the back-frame, combined with said bent tube, the said bent tube having its terminals split, and divided into diverging attaching parts which engage against and are secured to said seat on the under side thereof, substantially as described.

9. In a chair, in combination with a seat, a back-frame, the side members of which extend vertically across the edge of the seat, bracket-terminals on the side members of said back-frame consisting of split and bent portions of the said side members, which spread from the axis of the member with which they are integral and are provided with holes for the insertion therethrough of securing-screws, substantially as described.

10. In a chair or similar structure, in combination with the seat part supported on legs, rungs uniting the legs below the seat part and having as a joint connection the contiguous ends of adjacent rungs bent and arranged in parallel relation extending through a hole in and projecting beyond the leg and secured in place by a securing means on the projecting end, substantially as described.

820,690. BLOWPIPE AND BUNSEN BURNER. J LOWE YOUNG, Detroit, Mich. Filed Nov. 15, 1904. Serial No. 232,963.



Claim.—1. The combination of a base, a tubular burner-nozzle hinged to the base, valved air-inlets at the lower part of the nozzle, and a gas-supply nipple projecting laterally into the burner-nozzle, having an upwardly-directed jet-opening within the burner-nozzle, and below said air-inlets.

2. The combination of a base, a tubular burner-nozzle hinged to the base, air-inlets at the lower part of said nozzle, a valved gas-supply nipple secured to and projecting into the burner-nozzle and having an outlet below the air-inlets, and an apertured sleeve supported on the nozzle and acting as a valve for the air-ports.

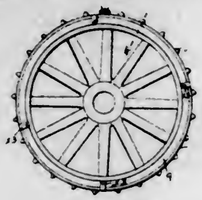
3. The combination of a base, a standard hinged thereto, a valved air-supply nipple secured to said standard, a burner-nozzle secured to the standard, an air-blast tube secured centrally within the nozzle and communicating with the air-supply nipple, by a passage in said standard, laterally-projecting air-inlets in the side of the burner and a gas-supply nipple for the burner-nozzle, arranged intermediate said air-inlets.

4. The combination of a base, a standard hinged thereto, an outwardly-extending nozzle mounted on the standard, an air-blast pipe extending centrally within the nozzle to a point adjacent its outer end, and having an inlet connection in said standard, a valved air-inlet in the nozzle adjacent its lower end, and a gas-inlet arranged intermediate said air-inlets.

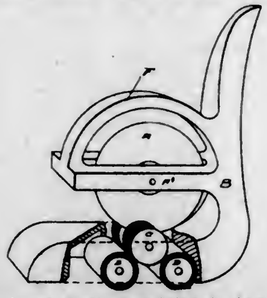
5. A combination blowpipe and Bunsen burner, comprising a base, a standard hinged thereto, a valved air-supply nipple secured to said standard, a burner-nozzle secured to the standard, an air-tube secured centrally within the nozzle and communicating with the air-supply nipple, valved air-inlets for the nozzle, a gas-supply nipple in the burner-nozzle between the air-supply nipple and the valved air-inlets, and a detachable crucible-support connected to said burner at its upper end.

820,691. TRACTION ATTACHMENT FOR AUTOMOBILE-WHEELS. GEORGE ADAMS, St. Louis, Mo. Filed Jan. 26, 1905. Serial No. 242,269.

Claim.—In a traction attachment for automobile-wheels, the combination with a tire, of an encircling band constructed of a single strip of material fitted to the tread of the tire and having integral portions that extend downwardly onto the sides of the tire, teeth riveted to the encircling band and projecting outwardly therefrom, a pair of perforated lugs integral with the meeting ends of the encircling band, and a draw-bolt passing through the perforated lugs; substantially as specified.



820,692. CARPET-CUTTER AND THE LIKE. NELSON W. ALDOUS, Toronto, Canada. Filed July 20, 1905. Serial No. 270,573.



Claim.—A carpet-cutter consisting of a frame, a sharp disk mounted therein, a roller having a circumferential groove also mounted in the frame below said disk, one side of the groove being inclined and the other perpendicular to form a cutting edge, said disk engaging with said cutting edge and friction-rollers engaging with the grooved roller to impart motion to the same.

820,693. BRACKET FOR SHADE-ROLLERS. CALVIN L. BEAM, Rockwell City, Iowa. Filed Nov. 28, 1905. Serial No. 289,445.



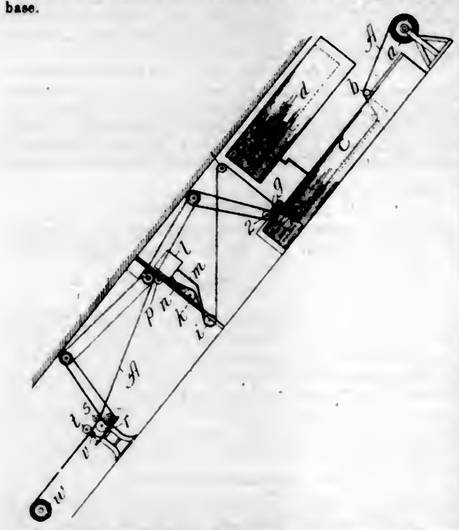
Claim.—1. A bracket for shade-rollers and the like comprising a strip having a roller-engaging arm at one end and a series of alternating slots extending into the strip from opposite edges, said slots projecting across the longitudinal center of the strip.

2. A bracket for shade-rollers and the like consisting of a strip of sheet metal having a roller-engaging arm at one end, a series of inclined slots extending into the strip from one edge thereof, and another series of slots extending into the strip from its opposite edge, all of said slots being parallel and extending across the longitudinal center of the strip, the slots of one series alternating with the slots of the other series.

3. The combination with a support having holding devices permanently connected thereto; of a bracket comprising a strip having a roller-engaging arm at one end, a series of slots extending into the strip from one edge and another series of slots extending into the strip from its opposite edge, all of said slots extending across the longitudinal center of the strip and one slot of each series constituting a seat for one of the holding devices.

820,694. WATERPROOF FABRIC. LON A. BOND, Logansport, Ind., assignor to Rubbertex Cloth and Paper Company, Logansport, Ind., a Corporation of Indiana. Filed Sept. 22, 1905. Serial No. 279,094.

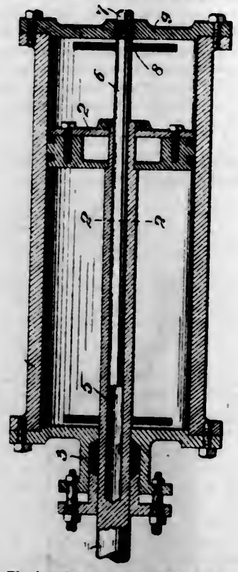
Claim.—1. As a new article of manufacture, a fabric composed of porous, fibrous material, having its fibers saturated or impregnated with asphaltic residuum from crude petroleum having an asphalt base.



2. As a new article of manufacture, a fabric composed of porous, fibrous material having its fibers saturated or impregnated and its pores between the fibers filled with asphaltic residuum from crude petroleum having an asphalt base.

3. As a new article of manufacture, a textile fabric composed of flexible, porous, fibrous material having its fibers saturated or impregnated with asphaltic residuum from crude petroleum having an asphalt base.

820,695. SUPPORT FOR PISTONS. JAMES BRAMMER, St. Louis, Mo. Filed June 26, 1905. Serial No. 267,073.



Claim.—1. The herein-described guide and support for pistons and piston-valves, comprising a supporting-bar fixed at one end to the cylinder-head and its opposite end projecting free; said supporting-bar having a venting-groove and extending within a hollow piston and piston-rod.

2. The herein-described guide and support for pistons and piston-valves, comprising a supporting-bar fixed at one end to the cylinder-head and projecting within the cylinder, in combination with a piston and piston-rod, said supporting-bar having a screw-threaded conical enlargement near its outer end.

3. The herein-described guide and support for pistons and piston-valves, comprising a supporting-bar fixed at one end to the cylinder-head and projecting within the cylinder, in combination with a piston and piston-rod, said supporting-bar having a screw-threaded conical enlargement near its outer end; said piston-rod having an axial bore within which said supporting-bar extends, the said parts being also provided with suitable venting means for permitting the said supporting-bar to pass freely within the bore of the piston-rod.

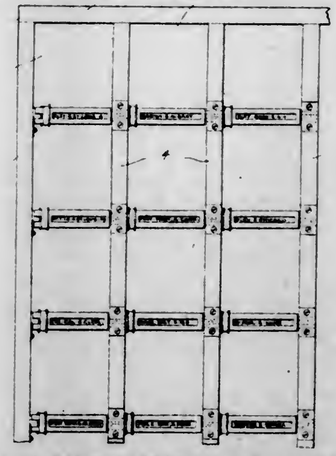
820,696. SAFETY DEVICE FOR DOORS AND LOCKS. HARRY S. BRICKELL, Pittsburg, Pa. Filed Jan. 15, 1906. Serial No. 296,032.



Claim.—1. The combination with a door and frame, of a bar secured within and extending out from between said door and frame, a ratchet-face on one side of said bar, a clamping-plate fitting over and around said bar through an opening in said plate, a tooth on said plate for engaging with said ratchet-face to clamp said plate against the door and jamb of the frame and hold said door in place within said frame, and a spring carried by said plate and engaging with the side of said bar opposite the ratchet-face thereon to hold said tooth in engagement with said ratchet-face and to permit the releasing of the frame.

2. The combination with a door and frame, a lock, a bar secured within and extending out from between said door and frame, said bar having an opening in its end, means on said bar for engaging with the same and with said door and jamb of said frame to hold said door in place within said frame, and a rod attached to the opening in said bar and to the key of the lock for fastening said key.

820,697. INDICATOR FOR LETTER-CASES. WILLIAM D. BROWN, Indianapolis, Ind., and CHARLES H. CAMPBELL, Springfield, Ohio. Filed June 16, 1905. Serial No. 265,511.



Claim.—1. An indicator for letter-cases, &c., comprising a rotatory body portion longitudinally recessed to form a plurality of seats for indicating-labels, a shell inclosing and moving with said body portion and provided with a plurality of sight-openings corresponding with the label-seats, and transparent closures for said sight-openings located between the body portion and shell, substantially as described.

2. An indicator for letter-cases, &c., comprising a body portion longitudinally recessed to form a plurality of seats for indicating-labels, a shell inclosing and moving with said body portion and provided with a plurality of sight-openings corresponding with the label-seats, and a tubular body of transparent flexible material inter-

posed between said shell and body and closing the sight-openings, substantially as described.

3. An indicator for letter-cases, &c., comprising a rotatory body portion longitudinally recessed to form a plurality of seats for indicating-labels, a shell inclosing and moving with said body portion and provided with a plurality of sight-openings corresponding with the label-seats, and a tubular body of transparent flexible material interposed between said shell and body and closing the sight-openings, said shell having openings forming receiving-mouths through which the labels may be inserted and removed, substantially as described.

4. An indicator for letter-cases, &c., comprising a body longitudinally recessed to form a plurality of label-seats, a shell inclosing said body and having sight-openings corresponding with the label-seats, and separate apertures forming receiving-mouths for the label-seats, and a guard-ring mounted to slide on the shell and adapted to close said receiving-mouths, substantially as described.

5. An indicator for letter-cases, &c., comprising a body longitudinally recessed to form a plurality of label-seats, a shell inclosing said body and having sight-openings corresponding with the label-seats, and separate apertures forming receiving-mouths for the label-seats, and a guard-ring mounted to slide on the shell and adapted to close said receiving-mouths, said shell being provided with means for holding said guard-ring in position to close said mouths, substantially as described.

6. An indicator for letter-cases, &c., comprising a body longitudinally recessed to form a plurality of label-seats, a shell inclosing said body and having sight-openings corresponding with the label-seats, and separate apertures forming receiving-mouths for the label-seats, and a guard-ring mounted to slide on the shell and adapted to close said receiving-mouths, said shell being provided with means for holding said guard-ring in position to close said mouths, said means comprising a stop on one side of the normal position of the ring, and an inclined detent projection on the other side thereof, the resilience of the parts permitting the ring to be forced over said detent projection, substantially as described.

7. An indicator for letter-cases, &c., comprising a body longitudinally recessed to form a plurality of label-seats, and a shell having sight-openings corresponding with the label-seats, and separate apertures forming inlet-mouths for said label-seats, the bottoms of said seats being inclined upward to the mouths at their ends adjacent to said mouths, substantially as described.

8. An indicator for letter-cases, &c., comprising a body longitudinally recessed to form a plurality of label-seats, and a shell having sight-openings corresponding with the label-seats, and separate apertures forming inlet-mouths for said label-seats, the bottoms of said seats being inclined upward to the mouths at their ends adjacent to said mouths, in combination with a guard-ring for closing said mouths, substantially as described.

9. An indicator for letter-cases, &c., comprising a body longitudinally recessed to form a plurality of label-seats, and a shell having sight-openings corresponding with the label-seats, and separate apertures forming inlet-mouths for said label-seats, the bottoms of said seats being inclined upward to the mouths at their ends adjacent to said mouths, said inclines being formed by inwardly-bent tongues forming portions of the shell partly severed therefrom to form the inlet-openings, substantially as described.

10. An indicator for letter-cases, &c., comprising a substantially cylindrical body having bearing-supports at its ends, longitudinally-extending internal label-seats, corresponding sight-openings smaller than said seats, and apertures forming receiving-mouths for said seats; said apertures being located inward from the end of the body, so as to be accessible when the end of the body is obstructed by the supporting-bearing, in combination with a guard-ring mounted to slide on said body and adapted to close said apertures, substantially as described.

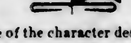
11. The combination, with a letter-case or the like having a plurality of compartments arranged in a horizontal row, of an indicator comprising a group of units, one for each compartment, mounted in a row on said case, said units being detachably connected so as to rotate in unison while free to accommodate themselves to variations in alinement or distance of the bearings, substantially as described.

12. The combination, with a letter-case or the like having a plurality of compartments arranged in a horizontal row, of an indicator comprising a group of units, one for each compartment, mounted in a row on said case, said units being detachably connected so as to rotate in unison while free to accommodate themselves to variations in alinement or distance of the bearings, one of said units being provided with a detent mechanism to hold the group in adjusted position, substantially as described.

13. The combination, with a letter-case or the like having bearings arranged in a row, of a group of indicator-units having journal-pins entering said bearings and having their meeting ends cut away longitudinally to match within said bearings to cause said units to rotate in unison, substantially as described.

14. The combination, with an indicator having a plurality of labels extending longitudinally thereof, and a terminal bearing-flange provided with corresponding notches, of a fixed housing comprising an annular flange to form a bearing for the indicator-flange, and a spring detent-pawl located within said housing-flange and projecting beyond the same to engage the notches of the indicator-flange, substantially as described.

820,698. SECURING DEVICE FOR SHOE-LACES. BENJAMIN G. BUCHANAN, Ashland, Wis. Filed Mar. 9, 1905. Serial No. 249,259.



Claim.—In a device of the character described, the combination with a base; of a bracket integral with one side of the base, an integral extension thereon overlapping and parallel with the base, and a spiral cam mounted within the extension and having its convolutions normally out of contact, said spiral cam being formed in a single strip of metal fastened at one end to the extension and terminating at its other end in a handle the outer convolutions of the cam being adapted to directly contact with the material inserted between the cam and base.

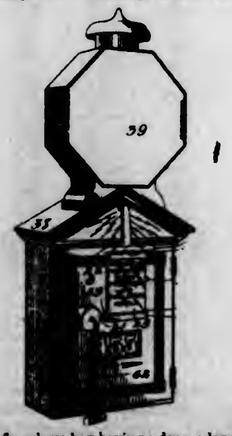
820,699. MEANS FOR FORMING FLOATS FROM LOGS OF WOOD. HEINRICH BUTENSCHÖN, Hohenwestedt, Germany. Filed Aug. 23, 1904. Serial No. 221,702.



Claim.—1. Means for forming rafts of logs, consisting of a plurality of channel-irons arranged in an upper course and a lower course, bolts connecting the members of said courses of irons together, said bolts pivotally connected with the members of the lower course and passing through the members of the upper course and having nuts applied to their upper ends.

2. Means for forming rafts of logs, consisting of a plurality of channel-irons arranged in an upper course and a lower course, bolts connecting the members of said courses together, said bolts pivotally connected with the members of the lower course, means for limiting the pivotal action of said bolts in one direction, and means for locking said bolts to the members of the upper course.

820,700. FIRE-ALARM BOX. LOUDOUN CAMPBELL and FRANK G. CAMPBELL, Washington, D. C. Filed Apr. 4, 1905. Serial No. 253,795.



Claim.—1. A fire-alarm box having a door, a lever located upon the exterior face of said door, a main-alarm mechanism, means for setting said main-alarm mechanism in motion when said lever is actuated and a frangible plate one edge of which engages said lever and the other edge of which engages a fixed member carried by the door.

2. The combination with a fire-alarm box of a local-alarm casing resting upon said box, the bottom of said casing having an opening formed therein, a detent pawl or latch pivoted in said opening, the lower end of said pawl being adapted to engage a portion of the fire-alarm box and the upper end of said pawl projecting above its pivotal point.

3. In a fire-alarm box, the combination with a main-alarm mechanism, of local-alarm mechanism, members engaging and controlling both of said alarms and the door of the fire-alarm box and a frangible device normally locking one of said members against movement.

4. The combination with a fire-alarm box, of a hook-pulling member carried by the door of said box, said hook-pulling member comprising a cam-carrying member and a cam pivoted to said cam-carrying member.

5. The combination, with a fire-alarm box, of a hook-pulling member carried by the door of said box, said hook-pulling member comprising a cam-carrying member and a cam pivoted to said cam-carrying member and a spring which normally holds said cam in alinement with the cam-carrying member.

6. The combination with a fire-alarm box, of a hook-pulling member, said hook-pulling member comprising a cam-carrying member and a cam pivoted to said cam-carrying member and adapted to give in one direction.

7. The combination, with a fire-alarm box, of main-alarm mechanism, local-alarm mechanism, a member controlling said main-alarm mechanism, a lever pivoted for swinging movement adjacent said alarm-controlling member, a cam carried by the door of the fire-alarm box, adapted to engage said swinging lever, a lock for said door and a lever controlling said lock.

8. In a fire-alarm box, the combination with a main-alarm controlling hook or the like, of a member carried upon the inner face of the door of the box and adapted to depress said hook when the door is opened, a door-controlling lever located upon the exterior of the box, a frangible device which prevents movement of said lever until broken, means for automatically forcing said door open when released, a local-alarm bell located upon the top of the box, a spring-motor for sounding said bell, a trip for said motor the lower end of which extends below the top of the fire-alarm box and a member carried by the door and adapted to hold said trip in an elevated position to thereby prevent the local-alarm bell from sounding as long as said door is closed.

9. The combination with a fire-alarm box, of main-alarm mechanism, local-alarm mechanism, members controlling both of said mechanisms, a frangible device normally locking one of said members against movement means for setting the main-alarm mechanism in motion when said last-named member is actuated, and means for throwing both the main and local alarm mechanisms out of action, said main-alarm-controlling member being located upon the exterior of the box and beyond the plane thereof.

10. The combination with a fire-alarm box, of main-alarm mechanism, comprising a hook, a lever pivoted for swinging movement over said hook, means carried by the door of the box for actuating said lever and means controllable from the exterior of the fire-alarm box for withdrawing said actuating means from engagement with said lever.

11. In a fire-alarm box, the combination with a main-alarm mechanism, of local-alarm mechanism, a lever pivoted upon the door of the box and adapted when actuated to operate the main alarm and to release the door of the box and a frangible device which normally locks said lever against movement.

12. In a fire-alarm box, the combination with an alarm mechanism, of an alarm-controlling hook or the like, a member adapted to depress said hook and means carried by the door of the box adapted to snap behind the said member when said door is closed and to actuate said member when said door is opened.

13. In a fire-alarm box, the combination with an alarm-controlling member of means carried by the door of the box for automatically actuating said alarm-controlling member as the said door is opened, said means being so arranged as not to strike said alarm-controlling member when the door of the box is closed.

14. A fire-alarm box having a door, a lever pivoted for swinging movement upon the exterior of said door, said lever having a groove formed in the under face thereof, and a frangible plate one edge of which engages in said groove and the other edge of which engages a fixed member carried by the door.

15. In a fire-alarm box, the combination of a main-alarm-controlling hook or the like, means carried upon the inner face of the door of the box for depressing said hook when the said door is opened, means for controlling said hook-depressing means from the exterior of the box to withdraw said means from engagement with the hook, a lever controlling the door of the box, a spring which tends to force said door open, and a frangible device which prevents movement of the door-controlling lever until broken.

16. In a fire-alarm box, the combination with a main-alarm mechanism, of a local-alarm casing situated upon the top of said box, a bell in said casing, a spring-actuated motor for sounding said bell, members engaging and controlling both the main-alarm mechanism and said spring-actuated motor and a frangible device normally locking one of said members against movement, said latter member being located upon the exterior of the door of the fire-alarm box.

17. In a fire-alarm box, the combination with a main-alarm mechanism, of local-alarm mechanism, members engaging and controlling both of said alarms, means normally tending to force the door of the fire-alarm box open and a frangible device normally locking one of said controlling members against movement.

18. The combination with a fire-alarm box, of main-alarm mechanism, a member controlling said mechanism, and means for actuating said member, said means comprising a bolt controllable from the exterior of the box and a cam member pivoted to said bolt and adapted to give in one direction.

19. A fire-alarm box having a door, a lever controlling said door and having a groove formed therein, a frangible plate, one edge of which engages in said groove and the opposite edge of which engages a fixed member on the door, main-alarm mechanism and means for automatically setting said main-alarm mechanism in motion when said door is opened.

20. The combination with a fire-alarm box, of a local alarm adapted to be engaged and cut out of action by the projection of the door of the fire-alarm box when said door is closed, a lever controlling said door and a frangible device normally engaging and locking said lever against movement.

21. The combination with a fire-alarm box, of a local alarm adapted to be engaged and cut out of action by a projection of the door of the fire-alarm box when said door is closed, a member controlling said door and a frangible device normally locking said member against movement.

22. The combination with a fire-alarm box, of a hook-pulling member carried by the door of said box, said hook-pulling member comprising a key-controlled bolt, a cam pivoted to said bolt, and a spring which normally holds said cam in alinement with said bolt.

23. The combination with a fire-alarm box, of main-alarm mechanism, a member the movement of which sets said main-alarm mechanism in motion, located upon the exterior of the box, a frangible device normally locking said member against movement and means for locking said frangible device in position.

24. The combination with a fire-alarm box, of a main-alarm, a local alarm, members engaging and controlling both of said alarms, a frangible device normally locking one of said members against movement and means for normally locking said frangible device in position, said main-alarm-controlling member being located upon the exterior of the fire-alarm box.

25. In a fire-alarm box, the combination with main-alarm mechanism, of local-alarm mechanism, members engaging and controlling both of said alarms, a frangible device normally locking one of said members against movement, means independent of said controlling member for locking both the main and local alarms out of action and means for locking said frangible device into position, said main-alarm-controlling member being located in a plane beyond and in front of the door of the fire-alarm box.

26. The combination with a fire-alarm box, of a door, fastening means for said door, a hook-pulling member carried by the door and adapted to give in one direction when the door of the box is closed and means for forcing the door of the fire-alarm box open when its fastening devices are released.

27. The combination with a fire-alarm box of a member located upon the exterior of said box, main-alarm mechanism, means for setting said main-alarm mechanism in motion when said member is actuated, a frangible device which normally prevents movement of said member and a local alarm adapted to be set in operation when said member is actuated.

28. The combination with a fire-alarm box having a door, of a door-controlling lever located upon the outer face of said door and locked against movement by a frangible member and means nor-

mally tending to force the door of said box open, a main-alarm mechanism and means for setting said main-alarm mechanism in motion when the door of the fire-alarm box is opened.

29. The combination with a fire-alarm box of a local alarm adapted to be engaged and cut out of action by a projection of the door of the fire-alarm box when said door is closed, a member controlling said door, a frangible device normally locking said member against movement, a main-alarm-controlling member, and means carried by the door of the box for actuating said main-alarm-controlling member when said door is opened.

30. In a fire-alarm box the combination with a main alarm of a local alarm, a lever, a frangible device normally locking said lever against movement and means whereby both the main and local alarms will be set in motion when said lever is actuated.

31. A fire-alarm box having a door-controlling member mounted upon the face of the door of said box and a frangible device which prevents movement of said member until broken but which does not cover said member.

32. A fire-alarm box having a movable member located upon the exterior of said box, means for setting a main-alarm mechanism in motion when said member is actuated and a frangible device which prevents movement of said member until broken but which does not cover said member.

820,701. **POWER DEVICE.** CLYDE J. COLEMAN, Rockaway, N. J., assignor to The Hall Signal Company, a Corporation of Maine. Filed July 11, 1903. Serial No. 165,093.



Claim.—1. Fluid-pressure motive-power apparatus comprising a pressure-fluid chamber and a chamber-sealing part contained therewithin, the chamber and chamber-sealing part being movable relatively to each other by pressure of pressure fluid in the chamber, and the chamber-sealing part fitting the chamber loosely and with clearance between the chamber-sealing part and the chamber to permit free movement of the parts and drainage of moisture from such chamber.

2. Fluid-pressure motive-power apparatus comprising a pressure-fluid chamber and a chamber-sealing part, the chamber and chamber-sealing part being movable relatively to each other by pressure of pressure fluid in the chamber and the chamber-sealing part not engaging the walls of the chamber but having a drainage clearance, and a sealing-surface secured relatively to the chamber in position to be engaged by the chamber-sealing part at the limit of its stroke so as to close the path of fluid efflux through the drainage clearance.

3. Fluid-pressure motive-power apparatus comprising a pressure-fluid chamber and a chamber-sealing part contained therewithin, the chamber being movable by pressure of pressure fluid within it, and the chamber-sealing part fitting the chamber loosely and with clearance between the chamber-sealing part and the chamber to permit free movement of the parts and drainage of moisture from such chamber.

4. Fluid-pressure motive-power apparatus comprising a pressure-fluid chamber and a chamber-sealing part, the chamber being movable by pressure of pressure fluid within it, and the septum not engaging the walls of the chamber but having a drainage clearance, and a sealing-surface secured relatively to the chamber in position to engage the chamber-sealing part at the limit of the stroke of the chamber so as to close the path of fluid efflux through the drainage clearance.

5. Fluid-pressure motive-power apparatus comprising a vertical pressure-fluid cylinder normally open for drainage at its lower end, a piston contained within the pressure-fluid cylinder but not engaging the sides of the cylinder but having a drainage clearance to permit drainage of moisture from the cylinder through its lower end, the cylinder and piston being movable relatively to each other by pressure of pressure fluid in the cylinder.

6. Fluid-pressure motive-power apparatus comprising a vertical pressure-fluid cylinder normally open for drainage at its lower end, a piston contained within the cylinder with a drainage clearance between piston and cylinder to permit drainage of moisture from the cylinder through such drainage clearance and through the lower and normally open end of the cylinder, such cylinder and piston being movable relatively to each other by pressure of pressure fluid in the cylinder, and a cylinder-sealing surface fixed relative to the cylinder in position to engage the piston at the end of the relative movement of the parts in order to close the path of fluid efflux through the drainage clearance and lower end of the cylinder.

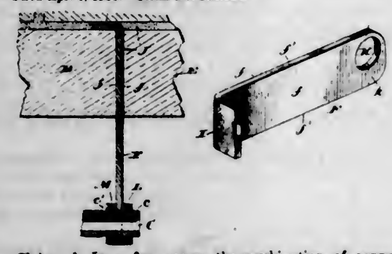
7. A power device comprising a piston and cylinder movable relatively to each other and means for introducing a power medium into the cylinder, the piston having a shoulder, and a flexible sealing-ring carried by the cylinder and located so as to be pressed against the shoulder of the piston by the power medium at the end of the expansive stroke.

8. Fluid-pressure motive-power apparatus comprising a vertical pressure-fluid cylinder normally open for drainage at its lower end, a piston contained within the pressure-fluid cylinder but not engaging the sides of the cylinder but having a drainage clearance to permit drainage of moisture from the cylinder through its lower end, the cylinder being movable by pressure of pressure fluid within it.

9. Fluid-pressure motive-power apparatus comprising a vertical pressure-fluid cylinder normally open for drainage at its lower end, a piston contained within the cylinder with a drainage clearance between piston and cylinder to permit drainage of moisture from the cylinder through such drainage clearance and through the lower and normally open end of the cylinder, such cylinder being movable by pressure of pressure fluid within it, and a cylinder-sealing surface fixed relative to the cylinder in position to engage the piston at the end of the relative movement of the parts in order to close the path of fluid efflux through the drainage clearance and lower end of the cylinder.

10. A power device comprising a piston and cylinder movable relatively to each other, means for introducing a power medium into the cylinder, the piston having a conical shoulder thereon, and a flexible sealing-ring carried by the cylinder and arranged to coact with the shoulder of the piston.

820,702. **FIRE-ESCAPE.** JAMES C. COVERT, Watervliet, N. Y. Filed Apr. 6, 1905. Serial No. 254,153.



Claim.—1. In a fire-escape the combination of supporting-brackets, a hand or foot rail carried thereby, and means operatively associated with one of the brackets and the end of said rail for preventing turning or endwise movement of the rail relative to the bracket comprising a threaded portion of the rail and a pair of nuts engaging said threaded portion adapted to impinge upon the opposite sides of the bracket.

2. A bracket for fire-escapes having an inner portion adapted to be secured to a wall and an outer portion provided with an eccentrically-arranged receiving-opening for a rail.

3. A bracket for fire-escapes having an inner portion adapted to be secured to a wall and an outer portion having an opening adapted to engage a rail, the base of said rail-engaging portion both directly beneath and forwardly of said opening being reinforced.

4. A bracket for fire-escapes having an inner portion adapted to be secured to a wall and an outer portion having an inclosed opening adapted to receive a rail, the base of said rail-engaging portion both directly beneath and forwardly of said opening being reinforced and the top thereof above said opening minimized.

5. A bracket for fire-escapes having an inner portion adapted to be secured to a wall and an outer portion provided with an eccentrically-arranged receiving-opening for a rail, the base of the bracket beneath said opening being relatively thick and the top thereof above said opening relatively thin.

6. A bracket for fire-escapes formed of sheet metal having an inner securing edgewise vertically disposed portion adapted to be embedded between the bricks of a wall and an outer similarly-disposed portion provided with a transverse receiving-opening for a rail.

7. In combination with a wall, a hand or foot rail, and means for securing the latter in place comprising a series of sheet-metal brackets, each having a securing portion embedded between adjoining bricks, the flat surfaces of the bracket facing the ends of the bricks and the edges thereof respectively overlying and underlying the bricks above and below said first-mentioned bricks, and an outer portion provided with a receiving-opening for the rail.

8. In combination with a wall, a hand or foot rail, and means for securing the latter in place comprising a series of sheet-metal brackets, each having a securing portion provided with an offset end and embedded between adjoining bricks, the flat surfaces of the bracket facing the ends of the bricks and the edges thereof respectively overlying and underlying the bricks above and below said first-mentioned bricks, and an outer portion provided with a receiving-opening for the rail.

9. In a fire-escape, the combination with a wall, of a hand or foot rail, and means for mounting said rail on the wall comprising a series of edgewise vertically disposed sheet-metal brackets having inner portions embedded in said wall and outer portions provided with transverse receiving-openings for the rail.

10. In a fire-escape, the combination with a wall, of a hand or foot rail, and means for mounting said rail on the wall comprising a series of edgewise vertically disposed sheet-metal brackets having offset inner portions embedded in said wall and outer portions provided with transverse receiving-openings for the rail.

11. A bracket for fire-escapes formed of sheet metal having an inner securing portion adapted to be embedded in a wall, and an outer portion formed to provide an eccentrically-arranged transverse receiving-opening for a rail

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820,703. **SNAP-HOOK.** JAMES C. COVERT, Watervliet, N. Y., assignor to Covert Manufacturing Company, Watervliet, N. Y., a Corporation of New York. Filed Jan. 5, 1906. Serial No. 294,742.



Claim.—1. A spring-tongue snap-hook comprising a body having separated cheeks, an opening in its bottom part, an overhanging top wall, a seat in advance of the opening, a straight back wall, a U-shaped spring between the cheeks and a struck-up lug on a cheek above the lower arm of the spring.

2. A spring-tongue snap-hook comprising a body having separated cheeks, an opening in its bottom part, an overhanging top wall, a seat in advance of the opening, a straight back wall, a U-shaped spring between the cheeks, and struck-up lugs on the cheeks above the lower arm of the spring.

3. A spring-tongue snap-hook comprising a body portion having spaced-apart cheeks, an elongated opening in the bottom, a back part, a top part, inwardly-projecting lugs on the cheeks beneath the top and adjacent the back parts, a U-shaped spring having one branch below the lugs and inwardly-bent sides engaging the edges of the spring at the opening.

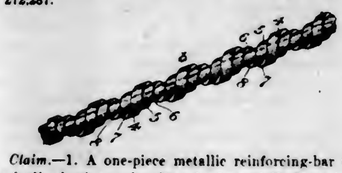
4. A spring-tongue snap-hook comprising a body having separated cheeks, an opening in its bottom part, an overhanging top wall, a seat in advance of the opening, a back wall, a U-shaped spring between the cheeks, and a struck-up lug on a cheek above the lower arm of the spring below the top wall and adjacent the back part.

5. A spring-tongue snap-hook comprising a body having separated cheeks, an opening in its bottom part, an overhanging top wall, a seat in advance of the opening, a straight back wall, a U-shaped spring between the cheeks, a struck-up lug on a cheek above the lower arm of the spring, and inwardly-bent sides at the opening.

6. A casting for spring-tongue snap-hooks consisting of a loop, a bill, and a body formed with separated cheeks having uninterrupted straight inner walls, an elongated opening in the bottom part, a straight back wall, an overhanging top part, and a seat portion in advance of the opening.

7. A casting for spring-tongue snap-hooks consisting of a loop, a bill and a body having separated cheek parts, a weakened puncture-spot on a cheek part, an elongated opening at the bottom and a back and top wall.

820,704. **REINFORCING-BAR FOR CEMENTITIOUS BODIES.** EDWARD F. CRANE, Newark, N. J. Filed Aug. 2, 1905. Serial No. 272,287.



Claim.—1. A one-piece metallic reinforcing-bar for cementitious bodies having a plurality of substantially flat spirals of different depths, as and for the purpose set forth.

2. A metallic reinforcing-bar having a plurality of substantially flat spirals of different depths with abruptly-formed shoulders between the spirals, as and for the purpose set forth.

3. A metallic reinforcing-bar having a plurality of spirals of different depths, said spirals having flat surfaces arranged parallel to the axis of the bar with shoulders between the flat faces of the adjacent spirals, as and for the purpose set forth.

4. A metallic reinforcing-bar for cementitious bodies having a plurality of parallel spirals of different depths with an abruptly-formed shoulder between the adjacent spirals, for the purpose set forth.

5. A composite structure, consisting of a cementitious body in combination with a metallic reinforcing-bar embedded therein, the said reinforcing-bar having a plurality of parallel spirals of different depths with an abruptly-formed shoulder between the adjacent spirals.

820,705. **COMPOSITION FOR FILLED BRAKE-SHOES AND PROCESS OF MANUFACTURE.** WARNER R. CROWELL, Boston, Mass., and NICHOLAS B. VARINA, Aurora, Ill. Filed Sept. 11, 1905. Serial No. 277,875.

Claim.—1. A composition of the character described, containing comminuted iron and comminuted steel; substantially as described.

2. A composition of the character described, containing metal particles and a rusting material, substantially as described.

3. A composition of the character described, containing metal particles and sal-ammoniac, substantially as described.

4. A composition of the character described, containing comminuted iron, comminuted steel, and sal-ammoniac, substantially as described.

5. A composition of the character described, containing comminuted iron, comminuted steel, and a rusting material, substantially as described.

6. A composition of the character described, containing coke, substantially as described.

7. A composition of the character described, containing metal particles and coke, substantially as described.

8. A composition of the character described, containing rubber and tallow, substantially as described.

9. A composition of the character described, containing coal-tar, rubber, and tallow, substantially as described.

10. A composition of the character described, containing coal-tar, india-rubber, tallow, powdered shellac, ground coke, sal-ammoniac, steel particles and iron particles, substantially as described.

11. A composition of the character described, containing the following elements in approximately the percentage of weight indicated: coal-tar, five per cent., india-rubber three per cent., tallow two per cent., powdered shellac, four per cent., ground coke five per cent., sal-ammoniac one per cent., finely-divided particles of steel forty per cent., finely-divided particles of iron forty per cent., substantially as described.

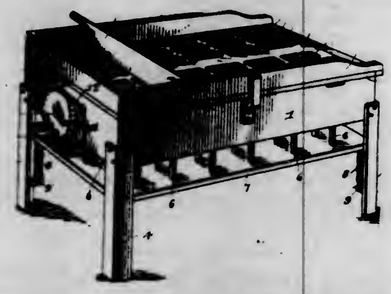
12. The process of producing a composition for filled brake-shoes, which consists in gently heating together coal-tar, rubber, and tallow, then adding and mixing thoroughly powdered shellac, ground coke, sal-ammoniac, finely-divided steel particles, finely-di-

vided iron particles, and pouring the same on a slab to cool, substantially as described.

13. The process of producing a composition for brake-shoes, which consists in gently heating together coal-tar, rubber, and tallow, then adding and thoroughly mixing powdered shellac, ground coke, sal-ammoniac, finely-divided particles of steel and finely-divided particles of iron, pouring the same upon a slab to cool, heating the same after being cooled to a temperature of approximately 250° Fahrenheit and pressing the same into the pocket or pockets of a brake-shoe, substantially as described.

14. The process of producing a composition for filled brake-shoes, which consists in gently heating together the following elements with the percentages by weight indicated; coal-tar, five per cent., india-rubber three per cent., tallow two per cent., and then adding and thoroughly mixing powdered shellac four per cent., ground coke five per cent., sal-ammoniac one per cent., steel particles forty per cent., iron particles forty per cent., pouring the same upon a slab to cool, and when cooled heating the same to approximately 250° Fahrenheit and pressing the composition into the pocket or pockets of a brake-shoe, substantially as described.

820,706. **MACHINE FOR APPLYING MORTAR TO TILES.** EDWIN M. DEHMDORF, Brooklyn, N. Y. Filed May 27, 1905. Serial No. 262,644.



Claim.—1. A device for applying plastic material to bodies consisting of a compartment adapted to hold the bodies and a plunger entering said compartment, and a means for elevating said plunger, a removable grille located over said compartment and a scraper adapted to pass over said grille.

2. A device for applying plastic material to a series of bodies simultaneously consisting of a series of compartments each adapted to hold several bodies, a plunger located in each compartment and a means for elevating said plunger simultaneously, a grille adapted to lay over the upper end of said compartments and a scraper adapted to pass over said grille.

3. A device for applying plastic material to bodies consisting of a compartment adapted to hold the bodies, a plunger located in said compartment, a rotatable shaft journaled in the framework of the device, a flexible connection between said shaft and a plunger-support, a grille adapted to lay over the upper end of said compartment and a scraper adapted to pass over said grille.

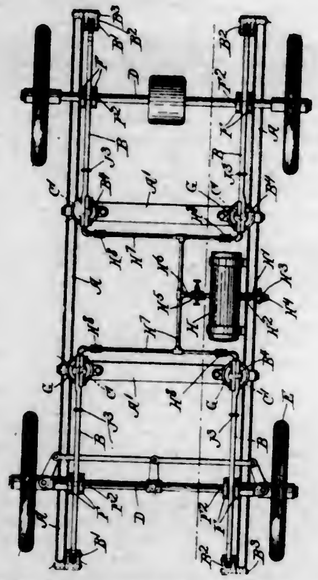
4. A device for applying plastic material to bodies consisting of a compartment adapted to hold the bodies, a plunger located in said compartment, a vertically-movable platform supporting said plunger, a means for moving said platform, a grille adapted to lay over said compartment and a scraper adapted to pass over said grille.

5. A device for applying plastic material to bodies consisting of a compartment adapted to hold the bodies, a plunger located in said compartment, a vertically-movable platform supporting said plunger, guides receiving said platform, a means for elevating said platform and springs for drawing said platform down, a grille adapted to lay over said compartment and a scraper adapted to pass over said grille.

6. A device for applying plastic material to bodies consisting of a series of compartments arranged in a frame, each compartment adapted to hold a number of bodies and a means for elevating the bodies in said compartments, a grille hinged to said frame and adapted to lay over said compartments, and a scraper adapted to pass over said grille.

7. A device for applying plastic material to bodies consisting of a series of compartments located in a frame, each adapted to hold the bodies and a means for elevating the bodies in said compartments, a grille hinged to said frame and adapted to lay over said compartments, a removable guide adapted to rest upon said grille and a scraper adapted to operate within said guide and pass over said grille.

820,707. **VEHICLE.** MURILLO DOWNER, Chicago, Ill. Filed Apr. 11, 1904. Serial No. 202,512.



Claim.—1. A vehicle comprising a vehicle-body and running-gear in combination with an air-cushion device on the vehicle-body and a supporting-lever, such supporting device being interposed between the vehicle-body, its running-gear and such cushioning device.

2. A vehicle comprising a body and running-gear in combination with a fluid-pressure cushion on the vehicle-body, and a supporting device connected at different points longitudinally thereon with the fluid-pressure cushion, the body of the vehicle and its running-gear.

3. A vehicle comprising a vehicle-body, running-gear, a fluid cushioning device, and a lever fulcrumed on the running-gear and being engaged at opposed points thereupon by the vehicle-body and such fluid cushioning device.

4. In a vehicle the combination of a vehicle-body, running-gear, a fluid-pressure device on the vehicle-body, and a supporting-lever interposed between the vehicle-body and its running-gear and associated with the fluid-pressure device so as to put the same in operation under the load of the vehicle.

5. In a supporting and cushioning device for vehicles the combination of an air-cylinder connected with the vehicle-body, a plunger in such cylinder, and a supporting device associated with the running-gear and movably connected at different points on such device with the wagon-body and with the plunger of such cylinder so as to transmit the pressure of the vehicle-body against the air in the cylinder.

6. In a supporting and cushioning device for vehicles the combination of a cylinder with a plunger therein, and a supporting device connected with the running-gear of the vehicle and associated at points on either side of the place of its connection with the running-gear, respectively with the vehicle-body and the cylinder-plunger, so as to support such vehicle-body against the pressure of fluid in the cylinder.

7. In a supporting and cushioning device for vehicles the combination of an air-cylinder connected with the vehicle-body, a plunger in such cylinder, a supporting device associated with the running-gear and connected with the vehicle-body and with the plunger of such cylinder, so as to cushion the vehicle-body against the air in the cylinder, a safety-valve associated with such cylinder, and means connected with the supporting device for automatically operating such valve under predetermined conditions.

8. In a supporting and cushioning device for vehicles the combination of an air-cylinder connected with the vehicle-body, a plunger in such cylinder, and a supporting device associated with the running-gear and movably connected with the wagon-body and with the plunger of such cylinder so as to cushion the vehicle-body against the air in the cylinder, such supporting device comprising a lever fulcrumed upon a part of the running-gear and having pivoted links at each end thereof for making connections with the wagon-body and with the plunger.

9. A vehicle comprising a vehicle-body and running-gear in connection with a plurality of air-cushions, a plurality of supporting devices movably connected with the vehicle-body and with the air-cushions, and fulcrumed on a part of the running-gear of the vehicle, and an air-storage tank with connections to the several air-cushions.

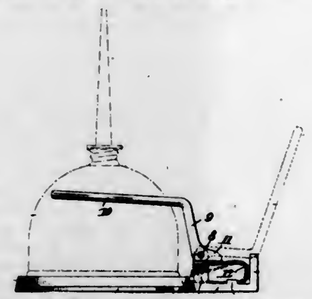
10. A vehicle comprising a vehicle-body, longitudinal supporting-beams connected therewith, a plurality of fluid-pressure cylinders having plungers therein, a plurality of supporting devices movably connected near their respective extremities with the supporting-beams and with the plungers of such fluid-pressure cylinders, and bearing upon the running-gear of the vehicle so as to transmit the load of the vehicle against the fluid in such cylinders, and a fluid-storage device with suitable connections and valves to deliver an equal pressure to all of such fluid-pressure cylinders.

11. A supporting and cushioning device for vehicles comprising an air-cushion, a hanger device on the axle of the vehicle, and a supporting-beam pivotally attached to the vehicle-body near one end, associated with the air-cushion near the other end, and pivotally connected with the hanger device therebetween.

12. A supporting and cushioning device for vehicles comprising an air-cushion, a supporting-beam pivotally attached to one end to the body of the wagon, and associated at the other end with the air-cushion, and a movable device on such supporting device adapted to give a movable connection between such supporting-beam and the running-gear of the vehicle.

13. In a cushioning device for vehicles, the combination of an air-cushion comprising a cylinder and a piston with a lever, the lever being connected with the supporting and supported parts of the vehicle with the piston of such air-cushion so as to transmit the pressure of the load against the air-cushinon device.

820,708. **OIL-CAN HOLDER.** ELISHA A. DURFEY, Penn Yan N. Y. Filed Oct. 30, 1905. Serial No. 285,098.

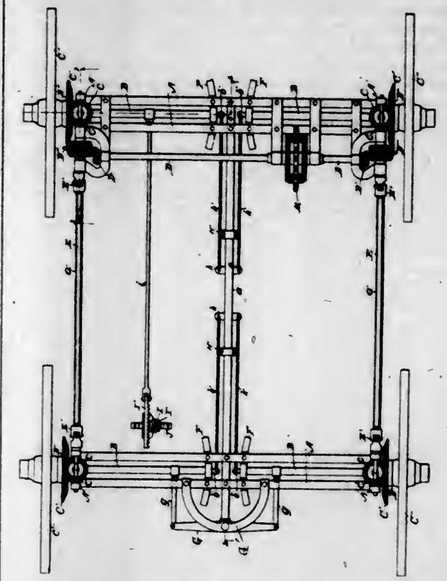


Claim.—1. A can-holder embodying a base provided with an arm, a pair of spaced lugs carried by the arm, a can-clamping member pivotally secured between the lugs, a spring bearing against the member, and a pair of ears carried by the arm and clenched against the spring.

2. A can-holder embodying a base, an arm projecting therefrom and carrying a pair of alined lugs and a terminal lug, a can-clamping member embodying a yoke mounted for pivotal movement between the pair of lugs and provided with a terminal cam, and an approximately U-shaped spring secured to the arm and having one member projecting between the pair of lugs and engaging the cam, the bend of the spring being normally in engagement with the terminal lug.

3. An oil-can holder embodying a base provided with an arm carrying a pair of juxtaposed lugs and a terminal lug, a can-clamping member embodying a yoke, pivoted between the pair of lugs and provided with a terminal cam, an approximately U-shaped spring having its free ends projecting between the pair of lugs and having one member disposed upon the arm, and ears carried by the arm and clenched against the spring.

820,709. **MOTOR-VEHICLE.** CARSON DURKEE, Vicksburg, Mich. Filed June 12, 1905. Serial No. 264,860.



Claim.—1. The combination of the axle-frames; a reach rigidly secured to said axle-frames; a pair of side bars pivotally secured to said axle-frames; wheels; axles therefor; sleeves in which said axles are journaled; pivots for said axle-sleeves; rollers on said sleeves; ways for said rollers secured to said axle-frames; gears secured to said wheels; gears journaled on said axle-pivots arranged to mesh with said gears on said wheels; a sectional driving-shaft; a compensating-gear driving connection for said shaft-sections; shafts arranged in suitable bearings on said axle-frames; gears thereon arranged to drive said gears on said axle-pivots; compensating gears for connecting said driving-shaft sections to said shafts carried by the axle-frames; tumbling-rods having universal-joint connections for connecting said compensating gears to the shafts carried by the forward axle-frames; a steering-rod; a pinion thereon; a rack arranged to mesh with said pinion; a link connecting said rack to one of the rear axle-sleeves; a pair of connecting-bars slidingly secured to said reach; links arranged to connect the diagonally opposite axles to said bars; a pivoted bar; and links for connecting said bar to the forward axles, all coacting for the purpose specified.

2. The combination of the axle-frames; a reach rigidly secured to said axle-frames; wheels; axles therefor; sleeves in which said axles are journaled; pivots for said axle-sleeves; rollers on said sleeves; ways for said rollers secured to said axle-frames; gears secured to said wheels; gears journaled on said axle-pivots arranged to mesh with said gears on said wheels; a sectional driving-shaft; a compensating-gear driving connection for said shaft-sections; shafts arranged in suitable bearings on said axle-frames; gears thereon arranged to drive said gears on said axle-pivots; compensating gears for connecting said driving-shaft sections to said shafts carried by the axle-frames; tumbling-rods having universal-joint connections for connecting said compensating gears to the shafts carried by the forward axle-frames; a steering-rod; a pinion thereon; a rack arranged to mesh with said pinion; a link connecting said rack to one of the rear axle-sleeves; a pair of connecting-bars slidingly secured to said reach; links arranged to connect the diagonally opposite axles to said bars; a pivoted bar; and links for connecting said bar to the forward axles; all coacting for the purpose specified.

3. The combination of the axle-frames; a reach; a pair of side bars pivotally secured to said axle-frames; wheels; axles therefor; sleeves in which said axles are journaled; pivots for said axle-sleeves; rollers on said sleeves; ways for said rollers secured to said axle-frames; gears secured to said wheels; gears journaled on said axle-pivots arranged to mesh with said gears on said wheels; a section driving-shaft; a compensating-gear driving connection for said shaft-sections; shafts arranged in suitable bearings on said axle-frames;

gears thereon arranged to drive said gears on said axle-pivots; compensating gears for connecting said driving-shaft sections to said shafts carried by the axle-frames; tumbling-rods having universal-joint connections for connecting said compensating gears to the shafts carried by the forward axle-frames; a steering-rod; a pinion thereon; a rack arranged to mesh with said pinion; a link connecting said rack to one of the rear axle-sleeves; a pair of connecting-bars slidingly secured to said reach; links arranged to connect the diagonally opposite axles to said bars; a pivoted bar; and links connecting said bar to the forward axles, all coacting for the purpose specified.

4. The combination of the axle-frames; a reach; wheels; axles therefor; sleeves in which said axles are journaled; pivots for said axle-sleeves; rollers on said sleeves; ways for said rollers secured to said axle-frames; gears secured to said wheels; gears journaled on said axle-pivots arranged to mesh with said gears on said wheels; a sectional driving-shaft; a compensating-gear driving connection for said shaft-sections; shafts arranged in suitable bearings on said axle-frames; gears thereon arranged to drive said gears on said axle-pivots; compensating gears for connecting said driving-shaft sections to said shafts carried by the axle-frames; tumbling-rods having universal-joint connections for connecting said compensating gears to the shafts carried by the forward axle-frames; a steering-rod; a pinion thereon; a rack arranged to mesh with said pinion; a link connecting said rack to one of the rear axle-sleeves; a pair of connecting-bars slidingly secured to said reach; links arranged to connect the diagonally opposite axles to said bars; a pivoted bar; and links for connecting said bar to the forward axle, all coacting for the purpose specified.

5. The combination of the axle-frames; a reach rigidly secured to said axle-frames; wheels; axles therefor; sleeves in which said axles are journaled; pivots for said axle-sleeves; rollers on said sleeves; ways for said rollers secured to said axle-frames; gears secured to said wheels; gears journaled on said axle-pivots arranged to mesh with said gears on said wheels; a sectional driving-shaft; a compensating-gear driving connection for said shaft-sections; shafts arranged in suitable bearings on said axle-frames; gears thereon arranged to drive said gears on said axle-pivots; compensating gears for connecting said driving-shaft sections to said shafts carried by the axle-frames; a steering-rod; a pinion thereon; a rack arranged to mesh with said pinion; a link connecting said rack to one of the rear axle-sleeves; a pair of connecting-bars slidingly secured to said reach; links arranged to connect the diagonally opposite axles to said bars; a pivoted bar; and links for connecting said bar to the forward axles, all coacting for the purpose specified.

6. The combination of the axle-frames; a reach; wheels; axles therefor; sleeves in which said axles are journaled; pivots for said axle-sleeves; rollers on said sleeves; ways for said rollers secured to said axle-frames; gears secured to said wheels; gears journaled on said axle-pivots arranged to mesh with said gears on said wheels; a sectional driving-shaft; a compensating-gear driving connection for said shaft-sections; shafts arranged in suitable bearings on said axle-frames; gears thereon arranged to drive said gears on said axle-pivots; compensating gears for connecting said driving-shaft sections to said shafts carried by the axle-frames; a steering-rod; a pinion thereon; a rack arranged to mesh with said pinion; a link connecting said rack to one of the rear axle-sleeves; a pair of connecting-bars slidingly secured to said reach; links arranged to connect the diagonally opposite axles to said bars; a pivoted bar; and links for connecting said bar to the forward axles, all coacting for the purpose specified.

7. The combination of the axle-frames; a reach rigidly secured to said axle-frames; a pair of side bars pivotally secured to said axle-frames; wheels; axles therefor; sleeves in which said axles are journaled; pivots for said axle-sleeves; rollers on said sleeves; ways for said rollers secured to said axle-frames; gears secured to said wheels; gears journaled on said axle-pivots arranged to mesh with said gears on said wheels; a sectional driving-shaft; a compensating-gear driving connection for said shaft-sections; shafts arranged in suitable bearings on said axle-frames; gears thereon arranged to drive said gears on said axle-pivots; compensating gears for connecting said driving-shaft sections to said shafts carried by the axle-frames; and tumbling-rods having universal-joint connections for connecting said compensating gears to the shafts carried by the forward axle-frames; for the purpose specified.

8. The combination of the axle-frames; a reach rigidly secured to said axle-frames; wheels; axles therefor; sleeves in which said axles are journaled; pivots for said axle-sleeves; rollers on said sleeves; ways for said rollers secured to said axle-frames; gears secured to said wheels; gears journaled on said axle-pivots arranged to mesh with said gears on said wheels; a sectional driving-shaft; a compensating-gear driving-shaft connection for said shaft-sections; shafts arranged in suitable bearings on said axle-frames; gears thereon arranged to drive said gears on said axle-pivots; compensating gears for connecting said driving-shaft sections to said shafts carried by the axle-frames; and tumbling-rods having universal-joint connections for connecting said compensating gears to the shafts by the forward axle-frames, all coacting for the purpose specified.

9. The combination of the axle-frames; a reach; a pair of side bars pivotally secured to said axle-frames; wheels; axles therefor; sleeves in which said axles are journaled; pivots for said axle-sleeves; rollers on said sleeves; ways for said rollers secured to said axle-frames; gears secured to said wheels; gears journaled on said axle-pivots arranged to mesh with said gears on said wheels; a sectional driving-shaft; a compensating-gear driving connection for said shaft-sections; shafts arranged in suitable bearings on said axle-frames; gears thereon arranged to drive said gears on said axle-pivots; compensating gears for connecting said driving-shaft sections to said shafts carried by the axle-frames; and tumbling-rods having universal-joint connections for connecting said compensating gears to the shafts carried by the forward axle-frames, all coacting for the purpose specified.

10. The combination of the axle-frames; a reach; wheels; axles therefor; sleeves in which said axles are journaled; pivots for said axle-sleeves; rollers on said sleeves; yoke-like ways for said rollers secured to said axle-frames; gears secured to said wheels; gears journaled on said axle-pivots arranged to mesh with said gears on said wheels; a sectional driving-shaft; a compensating-gear driving connection for said shaft-sections; shafts arranged in suitable bearings on said axle-frames; gears thereon arranged to drive said gears on said axle-pivots; compensating gears for connecting said driving-shaft sections to said shafts carried by the axle-frames; and tumbling-rods having universal-joint connections for connecting said compensating gears to the shafts carried by the forward axle-frames, all coacting for the purpose specified.

11. The combination of the axle-frames; a reach; wheels; axles therefor; sleeves in which said axles are journaled; pivots for said axle-sleeves; rollers on said sleeves; ways for said rollers secured to said axle-frames; gears secured to said wheels; gears journaled on said axle-pivots arranged to mesh with said gears on said wheels; a sectional driving-shaft; a compensating-gear driving connection for said shaft-sections; shafts arranged in suitable bearings on said axle-frames; gears arranged thereon to drive said gears on said axle-pivots; compensating gears for connecting said driving-shaft sections to said shafts carried by the axle-frames; tumbling-rods having universal-joint connections for connecting said compensating gears to the shafts carried by the forward axle-frames; a steering-rod; connections therefrom to one of said rear axles; a pair of connecting-bars slidingly secured to said reach; links arranged to connect the diagonally opposite axles to said bars; a pivoted bar; and links for connecting said bar to the forward axles, all coacting for the purpose specified.

12. The combination of the axle-frames; a reach; wheels; axles therefor; sleeves in which said axles are journaled; pivots for said axle-sleeves; rollers on said sleeves; ways for said rollers secured to said axle-frames; gears secured to said wheels; gears journaled on said axle-pivots arranged to mesh with said gears on said wheels; a sectional driving-shaft; a compensating-gear driving connection for said shaft-sections; shafts arranged in suitable bearings on said axle-frames; gears thereon arranged to drive said gears on said axle-pivots; compensating gears for connecting said driving-shaft sections to said shafts carried by the axle-frames; a steering-rod; connections therefrom to one of said rear axles; a pair of connecting-bars slidingly secured to said reach; links arranged to connect the diagonally opposite axles to said bars; a pivoted bar; and links for connecting said bar to the forward axles, all coacting for the purpose specified.

13. The combination of the axle-frames; wheels; axles therefor; sleeves in which said axles are journaled; pivots for said axle-sleeves; rollers on said sleeves; ways for said rollers secured to said axle-frames; gears secured to said wheels; gears journaled on said axle-pivots arranged to mesh with said gears on said wheels; a sectional driving-shaft; a compensating-gear driving connection for said shaft-sections; shafts arranged in suitable bearings on said axle-frames; gears arranged thereon to drive said gears on said axle-pivots compensating gears for connecting said driving-shaft sections to said shafts carried by said axle-frames; tumbling-rods having universal-joint connections for connecting said compensating gears to the shafts carried by the forward axle-frames; a steering-rod; connections therefrom to one of said rear axles; means for securing the diagonally opposite axles together; a pivoted bar; and links for connecting said bar to the forward axles, all coacting for the purpose specified.

14. The combination of the axle-frames; wheels; axles therefor; sleeves in which said axles are journaled; pivots for said axle-sleeves; rollers on said sleeves; ways for said rollers secured to said axle-frames; gears secured to said wheels; gears journaled on said axle-pivots arranged to mesh with said gears on said wheels; a sectional driving-shaft; a compensating-gear driving connection for said shaft-sections; shafts arranged in suitable bearings on said axle-frames; gears thereon arranged to drive said gears on said axle-pivots; compensating gears for connecting said driving-shaft sections to said shafts carried by the axle-frames; a steering-rod; connections therefrom to one of said rear axles; means for securing the diagonally opposite axles together; a pivoted bar; and links for connecting said bar to the forward axles, all coacting for the purpose specified.

15. The combination of the axle-frames; a reach; wheels; axles therefor; sleeves in which said axles are journaled; pivots for said axle-sleeves; rollers on said sleeves; ways for said rollers secured to said axle-frames; gears secured to said wheels; gears journaled on said axle-pivots arranged to mesh with said gears on said wheels; a driving-shaft; shafts arranged in suitable bearings on said axle-frames; gears thereon arranged to drive said gears on said axle-pivots; connections from said driving-shaft sections to said shafts on said axle-frames; a steering-rod; connections therefrom to one of said rear axles; a pair of connecting-bars slidingly secured to said reach; links arranged to connect the diagonally opposite axles to said bars; a pivoted bar; and links for connecting said bar to the forward axles, all coacting for the purpose specified.

16. The combination of the axle-frames; wheels; axles therefor; sleeves in which said axles are journaled; pivots for said axle-sleeves; rollers on said sleeves; ways for said rollers secured to said axle-frames; gears secured to said wheels; gears journaled on said axle-pivots arranged to mesh with said gears on said wheels; a driving-shaft; shafts arranged in suitable bearings on said axle-frames; gears thereon arranged to drive said gears on said axle-pivots; connections from said driving-shaft sections to said shaft on said axle-frames; a steering-rod; connections therefrom to one of said rear axles; means for securing the diagonally opposite axles together; a pivoted bar; and links for connecting said bar to the forward axles, all coacting for the purpose specified.

17. The combination of the axle-frames; a reach; wheels; axles therefor; sleeves in which said axles are journaled; pivots for said axle-sleeves; rollers on said sleeves; ways for said rollers secured to said axle-frames; gears secured to said wheels; gears journaled on said axle-pivots arranged to mesh with said gears on said wheels; a sectional driving-shaft; a compensating-gear driving connection for said shaft-sections; shafts arranged in suitable bearing on said axle-frames; gears thereon arranged to drive said gears on said axle-pivots; compensating gears for connecting said driving-shaft sections to said shafts carried by the axle-frame; and tumbling-rods having universal-joint connections for connecting said compensating gears to the shafts carried by the forward axle-frames, all coacting for the purpose specified.

18. The combination of the axle-frames; a reach; wheels; axles therefor; sleeves in which said axles are journaled; pivots for said axle-sleeves; rollers on said sleeves; ways for said rollers secured to said axle-frames; gears secured to said wheels; gears journaled on said axle-pivots arranged to mesh with said gears; on said wheels; a sectional driving-shaft, a compensating-gear driving connection for said shaft-sections; shafts arranged in suitable bearings on said axle-frames; gears thereon arranged to drive said gears on said axle-pivots; and compensating gears for connecting said driving-shaft sections to said shafts carried by the axle-frames; for the purpose specified.

19. The combination of the axle-frames; a reach; wheels; axles therefor; sleeves in which said axles are journaled; pivots for said axle-sleeves; rollers on said sleeves; ways for said rollers secured to said axle-frames; gears secured to said wheels; gears journaled on said axle-pivots arranged to mesh with said gears on said wheels; a driving-shaft; shafts arranged in suitable bearings on said axle-frames; gears thereon arranged to drive said gears on said axle-pivots; and connections from said driving-shaft sections to said shafts on said axle-frames, all coacting for the purpose specified.

20. The combination of the axle-frames; wheels; axles therefor; sleeves in which said axles are journaled; pivots for said axle-sleeves; rollers on said sleeves; ways for said rollers secured to said axle-frames; gears secured to said wheels; gears journaled on said

axle-pivots arranged to mesh with said gears on said wheels; a driving-shaft; shafts arranged in suitable bearings on said axle-frames; gears thereon arranged to drive said gears on said axle-pivots; and connections from said driving-shaft sections to said shafts on said axle-frames, all coacting for the purpose specified.

21. The combination of the axle-frames; wheels; axles therefor; pivots for said axles; gears secured to said wheels; gears journaled on said axle-pivots, arranged to mesh with said gears on said wheels; a sectional driving-shaft; a compensating-gear driving connection for said shaft-sections; shafts arranged in suitable bearings on saidaxle-frames; gears thereon arranged to drive said gears on said axle-pivots; compensating gears for connecting said driving-shaft sections to said shafts, carried by the axle-frames; tumbling-rods having universal-joint connections for connecting said compensating gears to the shafts carried by the forward axle-frames; a steering-rod connected to one of said axles; connections for the diagonally opposite axles; a pivoted bar; and links for connecting said bar to the forward axle, for the purpose specified.

22. The combination of the axle-frames; wheels; axles therefor; pivots on said axles; gears secured to said wheels; gears journaled on said axle-pivots, arranged to mesh with said gears on said wheels; a sectional driving-shaft; a compensating gear driving connection for said shaft-sections; shafts arranged in suitable bearings on said axle-frames; gears thereon arranged to drive said gears on said axle-pivots; compensating gears for connecting said driving-shaft sections to said shafts, carried by the axle-frames; a steering-rod connected to one of said axles; connections for the diagonally opposite axles; a pivoted bar; and links for connecting said bar to the forward axle, for the purpose specified.

23. The combination of the axle-frames; wheels; axles therefor; pivots for said axles; gears secured to said wheels; gears journaled on said axle-pivots, arranged to mesh with said gears on said wheels; a sectional driving-shaft; a compensating-gear driving connection for said shaft-sections; shafts arranged in suitable bearings on said axle-frames; gears thereon arranged to drive said gears on said axle-pivots; compensating gears for connecting said driving-shaft sections to said shafts, carried by the axle-frames; tumbling-rods having universal-joint connections for connecting said compensating gears to the shafts carried by the forward axle-frames, for the purpose specified.

24. The combination of the axle-frames; wheels; axles therefor; pivots for said axles; gears secured to said wheels; gears journaled on said axle-pivots, arranged to mesh with said gears on said wheels; a sectional driving-shaft; a compensating-gear driving connection for said shaft-sections; shafts arranged in suitable bearings on said axle-frames; gears thereon arranged to drive said gears on said axle-pivots; compensating gears for connecting said driving-shaft sections to said shafts, carried by the axle-frames, for the purpose specified.

25. The combination of the axle-frames; wheels; axles therefor; pivots for said axles; gears secured to said wheels; gears journaled on said axle-pivots, arranged to mesh with said gears on said wheels; means for driving said gears; a steering-rod connected to one of said axles; connections for the diagonally opposite axles; a pivoted bar; and links for connecting said bar to the forward axle, for the purpose specified.

26. The combination of the axle-frames; wheels; axles therefor; pivots for said axles; gears secured to said wheels; gears journaled on said axle-pivots, arranged to mesh with said gears on said wheels; means for driving said gears; a steering-rod connected to one of said axles; connections for the diagonally opposite axles; and equalizing connections for one pair of axles.

27. The combination of an axle-frame; wheels; axles therefor; gears connected to the said wheels; gears carried by said axle-frame, arranged to mesh with said gears on said wheels, the axes of which coincide with the axes of the said axle-pivots; a sectional driving-shaft; a compensating-gear driving connection for said driving-shaft sections; and compensating gears for connecting said driving-shaft sections to said gears carried by the said axle-frame, for the purpose specified.

28. The combination of an axle-frame; wheels; axles therefor; gears connected to the said wheels; gears carried by said axle-frame, arranged to mesh with said gears on said wheels, the axes of which coincide with the axes of the said axle-pivots; a driving-shaft; and compensating gears for connecting said driving-shaft to said gears carried by the said axle-frame, for the purpose specified.

29. The combination of the axle-frames; a reach rigidly secured to said axle-frame; a pair of side-bars pivotally secured to said axle-frame; wheels; axles therefor; sleeves in which said axles are journaled; pivots for said axle-sleeves; rollers on said axle-sleeves;

yoke-like ways for said rollers, secured to said axle-frame; a steering-rod; a pinion thereon; a rack arranged to mesh with said pinion; a link connecting said rack to one of the rear axle-sleeves; a pair of connecting-bars slidingly secured to said reach; links arranged to connect the diagonally opposite axles to said bars; a pivoted bar; and links connecting said pivoted bar to the forward axles, all coacting for the purpose specified.

30. The combination of the axle-frames; a reach rigidly secured to said axle-frame; a pair of side-bars pivotally secured to said axle-frame; wheels; axles therefor; sleeves in which said axles are journaled; pivots for said axle-sleeves; rollers on said axle-sleeves; ways for said rollers, secured to said axle-frame; a steering-rod connected to one of said axles; a pair of connecting-bars slidingly secured to said reach; links arranged to connect the diagonally opposite axles to said bars; a pivoted bar; and links for connecting said pivoted bar to the forward axles, all coacting for the purpose specified.

31. The combination of the axle-frames; a reach rigidly secured to said axle-frame; a pair of side-bars pivotally secured to said axle-frame; wheels; axles therefor; sleeves in which said axles are journaled; pivots for said axle-sleeves; rollers on said axle-sleeves; yoke-like ways for said rollers, secured to said axle-frame; a steering-rod; a pinion thereon; a rack arranged to mesh with said pinion; a link connecting said rack to one of the rear axle-sleeves; connections for the diagonally opposite axles; a pivoted bar; and links for connecting said pivoted bar to the forward axles, all coacting for the purpose specified.

32. The combination of the axle-frames; a reach rigidly secured to said axle-frame; a pair of side-bars pivotally secured to said axle-frame; wheels; axles therefor; sleeves in which said axles are journaled; pivots for said axle-sleeves; rollers on said axle-sleeves; ways for said rollers, secured to said axle-frame; a steering-rod connected to one of said axles; connections for the diagonally opposite axles; a pivoted bar; and links for connecting said pivoted bar to the forward axles, all coacting for the purpose specified.

33. The combination of the axle-frames; wheels; axles therefor; pivots for said axles; a steering-rod; a pinion thereon; a rack arranged to mesh with said pinion; a link connecting said rack to one of the rear axle-sleeves; a pair of connecting-bars slidingly secured to said reach; links arranged to connect the diagonally opposite axles to said bars; a pivoted bar; and links for connecting said pivoted bar to the forward axles, all coacting for the purpose specified.

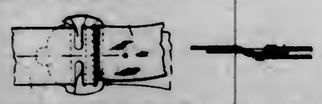
34. The combination of the axle-frames; wheels; axles therefor; pivots for said axles; a steering-rod connected to one of said axles; a pair of connecting-bars slidingly secured to said reach; links arranged to connect the diagonally opposite axles to said bars; a pivoted bar; and links for connecting said pivoted bar to the forward axles, all coacting for the purpose specified.

35. The combination of the axle-frames; wheels; axles therefor; pivots for said axles; a steering-rod; a pinion thereon; a rack arranged to mesh with said pinion; a link connecting said rack to one of the rear axle-sleeves; connections for the diagonally opposite axles; a pivoted bar; and links for connecting said pivoted bar to the forward axles, all coacting for the purpose specified.

36. The combination of the axle-frames; wheels; axles therefor; pivots for said axles; a steering-rod connected to one of said axles; connections for the diagonally opposite axles; a pivoted bar; and links for connecting said pivoted bar to the forward axles, all coacting for the purpose specified.

37. The combination of the axle-frames; wheels; axles therefor; pivots for said axles; rollers on said axles; ways for said rollers carried by said axle-frames; and connections for the diagonally opposite axles, for the purpose specified.

820,710. **BUCKLE.** GEORGE H. FORD, New Haven, Conn. Filed Feb. 6, 1903. Serial No. 142,201.



Claim.—1. In a buckle, the combination with a frame, consisting of a single piece of sheet metal, having a plurality of transverse slots, and the alternating cross-strips of metal bounding said slots divided to form openings between its inwardly-projecting ends; of a piece of webbing having its lower reach attached to one of the divided cross-strips and the upper reach extended through the slot bounded by the divided strip to which the lower reach is attached, so that the upper reach is normally held in proximity to the end of the lower reach, substantially as described.

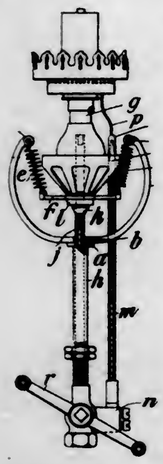
2. In a buckle, the combination with a frame consisting of a single piece of sheet metal having three transverse slots, the cross-strip at one end of said buckle bounding one of said slots being divided to form an opening between its inwardly-projecting ends, and the cross-strip of metal bounding the other side of said slot being on a plane different from that of the other cross-strips; of a piece of webbing having its lower reach attached to said divided cross-strip and its upper reach extended through the slot bounded by said divided strip and the strip on said different plane, substantially as described.

3. In a buckle, the combination with a frame consisting of a single piece of sheet metal having three transverse slots, the cross-strip at one end of said buckle bounding one of said slots being divided to form an opening between its inwardly-projecting ends, and the cross-strip separating the other two slots being likewise divided; of a piece of webbing having its lower reach attached to the divided end cross-strip, and its upper reach extended through said three slots, substantially as described.

4. As an article of manufacture, a buckle, consisting of a single piece of sheet metal, having three transverse slots, and the cross-strip of metal at one end of said buckle bounding one of said slots divided to form an opening between its inwardly-projecting ends, and the cross-strip of metal separating the other two slots being likewise divided, substantially as described.

5. As an article of manufacture, a buckle, consisting of a single piece of sheet metal having a tongue at one end; transverse slots; a strip divided to form an opening separating two of said slots; and a similarly-divided strip bounding one of said slots, the latter being at one end of said buckle and a cross-strip, being on a plane different from that of the buckle, substantially as described.

820,711. **INCANDESCENT GAS BURNER AND LAMP.** ADOLPHUS S. FRANCIS, London, England. Filed Feb. 6, 1905. Serial No. 244,484.



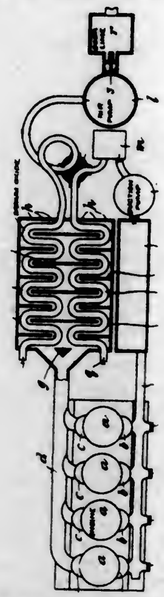
Claim.—1. The combination with an incandescent gas-lamp, of a supporting-frame fixed to the bottom thereof, a fixed supporting-frame having bowed arms sufficiently concaved to allow lateral play of the first-named frame, springs connecting said arms with the first-named frame and having their points of connection situated considerably below the top of the burner of said lamp and so arranged that the springs are inclined to counteract lateral play of the first-named frame, and a flexible tube for supplying the burner of said lamp.

2. The combination with an incandescent gas-lamp, of a supporting-frame fixed to the bottom thereof, a fixed tubular support, a frame secured to said support having bowed supporting-arms sufficiently concaved to allow lateral play of the first-named frame, springs connecting said arms with the first-named frame and having their points of connection situated considerably below the top of the burner of said lamp and so arranged that the springs are inclined to counteract lateral play of the first-named frame, and a flexible gas-supply tube partly contained in said tubular support and connected at one end to the lower end of said support and at the other end to the lamp.

3. The combination with an incandescent gas-lamp, of a fixed frame mounted on a rigid gas-supply pipe and provided with arms extending upward and inward, a burner-supporting frame provided with radial arms, helical springs connecting the radial arms of the burner-supporting frame with the fixed frame, a burner, a flexible tube for supplying the said burner, a by-pass, a second flexible tube for supplying the by-pass or pilot burner, a nipple on the end of the second flexible tube adapted to be loosely inserted into the by-pass tube, substantially as described and shown.

4. The combination with an incandescent gas-lamp, of a supporting-frame fixed thereto, a fixed tubular support, a frame secured to said support and comprising bowed supporting-arms, springs connecting said arms with the first-named frame and having their points of connection so arranged that said springs are inclined, a flexible gas-supply tube partly contained in said tubular support and connected at one end to the lower end of said support and at the other end to the lamp, a by-pass, a second flexible tube for supplying the by-pass or pilot burner, a nipple on the end of the second flexible tube adapted to be loosely inserted into the by-pass tube, substantially as set forth.

820,712. **INTERNAL-COMBUSTION ENGINE.** HARDINGE C. GIFFARD, London, England. Filed Apr. 28, 1905. Serial No. 257,840.

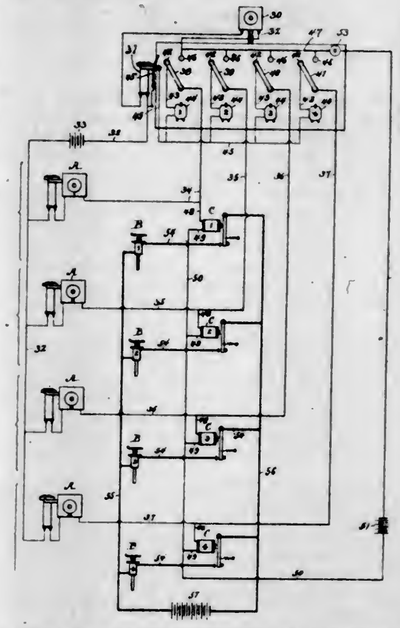


Claim.—1. The combination with an internal-combustion engine of two separate receptacles each containing a chemical substance capable of oxidation and reduction, a casing surrounding said receptacles, means for conveying the waste gases of the engine to said casing, means for supplying air to said receptacles alternately and for allowing gases to pass out from the receptacles, means for reducing the pressure in said receptacles alternately, and means for supplying evolved oxygen to the intake of the engine.

2. The combination with an internal-combustion engine of an apparatus containing a chemical substance which is capable of oxidation and reduction, a casing and means for conveying the waste gases of the engine to said casing, whereby the apparatus is heated, means for supplying air intermittently to said apparatus, means for withdrawing gas from said apparatus, and means for supplying the evolved gas to the intake of the engine.

820,713. **CREDIT-SYSTEM APPARATUS.** JACOB O. GREENWALD, Milwaukee, Wis. Original application filed Sept. 21, 1905, Serial No. 279,391. Divided and this application filed Feb. 2, 1906. Serial No. 299,094.

Claim.—1. In a device of the character described, a magnetic check-punching device comprising a solenoid, a core therefor, a spring-retracted punch member in the path of the core and adapted to be struck and moved thereby, punch-pins carried by the punch member, a plate having perforations in which the punch-pins project, and a die adapted to receive a check and having perforations into which the punch-pins may be driven through the check when the punch member is struck by the solenoid-core.



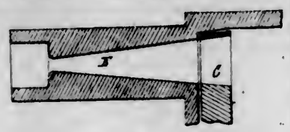
2. In a device of the character described, a magnetic check-punching device comprising a solenoid, a core therefor, a punch member in the path of the core and adapted to be struck and moved thereby, punch-pins carried by the punch member, a plate having perforations in which the punch-pins project, said punch member having a shouldered reduced portion, a punch-rest connected to the plate and having an opening through which the reduced portion of the punch member passes, a coil-spring surrounding the reduced portion of the punch member and bearing against its shoulder and against the punch-rest, and a check-receiving die mounted on the plate and having perforations into which the punch-pins are adapted to be driven through the check when the punch member is struck by the solenoid-core.

3. In a device of the character described, a check-punching means comprising a solenoid, a core-tube for the solenoid extending beneath the same, a core operating in the core-tube, a plate to which the core-tube is rigidly secured, a punch member having a reduced portion projecting into the core-tube and adapted to be struck and moved by the core, a series of punch-pins carried by the punch member, a top plate connected with the before-mentioned plate at a distance therefrom and having perforations into which the punch-pins extend, a punch-rest mounted on the top plate for supporting the punch member and having an opening through which the reduced portion of the punch member extends, a coil-spring surrounding and engaging the reduced portion of the punch member and bearing on the punch-rest, a check-receiving die-strip on the top plate having perforations into which the punch-pins are adapted to be driven when the punch member is struck by the solenoid-core, a bracing-strip on the die-strip adapted to prevent its being bent out of position, and guides on the top plate for determining the position of a check to be operated upon by the punching means.

820,714. **ELASTIC-FLUID TURBINE.** ALBERT R. GUY, Trenton, N. J., assignor to De Laval Steam Turbine Company. Filed Apr. 14, 1905. Serial No. 255,517.

Claim.—1. The combination of an elastic-fluid turbine-wheel

having a working passage of maximum cross-sectional area at its exhaust end, and an expansion-nozzle constructed to expand the working fluid to the pressure at the exhaust end of said passage prior to the entrance of said fluid into said passage.



2. The combination of an elastic-fluid turbine-wheel having a working passage gradually increasing in cross-sectional area in the direction of fluid-flow, and an expansion-nozzle constructed to expand the working fluid to the pressure at the exhaust end of said passage prior to the entrance of said fluid into said passage.

3. The combination of an elastic-fluid turbine-wheel having an annular working passage, the outer bounding periphery of which is parallel in cross-section to the axis of said wheel, and the inner periphery of which is diverging from said outer periphery in the direction of fluid-flow through said passage, and an expansion-nozzle constructed to expand the working fluid to the pressure at the exhaust end of said passage prior to the entrance of said fluid into said passage.

4. An elastic-fluid turbine-wheel of the axial-flow type having an annular working passage, the outer bounding periphery of which is parallel in cross-section to the axis of said wheel and the inner periphery of which is diverging from said outer periphery in the direction of fluid-flow through said wheel, and an expansion-nozzle constructed to expand the working fluid to the pressure at the exhaust end of said passage prior to the entrance of said fluid into said passage.

5. An elastic-fluid turbine-wheel of the axial-flow impulse type having an annular working passage, the outer bounding periphery of which is parallel in cross-section to the axis of said wheel and the inner periphery of which is diverging from said outer periphery in the direction of fluid-flow through said wheel, and an expansion-nozzle constructed to expand the working fluid to the pressure at the exhaust end of said passage prior to the entrance of said fluid into said passage.

820,715. **CLOTHES-LINE FASTENER.** JOSEPH HAHN and ANTON F. HAHN, New York, N. Y. Filed Oct. 7, 1905. Serial No. 281,737.



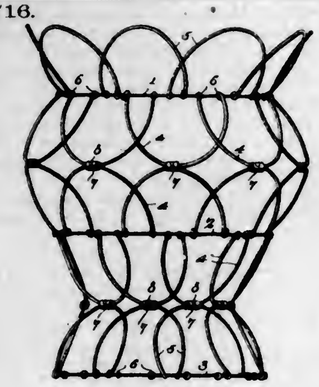
Claim.—A device of the character described, comprising an elongated body having a pocket intermediate the ends thereof, the said body being provided with an opening in one end thereof communicating with said pocket, a channel in said body adjacent to said pocket, said body being provided at its opposite end with an opening communicating with said channel, and an inclined plane in said channel adjacent to the opening communicating therewith.

820,716. **WIRE ARTICLE.** ALONZO HAYNES, Jackson, and JOHN F. MARTIN, Albion, Mich.; said Haynes assignor of his right to Albert W. Austin, Jackson, Mich. Filed May 1, 1905. Serial No. 258,339.

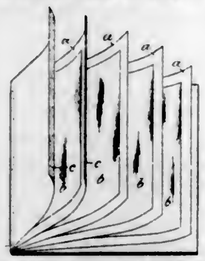
Claim.—1. A wire article embodying a plurality of assembling members, body members having their terminals pivotally connected with the assembling members, and means for connecting the intermediate portions of the body members, consisting of bands adapted to encircle the members, one end of each of the bands being provided with a tongue and the other end with a recess to receive the tongue.

2. A wire article embodying a plurality of assembling members, body members having their terminals pivotally connected with the assembling members, means for connecting the intermediate portions of the body members, consisting of bands adapted to encircle the members, each band being provided at one end with a tongue and at the other end with a recess to receive the tongue, and end body members having their terminals pivotally connected with the outer assembling members and held out of contact with the like terminals of the body members.

820,716.



820,717. **GOLD-LEAF BOOK.** ROBERT HENKE, Jr., New York, N. Y. Filed Jan. 25, 1906. Serial No. 297,867.



Claim.—The method of making a gold-leaf book which consists in binding a number of leaves of tissue-paper into a book, interposing a gold-leaf and a sheet of transfer-paper powdered on both sides between each pair of tissue-leaves, subjecting the book to pressure, and then removing the transfer-sheets, substantially as specified.

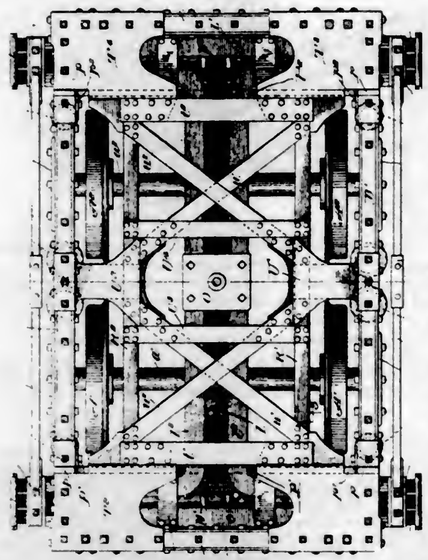
820,718. **CAR-TRUCK.** PETER N. HYDEN, Chicago, Ill., assignor of five-sixths to Ida Francis Hyden and one-sixth to Edward S. Endres, Chicago, Ill. Filed June 17, 1905. Serial No. 265,742.

Claim.—1. In a car-truck the combination with a pair of axles and wheels thereon, of equalizer-bars on the outside of each pair of wheels, springs mounted upon the equalizer-bars, a truck-frame supported upon said springs, spring-planks depending from the opposite ends of the truck-frame, springs mounted upon said planks, bolsters supported upon said springs, longitudinal beams rigidly connecting the bolsters at each end of the truck, and a central bearing supported upon said longitudinal beams.

2. In a car-truck the combination with a truck-frame, of equalizer-bars beneath the side sills of the truck-frame and extending over the axle journal-bearings, coiled springs interposed between the equalizer-bars and side sills of the truck-frame, spring-planks depending from the opposite ends of the truck-frame, elliptical springs mounted upon said planks, bolsters supported upon said elliptical springs, and longitudinal beams rigidly connecting the bolsters at each end of the truck.

3. In a car-truck, the combination with two axles having wheels thereon, of a truck-frame, equalizer-bars located beneath the side sills of the truck-frame and extending above the axle journal-bearings, coiled springs mounted upon the equalizer-bars at the ends thereof and intermediate of the axles upon which the side sills of the truck-frame are supported, spring-planks depending from the opposite ends of the truck-frame, two elliptical springs supported upon each plank, a bolster supported upon the pair of elliptical springs above each plank, and longitudinal beams rigidly connecting the bolsters at each end of the truck.

4. In a car-truck, the combination with axles and wheels thereon of a truck-frame, equalizer-bars located beneath the side sills of the truck-frame and extending around the axle journal-bearings, coiled springs interposed between the equalizer-bars and side sills of the frame, spring-planks depending from the opposite ends of the truck-frame, elliptical springs mounted upon said planks, bolsters supported upon said elliptical springs the ends of which project beneath and outside of the side sills of the frame, side bearings the ends of which are supported upon the projecting ends of the bolsters, and longitudinal beams rigidly connecting the bolsters at the opposite ends of the truck.



5. In a car-truck, the combination with the axles and wheels thereon, of a truck-frame, equalizer-bars located beneath the side sills of the frame and supported upon the axle journal-bearings, coiled springs interposed between the equalizer-bars and side sills of the truck, cross-sections rigidly uniting the side sills adjacent to but spaced apart from the end sills of the truck-frame, spring-planks depending from the end sills and adjacent cross-sections, springs mounted upon said planks, bolsters located between each end sill and the adjacent cross-section and supported above said spring-plank, and longitudinal beams for rigidly connecting the bolsters at the opposite ends of the truck.

6. In a car-truck, the combination with the axles and wheels thereon of a truck-frame, equalizer-bars located beneath the side sills of the frame and supported upon the axle journal-bearings, coiled springs interposed between the equalizer-bars and side sills of the truck, cross-sections rigidly uniting the side sills adjacent to but spaced apart from the end sills of the truck-frame, spring-planks depending from the end sills and adjacent cross-sections, springs mounted upon said planks, bolsters located between each end sill and the adjacent cross-section and supported above said spring-planks, longitudinal beams for rigidly connecting the bolsters at the opposite ends of the truck and chafing-plates interposed between the opposite surfaces of the bolsters and the adjacent surfaces of the end sills and cross-sections.

7. In a car-truck, the combination with the axles and wheels thereon of a truck-frame, equalizer-bars located beneath the side sills of the frame and supported upon the axle journal-bearings, coiled springs interposed between the equalizer-bars and side sills of the truck, cross-sections rigidly uniting the side sills adjacent to but spaced apart from the end sills of the truck-frame, spring-planks depending from the end sills and adjacent cross-sections, springs mounted upon said planks, bolsters located between each end sill and the adjacent cross-section and supported above said spring-planks, and longitudinal beams for rigidly connecting the bolsters at the opposite ends of the truck, longitudinal beams rigidly connected at their ends to the cross-sections and corner-braces rigidly uniting the end and side sills to the cross-sections and longitudinal beams.

8. In a car-truck, the combination with the axles and wheels thereon of a truck-frame, equalizer-bars located beneath the side sills of the frame and supported upon the axle journal-bearings, coiled springs interposed between the equalizer-bars and side sills of the truck, cross-sections rigidly uniting the side sills adjacent to but spaced apart from the side sills of the truck-frame, spring-planks depending from the end sills and adjacent cross-sections, springs mounted upon said planks, bolsters located between each end sill and the adjacent cross-section and supported above said spring-planks, longitudinal beams for rigidly connecting the bolsters at the opposite ends of the truck, longitudinal beams rigidly connected at their ends to the cross-sections and corner-braces rigidly uniting the end and side sills to the cross-sections and longitudinal beams, intermediate braces rigidly uniting the side sills to said longitudinal beams and diagonal braces uniting said corner and intermediate braces.

9. In a car-truck, the combination with a pair of axles and wheels thereon, of a truck-frame, equalizer-bars supported upon the axle journal-bearings, coiled springs interposed between the equalizer-bars and side sills of the truck-frame, spring-planks depending from the opposite ends of the truck-frame, springs mounted upon said planks, bolsters supported upon said spring-planks each composed of an I-beam connected to adjacent parallel end portions of two longitudinal I-beams extending between and rigidly connecting the bolsters.

10. In a car-truck, the combination with a pair of axles and wheels thereon, of a truck-frame, equalizer-bars supported upon the axle journal-bearings, coiled springs interposed between the equalizer-bars and side sills of the truck-frame, spring-planks depending from the opposite ends of the truck-frame, elliptical springs mounted upon said planks, a structure supported upon said elliptical springs composed of transverse I-beams located adjacent the end sills of the truck and central parallel longitudinal I-beams extending between said transverse I-beams and having outwardly-bent portions located adjacent and rigidly secured to said transverse I-beams, and a center bearing supported upon said longitudinal central I-beam.

11. In a car-truck, the combination with a pair of axles and wheels thereon, of a truck-frame, equalizer-bars supported upon the axle journal-bearings, coiled springs interposed between the equalizer-bars and side sills of the truck-frame, spring-planks depending from the opposite ends of the truck-frame, elliptical springs mounted upon said planks, a structure supported upon said elliptical springs composed of transverse I-beams located adjacent the end sills of the truck and central parallel longitudinal I-beams extending between said transverse I-beams and having outwardly-bent portions located adjacent and rigidly secured to said transverse I-beams, a center bearing supported upon said longitudinal central I-beam, a strengthening I-beam interposed between and rigidly secured to the longitudinal portions of said central I-beams and transverse plates located parallel to said transverse I-beams and rigidly uniting the oppositely-extending end portions of said central I-beams.

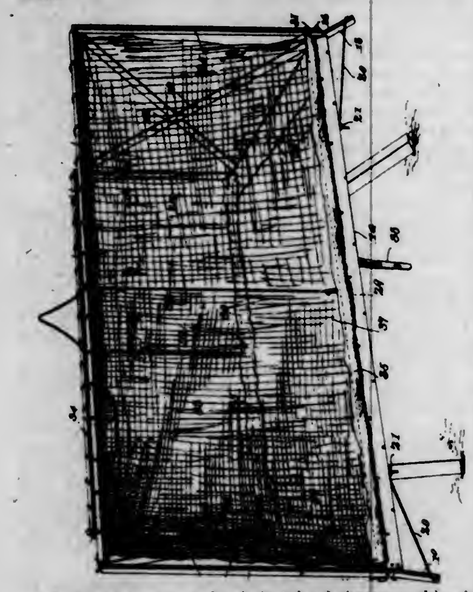
12. In a car-truck, the combination with a pair of axles and wheels thereon, of a truck-frame, equalizer-bars supported upon the axle journal-bearings, coiled springs interposed between the equalizer-bars and side sills of the truck-frame, spring-planks depending from the opposite ends of the truck-frame, elliptical springs mounted upon said planks, a structure supported upon said elliptical springs composed of transverse I-beams located adjacent the end sills of the truck and central parallel longitudinal I-beams extending between said transverse I-beams and having outwardly-bent portions located adjacent and rigidly secured to said transverse I-beams, a center bearing supported upon said longitudinal central I-beams, a strengthening I-beam interposed between and rigidly secured to the longitudinal portions of said central I-beam, transverse plates located parallel to said transverse I-beams and rigidly uniting the oppositely-extending end portions of said central I-beams, the ends of said transverse I-beams and the adjacent portions of the central I-beams being reduced and extending beneath the side sills of the truck-frame, and side bearings supported upon the projecting ends of said transverse I-beams.

13. In a car-truck the combination with a pair of axles and wheels thereon, of equalizer-bars at the sides of the truck, springs mounted upon said equalizer-bars, a truck-frame supported upon said springs, spring-planks supported by the ends of the truck-frame, springs carried by said planks, bolsters supported by said springs, and means rigidly connecting the bolsters at the ends of the truck.

820,719. **COT-CANOPY.** ISAAC C. KERRIDGE, Corpus Christi, Tex. Filed Dec. 5, 1905. Serial No. 290,437.

Claim.—1. A cot-canopy comprising a frame including spaced longitudinal bars, a horizontal bar vertically slidable upon the frame,

a fabric supported by the frame and with its edge secured to the sliding bar and means to raise the sliding bar and suspend it from the frame.



2. A cot-canopy crossed and pivoted end pieces spaced longitudinal frame-pieces supported at the upper extremities of the end pieces, vertical uprights slidably mounted upon the end pieces, a horizontal bar vertically slidable upon the uprights and means to raise the horizontal bar and suspend it from the frame.

3. In a cot-canopy, crossed and foldable end pieces normally spaced horizontal pieces supported at the extremities of the cross-pieces, vertical uprights slidably mounted upon the end pieces, a horizontal bar vertically slidable upon the uprights, means to raise the horizontal bar and suspend it from the frame, means to connect the end pieces to a cot and means carried by the end pieces to brace the frame relative to the cot.

4. A canopy comprising a collapsible frame having horizontal bars spaced apart, uprights connected to the horizontal bars and a fabric covering supported by the horizontal bars and normally hanging between the uprights, the end portions of said fabric having inwardly-extending flaps at their lower edges.

5. A canopy comprising a collapsible frame having horizontal bars spaced apart, uprights connected to the horizontal bars and the fabric covering supported by the horizontal bars and normally hanging between the uprights, the end portions of said fabric having inwardly-extending flaps at their lower edges, and said bars supported by the side portions of the fabric and slidably mounted on the uprights.

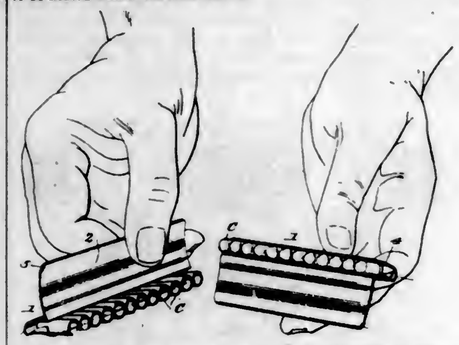
6. A canopy comprising a collapsible frame having horizontal bars spaced apart, uprights connected to the horizontal bars, a fabric covering supported by the horizontal bars and normally hanging between the uprights and side bars supported by the fabric and slidably mounted upon the uprights.

7. A canopy comprising a collapsible frame having horizontal bars spaced apart, uprights connected to the horizontal bars, a fabric covering supported by the horizontal bars and normally hanging between the uprights and side bars supported by the fabric and slidably mounted upon the uprights, means for independently raising or lowering the side bars, and inwardly-extending flaps upon the end portions of the covering.

820,720. **CAPSULE-FILLER.** HUBERT KING, New York, N. Y. Filed Oct. 6, 1904. Serial No. 227,445.

Claim.—1. An implement of the class described embodying means for holding a plurality of capsules, and a plate extending at an angle to the holding means and constituting a handle and a scraper.

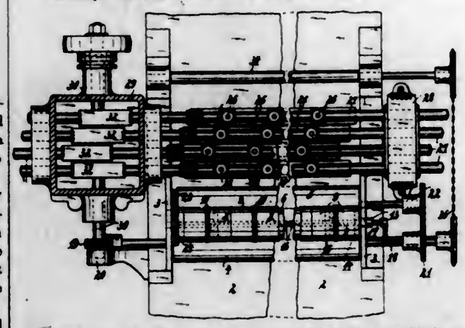
2. An implement of the class described comprising a main capsule-holder and a plurality of supplemental capsule-holders adapted to be nested within the main holder.



3. An implement of the class described comprising an approximately U-shaped holder and a handle combined therewith.

4. An implement of the class described comprising an approximately U-shaped holder provided with terminal guards or stops, and a handle combined with the holder.

820,721. **BRONZING APPARATUS.** CURT KOHLBACH, Leipsic, Germany. Filed May 3, 1904. Serial No. 206,218.



Claim.—1. In a bronzing apparatus of the kind specified, the combination of a bronze-powder-distributing cylinder having orifices therein, with a series of sleeves having corresponding orifices, means for adjusting the said sleeves on the said cylinder to open or close the said orifices, disks movable in the interior of the cylinder to vary the interior length thereof, and means for actuating said disks, substantially as described.

2. In a bronzing apparatus of the class specified, the combination of a bronze-distributing cylinder having orifices therein and means for closing or opening the said orifices along any desired sections of the length of the cylinder substantially as described.

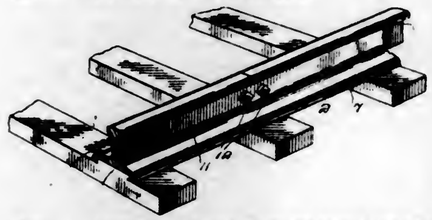
3. In a bronzing apparatus the combination of a bronze-distributing cylinder having orifices therein, means for opening or closing the same along sections of the length and means for varying the interior length of the cylinder substantially as described.

4. In a bronzing apparatus of the class specified, the combination of a bronze containing and distributing cylinder, a series of adjustable sleeves thereon and means in connection therewith for opening or closing the bronze-powder outlets in the interior cylinder, a screw-spindle having right and left hand threads, extending through the cylinder and partition-plates mounted on the said spindle and adapted to be moved toward and apart from each other when the spindle is turned substantially as described.

5. In a bronzing apparatus of the class specified, the combination of a series of horizontally-reciprocatory rubbers or pads, means for adjustably attaching the same to a series of carrier-rods, and carrier-rods having frames thereon, slide-blocks in said frames and eccentrics working in said blocks in the manner and for the purpose substantially as described.

6. In a bronzing apparatus of the class specified, the combination with a series of horizontally-reciprocatory rubbers or pads, carrier-rods, means for adjustably attaching the rubbers or pads to the carrier-rods, and driving means for said rubbers or pads, of a finishing-roll having a covering, a gearing connecting the roll to the driving means of the rubbers or pads whereby to operate the finishing-roll in unison with the said rubbers or pads.

820,722. **RAIL AND TIE FOR RAILROADS.** DAVID E. LINDSAY, Etna, Pa. Filed Feb. 6, 1906. Serial No. 299,604.



Claim.—1. The combination with ties having dovetail tongues, of a rail adapted to engage the tongues of said ties, said rail consisting of two parts, a head carried by one of said parts and common to both parts, a base-flange carried by each part and forming a dovetail groove when said parts are secured together, substantially as described.

2. The combination with ties having dovetail tongues, of a rail engaged by said tongues, said rail consisting of two parts alternately arranged together, base-flanges carried by said parts and forming a dovetail groove to receive the tongues of said ties, substantially as described.

3. The combination with ties having tongues, of a rail adapted to engage said tongues, said rail consisting of two parts, the ends of one part being arranged centrally of the other part, base-flanges carried by said parts and engaging said tongues, means to secure said parts together, substantially as described.

4. A tie provided on its upper face with a tongue having inclined side edges, combined with a rail having base-flanges resting on said tongue, and depending side flanges carried by said base-flanges, said depending side flanges having inclined inner faces engaging the inclined side edges of said tongue.

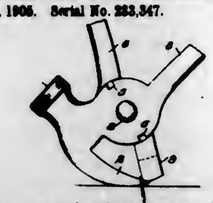
5. A rail formed in two members adapted to be secured together, each member having a base-flange provided with a groove, and a tie having a tongue adapted to fit in said grooves in the base-flanges of the rail members.

6. A rail provided in its base with a groove, combined with a tie, and means carried by the tie engaging in the groove of the rail and securing the rail to the tie.

7. A two-part rail provided in its base with a groove, combined with a tie, and means carried by the tie engaging in the groove of the rail and securing said rail to the tie.

8. A rail provided with a base, and depending side flanges carried by said base, combined with a tie, and means locking the tie to said side flanges of the rail.

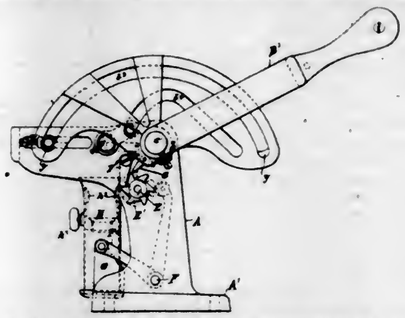
820,723. **COMPOUND TOOL.** OTIS MATHENEY, Chrisman, Ill. Filed Oct. 18, 1905. Serial No. 283,347.



Claim.—In a compound tool, the combination with a hammer-head having a curved tongue extending therefrom, the end of said head being curved, and a handle extending from the head; of a lever pivoted to the handle, the curved face of the tongue being concentric with the pivot of the lever, and a forked end to the lever adapted to straddle and swing throughout the length of the tongue the plane of the forked end being transverse to the tongue.

820,724. **CAPSULE CLOSING AND PRINTING MACHINE.** VICTOR MILLESON, Newark, N. J. Filed Apr. 6, 1905. Serial No. 254,154.

Claim.—1. In a capsule-closing machine, the combination of a rigid abutment or anvil, a plunger in alinement therewith, a folder, means for oscillating said folder, and means for moving said plunger against and retracting the same from said abutment, and thereafter oscillating said folder against the face of said abutment or anvil.



2. In a capsule-closing machine, the combination of a rigid abutment or anvil, a reciprocating plunger, an oscillating folder, and means for simultaneously reciprocating said plunger and oscillating said folder, against the face of said abutment or anvil.

3. In a capsule-closing machine, the combination of a rigid abutment or anvil, a reciprocating plunger, an oscillating folder, a lever provided with means for actuating said plunger and a means for actuating said folder, to cause the same to press against the face of said abutment or anvil.

4. In a capsule-closing machine, the combination of an abutment or anvil, a reciprocating plunger, and oscillating folder, means for advancing and retracting said plunger, and means for simultaneously oscillating said folder, against the face of said abutment or anvil.

5. In a capsule-closing machine, the combination of an abutment or anvil, a reciprocating plunger, and oscillating folder, means for advancing and retracting said plunger and means for oscillating said folder at a varying velocity during the advance and retraction of said plunger.

6. In a capsule-closing machine, the combination of an abutment or anvil, a plunger, a folder, means for advancing and retracting said plunger, means for moving said folder forward a portion of its stroke during the advance of the plunger, and then holding said folder stationary during a portion of the reverse movement of the plunger and thereafter continuing the forward movement of the folder during the remainder of the rearward stroke of said plunger.

7. In a capsule-closing machine, the combination of an abutment or anvil, a plunger, guides for said plunger, means for advancing and retracting said plunger along said guides, a folder, means for oscillating said folder during the advance of the plunger, a capsule-holder, means for elevating said holder during each alternate rearward stroke of said plunger.

8. In a capsule-closing machine, the combination of an abutment or anvil, a plunger, a folder, an oscillating lever, a cam upon said lever for actuating said plunger to advance and retract the same toward and from said abutment, a second cam upon said lever for actuating said folder simultaneously with the movement of said plunger.

9. In a capsule-closing machine, the combination of a frame or support, an abutment rigidly secured upon said frame, a plunger mounted to slide in guides upon said frame, a folder journaled in said frame, a lever journaled upon said frame, a cam upon said lever for actuating said plunger, a second cam upon said lever for actuating said folder, a capsule-holder supported by said frame, connection between said holder and said lever, whereby said holder is alternately elevated and lowered.

10. In a capsule closing and printing machine, the combination of means for closing the open end of a capsule, with means for printing an inscription upon the closed end of said capsule.

11. In a capsule closing and printing machine, the combination with means for folding and sealing the end of a capsule, to form a flat printing-surface, of mechanism actuated by the operative parts of said means for printing an inscription upon the flat printing-surface of said capsule.

12. In a capsule closing and printing machine, the combination with means for closing and sealing the end of a capsule, to form a flat printing-surface, of an eccentric and strap secured to the shaft

of the closing and sealing means, a guided cross-head connected to said strap, and a line of type fixed in the path of said cross-head, whereby the operation of the machine to close and seal one capsule will print an inscription upon the printing-surface of a second capsule.

13. In a capsule-closing machine the combination with means for closing a capsule, of means for folding over and compressing the closed end of said capsule, and means for alternately raising and lowering said capsule whereby a plurality of folds may be formed in the closed end thereof.

14. In a capsule-closing machine, the combination of a frame, a shaft journaled in the upper portion of said frame, a sectional lever secured to the ends of said shaft, pairs of cams in said lever, a guided plunger having lateral studs in engagement with and operated by one pair of said cams, a folder journaled in said frame in substantial alinement with said plunger, cranks upon the ends of said folder in engagement with and operated by the second pair of cams, a capsule-holder pivotally supported in said frame, and means operated by said sectional lever for alternately elevating and lowering said capsule-holder.

15. In a capsule closing and printing machine, the combination of a frame, a shaft journaled in the upper portion of said frame, a sectional lever secured to the ends of said shaft, pairs of cams in said lever, a guided plunger having lateral studs in engagement with and operated by one pair of said cams, a folder journaled in said frame in substantial alinement with said plunger, cranks upon the ends of said folder in engagement with and operated by the second pair of cams, a capsule-holder pivotally supported in said frame, and means operated by said sectional lever for alternately elevating and lowering said capsule-holder, and printing mechanism connected with said frame actuated by said sectional lever.

820,725. **BUTTER-TRAY MACHINE.** PERCIVAL D. MOODY and ARTHUR E. MOODY, New York, N. Y.; said Percival D. Moody assignor to said Arthur E. Moody. Filed Sept. 6, 1904. Serial No. 223,382.



Claim.—1. The combination with means for cutting flaps upon the ends of a blank, means for folding the flaps one over another to constitute the ends of a tray and to hold such folded tray in its finished form, and means for applying sheet-metal binding to such folded ends comprising a clamping device having a pair of relatively movable jaws, means for shifting the clamping device into the region of the tray end, means for advancing the same to apply the binding to the tray, means for actuating the clamping device to clamp the binding upon the tray, means for shifting said clamping device away from its working position and into an idle position with its clamping device open, means for feeding a strip of sheet metal above such idle position, a cutter-head embodying a cutter and a former for cutting a blank from such strip and bending the same into the jaws of the gripping member.

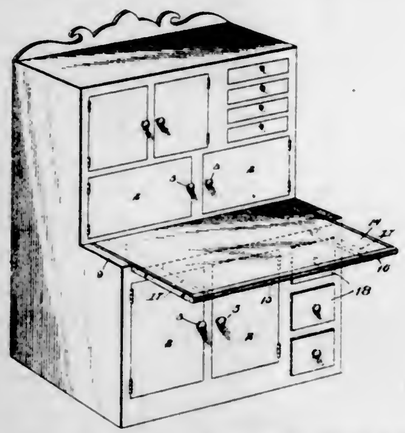
2. The combination with means for feeding the stock, of means for cutting blanks therefrom, means for bending the blank into a tray, means for feeding strips of sheet metal within the machine, means for cutting blanks therefrom and bending the same, and means for applying such bent sheet-metal binders to the tray while held by the said forming means.

3. The combination with means to feed a strip of thin material into a machine, means to score and cut the same into blanks having flaps at each end, means to fold the flaps one over another to form the end of a tray and to hold such tray at its formed position, a pair of levers pivoted below such forming device, means to raise and lower the levers in unison, each of said levers carrying a gripping device comprising a pair of members movable one relative to the other and means for producing such movement, means to shift said members from an idle position to the region of the tray, means to feed a strip of sheet metal above such grippers at their idle position, and a reciprocable member above such idle position, and having a shear-blade and a forming-die, said shear-blade for severing a blank from such strip of metal and the die for forcing the same into the grasp of the gripper.

4. The combination with means to form a strip of thin material into a tray, and means for holding such tray at its formed position, a pair of levers pivoted below such forming device, means to raise and lower the levers in unison, each of said levers carrying a gripping device comprising a pair of members movable one relative to the other and means for producing such movement, means to shift said members from an idle position to the region of the tray, means for severing a strip from sheet metal, means to feed such strip above such gripper at their idle position, and a reciprocable member above such idle position and having a shear-blade and a forming-die, said shear-blade for severing a blank from such strip of metal and the die for forcing the same into the grasp of the gripper.

5. In a tray-forming machine, the combination with a feed embodying a table having rollers, tracks upon the machine for the rollers, a feed-shoe adapted to engage the stock upon such table, means to reciprocate the shoe, a pair of pivoted arms provided with ways, ways upon the shoe mounted thereon, means to rock the arms upon their pivot to bring the shoe into and out of engagement with the stock, means to return the table to its initial position, a cutting-head for forming flaps upon the side of the blank to constitute the ends of the tray, a forming-head having a chamber to shape the tray and having fingers to bend inwardly one flap of the blank at each end of the tray, a knife carried by such head to sever the blank from the stock, a mating former to press the blank into said chamber and lap other of the flaps of the tray upon those that are bent inwardly, means to feed a stock of sheet metal toward each end of the tray, a cutting-head having a shear to sever a blank from each sheet-metal stock and having means to bend the blank into form, a coöperative bending and binder applying means comprising an arm pivoted upon a lever and having an arm pivoted upon it, opposing faces upon said arms coöperative with the bending means, means to rock the lever to seat the blank upon the end of the tray, a face upon one of said arms to engage a face upon the lower former, means to press such faces together to bend the blank binder and clamp the same in position, and means to rock said arm upon its pivot to bring it into the working position of the coöperative blank former, means to raise the chambered former, and means to rock the other former to eject the finished product.

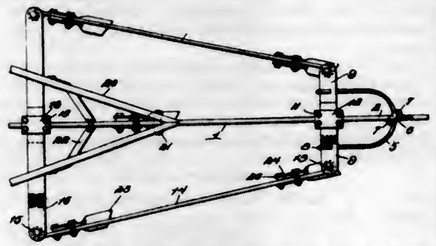
820,726. **MOLDING-BOARD.** JAMES S. MCQUINN, Newcastle, Ind. Filed Aug. 7, 1905. Serial No. 273,074.



Claim.—1. A molding-board comprising a plurality of strips having tongues and grooves whereby said strips may interlock and each strip having grooves in its lower face, a metallic covering upon the upper faces of the strips and having depending portions at each end and side of the strips, edge strips overlapping the metallic depending portions of the covering and secured to the edges of the board, and reinforcing-strips secured to the lower faces of the grooved strips and transversely to said grooves.

2. A molding-board comprising a plurality of strips having tongues and grooves adapted to interlock with each other and each strip having grooves in its lower face and longitudinally disposed throughout its length, a metallic covering upon the upper faces of said strips and overlapping each edge thereof, edge strips engaging the overlapped portions of said covering of the same relative height as said board and secured to the edges thereof, and reinforcing-strips secured to the lower faces of the grooved strips.

820,727. **HARROW.** JOEL W. NEWTON, Elberton, Ga., assignor of one-half to George T. Taylor, Elberton, Ga. Filed Nov. 4, 1905. Serial No. 285,893.



Claim.—1. In a harrow the combination with a beam; of overlapping cross-strips upon the beam and extending laterally therefrom, side bars pivoted to the cross-strips, and means for clamping the overlapping ends to the beam to lock the cross-strips in adjusted positions.

2. In a harrow the combination with a beam; of overlapping cross-strips extending in opposite directions from the beams adjacent the ends thereof, side bars pivoted to the cross-strips, and means for clamping the overlapping ends of the cross-strips to the beam to lock them in adjusted positions.

3. In a harrow the combination with a beam; of overlapping cross-strips arranged above and below the beam adjacent its ends, side bars pivoted between the cross-strips, means for clamping the overlapping ends of the cross-strips upon the beam, and a yoke secured to the beam and engaging the cross-strips at one end of the beam.

4. In a harrow the combination with a centrally-disposed beam; of overlapping cross-strips extending laterally from the beam adjacent one end thereof, means for clamping the overlapping ends of said strips to the beam, hooked yokes secured to the beam and engaging the strips, side bars pivoted to said strips at opposite sides of the beam, overlapping cross-strips extending laterally from the beam adjacent its other end, said side bars being pivoted between said strips, and means for clamping said last-mentioned cross-strips upon the beam to hold the same in adjusted position.

5. In a harrow the combination with a centrally-disposed beam; of overlapping cross-strips extending laterally from the beam adjacent one end thereof, means for clamping the overlapping ends of said strips to the beam; hooked yokes secured to the beam and engaging the strips, side bars pivoted to said strips at opposite sides of the beam, overlapping cross-strips extending laterally from the beam adjacent its other end, said side bars being pivoted between said strips, means for clamping said last-mentioned cross-strips upon the beam to hold the same in adjusted position, teeth secured to and depending from the beam and side bars, and means for adjustably securing said teeth to the bars and beam, respectively, said means adapted to engage the teeth.

820,728. **TRUSS.** THOMAS O'MALLEY, McKeesport, Pa. Filed Nov. 14, 1905. Serial No. 287,381.



Claim.—1. A truss embodying a fabric belt adapted to have its ends secured together, a metallic plate carried by said belt, a rivet passing through said plate and said belt, a spring mounted upon said plate, a pad carried by said spring, a strap having one end adjustably mounted upon said belt and adapted to have its other end detachably secured to said belt, adjacent said plate, substantially as described.

2. In a truss, the combination with a belt, of a plate mounted thereon, a cleat extending across said belt on the opposite side to the plate, said cleat having its ends bent around the edge of the plate, straps riveted to said plate, a spring having one end arranged between said plate and said straps, and a pad carried by the opposite end of said spring.

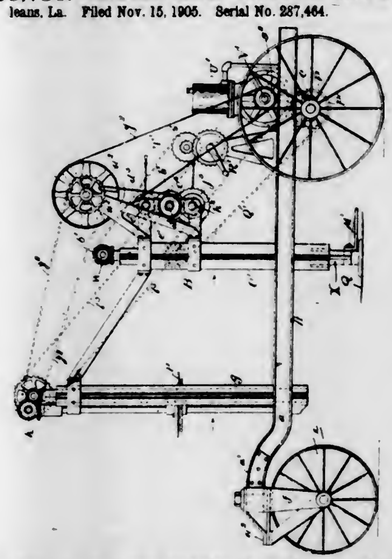
820,729. **COLLAR OR CUFF BUTTON.** DANNE PAMP, Philadelphia, Pa. Filed June 21, 1905. Serial No. 266,250.

Claim.—1. In a button of the character described, a body portion, a shank extending from said body portion, a spring-eye formed in the outer end of the shank, the walls of said spring-eye adapted to spring away from one another, a head, a tongue formed with the head, said tongue being enlarged at its outer end so as to spread, the walls of the eye where it passes through said tongue being formed narrow behind the outer end so that it will fit within the eye without spreading the walls thereof, as specified.



2. In a button of the character described, a body portion, a shank extending from said body portion, said shank being composed of two pieces of wire, the outer ends of which are bent outward and then inward toward one another to form an eye, the outer ends of the wires not being joined together but being free to spring apart, a head concaved on one surface, a tongue lying within the concaved surface and in the same plane as the flat surface of the head, the outer end of said tongue being enlarged so as to spread the wires forming the spring-eye of the shank when the tongue passes through the same, said tongue formed narrow behind the enlarged outer end so as to lie within the eye of the shank without spreading the wires, as specified.

820,730. **CANE-HARVESTER.** ALPHONSE O. PESSOU, New Orleans, La. Filed Nov. 15, 1905. Serial No. 287,464.



Claim.—1. In a cane-harvester, the combination of a main frame having side bars, uprights fixed to and rising from said side bars and means connecting the upper portions of the said uprights, a frame carried by the said connecting means and arranged to move in a transverse direction independently of the main frame, and cutting means carried by the said movable frame.

2. In a cane-harvester, the combination with a main frame having side bars, uprights fixed to and rising from said side bars, and a rigid connection between the upper portions of the said uprights; of a transversely-swinging frame hung from the said rigid connection, and cutting means carried by the said swinging frame.

3. In a cane-harvester, the combination of a transversely-swinging frame, cutting means carried by the said swinging frame, and a main frame carrying the swinging frame and having side bars extending in advance of the said swinging frame and the cutting means, whereby said side bars are enabled to receive a row of cane between them.

4. In a cane-harvester, the combination of a transversely-swinging frame, cutting means carried by the said swinging frame, a main frame carrying the swinging frame and having side bars extending in advance of the said swinging frame and cutting means, wheels supporting the rear portion of the main frame, and a guide-wheel supporting each of the forwardly-extending side bars of said main frame.

5. In a cane-harvester, a main frame having uprights and a rigid connection between the upper portions of said uprights and also having side bars extending in advance of the uprights and supported by wheels; in combination with a frame carried by the rigid connection between the uprights of the main frame and arranged to swing transversely independent of said main frame, and cutting means carried by said swinging frame.

6. In a cane-harvester, the combination with a wheel-supported main frame comprising side bars, uprights fixed to and rising from the side bars, and a rigid connection between the upper portions of the uprights; of a transversely-swinging frame hung from the said rigid connection, and horizontally-disposed cutting-knives carried by the said swinging frame.

7. In a cane-harvester, the combination of a main frame, transversely-swinging frames arranged one in front of the other in the main frame and hung from said main frame, cane-topping means carried by the forward swinging frame, and cane-severing means carried by the rear swinging frame.

8. In a cane-harvester, the combination of a main frame, transversely-swinging frames arranged one in front of the other in the main frame and hung from said main frame, cane-topping means carried by the forward swinging frame, cane-severing means carried by the rear swinging frame, and means for engaging and deflecting the cane subsequent to the severing of the same.

9. In a cane-harvester, the combination of a main frame, one or more knives carried by and movable vertically with respect to the main frame, a primary driver, and a driving connection intermediate the primary driver and the knife or knives for moving the latter vertically; the said driving connection comprising a reversing-gear, whereby the knife or knives may be either raised or lowered.

10. In a cane-harvester, the combination of a main frame, transversely-swinging frames carried by the main frame, topping-knives carried by one of said swinging frames, and cane-severing knives carried by the other swinging frame.

11. In a cane-harvester, the combination with a main frame comprising side bars, uprights fixed to and raising from said side bars at an intermediate point in the length thereof and rigidly connected together, and uprights fixedly connected to and rising from the side bars at points in rear of the first-mentioned uprights and rigidly connected together; of a transversely-swinging frame hung from the rigid connection between the forward uprights, cane-topping knives carried by the said swinging frame, a swinging frame hung from the rigid connection between the rear uprights, cane-severing knives carried by the latter swinging frame, wheels supporting the rear portion of the main frame, and guide-wheels supporting the forwardly-extended portions of the side bars of the main frame.

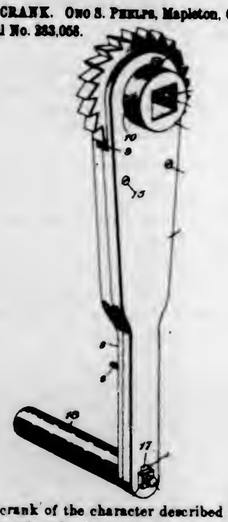
12. In a cane-harvester, the combination with a main frame comprising side bars, uprights fixed with respect to the side bars and having spaces, and a rigid connection between the upper portion of the said uprights; of a transversely-swinging frame hung from the said rigid connection and having upright T-bars the stems of which are disposed in the spaces of the upright fixed bars and also having a crown-bar connecting the upper portions of the T-bars, vertically-movable knife-carriers guided on the heads of the T-bars, horizontally-disposed, rotary knives movable vertically with and rotatable independently of said carriers, rotary shafts journaled in the swinging frame and engaging the knife-carriers, whereby when the shafts are rotated the carriers will be raised or lowered, and suitable means for rotating the shafts.

13. In a cane-harvester, the combination with a main frame comprising side bars, uprights fixed to and rising from the side bars at intervals in the length thereof and rigidly connected together, and a platform arranged on the rear portions of the side bars, wheels supporting the rear portion of the main frame, guide-wheels supporting the extended forward portions of the side bars of the main frame, a transversely-swinging frame hung from the connection between the forward uprights of the main frame, a transversely-swinging frame hung from the connection between the rear uprights of the main frame, cane-topping knives carried by the forward swinging frame and movable vertically, cane-severing knives carried by the rear swinging frame and movable vertically, means for raising and lowering the cane-severing knives, a driving connection between one of the rear wheels and the cane-severing knives for rotating the latter by the former, a motor mounted on the platform of the main frame, a driving connection intermediate said motor and the topping-knives for rotating the latter, and a driving connection intermediate the motor and the topping-knives for raising and lowering said knives; the latter driving connection comprising a reverse-gear, whereby the topping-knives may be either raised or lowered.

14. In a cane-harvester, the combination of a main frame, a transversely-swinging frame arranged in and hung from the main frame, vertically-movable bearings guided by the transversely-swinging frame, rotary cutters carried by the bearings, means for adjusting and adjustably fixing the bearings, and means for rotating the cutters.

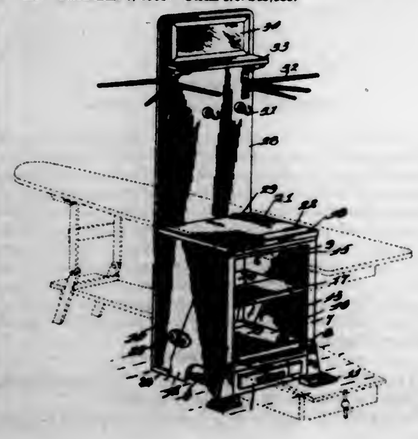
15. In a cane-harvester, the combination of a main frame, a transversely-swinging frame arranged in and hung from the main frame, cane-severing means carried by the said transversely-swinging frame, and bars also carried by the transversely-swinging frame and disposed above the severing means; the said bars being inclined upward and inward.

820,731. **CRANK.** OTHO S. PHELPS, Mapleton, Oreg. Filed Oct. 16, 1905. Serial No. 283,058.



Claim.—A crank of the character described comprising oppositely-disposed members having registering recesses, a grip extending through said members at one end and binding the members together, a barrel rotatably mounted in the other end of the members, a ratchet integral with and surrounding the barrel, said ratchet extending between the members, a spring-pressed dog slidably mounted within the registering recesses and normally engaging the ratchet, said dog having an angular recess therein, a stem slidably mounted between and extending laterally from the members, said stem projecting through the spring, and an angular extension upon one end of the stem and slidably mounted within but non-detachable from the dog, said dog being capable of longitudinal movement independent of the stem.

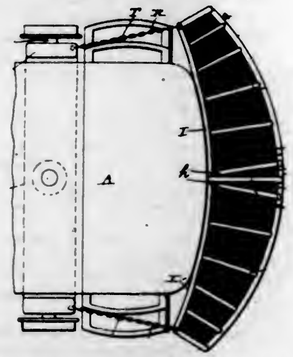
820,732. **COMBINATION-CABINET.** TOBIAS POLSTER, St. Louis, Mo. Filed Mar. 6, 1905. Serial No. 248,669.



Claim.—1. In a combination-cabinet, a body portion constructed of two parts vertically separable on diagonally-extending lines which parts are hinged together at their upper ends, shelves arranged in the two parts of the frame, and a back section hinged to the upper rear corner of the rear one of the parts forming the main frame; substantially as specified.

2. In a combination-cabinet, a rectangular body portion comprising two parts hinged together at their upper ends, shelves hinged in the two parts of the body portion, a drawer arranged in the lower portion of the front one of the parts, a rear section hinged to the upper rear corner of the rear one of the parts of the frame, and supports for the outer end of the back when the same is swung into a horizontal position; substantially as specified.

820,733. **STREET-RAILWAY-CAR FENDER.** JOHN POST, Philadelphia, Pa. Filed Nov. 29, 1905. Serial No. 289,702.



Claim.—1. A car-fender having its surface composed of inflatable cushions connected together for simultaneous inflation, substantially as shown and described.

2. A car-fender having its contacting surface composed of inflated tubing, substantially as shown and described.

3. A car-fender having its surface composed of inflatable tubing connected together for simultaneous inflation, substantially as shown and described.

4. A car-fender composed of horizontal bars, ribs connecting said horizontal bars, and inflatable tubing secured to said bars and ribs, substantially as shown and described.

5. A car-fender comprising horizontal bars, ribs secured to said bars, said bars and ribs being longitudinally channeled, and inflatable tubing secured in the channeled portion of said bars and ribs, substantially as shown and described.

6. A car-fender comprising horizontal bars, ribs secured to said bars, and inflatable tubing secured to said bars and ribs, said tubing being connected together for simultaneous inflation, substantially as shown and described.

7. A car-fender comprising horizontal bars, ribs secured to said bars, said bars and ribs being longitudinally channeled, and inflatable tubing secured to said bars and ribs, said tubing being connected together for simultaneous inflation, substantially as shown and described.

8. A car-fender comprising horizontal bars, ribs secured to said bars, a netting of flexible material secured to said ribs, and inflatable tubing secured to said bars and ribs, substantially as shown and described.

9. A car-fender comprising horizontal bars, ribs secured to said bars, a netting of flexible material secured to said ribs, and inflatable tubing secured to said bars and ribs, said tubing being connected together for simultaneous inflation, substantially as shown and described.

10. A car-fender comprising horizontal channeled bars, inflatable tubing secured to said bars, channeled ribs connecting said bars, a netting of flexible material covering said ribs and bent to fit the channels therein, and inflatable tubing secured in said bent portion of the netting, substantially as shown and described.

11. A car-fender comprising horizontal channeled bars, inflatable tubing secured to said bars, channeled ribs connecting said bars, a netting of flexible material covering said ribs and bent to fit the channels therein, and inflatable tubing secured in said bent portions of the netting, said inflatable tubing being connected together for simultaneous inflation, substantially as shown and described.

12. In combination with the platform of the car, and a fender secured thereto, brackets secured to said platform having swivelly-secured tubular bearings, horizontal rods secured to the fender and slidably mounted in said bearings, and coil-springs mounted on said rods, substantially as shown and described.

13. A car-fender formed of two sections mounted to swing independently of one another in a horizontal plane, and a fixed portion overlapping the adjacent ends of said swinging sections to bridge the opening therebetween, substantially as shown and described.

14. A car-fender formed of two independently-pivoted sections mounted to swing independently of one another in a horizontal plane, and a fixed portion overlapping the adjacent ends of said swinging sections to bridge the opening therebetween, substantially as shown and described.

15. In combination with a car having a platform, and a swinging truck, a fender consisting of two sections pivotally secured to the platform, and operative connections between the ends of the sections and the corresponding ends of the swinging truck, substantially as shown and described.

16. In combination with a car having a platform, and a swinging truck, a fender consisting of two sections pivotally secured to the platform, operative connections between the ends of the sections and the corresponding ends of the swinging truck, and spring-actuated means for holding the abutting ends of the sections together, substantially as shown and described.

17. In combination with a car having a platform, and a swinging truck, a rod secured to the platform and extending downwardly, a fender comprising two sections pivotally secured to the platform on each side of said rod and adapted to swing in horizontal planes, operative connections between the outer ends of said sections and the corresponding ends of the swinging truck, and springs connecting said rod and adjacent ends of said sections, substantially as shown and described.

18. In combination with a car having a platform, and a swinging truck, a rod secured to the platform and extending downwardly, a fender comprising two sections pivotally secured to the platform on each side of said rod and adapted to swing in horizontal planes, operative connections between the outer ends of said sections and the corresponding ends of the swinging truck, springs connecting said rod and the adjacent ends of said sections, horizontal rods secured to said sections, tubular bearings for said rods secured to the platform, and springs mounted on said rods and engaging against said tubular bearings, substantially as shown and described.

19. In combination with the platform of a car, a horizontal channeled bar secured thereto, an inflatable tube secured to said channeled bar, curved horizontal channeled bars, channeled ribs connecting said horizontal bars, inflatable tubes secured to said channeled ribs, brackets secured to said platform having tubular bearings, horizontal rods secured to said curved horizontal bars and slidably mounted in said tubular bearings, and coil-springs mounted on said rods, substantially as shown and described.

20. In combination with the platform of a car, a horizontal channeled bar secured thereto, an inflatable tube secured to said channeled bar, curved horizontal channeled bars, channeled ribs connecting said horizontal bars, inflatable tubes secured to said channeled ribs, said inflatable tubing being connected together for simultaneous inflation, brackets secured to said platform having tubular bearings, horizontal rods secured to said curved horizontal bars and slidably mounted in said tubular bearings, and coil-springs mounted on said rods, substantially as shown and described.

21. In combination with the platform of a car, a horizontal bar secured thereto, an inflatable tube secured to said bar, curved horizontal bars, inflatable tubes secured to said bar, ribs connecting said horizontal bars, a netting of flexible material covering said ribs, inflatable tubing secured over said ribs, brackets secured to the platform having tubular bearings, horizontal rods secured to said curved horizontal bars and slidably mounted in said tubular bearings, and coil-springs mounted on said rods, substantially as shown and described.

22. In combination with the platform of a car, a horizontal bar secured thereto, an inflatable tube secured to said bar, curved horizontal bars, inflatable tubes secured to said bar, ribs connecting said horizontal bars, a netting of flexible material covering said ribs, inflatable tubing secured over said ribs, all of the inflatable tubing being connected together for simultaneous inflation, brackets secured to the platform having tubular bearings, horizontal rods secured to said curved horizontal bars and slidably mounted in said

tubular bearings, and coil-springs mounted on said rods, substantially as shown and described.

23. In combination with the platform of a car, a horizontal channeled bar secured thereto, an inflatable tube secured in the channel of said bar, curved horizontal channeled bars, inflatable tubes secured to said last-mentioned bars, channeled ribs connecting said horizontal channeled bars, a netting of flexible material covering said ribs, inflatable tubes secured over said ribs, brackets secured to said curved horizontal bars and slidably mounted in said tubular bearings, and coil-springs mounted on said rods, substantially as shown and described.

24. In combination with the platform of a car, a horizontal channeled bar secured thereto, an inflatable tube secured in the channel of said bar, curved horizontal channeled bars, inflatable tubes secured to said last-mentioned bars, channeled ribs connecting said horizontal channeled bars, a netting of flexible material covering said ribs, inflatable tubes secured over the said ribs, all of said tubing being connected together for simultaneous inflation, brackets secured to the platform having tubular bearings, horizontal rods secured to said curved horizontal bars and slidably mounted in said tubular bearings, and coil-springs mounted on said rods, substantially as shown and described.

25. In combination with a car having a platform, and a swinging truck, a channeled rod secured to said platform, a netting of flexible material secured to said rod, an inflatable tube secured over said netting, a fender comprising two sections pivotally secured to said platform on each side of said rod and mounted to swing in horizontal planes, each of said sections comprising horizontal channeled bars and channeled ribs secured to said bars, said netting being stretched over said bars and ribs, inflatable tubing secured over said bars and ribs and connected together and with the tube over the central rod for simultaneous inflation, and operative connections between the outer ends of said sections and the corresponding ends of said swinging truck, substantially as shown and described.

26. In combination with a car having a platform, and a swinging truck, a channeled rod secured to said platform, a netting of flexible material secured to said rod, an inflatable tube secured over said netting, a fender comprising two sections pivotally secured to said platform on each side of said rod and mounted to swing in horizontal planes, each of said sections comprising horizontal channeled bars and channeled ribs secured to said bars, said netting being stretched over said bars and ribs, inflatable tubing secured over said bars and ribs and connected together and with the inflatable tube over the central rod for simultaneous inflation, operative connections between the outer ends of said sections and the corresponding ends of said swinging truck, and spring-actuated means for holding the inner ends of the sections against the central rod, substantially as shown and described.

27. In combination with a car having a platform, and a swinging truck, a channeled rod secured to said platform, a netting of flexible material secured to said rod, an inflatable tube secured over said netting, a fender comprising two sections pivotally secured to said platform on each side of said rod and mounted to swing in horizontal planes, each of said sections comprising horizontal channeled bars and channeled ribs secured to said bars, said netting being stretched over said bars and ribs, inflatable tubing secured over said bars and ribs and connected together and with the inflatable tube over the central rod for simultaneous inflation, operative connections between the outer ends of said sections and the corresponding ends of said swinging truck, and springs secured to the central rod and the adjacent ends of said sections, substantially as shown and described.

28. In combination with a car having a platform and a swinging truck, a channeled rod secured to said platform, a netting of flexible material secured to said rod, an inflatable tube secured over said netting, a fender comprising two sections pivotally secured to said platform on each side of said rod and mounted to swing in horizontal planes, each of said sections comprising horizontal channeled ribs secured to horizontal channeled bars, said netting being stretched over said bars and ribs, inflatable tubing secured over said bars and ribs and connected together and with the inflatable tube over the central rod for simultaneous inflation, operative connections between the outer ends of said sections and the corresponding ends of said swinging truck, springs secured to the central rod and the adjacent ends of said sections, horizontal rods secured to said sections, tubular bearings secured to the platform to receive said rods, and springs mounted on said rods and engaging said bearings, substantially as shown and described.

29. In combination with a car having a platform, and a swinging truck, a channeled rod secured to said platform, a netting of flexible material secured to said rod, an inflatable tube secured to said rod, and over said netting, a fender comprising two sections pivotally secured to said platform on each side of said rod and mounted to swing in horizontal planes, each of said sections comprising horizontal channeled bars and channeled ribs secured to said bars, said netting being stretched over said bars and ribs, inflatable tubing secured over said bars and ribs and connected together and with the tube over the central rod for simultaneous inflation, chains secured to and connecting the outer ends of the sections and the corresponding ends of said truck, horizontal rods secured to said sections, tubular bearings secured to the platform to receive said rods, and springs mounted on said rods and engaging said bearings, substantially as shown and described.

30. In combination with a car having a platform, and a swinging truck, a channeled rod secured to said platform, a netting of flexible material secured to said rod, an inflatable tube secured over said netting, and a fender formed of two sections mounted to swing in a horizontal plane, substantially as shown and described.

31. In combination with a car having a platform, and a swinging truck, a channeled rod secured to said platform, a netting of flexible material secured to said rod, an inflatable tube having right-angle extensions at its lower end over said netting, and a fender formed of two sections mounted to swing in a horizontal plane, substantially as shown and described.

32. In combination with a car having swinging trucks, a car-fender formed of a plurality of sections mounted to swing independently of one another in a horizontal plane, and operative connections between said sections and the adjacent truck, substantially as shown and described.

33. In combination with a car having swinging trucks, a car-fender formed of two independently-pivoted sections mounted to swing in a horizontal plane, and flexible connections between each section and the corresponding end of the adjacent swinging truck, substantially as shown and described.

34. A car-fender formed of a plurality of sections mounted to swing independently of one another, and a fixed portion overlapping the adjacent ends of said swinging sections to bridge the opening therebetween, substantially as shown and described.

35. A car-fender formed of a plurality of sections independently mounted to swing independently of one another, and a fixed portion overlapping the adjacent ends of said swinging sections to bridge the opening therebetween, substantially as shown and described.

36. In a car-fender, a plurality of sections mounted to swing independently of one another, said sections being normally in close proximity of one another, and automatic means to return said sections to their normal position after separation, substantially as shown and described.

37. In a car-fender, a plurality of sections mounted to swing independently of one another on horizontal planes, said sections being normally in close proximity to one another, and automatic means to return said sections to their normal position after separation, substantially as shown and described.

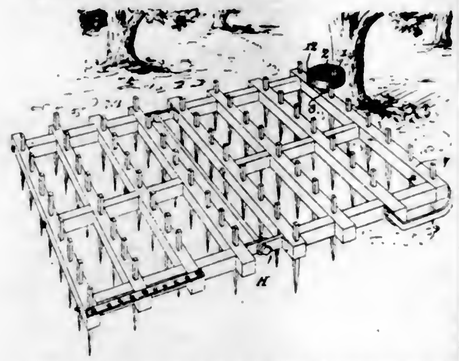
38. In a car-fender, a plurality of sections mounted to swing independently of one another, said sections being normally in close proximity to one another, and retractile coil-springs secured to the adjacent ends of said sections to hold the sections in their normal position and return them thereto when swung apart, substantially as shown and described.

39. In a car-fender, a plurality of sections mounted to swing independently of one another on horizontal planes, said sections being normally in close proximity to one another, and retractile coil-springs secured to the adjacent ends of said sections to hold the sections in their normal position and return them thereto when swung apart, substantially as shown and described.

40. In a car-fender, a plurality of sections mounted to swing independently of one another, said sections being normally in close proximity to one another, a fixed portion overlapping the adjacent ends of said sections to bridge the opening therebetween, and retractile coil-springs secured to said fixed portion and to the adjacent ends of said swinging sections, substantially as shown and described.

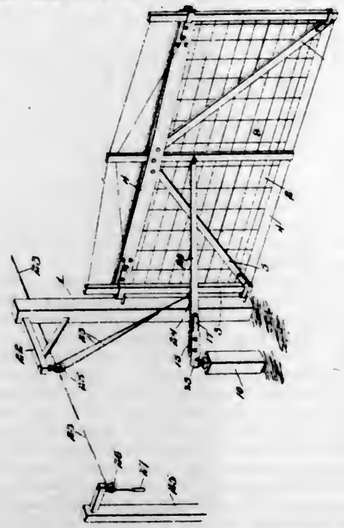
41. In a car-fender, a plurality of sections mounted to swing independently of one another on horizontal planes, said sections being normally in close proximity to one another, a fixed portion overlapping the adjacent ends of said sections to bridge the opening therebetween, and retractile coil-springs secured to said fixed portion and to the adjacent ends of said swinging sections, substantially as shown and described.

820,734. **TREE-PROTECTING ATTACHMENT FOR AGRICULTURAL IMPLEMENTS.** ARTHUR W. RALPH, Uriah, Cal. Filed Dec. 26, 1905. Serial No. 293,343.



Claim.—In a device of the class described, a base-plate having adjusting-slots, a strengthening-rib, and a conical spindle; in combination with a flanged wheel supported for rotation upon said spindle; and a yieldable tire supported upon said flanged wheel.

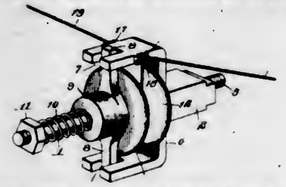
820,735. **GATE.** LEWIS E. REAMES, West Liberty, Ohio. Filed Dec. 12, 1905. Serial No. 291,424.



Claim.—The combination with a post and a gate hinged thereto; of a support, a stem secured to and projecting upward from said support, a ball secured to the upper end of said stem, a pair of strips having oppositely-disposed similar sockets adapted to engage and fit around said ball, a portion of the meeting faces of said sockets being cut away to form a slot, a bar-section secured between the opposite ends of said strips, a portion of the free end thereof being cut away to form a shoulder, a second bar-section pivotally secured between the elongated portions of said strips and having a portion of its end cut away to form a shoulder, said cut-away ends being designed to overlap each other, said second section being pivotally connected to the gate at its opposite end, the meeting ends of both of said sections adapted to swing upon their pivotal connection solely in a vertical plane, an arm extending from the post, and means depending from the arm and secured to the second bar-section adapted to swing the point of connection between said sections over the support.

820,736. **TENSION DEVICE.** WILLIAM J. RHODES, Elizabeth, Ind. Filed Nov. 9, 1905. Serial No. 286,617.

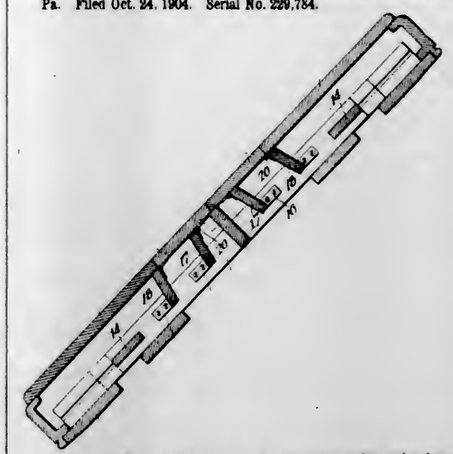
Claim.—1. A tension device of the character described, comprising a stem, a non-rotatable bracket mounted thereon, a cross-bar engaging the bracket and slidably mounted on the stem, a spool-section rotatably mounted on the stem and having a grooved tubular extension, another spool-section slidably mounted on the extension and rotatable therewith, both of the spool-sections being interposed between and contacted by the bracket and cross-bar, and tensioning means contacting with and adapted to actuate the cross-bar.



2. A tension device comprising a stem, a bracket fixedly mounted thereon, a spring-pressed cross-bar slidably mounted on the stem and engaging the bracket, and a sectional spool interposed between the bracket and cross-bar, one of said sections constituting a support for the other section and said sections being normally clamped together by the bracket and cross-bar.

3. A tension device comprising a stem, a bracket fixedly connected thereto and having guide-spools thereon, a cross-bar slidably mounted on the stem and engaging the bracket, a tension-spring upon the stem and bearing on the cross-bar and a sectional spool rotatably mounted on the stem and interposed between the bracket and cross-bar, one of the sections of the spool being slidably mounted on, but rotatable with the other section and both sections being normally clamped together by the bracket and cross-bar.

820,737. **EXTENSION-TABLE.** JOHN K. RISHEL, Williamsport, Pa. Filed Oct. 24, 1904. Serial No. 229,784.



Claim.—1. The combination in an extension-table, of a frame including a transversely-disposed bar arranged below and serving to support the adjacent edges of the permanent table-top, an auxiliary leaf, and pivotal supports for said leaf, the leaf being adjustable to bring one of its edges above the supporting-bar, and one of the pivotal supports at the opposite edge of said leaf serving to support the adjacent edge of the permanent top.

2. The combination in an extension-table, of a frame including a centrally-disposed cross-bar arranged below and serving to support the adjacent edges of the permanent top, auxiliary leaves, and pivotally-mounted cross-bars for the support of said leaves, the cross-bars being disposed on lines oblique to the top of the table when the leaves are adjusted to position for use.

3. The combination in an extension-table, of a frame including a transversely-disposed bar arranged below and serving to support the adjacent edges of the permanent table-top, auxiliary leaves, and pivotal supports for said leaves, each of said leaves being adjustable to bring one of its edges above the supporting-bar, and one of the pivotal supports at the opposite edge of said leaf serving to support an additional leaf.

4. In an extension-table, the combination with a plurality of slidably-connected rails arranged in pairs, of a rigid cross-bar extending between the rails forming the inner pair, and serving at all times as a support for two leaf-sections of the table-top, and an auxiliary leaf-section adjustable to the plane of the top of the table and arranged to rest on said cross-bar.

5. In an extension-table, slidable extension side rails connected in pairs, a rigid cross-bar extending between the rails forming the inner pair, a plurality of cross-bars pivotally connected at their opposite ends to said inner rails and having their upper edges oblique with respect to their sides, and an auxiliary leaf pivotally connected to said pivoted cross-bars and resting on the rigid cross-bar when adjusted to a position in the plane of the top of the table, the oblique edge of one of the bars serving to support another portion of the table-top, and the pivoted cross-bars having their upper load-receiving edges in vertical planes to one side of the vertical planes of their pivots.

820,738. **TIRE FOR VEHICLES.** THOMAS C. SANDERSON, West New Brighton, N. Y. Filed July 14, 1905. Serial No. 269,573.



Claim.—1. The combination of a vehicle-tire comprising an annular tube containing a semifluid or viscous substance, with a rim having a series of springs bearing against the walls of the tube so as to deform the same, substantially as set forth.

2. The combination of a vehicle-tire comprising a single annular tube containing a semifluid or viscous substance, with a rim having a series of springs bearing against the walls of the tube so as to deform the same, substantially as set forth.

3. The combination of a vehicle-tire comprising an annular tube containing a semifluid or viscous substance, with a rim, having a series of springs bearing against the walls of the tube so as to deform the same, and means for detachably securing the tube to said rim, substantially as set forth.

4. The combination of a vehicle-tire comprising an annular tube containing a semifluid or viscous substance, with a rim having a series of springs bearing against the walls of the tube so as to deform the same, said springs being formed by slits cut in the margins of the rim, substantially as set forth.

5. The combination of a vehicle-tire comprising a single annular tube containing a semifluid or viscous substance, with a rim having a series of springs bearing against the walls of the tube so as to deform the same, said springs being formed by slits cut in the margins of the rim, substantially as set forth.

6. The combination of a vehicle-tire comprising an annular tube containing a semifluid or viscous substance, with a rim having a series of springs bearing against the walls of the tube so as to deform the same, said springs being formed by slits cut in the margins of the rim, and means for detachably securing the tube to said rim, substantially as set forth.

7. The combination of a vehicle-tire comprising a single annular tube containing a semifluid or viscous substance, with a rim having a series of springs bearing against the walls of the tube so as to deform the same, said springs being formed by slits cut in the margins of the rim, and means for detachably securing the tube to said rim, substantially as set forth.

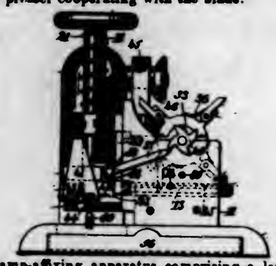
820,739. **STAMP-AFFIXING APPARATUS.** JOHN SCHNELL, Jr., Olean, N. Y. Filed May 17, 1905. Serial No. 260,776.

Claim.—1. A stamp-affixing apparatus comprising a laterally-curved blade and a presser coöperating with the blade.

2. A stamp-affixing apparatus comprising a laterally-curved blade, a presser coöperating with the blade, and means for forcing the presser toward the blade.

3. A stamp-affixing apparatus comprising a laterally-curved blade, a presser coöperating with the blade, and means for forcing the presser toward the blade, said blade being mounted for adjustment toward and from the presser.

4. A stamp-affixing apparatus comprising a laterally-curved blade, a guide curved to conform with the blade and extending therealong, and a presser coöperating with the blade.



5. A stamp-affixing apparatus comprising a laterally-curved blade, a curved guide extending along the blade, a presser coöperating with the blade, and means for moving the guide toward and from the presser.

6. A stamp-affixing apparatus comprising a blade, a guide extending along the blade, a presser coöperating with the blade, means for moving the guide toward and from the presser, and independent means for fixing said guide in position.

7. A stamp-affixing apparatus comprising a laterally-curved blade, a guide extending along and conforming to the blade, and a presser coöperating with the blade.

8. A stamp-affixing apparatus comprising a laterally-curved blade, a concave guide extending along the blade and having an opening, a feed device operating in the opening, and a presser coöperating with the blade.

9. A stamp-affixing apparatus comprising a laterally-curved blade, a concave guide extending along the blade and having an opening, a feed device having yieldable arms operating in the opening, and a presser coöperating with the blade.

10. A stamp-affixing apparatus comprising a laterally-curved blade, a concave guide extending along the blade and having an opening, a feed-wheel operating in the opening, a presser coöperating with the blade, and means for actuating the feed-wheel from the presser.

11. A stamp-affixing apparatus comprising a laterally-curved blade, a concave guide extending along the blade and having an opening, a feed-wheel operating in the opening, a presser coöperating with the blade, and ratchet mechanism connecting the feed-wheel and presser.

12. A stamp-affixing apparatus comprising dividing means movable retaining members situated at one side of the dividing means, and spaced apart from each other, and a presser movable between and independently of the retaining members.

13. A stamp-affixing apparatus comprising dividing means, pivotally-mounted retaining members situated at one side of the dividing means and spaced apart from each other, and a presser movable between and independently of the retaining members.

14. A stamp-affixing apparatus comprising dividing means, pivotally-mounted retaining members situated at one side of the dividing means and spaced apart from each other, a presser movable between and independently of the retaining members and a spring for retaining said retaining members in a definite position with respect to the presser.

15. A stamp-affixing apparatus comprising dividing means, a presser, members mounted independently of the presser below the dividing means and projecting at each side into the path of the presser, springs for normally maintaining the retaining members in position and means whereby the presser may swing said retaining members from without its path of movement.

16. A stamp-affixing apparatus comprising dividing means, a presser, retaining members mounted independently of the presser below the dividing means and projecting at each side into the path of the presser, means for normally maintaining the retaining members in the path of the presser, and means whereby the presser may swing said retaining members out of its path.

17. A stamp-affixing apparatus comprising a reservoir having a discharge-neck, an elastic sleeve situated in the neck and having a thickened engaging portion, and absorbent material carried by the sleeve, and means for compressing the sleeve.

820,740. **VALVE FOR CONVEYER-TUBES.** ADOLPH W. SOMMER, Lewiston, Idaho. Filed Feb. 8, 1905. Serial No. 244,594.

Claim.—1. A valve for conveyer-tubes comprising a rock-shaft having lateral arms and a valve-plate removably secured to and fitting between said arms.

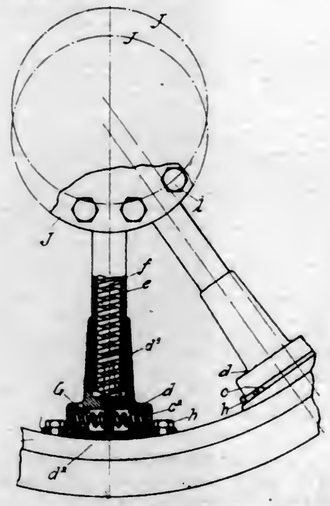


2. In a valve for conveyer-tubes a frame comprising a rock-shaft having a fixed lateral arm and a second lateral arm adjustable along the rock-shaft, the said arms being arranged to be secured to a valve-plate.

3. In a valve for conveyer-tubes a frame comprising a rock-shaft having a longitudinal slot and provided with a fixed lateral arm near one end and a second lateral arm provided with a tongue at one end fitted on and movable along the longitudinal slot of the rock-shaft, the said arms being arranged to be secured to a valve-plate.

4. In a valve for conveyer-tubes the combination of a rock-shaft having lateral arms, a valve-plate provided on its edges with recesses to receive said lateral arms, and means for securing the said arms to the valve-plate.

820,741. **WHEEL.** JOHN SINNOTT, Philadelphia, Pa. Filed July 10, 1905. Serial No. 268,969.



Claim.—1. A vehicle-wheel comprising a hub, a rim, outer shoes secured to the rim, inner shoes engaging, and movable circumferentially relatively to, the outer shoes respectively, tubular spokes securing to the hub and engaging, and movable radially relatively to, the inner shoes respectively, springs between the hub and the inner shoes, and springs between the inner and outer shoes.

2. A vehicle-wheel comprising a rim, a hub, tubular spokes connected to the hub, inner shoes having tubular arms engaging the tubular spokes respectively, springs within the spokes confined between the inner shoes and the hub, outer shoes secured to the hub and engaging the inner shoes and springs extending at right angles to the radius of the wheel and confined between the two shoes of each pair.

3. A vehicle-wheel comprising a two-part hub having recesses extending radially inward, tubular spokes extending into the recesses of both parts of the hub, means securing the hub parts together and securing the spokes in position, inner shoes having inwardly-extending tubular arms into which the spokes respectively extend, springs one within each spoke and confined between the hub and the shoe, a rim, outer shoes secured to the rim, two shoes of a pair having mutually engaging side flanges, and springs confined between the two shoes and permitting a limited relative movement between them in a circumferential direction.

4. A vehicle-wheel comprising a rim, a hub, outer shoes secured to the rim, inner shoes respectively engaging the outer shoes, a spring between the two shoes of a pair permitting the rim and the shoe secured thereto to move circumferentially with respect to the inner shoe, tubular spokes connected to the hub and engaging respectively the inner shoes and movable radially relatively thereto, and springs within the spokes and confined within the hub and the inner shoes.

5. A vehicle-wheel comprising a rim, a hub, spokes connected thereto, shoes one connected with the outer end of each spoke, shoes corresponding in number secured to the rim, each of said shoes having side flanges, the side flanges of one shoe fitting within the side flanges of the other shoe of the pair, one of said shoes having a central projection and the other end walls, and springs between said projection and said end walls.

6. A vehicle-wheel comprising a two-part hub having recesses extending radially inward, tubular spokes extending into said recesses, inner shoes one at the outer end of each spoke and movable radially thereon, springs one within each spoke and confined between the hub and the inner shoe, a rim, outer shoes secured to the rim, and connections between the inner and outer shoes whereby the rim is capable of a limited movement circumferentially with respect to the inner shoes, spokes and hubs.

7. A vehicle-wheel comprising a two-part hub having complementary abutting flanges extending radially outward, the abutting ends of the flanged portions of the hub being recessed to receive the spokes, tubular spokes extending within the recessed portions of the hub, bolts, one on each side of each spoke, extending through the flanges of the hub-sections and clamping the spokes in place, inner shoes having radially-extending tubular arms engaging the outer ends of the tubular spokes, springs, each extending within its corresponding tubular arm and tubular spoke and engaging, at its respective ends, the corresponding shoe and the hub, a rim, and means connecting the inner shoes with the rim.

8. A vehicle-wheel comprising a rim, a hub, spokes connected thereto, shoes one connected with the outer end of each spoke, other shoes secured to the rim, the first shoes each having tapered side flanges and a central projection and the second shoes each having tapered side flanges engaging the flanges of the first shoe, end walls and end flanges secured to the rim, and springs confined between the projection on the first shoe and the end walls of the second shoe.

9. A vehicle-wheel comprising a rim, a two-part hub having complementary abutting flanges extending radially outward, the abutting ends of the flanged portions of the hub being recessed to receive the spokes, tubular spokes extending within the recessed portions of the hub, bolts arranged alternately to the spokes, extending through the flanges of the hub-sections and clamping the spokes in place, a shoe for each spoke having an inwardly radially extending tubular arm within which the outer end of the corresponding spoke extends and a foot portion having tapered side flanges and a central projection, springs one within each tubular spoke and confined between the hub and the shoe, a second shoe having tapered side flanges engaging the flanges of the first shoe, end walls and end flanges secured to the rim, and springs confined between the projection on the first shoe and the end walls of the second shoe.

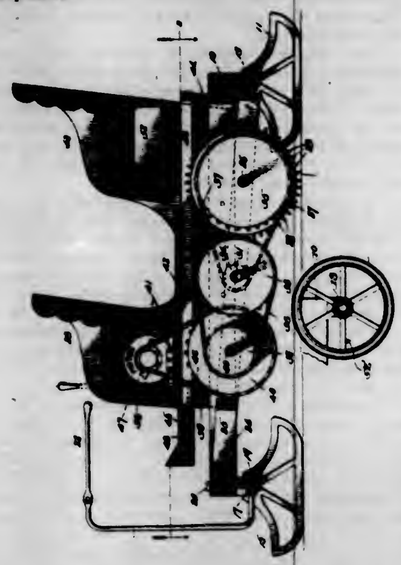
820,742. **MOTOR-SLEIGH.** CLAUDE J. SIMS, Hopkinsville, Ky. Filed July 11, 1905. Serial No. 269,221.

Claim.—1. In a vehicle of the class described, a main frame mounted upon bearing members, a supporting-frame swinging from said main frame, a traction-wheel mounted for rotation in said swinging frame for bearing on the ground, means carried by said main frame for rotating said wheel, a shifter-frame pivoted to the main frame at a point intermediate its ends, a yieldable element interposed between the movable end of said supporting-frame and the adjacent end of the shifter-frame, and means under the control of the operater for actuating said shifter-frame.

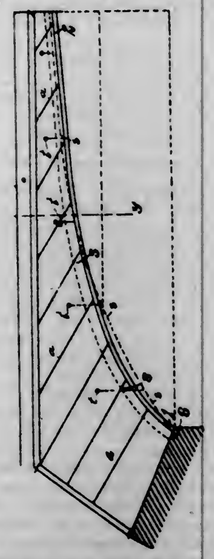
2. In a vehicle of the class described, a main frame mounted upon bearing members with a seat for the operator at the forward end, a supporting-frame swinging from said main frame, a traction wheel mounted for rotation in said swinging frame for bearing on the ground, means carried by said main frame for rotating said wheel, a shifter-frame swinging from said main frame and extending at one end beneath said seat, a footboard carried by said shifter-frame in advance of said seat, a yieldable element between said shifter-frame and the movable end of said supporting-frame, and means under the control of the operator for actuating said shifter-frame.

3. In a vehicle of the class described, a main frame mounted upon bearing members with a seat for the operator at the forward end, a supporting-frame swinging from said main frame, a traction-wheel mounted for rotation in said swinging frame for bearing on the ground, means carried by said main frame for rotating said wheel, a shifter-frame swinging from said main frame and extending at one

end beneath said seat, a footboard carried by said shifter-frame in advance of said seat, a yieldable element between said shifter-frame and the movable end of said supporting-frame, a lever-arm movably connected to said main frame and coupled by its shorter end to said shifter-frame and with its longer end terminating in a handle, a pawl carried by said lever, and a toothed segment for adjustable engagement by said pawl, whereby the shifter-frame is supported in any required position.



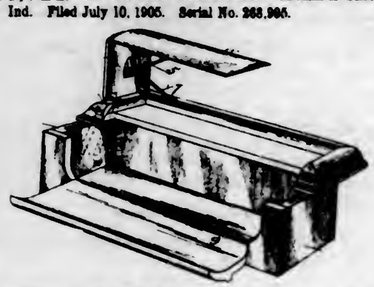
820,748. BRIDGE CONSTRUCTION OF REINFORCED CEMENT. OLNEY A. SLATER, Pontiac, Mich. Filed May 26, 1905. Serial No. 262,127.



Claim.—1. A reinforced concrete bridge structure, having in combination an arched floor structure, and concrete ribs having reinforcing-bars therein extending broadly from the floor structure at the ends and narrowing toward the middle, substantially as described.

2. In a reinforced concrete bridge structure, the combination of a deeply-ribbed concrete structure arched on the under side and arched beams at the under part, horizontal beams at the upper part, inclined beams supporting the ends of the horizontal beams, the arched beams and the horizontal and inclined beams being tied together in concrete, whereby there is produced a ribbed bridgework adapted to support a heavy layer of earthwork at the quarters of the arch and a light layer of earthwork at the crown of the arch, substantially as described.

820,744. COFFIN AND CASKET LID. THOMAS A. SMITH, Salem, Ind. Filed July 10, 1905. Serial No. 268,986.



Claim.—1. The combination, with a coffin or casket, of a lid-frame, and the links pivoted in pairs at one end to the lid-frame ends and having the other end pivoted to the coffin ends on each side of the center of the coffin ends for supporting said frame.

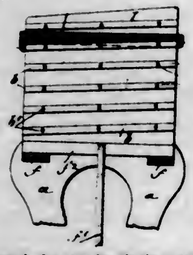
2. The combination, with a coffin or casket, of a lid-frame having one of its sides hinged to the coffin, a pair of links at each end of the frame and connecting these ends with the coffin ends to permit the lid to be swung across the coffin independent of said frame side to open and close the coffin.

3. The combination, with a coffin or casket, of a lid-frame having its ends and one side connected and movable together, the other side being separate and movable independently, and means connecting the frame with the coffin to effect said movements.

4. The combination, with a coffin or casket, of a lid-frame movable across the casket, a canopy-lid movable with the frame and adapted to be adjusted thereon independent of the frame movement, and means connecting said frame with the casket.

5. The combination, with a coffin or casket, of a lid-frame movable across the casket, a canopy-lid hinged to the frame and adapted to be adjusted independent of the frame movement, and a pair of links pivoted in each end of the casket and having separate pivot connections with the ends of the frame.

820,745. BENCH FOR USE IN PLAYING MUSICAL INSTRUMENTS. JOHN W. SUTTON, New York, N. Y. Filed Nov. 15, 1905. Serial No. 287,477.



Claim.—1. A bench for use in playing musical instruments, consisting of upright side walls provided with inclined parallel cleats at their upper ends, means for transversely connecting said side walls, and an adjustable seat provided with inclined recesses at the ends where they bear upon the inclined cleats.

2. A bench for use in playing musical instruments, consisting of upright side walls provided with inclined parallel cleats at their upper ends, means for transversely connecting said side walls, and a detachable seat made of increasing thickness from one edge to the other at both ends and adapted to be supported on the cleats in inclined or horizontal position.

3. A bench for use in playing musical instruments, consisting of upright side walls provided with inclined cleats attached to the upper parts of the same, means for transversely connecting said side walls, and a detachable seat provided with recesses at the ends that increase in depth from one edge to the opposite edge.

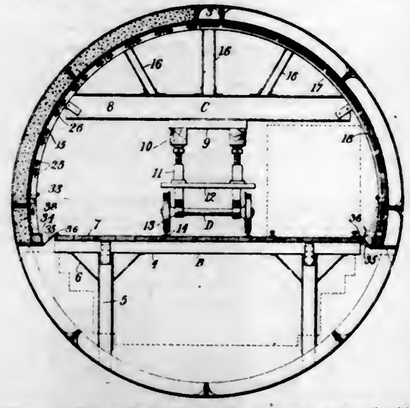
4. A bench for use in playing musical instruments, consisting of upright side walls, means for transversely connecting the same, inclined parallel cleats attached to the upper ends of said side walls, and a seat provided with recesses in its ends increasing gradually in thickness from one edge to the other and with transverse cleats at the ends of said recesses for being retained on the ends of the inclined cleats.

820,746. CLOTH-TENTERING MACHINE. CHARLES L. TAYLOR, Hartford, Conn. Filed Aug. 30, 1905. Serial No. 276,483.



Claim.—The combination in a tentering-machine, of a pair of tracks provided with vertical walls, hinged chain-links adapted to run in said tracks and provided with overhanging lips at their upper edges and laterally-extending lips at their lower edges, said laterally-extending lips fitting a groove in the track, rollers carried by said chain-links and arranged to bear against said vertical walls of the track, and fabric-gripping devices carried by said chain-links.

820,747. METHOD OF AND APPARATUS FOR LINING TUNNELS WITH CONCRETE. ROSS F. TUCKER, New York, N. Y. Filed July 8, 1904. Serial No. 215,731.



Claim.—1. The method of lining the interior of a tunnel while the heading is being driven and without interfering therewith, consisting in applying the lining along a longitudinal section of the wall in one set of operations while maintaining a way for transporting material to and from the heading adjacent the opposite section, and then lining said opposite section and maintaining the way for transporting material to and from the heading adjacent the first section.

2. The method of applying a concrete lining to a tunnel without interference with the driving of the heading, consisting in lining the arch and invert in separate operations, transporting materials to and from the heading along the bottom of the tunnel while the arch is being lined and concreting materials transported along elevated ways from entrance to the point of work, and transporting materials to and from the heading along elevated paths while the invert is being lined and material therefor transported along the bottom of the tunnel.

3. The method of lining and equipping the interior of a tunnel without interference with the driving of the heading consisting in arranging an elevated platform in the tunnel, carrying on the lining operations of the arch upon and over said platform and simultaneously utilizing the space beneath for a way for material-carriers to and from the heading, then operating said material-carriers upon said platform and lining and equipping the tunnel-invert.

4. The method of applying a concrete lining to a tunnel-tube, consisting in progressively erecting a substantially diametric platform behind the heading, transporting material to and from the heading underneath said platform and at the same time applying the concrete lining to the tunnel-arch and transporting materials to the point of work along the platform from the entrance, then transporting materials along the platform to and from the heading and applying the concrete lining to the tunnel-invert and transporting materials underneath the platform from entrance to point of work, whereby both sets of operations are carried on simultaneously.

5. In tunnel construction, means for lining the arch of the tunnel simultaneously with the driving of the heading, consisting of a frame or platform sufficiently elevated to permit free passage of material-cars underneath to and from heading, a center or shield for holding the concrete in place until set, a truck for carrying the same and tracks upon the platform for supporting said truck and for carrying material-cars along the tunnel above the cars running to the heading.

6. The method of applying a concrete lining to the arch of a tunnel-tube, consisting in inclosing successive or contiguous spaces thereon to form temporary chambers having circumferentially-disposed openings thereinto, then progressively filling said chambers from the bottom upward and closing said openings as the filling advances, and then removing the inclosing walls.

7. In tunnel construction, the method of simultaneously carrying on operations at the heading and upon the arch in the rear of the heading, and transporting materials to and from the heading along a path in the lower section of the tunnel, and transporting, along a path in the upper section of the tunnel, material from the entrance to the scene of work upon the arch.

8. In tunnel construction, the method which consists in arranging a substantially diametric, horizontal partition in the tunnel between the entrance and heading, utilizing the lower section of the tunnel as a way for transporting materials to and from the heading and the upper section for carrying on building operations upon the tunnel-arch and as a way for the transportation of material from the entrance to the scene of arch operations.

9. In tunnel construction, the method which consists in transporting materials to and from the heading along paths in the bottom section of the tunnel, and at the same time carrying on work upon the arch of the tunnel and transporting materials from the entrance to the point of such work along paths in the upper section of the tunnel.

10. In tunnel construction, the method which consists in transporting material to and from the heading in the lower segment of the tunnel and at the same time transporting materials toward and from the entrance and carrying on work upon the walls in the upper segment of the tunnel.

11. In tunnel construction, the method which consists in transporting material toward and from the heading along a path at or near the bottom of the tunnel and at the same time applying a concrete lining to the walls of the tunnel above said path.

12. A shield or center of the class described having a circumferential slot and removable sections for closing said slot.

13. Apparatus for applying a concrete lining to tunnel-tubes having interior ribs or flanges, consisting of a shield or center conforming to the arch of the tube, having means for adjusting its position along the tube and toward and from its arch, and provided with circumferential slots and removable sections for closing such slots.

14. A shield or center of the class described, comprising two or more similar cylindrical segments, uniformly interspaced to form intermediate slots, and having common support adjustable axially and radially, and removable closures for said slots for the purpose specified.

15. A shield or center of the class described, comprising in combination a series of similar cylindrical segments in normal or working position concentric with the tunnel-tube, uniformly interspaced to form intermediate openings or slots, and series of cylindrical segments for each slot serving as removable closures therefor.

16. A shield or center for the purpose specified, comprising in combination a series of similar cylindrical segments having a common support provided with means for adjusting the position of the shield lengthwise of the tunnel and radially toward and from the arch of the tunnel, said segments being uniformly interspaced, and series of sections for closing said spaces, certain of said sections having pipe or hose couplings.

17. The method of applying a concrete lining to a metallic tunnel-tube having inner circumferential ribs or flanges, consisting in first partially inclosing the spaces between said ribs to form chambers with circumferentially-slotted openings, then progressively closing said slots from the bottom upwardly and progressively filling the closed portions of the said chambers with concreting material.

18. The method of applying a concrete lining to a metallic tube, consisting in first partially inclosing a space thereon to form a temporary chamber with circumferentially-slotted opening, the tube constituting the outer wall of the chamber, then progressively clos-

ing said opening from the bottom upwardly and filling the closed portion of the chamber with concreting material, and then removing the inclosing walls of the chamber.

19. The method of applying a concrete lining to the arch of a tunnel-tube, consisting in partially inclosing spaces upon the walls of the tube to form series of circumferentially-extended, temporary chambers having circumferentially-slotted openings, then gradually closing said openings from the bottom upward, and filling the closed space with concreting material.

20. The method of applying a concrete lining to the arch of a tunnel-tube, consisting in first inclosing a space upon said arch to constitute a chamber having a circumferential slot or opening, then progressively closing said slot from the bottom upward and progressively charging the closed portions with concrete material, and then forcing grout into said chamber to complete the filling thereof.

21. The method of applying a concrete lining to the arch of a tunnel-tube, consisting in first inclosing successive or contiguous spaces thereon to form temporary chambers with circumferentially-disposed openings therefrom, then filling said chambers from the bottom upward with gravel or broken stone and closing said opening as such filling progresses, then forcing grout into said chambers to fill the interstices, and then removing the inclosing walls.

22. The method of applying a concrete lining to the arch of a tunnel-tube, consisting in first arranging a series of interposed circumferential cylindrical segments concentric with and spaced from the arch a distance equal to the required thickness of such lining then progressively closing the openings between segments and filling the space between segments and arch with concrete, and then removing said segments.

23. Apparatus for applying concrete lining to a circumferentially-ribbed tube, consisting of a series of interspaced cylindrical segments adapted to be seated severally upon the ribs of the tube, gaskets interposed between said segments and ribs, and sections for closing the spaces between segments.

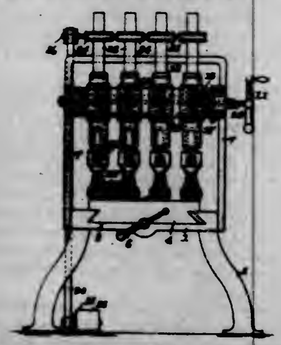
24. A shield of the class described, having series of cylindrical segments with intermediate slots, and closures therefor, and extension-segments for the lower ends of said cylindrical segments, and means for seating them against the tube.

25. A shield of the class described, having interspaced cylindrical segments, longitudinally-slotted flanges upon the edges thereof, closure-sections having flanged edges and securing-bolts arranged through said slots and section-flanges.

26. A shield or center for the purpose specified, comprising in combination a supporting and carrying truck, a series of interspaced cylindrical segments mounted thereon, and depending extension-pieces hinged to said segments.

27. A center of the class described, having depending extension-pieces hinged to the lower edges thereof, and means for raising and lowering said center and for forcing said extension-pieces outwardly.

820,748. **POLISHING-MACHINE.** GUSTAV TOECHEL, New York, N. Y. Filed Apr. 26, 1905. Serial No. 257,473.



Claim.—1. In a polishing-machine, the combination, with a frame and a work-holder on the same, of a plurality of polishing-ball carriers, polishing-balls arranged in said carriers, and means for effecting movement of the work-holder and ball-carriers the one with reference to the other, substantially as described.

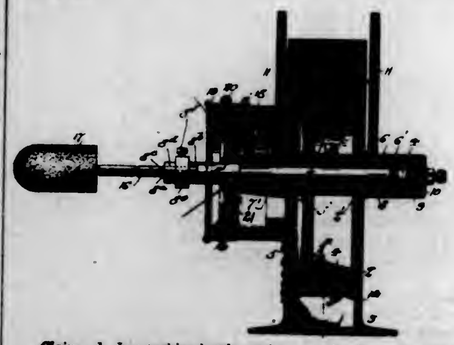
2. In a polishing-machine of the class described, the combination with a frame, and a movable work-holder on the same, of a plurality of adjustable hollow polishing-ball carriers, a plurality of polishing-balls made of felt carried by each carrier, a suitable fabric covering said balls, means for adjusting said ball-carriers vertically, means for adjusting the same laterally, and means for rotating the same, substantially as set forth.

3. In a polishing-machine of the class described, the combination with a frame, a suitable work-holder arranged on the same, and means for moving said work-holder forwardly and backwardly, of a plurality of vertical rotatable spindles arranged above said work-holder, a hollow polishing-ball carrier for each spindle, and capable of containing any desired polishing material, means for removably attaching the ball-carriers to the rotatable spindles, a plurality of felt balls projecting from the under side of each ball-carrier, means for adjusting the same vertically, and means for rotating the same, substantially as set forth.

4. In a polishing-machine of the class described, the combination with a frame, a suitable work-holder arranged on the same, and means for moving said work-holder forwardly and backwardly, of a plurality of vertical rotatable spindles arranged above said work-holder, a hollow polishing-ball carrier for each spindle, and capable of containing any desired polishing material, means for removably attaching the ball-carriers to the rotatable spindles, a plurality of felt balls projecting from the under side of each ball-carrier, a bearing for each spindle, and a laterally-adjustable bracket, wherein said bearing may be moved upward and downward, means for adjusting said brackets laterally, and means for rotating the spindles, substantially as set forth.

5. In a polishing-machine of the class described, the combination with a frame, a suitable work-holder arranged on the same, and means for moving said work-holder forwardly and backwardly, of a plurality of vertical rotatable spindles arranged above said work-holder, a hollow polishing-ball carrier for each spindle, and capable of containing any desired polishing material, means for removably attaching the ball-carriers to the rotatable spindles, a plurality of felt balls projecting from the under side of each ball-carrier, a bearing for each spindle, and a laterally-adjustable bracket, wherein said bearing may be moved upward and downward, a belt-pulley on the upper end of each spindle, an electric motor, means for mechanically connecting said motor to the belt-pulleys on the spindles, and means for laterally adjusting said brackets, substantially as set forth.

820,749. **TURBINE BOTTLE-WASHER.** THEODORE L. VALERIUS, Fort Atkinson, Wis., assignor to The Creamery Package Mfg. Company, Chicago, Ill., a Corporation of Illinois. Filed Dec. 15, 1904. Serial No. 236,982.



Claim.—1. In a turbine bottle-washer, a casing having a steam-nozzle and an exhaust-opening, in combination with a turbine-wheel in said casing, a wheel-shaft having bearings in said casing, a brush-holder on said shaft and a friction-brake arranged on said shaft and adapted to engage a part of said casing, and thereby retard the rotation of said wheel when the speed thereof equals a given number of revolutions per minute, substantially as described.

2. In a turbine bottle-washer of the class described, a casing having a suitable base, the axis of which is horizontal and which is provided with a steam-inlet nozzle and an exhaust-opening, in combination with a shaft mounted in said casing, a turbine-wheel mounted on said shaft, a brush-clamp on said shaft and a centrifugally-actuated automatic brake having its rotary part arranged for rotation with said wheel and its stationary part a part of said casing, substantially as described.

3. In a turbine bottle-washer comprising a suitable casing, in combination with a turbine-wheel, a shaft having a brush-holder, a boss on said casing and concentric with said shaft and a centrifugally-operated brake device mounted on said shaft for engagement with said boss, substantially as described.

4. In a turbine bottle-washer, a turbine-casing, a turbine wheel and shaft, said casing having an external hollow boss or sleeve 18 that is concentric with said shaft, a disk mounted on said shaft within said boss and centrifugal brake-blocks carried by said disk and adapted to be moved outwardly into engagement with said boss by the excessive speed of said wheel and shaft, substantially as described.

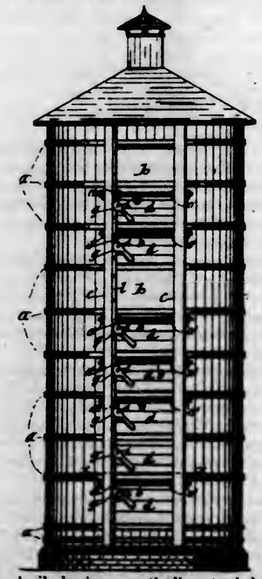
5. In a turbine bottle-washer, a casing, shaft and wheel, in combination with a centrifugal brake device mounted on said shaft, and a boss formed integrally with said casing and inclosing said device, substantially as described.

6. In a turbine bottle-washer, a casing, having a removable end and a hollow boss formed on said end, in combination with a shaft mounted in said casing, concentrically with said boss, a turbine-wheel on said shaft, a centrifugal brake device mounted on the portion of said shaft that is within said boss, and removable end or cap closing the open end of said hollow boss, substantially as described.

7. In a turbine bottle-washer, a casing having bearings in its sides, in combination with the turbine wheel and shaft in said bearings, whereon said wheel is mounted, an external sleeve or boss on the side of said casing concentric with said shaft and centrifugal friction-blocks mounted on said shaft within said sleeve and boss adapted to frictionally engage the latter to prevent excessive rotation of said shaft, substantially as described.

8. In a turbine bottle-washer, a casing having bearings in its sides, in combination with a shaft, a turbine-wheel mounted thereon, a stationary sleeve on the exterior of said casing and concentric with said shaft, a disk mounted on the shaft within said sleeve and spring-returned centrifugal brake-blocks mounted on said disk for engagement with the inner surface of said sleeve, for the purpose specified.

820,750. **SILO.** ABRAM WALRATH, Weedsport, N. Y. Filed Oct. 12, 1903. Serial No. 176,633.



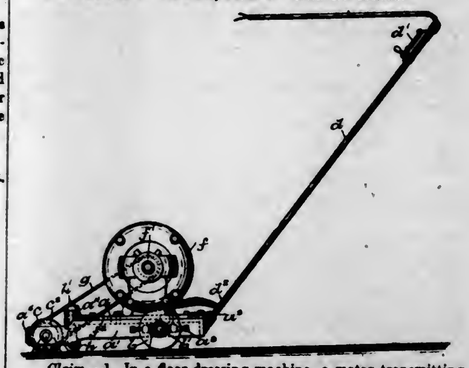
Claim.—1. A silo having a vertically-extended opening forming a doorway, a door-post formed in its jamb or inner face with a vertical groove V shape in cross-section, and an opposite door-post having the jamb or inner face beveled inwardly of the silo, a series of doors disposed successively one upon the top of the other and in the same vertical plane, each of said doors being movable vertically and laterally in the opening and having their edges conformed to the aforesaid jambs, and means for locking the edge of the doors separately in its closed position, and during the locking operation for causing said doors to be moved laterally and downwardly in the opening to wedge the same with the jambs of the door-posts.

2. A silo having a vertically-extended opening forming a doorway, a door-post formed with a vertically-grooved jamb, and an opposite door-post formed with an inwardly-beveled jamb, a series of doors disposed successively one on top of the other in the same vertical plane, and each movable independently vertically and laterally in the opening, said doors having their edges conformed to the aforesaid jambs to fit therewith, and means movably connected to each door to engage the exterior of the door-post formed with the beveled jamb and lock the doors, said means acting to move the doors laterally and downwardly during the locking operation, substantially as described.

3. In a silo provided with a vertical door-opening, the combination of a door-post having a vertically-grooved jamb, and an opposite door-post having an inwardly-beveled jamb, and a door having its edges conformed to said jambs to fit therewith, and means for forcing the door to its closed position and simultaneously with said closing of the door to move the same laterally toward the grooved jamb and downwardly, substantially as described.

4. A silo having a vertical opening forming a doorway, door-posts, one of which is grooved, the other beveled, doors fitting said door-posts and clamps carried by the doors and adapted to draw the doors between the door-posts and move the doors downwardly in the opening.

820,751. **FLOOR-DRESSING MACHINE.** CYRA B. WATTLES, Providence, R. I. Filed July 20, 1903. Serial No. 166,205.



Claim.—1. In a floor-dressing machine, a motor transmitting power to a dressing-roller, and means consisting of mechanism for adjusting the weight of the machine horizontally with respect to the dressing-roller to put more or less weight on the dressing-roller to vary the pressure of the dressing-roller on the floor, for the purpose as described.

2. In a floor-dressing machine, a frame supporting a motor and a dressing-roller, means for transmitting power from the motor to the dressing-roller, consisting of pulleys on the shafts of the motor and dressing-roller connected by a belt, and means for adjusting the weight of the motor upon the dressing-roller, consisting of mechanism adapted to adjust the motor on the frame horizontally toward or from the dressing-roller, as described.

3. In a floor-dressing machine, the combination with a frame, a pair of wheels therefor, a dressing-roller mounted in said frame on a horizontal axis and forming with said wheels, the sole support of the machine, a self-contained motor mounted upon the frame for driving said roller, and means consisting of mechanism for adjusting the weight of the machine with relation to the dressing-roller to place more or less weight on the dressing-roller whereby to proportion the weight of the machine to be supported by the wheels and said roller for the purpose specified.

4. In a floor-dressing machine, a frame, wheels adjustably secured to the frame, a dressing-roller rotatably secured in the frame and adapted to engage with the floor, a motor on the frame, a handle pivotally secured to the frame, pulleys on the shafts of the motor and dressing-roller connected by a belt, a caster adjustably secured in the frame and adapted to engage with the floor, means for adjusting the pressure of the dressing-roller on the floor, consisting of mechanism adapted to adjust the position of the wheels on the frame, means for adjusting the tension of the belt, consisting of mechanism adapted to adjust the position of the motor on the frame, means for adjusting

the dressing-roller from the floor, consisting of mechanism adapted to adjust the caster in the frame, to bring the caster into engagement with the floor, and means for transmitting power from a source of energy to the motor, as described.

5. In a floor-dressing machine, the combination of the frame *a* supported on the floor by the wheels *b b* adjustably secured to the frame, and the dressing-roller *c* rotatably secured in the frame, of the hollow T-shaped handle *d* pivotally secured at its lower end to the frame, the flexible cable *e* having wires extending downward through the handle connecting with the switch *d'* on the handle and to the motor *f* adjustably secured on the frame *a* by the bolts f^4 f^4 and a^9 a^9, the pulleys *f'* on the motor connected to the pulley c^3 on the dressing-roller shaft *c'* by the belt *g* and the caster *h* having the screw-threaded stem *h'* extending upward through the boss a^{11} on the frame *a* and adjustably secured in the boss by the nuts h^3 h^3 in screw-thread engagement with the stem *h'*, as described.

6. In a floor-dressing machine, the frame *a* having the sides *a' a'* extending outward at the front to form the arms a^3 a^3 in which are the bearings a^3 a^3 for the shaft of the dressing-roller *c* and the cavities a^4 a^4 for the rubber buffers a^5 a^5, the elongated openings a^6 a^6 in the sides *a' a'*, the outwardly-extending lugs a^7 a^7 on the sides at the ends of the openings, the adjusting-bolts a^8 a^8 screw-threaded in the lugs for adjusting the position of the wheels *b b* rotatably supported on the axle *b'* extending through the openings a^6 a^6 in the sides *a' a'*, the adjusting-bolts a^9 a^9 in screw-thread engagement with the lugs a^{10} a^{10} on the frame *a* and engaging with the base f^5 of the motor *f* and the cylindrical boss a^{11} in which the caster *h* is adjustably secured, as described.

7. In a floor-dressing machine, the combination of a frame, a dressing-roller mounted in one end of the frame on a horizontal axis and extending across the longitudinal middle line of the machine and serving as a support for that end of the frame, a pair of wheels secured near the opposite end of the frame, said wheels and dressing-roller forming the sole support of the frame, an electric motor mounted on the frame and connected to the dressing-roller to rotate the same, and means for connecting the motor with a source of electric energy.

8. In a floor-dressing machine, the combination of a frame, a pair of wheels therefor, a dressing-roller mounted in said frame on a horizontal axis and forming with said wheels, the sole support of the machine, a self-contained motor mounted on the frame for driving said roller, means for relatively adjusting the weight of the machine with respect to said supports whereby the pressure of the dressing-roller on the floor may be varied, and a handle pivotally secured to the frame and abutting thereagainst below its pivotal connection thereto, whereby the operator may at will lift the dressing-roller from the floor.

9. In a floor-dressing machine, the combination with a frame, a pair of supporting-wheels therefor, a dressing-roller mounted in said frame and forming with said wheels the sole supports of the machine, a self-contained motor mounted on the frame for driving said roller and means for relatively adjusting the weight of the machine with respect to said supports whereby the pressure of the dressing-roller upon the floor may be varied.

10. In a floor-dressing machine, a motor transmitting power to a dressing-roller, and means consisting of mechanism for adjusting the weight of the motor in relation to the dressing-roller to give more or less weight on the dressing-roller to vary the pressure of the dressing-roller on the floor, for the purpose as described.

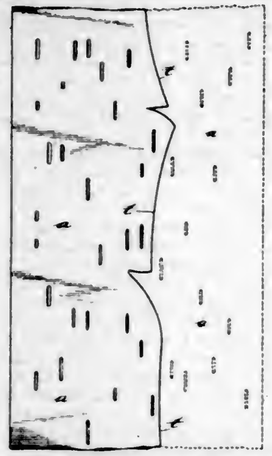
820,752. TEMPLET FOR PLACING EXPRESSION-LINES. FRANCIS L. YOUNG, Brooklyn, N. Y., assignor to Aeolian Company, New York, N. Y., a Corporation of Connecticut. Filed Mar. 3, 1905. Serial No. 248,217.

Claim.—1. As a new means for marking lines upon music-sheets, a templet having indicia to register with corresponding indicia on the music-sheet, and a profiled edge corresponding with the line to be produced.

3. A templet for music-sheets having perforations for registration with corresponding perforations of the music-sheet and having a profiled edge.

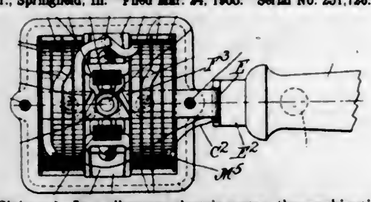
3. A templet for making a waved line upon the perforated music-sheets said templet having a straight edge corresponding with one straight edge of the music-sheet, and perforations corresponding with the note-actuating perforations of the music-sheet and a profiled edge corresponding with a line that is to be produced upon such music-sheet.

4. A templet for marking continuous lines or other indicia on music-sheets and corresponding with a portion of such music-sheets in respect to perforations and one edge, and provided with a profiled edge for correctly locating said continuous lines or other indicia on the music-sheet.



5. A templet for marking perforated music-sheets, having one irregular edge for locating the markings and one straight edge and perforations corresponding with the perforations in said sheet for accurate registration with the music-sheet.

820,753. ELECTRICAL VIBRATORY MOTOR. JAMES L. ADAMS, Jr., Springfield, Ill. Filed Mar. 24, 1905. Serial No. 251,726.



Claim.—1. In a vibratory electric motor, the combination of a field-core of magnetic material, a coiled winding for energizing such field-core, an air-gap in such field-core, and an elastically-supported armature adapted to oscillate in such air-gap such armature moved in one direction by magnetic force of the field-core and retracted by the elasticity of its support.

2. In a vibratory electric motor, the combination of a field-core of magnetic material, a coiled winding for energizing such field-core, a plurality of air-gaps in such field-core, and an elastically-supported armature adapted to vibrate in such air-gaps, such armature moved in one direction by magnetic force of the field-core and retracted by the elasticity of its support.

3. In a vibratory electric motor, the combination of a field-core of magnetic material, a coiled winding for energizing such field-core, an air-gap in such field-core, and an elastically-supported armature adapted to oscillate in such air-gap in synchronism with the periodic variations in strength of the exciting-current, such armature moved in one direction by magnetic force of the field-core and retracted by the elasticity of its support.

4. In a vibratory electric motor, the combination of a field-core having an air-gap, a coiled energizing-winding for such core, and an elastically-supported armature adapted to readily oscillate in such air-gap in unison with every half-cycle of an alternating exciting-current such armature moved in one direction by magnetic force of the field-core and retracted by the elasticity of its support.

5. In a vibratory electric motor, the combination of a field-core having an air-gap, a coiled energizing-winding for such core, and an elastically-supported armature adapted to readily oscillate in such air-gap in unison with every complete cycle of an alternating exciting-current such armature moved in one direction by magnetic force of the field-core and retracted by the elasticity of its support.

6. In a vibratory electric motor, the combination of a field-core having an air-gap, a coiled energizing-winding for such core, an elastically-supported armature adapted to readily oscillate in such air-gap, and a convenient controlling-switch for such exciting-current such armature moved in one direction by magnetic force of the field-core and retracted by the elasticity of its support.

7. In an electric motor, the combination of a hollow field-core formed by the superposition of laminæ of different dimensions so as to have corrugated or uneven heat-radiating surfaces, a coiled energizing-winding for such core, and an armature adapted to move within the hollow core.

8. In an electric motor, the combination of a hollow field-core having corrugated or uneven heat-radiating surfaces, such core forming a portion of the inclosing case of the motor a coiled energizing-winding for such core, and an armature adapted to move within the hollow core.

9. In a vibratory electric motor, the combination of a field-core, a coiled energizing-winding for such core, an angular air-gap formed by the slanting pole-faces of such core, and an armature having two faces of approximately corresponding obliquity, said armature being elastically supported so as to readily oscillate toward and away from the slanting pole-faces of such core.

10. In a vibratory electric motor, the combination of a field-core, a coiled energizing-winding for such core, a suitably-formed air-gap in such core, a spring-supported armature adapted to readily oscillate in such air-gap, and substantial means for attaching the spring element to such armature and to said core.

11. In a vibratory electric motor, the combination of a field-core, a coiled energizing-winding for such core, a suitably-formed air-gap in said core, a spring-supported armature adapted to readily oscillate in such air-gap, an inclosing casing firmly attached to said core, and substantial means for attaching the spring element to such armature, and to said inclosing casing.

12. In a vibratory electric motor, the combination of a field-core, a coiled energizing-winding for such core, a suitably-formed air-gap in such core, and an armature elastically supported on a plurality of flat springs and adapted to readily oscillate in such air-gap.

13. In a vibratory electric motor, the combination of a field-core, a coiled energizing-winding for such field-core, a suitably-formed air-gap in such core, and an armature elastically supported on compound leaf-springs, the leaves of which are separated from one another by suitably-formed spacers placed at the ends of such springs, the latter being substantially attached to said armature and to motor-frame, said armature being thereby adapted to readily oscillate in said air-gap, substantially as shown.

14. In a vibratory electric motor, the combination of a field-core, a coiled energizing-winding for such core, a suitably-formed air-gap in such core, and an armature elastically supported on compound springs, the individual leaves of which are separated from one another by suitably-formed compound leaf-spacers, the individual leaves of which latter are of a plurality of lengths, said compound spacers being placed between the ends of said compound springs, said springs being substantially attached to said armature and to motor-frame, said armature being adapted to readily oscillate in said air-gap, substantially as shown.

15. In an electric motor, the combination of a field-core having poles with oblique faces, an energizing-winding for such core, a suitable air-gap in such field-core, an armature having surfaces of approximately corresponding obliquity to said pole-faces and adapted to oscillate in such air-gap, such armature being elastically supported in such manner as to maintain approximate parallelism between its oblique surfaces and the corresponding pole-faces.

16. In an electric motor, the combination of an electromagnet with an armature, and two separate springs supporting such armature so as to permit of an approximately parallel motion of such armature, one of such springs being of non-magnetic material.

17. In a vibratory electric motor, the combination of a field-core, a coiled energizing-winding for such core, a suitably-formed air-gap in such core, a spring-supported armature adapted to readily oscillate in such air-gap, and a current-interrupter adapted to periodically make and break the exciting-circuit of said field-core.

18. In a vibratory electric motor, the combination of a field-core, a coiled energizing-winding for such core, a suitably-formed air-gap in such core, a spring-supported armature adapted to readily oscillate in such air-gap, and external electrical means for regulating the amplitude of vibration of such armature.

19. In a vibratory electric motor, the combination of a field-core; a coiled energizing-winding for such core; a suitably-formed air-gap in such core; a spring-supported armature adapted to readily oscillate in such air-gap; and convenient external mechanical means for regulating the amplitude of vibration of such armature.

20. In a vibratory electric motor, the combination of a field-core; an energizing-winding for such field-core; a suitably-tapered air-gap in such core; an armature of appropriate form adapted to readily oscillate in such air-gap; a plurality of leaf-springs supporting such armature; an inclosing casing; substantial means for attaching said springs to said armature and to said inclosing casing; and means for conducting the exciting-current from a supply-outlet to the winding of said vibratory motor.

21. In a vibratory electric motor, the combination of a laminated magnetic field-core having internal salient poles and channeled outer heat-radiating surfaces; an energizing-winding for such field-core, such winding being formed of a plurality of spirally-wound, insulated aluminium ribbon coils; a tapering air-gap formed by the oblique pole-faces of said field-poles; a laminated armature having faces of corresponding obliquity and adapted to oscillate in such tapering air-gap; a plurality of compound flat leaf-springs supporting said armature; rounded spacers of two different lengths separating alternate leaves of such compound springs; a light aluminium inclosing casing firmly attached to said core; substantial means for attaching such compound springs to the armature and to said inclosing casing; a convenient controlling-switch; and conductors whereby said motor may be connected to a supply-circuit.

22. In an electric motor, a hollow field-core forming a portion of the inclosing case of the motor having one or more uneven outer heat-radiating surfaces formed by the repeated superposition of a laminæ having different dimensions with respect to one or more of the axes of said field-core.

23. In an electric motor, the combination of a field-core; an energizing-winding for such core; a tapered air-gap in such core; an armature of corresponding obliquity adapted to readily oscillate in such air-gap; a light inclosing casing; projecting brackets depending from, and integral with such casing; and a set of flat, elastic springs firmly attached at one end to said brackets, said armature being solidly mounted on the other end of such springs in such manner as to readily permit vibratory motion in such armature.

24. In an electric motor, the combination of a light casing composed of two sections bolted together, with a field-core and its necessary winding bolted between the two integral parts of such casing; and an armature elastically suspended from the interior of such casing.

25. In an electric motor, the combination of a field-core; an energizing-winding for such core; an air-gap in said core; an armature elastically suspended and adapted to oscillate in such air-gap; a two-part inclosing casing between the integral parts of which above core, winding and elastically-supported armature are bolted; a handle to which said core and casing are firmly secured; and a manually-operated controlling-switch incorporated in said handle.

26. In a vibratory electric motor adapted to be energized by alternating, or by a pulsating direct current, the combination of a field-core; an energizing-winding for such core; an air-gap in such core; an armature movably mounted in such air-gap; an inclosing casing; and springs attached to said armature and to such inclosing casing; said armature and springs forming an elastically-supported moving element adapted to vibrate in unison with the periodic variations in strength of such current.

27. In an electric motor, the combination of a core with an armature supported so as to move to and from such core, the adjacent surfaces of the armature and the core being formed on lines oblique with respect to the direction of movement of such armature so that the distances between the armature and the core are short relative to the displacement of the armature throughout the travel of the same.

28. In a vibratory device, the combination of a supporting part, with an oscillating member, a compound spring connected at one end to the oscillating member and at the other to the supporting part, such spring comprising a plurality of leaves.

29. In a vibratory device, the combination of a supporting part, with an oscillating member, a compound spring connected at one end to the oscillating member and at the other to the supporting part, such spring comprising a plurality of leaves and a plurality of spacers between the leaves.

30. In a vibratory device, the combination of a supporting part, with an oscillating member, a compound spring connected at one end to the oscillating member and at the other to the supporting part, such spring comprising a plurality of leaves and a plurality of spacers of alternate lengths between the leaves.

31. In a vibratory device, the combination of two supporting-brackets with an oscillating member and means for elastically supporting such oscillating member, comprising two compound springs each of which is secured at one end to the oscillating member and at

the other to one of the supporting-brackets, each of such springs comprising a plurality of leaves, and interposed between such leaves a plurality of spacers of different lengths arranged alternately.

820,754. NON-REFILLABLE BOTTLE. GRAFTON C. ALLEN, Port Townsend, Wash. Filed Jan. 17, 1906. Serial No. 296,496.

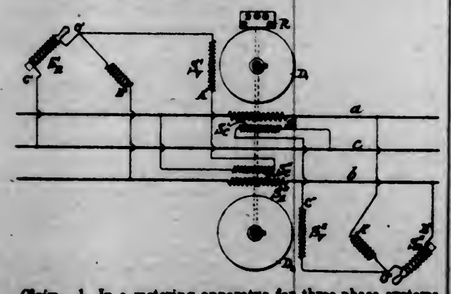


Claim.—1. A bottle having a neck, a plug mounted in said neck and having a chamber in the lower portion thereof, and a collapsible tube mounted in said chamber, said plug having a laterally-disposed duct in the upper portion thereof and having an opening communicating with said chamber at the side, said duct having a mouth-opening at the extremity of said plug.

2. A bottle having a neck, a plug mounted in said neck and having a chamber in the lower portion thereof, a collapsible tube mounted in said chamber, said plug having a laterally-disposed duct in the upper portion thereof and having an opening communicating with said chamber at the side, said duct having a mouth-opening at the extremity of said plug, and means for admitting air to the interior of the bottle.

3. A bottle having a neck, a plug mounted in said neck and having a chamber formed in the lower portion thereof communicating with the interior of the bottle, a collapsible tube having its lower edge attached to said plug and having its walls above substantially touching each other to constitute a valve, said plug further having a duct laterally disposed and communicating with said chamber through the side thereof and having a mouth-opening at the end of said plug, an air-tube in communication with said mouth and projecting into the interior of the bottle, and a valve carried by the inner extremity of said tube.

820,755. ENERGY-METER FOR THREE-PHASE PLANTS UNSYMMETRICALLY LOADED. RICCARDO ARNO, Milan, Italy. Filed Sept. 20, 1902. Serial No. 124,169.



Claim.—1. In a metering apparatus for three-phase systems, the combination, with a series coil, of an autotransformer connected between the main containing the series coil and one of the other mains, and a shunt-coil connected to a point in the autotransformer and to the remaining main of the system.

2. In a metering apparatus for three-phase systems, the combination, with a series coil, of an autotransformer connected between the main containing the series coil and one of the other mains, a shunt-coil connected to a point in the autotransformer and to the remaining main of the system, and means for adjusting the reactance of the transformer.

3. In a metering apparatus for three-phase systems, the combination, with a series coil, of an autotransformer connected between the main containing the series coil and one of the other mains, a shunt-coil connected to a point in the autotransformer and to the remaining main of the system, and means for adjusting the reactance of one part of the autotransformer.

4. In a meter for three-phase systems, the combination, with a three-phase reactance device connected to the three mains of the system, and having one of the coils arranged to act as one of the measuring-coils of the meter, of a second measuring-coil arranged with its magnetic field-interacting with the magnetic field of said first-mentioned measuring-coil, said second measuring-coil being connected in one of the main lines.

5. In a meter for three-phase systems, the combination, with a three-phase reactance device connected to the three mains of the system and having one of its coils arranged to act as one of the measuring-coils of the meter, the reactance of one of its other coils being adjustable, of a second coil connected in one of the main lines and arranged with its magnetic field interacting with the magnetic field of said first-mentioned measuring-coil.

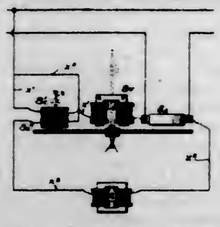
6. In a meter for three-phase systems, the combination, with two three-phase reactance devices, each connected to the three mains of the system, and each having one of its reactive coils arranged to act as a volt-measuring coil, of two ampere-measuring coils connected in the corresponding mains and each arranged to interact with its corresponding volt-measuring coil.

7. In a metering apparatus for three-phase systems, the combination, with two reactance devices, each connected to the three mains of the system, and each having one of its coils arranged to act as a volt-measuring coil, of two ampere-measuring coils connected in the corresponding mains, each being arranged to coact with its corresponding volt-measuring coil to form a pair of measuring-coils, and two compensating coils, each arranged to operate in conjunction with its corresponding pair of measuring-coils, the compensating coil of each pair of measuring-coils being connected in series with the volt-measuring coil of the other pair of measuring-coils.

8. In a three-phase metering device, the combination, with two series coils, and two shunt-coils, of two compensating coils, each compensating coil being in series with the corresponding opposite shunt-coil.

9. In a three-phase metering device, the combination, with two series coils, and two shunt-coils, of a compensating coil in series with each shunt-coil, and means for impressing each shunt-coil with an electromotive force which is displaced in phase with relation to the normal electromotive force between the corresponding leads of the three-phase system.

820,756. ALTERNATING-CURRENT METER. RICCARDO ARNO, Milan, Italy. Filed Feb. 10, 1904. Serial No. 192,966.



Claim.—1. In an electric meter, the combination, with the volt-coil and ampere-coil, of two compensating coils coacting to produce a common compensating flux, one compensating coil being in series with the volt-coil, and an inductance device in series with the second compensating coil, the said inductance device and the second compensating coil being in parallel with the volt-coil and the first compensating coil.

2. In an electric meter, the combination, with the mains of the system, of an ampere-coil inserted in one main, a branch circuit from each terminal of the ampere-coil to the other main of the system, a volt-coil and a compensating coil in series in one of said branch circuits, a second compensating coil and an inductance device in series on the other branch circuit, said compensating coils being arranged to produce a common field, and an armature within the inductive influence of all the coils.

3. In an electric meter, the combination, with a volt-coil and an ampere-coil, of two compensating coils coacting to produce a common compensating flux, one compensating coil being in series with the volt-coil, and an inductance device, in series with the second compensating coil, the inductance device and the said compensating coil being in parallel with the volt-coil and the first compensating coil, the connections of the second compensating coil being reverse to those of the first compensating coil.

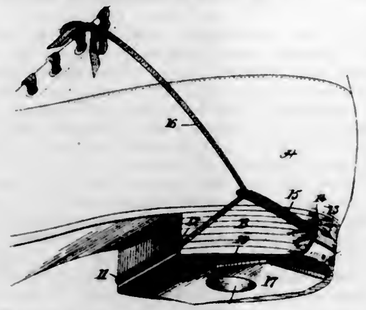
4. In an electric meter, the combination, with the volt-coil and ampere-coil, of two compensating coils coacting to produce a common compensating flux substantially in phase with the voltage of the system, said compensating coils being connected in branch circuits, and means for substantially equalizing the impedances of the branch circuits.

5. In an electric meter, the combination with the volt-coil and the ampere-coil, of two compensating coils coacting to produce a common compensating flux substantially in phase with the voltage of the system, said compensating coils being connected in branch circuits, and an inductance device in each branch circuit.

6. In an electric meter, the combination with the volt-coil and the ampere-coil, of two compensating coils coacting to produce a common compensating flux substantially in phase with the voltage of the system, said compensating coils being connected in branch circuits, an inductance device having a closed magnetic circuit in one branch circuit, and an inductance device having an open magnetic circuit in the other branch circuit.

7. In an electric meter, the combination with the volt-coil and the ampere-coil, of two compensating coils coacting to produce a common compensating flux substantially in phase with the voltage of the system, said compensating coils being connected in branch circuits, means for substantially equalizing the impedances of the branch circuits, and means for adjusting the position of the compensating coils.

820,757. BOWLING-SLIPPER. WILLIAM J. BARNETT, New York, N. Y. Filed July 28, 1905. Serial No. 271,661.

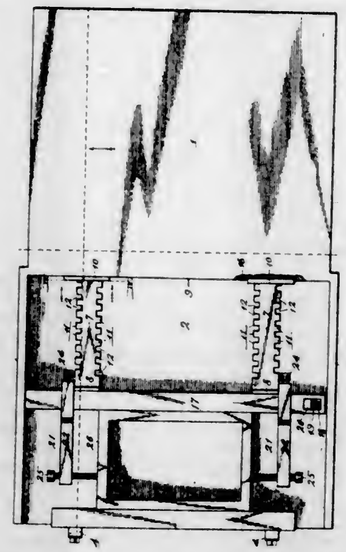


Claim.—1. As an improved article of manufacture, a bowling heel or slipper, consisting of a body portion, front and rear portions adapted to extend up at the front and at the rear of the heel of the shoe to which it is to be applied, the front portions of the body being provided with a stiffening member, elastic loops extending from opposite sides of the rear portion of the body, and tapes attached to the forward portion of the body, being adapted to be passed through the said loops, and a rubber pad secured to the bottom portion of the body.

2. A bowling slipper or heel consisting of a body-strip of stout fabric of greater length than the heel and of a width equal to that of the heel of the shoe to which the device is to be applied, the said body-strip being provided with an inserted bar at its forward end, elastic loops extending from the side portions to the rear end of the body-strip, tapes of non-elastic material secured to the forward portion of the body-strip and adapted to be carried through the elastic loops, and a rubber pad secured to the under face of the body-strip between its ends.

3. A bowling heel or slipper, consisting of a body portion adapted to the back and front of the heel of the shoe to which it is to be applied and extending in direction of the bottom of the heel, the forward end of the said body-strip being stiffened, an attaching medium consisting of elastic members extending from the rear of the body-strip and non-elastic members extending from the forward portion of the body-strip, being adapted for engagement with the elastic members, and a rubber pad secured to the under face of the body-strip.

820,758. BED-LOCK FOR INK-TABLE-DISTRIBUTION PRESSES. JOHN C. BERMINGHAM, Kansas City, Mo. Filed Sept. 6, 1904. Serial No. 223,353.



Claim.—1. In an apparatus of the character described, in combination, a type-bed, an ink-distribution table communicating therewith and provided with a pocket, the upper surface of said table being arranged in a higher plane than the upper surface of the type-bed, an extension-bar adjustably arranged in the pocket and adapted to be slid outwardly upon the upper surface of the type-bed, and means for locking said extension-bar from backward movement.

2. In an apparatus of the character described, in combination, a type-bed, an ink-distribution table communicating therewith and provided with pockets, the upper surface of said table being arranged in a higher plane than the upper surface of the type-bed, extension-bars adjustably arranged in the pockets and adapted to be slid outwardly upon the upper surface of the type-bed, means for locking said extension-bars from backward movement, and means on the forward ends of the extension-bars for limiting their backward movement.

3. In an apparatus of the character described, the combination with a frame provided with pockets, of extension-bars slidably arranged in said pockets and adapted to be slid into contact with an object to be secured upon said frame, teeth alternately arranged upon the longitudinal sides of said extension-bars, and keys straddling the extension-bars adapted to slide longitudinally and alternately engage the teeth upon the latter.

4. In an apparatus of the character described, the combination with a frame provided with a pocket, of an extension-bar slidably arranged in said pocket and adapted to be slid into contact with an object to be secured upon said frame, teeth alternately arranged upon the longitudinal sides of said extension-bar, and a key slidably arranged upon the extension-bar provided at its ends with depending lugs for engageng said teeth.

5. In an apparatus of the character described, the combination with a frame provided with pockets, of extension-bars slidably arranged in said pockets and adapted to be slid forwardly, teeth alternately arranged upon the longitudinal sides of said extension-bars, keys slidably arranged upon the extension-bars adapted to engage the

teeth on the latter, and a transverse bar interposed between the extension-bars and the object to be secured upon the frame.

6. In an apparatus of the character described, the combination with a frame provided with pockets, of extension-bars slidably arranged in said pockets and adapted to be slid forwardly, teeth alternately arranged upon the longitudinal sides of said extension-bars, keys slidably arranged upon the extension-bars adapted to engage the teeth on the latter, a transverse bar interposed betwen the extension-bars and the object to be secured upon the frame, and means for securing said transverse bar to the flanges on the frame.

7. In an apparatus of the character described, a transverse bar, and a side lock-clamp consisting of a bar provided at one end with a recess for the reception of the transverse bar, a set-screw at said recessed end for engaging the transverse bar, and an adjusting-screw at the opposite end of the clamp-bar.

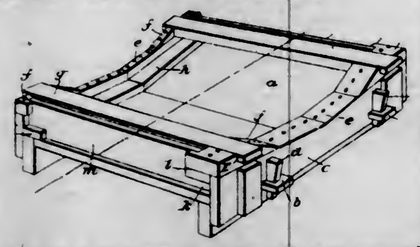
8. In an apparatus of the character described, the combination with a type-bed, a chase, and an ink-distribution table having pockets, of extension-bars slidably arranged in the pockets and adapted to be slid forwardly into contact with the chase, flanges on the front upper corners of the extension-bars, teeth on the opposite sides of the extension-bars, the teeth on one side being opposite the spaces between the teeth on the opposite side of each of said bars, keys having recesses to fit over the extension-bars, and lugs depending from the opposite sides of the keys adapted to alternately enter the spaces at the opposite sides of the extension-bars.

9. In an apparatus of the character described, the combination with a type-bed, a chase, and an ink-distribution table having recesses in its front surface and pockets in its under side communicating at their forward ends with the recesses, of extension-bars slidably arranged in the pockets and adapted to be slid forwardly into contact with the chase, and keys adapted to slide longitudinally in the recesses and alternately engage the teeth on the opposite sides of the extension-bars.

10. In an apparatus of the character described, the combination with a type-bed having flanges at two of its sides, a chase, and an ink-distribution table, of extension-bars adjustably secured to the ink-distribution table, means for locking said extension-bars from backward movement, a transverse bar adapted to be interposed between the chase and the extension-bars having an opening in one end, and a set-screw projecting through said end provided with an apertured head arranged in the opening of the transverse bar.

11. In an apparatus of the character described, the combination with a type-bed, a chase, and an ink-distribution table, of extension-bars slidably secured to the table, means for locking said extension-bars from backward movement, a transverse bar adapted to be interposed between the forward ends of the extension-bars and the chase, and side lock-clamps adjustably secured to the transverse bar and adapted to engage two sides of the chase.

820,759. **SEWER AND CULVERT MOLD.** HERMAN BESSER, Alpena, Mich. Filed Nov. 11, 1905. Serial No. 286,939.



Claim.—1. A mold comprising a base, side walls connected with the base, and having their upper edges in the same horizontal plane, guiding-plates adjustably mounted on the edges of the side walls at each end thereof, said plates being provided with notches, transverse core-blocks resting in the notches, and end walls connected to said plates and movable therewith.

2. A mold comprising a base and two side walls having guiding upper edges, and one of said side walls being removably mounted on the base, said base being provided with projections extending beyond the outer surface of said side wall, and wedges inserted between said projections and the side wall.

3. A mold comprising a base, side walls connected with the base and having their upper edges in the same horizontal plane, guiding-plates adjustably mounted on the edges of the side walls at each end thereof, and core-blocks and end walls connected to the guiding-plates and movable therewith.

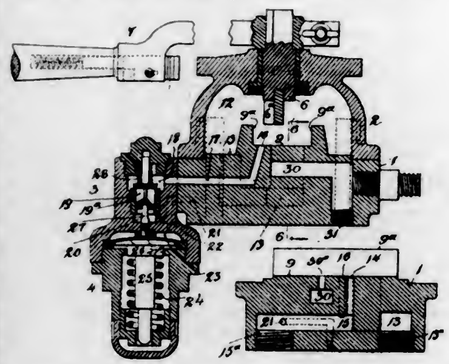
4. A mold comprising a base and side walls, guiding-plates adjustably mounted on the edges of the side walls at each end thereof, and core-blocks and end walls connected to the plates and movable therewith.

5. A mold comprising a base and side walls, guiding-plates adjustably mounted on the side walls at each end thereof, and end walls connected to the guiding-plates and movable therewith.

6. A mold comprising a base of concave form and two side walls, one of said side walls being removably mounted upon the base, one of the side walls being also provided with a ledge extending in parallel position with respect to the base and the other side wall being provided with a groove of the same shape and size as said ledge, the mold also having adjustable end walls fitting said ledge and groove.

7. A mold comprising a base of concave form and two side walls, one of said side walls being removably mounted upon the base, one of the side walls being also provided with a ledge extending in parallel position with respect to the base, and the other side wall being provided with a groove of the same shape and size as said ledge.

820,760. **VALVE FOR AIR-BRAKE SYSTEMS.** JOHN H. BLROO, New York, N. Y., assignor to Abraham B. Levy, New York, N. Y. Filed Jan. 9, 1904. Renewed Feb. 14, 1906. Serial No. 301,044.



Claim.—1. An air-brake valve provided with ports and passages, one of which serves for supplying air for the running position, and a movable valve having ports for controlling the first-named ports and passages, one of the ports of said movable valve being arranged for supplying air therethrough to one of the first-named ports for the running position and also arranged to supply air to the last-named port for recharging the system while all other ports and passages are blanked, substantially as described.

2. An air-brake valve provided with ports and passages communicating with a valve-seat, one of said ports serving to supply air for the running position, and a slide-valve on said seat provided with ports for use in connection with the ports of said seat, one of the ports of the slide-valve being arranged to register with one of the ports of the seat for the running position, said port of the slide-valve being arranged with relation to the other ports of the seat so as to register with the port thereof adapted for the running position while all other ports of the seat are blanked to cause recharging of the system while the last-named ports are blanked, substantially as described.

3. An air-brake valve provided with ports and passages communicating with a valve-seat, one of said ports serving to supply air for the running position, and a slide-valve on said seat provided with ports for use in connection with the ports of said seat, one of the ports of the slide-valve being arranged to register with one of the ports of the seat for the running position, said port of the slide-valve being elongated with relation to the other ports thereof so as to register with the port of the seat adapted for the running position while all other ports of the seat are blanked to cause recharge of the system while the last-named ports are blanked, substantially as described.

4. An air-brake valve provided with ports and passages and a feed-valve communicating with certain of said passages and with the train-pipes, and a valve having ports to coact with the first-named ports and passages and one of its ports arranged to supply air to the feed-valve for the running position and also while the brakes are applied, substantially as described.

5. An air-brake valve provided with ports and passages and a valve to control the same, combined with a feed-valve connected with certain of said passages and with a train-pipe, and a slide-valve having ports, one of said ports being arranged to register with a passage leading to the feed-valve for the running position and also to communicate with said passage when the valve is in position for blanking all other ports for causing recharging of the system while the valve is in such position, substantially as described.

6. An air-brake valve provided with a feed-valve having a chamber to receive main-reservior air, a valve and port to control the admission of air to said chamber, the feed-valve having another chamber to receive reservoir-air and maintained constantly under train-pipe pressure and not in communication with the main air-chamber of the valve except through the feed-valve and its supply-passage, substantially as described.

7. An air-brake valve having a main air-chamber and a passage communicating therewith, and a valve to control said passage, combined with a feed-valve casing provided with a chamber communicating with said passage and having a valve to control the exit of air from said chamber, said casing having another chamber communicating with the first-named chamber and in direct communication at all times with train-pipe air but having no connection with reservoir-air independent of the feed-valve, substantially as described.

8. An air-brake valve provided with ports and passages and a valve to control the same, combined with a feed-valve provided with a chamber communicating with one of said passages to receive main-reservoir air, a diaphragm-chamber communicating with the first-named chamber on the air-delivery side of the valve and with a passage connected with train-pipe air, whereby the diaphragm-chamber is maintained under train-pipe pressure and whereby the feed-valve prevents reservoir-pressure from reaching the diaphragm-chamber, a spring to act with the diaphragm, and a connection between the feed-valve and the diaphragm for opening the former by the influence of said spring, substantially as described.

9. An air-brake valve provided with passages and a valve to control the same combined with a feed-valve provided with a chamber in communication with one of said passages and a chamber communicating with train-pipe air and having no connection with main-reservoir air except as it is delivered past the feed-valve, and means for causing the feed-valve to close upon pressure in the train-pipe and the second-named chamber reaching a predetermined point and for causing the feed-valve to open upon reduction in train-pipe pressure to permit recharging of the train-pipe with air from the main reservoir, substantially as described.

10. An air-brake valve provided with passages and a valve to control the same, combined with a feed-valve casing provided with a chamber communicating with one of said passages, a valve to control the outlet from said chamber, a chamber communicating with the first-named chamber and with a passage for connection with a train-pipe, a diaphragm on one side of the second-named chamber, a spring to push the diaphragm against pressure in the train-pipe and a pin between the diaphragm and the feed-valve for opening the latter upon reduction of train-pipe pressure in the diaphragm-chamber, the spring and diaphragm being arranged to permit the feed-valve to close by reason of main-reservoir pressure upon the train-pipe pressure reaching a predetermined point, substantially as described.

11. An air-brake valve provided with ports and passages and a valve to control the same, combined with a feed-valve casing having a valve and a diaphragm, and a pin fitting snugly in its guide or bearing and provided with a plurality of friction-grooves to receive air to retain the pin in different positions of adjustment and arranged to be practically tight to prevent the flow of air past the pin, said pin being independent of the diaphragm and feed-valve so that either may move without moving the pin, substantially as described.

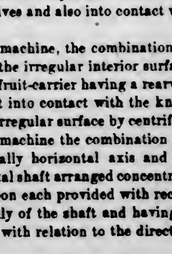
12. The combination of a slide-valve provided with a recess or bearing, a disk journaled therein, and a shaft movably connected with said disk so that the disk may be rotated by the shaft and have independent movement relative to the axis of the shaft, substantially as described.

13. The combination of a slide-valve provided with a bearing and a disk journaled therein, with a shaft connected with the disk to rotate the same, said shaft also having sliding connection with the disk to permit the disk to move relatively to the axis of the shaft, substantially as described.

14. The combination of a slide-valve and a disk journaled thereon, with a shaft, and a tongue-and-slot connection between the shaft and disk, whereby the disk may be rotated by the shaft and have movement relative to the axis of the shaft, substantially as described.

15. The combination of a slide-valve and a disk journaled thereon and provided with a slot, with a shaft having a tongue or foot fitting in said slot and arranged to rotate the disk and permit sliding movement of the latter relative to the shaft, substantially as described.

820,761. **HONING-MACHINE.** CHARLES F. BOLDT, Detroit, Mich. Filed July 27, 1905. Serial No. 271,477.

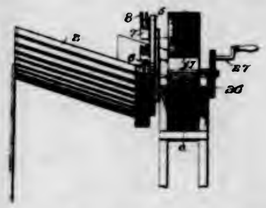


Claim.—1. In a razor-honing machine, the combination of the cylindrical stones, rotatively mounted and held yieldingly in peripheral contact, a supporting-plate for the razor-blade to direct the blade between said stones, and springs for supporting said plate to allow of a vertical movement thereof.

2. In a razor-honing machine, the combination of the shafts, the cylindrical stones thereon, springs connecting the ends of said shafts, a driving-wheel, pulleys upon said shafts adapted to carry a belt from the driving-wheel, an idle wheel engaging said belt, and means for directing the blade to the grinding-stones and permitting of a vertical reciprocation thereof.

3. In a razor-honing machine, the combination of the cylindrical, rotative stones, means for mounting said stones to allow of a lateral adjuetment thereof, means for supporting a razor movably in place over said stones to permit of a vertically-reciprocatory movement thereof when grinding, and means for driving the stones to rotate them in unison in opposite directions.

820,762. **FRUIT-SLICER.** WILLIAM H. BOUTELL, Rochester, N. Y., assignor to Boutell Manufacturing Company, Rochester, N. Y., a Corporation of New York. Filed May 9, 1901. Serial No. 59,498.



Claim.—1. In a slicing-machine, the combination with an annular casing or curb having the irregular interior surface, and slicing-knives therein, of a rotary fruit-carrier for moving the fruit into contact with the knives and also into contact with the irregular surface.

2. In a slicing-machine, the combination with an annular casing or curb having the irregular interior surface and slicing-knives therein, of a rotary fruit-carrier having a rearwardly-extending face for moving the fruit into contact with the knives and also into engagement with the irregular surface by centrifugal action.

3. In a slicing-machine the combination with an annular curb having a substantially horizontal axis and interiorly-extending knives, of a horizontal shaft arranged concentrically of the curb having rigid arms thereon each provided with recessed operating-faces arranged tangentially of the shaft and having their outer ends extending rearwardly with relation to the direction of rotation of the shaft.

4. In a slicing-machine the combination with an annular casing or curb having the slicing-knives at the periphery thereof, of a series of rigid arms having rearwardly-extending faces constituting rotary fruit-carriers, operating in the casing to force the fruit outwardly

against the knives, said faces being recessed in their forward sides to hold the fruit centrally on the curb.

5. In a slicing-machine, the combination with a casing having slicing-knives therein, over which the fruit is moved, and an irregular surface over which the fruit is also moved before engaging the knives to cause it to rest upon one of its flattened ends and fruit-carrying devices comprising rigid arms having rearwardly-extending recessed faces operating to center the separate pieces of fruit and move them over the irregular surface and into contact with the knives.

6. In a slicing-machine, the combination with a casing having slicing-knives therein and an irregular surface at the periphery upon which the fruit is moved before engaging the knives to cause it to rest upon one of its flattened ends, of a plurality of arms having faces curved transversely and extending rearwardly toward their outer ends for carrying pieces of fruit over said surface and into contact with the cutting edges of the knives.

7. In a slicing-machine, the combination with an annular casing or curb having slicing-knives arranged at its periphery with their cutting edges extending substantially in the direction of the length thereof, of a plurality of fruit-carrying arms comprising members having their ends extending rearwardly, the faces of said rearwardly-extending ends being disposed at an angle to the surface of the curb and recessed to hold a fruit centrally thereof when moving over the edges of the cutting-knives.

8. In a slicing-machine, the combination with an annular casing or curb having a horizontal axis and slicing-knives arranged at its periphery above the axis of the casing with the cutting edges extending substantially in the direction of the length thereof, of arms for carrying fruit around into engagement with the knife-edges having concaved faces arranged at an angle to the plane of the knives and extending rearwardly toward their outer ends.

9. In a slicing-machine, the combination with an annular casing or curb, a plurality of knives arranged at the periphery thereof, and a feeding-aperture in the casing in rear of the knives, of a rotary wheel having rigid arms thereon provided with rearwardly-extending ends the faces of which are recessed and disposed at an acute angle to the surface of the casing and operate upon fruit placed in the feeding-aperture to move it outwardly and support it centrally on the curb.

10. In a slicing-machine the combination with an annular casing or curb having an irregular interior surface, a plurality of knives arranged with their cutting edges beyond the surface, and a feeding-aperture beyond the knives, of a rotary wheel and rigid arms thereon extending rearwardly toward their outer ends, said ends forming pockets operating to receive fruit from the aperture and carry it over said irregular surface and into engagement with the knives.

11. In a slicing-machine, the combination with an annular casing or curb having a horizontal axis, and a plurality of cutting-knives therein having their cutting edges at the periphery thereof above the axis of the curb, of a rotary wheel, a plurality of fruit-carrying arms thereon having their operating-faces concaved and disposed at an angle to the plane of the knife-edges and having their outer ends lying in rear of their inner ends.

12. In a slicing-machine, the combination with an annular casing or curb, and a plurality of curved cutting-knives arranged successively therein having their cutting edges at the periphery of the curb, of a plurality of movable arms for carrying the fruit against the cutting edges of the knives.

13. The combination with a rotary slicer embodying an annular casing or curb, a plurality of knives arranged therein and a plurality of rotary arms for moving the fruit over the knives, of a fruit-feeding mechanism having pockets adapted to feed single pieces of fruit into the casing beyond the knives, driving devices for the arms and feeding mechanism and timing mechanism between said feeding mechanism and arms for operating the latter at a speed greater than that of the former.

14. The combination with a slicing-machine embodying knives and rotary arms for moving the pieces of fruit over the knives, of a feeding mechanism embodying a hopper or receptacle, and a rotary support at the end thereof, having lifting-fingers inclined backwardly relatively to the direction of movement of the support.

15. The combination with a slicing-machine adapted to operate upon single pieces of fruit, of a feeding mechanism therefor embodying a hopper or receptacle, a rotary support at the end thereof, and the lifters thereon, each embodying the two separated fingers.

16. The combination with a slicing-machine adapted to operate upon single pieces of fruit, of a feeding mechanism connected thereto embodying a hopper or receptacle, a rotary support at the end thereof, and the lifters thereon, each embodying the two separated fingers and the stationary rib in the hopper-bottom arranged between the fingers.

17. In a feeding device for slicers, the combination with the hopper having the rounded inclined bottom, and the rib at the end thereof, of the rotary support at the end of the hopper provided with the lifters thereon each embodying the two fingers extending on opposite sides of the rib.

18. In a slicing-machine, the combination with the annular casing or curb, the inner periphery thereof being slightly inclined on one side thereof relatively to the axis and having a plurality of ribs or shoulders thereon, and a plurality of slicing-knives arranged beyond said inclined and shouldered surface, of a rotary support embodying a plurality of arms movable over the surfaces and knives.

19. In a slicing-machine, the combination with a plurality of slicing-knives and means for forcing the fruit in contact with their cutting edges and between them, of a guard or deflector hinged to the casing and extending over the knives with which the slices contact to separate them.

20. In a slicing-machine, the combination with an annular casing or curb, a plurality of slicing-knives arranged successively in the curb, and means for pressing the fruit in contact with and between them, of a deflector extending over the knives to separate the slices and means for removably attaching it to the casing.

21. In a slicing-machine, the combination with an annular casing or curb having a substantially horizontal axis, and a plurality of slicing-knives, of a plurality of rotary pushers or sweeps operating in the casing, and a deflector removably attached to the casing and extending over the knives at the outer side thereof to discharge the slices downwardly.

22. In a fruit-slicing machine, the combination with a support, a slicing-knife arranged out of line with said support and substantially parallel therewith, a second knife broader than the first, of a pusher moving over the support and knives, a series of slicing-knives arranged in rear of the second knife and at an angle to the path of the pusher.

23. In a fruit-slicing machine, the combination with a support, a slicing-knife arranged substantially parallel with and out of line of the support, and a series of slicing-knives arranged at an angle to the support, of a knife-blade located between the first-mentioned blade and the series of blades, and arranged at an angle intermediate to that of the preceding and succeeding blades, and a pusher moving over the support and blades.

24. In a fruit-slicing machine, the combination with a support, a pusher movable above the support, and a slicing-knife arranged between the path of the pusher and the support and parallel to the latter, of slicing-knives arranged at an angle to the support, and a broad knife-blade located between the first and second mentioned knives and at an angle to the support intermediate that of the preceding and succeeding blades.

25. In a fruit-slicing machine, the combination with an annular curb or casing, a rotary pusher carrying the fruit around in contact with the curb, and a slicing-knife arranged substantially parallel with the curb and between the latter and the path of the pusher, of slicing-knives arranged in rear of the first knife and at an angle to the path of the pusher, and a knife-blade arranged between the first and second mentioned knives and located at an angle to the path of the pusher intermediate the angle of the preceding and succeeding knives

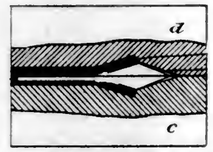
26. In a fruit-slicing machine the combination with a hopper thereon containing the fruit and having a head and a fruit-receiver leading from the hopper, of a carrier arranged within the hopper and operating in line with the receiver and engaging the line of fruit lying against the head to move the several pieces along the side of the hopper to deposit them singly in the receiver.

27. The combination with a fruit-slicing machine, a hopper thereon containing the fruit, a guide in the hopper against which the fruit lies whereby several pieces thereof will be supported in line, and a receiver for the fruit leading from the hopper and in line with the guide, of a fruit-carrier adapted to engage the line of fruit against the guide to move it thereon and deposit the several pieces singly in the receiver.

28. The combination with a fruit-slicing machine, a hopper containing the fruit, means for arranging the fruit in line, and a receiver leading from the hopper, of a carrier operating through the hopper to move the line of fruit and deposit the several pieces thereof successively in the receiver.

29. In a fruit-slicing machine, the combination with a hopper containing the fruit, a rotary head at the end of the hopper forming a guide against which the fruit in the bottom of the hopper lies and a receiver leading from the hopper, of lifters on the head projecting into the hopper and adapted to engage a line of fruit resting against the head and deposit the several pieces thereof successively in the receiver.

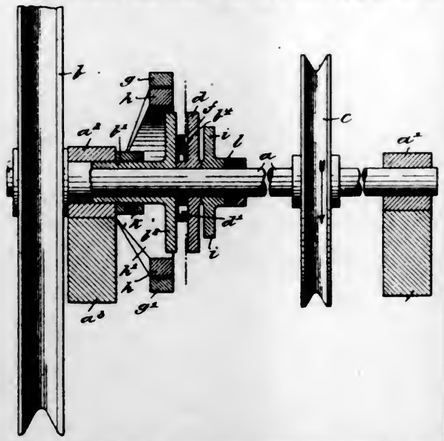
820,763. DIE. JAMES J. BROSSOIT, Salt Lake City, Utah. Filed Aug. 1, 1905. Serial No. 272,164.



Claim.—1. A drill-die formed of two sections each having two contiguous die-faces thereon, said faces on each section being inclined oppositely to each other, and one incline being deeper or at a greater angle to the drill position than the other, and the corresponding faces matching when the die-sections are engaged, whereby upon engaging the end of the stock or work between the shallow die-faces it will be flattened out to form the cutting edge of the drill and upon shifting the flattened end into position between the deep die-faces and turning said edge at right angles to its first position it will be swaged sidewise and trued up into flared or finished form.

2. A drill-die formed of two sections each having two contiguous die-faces sunk . .erein, said faces of each section being formed by cavities, the bottoms of which are inclined opposite to each other and one cavity being deeper and narrower than the other, and the corresponding die-faces matching when the die-sections are engaged together, whereby upon engaging the end of the stock or work between the shallow die-faces it will be flattened out to form the cutting edge of the drill and upon turning the flattened end at right angles to its first position and shifting it into position between the deep die-faces it will be swaged sidewise and trued up into flared or finished form.

820,764. HOISTING APPARATUS. WILLIAM H. BROWN, Philadelphia, Pa., assignor to Energy Elevator Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Mar. 2, 1906. Serial No. 303,782.



Claim.—1. A hoisting apparatus, comprising a shaft, a stationary ring surrounding said shaft, brake-arms surrounding said ring, a lever pivotally connected with said brake-arms, a load-wheel and a disk rigidly secured to said shaft, said disk arranged to actuate said lever and by the same bring said brake-arms into engagement with said ring to hold the load from either falling or rising when the same tends to rotate said shaft.

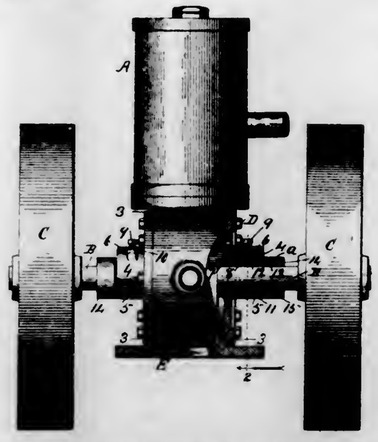
2. A hoisting apparatus, comprising a shaft, a stationary ring surrounding said shaft, brake-arms surrounding said ring, a lever pivotally connected with said brake-arms, a load-wheel and a disk rigidly secured to said shaft, and an operating-wheel loosely mounted on said shaft, said disk arranged to actuate said lever so as to bring said brake-arms into engagement with said ring to hold the load from either falling or rising when the same tends to rotate said shaft and said operating-wheel arranged to release said brake-arms from said ring by moving said lever in a direction opposite to that imparted to the same by said disk.

3. A hoisting apparatus, comprising a shaft, a stationary ring surrounding the same, brake-arms surrounding said ring, a load-wheel and a disk rigidly secured to said shaft, an operating-wheel loosely mounted on said shaft, a lever pivotally connected with said brake-arms and interposed between said disk and operating-wheel, said lever arranged to be independently actuated by said disk and operating-wheel so as to bring said brake-arms into and out of engagement with said ring.

4. A hoisting apparatus, comprising a shaft, a stationary ring surrounding the same, brake-arms surrounding said ring, a load-wheel and a disk rigidly secured to said shaft, said disk having bolts, an operating-wheel having a flanged extension loosely mounted on said shaft, bolts, carried by said extension, a lever pivotally connected with said brake-arms and interposed between the bolts of said flanged extension and disk, said lever arranged to be independently and alternately actuated by the bolts of said disk and the flanged extension of said operating-wheel to bring said brake-arms into and out of engagement with said ring.

5. A hoisting apparatus comprising a shaft, a stationary ring surrounding the same, brake-arms surrounding said ring, a load-wheel and a disk rigidly secured to said shaft, said disk having bolts, an operating-wheel having a flanged extension loosely mounted on said shaft, bolts carried by said extension, a lever pivotally connected with said brake-arms and interposed between the bolts of said flanged extension and disk, said lever arranged to be independently and alternately actuated by the bolts of said disk and the flanged extension of said operating-wheel to bring said brake-arms into and out of engagement with said ring and means loosely mounted on said shaft and adapted to support said brake-arms and lever.

820,765. JOURNAL-BEARING. ALBERT BUCHNER and ELMER P. MCCLURE, Chicago, Ill. Filed Aug. 6, 1902. Renewed Sept. 25, 1905. Serial No. 280,055.



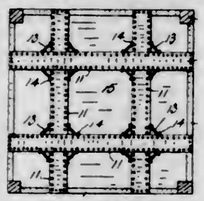
Claim.—1. A journal-bearing of the class described, comprising a chambered base, the companion side plates provided with a pillow-block having an arched top open from the inner end, an adjustable journal-cap inserted therein, and means employed in connection with the arched top for holding the journal-cap to a uniform bearing, substantially as set forth.

2. In a journal-bearing of the class described, the combination with a chambered base open on opposite sides, of companion side plates having an integral pillow-block and an arched top over the bearing with an intervening space, a journal-cap inserted endwise in said space, and means for retaining said cap in a uniform bearing position in compensating for the wear, substantially as set forth.

3. In a journal-bearing for gas-engines, the combination with a chambered base open on opposite sides, of a crank-shaft inserted therethrough, the companion side plates closing the open sides and provided with a pillow-block having an arched top and a stuffing-box extension, the journal-cap inserted loosely in its bearing position,

and the adjusting-screws bearing on said journal-cap, substantially as set forth.

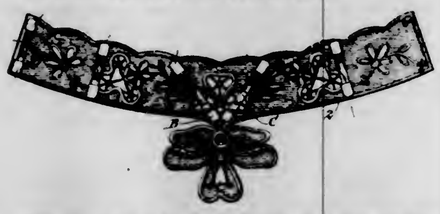
820,766. **FURNITURE CONSTRUCTION.** THOMAS A. COLE, Indianapolis, Ind., assignor, by direct and mesne assignments, to The Metallic Webbing & Manufacturing Company, Indianapolis, Ind., a Corporation of Indiana. Filed July 11, 1904. Serial No. 215,990.



Claim.—1. The combination of a frame for furniture or the like, of narrow metallic strips secured transversely of each other to said frame and provided throughout their length with continuous series of openings located closely together, suitable upholstering material, and means extending through the openings in said metallic strips for securing the upholstering material thereto, substantially as set forth.

2. The combination with the frame of furniture or the like, of metallic strips secured at their ends to said frame and provided with perforations throughout their lengths that are located closely together, suitable upholstering material, springs located between the upholstering material and said metallic strips, and means for securing said springs to said strips through the perforations, substantially as set forth.

820,767. **COLLAR-SUPPORTER.** MARGUERITE CONNELL, New York, N. Y. Filed June 1, 1905. Serial No. 263,260.



Claim.—1. A lace or like collar provided on its inner face with opposing pockets and flexible transparent stays, the ends of which enter said pockets.

2. A lace or like collar provided on its inner face adjacent to its upper and lower edges with a plurality of opposing pockets of fibrous material, and flexible transparent stays having their ends in the said pockets.

3. A collar of lace or like flimsy material provided with a plurality of pockets adjacent to the top and bottom edges of the collar, and a plurality of flexible stays having their ends entering said pockets, the stay at each side of the center of the collar being given an inclination from the top downward in direction of the lower central portion of the collar.

820,768. **WITHDRAWN.**

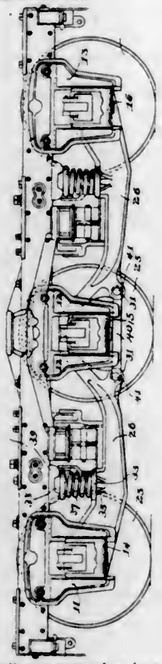
820,769. **COLLAPSIBLE SCREEN.** LOUIS DEJONGE, Jr., New York, N. Y. Filed Dec. 9, 1905. Serial No. 291,099.

Claim.—1. A screen comprising a plurality of panels, the frame of each panel comprising two uprights, a latch-bar pivoted to each upright, the latch-bar upon one upright being at the opposite end from the latch-bar upon the other upright, a keeper upon each upright for engagement by the latch-bar of the other upright and a body-section of pliable material secured to the uprights, said body-section being continuous on all of the panels.

2. A screen comprising a plurality of panels, the frame of each panel comprising two uprights, a latch-bar pivoted to each upright, the latch-bar upon one upright being at the opposite end from the latch-bar upon the other upright, a keeper upon each upright for engagement by the latch-bar of the other upright and a body-section of pliable material secured to the uprights, said body-section being continuous on all of the panels, and being secured to the uprights by the battens arranged longitudinally of the uprights.



820,770. **CAR-TRUCK.** ETHAN I. DODDS, Pullman, Ill., assignor to The Pullman Company, Chicago, Ill., a Corporation of Illinois. Filed Sept. 7, 1905. Serial No. 277,433.



Claim.—1. In a railway-car truck, a journal-box and an equalizing-bar integral with said box, substantially as described.

2. In a railway-car truck, the combination of two journal-boxes and an equalizing-bar integral with one of said boxes and resting upon the other of said boxes, substantially as described.

3. A six-wheel car-truck having, in combination, journal-boxes for said truck, and equalizing-bars each integral with an end journal-box and resting upon the center journal-box of the corresponding side, substantially as described.

4. A six-wheel car-truck having, in combination, journal-boxes for said truck, equalizing-bars each integral with an end journal-box and resting upon the center journal-box of the corresponding side, and means to tie said bars together, substantially as described.

5. A six-wheel car-truck having, in combination, journal-boxes for said truck, equalizing-bars each integral with an end journal-box and resting upon the center journal-box of the corresponding side, and a link to tie the two bars of each side together, substantially as described.

6. A six-wheel car-truck having, in combination, journal-boxes for said truck, equalizing-bars each integral with an end journal-box and resting upon the center journal-box of the corresponding side, and a link passing beneath each center journal-box, and tying together the two bars of each side, substantially as described.

7. A six-wheel car-truck having, in combination, journal-boxes for said truck, a pair of equalizing-bars each integral with one end journal-box and resting upon the center journal-box of the corresponding side, each bar having perforated spaced lugs, and a link pivoted to the lugs of the two bars on each side to tie the same together, substantially as described.

8. In a railway-car truck, a journal-box and an equalizing-bar integral with said box and having an integral spring-seat, substantially as described.

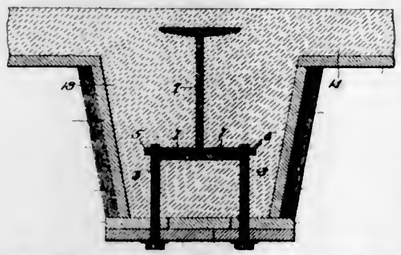
9. In a railway-car truck, the combination of two journal-boxes and an equalizing-bar integral with one of said boxes and resting upon the other of said boxes, said latter box being provided with guides for the end of said bar, substantially as described.

10. In a car-truck having a plurality of wheels on a side, the combination of one or more journal-boxes each having an integral equalizing bar or bars, and one or more additional journal-boxes, the free ends of said equalizing bar or bars resting upon said latter box or boxes, substantially as described.

11. In a six-wheel car-truck, the combination of a truck-frame having three pedestals on a side, a journal-box in each pedestal, the end journal-boxes each having an integral equalizing-bar resting upon the center journal-box of the corresponding side, and means to tie the two equalizing-bars of each side together thereby tying together the end pedestals, substantially as described.

12. In a six-wheel car-truck, the combination of a truck-frame having three pedestals on a side, a journal-box in each pedestal, the end journal-boxes each having an integral equalizing-bar resting upon the center journal-box of the corresponding side, and a link pivotally joining the two equalizing-bars of each side thereby tying together the end pedestals, substantially as described.

820,771. **HANGER.** JAMES H. DOUSMAN, Kansas City, Mo. Filed July 6, 1905. Serial No. 268,498.

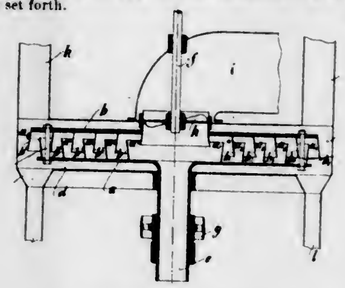


Claim.—In false work for concrete building construction, the combination with a beam forming a part of the permanent structure and having lateral flanges at its lower end, of plates or heads supported by and projecting slightly beyond said flanges and provided with openings near their outer ends, and removable supporting-rods detachably engaged in said openings, supported by said plates and depending therefrom on opposite sides of the beam, said rods being provided with fixed heads at their lower ends to support staging between which and the beam concrete may be placed, and the plates or heads being permanently surrounded by and embedded in the concrete.

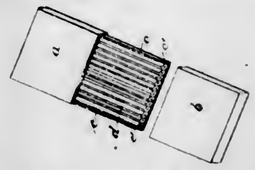
820,772. **APPARATUS FOR PURIFYING GAS.** ALBERT ELSENHANS, Rüttenscheid, near Essen-on-the-Ruhr, Germany. Filed Jan. 10, 1906. Serial No. 295,449.

Claim.—1. In gas-purifying mechanism, a pair of opposed disk-like devices and mechanism for rotating the same, a casing surrounding the said parts, means for introducing gas to the space between them, and means for introducing a washing fluid to the same space, the said disk-like parts being provided with series of concentric annular walls arranged so that the walls of each disk-like part enter the annular spaces between the walls of the other, and these walls in their rotation act centrifugally on the gas and liquid to thoroughly mix them and finally throw them outward against the said casing substantially as set forth.

2. In gas-purifying mechanism, a pair of opposed disk-like devices provided with means for admitting gas and purifying fluid to the space between them and concentric series of annular walls, in combination with an inclosing casing and means for rotating the said devices, the annular walls of one device entering the annular spaces between the corresponding walls of the other, and the annular walls of both devices being cut away obliquely substantially as and for the purpose set forth.



820,773. **BOX FOR PENCILS.** CLARENCE C. FLEMING, Newark, N. J., assignor to Eberhard Faber, New York, N. Y. Filed Nov. 5, 1904. Serial No. 231,495.



Claim.—1. A box for pencils and penholders, comprising an outer shell of pasteboard in two parts narrow and wide, and an inner part having a flat base and opposite sides only, received within the outer shell, secured to one part thereof and in part projecting therefrom and over which the other part slides, said box holding the articles in a single flat row.

2. A box for pencils and penholders, comprising an outer shell of pasteboard in two parts narrow and wide, and of substantially the same dimensions and an inner part having a flat base and opposite sides only, agreeing with the internal dimensions of the outer shell part and received within the outer shell, secured to one part thereof and in part projecting therefrom and over which the other part slides, said box holding the articles in a single flat row.

3. A box for pencils and penholders, comprising an outer shell of pasteboard in two parts narrow and wide, and an inner part having a flat base and opposite sides only, received within the outer shell secured to one part thereof and in part projecting therefrom and over which the other part slides, said box holding the articles in a single flat row, and the free ends of the opposite sides of the inner part being beveled or having their corners cut off, substantially as set forth.

820,774. **PIPE-COUPLING.** ANDERS O. FLYBERG, Braddock, Pa. Filed Aug. 30, 1905. Serial No. 276,382.

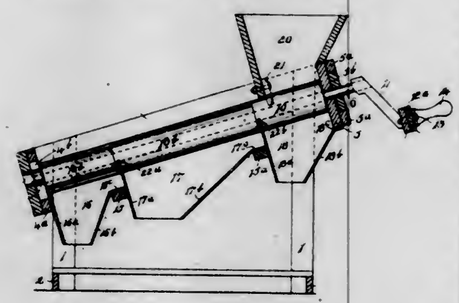


Claim.—1. A pipe-coupling embodying interfitting sections, a plurality of gripping-fingers carried by one section, the other section being formed with a groove and an annular shoulder adjacent said groove, said fingers being adapted to seat in said groove, a tubular member concentrically arranged in one of said sections and adapted to move therein and extending into the other section, said tubular member being formed with an annular shoulder adjacent its end, a stub-screw passing through the wall of the section containing the tubular member and into a groove in the said tubular member, said screw limiting the movement of said tubular member in both directions, a spring surrounding the tubular member, said spring forcing the annular shoulder on the tubular member against the confronting edge of the opposite interfitting member and a fluid-proof pack-

ing interposed between the annular shoulder on the tubular member and the end of said opposite interfitting member.

2. A pipe-coupling embodying interfitting male and female members, said female member being formed with a central bore of enlarged diameter along the inner portion thereof, and being formed with a shoulder adjacent the termination of said enlarged bore, a tubular packing member concentrically and slidably mounted within said female member, said packing member being provided adjacent the inner end thereof with an enlarged portion of slightly less diameter than the enlarged bore of said female member, a spiral expansive spring interposed between said shoulder of said female member and said enlarged portion of said tubular member, said spring being designed to force said tubular member inwardly against said male member, a stub-screw passing through the wall of said female member and into a groove in the said tubular member for limiting the movement of said tubular member, a packing-ring mounted upon the one end of said tubular member and adapted to be abutted by the inner end of said male member, a series of gripping-fingers carried by said female member, said male member being formed with a peripheral groove in which said fingers are adapted to enter to effect a locking engagement between said male and female members, said male member being formed with a tubular extension provided with an enlarged bore adapted to enter the concentric space existing between said tubular member and said female member.

820,775. SEED-CORN SEPARATOR. CHARLES L. FRISBY, Council Bluffs, Iowa. Filed May 9, 1905. Serial No. 259,593.



Claim.—1. In a machine for separating seed-corn and the like, the combination with the frame or body, a series of rolls arranged in parallel and spaced relation and disposed at an incline within said frame or body, said rolls being adjustable and formed with decreasing graduations in diameters to form passage-ways therebetween, chutes disposed beneath said rolls and having portions thereof projecting upwardly into said passage-ways, and feed-hopper plates carried by said hopper and projecting inwardly toward aforesaid rolls, aforesaid frame or body having openings therein at its lowest end in alinement with the passage-ways formed by and between aforesaid rolls, and means for rotating said rolls, substantially as and for the purpose set forth.

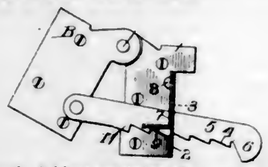
2. A machine of the type set forth embodying a series of rolls arranged in parallel and spaced relation and disposed at an incline, said rolls being formed with successively-decreasing graduations in diameters, and a delivery-chute for each of the said graduations, said chutes having a portion thereof extended upwardly to project in the passage-ways formed between said rolls.

3. A machine of the type set forth, embodying a series of rolls arranged at an incline and spaced apart to form passage-ways therebetween, and chutes disposed beneath said rolls and having portions thereof projecting upwardly into said passage-ways.

4. A machine of the type set forth, embodying a series of inclined rolls arranged in spaced and parallel relation, and a machine-body in which said rolls are mounted, said body having openings therein at its end in alinement with the passage-ways formed by and between said rolls.

5. In a machine of the type set forth, a body, a series of rolls mounted in spaced and parallel relation therein, said body having extensions on its side members, end members secured to said body and coacting with said extensions to form chutes, said forward end of the members having angular portions, and bars for securing said angular portions, said angular portions seating on said bars.

820,776. FURNITURE-HINGE. EDGAR A. GAY, Rochester, N. Y. Filed Apr. 27, 1903. Serial No. 154,379.



Claim.—1. A hinge consisting of a member having an abutment, a second member hinged to the first having a bar thereon provided with teeth adapted to coöperate with the abutment and a supporting member on the first-mentioned hinge member movable transversely of the path of the bar to hold it out of engagement with the abutment.

2. A hinge consisting of a member having an abutment, a second member pivoted to the first having a bar provided with teeth and a swinging supporting member movable laterally of the bar to hold it out of contact with the abutment.

3. A hinge consisting of a member having an abutment, a second member pivoted to the first having a bar provided with ratchet-teeth adapted to engage the abutment and a cam operating to raise the bar out of engagement with the abutment, and a pivoted supporting member movable laterally into engagement with the bar.

4. A hinge consisting of a member having an abutment, a second member pivoted to the first having a bar provided with teeth adapted to engage the abutment, means for raising the bar and a support separate from the bar for holding it out of engagement with the abutment, and means for moving the support to the inoperative position to release the bar.

5. A hinge consisting of a member having an abutment, a second member pivoted to the first having a bar provided with teeth adapted to engage the abutment, and with means coöperating with the abutment to raise the bar and a support separate from the bar for holding it out of engagement with the abutment and coöperating surfaces on the support and bar for disengaging the former from the latter.

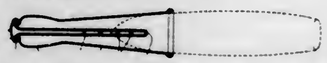
6. A hinge consisting of a member having an abutment, a second member pivoted to the first having a bar provided with teeth adapted to engage the abutment and means for raising the bar, a swinging supporting member pivoted to the first-mentioned hinge member and operating beneath the bar when the latter is raised and means for disengaging said supporting member from the bar when the hinge members are closed.

7. A hinge consisting of a member having an abutment, a second member pivoted to the first having a toothed bar engaging the abutment and means for disengaging the bar therefrom, a pivoted laterally-movable supporting member operating to hold the bar out of engagement with the abutment and means on the bar for disengaging the said member therefrom.

8. In a hinge, the combination with a member having a wing projecting therefrom and provided with an aperture and a second member pivoted to the first, of a bar journaled on the second member having its end projecting through the aperture and provided with teeth adapted to engage the edge thereof and a cam on the bar coöperating with the abutment for raising the bar, a supporting member pivoted above the bar and adapted to engage beneath the latter when it is elevated and means for automatically operating the supporting member to release the bar.

9. In a hinge, the combination with two pivoted members, a flange on one forming an abutment, a bar pivoted to the other member and provided with teeth adapted to coöperate with the abutment and means for disengaging the bar therefrom, of a member pivoted to the flange having a lip and a projection extending in the path of the bar and adapted to be engaged thereby to move the lip out of operative position.

820,777. CIGAR AND CIGARETTE HOLDER. GEORGE GRICE and CHARLES J. BARROW, Birmingham, England. Filed Dec. 18, 1905. Serial No. 292,373.

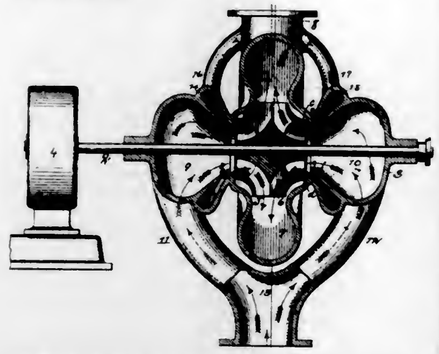


Claim.—1. A cigar or cigarette holder comprising a holder-body, a tube located centrally thereof, and means consisting of a perforated cap for securing the tube to the holder.

2. A cigar or cigarette holder comprising a holder-body, a perforated tube 6, V-shaped at its forward end and located centrally of the holder, and means consisting of a perforated cap for securing the tube to the holder.

3. A cigar or cigarette holder comprising a holder-body, a perforated tube located centrally thereof and having at its forward end two cutting members, and means consisting of a perforate cap for securing the tube to the holder.

820,778. PUMP. ALBERT E. GUY, Trenton, N. J., assignor to De Laval Steam Turbine Company, New York, N. Y. Filed Apr. 3, 1905. Serial No. 253,443.



Claim.—1. A pump, a casing therefor, an injector actuated by a portion of the liquid delivered by said pump and acting upon the liquid on the suction side thereof: the said injector being formed of the wall of said casing.

2. In a centrifugal pump, an impeller-wheel, a casing therefor, a suction-pipe, a delivery-pipe, a chamber with which said suction-pipe communicates, having a constricted outlet and delivering directly into said wheel, an annular chamber in said casing surrounding said constricted outlet, and a conduit connecting said annular chamber with said delivery-pipe.

3. In a centrifugal pump, an impeller-wheel having two sets of blades respectively of opposite pitch, a casing therefor, a suction-pipe, a delivery-pipe, chambers with which said suction-pipe communicates and having constricted outlets delivering directly into opposite sides of said wheel, annular chambers in said casing surrounding said constricted outlets, and conduits respectively connecting said annular chambers with said delivery-pipes.

4. In a centrifugal pump, an impeller-wheel and an injector actuated by a portion of the liquid delivered by said wheel having its outlet in proximity to and registering with said wheel-inlet, and constructed to increase the pressure of the liquid entering said wheel.

5. In a centrifugal pump, an impeller-wheel, a casing therefor, a chamber in said casing communicating with the suction-pipe of said pump and having its outlet in proximity to said wheel, an annular chamber having an outlet surrounding said first-named chamber-outlet, and a conduit connecting said annular chamber with the pump-delivery.

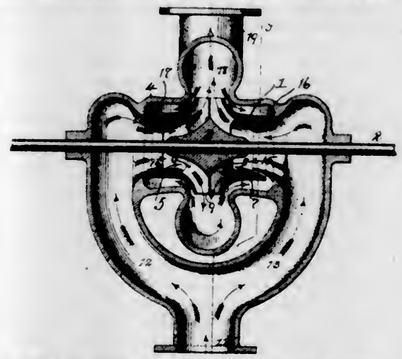
820,779. PUMPING APPARATUS. ALBERT E. GUY, Trenton, N. J., assignor to De Laval Steam Turbine Company, New York, N. Y. Filed Apr. 3, 1905. Serial No. 253,445.

Claim.—1. A moving liquid-impelling member, a casing therefor having a clearance-space between said member and said casing constructed to permit a regurgitation of a part of the flow delivered by said member, and means, actuated by said regurgitating flow, for accelerating the fluid-supply to said impelling member.

2. A moving liquid-impelling member, a casing therefor having a suction-passage and a clearance-space between said member and said casing constructed to permit a regurgitation of a part of the flow delivered by said member, and an injector in said suction-passage actuated by said regurgitating flow.

3. In combination with a centrifugal pump having a runner, a casing therefor and a clearance-space between said runner and casing constructed to permit the regurgitation of a part of the delivered flow, an injector constructed to deliver fluid-supply to said pump and actuated by said regurgitating flow.

4. In a centrifugal pump, a runner, a casing therefor, and an injector within said runner, delivering fluid-supply thereto.



5. In a centrifugal pump, a runner, a casing therefor, an injector within said runner for delivering fluid-supply thereto and a passage within said casing constructed to convey a part of the fluid-delivery of said pump to said injector to actuate the same.

6. In a pump, a moving liquid-impelling member and an injector delivering liquid to said member: the said injector having one of its concentric walls stationary and the other movable with said member.

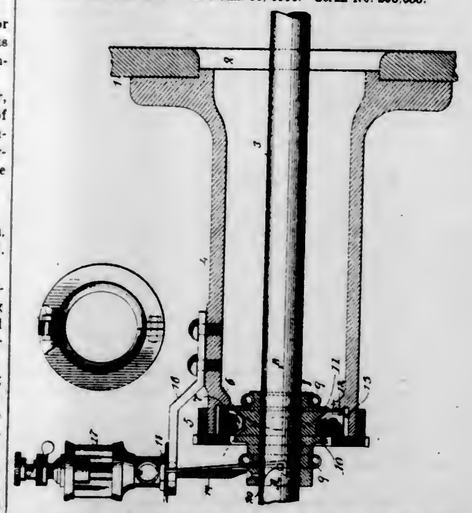
7. In a pump, a moving liquid-impelling member and an injector delivering liquid to said member: the said injector having its inner nozzle stationary and its outer wall surrounding said nozzle, movable with said member.

8. In a pump, a rotary liquid-impelling member and an injector delivering liquid to said member: the said injector having one of its concentric walls stationary and the other rotary with said member.

9. In a pump, a rotary liquid-impelling member, a supply-duct therefor, and an injector delivering liquid to said member: the said injector having its inner nozzle on said supply-pipe and its outer surrounding wall on said rotary member.

10. In a pump, a rotary liquid-impelling member, an injector supplying liquid to said member and having one of its concentric walls stationary and the other rotary with said member, and means for conveying liquid from the delivery side of said impelling member to the space between said injector-walls.

820,780. OBTURATOR FOR FLEXIBLE SHAFTS. ALBERT E. GUY, Trenton, N. J. Filed Jan. 11, 1906. Serial No. 295,655.



Claim.—1. In combination with the casing and flexible supporting-shaft of an elastic-fluid turbine-wheel, an obturator-ring

freely movable in an annular recess in said casing and a ball-and-socket joint between said shaft on said ring.

2. In combination with the casing and the flexible supporting-shaft of an elastic-fluid turbine-wheel, an obturator-ring surrounding said shaft and movable in an annular recess in a wall of said casing, and a ball-and-socket joint between said shaft and said ring,

3. The combination of a wall having an opening and an annular recess in the peripheral edge surrounding said opening, a ring loosely received in said recess, a flexible shaft, and a sleeve on said shaft surrounded by said ring; the said ring being constructed to form one member and the said sleeve being constructed to form the other member.

4. In combination with a turbine-wheel casing and a flexible shaft for said wheel, an obturator-ring loosely received in an annular recess in said casing and a sleeve on said shaft surrounded by said ring; the said ring being constructed to form one member and the said sleeve being constructed to form the other member of a ball-and-socket joint.

5. In combination with the flexible shaft and the casing of an elastic-fluid turbine, an annular recess in a wall of said casing concentric with said shaft, a loose ring in said recess of less diameter and less width than said recess, and having concavities in its outer faces and a fixed sleeve on said shaft and inclosed by said ring and having flanges with convexities constructed to fit in said ring concavities.

6. In combination with the flexible shaft and the casing of an elastic-fluid turbine, an annular recess in a wall of said turbine concentric with said shaft, a sleeve on said shaft having a circumferential groove with convex sides, and a loose ring in said groove having concave faces shaped to conform to said sides; there being a clearance-space between the bottom of said recess and said ring and between the inner circumferential periphery of the bounding-walls of said recess and said sleeve.

7. In combination with the flexible shaft and the casing of an elastic-fluid turbine, a tube surrounding said shaft supported on said casing and communicating therewith, a sleeve supported on said shaft having a circumferential groove with convex sides, a loose ring in said groove having concave faces shaped to conform to said sides and annular flanges on said tube surrounding said sleeve and disposed respectively on opposite sides of said ring; there being a clearance-space between the bottom of said recess and said ring and between the inner circumferential periphery of the bounding-walls of said recess and said sleeve.

8. In combination with the flexible shaft and the casing of an elastic-fluid turbine, a tube supported on said casing communicating with the interior thereof and inclosing said shaft, an internal flange on said tube, an annular bonnet on the end of said tube having its inner face parallel to a face of said tube-flange, a sleeve on said shaft having flanges, the said flanges having their opposing faces shaped to the annuli of spheres struck on equal radii from points lying in the axis of said shaft, and a loose ring surrounding said sleeve having its outer faces shaped to correspond to said flange-faces—and lying between said bonnet and said internal tube-flange; there being a clearance-space between the circumferential periphery of said ring and said tube and between said sleeve-flanges and the inner circumferential periphery of said annular bonnet and said tube-flange.

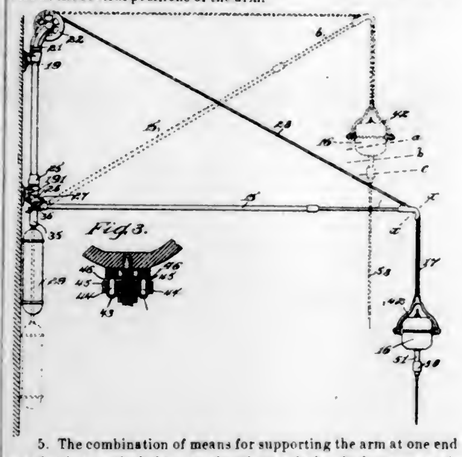
820,781. SUSPENDED ELECTRIC DENTAL MOTOR. JOHN F. HAMMOND, Brewster, N. Y. Filed Apr. 27, 1905. Serial No. 257,597.

Claim.—1. The combination of an electric translating device an arm supported to swing in a vertical plane, a member having a swinging connection with the arm and carrying said device, means for counterbalancing the arm and electric device in their several positions, and leads connected with the translating device.

2. The combination of an electric translating device, a member by which such device is suspended, means for supporting said member whereby it and the translating device can be raised and lowered, a balancing-weight connected with the supporting means, and springs arranged to coöperate with the counterbalancing member whereby the translating device and supporting means are counterbalanced in a number of positions.

3. The combination of a member supported to swing in a vertical plane, an electric translating device, a member pivotally suspended from the arm and carrying the translating device, and counterbalancing means connected with the swinging member and arranged to counterbalance the weight of the translating device and said members when the swinging member is swung through a predetermined path.

4. The combination of a suspending-arm supported to swing in a vertical plane, an electric translating device, a member pivotally suspended from the arm and carrying the translating device, counterbalancing means connected with the arm and arranged to counterbalance the weight of the arm-suspending member and translating device in the several positions of the arm.



5. The combination of means for supporting the arm at one end to swing in a vertical plane, an electric translating device, a suspending member pivotally carried by the arm and secured to the translating device a counterbalancing-weight connected with the arm and arranged to partially counterbalance the weight of the arm and translating device, a spring coacting with said weight to increase its draft on the arm when the arm is swung to decrease the horizontal distance between the vertical line of the motor and the pivotal point of the arm, and a spring arranged to counteract the draft of the weight on the arm upon the arm being swung to increase the distance between the vertical line of the motor and the pivotal support of the arm.

6. The combination of an arm supported to swing in a vertical plane, a suspending member pivotally carried by the arm, an electric translating device suspended by means of such member from the free end of the arm, a counterbalancing member connected by a flexible member with the free end of the arm and suspended adjacent to the pivoted end of the arm, and arranged to counterbalance the arm and translating device in the several positions of the arm.

7. The combination of an arm, means for supporting the arm at one end to swing in a vertical plane, an electric translating device, a suspending member pivotally connected with the arm and carrying the translating device, a guide member arranged before the swinging support of the arm, a flexible member secured to the arm beyond its swinging support and passing around the guide member, and a balancing-weight secured to the flexible member and arranged to counterbalance the arm and translating device.

8. The combination of an arm, means for supporting the arm at one end to swing in a vertical plane, an electric translating device, a suspending member pivotally connected with the arm and carrying the translating device, a guide member arranged above the swinging support of the arm, a flexible member secured to the arm beyond its swinging support and passing around the guide member, a balancing-weight secured to the flexible member and arranged to counterbalance the arm and translating device when in one position, a spring coacting with said weight to increase its draft on the flexible member when the arm is moved in one direction from said position, and a spring arranged to counteract the draft of the weight on the flexible member when the arm is swung in the opposite direction from such position.

9. The combination of an upright member supported to rotate on a vertical axis, an arm pivoted at the lower part of the upright to swing in a vertical plane, an electric translating device, a member supporting such device and having a swinging connection with the free end of the arm, a pulley mounted on the upright above the arm, a cable attached to the arm and passing around the pulley, a balancing-weight secured to the cable depending from the pulley and arranged to balance the arm and translating device.

10. The combination of an upright member supported to rotate on a vertical axis, an arm pivoted at the lower part of the upright to swing in a vertical plane, an electric translating device, a member supporting such device and having a swinging connection with the free end of the arm, a pulley mounted on the upright above the arm, a cable attached to the arm and passing around the pulley, a balancing-weight secured to the cable depending from the pulley and arranged to balance the arm and translating device in one position, a spring having one end connected with the upright, a detent connected with the weight and arranged to engage and distend the spring when the weight is lowered by raising the arm from said balanced position.

11. The combination of an upright member supported to rotate on a vertical axis, an arm pivoted at the lower part of the upright to swing in a vertical plane, an electric translating device, a member supporting such device and having a swinging connection with the arm, a pulley mounted on the upright above the arm, a cable attached to the arm and passing around the pulley, a balancing-weight secured to the end of the cable depending from the pulley and arranged to balance the arm and translating device in one position, and a spring arranged to be compressed when the weight is moved upward by the arm being lowered from said balanced position.

12. The combination of an upright member supported to rotate on a vertical axis, an arm pivoted at the lower part of the upright to swing in a vertical plane, an electric translating device, a member supporting such device and having a swinging connection with the arm, a pulley mounted on the upright above the arm, a cable attached to the arm and passing around the pulley, a balancing-weight secured to the end of the cable depending from the pulley and arranged to balance the arm and translating device in one position, a spring having one end connected with the upright, a detent connected with the weight and arranged to engage and distend the spring when the weight is lowered by raising the arm from said balanced position, and a spring arranged to engage the detent and be compressed when the weight is moved upward by the arm being lowered from said balanced position.

13. In a dynamo-electric device, the combination of a pair of supports, means whereby the device is pivotally suspended between said supports, the suspending means being arranged whereby the device is removable only when swung to a position transverse to its normal position.

14. The combination of a yoke, a dynamo-electric device, means for pivotally supporting the device between the ends of the yoke, a part of each of such pivotal means being arranged to be withdrawn for a limited distance, and means for thereupon permitting removal of the device from yoke upon the device being swung to a position transverse to its normal position.

15. The combination of a yoke, a dynamo-electric device, a journal carried by each end of the yoke, bearings carried by the device and engaged by said journals, the journals being arranged to be receded in the bearings for a limited extent, the device having a channel on each side disposed at right angles with said bearings and leading therefrom and extending vertical when the device is in its normal position, the channels being arranged to permit the ends of the journals when receded to such limited positions and the device swung to a position with the channels substantially horizontal to permit withdrawal of the device from the yoke by movement of the journals through the channels.

16. The combination of a dynamo-electric device, a yoke on which the device is pivoted, brushes carried by one of said members, and insulated contact-plates carried by the other member and arranged to connect with the plates respectively when the device is swung on its pivotal connection with the yoke.

17. The combination of a dynamo-electric device, a yoke on which the device is pivoted, a pair of brushes carried by each end of the yoke members, and a pair of insulated contact-plates carried by the device at each side and arranged to connect with the plates respectively when the device is swung on its pivotal connection with the yoke.

18. The combination with a motor having a frame and a shaft, of a flexible shaft, a member surrounding the flexible shaft, a skeleton support secured to the surrounding member and closing the extremity of the flexible shaft, the skeleton support being removably attached to the frame of the motor, the motor-shaft having its extremity extending into the skeleton member and removably secured to the extremity of the flexible shaft.

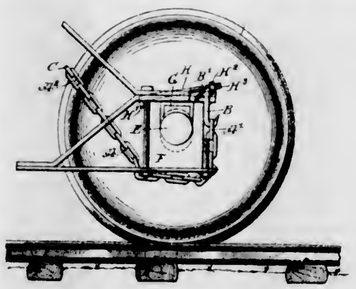
19. The combination with a motor having a frame and a shaft, of a flexible shaft, a member surrounding the flexible shaft, a skeleton support secured to the surrounding member and enveloping the extremity of the flexible shaft, the skeleton support being removably attached to the frame of the motor, the motor-shaft having its extremity extending into the skeleton member and secured to the extremity of the flexible shaft, a member arranged to insulate the skeleton member from the member surrounding the flexible shaft, and a member arranged to insulate the motor-shaft from the flexible shaft.

20. The combination with a motor having a frame and a shaft, of a threaded bushing projecting from the motor-frame, a skeleton member having a threaded sleeve arranged to screw into the threaded bushing of the frame, the shaft of the motor extending through said bushing into the skeleton member, a flexible supporting member secured to the skeleton member, a flexible shaft carried by the supporting member and having a screw-threaded engagement with the end of the driven shaft extending into the skeleton member.

21. The combination with an electric motor having a frame and a shaft, of a threaded bushing projecting from the frame, a skeleton member having a threaded connection with said bushing, a flexible casing secured to the skeleton member, an insulating-bushing in said connection arranged to insulate the skeleton member from the casing, a flexible shaft carried by the casing and having a threaded extremity extending into the skeleton member, the shaft of the motor being located in said threaded bushing, an insulating-plug secured to the extremity of the latter shaft, and a threaded piece secured to the insulating-plug and projecting into the skeleton member and engaged by the threaded extremity of the flexible shaft.

22. The slotted threaded tube, three nuts on the tube and a cable in the tube passing out around the intermediate nut and clamped by the nuts.

820,782. APPLIANCE FOR RAILROAD-CARS. GEORGE E. HANES, Gunnison, Colo. Filed Oct. 2, 1905. Serial No. 280,999.



Claim.—1. A railroad-car appliance comprising a flexible member provided at its ends with attaching devices, one for engaging the journal-box and the other the car-wheel rim, to raise the journal-box on turning the car-wheel, and retaining means for locking the attaching device on the journal-box in position thereon.

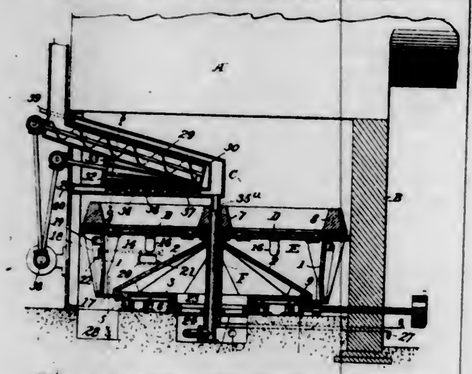
2. A railroad-car appliance comprising a chain adapted to pass around the bottom of the journal-box, and hooks on the ends of the chain, one of the hooks having a head adapted to engage the top of the journal-box of the car, and the other hook being adapted to engage the car-wheel rim a distance from the top thereof.

3. A railroad-car appliance comprising a chain adapted to pass around the bottom of the journal-box, hooks on the ends of the chain, one of the hooks having a head adapted to engage the top of the journal-box of the car, and the other hook being adapted to engage the car-wheel rim a distance from the top thereof, and a locking and releasing device for the hook engaging the journal-box.

4. A railroad-car appliance comprising a chain adapted to pass around the bottom of the journal-box, hooks on the ends of the chain, one of the hooks having a head adapted to engage the top of the journal-box of the car, and the other hook being adapted to engage the car-wheel rim a distance from the top thereof, a clip extending across the top of the journal-box and having an angular flange, and a nut screwing on the clip, the flange being adapted to engage the journal-box at one side and the said nut engaging the said hook-head.

5. A railroad car appliance comprising a chain adapted to pass around the bottom of the journal-box, a wheel clamp-hook connected with one end of the chain, a journal-box hook adapted to rest against one side of the journal-box and engaged by the other end of the chain, the said journal-box hook being provided with a head adapted to engage the top of the journal-box, a clip extending lengthwise across the top of the journal-box and provided at one end with an angular flange engaging the side of the journal-box opposite the one on which the journal-box hook is held, and a nut screwing on the said clip and engaging the said head.

820,783. GRATE AND FUEL FEEDER. ENRO HARCHARICK, Wilkes-Barre, Pa. Filed Apr. 1, 1904. Serial No. 201,121.



Claim.—1. In a furnace, the combination with a frame inclosing an ash-chamber of a grate carried by said frame, and means for revolving said frame, substantially as described.

2. In a furnace, the combination with a frame inclosing air and ash chambers, of a grate carried by said frame, and means for revolving said frame, substantially as described.

3. In a furnace, the combination with a revolving frame, of a sectional grate, supported by said frame and having in each section a plurality of independently-swinging plates, means for detachably securing said plates in operative position, and means adjacent each section of the grate for successively restoring the plates thereof to operative position after they have been dumped.

4. In a furnace, the combination with a revolving frame, of a sectional grate supported by said frame and having in each section thereof two plates adapted to swing indepenently about a common axis to dump the load thereon, means for detachably supporting said plates in operative position, and means movable about the axis of the plates of each grate-section to restore said plates to operative position after they have been dumped.

5. In a furnace, the combination with a revolving frame, of a sectional grate supported by said frame and having in each section thereof a plurality of independently-swinging plates, an ash-chamber rotating with the grate and divided into a series of compartments corresponding in number and arrangement to the sections of the grate, and means within each of said compartments of the ash-chamber for moving the plates of the adjacent grate-sections to operative position after they have been dumped.

6. In a furnace, the combination of a revolving sectional grate, each section including two plates adapted to move about a common axis, means for detachably holding said plates in horizontal position, and means movable in opposite directions about the axis of the plates for restoring the said plates successively to operative position after they have been dumped.

7. In a furnace, the combination of a revolving sectional grate, each section comprising a plurality of independently-swinging plates, and a rock-shaft adjacent each section of the grate and provided with means for restoring the plates of said section to operative position after they have been dumped.

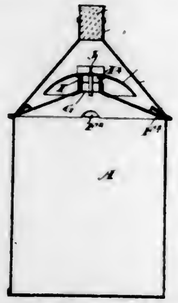
8. In a furnace, the combination with a sectional grate, of a support for the grate having therein a series of ash-chambers, corresponding in number and arranged below the sections of said grate, and means for revolving said grate-support.

820,784. OIL-CAN. GEORGE A. HARCOURT, Toronto Junction, Canada. Filed Apr. 11, 1905. Serial No. 255,049.

Claim.—1. In an oil-can and liquid-receptacle, the combination with the can-body having a suitable top and orifice therein, of a reverse saucer-shaped deflecting-plate located below the orifice and suitably supported, and an open support secured to the center of the top of the deflecting-plate immediately below the orifice as and for the purpose specified.

2. In an oil-can and liquid-receptacle, the combination with the can having a conical top and an orifice at the apex of the same, of a cone-shaped inner or supplemental top provided with a suitable orifice at the apex thereof and a saucer-shaped deflecting-plate suitably supported above the orifice as and for the purpose specified.

3. In an oil-can and liquid-receptacle, the combination with the can having a conical top and an orifice at the apex of the same, of a cone-shaped inner or supplemental top provided with a suitable orifice at the apex thereof, and a saucer-shaped deflecting-plate located centrally above the orifice and supports secured to the neck of the orifice and to the bottom of the deflecting-plate as and for the purpose specified.

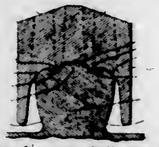


4. The combination with the can having a conical top and a central orifice, of an interior supplemental conical top having an orifice at its apex, and an orifice at its edge and a deflecting-plate suitably supported above the central orifice and leaving an opening for the passage of the liquid, and a shield located above the side orifice and leaving an opening for the passage of the liquid as and for the purpose specified.

5. In an oil-can and liquid-receptacle, a deflecting-plate, a cone-shaped supplemental top having a central orifice and means for supporting the deflecting-plate above the orifice as and for the purpose specified.

6. In combination a conical supplemental top provided with openings at the edge having shields therefor and a central orifice and a deflecting-plate suitably supported above the same as and for the purpose specified.

820,785. GRATE FOR STEAM-BOILERS AND THE LIKE. BENJAMIN F. HART, Jr., Hoboken, N. J., assignor to B. Franklin Hart, Jr., & Co., New York, N. Y., a Copartnership. Filed Aug. 9, 1905. Serial No. 273,394.



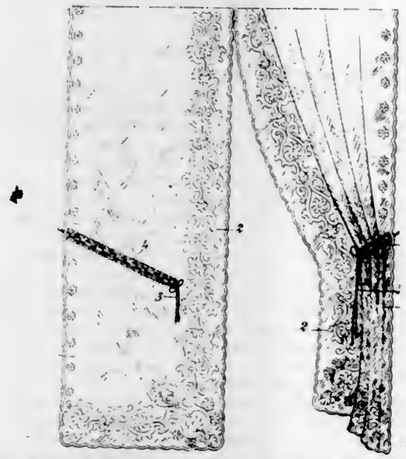
Claim.—1. A grate for steam-boilers or the like comprising a front and a rear bearing-bar, a series of separated projections on each of the bearing-bars, each of the projections provided on its upper side with a protuberance and with a recess or depression on each side of said protuberance, a series of grate-bars each having on the under side of each of its ends a rounded depression and a ridge on each side thereof, which depression and ridges are adapted to register respectively with said protuberance and recesses or depressions on said projections of the front and rear bearing-bars and air-openings through the body of the grate-bar, and means for rocking said grate-bar.

2. A grate for steam-boilers or the like comprising a front and a rear bearing-bar, a series of separated projections on each of the bearing-bars, each of the projections provided on its upper side with a protuberance and with a recess or depression on each side of said protuberance, a series of grate-bars of inverted-U shape in cross-section each having side webs and on the under side of each of its ends a rounded depression and a ridge on each side of the depression, which depression and ridges are adapted to register respectively with said protuberance and recesses or depressions on the projections of the front and rear bearing-bars and air-openings through the body of the grate-bar, and means for rocking said grate-bars.

3. A grate for steam-boilers or the like comprising a front and a rear bearing-bar, a series of separated and undercut projections on each of the bearing-bars, each of the projections provided on its upper side with a protuberance and with a recess or depression on each side of said protuberance, a series of grate-bars of inverted-U shape in cross-section each having side webs and provided with a strengthening fillet portion in each of the corners formed by the side webs and the bottom of the main portion of the grate-bar and extending the full length of the same, and on the under side of each of the grate-bar ends a rounded depression and a ridge on each side of the depression which depression and ridges are adapted to register respectively with said protuberance and recesses or depressions on the projections of the front and rear bearing-bars and air-openings through the body of the grate-bar, and means for rocking said grate-bar.

4. A grate for steam-boilers or the like comprising a front and a rear bearing-bar, a series of separated and undercut projections on each of the bearing-bars, each of the projections provided on its upper side with a protuberance and with a recess or depression on each side of said protuberance, a series of grate-bars of inverted-U shape in cross-section each having side webs and upper shedding-surfaces which incline from the center toward the side of the grate-bar and form obtuse angles with the outer walls of the side webs, a strengthening fillet portion in each of the corners formed by the side webs and the bottom of the main portion of the grate-bar and extending the full length of the same, and on the under side of each of the grate-bar ends a rounded depression and a ridge on each side of the depression, which depression and ridges are adapted to register respectively with said protuberance and recesses or depressions on the projections of the front and rear bearing-bars and air-openings through the body of the grate-bar, and means for rocking said grate-bars.

820,786. CURTAIN-LOOPER. JOHN W. HENSON, New York, N. Y. Filed Jan. 6, 1906. Serial No. 294,881.



Claim.—The combination, with a curtain having a border at its inner edge, of a reinforce extended transversely from the border, and a draw-string in said reinforce.

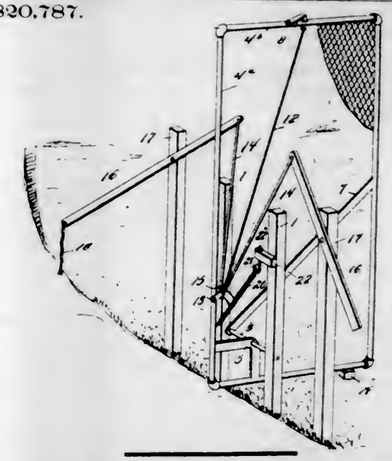
820,787. GATE. MELVIN L. HOWARTH, Norman, Okla., assignor of one-half to G. L. Abbott, Norman, Okla. Filed Jan. 18, 1906. Serial No. 296,666.

Claim.—1. A gate comprising a gate-frame, a pair of posts, a horizontal pivot-bar connecting the posts, an L-shaped plate provided with a journal-opening in the upper portion thereof through which the pivot-bar passes and connected to the bottom and the rear end bar of the gate-frame to brace them, and a brace extending downwardly and rearwardly from the top bar of the gate-frame and journaled on the pivot-bar.

2. A gate comprising a gate-frame, a pair of posts, a horizontal pivot-bar connecting said posts, an L-shaped plate secured to the vertical and horizontal portions of said gate and provided with a journal to receive said pivot-bar, and levers adapted to tilt said gate, substantially as described.

3. A gate pivotally mounted between two posts, a link pivotally connected to the bottom of said gate, a rod connected with said link, a lever adapted to actuate said rod, one end of said link being mounted in an arcuate slot, by which said link is adapted to unlatch said gate when the same is tilted, substantially as set forth.

820,787.



820,788. CONNECTING DEVICE FOR WHEEL-FELLIES. JOHN R. HUGHES, Chama, N. Mex., assignor to J. R. Hughes Invention Co., Chama, N. Mex. Filed May 29, 1905. Renewed Mar. 20, 1906. Serial No. 307,066.



Claim.—1. A connector for felly-sections comprising ferrules secured to the ends of the sections, each complementary to the other, the end face of one of the sections having therein a mortise and the ferrule of the other section having a tenon adapted thereto, constructed of integral portions of the ferrule bent together and thence outwardly.

2. A connector for felly-sections comprising complementary ferrules secured to the ends of the sections, the end face of one of the sections having a mortise therein and the ferrule of the other section having a tenon adapted to the mortise, constructed of integral portions of the ferrule bent together and thence outwardly this ferrule also having a recess, and the other ferrule having a projecting tongue for entering said recess.

3. A connector for felly-sections comprising complementary ferrules secured to the ends of the sections, and outer and inner irons lapping the sections at the joint, the end face of one of the sections having therein a mortise, and the ferrule of the other section having a tenon for entering the mortise.

4. A connector for felly-sections comprising complementary ferrules secured to the ends of the sections, and outer and inner irons lapping the sections at the joint, the end face of one of the sections having a mortise therein, and the ferrule of the other section having a tenon adapted to the mortise.

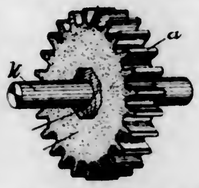
5. A connector for felly-sections, one having a mortise in the end face thereof, comprising complementary ferrules secured to the ends of the sections, and outer and inner irons lapping the ferrules at the joint, one ferrule having end sections lying at opposite sides of said mortise, and provided with a projecting tongue, and the other ferrule having a top section and end sections brought together and shaped into a tenon to enter the mortise, said end sections terminating short of the said top section to form a recess for receiving the tongue of the ferrule first named.

6. A connector for felly-sections comprising complementary ferrules secured to the ends of the sections, inner and outer irons lapping the sections at the joint, and a rivet and a bolt securing in place both the ferrules and the irons, the end face of one of the sections having therein a mortise and the corresponding face of the ferrule of the other section having a tenon entering said mortise.

7. A connector for felly-sections comprising complementary ferrules secured to the ends of the sections, inner and outer irons lapping the sections at the joint, and a rivet and a bolt securing in place both the ferrules and the said irons, one of said ferrules being

constructed with a socket and the other with a tongue received by the socket.

820,789. FLEXIBLE TOOTHED ELEMENT. FREDERICK HUTCHINS, Harlesden, England. Filed Oct. 30, 1905. Serial No. 285,172.



Claim.—1. A toothed element having a fluted covering, and a filling of elastic material.

2. A toothed element having a fluted covering of sheet material constituting teeth, and an elastic body for supporting the same.

3. A toothed element having an elastic body, and a sheathing surrounding the same, the latter forming teeth.

4. A toothed element having an elastic body, and a fluted covering surrounding the same and forming teeth.

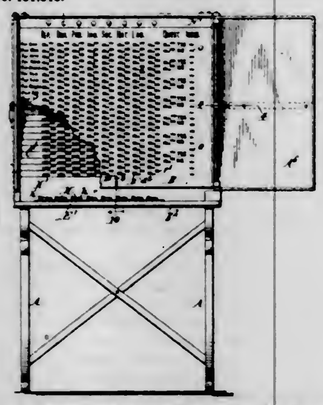
5. A toothed element having an axial core of rigid material, a covering formed from sheet material and fluted, and an intervening filling of elastic material, the said flutes constituting teeth and supported by the axial core having the elastic body secured thereto.

6. A toothed element having an elastic body provided with a toothed periphery, and a covering correspondingly shaped to the periphery of the said body and secured thereto.

7. A toothed element having a yieldable body formed of resilient material and provided with a fluted periphery, and a covering for the periphery formed of sheet material.

8. A toothed element having a fluted portion constituting teeth, and an elastic body for supporting the same.

820,790. VOTING-MACHINE. MARQUIS H. JOHNSON, Buffalo, N. Y., assignor to Joseph F. Rossell, Buffalo, N. Y. Filed Nov. 18, 1902. Serial No. 131,818.



Claim.—1. In a voting-machine, the combination of a case, voting mechaniam arranged in said case and including voting-keys and a key-restoring mechanism, a pair of doors applied to the front of the case, means for securing one of said doors substantially at right angles to the front of the case, and means for transmitting the movement of the other door to said key-restoring mechanism, substantially as set forth.

2. In a voting-machine, the combination of a case, voting mechanism arranged in said case and including voting-keys and a key-restoring mechanism, a pair of doors applied to the front of the case, one of said doors being hinged to the case by swinging arms which permit the door, when open, to swing backwardly at an angle to the front wall of the case, means for transmitting the movement of the last-named door to said restoring mechanism, and means for securing the other door substantially at right angles to the front of the case, substantially as set forth.

3. In a voting-machine, the combination of a counter having its units-wheel provided with an actuating device, a rock-shaft having an arm adjacent to said device, a voting-key, and a rod operated by said key and movably connected with the arm of said rock-shaft and adapted to engage or clear the actuating device of the units-wheel, substantially as set forth.

4. In a voting-machine, the combination of a counter having its units-wheel provided with an actuating-arm, a rock-shaft having an arm arranged adjacent to said actuating-arm and provided with an opening, a voting-key, and a rod attached to said key guided in said opening and adapted to be shifted across the actuating-arm of the units-wheel for vibrating the same, substantially as set forth

5. In a voting-machine, the combination of a face-plate or ballot-support, a series of voting-keys extending through said face-plate, a zero-setting shaft arranged on the rear side of said face-plate, a series of registers mounted on said shaft, and a rock-shaft arranged parallel with said resetting-shaft and provided with means for actuating the units-wheels of said registers, substantially as set forth.

6. In a voting-machine, the combination of a series of voting-keys each capable of being moved in opposite directions without restraint for permitting an elector to correct or change his vote, counters controlled by said keys, a universal shifting device having means constructed to move said keys in opposite directions for shifting the same into their voting position or restoring them to their initial position, and a party-key connected with said shifting device and capable of being moved manually in both directions, whereby said series of keys can be simultaneously and freely moved in either direction by said party-key, substantially as set forth.

7. A voting-machine, comprising a series of vote-indicators movable into and out of voting position and a unitary operating means common to said vote-indicators and operative to move the same into and out of voted position to change or correct a vote, substantially as set forth.

8. A voting-machine, comprising a series of individual-candidate-vote indicators movable into and out of voting position, operating means common to said vote-indicators and operative to move the same into and out of voted position, and a party-vote indicator for actuating said operating means, substantially as set forth.

9. In a voting-machine, the combination of a series of individual-voting keys, counters controlled by the same, a universal shifting device having forks arranged to engage said individual keys, respectively, the jaws of the forks being separated to permit a limited play of the individual keys between the same, and a party-key for operating said shifting device, substantially as set forth.

10. In a voting-machine, the combination of a series of pivoted individual-voting keys, counters controlled by the same, rock-shafts having shifting forks arranged to engage said keys, respectively, a party-key, and a connection between the latter key and said rock-shaft, substantially as set forth.

11. In a voting-machine, the combination of a series of pivoted individual-voting keys, counters controlled by the same, rock-shafts arranged parallel with the pivots of said keys and carrying shifting devices for the same, respectively, and a party-key connected with said rock-shaft and pivoted to swing in a parallel plane with the individual keys, substantially as set forth.

12. In a voting-machine, the combination of a series of individual-voting keys pivoted to swing horizontally and representing candidates for different offices of the same party, counters controlled by said keys, an upright rock-shaft having shifting forks arranged to engage said keys, respectively, and a party-key also pivoted to swing horizontally and operatively connected with said rock-shaft, substantially as set forth.

13. In a voting-machine, the combination of a series of individual-voting keys, counters controlled by the same, a universal shifting device for the series of voting-keys, a party-key for operating said shifting device, and a restoring device independent of said shifting device acting upon said party-key, substantially as set forth.

14. In a voting-machine, the combination of a series of individual-voting keys, counters controlled by the same, a universal shifting device for the series of voting-keys, a party-key for operating said shifting device, and a restoring-bar independent of said shifting device extending across the party-key and provided with a projection arranged to engage said key, substantially as set forth.

15. In a voting-machine, the combination of a voting-key, an indicating-slide having a portion arranged to appear or disappear and provided with an oblique slot, and a shifting pin operated by said key and engaging in said slot, substantially as set forth.

16. In a voting-machine, the combination of a face-plate, a voting-key extending through the same, a horizontal slide having a portion arranged to appear and disappear through an aperture in said plate and provided with an oblique slot, a shifting pin engaging in said slot and arranged to be shifted in one direction by said key, and a key-restoring device arranged to shift said pin in the opposite direction, substantially as set forth.

17. In a voting-machine, the combination of a face-plate, a series of individual-voting keys extending through said face-plate, registers controlled by said keys, an upright rock-shaft having an actuating-arm provided with a pin and a series of forks arranged to engage with said series of keys, a party-key also extending through the face-plate and engaging with the pin of said actuating-arm, an indicating-slide arranged adjacent to said party-key and having a portion which is adapted to appear or disappear, said slide being provided with an oblique slot which receives the pin of said actuating-arm, substantially as set forth.

18. In a voting-machine, the combination of a case provided in opposite walls with horizontal guides, shelves or trays removably arranged in said guides, a movable face-plate arranged in front of said shelves, a series of individual-voting keys and complementary registers mounted on each of said shelves, upright rock-shafts arranged in the case in rear of said shelves and provided with shifting forks which engage said individual keys, and party-keys for operating said rock-shafts, substantially as set forth.

19. In a voting-machine, the combination of a number of voting-keys, a universal locking or limiting member coöperating with the series of keys, and individual locking devices intermediate of the keys and said limiting member operated by the keys and each provided with means for shifting said limiting member and a stop arranged to encounter said member, substantially as set forth.

20. In a voting-machine, the combination of a number of voting-keys, a universal limiting-bar therefor, and a rotary locking-wheel for each key actuated by the key and provided with an actuating projection for shifting the limiting-bar and a stop arranged to encounter said bar, substantially as set forth.

21. In a voting-machine, the combination of a number of voting-keys, a universal limiting-bar therefor provided with shifting notches, and a rotary locking-wheel for each key actuated by the key and provided with an actuating-pin arranged to enter one of the notches of the limiting-bar and a stop-pin arranged to encounter said bar at one side of said notch, substantially as set forth.

22. In a voting-machine, the combination of a number of voting-keys, a universal limiting-bar therefor, and a rotary locking-wheel for each key actuated by the key and having means for shifting said limiting-bar and stops located on opposite sides of said shifting means and arranged to engage the bar for preventing rebound of the wheel at either extremity of its movement, substantially as set forth.

23. In a voting-machine, the combination of a number of voting-keys, a universal limiting-bar therefor provided with shifting notches and on opposite sides of said notches with stop-notches, and a rotary locking-wheel for each key actuated by the key and provided with an actuating-pin adapted to engage with one of the shifting notches of the limiting-bar and with a pair of stop-pins arranged to alternately enter the corresponding stop-notches of the bar, substantially as set forth.

24. In a voting-machine, the combination of a number of voting-keys, a universal limiting-bar therefor, a rotary locking-wheel for each key actuated by the key and having means for shifting said limiting-bar and stops located on opposite sides of said shifting means and arranged to engage the bar, and a detent engaging with said wheel, substantially as set forth.

25. In a voting-machine, the combination of two or more rows of group-voting keys, registers controlled by said keys, a locking-bar for each row of keys, and guide-arms for each of said locking-bars provided with extensions adapted to be detachably secured to the guide-arms of the adjacent locking bar or bars, substantially as set forth.

26. In a voting-machine, the combination of two or more sets of group-voting keys each set representing candidates of one party, registers controlled by said keys, a party-key coöperating with each of said sets of group-voting keys, and splitting-keys independent of said party-keys, whereby the keys of either of said sets may be collectively shifted to their ineffective position, substantially as set forth.

27. In a voting-machine, the combination of two or more sets of group-voting keys, each set representing candidates of one party, registers controlled by said keys, a rock-shaft for each of said sets having forks which engage with the respective keys of the set, and an operating-key for each of said rock-shafts, substantially as set forth.

28. In a voting-machine, the combination of a voting mechanism including rows of individual-voting keys and registers controlled by the same, a locking or limiting device for each row of keys, and a universal-shaft having shifting means adapted to engage with one or more of said limiting devices, substantially as set forth.

29. The combination of voting mechanism including series of individual-voting keys and registers controlled by the same, locking or limiting devices, one for each series of keys, and a universal actuating device constructed to engage with one or more of said limiting devices, substantially as set forth.

30. In a voting-machine, the combination of a voting mechanism including rows of individual-voting keys and registers controlled by the same, a locking or limiting device for each row of keys, a rock-shaft having shifting arms adapted to engage with one or more of said limiting devices, and means for actuating said rock-shaft from the outside of the machine, substantially as set forth.

31. In a voting-machine, the combination of a voting mechanism including horizontal rows of individual-voting keys and registers controlled by the same, a horizontally-movable locking-bar for each row of keys, and an upright rock-shaft provided with shifting forks which engage with said locking-bars, substantially as set forth.

32. In a voting-machine, the combination of the case, voting mechanisms arranged therein and including voting-keys, and a movable face-plate—constructed to permit the actuation of the keys in one position of the plate and to prevent their actuation in another position of the plate, and automatic means whereby said plate after having been once shifted and locked is permanently locked against operation by an election officer, substantially as set forth.

33. In a voting-machine, the combination of the case, voting mechanisms arranged therein and including voting-keys, and a movable face-plate having slots for the passage of said keys, said slots being provided at one side with stop-shoulders arranged to block the keys in the abnormal position of the face-plate, substantially as set forth.

34. In a voting-machine, the combination of the case, voting mechanisms arranged in the case and including voting-keys, and a sliding face-plate having slots for the passage of the keys, each of said slots being provided with a transverse locking-notch adapted to receive the corresponding voting-key when the plate is shifted out of its normal position, substantially as set forth.

35. In a voting-machine, the combination of the case, voting mechanisms including voting-keys, a movable face-plate having slots for the passage of said keys and constructed to block and release the keys in different positions of the plate, a manual lock for said plate, and automatic means permitting one operation of said manual lock and thereafter permanently locking said face-plate against operation by an election officer, substantially as set forth.

36. In a voting-machine, the combination of a case, voting mechanisms including registers or counters, a movable plate or shutter constructed to expose and conceal the registers in different positions of the plate, and carrying a locking member, a locking-bolt adapted to engage with said member, an auxiliary locking device also adapted to engage with said locking member and arranged to be shifted into its operative position by said locking-bolt, substantially as set forth.

37. In a voting-machine, the combination of a case, voting mechanisms including registers or counters, a sliding plate or shutter constructed to expose and conceal the registers in different positions of the plate and provided with a locking projection, a locking-bolt adapted to engage with said projection in the normal position of said plate, a carrier arranged to be advanced with said bolt, and a tumbler mounted on said carrier and arranged to be held in its inoperative position by said projection and adapted to move into its operative position and block said projection when the bolt is retracted and the plate is shifted to its abnormal position, substantially as set forth.

38. In a voting-machine, the combination of a case, voting mechanisms including registers or counters, a sliding plate or shutter constructed to expose and conceal the registers in different positions of the plate and provided with a locking projection, a locking-bolt adapted to engage with said projection in the normal position of said plate, a carrier arranged to be advanced with said bolt, a tumbler pivoted to said carrier and arranged to be swung to its inoperative position by contact with said projection and to swing over said projection when the plate is shifted to its abnormal position, and means for retaining said carrier in its advanced position, substantially as set forth.

39. In a voting-machine, the combination of a case, voting mechanisms including registers or counters, a sliding plate or shutter constructed to expose and conceal the registers in different posi-

tions of the plate and provided with a locking projection, a locking-bolt adapted to engage with said projection in the normal position of said plate, a carrier arranged to be advanced with said bolt, a depending tumbler pivoted to said carrier and arranged to be swung out of its normal position by contact with said projection and to swing over the same when the plate is lowered to its abnormal position, and an automatic detent arranged to engage with said carrier in its advanced position, substantially as set forth.

40. In a voting-machine, the combination of a case, voting mechanism including voting-keys, a sliding face-plate constructed to block and release said keys in different positions of the plate and carrying a locking member, a locking-bolt adapted to engage with said member, and an auxiliary locking device also adapted to engage with said locking member and arranged to be shifted into its operative position by said locking-bolt, substantially as set forth.

41. In a voting-machine, the combination of the case, voting mechanism including voting-keys, a sliding face-plate constructed to block and release said keys in different positions of the plate and carrying a locking projection, a locking-bolt adapted to engage with said projection in the normal position of said plate, a carrier arranged to be advanced with said bolt, and a tumbler mounted on said carrier and arranged to be held in its inoperative position by said projection and adapted to move into its operative position and block said projection when the bolt is retracted and the plate is shifted to its abnormal position, substantially as set forth.

42. In a voting-machine, the combination of the case, voting mechanism including voting-keys, a sliding face-plate constructed to block and release said keys in different positions of the plate and carrying a locking projection, a locking-bolt adapted to engage with said projection in the normal position of said plate, a carrier arranged to be advanced by said bolt, a tumbler pivoted to said carrier and arranged to be swung to its inoperative position by contact with said projection and to swing over said projection when the plate is shifted to its abnormal position, and means for retaining said carrier in its advanced position, substantially as set forth.

43. In a voting-machine, the combination of a case, voting mechanisms including registers or counters, a resetting device for said registers accessible through an opening in the case, a shutter applied to said opening, and a lock for said shutter accessible only from the inside of the case, substantially as set forth.

44. In a voting-machine, the combination of a case, voting mechanisms including registers or counters, a resetting device for said registers accessible through an opening in the case, a shutter applied to said opening, a spindle passing through the wall of the case and said shutter and provided with an eccentric locking-pin engaging with the shutter, and a locking device for said spindle arranged inside of the case, substantially as set forth.

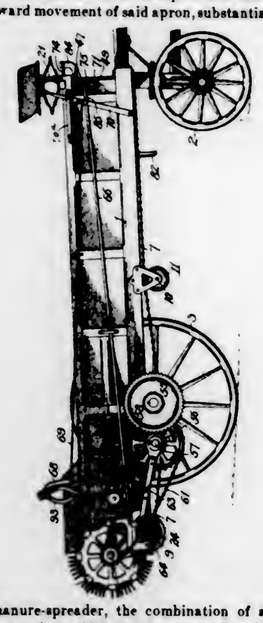
45. In a voting-machine, the combination of a case, voting mechanisms including registers or counters, a resetting device for said registers accessible through an opening in the case, a shutter applied to said opening and having a locking-slot, a spindle passing through the wall of the case and said slot and provided with an eccentric-pin adapted to engage against one edge of said slot, a locking-head secured to the inner end of the spindle, and a catch arranged inside of the case and adapted to interlock with said head, substantially as set forth.

46. In a voting-machine, the combination of a voting mechanism including voting keys and counters, a rock-shaft having arms adapted to actuate the units-wheels of the counters, a cam-lever connected with said rock-shaft, a key-restoring device, and an upright shaft or pintle having an arm arranged to engage with said cam-arm and said key-restoring device, substantially as set forth.

47. In a voting-machine, the combination of horizontal rows of counters, a rock-shaft arranged adjacent each row of counters and having means for engaging the units-wheels thereof, a universal actuating-bar arranged in rear of said rock-shafts, and intermediate levers having their front ends connected with said rock-shafts and their rear ends with said universal bar, substantially as set forth.

820,791. MANURE-SPREADER. LEVI H. KELLAM, Sandwich, Ill. Filed Apr. 10, 1905. Serial No. 254,635.

Claim.—1. In a manure-spreader, the combination of a main body, ground-wheels carrying said body, a traveling apron forming the bottom of said body, an intermediate mechanism between a ground-wheel and the apron for imparting a rearward movement to the apron, a detachable connection forming a part of such mechanism, means for manually actuating said detachable connection, an intermediate mechanism between a ground-wheel and the apron for imparting a forward movement to the apron, a clutch forming a part of such mechanism, means for manually actuating said clutch, and a locking member automatically controlled by the operating means of said detachable connection and adapted to lock the mechanism for effecting a forward movement of the apron in a dormant condition during a rearward movement of said apron, substantially as set forth.



2. In a manure-spreader, the combination of a main body, ground-wheels carrying said body, a traveling apron forming the bottom of said body, an intermediate mechanism between a ground-wheel and the apron for imparting a rearward movement to the apron, a detachable connection forming a part of such mechanism, means for manually actuating said detachable connection, an intermediate mechanism between a ground-wheel and the apron for imparting a forward movement to the apron, a clutch forming a part of such mechanism, means for manually actuating said clutch, and a locking member moving with the actuating means of the detachable connection aforesaid and adapted to be engaged by the aforesaid clutch-actuating means to lock the mechanism for effecting a rearward movement of the apron in a dormant condition during a forward movement of the apron, substantially as set forth.

3. In a manure-spreader, the combination of a main body, ground-wheels carrying said body, a traveling apron forming the bottom of said body, an intermediate mechanism between a ground-wheel and the apron for imparting a rearward movement to the apron, a detachable connection forming a part of such mechanism, means for manually actuating said detachable connection, an intermediate mechanism between a ground-wheel and the apron for imparting a forward movement to the apron, a clutch forming a part of such mechanism, means for manually actuating said clutch, and a locking member controlled by the actuating means of the aforesaid detachable connection and adapted to lock the mechanism for effecting a forward movement of the apron in a dormant condition during a rearward movement of said apron, and to be engaged by the clutch-actuating means so as to automatically lock the mechanism for effecting a rearward motion of the apron in a dormant condition during a forward movement of said apron, substantially as set forth.

4. In a manure-spreader, the combination of a main body, ground-wheels carrying said body, a traveling apron forming the bottom of said body, an intermediate mechanism between a ground-wheel and the apron for imparting a rearward movement to the apron, a detachable connection forming a part of such mechanism, means for manually actuating said detachable connection, an intermediate mechanism between a ground-wheel and the apron for imparting a forward movement to the apron, a clutch forming a part of such mechanism, means for manually actuating said clutch, a rock-shaft forming a part of the actuating means of the detachable connection aforesaid, and a pivoted arm operatively connected to said rock-shaft and adapted to lock the mechanism for effecting a forward movement of the apron in a dormant condition during a rearward movement of said apron, substantially as set forth.

5. In a manure-spreader, the combination of a main body, ground-wheels carrying said body, a traveling apron forming the bottom of said body, an intermediate mechanism between a ground-wheel and the apron for imparting a rearward movement to the apron, a detachable connection forming a part of such mechanism, means for manually actuating said detachable connection, an intermediate mechanism between a ground-wheel and the apron for imparting a forward movement to the apron, a clutch forming a part of such mechanism, means for manually actuating said clutch, a rock-shaft forming a part of the actuating means of the detachable connection aforesaid, and a pivoted arm operatively connected to said rock-shaft and adapted to be engaged by the clutch-actuating means so as to automatically lock the mechanism for effecting a rearward movement of the apron in a dormant condition during a forward movement of said apron, substantially as set forth.

6. In a manure-spreader, the combination of a main body, ground-wheels carrying said body, a traveling apron forming the bottom of said body, an intermediate mechanism between a ground-wheel and the apron for imparting a rearward movement to the apron, a detachable connection forming a part of such mechanism, means for manually actuating said detachable connection, an intermediate mechanism between a ground-wheel and the apron for imparting a forward movement to the apron, a clutch forming a part of such mechanism, means for manually actuating said clutch, a rock-shaft forming a part of the actuating means of the detachable connection aforesaid, and a pivoted arm operatively connected to said rock-shaft and adapted to be engaged by the clutch-actuating means, so as to automatically lock the mechanism for effecting a rearward movement of the apron in a dormant condition during a forward movement of said apron, and to lock the mechanism for effecting a forward movement of the apron in a dormant condition during a rearward movement of said apron, substantially as set forth.

7. In a manure-spreader, the combination of a main body, ground-wheels carrying said body, a traveling apron forming the bottom of said body, an intermediate mechanism between a ground-wheel and the apron for imparting a rearward movement to the apron, a detachable connection forming a part of said mechanism, means for manually actuating said detachable connection, an intermediate mechanism between a ground-wheel and the apron for imparting a forward movement to the apron, a clutch forming a part of such mechanism, means for manually actuating said clutch, a rotary beater at the end of the main body, an intermediate mechanism between a ground-wheel and the beater for imparting rotation to said beater, a clutch forming a part of such beater mechanism, means for actuating said beater-clutch, an operating connection common to the actuating means of the aforesaid detachable connection and to the means for actuating the clutch of the beater mechanism, and a locking member operatively connected to said operative connection and adapted to be controlled by the clutch-actuating means to automatically lock the mechanism for effecting a rearward movement of the apron in a dormant condition during a forward movement of said apron, substantially as set forth.

8. In a manure-spreader, the combination of a main body, ground-wheels carrying said body, a traveling apron forming the bottom of said body, an intermediate mechanism between a ground-wheel and the apron for imparting a rearward movement to the apron, a detachable connection forming a part of said mechanism, means for manually actuating said detachable connection, an intermediate mechanism between a ground-wheel and the apron for imparting a forward movement to the apron, a clutch forming a part of such mechanism, means for manually actuating said clutch, a rotary beater at the end of the main body, an intermediate mechanism between a ground-wheel and the beater for imparting rotation to said beater, a clutch forming a part of such beater mechanism, means for actuating said beater-clutch, an operating connection common to the actuating means of the aforesaid detachable connection and to the means for actuating the clutch of the beater mechanism, and a locking member operatively connected to said operative connection and adapted to be controlled by the clutch-actuating means to automatically lock the mechanism for effecting a rearward movement of the apron in a dormant condition during a forward movement of the apron, substantially as set forth.

9. In a manure-spreader, the combination of a main body, ground-wheels carrying said body, a traveling apron forming the bottom of said body, an intermediate mechanism between a ground-wheel and the apron for imparting a rearward movement to the apron, a detachable connection forming a part of said mechanism, means for manually actuating said detachable connection, an intermediate mechanism between a ground-wheel and the apron for imparting a forward movement to the apron, a clutch forming a part of such mechanism, means for manually actuating said clutch, a rotary beater at the end of the main body, an intermediate mechanism between a ground-wheel and the beater for imparting rotation to said beater, a clutch forming a part of such beater mechanism, means for actuating said beater-clutch, a rock-shaft common to the actuating means of the aforesaid detachable connection and to the means for actuating the clutch of the beater mechanism, and a pivoted arm operatively connected to said rock-shaft and adapted to lock the mechanism for effecting a forward movement of the apron in a dormant condition during the rearward movement of said apron, substantially as set forth.

10. In a manure-spreader, the combination of a main body, ground-wheels carrying said body, a traveling apron forming the bottom of said body, an intermediate mechanism between a ground-wheel and the apron for imparting a rearward movement to the apron, a detachable connection forming a part of said mechanism, means for manually actuating said detachable connection, an intermediate mechanism between a ground-wheel and the apron for imparting a forward movement to the apron, a clutch forming a part of such mechanism, means for manually actuating said clutch, a rotary beater at the end of the main body, an intermediate mechanism between a ground-wheel and the beater for imparting rotation to said beater, a clutch forming a part of such beater mechanism, means for actuating said beater-clutch, a rock-shaft common to the actuating means of the aforesaid detachable connection and to the means for actuating the clutch of the beater mechanism, and a pivoted arm operatively connected to said rock-shaft and adapted to lock the mechanism for effecting a forward movement of the apron in a dormant condition during the rearward movement of said apron, substantially as set forth.

11. In a manure-spreader, the combination of a main body, ground-wheels carrying said body, a traveling apron forming the bottom of said body, an intermediate mechanism between a ground-wheel and the apron for imparting a rearward movement to the apron, a detachable connection forming a part of said mechanism, means for manually actuating said detachable connection, an intermediate mechanism between a ground-wheel and the apron for imparting a forward movement to the apron, a clutch forming a part of such mechanism, means for manually actuating said clutch, a rotary beater at the end of the main body, an intermediate mechanism between a ground-wheel and the beater for imparting rotation to said beater, a clutch forming a part of such beater mechanism, means for actuating said beater-clutch, a rock-shaft common to the actuating means of the aforesaid detachable connection and to the means for actuating the clutch of the beater mechanism, and a pivoted arm operatively connected to said rock-shaft and adapted to be controlled by the clutch-actuating means of the apron mechanism so as to automatically lock the mechanism for effecting a rearward movement of the apron in a dormant condition during a forward movement of the apron, substantially as set forth.

12. In a manure-spreader, the combination of a main body, ground-wheels carrying said body, a traveling apron forming the bottom of said body, an intermediate mechanism between a ground-wheel and the apron for imparting a rearward movement to the apron, a detachable connection forming a part of said mechanism, means for manually actuating said detachable connection, an intermediate mechanism between a ground-wheel and the apron for imparting a forward movement to the apron, a clutch forming a part of such mechanism, means for manually actuating said clutch, a rotary beater at the end of the main body, an intermediate mechanism between a ground-wheel and the beater for imparting rotation to said beater, a clutch forming a part of such beater mechanism, means for actuating said clutch, a rock-shaft common to the actuating means of the aforesaid detachable connection and to the means for actuating the clutch of the beater mechanism, and a pivoted arm operatively connected to said rock-shaft and controlled by said rock-shaft and by the clutch-actuating means of the apron mechanism, and adapted to lock the mechanism for effecting a forward movement of the apron in a dormant condition during a rearward movement of said apron, and to be engaged by the clutch-actuating means so as to automatically lock the mechanism for effecting a rearward movement of the apron in a dormant condition during a forward movement of the apron, substantially as set forth.

13. In a manure-spreader, the combination of a main body,

ground-wheels carrying said body, a traveling apron forming the bottom of said body, an intermediate mechanism between a ground-wheel and the apron for imparting a forward motion to said apron, the same comprising a gear-wheel receiving motion from a ground-wheel, a supporting-arbor for said gear-wheel, a pinion receiving motion from said gear-wheel, a supporting-arbor for said pinion, a chain-wheel mounted on said arbor, the opposed faces of the pinion and chain-wheel having complementary clutch members, a bell-crank lever pivoted to the main body and adapted to impart lateral movement to said chain-wheel, an operating-lever at the front of the main body, lever and link connections between the operating and bell-crank levers, a driving-wheel for the traveling apron, and an operative connection between said driving-wheel and the aforesaid chain-wheel, substantially as set forth.

14. In a manure-spreader, the combination of a main body, ground-wheels carrying said body, a traveling apron forming the bottom of said body, an intermediate mechanism between a ground-wheel and the apron for imparting a forward motion to said apron, the same comprising a gear-wheel receiving motion from a ground-wheel, a supporting-arbor for said gear-wheel, a pinion receiving motion from said gear-wheel, a supporting-arbor for said pinion, a chain-wheel mounted on said arbor, the opposed faces of the pinion and chain-wheel having complementary clutch members, a bell-crank lever pivoted to the main body and adapted to impart lateral movement to said chain-wheel, an operating-lever at the front of the main body, lever and link connections between the operating and bell-crank levers, a driving-wheel for the traveling apron, an operative connection between said driving-wheel and the aforesaid chain-wheel, a spring tending to move the operating-lever in one direction, a catch-piece for holding said lever against the stress of said spring, and means for automatically disengaging said lever from said catch, substantially as set forth.

15. In a manure-spreader, the combination of a main body, ground-wheels carrying said body, a traveling apron forming the bottom of said body, an intermediate mechanism between a ground-wheel and the apron for imparting a forward motion to said apron, the same comprising a gear-wheel receiving motion from the ground-wheel, a supporting-arbor for said gear-wheel, a pinion receiving motion from said gear-wheel, a supporting-arbor for said pinion, a chain-wheel mounted on said arbor, the opposed faces of the pinion and chain-wheel having complementary clutch members, a bell-crank lever pivoted to the main body and adapted to impart lateral movement to said chain-wheel, an operating-lever at the front of the main body, lever and link connections between the operating and bell-crank levers, a driving-wheel for the traveling apron, an operative connection between said driving-wheel and the aforesaid chain-wheel a spring tending to move the operating-lever in one direction, a catch-piece for holding said lever against the stress of the spring, a pendent arm pivoted on the main body in the path of the forward end of the apron and adapted at the limit of the forward motion of the apron to automatically disengage said lever from said catch, substantially as set forth.

16. In a manure-spreader, the combination of a main body, ground-wheels carrying said body, a traveling apron forming the bottom of said body, an intermediate mechanism between a ground-wheel and the apron for imparting a forward motion to said apron, the same comprising a gear-wheel receiving motion from a ground-wheel, a supporting-arbor for said gear-wheel, a pinion receiving motion from said gear-wheel, a supporting-arbor for said pinion, a chain-wheel mounted on said arbor, the opposed faces of the pinion and chain-wheel having complementary clutch members, a bell-crank lever pivoted to the main body and adapted to impart lateral movement to said chain-wheel, an operating-lever at the front of the main body, lever and link connections between the operating and bell-crank levers, a driving-wheel for the traveling apron, an operative connection between said driving-wheel and the aforesaid chain-wheel, a spring tending to move the operating-lever in one direction, a catch-piece for holding said lever against the stress of the spring, a pendent arm pivoted on the main body in the path of the forward end of the apron and having an intermediate angular projection adapted at the limit of the forward motion of the apron to automatically disengage said lever from said catch, substantially as set forth.

17. In a manure-spreader, the combination of a main body, ground-wheels carrying said body, a traveling apron forming the bottom of said body, an intermediate mechanism between a ground-wheel and the apron for imparting a rearward motion to said apron, the same comprising a gear-wheel receiving motion from a ground-wheel, a series of annular gears on one face of said gear-wheel, a supporting-arbor for said gear-wheel, an adjustable pinion adapted for engagement with either of said annular gears, a shaft carrying said pinion, means for adjusting said pinion on said shaft, a bearing-sleeve for said shaft mounted in a slidable manner on the arbor aforesaid and provided with a spiral rib and a complementary spiral recess, an operating-arm journaled on said arbor and provided with an inclined projection and a hook-shaped toe adapted for operative engagement with the aforesaid rib and recess of the bearing-sleeve, a driving-wheel for the traveling apron, and operative connections between said driving-wheel and the pinion-shaft aforesaid, substantially as set forth.

18. In a manure-spreader, the combination of a main body, ground-wheels carrying said body, a traveling apron forming the bottom of said body, intermediate mechanisms between a ground-wheel and the apron for imparting opposite movements to said apron, a rotary beater journaled at the rear of the main body, an intermediate mechanism between a ground-wheel and the beater for imparting rotation to the beater, a section of chain connecting the ends of the traveling apron together to impart an endless form thereto, a transverse shaft arranged beneath the main body midway its length, a series of supporting-rollers on said shaft, and a vertically-enlarged link arranged at the intersection of the aforesaid chain-section and the tail of the apron and adapted to ride over one of said rollers and lift the tail of the apron above said rollers, substantially as set forth.

19. In a manure-spreader, the combination of a main body, ground-wheels carrying said body, a traveling apron forming the bottom of said body, intermediate mechanisms between a ground-wheel and the apron for imparting opposite movements to said apron, a rotary beater journaled at the rear of the main body, an intermediate mechanism between a ground-wheel and the beater for imparting rotation to the beater, a section of chain connecting the ends of the traveling apron together to impart an endless form thereto, a transverse shaft arranged beneath the main body midway its length, a series of supporting-rollers on said shaft, and a link arranged at the intersection of the chain-section and the tail of the traveling apron and provided with an inclined rib on its under side adapted to ride over one of said rollers and lift the tail of the apron above said rollers, substantially as set forth.

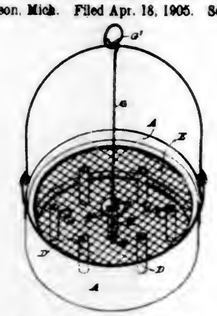
20. In a manure-spreader, the combination of a main body, ground-wheels carrying said body, a traveling apron forming the bottom of said body, intermediate mechanisms between a ground-wheel and the apron for imparting movement to said apron, a rotary beater journaled at the rear of the main body, an intermediate mechanism between a ground-wheel and the beater for imparting rotation to the beater, a pressure-comb formed in sections, means for supporting said sections, and individual yielding connections between said sections and the supporting means, substantially as set forth.

21. In a manure-spreader, the combination of a main body, ground-wheels carrying said body, a traveling apron forming the bottom of said body, intermediate mechanisms between a ground-wheel and the apron for imparting movement to said apron, a rotary beater journaled at the rear of the main body, an intermediate mechanism between a ground-wheel and the beater for imparting rotation to the beater, a pressure-comb formed in sections, a support in common for said sections formed by a transversely-extending shaft, and individual yielding connections between said sections and said shaft, substantially as set forth.

22. In a manure-spreader, the combination of a main body, ground-wheels carrying said body, a traveling apron forming the bottom of said body, intermediate mechanisms between a ground-wheel and the apron for imparting movement to said apron, a rotary beater journaled at the rear of the main body, an intermediate mechanism between a ground-wheel and the beater for imparting rotation to the beater, a pressure-comb formed in sections, means for supporting said sections and individual yielding connections between said sections and the supporting means consisting of a bolt carried by the supporting means, a pressure-nut on said bolt, and a spring arranged beneath said pressure-nut, substantially as set forth.

23. In a manure-spreader, the combination of a main body, ground-wheels carrying said body, a traveling apron forming the bottom of said body, intermediate mechanisms between a ground-wheel and the apron for imparting movement to said apron, a rotary beater journaled at the rear of the main body, an intermediate mechanism between a ground-wheel and the beater for imparting rotation to the beater, a pressure-comb formed in sections, a support in common for said sections formed by a transversely-extending shaft, and individual yielding connections between said sections and said shaft, and each comprising an arm on the shaft, a bolt on said arm, a pressure-nut on said bolt, and a spring arranged beneath said pressure-nut, substantially as set forth.

820,792. RACK FOR FRYING FRIED CAKES. ORLANDO G. KELLY, Jackson, Mich. Filed Apr. 18, 1905. Serial No. 256,287.



Claim.—1. In a fried-cake-frying device, a rack C provided with ventilating-tubes D D which are open at each end in order to permit the circulation of fat therethrough and slot F in combination with the cover E provided with a slot F' made to rest upon the tubes D D without obstructing the openings of said tubes; the handle G provided with the hooks H I to engage the slots F F', all in combination with and for the purpose of securing said rack and cover from separation; substantially as and for the purposes shown and described.

2. In a fried-cake-frying device the spring handle-ring G' of the handle G made to engage the bail B of the kettle or pail A and in combination therewith and with said rack and cover and arranged to secure the immersion of the rack, cover and contained cakes in the hot fat contained in the kettle or pail; substantially as shown and described.

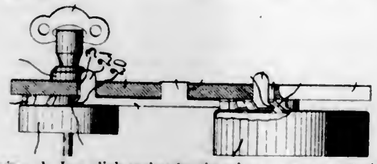
820,793. PLASTER-BOARD. HENRY KIMMET, St. Joseph, Mo. Filed July 15, 1905. Serial No. 269,883.



Claim.—1. In a plaster-board, the combination with a layer of plastic cement and shale, a layer of co-mingled cement and straw or fiber, and a second layer of cement and shale interposed thereupon, of a layer of coarse fabric secured to one of the faces of the board.

2. In plaster-board, the combination with two layers of plastic cement and shale, of an intermediate layer of straw and cement, and a layer of burlap secured to one face of the block.

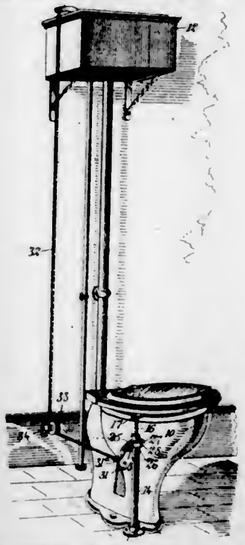
820,794. BARREL CLICK-SPRING FOR TIMEPIECES. JOSEPH KLEIN, Peru, Ill., assignor to The Western Clock Manufacturing Company, La Salle, Ill., a Corporation of Illinois. Filed Aug. 19, 1905. Serial No. 274,940.



Claim.—1. In a click-spring for timepieces, a movement-plate; two winding-barrels journaled in said plate; a metal strip fastened to said plate by means of its central side projection; two side projections from said strip, each passing through an aperture in said plate and two end projections each of which engages the teeth of one of the barrels.

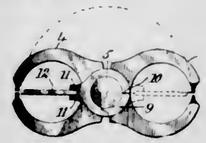
2. In a timepiece, a movement-plate; two winding-barrels journaled in said plate; a click-spring, fastened by means of its central side projection to said plate, with two side projections each passing through apertures in said plate, and with two end projections each of which engages with the teeth of one of the winding-barrels.

820,795. FLUSHING ATTACHMENT. JOHN KLEINBACH and KARL BARRIS, Spokane, Wash. Filed May 29, 1905. Serial No. 262,831.



Claim.—The combination with a water-closet bowl having a seat, and a flushing-tank provided with a valve, of a standard adjacent to the bowl and provided in its upper end with a vertical slot, a spring-supported rod slidably mounted in the standard and having a projection contacting with the seat, a lug having a square upper face and an inclined lower face and adjustably mounted on the rod and projecting through the slot, a bracket adjustably mounted on the standard, a lever pivoted on the bracket, one end of said lever having a square lower face and an inclined upper face for coöperating with the corresponding faces of the lug, and a flexible connection between the opposite end of the lever and the valve.

820,796. CALIPERS. ALFRED S. KOCH, Lancaster, Pa. Filed Mar. 14, 1906. Serial No. 306,024.



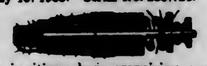
Claim.—1. A caliper having arms at its opposite ends, the arm at one end being integral with the opposite arm at the other end, a pivot-block having a flange upon which the upper surfaces of the arm members at the pivotal point engage, a plate detachably connected to said block and engaging upon the outer sides of said arm members at the pivotal point, said block having a projection outward from its flange, a spring-ring mounted to rotate on said projection, and a pointer having swinging connection with the ring.

2. A caliper comprising crossed members, a pivot-block on which the members are mounted to swing, a flange on said block for engaging with one side of said members, a plate removably attached to the block, for engaging with the other side of said members, a ring having swinging connection with said block, lugs extended from one side of the ring, and a pointer mounted between said lugs, so as to have a swinging movement toward and from the plane of the caliper.

3. The combination with caliper-arms of a pivot-block for the arms, the said pivot-block having an outward projection, a ring

mounted to rotate on said projection, the said ring being open at one side whereby it may be sprung over the projection, and for frictional engagement therewith, and a pointer mounted to swing on the ring.

820,797. SPARK-IGNITING PLUG. ROBERT B. KUHN, Canton, Ohio. Filed May 10, 1905. Serial No. 259,726.



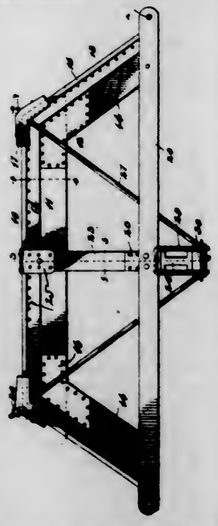
Claim.—1. An igniting-plug comprising a case with an electrode on its inner end and having a cavity with an outwardly-reduced tapered section therein, an insulation-tube in the cavity with a cone-shaped inner end and having a tapered section thereon adapted to fit and bear against the tapered cavity-section, a stem in the tube having an electrode-head on the inner end with a concave side adapted to fit and bear against the cone-shaped tube end, an insulation-collar around the outer end of the tube and bearing against the outer end of the case, a spring around the outer end of the stem and bearing against the outer end of the collar, and adjustable securing means on the outer part of the stem adapted to bear against the spring.

2. An igniting-plug comprising a case with an electrode on its inner end and having a cavity with an outwardly-reduced tapered section therein, an insulation-tube in the cavity with a cone-shaped inner end and having a tapered section thereon adapted to fit and bear against the tapered cavity-section, a stem in the tube having an electrode-head on the inner end with a concave side adapted to fit and bear against the cone-shaped tube end, an insulation-collar around the outer end of the tube and bearing against the outer end of the case, and adjustable securing means on the outer part of the stem adapted to bear against the collar.

3. An igniting-plug comprising a case with an electrode on its inner end and having a cavity with an outwardly-reduced tapered section therein, an insulation-tube in the cavity having a tapered section thereon adapted to fit and bear against the tapered cavity-section, a stem in the tube having an electrode-head bearing against the inner end of the tube, an insulation-collar around the outer end of the tube and bearing against the outer end of the case, a spring around the outer part of the stem and bearing against the outer end of the collar, and adjustable securing means on the outer part of the stem adapted to bear against the spring.

4. In an igniting-plug, an insulation-tube with a cone-shaped inner end and a stem in the tube having a head on the inner end with a concave side adapted to fit and bear against the cone-shaped tube end.

820,798. BRIDGE. CHARLES KUTZ, Louisville, Ohio. Filed Feb. 13, 1906. Serial No. 300,851.

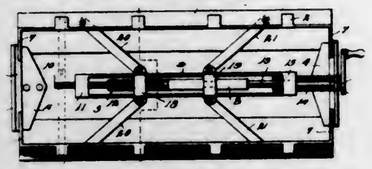


Claim.—1. A truss-bridge, the top chord and end posts of which are beams built up of flat plates and angle-beams secured to the sides thereof, the plate of the top chord projecting at its ends beyond the end of its angle-beams between the angle-beams of the end posts.

2. A truss-bridge, the end posts of which are built up of angle-beams with a plate therebetween, in combination with a top chord having a plate which extends between the angle-beams of the end posts and rests upon the upper ends of the plates thereof, and gussets covering the joint between the plates.

3. A truss-bridge, the top chord of which is a T-beam, in combination with an intermediate post which has at the top a vertical recess to receive the web of the aforesaid beam, and a strap passing over the top of the beam and down the sides of the post.

820,799. LOOSE-LEAF BINDER. GEORGE LABARRE, New Orleans, La. Filed Dec. 26, 1905. Serial No. 293,361.



Claim.—1. A loose-leaf binder comprising oppositely-located leaf-holding members, and means for moving said members in opposite directions consisting of runners having a linked connection with said members, and an operating-screw having threaded portions of different pitch and associated with the runners to impart equal and simultaneous movement thereto in opposite directions.

2. A loose-leaf binder comprising oppositely-located leaf-holding members, a base or frame plate with which said members have a sliding engagement, runners movable along said base-plate in a direction at right angles to the movement of said members, links interposed between said runners and members, and an operating-screw having a swiveled engagement with one runner, a threaded engagement with the other runner and a threaded engagement with the base or frame plate.

3. A loose-leaf binder comprising oppositely-located leaf-holding members, a base or frame plate with which said members have a sliding engagement, runners movable in a direction at right angles to the movement of said members, links connecting the runners with said members, and a telescopic operating-screw embodying an endwise-movable section having a threaded connection with the frame-plate and also connected with the runners to impart simultaneous and equal movement thereto in opposite directions.

4. A loose-leaf binder comprising oppositely-located leaf-holding members, a frame-plate with which said members have a sliding engagement, runners having a linked connection with said members, a telescopic operating-screw extending parallel with said members and adapted to actuate the runners simultaneously in opposite directions, said screw embodying an endwise-movable member and an endwise-fixed member into which the movable member slides and with which it has a keyed connection, and a detachable key for rotating the endwise-fixed member.

820,800. PAD FOR HORSES. SERIE A. LADD, Duane, N. Y. Filed Dec. 18, 1905. Serial No. 292,227.

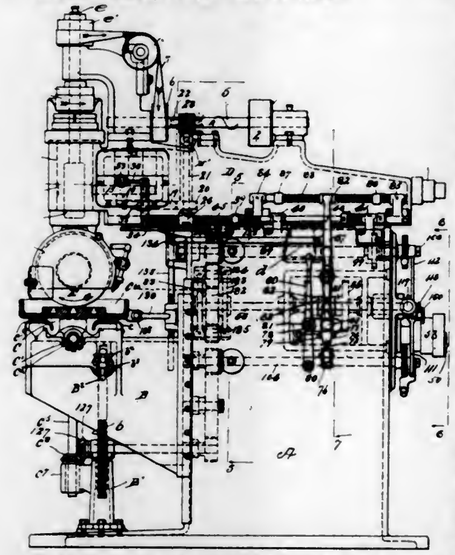


Claim.—1. A sweat-pad for horses composed of an outside and inside layer of cloth, as drilling, and an intermediate layer of composite stuffing, said layers being perforated through and through and quilted, the lines of all quilting-stitches crossing in the perforations.

2. A sweat-pad for horses composed of suitable coverings of cloth, and an inner stuffing, said layers or plies being perforated through and through and finished by cross-quilting, the cross-quilting lines of stitches crossing the perforations, as described, and hooks being connected with the outer edges.

3. A sweat-pad for harness perforated through and through, and quilted by lines of cross-stitches, the latter crossing in each perforation.

820,801. GRINDING-MACHINE. ABRAHAM B. LANDIS, Waynesboro, Pa. Filed Sept. 8, 1904. Serial No. 223,689.



Claim.—1. A grinding-machine comprising a grinding-wheel mounted upon a swiveled base, mechanism for turning said base automatically to present the face of said grinding-wheel to the work at different angles and reverse said angle automatically at each end of the work, a work-supporting carriage, and mechanism for operating the same, substantially as set forth.

2. In a grinding-machine, the combination of the grinding-wheel mounted upon a swiveled base, driving mechanism, mechanism for adjusting said grinding-wheel to any angle desired and automatically reversing said angle at the end of the traverse, a work-supporting carriage, and operating mechanism connected therewith, substantially as set forth.

3. In a grinding-machine, the combination of the grinding-wheel mounted upon a base swiveled in a traveling carriage, said carriage, the grinding-wheel shaft, a shaft in line with the swiveled base, a pulley on said shaft, a driving-shaft on the top of said carriage, a belt running from said driving-shaft over a horizontal idler to the pulley on said vertical shaft, another pulley on said vertical shaft, and a belt running from said pulley over another horizontal idler to the pulley on said grinding-wheel shaft, whereby said grinding-wheel may be swiveled as desired without interfering with the driving mechanism, substantially as set forth.

4. In a grinding-machine, the combination of the grinding-wheel carriage mounted to traverse across the top of the main base or frame, mechanism for traversing the same back and forth, a vertical bearing in the outer end of said carriage, the grinding-wheel mounted on a base swiveled in said bearing, driving mechanism, the work-supporting carriage and feeding mechanism therefor, substantially as set forth.

5. In a grinding-machine, the combination of the grinding-wheel carriage, a driving-shaft on the top thereof, the grinding-wheel mounted on a base swiveled in a bearing on said carriage, a driving mechanism, and mechanism for shifting the angle of said grinding-wheel automatically, comprising a gear on said base, a gear-wheel engaging therewith and having adjustable stops thereon, a locking device for engaging said stops, means for driving said wheel, means for releasing said locking device, and trips for operating said mechanism at each end of the traverse of the carriage, substantially as set forth.

6. In a grinding-machine, the combination of the grinding-wheel carriage, a grinding-wheel mounted on a base swiveled in a suitable bearing on one end of said carriage, a gear around said base, a gear-wheel engaging therewith and mounted on a stud-shaft on said carriage, adjustable stops mounted on the face of said gear-wheel, a locking-pin adapted to engage said stops and hold said wheel and grinding-wheel base in fixed positions, another gear connected with said gear-wheel and adapted to be driven by frictional contact with another gear thrown into contact therewith at the end of the travel of said carriage in one direction, and means for adjusting and operating said several parts, substantially as set forth.

7. In a grinding-machine, the combination of the grinding-wheel carriage, the grinding-wheel mounted upon a base swiveled in a bearing on one end of said carriage, a gear-wheel mounted on said carriage and engaging with a gear on the base of said grinding-wheel, adjustable stops on the face of said gear-wheel, means for driving the same intermittingly, a lock-pin for engaging said stops, and a cam and lever for throwing said locking-pin out of engagement therewith, substantially as set forth.

8. In a grinding-machine, the combination of the base, the grinding-wheel carriage mounted to slide thereon, the work-supporting table, the work-carriage mounted to slide on said table, a grinding-wheel carried by said grinding-wheel carriage, mechanism for traversing said grinding-wheel carriage, mechanism for traversing said work-supporting carriage, a reversing-gear connected with the driving-shaft for automatically reversing the direction of said shaft at the end of each traverse, a pawl-and-pitman connection between said driving-shaft and the shafts for operating the gear which drives the two carriages, through which either one of said shafts may be operated to feed either carriage as the other is traversed back and forth across its support, substantially as set forth.

9. In a grinding-machine, the combination of the base, the grinding-wheel carriage mounted thereon, mechanism for traversing said carriage back and forth, the work-supporting table, the work-carrying carriage mounted thereon, mechanism for traversing said carriage, a driving-shaft through which both mechanisms are operated, a shifting mechanism for reversing the motion of said shaft as desired, and a step-by-step-feeding mechanism connecting said driving-shaft with one or the other of said operating-shafts, substantially as set forth.

10. In a grinding-machine, the combination of the base, a grinding-wheel carriage mounted thereon, mechanism for moving said carriage back and forth, a grinding-wheel thereon, means for driving the same, the work-supporting carriage, mechanism for moving said carriage back and forth, a common driving-shaft for both sets of mechanism, and gearing arranged to move one of said carriages by a feeding motion while the other is moved by a traversing motion, substantially as set forth.

11. In a grinding-machine, the combination of the base, the grinding-wheel carriage mounted to slide thereon, the grinding-wheel on said carriage, mechanism for moving said carriage back and forth, the work-supporting carriage, mechanism for moving the same back and forth, means for driving one of said carriages to feed while the other is driven to traverse, and mechanism for changing the feeding and traversing motion from one carriage to the other, substantially as set forth.

12. In a grinding-machine, the combination of the base, the grinding-wheel carriage thereon, the grinding-wheel on said carriage, mechanism for moving said carriage back and forth, mechanism for adjusting and holding the grinding-wheel in relation to the work, a work-supporting carriage, mechanism for moving the same back and forth, a common driving-shaft for said two carriages, a feeding-gear for connecting said driving-shaft with the operating mechanism of one of said carriages, traversing-gear for connecting said driving-shaft with the operating mechanism of the other carriage, and means for reversing the engagement of said gears whereby either carriage may be fed or traversed, substantially as set forth.

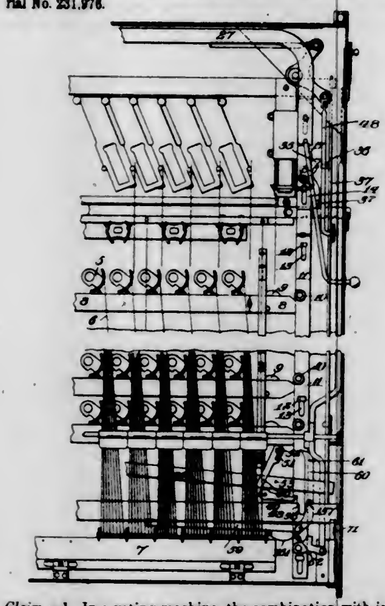
13. In a grinding-machine, the combination of the base, the carriage supporting the grinding-wheel mounted thereon, mechanism for moving the same back and forth, the work-supporting carriage, mechanism for moving the same back and forth, a common driving-shaft, shifting-gear for reversing the motion of said shaft, gearing adapted to connect said driving-shaft with either of the operating-shafts of said two carriages, and other gearing connecting

said operating-shaft, through the shaft to which it is geared with the other shaft to operate it to feed the carriage with which it is connected while the other carriage is traversing, substantially as set forth.

14. In a grinding-machine, the combination of the base, a grinding-wheel swiveled in a suitable bearing in its carriage, said carriage mounted on said base, means for adjusting said grinding-wheel at an angle with the work, means for reversing said angle at the end of each traverse, and means for throwing said mechanism out of gear and locking said wheel in a fixed position, substantially as set forth.

15. A grinding-machine having a grinding-wheel adapted to grind in both directions across the work and provided with two carriages, one of which carries the work and the other of which carries the grinding-wheel, and mechanism for feeding one and traversing the other, said mechanism being arranged to traverse either carriage and feed either carriage, one being fed while the other is traversed, substantially as set forth.

820,802. VOTING-MACHINE. WILLIAM J. LAUFFER, Jamestown, N. Y., assignor to U. S. Standard Voting Machine Company, Rochester, N. Y., a Corporation of New York. Filed Nov. 9, 1904. Serial No. 231,976.



Claim.—1. In a voting-machine, the combination with individual-candidate indicators, straight-ticket indicators for operating a plurality of the former, means for locking the indicators adapted to be released by the operation of a straight-ticket indicator, and a barrier, of means within the barrier and operated by the voter independently of the operation of any of the individual-candidate or of the straight-ticket indicators for releasing the locking device.

2. In a voting-machine, the combination with candidate-ballot indicators and straight-ticket indicators for operating a plurality of the former, of means for locking the indicators from operation adapted to be released by the operation of a straight-ticket indicator and a separate device operable by the voter independently of any of the candidate-indicators for releasing said indicator-locking means.

3. In a voting-machine, the combination with candidate-ballot indicators and straight-ticket indicators for operating a plurality of the former, of means for locking the indicators from operation, a universal bar or member adapted to be actuated by any of the straight-ticket indicators and serving by its movement to release the locking means and an operating means independent of any of the candidate-indicators or of the straight-ticket indicators and operable by the voter to actuate said member and release all the indicators.

4. In a voting-machine, the combination with candidate-ballot indicators and straight-ticket indicators for operating a plurality of the former, of means for locking the indicators from operation adapted to be released by the operation of a straight-ticket indicator, and a separate indicator-releasing device operable by the voter from the front of the machine and independently of any of the candidate and straight-ticket indicators for releasing the indicators.

5. In a voting-machine, the combination with candidate-ballot indicators and straight-ticket indicators for operating a plurality of the former, a bar coöperating with all the indicators, a lock for retaining said bar, a universal bar separate from the lock and operable by any of the straight-ticket indicators, and means operable by the voter independently of the straight-ticket indicators for actuating the universal bar.

6. In a voting-machine, the combination with the ballot-indicators, and straight-ticket indicators for operating a plurality of the former, of a universal bar with which the straight-ticket indicators coöperate, a bar coöperating with the indicators, a separate lock for said bar with which the universal bar coöperates to release the first-mentioned bar and means operable by the voter independently of any of the straight-ticket indicators for moving the universal bar.

7. In a voting-machine, the combination with a plurality of ballot-indicators, straight-ticket members for operating a plurality of the former, the bar coöperating with the indicators, and a lock for detaining it, of the longitudinally-movable universal bar coöperating with the lock to release it, a latch for retaining the universal bar, a movable member operating when in one position to hold the latch out of engagement with the universal bar and adapted to be moved by said bar to permit the engagement of the latch therewith to prevent a second movement.

8. In a voting-machine, the combination with the longitudinally-movable universal bar, the latch coöperating therewith to lock it, of a member operated by the bar in one direction only and coöperating with the latch to prevent its engagement with the bar when said member is moved by the latter.

9. In a voting-machine, the combination with the longitudinally-movable universal bar, the latch for coöperating therewith to lock it, of a member operated by the bar in one direction only and coöperating with the latch to prevent its engagement with the bar when said member is moved by the latter, said member also coöperating with the latch to release the bar when separately operated and means for operating the member independently of the bar.

10. In a voting-machine, the combination with the straight-ticket bars, the longitudinally-movable universal bar coöperating therewith and a latch adapted to coöperate with the bar to lock it from movement in one direction and having the inclined surface, of the member engaging the universal bar and operable in one direction only by the latter and adapted to engage the inclined surface of the latch to release it from the bar when operated in the other direction and means for moving the member in one direction independently of the bar.

11. In a voting-machine, the combination with the longitudinally-movable universal bar, the latch having the projection thereon, of the movable member forming a continuation of the universal bar and holding the latch out of engagement with the bar when moved by the bar in one direction and disengaging the latch from the bar when moved independently thereof.

12. In a voting-machine, the combination with the longitudinally-movable universal bar the member engaging the end thereof and movable by the bar in one direction only, of the latch for locking the bar having the projection adapted to extend between the bar and member and provided with the inclined surface adapted to be engaged by the member to release the bar.

13. In a voting-machine, the combination with the universal bar, the latch coöperating therewith, the sliding plate operable by the bar and coöperating with the latch to release and hold it out of engagement, of the operating member for the machine, the lever engaging said member and operable by the plate to release it.

14. In a voting-machine, the combination with the universal bar, the pivoted latch having the inclined projection and adapted to engage the bar, and the sliding plate with which the bar and latch coöperate, of the operating member, the locking-lever engaging it and operated in one direction by the sliding plate.

15. In a voting-machine, the combination with ballot-indicators, an operating member for the machine having the segment thereon, two retaining devices adapted to engage the segment to lock it in two positions, of means for releasing one retaining device from the exterior of the casing and means connected with the ballot-indicating devices for disengaging the other retaining device.

16. In a voting-machine, the combination with ballot-indicating devices, an operating member for the machine, a lock for said member, means connected to the ballot-indicating devices for releasing said lock and means operable by the voter independently of the ballot-indicating devices for releasing said lock.

17. In a voting-machine, the combination with the ballot-indicating devices, an operating member for the machine, having the segment provided with two apertures, the two locking-levers for engaging said apertures, means operable by the ballot-indicating devices for releasing one of the levers and means operable from the exterior of the casing for releasing the other lever.

18. In a voting-machine, the combination with the ballot-indicators, the resetting-bar therefor and the automatically-engaging catches for locking the bar, of the operating devices for the resetting-bar adapted when retracted to engage and release the catches.

19. In a voting-machine, the combination with the ballot-indicators, the resetting-bar therefor and the automatically-engaging catches between the casing and bar for locking the latter, of the operating devices for the resetting-bar having a movement independent thereof and operating when moved in one direction to release the catches before operating the bar.

20. In a voting-machine, the combination with the ballot-indicating devices, the resetting-bar therefor and automatic catches for holding the bar embodying the slotted links and pins coöperating therewith, of means for operating the resetting-bar, having a movement independent thereof and adapted when retracted to release the catches before retracting the bar.

21. In a voting-machine, the combination with the ballot-indicators, the resetting-bar therefor, the pivoted locking-links having the slots, and the pins coöperating with the slots, of the operating-levers for the bar adapted to engage and release the links before the bar is retracted.

22. In a voting-machine, the combination with the ballot-indicators, the resetting-bar therefor, the links pivoted to the bar having the slots therein, and the stationary pins in the slots, of means for operating the bar having a movement independent thereof and adapted to engage and release the links before the bar is returned.

23. In a voting-machine, the combination with the ballot-indicators, the resetting-bar, the pivoted catches arranged at the ends of the bar adapted to project over the bar to lock it and connections between said links for causing their simultaneous operation.

24. In a voting-machine, the combination with the ballot-indicators, a resetting-bar therefor, means for operating said bar having a movement independent thereof, and automatic catches for retaining the bar adapted to be released by the operating means after a predetermined movement, of separate catches arranged at opposite ends of the bar and operable independently thereof to lock it, connections between them for causing their simultaneous operation and means for operating said last-mentioned catches to release the bar.

25. In a voting-machine, the combination with the ballot-indicators, a plurality of straight-ticket devices for operating a plurality of said indicators to voted position, a resetting-bar for the indicators, means for operating said bar having a movement independent thereof and automatic catches for retaining said bar adapted to be released by the operating means after a predetermined movement, of separate catches to lock the bar arranged at opposite ends thereof and operable independently thereof, connections between said catches and operating connections between one of said catches and the straight-ticket indicators for causing the release of the resetting-bar.

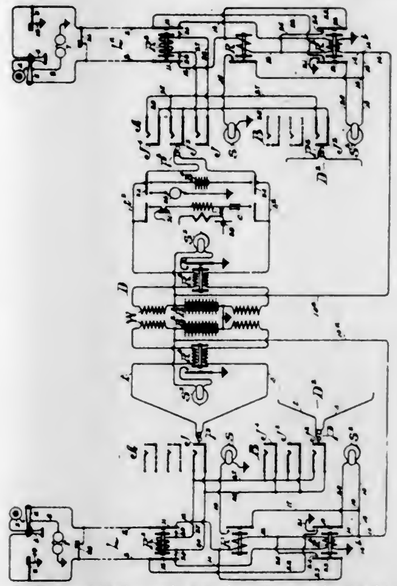
820,803. TWO-DIVISION TELEPHONE SYSTEM. JOHN H. LENDT, Chicago, Ill., assignor to Kellogg Switchboard and Supply Company, Chicago, Ill., a Corporation of Illinois. Filed Oct. 27, 1902. Serial No. 128,854.

Claim.—1. The combination with a telephone-line, of two line-signal-controlling electromagnets in series in the metallic line, one only of said electromagnets being responsive to current over the metallic circuit and a separate signal for each electromagnet, substantially as described.

2. The combination with a telephone-line, of two line-signal-controlling electromagnets in series in the metallic line, one of said electromagnets being differentially wound and unresponsive to current over both conductors of the line and a separate signal controlled by each magnet, substantially as described.

3. The combination with a telephone-line, of two signal-controlling electromagnets and a source of current in series in the metallic circuit of said line, one of said magnets being differential and therefore unresponsive to current from said source flowing over both sides of the line, and means operated from the substation for directing an actuating-current through either of said electromagnets, substantially as described.

4. The combination with a telephone-line, of two signal-controlling electromagnets and a source of current in series in the line at the central office, one of said signal-controlling electromagnets having two differential windings, one winding in each line conductor, means at the substation for completing the metallic circuit of the telephone-line over which current flows from said source and to which current said differential electromagnet is unresponsive and said other electromagnet is responsive, and further means at the substation for completing a circuit from said source through one winding only of said differential electromagnet to operate it, substantially as described.



5. The combination with a telephone-line terminating in a two-division switchboard at the central office, of a signal for said line upon each of the divisions, a signal-controlling electromagnet for each signal, said electromagnets being included together with a source of current in series in the line, one of said electromagnets having differential windings disposed in the opposite sides of the circuit and means operated from the substation for completing the circuit for current over the metallic line to which current the differential relay is unresponsive and for closing the circuit over one side of the line and through one winding only of the differential electromagnet to operate the same, substantially as described.

6. The combination with a telephone-line, of a line-signal-controlling electromagnet in one conductor thereof, a differential signal-controlling electromagnet having its windings in both conductors thereof, and a source of current included between said conductors, means at the substation for operating either of said relays singly from said source, and means whereby when the differential relay has been operated the other electromagnet is thereafter rendered inoperative, substantially as described.

7. The combination with a telephone-line, of a line-signal-controlling electromagnet in one conductor thereof, a differential signal-controlling electromagnet having its windings in both conductors thereof, a source of current included between both of said conductors, means at the substation for operating either of said relays singly from said source, and means whereby when the differential electromagnet has been operated the other electromagnet is thereafter short-circuited, substantially as described.

8. The combination with a telephone-line, of two signal-controlling electromagnets therefor, one of said electromagnets being differentially wound and unresponsive to current in the metallic line, and means for rendering said electromagnets inoperative when the operator establishes a connection with the line for conversation, substantially as described.

9. The combination with a telephone-line, of two signal-controlling electromagnets therefor, one of said electromagnets being differentially wound and unresponsive to current in the metallic line, and a cut-off relay for the line adapted when actuated to render said signal-controlling electromagnets inoperative, substantially as described.

10. The combination with a telephone-line, of a line-signal therefor in different divisions of a divided multiple switchboard, a line-relay for each signal and a source of current in series in the line, one of said relays being differential and having its windings disposed in the opposite sides of the line, a cut-off relay for the line adapted when operated to render said signals inoperative, and means for closing a circuit through said cut-off relay over a portion of the talking-circuit when connection is established by the operator with the line, substantially as described.

11. The combination with a telephone-line, of a line-signal therefor in different divisions of a divided multiple switchboard, a line-relay for each signal and a source of current in series in the line, one of said relays being differential and having its windings disposed in the opposite sides of the line, a cut-off relay for the line adapted when operated to render said signals inoperative, a cord-circuit, a supervisory signal associated therewith, and means for operating said cut-off relay and to place said supervisory signal in condition to operate by current over a portion of the talking-circuit when a connection is established with the line, substantially as described.

12. The combination with a telephone-line, of two signals therefor located upon different divisions of a divided multiple switchboard at the central office, of two line-relays therefor controlling said signals, one of said relays being differential and having its windings connected in the line so as to be unresponsive to current in the metallic line, said relays being capable of selective operation from the substation, and means to render the signals inoperative when a connection is established with the line at either of the divisions of the switchboard for conversation, substantially as described.

13. The combination with a telephone-line, of two signal-controlling electromagnets therefor, a signal for each magnet placed in the different divisions of a switchboard at the central office, one of said electromagnets being differentially wound and connected in the line so as to be unresponsive to current in the metallic line, said electromagnets being capable of selective operation from the subetation, and means for rendering said signals inoperative when the operator establishes a connection with the line for conversation, substantially as described.

14. The combination with a telephone-line, of two signal-controlling electromagnets therefor, a signal for each electromagnet placed in different divisions of the switchboard, one of said electromagnets being differentially wound and connected in the line so as to be unresponsive to the current in the metallic telephone-line, means at the subetation to cause the operation of said electromagnets singly, and a cut-off relay for the line adapted to be actuated when a connection is established with the line for conversation to render said signals inoperative, substantially as described.

15. The combination with a telephone-line, of a signal-controlling electromagnet in one conductor thereof, a differential signal-controlling electromagnet having its windings in both conductors of the line, a signal for each electromagnet placed in different divisions of the switchboard, a source of current included between said conductors, means at the subetation for operating either of said electromagnets singly from said source, means whereby when the differential relay is operated the other relay is prevented from operation, and means for rendering said signals inoperative when a connection is established with the line at either division of the switchboard, substantially as described.

16. The combination with a telephone-line, of a line-signal-controlling electromagnet in one conductor thereof, a differential signal-controlling electromagnet having its windings in both conductors of the line, a source of current included between said conductors, signals for the line one for each magnet and one in each division of the switchboard, means controlled by the differential relay to prevent the operation of the other signal-controlling electromagnet when the differential magnet is operated, said magnets being operated from said source at the will of the subscriber, and means for retiring the signals when connection is established with the line, substantially as described.

17. The combination with a telephone-line, of a signal-controlling electromagnet in one conductor thereof, a differential signal-controlling electromagnet having its windings in both conductors of the line, a signal for each electromagnet, a source of current included between said conductors, only said first-named electromagnet being responsive to current from said source when the metallic line is closed at the substation, a switch at the substation for closing circuit from said source over one line conductor only to operate said differential electromagnet, a locking-circuit for said differential electromagnet, a short circuit of said first-named relay controlled by said differential electromagnet, and a cut-off relay for the line to render said signals inoperative and to open said locking-circuit, substantially as described.

18. The combination with a telephone-line, of a relay in one line conductor thereof, a differential relay having its windings in both line conductors, a signal for each electromagnet upon different divisions of a switchboard at the central office, a source of current included between said line conductors, only said first-named relay being responsive to current from said source when the metallic line is closed at the substation, a switch at the substation for closing circuit from said source over the other line conductor to operate said differential relay, a locking-circuit for said differential relay, a short circuit of said first-named relay controlled by said differential relay, a cut-off relay for the line to render said signals inoperative, a cord-circuit to establish connections with the line for conversation, and means for including said source and said cut-off relay in a local circuit including a portion of the talking-circuit when the cord-circuit is connected with the line, said source being included in the metallic talking-circuit during connections to furnish current to the substation for talking, substantially as described.

19. The combination with a telephone-line, of two signals therefor placed upon the different divisions of a switchboard at the central office, two relays for the line one for each of said signals, one of said relays being placed in one line conductor and the other relay being differentially wound and connected in both line conductors, a central common source of current at the central office between the line conductors, means at the substation for completing circuit from said source over the metallic line to operate the first-named relay, the second relay being unresponsive to such current in the metallic line, means at the substation for completing circuit over one of the line conductors through said differential relay only to operate the same without operating the other relay, a cord-circuit to establish connections with the line for conversation, and means whereby when the connection is established said signals are rendered inoperative and the source of current is connected in the metallic circuit to furnish current to the substation for talking, substantially as described.

20. The combination with a telephone-line, of a line-signal therefor in different divisions of a divided multiple switchboard, a line-relay for each signal and a source of current in series in the line, one of said relays being differential and unresponsive to current in the line when the subscriber completes the metallic line at his station, a switch at the substation to complete the circuit from said source over one line conductor and through one winding of the differential relay to actuate the same without actuating said first-named relay, a cut-off relay for the line adapted when operated to render said signals inoperative, a cord-circuit, and means for closing a circuit from said source through said cut-off relay over a portion of the talking-circuit to operate the cut-off relay when connection is established by the cord-circuit with the line, said source being at the same time included in the metallic talking-circuit to furnish current to the substation for talking, substantially as described.

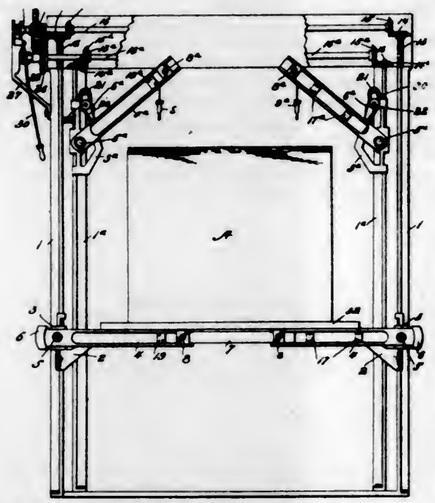
21. In a divided central system, the combination with a telephone-line, of a plurality of signals therefor located upon the different divisions of the switchboard, a plurality of relays associated with the line, and controlled from a substation to cause the desired operation of said signals, a common source of current to which the line is connected at the central office, one of said relays being differential and having a winding in each side of the telephone-line, and another of said relays connected in one line conductor only, said relays being both operated from said source, and means to render said signals inoperative when a connection is established with the line for conversation at any of the divisions of the switchboard, substantially as described.

820,804. PAPER-FEEDING DEVICE. CORNELIUS J. LUCY, Washington, D. C. Filed Dec. 29, 1905. Serial No. 293,796.

Claim.—1. In a paper-feeding device, the combination of two sets of frames having slideways thereon, one inside of the other, slides mounted on said slideways, pile-supporting members movably supported on said slides, and mechanism for alternately traversing said slides on the slideways, substantially as described.

2. In a paper-feeding device, the combination with the frame of the machine, of a pile-supporting member comprising separable sections, slides movably mounted on the frame of the machine and to which the separate sections of said pile-supporting member are movably connected, means for traversing said slides on the frame of the machine, and means for detachably connecting the sections together, substantially as described.

3. In a paper-feeding device, the combination with the frame of the machine, of two pile-supporting members each comprising separable sections, means for locking said sections together to support the pile of paper, and mechanism for alternately traversing said members on the frame of the machine to bring the pile of paper supported thereby to position for feeding sheets therefrom, substantially as described.



4. In a paper-feeding device, the combination with the frame of the machine, of a pile-supporting member, comprising separable sections, slides movably mounted on the frame of the machine and to which separate sections of said pile-supporting member are pivotally connected, means for traversing said slides on the frame of the machine, and detachable means for connecting the two sections together, substantially as described.

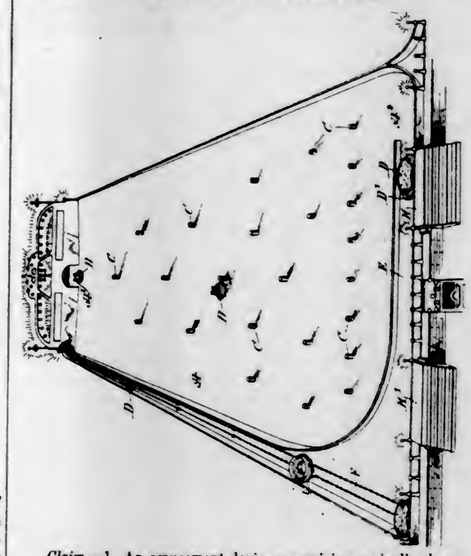
5. In a paper-feeding device, the combination with the frame of the machine, of a pile-supporting member, comprising separable sections, slides movably mounted on the frame of the machine and to which separate sections of said pile-supporting member are pivotally connected, means for traversing said slides on the frame of the machine, detachable means for connecting the two sections together, and means for swinging the separate sections on their pivots when disconnected, substantially as described.

6. In a paper-feeding device, the combination with the frame of the machine, of two pile-supporting members each comprising separable sections, means for detachably connecting the same together for supporting the pile of paper thereon, slides to which the supporting members are pivotally connected movably mounted upon the frame of the machine, mechanism for traversing said slides to bring the said pile-supporting members into position for feeding the sheets of papers from said pile, and means for swinging the separate sections of each of the pile-supporting members on their pivots when disconnected, substantially as described.

7. In a paper-feeding device, the combination with the frame of the machine, of a pile-supporting member comprising two separable sections, slides traversable upon said frame to which said sections are pivotally connected, means for traversing said slides, supplementary frames, a second pile-supporting member comprising separable sections, slides mounted on said frame to which the separate sections of said second member are pivotally connected, means for traversing said second supporting member, detachable means connecting the separate sections of each of said members, and means for swinging the separate sections of said member on their pivots, when disconnected, substantially as described.

8. In a paper-feeding device, the combination with the frame of a machine, of a pile-supporting member comprising two sections, locking-bars detachably connecting said members, slides traversable upon the frame of the machine to which the separate sections of said member are pivotally connected, means for traversing said slides on the frame of the machine, supplementary frames inside the main frame of the machine, a second pile-supporting member comprising two sections, slides traversable upon said supplementary frames to which the said sections are pivotally connected, locking-bars detachably connecting the two sections together, means for traversing said slides upon said supplementary frames, and means for swinging the separate sections of each of the supporting members on their pivots when disconnected, substantially as described.

820,805. AMUSEMENT DEVICE. WILLIAM F. MANGELS, New York, N. Y. Filed Mar. 21, 1905. Serial No. 251,221.



Claim.—1. An amusement device comprising an inclined surface having rising projections, and a car adapted to travel down the said surface and to bump against the projections, to change the course of the car, the car having means to turn on a central axis.

2. An amusement device comprising an inclined surface having fixed bumping-posts spaced apart, and a car adapted to travel down the said surface by its own weight, the said car having an external bumping-ring adapted to bump against the said bumping-posts to change the course of the car.

3. An amusement device comprising an inclined surface, bumping-posts fixed on the said surface and spaced apart, and a car having balls at its bottom for supporting the car on the said surface, the car, by its weight, traveling down the inclined surface and bumping against the said bumping-posts to change the course of the car, one of the said balls being arranged in the middle of the car to form a pivot for the car to turn on.

4. An amusement device comprising an inclined surface, bumping-posts fixed on the said surface and spaced apart, and a car having balls at its bottom for supporting the car on the said surface, the car, by its weight, traveling down the inclined surface and bumping against the said bumping-posts to change the course of the car, some of the balls being arranged near the side of the car and one of the balls being centrally arranged, to form a pivot for the car to turn on.

5. An amusement device comprising an inclined surface, bumping-posts fixed on the said surface and spaced apart, and a car having balls at its bottom for supporting the car on the said surface, the car, by its weight, traveling down the inclined surface and bumping against the said bumping-posts to change the course of the car, some of the balls being arranged near the side of the car and one of the balls being centrally arranged, to form a pivot for the car to turn on, the said central ball having its bottom a distance below the plane containing the bottoms of the outer balls.

6. An amusement device comprising a car, an inclined surface for the car to travel on by its own weight, the said surface having means adapted to be engaged by the car to change the course of the car from a straight-down path to an irregular one, a path at the upper end of the said surface, a track along the lower end of the said surface, and an elevator leading from the said track to the said path, the latter being inclined downwardly from the upper end of the elevator to the entrance of the upper end of the said surface.

7. An amusement device comprising a car, an inclined surface for the car to travel on by its own weight, the said surface having means adapted to be engaged by the car to change the course of the car from a straight-down path to an irregular one, the upper end of

the said surface having an entrance portion for the car to start, and an inclined path leading to the said entrance portion.

8. An amusement device comprising a car, an inclined surface for the car to travel on by its own weight, the said surface having means adapted to be engaged by the car to change the course of the car from a straight-down path to an irregular one, the upper end of the said surface having, at its middle, an entrance portion for the car to start down the inclined surface, and a path leading to the said entrance portion.

9. An amusement device comprising a car, an inclined surface for the car to travel on by its own weight, the said surface having means adapted to be engaged by the car to change the course of the car from a straight-down path to an irregular one, the upper end of the said surface having, at its middle, an entrance portion for the car to start down the inclined surface, and a path leading to the said entrance portion, the path being inclined downwardly in the direction of its length toward the said entrance portion and inclined transversely at the entrance portion, for the car to travel by its own weight down the said path and through the entrance portion onto the inclined surface.

10. An amusement device comprising a car, an inclined surface for the car to travel on by its own weight, the said surface having means adapted to be engaged by the car to change the course of the car from a straight-down path to an irregular one, the upper end of the said surface having, at its middle, an entrance portion for the car to start down the inclined surface, a path leading to the said entrance portion, the path being inclined downwardly in the direction of its length toward the said entrance portion and inclined transversely at the entrance portion, for the car to travel by its own weight down the said path and through the entrance portion onto the inclined surface, and an elevator extending upon one side of the said inclined surface and leading to the upper end of the said path.

11. An amusement device provided with a car having an externally-arranged bumping-ring.

12. An amusement device provided with a car having balls for the car to travel on, one of the balls being centrally arranged to form a pivot for the car to turn on.

13. An amusement device provided with a car mounted to travel and having a centrally-disposed pivot for the car to turn on.

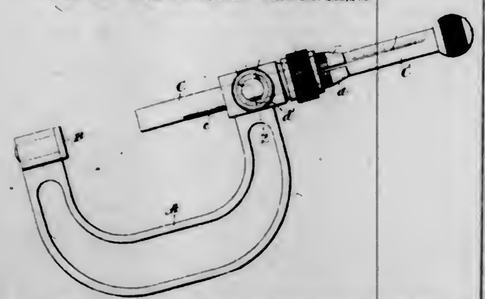
14. An amusement device comprising an inclined surface, a car having a resilient outer face and adapted to roll by gravity down the surface, and a plurality of obstructions for engaging and deflecting the car.

15. An amusement device comprising an inclined surface, a resilient car adapted to roll by gravity down the surface and a plurality of obstructions for engaging and deflecting the car.

820,806. **FOOD EXTRACT FROM CORNSTALKS.** ALBERT G. MANNS, Chicago, Ill., assignor, by direct and mesne assignments, to Food & Fiber Products Company, Chicago, Ill., a Corporation of Illinois. Filed July 17, 1905. Serial No. 270,104.

Claim.—The herein-described concentrated water extract of cornstalks, soluble in water and containing a relatively high per cent. of protein, phosphates and uncrystallizable sugar and a low per cent. of crystallizable polyoses, and characterized by being a friable solid when concentrated to contain 10 per cent. or less of water.

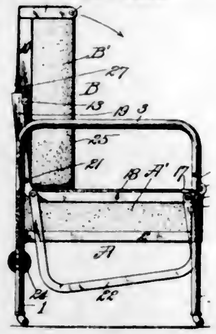
820,807. **MICROMETER-CALIPERS.** FRANK G. MARBACH, Medina, Ohio. Filed Jan. 16, 1905. Serial No. 241,270.



Claim.—1. A caliper or gage, comprising a frame having an arm with an opening, a measuring-post having graduations on its surface passing through said opening, said arm having a cavity wholly within the limits thereof that intersects the opening through which the measuring-post passes, through which cavity graduations of the measuring-post are visible, and a magnifying-glass in said cavity, and fitting the same, so that the inner surface of the glass is housed.

2. A caliper or gage, comprising a frame having an arm, a measuring-post longitudinally movable in an opening through said arm, a boss integral with said arm and having a cavity that intersects the opening through which the measuring-post passes, and having a light-admitting opening, and a glass mounted in said cavity.

820,808. **DAVENPORT-BED.** GEORGE A. MELLON, St. Louis, Mo. Filed Nov. 25, 1905. Serial No. 288,998.



Claim.—1. In a folding bed, the combination with a stationary section and a folding section, of means whereby said folding section is movably connected to said stationary section, and means whereby said folding section is caused to pivot directly on said stationary section when being unfolded and folded, substantially as set forth.

2. In a folding bed, the combination with a stationary section and a folding section, of means whereby said folding section is movably connected to said stationary section; said sections being provided with pivot members unconnected to each other and arranged to engage and act in conjunction with each other to cause said folding section to pivot directly on said stationary section when being unfolded and folded, substantially as set forth.

3. In a folding bed, the combination with a stationary section and a folding section, of means whereby said folding section is movably connected to said stationary section, a hook associated with one of said sections, and a stud associated with the other section adapted to act in conjunction with said hook to cause said folding section to pivot on said stationary section when being unfolded and folded, substantially as set forth.

4. In a folding bed, the combination with a stationary section and a folding section, of means whereby said folding section is movably connected to said stationary section, a hook associated with said stationary section, and a stud associated with said folding section; said stud and hook being arranged for engagement to cause said folding section to pivot on said stationary section when being unfolded and folded, substantially as set forth.

5. In a folding bed, the combination with a stationary section and a folding section, of means whereby said folding section is movably connected to said stationary section, a stud carried by said folding section, and a hook and runway member supported by said stationary section and adapted to receive said stud, substantially as set forth.

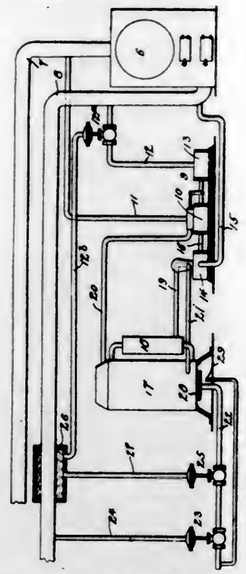
6. In a folding bed, the combination with a stationary section and a folding section, of a single pair of swinging arms each having pivotal connection with said sections to unite them; said folding section being arranged to pivot directly on said stationary section when being unfolded and folded, substantially as set forth.

7. In a folding bed, the combination with a stationary seat-section and a folding back-section, each having a face portion; of means whereby said folding section is movably connected to said stationary section in a manner to permit of a forward-and-downward movement of said back-section so that it is first brought to rest in a horizontal position upon said stationary section with the face portions of the members touching each other, and means for causing said back-section to pivot on said stationary section when the back-section is swung forwardly and downwardly from its position above the stationary section to a position in front of and in horizontal alinement with said stationary section, substantially as set forth.

8. In a folding bed, the combination with a stationary section and a folding section, of a swinging arm having pivotal connection with said sections to unite them and permit folding action of said folding section, a stud at the end of said folding section; said swinging arm being provided with a free end to receive the engagement of said stud, substantially as set forth.

9. In a folding bed, the combination of a stationary section and a folding section, of a swinging arm having pivotal connection with said sections to unite them, and a head or foot member carried by said swinging arm, substantially as set forth.

820,809. **STEAM-HEATING SYSTEM.** THOMAS S. MORGAN, Chicago, Ill., assignor to Gwendolyn Cattell Morgan, Chicago, Ill. Filed Sept. 16, 1905. Serial No. 278,715.



Claim.—1. In a steam-heating system, in combination, a vacuum-pump connected to the return-pipe of the system, and means to operate the pump controlled by the pressure, and also independently by the temperature, in the system.

2. In a steam-heating system, in combination, a vacuum-pump connected to the return-pipe of the system, a steam-generator connected to the pump, to supply steam thereto, and a fuel-supply to the generator controlled by the heat and pressure in the pipes of the system.

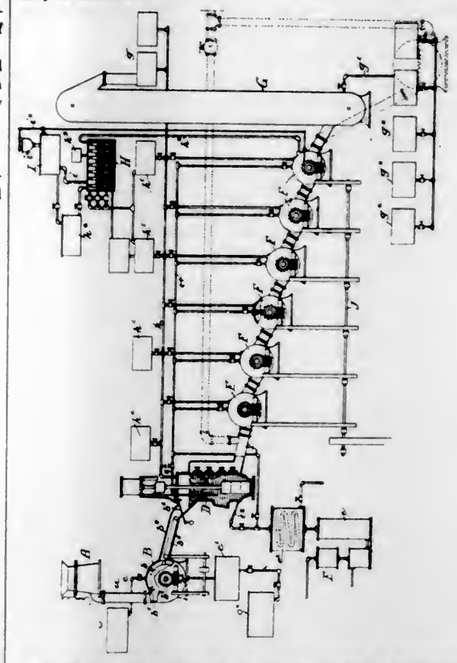
3. In a low-pressure steam-heating system, in combination, a vacuum-pump drawing air therefrom, a boiler connected to the pump and supplying steam thereto to operate the same, and a fuel-supply to the boiler automatically controlled by the degree of vacuum in the system.

4. In a low-pressure steam-heating system, in combination, a main boiler and circulation-pipes, a vacuum-pump drawing air from the circulation-pipes, an auxiliary boiler connected and supplying steam to the pump, to operate the same, and a feed-pump for the auxiliary boiler, connected to and operating with the vacuum-pump.

5. In a steam-heating system, in combination, a boiler having flow and return pipes, a vacuum-pump connected to the return-pipe, another boiler connected to said pump and arranged to supply power thereto, a fuel-supply to the latter boiler, and means automatically operated by the pressure in the system to control said supply.

820,810. **PROCESS OF EXTRACTING PRECIOUS METALS FROM THEIR ORES.** SIDNEY T. MUFFLY, Philadelphia, Pa., assignor to Philadelphia Cyanide Process Company, Wilmington, Del., and Philadelphia, Pa., a Corporation of Delaware. Filed Aug. 14, 1905. Serial No. 274,119.

Claim.—1. The process of treating ores which consists in pulverizing said ores while they are immersed in a solution capable of dissolving the contained gold and silver, said solution being exposed to air under pressure greater than that of the atmosphere, substantially as described.



2. The process of treating ores which consists in subjecting them to the action of a cyanid solution exposed to constantly-renewed bodies of air under pressure greater than that of the atmosphere, collecting the hydrocyanic-acid gas evolved, passing the gas with air to a solvent liquid, dissolving said gas in the liquid and afterward permitting said air to escape, substantially as described.

3. The process of treating ores which consists in continuously conveying them through successive bodies of a cyanid solution exposed to the action of compressed air, passing the hydrocyanic-acid gas evolved and the air through liquid capable of dissolving said gas, and using said liquid to act on further bodies of ore, substantially as described.

4. The process of treating ores which consists in acting upon them by a solution of cyanid, dissolving the hydrocyanic-acid gas evolved in a solution of a double cyanid and a hydrate compound, and using said solution to act on further bodies of ore, substantially as described.

5. The process of treating ores which consists in acting upon them by a solution of cyanid, dissolving the hydrocyanic-acid gas evolved in a solution of a double cyanid and a hydrate compound, and using said solution to act on further bodies of ore, substantially as described.

6. The process of treating ores which consists in continuously conveying the pulverized ores through successive bodies of a cyanid solution under a direct downward air-pressure greater than that of the atmosphere, substantially as described.

7. The process of treating ores which consists in continuously conveying the pulverized ores through a cyanid solution exposed to direct downward pressure of constantly-renewed bodies of compressed air, absorbing the hydrocyanic-acid gas evolved in a body of liquid, and using said liquid to act upon further bodies of ore, substantially as described.

8. The process of treating ores which consists in first crushing the ores, then subjecting them to the action of an alkaline hydrate solution, then pulverizing said ores within a cyanid solution, then conveying the pulverized ores through further bodies of cyanid solution, substantially as described.

9. The process of treating ores which consists in pulverizing said ore within a cyanid solution, then conveying said ore through successive bodies of a solution under air having a direct downward

pressure greater than that of the atmosphere, substantially as described.

10. The process of treating ore which consists in pulverizing said ore within a cyanid solution after neutralizing acid salts in the same, then conveying said ore through successive bodies of cyanid solution under a direct downward air-pressure greater than that of the atmosphere, said air being maintained at a temperature above the normal, substantially as described.

11. The process of treating ores and extracting gold and silver therefrom, which consists in rapidly and continuously passing them through an alkaline hydrate solution and immediately thereafter conveying them through an alkaline cyanid solution under a direct downward air-pressure greater than that of the atmosphere, substantially as described.

12. The process of treating ores which consists in subjecting them to an alkaline hydrate solution and immediately thereafter subjecting them to the combined action of an alkaline cyanid solution and air of an equable temperature having a direct downward pressure upon the solution greater than that of the atmosphere, substantially as described.

13. The process of treating ores continuously for the extraction of gold and silver, which consists in acting upon them with an alkaline neutralizing solution, then immediately thereafter conveying and subjecting them to a cyanid-solvent solution in the presence of heated air having a direct downward pressure upon the solution greater than that of the atmosphere; and passing the hydrocyanic-acid fumes to and absorbing same in a compound alkaline cyanid and alkaline hydrate solution; and at same time precipitating base-metal vapors arising with the hydrocyanic-acid fumes, substantially as described.

14. The process of treating ores to extract the gold and silver they contain, which consists in crushing the ore and neutralizing the acid salts in same, immediately conveying and pulverizing the said ores in an alkaline cyanid solution under air-pressure greater than that of the atmosphere; immediately and continuously conveying the ores through other bodies of cyanid solutions also under air-pressure greater than that of the atmosphere and forcing the hydrocyanic-acid fumes through and absorbing same in a compound alkaline cyanid and alkaline hydrate solution, using said solution in the treatment of further bodies of ore and simultaneously precipitating vapors of base elements arising with the hydrocyanic-acid fumes, substantially as described.

820,811. **APPARATUS FOR EXTRACTING PRECIOUS METALS FROM THEIR ORES.** SIDNEY T. MUFFLY, Philadelphia, Pa., assignor to Philadelphia Cyanide Process Company, Wilmington, Del., and Philadelphia, Pa., a Corporation of Delaware. Filed Aug. 14, 1905. Serial No. 274,190.

Claim.—1. A system for treating ores to extract the precious metals therein contained, which consists of the combination of an ore-neutralizing device, an inclosed stamp-mortar, and a closed conduit connecting said device with the stamp, substantially as described.

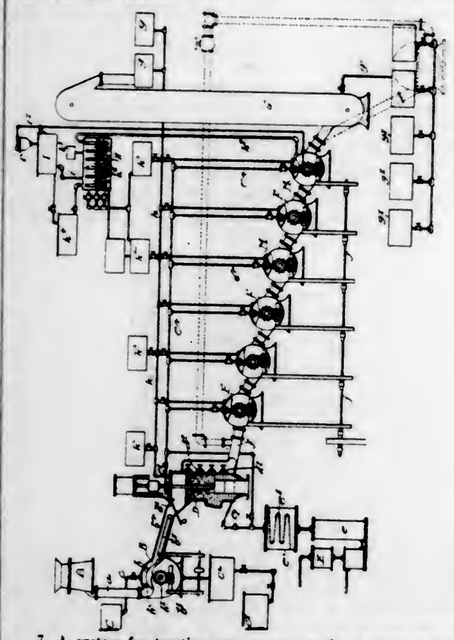
2. A system for treating ores to extract the precious metals therein contained, which consists of the combination of an ore-neutralizing device, an inclosed stamp-mortar, a closed conduit connecting said device with said stamp-mortar, and an automatic valve in said conduit, substantially as described.

3. A system for treating ores to extract the precious metals therein contained, which consists of the combination of an ore-neutralizing device, an inclosed stamp-mortar, and a closed conduit connecting said device with the stamp-mortar, said conduit having a conveyer placed to receive material from said neutralizing device, and an automatic valve placed to receive material from the conveyer, substantially as described.

4. A system for treating ores to extract the precious metals therein contained, which consists of the combination of an ore-neutralizing device, a stamp-mortar having an air-tight casing, and a source of air-supply connected to deliver air to said stamp-mortar casing, substantially as described.

5. A system for treating ore to extract the precious metals therein contained, which consists of the combination of an ore-neutralizing device, a stamp-mortar having an air-tight casing, and a source of air-supply connected to deliver air to the said stamp-mortar and casing, said mortar having within it means for discharging the air both above the surface of a body of liquid in it and also under the surface of said liquid adjacent to the stamps and dies, substantially as described.

6. A system for treating ores to extract the precious metals therein contained, the same consisting of an inclosed conduit, an ore-neutralizing device discharging into one end of said conduit, and a stamp-mortar and lixiviating means, all operative in the conduit, substantially as described.



7. A system for treating ores to extract the precious metals therein contained, the same consisting of an inclosed conduit, a stamp-mortar, lixiviating means connected to receive material from the stamp-mortar, and a source of air-supply connected to cause direct downward pressure upon the bodies of liquid in said conduit, substantially as described.

8. A system for treating ores to extract the precious metals therein contained, which includes a crusher, a neutralizing device, a stamp-mortar, a lixiviating device, means connecting said parts to form a continuous inclosed passage for ore, and a compressor connected to said passage to maintain the air in the stamp-mortar and in the lixiviating device under a pressure above the normal, substantially as described.

9. A system for treating ores to extract the precious metals therein contained which includes a stamp-mortar having an inclosed casing, a series of lixiviators connected to the stamp-mortar, each lixiviator consisting of a casing having a drum provided with buckets and driving means, and means for supplying cyanid solution and air under pressure to the stamp-mortar and to the lixiviator-casings, substantially as described.

10. In a system for treating ores to extract the precious metals therein contained, the combination of an inclosed stamp-mortar, a series of inclosed lixiviators connected to receive material from the stamp, a vessel for receiving liquid from the lixiviators, means for removing the tailings, and an absorbing apparatus connected to said lixiviators for receiving the hydrocyanic-acid gas evolved in said lixiviators, substantially as described.

11. A system for treating ores to extract the precious metals therein contained which includes an inclosed stamp-mortar, a series of inclosed lixiviators connected to receive material from the stamp, a series of receiving-tanks, an absorbing device and a conveyer, all connected to the lixiviators, said absorbing devices consisting of a chamber having connected to it a source of supply for solution capable of absorbing hydrocyanic-acid fumes, substantially as described.

12. A system for the treatment of ores of precious metals including a series of lixiviators and an absorbing-chamber connected thereto, said chamber having series of partitions forming a tortuous passage therethrough and being provided with means whereby a solvent solution may be supplied to said partitions, substantially as described.

13. A system for the treatment of the ores of precious metals including a series of lixiviators and a gas-absorbing chamber connected thereto, said chamber having series of partitions forming a tortuous passage therethrough, one series of said partitions being formed of fabric aprons having means whereby they are made to dip into a body of liquid in the bottom of the chamber, and means whereby their surfaces are supplied with relatively thin films of liquid.

14. In a system for the treatment of the ores of precious metals, the combination of a series of lixiviators, a source of compressed air connected thereto, means for receiving liquid and pulp after said materials have passed through said lixiviators an absorbing-chamber for receiving the hydrocyanic-acid gas evolved, and means for permitting the escape of the compressed air after it has passed through the absorbing-chamber, substantially as described.

15. In a system for the treatment of the ores of precious metals, the combination of a series of lixiviators, a source of compressed air, means for receiving liquid and pulp after said materials have passed through said lixiviators, with an absorbing-chamber connected to the lixiviators for receiving the hydrocyanic-acid gas evolved, and positively-acting means for periodically permitting the escape of the compressed air after it has passed through the absorbing-chamber, substantially as described.

16. A chamber for absorbing gas consisting of a container having partitions extending upwardly from its bottom, pairs of rollers between certain of the partitions, and fabric aprons extending vertically between each pair of rollers and entering bodies of liquid in the lower part of the chamber, substantially as described.

17. A chamber for absorbing gas, consisting of a container having partitions extending upwardly from its bottom, pairs of rollers between certain of the partitions, fabric aprons extending vertically between each pair of rollers and entering bodies of liquid in the lower part of the chamber, and means for turning certain of the rollers to cause movement of the aprons, substantially as described.

18. A system including the combination of an inclosed stamp-mortar and a series of inclosed lixiviators, with a chamber connected thereto for absorbing hydrocyanic-acid gas evolved, a container for cyanid solution, and a container for alkaline-hydrate solution, both connected to said absorbing-chamber, substantially as described.

19. In a system for the treatment of the ores of precious metals, the combination of a stamp-mortar, capable of holding liquid, a casing therefor capable of holding compressed air, a source of compressed air, and means for connecting said source of air with the casing, said connecting means including a pipe connecting with the top of the stamp-mortar and a second pipe placed to discharge adjacent to the stamps and dies, substantially as described.

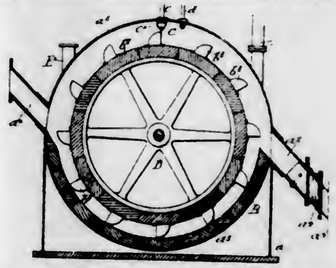
20. In a system for treatment of fine ore sand, clays, concentrates and mail-tailings containing precious metals, which consists of the combination of an acid-neutralizer with a chute at the back for the material to enter, a closed conduit at the front having a conveyer with an automatic valve placed to discharge the material to a series of lixiviators connecting with a gas-absorbing chamber having an automatic valve, connection with an ore-conveyer, with a sand-pump, with a solution-pump, with solution-tanks, with an air-compressor, and with an electrolytic or other gold and silver precipitating apparatus, substantially as described.

21. In a system for the treatment of ores containing precious metals, which consists of the combinations of an ore-crusher connected by a chute with an acid-neutralizer at the back for the broken ore to enter, with a closed conduit at the front having a conveyer with an automatic valve to discharge the broken ore into a fine crushing or pulverizing mill having pipe attachments for supplying air under pressure, a pipe for supplying solvent solution, connecting by an inclosed conduit with a series of lixiviators having air-receivers, with pipe connections with an air-compressor, with pipe connections with solution-tanks, with a gas-absorbing chamber, with an ore-conveyer, with a solution-pump, with a sand-pump and with an electrolytic or other gold and silver precipitating apparatus, substantially as described.

820,812. **LIXIVIATOR.** SIDNEY T. MUFFLY, Philadelphia, Pa., assignor to Philadelphia Cyanide Process Company, Wilmington, Del., and Philadelphia, Pa., a Corporation of Delaware. Filed Oct. 6, 1905. Serial No. 281,672.

Claim.—1. A lixiviator consisting of a containing-receptacle having an inlet and an outlet, a revoluble structure within the receptacle having pulp-carrying means, with a wooden lining within the lower portion of said receptacle, substantially as described.

2. A lixiviator consisting of a receptacle having an inlet and an outlet, a revoluble structure within said receptacle having means thereon for carrying pulp from one side of the receptacle to the other, said structure consisting of a revoluble framework provided with a shell consisting of longitudinal wooden elements, the pulp-carrying means being attached to said shell, substantially as described.



3. A lixiviator consistng of a substantially horizantal receptacle having an inlet and an outlet, a revoluble structure inside said receptacle and provided with means for carrying ore-pulp from the inlet around the receptacle to the outlet, said means being constructed to deliver the pulp into the outlet, and said outlet extending from said receptacle at an angle other than ninety degrees to the surface thereof, substantially as described.

4. A lixiviator consisting of a substantially horizontal receptacle with inlet and outlet fittings entering said receptacle at angles other than ninety degrees to the surface thereof and on opposite sides of the same, and a revoluble structure within the receptacle having means for receiving ore-pulp from the inlet-fitting and transferring it from one side to the other of said receptacle to the outlet-fitting, substantially as described.

5. A lixiviator consisting of a receptacle having an inlet and an outlet on opposite sides thereof, a revoluble structure in the receptacle having means for transferring material in lines at right angles to its axis of rotation, transversely of the receptacle from the inlet to the outlet, a fluid-supply pipe above the receptacle and an air-conduit extending in the upper portion of the receptacle for delivering air to the receptacle so that it exerts a direct downward pressure upon the liquid therein, substantially as described.

6. A lixiviator consisting of a receptacle having an inlet and an outlet, a revoluble device within the receptacle for transferring material therein to the outlet, with a substantially horizontal air-conduit connected to a source of air-supply and extending in the upper portion of the receptacle, said conduit being provided with a longitudinal slot whereby air under pressure is delivered throughout the entire length of the receptacle and caused to exert a direct downward pressure upon the surface of the liquid therein, substantially as described.

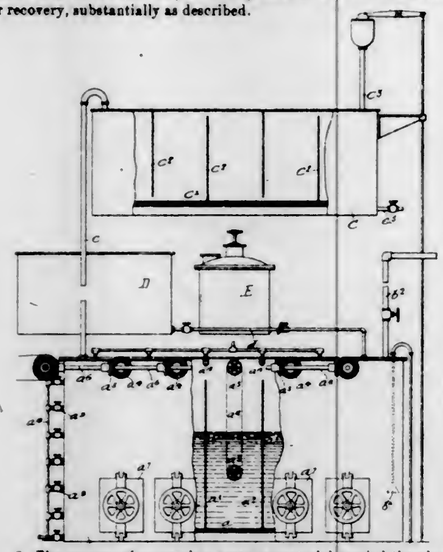
7. A lixiviator consisting of a receptacle having an inlet and an outlet, a revoluble device within the receptacle for transferring material therein to the outlet, with a substantially horizontal air-conduit connected to a source of air-supply and extending in the upper portion of the receptacle, said conduit being provided with a longitudinal slot whereby air under pressure is delivered throughout the length of the receptacle and caused to exert a direct downward pressure upon the surface of the liquid therein, said air-conduit being provided with an internal longitudinally-extending deflector, whereby the air is caused to be delivered with substantially uniformity from the entire length of the said slot, substantially as described.

8. A lixiviator consisting of a receptacle having an inlet and an outlet on opposite sides thereof and provided with a revoluble structure having buckets for transferring material transversely to the axis of said structure from the inlet to the outlet, means inside the receptacle for delivering air so that it will exert a direct downward pressure upon liquid therein, and a perforated pipe for delivering liquid to said receptacle, substantially as described.

820,813. **PROCESS OF CONDENSING OR DISSOLVING GASES AND VAPORS.** SIDNEY T. MUFFLY, Philadelphia, Pa., assignor to Philadelphia Cyanide Process Company, Wilmington, Del., and Philadelphia, Pa., a Corporation of Delaware. Filed Oct. 6, 1905. Serial No. 281,674.

Claim.—1. The process of recovering gases or material carried thereby in finely-divided or volatile form, which consists in passing the same through a thin film or films of a solvent solution carried upon a suitable supporting medium, and then removing the saturated solution and solid material on said medium by immersing the latter in a body of the solution, substantially as described.

2. The process of recovering gases or material carried thereby in finely-divided or volatilized form, which consists in dissolving the same in a cyanid solution by passing them through a thin film or films of the solution, thereby obtaining them in form for further use or recovery, substantially as described.



3. The process of recovering gases or material carried thereby in finely-divided or volatilized form, which consists in dissolving the same in a double cyanid of potassium and bromin by passing them through a thin film or films of the same, thereby obtaining them in form for further use or recovery, substantially as described.

4. The process of recovering gases or material carried thereby in finely-divided or volatilized form, which consists in dissolving the same in a cyanid solution by passing them through constantly-renewed films thereof, whereby said substances are obtained in a form for further use or recovery, substantially as described.

5. The process of recovering gases or material carried thereby in finely-divided or volatilized form, which consists in dissolving the same in a solution of double cyanid of potassium and bromin, whereby said substances are obtained in form for further use or recovery, substantially as described.

6. The process of recovering gases or material carried thereby in finely-divided or volatilized form which consists in passing the same into a solvent solution, precipitating the base metallic compounds formed, and then passing said gases, &c., through a series of thin films of said solution, substantially as described.

7. The process of recovering gases and base or other metals carried thereby in finely-divided or volatilized form, which consists in dissolving the same in a solution of a double cyanid of potassium and bromin by passing them through a series of thin films of such solution, and precipitating by means of an alkaline hydrate the base metallic compounds formed in said solution, said substances being thereby secured in form for further use or recovery, substantially as described.

8. The process of recovering gases or material carried thereby in a finely-divided or volatilized form which consists in passing the same through a solvent solution exposed to air acting upon its surface and under a pressure greater than that of the atmosphere, said substances being capable of reacting with the oxygen of the atmosphere in the presence of said solution, substantially as described.

9. The process of recovering gases or material carried thereby in finely-divided or volatilized form which consists in passing the same through a series of relatively thin films of a solvent solution exposed to the action of air under a pressure above that of the atmosphere, substantially as described.

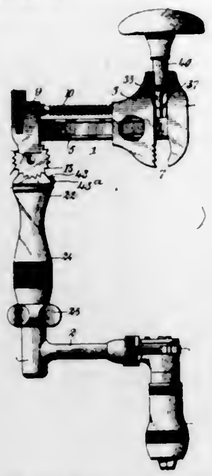
10. The process of recovering gases or material carried thereby in finely-divided or volatilized form, which consists in dissolving the same in a solution of a double cyanid of potassium and bromin by passing the said substances through thin films of said solution while it is exposed to the direct action of air and gas under pressure, the gases or material carried thereby being thus secured in form for further use or recovery, substantially as described.

11. The process of recovering gases or material carried thereby in finely-divided or volatilized form which consists in first passing said gases, &c., through a series of thin films of a solvent solution and in then removing the aqueous and other vapor still carried by the gas, substantially as described.

12. The process of recovering gases or material carried thereby in a volatilized or finely-divided form, which consists in exposing the same under pressure to a body of solvent solution and then passing them, mixed with air under pressure greater than that of the atmosphere, through a series of thin films of said solution, substantially as described.

13. The process of recovering gases and base or other metallic elements carried thereby in volatilized or finely-divided form, which consists in exposing the same under pressure to a body of a double cyanid of potassium and bromin and dissolving them in said solution by passing them through a series of thin films thereof while mixed with air under pressure greater than that of the atmosphere, and precipitating by an alkaline compound solution containing ammonium hydrate, the base metallic compounds formed in said solution, whereby the gases and substances carried thereby are secured in form for further use or recovery, substantially as described.

820,814. COMBINATION-TOOL. JOSEPH P. MCGINNITY, New York, N. Y., and ELISHA H. WINKLER, Krebs, Ind. Ter. Filed Oct. 28, 1905. Serial No. 284,791.



Claim.—1. A combination-tool comprising a jointed member with jaws constituting a wrench, a removable shank held in said jaws and carrying a rotatable knob, and a detachable arm adapted to be secured to said first member and carrying a chuck.

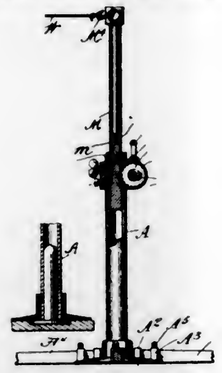
2. A combination-tool comprising a bar having a fixed jaw, a movable jaw mounted thereon, a segment carried by said bar, a spindle joined to said segment, a handle carried by said spindle, an arm detachably connected to said spindle and carrying a chuck, a shank removably held between said jaws, and a knob rotatable on said shank.

3. A combination-tool to be used as a brace and as a wrench and having a spindle, a sleeve surrounding said spindle, a normally rotatable handle carried on said sleeve having an opening in the extremity thereof, and a slidable button on said sleeve adapted to engage said opening to lock said handle to said sleeve.

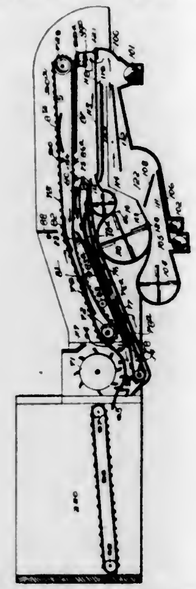
820,815. CLOTHES-LINE SUPPORT. FRANK MCMANUS, South Norfolk, Va. Filed May 12, 1905. Serial No. 260,069.

Claim.—1. Two upright tubular posts and means for supporting them, a pole movable up and down in the interior of each post carrying a cross-bar on the projecting upper end, fastenings on each cross-bar for a clothes-line arranged to hold such line in substantially parallel stretches between them, yokes B carrying shafts D with cranks D', and screws C adapted to perform the functions of holding and liberating the yoke, and guarding the pole against being turned horizontally, all combined substantially as herein specified.

2. Two upright tubular posts A, a roller P near the top of each performing the two functions of relieving from friction and aiding to hold the inclosed parts against being turned horizontally, a pole movable endwise in each post, carrying a cross-bar at its upper end and having a longitudinal groove, and further provisions carried in the structure for engaging in such groove and insuring against horizontal revolving motion, and provisions by a shaft, gear-wheel and crank, for raising and lowering each bar and its attachments, all combined and arranged to serve, substantially as herein specified.



820,816. GRAIN-SEPARATOR. ALEXANDER MCRAE, Pendleton, Oreg. Filed Feb. 24, 1904. Serial No. 195,056.



Claim.—1. In grain and straw separators, the combination of an endless traveling rake comprising endless webs and transverse slots spaced apart, end rollers or pulleys on which the said rake is supported and travels, side guides over which the upper run of the rake travels, other side guides supporting the lower run of the rake, whereby it is curved upward and inward toward the upper run, the runs thus approximating closely at one point and being somewhat widely separated in front of such point so that grain and straw protruding downward through the upper run at said point are struck by the lower run and carried forward and distributed as specified.

2. The combination, with end pulleys, of a traveling rake comprising an endless web and transverse slats attached to its outer side and spaced apart, guides for the upper run of the rake, idler-pulleys arranged under the lower run of the rake and located with reference to the upper guides so as to support the lower run nearer the upper run at one point than any other, the said pulleys thus serving both as guides and means for agitating the lower run as shown and described.

3. The combination, with idler-pulleys, of an endless carrier, composed of an endless belt or web having cross-slats attached to the outer side, pulleys arranged under the lower run of said carrier and the slats of the latter traveling over the pulleys whereby such lower run is agitated or shaken vertically, as and for the purpose specified.

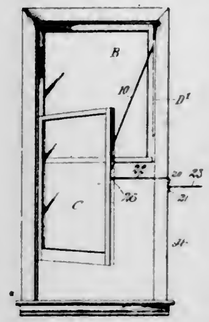
4. The combination, with the chain web 76 having cross-slats separated from each other, and end pulleys on which the same runs, of the board 77 having a gradual upward curve and arranged under the lower run of said web so that the slats slide in close contact with the upper side thereof, substantially as described.

5. The combination, with a fan and a grain-conveyer, of a hinged sieve, a flexible check 100 arranged at the end of the grain-winnower and above said conveyer, and connected with the sieve, and means for automatically supporting and adjusting the outer end of the sieve vertically according to the inclination of the machine in a lengthwise direction, as specified.

6. The combination, with a wheeled frame, casing, and a fan, of a hinged sieve-section 118, and means for automatically adjusting its free outer end vertically, the same consisting of a rock-shaft having a weighted lever-arm and other arms connected with the sieve, the weighted arm being adapted to swing in the direction of the length of the machine, as shown and described.

7. The combination, with a fan, a tailings-conveyer, and a hinged sieve having a transverse plate at its outer end, of a canvas check 100 whose upper edge is secured directly to said plate, and a weighted lever operatively connected with the sieve, as and for the purpose specified.

820,817. WINDOW FRAME AND SASH. ROBERT F. NICHOLS, Oakland, Cal. Filed Oct. 24, 1905. Serial No. 284,164.



Claim.—1. A window-frame having a section of its stop-bead and a corresponding section of its parting-strip removable, whereby the window-sashes may be swung into a room at one of their sides, locking-arms for holding the sashes in their inner position, and means for engagement by said arms, comprising a plate having a plurality of sockets for receiving the arms, and a plurality of parallel diagonal recesses, and screws on the frames for engagement by the recesses.

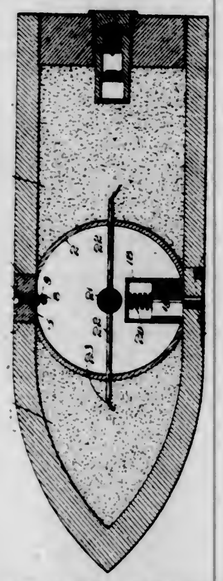
2. A window-frame having the stop-bead at one side and the parting-strip at the same side constructed in sections of equal length, corresponding sections being removable, window-sashes mounted in the said frame, having their stiles opposite the sectional parting-strip and stop-bead provided with openings, a detachable socket-plate for attachment to the frame and locking-arms connected with the socket-plate and adapted for connection with the window-sashes through the medium of said openings.

3. A window-frame having its parting-strip and its stop-bead at one side in two sections, the lower sections whereof are removable from the frame, an upper and a lower sash carried by the frame, a socket-plate removably connected with the frame, and removable locking-arms connected with the socket-plate and adapted for connection with the stiles of the said sashes which are opposite the sectional stop-bead and parting-strip, such attachment being made when the said stiles have been swung inward and upon the removal of the lower sections of the said stop-bead and parting-strip.

4. In a window-frame and sashes therefor, the said window-frame being provided at one side with a sectional stop-bead and a

sectional parting-strip, the lower sections of such parts being removable from the frame and the stiles of the window-sashes opposite the sectional portions of the stop-bead and parting-strip being provided with apertures, a removable socket-plate connected with the window-frame, the said plate being provided with independent socket-sections, and a locking-arm for each sash, which arms are provided with downwardly-extending lugs at their outer ends and horizontally-extending lugs at their inner ends, the outer lugs of the said arms being adapted to enter the socket-sections of the socket-plates and the inner lugs of the arms being adapted to enter the side stiles of the sashes.

820,818. PROJECTILE. ERNEST NIEHOFF, Brooklyn, N. Y. Filed Nov. 15, 1904. Serial No. 232,859.



Claim.—1. In a device of the class described, the combination with a body formed with an inlet, of means within the body designed to be ignited by contact of moisture, and means for preventing the admission of moisture through said inlet during the longitudinal travel of said body, said means leaving the inlet free for admission of moisture at the conclusion of such longitudinal movement.

2. In a device of the class described, the combination with a body having an inlet, of means within said body designed to be ignited by contact with moisture, pressure-actuated means for admitting moisture through said inlet, and means for maintaining said pressure-actuated means free from the action of surrounding pressure during the longitudinal travel of said body.

3. In a device of the class described, the combination with a body having an inlet and means arranged within said body adapted to be ignited by contact of moisture, of a valve inclosing said inlet, means retaining said valve closed against a predetermined amount of pressure admitted through said inlet, and means for preventing admission of pressure through said inlet during the longitudinal travel of said body.

4. In a device of the class described, the combination with a body, of pressure-energized means arranged within said body, and means for preventing admission of pressure to said body during the longitudinal travel thereof.

5. In a device of the class described, the combination with a body, of moisture-energized means arranged therein, a valve for preventing admission of surrounding moisture below a predetermined pressure and free to admit such moisture at or above said predetermined pressure, and means for preventing the admission of moisture regardless of the pressure thereof during longitudinal travel of said body.

6. In a device of the class described, the combination with a hollow body, designed to contain an explosive, of moisture igniting means for said explosive, a spherical container for said moisture igniting means, and pressure-controlling means for admitting moisture to said container.

7. A device of the character described, comprising a recessed body having an inlet, an oscillatory shield adapted to be seated within the recess, and means for automatically projecting the shield from the recess to open the inlet.

8. A device of the character described, comprising a recessed body having an inlet, a winged, oscillatory shield mounted within the recess and across the inlet, and means for automatically projecting the shield from the recess.

9. In a device of the character described, a body having a compartment therein, and a normally closed inlet to the compartment, a "water-primer" in the compartment, and pressure-operated means for opening the inlet.

10. A device of the character described, comprising a body having a compartment therein provided with an inlet, and a valved outlet, a centrally-disposed "water-primer" within the compartment, and pressure-operated means for opening the inlet.

11. A device of the character described, comprising a body having a compartment therein, provided with a valved inlet and an outlet, a "water-primer" in the compartment, pressure-operated means for opening the inlet, and a shield for said means.

12. A device of the character described, comprising a body having a compartment therein, provided with a valved outlet and an inlet, a perforated casing within the compartment and extending from the inlet, a pressure-operated, cut-off device within the casing, and a shield across the inlet.

13. A device of the character described, comprising a body having a compartment therein, provided with a valved outlet and an inlet, an apertured casing within the compartment extending from the inlet, a pressure-operated cut-off device within the casing, and an oscillatory shield connected to the body and extending across the inlet.

14. A device of the character described, comprising a body having a compartment therein, provided with a valved outlet and an inlet, a pressure-operated casing within the compartment and extending from the inlet, a pressure-operated, cut-off device within the casing, and a spring-controlled, oscillatory shield extending across the inlet.

15. A device of the character described, comprising an explosive-containing body having a compartment therein, said compartment being provided with a vent and an inlet, an apertured casing within the compartment and surrounding the inlet, a pressure-operated, cut-off device within the casing, a "water-primer" supported within the compartment, and a fuse extending from the "water-primer."

16. In a device of the character described, the combination with a body having a compartment therein, provided with a normally closed inlet and a vent, of pressure-operated means for automatically opening the inlet, and water-operated igniting means within the compartment.

17. In a device of the character described, the combination with a body having a compartment therein provided with a vent and a normally closed inlet, of pressure-operated means for automatically opening the inlet, means adapted to prevent the admission of water to the inlet during the movement of the body in one direction, and water-operated igniting means within the compartment.

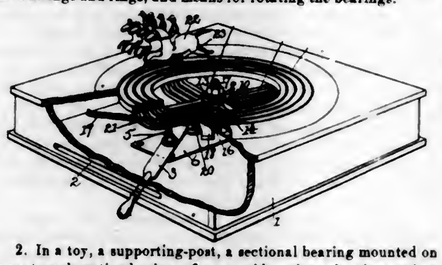
18. A device of the character described, comprising a body having a compartment therein, provided with a vent and a normally closed inlet, pressure-operated means for automatically opening the inlet, an oscillatory shield extending across the inlet and adapted to prevent the admission of water to the inlet, when the body is moving in one direction, and water-operated igniting means within the compartment.

19. A device of the character described, comprising a body having a compartment therein, provided with an inlet, a deflecting device upon the body and extending across the inlet, and water-operated igniting means within the compartment.

20. A device of the character described, comprising a body having a compartment therein, provided with an inlet, an oscillatory deflecting device connected to the body and extending across the inlet, and water-operated igniting means within the compartment.

820,819. TOY. EDWARD J. NOBLE, Hartford, Conn., assignor of one-half to James F. Robinson, Glastonbury, Conn. Filed July 13, 1905. Serial No. 269,569.

Claim.—1. In a toy, a support, a sectional bearing mounted on the support, each of the sections having a flange and abutting against another section, means for clamping the sections together, rings mounted on each of the sections between the flanges, each ring having movement independently of another ring, connections between the bearings and rings, and means for rotating the bearings.



2. In a toy, a supporting-post, a sectional bearing mounted on the post, each section having a flange, said sections abutting against each other, a nut fitting the screw-threaded surface of the post and clamping the sections together, a ring mounted on each of said sections between the flanges, a loose connection between each section and a ring, and means for rotating the bearing.

3. In a toy, a support and a bearing for an object mounted on the support, a swinging lever to rotate said bearing, and a spring having a connection with and movable independently of said lever.

4. In a toy, a support, a plural number of rings rotatably mounted on the support, a swinging lever for rotating the rings, connections between the lever and rings, and a spring loosely connected with one end of the lever and movable lengthwise therealong.

5. In a toy, a support, a plural number of rings mounted on the support, a lever for rotating the rings, connections between the lever and rings, a spring, and a roller connected with one end of the spring and in engagement with the end of the lever.

6. In a toy, a support, a sectional bearing mounted on the support, means for clamping the bearings to the support, supports for objects mounted on said sectional bearings, connections between said bearings and device-supports for positively moving the latter in one direction but allowing uninterrupted movement in the opposite direction, and means for rotating the bearings.

7. In a toy, a post, sectional bearings mounted on the post, means for clamping the bearings and post together, supports for devices mounted on said bearings, connections between said bearings and device-supports for positively moving the latter in one direction but allowing uninterrupted movement in the opposite direction, and means for rotating said post.

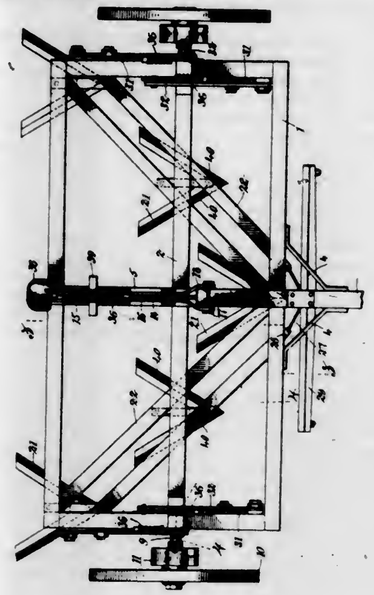
8. In a toy, a post, a pinion rigidly secured thereto, a lever for rotating the pinion, bearings mounted on the post, means for clamping the bearings and post together, device-supports rotatably mounted on said bearings, and connections between said bearings and device-supports for moving the latter.

9. In a toy, a post rotatably mounted on a base, a pinion secured to the post, a lever for rotating the pinion, sectional bearings mounted on said post, a nut for clamping said bearings to the post and to each other, device-supports mounted on said bearings, and connections between said bearings and the device-supports for positively moving the latter in one direction, but allowing unobstructed movement in the opposite direction.

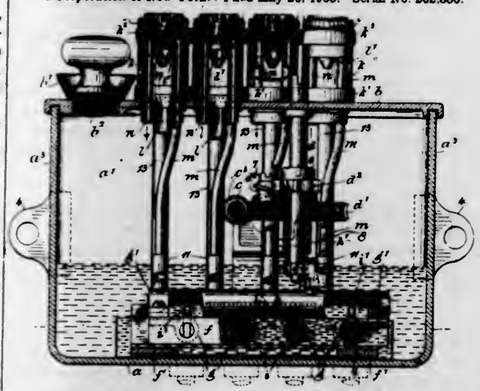
820,820. WEED-CUTTER. HILEY B. NOLEN, Lamar, Wash. Filed June 30, 1905. Serial No. 267,725.

Claim.—1. In a machine of the class described, in combination, a substantially rectangular main frame having a transverse beam and a central beam, a quadrant supported near the intersection of said beams, a lever coöperating therewith, a substantially rectangular drop-frame below said main frame, means for freely guiding said drop-frame upon said main frame, a link supporting said drop-frame from said lever, links attached to said drop-frame and having slots, quadrants carried by said main frame and levers carried by said last quadrants and attached in said slots.

2. In a machine of the class described, in combination, a substantially rectangular main frame having a transverse main beam and a central beam, spindle-irons attached to the extremities of said main beam and having downwardly-disposed extensions, a drop-frame disposed beneath said main frame and having brackets adapted to slide on said extensions, means for supporting said drop-frame from said main frame near the point of intersection of said beams, wheels carried by said spindle-irons, links attached to said drop-frame, quadrants attached to said main frame thereabove, and levers on said quadrants coöperating with said links to tilt said frame, said links having slots at which said levers attach.



820,821. LUBRICATOR. JOHANNES T. PEDERSEN, New York, N. Y., assignor to Pedersen Manufacturing Company, New York, N. Y., a Corporation of New York. Filed May 26, 1905. Serial No. 262,350.



Claim.—1. In a lubricating device, the combination with a series of pistons, of a movable frame and cylinders holding the pistons, means for reciprocating the pistons, a common means for intermittently actuating the latter means and reciprocating the slidable frame, slideways for said frame having inlet and exit ports in series at each side, each series agreeing in number with the number of the pistons and communicating with the ends of the piston-cylinders.

2. In a lubricating device, the combination with a series of reciprocating devices for feeding oil, of a revoluble shaft, a shaft at right angles thereto, means connected with the latter shaft for actuating the reciprocating devices, devices extending between the shafts whereby the movement of the former is communicated to the latter, yet leaving the latter independent to be manually rotated to effect a preliminary feed.

3. In a lubricating device, the combination with a receptacle holding a supply of lubricating material, of single, double-acting pump devices located within the receptacle and immersed in the lubricating material, and means extending to the outside of the receptacle for connection with devices actuated by the machine to be lu-

bricated and sight-feed devices through which the lubricating material is forced by the pump devices immersed within the receptacle, and pipes leading from the receptacle to the parts of the machinery to be lubricated.

4. In a lubricating device, the combination with a receptacle for holding lubricating material and a series of sight-feed devices, of a series of single, double-acting pump devices agreeing in number with the sight-feed devices located within the receptacle and immersed in the lubricating material, and a series of pipes from the receptacle also agreeing in number with the aforesaid parts for conveying away the lubricating material to the machinery to be lubricated, and means for actuating the series of pump devices within the receptacle whereby the lubricating material is forced through the sight-feed devices and then to the pipes for conveying the same away.

5. In a lubricating device, the combination with a receptacle for the lubricating material, of a slidable frame and cylinders and a series of pistons in the cylinders immersed in the lubricating material within the receptacle, means for imparting reciprocating movement to the said pistons and also reciprocating movement at right angles thereto to the said frame, cylinders and pistons, and devices coacting therewith for discharging lubricating material from the receptacle to the places to be lubricated.

6. In a lubricating device, the combination with a receptacle for lubricating material, and suitable sight-feed devices, of a revoluble shaft, a series of pistons, devices intermediate of said parts whereby the movement of the former is communicated to the latter to both reciprocate the series of pistons and move the same and their support, devices associated at opposite sides of the line of reciprocation having ports whereby on one side and in one position of their movement the pistons draw in the lubricating material from the receptacle, and in their other position force the same by suitable pipes through the oil-feed devices, and on their other side with the latter movement simultaneously draw oil from the sight-feed devices, and in their other and initial position force the oil to the parts of the machinery to be lubricated.

7. In a lubricating device, the combination with a receptacle for lubricating material, of a vertical revoluble shaft in bearings therein, a slotted crank-arm at the lower end of said vertical shaft, a slidable frame and cylinders, a series of pistons in said cylinders, a rock-shaft mounted on said slidable frame and means connecting the same with the pistons, a pin on the said rock-shaft engaging the slot of the crank-arm a slideway for said slidable frame, means for imparting movement to the said vertical shaft and slotted crank-arm for actuating the pistons and reciprocating the same with the aforesaid frame and cylinders, and means for freeing said vertical shaft from the latter means so that it may be mannally rotated.

8. In a lubricating device, the combination with a receptacle for holding lubricating material, of a frame secured within said receptacle adjacent to the bottom thereof so as to be immersed in the oil, and which frame comprises side members each having two series of ports, the ports of each series being alike and said frame forming a slideway, a frame of cylinders slidable in the aforesaid frame also immersed in the lubricating material, a series of pistons in said cylinders agreeing in number with the number of the ports of each series, means for actuating the pistons and for reciprocating the frame of cylinders and the pistons, whereby in one position of the parts oil is drawn into the piston-cylinders at one side and simultaneously forced from the other side to the parts of the machinery to be lubricated, and in the other position with the movement of the pistons the oil drawn in is forced out and oil is drawn in at the other side, and with the return movement the latter oil drawn in is forced to the parts of the machine to be lubricated.

9. In a lubricating device, the combination with a receptacle for holding lubricating material, of a frame secured within said receptacle and to the bottom thereof so as to be immersed in the oil, and which frame comprises side members each having two series of ports, the ports of each series being alike, and said frame forming a slideway, the frame of cylinders slidable in the aforesaid frame also immersed in the lubricating material, a series of pistons in said cylinders agreeing in number with the number of the ports of each series, a slotted rock-shaft, pins connected to the pistons and engaging the slot of the rock-shaft, a slotted crank-arm, a pin of the rock-shaft engaging the slot of the said crank-arm, and a shaft for revolving the crank-arm and actuating the pistons in opposite directions at parts of its movements, and reciprocating the frame and pistons at other parts of its movement.

10. In a lubricating device, a slidable frame comprising sides, ends and intermediate cylinders extending across between the sides, pistons in said cylinders, pins fast on said pistons and projecting through central longitudinal slots in said cylinders, a slideway for said frame, and means for actuating the pistons and reciprocating the frame and cylinders with the pistons.

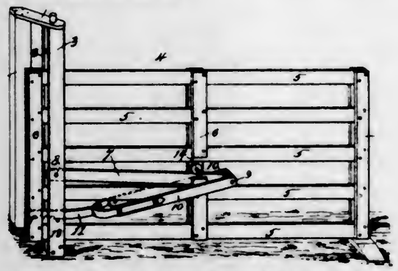
11. In a lubricating device, the combination with a receptacle for lubricating-oil, of a frame secured within and to the bottom of said receptacle immersed in the oil and composed of the side members *f*, *f*, the one having a series of inlet-ports 9 and an intermediate series of discharge-ports 10, and the other side member having a series of intake-ports 12 and discharge-ports 14, a series of sight-feed devices, pipes from the intermediate ports 10 of one sight member to and into the sight-feed devices, pipes 13 from said sight-feed devices to the ports 12 of the other side member of the frame, pipes 15 from the discharge-ports of the latter side member for conveying the oil to the parts of the machinery to be lubricated and reciprocating devices for moving the oil in the directions indicated.

12. In a lubricating device, the combination with a receptacle holding a supply of lubricating material, of single, double-acting pump devices located within the receptacle and immersed in the lubricating material, and means extending to the outside of the receptacle for connection with devices actuated by the machine to be lubricated and adjustable sight-feed devices through which the lubricating material is forced by the pump devices immersed within the receptacle, and pipes leading from the receptacle to the parts of the machinery to be lubricated.

13. In a lubricating device, the combination with a receptacle for holding lubricating material and a series of adjustable sight-feed devices, of a series of single pistons forming double-acting pump devices agreeing in number with the sight-feed devices located within the receptacle and immersed in the lubricating material, and a series of pipes from the receptacle also agreeing in number with the aforesaid parts for conveying away the lubricating material to the machinery to be lubricated, and means for actuating the series of pump devices within the receptacle whereby the lubricating material is forced through the sight-feed devices and then to the pipes for conveying the same away.

14. In a liquid-forcing device, a movable frame, pistons carried thereby, means adapting the same to draw in the charge at one port and discharge at another port, devices associated with the pistons, and means engaging the same for reciprocating the pistons, and means engaging the latter means for moving said frame.

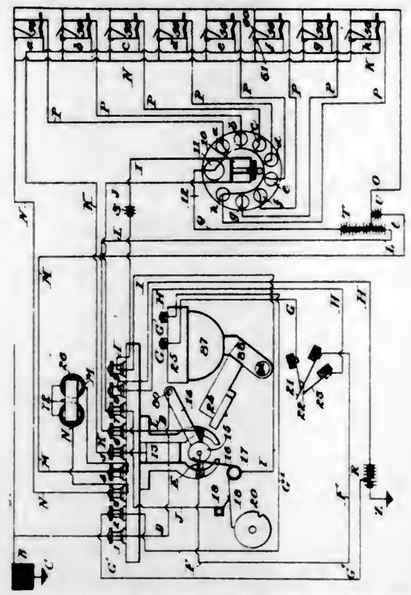
820,822. GATE. BARRETT W. PEYERS, Toledo, Ohio. Filed Mar. 3, 1906. Serial No. 303,756.



Claim.—A gate-post pivoted at top and at bottom, a bar pivoted at one end upon said post, a brace pivotally connected at its upper end with the other end of said bar, a series of teeth on the under side of the lower end of said brace, a pin upon said post adapted to engage either of the teeth upon said brace, a gate, and a roller upon said gate journaled midway of the length of the gate and adapted and arranged to travel upon the top of said bar.

820,823. ELECTRICAL FIRE-ALARM APPARATUS. JAMES P. ROBERTSON, North Sydney, near Sydney, New South Wales, Australia. Filed July 17, 1903. Serial No. 166,045.

Claim.—1. In automatic alarm apparatus, the combination with alarm-signal-transmitting means for transmitting an alarm through a line-circuit, comprising automatic driving means, of a detent normally preventing operation of said transmitting means, an automatically-operated switch normally disconnecting said signal-transmitting means from the line, means for releasing said detent and operating said switch, ringing-circuit and signaling-circuit contact-pieces and a movable contact-piece coacting therewith and electrically connected with said switch, a gear-wheel having teeth which engage the movable contact-piece to cause it to make contact with said other contact-pieces alternately, and a tappet operated by a shaft of said motor and arranged to engage said gear-wheel and advance the same intermittently.



2. In automatic alarm apparatus, the combination with alarm-signal-transmitting means for transmitting an alarm through a line-circuit, comprising a spring-motor for driving the same, of a detent normally preventing operation of said transmitting means, an automatically-operated switch normally disconnecting said signal-transmitting means from the line, means for releasing said detent and operating said switch, ringing-circuit and signaling-circuit contact-pieces and a movable contact-piece coacting therewith and electrically connected with said switch, a gear-wheel having teeth which engage the movable contact-piece to cause it to make contact with said other contact-pieces alternately, and a tappet operated by a shaft of said motor and arranged to engage said gear-wheel and advance the same intermittently.

3. In automatic alarm apparatus, the combination with telephonographic signal-transmitting mechanism for transmitting an alarm through a line-circuit, comprising automatic driving means, a record, a telephonographic transmitter, and means for feeding the reproducer thereof along said record, of a detent normally preventing operation of said transmitting means, an automatically-operated switch normally disconnecting said transmitter from the line, means for releasing said detent and operating said switch, talking-circuit and ringing-circuit contacts and a movable contact-piece coacting therewith and interposed between said switch and said transmitter, means for returning the reproducer to its starting-point, and means automatically operated for releasing the reproducer from its feeding means at predetermined points and permitting the return thereof, and for moving said movable contact-piece alternately into circuit with said talking-circuit and ringing-circuit contact-pieces.

4. In automatic alarm apparatus, the combination with telephonographic signal-transmitting mechanism for transmitting an alarm through a line-circuit, comprising automatic driving means, a record, a telephonographic transmitter, and means for feeding the reproducer thereof along said record, of a detent normally preventing the operating of said transmitting means, an automatically-operated switch normally disconnecting said transmitter from the line, means for releasing said detent and operating said switch, talking-circuit and ringing-circuit contact-pieces and a movable contact-piece coacting therewith and interposed between said switch and said transmitter, means for returning the reproducer to its starting-point, a gear-wheel having teeth which engage the movable contact-piece to cause it to make contact with said other contact-pieces alternately, and means operated by a shaft of said driving means for engaging said gear-wheel and advancing the same intermittently, and for releasing the reproducer from its feeding means at predetermined points and permitting the return thereof.

5. In automatic alarm apparatus, the combination with alarm-signal-transmitting means for transmitting an alarm through a line-circuit, comprising automatic driving means, of a detent normally preventing operation of said transmitting means, a switch normally disconnecting said signal-transmitting means from the line, a rotary armature, a magnet therefor having pole-pieces embracing said armature, said magnet adapted to be controlled by an automatically-controlled local circuit, and means operated by said armature for closing said switch and releasing said detent.

6. In automatic alarm apparatus, the combination with alarm-signal-transmitting means for transmitting an alarm through a line-circuit, comprising automatic driving means, of a detent normally preventing operation of said transmitting means, a rotary armature, a magnet therefor having pole-pieces embracing said armature, said magnet adapted to be controlled by an automatically-controlled local circuit, and a cam for operating said detent and a switch normally disconnecting said signal-transmitting means from the line, both operated by said armature.

7. In automatic alarm apparatus, the combination with a plurality of thermostats each comprising a chamber adapted to contain fluid under pressure, and alarm-signal-transmitting mechanism comprising a controlling-magnet in a circuit controlled independently by the several thermostats and means operated by said magnet for causing said mechanism to transmit a signal through a line-circuit, of a leak-indicator, a circuit therefor, and contact devices for each thermostat, controlling said indicator through the circuit thereof, and means for operating each of said contact devices upon decrease in pressure in the corresponding thermostat.

8. In automatic alarm apparatus, the combination with alarm-signal-transmitting means comprising automatic driving means, and ringing and signaling circuits, of a ringing-contact, a signaling-contact, a common movable contact member adapted to coact with both said contacts, means operated by said signaling mechanism for causing said contact member to contact with said contacts alternately during the operation of the apparatus, and means for bringing the mechanism to rest with said contact member out of contact with both said contacts.

9. In automatic alarm apparatus, the combination with alarm-signal-transmitting means comprising automatic driving means, and ringing and signaling circuits, of a ringing-contact, a signaling-contact, a movable contact member adapted to play between said contacts, a toothed wheel rotated by said mechanism in its operation and arranged to engage said contact member and cause the same to make contact with the ringing-contact and signaling-contact alternately, and a stop engaging a movable member of the apparatus at the conclusion of the operation thereof and arranged to bring said apparatus to rest with said movable contact out of contact with both said contacts.

820,824. TREATING DISTILLERY-SLOP. CURT J. ROEHR, Philadelphia, Pa., assignor to himself and William F. Parry, Philadelphia, Pa. Filed Jan. 9, 1905. Serial No. 240,355.

Claim.—1. The within-described improvement in treating distillers' slop, same consisting of subjecting the same while maintained in a heated condition to the action of an alkaline solution of mineral matter to effect precipitation of the protein contents of the slop, which said mineral matter is not soluble in water, substantially as specified.

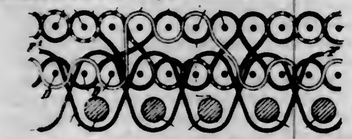
2. The mode herein described of treating distillers' slop, said mode consisting in first subjecting the same while maintained in a heated condition to the action of mineral matter in alkaline solution to effect precipitation of the protein contents of the slop, which said mineral matter is not soluble in water, and then filtering the latter, substantially as specified.

3. The mode herein described of treating distillers' slop, said mode consisting in subjecting the same while maintained in a heated condition to the action of a solution in water of silicate of soda, substantially as specified.

4. The mode herein described of treating distillers' slop, said mode consisting in effecting partial neutralization of the same and then causing precipitation of the protein contents of the slop by the action thereupon while maintained in a heated condition of mineral matter in alkaline solution, which said mineral matter is not soluble in water, substantially as specified.

820,825. WOVEN FABRIC. HOVCEP SARAFIAN, Yonkers, N. Y., assignor to Nazar Costikyan, New York, N. Y. Filed May 1, 1905. Serial No. 258,249.

Claim.—1. A woven fabric comprising a multiply face weave and a reinforcing bottom weave having its whole warp interwoven with the weft of the lowermost ply of the said face weave.



2. A woven fabric comprising a double face weave having sets of wefts arranged one above the other and sets of warps interwoven with the said sets of wefts, and a bottom weave having heavy filling-wefts and binding-warps each interwoven with the said heavy wefts and with the wefts of the lowermost set of wefts of the said face weave.

3. A woven fabric comprising a double face weave having sets of wefts arranged one above the other and pairs of warps interwoven with the said sets of wefts, each warp progressively engaging first a plurality of adjacent wefts of one set of wefts, and then engaging a plurality of adjacent wefts of the other set of wefts, and a bottom weave having heavy filling-wefts and binding-warps interwoven with the said heavy filling-wefts and with a plurality of wefts of the lowermost set of wefts of the said face weave.

4. A woven fabric comprising a double face weave having sets of wefts arranged one above the other and pairs of warps interwoven with the said sets of wefts, each warp progressively engaging first a plurality of adjacent wefts of one set of wefts, and then engaging a plurality of adjacent wefts of the other set of wefts, and a bottom weave having heavy filling-wefts and binding-wefts interwoven with the said heavy filling-wefts and with a plurality of wefts of the lowermost set of wefts of the said face weave, each heavy filling-weft corresponding to at least two of the said wefts of the lowermost set of wefts of the said face weave.

5. A woven fabric comprising a double face weave having sets of wefts arranged one above the other and pairs of warps interwoven with the said sets of wefts, each warp progressively engaging first a plurality of adjacent wefts of one set of wefts, and then engaging a plurality of adjacent wefts of the other set of wefts, oppositely-disposed wefts of the said weft-threads crossing each other alternately in an up-and-down direction, and a bottom weave having heavy filling-wefts and binding-warps interwoven with the said heavy filling-wefts and with a plurality of wefts of the lowermost set of wefts of the said face weave.

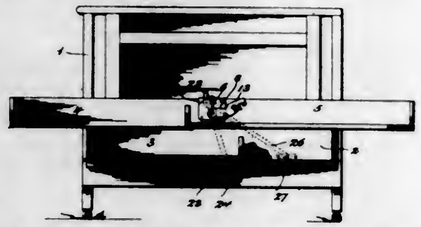
6. A woven fabric comprising a double face weave having sets of wefts arranged one above the other and pairs of warps interwoven with the said sets of wefts, each warp progressively engaging first a plurality of adjacent wefts of one set of wefts, and then engaging a plurality of adjacent wefts of the other set of wefts, each weft of the said sets of weft-threads spanning a plurality of adjacent warps, and a bottom weave having heavy filling-wefts and binding-warps interwoven with the said heavy filling-wefts and with a plurality of wefts of the lowermost set of wefts of the said face weave.

7. A woven fabric comprising a double face weave having sets of wefts arranged one above the other and pairs of warps interwoven with the said sets of wefts, each warp progressively engaging first a plurality of adjacent wefts of one set of wefts, and then engaging a plurality of adjacent wefts of the other set of wefts, oppositely-disposed wefts of the said sets of weft-threads crossing each other alternately in an up-and-down direction and each weft of the said sets of weft-threads spanning a plurality of adjacent warps, and a bottom weave having heavy filling-wefts and binding-warps interwoven with the said heavy filling-wefts and with a plurality of wefts of the lowermost set of wefts of the said face weave.

820,826. **SOFA-BED.** JULIUS T. SEBR, Chicago, Ill., assignor, by mesne assignments, to Geneva Furniture Mfg. Company, Geneva, N. Y., a Corporation of New York. Filed Nov. 14, 1904. Serial No. 232,636.

Claim.—1. The combination in a sofa-bed, of opposite end pieces, a transverse connecting-base, a seat and a back section mounted between the end pieces and independent of the same, a locking-hinge connecting the seat and back sections at their meeting corners, a bracket arranged at each end of and secured to the back-section and extending at opposite sides of the meeting edges of the two sections, front and rear suspension-rods connected to the brackets at each side of the pintle of the locking-hinge and at their lower ends pivotally connected to the framework at opposite sides of the meeting edges of the front and back sections.

2. The combination, in a sofa-bed, of the opposite end pieces, the transverse connecting-base, a seat-section mounted movably on the latter, a back-section arranged between the end pieces, opposite locking-hinges connecting the two sections, and oppositely-inclined suspension-rods upon which said sections are designed to move, said rods having their lower ends connected to the framework at opposite sides of the meeting edges of the front and back sections.

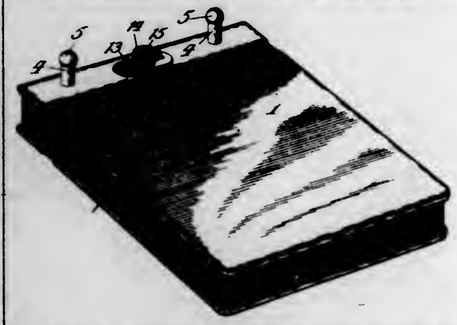


3. The combination, in a sofa-bed, of opposite end pieces, a transverse connecting-base, seat and back sections, opposite locking-hinges connecting the two sections at their meeting edges, front and rear supporting-rods, the former being longer than the latter, means for connecting said rods at their lower ends, to the framework of the article, and means for connecting the upper ends of the rods to the seat and back sections at opposite sides of the pintles of said locking-hinges.

4. In a sofa-bed, the combination, of the opposite end pieces, the transverse connecting-base, the seat and back sections independently movable between the end pieces, the opposite locking-hinges connecting the meeting ends of the said sections, brackets secured to the back-section and overlapping the front section at the meeting edges of said sections, suspension-rods connected to the opposite ends of said brackets, and means for connecting said rods at their lower ends to the framework.

5. In a sofa-bed, the combination, of the opposite end pieces 1, the transverse base connecting the two, the seat-section 4 and back-section 5 independent of the end pieces, the opposite locking-hinges connecting the sections 4 and 5 at their meeting edges, the opposite angular brackets 21 secured to the end rails of the back-section and overlapping the end rails of the seat-section, and the suspension-rods 23 and 26 pivotally connected at their upper ends to the front and rear ends of the brackets and at their lower ends pivotally connected to the framework, as at 24 and 27.

820,827. **TEMPORARY BINDER.** GEORGE A. SHOEMAKER, Chicago, Ill., assignor to Metal Sectional Furniture Company, Portland, Me., a Corporation. Filed Apr. 20, 1904. Serial No. 203,993.

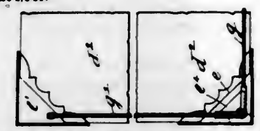


Claim.—1. In combination with binder posts and covers, one of which is adapted to slide upon said posts, of a lock forming the binding part of said sliding cover, consisting of a longitudinally-resilient bar, fitted with perforations corresponding in position and shape with and slightly larger than said posts, and means for moving said bar longitudinally, consisting of an eccentric fitted within a suitable perforation in said bar, and provided with a squared key-head and a separable key.

2. In combination with binder posts and covers, one of which is adapted to slide upon said posts, of a lock forming the binding part of said sliding cover, consisting of a casing, a longitudinally-resilient bar lying within said casing, both said casing and bar being fitted with perforations corresponding in position with the said binder-posts, and means for impinging said resilient bar against said posts, consisting of an eccentric fitted in a suitable perforation in said resilient bar, substantially as described.

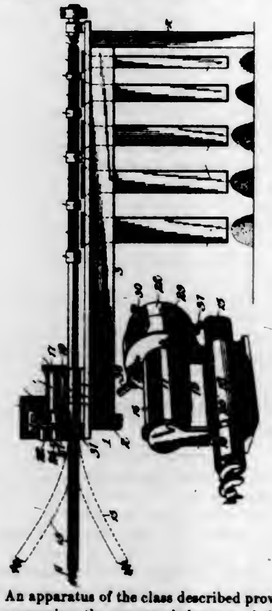
3. The combination with perforated leaves of a binding device comprising binder-posts engaging said perforated leaves, covers, one of which is fixed to said posts and one is adapted to slide thereupon, and a lock forming the binding part of said sliding cover, consisting of a casing, a longitudinally-resilient bar lying within said casing, both said casing and bar being fitted with perforations corresponding in position with the said binder-posts, and means for impinging said resilient bar against said posts, consisting of an eccentric fitted in a suitable perforation in said resilient bar, substantially as described.

820,828. **SHOW-CASE.** MAX A. SKALL, New York, N. Y., assignor of one-half to Edwin B. Hirsch, Brooklyn, N. Y. Filed Jan. 6, 1906. Serial No. 294,841.



Claim.—In a show-case, the combination, with a base and back frame, of front, side, and top glass plates, rear corner-pieces applied to the upper corners of said back frame, front corner-pieces resting on the upper surface of the top plate and having depending flanges abutting against the side plates and front plate, and connecting-rods spaced inwardly from the flanges of said corner-pieces and between which and said flanges the side plates and front plate are disposed, certain of said rods connecting the front corner-pieces with the rear corner-pieces, while another such rod connects the front corner-pieces.

820,829. **AUTOMATIC DIGGER AND CONVEYER.** PHILIP H. STAUCH, Chicago, Ill. Filed Apr. 9, 1903. Serial No. 151,864.



Claim.—1. An apparatus of the class described provided with a conveyer having a covering, the conveyer being extended beyond the covering to enable it to dig into the material to be conveyed, and both the conveyer and the covering being flexible to permit the extended end of the former to be moved about the material from one point to another.

2. A conveyer, comprising a rotary spirally-coiled strip of flat resilient material, and a covering for the same, said covering being flexible to permit the conveyer to be moved about the material operated on.

3. In an apparatus of the class described, the combination of a flexible shell or casing, and means carried by the shell or casing for conveying material through the same, substantially as described.

4. An apparatus of the class described provided with a flexible conveyer, and having an auger movable with the conveyer, substantially as described.

5. In an apparatus of the class described, the combination of a flexible conveyer consisting of spirally-coiled resilient material, an auger carried by the conveyer, and means for rotating the conveyer, substantially as described.

6. In an apparatus of the class described, the combination of a flexible tubular shell or casing fixed at one end, a flexible conveyer extending through the shell or casing and movable with the same, and means for rotating the conveyer, substantially as described.

7. In an apparatus of the class described, the combination of a flexible tubular shell or casing fixed at one end, a flexible conveyer extending through the shell or casing, an auger carried by the conveyer and located at the outer end thereof, and means for rotating the conveyer, substantially as described.

8. In an apparatus of the class described, the combination of a flexible tubular shell or casing fixed at one point, a flexible conveyer consisting of a spirally-coiled piece of resilient material, auger-sections secured to the conveyer, and means for rotating the latter, substantially as described.

9. In an apparatus of the class described, the combination of a flexible tubular shell fixed at one point and composed of spirally-coiled material, a flexible conveyer extending through the shell or casing and movable with the same, and means for rotating the conveyer, substantially as described.

10. The combination of a tubular conveyer-casing having a flexible outer portion and provided at the inner portion with an outlet for the material, and a flexible spiral conveyer operating within the conveyer-casing, substantially as described.

11. The combination of a casing having approximately parallel tubular portions, and an intermediate connecting-passage, a neck extending throughout the length of the said tubular portions, spirally-coiled strips located within the tubular portions of the casings, and means for rotating the spirally-coiled strips, substantially as described.

12. A conveyer, comprising a spirally-coiled strip having a central longitudinal opening, and a spiral core located within the central opening, substantially as described.

13. A conveyer, comprising a spirally-coiled strip having a central longitudinal opening, and a spiral core located within the central opening and composed of short sections, substantially as described.

14. A conveyer, comprising a spirally-coiled strip having a central opening, and a spiral core arranged within the opening and extending beyond the spiral strip, substantially as described.

15. A conveyer, comprising a tubular casing having a flexible outer portion, a spirally-coiled conveyer-strip located within the tubular casing and having a central longitudinal opening, and a spiral core arranged within the opening and composed of sections and extended beyond the front end of the strip, substantially as described.

16. A conveyer, comprising a tubular casing having a flexible outer portion, a spirally-coiled conveyer-strip located within the tubular casing and having a central longitudinal opening, and a spiral core arranged within the opening and composed of sections, said strip and core being extended beyond the casing, substantially as described.

17. A conveyer, comprising a tubular casing, a spirally-coiled strip having a central opening, and a spiral core located within the central opening, said strip and core being extended beyond the casing.

18. A conveyer, comprising a tubular casing, a spirally-coiled strip having a central opening, and a spiral core located within the central opening and extending beyond the tubular casing.

820,830. **ALKAMINESTER.** FRIEDRICH STOLS and BAPTIST REUTER, Höchst-on-the-Main, Germany, assignors to Farbwerke, vorm. Meister, Lucius & Brüning, Höchst-on-the-Main, Germany, a Corporation of Germany. Filed Dec. 2, 1905. Serial No. 289,957.

Claim.—1. As new products, the alkaminesters of alkylated aminobenzoic acids which are decomposed when heated with acids or alkalies into alkylated aminobenzoic acids and alkamins, being colorless compounds, little soluble in water, readily soluble in alco-

hol, ether and benzene, forming with hydrochloric acid readily-soluble salts of neutral reaction and having an anesthetic action free from irritating properties.

2. As new product, the diethylaminoethanolester of para-methylaminobenzoic acid, a colorless compound decomposed when heated with alkalies or acids into para-methylaminobenzoic acid and diethylaminoethanol and melting below 0° centigrade, little soluble in water, readily soluble in alcohol, ether and benzene, of alkaline reaction on litmus, forming with one equivalent of hydrochloric acid a salt the solution of which is of neutral reaction having an anesthetic effect free from irritating properties.

820,831. BALING-PRESS. CLEMENS A. STRUVE, Fayetteville, Tex. Filed July 2, 1903. Serial No. 164,059.



Claim.—1. In a baling-press, the combination with a frame and a box mounted thereon, a plunger slidably secured upon said frame, a sweep pivotally secured to said frame and carrying rotatable rectangular bearings, and means upon the frame for engaging the said bearings when they pass off of the plunger-head to prevent the bearings from rotating.

2. In a baling-press, the combination with a frame and a plunger mounted thereon, a sweep provided with rotatable rectangular bearings adapted to actuate said plunger, and means upon said frame for engaging the bearings to prevent the plunger from returning to its normal position until the said bearings are out of the path of the plunger.

3. In a baling-press, the combination with a frame, a cross-head and a plunger mounted thereon, of a guide mounted upon said frame and coacting with said plunger to prevent the return movement of said plunger before said cross-head is positively out of the line of the stroke of said plunger.

4. In a baling-press, the combination with a frame and a box thereon, of a plunger mounted upon said frame, a sweep provided with bearings pivotally secured to the frame, said bearings carried by the sweep adapted to engage said plunger, a pivoted bracket secured to the frame and adapted to receive the bearings engaging the plunger when the same is in its innermost position within the box, a tucker mounted upon the box, and means for actuating the said tucker and operating the several parts of the press.

5. In a baling-press, the combination with a frame, of a box thereon and a plunger secured upon said frame, a sweep pivotally mounted upon the frame and provided with rectangular bearings, a pivoted bracket secured to said frame and provided with a head which is adapted to coact with the head of the plunger when the same is at its inward stroke, an arm secured upon said bracket and means carried by the plunger for returning the bracket to its coacting position when the plunger is actuated.

6. A baling-press comprising a frame and a box thereon, a sweep provided with rotatable rectangular bearings mounted upon said frame, a plunger slidably secured upon said frame, means for returning the plunger to its outward position, means for pressing inwardly one of the edges of a bale and means carried upon the frame for receiving said rectangular bearings carried by the sweep to prevent the kick of the plunger.

7. In a baling-press, the combination with a frame and a box thereon, of a plunger slidably secured to said frame, a bracket movably mounted upon the frame comprising a head and an extension formed integral therewith, a curved arm secured to said bracket, means carried by a sweep pivotally mounted upon the frame for engaging and actuating the plunger, said plunger provided with means engaging the curved arm secured to the bracket for imparting movement thereto.

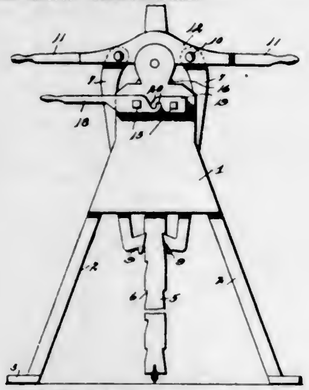
8. In a baling-press, the combination with a frame and a box thereon, of a plunger mounted upon said frame, a mechanism for returning the plunger to its outward position comprising a lever pivotally secured to the frame and a shoulder formed integral with said lever and means connecting the lever with the plunger, a tucker mounted upon said box and provided with means connected with the plunger for actuating the same, and means upon said frame for operating the lever and the plunger.

9. In a baling-press, the combination with a frame and a box thereon, of a sliding plunger mounted upon the frame, a lever mechanism for returning the plunger to its outward position, a tucker mechanism pivotally mounted upon the box, and means carried upon the frame for alternately actuating the plunger and the tucker mechanism.

10. In a baling-press, the combination with a frame and a box, of a plunger carried by said frame, means upon the frame and in alinement with the head of the plunger when the same is at its innermost stroke, and means carried by said frame for engaging the head of the plunger and the means upon the frame for preventing a kick of the plunger and insuring the entire removal of the same from the path of the stroke of the plunger.

11. In a baling-press, the combination with a frame, a box and a plunger thereon, a sweep pivotally mounted upon said frame, means upon the frame for returning the plunger to its outward position, a pivoted bracket mounted upon the frame, means upon the sweep for engaging the head of the plunger and the head of said pivoted bracket, said bracket secured upon the frame in a parallel position to the plunger, a tucker pivotally mounted upon the box and provided with means secured to the plunger for simultaneously actuating the same.

820,832. LIFTING-JACK. FREEMAN D. TARVER, Blanton, Ga. Filed Jan. 16, 1906. Serial No. 296,317.



Claim.—1. A lifting-jack comprising a stand, a lifting-bar movable vertically therein, an operating-lever, lifting-dogs connected with said lever and engaging the lifting-bar, sustaining-pawls also engaging the lifting-bar, parallel shafts on which the pawls are fixedly mounted journaled in the stand, a spring connecting said shafts and operating to hold the pawls in engagement with the lifting-bar, and levers fixedly mounted on said shafts and coöperating with each other to simultaneously throw the pawls out of engagement with the lifting-bar.

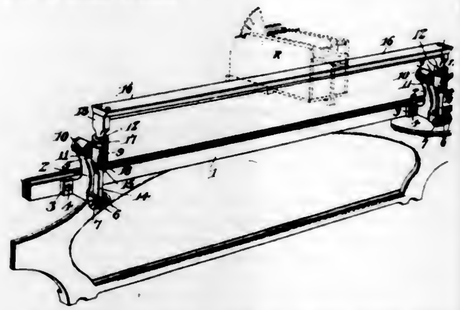
2. A lifting-jack comprising a stand, a lifting-bar movable vertically therein, an operating-lever, lifting-dogs connected with said lever and engaging the lifting-bar, parallel shafts journaled in the stand, sustaining-pawls carried by said shafts and engaging the lifting-bar, a pawl-release hand-lever mounted on one of said shafts, and a complemental pawl-release lever mounted on the other shaft, said levers being provided with interlocking hooks, substantially as and for the purpose described.

820,833. REGISTER-SUPPORT FOR TYPE-WRITING AND ADDING MACHINES. PATRICK H. TURLEY, Harrisburg, Pa., assignor to Elliott-Fisher Company, New York, N. Y., a Corporation of Delaware. Filed Aug. 24, 1905. Serial No. 275,696.

Claim.—1. The combination with a frame and a register-supporting bar, of an intermediate structure including means for adjusting the bar laterally, and separate means for adjusting the bar laterally in a direction substantially at right angles to the lateral adjustment first named.

2. The combination with a frame and a register-supporting bar, of two intermediate members movable together to adjust the bar laterally in one direction, and relatively movable to effect the lateral adjustment of the bar in another direction.

3. The combination with a frame, of a register-supporting bar, and separate supports for the opposite ends of the bar, each support including two members adjustable in unison to adjust the bar laterally in one direction and relatively adjustable to adjust the bar laterally in another direction.



4. The combination with a frame, of a register-support including a bracket secured to the frame, a horizontally-adjustable member carried by the bracket, means for adjusting and locking said member, a post carried by the horizontally-adjustable member, and means for vertically adjusting and locking said post.

5. The combination with a frame, of a register-support including a bracket secured to the frame, a horizontally-disposed screw passed through the bracket and having an apertured head, adjusting and locking nuts coöperating with the screw, a threaded post passed through the apertured head of the horizontal screw, and adjusting and locking nuts coöperating with said post.

6. The combination with a frame, of register-supporting means including a bracket secured to the frame and provided with a clamp, a horizontally-adjustable member carried by the bracket, and a vertically-adjustable post carried by said member and disposed to be engaged and held by the clamp.

7. The combination with a frame, of a register-supporting bar, and a plurality of supporting devices for said bar, each of said devices including a bracket secured to the frame, a horizontally-adjustable screw carried by the bracket, nuts for adjusting and locking said screw, a vertically-adjustable post carried by the screw, locking and adjusting nuts coöperating with the post, and a clamp carried by the bracket and engaging the post.

8. The combination with a frame, of a register-support including a horizontally-adjustable screw, a vertically-adjustable post carried thereby, and means for preventing turning of the screw or post.

9. The combination with a frame, of horizontally-adjustable members carried by the frame, posts carried by said members and vertically adjustable relative thereto, and a horizontally-disposed register-supporting bar carried by the upper ends of the posts.

10. The combination with a frame, of a supporting member horizontally adjustable thereon, a second supporting member carried by and adjustable with the member first named and also having independent vertical adjustment, and a register-supporting bar disposed over and supported by the vertically-adjustable member, whereby said bar may be shifted horizontally by the adjustment of one member and vertically by the adjustment of the other member.

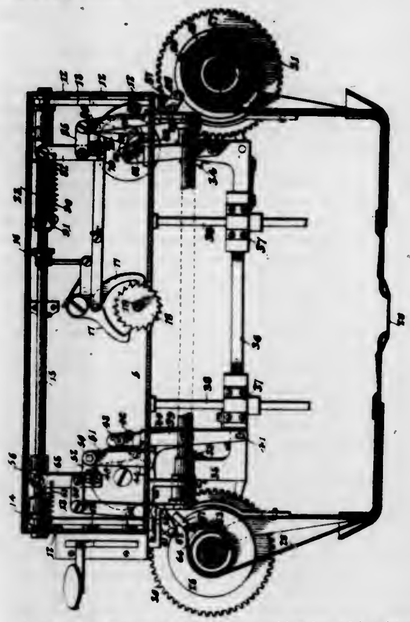
11. Register-supporting means including a bracket, a member horizontally adjustable on the bracket, means for locking said member in its adjusted positions, a second member vertically adjustable on the member first named, means for securing the second member in its vertically-adjusted positions, and a horizontal register-supporting bar adjustable with the second member.

12. A register-support including a rigid member, a horizontally-adjustable screw carried thereby, a nut retaining the screw, a threaded post extended through the head of the screw, a nut retaining the post, and a register-supporting bar resting on the post.

13. Register-supporting means including a rigid member, a horizontally-adjustable screw carried thereby, a vertically-adjustable threaded post extended through the head of the screw, and a clamp engaging the lower end of the post.

820,834. AUTOMATIC RIBBON-REVERSE. WILLIAM A. TWINING, Cleveland, Ohio, assignor to Elliott-Fisher Company, New York, N. Y., a Corporation of Delaware. Filed Mar. 14, 1905. Serial No. 250,062.

Claim.—1. In a type-writing machine, the combination with the movable carriage, and keys, of ribbon-feeding mechanism operated by the movement of the carriage, and ribbon-feed-reversing mechanism operated by the keys.



2. In a type-writing machine, the combination with a frame, a movable carriage, and keys, of ribbon-feeding mechanism mounted on the carriage and operated by the movement thereof, and ribbon-feed-reversing mechanism operated by the keys.

3. In a type-writing machine, the combination with a movable carriage, and keys, of ribbon-feeding mechanism operated by the movement of the carriage, ribbon-reversing mechanism, and means for automatically connecting the ribbon-reversing mechanism with the keys to effect the reversal of the ribbon-feed at the proper time.

4. In a type-writing machine, the combination with a movable carriage, and keys, of ribbon-feeding mechanism mounted on the carriage and operated by the movement thereof, and ribbon-reversing mechanism also mounted on the carriage and operated by the keys.

5. In a type-writing machine, the combination with a movable carriage and ribbon-feeding mechanism mounted on and operated by the movement of the carriage, of the type-writer keys, ribbon-reversing mechanism normally disconnected from the keys, and ribbon-controlled means for connecting the keys with the ribbon-reversing mechanism during the travel of the carriage from one printing position to another, whereby the key next depressed will operate the ribbon-feed-reversing mechanism to reverse the direction of the ribbon-feed.

6. In a type-writing machine, the combination with the carriage, ribbon-spools movable therewith, a relatively fixed rack, and gearing arranged to gear either of the spools to the rack to effect the positive rotation of one spool or the other as the carriage advances, of ribbon-feed-reversing mechanism arranged to shift the gearing to disconnect one ribbon-spool from the rack and to gear the other spool to said rack, the usual type-writer keys normally disconnected from the ribbon-feed-reversing mechanism, a device movable to effect an operative connection between the keys and the ribbon-feed-reversing mechanism, and a member movable with a ribbon-spool to operate said connecting device, said member being normally retained in an inactive position by the ribbon wound upon the spool.

7. In a type-writing machine, the combination with the carriage and keys, of a pair of ribbon-spools movable with the carriage, spool-pinions for the spools, a relatively fixed rack, a shift-bar, a pair of shift-pinions carried by the bar and engaging the rack, ribbon-feed-reversing mechanism arranged to shift the shift-bar to present one of the shift-pinions to a spool-pinion, and ribbon-controlled means for automatically connecting the ribbon-feed-reversing mechanism with the keys for actuation by the latter.

8. In a type-writing machine, the combination with the keys and the escapement operated thereby, of a motor, ribbon-feeding mechanism operated by the motor and controlled by the escapement, ribbon-feed-reversing mechanism normally disconnected from the keys, and ribbon-controlled means for effecting a temporary connection between the ribbon-feed-reversing mechanism and the keys, whereby the operation of the latter will effect a reversal of the ribbon-feed.

9. In a type-writing machine, the combination with a movable carriage, an escapement controlling the movement thereof, ribbon-feeding mechanism operated by the movement of the carriage and thus controlled by the escapement, a member for operating the escapement, keys having permanent operative connection with the member to operate the same and thus shift the escapement when a key is depressed to print a character, ribbon-feed-reversing mechanism normally disconnected from the escapement-operating member, and means for automatically connecting said member with the ribbon-feed-reversing mechanism to operate the latter.

10. In a type-writing machine, the combination with a carriage, an escapement controlling its movement, an escapement-operating member, and keys for moving the member, of ribbon-feeding mechanism, ribbon-feed-reversing mechanism, a connecting device carried by the escapement-operating member and movable into effective engagement with the ribbon-reversing mechanism, and ribbon-controlled means for moving the connecting device.

11. In a type-writing machine, the combination with the carriage, keys, and ribbon-feeding mechanism, of ribbon-reversing mechanism including a lever having an angular slot in one arm thereof, and mechanism for connecting said lever with the keys for actuation by the latter, said mechanism including a connecting device playing idly in one portion of the slot and movable to another portion of the slot to operatively connect the lever and keys.

12. In a type-writing machine, the combination with the carriage, escapement, and keys, of a rock-shaft operated by the keys and serving to actuate the escapement, ribbon-feeding mechanism, ribbon-reversing mechanism, and a connecting member movable with the rock-shaft as the latter is operated by the keys and also movable in another direction into and out of effective engagement with the ribbon-reversing mechanism.

13. In a type-writing machine, the combination with the carriage, escapement, and keys, of a rock-shaft operated by the keys and disposed to operate the escapement, ribbon-feeding mechanism, ribbon-feed-reversing mechanism including a lever, and a link movable with the rock-shaft and arranged to swing into and out of effective engagement with the lever.

14. In a type-writing machine, the combination with the carriage, escapement, and keys, of a key-operated rock-shaft arranged to operate the escapement, ribbon-feeding mechanism operated by the movement of the carriage and including a shifter movable to reverse the ribbon-feed, ribbon-feed-reversing mechanism including a lever for moving the shifter, a link reciprocated by the rock-shaft when the latter is moved to operate the escapement, and ribbon-controlled means for swinging the link into effective engagement with the lever of the ribbon-feed-reversing mechanism.

15. In a type-writing machine, the combination with the carriage, its escapement, and an escapement-operating member, of ribbon supporting and feeding mechanism including a pair of ribbon-spools, means for positively rotating either spool, and a shifter, ribbon-feed-reversing mechanism including a lever for moving the shifter, a connecting device carried by the escapement-operating member and movable into effective engagement with the lever, a second lever for moving the connecting device to its engaging position, and a finger movable with a spool to operate the last-named lever, said finger being normally held in an inoperatvie position by the ribbon wound upon the spool.

16. In a type-writing machine, the combination with the carriage, keys, ribbon-feeding mechanism, and ribbon-feed-reversing mechanism, of a key-operated locking device for the ribbon-feed-reversing mechanism.

17. In a type-writing machine, the combination with a carriage, keys, and ribbon-feeding mechanism including an element movable to reverse the direction of the ribbon-feed, of a key-operated locking device for said element.

18. In a type-writing machine, the combination with a carriage, keys, and ribbon-feeding mechanism including an element movable to reverse the direction of the ribbon-feed, of a locking device for said element normally disconnected from the keys, and means for effecting a temporary connection between the keys and the locking device.

19. In a type-writing machine, the combination with a carriage, keys, and ribbon-feeding mechanism including an element movable to reverse the direction of the ribbon-feed, of a locking device for said element, and means for automatically connecting the locking device with the keys.

20. In a type-writing machine, the combination with a carriage, keys, and ribbon-feeding mechanism including an element movable to reverse the direction of the ribbon-feed, of a locking device for said element, and ribbon-controlled means for effecting a temporary connection between the keys and the locking device.

21. In a type-writing machine, the combination with the carriage, keys, and ribbon-feeding mechanism including a shifter, of a pivoted locking-dog having operative connection with the shifter and engaging a fixed part, and means for disengaging the dog from the fixed part to release the shifter.

22. In a type-writing machine, the combination with the carriage, keys, and ribbon-feeding mechanism including a shifter, of a locking device for the shifter, and means operated by the keys for operating the locking device and the shifter.

23. In a type-writing machine, the combination with a carriage, keys, and ribbon-feeding mechanism including a shifter, of a locking device for the shifter, a member movable to operate the locking device to release the shifter and also movable to actuate the shifter, and means for connecting said member with the keys for actuation thereby.

24. In a type-writing machine, the combination with a carriage, keys, and ribbon-feeding mechanism including a shifter, of a locking device for the shifter, and ribbon-controlled means for effecting a temporary connection between the keys and the locking device and shifter, whereby the depression of a key will move the locking device to release the shifter and will thereafter operate the shifter to reverse the direction of the ribbon-feed.

25. In a type-writing machine, the combination with a carriage, keys, and ribbon-feeding mechanism including a shifter movable to change the direction of the ribbon-feed, of a locking device for the shifter, a lever movable to release and move the shifter, and ribbon-controlled means for automatically connecting the lever to the keys for actuation by the latter.

26. In a type-writing machine, the combination with a carriage, keys, and ribbon-feeding mechanism including a shifter movable to reverse the direction of the ribbon-feed, of a lock for the shifter, an escapement controlling the movement of the carriage, an escapement-operating member arranged to be operated by the keys, a lever movable to unlock and move the shifter, said lever being normally disconnected from the escapement-operating member, and means for automatically establishing a temporary connection between the escapement-operating member and the lever.

27. In a type-writing machine, the combination with a carriage, keys, and ribbon-feeding mechanism including a shifter movable to reverse the direction of the ribbon-feed, of a lock for the shifter, an escapement controlling the movement of the carriage, an escapement-operating member arranged to be operated by the keys, a lever movable to unlock and move the shifter, said lever being normally disconnected from the escapement-operating member, and ribbon-controlled means for effecting an operative connection between the escapement-controlled member and the lever.

28. In a type-writing machine, the combination with a carriage, keys, and ribbon-feeding mechanism including a shifter movable to reverse the direction of the ribbon-feed, of a lock for the shifter, an escapement controlling the movement of the carriage, an escapement-operating member arranged to be operated by the keys, a lever movable to unlock and move the shifter, said lever being normally disconnected from the escapement-operating member, a swinging link carried by the escapement-operating member, and means for moving said link into effective engagement with the lever.

29. In a type-writing machine, the combination with a carriage, keys, and ribbon-feeding mechanism including a shifter movable to reverse the direction of the ribbon-feed, of a pair of locking devices for said shifter, and means for operatively connecting the keys with the locking devices in alternation.

30. In a type-writing machine, the combination with a carriage, keys, and ribbon-feeding mechanism including a shifter, of a pair of locking devices for the shifter, a pair of ribbon-feed reversing mechanisms each arranged to move one of the locking devices of the shifter, and ribbon-controlled means for alternately connecting the ribbon-reversing mechanisms with the keys for actuation thereby.

31. In a type-writer, the combination with a carriage, escapement and keys, of a key-operated member arranged to operate the escapement, ribbon-feeding mechanism including a shifter movable to reverse the ribbon-feed, ribbon-feed-reversing mechanism including a lever for moving the shifter, a link reciprocated by the escapement-operated member when the latter is moved to operate the escapement, and ribbon-controlled means for swinging the link into effective engagement with the lever of the ribbon-feed-reversing mechanism.

32. In a type-writing machine, the combination with a movable carriage, a key and ribbon-feeding mechanism operated by the movement of the carriage, of means operated by the key for reversing the feed of the ribbon.

33. In a type-writing machine, the combination with printing mechanism and a ribbon, of a motor for feeding the ribbon relative to the printing mechanism, a key, and means operated by the key for effecting the reversal of the ribbon-feed.

34. In a type-writing machine, the combination with printing mechanism and an ink-ribbon, of a motor for feeding the ribbon relative to the printing mechanism, a key, ribbon-feed-reversing mechanism, and automatic means for effecting a temporary connection between the key and the ribbon-reversing mechanism.

35. In a type-writing machine, the combination with printing mechanism and an ink-ribbon, of a motor for feeding the ribbon relative to the printing mechanism, keys for operating the printing mechanism, and ribbon-feed-reversing mechanism operated by said keys.

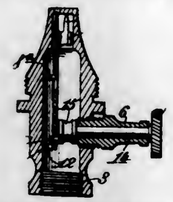
36. In a type-writing machine, the combination with printing mechanism, operating-keys therefor, and an ink-ribbon, of a motor for feeding the ink-ribbon relative to the printing mechanism, ribbon-feed-reversing mechanism, and means whereby the keys will be automatically connected with the ribbon-feed-reversing mechanism to operate the latter when the feed of the ribbon in one direction is completed.

37. In a type-writing machine, a movable carriage, printing mechanism and a key, of a ribbon, ribbon-feeding mechanism operated by the movement of the carriage, ribbon-feed-reversing mechanism normally disconnected from the key, and means for temporarily connecting the key with the ribbon-feed-reversing mechanism.

38. In a type-writing machine, a movable carriage, printing mechanism and a key, of a ribbon, ribbon-feeding mechanism operated by the movement of the carriage, ribbon-feed-reversing mechanism normally disconnected from the key, and automatic means for temporarily connecting the key with the ribbon-feed-reversing mechanism.

39. In a type-writing machine, a movable carriage, printing mechanism and a key, of a ribbon, ribbon-feeding mechanism operated by the movement of the carriage, ribbon-feed-reversing mechanism normally disconnected from the key, and ribbon-controlled means for temporarily connecting the key with the ribbon-feed-reversing mechanism.

820,835. **GAS-CHECK.** ALBERT ULLMANN, Macon, Ga., assignor of one-half to Ramsdell Inverted Gas Lamp Company, a Corporation of New York. Filed Sept. 13, 1905. Serial No. 278,293.



Claim.—1. In a gas-check, a body portion open at its bottom and having its top provided with a plurality of gas-outlets, a vertically-movable flat slide arranged within said body portion at one side thereof and having an opening and a laterally-extending integral guide member, a rotatable shaft extending within the body of the check and provided with an eccentrically-mounted stud projecting through said opening, said stud adapted to engage said slide and shift the same when the shaft is rotated, and a plurality of pin-valves carried by said slide and adapted to open or close said outlets when the slide is shifted.

2. A gas-check having a series of gas-outlets, a vertically-movable flat slide carrying a plurality of pin-valves for opening and closing said outlets, said slide further provided with a guide member extending at right angles thereto and having an opening, and means engaging in the slide for vertically moving the same.

3. A gas-check having a series of gas-outlets, a vertically-movable slide carrying a plurality of pin-valves for opening and closing said outlets, said slide further provided at its lower end with a guide member extending at right angles thereto and having an opening, and a shiftable and eccentrically-mounted means engaging in said slide for vertically moving the same when the said means is shifted.

4. A gas-check comprising a body portion communicating at one end with a gas-supply and at its other end provided with a plurality of gas-outlets, a plurality of vertically-movable pin-valves arranged within said body portion and adapted to open and close the said outlets, a vertically-movable flat slide carrying the said pin-valves and bent at its lower end to provide a guide member and said slide further provided with an opening, and a shiftable and eccentrically-mounted means supported by the body portion and engaging in said opening for vertically moving the slide when said means is shifted.

5. A gas-check comprising a body portion having a part thereof cylindrical in contour and the other part thereof tapering, said cylindrical part of said body portion communicating with a gas-supply and said tapering part provided with a plurality of gas-outlets, a vertically-movable flat slide arranged within said body portion and having the side edges thereof conforming in contour to the shape of the body portion, a plurality of pin-valves carried by said slide and adapted to open and close the said outlet, and shiftable and eccentrically-mounted means engaging in said slide for vertically moving it when said means is shifted.

6. A gas-check comprising a body portion having a part thereof cylindrical in contour and the other part thereof tapering, said cylindrical part of said body portion communicating with a gas-supply and said tapering part provided with a plurality of gas-outlets, a vertically-movable flat slide arranged within said body portion and having the side edges thereof conforming in contour to the shape of the body portion, a plurality of pin-valves carried by said slide and adapted to open and close the said outlets, said slide provided with a curvilinear guide member having an opening therethrough, and a shiftable and eccentrically-mounted means engaging in said slide and adapted to vertically move it when the said means is shifted.

7. A gas-check comprising a body portion communicating at its bottom with a gas-supply and having its top provided with a plurality of gas-outlets, a vertically-movable flat slide arranged within said body portion at one side thereof and provided with an opening, a plurality of pin-valves carried by the slide and adapted to open and close said outlets, a shaft extending into said body portion and provided with an enlarged end bearing against said slide and further provided with an eccentrically-mounted member extending in said opening and adapted when the shaft is shifted to vertically move the slide, a thumb-piece carried on the outer end of said shaft, and means for securing the shaft to the body portion.

8. A gas-check comprising a body portion having a plurality of gas-outlets, a vertically-movable slide arranged therein and having its upper portion substantially cylindrical in contour, said cylindrical portion having the top edge thereof provided with a plurality of upwardly-extending pin-valves adapted to open and close said outlets, said slide having its bottom formed with a laterally-extending curvilinear guide member provided with an opening and said slide at a point in close proximity to said guide member formed with a slot, and a shiftable and eccentrically-mounted means supported by the body portion of the gas-check and engaging in said slide and adapted when shifted to vertically move the slide.

9. A gas-check having a plurality of openings substantially square in contour and forming gas-outlets, a vertically-movable flat slide arranged within said body portion, a plurality of pin-valves carried by said slide, substantially square in cross-section and adapted to open and close the said outlets, and means for vertically moving the said slide.

10. A gas-check having a plurality of openings substantially square in contour and forming gas-outlets, a vertically-movable flat slide arranged within said body portion, a plurality of pin-valves carried by said slide, substantially square in cross-section and adapted to open and close the said outlets, said slide provided with a slot and with a guide member having an opening therein, and a shiftable and eccentrically-mounted means engaging in said slot for vertically moving the slide when said means is shifted.

11. In a gas-check, the combination with a body portion provided with a plurality of outlets, of means for opening and closing said outlets, said means consisting of a vertically-movable slide terminating at its top in a laterally-extending cylindrical portion provided with a plurality of vertically-extending pin-valves.

12. In a gas-check, the combination with a body portion provided with a plurality of outlets, of means for opening and closing said outlets, said means consisting of a vertically-movable slide terminating at its top in a laterally-extending cylindrical portion provided with a plurality of vertically-extending pin-valves and

said slide at its bottom terminating in a laterally-exteading guide member.

13. In a gas-check, the combination with a body portion provided with a plurality of outlets, of means for opening and closing said outlets, said means consisting of a vertically-movable flat slide terminating at its top in a laterally-extending cylindrical portion provided with a plurality of vertically-extending pin-valves and said slide at its bottom terminating in a laterally-extending guide member provided with an opening.

14. In a gas-check, the combination with a body portion provided with a plurality of outlets, of means for opening and closing said outlets, said means consisting of a vertically-movable flat slide terminating at its top in a laterally-extending cylindrical portion provided with a plurality of vertically-extending pin-valves and said slide terminating at its bottom in a laterally-extending curvilinear flange provided with an opening.

15. In a gas-check, the combination with a body portion provided with a plurality of outlets, of means for opening and closing said outlets, said means consisting of a vertically-movable flat slide terminating at its top in a laterally-extending cylindrical portion provided with a plurality of vertically-extending pin-valves and said slide having a slot and terminating at its bottom in a laterally-extending curvilinear guide member provided with an opening, combined with means engaging in said slot for vertically moving the slide.

16. The combination with a body portion having an outlet, of a valvular means for opening and closing said outlet, operating means for said valvular means, and a slotted shell engaging said body portion for retaining said operating means in position.

17. The combination with a body portion having an outlet, of a valvular means for opening and closing said outlet, operating means for said valvular means, and a shiftable and detachable slotted shell engaging said body portion for retaining said operating means in position.

18. A gas-check comprising a body portion having a series of gas-outlets, a vertically-movable slide carrying a plurality of pin-valves for opening and closing said outlets, means engaging in said slide for vertically moving the same, and a slotted shell engaging the body portion and operating means for retaining the latter in position.

19. A gas-check comprising a body portion having a series of gas-outlets, a vertically-movable slide carrying a plurality of pin-valves for opening and closing said outlets, means engaging in the slide for vertically moving the same, and a shiftable and detachable shell provided with a keyhole-slot and engaging said body portion and operating means for retaining the latter in position.

20. A gas-check comprising a body portion having a series of gas-outlets, a movable slide carrying a plurality of pin-valves for opening and closing said outlets, a shiftable and eccentrically-mounted means engaging in said slide for moving the same when said means is shifted, and a slotted shell engaging said body portion and operating means for retaining the latter in position.

21. A gas-check comprising a body portion having a series of gas-outlets, a movable slide carrying a plurality of pin-valves for opening and closing said outlets, a shiftable and eccentrically-mounted means engaging in said slide for moving the same when the said means is shifted, and a shell provided with a keyhole-slot and engaging said body portion and operating means for retaining the latter in position.

22. A gas-check comprising a body portion communicating at its bottom with a gas-supply and having its top provided with a plurality of gas-outlets, a reciprocating slide arranged within said body portion, a plurality of pin-valves carried by the slide and adapted to open and close said outlets, a shaft extending through said shell and into said body portion and provided with an enlarged end bearing against said slide and further provided with an eccentrically-mounted member extending in the slide and adapted when the shaft is shifted to reciprocate the slide, a thumb-piece carried on the outer end of said shaft, and a shell surrounding the body portion and engaging the shaft for retaining the latter in position

23. A gas-check having a series of gas-outlets, a vertically-movable slide carrying a plurality of pin-valves for opening and closing said outlets, said slide bent at its lower end to form a guide member and further provided near the top thereof with a guide member struck therefrom, said guide members extending in the same direction and the lower of said members provided with an opening, and a shiftable and eccentrically-mounted means engaging in said slide for vertically moving the same when the said means is shifted.

24. A gas-check having a series of gas-outlets, a vertically-movable slide carrying a plurality of pin-valves for opening and closing said outlets, said slide provided at its bottom with an opening and further provided at its bottom with a laterally-extending guide and near the top of the laterally-extending guide, and a shiftable and eccentrically-mounted means engaging in said opening for vertically moving the same when the said means is shifted.

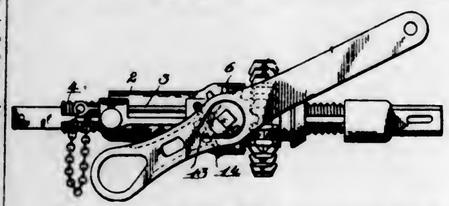
25. A gas-check comprising a body portion, a vertically-movable slide arranged in said body portion at one side thereof and provided with a pair of guides, a plurality of pin-valves carried by the slide and adapted to open and close said outlets, and a shaft provided with an enlarged end arranged in the other side of said body portion and bearing against said slide and further provided with an eccentrically-mounted member extending in said slide and adapted when the shaft is operated to vertically move the slide, thereby shifting the pin-valves to and from closure position.

820,836. **BOTTLE-STOPPER.** CHARLES W. VOELPEL, Port Richmond, N. Y. Filed Sept. 6, 1905. Serial No. 277,221.



Claim.—A bottle-stopper comprising a body portion, an air-tight disk applied to the lower end of said body portion, said disk being larger in diameter than the body portion, a plate resting against the disk, a plate resting against the body portion, a connecting member extending through the two plates and through the body portion and disk, said connecting member comprising a strip of metal bent upon itself and having an eye at its upper portion, the terminals of said connecting member being adapted to be bent toward or from each other so as to render the plate which rests against the disk removable, and a ring engaging the eye of the connecting member.

820,837. **DRILLING-MACHINE.** ALEXANDER WALKER, What Cheer, Iowa, assignor to What Cheer Tool Company, What Cheer, Iowa, a Corporation of Iowa. Filed June 9, 1905. Serial No. 264,454.



Claim.—1. In a drilling-machine, the combination of internally-threaded boxing, a threaded rod extending through, and the threads of which engage those of, the boxing, a bevel-gear splined on the rod and having expanded heads and bevel-teeth on opposite sides thereof, the boxing having a channel to receive either of the heads, and a second bevel-gear to mesh with either set of teeth on the first bevel-gear.

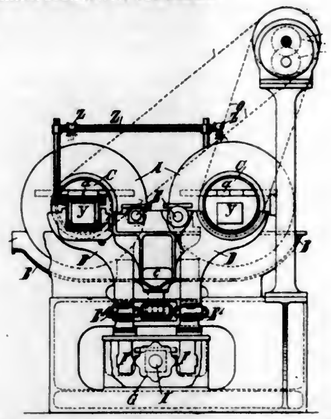
2. In a drilling-machine, the combination of an internally-threaded boxing, a threaded rod extending therethrough, the threads of the two parts engaging each other, a bevel-gear splined on the rod and having expanded heads integral with the hub thereof, bevel-teeth upon opposite sides thereof, the boxing having a channel to receive either of the heads, a second bevel-gear to mesh with either set of teeth on the first bevel-gear, the boxing being provided with a shaft to carry said second bevel-gear, and a hand-crank mounted on the second bevel-gear for turning the same

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820,838. **MEANS FOR OPERATING PICKER-DRUMS.** CHARLES WALMSLEY, Bury, England, assignor to Wandel & Co. Metalltuch-Fabrik, Reutlingen, Germany. Filed Mar. 25, 1905. Serial No. 253,060.

Claim.—1. In a device of the character described, a supporting-frame, a depending rocker-arm pivoted to the frame, a picker-drum rotating upon trunnions journaled in the rocker-arm to one side of the pivotal support thereof, a cam bearing against the face of the depending arm, means for rotating the drum and the cam, means for limiting the vibratory movement of the depending arm under the

action of the cam, an adjustable hammer carried by each rocker-arm, and a resilient abutment for said hammer.



2. In device of the character described, a supporting-frame, depending rocker-arms pivoted to the frame, picker-drums rotating upon trunnions journaled in the rocker-arms to one side of the pivotal supports thereof, a cam arranged between and bearing against the opposing faces of the depending rocker-arms, a drive-pulley, belt connections between the drive-pulley and the trunnions, and means for driving the cam and pulley.

3. In a device of the character described, a supporting-frame, a depending rocker-arm pivoted to the frame, a picker-drum rotating upon hollow trunnions journaled in the rocker-arm to one side of the pivotal support thereof, a cam bearing against the face of the depending rocker-arm, means for rotating the drum and the cam, a feed-inlet to the interior of the drum through the trunnion at one end, a trough arranged beneath the drum, and a discharge-outlet from said trough.

4. In a device of the character described, a supporting-frame, a depending rocker-arm pivoted to the frame, a picker-drum rotating upon hollow trunnions journaled in the rocker-arm to one side of the pivotal support thereof, a cam bearing against the face of the depending arm, means for rotating the drum and the cam, and means for limiting the vibratory movement of the depending arm under the action of the cam, feed-inlet pipes leading to the interior of the drums through the hollow trunnions at one end thereof, said pipes being provided with discharge perforations, a trough arranged beneath the drums and provided with an outlet from the medial portion of the same above the bottom, and a cleansing-tap arranged in the bottom of the trough.

5. In a device of the character described, a supporting-frame, a depending rocker-arm pivoted to the frame, a picker-drum rotating upon hollow trunnions journaled in the rocker-arm to one side of the pivotal support thereof, a cam bearing against the face of the depending arm, means for rotating the drum and the cam, means for limiting the vibratory movement of the depending arm under the action of the cam, an adjustable hammer carried by each rocker-arm, a resilient abutment for said hammers, feed-inlet pipes leading through the hollow trunnions to the interior of the drums and discharging therein through perforations, a trough arranged beneath the drums and proivded with a discharge above the bottom thereof, a spray-pipe arranged to discharge upon the upper exterior face of the drums, a tray arranged within the drums above the feed-inlet pipes and discharging at the opposite ends of the drums from the feed-inlets, and a cleansing-tap arranged in the bottom of the trough.

820,839. **REINFORCEMENT FOR CONCRETE GIRDERS, &c.** SIDNEY H. WOODRUFF, Buffalo, N. Y. Filed Feb. 1, 1906. Serial No. 299,006.

Claim.—1. A reinforcement for concrete girders, beams, &c., comprising a lower horizontal tension-rod, and upper and lower shearing-rods each having a lower central horizontal part, inclined parts extending upwardly and outwardly from opposite ends of the central part and upper horizontal parts extending outwardly from the ends of said inclined parts, the lower horizontal part of the lower shearing-rod being longer than that of the upper shearing-rod and interposed between the same and the central part of the tension-rod and the horizontal ends of the upper shearing-rod being longer than those of the lower shearing-rod and arranged above the same, and the horizontal ends of the upper shearing-rod being longer than those of the lower shearing-rod and arranged above the same, substantially as set forth.



2. A reinforcement for concrete girders, beams, &c., comprising a lower horizontal tension-rod, upper and lower shearing-rods, each having a lower central horizontal part, inclined parts extending upwardly and outwardly from opposite ends of the central part and upper horizontal parts extending outwardly from the end of said inclined parts, the lower horizontal part of the lower shearing-rod being longer than that of the upper shearing-rod and interposed between the same and the central part of the tension-rod and the horizontal ends of the upper shearing-rod being longer than those of the lower shearing-rod and arranged above the same, means for connecting the central parts of the tension-rod, upper shearing-rod and lower shearing-rod, and means for connecting the horizontal end portions of the upper and lower shearing-rods, substantially as set forth.

3. A reinforcement for concrete girders, beams, &c., comprising a lower horizontal tension-rod, upper and lower shearing-rods each having a lower central horizontal part, inclined parts extending upwardly and outwardly from opposite ends of the central part and upper horizontal parts extending outwardly from the ends of said inclined parts, the lower horizontal part of the lower shearing-rod being longer than that of the upper shearing-rod and interposed between the same and the central part of the tension-rod and the horizontal ends of the upper shearing-rod being longer than those of the lower shearing-rod and arranged above the same, and upright wire stirrups wound at their lower ends around said tension-rod and lower horizontal parts of said shearing-rods and at their upper ends around the horizontal end parts of the upper and lower shearing-rods, substantially as set forth.

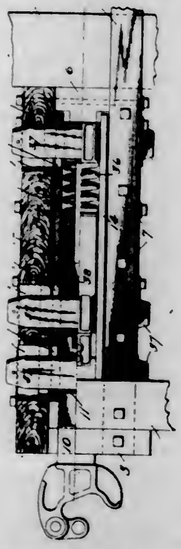
4. A reinforcement for concrete girders, beams, &c., comprising a lower horizontal tension-rod, upper and lower shearing-rods each having a lower central horizontal part, inclined parts extending upwardly and outwardly from opposite ends of the central part and upper horizontal parts extending outwardly from the ends of said inclined parts, the lower horizontal part of the lower shearing-rod being longer than that of the upper shearing-rod and interposed between the same and the central part of the tension-rod and the horizontal ends of the upper shearing-rod, being longer than those of the lower shearing-rod and arranged above the same, an upper compression-rod, and upright stirrups secured at their lower ends to said tension-rod and lower parts of the shearing-rods while their upper ends are secured to the ends of the shearing-rods and to said upper compression-rod, substantially as set forth.

5. A reinforcement for concrete girders, beams, &c., comprising a lower horizontal tension-rod, an upper horizontal compression-rod, upper and lower shearing-rods each having a lower central horizontal part, inclined intermediate parts which extend upwardly and outwardly from the opposite ends of the central part and horizontal end parts which extend outwardly from the upper ends of the in-

clined parts, the horizontal lower part of the lower shearing-rod being longer than that of the upper shearing-rod and interposed between the same and the tension-rod and the end parts of the upper shearing-rod being longer than the corresponding parts of the lower shearing-rod and interposed between the same and the upper compression-rod, and upright stirrups wound at their lower ends around the tension-rod and the horizontal lower parts of the shearing-rods while their upper ends are wound around the compression-rod and horizontal end parts of the shearing-rods, substantially as set forth.

6. A reinforcement for concrete girders, beams, &c., comprising a lower horizontal tension-rod, an upper horizontal compression-rod, upper and lower shearing-rods each having a lower central horizontal part, inclined intermediate parts which extend upwardly and outwardly from opposite ends of the central part and horizontal end parts which extend outwardly from the upper ends of the inclined parts, the horizontal lower part of the lower shearing-rod being longer ger than that of the upper shearing-rod and interposed between the same and the tension-rod and the end parts of the upper shearing-rod being longer than the corresponding parts of the lower shearing-rod and interposed between the same and the upper compression-rod, upright stirrups wound at their lower ends around the tension-rod and the horizontal lower parts of the shearing-rods while their upper ends are wound around the compression-rod and horizontal end parts of the shearing-rods, upwardly-turned hooks arranged at the ends of the tension-rod and downwardly-turned hooks arranged at the ends of compression-rod and the shearing-rods, the hooks of the upper shearing-rod being arranged between those of the compression-rod and the lower shearing-rod, substantially as set forth.

820,840. **DRAFT AND BUFFING GEAR FOR CARS.** IRA O. WRIGHT and JOHN H. FARLOW, Baltimore, Md., assignors to Farlow Draft Gear Company, Baltimore, Md. Filed Mar. 23, 1905. Serial No. 251,525.



Claim.—1. The combination in a draft and buffing gear, of a coupler and draw-bar; a front follower; a rear follower; a friction device between the followers; links; keys; and slotted supports for the keys, the keys supporting the front follower being movable within slots of the supports.

2. The combination in a draft and buffing gear, of a coupler and draw-bar; a front follower; a rear follower; a friction device and spring or springs between the followers; links; keys; and slotted supports for the keys, the key supporting the front follower being movable in slots in the supports.

3. The combination in a draft and buffing gear, of a coupler and draw-bar; a front follower; a rear follower; a friction device between the followers; slotted links; keys; and slotted supports for the keys; all of the keys being movable within the slots of the supports, and the friction device supported by the keys.

4. The combination in a draft and buffing gear, of a coupler and draw-bar; a front follower; a rear follower; a friction device and spring or springs between the followers; slotted links; keys; and slotted supports; all of the keys being movable within the slots of the supports, and the friction device and spring or springs supported by the keys.

5. The combination in a draft and buffing gear, of a coupler and draw-bar; a front follower; a rear follower; a friction device and spring or springs between the followers; links; keys; and slotted supports for the keys; said friction device consisting of a cylinder, a piston, a cylinder-head and movable friction-blocks and friction-wedges.

6. A friction device for draft and buffing gears, embracing a cylinder, a cylinder-head, a piston, a plurality of friction-blocks and a plurality of friction-wedges within the cylinder, and a spring or springs; the wedges adapted to move radially and the blocks longitudinally when the piston engages the wedges.

7. A friction device for draft and buffing gears, embracing a cylinder, a cylinder-head, a piston, a plurality of friction-blocks arranged to form a cylindrical body with a passage for the piston, a plurality of friction-wedges arranged to form a conical seat for the end of the piston, and a spring.

8. The combination in a friction device, of a slotted follower carrying a cylinder, a slotted follower carrying a piston, movable friction-blocks within the cylinder, and a spring or springs; said follower being carried by keys located within slotted supports.

9. The combination in a friction device for draft and buffing gear, of a follower with a cylinder at one end, a follower with a piston at one end, frictional elements between the piston and cylinder, and a spring or springs; the said followers being held in place by keys movable within slotted supports of the gear.

10. The combination with a draft and buffing gear, provided with slotted supports and constructed substantially as described, of a front follower with a passage therethrough, a rear follower with a passage, keys within the passages of the followers and slots of the supports, a friction device between the followers; slotted links; and a coupler and draw-bar; the front follower-block and key which passes through the same being movable.

11. The combination with a draft and buffing gear provided with slotted supports, of a front follower with a passage therethrough, a rear follower with a passage, keys within the passages of the followers and slots of the supports, a friction device, a spring, slotted links, and a coupler and draw-bar; the said friction device and spring being located in direct line between the follower-blocks.

12. The combination in a draft and buffing gear, of a coupler and draw-bar; a front follower; a rear follower; a friction device between the followers; links; slotted supports; and keys passed through the draw-bar, followers, and links and movable within the slotted supports; the arrangement being such that in drawing the rear follower and draw-bar move forwardly, and in buffing the draw-bar and front follower move rearwardly.

13. The combination in a draft and buffing gear, of a coupler and draw-bar; a front follower; a rear follower; a friction device between the followers; slotted links; keys; and slotted supports for the keys; all of the keys being movable within the slots of the supports.

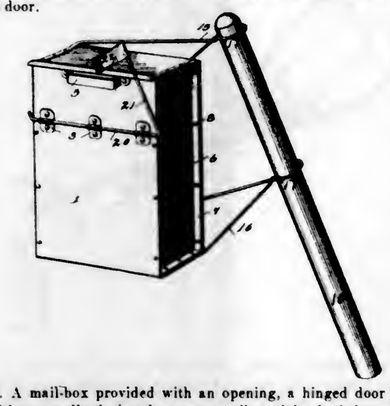
14. The combination in a draft and buffing gear, of a coupler and draw-bar; a front follower; a rear follower; a friction device between the followers; slotted links; keys; and slotted supports; the links in drawing being movable relative to or over one of the keys, which key in buffing is movable within slots of the supports.

15. The combination in a draft and buffing gear, of a coupler and draw-bar; a front follower; a rear follower; a friction device and a spring or springs arranged in line with and between the followers; slotted supports; three keys within the slotted supports; and two slotted links located between the friction device and the slotted supports and supported by the keys; the friction element and the spring or springs being brought into action simultaneously in both buffing and drawing.

16. The combination with a draft and buffing gear provided with slotted supports, and constructed substantially as set forth, of a front follower with a passage therethrough, a rear follower with a passage, slotted links, keys within the passages of the followers and slots of the links and supports, a coupler and draw-bar, and a friction device and spring in connection with the followers; both the front follower-block and the key which passes through the same being movable.

820,841. **MAIL-BOX.** OLE M. AARSETH, Bobo, Minn. Filed Aug. 5, 1904. Serial No. 219,619.

Claim.—1. A mail-box provided with an opening, a pivoted door for normally closing said opening, a mail-receiving member pivoted to and adapted for movement with the door, said member serving as a closure for the opening when the door is in open position, and means for locking the member against movement relative to the door.

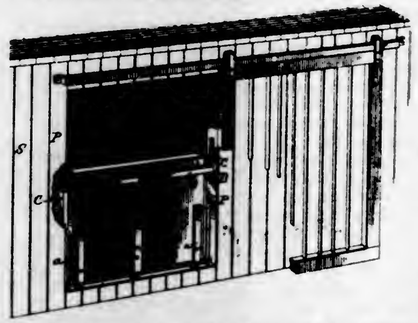


2. A mail-box provided with an opening, a hinged door designed for normally closing the same, a mail-receiving leaf pivoted to the door and adapted for movement with the latter to form a closure for the opening when the door is in open position, and means for locking the leaf against movement relative to the door, said leaf when released being adapted for movement to permit access to the box through the opening.

3. A box provided with an opening, a pivoted door for normally closing said opening, a mail-receiving leaf pivoted to the door constituting a closure for the opening when the door is in open position, said leaf being movable relative to the door to permit access to the box through the opening, a keeper provided on one of the parts to a locking member on the other part for engagement with the keeper to lock the door and leaf against relative movement.

4. A mail-box, an inclined supporting-post, upper and lower brackets attached to the box and having collars journaled on the support, said brackets being relatively of different lengths whereby the box will return automatically to a predetermined position, and means for fixing the collars against movement longitudinally of the support.

820,842. **SAFETY-BRIDGE LOCK.** HENRY ALSOP, Chicago, Ill. Filed Feb. 26, 1906. Serial No. 303,038.



Claim.—1. In combination with a safety-bridge for stock-cars pivotally hinged at its lower end within the doorway of the car, said doorway provided at its sides with pockets, of a bar pivoted between its ends to the outer face of the safety-bridge, the ends of said bar projecting beyond the side edges of the bridge and adapted to be swung into the aforesaid pockets in the doorway, and retain the bridge in its vertical position.

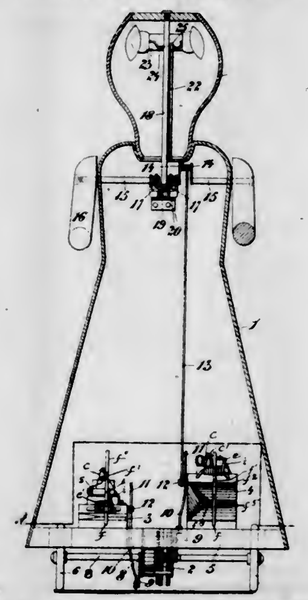
2. In combination with a safety-bridge for stock-cars pivotally hinged at its lower end within the doorway of the car, said doorway provided at its sides with pockets, of a bar pivoted between its ends to the outer face of the bridge, the ends of said bar projecting beyond the side edges of the bridge and adapted to be swung into the aforesaid pockets, and means applied to side posts of the doorway to be moved into the vertical path of the ends of the bar to prevent accidental displacement of the same.

3. In combination with a safety-bridge for stock-cars pivotally hinged at its lower end within the doorway of the car, said doorway having in its inner faces wedge-shaped pockets reversely arranged, of a bar pivotally secured between its ends to the outer face of the bridge, the outer ends of said bar projecting beyond the side edges of the bridge and adapted to be swung into said wedge-shaped pockets, to retain the safety-bridge in its vertical position.

4. In combination with a safety-bridge for stock-cars pivotally hinged at its lower end within the doorway of the car, said doorway having in its inner faces wedge-shaped pockets reversely arranged, of a bar pivotally secured between its ends to the outer face of the safety-bridge, the ends of said bar projecting beyond the side edges of said bridge and adapted to be swung into the wedge-shaped pockets, and means so secured to the side posts of the doorway as to be moved into the vertical path of the ends of the pivoted bar to prevent its accidental displacement.

5. In combination with a safety-bridge for stock-cars pivotally hinged at its lower end within the doorway of the car, said doorway having in its inner faces vertical pockets, of a bar pivotally secured between its ends to the outer face of said bridge, the ends of said bar projecting beyond the side edges of said bridge and adapted to be swung into said pockets, and a button pivotally secured at its upper end to one or both of the inner faces of the doorway and swinging over said pockets in the vertical path of the ends of the aforesaid bar.

820,843. **DOLL.** OSCAR ARNOLD, Neustadt, Germany. Filed May 3, 1904. Renewed Apr. 13, 1906. Serial No. 311,554.



Claim.—1. A doll comprising a body, and a head arranged for turning motion with respect to the body, a divided shaft in the body, provided with arms at its opposite ends, gears between the respective sections of the shaft for driving one by the power of the other, a motor operatively connected with one of the sections of the shaft, and a spindle carrying the head and connected with one of the gears.

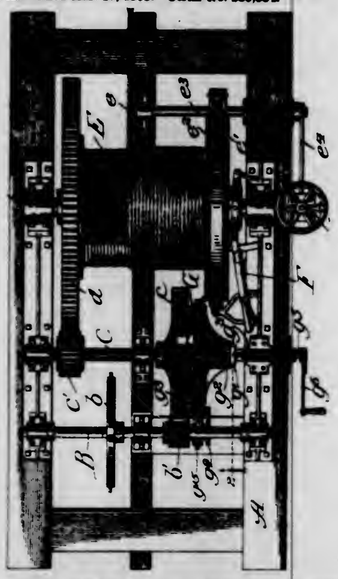
2. A doll comprising a body, and a head arranged for turning motion with respect to the body, a horizontally-disposed divided shaft in the body, provided with arms at its opposite ends, a train of bevel-gears between the sections of the shaft, for driving one by the power of the other, a motor operatively connected with one of the sections of the shaft, to positively drive the same, and a vertically-disposed spindle for carrying the head, said spindle being connected with the intermediate bevel-gear.

3. A doll comprising a body, and a head arranged for turning movement with respect to the body, a wheeled shaft connected with the body, the wheels of which are adapted to traverse the ground, a

motor carried by the doll for operating said shaft, oppositely-set cranks connected with the motor, rods extending from the shaft, bellows in the said body, to which said rods are connected, thereby to expand and contract the bellows in alternation, a valve, each of the bellows having a port controlled by said valve, mechanism coöperative with the respective bellows for opening and closing the valve in alternation, a divided shaft in the body, one section having a crank, a rod extending from said crank to one of the bellows, thereby to cause the reciprocation of said rod, a train of bevel-gears between the sections of said divided shaft, the intermediate bevel-gear being movable about a vertical axis, arms connected with the opposite ends of said divided shaft, and a spindle carrying said head and connected with the intermediate bevel-gear.

4. A doll comprising a body, and a head arranged for turning movement with respect to the body, said head having eyes, a connecting-piece between the eyes, having an arcuate portion, a divided shaft in the body, having arms at its opposite ends, gears between the sections of said divided shaft, for operating one by the power of the other, a motor operatively connected with one section of the shaft for positively driving the same, a link extending from the divided shaft and connected with said arcuate portion, and a spindle carrying said head and connected with one of said gears.

820,844. HOISTING APPARATUS. WALTER H. BALDWIN, Chicago, Ill. Filed Mar. 17, 1905. Serial No. 250,594.

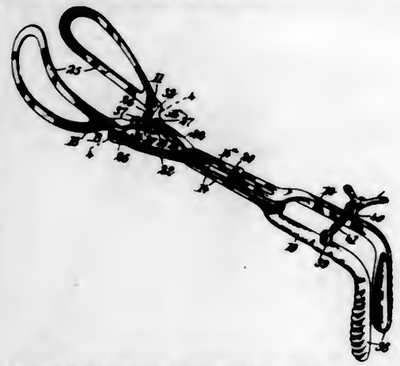


Claim.—1. The combination with a drum-shaft, a drum journaled thereon, a clutch for the drum, and a manually-controlled brake for said drum, of a shaft geared to the drum-shaft, and an automatic brake for said second-named shaft which permits rotation in the winding operation and automatically gripe to prevent reverse rotation, for the purpose set forth.

2. The combination with a hoisting-drum, of a driving-shaft geared to the shaft of the drum and equipped with a loose gear through which it may receive power, an adjacent shiftable brake-wheel keyed on the driving-shaft, a friction-clutch between the gear and brake wheel, means for shifting the brake-wheel, a brake-strap, a pivoted locking member with which the respective ends of the brake-strap are connected at different distances from the pivot of the locking member, and yielding means acting in a direction opposed to the force exerted by the brake-strap upon the long arm of the locking member and serving, when the direction of the brake-wheel is reversed, to effect locking of the brake-wheel, for the purpose set forth.

820,845. OBSTETRICAL FORCEPS. LYMAN G. BARTON, Williamsburg, N. Y., assignor of one-half to Albert A. Wheelock, Elizabethtown, N. Y. Filed Mar. 30, 1905. Serial No. 252,257.

Claim.—1. Obstetrical forceps, comprising associated members, each having a handle, and a blade pivoted to the handle, the handle and the blade of one member being pivotally connected to the handle and the blade of the other member.



2. Obstetrical forceps, comprising associated members, each having a handle, and a blade pivoted to the handle, the handle and the blade of one member being pivotally connected to the handle and the blade of the other member, and the handles being movable longitudinally with respect to each other.

3. Obstetrical forceps comprising associated members, each having a handle and a blade portion, said members being pivotally connected and also movable longitudinally of one another.

4. Obstetrical forceps comprising coöperating handles, blades pivoted upon the handles, and means for simultaneously swinging the blades with respect to the handle through their connections therewith.

5. Obstetrical forceps comprising coöperating handles, blades movable upon the handles, said blades being pivotally connected to one another.

6. Obstetrical forceps comprising a pair of associated members composed of a blade and a handle pivotally connected, the members being movable longitudinally of each other, and means for constraining the blade portions to move symmetrically.

7. Obstetrical forceps comprising a pair of associated members, one of which has a slot and the other a projection operating in the slot and furnishing a pivotal connection.

8. Obstetrical forceps comprising a pair of associated members, one of which has a slot and the other a projection operating in the slot, said projection being rotatable upon its member and provided with an elongated head.

9. Obstetrical forceps comprising a pair of handles pivoted to one another, and a blade pivoted upon each handle, on an axis perpendicular thereto.

10. Obstetrical forceps comprising a pair of handles pivoted to one another, a blade pivoted upon each handle and being extended inwardly beyond their pivots, and a connection between the blade extensions.

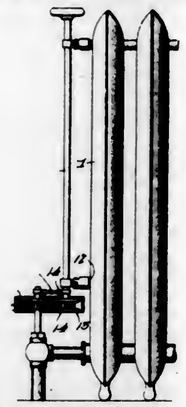
11. Obstetrical forceps comprising a pair of handles pivoted to one another, a blade pivoted upon each handle and being extended inwardly beyond their pivots, one of said blade extensions being provided with a recess and the other with a coöperating pin, and means for locking the pin within the recess.

12. Obstetrical forceps comprising a pair of handles pivoted to one another, a blade pivoted upon each handle and being extended inwardly beyond their pivots, one of said blade extensions being provided with a recess and the other with a coöperating pin, a projection upon one of the extensions, and a member movably mounted upon the other extension for engagement with the projection.

13. Obstetrical forceps, comprising independently-movable handles, blades pivoted to the handles on an axis perpendicular thereto, means whereby the handles may be moved longitudinally with respect to each other, and means whereby the blades may be constrained to move in definite relation with respect to each other.

820,846. VALVE-ACTUATING MECHANISM FOR RADIATORS. WILLIAM S. BATE, Elizabeth, N. J. Filed Apr. 11, 1905. Serial No. 254,978.

Claim.—1. A radiator, a valve therefor, a rod for operating the valve, and a member connected to the radiator and having means for guiding and allowing lateral adjustment of the rod whereby the latter may be placed in proper operative relation to the valve.



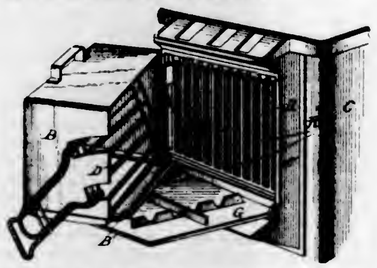
2. A radiator, a valve therefor, a screw-threaded lug on said radiator, a rod for operating the valve, a link for guiding and allowing lateral adjustment of the rod, said link having a collar at one end adapted to fit around said rod, a screw-threaded socket-piece adapted to engage said lug, and means to secure the other end of the link to said socket-piece.

3. A radiator, a valve therefor, a screw-threaded lug on said radiator, a rod for operating the valve, a link for guiding and allowing lateral adjustment of the rod, said link having a collar at one end adapted to fit around said rod, a screw-threaded socket-piece adapted to engage said lug, and provided with ears, and means for securing the other end of the link between the ears.

4. A radiator, a valve therefor, a bar connecting the sections of the radiator together and having a projecting screw-threaded end, a rod for operating the valve, a link for guiding and allowing lateral adjustment of the rod, said link having a collar at one end adapted to fit around said rod, a screw-threaded socket-piece adapted to engage the screw-threaded end of said bar, and means to secure the other end of the link to said socket.

5. A radiator, a valve therefor, a rod for operating the valve, a member connected to the radiator and having means for guiding and allowing lateral adjustment of the rod whereby the latter may be placed in proper operative relation to the valve, and adjustable means for holding the valve and operating-rod together under strain.

820,847. COOKING-STOVE. ERNEST C. COLE, Chicago, Ill., assignor to Cole Manufacturing Company, Chicago, Ill., a Corporation of Iowa. Filed May 11, 1905. Serial No. 260,013.

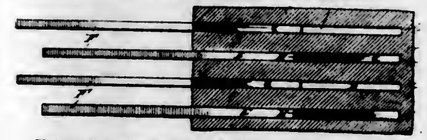


Claim.—1. The improvement herein described, comprising the upright grate-front having the spaces between its bars contracted at the upper portion of the grate, the broiler-box having means for supporting the broiler, and provided at the lower edge of its open side with a projecting lip or flange extending toward the grate-front, and a support for the broiler, substantially as set forth.

2. The combination with a grate-front having the spaces between its bars contracted or narrowed at the upper portion thereof, and a broiler including the gridiron and the box in which it is supported in front of the grate, substantially as set forth.

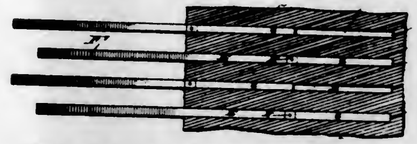
3. The combination of a grate-front having the spaces between its upright bars contracted or narrowed at the upper portion thereof, and the broiler-box fitted at its open front for application to the said grate-front, and a gridiron, substantially as set forth.

820,848. DEVICE FOR SPLITTING STONE. JAMES F. COPPS, Alberene, Va. Filed Jan. 11, 1906. Serial No. 295,558.



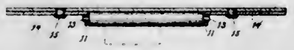
Claim.—A wedge for use in splitting stone comprising the tapered feathers, and the tapered plug having coincident openings near their smaller ends and means passing through said openings and forming a breakable connection for the wedge-sections, substantially as set forth.

820,849. METHOD OF SPLITTING STONE. JAMES F. COPPS, Alberene, Va. Original application filed Jan. 11, 1906, Serial No. 295,558. Divided and this application filed Mar. 17, 1906. Serial No. 306,564.



Claim.—The herein-described method of splitting stone, which consists in forming a series of holes having generally the same direction longitudinally and arranged in approximately a common plane, the holes extending nearly through the body of stone to be split, and subsequently exerting a splitting force in the direction in which it is desired to separate the stone, such splitting force being exerted in the extreme inner or closed ends of some of the holes and in the extreme outer or open ends of some adjacent holes whereby to secure a splitting of the body of stone in approximately a straight plane.

820,850. WAGON. WILLIAM T. DAUM, Chicago, Ill. Filed Dec. 12, 1904. Serial No. 236,567.



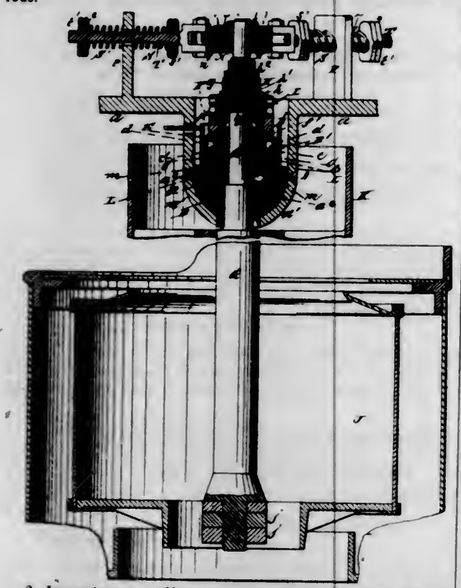
Claim.—1. In a vehicle, a front axle, a hounds sway-bar secured to the axle, a reach extending rearwardly from the front axle and passing the sway-bar, a flat bearing-plate on the reach having transverse ribs thereon, a plurality of rollers throughout their length bearing and rotating on the plate between the ribs and on which rollers the sway-bar bears and travels, and pintles on the ends of the rollers loosely fitting holes therefor in the ribs whereby the rollers are held against displacement.

2. A sway-bar roller-bearing, comprising a flat roller-bearing plate, shorter rib-plates each provided with a flange across one end forming a rib, said plates secured one at each end to the roller-bearing plate providing two ribs on and transversely of the roller-bearing plate at a distance apart said ribs having pintle-receiving apertures, one or more rollers disposed longitudinally of and bearing throughout their lengths on the plate between the ribs, and pintles on the rollers which pintles enter loosely the apertures in the ribs but have no bearing therein toward the roller-bearing plate.

820,851. MEANS FOR HANGING AND CENTRALIZING OVER-DRIVEN CENTRIFUGAL MACHINES. GEORGE DINKEL, Jersey City, N. J. Filed Aug. 18, 1905. Serial No. 274,666.

Claim.—1. In overhung centrifugal apparatus, the combination of a single spindle suspended upon a universal joint and rotatable upon a bearing supported upon and supplemental to said universal joint the suspension of said spindle being directly on said bearing, said bearing of rotation, said universal joint, and a lateral bearing interposed between said spindle, on one side and said universal joint upon the other, one portion of which is mounted rigidly though indi-

rectly upon the spindle and a resilient centralizing device acting on said spindle above said joint and bearing for the purpose described, said centralizing device comprising independently-movable tension-rods.



2. In overhung centrifugal apparatus, the combination of a single spindle suspended upon a universal joint and rotatable upon a bearing supported upon and supplemental to said universal joint above the hemispherical center thereof, and a resilient centralizing device acting on said spindle above said joint and bearing the suspension of said spindle being directly on said bearing, said bearing of rotation, said universal joint, and a lateral bearing interposed between said spindle, on one side and said universal joint upon the other one portion of which is mounted rigidly though indirectly upon the spindle for the purpose described said centralizing device comprising independently-movable tension-rods.

3. In overhung centrifugal apparatus, the combination of a single spindle suspended upon a universal joint and rotatable upon a bearing supported upon and supplemental to said universal joint the suspension of said spindle being directly on said bearing, said bearing of rotation, said universal joint, and a laterally-disposed antifriction-bearing interposed between said spindle on one side and said universal joint on the other for the purpose described.

4. In overhung centrifugal apparatus, the combination of a single spindle suspended upon a universal joint and rotatable upon a bearing supported upon and supplemental to said universal joint above the hemispherical center thereof, the suspension of said spindle being directly on said bearing, said bearing of rotation, said universal joint, and a laterally-disposed antifriction-bearing interposed between said spindle on one side and said universal joint on the other above and in proximity to said joint for the purpose described.

5. In overhung centrifugal apparatus, the combination of a single spindle suspended upon a universal joint and rotatable upon a bearing supported upon and supplemental to said universal joint, the suspension of said spindle being directly on said bearing, said bearing of rotation, said universal joint, horizontally-disposed means for restricting the oscillation of the universal joint, and a resilient centralizing device acting on said spindle above said joint and bearing and a lateral bearing interposed between said spindle on one side and said universal joint upon the other one portion of which is mounted rigidly though indirectly upon the spindle for the purpose described.

6. In overhung centrifugal apparatus, the combination of a single spindle suspended upon a universal joint and rotatable upon a bearing supported upon and supplemental to said universal joint, above the hemispherical center thereof, the suspension of said spindle being directly on said bearing, said bearing of rotation said universal joint, horizontally-disposed means for restricting the oscillation of the universal joint, and a resilient centralizing device acting on said spindle above said joint and bearing and a lateral bearing interposed between said spindle on one side and said universal joint upon the other, one portion of which is mounted rigidly though indirectly upon the spindle for the purpose described.

7. In overhung centrifugal apparatus, the combination of a single spindle suspended upon a universal joint and rotatable upon a bearing supported upon and supplemental to said universal joint, the suspension of said spindle being directly on said bearing, said bearing of rotation, said universal joint, horizontally-disposed means for restricting the oscillation of the universal joint, and a laterally-disposed antifriction-bearing interposed between said spindle on one side and said universal joint on the other, for the purpose described.

8. In overhung centrifugal apparatus, the combination of a single spindle suspended upon a universal joint and rotatable upon a bearing supported upon and supplemental to said universal joint, above the hemispherical center thereof, the suspension of said spindle being directly on said bearing, said bearing of rotation, said universal joint, horizontally-disposed means for restricting the oscillation of the universal joint, and a laterally-disposed antifriction-bearing interposed between said spindle on one side and said universal joint on the other above and in proximity to said joint for the purpose described.

9. In overhung centrifugal apparatus, the combination of a single rotatable spindle suspended upon a universal joint said universal joint, and a resilient centralizing device connected directly with the spindle above said universal joint and comprising a bearing-collar encircling said spindle friction-reducing means between said collar and the spindle and a plurality of radially-arranged spring-tension bars, for the purpose described.

10. In overhung centrifugal apparatus, the combination of a single spindle suspended upon a universal joint and rotatable upon a bearing supported upon and supplemental to said universal joint, the suspension of the spindle being directly upon the said bearing, said bearing of rotation, said universal joint and a resilient centralizing device connected directly with the spindle above said bearing of suspension and said universal joint and comprising a bearing-collar encircling said spindle friction-reducing means between said collar and the spindle and a plurality of radially-arranged spring-tension bars for the purpose described.

11. In overhung centrifugal apparatus, the combination of a single spindle suspended upon a universal joint and rotatable upon a bearing supported upon and supplemental to said universal joint, the suspension of the spindle being directly upon the said bearing, and a resilient centralizing device connected directly with the spindle above said bearing of suspension and said universal joint and consisting of a bearing-collar encircling said spindle friction-reducing means between said collar and the spindle and a plurality of radially-arranged spring-tension bars, together with means for adjusting the tension of the springs, for the purpose described.

12. In overhung centrifugal apparatus, the combination of a single spindle suspended upon a universal joint and rotatable upon a bearing supported upon and supplemental to said universal joint, the suspension of the spindle being directly upon the said bearing, said bearing of rotation, said universal joint, horizontally-disposed means for restricting the oscillation of said universal joint, and a resilient centralizing device connected directly with the spindle above said bearing of suspension and said universal joint and comprising a bearing-collar encircling said spindle friction-reducing means between said collar and the spindle and a plurality of radially-arranged spring-tension bars for the purpose described.

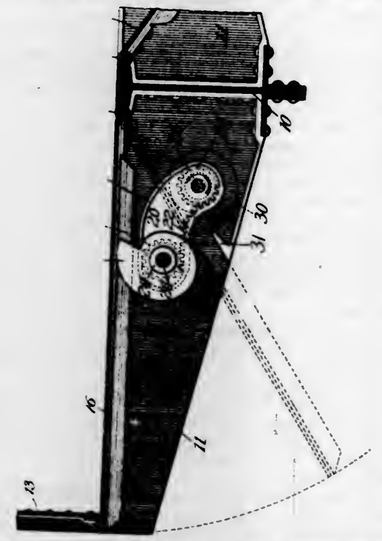
13. In overhung centralizing apparatus the combination of a single spindle suspended upon a universal joint and rotatable upon a bearing supported upon and supplemental to said universal joint, the suspension of the spindle being directly upon said bearing, said bearing of rotation, said universal joint, a resilient centralizing device connected with the spindle above said bearing of suspension and said universal joint, said centralizing device consisting of a bearing-collar encircling said spindle and a plurality of radially-arranged spring-tension arms, together with an antifriction-bearing interposed between said bearing-collar and said spindle for the purpose described.

14. In overhung centrifugal apparatus, the combination of a single spindle suspended upon a universal joint and rotatable upon a bearing supported upon and supplemental to said universal joint, the suspension of the spindle being directly upon said bearing, said bearing of rotation, said universal joint, a laterally-disposed antifriction-bearing interposed between said spindle on one side and said universal joint on the other, and a resilient centralizing device connected with the spindle above said bearing of suspension, universal joint and laterally-disposed antifriction-bearing, said centralizing device comprising a bearing-collar encircling the spindle and a plurality of radially-arranged spring-tension arms for the purpose described.

15. In overhung centrifugal apparatus, the combination of a single spindle suspended upon a universal joint and rotatable upon a bearing supported upon and supplemental to said universal joint, the suspension of the spindle being directly upon said bearing, said bearing of rotation, said universal joint, a resilient centralizing device connected with the spindle above said bearing of suspension and said universal joint, said centralizing device comprising a bearing-collar encircling said spindle and a plurality of radially-arranged spring-tension bars, each provided with two springs, one arranged to push the bar inward centrally and the other arranged to pull the bar outward radially for the purpose described.

16. In overhung centrifugal apparatus, the combination of a single spindle suspended upon a universal joint and rotatable upon a bearing supported upon and supplemental to said universal joint, the suspension of the spindle being directly upon said bearing, said bearing of rotation, said universal joint, a resilient centralizing device connected with the spindle above said bearing of suspension and said universal joint, said centralizing device consisting of a bearing-collar encircling said spindle and a plurality of radially-arranged spring-tension bars, each provided with two springs, one arranged to push the bar inward centrally and the other arranged to pull the bar outward radially, together with means for regulating the tension of the said springs for the purpose described.

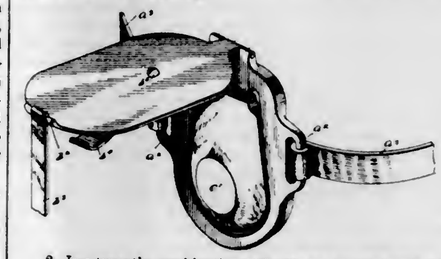
820,852. **CAR-DOOR-OPERATING MECHANISM.** ETHAN I. DODDS, Avalon, Pa., assignor to The Pullman Company, Chicago, Ill., a Corporation of Illinois. Filed May 29, 1905. Serial No. 262,823.



Claim.—In a car, in combination with an underframe having load-carrying car floor-doors pivotally mounted toward the center of the car and adapted to swing downwardly from the side of the car, to discharge the load at the side of the car; a shaft extending lengthwise of the car adapted to be bodily rolled crosswise of the car in inclined slots cut in the underframe of the car, said slots being lower toward the center of the car than at the side, racks upon the under sides of said slots, pinions on said shaft adapted to travel in said racks and spiral cams rigidly secured to said shaft adapted to bear upon the under sides of said doors as said shaft is rotated to open and close the doors.

820,853. **TRUSS.** HARVEY RAGON, New Comerstown, Ohio. Filed July 14, 1905. Serial No. 269,614.

Claim.—1. A truss, comprising a ring-shaped frame having a central opening, loops on either side of the frame, a belt connected to the loops, lugs on the upper edge of the frame, a plate hinged to the lugs and adapted to cover the front of the frame, a loop on the lower edge of the plate, a band connected to the loop, a spring on the rear face of the plate, a plate pivoted to the upper edge of the frame within the opening, and a pad hinged to the plate, and having a surface for coacting with the spring.



2. In a truss the combination with a frame provided with a central opening, of a plate pivoted within the opening, a pad hinged to the plate, a plate hinged to the front of the frame, and means on the plate for making pressure on the pad.

3. In a truss the combination with a frame having a central opening, of a plate pivoted within the opening, a pad hinged to the plate and elastic means for making pressure on the pad.

4. In a truss the combination with a frame having a central opening, of a pad within the opening and connected to the frame, means for varying the lateral inclination of the pad with respect to the frame, elastic means for making pressure upon the pad, and means for adjusting the last-named means to conform with the position of the pad.

5. In a truss the combination with a frame having a central opening, a pad arranged within the opening, means for adjusting the lateral inclination of the pad with respect to the opening and elastic means for making pressure on the pad.

6. In a truss, the combination with a frame having a central opening, a pad arranged within the opening, and means whereby the lateral inclination of the pad with respect to the frame may be adjusted.

7. In a truss, the combination with a frame having a central opening, of a plate pivoted within the opening, a pad hinged to the plate, elastic means for making pressure on the pad, and means for adjusting said last-named means to conform with the position of the pad.

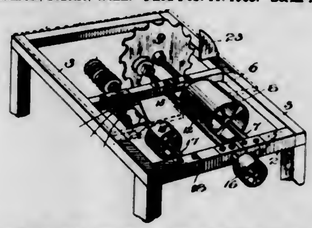
8. In a truss, the combination with a frame having a central opening, of a pad within the opening, a plate hinged to the front of the frame for supporting the pad, and means whereby the plate may be maintained in contact with the frame.

820,854. **BLASTING-POWDER.** BALTHASER EBERLE, Passaic, N. J. Filed Aug. 16, 1905. Serial No. 274,421.

Claim.—1. A blasting compound consisting of saltpeter, chlorate of potash, sugar, phosphorus, sulfur and manure.

2. A blasting compound consisting of four pounds saltpeter, one and one-half pounds chlorate of potash, one and one-half pounds of sugar, three ounces of phosphorus, three-fourths pound sulfur, and one-half pound manure.

820,855. **MACHINE FOR PRODUCING LATH-BOLTS.** HERMAN C. ERICKSON, Seattle, Wash. Filed Feb. 11, 1905. Serial No. 245,205.



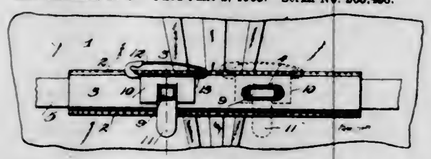
Claim.—1. In a mechanism of the class described, the combination with a frame, of a saw-carrying, a primary, and an auxiliary shaft journaled upon said frame, all of the shafts terminating short of one and the same end of said frame, a rotatable saw fixedly secured near the inner end of said saw-carrying shaft, abutting, toothed disks secured upon said auxiliary shaft in alinement with the

rotatable saw and spaced toothed disks upon said shaft at opposite sides of the abutting toothed disks, removable toothed disks positioned upon the inner end of said primary shaft, between the disks of said auxiliary shaft and the saw-carrying shaft, said disks carried by the primary shaft positioned within the limit of the cutting edge of said rotatable saw, a smooth disk interposed between said toothed disks carried by said primary shaft, and locking-nuts carried by said primary shaft and in engagement with one of said toothed disks for securing the same in a fixed position.

2. In a machine of the character described, the combination with a cutting element, of a shaft at one side thereof and extending into close proximity thereto, spaced toothed disks upon the shaft and adjacent to and within the limit of the cutting edge of said cutting element, means for detachably securing the disks to the shaft, and a feeding element in front of the cutting element and comprising a shaft, a series of abutting toothed disks upon the shaft and alining with the cutting element and spaced toothed disks upon the shaft at opposite sides of said abutting disks.

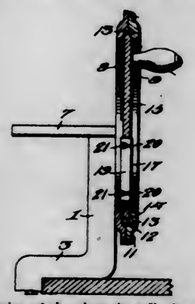
3. In a mechanism of the class described, the combination with a frame, of a saw-carrying shaft journaled thereon, the inner end of said saw-carrying shaft terminating short of one of the sides of the frame, a revoluble saw fixedly secured near the inner end of said shaft, a primary shaft secured parallel to said saw-carrying shaft, removable toothed disks positioned upon the inner end of said primary shaft, a smooth disk interposed between said toothed disks, locking-nuts carried by said shaft for securing said smooth and the toothed disks in a fixed position, said disks positioned within the limit of the edges of said saw, an auxiliary shaft secured parallel to said primary and saw-carrying shafts, the inner end of said auxiliary shaft terminating short of one of the ends of said frame, a removable toothed disk positioned upon the inner end of said auxiliary shaft, and means for securing said disk in a fixed position.

820,856. **GARMENT-SUPPORTING DEVICE.** JOSEPHINE ETTINGER, Cortland, N. Y. Filed June 2, 1905. Serial No. 263,458.



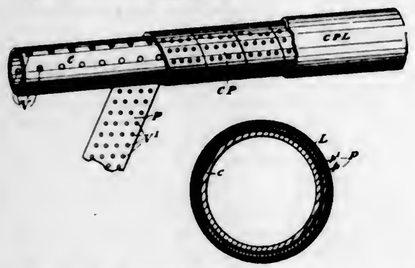
Claim.—The combination with a garment having a strip of material attached thereto to form a casing, the latter being provided with longitudinal openings, of a metal strip seated in the casing and having outstruck loops arranged to register with and project through said openings, said strip being also provided adjacent its ends with transverse openings and having oppositely-disposed tongues situated adjacent said openings, a belt threaded through the openings for connection with the strip and the tongues being folded into clamping engagement with the belt, and garment-supporting hooks adapted for engagement with a second garment and having tongues designed to enter and for engagement with said loops

820,857. **FRUIT AND VEGETABLE SLICER AND GRATER.** CHARLES H. FARRAR, Lilly Dale, N. Y. Filed May 19, 1905. Serial No. 261,279.



Claim.—A device of the class described comprising a supporting-bracket, a vertically-disposed frame formed of a pair of rings, one of said rings being fixed to the bracket and both rings provided with ears, fastenings passing through said ears and detachably connecting the other ring to said fixed ring, the rim portions of said rings being grooved to mutually form a V-shaped annular raceway and an entrance-slot communicating therewith, and a rotary head or disk provided with means for acting upon the substances to be treated, said disk having its edge arranged to rotate in said slot, and bearing-balls arranged in said raceway and between and in contact with the meeting faces of the rims and the periphery of the disk.

820,858. **CORE.** MORDECAI H. FLETCHER, Cincinnati, Ohio. Filed Apr. 10, 1905. Serial No. 254,740.



Claim.—1. An improved core for casting hollow objects of metal, consisting of a metal core-barrel having applied thereto a concentric combustible compound layer, whose outer section is waterproof, in sheet form wound on in a spiral strip and secured in position at each end of the core-barrel, and upon this a concentric layer of loam to form the casting-surface.

2. An improved core for casting hollow pipes and the like consisting of the metal core-barrel wrapped in a spiral direction with a strip of combustible material applied directly to said core-barrel, said strip having flat sides and a substantially uniform diameter from edge to edge, and a non-combustible outer layer.

3. An improved core for casting pipes consisting of the metal core-barrel wrapped in a spiral direction with a relatively wide and thin strip of combustible material whose inner surface is applied direct to the surface of the core and whose outer surface is rendered impervious to moisture, and a non-combustible outer layer.

4. An improved core for casting pipes, consisting of a metal core-barrel wrapped in a spiral direction with a relatively wide and thin strip of combustible material, perforated for venting, whose inner surface is applied directly to the surface of the core and whose outer surface is rendered impervious to moisture, and a non-combustible outer layer.

5. A core for casting hollow pipes and the like consisting of the metal core-barrel wrapped with a combustible layer in sheet form applied directly to said core-barrel, and one or more non-combustible outer layers.

6. A core for casting metal pipes and the like, consisting of a properly-vented metal core-barrel wrapped with a combustible layer in sheet form applied directly to said core-barrel spirally, said combustible layer secured to said core-barrel, and one or more non-combustible outer layers.

7. A core for casting hollow pipes and the like consisting of the metal core-barrel wrapped with a suitably-perforated combustible layer in sheet form, applied directly to said core-barrel, and one or more non-combustible outer layers.

820,859. **PROCESS FOR THE MANUFACTURE OF ARTIFICIAL EMERY.** ADRIEN GACON, Montval, near Marly-le-Roy, France. Filed Nov. 22, 1904. Serial No. 233,920.

Claim.—1. The process of manufacturing artificial emery consisting in mixing bauxite, coke and nitrate of soda, and igniting the said mixture, the nitrate of soda intervening actively so as to hasten the fusion and reduce the amount of combustible required to a minimum.

2. The process of manufacturing artificial emery consisting in mixing bauxite with a combustible, nitrate of soda, and a suitable quantity of sawdust, and forming a homogeneous pasty mass, molding the mass into loaves or cakes for the purpose of stoving in a suitable furnace and igniting the same.

3. The process of manufacturing artificial emery consisting in mixing bauxite, coke, nitrate of soda and sawdust with water, forming said mixture into blocks, stoving them, and finally crushing the product so obtained.

4. The process of manufacturing artificial emery consisting in mixing bauxite with a combustible and a flux, and adding sawdust and water to form a pasty mass, molding the mass into loaves, igniting the loaves in a furnace, and then crushing the product so obtained.

820,860. **COMBINED MATCH AND CIGARETTE BOX.** LOUIS DE GOLL, Baltimore, Md. Filed May 22, 1905. Serial No. 261,641.



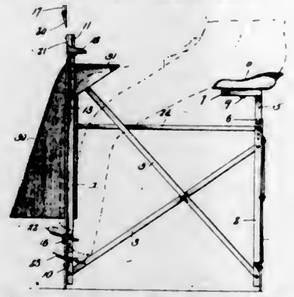
Claim.—1. A box provided with a partition dividing it into two chambers, one for the reception of matches, and the other for the reception of cigarettes, a cover pivoted near one end to said box, said cover being provided over the match-holding chamber with a delivery-hole and an inclined trough leading to said hole, and resilient means for holding the cover closed, substantially as described.

2. A box provided with a partition dividing it into two chambers, one for the reception of matches, and the other for the reception of cigarettes, said box being cut away near one corner thereof so that a cigarette may be easily reached, a cover pivoted near one end thereof to the top of said box, and a resilient band secured to said cover and passing around said box, substantially as described.

3. A crescent-shaped box provided with a partition dividing it into two chambers, one for matches, and the other for cigarettes, said box being cut away near one of its upper corners, a cover pivoted near one end to the top of said box, and an elastic band secured to said box and said cover and passing around them, said cover being provided with a delivery-hole for matches, substantially as described.

4. In a combined match and cigarette box, the combination of a crescent-shaped box-body cut away near one of the upper corners thereof, a cover adapted to fit in the open top of said box, said cover being pivoted to said box near one end thereof, and a rubber band passing around said box and said cover, and secured to both of them, substantially as described.

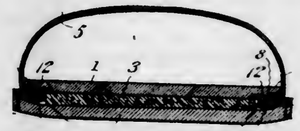
820,861. **BEET-TOPPING MACHINE.** HERBERT V. GOULD, Eastport, Mich. Filed Apr. 7, 1905. Serial No. 254,382.



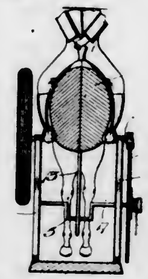
Claim.—A device for topping beets including a frame, a seat supported adjustably upon said frame, a cutting device comprising a knife connected pivotally with the frame and treadle means for operating said knife, and a shield disposed beneath the cutting apparatus; said shield including an inclined deflector and a table portion disposed horizontally at the upper end of the deflector and constituting a knee-guard for an operator occupying the seat of the machine.

820,862. **SHOE.** FRANK GUSTAVESON, Wabasha, Minn. Filed June 6, 1905. Serial No. 263,987.

Claim.—In a shoe, an insole having an angularly-outturned marginal tongue producing a substantially L-shaped recess and a marginal kerf formed on the sole at an inner point remote from the recess, a welt-strip bent transversely to conform to and applied within the recess and united to the sole by a row of stitches passed through the welt-strip and adjacent portion of the upper, said stitches being engaged at their inner ends in the kerf and at their outer ends in the angle of the strip, a second welt-strip bent to conform to and applied within the recess and secured in place by a row of stitches passed through the tongue and first-named strip and engaged at their outer ends in the angle of the second strip, said strips conjointly forming a double welt, and an outsole united to the double welt by a row of stitches passed through both of the welt-strips.



820,863. **TOY.** SETH M. HALL, Lockport, N. Y. Filed May 17, 1905. Serial No. 260,829.



Claim.—In a toy, a frame, a drive-shaft journaled therein, a figure pivoted for oscillation on the drive-shaft, an arm attached to and projecting from the figure and having a longitudinal slot, a crank-shaft journaled in the frame and having its crank portion arranged in the slot, a pinion-and-gear connection between the crank and drive shafts, a weighted fly-wheel fixed upon the latter, and a winding-drum fixed on the crank-shaft and adapted to receive a flexible element for operating the device.

820,864. **CHAIR.** JAMES E. HANGER, Washington, D. C. Filed Apr. 1, 1905. Serial No. 253,335.



Claim.—1. In a chair, the combination of a supporting-frame, a back directly pivoted on said frame, a seat directly pivoted on said back, a wire frame located in proximity to said back and seat and consisting of two parts, each part consisting of a number of parallel wires, one part being shaped to conform to the shape of the back, and the other part being shaped to conform to the shape of the seat, and a canvas cover for said wire frame, the ends of which cover are supported by the back and seat respectively, said wires being secured to said canvas, substantially as described.

2. In a chair, the combination of a supporting-frame, a back pivoted thereon and provided with a head-rest, a seat pivotally connected to said back, a wire frame located in proximity to said back and seat and composed of two parts pivotally connected together and shaped to substantially correspond with the back and the seat re-

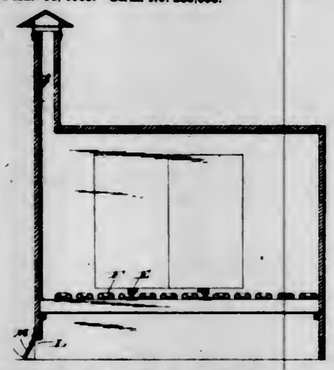
spectively, said frame being composed of a number of parallel wires, and a canvas cover composed of two parts fastened to said wire frame, the upper end of the canvas being supported by the back, and the lower end by the seat, substantially as described.

3. In a chair, the combination with a supporting-frame, the front cross-piece of which is provided with undercut grooves, a seat carrying ratchet-faced projections, which projections engage with said grooves, a back directly pivoted to said seat, and means for normally locking said seat, and thereby said back, in any desired position, consisting of a sliding bar provided with portions adapted to engage said ratchet-teeth, a lever operated by the user, and a spring for returning said lever to its initial position, substantially as described.

4. In a chair, the combination of a frame including uprights, cross-pieces, the front cross-piece being provided with undercut grooves, a seat slidably supported on said cross-pieces and provided with ratchet-faced projecting portions shaped to engage said grooves, a chair-back pivotally connected to said seat, a sliding bar provided with a slot and pointed end adapted to engage said ratchet-teeth, a lever for operating said bar and a spring for normally holding said bar in engagement with said ratchet-teeth, substantially as described.

5. In a chair, the combination of a frame consisting of uprights, side pieces, cross-pieces and arms, the front cross-pieces being provided with undercut grooves, a seat slidably supported on said frame and provided with downwardly-extending ratchet-faced projections shaped to engage with said grooves, a back pivotally connected to said seat and provided with a head-rest, a wire frame composed of two parts joined together and conforming in shape to the back and to the seat respectively, and a canvas cover for said wire frame, said cover being secured to said frame and the ends of said cover being secured to the back and the seat respectively, substantially as described.

820,865. **DRYING-KILN.** JOSEPH F. HANRAHAN, Buffalo, N. Y. Filed Mar. 31, 1905. Serial No. 253,096.

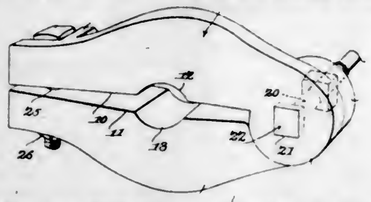


Claim.—1. In a drying-kiln, the combination of a chamber provided with an air-inlet exending substantially the entire length thereof near the bottom of the chamber and opening directly into the same, said chamber being likewise provided with an opening in the upper portion thereof extending substantially the length of the chamber; air-heating means located in the chamber at a point substantially above the bottom thereof; means for regulating the amount of air which may pass into said chamber through the lower opening; and means for regulating the outflow of the air through said upper opening.

2. In a drying-kiln, the combination of a chamber having an opening formed at the lower portion thereof, said opening extending substantially the entire length of the chamber and having a free and unobstructed inlet directly into the same, said chamber being likewise provided with an opening in the upper portion thereof extending substantially the length of the chamber; means for regulating the size of said lower opening; a series of cross-bars or supports mounted in the chamber; a series of heating-pipes supported by said cross-bars, the bars and pipes being elevated sufficiently to permit the air which enters the opening in the lower portion of the kiln to pass to the opposite side thereof before coming entirely under the influence of the heat radiated from the pipes; and means for regulating the escape of the heated, moisture-laden air through said upper opening.

3. In a drying-kiln, the combination of a chamber provided with an air-inlet extending substantially the entire length thereof near the bottom of the chamber and opening directly into the same, said chamber being likewise provided with an opening in the upper portion thereof extending substantially the length of the chamber; air-heating means located in the chamber at a point substantially above the bottom thereof; and means for regulating the amount of air which may pass into and through said chamber.

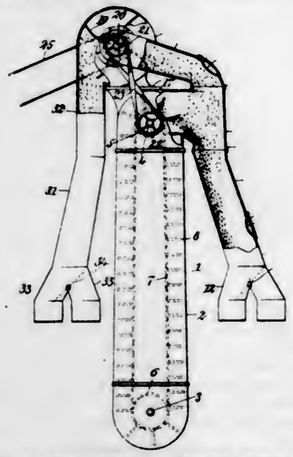
820,866. **COMBINED PIPE CLAMP AND WRENCH.** JOHN W. HARRIS, Pearsall, Tex. Filed Sept. 21, 1905. Serial No. 279,488.



Claim.—1. A tubing-clamp consisting of two body members having recesses in their contiguous edges for bearing upon the tube from opposite sides and with laterally-extending ribs at the edges whereby a relatively broad bearing-surface is provided at one side, said members having overlapping ears at one end, a pivot-pin extending through said ears and with a head upon one end and threads disposed intermediately of the pin, whereby an unthreaded portion of the pin extends beyond the ears at one side to form a bearing for a wrench-arm, and a clamp-bolt operating through the opposite ends of the body members.

2. A tubing-clamp consisting of two body members having recesses in their contiguous edges for bearing upon the tube from opposite sides and with overlapping ears at one end, a clamp-bolt operating through said body members at one end, and a pivot-pin disposed through said overlapping ears and with a head at one end and with threads intermediately of the pin and a clamp-nut engaging said threaded portion, whereby an unthreaded portion of the bolt is provided and extending beyond the clamp-nut.

820,867. **COMBINED SEPARATOR AND BAGGING DEVICE FOR GRAIN.** THOMAS C. HENNINGER, Markham, Tex. Filed May 20, 1905. Serial No. 261,346.

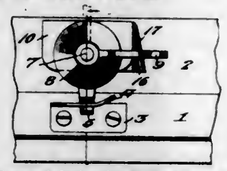


Claim.—1. As an attachment for threshing-machines, a combined grain-separator and loading device comprising an elevator for the grain, a downwardly-extending air-trunk into which the grain is discharged at the upper end of the elevator, the same being provided with a valve-controlled inlet for air and a discharge-outlet for the heavier particles of grain, a fan and a casing therefor, means of communication between the upper end of the air-trunk and fan-casing for the passage of the lighter particles of grain to and through the latter, and a trunk communicating with the fan-casing and pendent therefrom into which the lighter particles of grain are received from the fan-casing.

2. As an attachment for threshing-machines, a combined grain-separator and loading device comprising an elevator for the grain, a downwardly-extending air-trunk into which the grain is discharged at the upper end of the elevator, the same being provided with a valve-controlled inlet for air and a discharge-outlet for the heavier particles of grain, a fan and a casing therefor, means of communication between the upper end of the air-trunk and fan-casing for the passage of the lighter particles of grain to and through the latter, and a trunk communicating with the fan-casing and pendent therefrom into which the lighter particles of grain are received from the fan-casing, this trunk being provided at its lower end with a plurality of valve-controlled discharge-outlets from which the lighter particles of grain may be delivered to a suitable receptacle therefor.

3. As an attachment for threshing-machines, a combined grain-separator and loading device comprising an elevator for the grain, a housing for the elevator, a tubular member communicating with the upper end of the housing, a pendent air-trunk connected at its upper end to the lower open end of the said member and provided with a valve-controlled air-inlet thereto, a fan-casing mounted upon the upper end of the housing and containing a fan, a trunk forming communication between the upper end of the tubular member and fan-casing, said trunk being provided with an air-inlet having a controlling-valve, another trunk leading downwardly from the fan-casing and in communication therewith, and motion-transmitting devices between said fan and elevator whereby the two may be operated from the same source of power.

820,868. **SASH-LOCK.** WILLIAM HINCHLIFFE, Huntsville, Ala. Filed Dec. 16, 1905. Serial No. 292,026.



Claim.—1. In a sash-lock, a latch member comprising an attaching-plate, a supporting-plate hinged to the attaching-plate and carrying a fulcrum-pin, a locking-head pivoted upon the fulcrum-pin and provided with a stop-pin adapted to contact with the edge of the supporting-plate to limit the movement of the locking-head, the latter also being provided with a latch-hook and a shoulder spaced therefrom, and an operating-head pivoted upon the fulcrum-pin and provided with a lug movable between said shoulder and latch-hook to transfer movement in opposite directions to the locking-head.

2. In a sash-lock, an attaching-plate provided at one end with an obliquely-disposed flange having an inclined upper edge provided with a notch, a supporting-plate hinged to said attaching-plate, locking and operating heads coaxially pivoted upon the supporting-plate and provided with interengaging projections, whereby upon turning the operating-head in reverse direction corresponding movement may be imparted to the locking-head, and a finger-piece upon the locking-head adapted to ride upon the inclined edge of the flange and to seat within the notch thereof when the latch member is in locking position.

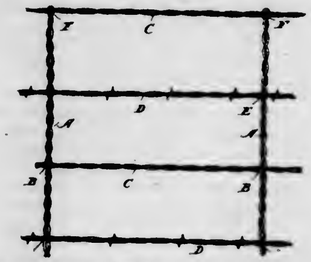
820,869. **PROCESS OF MAKING INDIGO COLORING-MATTER.** HENRY S. A. HOLT, Ludwigshafen-on-the-Rhine, Germany, assignor to Badische Anilin & Soda Fabrik, Ludwigshafen-on-the-Rhine, Germany, a Corporation. Filed Dec. 4, 1905. Serial No. 290,278.

Claim.—1. The process for the production of finely-divided indigo by oxidizing an alkali solution of a leuco indigo compound in the presence of a soap.

2. The process for the production of finely-divided indigo by oxidizing an alkali solution of a leuco indigo compound in the presence of soft soap.

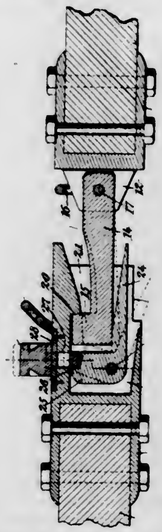
820,870. **FENCE-STAY.** ROBERT L. HORSLEY, Fort Worth, Tex., assignor to Worth Wire Works, Fort Worth, Tex., a Corporation of Texas. Filed Mar. 20, 1906. Serial No. 307,074.

Claim.—1. A stay for fences comprising a wire formed into a spiral and bent upon itself and the two parts twisted together and meshing with each other and having a clamp formed of the two parts at a distance from the bent portion of said wire.



2. The combination of the line-wires of a fence and a stay therefor, said stay consisting of a wire formed into a spiral and bent upon itself and the two parts meshed together and having a clamp formed of the two parts at a distance from the bent part thereof, said stay being screwed on the said line-wires and said clamp being sprung on the top line-wire of the fence.

820,871. **CAR-COUPLING.** JACOB HOUSEHOLDER, Big Chimney, and JOHN C. GALBREATH, Charleston, W. Va. Filed July 24, 1905. Serial No. 271,012.



Claim.—1. A car-coupling comprising a coupling-bar having a stud, a socket-piece having an interior shoulder for engaging the stud, positively-acting means for engaging the bar and lifting it into engagement with the shoulder, and means whereby the bar may actuate said lifting means.

2. A car-coupling comprising a coupling-bar having a stud, a socket-piece having an interior shoulder for engaging the stud, means for engaging the bar and lifting it into engagement with the shoulder, means whereby the bar may actuate said lifting means, and means for locking said lifting means.

3. A car-coupling comprising a coupling-bar, a socket-piece, means within the socket-piece for retaining the coupling-bar therein, means for guiding the bar into engagement with said retaining means, means whereby the bar may operate said guiding means, and means for locking the guiding means.

4. A car-coupling comprising a coupling-bar and a socket-piece, means on the bar for engaging the socket-piece, positively-acting means within the socket for lifting the bar into engagement with said means, and means whereby the bar may operate said lifting means.

5. In a car-coupling, the combination of a coupling-bar having a stud therein, a socket-piece having a shoulder adapted to be engaged by said stud, an essentially elbow-shaped latch mounted on

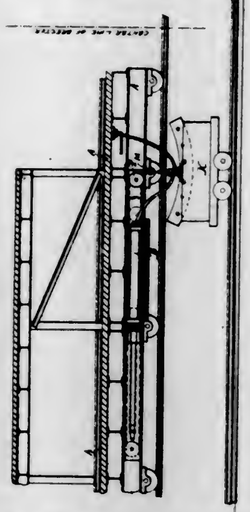
the socket-piece and coacting with the coupler-bar, and a bolt for removably holding the latch in active position.

6. A car-coupling comprising a coupling-bar, a socket-piece having an interior shoulder adapted to be engaged by a part of the coupling-bar, an essentially elbow-shaped latch mounted in the socket-piece and coacting with the coupling-bar, and a bolt for removably holding the latch in place.

7. In a coupling, the combination of a coupling-bar, a socket-piece adapted to receive the same, an essentially elbow-shaped latch mounted in the socket-piece, one arm engaging the coupling-bar to hold it in active position, and a bolt movable in the socket-piece and engaging the other arm of the latch removably to hold the same.

8. A car-coupling comprising sections having coacting coupling devices, and clevises attached respectively to the sections and adapted to permit the connection of a team with the car through the medium of the coupling-section.

820,872. **TRAVELING HOIST.** HENRY JAPP, New York, N. Y., assignor to S. Pearson and Son, Inc., Long Island City, N. Y., a Corporation of New York. Filed Sept. 21, 1905. Serial No. 279,553.



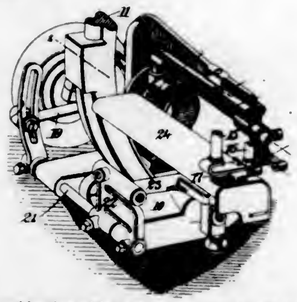
Claim.—1. The herein-described traveling hoist, comprising a traveling stage, horizontal ways under the stage, a carriage adapted to travel on said ways, and a fluid-pressure cylinder and piston rigidly mounted on the carriage, in combination with a cross-head on the piston, guides therefor in the sides of said carriage, a pair of chains or ropes secured to the ends of the cross-head, and pulleys on the carriage over which the ropes or chains may pass and hang pendent to receive the load.

2. The herein-described traveling hoist, comprising horizontal ways, a carriage thereon and a hydraulic fluid-pressure cylinder and piston mounted on the carriage, in combination with a cross-head on the piston guided in the carriage, a pair of chains or ropes attached to the cross-head and a pair of pulleys mounted on the carriage near the opposite end from that in which the cross-head is guided.

820,873. **SEWING-MACHINE.** WILLIAM JASPER, New York, N. Y., assignor of one-half to Andrew Wolf, New York, N. Y. Filed Oct. 19, 1904. Serial No. 229,131.

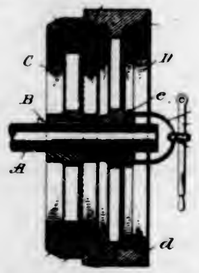
Claim.—1. The combination with a sewing-machine, of a cord-carrier, and means for moving the same back and forth from one side of the needle to the other in synchronism with the operation of the sewing-machine stitch-forming mechanism, said means for operating the cord-carrier comprising a slide connected to the carrier, a bracket mounting the slide, said bracket being attached to the frame of the sewing-machine, a cam sustained by the bracket and actuating the slide, and gearing for driving the cam from the shaft of the sewing-machine.

2. The combination with a sewing-machine, of a bracket attached thereto and overhanging the level of the stitch-plate of the sewing-machine, a slide mounted on said bracket, a cord-carrier attached to the slide and juxtaposed to the needle of the sewing-machine, and means for operating the slide, said means comprising a cam revolubly mounted on the bracket and engaged with a part of the slide, and gearing for driving the cam from a mobile part of the sewing-machine.



3. The combination with a sewing-machine having a lower arm or stitch-plate, of a bracket attached to the sewing-machine adjacent to the inner end of said lower arm or stitch-plate and extending upwardly and thence outwardly over the plane of the stitch-plate, a slide mounted on the bracket, a cord-carrier attached to the slide, for the purpose specified, a cam mounted on the bracket and actuating the slide, and means for driving the cam in unison with the sewing-machine.

820,874. **FRICTION-CLUTCH.** JOHN S. JELLISON, Boise, Idaho. Filed Apr. 29, 1905. Serial No. 258,136.



Claim.—1. The combination with suitable shafting, of a pair of clutch members respectively secured to and rotatably mounted on said shafting, one of said members being reversible and provided with a plurality of beveled friction-faces adapted to engage with a beveled friction-face on the other said member, and means rigidly attached to the rotatably-mounted member for operating one of said members relatively to the other.

2. The combination with suitable shafting, of a pair of reversible clutch members respectively secured to and rotatably mounted on said shafting and provided with a plurality of coöperating friction-faces, and means rigidly attached to the rotatably-mounted member for throwing said members in clutch.

3. The combination with suitable shafting, of a pair of reversible clutch members respectively secured to and rotatably mounted on said shafting and provided with a plurality of coöperating beveled friction-faces, and means rigidly attached to the rotatably-mounted member for throwing said members in clutch.

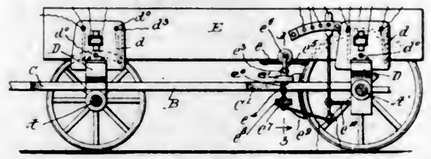
4. The combination with suitable shafting, of a clutch comprising an externally-beveled male member and an internally-beveled female member, one of said members being secured to and the other rotatably mounted on said shafting and one of said members being reversible and provided with a plurality of beveled faces adapted to engage the beveled face of the other member, and means rigidly attached to the rotatably-mounted member for throwing said members in clutch.

5. The combination with suitable shafting, of a clutch comprising a male and female member, one of said members being secured to and the other rotatably mounted on said shafting, and said male member being reversible and provided with a plurality of beveled friction-faces adapted to engage a beveled friction-face on said female member, and means rigidly attached to the rotatably-mounted member for throwing said members in clutch.

6. The combination with suitable shafting, of a pair of reversible clutch members respectively provided with a plurality of external and internal coöperating beveled friction-faces, one of said members being secured to the shaft and the other said member rotatably mounted thereon, and means rigidly attached to the rotatably-mounted member for throwing said members in clutch.

7. The combination with suitable shafting, of a reversible friction-pulley, keyed to said shafting, and provided with a plurality of beveled peripheral faces, a loose pulley on said shafting provided with an internally-beveled rim forming a friction-face adapted to be brought into engagement with the friction-faces of said other pulley, and means rigidly attached to the rotatably-mounted member for throwing said pulleys in clutch.

820,875. **WAGON-BRAKE.** TORIS N. JOHNSEN, Wilbur, Wash. Filed June 2, 1905. Serial No. 263,400.



Claim.—1. In a wagon-brake, the combination of the front and rear axles, the coupling-pole, bolsters supported on the axles, standards on the bolsters, rollers journaled in the standards longitudinally of the bolsters, rollers journaled in the individual standards longitudinally thereof, a wagon-bed supported by the rollers, brackets on the bed, a cross-bar secured to the coupling-pole, bolts traversing the ends of the cross-bar, and provided with upper and lower eyes, yokes engaging the upper eyes, rollers journaled in the arms of yokes and engaging the brackets, eyebolts engaging the lower eyes, a brake-beam secured to the eyebolts, brake-shoes on the ends of the brake-beam, bearings on the rear axle, a rock-shaft journaled in the bearings, brackets on the sides of the bed and provided with perforations, upwardly-extending arms on the ends of the rock-shaft for engaging the brackets, a central depending arm on the rock-shaft, and a rod connecting the depending arm with the brake-beam.

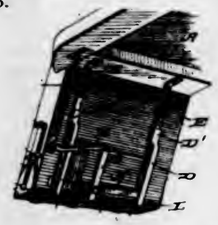
2. In a wagon-brake, the combination with the bed of a front and rear axle, the coupling-pole, bolsters supported on the axles, standards on the bolsters, rollers journaled in the standards longitudinally thereof, means connected with the standards for supporting the wagon-bed, a brake-beam depending from the bed, means for maintaining the brake-beam in fixed relation with respect to the coupling-pole, brake-shoes on the ends of the brake-beam, a rock-shaft journaled in the rear axles, brackets having a plurality of perforations secured to the bed, arms on the rock-shaft for engaging the brackets, whereby the longitudinal movement of the bed may rock the shaft, and a connection between the rock-shaft and the brake-beam whereby the rocking of the shaft may operate the brake.

3. In a wagon-brake, the combination of a front and a rear axle, bolsters having standards supported on the axles, a bed supported on the bolsters, means whereby the bed may move longitudinally upon the bolsters, a brake-beam depending from the bed, brake-shoes on the ends of the brake-beam, a rock-shaft journaled on the rear axle, brackets having a plurality of perforations secured to the bed, arms on the rock-shaft for engaging the bracket, and connections between the rock-shaft and the brake-beam whereby the rocking of the shaft may operate the brake.

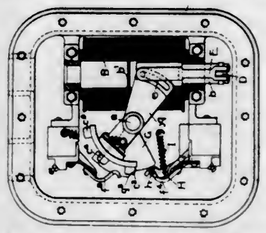
820,876. **EXTENSION CAR-STEP.** GUSTAV G. JOHNSON, Wishaw, Pa., assignor to I. N. Rodkey, Spangler, Pa. Filed Sept. 8, 1905. Serial No. 277,493.

Claim.—The combination with main steps, of a supplemental step, guide-bars fixed to the main steps, bars attached to the supplemental step and having box-loops, a central bar, an operating-handle, means connecting the handle and bar, said handle having ratchet projections adjacent its upper end, a slotted plate through which the upper end of the handle works, a spring adapted to hold said ratchet projections in engagement with the slotted plate, a slotted guide-plate carried by the side of the steps and having a stop formed at its upper end, and guide-loops on the step side for said plates.

820,876.



820,877. **CONTROLLER FOR ELECTRIC CIRCUITS.** SAM H. KANNACHER, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed June 22, 1904. Serial No. 213,589.



Claim.—1. In combination, a switch having a plurality of operative positions on one side of its off position, means controllable from a distance for moving said switch to an operative position, a stop for said moving means to arrest said switch at said position, a lost-motion connection between said moving means and said switch whereby the movement of the switch may be continued manually to another operative position, and means connected directly to said switch for holding the switch normally in off position.

2. In combination, a switch having a plurality of operative positions on one side of its off position, an electroresponsive device adapted and arranged to move said switch to an operative position, a lost-motion connection between said device and said switch whereby the movement of said switch may be continued manually to another operative position without moving said device, and means connected directly to said switch for holding the switch normally in off position.

3. In combination, a switch having a plurality of operative positions on one side of its off position, an electromagnet adapted and arranged to move said switch to an operative position, a stop for arresting the movement of said electromagnet when said switch reaches said operative position, a lost-motion connection between said switch and said electromagnet whereby the movement of said switch may be continued manually to another operative position, and means connected directly to said switch for holding the switch normally in off position.

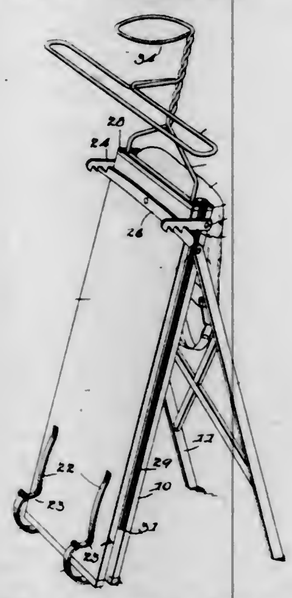
4. In combination, a switch having a plurality of operative positions on one side of its off position, means controllable from a distance for moving said switch to an operative position, a lost-motion connection between said switch and said moving means whereby the movement of said switch may be continued manually to another operative position without moving said moving means, and means connected directly to said switch for holding the switch normally in off position.

5. In combination, a switch, a stop engaging said switch when in off position, an electroresponsive device adapted and arranged to move said switch away from said stop to an operative position, a lost-motion connection between said device and said switch whereby the movement of said switch may be continued manually to another operative position without moving said device, and a spring connected directly to said switch and normally pressing the switch against said stop.

6. In combination, a switch, a stop engaging said switch when in off position, an electroresponsive device adapted and arranged to move said switch away from said stop to an operative position, means for arresting said device when the switch reaches said operative position, a lost-motion connection between said switch and said device whereby the movement of said switch may be continued manually to another operative position, and a spring connected directly to said switch and normally pressing the switch against said stop.

7. In combination with an electric motor, a reversing-switch for said motor having both operative positions on one side of its off position, means controllable from a distance for moving said switch to one of its operative positions, a lost-motion connection between said switch and said moving means whereby the movement of said switch may be continued manually to the other operative position, and means connected directly to said switch for holding the switch normally in off position.

820,878. **TROUSERS-PRESSER.** ROBERT P. KOONS, Lees Summit, Mo. Filed Jan. 3, 1906. Serial No. 294,197.



Claim.—1. In a trousers-presser, a back board having hooked springs at one end thereof, a front board proportioned for disposition within the springs, clamps carried by the springs and adapted to engage the adjacent end of the front board, and means for yieldably clamping the boards together at their opposite ends.

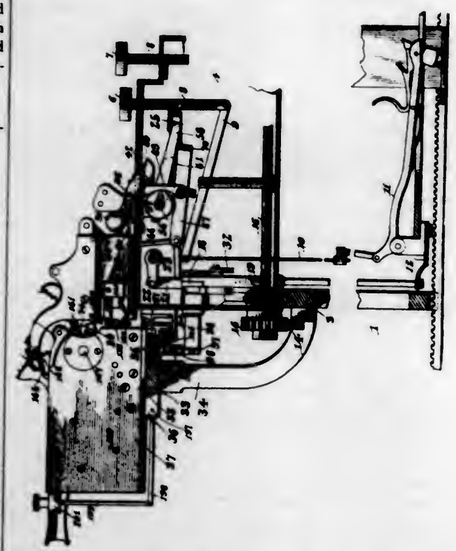
2. In a trousers-presser, a back board provided at one end with laterally-turned hooked springs, notched latch members pivoted to the opposite end of the back board, a front board proportioned for disposition within the hooked springs, clamping-levers pivoted to the springs and arranged to clamp the adjacent end of the front board, and a resilient bar pivoted to the front board and proportioned to engage the latches.

3. In a trousers-presser, a back board, hooked springs detachably secured to one end of and turned laterally of the back board, a front board proportioned to be disposed within the hooks of the springs, clamping-levers pivoted to the springs and arranged to exert a yielding pressure upon one end of the front board, and means for yieldably clamping the opposite ends of the boards.

4. In a trousers-presser, a back board, socket members secured to one end of the board, hooked springs adjustably disposed within the sockets and turned laterally upon one side of the front board when in operative position, and extending beyond the end of the board, when out of operative position, a front board proportioned for disposition within the springs, clamping-levers pivoted to the springs and arranged to exert a yieldable pressure upon one end of the board, and means for clamping the opposite ends of the boards.

820,879. **COMBINED CALCULATING AND TYPE-WRITING MACHINE.** CHARLES F. LAGANKE and JOHN A. SMITH, Cleveland, Ohio, assignors to Elliott-Fisher Company, New York, N. Y., a Corporation of Delaware. Filed Sept. 17, 1903. Serial No. 173,614.

Claim.—1. The combination with a computing device; of a carriage, keys for operating the computing device, a detachable cover-plate for the carriage, and operating connections assembled on said plate and arranged to transmit movement from the keys to the computing device.



2. The combination with a computing device; of a traveling carriage, a detachable cover-plate therefor, operating-keys for the computing device, and operating connections including an actuator mounted above the plate and differential mechanism suspended from the plate and having operative relation with the keys.

3. The combination with a computing device including digit-carriers and operating-keys for effecting the differential movement of said carriers; of operating connections between the keys and the computing device, said connections including an actuator movable to engage successive digit-carriers, a rock-shaft operatively related thereto, and a series of arms extending from the rock-shaft and operatively related to the keys.

4. The combination with a computing device including denominational members, and operating-keys for effecting the differential movement of said members; of operating connections between the keys and the computing device, said connections including an actuator movable to engage the denominational members in succession, a rock-shaft operatively related thereto, a series of arms extending from the rock-shaft, and a projection associated with each of the keys to engage one of the arms and thereby rock the shaft when a key is depressed.

5. The combination with a computing device, including digit-carriers; of operating-keys for imparting differential movement to the carriers, and operating connections between the keys and carriers, said connections including a laterally-shiftable actuator, a shaft geared thereto and shiftable therewith, and arms extending from the shaft in graduated arrangement and disposed for actuation by the keys.

6. The combination with a computing device and operating-keys having key-stems provided with projections; of operating connections including a laterally-shiftable actuator arranged to actuate the computing device, a rock-shaft geared to the actuator and shiftable therewith and differential mechanism carried by the rock-shaft and arranged to be engaged by the projections on the key-stems.

7. The combination with a computing device and operating-keys therefor; of operating connections between the keys and the computing device, said connections including an actuator, a rock-shaft geared thereto, a series of fixed arms extending from the rock-shaft, a corresponding series of loose arms extending from the shaft and arranged to engage the fixed arms, said loose arms being operatively related to the keys.

8. The combination with a computing device and operating-keys therefor; of operating connections between the keys and the computing device, said connections including an actuator, a rock-shaft geared thereto, a series of fixed arms extending from the rock-shaft, a corresponding series of loose arms extending from the shaft and arranged to engage the fixed arms, and projections associated with the keys and disposed to engage the loose arms.

9. The combination with a computing device; of operating-keys therefor, operating connections between the keys and said device, said connections including a laterally-shiftable actuator, an actuating-lever geared thereto, a swinging arm for operating the lever, and means whereby the keys effect a differential movement of the arm.

10. The combination with a computing device, operating-keys, and projections associated with the latter; of operating connections between the keys and the computing device, said connections including an actuator, an actuating-lever geared thereto, a rock-shaft, an arm extending from the rock-shaft to actuate the lever, and a graduated series of arms extended from the rock-shaft to be engaged by the projections associated with the keys.

11. The combination with a computing device; of a traveling carriage having a removable cover-plate, operating-keys for the computing device, and operating connections between the keys and said device, said connections including an actuator, a rocking member suspended from the removable cover of the carriage and geared to the actuator, and means for imparting differential movement to said member from the keys.

12. The combination with a computing device; of a master-wheel therefor, operating-keys, a connection between the keys and master-wheel including a series of graduated swinging arms, a check-arm arranged to engage the master-wheel to prevent overrunning thereof, and means operated by the graduated arms for moving the check-arm to its engaging position to prevent overrunning of the master-wheel.

13. The combination with a computing device; of a master-wheel therefor, operating-keys, a connection between the keys and master-wheel including a series of graduated swinging arms, a check-arm arranged to engage the master-wheel to prevent overrunning thereof, a universal member disposed for engagement by each of the graduated arms, and an operative connection between the universal member and the check-arm.

14. The combination with a computing device; of operating-keys, a master-wheel, a connection between the master-wheel and the keys including a rock-shaft, a series of graduated arms extending therefrom, a yoke extending below the arms to be engaged thereby, and a swinging check-arm operated by the yoke to engage the master-wheel to prevent overrunning thereof.

15. The combination with a computing device including a series of denominational members; of a master-wheel arranged to engage said members, means for operating the master-wheel, a check-arm to prevent overrunning of the wheel, and means for operating the check-arm, the engaging portion of said arm and the teeth of the master-wheel being beveled to facilitate the movement of the arm to its engaging position.

16. The combination with a computing device, a key capable of making either a complete or incomplete stroke, and an intermediate operating connection, of means for locking the connection against retraction when the key rises from an incomplete stroke, and means, automatically brought into action after a complete key-stroke, to unlock the connection.

17. The combination with a computing device, a key capable of making either a complete or incomplete stroke, and an intermediate operating connection, of a member for locking said connection against retraction as the key rises from an incomplete stroke, and power mechanism separate from the key for moving the member to unlock the connection.

18. The combination with a computing device, a key, and an intermediate operating connection, said key being capable of making either a complete or incomplete stroke; of means preventing the retraction of said connection as the key rises from an incomplete stroke, and means, operative subsequent to the completion of a full key-stroke, for releasing said connections to permit the retraction thereof.

19. The combination with a computing device, a key and an intermediate operating connection, said key being capable of making either a complete or an incomplete stroke, of means for locking the connection against retraction when the key rises from an incomplete stroke, a power-operated member for unlocking said connection, and means for releasing said member as the key reaches the limit of a full stroke.

20. The combination with a computing device and operating mechanism, having relative lateral movement, of means for locking the operating mechanism against retraction until a complete operation thereof has been effected, and means operated by the relative lateral movement of the computing device and the operating mechanism to release the latter.

21. The combination with a computing device, a key, and an intermediate operating connection; of a traveling carriage, means for locking the connection against retraction, and means operated by the movement of the carriage for releasing said connection.

22. The combination with a computing device and keys; of an intermediate operating connection, key-operated means for locking the connection against premature retraction, and means for applying a power, other than that exerted upon the keys, for moving the locking means to release the connection after a complete key-stroke is assured.

23. The combination with a computing device, a key and an intermediate operating connection; of a traveling carriage, means operated by the key for locking the connection against premature retraction and means operated by the carriage to release the connection when the key has completed its stroke.

24. The combination with a computing device, a key, and an intermediate operating connection; of a traveling carriage, a locking member and a coöperating trip, one of said elements being movable with the carriage, said locking member serving to lock the operating connection against premature retraction and being arranged for release by engagement with the trip.

25. The combination with a computing device, a key, and an intermediate operating connection; of a traveling carriage, a locking member movable with the carriage and arranged to prevent the premature retraction of the operating connection, and a trip arranged to be engaged by the locking member upon the movement of the carriage to release the connection and permit its retraction when the key has completed its stroke.

26. The combination with a computing device, a key, and an intermediate operating connection; of means preventing the premature retraction of said connection, a traveling carriage, and means operated by the carriage for releasing the connection to permit the retraction thereof.

27. The combination with a computing device, a key and an intermediate operating connection; of means preventing the premature retraction of the connection, a traveling carriage the movement of which is controlled by the key, and means operated by the movement of the carriage to release the connection.

28. The combination with a computing device including a series of denominational members; of a key, and operating connections including an actuator, a laterally-movable carriage for moving the actuator to the several denominational members in succession, means for locking the operating connection against premature retraction, and means operative during the advance of the carriage to release the connection and thus permit the retraction thereof during the travel of the actuator from one digit-carrier to another.

29. The combination with a computing device including a series of digit-carriers; of a traveling carriage, an escapement controlling the movement thereof, a key for operating the escapement to permit the feed of the carriage, operating connections between said key and the computing device, means preventing the premature retraction of said connections, and means operative during the feed of the carriage to release the operating connection and thus permit the retraction thereof.

30. The combination with a computing device including a series of digit-carriers; of a traveling carriage, operating mechanism for the computing device movable with the carriage, means for locking an element of said mechanism against premature retraction, and a plurality of trips brought into engagement with said means by the movement of the carriage.

31. The combination with a computing device including a series of denominational members; of a corresponding series of trips, operating mechanism arranged to operate the denominational members in succession, and a locking-arm preventing premature retraction of the operating mechanism and presentable to the trips in succession.

32. The combination with a computing device including a series of denominational members; of a corresponding series of trips, operating mechanism for the computing device movable laterally to engage successive denominational members, a locking-arm for preventing premature retraction of the operating mechanism, and presentable to the trips in succession to effect the release of the operating mechanism and permit the retraction thereof as said mechanism advances from one denominational member to another.

33. The combination with a computing device including a series of denominational members; of a master-wheel therefor, means for dogging the master-wheel against reverse rotation, operating mechanism for the master-wheel including a clutch member and

means for holding said clutch member in one position to prevent the retraction of the operating mechanism until a full stroke thereof has been completed.

34. The combination with a computing device including a series of denominational members, and a master-wheel therefor; of means for preventing the reverse rotation of the master-wheel, master-wheel-operating mechanism, a clutch member connecting said mechanism with the master-wheel, and a locking-arm arranged to prevent premature disengagement of the clutch member from the master-wheel, said arm being moved to its effective position by the master-wheel-operating mechanism.

35. The combination with a computing device including a series of denominational members; of a master-wheel therefor, operating mechanism for the master-wheel, a clutch connecting said mechanism with the wheel, a locking-arm preventing premature disengagement of the clutch, means for effecting relative lateral movement of the master-wheel and computing device, and a trip presentable to the locking-arm by such relative movement to effect the release of the clutch.

36. The combination with a computing device; of a master-wheel therefor dogged against reverse rotation, a pinion, a clutch member between the pinion and master-wheel, an operating-lever for rotating the pinion, and a locking-arm operated by the lever to hold the clutch in its engaging position.

37. The combination with a computing device; of a master-wheel therefor dogged against reverse rotation, a pinion, a clutch member between the pinion and master-wheel, an operating-lever for rotating the pinion, a locking-arm operated by the lever to hold the clutch in its engaging position, and a detent for retaining the locking-arm.

38. The combination with a computing device; of a master-wheel therefor, a pinion, a clutch between the pinion and the master-wheel, a locking-arm, means for moving the locking-arm into position to hold the clutch in engagement with the master-wheel, a trip-arm associated with the locking-arm, and a trip coöperating with the trip-arm to move the locking-arm out of the path of the clutch.

39. The combination with a computing device including a series of digit-carriers; of a corresponding series of fixed trips associated with the computing device and having the form of pointed teeth, a laterally-movable carriage, operating mechanism for the master-wheel, a clutch connecting the mechanism and wheel, a locking-lever provided at one end with a locking-arm arranged to engage the clutch, and a trip-arm disposed to engage the trips to move the locking-arm away from the clutch, said locking-lever having a tail-piece operatively related to the master-wheel-operating mechanism.

40. The combination with a computing device, of operating mechanism therefor including a shaft, a series of arms carried by the shaft and having graduated arrangement, keys for operating the arms to transmit motion to the computing device through the medium of the shaft, mechanism controlling the coöperative relation between the keys and arms, and a key for operating said mechanism to destroy such coöperative relation.

41. The combination with a computing device and operating connections therefor; of keys arranged to operate the computing device through said connections, a cam-lever for moving certain elements of said connections to inoperative positions, and a retaining device for holding the cam-lever at either limit of its movement.

42. The combination with a computing device; of a traveling carriage, a key, an operating connection between the key and the computing device, and means movable with the carriage for moving said operative connection to an inoperative position.

43. The combination with a computing device; of a type-writing machine including a traveling carriage, printing mechanism and operating-keys, a motion-transmitting connection between the keys and the computing device, and a lever extended through the top of the carriage and arranged to disconnect said connection from the keys.

44. The combination with a computing device; of a laterally-movable carriage including a casing, a key, operating connections between the key and the computing device, including a rock-shaft suspended from the cover of the carriage-casing and operatively related to the keys, a cam-lever extended through the cover of the carriage-casing and arranged to rock the shaft to break the operative connection between the keys and the computing device, and a spring for holding said cam-lever at either limit of its movement.

45. The combination with a platen and printing mechanism movable opposite the platen; of means controlling such movement to permit the printing of digits in different denominational positions, decimal-spacing means for effecting the exaggeration of such movement to accommodate the decimal-space, and a computing device operative to effect a computation including the printed digits.

46. The combination with a platen and printing mechanism relatively movable; of means controlling such relative movement to permit the printing of digits in different denominational positions, decimal-spacing means for exaggerating such movement to accommodate the decimal-space, said decimal-spacing means being adjustable to accommodate the varying location of the decimal-point and computing mechanism operatively related to the printing mechanism.

47. The combination with a platen and printing mechanism; of means for effecting the uniform step-by-step advance of one of said elements, a computing device and decimal-spacing means adjustable relative to the platen, to effect the spacing of the movable element over the decimal-point of any column on the work-sheet.

48. The combination with a platen, and printing mechanism movable thereover; of means for feeding the printing mechanism in the direction of letter-spacing, decimal-spacing means for automatically exaggerating the movement of the printing mechanism to accommodate the decimal-space, a computing device including a series of digit-carriers, and actuating mechanism therefor, movable with the printing mechanism.

49. The combination with a platen and printing mechanism mounted to travel thereover; of an escapement controlling the letter-space movement of the printing mechanism, decimal-spacing mechanism for automatically operating the escapement to effect an exaggerated feed of the printing mechanism to accommodate the decimal-space, a computing device, and a laterally-movable actuator, the position of which, relative to the computing device, is controlled by the escapement.

50. The combination with a platen and movable printing mechanism; of an escapement controlling the letter-space movements of the latter, means for operating the escapement to effect an exaggerated feed of the printing mechanism, said means being brought into operation by the movement of said printing mechanism, a computing device, and an actuator therefor, arranged for advance with the printing mechanism.

51. The combination with a platen and movable printing mechanism; of an escapement controlling the letter-space movements of the latter, decimal-spacing means for effecting the exaggerated movement of the printing mechanism, said decimal-spacing means including coöperating elements one of which is mounted independently of the printing mechanism and a computing device mounted independently of the printing mechanism and operated thereby.

52. The combination with a platen and a type-writing machine mounted to travel thereover; of an escapement controlling the letter-space movements of the machine, decimal-spacing means including a trip mounted independently of the machine, means operated by the trip to space the machine over the decimal-point, a computing device, and an actuator therefor movable with the machine in the direction of letter-spacing.

53. The combination with a platen and a type-writing machine mounted to travel thereover; of an escapement controlling the letter-space movements of the machine, a trip adjustable transversely of the platen to position it with reference to any desired column on a work-sheet, means brought into engagement with said trip by the movement of the machine to operate the escapement, for the purpose of effecting an exaggerated feed of the machine to accommodate the decimal-space, a computing device adjustable to different positions, and an actuator therefor movable with the traveling machine.

54. The combination with a platen and a type-writing machine mounted to travel thereover; of an escapement mounted on the machine and controlling the letter-space movements thereof, a trip-arm operatively related to the escapement to effect an exaggerated feed of the machine, a trip for operating the trip-arm, a computing device, and actuating mechanism presentable to the computing device by the letter-space movement of the machine.

55. The combination with a platen and a type-writing machine mounted to travel thereover; of an escapement movable with the machine, a trip-arm likewise movable therewith and operatively related to the escapement, a trip mounted independently of the machine and arranged to move the trip-arm for the purpose of operating the escapement to effect an exaggerated feed of the machine, a computing device mounted independently of the machine, and an actuator therefor movable with the machine.

56. The combination with a platen; of a machine-frame mounted to travel longitudinally thereof, printing mechanism mounted on said frame to travel transversely of the platen, a trip adjustable upon the machine-frame to dispose it in proper relation to any desired column, an adjustable escapement controlling the letter-space movements of the printing mechanism, a trip-arm operatively related to the escapement and disposed to be presented to the trip by the movement of the printing mechanism to effect the decimal-spacing of the latter, a computing device supported by the frame, and an actuator therefor movable with the printing mechanism.

57. The combination with an escapement comprising a rack member and a pair of dogs coöperating therewith; of means for operating the escapement, decimal-spacing means including an arm operatively related to one of the dogs and means for operating said arm to retard the movement of the dog for the purpose of effecting an exaggerated operation of the escapement, a computing device including a series of digit-carriers, and a laterally-movable actuator therefor controlled, with respect to such lateral movement, by the escapement.

58. The combination with an escapement including a rack member and coöperating dogs; of a trip-arm operatively related to one of the dogs, a trip disposed to engage the trip-arm to retard the movement of the dog into engagement with the rack for the purpose of effecting an exaggerated operation of the escapement, a computing device, and a relatively movable actuator therefor, the relative movement of the computing device and its actuator being controlled by the escapement.

59. The combination with an escapement including a rack member and coöperating dogs; of a rock-shaft coöperatively related to one of the dogs, a trip-arm extending from one end of the rock-shaft, a trip disposed to engage said arm, a computing device, and an actuator having relative movement controlled by the escapement.

60. In a type-writing machine, the combination with a movable carriage; of an escapement mounted on the carriage and including a rack member and coöperating dogs, a rock-shaft also mounted on the carriage and operatively related to one of the dogs, a trip-arm extending from the rock-shaft, a trip mounted independently of the carriage and disposed to engage the trip-arm, a computing device mounted independently of the carriage, and an actuator therefor movable with the carriage.

61. The combination with a type-writing machine; of an escapement including a rotary rack member and a pair of coöperating dogs, an arm extending from one of said dogs, a rock-shaft provided at one end with an arm coöperating with the arm first named, a trip-arm at the opposite end of said rock-shaft a trip disposed to engage the trip-arm, a computing device including a series of digit-carriers, and a master-wheel whose movement, relative to the carriers, is controlled by the escapement.

62. In a type-writing machine, the combination with a carriage and an escapement controlling the movement thereof; of decimal-spacing means including a trip-arm operatively related to the escapement and having a pointed tooth, a trip in the form of a pointed tooth disposed to be engaged by the tooth of the trip-arm and to effect a momentary retardation of an escapement element, a computing device, and a laterally-movable master-wheel controlled in its lateral advance by the escapement.

63. The combination with a platen, and printing mechanism for printing several columns, each including a series of denominations on a work-sheet supported by the platen, of a bodily-movable computing device, and locating means in the path of said device to arrest the same for use in connection with any one of several columns.

64. The combination with a computing device, bodily movable to position the same with reference to different columns, and including a series of digit-carriers corresponding to the denominations or orders of a column, and stop mechanism for arresting said computing device to properly locate the same opposite the respective columns.

65. The combination with a computing device, bodily movable to position it with reference to different columns, and including a series of digit-carriers representing the several denominations or orders of a column, of an adjustable locating-stop, mounted independently of the computing device, to arrest the same opposite any desired column.

66. The combination with an adjustable computing device and a traveling carriage, of a stop movable, relative to the computing device, with the carriage, to be thus disposed in position to arrest and properly locate the computing device with reference to one of several columns.

67. The combination with a traveling carriage, printing mechanism, and an adjustable computing device, of a stop for arresting and properly locating the computing device with reference to the printing-point and independently shiftable in the direction of movement of said device.

68. The combination with a traveling carriage, printing mechanism, and an adjustable computing device; of locating means including a stop for arresting the computing device, and stop mechanism for properly locating the carriage and said locating means with reference to the printing-point.

69. The combination with an adjustable computing device, a traveling carriage and printing mechanism; of a computing-device-locating stop movable with the carriage, and tabulating mechanism for locating the carriage to position the stop for the arrest of the computing device at the proper point.

70. The combination with an adjustable computing device, a movable carriage and printing mechanism; of a computing-device-locating stop movable with the carriage, and tabulating mechanism comprising a column-stop and a coöperating catch for locating the carriage.

71. The combination with a platen and printing mechanism mounted to travel thereover; of a computing device adjustable with reference to different columns, and a locating-stop movable with the printing mechanism, and designed to facilitate the location of the computing device.

72. The combination with a platen; of a machine-frame mounted to travel thereover, a computing device adjustable on the frame, a locating-stop for said device, a carriage mounted to travel on the frame, and operating mechanism for said computing device mounted on and movable with the carriage.

73. The combination with a platen; of a type-writing machine comprising a machine-frame and a carriage mounted to travel thereon, a locating-stop mounted on the carriage, and an adjustable computing device mounted on the frame and arranged to be located by said stop.

74. The combination with a platen and a computing device adjustable relative thereto; of a locating-stop movable into and out of the path of said device.

75. The combination with a computing device, operating mechanism therefor, and a traveling carriage supporting the operating mechanism; of a brace extending from the carriage and provided with a roller engaging the computing device.

76. The combination with a computing device including a series of denominational members and transfer mechanism; of operating mechanism presentable to said members in succession, and means for automatically moving the transfer mechanism into engagement with the members, said means being operated during the advance of the operating mechanism from one member to another.

77. The combination with a coniputing device including a series of denominational members and transfer mechanism; of a traveling carriage movable independently of the computing device and means operated by the movement of said carriage for positively urging the transfer mechanism into engagement with said members.

78. The combination with a computing device including a series of denominational members and transfer mechanism including transfer-dogs; of a traveling carriage, and means operated by the carriage for positively urging the transfer-dogs to their engaging positions.

79. The combination with a computing device including a series of denominational members and transfer-dogs; of a traveling carriage, and a vibrator operated by the carriage to positively urge the dogs to their engaging positions.

80. The combination with a computing device, including a series of denominational members and transfer-dogs; of a vibrator arranged to move the dogs, a traveling carriage, operating mechanism mounted on the carriage and presentable to the denominational members in succession, and means for effecting the movement of the vibrator upon each advance of the carriage.

81. The combination with a computing device, including a series of denominational members and transfer-dogs; of a vibrator disposed to engage the dogs and having a series of projections, and a traveling carriage having a projection disposed to engage the projections on the vibrator to vibrate the latter successively for the purpose of positively urging the dogs into engagement with the denominational members.

82. The combination with a series of denominational members, and locating mechanism therefor normally resisting the movement of the members, of means for urging the locating mechanism to ease certain of the members without interfering with the retention of the others.

83. The combination with a series of denominational members and locating devices coöperating therewith; of means for operating said locating devices in succession to ease the members.

84. The combination with a series of denominational members and locating devices therefor; of means for partially retracting the

locating devices to ease the members and for subsequently completing the retraction of said devices.

85. The combination with a series of denominational members and a series of locating devices; of means for effecting the partial retraction of the locating devices in succession to ease the members, and means for completing the retraction of said devices.

86. The combination with a computing device including a series of denominational members and locating devices therefor; of a traveling carriage, and means operated by the carriage for urging the locating devices to ease the members.

87. The combination with a computing device including a series of denominational members and locating devices therefor; of a traveling carriage, and means operated by the carriage for urging the locating devices to ease the members in succession.

88. The combination with a computing device including a series of denominational members and locating devices therefor; of a traveling carriage, and means operated by the carriage for partially retracting the locating devices to ease the carriers and for subsequently effecting the complete withdrawal of said devices from said members.

89. The combination with a computing device including a series of denominational members and a series of locating devices for said members; of a traveling carriage and means movable with the carriage and disposed to engage the locating devices for the purpose of easing the members.

90. The combination with a series of denominational members and locators therefor; of a locator-depressing plate arranged to traverse the series of locators and to depress the same for the purpose of easing the members.

91. The combination with a computing device including a series of denominational members and locating devices therefor; of a traveling carriage and a locator-depressing plate movable with the carriage to engage the locating devices.

92. The combination with a computing device including a series of denominational members and locating devices therefor; of a traveling carriage, a locator-depressing plate movable with the carriage to engage the locating devices, and to partially depress the same, and means for moving said plate to complete the depression of the locating devices.

93. The combination with a computing device including a series of denominational members and a series of locating devices; of a traveling carriage, and a locator-depressing plate operative to depress the locating devices when the carriage is moved in one direction and inoperative during the retraction of the carriage.

94. The combination with a computing device including a series of denominational members and a series of locating devices; of a traveling carriage, a locator-depressing plate mounted on the carriage and movable therewith to effect the partial depression of the locating devices in succession, and a trip device arranged to engage the depressing-plate for the purpose of moving the latter to effect the complete retraction of the locating devices.

95. The combination with a computing device including a series of denominational members and a series of locating devices extending beyond the computing device; of a traveling carriage, a locator-depressing plate movable with the carriage and mounted to swing vertically, and a rigid trip-bar disposed to depress the depressing-plate after the latter has effected the partial depression of the locating devices.

96. The combination with a computing device including a series of denominational members and a series of locating devices extending beyond the computing device; of a traveling carriage a locator-depressing plate movable with the carriage and mounted to swing vertically, and a rigid trip-bar disposed to depress the depressing-plate after the latter has effected the partial depression of the locating devices, said depressing-plate being arranged to ride over the locating devices and under the trip-bar during the movement of the carriage in one direction and to ride under the locating devices during the movement of the carriage in the opposite direction.

97. The combination with a computing device including a series of denominational members and transfer mechanism therefor; of a traveling carriage, and means operated by the carriage for operating the transfer mechanism.

98. The combination with a computing device including a series of denominational members and transfer mechanism therefor; of a traveling carriage, and means operated by the carriage for retracting the transfer mechanism.

99. The combination with a computing device including a series of denominational members and transfer mechanism therefor; of a traveling carriage, means for operating the members, and transfer mechanism, and means operated by the carriage for restoring the transfer mechanism to its normal position.

100. The combination with a computing device including a series of denominational members and transfer mechanism; of means for operating the members and transfer mechanism, a traveling carriage supporting the operating mechanism, and means operated by the retraction of the carriage for restoring the transfer mechanism to its operative position.

101. The combination with a computing device including a series of denominational members and transfer mechanism; of a traveling carriage, and a slide operatively related to the transfer mechanism and disposed for actuation by the carriage.

102. The combination with a computing device including a series of denominational members and transfer-levers each operated by one member to transmit movement to another carrier; of a traveling carriage, member-operating mechanism mounted thereon, and means operated by the carriage for restoring the transfer-levers to their normal positions.

103. The combination with a computing device including a series of denominational members and a series of transfer-levers therefor; of a traveling carriage, a slide operatively related to the transfer-levers and arranged to retract the same, and a slide-actuator movable with the carriage and disposed to engage the slide during the movement of the carriage in one direction.

104. The combination with a computing device including a series of denominational members, a series of transfer-levers therefor; a rocker for retracting the levers, and a slide connected to the rocker; of a traveling carriage, member-operating mechanism movable with the carriage, and a slide-actuator arranged to engage the slide during the retraction of the carriage.

105. The combination with a series of denominational members and transfer mechanism therefor; of operating mechanism for the members, a check device operatively connected to said operating mechanism and arranged to be projected into engagement with the denominational members.

106. The combination with a series of denominational members and transfer mechanism therefor; of operating mechanism for operating the members in succession, and a check device disposed to engage a member of higher order than the one operated to prevent accidental movement thereof.

107. The combination with a series of denominational members and transfer mechanism therefor; of means for operating a member, and a check arranged to engage the next adjacent member just as the operated member reaches its limit of movement.

108. The combination with a series of denominational members and transfer mechanism therefor; of member-operating mechanism presentable to the members in succession, a check device likewise presentable to successive members and arranged to be moved into engagement with the member next adjacent to the one being operated.

109. The combination with a series of denominational members and transfer mechanism therefor; of a traveling carriage, member-operating mechanism movable with the carriage, and a check device likewise movable with the carriage and arranged to engage the members to prevent accidental movement thereof.

110. The combination with a series of denominational members and transfer mechanism therefor; of a traveling carriage, member-operating mechanism movable with the carriage, and a check-slide presentable opposite the members in succession and arranged to be projected into engagement therewith by the member-operating mechanism.

111. The combination with a series of denominational members; of transfer-levers, each of which is arranged to be engaged by one member to effect the movement of another member, and means for slightly dislocating certain of the levers to prevent the accidental movement thereof when the members serving said levers come to rest in the "9" position.

112. The combination with a series of denominational members having projections, and transfer-levers arranged to be moved by engagement with said projections; of means for slightly dislocating certain of the levers to prevent accidental movement thereof by the impact of the projections when the members are brought to rest in the "9" position.

113. The combination with a computing device including a series of denominational members and transfer-levers therefor; of a traveling carriage, and means operated by the carriage for slightly dislocating certain of the transfer-levers to prevent the accidental movement thereof when the members serving the same come to rest in the "9" position.

114. The combination with a computing device including a series of denominational members and transfer-levers therefor provided with extensions; of a traveling carriage, and a lever-depressing arm movable with the carriage and arranged to slightly depress certain of the levers.

115. The combination with a computing device including a series of denominational members, and transfer-levers provided with extensions; of a traveling carriage, and a lever-depressing arm movable with the carriage and arranged to slightly depress all of the levers to the left of the one next adjacent to the actuated member.

116. The combination with a series of denominational members and combined transfer and locking levers therefor; of means for preventing the accidental locking of the member being actuated, said means including a stop arranged to positively retain in its operative position the transfer-lever which serves the member being actuated.

117. The combination with a series of denominational members and transfer-levers therefor; of a traveling carriage, member-operating mechanism movable with the carriage, and a stop-finger likewise movable with the carriage and disposed to engage and positively retain the lever which serves the member being actuated.

118. The combination with a support and a computing device adjustable thereon; of a locking-lever for retaining the computing device in its adjusted positions.

119. The combination with a support; of a computing device adjustable thereon, a locking-lever for retaining the computing device in its adjusted positions, and means for operating the lever.

120. The combination with a support; of a computing device adjustable thereon, locking means for retaining the computing device in its adjusted positions, and an actuator for said locking means located adjacent to the top of the computing device.

121. The combination with a support; of a computing device adjustable thereon, a locking-lever for retaining said device in its adjusted positions, a thumb-screw, and a connection between the thumb-screw and the locking-lever.

122. The combination with a support; of a computing device adjustable thereon, a locking-lever arranged to lock the computing device in its adjusted positions, a thumb-screw, and a push-rod connecting the thumb-screw with the locking-lever.

123. The combination with a computing device, a platen, and printing mechanism, of means for effecting relative step-by-step movement of the platen and printing mechanism, and means for exaggerating such movement to accommodate the decimal-space.

124. The combination with a computing device, a platen, and printing mechanism, of means for effecting relative movement of the computing device and printing mechanism, and automatic means for exaggerating such movement to accommodate the decimal-space.

125. The combination with a platen and printing mechanism, of a computing device, and a stop mounted independently of the computing device and disposed to arrest the same in various positions relative to the platen.

126. The combination with a platen and printing mechanism, of a shiftable computing device, and a stop shiftable to different points and movable into and out of the path of the computing device.

127. The combination with a platen and printing mechanism, of a computing device shiftable relative to the platen, and a stop for arresting the computing device when so shifted said stop being shiftable independently of both the computing device and platen.

128. The combination with a platen and printing mechanism, of a computing device shiftable relative to the platen, a stop shiftable to any point at which it is desired to arrest the computing device and movable into and out of the path of said device.

129. The combination with a platen and printing mechanism, of a computing device, a locating means therefor, and tabulating mechanism for locating said means independently of the computing device.

130. The combination with a platen and printing mechanism, of a computing device shiftable relative to the platen, a locating-stop shiftable to various points independently of the computing device and platen to arrest the computing device in position for use with reference to various columns, and tabulating mechanism for locating said stop.

131. The combination with a platen and printing mechanism, of a computing device, a shiftable stop shiftable in the direction of movement of the computing device and disposed to arrest the same opposite different portions of the platen, and an escapement controlling the movement of said stop.

132. The combination with a platen and printing mechanism, of a shiftable computing device, locating means for said device, and key-controlled means for moving said locating means independently of the computing device.

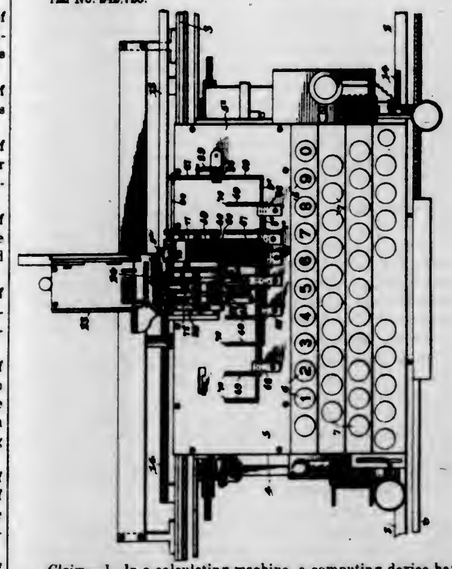
133. The combination with a computing device, of operating mechanism therefor including a shaft, a series of arms carried by the shaft and having graduated arrangement, printing mechanism including keys arranged to operate the arms to transmit motion to the computing device through the medium of the shaft when the keys are operated to print digits, mechanism controlling the operating relation between the keys and arms, and a key for operating said mechanism to destroy such coöperative relation to permit the printing of the total without operating the computing device.

134. In combination, a platen, printing mechanism, a computing device having denominational members, an actuator therefor, mechanism for causing relative movement of the platen and printing mechanism and also relative movement of the computing device and its actuator, mechanism controlling such relative movement to permit digits to be printed in different denominational positions and to permit corresponding denominational members of the computing device to be rendered operative by the actuator, and automatic means coöperating with said controlling mechanism to permit exaggerated relative movement of the platen and printing mechanism and also of the computing device and its actuator when the decimal-space is reached.

135. In combination, a platen and printing mechanism, relatively movable, a computing device operated by the printing mechanism to add a column of numbers as the numbers are printed, a column-selective device adjustable to different positions to determine the location of the column to be computed, and a denominational selective device for arresting the relative movement of the platen and printing mechanism when the printing-point is opposite the desired denominational order of the column.

136. The combination with a platen, printing mechanism and a computing device having denominational members and arranged to be operated by the printing mechanism, the platen and printing mechanism being relatively movable and the computing device and platen being relatively adjustable, a column-selective stop for determining the relative adjustment of the computing device and platen to determine the location of the column to be computed, and denominational selective mechanism for arresting the relative movement of the platen and printing mechanism when the latter is in proper denominational relation with the column and the computing device.

820,880. CALCULATING-MACHINE. CHARLES F. LAGANKE and JOHN A. SMITH, Cleveland, Ohio, assignors to Elliott-Fisher Company, New York, N. Y., a Corporation of Delaware. Filed Jan. 26, 1905. Serial No. 242,720.



Claim.—1. In a calculating-machine, a computing device having denominational members, a series of keys arranged to cause the operation of either of said members independently of those of lower order, a graduated series of stops movable with the member operated, a second series of stops normally out of coöperative relation with the stops of the first series, and means whereby when a key is moved to

cause the operation of a denominational member of the computing device and the stops of the first series, a stop of the second series will be moved into interfering relation with a stop of the first series to arrest the movement of the denominational member at the proper point.

2. In a calculating-machine, a computing device having a series of denominational members, a master means arranged to operate said members in succession, a graduated series of stops movable with the master means, a series of keys each of which is arranged to move the master means and the graduated series of stops, and a second series of stops each operatively connected with one of the keys and arranged to be moved into interfering relation with one of the stops of the graduated series when a key is depressed, whereby the movement of the denominational member will be arrested at the proper point by the interference of the stops.

3. In a calculating-machine, a computing device including a series of denominational members, a key-operated master-actuator arranged to operate either of said members independently of those of lower order, and means including a spiral stop for arresting the movement of the actuator and the denominational member operated thereby.

4. In a calculating-machine, a computing device including a series of denominational members, a master-wheel arranged to directly engage and operate each of said members independently of those of lower order, a spiral stop member rotatable with the wheel, and means coöperating with said member and arranged to engage and arrest the movement of the wheel at the proper point.

5. In a calculating-machine, a computing device including a series of denominational members, actuating mechanism therefor arranged to directly engage and actuate each of said members independently of those of lower order, a graduated series of stops movable with the actuating mechanism, and means coöperating with said stops to arrest the actuating mechanism at different points.

6. In a calculating-machine, a computing device including a series of denominational members, keys each arranged to operate each of said members independently of those of lower order, and a key-operated spiral stop member arranged to arrest the movement of a denominational member.

7. In a calculating-machine, a computing device including a series of denominational members, an actuator arranged to operate successive members, a plurality of keys, and two key-operated series of stops coöperating to arrest the movement of a denominational member.

8. In a calculating-machine, a computing device including a series of denominational members, actuating mechanism arranged to actuate any member independently of those of lower order, a plurality of keys, and two series of key-operated stops, the stops of one series being normally alined and the stops of the other series having graduated arrangement, the stops of said series being disposed to coöperate to limit the operation of the computing device.

9. In a calculating-machine, a computing device including a series of denominational members, keys arranged to operate any member independently of those of lower order, and means for preventing overthrow of the computing device, said means including two series of coöperating stops, one of said series of stops having a spiral arrangement.

10. In a calculating-machine, a computing device having denominational members, an actuator arranged to operate successive members, a stop member movable with the actuator and having a spirally-arranged series of stops, and a second series of stops disposed to coöperate with the spirally-arranged series of stops to arrest the movement of a denominational member.

11. In a calculating-machine, a computing device having denominational members, actuating mechanism arranged to actuate either denominational member independently of those of lower order, and two series of coöperating stops for the actuating mechanism, one series of stops being movable in unison and the stops of the other series being independently movable into operative position to arrest the movement of the actuating mechanism after a given operation of the computing device.

12. In a calculating-machine, a computing device including a series of denominational members, a series of keys arranged to operate any member independently of those of lower order, and stop mechanism including a spirally-arranged key-operated series of stops movable in unison and a second series of stops each of which is independently movable into operative relation with a stop of the spiral series to arrest the movement of a denominational member.

13. In a calculating-machine, a computing device including a series of denominational members, a master-wheel movable to engage and operate successive members, a spirally-arranged series of stops movable with the master-wheel, and a normally alined series of stops each of which is independently movable into coöperative relation with a stop of the other series to arrest the movement of a denominational member.

14. In a calculating-machine, a computing device including a series of denominational members, keys for moving each of said members independently of those of lower order, and stop mechanism for said computing device including a plurality of stops arranged to be operated by the keys to arrest the movement of the denominational members.

15. In a calculating-machine, a computing device including a series of denominational members, keys for moving either of said members independently of those of lower order, stop mechanism including a series of stops each of which is operatively related to a key to be moved to its operating position when the key is moved to operate the computing device, and means arranged to engage the stops so positioned to arrest the movement of a denominational member.

16. In a computing-machine, a computing device including a series of denominational members, keys arranged to operate either of said members independently of those of lower order, and stop mechanism including a spirally-arranged series of stops arranged to be moved by the keys and to arrest the movement of the denominational members.

17. In a calculating-machine, a computing device including a series of denominational members, keys arranged to operate either of said members independently of those of lower order, and stop mechanism including two series of stops, the stops of one series being movable in unison by the keys and having graduated arrangement and the stops of the other series being independently movable to their operative positions by the keys to cause the movement of the denominational members to be arrested at the proper time.

18. In a calculating-machine, a computing device including a series of denominational members, a master-wheel arranged to directly engage and operate successive members, a graduated series of stops movable with the master-wheel, a second series of stops independently movable into position to coöperate with the stops of the first-named series to cause the movement of the master-wheel to be arrested at the proper point, and keys arranged to operate the master-wheel and to move the stops of the second series into operative position.

19. In a calculating-machine, a computing device including a series of denominational members, a master-wheel arranged to engage and operate successive members, a key for operating the master-wheel, a stop movable with the master-wheel, and a second stop normally occupying an inoperative position but arranged to be moved by the initial movement of the key to an interfering position with respect to the stop which is movable with the master-wheel, the interference of the stops serving to cause the arrest of the master-wheel and the denominational member engaged thereby at the proper point.

20. In a calculating-machine, a computing device, a master-wheel therefor, means for operating the master-wheel, and stop mechanism including a spiral stop arranged to rotate with the master-wheel when the latter is moved to operate the computing device and arranged to be retracted to its normal position after each operation of the master-wheel.

21. In a calculating-machine, a computing device, a master-wheel therefor, an actuator-pinion, a clutch for connecting said pinion with the master-wheel to rotate the latter in one direction, means for rotating the pinion, and stop mechanism including a graduated series of stops movable with the pinion.

22. In a calculating-machine, a computing device, a master-wheel therefor, an actuator-pinion, a clutch for connecting said pinion with the master-wheel to rotate the latter in one direction, means for rotating the pinion, and stop mechanism including a spirally-arranged series of stops movable with the pinion.

23. In a calculating-machine, a computing device including a series of denominational members, keys arranged to operate either member independently of those of lower order, stop mechanism including two series of stops coöperative to arrest the movement of the denominational members, and a series of levers each operatively related to a key and to a stop of one series to transmit motion from the key to said stop.

24. In a calculating-machine, a computing device, actuating mechanism therefor including a rock-shaft, a series of arms thereon, keys for swinging the arms, and stop mechanism including two coöperating series of stops, each of the several stops of one series being operatively related to one of the arms on the rock-shaft and arranged to be moved to its operative position by said arm.

25. In a calculating-machine, a computing device including a series of denominational members, operating mechanism for transmitting motion to either of said members independently of those of lower order, and stop mechanism including a series of independently-movable stops arranged to be positioned by the operating mechanism of the computing device and to thereafter cause the movement of a denominational member to be arrested at the proper point.

26. In a calculating-machine, a computing device including a series of denominational members, means for transmitting motion to either member independently of those of lower order, and stop mechanism including a series of independently-movable stops and a series of rock-shafts each connected to a stop to move the same and arranged to be operated by the motion-transmitting means.

27. In a calculating-machine, a computing device including a series of denominational members, keys for moving either of said members independently of those of lower order, and stop mechanism including a series of independently-movable stops each of which is disposed for actuation by one of the keys to present the stop in position to cause the arrest of a denominational member.

28. In a calculating-machine, a computing device including a series of denominational members, keys for moving either of said members independently of those of lower order, stop mechanism including a series of independently-movable stops, and a series of rock-shafts each disposed to be operated by a key to move one of the stops to its operative position.

29. In a calculating-machine, a computing device including a series of denominational members, keys for moving either of said members independently of those of lower order, stop mechanism including a series of independently-movable stops, a series of levers arranged to move said stops to their operative positions, and a series of rock-shafts for moving said levers, each of said rock-shafts being operatively related to a key.

30. In a calculating-machine, a computing device, an actuator therefor, a rock-shaft, operating connections between the rock-shaft and the actuator, a series of cam-arms extending from the rock-shaft, keys each arranged to rock said shaft and to move a cam-arm, a series of rock-shafts each of which is moved by one of the cam-arms, a series of bell-crank levers each arranged to be swung by one of the rock-shafts last named, and stop mechanism including a series of independently-movable stops each arranged to be moved by one of the bell-crank levers.

31. In a calculating-machine, a computing device, a master-wheel therefor, a check-arm for the master-wheel, a plurality of coöperating stops, and means operated by one of the stops for moving the check-arm to its engaging position.

32. In a calculating-machine, a computing device, a master-wheel therefor and a check-arm for the master-wheel, stop mechanism including a series of independently-movable stops, and means arranged to be operated by either of said stops to move the check-arm to its engaging position.

33. In a calculating-machine, a computing device, a master-wheel therefor, a check-arm for the master-wheel, two series of coöperating stops, and means operated by certain of said stops for moving the check-arm to its engaging position.

34. In a calculating-machine, a computing device, a master-wheel therefor, a check-arm for the master-wheel, a series of stops movable with the master-wheel, a second series of stops each of which is movable into interfering relation with a stop of the first series and each of which is capable of further movement after being engaged by a stop of the first series, and means arranged to be operated by either stop of the second series during the final movement thereof to move the check-arm to its engaging position.

35. In a calculating-machine, a computing device, a master-wheel therefor, a check-bar, a check-arm carried by the bar and disposed to engage the master-wheel, and two series of coöperating stops, certain of said stops being disposed to rock the check-bar to throw the check-arm to its engaging position.

36. In a calculating-machine, a computing device, a master-wheel therefor, a check-bar, a check arm carried by the bar and movable to engage the master-wheel, a plate extended laterally from the check-bar and stop mechanism including two series of coöperating stops, the stops of one series being provided with depressing-arms disposed to engage and move the plate and to thus rock the check-bar and move the check-arm to its engaging position.

37. In a calculating-machine, a computing device, a master-wheel therefor, a check-arm movable to engage the master-wheel, a spirally-arranged series of stops movable with the master-wheel, an alined series of stops each movable into interfering relation with one of the stops of the spiral series and also having limited movement after being engaged by said stop, and means whereby the final movement of any one of the alined series of stops will effect the movement of the check-arm to its engaging position.

38. In a calculating-machine, a computing device, a master-wheel, a check-arm disposed to engage the master-wheel, means for yieldingly retaining the check-arm in its engaged position, mechanism movable to operate the master-wheel and arranged to be retracted independently thereof, and means whereby said mechanism when retracted will positively move the check-arm out of engagement with the master-wheel.

39. In a calculating-machine, a computing device, a master-wheel therefor, a check-arm for the master-wheel, an actuating member arranged to rotate the master-wheel, means for moving the check-arm to engage the wheel, and means operated by the actuating member for moving the check-arm to its disengaged position.

40. In a calculating machine, a computing device, a master-wheel, a check-bar having a check-arm disposed to engage the master-wheel, an actuating-lever for the master-wheel, a second arm extending from the check-bar, and a projection extending from the actuating-lever and arranged during the retraction of said lever to strike and swing the last-named arm for the purpose of rocking the check-bar to withdraw the check-arm from the master-wheel.

41. In a calculating-machine, a computing device, including a series of number-wheels, actuating mechanism therefor, stop mechanism including a series of stops, and a check-slide arranged to be moved by any of said stops to engage a wheel of the computing device.

42. In a calculating-machine, a computing device including a series of number-wheels, a master-wheel therefor, a check-bar having a check-arm disposed to engage the master wheel, and a check-slide arranged to be moved by the check-bar to engage one of the wheels of the computing device.

43. In a calculating-machine, a computing device, a master-wheel, a check-slide for the computing device, and a rotary check-bar arranged to operate both the check-arm and the check-slide.

44. In a calculating-machine, a computing device and actuating mechanism therefor, having relative lateral movement, recording mechanism operatively connected with the actuating mechanism of the computing device, means for disconnecting said actuating mechanism from the recording mechanism to permit the printing of the total while the actuating mechanism is in engagement with the computing device, without effecting the operation of said device, and means for automatically restoring the connection between the actuating mechanism and the recording mechanism.

45. In a calculating-machine, a computing device, actuating mechanism therefor, printing mechanism normally connected with the actuating mechanism, a carriage movable laterally with respect to the computing device to effect relative movement of the computing device and its actuating mechanism, means for disconnecting the printing mechanism from the actuating mechanism to permit the printing of totals while the actuating mechanism is in engagement with the computing device, and means brought into action upon the retraction of the carriage to restore the connection between the printing mechanism and the actuating mechanism of the computing device.

46. In a calculating-machine, a computing device, actuating mechanism therefor, printing mechanism connected to the actuating mechanism, a carriage movable laterally with relation to the computing device to effect relative movement of said device and its actuating mechanism, a total-key arranged to disconnect the printing mechanism from the actuating mechanism to permit the printing of totals, and means including a trip brought into action during the retraction of the carriage to restore the total-key to its normal position.

47. In a calculating-machine, a computing device, actuating mechanism therefor, printing mechanism connected to the actuating mechanism, a traveling carriage, a total-key for disconnecting the printing mechanism from the actuating mechanism to permit the printing of totals while the actuating mechanism is in engagement with the computing device, a total-key-retracting mechanism including a lever and a trip, one of said elements being movable with the carriage and presentable to the other to effect the retraction of the total-key.

48. In a calculating-machine, a computing device, a traveling carriage, actuating mechanism for the computing device mounted on the carriage, printing mechanism connected with the actuating mechanism, a total-key for disconnecting the printing mechanism from the actuating mechanism, a lever movable with the carriage, and a trip mounted independently of the carriage and arranged to effect the actuation of the lever to retract the total-key.

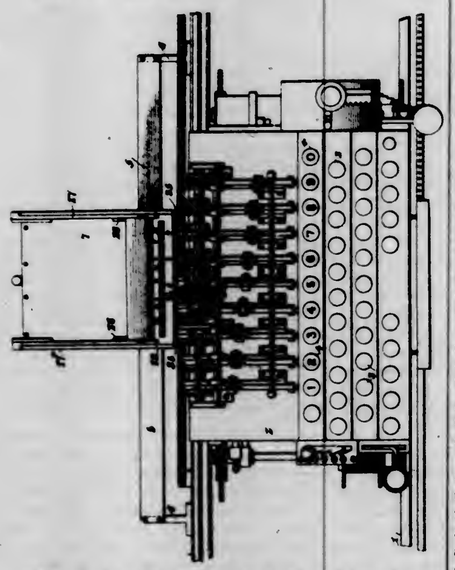
49. In a calculating-machine, a computing device, a traveling carriage, actuating mechanism for the computing device, movable

with the carriage, printing mechanism also movable with the carriage and connected to the actuating mechanism, a total-key mounted on the carriage and movable to disconnect the printing mechanism from the actuating mechanism, a total-key-retracting lever mounted on the carriage, and a trip associated with the computing device and arranged to operate the lever as the carriage is retracted.

50. In a calculating-machine, acomputing device, a traveling carriage, actuating mechanism for the computing device movable with the carriage, printing mechanism also movable with the carriage and connected to the actuating mechanism, a total-key mounted on the carriage and movable to disconnect the printing mechanism from the actuating mechanism, a total-key-retracting lever mounted on the carriage, a trip associated with the computing device and arranged to operate the lever as the carriage is retracted, and means whereby the trip will be prevented from operating the lever during the advance of the carriage in the direction of letter-spacing.

51. The combination with a computing mechanism including a series of denominational members, of a series of keys arranged to transmit motion from the finger of an operator to either member independently of those of lower order, a graduated series of stops arranged to be moved by the keys, and a second series of stops movable independently of each other and each arranged to be moved by a key into position to cause the arrest of the movement of the computing device under the impulse of said key.

820,881. **COMBINED RECORDING AND CALCULATING MACHINE.** CHARLES F. LAGANKE, Cleveland, Ohio, assignor to Elliott-Fisher Company, New York, N. Y., a Corporation of Delaware. Filed Mar. 14, 1905. Serial No. 250,059.



Claim.—1. As a means for recording and totalizing adjoining parallel columns of numbers, a traveling recording mechanism, a master means movable therewith and operated thereby, and a computing device including a casing, several independent groups or sets of number-wheels mounted in the casing and arranged to be operated by the master means, and separate resetting mechanisms, one of said mechanisms being arranged to reset a single group of wheels and another of said mechanisms being arranged to simultaneously reset a plurality of groups of wheels.

2. The combination with a type-writing machine including the printing devices and keys, of a computing device including a casing, a continuous series of alined number-wheels mounted in the casing, carrying mechanisms forming the series of wheels into independent groups or sets, the wheels of each group or set having coöperative relation, a master means operated by the keys of the type-writer to rotate the number-wheels, and separate resetting mechanisms including operating members located beyond the opposite ends of the series of wheels.

3. The combination with a type-writing machine including the printing devices and keys, of a computing device including a casing, a continuous series of alined number-wheels mounted in the casing, carrying mechanisms forming the series of wheels into independent groups or sets, the wheels of each group or set having coöperative relation, a master means operated by the keys of the type-writer to rotate the number-wheels, and separate resetting mechanisms one of which is common to a plurality of groups or sets of number-wheels.

4. The combination with a type-writing machine including a frame, a laterally-movable carriage, and printing devices and keys movable with the carriage, of a computing device including a casing, several independent groups or sets of number-wheels mounted in the casing, the wheels of each set being coöperatively related, a master means operated by the type-writer keys to rotate the number-wheels, and separate independent resetting mechanisms for different sets or groups of wheels, one of said mechanisms being common to a plurality of groups or sets.

5. The combination with a type-writing machine including a frame, a laterally-movable carriage, and printing devices and keys movable with the carriage, of a computing device including a casing, several independent groups or sets of number-wheels mounted in the casing, the wheels of each set being coöperatively related, a master means operated by the type-writer keys to rotate the number-wheels, a wheel-resetting mechanism located at one side of the computing-device casing and arranged to effect the simultaneous resetting of a plurality of groups or sets of number-wheels, and a second resetting mechanism located at the opposite side of the casing and arranged to effect the resetting of a single group or set of wheels.

6. The combination with recording mechanism and operating-keys therefor, of a computing device including a shaft, a group or set of number-wheels mounted on the shaft, a sleeve carried by the shaft and rotatable independently thereof, a second group or set of number-wheels mounted on the sleeve, key-operated master means for operating the number-wheels, and wheel-resetting mechanisms, one including means for rotating the shaft and the other including means for rotating the sleeve.

7. The combination with recording mechanism and operating-keys therefor, of a computing device including a casing, a shaft extending across the casing and having a reduced portion, a sleeve rotatable on the reduced portion of the shaft, a plurality of independent groups or sets of number-wheels mounted on the shaft, another group or set of number-wheels mounted on the sleeve, key-operated means for rotating the number-wheels, a wheel-resetting mechanism including means for rotating the shaft to simultaneously reset the groups or sets of number-wheels mounted thereon, and a second resetting means for rotating the sleeve to reset the number-wheels carried by the latter.

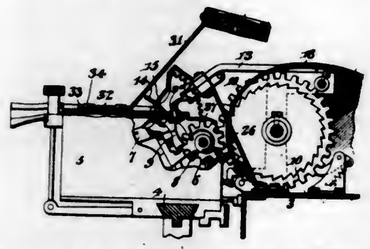
8. The combination with recording mechanism and a master means operated thereby, of a computing device operated by the master means and including several independent groups or sets of number-wheels, locking means common to the wheels of said sets or groups, wheel-resetting means, and means operated by the resetting means for simultaneously unlocking the locked wheels of said groups or sets.

9. The combination with recording mechanism and a master means operated thereby, of a computing device operated by the master means and including a plurality of independent groups or sets of number-wheels, locking means for the wheels of said sets or groups, and resetting means common to a plurality of groups or sets of wheels and arranged to effect the unlocking of the wheels prior to the resetting thereof.

10. The combination with recording mechanism and a master means operated thereby, of a computing device including several independent groups or sets of wheels, locking means for the wheels of each group or set, and a plurality of resetting mechanisms, one of said mechanisms being common to a plurality of groups or sets of wheels and arranged to unlock said wheels prior to the resetting thereof and the other resetting mechanism being arranged to operate a single group or set of number-wheels and to unlock the same.

11. The combination with a flat platen, of a type-writing machine mounted to travel thereover and including a machine-frame, a carriage movable on the frame, printing mechanism movable with the carriage, and keys for operating the printing mechanism, a guide-bar carried by the machine-frame, a computing device adjustable on said guide-bar and including several independent groups or sets of coöperatively-related number-wheels, and a master means mounted on the carriage and operated by the keys to actuate the number-wheels of the computing device.

820,882. **COMBINED TYPE-WRITING AND CALCULATING MACHINE.** CHARLES F. LAGANKE, Harrisburg, Pa., assignor to Elliott-Fisher Company, New York, N. Y., a Corporation of Delaware. Filed Aug. 24, 1905. Serial No. 275,580.



Claim.—1. The combination with a series of denominational members and a series of carrying devices each movable into and out of engagement with a member, of means arranged to engage the carrying devices in succession to insure their engagement with said members.

2. The combination with a series of denominational members, of a series of carrying devices engaging the members, and means presentable to the carrying devices in succession to maintain the engagement thereof with said members.

3. The combination with a series of denominational members, of carrying mechanism therefor including transfer-dogs, and a device movable to engage successive dogs and insure the engagement thereof with said members.

4. The combination with a series of wheels, of carrying mechanism including transfer members and transfer-dogs movable on the members, a tailpiece carried by each dog, and means coöperating with the tailpiece to positively resist premature movement of the transfer-dogs to inoperative positions.

5. The combination with a series of denominational members, of carrying mechanism associated therewith and including transfer-levers, pivoted transfer-dogs mounted on the levers and engaging the denominational members, tailpieces extended from the dogs, and means engaging the tailpieces to positively resist disengagement of the dogs from the denominational members prior to the actuation of the transfer-levers.

6. The combination with a series of denominational members, of transfer mechanism associated therewith and including transfer-levers, pivoted transfer-dogs, tailpieces extended from the dogs, and a bar movable across the series of tailpieces and coöperating therewith to prevent premature disengagement of the dogs from the denominational members.

7. The combination with a series of denominational members and a series of carrying devices associated therewith, of an actuator movable to successive members to move the same, and means movable with the actuator to engage successive carrying devices and to prevent premature disengagement thereof from the denominational members.

8. The combination with a series of denominational members, a series of carrying devices therefor including pivoted dogs engaging said members and having tailpieces, an actuator movable to successive members and adapted to move the same, and a retaining-bar movable with the actuator and coöperating with the series of tailpieces extending from the transfer-dogs.

9. The combination with a series of denominational members, a series of transfer-levers therefor, dogs pivoted on the levers and having tailpieces concentric with the axis of said levers, retaining means coöperating with the tailpieces of the dogs to prevent said dogs from prematurely moving to their disengaging positions, without interfering with the movement of the dogs when the transfer-levers are operated.

10. The combination with a series of denominational members, of a series of carrying-dogs therefor, an actuator movable to successive members, and a bevel-ended bar movable with the actuator and coöperating with the dogs to insure their engagement with said members.

11. In a combined billing and adding machine, the combination with a computing device, of a traveling carriage, a series of keys and an actuator mounted on the carriage, operating connections intermediate of the actuator and keys, and a casing inclosing the operating connections and having the actuator projected through the wall thereof to engage the computing device.

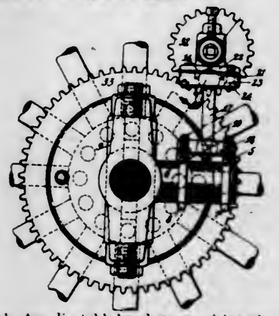
12. The combination with a computing device, of a plate, operating connections for the computing device mounted on the plate, and a dust guard or case also mounted on the plate and inclosing said operating connections, said guard or case comprising a pair of end frames rising from the plate and each including opposed members, transparent end walls clamped between the members of the respective end frames, a curved top wall having its opposite edges retained between the members of the frames, and means for securing the opposite longitudinal edges of the top wall to the plate.

13. The combination with a computing device, of a reading-glass therefor, a frame in which the glass is mounted, a single standard supporting the frame, a foot disposed at an angle to the lower end of the standard, and means for detachably securing said foot to the computing device.

14. The combination with a computing device, of a reading-glass therefor, a standard supporting the computing device, a foot located at the lower end of the standard and disposed at an angle thereto, said foot being provided with a bifurcated extremity and with a slot enlarged at one end, and a pair of headed screws carried by the casing of the computing device and designed respectively to be received within the bifurcated end of the foot and within the slot thereof.

15. The combination with a computing device, of a reading-glass therefor, a single standard, a glass-supporting frame and an attaching foot extending in opposite directions from the opposite ends of the standard, and means for detachably securing the foot to the computing device.

820,883. **SWIVEL-BEARING.** EDWARD S. LEA, Trenton, N. J. Filed May 13, 1905. Serial No. 260,359.

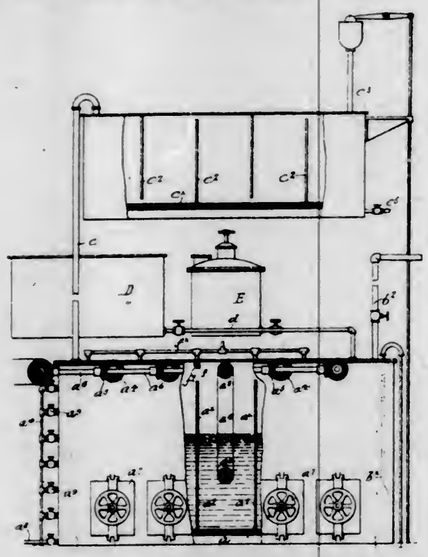


Claim.—1. An adjustable bracket comprising a base, a supporting-arm, clamping means for rigidly securing the arm by one end to the base for universal adjustment, a carrying member, clamping means for rigidly securing the arm by its other end to the clamping member for universal adjustment, and a bearing adjustably mounted on the carrying member.

2. An adjustable bracket comprising a base, an arm having a head at each end, a clamping-plate, means for locking the clamping-plate to the base, the base and plate being arranged to engage the arm by one head for universal adjustment and to clamp it in such positions, a carrying-plate, a second clamping-plate, means for securing the carrying-plate to the latter clamping-plate, the latter member being arranged to support the arm by its other head for universal adjustment and to secure the arm in such adjusted positions, and a post secured to the carrying-plate, and a bearing adjustably secured to the post.

3. An adjustable bracket comprising a base, securing means carried by the base, the base having a concave recess, a clamping-plate having a tapering aperture, screws for securing the clamping-plate to the base, an arm having a spherical head at each end, one of said heads being adjustably secured between the base at its recess and the apertured part of the clamping-plate whereby the arm can be secured to the base for universal adjustment and locked in such positions, a carrying-plate having a concave recess, a second clamping-plate having a tapering aperture, screws for securing the latter clamping-plate to the carrying-plate, the arm having its other head engaging the carrying-plate at its recess and also engaging the apertured part of the second clamping-plate whereby the arm is secured to the carrying-plate for universal adjustment and clamped in such positions, a post secured to the carrying-plate and having a transverse opening, a bearing longitudinally movable in the post-opening, and a bolt for clamping the bearing in the post-opening.

820,884. **APPARATUS FOR CONDENSING GASES.** SIDNEY T. MUFFLY, Philadelphia, Pa., assignor to Philadelphia Cyanide Process Company, Wilmington, Del., and Philadelphia, Pa., a Corporation of Delaware. Filed Oct. 6, 1905. Serial No. 281,673.



Claim.—1. In apparatus for condensing or dissolving gases or the like, the combination of a closed chamber having an inlet and containing a body of liquid, a series of substantially vertical, endless aprons extending across the chamber, partitions extending upward from the bottom of the chamber to points adjacent to the top thereof and respectively between successive aprons, with means for supporting and longitudinally moving said aprons to cause them to enter and emerge from the body of liquid in the chamber, substantially as described.

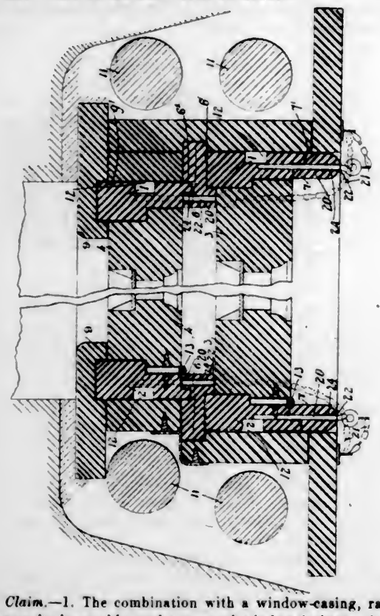
2. In apparatus for condensing or dissolving gases or the like, the combination of a closed chamber containing a body of liquid, a series of substantially vertical and endless aprons extending downwardly into the body of liquid in said chamber, means for longitudinally moving the aprons to cause them to enter and emerge from the body of liquid, with partitions extending across the chamber from the bottom to points adjacent to the top thereof and respectively placed between successive aprons, there being openings through the partitions below the level of the liquid to permit of the circulation of liquid, substantially as described.

3. In apparatus for condensing or dissolving gases or the like, the combination of a closed chamber, a series of substantially vertical aprons in said chamber, means for supplying liquid to the surfaces of the aprons, with partitions extending across the chamber and respectively placed between successive aprons, there being openings through the partitions to permit of the passage of liquid, and said casing having a false bottom of filtering material placed to form a space for the filtered liquid, there being an outlet to said space, substantially as described.

4. In apparatus for condensing or dissolving gases or the like, the combination of a closed chamber having an inlet and an outlet for gases, &c., to be dissolved or condensed, a series of aprons in the chamber, means for supplying said aprons with solvent liquid, and means for supplying air to the chamber so that it exerts a direct downward pressure upon liquid in the same greater than that of the atmosphere, substantially as described.

5. In apparatus for condensing or dissolving liquid or the like, the combination of a closed chamber having an inlet and an outlet for gases, &c., to be dissolved or condensed, a series of aprons in the chamber, means for supplying air to the chamber so that it exerts a direct downward pressure upon liquid in the same greater than that of the atmosphere, a closed box having a series of baffle-plates and connected to said chamber, with an automatic outlet-valve for said box having means whereby it is periodically actuated to permit of escape of air, substantially as described.

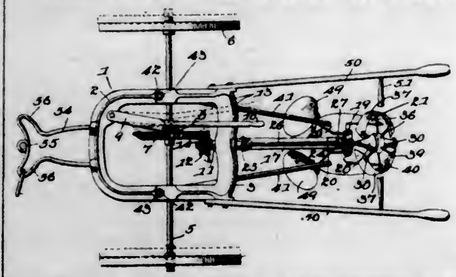
820,885. **WINDOW-SASH FRAME.** JOHN MUIR, Carluke, Scotland. Filed Oct. 20, 1904. Serial No. 230,488.



Claim.—1. The combination with a window-casing, rabbeted strips on its inner side, and a grooved window-facing on its outer side, a parting-piece grooved on both sides, with grooves of different widths, sliding stiles between the parting-piece and the rabbeted strip and between the parting-piece and window-facings, a pair of window-sashes each hinged at one side of one of said sliding stiles, an elongated projection at the opposite side of said sash, and an elongated socket in the adjacent face of each stile into which said projection may be inserted by a combined horizontal and downward movement of the sash and projection, the grooves in the window-facings and rabbeted strip being of the same width as the inner and outer grooves of the parting-piece respectively.

2. In combination with a window-casing, sliding weight-controlled stiles, means for securing said stiles to said casing, a sash hinged at one side to one of said stiles, an elongated projection with a curved end on the unhinged side of said sash, a recessed plate on the stile adjacent thereto, an elongated portion at the lower end of said recessed plate open inwardly at its upper end, whereby upon securing the stile to the casing and vertically moving the sash, the curved end of the projection will abut against the upper limit of the recessed plate to cause the sash to be slightly forced inward.

820,886. **COTTON CHOPPER AND CULTIVATOR.** GEORGE H. MCGUIRE, Dahlonega, Ga. Filed Dec. 26, 1905. Serial No. 293,354.



Claim.—1. In a cotton-chopper, a hingedly-supported beam, divergent ground-engaging supporting means connected with said beam, and a rotary chopping member carried by the latter.

2. In a cotton-chopper, a hinged beam, and divergent ground-engaging supporting means connected adjustably therewith.

3. In a cotton-chopper, a hinged beam, plates pivotally connected therewith and having downwardly-extending divergent wing-carrying arms, and means for securing the plates at various adjustments.

4. A hinged beam, overlapping plates pivotally connected therewith and having downwardly-divergent wing-carrying arms, and means for securing the plates at various adjustments.

5. A beam having a downturned bracket, plates having downwardly-divergent wing-carrying arms, and means adjustably securing the plates upon the downturned bracket.

6. A beam having a bracket, plates pivoted upon the beam and having ground-engaging supporting means, and means for securing the plates at various adjustments.

7. A beam having a bracket, overlapping plates pivoted upon said bracket and having downwardly-divergent ground-engaging wings and provided with registering slots, and tightening means extending through said slots and through the bracket.

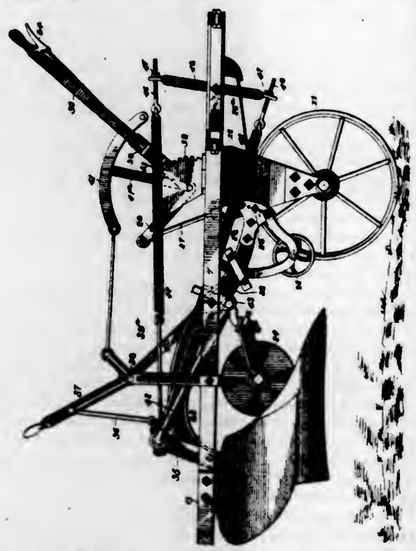
8. A chopper-supporting beam having a bracket, and members pivoted adjustably upon the bracket and having terminal ground-engaging wings.

9. A shaft supported for rotation and having a clutch member, a hub having clutch-engaging teeth, a spring connecting the hub with the clutch member, and blade-carrying spokes radiating from the hub.

10. A shaft supported for rotation, a clutch member upon said shaft, a hub having clutch-engaging teeth, a bolt extending through the hub and connected adjustably therewith, a spring connecting said bolt with the clutch-carrying shaft, and earth-engaging members connected with and supported by the hub.

11. A shaft supported for rotation, a hub connected with the shaft by flexible and resilient connecting means, spokes extending from the hub, and chopping-blades connected adjustably with the spokes.

820,887. **MOTOR-PLOW.** JOHN W. MCGUIRE, Joliette, N. D., assignor of one-fourth to George F. Ogg, Minneapolis, Minn., and one-fourth to Daniel Dow, Grand Forks, N. D. Filed July 6, 1905. Serial No. 268,363.



Claim.—1. The combination, with the axle of a motor, of a gang-plow frame having parallel side bars extended forward, hubs adapted to receive and extend from the said axles and having reduced cylindrical portions at their outer ends, and couplings which are applied to and rotatable on such reduced portions and connected with the said side bars, substantially as described.

2. A gang-plow frame formed of cross-bars and longitudinal bars arranged at an angle to the former, all rigidly connected, and side bars extending forward and provided with rigid couplings, and extension-hubs adapted for attachment to a motor-axle and for rotatable connection with the said couplings, substantially as described.

3. The combination, with a frame and a plow proper, of means for raising and lowering the latter, the same comprising a main lever and a supplementary lever connected with the front and rear ends of the plow-beam, respectively, means for connecting the two levers, the same comprising a pivoted quadrant which the main lever engages and by which it is shifted, and a rod connecting such quadrant with the rear lever whereby the latter is shifted by the quadrant when the main lever is thrown forward or backward, substantially as described.

4. The combination, with a wheeled frame and a plow proper, of mechanism for raising, lowering, and tilting the plow, the same comprising the main lever 30 and a fixed toothed segment to which the lever is pivoted, a pivoted quadrant-lever, a tappet, 41, adapted to swing fore and aft in a vertical plane, and mechanism for connecting the main lever and quadrant with the respective ends of the plow-beam, substantially as described.

5. The combination, with a frame and a plow proper, of the lever 30 connected with the front end of the beam, a second lever 37 connected with the rear end of the beam and having a handle for use in raising the plow, and a rod 40 connecting the two levers, whereby when the rear lever is raised the front one is thrown forward and the front end of the plow also raised, as described.

6. The combination, with a plow-frame and plow proper, of a bar 42 which is pivotally connected with the rear end of the beam and extends forward and is pivotally connected with the frame whereby its serves to hold the plow in due position and also as a fulcrum on which the plow swings in its upward and downward movement, a draft-bar 26^4 which is pivotally connected with the frame and front end of the plow-beam, and lever mechanism mounted on the frame and connected with the plow-beam whereby the latter may be raised and lowered so as to swing on the fixed pivot ends of the bars 42 and 26^4, as described.

7. The combination, with a frame composed of longitudinal bars and transversely-inclined bars, of plows arranged in the spaces between the said bars, and means for pivotally connecting the opposite ends of the plow-beams with the said frame, and means for raising and lowering the plows, substantially as described.

8. The combination, with a frame, a plow proper, and a swing bar which is pivoted at its respective ends to the frame and the rear end of the plow-beam, lever mechanism for raising and lowering the plow, and an equalizing spring attachment comprising two coil-springs connected at their rear ends with the plow-beam and an equalizing-bar pivoted in vertical position in the frame and connected with the front ends of the springs, all adapted to operate in the manner described.

9. The combination, with a plow-beam and a plow proper, of the draft-bar 26^4 which pivotally connects the front end of the beam with said frame, and a steadying and fulcrum bar 42 which is pivotally connected with the frame at its front end and also with the plow-beam at its rear end, and means for raising and lowering the plow, substantially as described.

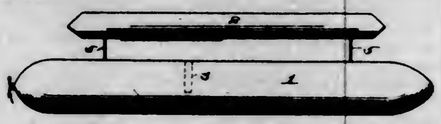
10. The combination, with the wheeled plow-frame, of a plow and plow-beam, pivoted draft and fulcrum rods 26^4 and 42, connecting opposite ends of the beam with the frame, lever mechanism for raising and lowering the plow, and a spring attachment secured to the forward portion of the frame and connected with rear end of the plow-beam, which is adapted to swing above and below the frame, so that the spring attachment aids in holding the plow elevated and also steadies it in the lowered or working position, substantially as described.

11. The combination, with the wheeled plow-frame, of a plow and plow-beam, pivoted draft and fulcrum rods 26^4 and 42, connecting opposite ends of the beam with the frame, lever mechanism for raising and lowering the plow and beam, and a spring attachment comprising a bar arranged vertical and pivoted at its middle to the plow-frame in advance of the plow, a spiral spring connecting the respective ends of such bar with the rear upper portion of the plow-beam, the fulcra of the beam being arranged in such relation to the pivot of the bar to which the springs are attached, that when the beam is raised or lowered the springs exert traction in such manner as to assist in holding the plow and beam above the frame and to steady it when lowered below the frame in working position, substantially as described.

820,888. **VALVE ATTACHMENT FOR TORPEDOES.** ERNEST NIEHOFF, Brooklyn, N. Y. Filed May 9, 1904. Serial No. 207,142.

Claim.—1. A firing device comprising a casing, firing means arranged therein, a spring governing the operation of said firing means, and means adapted to be wedged into engagement with said

spring for effecting a release of the firing means for permitting operation thereof.



2. In a device of the class described, the combination with an explosive projectile, and means for temporarily maintaining said projectile buoyant, and for permitting sinking at the conclusion of the temporary buoyancy, of means for exploding said projectile, and means adapted to be operated by the pressure of the surrounding water for controlling the operation of said exploding means.

3. A firing device comprising a firing-pin, means for throwing the same into a firing position, a laterally-movable spring arranged at one side of said firing-pin, a hook carried by said spring normally engaging said pin for retaining the same against operation, and pressure-governed means for releasing said spring.

4. A firing device comprising a casing, a firing-pin longitudinally movable therein, a spring arranged longitudinally within said casing, means for throwing said pin, means carried by said spring normally engaging said pin for preventing the throwing thereof, and pressure-governed means for moving said spring laterally for releasing said pin.

5. A firing device comprising a casing, a firing-pin arranged therein, means for throwing said firing-pin to a firing position, an annular groove being formed in said pin, springs arranged longitudinally of said casing and formed with hooks normally extending into said groove, and pressure-operated means for pressing said springs for removing the hooks from the groove.

6. A firing device comprising a casing, a firing-pin arranged within, means for throwing said pin for producing a firing operation thereof, springs arranged longitudinally of said casing and engaging said pin for preventing such firing operation, said springs being bent intermediate their length, and pressure-operated means adapted to be pressed between said springs in contact with said bent portions for throwing said springs out of engagement with said pin.

7. The combination with a container for explosive materials, of a casing extending into the same, a firing-pin arranged within said casing, means for locking said pin against operation, a valve mounted to slide longitudinally of said casing, a spring normally preventing such movement of said slide, means engaged by said slide when moved longitudinally for releasing said pin, and means for throwing said pin for accomplishing an igniting operation thereof when the pin is released.

8. A firing device comprising a casing, firing means arranged therein, springs governing the operation of said firing means, and a valve adapted to be wedged between said springs when subject to pressure for releasing said firing means.

9. A firing device comprising a casing, firing means arranged therein, a spring extending longitudinally of said casing, and acting laterally for retaining said firing means out of operation, and means designed to be moved by pressure into engagement with said spring for moving the same laterally to a position for releasing said firing means.

10. An explosive projectile comprising a firing member, gripping means engaging the same from opposite sides, and a valve member capable of spreading the gripping means when submitted to a given pressure.

11. A firing device comprising a casing, firing means arranged therein, springs extending longitudinally of said casing, and acting laterally for retaining said firing means out of operation, and pressure-governed means adapted to be moved longitudinally of the springs between the same for spreading the same apart and releasing said firing means.

820,889. **DISCHARGING-PASTE AND PROCESS OF MAKING SAME.** KARL RENKING, Ludwigshafen-on-the-Rhine, Germany, assignor to Badische Anilin & Soda Fabrik, Ludwigshafen-on-the-Rhine, Germany, a Corporation. Filed Jan. 31, 1905. Serial No. 243,589.

Claim.—1. As a new article of manufacture a discharging-paste containing a hydrosulfite and also containing a hereinbefore-defined salt so that the hydrosulfite remains practically undissolved.

2. As a new article of manufacture a discharging-paste containing a hydrosulfite and also containing common salt, so that the hydrosulfite remains practically undissolved.

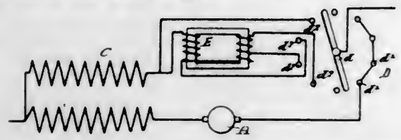
3. As a new article of manufacture a discharging-paste containing sodium hydrosulfite and also containing a hereinbefore-defined salt so that the hydrosulfite remains practically undissolved.

4. As a new article of manufacture a discharging-paste containing sodium hydrosulfite and also containing common salt so that the hydrosulfite remains practically undissolved.

5. As a new article of manufacture a discharging-paste containing a hydrosulfite and also containing a hereinbefore-defined salt so that the hyrdosulfite remains practically undissolved, glycerin, caustic-soda solution and British gum thickening.

6. As a new article of manufacture a discharging-paste containing sodium hydrosulfite and also containing common salt, so that the hydrosulfite remains practically undissolved, glycerin, caustic-soda solution and British gum thickening.

820,890. **ALTERNATING-CURRENT MOTOR.** ADOLPH W. SCHRAMM, Philadelphia, Pa., assignor to Electro Dental Manufacturing Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed May 20, 1905. Serial No. 261,381.



Claim.—1. An alternating-current motor having main and corrective field-windings, and means for varying the speed of the motor, said means including a device for varying, through a number of steps, the current-flow in the corrective field-circuit, and for varying the number of turns of the main field-winding in circuit, substantially as described.

2. An alternating-current motor having main and corrective field-windings and means for varying the speed of the motor, said means including a device for varying, through a number of steps, the current-flow in the corrective field-circuit for each of a plurality of arrangements of the main field-winding, substantially as described.

3. An alternating-current motor having a main field-winding in series with its armature, a corrective winding placed to vary the magnitude and phase of the flux set up by said main field-winding, current modifying means in series with the corrective winding, and a controlling device having connections for varying the number of turns of the main field-winding and the amount of the current-modifying means in circuit, substantially as described.

4. An alternating-current motor having a main field-winding in series with its armature, corrective winding connected in parallel to the armature and main field-winding, and placed to vary the magnitude and phase of the flux set up by said main field-winding, an inductive winding in series with the corrective winding, and a controlling device having connections for varying the number of turns of the main field-winding and of the inductive winding in circuit, substantially as described.

5. An alternating-current motor having a main and a corrective field-winding, current-modifying means, and a controller connected to vary the amount of the main field-winding and also the amount of the current-modifying means in circuit, substantially as described.

6. An alternating-current motor having main and corrective field-windings, current-modifying means in circuit with the corrective winding, and a controller for governing the amount of said means in circuit, said controller including a rotatably-supported arm connected to a current-supply main, a series of contacts connected to different points on the current-modifying means, and a second series of contacts connected to the main field-winding of the motor, substantially as described.

7. An alternating-current motor having main and corrective field-windings, current-modifying means in circuit with the corrective winding, and a controller for governing the amount of said means in circuit, said controller including an arm and contacts whereby both the main and corrective field-circuits may be simultaneously connected to a current-supply main or simultaneously broken, substantially as described.

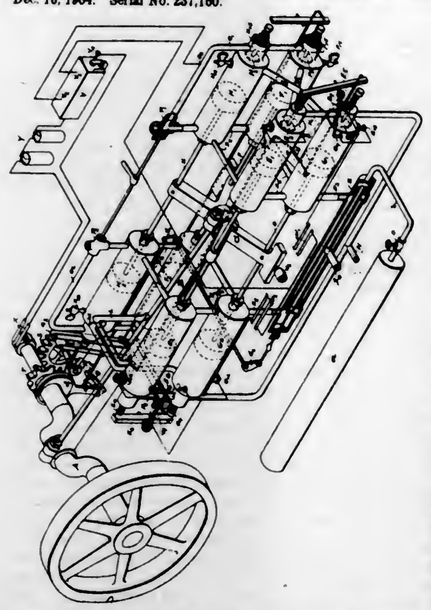
8. An alternating-current motor having a main and a corrective field-winding, current-modifying means in circuit with the corrective winding, a controller having certain contacts connected to different points of the main field-winding, other contacts connected to different points on the current-modifying means, and an arm for simultaneously connecting successive pairs of said contacts to a current-supply main, substantially as described.

9. An alternating-current motor having main and corrective field-windings, a controller having an arm connected to a current-supply main, two sets of contacts for the controller-current-modifying windings connected at various points of their length to one set of contacts, and the main field-winding having a plurality of connections respectively to the other set of contacts, substantially as described.

10. An alternating-current motor having a main and a corrective field-winding, an inductive resistance in circuit with said corrective field, and a controller for varying the amount of said resistance in circuit, said controller having a number of contacts, and having pieces placed to cause one contact or set of contacts to be disengaged before the circuit can be completed through another contact or contacts to prevent short-circuiting of successive contacts, substantially as described.

11. An alternating-current motor having a main and a corrective field-winding, current-modifying means in circuit with the corrective winding, and a device for varying the amount of said means in circuit, said device including pieces for simultaneously breaking the circuits of the main and corrective windings between successive positions, substantially as described.

820,891. **GAS-ENGINE.** JOHN C. SCOVEL, Jr., Chicago, Ill. Filed Dec. 16, 1904. Serial No. 237,160.



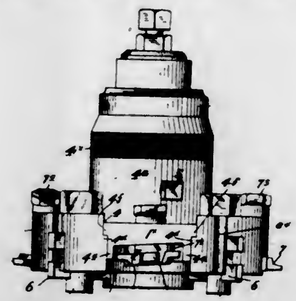
Claim.—1. The combination of a reciprocating cross-head and two pairs of cylinders, the pistons of each pair being equal in area and connected to the cross-head at opposite points equally distant from the center from which the power is taken, and two equalizing-tubes connecting the ends of each pair of cylinders constantly.

2. The combination of eight equal cylinders, open at one end only and arranged in two sets of four cylinders each, with open ends facing each other and center lines coinciding, of eight pistons and four piston-rods, connected to a common cross-head, reciprocating between the sets of cylinders, at points opposite and equally distant from the center of the cross-head from which power is taken, and of equalizing-tubes connecting the closed ends of the alternate cylinders.

3. The combination of a reciprocating cross-head, of four equal cylinders side by side, of four pistons and piston-rods attached to the cross-head at points opposite and equally distant from its center, of stuffing-boxes for the piston-rods, of equalizing-tubes connecting the farther ends of the alternate cylinders, of equalizing-tubes connecting and a common exhaust-valve for the ends of the cylinders nearest the cross-head, of a conduit connecting these latter equalizing-tubes with the chambers of the exhaust-valves for the farther pairs of cylinder ends.

4. The combination of four piston-rods passing through points opposite and equally distant from the center of a common reciprocating cross-head, each piston-rod carrying two equal pistons at its ends, of cylinders whose farther ends are connected in alternate pairs by equalizing-tubes and whose nearer ends are provided with stuffing-boxes for the piston-rods, of equalizing-tubes for the nearer ends of the cylinders, and valves which open communication alternately with the equalizing-tube spans, of the ends of the cylinders nearest and on opposite sides of the cross-head and an exhaust-passage.

820,892. **CUTTER-HEAD.** ELMER S. SHIMER and GEORGE S. SHIMER, Milton, Pa. Filed Nov. 21, 1905. Serial No. 288,471.



Claim.—1. A rotary cutter-head of the character described, comprising a primary member or section carrying sets or groups of straight radial bits effective to act upon the material, and a movable member or section carrying circular cutters, said primary member also carrying circular cutters, the circular cutters of said members alternating said bits and supplementing the action of said bits in cutting or acting upon the material or board.

2. A rotary cutter-head of the character described, comprising a primary member having a reduction in its upper surface, extending clear across the same, and a movable or supplemental member or section seated in said reduction, said primary member carrying in its peripheral edge sets of straight radial bits and circular cutters arranged intermediately of said bits and said movable member carrying upon its under side, at the ends, circular cutters, also arranged intermediately of said bits, said circular cutters adapted to act upon the upper and lower edges or surfaces of the product resulting from the action of said bits.

3. A rotary cutter-head of the character described, comprising a primary member carrying groups or sets of straight radial bits and circular cutters arranged intermediately of said bits, said member having in opposite peripheral edges thereof recesses and in its upper surface a seat or reduction extending clear across the same in a line parallel with said peripheral recesses and a supplemental member or section fitted in said reduction or seat and carrying upon its under side, at the ends, circular cutters whose seats are arranged within said peripheral recesses, said circular cutters adapted to act upon the upper and lower edges of the product resulting from the action of said straight bits.

4. A rotary cutter-head of the character described, comprising a primary member having a reduction extending clear across thereof, said member also having peripheral recesses opening upward into said reduction, and a supplemental member fitted into said reduction and having upon its under side, at the ends, pendent flanges let into said peripheral recesses of said primary member, said supplemental cutter-head member also carrying opposite circular cutters arranged in seats formed by said flanges, and said primary cutter-head member carrying groups or sets of straight radial bits and circular cutters, said circular cutters alternating said straight radial bits and adapted to act upon the upper and lower edges or surfaces of the product resulting from the cutting action of said radial bits.

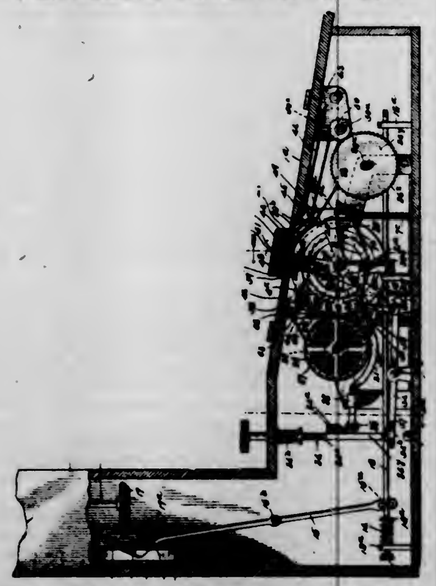
5. A rotary cutter-head of the character described, comprising a primary stationary member equipped with groups or sets of radial bits, circular cutters and a movable member set into said primary member and also equipped with circular cutters, and means for the adjustment of said movable member as in expanding or varying the relative distance between the circular cutters of the primary member and those of the latter member, said circular cutters being adapted to act upon the upper and lower edges or surfaces of the product resulting from the cutting action of said radial bits.

820,893. **RAIN-COAT.** FLORENCE W. SLATER, Flushing, N. Y. Filed Feb. 1, 1906. Serial No. 299,937.



Claim.—A rain protector or coat for women, comprising an outer rain-coat, a set of fastening members around the lower inner edge of such coat, an inner rain-skirt open from top to bottom and provided with fastenings on its meeting edges whereby it may be secured together after the skirt is in position, and with devices on its upper edge, whereby it may be secured around the waist of the wearer beneath the ordinary skirts and below the bands thereof, and removed or put on without removing the ordinary skirts, and fastening devices on the lower outer edge of the inner rain-skirt adapted to engage the fastening devices on the lower edge of the outer coat and pocket the wearer's ordinary skirts between the coat and skirt, substantially as described.

820,894. **TIME CHECK OR RECORDER.** LESLIE M. SOBER and ELMER E. BROWN, Oklahoma, Okla.; said Brown assignor to James L. McCune, Oklahoma, Okla. Filed June 12, 1905. Serial No. 264,855.



Claim.—1. In a time-check and recording mechanism, a casing having a desk portion, a series of dating-wheels, clock mechanism for setting said wheels, said desk portion of the casing including a removable top having an aperture and a transparent portion, a plate held under said top aperture, means for moving a record-receiving strip over said plate and said wheels, a supplemental segmental wheel having peripheral characters, a carbon-ribbon held over said paper in line with all of said wheels, means for setting said supplemental wheel to bring a predetermined portion of its circumference in line with said plate, means coöperating with said supplemental-wheel-setting means, for pressing the ribbon and the record-receiving strip against the several wheels, and means, coöperating with said supplemental-wheel-setting means and said pressing means, for moving said strip with the record from under the top aperture and under the transparent portion of the top, substantially as shown and described.

2. In a time-check and recording mechanism, a casing having a desk portion, a series of dating-wheels, a clock mechanism for setting said wheels, said desk portion of the casing including a removable top having an aperture and a transparent portion, a plate held under said top aperture, means for moving a record-receiving strip over said plate and said wheels, a supplemental segmental wheel having peripheral characters, a carbon-ribbon held over said paper in line with all of said wheels, means for setting said supplemental wheel to bring a predetermined portion of its circumference in line with said plate, means, coöperating with said supplemental wheel for pressing the ribbon and the record-receiving strip against the several wheels, and means, coöperating with said supplemental-wheel-setting means and said pressing means for moving said strip with the record from under the top aperture and under the transparent portion of the top, and means for perforating said strip after each record.

3. In a time-check and recording mechanism, a casing having a desk portion, a series of dating-wheels, clock mechanism for setting said wheels, said desk portion of the casing including a removable top having an aperture and a transparent portion, a plate held under said top aperture, means for moving a record-receiving strip over said plate and said wheels, a supplemental segmental wheel having peripheral characters, a carbon-ribbon held over said paper in line with all of said wheels, means for setting said supplemental wheel to bring a predetermined portion of its circumference in line with said plate, means, coöperating with said supplemental-wheel-setting means, for pressing the ribbon and the record-receiving strip against the several wheels, means coöperating with said supplemental-wheel-setting means and said pressing means, for moving said strip with the record from under the top aperture and under the transparent portion of the top, and means for gripping said strip to hold the same from movement while the recorded portion of the strip is being removed from the casing, substantially as shown and described.

4. In an apparatus of the class described, a casing including a desk portion having an apertured lid, a shaft mounted within the casing, a pair of time-wheels mounted on the shaft, means for automatically setting said time-wheels, a supplemental dating-wheel mounted on the shaft and having a hub portion projecting through the casing, a turn-head and a pointer on said hub portion, a scale on the casing for coöperating with said pointer, a spindle within the casing adapted to receive a roll of paper, a second spindle also within the casing and adapted to receive the paper as it is unwound from the first spindle, a writing-plate over which and the time and dating wheels the paper passes, a ribbon held above the paper and the time and dating wheels, means for pressing the ribbon against the paper and the wheels at times to leave a record on the paper, said desk-lid aperture adapted to expose a part of the paper to receive writing thereon, a segmental character-bearing wheel adjacent the time-wheels, said segmental wheel having peripherally-arranged and spaced characters, a plurality of keys, one for each peripheral-wheel character, means coöperating with said keys for setting said peripheral wheels and means operated by said keys for moving said paper and ribbon forward after each entry to remove the recorded portion of the paper from under the desk writing-aperture, substantially as shown and described.

5. In an apparatus of the class described, a casing including a desk portion having an apertured lid, a shaft mounted within the casing, a pair of time-wheels mounted on the shaft, means for automatically setting said time-wheels, a supplemental dating-wheel mounted on the shaft and having a hub portion projecting through the casing, a turn-head and a pointer on said hub portion, a scale on the casing for coöperating with said pointer, a spindle within the casing adapted to receive a roll of paper, a second spindle also within the casing and adapted to receive the paper as it is unwound from the first spindle, a writing-plate over which and the time and dating wheels the paper passes, a ribbon held above the paper and the time and dating wheels, means for pressing the ribbon against the paper and the wheels at times to leave a record on the paper, said desk-lid aperture adapted to expose a part of the paper to receive writing thereon, a segmental character-bearing wheel adjacent the time-wheels, said segmental wheel having peripherally-arranged and spaced characters, a plurality of keys, one for each peripheral-wheel character, means coöperating with said keys for setting said peripheral wheel means for moving said paper and ribbon forward after each entry to remove the recorded portion of the paper from under the desk writing-aperture, and means controlled by said keys for perforating said paper between the records.

6. In a device of the class described, the combination of a paper-ribbon-moving device actuated from the exterior of the casing, a plurality of time-indicating wheels, means for setting said wheels, a segmental character-bearing wheel, having a plurality of peripheral characters, means actuated by the paper-moving-device-actuating means, for setting said segmental wheel, a slotted cover through which the paper is disclosed and means coöperating with said paper-moving mechanism for pressing the paper against the time and segmental wheels, substantially as shown and for the purposes described.

7. In an apparatus of the class described, a desk having a lid provided with an elongated aperture and a housing at one end of said aperture, a ribbon-holding bobbin mounted within the desk, guide-rollers in the lid-housing, a ribbon-receiving bobbin within the desk, said ribbon passing over said housing-rolls and onto said receiving-bobbin, a paper-holding bobbin and a paper-receiving bobbin, a writing-plate secured within the desk below the lid-aperture, said paper adapted to pass over said writing-plate, means within the casing for intermittently winding said paper upon said paper-receiving bobbin, a plurality of time-wheels arranged within the casing, below the lid-housing and the paper and ribbon, independent means for automatically setting said time-wheels, a segmental wheel having peripherally-arranged indicating characters, mounted adjacent said time-wheels, means within the casing for setting said segmental wheel, an impressor within the lid-housing above the ribbon, means controlled by the paper-winding means for actuating said impressor, substantially as shown and for the purposes described.

8. In an apparatus of the class described, a desk having a lid provided with an elongated aperture and a housing at one end of said aperture, a ribbon-holding bobbin mounted within the desk, guide-rollers in the lid-housing, a ribbon-receiving bobbin within the desk, said ribbon passing over said housing-rolls and onto said receiving-bobbin, a paper-holding bobbin and a paper-receiving bobbin, a writing-plate secured within the desk below the lid-aperture, said paper adapted to pass over said writing-plate, means within the casing for intermittently winding said paper upon said paper-receiving bobbin, a plurality of time-wheels arranged within the casing, below the lid-housing and the paper and ribbon, independent means for automatically setting said time-wheels, a segmental wheel having peripherally-arranged indicating characters, mounted adjacent said time-wheels, means within the casing for setting said segmental wheel, an impressor within the lid-housing above the ribbon, means controlled by the paper-winding means for actuating said impressor, and means controlled from the exterior of the casing for actuating said paper-winding means and said segmental-wheel-setting means, substantially as shown and described.

9. In an apparatus of the class described, a desk having a lid provided with an elongated aperture and a housing at one end of said aperture, a ribbon-holding bobbin mounted within the desk, guide-rollers in the lid-housing, a ribbon-receiving bobbin within the desk, said ribbon passing over rolls and onto said receiving-bobbin, a paper-holding bobbin and a paper-receiving bobbin, a writing-plate secured within the desk below the lid-aperture, said paper adapted to pass over said writing-plate, means within the casing for intermittently winding said paper upon said paper-receiving bobbin, means for moving said ribbon, said ribbon-moving means comprising a gear connection between the ribbon-receiving bobbin and the paper-holding bobbin, a plurality of time-wheels arranged within the casing, below the lid-housing and the paper and ribbon, independent means for automatically setting said time-wheels, a segmental wheel having peripherally-arranged indicating characters, mounted adjacent said time-wheels, means within the casing for setting said segmental wheel, an impressor within the lid-housing above the ribbon, means controlled by the paper-winding mechanism for actuating said impressor, substantially as shown and described.

10. In an apparatus of the class described, a desk having a lid provided with an elongated aperture and a housing at one end of said aperture, a ribbon-holding bobbin mounted within the casing, guide-rollers in the lid-housing, a ribbon-receiving bobbin within the desk, said ribbon passing over said housing-rolls and onto said receiving-bobbin, a paper-holding bobbin and a paper-receiving bobbin, a writing-plate secured within the desk below the lid-aperture, said paper adapted to pass over said writing-plate, means within the casing for intermittently winding said paper upon said paper-receiving bobbin, a plurality of time-wheels arranged within the casing, below the lid-housing and the paper and ribbon, independent means for automatically setting said time-wheels, a segmental wheel having peripherally-arranged indicating characters, mounted adjacent said time-wheels, means within the casing for setting said segmental wheel, an impressor within the lid-housing above the ribbon, means controlled by the paper-winding mechanism for actuating said impressor, means connected with the paper-winding means for perforating the paper between the records, substantially as shown and described.

11. In an apparatus of the class described, a desk having a lid provided with an elongated aperture and a housing at one end of said aperture, a ribbon-holding bobbin mounted within the desk, guide-rollers in the lid-housing, a ribbon-receiving bobbin within the desk, said ribbon passing over said housing-rolls, and onto said receiving-bobbin, a paper-holding bobbin and a paper-receiving bobbin, a writing-plate secured within the desk below the lid-aperture, said paper adapted to pass over said writing-plate, means within the casing for intermittently winding said paper upon said paper-receiving bobbin, a plurality of time-wheels arranged within the casing, below the lid-housing and the paper and ribbon, independent means for automatically setting said time-wheels, a segmental wheel having peripherally-arranged indicating characters mounted adjacent said time-wheels, means within the casing for setting said segmental wheel, an impressor within the lid-housing above the ribbon, means controlled by the paper-winding mechanism for actuating said impressor, means connected with the paper-winding means for perforating the paper between the records, and means operated from the exterior of the casing for actuating said winding means, said segmental-wheel-setting means, and said paper-perforating means, substantially as shown and described.

12. In an apparatus of the class described, a desk having a lid provided with an elongated aperture and a housing at one end of said aperture, a ribbon-holding bobbin mounted within the desk, guide-rollers in the lid-housing, a ribbon-receiving bobbin within the desk, said ribbon passing over said housing-rolls and onto the receiving-bobbin, a paper-holding bobbin and a paper-receiving bobbin, a writing-plate secured within the desk below the lid-aperture, said paper adapted to pass over said writing-plate, means within the casing for intermittently winding said paper upon said paper-receiving bobbin, a plurality of time-wheels arranged within the casing, below the lid-housing and the paper and ribbon, independent means for automatically setting said time-wheels, a segmental wheel having peripherally-arranged indicating characters, mounted adjacent said time-wheels, means within the casing for setting said segmental wheel, an impressor within the lid-housing above the ribbon, means controlled by the paper-winding mechanism for actuating said impressor, means connected with the paper-winding means for perforating the paper between the records, and means operated from the exterior of the casing for actuating said paper-winding means and said segmental-wheel-setting means, substantially as shown and described.

13. In a mechanism of the character stated, a casing having a lid provided with an elongated aperture, and a transparent portion adjacent thereto, means for moving a paper strip in the casing under the lid-aperture and the transparent portion the strip being adapted to receive a written entry and a printed record thereon, a printing mechanism for making such printed record comprising dating-wheels, mechanism for automatically setting said dating-wheels, a printing-ribbon, means independent of the wheel-setting mechanism for pressing the ribbon against the paper and the wheels to imprint a record on the paper, means for moving said paper after each record to expose the record under the transparent portion of the lid, means controlled by the paper-moving means for moving the ribbon, a segmental wheel arranged adjacent the dating-wheels and having peripherally-arranged characters, means for setting said segmental wheel to its proper position, and a plurality of keys one for each segmental character of the peripheral wheel for actuating said setting means, said paper-moving means and said impressing mechanism substantially as shown and described.

14. In an apparatus of the class described, a casing having a lid provided with an elongated aperture and a transparent portion adjacent thereto, a hood at one end of said elongated aperture, a shaft mounted within said casing, a pair of time-indicating wheels mounted on said shaft, a clock mounted within the casing, gear connections between said clock and said time-indicating wheels for moving the

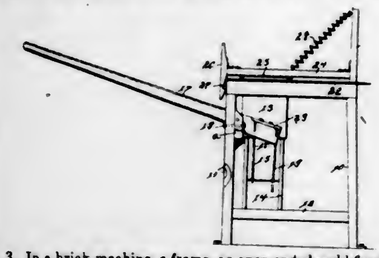
time-indicating wheels in unison with said clock, a third time-indicating wheel mounted adjacent the other time-indicating wheels, means connected with said third time-indicating wheel and extending to without the casing by means of which said wheel can be turned, a pointer on said turning means, a scale-plate on said casing for coöperating with the pointer, a segmental wheel mounted adjacent the first-mentioned time-indicating wheels on said shaft, a supplemental segmental wheel having a plurality of peripherally-spaced indicating characters, a writing-plate under the aperture of the casing-lid, a paper-roll holder mounted within the casing and a paper-receiving roll also mounted within the casing, friction-rollers mounted in the casing for receiving said paper, said paper passing over said writing-plate and said wheels, a ratchet-and-pawl device for winding up said paper onto the paper-receiving roll, an impressor extended up into the lid-hood and means for operating said ratchet-and-pawl paper-moving means and said impressor, said last-named means including a lever fulcrumed on the casing-bottom, a pitman connected to said segmental wheel, a plurality of keys having cam-surfaces, one key for each peripheral indicating character of the segmental wheel, said keys adapted to coöperate with said pitman whereby when the keys are depressed, the pitman will be moved to turn the segmental wheel, said keys also coöperating with said paper-moving means and said impressor-actuating lever for operating said lever, a ribbon passing over the paper and over said wheels, and under the impressor, means for moving said ribbon synchronously with said paper, said ribbon-moving means comprising a gear connection with said paper-moving means, all being arranged substantially as shown and described.

15. In an apparatus of the class described, a casing having a lid provided with an elongated aperture and a transparent portion adjacent thereto, a hood at one end of said elongated aperture, a shaft mounted within said casing, a pair of time-indicating wheels mounted on said shaft, a clock mounted within the casing, gear connections between said clock and said time-wheels for moving the time-indicating wheels in unison with said clock, a third time-indicating wheel mounted adjacent the other time-indicating wheels, means connected with said third time-indicating wheel and extending to without the casing by means of which said wheel can be turned, a pointer on said turning means, a scale-plate on said casing for coöperating with the pointer, a segmental wheel mounted adjacent the first-mentioned time-indicating wheels on said shaft, said segmental wheel having a plurality of peripherally-spaced indicating characters, a writing-plate under the aperture in the casing-lid, a paper-roll holder mounted within the casing and a paper-receiving roll also mounted within the casing, friction-rollers mounted in the casing for receiving said paper, said paper passing over said writing-plate and said wheels, a ratchet-and-pawl device for winding up said paper onto the paper-receiving roll, an impressor extending up into the lid-hood, means for operating said ratchet-and-pawl paper-moving means and said impressor, said last-named means including a lever fulcrumed on the casing-bottom, a pitman connected to said segmental wheel, a plurality of keys having cam-surfaces, one key for each peripheral indicating character of the segmental wheel, said keys adapted to coöperate with said pitman whereby when the keys are depressed the pitman will be moved to turn the segmental wheel, said keys also coöperating with said paper-moving means and said impressor-actuating lever for operating said lever, a ribbon passing over the paper and over said wheels, and in the lid-hood, means for moving said ribbon synchronously with said paper, said ribbon-moving means comprising a gear connection with said paper-moving means, a plate mounted within the casing over said paper, said last-named plate having a plurality of pin-receiving apertures, a perforating-plate having pins for entering said apertures, said perforating-plate held beneath said apertured plate and said paper, and means connected with the paper-moving means for actuating said perforating-plate, substantially as shown and described.

820,895. HAND-POWER BRICK-MACHINE. JOHN A. SODERSTROM, Sac City, Iowa. Filed Nov. 23, 1904. Serial No. 233,901.

Claim.—1. In a brick-machine, a frame having two uprights in parallel position and near to each other, adjustable bearings fixed to the uprights, a lever fulcrumed to said bearings, an open-ended mold fixed to the frame at the side of the lever, a plunger fitted in the mold and means for adjustably connecting the short arm of the lever with the plunger, to operate as set forth.

2. In a brick-machine, a frame having two uprights in parallel position and near each other, bearings provided with longitudinal slots and bolts passed through bores in the uprights and through the slots to clamp the bearings to the uprights, a lever fulcrumed to said bearings, an open-ended mold fixed to the frame in upright position, a plunger fitted in the mold, links differing in length for connecting the short arm of the lever with the plunger, to operate as set forth.



3. In a brick-machine, a frame, an open-ended mold fixed to the frame, bearings for a plunger extended downward from the mold, a platform at the top of the mold, a plunger fitted to the bearings and a lever fulcrumed to the frame in adjustable bearings fixed to the frame, a link having a hook at each end connected at its top with the lever and at its bottom with the lower end of the plunger, to operate in the manner set forth.

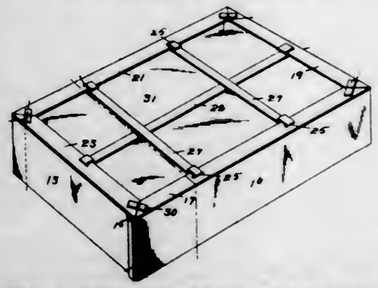
4. In a brick-machine, a frame, an open-ended mold fixed to the frame, bearings for a plunger extended downward from the mold, a plunger fitted to the bearings, a lever adjustably fulcrumed to the frame, a link having a hook at each end connected at its top with the lever and at its bottom with the lower end of the plunger, a second link having hooks at its ends connected with the lever to engage the bottom of the plunger, to operate in the manner set forth.

5. In a brick-machine, an open-ended mold fixed to the frame, a plunger fitted in the frame, a stop adjustably connected with the plunger, a link having a hook on its lower end to engage the lower end of the plunger, a detent adjustably connected with the end of the hook and means for raising and lowering the link and plunger for the purposes stated.

6. In a brick-machine, a frame having two uprights in parallel position and near each other, adjustable bearings fixed to the uprights, a lever fulcrumed to said bearings, an open-ended mold fixed to the frame aside of the short arm of the lever, a plunger fitted in the mold, means for adjustably connecting the short arm of the lever with the lower end of the plunger, a cover for closing the mold and means for locking the cover, arranged and combined to operate as set forth.

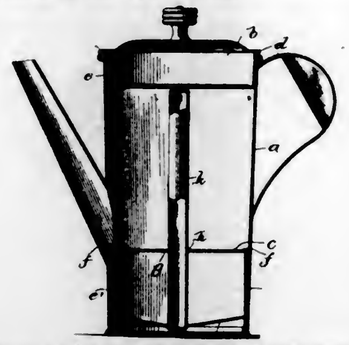
7. A brick-machine, comprising a frame, an open-ended mold fixed to the frame, bearings for a plunger connected with the lower end of the mold, a plunger fitted in the mold, a lever fulcrumed to the frame in adjustable bearings fixed to the frame, two links of unequal length having hooks at their lower ends connected with the short arm of the lever to engage the lower end of the plunger, a stop device adjustably fixed to the plunger, a detent fixed to the hook portion of the longest link, a bar hinged to the top of the frame, a striker fixed to the frame and a latch hinged to the end of the hinged bar, arranged and combined to operate in the manner set forth for the purposes stated.

820,896. SHIPPING-CRATE. FRANK VAN PATTEN, Davenport, Iowa. Filed Feb. 27, 1905. Serial No. 247,428.



Claim.—A shipping-crate comprising a sheet-metal strip having side and end portions adapted to receive superposed sheets of tin between them and also having inwardly-extending flanges on said portions arranged to rest above and below the sheets of tin and further having its ends folded into each other or interlocked, whereby it is adapted to resist edgewise thrust of the sheets of tin; in combination with metallic straps connecting the meeting ends of the flanges on the strip, at opposite sides of the crate, and metallic straps connecting opposite flanges of the strip, at opposite sides of the crate.

820,897. COFFEE AND TEA POT. JOSEPH W. WHITAKER, Noble, Ill. Filed July 17, 1905. Serial No. 270,022.



Claim.—1. A coffee or tea pot consisting of a body portion having its wall slightly tapered toward its bottom, a cover, and a close-fitting open-bottom removable cylindriform collecting-holder having a strainer-top, a central bracing-handle extending through said top and holder, and bracing-arms connecting the handle and the peripheral walls of the holder at the bottom of the holder.

2. A coffee or tea pot consisting of a body portion having its wall slightly tapered toward its bottom, and a close-fitting open-bottom removable cylindriform collecting-holder having a strainer-top, a central bracing-handle extending through said top and holder, bracing-arms connecting the handle-bottom, and the bottom of the peripheral walls of the holder and a cover for said pot having a false bottom adapted to fit down close to the top of said handle to keep the holder in place.

820,898. PROCESS OF MANUFACTURING IRON DIRECT FROM ITS OXIDS. JAMES N. WHITMAN, Philadelphia, Pa., assignor of one-half to Marcus T. Reynolds, Albany, N. Y. Filed Feb. 23, 1906. Serial No. 302,584.

Claim.—1. The improvement in processes of manufacturing iron direct from its ores, which consists in subjecting the ore to heat under oxidizing conditions to eliminate volatile impurities, and as a successive step, subjecting the purified ore to heat and agitation under deoxidizing and carburizing conditions produced by the introduction of free carbon, to partially deoxidize, carburize, partially reduce and agglomerate the ore into coherent masses.

2. The improvement in processes of manufacturing iron direct from its ores, which consists in comminuting and mechanically purifying the ore, then subjecting the comminuted ore to heat under oxidizing conditions to eliminate volatile impurities, then subjecting the ore to heat and agitation under deoxidizing and carburizing conditions produced by the introduction of free carbon, to partially deoxidize, partially reduce and agglomerate the ore into coherent masses.

3. The improvement in processes of manufacturing iron direct from its ores, which consists in subjecting the ore to heat under oxidizing conditions to eliminate volatile impurities, then subjecting the ore to heat and agitation under deoxidizing and carburizing conditions produced by the introduction of free carbon, to partially deoxidize, partially reduce and agglomerate the ore into coherent masses and then subjecting the product to higher-temperature and reducing conditions to effect complete reduction.

4. The improvement in processes of manufacturing iron direct from its ores, which consists in comminuting and mechanically purifying the ore, then subjecting the comminuted ore to heat under oxidizing conditions to eliminate volatile impurities, then subjecting the ore to heat and agitation under deoxidizing and carburizing conditions produced by the introduction of free carbon, to partially deoxidize, partially reduce and agglomerate the ore into coherent masses and then subjecting the product to higher-temperature and reducing conditions to effect complete reduction.

5. The improvement in processes of manufacturing iron direct from its ores, which consists in subjecting the ore to heat under oxidizing conditions and in the presence of a reagent for the removal and elimination of impurities and as a successive step subjecting the purified ore to heat and agitation under deoxidizing and carburizing conditions produced by the introduction of free carbon, to partially deoxidize, carburize, partially reduce and agglomerate the ore into coherent masses.

6. The improvement in processes of manufacturing iron direct from its ores, which consists in subjecting the ore to heat under oxidizing conditions to eliminate the more volatile impurities, then adding a reagent in the presence of heat to remove and eliminate remaining impurities, then subjecting the ore to heat and agitation under deoxidizing and carburizing conditions produced by the introduction of free carbon, to partially deoxidize, partially reduce and agglomerate the ore into coherent masses.

7. The improvement in processes of manufacturing iron direct from its ores, which consists in subjecting the ore to heat under oxidizing conditions to eliminate the more volatile impurities, then adding a reagent in the presence of heat to remove and eliminate remaining impurities, then subjecting the ore to heat and agitation under deoxidizing and carburizing conditions produced by the introduction of free carbon, to partially deoxidize, partially reduce and agglomerate the ore into coherent masses, then subjecting the product to higher-temperature and reducing conditions to effect complete reduction.

820,899. SHREDDED-WHEAT BISCUIT. WILLIAM H. WILLIAMS, Chicago, Ill. Filed Oct. 4, 1904. Serial No. 227,147.



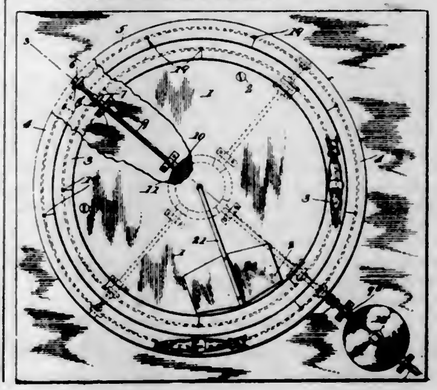
Claim.—1. A cup-shaped biscuit made up of interlaced cereal filaments whose general courses are around the cup in various directions, forming a nest-like structure.

2. A cup-shaped biscuit having its walls made up of interlaced cereal filaments forming a nest-like structure with a rounded edge the general course of which is approximately followed by the filaments visible at that edge.

820,900. REDUCTION OF INDIGO COLORING-MATTERS. ROBERT WIMMER, Ludwigshafen-on-the-Rhine, Germany, assignor to Badische Anilin & Soda Fabrik, Ludwigshafen-on-the-Rhine, Germany, a Corporation. Filed Apr. 22, 1905. Serial No. 256,986.

Claim.—The reduction of indigo coloring-matters by heating the same with iron-powder in caustic-alkali solution which contains at least six and a half per cent. of solid caustic alkali.

820,901. MERRY-GO-ROUND. JUAN L. ARISTIA, Iquique, Chile. Filed May 9, 1905. Serial No. 259,569.



Claim.—1. The improved apparatus for the purpose specified comprising a driving-shaft, a master-gear driven thereby, a series of shafts geared with the master-gear and radiating therefrom, flanged rollers keyed on the several radial shafts equidistantly from the common center, and annular rails having pendent base-flanges resting upon and held in place by the aforesaid flanged rollers, substantially as described.

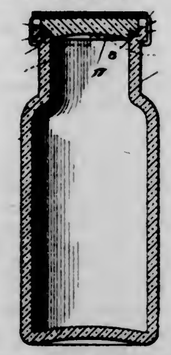
2. The improved apparatus for the purpose specified comprising a central master-gear, a series of shafts geared therewith and radiating therefrom and each provided with flanged rollers spaced apart, annular rails having pendent flanges that travel on and are held in place by the said flanged rollers, and provided with a series of posts for supporting dummy animals, a driving-shaft, and means for detachably connecting it with one of the aforesaid radial shafts, substantially as described.

3. An apparatus for the purpose specified, comprising a central master-gear and a series of radial shafts operatively geared therewith and provided with rollers arranged equidistantly from the common center, and an annular platform or rail supported upon and adapted to be driven by the several rollers, substantially as described.

4. An apparatus for the purpose specified, comprising a fixed circular platform, a driving-gear arranged centrally thereof, a series of radial shafts having rollers on their outer ends, the same being spaced apart, a series of annular rails traveling on said rollers and provided with a series of vertical posts, and a shiftable stop-indicator comprising a plate and a radial arm pivoted to the center of the fixed platform and adapted for use in the manner described.

5. In an apparatus for the purpose specified, the combination, with a suitable central support, a series of annular rails arranged exterior to and concentric with such support, means for supporting said rails and causing them to travel, and a stop-indicator pivotally connected with said support so that it is adapted to be shifted around the center thereof, and comprising a laterally-extended portion and a radial arm, substantially as described.

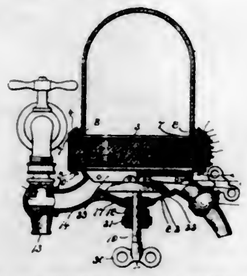
820,902. JAR-CLOSURE. CHARLES BARNES, Zanesville, Ohio. Filed Nov. 12, 1901. Serial No. 82,003.



Claim.—The combination with a vessel having a flat surface surrounding its mouth, and an upwardly-extending flange surrounding the flat surface, the under surface of the said flange being inclined in stepped relation one incline with the other, of a closure for the opening comprising an annular cap having an outwardly-extending annular flange surrounding its upper portion, said flange having an annular rib upon its lower face, said rib having a sharp edge, said closure adapted to lie within the opening of the vessel with its flange above the flat surface, a resilient gasket disposed between the flange of the closure and the flat surface of the vessel and adapted to be readily expanded by pressure of the rib thereagainst, and a yoke extending over the closure and provided with depending inwardly-turned ends for engagement with the aforesaid inclined surfaces of the first-mentioned flange, the peripheral edge of the upper part of the closure being slotted to receive and lock the yoke in engagement therewith and whereby the yoke will draw the closure downwardly with respect to the vessel, the said peripheral edge being milled.

820,903. FILTER. JOHN S. BARNES and LEO A. ROSIER, Detroit, Mich. Filed Apr. 17, 1905. Serial No. 256,154.

Claim.—1. In a filter, the combination with a casing and a filtering-stone in the casing, of a horizontally-extending strip forming a scraper adapted to be forced into engagement with the stone and turned, a brush supported adjacent to the scraper and movable therewith with the ends of its bristles extending a short distance beyond the contact edge of the scraper, and means for operating the scraper and brush.



2. In a filter, the combination with a casing and a filtering-stone in the casing with a chamber above and below the same, of a strip forming a scraper rotatably supported intermediate its ends to turn in a horizontal plane and adapted to be raised into engagement with the stone, a brush secured at one side of the scraper and extending from one end thereof to the axis of the pivot of the same, a brush secured at the opposite side of the scraper and extending from the opposite end of the same to said axis, the ends of the bristles forming said brushes being extended a short distance above the horizontal plane of the upper edge of the scraper, and means for raising and turning said brushes and scraper.

3. In a filter, the combination with a casing having an upper and a lower chamber, and a filtering medium between said chambers, of a pin extending vertically upward through the bottom of the lower chamber and movable longitudinally, a pipe opening into the lower chamber at one side thereof, and a circular inverted-cup-shaped deflector secured to the upper end of said pin and normally supported thereby with its lower edge below the lower edge of the open end of the pipe and adapted to be raised by the pin to deflect the water from the pipe upwardly against the lower surface of the stone and cause the same to flow across said surface.

4. In a filter, the combination with a casing made in parts and means for detachably securing the parts together, of a filtering-stone, a chamber in the lower part of the casing to receive the stone and within which it fits, a pin extending into the casing below the stone and rotatively and longitudinally movable, a cup-shaped deflector secured to the inner end of said pin, ears formed on said deflector, a scraper secured to said ears and extending diametrically across the lower face of the stone, and a handle on the outer end of the pin by means of which the same may be turned and forced inward.

5. In a filter, the combination of a casing consisting of a glass bell formed with an outwardly-extending flange at its lower end and a lower cup portion formed with a circular rim, a lower hemispherical portion forming a chamber for the unfiltered water and a shoulder formed between said portion and rim, a filtering-stone resting upon said shoulder within the rim, a packing-band engaging the edge of the stone and extending between the flange on the bell and said stone and said shoulder and stone, a clamping-band encircling the casing and provided with inwardly-turned inclined edges to engage the flange on the bell and the shoulder on the lower part of the casing, and means on the ends of said band for drawing said ends toward each other and for detachably securing the same.

6. In a filter, the combination of a bell forming a chamber for filtered water and provided with a flange at its lower end, a cup formed of sheet metal with an upwardly-extending rim and a lower portion formed with an intake and a discharge opening and an axial opening in its bottom, a filtering-stone adapted to fit within the rim, a packing-band engaging the edge of the stone, a clamping-band having inwardly-turned edges engaging the flange on the bell and the cup, means for detachably securing the ends of said band, a pipe adapted to be attached to a faucet secured within the inlet-opening of the cup, an arm on said pipe extending beneath the cup and provided with a bearing projecting through the axial opening in the cup and secured therein, a pin rotatively and longitudinally movable in said bearing, a packing-nut on the outer end of the bearing to prevent leakage around the pin, a handle on the outer end of the pin, a deflector secured to the inner end of said pin, means for engaging and cleaning the surface of the stone secured to said deflector, and a draw-off cock secured in the discharge-opening in the cup.

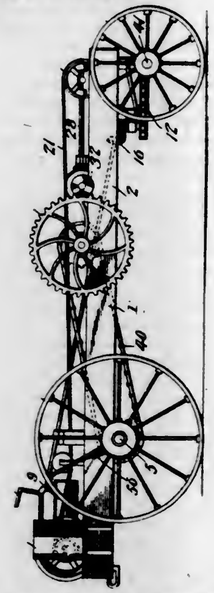
820,904. HOOK-AND-EYE FASTENING. ALBERT W. BERGER, Canton, Ohio. Filed Oct. 16, 1905. Serial No. 282,961.



Claim.—1. A hook of the character described made of a single piece of material bent to form a shank comprising parallel side bars and an intermediate bar, a loop uniting the intermediate bar with one of the side bars, a loop at the opposite end of the shank, uniting the side bars, a loop opposite and abreast of the first-mentioned loop and formed at one end on one of the side bars, and a hook bent from the end of the intermediate bar, said hook projecting beyond the loop which unites said side bars.

2. A hook of the character described made of a single piece of material bent to form a shank comprising parallel side bars and an intermediate bar, a loop uniting the intermediate bar with one of the side bars, a loop at the opposite end of the shank, uniting the side bars, a loop opposite and abreast of the first-mentioned loop and formed at one end of one of the side bars, said loop terminating in a bar 10 extending transversely across and beneath the inner ends of the side and intermediate bars and closing the detaching-loop, and a hook bent from the end of the intermediate bar, said hook projecting beyond the loop which unites said side bars.

820,905. MOTOR-VEHICLE. JACOB W. BIRD, Townsend, Tenn., assignor of one-half to Edward George Keeble, Townsend, Tenn. Filed July 22, 1905. Serial No. 270,820.



Claim.—1. In a motor-vehicle, a driving-axle, wheels mounted thereon, a compensating clutch connection between each wheel and the axle, means for imparting direct motion to the axle to rotate the wheels in one direction, and means for communicating motion to one of the wheels and to the axle and other wheel through said compensating clutch connections to drive the same in the opposite direction.

2. In a motor-vehicle, a driving-axle, wheels mounted thereon, a motor, means for directly connecting the axle with the motor to drive the wheels in one direction, and means for indirectly connecting the motor to the axle through one of the wheels to drive the wheels in the reverse direction.

3. In a motor-vehicle, a driving-axle, wheels mounted thereon, a compensating clutch connection between each wheel and the axle, a driving-shaft, a power-transmitting shaft, gearing for connecting the driving-shaft with the power-transmitting shaft, and sets of gearing for connecting the power-transmitting shaft with the driving-axle or one of the wheels, and means for throwing said sets of the gearing into and out of operation at will.

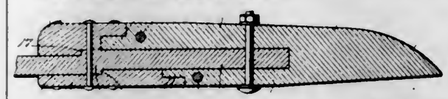
4. In a motor-vehicle, a driving-axle, wheels mounted thereon, a compensating clutch connection between each wheel and the axle, a power-transmitting shaft, means for driving the same, sets of gearing for connecting said shaft with the axle or one of the wheels, and means for throwing either set of gearing into and out of operation at will.

5. In a motor-vehicle, a driving-axle, wheels mounted thereon, a compensating clutch connection between each wheel and the axle, a power-transmitting shaft, sets of gearing for connecting said shaft with the axle and one of the wheels, and clutch mechanism shiftable in opposite directions for connecting the shaft with either set of gearing at will.

6. In a motor-vehicle, a driving-axle, wheels mounted thereon, a compensating clutch connection between each wheel and the axle, a drive-shaft, a power-transmitting shaft, gearing connecting the drive-shaft with the power-transmitting shaft, means for throwing said gearing into and out of operation at will, sets of gearing connecting the power-transmitting shaft with the axle and one of the wheels thereon, and means for throwing either of said sets of gearing into and out of operation at will.

7. In a motor-vehicle, a driving-axle, wheels mounted upon the axle, a compensating clutch connection between each wheel and the axle, said clutch connection comprising members respectively connected with the axle and wheel, said members adapted to alternately operate as driving members when motion is imparted to the axle or wheel to drive the axle in reverse direction, means for communicating motion to the axle in one direction, means for communicating motion to the wheel in the reverse direction, and means for throwing either of said motion-communicating means into and out of operation at will.

820,906. DIPPER-TOOTH. WILLIAM BODETTE, Toledo, Ohio. Filed Feb. 20, 1906. Serial No. 302,138.



Claim.—1. A dipper-tooth comprising upper and lower bifurcated portions having their extremities rabbeted, in combination with rabbeted saddle-plates.

2. A dipper-tooth comprising rearwardly-extending bifurcated portions, and saddle-plates with which said bifurcated portions have an interlocked engagement.

3. A dipper-tooth comprising bifurcated portions, and saddle-plates having a scarf-jointed connection with said bifurcated portions.

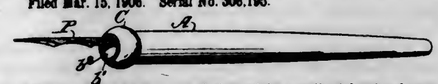
4. A dipper-tooth comprising bifurcated portions terminating in tongues, and saddle-plates recessed to receive said tongues.

5. A dipper-tooth comprising bifurcated portions having terminal tongues, saddle-plates recessed to receive said tongues, and fasteners passing through the tongues and saddle-plates.

6. A dipper-tooth comprising rearwardly-extending bifurcated portions, saddle-plates with which said bifurcated portions have an interlocked connection, and dipper-engaging shoulders on said saddle-plates.

7. A dipper-tooth comprising rearwardly-extending bifurcated portions adapted to straddle the dipper, saddle-plates secured to the dipper and having an interlocked engagement with the bifurcated portions of the tooth, and a bolt passing through the bifurcated portions of the tooth and also through the dipper.

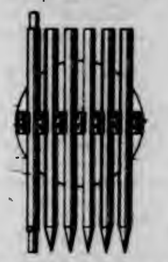
820,907. PENHOLDER. CLARE W. BOMAN, Brooklyn, N. Y., assignor to Eagle Pencil Company, New York, N. Y., a Corporation. Filed Mar. 15, 1906. Serial No. 306,195.



Claim.—A penholder, consisting of the handle A having bore a, metallic tip B adapted to be inserted and held in said bore, and provided with flanged front end b', and the annular bulbous shield C, fitted upon the shank of the tip, and confined between the flanged end

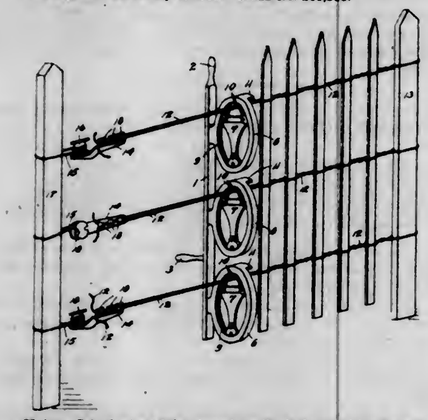
of said tip and the front end of the handle, as hereinbefore shown and described.

820,908. **PEN AND PENCIL HOLDER.** ELVAN O. BULMAN, Grand Rapids, Mich. Filed Jan. 9, 1905. Serial No. 240,338.



Claim.—In a pen and pencil holder, a thin disk, a pin pivoted to the back side of said disk, a narrow, thin sheet of spring metal formed in a series of loops, flatwise, and fastened at each end to opposite edges of the disk with the loops free to move upon the face of the disk, substantially as, and for the purpose set forth.

820,909. **FENCE-WIRE TWISTER.** HARRY H. BUSH, Seattle, Wash., assignor, by mesne assignments, of one-half to Western Patent Right and Investment Company, Seattle, Wash., a Corporation of Washington. Filed July 6, 1905. Serial No. 268,360.



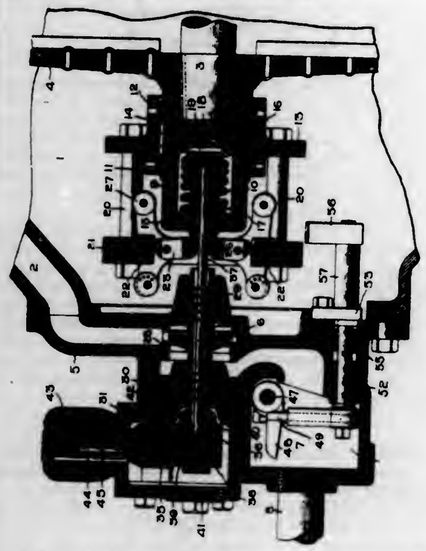
Claim.—In a device of the class described, the combination of an operating-bar provided with handles, annular guide-frames attached to said bar, each frame being formed with an interiorly-disposed groove, a rotary member mounted in each guide-frame, each rotary member being formed with a plurality of arms, antifriction-wheels mounted in the said arms and running in said groove, each member being formed also with an arm protruding into said groove, said arm being provided with a pair of apertures in proximity to its outer edge.

820,910. **SPEED-GOVERNOR FOR ELASTIC-FLUID TURBINES.** JOHN G. CALLAN and FREDERIC R. C. BOYD, Lynn, Mass., assignors to General Electric Company, a Corporation of New York. Filed Mar. 13, 1904. Serial No. 197,788.

Claim.—1. In a shaft-governor, the combination ofcentrifugally acting weights, a spring opposing the weights, an abutment movable in response to the resultant forces due to the combined action of the weights and spring, a means for varying the moment-arms of the weights, a means for changing the tension on the spring, and a means for changing the scale of the spring.

2. In a shaft-governor, the combination of centrifugally-acting weights, knife-edges for supporting the weights, a tension-spring opposing the weights, a movable abutment to which one end of the spring is attached, a nut secured to the spring, which acts as an anchor and as an adjusting means for changing its scale, and an actuator which extends from the abutment through the spring and nut.

3. In a shaft-governor, the combination of centrifugally-acting weight-arms, knife-edges for supporting the weight-arms, means for changing the moment-arm of the weights about the knife-edges, a tension-spring opposing the weight, a movable abutment, a means for adjusting the tension of the spring, means for adjusting the scale of the spring, and compression members or struts which extend through the spring and engage the weight-arms.



4. In a shaft-governor, the combination of a tubular support which is mounted on a shaft, a ring mounted on the support, means for adjusting the ring axially on the support, centrifugally-acting weight-arms carried by the support, a tension-spring located within the support, a movable abutment engaging the spring, and compression members or struts which engage the weight-arms and the abutment.

5. In a shaft-governor, the combination of a shaft, a support which is mounted thereon, a ring which surrounds the support and is carried thereby, a tension-spring located within the support, a nut for supporting one end of the spring and changing its scale, which is mounted on the support, a movable abutment which also forms a nut to which the opposite end of the spring is attached, seats formed in the abutment, weight-arms carried by the supports, and compression members which engage the seats and the weight-arms.

6. In a shaft-governor, the combination of a support, weight-arms carried thereby, a spring opposing the weights, means for transmitting motion from the weights to the spring, which are provided with knife-edges, frames or blocks which are detachably secured to the arms and are provided with knife-edges for supporting the weights, and seats for the knife-edges on said means.

7. In a shaft-governor, the combination of a support having seats thereon, weight-carrying arms comprising plates and weights attached thereto, frames or blocks which unite the plates each of which is provided with a knife-edge at its outer end and a seat at its inner end, measured from the axis of the support, a tension-spring which is anchored to the support at one end, a movable abutment for the opposite end of the spring, and compression members which engage the abutment and enter the seats on the inner ends of the frames or blocks.

8. In a shaft-governor, the combination of a threaded shaft, a threaded support mounted thereon, a wheel-hub situated adjacent to the support, which is provided with an external screw-thread, a ring which surrounds the support, an adjusting-nut mounted on the screw-threaded hub for engagement with the ring, a second adjusting-nut mounted on the support, which also engages the ring, weight-carrying arms carried by the ring, and a tension-spring located within the support for opposing the movements of the arms.

9. In combination, a rotating support, centrifugally-acting weight-arms carried thereby, and a device for loading or opposing the action of the weights, in combination with a valve, and an actuator which passes through the valve and at one end is acted upon by the resultant force due to the weights and said device, and at the other end is attached to the valve-stem.

10. A governing mechanism comprising a rotating support, centrifugally-acting weight-arms carried thereby, and a movable abutment which opposes the action of the weights, in combination with a valve, a hollow stem therefor which acts as a guide, and an actuator which extends through the valve and stem and is acted upon by the abutment at one end and is attached to the valve-stem at the other.

11. A governing mechanism comprising a rotating support, centrifugally-acting weight-arms carried thereby, and a movable abutment which opposes the action of the weights, in combination with a valve, a hollow stem therefor which acts as a guide, an actuator which extends through the valve and stem and is acted upon by the abutment at one end, and a means for uniting the valve-stem and the actuator, which contains a bearing for the latter.

12. A governing mechanism comprising a rotating support, centrifugally-acting weights, and a movable abutment for opposing the weights, in combination with a valve having a hollow stem, an actuator for the valve connected to the abutment, which extends through the valve, a head which is attached to the stem and the actuator, a bearing for the actuator, carried by the head, and a chamber containing lubricant for the bearing, which is formed in the head.

13. A governing mechanism comprising a rotary support, centrifugally-acting weights, and a movable abutment for opposing the weights, in combination with a valve having a hollow stem, an actuator for the valve connected to the abutment, which extends through the valve, a head which is attached to the stem and the actuator, a bearing for the actuator, carried by the head, and a cap for the bearing, which is in line with the actuator and is removable from the opposite side thereof.

14. A governing mechanism comprising a rotary support, centrifugally-acting weights, and a movable abutment for opposing the weights, in combination with a valve having a hollow stem, an actuator for the valve, which rotates with the weights and is moved longitudinally by the resultant force of the weights and opposing abutment, a head which is attached to the valve-stem, in which the actuator is free to rotate and which moves longitudinally with the actuator, and means for preventing the head from rotating.

15. A governing mechanism comprising a rotary support, centrifugally-acting weights, and a spring-pressed abutment for opposing the weights, a piston-valve, a hollow stem therefor, a head attached to the outer end of the stem, an actuator which extends through the spring and valves and enters the head, and universal bearings for the ends of the actuator, which permit the spring-pressed abutment to rotate about its own center of rotation without straining the valve.

16. In a governing mechanism, the combination of a support, weights carried thereby, a spring-pressed abutment which opposes their action, a valve, and an actuating device which is attached to the valve and the abutment and includes universal joints at the points of attachment therewith.

17. A governing mechanism comprising a rotary support, centrifugally-acting weights, and a movable abutment for opposing the weights, in combination with a reciprocating valve, a rotary actuator therefor, a head for connecting the valve and actuator, and a casing which incloses the head and has a chamber for supplying lubricant to the head.

18. A governing mechanism comprising a rotary support, centrifugally-acting weights, and a movable abutment for opposing the weights, in combination with a reciprocating valve, a rotary actuator therefor, a head for connecting the valve and actuator, a casing which incloses the head and has a chamber for supplying lubricant to the head, and an opening between the chamber and the interior of the casing for equalizing the pressures.

19. A governing mechanism comprising a rotary support, centrifugally-acting weights, and a movable abutment for opposing the weights which constitutes the main governor, in combination with an emergency-governor mounted on the rotary support and acting independently of the main governor, and a valve which is tripped by the emergency-governor.

20. A governing mechaniam comprising a rotary support, centrifugally-acting weights, and a movable abutment for opposing the weights, in combination with an emergency-governor mounted on the same support with the speed-governor, a counterbalance for the emergency-governor, a valve, a latch which normally holds the valve open, and a spring which closes the valve when released by the latch.

21. In a governing mechanism, the combination of a support, a weight-arm carried thereby, an emergency-valve, a latch normally holding the valve open, which is tripped by the weight-arm, and a spring which engages the latch after being struck by the weight-arm and prevents the latch from holding the valve open.

22. In a governing mechanism, the combination of a support, a weight-arm, a spindle for the arm, which is carried by the support, a knife-edge between the arm and spindle, and a stop on the active end of the arm, which limits the movement thereof and holds the knife-edge in its seat.

23. In a governing mechanism, the combination of a support, a weight-arm, a spindle therefor, a knife-edge between the spindle and arm formed with concave side walls, and a seat for the knife-edge, provided with convex side walls.

24. In a governing mechanism, the combination of a support, a weight-arm carried thereby, a seat formed thereon, a spindle for the arm, a collar on the spindle for limiting the movement of the arm on the spindle, a knife-edge on the spindle, which engages the seat, and a spring for opposing the movements of the arm.

25. In a governing mechanism, the combination of a support, a weight-arm carried thereby, a two-part spindle about which the arm is movable, a spring which connects the parts of the spindle, and a knife-edge between the spindle and arm, which is surrounded by the arm.

26. In a governing mechanism, the combination of a support, a weight-arm carried thereby, a spindle for the arm, having a knife-edge with concave walls, and a seat for the knife-edge, formed on the arm and provided with convex walls.

27. In a governing mechanism, the combination of a support, a pair of rings carried thereby, a two-part spindle, one part being carried by one ring and the other part by the second ring, and a weight-arm mounted on the spindle.

28. In a governor, the combination of a support, a centrifugally-acting weight, and a means opposing the weight, which includes a member having a double-tapered knife-edge.

29. In a governor, the combination of a support, a centrifugally-acting weight, and a means opposing the weight, which includes a knife-edge, the walls of which have a double bevel, and a seat for the knife-edge, the walls of which are also formed with a double bevel.

30. In a governor, the combination of a support, a centrifugally-acting weight, a spring for opposing the weight, and an anchor for the spring, which is screw-threaded to receive the turns thereof, the end of the thread being cut away abruptly to prevent frictional engagement with the spring as the latter extends and contracts.

31. In a governor, the combination of a support, a centrifugally-acting weight, a spring for opposing the weight, and anchors for opposite ends of the springs, one located inside of the spring and the other outside, each anchor being screw-threaded to receive the end of the spring, with the end of the thread on the side adjacent to the center of the spring cut away abruptly to give freedom of movement to the turns of the spring between the anchors.

32. In a governor, the combination of a support, an arm carrying a centrifugally-acting weight, a knife-edge for the weight, a piece containing a seat which is slightly longer than the knife-edge, and means formed integral with the piece for limiting the longitudinal movement of the knife-edge.

33. In a governor, the combination of a support, a piece carried thereby, and a feather or key for preventing the piece from rotating independently of the support, the said feather or key comprising a cylindrical body portion which is located in one of the parts, and a projection formed thereon which is smaller in cross-section than the body portion and enters the other part.

34. In a governor, the combination of a rotating element, a valve arranged in line with the axis thereof, a speed-responsive device connected with the element and located between it and the valve, and a connection for moving the valve which extends from the speed-responsive device to a point located on the side of the valve opposite to that of the said device.

35. In a governor, the combination of a rotating element, a valve arranged in line with the axis thereof, a speed-responsive device connected with the element and located between it and the valve a connection for moving the valve which extends from the speed-responsive device to a point located on the side of the valve opposite to that of the said device, and a universal joint between the said connection and the valve.

36. In a governor, the combination of a rotating element, a valve arranged in line with the axis thereof, a speed-responsive device connected with the element and located between it and the valve, and a connecting means between the valve and the speed-responsive device which rotates with the latter and includes a universal and slip joint at the point of connection with the valve.

37. In a governing mechanism for elastic-fluid turbines, the

combination of a gravity-closing emergency-valve, an inclosure therefor, means located within the inclosure for holding the valve in raised or open position, and a centrifugally-acting emergency device arranged to release said means when the speed becomes excessive.

38. In a governor, the combination of a rotating element, independent centrifugally-acting speed-responsive devices, a common support carried by the said element for supporting the speed-responsive devices, and regulating and shut-off valves arranged to be operated by the speed-responsive devices.

39. In a governor, the combination of a rotating element, independent centrifugally-acting speed-responsive devices, a common support therefor, and a connection between the rotating element and the support by which the latter can be removed with the speed-responsive devices intact.

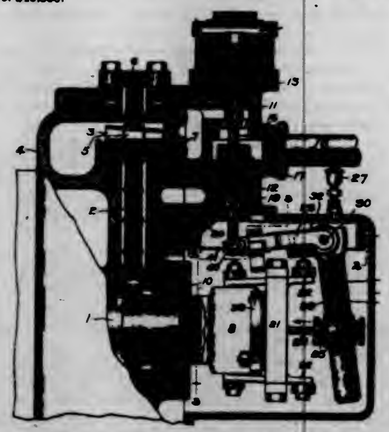
40. In a governor, the combination of a rotating element, a structure removably secured thereto, a speed-responsive device for actuating a regulator, and a second speed-responsive device for actuating a shut-off mechanism, both of said speed-responsive devices being carried by the said structure and removable therewith.

41. In a governor, the combination of a shaft, a hollow cylindrical support secured on the shaft to rotate therewith, a spring disposed within the support and fixedly attached at its outer end thereto, a frame arranged around the support, centrifugally-acting weights on the support, a connection between the weights and the inner or movable end of the spring, and means for adjusting the frame axially of the support for varying the tension of the spring.

42. In a governor, the combination of a shaft, a hollow support on the shaft which rotates therewith, a spring arranged in the support and attached at one end thereto, a ring arranged adjacent the support, centrifugally-acting weights on the ring, a connection for transmitting motion from the weights to the spring, and means for adjusting the ring on the support to transmit motion through the weights and the said connection to vary the tension of the spring.

43. In a governor, the combination of a shaft, a hollow support secured on the shaft to rotate therewith, an extension-spring arranged within the support and anchored at its outer end thereon, a movable abutment to which the inner end of the spring is attached, a frame surrounding the support, centrifugally-acting weights carried by the frame, struts arranged within the spring and connecting the weights with the movable abutment, and means for securing the frame to and moving it along the support for adjusting the tension of the spring.

820,911. REGULATING MECHANISM FOR ELASTIC-FLUID TURBINES. JOHN G. CALLAN, Lynn, Mass., assignor to General Electric Company, a Corporation of New York. Filed Feb. 23, 1905. Serial No. 246,858.



Claim.—1. In a governing mechanism for fluid-actuated motors, the combination of a combined controlling and shut-off valve, a speed-responsive device which moves the valve to and fro to regulate the admission of fluid, and a second speed-responsive device which acts independently of the first to shut the valve when the speed of the motor exceeds a predetermined amount.

2. In a governing mechanism, the combination of a combined controlling and shut-off valve for controlling the admission of motive fluid to the turbine, a speed-responsive device connected to the valve for normally regulating the admission of fluid to the buckets, and a means for breaking the connection between the valve and device and shutting the valve to cut off the supply of motive fluid when the speed of the turbine exceeds a predetermined amount.

3. In a governing mechanism, the combination of a combined controlling and shut-off valve for regulating the admission of fluid to the turbine, a stem for actuating the valve, a speed-responsive device, a divided connection between the valve and said device, and a means for separating the parts of the connection and shutting the valve under predetermined conditions.

4. In a governing mechanism, the combination of a valve regulating the admission of motive fluid to the turbine, a speed-responsive device, a divided connection for transmitting motion from the device to the valve, a lock for uniting the parts of the connection, and a means for releasing the lock under certain predetermined conditions.

5. In a governing mechanism, the combination of a valve, a speed-responsive device, a divided connection for moving the valve which is actuated by the speed-responsive device, a lock for uniting the parts of the connection, a means for releasing the lock, and a means for separating the parts of the connection and shutting the valve.

6. In a governing mechanism, the combination of a valve, a speed-responsive device, a divided connection for moving the valve which is actuated by the speed-responsive device, a combined trigger and lock which normally unites the parts of the connection, and a means arranged to engage the trigger under certain conditions and release the lock and permit the valve to move.

7. In a governing mechanism, the combination of a valve, a speed-responsive device, a divided connection for moving the valve, which is actuated by the speed-responsive device, a bracket for supporting the connection, a lock normally holding the parts of the connection in a predetermined relation, and a spring for separating the parts of the connection and moving the valve when released by the lock.

8. In a governing mechanism, the combination of a valve, a speed-responsive device, a divided connection for actuating the valve which is moved by the speed-responsive device, a lock carried by one part of the connection and normally engaging another, a means for separating the parts of the connection when released by the lock, and an emergency-governor for releasing the lock.

9. In a governing mechanism, the combination of a valve, a speed-responsive device, a bell-crank lever comprising two principal parts for transmitting motion from the said device to the valve, a fulcrum which is common to said parts of the lever, a spring tending at all times to separate the parts of the lever, a lock for resisting the spring, and an emergency-governor for releasing the lock.

10. In a governing mechanism, the combination of a combined regulating and shut-off valve, a speed-responsive device, a divided lever for transmitting motion from the speed-responsive device to the valve, a universal connection between the lever and valve, a spring normally tending to separate the parts of the lever, a lock normally uniting the parts of the lever, and a spring, the free end of which releases the lock under conditions of excess speed.

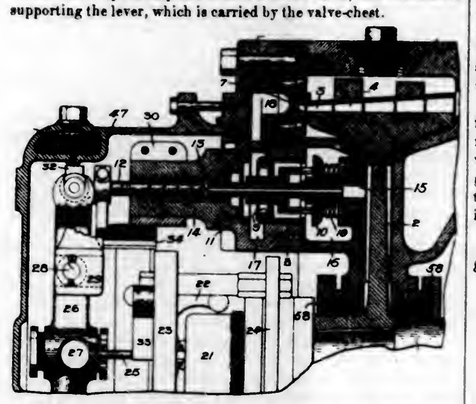
11. In a governing mechanism, the combination of a movable element, a valve which controls the action of the motive fluid on the movable element, a device responding to changes in speed of the movable element, which tends to open and close the valve as the speed changes, and a second device normally inactive but which responds to abnormal speed changes and shuts said valve to cut off the supply of motive fluid to the movable element.

12. In a governing mechanism, the combination of a movable element, a single valve which acts as a controlling and a shut-off valve, a speed-responsive device which tends to open and close the valve as the speed of the moving element changes, and a means which, under abnormal conditions, closes the valve irrespective of the position occupied by the speed-responsive device.

13. In a governing mechanism for motors, the combination of a valve which is adapted to shut off the supply of fluid to the motor when the speed exceeds a certain predetermined limit, a flat spring for actuating the valve which is rotated by the motor, and a support for the spring which also acts as a stop to limit its outward movement due to centrifugal force.

820,912. GOVERNING MECHANISM. JOHN G. CALLAN, Lynn, Mass., assignor to General Electric Company, a Corporation of New York. Filed Feb. 23, 1905. Serial No. 246,859.

Claim.—1. In combination, a fluid-actuated motor, a valve-chest mounted thereon, a valve mounted therein, a detachable head for the chest, a stem for the valve passing through the head, a speed-responsive device driven by the motor, a lever for transmitting motion from the speed-responsive device to the valve, and a frame for supporting the lever, which is carried by the valve-chest.



2. In combination, a fluid-actuated motor, a valve-chest, regulating and shut-off valves mounted therein, an actuator which is common to the valves, speed-responsive devices for governing and shutting down the motor, a lever transmitting motion from one of the speed-responsive devices to the actuator, and a trigger located between the point of attachment of the actuator and lever and the valve-chest which is actuated by the emergency speed-responsive device.

3. In combination, a fluid-actuated motor, a valve-chest attached to the motor, a regulating-valve mounted in the chest, a detachable head for the chest, a speed-responsive device, a lever connecting the valve with the speed-responsive device, and a frame carried by the detachable head which carries the pivot for the lever.

4. In combination, a fluid-actuated motor, a speed-responsive device driven by the motor, a valve-chest which overhangs the speed-responsive device, a valve in the chest, a stem for the valve which extends parallel to the axis of the motor, and a lever for transmitting motion from the speed-responsive device to the valve.

5. In combination, a fluid-actuated motor, a speed-responsive device driven by the motor, a valve controlling the admission of fluid to the motor, a means actuated by the speed-responsive device for tripping the valve, and an eccentric for resetting the valve.

6. In combination, a fluid-actuated motor, a speed-responsive device driven by the motor, a valve controlling the admission of fluid to the motor, a lever actuated by the speed-responsive device for tripping the valve, a pivot for the lever, and a means for moving the pivot to reset the valve.

7. In combination, a fluid-actuated motor, a speed-responsive device driven by the motor, a valve controlling the admission of fluid to the motor, a lever actuated by the speed-responsive device for tripping the valve, an eccentric which acts as a pivot for the lever, a casing inclosing the parts, and a means external to the casing for moving the eccentric in a manner to reset the valve.

8. In combination, a fluid-actuated motor, a speed-responsive device driven by the motor, a valve controlling the admission of fluid to the motor, a lever actuated by the speed-responsive device, for tripping the valve, a casing for the parts, a means for resetting the valve, a handle located outside of the casing for actuating the resetting means, and a locking device for the handle.

9. In combination, a fluid-actuated motor, a speed-responsive device driven thereby, regulating and shut-off valves controlled by the speed-responsive device, and a sleeve which acts as a guide for one of the valves and a seat for the other.

10. In combination, a fluid-actuated motor, a speed-responsive device driven thereby, regulating and shut-off valves controlled by the speed-responsive device, a sleeve which acts as a guide for one of the valves and a seat for the other, and a stem for the regulating-valve which passes through the sleeve.

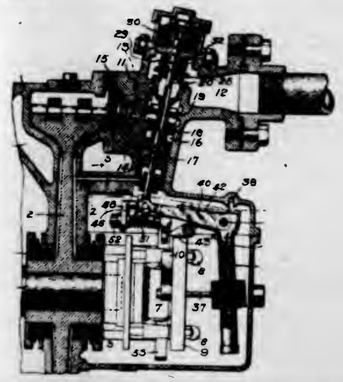
11. In combination, an elastic-fluid motor, a valve-chest, a valve located therein, a speed-responsive device for actuating the valve, and a damper carried by the valve-chest for preventing excess movement of the speed-responsive device.

12. In combination, an elastic-fluid motor, a valve-chest, a controlling-valve located therein, a stem for actuating the valve, a trigger mounted on and moving longitudinally with the stem, and a speed-responsive device arranged to actuate the trigger under predetermined conditions as to speed.

13. In combination, a fluid-actuated motor, an admission-port for the motor between the shaft and the periphery of the casing, a regulating-valve and a shut-off valve having a common axis extending in a plane parallel to the axis of the motor, a speed-governor driven by the revolving element of the motor, a lever connecting the speed-governor with the regulating-valve, and a means for actuating the shut-off valve.

14. In combination, a fluid-actusted motor, an admission-port for the motor between the shaft and the periphery of the casing, a regulating-valve and a shut-off valve, a spindle common to the valves which extends in a plane parallel to the shaft of the motor, a speed-governor mounted on the shaft, a lever connecting the governor and the spindle for moving the regulating-valve, and a means for actuating the shut-off valve.

820,913. GOVERNING MECHANISM FOR FLUID-ACTUATED MOTORS. JOHN G. CALLAN, Lynn, Mass., assignor to General Electric Company, a Corporation of New York. Filed Feb. 23, 1905. Serial No. 246,860.



Claim.—1. In a governing mechanism, the combination of a controlling-valve, a shut-off valve, a single actuator for actuating the controlling-valve and tripping the shut-off valve, and a means for moving the actuator.

2. In a governing mechanism, the combination of a controlling-valve, a shut-off valve, a governor, and a lever actuated by the governor which moves the controlling-valve under normal conditions, and the shut-off valve under abnormal conditions.

3. A fluid-actuated motor in combination with a regulating-valve, a shut-off valve, an actuator common to the valves, a speed-responsive device acting through the actuator to move the regulating-valve to govern the motor, and a second speed-responsive device acting independently of the first for actuating the shut-off valve through the actuator.

4. A fluid-actuated motor, in combination with a regulating-valve, a shut-off valve, an actuator common to the valves, a speed-responsive device for reciprocating the actuator and the regulating-valve to govern the admission of fluid to the motor, and a second speed-responsive device acting under emergency conditions to rock the actuator and close the shut-off valve.

5. In a governing mechanism, the combination of a valve for controlling the admission of motive fluid to the bucket-wheel, a shut-off valve, an actuator common to the valves, a load-responsive device, and a means actuated by the load-responsive device for reciprocating the actuator to control the supply of motive fluid, and for imparting rotary movement to the actuator for closing the shutting-off valve.

6. In a governing mechanism, the combination of a reciprocating valve for controlling the admission of motive fluid to the bucket-wheel, a shut-off valve, a valve-stem through which the piston and shut-off valves are actuated, and a speed-responsive device which reciprocates the stem for governing the supply of motive fluid and rotates it for actuating the cut-off valve.

7. In a governing mechanism, the combination of a controlling-valve, a shut-off valve, a speed-responsive device for actuating the controlling-valve, an actuator which is common to the valves, and an emergency-governor actuated by the shaft for turning the shut-off

valve about its axis by means of the actuator when it is desired to operate it.

8. A fluid-actuated motor in combination with a regulating-valve, a shut-off valve, an actuator common to both valves, a lock for holding the shut-off valve open, a telescope-joint between the shut-off valve and the actuator, and means for moving the actuator.

9. In a governing mechanism, the combination of a shut-off valve, a means for holding the valve open, a controlling-valve, a stem which moves both the controlling and the shut-off valves, means including a lost-motion for fastening the shut-off valve to the stem, and a speed-responsive device for moving a controlling-valve without disturbing the shut-off valve, and a second speed-responsive device for moving the shut-off valve without changing the position of the controlling-valve.

10. In combination, a fluid-actuated motor, a speed-responsive device, a valve controlling the admission of fluid to the motor, a support for the valve, a projection or lock between the valve and support arranged to hold the valve in a predetermined position, and a connection between the speed-responsive device and the valve for disengaging the valve and projection or lock.

11. In combination, a fluid-actuated motor, a speed-responsive device driven thereby, a valve controlling the admission of fluid to the motor, a support for the valve, a lock for holding the valve in a given position, a cam for setting the valve, and a stop for limiting the movement of the valve.

12. In a governing mechanism, the combination of a shut-off valve, a lock for holding the valve in an open position, and a means responsive to abnormal increases in speed for rotating the valve in a direction to unlock it and permit the same to close.

13. In a governing mechanism, the combination of a controlling-valve, a shut-off valve, a single stem for reciprocating the controlling-valve and releasing the shut-off valve, a lock for the shut-off valve which is controlled by the stem, and a spring for seating the shut-off valve

14. In a governing mechanism, the combination of a controlling-valve, a shut-off valve, a lock which normally holds the shut-off valve open, a means for closing the valve, and a lever actuated by the governor for moving the controlling-valve and releasing the shut-off valve.

15. In combination, a fluid-actuated motor, a speed-responsive device driven thereby, a valve controlling the admission of fluid to the motor, a hollow lever transmitting motion from the speed-responsive device to the valve, a casing inclosing the speed-responsive device and lever, and a means for supplying lubricant to the interior of the lever for lubricating the parts.

16. In a governing mechanism, the combination of a valve, a speed-responsive device, a connection between the valve and said device, and a means for lubricating the joint between the connection and the device which also supplies the lubricant for the parts of the device.

17. In a governing mechanism, the combination of a valve and its casing, a tubular stem therefor having suitable guides, a lubricant-containing chamber which communicates with the interior of the stem and discharges lubricant into it, as the water due to condensation rises in the chamber, and a speed-responsive device for moving the stem and the valve.

18. In a governing mechanism, the combination of a valve and its casing, a tubular stem therefor having suitable guides, a lubricant-containing chamber which communicates with the interior of the stem and discharges lubricant into it and to the guides, as the water due to expansion and condensation rises in the chamber, a passage discharging lubricant and water from the valve-stem into the wheel-casing, and a speed-responsive device for moving said stem and valve.

19. In a governing mechanism, the combination of a controlling-valve, a shut-off valve, a stem that is common to both valves, a speed-responsive device, a connection between the speed-responsive device and the valve-stem composed of two principal parts which are movable with respect to each other, a means for actuating the shut-off valve, and a device for resetting the shut-off valve which acts through the said connection.

20. In a governing mechanism, the combination of a shut-off valve, a speed-responsive device, a stem for moving the valve, a two-part lever connected to the valve and the speed-responsive device, an emergency governor for causing the valve to close, and a device acting upon one portion of the lever for resetting the valve.

21. In a governing mechanism, the combination of a controlling-valve, a stem for actuating it, a governor, a two-part bell-crank lever for operating the valve, one part being connected to the valve and the other to the governor, and a chamber in one part of the lever which carries lubricant for the governor.

22. In a governing mechanism, the combination of a shut-off valve, a governor, a trigger actuated by the governor for closing the valve, a casing which incloses the trigger and governor, and a means located external to the casing for adjusting the position of the trigger with respect to the governor.

23. In a governor mechanism, the combination of a shut-off valve, a governor, a trigger moved by the governor for actuating the valve, a casing which incloses the trigger, a stem for transmitting motion from the trigger to the valve, and a means located external to the casing for imparting an oscillatory motion to the stem for adjusting the position of the trigger with respect to the governor.

24. In a governing mechanism, the combination of a valve, a speed-responsive device for moving the valve, a casing which incloses the valve, and means exterior of the casing for changing the critical speed at which the valve is actuated.

25. In combination, a fluid-actuated motor, a speed-responsive device driven by the motor, a valve controlling the admission of fluid to the motor, a stem for the valve, a lever attached to the speed-responsive device which is provided with a forked end, and a trunnion-block located in the fork, which is attached to the valve-stem.

26. In a governing mechanism, the combination of a shut-off valve, a governor, a stem for actuating the valve, a lever which connects the stem with the governor, a block pivotally mounted in the lever through which the valve-stem extends, a means attached to the valve-stem for oscillating it, a trigger acting on said means to oscillate the valve-stem, and a means sensitive to speed variations for moving the trigger when the speed exceeds a predetermined amount.

27. In combination, a fluid-actuated motor, a speed-responsive device driven thereby, a valve controlling the admission of fluid to the motor, a support for the valve, a lock for holding the valve in a given position, a cam for setting the valve, a stop for limiting the movement of the valve, and a spring for seating the valve when the lock is released.

28. In combination, a fluid-actuated motor, a valve-chest mounted thereon, a valve mounted therein, a speed-responsive device driven by the motor, means transmitting motion from the speed-responsive device to the valve, and a support for the means which is carried by the valve-chest.

29. In combination, a fluid-actuated motor, a speed-responsive device driven by the motor, a valve actuated by the speed-responsive device for controlling the motor, a perforated stem for the valve, a head through which the stem passes, and an opening communicating with the perforation in the stem and the motor-casing so that leakage around the stem is conveyed into the motor-casing.

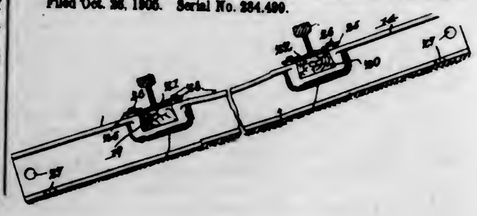
30. In a governing mechanism, the combination of a movable element, a valve for regulating the action of the motive fluid upon the element, a second valve for shutting off the fluid to said element, an actuator which is reciprocated to move the regulating-valve and oscillated to move the shut-off valve, and a load-responsive device for moving the actuator.

31. A fluid-actuated motor, in combination with a regulating-valve, a shut-off valve, an actuator common to the valves, and means responsive to load changes acting through the actuator to move the regulating-valve and also the shut-off valve.

32. A fluid-actuated motor, in combination with a regulating-valve, a shut-off valve, a stem common to both valves, and a load-responsive means for reciprocating the stem to move one valve and for oscillating it to move the other valve.

33. A fluid-actuated motor having independent admission-ports, in combination with valves arranged to move back and forth over the ports and cut them into and out of service successively, an emergency-valve, a stem common to the valves, and speed-responsive means acting through the stem on the valves.

820,914. **RAILWAY-TIE.** NICHOLAS J. CAMPBELL, Newark, N. J. Filed Oct. 26, 1905. Serial No. 284,490.



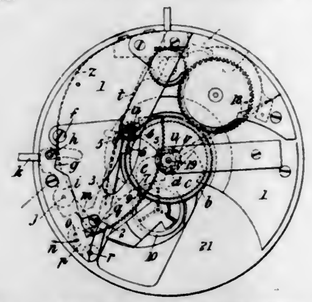
Claim.—A metal railway-tie consisting of a horizontal plate having a central vertical web and reinforced where the rails cross the same by increasing the thickness of the plate and bracing the web transversely, said thickened portion having a transverse recess open at the ends, filler-blocks of yieldable material disposed in said recesses and removable endwise therefrom, and clamp-bolts in said thickened portion and having laterally-projecting heads for extending over the tie-flanges of the rails bearing upon said blocks.

820,915. **VEGETABLE-SLICER.** FRANK CANFIELD, Denver, Colo., assignor of one-half to William H. Fenn, Denver, Colo. Filed Dec. 12, 1904. Serial No. 236,450.



Claim.—The combination of a U-shaped frame or holder formed from an integral piece of wire, a body portion attached to said holder and formed from an integral piece of metal, said body being composed of a bottom part, side parts bent to form angles to the body part, said side parts being attached to the parallel members of the U shaped frame by bending their edges outwardly over the same, the sides of the body portion being provided with a number of separated grooves or ways produced by bending the side parts inwardly to form interior beads, and a cutter-plate removably held in one of said grooves the bottom of the body part below or adjacent to the cutting device, being cut away to allow the sliced or disintegrated material to pass through, the closed end of the U-shaped frame being provided with a handle, while the parallel members of the frame project beyond the body part at the extremity remote from the handle, and form a support for the device during use.

820,916. **SPEED-INDICATOR FOR VEHICLES, &c.** CHARLES COULERU-MEURI, La Chaux-de-Fonds, Switzerland, assignor to Flory, Reingpach & Co., Colchester, England. Filed Oct. 6, 1904. Serial No. 227,421.



Claim.—1. A speed-indicator for vehicles adapted to be operated during a definite period of time and proportional to the average speed of the vehicle for that time, means adapted to be connected to a wheel of the vehicle for actuating the indicator mechanism, an index-finger, a sector for returning said index-finger to zero, locking devices for the index-finger and indicator mechanism, means for releasing said locking devices, and a spring-actuated lever adapted to again bring said locking devices into engagement after a definite period of time.

2. A speed-indicator for vehicles adapted to be operated during a definite period of time and proportional to the average speed of the vehicle for that time, means adapted to be connected to a wheel of the vehicle for actuating the indicator mechanism, an index-finger, a sector for returning said index-finger to zero, locking devices for the indicator mechanism, a pivoted spring-actuated lever for releasing said locking device, clockwork for operating the indicator for a definite interval of time and means for again locking the indicator mechanism at the completion of the time.

3. A speed-indicator for vehicles adapted to be operated during a definite period of time and proportional to the average speed of the vehicle for that time, means adapted to be connected to a wheel of the vehicle for actuating the indicator mechanism, an index-finger, a notched wheel movable therewith, a sector for returning said index-finger to zero, locking devices for the indicator mechanism, comprising a toothed lever engaging said notched wheel controlling said index-finger, and means for releasing said locking devices and bringing them into engagement after a definite interval of time.

4. A speed-indicator for vehicles of the character described, having means adapted to be connected to a wheel of the vehicle, an index-pointer operated thereby for showing the speed at which the vehicle is moving, locking means for said pointer, and a push-pin under control of the operator for releasing the locking means putting said indicator device into operation at any moment, and a sector also operated by said pin for resetting the indicator to zero before the device is started.

5. A speed-indicator for vehicles adapted to be operated during a definite period of time and proportional to the average speed of the vehicle for that time, said indicator comprising driving means, a dial and index-finger, and means in frictional engagement with said driving means for operating said index-finger.

6. A speed-indicator for vehicles adapted to be operated during a definite period of time and proportional to the average speed of the vehicle for that time, said indicator comprising driving means, a dial and index-finger, and a ratchet-wheel in frictional engagement with said driving means for operating said index-finger, in combination with a locking device for holding said ratchet-wheel from rotating when the indicator is not in use.

7. A speed-indicator for vehicles adapted to be operated during a definite period of time and proportional to the average speed of the vehicle for that time, said indicator comprising an indicating mechanism, means for operating said indicating mechanism, and means for locking said mechanism against rotation in combination with clockwork for limiting the period of operation, a locking device therefor, and means for starting said clockwork after resetting the indicating mechanism to zero.

8. A speed-indicator for vehicles adapted to be operated during a definite period of time and proportional to the average speed of the vehicle for that time, said indicator comprising an indicating mechanism, means for operating said indicating mechanism, and means for locking said mechanism against rotation in combination with clockwork for limiting the period of operation, and means for turning the indicating mechanism to zero before the clockwork is started.

9. A speed-indicator for vehicles adapted to be operated during a definite period of time and proportional to the average speed of the vehicle for that time, said indicator comprising an indicating mechanism, means for operating said indicating mechanism, and means for locking said mechanism against rotation in combination with means for turning said indicating mechanism to zero before unlocking the same.

10. A speed-indicator for vehicles adapted to be operated during a definite period of time and proportional to the average speed of the vehicle for that time, said indicator comprising an indicating mechanism, means for operating said indicating mechanism, and means for locking said mechanism against rotation in combination with clockwork for limiting the period of operation, and means for putting said clockwork and indicating mechanism into operation at the same time.

11. A speed-indicator for vehicles adapted to be operated during a definite period of time, and proportional to the average speed of the vehicle for that time, said indicator comprising an indicating mechanism, means for operating said indicating mechanism, and means for locking said mechanism against rotation in combination with clockwork for limiting the period of operation, and means for turning the indicating mechanism to zero before the indicating mechanism and clockwork are put into actual operation.

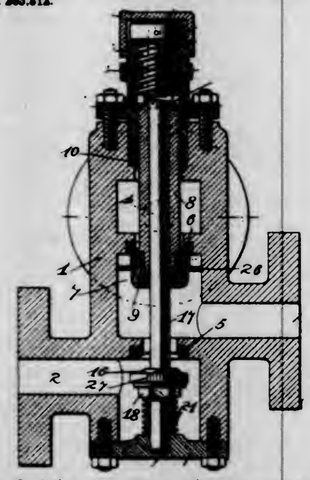
12. A speed-indicator for vehicles adapted to be operated dur-

ing a definite period of time, and proportional to the average speed of the vehicle for that time, said indicator comprising a dial and an index-finger, in combination with means for retaining the index-finger in its final position at the end of the definite period of time and means under the control of the operator for returning said index-finger to zero before each operation.

13. The combination of an indicator and a driving means adapted to be actuated from the wheel of a vehicle, with a locking means for the indicator and means under the control of the operator to free the locking device, and a clockwork to determine the reëngagement of the locking device.

14. The combination of an indicator and a driving means adapted to be actuated from the wheel of a vehicle, and a frictional connection between the two, with a locking means for the indicator, and means under the control of the operator to free the locking device, and a clockwork to determine the reëngagement of the locking device.

820,917. **VALVE.** JAMES R. CULLEN, Belle Vernon, Pa., assignor of one-half to George S. Bowen, Monessen, Pa. Filed June 5, 1905. Serial No. 263,812.

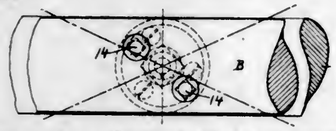


Claim.—1. A three-way valve comprising a casing having inlet and discharge ports formed therein, valve-seats arranged in said casing, a discharge-valve adapted to engage one of said seats, a tubular stem secured to said valve, an inlet-valve adapted to engage the other valve-seat, a stem secured to said inlet-valve and adapted to work through the tubular stem of the discharge-valve, threads formed on the upper end of the tubular valve-stem of said discharge-valve, a nut adapted to be screwed up and down on said threads and means whereby the stem of said inlet-valve is loosely connected to said nut, and operated thereby, substantially as described.

2. A three-way valve comprising a casing having inlet and discharge ports formed therein, valve-seats arranged in said casing, a discharge-valve adapted to engage one of said seats, a tubular stem secured to said valve, an inlet-valve adapted to engage the other valve-seat, a stem secured to said inlet-valve and adapted to work through the tubular stem of the discharge-valve, threads formed on the upper end of the tubular stem of said exhaust-valve, a nut adapted to be screwed up and down on said threads, a packing-gland arranged around the tubular stem of said exhaust-valve where the same passes through said valve-casing, means to limit the movement of said exhaust-valve stem and valve, a collar secured to the upper end of said inlet-valve stem, and means whereby said collar is secured to and operated by the nut on the stem of said exhaust-valve, substantially as described.

3. A three-way valve comprising a casing having inlet and discharge ports formed therein, valve-seats arranged in said casing, a discharge-valve adapted to engage one of said seats, a tubular stem secured to said valve, an inlet-valve adapted to engage the other valve-seat, a stem secured to said inlet-valve and adapted to work through the tubular stem of the discharge-valve, threads formed on the upper end of the tubular stem of said exhaust-valve, a nut adapted to be screwed up and down on said threads, a packing-gland arranged around the tubular stem of said exhaust-valve where the same passes through said valve-casing, a stop-plate adapted to engage an annular recess in the tubular stem of said exhaust-valve whereby the movement of the same is limited, a collar secured to the upper end of said inlet-valve stem in position to engage the nut on the exhaust-valve stem and a cap adapted to be screwed onto said nut thereby loosely securing the inlet-valve stem to said nut, substantially as described.

820,918. **WHIFFLETREE-COUPLING.** FRANCIS G. DAVIS, Watertown, N. Y., assignor to H. H. Babcock Company, Watertown, N. Y., a Corporation of New York. Filed May 11, 1905. Serial No. 259,895.



Claim.—1. In a whiffletree-coupling, the combination with a cross-bar and whiffletree, of a cup-shape plate secured to the cross-bar and provided with a central aperture, a plate secured to the lower face of the whiffletree and rotatingly fitted upon and within the open upper end of the cup-shape plate forming therewith an intervening space for the reception of a lubricant, said second plate being provided with a central aperture and a surrounding boss and a clamping-bolt passed through the apertures in said plates and having its upper end provided with a head engaging the upper face of the boss on the rotatable plate and its lower end secured to the cross-bar.

2. In combination with a cross-bar and whiffletree, a wearing-plate secured to the top face of the cross-bar and provided with a marginal annular flange and a central tubular boss extending above the annular flange, a second wearing-plate secured to the lower face of the whiffletree and having a central aperture receiving and fitting upon the upper end of said boss, said second plate bearing upon the marginal flange of the first-named plate bolts passing through the whiffletree and carrying nuts located in the space between said plates and a clamping-bolt secured to the cross-bar and engaged with the second wearing-plate for holding the latter in operative position upon the first-named plate.

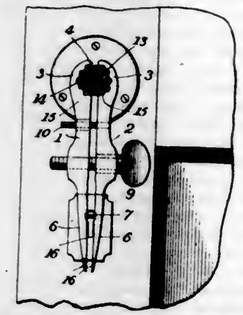
3. In combination with a cross-bar and whiffletree, the cross-bar being provided with a central aperture, a wearing-plate secured to the top face of the cross-bar and provided with an annular flange and a central aperture alined with the aperture in the cross-bar, a second wearing-plate secured to the under side of the whiffletree and bearing upon the top face of said flange and provided with a central aperture, a bolt having a bearing-face resting upon the top face of the second wearing-plate and provided with a threaded shank extending through the apertures in the first-named wearing-plate and cross-bar, and a key carried by the bolt and engaging a keyway in said wearing-plate for locking the bolt against rotation.

4. In combination with a cross-bar and whiffletree, the cross-bar being provided with a central aperture therethrough, a wearing-plate secured to the top face of the cross-bar and provided with a marginal upwardly-projecting annular flange and a central projecting boss projecting upwardly above the upper edge of the flange and provided with an aperture therethrough, a second wearing-plate secured to the under face of the whiffletree and having a portion thereof bearing upon the top face of the flange and, another portion fitting within the flange, said second plate being provided with a central aperture receiving and fitting upon the boss of the first-named plate and a bolt engaging the top face of the second plate and passing through the apertures in the first-named plate and cross-bar and clamped to said cross arm, and a key carried by the bolt and engaging a keyway in said wearing-plate for preventing the rotation of the first-named bolt in the first-named plate.

820,919. **KEY AND KNOB CLAMP.** WILLIAM DEUTSCH, Baltimore, Md. Filed Apr. 8, 1905. Serial No. 254,572.

Claim.—1. The herein-described key and knob fastener comprising two pairs of jaws, adapted to respectively engage the shank of a door-knob and the stem of a key, and an adjusting device connecting the members of the jaws and adapted to simultaneously open and close both said jaws.

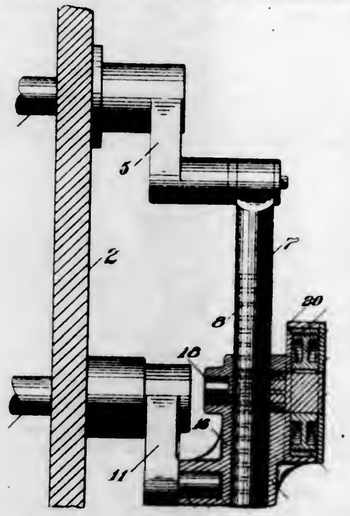
2. The herein-described key and knob fastener comprising two members, each having a concave inner face adjacent to one end forming one jaw of a clamp adapted to engage the shank of a door-knob, and each member forming below such concave portion one jaw of a clamp adapted to engage a key-stem, and means connecting said members between the jaw-sections thereof and adapted to positively close both of the clamps formed thereby.



3 The herein-described key and knob fastener comprising two members forming adjacent the ends thereof clamps adapted to respectively engage the shank of a door-knob and the stem of a key, a guiding pin or stud rigidly secured, to one of said members and having one end extending loosely through a passage in the other member, and an adjusting-screw also connecting said members and adapted to open and close both the clamps formed thereby.

4. The combination with a door-knob having its shank secured to the lock-spindle by a fastening the head of which projects beyond the surface of the knob-shank, of a fastening device comprising two members having concave jaws formed thereon and adapted to receive between them the shank of the knob, one of said jaws having its concaved face provided with recesses of such form and dimensions as to receive the projecting end or head of the fastening connecting said knob and lock-spindle, means for moving said jaws into close engagement with the knob-shank, and means for engaging a key projecting from a lock adjacent the knob.

820,920. **POWER-TRANSMITTING MECHANISM.** TALBOT C. DEXTER, Pearl River, N. Y. Filed Nov. 23, 1905. Serial No. 289,508.



Claim.—1. In a power-transmitting mechanism the combination of two members each having movement of translation and one driven by the other, a spur gear or pinion journaled upon one of said members and meshing with rack-teeth with which the other member is provided, and frictional means retarding rotation of the said spur gear or pinion and thereby controlling relative movement of said members.

2. In a power-transmitting mechanism the combination of a driving and a driven member sliding one upon the other, one provided with rack-teeth and the other with a spur gear or pinion meshing with said rack-teeth, and adjustable friction means for controlling the rotation of said spur gear or pinion, whereby relative movement of translation is permitted between the driving and the driven member.

3. In a power-transmitting mechanism the combination with a crank and a device to be driven by said crank, of a power-transmitting device consisting of two relatively movable members one connected to the crank and the other to the said driven device, a spur wheel or pinion journaled on one of said relatively movable members and meshing with rack-teeth with which the other member is provided, and frictional means for controlling the rotation of said spur gear or pinion.

4. In a power-transmitting mechanism, the combination of two cranks, one of which is to be driven by the other, of two relatively movable members sliding one upon the other, one of which is connected to each of said cranks, rack-teeth on one of said members, a shaft journaled upon the other of said members, a spur gear or pinion upon said shaft meshing with said rack-teeth, and a frictional device operating upon said shaft for controlling the rotation of said spur gear or pinion.

5. In a power-transmitting mechanism, the combination of a rotary crank and an oscillatory crank, with coöperating telescoping members connected respectively with said cranks, a rack-bar formed upon one of said members, a shaft journaled in the other of said members and carrying a spur gear or pinion which meshes with said rack-bar, and an adjustable frictional clutch operating between said shaft and the member on which said shaft is journaled.

6. In a power-transmitting mechanism, the combination of a rotary crank, the coöperating telescoping piston and casing, means of engagement between the crank and casing, a rack-bar formed upon the piston a shaft journaled in the casing and carrying a spur gear or pinion which meshes with said rack-bar, and an adjustable frictional clutch operating between said shaft and casing.

7. In a power-transmitting mechanism, the combination of a reciprocatory casing, a thrust-bar or piston telescoping with said casing, a rack-bar formed upon said piston, a shaft journaled in the said casing and carrying a spur gear or pinion which meshes with said rack-bar, and an adjustable frictional clutch, one member of which is secured to said shaft and the other member of which is carried by the casing.

8. In a power-transmitting mechanism, the combination of a piston having rack-teeth, with a reciprocatory casing having a bore or socket in which said piston has sliding engagement, and a second bore or socket extending approximately at a right angle thereto, a shaft journaled in said second bore or socket, a pinion or gear upon said shaft meshing with said rack-teeth, a friction-wheel also on said shaft, and an adjustable friction-band encircling said friction-wheel and held by the casing.

9. In a power-transmitting mechanism the combination of two members sliding one on the other and each capable of movement of translation independently of the other, a spur-gear on one of said members meshing with rack-teeth with which the other member is provided and means for applying frictional resistance to rotation of the said spur-gear and thereby retarding the relative sliding movement referred to.

820,921. **CONCRETE-BRIDGE REINFORCEMENT.** GEORGE M. CHENEY, Indianapolis, Ind. Filed Feb. 26, 1906. Serial No. 303,895.

Claim.—1. In a concrete bridge, an arch composed of a plurality of longitudinally-separable panels embedded therein.

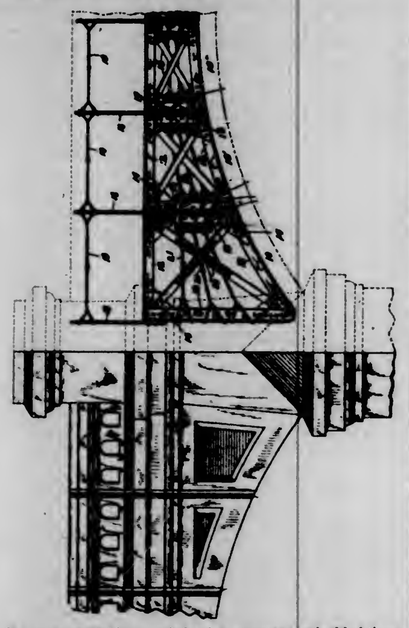
2. In a concrete bridge, an arch embedded therein, said arch consisting of a plurality of separate panels pinned together to prevent transverse displacement and to permit longitudinal separation.

3. In a concrete bridge, an arch composed of a plurality of longitudinally-separable panels embedded therein, and a tension member connecting the ends of the arch along the line of the panels.

4. In a concrete bridge, an arch embedded therein, said arch consisting of a plurality of separate panels pinned together to prevent transverse displacement and to permit longitudinal separation, and a tension member connecting the ends of the arch along the line of the panels.

5. In a concrete bridge, an arch embedded therein, said arch composed of a plurality of separate panels with interengaging portions to permit longitudinal displacement but preventing transverse displacement, a tension member connecting the end panels along the line of panels, and rail-posts tied together in sets preserving the lines of separation between the arch-panels.

6. In a concrete bridge, an arch embedded therein, said arch composed of a plurality of separate panels, interengaging members permitting longitudinal displacement, plates 20 passing through the adjacent ends of the several panels, and tension members connecting the several plates and the end panels.



7. In a concrete bridge, a reinforcing structure embedded therein, said structure comprising a pair of arches each consisting of a plurality of separate panels with interengaging members permitting longitudinal displacement but preventing transverse displacement, and floor-beams connecting the two arches, said interengaging members of the arches passing freely through the floor-beams in such manner as to hold the floor-beams lengthwise.

8. In a concrete bridge, the combination with a plurality of transverse reinforcing members, of a tension member connecting said reinforcing members on a line adjacent and approximating the intrados, and other tension members suspended from the transverse reinforcing members and engaging the first-mentioned tension member at points between the transverse reinforcing members under tension whereby the first-mentioned tension member is held between the transverse reinforcing members in a curve approximating the curvature of the intrados.

9. In a concrete bridge, the combination with transverse reinforcing members embedded therein, of a tension member extending between the several transverse members longitudinally of the arch and placed in tension tending to straighten the same between the transverse members, and suspension members suspended from the transverse members and engaging the first-mentioned tension member, said suspension members being placed in tension after their suspension to displace the first-mentioned tension member between the transverse members and hold the said first-mentioned tension member in a curve approximating the curvature of the adjacent portion of the intrados.

10. In a concrete bridge, an arch composed of a plurality of longitudinally-separable panels embedded therein, and weakening-grooves formed in the face of the concrete adjacent and substantially parallel with the lines of separation between the panels of the reinforcing-arch.

11. In a concrete bridge, an arch embedded therein, said arch consisting of a plurality of separate panels pinned together to prevent transverse displacement and to permit longitudinal separation, and weakening-grooves formed in the face of the concrete adjacent and substantially parallel with the lines of separation between the panels of the reinforcing-arch.

12. In a concrete bridge, an arch composed of a plurality of longitudinally-separable panels embedded therein, a tension member connecting the ends of the arch along the line of the panels, and weakening-grooves formed in the face of the concrete adjacent and substantially parallel with the lines of separation between the panels of the reinforcing-arch.

13. In a concrete bridge, an arch embedded therein, said arch consisting of a plurality of separate panels pinned together to prevent transverse displacement and to permit longitudinal separation, a tension member connecting the ends of the arch along the line of the panels, and weakening-grooves formed in the face of the concrete adjacent and substantially parallel with the lines of separation between the panels of the reinforcing-arch.

14. In a concrete bridge, an arch embedded therein, said arch composed of a plurality of separate panels with interengaging portions to permit longitudinal displacement but preventing transverse displacement, a tension member connecting the end panels along the line of panels, rail-posts tied together in sets preserving the lines of separation between the arch-panels, and weakening-grooves formed in the face of the concrete adjacent and substantially parallel with the lines of separation between the panels of the reinforcing-arch.

15. In a concrete bridge, an arch embedded therein, said arch composed of a plurality of separate panels, interengaging members permitting longitudinal displacement, plates 20 passing through the adjacent ends of the several panels, tension members connecting the several plates and the end panels, and weakening-grooves formed in the face of the concrete adjacent and substantially parallel with the lines of separation between the panels of the reinforcing-arch.

16. In a concrete bridge, a reinforcing structure embedded therein, said structure comprising a pair of arches each consisting of a plurality of separate panels with interengaging members permitting longitudinal displacement but preventing transverse displacement, and floor-beams connecting the two arches, said interengaging members of the arches passing freely through the floor-beams in such manner as to hold the floor-beams lengthwise, and weakening-grooves formed in the face of the concrete adjacent and substantially parallel with the lines of separation between the panels of the reinforcing-arch.

17. In a concrete bridge, the combination with a plurality of transverse reinforcing members, of a tension member connecting said reinforcing members on a line adjacent and approximating the intrados, and other tension members suspended from the transverse reinforcing members and engaging the first-mentioned tension member at the points between the transverse reinforcing members under tension whereby the first-mentioned tension member is held between the transverse reinforcing members in a curve approximating the curvature of the intrados, and weakening-grooves formed in the face of the concrete adjacent and substantially parallel with the lines of separation between the panels of the reinforcing-arch.

820,922. **SIGHT-FEED FOR LUBRICATORS.** GEORGE N. EINSELE, Chicago, Ill., assignor to Reuben W. Newton and Harrison F. Jones, Chicago, Ill. Filed Mar. 17, 1905. Serial No. 250,672.



Claim.—1. A sight-feed for lubricators, comprising a hollow body a plurality of oppositely-arranged transparent walls, and upper and lower attaching portions, said portions being adapted to simulate the upper and lower ends of the ordinary glass tube, whereby the said sight-feed is adapted to be employed as a substitute for the said glass tube the said sight-feed having an inlet-passage at its lower end and an outlet-passage at its upper end.

2. A sight-feed for lubricators, comprising upper and lower metal attaching portions, an intermediate portion and transparent means permitting the globules of oil to be observed, said upper and lower portions being adapted to simulate the upper and lower ends of the ordinary glass tube, whereby the said sight-feed is adapted for use as a substitute for the said glass tube, the said sight-feed having an inlet-passage at its lower end and an outlet-passage at its upper end.

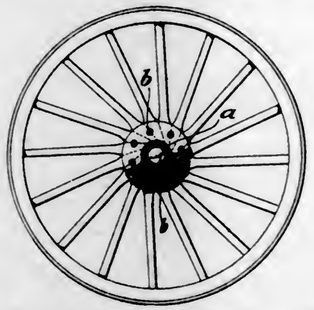
3. A sight-feed for lubricators, comprising upper and lower metal attaching portions, an intermediate portion and transparent means for viewing the globules of oil as they pass upwardly through the sight-feed, said attaching portions being adapted for establishing the desired connection between the sight-feed and the structure of the lubricator the said sight-feed having an inlet-passage at its lower end and an outlet-passage at its upper end.

4. A sight-feed for lubricators, comprising a hollow body, front and rear with detachable transparent walls, and vertically-extending metal attaching portions, said attaching portions being adapted for establishing connection between the sight-feed and the structure of the lubricator the said sight-feed having an inlet-passage at its lower end and an outlet-passage at its upper end.

5. A sight-feed for lubricators, comprising a hollow body, oppositely-arranged detachable transparent members through which the globules of oil may be observed, and having cylindrical and vertically-disposed top and bottom metal attaching portions adapted to simulate the upper and lower ends of an ordinary glass tube, whereby the said sight-feed is adapted for use as a substitute for the said ordinary or usual sight-feed the said sight-feed having an inlet-passage at its lower end and an outlet-passage at its upper end.

6. A sight-feed for lubricators, comprising a metal body, front and rear detachable glass walls through which the globules of oil may be observed, a downwardly-extending integral attaching portion, and an upwardly-extending detachable attaching portion, said attaching portions being of metal and adapted to simulate the upper and lower end portions of the ordinary glass tube, whereby the sight-feed is adapted to be used as a substitute for the said ordinary or usual sight-feed the said sight-feed having an inlet-passage at its lower end and an outlet-passage at its upper end.

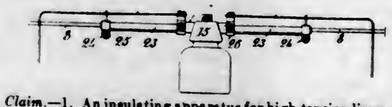
820,923. **WOODEN-SPOKE WHEEL.** THOMAS GARE, New Brighton, England. Original application filed Jan. 15, 1904, Serial No. 189,173. Divided and this application filed July 17, 1905. Serial No. 270,073.



Claim.—1. In a wooden vehicle-wheel, spokes having wedge-shaped inner ends and sides both of which are tangent to the bore of the wheel, substantially as and for the purpose set forth.

2. In a wooden vehicle-wheel spokes having wedge-shaped inner ends and sides both of which are tangent to the bore of the wheel, a hub-flange on each side and rivets through the latter and the said ends, all substantially as and for the purpose set forth.

820,924. **INSULATOR FOR HIGH-TENSION LINES.** EMILE GIRAUD, Paris, France. Original application filed Oct. 31, 1903, Serial No. 179,376. Divided and this application filed Oct. 1, 1904. Serial No. 226,795.



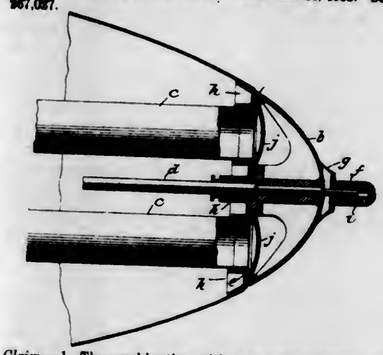
Claim.—1. An insulating apparatus for high-tension lines, comprising a fixed insulating-head, a socket fixed on the said head, arms pivoted to the socket, a tube adapted to be fixed on the line-wire, members on the said tube to engage with the said arms, and a discharge-conductor so arranged as to be met by the said arms.

2. An insulating apparatus for high-tension lines, comprising a fixed insulating-head, a socket fixed on the head, arms pivoted to the socket and having a curved part and a bent end, a tube slidable in the socket, eyed members on the said tube and through which the arms pass, and a discharge-conductor so arranged as to be met by the bent end of the said arms.

3. An insulating apparatus for high-tension lines, comprising a fixed insulating-head having a socket, a tube slidably mounted in the socket, means for securing the tube to the line-wire, arms pivoted to the socket and normally lying substantially parallel therewith, and means whereby the movement of the tube through the socket may swing the arm transversely thereof.

4. An insulating apparatus for high-tension lines, comprising an insulating-head having a socket for receiving the line-wire, arms pivoted to the insulator and normally lying substantially parallel with the line-wire, and connections between the line-wire and the arms whereby the movement of the wire through the socket may swing the arms transversely thereof.

820,925. **REVOLVING TORPEDO-TUBE CAP.** HUGO E. GRIMSHAWE, Quincy, Mass., assignor to Electric Boat Company, Bayonne, N. J., a Corporation of New Jersey. Filed June 26, 1905. Serial No. 267,087.



Claim.—1. The combination with a torpedo-expulsion tube or tubes, of a revoluble shaft mounted longitudinally of and projecting beyond the end thereof, a cap on the end of said shaft movable transversely of the axis of said tube or tubes to open and close the outboard end of said tube or tubes.

2. The combination with a torpedo-expulsion tube or tubes, of a revoluble shaft mounted longitudinally of and projecting beyond the end thereof, a cap on the end of said shaft movable transversely of the axis of said tube or tubes, said cap having a cover and an orifice alternately brought into registry with the outboard end of said tube or tubes to close and open the same.

3. The combination with a torpedo-expulsion tube or tubes, of a revoluble cap to open and close the outboard end of said tube or tubes, and a shaft upon which said cap is secured, said shaft having a slight longitudinal movement to disengage the cap from the tube end or ends.

4. In a submarine boat having a torpedo-expulsion tube or tubes, a revoluble shaft mounted longitudinally of the boat and extending beyond the end thereof, a cap on the end of said shaft movable transversely of the axis of the tube or tubes to open and close the outboard end of said tube or tubes.

5. In a submarine boat having a torpedo-expulsion tube or tubes, a revoluble shaft mounted longitudinally of the boat and extending beyond the end thereof, a cap on the end of said shaft movable transversely of the axis of the tube or tubes to open and close the outboard end of said tube or tubes, said cap forming the end of the boat.

6. In a submarine boat having a torpedo-expulsion tube or tubes in the end thereof, a revoluble shaft mounted longitudinally of the boat and extending beyond the end thereof, a cap on the end of said shaft movable transversely of the axis of said tube or tubes to close and open the outboard end of the tube or tubes, said cap forming the nose or end of the boat.

7. In a submarine boat having a torpedo-expulsion tube or tubes, a revoluble shaft mounted longitudinally of the boat and projecting from the end thereof, a cap on the outer end of said shaft, and a cover on said cap adapted to close the outboard end of said tube or tubes.

8. In a submarine boat having a torpedo-expulsion tube or tubes in the end thereof, a revoluble shaft mounted longitudinally of the board, a bracket secured to the end of the boat and constituting an end bearing for said shaft, a cap on said shaft, and a cover on said cap adapted to close the outboard end of said tube or tubes.

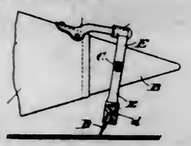
9. In a submarine boat having parallel torpedo-expulsion tubes in the bow thereof, a revoluble longitudinal shaft mounted adjacent to said tubes, and a cap secured to said shaft serving to open and close the outboard ends of said tubes.

10. In a submarine boat having parallel torpedo-expulsion tubes in the bow thereof, a revoluble longitudinal shaft mounted adjacent to said tubes, a generally arch-shaped bracket secured to the hull and forming a bearing for the end of said shaft, and a cap secured to said shaft serving to open and close the outboard ends of said tubes.

11. In a submarine boat having parallel torpedo-expulsion tubes in the bow thereof, a revoluble longitudinal shaft mounted adjacent to said tubes, a generally arch-shaped bracket secured to the hull and forming a bearing for the end of said shaft, a convex cap secured to said shaft forming the nose or end of the boat, and covers in said cap serving to open and close the outboard ends of said tubes.

12. In a submarine boat having parallel torpedo-expulsion tubes in the bow thereof, a revoluble longitudinal shaft mounted adjacent to said tubes, a generally arch-shaped bracket secured to the hull and forming a bearing for the end of said shaft, a convex cap secured to said shaft forming the nose or end of the boat, and covers in said cap serving to open and close the outboard ends of said tubes, said shaft having a slight longitudinal movement to cause the covers to engage and disengage the tube ends in the final closing and preliminary opening movements, respectively, of the cap.

820,926. SOUND-REPRODUCER. ROBERT HEAD, New York, N. Y., assignor to Edwin Walker, Erie, Pa. Original application filed May 18, 1904, Serial No. 208,539. Divided and this application filed Apr. 25, 1905. Serial No. 257,305.



Claim.—1. A phonograph-reproducer provided with a plurality of styluses arranged and adapted for use respectively in connection with graphophone and gramophone records.

2. A phonograph-reproducer provided with two styluses, one being arranged for use in connection with a graphophone-record, and the other with a gramophone-record.

3. A phonograph-reproducer having a stylus adapted for use on a graphophone-record, and also provided with a stylus arranged to operate on a gramophone-record; said styluses being in different planes and adapted to be brought, by a change in the position of the reproducer, into coöperative relation to one of the specified types of records.

4. A phonograph-reproducer provided with two styluses; said reproducer being rotatable whereby one stylus may be brought into coöperative relation to a graphophone-record, and the other into like relation to a gramophone-record.

5. A phonograph-reproducer having a member provided with a stylus adapted to coöperate with a graphophone-record, and provided also with a stylus adapted to coöperate with a gramophone-record.

6. A phonograph-reproducer provided with a plurality of reproducing-styluses, one or more of the stylus-points being in a different plane from the others, said reproducer being capable of being positioned to place either of said styluses into coöperative relation to a record.

820,927. CLOTHES-PROP. VALENTINE HERBER, Orwigsburg, Pa., assignor of one-half to Harvey A. Weller, Orwigsburg, Pa. Filed Oct. 7, 1905. Serial No. 281,786.

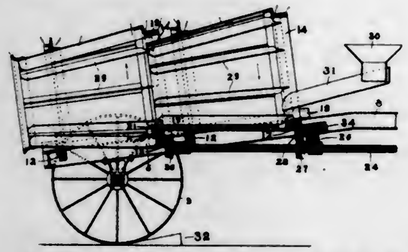
Claim.—1. A supporting member and a like member adjustable thereon, and secured against lateral displacement; in combination with a revoluble member between the supporting members and attached to a member pivotally connected to one of said supporting members.

2. A supporting member and a like member adjustable thereon, secured against lateral displacement, and having a recess in its inner face; in combination with a revoluble member in said recess, and a lever supporting said revoluble member and pivotally secured to one of said supporting members.



3. A supporting member and a like member adjustable thereon, means for securing said members against lateral displacement, a recess having an inclined wall and extending across one of said members, a revoluble member in said recess, and a lever having arms pivotally connected to one of the supporting members and provided with slots in which said revoluble member is suspended

820,928. CONCRETE-MIXER. HIRAM W. HUBBARD, Milwaukee, Wis., assignor of three-fifths to Logemann Brothers Company, Milwaukee, Wis., a Corporation of Wisconsin. Filed June 20, 1904. Serial No. 213,206.



Claim.—1. In a device of the character described a mixing-drum comprising a conical shell, a track-ring mounted on the exterior of the shell and provided with a flanged tread, a reduced mouth-ring secured to the larger end of the shell and provided with a shouldered track, a supporting-frame, parallel shafts journaled in said frame, friction-rollers carried by the parallel shafts and receiving the tread of the track-ring and the track of the mouth-ring and bearing upon the flange of the track-ring and the shoulder of the mouth-ring, and means for rotating the drum.

2. In a device of the character described a mixing-drum comprising a conical shell, a track-ring mounted on the exterior of the shell and provided with a flanged tread, a reduced mouth-ring secured to the larger end of the shell and provided with a shouldered track, a supporting-frame, parallel shafts journaled in said frame, friction-rollers carried by the parallel shafts and receiving the tread of the track-ring and the track of the mouth-ring and bearing upon the flange of the track-ring and the shoulder of the mouth-ring, gear-teeth arranged around the mouth-ring, a drive-shaft journaled in the frame, and a pinion driven by the drive-shaft and meshing with the gear-teeth of the mouth-ring.

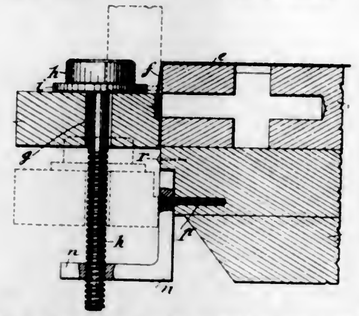
3. In a device of the character described an inclined frame mounted on wheels, a pair of conical mixing-drums rotatably mounted thereon and having their ends overlapping, each drum provided with a track-ring on its exterior having a flanged tread and a reduced mouth-ring having a shouldered track with a series of gear-teeth, parallel shafts journaled in the frame, friction-rollers mounted on the parallel shafts and bearing on the tread and rail of the track-ring and mouth-ring respectively of each mixing-drum, a drive-shaft journaled in the frame, a pinion on the drive-shaft meshing with the gear-teeth of the lower drum, a second pinion on the drive-shaft, and a third pinion suitably journaled in the frame and meshing with the second pinion and the gear-teeth of the upper mixing-drum.

4. In a device of the character described, a pair of conical drums arranged on the same inclined axis with the smaller end of one drum projecting within the larger end of the other drum, and straight radial blades in the drums adapted to mix material and feed it through the drums by lifting the material carrying it forwardly and dropping it in an advanced position.

5. In a device of the character described, an inclined frame, a pair of conical drums rotatably mounted thereon with one drum having its smaller end projecting within the larger end of the other drum, means mounted on said frame for rotating the drums in opposite directions, and straight radial blades in the drums adapted to mix material therein and feed it through the drums by lifting the material and dropping it in an advanced position, the material being given a forward start by the inclination of the blades when it drops therefrom.

6. In a device of the character described, an inclined frame, a pair of conical drums rotatably mounted thereon arranged with their axes on an incline and the smaller end of one drum projecting within the larger end of the other drum with a space therebetween, means for rotating the drums, water-introducing means in said space between the drums, and straight radial blades in the drums for mixing material therein and feeding it therethrough by degrees, said blades lifting the material and dropping it in an advanced position.

820,929. APPARATUS FOR COVERING THE BEDS OF BILLIARD-TABLES. ALFRED M. HUBERT-BRIERRE, Paris, France. Original application filed Mar. 26, 1903, Serial No. 149,680. Divided and this application filed Nov. 8, 1905. Serial No. 286,374.



Claim.—1. In an apparatus for covering billiard-tables, the combination of a rigid cloth-holding frame embracing the table on all sides, and means for feeding said frame in downward direction.

2. In an apparatus for covering billiard-tables, the combination, with the table, of stationary supports carried thereby at the sides thereof, a cloth-holding frame, and means adjustably connecting said frame and said supports.

3. The combination, with the table, of a plurality of supports projecting laterally from the sides thereof, a cloth-holding frame, and tensioning members engaging said frame and having threaded engagement with said supports.

4. In an apparatus such as described, the combination, with the table to be covered, of the frame provided with openings, the bolts passing downwardly through said openings, and the relatively fixed members engaging the lower threaded portions of said bolts.

5. In an apparatus for covering billiard-tables, the combination, with the table to be covered, of a frame surrounding the same on all sides, members projecting outwardly from said table below the top of the same and provided at points spaced outwardly from the table sides with vertically-threaded openings, and bolts passing through said frame and engaging said openings.

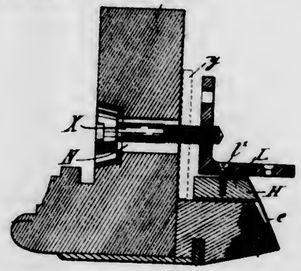
6. In an apparatus for covering the beds of billiard-tables, the combination, with the table to be covered, of the frame surrounding the same and constituted by the strips M, said strips being provided with openings *g*, the angle-pieces *n* applied to the sides of the table and having portions extending laterally therefrom, and the bolts *b* passing through said openings *g* and having threaded engagement with the laterally-extending portions of said angle-pieces.

820,930. APPARATUS FOR COVERING THE CUSHIONS OF BILLIARD-TABLES. ALFRED M. HUBERT-BRIERRE, Paris, France. Filed Nov. 8, 1905. Serial No. 286,375.

Claim.—1. In an apparatus for covering billiard-cushions, the combination, with the apertured flange and the cushion applied thereto, of the bolts passing through the apertures in said flange, the members adjustable by said bolts, and the cloth-carrying strip attached to said members.

2. In an apparatus for covering billiard-cushions, the combination, with a flange provided with a lateral opening, the cushion being secured to the inner wall of said flange, of a strip to which the lower part of the cover is attached, a bolt passing inwardly through the openings in said flange, and means for connecting said bolt with said strip.

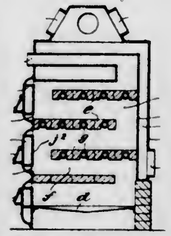
3. In an apparatus such as described, the combination, with the flange provided with lateral openings, the cushion being secured to said flange, of bolts passing through said flange, members adjustable by said bolts, a strip to which the cloth is attached, and means for attaching said members to said strip.



4. The combination, with the flange having the cushion applied thereto upon the inner face of the same, of means for securing one end of the cloth to the upper portion of said cushion, a strip attached to the opposite end of the cloth, brackets attached to said strip, and means for adjusting said brackets toward and away from the inner face of said flange.

5. In an apparatus such as described, the combination, with the flange E having the lateral openings N therethrough, the cushion D^3, D′ being applied to the inner face of said flange, the means for attaching one end of the cloth to the upper portion of the cushion D^3, the strip H applied to the opposite end of the cloth and having the inclined face A^3 adapted to aline with the inner face of the cushion D′ when said strip is reversed, the brackets or angle-bars L attached to said strip, and the bolts X passing through the lateral openings in said flange and engaging with their threaded inner ends threaded openings in the upright legs of said brackets or angle-bars.

820,931. FURNACE FOR BURNING COMMINUTED MATERIAL. HOSEA K. KRIEBEL, Philadelphia, Pa. Filed Dec. 29, 1904. Serial No. 238,756.

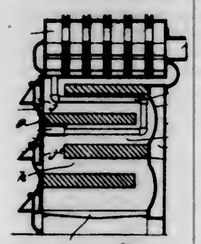


Claim.—A furnace for burning comminuted materials provided with a series of superposed communicating hearths that overlap to form a tortuous flue, an air-chamber almost wholly surrounding the furnace, a series of pipes horizontally arranged across the furnace and partially embedded in said hearths that communicate with the air-chamber, means located beneath the lowest hearth for heating the same to initially start the furnace and means opposite the hearths for introducing the materials to be burned provided with doors equipped with ports for the admission of air arranged above the level of the respective hearths, substantially as described.

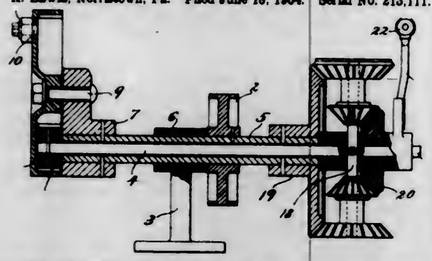
820,932. FURNACE FOR BURNING COMMINUTED MATERIAL. HOSEA K. KRIEBEL, Philadelphia, Pa. Filed Dec. 29, 1904. Serial No. 238,757.

Claim.—A furnace for burning comminuted materials provided with a series of superposed communicating hearths that overlap to form a tortuous flue, a boiler, water-compartments almost wholly surrounding the furnace, laterally-arranged communicating means for procuring a circulation of water across the furnace, means located beneath the lower hearth for heating the same to initially start the furnace and means opposite the hearths for introducing the materials to be burned provided with doors equipped with ports for the admission of air arranged above the level of the respective hearths, substantially as described.

820,932.



820,933. STROKE AND POWER CHANGING DEVICE. HARRY A. LEWIS, Norristown, Pa. Filed June 18, 1904. Serial No. 213,111.

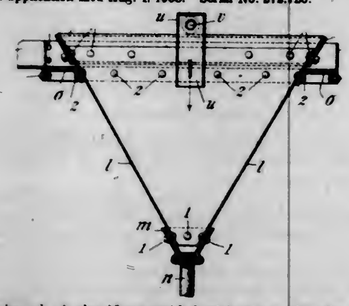


Claim.—1. Power-transmission mechanism comprising a tubular shaft provided with an arm, a disk centrally pivoted to the end of said arm and provided with a stud or crank-pin and with internal teeth, and a second shaft arranged in said tubular shaft and a pinion mounted thereon meshing with said teeth, substantially as described.

2. Power-transmission mechanism comprising a driving part, a driven part, an arm connected with one of said parts, a disk centrally pivoted to the arm and provided with internal teeth and having pivotal connection with the driven part, a pinion engaging said teeth, pawl-and-ratchet connections for the driven part, and means for changing the angular relation between the axis of rotation of the arm and said pivotal connection, substantially as described.

3. Power-transmission mechanism comprising a driving part, a driven part, an arm carried by one of said parts, a toothed member having pivotal connection with the other of said parts and rotatably mounted on the arm, a toothed wheel meshing with the teeth of said member, a tubular shaft carrying the arm, a shaft arranged within the tubular shaft and carrying said toothed wheel, an arm connected with said shaft, sets of beveled gears carried by said arm, a beveled gear on said tubular shaft meshing with one of the sets of beveled gears, a second beveled gear meshing with the other of said sets of beveled gears, and means for positioning and holding the last-mentioned beveled gear, substantially as described.

820,934. CLASSIFIER. CHARLES W. MERRILL, Lead, S. D. Original application filed Nov. 25, 1904, Serial No. 234,206. Divided and this application filed Aug. 4, 1905. Serial No. 272,720.



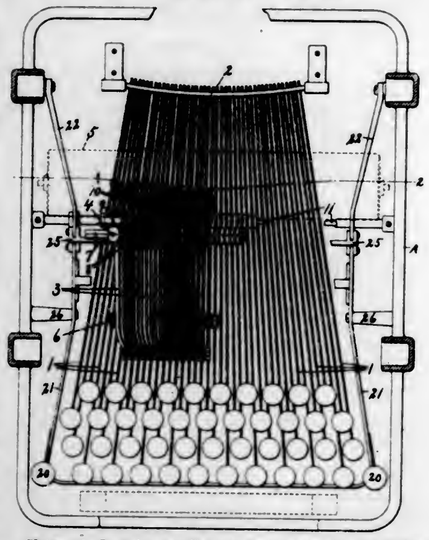
Claim.—1. A classifier provided with an overflow-line of soft metal, substantially as described.

2. A classifier provided with an overflow-line of soft metal extending around its entire periphery, substantially as described.

3. A static classifier consisting of a receiver having a feed wholly within the periphery, and said periphery being provided with an overflow-line of soft metal, substantially as described.

4. A static classifier consisting of a receiver having a sheet-iron body, a feed wholly within the periphery, a bottom discharge and an overflow-rim composed of a strip of soft metal.

820,935. TYPE-WRITING MACHINE. HARVEY A. MOYER, Syracuse, N. Y. Filed Mar. 15, 1905. Serial No. 250,245.



Claim.—1. In a front-strike type-writing machine, a series of type-bars pivoted in a circular arc to strike at the same printing-point, in combination with a system of key-levers converging rearwardly from their keys in straight lines and fulcrumed at their rear ends in a horizontal arc struck from the point of convergence of said lines, a system of upwardly-converging intermediary levers fulcrumed at their lower ends in a straight line transversely of the key-levers and having their upper ends disposed in an arc and connected to the type-bars, and a system of equalizing draw-bars attached to the intermediary levers above their fulcrums and to the key-levers at one side of their fulcrums, said draw-bars being attached to one system of levers at different points in their lengths to equalize the power and degree of movement necessary to throw the type-bars to the printing position.

2. In a front-strike type-writing machine, the combination with a system of type-bars, of a system of key-levers converging rearwardly in straight lines from points directly below their keys to their fulcrums, and fulcrumed at their rear ends, upwardly-converging intermediary levers fulcrumed at their lower ends and having their upper ends connected to the type-bars, and connections whereby motion is transmitted from the key-levers to their respective intermediary levers to actuate the type-bar.

3. In a front-strike type-writing machine, the combination with a system of type-bars, of a system of key-levers converging rearwardly in straight lines from points directly below their keys to their fulcrums and fulcrumed at their rear ends, upwardly-converging intermediary levers fulcrumed at their lower ends and having their upper ends connected to the type-bars, and draw-bars attached directly to the key-levers and to their corresponding intermediary levers.

4. In a front-strike type-writing machine, the combination with a system of type-bars, of a system of key-levers converging rearwardly from their keys in straight lines and fulcrumed at their rear ends, upwardly-converging intermediary levers fulcrumed at their lower ends and having their upper ends connected to the type-bars, and draw-bars connected to said levers at such points as will cause each type-bar to move through an equal arc by an equal depression of each key-lever.

5. In combination with a platen, a series of type-bars pivoted in an arc to strike at the same printing-point, a series of upwardly-converging intermediary levers fulcrumed on a common axis below the type-bars and having their upper ends disposed in an arc and each linked to one of the type-bars, horizontal key-levers, equalizing draw-bars each having its upper end pivoted directly to one of the first-named levers at a point above its fulcrum and its lower end pivoted directly to the key-lever.

6. In a front-strike type-writing machine, the combination with a platen, pivoted type-bars and horizontal key-levers, of upwardly-converging intermediary levers fulcrumed on a common axis above the key-levers and below the type-bars and having their free ends connected to their respective type-bars, and equalizing draw-bars each having its lower end pivoted to the key-lever and its upper end pivotally attached directly to one of the intermediary levers between its fulcrum and connection with the type-bar.

7. In a front-strike type-writing machine, a system of type-levers pivoted in a vertical arc, a system of key-levers having their fulcrums arranged in a horizontal arc, said key-levers extending forwardly from their fulcrums in straight lines radial to said horizontal arc, a system of upright intermediary levers having their fulcrums disposed in a straight line transversely of the key-levers, said intermediary levers gradually increasing in length from the center toward the side of the machine and converging upwardly from their fulcrums, links connecting the upper ends of said levers with their respective type-levers and a system of equalizing draw-bars each pivotally connected to one of the key-levers and to the intermediary levers in transverse lines where the collective width of the key-levers is substantially equal to the collective width of the intermediary levers.

8. In a front-strike type-writing machine, the combination with a platen, of type-levers fulcrumed in the arc of a circle having its center at the printing-point, upwardly-converging intermediary levers fulcrumed on a fixed common axis below the type-levers and gradually increasing in lengths from the center toward the ends of the arc, said intermediary levers having their upper ends connected to their respective type-levers, and key-levers converging rearwardly from their keys in straight lines from points directly below their keys to their fulcrums and connected to the upright levers above their fulcrums.

9. In a front-strike type-writing machine, the combination with a series of type-levers and key-levers, of a corresponding series of upwardly-converging intermediate levers fulcrumed on a fixed common axis below the type-levers and connected to their respective type-levers, and equalizing draw-bars connected at different lengthwise points to the key-levers and attached to the intermediary levers above their fulcrums.

10. In a type-writing machine, the combination with a platen and type-bars pivoted in a circular arc to strike the front face of the platen, of a system of operating devices for the type-bars, each device including a key-lever, an upright intermediary lever, and an equalizing draw-bar, said intermediary lever and draw-bar converging upwardly from the key-lever and pivotally attached at their points of convergence, each intermediary lever being linked to its type-bar above its connection with its draw-bar, and the draw-bar having its lower end pivotally attached to the key-lever.

11. In a front-strike type-writing machine, a series of type-bars pivoted in a circular arc, a series of upwardly-converging intermediary levers pivoted at their lower ends in the same horizontal line and gradually increasing in length from the center toward the ends of the arc, the upper ends being in planes radial to such arc, links connecting the upper ends of the intermediary levers to their respective type-bars, key-levers, one for each type-bar, and equalizing draw-bars extending upwardly from and pivotally attached to the key-levers and having their upper ends pivoted to their respective intermediate levers above the fulcrums of said intermediate levers.

12. The combination with a platen, type-bars and key-levers of a front-strike type-writing machine, of upwardly-converging intermediate levers pivoted at their lower ends in the same horizontal line and having their upper ends linked to their respective type-bars, and equalizing draw-bars of different lengths connecting the intermediate levers with their key-levers.

13. In a type-writing machine, the combination with a platen, of a plurality of type-bars pivoted in an arc to strike at the same printing-point at the front side of the platen, upwardly-converging intermediary levers fulcrumed at their lower ends and having their upper ends radial to said arc and connected to the type-bars, key-levers converging rearwardly from their keys in straight vertical planes, and equalizing draw-bars attached directly to the intermediary and key levers.

14. The combination with the platen and type-bars of a front-strike type-writing machine, of a system of rearwardly-converging key-levers, and a system of upwardly-converging intermediate levers, draw-bars pivoted to the key-levers and to the intermediate levers, the collective width of the key-levers at their points of connection with the draw-bars being substantially equal to the collective width of the intermediate levers at their point of connection with said draw-bars.

15. The combination with the platen and type-bars of a front-strike type-writing machine, of a system of rearwardly-converging key-levers, a system of upwardly-converging intermediate levers fulcrumed at their lower ends on the same horizontal axis above and transversely of the key-levers and their upper ends connected to the type-bars, and equalizing draw-bars connecting the intermediary to the key levers, the collective transverse width of the key-levers at their points of connection with the draw-bars being substantially equal to the collective transverse width of the intermediary levers at their points of connection with said draw-bars.

16. In a type-writing machine, a series of type-bars pivoted in a circular arc, in combination with upwardly-converging intermediate levers fulcrumed at their lower ends and all having their upper ends disposed in planes radial to said arc and connected to the type-bars, and a system of key-levers each connected to its intermediary lever.

17. The combination with a series of type-bars pivoted in an arc to strike at one and the same printing-point, of a system of key-levers, intermediary levers fulcrumed at their lower ends on the same horizontal axis and at right angles thereto, and having their upper ends disposed in planes radial to said arc and connected to the type-bars, and draw-bars connected to the intermediary and key levers at such points as will move the upper ends of the intermediary levers equal distances by substantially the same stroke of the key-levers.

18. The combination with a platen and a series of type-bars pivoted in an arc to strike at the same printing-point at the front side of the platen, of a system of key-levers converging rearwardly in straight lines from their keys and having their front ends terminating in straight transverse rows and their rear ends engaging fulcrums which are arranged in a horizontal arc, each key-lever having suitable connection with its type-bar to throw the latter to its printing position.

19. In combination with a platen and a series of type-bars pivoted in an arc to strike at the same printing-point at the front side of the platen, of a system of key-levers converging rearwardly in straight lines from their keys and having their front ends terminating in straight transverse rows and their rear ends engaging fulcrums which are arranged in a horizontal arc, and intermediate levers fulcrumed at their lower ends and each connected to one of the type-bars and to its corresponding key-lever.

20. The combination with a platen and a series of type-bars pivoted in an arc to strike at the same printing-point at the front side of the platen, of a system of key-levers converging rearwardly in straight lines from their keys and having their front ends terminating in straight transverse rows and their rear ends engaging fulcrums which are arranged in a horizontal arc, intermediary levers fulcrumed at their lower ends and having their upper ends connected to the type-bars and equalizing draw-bars each connected to one of said intermediary levers and to its corresponding key-lever.

21. The combination with a platen and a series of type-bars pivoted in an arc to strike at the same printing-point at the front side of the platen, of a system of key-levers converging rearwardly in straight vertical planes from their keys, and having their front ends terminating in straight transverse rows and their rear ends fulcrumed in a transverse line, upwardly-converging intermediary levers fulcrumed at their lower ends and having their upper ends connected to the type-bars, and equalizing draw-bars connected to their respective intermediary levers and key-levers.

22. The combination with a platen and a series of type-bars pivoted in an arc to strike at the same printing-point at the front side of the platen, of a system of key-levers converging rearwardly in straight lines from their keys, and having their front ends terminating in straight transverse rows and their rear ends engaging fulcrums which are arranged in a horizontal arc, upwardly-converging intermediary levers fulcrumed at their lower ends on a fixed horizontal axis and having their upper ends disposed in planes radial to the arc in which the type-bars are pivoted and connected to said type-bars, and draw-bars connecting said intermediary levers to their respective key-levers.

23. In a type-writing machine, the combination with a platen and type-bars pivoted in an arc to strike at the same printing-point, of a system of rearwardly-converging key-levers, a system of upwardly-converging intermediary levers, and draw-bars pivotally connected to the intermediary levers and to the key-levers, the col-

lective width of the key-levers at their points of connection with the draw-bars being substantially equal to the collective transverse width of the intermediary levers at their points of connection with said draw-bars.

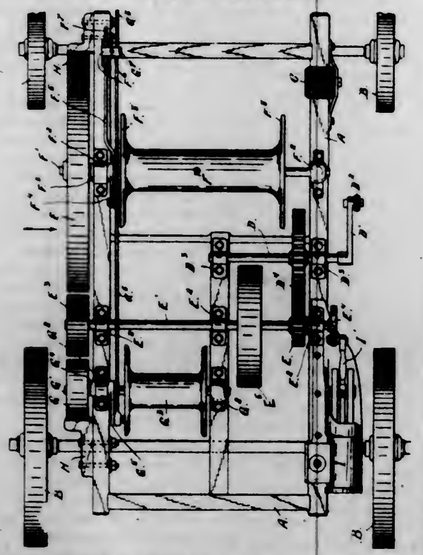
24. In a type-writing machine, the combination with a platen and type-bars pivoted in a substantially vertical arc, of a system of key-levers fulcrumed in a substantially horizontal arc, intermediary levers fulcrumed at their lower ends on a horizontal axis and having their upper ends disposed in a vertical arc and connected to the type-bars, and draw-bars connected to the levers in such manner as to equalize the stroke of the several key-levers in throwing the type-bars to the printing position.

25. In a front-strike type-writing machine a type-bar and a key-lever, the latter fulcrumed at its rear end in combination with an upright rock-arm linked to the heel of the type-bar, and a draw-bar attached to the rock-arm and also pivotally attached to the key-lever in the plane of a direct line drawn between the fulcrum and key of the key-lever.

26. In a type-writing machine a series of type-bars pivoted in the arc of a circle to strike upwardly and rearwardly, a system of upwardly-converging rock-levers, each linked to one of the type-bars, a system of key-levers converging rearwardly in straight vertical planes from their keys to their fulcrums, and a system of equalizing draw-bars arranged in parallel vertical planes running from front to rear and each connecting one of the rock-levers to one of the key-levers.

27. In a front-strike type-writing machine, a system of type-bars pivoted in a circular arc, a system of key-levers converging rearwardly in straight vertical planes from their keys to their fulcrums, a system of intermediary levers having their lower ends disposed in parallel vertical planes and pivoted upon a common axis, and their upper ends disposed in planes substantially parallel with the swinging planes of their respective type-bars and connected to said type-bars, and a system of draw-bars of varying lengths from the center toward the side of the machine, each of said draw-bars connecting one of the intermediary to one of the key levers.

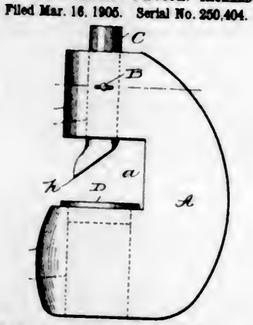
820,936. **WELL-DRILLING MACHINE.** CLAUDE M. MCAFEE, Waco, Tex. Filed Feb. 18, 1904. Serial No. 194,309.



Claim.—1. In a well-drilling machine, the combination with an engine-shaft, of a walking-beam shaft directly connected to the engine-shaft, a bull-wheel shaft directly connected to the engine-shaft, and a sand-reel shaft directly connected to the engine-shaft.

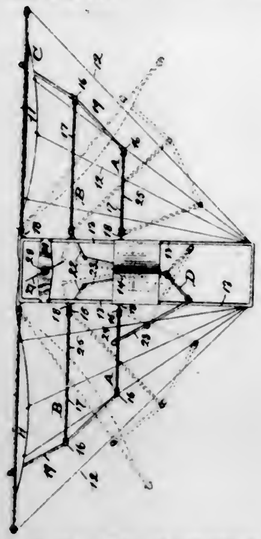
2. In a well-drilling machine, an engine-shaft having a spur-gear and a friction-wheel, a walking-beam shaft having a spur-gear engaging the spur-gear on the engine-shaft, a bull-wheel shaft having a friction-wheel, a sand-reel shaft having a friction-wheel, and separate means for causing the bull-wheel and sand-reel friction-wheels to directly engage and disengage with the engine-shaft friction-wheel.

820,937. **METAL-WORKING DEVICE.** RICHARD O'HEARN, Monterey, Ky. Filed Mar. 16, 1905. Serial No. 250,404.



Claim.—A device for the purpose described, comprising a body, of a shape and size to be held in one hand, having a bifurcation in one of its edges, a longitudinal bore in one wall of the bifurcation and a longitudinal bore in the other wall thereof, an anvil removably arranged in the latter bore, and a rectilinearly-movable punch arranged and retained against casual displacement in the first-mentioned bore of the body and having a chisel-point A arranged at its inner end and off its longitudinal center, for the purpose set forth.

820,938. **AERIAL VESSEL.** BARTHOLOMEW O'KANE, Cincinnati, Ohio, assignor of one-half to Stella Noel, Cincinnati, Ohio. Filed Aug. 22, 1904. Serial No. 221,654.



Claim.—1. In an aerial vessel, the combination of a cab, a frame containing upright members between which this cab is sustained, a parachute on top of the frame, having parts projecting on each side thereof and arranged to have pivotal motion thereon, vertically-spaced wings arranged in pairs pivotally attached to the sides of the frame, they being provided with feathering-blades and projecting laterally from the frame in opposite directions, feathering-blades provided also in the laterally-projecting parts of the parachute, links connecting each of the projecting parts mentioned with the wings on the respective side of the frame and mechanism in the cab for imparting an up-and-down motion to all wings and the lateral parts of the parachute simultaneously.

2. In an aerial vessel, the combination of a cab, a frame containing upright members between which this cab is sustained, a parachute provided on top of the frame, wings arranged in pairs pivotally attached to the sides of this latter from which they laterally project in opposite directions, an additional wing pivotally attached at its upper edge to the under side of the cab and to the longitudinal center thereof, from which it projects downwardly, links whereby this wing and all the laterally-projecting wings are connected for simultaneous movement and operatively-connected mechanism supported in the cab for imparting such simultaneous movement to the wings.

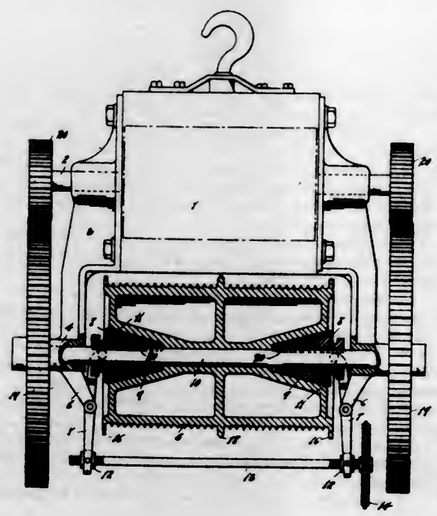
3. In an aerial vessel, the combination of a cab, a frame containing upright members between which this cab is sustained, a parachute provided on top of the frame beyond which it laterally extends on both sides, vertically-spaced wings arranged in pairs pivotally attached to the sides of the frame from which they project in opposite directions, the laterally-projecting portions of the parachute being also arranged to have a pivotal motion on the frame, links connecting these portions of the parachute and all the wings below them on a side for simultaneous movement, operatively-connected mechanism in the cab to impart simultaneously to these portions of the parachute and to the wings, an up-and-down motion, feathering-blades provided in the wings and in the movable portions of the parachute, the blades in the wings being arranged so as to be free to yield in opposite direction at the up as well as down stroke of the wings, and stops provided for the blades in the parachute which prevent these blades from yielding on the downstroke.

4. In an aerial vessel, the combination of a cab, a frame containing upright members between which this cab is sustained, a parachute provided on top of the frame, which projects all around beyond the same, the laterally-projecting portions of the parachute being arranged by means of a pivotal connection to the frame to be capable of having an up-and-down motion thereon, wings pivotally attached to the sides of the frame and below the parachute, they being arranged in pairs and projecting laterally from the frame, an additional wing pivotally attached below the cab to the longitudinal center thereof, links whereby this wing, the laterally-projecting wings and the movable portions of the parachute are all connected for simultaneous movement and operatively-connected mechanism carried on the cab to impart such movement.

5. In an aerial vessel, the combination of means for effecting elevation and motion, a rudder for steering, a frame to guide the helm of this rudder, a brace on which this helm is supported with a ball-joint permitting adjustment in horizontal as well as vertical directions, and means to hold this helm in adjusted position.

6. In an aerial vessel, the combination of means for effecting elevation and motion, a rudder for steering, a frame, having horizontal and vertical branches to guide the helm of the rudder, the end of which helm is adapted to move in these guides and a friction-spring provided in this end to hold the helm in adjusted position.

820,939. **HOISTING-ENGINE.** JAMES L. PILLING, Detroit, Mich. Filed Aug. 11, 1905. Serial No. 273,746.



Claim.—1. In combination with a motor, a motor-shaft, a drum-shaft, gearing on each end of the motor-shaft, and gearing on each end of the drum-shaft, a frame connecting the said shafts, clutch-bodies on the drum-shaft adapted to slide longitudinally thereof, and engaging the drum at both ends, and clutch-actuating means, substantially as described.

2. In combination with a motor, a drum-shaft carried to turn therewith, a drum rotating freely on said drum-shaft and provided with terminal clutch-surfaces, clutch-bodies carried by said shaft adapted to slide longitudinally thereof and adapted to engage the drum, pivoted levers engaging said clutch-bodies, and a screw-actuator engaging said pivoted levers to actuate them simultaneously, substantially as described.

820,940. **HYDRANT.** EDGAR R. STODDARD, Detroit, Mich., assignor to Eugene H. Sloman, Detroit, Mich. Filed Aug. 6, 1903. Renewed Sept. 23, 1905. Serial No. 279,852.



Claim.—1. The combination of a valve-casing, a stand-pipe extending upward from said casing, a valve in said casing the stem of which extends upward adjacent to the stand-pipe, a hydrant attached to the upper end of said stand-pipe to turn thereon, and a ring sleeved on the hydrant and having an opening through which the valve-stem passes.

2. The combination of a hydrant-casing formed with an integral closed upper end and having openings and a hand-hole in its sides, nozzle members screw-threaded at their outer ends and provided with flanges at their inner ends to engage the inner side of the casing, lock-nuts on the nozzles to engage the outer side of the casing, ways integral with the inner flanged ends of the nozzle members, valves guided on said ways within the casing to engage and close the inner ends of said nozzle members and valve-stems to operate said valves extending outward through stuffing-boxes on the casing.

3. The combination with a stand-pipe and hydrant, of a drain-valve in the lower end of the stand-pipe, and a vent in the upper end of the hydrant consisting of a plug chambered at its inner end to form a valve-seat and recessed at its outer end and formed with lateral passages leading from said seat, a valve to engage said seat a valve-stem for said valve guided in said plug and provided with a head within said recess, and a plug to close the outer end of said recess.

4. The combination with a valve-casing provided with a lateral chamber, a disk valve in said casing, a valve-stem extending vertically upward from said valve, a drain-valve in said chamber, a spring to normally hold said valve open and to allow the valve to close when the disk valve is opened, a stand-pipe secured to said casing, a hydrant-casing secured to the upper end of said stand-pipe and pro-

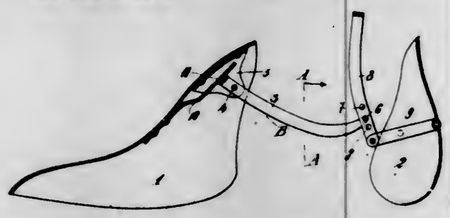
vided with openings and a hand-hole, a ring loosely sleeved on the hydrant through which the vertical valve-stem extends, nozzle members secured in the openings in the hydrant-casing, valves to close said nozzles, and a vent in the upper end of the hydrant-casing consisting of a plug formed with a chamber and lateral openings, and a recess in the top, a valve to close the lateral openings, a valve-stem extending upward into the recess and provided with a head therein, and a screw-plug to close the recess.

820,941. LOCK WASHER-NUT. FRANK SWARTHOUT, Saginaw, Mich. Filed June 9, 1905. Serial No. 264,373.



Claim.—The combination of two jaws screw-threaded for engagement with a bolt, the outside surface of each jaw being eccentric, each of said jaws having at one end thereof a bearing-surface and at the other end a shoulder, and an unthreaded nut the bore in said nut being a double eccentric and having shoulders formed therein for engagement with the edge of said jaws, said nut adapted to lock said jaws when turned in one direction and to unlock the same when turned in the opposite direction, and held on said jaws by said shoulders.

820,942. BOOT AND THE LIKE STRETCHING DEVICE. MAX TONZO, Langenserdorf, Austria-Hungary, assignor to Emil Lederer, Kornsteburg, Austria-Hungary. Original application filed Apr. 27, 1904, Serial No. 205,139. Divided and this application filed Mar. 8, 1905. Serial No. 248,967.



Claim.—1. In a stretching device for boots, shoes and the like the combination with a front and a heel part of a bow-like or double lever jointed or hinged to the back or the heel part and a two-armed fork-like U-shaped connecting-lever attached to the front part and being turned inward at its ends so as to be adapted to be hooked into corresponding holes of the said bow-like or double lever, thereby to adjust the length of the stretching device.

2. In a stretching device for boots, shoes and the like, the combination with a front and a heel part, of a bow-like or double lever jointed or hinged to the heel part, a two-armed fork-like connecting-lever, attached to the front part and being turned inward at one end so as to form pivots adapted to be hooked into holes of the said bow-like lever, and a spring fastened to the front part to keep the device in a stretched position.

820,943. FINGER-BAR. CHARLES O. WYMAN, Anoka, Minn. Original application filed July 1, 1903, Serial No. 163,872. Divided and this application filed Nov. 6, 1903. Renewed Oct. 13, 1905. Serial No. 282,676.

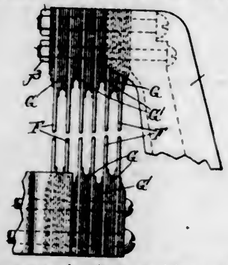
Claim.—1. The combination with a harvester-platform, of a sickle-bar mounted thereon to rock around an axis extending longitudinally of the finger-bar, a rock-shaft, a universal connection between the rock-shaft and finger-bar, and means for operating the rock-shaft.

2. In a harvester, the combination of a finger-bar, means for mounting the same to rock around an axis extending longitudinally of the finger-bar and to swing bodily into vertical position, a sickle-bar, means for imparting reciprocal movement to the sickle-bar, a rocking member for imparting said rocking movement to the finger-bar, and a universal connection between the said member and the finger-bar.

3. In a harvester, the combination of a finger-bar, means for mounting the same to rock around an axis extending longitudinally thereof and for mounting the finger-bar to swing bodily into vertical position, a sickle-bar, a pitman connected to the sickle-bar, means for operating the pitman, a rocking member, means for imparting a rocking movement thereto, and a universal connection between said member and said finger-bar, whereby to impart said rocking movement to the sickle-bar.



820,944. COMPOUND SPRING. JAMES L. ADAMS, Jr., Springfield, Ill. Original application filed Mar. 24, 1905, Serial No. 251,726. Divided and this application filed June 15, 1905. Serial No. 265,443.



Claim.—1. A compound spring comprising a plurality of leaves which are separated one from another by spacers said leaves secured together so as to be flexible between the spacers.

2. A compound spring comprising a plurality of leaves which are separated one from another by spacers having curved inner ends.

3. A compound spring comprising a plurality of leaves which are fastened together and separated one from another at each end by a plurality of separate short spacers extending a short distance between the several leaves.

4. A compound spring comprising a plurality of leaves which are separated one from another at each end by a plurality of short spacers having curved inner ends.

5. A compound spring comprising a plurality of leaves, in combination with a plurality of separators of different lengths separating the ends of said leaves.

6. A compound spring comprising a plurality of leaves separated one from another by spacers of different lengths, the different lengths alternating.

7. A compound spring comprising a plurality of leaves separated one from another by compound leaf-spacers.

8. A compound spring comprising a plurality of leaves separated one from another by short compound leaf-spacers, the individual leaves of which are of different lengths.

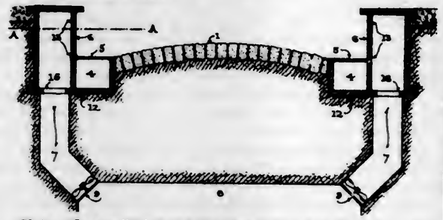
9. A compound spring comprising a plurality of leaves separated one from another by short compound leaf-spacers, the individual leaves of which are of different lengths, the said compound spacers being in their entirety of different lengths, the different lengths alternating between leaves of the spring.

10. A compound spring comprising a plurality of leaves which are separated one from another by short compound leaf-spacers, the individual leaves of such spacers being of different lengths and stepped with the shortest in the middle.

11. In a vibratory device, a straight-leaf spring having a plurality of mounting holes at each end of the leaf and arranged longitudinally thereof.

12. In a vibratory device, a leaf-spring having a plurality of mounting holes at each end of such spring, such holes having different diameters, those of the smaller diameter being nearer the center of such spring.

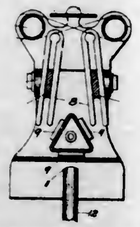
820,945. VENTILATING SYSTEM FOR MINES, TUNNELS, OR SUBWAYS. ROBERT E. BOORAEM, New York, N. Y. Filed June 17, 1905. Serial No. 265,769.



Claim.—In ventilating systems of the class described, in combination, an underground passage or chamber, a hollow or open curb with flue or pipe connections connecting the outer air and underground passage or chamber, a gutter separated from the hollow or open curb by a longitudinal partition, whereby surface water is drained in proper channels and not allowed to flow into the subway or chamber.

REISSUES.

12,481. STOP-MOTION FOR LOOMS. JOSEPH COLDWELL and CHRISTOPHER G. GILDARD, South Swansea, Mass., assignors to The Coldwell-Gildard Company, a Corporation of Massachusetts. Filed Dec. 8, 1905. Serial No. 291,002. Original No. 747,856, dated Dec. 22, 1903.



Claim.—1. The combination with a loom and a stop-motion therefor comprising a series of drop-bars supported upon the warp-threads of the loom, of an elastic guard-strip supported above and out of contact with the drop-bars and the warp-threads of the loom and designed to prevent an accidental throwing off of said drop-bars from said warp-threads and capable of being stretched to one side to give access to the drop-bars.

2. The combination with a loom and a stop-motion therefor comprising a series of drop-bars supported on the warp-threads of the loom, of an elastic guard-strip removably supported above and out of contact with the drop-bars and designed to prevent an accidental throwing-off of said drop-bars from the warp-threads.

3. The combination with a loom comprising brackets arranged for the support of its lease-rods, and above and between the latter provided with lugs, of a stop-motion for the loom comprising a series of drop-bars supported by the warp-threads thereof between the lease-rods, and a guard-strip arranged above and out of contact with the drop-bars and terminating in eyes engaging said lugs of the brackets.

4. In an electrically-operated stop-motion for looms, and in combination with an electrical circuit rod or bar, and drop-bars loosely embracing the same, a contact-bar, also in circuit, and having an inclined contact-surface free at its lower edges arranged in the path of and adapted to deflect said drop-bars.

5. In an electrically-operated stop-motion for looms, and in combination with a pair of electrical-circuit bars, and drop-bars loosely embracing the same, a hollow triangular contact-bar having its oppositely-inclined contact-surfaces arranged in the path of and adapted to deflect the drop-bars, and also in circuit.

6. The combination with a loom-frame, the main brackets supported thereby and provided with the lugs forming the broken triangular sockets, one of which latter has a perforation, a wire-conducting tube leading to the same and to the bottom of the loom, triangular insulating-plugs, one of which is hollow, seated in the sockets, a triangular contact-bar receiving the inner ends of the plugs, a source of electrical supply located at the foot of the loom or below the same, a circuit-wire leading from the same up through the tube and terminating in the triangular contact-bar in an electrical contact, of a pair of lease-rod brackets, circuit-bars below the same and supported by the main brackets, lease-rods carried by the lease-rod brackets, a series of drop-bars embracing the circuit-bars and adapted to be supported out of contact with the contact-bar by the warp-threads passing about the lease-rods, a knock-off mechanism, a magnet for operating the same, and an electrical connection between the source of electrical supply and the said magnet.

7. The combination, in a loom, a stop-motion therefor, comprising, a series of drop-bars supported upon the warp-threads of the loom, and an elastic guard-strip supported above the drop-bars and adapted to limit the upward movement of the drop-bars.

8. The combination, in a loom, of means for disposing the warp-threads thereof into opposite declining intersecting banks, a stop-motion embodied in the loom and comprising opposite series of drop-bars supported by the several threads composing said banks, and a yielding means located between the intersecting banks of warp-threads and the thread-disposing means for limiting the upward movement of said bars and capable of being drawn aside to expose said bars.

9. The combination, in a loom, of means for disposing the warp-threads thereof into opposite declining intersecting banks, a stop-motion embodied in the loom and comprising opposite series of drop-bars supported by the several threads composing said banks, and a yielding means common to both series of drop-bars located between the intersecting banks of threads and the thread-disposing means for limiting the vertical movement of said drop-bars and capable of being drawn aside to expose said drop-bars.

10. The combination, in a loom, means for disposing the warp-threads thereof into opposite intersecting banks, a stop-motion embodied in the loom, and comprising, opposite series of drop-bars supported by the several threads composing the said banks, and an elastic strip located between said dividing means and above the said drop-bars whereby the drop-bars of both series are limited in their upward movement.

11. The combination, in a loom, of means for supporting the warp-threads thereof, a stop-motion embodied in the loom and comprising a series of drop bars supported by the several warp-threads, and a flexible strip secured at its opposite ends located above and adapted to limit the upward movement of the drop-bars and adapted to be drawn aside in order to give access to said drop-bars and permit of their removal from and replacement on the threads.

12. The combination, in a loom, of means for disposing the warp-threads thereof into opposite declining intersecting banks, a stop-motion embodied in the loom and comprising opposite series of drop-bars supported by the several threads composing said banks, and a flexible guard common to both series of drop-bars secured at its opposite ends and located between the intersecting banks of threads and adapted to be drawn aside from said drop-bars to give access to said drop-bars and permit of their removal from and replacement on the threads.

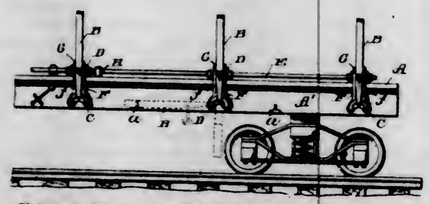
13. In warp stop mechanism for looms, the combination of a series of drop-bars supported upon the warp-threads, and a guard-strip attached at each end to the loom-frame and located above the series of drop-bars and across their line of movement transversely of the warp-threads, which guard-strip is adapted normally to prevent the drop-bars from being thrown from the warp-threads and also to be readily moved to one side of the line of drop-bars without detaching the end connections of the guard-strip from the frame.

14. In warp stop mechanism for looms, the combination of a series of drop-bars supported upon the warp-threads, and a guard-

strip attached at each end to the loom-frame in a position to normally cover the upper ends of the series of drop-bars and prevent their accidental displacement from the warp-threads; which guard-strip is adapted to be readily moved from its normal position without disturbing its attachment to the loom-frame, and to be automatically returned to such position.

15. In warp stop mechanism for looms, the combination of one or more series of drop-bars supported upon the warp-threads and a cover for the upper ends of the drop-bars normally located above and in proximity to them, and attached at each end to the loom-frame, which cover is adapted to be thrown to one side, to give access to the drop-bars, and to be returned to its normal position, without removal from its connections with the loom-frame.

12,482. LOCKING AND RELEASING MECHANISM FOR STANDARDS OF LOGGING-CARS. Gideon W. Du Bos, New Orleans, La. Filed Mar. 26, 1906. Serial No. 308,193. Original No. 808,733, dated Jan. 2, 1906.



Claim.—1. The combination with a car-body, of standards hinged on the sides of the same and provided with pivoted hooks adapted to extend inward, a rotary shaft arranged in bearings parallel to the side of the car and adapted for engagement with said hooks, gears fixed to said shaft, a transverse shaft having a worm which engages such gear and is adapted to rotate or lock the same, and means for rotating the transverse shaft, substantially as described.

2. The combination with the car-body, of standards pivoted on the sides of the same, hooks hinged to the standards and adapted to extend inward therefrom, a shaft arranged parallel to the side edge of the car adjacent to the standards and provided with flattened portions with which the hooks are adapted to engage, a segmental gear keyed on the shaft, a worm engaging the segments, and a transverse shaft on which the worm is keyed, the same having a slidable extension provided with a handle, substantially as described.

3. The combination with a car-body, standards pivoted on the sides of the same, hooks pivoted to the standards and a shaft arranged along the edge of the car-body and provided with a gear, of means for operating and locking the latter consisting of a worm and a shaft on which the same is mounted, the shaft extending transversely beneath the car, a sliding tubular shaft applied to the worm-shaft, and a slidable handle applied to the outer end of the tubular extension, substantially as described.

4. The combination with a car-body of devices attached to the side thereof, and consisting of U-bolts having the curved central portion bent upward, standards mounted loosely on such curved portions, and means for locking and releasing the standards, substantially as described.

5. The combination with the car-body and standards therefor, of supports for the standards having curved portions arranged parallel to the side of the car, and the convex side of the curve being uppermost, and means for locking and releasing the standards, substantially as described.

6. An apparatus for maintaining and releasing loads on cars or carts, or other vehicles, comprising a series of blocks secured to the vehicle-body, a series of rigid standards pivoted below said blocks, means for locking each standard to the corresponding block, and means for simultaneously unlocking and releasing a plurality of said standards, substantially as described.

7. An apparatus for maintaining and releasing loads on cars or carts, or other vehicles, comprising a series of blocks secured to the vehicle-body, and provided with outwardly-disposed holding-grooves, a series of rigid standards adapted to swing into engagement in said grooves, means for hinging said standards below said blocks, means for holding the standards in engagement with said grooves, and means for simultaneously releasing a plurality of said standards.

8. An apparatus for maintaining and releasing loads on cars or carts, or other vehicles, comprising a series of metallic blocks provided with vertical grooves and secured to the vehicle-body, a series of rigid metal standards adapted to swing into engagement in said grooves, means for hinging said standards below said blocks, means for holding the standard in engagement with said grooves in the blocks, and means for simultaneously releasing a plurality of said standards.

9. An apparatus for maintaining and releasing loads on cars or carts, or other vehicles, comprising a series of blocks provided with vertical grooves secured to the vehicle-body, a series of rigid standards adapted to engage in said grooves, means for hinging said standards below said blocks, means for holding the standards in engagement with said grooves in the blocks, and means operable from another side of the vehicle for simultaneously releasing a plurality of said standards, substantially as described.

10. An apparatus for maintaining and releasing loads on cars or carts, or other vehicles, comprising a series of blocks provided with vertical grooves secured to the vehicle-body, a series of rigid standards adapted to engage in said grooves, means for hinging said standards below said blocks, means for holding the standards in engagement with said grooves in the blocks, and means for simultaneously releasing a plurality of said standards, with means located beneath the platform of the vehicle for supporting the free end of the standard when released, substantially as described.

11. An apparatus for maintaining and releasing loads on cars or carts, or other vehicles, comprising a series of blocks provided with vertical grooves secured to the vehicle-body, a series of rigid standards adapted to engage in said grooves, means for hinging said standards below said blocks, means for holding the standard in engagement with said grooves in the blocks, and means operable from another side of the vehicle for simultaneously releasing a plurality of said standards, with means located beneath the platform of the vehicle for supporting the free end of the standard when released, substantially as described.

12. An apparatus for maintaining and releasing loads on cars or carts, or other vehicles, comprising a series of metal blocks provided with vertical grooves and secured to the vehicle-body, a series of rigid ribbed metal standards adapted to engage closely in said grooves, means for hinging said standards below said blocks to enable the standard to swing outward and laterally, means for holding the standards in engagement with said grooves in the blocks, and means for simultaneously releasing a plurality of said standards.

13. An apparatus for maintaining and releasing loads on cars or carts, or other vehicles, comprising a series of metal blocks provided with vertical grooves and secured to the vehicle-body, a series of ribbed metal standards adapted to engage closely in said grooves, means for hinging said standards below said blocks to enable the standard to swing outward and laterally, means for holding the standards in engagement with said grooves in the blocks, and means operable from another side of the vehicle for simultaneously releasing a plurality of said standards, substantially as described.

14. An apparatus for maintaining and releasing loads on cars or carts, or other vehicles, comprising a series of metal blocks provided with vertical grooves secured to the vehicle-body, a series of rigid ribbed metal standards adapted to engage in said grooves, means for hinging said standards below said blocks to enable the standard to swing outward and laterally, means for holding the standards in engagement with said grooves in the blocks, and means for simultaneously releasing a plurality of said standards, with means located beneath the platform of the vehicle for supporting the free end of the standard when released, substantially as described.

15. An apparatus for maintaining and releasing loads on cars or carts, or other vehicles, comprising a series of blocks provided with vertical grooves secured to the vehicle-body, a series of standards adapted to engage in said grooves, means for hinging said standards below said blocks, hooks pivoted to said standards for holding the standards in engagement with said grooves in the blocks, and means operable from another side of the vehicle for simultaneously releasing a plurality of said hooks and the standards held thereby, substantially as described.

16. An apparatus for maintaining and releasing loads on cars or carts, or other vehicles, comprising a series of blocks provided with vertical grooves secured to the vehicle-body, a series of standards adapted to engage in said grooves, means for hinging said standards below said blocks to enable the standard to swing outward and laterally, hooks pivoted to said standards for holding the standards in engagement with said grooves in the blocks, and a notched rod engaging a series of said hooks and adapted when rotated to simultaneously release a plurality of said hooks and the standards held thereby, substantially as described.

17. An apparatus for maintaining and releasing loads on cars or carts, or other vehicles, comprising a series of metal blocks provided with vertical grooves secured to the vehicle-body, a series of rigid metal standards adapted to engage in said grooves, hooks pivoted to said standards and holding said standards in said grooves, the said standards being perforated near their lower ends, a series of substantially U-shaped bolts secured to the vehicle-body, and each passing through the perforation in a standard, and means for simultaneously releasing a plurality of said standards and allowing them to swing about said U-shaped bolts, substantially as described.

18. An apparatus for maintaining and releasing loads on cars or carts, or other vehicles, comprising a series of metal blocks provided with vertical grooves secured to the vehicle-body, a series of metal standards adapted to engage in said grooves, hooks pivoted to said standards and holding said standards in said grooves, the said standards being perforated near their lower ends, a series of substantially U-shaped bolts secured to the vehicle-body, and each passing through the perforation in a standard, and a rotatable notched rod for releasing said hooks, thus simultaneously releasing a plurality of said standards and allowing them to swing about said U-shaped bolts, substantially as described.

19. An apparatus for maintaining and releasing loads on cars or carts, or other vehicles, comprising a series of metal blocks provided with vertical grooves secured to the vehicle-body, a series of rigid metal standards adapted to engage in said grooves, the said standards being perforated near the lower ends, a series of substantially U-shaped bolts secured to the vehicle-body, and each passing through the perforation in a standard, and means for simultaneously releasing a plurality of said standards and allowing them to swing about said U-shaped bolts, with means located below the platform of the vehicle-body for supporting the free ends of said standards, substantially as described.

20. An apparatus for maintaining and releasing loads on cars or carts, or other vehicles, comprising a series of metal blocks provided with vertical grooves secured to the vehicle-body, a series of metal standards adapted to engage in said grooves, the said standards being perforated near their lower ends, hooks pivoted to said standards, a series of substantially U-shaped bolts secured to the vehicle-body, and each passing through the perforation in a standard, and a notched rod operable from another side of the car for releasing said hooks, thus simultaneously releasing a plurality of said standards and allowing them to swing about said U-shaped bolts, substantially as described.

21. An apparatus for maintaining and releasing loads on cars or carts, or other vehicles, comprising a series of blocks secured to the vehicle-body, and each provided with an outwardly-disposed holding-groove, a series of rigid standards each pivoted below said blocks and each adapted to engage in one of said grooves, means for holding the standards in engagement with said grooves in the blocks, and means for simultaneously releasing a plurality of said standards, whereby the said standards are allowed to swing outward about their pivots, substantially as described.

22. An apparatus for maintaining and releasing loads on cars or carts, or other vehicles, comprising a series of blocks secured to the vehicle-body, and each provided with an outwardly-disposed holding-groove, a series of standards each adapted to be swung upward into engagement in one of said grooves, means for hinging said standards below said blocks to enable the standard to swing outward and downward and laterally, means for holding the standards in engagement with said grooves in the blocks, and means operable from another side of the vehicle for simultaneously releasing a plurality of said standards, substantially as described.

23. An apparatus for maintaining and releasing loads on cars or carts, or other vehicles, comprising a series of blocks secured to the vehicle-body, and each provided with an outwardly-disposed holding-groove, a series of standards each adapted to be swung upward into engagement in one of said grooves, means for hinging said standards below said blocks, a hook pivoted to each of said standards at a distance from the pivot of said standard for holding the standard in engagement with said grooves in the blocks, and means operable from another side of the vehicle for simultaneously releasing a plurality of said hooks, thereby allowing said standards to swing outward, substantially as described.

24. An apparatus for maintaining and releasing loads on cars or carts, or other vehicles, comprising a series of blocks secured to the vehicle-body, and each provided with an outwardly-disposed holding-groove, a series of standards each adapted to be swung upward into engagement in one of said grooves, means for hinging said standards below said blocks, a hook pivoted to each of said standards at a distance from the pivot of said standard for holding the standard in engagement with said groove in the block, and notched rods normally engaging said hooks and operable from another side of the vehicle for simultaneously releasing a plurality of said hooks, thereby releasing said standards, substantially as described.

25. An apparatus for maintaining and releasing loads on cars or carts, or other vehicles, comprising a series of blocks each provided with a holding-groove and secured to the vehicle-body, a series of rigid standards each adapted to engage in one of said grooves, the said standards being perforated near their lower ends, a substantially U-shaped bolt curved upward at its center and secured to the vehicle-body, and passing through the perforation in the standard, and means for simultaneously releasing a plurality of said standards and allowing them to swing about said U-shaped bolts, substantially as described.

26. An apparatus for maintaining and releasing loads on cars or carts, or other vehicles, comprising a series of blocks each provided with a holding-groove and secured to the vehicle-body, a series of rigid standards each adapted to engage in one of said grooves, the said standards being perforated near their lower ends, a substantially U-shaped bolt curved upward at its center and secured to the vehicle-body, and passing through the perforation in the standard, and means for simultaneously releasing a plurality of said standards and allowing them to swing about said U-shaped bolts, with means located below the platform of the vehicle-body for supporting the free ends of said standards, substantially as described.

27. In an apparatus for maintaining and releasing loads on cars, the combination with the car-body, of a block provided with a holding-groove and secured to the car-body, a rigid standard hinged below said block so as to swing laterally and vertically, the said standard being adapted to swing up into engagement in said groove, means for locking the standard in engagement in said groove, and means for unlocking and releasing said standard, substantially as described.

28. In an apparatus for maintaining and releasing loads on cars, the combination with the car-body, of a block provided with a holding-groove and secured to the car-body, a rigid standard hinged below said block so as to swing laterally and vertically, the said standard being adapted to swing up into engagement in said groove, means for locking the standard in engagement in said groove, and means for unlocking and releasing said standard, with means located beneath the platform of the vehicle for supporting the free end of the standard when released, substantially as described.

29. An apparatus for maintaining and releasing loads on cars, comprising a series of metallic blocks secured to the car-body and each provided with a holding-groove, a series of metal standards each adapted to engage in one of said grooves, means for hinging said standards below said blocks to enable the standard to swing vertically and laterally, means for holding the standards in engagement with said grooves in the blocks, and means operable from another side of the car for simultaneously releasing a plurality of said standards, with means located beneath the platform of the vehicle for supporting the free end of the standard when released, substantially as described.

30. An apparatus for maintaining and releasing loads on cars, comprising a series of blocks secured to the car-body and each provided with a holding-groove, a series of rigid standards each adapted to engage in one of said grooves, the said standards being perforated near their lower ends, and a series of substantially U-shaped bolts curved upward to their center and secured to the car beneath the corresponding blocks, and passing through the perforations in the standards, and means for locking said standards to said blocks and for releasing same and allowing them to swing about said U-shaped bolts, substantially as described.

31. An apparatus for maintaining and releasing loads on cars or carts, or other vehicles, comprising a series of blocks secured to the vehicle-body, beams extending across the car-body and each tying together a pair of oppositely-disposed blocks, a series of rigid standards pivoted below said blocks, means for locking each standard to the corresponding block, and means for simultaneously unlocking and releasing a plurality of said standards, substantially as described.

32. An apparatus for maintaining and releasing loads on cars or carts, or other vehicles, comprising a series of blocks secured to the vehicle-body, beams extending across the car-body and each tying together a pair of oppositely-disposed blocks and provided with outwardly-disposed holding-grooves, a series of rigid standards adapted to swing into engagement with said grooves, means for hinging said standards below said blocks, means for holding the standards in engagement with said grooves, and means for simul-

taneously releasing a plurality of said standards, substantially as described.

33. An apparatus for maintaining and releasing loads on cars or carts, or other vehicles, comprising a series of metallic blocks provided with vertical grooves and secured to the vehicle-body, metal beams extending across the car-body and each tying together a pair of oppositely-disposed blocks, a series of rigid metal standards adapted to swing into engagement in said grooves, means for hinging said standards below said blocks, means for holding the standard in engagement with said grooves in the blocks, and means for simultaneously releasing a plurality of said standards, substantially as described.

34. An apparatus for maintaining and releasing loads on cars or carts, or other vehicles, comprising a series of metal blocks provided with vertical grooves and secured to the vehicle-body, metal beams extending across the car-body and each tying together a pair of oppositely-disposed blocks, a series of rigid ribbed metal standards adapted to engage closely in said grooves, means for hinging said standards below said blocks to enable the standard to swing outward and laterally, means for holding the standards in engagement with said grooves in the blocks, and means for simultaneously releasing a plurality of said standards, substantially as described.

35. An apparatus for maintaining and releasing loads on cars or carts, or other vehicles, comprising a series of metal blocks provided with vertical grooves and secured to the vehicle-body, metal beams extending across the car-body and each tying together a pair of oppositely-disposed blocks, a series of ribbed metal standards adapted to engage closely in said grooves, means for hinging said standards below said blocks to enable the standard to swing outward and laterally, means for holding the standards in engagement with said grooves in the blocks, and means operable from another side of the vehicle for simultaneously releasing a plurality of said standards, substantially as described.

36. An apparatus for maintaining and releasing loads on cars or carts, or other vehicles, comprising a series of metal blocks provided with vertical grooves secured to the vehicle-body, metal beams extending across the car-body and each tying together a pair of oppositely-disposed blocks, a series of rigid ribbed metal standards adapted to engage in said grooves, means for hinging said standards below said blocks to enable the standard to swing outward and laterally, means for holding the standards in engagement with said grooves in the blocks, and means for simultaneously releasing a plurality of said standards, with means located beneath the platform of the vehicle for supporting the free end of the standard when released, substantially as described.

37. An apparatus for maintaining and releasing loads on cars or carts, or other vehicles, comprising a series of metal blocks provided with vertical grooves secured to the vehicle-body, metal beams extending across the car-body and each tying together a pair of oppositely-disposed blocks, a series of rigid metal standards adapted to engage in said grooves, hooks pivoted to said standards and holding said standards in said grooves, the said standards being perforated near their lower ends, a series of substantially U-shaped bolts secured to the vehicle-body, and each passing through the perforation in a standard, and means for simultaneously releasing a plurality of said standards and allowing them to swing about said U-shaped bolts, substantially as described.

38. An apparatus for maintaining and releasing loads on cars or carts, or other vehicles, comprising a series of metal blocks provided with vertical grooves secured to the vehicle-body, metal beams extending across the car-body and each tying together a pair of oppositely-disposed blocks, a series of metal standards adapted to engage in said grooves, hooks pivoted to said standards and holding said standards in said grooves, the said standards being perforated near their lower ends, a series of substantially U-shaped bolts secured to the vehicle-body, and each passing through the perforation in a standard, and a rotatable notched rod for releasing said hooks, thus simultaneously releasing a plurality of said standards and allowing them to swing about said U-shaped bolts, substantially as described.

39. An apparatus for maintaining and releasing loads on cars or carts, or other vehicles, comprising a series of metal blocks provided with vertical grooves secured to the vehicle-body, metal beams extending across the car-body and each tying together a pair of oppositely-disposed blocks, a series of rigid metal standards adapted to engage in said grooves, the said standards being perforated near the lower ends, a series of substantially U-shaped bolts secured to the vehicle-body, and each passing through the perforation in a standard, and means for simultaneously releasing a plurality of said standards and allowing them to swing about said U-shaped bolts, with means located below the platform of the vehicle-body for supporting the free ends of said standards, substantially as described.

40. An apparatus for maintaining and releasing loads on cars or carts, or other vehicles, comprising a series of metal blocks provided with vertical grooves secured to the vehicle-body, metal beams extending across the car-body and each tying together a pair of oppositely-disposed blocks, a series of metal standards adapted to engage in said grooves, the said standards being perforated near their lower ends, hooks pivoted to said standards, a series of substantially U-shaped bolts secured to the vehicle-body, and each passing through the perforation in a standard, and a notched rod operable from another side of the car for releasing said hooks, thus simultaneously releasing a plurality of said standards and allowing them to swing about said U-shaped bolts, substantially as described.

41. An apparatus for maintaining and releasing loads on cars or carts, or other vehicles, comprising a series of blocks secured to the vehicle-body, and each provided with an outwardly-disposed holding-groove, metal beams extending across the car-body and each tying together a pair of oppositely-disposed blocks, a series of rigid standards each pivoted below said blocks and each adapted to engage in one of said grooves, means for holding the standards in engagement with said grooves in the blocks, and means for simultaneously releasing a plurality of said standards, whereby the said standards are allowed to swing outward about their pivots, substantially as described.

42. An apparatus for maintaining and releasing loads on cars or carts, or other vehicles, comprising a series of blocks secured to the vehicle-body, and each provided with an outwardly-disposed holding-groove, beams extending across the car-body and each tying together a pair of oppositely-disposed blocks, a series of standards each adapted to be swung upward into engagement in one of said grooves, means for hinging said standards below said blocks, a hook pivoted to each of said standards at a distance from the pivot of said standard for holding the standard in engagement with said grooves in the blocks, and means operable from another side of the vehicle for simultaneously releasing a plurality of said hooks, thereby allowing said standards to swing outward, substantially as described.

43. An apparatus for maintaining and releasing loads on cars or carts, or other vehicles, comprising a series of blocks secured to the vehicle-body, and each provided with an outwardly-disposed holding-groove, beams extending across the car-body and each tying together a pair of oppositely-disposed blocks, a series of standards each adapted to be swung upward into engagement in one of said grooves, means for hinging said standards below said blocks, a hook pivoted to each of said standards at a distance from the pivot of said standard for holding the standard in engagement with said groove in the block, and notched rods normally engaging said hooks and operable from another side of the vehicle for simultaneously releasing a plurality of said hooks, thereby releasing said standards, substantially as described.

44. An apparatus for maintaining and releasing loads on cars or carts, or other vehicles, comprising a series of blocks each provided with a holding-groove and secured to the vehicle-body, beams extending across the car-body and each tying together a pair of oppositely-disposed blocks, a series of standards each adapted to engage in one of said grooves, the said standards being perforated near their lower ends, a substantially U-shaped bolt curved upward at its center and secured to the vehicle-body, and passing through the perforation in the standard, and means for simultaneously releasing a plurality of said standards and allowing them to swing about said U-shaped bolts, substantially as described.

45. An apparatus for maintaining and releasing loads on cars or carts, or other vehicles, comprising a series of blocks each provided with a holding-groove and secured to the vehicle-body, beams extending across the car-body and each tying together a pair of oppositely-disposed blocks, a series of standards each adapted to engage in one of said grooves, the said standards being perforated near their lower ends, a substantially U-shaped bolt curved upward at its center and secured to the vehicle-body, and passing through the perforation in the standard, and means for simultaneously releasing a plurality of said standards and allowing them to swing about said U-shaped bolts, with means located below the platform of the vehicle-body for supporting the free ends of said standards, substantially as described.

46. An apparatus for maintaining and releasing loads on cars, comprising a series of metallic blocks secured to the car-body and each provided with a holding-groove, metal beams extending across the car-body and each tying together a pair of oppositely-disposed blocks, a series of metal standards each adapted to engage in one of said grooves, means for hinging said standards below said blocks to enable the standards to swing vertically and laterally, means for holding the standards in engagement with said grooves in the blocks, and means operable from another side of the car for simultaneously releasing a plurality of said standards, with means located beneath the platform of the vehicle for supporting the free end of the standard when released, substantially as described.

47. An apparatus for maintaining and releasing loads on cars or carts, or other vehicles, comprising a series of blocks secured to the vehicle-body, a series of standards pivoted below said blocks, a hook pivoted to each standard for locking same to the corresponding block, and a notched shaft engaging a series of said hooks, with means for turning said shaft, substantially as described.

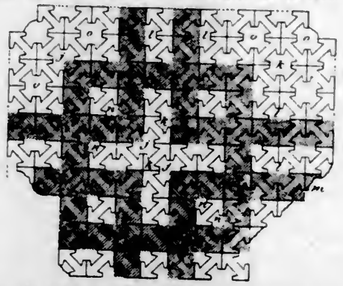
48. An apparatus for maintaining and releasing loads on cars or carts, or other vehicles, comprising a series of blocks secured to the vehicle-body, a series of standards pivoted below said blocks, a hook pivoted to each standard for locking same to the corresponding block, and a notched shaft engaging a series of said hooks, with means for turning said shaft, said means comprising a worm-gear fast on said shaft, a worm meshing in said gear, with means for turning said worm, substantially as described.

49. An apparatus for maintaining and releasing loads on cars or carts, or other vehicles, comprising a series of blocks secured to the vehicle-body and each provided with a holding-groove, a series of standards adapted to engage in said grooves, means for hinging said standards below said blocks, clevis-shaped hooks pivoted to said standards for holding the standards in engagement with said grooves in the blocks, a notched shaft normally engaging said hooks, and means for rocking said shaft and simultaneously releasing a plurality of said hooks and the standards held thereby, substantially as described.

50. An apparatus for maintaining and releasing loads on cars or carts, or other vehicles, comprising a series of blocks secured to the vehicle-body and each provided with a holding-groove, a series of standards adapted to engage in said grooves, means for hinging said standards below said blocks, clevis-shaped hooks pivoted to said standards for holding the standards in engagement with said grooves in the blocks, a notched shaft normally engaging said hooks, and means for rocking said shaft and simultaneously releasing a plurality of said hooks and the standards held thereby, said means comprising a worm-gear fast on said shaft, a worm meshing in said gear, and means for turning said worm, substantially as described.

12,483. INTERLOCKING TILE FOR FLOOR OR WALL COVERINGS.

AXEL W. NILSSON, New York, N. Y. Filed Mar. 29, 1906. Serial No. 308,815. Original No. 750,779, dated Jan. 26, 1904.



Claim.—1. A floor or wall covering composed of tiles of the general shape of a Maltese cross having differently-colored parts arranged radially about the center, interlocked with tiles of the shape of a double-headed arrow, forming a pattern or design irrespective of the interlocked portions of the tiles, as set forth.

2. A floor or wall covering composed of interlocked solidly-colored tiles and tiles party-colored symmetrically and radially and having a pattern or design therein, the outlines thereof being formed by the colors on the tiles irrespective of the interlocked portions of the tiles.

3. As a new article of manufacture, a tile of the general form of a Maltese cross, having differently-colored parts thereon symmetrically arranged about the center of the tile for the purposes set forth.

4. A floor or wall covering, consisting of equidistantly-spaced major tiles, each having four outer sides at right angles and having three-sided indentations between adjacent outer sides, the bases or innermost sides of the indentations being at angles of forty-five degrees to the said outer sides; and interlocking minor tiles between the major tiles, each composed of a body portion with parallel sides and pointed ends and having at each end laterally and inwardly projecting extensions, said minor tiles being arranged in groups of four about a common center, end to end, with their extensions in contact and entering the indentations, in the adjacent major tiles and interlocking therewith; as set forth.

DESIGNS.

38,010. BADGE. PAUL GIBSON BLANFORD, Portsmouth, Va. Filed Apr. 4, 1906. Serial No. 309,944. Term of patent 3½ years.



Claim.—The ornamental design for a badge as shown.

38,011. CLOCK-FRAME. STANLEY M. LAWSON, Cincinnati, Ohio. Filed Mar. 28, 1906. Serial No. 308,624. Term of patent 3½ years.



Claim.—The ornamental design for a clock-frame as shown.

38,012. GLASS VESSEL. JOHN OWENS, Wheeling, W. Va., assignor to Imperial Glass Company, Bellaire, Ohio, a Corporation. Filed Apr. 7, 1906. Serial No. 310,561. Term of patent 3½ years.





Claim.—The ornamental design for a glass vessel, as shown.

38,013. CAKE-IRON COVER. ALFRED ANDRESEN, Minneapolis, Minn. Filed Mar. 22, 1906. Serial No. 307,550. Term of patent 14 years.



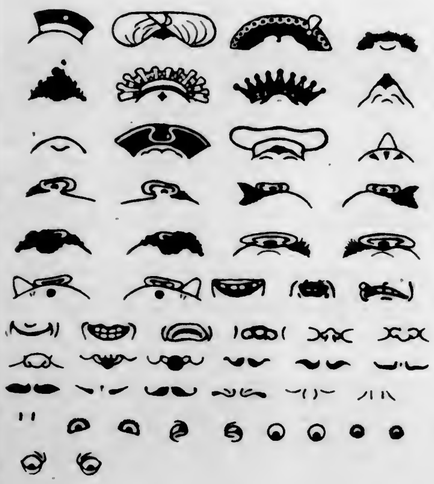
Claim.—The ornamental design for a cake-iron cover, as shown.

38,014. ELECTRICALLY-ILLUMINATED SIGN. GEORGE HOWE, New York, N. Y. Filed Mar. 29, 1906. Serial No. 306,783. Term of patent 7 years.



Claim.—The ornamental design for an electrically-illuminated sign, as shown.

38,015. FONT OF PRINTING-TYPE. ORRIN W. SIMONS, New York, N. Y. Filed Feb. 19, 1906. Serial No. 301,953. Term of patent 7 years.



Claim.—The ornamental design for a font of printing-type, as shown.

38,016. HAT. FLORENCE VAN RENSSELAER, Swartswood, N. J. Filed Mar. 3, 1906. Serial No. 304,127. Term of patent 7 years.



Claim.—The ornamental design for a hat, as shown.

TRADE-MARKS

PUBLISHED MAY 15, 1906.

The following trade-marks have been adjudged entitled to registration under the act of February 20, 1905, and are published in compliance with section 6 of said act. Said section provides:

"Any person who believes he would be damaged by the registration of a mark may oppose the same by filing notice of opposition, stating the grounds therefor, in the Patent Office within thirty days after the publication of the mark sought to be registered, which said notice of opposition shall be verified by the person filing the same before one of the officers mentioned in section two of this act. If no notice of opposition is filed within said time the Commissioner shall issue a certificate of registration therefor, as hereinafter provided for."

Marks which are stated to have been "Used ten years" are registrable under the last proviso of section 5 of said act, which is as follows:

"And provided further, That nothing herein shall prevent the registration of any mark used by the applicant or his predecessors, or by those from whom title to the mark is derived, in commerce with foreign nations or among the several States, or with Indian tribes, which was in actual and exclusive use as a trade-mark of the applicant or his predecessors from whom he derived title for ten years next preceding the passage of this act."

Section 14 of said act provides for the following fee:

"On filing notice of opposition to the registration of a trade-mark, ten dollars."

SER. No. 171. CANNED VEGETABLES. BLOOMINGTON CANNING CO., Bloomington, Ill. Filed Apr. 1, 1905. Used ten years.

AMERICAN

The word AMERICAN.

SER. No. 625. HAIR, CLOTHES, AND HAT BRUSHES. FLORENCE MANUFACTURING COMPANY, Northampton, Mass. Filed Apr. 6, 1905.

FLORELOID

The word "FLORELOID."

SER. No. 1,073. SOLUBLE EFFERVESCENT SALT FOR NERVINE PREPARATIONS. CHELF CHEMICAL CO, Richmond, Va. Filed Apr. 11, 1905.

C.C.C.C.

The four letters C. C. C. C.

SER. No. 1,074. SOLUBLE COMPOUND IN THE FORM OF A POWDER OR TABLET WHICH IS EXPOSED IN ITS DRY STATE AS A DISINFECTANT FOR APARTMENTS, &c., OR IN SOLUTION FOR LOCAL APPLICATION IN CASES OF MORBID CONDITIONS OF THE MUCOUS MEMBRANES, SUCH AS IRRITATION, OR OF EXCESSIVE SECRETIONS, AS IN CATARRH. CHELF CHEMICAL CO, Richmond, Va. Filed Apr. 11, 1905.

Vagicura

The word VAGICURA.

SER. No. 1,093. REMEDIES FOR AFFECTIONS OF THE THROAT, CHEST, AND LUNGS. FOLEY & COMPANY, Chicago, Ill. Filed Apr. 11, 1905. Used ten years.

FOLEY'S

HONEY & TAR

The words FOLEY'S HONEY AND TAR.

SER. No. 1,101. SHREDDED CODFISH. J. W. BEARDSLEY'S SONS, New York, N. Y. Filed Apr. 11, 1905. Used ten years.

SHREDDED CODFISH.

The words SHREDDED CODFISH.

SER. No. 1,388. RAILWAY-CAR CASTINGS. THE NATIONAL MALLEABLE CASTINGS COMPANY, Cleveland, Ohio. Filed Apr. 13, 1905.



The letter C inclosed within a lozenge-shaped figure.

SER. No. 1,469. FUSES. THE CLIMAX FUSE CO. New York, N. Y. Filed Apr. 14, 1905.

CRESCENT



A crescent figure in association with the word CRESCENT.

SER. No. 1,823. REMEDIES FOR STOMACH DISEASES. FRIEDRICH ADOLF RICHTER, New York, N. Y., and Rudolstadt, Germany. Filed Apr. 15, 1905.



The representation of a star with lines radiating therefrom.

SER. No. 1,897. WHISKY. PHILIP FREILER, Elgin, Ill. Filed Apr. 17, 1905.



The words FATHER TIME and a representation of an old man having wings and carrying a scythe and a watch and represented as flying, associated with a representation of an hour-glass.

SER. No. 1,915. WHISKY. A. A. WOLF & CO., Pittsburg, Pa. Filed Apr. 17, 1905.

KENTONIAN

The word "KENTONIAN."

SER. No. 1,922. WHISKY. A. A. WOLF & CO., Pittsburg, Pa. Filed Apr. 17, 1905.



The words "ALLEGHENY CLUB" and the representation of a shield design with two heads of grain on each side of the shield and on the shield a monogram composed of the letters "A A W & Co".

SER. No. 1,993. CANDY. WALLACE & CO. New York, N. Y. Filed Apr. 17, 1905. Used ten years.



The words "MOST EXCELLENT," inclosed in quotation-marks upon a panel of contrasting color.

SER. No. 2,001. INSECTICIDES AND RODENT-POISONS. HENRIETTE NAPRSTEK, New York, N. Y. Filed Apr. 17, 1905.



The bust figures or portraits of two men arranged side by side and representing, respectively, the personages known as J. Opitz, Sr., deceased, and J. Opitz, Jr., deceased. These bust figures or portraits are intersected by an annular band arranged between them and inclosing the letters J·O. In connection with the inclosed matter are arranged the letter and words J. OPITZ'S ROACH PASTE, the words ROACH PASTE being inclosed in an ornamental

border and respectively arranged at each side of a central picture or illustration of a rat, which is also inclosed by a border.

SER. No. 2,217. CULTIVATORS. THE OHIO CULTIVATOR COMPANY, Bellevue, Ohio. Filed Apr. 19, 1905.



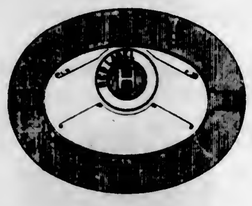
A red medallion bearing the words "FAMOUS OHIO.," inclosed within quotation-marks, and the name and address of the applicant, and having centrally arranged thereon a white diamond-shaped figure inclosing a picture of a cultivator.

SER. No. 2,595. PURE RYE WHISKY. SUNNY SIDE DISTILLING CO, Cincinnati, Ohio. Filed Apr. 21, 1905.



The words SUNNY SIDE and the conventional representation of the sun with a beaming face appearing thereon.

SER. No. 2,839. CUCUMBER PICKLES, MIXED PICKLES, CHOW-CHOW, AND PICKLED ONIONS. WM HENNING CO, Chicago, Ill. Filed Apr. 24, 1905.



An elliptical band, a circle within said band, a circular field within said circle, said field bearing the letter "H," and the words "RED LABEL" in the space between said circle and said circular field. The elliptical band and the circular field are printed in red.

SER. No. 2,932. VALVES AND COCKS. H. MUELLER MANUFACTURING COMPANY, Decatur, Ill. Filed Apr. 24, 1905.

H
◇
M

A diamond-shaped figure having concave sides, the letter "H" arranged above and the letter "M" beneath the same.

SER. No. 3,068. WHISKY. A. GRAF DISTILLING CO, St. Louis, Mo. Filed Apr. 26, 1905.



The words "OLD GOVERNOR" and a monogram composed of the letters "A G D Co"

SER. No. 3,209. WHISKY. J. H. FRIEDENWALD & CO, Baltimore, Md. Filed Apr. 27, 1905.



The pictorial representation of a female in uniform carrying under its left arm a miniature barrel with the initials F P R down the front of the female, associated with the words FRIEDENWALD'S BABY BARREL.

SER. No. 3,411. SEWING-MACHINE NEEDLES. GEORGE THOMPSON ROBIE, Chicago, Ill. Filed Apr. 28, 1905.



The representation of a drummer-boy in Continental uniform appearing upon a shield.

SER. No. 3,966. SALAD-DRESSING AND SAUCES. E. R. DURKEE & Co., New York, N. Y. Filed May 2, 1905.



The representation of a gauntlet or the word GAUNTLET, used singly or together.

SER. No. 4,099. ROASTED COFFEE AND ROASTED AND GROUND COFFEE. THE ENTERPRISE COFFEE COMPANY OF BALTIMORE CITY, Baltimore, Md. Filed May 3, 1905.

ENTERPRISE

The arbitrary word "ENTERPRISE" inclosed in quotation-marks.

SER. No. 4,384. MILK CENTRIFUGAL MACHINES AND MILK COOLING AND PASTEURIZING MACHINES AND APPARATUS. AKTIEBOLAGET SALENIUS WERKSTÄDER, Stockholm, Sweden. Filed May 5, 1905.



The representation of a shield surmounted by a phenix. In the field of said shield is the representation of a centrifugal drum surrounded by a band on which appear the words SALENIUS' WERKSTÄDER, STOCKHOLM.

SER. No. 4,407. GOLD AND SILVER FLAT WARE, HOLLOW WARE, AND TABLEWARE. WILLIAM LINKER, Philadelphia, Pa. Filed May 5, 1905.



The conventional representation of a fleur-de-lis.

SER. No. 4,466. TOILET WATERS. LANMAN & KEMP, New York, N. Y. Filed May 6, 1905.



The facsimile signature of our firm's name, LANMAN & KEMP, arranged below a fancy scroll, and having at each end the representation of a phenix inclosed by an ornamental quadrangular border, the said border having above the representation the words, NEW YORK. A rectangular border incloses the whole.

SER. No. 4,573. TEA. F. P. GARRETTSON & Co., Newport, R. I., and New York, N. Y. Filed May 6, 1905.

MYONARA TEA

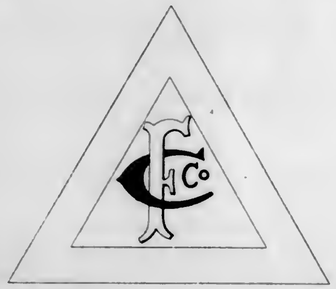
The words "MYONARA TEA," the word "TEA" being inclosed in a circle.

SER. No. 4,575. COFFEE. F. P. GARRETTSON & Co., Newport, R. I., and New York, N. Y. Filed May 6, 1905.

TUXEDO COFFEE

The words "TUXEDO COFFEE."

SER. No. 4,672. TEETHING AND COOLING POWDERS FOR CHILDREN. JOSEPH A. W. BOUVIER, Fall River, Mass. Filed May 8, 1905.



A monogram composed of the letters and abbreviation F C Co, arranged within two triangles having parallel sides.

SER. No. 4,742. CONDITION-POWDERS. FREDERIC G. BOYNTON, Boston, Mass. Filed May 8, 1905.



The words "SHERIDAN'S CAVALRY" and the representation of the portrait of General Sheridan, deceased, centrally located between the representation of a barnyard scene comprising a barn and stock in the foreground and a scene representing a battle-field and a cavalry charge.

SER. No. 4,776. GAMES PLAYED WITH DISKS AND A FIELD CONTAINING A DIAGRAM UPON WHICH DISKS ARE ADAPTED TO BE PITCHED, THE POSITION OF THE DISKS ON THE FIELD INDICATING THE SCORE MADE. ADAM H. IMBODEN, Wichita, Kans. Filed May 9, 1905.

FIFTEEN

The word FIFTEEN.

SER. No. 4,809. REMEDIES FOR DISEASES OF THE THROAT AND LUNGS. NATIONAL REMEDY COMPANY, New York, N. Y. Filed May 9, 1905.

A representation of a lion rampant, standing on a heraldic roll and holding a plummet, associated with the words COMMUNE BONUM. QUOD PETIS HIC EST., all inclosed within an ornamental circular border, and associated with the words NATL REMEDY CO.

SER. No. 4,905. BEARING METAL. FRICTIONLESS METAL COMPANY, Richmond, Va. Filed May 10, 1905. Used ten years.

WAGNER'S HIGH SPEED

The words "WAGNER'S HIGH SPEED."

SER. No. 5,162. HARD-RUBBER BATTERY-CELLS. AMERICAN HARD RUBBER CO., New York, N. Y. Filed May 11, 1905.

VOLCAN

The word-symbol "VOLCAN."

SER. No. 5,127. TONIC REMEDY FOR CHILLS AND FEVER, BILIOUSNESS, AGUES, BILIOUS AND REMITTENT FEVERS, AND MALARIAL DISEASES. ALBERT B RICHARDS, Sherman, Tex. Filed May 11, 1905.



A shield in which appear a five-pointed star and a capital letter T.

SER. No. 5,531. TOILET PREPARATIONS FOR REMOVING STAINS FROM THE SKIN AND FINGER-NAILS AND FOR BLEACHING AND MANICURING THE NAILS. DR. J. PARKER PRAY COMPANY, LIMITED, New York, N. Y. Filed May 13, 1905.

ONGOLINE

The word "ONGOLINE."

SER. No. 5,895. POWDERS FOR TREATMENT OF INFANTS AND CHILDREN DURING TEETHING, FOR COOLING AND PURIFYING THE BLOOD, AND AS A REMEDY FOR INFANTILE ILLNESSES, FEVERS, GRIPES, WIND, WORMS, AND CONVULSIONS. JOSEPH ARTHUR WILFRID BOUVIER, Fall River, Mass. Filed May 17, 1905. Used ten years.

THE FENNING
TEETHING and COOLING POWDERS

The words "THE FENNING TEETHING AND COOLING POWDERS."

SER. No. 6,031. PERFUMES. FREDERICK STEARNS & Co., Detroit, Mich. Filed May 18, 1905.

Pompadour

The word POMPADOUR.

SER. No. 6,103. SHIRT-WAISTS AND SKIRTS. WALDORF MFG CO, Syracuse, N. Y. Filed May 19, 1905.

THE Waldorf

The words THE WALDORF.

SER. No. 6,286. REMEDY FOR SKIN DISEASES AND ERUPTIONS. ALBERT B RICHARDS, Sherman, Tex. Filed May 22, 1905. Used ten years.

HUNT'S CURE

The words "HUNT'S CURE."

SER. No. 6,605. YEAST. NATIONAL DISTILLING CO., Milwaukee, Wis. Filed May 25, 1905.

RED STAR

The words "RED STAR" associated with a representation of a red star.

SER. No. 7,077. KNIT UNDERSHIRTS AND DRAWERS. COOPER UNDERWEAR CO. Kenosha, Wis. Filed May 31, 1905.

COOPER UNDERWEAR CO. KENOSHA, WIS.

The words "WHITE CAT BRAND," and the representation of a domestic cat couchant, with its tail curved around in front of its feet, and having a wide close-fitting cravat, all arranged upon a black elliptical panel inclosed within an ellipse, and associated with the words and abbreviations "COOPER UNDERWEAR CO. KENOSHA, WIS."

SER. No. 7,315. PILLS FOR THE CURE OF BILIOUS AND DIGESTIVAL DERANGEMENTS. JAMES F. BALLARD, St. Louis, Mo. Filed June 3, 1905. Used ten years.

SMITH'S BILE BEANS

A bottle similar in shape to a watchcase, containing a series of bean-shaped pellets or pills, and bearing on its face the legend SMITH'S BILE BEANS, arranged in the arc of a circle and PRICE 25¢ in the center thereof, above the bottle the word SMITH'S and below the bottle the words BILE BEANS, each arranged in circular arcs.

SER. No. 7,451. MEDICATED STOCK-FOOD. MARION W. SAVAGE, Minneapolis, Minn. Filed June 5, 1905. Used ten years.

INTERNATIONAL

The word INTERNATIONAL.

SER. No. 7,452. MEDICATED POULTRY-FOOD. MARION W. SAVAGE, Minneapolis, Minn. Filed June 5, 1905. Used ten years.

INTERNATIONAL POULTRY FOOD

The words INTERNATIONAL POULTRY FOOD. A monogram of the letters M W S appears on the mark with the pictorial representation of a rural landscape with poultry in the foreground.

SER. No. 7,507. COATS, VESTS, AND TROUSERS. S. A. HILPP & COMPANY, Louisville, Ky. Filed June 5, 1905.

KK BRAND KWALITY KOUNTS

The letters "K K" crossed by a panel inclosing the word "BRAND," and the words "KWALITY KOUNTS" beneath.

SER. No. 7,518. METALLIC ALLOYS. THE PHOSPHOR-BRONZE SMELTING CO., LIMITED, Philadelphia, Pa. Filed June 5, 1905.

The representation of an elephant.

SER. No. 7,575. WATERPROOFED SILK PILE FABRICS. LISTER & COMPANY, LIMITED, Bradford, England, and New York, N. Y. Filed June 7, 1905.

Lisreine

The word LISREINE.

SER. No. 7,746. WHISKY. GOODERHAM & WORTS LIMITED, Toronto, Canada. Filed June 9, 1905.

GOODERHAM & WORTS G&W TORONTO

The letters and character "G & W" in script surrounded by an elliptical band bearing the words and character GOODERHAM & WORTS TORONTO and a representation of two stars.

SER. No. 7,828. CONDENSED MILK. MICHIGAN CONDENSED MILK CO., Lansing, Mich., and New York, N. Y. Filed June 10, 1905. Used ten years.

MICHIGAN

The arbitrarily-selected word MICHIGAN.

SER. No. 7,998. SAWS OF ALL KINDS. E. C. ATKINS & COMPANY, Indianapolis, Ind.; New York, N. Y.; Memphis, Tenn.; Atlanta, Ga.; Minneapolis, Minn.; Portland, Oreg.; Seattle, Wash.; San Francisco, Cal.; Chicago, Ill., and Toronto, Canada. Filed June 12, 1905.

AAA

A symbol composed of the letters A A A.

SER. No. 8,271. SOAP FOR ANTISEPTIC AND DISINFECTING PURPOSES. FELS & CO., Philadelphia, Pa. Filed June 15, 1905. Used ten years.

Germicide

The word GERMICIDE.

SER. No. 8,383. BREAKFAST-FOOD AND FARINA MADE FROM WHEAT. SLEEPY EYE MILLING COMPANY, Sleepy Eye, Minn. Filed June 17, 1905.



The representation of an Indian head. The Indian's side face is shown and upon the head is a headdress of feathers and ornaments.

SER. No. 8,425. ANESTHETIC FOR DENTAL AND SURGICAL OPERATIONS. LESTER H. KNAPP, Buffalo, N. Y. Filed June 17, 1905.

MILOCAL

The word MILOCAL.

SER. No. 8,661. HOSIERY. LORD & TAYLOR, New York, N. Y. Filed June 21, 1905.

155K

The numerals and letter "155 K."

SER. No. 8,735. WHISKY. B. S. GREIL & CO., Cincinnati, Ohio. Filed June 21, 1905.

ETHELBERT

The word "ETHELBERT."

SER. No. 8,807. RAZORS AND POCKET-KNIVES. ALBERT L. SILBERSTEIN, New York, N. Y. Filed June 23, 1905.

Carbo Magnetic

The words CARBO MAGNETIC and the conventional representation of flashes.

SER. No. 8,826. CIGARETTES. BUTLER-BUTLER (INCORPORATED,) New York, N. Y. Filed June 23, 1905.



A liberty-cap encircled by a wreath from which flow two streamers bearing the words "LITTLE CIGARS," thereabove appear the words "ST. LEGER" and upon each side the words "SUPERFINE" and "ELEGANTES" and above the latter words in a panel the phrase "WORTH A DOLLAR A BOX." Below the wreath appear the words "BLENDED BY BUTLER-BUTLER, NEW YORK, U. S. A., PATENTED HYGIENIC MOUTH PIECES." On each side thereof a group of medals is shown and below one group of medals the words "CXX MILD."

SER. No. 8,866. PERFUMERY. JORDAN MARSH COMPANY, Boston, Mass. Filed June 24, 1905. Used ten years.

Latour

The word LATOUR.

SER. No. 8,969. WHISKY. THE SOL RAUH & SONS CO., Dayton, Ohio. Filed June 24, 1905. Used ten years.

EDDY'S



The name EDDY'S and a portrait of Edward Rauh inclosed in a circle.

SER. No. 9,060. RYE WHISKY. GILLIAMS, JONES & CO., Philadelphia, Pa. Filed June 26, 1905. Used ten years.



The words ROYAL CABINET FINE RYE WHISKY, GILLIAMS, JONES & CO. PHILADELPHIA. within a broken-line border.

SER. No. 9,089. TOMATO CATSUP. WM HENNING CO, Chicago, Ill. Filed June 26, 1905.



An elliptical band, a circle within said band, a circular field within said circle, said field bearing the letter "H," and the words "RED LABEL" in the space between the periphery of said circle and said circular field. The elliptical band and the circular field are printed in red.

SER. No. 9,371. LADIES' DRESSES. ROSALIND EPSTEIN, New York, N. Y. Filed June 29, 1905.



A coat of arms, comprising the letters R E two winged dragons on either side thereof standing on a scroll bearing the motto "JUSTUM," "TIMETO" "PERFICITO" "NIHIL" with a leaf and a stem above said letters.

SER. No. 9,379. PREPARATION FOR THE COMPLEXION IN THE FORM OF A LOTION. S. R. VAN DUSER, New York, N. Y. Filed June 29, 1905. Used ten years.



The words BRIDAL BOUQUET BLOOM, associated with the representation of the face and bust of a female figure arrayed in bridal costume and partially encircled by a floral wreath.

SER. No. 9,470. BLEACHED, UNBLEACHED, PRINTED, AND DYED SPECIALLY FINISHED TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa. Filed June 30, 1905. Used ten years.

SER. No. 9,470.

CEYLON
SATINES.

The words, "CEYLON" and "SATINES."

SER. No. 9,474. BLEACHED, UNBLEACHED, PRINTED, AND DYED COTTON TEXTILE FABRICS HAVING A SILK-LIKE FINISH. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa. Filed June 30, 1905.



A representation of an olive branch.

SER. No. 9,475. BLEACHED, UNBLEACHED, PRINTED, AND DYED SPECIALLY-FINISHED TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa. Filed June 30, 1905.

Eddysilk

The arbitrary word EDDYSILK.

SER. No. 9,477. PRINTED AND DYED COTTON TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa. Filed June 30, 1905.

Rajah

The arbitrary word RAJAH.

SER. No. 9,480. BLEACHED, UNBLEACHED, PRINTED, AND DYED SPECIALLY-FINISHED TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa. Filed June 30, 1905.

TYPHOON

The arbitrary word TYPHOON.

SER. No. 9,482. PRINTED AND DYED SPECIALLY-FINISHED COTTON TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa. Filed June 30, 1905.

Lama

The word LAMA

SER. No. 9,809. BLEACHED, UNBLEACHED, PRINTED, AND DYED SPECIALLY-FINISHED TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa. Filed July 6, 1905.



A representation of a lighthouse surrounded by an ornamental border associated with the words, WM. SIMPSON & SONS above, and the word NOVELTIES below the lighthouse.

SER. No. 9,903. SCYTHE-STONES, ABRASIVE STONES, AND HONES. NORTON EMERY WHEEL COMPANY, Worcester, Mass. Filed July 3, 1905.



The arbitrary word LIGHTNING, and below it the representation of a hand holding an abrasive stone, from which lightning flashes extend, and beneath the hand, the words, SCYTHE STONE, the whole being inclosed in a diamond-shaped figure.

SER. No. 9,928. PRINTED AND DYED TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa. Filed July 5, 1905.



A representation of a lighthouse and the word "EDDYSTONE" above it, associated with the words "DYED PERCALE FAST COLOR." and the phrase "MADE BY THE EDDYSTONE MFG. CO. SOLE MANUFACTURERS OF WM. SIMPSON & SONS' PRINTS."

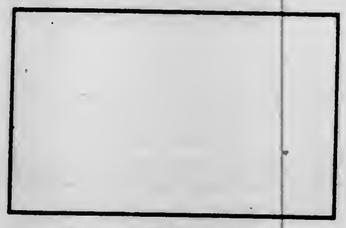
SER. No. 10,255. FANCY CALENDARS AND SHOW-CARDS. THE INTERNATIONAL ART PUBLISHING CO., New York, N. Y. Filed July 13, 1905.



A representation of a globe surmounted by a spread-eagle and resting as upon an axis in a painter's palette in the thumb-hole of which is a set of paint-brushes and on the palette appear the words and letters THE I. A. P. Co.

SER. No. 10,306. BLEACHED, UNBLEACHED, PRINTED, AND DYED TEXTILE FABRICS HAVING A DISTINCTIVE FINISH. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa. Filed July 14, 1905. Used ten years.

LINEN FINISH



William Simpson & Sons

A rectangular panel associated with the words, LINEN FINISH above it, and the words, WILLIAM SIMPSON & SONS, in script below it.

SER. No. 10,309. BLEACHED, UNBLEACHED, PRINTED, AND DYED TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa. Filed July 14, 1905.



A rectangular border inclosing a representation of a crown and crossed scepters, associated with scrolls bearing the words GUARANTEED BEST EXTRA CLOTH 64×64.

SER. No. 10,365. PRINTED AND DYED TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa. Filed July 15, 1905.



The word "VICTORIA" associated with a medallion having a bas-relief portrait of Victoria and the words "VICTORIA DEI GRATIA."

SER. No. 10,366. BLEACHED, UNBLEACHED, PRINTED, AND DYED LININGS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa. Filed July 15, 1905. Used ten years.



A banner-shaped border having a diagonal panel intercepting a transverse panel with triangular-shaped ornamental scrolls on either side of the diagonal panel, associated with the words, "WM. SIMPSON & SONS LININGS" and "MADE BY THE EDDYSTONE MFG. CO. SOLE MANUFACTURERS OF WM. SIMPSON & SONS, PRINTS."

SER. No. 10,451. LEATHER AND CANVAS BOOTS AND SHOES. GEO E. KEITH COMPANY, Brockton, Mass. Filed July 17, 1905.

Puritan

The word PURITAN.

SER. No. 10,465. REMEDY FOR THE TREATMENT OF THE FEET. ARTHUR F. PIERCE, Wallingford, Conn. Filed July 17, 1905.



The pictorial representation of a shield arranged within two ellipses and containing the letter "P," which is pierced by two crossed arrows.

SER. No. 10,498. COTTON DUCK. MOUNT VERNON-WOODBERRY COTTON DUCK COMPANY, Baltimore, Md. Filed July 18, 1905.

IMPERIAL

The arbitrary word IMPERIAL.

SER. No. 10,522. CELERY TONIC BEVERAGE. SOL LEVINSON, Brooklyn, N. Y. Filed July 18, 1905.

SER. No. 10,522.



A rectangular field with ornamental leaf-border, within which at the top appears LION BRAND, and the representation of two lions, and at the center between upper and lower oblong-shaped figures appear the words CELERY TONIC, between which is the representation of a bunch of celery and near the lower edge is a panel bearing the name and address of the owner.

SER. No. 10,547. STOVES, RANGES, GAS-STOVES, AND ATTACHMENTS AND PARTS AND REPAIRS THEREFOR. SILL STOVE WORKS, Rochester, N. Y. Filed July 18, 1905. Used ten years.



The approximately circular figure formed of the ribbon or band folded over at the sides and surrounding a circular medallion from the edges of which extend flames, and upon said medallion is the pound-sterling mark. On the upper portion of the band is the word "STERLING."

SER. No. 10,553. PRINTED AND DYED TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa. Filed July 19, 1905.



A fanciful picture of a crowned female, dressed in Elizabethan costume, associated with the words, IMPERIAL and BLACK, arranged upon a medallion frame surrounding the portrait and supporting a crown.

SER. No. 10,554. GLOVES. V. PERRIN & CIE, New York, N. Y., and Grenoble, France. Filed July 19, 1905. Used ten years.

SER. No. 10,554.



The representation of an ace of clubs with the figure or representation of a female goat and a kid in the act of suckling the same, on the background of the rising sun within said ace of clubs.

SER. No. 10,607. DYESTUFF. BADISCHE ANILIN- & SODA-FABRIK, Ludwigshafen-on-the-Rhine, Germany. Filed July 20, 1905. Used ten years.

PALATINE

The word PALATINE.

SER. No. 10,842. BOTTLED WINES. MONO VINEYARD & WINE CO., Chicago, Ill. Filed July 26, 1905.



A representation of a six-pointed star formed of superimposed double-lined triangles printed in gold and red and surrounded by concentric circles printed in red with the words "MONO VINEYARD & WINE CO., INCORPORATED" between the circles and the letters, character, and abbreviation "M. V. & W. Co" between the points of the star.

SER. No. 10,844. SOLID-HEADED STRAIGHT PINS. THE PLUME & ATWOOD MFG. CO., Waterbury, Conn., and New York, N. Y. Filed July 26, 1905.

P&A

The letters and character P & A.

SER. No. 11,005. WHEAT BREAD. HARRY RICHTER, St. Louis, Mo. Filed July 29, 1905.



The pictorial representation of a dairy-maid standing upon a porch in the act of churning, with fowls and the heads of a cow and

calf appearing in the yard adjacent the porch, and above said pictorial representation appearing the words "BUTTERMILK BREAD."

SER. No. 10,963. FRUITS AND VEGETABLES HERMETICALLY SEALED IN TIN OR GLASS. AUGHINBAUGH CANNING COMPANY, Baltimore, Md. Filed July 26, 1905.



The words "NIGGER HEAD BRAND" associated with a representation of a negro in the act of eating an oyster which depends from a fork held in the left hand of the negro.

SER. No. 11,136. CALF-LEATHER. GEO. F. WERNER'S SON, New York, N. Y. Filed Aug. 2, 1905. Used ten years.



The words, STANDARD CALF arranged between two concentric circles.

SER. No. 11,146. MUCILAGE, LIQUID STARCH, GUMS, LIQUID SIZINGS, AND LIQUID PASTES. THE ARABOL M'F'G CO., New York, N. Y. Filed Aug. 2, 1905.

UNIVERSAL

The word UNIVERSAL.

SER. No. 11,327. SOLUBLE FLAVORING EXTRACTS. STANDARD BOTTLING & EXTRACT CO., Boston, Mass. Filed Aug. 7, 1905. Used ten years.

STANDARD

The word-symbol STANDARD.

SER. No. 11,297. CIGARS. FRANK P. LEWIS, Peoria, Ill. Filed Aug. 5, 1905. Used ten years.

SER. No. 11,297.



A panel bearing the words "LEWIS' SINGLE BINDER 5¢ CIGAR GUARANTEED MADE WITH BUT ONE BINDER IN REGULAR CUBAN STYLE," ornamental scrollwork and medallions associated with the words, "FRANK P. LEWIS STRAIGHT FIVE SMOKER."

SER. No. 11,335. SOAP FOR THE CLEANING AND DRESSING OF HARNESS. HOFFHEIMER SOAP CO., Chicago, Ill. Filed Aug. 7, 1905.

20TH CENTURY

The words 20TH CENTURY.

SER. No. 11,388. LEATHER BOOTS AND SHOES. HENRY F TAPLEY, Boston, Mass. Filed Aug. 7, 1905. Used ten years.



The representation of a box having thereon the words "BREAD WINNER" and the representation of a man standing on said box, and holding a shoe in one hand, the man being in his shirt-sleeves and having his trousers in his boots.

SER. No. 11,436. HAVANA CIGARS. J. S. MURIAS Y CA., Jersey City, N. J., and New York, N. Y. Filed Aug. 8, 1905. Used ten years.



The word "FLOR" upon the representation of a scroll which surmounts and partially incloses the words J. S. MURIAS Y CA, and of the word "HABANA" at the bottom of the mark, and a representation of a sprig bearing leaves and a blossom above said word "HABANA."

SER. No. 11,450. ARTIFICIAL LEGS, ARMS, FEET, AND HANDS. A. A. MARKS, New York, N. Y. Filed Aug. 9, 1905. Used ten years.

MARKS

The word MARKS.

SER. No. 11,461. TEAS. NEW ORLEANS IMPORT CO., LIMITED, New Orleans, La. Filed Aug. 9, 1905. Used ten years.



The letter X having on each arm thereof the name TOKAY.

SER. No. 11,481. CURE FOR PILES. HARRY J. BURKE, South Boston, Mass. Filed Aug. 10, 1905.



The representation of a yacht under full sail encircled by a knotted rope frame and associated with the words, "BURKE'S FISHERMAN'S PILE CURE," all surrounded by an ornamental scroll-like border.

SER. No. 11,555. CORSETS AND CORSET-WAISTS. THE H. & W. COMPANY, Newark, N. J. Filed Aug. 11, 1905.

H. & W. MATERNITY

The letters, character and word "H. & W. MATERNITY."

SER. No. 11,624. PLAYING-CARDS. HOME GAME COMPANY, Chicago, Ill. Filed July 24, 1905.

BUNCO

The word "BUNCO," said word being included between quotation-marks.

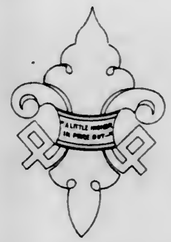
SER. No. 11,685. STOMACH BITTERS OR TONICS. FREDERICK S. AMIDON, Hartford, Conn. Filed July 25, 1905.

UNION



The word UNION and the representation of an eagle with a streamer in its beak and standing on clasped hands.

SER. No. 11,724. BUGGIES AND CARRIAGES. THE ROCK HILL BUGGY CO., Rock Hill, S. C. Filed Aug. 17, 1905.



The phrase, "A LITTLE HIGHER IN PRICE BUT—" inclosed in quotation-marks and printed on a background in the form of a fleur-de-lis.

SER. No. 11,754. SHIP-LOGS. THOMAS WALKER & SON LTD., Birmingham, England. Filed Aug. 18, 1905. Used ten years.

WALKER'S
SHIP-LOG
A.1

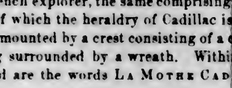
The words WALKER'S SHIP-LOG A. 1.

SER. No. 11,765. AUTOMOBILES. CADILLAC AUTOMOBILE COMPANY, Detroit, Mich., assignor to Cadillac Motor Car Company, Detroit, Mich., a Corporation of Michigan. Filed Aug. 18, 1905.



A representation of the coat of arms of Antoine de la Mothe Cadillac, the French explorer, the same comprising a heraldic shield, upon the field of which the heraldry of Cadillac is emblazoned, the shield being surmounted by a crest consisting of a crown, said shield and crest being surrounded by a wreath. Within the wreath and below the shield are the words LA MOTHE CADILLAC.

SER. No. 11,780. WHISKY. WILLIAM SCHUMAN, Buffalo, N. Y. Filed Aug. 18, 1905.



The words GENESEE CLUB.

SER. No. 11,784. BELT AND LACE LEATHER. KELTON-BRUCE MANUFACTURING CO., Portland, Me. Filed Aug. 18, 1905. Used ten years.

INDIAN TANNED

The words, INDIAN TANNED.

SER. No. 11,937. PEA-HULLERS. JOHN M. SAUNDERS, Dalton, Ga. Filed Aug. 23, 1905.

SER. No. 11,987.

DIXIE

The word DIXIE.

SER. No. 12,024. HAT-PINS, COMBS, AND HAIR-PINS OF GOLD. KREMENTZ & Co., Newark, N. J. Filed Aug. 26, 1905.



A figure having substantially the parts of an anchor—a shank, a stock, and two arms curled oppositely to each other.

SER. No. 12,126. SPECIFIC FOR BRONCHIAL IRRITATION, COLDS, AND LIKE COMPLAINTS. NIXIE COUGH CO., York, Pa. Filed Aug. 30, 1905.



A scroll-like panel bearing the words "NIXIE COUGH."

SER. No. 12,273. LOTIONS, SALVES, AND OINTMENTS FOR THE TREATMENT OF DISEASES OR AILMENTS OF THE SKIN AND LOOSE MEMBRANE. SERETA CHEMICAL COMPANY, Minneapolis, Minn. Filed Sept. 6, 1905.

SE-RE-TA

The word SE-RE-TA.

SER. No. 12,275. REMEDY FOR COLDS, FEVER, AND LA GRIPPE PUT UP IN CONCRETE FORM OR COMPRESSED TABLETS. C. I. SHOOP, Racine, Wis. Filed Sept. 6, 1905.

Dr. Shoop's
PREVENTICS

The words "DR. SHOOP'S PREVENTICS."

SER. No. 12,351. CEREAL STARCH AND FLOUR BINDERS, FILLERS, ABSORBENTS, AND THICKENERS USED IN FOOD PRODUCTS. THE PRESERVALINE MANUFACTURING COMPANY, New York, N. Y. Filed Sept. 7, 1905.

SER. No. 12,351.



Two concentric circles with the representation of a boar's head arranged within the inner circle, and the words "BOAR'S HEAD" arranged between the circles above the representation of the boar's head.

SER. No. 12,418. BOYS' COATS, VESTS, AND PANTALOONS. GREENSTEIN, SIMON & LEERBURGER, New York, N. Y. Filed Sept. 9, 1906.

JIU JITSU SYSTEM

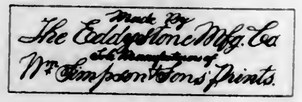
The arbitrarily-chosen word-symbol "JIU JITSU SYSTEM."

SER. No. 12,433. BREAD, CAKE, PASTRY, AND CRACKERS. GEORGE G FOX COMPANY, Boston, Mass. Filed Sept. 9, 1905.

Creamalt

The word CREAMALT.

SER. No. 12,490. PRINTED AND DYED TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa. Filed Sept. 12, 1905.



The words "MADE BY THE EDDYSTONE MFG. CO. SOLE MANUFACTURERS OF WM. SIMPSON & SONS' PRINTS." in the facsimile handwriting of Wm. Simpson, the founder of the company.

SER. No. 12,597. SHEEP AND GARDEN SHEARS. BURGON & BALL, LIMITED, Sheffield, England. Filed Sept. 14, 1905. Used ten years.

SER. No. 12,597.



The representation of a boy marching and beating a drum associated with the word SOUND on the head of the drum.

SER. No. 12,776. LIVER-POWDER, A CURE FOR DYSPEPSIA, CONSTIPATION, INDIGESTION, BILIOUSNESS, MALARIA, NERVOUS OR SICK HEADACHE, DIARRHEA, AND DYSENTERY OF THE BILIOUS TYPE. THE AMERICAN PHARMACAL CO., Evansville, Ind. Filed Sept. 18, 1905.



The bust portrait of Dr. O. A. Carlstadt, and name DR. O. A. CARLSTADT'S.

SER. No. 12,801. CANNED FRUITS AND VEGETABLES. GULFPORT GROCERY CO., Gulfport, Miss. Filed Sept. 20, 1905.

PYRAMID

The word PYRAMID.

SER. No. 12,837. BRANDY. JAS. HENNESSY & Co., Cognac, France. Filed Sept. 21, 1905.



The representations of a mailed arm wielding a battle-ax, and a heraldic roll below the arm and the abbreviation and words "JAS. HENNESSY COGNAC."

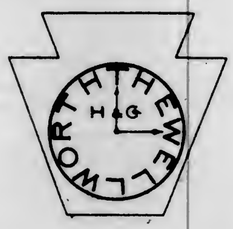
SER. No. 12,838. BRANDY. JAS. HENNESSY & Co., Cognac, France. Filed Sept. 21, 1905.



The representations of a mailed arm wielding a battle-ax and a heraldic roll below the arm arranged within a fanciful circular bor-

der which is surrounded by a circle within which appear the abbreviations, words and character "JAS. HENNESSY & Co. COGNAC."

SER. No. 12,900. CANDIES. HENRY R. HANSEN, Jersey City, N. J. Filed Sept. 22, 1905.



The representation of a keystone upon which appears a clock-dial having the words "THE WELL WORTH" arranged in place of the usual figures, the letter, character, and abbreviation H & Co. also appearing on the dial.

SER. No. 12,938. DISINFECTANT ANTISEPTIC POWDER. JAMES C. BAYLES, New York, N. Y. Filed Sept. 23, 1905.



The word HERAKLITE and a representation of a club with a serpent entwined about it, the head of the serpent being shown as crushed under the club.

SER. No. 13,125. MEDICINAL PREPARATION FOR INTERNAL USE AGAINST NERVOUS DISORDERS. J. D. RIEDEL AKTIENGESELLSCHAFT, Berlin, Germany. Filed Sept. 29, 1905.

Bornyval

The word BORNYVAL.

SER. No. 13,126. MEDICINAL PREPARATION FOR INTERNAL USE AGAINST GONORRHEA AND OTHER DISEASES. J. D. RIEDEL AKTIENGESELLSCHAFT, Berlin, Germany. Filed Sept. 29, 1905.

SER. No. 13,126.

Gonosan

The word GONOSAN.

SER. No. 13,195. FISHING-LINES, FISHING-GUT, AND GUT LINES. HENRY MILWARD & SONS, LIMITED, Redditch, England. Filed Oct. 2, 1905. Used ten years.



The figure of a mailed arm holding in the hand a falchion, supported upon an heraldic wreath.

SER. No. 13,358. COMPOUND FOR POLISHING METALS, WOOD, GLASS, AND MARBLE. GEORGE WILLIAM HOFFMAN, Indianapolis, Ind. Filed Oct. 6, 1905.



The words "THE BAR-KEEPER'S FRIEND," the word "FRIEND" being inclosed in quotation-marks.

SER. No. 13,587. FISHING-RODS. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill. Filed Oct. 13, 1905.

H.S.B & Co.
REV-O-NOC

The words "REV-O-NOC" and the letters, character, and abbreviation "H. S. B & Co."

SER. No. 13,589. MOTOR-TRUCKS, MOTOR-RUNABOUTS, MOTOR BUSINESS-WAGONS, AND MOTOR TONNEAU-CARS. THE BUCKEYE MANUFACTURING COMPANY, Anderson, Ind. Filed Oct. 14, 1905. Used ten years.



The words THE LAMBERT.

SER. No. 13,644. CATTLE. HARRY YATES, Buffalo and Orchard Park, N. Y. Filed Oct. 16, 1905.



The head of a Guernsey cow surrounded by a colored band or circle in which are arranged the words "HILLHURST FARM" in the upper portion thereof, and the words "ORCHARD PARK, N. Y.," in the lower portion thereof.

SER. No. 13,651. ACCOUNT-BOOKS. ROBERT HOLLINGWORTH, Lincoln, Nebr. Filed Oct. 16, 1905.

THE SEARCHLIGHT

The words "THE SEARCHLIGHT."

SER. No. 13,729. CHOCOLATE CANDY. QUAKER CITY CHOCOLATE AND CONFECTIONERY COMPANY, Philadelphia, Pa. Filed Oct. 18, 1905.



The word DOROTHY.

SER. No. 13,730. CHOCOLATE CANDY. QUAKER CITY CHOCOLATE AND CONFECTIONERY COMPANY, Philadelphia, Pa. Filed Oct. 18, 1905



The word RAVEN.

SER. No. 13,754. FACIAL CREAMS. ISAAC HUBERT, Toledo, Ohio. Filed Oct. 19, 1905.



The word MALVINA on a horizontal panel, surmounted by a double eagle, all inclosed in a circular border.

SER. No. 13,856. DISINFECTANT, GERMICIDE, DEODORIZER AND INSECTICIDE. WELLSVILLE CHEMICAL CO., Wellsville, N. Y. Filed Oct. 23, 1905.

PURO

The word PURO.

SER. No. 13,917. KID-LEATHER MADE FROM SHEEP AND GOAT SKINS. A. B. CLARK CO, New York, N. Y. Filed Oct. 25, 1905.



The letters A. B. C. and the word KID, and between the letters and the word, the representation of a boy sitting down and holding a pencil in one hand and a slate in the other, upon which latter appear the letters A B C.

SER. No. 13,982. BEET-PULLERS AND POTATO-DIGGERS. MOLINE PLOW CO., Moline, Ill. Filed Oct. 19, 1905.



A grotesque representation of a man exaggerated in dress and appearance to portray the fanciful figure of a Flying Dutchman; so called. The figure stands on a stump holding aloft in one hand an ear of corn, and from the shoulders of the figure wings are represented as spreading outward. Above the stump and divided by the fanciful figure the words MOLINE PLOW CO. appear and below these the words MOLINE, ILL'S. The stump bears the monogram M P Co. The entire picture is inclosed in a border.

SER. No. 13,985. PLAYING-CARDS. STANDARD PLAYING CARD MANUFACTURING CO., Chicago, Ill. Filed Oct. 21, 1905.

RADIUM

The word "RADIUM."

SER. No. 13,988. STALK-CUTTERS. MOLINE PLOW CO., Moline, Ill. Filed Oct. 19, 1905.



A grotesque representation of a man, exaggerated in dress and appearance to portray the fanciful figure of a Flying Dutchman, so called. The figure stands on a stump holding aloft in one hand an ear of corn, and from the shoulders of the figure, wings are represented as spreading outward. Above the stump and divided by the fanciful figure, the words, MOLINE PLOW CO. appear, and below these, the words, MOLINE, ILL'S. The stump bears the monogram M P Co. The entire picture is inclosed in a border.

SER. No. 13,987. MEDICINAL TABLETS FOR THE CURE OF LA GRIPPE, CONSTIPATION, COUGHS, COLDS, AND BRONCHIAL TROUBLES. F. HENRY PUTNAM, Boston, Mass. Filed Oct. 27, 1905.



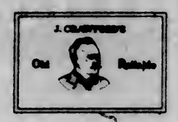
A band having vertical stripes in red, white, and chocolate, the white stripe having thereon the abbreviation R bearing the numeral 3 and the abbreviation B B.

SER. No. 14,069. WHISKY. HERMAN J. LEBOVITZ, Chicago, Ill. Filed Oct. 30, 1905.



The words, NATIONAL GUARD, associated with the picture of a man in National-Guard uniform carrying a musket on his shoulder and standing by a cannon, with the representation of a tent at one side inclosed in a circular scroll at each side of which is a panel design and sprays of grain.

SER. No. 14,133. STEEL PENS. JOHN CRAWFORD, New York, N. Y. Filed Oct. 31, 1905.



The words OLD RELIABLE associated with the name, J. CRAWFORD'S, and a portrait of the applicant, all being within a rectangular border.

SER. No. 14,159. MEN'S NECK TIES AND SCARFS. WELD, COLBURN & WILCKENS, New York, N. Y. Filed Nov. 1, 1905. Used ten years.

WC&W

The letters and character "W C & W" inclosed by a plain elongated border.

SER. No. 14,181. DARK-ROOM LAMPS AND LANTERNS AND PARTS THEREOF. R E DIETZ COMPANY, New York, N. Y. Filed Nov. 1, 1905.

LUNA

The word LUNA.

SER. No. 14,245. LATHES, MILLING-MACHINES, BORING-MILLS, AND SCREW-MACHINES. GISHOLT MACHINE COMPANY, Madison, Wis. Filed Nov. 3, 1905.

GISHOLT

The word "GISHOLT."

SER. No. 14,318. CROCHET-COTTON OR COTTON THREAD. THE CLARK THREAD CO., Newark, N. J. Filed Nov. 4, 1905. Used ten years.



A circular collocation in blue and gold comprising a gold disk bearing a circular field broken at the bottom by a gold shield and a blue serrated band adjacent the outer edge of the disk.

SER. No. 14,343. COTTON PIECE GOODS. EVERETT MILLS, Lawrence, Mass. Filed Nov. 4, 1905. Used ten years.

ANDOVER

The arbitrarily-selected word ANDOVER.

SER. No. 14,342. COTTON PIECE GOODS. EVERETT MILLS, Lawrence, Mass. Filed Nov. 4, 1905. Used ten years.

MERRIMACK RIVER

The words MERRIMACK RIVER.

SER. No. 14,362. VERMIFUGE. GILPIN, LANGDON & COMPANY, INCORPORATED, Baltimore, Md. Filed Nov. 6, 1905.



The representation of a bottle bearing the words "FREYS' VERMIFUGE" and a facsimile of the firm-signature "E. & S. FREY," the applicant's predecessor in business.

SER. No. 14,364. CURE FOR CATARRH, ASTHMA, LA GRIPPE, HAY-FEVER, COMMON COLDS, OR ANY HEAD, THROAT, OR LUNG AFFECTION. S A ALBERTUS, Los Angeles, Cal. Filed Nov. 6, 1905.

Q.P.I.D.



The figure of a cupid with a bow and arrow. Above the figure are the capital letters Q. P. I. D.

SER. No. 14,388. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y. Filed Nov. 7, 1905.



A rectangular panel inclosed by a frame resembling Mosaic work and suggesting Indian beads, upon which panel at each end is shown the head and shoulders of an American Indian wearing characteristic headdress. With his right hand he holds a pipe to his mouth, and in his left hand an upright torch. Waves of smoke curve away from the bowl of the pipe, and at the base of each head are curved scrolls. The two heads are in reverse position, so that one is upside down to the observer

SER. No. 14,379. LIQUID MEDICINAL REMEDY FOR RHEUMATISM. ORLAN C. BROWN, Fort Wayne, Ind. Filed Nov. 6, 1905.



The upright figure of a man supporting himself upon crutches and with one arm extended in the act of reaching for a bottle extended toward him by the partly-disclosed figure of an angel, and the whole inclosed by an elliptical border, with the words THE NEW LIFE on the upper part of the border and the words RHEUMATISM CURE upon the lower part thereof.

SER. No. 14,462. SHOE-POLISH. AMERICAN CHEMICAL MANUFACTURING & MINING COMPANY, Rochester, N. Y. Filed Nov. 9, 1905.

SHINOLA

The word SHINOLA.

SER. No. 14,479. HEATING-FURNACES. UTICA HEATER CO., Utica, N. Y. Filed Nov. 10, 1905. Used ten years.

SUPERIOR

The arbitrarily-selected word "SUPERIOR."

SER. No. 14,533. TRANSFER-PAPERS. PAAS DYE CO., Newark, N. J. Filed Nov. 13, 1905. Used ten years.



The words PAAS CALICO AND PICTURE PAPERS and the words, FOR EASTER EGGS, all arranged upon an ornamental panel.

SER. No. 14,789. BOTTLE-WASHING MACHINES. M. C. ROSENFELD CO. Boston, Mass. Filed Nov. 18, 1905.

LITTLE GIANT

The words LITTLE GIANT.

SER. No. 14,821. TABLES. WILLIAM J. MARDOX, Jamestown, N. Y. Filed Nov. 20, 1905.



"MAD-OX"

The representation of an enraged ox, associated with the hyphenated word "MAD-OX" inclosed in quotation-marks.

SER. No. 14,849. RASPS. STOKES BROS. MANUFACTURING CO., Freehold, N. J. Filed Nov. 20, 1905. Used ten years.

STOKES

The word STOKES.

SER. No. 14,905. SARSAPARILLA. JOSEPH PARADIS, Holyoke, Mass. Filed Nov. 22, 1905.

WONDERFUL



Before After

SARSAPARILLA

Two fanciful portraits of a woman, with the words WONDERFUL above and SARSAPARILLA below the same and the words BEFORE and AFTER under the respective portraits.

SER. No. 14,950. CIGARS, CHEROOTS, AND CIGARETTES MADE OF CIGAR-TOBACCO. CAYEY-CAGUAS TOBACCO COMPANY, New York, N. Y., and Caguas, Porto Rico. Filed Nov. 23, 1905.

Savarona

The word "SAVARONA."

SER. No. 14,942. PICKS, MATTOCKS, GRUB-HOES, AND HYE-HOES. SIMMONS HARDWARE COMPANY, St. Louis, Mo. Filed Nov. 23, 1905. Used ten years.

KEEN KUTTER

The words "KEEN KUTTER" and a figure of wedge shape having three-sided projections at its sides and on which said words appear.

SER. No. 14,951. CIGARS, CHEROOTS, AND CIGARETTES MADE OF CIGAR-TOBACCO. CAYEY-CAGUAS TOBACCO COMPANY, New York, N. Y., and Caguas, Porto Rico. Filed Nov. 23, 1905.



Representations of a tobacco-plant on each side of a heraldic device consisting of a shield barred with a broad Y, on which Y appear the letters C C T C$_A$, there being above the shield a representation of a crown.

SER. No. 15,002. CIGARS. H. C. STONE, Oneida, N. Y. Filed Nov. 27, 1905.



The words "QUEEN OF MANILLA" displayed above the figure of a woman arrayed in evening dress, with an opera-cloak resting upon the right shoulder and retained in place by the right hand, and upon the left hip and retained in place by the left hand, the entire representation being surrounded by ornamental scrollwork.

SER. No. 15,007. INNER SOLES FOR BOOTS AND SHOES. HUGO LOWENSTEIN, New York, N. Y. Filed Nov. 27, 1905.

SER. No. 15,007.

ASBESOLE

The word, ASBESOLE arranged as shown in the drawing, so that the edges of the letters shall form the outline of the sole of a shoe.

SER. No. 15,011. RUBBER PACKING, RUBBER GASKETS, RUBBER DISKS, RUBBER RINGS, AND RUBBER WASHERS. ALFRED B. JENKINS, New York, N. Y., and Boston, Mass. Filed Nov. 27, 1905.

Jenkins Bros.

The facsimile signature JENKINS BROS, in the handwriting of Alfred B. Jenkins.

SER. No. 15,014. HAY, STRAW, AND CORN KNIVES, SCYTHES, GRASS-HOOKS, AND SICKLES. DAVID WADSWORTH & SON, Auburn, N. Y. Filed Nov. 27, 1905.



BIG CHIEF

The words "BIG CHIEF" and the representation of the head and shoulders of an Indian chief, wearing a feathered war-bonnet.

SER. No. 15,091. ROPE AND TWINE MANUFACTURED FROM VEGETABLE FIBER. THE AMERICAN MANUFACTURING COMPANY, New York, N. Y. Filed Dec. 1, 1905.

CORDADEFER



The word "CORDADEFER" and the representation of a suspension-bridge, with buildings appearing in the background.

SER. No. 15,096. BAGGING. THE AMERICAN MANUFACTURING COMPANY, New York, N. Y. Filed Dec. 1, 1905.

IVY

The word IVY.

SER. No. 15,097. BAGGING. THE AMERICAN MANUFACTURING COMPANY, New York, N. Y. Filed Dec. 1, 1905.

SER. No. 15,097.

OAK

The word OAK.

SER. No. 15,098. BAGGING. THE AMERICAN MANUFACTURING COMPANY, New York, N. Y. Filed Dec. 1, 1905.

SUN

The word "SUN."

SER. No. 15,099. BAGGING. THE AMERICAN MANUFACTURING COMPANY, New York, N. Y. Filed Dec. 1, 1905.

ATLAS

The word ATLAS.

SER. No. 15,100. BAGGING. THE AMERICAN MANUFACTURING COMPANY, New York, N. Y. Filed Dec. 1, 1905.

CRESCENT

The word CRESCENT.

SER. No. 15,101. BAGGING. THE AMERICAN MANUFACTURING COMPANY, New York, N. Y. Filed Dec. 1, 1905. Used ten years.

BOSTON

The word BOSTON.

SER. No. 15,134. CEREAL SUBSTITUTE FOR COFFEE. DECATUR CEREAL COFFEE WORKS, Decatur, Ill. Filed Dec. 1, 1905.

H IS WEALTH

The letter "H" arranged above the letter "W," the word, "IS" being arranged between the two, in combination with the letters "EALTH" common to both the "H" and "W" so that the combination gives the words, "HEALTH IS WEALTH."

SER. NO. 15,137. CEREAL SUBSTITUTE FOR COFFEE. DECATUR CEREAL COFFEE WORKS, Decatur, Ill. Filed Dec. 1, 1905.

JAVELLE

The arbitrary or fanciful word JAVELLE.

SER. NO. 15,169. METAL WARE FOR TABLE USE COMPOSED IN WHOLE OR IN PART OF GOLD OR SILVER OR BOTH OF SUCH METALS. TIFFANY & CO., New York, N. Y. Filed Dec. 4, 1905. Used ten years.

TIFFANY & Co

The word, character and abbreviation, TIFFANY & CO.

SER. NO. 15,219. LIVER-PILLS. JAMES P. SMITH, Augusta, Ga. Filed Dec. 5, 1905.



A circular panel bearing the words DR SMITH'S ELECTRIC LIVER PILLS, a facsimile of applicant's signature, and a human hand on a clouded background with rays of lightning radiating therefrom.

SER. NO. 15,451. TEAS IN ANY KIND OF PACKAGE. NEW ORLEANS COFFEE CO LTD, New Orleans, La. Filed Dec. 15, 1905.



The word STAG, and the representation of a stag's head.

SER. NO. 15,452. BICYCLES. MARY ELIZABETH JOHNSON, trustee, Fitchburg, Mass. Filed Dec. 15, 1905. Used ten years.

IVER JOHNSON

The words IVER JOHNSON.

SER. NO. 15,477. MEN'S SUITS AND OVERCOATS. SCHWAB CLOTHING CO., St. Louis, Mo. Filed Dec. 18, 1905.



The representation of a shield having a gold border surmounted by a rectangular panel in purple bearing the name SCHWAB ST. LOUIS, the said shield having thereon the symbol $15, and the word SPECIAL, and the name and words, SCHWAB CLOTHING CO. SAINT LOUIS MAKERS.

SER. NO. 15,506. BELT-LACING. KERR & COMPANY, New York, N. Y. Filed Dec. 19, 1905. Used ten years.

Kerr's

The name KERR'S.

SER. NO. 15,508. HAIR-PINS AND ORNAMENTAL COMBS. WILLIAM D. EARL, Leominster, Mass. Filed Dec. 19, 1905.

Ososmooth

The word "OSOSMOOTH."

SER. NO. 15,529. MONTHLY MAGAZINE. CRIST, SCOTT & PARSHALL, Cooperstown, N. Y. Filed Dec. 20, 1905.

THE MOTHERS MAGAZINE

The words "THE MOTHERS MAGAZINE."

SER. NO. 15,536. CHAINS, NECKLACES, AND FOBS. KREMENTZ & Co., Newark, N. J. Filed Dec. 20, 1905.



A figure, having substantially the parts of an anchor, a shank, a stock, and two arms curled oppositely to each other.

SER. NO. 15,548. HATS. YOUNG BROTHERS, New York, N. Y. Filed Dec. 20, 1905. Used ten years.



The words YOUNG'S HATS, and a paraph extending beneath the words from left to right.

SER. NO. 15,549. FLAVORING EXTRACTS. A. SCHILLING & CO., San Francisco, Cal. Filed Dec. 21, 1905. Used ten years.

Schilling's Best

The words SCHILLING'S BEST.

SER. NO. 15,551. FLAVORING EXTRACTS. A. SCHILLING & CO., San Francisco, Cal. Filed Dec. 21, 1905. Used ten years.



The pictorial representation of a white Greek cross surrounded by a wreath of leaves and berries, tied by a ribbon formed into a bow with scroll-like free ends.

SER. NO. 15,554. FRUIT-TREES, BUDS, AND SCIONS THEREOF. OREGON NURSERY COMPANY LIMITED, Salem, Oreg. Filed Dec. 21, 1905.



The portrait of Luther Burbank.

SER. NO. 15,654. PREPARATIONS FOR THE CURE AND ALLEVIATION OF COUGHS, LUNG AND BRONCHIAL AFFECTIONS, AND CHILLS AND FEVER. THE E. E. SUTHERLAND MEDICINE CO., Paducah, Ky. Filed Dec. 26, 1905.



The representation of the bust of an aged woman wearing a cap and spectacles, and having about her shoulders a shawl or shawl-like wrap, over which falls a narrow neck tie or scarf.

SER. No. 15,921. QUININE PREPARATION. THE CHAS H PHILLIPS CHEMICAL CO. New York, N. Y. Filed Jan. 5, 1906. Used ten years.



The monogram shown in the accompanying drawing, and containing the letters of the word "PHILLIPS," said monogram being on a shield which is surrounded by a buckled strap.

SER. No. 15,922. COD-LIVER-OIL EMULSION. THE CHAS H PHILLIPS CHEMICAL CO., New York, N. Y. Filed Jan. 5, 1906. Used ten years.



The monogram shown in the accompanying drawing, and containing the letters of the word PHILLIPS, said monogram being on a shield which is surrounded by a buckled strap.

SER. No. 15,992. WRAPPING-PAPER. THE DAYTON PAPER NOVELTY CO., Dayton, Ohio. Filed Jan. 8, 1906.



The letter "N" inclosed in concentric circles, and surrounded by a circular field bearing the words "GOLDEN SEAL."

SER. No. 16,054. DRILLS AND DRILLING-MACHINES FOR DRILLING IN METAL. THE AJAX MANUFACTURING COMPANY, Cleveland, Ohio. Filed Jan. 8, 1906.

AJAX

The word AJAX.

SER. No. 16,055. ROLLED OATS. THE ATCHISON OAT MEAL AND CEREAL CO. Atchison, Kans. Filed Jan. 8, 1906.

SER. No. 16,055.



A rectangular panel bearing the words "SUNSHINE ROLLED OATS" and a representation of the sun in the form of a human face with rays radiating therefrom.

SER. No. 16,116. CIGARETTES AND TOBACCO FOR CIGARETTES. NESTOR GIANACLIS COMPANY, Boston, Mass. Filed Jan. 11, 1906. Used ten years.



The words "NESTOR GIANACLIS" printed upon a scroll or floating ribbon.

SER. No. 16,194. ODORLESS CHEMICAL FERTILIZER COMPOUND. HERMENIA A. NIEMANN, Philadelphia, Pa. Filed Jan. 15, 1906.



A representation of a potted plant and a scroll bearing the compound word "FLORA-VITAE."

SER. No. 16,211. OINTMENTS. FOSTER-MCCLELLAN COMPANY, Buffalo, N. Y. Filed Jan. 16, 1906.

SER. No. 16,211.



A circular panel bearing the words "DOAN'S OINTMENT" and "DOAN'S SPECIALTIES," and a portrait of James Doan and the representation of a human eye having wings extending downwardly therefrom and partially inclosing said portrait.

SER. No. 16,215. COTTON SHEETINGS. HERMANN NORDEN, New York, N. Y. Filed Jan. 16, 1906.



The representation of a branch bearing two peaches, a few leaves and a flower, at the top and bottom of which an imaginary animal, representing a bat, is placed, and which is in a flying position, arranged in such manner that the wings encircle the two peaches and flower placed in the center.

SER. No. 16,275. SAFETY-MATCHES. AKTIEBOLAGET SÖDERTELJE TÄNDSTICKSFABRIK, Södertelje, Sweden. Filed Jan. 18, 1906.



The representation of a rose in bloom upon the figure of an ellipse, on each side of which is shown a medal. Above these are the words, SÖDERTELJE TÄNDSTICKSFABRIKS IMPREGNERADE SÄKERHETS TÄNDSTICKOR, from the top downward in the order named. Below the representation of the rose the words, GLÖDA EJ NÄR LÅGAN BLICKER, are shown.

SER. No. 16,320. DISINFECTANTS. THE KRIX-OL CHEMICAL CO., Washington, D. C. Filed Jan. 19, 1906.

KRIX-OL

The word KRIX-OL.

SER. No. 16,336. BEER. JACOB RUPPERT, New York, N. Y. Filed Jan. 20, 1906.



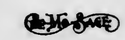
The pictorial representation of a flying eagle, clutching an escutcheon charged with the representation of the head of a beer-barrel, and carrying a streamer in its talons. On the streamer appear the words "CENTENNIAL PRIZE MEDAL" and on the representation of the head of a beer-barrel the word "ESTABLISHED" together with the monogram "J. R." and figures "1867."

SER. No. 16,370. WHEAT-FLOUR. BULSING & HESLENFELD, Amsterdam and Rotterdam, Netherlands. Filed Jan. 22, 1906.

DAVID

The word DAVID.

SER. No. 16,388. CREAM OR SALVE FOR THE SKIN AND COMPLEXION. ROBERT A. ROWLINSKI, Savannah, Ga. Filed Jan. 22, 1906.



The hyphenated word CRE-MO-SAOK.

SER. No. 16,490. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio. Filed Jan. 25, 1906.

SNOWFLAKE

The word "SNOWFLAKE."

SER. No. 16,491. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio. Filed Jan. 25, 1906.

TWIG

The word TWIG.

SER. No. 16,502. LIQUID COMPOUND OF HONEY AND ROCK-CANDY. JOSEPH KRIMO, Jersey City, N. J. Filed Jan. 26, 1906.

ANNETTA

A background of a conventionalized hop-plant design showing six lobes of the hop-leaf from the upper of which at either side depends a hop-flower, while two smaller hop-flowers depend from the lower lobes at either side. Arranged within this conventional design is a Maltese cross with the letters "J" and "K" thereon and surmounted by a crown above which is a series of stars. With this representation is associated the word "ANNETTA."

SER. No. 16,523. AMMONIUM CHLORID. BRUNNER, MOND & CO., LIMITED, Northwich, England. Filed Jan. 26, 1906.

SALAMAC

The inveated word "SALAMAC."

SER. No. 16,540. TAP-RECEPTACLES. THE DALE COMPANY, New York, N. Y. Filed Jan. 26, 1906.

CONNECTTOME

The word "CONNECTTOME" inclosed in a diamond-shaped figure.

SER. No. 16,602. PISTON-ROD PACKING COMPOSED OF RUBBER AND CANVAS. CAROLINA SUPPLY CO, Greenville, S. C. Filed Jan. 29, 1906.

CAROLINA SUPPLY CO. COTTON MILL DEAL SUPPLIES GREENVILLE, S.C.

An elliptical shield with a carpenter's square and the word DEAL written through same on a solid black background. Surrounding this shield is a similar elliptical border in which, on a white background, appears our corporation, name, address and the words COTTON MILL SUPPLIES, with a shuttle and a roving-can shown on opposite sides of the border between our name and address.

SER. No. 16,646. ROUND-SHANK SCREW-DRIVERS. STANLEY RULE & LEVEL COMPANY, New Britain, Conn. Filed Jan. 31, 1906.

VICTOR

The word "VICTOR."

SER. No. 16,727. CENTRIFUGAL CREAM-SEPARATORS. VERMONT FARM MACHINE CO., Bellows Falls, Vt. Filed Feb. 3, 1906. Used ten years.

UNITED STATES

The words, UNITED STATES.

SER. No. 16,759. REMEDY FOR DISEASES OF THE STOMACH AND DISORDERS OF THE ALIMENTARY CANAL. THE MUELLER CHEMICAL CO. INC., Wapakoneta, Ohio. Filed Feb. 5, 1906.

Chloropepsoid

The coined word CHLOROPEPSOID.

SER. No. 16,819. MEN'S AND BOYS' CLOTHING, CONSISTING OF COATS, VESTS, AND PANTS. ROSENBAUM COMPANY, Pittsburg, Pa. Filed Feb. 8, 1906.

The representation of a shield quartered, the quarters being in two contrasting colors, one quarter having the representation of a rose-tree produced thereon, another quarter a representation of a rose in full bloom, the third quarter has the letters A R C O, and the fourth quarter the letter R. and the abbreviation Co.

SER. No. 16,822. GLOVES. ROSENBAUM COMPANY, Pittsburg, Pa. Filed Feb. 8, 1906.

The representation of a shield quartered, the quarters being in two contrasting colors, one quarter having the representation of a rose-tree produced thereon, another quarter a representation of a rose in full bloom, the third quarter has the letters A R C O, and the fourth quarter the letter R. and the abbreviation Co.

SER. No. 16,823. HOSIERY. ROSENBAUM COMPANY, Pittsburg, Pa. Filed Feb. 8, 1906.

The representation of a shield quartered, the quarters being in two contrasting colors, one quarter having the representation of a rose-tree produced thereon, another quarter a representation of a rose in full bloom, the third quarter has the letters A R C O, and the fourth quarter the letter R. and the abbreviation Co.

SER. No. 16,858. BROOMS. LEE BROOM & DUSTER COMPANY, Lincoln, Nebr. Filed Feb. 9, 1906.

USE THE LEE BROOM CLEENER

The representation of a group of factories within a border flanked by stalks of broom-corn, above this design is the representation of a seal, inclosed within a circle flanked by ornamental scrolls, bearing the words "USE THE LEE BROOM," above the design also appear the words "USE THE LEE," below said design appears the word "BROOM" and beneath this a panel having scroll ends and bearing the word CLEENER, the letters LEE thereof being in a color contrasting with the remaining letters of said word.

SER. No. 16,869. POPCORN. A. A. BERRY SEED COMPANY, Clarinda, Iowa. Filed Feb. 9, 1906.

FROSTED FLAKES

The words, FROSTED FLAKES, in letters covered with patches of snow and icicles, above a lens-shaped panel showing a winter landscape with a house and trees in the background and a man and woman in Colonial attire in the foreground, and patches of snow and icicles hanging over the top of the panel.

SER. No. 16,874. FURNITURE-POLISH. WALLACE L. CONNER, New York, N. Y. Filed Feb. 9, 1906.

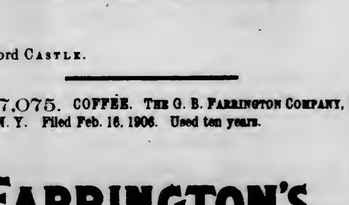
ESTACON

The name ESTACON.

SER. No. 16,918. RUBBER-COVERED ELECTRICAL WIRE. JOHN A. ROEBLING'S SONS CO., Trenton, N. J. Filed Feb. 12, 1906.

A helically-arranged red thread or strand woven into the covering of the wire.

SER. No. 16,924. SAFETY-MATCHES. JÖNKÖPINGS OCH VULCANS TÄNDSTICKSFABRIKSAKTIEBOLAG, Jönköping, Sweden. Filed Feb. 12, 1906.



The representation of a courser holding in leash a pair of hounds.

SER. No. 17,000. ELECTRIC-LIGHT CARBONS. KÖRTING & MATHIESEN AKTIENGESELLSCHAFT, Leutzsch, Germany. Filed Feb. 14, 1906.

Excello

The word "EXCELLO."

SER. No. 17,046. WHISKY. THE ELLISON-HARVEY COMPANY, Richmond, Va. Filed Feb. 15, 1906. Used ten years.

OLD DURHAM

The words OLD DURHAM.

SER. No. 17,074. COFFEE. THE G. B. FARRINGTON COMPANY, New York, N. Y. Filed Feb. 16, 1906.

CASTLE

The word CASTLE.

SER. No. 17,075. COFFEE. THE G. B. FARRINGTON COMPANY, New York, N. Y. Filed Feb. 16, 1906. Used ten years.

FARRINGTON'S COFFEE

The words FARRINGTON'S COFFEE.

SER. No. 17,076. COFFEE. THE G. B. FARRINGTON COMPANY, New York, N. Y. Filed Feb. 16, 1906. Used ten years.

OXFORD

The word OXFORD.

SER. No. 17,077. COFFEE. THE G. B. FARRINGTON COMPANY, New York, N. Y. Filed Feb. 16, 1906. Used ten years.

NEWPORT

The word NEWPORT.

SER. No. 17,078. COFFEE. THE G. B. FARRINGTON COMPANY, New York, N. Y. Filed Feb. 16, 1906.

WARWICK



The representation of a battlemented castle-tower upon a natural-rock foundation, the main tower being flanked by minor towers in the background, associated with the word WARWICK.

SER. No. 17,079. COFFEE. THE G. B. FARRINGTON COMPANY, New York, N. Y. Filed Feb. 16, 1906. Used ten years.

WINDSOR

The word WINDSOR.

SER. No. 17,094. CRACKERS. CRATLAND & LENHART, Brownsville, Pa. Filed Feb. 16, 1906. Used ten years.

"THE CRACKER THAT HAS 'BROWNSVILLE' ON IT."

The phrase "THE CRACKER THAT HAS 'BROWNSVILLE' ON IT," the phrase being in quotation-marks and the word "BROWNSVILLE" being pointed out by quotation-marks.

SER. No. 17,108. LEATHER BOOTS AND SHOES. H. W. CROCKER SHOE CO, Boston, Mass. Filed Feb. 16, 1906.

Clarice

The word "CLARICE" above a curved or flourish line.

SER. No. 17,121. RELISHES, CONSISTING OF MIXTURES OF MINCED VEGETABLES, EITHER SOUR, SWEET, OR SPICED. WM HENNING CO, Chicago, Ill. Filed Feb. 17, 1906.



An elliptical band, a circle within said band, a circular field within said circle, said field bearing the letter H, and the words, RED LABEL, in the space between the periphery of said circle and said circular field. The elliptical band and the circular field are printed in red.

SER. No. 17,122. SALAD-OIL. WM HENNING CO, Chicago, Ill. Filed Feb. 17, 1906.



An elliptical band, a circle within said band, a circular field within said circle, said field bearing the letter H, and the words, RED LABEL, in the space between the periphery of said circle and said circular field. The elliptical band and the circular field are printed in red.

SER. No. 17,123. SAUCES, CONSISTING OF SPICED LIQUIDS, INTENDED FOR USE WITH MEATS, FISH, AND SOUPS. WM HENNING CO, Chicago, Ill. Filed Feb. 17, 1906.



An elliptical band, a circle within said band, a circular field within said circle, said field bearing the letter H, and the words, RED LABEL, in the space between the periphery of said circle and said circular field. The elliptical band and the circular field are printed in red.

SER. No. 17,124. MUSTARD. WM. HENNING CO, Chicago, Ill. Filed Feb. 17, 1906.

SER. No. 17,124.



An elliptical band, a circle within said band, a circular field within said circle, said field bearing the letter "H," and the words "RED LABEL" in the space between the periphery of said circle and said circular field. The elliptical band and the circular field are printed in red.

SER. No. 17,125. OLIVES. WM HENNING CO, Chicago, Ill. Filed Feb. 17, 1906.



An elliptical band, a circle within said band, a circular field within said circle, said field bearing the letter H, and the words, RED LABEL, in the space between the periphery of said circle and said circular field. The elliptical band and the circular field are printed in red.

SER. No. 17,129. STIFFENING CORDS, BLADES, TAPES, AND FABRICS FOR WEARING-APPAREL. THE WARREN FEATHERBONE CO. Three Oaks, Mich. Filed Feb. 17, 1906.

FEATHERBONE

The word "FEATHERBONE."

SER. No. 17,130. STIFFENING CORDS, BLADES, TAPES, AND FABRICS FOR WEARING-APPAREL. THE WARREN FEATHERBONE CO. Three Oaks, Mich. Filed Feb. 17, 1906.



The representation of a feather.

SER. No. 17,131. STIFFENING CORDS, BLADES, TAPES, AND FABRICS FOR WEARING-APPAREL. THE WARREN FEATHERBONE CO, Three Oaks, Mich. Filed Feb. 17, 1906.



The representation of a feather having the word FEATHERBONE thereon or associated therewith.

SER. No. 17,267. TOILET AND MEDICATED SOAPS. THE LEHEALOL PREPARATION CO., Melrose, Mass. Filed Feb. 23, 1906.

Léhealol

The word, LÉHEALOL written in script, with a paraph.

SER. No. 17,278. CIGARS. EDWIN ABE, Wapakoneta, Ohio. Filed Feb. 23, 1906.



The words GREEN TAG, produced upon a tag and the representation of cupids supporting the tag.

SER. No. 17,311. SMOKED AND PICKLED MEATS. P A FERRIS & COMPANY, New York, N. Y. Filed Feb. 24, 1906. Used ten years.

FERRIS

The word FERRIS.

SER. No. 17,336. MATTRESSES AND PILLOWS. WASHINGTON MATTRESS & FURNITURE CO., Seattle, Wash. Filed Feb. 24, 1906.



The representation of an owl perched on the branch of a tree and a shield covering the body of the owl, all arranged in a circular background.

SER. No. 17,337. LEATHER-POLISH. WHITTEMORE BROTHERS AND COMPANY, Cambridge, Mass. Filed Feb. 19, 1906.

"GUN METAL"

The words GUN METAL. The words are inclosed in quotation-marks.

SER. No. 17,405. OLIVES IN BOTTLES AND JARS. SEVILLE PACKING COMPANY, New York, N. Y. Filed Feb. 28, 1906.

ROYAL

The word "ROYAL."

SER. No. 17,435. COTTON PIECE GOODS. MASSACHUSETTS COTTON MILLS, Lowell, Mass. Filed Mar. 1, 1906. Used ten years.

BELMONT

The word BELMONT.

SER. No. 17,448. NEGLIGEE-SHIRTS, GOLF-SHIRTS, STIFF-BOSOM SHIRTS, DRESS-SHIRTS, AND OUTER FLANNEL SHIRTS. REGENT SHIRT COMPANY, New York, N. Y. Filed Mar. 1, 1906.

RESCO

The word RESCO.

SER. No. 17,574. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 6, 1906. Used ten years.

POWERS GIBBS & CO'S.

The words and abbreviation "POWERS GIBBS & Co's."

SER. No. 17,594. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 6, 1906. Used ten years.

S. W. TRAVERS & CO'S

The words and abbreviations S. W. TRAVERS & Co's.

SER. No. 17,600. TOOTH-BRUSHES. FLORENCE MANUFACTURING COMPANY, Northampton, Mass. Filed Mar. 6, 1906.

6

The numeral 6 inclosed in a square.

SER. No. 17,612. TOYS AND TOY-CIRCUS EQUIPMENT. THE A. SCHOENHUT COMPANY, Philadelphia, Pa. Filed Mar. 6, 1906.

HUMPTY DUMPTY

The words or title HUMPTY DUMPTY.

SER. No. 17,641. SILK EMBROIDERIES. LION BROS. CO., Baltimore, Md. Filed Mar. 8, 1906.



The word "LIONA" composed of ornamental letters written vertically on a panel, to the right of which upon a shield is the monogram "L B Co."

SER. No. 17,658. TEA. LAFFIN TEA COMPANY, New York, N. Y. Filed Mar. 8, 1906.



The words "THE KIND OF TEA THEY USE IN IRELAND," and the representation of a harp, from which shamrocks are springing on each side and the words "IRISH TEA."

SER. No. 17,671. CANDY. THE LIPPS-MURBACH CO. OF BALTIMORE CITY, Baltimore, Md. Filed Mar. 8, 1906.

Snow-Flake

The hyphenated word SNOW-FLAKE associated with the representation of a spray of holly.

SER. No. 17,689. WHEAT-FLOUR. FRANK F ROBY, Kearney, Nebr. Filed Mar. 9, 1906.

B. AND M.

The letters and word B. AND M.

SER. No. 17,729. NON-ALCOHOLIC, ACIDULATED, CARBONATED SODA-WATER. CHARLES H. HOUSE, Buffalo, N. Y. Filed Mar. 10, 1906.

Pomay

The word POMAY written in script with a paraph extending underneath the word from the last letter thereof.

SER. No. 17,763. NON-ALCOHOLIC BEVERAGES AND THE EXTRACTS USED IN THEIR MANUFACTURE. W. H. HUTCHINSON & SON, Chicago, Ill. Filed Mar. 12, 1906.

ORCHERADE

The arbitrary word ORCHERADE.

SER. No. 17,808. WHEAT-FLOUR. ST. MARY'S MILL COMPANY, St. Marys, Mo. Filed Mar. 14, 1906.

ORRIS

The word ORRIS.

SER. No. 17,778. WHEAT-FLOUR. THE HAWKEYE FLOUR COMPANY, Cedar Rapids, Iowa. Filed Mar. 12, 1906.



The words, SEE DER RABBITS JUBILEE, associated with the pictorial representation of four dancing rabbits.

SER. No. 17,809. FLOUR. WILLMAR MILLING COMPANY, Willmar, Minn. Filed Mar. 14, 1906.

BANZAI

The word BANZAI.

SER. No. 17,812. LUBRICATING-OIL. LOUIS MENDEL, Philadelphia, Pa. Filed Mar. 14, 1906.



The representation of a phonograph having the word PHONO-VITA arranged in proximity thereto.

SER. No. 17,819. MEN'S AND BOYS' LEATHER BOOTS AND SHOES. DUNHAM BROTHERS, Windham, Vt. Filed Mar. 14, 1906.

CHESTERFIELD

The word CHESTERFIELD.

SER. No. 17,904. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio. Filed Mar. 15, 1906.

The Earl

The words THE EARL.

SER. No. 17,880. FERTILIZERS. AMERICAN FERTILIZING COMPANY, Norfolk, Va. Filed Mar. 15, 1906. Used ten years.

BOB WHITE FERTILIZER



The words "BOB WHITE FERTILIZER," and the representation of two quails.

SER. No. 17,953. DRESS-SHIELDS. I. B. KLEINERT RUBBER CO, New York, N. Y. Filed Mar. 16, 1906.

Lingerie

The fanciful word LINGERIE.

SER. No. 18,057. COFFEE. NEW YORK COFFEE COMPANY, New York, N. Y. Filed Mar. 20, 1906.



The words "BREAKFAST BELL," together with the representation of a coffee-field with mountains in the background, and in the foreground, the picture of a donkey carrying two boys, on either side of the said donkey being a bag for collecting coffee.

SER. No. 18,098. RIBBON. NEW YORK MERCHANDISE COMPANY, New York, N. Y. Filed Mar. 21, 1906.



The representation of a tortoise on an oval panel, through openings in which passes a ribbon on the exposed portion of which appear the words "YOURS FOR SHAPE," and the whole being surrounded by a circular border.

SER. No. 18,122. LEAD-PENCILS. EAGLE PENCIL COMPANY, New York, N. Y. Filed Mar. 22, 1906. Used ten years.

2½

The symbol 2½.

SER. No. 18,123. LEAD-PENCILS. EAGLE PENCIL COMPANY, New York, N. Y. Filed Mar. 22, 1906. Used ten years.

1½

The symbol 1½.

SER. No. 18,124. LEAD-PENCILS. EAGLE PENCIL COMPANY, New York, N. Y. Filed Mar. 22, 1906. Used ten years.

3½

The symbol 3½.

SER. No. 18,173. CHEWING-GUM. THE CANTON GUM COMPANY, Canton, Ohio. Filed Mar. 23, 1906.

TRY ME

The words "TRY ME."

SER. No. 18,249. FRUIT-JARS. HAZEL-ATLAS GLASS COMPANY, Wheeling, W. Va. Filed Mar. 24, 1906.

ATLAS

The word ATLAS.

SER. No. 18,266. LEAD-PENCILS. EAGLE PENCIL COMPANY, New York, N. Y. Filed Mar. 26, 1906.

PILOT

The word PILOT.

SER. No. 18,307. WRITING AND DRAWING PAPER. RICHARD JAMES BALSTON, Springfield Mill, Maidstone, county of Kent, England. Filed Mar. 26, 1906.

SER. No. 18,307.



A line, comprising a central lower portion arranged to represent the letter W, and two curved or scroll-like side portions that are connected at their lower ends to the two end portions of the letter and are united together in an upper loop portion.

SER. No. 18,312. TALKING-MACHINES AND PARTS THEREOF. VICTOR TALKING MACHINE COMPANY, Camden, N. J. Filed Mar. 28, 1906.



The representation of a winged cupid, leaning on one hand and drawing substantially concentric lines around himself with a quill held in the other hand.

SER. No. 18,314. WATCHES AND PARTS THEREOF. DUBOIS WATCH CASE COMPANY, New York, N. Y. Filed Mar. 28, 1906.



A floral design, each flower being represented in the shape of the letter D.

SER. No. 18,351. TRADE-JOURNALS. WARE BROS. COMPANY, Philadelphia, Pa. Filed Mar. 29, 1906. Used ten years.

THE AMERICAN FERTILIZER

The words "THE AMERICAN FERTILIZER."

SER. No. 18,353. TRADE-JOURNALS. WARE BROS. COMPANY, Philadelphia, Pa. Filed Mar. 29, 1906. Used ten years.

THE CARRIAGE MONTHLY

The words "THE CARRIAGE MONTHLY."

SER. No. 18,352. TRADE-JOURNALS. WARE BROS. COMPANY, Philadelphia, Pa. Filed Mar. 29, 1906. Used ten years.

THE Implement Age

The words "THE IMPLEMENT AGE."

SER. No. 18,358. COTTON DUCK. WILLIAM L. BARRELL CO, Boston, Mass. Filed Mar. 29, 1906.

Barrell's MILLS

The words BARRELL MILLS.

SER. No. 18,364. ICE-CREAM. THE CRANE ICE CREAM COMPANY, Philadelphia, Pa. Filed Mar. 28, 1906. Used ten years.

CRANE'S ICE CREAM

The words "CRANE'S ICE CREAM."

SER. NO. 18,369. WHEAT-FLOUR. D AND A LUCKENBACH, Bethlehem, Pa. Filed Mar. 30, 1906.

KOTASOTA

The word KOTASOTA.

SER. NO. 18,396. CHEWING-GUM. CURTIS & SON COMPANY, Portland, Me. Filed Mar. 31, 1906.

O.K.

The letters O. K.

SER. NO. 18,406. RUBBER BOOTS AND SHOES. HOOD RUBBER CO., Boston, Mass. Filed Mar. 31, 1906.



The representation of a bow and two arrows crossing the same.

SER. NO. 18,408. WHEAT-FLOUR. THE WICHITA MILL & ELEVATOR COMPANY, Wichita Falls, Tex. Filed Mar. 31, 1906.



The words "BELLE OF WICHITA" and the picture of a woman holding a parasol, and seated in a carriage that is decorated with leaves and flowers.

SER. NO. 18,422. CANDY. JOHN F. BIRKMEYER & SONS, Baltimore, Md. Filed Apr. 2, 1906. Used ten years.

SER. NO. 18,422.



White script letters "J. F. B & S." on a contrasting background.

SER. NO. 18,437. LEATHER BOOTS AND SHOES. SHOEMART COMPANY, St. Louis, Mo. Filed Apr. 2, 1906.



The word SHOEMART.

SER. NO. 18,467. CHOCOLATES AND BONBONS. THE WILEY MANUFACTURING COMPANY, Atlanta, Ga. Filed Apr. 3, 1906.

Wiley's

The word "WILEY'S" printed or impressed in the particular or distinctive manner shown in the accompanying drawing and facsimiles; that is to say, the letters of the word are script, strongly shaded, with a backward-shaded flourish extending from the letter "Y" beneath the preceding part of the word.

SER. NO. 18,469. GLASS CHIMNEYS, LANTERN-GLOBES, AND REFLECTORS. GILL BROTHERS COMPANY, Steubenville, Ohio. Filed Apr. 3, 1906.

SOLAR

The word "SOLAR."

SER. NO. 18,580. CARVING-KNIVES. LANDERS, FRARY AND CLARK, New Britain, Conn. Filed Apr. 6, 1906. Used ten years.



The representation of a similar of an extremely-curved form, together with a representation of a star in the space between the two ends of the curved similar. In connection therewith the word DAMASCUS is placed on the blade and the letters L. F. & C. in the space inclosed by the similar and star.

SER. NO. 18,598. WHEAT-FLOUR. AURORA MILLING COMPANY, Aurora, Mo. Filed Apr. 7, 1906.

SER. NO. 18,598.

VESTA

The word VESTA.

SER. NO. 18,650. GINGER-ALE, BLOOD-ORANGE, BIRCH-BEER, SARSAPARILLA, AND PLAIN SODA. CLICQUOT CLUB COMPANY, Millis, Mass. Filed Apr. 9, 1906.



The arbitrarily-selected word-symbol CLICQUOT CLUB.

SER. NO. 18,651. GRAPE-JUICE. GRAPE PRODUCTS CO., Detroit, Mich. Filed Apr. 9, 1906.

GRAVINO

The word GRAVINO.

SER. NO. 18,658. APPARATUS FOR FIRE-ALARM AND POLICE-SIGNAL TELEGRAPHING. THE GAMEWELL FIRE-ALARM TELEGRAPH COMPANY, New York, N. Y. Filed Apr. 10, 1906.



A hand grasping a sheaf of bolts of lightning which extends on both sides of the hand.

SER. NO. 18,742. AXES, HATCHETS, AND ADZES. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill. Filed Apr. 12, 1906.



A representation of three shields. Upon the surface of each appears one of the three words "UNIVERSAL," "SATISFACTION," and "ASSURED," in the order named, associated with their initial letters, "U S A." The words "OUR GUARANTEE" appear on a scroll above the shields.

SER. NO. 18,766. MINERAL WATER. WELLS, LAWRENCE AND GOOCH, Bowling Green, Mo. Filed Apr. 13, 1906.



A picture or representation of a hornet, associated with a nautical scene, wherein a ship is seen in the act of sinking, while a lifeboat and crew are coming to the rescue. Within concentric circles surrounding the scene appear the words, in capitals: THE CELEBRATED HORNET MINERAL WATER ALL THE WAY FROM PIKE. Above the picture of the hornet, again appear the words, THE CELEBRATED HORNET and underneath said picture, the words, MINERAL WATER. Beneath the nautical scene, the words, THE CELEBRATED HORNET MINERAL WATER, are seen again.

SER. NO. 18,847. WHEAT-FLOUR. HOME MILL & GRAIN CO., Mount Vernon, Ind. Filed Apr. 16, 1906.



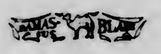
The hyphenated phrase "U-KNEAD-IT," appearing in a horizontally-arranged panel, the top side of which is curved, and above said phrase, in a circular panel, appears the pictorial representation of a loaf of bread, which phrase and pictorial representation are inclosed by a circular border-line.

SER. NO. 18,890. WHEAT-FLOUR. BARBER MILLING COMPANY, Minneapolis, Minn. Filed Apr. 18, 1906.

WHITE SATIN

The words WHITE SATIN.

SER. No. 18,904. RAZORS. ULYSSES J. ULERY, New York, N. Y. Filed Apr. 18, 1906.



The representation of a camel of the Bactrian variety, and the word DAMASCUS arranged on one side, and BLADE, at the other side of the same.

SER. No. 18,979. BREAD. DAVID BAYER, Columbus, Ohio. Filed Apr. 21, 1906.



The words "CRACKER JACK" on the representation of a loaf of bread. On the end of the loaf appears the monogram "C B Co".

PHOTO-LITHOGRAPHED BY
SACKETT & WILHELMS
LITHOGRAPHING & PRINTING CO.
NEW YORK

TRADE-MARKS

REGISTERED MAY 15, 1906

52,547. LUBRICATING-GREASE. ADAM COOK'S SONS, New York, N. Y.
The arbitrarily-selected word "ALPHA."
Filed May 4, 1905. Serial No. 4,253. PUBLISHED MARCH 20, 1906.

52,548. FIRE-BRICKS FOR LINING STOVES AND FURNACES. STEPHEN D. HORTON, Peekskill, N. Y.
The representation of a crescent formed with a double outline with two bars dividing the inclosed space in three parts, a triangular figure appearing in the central part.
Filed May 18, 1905. Serial No. 6,055. PUBLISHED MARCH 20, 1906.

52,549. DRESS-SHIELDS. I. B. KLEINERT RUBBER COMPANY, New York, N. Y.
The words "THE GEM."
Filed April 29, 1905. Serial No. 3,661. PUBLISHED MARCH 20, 1906.

52,550. HOSE-SUPPORTERS. I. B. KLEINERT RUBBER COMPANY, New York, N. Y.
The words "BUSTER BROWN."
Filed April 29, 1905. Serial No. 3,664. PUBLISHED MARCH 20, 1906.

52,551. HOSE-SUPPORTERS. I. B. KLEINERT RUBBER COMPANY, New York, N. Y.
The word "HOOKON."
Filed April 29, 1905. Serial No. 3,665. PUBLISHED MARCH 20, 1906.

52,552. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.
The number "97." Used ten years.
Filed May 2, 1905. Serial No. 3,962. PUBLISHED MARCH 20, 1906.

52,553. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.
The abbreviation and numerals "No. 26." Used ten years.
Filed May 5, 1905. Serial No. 4,303. PUBLISHED MARCH 20, 1906.

52,554. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.
The abbreviation and number "No. 37." Used ten years.
Filed May 5, 1905. Serial No. 4,310. PUBLISHED MARCH 20, 1906.

52,555. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.
The abbreviation and number "No. 351."
Filed May 5, 1905. Serial No. 4,313. PUBLISHED MARCH 20, 1906.

52,556. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.
The abbreviation and number "No. 220." Used ten years.
Filed May 5, 1905. Serial No. 4,317. PUBLISHED MARCH 20, 1906.

52,557. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.
The abbreviation and number "No. 19." Used ten years.
Filed May 5, 1905. Serial No. 4,327. PUBLISHED MARCH 20, 1906.

52,558. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.
The abbreviation and number "No. 444." Used ten years.
Filed May 5, 1905. Serial No. 4,329. PUBLISHED MARCH 20, 1906.

52,559. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.
A design wherein at the bottom, to the right of a scroll, the side view of a seated mermaid is shown. Her hair is blown outward over the top of her head, and she gazes into a mirror held in her right hand. On the left side, in corresponding position, is shown a bearded merman blowing a shell-like horn, which he holds to his mouth with his right hand, while in his left he holds a trident. Between the figures a light scroll of curves surrounding the numerals "42" appears upon a dark background terminating in a point. On either side of said dark pointed background is a light band curving from the top toward the figures below, and outside such bands are conventional scrolls. At the top a starfish appears, and just below is a horizontal panel surrounded by scrolls. Used ten years.
Filed May 11, 1905. Serial No. 5,008. PUBLISHED MARCH 20, 1906.

52,560. NON-ALCOHOLIC FOOD DRINKS WHICH ARE PRODUCED FROM A CEREAL. POSTUM CEREAL CO., LIMITED, Battle Creek, Mich.
The words "POSTUM CEREAL," together with two red disks, each bearing the words "IT MAKES RED BLOOD."
Filed May 3, 1905. Serial No. 4,100. PUBLISHED MARCH 20, 1906.

52,561. SHEET-METAL VESSELS FOR DOMESTIC OR HOUSEHOLD PURPOSES. ROCHESTER NONRUST TINWARE CO., Rochester, N. Y.
The word "NONRUSTIN" on a scroll upon a diamond-shaped panel surrounded by a correspondingly-shaped border.
Filed May 3, 1905. Serial No. 4,147. PUBLISHED MARCH 20, 1906.

52,562. COFFEE. THE WEIDEMAN CO., Cleveland, Ohio; Chicago, Ill., and New York, N. Y.
The representation of a pair of scales showing a can balanced by a coin, and the words "BEST VALUE BRAND," and a monogram of the letter and abbreviation "W Co." the word "THE" above, the word "THE" and the monogram inclosed in ornamental scroll-work with a panel beneath the scales. Used ten years.
Filed April 26, 1905. Serial No. 3,044. PUBLISHED MARCH 20, 1906.

52,563. CHEESE, ESPECIALLY CREAM-CHEESE. A. F. MACLAREN IMPERIAL CHEESE CO., LIMITED, Toronto, Canada.
The representation of an Indian paddling in a canoe, a body of water having several water-lilies in the foreground, two points of land in the background running out into the water, the point of land to the right having on it woods and two tepees or wigwams and the one to the left being wooded. Associated with the above appear the word "CANADA" above and the words "CREAM" and "CHEESE" to the left and right, respectively.
Filed April 24, 1905. Serial No. 2,869. PUBLISHED MARCH 20, 1906.

52,564. ENAMELED LEATHER. BARNET LEATHER CO., New York, N. Y.
The word "PYROX."
Filed April 24, 1905. Serial No. 2,924. PUBLISHED MARCH 20, 1906.

52,565. WHISKY. BLUTHENTHAL & BICKART, Atlanta, Ga.
The words "KENTUCKY BLUE BLOOD." Used ten years.
Filed April 28, 1905. Serial No. 3,356. PUBLISHED MARCH 20, 1906.

52,566. POCKET-KNIVES. CARL F. BOKER, New York, N. Y.
The word "TRENTON" arranged on a diamond-shaped figure. Used ten years.

Filed May 15, 1905. Serial No. 5,680. PUBLISHED MARCH 20, 1906.

52,567. TELEPHONE TRANSMITTERS AND RECEIVERS. ERICSSON TELEPHONE COMPANY, New York, N. Y.
The word "ECHOPHONE."
Filed May 29, 1905. Serial No. 7,025. PUBLISHED MARCH 20, 1906.

52,568. LAMP AND CANDLE WICKS. FLETCHER MANUFACTURING COMPANY, Providence, R. I.
The representation of an arm extending upward from a heraldic scroll and holding a bow, associated with the words "FLETCHER WICK."
Filed April 24, 1905. Serial No. 2,885. PUBLISHED MARCH 20, 1906.

52,569. CANNED LOBSTERS. JOHN GILLIAM, New York, N. Y.
The word "DAISY" and the representation of a daisy and a lobster and a landscape.
Filed April 22, 1905. Serial No. 2,733. PUBLISHED MARCH 20, 1906.

52,570. MEN'S COATS AND TROUSERS. EDWIN M. GOLDSMITH, Philadelphia, Pa.
The hyphenated word "KEEP-KOOL."
Filed June 6, 1905. Serial No. 7,516. PUBLISHED MARCH 20, 1906.

52,571. DRESS-SHIELDS. I. B. KLEINERT RUBBER COMPANY, New York, N. Y.
The word "OLYMPIA."
Filed April 29, 1905. Serial No. 3,655. PUBLISHED MARCH 20, 1906.

52,572. DRESS-SHIELDS. I. B. KLEINERT RUBBER COMPANY, New York, N. Y.
The word "INVINCIBLE."
Filed April 29, 1905. Serial No. 3,656. PUBLISHED MARCH 20, 1906.

52,573. DRESS-SHIELDS. I. B. KLEINERT RUBBER COMPANY, New York, N. Y.
The word "MID-SUMMER."
Filed April 29, 1905. Serial No. 3,657. PUBLISHED MARCH 20, 1906.

52,574. DRESS-SHIELDS. I. B. KLEINERT RUBBER COMPANY, New York, N. Y.
The word "BEAUTY."
Filed April 29, 1905. Serial No. 3,658. PUBLISHED MARCH 20, 1906.

52,575. DRESS-SHIELDS. I. B. KLEINERT RUBBER COMPANY, New York, N. Y.
The words "FEATHER WEIGHT."
Filed April 29, 1905. Serial No. 3,659. PUBLISHED MARCH 20, 1906.

52,576. FARM-WAGONS. KENTUCKY WAGON MANUFACTURING COMPANY, Louisville, Ky.
A rectangular panel of solid color bearing the word "KENTUCKY" in block letters in contrasting colors, said word being inclosed in quotation-marks. Used ten years.
Filed April 29 1905. Serial No. 3,654. PUBLISHED MARCH 20, 1906.

52,577. WHISKY. ALBERT LIPMAN, Cincinnati, Ohio.
The words "CYRUS FIELD." Used ten years.
Filed May 24, 1905. Serial No. 6,526. PUBLISHED MARCH 20, 1906.

52,578. DENIMS. MASSACHUSETTS COTTON MILLS, Lowell, Mass.
The representation of a pair of sheep, one of the sheep being in a standing position and the other in a reclining position, the animals being represented partly in side view and each sheep having its head partly turned.
Filed May 10. 1905. Serial No. 4,982. PUBLISHED MARCH 20, 1906.

52,579. BLUE DENIMS. MASSACHUSETTS COTTON MILLS, Lowell, Mass.
The representation of a swimming fish.
Filed May 11, 1905. Serial No. 5,231. PUBLISHED MARCH 20, 1906.

52,580. WHISKY. D. SACHS AND SONS, Louisville, Ky.
The words "CAPE MAY." Used ten years.
Filed April 26, 1905. Serial No. 3,052. PUBLISHED MARCH 20, 1906.

52,581. PHOTOGRAPHIC PAPER AND FILMS. SOCIÉTÉ ANONYME "LUNA," Lausanne, Switzerland.
The representation of a black disk in which are drawn in white lines a crescent with human face, three stars in front of said human face, and the letters and character "V & C" crossing the said disk and crescent, the said black disk being, moreover, surrounded by a series of white pearls.
Filed May 15, 1905. Serial No. 5,617. PUBLISHED MARCH 20, 1906.

52,582. CANDY. PHILIP WUNDERLE, Philadelphia, Pa.
The word "DAISIES."
Filed June 1, 1905. Serial No. 7,183. PUBLISHED MARCH 20, 1906.

52,583. CENTRIFUGAL LIQUID-SEPARATORS. THE DE LAVAL SEPARATOR COMPANY, New York and Poughkeepsie N. Y.
The word "DE LAVAL." Used ten years.
Filed June 30, 1905. Serial No. 9,447. PUBLISHED MARCH 20, 1906.

52,584. EVAPORATED MILK AND CREAM. THE FALK MERCANTILE CO. LTD. Boise, Idaho.
The representation of an inverted wreath of laurel-leaves having a bow of ribbon tied thereto, said wreath being associated with the letters "F. M. Co." and the word "SILVERWREATH."
Filed July 6, 1905. Serial No. 9,837. PUBLISHED MARCH 20, 1906.

52,585. LAGER-BEER. THE JOHN F. WIESSNER & SON'S BREWING CO. OF BALTIMORE CITY, Baltimore, Md.
A shield-like figure from behind which extend hop leaves and blossoms and barley-heads and upon which appears a monogram of the letters "J F W," across which a band or scroll appears bearing the character and word "& SONS," and the representation of the hooped end of a beer-keg, which extends slightly beyond one side of the shield.
Filed May 8, 1905. Serial No. 4,738. PUBLISHED MARCH 20, 1906.

52,586. WHISKY. LOUIS LAZARUS, Lynchburg, Va.
The representation of a cat attired in full-dress costume, playing the fiddle.
Filed May 6, 1905. Serial No. 4,492. PUBLISHED MARCH 20, 1906.

52,587. STEAM, GAS, OIL, AND WATER PIPES, FITTINGS, AND CONNECTIONS THEREFOR. MCNAB & HARLIN MANUFACTURING COMPANY, New York, N. Y.
The letters "M H," one leg of the "M" and of the "H" being identical.
Filed May 5, 1905. Serial No. 4,398. PUBLISHED MARCH 20, 1906.

52,588. LIME AND PLASTER. ROCK PLASTER CO., OF NEW YORK & NEW JERSEY, New York, N. Y.
The words "RIVERSIDE BRAND," the words being divided by a scene comprising a castle with battlemented towers upon a natural-rock foundation in the foreground of a marine scene, the words and design being surrounded by a border having a circular central portion inclosing the design and laterally-extending arms inclosing the words "RIVERSIDE BRAND."
Filed July 17, 1905. Serial No. 10,456. PUBLISHED MARCH 20, 1906.

52,589. HYDRAULIC PUMPS. UNITED IRON WORKS, Oakland, Cal.
A horizontal open bar with convergent pointed ends and with similar points extending upwardly and downwardly from the central portion. Concentric rings inclose the central portion, the inner ring contacting with the central points.
Filed July 13, 1905. Serial No. 10,271. PUBLISHED MARCH 20, 1906.

52,590. CANNED, BOTTLED, AND PRESERVED FRUITS AND VEGETABLES. WILSON GROCERY COMPANY, Peoria, Ill.
The word "PROGRESS."
Filed May 8, 1905. Serial No. 4,646. PUBLISHED MARCH 20, 1906.

52,591. ANTISEPTIC ADHESIVE POULTICE-PLASTER. BAYLES DISTRIBUTING CO. Kansas City, Mo.
The representation of two rampant dragons with a roll of plaster arranged between them and the words "GERMS FLEE FROM ANTI-FLAMMA POULTICE PLASTER ADHESIVE ANTISEPTIC."
Filed June 6, 1905. Serial No. 7,560. PUBLISHED MARCH 20, 1906.

52,592. PETROLEUM LUBRICATING-OILS. GULF REFINING COMPANY, Port Arthur, Tex., and Pittsburg, Pa
The representation of an Indian chieftain's head inclosed within two concentric circles and having a head-dress of feathers and one ear-ring.
Filed June 22, 1905. Serial No. 8,767. PUBLISHED MARCH 20, 1906.

52,593. PETROLEUM LUBRICATING-OILS. GULF REFINING COMPANY, Port Arthur, Tex., and Pittsburg, Pa.
The word "ESKIMO."
Filed June 22, 1905. Serial No. 8,769. PUBLISHED MARCH 20, 1906.

52,594. PREPARATION FOR CLEANING. THEODORE JOERN, St. Louis, Mo.
The words "QUEEN WASHER" and the pictorial representation of a beautiful woman, said woman being shown attired in décolleté costume wearing a crown, from which is suspended a veil. Around her neck is a jeweled necklace, and from her ears hang pendent ear-rings.
Filed May 22, 1905. Serial No. 6,244. PUBLISHED MARCH 20, 1906.

52,595. WHISKY. W. H. JONES AND CO., Boston, Mass.
The word "HOLIDAY."
Filed April 3, 1905. Serial No. 251. PUBLISHED MARCH 20, 1906.

52,596. STEAM, HOT-WATER, AND HOT-AIR HEATERS. HART & CROUSE CO., Utica, N. Y.
The word "ROYAL."
Filed June 14, 1905. Serial No. 8,130. PUBLISHED MARCH 20, 1906.

52,597. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill.
The designation "HOUSEKEEPER'S." Used ten years.
Filed April 1, 1905. Serial No. 41. PUBLISHED MARCH 20, 1906.

52,598. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill.
The designation "MICHIGAN FAMILY."
Filed April 1, 1905. Serial No. 48. PUBLISHED MARCH 20, 1906.

52,599. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill.
The designation "NAVY BLUE." Used ten years.
Filed April 1, 1905. Serial No. 52. PUBLISHED MARCH 20, 1906.

52,600. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill.
The word "BULL." Used ten years.
Filed July 13, 1905. Serial No. 10,201. PUBLISHED MARCH 20, 1906.

52,601. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill.
The designation "BLUE CLOUD."
Filed July 13, 1905. Serial No. 10,204. PUBLISHED MARCH 20, 1906.

52,602. SOAP. THE N. K. FAIRBANK COMPANY, Chicago Ill.
The designation "SILVER CLOUD." Used ten years.
Filed July 13, 1905. Serial No. 10,205. PUBLISHED MARCH 20, 1906.

52,603. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill.
The word "CLAIRETTE." Used ten years.
Filed July 13, 1905. Serial No. 10,209. PUBLISHED MARCH 20, 1906.

52,604. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill.
The designation "KRISS KRINGLE." Used ten years.
Filed July 13, 1905. Serial No. 10,211. PUBLISHED MARCH 20, 1906.

52,605. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill.
The designation "PLYMOUTH ROCK." Used ten years.
Filed July 13, 1905. Serial No. 10,213. PUBLISHED MARCH 20, 1906.

52,606. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill.
The word "JEWEL." Used ten years.
Filed July 13, 1905. Serial No. 10,216. PUBLISHED MARCH 20, 1906.

52,607. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill.
The brand "CHICAGO FAMILY." Used ten years.
Filed July 13, 1905. Serial No. 10,218. PUBLISHED MARCH 20, 1906.

52,608. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill.
The words "GREEN SEAL." Used ten years.
Filed July 13, 1905. Serial No. 10,221. PUBLISHED MARCH 20, 1906.

52,609. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill.
The word "PRUDENTIAL."
Filed July 13, 1905. Serial No. 10,222. PUBLISHED MARCH 20, 1906.

52,610. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill.
The word "RAINBOW." Used ten years.
Filed July 13, 1905. Serial No. 10,224. PUBLISHED MARCH 20, 1906.

52,611. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill.
The word "DANDY." Used ten years.
Filed July 13, 1905. Serial No. 10,225. PUBLISHED MARCH 20, 1906.

52,612. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill.
The word "FAIRY." Used ten years.
Filed July 13, 1905. Serial No. 10,226. PUBLISHED MARCH 20, 1906.

52,613. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill.
The designation "TOM, DICK & HARRY." Used ten years.
Filed July 13, 1905. Serial No. 10,229. PUBLISHED MARCH 20, 1906.

52,614. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill.
The words "RABBIT FOOT." Used ten years.
Filed July 13, 1905. Serial No. 10,230. PUBLISHED MARCH 20, 1906.

52,615. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill.
The designation "SUNNY MONDAY."
Filed July 13, 1905. Serial No. 10,231. PUBLISHED MARCH 20, 1906.

52,616. PARTICULARLY FINE GRADE OF PLUG-TOBACCO. RYAN-HAMPTON TOBACCO CO., Newburg, Ind.
The words "GOOD GRAVY" arranged one above the other, the middle letters of each being elongated, all in a circular figure.
Filed July 11, 1905. Serial No. 10,111. PUBLISHED MARCH 20, 1906.

52,617. ILLUMINATING-OILS. STANDARD OIL CO. OF NEW YORK, New York, N. Y.
The words "COCK BRAND" and the Chinese equivalents thereof.
Filed June 26, 1905. Serial No. 9,858. PUBLISHED MARCH 20, 1906.

52,618. SIDEWALK AND ICE SCRAPERS. THE AVERY STAMPING COMPANY, Cleveland, Ohio.
The word "KLONDIKE."
Filed February 14, 1906. Serial No. 16,992. PUBLISHED MARCH 20, 1906.

52,619. WHISKY. OWEN J. CARPENTER, Covington, Ky.
The words "OLD DEXTER," beneath which is a representation of several men at work at some casks inclosed in a rectangular outline.
Filed July 15, 1905. Serial No. 10,379. PUBLISHED MARCH 20, 1906.

52,620. INCANDESCENT ELECTRIC LAMPS. THE EDISON AND SWAN UNITED ELECTRIC LIGHT COMPANY LIMITED, London, England.
The word "THE" and the hyphenated words "EDISON-SWAN" in capital letters inclosed within quotation-marks, the usual straight lines of said letters being somewhat curved, each letter consisting of a dark part with a shading on the right hand and below the lower portion of the letter, all of said letters having their tops inclined toward the left.
Filed June 28, 1905. Serial No. 9,367. PUBLISHED MARCH 20, 1906.

52,621. INCANDESCENT ELECTRIC LAMPS AND ELECTRIC LIGHTING APPARATUS. THE EDISON AND SWAN UNITED ELECTRIC LIGHT COMPANY LIMITED, London, England.
The representation of an electric incandescent lamp having arranged in a circular manner within the outline of the bulb and conforming to said outline the words "THE SWAN UNITED ELECTRIC LIGHT CO. LD."

Filed June 28, 1905. Serial No. 9,368. PUBLISHED MARCH 20, 1906.

52,622. ELECTRIC LAMPS. THE FRANKLIN ELECTRIC MFG. CO., Hartford, Conn.
The word "FEMCO."
Filed June 10, 1905. Serial No. 7,850. PUBLISHED FEBRUARY 6, 1906.

52,623. TRUSSES. J. ELLWOOD LEE COMPANY, Conshohocken, Pa.
The word "LEE'S." Used ten years.
Filed February 16, 1906. Serial No. 17,067. PUBLISHED MARCH 20, 1906.

52,624. TRUSSES. J. ELLWOOD LEE COMPANY, Conshohocken, Pa.
The word "CHAMPION." Used ten years.
Filed February 16, 1906. Serial No. 17,068. PUBLISHED MARCH 20, 1906.

52,625. UNMANUFACTURED STEEL, INCLUDING STEEL BLANKS, SHAPES, RODS, BILLETS, AND SHEETS. GEORGE NASH, New York, N. Y.
The work "SOLAR."
Filed February 12, 1906 Serial No. 16,959. PUBLISHED MARCH 20, 1906.

52,626. INSULATED WIRES. PHILLIPS INSULATED WIRE CO., Pawtucket, R. I.
The word "PARAC" on a background inclosed in concentric circles.
Filed February 14, 1906. Serial No. 17,024. PUBLISHED MARCH 20, 1906.

52,627. ENGINE-GOVERNORS. THE PICKERING GOVERNOR COMPANY, Portland, Conn.
The word "PICKERING." Used ten years.
Filed November 20, 1905. Serial No. 14,859. PUBLISHED MARCH 20, 1906.

52,628. LEATHER BOOTS AND SHOES AND LEATHER USED IN THEIR MANUFACTURE. RICE & HUTCHINS, INCORPORATED, Boston, Mass., assignor to Rice and Hutchins Incorporated, a Corporation of Maine.
The pictorial representation of a man and a woman dressed in outing costume and walking together.
Filed June 10, 1905. Serial No. 7,795. PUBLISHED MARCH 20, 1906.

52,629. SHOT. SELBY SMELTING & LEAD COMPANY, San Francisco, Cal.
The word "SELBY." Used ten years.
Filed February 16, 1906. Serial No. 17,084. PUBLISHED MARCH 20, 1906.

52,630. SOLDER, BABBITT, OR OTHER ANTIFRICTION METAL. SELBY SMELTING & LEAD COMPANY, San Francisco, Cal.
The word "SELBY." Used ten years.
Filed February 16, 1906. Serial No. 17,085. PUBLISHED MARCH 20, 1906.

52,631. LEAD TRAPS AND BENDS. SELBY SMELTING AND LEAD COMPANY, San Francisco, Cal.
The word "SELBY." Used ten years.
Filed February 16, 1906. Serial No. 17,086. PUBLISHED MARCH 20, 1906.

52,632. GLOVES. JACOB ADLER & CO., New York, N. Y.
The word "ADLERS," associated with a fanciful design consisting of a printed rosette and a fanciful arrow-like design upon each side thereof beneath said word. Used ten years.
Filed June 13, 1905. Serial No. 8,020. PUBLISHED MARCH 20, 1906.

52,633. BEER. ANHEUSER-BUSCH BREWING ASSOCIATION, St. Louis, Mo.
The word "MEPHISTO."
Filed July 3, 1905. Serial No. 9,768. PUBLISHED MARCH 20, 1906.

52,634. WATER-TUBE BOILERS. THE AULTMAN & TAYLOR MACHINERY COMPANY, Mansfield, Ohio.
The word "CAHALL," followed by the descriptive words "SAFETY BOILER." Used ten years.
Filed April 6, 1905. Serial No. 542. PUBLISHED MARCH 20, 1906.

52,635. BEER. THE BERGNER & ENGEL BREWING CO., Philadelphia, Pa.
The word "TANNHAEUSER." Used ten years.
Filed June 10, 1905. Serial No 7,873. PUBLISHED MARCH 20, 1906.

52,636. CONDENSED MILK. BORDEN'S CONDENSED MILK CO., Jersey City, N. J., and New York, N. Y.
The representation of a completely-equipped battleship under full headway and above the whole the arbitrarily-selected word "DEFIANCE." Used ten years.
Filed June 10, 1905. Serial No. 7,814. PUBLISHED MARCH 20, 1906.

52,637. CONDENSED MILK. BORDEN'S CONDENSED MILK CO., Jersey City, N. J., and New York, N. Y.
The arbitrarily-selected word "SUPERB." Used ten years.
Filed June 10, 1905. Serial No. 7,818. PUBLISHED MARCH 20, 1906.

52,638. CONDENSED MILK. BORDEN'S CONDENSED MILK CO., Jersey City, N. J., and New York, N. Y.
The arbitrarily-selected word "BUTTERCUP," associated with the picture or representation of three full-blown buttercup-blossoms, together with leaves, stems, and buds. Used ten years.
Filed June 10, 1905. Serial No. 7,819. PUBLISHED MARCH 20, 1906.

52,639. CONDENSED MILK. BORDEN'S CONDENSED MILK CO., Jersey City, N. J., and New York, N. Y.
The arbitrarily-selected word "DAIRY," associated with the word "BRAND," and the representation of a landscape with a cow in the foreground. Used ten years.
Filed June 10, 1905. Serial No. 7,821. PUBLISHED MARCH 20, 1906.

52,640. CONDENSED MILK. BORDEN'S CONDENSED MILK CO., Jersey City, N. J., and New York, N. Y.
The representation of three thistle-blossoms with leaves and stems, while above the whole is the arbitrarily-selected word "THISTLE," associated with the word "BRAND." Used ten years.
Filed June 10, 1905. Serial No. 7,822. PUBLISHED MARCH 20, 1906.

52,641. BAKING-POWDER. E. M. CHASE CO., Nebraska City, Nebr.
The words "THE CHASE," together with a pictorial representation of a chase, including riders mounted on horses leaping a fence and following hounds; also, the words "PROVEN" and "PURITY" on scroll-like panels projecting on opposite sides of the picture.
Filed June 21, 1905. Serial No. 8,677. PUBLISHED MARCH 20, 1906.

52,642. WHISKY. JOHN MILLING CRANSTON, Augusta, Ga.
The word "DIODORA."
Filed June 24, 1905. Serial No. 8,878. PUBLISHED MARCH 20, 1906.

52,643. PRINTED AND DYED TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING CO., Eddystone and Philadelphia, Pa.
The words "BRANDENBURG CLOTH." Used ten years.
Filed July 8, 1905. Serial No. 9,926. PUBLISHED MARCH 20, 1906.

52,644. WHISKY. PHILIP FREILER, Elgin, Ill.
The words and figures "FREILER'S 1883 FINE OLD LITTLE JOE NELSON CO. KY. SOUR MASH WHISKEY" inclosed in an ornamental circular border, with the words "FREILER'S SOUR MASH WHISKEY" arranged in circular form inside of said border, and an ornament consisting of two crossed heads of corn above the words "SOUR MASH WHISKEY." Used ten years.
Filed April 20, 1905. Serial No. 2,335. PUBLISHED MARCH 20, 1906.

52,645. CANNED FRUITS AND VEGETABLES. GRIGGS, COOPER & COMPANY, St. Paul, Minn.
The word "WHYNOT."
Filed July 3, 1905. Serial No. 9,647. PUBLISHED MARCH 20, 1906.

52,646 BEER AND LAGER-BEER. HARVARD BREWING CO., Lowell, Mass.
The word-symbol "HARVARD" in fancy script lettering, the final stroke of the letter "D" extending beneath a portion of the remaining letters of the word.
Filed June 26, 1905. Serial No. 9,055. PUBLISHED MARCH 20, 1906.

52,647. WHISKY. HILBERT MERCANTILE CO., San Francisco, Cal.
The letters "H B."

Filed June 26, 1905. Serial No. 9,033. PUBLISHED MARCH 20, 1906.

52,648. WHISKY. LANG, SCHENCK & CO., Columbus, Ohio.
The words "THREE-BUNNIE" above a design inclosed in a double circle showing three rabbits arranged so that their heads converge to a common center. Below this design and on either side are three heads of grain.
Filed June 30, 1905. Serial No. 9,437. PUBLISHED MARCH 20, 1906.

52,649. WHISKY. THE MONTICELLO DISTILLING COMPANY, Baltimore, Md.
The word "MONTICELLO." Used ten years.
Filed June 8, 1905. Serial No. 7,670. PUBLISHED MARCH 20, 1906.

52,650. ROCK AND RYE. P. J. BOWLIN LIQUOR CO., St. Paul, Minn.
The word "ANCHOR," through which and extending below is the representation of a fouled anchor.
Filed June 21, 1905. Serial No. 8,633. PUBLISHED MARCH 20, 1906.

52,651. CANNED FRUITS AND VEGETABLES. SPRAGUE, WARNER & COMPANY, Chicago, Ill.
The arbitrarily-selected word "RICHELIEU."
Filed July 3, 1905. Serial No. 9,794. PUBLISHED MARCH 20, 1906.

52,652. GLOVES. ABRAHAM & STRAUS, Brooklyn, N. Y.
The word "MARQUISE."
Filed April 18, 1905. Serial No. 2,183. PUBLISHED MARCH 20, 1906.

52,653. CIRCUIT-CONTROLLERS OR SWITCHES. ALBERT & J. M. ANDERSON MANUFACTURING COMPANY, Boston, Mass.
The letter "A" inclosed within a circle.
Filed February 19, 1906. Serial No. 17,166. PUBLISHED MARCH 20, 1906.

52,654. EXTRACT OF MALT AND HOPS. ANHEUSER-BUSCH BREWING ASSOCIATION, St. Louis, Mo.
The hyphenated word "MALT-NUTRINE."
Filed July 3, 1905. Serial No. 9,769. PUBLISHED MARCH 20, 1906.

52,655. INSULATING AND SHEATHING PAPER AND CLOTH. J. A. & W. BIRD & Co., Boston, Mass.
The word "IBEX."
Filed February 16, 1906. Serial No. 17,106. PUBLISHED MARCH 20, 1906.

52,656. DUST-PANS. THE CENTRAL STAMPING COMPANY, New York, N. Y.
The representation of a dust-pan having a stripe or section upon the upper surface along the extreme forward edge thereof, presenting the color of the metal of which the edge is made or a close approximation thereto and contrasting in color with the color of the main portion or body of the pan. Used ten years.
Filed July 12, 1905. Serial No. 10,199. PUBLISHED MARCH 20, 1906.

52,657. STEEL. CRUCIBLE STEEL COMPANY OF AMERICA, Pittsburg, Pa.
The word "SUPERIOR." Used ten years.
Filed February 17, 1906. Serial No. 17,137. PUBLISHED MARCH 20, 1906.

52,658. WEEKLY MAGAZINE. THE ENGINEERING & MINING JOURNAL, INCORPORATED, New York, N. Y.
The words "THE ENGINEERING AND MINING JOURNAL."
Filed June 30, 1905. Serial No. 9,537. PUBLISHED MARCH 20, 1906.

52,659. SEWING-MACHINE NEEDLES. EXCELSIOR NEEDLE COMPANY, Torrington, Conn.
The word "EXCELSIOR." Used ten years.
Filed February 21, 1906. Serial No. 17,218. PUBLISHED MARCH 20, 1906.

52,660. SEWING-MACHINE NEEDLES. EXCELSIOR NEEDLE COMPANY, Torrington, Conn.
The representation of a man ascending the side of a mountain and carrying a banner upon which is inscribed the word "EXCELSIOR."
Filed February 21, 1906. Serial No. 17,220. PUBLISHED MARCH 20, 1906.

52,661. SILVER-POLISH IN LIQUID, POWDER, OR PASTE FORM. GORHAM MFG. CO., Providence, R. I.
The words "GORHAM SILVER POLISH." Used ten years.
Filed November 15, 1905. Serial No. 14,666. PUBLISHED MARCH 20, 1906.

52,662. RANGE-BOILERS. HAYES MFG. CO., Paterson, N. J.
The word "WILHELMI." Used ten years.
Filed February 16, 1906. Serial No. 17,092. PUBLISHED MARCH 20, 1906.

52,663. ROASTED COFFEE IN CANS OR OTHER PACKAGES. IMPORTERS COFFEE COMPANY, Duluth, Minn.
The words "KING ARTHUR," with the pictorial representation of a knight mounted upon a horse and carrying a banner upon which is the representation of a crown.
Filed April 18, 1905. Serial No. 2,126. PUBLISHED MARCH 20, 1906.

52,664. SUSPENSORY BANDAGES. J. ELLWOOD LEE COMPANY, Conshohocken, Pa.
The word "SYRACUSE." Used ten years.
Filed February 16, 1906. Serial No. 17,058. PUBLISHED MARCH 20, 1906.

52,665. ADHESIVE PLASTER. J. ELLWOOD LEE COMPANY, Conshohocken, Pa.
The word "AMERICAN." Used ten years.
Filed February 16, 1906. Serial No. 17,059. PUBLISHED MARCH 20, 1906.

52,666. SCISSORS. ADOLPH KASTOR & BROS., New York, N. Y.
A representation of a four-leaf clover.
Filed February 20, 1906. Serial No. 17,201. PUBLISHED MARCH 20, 1906.

52,667. HEATING-FURNACES AND BOILERS. MONROE FOUNDRY & FURNACE CO., Monroe, Mich.
The words "FLORAL CITY." Used ten years.
Filed February 19, 1906. Serial No. 17,175. PUBLISHED MARCH 20, 1906.

52,668. CARBONS FOR ELECTRICAL PURPOSES. HUGO REISINGER, New York, N. Y.
The word "EXCELLO."
Filed February 21, 1906. Serial No. 17,231. PUBLISHED MARCH 20 1906.

52,669. RYE AND BOURBON AND ALL KINDS OF WHISKIES. S. C. HERBST IMPORTING CO., Milwaukee, Wis.
The words "CHANCELLOR CLUB."
Filed April 19, 1905. Serial No. 2,252. PUBLISHED MARCH 20, 1906.

52,670. WITHDRAWN

52,671. LAUNDRY SOAP. TROY LAUNDRY MACHINERY COMPANY LIMITED, Chicago, Ill.
The word "TROJAN."
Filed April 19, 1905. Serial No. 2,222. PUBLISHED JUNE 13, 1905.

52,672. WHEAT-FLOUR. THE ANSTED & BURK COMPANY, Springfield, Ohio.
The words "WILLIAM TELL" and the representation of the traditional William Tell, with his bow and arrow, shooting the apple off the head of his son, which is shown upon a background showing mounted figures, a church, and water, the whole being surrounded by an annular border having in the upper part thereof the name "ANSTED & BURK CO." and below the words "WILLIAM TELL," upon a scroll, the words "SPRINGFIELD OHIO," and upon the respective sides of the field the words "ROLLER" and "PATENT" in scroll-shaped figures.
Filed September 2, 1905. Serial No. 12,168. PUBLISHED MARCH 20, 1906.

52,673. WOVEN CARPETS AND RUGS. BIGELOW CARPET COMPANY, Boston, Mass.
The word "MIDDLESEX." Used ten years.
Filed September 11, 1905. Serial No. 12,446. PUBLISHED MARCH 20, 1906.

52,674. CORSETS. BIRDSEY & SOMERS, New York, N. Y.
The arbitrarily-selected letters "F. P."
Filed November 8, 1905. Serial No. 14,403. PUBLISHED MARCH 20, 1906.

52,675. CORSETS. BIRDSEY & SOMERS, New York, N. Y.
The word "ARMORSIDE."

Filed November 9, 1905. Serial No. 14,438. PUBLISHED MARCH 20, 1906.

52,676. CORSETS. BIRDSEY & SOMERS, New York, N. Y.
The letters and word "A TO Z."
Filed November 9, 1905. Serial No. 14,440. PUBLISHED MARCH 20, 1906.

52,677. WHISKY. THE GOTTSCHALK CO., Baltimore, Md.
The words "BLUE BIRD."
Filed August 29, 1905. Serial No. 12,072. PUBLISHED MARCH 20 1906.

52,678. POLISHING-PAD FOR FLAT-IRONS. THE GREEDER MANUFACTURING COMPANY, Cincinnati, Ohio.
The representation of a piece of cloth suspended from a clothes-line, and upon the cloth appears the hyphenated word "IRON-SLICK," together with the representation in perspective of a substantially square figure bearing the hyphenated word "IRON-SLICK" on two of its edges, a part of the word "IRON-SLICK" appearing on the distant edge being hidden by the representation of a flat-iron resting upon this perspective of a substantially square figure.
Filed October 28, 1905. Serial No. 14,015. PUBLISHED MARCH 20, 1906.

52,679. CORSETS AND CORSET-WAISTS. THE H & W COMPANY, Newark, N. J.
The letters and character "H & W." Used ten years.
Filed August 11, 1905. Serial No. 11,553. PUBLISHED MARCH 20, 1906.

52,680. CERTAIN NAMED KNIVES AND RAZORS. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill.
The word "REV-O-NOC" and the letters, character, and abbreviation "H. S. B & Co."
Filed October 13, 1905. Serial No. 13,582. PUBLISHED MARCH 20, 1906.

52,681. SEWING-MACHINES AND SEWING-MACHINE PARTS. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill.
The coined word "HIBSPEBAR."
Filed October 21, 1905. Serial No. 13,838. PUBLISHED MARCH 20, 1906.

52,682. CERTAIN NAMED KNIVES AND RAZORS. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill.
The coined word "HIBSPEBAR."
Filed October 21, 1905. Serial No. 13,841. PUBLISHED MARCH 20, 1906.

52,683. CORSETS. KOPS BROS., New York, N. Y.
The word "CELLCLOTH."
Filed November 2, 1905. Serial No. 14,209. PUBLISHED MARCH 20, 1906.

52,684. CANNED FRUITS AND VEGETABLES. PLATT & COMPANY, Baltimore, Md.
The words "BALTIMORE ORIOLE BRAND," associated with the representation of an oriole perched upon a branch of a tree.
Filed October 5, 1905. Serial No. 13,341. PUBLISHED MARCH 20, 1906.

52,685. COTTON DAMASK. ROSEMARY MANUFACTURING COMPANY, Roanoke Rapids, N. C.
The word "ROSEMARY."
Filed October 19, 1905. Serial No. 13,770. PUBLISHED MARCH 20, 1906.

52,686. WHISKY. JOSEPH F. SINNOTT, Philadelphia, Pa.
The representation of a distillery, above which, arranged in a curved line, are the following words and numerals: "GIBSONTON MILLS ON THE MONONGAHELA RIVER, ERECTED 1856," and below which are the words, character, and abbreviation "JOHN GIBSON'S SON & CO'S.," and beneath which is a horizontal panel composed of parallel lines, beneath which are the words "RYE WHISKEY."
Filed September 21, 1905. Serial No. 12,839. PUBLISHED MARCH 20, 1906.

52,687. AXES, HATCHETS, AND ADZES. SUPPLEE HARDWARE COMPANY, Philadelphia, Pa.
The words "RED CHIEFTAIN" and the representation of an Indian camp, showing an Indian in the foreground with a scalp and tomahawk in his hands.
Filed October 21, 1905. Serial No. 13,825. PUBLISHED MARCH 20, 1906.

52,688. WHEAT-FLOUR. THE SWEET SPRINGS MILLING COMPANY, Sweet Springs, Mo.
The representation of a river steamboat, associated with the words "NEW SOUTH," accompanied by the words and abbreviations "SWEET SPRINGS MILLING CO SWEET SPRINGS, MO."
Filed September 2, 1905. Serial No. 12,191. PUBLISHED MARCH 20, 1906.

52,689. WRINGERS. THE AMERICAN WRINGER COMPANY, New York, N. Y.
The word "HOUSEHOLD."
Filed October 14, 1905. Serial No. 13,620. PUBLISHED MARCH 20, 1906.

52,690. PREPARED SHEET-FELT ROOFING. ASBESTOS MANUFACTURING AND ROOFING CO., St. Louis, Mo.
The hyphenated word "MICA-NOID."
Filed August 24, 1905. Serial No. 11,955. PUBLISHED MARCH 20, 1906.

52,691. READY TAR AND FELT ROOFING. BARRETT MANUFACTURING COMPANY, New York, N. Y.
The words "BLACK DIAMOND." Used ten years.
Filed August 26, 1905. Serial No. 12,038. PUBLISHED MARCH 20, 1906.

52,692. WHEAT-FLOUR. BARRETT, DENTON & LYNN COMPANY, Dalton, Ga.
The words "ALPINE SNOW."
Filed November 25, 1905. Serial No. 14,972. PUBLISHED MARCH 20 1906.

52,693. WHEAT-FLOUR. BARRETT, DENTON & LYNN COMPANY, Dalton, Ga.
The word "VICI."
Filed November 25, 1905. Serial No. 14,974. PUBLISHED MARCH 20, 1906.

52,694. CANNED LOBSTER AND CANNED MACKEREL. HARTLEY C. BAXTER, Brunswick, Me.
The word-symbol "PREFERRED STOCK." Used ten years.
Filed January 11, 1906. Serial No. 16,125. PUBLISHED MARCH 20, 1906.

52,695. POLISHING AND CLEANSING PREPARATIONS. LOUISE HAUCK, New York, N. Y.
The word "ULAKA."
Filed December 5, 1905. Serial No. 15,223. PUBLISHED MARCH 20, 1906.

52,696. HAVANA CIGARS. HAVANA COMMERCIAL COMPANY Jersey City, N. J., and New York, N. Y.
The words "MANUEL GARCIA" arranged within the upper band of two bands united by heart-shaped figures forming together a fancy double ellipse, the word "ALONSO" in the center of such double ellipse, and the word "HABANA" arranged within the lower band. Used ten years.
Filed August 8, 1905. Serial No. 11,422. PUBLISHED MARCH 20, 1906.

52,697. TELEPHONES AND PARTS THEREOF. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill.
The word "REV-O-NOC" and the letters, character, and abbreviation "H. S. B & Co."
Filed October 13, 1905. Serial No. 13,585. PUBLISHED MARCH 20, 1906.

52,698. WHEAT-FLOUR. THE ISAAC HARTER MILLING COMPANY, Toledo and Fostoria, Ohio.
The word "HARTER'S." Used ten years.
Filed December 16, 1905. Serial No. 15,467. PUBLISHED MARCH 20, 1906.

52,699. MIXED PAINTS. JOHN W. MASURY & SON, Brooklyn, N. Y.
The word "MASURY'S. Used ten years.
Filed September 13, 1905. Serial No. 12,509. PUBLISHED MARCH 20, 1906.

52,700. EDUCATIONAL BOOKS FOR RAILWAY EMPLOYEES. THE RAILWAY EDUCATIONAL ASSOCIATION, New York, N. Y.
The representation of the front of a locomotive. The words "KNOWLEDGE IS POWER" appear on the front of the locomotive.
Filed August 19, 1905. Serial No. 11,804. PUBLISHED MARCH 20, 1906.

52,701. EDUCATIONAL BOOKS FOR RAILWAY EMPLOYEES. THE RAILWAY EDUCATIONAL ASSOCIATION, New York, N. Y.
A star radiating from a circle, inside of which a front view of a locomotive is illustrated. The words "KNOWLEDGE IS POWER" appear on the front of the locomotive, and the words "RAILROADS NEED EDUCATED MEN" appear on the circle from which the points of the star radiate.
Filed August 19, 1905. Serial No. 11,806. PUBLISHED MARCH 20, 1906.

52,702. METAL-POLISHES. CHAS. RATH, Philadelphia, Pa.
The word "IMPERIAL."
Filed July 31, 1905. Serial No. 11,083. PUBLISHED MARCH 20, 1906.

52,703. SHIP-LOGS AND SOUNDING-MACHINES. THOMAS WALKER & SON LIMITED, Birmingham, England.
The word "HARPOON." Used ten years.
Filed August 18, 1905. Serial No. 11,753. PUBLISHED MARCH 20, 1906.

52,704. SHIP-LOGS. THOMAS WALKER & SON LTD., Birmingham, England.
The words "WALKER'S SHIP-LOG A2." Used ten years.
Filed August 18, 1905. Serial No. 11,755. PUBLISHED MARCH 20, 1906.

52,705. SHIP-LOGS AND SOUNDING-MACHINES. THOMAS WALKER & SON LTD., Birmingham, England.
The word "CHERUB." Used ten years.
Filed August 18, 1905. Serial No. 11,756. PUBLISHED MARCH 20, 1906.

52,706. ILLUMINATING-OIL. WEST INDIA OIL COMPANY, New York, N. Y.
A representation of Columbus in association with the words "LUZ SUPERIOR."
Filed October 21, 1905. Serial No. 13,986. PUBLISHED MARCH 20, 1906.

52,707. CIGARETTES. GEORGE H. G. WING, Boston, Mass.
A pictorial representation of overlapping college emblems, associated with the words "ALMA MATER" written across the central portion thereof.
Filed December 11, 1905. Serial No. 15,344. PUBLISHED MARCH 20, 1906.

52,708. LEATHER BOOTS AND SHOES. A. PRIESMEYER SHOE CO., Jefferson City, Mo.
The words "YOUNG AMERICA."
Filed August 12, 1905. Serial No. 11,566. PUBLISHED MARCH 20, 1906.

52,709. GERMICIDE DISINFECTANT. THE ALBO CHEMICAL CO., Cincinnati, Ohio.
The words "SUNLIGHT DIP" on the rays of the sun.
Filed September 28, 1905. Serial No. 13,096. PUBLISHED MARCH 20, 1906.

52,710. MINERAL WATER. THE APOLLINARIS COMPANY, LIMITED, London, England.
The words "THE QUEEN OF TABLE WATERS" surrounded by an ornamental border. Used ten years.
Filed November 4, 1905. Serial No. 14,314. PUBLISHED MARCH 20, 1906.

52,711. WAGONS, CARTS, DRAYS, AND TRUCKS. AUBURN WAGON CO., Martinsburg, W. Va.
An ornamental ribbon arranged in front of a bundle of wheat, said ribbon bearing the words "THE AUBURN MARTINSBURG, W. VA." Used ten years.
Filed September 12, 1905. Serial No. 12,486. PUBLISHED MARCH 20, 1906.

52,712. WOOLEN OR WORSTED FABRICS. BOTANY WORSTED MILLS, Passaic, N. J., and New York, N. Y.
The representation of a female figure seated at a spinning-wheel surrounded by a wreath, and the head of a deer and a bee, each arranged in a wreath, together with the representation of a cross and the letters "B W M P" arranged in the arms thereof, inclosed in two concentric ornamental borders, between which appear the words "BOTANY WORSTED MILLS, PASSAIC, N. J." and two stars.
Filed April 11, 1905. Serial No. 1,182. PUBLISHED MARCH 20, 1906.

52,713. WHISKY. JAMES M. CARROLL, Torrington, Conn.
A pictorial representation of the birthplace of John Brown inclosed in a border having thereon the words "BIRTH PLACE OF JOHN BROWN HERO OF HARPER'S FERRY BORN IN TORRINGTON, CONN. MAY 9TH 1800."
Filed October 20, 1905. Serial No. 13,779. PUBLISHED MARCH 20, 1906.

52,714. CIGARS, CHEROOTS, AND CIGARETTES MADE OF CIGAR-TOBACCO. CAYEY-CAGUAS TOBACCO COMPANY, New York, N. Y., and Caguas, Porto Rico.
A representation of a tobacco-plant with a cigar underneath, all inclosed in a conventionalized trefoil, the base being rounded.
Filed September 23, 1905. Serial No. 12,940. PUBLISHED MARCH 20, 1906.

52,715. REMEDIES FOR INTERNAL USE. CHESTER KENT & Co., Boston, Mass.
The word "VINOL."
Filed June 3, 1905. Serial No. 7,335. PUBLISHED NOVEMBER 7, 1905.

52,716. BURNERS FOR ACETYLENE AND OTHER GASES. CRESCENT BURNER MANUFACTURING CO., New York, N. Y.
The word "CRESCENT" upon a representation of a crescent-shaped figure.
Filed September 25, 1905. Serial No. 12,962. PUBLISHED MARCH 20, 1906.

52,717. KNIT GOODS IN THE PIECE. FRENCH & WARD, New York, N. Y., and West Stoughton, Mass.
The word "KRINKLEDOWN."
Filed February 16, 1906. Serial No. 17,102. PUBLISHED MARCH 20, 1906.

52,718. SILK LININGS AND DRESS-SILKS. GOETZ SILK MANUFACTURING COMPANY, Holyoke, Mass.
A square outline within which is a four-pointed star, each point of said star intersecting an angle of said square. Upon the star is a circle within which is a ring, across the face of which ring is a bar running from left to right, upon which are the words "GUARANTEED PURE DYE." Within said ring and above said bar is the name "GOETZ" and within said ring and below said bar the word "SILKS."
Filed November 20, 1905. Serial No. 14,813. PUBLISHED MARCH 20, 1906.

52,719. PORCELAIN WARE OF ALL KINDS. ADOLF HAMANN, Dresden, Germany.
The representation of an electoral hat, accompanied by and arranged over the word "DRESDEN."
Filed July 25, 1905. Serial No. 10,775. PUBLISHED MARCH 20, 1906.

52,720. SHAMPOO AND SCALP-CLEANSING PREPARATIONS. LOUISE HAUCK, New York, N. Y.
The word "POTULA."
Filed December 5, 1905. Serial No. 15,222. PUBLISHED MARCH 20, 1906.

52,721. SILVER-PLATED HOLLOW WARE, FLAT WARE, AND TABLEWARE. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill.
The word "REV-O-NOC" and the letters, character, and abbreviation "H. S. B & Co."
Filed October 13, 1905. Serial No. 13,581. PUBLISHED MARCH 20, 1906.

52,722. HARNESS, SADDLES, AND PARTS THEREOF. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill.
The word "REV-O-NOC" and the letters, character, and abbreviation "H. S. B & Co."
Filed October 13, 1905. Serial No. 13,584. PUBLISHED MARCH 20, 1906.

52,723. HARNESS, SADDLES, AND PARTS THEREOF. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill.
The coined word "HIBSPEBAR."
Filed October 21, 1905. Serial No. 13,840. PUBLISHED MARCH 20, 1906.

52,724. SILVER-PLATED HOLLOW WARE, FLAT WARE, AND TABLEWARE. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill.
The coined word "HIBSPEBAR."
Filed October 21, 1905. Serial No. 13,842. PUBLISHED MARCH 20, 1906.

52,725. WEEKLY PERIODICAL. WILLIAM J. JOHNSTON, New York, N. Y.
The words "MINING MAGAZINE."
Filed September 1, 1905. Serial No. 12,140. PUBLISHED MARCH 20, 1906.

52,726. BLOOD-PURIFIER AND LIVER-TONIC. AUGUSTUS A. KLEINSCHMIDT, St. Louis, Mo.
The word "LIVEREASE" and the facsimile signature "A. A. KLEINSCHMIDT" printed across the word.

Filed April 17, 1905. Serial No. 2,002. PUBLISHED MARCH 20, 1906.

52,727. COTTON-BATTING. WILLIAM LOWENTHAL, Cohoes, N. Y.

The word "DAISY" in quotation-marks.

Filed November 21, 1905. Serial No. 14,884. PUBLISHED MARCH 20, 1906.

52,728. WHISKY. MARYLAND DISTILLING CO., Baltimore, Md.

The word "CALVERT." Used ten years.

Filed August 12, 1905. Serial No. 11,613. PUBLISHED MARCH 20, 1906.

52,729. CERTAIN NAMED CHEMICAL PREPARATIONS. MCKESSON & ROBBINS, New York, N. Y.

The word "GUAIAQUIN."

Filed May 10, 1905. Serial No. 4,891. PUBLISHED MARCH 20, 1906.

52,730. ROASTED COFFEES. OKLAHOMA WHOLESALE GROCER CO., Oklahoma, Okla. Ter.

The word "QUAIL" and the picture of a quail standing on a log and surrounded by an ornamental framework border.

Filed January 23, 1906. Serial No. 16,416. PUBLISHED MARCH 20, 1906.

52,731. BOOK AND COVER PAPER. PENINSULAR PAPER CO., Ypsilanti, Mich.

The representation of a shield mounted by a crown and a monogram of the letters "P P C" appearing on the shield.

Filed July 17, 1905. Serial No. 10,459. PUBLISHED MARCH 20, 1906.

52,732. COATS, VESTS, PANTALOONS, OVERCOATS, AND MEN'S AND BOYS' SUITS. PERRY & CO., Philadelphia, Pa.

The letters "N. B. T.," each followed by a period.

Filed November 21, 1905. Serial No. 14,867. PUBLISHED MARCH 20, 1906.

52,733. CERTAIN NAMED POLISH. AMOS L. PRESCOTT, New York, N. Y.

A dark rectangular panel with rounded corners, upon which appears the arbitrarily-selected word "VULCANOL," associated with the words "BETTER THAN STOVE POLISH."

Filed November 2, 1905. Serial No. 14,206. PUBLISHED MARCH 20, 1906.

52,734. BAKING-POWDER. PRICE BAKING POWDER COMPANY, Chicago, Ill.

The representation of a blue circular disk surrounded by a gold border composed of a wreath of leaves inclosing a collocation of printed matter. The printed matter reads "HIGHEST MEDAL AWARDED DR. PRICE'S CREAM BAKING POWDER WORLD'S COLUMBIAN EXPOSITION." Used ten years.

Filed August 12, 1905. Serial No. 11,571. PUBLISHED MARCH 20, 1906.

52,735. FIREPROOF STARCH. PRICE FIREPROOFING COMPANY, Poughkeepsie, N. Y.

The hyphenated word "FIRE-FOE."

Filed May 9, 1905. Serial No. 4,797. PUBLISHED MARCH 20, 1906.

52,736. MATTRESSES. CHARLES W. WHITE, Waco, Tex.

The word-symbols "WHITE'S COTTODOWN" beneath a picture representing falling particles of fiber. The picture is inclosed in a rectangular frame, and the falling particles are represented as entering in a stream at one side and near the top of the frame.

Filed May 16, 1905. Serial No. 5,834. PUBLISHED MARCH 20, 1906.

52,737. WHISKY. FRED. S. SCHERER, Utica, N. Y.

The words "OLD NIP," with scrollwork on either side thereof, associated with the picture of an old man holding a glass of whisky in his right hand, inclosed in an ornamental border with scrollwork.

Filed October 23, 1905. Serial No. 13,873. PUBLISHED MARCH 20, 1906.

52,738. OILSTONES, WATERSTONES, WHETSTONES, HONES, AND GRINDSTONES. THE SCRANTON WHETSTONE AND ABRASIVE WHEEL CO., Scranton, Pa.

The word "IDEAL" and the representation of the ideal flower appearing on the representation of a keystone superimposed on a serrated seal.

Filed November 3, 1905. Serial No. 14,232. PUBLISHED MARCH 20, 1906.

52,739. COFFEE. SPRAGUE, WARNER & COMPANY, Chicago, Ill.

The arbitrarily-selected word "FERNDELL."

Filed January 24, 1906. Serial No. 16,473. PUBLISHED MARCH 20, 1906.

52,740. TEA. SPRAGUE, WARNER & COMPANY, Chicago, Ill.

The arbitrarily-selected word "FERNDELL."

Filed January 24, 1906. Serial No. 16,474. PUBLISHED MARCH 20, 1906.

52,741. WHEAT-FLOUR. THE SWEET SPRINGS MILLING COMPANY, Sweet Springs, Mo.

The representation of the capital letter "C" inclosing the words "HIGH PATENT" and bearing upon the upper arm the words and abbreviation "SWEET SPRINGS MILLING CO." and upon the lower arm the words and abbreviation "SWEET SPRINGS, MO."

Filed September 2, 1905. Serial No. 12,192. PUBLISHED MARCH 20, 1906.

52,742. WOOLEN CLOTH. TALBOT MILLS, Billerica, Mass.

The letter "T" in fanciful type resting upon a base-piece, a sheep's head at the right of the letter and partially imposed thereon, in the top or crossing of the "T" the words "TALBOT MILLS," and below the crossing at the left of the "T" the abbreviation "ESTAB." and on the right thereof "1857."

Filed November 24, 1905. Serial No. 14,956. PUBLISHED MARCH 20, 1906.

52,743. RECLAIMED RUBBER. U. S. RUBBER RECLAIMING WORKS OF NEW YORK, New York, N. Y.

A representation of a Maltese cross inclosed in a circle, with the words "RECLAIMED MATCHLESS RUBBER" upon the cross.

Filed August 24, 1905. Serial No. 11,962. PUBLISHED MARCH 20, 1906.

52,744. RECLAIMED RUBBER. U. S. RUBBER RECLAIMING WORKS OF NEW YORK, New York, N. Y.

The representation of a Maltese cross inclosing the capital letter "D" and the words "RECLAIMED RUBBER."

Filed October 26, 1905. Serial No. 13,963. PUBLISHED MARCH 20, 1906.

52,745. RECLAIMED RUBBER. U. S. RUBBER RECLAIMING WORKS OF NEW YORK, New York, N. Y.

The representation of a Maltese cross with the words "RECLAIMED PEERLESS RUBBER" arranged within the cross, the whole inclosed in a circle.

Filed November 1, 1905. Serial No. 14,162. PUBLISHED MARCH 20, 1906.

52,746. WHISKY. VAN VLEET-MANSFIELD DRUG CO., Memphis, Tenn.

The words "WAYSIDE INN."

Filed August 2, 1905. Serial No. 11,181. PUBLISHED MARCH 20, 1906.

52,747. MEDICINES IN PILL FORM. WILLIAM R. WARNER & CO., Philadelphia, Pa.

The arbitrary word "PARVULES." Used ten years.

Filed April 14, 1905. Serial No. 1,498. PUBLISHED MARCH 20, 1906.

52,748. WHEAT-FLOUR. WASHBURN-CROSBY COMPANY, Minneapolis, Minn.

The words "GIANT POWDER."

Filed September 2, 1905. Serial No. 12,170. PUBLISHED MARCH 20, 1906.

52,749. CLOCKS. YEAR CLOCK COMPANY, Mount Vernon, N. Y.

The capital letter "Y" flanked on its respective sides by the words "NEW" and "YORK" and having above the same the words and abbreviation "YEAR-CLOCK-CO."

Filed September 2, 1905. Serial No. 12,164. PUBLISHED MARCH 20, 1906.

52,750. GELATIN. AMERICAN GLUE CO., Boston, Mass.

The representation of a shield divided by a horizontal line into an upper field bearing the word "UNION" and a lower field on which the word "GRADE" appears.

Filed December 1, 1905. Serial No. 15,105. PUBLISHED MARCH 20, 1906.

52,751. COPPER. BALTIMORE COPPER SMELTING & ROLLING CO., Baltimore, Md.

The letters "B. E. R" arranged horizontally within a circle with periods after the letters "B." and "E." Above the letters are the letters and character "B. C. S. & R. Co." and below the word "BALTIMORE." Connected to the circle at the bottom is a panel within which are the letters "U. S. A."

Filed August 10, 1905. Serial No. 11,622. PUBLISHED MARCH 20, 1906.

52,752. POCKET-KNIVES. GRAEF & SCHMIDT, New York, N. Y.

The representation of a spider's web with a spider thereupon.

Filed August 16, 1905. Serial No. 11,691. PUBLISHED MARCH 20, 1906.

52,753. OLIVE-OIL. ROBERT HILL, New York, N. Y.

The representation of an olive orchard with the figure of a woman in the background supporting a basket on her head. The entire view is inclosed in a rectangular border composed of thick outer lines and light inner lines, said inner lines having rounded corners.

Filed December 4, 1905. Serial No. 15,163. PUBLISHED MARCH 20, 1906.

52,754. OLIVE-OIL. ROBERT HILL, New York, N. Y.

The representation of the sun bearing on its face the features of a man surrounded by an irregular radiance and by diverging rays. Above the representation of the sun appear the words "OLIO D'OLIVA SOPRAFFINO." Beneath appears a transverse panel bearing the words "FRATELLI BORELLI E CO" and below this the words "LUCCA ITALY," the whole being inclosed in a border with rounded corners.

Filed December 4, 1905. Serial No. 15,164. PUBLISHED MARCH 20, 1906.

52,755. OLIVE-OIL. ROBERT HILL, New York, N. Y.

The representation of an Italian gentleman wearing a plumed hat and a cloak and holding in both hands his drawn sword, associated with a monogram of the letters "T F" inclosed in concentric circles. Above appear the words "OLIO D'OLIVA SOPRAFFINO" and upon a ribbon the words "TEODORO FAGILLA" and below this the words "LIVORNO, ITALY," the whole being surrounded by a border.

Filed December 4, 1905. Serial No. 15,165. PUBLISHED MARCH 20, 1906.

52,756. FISHING-RODS. THE HORTON MANUFACTURING COMPANY, Bristol, Conn.

The word "RAINBOW."

Filed December 4, 1905. Serial No. 15,186. PUBLISHED MARCH 20, 1906.

52,757. SILVER-PLATED HOLLOW WARE. INTERNATIONAL SILVER COMPANY, Meriden, Conn.

The words "AMERICAN SILVER PLATE CO." disposed around a circle inclosing the word "QUADRUPLE." Used ten years.

Filed November 10, 1905. Serial No. 14,477. PUBLISHED MARCH 20, 1906.

52,758. MALT EXTRACTS. M. K. GOETZ BREWING CO., St. Joseph, Mo.

The word "GOETZ." Used ten years.

Filed November 17, 1905. Serial No. 14,765. PUBLISHED MARCH 20, 1906.

52,759. BEER. N. BENJAMIN SON INC., Brooklyn, N. Y.

The portrait of Benjamin Benjamin, secretary of N. Benjamin Son Inc.

Filed November 28, 1905. Serial No. 15,051. PUBLISHED MARCH 20, 1906.

52,760. LEATHER BOOTS AND SHOES. THOMAS F. PEIRCE & SON, Providence, R. I.

A conventional form or figure somewhat resembling a fleur-de-lis, with the letters "T. F. P. & SON" on said figure, a panel horizontally crossing the figure below the middle portion, said panel containing the following: "ESTABLISHED 1836."

Filed November 20, 1905. Serial No. 14,856. PUBLISHED MARCH 20, 1906.

52,761. ORANGES, LEMONS, GRAPE-FRUIT, TANGERINES, AND MANDARINS. RUSSELL & COMPANY, Fort Ogden, Fla., and New York, N. Y.

An outline of the State of Florida having thereon the words "FLORIDA SUNNY SOUTH FARMS FORT OGDEN," appearing on a circular field surrounded by radiating tongues of flame and the words "SUNNY SOUTH FARMS."

Filed November 25, 1905. Serial No. 14,996. PUBLISHED MARCH 20, 1906.

52,762. LAGER-BEER AND BOTTLED BEER. TERRE HAUTE BREWING CO., Terre Haute, Ind.

The representation of a cornucopia ornamented with barley-heads and hop-blossoms and an eagle poised thereon and the words "TERRE HAUTE BEER" spanning said representation, the body of the eagle resting in the letter "U" of the word "HAUTE," and all inclosed in concentric circles.

Filed April 24, 1905. Serial No. 2,901. PUBLISHED MARCH 20, 1906.

52,763. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio.

The word "AUTOBIKE."

Filed January 25, 1906. Serial No. 16,489. PUBLISHED MARCH 20, 1906.

52,764. MONTHLY MAGAZINES. THE WORLD TODAY COMPANY, Chicago, Ill.

The words "THE WORLD TO-DAY."

Filed December 6, 1905. Serial No. 15,234. PUBLISHED MARCH 20, 1906.

52,765. BREAKFAST-FOOD, ROLLED OATS, AND OATMEAL. THE AMERICAN CEREAL COMPANY, Akron, Ohio; Chicago, Ill., and Cedar Rapids, Iowa.

The words "VICTOR OATS" and the representation of a stag's head.

Filed July 26 1905. Serial No. 10,855. PUBLISHED MARCH 20, 1906.

52,766. CHAMPAGNE OR SPARKLING WINE. AMERICAN WINE CO., St. Louis, Mo.

The representation of a six-pointed star in solid color upon a black circular background or disk, which in turn is surrounded by a circular white border, said star bearing the words "COOK'S IMPERIAL."

Filed April 20, 1905. Serial No. 2,397. PUBLISHED MARCH 20, 1906.

52,767. EXTRACT MADE FROM MALT AND HOPS. ANHEUSER-BUSCH BREWING ASSOCIATION, St. Louis, Mo.

The word "INO."

Filed July 3, 1905. Serial No. 9,781. PUBLISHED MARCH 20, 1906.

52,768. HERB BITTERS. ASCHENBACH & MILLER, Philadelphia, Pa., assignors to Aschenbach & Miller, Incorporated, a Corporation of Pennsylvania.

The words "MISHLER'S HERB BITTERS" and the representation of a sea scene inclosed in an ornamental border of scrolls, leaves, and flowers and showing the rising sun in the background, an anchor in the foreground, and a cable wound around the shank of the anchor. Used ten years.

Filed July 8, 1905. Serial No. 9,931. PUBLISHED MARCH 20, 1906.

52,769. CERTAIN NAMED MEDICINAL PREPARATIONS. HENRY A. BLAIR, San Antonio, Tex.

The words "KYEZOR'S CHIMNEY SWEEPER," associated with a band of red and a band of green.

Filed April 21, 1905. Serial No. 2,548. PUBLISHED MARCH 20, 1906.

52,770. CANNED FRUITS. CALIFORNIA CANNERIES CO., San Francisco, Cal.

The representation of a bear in an upright position with fore paws engaging a can of applicant's goods and a landscape and small bears in the background in different positions and each holding a can.

Filed April 24, 1905. Serial No. 2,936. PUBLISHED MARCH 20, 1906.

52,771. CASTOR-OIL CONFECTION. CASTOR OIL TABLET CO., New York, N. Y.

The letters "C" and "O" arranged upon an oval-shaped tablet. Within the letter "C" is the word "ASTOR," and within the letter "O" is the word "VAL." Upon the edge of the tablet, in plain block letters, appear the words "THE ONLY CASTOR OIL CONFECTION."

Filed November 28, 1905. Serial No. 15,036. PUBLISHED MARCH 20, 1906.

52,772. LIQUID MAGNESIA PREPARATION. THE CHAS. H. PHILLIPS CHEMICAL CO., New York, N. Y.

The monogram containing the letters of the word "PHILLIPS," said monogram being on a shield which is surrounded by a buckled strap. Used ten years.

Filed January 3, 1906. Serial No. 15,846. PUBLISHED MARCH 20, 1906.

52,773. MEDICINAL COMPOUND. CHELF CHEMICAL CO., Richmond, Va.

The words and abbreviation "CHELF'S CELERY-CAFFEIN COMP."

Filed September 14, 1905. Serial No. 12,553. PUBLISHED MARCH 20 1906.

52,774. WHEAT-FLOUR. GEO. T. EVANS & SON, Indianapolis, Ind.

The words "EVANS' OSOFINE FLOUR" arranged on a figure representing a flour-sack, the words "OSOFINE" and "FLOUR" separated by the picture of a bunch of asters. Below the word "FLOUR" are the words "HOOSIER FLOUR MILLS INDIANAPOLIS, IND." The whole is surrounded by the words "OSOFINE" on either side, "FANCY PATENT" above, and "FROM SELECTED HARD WHEAT" and "GEO. T. EVANS & SON, INDIANAPOLIS." below.

Filed September 2, 1905. Serial No. 12,195. PUBLISHED MARCH 20, 1906.

52,775. BLEACHED COTTON GOODS. FALL RIVER BLEACHERY, Fall River, Mass.

A diamond-shaped figure with labyrinthic ornamentation at the four corners inclosing the words "GUARANTEED PURE FINISH. ABSOLUTELY FREE FROM MINERAL SUBSTANCES." Above the figure the word and figures "ESTABLISHED 1872" appear, while below the figure the words "FALL RIVER BLEACHERY" and a facsimile of the signature of "SPENCER BORDEN TREAS." appear.

Filed June 26, 1905. Serial No. 9,095. PUBLISHED MARCH 20, 1906.

52,776. FOOD FOR CATS AND KITTENS. WILLIAM W. FRENCH, Gloucester and Boston, Mass.

The name "KITTY-KAKE" and the representation of a domestic cat seated upon a cushion.

Filed February 23, 1906. Serial No. 17,299. PUBLISHED MARCH 20, 1906.

52,777. PIE-FILLINGS. HUBERT C. GUTCHESS, Port Byron, N. Y.

The word "IMPERIAL."

Filed August 3, 1905. Serial No. 11,230. PUBLISHED MARCH 20, 1906.

52,778. ANTISEPTIC OR DISINFECTING CHEMICAL COMPOUND. HANCE BROS. & WHITE, Philadelphia, Pa.

The word "PHENOLINE." Used ten years.

Filed May 15, 1905. Serial No. 5,686. PUBLISHED MARCH 20, 1906.

52,779. INTERNAL REMEDY FOR HEADACHE. CHARLES B. HUDON, Manchester, N. H.

The arbitrary word "MIKADO."

Filed January 4, 1906. Serial No. 15,890. PUBLISHED MARCH 20, 1906.

52,780. VERMICIDE. CYRUS LAWALL'S SON & CO., Easton, Pa.

The word "KILMITOL."

Filed September 8, 1905. Serial No. 12,370. PUBLISHED MARCH 20, 1906.

52,781. INSECTICIDES. LEGGETT & BROTHER, New York, N. Y.

The representation of a woman applying a liquid upon a bedstead, the representation of a bedbug arranged at the left thereof, and the representation of an oil-can surrounded by the words "LEGGETT'S MAGIC FLUID KILLS BED BUGS" arranged at the right thereof, each of said representations being surrounded by a rectangular border and the whole being inclosed by a rectangular border, within which are the words "MAGIC FLUID FOR BED BUGS" arranged immediately above the middle representation. Used ten years.

Filed April 24, 1905. Serial No. 2,812. PUBLISHED MARCH 20, 1906.

52,782. BEEF EXTRACTS AND BEEF, IRON, AND WINE. LIEBIG EXTRACT COMPANY, New York, N. Y.

The representation of a combined red crown and red Greek cross.

Filed August 19, 1905. Serial No. 11,791. PUBLISHED MARCH 20, 1906.

52,783. VANILLIN AND CUMARIN. GEORGE LUEDERS & CO., New York, N. Y.; Chicago, Ill., and San Francisco, Cal.

The word "VERA."

Filed April 15, 1905. Serial No. 1,698. PUBLISHED MARCH 20, 1906.

52,784. REMEDY FOR THE CURE OF ST. VITUS' DANCE OR CHOREA. SUSANNA W. MACKRELL, Asbury Park, N. J.

The words "ST. VITUS' REMEDY" inclosed by a border. Used ten years.

Filed July 11, 1905. Serial No. 10,122. PUBLISHED MARCH 20, 1906.

52,785. WHISKY. MORRIN-POWERS MERC. CO., Kansas City, Mo.

The word "PALMETTO."

Filed June 24, 1905. Serial No. 8,959. PUBLISHED MARCH 20, 1906.

52,786. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill.

The designation "WHITE STAR." Used ten years.

Filed April 1, 1905. Serial No. 42. PUBLISHED MARCH 20, 1906.

52,787. PREPARED FATTY, OLEAGINOUS, OR UNCTUOUS FOOD SUBSTANCES. THE N. K. FAIRBANK COMPANY, Chicago, Ill.

The coined word "COTTOLENE." Used ten years.

Filed July 13, 1905. Serial No. 10,234. PUBLISHED MARCH 20, 1906.

52,788. FIRE-EXTINGUISHER IN POWDERED FORM. THE NEVERMYSS FIRE EXTINGUISHER COMPANY, Middletown, N. Y.

A circular panel bearing scrollwork and a flaming torch partially covered by a winged shield and the whole associated with the words "THE NEVERMYSS FIRE EXTINGUISHER."

Filed November 16, 1905. Serial No. 14,725. PUBLISHED MARCH 20, 1906.

52,789. REMEDY FOR THE TREATMENT AND PREVENTION OF DISEASES PECULIAR TO WOMEN. JOHN MILTON OLDFIELD, Philadelphia, Pa.

A panel containing the trunks of two trees, entwined about which and connected together at the top and about the upper central portion of the panel are two grape-vines with clusters of grapes suspended therefrom, associated with the words "WILD GRAPE."

Filed April 17, 1905. Serial No. 2,082. PUBLISHED MARCH 20, 1906.

52,790. REMEDIES FOR BLOAT IN ANIMALS. PRATT FOOD CO., Philadelphia, Pa.

The representation of a red seal having thereon a blue segment and disk, with the word "PRATT'S" on the segment, the word "BLOAT" on the seal, and the word "CURE" on the disk.

Filed September 15, 1905. Serial No. 12,658. PUBLISHED MARCH 20, 1906.

52,791. STOCK-FOOD. MARION W. SAVAGE, Minneapolis, Minn.

The numeral and words "3 FEEDS FOR ONE CENT."

Filed February 10, 1906. Serial No. 16,892. PUBLISHED MARCH 13, 1906.

52,792. CURE FOR RHEUMATISM. JAMES L. SMEDLEY, New York, N. Y.

The word "VOLCANA."

Filed January 2, 1906. Serial No. 15,836. PUBLISHED MARCH 20, 1906.

52,793. PUDDINGS. ARISTOTLE TSAKONA, San Francisco, Cal.

The word "HELIOS."

Filed February 23, 1906. Serial No. 17,273. PUBLISHED MARCH 20, 1906.

52,794. HAIR-VIGOR AND DANDRUFF CURE. JERRIE B. WALL, Ardmore, Ind. Ter.

The words "TRUMPET HAIR VIGOR AND DANDRUFF CURE" and the representation of a trumpet, the words "AND DANDRUFF CURE" appearing on a scroll beneath the trumpet.

Filed August 18, 1905. Serial No. 11,771. PUBLISHED MARCH 20, 1906.

52,795. PREPARATIONS FOR COLORING BUTTER. WELLS & RICHARDSON COMPANY, Burlington, Vt.

The representation of a dandelion flower and plant substantially as shown.

Filed September 9, 1905. Serial No. 12,426. PUBLISHED MARCH 20, 1906.

52,796. CURE OR SPECIFIC FOR NEURALGIA. EDWARD B. WHITE, Lancaster, Ohio.

A representation of a knife, through the central portion of the blade of which extend the letters forming the word "NEURALGIA."

The word "NEURAL" appears in relatively small type on the lower portion of the blade below the parts of the letters forming the word "NEURALGIA," which are presented as extending above the upper side of the blade.

Filed January 3, 1906. Serial No. 15,847. PUBLISHED MARCH 20, 1906.

52,797. EXTERNAL REMEDY FOR ANIMALS. ALBERT B. YOUNG, Buffalo, N. Y.

The representation of a barn of the hip-roof type with a silo in rear of the same.

Filed January 2, 1906. Serial No. 15,803. PUBLISHED MARCH 20, 1906.

52,798. EXTERNAL REMEDY FOR ANIMALS. ALBERT B. YOUNG, Buffalo, N. Y.

The hyphenated word "SOZO-NUX."

Filed January 2, 1906 Serial No. 15,804. PUBLISHED MARCH 20, 1906.

52,799. OLIVE-OIL. AKERMAN & TUFFLEY, North San Diego, Cal.

The words "OLD MISSION" and a pictorial representation of an old mission building set in a landscape showing an uncultivated area of grass and semitropical undergrowth in the middle distance and two tall palm-trees in the foreground.

Filed November 23, 1905. Serial No. 14,910. PUBLISHED MARCH 20, 1906.

52,800. PREPARED CEREAL FOOD. THE AMERICAN CEREAL COMPANY, Akron, Ohio; Chicago, Ill., and Cedar Rapids, Iowa.

The word "APITEZO."

Filed May 15, 1905. Serial No. 5,612. PUBLISHED MARCH 20, 1906.

52,801. GLUE. AMERICAN GLUE CO., Boston, Mass.

The representation of a shield, the word "UNION" in the upper portion of the shield and the word "CABINET" just below, a line dividing the face of the shield into two unequal areas.

Filed December 1, 1905. Serial No. 15,102. PUBLISHED MARCH 20, 1906.

52,802. GLUE. AMERICAN GLUE CO., Boston, Mass.

The representation of a shield, the word "UNION" in the upper portion of the shield, a line dividing the shield into two unequal areas, the words "COLLE" and "EXTRA," arranged substantially on the perimeter of a circle, being shown in the lower and larger area.

Filed December 1, 1905. Serial No. 15,103. PUBLISHED MARCH 20, 1906.

52,803. WALL-PAPERS. BAECK WALL PAPER CO., New York, N. Y.

The word "MURALIA" within quotation-marks.

Filed February 1, 1906. Serial No. 16,670. PUBLISHED MARCH 20, 1906.

52,804. WHEAT-FLOUR. BARRETT, DENTON & LYNN COMPANY, Dalton, Ga.

The word-symbol "ACME."

Filed November 25, 1905. Serial No. 14,975. PUBLISHED MARCH 20, 1906.

52,805. TONICS AND REMEDIES FOR DYSPEPSIA AND STOMACH AND INTESTINAL DISORDERS. VICTOR E. BECK, New York, N. Y.

The word "RONUMA," the same appearing upon an escutcheon-like shield and a scroll appearing above and below the said word.

Filed September 20, 1905. Serial No. 12,796. PUBLISHED MARCH 20, 1906.

52,806. HAIR-DRESSING. CARRIE V. DORMAN, Washington, D. C.

The word "JATAMANSI." Used ten years.

Filed November 11, 1905. Serial No. 14,496. PUBLISHED MARCH 20, 1906.

52,807. METALLIC TIPS FOR LEAD-PENCILS. EAGLE PENCIL COMPANY, New York, N. Y.

A circumferential band of red color contrasting with a yellow or gold color on each side thereof and produced on a lead-pencil tip.

Filed December 28, 1905. Serial No. 15,729. PUBLISHED MARCH 20, 1906.

52,808. TOOTH-BRUSHES. FLORENCE MANUFACTURING COMPANY, Northampton, Mass.

The numeral "2" inclosed in a circle.

Filed February 23, 1906. Serial No. 17,280. PUBLISHED MARCH 20, 1906.

52,809. CULINARY UTENSILS MADE OF COPPER WARE. THE LISK MANUFACTURING CO., LIMITED, Canandaigua, N. Y.

The representation of a Maltese cross and the word "LISK" in the middle of the cross. Used ten years.

Filed February 19, 1906. Serial No. 17,165. PUBLISHED MARCH 20, 1906.

52,810. OLIVE-OIL AND SALAD-OIL FOR TABLE USE AND COOKING. GEORGE LUEDERS & CO., New York, N. Y.; Chicago, Ill., and San Francisco, Cal.

The words "DE LUXE." Used ten years.

Filed April 15, 1905. Serial No. 1,697. PUBLISHED MARCH 20, 1906.

52,811. EYELETS FOR SHOES. MANUFACTURE FRANÇAISE D'OEILLETS MÉTALLIQUES (ANCIENNE MAISON G. BAC,) Paris, France.

A lion passant standing upon a bar or chevron and with the upraised dexter fore paw resting upon or supporting a scroll or scroll-shaped shield of appreciable thickness. The scroll bears the representation of a four-oared galley with three sails sailing counter. The device is inclosed in concentric circles, the outer a heavy and the inner a light one. Above the device, concentric interiorly with the circle, is a scroll of semicircular extent bearing the figures and words "ŒILLETS RENFORCÉS" and below the bar or chevron and parallel therewith the letters "NO."

Filed September 8, 1905. Serial No. 12,387. PUBLISHED MARCH 20, 1906.

52,812. LEATHER BOOTS AND SHOES. NATHANIEL M. NELSON, Haverhill, Mass.

The word "KENOZA."

Filed February 10, 1906. Serial No. 16,898. PUBLISHED MARCH 20, 1906.

52,813. EXTRACT OF SARSAPARILLA. NOSTRAND TRADING CO., New York, N. Y.

The words "DR. TOWNSEND'S SARSAPARILLA." Used ten years

Filed October 25, 1905. Serial No. 13,920. PUBLISHED MARCH 20, 1906.

52,814. EXTRACT OF SARSAPARILLA. NOSTRAND TRADING CO., New York, N. Y.

The facsimile signature "S. P TOWNSEND."

Filed October 25, 1905. Serial No. 13,921. PUBLISHED MARCH 20, 1906.

52,815. EXTRACT OF SARSAPARILLA. NOSTRAND TRADING CO., New York, N. Y.

An allegorical representation showing the bust of Dr. S. P. Townsend inclosed in a frame held in the hands of an angel, with the figure of a woman whose hand points toward said bust and a female figure below gazing upwardly, together with the representation of a building.

Filed October 25, 1905. Serial No. 13,922. PUBLISHED MARCH 20, 1906.

52,816. LEATHER BOOTS, SHOES, AND SLIPPERS. PARKER HOLMES & COMPANY, Boston, Mass.

The words "OUR DAISY," together with the representation of a girl holding out a daisy and seated on the ground among a field of daisies, a boy lying on the ground, and a dog between them. Used ten years.

Filed August 14, 1905. Serial No. 11,646. PUBLISHED MARCH 20, 1906.

52,817. LANTERN-BURNERS. R. E. DIETZ COMPANY, New York, N. Y.

The word "CONVEX." Used ten years.

Filed February 19, 1906. Serial No. 17,172. PUBLISHED MARCH 20, 1906.

52,818. SHEEPSKINS HAVING A SPECIAL FINISH. RICHARD YOUNG COMPANY, New York, N. Y.

The words "CAPT. KIDD," associated with which is the representation of a man holding two pistols, a sailing vessel in the distance, and the words "RICHARD YOUNG CO. NEW YORK AND BOSTON."

Filed February 20, 1906. Serial No. 17,202. PUBLISHED MARCH 20, 1906.

52,819. WHEAT-FLOUR. SLEEPY EYE MILLING COMPANY, Sleepy Eye, Minn.

The words "OLD SLEEPY EYE," associated with the representation of an Indian's head in side view wearing a head-dress of feathers and ornaments.

Filed May 29, 1905. Serial No. 6,958. PUBLISHED OCTOBER 24, 1905.

52,820. SPIRAL, SECTIONAL RING, FLAX, AND SHEET PACKING. SPECK, MARSHALL & Co., Pittsburg, Pa.

The word "GEM."

Filed February 17, 1906. Serial No. 17,126. PUBLISHED MARCH 20, 1906.

52,821. RUBBER HOSE. SPECK, MARSHALL & Co., Pittsburg, Pa.

The word "ANVIL."

Filed February 17, 1906. Serial No. 17,127. PUBLISHED MARCH 20, 1906.

52,822. RUBBER BELTING. SPECK, MARSHALL & Co., Pittsburg, Pa.

The word "INVINCIBLE."

Filed February 17, 1906. Serial No. 17,128. PUBLISHED MARCH 20, 1906.

52,823. TOILET-PAPER. THOMAS F. SPRIGG, Baltimore, Md.

The word "JUMBO," in connection with the representation of a witch-hazel plant, and the words "WITCH HAZEL," "TOILET PAPER," "THOROUGHLY MEDICATED," and "EXPRESSLY PREPARED, AND FOR FINE DRUGGISTS' TRADE."

Filed December 26, 1905. Serial No. 15,649. PUBLISHED MARCH 20, 1906.

52,824. RINGS. WARREN & WILLIAMS, Providence, R. I.

The monogram "W W" and the character "&" arranged just above the center of the monogram.

Filed February 17, 1906. Serial No. 17,138. PUBLISHED MARCH 20, 1906.

LABELS

REGISTERED MAY 15, 1906.

12,872.—*Title:* "PURA WORLD'S-BEST." (For Coffee.) JAMES J. COLLINS, Boston, Mass. Filed March 24, 1906.

12,873.—*Title:* "FRAGRANT SHAMROCK." (For Tea.) NATIONAL TEA IMPORTING COMPANY, Salt Lake City, Utah. Filed March 19, 1906.

12,874.—*Title:* "WORTHMORE." (For Rye Whisky.) E. M. HIGGINS Co., Rochester, N. Y. Filed April 18, 1906.

12,875.—*Title:* "WINCHESTER PURE RYE WHISKEY." (For Whisky.) THE HORNSTEIN GROCERY Co., Washington, D. C. Filed April 17, 1906.

12,876.—*Title:* "MONUMENT PURE RYE WHISKY." (For Whisky.) THE HORNSTEIN GROCERY Co., Washington, D. C. Filed April 17, 1906.

12,877.—*Title:* "SHREDDED CHOCOLATES." (For Candy.) THE LIPPS-MURBACH Co. OF BALTIMORE CITY, Baltimore, Md. Filed April 19, 1906.

12,878.—*Title:* "WALTON'S PEPSIN DENTAL GUM." (For Chewing-Gum.) GEORGE E. WALTON, Daytona, Fla. Filed April 16, 1906.

12,879.—*Title:* "LIGHTNING WASHING FLUID." (For Washing Fluid.) JACQUES V. QUICK, Wahpeton, N. D. Filed April 16, 1906.

12,880.—*Title:* "HOMEO." (For Poultry Remedies.) HOMEO REMEDY Co., Philadelphia, Pa. Filed April 6, 1906.

12,881.—*Title:* "KEEP-KUFFS-KLENE." (For Cuff-Protectors.) KEEP NOVELTY COMPANY, New York, N. Y. Filed April 19, 1906.

12,882.—*Title:* "DREAD-NAUGHT MOTOR GOGGLE." (For Goggles.) THE TEXAS COMPANY, Chicago, Ill. Filed April 19, 1906.

PRINTS

REGISTERED MAY 15, 1906.

1,660.—*Title:* "PETTIJOHN SAYS." (For a Cereal Preparation.) THE AMERICAN CEREAL Co., Akron, Ohio. Filed March 22, 1906.

1,661.—*Title:* "PETTIJOHN SAYS." (For a Cereal Preparation.) THE AMERICAN CEREAL Co., Akron, Ohio. Filed March 22, 1906.

1,662.—*Title:* "PETTIJOHN SAYS." (For a Cereal Preparation.) THE AMERICAN CEREAL Co., Akron, Ohio. Filed March 22, 1906.

1,663.—*Title:* "IT MAKES THE MOUNTAIN SMILE." (For Beer.) THE MILWAUKEE LITHOGRAPHING COMPANY, Milwaukee, Wis. Filed April 19, 1906.

1,664.—*Title:* "THE KEY TO GOOD CROPS 'PURE & SURE' SEEDS." (For Seeds.) ST. LOUIS SEED COMPANY, St. Louis, Mo. Filed March 23, 1906.

1,665.—*Title:* "YANKEE COAL." (For Fuel.) YANKEE FUEL COMPANY, New York, N. Y. Filed April 18, 1906.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

HEWITT *v.* THOMAS *v.* KRUH *v.* WEINTRAUB.

Decided March 10, 1906.

1. INTERFERENCE—BURDEN OF PROOF—NO INTERLOCUTORY APPEAL FROM DECISION OF EXAMINER OF INTERFERENCES.

From a refusal of the Examiner of Interferences to grant a motion to shift the burden of proof no appeal lies, (Rule 122;) but the question will be considered at final hearing on priority.

2. SAME—REHEARING—NO APPEAL FROM REFUSAL TO REHEAR.

The Commissioner will not control the discretion of the Examiner of Interferences upon the questions of rehearing and reconsideration.

ON PETITION.

VAPOR ELECTRIC APPARATUS.

Mr. Charles A. Terry and *Mr. George C. Dean* for Hewitt.

Mr. Charles A. Terry for Thomas.

Mr. A. G. Davis for Kruh. (*Mr. A. D. Lunt* of counsel.)

Mr. A. G. Davis for Weintraub. (*Mr. A. D. Lunt* of counsel.)

ALLEN, *Commissioner:*

This is a petition by Hewitt entitled as one for relief from the decision of the Examiner of Interferences refusing to reopen and rehear a motion to shift the burden of proof.

No good reason is seen for controlling the discretion of the Examiner upon the questions of rehearing and reconsideration.

The petitioner prays for review of the question of burden of proof, which was decided adversely to him by the Examiner of Interferences on motion. Rule 122 provides that no appeal will be entertained from a decision on motion to shift the burden of proof, but that the matter may be reviewed on appeal from the final decision upon the question of priority of invention. The rule will be followed.

The petition is denied.

EX PARTE HOSCHKE.

Decided March 17, 1906.

OATH TO APPLICATION—LONG DELAY AFTER EXECUTION IN FILING APPLICATION.

Where the oath to an application is executed more than nineteen months prior to the filing of the application, a new oath cannot be waived on a mere allegation that differences have arisen between the inventor and assignee by reason of which the inventor refuses to execute another oath. Where there is such long delay, the requirement for a new oath can be waived only upon a showing of the most satisfactory character.

ON PETITION.

AUTOMATIC MUSICAL INSTRUMENT.

Mr. Oscar F. Gunz and *Mr. Edwin Cruse* for the applicant.

ALLEN, *Commissioner:*

This is a petition by the assignee from the action of the Examiner requiring a new application oath.

The oath filed with the application was executed February 25, 1903. The application was not filed, however, until September 27, 1904 In accounting for this delay the petitioner states that after the execution of the original oath certain difficulties in the construction of the machine were encountered and that it was deemed advisable to produce a perfect instrument before filing the application. As a reason why a new oath is not filed it is alleged that differences have arisen between the assignee and the inventor, in view of which the inventor refused to execute another oath.

It is apparent that when this application was filed there had been a period of nineteen months wherein public use of the invention would bar a patent, which was not covered by the statement as to public use in the application oath. Such statutory bar should be rebutted by the oath of the inventor. Where the delay in filing the application after execution of the oath is so great, the reasons for delay and the reasons why a new oath is not filed must be of a most satisfactory character in order to justify the relief requested here. The reasons given by the petitioner are not regarded as sufficient as to either of these points.

The petition is denied.

EX PARTE COX.

Decided March 19, 1906.

PRACTICE—FINAL REJECTION.

Where a claim is presented a second time without material amendment and with no direct request for further explanation of the grounds for rejection, *Held* that the Examiner, adhering to his original opinion and having no new grounds for rejection to offer, may properly make his action final, even though it is but the second action in the case.

ON PETITION.

CUTTING DEVICE FOR ROLL-PAPER HOLDERS.

Messrs. R. S. & A. B. Lacey for the applicant.

ALLEN, *Commissioner:*

This is a petition from the Examiner's action refusing to enter and consider an amendment presented after final rejection.

In response to the first Office action rejecting the claims

in the case applicant presented an amendment canceling all the claims save one. This claim was amended in form only by changing the word "rearwardly" to "inwardly," both words evidently meaning the same in the structure described. Accompanying said amendment was a request for reconsideration. There was no intimation on applicant's part that the references were not understood or that the grounds of rejection were not clearly stated. On the contrary, applicant entered into an argument upon the patentability of the device claimed over the prior art shown.

Applicant states in his proposed amendment following the final rejection that the term "reconsideration" was inadvisedly employed and that what he really desired was an explanation of the pertinence of the references. It is also maintained by applicant that the same liberal spirit governing the decision of *ex parte Wieser* (110 O. G., 1726) and *ex parte Greth* (116 O. G., 2532) should have been exercised in his behalf and that the final rejection on the second action in the case should not have been given.

It is true that the Office desires to afford an applicant ample opportunity for amendment, and where the pertinence of the references has not been made clear and explanation thereof is asked the action should not be final. Owing, however, to the great amount of work before the Office, it is only just to other applicants that the prosecution of a case should be brought to a close as soon as possible. Where a claim is presented a second time without material amendment and with no direct request for further explanation of the grounds for rejection, the Examiner, adhering to his original opinion and having no new grounds of rejection to offer, may properly decide that the prosecution before him should close and make his action final, even though it be but the second action in the case.

The petition is denied.

LATOUR *v.* LUNDELL.

Decided March 19, 1906.

1. MOTION TO DISSOLVE—RIGHT TO MAKE CLAIMS—INDEFINITENESS.

A motion to dissolve which alleges that the opposing party has no right to make the claims of the issue, five in number, because he does not show five specified combinations of elements, is objectionable on the ground of indefiniteness, where it is found that the five combinations specified are the same as the combinations of the claims in issue. The allegation amounts to nothing more than a statement that the opposing party has no right to make the claims of the issue.

2. SAME—PATENTABILITY OF ISSUE—INDEFINITENESS.

A motion to dissolve alleging non-patentability of the opposing party's claims in view of certain specified patents is not indefinite simply because the patents are early enough to anticipate the claims of both parties. The allegation that the patents anticipate the claims of the opposing party only will not prevent a holding by the Primary Examiner that they anticipate the claims of both parties.

APPEAL on motion.

ALTERNATING-CURRENT MOTOR.

Mr. Albert G. Davis for Latour.

Mr. Charles J. Kintner for Lundell.

ALLEN, *Commissioner:*

This is an appeal by Latour from that part of a decision of the Examiner of Interferences transmitting Lundell's motion to dissolve as to the grounds of non-patentability and lack of right to make the claims.

In addition to the grounds above specified the motion alleged non-interference in fact, and this part of the motion was also transmitted to the Primary Examiner.

The transmission of the motion is opposed by Latour on the ground that the points to be argued are not specified with that definiteness which is required by the practice laid down in *Vreeland* v. *Fessenden* v. *Schloemilch* (117 O. G., 2633) and *Dunker* v. *Reist*, (119 O. G., 1925.)

The motion alleges that Latour has no right to make the claims of the issue because "no sufficient basis therefor appears in the Latour application in that said application does not show" certain combinations of elements. The motion specifies five different combinations of elements which it is alleged are not disclosed in the Latour application, and upon a comparison of these combinations with the five counts forming the issue it is found that they correspond in all essential elements to the respective combinations set forth in said five counts, differing therefrom in language only and not in substance. In other words, the substance of this part of the motion is that Latour has no right to make the claims of the issue because there is no foundation therefor in Latour's application. A motion in this form obviously does not comply with the requirements laid down in *Dunker* v. *Reist, supra*. Two combinations lack identity if they are not identical even as to a single material feature. The appellee's allegation might therefore be established by showing lack of identity as to only one of a number of features. It is scarcely conceivable that the Primary Examiner could have declared an interference between two parties when one of them did not show a single element of the combination claimed by the other party, and if appellee is going to urge that a part only of the elements of the combinations in issue are not disclosed by the appellant it is believed that the latter is entitled to know what particular element or elements are to be thus brought in question, so that it will be unnecessary for him to be prepared to defend his case as to every element of a large number of combination claims. This part of the motion is therefore believed to be too indefinite.

The motion further alleges that the "claims forming the issue of the above-entitled interference are not patentable to Latour in view of the prior art as set forth" in certain specified patents. Appellant states that the allegation that the claims are not patentable "to Latour" is indefinite and cannot be understood, because the patents relied upon were granted prior to any date of invention set up by either party, and he maintains that in view of this fact if the patents anticipate Latour they also anticipate Lundell; but it is believed that this objection is not well taken. If the Primary Examiner should find that Latour has a right to make the claims and also that there is no interference in fact, then the claims of Latour, but not those of Lundell, might be anticipated by such references. Moreover, the transmission of the motion in this form cannot operate to the disadvantage of Latour, because if it is plain to the Primary Examiner that the references meet the claims of both parties there is no reason why he should not so decide, notwithstanding the fact that the motion alleges only that the claims were not patentable to Latour.

The decision of the Examiner of Interferences as to that part transmitting the motion to dissolve on the ground of lack of right to make the claims is reversed, but as to that part transmitting it on the ground of non-patentability of the claims it is affirmed.

PHILLIPS *v.* SENSENICH.

Decided March 19, 1906.

1. INTERFERENCE—DISSOLUTION ON GROUND OF IRREGULARITY.

Where two interferences are declared, one between an application of S. and a divisional application of P. and the other between the same application of S. and the parent case of P., the fact that the issue involving the parent case could as well have been included in the interference involving the divisional application does not constitute such an irregularity as will prevent a proper determination of the question of priority.

2. SAME—TRANSFERRING ISSUE OF ONE INTERFERENCE TO ANOTHER—RE-FORMING INTERFERENCE.

Where P. has a divisional application involved in an interference with S., and the parent case is involved in another interference with the same application of S., and P. is desirous of transferring the issue involving the parent case to the other interference in order that he may prosecute to allowance the parent case on divisible subject-matter, this purpose cannot be accomplished by a dissolution of the interference involving the divisional application. The remedy is to re-form the interference.

APPEAL on motion.

SELF-OILING CAR-WHEEL.

Messrs. Connolly Bros. for Phillips.

Mr. J. M. Nesbit and *Mr. H. E. Peck* for Sensenich.

ALLEN, *Commissioner:*

This is an appeal by Phillips from a decision of the Examiner of Interferences refusing to transmit to the Primary Examiner his motion to dissolve, alleging lack of right to make counts 2 and 3 of the issue, the non-patentability of the issue, and irregularity in the declaration of the interference.

It appears that an interference was originally declared between the application of Sensenich here involved and certain claims of an application of Phillips which were divisible from other claims in the case. Accordingly Phillips filed a divisional application including the interfering claims and substituted it for the parent case, as provided by Rule 106. Subsequently another interference was declared between the same application of Sensenich and the parent case of Phillips on a claim which at one time the Examiner held was not patentable over the issue in the first interference, which is the one now under consideration. Phillips now brings this motion to dissolve this interference on the ground of irregularity, because of the Examiner's failure to include therein the claim which now forms the issue in the second interference and because of non-patentability and lack of right to make counts 2 and 3 of the issue. From the refusal of the Examiner of Interferences to transmit this motion to dissolve this appeal was taken. Appellant contends that he should not be compelled to contest two interferences when the issues can as well be included in one. Furthermore, he contends that such action should be taken as would permit him to prosecute to allowance the non-interfering subject-matter of the parent case, which is divisible from the issues in interference.

Assuming that appellant's contentions are well founded, it seems clear that the remedy he proposes will not accomplish the desired object. To accomplish the desired purpose, it will be necessary not only to dissolve one of the interferences, but to transfer the issue thereof to the other interference. By re-forming the interference in this way there will be but one interference, and if the issue of the later interference is transferred to the earlier the parent case may be prosecuted independently of the interference, if desired, providing, of course, that the subject-matter remaining in such parent case is entirely independent of the issue. The circumstances presented do not appear to constitute such an irregularity as will preclude a proper determination of the question of priority, and the Examiner of Interferences properly refused to transmit the motion as to this ground. However, should appellant promptly bring a motion to re-form the issue in the manner above suggested the Examiner of Interferences is at liberty to transmit the same to the Primary Examiner for his consideration.

The motion was further refused transmission for the reason that as to the right to make certain counts the motion did not definitely specify the points to be argued, and as to the ground of non-patentability the moving party was guilty of laches in failing to present the alleged anticipatory patents on a previous motion to dissolve alleging non-patentability of the issue. With respect to these matters the decision is believed to be right, and no good reason is seen for modifying it in any way.

The decision of the Examiner of Interferences is affirmed.

DECISIONS OF THE U. S. COURTS.

Court of Appeals of the District of Columbia.

IN RE GARRETT.

Decided February 6, 1906.

1. PATENTABILITY—CHANGE IN LOCATION OF ELEMENTS NOT INVENTION.

Held that the change in the relative location of the various elements of the apparatus is nothing more than would suggest itself to a skilled mechanic having in view the conditions and conveniences of the different places in which the construction and use of the apparatus may be desired.

2. SAME—OPINION AFFIDAVITS ENTITLED TO NO WEIGHT.

Where affidavits are filed containing general expressions of opinion in respect of the patentability of claims, *Held* that they are entitled to no weight.

3. SAME—UTILITY DOES NOT ESTABLISH NOVELTY.

Where the want of patentable novelty is reasonably clear and not in doubt, *Held* that the fact, if established, that the apparatus claimed has displaced others generally by reason of its obvious superiority can have no weight.

Mr. E. H. Fairbanks for the appellant.

Mr. John M. Coit for the Commissioner.

SHEPARD, *J.*:

This is an appeal from the decision of the Commissioner of Patents rejecting an application for an improvement in attachments for feed-water purifiers, containing the following claims:

1. A water-purifying system comprising a source of water-supply, a water-motor, located on the ground floor of the apparatus a pipe leading from said source of supply to said motor, a discharge-pipe leading upwardly from said water-motor, an oscillating receiver located above said motor, said discharge-pipe discharging thereunto, a container located above said receiver, a commingling-tank also located on substantially the same floor-level as said motor, a pump located on substantially the same level as said commingling-tank, a mixer in said commingling-tank, mechanism for simultaneously imparting motion to said mixer and said pump from said motor, a discharge-pipe leading from said pump to said container, a valve in said container and mechanism intermediate said valve and receiver.

2. A water-purifying system comprising means for supplying water to be purified under pressure, a water-motor located on the ground floor of the apparatus, an oscillating receiver located above said motor, a discharge-pipe leading upward from said motor to said receiver, a commingling-tank for said purifying solution located substantially on a level with said motor, a mixing device in said tank, a pump adjacent and connected to said tank; a discharge-pipe leading from said pump to said container, a rotary shaft connected to said mixing device and said pump and an operative connection between said motor and said shaft.

3. In a water-purifying system, the combination of a water-motor located on the ground floor of the apparatus, a source of

water-supply located above said water-motor, an oscillating receiver suitably supported and located above said motor, a discharge-pipe leading from said pump into said container, a valve in said container, mechanism intermediate said receiver and valve for operating the latter simultaneously with the oscillation of the receiver, a mixer in said commingling-tank, a shaft mounted above said mixer, connecting mechanism common to said mixer and shaft, and power-transmission devices intermediate said shaft and motor.

4. In a water-purifying system, the combination of a source of water-supply 1, a motor 5, a pipe 2 leading from said source of water-supply to said motor, an oscillating receiver 7 located above said motor, a discharge-pipe 6 leading from said motor to said receiver, the latter being provided with a partition 10 forming chambers 8 and 9, a container 32 located above said receiver 7, an outlet from said container into said reservoir, a valve 15 controlling said outlet, mechanism common to said valve and receiver whereby the same are actuated in unison, a commingling-tank 26 located on the same floor-level as said motor, a mixer 25 in said commingling-tank, a shaft 24 having a beveled gear 23 operating said mixer, a pump 29 also located on the same floor-level as said commingling-tank and motor, a discharge-pipe 30 leading from said pump into said container a shaft 21 mounted in proximity to said commingling-tank, a pulley 20 on said shaft, a gear 22 on said shaft and adapted to mesh with said gear 23, connections intermediate said pump and shaft 21, a pulley 20 on said shaft, a shaft 17 carrying a pulley 18 and a belt 19 common to said pulleys 18 and 20.

The application was rejected by the Examiner and by the Examiners-in-Chief on appeal, on references made to patent to Stillman August 21, 1900, No. 656,331, and patent to Davidson December 2, 1902, No. 715,031. On appeal to the Commissioner a new claim was suggested for his consideration, but was not acted upon. By his nonaction the Commissioner seems not to have regarded this claim as properly presented. It is probable that in order to have it passed upon, the applicant should have requested that his application be remanded to the Examiner with leave to amend by inserting said claim as an additional one, or as a substitute for others. It could then have been brought up in regular order.

The Commissioner, without noticing this claim, affirmed the decision of the Examiners-in-Chief rejecting the claims above set forth. Whatever practice should have been pursued in regard to the additional claim, which was neither considered nor rejected, we do not consider that we are at liberty to pass upon it on this appeal.

The appellant does not claim anything new in the elements of his combination. His contention is that by combining old elements, he has obtained a new and useful result showing invention. The distinguishing feature of his invention in combination is, as he says, the locating of the water-reservoir above all the other parts of the apparatus such as the motor, the commingling-tank, and the pump, which are placed on the ground floor, so that the motor is actuated solely by the natural hydraulic head from the elevated reservoir.

We agree with the tribunals of the Patent Office that the patent to Davidson anticipates the invention claimed by the appellant.

The Examiner in his decision points out in detail the close resemblance between the Davidson combination and that of the appellant, and the same is concisely stated by the Examiners-in-Chief in the following extract from their decision:

Substantially the only difference between the purifying apparatus of the present case and that of the Davidson patent involves the location of the pump, the commingling-tank, and the shafting and gearing of the former at the floor-level, instead of at a higher level as in the latter construction.

This conclusion is undoubtedly correct. The change in the relative location of the various elements of the apparatus is nothing more than would suggest itself to a skilled mechanic having in view the conditions and conveniences of the different places in which the construction and use of the apparatus may be desired.

The conditions of one place may render it desirable to locate the motor and commingling-tank at a higher level as shown in Davidson's drawings, and those of another may suggest their location at the ground or floor level, as shown by the appellant.

The expediency of change of location thus suggested, it could readily be accomplished through ordinary mechanical skill.

The appellant contends further that his new arrangement of the various old elements permits the use of a hydraulic head for the operation of the motor, and renders the motor and commingling device more accessible as well as convenient and labor-saving in operation.

Without pausing to consider whether these advantages are also within the range of accomplishment by ordinary mechanical skill, it is sufficient to say that the apparatus of the Stillman patent for a water-feed purifier, though different in some material respects from that of the appellant, discloses the use of a hydraulic head, and the location of the motor, the commingling-tank, and the operating-gearing on the ground floor. With a knowledge of this apparatus it is clear that the change of location of the elements of the Davidson apparatus, as has been made by the appellant, did not amount to invention.

On a petition for rehearing before the Examiners-in-Chief the appellant presented his own, and the affidavits of two other persons tending to show the superiority of appellant's apparatus over those of Stillman and Davidson, and expressing the opinion that his involves invention by reason of its advantages. They also tend to show that several railway companies have adopted it, and that during the past year appellant has made installations for them involving approximately the cost of $20,000.

The general expressions of opinion in these affidavits in respect of the patentability of appellant's claims are entitled to no weight. As regards the advantages of his apparatus they deal more in conclusions than in fact, and fall far short of showing that it has displaced others generally by reason of its obvious superiority.

That fact, if it be established with certainty, is sometimes of weight in determining whether there has been an exercise of inventive talent, where the question of patentable novelty is in doubt irrespective of the same. (*In re Thompson*, present term.) That is to say, it has sometimes the weight to turn the scale in favor of the existence of invention, in particular cases where that question is otherwise in doubt. On the other hand, it has no weight where the want of patentable novelty is already reasonably clear. Utility does not establish novelty. (*Durham* v. *Seymour*, 6 App. D. C., 78, 92, and cases cited.)

It follows that the decision of the Commissioner must be affirmed. It is so ordered, and that this decision and the proceedings in this court be certified to him as the law requires. Affirmed.

Court of Appeals of the District of Columbia.

IN RE FRASCH.

Decided February 6, 1906.

1. DIVISION—CONSTITUTIONALITY OF SECTION 4886, REVISED STATUTES.

Where the constitutionality of section 4886, Revised Statute, is attacked because it provides that inventions or discoveries may be either arts, machines, manufactures, or compositions of matter and because presumptively no two of these subjects are one invention, it is a sufficient answer to say that inventions have been thus distinguished continuously since 1793 and that the court of last resort has been called upon to consider, from one standpoint or another, this division of inventions and has frequently recognized the distinction between them without ever intimating that the legislative branch of the Government had exceeded its power in so classifying inventions.

2. SAME—STEINMETZ *v.* ALLEN AUTHORITY.

Where it is urged that the Commissioner had no valid authority to require division between process and apparatus claims, *Held* that the ruling of the Supreme Court in *Steinmetz* v. *Allen* is the guiding authority in determining this question.

3. SAME—STEINMETZ *v.* ALLEN CONSTRUED.

The decision of the Supreme Court in *Steinmetz* v. *Allen* interpreted to mean that a process and an apparatus, while presumptively independent inventions when considered in the light of section 4886, Revised Statutes, they nevertheless may be so connected in their design and operation as to constitute a unitary invention; that when constituting independent inventions they may not be claimed in one and the same application; that when so dependent as to constitute a unitary invention they may be claimed in one and the same application.

4. SAME—INVOLVES EXERCISE OF DISCRETION—BURDEN ON APPLICANT.

The application of the rule concerning the requirement of division to a given case involved an exercise of judgment and discretion in every case. The facts of each case must be considered, with the burden upon the applicant who asserts that two statutory inventions are one unitary invention.

5. SAME—REQUIREMENT VALID.

Held that the statute being constitutional and the Supreme Court having laid down the rule that not in all cases can claims for process and apparatus be joined in one application, it follows that the Commissioner in requiring division exercises a valid authority, and if correctly exercised no error is committed.

Mr. C. J. Hedrick for the appellant.

Mr. J. M. Coit for the Commissioner.

DUELL, *J.*:

From the requirement of the Commissioner of Patents that appellant divide out of an application for patent, filed November 13, 1899, claim 1 for a process, this appeal has been taken.

The subject-matter of the invention is stated to be for improvements in means for removing the incrustation of calcium sulfate from brine-heating surfaces. The application was filed with six claims, the first three being process claims and the others for the apparatus.

Patent Office Rule 41, at the time when the application was filed, did not permit the joinder of claims for process and apparatus in one and the same application. The Examiner, following the rule, required division between the process and apparatus claims, and refused to act upon the merits. An appeal was taken to the Examiners-in-Chief but the Examiner refused to forward it. Thereupon a petition was filed asking the Commissioner of Patents to direct that the appeal be heard. The Commissioner held that the Examiner was right in refusing to forward the appeal. From this refusal an appeal was taken to this court which held that it did not have jurisdiction to entertain the appeal. Appellant then filed a petition in the Supreme Court for a mandamus directing this court to hear and determine the appeal. This petition was dismissed. (192 U. S., 566.) Meanwhile the Supreme Court in *U. S. ex rel. Steinmetz* v. *Allen* (192 U. S., 543) held a requirement for division to be a rejection of an application, and, therefore, under the statute, appealable. The Supreme Court having so held, the proceedings in this case were resumed in the Patent Office and the Examiner was directed to forward the appeal to the Examiners-in-Chief. From the Examiner's statement forwarding the appeal it appears that in originally requiring division the Examiner relied not only upon the clause of Rule 41 which prohibited the joinder of process and apparatus claims under any circumstances, which clause was held invalid in *Steinmetz* v. *Allen*, *supra*, but also upon the ground that different subjects of invention were presented in the same application. Provision was contained in Rule 41 for such objection. That paragraph of the rule is as follows:

Two or more independent inventions cannot be claimed in one application; but where several inventions are dependent upon each other and mutually contribute to produce a single result they may be claimed in one application.

The Examiners-in-Chief heard the appeal and a majority of them in a very elaborate and able opinion, in which they recognize to the fullest extent the rule laid down by the Supreme Court in *Steinmetz* v. *Allen*, *supra*, decided that the Examiner was right in the case at bar in requiring division between the process and apparatus claims. From this decision an appeal was taken to the Commissioner in person who affirmed the decision of the Board as to claim 1 but reversed it as to claims 2 and 3.

Before passing to the consideration of the main question it may be well to see whether the position of appellant is correct in maintaining that the Commissioner had refused to permit him to join all the claims for the alleged process in one application. We do not so read his decision. He has merely held that claims 2 and 3 for the alleged process may be retained in the present application with the three claims for the apparatus. He has not held, nor intended to hold, as we construe his decision, that appellant may not, if it be finally decided that claim 1 cannot be joined with the apparatus claims, that he may present the three process claims in one application and the three apparatus claims in another application. All that is denied him is the right to retain claim 1 with the apparatus claims.

For a better understanding of the questions involved all six of the claims will be set out. They read as follows:

1. The process of removing incrustations of calcium sulfate from heating-surfaces, consisting in condensing steam in contact with said surfaces by carrying off the heat from the opposite side of the heat-conducting walls, substantially as described.

2. The process of removing incrustations of calcium sulfate from heating-surfaces, consisting in condensing steam in contact with said surfaces by transferring its heat to brine of lower temperature on the opposite side of the heat-conducting walls and so carrying off the heat, the steam and brine being applied alternately to each side of said heat-conducting walls so that the heating of the brine and the removal of the incrustation from a previous heating proceed together, substantially as described.

3. The process of removing incrustations of calcium sulfate from heating-surfaces, consisting in condensing steam in contact with said surfaces by transferring its heat to saturated boiling brine of lower temperature on the opposite side of the heat-conducting walls and so carrying off the heat, the steam and brine being applied alternately to each side of said heat-conducting walls so that the evaporation of the brine with precipitation of salt and the removal of the incrustation from a previous heating proceed together, substantially as described.

4. An apparatus divided into chambers by heat-conducting walls and provided as to one chamber with a steam-supply pipe, a brine-supply conduit, and means for withdrawing the products of the steam-condensing and brine-heating operations, and as to other chamber with a steam-supply pipe, means for supplying a cooling medium, and means for withdrawing the products of the steam-condensing and the cooling-medium-heating operations, substantially as described.

5. An apparatus divided into chambers by heat-conducting walls and having each chamber provided with a steam-supply pipe, a brine-supply conduit, and means for withdrawing the products of the steam-condensing and brine-heating operations, substantially as described.

6. An apparatus divided into chambers by heat-producing walls and having each chamber provided with a steam-supply pipe, a brine-supply conduit and means for withdrawing water from the steam-condensing operation and water-vapor and salt from the brine-heating operation, substantially as described.

As before stated the question to be determined on this appeal is whether or not the Commissioner erred in requiring that claim 1 be divided from the apparatus claims. No

other question is before us. The Commissioner permits the inclusion of process claims 2 and 3 with the apparatus claims upon the ground that they contain limitations which require that the process be carried out by the use of the specific apparatus set out in the apparatus claims. While expressing doubt whether such limitations can be considered proper steps of the process, he held that that question was not then before him, and concluded, that for the purpose of determining the question of division, the claims must be taken as they read. He says:

> If they contain limitations, whether proper or improper, which make the alleged process claims indivisible from the apparatus claims, division cannot be required.

He construes claim 1 as one for a process consisting in the single step of condensing steam in contact with the incrusted surfaces of heat-conducting walls by carrying off heat from the opposite side of the wall. While admitting that the apparatus described in the apparatus claims may be used in carrying out the process set out in this claim he states that—

> It is very clear, however, that the process may be performed without using the particular apparatus disclosed and that the particular apparatus may be used without performing the process. Neither, therefore, depends upon the other.
>
> The appellant has discovered that incrustation may be removed by condensing steam upon it, and this idea is the basis for his process claims. He has also devised convenient means for performing his process, and such means constitutes the basis for his apparatus claims. The two things are separate and independent, both in conception and in execution. The process which consists in condensing steam upon an incrusted surface and apparatus which consists of two chambers separated by a heat-conducting partition, and provided with certain inlets and outlets, have so little in common and there is such an utter absence of necessary relationship between them, that it is difficult to see upon what theory they could be regarded as one invention or as dependent inventions.

We fully agree with the quoted statement which is correct in point of fact and logical in its conclusion. We do not consider it necessary to furnish illustrations. They will occur to any one who examines the specification. Granting that there is any discretion vested in the Commissioner of Patents to require division between process and apparatus claims, when the process may be carried out by the use of apparatus other than the particular apparatus described, and that the apparatus claimed may be used for purposes other than practicing the particular process, or admitting that the statute either permits, or requires, division between claims for process and apparatus when they are not dependent, but are independent inventions, then the discretion vested in the Commissioner has been properly exercised and will not be disturbed by us.

Appellant in support of his appeal presents these points:

I. The Commissioner's decision is predicated upon an invalid, because unconstitutional, statute.
II. The Commissioner exercised an invalid authority in rendering his decision.
III. The Commissioner invaded appellant's legal rights in rendering his said decision.
IV. The Commissioner erred in many material respects.

If appellant is to be understood as attacking the constitutionality of section 4886 of the Revised Statutes because it provides that inventions or discoveries may be either arts, machines, manufactures or compositions of matter, and because presumptively no two of these subjects are one invention, it is a sufficient answer to say that inventions have been thus distinguished continuously since 1793, and that the court of last resort has been called upon to consider, from one standpoint or another, this division of inventions, and has frequently recognized the distinctions between them without ever intimating that the legislative branch of the Government had exceeded its power in so classifying inventions. As we interpret the decision of the Supreme Court in *Steinmetz* v. *Allen*, *supra*, it recognizes that inventions are lawfully distinguished into the four classes before enumerated, and that each of them is, or may be, a separate, independent invention, or, as is said, in speaking of a process and apparatus, "they may be completely independent."

If section 4886 is to be held invalid, such ruling will have to be by the Supreme Court. For us to do so would be in effect overruling many decisions of that Court. In *Rubber Co.* v. *Goodyear*, (9 Wall., 788,) after defining patentable subjects as of the four enumerated kinds the Court said:

> The patentability, or the issuing of a patent as to one, in no wise affects the rights of the inventor or discoverer in respect to the other.

Again in *Heald* v. *Rice* (104 U. S., 737) the Court said, in speaking of an apparatus and a process claim:

> It might well be that Rice was entitled to patents for both, separately, or to one for both inventions. But it is too plain for argument that they are perfectly distinct.

Measured by the rule that process and apparatus may be completely independent and subjects of separate patents we think that in the present case claim 1 is clearly for a different invention than the invention of the apparatus claims. (See also *Cochrane* v. *Deener*, 94 U. S., 780; *James* v. *Campbell*, 104 U. S., 356; *Steinmetz* v. *Allen*, *supra*.)

It is next urged that the Commissioner had no valid authority to require division in this case. The ruling of the Supreme Court in *Steinmetz* v. *Allen*, *supra*, is the guiding authority to govern in the decision of this question as to the power of the Commissioner in the premises. From a careful reading of the opinion in that case we deduce the conclusion that a process and an apparatus, while presumptively independent inventions when considered in the light of section 4886 of the Revised Statutes, they nevertheless may be so "connected in their design and operation" as to constitute a unitary invention; that when constituting independent inventions they may not be claimed in one and the same application; that when so dependent as to constitute a unitary invention they may be claimed in one and the same application.

If we are correct in our views of the conclusions of the Supreme Court, it follows that the application of the rule to a given case involves the exercise of judgment and discretion in every case. The facts of each case must be considered, with the burden upon the applicant who asserts that two statutory inventions are one unitary invention. We are confirmed in this conclusion by the utterances of the Court in the *Steinmetz Case*. At page 560 the learned justice who wrote the opinion quoted with approval the following from the opinion of the Court in an earlier case, *Bennet* v. *Fowler*, (8 Wall., 445:)

> It is difficult, perhaps impossible, to lay down any general rule by which to determine when a given invention or improvement shall be embraced in one, two, or more patents. Some discretion must necessarily be left on this subject to the head of the Patent Office. It is often a nice and perplexing question.

On page 561 it is further said, in referring to Rule 41:

> Without that rule the action of the Patent Office can be accommodated to the character of inventions, and discretion can be exercised, and when exercised, we may say in passing, except in cases of clear abuse, the courts will not review it.

The statute being constitutional and the Supreme Court having laid down the rule that not in all cases can claims for process and apparatus be joined in one application, it follows that the Commissioner in requiring division exercises a valid authority and if correctly exercised, no error is committed. His decision in the case at bar being correct in fact, and warranted by law, there is no force in appellant's third point that he has been deprived of any legal rights by the Commissioner.

If, as alleged by appellant, in his fourth contention, the Commissioner erred in any material respect, such alleged errors, save as before considered, are not properly before us at this time and therefore need not be considered. We see no reason for disturbing the decision of the Commissioner of Patents and therefore affirm it, and it is so ordered.

The clerk of the court will certify this opinion and proceedings in this court in the premises to the Commissioner of Patents, according to law. Affirmed.

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

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Designs	15	No. 38,017 to No. 38,031, inclusive.
Trade-Marks	266	No. 52,825 to No. 53,090, inclusive.
Labels	24	No. 12,883 to No. 12,906, inclusive.
Prints	16	No. 1,666 to No. 1,681, inclusive.
Reissues	6	No. 12,484 to No. 12,489, inclusive.
Total issue	983	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama	2	.....	Nevada	.....	.....
Alaska, District of	.....	.....	New Hampshire	3	.....
Arizona Territory	1	.....	New Jersey	23	12
Arkansas	3	.....	New Mexico Ter't'y	.....	.....
California	20	6	New York	114	69
Colorado	6	2	North Carolina	3	2
Connecticut	24	5	North Dakota	2	1
Delaware	.....	.....	Ohio	48	31
District of Columbia	2	.....	Oklahoma Territ'y	5	3
Florida	.....	.....	Oregon	2	.....
Georgia	3	2	Pennsylvania	60	18
Hawaii Territory	.....	.....	Philippine Islands	.....	.....
Idaho	1	.....	Rhode Island	5	2
Illinois	60	32	South Carolina	.....	4
Indian Territory	4	.....	South Dakota	.....	.....
Indiana	15	3	Tennessee	5	1
Iowa	13	3	Texas	6	1
Kansas	7	1	Utah	.....	.....
Kentucky	5	9	Vermont	3	7
Louisiana	7	1	Virginia	5	1
Maine	4	.....	Washington	5	1
Maryland	9	6	West Virginia	2	2
Massachusetts	33	36	Wisconsin	18	5
Michigan	18	7	Wyoming	.....	.....
Minnesota	11	10	U. S. Army	.....	.....
Mississippi	1	1	U. S. Navy	.....	.....
Missouri	29	6			
Montana	1	.....	Total to citizens of the United States	591	292
Nebraska	3	2			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Algeria	.....	.....	Netherlands	1	.....
Austria-Hungary	3	.....	Newfoundland	.....	.....
Belgium	.....	.....	New South Wales	.....	.....
Brazil	.....	.....	New Zealand	1	.....
British West Indies	.....	.....	Norway	1	.....
Canada	11	2	Persia	.....	.....
Cape Colony	.....	.....	Queensland	2	.....
Chile	.....	.....	Roumania	.....	.....
China	.....	.....	Russia	2	.....
Costa Rica	.....	.....	San Salvador	.....	.....
Cuba	.....	.....	Scotland	2	1
Denmark	.....	.....	South Australia	1	.....
Ecuador	.....	.....	Spain	.....	.....
England	16	4	Switzerland	2	2
France	6	.....	Transvaal, South Africa	2	.....
Germany	25	4	Turkey	1	.....
India	1	.....	Victoria	2	.....
Ireland	1	.....	Western Australia	.....	.....
Italy	.....	1			
Japan	.....	.....			
Java	.....	.....	Total to citizens of foreign countries	80	14
Mexico	.....	.....			

Notice.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., May 10, 1906.

Notice is hereby given that no cases will be docketed or heard by the Commissioner or the Assistant Commissioner in the months of July and August, 1906, except when required to avoid irreparable injury.

F. I. ALLEN,
Commissioner.

Drawings.

RULE 38.

38. When there are drawings the description will refer to the different views by figures and to the different parts by letters or numerals (preferably the latter).

RULE 52—EXTRACT.

(8) The different views should be consecutively numbered. Letters and figures of reference must be carefully formed. They should, if possible, measure at least one-eighth of an inch in height, so that they may bear reduction to one twenty-fourth of an inch; and they may be much larger when there is sufficient room. They must be so placed in the close and complex parts of drawings as not to interfere with a thorough comprehension of the same, and therefore should rarely cross or mingle with the lines. When necessarily grouped around a certain part, they should be placed at a little distance, where there is available space, and connected by short broken lines with the parts to which they refer. They must never appear upon shaded surfaces, and when it is difficult to avoid this, a blank space must be left in the shading where the letter occurs, so that it shall appear perfectly distinct and separate from the work. If the same part of an invention appear in more than one view of the drawing it must always be represented by the same character, and the same character must never be used to designate different parts.

It is suggested that numerals or letters be used without exponents

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business May 15, 1906.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
	In arrears—Under fifteen days.			
378	XXXVIII. Artesian and Oil Wells, Bottles and Jars, Care of Live Stock, Fishing and Trapping, Stationery, Stone-Working.	May 8	Apr. 9	271
322	XXXVI. Curtains, Shades, and Screens, Drafting, Driers, Measuring Instruments, and Wind-Wheels.	May 2	Apr. 18	254
154	XI. Boot and Shoe Making, Boots, Shoes, and Leggings, Button, Eyelet, and Rivet Setting, Leather Manufacturing, Nailing and Stapling, Check-Controlled Apparatus, Whips and Whip Apparatus.	May 2	Feb. 6	318
303	XVII. Linotyping, Printing, Matrix-Making, Nut and Bolt Locks.	May 1	Feb 26	335
244	XXXV. Baggage, Buckles, Buttons, and Clasps, Card, Picture, and Sign Exhibiting, Deposit and Collection Receptacles, Package and Article Carriers, Packing and Storing Vessels, Photography.	May 1	Feb. 17	677
148	XXXII. Carbonating Beverages, Dispensing Beverages, Dispensing-Cans, Metallic Shipping and Storing Vessels, Packaging Liquids, Paper Receptacles, Refrigeration, Wooden Receptacles.	May 1	Dec. 12	715
179	XX. Artificial Limbs, Builders' Hardware, Dentistry, Locks and Latches, Safes, Undertaking.	May 1	Sept. 26	491
175	III. Annealing and Tempering, Coating with Metal, Electro-chemistry, Metal-Founding, Metallurgy, Shaping Fluid Metal.	Apr. 30	Mar. 23	344
304	XXXIV. Railways, Railway-Brakes, Rolling-Stock.	Apr. 30	Mar. 10	396
137	VIII. Beds, Chairs, Furniture, Kitchen and Table Articles, Store Furniture.	Apr. 30	Jan. 9	646
	Under one month.			
109	XVI. Telegraphy and Telephony.	Apr. 28	Feb. 15	402
321	I. Tillage, etc., Fences, and Railway Draft Appliances.	Apr 27	Mar. 28	261
308	XV. Bread, Pastry, and Confections, Making, Coating, Laminated Sheets and Fabrics, Fuel, Glass, Hydraulic Lime and Cement, Paper-Making, Paving, and Plastics.	Apr. 26	Mar. 7	476
332	X. Carriages and Wagons	Apr. 26	Dec. 12	998
164	XXXIII. Canes, Canopies, Cutlery, Domestic Cooking Vessels, Electricity, Medical and Surgical, Electric Signaling, Fireproof Buildings, Harness, Masonry, Tents, and Umbrellas.	Apr. 25	Nov. 8	697
122	XIX. Stoves and Furnaces and Steam-Boiler Furnaces.	Apr. 25	Nov. 7	723
105	XXVI. Electricity, Generation, Electric Heaters, Electric Railways, Motive Power.	Apr. 25	Oct. 18	762
107	XXXVII. Electricity, Conductors, Lighting, Special Apparatus.	Apr. 25	Sept. 27	841
330	XIII. Arms, Projectiles, and Explosive Charges, Making, Metal-Working, Needle and Pin Making.	Apr. 24	Sept. 29	603
128	II. Bee Culture, Dairy, Label-Affixers, Paper Files and Binders, Presses, Store-Service, Tobacco, etc.	Apr. 19	Feb. 19	316
318	VI. Bleaching and Dyeing, Chemicals, Explosives, Fertilizers, Medicines, Preserving, Sugar and Salt.	Apr. 18	Jan. 17	415

Applications Under Examination—Continued.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of application awaiting action.
379	XXIII. Acoustics, Coin-Handling, Horology, Recorders, Registers, Optics, Signals, Time Controlling Mechanism.	Apr. 18	Nov. 10	718
172	XXXI. Alcohol, Charcoal and Coke, Distillation, Gas, Heating and Illuminating, Hides, Skins, and Leather, Liquid Coating Compositions, Oils, Fats, and Glue, Water Purification.	Apr. 17	Mar. 15	322
327	XVIII. Steam-Engineering, etc	Aug. 17	Jan. 11	442
152	XXX. Fluid-Pressure Regulators, Lamps and Gas-Fittings, Type-Writing Machines.	Apr. 17	Oct. 18	735
147	XXIX. Coopering, Roofs, Wheelwright-Machines, Wooden Buildings, Wood-Sawing, Wood-Turning, Woodworking-Tools.	Apr. 16	Jan. 13	485
144	XXIV. Apparel, Apparel Apparatus, Sewing-Machines, Surgery, Toilet.	Apr. 16	Dec. 1	644
	Between one and two months.			
133	XXII. Air-Guns, Ammunition and Explosive Devices, Boats and Buoys, Catapults and Targets, Firearms, Marine Propulsion, Ordnance, Ships.	Apr. 12	Oct. 21	324
167	V. Fine Arts, Bookbinding, Harvesters, Jewelry, and Music.	Apr. 10	Feb. 7	487
232	IV. Bridges, Conveyers, Cranes and Derricks, Excavating, Hoisting, Hydraulic Engineering, Loading and Unloading, and Towers.	Apr. 9	Apr. 13	421
324	XII. Elevators, Journal-Boxes, Lubricators, Machine Elements, Pulleys and Shafting.	Apr. 7	Mar. 13	498
307	XIV. Cutting and Punching Sheets and Bars, Farriery Metal-Bending, Metal-Ornamenting, Metal Personal Wear. Making, Sheet-Metal Ware Making, Tools, Wire-Working.	Apr. 2	Jan. 2	373
312	VII. Velocipedes, Clutches, Fire-Escapes, Games and Toys, Ladders, Mechanical Motors, and Paper Manufactures.	Apr. 2	Nov. 21	525
315	XXV. Butchering, Mills, Threshing, and Vegetable Cutters and Crushers.	Mar. 21	Dec. 18	592
375	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, Washing Apparatus.	Mar. 19	Oct. 27	839
	Between two and three months.			
142	IX. Baths and Closets, Fire-Extinguishers, Hydraulic Motors, Pumps, Sewerage, and Water Distribution.	Mar. 12	Sept. 19	1179
112	XXI. Textiles, Carding, Knitting, Spinning, Weaving, etc.	Mar. 1	Sept. 19	700
382	XXVIII. Air and Gas Engines, Air and Gas Pumps, Pneumatics.	Feb. 27	Aug. 7	1276
	Total number of applications awaiting action			21,501
159	TRADE-MARKS, DESIGNS, LABELS AND PRINTS.			
	Under one month.			
	Trade-Marks	Apr. 16	Mar. 1	1877
	Under fifteen days.			
	Designs	May 7	Apr. 2	54
	Labels and Prints	May 7	May 7	23

Trade-Marks.

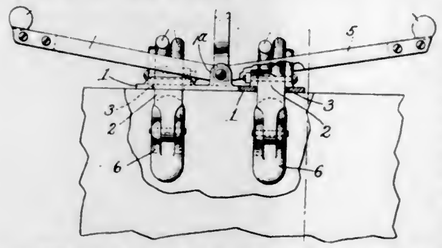
The publication of trade-marks under the act of February 20, 1905, in the OFFICIAL GAZETTE, commenced May 2, 1905, and will appear in each weekly number of the GAZETTE thereafter.

Extra copies of the trade-mark portion of the GAZETTE, which will be sold separately, may be obtained single or in quantities for five cents each. Coupons will be taken in payment therefor.

PATENTS

GRANTED MAY 22, 1906.

820,946. **LIFTER FOR MOLDED BUILDING-BLOCKS.** ANDREW M. BALZER, Des Moines, Iowa, assignor to Miracle Pressed Stone Company, Sioux Falls, S. D., a Corporation of South Dakota. Filed June 24, 1905. Serial No. 266,762.



Claim.—1. In a device for the purpose indicated, in combination with a fulcrum-plate, a pair of levers fulcrumed on such plate projecting downwardly from their fulcrums, having arms extending in opposite directions in the plane of movement of the respective levers about their fulcrums; a third lever fulcrumed on the plate for movement transversely with respect to said arms and extending under the same, and means by which the downwardly-extending levers grasp the block to be lifted.

2. In a device for the purpose indicated, in combination with a fulcrum-plate, a pair of levers fulcrumed thereon extending downwardly from their respective fulcrums, having each an arm extending toward the other lever of the pair in the plane of rocking movement of the levers; gripping-shoes pivotally carried by the said levers at their lower ends, and a third lever fulcrumed for movement transversely of said oppositely-extending arms of the first levers under the same.

3. In a device for the purpose indicated, in combination with the fulcrum-plate, a plurality of pairs of levers fulcrumed on the plate and extending downwardly from their respective fulcrums, the two levers of each pair having arms extending transversely, each toward the opposite lever of the pair, and two additional levers fulcrumed on the plate extending longitudinally transversely to said oppositely-extending arms of the first-mentioned levers under the same.

4. In a device for the purpose indicated, in combination with the fulcrum-plate, a pair of levers fulcrumed on the plate and extending downwardly from their fulcrums opposite each other and provided with means at their lower ends for gripping the block between them; an arm extending transversely across the interval between the levers; a third lever fulcrumed on the plate extending longitudinally transversely to said arms under the same, and a handle independent of said levers for lifting the fulcrum-plate.

5. In a device for the purpose indicated, in combination with a fulcrum-plate, a pair of levers fulcrumed on the plate and extending downwardly from their fulcrums, the two levers of each pair having means at their lower ends for gripping a block between them, and having at their upper ends arms extending each toward the opposite lever across the interval between them, and two lifting-levers fulcrumed on the plate extending transversely with respect to the arms of the first-mentioned levers of said pairs, respectively, under the same.

6. In a device for the purpose indicated, in combination with the fulcrum-plate, two pairs of levers fulcrumed on the plate and extending downwardly therefrom, and gripping-shoes pivotally mounted on said levers respectively, at their lower ends, said levers having at their upper ends arms extending transversely, each toward the opposite lever of the pair, the two arms of each pair of levers standing alongside each other and projecting each past the opposite lever; two additional levers fulcrumed on the plate and extending longitudinally thereof, comprising each two side bars which extend under the projecting ends of said transversely-extending arms of the first-mentioned levers, and a handle independent of said levers for lifting the plate.

7. In a device for the purpose indicated, in combination with a fulcrum-plate, a pair of levers fulcrumed on the plate and having each an arm projecting downward and moving toward and away from each other as the levers are rocked, a lever having its fulcrum carried by the plate and provided with a lifting-handle, said last-mentioned lever operating on the other arms of the first-mentioned levers to rock the downwardly-extending arms of said first-mentioned levers toward each other in the lifting movement of the last-mentioned lever, and means by which said downwardly-extending arms grip the block between them.

8. In a device for the purpose indicated, in combination with the fulcrum-plate, a pair of bell-crank levers fulcrumed on the plate having downwardly-projecting arms extending below the plate and horizontally-extending arms above the plate; means connected with the plate extending under said horizontally-extending arms for lifting the latter to move the downwardly-extending arms toward each other, and means by which said downwardly-extending arms grip the block between them when thus moved.

9. In a device for the purpose indicated, in combination with the fulcrum-plate, a pair of levers fulcrumed on the plate for rocking in parallel planes, having each a downwardly-projecting arm and an arm extending toward the other lever of the pair; a hand-operated lifting-lever fulcrumed on the plate operating by its upward movement on said last-mentioned arms, and means by which the downwardly-extending arms grip the block between them.

10. In a device for the purpose indicated, in combination with the fulcrum-plate, a pair of levers fulcrumed on the plate for rocking in parallel planes, having each a downwardly-projecting arm and an arm extending toward the other lever of the pair; means mounted on the plate engaging under said last-mentioned arms for lifting the same; means by which the downwardly-extending arms grip the block between them, and a handle independent of said levers for lifting the fulcrum-plate.

11. In a device for the purpose indicated, in combination with a fulcrum-plate, two pairs of levers fulcrumed on the plate for rocking in parallel planes, having each an arm projecting downward and an arm projecting toward the opposite lever of the pair; lifting-levers mounted on the plate engaging under the last-mentioned arms of the paired levers, and means on the downwardly-extending arms of said paired levers for engaging the block between the two levers of each pair.

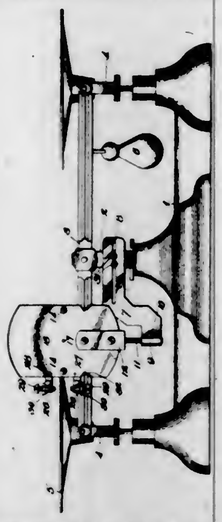
12. In a device for the purpose indicated, a fulcrum-plate, gripping-shoes connected therewith, and a lever having a fulcrum connection with said plate, and means by which said lever actuates the shoes for gripping when operated for lifting the plate.

820,947. **ATTACHMENT FOR WEIGHING-SCALES.** JOHN BARRY and MICHEAL L. SHAUGHNESSY, Westphalia, Kans., assignors of one-half to L. J. Barrett and C. M. Elmore, Hoisington, Kans. Filed June 28, 1905. Serial No. 267,470.

Claim.—1. The combination of a scale, an arm carried by said scale, a scale-plate carried by said arm and provided with indicia numbered from "0" upward in opposite directions, a lever overhanging a movable part of the scale, an index-finger pivoted to the scale-plate, and a link pivotally connecting said lever and index-finger to transmit movement from one to the other.

2. The combination with a scale of an attachment, comprising

a supporting-arm secured to a fixed point of the scale, a scale-plate supported from said arm, having indicia numbered upward in opposite directions from a "0" or neutral point, an index-finger pivoted to the scale-plate, a pair of levers pivoted to the scale-plate and linked to the index-finger and disposed above and below a movable part of the scale so as to be moved downward by said movable part when the commodity upon the scale is under weight, and upward by said part when the commodity on the scale is over weight, and means to cause the index-finger to yieldingly resist such rise or fall of the balance-frame and to dispose and hold it at the neutral point of the scale-plate when said balance-frame is balanced.



3. The combination with a scale, of an attachment, comprising a supporting-arm secured to a fixed point of the scale and longitudinally adjustable thereon, a scale-plate supported from said arm, having indicia numbered upward in opposite directions from a "0" or neutral point, an index-finger pivoted to the scale-plate, a pair of levers pivoted to the scale-plate and linked to the index-finger and disposed above and below a movable part of the scale so as to be moved downward by said movable part when the commodity upon the scale is under weight, and upward by said part when the commodity on the scale is over weight, and means to cause the index-finger to yieldingly resist such rise or fall of the balance-frame and to dispose and hold it at the neutral point of the scale-plate when said balance-frame is balanced.

4. The combination with a scale, of an attachment, comprising a supporting-arm secured to a fixed point of the scale, a scale-plate vertically adjustable on said arm, and having indicia numbered upward in opposite directions from a "0" or neutral point, an index-finger pivoted to the scale-plate, a pair of levers pivoted to the scale-plate and linked to the index-finger and disposed above and below a movable part of the scale so as to be moved downward by said movable part when the commodity upon the scale is under weight, and upward by said part when the commodity on the scale is over weight, and means to cause the index-finger to yieldingly resist such rise or fall of the balance-frame and to dispose and hold it at the neutral point of the scale-plate when said balance-frame is balanced.

5. The combination with a scale, of an attachment, comprising a supporting-arm secured to a fixed point of the scale, a scale-plate supported from said arm having indicia numbered upward in opposite directions from a "0" or neutral point, an index-finger pivoted to the scale-plate, a pair of levers pivoted to the scale-plate and linked to the index-finger and disposed above and below a movable part of the scale, vertical set-screws secured in the outer ends of said levers, the upper screw to be engaged by the movable part of the scale when it rises a sufficient distance and the lower one to be engaged by said part when it descends a suitable distance, and means to cause the index-finger to yieldingly resist such rise or fall of the balance-frame, and to dispose and hold it at the "0" or neutral point of the scale-plate when said balance-frame is balanced.

6. The combination with a scale of an attachment, comprising a supporting-arm secured to a fixed point of the scale, a scale-plate supported from said arm and having indicia numbered upward in opposite directions from a "0" or neutral point, an index-finger pivoted to the scale-plate, a pair of levers pivoted to the scale-plate and linked to the index-finger and disposed above and below a movable part of the scale so as to be moved downward by said movable part when the commodity upon the scale is under weight, and upward by said part when the commodity on the scale is over weight, and a longitudinally-adjustable weight mounted upon the index-finger below its pivot and tending to hold the same in line with the "0" or neutral point of the indicia.

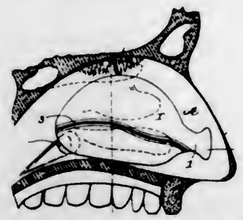
7. The combination of an even-balance scale, a horizontally-slotted arm, screw-bolts carried by a fixed part of the scale-frame and extending through the slot of said arm to clamp the latter at the desired point of adjustment, a vertical clamping-sleeve at the opposite end of said arm, a vertical standard clamped in said sleeve, a scale-plate rigid with and supported from said standard and having indicia numbered upward in opposite directions from a "0" or neutral point, an index-finger pivoted to the scale-plate, a pair of levers pivoted to the scale-plate and linked to the index-finger and disposed above and below a movable part of the scale so as to be moved downward by said movable part when the commodity upon the scale is under weight, and upward by said part when the commodity on the scale is over weight, and means to cause the index-finger to yieldingly resist such rise or fall of the balance-frame and to dispose and hold it at the neutral point of the scale-plate when said balance-frame is balanced.

8. The combination with an even-balance scale having a suitable fixed frame, a balance-frame mounted thereon, frames pivotally suspended from the end of the balance-frame, pans movable vertically with said pivotally-suspended frames, a longitudinally-slotted arm secured to the scale-frame below the pivotal point of the balance-frame, a scale-plate supported from said arm having indicia numbered upward in opposite directions from a "0" or neutral point, an index-finger pivoted to the scale-plate, a pair of levers pivoted to the scale-plate and linked to the index-finger and disposed above and below one of the movable pans, so as to be moved downward by said pan when the commodity on the other pan is under weight, and upward by said first-named pan when the commodity in said other pan is over weight, and means to cause the index-finger to yieldingly resist such movement.

9. The combination with an even-balance scale, of a scale-plate bearing a fixed relation to the scale-frame and provided with indicia numbered from "0" upward in opposite directions, a pair of levers pivoted to the scale-plate and disposed above and below and within the range of movement of a movable part of the scale, an index-finger pivoted to the scale-plate and linked to said levers, and means to hold the index-finger yieldingly in a vertical position and adapted to resist the rise or fall of the movable part of the scale in its balancing movement.

10. The combination of a scale, an arm carried by said scale, a scale-plate carried by said arm and provided with indicia numbered from "0" upward in opposite directions, a lever underlying a movable part of the scale, an index-finger pivoted to the scale-plate, and a link pivotally connecting said lever and index-finger to transmit movement from one to the other.

820,948. **DEVICE FOR TREATING THE NASAL PASSAGES.** EDWARD BAUM, Knoxville, Tenn. Filed Jan. 23, 1905. Serial No. 242,217.

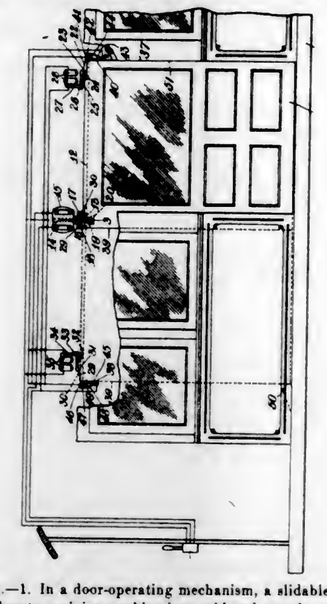


Claim.—1. A device for treating the nasal cavity, said device consisting of a body provided with an approximately flat side with a projection thereon for spacing it from the nasal septum, whereby breathing through the nose is permitted while the device is in position, substantially as described.

2. A device for treating the nasal cavity, said device consisting of a medicated body provided with an approximately flat side with a projection thereon for spacing it from the nasal septum, whereby breathing through the nose is permitted while the device is in position, substantially as described.

3. A device for treating the nasal cavity, said device consisting of a soluble medicated body provided with an approximately flat side with a projection thereon for spacing it from the nasal septum, whereby breathing through the nose is permitted while the device is in position, substantially as described.

820,949. **DOOR-OPERATING MECHANISM.** CHESTER A. BELL, Forest Hills, Mass. Filed Oct. 18, 1905. Serial No. 283,252.



Claim.—1. In a door-operating mechanism, a slidable door, a rack fast thereto, a pinion meshing into said rack, an electric motor adapted to rotate said pinion, a source of electrical current to drive said motor, and electromagnet in circuit with said electric motor and said source of electrical current, an armature, a door-latch operatively connected to said armature, said door-latch being adapted to lock said door and said armature being adapted to unlock said latch from said door, a pole-changer in circuit with said electric motor, said source of electrical current and said electromagnet, whereby said electromagnet may be operated to unlock said door and whereby said electric motor may be operated to rotate said pinion and to move said door, and two circuit-breakers also in said circuit, one of said circuit-breakers adapted to be operated by said door at the end of its opening movement and the other of said circuit-breakers adapted to be operated by said door at the end of its closing movement.

2. A door-operating mechanism comprising in its construction a slidable door, a rack fast thereto, a pinion meshing into said rack, a motor adapted to rotate said pinion, a source of electrical current to drive said motor, a manually-operatable pole-changer in circuit with said motor and said source of electrical current, an electromagnet also in said circuit, an armature, a door-latch, said armature operatively connected to said door-latch, and two circuit-breakers also in said circuit, one of said circuit-breakers adapted to be operated by said door at the end of its opening movement, the other of said circuit-breakers adapted to be operated by said door at the end of its closing movement.

3. In combination a slidable door, means electrically operated for opening and closing said door, locking means whereby said door may be automatically locked in its closed position, locking means whereby said door may be automatically locked in its opened position, and electrical means, manually operatable, whereby said opening and closing means may be controlled and whereby each of said locking means may be actuated to unlock said door.

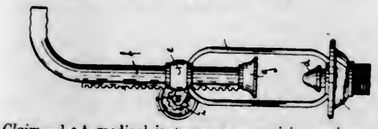
4. In combination a slidable door, means electrically operated for opening and closing said door, locking means whereby said door may be locked in its closed position, locking means whereby said door may be locked in its opened position, electrical means, manually operatable, whereby said opening and closing means may be controlled and whereby each of said locking means may be actuated to unlock said door, circuit-breaking means automatically operated by said door at the end of its opening movement, and circuit-breaking means automatically operated by said door at the end of its closing movement, each of said circuit-breaking means acting to stop said opening and closing means.

5. In a door-operating mechanism, a slidable door, a rack fast thereto, a pinion meshing into said rack, an electric motor adapted to rotate said pinion in opposite directions and open or close said door, respectively, and a friction-clutch interposed between said electric motor and said pinion.

6. In a door-operating mechanism, a slidable door, a rack fast thereto, a pinion meshing into said rack, an electric motor adapted to rotate said pinion, a friction-clutch interposed between said electric motor and said pinion said motor being adapted to rotate said pinion in opposite directions and open or close said door, respectively, a latch acting to hold said door in its closed position, and a latch acting to hold said door in its opened position.

7. In a door-operating mechanism, a slidable door, a rack fast thereto, a pinion meshing into said rack, an electric motor adapted to rotate said pinion in opposite directions and open or close said door, respectively, a latch acting to hold said door in its closed position, a latch acting to hold said door in its opened position, two armatures, one of said armatures operatively connected to said first-named latch, the other of said armatures operatively connected to said second-named latch, and two electromagnets, each of said electromagnets acting to disengage its respective latch from said door.

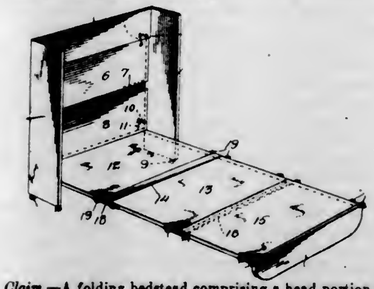
820,950. **MEDICAL INSTRUMENT.** KARL A. BODE, New York, N. Y. Filed Nov. 9, 1905. Serial No. 286,594.



Claim.—1. A medical instrument comprising a bow-shaped frame, a hollow outwardly-threaded neck arranged at one end of said frame and adapted to be secured to the steam-generator, a perforated mouthpiece communicating with said neck, a sleeve at the other end of the bow-shaped frame, a tube movably guided in said sleeve, a funnel-shaped projection or receiver at the inner end of the tube and directed toward the perforated mouthpiece and means for effecting a longitudinal movement of the tube in relation to said mouthpiece, substantially and for the purpose as specified.

2. A medical instrument comprising a bow-shaped frame, a hollow outwardly-threaded neck arranged at one end of said frame and adapted to be secured to the steam-generator and a perforated mouthpiece communicating with said neck, a sleeve at the other end of the bow-shaped frame, a tube movably guided in said sleeve, a funnel-shaped projection or receiver arranged at the inner end of the tube and directed toward the perforated mouthpiece, a rack at one side of the tube, a pinion meshing with said rack and supported in the frame, a hand-wheel connected with the pinion, and a graduation at one side of the frame, substantially and for the purpose as specified.

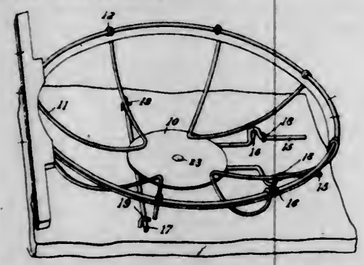
820,951. **BEDSTEAD.** FLORA R. BROWN, Philadelphia, Pa. Filed June 1, 1905. Serial No. 263,229.



Claim.—A folding bedstead comprising a head portion having side pieces and a cross-piece connecting the side pieces, a foldable

head-section including flexibly-hinged members detachably secured to said cross-piece, a foldable body-section including flexibly-hinged members secured to said head-section, apertured lugs carried by the edges of the members of the body-section adjacent their meeting edges, rods detachably secured in said lugs, and a footboard secured to the edge of the outer member of the body-section.

820,952. NEST. WILLIAM M. BUNKER, Galesville, Wis. Filed Oct. 31, 1905. Serial No. 285,278.



Claim.—1. A nest comprising, a basket, a lining for the basket and means to attach the basket to a suitable support.

2. A nest comprising a basket, a dished lining for the basket and means to attach the basket to a suitable support.

3. A nest comprising a container, a dished nest member within the container and means to attach the container to a suitable support.

4. A nest comprising, a skeleton basket, a nest member proportioned to be removably placed within the basket and means to attach the basket to a suitable support.

5. A nest comprising, a skeleton basket and a dished nest member proportioned to be removably placed within the basket.

6. A nest comprising a skeleton basket, a dished nest member proportioned to be removably placed within the basket and means to attach the basket to a suitable support.

7. A nest comprising a skeleton basket, a nest member within the basket and means carried by the basket to prevent displacement of the nest member.

8. A nest comprising a skeleton basket, a dished nest member within the basket and means carried by the basket to prevent displacement of the nest member.

9. A nest comprising, a plate, arms secured radially to the plate and curved upwardly, a nest member disposed within the arms and means to attach the plate to a suitable support.

10. A nest comprising a plate, arms secured radially to the plate and curved upwardly and with their extremities bent inwardly, a nest member disposed within the arms and held from displacement by the inturned ends.

11. A nest comprising a plate, arms secured radially to the plate, and curved upwardly, a hoop carried by the arms and a nest member disposed within the arms.

12. A nest comprising a plate, arms secured radially to the plate and curved upwardly, a hoop secured to the ends of the arms and a nest member disposed within the arms.

13. A nest comprising a plate, arms secured radially to the plate and curved upwardly, a hoop carried by the arms and a dished nest member disposed within the arms.

14. A nest comprising a plate, arms secured radially to and curved upwardly from the plate, a hoop secured to the extremities of the arms and a dished nest member disposed within the arms.

15. A nest comprising, a plate, arms secured radially to and curved upwardly from the plate and terminating in inturned ends, a hoop secured to the ends of the arms and a dished nest member disposed within the arms and held from displacement under the hoop.

16. A nest comprising radial upwardly-curved arms with inturned ends, a hoop secured to the ends, a band secured to the arms larger than and below the hoop and a dished nest member disposed within the arms and with its periphery beneath the hoop and against the band.

17. A nest comprising radial upwardly-curved arms with inturned ends, a hoop secured to the ends, a band larger than and below the hoop and secured to the arms, a dished nest member disposed within the arms and with its periphery beneath the hoop and against the band and means to attach the arms to a suitable support.

18. A nest comprising a plate, arms secured radially to and curved upwardly from the plate and with inturned ends, a hoop secured to the ends, a band larger than and below the hoop and secured to the arms, a dished nest member disposed within the arms and with its periphery beneath the hoop and against the band and means to attach the plate to a suitable support.

19. A nest comprising a dish-shaped fibrous sheet and a skeleton container for the sheet.

20. A nest comprising a dish-shaped fibrous medicated sheet and a skeleton container for the sheet.

21. A nest comprising, a dish-shaped medicated sheet a container for the sheet and means to attach the container to a suitable support.

22. A nest comprising a skeleton container and a medicated nest member within the container.

23. A nest comprising a skeleton basket and a medicated nest member within the basket.

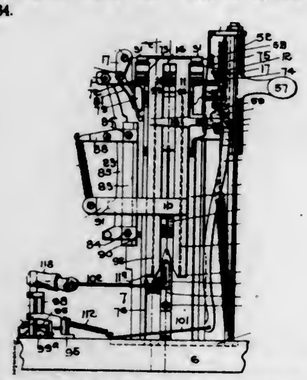
24. A nest comprising a paper dish and a skeleton basket for the dish.

25. A nest comprising a paper dish and a wire basket proportioned to contain the dish.

26. A nest comprising, a medicated paper dish, a container for the dish and means to attach the container to a suitable support.

27. A nest comprising a medicated paper dish, a wire basket for the dish and means to attach the basket to a suitable support.

820,953. COMBINED MATCH RECEPTACLE AND IGNITER. WILLIAM CHATER, Denver, Colo. Filed Oct. 12, 1905. Serial No. 282,464.



Claim.—1. A device of the class named, comprising a base, a standard thereon, a match-receptacle movably connected to said standard, a plate having a vertical reciprocating movement between the standard and the receptacle, and adapted to hold during its upward movement a match deposited thereon from said receptacle, a carrying device secured to said plate, means to transfer a match from the plate to said carrier, an igniter on said standard adapted to engage the head of the match during downward movement of the carrier, and means to transmit the burning match from said carrier into a suitable receptacle.

2. A device of the class named comprising a base, a plate vertically erected thereon, a match-receptacle vertically divided into two communicating compartments, movably secured to said plate, springs on said plate adapted to space the receptacle from the plate and to engage the matches contained in the inner compartment, a spring adapted to insure the contact between the receptacle and the springs, and a vertically-reciprocating carriage including a plate adapted to pass between the springs and the thereby-engaged matches, and to hold and elevate one of the latter.

3. A device of the class named comprising a base, a standard, having an inclined plane at its upper extremity, erected thereon, a match-receptacle on said frame, a vertically-reciprocating carriage comprising two members respectively disposed on opposite sides of said standard, one of said members having a stationary and a movable jaw, means to recede the latter when the carriage is in its uppermost position to permit a match deposited on the inclined plane to fall onto the stationary jaw, and means to project and hold the movable jaw over the match during downward movement of the carriage.

4. A device of the class named comprising a base, a standard thereon, a match-receptacle on said standard, a vertically-reciprocating carriage, including a match-elevating member and a match-lowering member, respectively disposed on opposite sides of the standard, means to transfer a match from the receptacle onto the first-named member, means to subsequently transmit said match from said member onto the opposite member, and an igniter, including a serrated plate, yieldingly mounted on said standard and adapted to engage the head of a match held by the second member during downward movement of the carriage.

5. A device of the class named comprising a base, a standard thereon, a match-receptacle on said standard, a vertically-reciprocating carriage, including a match-elevating member and a match-lowering member, respectively disposed on opposite sides of the standard, means to transfer a match from the receptacle onto the first-named member, means to subsequently transmit said match from said member onto the opposite member, an igniter including a serrated plate detachably mounted on said standard and adapted to engage the head of a match held by the carrier during its downward movement, and means to bring said head in alinement with the serrated edge of said plate.

6. A device of the class named comprising a base, a standard thereon, a match-receptacle on said standard, a reciprocating carriage, comprising a match-elevating member and a member having a stationary and a movable jaw, said members being disposed on opposite sides of the standard, means to pass a match from the receptacle onto the elevating member, means to transmit a match from the latter in between the jaws, and springs on said standard adapted to engage said match to limit its forward movement during downward movement of the carriage.

7. A device of the class named comprising a base, a standard thereon, a match-receptacle on said standard, a vertically-reciprocating carriage including match-elevating and match-lowering members, means to pass a match from the receptacle onto the first-named member, means to transmit the match from said member onto the match-lowering member, means on said standard to ignite said match during downward movement of the carriage, and means to disengage the burning match from the carriage and deposit it onto a suitable receptacle.

8. A device of the class named comprising a base, a standard thereon, a match-receptacle on said standard, a vertically-reciprocating member, comprising a match-elevating member and a member having a stationary and a movable jaw, means to transfer a match from said receptacle onto the elevating member, means to transmit the match from said member onto the stationary jaw in engagement with the movable one, igniting means adapted to engage said match during downward movement of the carriage and a prong adapted to engage said movable jaw and by bringing it forward, transmit the match from the stationary jaw into a suitable receptacle.

9. The combination with a base, a match-receptacle mounted thereon, mechanical means to extract a match from said receptacle, means to subsequently ignite said match, and means to deposit same, of a gripping appliance movably mounted on said base and adapted to receive and hold the deposited match, and means to move said appliance to a point remote from the place of deposit.

10. In combination, a base, a standard thereon, a match-receptacle on said standard, a vertically-reciprocating carrier adapted to extract and remove a match from the receptacle, means to ignite said match, means to remove said match from the receptacle, a gripping appliance capable to receive and hold the removed match and convey it to a point remote from said standard, and means to operate said appliance through the action of said carrier.

11. In combination, a base, a standard thereon, a match-receptacle on said standard, a vertically-reciprocating carrier adapted to extract and remove a match from the receptacle, means to ignite said match, means to remove said match from the receptacle, an arm pivotally mounted on said base and having match-holding means at its outer extremity, normally remote from said standard, means to bring said extremity toward the standard during downward movement of the carrier and to return it to its normal position when the carrier moves upward.

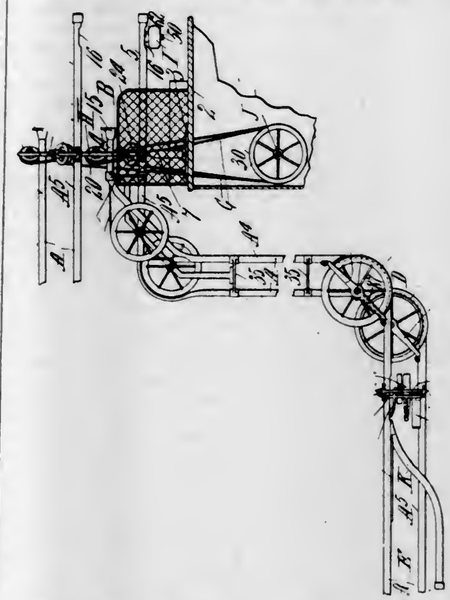
12. In combination, a base, a standard thereon, a match-receptacle on said standard, a vertically-reciprocating carrier adapted to extract and remove a match from the receptacle, means to ignite said match, means to remove said match from the receptacle, an arm pivotally mounted on said base and having match-holding means at its outer extremity, normally remote from said standard, a lever fulcrumed on the standard, a bell-crank lever mounted on the base and operatively connected with said lever and said arm, means on the carrier to operatively engage the lever on the standard and a spring on said arm adapted to yieldingly hold it in its normal position.

13. The combination with a base, a match-receptacle supported thereon and mechanical means to extract and remove a match from said receptacle, ignite the same and deliver the burning match, of the figure of an animated being mounted on said base, one of its limbs being movable and carrying a match-holding appliance normally remote from said receptacle, and means to coöperatively operate said mechanical means and said limb to cause the latter to receive and serve the burning match.

820,954. COPPER ALLOY. GUSTAV CHAUDOIR, Jr., Vienna, Austria-Hungary. Filed Feb. 3, 1904. Serial No. 191,911.

Claim.—A copper alloy containing from three-fourths to three and one-half parts of cadmium per from ninety-nine and one-fourth to ninety-two parts of copper.

820,955. CASH-CARRIER APPARATUS. DAVID E. CHISM, Stafford Springs, Conn. Filed July 3, 1905. Serial No. 268,224.



Claim.—1. For a cash-carrier terminal station, a plurality of horizontal lines of track arranged one above another, and each line including a sending, and a return, trackway, a column or standard including a plurality of frames, one above another, the several trackways having supports on said frames, and extending rearwardly therebeyond, wheels for the carrier-cables rotatably mounted in the several frames, having peripheral portions thereof in proximity to the trackways and one of the wheels for each line of track having its body inclined relatively to the length of the latter, and endless carrier-cables respectively provided for each line of double track running along the trackways oppositely-running courses of said cables having engagements with said wheels for transverse or diverted guidance of the cables.

2. For a cash-carrier terminal station, a plurality of lines of track, each line including a sending, and a return trackway, a column or standard including a plurality of sectionally-formed and rigidly-mounted frames, one above another, the several trackways having supports on said frames, and extended rearwardly therebeyond. wheels for the carrier-cables rotatably mounted in the several frames, having peripheral portions thereof in proximity to the trackways and one of the wheels for each line of track having its body inclined relatively to the length of the latter, for the purpose set forth.

3. For a cash-carrier terminal station, a plurality of lines of track, each line including a sending, and a return, trackway, a column or standard including a plurality of frames, one above another, the several trackways having supports on said frames, and extended rearwardly therebeyond, each return-trackway terminating farther rearwardly of said frames than the sending-trackways, wheels for

the carrier-cables rotatably mounted in the several frames, having peripheral portions thereof in proximity to the trackways and one of the wheels for each line of track having its body inclined relatively to the length of the latter.

4. For a cash-carrier terminal station, a plurality of lines of track, each line including a sending, and a return, tubular longitudinally-slotted, and apertured trackway, a column or standard including a plurality of frames, one above another, the several trackways having supports on said frames, and extended rearwardly therebeyond, each return-trackway terminating farther rearwardly of said frames than the sending-trackways, and said sending-trackways being rearwardly endwise open, wheels for the carrier-cables rotatably mounted in the several frames, having peripheral portions thereof in proximity to the trackways and one of the wheels for each line of track having its body inclined relatively to the length of the latter.

5. For a cash-carrier terminal station, a line of track, including a sending, and a return, tubular longitudinally-under-slotted trackway, an upright frame by which said trackway-tubes are supported and beyond which they are extended, the sending-tube being rearwardly endwise open while the return-tube has a widened aperture through its under side, formed near its rear end, wheels for the carrier-cables, rotatably mounted in the said frame, having peripheral portions thereof in proximity to the upper sides of the trackway which are apertured thereat for the run of the cord to said wheels, and one of said wheels having its body inclined relatively to the length of the track.

6. For a cash-carrier terminal station, a plurality of lines of track, each line including a sending, and a return, tubular under-slotted trackway, a column or standard including a plurality of frames, one above another, the several trackways being supported by said frames, and extended rearwardly therebeyond, the tubular return-trackways terminating farther rearwardly than the tubular sending-trackway, made rearwardly closed and formed with underneath widened openings forward of their closed rear ends while the sending track-tubes are open at their rear ends.

7. For a cash-carrier terminal station, a plurality of lines of track, each line including a sending, and a return, trackway, a column or standard including a plurality of frames, one above another, the several trackways being supported by said frames, and extended rearwardly therebeyond, the tubular return-trackways terminating farther rearwardly than the tubular sending-trackways, made rearwardly endwise closed and formed with underneath widened openings forward of their closed rear ends, while the sending track-tubes are open at their rear ends, and are provided with angularly-extending members 15 bearing line designations, and the cash-boxes provided with cylindrical cable-engaging heads and having designating characters corresponding to those on said members 15 of the line with which the boxes correspond, wheels for the carrier-cables, rotatably mounted in the several frames, having peripheral portions thereof in proximity to the trackways and one of the wheels for each line of track having its body inclined relatively to the length of the latter.

8. For a cash-carrier terminal station, a plurality of lines of track, each line including a sending, and a return, trackway, a column or standard including a plurality of frames, one above another, the several trackways having supports on said frames, and extending rearwardly therebeyond, wheels for the carrier-cables rotatably mounted in the several frames, having peripheral portions thereof in proximity to the trackways, and one of the wheels of each line of track having its body inclined relatively to the lengths of the latter, a post on which the column of frames is supported, a base-plate having holes 31 in two diagonal rows angular to each other, the pulleys axially centrally under said frame-comprised column, and the carrier-cables for the respective lines of track engaged around said pulleys, having courses thereof passing through said holes 31, having guide and offsetting engagements with said frame-wheels, and having runs along the trackways.

9. For a cash-carrier terminal station, a column or standard, sectionally made and rigidly united, each section including the double frames 6, the several lines of track, each including a sending and a return tubular trackway, and both thereof supported by the respective frames of a given section, and extended rearwardly therebeyond, wheels for the carrier-cables rotatably mounted in the several frames, having peripheral portions thereof in proximity to the trackways and one of the wheels for each line of track having its body inclined relatively to the length of the latter, for the purpose set forth.

10. For a cash-carrier terminal station, a column or standard, sectionally made and rigidly united, each section including the double frames 6, a post, at the top of which said frame-sections are carried, having a shouldered and screw-threaded lower end, a base-plate, having the screw-threaded socket, and formed with the series of holes 31 in diagonal rows, arranged one row angular to the other, and in the said socket of which plate the lower end of said post-screw engages, the several lines of track, each including a sending and a return tubular trackway, and both thereof supported by the respective frames of a given section, and extended rearwardly therebeyond, wheels for the carrier-cables rotatably mounted in the several frames, having peripheral portions thereof in proximity to the trackways and one of the wheels for each line of track having its body inclined relatively to the length of the latter, for the purpose set forth.

11. For a cash-carrier terminal station, a column or standard, sectionally made and rigidly united, each section including the double frames 6, a post, at the top of which said frame-sections are carried, having a shouldered and screw-threaded lower end, a base-plate, having the upper and lower bosses, 9, 9, with the screw-threaded socket therethrough, and formed with the series of holes 31 in diagonal rows, arranged one row angular to the other, and in the said socket of which plate the lower end of said post-screw engages, the several lines of track, each including a sending and a return tubular trackway, and both thereof supported by the respective frames of a given section, and extended rearwardly therebeyond, wheels for the carrier-cables rotatably mounted in the several frames, having peripheral portions thereof in proximity to the trackways and one of the wheels for each line of track having its body inclined relatively to the length of the latter, for the purpose set forth.

12. In a cash-carrier apparatus, a sending-trackway, and a clerk-station trackway diverging therefrom, a support adjacent the junction of said trackways having a cash-box-switching member supported thereby, a frame pivotally mounted on said support for swinging movement on a vertical axis, and having longitudinally-extending separated and endwise-open members to engage and serve as guards for the sides of the box to be switched.

13. In a cash-carrier apparatus, a sending-trackway, and a clerk-station trackway diverging therefrom, a support adjacent the junction of said trackways having a cash-box-switching member supported thereby, a frame pivotally mounted on said support for swinging movement on a vertical axis, and having longitudinally-extending separated and endwise-open members to engage and serve as guards for the sides of the box to be switched, said separated members being rearwardly divergent.

14. In a cash-carrier apparatus, a sending-trackway and a clerk-station trackway diverging therefrom, a support adjacent the junction of said trackways having a cash-box-switching member supported thereby, a frame pivotally mounted on said support for swinging movement on a vertical axis, longitudinal, slightly-separated, and endwise-open, members 60, 60, to engage and serve as guards for the thin flat neck of a cash-box, as described.

15. In a cash-carrier apparatus, a sending-trackway and a clerk-station trackway diverging therefrom, a support adjacent the junction of said trackways having a cash-box-switching member supported thereby, a frame pivotally mounted on said support for swinging movement on a vertical axis, having the longitudinally-extending separated and endwise-open box side guard members 54, 54, and longitudinal, slightly-separated, and endwise-open, members 60, 60, above the members 54 to engage and serve as guards for the thin flat neck of a cash-box, as described.

16. In a cash-carrier apparatus, a sending-trackway and a clerk-station trackway diverging therefrom, a support adjacent the junction of said trackways having a cash-box-switching member supported thereby, a frame pivotally mounted on said support for swinging movement on a vertical axis, having longitudinally-extending separated and endwise-open members to engage and serve as guards for the sides of the box to be switched, and a spring operating upon said frame to maintain said frame normally with its box-guard members parallel with the line of the sending-trackway.

17. In a cash-carrier apparatus, a main line and a branching trackway provided near their junction with a stationary switch-frame comprising a vertical post, a swinging frame pivoted at top and bottom to said switch-frame and provided with the separated box-side and box-neck engaging members, and a spiral spring encircling said post and having an extension engaged with said swinging frame for maintaining it normally in line with the main trackway.

18. In a cash-carrier apparatus, a sending-trackway and a branch trackway diverging therefrom, a support adjacent the junction of said trackways having a cash-box-switching member supported thereby, a frame pivotally mounted on said support for swinging movement on a vertical axis, and having separated members to engage at opposite sides of the box to be switched, and adjustable means for limiting the swinging movement of said frame.

19. In a cash-carrier apparatus, a sending-trackway and a branch trackway diverging therefrom, a switch-frame adjacent the junction of said trackways having a cash-box-switching member supported thereby, the guide-frame, pivotally mounted on said support for swinging movement on a vertical axis, and provided with separated endwise-open members to engage at opposite sides of the box to be switched, the adjustable screw 59 for limiting the swinging movement of the pivotal frame relatively to the switch-frame, and a spring for maintaining the pivotal frame alined with the sending-trackway.

20. In a cash-carrier apparatus, tubular under-slotted sending and branching trackways, a carrier-cable arranged to run through the tubular sending-trackway, the cash-box having the thin flat neck and cylindrical channeled head for engagement with the trackway and cable, a support adjacent the junction of said trackways having the cash-box-switching member, and a frame pivotally mounted on said support for swinging movement, and having endwise-open separated members for engagements at opposite sides of the box to be switched.

21. In a cash-carrier apparatus, a sending tubular under-slotted trackway and a branch tubular slotted trackway diverging therefrom, a carrier-cable arranged to run through the tubular sending-trackway, the cash-box having the thin flat neck, the cylindrical channeled head for engagement with the trackway and cable and the depending U-shaped switch engagement lug 51, a support adjacent the junction of said trackways provided with the cash-box-switching bar 45, and a frame, pivotally mounted on said support for horizontal swinging movements, and having separated members for engagements at opposite sides of the box to be switched.

22. In a cash-carrier apparatus, the combination with a main trackway and a branch trackway, of a switch-frame having a supporting engagement with said trackways and provided with a switch-carrying plate comprising a back member having a slot and set-screw transverse adjustment on a lower portion of said switch-frame and the angular forwardly-extending member 46, and the switch-bar 45 secured to said member 46.

23. In a cash-carrier apparatus, the combination with a main trackway and a branch trackway, of a switch-frame having a supporting engagement with said trackways and having a switch-carrying plate confined on a lower portion of said switch-frame and including the forwardly-extending lug 46, the curved or inclined switch-bar 45 having at one end portion the pairs of holes in longitudinal lines one above the other, for invertible connection on said angular member, and screws or like fastenings passed through said lug 46 and one of the pair of perforations in the switch-bar.

24. In a cash-carrier apparatus, the combination with a main trackway and a branch trackway, of a switch-frame having a supporting engagement with said trackways, and constructed with the horizontal transverse slot 37*, a T-shaped switch-carrying plate confined on a lower portion of said switch-frame, and having the central lug 46 thereof forwardly extended, the curved or inclined switch-bar 45 having at one end portion the pairs of holes in longitudinal lines one above the other, for invertible and also reversible connection on said lug 46, as described, screws or like fastenings passed through said lug 46 and one of the pair of perforations in the switch-bar, and the adjustment-confining screws 48 engaging through said transverse slot and with the lock members of said T-shaped lug.

25. In a cash-carrier apparatus, a sending tubular longitudinally-under-slotted trackway and a branch tubular longitudinally-under-slotted trackway diverging therefrom, both said tubular trackways having, through their upper portions, openings adjacent, and extending forwardly beyond, their junction.

26. In a cash-carrier apparatus, a sending tubular under-slotted trackway and a branch tubular under-slotted trackway diverging therefrom, and both said tubular trackways having, through their upper portions, divergent openings adjacent and extending forwardly beyond their junction, and having forwardly of the junction of said upper openings the longitudinally-extending rib with the rounded upper portion 76, as and for the purpose set forth.

27. In a cash-carrier apparatus, the combination with a sending tubular longitudinally-under-slotted trackway and a branch longitudinally-under-slotted trackway diverging therefrom, both said tubular trackways having, through their upper portions, openings adjacent, and extending forwardly beyond, their junction, of the cable running through the sending-trackway, the cash-box having the thin flat neck and the cylindrical channeled cable-engaging head, and a switching device for the cash-box.

28. In a cash-carrier apparatus, a sending tubular under-slotted trackway and a branch tubular under-slotted trackway diverging therefrom, and both said tubular trackways having, through their upper portions, openings adjacent and forwardly of their junction, the carrier-cable arranged to run through the tubular sending-trackway, the cash-box having the thin flat neck and cylindrical channeled head for engagement with the trackway and cable, a support adjacent the junction of said trackway having the cash-box-switching member, and a frame pivotally mounted on said support for swinging movements and having separated longitudinal, endwise-open, members for engagements at opposite sides of the box to be switched.

29. In a corner portion of a cash-carrier apparatus, the two trackways of a line arranged in planes one in front of the other and each trackway having the sections thereof at right angles to each other, united by quarter circular portions 84, which arc-shaped portions for the two trackways are generated from respective axes offset one from the other, the diagonally-arranged corner-braces provided for and connecting the angularly-approaching portions of each of the trackways, the crank-like part 87, 86, 86, having the opposite offset shaft members 86 thereof engaged centrally through said corner-braces, and cable-guiding wheels on said shaft members 86.

30. In a corner portion of a cash-carrier apparatus, the two trackways of a line arranged in planes one in front of the other and each trackway having the sections thereof at right angles to each other, united by quarter circular portions 84, which arc-shaped portions for the two trackways are generated from respective axes offset one from the other, the diagonally-arranged corner-braces provided for and connecting the angularly-approaching portions of each of the trackways, the crank-like part 87, 86, 86, having the opposite offset shaft members 86 thereof engaged centrally through said corner-braces, cable-guiding wheels on said shaft members 86, and the brackets transversely arranged between and connected with the sections of both trackways, and for rigidly holding the corner components in their proper relations, as shown.

31. A cash-carrier apparatus having a terminal station, comprising, at such station, a trackway having a straight portion, a cable-guiding wheel adjacent the trackway and forward of the rear end of such straight portion thereof, a box propulsion-cable having a run or course thereof along the straight portion of the trackway forward of said guiding-wheel, and in engagement with said wheel and thereby guided away from the line of the trackway.

32. A cash-carrier apparatus having a terminal station comprising at such station a trackway having a straight portion, a cable-guiding wheel adjacent the trackway and forward of the rear end of such straight portion thereof, a cable-driving drum or wheel adjacent the trackway-terminal, a cable having a run or course thereof along the straight portion of the trackway, engaged by said guiding-wheel for a course away from the trackway, and having running engagement around said driving-wheel.

33. A cash-carrier apparatus having a terminal-station portion comprising a plurality of straight trackways for respectively receiving and sending cash-boxes, and endless cables having straight courses thereof running along the receiving and sending trackways, guide-wheels adjacent the straight trackway portions around which the cables run, and by which they are given courses away from the said trackways, driving-wheels with which the diverted cables have engagements, said receiving-trackways having box-delivering openings in a vertical line, and said sending-trackways having box-entrance openings in a differently-located vertical line.

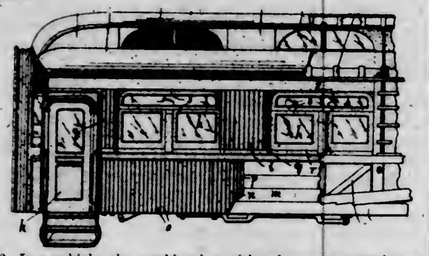
34. An endless cable cash-carrier apparatus, the terminal portion of which comprises a plurality of tubular longitudinally-slotted trackways, and cable-guiding wheels, sidewise adjacent the trackways, said tubular trackways having straight, endwise-open cash-box-receiving extensions, ending rearwardly beyond the courses of the cables and the guide-wheels therefor, and in line with straight portions of the trackways forwardly beyond said cable-guiding wheels.

35. A cash-carrier apparatus comprising a straight trackway, an endless cable, and a cable-guiding wheel arranged adjacent a portion of the said trackway which is forwardly beyond the terminal end thereof and operable to guide the cable to one side of the straight course of the box along the trackway.

820,956. **VEHICLE.** JAMES M. COLEMAN, Montreal, Canada, assignor of one-fourth to Archibald William Stevenson and one-fourth to William Sclater, Montreal, Canada, and one-fourth to Charles Edward Wade, Ambler, Pa. Filed Oct. 27, 1905. Serial No. 284,696.

Claim.—1. In a vehicle, the combination with a frame, a running-gear supporting said frame, of a facing formed in slabs of a

consistent, plastic and mineral material applied in its consistent or set state, said slabs being adhesively joined at their edges, a variety of molded shapes of said material applied to the construction in its coalescent state and forming the other exposed parts and adhesively joined one to the other or to the slabs where meeting, and means for securing said slabs and shapes to said frame, as and for the purpose specified.



2. In a vehicle, the combination with a frame supported on a suitable running-gear and a sheathing covering in a portion of said frame, of a facing applied to said sheathing and formed of a consistent, plastic and mineral material made in slabs, said slabs abutting one another and joined, a roofing supported on said frame and formed of molded shapes of said consistent, plastic and mineral material, and suitably joined to said slabs forming the walls, a plurality of molded shapes of said material joined to said walls and roof respectively and forming the sills and frames to the openings through said walls, and the doors, an interior lining to said frame of said consistent, plastic and mineral material formed in slabs and molded shapes securely joined together at the edges, a facing of like material to the floor-sheathing, a facing of like material to the sheathing attached to the under side of the beams supporting the floor, means for securing said shapes and slabs of said consistent, plastic and mineral material to the sheathing and to the frame respectively and means for securing said slabs one to the other and said shapes to said slabs and said shapes to said shapes, as and for the purpose specified.

3. In a vehicle, the combination with a metal frame and a suitable sheathing covering in a portion of said frame, of a facing forming the outer walls and formed of a consistent, plastic and mineral material made in slabs of reduced thickness at their overlapping adjoining edges, a roof formed in sections and molded shapes of said consistent, plastic and mineral material having reduced ends overlapping one another and securely joined together, said shapes being suitably joined to said walls, an interior lining of said material formed in slabs and shapes having reduced adjoining edges overlapping one another, bolts through said slabs and shapes securing same firmly to the frame, and an adhesive substance interposed between the adjoining surfaces of said slabs and the adjoining surfaces of said shapes and said slabs and the adjoining surfaces of said shapes, as and for the purpose specified.

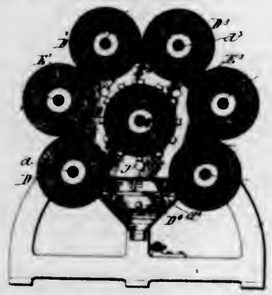
4. In a vehicle, the combination with a frame of suitable material supported on a running-gear and a sheathing covering in a portion of said frame, of a facing formed in slabs of a consistent, plastic and mineral material having reduced adjoining ends overlapping one another, an adhesive substance securing said slabs together and to said sheathing, a variety of molded shapes of said consistent, plastic mineral material having reduced adjoining edges overlapping one another, an adhesive and consistent substance joining said shapes one to the other and to said slabs where meeting, an interior lining of said consistent, plastic mineral material formed in slabs in various molded shapes and secured to said frame, bolts securing said lining to said frame, and panels of decorative wood material superimposed on said lining and adhesively secured thereto, as and for the purpose specified.

5. In a vehicle, the combination with a suitable frame, and a running-gear supporting said frame, of an outer wall having a facing of a plastic and mineral material in which a coloring-matter is intermixed, said facing being applied to the construction of said wall in slabs in its set or consistent state, and said slabs being secured together at their adjoining edges by a suitable adhesive substance, a variety of molded shapes of said plastic and mineral material forming other parts to the outer construction of the car and joined together at the edges thereof by suitable adhesive substances, said material having suitable coloring-matters intermixed in the preparation thereof and applied to the construction in its set or consistent state, means for fastening the various parts to said walls, an interior lining to said vehicle formed in suitable slabs and shapes of said plastic mineral material suitably colored in preparation and secured to said frame in its consistent state, and bolts or screws securing said material to said frame, as and for the purpose specified.

6. In a device of the class described, in combination, a frame a running-gear supporting said frame, a plurality of slabs of a consistent, plastic and mineral material permeated with suitable coloring-matters and forming the outer and inner walls of the vehicle and secured to the said frame and adhesively secured together at their adjoining edges, a plurality of molded shapes of like material permeated with suitable coloring-matters and forming throughout said vehicle construction the various exposed parts to complete the structure, and fixtures forming the fittings within said vehicle formed of a like material and permeated with suitable coloring-matters, bolts securing said material to said frame and said fixtures to said slabs, and hangings and light furnishings of a non-inflammable nature, as and for the purpose specified.

7. In a device of the class described, in combination, a frame, a suitable running-gear, a double wall formed of slabs of a consistent, plastic and mineral material having overlapping adjoining edges adhesively secured together, a roof secured to said walls at the top thereof and formed of a like material, said material being permeated with a suitable coloring-matter, and a double flooring formed in slabs adhesively secured together at their adjoining edges and bolted and adhesively secured to the bottom of said walls, as and for the purpose specified.

820,957. **DELINTING-MACHINE.** ROMAN DERDEYN, Vicksburg, Miss. Filed May 6, 1904. Serial No. 206,616.



Claim.—1. In a delinting-machine, in combination, a delinting-chamber formed by a series of auxiliary grinding-rolls, and a grinding-roll located within said delinting-chamber, as described.

2. In a delinting-machine, a grinding-roll, a series of auxiliary rolls located around said grinding-roll and provided with bars located between each pair of auxiliary rolls, as and for the purposes described.

3. In a delinting-machine, a grinding-roll, a plurality of auxiliary rolls located about said grinding-roll to form a portion of the walls of the seed-containing chamber, and means whereby the location of the axes of said auxiliary rolls may be adjusted with relation to each other, as and for the purposes described.

4. In a delinting-machine, a grinding-roll, a series of auxiliary rolls forming the walls of the grinding-chamber, adjustable means located between each pair of auxiliary rolls whereby the escape of seed between said rolls may be prevented.

5. In a delinting-machine, a grinding-roll, a seed-delinting chamber, the walls of which comprise auxiliary grinding-rolls, and means for preventing the escape of seed between a pair of such auxiliary rolls, comprising a bar arranged with relation thereto, as described.

6. In a delinting-machine, a grinding-roll, a seed-delinting chamber, the walls of which comprise a plurality of auxiliary grinding-rolls and means for the escape of the lint from said chamber, and means whereby the size of said chamber is adjusted, as described.

7. In a delinting-machine having a grinding-roll and a plurality of auxiliary rolls surrounding said grinding-roll, means for supporting one or more auxiliary rolls comprising a pair of links, each supporting a journal for such roll and pivotally mounted on the machine, and means whereby the position of such links may be adjusted comprising set-screws located on each side of said link and bearing against it, as described.

8. In a delinting-machine, in combination, a delinting-chamber formed by a series of auxiliary grinding-rolls, and a grinding-roll located centrally within said chamber, whereby an annular delinting-chamber is formed as shown.

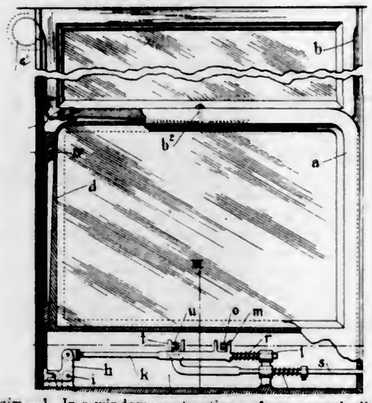
9. In a delinting-machine, a grinding-roll and a seed-delinting chamber formed about said grinding-roll, the walls of which comprise one or more pairs of grinding-rolls, means for rotating each roll of each pair in a reverse direction from the other roll of the same pair, and means for the escape of lint from said chamber, as set forth.

10. In a delinting-machine, a series of auxiliary grinding-rolls arranged to form a delinting or seed-containing chamber, and a grinding-roll within said chamber.

11. In a delinting-machine, a grinding-roll and around said roll a series of auxiliary grinding-rolls arranged to form between the same and said interior grinding-roll an annular delinting or seed-containing chamber.

12. In a delinting-machine, a series of auxiliary grinding-rolls located in close proximity to one another and arranged to form within or between the same a delinting or seed-containing chamber, a grinding-roll within said chamber, and means for the escape of lint from said chamber, as described.

820,958. **WINDOW.** ROBERT M. DIXON, East Orange, N. J. Filed Feb. 11, 1905. Serial No. 245,196.



Claim.—1. In a window construction, a frame, a sash slidably mounted between the jambs thereof, a wedge-shaped clog interposed between a stile of such sash and a jamb and carried by said sash and in frictional engagement with both of said parts, and means tending to raise said sash and simultaneously actuate said clog to prevent such movement.

2. In a window construction, a frame, a sash slidably mounted between the jambs thereof, and provided in its side stile with a groove having a greater depth at the top than at the bottom thereof, a clog interposed between the bottom wall of said groove and said jamb and having a wedge shape in conformity therewith and means normally maintaining said clog in a tightly-wedged position whereby sliding of said sash will be prevented.

3. In a window construction, a frame, a sash slidably mounted between the jambs thereof, wedge means interposed between and engaging directly said sash and frame to normally positively lock the same against an upward movement but unadapted to positively secure the same against downward movement, and means yieldably supporting said sash whereby the same may be manually lowered in opposition thereto.

4. In a window construction, a frame, a sash slidably mounted between the jambs thereof, a side stile of said sash provided with a groove which gradually diminishes in depth from the top to the bottom thereof, a clog wedge-shaped in conformity with the bottom wall of said groove and interposed between the jamb and said wall, said clog being mounted to normally move against said wall within the plane of said sash and means for releasing said clog.

5. In a window construction, a frame, a sash slidably mounted therein, an equalization-bar hinged to said sash, and sash-supporting cords attached to the ends of said bar and adapted to support the same together with the sash suspended therefrom.

6. In a window construction, a frame, a sash slidably mounted therein, an equalizing-bar affixed to said sash at a point intermediate its ends, and suspending means supporting said bar and depending sash.

7. In a window construction, a frame, a sash slidably mounted between the jambs thereof, an equalization-bar overlying the top end of said sash and attached thereto at a point intermediate its ends, and supporting-cords attached to the ends of said bar, whereby the same, together with the depending sash are suspended thereby.

8. In a window construction, a frame, a sash slidably mounted therein, a wedge-shaped member positioned therebetween and normally held in engagement with said sash and said frame, said wedge-shaped member having a greater extent of surface in engagement with said frame than with said sash so that when said sash is slid in either direction relative movement will tend to take place between said wedge-shaped member and said sash.

9. In a window construction, a frame, a sash slidably mounted therein, a wedge-shaped member positioned therebetween and normally held in engagement with both of said parts, a portion of the surface of said wedge-shaped member adjacent said sash being removed whereby the same has less surface exposed to said sash than to said frame, so that when said sash is slid in either direction relative movement will tend to take place between said wedge-shaped member and said sash.

10. In a window construction, a frame, a sash slidably mounted therein, said sash having its side stile provided with a groove tapering in depth from end to end thereof, a clog lying in said groove and being tapered in a direction opposite from the taper of said groove and interposed between a wall of said groove and said frame, and means for reciprocating said clog to permit the sash to slide in its frame.

11. In window construction, in combination, a frame, a sash having a channeled stile slidably mounted in said frame, a strip secured to said frame and extending into one of the channels of said stile and a clog interposed between said strip and a wall of said channel for normally securing the sash frictionally to the frame.

12. In window construction, in combination, a frame, a sash having a channeled stile slidably mounted in said frame, a strip secured to said frame and extending into a channel of said stile, a clog interposed between said strip and a wall of said channel, means for normally maintaining said clog in frictional engagement with each of said parts, and means for reciprocating said clog to release said sash.

13. In a window construction, a frame, a sash slidably mounted between the jambs thereof, wedge means located in a tapering groove in said sash and interposed between and engaging said sash and said frame normally to frictionally lock the sash against sliding in one direction but adapted to permit sliding of said sash in an opposite direction.

14. In a window construction, a frame, a sash slidably mounted between the jambs thereof, wedge means located in a tapering groove in said sash and interposed between and engaging said sash and said frame normally to frictionally lock the sash against sliding in one direction but adapted to permit sliding of said sash in an opposite direction, and means for moving said wedge means, whereby the sash may be slid in either direction.

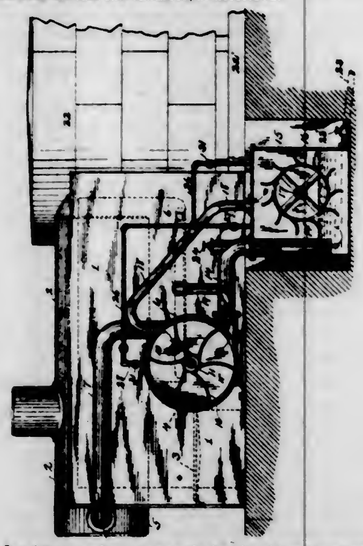
15. In a window construction, a frame, a sash slidably mounted between the jambs thereof, wedge means interposed between and engaging said sash and said frame normally to frictionally lock the sash against sliding in one direction but adapted to permit sliding of said sash in an opposite direction, a positive lock for securing said sash to said frame, said wedge means and said positive locking means being provided with means which at a single operation may be manipulated move said parts thereby to release said sash.

16. In window construction, in combination, a frame, a sash, the side stile of which has a tapered recess extending longitudinally thereof, a wedge member located within said recess and interposed between and engaging said frame and a wall of said recess, a device for positively locking said sash to said frame, and means connected with said wedge member and said positively-locking means, whereby at a single operation said parts may be moved to free the sash and permit a free sliding movement thereof.

17. In a window construction, a frame provided with a projecting member, a sash slidably mounted between the jambs of said frame and having a channeled stile, the edges of which take about said member, a clog carried by said sash and interposed between said member and a wall of the channel of said sash, and means tending to raise said sash and simultaneously actuate said clog to prevent such movement.

820,959. **GAS APPARATUS.** HUGH Y. B. DUFF, Allegheny, Pa., assignor to A. G. Carpenter, Joseph Stuart, John McCune, William Y. Cadwallader, and G. B. Griffiths, individually and as trustees, Pittsburg, Pa. Filed Apr. 21, 1905. Serial No. 256,714.

Claim.—1. In a furnace using a gaseous fuel such as bituminous coal, comprising a smoke-receptacle connected to said furnace, a pipe leading from said receptacle, a fan or blower connected to said pipe, the free end of which is submerged in water, a means comprising a coil of pipe arranged within the said furnace for superheating the gases passing through the fan or blower, and a means for spraying water into the said fan-chamber, as described.



2. In a furnace using a gaseous fuel such as bituminous coal, the combination comprising the smoke-receptacle, connected to said furnace, a pipe leading from said receptacle, a fan or blower connected to said pipe, an exit-pipe from said fan, an air-valve in said pipe, a gas-washer comprising a tank and agitator for the water therein, a pipe leading from said tank to a second fan or blower, whereby the gaseous contents of said washer may be removed to a gas-holder.

3. In a furnace using a gaseous fuel such as bituminous coal, the combination comprising a smoke-receptacle connected to said furnace, a pipe leading from said receptacle, a fan or blower connected to said pipe, an exit-pipe leading from the fan-chamber, an air siphon-valve in said pipe, a gas-washer consisting of a tank with inclosed agitator, a pipe leading from said tank to a second fan or blower, and a pipe leading from said second blower to a heating-coil arranged in connection with the furnace, as and for the purpose described.

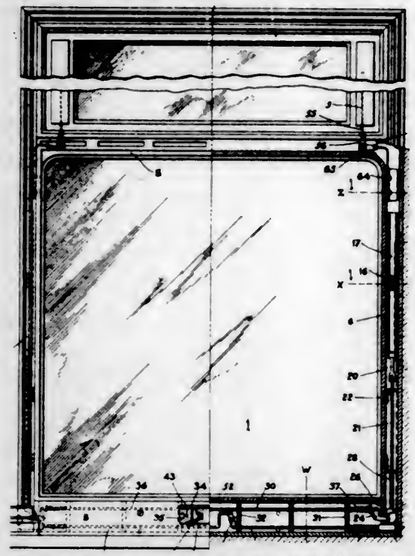
820,960. **WINDOW.** EDMUND M. HAS, Jersey City, N. J., assignor to Robert M. Dixon, East Orange, N. J. Filed Oct. 23, 1905. Serial No. 284,110.

Claim.—1. In combination, a sash, a frame, a guide fixed upon the frame and extending within said sash, and a wedge member carried by the sash adapted by movement relative thereto to engage said guide to force said sash into engagement with said guide.

2. In combination, a sash, a frame, a guide fixed upon said frame extending within a channel arranged longitudinally of said sash, and a member adapted automatically to coact with said sash and said guide whereby said sash and said guide are forced into frictional contact to prevent a relative movement thereof.

3. In combination, a sash, a frame, a guide fixed upon said frame extending within a channel arranged longitudinally of said sash, means rotatably mounted upon said sash within the channel thereof, a member carried by said sash mounted for movement relative thereto, and means for causing said member to wedge between said rotatably-mounted means and said guide whereby said sash is caused to frictionally engage said guide.

4. In combination, a sash having a longitudinally-extending channel, a frame, a guide fixed upon said frame extending within said channel, said guide being disposed in a parallel relation to the walls of said channel, means mounted rotatively upon said sash within said channel, a movable member provided with a wedge carried by said sash and arranged within said channel, means adapted automatically to force said wedge between said rotatively-mounted member and said guide whereby said sash is caused frictionally to engage said guide, and manually-controlled means adapted to retract said wedge.



5. In combination, a sash, a frame, a guide fixed upon said frame extending into a channel arranged longitudinally of said sash, means for positively locking said sash with said frame, means for frictionally locking said sash with said guide, means constantly urging said sash to movement in said frame, and manually-operated means adapted simultaneously to release both of said locking means, said frictional locking means being adapted automatically to relock said sash with said guide at any point in the range of movement thereof.

6. In combination, a sash, a frame, a guide fixed upon said frame extending into a channel arranged longitudinally of said sash, means for positively locking said sash with said frame, means for frictionally locking said sash with said guide, means constantly urging said sash to movement in said frame, manually-operated means adapted simultaneously to release both of said locking means, and means for relocking said frictional locking means with said guide at any point in the range of movement of said sash

7. In combination, a sash, a frame, a guide fixed upon said frame extending within said sash, means for constantly urging said sash to movement along said guide, means for positively locking said sash with said frame, means for frictionally locking said sash with said guide, both of said locking means being carried by said sash, and means adapted simultaneously to release both of said locking means whereby movement of said sash along said guide is permitted, and means adapted to operate said frictional locking means whereby said sash is forced into engagement with said guide at any point in its range of movement.

8. In combination, a sash, a frame, a guide fixed upon said frame extending within a recess in said sash, means connected with said sash tending to urge the same to movement, a plurality of locking means carried by said sash, one of said locking means being adapted positively to lock said sash with said frame, the other of said locking means being adapted frictionally to lock the same with said guide, means adapted simultaneously to release both of said locking means whereby said sash is freely movable, said frictional locking means being adapted automatically to lock said sash with said guide at any point within its range of movement.

9. In combination, a sash, a frame, a guide fixed upon said frame extending within a recess in said sash, means connected with said sash tending to slide the same in said frame, a plurality of locking means carried by said sash, one of said locking means being adapted positively to lock said sash with said frame, the other of said locking means being adapted frictionally to lock the same with said guide, means adapted simultaneously to release both of said locking means whereby said sash is freely movable, and means adapted automatically to operate said frictional locking means at any stage of movement of said sash.

10. In combination, a sash, a frame, said sash being provided with a longitudinally-extending channel, a guide fixed upon the frame extending within said channel, said guide being arranged in proximity to one of the walls of said channel, means connecting said sash with said frame adapted to urge the same to movement therein, a plurality of locking means carried by said sash one of which is adapted to lock the same positively with said sash, the other of said locking means being adapted frictionally to lock the same with said guide, and means carried by said sash adapted simultaneously to release both of said locking means whereby said sash is permitted free movement, said frictional locking means being adapted to force said sash into frictional engagement with said guide at any point in the range of its sliding movement.

11. In combination, a sash, a frame, means for urging said sash to movement in said frame, a plurality of positive locks for said sash, a plurality of frictional locks for said sash, a single means adapted to operate both of said positive locks, and a single means adapted to operate both of said frictional locks.

12. In combination, a sash, a frame, means for urging said sash to movement in said frame, a plurality of positive locks for said sash, a plurality of frictional locks for said sash, a single means adapted to release both of said positive locks, and a single means to release both of said frictional locks, said releasing means being capable of being manipulated whereby all of said locks are released simultaneously to allow free movement of said sash, said frictional locking means being adapted to lock said sash at any stage of its range of movement.

13. In combination, a sash provided with a plurality of longitudinally-arranged channels, a frame, guides fixed upon said frame, one of said guides extending within each of said channels, means mounted upon said frame and connected with said sash adapted constantly to urge the same to movement in said frame, a plurality of members adapted to be reciprocated within said sash to lock the same positively to said frame, a single means for operating all of said members, a plurality of frictional locking members carried by said sash one of which is located within each of said channels, a single means for operating each of said frictional locking members, the operating means for said positive locking members and said frictional locking means being capable of being operated simultaneously to release said sash whereby the same may move in said frame, and means adapted automatically to force said frictional locking means into engagement with said guide whereby said sash is caused frictionally to engage said guide at any point within its range of movement.

14. In combination, a sash, a frame, said sash being provided with a longitudinally-extending channel in each of its lateral edges, a plurality of guides fixed upon said frame one of which extends within each of said channels, a plurality of means positioned upon said frame and connected with said sash, each of which is adapted to urge said sash to movement in said frame, a plurality of locking-bolts arranged to reciprocate in opposite directions within said sash, a rocker-lever either end of which is connected to one of said bolts whereby said bolts are reciprocated simultaneously in opposite directions, a single means for reciprocating said bolts, means adapted to maintain said bolts in an extended condition, a plurality of frictional locking means positioned within said sash, each of said means comprising a wedge-shaped member located in one of said channels and interposed between one of said guides and a wall of one of said channels, springs for causing each of said wedge-shaped members to force the walls of their respective channels into engagement with said guides, and a single means for unwedging all of said wedge-shaped members whereby said sash may move freely along said guide.

15. In combination, a sash, a frame, suspending means for said sash and means connected with said suspending means adapted automatically to prevent a descent of said sash upon disconnection thereof from said suspending means.

16. In combination, a sash, a frame in which said sash is adapted to slide, suspending means for said sash, and means adapted to prevent a quick descent of said sash upon disconnection thereof from said suspending means, said last-mentioned means being normally held in an inoperative condition by said suspending means.

17. In combination, a sash, a frame in which said sash is mounted to slide, suspending devices for said sash, and locking means connected with said suspending devices a portion of which is interposed in the support of said sash adapted to lock the same with said frame upon a breakage of said suspending devices.

18. In combination, a sash, a frame in which said sash is mounted to slide, a guide for said sash fixed upon said frame, suspending devices for said sash, said suspending devices tending to urge said sash to upward movement, and frictional locking means connected with said suspending devices a portion of which is interposed in support of said sash, said frictional locking means being normally held in an inoperative condition by said suspending devices and adapted to become operative and lock said sash to said guide upon a release of said sash and said suspending devices.

19. In combination, a sash, a frame in which said sash is mounted to slide, means for suspending said sash from said frame, said means tending to urge said sash to slide in said frame, a member mounted for movement upon said sash, means for connecting said member with said suspending means, and means adapted automatically upon a breakage of said suspending devices to move said member whereby said sash will be locked in said frame.

20. In combination, a sash, a member in which said sash is adapted to slide, a guide upon said member extending within said sash, a member mounted upon said sash adapted to be moved to engage said guide, suspending devices for said sash, a pivotally-mounted member forming a means of connection between said suspending devices and said sash and connected with said second-mentioned member, and means adapted automatically to move said second-mentioned member into frictional engagement with said guide upon a release of said sash from said suspending devices.

21. In combination, a sash, a frame in which said sash is adapted to slide, a guide fixed upon said frame extending within said sash, a frictional locking member provided with an inclined slot mounted for movement upon said sash, means extended loosely through said inclined slot for connecting said member with said sash, suspending devices for said sash, a member pivotally mounted upon said sash connected with said suspending devices, said member being also connected with said frictional locking member, and means whereby said last-named member will be operated to cause said frictional locking member to engage said guide upon the breakage of said suspending devices.

22. In combination, a frame, a sash mounted to slide in said frame, a guide upon said frame extending within said sash, a frictional locking member provided with a plurality of inclined slots, means extending loosely through said inclined slots to connect said frictional locking member movably with said sash, a lever pivotally mounted upon said sash, suspending means for said sash one end of said lever connected with said suspending means, the other end of said lever being connected with said frictional locking member, and a spring normally held in an inoperative condition by said suspending devices but adapted to swing said lever upon a disconnection thereof from said suspending devices whereby said frictional locking means is caused to frictionally engage with said guide to lock the sash against movement.

23. In combination, a frame, a sash mounted to slide in said frame, a suspending device for said sash, means adapted positively to lock said sash to said frame, means adapted frictionally to lock said sash to said frame and a third means adapted to lock said sash to said frame when said sash becomes disconnected from its suspended device.

24. In combination, a sash, a frame in which said sash is adapted to slide, suspending means for said sash, means adapted positively to lock said sash in said frame, a pair of frictional locking means, one of which is adapted to lock said sash in said frame at any point in its range of movement, the other of said frictional locking means being adapted to lock said sash in said frame at any point in its range of movement upon a release of said sash from its suspending device.

25. In combination, a sash, a frame into which said sash is mounted to slide, suspending means for said sash, means adapted positively to lock said sash to said frame, and a pair of frictional locking devices, one of which is adapted automatically to lock said sash in said frame at any point in its range of movement, the other of said frictional locking devices being adapted automatically to lock said sash to said frame at any point in its range of movement, the operation of said last-mentioned means being determined by a breakage of the suspending devices for said sash.

26. In combination, a sash, a frame in which said sash is mounted for sliding movement, suspending means for said sash adapted to urge said sash to movement in said frame, a device for positively locking said sash to said frame when said sash is in a closed condition, and a pair of frictional locking devices one of which is adapted to lock said sash to said frame at any point in its range of movement, the other of said frictional locking devices being normally in an inoperative condition but adapted to operate upon a breakage of said suspending devices automatically to lock said sash to said frame at any point in its range of movement, all of said locking devices being mounted for movement with said sash.

27. In window construction, in combination, a sash having a recessed portion, guiding means projecting within said recessed portion, and means positioned between said guiding means and one of the walls of said recess adapted to force apart said wall and said guiding means and force together said guiding means and the opposite wall of said recess.

28. In window construction, in combination, a sash having a recessed portion, guiding means projecting within said recessed portion, and means within said recessed portion adapted to clamp said guiding means and lock said sash against movement in either direction.

29. In window construction, in combination, a sash having its lateral portions channeled, guiding means projecting within said channels, and means within each of said channeled portions adapted to clamp each of said guiding means and lock said sash against movement in either direction.

30. In window construction, in combination, a sash having its lateral portions channeled, guiding means projecting within said channels, means within each of said channeled portions adapted to clamp each of said guiding means and lock said sash against movement in either direction, and means adapted simultaneously to release said guiding means from clamped condition.

31. In window construction, a sash having a channeled portion on its lateral edge, guiding means projecting within said channeled portion, means within said channeled portion adapted to clamp said guiding means and lock said sash against movement in either direction, positively-acting locking means adapted to lock said sash in a predetermined position, and means adapted simultaneously to release both of said locking means.

32. In window construction, in combination, a sash, means adapted to suspend said sash, and means connected with said suspending means adapted upon being released therefrom automatically to lock said sash.

33. In window construction, in combination, a sash, means adapted to suspend said sash, and means adapted automatically to lock said sash upon said suspending means becoming inoperative.

34. In window construction, in combination, a frame, a guiding member fixed upon said frame, a slidable sash, portions of which extend about said guide, and revoluble means carried by said sash and located therein adapted automatically to be forced laterally to carry said sash into frictional contact with said guide.

35. In window construction, in combination, a slidable sash provided with a recess, a stationary guide fixed to the frame and extending within said recess, and means located within said recess adapted to automatically force one of the walls of said recess into frictional contact with said guide.

36. In window construction, in combination, a slidable sash or similar member having a recess therein, a frame in which said sash is mounted to slide, a guide fixed to said frame extending within said recess, and wedging means carried by said sash located within said recess and adapted by a movement relatively to said sash to automatically force a wall of said recess into frictional engagement with said guide.

37. In combination a slidably-mounted sash or similar member having a channeled stile, a frame in which said sash is mounted to slide, a guide fixed to said frame extending within said channel, a wedge carried by said sash adapted to be moved into engagement with means fixed upon one of the walls of said channel and with said guide, whereby a wall of said channel will be frictionally engaged with said guide.

38. In window construction, in combination, a slidable sash or similar member having a channeled edge, a guide extending within the channel in the edge of said sash, a movable member carried by said sash and located in the channel thereof, said guide adapted by movement of said movable member to be clamped between the same and the flange of the channel in said sash.

39. In window construction, in combination, a slidable sash or the like provided with a channel in the side stile thereof, a fixed guide extending within said channel, a wedge member carried by said sash adapted to be reciprocated within said channel, and means adapted automatically to force said wedge into engagement with means positioned upon a flange of said channel and said guide whereby said guide will be clamped between said wedge and another flange of said channel, thereby preventing relative movement of said sash and said guide.

40. In window construction, in combination, a slidable sash, a frame in which said sash is adapted to slide, suspending devices for said sash, and locking means for said sash normally maintained in inoperative position by said suspending devices, but adapted to become operative upon a disconnection of said sash from said suspending devices.

41. In window construction, in combination, a frame, a sash mounted to slide therein, means for suspending said sash, and means mounted upon said sash adapted to lock the same automatically to said frame upon said sash being freed from said suspending means.

42. In window construction, in combination, a frame, a sash provided with a channel in its side stile, a guide secured to said frame and extending in said channel adjacent a side wall thereof, and an antifriction-roller supported upon one of the walls of said channel, and a reciprocatory wedge member normally interposed between said antifriction-roller and said guide, means for holding said parts in frictional contact, whereby said sash is frictionally held against movement relative to said guide and means for reciprocating said member, whereby said sash is freed from said guide and permitted to move in said frame.

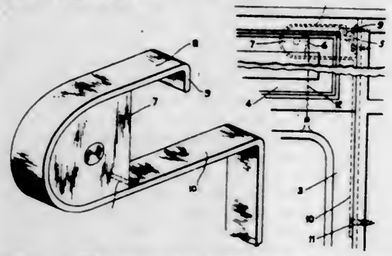
43. In combination, a sash, a frame, a guide fixed upon the frame and extending within said sash, and means carried by the sash adapted by a relative movement thereto to engage said guide to force said sash into engagement with said guide.

44. In combination, a sash, a frame, a member fixed upon said frame and extending within said sash, and means carried by the sash adapted by a movement relative thereto to engage said member to force said sash into engagement with said member.

45. In combination, a sash, a frame, a guide fixed upon the frame, and means carried by the sash adapted by a movement relative thereto to engage said guide to force said sash into engagement with said guide.

46. In combination, a sash, a frame, a member fixed upon the frame and means adapted by a movement relative to said sash to engage said member to force said sash into engagement with said member.

820,961. CAR CONSTRUCTION. EDMUND M. ERB, Jersey City, N. J., assignor to Robert M. Dixon, East Orange, N. J. Filed Oct. 23, 1905. Serial No. 284,111.



Claim.—1. The combination with a car-body of a fixture secured thereto between the side walls, and means adapted removably to attach a sash-suspending device to said fixture, said means being provided with a part projecting beyond one of said side walls.

2. The combination with a car-body of a fixture secured thereto between the side walls, and means adapted removably to attach a sash-suspending device to said fixture, said means being provided with a supporting part projecting beyond one of said side walls.

3. The combination with a car-body of a fixture permanently secured therein between the side walls, sash-suspending means adapted to be secured to said fixture, and means without said side walls adapted to control the position of said suspending means with relation to said fixtnre.

4. The combination with a car-body of a fixture secured thereto between the side walls, sash-suspending means adapted to be introduced between said side walls and moved up and attached to said fixture, and means without said side walls adapted to control the position of said sash-suspending means with relation to said fixture.

5. In a car, the combination of a fixture secured between the side walls thereof above a sash, and sash-suspending means provided with a member adapted to coact with said fixture and also provided with a member extending beyond one of said side walls and adapted to be rigidly secured to said car.

6. The combination with a car-body having inner and outer side walls, of a fixture permanently secured to a pilaster between said walls, sash-suspending means having a member extending therefrom adapted to engage with said fixture, a member extending from said sash-suspending means beyond one of said side walls, and means adapted to fasten said member to said pilaster.

7. The combination with a car-body provided with a permanent fixture positioned between the side walls of sash-suspending means provided with a plurality of projecting portions, one of which is adapted to be attached to said fixture within the side walls, and the other of which extends beyond one of the side walls and is adapted to be attached to the car.

8. The combination with a car-body, of a socket mounted upon a pilaster between the side walls thereof, a suspending device for sashes provided with a hook-shaped member adapted to coact with said socket and being also provided with a depending member extending without the side walls, and means for fastening said depending member to said pilaster.

9. In combination, a car-body, a socket rigidly secured thereto between the side walls, a sash-suspending device provided with a hook-shaped member adapted to be hung on said socket and with a depending member extending without said side walls, and means for attaching said depending member securely to the side walls, said last-mentioned means controlling the engagement of said hook-shaped member with said socket.

10. The combination with a car-body, of a sash-suspending device, means for securing said sash-suspending device to said car-body within the side walls thereof, and means for attaching said sash-suspending device to said car-body without said side walls.

11. The combination with a car-body having spaced inner and outer side walls, of a fixture permanently secured to the car within said side walls, a sash-suspending device adapted to be inserted from without said car-body within said side walls and provided with a hook-shaped member adapted to coact with said fixture whereby said sash-suspending device is secured to said car-body within said side walls, and means without said side walls adapted to secure a member depending from said sash-suspending device to said car.

12. In construction of the class described, in combination, inner and outer walls, a member fixed within the space comprised between said walls, a sash, sash-suspending means connected with said sash and adapted to interlock with said member, and means adapted to control said interlocking means from without said space.

13. In construction of the class described, in combination, a structure comprising inner and outer walls, a sash, suspending means connected with said sash and adapted to be connected with said structure in the space comprised between said walls, and means adapted to control said last connection from without said space.

14. In construction of the class described, in combination, a pair of walls, a sash, suspending means connected with said sash and normally positioned within the space comprised between said walls, and a relatively accessible member connected with said suspending means and through which said suspending means is adapted to be removed from its normal operative position.

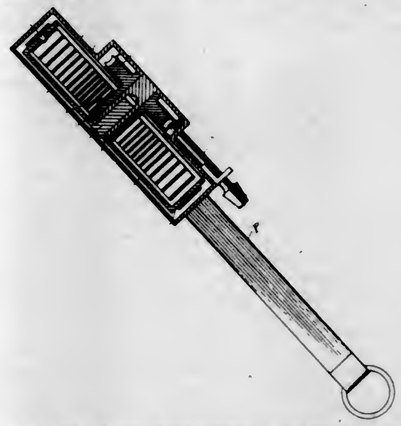
15. In construction of the class described, in combination, a pair of walls, a sash adapted to pass into the space comprised between said walls, a fixture secured within said space, a spring-drum connected with and adapted to balance said sash, means within said space having mounted thereon said spring-drum adapted to interlock with said fixture, and rigid means connected with said last-mentioned means and extending without said space adapted to control said interlocking of said first-mentioned means with said fixture.

820,962. ADJUSTABLE SASH-BALANCE. EDMUND M. ERB, Jersey City, N. J., assignor to Robert M. Dixon, East Orange, N. J. Filed Dec. 26, 1905. Serial No. 293,239.

Claim.—1. In a sash-balance, a revoluble drum having a journal and provided with a flexible connection adapted for being attached to a sash, a spring affixed to said drum within the same for yieldably restraining the revolutions thereof, whereby the sash is elastically supported, a wheel affixed to said spring, a suitable worm for revolubly positioning said wheel to vary the elasticity of said spring and an incasing shell having a stem provided with an orifice for receiving said journal, said stem providing a journal for said wheel.

2. In a sash-balance, a drum, a flexible connection attached thereto, and peripherally riding thereon and adapted for being detachably secured to a sash, a spiral spring attached to said drum therewithin to yieldably restrain the movement thereof whereby the sash is elastically supported, a sleeve fixed to said spring and peripherally provided with teeth, a worm revolubly engaged therewith but restrained against displacement and extending exteriorly of a casing into a head adapted for being engaged by a suitable actuating-wrench, and a suitable casing for inclosing said parts and having a tubular journal whereby said drum and said sleeve may be independently carried.

3. In a sash-balance, in combination, a revoluble drum having a journal and provided with a flexible connection adapted for being connected with a sash, a spring affixed to said drum within the same for yieldably restraining the revolution thereof, whereby said sash is elastically supported, a sleeve attached to said spring and adapted to be revolved to tension the same, means for maintaining said spring in any desired adjustment, and a member provided interiorly with a bearing for the journal of said drum and exteriorly with a bearing for said sleeve.



4. In a sash-balance, in combination, a drum having an integral journal, a connection affixed exteriorly to said drum and adapted for being attached to a sash, a spring within said drum having its outer end affixed thereto, a worm-wheel provided with a sleeve to which the inner end of said spring is affixed, a worm for adjusting said wheel and having thrust-bearings intermediate its ends, said worm extending beyond said thrust-bearings and having its end shaped for engagement by a wrench, and a casing for inclosing said parts provided with an integral hollow member interiorly of which the journal of said drum is journaled, and exteriorly with a bearing for the sleeve of said worm-wheel, the extension of said worm extending without said casing, whereby it is easily accessible.

820,963. BRACELET. FREDERICK FETTING, Providence, R. I., assignor to Potter & Buffinton Company, a Corporation of Rhode Island. Filed Jan. 5, 1906. Serial No. 294,725.



Claim.—1. In a bracelet, two hollow wings, in combination with a tube having a projecting head fixed in one wing and slotted, of a reinforcing-strip having a projecting upper portion and a lower portion of less breadth than the outer diameter of the tube loosely mounted in the tube, and a pivot-pin fixed in the other hollow wing and traversing the head of the tube and the upper end of the reinforcing-strip.

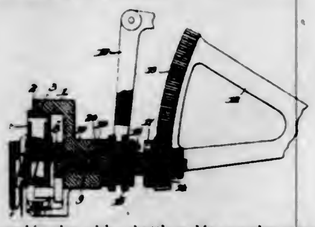
2. In a bracelet, two hollow wings, in combination with a longitudinally-slotted tube having a projecting head fixed in one wing and slotted, of a reinforcing-strip having a projecting upper portion and a lower portion of less breadth than the outer diameter of the tube mounted in the tube in alinement with the longitudinal slot, and a pivot-pin fixed in the other hollow wing and traversing the head of the tube and the upper end of the reinforcing-strip.

3. In a bracelet, two hollow wings, in combination with a tube having a projecting head fixed in one wing and slotted, of a reinforcing-strip having a projecting beveled upper portion and a lower portion of less breadth than the outer diameter of the tube loosely mounted in the tube, and a pivot-pin fixed in the other hollow wing and traversing the head of the tube and the upper end of the reinforcing-strip.

820,964. SHUTTLE-ACTUATING MECHANISM FOR SEWING-MACHINES. ALFRED B. FOWLER, Boston, Mass., assignor to United Shoe Machinery Company, Paterson, N. J., a Corporation of New Jersey. Filed Jan. 13, 1902. Serial No. 89,584.

Claim.—1. A shuttle-actuating mechanism, having, in combination, a shuttle, a shuttle-driver shaft, an oscillatory member

loosely mounted thereon, a vibrating lever for actuating the oscillatory member, a clutch member slidingly mounted upon the shuttle-driver shaft and held from rotation with relation thereto, a stationary braking member and means for moving the clutch member alternately into engagement with the oscillatory member and braking member, substantially as described.



2. The combination with a shuttle and its complementary stitch-forming mechanism of means for intermittently operating said shuttle comprising a shaft, driving connections between said shaft and said shuttle, a member loosely mounted upon said shaft, means for oscillating said member, means for operatively connecting said member and shaft during movement of said member in one direction, and means for locking said shaft against movement during the reverse movement of said member, substantially as described.

3. A shuttle-actuating mechanism, having, in combination, a shuttle-driver, a shuttle-driver shaft, a pinion loosely mounted thereon, a toothed segment meshing with the pinion, and means for connecting the pinion to the shuttle-driver shaft and for disconnecting it therefrom, substantially as described.

4. A shuttle-actuating mechanism, having, in combination, a shuttle-driver, a shuttle-driver shaft, a pinion loosely mounted thereon, a toothed segment meshing with the pinion, means for connecting the pinion to the shuttle-driver shaft and for disconnecting it therefrom, and means for locking the shuttle-driver shaft in position while the pinion is disconnected therefrom, substantially as described.

5. A shuttle-actuating mechanism, having, in combination, a shuttle-driver, a shuttle-driver shaft, a pinion loosely mounted thereon, a toothed segment meshing with said pinion, a clutch member splined on the shaft, a stationary braking member, and means for moving the clutch member alternately into engagement with the pinion and braking member, substantially as described.

6. In a sewing-machine, the combination with a main driving-shaft, a shuttle, complementary stitch-forming mechanism, and driving connections between said main shaft and said complementary stitch-forming mechanism, of means for intermittently operating said shuttle during the continuous operation of said complementary stitch-forming mechanism, said means comprising a second shaft, driving connection between said second shaft and said shuttle, a gear having movement independent of said second shaft, driving connection between said gear and said main shaft, a clutch adapted to connect said gear and said second shaft, and means between said main shaft and said clutch for causing said main shaft to operate said clutch to alternately connect and disconnect said second shaft and said gear, substantially as described.

7. The combination with a shuttle and its complementary stitch-forming mechanism, of means for intermittently operating said shuttle comprising a driving-shaft in driving connection therewith, a gear having movement independent of said shaft, means for reciprocating said gear, a clutch adapted to connect said gear and said shaft, and means for automatically throwing said clutch into position to connect said gear and shaft during movement of said gear in one direction and into position to disconnect said gear and shaft during reverse movement of said gear, substantially as described.

8. The combination with a shuttle and its complementary stitch-forming mechanism, of a main shaft, driving connection between said main shaft and said complementary stitch-forming mechanism, and means for intermittently operating said shuttle without affecting the operation of said complementary stitch-forming mechanism, said means comprising a second shaft, driving connections between said second shaft and said shuttle, a gear having movement independent of said second shaft, driving connection between said gear and said main shaft, a clutch adapted to connect said gear and said second shaft, and means for operating said clutch from said main shaft, substantially as described.

9. The combination with a shuttle and its complementary stitch-forming mechanism, of means for intermittently operating said shuttle and comprising a driving-shaft having driving connection therewith, a gear having movement independent of said shaft, a rocking segment coöperating with said gear, means for reciprocating said segment, a clutch adapted to connect said gear and said shaft, and means for operating said clutch, substantially as described.

10. The combination with a shuttle and its complementary stitch-forming mechanism, of means for intermittently operating said shuttle comprising a shaft, driving connection between said shaft and said shuttle, a gear loosely mounted upon said shaft, means for reciprocating said gear, means for operatively connecting said gear and shaft during movement of said gear in one direction, and means for locking said shaft against movement during the reverse movement of said gear, substantially as described.

11. The combination with a shuttle and its complementary stitch-forming mechanism, of means for intermittently operating said shuttle and comprising a gear having movement independent of said shuttle, a driving member coöperating with said gear, said driving member having movement other than its shuttle-driving movement, means for locking said driving member against movement, a relatively fixed member, a clutch having gear engaging and releasing movement independent of said shuttle but movable with said shuttle in the movement of the latter, and means for locking said clutch in engagement with said gear when said gear-driving member is locked against movement, moving said clutch into locked engagement with said relatively fixed member to break the connection between said shaft and said gear and permit movement of said driving member other than shuttle-driving movement, and to connect said gear and shuttle during the shuttle-driving movement of said gear-driving member, substantially as described.

12. The combination with a shuttle and its complementary stitch-forming mechanism, of means for intermittently operating said shuttle and comprising a gear having movement independent of said shuttle, a driving member coöperating with said gear, said driving member having movement other than its shuttle-driving movement, means for locking said driving member against movement, a relatively fixed member, a clutch having gear engaging and releasing movement independent of said shuttle but movable with said shuttle in the movements of the latter, means for locking said clutch in engagement with said gear when said gear-driving member is locked against movement, moving said clutch into locked engagement with said relatively fixed member to break the connection between said shaft and said gear and permit movement of said driving member other than shuttle-driving movement, and to connect said gear and shuttle during the shuttle-driving movement of said gear-driving member, and means whereby said clutch engages one of the parts to which it is locked before disengaging the other of said parts, substantially as described.

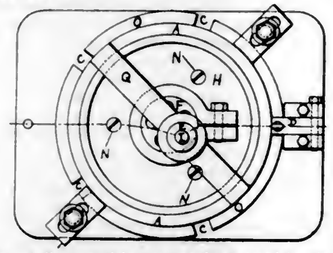
13. The combination with a shuttle and its complementary stitch-forming mechanism, of means for intermittently operating said shuttle and comprising a driving-shaft in driving connection therewith, a gear having movement independent of said shaft, a reciprocatory gear-driving member, means for locking said driving member against movement, a relatively fixed member, a clutch slidable upon said shaft but rotatable therewith, and means upon said clutch whereby the same can engage either said gear or said relatively fixed member, said means being of such character that said clutch engages one of said parts before disengaging the other thereof, substantially as described.

14. The combination with a shuttle and its complementary stitch-forming mechanism, of means for intermittently operating said shuttle and comprising a driving-shaft in driving connection therewith, a gear having movement independent of said shaft, a reciprocatory gear-driving member, a clutch slidable upon said shaft but rotatable therewith, said clutch being adapted to engage said gear, and means whereby, said clutch being in closed position connecting said gear and said shaft and said clutch-driving member being at the end of its clutch-driving movement said gear-driving member rests and during this period of rest said clutch is thrown into open position, said gear-driving member then moves backwardly, said gear-driving member then rests and during this period of rest said clutch moves into closed position, and said gear-driving member then moves forwardly to drive the said shaft, substantially as described.

15. A shuttle-actuating mechanism, having, in combination, a shuttle-driver, an oscillatory member, a vibrating lever for actuating the oscillatory member having continuous operative engagement therewith, and means for connecting the shuttle-driver to the oscillatory member and for disconnecting it therefrom, substantially as described.

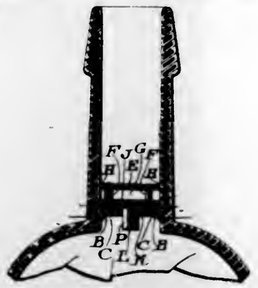
16. A shuttle-actuating mechanism, having, in combination, a shuttle-driver, an oscillatory member, a lever and cam for acutating the oscillatory member, said lever and oscillatory member being in continuous operative connection, and a clutch and suitable connections for connecting and disconnecting the oscillatory member and shuttle-driver, substantially as described.

820,965 JIG FOR DRILLING, REAMING, AND BROACHING. WILLIAM H. FROSCATT, Jr., Philadelphia, Pa. Filed Dec. 4, 1905. Serial No. 290,312.



Claim.—A jig comprising an annular tapered bearing projection, a blank-holder arranged to be secured in the recess in said projection, a disk provided with index-notches and revolubly mounted on said annular projection, a support provided with a tool-aperture and extending over the blank-holder carried by said disk, a latch coöperating with the index-notches, and means for clamping the disk.

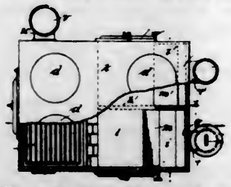
820,966. NON-REFILLABLE BOTTLE. FREDERICK J. GREEN and ALBERT MAUCHER, Philadelphia, Pa. Filed June 14, 1905. Serial No. 265,188.



Claim.—1. A non-refillable device for a bottle consisting of a base-plate, a valve on said plate, a diaphragm elevated from said plate and integral shouldered posts connected with said plate and diaphragm supporting the latter, said diaphragm having a port therethrough.

2. A non-refillable device for a bottle consisting of a base-plate, a valve on said plate, a diaphragm elevated from said plate, and integral shouldered posts connected with said plate and diaphragm supporting the latter, said diaphragm having a port therethrough, said plate having an opening therethrough and said valve having an elongated stem provided with a duct in its side and freely occupying said opening and extended therethrough.

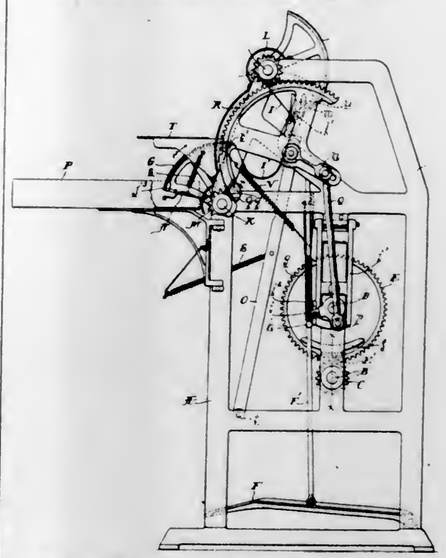
820,967. COOKING AND ROASTING STOVE. FRANZ GLOWACKI, Brooklyn, N. Y. Filed June 15, 1905. Serial No. 265,393.



Claim.—1. The combination with a cooking-stove, of a roasting or baking chamber extending transversally within the stove, said chamber being accessible from two ends, a partition-wall dividing the space between the outer wall of the said chamber and one of the side walls of the stove into two vertical compartments, a transversal extension of the partition at its lower end dividing the space below the baking-chamber into two transversal compartments, a fire-box at the opposite end of the stove, flap-valves at the upper end of the vertical compartments, said flap-valves being adapted to alternately control the passage of the fire-gases through said compartments, the wall of the stove being provided with controllable holes, each terminating in a separate compartment, a smoke-pipe adapted to be alternatively fixed in said holes, substantially and for the purpose as specified.

2. The combination with a cooking-stove, of a roasting or baking chamber extending transversally within the stove, said chamber being accessible from two ends, doors at said two ends of the chamber, said doors being capable of swinging vertically, a partition-wall dividing the space between the outer wall of the baking-chamber and one of the side walls of the stove into two vertical compartments, said partition-wall having a transversal extension at its lower end dividing the space underneath the baking-chamber into two transversal compartements, flap-valves at the upper end of the vertical compartments, said flap-valves being controllable from the outside and adapted to alternatively permit the passage of the fire-gases through the respective compartments, the wall of the stove being provided with controllable holes, each terminating into a separate compartment, a smoke-pipe adapted to be alternatively fixed in said holes, substantially and for the purpose as specified.

820,968. CIGAR-BUNCHING MACHINE. ALEXANDER GORDON, Detroit, Mich. Filed July 14, 1904. Serial No. 216,475.



Claim.—1. In a cigar-bunching machine, the combination with the bunching-apron and its front and rear carriers adapted to form a pocket in said apron and to actuate the same in rolling the bunch, of a bunch-former movable toward said front carrier in advance of the movement of the same and operating to confine the filler in the pocket of the apron, and thence to hold the bunch in stationary position while being rolled.

2. In a cigar-bunching machine, the combination with the bunching-apron, of oscillating front and rear carriers having segmental cylindrical faces and adapted to form a pocket in said apron and to actuate the same by the movement of said carriers, the rear carrier having a movement in advance of the front carrier and being located above the front carrier and adapted to carry the rear end of the apron forwardly over the front carrier and thereby close the pocket in the apron by the movement of said carrier alone.

3. In a cigar-bunching machine, the combination with the bunching-apron, of oscillating front and rear carriers having segmental cylindrical faces and adapted to hold the apron in their normal position to form a pocket for the reception of the filler and to

close the same by an independent movement of the rear carrier while the front carrier remains stationary, and a bunch-former conjointly moving with the rear carrier in advance of the movement of the front carrier and coöperating therewith to close the pocket and confine the filler therein.

4. In a cigar-bunching machine, the combination with the bunching-apron, of oscillating front and rear carriers having segmental cylindrical faces and normally holding the apron in position to form a pocket for receiving the filler, said rear carrier having an independent movement in advance of the front carrier and operating to close the pocket in the apron while the front carrier remains stationary and the front carrier having a conjointed movement with the rear carrier adapted to actuate the apron.

5. In a cigar-bunching machine, the combination with the bunching-apron and its front and rear carriers adapted to form a pocket in said apron and actuate the same in rolling the bunch, of a movable bunch-former actuated by the movement of the rear carrier and adapted to close the pocket in the apron in the movement of said rear carrier in advance of that of the front carrier, said carrier being adapted to maintain the slack in the apron during the movement of the bunch-former in closing the pocket.

6. In a cigar-bunching machine, the combination with the bunching-apron, of oscillating front and rear carriers adapted to form a pocket in the apron and to actuate the same in rolling the bunch, the rear carrier having an independent movement in advance of the front carrier and a conjointed movement with the front carrier for actuating the apron in rolling the bunch and a bunch-former actuated by the rear carrier in the independent movement thereof and remaining stationary during the conjointed movement of the carriers.

7. In a cigar-bunching machine, the combination with the bunching-apron and its front and rear carriers adapted to form a pocket in said apron and to actuate the same in rolling the bunch, of a movable bunch-former arranged to jointly move with the rear carrier in advance of the front carrier and adapted to close the pocket in said apron and means whereby the front carrier remains stationary and is locked in position till the pocket is closed and the slack is taken out of the apron.

8. In a cigar-bunching machine, the combination with the bunching-apron and its front and rear carriers adapted to form a pocket in said apron and to actuate the same in rolling the bunch, of a movable bunch-former, and means for imparting a joint movement to the rear carrier and to the bunch-former in advance of the movement of the front carrier and adapted to first close the pocket in the apron and thence to take the slack out of the apron, while the front carrier remains stationary and is locked in position.

9. In a cigar-bunching machine, the combination with the bunching-apron and its front and rear carriers adapted to form a pocket in said apron and actuate the same in rolling the bunch, of means for imparting a conjoint movement to said carriers and an independent movement to the rear carrier in advance of the front carrier, and a movable bunch-former coöperating with the rear carrier to close the pocket and take up the slack in the apron during the independent movement of said rear carrier.

10. In a cigar-bunching machine, the combination with the bunching-apron and its front and rear carriers adapted to form a pocket in said apron and actuate the same in rolling the bunch, of a movable bunch-former, an actuating-spring therefor adapted to move it into operative position, and hold the same in rolling the bunch and means for controlling the movement of said bunch-former by the movement of the rear carrier, said rear carrier having a movement in advance of the front carrier.

11. In a cigar-bunching machine, the combination with the bunching-apron and its front and rear carriers adapted to form a pocket in said apron and to actuate the same in rolling the bunch, of means for imparting movement to the rear carrier in advance of the front carrier, a movable bunch-former, means adapted to move said bunch-former into operative position by the advance movement of the rear carrier and to release the same from engagement with said rear carrier when in said position and a spring adapted to hold said bunch-former in its operative position independently of said rear carrier.

12. In a cigar-bunching machine, the combination with the bunching-apron and its front and rear carriers adapted to form a pocket in said apron and to actuate the same in rolling the bunch, of a bunch-former, an oscillating frame carrying said bunch-former, a spring adapted to actuate the frame to move said bunch-former into operative position and yieldingly hold the same in said position and means for controlling the movement of said frame by the movement of the rear carrier, said means adapted to release said frame from control when the bunch-former has moved into operative position.

13. In a cigar-bunching machine, the combination with the bunching-apron and its carriers adapted to form a pocket in the apron and actuate the same in rolling the bunch, of a bunch-former composed in parts of a flexible pressure-bar and means applied thereto for shortening or lengthening the portions of said bar subjected to flexure in rolling.

14. In a cigar-bunching machine, the combination with the bunching-apron and its coöperating carriers, of a bunch-former composed of a rigid and a flexible portion or pressure-bar, and means for supporting said flexible portion upon the rigid portion at variable points of its length against flexure in rolling the bunch.

15. In a cigar-bunching machine, the combination with the bunching-apron and its coöperating carriers, of a bunch-former composed of a rigid bar, a coil-spring secured at its ends to the rigid bar and supports carried by the rigid bar slidingly adjustable thereon and adapted to support said coil-spring intermediate its ends against flexure in rolling the bunch.

16. In a cigar-bunching machine, the combination with the frame, of a bunching-apron, oscillating front and rear carriers for said apron, each consisting of a rocker mounted upon a shaft journaled in the frame and provided with a segmental cylindrical face for the apron to wind upon, and actuating devices therefor comprising pinions carried by the shafts of the rockers and an oscillating gear-segment traveling in continuous mesh with the pinion of the rear carrier and in discontinuous mesh with the pinion on the front carrier whereby said front carrier remains stationary during a portion of the movement of the rear carrier.

17. In a cigar-bunching machine, the combination with the frame, of a bunching-apron, oscillating front and rear carriers for said apron each consisting of a rocker mounted upon a shaft journaled in the frame and provided with a segmental cylindrical face for the apron to wind upon, and actuating devices therefor comprising pinions carried by the shafts of the rockers and an oscillating segmental rack traveling in continuous mesh with the pinion of the rear carrier and in discontinuous mesh with the pinion of the front carrier, said pinion and rack having mutilated portions adapted to delay the motion of the front carrier and lock the same in position and means for throwing said rack and pinion into gear at the end of the delay.

18. In a cigar-bunching machine, the combination with the frame, of a bunching-apron, oscillating front and rear carriers for said apron each consisting of a rocker mounted upon a shaft journaled in the frame and provided with a segmental cylindrical face for the apron to wind upon, pinions carried by the shafts of the rockers, an oscillating rack in continuous mesh with the pinion of the rear carrier and in discontinuous mesh with the pinion of the front carrier, means for locking said front carrier in position when not in mesh with the rack and means for imparting one complete oscillation to the oscillating rack under control of a foot-lever.

19. In a cigar-bunching machine, the combination with the frame and bunching-apron, of oscillating front and rear carriers for said apron consisting of rockers mounted upon shafts journaled in the frame, pinions on said shafts, an oscillating rack actuating said pinions, a continuously-revolving pinion, a gear-wheel meshing with said pinion and having a hinged section carrying a small portion of the gear-teeth of said wheel, a spring for normally throwing said section out of operative position, a foot-lever adapted to throw the same into operative position, a crank carried by the shaft of the gear-wheel, and a connecting-rod connecting said crank with the oscillating rack and adapted to actuate the same, means being provided for frictionally locking the shaft of the gear-wheel after each revolution into its prescribed normal position.

20. In a cigar-bunching machine, the combination with the frame and bunching-apron, of oscillating front and rear rockers mounted upon shafts journaled in the frame and adapted to actuate the apron in forming the bunch, pinions mounted upon the shafts of the rockers, an oscillating rack adapted to oscillate the rockers through the medium of said pinions and impart a conjointed motion thereto and an independent motion to the rear rocker in advance of the front rocker, a movable bunch-former actuated by the rear rocker in advance of the front rocker, and means under control of the operator for imparting to the rack one complete oscillation through a prescribed angle of motion.

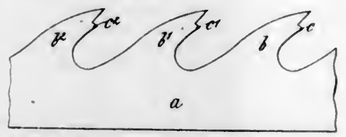
21. In a cigar-bunching machine, the combination with the frame and the bunching-apron, of front and rear carriers therefor adapted to form a pocket in the apron and actuate the same in rolling the bunch, a movable bunch-former actuated by the rear carrier and coöperating therewith to contract the pocket in the apron around the filler and carry it into position for rolling while the front carrier remains stationary, and a stationary table above the front carrier and adapted to support the binder in position.

22. In a cigar-bunching machine, the combination with the frame and bunching-apron, of oscillating front and rear carriers for the apron, each consisting of a segmental cylindrical rocker coöperating with each other in rolling the bunch, the one in front forming the bunching-table and operating to pay out the apron in a rearward direction and the one in rear operating to take up the apron in an upward and forward direction, the rockers being of like radius and oscillating in opposite directions.

23. In a cigar-bunching machine, the combination with the frame and bunching-apron, of oscillating front and rear carriers for the apron each consisting of a segmental cylindrical rocker coöperating with each other in rolling the bunch, the front rocker adapted to form the table and pay out the apron in a rearward direction and the rear rocker adapted to take up the apron in an upward and forward direction, the two rockers being of the same radius and oscillating alike but in opposite directions, and a movable bunch-former coöperating with the rear rocker to take up the slack in the apron in advance of the movement of the front rocker and remaining stationary in rolling the bunch.

24. In a cigar-bunching machine, the combination with the frame and bunching-apron, of a stationary binder-table, an oscillating rocker below said table carrying the front end of the apron and forming the table for rolling the bunch, an oscillating rocker above the table carrying the rear end of the apron, the two rockers adapted to form a pocket in the apron adjacent to the rear end of the binder-table and to actuate the apron in rolling the bunch by oscillating in opposite directions to each other, and a movable bunch-former coöperating therewith.

820,969. SAW. HEINRICH GRELCK, Barmstedt, Germany. Filed Oct. 26, 1905. Serial No. 284,457.



Claim.—A saw the cutting-teeth of which are provided on the front of the teeth with projections which prevent the sawdust from getting to the bottom of the intervals between the teeth and thence between the saw-blade and the cutting-surfaces.

820,970. METAL PILING. JAMES J. HAROLD, Jersey City, N. J., assignor, by mesne assignments, to Emma Harold, Jersey City, N. J. Filed Dec. 22, 1904. Serial No. 237,871.



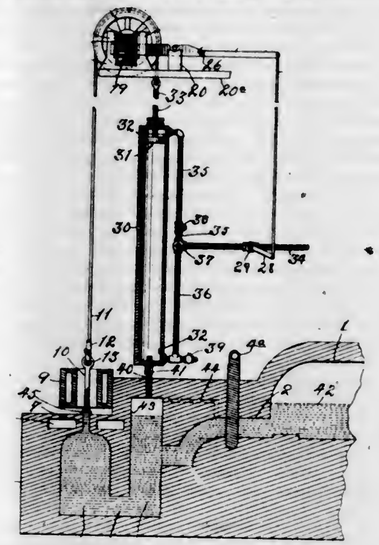
Claim.—In metal piling, interlocking members and flanged beams, said interlocking members provided with channels and flat surfaces, said flat surfaces of said members fastened together and said channels adapted to engage and retain the flanges of said beams.

820,971. APPARATUS FOR DRAWING ARTICLES FROM MOLTEN BATHS. GEORGE H. HARVEY, Glenfield, Pa., assignor, by mesne assignments, of one-half to Brownsville Glass Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed July 5, 1904. Serial No. 215,284.

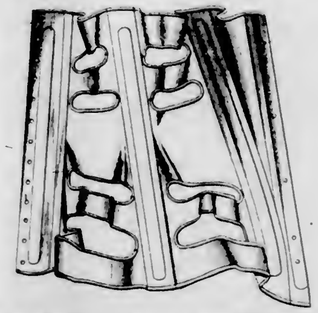
Claim.—1. In the manufacture of an article from molten or semimolten material, means for forcing said material through an orifice, second means for withdrawing the material protruding from said orifice and third means for regulating the flow of material through said orifice by the increase of weight of the material being drawn by said withdrawing means.

2. In the manufacture of an article from molten or semimolten material, means for forcing said material through an orifice, means for withdrawing said material as it is caused to protrude from said orifice and means for increasing the power operating said withdrawing means as the body of withdrawn material increases so that the rate of withdrawal is susbstantially constant.

3. In the manufacture of an article from molten or semimolten material, means for continuously forcing said material through an orifice, means for withdrawing material as it protrudes from said orifice and means whereby the power operating said withdrawing means is increased as the body of withdrawn material increases so that the rate of withdrawal is substantially constant.

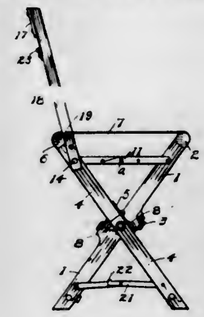


820,972. BATHING-CORSET. KATE HATCH, New York, N. Y. Filed May 24, 1905. Serial No. 261,944.



Claim.—A bathing-corset comprising a plurality of matching vulcanizable sections, waterproof union strips vulcanized to the contiguous edges of the corset-sections and arranged upon opposite sides of the latter to form pockets therebetween, and stiffening-ribs inclosed in said pockets.

820,973. FOLDING SEAT AND STEP. CHARLES N. HAZELTON, Morrison, Ill. Filed Apr. 7, 1905. Serial No. 254,318.

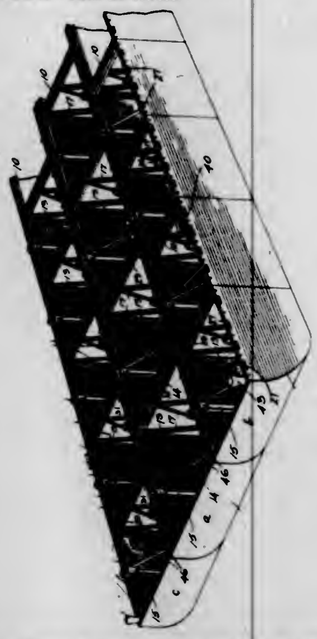


Claim.—1. In a combined folding seat and step, the combination of an inner pair of legs; a step rigidly uniting such legs at their central points; an outer pair of legs, spaced apart from said inner pair, and pivotally secured thereto at their central points, the upper parts of said outer pair of legs being hingeably secured to the lower parts, above the pivotal points thereof, so as to fold over into proximity with the inner pair of legs; means for holding the upper parts of each adjacent pair of legs from accidental closing; means for limiting the separation of the lower parts of said legs, when in use; and a folding back, pivotally secured to the outer pair of said legs, and adapted to fold downwardly to form a support, when said device is in use as a step, substantially as shown and set forth.

2. The combination, with a pair of spaced-apart legs 1 and 4, pivotally attached at their central points, of a brace 11, pivotally secured at each of its ends to one of said legs, and comprising two plates 12 and 13, pivotally united centrally of said brace, so as to fold downwardly into the space between said legs; the inner ends of said plates being projected beyond the pivotal point, the inner end of the plate 12 coming in contact with a stud 15 fixed on the plate 13, and the inner end of the plate 13 engaging a boss 16 on the plate 12, so as to lock said brace from accidental closing, substantially as shown and described.

3. In a folding seat and step, the combination of a pair of legs 1, provided with the cross-piece 2; the pair of legs 4, pivotally attached to the legs 1 at their central points, and provided with the cross-piece 6; a pair of supports 18, pivoted on the legs 4, and united by the back 17; and the buttons 23, pivoted on the strips 18, and adapted to be turned inwardly into engagement with the ends of the cross-piece 2, to support the back thereon, substantially as and for the purpose named.

820,974. **STEEL BARGE.** MEIER G. HILPERT, Pittsburg, Pa. Filed Jan. 6, 1905. Serial No. 239,585.



Claim.—1. A barge or boat comprising a series of sections open at the top and of several different sizes whereby they may be nested in groups, and means for connecting said sections together.

2. A barge or boat comprising a series of sections open at the top and of several different sizes whereby they may be nested in groups, each section being a unit as to stability and flotation, and means for connecting said sections together.

3. A barge or boat comprising a series of sections each having sides, ends and bottom, and being of several different sizes whereby they may be nested in groups, and means for connecting said sections together.

4. A barge or boat comprising a series of sections open at the top and being of the same shape but of several different sizes, whereby they may be nested in groups, and means for conecting said sections together.

5. A barge or boat comprising a series of sections having sides, ends and bottom and being of the same shape but of several different sizes whereby they may be nested in groups, and means for connecting said sections together.

6. A barge or boat comprising a series of rectangular sections open at the top and of several different sizes, whereby they may be nested in groups, and means for connecting said sections together.

7. A barge or boat comprising a series of rectangular sections having metallic sides, ends and bottom, and being open at the top and of several different sizes whereby they may be nested in groups, and means for connecting said sections together.

8. A barge or boat comprising a series of sections having metallic sides, ends and bottom and being open at the top and of several different sizes whereby they may be nested in groups, each section being a unit as to stability and flotation, and means for connecting said sections together.

9. A barge or boat comprising a series of sections open at the top and of different sizes whereby they may be nested in interchangeable groups, and means for connecting said sections together.

10. A barge or boat comprising a series of sections open at the top and of several different sizes whereby they may be nested in interchangeable groups, each section being a unit as to stability and flotation, and means for connecting said sections together.

11. A barge, boat or body of floating compartments comprising a plurality of interchangeable sections provided with means for the attachment of lifting mechanism, and means for connecting said sections together.

12. A barge or boat comprising a plurality of interchangeable metallic sections each being a unit as to stability and flotation and each provided with means for the attachment of lifting mechanism, and means for connecting said sections together.

13. A barge or boat comprising a plurality of rectangular sections having metallic sides, ends and bottoms, and each being provided with means for the attachment of lifting mechanism, and means for connecting said sections together.

14. A barge or boat comprising a plurality of sections each provided with means for the attachment of lifting mechanism, and means for connecting said sections together.

15. A barge or boat comprising a plurality of sections each being a unit as to stability and flotation, said sections being arranged for the attachment of lifting means, and means for connecting said sections to each other.

16. A barge or boat comprising a plurality of sections each of which is provided with sockets for the attachment of lifting means, and means for connecting said sections together.

17. A barge or boat comprising a plurality of sections each of which is a unit as to stability and flotation, ears on each of said sections for the attachment of lifting means, and suitable means for connecting said sections to each other.

18. A barge-section comprising metallic side, end and bottom plates, a lifting attachment on the sides, and a cross-beam on the bottom in line with said lifting attachment.

19. A barge-section comprising metallic side, end and bottom plates, lifting attachments on the upper edges of said section, trusses for strengthening the side and end plates, and a bottom supported from said trusses.

20. A barge-section comprising metallic side, bottom and end plates, trusses for strengthening the side plates and end plates, floor-supports connected to the side and end plates, and lifting means at the upper edges of said section.

21. A barge-section comprising side, end and bottom plates, trusses for strengthening the side plates and end plates, lifting attachments on the side plates intermediate their ends, a cross beam or beams attached to the floor and in line with said lifting means, and floor-supports extending from said cross beam or beams to the end plates.

22. A boat or barge comprising a plurality of sections, means on said sections for attaching lifting mechanism and swiveling the same thereon, and means for connecting said sections together.

23. A barge or boat comprising a plurality of sections each being provided with means for the attachment of lifting mechanism and with means for connecting thereto a dumping hook or rod, and means for connecting said sections together.

24. A boat or barge comprising a plurality of sections each provided with sockets for having swiveled thereto a lifting mechanism and with an attachment for connecting thereto a dumping rod or hook, and means for connecting said sections together.

25. A barge or boat comprising a series of sections open at the top and of several different sizes whereby they may be nested in groups, and means arranged for easy disconnection and serving to connect said sections together.

26. A barge or boat comprising a series of sections each being a unit as to stability and flotation and being open at the top, said sections being of several different sizes whereby they may be nested in groups, and means arranged to permit of easy disconnection and serving to connect said sections together.

27. A barge or boat comprising a series of interchangeable sections open at the top and of several different sizes whereby they may be nested in groups, said sections being provided with openings in their top edges, and detachable connecting means passing through said openings.

28. A barge or boat comprising a series of sections open at the top and of several different sizes whereby they may be nested in groups, and provided at their top edges with a series of slots laid out on the Vernier or other scale, and detachable connecting means passing through said slots.

29. A barge or boat comprising a series of sections open at the top and of several different sizes whereby they may be nested in groups, metallic gunwales connected to the top edges of said sections, and connecting means attached to said gunwales.

30. A barge or boat comprising a series of metallic sections open at the top and of several different sizes whereby they may be nested in groups, metallic flanged gunwales on said sections, and connecting means attached to said gunwales.

31. A barge or boat comprising a plurality of interchangeable sections of several different sizes and being open at their tops whereby they may be nested in groups, means for connecting said sections to each other at their tops, and means for connecting the same together at their bottoms.

32. A barge or boat comprising a plurality of sections open at the top and of several different sizes, coupling-hooks swiveled to some of said sections and arranged to engage adjacent sections, and operating means connected to each of said hooks.

33. A barge or boat comprising a plurality of sections, a coupling-hook mounted thereon and arranged to engage a stop on the adjacent section, and an operating-shaft connected to said coupling-hook and extending to the top of the section.

34. A barge or boat comprising a plurality of sections each provided with a well, an operating-shaft in said well, and a coupling-hook on said shaft and arranged to engage a coöperating coupling member on the adjacent section.

35. A barge-section comprising metallic side, end and bottom plates, gunwales attached to the upper edges thereof, corner-connecting angles and strengthening members attached to said plates, said gunwales connecting-angles and strengthening members being on the inside of said section, and means attached to the side plates and serving for the attachemnt of lifting mechanism.

36. A barge or boat comprising a series of groups of sections each group being composed of a plurality of sections of different sizes whereby they may be nested when empty, and means for connecting said sections together.

37. A barge or boat comprising a series of groups of sections, each group being composed of a plurality of sections open at the top and of different sizes, whereby they may be nested when empty, and means for connecting said sections together.

38. A barge or boat comprising a series of groups of sections, each group being composed of a plurality of sections of metallic construction open on their tops and of different sizes, whereby they may be nested when empty, and means for connecting said sections directly to each other.

39. A barge or boat comprising a plurality of sections open at the top and of different sizes, each of said sections being provided with suitable means for the attachment of lifting means, and means for connecting said sections together.

40. A barge or boat comprising a plurality of sections each being open at its top, means for connecting said sections together, and rigid side extensions or spray-boards detachably secured to the outer edges of the edge sections.

41. A barge or boat comprising a plurality of sections each being a unit as to stability and flotation and being open on its top, means for connecting said sections together, and rigid side extensions or spray-boards detachably secured to the outer edges of the edge sections.

42. A barge or boat comprising a series of metallic sections comprising side, end and bottom plates, corner-connecting angles for uniting said plates, said corner-connecting angles projecting above the tops thereof, and spray-boards attached to said projecting angles.

43. A barge or boat comprising a plurality of metallic sections provided with gunwales, means secured to said gunwales for connecting said sections together, and metallic spray-boards connected water-tight to said gunwales and to each other, thereby to bring the connecting means nearer the center of gravity of the sections.

44. A boat or barge comprising a series of sections each comprising a unit as to stability and flotation, means for connecting said sections together, and line-attaching means detachably connected to the outer sections of said barge.

45. A barge or boat comprising a series of metallic sections, metallic gunwales attached to said sections, means for connecting said sections together, and line-attaching means detachably secured to the gunwales of the outer sections of said barge.

46. A barge or boat comprising a series of metallic sections, flanged bars forming the gunwales thereof and provided with holes, means for connecting said sections together, line-attaching means, and bolts for attaching the same to the gunwales of said sections.

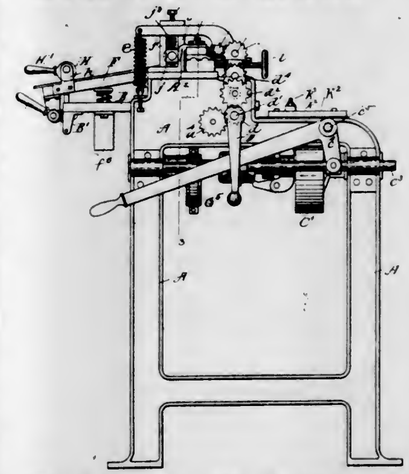
47. A barge or boat comprising a series of metallic sections having side, end and bottom plates, corner-connecting angles for said plates, said corner-connecting angles projecting above the top edges of said sections, means for connecting said sections together, and a check-post having an opening and adapted to pass over the projecting angle at the corners of the barge, and be attached to the gunwale thereof.

48. A barge comprising a series of sections open at the top and of several different sizes whereby they may be nested in groups, some of said sections being provided with a rake, and means for connecting said sections together.

49. A barge or boat comprising a plurality of sections, wells in said sections, and connecting means for said sections operable through said wells.

50. A barge or boat comprising a plurality of metallic sections, wells on said sections adjacent to the side or end walls, and connecting means for said sections operable through said wells.

820,975. **MACHINE FOR SCARFING LEATHER.** MERTON A. HOLMES, Newton, and GEORGE W. ALLEN, East Bridgewater, Mass., assignors to Charles Holmes Machine Company, Portland, Me., a Corporation of Maine. Filed Feb. 1, 1904. Serial No. 191,548.



Claim.—1. In a scarfing-machine, in combination, a movable table adapted to serve as a work-support, a knife-blade located above said table, and a roll also located above said table and adapted to feed leather to the edge of said knife-blade, said roll being located in front of said knife-blade and in close proximity thereto, and said movable table being provided with means connecting it with said roll whereby the surface speed of said roll will be the same as the speed of said table, as described.

2. In a scarfing-machine, in combination, a movable table

adapted to serve as a work-support, a knife-blade located above said table, and a roll also located above said table and adapted to feed leather to the edge of said knife-blade, and said roll being located in front of said knife-blade and in close proximity thereto, and being positively revolved in a direction to feed the leather to the knife-blade, as described.

3. In a scarfing-machine, in combination, a knife-blade, a flat leather-carrying table, a clamp to clamp the leather to said table, and means located above said table to engage the leather on said table at a surface speed equal to the movement of said table and in a direction to force the leather against said knife-edge, said means comprising a feed-roll and means to positively drive said feed-roll, as described.

4. In a scarfing-machine, a bed, means whereby it is reciprocated, a knife-blade located above said bed, a work-supporting table mounted on said bed and below said knife-blade and hinged at one end, and means whereby the free end of said table may be clamped with relation to said bed, comprising a cam adapted to be rotated so as to clamp said table whereby the work may be presented at a proper angle to the knife-blade, as described.

5. In a scarfing-machine, a bed, means whereby it is reciprocated, a knife-blade located above said bed, a work-supporting table mounted on said bed and below said knife-blade, and hinged at one end, and means whereby the free end of said table may be clamped with relation to said bed, comprising a projection extending from said bed, and a cam mounted on said table and adapted to engage said projection from said bed, whereby the work may be presented to the knife at a proper angle, as described.

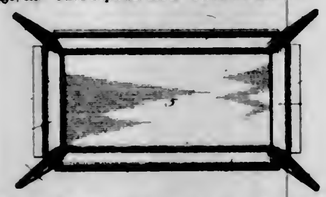
6. In a scarfing-machine, a bed, means whereby it is reciprocated, a knife-blade located above said bed, a work-supporting table mounted on said bed and below said knife-blade, and pivoted at one end, said pivoted end of said table being rounded off, whereby the free end of the table may be elevated and depressed and the said end of the table will always present the proper surface to the knife-edge, as described.

7. In a scarfing-machine, in combination with a knife-blade, a table hinged at one end, a leather-holding roll located in rear of said knife-blade and above said table, and means whereby said table is pressed upward against said roll and said knife-blade with a substantially constant pressure, as described.

8. In a scarfing-machine, in combination with a cutting mechanism, a bed, a table pivotally mounted thereon near one edge thereof, and means for retaining the free edge of said table in a fixed position with relation to said bed, said means comprising a clamping-piece pivotally mounted to said bed, a clamp pivotally mounted on said table, and means for causing the engagement of said clamp and said clamping-piece, as described.

9. In a scarfing-machine, in combination with a knife-blade, a table, means for feeding said table with relation to said knife-blade, whereby said knife-blade will engage material placed thereon to cut it, the rear edge of said table being provided with a face-piece whereby the knife-blade may be whetted by contact therewith, as and for the purposes described.

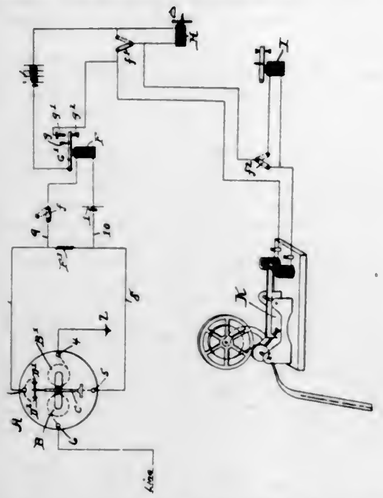
820,976. METHOD OF MAKING PANS. EDWARD KATZINGER, Chicago, Ill. Filed Sept. 22, 1904. Serial No. 225,431.



Claim.—1. The method of forming a concavo-convex corner on a sheet-metal pan, which consists in cupping a blank to produce a two-ply flap projecting outwardly from the point where the corner is to be produced, in a triangular form, having two of its angles situated at the top and bottom corners of the pan and the other at the outer end of the flap, bending one ply of said flap at a sharper angle than the other where they conjoin respectively with the walls of the pan, then applying pressure first to the lower corner of said triangle and then to its outer and upper corner in a direction transverse to the flap and toward the ply having the sharper of the two angles and longitudinally of one wall of the pan until the sides of the flap are folded together against such wall of the pan.

2. The method of making a concavo-convex corner of a sheet-metal pan, which consists in cupping a blank to form a two-ply flap projecting outwardly from the point where the corner is to be produced, providing one ply of said flap with a sharp indentation along a line curved to conform to the said concavo-convex corner and extending from about the center of such corner upwardly along the line of the upright corner or line of conjunction between the side and end walls, and subsequently folding said flap inwardly against one wall of the pan, over said indentation.

820,977. ELECTRIC TELEGRAPHY. ISIDOR KITSEE, Philadelphia, Pa. Filed June 10, 1905. Serial No. 264,657.



Claim.—1. In telegraphy, a line of transmission, a polarized relay connected to said line of transmission, contacts for said polarized relay, said contacts in electrical connection with each other and with one terminal of a local circuit, the other terminal connected to the armature of said relay, a local circuit containing translating devices, a source of current and a resistance, said resistance adapted to be shunted through the contacting of said armature with one or the other of said contacts.

2. In telegraphy, in combination with a line of transmission, a receiving device consisting of a polarized relay provided with contacts, a closed local circuit embracing a source of current, an electromagnet and a resistance of a value great enough to normally make said electromagnet inoperative; a shunt around said resistance, one terminal of said shunt in electrical contact with the movable part of said relay and the second of said terminals in electrical connection with the contacts of said relay, and means at said relay to shunt through said movable part said resistance, thereby making operative said electromagnet.

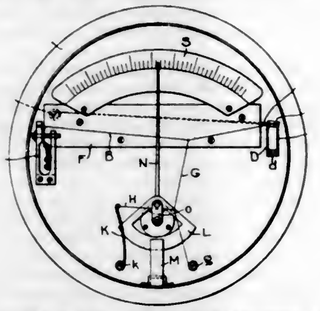
3. In telegraphy, a receiving device comprising a polarized relay connected to the line and ground respectively, a normally closed local circuit comprising an electromagnet, a source of current, and a resistance, in combination with a shunt around said resistance and means at said relay to open and close said shunt.

4. In telegraphy, a closed local circuit, a translating device connected in said circuit but non-operative by the normal current strength therein, a non-inductive resistance also connected in said local circuit, a main line, and a receiving instrument connected to be operated by current in said main line to shunt said resistance for the operation of said translating device.

5. A telegraph-line having a main-line relay connected therein, a closed local circuit, a non-inductive resistance included in said local circuit, said resistance being controlled by said relay, and a translating device operated by current in said closed circuit.

6. A telegraph-line having a main-line relay connected therein to be operated by current passing over said line, a non-inductive resistance connected in series with the tongue and forward contact of said relay, a closed circuit, and a translating device connected to be operated by current in said closed circuit.

820,978. ELECTRICAL MEASURING INSTRUMENT. WESLEY E. LAIRD, Pittsfield, Mass., assignor to Stanley Electric Manufacturing Company, Pittsfield, Mass., a Corporation of New Jersey. Filed Oct. 12, 1904. Serial No. 228,140.



Claim.—1. In an electrical measuring instrument, a yielding abutment comprising two parallel springs supported at one end and connected to each other at their free end, a wire adapted to be traversed by electric current stretched between said abutment and another support, and a compensating wire approximately parallel to the first wire connecting said abutment to a fixed support.

2. In an electrical measuring instrument, a yielding abutment comprising two parallel leaf-springs supported at one end and connected to each other at their free end, a wire adapted to be traversed by electric current stretched between said abutment and another support, and a compensating wire approximately parallel to the first wire and taking up the tension of said parallel springs.

3. In an electrical measuring instrument, a yielding abutment comprising two parallel springs supported at one end and connected to each other at their free end, a wire adapted to be traversed by electric current stretched at substantially right angles to said springs and attached to their free end, and a compensating wire substantially parallel to said first wire and connecting the free end of said springs to a fixed support.

4. In an electrical measuring instrument, a wire adapted to be traversed by electric currents, a compensating wire not traversed by current, and a heat-guard interposed between said wires.

5. In an electrical measuring instrument, a wire adapted to be traversed by electric currents, a compensating wire not traversed by current, and a plate of heat-absorbing, heat-conducting, material interposed between said wires.

6. In an electrical measuring instrument, an expansion-wire adapted to be traversed by electric currents, means for laterally straining said wire, means for indicating the amount said wire yields to said strain when expanded by an electric current, a compensating wire adapted to vary the distance between the end supports of the expansion-wire, and a heat-guard interposed between said wires.

7. In an electrical measuring instrument, indicating means, a cam-shaped pulley operatively connected thereto, a member movable with variation of current through the instrument, and a cord connected to said member and passing around said pulley.

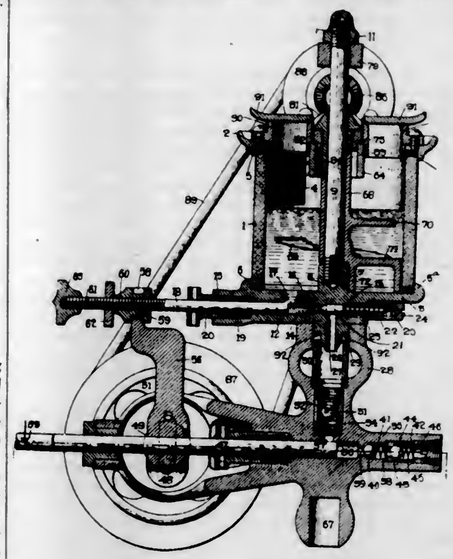
8. In an electrical measuring instrument, an expansion-wire adapted to be traversed by electric current, indicating means, a cam-shaped pulley operatively connected to said means, and a cord operatively connected to said wire and passing around said pulley.

9. In an electrical measuring instrument, an expansion-wire adapted to be traversed by electric current, means for laterally straining said wire, indicating means, a cam-shaped pulley carried thereby, and a cord connected to said straining means and passing around said pulley.

820,979. FORCE-FEED LUBRICATOR. CHARLES W. MANZEL, Buffalo, N. Y., assignor to Manzel Brothers, Buffalo, N. Y. Filed June 22, 1904. Serial No. 213,640.

Claim.—1. In a device of the class described, an oil-cup, a rod located in central vertical position in said oil-cup, an agitator arranged wholly within the cup and rotatably mounted on said rod, a bevel gear-wheel having a part interlocking with the agitator to rotate in unison therewith, a shaft having a bevel gear-wheel meshing with the first-mentioned bevel-gear, and means for rotating said shaft, substantially as set forth.

2. In a device of the class described, a plurality of force-feed devices, a shaft and a cam reciprocated by said shaft and having a vertical arm connected to the piston-rod of one of said force-feed devices and an enlargement through which another piston-rod passes.



820,980. BROOM-SEWING MACHINE. ANDREW E. MILLER, Baltimore, Md., assignor, by mesne assignments, to Hamilton Cassard, Baltimore, Md. Filed Oct. 10, 1900. Serial No. 32,574.

Claim.—1. In a broom-sewing machine, the vise-feeding mechanism comprising a pair of relatively movable rods to one of which the vise is connected, means for alternately holding and releasing said rods, means for imparting movement to each rod when released and coacting devices connected with said rods whereby each rod is given the same extent of movement.

2. In a broom-sewing machine, the combination with sewing mechanism, and a vise, of means for feeding the vise intermittently to the sewing mechanism comprising a pair of feed-rods to one of which the vise is connected, means for moving said rods alternately step by step, and a stop arranged to limit the relative movement of the rods.

3. In a broom-sewing machine, the combination with sewing mechanism, and a vise, of means for feeding the vise intermittently to the sewing mechanism comprising a pair of feed-rods to one of which the vise is connected, means for moving said rods alternately step by step, a stop arranged to limit the relative movement of the rods, and devices for adjusting the stop to vary the length of stitch.

4. In a broom-sewing machine, the combination with sewing mechanism and a vise, of a pair of rods to one of which the vise is connected, a stop carried by one of said rods, a spring for moving one of the rods until intercepted by the stop, means for positively moving the other rod, and means for clamping said rods during their periods of rest.

5. In a broom-sewing machine the combination with sewing mechanism, and a vise, of a pair of parallel feed-rods to one of which the vise is connected, mechanism for moving said rods alternately step by step, connections between said rods whereby each is given the same extent of movement, and means for clamping said rods during their periods of rest.

6. In a broom-sewing machine the combination with sewing mechanism, and a vise, of a pair of parallel feed-rods to one of which the vise is connected, mechanism for moving said rods alternately step by step including connections between said rods whereby the movable rod is actuated by devices connected with the stationary rod, and means for clamping said rods during their periods of rest

7. In a broom-sewing machine, the combination with sewing mechanism, and a vise, of a pair of rods to one of which the vise is connected, an adjustable stop carried by one of said rods, a spring for moving one of the rods until intercepted by the stop, means for positively moving the other rod, and means for clamping said rods during their periods of rest.

8. In a broom-sewing machine, the combination with sewing mechanism, and a vise, of a pair of parallel rods to one of which the vise is connected, means for imparting to said rods an alternate step-by-step forward movement, said means including an elongated vibrating blade 98 adapted to operate the feeding mechanism throughout its travel.

9. In a broom-sewing machine, the combination with sewing mechanism, and a vise, of vise-feeding mechanism comprising a rod to which the vise is connected, a second parallel rod, an arm on one of said rods, an adjustable stop on the second rod arranged to coöperate with said arm, a spring tending to move said rods relatively, a lever arranged to move said rods relatively in opposition to the spring, and means for gripping the rods alternately during their periods of rest.

10. In a broom-sewing machine, the combination with sewing mechanism, and a vise, of vise-feeding mechanism comprising the rods 83 and 91, the adjustable stop on said rod 91, a spring surrounding said rod 83, an arm on rod 83 coöperating with said stop, an arm on said rod 91 coöperating with said spring, an elbow-lever arranged to move said rods relatively and compress said spring, and means for gripping said rods alternately to hold them during their periods of rest.

11. In a broom-sewing machine, the combination with sewing mechanism, and a vise, of a vise-feeding mechanism comprising a pair of parallel rods, means for moving said rods alternately, and an adjustable stop to vary the relative movement of said rods, said stop having, for its adjusting means, a bar within the rod, a sleeve on said bar having a threaded portion engaging a threaded socket in the rod, and means for locking said sleeve to secure any desired adjustment.

12. In a broom-sewing machine, a clutch, means tending to throw the clutch into action to start the machine, a device for locking the clutch out of action, a vise, a block movable with the vise-frame and having staggered surfaces adapted to engage said locking device, and broom-dropping mechanism connected to said block and adapted to move the latter relatively to the locking device.

13. In a broom-sewing-machine, an automatic stopping mechanism, comprising means for throwing off the power and applying the brake, in combination with a part adapted to bear on the edge of the broom during the sewing operation, and a connection between said part and the stopping mechanism, for the purpose set forth.

14. In a broom-sewing machine, a part adapted to impinge on the edge of the broom during the sewing operation, in combination with automatic stopping mechanism connected with and brought into action by said part, whereby the last stitch made before stopping is placed in proper relation to the edge of the broom.

15. In a broom-sewing machine, the combination of a vise, pivoted binder-supports arranged to bear upon the edges of the broom during the sewing operation, automatic stopping mechanism, and a connection between said mechanism and one of said binder-supports, whereby the time of stopping is governed by the position of said support.

16. In a broom-sewing machine, the combination of a clutch, a vertically-movable rock-shaft having an arm adapted to throw the clutch out of action, cams arranged to rock said shaft while in one of its positions, a spring tending to throw the shaft into position to be rocked by the cams, a latch holding said shaft out of said position, a binder-support, and means connected with said support for releasing said latch, for the purpose set forth.

17. In a broom-sewing machine, the stopping mechanism comprising the vertically-movable rock-shaft, a spring and latch therefor, a binder-support, a link connected with said support and provided with a shoulder adapted to operate the latch, and the extension of the rock-shaft adapted to release the latch from said shoulder.

18. In a broom-sewing machine, the combination with the sewing-needles, of the threading devices each comprising a cam-lever, an arm pivotally connected to said lever, a cam rigidly connected to said arm, a fixed pin or guide coöperating with said cam, a thread-clamping finger pivotally connected to the arm, a spring for moving said finger in one direction to clamp the thread, and a fixed stop against which the finger abuts to unclamp the thread.

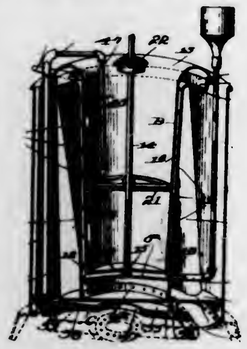
19. In a broom-sewing machine, a threading device comprising the cam-lever, an arm pivotally connected to said lever at one end and having an eye in its opposite end, a cam-piece rigidly connected to said arm and provided with a cam-slot, a fixed guide coöperating with said cam-slot, a finger pivoted to said arm and extending across the eye, a spring arranged to move said finger in one direction to clamp the thread in the eye, and a fixed stop against which the finger abuts to unclamp the thread.

20. In a broom-sewing machine, the combination of a pair of pivoted vise-jaws, toggle-levers for closing said jaws, and means for varying the effective length of the toggle-levers whereby the degree of closing of the jaws may be varied.

21. In a broom-sewing machine, the combination of a pair of pivoted vise-jaws, toggle-levers for closing said jaws, and adjustable connections between said toggle-levers and the lower ends of the jaws whereby the degree of closing of the jaws may be varied.

22. In a broom-sewing machine, the combination of a pair of pivoted vise-jaws, toggle-levers for closing said jaws, eccentric pivot-pins between said levers and jaws, and means for adjusting said eccentrics to vary the degree of closing the jaws.

820,981. **PASTEURIZER.** JOHN C. MILLER, Canton, Ohio, assignor to The Miller Pasteurizing Machine Company, Canton, Ohio, a Corporation of Ohio. Filed July 30, 1903. Serial No. 167,594.



Claim.—1. In a device for heating liquids, the combination of an inner water-holding vessel, an outer water-holding vessel, said vessels having adjacent walls providing a path for the liquid to be heated, one of said vessels being adapted to have heated currents applied directly thereto to raise the temperature of the water which it contains, and a water-duct communicating with both the inner vessel and the outer vessel and adapted to be heated to a higher temperature than the water in the said vessels, substantially as set forth.

2. In an apparatus for heating liquids, the combination of an inner water-holding vessel, an outer water-holding vessel, the walls of said vessels providing a passage-way for the liquid to be heated, and a water-duct communicating with both of the said vessels and adapted to be heated supplementally to the heating of either of the water vessels and to a temperature higher than the water in either of said vessels, whereby water may be forced from one vessel to the other, substantially as set forth.

3. In a device for heating liquids, the combination of an inner water-holding vessel, an outer water-holding vessel, said vessels having adjacent walls providing a path for the liquid to be heated, and a water-duct communicating with both of said water-holding vessels and having a part thereof below the level of the lowest body of water in said vessels exposed and situated outside both of said water-bodies, and adapted to have heated currents applied directly thereto, substantially as set forth.

4. In an apparatus for heating liquids, the combination of an outer water-holding vessel having an external wall adapted to be impinged upon by currents of heated air or gas and having flues for the passage of said currents, an inner vessel adapted to hold a body of water separate from the body of water in the outer vessel, and a water-duct communicating with both of said vessels and adapted to be heated independently of the said water vessels and extending to points above the level of the water in either of said vessels, substantially as set forth.

5. In an apparatus for heating liquids, the combination of an outer water-holding vessel, an inner vessel adapted to hold a separate body of water with a level higher than that of the water in the outer vessel, the adjacent walls of said vessels forming a path for the liquid to be heated and a water-duct communicating with both of said vessels having a section outside of both vessels and adapted to be heated independently thereof to maintain a continuous circulation of water between the said vessels, said duct extending to points above the level of the water in the inner vessel, substantially as set forth.

6. In an apparatus for heating liquids, the combination of an outer water-holding vessel, an inner water-holding vessel adapted to deliver water from its upper edge to the outer vessel, the adjacent walls of the said vessels forming a path for the liquid to be heated and a water-duct communicating with both of the said vessels and adapted to be externally heated independently thereof and arranged to conduct water from one of the said vessels to the other, substantially as set forth.

7. In an apparatus for heating liquids, the combination of an outer water-holding vessel, an inner vessel adapted to hold a body of water with a level higher than that of the body in the outer vessel and to deliver water thereto by overflow at its upper level, said inner and outer water-holding vessels having adjacent walls forming a pathway for the liquid to be heated, an escape for the liquid communicating with the said pathway, and a water-duct communicating with both of the said water-holding vessels and adapted to be externally heated independently thereof to a temperature higher than the temperature of the bodies of water in said vessels and extending to points above the water-level of the inner vessel, substantially as set forth.

8. In an apparatus for heating liquids, the combination of an outer water-holding vessel, the inner water-holding vessel, said vessels being arranged to have a reduced passage-way between their walls, means for rotating the inner vessel, and a water-duct communicating with both of the said water-holding vessels, and adapted to be externally heated independently thereof to a temperature higher than the temperature of the bodies of water in said vessels and extending to points above the level of the water in the vessel from which said duct conducts water to the other vessel, substantially as set forth.

9. In an apparatus for heating liquids, the combination of an inner water-holding vessel, an outer water-holding vessel, the walls of said vessels providing a passage-way for the liquid to be heated and the water in one vessel having normally a level differing from the water in the other vessel, and a water-duct communicating with the said vessels and through which water can pass from the vessel having the lower level to the vessel having water of the higher level, and said water-duct being adapted to be directly heated by heated currents applied to the outer surfaces of said ducts independently of the water vessels for causing such flow of water from the one to the other, substantially as set forth.

10. In a vessel for heating liquids, the combination of an outer vessel adapted to hold a body of the liquid to be treated and to hold a body of water around the said liquid to be treated, an inner vessel adapted to hold a body of water with a level higher than the water-body in the outer vessel and to supply water at such higher level to said outer vessel, a withdrawing-duct for the liquid to be treated communicating with the space between the inner vessel and the outer vessel, a supply-duct for supplying the liquid to be treated to the said space and extending to points higher than the withdrawing-duct, and a water-duct communicating with both the water-chambers in the inner vessel and the outer vessel and having a part thereof below the water in the outer vessel situated outside of both the bodies of water and adapted to be heated to a higher temperature than the bodies of water in said vessels, substantially as set forth.

11. In an apparatus for heating liquids, the combination of the outer vessel having an inner wall and an outer wall forming a water-chamber, heating-flues in the said water-chamber, a bottom wall adapted to be heated by the direct impinging of currents of heated air or gas, an inner water-holding vessel having its wall adjacent to the inner wall of the outer vessel, and a water-duct communicating with both the inner and the outer water-holding vessels and having a part thereof below the bottom of the outer vessel and adapted to be directly heated by means outside of the said water vessels, substantially as set forth.

12. In an apparatus for heating liquids, the combination with the outer water-holding vessel, an inner water-holding vessel adapted to hold a body of water independent of that in the outer vessel, and the supplemental water heater and distributer C situated outside of said water-holding vessels and having the lower receiving portion and the higher water-distributing portion and adapted to be heated directly by heating means independent of the bodies of water in the said vessels, substantially as set forth.

13. The combination of the inner water-holding vessel, the outer water-holding vessel having an outer wall and an inner wall, said inner wall being adjacent to the wall of the inner water-holding vessel and forming therewith a restricted passage-way for the liquid to be heated, the inner water-holding vessel being adapted to hold a body of water at a higher level than that in the outer vessel, and the outer vessel having a wall adapted to be heated directly by currents of air or gas, and a duct extending from the said outer water vessel into the inner vessel and adapted to be heated to a higher degree than the outer vessel by the same currents of air or gas which heat the outer vessel, said duct extending to points higher than the water in the outer vessel, substantially as set forth.

14. In a device for heating liquid, the combination of an inner water-holding vessel, an outer water-holding vessel, said vessels having adjacent walls providing a path for the liquid to be heated, the inner vessel being adapted to hold a body of water at a level higher than the body of water in the outer vessel and to discharge water into the outer vessel, the heater and distributer arranged beneath the outer vessel and communicating therewith, and the duct leading from said heater and distributer to the interior of said inner vessel.

15. In a device for heating liquid, the combination of an inner water-holding vessel, an outer water-holding vessel, said vessels having adjacent walls providing a path for the liquid to be heated, the inner vessel being arranged to discharge water into the outer vessel when its level in the inner vessel exceeds a fixed height, the water heater and distributer having a relatively narrow passage-way for the water therethrough arranged outside of said vessels, the duct communicating with said passage and with said outer water-holding vessel, and the duct communicating with said passage and said inner water-holding vessel.

16. In a device for heating liquid, the combination of an inner water-holding vessel, an outer water-holding vessel, said vessels having adjacent walls providing a path for the liquid to be heated, the inner vessel being arranged to discharge water into the outer vessel when its level in the inner vessel exceeds a fixed height, the water heater and distributer having a relatively narrow passage-way for the water therethrough, adapted to have its outer surfaces directly impinged upon and heated by highly-heated currents adapted to maintain a constant circulation between the outer cylinder and the inner cylinder, the duct communicating said passage-way with said outer water-holding vessel and the duct communicating said passage-way with the inner water-holding vessel.

17. In an apparatus for heating liquids, the combination of an inner water-holding vessel, an outer water-holding vessel, said vessels having adjacent walls providing a path for the liquid to be heated, a heater or distributer C having a relatively thin expanded water-chamber 40 shaped substantially as described and adapted to receive the water to be heated at its lower level and to deliver it from its higher level, a duct connecting said water-chamber with said outer water-holding vessel, and a duct leading from said water-chamber to said inner water-holding vessel.

820,982. **DRAWING-ROLL.** CHARLES MILLS, Newton, Mass., assignor to Saco & Potter Machine Shops, Newton, Mass., a Corporation of Massachusetts. Filed Mar. 23, 1904. Serial No. 199,623.

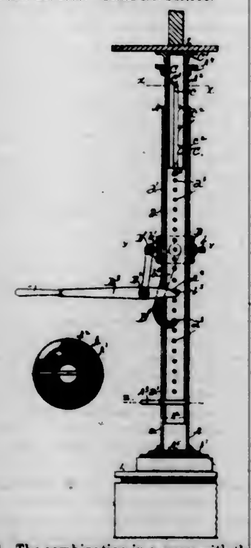


Claim.—1. A drawing-roll boss having a fluted hardened exterior and a longitudinal opening therethrough, as and for the purposes described.

2. In combination with one or more gudgeons a drawing-roll boss having a fluted hardened exterior and a longituidnal opening therethrough, the end of each gudgeon projecting into a longitudinal opening in said boss and serving as a continuation thereof, as and for the purposes described.

3. The drawing-roll above described comprising a series of bosses each having a fluted hardened exterior, and each having a longitudinal opening through it, in combination with means engaging the interior of the openings in said bosses, whereby the said bosses are kept properly centered and are connected to form a continuous drawing-roll from which any boss may be removed without the removal of any other boss, as set forth.

820,983. **TUBULAR TELESCOPING JACK OR PRESS.** SIMON B. MINNICH, Landisville, Pa., assignor to Mary M. Minnich, Landisville, Pa. Filed Jan. 20, 1905. Serial No. 241,998.



Claim.—1. The combination in a press with the tube A secured and having the base-plate A′ and the vertical slot a, of the telescoping tube A^2 mounted therein and having the vertical slot a' with the series of pins a^3 rigidly secured into the opposite sides thereof, and the ring or flanged plate A^4 rigidly secured to its upper end, with the cushion A^5 placed within the tube A and on said base-plate A′, with means provided to raise or lower said telescoping tube, all substantially as described and for the purpose hereinbefore set forth.

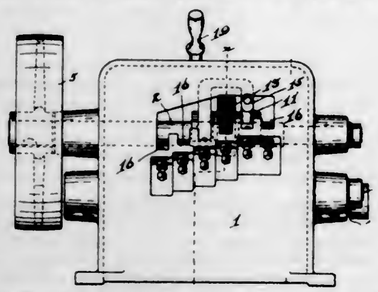
2. The combination in a press with the tube A and the telescoping tube A^2 mounted therein with the pins a^3 secured into the opposite sides thereof, said tubes having respectively the vertical slot a and the vertical slot a', of the collar B rigidly secured to said first-mentioned tube, said collar having the lug or ear b' with the orifice b^2 and the bolt B′ with the links or hangers having their upper ends pivoted on said bolt and their lower ends journaled to the sides of the lever-arm B^3, said lever-arm having its end b^3 notched above and upwardly sloped on its under side for the successive engagement with said pins a^3, substantially as described and for the purpose hereinbefore set forth.

3. In a press of the character described having the telescoping tubes A and A^2, said former tube having the slot a and said latter tube the slot a' with the pins a^3 all as shown, the combination with the collar B as described and rigidly secured to said tube A and having the bolts B^4 rigidly secured into the opposite sides thereof, of the pawl-hook B^5 having the upper ends of its arms b^4 journaled to said bolts B^4, said arms having at their lower ends the pawl-hook B^5 shaped as shown and engaging through said slots with its inner end to successively engage on said pins a^3, substantially as described and for the purpose hereinbefore set forth.

4. In a press of the character described having the tube A and the telescoping tube A^2, said former tube having the slot a and said telescoping tube having the slot a', the combination with said latter tube of the pin or rod A^3 passing through the slots and rigidly secured thereto with its forward end extending through said slot a closely engaging the side edge thereof, substantially as described and for the purpose hereinbefore set forth.

5. The combination in a press of the character described having the tube A and the telescoping tube A^2 with the flanged cap A^4 at the upper end thereof, and having the central orifice of equal diameter with the interior diameter of the tube A^2, and the pin c' rigidly secured into the opposite sides thereof, with said telescoping tube, of the extension-tube C with the ring flange C′ secured to the upper end thereof, said latter tube C situated within the telescoping tube and engaging on said pin c', substantially as described and for the purpose hereinbefore set forth.

820,984. **VARIABLE-SPEED MECHANISM.** HENRY M. NORRIS, Cincinnati, Ohio, assignor to The Pickford Drill & Tool Company, Cincinnati, Ohio, a Corporation. Filed Sept. 14, 1905. Serial No. 278,517.



Claim.—1. In a variable-speed device, a shaft, a cone of different diameter gear-wheels, means for selectively driving any one of said gear-wheels, a second shaft, a loose gear-wheel thereon intermeshed with a gear-wheel on the cone, a slidable clutch for fixing said loose gear-wheel to the second shaft, a second gear-wheel loose on the second shaft and intermeshed with one of said cone-gears, and an automatic clutch mechanism adapted to fix said second gear-wheel to said second shaft when the slidable clutch is disengaged and to automatically unclutch said second gear when the slidable clutch is engaged, substantially as described.

2. In a variable-speed device, a shaft, a cone of different diameter gear-wheels, means for selectively driving any one of said gear-wheels, a second shaft, a loose gear-wheel thereon intermeshing with a relatively larger gear-wheel of the cone, a slidable clutch for fixing said loose gear-wheel to the second shaft, a second gear-wheel loose on the second shaft and intermeshing with one of said cone-gears, and an automatic clutch mechanism adapted to fix said second gear-wheel to said second shaft when the slidable clutch is disengaged

and to automatically unclutch said second gear when the slidable clutch is engaged substantially as described.

3. In a variable-speed device, a first shaft, a tumbler-lever and gear-wheels thereon, a second shaft, a cone of gear-wheels thereon adapted to be selectively engaged by the tumbling-gear, a constantly-intermeshing pair of gear-wheels connecting said shafts, the driven gear-wheel being loose, and an automatic clutch adapted to fix said loose gear to its shaft when they approximate the same rate of rotation and to unclutch said gear from its shaft when said shaft is driven relatively faster, substantially as described.

4. In a variable-speed device, a first shaft, a tumbler-lever and gear-wheels thereon, a second shaft, a cone of gear-wheels thereon adapted to be selectively driven by the tumbling-gear, a constantly-intermeshing pair of gear-wheels connecting said shafts, the driven gear-wheel being loose, an automatic clutch adapted to fix said loose gear to its shaft when they approximate the same rate of rotation and to unclutch said gear from its shaft when said shaft is driven relatively faster, a third shaft, a loose gear-wheel thereon engaging one of the cone gear-wheels, a slidable clutch for fixing said loose gear-wheel to the third shaft, a second gear-wheel on said third shaft intermeshing with one of said cone of gear-wheels and an automatic clutch adapted to fix said second loose gear-wheel to said third shaft when the slidable clutch is out of commission and to be automatically released when the slidable clutch is engaged, substantially as described.

5. In a variable-speed device, a first shaft, a tumbler-lever and gear-wheels thereon, a second shaft, a cone of gear-wheels thereon adapted to be selectively driven by the tumbling-gear, a constantly-intermeshing pair of gear-wheels connecting said shafts, the driven gear-wheel being loose, an automatic clutch adapted to fix said loose gear to its shaft when they approximate the same rate of rotation and to unclutch said gear from its shaft when said shaft is driven relatively faster, a third shaft, a loose gear-wheel thereon engaging a relatively larger gear-wheel of the cone gear-wheels, a slidable clutch for fixing said loose gear-wheel to the third shaft, a second gear-wheel on said third shaft intermeshing with one of said cone of gear-wheels and an automatic clutch adapted to fix said second loose gear-wheel to said third shaft when the slidable clutch is out of commission and to be automatically released when the slidable clutch is engaged, substantially as described.

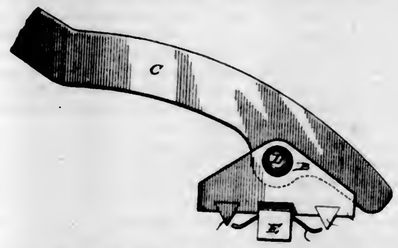
6. In a variable-speed device, a first and second shaft, a cone and tumbler gear system adapted to connect said shafts, an independent train of gears between said shafts comprising an automatic clutch adapted to be thrown in when the tumbler is disengaged, a third shaft, a pair of loose gears on said third shaft intermeshed with two of the cone-gears, a slidable clutch for one of said loose gears, and an automatic clutch for the second loose gear-wheel, adapted to be engaged when the slidable clutch is disengaged and vice versa, substantially as described.

7. In a variable-speed device, a first and second shaft, a cone and tumbler gear system adapted to connect said shafts in driving relation, a third shaft, a pair of loose gears on said third shaft intermeshing with two of said cone-gears, and having opposing clutch-faces, a double-face shifting coöperating clutch on the third shaft adapted to fix either of said gears to said third shaft, a third loose gear on said third shaft intermeshing with one of the cone-gears, and an automatic clutch adapted to fix said third gear to its shaft when said pair of loose gears are unclutched, and to be automatically unclutched when either of said pair of gears is clutched to said shaft, substantially as described.

8. In a variable-speed device, a first and second shaft, a cone and tumbler gear system adapted to connect said shafts in driving relation, a third shaft, a pair of loose gears on said third shaft intermeshing with two of said cone-gears, and having opposing clutch-faces, a double-face shifting coöperating clutch on the third shaft adapted to fix either of said gears to said third shaft, a third loose gear on said third shaft intermeshing with one of the cone-gears, and an automatic clutch adapted to fix said third gear to its shaft when said pair of loose gears are unclutched, and to be automatically unclutched when either of said pair of gears is clutched to said shaft, an independent train of gears connecting said first and second shafts, one of which is loose on its shaft, and an automatic clutch connecting said loose gear to its shaft and adapted to be automatically uncluteched when said tumbler is engaged, substantially as described.

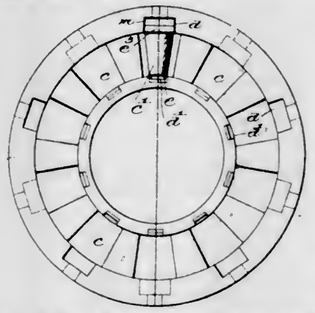
820,985. **PINCH-BAR.** EUGENE A. PATTERSON, Dunbar, Nebr. Filed Mar. 30, 1905. Serial No. 252,582.

Claim.—1. A car-mover comprising a block having depending side legs, the transverse biting edges arranged adjacent each end of the block, the leaf-spring connected to the block between the said biting edges having its free ends bent downwardly and depending legs, and a lever pivoted to the said block, the pivotal point of the lever being midway between the biting edges as set forth.



2. A car-mover comprising a block having upwardly-extending side flanges and depending side legs, dovetail grooves formed adjacent each end, triangular-shaped pieces of steel secured in said groove, a leaf-spring secured to the block between the biting edges and the depending legs, having its free ends bent downwardly adapted to engage the face of the rail, and a lever pivoted between the flanges midway between the biting edges, as set forth.

820,986. **END-THRUST BEARING.** JULIUS A. PERKINS, Omaha, Nebr., assignor to Moffett Bearing Company, Council Bluffs, Iowa. Filed Aug. 14, 1903. Serial No. 169,499.



Claim.—1. A series of conical rollers, combined with an end-thrust cage having roller-spaces separated one from the other, said cage having at its opposite sides lateral ways intersecting the ends of alternate roller-spaces, said ways being adapted to receive alternately from opposite sides of the cage the journals of said rollers and maintain said rollers in said cage in a position radially to the shaft surrounded by said cage.

2. An end-thrust cage, comprising a ring tapered in cross-section and provided with through-and-through openings, the cage having at its opposite sides lateral ways extending partially through the cage, and conical rollers having their journals entered into said ways from the opposite sides of the cage.

3. An end-thrust cage, comprising a ring tapered in cross-section and unbroken at its inner edge, said cage having through-and-through openings and at the ends of said openings ways opening alternately at opposite sides of the cage, combined with conical rollers having journals entering said ways.

4. The combination with a series of tapered rollers having end journals, of an end-thrust cage having roller-spaces separate one from the other, alternate roller-spaces having leading into them from opposite sides of the cage lateral ways for the insertion of the journals at both ends of said rollers, and tracks at each side said cage to retain said rollers in position in said cage, said cage being shaped to maintain said rollers therein radially to the shaft surrounded by said cage.

5. In a roller-bearing, circular taper-faced tracks, an end-thrust cage interposed between said tracks and having roller-spaces separate one from the other, alternate spaces having lateral ways leading thereinto from opposite sides of the cage combined with a series of tapering rollers having end journals, said rollers being located in the spaces of said cage and interposed between said tracks, the journals of the rollers entering the lateral ways.

6. In a roller-bearing, circular taper-faced tracks and an interposed end-thrust cage having roller-spaces separate one from the other, alternate spaces having their sides open for the insertion in the cage of end-thrust rollers, leaving the journals of alternate end-thrust rollers exposed only at the same side of the cage.

7. In a roller-bearing, two circular tracks, an interposed end-thrust cage having conical end-thrust rollers provided with journals at both ends keeping the end-thrust rollers with their longitudinal axes radial to the shaft surrounded by said cage, the journals of said rollers in contact with the ends of the lateral ways cut alternately in the opposite sides of said cage preventing movement of the cage in a direction longitudinal of said shaft.

8. A roller-bearing cage for sustaining end-thrust rollers, said cage having through-and-through openings parallel with the shaft surrounded by the cage to receive the bodies of the end-thrust rollers, the opposite sides of the cage having made therein alternately pockets through which may enter the journals at opposite ends of the rollers as said journals are put into their operative position in the cage.

9. Two circular beveled tracks, an interposed end-thrust cage having through-and-through openings, and ways intersecting said through-and-through openings alternately from opposite sides of the cage, and a series of conical end-thrust rollers located in said through-and-through openings, the journals of said rollers entering alternately said ways from one and then from the opposite side of the cage.

10. In a roller-bearing, end-thrust rollers, an end-thrust cage having through-and-through openings to expose the sides of the rollers occupying radial positions in said cage, said cage having at its side a series of ways intersecting the ends of alternate through-and-through openings, said ways receiving the ends of the journals of the end-thrust rollers.

11. An end-thrust cage having through-and-through openings, proivded at their opposite ends with lateral ways and conical rollers having journals at each end, combined with ball-tracks inserted laterally into said ways and balls in said ball-tracks surrounding said journals, and a series of hollow screws and washers, the washers being of a thickness when removed to enable the ball-tracks for the journals to be lifted to permit said journals and the shoulders of the rollers to be inspected.

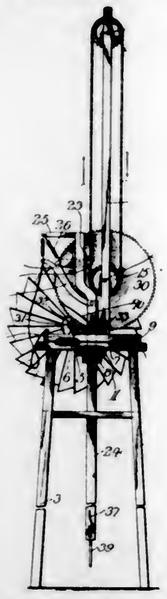
820,987. LIQUID-DISTRIBUTER. LOUIS PEROTTI, Newark, N. J. Filed July 11, 1905. Serial No. 269,198.



Claim.—1. A liquid-distributer of the character described, comprising a hollow bulb having a hollow neck and adjacent thereto an open nozzle, an elastic body for connecting said bulb with the neck of a bottle, an intermediate part of said body forming a valve between the bottle and the bulb, substantially and for the purpose as specified.

2. A liquid-distributer of the character described, comprising a hollow bulb having a hollow neck and adjacent thereto an open nozzle, an elastic body adapted to connect the bulb with a bottle, said body having hollow ends, to engage the necks of the body and the bulb and an intermediate solid part, said solid part being centrally cut in two to form a valve, substantially and for the purpose as specified.

820,988. WINDMILL. JULIUS PESTOR, Los Angeles, Cal. Filed Jan. 10, 1906. Serial No. 295,477.



Claim.—1. A windmill comprising a suitably-mounted base-plate; a frame secured thereto and projecting upwardly therefrom; shafts mounted in said frame one near the top and one near the bottom thereof; sprocket-wheels secured upon said shafts; sprocket-chains upon said sprocket-wheels; lifting-bars secured to said sprocket-chains; a gear-wheel secured to the lower of said shafts; another shaft mounted in bearings secured to said base-plate; a wind-wheel on said last-named shaft; a pinion on said last-named shaft meshing with the gear-wheel on the shaft mounted in the frame; a vane secured to said base-plate; a plunger-bar; and means secured to said bar to engage the lifting-rods on the chains; and means to release said engaging means at a predetermined height of movement of the plunger-bar.

2. A windmill comprising a frame; a platform secured upon the top of said frame; a ball-race in the top of said platform, said platform having a central aperture therein; a base-plate having a sleeve projecting downwardly through the aperture in said platform; a ball-race in the bottom of said base-plate, balls in said race and in the race in the platform; a collar on said sleeve below said platform; a frame projecting upwardly from said base-plate and secured thereto; shafts mounted in said frame secured to the base-plate, one near the top and one near the bottom thereof; sprocket-wheels secured upon said shafts; sprocket-chains upon said sprocket-wheels; lifting-bars secured to said sprocket-chains; a plunger-bar vertically movable through the sleeve and base-plate; a latch pivotally secured to said plunger-bar one end of which engages the lifting-bars; a trigger pivotally secured to said plunger-bar, said trigger being adapted to engage the latch and lock it against movement when the inner end thereof engages the lifting-bar; springs secured to said latch and trigger and to said plunger-bar, said springs being adapted to hold said latch and trigger in engagement with each other; a stroke-regulating cord secured to said base-plate and to said trigger; a shaft revolubly mounted in bearings secured to said pase-plate; a wind-wheel and a pinion secured upon said last-named shaft; and a gear-wheel secured upon the lower shaft in the frame secured to the base-plate, said gear meshing with said pinion; and a vane secured to said base-plate.

3. In a windmill a plunger-bar vertically movable therein; rotating means to move said plunger-bar vertically; and means to release said plunger-bar at any predetermined height in the movement thereof.

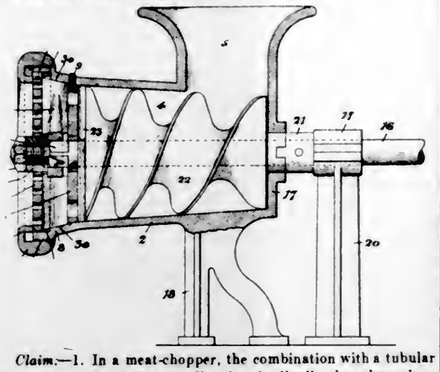
4. In a windmill a plunger-bar vertically movable therein; rotating means engaging said plunger-bar; and means to release said movable means from said plunger-bar at any predetermined height in the movement thereof.

820,989. SOCK OR STOCKING. ANDREW PORTEL, Dover, N. J. Filed Apr. 17, 1906. Serial No. 312,114.



Claim.—The combination with the toe of a stocking, of a cap within the toe formed of a separate thickness of material and secured to the toe at its base and apex, the meshes of the toe at its apex being extended and interlooped beyond the apex of the cap.

820,990. MEAT-CHOPPER. HENRY C. SANDER, Newark, N. J. Filed Jan. 9, 1905. Serial No. 240,164.



Claim.—1. In a meat-chopper, the combination with a tubular body portion, of a shaft extending longitudinally therethrough, a feed-screw and an inner perforated plate and a cutter upon said shaft, the said cutter and feed-screw being adapted to turn therewith, means for holding the perforated plate stationary, means upon the end of said shaft for clamping the cutter and inner plate and feed-screw together thereon, an outer perforated plate at the opposite side of the cutter from the inner plate centrally apertured to loosely receive the said clamping means independent thereof, and means upon the body portion for clamping said outer plate against the cutter.

2. In a meat-chopper, the combination with a tubular body portion, of a shaft extending longitudinally therethrough, a feed-screw and an inner perforated plate and a cutter upon said shaft, the said cutter and feed-screw being adapted to turn therewith, means for holding the perforated plate stationary, an outer perforated plate at the opposite side of the cutter from said inner plate and being centrally apertured, a cylindrical washer upon said shaft extending through said aperture of the outer plate, a nut outside said washer, and means upon the body portion for clamping said outer plate against the cutter.

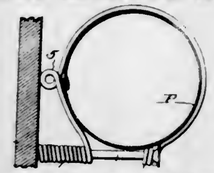
3. In a meat-chopper, the combination with a chambered body portion, a shaft extending therethrough, a feed-screw on said shaft and an inner perforated plate, of a large outer perforated plate stationed at the end of said body, a cutter on said shaft between said perforated plates, and clamping means independent of the large plate, lying within and extending through said outer plate, and means at the outside of said outer plate to force the feed-screw, inner plate and intermediate cutter in close operative relation.

4. In a meat-chopper, the combination with the chambered body of an operating-shaft, a feed-screw, an inner perforated plate, and an outer perforated plate, of a cutter arranged on said shaft between said plates, and means clamping the screw and cutter firmly against the opposite sides of the inner perforated plate, said clamping means extending through the outer perforated plate and being adapted to be manipulated at the outer side thereof.

5. In a meat-chopper, a body having a gently enlarging or flaring interior passage and near one end having an increase in the angle of its flaring surfaces, an inner perforated plate set at the angle formed by the gently-flaring and increased flaring lines, an outer plate set at the large end of the flaring body, a shaft, a feed-screw arranged at the inside of the inner plate, a cutter on said shaft intermediate of said perforated plates and having its ends extend to the flaring walls of the chamber between said plates and means for fastening the feed-screw and cutter upon said shaft.

6. In a meat-comminuting machine, the combination with a chambered body having gently-flaring interior walls, with a hopper at its upper side, and a more sharply flaring large end, the flaring walls of which are formed on lines at angles to the gently-flaring walls, perforated plates arranged at right angles to the longer axis of the flaring body, said plates being disposed one at the larger end and the other at the small end of the sharply-flaring part and being separate to form an intermediate chamber, a feed-screw, a shaft extending from the feed-screw through the perforated plates, the outer perforated plate being centrally apertured, a cutter arranged between the perforated plates, on said shaft, and clamping means arranged on said shaft and extending through the aperture of the outer plate and adapted to be manipulated from the outside of said outer plate, substantially as set forth.

820,991. CONDUCTOR-PIPE HOLDER. THEODORE N. E. SCHEBLER, Davenport, Iowa. Filed Mar. 20, 1905. Serial No. 251,092.

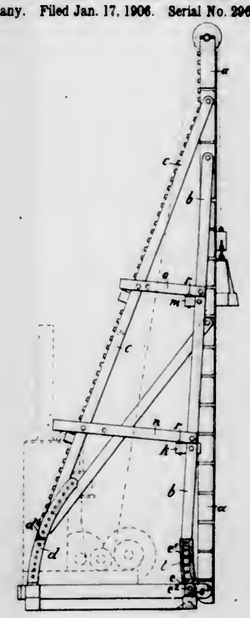


Claim.—1. A pipe-holder comprising a clamping member adapted to surround a pipe and having its terminals formed into spring elements, and a securing member engaging the elements and adapted to produce tension upon the clamping member, one of the elements being adapted resiliently to resist the tension.

2. A pipe-holder comprising a clamping member adapted to surround a pipe and having its terminals formed into coils, and a securing member engaging the coils and adapted to produce tension upon the clamping member, one of the coils being adapted resiliently to resist the tension.

3. A pipe-holder comprising a clamping member adapted to surround a pipe and having its terminals formed into coils and its intermediate portion into a spacing element, and a securing member engaging the coils and adapted to produce tension upon the clamping member, one of the coils being adapted resiliently to resist the tension.

820,992. PILE-DRIVING MACHINE. CARL H. R. SCHWARZ, Hamburg, Germany. Filed Jan. 17, 1906. Serial No. 296,462.

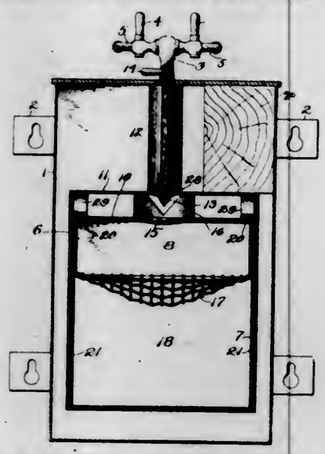


Claim.—1. A pile-driving machine with movable gib, provided with a divided front sleeper whose outer portions *f* are hinge-jointed to the middle portion *w* and to front ties *b* so that by turning back the outer sleeper portions, the machine can be used in corners, as set forth.

2. A pile-driver provided with a pivoted gib, a pair of hinged sleepers, bars pivoted to the sleepers, and braces adjustably secured to the bars, substantially as specified.

3. A pile-driver provided with a pivoted gib, a pair of hinged sleepers, and pivoted braces adjustably secured to the sleepers, substantially as specified.

820,993. **ACETYLENE-GAS GENERATOR.** JAMES R. SHERRETTS, Amesbury, Mass. Filed Oct. 21, 1905. Serial No. 283,723.



Claim.—1. An acetylene-gas generator, comprising a water-tank, a regulating-valve therefor, an inner gas chamber or cavity within and surrounded by said water-tank, and a removable carbid-chamber fitting within said gas-chamber and having a carbid-basket in its upper portion for restricting the carbid to said upper portion, the lower portion constituting an ash-box, and a closing-cover, said cover having a small perforated approximately horizontal opening beneath said valve and a surrounding wall extending approximately to the bottom of the water-tank but disconnected therefrom.

2. An acetylene-gas generator, comprising a water-tank, a regulating-valve therefor, an inner gas chamber or cavity formed in the midst of said water-tank and surrounded by the latter, and a carbid-chamber sliding removably into said gas-chamber, means for maintaining said carbid-chamber stationary against all jolting movements in use, said carbid-chamber having a permanently-closed lower portion constituting an ash-box and having at its upper portion a vertically-removable carbid-basket, provided with a wide-mesh open-work bottom through which the ashes may freely fall, said carbid-chamber being permanently closed excepting at its top, and having a closing top cover.

3. An acetylene-gas generator, comprising a water-tank, a regulating-valve therefor, an inner gas chamber or cavity formed in the midst of said water-tank and surrounded by the latter, and a carbid-chamber sliding removably into said gas-chamber, said ca chamber having a permanently-closed lower portion constituting an ash-box and having at its upper portion a vertically-removable carbid-basket, provided with a wide-mesh open-work bottom through which the ashes may freely fall, said carbid-chamber being permanently closed excepting at its top, and having a closing top cover, and springs within said gas-chamber between said top cover and said tank for preventing a jolting movement of the carbid-chamber within said gas-chamber.

4. An acetylene-gas generator, comprising a water-tank, an inner gas-chamber set laterally, from one side of the generator, into the midst of said tank and surrounded thereby, and a laterally-removable carbid-receptacle, containing a vertically-removable carbid-basket supported within said receptacle adjacent the top thereof, said basket being provided with sides extending upwardly approximately to the top of said receptacle, the top edges of said sides being inturned slightly for engaging the fingers.

5. An acetylene-gas generator, comprising a water-tank, a laterally-removable carbid-chamber beneath said tank having a closed top fitting water-tight over said chamber and provided with a small approximately horizontal perforated opening, a drip-valve from said tank terminating above said chamber in line with said opening, and a wall or collar extending up from said top about said opening and valve, affording means to permit the free escape of gas from said chamber into the space between said top and said water-tank, and approximately cutting off the access to said chamber of all moisture except from said valve, said wall or collar extending up approximately to the bottom of said tank and having its top edge notched to permit its lateral removal past said valve.

6. An acetylene-gas generator, comprising an external casing having an opening in its side, located toward the lower portion of said side and terminating short of the bottom and vertical edges of said side, an inner casing extending inwardly from said opening within said external casing, leaving a space to constitute a water-tank, immediately above and at the opposite sides and bottom of said inner casing, said inner casing constituting a gas-chamber, a carbid-receptacle mounted to slide endwise through said opening into said gas-chamber, yielding means for holding said carbid-receptacle approximately down on the bottom of said gas-chamber, a gas-tight cap or door removably closing said opening, and a drip-valve located in the top wall of said inner casing to permit water to drip from said water-tank to said carbid-receptacle, said water-tank above the inner casing holding the exact amount of water necessary for exhausting the carbid of said receptacle when full, and having the exact depth to provide the head of water required for giving, by gravity alone, a normal working pressure to the gas generated from said carbid.

7. An acetylene-gas generator, comprising an external casing having an opening in its side, located toward the lower portion of said side and terminating short of the bottom and vertical edges of said side, an inner casing extending inwardly from said opening within said external casing, leaving a space to constitute a water-tank, immediately above and at the opposite sides and bottom of said inner casing, said inner casing constituting a gas-chamber, a carbid-receptacle mounted to slide endwise through said opening into said gas-chamber, a gas-tight cap or door removably closing said opening, and a drip-valve located in the top wall of said inner casing to permit water to drip from said water-tank to said carbid-receptacle, said water-tank above the inner casing holding the exact amount of water necessary for exhausting the carbid of said receptacle when full, and having the exact depth to provide the head of water required for giving, by gravity alone, a normal working pressure to the gas generated from said carbid.

820,994. **WOVEN FABRIC.** HARRY W. SMITH, North Grafton, Mass. Filed Mar. 21, 1903. Serial No. 99,275.



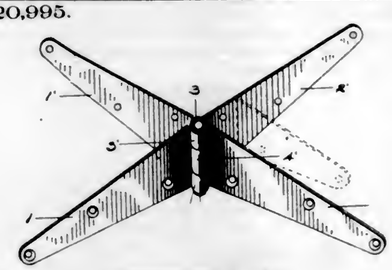
Claim.—1. A fabric for toweling comprising warp-threads arranged in sections, said sections being separated from each other, and a filling composed of soft fibers twisted so as to form kinks or bunches, and the portions of the filling between the sections of warp-threads being left free and unconfined to thereby enhance the moisture-absorbing quality.

2. A towel fabric comprising plain woven warp-threads arranged in separate sections, each section containing three or more warp-threads, and a filling composed of soft-twisted kinky, or bunchy fibrous material intertwisted with a harder-spun yarn, said filling being bound by the plain woven warp-threads of each section leaving the portion of the filling between the sections free to quickly absorb moisture.

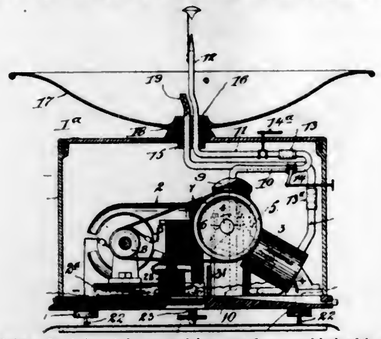
820,995. **MULTIPLE-STAY HINGE.** WILLIAM M. SMITH, New Cumberland, W. Va. Filed May 4, 1905. Serial No. 258,791.

Claim.—In a strap-hinge, two pairs of straps each pair terminating and having substantially like turned-over cylindrical sockets at their extreme inner ends, one pair being pivotally secured by or mounted upon a pintle passing through their sockets and the other pair mounted upon the sockets of the first-mentioned pair and extending at right angles therefrom, in the manner substantially as shown and set forth.

820,995.



820,996. **ELECTRICALLY-OPERATED FOUNTAIN.** ARTHUR D. SOUTHAM, New York, N. Y. Filed May 27, 1905. Serial No. 262,587.



Claim.—1. A fountain comprising a casing provided with a detachable top, an electric motor within the casing, a pump within the casing and adapted to be operated by the motor, a fountain-basin carried by the detachable top, a nozzle mounted in said basin, a pipe connecting the nozzle to the outlet from the pump, a pipe connecting the pump-intake to the basin, couplings in said pipes whereby the basin and top of the casing may be removed without disturbing the pump in the casing, and means for regulating the jet from the nozzle, a supporting-plate, a pair of contacts carried thereby, a pair of contacts carried by the casing and adapted to rest upon the contacts carried by the plate.

2. A fountain comprising a casing, an electric motor therein, a punip within the casing and adapted to be operated by the motor, means for controlling the speed of the motor, a basin carried by the casing, a nozzle carried by said basin, a pipe connecting said nozzle to the outlet from the pump, and a pipe connecting the pump-intake to said basin, a supporting-plate, a pair of sharp upward-extending contacts carried by said plate, a pair of inverted-cup-shaped contacts carried by the casing and adapted to rest upon the contacts carried by the plate.

3. A fountain comprising a casing, an electric motor therein, a pump in said casing and adapted to be operated by the motor, a basin mounted on said casing, a nozzle carried by said basin, a pipe connecting said nozzle to the pump-outlet, a pipe extending from the pipe-intake into the basin, resistance means in the motor-circuit and means for varying the resistance in said circuit to govern the speed of the motor, a pair of contacts secured to the bottom of the casing, a supporting-plate, a pair of contacts carried thereby and adapted to support the casing by engaging the contacts carried by the casing and a leveling device carried by the casing and adapted to engage the supporting-plate.

4. A fountain comprising a casing, an electric motor therein, a pump within the casing and operated by said motor, a reservoir within said casing and connected to the outlet from said pump, a fountain-basin mounted on top of the casing, a nozzle projecting upward from the bottom of the basin, a pipe connecting the nozzle with the bottom of the reservoir, a valve in said pipe, the upper end of said reservoir being sealed to form an air-chamber, a pipe connecting the bottom of said basin with the intake of the pump, a pair of contacts secured to the bottom of the casing, a pair of contacts connected to the main line-circuit and adapted to be engaged by the contacts on the bottom of the casing whereby the casing may be raised from the supporting-contacts and disengaged from the line of circuit.

5. A fountain comprising a casing, an electric motor therein, a pump adapted to be operated by said motor, a fountain-basin, a nozzle, means connecting the outlet of the pump to said nozzle, a supporting-plate, a pair of electrical contacts carried by said plate, a pair of contacts carried by the bottom of the casing and adapted to engage contacts carried by the supporting-plate.

6. A fountain comprising a casing, an electric motor therein, a pump adapted to be operated by said motor, a fountain-basin, a nozzle, means connecting the outlet of the pump to said nozzle, a supporting-plate, a pair of electrical contacts carried by said plate, a pair of contacts carried by the bottom of the casing and adapted to rest on the contacts carried by the supporting-plate.

7. A fountain comprising a casing, an electric motor therein, a pump adapted to be operated by said motor, a fountain-basin, a nozzle, means connecting the outlet of the pump to said nozzle, a supporting-plate, a pair of electrical contacts carried by said plate, a pair of contacts carried by the bottom of the casing and adapted to rest on the contacts carried by the supporting-plate, one of said sets of contacts being sharpened and of very small diameter.

8. A fountain comprising a casing, an electric motor therein, a pump adapted to be operated by said motor, a fountain-basin, a nozzle, means connecting the outlet of the pump to said nozzle, a supporting-plate adapted to be placed under a table-cover, a pair of sharp upward-extending contact-points carried by said supporting-plate and adapted to extend through the table-cover, and a pair of contact-plates secured to the bottom of the casing and adapted to rest upon the tops of the contact-points carried by the supporting-plate, and means for electrically connecting the contact-plates with the motor, and means for electrically connecting the contact-points of the supporting-plate with a source of supply.

9. Means for forming electrical connections comprising a casing supporting an electric device, a pair of contacts secured to the bottom thereof, a supporting-plate adapted to be placed under a table-cover, a pair of contact-points on said plate, one of said pairs of contact-points being sharpened and of very small diameter, whereby they will pass through the table-cover without materially marring the same.

10. Means for forming electrical connections comprising a casing supporting an electric device, a pair of contacts secured to the bottom thereof, a supporting-plate adapted to be placed under a table-cover, a pair of contact-plates secured to the bottom of said casing, said contact-plates being concave on their under sides, a supporting-plate adapted to be placed under the table-cover, a pair of sharp pin-like contact-points secured to said plate and adapted to pass through the table-cover without materially marring the same, the contact-plates of the casing being adapted to rest upon said points.

11. A fountain comprising a casing, an electric motor therein, a pump adapted to be operated by said motor, a nozzle connected to said pump, a liquid-supply connected to said pump, means for forming electric connections with said motor, said means consisting of a pair of contacts secured to the bottom of the casing, a supporting-plate, a pair of contacts carried thereby and adapted to receive the contacts carried by the casing and to support the casing, and a leveling device carried by the casing between the contacts and adapted to engage the supporting-plate.

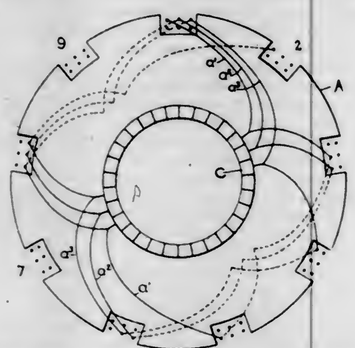
12. A fountain comprising a casing, an electric motor therein, a pump adapted to be operated by said motor, a fountain-basin, a nozzle, means connecting the pump to the nozzle, a supporting-plate, a pair of sharp upward-extending contact-points carried by said supporting-plate, a pair of tubular contacts secured to the bottom of the casing and adapted to receive the contact-points carried by the plate, one of said sets of contacts being tapered to bring the two contacts into engagement, and means for electrically connecting the tubular contacts with the motor.

13. A fountain comprising a closed casing, an electric motor therein, a pump within the casing and adapted to be operated by the motor, a basin carried by the casing, a nozzle supported in said basin, means connecting the nozzle to the pump-outlet, a pipe connected to the pump-intake and in communication with the fountain-basin, motor-circuit terminals secured to the bottom of the casing, and supporting devices adapted to engage said terminals to complete the motor-circuit.

820,997. **ARMATURE-WINDING.** CHARLES P. STEINMETZ, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Oct. 10, 1904. Serial No. 227,830.

Claim.—1. In a dynamo-electric machine, an armature-winding having a plurality of coils per slot and a coil width equal to the dis-

tance between adjacent slots multiplied by a whole number plus a fraction.



2. In a dynamo-electric machine, an armature-winding having a plurality of coils per slot and a coil pitch equal to a fractional number of slots.

3. In a dynamo-electric machine, an armature-winding having a plurality of coils per slot and a coil pitch equal to $(n\pm\frac{1}{x})$ slots, n being a whole number and x being the number of coils per slot.

4. In a dynamo-electric machine, an armature-winding having three coils per slot and a coil pitch equal to $(a\pm\frac{1}{3})$ slots, n being a whole number.

5. In a dynamo-electric machine, an armature-winding having three coils per slot and a coil width equal to the distance between adjacent slots multiplied by a whole number plus or minus one-third.

6. In a dynamo-electric machine, an armature-winding having a plurality of coils per slot and a coil width equal to the distance between adjacent slots multiplied by a whole number plus a fraction having as its denominator the number of coils per slot.

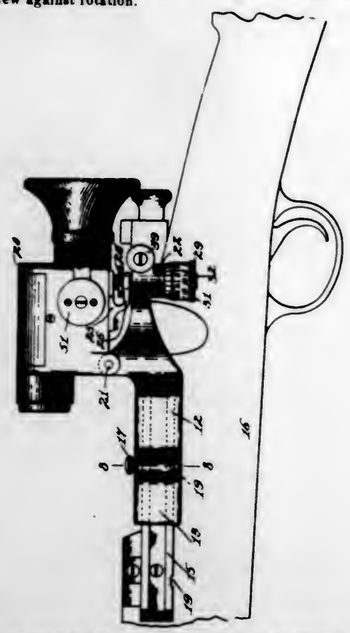
7. In a dynamo-electric machine, a slotted armature-core, a commutator carried thereby, three or more independent windings distributed in the slots of said core, each slot containing coils belonging to each of said windings, and leads from said coils to successive commutator-segments, said coils being so arranged in said slots that the phase of the induced voltage of each lead corresponds to the angular position of the commutator-segment to which it is connected.

820,998. **TELESCOPIC SIGHT FOR FIREARMS.** AMBROSE SWASEY, Cleveland, Ohio, assignor to The Warner & Swasey Company, Cleveland, Ohio, a Corporation of Ohio. Filed Oct. 10, 1905. Serial No. 282,096.

Claim.—1. The combination of a supporting member arranged to be secured to a firearm, a sight device pivotally mounted on the supporting member, a socket portion on the supporting member having a screw-threaded bore, a screw operating in said bore and engaging the sight device by one extremity, the screw having an annular slot adjacent said end, and an arm secured to the sight device and engaging the screw at said slotted portion.

2. The combination of a supporting member arranged to be secured to a firearm, a sight device pivotally mounted on the supporting member, a socket portion on the supporting member having a screw-threaded bore, a screw operating in said bore and engaging the sight device by one extremity, the screw having an annular slot adjacent said end, an arm secured to the sight device and engaging the screw at said slotted portion, a collar on said screw, the supporting member having a bore extending transverse to said bore and having an enlarged portion communicating therewith, a bolt located in said latter bore with its head in said enlarged portion, and a nut on said bolt arranged to move it and cause its head to engage said collar on the screw and lock the latter against movement.

3. The combination with a firearm, of a bar removably attached thereto, pivoting members extending upward at an intermediate part of the bar, a sight device having pivoting members at its lower forward portion engaging said pivoting members, whereby the sight device is pivoted on the bar, the supporting member being provided with an upright screw-threaded bore in its rear portion, a screw operating in said bore and provided with a collar adjacent its upper end, a bearing member secured to the bottom of the sight device at its rear end arranged to engage the end of said screw, the bearing member being provided with a forked arm engaging said screw below its collar, whereby the rotation of the screw will swing the sight device on its support, and a clamping-bolt arranged to lock the screw against rotation.



4. In a sight device, the combination with the lenses, of a cross-wire member movable across the axis of the lenses, a frame supporting the cross-wire member, a guide in which said frame is slidable to move the cross-wire member, a nut secured to said member, a screw engaging said nut to adjust the cross-wire member, and a spring-latch for locking the screw in adjusted positions.

5. In a sight device, the combination with the lenses, of a cross-wire member movable across the axis of the lenses, a frame supporting the cross-wire member, a guide in which said frame is slidable to move the cross-wire member, a nut secured to said member, a screw engaging said nut to adjust the cross-wire member, and a coil-spring on the screw for preventing backlash between the screw and nut.

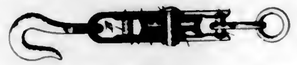
6. In a sight device, the combination with the lenses, of a cross-wire member movable across the axis of the lenses, a frame supporting the cross-wire member, a guide in which said frame is slidable to move the cross-wire member, a nut secured to said member, a screw engaging said nut to adjust the cross-wire member, a latch-plate carried by the device, and a spring-latch secured to the head of the screw and engaging the latch-plate to lock the screw in adjusted positions.

7. The combination, in a sight device, of a body member having a tubular portion and carrying a lens disposed in the axis of said portion, a tubular eyepiece telescoping said tubular portion and having a screw-threaded engagement therewith, a spring-latch carried by one of said tubular members, and an annular latch-plate engaged by said latch to lock said members in adjusted positions.

8. The combination of a supporting member organized to be secured to a firearm, a sight device pivotally mounted on the supporting member, the supporting member having a cylindrical portion provided with a screw-threaded bore, a screw operating in said bore and connected with the supported member for adjusting the same on its pivotal support, and a cam member, having a tangential engagement with the shank of the screw for locking the same in adjusted positions.

820,999. **BLOCK.** ALFRED B. TARBOX, Boston, Mass. Filed June 24, 1905. Serial No. 266,755.

Claim.—1. A block of the character specified having cheeks of a single thickness of sheet-metal plate, separators for said cheeks to which they are riveted at the top and bottom, said cheeks also being turned or bent outwardly along the edge or periphery thereof, a sheave interposed between said cheeks, a sheave-pin and a strap the arms of which are turned to extend down alongside said cheeks on the outside thereof and be secured to said sheave-pin substantially as described.



2. A block of the character specified having cheeks of a single thickness of sheet-metal plate, separators for said cheek to which said cheeks are riveted at the top and bottom by rivets extending through the same, said cheeks being turned or bent outwardly along their edges or peripheries and having also outwardly and inwardly bent portions a^3 and a^3, a sheave interposed between said cheeks, a sheave-pin, and a strap the arms of which are turned to extend down alongside said cheeks on the outside thereof and be secured to said sheave-pin substantially as described.

3. A block of the character specified having cheeks of a single thickness of sheet-metal plate, two or more sheaves interposed between the same, a flat sheet-metal plate or plates substantially oval in shape between said sheaves, separators between said cheeks and plate or plates to which said cheeks are riveted at the top and bottom by rivets extending through said cheeks, separators and plates and headed on the outside of said cheeks, said cheeks also being turned or bent outwardly along the edges or peripheries thereof, a sheave-pin for supporting said sheave, and a strap the arms of which are turned to extend down alongside said cheeks on the outside thereof and be secured to said sheave-pin substantially as described.

821,000. **BRAKE-SHOE.** WILLIAM P. TAYLOR, Buffalo, N. Y. Filed Mar. 13, 1905. Serial No. 249,712.



Claim.—1. A brake-shoe comprising a cast body and a plate-like reinforcement in said body which is united thereto by a coalesced formation of appreciable extent consisting of fused-together portions of the cast metal of the body and the metal of the reinforcement, the remaining parts of the reinforcement and body retaining their independent characteristics.

2. A brake-shoe comprising a cast body and a plurality of parallel fairly thin flat-surfaced reinforcing-plates embedded in said body and having notched edges.

3. A brake-shoe comprising a cast body and a fairly thin flat-surfaced reinforcing-plate having at least one recess in its side edge, one wall of which extends transversely and another wall of which extends diagonally.

4. A brake-shoe comprising a cast body and a plurality of parallel flat-surfaced reinforcing-plates of fairly narrow width embedded in said body and having portions cut therefrom.

5. A brake-shoe comprising a cast body and a flat-surfaced reinforcing-plate of approximately equal width throughout embedded in said body and having both of its side edges notched.

6. A brake-shoe comprising a cast body and a plurality of parallel fairly thin flat-surfaced reinforcing-plates embedded in said body and having portions cut therefrom.

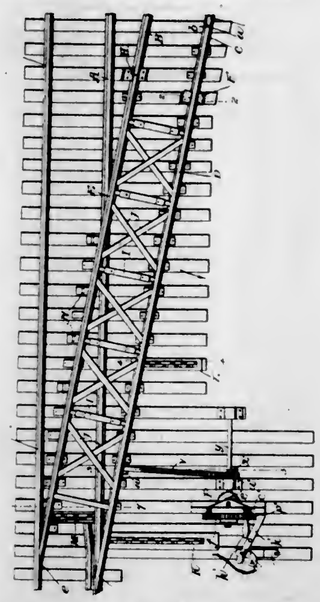
7. A brake-shoe comprising a cast body and a plurality of reinforcing-plates of fairly narrow width embedded in said body and united thereto by coalesced formation.

8. A brake-shoe comprising a cast body and a reinforcing-plate embedded in said body and united thereto by a coalesced formation.

821,001. **RAILWAY-SWITCH.** EMANUEL H. THORNE, Hagan, Ga. Filed Mar. 14, 1906. Serial No. 306,053.

Claim.—1. In a railway-switch, the combination with main-line rails and siding or turnout rails; of switch-rails, the outer one of which is arranged to move bodily over one of the main-line rails and assume a position at the inner side of the other main-line rail, and an inclined support disposed between the rails of the main line and under the said switch-rail for the purpose set forth.

2. In a railway-switch, the combination with main-line rails and siding and turnout rails; of switch-rails, the outer one of which is arranged to move bodily over one of the main-line rails and assume a position at the inner side of the other main-line rail, and a support for the said switch-rail, arranged between the main-line rail and having antifriction devices arranged to present an inclined rolling surface to the said switch-rail, for the purpose set forth.



3. In a railway-switch, the combination with main-line rails and siding or turnout rails; of switch-rails, the outer one of which is arranged to move bodily over one of the main-line rails and assume a position at the inner side of the other main-line rail, a chair receiving and connected to the inner switch-rail and having a depending pin, and a fixed rest or support disposed under the said chair and having a socket receiving the depending pin thereof.

4. In a railway-switch, the combination with main-line rails and siding or turnout rails; of switch-rails, the outer one of which is arranged to move bodily over one of the main-line rails and assume a position at the inner side of the other main-line rail, and the inner one of which has a beveled end opposed to a corresponding end of one siding or turnout rail, a chair connecting the other siding or turnout rail and the outer switch-rail and loosely receiving the end of the latter, a chair receiving and connected to the inner switch-rail at an intermediate point in the length thereof and having a depending pin, and a fixed rest or support disposed under the said chair and having a socket receiving the depending pin thereof.

5. In a railway-switch, the combination with main-line rails and siding or turnout rails; of switch-rails abutting at their heels against the siding or turnout rails, the outer one of the said switch-rails being arranged to move bodily over one of the main-line rails and assume a position at the inner side of the other main-line rail, and suitable means for supporting the switch-rails incident to the described movements thereof.

6. In a railway-switch, the combination of main-line rails, siding or turnout rails, switch-rails, the outer one of which is arranged to move bodily over one of the main-line rails and has a beveled or pointed end shaped to assume a position at the inner side of the other main-line rail and the other of which is fixed to the first-mentioned switch-rail so as to move therewith and is provided at its free end with an overhanging beveled portion adapted to lap over and rest on the tread of one main-line rail, and suitable means for supporting the switch-rails incident to the described movements thereof.

7. In a railway-switch, the combination of main-line rails, abutments arranged between the said main-line rails, siding or turnout rails, switch-rails, the outer one of which is arranged to move bodily over one of the main-line rails and assume a position at the inner side of the other main-line rail, tie-rods and braces interposed between

and fixedly connecting the switch-rails together, an inclined, antifriction-support for the outer switch-rail, arranged between the main-line rails, one or more horizontal, antifriction-supports for the inner switch-rail, an operating mechanism connected with the inner switch-rail, and means for locking the said mechanism against movement; the said means comprising a spur-gear and a locking-lever having teeth positioned to engage those of the spur-gear.

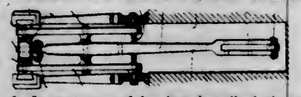
821,002. **FLUSH-TANK-OPERATING DEVICE.** BERT O. TILDEN, New York, N. Y. Filed July 7, 1905. Serial No. 268,641.



Claim.—1. In combination with a closet low-down flush-tank, of a flush-valve within said tank, a rocking lever pivoted within the tank and connected at one side of its fulcrum with the valve and having at the other side of its fulcrum a pair of bearing-faces spaced apart, a spindle projecting through the wall of the tank and provided on its outer end with a fixed operating-handle located within reach of the user seated on said closet, and having fixed on its inner end a rocking lever, likewise having a pair of bearing-faces spaced apart and coöperating with the bearing-faces of the valve-lever, so that on the swinging of said operating-handle in either direction from its normal position the free end of the valve-lever will be depressed and the valve operated.

2. The combination with a closet low-down flush-tank and with a flushing-valve within said tank, of valve-operating mechanism comprising two members, one a relatively long valve-operating lever pivoted within the tank and connected at one side of its fulcrum with the valve and having at the other side of its fulcrum a bearing-face, and a relatively short arm located at one side of the fulcrum of said valve-lever and having a bearing-face in position to engage the bearing-face of the valve-lever, and all located within the tank, a spindle projecting through the wall of the tank with its inner end connected to said arm and forming the fulcrum thereof, and an operating-handle rigidly secured to the spindle on the outside of the tank and within reach of the user seated on said closet so that on the swinging of said handle from its normal position the free end of the valve-lever will be depressed by the arm and the valve operated.

821,003. **POWER-TRANSMITTING APPARATUS.** JAMES TRAINER, Pointrock, Ohio. Filed Oct. 2, 1905. Serial No. 281,069.

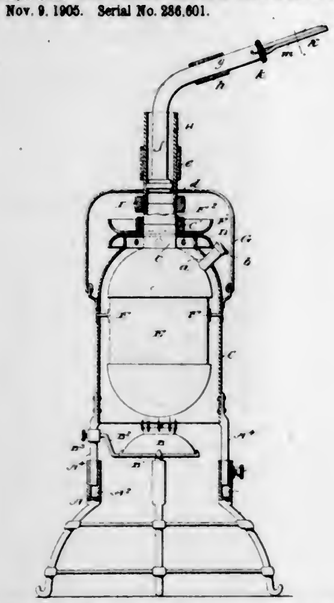


Claim.—1. In apparatus of the class described, the combination with a driving and a driven member, of a pair of parallel levers having independent fulcrums and both operatively connected to the driving member at one end, a floating lever pivotally connected to one of said levers near one end and having a linked connection with the other lever at the opposite end, and means for connecting the floating lever to the driven member.

2. In apparatus of the class described, a reciprocatory crosshead, a two-armed lever, and a one-arm lever connected to said crosshead, a floating lever pivoted at a point intermediate its ends to said one-arm lever, means for connecting the longer arm of the floating lever to the second arm of the two-arm lever, and a driven member to which the shorter arm of said floating lever is connected.

3. In apparatus of the class described, the combination with a cross-head, of a guiding means therefor, a cross-head-operating device, brackets carried by the cross-head, a block pivoted to said brackets, a lever pivoted at a point intermediate its ends on a stationary pin, the upper arm of said lever having a reduced portion fitting in said rocking block, a pair of one-arm levers pivoted approximately in a horizontal plane of the first lever, links for connecting the upper ends of said one-arm levers to the cross-head, a floating lever pivoted between the two one-arm levers, the pivot of said floating lever being arranged at a point adjacent to its upper end, a link connecting the lower arm of the first lever to the lower longer arm of the floating lever, a crank-shaft, a crank-pin, and a connecting-rod extending between the upper shorter arm of the floating lever and the crank-pin.

821,004. **VAPORIZER.** HENRY A. VEANIE, New Orleans, La. Filed Nov. 9, 1905. Serial No. 286,601.



Claim.—1. The combination in a vaporizer, of a retort, and an inclined nozzle connected with the retort and comprising a vapor-conduit open at its opposite ends, and a return-conduit for fluid of condensation arranged below and connected with the vapor-conduit so as to receive therefrom and open at its rear end and closed at its forward end.

2. The combination in a vaporizer, of a retort, and a nozzle connected with the retort and comprising a vapor-conduit open at its opposite ends, and a return-conduit for fluid of condensation arranged below and connected with the vapor-conduit so as to receive therefrom and open at its rear end and closed at its forward end.

3. A nozzle for the purpose described comprising a vapor-conduit open at its opposite ends, and a return-conduit for fluid of condensation arranged below and connected with the vapor-conduit so as to receive therefrom and open at its rear end and closed at its forward end.

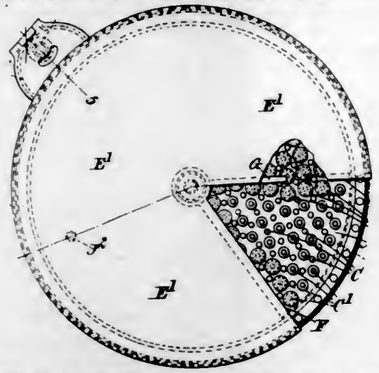
4. The combination in a vaporizer, of a retort, a tube connected with and extending upwardly from the retort, a tube having a lower arm telescopically arranged in the first-mentioned tube and also having an upper inclined arm, and a nozzle carried by the inclined arm of the second-mentioned tube, and comprising a vapor-conduit open at its opposite ends, and a return-conduit for fluid of condensation arranged below and connected with the vapor-conduit so as to receive therefrom and open at its rear end and closed at its forward end.

5. A nozzle comprising a vapor-conduit open at its opposite ends, a return-conduit for fluid of condensation arranged below the vapor-conduit and open at its rear end and closed at its forward end, and one or more openings intermediate the two conduits.

6. A nozzle comprising a vapor-conduit open at its opposite ends and having its discharge end beveled to increase the area of the discharge, a return-conduit for fluid of condensation arranged below the vapor-conduit and open at its rear end and closed at its forward end, and one or more openings intermediate the two conduits.

7. In a vaporizer, the combination of a casing having lateral apertures adjacent to its upper end, a hood closing the upper end of the casing and disposed over said apertures, and a retort arranged in the casing and having a nipple at its upper end extending through the hood.

821,005. **BOTTLE OR SIMILAR WASHING APPARATUS.** OTTO VOGEL, Berlin, Germany, assignor to Sigmund Ludwig Goldman, London, England. Filed Jan. 30, 1905. Serial No. 243,242.



Claim.—1. In apparatus for washing hollow vessels the combination of a hollow tray to carry the vessels, means for supporting the tray, means for rotating the same about a vertical axis, a series of jet-nozzles for liquid directed against the vessels and communicating with the hollow interior of the tray by which latter they are carried, means for supplying liquid to the interior of the tray, a plate within the tray bearing against the ends of the nozzles at the point where they communicate with the hollow interior so that it closes a given number of them according to the dimensions of the plate, and means for holding the plate against rotation with the tray, substantially as set forth.

2. In apparatus for washing hollow vessels the combination of a hollow tray to carry several rows of the vessels in an inverted position, a series of jet-nozzles for liquid directed against the vessels and communicating with the hollow interior of the tray by which latter they are carried, means for supplying liquid to the interior of the tray, means for rotating the tray, an annular casing surrounding the same, a stationary support for the casing, a spray device at the top of the casing for discharging liquid down upon the inverted ends of the several rows of vessels, a plate within the tray bearing against the ends of the nozzles at the point where they communicate with the hollow interior of the same thus closing a given number of them according to the dimensions of the plate and such plate being further situated opposite an opening in the casing, and means for holding the plate against rotation with the tray, substantially as and for the purpose described.

3. In apparatus for washing hollow vessels the combination of a hollow tray to carry several rows of the vessels in an inverted position, a series of jet-nozzles for liquid directed against the vessels and communicating with the hollow interior of the tray by which latter they are carried, means for supplying liquid to the interior of the tray, means for rotating the tray, an annular casing surrounding the same having an opening therein, a stationary support for the casing, a spray device at the top of the casing for discharging liquid down upon the inverted ends of the several rows of vessels, a plate within the tray bearing against the ends of the nozzles at the point where they communicate with the hollow interior of the same thus closing a given number of them according to the dimensions of the plate, such plate being further situated opposite an opening in the casing, means for holding the plate against rotation with the tray, a support extending toward the interior of the casing from a point approximately at the top of one of the outer edges of the opening in the same, a second support similarly extending from the opposite edge of the opening, and an elastic wall pendent one from each of the supports the lower edge of each sweeping upon the inverted ends of the several series of vessels on the tray as they pass substantially as set forth.

4. In apparatus for washing hollow vessels the combination of a hollow tray to carry several rows of the vessels in an inverted position, a series of jet-nozzles for liquid directed against the vessels and communicating with the hollow interior of the tray by which latter they are carried, means for supplying liquid to the interior of the tray, means for rotating the tray, an annular casing surrounding the same, a stationary support for the casing, a spray device at the top of the casing for discharging liquid down upon the inverted ends of the several rows of vessels, a plate within the tray bearing against the ends of the nozzles at the point where they communicate with the hollow interior of the same thus closing a given number of them according to the dimensions of the plate such plate being further situated opposite an opening in the casing, means for holding the plate against rotation with the tray, a support extending from a point approximately at the top of one of the edges of the opening in the casing toward the interior of the same, a second support similarly extending from the opposite edge of the opening and a series of brushes pendent from each support the lower edges of the brushes sweeping upon the inverted vessels on the tray as they pass, substantially as set forth.

5. In apparatus for washing hollow vessels the combination of a hollow tray to carry several rows of the vessels in an inverted position, a series of jet-nozzles for liquid directed against the vessels, and communicating with the hollow interior of the tray by which they are carried, means for supplying liquid to the interior of the tray, means for rotating the tray, an annular casing surrounding the same, a stationary support for the casing, a hollow cover to the casing having perforations in the under side thereof, means for supplying liquid to the hollow interior thereof, a plate within the tray bearing against the ends of the nozzles at the point where they communicate with the hollow interior of the same thus closing a given number of them according to the dimensions of the plate, such plate being further situated opposite an opening in the casing, means for holding the plate against rotation with the tray, and elastic walls depending from the cover one extending from each side of the opening in the casing toward the interior of the same, substantially as set forth.

6. In apparatus for washing hollow vessels the combination of a hollow tray to carry a series of the vessels in an inverted position, a series of jet-nozzles for liquid directed against the vessels and communicating with the hollow interior of the tray by which latter they are carried, means for supplying liquid to the interior of the tray, means for rotating the tray, an annular casing surrounding the same, a stationary support for the casing, a spray device at the top of the casing for discharging liquid down upon the inverted ends of the several series of vessels, a plate within the tray bearing against the ends of the nozzles at the point where they communicate with the hollow interior of the same thus closing a given number of them according to the dimensions of the plate such plate being further situated opposite an opening in the casing, means for holding the plate against rotation with the tray, a support extending from a point approximately at the top of one of the edges of the opening in the casing toward the interior of the same and situated vertically above one edge of the plate within the tray, a second support similarly extending from the opposite edge of the opening and situated vertically above the other edge of the plate within the tray, and an elastic wall pendent from each support the lower edges of which sweep upon the inverted ends of the vessels on the tray as they pass, substantially as set forth.

821,006. **FASTENER.** FRANKLIN R. WHITE, Waterbury, Conn., assignor to The Platt Brothers & Company, Waterbury, Conn., a Corporation of Connecticut. Filed June 28, 1904. Serial No. 214,443.



Claim.—An improved socket member of a ball-and-socket fastener, said socket member consisting of a cap-piece and collet locked together said collet having a central opening, and an eyelet consisting of two members, one of said eyelet members having a hollow shank and base-flange and the other eyelet member being of disk form having its edge flanged over the base-flange of the shank, and having a central opening whose edge is radially slotted to form a series of spring-arms with upwardly-turned points entering but out of contact with the inner wall of the hollow shank, said shank having

a closed head which, after insertion into the collet-opening, is upset and bulged or flared outwardly and over and upon the edge of said collet-opening, all constructed and arranged to operate, as herein described.

821,007. **FASTENER.** FRANKLIN R. WHITE, Waterbury, Conn., assignor to The Platt Brothers & Company, Waterbury, Conn., a Corporation of Connecticut. Filed Aug. 9, 1904. Serial No. 220,063.



Claim.—The ball member of a ball-and-socket fastener said member consisting of a ball proper provided with a base-flange and having the perimeter of said base provided with depending teeth or prongs, said head being upset in the direction of its axis and having one or more of its sides flattened.

821,008. **GLOVE-FASTENER.** FRANKLIN R. WHITE, Waterbury, Conn., assignor to The Patent Button Company, Waterbury, Conn., a Corporation of Connecticut. Filed June 29, 1905. Serial No. 267,489.



Claim.—1. A fastener of the character described constructed with a cap-piece having an inturned flange, a cone-disk contained within the cap-piece between the inner wall thereof and said flange and having its marginal edge located within said flanged portion, and an eyelet the end of which is spread within the cap-piece by said cone, the end of the eyelet being also spread within the cap-piece and confined between the inturned flange thereof and the cone-disk, and the center of said cone being bent inwardly into the cap-chamber.

2. A fastener of the character described constructed with a cap-piece having an inturned flange, a cone-disk contained wholly within the chamber of the cap-piece and having its marginal edge contained within the inturned portion of the cap-piece, and a tapered eyelet, the end of which is spread within the chamber of the cap-piece and confined between the inner wall of the inturned flange and the cone-disk, said cone-disk having its central portion capable of spreading the end of the eyelet, and of being substantially bent inwardly.

3. The socket member of a ball-and-socket fastener consisting of a cap-piece having an inturned flange, a cone-disk within the chamber of the cap-piece and having its marginal edge confined within the said inturned portion of the cap-piece, and a split eyelet of tapered form the end of which is spread within the cap-piece between the flange thereof and said cone-disk, the latter being subsequently bent inwardly, said eyelet having a central opening provided with yielding stud-engaging members.

4. The socket member of a ball-and-socket fastener, consisting of a hollow cap-piece having an inturned flange adapted to clamp one side of the material, said cap-piece containing within its chamber a cone, and an eyelet fashioned from a disk having radial points and having a perforate center with slots radiating therefrom, said points subsequently bent to form a tapered split hub and to be spread within the cap-piece by said cone, and the metal between the radial slots at the center being bent inwardly substantially parallel with the axis of the hub to form yielding stud-engaging means.

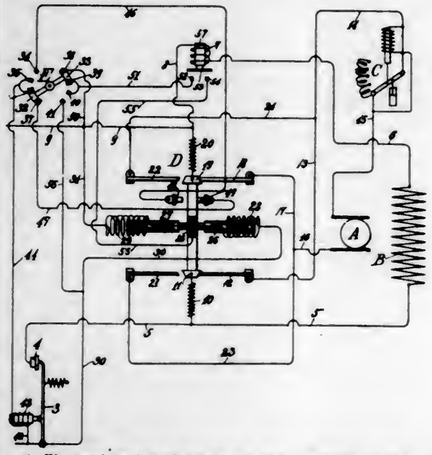
5. In the socket member of a ball-and-socket fastener, the combination with a cap-piece containing a cone, a tapered split eyelet, the upper smaller end of which is spread within said cap-piece by said cone, the latter being subsequently bent inwardly, the lower larger end of said eyelet being flanged and bent inwardly to form a yielding stud-engaging piece, substantially as described.

821,009. **AUTOMATIC MOTOR-REVERSER.** GEORGE H. WHITTINGHAM, New York, N. Y., assignor to Automatic Switch Company, a Corporation of Maryland. Filed Dec. 9, 1903. Renewed Oct. 21, 1905. Serial No. 283,804.

Claim.—1. The combination with the armature and field windings of a motor, of means for preventing a reversal of current in one of said windings except when the current in the other winding is less than a determined value.

2. The combination with a motor, of means for reversing the current in the armature-winding, and means controlled by the strength of current in the field-winding for preventing such reversal except when the current in the field-winding is less than a determined value.

3. The combination of a motor and a reversing-switch, means for setting the same, and means for maintaining the same in set position except when the current in the armature-winding is less than a determined value.



4. The combination with a motor, and a reversing-switch, oppositely-acting coils for operating the same, means for short-circuiting either of said coils, and means for preventing such short-circuiting except when the current in one of the motor-windings is below a determined value.

5. The combination with a motor, of a reversing-switch, oppositely-acting coils for operating the same, means for short-circuiting either of said coils when the current in one of the motor-windings is below a determined value, and means whereby upon making said short circuit current is introduced to the motor.

6. The combination with a motor, of a reversing-switch, and oppositely-acting electromagnets for operating the same, said electromagnets being adapted to normally hold said switch in either one of its running positions, and means for preventing the switch from operating until the speed of the motor falls below a determined rate.

7. The combination with a motor, of a reversing-switch, two oppositely-acting forces for moving the switch to either one of two positions, and means whereby said forces normally hold said switch in either of said positions when moved thereto, and means for preventing the switch from operating until the speed of the motor falls below a determined rate.

8. The combination with a motor, of a reversing-switch, armatures connected to the opposite sides of said switch, and two oppositely-acting coils respectively surrounding said armatures, said coils and armatures being so disposed that when the switch is moved to one side the equilibrium of the coils will be unbalanced.

9. The combination with a motor, of a reversing-switch, and two oppositely-acting electromagnets for operating said switch, the equilibrium of said electromagnets being unstable, and means for changing said equilibrium when the speed of the motor falls below a determined rate.

10. The combination with a motor, of a reversing-switch, two oppositely-acting electromagnets for operating said switch, the equilibrium of said electromagnets being unstable, and means for changing said equilibrium when the current in one of the motor-windings is less than a determined value.

11. The combination with a motor, of a reversing-switch, two oppositely-acting electromagnets for operating said switch, the equilibrium of said electromagnets being unstable, and means for preventing a change of equilibrium except when the current in one of the motor-windings is less than a determined value.

12. The combination with a motor, of field and armature windings therefor, a reversing-switch in the armature-circuit, and means for preventing the throwing of the reversing-switch except when the current in the field-winding is less than a determined value, substantially as described.

13. The combination with a motor, of field and armature windings therefor, a reversing-switch in the armature-circuit, a controller adapted to establish circuits which shall become operative upon the throwing of the reversing-switch, and means whereby after said controller is operated the reversing-switch will be automatically thrown when the current in one of the motor-windings is less than a determined value, substantially as described.

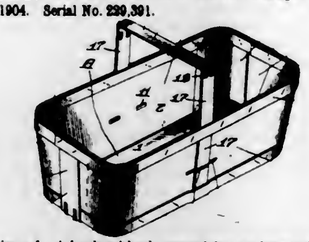
14. The combination with a motor, of field and armature circuits therefor, a reversing-switch, a circuit-closing switch adapted to establish the field and armature circuits upon the operation of the reversing-switch, means for establishing a short circuit through the armature-circuit and a braking resistance when said circuit-closing switch is opened, and means for maintaining said short circuit until the current therein is less than a determined value.

15. The combination with a motor of a circuit-closing switch therefor, means for establishing a short circuit through the motor-armature and a braking resistance upon the opening of said circuit-closer, and means for maintaining said circuit as long as the current therein is above a determined value, substantially as described.

16. The combination with a motor, of a reversing-switch, a controlling-switch for opening the main circuit and for operating the reversing-switch and automatic means for preventing the operation of the reversing-switch until the speed of the motor has fallen below a determined rate.

17. The combination with a motor, of a reversing-switch, and automatic means for controlling the latter, said means being allowed to operate the reversing-switch only when the speed of the motor has fallen below a determined rate.

821,010. **BASKET.** HETTIE O. WILCOX, Chicago, Ill. Filed Oct. 21, 1904. Serial No. 229,391.



Claim.—1. A basket-blank comprising an integral sheet of material, said sheet being substantially coextensive with the blank, rim-strips secured to the side edges of said sheet and provided with projecting end portions, and transverse reinforcing means connecting the rim-strips, the said blank being provided on its outer surface with a pair of recesses extending toward each other from between the rim-strips, metal strips spanning said recesses, and a handle adapted to be inserted between the rim-strips and provided with outer transverse grooves adapted to engage said metal strips, substantially as described.

2. A basket-blank comprising an integral sheet of material, said sheet being substantially coextensive with the blank, rim-strips 12 secured to the side edges of said sheet and provided with projecting end portions, strips 13 secured to the sheet at points between and parallel with the strips 12, a transverse band secured at its ends to said rim-strips, a bottom board 1 secured to the inside of the blank, and a longitudinal strip secured to the outside of the blank and at the center thereof, substantially as set forth.

3. A basket-blank comprising an integral sheet of material having its sides provided with notches, said sheet being substantially coextensive with the blank, rim-strips secured to the side edges of the said sheet, outside strips of metal spanning the said notches, and a handle having end portions adapted to be inserted between the rim-strips, when the blank is folded, and provided with transverse outside grooves adapted to engage said strips of metal, substantially as set forth.

4. A basket-blank comprising a reinforced integral sheet of material which is coextensive or substantially coextensive with the blank, and provided with parallel inner and outer rim-strips secured to its side edges and projecting at the ends of the blank, the said blank being provided on its outer surface with a pair of recesses extending toward each other from between the rim-strips, metal strips spanning said recesses, and a handle adapted to be inserted between the rim-strips and provided with outer transverse grooves adapted to engage said metal strips.

821,011. **FRICTION-SLIDE FOR GARMENT-SUPPORTERS.** ANTONIO ABHAID, Douma, Syria, Turkey. Filed Jan. 10, 1906. Serial No. 295,375.

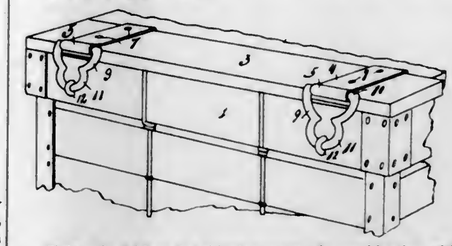
Claim.—1. A friction-slide of the character described, having two parallel slots spaced apart to form between them a central friction portion-holding-bar and each slot having an offset tab-receiving portion.



2. A garment-supporting web having associated therewith a friction-slide, formed from a single piece of material and embodying a central bar having rearwardly folded and overlapped lip portions between which and said central bar an end of the web is clamped, and two outer bars arranged parallel with the central bar, each outer bar having a tab-receiving offset portion of less length than its bar, and a tab looped about each offset portion, the looped portions of the tabs being in close surface contact with the supporting-web at the points where the web passes over the central bar whereby to increase the frictional resistance of the web at such points.

3. A garment-supporting web having associated therewith a friction-slide formed from a single piece of material and embodying a central bar and two outer bars arranged parallel therewith, each outer bar having a tab-receiving offset portion of less length than its bar, and a tab looped about each offset portion, the looped portions of the tabs being in frictional contact with the surface of the web at the points where the web passes over the central bar, whereby to increase the frictional resistance of the web at these points.

821,012. **HINGE.** HENRY N. BACKUS, Detroit, Mich. Filed May 9, 1903. Serial No. 156,395.



Claim.—In a hinge for shipping-crates, the combination with the crate and cover, of a hinge comprising a member fixed to the cover, having a bearing-eye extending transversely thereof, a link having a transverse bar at one end rotatively seated in said eye, a hinge member secured to the body of the crate having an aperture therein which loosely receives the opposite end of said link, whereby the cover is flexibly hinged to the crate and is caused to fall squarely thereon when closed.

821,013. **SPINNING AND LIKE MACHINE.** FRANK A. BREEZE, Forest Mills, Canada. Filed Oct. 10, 1904. Renewed Oct. 16, 1905. Serial No. 283,043.

Claim.—1. A spinning or like machine having a toothed belt or apron traveling in a direction transversely to the series of slivers or yarns and adapted to receive and convey broken ends of the same, said belt presenting a continuous toothed surface for receiving the broken ends of the yarn, substantially as specified.

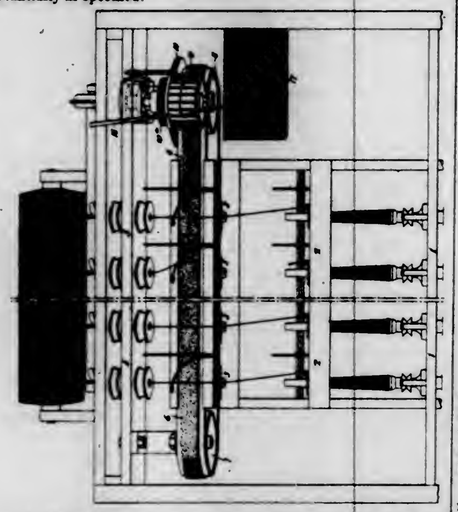
2. A spinning or like machine having a toothed belt or apron for receiving and conveying the broken ends of yarns or slivers and means for clearing the latter from said apron, said apron presenting a continuous toothed surface for receiving the broken ends of the yarn, substantially as specified.

3. The combination, in a spinning or like machine, of a toothed apron traveling in a direction transverse to the series of yarns or slivers and adapted to receive and convey the broken ends of the same, with a toothed drum for removing the yarns or slivers from said apron, substantially as specified.

4. The combination, in a spinning or like machine, of a toothed receiver for conveying the broken ends of yarns or slivers, with a drum having advancing and retracting combs for removing the yarns or slivers from said receiver, substantially as specified.

5. The combination, in a spinning or like machine, of a toothed apron traveling in a direction transverse to the series of yarns or slivers, and adapted to receive and convey the broken ends of the same, with a drum having advancing and retracting combs for clearing the yarns or slivers from the apron, substantially as specified.

6. The combination, in a spinning or like machine, of a toothed receiver for conveying the broken ends of yarns or slivers, with a toothed drum for clearing the yarns or slivers from the receiver, and a blast-nozzle for removing said yarns or slivers from the drum, substantially as specified.



7. The combination, in a spinning or like machine, of a toothed apron, traveling in a direction transverse to the series of yarns or slivers and adapted to receive and convey the broken ends of the same, with a toothed drum for clearing the yarns or slivers from the apron and a blast-nozzle for removing said yarns or slivers from the drum, substantially as specified.

8. The combination in a spinning or like machine, of a toothed receiver for conveying the broken ends of yarns or slivers, with a drum having advancing and retracting combs for removing the yarn or slivers from said receiver, and a blast-nozzle for discharging the yarns or slivers from said drum at a point where the combs are retracted, substantially as specified.

9. The combination, in a spinning or like machine, of a toothed apron, traveling in a direction transverse to the series of yarns or slivers and adapted to receive and convey the broken ends of the same, with a drum having advancing and retracting combs for removing the yarns or slivers from said apron, and a blast-nozzle for discharging the yarns or slivers from said drum at a point where the combs are retracted, substantially as specified.

821,014. RAILWAY-TIE. MICHAEL C. BRODERICK and BERNHART F. SIBER, Massillon, Ohio. Filed Jan. 8, 1906. Serial No. 295,153.

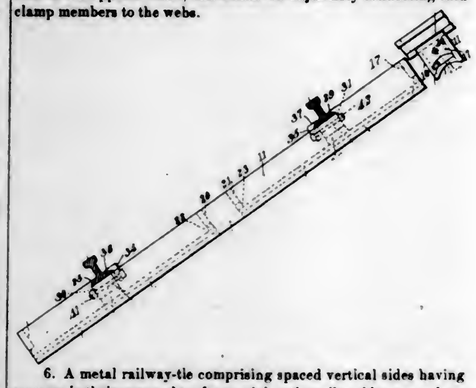
Claim.—1. A metal railway-tie comprising spaced vertical sides and connected by horizontal webs extending longitudinally thereof and spaced apart at the inner ends, and transverse vertical webs connecting said sides and spaced from the inner ends of the horizontal webs.

2. A metal railway-tie comprising spaced vertical sides and connected by horizontal webs spaced apart at the inner ends and with the lower surfaces concaved, and transverse vertical webs connecting said sides and spaced from the horizontal webs.

3. A metal railway-tie comprising vertical sides having recesses in their upper edges for receiving the rails, said recesses having overhanging terminals bearing over the tie-flanges of the rails, a horizontal web integral with the sides connecting said spaced sides opposite said recesses and with their upper surfaces flush with the bottoms of the recesses, and means for clamping said rails to said tie structure.

4. A metal railway-tie comprising spaced vertical sides having recesses in their upper edges for receiving the rails, said recesses having overhanging terminals bearing over said vertical sides, transverse vertical webs connecting said spaced sides integral therewith and with the upper surfaces flush with the bottoms of the recesses for bearing beneath a rail, and means for clamping said rails to said tie structure with the tie-flanges beneath said overhanging portions.

5. A metal railway-tie comprising spaced vertical sides having recesses in their upper edges for receiving the rails, said recesses having overhanging terminals bearing at one side over said vertical sides, webs connecting said spaced sides and integral therewith and with the upper surfaces flush with the bottoms of the recesses for bearing beneath rails, clamp members for bearing over the tie-flanges of the rails at the opposite sides, and means for adjustably connecting said clamp members to the webs.

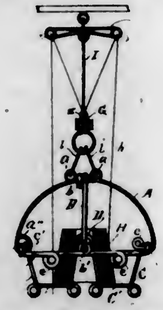


6. A metal railway-tie comprising spaced vertical sides having recesses in their upper edges for receiving the rails said recesses having overhanging terminals bearing at one side over the spaced sides, webs connecting said sides for bearing beneath the rails, clamp members for bearing against the rails at the opposite sides, and clamp-bolts extending through said webs and clamp members.

7. A metal railway-tie comprising spaced vertical sides having recesses in their upper faces for receiving the rails, said recesses having overhanging terminals bearing at one side over said vertical sides, webs connecting said spaced sides and integral therewith and with the upper surfaces flush with the bottoms of the recesses for bearing beneath rails, clamp members for bearing over the tie-flanges of the rails at the opposite sides and provided wth stop-shoulders, and clamping-bolts passing through said clamp members and webs and with heads at one end bearing against said shoulders.

8. A metal railway-tie comprising spaced vertical sides having recesses in their upper edges for receiving the rails said recesses having overhanging terminals for bearing over one side of the tie-flanges of the rails, webs connecting said sides for bearing beneath the rails, clamp members for bearing against the rails at the opposite sides and provided with inclined lips overhanging the tie-flanges and provided with spaced teeth in the inclined faces of the clamp members and bearing upon the upper faces of the tie-flanges, and clamp-bolts connecting the clamp members to the webs.

821,015. TWINE-HOLDER. ELVAN O. BULMAN, Grand Rapids, Mich. Filed July 31, 1905. Serial No. 272,127.

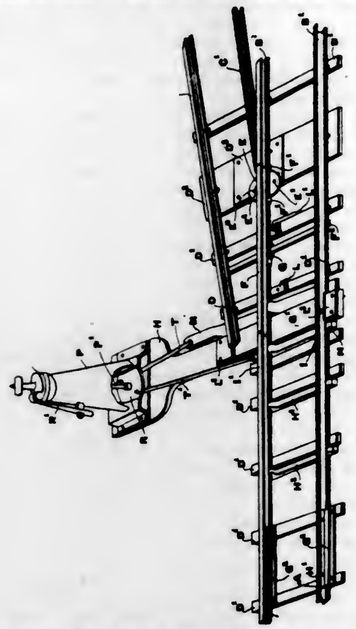


Claim.—1. In wire-constructed implements, a base having loops formed at intervals and forming a circle, a bail pivotally connected with opposite loops, projecting beyond said loops and forming a twine-receptacle, a bail pivotally attached to loops in the base at right angles with the first-mentioned bail, said bails having interlocking loops at the point of contact, and a supporting-rod.

2. In a twine-holder, an annular base having loops at intervals, a bail pivotally attached to opposite loops in said base, passing beyond said base and forming a twine-support, a second bail pivotally attached to the base at right angles to the first-mentioned bail, said bails having interlocking loops at the point of contact, a supporting-rod connected with the bails and having loops for threading the twine, and an adjustable weight upon said rod for taking up the slack of the twine, substantially as and for the purpose set forth.

3. In a folding twine-holder, an annular base having loops, bails pivoted in said loops at right angles with each other and having interlocking contact-points, a twine-holder connected with one of said bails, and a supporting-rod and take-up weight, substantially as and for the purpose set forth.

821,016. FROGLESS RAILROAD-SWITCH. JOHN E. CANHAM, Sprague, Canada. Filed Jan. 23, 1906. Serial No. 297,438.



Claim.—1. In a device of the class described the combination with the main track and siding, of a switch-rail, a chair secured adjacent one end thereof, said chair being pivoted at one side to a sleeper and having a slot in its other side concentric to the pivot, a stationary pin projecting through said slot, a movable main-track portion and means for throwing said switch-rail and main-line portions to connect the main line with the siding.

2. In a device of the class described the combination with the fixed main line, siding and sleepers, of a switch, comprising a slidably-supported switch-rail, a chair secured to said switch-rail, at or near the end adjacent the inner of the converging siding and main-line rails, a plate supporting said chair, a pivot extending through said chair and into said plate, and out of alinement with the switch-rail, a slot in the said chair and concentric with the said pivot, a pin extending through said slot and into said plate, oppositely placed, supporting, angle or fish bars, secured to the opposing main-line rails and the sleepers, a slidably-movable main-line end portion extending beyond said angle-bars, switch-rods connecting and supporting said extending main-line portion, means for supporting the slidable rails when in their limited positions, and reversible means for throwing the said switch-rail and the extending main-line portion, coincident, to connect the main line with the siding, as and for the purpose specified.

3. In a device of the class described, the combination with the fixed main line, the siding and the sleepers, of a switch, comprising a pivoted chair in proximity to the converging inner of said siding and main-line rails, a slidably-movable switch-rail eccentrically secured to the said chair, a guideway extending from the outer of said siding-rails, transversely, under said switch-rail, to the onter of said main-line rails, a clasp extending under said guideway and secured to said switch-rail, oppositely placed, supporting fish or angle bars secured to the opposing main-line rails and the sleepers, an outstanding, slidably-movable, main-line end portion, extending beyond said angle-bars, switch-rods connecting and supporting said extending main-line portions, a throw-over or pull rod connected to the switch-rod, in proximity to the free ends of the extending main-line end portion, a switch-rod passing under the outer of said siding-rails and connected to the switch-rail in proximity to the free end thereof, a throw-over or push rod, connected to the said switch-rod, reversible means for throwing said throw-over rods, so that the switch-rail and the extending main-line end portion, connect the main line with the siding, and means for supporting the movable rails when in their limiting positions, as and for the purpose specified.

4. In a device of the class described, the combination with the switch-station, main-line rails, siding, of a switch, comprising an eccentrically-pivoted switch-rail, a slidably-movable main-track portion, throw-over rods connected, respectively, to the free end of the switch-rail, and, to the free ends of said movable main-track portion, and a disk within the switch-stand to which said rods are connected and means for rotating the disk.

821,017. COMPOSITION OF MATTER FOR ELECTRIC CONDUCTORS. WALTER G. CLARK, New York, N. Y., assignor to Parker-Clark Electric Company, Jersey City, N. J., a Corporation of New Jersey. Filed Jan. 24, 1906. Serial No. 297,538.

Claim.—1. The herein-described composition of matter consisting of a dense non-porous and non-crystalline combination of silicon and carbon.

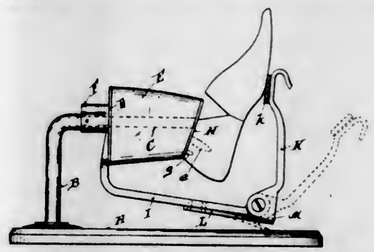
2. The herein-described composition of matter consisting of a dense non-porous and non-crystalline combination of silicon and carbon produced below the fusing-point of carborundum.

3. A composition of matter consisting of a combination of carbon and silicon less hard than carborundum produced by decomposing gaseous compounds of carbon and volatile compounds of silicon in the presence of each other.

4. The herein-described composition of matter consisting of a combination of carbon and silicon less hard than carborundum which is produced at a temperature less than that required to fuse carborundum and is a conductor of electricity when cold.

5. The herein-described composition of matter consisting of a combination of carbon and silicon less hard than carborundum produced by decomposing a carbonaceous gas in the presence of a volatile silicon compound.

821,018. SHOE-IRONING JACK. HARRY D. COFFMAN, Washington Court-House, Ohio, assignor of one-half to John Morgan Baker, Washington Court-House, Ohio. Filed Sept. 19, 1904. Serial No. 225,007.



Claim.—1. In an ironing-jack for shoes, a spindle, a stock longitudinally bored to fit the spindle, the inner end of said stock-bore being enlarged to form an annular recess, a plate secured to the stock, provided with a spindle-receiving bore alined with the bore of the stock, one edge of said plate-bore having a notch, a radial pin on the spindle adapted to pass through said notch when alined and enter into said annular recess, a spring-controlled keeper-pin supported on the spindle, said stock-plate having indents adapted to be engaged with the keeper-pin, when the stock is rotated, a last, and means for securing the last to the stock, substantially as described.

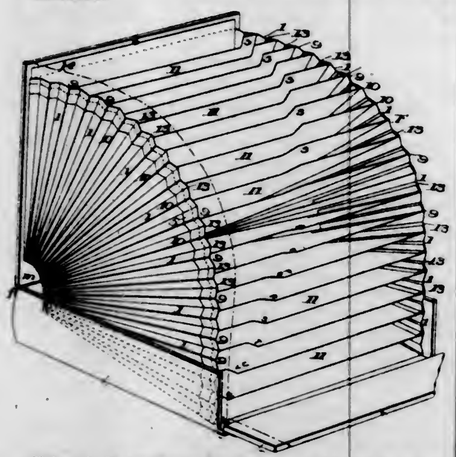
2. In combination with a shoe-jack having a supporting-spindle, an ankle-stock adapted to support the last, journaled on said spindle, a supporting-arm connected to said stock and projecting forward under the last, and a spring clamping-arm journaled to said supporting-arm, and adapted to engage the sole of the shoe supported on said last, substantially as described.

3. In a shoe-ironing jack, a spindle, an ankle-stock detachably

journaled thereon, means for holding said stock against longitudinal movement, means for locking said stock in selected positions of rotation, a last, alining devices between the meeting faces of the last and stock, and clamping mechanism adapted to engage the opposite faces of the last and stock, substantially as described.

4. In an ironing-jack, a spindle, an ankle-stock detachably journaled thereon, a sleeve fixed to the spindle, a lock between the spindle and stock permitting the rotation of the stock without longitudinal movement, a spring detent and indents between the sleeve and stock, adapted to hold the stock temporarily in selected positions of adjustment and to automatically engage and disengage under manual torsional strains, substantially as described.

821,019. **RECEPTACLE FOR LETTERS OR OTHER PAPERS.** WILLIAM A. COOKE, Jr., New York, N. Y. Filed Mar. 13, 1905. Serial No. 249,831.



Claim.—1. In receptacles for letters or other papers, an expansible pocket-file formed with bellows-fold sides and relatively stiff ends, the bellows-fold sides having two-ply top edges and tapes incased therein, substantially as specified.

2. In receptacles for letters or other papers, an expansible pocket-file formed with bellows-fold sides and relatively stiff ends, the bellows-fold sides having two-ply top edges and tapes incased therein, the wings of the terminal bellows-folds, the ends of the two-ply edges and the ends of the incased tapes being affixed to the stiff ends of the file, substantially as specified.

3. In receptacles for letters or other papers, an expansible pocket-file formed with bellows-fold sides and relatively stiff ends, the bellows-fold sides having two-ply top edges which are integral parts of the bellows-fold sides and tapes incased therein, the two-ply top edges being formed by folding the extended parts of the blanks down over the tapes and the sides of the blanks below the same and gluing them thereto, substantially as specified.

4. In receptacles for letters or other papers, an expansible pocket-file formed with bellows-fold sides and relatively stiff ends, the bellows-fold sides having two-ply top edges which are integral parts of the bellows-fold sides and tapes incased therein, the two-ply top edges being formed by folding the extended parts of the blanks down over the tapes and the sides of the blanks below the same and gluing them thereto, and the wings of the terminal bellows-folds, the ends of the two-ply top edges and the ends of the tapes being fastened to the ends of the file, substantially as specified.

5. In receptacles for letters or other papers, an expansible pocket-file formed with bellows-fold sides and relatively stiff ends, the bellows-fold sides having two-ply top edges and tapes incased therein, the wings of the terminal bellows-folds, the ends of the two-ply edges and the ends of the incased tapes being carried around the edges of the ends and fastened to the exterior sides thereof, substantially as specified.

6. In receptacles for letters or other papers, an expansible pocket-file formed with bellows-fold sides and relatively stiff ends, the bellows-fold sides having two-ply top edges which are integral parts of the bellows-fold sides and tapes incased therein, the two-ply top edges being formed by folding the extended parts of the blank down over the tapes against the blank below the tapes and gluing them thereto and to the tapes, and the wings of the terminal bellows-folds, the ends of the two-ply top edges and the ends of the tapes being carried around the edges of the ends and fastened to the exterior thereof, substantially as specified.

7. In receptacles for letters or other papers, an expansible pocket-file formed with bellows-fold sides and relatively stiff ends, the bellows-fold sides having two-ply top edges which are integral parts of the bellows-fold sides and tapes incased therein, the two-ply top edges being formed by folding the extended parts of the blank down over the tapes against the exterior of the blank below the tapes and gluing them thereto and to the tapes and wings of the terminal bellows-folds and the ends of the two-ply top edges and tapes carried around the edges of the ends and fastened to the exterior thereof, substantially as specified.

8. In receptacles for letters or other papers, an expansible pocket-file formed with bellows-fold sides and relatively stiff ends and having partitions to form the pockets or compartments, each of the partitions having a two-ply top edge and a cord incased therein, substantially as specified.

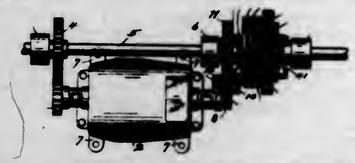
9. In receptacles for letters or other papers, an expansible pocket-file formed with bellows-fold sides and relatively stiff ends and having partitions to form the pockets or compartments each of the partitions having a two-ply top edge which are integral parts of the partitions and a cord incased therein, substantially as specified.

10. In receptacles for letters or other papers, an expansible pocket-file formed with bellows-fold sides and relatively stiff ends and having the pockets formed by partitions, each of the partitions having a two-ply top edge and a cord incased therein, in combination with the bellows-fold sides of the file in the outward-projecting folds of which the ends of the partitions are held, connections between the ends of the partitions and the bellows-folds, and the ends of the cords incased in the two-ply tops of the partitions secured between the said connections and the bellows-folds, substantially as specified.

11. The combination with a box or case formed by two parts hinged together and adapted to be opened, of an expansible pocket-file formed with the bellows-fold sides and bottom and relatively stiff ends, the bellows-fold ends having two-ply top edges and tapes incased therein, the wings of the terminal bellows-folds, the ends of the two-ply edges and the ends of the incased tapes being carried around the edges of the stiff ends and fastened to the exterior thereof, and the stiff ends fastened to the two parts of the box or case with the ends of the two-ply top edges and inserted tapes between them and the parts of the box or case to which they are fastened, substantially as specified.

12. The combination with a box or case open at the top and front and provided with a hinged cover and hinged front flap, of an expansible pocket-file formed with bellows-fold sides and bottom and relatively stiff ends, the bellows-fold sides having two-ply top edges and tapes incased therein, the wings of the terminal bellows-folds, the ends of the two-ply top edges and the ends of the tapes being carried around the edges of the stiff ends and fastened to the exterior thereof, one of the stiff edges being fastened rigidly to the cover of the case with the wing of the terminal bellows-fold and the end of the two-ply top edge and the end of the tape between the ends and the cover and the opposite end of the two-ply top edge and the tape fastened to the bottom of the box and forming a hinged connection between the side of the file and the bottom of the box, substantially as specified.

821,020. **MAGNETIC CLUTCH.** HENRY H. CUTLER, Milwaukee, Wis., assignor to The Arnold Magnetic Clutch Company, Milwaukee, Wis., a Corporation of Wisconsin. Filed Jan. 18, 1902. Serial No. 90,296.



Claim.—1. The combination with clutch members, of a second member, and means to attract either of said clutch members and the second member together, and further means actuated when one of said members is first attracted to release by impact the other of said members, substantially as described.

2. The combination with two clutches, of means actuated when one clutch is energized to release by impact the second clutch, substantially as described.

3. The combination with two clutches adapted to be alternately energized, of means actuated when one of said clutches is energized to release by impact the second clutch, substantially as described.

4. The combination with two clutches adapted to drive machinery at different speeds and to be alternately energized, of means actuated when one of said clutches is energized to release the second clutch by impact, substantially as described.

5. The combination with two clutches arranged to drive machinery in opposite directions and adapted to be energized, of means for causing one of said clutches when energized to release by impact the opposite clutch, substantially as described.

6. The combination with two clutches arranged to operate machinery in different directions and at different speeds, said clutches being adapted to be alternately energized, of means to cause one of said clutches when actuated to release by impact the other clutch, substantially as described.

7. In a magnetic clutch device, the combination with a common member, of two coöperating members, one located opposite each face of the common member, means to cause mutual attraction between said common member and either of said coöperating members, pins carried by the common member and adapted to be engaged by either of said other members when attracted to the common member, said pins being slightly longer than the thickness of the said carrying member and slightly shorter than the distance between said opposing members when one is attracted and the other unattracted, substantially as described.

8. In a magnetic clutch, the combination with a magnet member of two armature members located opposite the faces of said magnet member, means to energize the opposite faces of said magnet member, whereby the adjacent armature member is attracted thereto, pins projecting through the magnet member and adapted to be engaged by said armature members, said pins being slightly shorter than the distance between the two armatures, whereby when one armature is attracted it acquires momentum before striking the pins and thus delivers a blow upon the opposite armature substantially as described.

9. In a magnetic clutch, the combination with a clutch member having channels formed in its opposite faces, magnet-coils located in said channels, armature-disks located opposite the said channels and adapted to be attracted by the magnets, pins carried by the clutch member and adapted when one of said armatures is attracted to receive the impact of said armature and deliver it to the opposite armature whereby the latter is released from the clutch member, substantially as described.

10. The combination with a common rotatable member, means for energizing each face thereof, a second rotatable member mounted opposite each said face of said common member, and means when one of said second members is initially attracted to the adjacent face of said common member to release the other second member by the impact of a blow delivered thereto by the said attracted member, substantially as described.

11. The combination with a magnet member, of two opposed members free to rotate independently of each other and adapted to be alternately attracted by said magnet member, and means to release one such member from the magnet member by the other opposed member when the latter is attracted, substantially as described.

12. The combination with a shaft, of a clutching mechanism mounted upon said shaft and comprising a common member, and a second member opposite each face of said common member, means to attract either of said second members and said common member together, and further means actuated when one of said second members and the common member are initially attracted together to release the other of said second members from said common member by the impact of a blow delivered thereto, substantially as described.

13. In a magnetic clutch, the combination with a rotatable main body and an energizing-coil located on each side of said main body, of independently-rotatable armatures, one on each side of said main body, and a sliding rod extending through said main body of a length somewhat greater than the width of said main body, whereby as one armature moves up to said main body the other is forced away therefrom.

14. In a variable-speed device, a revoluble shaft, a magnet having a plurality of coils fastened thereon, independent transmitting-wheels loosely mounted on said shaft, an armature rigidly connected with each of said wheels each armature facing a pole or poles of said magnet, means for controlling the energization of the actuating-coils of the magnet independently of each other, and means for preventing said armatures from simultaneously contacting with their respective magnet-faces when the coils of said magnet are energized.

15. In a variable-speed device, a revoluble shaft, a magnet having a plurality of coils fastened thereon, transmitting-wheels of different diameters loosely mounted on said shaft, an armature rigidly connected with each of said wheels each armature facing a pole or poles of said magnet, means for controlling the energization of the magnet-coils independently of each other, and means for preventing said armatures from simultaneously contacting with their respective magnet-faces when the coils of said magnet are energized, said means comprising a rod or rods extending through said magnet and having a length slightly greater than the distance between the opposing faces of said magnet.

16. In a variable-speed mechanism, a revoluble shaft, a magnet fastened thereon, independent transmitting-wheels loosely mounted on said shaft each of said wheels being fastened to a disk which faces a pole or poles of the magnet and forms an armature therefor, and a rod or rods passing through said magnet whereby said armatures are prevented from simultaneously contacting with the opposing faces of said magnet.

17. In combination, a revoluble shaft, a double-faced electromagnet mounted on said shaft, two independent armatures loosely mounted on said shaft and adapted to coact with the opposing faces of said magnet, and a rod or rods carried by said magnet for the purpose of forcing one armature away from its magnet-face when the other armature is in contact with its magnet-face.

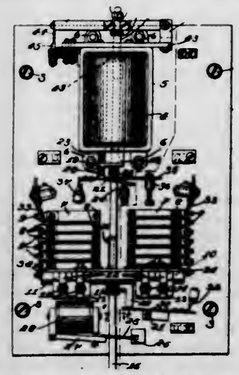
18. In a magnetic clutch, the combination with the main body and energizing-coils located on either side of said main body, of relatively rotatable armatures on opposite sides of said main body, a sliding rod extending through said main body of a length somewhat greater than the width of said main body, whereby as one armature moves up to said main body the other is forced away therefrom.

19. The combination with two independently-rotatable bodies or members, of a third or central body arranged between said independently-rotatable bodies, electromagnetic windings for bringing either of said independently-rotatable bodies into operative relation with said third body, and means whereby when one of said independently-rotatable bodies is in operative relation with said third body the other independently-rotatable body is forced away from said third body.

20. The combination with two relatively movable bodies, of a third or central body, electromagnetic windings for bringing either of said relatively movable bodies into engagement with said third body, and means whereby when one of said relatively-movable bodies is brought into engagement with said third body the other relatively movable body is forced away from said third body.

21. The combination with two relatively movable bodies, of a third or central movable body, electromagnetic windings for bringing either of said relatively movable bodies into engagement with said third body, and a rod supported by said third body for forcing one of said relatively movable bodies away from said third body when the other relatively movable body is in engagement with said third body.

821,021. **ELECTRICAL STEP-BY-STEP CONTROLLER.** HENRY H. CUTLER, Milwaukee, Wis. Filed May 10, 1902. Serial No. 106,701.



Claim.—1. In an electric controller for motors, a variable resistance adapted to be included in a motor-circuit, a magnetically-

controlled means adapted to be successively operated to vary the amount of said resistance in the circuit, and means whereby the amount of movement of the resistance-varying device at each successive operation is changed for governing the time required for the total variation, substantially as described.

2. In an electric controller for starting motors, a resistance, magnetically-operated means for cutting out said resistance by successive movements in one direction, and means for varying the extent of each movement, substantially as described.

3. An electric controller employed in starting a motor, comprising a single solenoid and its core, means whereby the successive movements of the core in one direction will cut out the resistance in the armature-circuit of an electric motor, and means for varying the amount of each said movement, whereby the time period required for cutting out the whole resistance may be changed, substantially as described.

4. An electric controller employed in starting a motor, comprising a single solenoid and its core, means whereby the successive movements of the core in one direction will cut out the resistance in the armature-circuit of an electric motor, and means for varying the extent of the movement of the core, substantially as described.

5. In an electric controller, the combination with a variable resistance adapted to be included in an electric circuit, of a resistance-varying element therefor, means for operating said element step by step, and further means for adjusting the amount of movement imparted to said element at each step, substantially as described.

6. In an electric controller, the combination with a variable resistance adapted to be included in an electric circuit, of a resistance-varying element therefor, a solenoid and its reciprocating core for operating said element step by step, and means for adjusting the movement of said element at each step, substantially as described.

7. In an electric controller, the combination with a variable resistance adapted to be included in an electric circuit, of a resistance-varying element therefor, a solenoid and its reciprocating core for operating said element step by step in one direction, independent means for permitting the return of said element, and means for adjusting the extent of movement of said element at each step, substantially as described.

8. The combination with a rheostat having a series of contact-segments, of a brush adapted to be moved over said segments, a rod to move the same, and a ring-clutch mechanism magnetically controlled to move said rod and brush step by step from one end of said series to the other, substantially as described.

9. The combination with a rheostat having a series of contact-segments, of a brush adapted to be moved over said segments, a rod carrying the brush, a ring-clutch magnetically controlled to lift said rod step by step to move the brush from one end to the other of the series of segments, and a second ring-clutch also magnetically controlled to maintain the brush and rod as long as desired in the position to which it is lifted, substantially as described.

10. The combination with a rheostat having two series of contact-segments, of a cross-head carrying brushes adapted to travel over said segments, a rod to which said cross-head is secured, a solenoid having a core, a ring-clutch actuated by said core to lift the said rod and cross-head to cause the brushes to travel over the contact-segments, and a similar ring-clutch for said rod and a magnet to control the same to maintain the cross-head as long as desired in any position to which it is lifted, substantially as described.

11. The combination with a series of contact-segments, a brush adapted to travel over the same, a rod carrying the brush, a solenoid having a core, a ring-clutch secured to the lower end of the core, and adapted to lift the rod, a pivoted switch mounted above the solenoid, a rod carried by the said core and extending through the switch, and adapted in its upper movement to open the switch and in its downward movement to close the same, whereby when the circuit of the solenoid is closed at the main switch it is automatically and successively energized to lift the rod and brush, substantially as described.

12. In a system of motor control the combination with a main switch, of a rheostat and its operating-solenoid, the circuit of said solenoid being controlled by said switch, an auxiliary magnet to maintain the movable element of the rheostat in operated position, said magnet being normally shunted by said movable element but adapted to be connected in series with the main-switch magnet at other times, whereby the main switch receives a strong current at first but a weaker current thereafter owing to the presence in its circuit of the said auxiliary magnet, substantially as described.

13. In a controller, the combination with a resistance, of magnetically-operated means for cutting out said resistance step by step, and means for varying the time required for demergizing the magnet to vary the rapidity of operation of the step-by-step device, substantially as described.

14. In a controller, the combination with a resistance, of magnetically-operated means for cutting out said resistance step by step, and means for varying the time for cutting out the said resistance by adjusting the time required for energizing and deenergizing the magnet and the extent of movement of said means at each step, substantially as described.

15. The combination with a motor, of a starting-rheostat therefor actuated step by step to cut out the resistance of said rheostat in the motor-circuit and electrical means for varying the time of movement of said step-by-step device at each step.

16. The combination with a motor, of a starting-rheostat therefor having its resistance included in the armature-circuit of said motor at the time of starting the same, said rheostat being actuated step by step, and means for adjusting the time of movement imparted to said step-by-step device at each step.

17. The combination with an electric motor, of a controller therefor, consisting of a rheostat, the resistance of which is included in the armature-circuit of the motor at starting, a solenoid and its reciprocating core for operating the movable element of said rheostat step by step in one direction, independent means for permitting the return of said element to normal position, and further means for adjusting the extent of movement taken by said element at each step, substantially as described.

18. The combination with a rheostat, of a solenoid and its core adapted to operate said rheostat, a switch controlling the energization of said solenoid adapted to be operated by the core of said solenoid, and a resistance in addition to that of the rheostat connected in parallel to the solenoid to govern the variation of the resistance of the rheostat and to prevent sparking at the contacts of the switch, substantially as described.

821,022. **MAGNETIC CLUTCH.** HENRY H. CUTLER, Milwaukee, Wis. Filed Aug. 5, 1903. Serial No. 168,389.

Claim.—1. In a magnetic clutch, the combination with a driving and a driven member, of a main winding for exerting a force to connect said members with each other, and a supplemental winding for exerting a magnetic force to disconnect said members said windings adapted to be energized one at a time.

2. In a magnetic clutch, the combination with a driving and a driven member, of a main winding for exerting a force to connect said driven member with said driving member, a supplemental winding, and means operated by the force exerted by said supplemental winding when it is energized to entirely separate said members said windings adapted to be energized one at a time.

3. In a magnetic clutch, the combination with a magnet member, of an armature member arranged upon one side of said magnet member, a main winding for exerting a force to attract said armature member to said magnet member, a part arranged upon the opposite side of said magnet member and movable independently of said armature member, means for normally holding said part out of contact with said magnet member when said armature member is in contact with said magnet member, and a supplemental winding for exerting a force to attract said magnet member to said part, whereby the magnet member may be entirely separated from the armature member when desired.

4. In a magnetic clutch, the combination with a magnet member, of an armature member arranged upon one side of said magnet member, a main winding for exerting a force to connect said armature member with said magnet member, a part arranged upon the opposite side of said magnet member and rotatable independently of said armature member, one or more pins passing through said magnet member and holding said part out of contact with said magnet member when the latter is in engagement with the armature member, and a supplemental winding for exerting a force when energized to bring said part and magnet member toward each other to entirely separate the members of the clutch.

5. In a magnetic clutch, the combination with a driving member, of a driven member, a main winding for exerting a force to attract said driven member to said driving member, a part normally bearing against said driven member and adapted to rotate independently of said driving member, and a supplemental winding for exerting a force when energized to operate said part to entirely separate the driving member from the driven member.

6. In a magnetic clutch, the combination with a driving member, of a driven member movable relatively to said driving member, a main winding for exerting a force to connect said driven member with said driving member, a supplemental winding, and a part rotatable independently of said driving member operated by the force exerted by said supplemental winding when energized to entirely separate said driven member from said driving member.

7. The combination with a magnet member, of an armature member, a main winding carried by said magnet member for exerting a force to connect said armature member therewith, a supplemental winding also carried by said magnet member, and a part rotatable independently of said armature member operated by the force exerted by said supplemental winding when energized to entirely separate said armature member from said magnet member.

8. In a magnetic clutch, the combination with a driving member, of a driven member arranged upon one side thereof, a main winding for exerting a force to attract said driven member to said driving member, an armature arranged upon the opposite side of said driving member and rotatable independently of said armature member, one or more pins passing through said driving member and bearing against the driven member to hold said armature out of contact with said driving member when the driven member is in engagement with said driving member, and a supplemental winding for exerting a force to attract said armature to said driving member to entirely separate the driving member from the driven member.

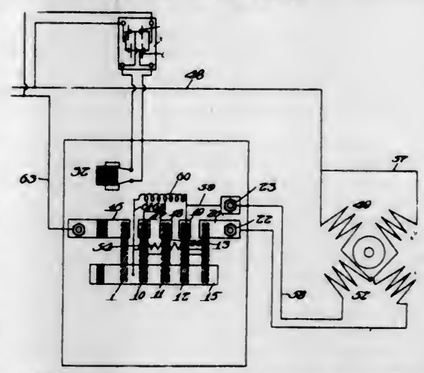
9. In a magnetic clutch, the combination with a magnet member, of an armature member arranged on one side thereof, a main winding carried by said magnet member for exerting a force to connect said armature member with said magnet member, an armature arranged upon the opposite side of said magnet member and rotatable independently of said first-mentioned armature member, one or more pins passing through said magnet member and bearing against the armature member to hold said armature out of contact with the magnet member when the armature member is in engagement therewith, and a supplemental winding also carried by said primary member for exerting a force to attract said armature to said magnet member and thereby entirely disconnect said armature member from said magnet member.

10. In a magnetic clutch, the combination with a magnet member, of an armature member movable relatively thereto, a main winding for exerting a force to attract said armature member to said magnet member, a plate bearing against said armature member and movable freely thereof, an armature arranged upon the opposite side of said magnet member, one or more pins extending through said magnet member and connected with said plate to hold said armature out of engagement with said magnet member when the armature member is conected with said magnet member, and a supplemental winding for exerting a force to attract said armature to said magnet member and thereby entirely release the armature member from said magnet member.

11. In a magnetic clutch, the combination with a magnet member loosely mounted upon a suitable hub of an armature member fixed to said hub, a second armature also loosely mounted upon said hub and arranged upon the opposite side of said magnet member to said armature member, one or more pins extending through said magnet member and holding said second armature out of contact with said magnet member when the latter is connected with said first armature member, a main winding carried by said magnet member for exerting a force to attract said first armature member to said magnet member, and a supplemental winding also carried by said magnet member, for exerting a force to attract said magnet member to said second armature and thereby release said magnet member from said armature member.

12. In a magnetic clutch, the combination with a driving member, of a driven member, a main winding for exerting a force to attract said driven member to said driving member, a supplemental winding for exerting a force to separate said driven member from said driving member, and means for energizing said windings one at a time.

821,028. **PHASE-SPLITTER.** HENRY H. CUTLER, Milwaukee, Wis. Filed Jan. 7, 1905. Serial No. 240,127.



Claim.—1. In a phase-splitter, in combination, a plurality of resistances of different character, and a plurality of independently-actuated switches for controlling said resistances, each of said switches being adapted to control all of said resistances.

2. In a phase-splitter, in combination, a plurality of resistances of different character, a plurality of independently-actuated switches controlling said resistances, and means for preventing the closure of said switches except in a definite order.

3. In a phase-splitter, in combination, a plurality of resistances of different character, a plurality of independently-actuated switches for controlling said resistances, and a retaining-magnet for holding said switches in a closed position.

4. In a phase-splitter, in combination, a plurality of resistances of different character, a plurality of independently-actuated switches for controlling the said resistances, and an electromagnetic retaining mechanism for holding said switches in a closed position.

5. In a phase-splitter, in combination, a plurality of resistances of different character, and a plurality of independently-actuated switches for controlling said resistances, an electromagnetic retaining mechanism for holding said switches in a closed position, and means for supplying the same with a direct current.

6. In a phase-splitter, in combination, a plurality of resistances of different character, a plurality of independently-actuated switches for controlling the same, means for preventing the closure of said switches except in a definite order, and a retaining mechanism for holding said switches in a closed position.

7. In a phase-splitter, in combination, a plurality of resistances of different character, a plurality of independently-actuated switches arranged in series for controlling said resistances, an interlocking mechanism, whereby each switch controls the next succeeding switch, and retaining means for the first switch of the series.

8. In a phase-splitter, in combination, a plurality of resistances of different character arranged in parallel paths, and a plurality of independently-actuated switches for controlling said resistances, each switch being adapted to control all of said resistances.

9. In a phase-splitter, in combination, a plurality of resistances of different character arranged in parallel paths, a plurality of independently-actuated switches for controlling said resistances, and means for preventing the closure of said switches, except in a definite order.

10. In a phase-splitter, the combination with a plurality of resistances, of different character, arranged in parallel paths, a plurality of independently-actuated switches for controlling said resistances, a retaining mechanism for holding said switches in a closed position, and means for automatically actuating said mechanism to release said switches.

11. In a phase-splitter, in combination, a plurality of resistances of different character arranged in parallel paths, a plurality of independently-actuated switches for controlling said resistances, means for preventing the closure of said switches except in a definite order, and a retaining mechanism for holding said switches in a closed position.

12. In a phase-splitter, in combination, a non-inductive and an inductive resistance arranged in parallel paths, and a plurality of independently-actuated switches for controlling said resistances, each switch being adapted to control both of said resistances.

13. In a phase-splitter, in combination, a non-inductive and an inductive resistance arranged in parallel paths, a plurality of independently-actuated switches for controlling said resistances, and means for preventing the closure of said switches except in a definite order.

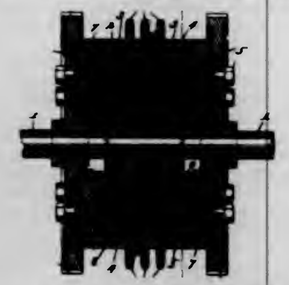
14. In a phase-splitter, in combination, a non-inductive and an inductive resistance arranged in parallel paths, a plurality of independently-actuated switches for controlling said resistances, means for preventing the closure of said switches except in a definite order, and a retaining mechanism for holding said switches in a closed position.

15. In a phase-splitter, in combination, a plurality of resistances of different character, and a plurality of independently-actuated switches for simultaneously controlling said resistances, each switch adapted to control both of said resistances.

16. In a phase-splitter, in combination, a plurality of resistances of different character, a plurality of independently-actuated switches for simultaneously controlling said resistances, and means for preventing the closure of said switches except in a definite order.

17. In a phase-splitter, in combination, a plurality of resistances of different character, a plurality of independently-actuated switches for simultaneously controlling said resistances, means for preventing the closure of said switches except in a definite order, and a retaining mechanism for holding said switches in a closed position.

821,024. MAGNETIC CLUTCH. GEORGE A. DAMON, Chicago, Ill., assignor to The Arnold Magnetic Clutch Company, Milwaukee, Wis., a Corporation of Wisconsin. Filed Apr. 15, 1903. Serial No. 152,682.



Claim.—1. In a device of the character described, a magnet member having exciting-coils adapted to produce magnetic fields with the lines of force of one field moving in an opposite direction to those of the other, whereby when one coil is energized its field will destroy the residual magnetism in the other field, substantially as described.

2. In a device of the character described, a magnet member having energizing-coils adapted to produce magnetic fields which have lines of force moving in opposite directions, the circuits of said fields having portions which are in common whereby when one coil is energized its field will destroy the residual magnetism of the other field, substantially as described.

3. In a device of the character described, a magnet member having energizing-coils adapted to produce magnetic fields which have lines of force moving in opposite directions, the circuits of said fields having portions which are in common, said coils adapted to be excited one at a time whereby the field excited by the energized coil will destroy the residual magnetism of the other field, substantially as described.

4. In a device of the character described, a magnet member having exciting-coils adapted to produce magnetic fields which have lines of force moving in opposite directions, the circuits of said fields having portions which are in common, and means for alternately energizing said coils whereby the field excited by the energized coil will destroy the residual magnetism of the other field, substantially as described.

5. A machine of the character described, comprising a magnet member having exciting-coils, which will produce magnetic fields which have portions of their circuits in common, and means for causing the currents in said coils to move in opposite directions in order to excite magnetic field having lines of force which move in different directions, whereby when one coil is energized its field will destroy the residual magnetism of the other field, substantially as described.

6. In a device of the character described, the combination of an armature and a magnet member which are independently movable, said magnet member having exciting-coils adapted to produce magnetic fields which have their lines of force moving in opposite directions, the circuits of said fields having portions in common whereby when the exciting-coil of the magnet which attracts the armature is denergized and the other coil energized, the magnetic field of the latter will destroy the residual magnetism in the field of the former and thus release the armature, substantially as described.

7. In a device of the character described, the combination with a pair of armatures, which are movable independently of each other, a magnet member arranged between said armatures, energizing-coils associated with said magnet member and each adapted to produce a magnetic field which will attract one of said armatures, said fields having lines of force moving in opposite directions and circuits with portions in common, whereby when one of said coils is energized its field will destroy the residual magnetism of the other field, substantially as described.

8. In a device of the character described, the combination with a pair of armatures, which are movable independently of each other, a magnet member arranged between said armatures, energizing-coils associated with said magnet member and each adapted to produce a magnetic field which will attract one of said armatures, said fields having lines of force moving in opposite directions and circuits with portions in common, and means for alternately closing the circuits of said coils whereby the field of the energized coil will destroy the residual magnetism of the other field, substantially as described.

9. A magnetic clutch comprising a pair of exciting-coils, one of said coils being arranged to destroy the residual magnetism of the other coil, said coils being adapted to be excited one at a time, substantially as described.

10. A magnetic clutch having a pair of exciting-coils connected in parallel and one part in common, said coils being adapted to produce magnetic fields with the lines of force of one field moving in an opposite direction to those of the other, said coils being adapted to be excited one at a time, whereby when one coil is energized its field will destroy the residual magnetism of the other field, substantially as described.

11. In a magnetic clutch, a magnet member having two magnetic circuits, armatures on either side of the magnet member, means for energizing either of the magnetic circuits and for thereby destroying the magnetism in the other magnetic circuit.

12. In a magnetic clutch, a magnet member having two magnetic circuits, armatures on either side of the magnet member, means for energizing either of the magnetic circuits and thereby attracting one of the armatures and at the same time destroying the magnetism in the other magnetic circuit and releasing the other armature

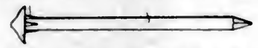
13. In a magnetic clutch, a magnet member having two magnetic circuits, armatures on either side of the magnet member, means for energizing either of the magnetic circuits and thereby attracting one of the armatures and at the same time destroying the magnetism in the other magnetic circuit and releasing the other armature, and a driving-shaft geared directly to one of said armatures and reversely to the other armature.

14. In a magnetic clutch, a driven shaft, a magnet member attached thereto, said magnet member having two magnetic circuits, armatures loosely mounted on the driven shaft on either side of the magnet member, means for energizing either of the magnetic circuits and thereby moving one of the armatures into contact with the magnet member near its outer edge and at the same time destroying the magnetism in the other magnetic circuit and releasing the other armature, and a driving-shaft geared directly to one of the armatures and reversely to the other.

821,025. NAIL OR SCREW FOR SECURING CORRUGATED IRON. JOSEPH B. DAVIES, Malvern, Victoria, Australia. Filed Jan. 27, 1903. Serial No. 140,710.

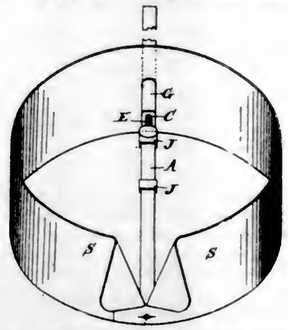
Claim.—1. In combination with a nail having an exposed hard solid head, a soft-metal bearing part extending under the head and up over the edge of the same, substantially as described.

2. In combination, a nail having an exposed hard solid head and spurs formed about the shank and a soft-metal bearing part extending under the head, and held in place by said spurs



3. In combination with a nail having a hard solid head, the crown whereof is exposed and spurs formed about the shank below the under side of the head, a soft-metal bearing part extending under the head and clenched by said spurs and up over the outer edge of said head.

821,026. COLLAR STAND OR SUPPORT. WILLIAM DELF, Willesden, London, England. Filed Mar. 27, 1905. Serial No. 252,403.



Claim.—1. A device consisting of a base having means for securing a collar in position thereon and means whereby the set or slope of the collar may be regulated by pressure applied against the back of the collar.

2. A device consisting of an extensible base having means for securing a collar firmly in position thereon and means whereby the set or slope of the collar may be regulated by pressure applied against the back of the collar.

3. A device consisting of a base having upturned ends, one of said ends being provided with a stud and the other of said ends having a stud and regulating-screw, the latter for imparting pressure against the back of the collar.

4. A device consisting of an extensible base, one portion of said base having upturned ends respectively provided with engaging means, and a regulating-screw and hinged plate, said plate being provided with a stud and adapted to have pressure imparted thereagainst by said regulating-screw.

5. A device consisting of a base having upturned ends, one of said ends being provided with a stud and the other of said ends having a regulating-screw and a hinged arm; said arm being provided with a stud and adapted to impart pressure against the back of a collar, and said base having means of attachment.

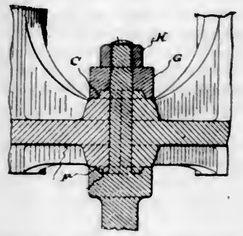
6. A device consisting of an extensible base, one portion of said base having upturned ends respectively provided with engaging means for a collar, and a regulating-screw and hinged plate, said plate being provided with a stud and adapted to impart pressure against the back of a collar, and the other of said base portions having means of attachment.

7. A device consisting of an extensible base, one portion of said base having upturned ends and the other portion thereof means of attachment, one of said upturned ends being provided with a stud and the other of said upturned ends having a regulating-screw and a pivoted plate, said plate being provided with engaging means for a collar and adapted to impart pressure against the back thereof when operated upon by said regulating-screw.

821,027. CONNECTION FOR MACHINES AND PARTS THEREOF. HERMAN DOCK, Philadelphia, Pa. Filed May 11, 1905. Serial No. 260,028.

Claim.—1. As a means for connecting two machines or parts thereof together and to support the same, in combination, a flange for each of the parts to be connected together, each flange having a projecting portion, a column having a projecting rod, said flanges being abutted together around said rod, there being a pocket or seat in said column conforming to the lower projecting portions of said flanges, a washer having an orifice through which said rod passes, said washer having a pocket or seat conforming to the upper projecting portions of said flanges, and means to secure said projecting portions in their pockets.

2. As a means for connecting two machines or parts thereof together and to a support, in combination, a flange for each of the parts to be connected together, each flange having an upper and lower projecting portion, a column having a projecting rod, said flanges being abutted together around said rod, there being a pocket or seat in said column conforming to the lower projecting portions of said flanges, a washer having an orifice through which said rod passes, said washers having a pocket or seat conforming to the upper projecting portions of said flanges, and means to secure said projecting portions in their pockets.



3. As a means for connecting two machines or parts thereof together and to a support, in combination, a flange for each of the parts to be connected together, each flange having a conical projecting portion, a column having a projecting rod, said flanges being abutted together around said rod, there being a pocket or seat in said column conforming to the projecting portion of said flanges and means to secure said projecting portions in said pockets.

4. As a means for connecting two machines or parts thereof together and to a support, in combination, a flange for each of the parts to be connected together, each flange having an upper and lower conical projecting portion, a column having a projecting rod, said flanges being abutted together around said rod, there being a pocket or seat in said column conforming to the lower projecting portions of said flanges, a washer having an orifice through which said rod passes, said washer having a pocket or seat conforming to the upper projecting portions of said flanges, and means to secure said projecting portions in their respective pockets.

5. As a means for connecting two machines or parts thereof together and to support the same, in combination, a flange for each of the parts to be connected together, each flange having a projecting portion, a column having a projecting rod, said flanges being abutted together around said rod, there being a pocket or seat in said column conforming to the projecting portion of said flanges and a nut adapted to be forced against the upper end of said flanges.

6. As a means for connecting two machines or parts thereof together and to a support, in combination, a flange for each of the parts to be connected together, each flange having an upper and lower projecting portion, a column having a projecting rod, said flanges being abutted together around said rod, there being a pocket or seat in said column conforming to the lower projecting portions of said flanges, a washer having an orifice through which said rod passes, said washers having a pocket or seat conforming to the upper projecting portions of said flanges, the upper portion of said rod being threaded and a nut working thereon above said washer.

7. As a means for connecting two machines or parts thereof together and to a support, in combination, a flange for each of the parts to be connected together, each flange having a conical projecting portion, a column having a projecting rod, said flanges being abutted together around said rod, there being a pocket or seat in said column conforming to the projecting portion of said flanges and a nut adapted to be forced against the upper end of said flanges.

8. As a means for connecting two machines or parts thereof together and to a support, in combination, a flange for each of the parts to be connected together, each flange having an upper and lower conical projecting portion, a column having a projecting rod, said flanges being abutted together around said rod, there being a pocket or seat in said column conforming to the lower projecting portions of said flanges, a washer having an orifice through which said rod passes, said washer having a pocket or seat conforming to the upper projecting portions of said flanges, the upper portion of said rod being threaded and a nut working thereon above said washer.

821,028. REMOVABLE ANVIL-CONTACT AND BRIDGE-SUPPORT FOR ELECTRIC VIBRATORS. WILLARD E. DOW, Braintree, Mass. Filed Mar. 13, 1905. Serial No. 249,822.

Claim.—1. In an induction-coil vibrator, an adjustable contact-point adapted to be removed from its bearing, and replaced, without altering the adjustment.



2. In an induction-coil vibrator having an adjustable contact-point, means supporting said contact-point in a manner permitting its removal and replacement without disturbing the adjustment.

3. In a vibrator for induction-coils having an adjustable contact-point, means for disrupting and reëstablishing the primary circuit, consisting of a removable support for said adjustable contact-point.

4. In an electric vibrator, a vibrating contact-breaker, a holder, a contact adjustable therein and intermittingly engaged by said contact-breaker, and means permitting said holder and contact to be instantly removed or placed in position without disturbing the adjustment of said contact.

5. An electric vibrator, having a removable contact-holder, a contact adjustable therein, a vibrating contact-breaker intermittingly closing and breaking the circuit through said contact, and yielding means for normally maintaining said holder and its contact in operative position.

6. An electric vibrator, provided with a bridge having a bifurcated free end, and a contact and its holder normally retained by said bifurcated free end, said holder and bridge having coöperating locking means for permitting the instant removal of said holder and contact.

7. An electric vibrator, provided with a bridge having a bifurcated free end, and a contact and its holder normally retained by said bifurcated free end, said holder and bridge having a coöperating notch and stud for removably locking them together.

8. An electric vibrator, provided with a bridge having a bifurcated free end, and a contact and its holder normally retained by said bifurcated free end, said holder and bridge having a coöperating notch and stud for removably locking them together, and a spring for yieldingly holding said notch and stud in locking position.

821,029. **ELECTRIC BINDING-POST.** WILLARD E. DOW, Braintree, Mass. Filed Aug. 21, 1905. Serial No. 274,969.



Claim.—1. A binding-post, comprising a hollow post provided with a diagonal slot in one side, and a spring-actuated clamp sliding in said post transversely of said slot and occupying a releasing position when opposite the mouth of said slot and a clamping position when adjacent the lower, inner end of said slot.

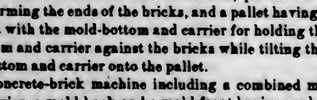
2. A binding-post, comprising a hollow post provided with a diagonal slot in one side, a spring in said post, a headed contact movably retaining said spring at one end of said post and a headed clamp engaging the opposite end of said spring and movable past said slot.

3. A binding-post, comprising a hollow, apertured post, externally threaded at one end, and having a shouldered opening at its opposite end, a headed clamp in said post having an operating-stem projecting through said end opening, a spring engaging said clamp, a movable contact at the opposite end of said post held yieldingly by said spring, and a retaining-nut engaging the threaded end of said post and retaining all the parts within the latter.

4. A binding-post, comprising a hollow, diagonally-slotted post containing oppositely-projecting yielding devices at its opposite ends and an intervening spring normally holding them apart, one of said devices being provided with clamping means for clamping movement with relation to the diagonal slot to bind a circuit-terminal therein, and the other of said devices constituting a yielding contact.

5. A binding-post, comprising a hollow, apertured post containing oppositely-projecting yielding devices at its opposite ends and an intervening spring normally holding them apart, one of said devices being provided with clamping means for clamping movement with relation to the aperture to bind a circuit-terminal therein, and the other of said devices constituting a yielding contact, the adjacent end of said post being externally threaded, and a cap-shaped nut internally threaded to fit said post and externally threaded for mounting purposes.

821,030. **TOBACCO-PIPE.** WILLIAM F. DUGINS, Kew, Victoria, Australia. Filed Nov. 1, 1904. Serial No. 230,965.



Claim.—1. A pipe having a cap-piece provided with openings and knives and rollers arranged on said cap-piece over said openings substantially as described.

2. A pipe having a cap-piece hinged thereto, said cap-piece having openings therein and a knife and roller arranged on said piece over said openings, substantially as described.

3. A pipe having a cap-piece provided with openings, lugs on said piece, knives and rollers carried in said lugs and arranged over the openings in the cap-piece and means for securing the cap-piece to the pipe, substantially as described.

821,031. **CONCRETE-BRICK MACHINE.** GEORGE W. DE ARMAN, Indianapolis, Ind., assignor of one-half to John Whitaker, Middleport, Ohio. Filed June 29, 1905. Serial No. 267,501.



Claim.—1. A concrete-brick machine including a base, a plurality of upright plates mounted upon the base, a slotted combined mold-bottom and carrier, a mold-front and a mold-back having each a recess in the top thereof opposite a space between two of the upright plates, and a clamp for the mold-front and the mold-back fitting in the slots and insertible between said two of the upright plates.

2. A concrete-brick machine including a base, a plurality of pairs of angle-irons attached to the base and each pair having an upright plate secured thereto, a pair of angle-irons attached to the base and having a pair of upright plates secured thereto with a spacing-block between the plates, a slotted combined mold-bottom and carrier, a mold-front and mold-back, and a clamp for the mold-front and mold-back fitting between the two of the pair of upright plates.

3. A concrete-brick machine including a base, a plurality of pairs of angle-irons attached to the base, upright plates secured to the angle-irons, a pair of angle-irons having slots therein and supporting an upright plate, screws attached to the base and extending through the slots of the angle-irons securing them adjustably to the base, a slotted combined mold-bottom and carrier provided at an end thereof with a removable filling-piece, and a mold-front and mold-back.

4. A concrete-brick machine including a base, a plurality of upright plates mounted on the base, a slotted combined mold-bottom and carrier, a mold-front and a mold-back having recesses in the tops thereof adjacent to the ends of the upright plates, and a plurality of clamps for the mold-front and the mold-back fitting in the said recesses.

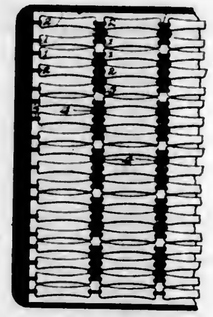
5. A concrete-brick machine including a combined bottom and carrier, a mold-back and a mold-front coöperating with the mold-bottom and carrier and removable therefrom, partitions and end plates for forming the ends of the bricks, and a pallet having lugs for engagement with the mold-bottom and carrier for holding the pallet on the bottom and carrier against the bricks while tilting the bricks from the bottom and carrier onto the pallet.

6. A concrete-brick machine including a combined mold-bottom and carrier, a mold-back and a mold-front having each a recess in the top thereof, a hinged clamp fitting into said recesses and provided with a nut for clamping said back and front together, a base, and upright plates on the base.

7. A concrete-brick machine including a mold-back and a mold-front having each a plurality of recesses in the inner side thereof, a combined mold-bottom and carrier, clamps for the mold-back and mold-front, a base, and upright plates on the base fitting into the recesses of the mold-back and mold-front.

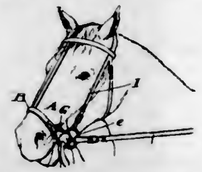
8. A concrete-brick machine including a combined mold-bottom and carrier, a mold-back having a recess in the top and a plurality of recesses in the inner side thereof, a mold-front having pattern-plates thereon, a hinged clamp fitting into the recess in the top of the mold-back and between two of the pattern-plates, a base, and upright plates on the base fitting in the recesses in the inner side of the mold-back and also between the ends of the pattern-plates.

821,032. **STORAGE BATTERY.** THOMAS A. EDISON, Llewellyn Park, N. J., assignor to Edison Storage Battery Company, West Orange, N. J., a Corporation of New Jersey. Filed Sept. 26, 1904. Serial No. 226,314.



Claim.—In a storage battery employing an alkaline electrolyte and active materials containing iron and nickel respectively, the combination of a series of grids or plates carrying pockets for the iron composition, and a series of grids or plates carrying pockets for the nickel composition, said latter grids being placed in pairs between the individual grids of the former series, and the volume of active material carried by each grid of the battery being substantially the same, substantially as set forth.

821,033. **BRIDLE-BIT.** PETER H. FLYNN, New York, N. Y. Filed Sept. 8, 1904. Serial No. 223,655.



Claim.—1. A controller comprising an elastic nose-band, terminal links connected to said nose-band, pressure members in separate pieces from the terminal links, and means for holding said pressure members on the terminal links.

2. The combination of a bridle, a bit, an elastic controller connected with the bit so as to be contracted by a compression movement thereof, said controller being supported by the bridle normally in an inclined position relative to the bit, and nerve-pressure members supported by, and adjustable on, the controller and adapted, when the controller is contracted, to exert pressure on the nerves of a horse's head.

3. A controller for horses comprising terminal members, nerve-pressure blocks fitted on the terminal members, and means connecting said terminal members for adjustment lengthwise thereof.

4. In a bridle, a controller comprising a nose-band and terminal members, said parts being adjustably and fixedly connected for the nose-band to assume different angular positions relative to the terminal members.

5. In a bridle, a controller comprising a nose-band, terminal links connected to said nose-band adjustable at different angles thereto, means for holding the links in fixed relation to said band, said nose-band being elastic and tending to normally separate the links, and nerve-pressure surfaces on said links.

6. In a bridle, a controller comprising a nose-band, terminal members pivoted thereto, and means for clamping the parts adjustably one to the other.

7. In a bridle, a controller having a nose-band, a plurality of terminal members, and means for adjustably clamping said terminal members in different angular positions relative to the nose-band, said members having nerve-pressure surfaces.

8. In a bridle, a controller comprising a nose-band, links connected to said band, and pressure members movable on the links to assume different positions thereon.

9. A controller having an elastic nose-band, and nerve-pressure members adjustable back and forth on the controller, in combination with a bit, and means for holding the controller in a position inclined relative to the bit, whereby the pressure members are adapted to act on the nerves of a horse's head back of the nostrils.

10. In a controller, an elastic nose-band provided with means for engagement with a bit, and pressure members adjustable back and forth on said controller relative to said nose-band.

11. In a controller, a nose-band, open links adapted for the reception of a bridle-bit, and pressure members carried by and adjustable on the open links.

12. In a controller, an elastic nose-band provided at its ends with open links, and adjustable pressure members carried by said links.

13. A controller comprising an elastic nose-band, members attached to the nose-band and adapted for engagement with a bridle-bit, pressure-blocks fitted adjustably on the members, and means for clamping the pressure-blocks on said members.

14. In a bridle, a controller comprising a spring nose-band, terminal members on said band, and adjustable pressure members carried by said terminal members.

15. In a bridle, a controller comprising a nose-band, terminal members connected therewith, and pressure members on the terminal members, said pressure members being adjustable lengthwise of the terminal members.

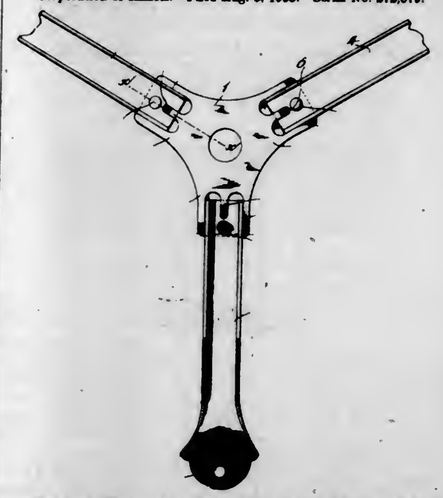
16. In a bridle, a controller comprising a nose-band, terminal members connected adjustably therewith, and pressure-blocks carried by the terminal members, said pressure-blocks being adjustable independently of the adjustment of the nose-band to the terminal members.

17. In a bridle, a controller comprising terminal members provided with ears and shoulders, a nose-band pivoted to said ears for its ends to engage with the shoulder, and means for clamping the band and the members adjustably together.

18. In a bridle, a controller comprising tapering terminal members, pressure-blocks clamped to said members, and means connecting the members.

19. In a bridle, a controller provided at its end portions with nerve-pressure surfaces, and pressure-blocks connected to said controller between the pressure-surfaces at the ends thereof.

821,034. **CHAIR-IRON.** JOHN E. GILSON, Port Washington, Wis., assignor to Gilson Manufacturing Company, Port Washington, Wis., a Corporation of Illinois. Filed Aug. 3, 1905. Serial No. 273,579.



Claim.—1. The combination with a cast-metal hub or support provided with radial spider-arm seats, having inner abutting walls of spider-arms formed of sheet metal mounted on the seats, and at their rear ends abutting against the walls and rivets passed through the arms and seats.

2. The combination with a cast-metal hub or support having depressed radial seats provided with inner abutting walls, of spider-arms of sheet metal conforming in cross-section to the seats, and abutting against said walls and means for securing the arms in the seats.

3. The combination with a cast-metal hub or support having a plurality of outwardly-disposed depressed seats, of sheet-metal spider-arms mounted in and conforming to the seats, and engaged at their rear ends by the rear walls of the seats and means for securing the arms within the seats.

4. The combination, with a cast-metal hub or support having outwardly-disposed depressed seats terminating short of the center of the hub, of sheet-metal spider-arms semitubular in cross-section and mounted in and conforming to the seats, engaged by a wall thereof.

5. The combination with a cast-metal hub or support having a depressed seat and an intermediate lug terminating above the seat and combining therewith to form a slot, of a semitubular sheet-metal spider-arm mounted in the seat and having its rear end extended under the lug and within the slot.

6. The combination with a cast-metal hub having a depressed seat and a radial lug extending from its back wall and terminating above the seat, of a spider-arm semitubular in cross-section, formed of sheet metal, and mounted in the seat and extended under the lug.

7. The combination with a cast-metal hub having a depressed seat and provided with a securing-lug extending from the wall thereof, of a sheet-metal semitubular spider-arm arranged in the seat and clamped by means of the lug.

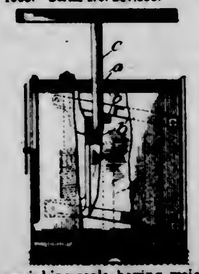
8. The combination with a cast-metal hub having a depressed seat the wall of which is provided with a lug terminating above the seat and combining therewith to form a slot, a sheet-metal spider-arm arranged in the seat and extending into the slot, and a rivet passed through the spider-arm and bottom of the seat.

9. The combination with the cast-metal hub provided with radially-disposed branches each having a depressed seat disposed with relation to the branches, and terminating short of the center of the hub and semitubular sheet-metal spider-arms arranged in and conforming to the seat, and engaged by the rear walls thereof.

10. The combination with the cast-metal hub having the radial branches provided with concaved seats near their outer ends and having their inner walls each provided with a lug 6 combining with the bottom of the seat to form the recess 7, the sheet-metal semitubular spider-arms 4 mounted in the seats and extending into the slots, and the rivets 8 passing through the seats and the arms.

11. The combination with a hub or support having a depressed seat provided with an intermediate lug spaced therefrom and combining therewith to form a slot, of a spider-arm mounted in the seat and extending under the lug and within the seat.

821,035. **WEIGHING-SCALE.** MARIUS H. HANSEN, Chicago, Ill. Filed June 29, 1905. Serial No. 267,563.

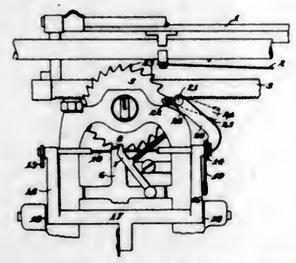


Claim.—1. A weighing-scale having weighing mechanism, a casing containing the weighing mechanism and having an opening through its top, a post extending through said opening and removably engaging a part of the weighing mechanism, and a platform carried by the post, the casing having also an opening for receiving said post for packing purposes, substantially as described.

2. A weighing-scale having weighing mechanism, a casing containing the weighing mechanism and having an opening through its top, a post extending through said opening and engaging a part of the weighing mechanism, said part having a socket in which said post fits removably, and a platform carried by the post, said casing having also an opening for receiving said post for packing purposes, substantially as described.

3. A weighing-scale having weighing mechanism, including a load-beam provided with a socket, a casing containing the weighing mechanism and having through its top an opening opposite said socket, a post passing through said opening and removably fitting in said socket, and a platform carried by the post the casing having also an opening for receiving said post for packing purposes, substantially as described.

821,036. **TYPE-WRITING MACHINE.** WILLIAM F. HELMOND, Hartford, Conn., assignor to Underwood Typewriter Company, New York, N. Y., a Corporation of New Jersey. Filed July 18, 1905. Serial No. 270,299.



Claim.—1. In a type-writer letter-feeding mechanism, the combination with a carriage, a series of escapement-teeth, and feeding-dogs coöperating therewith, of a back-check pawl connected to reciprocate simultaneously with the feeding-dogs into and out of the series of escapement-teeth, said pawl pivoted and adapted to yield when engaged by the escapement-teeth in advancing and thereby forced out of their path.

2. In a type-writer letter-feeding mechanism, the combination with a carriage, a series of escapement-teeth, and feeding-dogs coöperating therewith, of a back-check pawl connected to reciprocate simultaneously with the feeding-dogs into and out of the series of escapement-teeth, said pawl pivoted and adapted to yield when engaged by the escapement-teeth in advancing and thereby forced out of their path; means being provided for restoring the back-check pawl to normal position after such action by the escapement-teeth.

3. In a type-writer letter-feeding mechanism, the combination with a carriage, a series of escapement-teeth and feeding-dogs coöperating therewith, of an arm vibrating transversely of the series of escapement-teeth at the feeding operation, a back-check pawl pivoted upon said arm and adapted to yield when engaged by the escapement-teeth in advancing and thereby forced out of their path, and means restoring said pawl to normal condition.

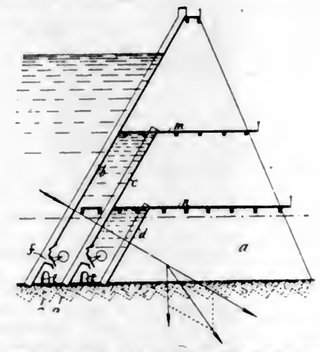
4. In a type-writer letter-feeding mechanism, the combination with a series of escapement-teeth and feeding-dogs coöperating therewith, of an arm vibrating transversely of the series of escapement-teeth at the feeding operation, a back-check pawl pivoted upon said arm and adapted to yield when engaged by the escapement-teeth in advancing and thereby forced out of their path; said back-check pawl having a gravity-arm for restoring it to normal condition, and stops being provided for limiting the vibration of said back-check pawl upon its pivot.

821,037. **WALL FOR DAMS, BARRIERS, PROTECTION-WALLS, AND RESERVOIR-WALLS, AND THE LIKE.** FRANÇOIS HENNEBIQUE, Paris, France. Filed Feb. 7, 1903. Serial No. 142,400.

Claim.—1. In dams, guard-walls and reservoirs proper, the combination of continuous thin and water-tight cylindrical walls concave toward upstream, said walls consisting of cement strengthened with a metallic framework, resting on and attached to piers of strengthened beton, buttressed by platforms of strengthened cement, substantially as described.

2. In dams, guard-walls and reservoirs proper and cylindrical reservoirs constructed of cement and beton strengthened, the combination of multiple walls in steps decreasing in height from above dam downstream said walls forming successive compartments with apparatus adapted to hold water at such heights that its level shall always be lower on the reverse than on the dam side of any of the walls and that the difference of level above and below every wall shall never exceed the height of the steps, substantially as described.

3. In the multiple walls of reservoirs of cement strengthened such as hereinbefore described the combination of safety-valves opening downstream and loaded with weight adapted to preserve the difference in the level above and below every wall within a fixed limit, substantially as described.



4. In the multiple walls of reservoirs of cement strengthened such as hereinbefore described the combination of vibrating valves opening from the downstream toward the upstream normally maintained closed by the pressure of water adapted to preserve the level higher above than down, substantially as described.

821,038. **SECTIONAL CAM.** JAMES J. HERVEY, Randsburg, Cal. Filed Apr. 9, 1904. Serial No. 202,396.



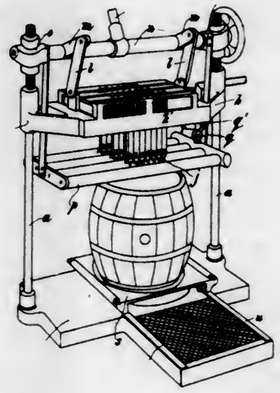
Claim.—1. A cam having separate wing portions the inner meeting ends of said wings being cut out to fit a shaft and reduced in thickness to overlap, oppositely-arranged shoulders on said wings, said shoulders being curved on an arc struck from the axial line of the shaft, and a sectional ring adapted to lie between the said shoulders and over the overlapping meeting ends of the wings, as and for the purpose set forth.

2. A cam formed in two wing-sections cut away to fit a shaft and reduced in thickness, and a sectional ring having overlapping end portions, the said ring being adapted to lie in the reduced portions of the wing-sections, the outer face of the ring being flush with the outer face of the cam-wings, and the solid portions of the ring overlying the juncture of the inner ends of the wings.

3. A cam formed of two wings, each wing having formed at its inner end a semicircular portion of less thickness than the wing proper, said reduced portion being cut away to fit a shaft and being partially inclosed by a shoulder, the extreme end portions of each wing being cut away on opposite faces and adapted to overlap, said overlapping portions having alining perforations formed therein, and the reduced portions of the wings having perforations intermediate the overlapping portions, and a cut ring having overlapping, perforated end portions and having perforations formed therein intermediate the end portions, the said ring being adapted to fit over the reduced portions of the wings the periphery of the ring bearing on the shoulders inclosing the reduced portions of the wing, the perforations in the overlapping end portions of the ring being adapted to aline with the perforations formed in the reduced portions of the wings intermediate their overlapping portions, and the perforations in the intermediate portions of the ring being adapted to aline with the perforations formed in the overlapping end portions of the wings, the outer face of the ring being flush with the outer face of the cam-wings proper.

821,039. **BRANDING-MACHINE FOR CASKS, CASES, AND THE LIKE.** JAMES INGLE, London, England. Filed Oct. 6, 1905. Serial No. 281,660.

Claim.—1. A branding-machine comprising a base, uprights secured thereto, a frame sliding on said uprights, branding devices carried by said frame, a shaft *g* supported at the top of the uprights, a sleeve on said shaft, links connecting said sleeve with the sliding frame and a handle whereby said sleeve may be rocked, substantially as described.

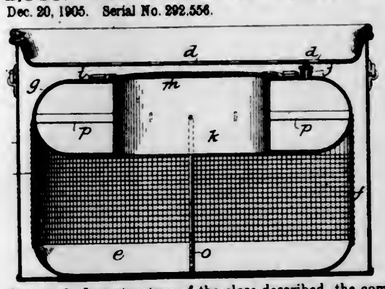


2. A branding-machine comprising a base, uprights secured thereto, a frame sliding on said uprights, branding devices carried by said frame, a shaft *g* supported at the top of the uprights, means for raising and lowering said shaft, a sleeve on said shaft, links connecting said sleeve with the sliding frame and a handle whereby said sleeve may be rocked, substantially as described.

3. A branding-machine comprising a base, uprights thereon, a frame sliding on said uprights, a shaft, nuts securing said shaft to the tops of the uprights, means for raising and lowering said nuts, a sleeve on said shaft, means for rocking said sleeve, links connecting said sleeve to the sliding frame, a frame consisting of a series of pipes having perforations therein, means for supplying said pipes with gas, links connecting said frame to the adjustable shaft, branding devices secured to the sliding frame and arranged to pass between the pipes and means actuated by the sliding frame for controlling the supply of gas to the pipes, substantially as described.

4. In a branding-machine, a movable frame carrying the branding devices in combination with a traveling platform, rolls arranged in a circle on said platform and a barrel-support mounted to rotate on said rolls.

821,040. **MINNOW-PAIL.** SAMUEL A. JONES, Deshler, Ohio. Filed Dec. 20, 1905. Serial No. 292,556.



Claim.—1. In a structure of the class described, the combination with a cage of a combined air-chamber and float mounted in the top thereof and provided with apertures for the admission and escape of air.

2. In a structure of the class described, the combination with a cage of an air-reservior mounted in the top thereof and formed with a central opening giving access to the interior of the cage; said air-reservoir being provided with means for permitting the gradual escape of air therefrom.

3. In a structure of the class described, the combination of a device for holding live bait in water; and an air-reservoir provided with a tube the longitudinal passage through which is fine and hair-like, and compels the escape of air from the air-reservoir to the water therethrough to be gradual and slow.

4. In a structure of the class described, the combination of a cage having reticulated lateral walls; an air-chamber mounted therein; said air-chamber being provided with means for the attachment

of an air-pump and with means for permitting the gradual escape of air.

821,041. **REPAIR-PLUG FOR PNEUMATIC TIRES.** RALPH P. KINNEY, Cleveland, Ohio. Filed Oct. 20, 1905. Serial No. 283,586.



Claim.—1. As a new article of manufacture, a tire-repairing device comprising a disk of suitable material having a flat under surface, and provided with a pyriform nipple projecting therefrom.

2. As a new article of manufacture, a tire-repairing device comprising a disk of suitable material having a flat under surface, and provided with an integral pyriform nipple projecting therefrom.

3. As a new article of manufacture, a tire-repairing device comprising a flange of elastic material formed with a projecting nipple integral with and of greater degree of hardness than said flange.

4. As a new article of manufacture, a tire-repairing device comprising a circular flange of rubber or other elastic material and a nipple integral with said flange, the said nipple being constructed of comparatively harder material than that of said flange.

5. As a new article of manufacture, a tire-repairing device comprising a semilenticular flange of rubber provided with a projecting nipple integral therewith, said nipple formed with a groove adjacent to its junction with said flange.

6. As a new article of manufacture, a tire-repairing device comprising a rubber flange formed with a tapered nipple of comparatively harder material.

7. As a new article of manufacture, a tire-repairing device comprising a soft-rubber flange provided with an integral hard-rubber nipple projecting from said flange.

8. As a new article of manufacture, a tire-repairing device comprising a soft-rubber flange provided with an integral hard-rubber tapered nipple projecting from said flange.

9. As a new article of manufacture, a tire-repairing device comprising a flange of soft rubber or similar elastic material having a flat under surface and a tapered edge, and provided with a nipple of a material harder than that of said flange.

10. The combination of an outer shoe, a perforated inner tube, and a plug comprising a semilenticular flange provided with a nipple projecting therefrom; said nipple passing through such perforation and formed with a circumferential groove adjacent to its junction with said flange, the latter being located between said shoe and tube.

11. As a new article of manufacture, a tire-repairing device comprising a semilenticular flange of rubber or similar material provided with a tapered nipple integral therewith and projecting therefrom and formed with a groove adjacent to its junction with said flange, said nipple being made of material harder than that of said flange.

12. As a new article of manufacture, a tire-repairing device comprising a disk of rubber or similar material, having a flat under surface, and provided with a tapering nipple integral therewith, the diameter of said nipple being reduced at or near its junction with said disk to form a circumferential groove of greater width at its top than at its bottom.

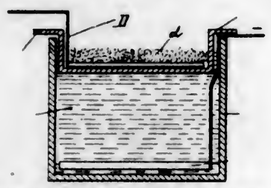
13. As a new article of manufacture, a tire-repairing device comprising a disk of rubber or similar material, having a flat under surface, and provided with a nipple centrally located thereon, the diameter of said nipple being reduced at or near its junction with said disk to form a circumferential groove and the remaining portion thereof being substantially pyriform.

14. As a new article of manufacture, a tire-repairing device comprising a disk of rubber or similar material, having a flat under surface, and provided with a nipple centrally located thereon, the diameter of said nipple being reduced at or near its junction with said disk to form a circumferential groove, the remaining portion thereof being substantially pyriform and of greater hardness than said disk.

15. As a new article of manufacture, a tire-repairing device comprising a disk of rubber or similar material, having a flat under surface, and provided with a tapering nipple of greater hardness than said disk and integral therewith, the diameter of said nipple being reduced at or near its junction with said disk to form a circumferential groove of greater width at its top than at its bottom.

821,042. **TREATING CONTACT SUBSTANCES USED FOR CATALYTIC ACTION.** ISIDOR KITSEE, Philadelphia, Pa., assignor of one-half to C. L. Hamilton and W. F. Hamilton. Filed Feb. 24, 1903. Renewed Nov. 2, 1903. Serial No. 179,637.

Claim.—1. The process of regenerating contact substances for catalytic action which consists in subjecting said contact substances to the action of an electric current, said substances being made part of the anode of an electrolytic apparatus.



2. The process of reimparting to platinum contacts the catalytic power they formerly possessed, which consists therein that such platinum contacts are made part of the anode of an electrolytic apparatus at the same time at which a current of electricity is passed through said apparatus.

3. The process of reimparting to contact substances the catalytic activity impaired through "contact poisons" such as arsenic and the like, which consists in providing such contact mass with an electrode, placing said mass with its electrode in an electrolytic cell provided with a second electrode and causing currents of electricity to pass through said apparatus, the contact mass with its electrode being made the anode of said cell.

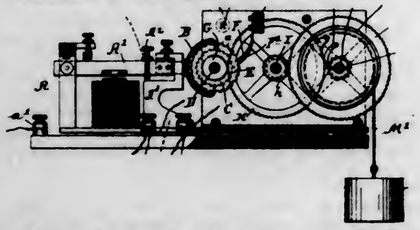
4. The process of eliminating the "contact poison" from contact masses, which consists in making said contact masses part of the anode of an electrolytic apparatus and sending at the same time currents of electricity through said apparatus.

5. The process of extracting the contact poison or poisons from contact masses used for catalytic action which consists in making said contact masses part of an electrode of an electrolytic apparatus and passing currents of electricity through said apparatus in a manner so that said contact poison shall be oxidized or dissolved out of said mass.

6. The method of preventing substances known as "contact poisons" from destroying the catalytic action of contact masses which consists in subjecting said masses to the electrolytic action of an electric current, said contact masses forming part of or being in contact with the anode of an electrolytic apparatus.

7. The process which consists therein that a contact mass is made part of the anode of an electrolytic apparatus during the time that gases, adapted to be oxidized through the catalytic action of said mass, are brought in contact with same, whereby the destructive influence of the contact poisons carried by said gases is counteracted.

821,043. **TELEGRAPHIC TRANSMITTING DEVICE.** ISIDOR KITSEE, Philadelphia, Pa., assignor of one-half to William J. Latta, Philadelphia, Pa. Filed May 27, 1905. Serial No. 263,635.

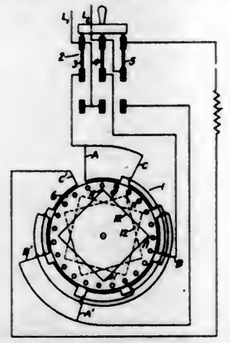


Claim.—1. In telegraphy, a transmitting device embracing the key proper, a pole-changing device, said pole-changing device embracing an electromagnet, an escapement carried by the armature of said electromagnet, a train of wheels, operatively connected to said escapement, a contact-wheel carried by the shaft of one of said wheels, two brushes in operative relation to said contact-wheel, a source of current for each of said contact-brushes, both sources electrically connected with each other and grounded at their junction, and driving means to revolve said train of wheels.

2. In telegraphy, a pole-changing transmitting device embracing a key proper, an electromagnetic device connected to said key, a pole-changing contact-wheel, electrical connection for same, two sources of current grounded at their junction, and means to connect alternately one or the other of said sources to said contact-wheel, driving means to revolve said contact-wheel, and means to make inoperative said driving means, said means depending on the energizing of the electromagnet through the operation of the key proper.

3. In a device of the class described, a contact-wheel, two brushes for said contact-wheel, one source of current connected with the positive pole of one of said brushes, a second source connected with the negative pole of the second of said brushes, both sources grounded, driving means to revolve said contact-wheel, an electromagnet and means carried by said electromagnet to make inoperative said driving means, a key adapted to make inoperative the means carried by said electromagnet.

821,044. **INDUCTION-MOTOR.** BENJAMIN G. LAMME, Pittsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed Feb. 27, 1904. Serial No. 195,686.



Claim.—1. In an alternating-current motor the combination with a primary member having a winding adapted to produce a plurality of numbers of magnetic poles and means for changing from one number of poles to another, of a secondary member comprising a slotted core, conducting-bars in the core-slots, a high-resistance body or element that is so connected to said conducting-bars as to be effective when the primary winding produces the larger number of poles, and a low-resistance body or element that completes the secondary circuits when the primary winding produces the smaller number of poles.

2. In an alternating-current motor, the combination with a primary member having a winding adapted to produce a plurality of numbers of magnetic poles and means for changing from one number of poles to another, of a secondary member comprising a slotted core, conducting-bars in the core-slots, a high-resistance body or element that is connected to all of said bars and to complete the secondary circuits corresponding to the larger number of poles, and a low-resistance body or element that is connected to only a few of said bars to complete the secondary circuits corresponding to the smaller number of poles.

3. In an alternating-current motor, the combination with a primary member having a winding adapted to produce a plurality of numbers of magnetic poles and means for changing from one number of poles to another, of a secondary member comprising a slotted core, conducting-bars in the core-slots, high-resistance end rings connected to all of said bars and low-resistance end rings connected to the high-resistance end rings at a number of points corresponding to a definite number of magnetic poles.

4. In an alternating-current motor, the combination with a primary member having a winding adapted to produce a plurality of numbers of magnetic poles and means for changing from one number of poles to another, of a secondary member comprising a slotted core, conducting-bars in the core-slots, high-resistance end rings connected to all of said bars and adapted, in connection with said bars, to form a high-resistance winding suitable for the larger number of primary magnetic poles, and low-resistance end rings connected to the conducting-bars so as to form a low-resistance winding for a smaller number of magnetic poles.

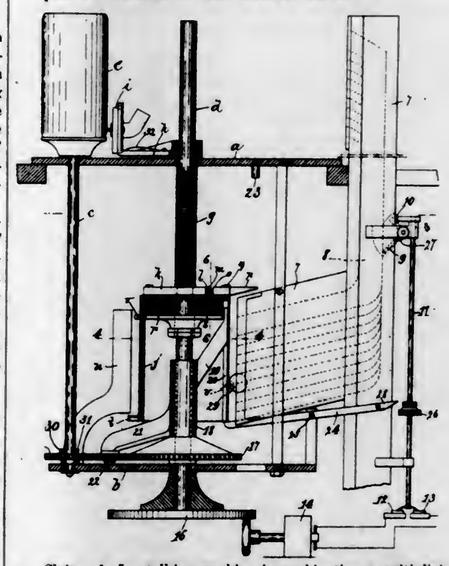
5. In an alternating-current motor, the combination with a primary member having a winding adapted to produce NX or X magnetic poles and means for changing from one number of poles to the other, of a secondary member comprising a slotted core, conducting-bars in the core-slots, high-resistance end rings connected to all of said bars and adapted, in connection therewith, to form a high-resistance winding suitable for NX primary magnetic poles and low-resistance end rings connected with the conducting-bars so as to form a low-resistance winding for X magnetic poles.

6. In an alternating-current motor, the combination with a primary member having a winding adapted to produce a plurality of numbers of magnetic poles and means for changing from one number of poles to another, of a secondary member comprising a slotted core, conducting-bars in the core-slots, high-resistance rings connected respectively to the ends of all of said bars and low-resistance rings connected with said bars at intervals such that they become effective conductors only when a definite number of magnetic poles are induced by the primary member of the motor.

7. In an alternating-current motor, the combination with a primary member having a winding adapted to produce a plurality of numbers of magnetic poles and means for changing from one number of poles to another, of a secondary member comprising a slotted core, conducting-bars in the core-slots, high-resistance rings connected respectively to the ends of all of said bars and low-resistance rings connected with said bars at such intervals as to become effective conductors only when a number of magnetic poles corresponding to full-speed running condition of the motor are induced by the primary member of the motor.

8. In an alternating-current motor, the combination with a primary member having a winding adapted to produce a plurality of numbers of magnetic poles and means for changing from one number of poles to another, of a secondary member comprising a core, longitudinally-disposed conductors, high-resistance elements connected to the ends of all of said conductors and low-resistance elements that are connected to the ends of such conductors as will make them effective portions of the secondary circuits when the smaller number of poles is produced by the primary winding.

821,045. **TALKING-MACHINE.** EINAR LESCHEBRANDT, Philadelphia, Pa. Filed Mar. 14, 1905. Serial No. 249,975.



Claim.—1. In a talking-machine, in combination, a multiplicity of record-supports placed concentrically around a central shaft, said shaft, a sound-reproducer guided by and capable of a movement of rotation around and a longitudinal movement along said shaft, means for bringing said sound-reproducer into coöperative relation with any predetermined one of the records carried by said record-supports, means for rotating said shaft, means actuated by said shaft for advancing said sound-reproducer longitudinally of said record-support, and means for rotating said record-support upon its longitudinal axis.

2. In a talking-machine, in combination, a multiplicity of vertically-arranged cylindrical record-supports placed concentrically around a central vertical shaft, said shaft, a sound-reproducer capable of a movement of rotation around and a lateral movement upon said shaft, means for bringing said sound-reproducer into coöperative relation with a record carried by any predetermined one of said

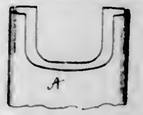
record-supports, means actuated by said shaft for advancing said sound-reproducer vertically in contact with a record carried by one of said supports, means for rotating said record-supports around their vertical axis, and means for rotating said central shaft.

3. In a talking-machine, in combination, a central vertical threaded shaft, a multiplicity of record-supports surrounding said shaft, a sound-reproducer carried by a sleeve surrounding said shaft, means for rotating said shaft, means for rotating said record-supports, means for bringing said sound-reproducer into cooperative relation with a record carried by any one of said record-supports, and means operated by the screw-thread on said central shaft for advancing said sound-reproducer longitudinally in contact with a record carried by one of said supports.

4. In a talking-machine, in combination, a central vertical threaded shaft, a multiplicity of vertical record-spindles surrounding said shaft, a cup closed at its upper end surrounding said central shaft, a sleeve carried by said cup and surrounding said shaft, an arm carried by said sleeve, a sound-reproducer carried by said arm, means for locking said cup to the thread on said central shaft, means for preventing a rotary movement of said cup while the sound-reproducer is in operative connection with one of the records carried by said spindles, means for rotating said central shaft and means for rotating the record-carrying spindles.

5. In a talking-machine, in combination, a central threaded shaft, means for driving said shaft, an inverted cup surrounding said shaft, a sound-reproducer carried by said cup, means for carrying and means for rotating a record, a swinging nut carried by said cup, a trigger connected with said nut, a pivoted arm connected with said trigger, a plate carried by said shaft, a top carried by said plate adapted upon the revolution of said shaft and plate to engage said trigger to cause said nut to engage the thread on said shaft, means for preventing said cup from turning when said sound-reproducer is in contact with a record, and means for tripping said pivoted arm, trigger and swinging nut so as to throw the latter out of engagement with the threads of the central shaft when the sound-reproducer has traversed a record.

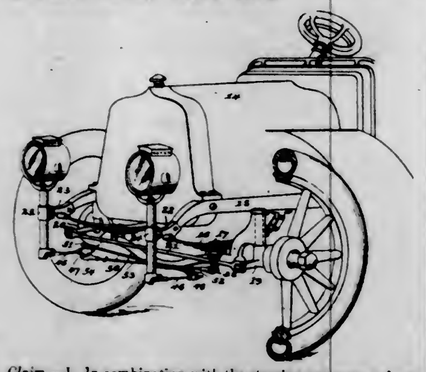
821,046. LADY'S UNDERGARMENT. WILLIAM S. LODGE, Albany, N. Y. Filed Mar. 16, 1905. Serial No. 250,344.



Claim.—1. A waist-garment, having the armholes cut entirely out of the back, in order to narrow the back and widen the bust portion of the garment.

2. A waist-garment, made from a tubular web, having the armholes cut entirely out of the back, in order to narrow the back and widen the bust portion of the garment.

821,047. ADJUSTABLE HEADLIGHT. FRED C. LYON, Evanston, Ill. Filed Nov. 29, 1905. Serial No. 289,647.



Claim.—1. In combination with the steering apparatus of a vehicle and a plurality of rotatable lamps, of adjustable connections between said steering apparatus and said lamps whereby turning movements of unequal extents may be imparted to said lamps respectively upon a movement of said steering apparatus, substantially as described.

2. The combination with the steering apparatus of a vehicle, and a plurality of rotatably-supported lamp-actuating rods, of adjustable connections between said steering apparatus and said lamp-actuating rods whereby turning movements of equal or different extents may be imparted to the lamps upon a movement of said steering apparatus, substantially as described.

3. The combination with the steering apparatus of a vehicle, and a rotatably-supported lamp-actuating rod, of a gear-wheel on said rod, a lever having a segmental gear engaging said gear-wheel, and a connecting-rod connected to said lever and steering apparatus by universal-joint couplings, substantially as described.

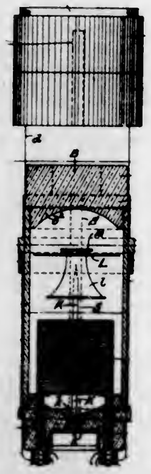
4. The combination with the steering apparatus of a vehicle, and a rotatably-supported lamp-actuating rod, of a gear-wheel on said rod, a lever having a segmental gear engaging said gear-wheel, a collar on said lever adjustable lengthwise thereof, and a connecting-rod connected to said collar and steering apparatus by universal-joint couplings, substantially as described.

5. The combination with the steering apparatus of a vehicle, and a pair of rotatably-supported lamp-actuating rods, of gear-wheels on said rods, levers having segmental gears engaging said gear-wheels, a connecting-rod between one of said levers and said steering apparatus, and another connecting-rod between said levers, substantially as described.

6. The combination with the steering apparatus of a vehicle, and a pair of rotatably-supported lamp-actuating rods, of gear-wheels on said rods, levers having segmental gears engaging said gear-wheels, collars on said levers adjustable lengthwise thereof, a connecting-rod pivotally connected to one of said collars and said steering apparatus, and another connecting-rod pivotally connected to said collars, substantially as described.

7. The combination with the steering apparatus of a vehicle, and a pair of rotatably-supported lamp-actuating rods, of gear-wheels on said rods, levers having segmental gears engaging said gear-wheels, collars on said levers adjustable lengthwise thereof, a connecting-rod connected to one of said collars and said steering apparatus by universal-joint couplings, and another connecting-rod pivotally connected to said collars, substantially as described.

821,048. MEANS FOR SURVEYING BORE-HOLES. HUGH F. MARRIOTT, Parktown, Transvaal. Filed Aug. 30, 1904. Serial No. 222,777.



Claim.—1. In an instrument for surveying bore-holes, means for determining the direction and measuring the amount of dip and means for liquefying a solid for recording the indications or readings *in situ* by the passage of a current of electricity through the instrument.

2. An instrument for surveying bore-holes, comprising a vessel, a magnetic compass therein and a solid substance in said vessel which is liquefiable by a current of electricity passed through the instrument so that on resolidification the magnetic compass is thereby retained in the position it assumes at the point to be surveyed, substantially as described.

3. An instrument for surveying bore-holes, comprising a casing, a magnetic compass therein, a resistance frame or coil and a quantity of material which is liquefiable by a current of electricity passed through the instrument to allow the magnetic compass to assume its true magnetic north and south positions at the point to be surveyed in the bore-hole, which material on resolidification retains the magnetic compass in such position, substantially as described.

4. In an instrument for surveying bore-holes, in combination, a vessel fitted with a plug at each end, the lower plug carrying a needle supporting a magnetic compass formed with a conical or bell-shaped lower portion and carrying a mirror, a resistance frame or coil arranged inside the vessel, a substance or material placed in the vessel which substance or material is liquefied on the passage of a current of electricity through the resistance-coil, substantially as described.

5. An instrument for surveying bore-holes, comprising in combination, a vessel fitted with plugs or caps at each end, the bottom plug carrying the terminals connected with the electrical wires or conductors and supporting a vertically-arranged needle which carries at its upper end a magnetic compass formed with a conical or bell-shaped base and fitted with a mirror, a resistance frame or coil located in the vessel connected with the terminals, a substance or material placed in the vessel, which substance or material is liquefied on the passage of a current of electricity through the resistance-coil and wires or conductors for passing the electric current through the instrument, substantially as described.

6. In an instrument for surveying bore-holes the combination of a magnetic compass constructed with a bell-shaped base, a vertical needle on the extremity of which said compass-base is supported, a mirror carried by the compass, a resistance-coil below the compass, a substance surrounding said coil which substance is liquefiable by the passage of a current of electricity through the coil, said substance serving on resolidification to retain the compass in the position it assumes when the substance is liquefied at the point to be surveyed, wires or conductors for passing a current of electricity through the coil, and a casing for inclosing the several parts of the instrument constructed with a longitudinal feather or projection and fitted with a diaphragm for supporting the instrument in the casing, substantially as described.

821,049. SHOE-HORN. EDWARD R. MASON, Chicago, Ill. Filed June 10, 1905. Serial No. 264,572.



Claim.—1. A shoe-horn composed of a plurality of members hinged or pivoted together on a common axis to swing or fold laterally or sidewise upon or away from each other.

2. A shoe-horn comprising a plurality of members and a rivet-stud upon which said members are pivotally mounted at one end whereby said members may be spread out into fan shape for use or folded or collapsed upon each other.

3. A shoe-horn comprising a plurality of members hinged or pivoted together at one end to swing laterally or sidewise upon or away from each other, each member being curved both longitudinally and transversely.

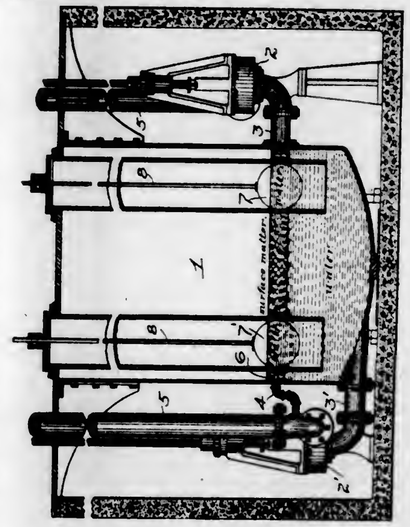
4. A shoe-horn comprising members hinged or pivoted together at one end upon a common stud, said stud having a head at one end and a washer at the other.

5. A shoe-horn comprising members hinged or pivoted together at one end upon a common stud, the outer members having a seat or recess in their juxtaposed edges to receive the edges of the inner member.

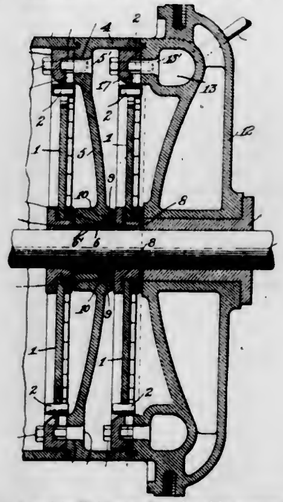
6. A shoe-horn comprising a plurality of members hinged or pivoted together on a common pivot-stud, the outer edges of the center member and the proximate edges of the outer members being correspondingly beveled.

821,050. SEWAGE-EJECTOR. FREDERICK MEYERS, Chicago, Ill., and CHARLES T. HILDEBRANDT, Dayton, Ohio, assignors to The Dayton Hydraulic Machinery Co., Dayton, Ohio, a Corporation of Ohio. Filed Oct. 11, 1905. Serial No. 282,227.

Claim.—In a sewage-ejector, a catch-basin, a suction-pump connected with the bottom of said basin, a suction-pump connected with the opposite side of said basin at an elevation, and a spraying device connected with the discharge-pipe of the lower pump and adapted to inject water into the basin in a direction toward the inlet to the elevated pump, whereby, means are provided for reducing the contents of the basin, and for removing the surface matter from the contents of said basin, substantially as specified.



821,051. STEAM-TURBINE. JAMES L. MOORE, Wellsville, N. Y., assignor to Kerr Turbine Company, Wellsville, N. Y., a Corporation of New York. Filed Oct. 18, 1905. Serial No. 283,216.



Claim.—1. A multicellular compound turbine comprising a cylinder composed of separable and independent sections for the several stages of expansion of the motive fluid, a vertical partition or wall within each section and secured thereto by separated webs thereby forming arcuate-shaped ports or passage-ways between the inner side of each of the sections and the periphery of the partitions, removable and independent nozzle-rings, an annular recess or groove in one of the flat faces and near the periphery of each of the nozzle-rings, said recess corresponding or registering with the arcuate-shaped ports in one of the vertical partitions, nozzle-passages in the rings and connecting the annular recesses with the centers of the nozzle-rings, means for securing or holding the nozzle-rings against the vertical partition, a rotary shaft passing centrally through each

of said sections and partitions, a wheel or disk within each chamber formed by the separable sections and fixed to the shaft, and a row of single-cup buckets on the periphery of each wheel or disk.

2. A multicellular compound turbine comprising a cylinder composed of separable and independent sections for the several stages of expansion of the motive fluid, a vertical partition or wall within each section and secured thereto by separated webs thereby forming arcuate-shaped ports or passage-ways between the inner side of each of the sections and the periphery of the partitions, removable and independent nozzle-rings, an annular recess or groove in one of the flat faces and near the periphery of each of the nozzle-rings, said recess corresponding or registering with the arcuate-shaped ports in one of the vertical partitions, nozzle-passages in the rings and connecting the annular recesses with the centers of the nozzle-rings, means for securing or holding the nozzle-rings against the vertical partition, a rotary shaft passing centrally through each of said sections and partitions, a wheel or disk within each chamber formed by the separable sections and fixed to the shaft, and a row of single-cup buckets on the periphery of each wheel or disk, the inner walls of the cups and their relation to the nozzle-passages being such that the motive fluid passes into the cups on one side of the bucket-wheel and across their interior and issues from the other side of the bucket-wheels.

3. In a multicellular compound turbine, a nozzle-ring of U-section with a series of passages cut in the radially inner edge of said section and means for holding said nozzle-ring in position in said turbine.

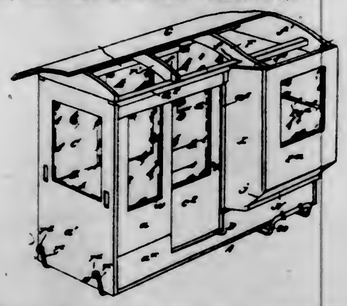
4. A multicellular compound turbine composed of a series of separable and independent sections, a rotary shaft passing through each of said sections, a wheel or disk fixed to said shaft within each chamber formed by adjacent sections, a series of buckets fixed to the rim of each disk, and a removable nozzle-ring of U-section held to successive sections of said turbine in position to deliver the motive fluid tangentially to said series of buckets.

821,052. TRIPOD-STAND FOR CAMERAS. ALEXANDER McLEOD, Brisbane, Queensland, Australia. Filed Sept. 6, 1904. Serial No. 223,468.



Claim.—A tripod for cameras and the like comprising a stationary central plate, rectangular plates for carrying the tripod-legs hinged to said central plate, said rectangular plates being adapted to extend over the central plate when in operative position, a tightening-screw passing through the central plate to engage the camera and means independent of said screw for holding the rectangular plates in their extended position on the central plate.

821,053. VEHICLE-BODY. WILLIAM D. McNUTT, Upper Sandusky, Ohio. Filed Mar. 16, 1905. Serial No. 250,414.

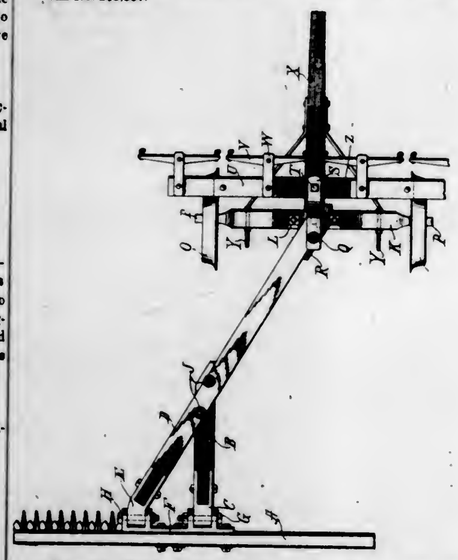


Claim.—1. A wagon-body comprising a bottom or box portion of uniform width its entire length, a platform that covers the rear portion of the said bottom box, a cab mounted on the said box which extends the full length thereof, the front portion being of the same width as the said bottom box, the rear portion being mounted on the platform and extended laterally over the sides of the bottom box as set forth.

2. A wagon-body comprising a rectangular box, a platform mounted over the rear end of the said box, and projected over the sides and rear end thereof, and a cab that extends the full length of the box, the front portion having the width of the box, the rear portion being mounted on the platform and projected laterally at each side of the said box as set forth.

3. A wagon-body comprising a rectangular box-like bottom of uniform width its entire length, a platform covering the rear part of the said box-like bottom, the opposite side edges thereof projecting beyond the sides of the box-bottom and the front edge being cut away at its opposite sides at an angle, a cab mounted on the box-like bottom, said cab comprising side portions extending in the vertical plane of the sides of the box-like bottom, from the front end thereof to the platform, top rails extending the full length of the body, cross-braces connecting the top rails and of a length equal to the width of the box-like bottom, other cross-braces connecting the rear end of the top rails, the ends thereof projecting beyond said top rails, outwardly-inclined side pieces projecting up from the opposite side edges of the platform, side members projecting from the said inclined members and connecting with the extension of the rear cross-braces, fillet-pieces connecting at the bottom with the angle-corners of the platform and with the top rails and the front edge of the laterally-projecting sides, the sides and end of the cab having window-openings and that portion of the sides in advance of the platform having door-openings and closure members therefor, all arranged substantially as described and for the purpose set forth.

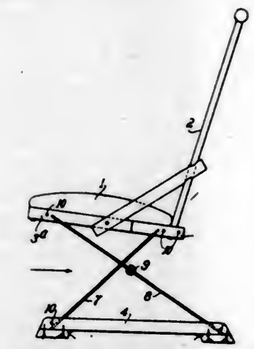
821,054. BINDER CROSS-TONGUE AND TRUCK ATTACHMENT. CHARLES C. NORMAN, Abilene, Kans. Filed June 3, 1905. Serial No. 263,557.



Claim.—1. In a binder cross-tongue and truck attachment, the combination with an abbreviated tongue, of a cross-tongue extending diagonally across the said abbreviated tongue and rigidly secured thereto, a truck located at the outer end of the said cross-tongue, a king-bolt connecting the said cross-tongue and truck pivotally, a clip pivotally connected with the said cross-tongue, and draft devices pivotally connected with said clip whereby forward draft may be exerted upon the said cross-tongue, substantially as described.

2. In a binder cross-tongue and truck attachment, the combination with an abbreviated tongue, of a cross-tongue extending diagonally across the said abbreviated tongue and rigidly secured thereto, a truck provided with flanged cone-wheels and located at the outer end of the said cross-tongue, a king-bolt connecting the said cross-tongue and truck pivotally, a clip pivotally connected with the said cross-tongue, and draft devices pivotally connected with said clip whereby forward draft may be exerted upon the said cross-tongue, substantially as described.

821,055. BASE-ROCKER. ALBERT H. ORDWAY, South Framingham, Mass., assignor to Framingham Chair Company, Framingham, Mass., a Corporation of Massachusetts. Filed Apr. 20, 1905. Serial No. 257,998.



Claim.—1. In a base-rocker, a seat-frame, a base having removable feet, offset pieces on the seat-frame, sets of yieldable members connecting the offset pieces with the base, each set of said members diagonally arranged with respect to one another, and an adjustable stop carried by one of said members immediately below the point of intersection of the other set of members.

2. In a base-rocker, a seat-frame, a base having removable feet, offset pieces at opposite sides of the seat-frame, yieldable legs arranged in series and diagonally of one another, one end of a pair of the series of said legs connected to the offsets at the rear of the seat-frame, and the other end thereof to the forward portion of the base, one end of the other pair of the series of said legs connected to the forward part of said seat-frame and the other end to the rear of said base, and a shiftable stop-bar connected to a pair of a series of said legs and arranged below the point of intersection of the other series of legs for limiting the backward movement of the seat-frame.

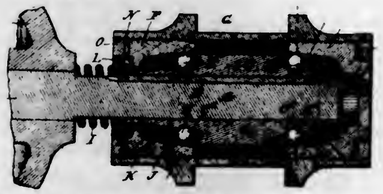
821,056. INCANDESCENT ELECTRIC LAMP. HERSCHEL C. PARKER, New York, N. Y., assignor to Parker-Clark Electric Company, Jersey City, N. J., a Corporation of New Jersey. Filed Apr. 21, 1904. Serial No. 204,170.



Claim.—1. An incandescent electric lamp comprising a transparent tube, a pencil of mingled refractory conducting and non-conducting materials held longitudinally in the tube, and terminals of larger cross-section than the pencil, said terminals filling the tube ends and forming a support for the pencil so as to make a gap between the pencil and the sides of the tube.

2. An incandescent electric lamp comprising a transparent tube, a pencil of mingled refractory conducting and non-conducting materials arranged longitudinally in the tube so as to leave a gap between itself and the tube end, terminals for the pencil, said terminals filling and closing the tube, and a seal for the ends of the tube.

821,057. BALL-BEARING. JOHN N. PETERSEN, New Orleans, La., assignor of one-half to William F. Pettit, New Orleans, La. Filed July 9, 1904. Serial No. 215,858.



Claim.—1. A ball-bearing, comprising a longitudinally-grooved journal, a sleeve having a key fitting in the groove of the journal and provided with spaced annular raceways, balls in each of the raceways, a spring pressing the sleeve in the direction of its length, a box, a cup screwing into each end of the box and engaging with its inner face the balls, the outer cup being closed and the inner one having an opening to receive the sleeve, means for locking the cups in position, and a dust-ring secured to the outer end of the inner cup and fitting the peripheral face of the sleeve.

2. A ball-bearing, comprising a journal, a spring-pressed sleeve having sliding and guided movement on the journal, said sleeve being provided with spaced annular race-ways, balls in the raceways, a box, a cup secured in each end of the box and engaging the balls, the outer cup being closed and the inner one having an opening to receive the sleeve, means for locking the cups in position, and a dust-ring secured to the inner cup and fitting upon the sleeve.

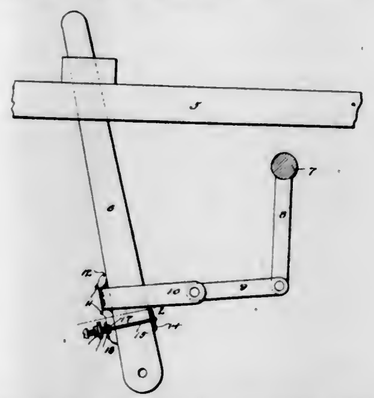
3. A ball-bearing, comprising a box, a journal, a sliding and spring-pressed sleeve on the journal, said sleeve being provided with spaced annular raceways, balls in the raceways, and cups secured in the ends of the box and engaging the balls.

4. In a ball-bearing, a box, a journal, a sliding and spring-pressed sleeve on the journal, said sleeve having spaced raceways, each formed by an annular groove and a ring secured to the sleeve adjacent to the groove, balls in the raceways, and a cup secured in each end of the box and engaging the balls.

5. In a ball-bearing, a box, a journal, a sliding and spring-pressed sleeve on the journal, said sleeve being provided with spaced annular raceways, balls in the raceways, cups secured in the ends of the box and engaging the balls, a dust-ring fitting upon the inner end of the sleeve, a washer engaging the dust-ring and end of the inner cup, and a ring-nut screwing into the box into engagement with the washer.

6. In a ball-bearing, a box, a journal, a spring-pressed sleeve having sliding and guided movement on the journal, said sleeve being provided with spaced annular raceways, balls in the raceways, cups screwing into the ends of the box and engaging the balls, and means for locking the cups in position after they have been adjusted.

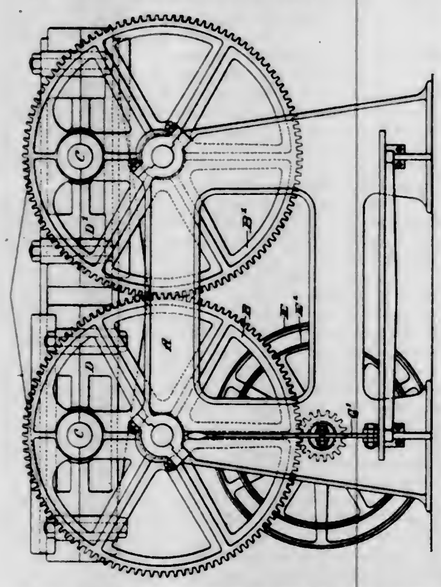
821,058. LUG-STRAP FASTENER FOR LOOM PICKER-STICKS. GEORGE E. PRESCOTT, Skowhegan, Me., assignor of one-fourth to Clyde H. Smith and one-fourth to Ellin W. Page, Skowhegan, Me. Filed Apr. 19, 1905. Serial No. 256,337.



Claim.—1. The combination with a picker-stick and its lug-strap; of a block on the picker-stick around which block the lug-strap passes; plates on opposite sides of the picker-stick; stems connecting said plates; a rod secured to and extending across the face of the block, and having its outer ends bent to form eyes through which the stems pass; and a clamping-screw threaded through one of the aforesaid plates and bearing on the block.

2. The combination with a picker-stick and its lug-strap; of a block on the picker-stick around which block the lug-strap passes, and said block having a groove extending across its face; a rod extending through the groove and having its outer ends extending beyond the block and formed with eyes; plates on opposite sides of the picker-stick; stems connecting said plates and extending through the aforesaid eyes; a clamping-screw threaded through one of the aforesaid plates; and a plate on the block over the groove on which plate the clamping-screw bears.

821,059. **FORGING-MACHINE.** THEODORE C. PROUTY, Albion, Mich. Filed June 26, 1903. Serial No. 163,164.



Claim.—1. In a forging-machine, the combination of two oscillatory carriers, a die-head pivotally mounted on each of said carriers, and a vertically-movable guideway adapted to maintain said die-heads parallel with each other.

2. In a forging-machine, the combination of two oscillatory carriers, a die-head pivotally mounted on each of said carriers, and a vertically-movable guideway, said die-heads being horizontally movable in said guideway.

3. In a forging-machine, the combination of two oscillatory carriers, a die-head pivotally mounted on each of said carriers, and a vertically-movable guideway, said die-heads being slidably mounted in said guideway so as to be longitudinally movable therealong.

4. In a forging-machine, the combination of two oscillatory carriers, and a die-head pivotally mounted on each of said carriers, said carriers being connected to oscillate so as to impart equal movement to said die-heads.

5. In a forging-machine, the combination of two oscillatory carriers, a die-head pivotally mounted on each of said carriers, said carriers being connected to oscillate so as to impart equal momenta to said die-heads, and a vertically-movable guideway adapted to maintain said die-heads parallel with each other.

6. In a forging-machine, the combination of two oscillatory carriers, a die-head pivotally mounted on each of said carriers, and a guideway fixedly attached to one of said heads and slidably secured to the other.

7. In a forging-machine, the combination of two oscillatory carriers, a die-head pivotally mounted on each of said carriers, and a guideway fixedly attached to each of said heads, each such guideway being slidably secured to the other of said heads, whereby said heads are maintained in parallelism pending the oscillation of said carriers.

8. In a forging-machine, the combination of two oscillatory carriers, a die-head pivotally mounted on each of said carriers, said carriers being connected to oscillate so as to impart equal momenta to said die-heads, and a guideway fixedly attached to one of said die-heads and slidably secured to the other.

9. In a forging-machine, the combination of two oscillatory carriers, a die-head pivotally mounted upon each of said carriers; positive means for moving said carriers through both strokes of their oscillation; means for releasing said carriers from the actuation of said positive means, whereby said carriers are gravity-operated; and a vertically-movable guideway adapted to maintain said die-heads parallel with each other.

10. In a forging-machine, the combination of two oscillatory carriers; a die-head pivotally mounted upon each of said carriers; positive means for moving said carriers through both strokes of their oscillation; means for releasing said carriers from the actuation of said positive means, whereby said carriers are gravity-operated; and a guideway fixedly attached to one of said heads and slidably secured to the other.

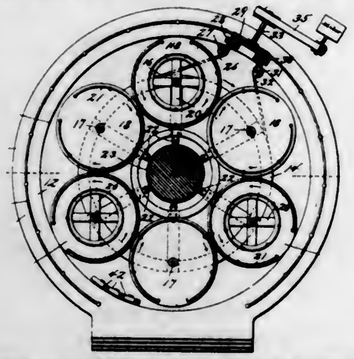
11. In a forging-machine, two pairs of coöperating gears; two die-heads each mounted upon one of each pair of gears; positive means for actuating said gears in either direction, means for maintaining parallelism of said die-heads during the movement of said gears; and means for releasing said gears from said positive means, whereby the gears and heads are gravity-operated, the construction being such that the approach of said die-heads is effected at the end of said gravity-operated movement.

12. In a forging-machine, the combination of two pairs of intermeshing gears, a die-head pivotally mounted between the members of each pair of gears, positive means for actuating said gears in either direction, means for releasing said gears from the actuation of said positive means, whereby said gears and die-heads are gravity-operated, the construction being such that the approach of said die-heads is effected at the end of said gravity-operated movement, and a vertically-movable guideway adapted to maintain said die-heads parallel with each other.

13. In a forging-machine, the combination of two pairs of intermeshing gears, a die-head pivotally mounted between the members of each pair of gears, positive means for actuating said gears in either direction, means for releasing said gears from the actuation of said positive means, whereby said gears and die-heads are gravity-operated, the construction being such that the approach of said die-heads is effected at the end of said gravity-operated movement, and a guideway fixedly attached to one of said die-heads and slidably secured to the other.

14. In a forging-machine, the combination of two pairs of intermeshing gears, a die-head pivotally mounted between the members of each pair of gears, positive means for actuating said gears in either direction, means for releasing said gears from the actuation of said positive means, whereby said gears and die-heads are gravity-operated, the construction being such that the approach of said die-heads is effected at the end of said gravity-operated movement, and a guideway fixedly attached to each of said die-heads, each such guideway being slidably secured to the other head, whereby said heads are maintained in parallelism pending the oscillation of said gears.

821,060. **WATER-CAROUSEL.** ATTILIO PUSTERLA and PAOLO TESTI, Brooklyn, N. Y. Filed Dec. 8, 1904. Serial No. 236,034.



Claim.—1. In a carousel, the combination with a suitable basin and a body of water therein, of platforms floating on and supported by the water, means to rotate the platforms and means to translate them having devices to maintain the centers of said platforms in their positions with respect to each other, substantially as described.

2. In a carousel, the combination with a suitable basin and a body of water therein, of platforms floating on and supported by the water, means to translate the platforms having devices on which the platforms are rotatably mounted and means constantly coöperating with the platforms to rotate them on their axes, substantially as described.

3. In a carousel, the combination with a suitable basin and a body of water therein, of platforms floating on and supported by the water, means to maintain the centers of said platforms in their relative positions, means to rotate the platforms, means to translate said platforms and means to rock the platforms, substantially as described.

4. In a carousel, the combination with a suitable basin and a body of water therein, a submerged rotatable element, projecting pins on the periphery of the element on which said platforms are revolubly mounted and means frictionally engaging with the platforms to rotate them during their travel, and rollers over which the edges of the platforms ride, substantially as described.

5. In a carousel, the combination with a suitable basin and a body of water therein, a friction-ring therein, a driven spider, spindles projecting from the spider, floating platforms mounted on the spindles, some of the platforms coöperating with the ring and some of the platforms in frictional engagement with the aforementioned ones, and submerged rollers in the path of the platforms to rock them, substantially as described.

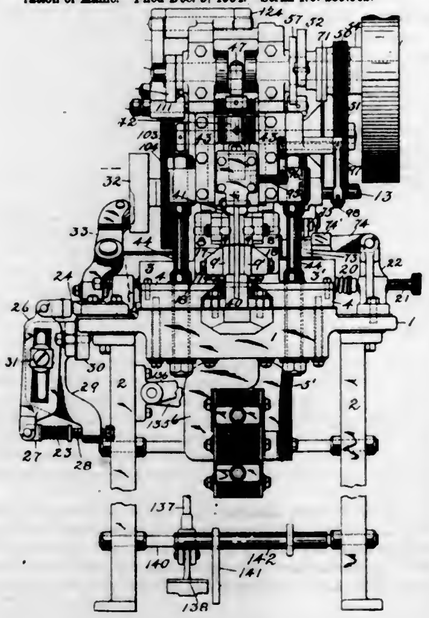
6. In a carousel, the combination with a suitable basin, a body of water therein, a friction-ring at its periphery and a similar ring at its center, a submerged spider, means to rotate it, antifriction-rollers at the central portion of the spider to engage the ring at the center, spindles on the spider, floating platforms mounted on the spindles, some of the platforms having frictional engagement with the ring at the periphery, and the remaining platforms in frictional engagement with the aforementioned ones, a set of submerged rollers at different levels at the periphery of the basin and in the path of the platforms, substantially as described.

7. The combination with a suitable basin and a suitable liquid in said basin, of floating platforms, a rotatable submerged element, means to rotatively mount the platforms thereon, said platforms frictionally coöperating with the basin to be thereby rotated.

8. The combination with a suitable basin and a body of water therein, a friction-ring therein, a driven spider, spindles projecting from the spider, floating platforms mounted on the spindles, some of the platforms coöperating with the ring to rotate on the spindles and some of the platforms coöperating with the aforementioned ones to rotate in an opposite direction.

9. The combination with a suitable basin and a body of water therein, of a driven submerged spider, means to maintain the spider submerged and above the bottom of the basin, spindles on the spider and floating circular platforms mounted on the spindles, alternate platforms rolling on the inner edge of the basin and the other platforms rolling on the former ones.

821,061. **AUTOMATIC ELECTRIC METAL-WORKING MACHINE.** ADOLPH F. RIETZEL and GEORGE E. BARSTOW, Lynn, Mass., assignors to Thomson Electric Welding Company, Lynn, Mass., a Corporation of Maine. Filed Dec. 5, 1904. Serial No. 235,562.



Claim.—1. In an electric metal-working apparatus, the combination of a work-holder, a spring for applying spring-pressure to upset the heated section of work and a counteracting-spring acting on the holder to oppose the action of the first-named spring during the forward movement of the holder as the work softens.

2. In an electric metal-working apparatus, the combination of a work-holder operated by spring-pressure during the upsetting of the softened metal and means for exerting an opposing action to said spring-pressure increasing in amount with the movement of the parts in such upsetting operation.

3. The combination in an electric metal-working apparatus, of a clamping device, a suitable slide or block carrying the same, a spring of sufficient power to apply the welding or upsetting pressure to the work, means disconnected from the slide for putting said spring under compression, and a counteracting-spring of less power acting to oppose the spring-pressure exerted by the first-named spring and thereby prevent too sudden action when the work becomes fully softened.

4. In an electric metal-working apparatus, the combination of a spring for applying a determinate upsetting pressure to the work and means for applying a counteracting force of increasing amount as the work softens.

5. In an electric metal-working apparatus, the combination of means for applying an upsetting spring-pressure to the work and means for retarding the action of said spring as the work softens.

6. In an electric metal-working apparatus the combination with a work-holder of means for forcing it toward the opposite work-holder, a counteracting-spring and an intermediate lever having an adjustable fulcrum.

7. In an electric metal-working apparatus the combination with means of applying welding pressure to the heated work, of a counteracting-spring and a lever through which the counteracting effect of said spring is transmitted and means for changing the position of the fulcrum of said lever to vary the counteracting effect.

8. In an electric metal-working apparatus the combination with a block for applying welding pressure to the work, of means for forcing the block forward to affect the work, a cam for alternately retracting the block and freeing the same when the welding pressure is to be applied and means for retarding the motion of the block as it moves forward.

9. In an electric metal-working apparatus the combination of a reciprocating block through which pressure is applied to the heated section of the work, a spring acting thereon to move it forward, a cam for alternately forcing the block backward and releasing it to the action of the spring and a counteracting-spring connected to the block for retarding the forward motion of the same.

10. In an electric welding apparatus the combination of a spring for applying pressure to the heated section of work, mechanism for releasing said spring to permit it to act and a counteracting-spring as and for the purpose described.

11. In an electric metal-working apparatus the combination with a spring-actuated work-holder, of means for applying a counteracting force when the work-holder moves forward to compress the heated section of work and a lever having an adjustable fulcrum for varying the counteracting force.

12. In an electric metal-working apparatus, the combination with a clamp-supporting block and a forging-tool, of an actuating mechanism therefor, a coupling for connecting the tool and actuating mechanism, a dog by which the members of the coupling are held disengaged and a controlling-lever for said dog normally restrained by the block.

13. In an electric metal-working apparatus, the combination with a clamp-supporting block, of a forging-tool, a spring-actuated rocking coupling key or pin, a dog normally holding the same out of action and means connected with the clamp-supporting block for releasing the dog and thereby coupling the forging-tool to the operating power when the block is permitted to move forward by the softening of the work.

14. In an electric metal-working apparatus, the combination with the work-holding carrier of an automatic lock for locking the same in its forward position during the forging of the heated work.

15. In an electric metal-working apparatus, the combination of a forging or shaping mechanism, a work-holding carrier, a lock for locking the same in its forward position during the shaping or forging, means connected with said lock for bringing the forging or shaping mechanism into operation when the carrier moves forward, and a controlling-lever connected with the releasing mechanism and normally restrained by engagement with the work-holding carrier.

16. In an electric metal-working apparatus, the combination of a work-holding slide, a tool-actuating shaft, a clutch-coupling the

same to a power-wheel, a dog normally engaging the clutch-operating arm and holding the same uncoupled, a catch controlling the position of said dog and an actuating mechanism for freeing said catch normally held out of action by the slide, but adapted to be released when the work softens and permits the slide to move forward.

17. In an electric metal-working apparatus, the combination with a work-holding slide and tool-actuating mechanism of a clutch connecting the same with a power mechanism, coupling devices normally tending to couple the tool-actuating mechanism and the power device, releasing mechanism for freeing the coupling devices, said releasing mechanism being normally restrained from action by the work-holding slide, but released thereby when the softening of the work permits the slide to move forward, and means connected with the tool-actuating mechanism for restoring said releasing mechanism to normal position.

18. In an electric metal-working apparatus, the combination with the tool-shaft of a coupler adapted to connect the same to the power device, a dog for normally holding said coupler in uncoupled position a work-holding slide, means controlled thereby for actuating the dog to free the coupler device, and means connected with the tool-shaft for restoring the dog to normal position.

19. In an electric metal-working apparatus, the combination with the tool-shaft of a coupler adapted to connect the same to the power device, a dog for normally holding said coupler in uncoupled position, means for applying pressure to an electrically-heated section of metal, means controlled thereby for actuating the dog to free the coupler device, and means connected with the tool-shaft for restoring the dog to normal position.

20. In an electric metal-working apparatus, the combination of a tool-actuating shaft or mechanism, a clutch-controlling arm, a dog normally restraining the same in uncoupling position, a work-holding slide, an arm normally sustained thereby but released when the slide moves forward, means controlled by said arm for governing the position of the dog to release the clutch-controlling arm, and means connected with the tool-actuating devices for restoring the dog to position for uncoupling the tool from the power.

21. In an electric metal-working apparatus, the combination of a work-holding slide, a master-shaft provided with a cam for controlling the application of pressure to the heated section of work, a clutch normally tending to disconnect said master-shaft from its power-shaft, a cam on the master-shaft for releasing the clutch and bringing the cam-shaft to rest, means connected to said master-shaft for starting the flow of heating-current in the work and means controlled through the yielding of the work under pressure for restarting said master-shaft and cutting off the flow of heating-current.

22. In an electric metal-working apparatus, the combination of a work-holding slide, means for applying pressure to the heated section of the work, a cam-shaft provided with a cam controlling the application of the pressure, means connected to said cam-shaft for starting the flow of heating-current in the work, means for automatically bringing the cam-shaft to rest as soon as pressure and heating-current are applied to the work, a forging apparatus normally quiescent, means controlled by the yielding of the work under pressure when brought to plastic condition for starting the forging apparatus, a clutch by which the cam-shaft is coupled to its power-shaft and means carried by the forging apparatus for actuating said clutch to bring its members into engagement and restarting the cam-shaft.

23. The combination, in an electric metal-working apparatus, of a work-holding slide, means for applying pressure thereto and through the same to the heated section of the work, a starting-switch for starting the flow of heating-current, a forging-tool, normally uncoupled from a suitable power, means for coupling the same automatically to the power when the slide moves forward through the softening of the work, a master-shaft normally coupled to such power and cams thereon acting respectively to start the flow of current, release the pressure devices, and automatically stop the master-shaft by uncoupling the power, and means controlled by the actuating devices of the die or forging-tool for automatically recoupling the cam-shaft to the power whereby the same may be restarted.

24. The combination, in an electric metal-working apparatus, of a work-holding slide, means for applying pressure thereto and through the same to the heated section of the work, a starting-switch for starting the flow of heating-current, a forging-tool normally uncoupled from a suitable power, means for coupling the same automatically to the power when the slide moves forward through the softening of the work, a master-shaft, a clutch by which the same is normally coupled to such power, a detent holding the clutch members in engagement, a cam on the master-shaft for releasing the detent, a cam on said shaft for starting the flow of heating-current and a cam on said shaft for controlling the application of pressure to the work.

25. In an electric metal-working apparatus, the combination of a spring-actuated work-holder, a forging-tool, a coupling device for coupling said forging-tool to a suitable power, means controlled by the work-holder for bringing the coupling device into operation, a circuit-controller governing the flow of heating-current in the work, a master-shaft, a clutch by which the same is normally connected to the driving power, means on said shaft for actuating or controlling the circuit-controller, means connected with said shaft for automatically uncoupling it from the driving power when the flow of heating-current has been established by the circuit-controller and means connected with the forging-tool for automatically recoupling said master-shaft with its operating parts.

26. In an electric metal-working apparatus, the combination of a work-holder, a forging-tool, mechanism controlled by the work-holder for bringing the forging-tool into operation when the work softens, a normally rotating master-shaft, means controlled thereby for starting the flow of heating-current, means for automatically stopping said master-shaft when the flow of heating-current is established, and means controlled by the forging-tool for restarting the master-shaft.

27. In an electric metal-working apparatus, the combination of a work-holder, a forging-tool, mechanism controlled by the work-holder for bringing the forging-tool into operation when the work softens, a normally rotating master-shaft, means controlled thereby for starting the flow of heating-current and clamping the work, means for automatically stopping said master-shaft when the flow of heating-current is established, and means controlled by the forging-tool for restarting the master-shaft.

28. In an electric metal-working apparatus, the combination of a work-holder, a forging-tool, mechanism controlled by the work-holder for bringing the forging-tool into operation when the work softens, a normally rotating master-shaft, means controlled thereby for starting the flow of heating-current, means carried by said shaft for automatically stopping the same after starting the flow, and means connected with the forging-tool for restarting the master-shaft so as to break the starting-circuit after the tool has done its work.

29. In an electric metal-working apparatus, the combination with a work-holding slide of a forging-tool, means for bringing the same into operation when the slide moves forward through the softening of the work, a master-shaft provided with means for automatically clamping the work and releasing the slide, means for automatically stopping said shaft in position to clamp the work and means controlled by the forging-tool for restarting the master-shaft.

30. In an electric metal-working apparatus, the combination of a master-shaft provided with means for controlling the flow of the heating-current, stop mechanism for automatically stopping said shaft, a tool-operating shaft, means controlled by the yielding of the heated section of work for starting said shaft and a cam thereon for resetting said stop mechanism in order to restart the master-shaft.

31. In an electric metal-working apparatus, the combination of a master-shaft provided with means for operating the clamp devices, stop mechanism for automatically stopping said shaft, a tool-operating shaft, means controlled by the yielding of the heated section of work for starting said shaft and a cam thereon for resetting said stop mechanism in order to restart the master-shaft.

32. In an electric metal-working apparatus, the combination with a master-shaft provided with means for controlling the flow of heating-current, of a clutch, a spring-actuated toggle for disconnecting the members of the clutch, a detent normally holding said spring out of action and means connected to said shaft for operating the detent when the shaft reaches position for establishing the flow of heating-current.

33. In an electric metal-working apparatus, the combination with a master-shaft provided with means for controlling the flow of heating-current, of a clutch, a spring-actuated toggle for disconnecting the members of the clutch, a detent normally holding said spring out of action, means connected to said shaft for operating the detent when the shaft reaches position for establishing the flow of heating-current and mechanism for automatically restoring the toggle to a position for rotating the shaft when the heated section of work yields to pressure.

34. In an electric metal-working apparatus, the combination with a master-shaft provided with means for controlling the flow of heating-current, of a clutch, a spring-actuated toggle for disconnecting the members of the clutch, a detent normally holding said spring out of action, means connected to said shaft for operating the detent when the shaft reaches position for establishing the flow of heating-current and mechanism controlled by the work-holding slide or carrier for restoring the toggle and clutch to position for rotating the shaft.

35. In an electric metal-working apparatus, the combination with a master-shaft provided with means for controlling the flow of heating-current, of a clutch, a spring-actuated toggle for disconnecting the members of the clutch, a detent normally holding said spring out of action, means connected to said shaft for operating the detent when the shaft reaches position for establishing the flow of heating-current, a forging-tool, means controlled by the yielding of the heatel section of work for bringing the tool into operation and mechanism connected with the tool-operating devices for restoring the toggle and clutch to position for rotating the shaft.

36. The combination in an electric working apparatus of a work-holding carrier, an automatic lock for locking the same in its forward position, a forging-tool and actuating devices controlled by the carrier and means controlled by the operating mechanism of a forging-tool for unlocking the carrier.

37. The combination in an electric working apparatus of a power-actuated forging-tool, a work-holding carrier, means controlled thereby for coupling forging-tool to its actuating power, means for locking the carrier in the position to which it is permitted to move by the softening of the work and means connected with the forging-tool for unlocking said carrier.

38. In an electric metal-working apparatus, the combination of a master-shaft and circuit-controller actuated thereby, a spring-actuated clutch by which said shaft is normally coupled to the driving power, mechanism acting against said spring to throw the members of the clutch out of connection, detent devices normally holding said mechanism out of action, means connected with the shaft for actuating said detent devices and releasing said mechanism when the shaft reaches position for establishing the flow of heating-current and means controlled by the yielding of the heated section of work for returning the detent devices and the mechanism controlled thereby to normal position.

39. In an electric metal-working apparatus, the combination of a master-shaft and circuit-controller actuated thereby, a spring-actuated clutch by which said shaft is normally coupled to the driving power, mechanism acting against said spring to throw the members of the clutch out of connection, detent devices normally holding said mechanism out of action, means connected with the shaft for actuating said detent devices and releasing said mechanism when the shaft reaches position for establishing the flow of heating-current, a forging-tool controlled by the yielding of the heated section of work and means connected with said forging-tool for returning the detent devices and mechanism controlled thereby to position in which the shaft and the driving power are coupled.

40. In an electric metal-working apparatus, the combination with the master-shaft and means actuated thereby for controlling the flow of heating-current of a pair of cooperating power-controlling detents, means connected with shaft for operating one of said detents to bring the shaft to rest and means operated independently of the shaft for setting the other one of said detents in position for keeping the power temporarily in operation after the shaft resumes its rotation.

41. In an electric metal-working apparatus, the combination with the power-shaft and means controlled thereby for establishing the flow of heating-current, of a detent actuated by the shaft, mechanism controlled by said detent for stopping the rotation thereof, means for restoring said mechanism to position for restarting the shaft and a second temporarily-acting detent for holding said mechanism in position after the shaft resumes rotation.

42. In an electric metal-working apparatus, the combination with the power-shaft and means controlled thereby for establishing the flow of heating-current, of a detent actuated by the shaft mechanism controlled by said detent for stopping the rotation thereof, means for restoring said mechanism to position for restarting the shaft, a second temporarily-acting detent for holding said mechanism in position after the shaft resumes rotation, and means connected with the shaft for releasing the latter detent and thereby delivering the control of the starting and stopping mechanism to the first-named detent thereby preparing the apparatus for a repetition of the automatic stopping arrangement.

43. In an electric metal-working apparatus, the combination with a master-shaft of mechanism for stopping and starting the rotation thereof, a pair of spring-actuated detents for holding said mechanism in position to produce rotation, means on the shaft acting on one of said detents to release the mechanism and stop rotation of the shaft and upon the other detent to deliver the mechanism to the control of the first-named detent.

44. In an electric metal-working apparatus, the combination with the master-shaft and the power-controlling mechanism by which the same is rotated, of a pair of detents 128 and 128′ of different lengths, a dog connected to the controlling mechanism and adapted to engage either of said detents and means connected with the shaft for acting on said detents at different stages of the revolution of said shaft.

45. In an electric metal-working apparatus, the combination with the master-shaft of the spring-actuated detents 128, 128′ of different lengths, a dog 127 detained thereby and connected with mechanism for starting and stopping rotation of the shaft, a cam carried by said shaft and acting on said detents, means controlled by the shaft for starting the flow of heating-current and means responsive to the yielding of the work when rendered plastic by the heating for returning the dog 127, from position assumed when it has been freed by both detents.

46. The combination with an electric metal-working apparatus of a current-controller having two members which coact to close the circuit, a cam for holding one of said members in circuit-closing position while heating-current is required, a latch or catch for holding the other member in circuit-closing position and mechanism for depressing said member and throwing it into circuit-closing position in the interval between the periods of use of the heating-current.

47. In an electric metal-working apparatus a current-controller having two members which coact to close the circuit, a latch for holding one member in closed position, a cam acting momentarily on said member to throw it into circuit-closing position and a second cam for holding the other member in circuit-closing position.

48. In an electric metal-working apparatus, a current-controller having two members which coact to close the circuit, a latch for holding one member in closed position, a cam acting momentarily on said member to throw it into circuit-closing position, a second cam for holding the other member in circuit-closing position during the time that the heating-current is required and means for acting on said latch to free the member held thereby in order to stop the flow of current.

49. In an electric metal-working apparatus, a current-controller having two members which coact to close the circuit, a latch for holding one member in closed position, a cam acting momentarily on said member to throw it into circuit-closing position, a second cam for holding the other member in circuit-closing position during the time that the heating-current is required, mechanism for forging or shaping the heated section of work and means connected therewith for operating on said latch to free the member locked thereby and thereby stop the flow of heating-current.

50. In an electric metal-working apparatus, the combination with a circuit-controller, having two members which coact to cause a flow of heating-current in the work, a cam-shaft having two cams operating respectively on said members to place them in operative position and acting consecutively and means for stopping the cam-shaft in position where one of said members will be held by its cam, the other member being at such time free from the cam by which it has been set.

51. In an electric metal-working apparatus, the combination with a circuit-controller, having two members which coact to cause a flow of heating-current in the work, a cam-shaft having two cams operating respectively on said members to place them in operative position and acting consecutively, means for stopping the cam-shaft in position where one of said members will be held by its cam, the other member being at such time free from the cam by which it has been set, a latch for holding the latter member down and means for operating the latch to free the member so as to open the circuit and stop the flow of heating-current.

52. The combination with a circuit-controller having two members independently operated but which coact to close the circuit, a cam acting temporarily on one of said members to throw the same, a latch for holding said member when thrown, a second cam for acting on the second member and means for temporarily stopping the cams in position where the latter cam will hold the member upon which it acts and the first-named cam will be free from the member on which it acts.

53. In an electric metal-working apparatus, the combination with a current-controller having two members which coact to close the circuit, of a master-shaft provided with means for holding one of said members in circuit-closing position when said shaft is brought to rest, a latch for holding the other member in circuit-closing position and mechanism controlled by the yielding of the heated section of work for automatically releasing the same.

54. In an electric metal-working apparatus, the combination of a master-shaft, a compound circuit-controller, means for automat-

ically bringing said shaft to rest in position to hold one member of said circuit-controller in position for establishing the flow of heating-current, independent means for holding the other member in coöperating position and means for automatically releasing the latter member when the section of electrically-heated work yields to pressure.

55. In an electric metal-working apparatus, the combination with a compound circuit-closer of an actuating-shaft, a latch for holding one of the members of said circuit-closer in closed position, a forging-tool and mechanism controlled thereby for releasing said member.

56. In an electric metal-working apparatus, the combination with a compound circuit-closer, of an actuating-shaft, a latch for holding one of the members of said circuit-closer in closed position, a work-holding carrier and mechanism controlled thereby for releasing said member.

57. In an electric metal-working apparatus, the combination with a compound circuit-closer, of an actuating-shaft, a latch for holding one of the members of said circuit-closer in closed position, a forging-tool, mechanism for automatically bringing the forging-tool into operation when the heated work yields to pressure and means connected with the forging-tool for releasing said member.

58. In an electric metal-working apparatus, the combination of a circuit-controller having two members which coact to start a flow of heating-current in the work, a master-shaft provided with means for placing said members in operative position, a latch for holding one of said members, means for automatically bringing the shaft to rest in position to hold the other member, and mechanism for automatically releasing the latched member when the heated section of work yields to pressure.

59. In an electric metal-working apparatus, the combination of a circuit-controller having two members which coact to start the flow of heating-current in the work, a master-shaft provided with means for placing said members in operative position, a latch for holding one of said members, means for automatically bringing the shaft to rest in position to hold the other member, a forging-tool and means connected therewith for releasing the latched member.

60. In an electric metal-working apparatus, the combination of a circuit-controller having two members which coact to start the flow of heating-current in the work, a master-shaft provided with means for placing said members in operative position, a latch for holding one of said members, means for automatically bringing the shaft to rest in position to hold the other member, a forging-tool mechanism for automatically bringing the same into action when the section of heated work yields under pressure and means connected with said forging-tool for releasing the latched member.

61. In an electric metal-working apparatus, the combination of a master-shaft, a movable work-holder provided with clamping devices, means upon the master-shaft for operating said clamping devices, a compound circuit-controller for establishing and disestablishing the flow of heating-current in the work, means upon the master-shaft for setting the members of said circuit-controller in operating position consecutively, means for automatically bringing the shaft to rest in position where it acts on one of said members, a latch for holding the other member in operative position and mechanism controlled by the work-holder for unlatching the latter member to disestablish the flow of heating-current.

62. In an electric metal-working apparatus, the combination of a master-shaft, a movable work-holder provided with clamping devices, means upon the master-shaft for operating said clamping devices, a compound circuit-controller for establishing and disestablishing the flow of heating-current in the work, means upon the master-shaft for setting the members of said circuit-controller in operating position consecutively, means for automatically bringing the shaft to rest in position where it acts on one of said members, a latch for holding the other member in operative position, a forging-tool, mechanism controlled by the work-holder for bringing the forging-tool into operation and devices connected with the forging-tool for unlatching the latter member.

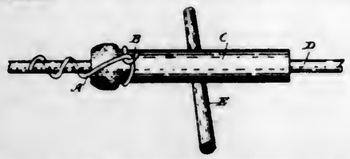
63. In an electric metal-working apparatus, the combination of a current-controller having two coacting members, means acting momentarily on one of said members to set it in circuit-closing position, a latch for maintaining it in such position, a rotating shaft provided with means for holding the other member in circuit-closing position, mechanism for automatically bringing said shaft to rest and mechanism controlled by the yielding of the heated section of work for releasing the latch.

64. In an electric metal-working apparatus, the combination of a compound circuit-controller for establishing and disestablishing the flow of heating-current, a master-shaft having cams which act on the two members of the circuit-controller in succession, a latch for one of said members, a tool-operating shaft, means connected therewith for releasing said latch, means for automatically bringing the shaft to rest, and means for automatically restarting said shaft when the heated section of work yields under pressure.

65. In an electric metal-working apparatus, a compound circuit-controller having two members, in combination with means for setting one of said members in circuit-closing position in the intervals between the periods of use of heating-current, mechanism for setting the other member into coacting position to establish the flow of heating-current, a forging-tool and means connected therewith for automatically unsetting the first-named member to disestablish the flow of heating-current.

66. In an electric metal-working apparatus, a compound circuit-controller having two members, a master-shaft, means on said shaft for setting one of said members in operating position, means connected with said shaft for setting the other member into coacting position to establish the flow of heating-current and mechanism controlled by the yielding heated section of work for unsetting the first-named member to disestablish the flow of heating-current.

821,062. **WIRE AND INSULATOR HOLDER.** ARTHUR J. SEGUIN and ERNEST P. GINGRAS, Ottawa, Canada. Filed Mar. 6, 1905. Serial No. 248,747.

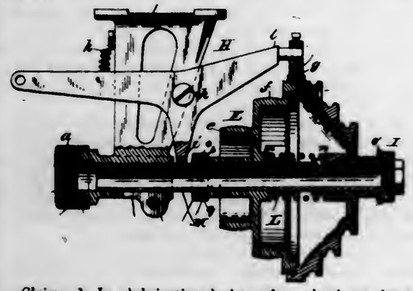


Claim.—1. A resilient open spiral wire-holder having an integral and concentric insulator-holder.

2. A wire and insulator holder having one end bent to encircle an insulator, and the other end terminating in a resilient open spiral, said resilient spiral being concentric with the insulator holder.

3. In combination, an insulator, a wire passing through said insulator, a holder detachably secured to said insulator and having a resilient open spiral encircling the wire.

821,063. **LUBRICATING DEVICE.** DUDLEY S. SEYMOUR, Oak Park, Ill., assignor to Union Special Sewing Machine Company, Chicago, Ill., a Corporation of Illinois. Filed May 4, 1904. Serial No. 206,278.



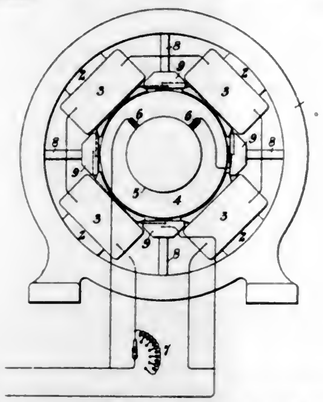
Claim.—1. In a lubricating device, a frame having a clamping-collar and provided at one end with an enlarged portion, means for closing one end of said enlarged portion, a hollow shaft, having one end clamped on said collar, the opposite end of said shaft being closed; substantially as described.

2. In a lubricating device, a frame having a clamping-collar forming a part of the lubricant-reservoir, an adjustable means closing one end of said collar, and a hollow shaft held on said collar and forming also a part of the reservoir, longitudinal adjustment of the shaft serving to vary the area of said reservoir; substantially as described.

3. In a lubricating device, a frame having a clamping-collar and provided at one end with an enlarged threaded portion, a hollow shaft held by the collar and forming in connection with said collar a lubricant-reservoir the area of which is increased or diminished by longitudinal adjustment of said hollow shaft and a lubricant-feeding cap mounted on the threaded portion of said collar.

4. In a lubricating device, a frame having a clamping-collar and provided at one end with an enlarged threaded portion, a lubricant-feeding cap screwed onto said threaded portion, a spring-pressed locking-pin arranged in a guiding-recess in said enlarged portion and bearing against the threaded portion of the cap, a hollow shaft clamped in said collar, and a removable screw at the outer end of the shaft and constituting one of the end walls of the reservoir.

821,064. **DYNAMO-ELECTRIC MACHINE.** FERDINAND SIEBER, Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed May 1, 1905. Serial No. 258,331.



Claim.—1. In a dynamo-electric machine, the combination with an armature, of a field-magnet frame provided with main polar projections and with auxiliary polar projections of smaller cross-section that are located between the main polar projections and are provided with coils that are concentrated in close proximity to the armature.

2. In a dynamo-electric machine, the combination with an armature, of a field-magnet frame provided with main polar projections and with auxiliary polar projections of smaller cross-section that are located intermediate the main polar projections and are provided with coils that are concentrated in close proximity to the armature and are connected in series with the armature-winding.

3. In a dynamo-electric machine, the combination with an armature, of a field-magnet frame that is provided with sets of alternately-disposed polar projections having windings that are connected respectively in series and in shunt relation to the armature-winding, the coils of the series-connected winding being concentrated near the armature.

4. In a dynamo-electric machine, the combination with an armature, of a field-magnet frame provided with sets of alternately-disposed polar projections of respectively different cross-sectional area and windings therefor that are connected respectively in series and in shunt relation to the armature-winding, the coils of the series-connected winding being concentrated near the armature.

5. In a dynamo-electric machine, the combination with an armature, and a field-magnet frame having a set of main pole-pieces, and a set of auxiliary pole-pieces that alternate in position with the main pole-pieces, of a set of coils for the auxiliary pole-pieces that are concentrated adjacent to the armature and constitute a compensating and regulating winding.

6. In a dynamo-electric machine, the combination with an armature, of a field-magnet having a set of main coils and a set of auxiliary coils that alternate in position with the main coils and are concentrated adjacent to the armature to constitute a compensating and regulating winding.

821,065. **TOOL-POST.** WILLIAM T. SLIDER, Indianapolis, Ind., assignor of one-half to Benjamin A. Brown, Indianapolis, Ind. Filed Aug. 14, 1905. Serial No. 274,063.

Claim.—1. The combination, in a tool-post, of a stationary part containing a longitudinal perforation with an outwardly-flared lower end, a second part having a stem which enters said perforation and provided with a cone-shaped intermediate portion adapted to fit within the outwardly-flared lower end of the perforation of the first part, means for drawing said parts together longitudinally whereby both angular and relative lateral movement is prevented, a third part pivoted to the second part by means of a rule-joint, and a spring whereby the shoulders of the rule-joint are normally held in contact by spring force, said third part being also provided with a tool-holding opening and a cutting-tool adjustably secured therein.



2. The combination, in a tool-post, of two members connected by a transversely-positioned pivot, one of said members being bifurcated and the other provided with a shouldered tongue extending between the portions of said bifurcated end, and a screw mounted in said bifurcated member opposite said shoulder, whereby when the screw is driven completely in rigidity between the parts is secured, while one is enabled to swing relatively to the other when said screw is loosened.

3. The combination, in a tool-post, of two parts united by a rule-joint and having abutting shoulders, the tongue on one member being provided with a second shoulder arranged substantially at right angles with the abutting shoulders, a screw-pin mounted in the other member opposite said last-named shoulder, and a spring surrounding said screw-pin and interposed between said shoulder and a shoulder on the screw-pin, said screw-pin being thus adapted to operate directly both upon the spring and upon said shoulder.

4. The combination, in a tool-post, of a tool-holding member composed of two parts pivoted together and having oppositely-positioned shoulders, and a device composed of a spring and a screw interposed between said shoulders whereby the relative movement of the two parts is adjustably limited and controlled, said screw being mounted in one of the parts and thus also adapted when driven home to render said parts rigid with each other.

5. The combination, in a tool-post, of a bifurcated and shouldered member, another member having a tongue fitting within the bifurcated end of the first-named member and correspondingly shouldered, a pivot uniting said tool members, and means for holding the contacting shoulders yieldingly into contact consisting of a shoulder on said tongue, a screw carried by the other member adjacent to said tongue and a spring interposed between said tongue-shoulder and the shoulder on the screw.

6. The combination, in a tool-post, of a stationary member, a second member pivoted thereto, said two members being provided with shoulders where they come together which shoulders come in contact when the tool is in working position, a spring interposed between the parts and tending normally to hold said shoulders together but adapted to yield as the tool recedes after making its cut, and a screw upon which said spring is mounted and having a shoulder against which one end of said spring bears, said screw being adapted to both vary the tension of the spring and adjustably limit the movement of the tool-holding part.

7. The combination, in a tool-post, of a tool-holding member composed of two parts united by a rule-joint, the tongue on one part being provided with a shoulder, a shouldered screw-pin mounted in the other part opposite said shoulder, and a coiled spring surrounding the pin and interposed between the shoulder thereon and the shoulder on the tongue.

821,066. **MANUFACTURING RUBBER NIPPLES AND THE LIKE.** EMANUEL J. SONN, Brooklyn, N. Y. Filed May 3, 1905. Serial No. 258,647.

Claim.—1. A form for vulcanizing rubber nipples and the like, consisting of the form proper, a removable pin secured thereto at one

end and projecting from the surface thereof adapted to have its outer free end passed through the rubber.



2. A form for vulcanizing rubber nipples and the like, comprising a form proper, a removable pin secured thereto and projecting from the surface thereof and an annular flange or collar surrounding the said pin and conforming to the adjacent surface of the form.

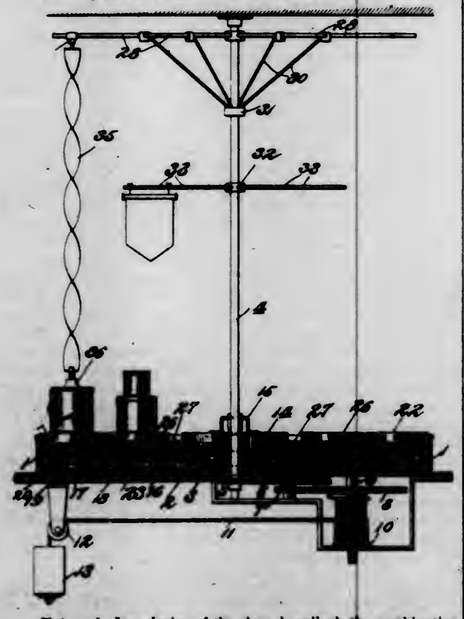
3. In a form for manufacturing rubber nipples and the like, the combination of a form proper and a pin secured thereto and projecting from the surface thereof tapering toward its outer end.

4. A form for manufacturing rubber nipples and the like, comprising a form proper, a pin secured thereto and projecting from the surface thereof, a tapering portion on said pin, and means for adjusting the said pin longitudinally.

5. In a device of the character described, the combination of a form proper adapted to receive the rubber in plastic condition on its exterior, a pin projecting from the exterior through and beyond the said plastic rubber in such a manner that the latter may be closed around said pin and against the adjacent surface of the form, whereby a capillary opening is formed in the rubber.

6. A device for vulcanizing and forming capillary openings in rubber nipples and the like which consists of a form proper adapted to receive the rubber in plastic condition on its exterior and a pin projecting from the said exterior to an extent greater than the thickness of the rubber in such a manner that the plastic rubber may be closed around said pin and against the adjacent surface of the form and will remain in such position during vulcanizing.

821,067. **DISPLAY DEVICE.** GEORGE R. STEINHAUSER, St. Louis, Mo., assignor to National Moving Window Display Company, Chicago, Ill., a Corporation of Illinois. Filed Mar. 27, 1905. Serial No. 252,215.

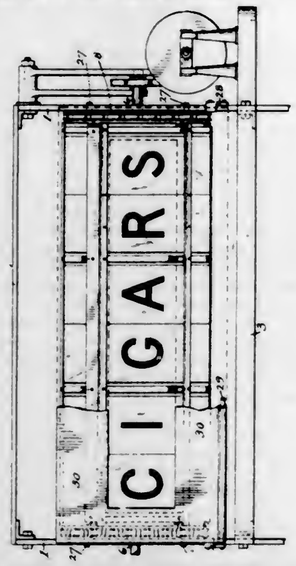


Claim.—1. In a device of the class described, the combination with a tank, of a vertical, rotatable shaft in said tank, radial arms arranged about the shaft and adapted to be driven thereby, circular floats connected to the arms and having frictional contact against the edge of the tank, and floats connected to the arms intermediate their ends and peripherally engaging the peripheries of the first-named floats; substantially as described.

2. In a device of the class described, the combination with a tank, of a vertical rotatable shaft in said tank, radial arms arranged about the shaft and adapted to be driven thereby, circular floats connected to the arms and having peripherally-arranged flanges at their bottom portions, and floats connected to said arms and peripherally engaging the peripheries of the flanges and at all times contacting with the inner edge of the tank; substantially as described.

3. In a device of the class described, the combination with a tank, of a vertically-arranged rotatable shaft in the tank, radial arms on said shaft and above the tank, radial arms driven by said shaft and within the tank, floats carried by said arms and rotatable about their axes, a rotatable strip swivelly connected to one of the first-named arms and alining with but terminating above one of the floats, and a removable device insertible between the float and the lower end of said strip, said insertible device partaking of the motion of its supporting-float so as to rotate said strip; substantially as described.

821,068. **AUTOMATIC CHANGEABLE SIGN.** THOMAS W. THOMAS and GEORGE W. GILLETTE, Cleveland, Ohio, assignors, by direct and mesne assignments, of one-half to Sheridan Risley, Cleveland, Ohio. Filed May 18, 1905. Serial No. 260,969.



Claim.—1. A changeable sign, comprising rigid sign-frames suspended between chains traveling around sprocket-wheels, means for securing the sign-frames so as to allow them to travel with the chains around the sprockets, comprising a rod hinged to each sign-frame and a tube secured to each succeeding sign-frame into which said rod slides, substantially as described.

2. In a changeable sign, the combination of a pair of endless chains, pairs of sprockets around which the chains are caused to travel, a driving-shaft secured to a pair of said sprockets to turn said chains in unison, a series of bars extending between said chains, the ends of said bars being shaped to take the place of and serve as rivets of said chains, sign-frames secured to each bar, and means for attaching the sign-frames to each succeeding bar, comprising a tube attached to the under side of each frame and a rod sliding therein attached to each succeeding bar and free to turn thereon, substantially as described.

3. In a changeable sign, the combination of a pair of endless chains, pairs of sprockets around which the chains are caused to travel, a driving-shaft secured to a pair of said sprockets, a series of bars suspended between said chains, sign-frames secured to each bar and connected to each succeeding bar by a collapsible rod and tube connection, a light-shield having an opening the size of the sign-frames secured to the front of the sign by hinges and springs, and a source of lighting contained in a suitable light-box secured behind the light-shield and within the series of sign-frames, substantially as described.

4. In a changeable sign, the combination of a sign-carrier comprising a series of sign-frames suspended between a pair of endless chains, pairs of sprockets around which the chains are caused to travel and a driving-shaft to which a pair of said sprockets are secured, with a magnetic clutch attached to said driving-shaft, consisting of a magnet-coil contained in a suitable iron frame with a brass retaining-plate, said frame being free to revolve on said shaft and constituting the pulley to which power is applied, insulated brass rings concentric with said shaft secured to the outside of said iron frame and connected with the opposite ends of said magnet-coil, a brush for each ring suitably suspended to make contact therewith, and an iron disk or armature keyed to revolve with said shaft but to have slight lateral movement thereon, substantially as described.

5. In a changeable sign, the combination of a sign-carrier comprising a series of sign-frames suspended between a pair of endless chains, pairs of sprockets around which the chains are caused to travel and a driving-shaft to which a pair of said sprockets are secured, with a magnetic brake, consisting of a star-shaped brake-wheel secured to said driving-shaft, a lever having a roller secured thereto to fit into the indentations of said brake-wheel, a magnet-coil, a plunger sliding in said magnet-coil, a rod connecting the plunger and lever, an adjustable bushing in the rear end of the yoke of the magnet-coil for regulating the stroke of the plunger, a small brass rod secured to the end of the plunger and extending through said bushing, and a spring attached to said rod and the yoke of the coil to throw the plunger out, substantially as described.

6. In a changeable sign, the combination of a sign-carrier, a main shaft in driving connection therewith, a magnetic brake mechanism operating on the end of said shaft, consisting of an indented wheel secured to the shaft, a lever fitting against said wheel, a plunger sliding in a magnet-coil, a rod connecting lever and plunger, a brass rod extending through the rear end of the yoke of the coil, and a spring attached to said rod to throw out the plunger when the magnet-coil is inert, two electric circuits, a pair of posts inserted in each of said circuits, and a circuit-breaker comprising an adjustable cross-bar secured to said brass rod of the magnetic brake mechanism and arranged to connect and disconnect said posts with the movement of the plunger, all substantially as described.

7. In a changeable sign, the combination of a sign-carrier comprising a series of sign-frames revolving around a main shaft in driving connection therewith, a magnetic brake mechanism comprising a lever, a magnet-coil, plunger and spring for operating said lever, and an indented wheel secured to said main shaft, into the indentations of which said lever works, and an electric controller for said brake mechanism, consisting of a brass cylinder suitably supported, gearing for imparting motion from the main shaft to said cylinder by which it is caused to make one complete revolution simultaneously with a like revolution of the sign-carrier, a series of contact-pins, one for each sign-frame, inserted in the periphery of said cylinder and arranged to correspond in relative position to the relative position of the sign-frames, a corresponding number of brushes suitably supported to make contact each with one only of said pins when the cylinder revolves, and a brush suitably supported to make continuous contact with said cylinder, substantially as described.

8. In a changeable sign, the combination of a sign-carrier comprising a series of sign-frames suspended between a pair of chains, pairs of sprockets over which the chains are caused to run, and a shaft in driving connection therewith, a magnetic clutch mechanism to rotate said shaft, comprising a magnet-coil rotating freely on and an armature keyed to said shaft, and a two-speed electric controller, consisting of a shaft turning in suitable supports, a brass cylinder with lateral rows of holes in its outer surface, secured to said shaft, contact-pins for insertion in said holes, a row of brushes suitably supported, one brush making continuous contact with said cylinder and the others suspended to make contact with the pins when inserted, a gear secured to the aforesaid cylinder-shaft, a rocker-arm suitably supported, a large and a small gear suspended on either end of said rocker-arm, a pulley to which power is applied, sprockets and a chain for imparting motion from said power-pulley to said large and small gears, a spring for holding the large gear in mesh with the gear on the cylinder-shaft, and a magnet-coil and plunger for pulling the large gear out of mesh and the small gear in mesh, substantially as described.

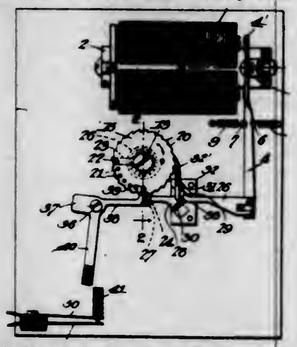
9. In a changeable sign, the combination of a sign-carrier comprising a series of sign-frames, a pair of endless chains between which the sign-frames are suspended, pairs of sprockets over which the chains are caused to travel and a shaft in driving connection therewith, a magnetic clutch mechanism for rotating said shaft, a magnetic brake mechanism for holding said shaft stationary, and an electric controller for operating the clutch and brake, consisting of two combined controllers, the first comprising a brass cylinder having lateral rows of holes on its outer surface, means for revolving said cylinder at fast or slow speed automatically, comprising a set of constantly-rotating gears suspended on a rocker-arm, a spring for throwing the fast gear in mesh and a magnet-coil and plunger for throwing the slow gear in mesh, a brush suitably supported and suspended to make continuous contact with said cylinder, contact-pins for insertion in the holes in said cylinder, and a series of brushes suitably supported and suspended to make contact with said pins when inserted, the other comprising a brass cylinder having a series of contact-pins arranged thereon to correspond to the relative position of the sign-frames, a corresponding number of brushes suitably supported and suspended to make contact each with one only of said pins, wiring connecting each of said brushes with a corresponding brush on the other controller, a brush suitably supported to make continuous contact with said cylinder, and gearing for imparting motion to said cylinder from the sign-carrier shaft to cause it to revolve simultaneously with a revolution of the sign-carrier, all substantially as described.

10. In a changeable sign, the combination of a sign-carrier comprising a series of sign-frames, a pair of endless chains, means for suspending the sign-frames between said chains, including a collapsible rod and tube connection between the frames for allowing them to turn angles with the chains, pairs of sprockets around which the chains are caused to travel, and a driving-shaft secured to a pair of said sprockets for imparting motion to the chains, a magnetic clutch mechanism secured to said shaft, comprising a magnet-coil constantly rotating on said shaft and an armature slidably but non-rotatably fixed on said shaft, an electric circuit running through said magnet-coil, hereinafter called the clutch-coil circuit, means for illuminating the signs comprising a suitable reflector-box, suitable electric lamps contained in said box and a lighting-circuit running through said lamps, a magnetic brake mechanism operating on said shaft, comprising an indented brake-wheel, a lever fitting into the indentations of said brake-wheel, a magnet-coil and plunger for operating said lever, and a spring for releasing same, a circuit-breaker comprising two sets of posts inserted one set in the magnetic clutch-coil circuit and the other in the lighting-circuit, and a connecting-bar operated by the movement of the plunger of the magnetic brake mechanism, an electric controller for the magnetic brake mechanism, comprising a brass cylinder with contact-pins in its outer surface, in number equal to the number of sign-frames, a corresponding number of brushes suitably supported and suspended to make contact each with one only of said pins, gearing for causing said cylinder to revolve simultaneously with a revolution of the sign-carrier, the pins and brushes being so arranged to have a pin make contact when its corresponding sign-frame is in display position, a brush suitably supported and suspended to make continuous contact with the cylinder, and wiring connecting said brush with the magnet-coil of the brake mechanism, and a main electric controller comprising a cylinder with lateral rows of holes thereon, contact-pins for insertion in said holes, means for revolving said cylinder at fast or slow speed automatically, comprising a rocker-arm, a large and a small gear on either end of said arm, means for imparting continuous motion to these gears, a gear in driving connection with the cylinder, a spring for holding the large gear in mesh for turning the cylinder fast, and a magnet-coil and plunger for pulling the small gear in mesh for turning the cylinder slow, a brush suitably supported and suspended to make continuous contact with said cylinder, wiring connecting said brush with the source of power, a row of brushes corresponding in number to the number of sign-frames suitably supported and suspended to make contact with the contact-pins when inserted, wiring connecting each of said brushes with its corresponding brush on the brake-mechanism controller, a brush suitably supported and suspended to make contact with pins when inserted, and wiring connecting this brush with the magnetic clutch-coil and also through the magnet-coil of the speed-regulator of the controller, and wiring from the magnetic clutch-coil through the circuit-breaker, substantially as shown and described.

821,069. **TELEPHONE SELECTING DEVICE.** WILLIAM D. WATKINS, San Jose, Cal. Filed May 16, 1904. Serial No. 208,225.

Claim.—1. A receiver-hook lock, including a pivotally-mounted lever, a ratchet-disk, a pair of spaced pins carried thereby, one of which normally engages and holds the lever in unlocking position,

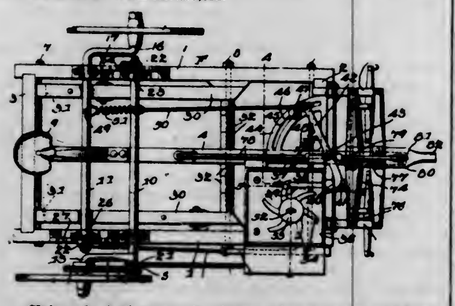
said pin being formed of insulating material and serving when in engagement with the lever to break the signal-circuit of the telephone and means for turning the disk to first permit automatic locking movement of the lever and maintain the same locked until the second pin engages said lever and moves it to release position.



2. In selecting mechanism, a toothed disk mounted for rotative movement, a pawl engaging the same, a pawl-carrying bar having upper and lower cam-shoulders, a pair of stationary cams to be engaged by said shoulders, an armature connected to the pawl-bar, an electromagnet for operating the armature, a locking-pawl for holding the disk in the position to which it is moved, and means on the pawl-bar for moving said locking-pawl to release position.

3. In selecting mechanism, a toothed disk, a bell-crank lever, a pair of pins carried by the disk, one of which is insulated, and the other a conductor, said pins being adapted to engage the lever, a pawl, carrying bar having a pair of cam-shoulders, a pair of stationary cams with which said shoulders engage, a locking-pawl, a pin or lug carried by the bar and engaging said locking-pawl, a polarized armature connected to the bar, and an electromagnet for operating the armature.

821,070. PLOW AND PLANTER. HENRY F. WEAVER, Lincolnton, N. C., assignor of one-half to George W. Rabb, Newton, N. C. Filed Feb. 1, 1906. Serial No. 299,015.



Claim.—1. A plow-carrying frame, a hopper upon said frame, feeding mechanism in the hopper including a shaft having a sprocket-wheel, an axle journaled upon the frame having a wheel-carrying crank and provided with an extension concentric with the axis of the axle, a double-sprocket member journaled upon said extension, a sprocket-wheel connected with the carrying-wheel journaled upon the crank of the axle, a chain connecting said sprocket-wheel with one member of the double sprocket journaled upon the extension of the axle, and means for transmitting motion from the other member of said double sprocket to the planting mechanism of the hopper.

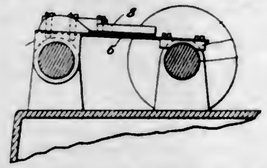
2. A plow-carrying frame, a hopper supported upon the frame, a discharge-aperture in the hopper, a regulating-slide for said aperture, agitating means in the hopper and operating mechanism therefor, an axle journaled upon the frame and having a wheel-carrying crank, adjusting means for said axle, and means connected with and operated by the axle for actuating the slide to close the aperture in the hopper and for throwing the operating mechanism of the agitating means in the hopper out of gear when the wheel is lowered to elevate the frame for transportation, and vice versa.

3. A hopper having a discharge-aperture, a slide to regulate said aperture, a spring-actuated lever engaging said slide, a stop disposed adjustably in the path of the lever, a rock-shaft having a crank, and means including a spring and a link connecting said crank with the spring-actuated lever to operate the latter against the tension of its actuating-spring.

4. A hopper having a discharge-aperture, a slide to regulate said aperture having a recess, a spring-actuated lever engaging the recess in the slide, a supporting-plate having a segmental slot concentric with the fulcrum of the lever, a stop member adjustable in said slot in the path of the lever, a rock-shaft having a crank, and means including a spring and a link connecting said crank with the lever to move the latter forcibly against the tension of its actuating-spring.

5. A plow-carrying frame, a hopper supported upon the frame and having a discharge-aperture, an agitator-shaft, an agitating wheel or disk mounted upon said shaft, an operating-shaft, intermeshing bevel-pinions upon the operating-shaft and the agitator-shaft, sprocket-wheels upon the operating-shaft having interengaging clutch members one of said sprocket-wheels being feathered upon the shaft for slidable movement thereon, a slidable spring-actuated member engaging the slidable sprocket-wheel to move it in the direction of the opposite sprocket-wheel, a slidably-supported wedge member engaging the spring-actuated slide to force it against the tension of its actuating-spring, a cranked wheel-carrying axle upon the plow-carrying frame, an adjusting-lever upon said axle, and a link connecting said adjusting-lever with the wedge member.

821,071. PHONOGRAPH. PETER WEBER, Orange, N. J., assignor to New Jersey Patent Company, West Orange, N. J., a Corporation of New Jersey. Filed Oct. 21, 1905. Serial No. 283,837.



Claim.—1. In a phonograph, the combination of the feed-screw, back rod and support traveling on said back rod, of the feed-nut spring secured at one end to said support, and a rigid guard carried by said support and extending close to said spring at its free end, substantially as set forth.

2. In a phonograph, the combination of the feed-screw, back rod, and support traveling on said back rod, of the feed-nut spring secured at one end to said support, a rigid guard carried by said support and extending close to said spring at its free end, and a device coöperating with said guard for adjusting the free end of said spring downward, substantially as set forth.

3. In a phonograph, the combination of the feed-screw, back rod, and support traveling on said back rod, of the feed-nut spring secured at one end to said support, a rigid guard carried by said support and extending close to said spring at its free end and an adjusting-screw threaded in said guard and abutting against said spring, substantially as set forth.

821,072. LUBRICATOR. LOUIS G. M. WEST, Baltimore, Md. Filed Mar. 23, 1905. Serial No. 251,519.

Claim.—1. A lubricating device comprising a reservoir, and a member spaced apart from and in juxtaposition with said reservoir, having its exposed end provided with a distributing-well, said well being provided with means for dividing the lubricant into a plurality of parts.

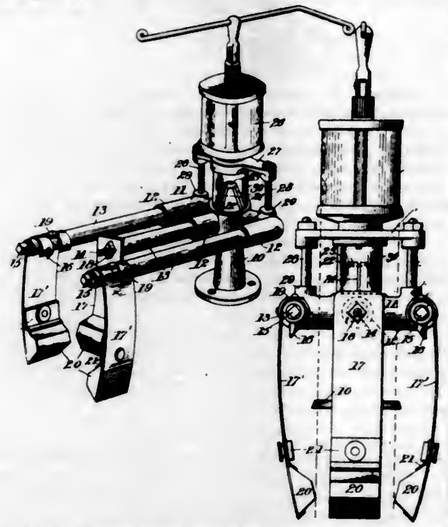
2. A lubricating device comprising a dividing member, one end of which is provided with an interrupted surface forming a plurality of spaced-apart dividing portions.

3. A lubricating device comprising a dividing member one end of which is provided with an interrupted surface forming a plurality of spaced-apart dividing portions, and means for dropping lubricant upon the end of said member.

4. A lubricating device comprising a dividing member one end of which is provided with a well, the wall of said well being interrupted to form spaced-apart dividing portions.

5. A lubricating device comprising a dividing member having one end provided with a receiving-well, and means for dropping lubricant into said well.

6. A lubricating device comprising a member provided with a conical distributing-well, said member having grooves intersecting the sides of said well, and distributing devices communicating with said grooves.



7. A lubricating device comprising a tapering member having its end provided with a conical cavity, the periphery of said member being provided with grooves intersecting said cavity, and distributing devices communicating with said grooves.

8. A lubricating device comprising a base or standard a tapering member supported thereby and provided with a conical well, grooves being formed in the periphery of said body and intersecting said well, and distributing devices communicating with said grooves.

9. A lubricating device comprising a plurality of distributing pipes or conduits, flexible plates secured thereto, and means for supplying lubricant to said pipes or conduits, the latter being provided with discharge-openings adjacent said plates.

10. A lubricating device comprising a plurality of pipes or conduits having outlet-nipples, flexible plates secured to said pipes or conduits adjacent said nipples, rubbing-blocks mounted in the lower ends of said plates, and means for supplying lubricant to said pipes or conduits.

11. A lubricating device comprising a plurality of pipes or conduits having outlet-nipples, flexible plates secured to said pipes or conduits adjacent said nipples, clamps on the lower ends of said plates, rubbing-blocks mounted in said clamps, and means for supplying lubricant to said pipes or conduits.

12. A lubricating device comprising a base or support, a coupling member supported thereby, pipes or conduits mounted in said coupling member, means for supplying lubricant thereto, and flexible distributing devices mounted upon said pipes or conduits.

13. A lubricating device comprising a base or support, a coupling member supported thereby, a tapering member mounted upon said coupling member and having a conical cavity, said member being provided with grooves intersecting said cavity, pipes or conduits mounted in said coupling member and communicating with said grooves, and flexible distributing devices mounted on the free ends of said pipes or conduits.

14. A lubricating device comprising a tapering member having its end provided with a cavity, the periphery of said member being provided with grooves which are in communication with said cavity, and distributing devices communicating with said grooves.

15. A lubricating device comprising a base, a tapering member supported thereby and provided with a well, grooves being formed in the periphery of said body which are in communication with said well, and distributing devices communicating with said grooves.

821,073. DASH-POT. SAMUEL P. WILBUR, Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed Apr. 18, 1905. Serial No. 256,274.

Claim.—1. In a dash-pot, the combination with a cylinder that is open at one end and the other end of which is provided with a cap having a valved opening, of a piston and a connecting-rod attached thereto, said piston comprising a tubular body of lubricating material, end plates, and a screw that clamps the tubular body and end plates together and to the end of the piston-rod and is of materially less diameter than the interior of the tubular body.



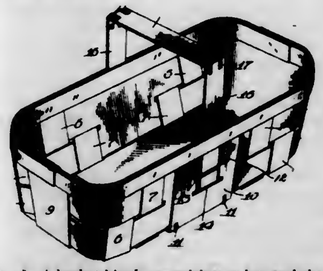
2. In a dash-pot, the combination with a cylinder, of a piston comprising a tubular body of lubricating material, end plates or washers and a fastening-screw that clamps the tubular body between the end plates and is of materially less diameter than the interior of the tubular body.

3. In a dash-pot, the combination with a cylinder, of a piston comprising a tubular body of lubricating material having beveled edges, end plates or washers that are flanged to engage the beveled edges of said tubular body, a screw that passes through said washers, and a rod having an end socket to receive said screw.

4. The combination with a cylinder having a cap provided with a valved opening, of a piston comprising a tubular body of graphite and end plates or washers therefor, a rod and a screw of materially less diameter than the interior of the tubular body for clamping the piston parts together and to the end of said rod.

5. In a dash-pot, the combination with a cylinder, of a piston-rod and a piston comprising a tubular body of graphite, end plates or washers, and a screw of materially less diameter than the interior of the tubular body for clamping said tubular body and end plates together and to the end of the piston-rod.

821,074. BASKET. HETTIE O. WILCOX, Chicago, Ill. Filed Oct. 21, 1904. Serial No. 229,392.



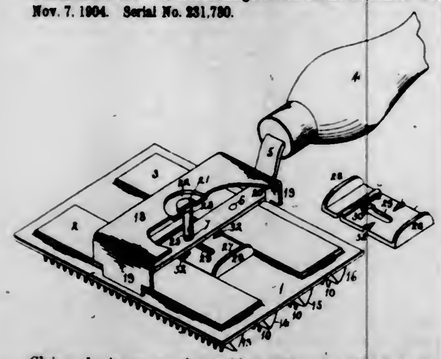
Claim.—1. A basket-blank comprising an integral sheet of material having its end portions slitted longitudinally, rim-strips secured to the side edges of the said sheet and provided with projecting end portions, and transverse strips interwoven in the slitted end portions of the sheet and secured at their ends to said rim-strips, substantially as set forth.

2. A basket-blank comprising an integral sheet of material having slitted end portions, rim-strips 8 secured to the side edges of said sheet, transverse strips 6 and 7 interwoven in said slitted end portions of the sheet and having their ends secured to said rim-strips, a transverse band 10 extending across the outside of the blank and se-

cured at its ends to the said rim-strips, and a longitudinal strip 9 between the said sheet and band, substantially as set forth.

3. A basket-blank comprising parallel rim-strips for the side edges of the blank, a transverse reinforcing-band extending entirely across the outside of the blank and secured at its ends to the middle portions of said rim-strips, said band being flexible and having longitudinal notches at its ends, strips of metal spanning said notches, and a handle having end portions adapted to be inserted between the rim-strips, when the blank is folded, and provided with transverse outside grooves adapted to engage said strips of metal, substantially as set forth.

821,075. **CURRYCOMB.** JOHN Q. ADAMS and JOHN M. ADAMS, Union, Ill.; said John Q. Adams assignor to said John M. Adams. Filed Nov. 7, 1904. Serial No. 231,780.



Claim.—1. A currycomb provided with teeth, shields for the teeth and means for permitting the teeth to be partly exposed and held against movement.

2. A currycomb provided with teeth, shields for the teeth and means for permitting the teeth to be fully exposed, partly extended or not exposed and held against movement when adjusted.

3. A currycomb having a top plate, a bottom plate, a handle having a connection with the top plate, a movable connection between the plates, means operating upon the movable connection for holding the plates separated and in fixed adjustment, teeth supported by the top plate and shields for the teeth supported by the bottom plate.

4. A currycomb having a top plate, a bottom plate, a handle having a connection with the top plate, teeth supported by the top plate, shields for the teeth supported by the bottom plate, a movable connection between the plates, a pin movable with the bottom plate and provided with an annular groove, and a sliding plate adapted to engage the pin by entering the groove.

5. A currycomb having a top plate, a bottom plate, a handle having a connection with the top plate, teeth supported by the top plate, shields for the teeth supported by the bottom plate, a movable connection between the plates, a pin movable with the bottom plate and provided with two annular grooves, and a sliding plate adapted to engage the pin by entering either of the grooves.

6. A currycomb having a top plate, a bottom plate, a handle having a connection with the top plate, teeth supported by the top plate, shields for the teeth supported by the bottom plate, a plate having a connection with the bottom plate and overspanning the top plate, a pin connecting the bottom plate and overspanning plate, and seated in recesses in both plates, and a sliding plate adapted to engage the pin.

7. A currycomb having a top plate, a bottom plate, a handle having a connection with the top plate, teeth supported by the top plate, shields for the teeth supported by the bottom plate, and two flat springs permanently connected to the top plate and having an engagement with the bottom plate.

8. A currycomb having a top plate, a bottom plate, a handle having a connection with the top plate, teeth supported by the top plate, shields for the teeth supported by the bottom plate, two flat springs, and screws connecting the springs to the top plate, the bottom plate provided with openings through which the screws pass.

9. A currycomb having a top plate provided with two rectangular depressions, and two double-toothed sections, one section located in a depression and held in place therein.

10. A currycomb having a bottom plate stamped from a single piece of sheet material and comprising an edging and a series of raised shields having closed ends.

821,076. **PRINTING-TYPE.** CHARLES B. ASKEW, Chicago, Ill. Filed Sept. 23, 1905. Serial No. 280,057.

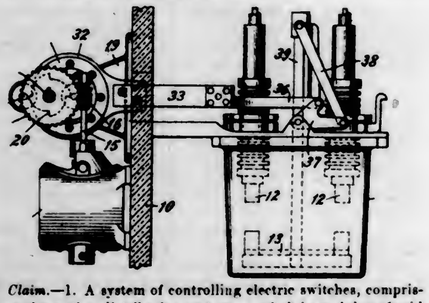


Claim.—1. Printing-type adapted to be set side by side in line and bearing vertically-unbalanced faces, each of said vertically-unbalanced type having its body diminished in width at the portion corresponding to the narrow portion of the type-face, and of suitable vertical extent to receive the undiminished portion of an oppositely-unbalanced type, whereby the type-faces, oppositely unbalanced, may be brought into artistic proximity when said type are placed side by side.

2. Vertically-unbalanced printing-type, each having a recess made in the side face of its body, corresponding in vertical position with the narrower portion of the unbalanced type-face, and of vertical extent equal to or greater than the undiminished portion of an oppositely-unbalanced type.

3. Vertically-unbalanced type having recesses formed therein extending into the side of each type-body along the edge thereof corresponding with the minimum width of the type-face, the recesses in the "wide-top" types being adapted to interfit with the undiminished portions of the "wide-base" types.

821,077. **SYSTEM AND APPARATUS FOR OPERATING ELECTRIC SWITCHES.** HENRY P. BALL, New York, N. Y., assignor to The General Incandescent Arc Light Company, of New York, a Corporation. Filed Sept. 30, 1902. Serial No. 125,435.



Claim.—1. A system of controlling electric switches, comprising an alternating distributing system, a switch in each leg of said system, a motor device for moving said switches, means for automatically throwing said motor device into operative relation with said switches, and means for automatically controlling the movement of said switches individually.

2. A system of controlling electric switches, comprising an alternating distributing system, a switch in each leg of said system, a motor device for moving said switches, means for automatically throwing said motor device into operative relation with said switches, means for automatically controlling the movement of said switches individually, and means for manually controlling the movement of said switches.

3. A system of controlling electric switches, comprising an alternating distributing system, a switch in each leg of said system, a motor device for actuating said switches, an independent source of energy for actuating the motor device, and means energized by an increase in current in the distributing-circuit above the normal, which will close the circuit through the motor and selectively apply the movement imparted by the motor to the switches.

4. A system of controlling electric switches, comprising an alternating distributing system, a switch, a transformer and an overload device in each leg of the system, a motor device for moving the switches, an independent source of energy for moving the motor device, and means in the circuit of the motor device for selectively controlling the movement of the switches.

5. In a switch-actuating mechanism, the combination of a shaft, a motor for driving the shaft, an eccentric pivoted on the shaft, means for connecting and disconnecting the eccentric from the shaft, a switch mechanism, and means driven by the eccentric for actuating the switch mechanism.

6. In a switch-actuating mechanism, the combination of a shaft, a motor for driving the shaft, an eccentric pivoted on the shaft, means for connecting and disconnecting the eccentric from the shaft, means for controlling said connecting and disconnecting means, a switch mechanism, and means driven by the eccentric for actuating the switch mechanism.

7. In a switch-actuating mechanism, the combination of a shaft, a motor for driving the shaft, an eccentric pivoted upon the shaft, a ratchet driven by the shaft, means for connecting and disconnecting the eccentric and ratchet, means for controlling said connecting and disconnecting means, a switch mechanism, and means driven by the eccentric for moving the switch mechanism.

8. In a switch-actuating mechanism, the combination of a shaft, a motor for driving the shaft, an eccentric pivoted on the shaft, a ratchet driven by the shaft, a spring-actuated latch device carried by the eccentric and adapted to coact with the ratchet, and a pair of solenoids having movable cores adapted to cooperate with the latch.

9. In a switch-actuating mechanism, the combination of a driven shaft, an eccentric pivoted on said shaft, a double-arm latch pivoted on said eccentric, a ratchet on the shaft, and means for controlling the engagement of the latch with the ratchet.

10. In a switch-actuating mechanism, the combination of a driven shaft, an eccentric pivoted on the shaft, a ratchet, means for throwing the eccentric into and out of engagement with the ratchet, a strap surrounding said eccentric, and means for holding said strap in frictional engagement with said eccentric.

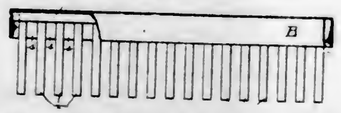
11. In a switch-actuating mechanism, the combination of a driven shaft, an eccentric pivoted on the shaft, a ratchet driven by the shaft, a latch for connecting said eccentric to said ratchet, and electrical means for controlling the engagement of said latch with said ratchet.

12. In a switch-actuating mechanism, the combination of a driven shaft, an eccentric pivoted on the shaft, means for connecting said eccentric to the shaft, and electrical means for disconnecting said eccentric from said shaft

13. In a switch-actuating mechanism, the combination of a driven shaft, a ratchet pivoted on the shaft, means for transmitting the power of the shaft elastically to the ratchet, an eccentric pivoted on the shaft, and means for transmitting the movement of the ratchet to the eccentric when desired.

14. A system of controlling electric switches, comprising a motor, a source of energy therefor, a shaft driven by the motor, a series of switch-actuating mechanisms, a series of switches adapted to be operated by the shaft, electrical means for controlling the switch-actuating mechanisms, said means having an automatically-acting part located at or near the switches, and a manually-controlled part located at a distance from the switches.

821,078. **BRUSH.** WILLIAM H. BENNETT, Rochester, N. Y. Filed Jan. 23, 1905. Serial No. 242,225.



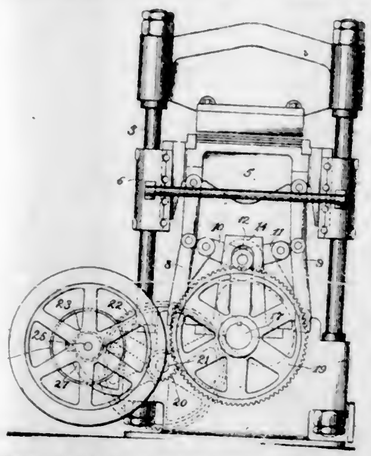
Claim.—1. In a brush, a series of sheets of fabric arranged in substantially parallel planes, separating-strips between such sheets of fabric near their upper edges, a common uniting-strip secured to such separating-strips and to the upper edges of such sheets of fabric, such separating-strips secured to such sheets of fabric and an inclosing case arranged to engage such separating-strips.

2. In a brush, a series of sheets of fabric arranged in substantially parallel planes, separating-strips between such sheets of fabric near their upper edges, a common uniting-strip secured to such separating-strips and to the upper edges of such sheets of fabric, an inclosing case, such separating-strips secured to such sheets of fabric and means for securing such separating-strips and such common uniting-strip in such inclosing case.

3. In a brush, in combination with a series of sheets of fabric arranged in substantially parallel planes, a common uniting-strip, means for securing such sheets of fabric to such common uniting-strip comprising a series of independent separating-strips of relatively non-compressible material secured to and between such sheets of fabric near their upper edges and a metallic case for inclosing and retaining such separating-strips and such common uniting-strip.

4. A brush comprising a metallic case and a series of sheets of fabric and means for supporting such sheets of fabric in such case in substantially parallel planes comprising individual separating-strips of relatively non-compressible material secured to and between such sheets of fabric at their upper edges and a common uniting-strip for such separating-strips and sheets of fabric.

821,079. **EMBOSSING-PRESS.** ALFRED BREDENBERG, Champlain, N. Y., assignor of one-half to The Sheridan Iron Works, a Corporation of New York, and one-half to T. W. & C. B. Sheridan Company, a Corporation of New York. Filed Aug. 20, 1904. Serial No. 221,570.



Claim.—1. An embossing-press including in combination, a stationary head, a movable head, mechanism including members moving in opposite directions transversely to the line of movement of said movable head for operating said head, a toggle device for moving said members, power mechanism for actuating said toggle device, said power mechanism including a shaft and connections between said shaft and said toggle device constructed to cause a quick movement of the movable head through the greater part of its stroke and a slow powerful movement at the end of its stroke, and means independent of said power mechanism for controlling the action of said toggle device upon said oppositely-moving members.

2. An embossing-press including in combination, a stationary head, a movable head, mechanism including members moving in opposite directions transversely to the line of movement of said movable head for operating said head, a toggle device for moving said members, a cam for actuating said toggle device, said cam being constructed to cause a quick movement of the movable head through the greater part of its stroke and a slow powerful movement at the end of its stroke, and guides for positively controlling the action of said toggle device upon said transversely-moving members.

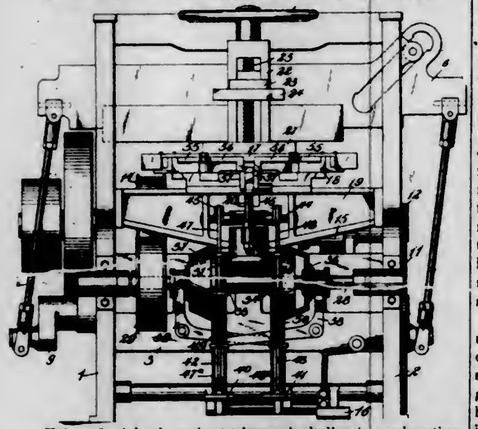
3. An embossing-press including in combination, a stationary head, a movable head, a pair of toggle members moving in opposite directions for operating said movable head, a toggle device arranged between said toggle members for moving the same, power mechanism for actuating said toggle devices, said power mechanism including a shaft and connections between said shaft and said toggle device constructed to cause a quick movement of the movable head through the greater part of its stroke and a slow powerful movement at the end of its stroke, and means independent of said power mechanism for controlling the action of said toggle device upon said toggle members.

4. An embossing-press including in combination, a stationary head, a movable head, a pair of toggle members moving in opposite directions for operating said movable head, a toggle device for moving said toggle members, a cam for actuating said toggle device, said cam being constructed to cause a quick movement of the movable head through the greater part of its stroke and a slow powerful movement of the head at the end of its stroke, and guides for positively controlling the action of said toggle device upon said toggle members.

5. An embossing-press including in combination, a base, a stationary head connected to said base by tension-rods, a vertically-movable head guided between said tension-rods, a pair of toggles located between said base and said movable head and having members

arranged to move in opposite directions upwardly to operate said movable head, a toggle device arranged between said toggle members for operating the same, a cam mounted on said base below said toggle device for actuating the same, vertical guides for controlling the said toggle device, and power mechanism mounted on said base for driving said cam.

821,080. BOOK-TRIMMER. ALFRED BREDENBERG, Champlain, N. Y., assignor of one-half to The Sheridan Iron Works, a Corporation of New York, and one-half to T. W. & C. B. Sheridan Company, a Corporation of New York. Filed Nov. 14, 1904. Serial No. 232,597.



Claim.—1. A book or sheet trimmer including in combination, a trimming mechanism, a pile-support movable into and out of coöperative relation with said trimming mechanism, a clamp mechanism movable with said support, power mechanism for operating said clamp mechanism, and means for connecting and disconnecting said power mechanism and said clamp mechanism when said pile-support is out of coöperative relation with said trimming mechanism.

2. A book or sheet trimmer including in combination, a trimming mechanism, a rotatable pile-support movable into and out of coöperative relation with said trimming mechanism, a clamp mechanism rotatable and movable with said pile-support, means for locking said pile-support and clamp mechanism against rotation, power mechanism for operating said clamp mechanism, and means for connecting and disconnecting said power mechanism and said clamp mechanism when said pile-support is out of coöperative relation with said trimming mechanism.

3. A book or sheet trimmer including in combination, a trimming mechanism, a pile-support movable into and out of coöperative relation with said trimming mechanism, a clamp mechanism movable with said support, power mechanism including two friction clutches for operating said clamp mechanism in opposite directions, means for operating said clutches, and means for connecting and disconnecting said power mechanism and said clamp mechanism when said pile-support is out of coöperative relation with said trimming mechanism.

4. A book or sheet trimmer including in combination, a trimming mechanism, a pile-support movable into and out of coöperative relation with said trimming mechanism, a clamp mechanism movable with said support, power mechanism including two friction-clutches for operating said clamp mechanism in opposite directions, independent means for operating each clutch, and means for connecting and disconnecting said power mechanism and said clamp mechanism when said pile-support is out of coöperative relation with said trimming mechanism, each said clutch-operating means being connected to operate said connecting and disconnecting means.

5. A book or sheet trimmer including in combination, a trimming-knife reciprocating in a vertical plane, a pile-support reciprocating in a horizontal plane into and out of coöperative relation with said trimming-knife, a clamp mechanism mounted on said pile-support and having a vertical clamp-operating screw, a power mechanism having a vertical shaft arranged to substantially aline with said clamp-operating screw when the pile-support is out of coöperative relation with the trimming-knife, means for connecting and disconnecting said clamp-operating screw and said vertical shaft, and means for driving said vertical shaft in opposite directions.

6. A book or sheet trimmer including in combination, a trimming-knife reciprocating in a vertical plane, a pile-support reciprocating in a horizontal plane into and out of coöperative relation with said trimming-knife, a clamp mechanism mounted on said pile-support and having a vertical clamp-operating screw, a power mechanism having a vertical shaft arranged to substantially aline with said clamp-operating screw when the pile-support is out of coöperative relation with the trimming-knife, means for connecting and disconnecting said clamp-operating screw and said vertical shaft, a clutch for connecting and disconnecting said clamp-operating screw and said vertical shaft, and means including a constantly-running shaft and two friction-clutches for driving said vertical shaft in opposite directions.

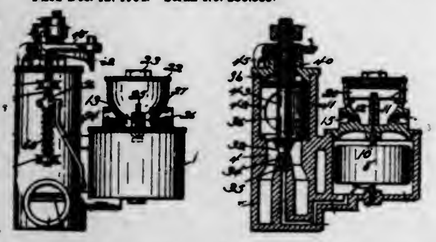
7. A book or sheet trimmer including in combination, a trimming-knife reciprocating in a vertical plane, a pile-support reciprocating in a horizontal plane into and out of coöperative relation with said trimming-knife, a clamp mechanism mounted on said pile-support and having a vertical clamp-operating screw, a power mechanism having a vertical shaft arranged to substantially aline with said clamp-operating screw when the pile-support is out of coöperative relation with the trimming-knife, means for connecting and disconnecting said clamp-operating screw and said vertical shaft, means for connecting and disconnecting said vertical shaft and screw, means including two oppositely-acting clutches for driving said vertical shaft in opposite directions, and independent means for operating said two clutches, each of said clutch-operating means being connected to operate said means for connecting and disconnecting the screw and vertical shaft.

8. A book or sheet trimmer including in combination, a trimming mechanism, a rotatable pile-support, a reciprocating carriage on which said pile-support is rotatably mounted, said pile-support and said carriage each having on their adjacent surfaces an annular groove of comparatively large radius adapted to receive bearing-balls, and means for locking said support on said carriage, said locking means being constructed to engage said support at a point radially beyond the ball-receiving groove thereof.

9. A book or sheet trimmer including in combination, a trimming mechanism, a rotatable pile-support, a reciprocating carriage on which said pile-support is rotatably mounted, a pair of spring-pressed latches mounted on said carriage and adapted to simultaneously engage suitably-spaced recesses in said pile-support, and means for simultaneously retracting said latches to permit rotation of said pile-support.

10. A book or sheet trimmer including in combination, a trimming mechanism, a rotatable pile-support, a reciprocating carriage on which said pile-support is mounted, a pair of reciprocating spring-pressed latches mounted on said carriage and adapted to engage suitably-spaced recesses in said pile-support, a pair of levers fulcrumed on said carriage and each having an arm engaging one of said latches, the oppositely-extending arms of said levers terminating adjacent to each other, a latch-operating member mounted on a fixed part of the machine and adapted to be moved into and out of operative position with relation to said latch-operating levers when the said carriage is near one end of its stroke.

821,081. CARBURETER. PATRICK H. BRENNAN, Syracuse, N. Y. Filed Dec. 12, 1904. Serial No. 236,555.



Claim.—1. In a carbureter for a gas-engine, the combination with a suitable shell inclosing a mixing-chamber having gasolene and air inlets in its lower portion and a vapor-outlet in its upper portion, of a shutter air-valve journaled across the air-inlet, an external crank on said air-valve, a sliding rod arranged in bearings on the shell, a connection between said rod and said crank, a spring engaging with the rod to hold the valve open, a throttle-valve in the mixing-chamber controlling the vapor-outlet, an outwardly-extending

stem on the throttle-valve and an eccentric cam connected to said stem and engaging with the sliding rod to operate said valves simultaneously.

2. In a carbureter for a gas-engine, a mixing-chamber shell provided with an inlet-channel and an air-inlet in its lower portion and a vapor-outlet in its upper portion, and in combination therewith a throttle-valve arranged within the mixing-chamber and having a port to register with the vapor-outlet, a tubular stem on the throttle-valve outwardly extending through the top of the chamber, an arm secured to the outer end of said stem, a tail on said arm, stop-lugs on the shell to engage with said tail and limit the movement of the throttle-valve, stops on said arm, a controlling-valve arranged in the mixing-chamber, to control the admission of the gasolene through the inlet, a valve-rod on the throttle-valve extending outwardly through said tubular stem, said rod being threaded to engage with the interior of said stem, a second arm secured to the outer end of said valve-rod and arranged between the stops on the first arm.

3. In a carbureter for a gas-engine, a mixing-chamber shell provided with an inlet-channel and an air-inlet in its lower portion and a vapor-outlet in its upper portion, and in combination therewith an air-valve journaled in the air-inlet to control the supply of air, an external crank on the air-valve, a vertical sliding rod fitted to ears on the exterior of the shell, a collar adjustably fitted to said rod, a spiral spring arranged around the rod between the collar and one ear to hold the rod up and the valve open, a connection connecting said crank and collar, a throttle-valve fitted to the enlarged upper portion of the mixing-chamber and having a port to register with the vapor-outlet, a tubular stem on the throttle-valve outwardly extending through the top of the chamber, an arm secured to the outer end of said stem, an eccentric cam on said arm to engage with said sliding rod and force it downwardly to close the air-valve, more or less, simultaneously with the throttle-valve, a controlling-valve arranged in the mixing-chamber to control the admission of gasolene, a valve-rod on the controlling-valve extending outwardly through said tubular stem, said rod being threaded to engage with the interior of said stem, and a second arm secured to the outer end of said valve-rod.

4. In a carbureter for a gas-engine, a mixing-chamber shell provided with an inlet-channel and an air-inlet in its lower portion and a vapor-outlet in its upper portion, and in combination an air-valve to control the supply of air through the air-inlet, a throttle-valve fitted to the enlarged upper portion of the mixing-chamber and having a port to register with the vapor-outlet, a tubular stem on the throttle-valve outwardly extending through the top of the chamber, an arm secured to the outer end of said stem, a lever connected to said arm, a tail on said arm, stop-lugs on the shell to engage with said tail and limit the movement of the throttle-valve, a curved cross-piece on said arm having an upwardly-extending stop at each end, a connection between said arm and the air-valve to operate the air-valve simultaneously with the throttle-valve, a controlling-valve longitudinally arranged in the mixing-chamber and having a stem fitting a seat in the upper end of the inlet, a ribbed conical portion immediately above said stem and a valve-rod extending outwardly through said tubular stem, said rod being threaded to engage with the interior of said stem and a second arm secured to the outer end of said valve-rod and arranged between the stops on the first arm, substantially as described and shown.

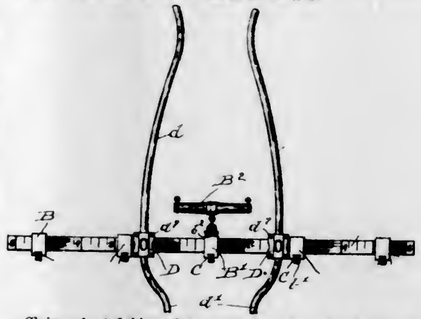
5. In a carbureter for a gas-engine, the combination with a mixing-chamber shell having gasolene and air inlets and a vapor-outlet, a valve for the air-inlet, a sliding rod connected to said valve whereby the valve is controlled, a throttle-valve for the outlet, a cam on the throttle-valve engaging with said rod whereby the valves are closed simultaneously, and a controlling-valve for the oil-inlet.

6. In a carbureter for a gas-engine, the combination with a mixing-chamber shell having oil and air inlets and a vapor-outlet, of an air-valve controlling the air-inlet, a rod fitted to slide in external bearings on the shell and connected to the air-valve, a throttle-valve for the vapor-outlet, an eccentric cam on the throttle-valve engaging with said rod, a lever connected to the throttle-valve whereby said valves are closed simultaneously and a plunger-valve for the oil-inlet.

7. In a carbureter for a gas-engine, the combination with a mixing-chamber shell having oil and air inlets and a vapor-outlet, of an air-valve journaled across the air-inlet, a rod fitted to slide in bearings and connected to said valve, a spring tending to open said valve, a throttle-valve for the outlet, an eccentric cam connected to the throttle-valve and engaging with said rod, whereby the valves are operated simultaneously, and a plunger-valve for the oil-inlet.

8. In a carbureter for a gas-engine, a mixing-chamber shell provided with an inlet-channel and an air-inlet in its lower portion and a vapor-outlet in its upper portion, and in combination therewith a shutter-valve journaled in the air-inlet to control the supply of air, an external crank on the air-valve, a vertical sliding rod fitted to ears on the exterior of the shell, a collar adjustably fitted to said rod, a spring arranged around the rod between the collar and one ear to hold the rod up and the valve open, a connection connecting said crank and collar, a throttle-valve fitted to the enlarged upper portion of the mixing-chamber and having a port to register with the vapor-outlet, a tubular stem on the throttle-valve outwardly extending through the top of the chamber, an arm secured to the outer end of said stem, a lever connected to said arm, an extension or tail on said arm, stop-lugs on the shell to engage with said extension or tail and limit the movement of the throttle-valve, a curved cross-piece on said arm having an upwardly-extending stop at each end, a cam on said arm to engage with said sliding rod and force it downwardly to close the air-valve, more or less, simultaneously with the throttle-valve, a controlling-valve longitudinally arranged in the mixing-chamber, and having a stem fitting a seat in the upper end of the inlet, a ribbed conical portion immediately above said stem and a valve-rod extending outwardly through said tubular stem, said rod being threaded to engage with the interior of said stem and having a slot on its outer end, a second arm secured to the outer end of said valve-rod and arranged between the stops on the first arm, and a lever attached to said second arm, substantially as described and shown.

821,082. LAND-MARKER. ELMER L. BRILLHART, Ludington, Mich. Filed Aug. 21, 1905. Serial No. 275,135.



Claim.—1. A field-marker comprising a beam graduated with a linear scale from its middle to its extremities, teeth adjustable longitudinally thereon, sleeves having seats therein adapted to detachably secure the teeth upon the beam at varying distances apart, means for attaching a draft-animal to the beam and handles projecting rearwardly from each side of the center.

2. A land-marker comprising, a graduated beam, adjustable means affording attachment for thills and handles and spring-teeth adjustably secured thereon and affording the marking means.

3. A land-marker comprising a metallic beam, a graduated scale thereon extending from the center toward the extremities, slotted sleeves adjustably engaged on said beam, spring-teeth engaged in said slots, means adjustably engaged on the beam at equal distances from the center adapted to secure thills and handles and thills and handles engaged therein.

4. A knockdown land-marker comprising a bar provided with a linear scale indicated thereon from the center to the extremities of the bar, sleeves engaged on said bar and each provided with an aperture at the rear of the bar, a leg engaged in the aperture in each sleeve, a set-screw passing therethrough and acting to lock the sleeve on the bar, thills and handles for said marker and means for adjustably engaging said thills and handles on the bar.

5. In a device of the class described the combination with a bar provided with a linear scale thereon of recessed sleeves adjustably engaged on said bar, a tooth engaged in the recess of each sleeve and means for adjustably engaging thills and handles on said bar.

6. In a device of the class described the combination with a beam of a linear scale thereon, sleeves adjustably engaged on said beam and provided with shoulders on their inner surfaces adapted to contact with the beam, a tooth engaged in a recess in each sleeve, a set-screw passing therethrough and engaging the beam, clamps adjustably engaged on the beam and thills and handles engaged in said clamps.

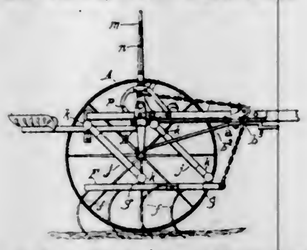
7. In a land-marker the combination with a beam of legs adjustably engaged thereon, clamps at equal distances from the center of said beam and provided with seats in the top thereof and thills and handles rigidly engaged in said seats.

8. In a land-marker the combination with a channel-iron beam provided with a linear scale thereon of sleeves adjustably engaged on said beam, bearing-shoulders on the inner side of said sleeves, a spring-tooth engaged in each sleeve, clamps adjustably engaged on said beam and thills and handles carried in said clamps.

9. In a land-marker the combination with a channel-iron beam of rectangular sleeves adjustable longitudinally thereof, legs engaged in said sleeves, plates having parallel ribs thereon adapted to receive the beam therebetween, thills engaged in seats on the upper plates, a clamping-plate above each thill, bolts rigidly engaging said plates and thills to the beam, handles integral with the thills and means for attaching a draft-animal.

10. In a land-marker the combination with a beam provided with linear scales thereon extending from the center toward the ends, sleeves slidably engaged on said beam, teeth removably engaged in said sleeves, plates having parallel ribs thereon adapted to engage the beam, seats in the upper plates, thills and handles in said seats and a clamping-plate adapted to hold the same in place.

821,083. SULKY-CULTIVATOR. EDWARD R. BROOKBANK, Battle Creek, Mich. Filed July 17, 1905. Serial No. 270,150.



Claim.—1. In a cultivator, the combination with the main frame, of shovel-gangs suspended therefrom by forwardly-inclined parallel-arranged hangers from pivotal journals capable of retaining said gangs in the same plane when raised, lowered, or laterally disposed, each gang being provided with triple hangers, one at the forward end and two at or near the rear extremity of the respective gangs, levers to raise or lower said gangs, grooved rollers mounted at the forward end of said frame and chains trained over said rollers and connected at their ends with said levers and gangs, respectively, substantially as, and for the purpose set forth.

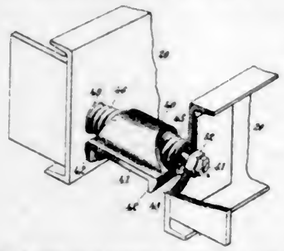
2. In a cultivator, the combination with the main frame, of shovel-gangs suspended therefrom by forwardly-inclined parallel-arranged hangers having ball-and-socket joints both at their connection with the main frame and also with the respective gangs, so that when the gangs are raised, lowered, or laterally disposed, the gangs will retain the same plane, levers to raise or lower said gangs, grooved rollers mounted at the forward end of said frame and chains trained over said rollers and connected at their ends with said levers and the forward ends of said gangs respectively, substantially as, and for the purpose set forth.

3. In a cultivator, the combination with the axle and tongue, of a frame comprising oppositely-disposed, angular side pieces meeting the tongue at their forward ends and spread at their rear extremities, a cross-piece intersecting said side pieces forward of the axle and a cross-piece secured to the extremities of said side pieces extending beyond their ends at the rear of the axle, longitudinal slots within said cross-pieces, and hanger-brackets bolted to said cross-pieces at the intersection of said slots, substantially as, and for the purpose set forth.

4. In a cultivator, the combination with the main frame, of a cross-piece forward of the axle, a cross-piece to the rear of the axle, longitudinal slots in said cross-pieces, hanger-brackets bolted to said cross-pieces at the intersection of said slots, parallel-arranged hangers suspended from said brackets in a forwardly-inclined position, shovel-gangs suspended from said hangers, a cross-piece attached to the forward end of the frame, grooved rollers mounted on said cross-piece, chains passing over said rollers and connectively united to the forward end of said gangs, their opposite ends being attached to adjusting-levers, substantially as, and for the purpose set forth.

5. In a cultivator, a quadrant mounted thereon, a lever pivotally operative from said quadrant, of a curved extension to said lever terminating in a fork, a lift-chain pivoted near the axis or pivot of said lever and passing over a grooved roller at the forward end of the cultivator and attached to the forward end of a shovel-gang, the pivotal connection of the chain with the lever acting as a leverage to start the shovel-gang from the soil, the curved extension acting to accelerate the movement of the shovel-gang when the chain is engaged therewith, substantially as, and for the purpose set forth.

821,084. DRAW-BAR-CENTERING DEVICE FOR RAILWAY-CARS. THOMAS R. BROWN, New York, N. Y., assignor to Benjamin A. Hegeman, Jr., North Plainfield, N. J. Filed Mar. 6, 1905. Serial No. 248,617.



Claim.—1. A draw-bar-centering device comprising a body portion having arms to be engaged by the coupler-stem, springs at the ends of said body portion, a tubular stem passing through said springs and body portion and having means on its ends to engage the outer ends of said springs and thereby bind said springs in position, and a supporting-bolt extending through said stem and supported at its ends in parts carried by the car; substantially as set forth

2. A draw-bar-centering device comprising a body portion having arms to be engaged by the coupler-stem and also a transverse partition supporting a sleeve, end springs mounted at their inner ends upon said sleeve, and a transverse bolt extended through said springs and sleeve and supported at its ends in parts carried by the car; substantially as set forth.

3. A draw-bar-centering device comprising a body portion having arms to be engaged by the coupler-stem and also a transverse partition supporting a sleeve, end springs mounted at their inner ends upon said sleeve, a tubular stem passing through said springs and body portion and having means on its ends to engage the outer ends of said springs and thereby bind said springs in position, and a supporting-bolt extending through said stem and supported at its ends in parts carried by the car; substantially as set forth.

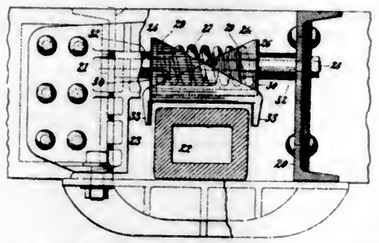
4. A draw-bar-centering device comprising a cylindrical body portion having a transverse partition, a base 41 and arms 42 to be engaged by the coupler-stem, end springs housed at their inner ends within the ends of said body portion and projecting beyond the same, and a transverse bolt extended through said springs and body portion and supported at its ends in parts carried by the car; substantially as set forth.

5. A draw-bar-centering device comprising a cylindrical body portion having a transverse partition, a base 41 and arms 42 to be engaged by the coupler-stem, end springs housed at their inner ends within the ends of said body portion and projecting beyond the same, a tubular stem passing through said springs and body portion and having means on its ends to engage the outer ends of said springs and thereby bind said springs in position, and a supporting-bolt extending through said stem and supported at its ends in parts carried by the car; substantially as set forth.

6. A draw-bar-centering device comprising a centrally-disposed body portion having arms to be engaged by the coupler-stem, springs at the ends thereof, a tubular stem passing through said body portion and springs and having on one end a head and flange to engage the outer end of one of said springs and on its other end a nut and flange to engage the outer end of the other spring, and a supporting-bolt extended through said stem and supported at its ends in parts carried by the car; substantially as set forth

821,085. DRAW-BAR-CENTERING DEVICE FOR RAILWAY-CARS. THOMAS R. BROWN, New York, N. Y., assignor to Benjamin A. Hegeman, Jr., North Plainfield, N. J. Filed Feb. 1, 1906. Serial No 298,924.

Claim.—1. A draw-bar-centering device comprising independent nested sections of about corresponding length and adapted to slide one upon the other, said sections at their outer ends having walls and outwardly-projecting longitudinal sleeves and at their inner ends arms projecting along opposite sides of the coupler-stem, combined with a spring held between said end walls, a bolt passing through said sections, sleeves and spring, and means rigid with the car engaging the outer ends of said sleeves to resist outward movement of said sections from their normal position; substantially as set forth.

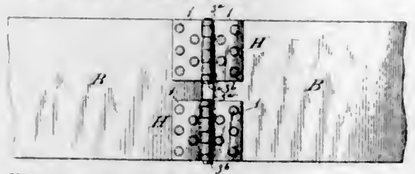


2. A draw-bar-centering device comprising independent nested sections of about corresponding length, one of said sections being set within and at its inner end projected through the other, and said sections being adapted to slide one upon the other and having at their outer ends walls and outwardly and inwardly extending longitudinal sleeves and at their inner ends arms projecting along opposite sides of the coupler-stem, combined with a spring interposed between said sections and mounted on the inner end portions of said sleeves, a bolt passing through said sections, sleeves and spring, and means rigid with the car engaging the outer ends of said sleeves to resist outward movement of said sections from their normal position; substantially as set forth.

3. A draw-bar-centering device comprising the independent nested sections of about corresponding length having side, bottom and outer end walls and being open at their inner ends where they are formed with arms projected along opposite sides of the coupler-stem, the outer section having an opening to admit the inner end of the inner section and permit its sides to slide through the same to the requisite extent, combined with a spring held between said end walls, a bolt passing through said sections and spring, and means rigid with the car engaging said sections to resist outward movement of same from their normal position; substantially as set forth.

4. A draw-bar-centering device comprising the independent nested sections of about corresponding length having side, bottom and outer end walls and longitudinal end sleeves and being open at their inner ends where they are formed with arms projected along opposite sides of the coupler-stem, the outer section having an opening to admit the inner end of the inner section and permit its sides to slide through the same to the requisite extent, combined with a spring held between said end walls, a bolt passing through said sections, sleeves and spring, and means rigid with the car engaging the outer ends of said sleeves to resist outward movement of said sections from their normal position; substantially as set forth.

821,086. BELT-COUPLING. ROBERT CANNAN, New York, N. Y. Filed June 14, 1905. Serial No. 265,229.



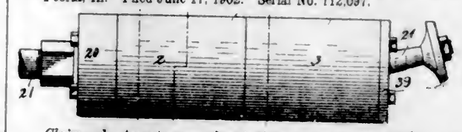
Claim.—1. A belt-coupling, having a hinging-pin composed of two longitudinally-extending members, one of said members having a V edge which bears on the face of the other, and one member having means for retaining the pin in place in the barrel of the hinge.

2. A belt-coupling, having a hinging-pin composed of two longitudinally-extending members placed face to face, one of said members having a step at one end, a bendable metal tongue at the other, and a stud which engages a hole in the hinge, the said step and tongue embracing between them endwise the other member of the hinging-pin.

3. A belt-coupling, having a hole 5 in it substantially as shown, and having a hinging-pin composed of two members which extend longitudinally through the barrel of the hinge, one of said members having a stud to engage the hole 5 and prevent the pin from moving endwise in the barrel, and one of said members having means which embrace the other member endwise and prevent its endwise movement independently of the other member.

4. The combination with the two sections of a belt-coupling one of which is provided with a hole 5 opening into the bearing for the hinging-pin, of the said pin, comprising a member 3, having a flat face, a step 3^a at one end, a tongue 3^b at the other end, and a stud 3^c which engages the hole 5, and the member 4, embraced endwise between said step and tongue on the member 3, and having a V-shaped edge on its face which bears in the flat face of the other member.

821,087. BOILER-TUBE CLEANER. CHARLES L. CHARVAT, Peoria, Ill. Filed June 17, 1902. Serial No. 112,097.



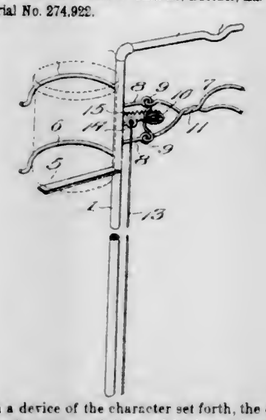
Claim.—1. A scale-removing device, comprising a member, having a cylinder portion, an extension in advance of the cylinder portion slotted from one side and having matching walls, a piston operatively carried in the cylinder portion, the hammer-arm 24 having one end pivoted between the walls of the aforesaid extension and carrying a tool on its outer end, the bar 30 pivoted to said extension and connections between said bar, the piston and hammer-arm 24, substantially as described.

2. A scale-removing device, comprising a member, having a cylinder portion, a reduced extension in advance of the cylinder portion slotted substantially as shown, a sleeve encircling the slotted portion, a piston operatively carried in the cylinder portion, the hammer-arm 24 pivoted at 25^a in the slotted portion, the bar 30 and connections between the same and piston, and the link 28 having connection with the hammer-arm 24 and bar 30, substantially as described.

3. In a device of the class described, the combination of a casing, a piston, a hammer-arm carrying a tool on its outer end, its inner end pivoted within the casing, a bar pivotally arranged within the casing and having a slot at its upper end, a coupling between the slotted end of the bar and the piston, and a link connection between the said bar and the inner end of the hammer-arm, substantially as specified.

4. An inclosure for the support of operative parts of a scale-loosening device, comprising a member having a cylinder portion, a slotted extension of said cylinder portion separated by a partition, ports of the cylinder portion communicating with the slotted extension through its side walls, and a sleeve encircling the slotted extension, as and for the purposes set forth.

821,088. LIFTER. JOHN E. CHENET, Lutcher, La. Filed Aug. 19, 1905. Serial No. 274,922.



Claim.—In a device of the character set forth, the combination of a staff having its upper end disposed horizontally and provided with a bail-receiving portion, a plate secured rigidly to the staff, an arm secured rigidly to the staff above the plate, bolts secured to the staff above and in rear of the plate, a clamping-arm, said clamping-arm being constructed from a single strand of wire bent to provide an eye and coiled about the bolts so as to pivotally mount the arm, the

ends of said strand being coiled about each other for a portion of their lengths and thence spaced apart, a spring having one of its ends connected to the staff and its other end connected to the eye of the pivotally-mounted arm, whereby to retain the pivotally-mounted arm in inoperative position, and means for swinging the arm into operative position.

821,089. LOG-LOADER. OLIVER CHEVERFIELD, Deer River, Minn. Filed May 7, 1904. Serial No. 206,578.



Claim.—1. A device of the kind described comprising a stationary frame, a movable frame hinged thereto, an endless conveyer adapted to travel over the frames, the conveyer passing downward over the front end of the hinged frame, a shaft carried adjacent the front end of the hinged frame, pulleys on the shaft, skids adapted to travel on the pulleys and to receive logs from the conveyer, and means for rotating the shaft and pulley in either direction.

2. A device of the kind described comprising a stationary and a hinged frame, parallel shafts carried by the hinged frame, a pulley loosely mounted on one of the said shafts, said pulley having an elongated hub portion, a bevel-gear on the said hub portion and a gear-wheel on the hub portion on the opposite side of the pulley, a slidable clutch on the said shaft adapted to engage the pulley-hub, said clutch being keyed to the shaft, means for driving said pulley, a ratchet-wheel on the said shaft, a pawl adapted to engage the said ratchet-wheel, an endless conveyer, sprocket-wheels adapted to be engaged by the conveyer, means connecting the said shaft with the sprocket-wheels, a gear-wheel on the second shaft, means for locking said wheel to said shaft, drums on the said shaft, cables adapted to wind on the said drums, and means for driving the first-mentioned shaft.

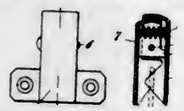
3. A device of the kind described comprising a stationary frame, a hinged frame adapted to be moved vertically, an endless conveyer adapted to travel over the frames, skids carried by the hinged frame and adapted to be projected in advance of same and receive logs from the conveyer, means for driving the conveyer, means for raising and lowering the hinged frame, and a platform carried by one side of the hinged frame, as and for the purpose set forth.

4. A device of the kind described comprising a stationary frame, a movable frame hinged thereto carrying a shaft, carriers arranged on said shaft, skids arranged in the carriers and means for driving the shaft for the purpose described.

5. A device of the kind described comprising a stationary frame, a movable frame hinged thereto, a shaft mounted in said frame, pulleys mounted on said shaft, carriers arranged on said shaft skids working through said carriers, and means for driving the shaft for the purpose described.

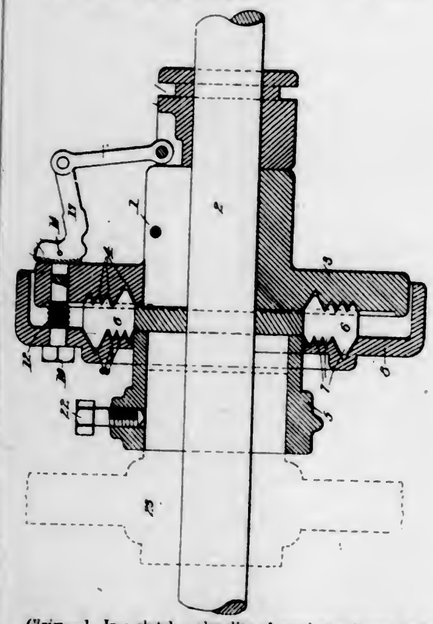
6. A device of the kind described, comprising a frame a shaft mounted in said frame, carriers arranged on the frame provided with grooves, guide-arms, extending upwardly from said carriers, pulleys mounted loosely on said shaft, working in the grooves of the carriers, said skids working on the pulley and through the guide-arms, for the purpose described.

821,090. FASTENER FOR WINDOW-SASH, DOORS, &c. OLAUS A. DAHL, Nash, N. D. Filed Jan. 4, 1906. Serial No. 294,553.



Claim.—A latch comprising a bracket 7 pressed from a single piece of metal and provided with laterally-turned flanges, a latch 5 pressed from another piece of metal and provided with two-way beveled cam-flanges 8, and with laterally-turned flanges, the said flanges of the bracket 7 and latch 5 overlapping one with the other thus affording a casing, a spring 9 within said casing compressed between the bracket 7 and the latch 5, and a latch-bail engageable with said cam-flanges 8, substantially as described.

821,091. CLUTCH. JEREMIAH Y. EVANS, Philadelphia, Pa. Filed Sept. 8, 1904. Serial No. 223,690.



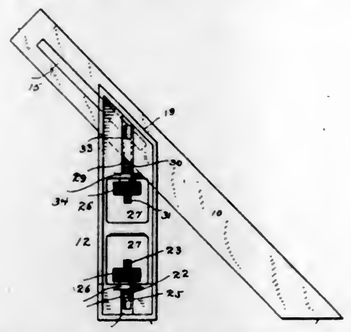
Claim.—1. In a clutch a plurality of members adapted to frictionally engage each other, one of said members being provided with a plurality of V-shaped annular projections of different size and another member provided with annular grooves corresponding in size and arrangement with the projections on the first-named member, and means for exerting a clamping pressure between the two members.

2. In a clutch, a friction-plate provided with a plurality of V-shaped annular projections of different size upon each side thereof, plates provided with grooves corresponding in size and arrangement with the said projections, mounted upon each side of the friction-plate and means for exerting a clamping pressure between the said plates and disk.

3. In a clutch, a friction-plate provided with a large V-shaped annular projection and one or more relatively small V-shaped annular projections adjacent thereto upon each side of the said plate, the annular arrangement of the projections on one side of the plate being opposite to the annular arrangement of the projections on the other side, friction-disks provided with grooves corresponding in size and arrangement with the said projections mounted adjacent to the friction-plate and located on each side thereof, and means for exerting a clamping pressure between the said plates and disk.

4. In a clutch, a friction-plate and a disk adapted to frictionally contact therewith, to produce a clamping engagement, a cam provided with a ball-race on its bearing-surface and balls therein, said cam bearing upon the surface of the said disk, and means to operate the cam to exert a clamping pressure between the plates and disk.

821,092. ADJUSTABLE AND SEPARABLE SQUARE AND MITER. PHILO L. FOX, Bridgeport, Conn. Filed Nov. 24, 1905. Serial No. 288,922.



Claim.—1. An adjustable and separable square and miter comprising sliding and miter blades, a handle having in one end in the direction of its width a transverse slot adapted to receive the sliding blade and in the other end an oblique slot adapted to receive the miter-blade, said sliding and miter blades being respectively adjustable and non-adjustable, the miter-blade having an oblique end and being of a length to contact with the inner edge of the sliding blade, said blades and handle forming a complete triangle, and means for detachably securing said blades to the handle.

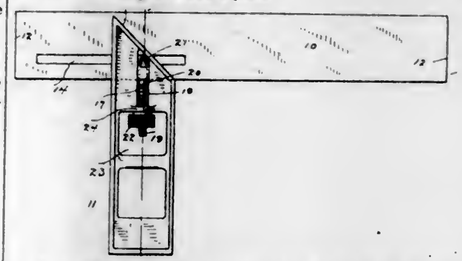
2. A square and miter comprising a handle having in one end in the direction of its width a transverse slot 20 and a slot 21 longitudinal to the handle, at the other end an oblique slot 28 and a slot 29 longitudinal to the handle, a sliding blade in slot 20 provided with a slot 15, a miter-blade in slot 28 provided with a hole 17, the miter-blade having an oblique end and being of a length to contact with the inner edge of the sliding blade, said blades and handle forming a complete triangle, locking-rods in slots 21 and 29 provided with undercut heads which engage respectively said slot and hole and nuts on said rods by which the blades are detachably secured to the handle.

3. A square and miter comprising a handle having in one end in the direction of its width a slot 20 and a slot 21 longitudinal to the handle, at the other end an oblique slot 28 and a slot 29 longitudinal to the handle and recesses 27, a sliding blade in slot 20 provided with a slot 15, a miter-blade in slot 28 provided with a hole 17, the miter-blade having an oblique end and being of a length to contact with the inner edge of the sliding blade, said blades and handle forming a complete triangle, locking-rods in slots 21 and 29 having heads adapted to engage said slot and hole respectively and nuts on said rods lying in recesses 27 by which the blades are secured to the handle.

4. A square and miter comprising a handle having in one end in the direction of its width a slot 20 and a slot 21 longitudinal to the handle, at the other end an oblique slot 28 and a slot 29 longitudinal to the handle, a sliding blade in slot 20 provided with a slot 15, a miter-blade in slot 28 provided with a hole 17, the miter-blade having an oblique end and being of a length to contact with the inner edge of the sliding blade, said blades and handle forming a complete triangle, locking-rods in slots 21 and 29 cut away on one side to receive the blades and having undercut heads adapted to engage the slot and hole respectively and nuts on said rods by which the blades are secured to the handle.

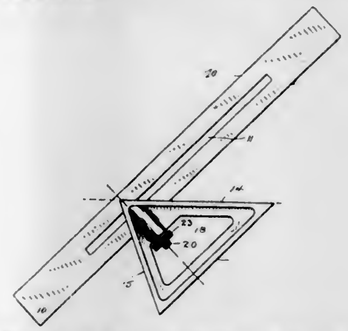
821,093. ADJUSTABLE AND SEPARABLE SQUARE AND MITER. PHILO L. FOX, Bridgeport, Conn. Filed Nov. 24, 1905. Serial No. 288,923.

Claim.—1. A square and miter comprising a handle having at one end an inclined face to serve as a miter, in the direction of its width a transverse slot and a longitudinal open-side slot, a blade lying in the transverse slot and also provided with a slot, a locking-rod lying in the longitudinal slot and having an undercut bead adapted to engage the wall of the slot in the blade, threaded at its opposite end and cut away on one side to receive the blade below the slot and a nut on said rod for locking the blade in place.



2. A square and miter comprising a handle having in the direction of its width a transverse slot, and formed with a longitudinal open-side slot with a bridge-piece at the lower end thereof and having a recess below said bridge-piece, a blade lying in the transverse slot and also provided with a slot, a locking-rod lying in the longitudinal slot and having a head adapted to engage the wall of the slot in the blade and a nut on said rod engaging the wall of the recess and the bridge-piece, whereby the blade is locked in place.

821,094. IMPLEMENT FOR LAYING OUT MITERS AND OCTAGONS. PHILO L. FOX, Bridgeport, Conn. Filed Jan. 15, 1906. Serial No. 296,048.



Claim.—1. An implement for laying out miters and octagons comprising a handle having a base, a face at an angle of forty-five degrees thereto, and an octagon face at an angle of sixty-seven and one-half degrees to said base, and at the intersection of said faces a slot lying parallel with the sides and the bottom of which is parallel with the base of the handle, a blade in said slot and means for securing the blade at any desired longitudinal adjustment.

2. An implement for laying out miters and octagons comprising a handle having a base, a face at an angle of forty-five degrees thereto, and an octagon face, at an angle of sixty-seven and one-half degrees to said base, and at the intersection of said faces a slot lying parallel with the sides and the bottom of which is parallel with the base of the handle, a blade in said slot itself provided with a longitudinal slot, a locking-rod in the handle having a head engaging the wall of the slot in the blade and a nut whereby the blade is locked in place.

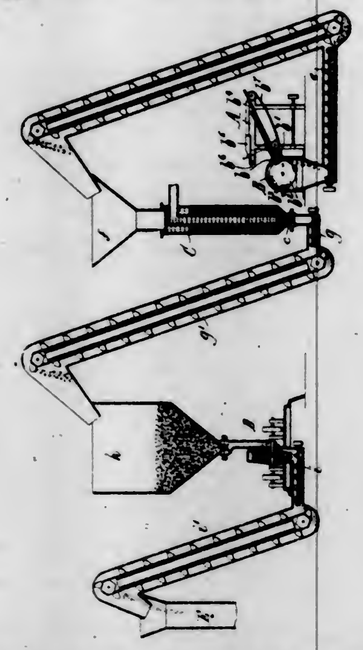
3. An implement for laying out miters and octagons comprising a handle having a base, a face at an angle of forty-five degrees thereto, and an octagon face, at an angle of sixty-seven and one-half degrees to said base, and at the intersection of said faces a slot lying parallel with the sides and the bottom of which is parallel with the base of the handle, a blade in said slot itself provided with a longitudinal slot, and a locking-rod threaded at one end, cut away on one side to receive the portion of the blade below the slot and having an undercut head engaging the slot, and a nut on said rod by which the blade is locked in place.

4. An implement for laying out miters and octagons comprising a handle having a base, a face at an angle of forty-five degrees thereto, and an octagon face at an angle of sixty-seven and one-half degrees to said base, at the intersection of said faces a slot lying parallel with the sides, and the bottom of which is parallel with the base

of the handle, an opening in the handle having a wall parallel with the bottom of the slot, and a hole intersecting the slot and the opening at right angles thereto, a slotted blade in the slot in the handle, a locking-rod in the hole having an undercut head engaging the slot in the blade, and a nut on the rod adapted to bear against the wall of the opening to lock the blades at any desired adjustment.

5. The combination with a handle comprising a base and faces at angles thereto of forty-five and sixty-seven and one-half degrees respectively, of a blade and means for adjustably securing the blade to the handle at an angle of forty-five and sixty-seven and one-half degrees to the faces respectively.

821,095. APPARATUS FOR REDUCING HOT OIL-CAKE. ALFRED W. FRENCH, Piqua, Ohio. Filed Nov. 26, 1904. Serial No. 234,367.



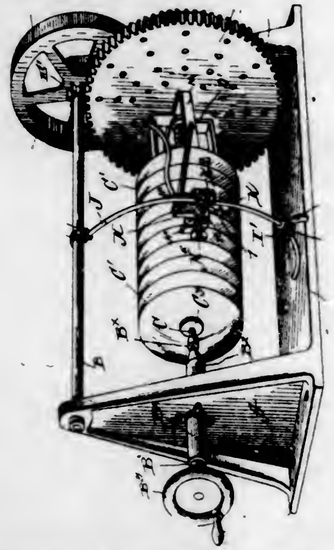
Claim.—1. In an apparatus for treating oil-cake, the combination of a machine for reducing the hot oil-cake into pieces or particles, means for conveying the reduced cake from the reducing-machine to a cooler and drier, and a cooler and drier in which the reduced cake is cooled and dried, substantially as set forth.

2. In an apparatus for treating oil-cake, the combination of a machine for reducing the hot oil-cake into pieces or particles, means for conveying the reduced cake from the reducing-machine to a cooler and drier, and a cooler and drier consisting of a receptacle in which the cake is subjected to an air-current to cool and dry it, substantially as set forth.

3. In an apparatus for treating oil-cake, the combination of a machine for reducing the hot oil-cake into pieces or particles, means for conveying the reduced cake from the reducing-machine to a cooler and drier, a cooler and drier in which the reduced cake is cooled and dried, means for conveying the reduced cake from the cooler and drier to a grinding-mill, and a grinding-mill for the reduced cake, substantially as set forth.

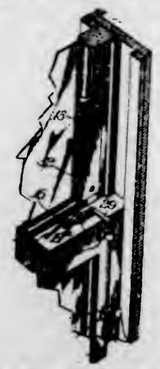
821,096. DISK-SHARPENER. GABRIEL GERARDY, Blackwell, Okla., assignor of one-half to E. Y. Alkire, Bendena, Kans. Filed June 5, 1905. Serial No. 263,858.

Claim.—1. An apparatus for holding knives for sharpening disks consisting of a frame with standards rising therefrom, a bar connecting said standards, a disk-carrying shaft, and means for rotating the same, a resilient rod having one end bent to form a loop engaging said bar and movable thereon, a knife-holding yoke, a knife carried by said yoke, and a clamp fixed to said yoke and adjustably held upon said rod, as set forth.



2. An apparatus for holding knives for sharpening disks consisting of a frame with standards rising therefrom, a bar connecting said standards, a disk-carrying shaft, and means for rotating the same, a resilient rod having one end bent to form a loop engaging said bar, an adjustable winged collar on said rod, a clamping member adjustably held upon said rod and provided with an integral ball-socket, a knife-carrying yoke, a shaft mounted thereon, a bull at one end of said shaft engaging said socket, and a handle fixed to said yoke, as set forth.

821,097. SASH-LOCK FOR WINDOWS. EDWARD J. GLACKIN, Chicago, Ill. Filed Dec. 15, 1904. Serial No. 236,932.



Claim.—1. In a window, the combination with a casing, of the two sashes movable therein and relative to each other, a plurality of locking-dogs on one sash, a corresponding plurality of members on the other sash adapted to be engaged by the dogs in any desired relative position of the sashes, said dogs being adapted to engage said members without interfering with the movement of the sashes relative to the casing and connections for simultaneously causing the dogs to engage the members whereby the lower sash may be used for raising and lowering the upper sash any desired amount.

2. In a window, the combination with a casing, of the two sashes movable therein and relative to each other, a plurality of locking-dogs on one sash, a corresponding plurality of rack-bars on the other sash adapted to be engaged by the dogs, said dogs being adapted to engage said rack-bars without interfering with the movement of the sashes relative to the casing and connections for simultaneously causing the dogs to engage the teeth of the rack-bars whereby the lower sash may be used for raising and lowering the upper sash any desired amount.

3. In a window, the combination with a casing, of the two sashes movable therein and relative to each other, a plurality of pivoted locking-dogs on one sash, a corresponding plurality of members on the other sash adapted to be engaged by the dogs in any desired relative position of the sashes, said dogs being adapted to engage said members without interfering with the movement of the sashes relative to the casing and a link connecting the dogs to compel their simultaneous movement to engage the members whereby the lower sash may be used for raising and lowering the upper sash any desired amount.

4. In a window, the combination with a casing, of the two sashes movable therein and relative to each other, a plurality of locking-dogs on one sash, a corresponding plurality of members on the other sash adapted to be engaged by the dogs in any desired relative position of the sashes, said dogs being adapted to engage said members without interfering with the movement of the sashes relative to the casing and automatically-operating mechanism to hold the dogs and members in engagement whereby the lower sash may be used for raising and lowering the upper sash any desired amount.

5. In a window, the combination with a casing, of the two sashes movable therein and relative to each other, a plurality of pivoted locking-dogs on one sash, a corresponding plurality of members on the other sash adapted to be engaged by the dogs in any desired relative position of the sashes, said dogs being adapted to engage said members without interfering with the movement of the sashes relative to the casing a link connecting the dogs to compel their simultaneous movement to engage the members, and automatically-operating mechanism to hold the dogs and members in engagement whereby the lower sash may be used for raising and lowering the upper sash any desired amount.

6. In a window, the combination with a casing, of the two sashes movable therein relative to each other, rack-bars on the sides of the outer sash with their teeth facing each other, the pivoted locking-dogs adapted to engage the teeth of the racks, and a link pivoted to the dogs on opposite sides of their pivots, for the purpose described.

7. In a window, the combination with a casing, of the two sashes movable therein and relative to each other, the rack-bars on the sides of the outer sash with their teeth facing each other, the pivoted dogs having the hook-shaped ends mounted on the inner sash, and the flanges secured on the racks between their teeth and the pivots of the dogs.

8. In a window, the combination with a casing, of the two sashes movable therein and relative to each other, a plurality of locking-dogs on the top of the lower sash, a corresponding plurality of members on the sides of the upper sash adapted to be engaged by the dogs in any desired relative position of the sashes, said dogs being adapted to engage said members without interfering with the movement of the sashes relative to the casing and mechanism extending below the top of the lower sash for operating the dogs to cause them to engage with the members, whereby the lower sash may be used for raising and lowering the upper sash any desired amount.

9. In a window, the combination with the casing, of two sashes movable therein and relative to each other, a plurality of locking-dogs on the top of the lower sash, a corresponding plurality of members on the sides of the upper sash adapted to be engaged by the dogs in any desired relative position of the sashes, said dogs being adapted to engage said members without interfering with the movement of the sashes relative to the casing and a single mechanism extending below the top of the lower sash for simultaneously operating all of the dogs to cause them to engage with the members.

10. In a window, the combination with a casing, of the two sashes movable therein and relative to each other, a locking-dog pivoted to swing in a horizontal plane on the top of the lower sash, a member on the side of the other sash adapted to be engaged by the dog in any desired relative position of the sashes, a vertical rock-shaft journaled on the lower sash having an operating-arm on its lower end, connections between the pivoted dog and the top of the rock-shaft, and means for securing the shaft in the locked position of the parts.

11. In a window, the combination with a casing, of the two sashes movable therein and relative to each other, a locking-dog pivoted to swing in a horizontal plane on the top of the lower sash, a member on the side of the other sash adapted to be engaged by the dog in any desired relative position of the sashes, a vertical rock-shaft journaled on the lower sash having an operating-arm on its lower end, connections between the pivoted dog and the top of the rock-shaft, and means for securing the shaft in the locked position of the parts, said means consisting of a segmental ratchet secured to the rock-shaft and having beveled teeth, and a spring-pressed plunger coöperating therewith.

12. In a window, the combination with a casing, of the two sashes movable therein and relative to each other, the racks secured to the sides of the upper sash and having their teeth facing each other, the coöperating dogs pivotally mounted on the top of the lower sash, the link connecting said dogs and secured thereto on opposite sides of their pivots, the vertical rock-shaft journaled on the lower sash, the arm for operating said rock-shaft on the lower end, the arm on the upper end of the rock-shaft having the pin, and the arm on the adjacent dog having the slot with which the pin coöperates.

13. In a window, the combination with a casing, of the two sashes movable therein and relative to each other, locking-dogs carried on the top of the lower sash immediately adjacent the sides of the upper sash and extending when in their locking position into the plane of the upper sash, but not otherwise, so that the sashes can pass each other when unlocked, members on the sides of the upper sash with which the dogs are adapted to engage in any position of adjustment without interfering with the movement of the sashes relative to the casing, and connections for simultaneously causing the dogs to engage the members, whereby the lower sash may be used for raising and lowering the upper sash any desired amount.

14. In a window, the combination with the casing, of the two sashes movable therein and relative to each other, locking-dogs pivoted on the top of the lower sash immediately adjacent the sides of the upper sash and having their noses extending when in their locking position into the plane of the upper sash, but not otherwise, so that the sashes can pass each other when unlocked, rack-bars on the sides of the upper sash with which the dogs are adapted to engage in any position of adjustment without interfering with the movement of the sashes relative to the casing, and connections for simultaneously causing the dogs to engage the rack-bars, whereby the lower sash may be used for raising and lowering the upper sash any desired amount.

15. In a window, the combination with the casing, of the two sashes movable therein and relative to each other, locking-dogs pivoted on the top of the lower sash immediately adjacent the sides of the upper sash and having their noses extending when in their locking position into the plane of the upper sash, but not otherwise, so that the sashes can pass each other when unlocked, rack-bars on the sides of the upper sash with which the dogs are adapted to engage in any position of adjustment without interfering with the movement of the sashes relative to the casing, connections for simultaneously causing the dogs to engage the rack-bars, whereby the lower sash may be used for raising and lowering the upper sash any desired amount, and a spring-pressed ratchet for holding the dogs in engagement with the members, substantially as and for the purpose described.

821,098. AUTOMATIC FIRE-ALARM. JOHN W. GRIFFIN, Pawtucket, R. I. Filed Apr. 10, 1905. Serial No. 254,739.

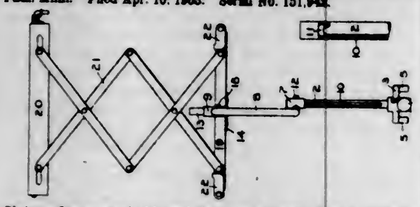


Claim.—1. In an automatic fire-alarm, a base having upon one face a longitudinal channel, and upon the opposite face having longitudinal and transverse intersecting channels, binding-posts, nuts and circuit-wires connected in the last-named channels, a tubular section of insulating material in the first-mentioned channel, caps on said section having feet held by said binding-posts, a fixed contact within said tubular section, a movable contact within said section, and fusible means for normally holding said contacts separated.

2. In an automatic fire-alarm, a tubular section of insulating material, a fixed contact therein, a spring-actuated contact in said section, a rod carrying said movable contact with one end extended through said section, and a perforated sleeve outside said section and receiving the extended end of said rod and held to the latter by fusible material filling said perforations.

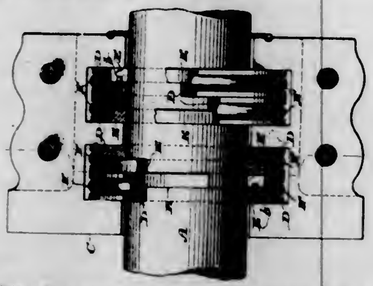
3. In an automatic fire-alarm, a tubular section of insulating material, a fixed contact therein, a spring-actuated contact in said section, a rod carrying said movable contact with one end extended through said section, and a perforated sleeve outside said section and receiving the extended end of said rod and held to the latter by fusible material filling said perforations, said perforations being distributed about the said sleeve, and the sleeve bearing against the end of the tubular section.

821,099. COPY-HOLDER FOR TYPE-WRITERS. EDWARD A. HOLARTA, St. Paul, Minn., assignor of one-half to James C. Bramwell, St. Paul, Minn. Filed Apr. 10, 1903. Serial No. 151,942.



Claim.—In a copy-holder of the class described, the combination of a standard provided with a longitudinal slot having a laterally-extending portion with a downward extension at its end, a collar slidable upon said standard and carrying a pin projecting into said slot, an arm carried by said collar, a post, a collar carried by the upper end of said arm and fitting over said post, a longitudinal slot formed in the side of said post and having a laterally-extending portion with an upward extension at its end, a pin carried by said collar and projecting into said slot, and a copy-holding frame carried by said post.

821,100. PISTON-ROD PACKING. JOHN H. HOYER, Corliss, Wis. Filed Dec. 23, 1905. Serial No. 293,905.



Claim.—1. A piston-rod packing comprising an outer ring divided into segments each having one side only thereof provided with a right-angled recess, an inner ring divided into segments fitting the recesses of the outer ring-segments with which they break joints and have their sides and peripheries in ground-joint contact, and an annular spring under tension on the segments of said outer ring.

2. A piston-rod packing comprising an outer ring divided into segments each having one side only thereof provided with a right-angled recess, an inner ring divided into segments fitting the segments aforesaid with which they break joints and have their sides and peripheries in ground-joint contact, means for determining the proper position of the inner ring-segments, and an annular spring under tension on the segments of said outer ring.

3. A piston-rod packing comprising an outer ring divided into segments each having one side only thereof provided with a right-angled recess, an inner ring divided into segments fitting the segments aforesaid with which they break joints and have their sides and peripheries in ground-joint contact, stop-pins projecting from the outer ring-segments between the ends of the inner ring-segments, and an annular spring under tension on the segments of said outer ring.

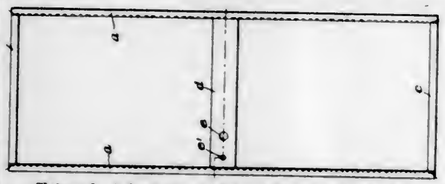
4. A piston-rod packing comprising duplicate outer rings each divided into segments having one side only thereof provided with a right-angle recess, duplicate inner rings divided into segments fitting the recesses of the outer rings with which they break joints and have their sides and peripheries in ground-joint contact, the opposing surfaces of the duplicate parts in the packing being in similar contact, and annular springs under tension on the segments of the aforesaid outer rings.

821,101. WINDOW. HIRAM HYDE, Westworth, Canada. Filed Aug. 14, 1905. Serial No. 274,060.

Claim.—The combination in a window of an outwardly and downwardly projecting sill, an interior ventilating-sash resting on said sill, an exterior sash separated by an air-space from said sill, and a slide-bar ventilator located in the horizontal plane of the stool-cap and adapted to the admission of air from the said air-space; substantially as described and for the purpose specified.



821,102. METALLIC DOOR OR PANEL FOR LOCKERS. RICHARD W. JEFFERIS, Merchantville, N. J., assignor to Merritt and Company, a Corporation of New Jersey. Filed Dec. 8, 1905. Serial No. 290,891.



Claim.—1. A door or panel for metal lockers and the like, consisting of a pair of vertical angle-irons, connected at the top and bottom by cross-bars, and a metal sheathing having its vertical side edges bent over the front flanges of the vertical angle-irons and its upper and lower edges bent over the top and bottom cross-bars.

2. A dor or panel for metal lockers and the like, consisting of a pair of vertical angle-irons, connected at the top and bottom by cross-bars secured at their ends to said angle-irons at a distance in from their angular edges to form vertical shoulders, and a metal sheathing provided with vertical shoulders fitting over the shoulders of the angle-irons and having its vertical side edges beyond said shoulders bent over the front flanges of the vertical angle-irons and its upper and lower edges bent over the top and bottom cross-bars.

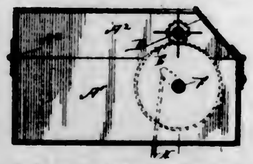
3. A door or panel for metal lockers and the like, consisting of a frame composed of vertical angle-irons *a a* and cross-bars *b c* secured to said angle-irons at their ends at a distance in from the angles of said irons to form shoulders *k*, and a sheathing of sheet metal having its sides formed with stamped shoulders *g* fitting over the shoulders *k* of the angle-irons and its edges beyond said shoulders bent about the front flanges of said angle-irons.

4. The metal frame for doors and panels of lockers and the like, composed of parallel irons, and cross-bars fastened at their ends to the inner side faces of said irons at a distance in from the outer front faces to form shoulders at the corners of said irons.

5. The metal frame for doors and panels of lockers and the like, composed of parallel irons, and cross-bars fastened at their ends to the inner side faces of said irons at a distance in from the outer front faces to form shoulders at the corners of said irons, in combination with a sheathing fitted over said shoulders and having its edges bent over the connecting cross-bars and also over the outer edges of the front faces of said irons.

6. A door or panel for metal lockers and the like, consisting of two metal side bars, cross-bars fastened at their ends to the inner side faces of said side bars, and a metal sheathing having its side edges bent about the outer edges of the metal side bars, and its upper and lower edges bent over the tops of the cross-bars between said side bars.

821,103. VEGETABLE-PARER. WILLIAM F. JETTER, Philadelphia, Pa. Filed May 5, 1905. Serial No. 258,959.



Claim.—1. A device for paring vegetables comprising a box consisting of an upper section and lower section, the upper section having an opening in the top thereof, a shaft mounted in said upper section, said shaft having a plurality of paring-brushes connected thereto, said brushes being of a length to extend into the said opening in the top, and means for rotating the shaft carrying the brush, as set forth.

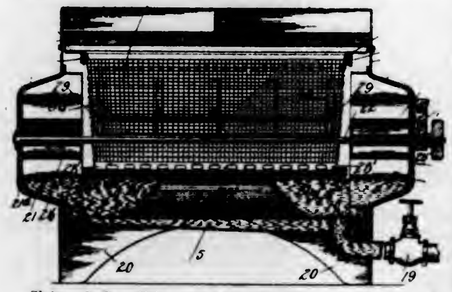
2. A device for paring vegetables comprising a box, consisting of an upper and lower section, the upper section having a transverse opening, in the top thereof, a shaft mounted in said upper section, and a plurality of paring-brushes connected to said shaft, the fibers of each brush being arranged in the same plane, said fibers being of such length as to extend into the transverse opening in the top, a pinion mounted on the shaft, a shaft journaled in the lower section of the box, a gear mounted upon said shaft and adapted to mesh with the pinion, the crank-arm arranged upon the end of the shaft, the pitman connected thereto and the treadle connected to the pitman, all arranged and adapted to operate substantially as described.

821,104. BAKING-PAN. EDWARD KATZINGER, Chicago, Ill. Filed Nov. 7, 1904. Serial No. 231,626.



Claim.—As a new and useful article of manufacture a pan provided with a concavo-convex corner having two folds and in which one fold of the metal on the inside extends from the bottom of the pan at or about the center of such corner, radially or outwardly, conforming to the concave surface of the corner and thence upwardly along the upright corner formed by the contiguous sides of the pan; and the outer fold of the metal extends from a point at the bottom of the pan at or about the center of such corner, upwardly and spirally toward the opposite side of the pan and conforming to the convex surface of the corner, one wall of the pan having a sharp inward curve with its axis upright, terminating at the apex of the said inner fold and which inward curve is crossed in a spiral direction by the apex of the outer fold, and the outer ply of the outer fold being a continuation of the contiguous wall of the pan and extending in an out curve around the said curved part of the first said wall.

821,105. DISH-WASHING MACHINE. OSCAR KITCHELL and CARL W. SWANSON, Chicago, Ill., assignors, by direct and mesne assignments, to said Swanson, George W. Powers, and Sherman W. Prince, Chicago, Ill. Filed June 17, 1905. Serial No. 265,639.



Claim.—1. In a dish-washing machine, the combination with a casing providing a dish-space, and a water-space at a lower level than the dish-space, of a rotatable blade-wheel within the casing and without the dish-space, disposed with its side toward the dish-space, and arranged to throw water into the dish-space.

2. In a dish-washing machine, a casing providing a dish-space, and a water-well, a blade-wheel having an open side, disposed within the casing with its open side toward the dish-space, said wheel being arranged to dip into the water-well and adapted to throw water from the well into the dish-space.

3. In a machine of the character described, a casing providing a dish-space and a water-space, a shaft extending throughout the casing and blade-wheels on said shaft at opposite ends of the casing, each arranged to throw water from the water-space into the dish-space.

4. In a machine of the character described, a casing providing a dish-space and a water-space therebelow, a blade-wheel within the casing arranged transversely of the casing with its side toward the dish-space, said wheel extending into and out of the water-space, and said wheel being arranged when rotated to throw water from the well upward and inward into the dish-space.

5. In a machine of the class described, a casing providing a dish-space and a water-space, and a blade-wheel arranged transversely of the casing with its side toward the dish-space, extending into and without the water-space, and provided with a part closing its side away from the dish-space and a series of blades each comprising portions at different radial distances from the center of the wheel, disposed in substantial parallelism, but out of alinement, and a curved portion connecting said substantially parallel portions.

6. In a machine of the class described, a casing providing a dish-space and a water-space, a blade-wheel within the casing arranged transversely thereof, to present its side toward the dish-space, and extending into and without the water-space, said wheel having its largest diameter on the side adjacent the dish-space, and decreasing in diameter toward its other side, and being closed throughout its smaller side and periphery, and said wheel being further provided with blades each comprising substantially parallel, non-alining portions extending in a generally radial direction, and curved portions connecting said non-alining straight portions.

7. In a machine of the character described, a casing providing a dish-space and a water-space, confronting blade-wheels each disposed with its side toward the dish-space and arranged to throw water from the water-space into the dish-space, and means for simultaneously driving said blade-wheels.

8. In a machine of the character described, a casing providing a dish-space and a water-space, oppositely-disposed blade-wheels without the dish-space, arranged to present their sides toward the dish-space and adapted to throw water from the water-space into the dish-space, a shaft common to said wheels and means for rotating the shaft.

9. In a machine of the character described, a casing, a false bottom in said casing providing wells at opposite ends thereof, wheels at opposite ends of the casing arranged transversely thereof each to present its side toward the center of the casing, each of said wheels being arranged to dip into the well at its end of the casing and adapted to throw water from said well into the space intermediate the wheels, and means in said space intermediate the wheels for supporting dishes above the level of the water-well.

10. In a machine of the character described, a casing, a shaft extending through said casing, wheels mounted upon opposite ends of said shaft and disposed to throw water from the bottom of the casing into the space between said wheels, and means for supporting dishes in the space between said wheels above the bottom of the casing, comprising a bottom member having an elevated portion adapted to straddle the wheel-driving shaft.

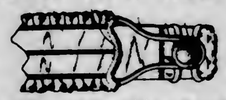
11. In a machine of the character described, a casing providing a dish-space, wheels within the casing for throwing water from the bottom of said casing into said dish-space, and means for supplying a water-spray to the interior of said casing independent of and in addition to said wheels.

12. In a machine of the class described, the combination with a casing of wheels arranged therein, adapted to throw water from the bottom of the casing upon the dishes, and a sprayer 36, arranged at the top of the casing and adapted to be connected with an extraneous source of water-supply.

13. In a machine of the class described, the casing 11, the wheels 27 and the top 33 provided with the splash-ribs 34, substantially as described.

14. In a machine of the class described, a casing provided at its end with recesses 12 opening into the interior of the casing, wheels disposed in said recesses with their sides confronting each other, means for driving wheels simultaneously, and means for supporting said dishes between the wheels above the level of the water into which said wheels dip, substantially as described.

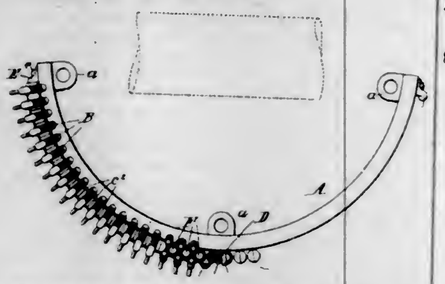
821,106. HOSE-SUPPORTER LOOP. ISAAC B. KLEINERT, New York, N. Y., assignor to I. B. Kleinert Rubber Company, a Corporation of West Virginia. Filed May 9, 1905. Serial No. 259,618.



Claim.—A hose-supporter comprising an attaching-tape, a hose-supporter loop having an inwardly-bent upper bar, and a line of stitching following the bend of the upper bar and securely fastening

said bar to the tape, whereby endwise movement of the upper bar is prevented by the line of stitching.

821,107. TYPE-WRITING MACHINE. EMMIT G. LATTA, Friendship, N. Y., assignor of one-half to Harvey A. Moyer, Syracuse, N. Y. Filed Sept. 8, 1902. Serial No. 122,476.



Claim.—1. The combination in a type-writing machine, of a series of vibrating type-bars, a series of hangers providing substantially spherical bearing-heads for said type-bars each of which heads extends between and partially supports two adjacent type-bars, and a circular row of balls carried by each type-bar and bearing on said bearing-heads, substantially as set forth.

2. The combination in a type-writing machine, of a series of vibrating type-bars, a series of hangers providing substantially spherical bearing-heads for the type-bars each of which heads is formed by two adjacent hangers and extends between and partially supports two adjacent type-bars, and a circular row of balls carried by each type-bar and bearing on said bearing-heads, substantially as set forth.

3. The combination in a type-writing machine, of a series of vibrating type-bars, a series of hangers providing bearing-heads each of which extends between and partially supports the bearing ends of two adjacent type-bars, and a circular row of bearing-balls carried by one of said bearing parts and bearing on an integral bearing-face on the other bearing part, substantially as set forth.

4. The combination in a writing-machine having a series of vibrating type-bars, and hangers therefor arranged in a segment and laterally adjustable, of means for adjusting the hangers from the central part of the segment toward its ends, substantially as set forth.

5. The combination in a writing-machine having a series of vibrating type-bars, a supporting-segment, and type-bar hangers arranged side by side on said segment and laterally adjustable thereon, of means for adjusting the hangers from the central part of the segment outwardly, and from its ends inwardly, substantially as set forth.

6. The combination in a writing-machine of a series of vibrating type-bars each containing a row of bearing-balls, a segment, a series of hangers supported by and independently secured to said segment and having opposable laterally-adjustable bearing-surfaces for the bearing-balls, each hanger being adapted to be detached from the segment without removing its neighbor, and means for adjusting the bearings by moving the hangers along the segment, substantially as set forth.

7. The combination in a writing-machine having a series of vibrating type-bars, of a series of U-shaped hangers supporting the bars in a segment at their free ends, and having their adjoining ends connected, with means for closing the ends of the hangers by crowding them into closer contact, substantially as set forth.

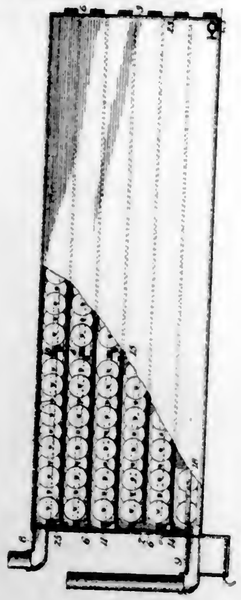
8. The combination in a writing-machine having a series of vibrating type-bars, of a series of U-shaped hangers supporting the bars at their free ends, and having said ends in contact, with means for closing the ends of the hangers by crowding them together, substantially as set forth.

9. In a type-writing machine, the combination of a series of vibrating type-bars, each containing a circular row of bearing-balls, and a series of U-shaped hangers each formed of a single piece of sheet metal and having a pair of opposable center bearings and adapted to be sprung into operative position with the balls, substantially as set forth.

10. In a type-writing machine, the combination of a series of vibrating type-bars, each containing a circular row of bearing-balls, and a series of hangers, each having a pair of opposable center bearings for the balls, and each hanger in direct contact with the neighboring hanger whereby the bearings are held against lateral movement, substantially as set forth.

11. In a type-writing machine, the combination of a series of vibrating type-bars, each containing a circular row of bearing-balls, and a series of hangers each having hollow or cup-shape bearings for the balls, and a connecting-ball arranged in the hollow parts of adjoining hangers, substantially as set forth.

821,108. AMALGAMATOR. ALLAN G. MACDONELL, Chevy Chase, Md. Filed Feb. 27, 1903. Serial No. 145,430.



Claim.—1. An amalgamator comprising a substantially closed tank, partitions therein arranged to afford a tortuous passage through the tank, removable plates having amalgamated surfaces which completely inclose said passage, vertical disks arranged in said passage parallel with the direction of flow of the liquid passing therethrough, and means for imparting motion to said disks, as set forth.

2. An amalgamator comprising a substantially closed tank, partitions therein arranged to afford a tortuous passage through the tank, and a plurality of series of intermeshing amalgamated disks in said tank, as set forth.

3. An amalgamator comprising a substantially closed tank, partitions therein arranged to afford a tortuous passage through the tank, a plurality of series of intermeshing amalgamated disks in said tank, and means for revolving said disks, as set forth.

4. An amalgamator comprising a substantially closed tank, partitions therein arranged to afford a tortuous passage through the tank, removable plates having amalgamated surfaces which completely inclose said passage, intermediate vertical amalgamated plates arranged in said passage parallel with the direction of flow of the liquid passing therethrough, said plates mounted in removable frames, as set forth.

5. An amalgamator comprising a conduit, an inlet and an outlet therefor, and a series of intermeshing revoluble amalgamated disks mounted upon parallel axes in said conduit, as set forth.

6. An amalgamator comprising a conduit, an inlet and an outlet therefor, a series of intermeshing revoluble amalgamated disks, mounted upon parallel axes in said conduit, and a shallow tray beneath said disks, as set forth.

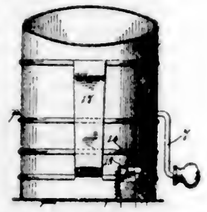
7. An amalgamator comprising a conduit, a series of intermeshing revoluble amalgamated disks mounted upon parallel axes in said conduit, a tray beneath said disks, and partitions in said tray, as set forth.

8. An amalgamator comprising a substantially closed tank, amalgamated surfaces therein, a removable end plate, and a device cooperating with said amalgamated surfaces to move them longitudinally of the tank, as set forth.

9. An amalgamator comprising a substantially closed tank, amalgamated surfaces therein, a removable end plate, a slotted end plate, and a device cooperating with said amalgamated surfaces and slotted plate to move the amalgamated surfaces longitudinally of the tank, as set forth.

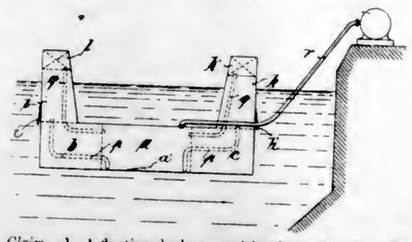
10. In an amalgamator, a shallow tray for containing mercury, partitions arranged therein at an angle to each other, whereby an even distribution of the mercury over the bottom of the tray is secured and amalgamated disks revoluble in contact with said mercury, as set forth.

821,109. FLOUR-SIFTER. HELEN MACKAY, Prince Albert, Canada. Filed Oct. 6, 1905. Serial No. 281,584.



Claim.—In combination with a sifter comprising a receptacle, a sieve, and a rotary agitator, a hinged bottom closure for the receptacle, springs secured to the closure and terminating in a yoke having a ring thereon, and retaining members on the side of the receptacle adapted to be engaged by the yoke.

821,110. FLOATING DOCK. ALFRED MEHLHORN, Dietrichsdorf, near Kiel, and PHILIPP VON KLITZING, Neumühlen, near Kiel, Germany. Filed July 30, 1904. Serial No. 218,785.



Claim.—1. A floating dock, comprising in combination, chambers in the bottom pontoon of said dock, means connecting the bottom of said chambers with the exterior water, side air-chambers in said dock, and means connecting the chambers in said bottom pontoon with said side chambers, substantially as, and for the purpose set forth.

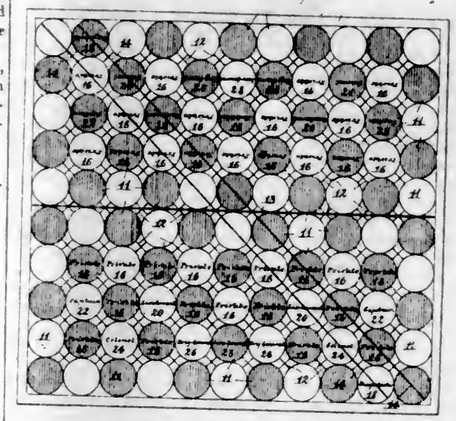
2. A floating dock, comprising in combination, chambers in the bottom pontoon of said dock, means connecting the bottom of said chambers with the exterior water, side air-chambers in said dock, side water-chambers in said dock, means connecting the chambers in said bottom pontoon with said side air-chambers and means connecting said side water-chambers with the bottom part of the chambers in said bottom pontoon, substantially as, and for the purpose set forth.

3. A floating dock, comprising in combination, chambers in the bottom pontoon of said dock, means connecting the bottom of said chamber with the exterior water, side air-chambers in said dock, means connecting the chambers in said bottom pontoon with said side chambers, an air-chamber outside said dock, and means connecting said outside air-chamber with the chambers in said bottom pontoon, substantially as, and for the purpose set forth.

821,111. GAME APPARATUS. CHARLES A. MILLER, Buffalo, N. Y. Filed Feb. 23, 1905. Serial No. 246,923.

Claim.—1. A game apparatus comprising a game-board having its surface divided into playing-spaces, said spaces divided into two fields separated by a center line, and parallel lines passing through the playing-spaces diagonally across the board.

2. A game-board having its surface laid off in circular playing-spaces connected by crossed lines between the spaces, said spaces divided into two fields separated by a center line.

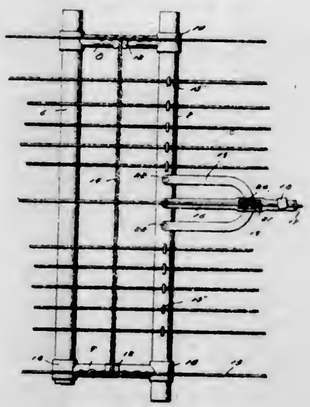


3. A game-board having its surface laid off in circular playing-spaces, said spaces divided into two fields separated by a center line, and game-pieces of different forms adapted to be used in connection with the board.

4. A game-board having its surface laid off in circular playing-spaces arranged in two fields separated by a center line, parallel lines passing centrally through adjacent playing-spaces and extending diagonally across the board, and game-pieces adapted to be used in connection with the board.

5. A game apparatus comprising a game-board having its surface divided into playing-spaces constituting two fields separated by a center line, means for distinguishing two parallel diagonal series of spaces, and movable pieces associated with the board, said pieces being of different shapes.

821,112. WIRE-FENCE MACHINE. ISAAC N. MORFORD, Waynesville, Ill. Filed Oct. 31, 1905. Serial No. 285,246.



Claim.—1. A wire-fence machine comprising a pair of standards, one of which has hooks engageable with line-wires, and upper and lower coupling-bars having sleeves at the ends fitting around the standards and adjustable up and down thereon, and also having projecting forks to engage opposite ends of the stay-wires while they are being twisted.

2. In a wire-fence machine, a standard having hooks to engage the line-wires, a pivoted arm projecting laterally from the standard and having means at its end to engage a line-wire, and a brace pivotally connected to the standard and having a slot-and-pin connection to the arm, to allow the latter to be swung up or down.

821,118. DEVICE FOR HOLDING TARGET-STICKERS. AUSTIN MOUNT, Erie, Pa., assignor of one-fourth to Clarence Johnson, Erie, Pa. Filed May 4, 1905. Serial No. 258,872.



Claim.—1. In a device for holding target-pasters, the combination of a case open at its side and top to permit of the turning up and grasping of the uppermost paster; a stop arranged at the top of the case to limit the upward movement of pasters in said case; the opening through the side of the case having less width at the plane of the stop than the largest cross dimension of the case at the place of the stop, and a spring-follower in the lower part of the case arranged to crowd the pasters upwardly against the stop.

2. In a device for holding target-pasters, the combination of a case open at its side and top to permit of the turning up and grasping of the uppermost paster; a removable stop arranged at the top of the case to limit the upward movement of stickers in said case; the opening through the side of the case having less width at the plane of the stop than the largest cross dimension of the case at the place of the stop, a spring-follower in the lower part of the case arranged to crowd the stickers upwardly against the stop; and means for locking the stop in place.

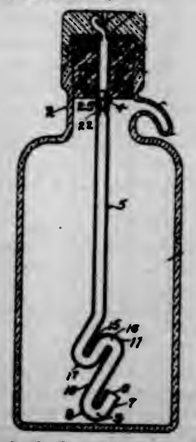
3. In a device for holding target-pasters, the combination of a case open at its side and top to permit the turning up and grasping of the uppermost paster; a spring-finger *a* arranged in one side of the case; a stop *a'* carried by said finger; and the ring B arranged to slide over the case for locking the finger in place.

4. In a device for holding target-pasters, the combination of a case open at its side and top to permit the turning up and grasping of the uppermost paster; the spring-finger *a* arranged in one side of the case and being tensioned to extend outwardly from the case; the stop *a'* projecting from the upper end of the finger over the case; and the ring B arranged to lock the finger in its inward position.

5. In a device for holding target-pasters, the combination of two cases arranged side by side with a slot between them; stops arranged over the cases for holding the pasters in said cases; and means sliding on the cases and extending through the slot between the cases for locking the stops in place.

6. In a device for holding target-pasters, the combination of the cases A and A', each case having a spring-finger *a* with a stop *a'* extending therefrom over the top of the cases and each case being provided with a ring B surrounding the cases and movable on said cases, said cases being sufficiently separated to permit the movement of said rings.

821,114. BOTTLE. JOHN W. MCGOWAN, Cincinnati, Ohio. Filed July 10, 1905. Serial No. 269,036.

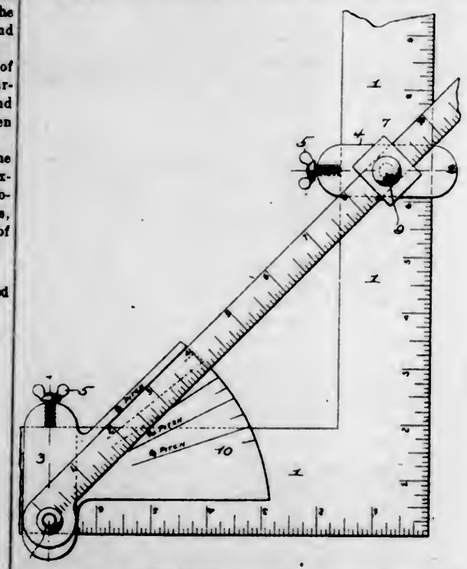


Claim.—1. In a bottle, the combination, with its body and neck, a stopper in said neck, said stopper having a central opening taking longitudinally therethrough, a tube secured in said opening, a trap at the bottom of said tube adjacent to the bottom of the bottle, and a cap secured to the neck of said bottle and taking over said stopper, said neck having a frangible closed spout communicating with the interior of said bottle and arranged to be broken for removing the contents of said bottle, substantially as described.

2. In a bottle, the combination, with its body and neck, of a stopper taking into said neck, said stopper having a central longitudinal opening therethrough, a hollow tube secured in said opening, said tube taking into the body of said bottle and extending to a point adjacent to the bottom of said bottle, said tube being reversely bent at its bottom for forming a trap at the bottom of said tube, and a cap taking over said stopper and secured to said neck for sealing said stopper in said neck, said bottle having a frangible closed spout arranged to be broken for removal of the contents of said bottle, substantially as described.

3. In a bottle, the combination, with its body and neck, of a stopper taking into said neck, said stopper having a central longitudinal hole therethrough, a hollow tube secured in said hole in said stopper, said tube taking into the body of said bottle, said tube having a slanting part extending downwardly from its lower open end, at the bottom of which slanting part said tube has an upwardly-extending curve for forming a trap at the lower end of said tube, a cap taking over said stopper and secured to said neck for sealing said stopper in said neck, said bottle having a frangible closed spout arranged to be broken for removal of the contents of said bottle, said tube having a valve-seat, said cap having a central opening merging into a second valve-seat registering longitudinally with said tube, and a valve in said tube adapted to reciprocate between and engage said valve-seats, substantially as described.

821,115. ATTACHMENT FOR SQUARES. MOSES NICHOLLS, Ottumwa, Iowa, assignor to James D. Gray, William C. Hugus, and Willard Webster, Ottumwa, Iowa. Filed Nov. 25, 1905. Serial No. 289,037.



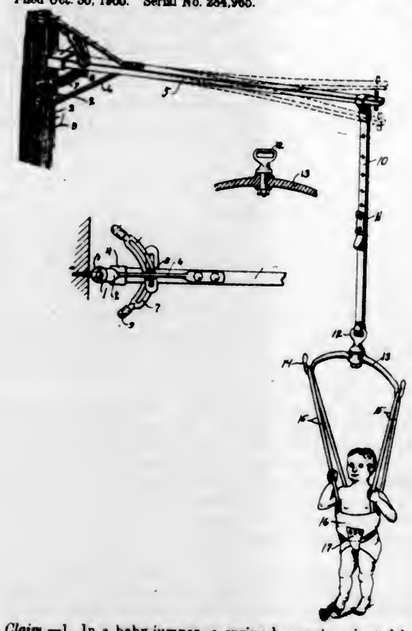
Claim.—1. An attachment for a square, comprising two clips, means for securing said clips at any desired adjustment on the arms of a square, one of said clips provided with an integral graduated quadrant projecting laterally therefrom, a graduated bar pivoted at one end to the clip having the graduated quadrant and means for adjustably securing said graduated bar to the other clip.

2. The combination with clips to be adjustably secured to the arms of a square, and a sleeve pivotally attached to one of said clips, a graduated bar pivoted to one clip and movable through the sleeve on the other clip, a sector or quadrant secured to the first-mentioned clip and marked to register with the edge of the bar and indicate the pitch thereof.

3. The combination with clips to be adjustably secured to the arms of a square, a graduated bar pivoted at one end to one clip, a rotary angular sleeve swiveled to the other clip and adapted to receive the bar, a thumb-screw in the sleeve to clamp the bar, and a sector or quadrant carried by the first-mentioned clip and marked to register with the edge of the bar and indicate the pitch thereof.

4. The combination with clips to be located on the arms of a square and thumb-screws to clamp the clips to the square, a graduated bar pivoted to one clip, an angular sleeve swiveled to the other clip and adapted to receive the bar, and a thumb-screw in the sleeve to clamp the bar.

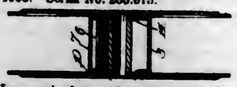
821,116. BABY-JUMPER. JOSEPH M. NUNAMAKER, Canton, Ohio. Filed Oct. 30, 1905. Serial No. 284,965.



Claim.—1. In a baby-jumper, a spring-bar and a pivoted bar provided with a socket adapted to receive the spring-bar, means for holding the spring socket-bar in proper elevation, a strap attached to the free end or portion of the spring-bar, an eyebar connected to the strap, a cross-bar swiveled upon the eyebar, said cross-bar provided with means for suspending straps, straps suspended by the cross-bar, a body-band carried by the straps and a seat-strap carried by the body-band, and stop-bars adjustably attached to the spring-bar, substantially as and for the purpose specified.

2. In a baby-jumper, a spring-bar and a pivoted bar provided with a socket adapted to receive the spring-bar, means for holding the spring socket-bar in proper elevation, a strap attached to the free end or portion of the spring-bar, an eyebar connected to the strap, a cross-bar swiveled upon the eyebar, said cross-bar provided with means for suspending straps, straps suspended by the cross-bar, a body-band carried by the straps and a seat-strap carried by the body-band, and stop-bars provided with cushioned ends, substantially as and for the purpose specified.

821,117. SPOOL OR REEL. ALBERT H. OLMSTED, Rochester, N. Y. Filed Apr. 3, 1905. Serial No. 253,675.



Claim.—1. In a reel, the combination with the end flanges and the drum, of a central bearing member comprising an integral tubular core lying within the drum and forming a rigid connection between the end flanges.

2. In a reel, the combination with the end flanges having the central apertures and the hollow drum, of a bearing member comprising an integral tubular core lying within the drum and supported in the apertures in the end flanges and a positive connection between the latter and the core.

3. In a reel, the combination with the end flanges having central apertures and the hollow drum, of a bearing member comprising a tubular core with its ends mounted in the apertures in the end flanges and having shoulders abutting the inner surfaces of the latter.

4. In a reel for tape or ribbon, the combination with the drum and the end flanges, of a plate having pivotal connections with the end flanges at points substantially in the plane of the plate and lying contiguous to said drum and means on the plate for attaching a ribbon.

5. In a reel for tape or ribbon, the combination with the drum and end flanges, of an attaching means located contiguous to the drum and having its outer surface a substantial continuation of its periphery.

6. In a reel for tape or ribbon, the combination with the drum and end flanges, of a plate lying contiguous to said drum and secured to the flanges and teeth on said plate adapted to pierce the end of a ribbon in attaching it thereto.

7. In a reel for tape or ribbon, the combination with end flanges and a cylindrical drum having a depression therein, of a plate arranged opposite the depression, its outer surface forming substantially a continuation of the periphery of the drum, pivotal projections upon the ends of the plate lying in the plane thereof, and bearing in the end flanges and teeth upon the plate for engaging a ribbon.

8. In a reel for tape or ribbon, the combination with the drum and flanges of a plate lying contiguous to said drum and having pivotal projections at its ends supported in bearings in said flanges said bearings being located in substantial proximity to the drum, and means on said plate for attaching a ribbon thereto.

9. In a reel for tape or ribbon, the combination with the cylindrical drum having a depression therein and the flanges, of a plate arranged opposite the depression but wholly within the radius of the cylinder, pivot projections on said plate having bearings in the flanges, and means thereon for attaching a ribbon thereto.

10. In a reel for tape or ribbon, the combination with the drum and flanges, of a flat plate lying contiguous to said drum and having pivotal projections at its ends mounted in bearings in said flanges, said bearings being located in substantial proximity to the drum, and teeth on said plate adapted to pierce the end of a ribbon in attaching it thereto.

11. In a reel for tape or ribbon, the combination with the drum having a depression therein, and the flanges, of a plate opposite the depression and so arranged that its outer surface forms a continuation of the surface of the drum, pivot projections on said plate bearing in the flanges and ribbon-engaging portions on the plate for engaging a ribbon in attaching it thereto.

821,118. SINGLE-TRIGGER MECHANISM FOR GUNS. GARRET B. OSTERHOUT, New York, N. Y. Filed Nov. 28, 1905. Serial No. 289,395.



Claim.—1. In a single-trigger mechanism the combination with a plurality of firing mechanisms in which are included hammers and sears, of a single trigger, tripping members engaging respectively with the said sears, the first of said tripping members being pivoted to the frame of the gun and another tripping member pivoted to the first tripping member and means whereby the first tripping member is forced downward and backward when the sear with which it is engaged is tripped and the second tripping member is forced backward and into engagement with the trigger mechanism, substantially as and for the purposes described.

2. In a single-trigger mechanism the combination with a plurality of firing mechanisms which include hammers and sears, of a single trigger, two tripping members engaging respectively the said sears, the first of said tripping members being pivoted to the frame of the gun and the second tripping member to the first tripping member and means whereby the first tripping member is forced downward and backward when the sear with which it is engaged is tripped and the second tripping member is forced backward and into en-

gagement with a stop which prevents its further backward movement, means for releasing said tripping member from said stop by a pull upon the trigger and permitting the second tripping member to shift backward into engagement with the trigger mechanism substantially as and for the purposes described.

3. In a single-trigger mechanism the combination with a plurality of firing mechanisms which include hammers and sears, of a single trigger, tripping members engaging respectively with the said sears, the first of said tripping members being pivoted to the frame of the gun and the second tripping member to the first tripping member, means whereby the first tripping member is forced downward and backward when the sear with which it is engaged is tripped and the second tripping member is forced backward and into engagement with a stop which prevents its further movement, means for releasing the said tripping member from said stop by a pull upon the trigger, a second stop which limits the shifting of the tripping members until the second pull upon the trigger is released and means for shifting the second tripping member into engagement with the trigger mechanism, substantially as and for the purposes described.

4. In a single-trigger mechanism the combination with a plurality of firing mechanisms which include hammers and sears, of a single trigger, tripping members engaging respectively with said sears, means for shifting the first tripping member backward when the sear with which it is in engagement has been tripped, means for connecting the second tripping member to the first tripping member so that the backward movement of the first tripping member will be communicated to the second tripping member, stops on the trigger which limit the backward movement of the second tripping member, the first stop being so located that a second pull on the trigger will cause it to pass out of engagement with the tripping members and a second stop on said trigger which prevents the complete backward movement of the tripping member when the trigger is in an elevated position, substantially as and for the purposes specified.

5. In a single-trigger mechanism the combination with a plurality of firing mechanisms in which are included hammers and sears, of a single trigger, tripping members engaging respectively with the said sears and with each other and a safety device which is adapted to ride upon the upper face of said tripping members, said safety device being adapted to be moved forward and out of engagement with the first tripping member and to remain in contact with the second tripping member and means for shifting the second tripping member backward and out of engagement with said safety device when the first tripping member has tripped the sear with which it is in engagement, substantially as and for the purpose described.

6. In a single-trigger mechanism the combination with a plurality of firing mechanisms in which are included hammers and sears, of tripping members engaging respectively with said sears and a safety device consisting of a stop adapted to be interposed between the uper face of said tripping members and the frame of the gun and manual means for shifting the said safety device out of an engagement with the first tripping member and automatic means for shifting the second tripping member out of engagement with said safety device when the sear with which the first tripping member is in engagement has been tripped, substantially as and for the purposes described.

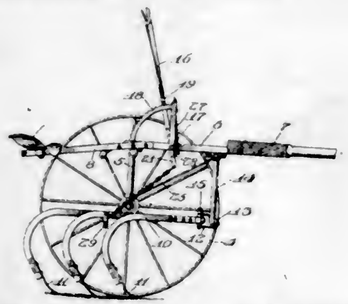
7. In a single-trigger mechanism comprising a plurality of hammers and sears, of two tripping members engaging respectively with said sears, the first tripping member being provided with a shoulder pivoted thereto, normally adapted to engage with a shoulder on the single trigger, a safety device adapted to be interposed between the tripping members and the frame of the gun and capable of longitudinal movement and provided with a finger adapted to contact with the said movable shoulder and force such shoulder out of contact with the trigger, substantially as and for the purposes described.

821,119. CULTIVATOR. WILLIAM L. PAUL, Bradley, Ill., assignor to David Bradley Manufacturing Company, Bradley, Ill., a Corporation of Illinois. Filed Apr. 17, 1905. Serial No. 256,084.

Claim.—1. The combination of a furrow-opener, a lifting-lever therefor, a pivoted extension for said lever, said extension being movable independently of said lever, a lifting-spring for the furrow-opener, means for locking said lever and extension together, and means connecting said extension with the furrow-opener.

2. The combination of a furrow-opener, a lifting-lever therefor, a pivoted extension for said lever, said extension being movable independently of said lever, means for locking said lever and extension together, means connecting said extension with the furrow-opener, and a lifting-spring connected with said furrow-opener independently of said lever.

3. The combination of a furrow-opener, a lifting-lever therefor, a pivoted extension for said lever, said extension being movable independently of said lever, means for locking said lever and extension together, means connecting said extension with the furrow-opener, and a lifting-spring connected with said extension.



4. The combination of a furrow-opener, a lifting-lever therefor, an auxiliary lever movable independently of said lifting-lever, means connecting said auxiliary lever with the furrow-opener, and a lifting-spring for the furrow-opener.

5. The combination of a furrow-opener, a pivotally-mounted lifting-lever therefor, an extension mounted on the pivot of said lever and having a portion registering therewith, means connecting said furrow-opener with said extension, and a lifting-spring connected with said extension.

6. The combination of a furrow-opener, an auxiliary lever connected with the furrow-opener, a lifting-spring connected with said auxiliary lever, and a lever for controlling said auxiliary lever.

7. The combination of a furrow-opener, a pivotally-mounted lifting-lever therefor, an extension mounted on the pivot of said lever and having a portion registering therewith, means connecting said furrow-opener with said extension means for locking said lever and extension together, and a lifting-spring connected with said extension.

8. The combination of a furrow-opener, an auxiliary lever connected with the furrow-opener, a lifting-spring connected with said auxiliary lever, a lever for controlling said auxiliary lever, and means for locking said levers together.

9. The combination of a furrow-opener, a lifting-lever therefor, a pivoted extension for said lever, said extension being movable independently of said lever, a stop carried by said lever for limiting the movement of said extension, and means connecting said extension with said furrow-opener.

10. The combination of a furrow-opener, a lifting-lever therefor, a pivoted extension for said lever, said extension being movable independently of said lever, a stop carried by said lever for limiting the movement of said extension, means connecting said extension with said furrow-opener, and means for locking said lever and extension together.

11. The combination of a furrow-opener, an auxiliary lever connected with the furrow-opener, a lifting-spring connected with said auxiliary lever, a lever for controlling said auxiliary lever, and means for locking said controlling-lever in different positions of adjustment.

12. The combination of a furrow-opener, a lifting-lever therefor, means for locking said lever in various positions of adjustment, a pivoted extension for said lever, said extension being movable independently of said lever, means connecting said extension with the furrow-opener, and a lifting-spring connected with said extension.

13. The combination of a furrow-opener, a lifting-lever therefor, means for locking said lever in various positions of adjustment, a pivoted extension for said lever, said extension being movable independently of said lever, means connecting said extension with the furrow-opener, a lifting-spring connected with said extension, and means for locking said lever and extension together.

14. In a cultivator, the combination of a carriage, a vertically-movable cultivator-gang, a lifting-lever therefor, an extension for said lifting-lever, means connecting said extension with the gang, and a stop carried by said lever for limiting the movement of said extension.

15. In a cultivator, the combination of a carriage, a vertically-movable cultivator-gang, a lifting-lever therefor, an extension for said lifting-lever, means connecting said extension with the gang, a stop carried by said lever for limiting the movement of said extension, and means for locking said lever and extension together.

16. In a cultivator, the combination of a carriage, a vertically-movable cultivator-gang, a lifting-lever therefor, an extension for said lifting-lever, means connecting said extension with the gang, a stop carried by said lever for limiting the movement of said extension, means for locking said lever and extension together, and a spring connected with the carriage and with said extension.

17. The combination of a furrow-opener pivotally mounted to swing vertically, a lifting-lever for said furrow-opener, a lifting-spring for said furrow-opener, and means operated by movement of the lever in one direction for raising the furrow-opener, said lever being movable in the opposite direction independently of the furrow-opener.

18. The combination of a furrow-opener pivotally mounted to swing vertically, an adjustable lever for limiting the downward movement of the furrow-opener, an auxiliary lever and a lifting-spring acting through said auxiliary lever for lifting the furrow-opener.

19. The combination of a frame, a furrow-opener pivotally connected with said frame so as to swing vertically, an auxiliary lever fulcrumed on the frame and connected with the furrow-opener, a lifting-spring for the furrow-opener, and adjustable means for limiting the downward movement of the furrow-opener.

20. The combination of a frame, a furrow-opener pivotally connected with said frame so as to swing vertically, an auxiliary lever fulcrumed on the frame and connected with the furrow-opener, a lifting-spring for the furrow-opener, and a lifting-lever coacting with said auxiliary lever for raising said furrow-opener and limiting the downward movement thereof.

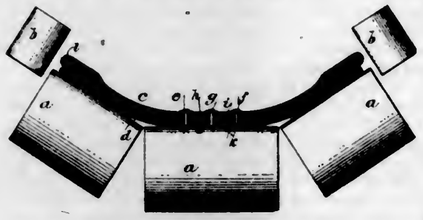
821,120. THROTTLE-VALVE. WILLIAM A. PHILLIPS, East Cleveland, Ohio. Filed Aug. 9, 1905. Serial No. 273,369.



Claim.—1. A piston-valve having a rod and heads integral therewith, packing-rings on the heads, and a split sleeve on the rod between the heads, holding the rings thereon.

2. A piston-valve having a rod and heads integral therewith, packing-rings on the heads, a split sleeve on the rod between the heads, and a washer on the end of the valve, the rings being held in place by the sleeve and the washer.

821,121. CONVEYER-BELT. GEORGE C. PLUMMER, Philadelphia, Pa. Filed Apr. 18, 1905. Serial No. 256,239.



Claim.—1. A conveyer-belt comprising a plurality of sheets secured together along their central portions and disconnected from, but contacting with, each other between their central portions and edges.

2. A conveyer-belt comprising three longitudinal portions, the central portion comprising a unitary or integral structure, while the two side portions consist of a plurality of disconnected but contacting sheets free to bend independently.

3. A conveyer-belt comprising a plurality of sheets secured together along their central portions only and free from each other outside their central portions.

4. A conveyer-belt comprising a longitudinal central portion composed of a plurality of sheets restrained from moving relatively both longitudinally and laterally, and side portions each composed of a plurality of sheets restrained from relative longitudinal movement but capable of independent lateral movement.

5. A conveyer-belt comprising a plurality of superposed sheets contacting throughout their width and restrained from independent movement longitudinally but capable of limited movement laterally relatively to each other.

6. A conveyer-belt comprising a plurality of sheets secured together along their central portions only.

7. A conveyer-belt comprising a plurality of sheets contacting throughout but secured together along a part only of their width.

8. A conveyer-belt comprising a plurality of superposed sheets having contacting side portions adapted when bent to slide laterally one upon the other.

9. A conveyer-belt comprising a plurality of superposed sheets free and independent of each other only along the portions adjoining their longitudinal edges.

10. A conveyer-belt comprising a central longitudinal portion comprising a unitary or integral structure, and side portions consisting of a plurality of sheets free to bend independently, the edges of one or more of the sheets being thickened.

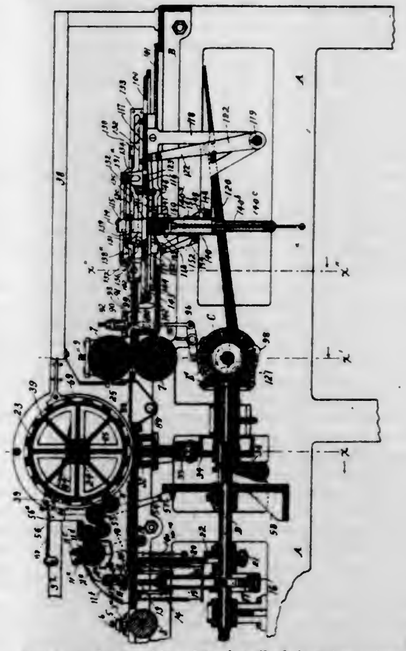
11. A conveyer-belt comprising a plurality of sheets secured together along their central portions and free from each other between their central portions and edges, the edges of the upper sheet being thickened.

12. A conveyer-belt comprising a plurality of sheets, and fastening means extending through all the sheets and securing them together along their longitudinal central portions only.

13. A conveyer-belt comprising a plurality of sheets and stitches securing the sections together along their longitudinal central portions only.

14. A stitched canvas belt comprising a plurality of sheets, each sheet composed of a plurality of thicknesses of canvas, stitches extending through the several thicknesses of each sheet across the entire width thereof, and fastening means securing together the several sheets along their longitudinal central portions only.

821,122. MACHINE FOR THE MANUFACTURE OF FACING-SLIPS FOR THE POSTAL SERVICE. JABEZ E. RAY, Toledo, Ohio, assignor, by mesne assignments, to The Postal Printing & Supply Company, a Corporation of Ohio. Filed Sept. 15, 1902. Serial No. 123,380.



Claim.—1. In a machine of the described class, two coöperating registering printing mechanisms, one of said printing mechanisms being adapted and arranged to repeat its impressions uniformly, the other of said printing mechanisms being adapted and arranged to change its impression at each succeeding imprint, and means for intermittently feeding paper to said printing mechanisms successively in harmony with their movement.

2. In a machine of the described class, means for printing a series of slips the subject-matter of which is, in part, uniform, and, in part, varied with each succeeding slip, said means comprising a printing mechanism for the constant matter, a printing mechanism for the variable matter, the imprint of the latter printing mechanism registering with that of the first-mentioned printing mechanism, means for actuating said two printing mechanisms in harmony with each other, and means for feeding paper successively to said two printing mechanisms in harmony with their movement.

3. In a machine of the described class, means for printing upon a series of slips matter which is uniform throughout the series, means for printing upon said slips matter which varies throughout the series, and means for folding said slips with the variable matter exposed.

4. In a machine of the described class, a roll-holder for a paper-roll, a printing mechanism which prints uniform matter at regular intervals upon said paper, a printing mechanism which prints varying matter at like regular intervals upon said paper, the impressions of said printing mechanisms being successive but registering with each other, means for feeding the paper through said printing mechanisms in harmony with their movement, and means for severing the paper at regular intervals between its printed portions.

5. In a machine of the described class, a roll-holder for a paper-roll, means for printing upon such paper, at regular intervals, matter which is uniform, means for printing upon such paper, at like intervals, matter which constantly varies, means for feeding paper from such roll in harmony with the movement of the printing mechanisms, means for severing the paper between the printed portions thereof, and means for folding the paper with the variable matter printed thereon exposed.

6. In a machine of the described class, two coöperating printing mechanisms, means in one of said mechanisms for printing uniform matter, means in the other of said printing mechanisms for printing variable matter, a drying device, a cutter, and a folder, combined with a paper-roll holder, means for presenting a strip of paper from a roll on said holder to the successive action of the printing mechanisms the drier the cutter and the folder.

7. In a machine of the described class, a printing mechanism for printing upon a series of slips matter which is uniform throughout the series, a printing mechanism for printing upon said slips matter which varies throughout the series, means for folding said slips with the variable matter exposed, and means for assembling said folded slips in their proper order in a suitable receptacle.

8. In a machine of the described class, a cylinder, a series of type-plates bearing constantly-changing matter, means for operatively securing said type-plates upon said cylinder, means for imparting intermittent rotation to said cylinder, means for feeding to said cylinder a series of type-plates, means for printing from said type-plates in succession, and means for removing said type-plates successively from said cylinder combined with a coöperating printing mechanism adapted to print uniform matter which registers with said changing matter.

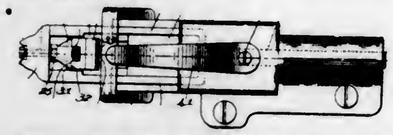
9. In a machine of the described class, a cylinder, means for detachably securing type-plates in operative position upon the cylinder, two holders adapted to receive a series of type-plates, means for transferring said type-plates successively from one holder to the cylinder, means for removing said type-plates successively from the cylinder to the other holder, said latter means including devices for giving each type-plate a half-turn during its passage from the cylinder to the latter holder whereby the printing-face of the type-plates will be disposed in the latter holder in their original relative and successive positions without rearrangement.

10. In a machine of the described class, a paper-roll holder, two coöperating registering printing mechanisms, means for presenting a strip of paper from a roll on said roll-holder to the successive action of said printing mechanisms, means in one of said printing mechanisms for printing upon said paper, at regular intervals, uniform matter, and means in the other printing mechanism for printing variable matter on said paper, at like intervals, and in registration with the imprint of the first-mentioned printing mechanism, said latter means comprising a cylinder, means for operatively securing type-plates upon said cylinder, a platen, means for inking the type-plates, two holders for a series of type-plates, means for removing said type-plates successively from one holder to the cylinder, and means for removing said type-plates successively from the cylinder to the other holder.

11. In a machine of the described class, a cylinder having upon its face spaced recesses for the reception of type-plates, a platen, an inking mechanism for such type-plates, two holders for a series of type-plates, a feed-screw, a follower in one of said type-plate holders controlled by said feed-screw, means for successively removing a series of type-plates from said latter holder to the recesses in said cylinder, means for removing said type-plates successively from said cylinder to said other type-plate holder, and means for imparting harmonious intermittent movement to the feed-screw the cylinder the platen the inking mechanism and the devices for moving the type-plates to and from the cylinder.

12. In a machine of the described class, a holder 11 for type-bars, means for removably securing type-bars therein, pivotal supports for said holder, a platen, means for reciprocating the holder to and from the platen, means for inverting the holder upon its pivotal support after each impression, and an inking mechanism adapted to ink the type-bar faces at each inversion of the holder, combined with a coöperating printing mechanism which registers with the imprint of the first-mentioned printing mechanism, and is adapted and arranged to change the impression at each succeeding imprint, and means for intermittently feeding the paper successively to said two printing mechanisms.

821,123. **FILLING-EXHAUSTION-INDICATING MECHANISM FOR LOOMS.** CHARLES F. ROPER, Hopedale, Mass., assignor to Draper Company, Hopedale, Mass., a Corporation of Maine. Filed Sept. 27, 1905. Serial No. 280,306.



Claim.—1. In a loom, a shuttle to contain a carrier having a mass of filling wound thereon, filling-replenishing mechanism, and means to control the time of its operation, said means including two adjacent and yieldingly-mounted, relatively movable members one of which is adapted to penetrate, and the other to impinge against, the filling mass in the shuttle, to effect relative movement of said members, substantial exhaustion of the filling permitting the penetrating member to engage the carrier and move in unison with the impinging member, to cause the operation of the controlling means.

2. In a loom, a shuttle to contain a carrier having a mass of filling wound thereon, filling-replenishing mechanism, and means to control the time of its operation, said means including two adjacent and yieldingly-mounted, relatively movable members one of which is provided with two portions which intermittingly penetrate the filling mass, the other member intermittingly impinging against the filling between said penetrating portions, to effect relative movement of the said members until substantial exhaustion of the filling, such substantial exhaustion permitting the penetrating portions and the impinging member to simultaneously engage the carrier and the remaining filling, respectively, to thereby move the members in unison and effect the operation of the controlling means.

3. In a loom, a shuttle to contain a carrier having a mass of filling wound thereon, filling-replenishing mechanism, and means to control the time of its operation, said means including a member having a bifurcated end to intermittingly penetrate the filling mass, a second member supported by the first-named member and movable relatively thereto and adapted to intermittingly impinge against the filling mass between the furcations of the first-named member, to effect relative movement of said members until exhaustion of the filling to a predetermined extent, whereupon the bifurcated member and the impinging member simultaneously engage the carrier and the remaining filling, respectively, to move the members in unison and effect the operation of the controlling means.

4. In a loom, a shuttle adapted to contain a carrier having a mass of filling wound thereon, filling-replenishing mechanism, and means to control the time of its operation, combined with a yieldingly-controlled, reciprocating member adapted to intermittingly penetrate and be moved by the filling mass until substantial exhaustion thereof, an impinging member carried by and movable relatively to said penetrating member and adapted to intermittingly impinge upon and be moved by the filling mass relatively to said supporting member, and an actuator for the controlling means, relative movement of said members preventing coöperation of said means and the actuator, substantial exhaustion of the filling causing the penetrating member to engage and be moved by the carrier in unison with the impinging member, to thereby effect coöperation between the actuator and the controlling means.

5. In a loom, a shuttle adapted to contain a carrier having a mass of filling wound thereon, filling-replenishing mechanism, and means to control the time of its operation, combined with a yieldingly-controlled, reciprocating member adapted to intermittingly penetrate the filling mass at a plurality of points until substantial exhaustion thereof, a relatively movable member to intermittingly impinge upon the filling between such points, to effect differential movement of said members, and an actuator for the controlling means, engagement of the two members with the carrier and the remaining filling, respectively, causing the members to move in unison and thereby effect coöperation between the actuator and the controlling means.

6. In a loom, a shuttle adapted to contain a carrier having a mass of filling wound thereon, filling-replenishing mechanism, and means to control the time of its operation, combined with a yieldingly-controlled, reciprocating carriage having two adjacent extensions to intermittingly penetrate the filling mass until substantial exhaustion thereof, a feeler supported by and relatively movable on the carriage and adapted to intermittingly impinge against the filling between said extensions, whereby differential movement of the carriage and feeler is effected, predetermined exhaustion of the filling permitting substantially simultaneous engagement of the carriage and feeler with the carrier and the filling remaining thereon, respectively, to move carriage and feeler in unison, and a device to effect the operation of the controlling means upon such unison movement

7. In filling-exhaustion-indicating mechanism for looms, in combination, a feeler device having two relatively movable members adapted respectively to intermittingly penetrate and impinge against the filling mass in the shuttle, to thereby effect differential movement of said members until substantial exhaustion of the filling, an actuator mounted on one, and controlled by the other of said members, differential movement of the members rendering the actuator inoperative, and a transmitter, substantial exhaustion of the filling permitting movement of said members in unison, to operatively position the actuator and effect its coöperation with the transmitter.

8. In a loom, in combination, a running shuttle adapted to contain a carrier with a mass of filling wound thereon, and mechanism to automatically replenish the shuttle with filling, combined with a feeler to intermittingly impinge against and be moved by the filling, a carriage on which the feeler is mounted relatively movable, said carriage having an extension at each side of the feeler to intermittingly penetrate the filling mass until substantial exhaustion thereof, to thereby effect differential movement of the carriage and feeler, an actuator mounted on the carriage and controlled by the feeler, differential movement of carriage and feeler rendering the actuator inoperative, and means to cause the operation of the replenishing mechanism by or through the actuator when operatively positioned, substantial exhaustion of the filling causing the extensions of the carriage and the feeler to simultaneously coöperate, respectively, with the carrier and the filling remaining thereon, to effect unison movement of the carriage and feeler and thereby operatively position the actuator.

9. In filling-exhaustion-indicating mechanism for looms, in combination, two adjacent and relatively movable members one of which is adapted to penetrate, and the other to impinge against, the filling mass in the shuttle, to effect relative movement of said members, substantial exhaustion of the filling causing the members to move in unison, and means operated by or through such unison movement to control the operation of the loom.

10. In filling-exhaustion-indicating mechanism for looms, in combination, a feeler device having two relatively movable members one of which is adapted to intermittingly penetrate, and the other to impinge against, the filling mass in the shuttle, to effect differential movement of the said members until substantial exhaustion of the filling, such exhaustion of filling causing movement of the members in unison, and filling-replenishing mechanism the operation whereof is effected by or through such unison movement of said members.

11. A controlling mechanism for looms, having two relatively movable members one supporting the other, one of said members being adapted to intermittingly penetrate, and the other to impinge against, the filling mass in the shuttle, to effect differential movement of said members until substantial exhaustion of the filling, said members thereupon being moved in unison, and means operated by such unison movement to cause the actuation of the controlling mechanism.

12. In a loom, a shuttle adapted to contain a carrier having a mass of filling wound thereon, means to change the operation of the loom, and a device coöperating with the filling to effect the actuation of said means by or through the relative density of the carrier and the filling thereon when the latter is exhausted to a predetermined extent.

13. In a loom, a shuttle adapted to contain a carrier having a mass of filling wound thereon, means to automatically change the filling in the shuttle, and a device intermittingly cooperating with the filling to effect the actuation of the filling-changing means by or through the relative density of the carrier and the filling thereon when the latter is exhausted to a predetermined extent.

14. In a loom, a shuttle adapted to contain a carrier having a mass of filling wound thereon, means to change the operation of the loom, and a feeler device having two relatively movable members adapted respectively to intermittingly penetrate and impinge upon the filling mass, to effect differential movement of said members until substantial exhaustion of the filling, the penetrating member engaging the carrier upon such exhaustion and moving in unison with the impinging member, such unison movement effecting the actuation of the means which change the operation of the loom.

15. In a loom, a shuttle adapted to contain a carrier having a mass of filling wound thereon, means to change the operation of the loom, and a feeler device having two relatively movable members adapted respectively to intermittingly penetrate and impinge upon the filling mass, to effect differential movement of said members until substantial exhaustion of the filling, one of said members being supported by the other, substantial exhaustion of the filling permitting the penetrating member to engage the carrier and to move in unison with the impinging member, to cause the actuation of the means which change the operation of the loom.

16. In filling-exhaustion-indicating mechanism for looms, in combination, a yieldingly-sustained reciprocating carriage, adapted to intermittingly penetrate the filling mass in the shuttle, a feeler longitudinally movable on the carriage and adapted to intermittingly impinge against the filling mass, to effect a differential movement of the carriage and feeler until substantial exhaustion of the filling, a rocking actuator mounted on the carriage and operatively connected with the feeler, movement of the latter relatively to the carriage rendering the actuator inoperative, substantial exhaustion of the filling causing the carriage and feeler to move in unison and thereby to operatively position the actuator, and means to control the operation of the loom, actuated by the actuator when operatively positioned.

17. In filling-exhaustion-indicating mechanism for looms, in combination, a yieldingly-sustained reciprocating carriage having two bevel-faced extensions to intermittingly penetrate the filling mass in the shuttle, a feeler longitudinally movable on the carriage and adapted to intermittingly impinge against the filling mass between said extensions, to effect a differential movement of carriage and feeler until substantial exhaustion of the filling, an actuator mounted on the carriage and operatively connected with the feeler, movement of the latter relatively to the carriage rendering the actuator inoperative, substantial exhaustion of the filling causing the carriage and feeler to move in unison and thereby to operatively position the actuator, and means the operation whereof is effected by the actuator when operatively positioned.

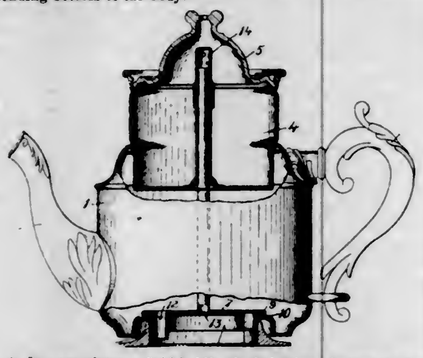
18. In a loom provided with automatic filling-replenishing mechanism, and a shuttle adapted to contain a carrier having a mass of filling wound thereon, in combination, a device intermittingly cooperating with such filling mass to effect the actuation of the replenishing mechanism by or through the relative density of the carrier and the filling thereon when the latter is exhausted to a predetermined extent.

821,124. **PERCOLATOR.** GEORGE E. SAVAGE, Meriden, Conn., assignor to Manning, Bowman and Company, Meriden, Conn., a Corporation of Connecticut. Filed Aug. 31, 1905. Serial No. 276,594.

Claim.—1. In a percolator, a fluid-holding body having an integral bottom portion forming a relatively small heating-chamber at the base, a cover member forming the top of the heating-chamber, a percolator-tube connected to the cover, said cover having an inlet discharging close to the bottom for the passage of fluid from the body to the heating-chamber, and a base with a ring formed separately from the bottom of the heating-chamber and laterally surrounding and secured in intimate contact with the outer side walls of the heating-chamber and extended horizontally beyond the bottom of the heating-chamber to form an extended base for the percolator and vertically spaced apart from the body of the percolator.

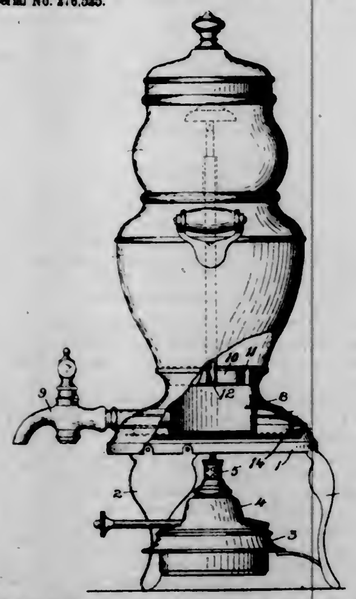
2. In a percolator, a fluid-holding body having a bottom portion forming a relatively small heating-chamber, a cover for the heating-chamber having an inlet and an outlet, and a separately-formed base-ring providing an extended base and vertically insulating the body, the bottom of the heating-chamber being expanded outwardly to afford a secure and intimate union with the base-ring.

3. In a percolator, a fluid-holding body having a bottom with an integral portion forming the bottom and side walls of a heating-chamber, a cover forming the top of the heating-chamber, and having an inlet-passage discharging close to the bottom of the chamber, a percolator-tube leading up from said cover and a base with a ring formed separately from the bottom of the heating-chamber and surrounding and secured in permanent intimate contact with the side wall of the heating-chamber, and extending beneath the laterally-extending bottom of the body.



4. In a percolator, a fluid-holding body having a bottom portion forming a heating-chamber, a cover forming the top of the heating-chamber, and having an inlet-passage, a percolator-tube secured to the cover and a base with a ring formed separately from the bottom of the heating-chamber and surrounding and in intimate contact with substantially the entire side wall of the heating-chamber, said ring forming an extended base and having its lower supporting-surface substantially on a plane with the bottom of the heating-chamber and substantially below the plane of the bottom of the fluid-holding body.

821,125. PERCOLATOR. GEORGE E. SAVAGE and JAMES W. CHAPMAN, Meriden, Conn., assignors to Manning, Bowman and Company, Meriden, Conn., a Corporation of Connecticut. Filed Aug. 31, 1905. Serial No. 276,525.



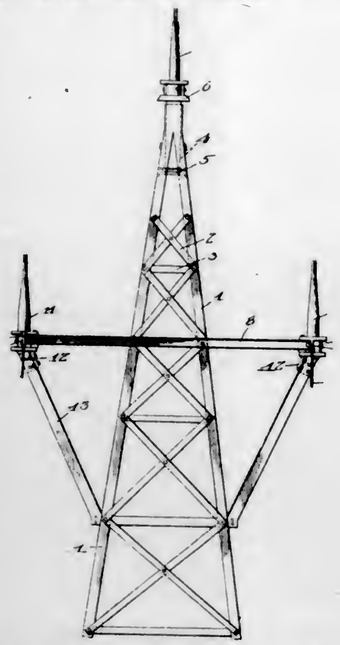
Claim.—1. In a percolator, a liquid-reservoir, a receptacle for holding the grounds, a heating-chamber having lateral walls exposed to the flame, a cap having an inlet and an outlet, and a b se flange secured at the top of and extending laterally of said chamber,

2. In combination, a percolator-urn having a liquid-reservoir, a receptacle for holding the grounds, a heating-chamber having substantially vertical walls, a controllable outlet from said chamber, a cap having an inlet and an outlet a flaring base-flange secured adjacent the operative position of said cap, a standard for supporting said percolator, and a lamp.

3. In a percolator, a body having a heating-chamber, a cap for said chamber, and a laterally-extending flange secured at the bottom of the main portion of the body for shielding it from the heat of the flame.

4. In a percolator, a liquid-holding reservoir or body, a receptacle for grounds, a heating-chamber, a cap therefor, a percolator-tube, and a base-flange extending laterally from the top of said heating-chamber adjacent the operative position of said cap.

821,126. TRANSMISSION-TOWER. DANIEL R. SCHOLES, Chicago, Ill., assignor to Aermotor Company, Chicago, Ill., a Corporation of Illinois. Filed Feb. 21, 1906. Serial No. 302,226.



Claim.—1. A tower having a resilient cross-arm, the guy-wires of said tower being secured to said arm.

2. A skeleton tower having a resilient cross-arm, the guy-wires of said tower being secured to the ends of said arm.

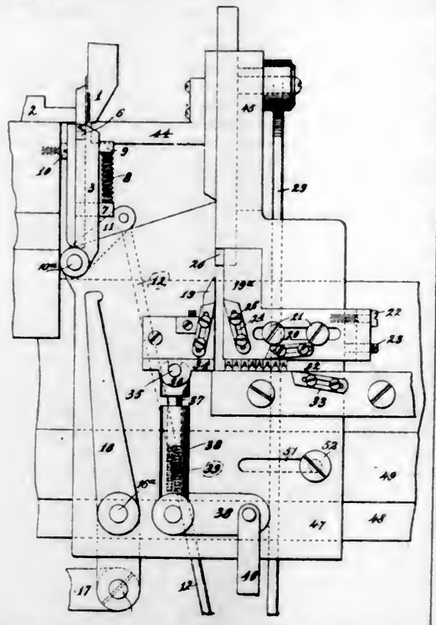
3. The combination with a skeleton tower, of a cross-arm therefor, comprising angle-irons secured upon either side of the tower, means for connecting the ends of said angle-irons together, and guy-wires for said tower connected at the outer ends of said arm, said arm being resilient to permit a lateral movement thereof, whereby the lateral strain upon the same will be taken up by said guy-wires.

4. The combination with a skeleton tower, of a cross-arm therefor, comprising angle-irons secured upon each side of the tower, means for connecting the outer ends of said angle-irons together, wire-supporting pins carrying means at the outer ends of said cross-arm and guy-wires for said tower connected to the outer ends of said arm, said arms being resilient to permit a lateral movement thereof, whereby the lateral strain upon the arms will be taken up by said guy-wires.

5. The combination with a skeleton tower, of a cross-arm therefor, guy-wires secured to the outer ends of said cross-arm, and diagonal supports connected at one end to the outer end of said cross-arm, and at the other end to the tower, said cross-arm being resilient to permit a lateral movement thereof.

6. The combination with a skeleton tower, of a cross-arm therefor, comprising angle-irons arranged upon each side of said tower, means for connecting the outer ends of said angle-irons, insulator-pins carried upon the outer ends of said cross-arm, and braces for said cross-arm comprising angle-irons connected at their upper ends to said cross-arm and converging toward their lower ends and connected to said tower, and guy-wires connected at the outer ends of said cross-arm, said arm being resilient to permit of a lateral movement thereof.

821,127. TYPE-PERFECTING MECHANISM. WILLIAM A SCHRAUBSTADTER, St. Louis, Mo. Filed Apr. 20, 1903. Serial No. 153,436.



Claim.—1. A type-making machine comprising a mold, a reciprocating mold-cover adapted to receive the type directly from the mold, a type-carrier, a type-channel, and perfecting-knives arranged along the path of said type, said type-carrier being arranged to receive the type from said mold-cover and to deliver them singly into said passage-way.

2. A type-making machine comprising a mold, a reciprocating mold-cover adapted to receive the type directly from the mold, a type-carrier, a type-channel, and relatively adjustable perfecting-knives arranged along the path of said type, said type-carrier being arranged to receive the type from said mold-cover and to deliver them singly into said passage-way.

3. In a machine for making type, the combination of type-casting mechanism and type-perfecting mechanism, said type-perfecting mechanism comprising a type-channel having its admission portion and its delivery portion transverse to each other, perfecting-knives alongside the said portions, means for delivering type into and through said channel, said means comprising an oscillating carrier-arm adapted to receive the type from the casting mechanism and carry it to a point opposite the admission end of said channel, and pusher-bars arranged to be actuated by the actuating mechanism to push said type into and through said channel.

4. In a machine for making type, the combination of type-casting mechanism and type-perfecting mechanism, said type-perfecting mechanism comprising a type-channel having a vertical portion and a horizontal portion, perfecting-knives alongside the said portions, and means for delivering type into and through said channel, said means comprising an arm mounted to swing in a vertical plane below the delivery end of the casting mechanism and adapted to receive the type therefrom in its upright position and also adapted to carry said type to a point opposite the delivery end of said channel and pusher-bars arranged to be actuated by the actuating mechanism to push said type into and through said channel.

5. In a machine for making type, the combination of type-casting mechanism and type-perfecting mechanism, said type-perfecting mechanism comprising a type-channel having a vertical portion and a horizontal portion, perfecting-knives alongside of said portions, and means for delivering type into and through said channel, said means comprising a vertically-oscillating type-carrier arm having a groove and socket in its end and a pusher-bar therein, and means for operating said pusher-bar when said arm is in its horizontal position to force the type from its groove into said channel.

6. In a type-making machine, the combination of type-casting mechanism and type-perfecting mechanism movable relatively thereto, and a jet-cutter arranged on the type-perfecting mechanism so as to be movable with said type-perfecting mechanism and in position to remove the jet from the type before said type is delivered to the perfecting mechanism.

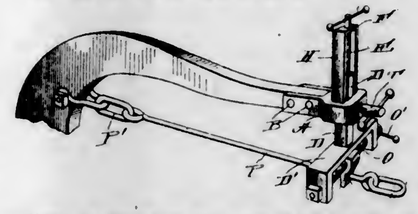
7. In a type-making machine, the combination of a type-casting mechanism, and a type-perfecting mechanism, and a jet-cutter mounted on the type-perfecting mechanism in position to remove the jet from the type before it is delivered to the perfecting mechanism.

8. In a type-casting machine, the combination of a member provided with a mold-cavity, an oscillating carrier provided with a type-receiving channel, a raceway, means for delivering type to said carrier, an ejector operating in said channel, and means for operating said ejector, substantially as described.

9. In a type-casting machine, the combination of a member containing a mold-cavity, a raceway, an oscillating carrier, means for delivering type to said carrier, and an ejector on the carrier adapted to permit the same to receive the type and operating to deliver said type to the raceway, substantially as described.

10. In a machine for making type, the combination of type-casting and type-perfecting mechanism, said type-perfecting mechanism comprising a raceway having a vertical portion and a horizontal portion, perfecting-knives along said raceway, and means for delivering type into and through said raceway, said means comprising a vertically-oscillating type-carrier having a type-receiving channel and ejector therein and means for operating said ejector, when the type-receiving channel is in a horizontal position, to force type from said carrier into said raceway, substantially as described.

821,128. PLOW ATTACHMENT. GEORGE A. SCHULTZ, Ringle, Wis. Filed Dec. 21, 1905. Serial No. 292,769.



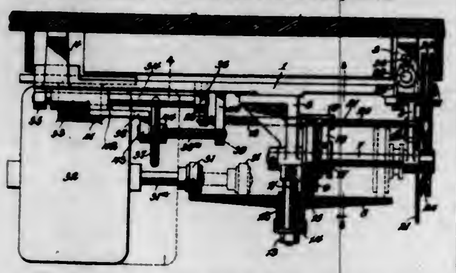
Claim.—In combination with a post having a shank portion which is forked, means for fastening the same to a plow-beam, a rack projecting from said post upon opposite sides of a transverse opening through the same, a yoke having a hollow shank portion, the inner wall of which is threaded, a feed-screw having a portion thereof journaled in said rack and engaging the threads of the shank portion, means for holding the yoke in an adjusted position, a screw mounted in the arms of said yoke, a threaded block mounted upon said screw carried by the yoke, and a rod passing through an aperture in said block, as set forth.

821,129. SPEED-CONTROLLER FOR SEWING-MACHINES. HENRY R. SCHWEINLER, Brooklyn, N. Y., assignor, by direct and mesne assignments, to W. T. Macon, administrator of Jacob H. Macon, Jr., deceased, Tampa, Fla., and Frank M. Simonton. Filed May 4, 1905. Serial No. 258,776.

Claim.—1. In a device of the class described, the combination of a sewing-machine frame, a horizontal supporting-frame located beneath the top of the sewing-machine frame and provided with upwardly-extending arms secured to the said top, a horizontal gear, an adjustable motor slidably hung from the horizontal supporting-frame and having a driving-wheel engaging the horizontal gear, said motor being movable to carry the driving-wheel toward and from the center of the driving-gear, and means for transmitting motion from the gear to the sewing-machine.

2. In a device of the class described, the combination of a hori-

zontal frame provided with depending lugs, guide-rods supported by the lugs and spaced from the frame, a gear, a motor provided at the top with opposite lugs slidable on the guide-rods, whereby the motor is hung therefrom, said motor being also provided with a drive-wheel movable toward and from the center of the gear, and means for transmitting motion from the gear to the machine to be operated.



3. In a device of the class described, the combination of a horizontal frame provided with upwardly-extending arms adapted to be secured to the frame of a machine, said horizontal frame being also provided with depending lugs, a gear, guide-rods supported by the said lugs and spaced from the frame, a motor provided at the top with lugs slidably arranged on the guide-rods, whereby the motor is hung from the horizontal frame, said motor being also provided with a drive-wheel movable toward and from the center of the gear, and means for transmitting motion from the gear to the machine to be operated.

4. In a device of the class described, the combination with a horizontal frame, a horizontal gear, and a motor slidably hung from the frame and provided with a drive-wheel movable toward and from the center of the gear, of a bracket depending from the frame and having a threaded opening, an adjusting-screw connected with the motor and engaging the threaded opening of the bracket, and means for transmitting motion from the gear to the machine to be operated.

5. In a device of the class described, the combination of a frame having opposite guides, a motor provided at the upper portion with lugs slidable on the guides, said motor being also provided with a drive-wheel, a gear, a bracket located above the gear and depending from the frame and having a threaded opening, a yoke secured to one of the lugs of the motor, an adjusting-screw swiveled to the yoke and engaging the threaded opening of the bracket for moving the drive-wheel toward and from the center of the gear, and means for transmitting motion from the gear to the machine to be operated.

6. In a device of the class described, the combination of a frame, inner and outer bearing-brackets depending from the frame, a gear supported by the inner bearing-bracket, a shaft mounted on and extending across the space between the bearing-brackets, a shiftable wheel mounted on the shaft and movable toward and from the center of the gear, a guide-rod also supported by and extending across the space between the bearing-brackets, a slide mounted on the guide-rod and connected with the shiftable wheel, and means for operating the slide.

7. In a device of the class described, the combination of a frame, inner and outer bearing-brackets depending from the frame, a gear supported by the inner bearing-bracket, a shaft mounted on and extending across the space between the bearing-brackets, a shiftable wheel mounted on the shaft and movable toward and from the center of the gear, a guide-rod also supported by and extending across the space between the bearing-brackets, a slide mounted on the guide-rod and connected with the shiftable wheel, and means for operating the slide, said means embodying a guide-pulley located at the outer bearing-bracket, and a flexible connection arranged on the guide-pulley and connected to the slide.

8. In a device of the class described, the combination of a frame, inner and outer bearing-brackets depending from the frame, a gear supported by the inner bearing-bracket, a shaft mounted on and extending across the space between the bearing-brackets, a shiftable wheel mounted on the shaft and movable toward and from the center of the gear, a guide-rod also supported by and extending across the space between the bearing-brackets, a slide mounted on the guide-rod and connected with the shiftable wheel, and means for operating the slide, said means embodying a guide-pulley located at the outer bearing-bracket, a flexible connection connected with the guide for moving the same outward, and a spring connected with the slide for moving the same inward.

9. In a device of the class described, the combination of a frame provided at one end with horizontal guide-rods, inner and outer bearing-brackets located at the opposite end of the frame, a motor hung from and slidable on the guide-rods and having a drive-wheel, a horizontal gear supported by the inner bearing-bracket and receiving the drive-wheel, a shaft extending across the space between and supported by the bearing-brackets, a shiftable wheel slidable on the shaft and arranged to engage the gear, a guide-rod also supported by the bearing-brackets, a slide mounted on the guide-rod and connected with the shiftable wheel, means for operating the slide, and operating mechanism located above the gear and arranged between the inner bearing-bracket and the motor for adjusting the latter to move the drive-wheel toward and from the center of the gear.

10. In a device of the class described, the combination with a gear, of a drive-wheel engaging the gear, means for moving the drive-wheel toward and from the center of the gear for varying the speed of the same, and transmitting mechanism having a shiftable wheel movable toward and from the center of the gear independently of the driving-gear for varying the speed.

11. In a device of the class described, the combination of a gear, means for rotating the same, a shaft, a shiftable wheel thereon for engaging the said gear, a pulley carried by the shaft, and an adjustable guide-pulley moved inwardly and outwardly.

12. In a device of the class described, the combination of a gear, means for rotating the same, a shaft, a shiftable wheel thereon for engaging the said gear, a pulley carried by said shaft, an adjustable guide-pulley moved inwardly and outwardly, a slide carrying the guide-pulley, and guiding means for the slide.

821,130. **CORE-DRILL.** JOHN M. SMITH, Reynoldsville, and ROBERT M. DOWNIE, and FREDERICK W. RANSOM, Beaver Falls, Pa., assignors to Keystone Driller Company, Beaver Falls, Pa. Filed Oct. 17, 1905. Serial No. 283,191.



Claim.—1. The combination with a tubular reciprocatory drill-stem having a percussion-cutter at its lower end, of a tubular core-holder located within the stem and having a free longitudinal movement in the same, the lower portion of said tubular core-holder being movable freely through the percussion-cutter, and a spring engaging the holder and urging the same through said percussion-cutter.

2. The combination with a tubular reciprocatory drill-stem having a completely-closed upper end and an open lower end, of a percussion cutter-head surrounding said lower end, a tubular core-holder located within the stem and having a free longitudinal movement therein, and a spring engaging the holder and urging the same through the said cutter-head.

3. The combination with an imperforate stem-tube, of an attaching-head completely closing the upper end thereof, a percussion drill-head sleeve secured to the lower end of the tube, a freely-movable core-barrel longitudinally slidable in the stem-tube and movable through the sleeve, and a coiled spring interposed between and bearing against the attaching-head and barrel to urge the latter outwardly through the drill-head sleeve.

4. The combination with a tubular drill-stem, of a longitudinally-movable swivel therein, said swivel comprising relatively rotatable members, a core-holder carried by one member, and a spring associated with the other member to urge the holder over a core.

5. The combination with a tubular drill-stem, of a longitudinally-movable core-barrel located therein, and a spring having a swiveled bearing upon the core-barrel.

6. The combination with a tubular drill-stem, of a longitudinally-movable swivel therein comprising relatively rotatable upper and lower members, a tubular core-barrel depending from the lower member, and a coiled spring extending above the swivel and bearing downwardly thereupon.

7. The combination with a tubular drill-stem, of a longitudinally-movable core-barrel located therein, a cap carried by the upper end of the barrel and constituting a swivel member, another member including a spindle journaled in the cap, and a coiled spring bearing upon said other member.

8. The combination with a tubular drill-stem, of a core-holder movable therein, a weight having a swivel connection with the core-holder, and a spring associated with the weight.

9. The combination with a tubular reciprocatory drill-stem carrying a percussion-cutter at its lower end, of a core-barrel longitudinally slidable in the stem, a weight having a swivel connection with the upper end of the barrel, and a spring surrounding the weight and bearing against the swivel connection.

10. The combination with a drill-stem, of a core-barrel longitudinally movable therein and having a cap at its upper end, a weight located above the barrel and having a stem journaled in the cap, and a spring coiled about the weight and urging the core-barrel downwardly.

11. The combination with a tubular drill-stem, of an attaching-head secured to the upper end thereof and closing the same, a percussion drill-head secured to the lower end of the stem and having an opening therethrough, a tubular core-barrel slidably mounted in the stem and movable through the opening, a cap secured to the upper end of the barrel, a weight swiveled on the cap and located between the barrel and attaching-head, said weight being adapted to engage with said attaching-head, and a spring surrounding the weight and bearing against the attaching-head, said spring urging the core-barrel downwardly.

12. The combination with a stem, of a core-holder movably associated therewith, means for effecting the downward movement of the holder, said means having a swivel connection with the holder, and antifriction-rollers located contiguous to said swivel connection.

13. The combination with a tubular stem, of a core-holder longitudinally movable therein, a weight for moving the holder downwardly in the stem, said weight having a swivel connection with the holder, and antifriction-rollers carried by said swivel connection.

14. The combination with a stem, of a core-holder movably associated therewith, a weight having a swivel connection with the upper end of the core-holder, a carrier mounted on the swivel connection, and rollers journaled on the carrier and operating against the stem.

15. The combination with a stem, of a core-holder movably associated therewith, a weight having a swivel connection with the upper end of the core-holder, a carrier mounted on the swivel connection, rollers journaled on the carrier and operating against the stem, and a ball-bearing interposed between the carrier and holder.

16. The combination with a tubular drill-stem, of an attaching-head secured to the upper end thereof, a percussion cutter-head sleeve secured to the lower end of the stem, a tubular core-barrel slidably mounted in the stem and arranged to move through the cutter-head, a cap carried by the upper end of the barrel, a weight located within the barrel and having a spindle journaled in the cap, a carrier-collar mounted on the spindle and having recessed seats, rollers journaled in the seats and bearing against the drill-stem, and a spring surrounding the weight and bearing against the carrier-collar.

17. The combination with a drill-stem and core-holder, of a cutter carried by the lower end of the stem and including a series of rollers having sharpened peripheral edges.

18. The combination with a drill-stem and a core-holder, of a sleeve carried by the lower end of the stem and having a series of slots, cutting-rollers located in the slots, journal means for said rollers mounted on the sleeve and a keeper secured to the sleeve and having ears that extend between the rollers and over the journal means.

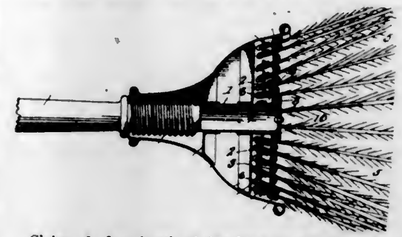
19. The combination with a drill-stem and a core-holder, of a sleeve carried by the lower end of the stem and having a series of slots, cutting-rollers located in the slots, a ring-axle for said rollers located at the end of the sleeve, and a keeper secured to the sleeve and having ears that extend between the rollers and over the axle to retain the latter in place.

20. The combination with a drill-stem and core-holder, of a cutter comprising a sleeve secured to the lower end of the stem, said sleeve having an annular seat and slots intersecting the same, rollers located in the slots, a ring-axle for the rollers located in the seat, and a keeper extending over the axle.

21. The combination with a tubular stem, of a core-barrel longitudinally movable therein, means detachably associated with the core-barrel for effecting the feeding movement thereof over a core, and a device for holding the moving means against rotation during the detachment of the barrel therefrom, said device being carried by the stem and said means being movable into and out of engagement therewith.

22. The combination with a tubular stem, of a cutter-head carried by the lower end thereof, a lug disposed inside the stem adjacent to the cutter-head, a core-barrel slidably mounted within the stem, a cap screwed upon the upper end of said barrel, said cap having a socket that receives the lug, and means for urging the barrel outwardly to bring the seat of the cap to a position to receive the lug.

821,131. **FEATHER DUSTER.** JAMES E. SNEVELY, San Francisco, Cal. Filed Sept. 14, 1905. Serial No. 278,399.



Claim.—1. In a brush of the character described, the central core, a coiled binder-strip thereon having a turned-over edge, and brush-stock between the core and the binder-strip, and spread apart by the turned-over edge of said strip.

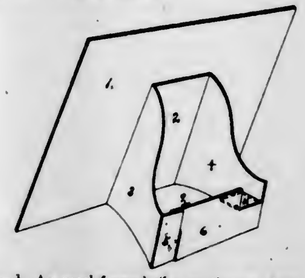
2. In a brush, the core, a coiled binder-strip connected thereto, a stock having its inner ends turned round the edge of the binder-strip, and means for securing the stock and binder to the core.

3. In a brush, the core, a coiled binder-strip having a thickened edge, and the stock having its inner end turned round the thin edge of the binder-strip, all combined.

4. In a feather duster, a core, a flexible metallic strip secured thereto and having one edge thickened, the feathers having their inner ends turned round the thin inner edge of the binder-strip, and a wire coiled between the coils of the binding-strip, all combined.

5. In a brush of the character described, a core, a coiled binder-strip thereon, the stock secured by said strip, and a holding-disk secured to the core and projecting over part of the coiled binder.

821,132. **EASEL.** CHARLES T. SPRINGMAN, Detroit, Mich. Filed Nov. 6, 1905. Serial No. 285,975.

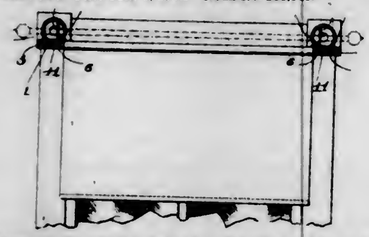


Claim.—1. An easel formed of a continuous sheet of flexible material and comprising a back adapted to be secured to the article to be supported, arms extending from each side of the back, and portions extending from the ends of the arms provided with slots to permit interlocking of the ends, one of said portions being formed with a tongue adapted to be bent down to contact with the inner side of one of the arms to hold the easel in position.

2. A collapsible easel constructed from a strip of material so as to form a figure having four sides, one of which is of less width than the others, the material being adapted to be folded at the corners, and one of the longer sides being provided with a hinge.

3. A four-sided collapsible easel constructed with one side adapted to be secured to the article to be supported, and having one of the sides formed with a tongue at one end thereof adapted to fold down at an angle to and with an edge in contact with an adjacent side at the adjacent end thereof to hold the easel in open position.

821,133. SHADE AND CURTAIN FIXTURE. CLAUDE S. STATEN, Dallas, Tex. Filed June 9, 1904. Serial No. 211,840.



Claim.—1. In a device of the class described, a base-plate having inturned flanges forming guideways, in combination with a bracket member having a laterally-extending flange connected therewith by a reduced shank, said bracket member bearing exteriorly upon, and said flange being in engagement with the guideways of the base-plate and provided with a reinforced, perforated, screw-threaded portion and a thumb-screw engaging the same and adapted to bear upon the main portion of the base-plate between the flanges thereof to retain the bracket member at any desired adjustment.

2. In a device of the character described, a base member having guideways, in combination with a bracket member laterally adjustable in said guideways; said bracket member being provided with a forwardly-extending arm and with an outwardly and upwardly extending arm; the latter terminating in a hook and provided with a transverse perforation; a chain connected with the eye and having a free end adapted for adjustable engagement with the hook member; and a curtain-pole having an end supported in said chain and thereby suspended in front of the base member and spaced from the latter.

821,134. CAN-SEAMING MACHINE. JOHN A. STEWARD, Rutland, Vt. Filed Jan. 11, 1905. Serial No. 240,606.

Claim.—1. In a seaming-machine, a seaming-head, roller-carriers slidably mounted therein, a pattern-cam carried by the head and connected to the carriers to control the movement of said carriers and means for successively retaining said carriers in operative position.

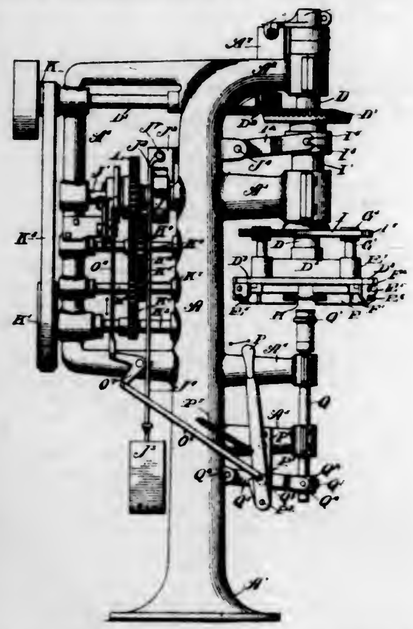
2. In a seaming-machine, a seaming-head, roller-carriers slidably mounted therein, a pattern-cam carried by the head and connected to the carriers to control the movement of said carriers, and cam-fingers constructed to successively retain said carriers in operative position.

3. In a seaming-machine, a seaming-head, roller-carriers slidably mounted therein, a pattern-cam carried by the head and connected to the carriers to control the movement of said carriers, cam-fingers constructed to successively retain said carriers in operative postion, and arms to control the reciprocation and radial travel of said fingers.

4. In a seaming-machine, a seaming-head, roller-carriers slidably mounted therein, a pattern-cam adapted to control the movement of said carriers, cam-fingers constructed to successively retain said carriers in operative position, arms to control the reciprocation of said fingers, and a controlling-cam to impart a progressive movement to said arms.

5. In a seaming-machine, a seaming-head, roller-carriers slidably mounted therein, a pattern-cam adapted to control the movement of said carriers, cam-fingers constructed to successively retain said carriers in operative position, arms to control the reciprocation of said fingers, a controlling-cam to impart a progressive movement to said arms, and a shipper-lever extending from said arms to said controlling-cam.

6. In a seaming-machine, a seaming-head, roller-carriers slidably mounted therein, a pattern-cam adapted to control the movement of said carriers, cam-fingers constructed to successively retain said carriers in operative position, arms to control the reciprocation of said fingers, a controlling-cam to impart a progressive movement to said arms, a shipper-lever extending from said arms to said controlling-cam, a controlling-lever, and means connected therewith for driving said controlling-cam for a single rotation.



7. In a seaming-machine, a seaming-head, roller-carriers slidably mounted therein, a pattern-cam adapted to control the movement of said carriers, cam-fingers constructed to successively retain said carriers in operative position, arms to control the reciprocation of said fingers, a controlling-cam to impart a progressive movement to said arms, a shipper-lever extending from said arms to said controlling-cam, a controlling-lever, means connected therewith for driving said controlling-cam for a single rotation, and a can-table operatively connected to said lever to be raised into position prior to the operation of the driving means for the controlling-cam.

8. In a seaming-machine, a seaming-head, roller-carriers slidably mounted therein, a pattern-cam adapted to control the movement of said carriers, cam-fingers constructed to successively retain said carriers in operative position, arms to control the reciprocation of said fingers, a controlling-cam to impart a progressive movement to said arms, a shipper-lever extending from said arms to said controlling-cam, a controlling-lever, means connected therewith for driving said controlling-cam for a single rotation, a can-table operatively connected to said lever to be raised into position prior to the operation of the driving means for the controlling-cam, and means for rotating said seaming-head and parts carried thereby relative to the fixed pattern-cam.

9. In a seaming-machine, a seaming-head, roller-carriers slidably mounted therein, a pattern-cam adapted to control the movement of said carriers, cam-fingers constructed to successively retain said carriers in operative position, arms to control the reciprocation of said fingers, a controlling-cam to impart a progressive movement to said arms, a shipper-lever extending from said arms to said controlling-cam, a controlling-lever, means connected therewith for driving said controlling-cam for a single rotation, a can-table operatively connected to said lever to be raised into position prior to the operation of the driving means for the controlling-cam, means for rotating said seaming-head and parts carried thereby relative to the fixed pattern-cam, and means for restoring said shipper-lever to its initial position after a single rotation of the controlling-cam.

10. In a seaming-machine, a seaming-head, provided with a rotatable bearing-sleeve, means for driving said sleeve, a fixed supporting-shaft within said sleeve, a pattern-cam secured to said supporting-shaft within the seaming-head, and a slide-block mounted for reciprocation in said head and having means extending into the path of said cam, a seaming-roller carrier slidably mounted in said head and composed of separate sections, and a cam-finger mounted for insertion between said sections to hold the roller in operative position.

12. In a seaming-machine, a seaming-head provided with a rotatable bearing-sleeve, means for driving said sleeve, a fixed supporting-shaft within said sleeve, a pattern-cam secured to said supporting-shaft within the seaming-head, a slide-block mounted for reciprocation in said head and having means extending into the path of said cam, a seaming-roller carrier slidably mounted in said head and composed of separate sections, a cam-finger mounted for insertion between said sections to hold the roller in operative position, a cushion-block disposed upon one member of said carrier, and a set-screw carried by the slide-block to bear upon said cushion.

13. In a seaming-machine, a seaming-head provided with a rotatable bearing-sleeve, means for driving said sleeve, a fixed supporting-shaft within said sleeve, a pattern-cam secured to said supporting-shaft within the seaming-head, a slide-block mounted for reciprocation within said head and having means extending into the path of said cam, a seaming-roller carrier slidably mounted in said head and composed of separate sections, a cam-finger mounted for insertion between said sections to hold the roller in operative position, a cushion-block disposed upon one member of said carrier, a set-screw carried by the slide-block to bear upon said cushion, and a stop-pin carried by a member of the carrier and extending through a wall of said slide-block.

14. In a seaming-machine, a seaming-head, a seaming-roller carrier slidably mounted thereon, fingers for retaining said carrier in operative position, a sleeve provided at its lower end with arms connected to said fingers, a pattern-cam connected to shift said carrier and fingers relatively to the head, and means for reciprocating said sleeve upon the shaft of the seaming-head.

15. In a seaming-machine, a seaming-head, a seaming-roller carrier slidably mounted thereon, fingers for retaining said carrier in operative position, a sleeve provided at its lower end with arms connected to said fingers, a pattern-cam connected to shift said carrier and fingers relatively to the head, means for reciprocating said sleeve upon the shaft of the seaming-head, and a bearing-sleeve mounted upon the upper end of said fingers and adapted to slide in a slot within said arms.

16. In a seaming-machine, a seaming-head, a seaming-roller carrier slidably mounted thereon, fingers for retaining said carrier in operative position, a sleeve provided at its lower end with arms connected to said fingers, means for reciprocating said sleeve upon the shaft of the seaming-head, a bearing-sleeve mounted upon the upper end of said fingers and adapted to slide in a slot within said arms, a stem pivotally mounted upon said fingers, and means at the upper portion of said stem to hold the bearing-sleeve against rotation.

17. In a seaming-machine, a supporting-shaft, means carried by the frame of the machine for holding said shaft against rotation, a tubular driving-shaft surrounding said supporting-shaft and provided with a bearing-nut at its upper end, a seaming-head carried by the lower end of said tubular shaft and having an interior recess therein, a pattern-cam disposed within said recess, and a nut disposed upon the lower end of said supporting-shaft for retaining said cam in position.

18. In a seaming-machine, a supporting-shaft, means carried by the frame of the machine for holding said shaft against rotation, a tubular driving-shaft surrounding said supporting-shaft and provided with a bearing-nut at its upper end, a seaming-head carried by the lower end of said tubular shaft and having an interior recess therein, a pattern-cam disposed within said recess, a nut disposed upon the lower end of said supporting-shaft for retaining said cam in position, a slotted flange extending from the seaming-head, a slide-block provided with a tubular stem disposed within the slot of said flange, and a friction-roller carried by said block and disposed in the path of said pattern-cam.

19. In a seaming-machine, a supporting-shaft, means carried by the frame of the machine for holding said shaft against rotation, a tubular driving-shaft surrounding said supporting-shaft and provided with a bearing-nut at its upper end, a seaming-head carried by the lower end of said tubular shaft and having an interior recess therein, a pattern-cam disposed within said recess, a nut disposed upon the lower end of said supporting-shaft for retaining said cam in position, a slotted flange extending from the seaming-head, a slide-block provided with a tubular stem disposed within the slot of said flange, a friction-roller carried by said block and disposed in the path of said pattern-cam, a depending track carried by said seaming-head at opposite sides of the slots therein to support said block, and a roller-carrier beneath the sliding block provided with a flange adapted to be supported upon the track carried by the seaming-head.

20. In a seaming-machine, a slide-block, a roller-carrier mounted to reciprocate thereon and comprising independent members, friction-rollers carried by the adjacent faces of said members, and a finger mounted to reciprocate between said rollers.

21. In a seaming-machine, a seaming-head, a series of roller-carriers mounted to reciprocate thereon, a reciprocatory member provided with fingers constructed and arranged to consecutively hold said carriers in operative position and to travel therewith radially of said member, and a controlling-cam to impart motion to said fingers.

22. In a seaming-machine, a seaming-head, a series of roller-carriers mounted thereon, a reciprocatory member provided with fingers constructed and arranged to consecutively hold said carriers in operative position, a controlling-cam to impart motion to said fingers, driving means and clutch connections for said cam, a can-table beneath said rollers, and controlling means constructed and arranged to primarily raise said table into operative position and subsequently clutch and automatically unclutch said controlling-cam with its driving means.

23. In a seaming-machine, a seaming-head, a series of roller-carriers mounted thereon, a reciprocatory member provided with cam-fingers constructed and arranged to consecutively hold said carriers in operative position, a controlling-cam to impart motion to said fingers, a can-table beneath said rollers, controlling means constructed and arranged to primarily raise said table into operative position and secondarily to connect said controlling-cam with its driving means, a pattern-cam carried within said head, and means extending from said pattern-cam to control the reciprocation of the roller-carriers.

24. In a seaming-machine, a seaming-head, a series of roller-carriers mounted thereon, a reciprocatory member provided with cam-fingers constructed and arranged to consecutively hold said carriers in operative position, a controlling-cam to impart motion to said fingers, a can-table beneath said roller-carriers, controlling means constructed and arranged to primarily raise said table into operative position and secondarily to connect said controlling-cam with its driving means, a pattern-cam carried within said head, means extending from said pattern-cam to control the reciprocation of the roller-carriers, and means for automatically releasing the controlling-cam from its driving means and lowering the can-table after a complete rotation of the controlling-cam.

25. In a seaming-machine, a seaming-head, a series of roller-carriers mounted thereon, a reciprocatory member provided with cam-fingers constructed and arranged to consecutively hold said carriers in operative position, a controlling-cam to impart motion to said fingers, a can-table beneath said roller-carriers, controlling means constructed and arranged to primarily raise said table into operative position and secondarily to connect said controlling-cam with its driving means, a pattern-cam carried within said head, means extending from said pattern-cam to control the reciprocation of the roller-carriers, means for automatically releasing the controlling-cam from its driving means and lowering the can-table after a complete rotation of the controlling-cam, and means for continuously rotating the seaming-head relative to the pattern-cam and at a greater speed than the rotation of the controlling-cam.

26. In a seaming-machine, a seaming-head, seaming-rollers mounted to reciprocate therein, fingers to control said rollers and travel therewith, a shoe provided with radiating slotted arms, and a carrier for said fingers disposed to travel radially within said arms and provided with flanges upon its opposite ends.

27. In a seaming-machine, a seaming-head, seaming-rollers mounted therein, fingers for controlling said rollers, a shoe provided with radiating slotted arms, a carrier for said fingers disposed within said arms and provided with flanges upon its opposite ends, and an interlocking projection between said fingers and carrier to prevent relative rotation thereof.

28. In a seaming-machine, a seaming-head, seaming-rollers mounted therein, fingers for controlling said rollers, a shoe provided with radiating slotted arms, a carrier for said fingers disposed within said arms and provided with flanges upon its opposite ends, an inter-

locking projection between said fingers and carrier to prevent relative rotation thereof, a cam portion at the lower end of said fingers, and a pivotal connection between said portion and the upper end of the fingers.

29. In a seaming-machine, a seaming-head, seaming-rollers mounted therein, fingers for controlling said rollers, a shoe provided with radiating slotted arms, a carrier for said fingers disposed within said arms and provided with flanges upon its opposite ends, an interlocking projection between said fingers and carrier to prevent relative rotation thereof, a cam portion at the lower end of said fingers, a pivotal connection between said portion and the upper end of the fingers, a driving-shaft, a controlling-cam upon said shaft having a face to effect a consecutive movement of said fingers, and a connection between said cam and said shoe.

30. In a seaming-machine, a seaming-head, seaming-rollers mounted therein, fingers for controlling said rollers, a shoe provided with radiating slotted arms, a carrier for said fingers disposed within said arms and provided with flanges upon its opposite ends, an interlocking projection between said fingers and carrier to prevent relative rotation thereof, a cam portion at the lower end of said fingers, a pivotal connection between said portion and the upper end of the fingers, a driving-shaft, a controlling-cam upon said shaft having a face to effect a consecutive movement of said fingers, a pivoted lever having a pivotal connection with the upper portion of said shoe, a casing mounted on the opposite end of said lever and having a roller therein to bear upon said cam, and tension means for retaining said roller in contact with said cam.

31. In a seaming-machine, a seaming-head, seaming-rollers mounted therein, fingers for controlling said rollers, a shoe provided with radiating slotted arms, a carrier for said fingers disposed within said arms and provided with flanges upon its opposite ends, an interlocking projection between said fingers and carrier to prevent relative rotation thereof, a cam portion at the lower end of said fingers, a pivotal connection between said portion and the upper end of the fingers, a driving-shaft, a controlling-cam upon said shaft having a face to effect a consecutive movement of said fingers, a pivoted lever having a pivotal connection with the upper portion of said shoe, a casing mounted at the opposite end of said lever and having a roller therein to bear upon said cam, a depending rod pivotally connected to said casing, and a weight supported by the lower end of said rod.

32. In a seaming-machine, a seaming-head provided with seaming-rollers, means carried by the head for controlling said rollers, a driving-shaft provided with a cam operatively connected with said controlling means, a driving-gear loosely mounted upon said shaft, a hub secured to said shaft, and a clutch-pin extending from said hub to said gear.

33. In a seaming-machine, a seaming-head provided with seaming-rollers, means carried by the head for controlling said rollers, a driving-shaft provided with a cam operatively connected with said controlling means, a driven gear loosely mounted upon said shaft, a hub secured to said shaft, a clutch-pin extending from said hub to said gear, and means for automatically withdrawing said pin after a rotation of said gear.

34. In a seaming-machine, a seaming-head provided with seaming-rollers, means carried by the head for controlling said rollers, a driving-shaft provided with a cam operatively connected with said controlling means, a driven gear loosely mounted upon said shaft, a hub secured to said shaft, a clutch-pin extending from said hub to said gear, and a tripper-finger pivotally mounted to normally engage and withdraw said pin.

35. In a seaming-machine, a seaming-head provided with seaming-rollers, means carried by the head for controlling said rollers, a driving-shaft provided with a cam operatively connected with said controlling means, a driven gear loosely mounted upon said shaft, a hub secured to said shaft, a clutch-pin extending from said hub to said gear, a tripper-finger pivotally mounted to normally engage and withdraw said pin, and a lever controlled by an operating-handle and provided with a projection to engage said tripper-finger.

36. In a seaming-machine, a seaming-head provided with seaming-rollers, means carried by the head for controlling said rollers, a driving-shaft provided with a cam operatively connected with said controlling means, a driven gear loosely mounted upon said shaft, a hub secured to said shaft, a clutch-pin extending from said hub to said gear, a tripper-finger pivotally mounted to normally engage and withdraw said pin, a lever controlled by an operating-handle and provided with a projection to engage said tripper-finger, a controlling-flange carried by said hub, and a friction-roller secured to an arm upon said lever for traversing said flange.

37. In a seaming-machine, a seaming-head provided with seaming-rollers, means carried by the head for controlling said rollers, a driving-shaft provided with a cam operatively connected with said controlling means, a driven gear loosely mounted upon said shaft, a hub secured to said shaft, a clutch-pin extending from said hub to said gear, a tripper-finger pivotally mounted to normally engage and withdraw said pin, a lever controlled by an operating-handle and provided with a projection to engage said tripper-finger, a controlling-flange carried by said hub, a friction-roller secured to an arm upon said lever for traversing said flange, and a tension device bearing upon the head of said pin.

38. In a seaming-machine, a seaming-head, a can-table disposed relatively thereto, a pivoted lever connected to a depending shaft from said table, means extending laterally from said lever, and an operating-lever provided with a cam-lever to engage said means.

39. In a seaming-machine, a seaming-head, a can-table disposed relatively thereto, a pivoted lever connected to a depending shaft from said table, a pin extending laterally from said lever, an operating-lever provided with a cam-lever to engage said pin, seaming-rollers carried by said head, a driven shaft for actuating said rollers, and a clutch mechanism upon said driving-shaft operatively connected with said controlling-lever for actuation after the raising of the table.

40. In a seaming-machine, a seaming-head, a can-table disposed relatively thereto, a pivoted lever connected to a depending shaft from said table, a pin extending laterally from said lever, an operating-lever provided with a cam-lever to engage said pin, seaming-rollers carried by said head, a driven shaft for actuating said rollers, a clutch mechanism upon said driven shaft operatively connected with said controlling-lever for actuation after the raising of the table, and means for automatically restoring said controlling-lever to its initial position.

41. In a seaming-machine, a standard, a seaming-head thereon, a can-table provided with a shaft mounted for reciprocation toward and from said head, a lever pivotally mounted upon the standard at one end and connected to said shaft at its opposite end, and an operating-lever provided with a cam-surface disposed in the path of a portion of said shaft-lever to engage the same in the travel of the operating-lever.

42. In a seaming-machine, a standard, a seaming-head thereon, a can-table mounted for reciprocation toward and from said head, means for driving said head, a clutch-pin engaging said driving means, a finger to normally hold said pin out of engagement with said driving means, and an operating-lever constructed and arranged to primarily raise the table into seaming position and subsequently withdraw said finger from the clutch-pin.

43. In a seaming-machine, a standard, a seaming-head thereon, a can-table mounted for reciprocation toward and from said head, means for driving said head, a clutch-pin engaging said driving means, a finger to normally hold said pin out of engagement with said driving means, an operating-lever constructed and arranged to primarily raise the table into seaming position and subsequently withdraw said finger from the clutch-pin, and means for automatically throwing said finger into the path of said clutch-pin and for restoring the operating-lever to its initial position.

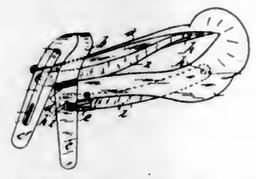
44. In a seaming-machine, a standard, a seaming-head rotatably mounted thereon, a driven shaft for said head, seaming-rollers mounted in said head, means for actuating the same, a driving-shaft for said means having its gear loosely mounted thereon, a clutch mechanism secured to said last-mentioned shaft for connecting the driving-gear therewith, a counter-shaft below the main driving-shaft and driven therefrom, and a series of reducing-gears and pinions extending from said counter-shaft to the gear loosely mounted upon the driving-shaft for actuating the seaming-rollers.

45. In a seaming-machine, a seaming-head, means for rotating said head, seaming-rollers each mounted in an independently-reciprocating block upon said head, a pattern-cam carried by said head and connected with each of said blocks for consecutively-placing the rollers therein in operative position, a can-table beneath said rollers, and means for automatically connecting and disconnecting the seaming-rollers for operation by the pattern-cam.

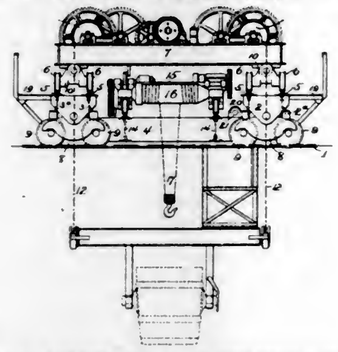
821,135. SADDLE ADJUSTING ITSELF AUTOMATICALLY IN TWO DIRECTIONS. CARL SAMKITAT, Hamburg, Germany. Filed Sept. 3, 1904. Serial No. 223,293.

Claim.—A saddle-tree comprising a fork, stays hinged thereto, a cantle, back plates connecting said cantle and stays, springs connecting said stays and fork, and longitudinally-disposed springs secured to said stays and the rear of said saddle.

821,135.



821,136. OVERHEAD TRAVELING CRANE. CLARENCE L. TAYLOR, Alliance, Ohio, assignor to The Morgan Engineering Company, Alliance, Ohio. Filed Feb. 6, 1906. Serial No. 299,795.



Claim.—1. In an overhead crane, the combination of two main girders each made up of two parallel separated sections, the latter being disconnected from end to end, a trolley having bearing on each section of said main girders, intermediate girders and a trolley mounted on said intermediate girders.

2. In an overhead crane, the combination of two main girders each composed of two parallel separated sections, the sections comprising each main girder being disconnected from end to end, a trolley having bearing on each section of said main girders and carrying hoisting-chains which pass between said sections, intermediate girders and a trolley mounted on said intermediate girders, the chains from said latter trolley passing between the intermediate girders.

3. In an overhead crane, the combination with two girders each composed of two parallel separated sections, the sections comprising each girder being disconnected from end to end, and a trolley having bearing on each section of said girders, of a trackway secured to the inner sections of said girders, but below the plane of the top of the latter and an auxiliary trolley mounted on said trackway.

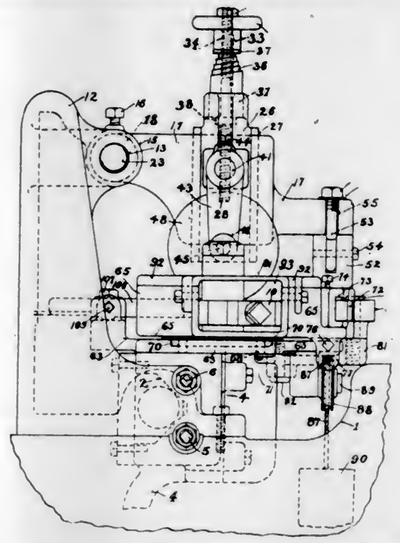
4. In an overhead crane, the combination with two main girders each composed of two parallel separated sections, the sections comprising each girder being disconnected from end to end and a trolley having bearing on each section of said girders, the hoist-chains of said trolley passing down between the sections of each girder, of a trackway secured to the inner section of said girders but below the plane of the top of the latter and auxiliary trolley on said trackway, the hoist-chain of said auxiliary trolley depending between the rails of said trackway.

5. In an overhead crane, the combination with two main girders each made up of two parallel separated sections the latter being disconnected from end to end, of a trolley having bearing on each of said main sections and carrying hoisting-chains which pass downwardly between the sections of each girder.

6. In an overhead crane the combination with two main girders each made up of two separated sections the latter being disconnected from end to end, of a trolley mounted on pivoted trucks, the wheels of the trucks at one side of the trolley resting and moving on the separated sections of one girder and the wheels of the trucks at the other side of the trolley resting and moving on the separated sections of the other girder, and hoisting-chains carried by the trolley and passing downwardly between the sections of the two girders.

821,137. PLANING MACHINERY. JOHN R. THOMAS, Cincinnati, Ohio, assignor to J. A. Fay & Egan Company, Cincinnati, Ohio, a Corporation of West Virginia. Filed Mar. 30, 1905. Serial No. 252,927.

Claim.—1. In a planing-machine, the combination with a side cutter-head, of a holddown device comprising a swinging bridge extending longitudinally of the machine and arranged to swing away from the side cutter-head, a slide on said bridge intermediate of its ends, and a pressure-roll mounted on said slide and adapted to take against the stock closely adjacent to said side cutter-head.



2. In a planing-machine, the combination with a side cutter-head, of a swinging bridge taking thereover, means for securing said bridge rigidly in position, and an overhanging pressure-roll yieldably mounted on said bridge.

3. In a planing-machine, the combination of a side cutter-head, a swinging bridge taking thereover, means for rigidly positioning said bridge, a slide on said bridge, means for adjusting said slide up and down, pressure means for said slide, and overhanging idler pressure-roll sections removably mounted on said slide, substantially as described.

4. In a planing-machine, the combination of oppositely-disposed side cutter-heads, a swinging pressure-frame, a slide on the pressure-frame, an idler pressure-roll mounted on said slide, said roll arranged to take against the stock between the said side cutter-heads, means for adjusting said slide up and down, a pressure means for said roll, and means permitting said roll and frame to swing away from the said side cutter-heads.

5. In a planing-machine, the combination with the frame, a pair of standards, a longitudinally-movable shaft, a bridge having a bearing therefor about said shaft, said bridge swinging on said bearing, means for positioning said bridge longitudinally of said shaft, means for positioning said bridge rigidly with relation to the frame, a slide having connection on the said bridge, means for adjusting said slide, pressure means for said slide, an overhanging stud on the said slide, a bearing depending therefrom, a shaft mounted on said slide and in said bearing, and pressure-roll sections removably mounted about said shaft, said last-named bearing being releasable for permitting removal of said roll-sections, substantially as described.

6. In a planing-machine, the combination with a side cutter-head, of a chip-breaker therefor, and roller-bearing for said chip-breaker taking concentrically about the rotary axis of said side cutter-head.

7. In a planing-machine, the combination with a side cutter-head, of a chip-breaker therefor, a roller-bearing for said chip-breaker taking concentrically about the rotary axis of said side cutter-head, said chip-breaker having a toe and an inclined face, a lever, and a contact-roll for said lever taking against said inclined face, the inner edge of said roll maintained slightly nearer the longitudinal middle of the path of travel of stock through said machine than said toe, substantially as described.

8. In a planing-machine, the combination with a side cutter-head, of a chip-breaker therefor, its toe, a lever having a pivot disconnected from said chip-breaker, and a bearing part on said lever for stock, said lever having a part thereon arranged to move the chip-

breaker, and flexible pressure means for said chip-breaker, substantially as described.

9. In a planing-machine, the combination with a side cutter-head, of a chip-breaker, a bearing therefor concentric with relation to the rotary axis of said side cutter-head, and a contact-lever for the stock, said chip-breaker having an inclined face, a contact part on said lever taking against said inclined face, and pressure means acting on said chip-breaker for urging the latter simultaneously against said contact part and the stock, substantially as described.

10. In a planing-machine, the combination of a side cutter-head, a chip-breaker, a bearing for said chip-breaker concentric with relation to the rotary axis of said side cutter-head, a lever having a pivot disconnected from said chip-breaker, said lever having a contact part thereon, the chip-breaker having an inclined face therefor, the pivot of said lever being out of a right line drawn from the rotary axis of said cutter-head to said contact part, and said inclined face being projected in a direction traversing said right line and the direction of projection of said lever.

11. In a planing-machine, the combination of a side head-hanger, a side cutter-head mandrel journaled thereon, a chip-breaker, a bearing therefor concentric to said mandrel, a lever pivoted on said hanger, said chip-breaker having an inclined face and said lever having a contact part taking against said inclined face for receding said chip-breaker, and pressure means acting on said chip-breaker for urging the latter simultaneously against said contact part and the stock, substantially as described.

12. In a planing-machine, the combination of a side cutter-head hanger, means for adjusting the same transversely of the machine, a side cutter-head spindle journaled in said hanger, a shelf for said hanger, a yielding chip-breaker, said chip-breaker having a stock-contacting toe, a bearing for said chip-breaker taking concentrically about the rotary axis of said side cutter-head spindle, a lever pivoted to said shelf, a contact-roll for stock thereon, said chip-breaker having an inclined face for said roll, the pivotal point of said lever and the angle of incline of said inclined face being relatively such as to maintain the inner edge of said contact-roll a slightly less distance from the longitudinal middle of stock passing through said machine than the stock-contacting face of said toe, substantially as described.

13. In a planing-machine, the combination of a side head-hanger, a mandrel journaled thereon, a chip-breaker having roller-bearing on the said hanger taking concentrically about said mandrel, said chip-breaker having an inclined face and a stop at the outer end of said inclined face, a lever pivoted on said hanger, a contact-roll mounted on the swinging end of said lever, the outward movement of said roll normally limited by said stop, said roll arranged to move along said inclined face for swinging said chip-breaker about its concentric bearing, substantially as described.

14. In a planing-machine, the combination of a side head-hanger, a side cutter-head spindle journaled therein, a side cutter-head chip-breaker, a concentric bearing for the latter taking concentrically about the rotary axis of said spindle, said chip-breaker having a toe, and a contact part for the stock and said chip-breaker, the inner edge of said contact part being maintained slightly nearer the longitudinal middle of the path of travel of said stock through said machine than said toe, substantially as described.

15. In a planing-machine, the combination of a side head-hanger, a side cutter-head therefor, a chip-breaker for the latter, a concentric bearing for said chip-breaker taking concentrically about said spindle, a contact part for the stock taking against said chip-breaker for moving all parts of said chip-breaker in concentric lines about the longitudinal axis of said spindle, an adjustable toe for said chip-breaker, and pressure means for said chip-breaker acting against said contact part for relieving said toe from pressure by the stock, substantially as described.

16. In a planing-machine, the combination of a side cutter-head hanger, means for adjusting said hanger transversely of the machine, said hanger having a shelf, a side cutter-head for said hanger, a chip-breaker for said side cutter-head, a roller-bearing for said chip-breaker on said shelf, said roller-bearing taking concentrically about the rotary axis of said side cutter-head, and a lever pivoted on said shelf and moving therewith, said chip-breaker having an inclined face, and said lever having a contact part for said inclined face and for the stock passing through the machine for moving said chip-breaker, substantially as described.

17. In a planing-machine, the combination of a side cutter-head hanger, a shelf therefor, a side cutter-head spindle journaled in said hanger, a cutter-head therefor, a chip-breaker for said cutter-head, said shelf and said chip-breaker having annular rabbets, and anti-friction-roller parts in said rabbets, said rabbets being concentric to the rotary axis of said side cutter-head spindle, substantially as described.

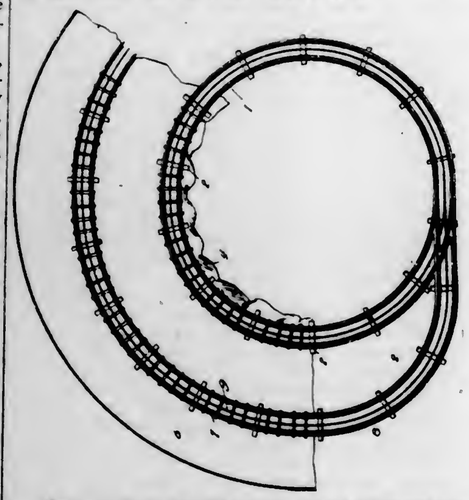
18. In a planing-machine, the combination of a side cutter-head hanger, a shelf therefor, means for adjusting said hanger transversely of the machine, a side cutter-head spindle journaled in said hanger, a side cutter-head for said spindle, a chip-breaker for said side cutter-head, said shelf having an annular rabbet 66, said chip-breaker having an annular rabbet 67 and a depending journal-piece 68, said rabbets being concentric to the circle of cut of said side cutter-head and forming a runway 69 for antifriction-balls 70, and retaining means between said depending journal-piece and shelf, substantially as described.

19. In a planing-machine, the combination of a side cutter-head hanger, a side cutter-head spindle journaled thereon, a shelf on said hanger, a yielding chip-breaker having roller-bearing connection with said shelf, said roller-bearing being concentric of the rotary axis of said cutter-head spindle, a lever pivoted on said shelf, said chip-breaker having an inclined face, and a contact-roll on said lever having engagement with said inclined face, the inner edge of said contact-roll being maintained a slightly less distance from the longitudinal middle of stock passing through said machine than the toe of said chip-breaker throughout the yielding movements of said chip-breaker, substantially as described.

20. In a planing-machine, the combination of a side cutter-head hanger, means for adjusting the same transversely of the machine, a side cutter-head spindle journaled on said hanger, a shelf for said hanger, a yielding chip-breaker therefor, a bearing for said chip-breaker taking concentrically about the rotary axis of said side cutter-head spindle, a lever pivoted to said shelf, and a contact-roll for stock thereon, said chip-breaker having an inclined face mergiug into a stop for said roll, substantially as described.

21. In a planing-machine, the combination of a side cutter-head hanger, means for adjusting the same transversely of the machine, a side cutter-head spindle journaled in said hanger, a shelf for said hanger, a yielding chip-breaker, a bearing for said chip-breaker taking concentrically about the rotary axis of said side cutter-head spindle, a lever pivoted to said shelf, a contact-roll for stock thereon, said chip-breaker having an inclined face merging into a stop for said roll, and a projection on said shelf limiting inward movement of said lever, substantially as described.

821,138. MERRY-GO-ROUND MUSEUM. JACOB L. TIDD, Lancaster, Ohio. Filed Oct. 5, 1905. Serial No. 281,491.

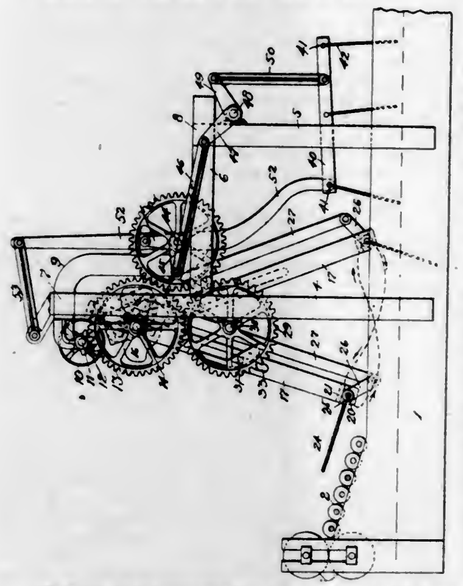


Claim.—1. In a device of the character described, the combination of a continuous track in the form of a loop, one side of which is elevated, a train of cars running upon the track, one of the cars being provided with a motor, a feed-rail located at an intermediate point between the two rails of the main track and adapted to supply electricity to the motor, a guard-rail running around the outside of the track and located a short distance above the top of the tread of the outside wheels, and an inclosure located adjacent the elevated portion of the track and provided with amusement devices.

2. In a device of the character described, the combination of a continuous track in the form of a loop, one side of which is elevated, a train of cars running upon the track, one of the cars being provided with a motor, a feed-rail located at an intermediate point between the two rails of the main track and adapted to supply electricity to the motor, a guard-rail extending around the track and slightly spaced from the top of the tread of the outside wheel, said guard-rail comprising two spaced members having rollers or wheels mounted between them at short intervals, and an inclosure located adjacent the elevated portion of the track and provided with scenery to present a panoramic view.

3. In a device of the character described, the combination of a continuous track in the form of a loop, one side of which is elevated, a train of cars running upon the track, one of the cars being provided with a motor, a feed-rail located at an intermediate point between the two rails of the main track and adapted to supply electricity to the motor, a guard-rail extending around the track and slightly spaced from the top of the tread of the outside wheel, said guard-rail comprising two spaced members having rollers or wheels mounted between them at short intervals, an inclosure located adjacent the elevated portion of the track and provided with scenery to present a panoramic view, and a track running through the inclosure approximately parallel to the main track and upon which special cars travel back and forth for the accommodation of faries, musicians, &c., said track being connected to the main track at the lower portion thereof.

821,139. WOOL-SCOURING MACHINE. JOSEPH H. TILLINGHAST, Stockton, Cal. Filed June 12, 1905. Serial No. 264,813.



Claim.—1. In an apparatus of the character described, the combination, with a vat, of a pair of forks therein, each comprising a fork-bar and tines extending therefrom, a carrier for each fork, each fork extending from its carrier toward the other carrier, means for imparting to said carriers horizontal movements of reciprocation alternating in cycle, and means for moving said forks so as to avoid each other in passing in opposite directions, substantially as described.

2. In an apparatus of the character described, the combination, with a vat, of a pair of forks therein, each comprising a fork-bar and tines extending therefrom, a carrier for each fork in which it is rotatable, each fork extending from its carrier toward the other carrier, means for imparting to said carriers horizontal movements of reciprocation alternating in cycle, and means for moving said forks so as to avoid each other in passing in opposite directions, and for rotating each fork-bar in its carrier at the end of its forward movement to scoop up the wool, substantially as described.

3. In an apparatus of the character described, the combination, with a vat, of a fork, a carrier therefor, a transverse shaft having a cam thereon, a roller on said carrier engaged by said cam to impart vertical reciprocation to the carrier, and means operatively connected with the shaft for imparting a horizontal movement of reciprocation to the carrier, substantially as described.

4. In an apparatus of the character described, the combination, with a vat, of a fork, a carrier in which the fork is rotatable, a transverse shaft having a cam thereon, a roller on said carrier engaged by said cam to impart vertical reciprocation to the carrier, means operatively connected with the shaft for imparting a horizontal movement of reciprocation to the carrier, and means for rotating the fork-bar in the carrier at the end of its forward movement to impart an upward scooping movement to the fork, substantially as described.

5. In an apparatus of the character described, the combination, with a vat, of a fork comprising a fork-bar and tines extending therefrom, a carrier comprising a pair of arms, a shaft passing through said arms and having cams thereon, a roller supported upon each arm and engaged by a corresponding cam to impart a vertical movement to the arm, and means operatively connected with the shaft for imparting a horizontal reciprocation to the arms, substantially as described.

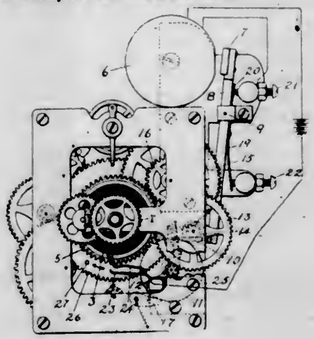
6. In an apparatus of the character described, the combination, with a vat, of a fork comprising a fork-bar and tines extending therefrom, a carrier in which said fork-bar is rotatably supported, comprising a pair of arms, a shaft passing through said arms and having cams thereon, a roller supported upon each arm and engaged by a corresponding cam to impart a vertical movement to the arm, means operatively connected with the shaft for imparting a horizontal reciprocation to the arms, and means for rotating the fork-bar in the carrier to impart an upward scooping movement to the tines at the end of the forward movement of the carrier, substantially as described.

7. In an apparatus of the character described, the combination, with a vat, of a pair of forks therein each comprising a fork-bar and tines extending therefrom, a pair of carriers, each comprising a substantially straight outer arm and an inner arm bent at its lower end outward or toward the outer arm, a shaft, two pairs of cams on said shaft each adjacent to a corresponding arm, rollers carried by the arms engaged by the cams to impart a vertical movement of reciprocation to said forks, and means for imparting a horizontal movement of reciprocation thereto, substantially as described.

8. In an apparatus of the character described, the combination, with a vat, of a pair of forks therein each comprising a fork-bar and tines extending therefrom a pair of carriers in which said fork-bars are respectively rotatable, each carrier comprising a substantially straight outer arm and an inner arm bent at its lower end outward or toward the outer arm, a shaft, two pairs of cams on said shaft each adjacent to a corresponding arm, rollers carried by the arms engaged by the cams to impart a vertical movement of reciprocation thereto, and means for rotating the fork-bars in the carriers, substantially as described.

9. In an apparatus of the character described, in combination with a vat, feeding-forks therein, and mechanism for operating said forks, a rake for feeding the wool to the forks, including a front transverse bar, teeth extending therefrom, and means operatively connected with the mechanism for feeding the forks to impart a scooping movement to said teeth, substantially as described.

821,140. SELF-WINDING ELECTRIC CLOCK. BERNHARD TROPP, New York, N. Y., assignor to William Henry Laird, New York, N. Y. Filed July 16, 1904. Serial No. 216,817.



Claim.—1. The combination substantially as described of a driving power, a driven mechanism, an electric motor, winding mechanism interposed between the same and the driving power, a primary circuit-closer, comprising a stationary contact member and a coöperating contact member carried by a wheel of the driven mechanism for periodically but momentarily closing the circuit of the motor at one point, and a secondary independently-operating circuit-closer comprising a fixed contact member and a coöperating contact member carried by a wheel connected with the winding mechanism.

2. The combination in a self-winding mechanism of a spring-driven train, an electric motor for periodically winding said spring, a circuit-closing device in the circuit of said motor comprising a pin or projection on a wheel of the driven train and a spring, periodically but momentarily engaged thereby, and a second circuit-closer in the circuit of said motor, comprising the barrel of the spring having an insulating-space, and coöperating spring engaging said barrel.

3. The combination with a time-keeping device, of a winding electric motor, primary circuit-closer, in the circuit of said motor, consisting of a contact-pin set in the hour-wheel of the train and adapted to engage a circuit-closing spring, and a secondary circuit-closer comprising a spring-barrel having an insulating notch or space and a coöperating circuit-closing spring, as and for the purpose described.

4. In a self-winding mechanism for clocks, the combination with an electric motor and a winding-barrel operated by said motor, of a primary circuit-closer comprising a pin or stud projecting from a wheel of the clock-train and adapted to engage a coöperating circuit-closing spring, and a secondary circuit-closer consisting of a winding-barrel having an insulated space and a coöperating contact-spring adapted to engage said barrel.

5. In a winding mechanism for spring-driven timepieces, the combination of an electric motor, a winding-train interposed between the same and the spring, a secondary circuit-closer brought into action by a revolving member of the winding-train when the winding starts, and a primary circuit-closer brought into action by a pin or stud projecting from a wheel of the time-train and adapted to close the circuit of the motor to start the winding.

6. In a self-winding mechanism for clocks, the combination of an electric motor and two circuit-closers therefor, one consisting of a spring 23 and a stud 27 on the hour-wheel of the clock, and the other consisting of a spring 24 engaging the periphery of the notched spring-barrel.

821,141. LENS-FINDER FOR CLINICAL THERMOMETERS. WALDEMAR UDE, St. Louis, Mo., assignor to Johnson & Johnson, New Brunswick, N. J. Filed Dec. 18, 1905. Serial No. 292,346.



Claim.—1. The combination with the tube of a thermometer, of a lens-finder, comprising an opaque member inclosing a portion of the tube of the thermometer and having an open space for the lens, and having a portion of its sides at a distance from the thermometer-tube to form means for manual engagement, substantially as specified.

2. The combination with the tube of a clinical thermometer, of a lens-finder, comprising an opaque member having an open space throughout its length, slidably mounted on the tube, substantially as described.

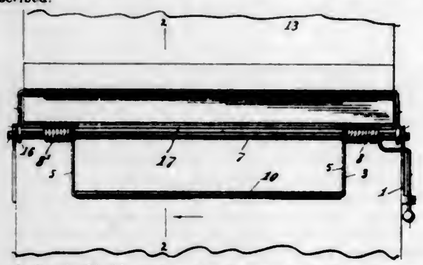
3. The combination with the tube of a clinical thermometer, of an opaque plate bent to inclose the tube of the thermometer, and having its edges spaced apart to disclose the lens, substantially as described.

4. The combination with the tube of a thermometer, of a lens-finder, comprising an opaque tube open on one side throughout its length, slidably mounted upon the tube of the thermometer, the edges at the open space of said opaque tube bearing against the surface of the thermometer-tube at the sides of the lens, substantially as specified.

5. The combination with the tube of a clinical thermometer, of a lens-finder comprising an opaque member inclosing all sides of a portion of the tube except the lens, slidably mounted on the tube, and having its edges bearing against the surface of the tube at the sides of the lens, substantially as specified.

821,142. LEAF-HOLDER. HENRY V. WAGONER, New York, N. Y. Filed Nov. 2, 1903. Serial No. 179,422.

Claim.—1. In a leaf-holder, a base, a rod, means on said base for carrying said rod, a wire clip having parts at or near its ends coiled about said rod, its intermediate portion forming a pressing edge, one end of said clip being prolonged into an arm, a second rod and a cover hinged thereto, the ends of said second rod being bent into arms terminating in eyes which receive said first rod, substantially as described.

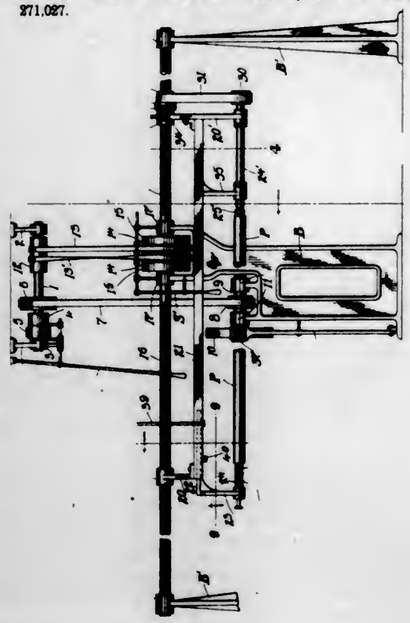


2. In a leaf-holder, a base, a rod, means on said base for carrying said rod, and a wire clip having parts at or near its ends coiled about said rod, its intermediate portion forming a pressing edge, one end of said clip being formed into a handle whereby said clip may be manipulated, and means on said base adapted to engage said handle and thereby cause said wire clip to press against said base, substantially as described.

3. In a leaf-holder, a board, a base mounted on said board, a rod, means on said base for carrying said rod, a wire clip having parts at or near its ends coiled about said rod, its intermediate portion forming a pressing edge, one end of said clip being prolonged into an arm, a catch, said arm being adapted to coöperate with said catch to hold the clip in the closed position, said clip being adapted when released from its closed position to move freely on said rod, substantially as described.

4. In a leaf-holder, a base, a rod, means on said base for carrying said rod, a cover carried by said rod, and a wire clip having parts at or near its ends coiled about said rod, its intermediate portion forming a pressing edge, one end of said clip being formed into a handle, whereby said clip may be manipulated, and means on said base adapted to engage said handle and thereby cause said wire clip to press against said base, substantially as described.

821,143. FEED MECHANISM FOR POLISHING-MACHINES. JAMES D. WALSH, St. Louis, Mo. Filed July 24, 1905. Serial No. 271,027.



Claim.—1. In combination with a rotating abrading or polishing disk, a screw-shaft, a frame traveling along the shaft, means on the frame for supporting the article to be polished, and a yielding member for pressing the article against the disk during the rotation of the latter, substantially as set forth.

2. In combination with a rotating abrading or polishing disk, a screw-shaft, a frame for supporting the article to be polished, depending from the shaft and movable longitudinally along the same, means for imparting rotation to the screw-shaft, and intermediate connections between the shaft and article to be polished for rotating the latter during the rotation of the disk, and during the longitudinal travel of the article along said disk, substantially as set forth.

3. In combination with a rotating disk, a rotatable screw-shaft, a frame depending therefrom, means for reciprocating the frame along the shaft during the rotation of the latter, suitable rotatable chucks carried by the frame for supporting and rotating the article to be polished, and intermediate connections between the shaft and chucks for imparting rotating to the latter and to the article carried thereby during the reciprocations of the frame, substantially as set forth.

4. In combination with a rotating disk, a rotatable screw-shaft, belt-operated pulleys for the shaft, a belt-shifter for the pulleys, a frame depending from the shaft and having a nut engaging the threaded portion thereof, chucks having rotatable members mounted in the frame for the support of a pipe or article to be polished, a sliding pulley feathered along the smooth portion of the shaft and rotating therewith, a pulley on the adjacent chuck member, belt connections between said pulley and the sliding pulley on the shaft, and tappet members or arms carried at opposite ends of the frame for reversing the rotation of the screw-shaft at the ends of the longitudinal strokes of the frame, substantially as set forth.

5. In combination with a rotating disk adapted to operate upon a rotating and longitudinally-movable article, a spring-controlled arm disposed in the plane of rotation of the disk and bearing against the article from the opposite side to prevent undue vibration thereof, substantially as set forth.

6. In combination with a rotating disk adapted to operate upon a rotating and longitudinally-movable cylindrical article, a yielding arm disposed in the plane of rotation of the disk and bearing against the article from the opposite side and prevent lateral vibration thereof, and a pair of rollers mounted on the arm and engaging the article, substantially as set forth.

7. In combination with a rotating disk, a rotatable screw-shaft, a frame depending therefrom and adapted to reciprocate along the shaft, a channel-bar forming a member of said frame, an arm having a tongue for insertion into one end of the channel of said bar, a tappet-arm secured to said tongue, a tail-chuck carried by the arm aforesaid, a head-chuck at the opposite end of said reciprocating frame, means for imparting rotation to the head-chuck from the screw-shaft, and in turn to the article held between the chucks, a second tappet-arm at the opposite end of the frame, and reversing mechanism for the shaft controlled by said tappets, substantially as set forth.

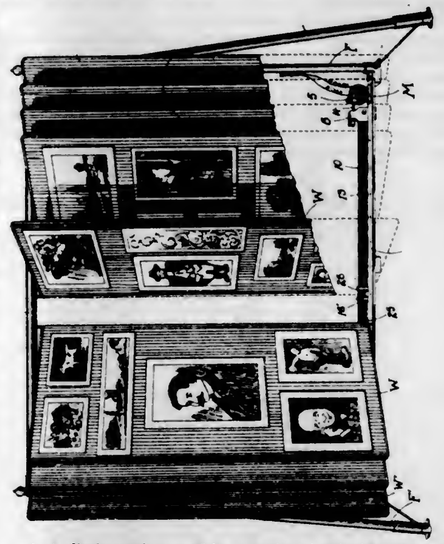
8. In combination with a rotating screw-shaft having a smooth portion, a frame having portions traveling over the screw-threaded and smooth portions respectively, means for attaching an article to be operated on, to the frame, a belt-pulley slidingly feathered to the shaft along the smooth portion thereof, a peripheral groove formed in the adjacent portion of the frame traveling over the smooth section of the screw-shaft, fingers formed on the feathered pulley and loosely engaging the groove aforesaid, and belt connections between the feathered pulley and the adjacent end of the article supported in the frame for imparting rotation to said article during the longitudinal travel of the frame along the screw-shaft, substantially as set forth.

821,144. DISPLAY-RACK. JAMES D. WALSH, St. Louis, Mo. Filed Oct. 23, 1905. Serial No. 283,963.

Claim.—1. A display-rack comprising a series of swinging wings or leaves, and suitable devices for imparting to the leaves an automatically-reciprocating oscillatory movement, substantially as set forth.

2. A display-rack comprising a series of swinging wings or leaves mounted along consecutive hinge-axes, and devices moving in proximity to said axes and engaging said wings for oscillating the same first in one direction and then automatically in the other, substantially as set forth.

3. A display-rack comprising a series of swinging wings or leaves mounted along consecutive hinge-axes, and devices automatically reciprocating in proximity to said axes and engaging the said wings for oscillating the same first in one direction and then the other, substantially as set forth.



4. A display-rack comprising a series of swinging wings or leaves mounted along consecutive hinge-axes, projections formed on the several leaves extending rearwardly beyond the axes, and suitable automatically-reciprocating devices adapted to impinge against said projections and thereby oscillate the wings, substantially as set forth.

5. A display-rack comprising a series of swinging wings, a rail disposed adjacent to the hinge-axes of the wings, a rider automatically reciprocating on said rail, and formations on the wings with which the rider comes successively in contact for oscillating the wings with each reciprocation, substantially as set forth.

6. A display-rack comprising a series of swinging wings, studs on the same projecting beyond the hinge-axes of the same, a stationary rail disposed adjacent to the studs, a rider on said rail, a driving sprocket-chain adjacent to the rail, sprocket-wheels at opposite ends of the chain, a dog mounted on the rider, and suitable shifting devices operated by the sprocket-wheels for alternately bringing the dog into engagement with the opposite laps of the chain, substantially as set forth.

7. A display-rack comprising a series of swinging wings, studs on the same projecting beyond the hinge-axes of the same, a stationary rail disposed adjacent to the studs, a rider on said rail, a yielding impact member or buffer carried by the rider, said buffer provided with means for permitting engagement therewith of the studs as the buffer passes over the studs, a sprocket-chain adjacent to the rail, sprocket-wheels at opposite ends of the chain, a dog mounted movably on the rider, and suitable shifting levers operated by the sprocket-wheels for forcing the dog into alternate engagement with the opposite laps of the chain, substantially as set forth.

8. In a display-rack, a suitable reciprocating rider, a pair of levers pivoted thereon and oscillating in the same plane, a dog movably connected to the ends of the adjacent arms of said levers, and means for alternately tripping the outer arms of the levers in opposite direction thereby reciprocating the dog confined between the adjacent arms, substantially as set forth.

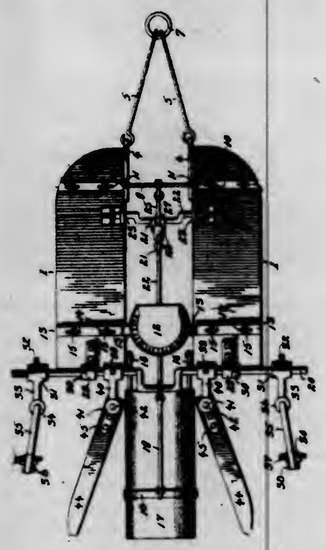
9. In a display-rack, a suitable reciprocating rider, a pair of levers pivoted thereon and oscillating in the same plane, a dog movably coupled between the ends of the adjacent arms of the levers, a spring latch or stud on the dog, the rider having a depression for receiving said stud, and means for alternately tripping the outer arms of the levers in opposite directions thereby reciprocating the dog confined between the adjacent arms of said levers, substantially as set forth.

10. In a display-rack, a traveling endless conveyer, a rider in proximity thereto, and devices on the rider for alternately engaging one lap of the conveyer and then the other whereby a reciprocating movement is imparted to the rider, substantially as set forth.

11. In a display-rack, a traveling endless chain, a rider in proximity thereto, sprocket-wheels for the chain, and devices on the rider actuated by the sprocket-wheels and forced into alternate engagement with the respective laps of the chain, whereby the rider is reciprocated by the chain, substantially as set forth.

12. In a display-rack, a series of swinging wings, projections formed on the same and extending beyond the hinge-axes thereof, a reciprocating rider mounted adjacent to the hinge-axes, a spring-controlled buffer carried by the rider and having inclined faces adapted to impinge against the projections aforesaid, and provided with a groove adapted to receive the projections of the said wings, the parts operating substantially as, and for the purpose set forth.

821,145. STRADDLE-ROW CULTIVATOR. AUGUST C. WALTER, Alex. Ind. Ter. Filed Feb. 15, 1906. Serial No. 301,274.

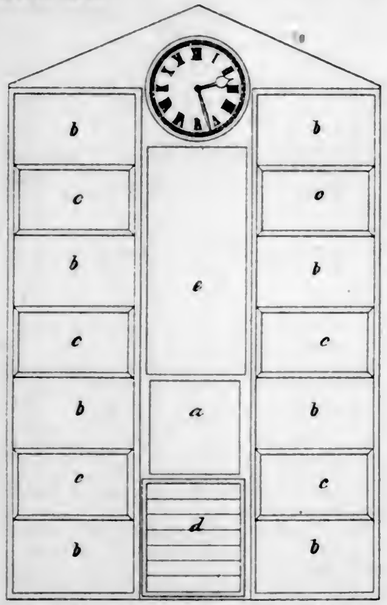


Claim.—1. In a straddle-row cultivator, the combination with the runners and the platforms secured thereto, of an arched strap straddling the space between the runners and having extensions adjustably secured to the platforms, an arched shaft journaled on the platforms and formed with an integral lever, provided with a slot, a notched latch hung to the forward arched strap and engaging the slot in the lever, a rock-shaft journaled at the rear ends of the platforms and formed with a raised or arched middle portion, a fender pivotally secured to the rear ends of the runners, a connecting-rod between the fender and the arch of the rock-shaft, and a connecting-rod between said rock-shaft and the lever.

2. In a straddle-row cultivator, the combination of the rock-shaft journaled at the rear of the machine and provided with an arched middle portion disposed to straddle the row of standing plants, and knives secured to the rock-shaft and comprising arms adjustably mounted on said shaft and formed with vertically-disposed sleeves at their outer ends, vertical stems adjustably fitted in said vertical sleeves and formed at their lower ends with bosses, having one face radially notched, brackets formed with bosses having one face radially notched to engage the coincident notches in the bosses of said stems, a bolt projected through the bosses to clamp them together, and flat knives secured to the brackets, and means substantially as described to rock the shaft and tilt and lift the knives from the ground.

3. In a straddle-row cultivator, the combination with the runners and the platform mounted thereon, of a rock-shaft journaled to the rear ends of the platform and formed with an arched middle portion straddling the space between the runners, arms adjustably mounted on said shaft and formed with vertically-disposed sleeves at their free ends, plow-beams adjustably fitted in said sleeves and consisting of horizontal portions having the ends turned down at right angles thereto, and plows secured to the outer limb of the beams.

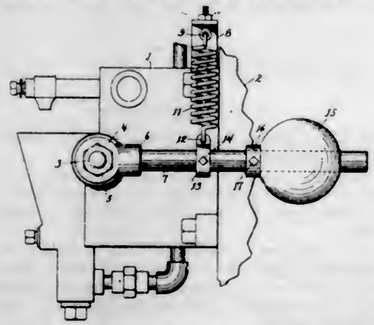
821,146. ADVERTISING APPARATUS. FREDERICK J. WALTON and LONGINUS V. ROGERS, Finchley, England. Filed June 23, 1905. Serial No. 266,620.



Claim.—1. In advertising apparatus, the combination with a framework having display-orifices of advertisement-carrying boards, of a chain connection between said boards, pulleys over which such chain connection runs, a centrally-journaled clockwork-operated lever, a connecting-rod pivoted at one end to one of the advertisement-carrying boards and at the other end to one end of the centrally-journaled clockwork-operated lever, and means for retarding and releasing said lever at predetermined intervals, substantially as specified.

2. In advertising apparatus the combination with a framework having display-orifices of advertisement-carrying boards, of a chain connection between said boards, pulleys over which such chain connection runs, a centrally-journaled clockwork-operated lever, a connecting-rod pivoted at one end to one of the advertisement-carrying boards and at the other end to one end of the centrally-journaled clockwork-operated lever, projections carried upon the ends of said lever, a retarding-disk, radial plates carried by said disk against which the projections on the ends of the clockwork-operated lever operate, substantially as specified.

821,147. OIL-PUMP MOTOR. ARTHUR J. WEST, Milwaukee, Wis., assignor to Sight Feed Oil Pump Company, Milwaukee, Wis., a Corporation of Wisconsin. Filed Feb. 15, 1904. Serial No. 193,518.



Claim.—1. A suitably-journaled operating-shaft, a lever-arm mounted thereon, a weight carried by the lever-arm, a bracket, an eyebolt adjustable through an opening of the bracket, a nut threaded on the eyebolt and bearing on the bracket, and a spring connecting the lever-arm with the eyebolt.

2. A pump-operating shaft, a sleeve fixed thereon, a lever-arm carried by the sleeve, a weight adjustable on the lever-arm, a collar mounted on the lever-arm, and having a perforated ear, a coil-spring engaging the perforation thereof, a bracket rigidly supported above the lever-arm, and an eyebolt adjustable therethrough and having its eye engaged by the other end of the coil-spring.

3. A pump-operating shaft, a sleeve fixed thereon, a lever-arm carried by the sleeve, a weight adjustable on the lever-arm, a collar adjustably mounted on the lever-arm and having a perforated ear, a coil-spring engaging the perforation thereof and means for giving the coil-spring a support from a movable body.

4. In combination, an oil-pump having an oscillating operating-shaft, a sleeve secured thereto, a lever-arm mounted in said sleeve and extending in an approximately horizontal position, a weight adjustably slidable on the lever-arm, a sleeve also adjustably slidable on the lever-arm, a coil-spring engaging the sleeve, a bracket mounted on the pump, and an eyebolt adjustably supported by the bracket and engaged by the coil-spring and serving as a means for adjusting the normal position of the lever-arm, the adjustment of the sleeve on the lever-arm serving to vary the normal tension on the coil-spring and the adjustment of the weight on the lever-arm serving to vary the degree of oscillation of said lever-arm which results from the inertia of said weight during a movement of the pump.

5. A movable body, an arm pivotally mounted thereon, a weight carried by the arm, and a spring means for supporting the weight having an adjustable connection with the arm.

6. A movable body, an arm pivotally mounted thereon, a weight carried by the arm and adjustable thereon, and a spring means for supporting the weight having an adjustable connection with the arm.

7. A movable body, an arm pivotally mounted thereon, a weight carried by the arm and adjustable thereon, a spring means for supporting the weight having an adjustable connection with the arm, and a support to which the spring means is adjustably connected.

821,148. SNATCH-BLOCK. ALBERON F. WHEATON, Menlo, Wash. Filed Aug. 14, 1905. Serial No. 274,149.

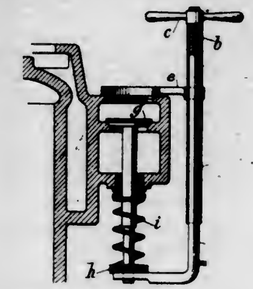


Claim.—1. A pulley-block of the class described, consisting of parallel side plates connected together at their lower ends, a grooved pulley journaled in said plates, reinforcing-plates arranged on said side plates, apertured parallel bearing-lugs formed on one of the latter, a right-angularly-formed supporting-bail pivotally mounted in said parallel lugs, a lug formed on the end of said bail, said lug having an inwardly-projecting beveled extension adapted to engage a beveled surface on the reinforcing-plate of the opposite side plate, an apertured lug formed on said latter reinforcing-plate, a bail-shaped latch pivotally mounted on said lug and adapted to be swung into engagement with the lug on said supporting-bail to hold the same closed, and means to hold said latch against casual disengagement from said lug, substantially as described.

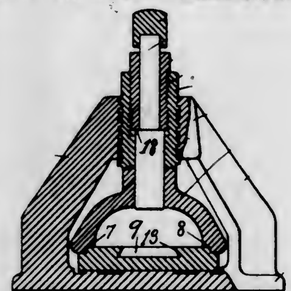
2. A pulley-block of the class described, consisting of parallel side plates connected together at their lower ends, a grooved pulley journaled in said plates, reinforcing-plates arranged on said side plates, apertured parallel bearing-lugs formed on one of said side plates, a right-angularly-formed supporting-bail pivotally mounted in said parallel lugs, a lug formed on the end of said bail, said lug having an inwardly-projecting beveled extension adapted to engage a beveled surface on the reinforcing-plate of the opposite side plate, an apertured lug formed on said latter reinforcing-plate, a pivot-pin journaled in said apertured lug, a bail-shaped latch fixed on said pin and adapted to be swung into engagement with the lug on said supporting-bail, an offset lug formed on one end of said pin and a spring adapted to be engaged by said offset, whereby said latch will be held against casual disengagement from the lug on said supporting-bail, substantially as described.

821,149. DEVICE FOR FACILITATING THE REMOVAL OF VALVES FROM VALVE-BOXES OF INTERNAL-COMBUSTION ENGINES. GASTON J. B. ALPHANDERY, Chaumont, France. Filed Nov. 3, 1905. Serial No. 286,426.

Claim.—In a device for facilitating the removal of valves from the valve-boxes of explosive-motors, the combination with a bent rod slotted at its lower extremity, of a slidable tube applied on said rod, an arm movably mounted upon said tube, and a nut engaging the upper threaded extremity of said rod and bearing upon the upper end of said tube, substantially as above described and for the object specified.



821,150. DENTAL SWAGING APPARATUS. FRANK L. ARGALL, San Jose, Cal. Filed Oct. 25, 1904. Serial No. 229,968.



Claim.—1. In combination with flask-sections, means for firmly holding the two together to form the flask, a screw having a smooth bore, a plunger sliding in said bore and entering the flask-cavity, the plunger having a shoulder engaging the screw to limit its outward movement, the parts being provided with means for enabling the screw to be screwed toward the cavity, substantially as described.

2. In an apparatus of the character described, the combination of upper and lower flask-sections, means for holding said flask-sections together formed with an internally-threaded passage for a screw, a screw screwed into said passage and having a smooth bore, and a plunger sliding in said smooth bore, its inner end entering the flask-cavity and having a shoulder engaging said screw to limit the outward movement of the plunger, substantially as described.

3. In an apparatus of the character described, the combination of upper and lower flask-sections, means for holding the flask-sections together, one of said flask-sections having a die-cavity, the bottom of which slopes continuously upward to the surface of the section, whereby the die can be driven transversely out of the cavity, and means for compressing material in the flask-cavity, substantially as described.

4. In an apparatus of the character described, the combination of upper and lower flask-sections, means for holding the flask-sections together, one of said flask-sections having a die-cavity, the bottom of which slopes continuously upward to the surface of the section, and the sides of said die-cavity flaring outward toward said shallow portion, whereby the die can be driven transversely out of the cavity, and means for compressing material in the flask-cavity, substantially as described.

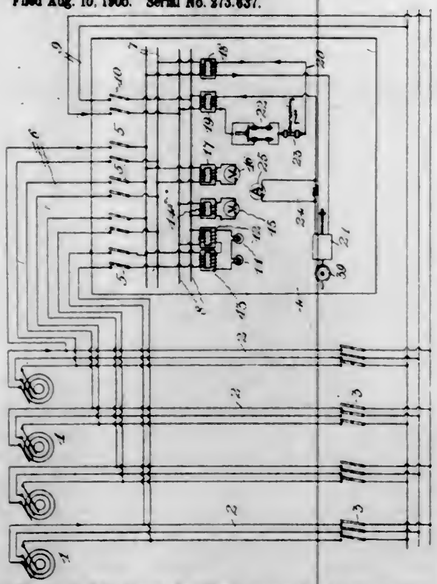
5. In an apparatus of the character described, the combination of upper and lower flask-sections, means for holding the flask-sections together, one of said flask-sections having a die-cavity, the bottom of which slopes upward to the surface of the section, and the sides of said die-cavity being undercut and flaring outward toward said shallow portion, whereby the die can be driven out of the cavity, and means for compressing material in the flask-cavity, substantially as described.

6. In an apparatus of the character described, the combination of a suitable support having standards and a collar supported by said

standards, upper and lower flask-sections on said support, a threaded neck in said collar bearing down upon the upper flask-section and maintaining the flask-cavity closed, said neck being hollow and threaded internally, a screw screwed into said internally-threaded neck and having a smooth longitudinal bore, and a reciprocating plunger in the bore of said screw, substantially as described.

7. In an apparatus of the character described, the combination of a suitable support having standards and a collar supported by said standards, upper and lower flask-sections on said standards, upper and lower flask-sections on said support, a threaded neck in said collar bearing down upon the upper flask-section and maintaining the flask-cavity closed, said neck being hollow and threaded internally, a screw screwed into said internally-threaded neck and having a smooth longitudinal bore, and a reciprocating plunger in the bore of said screw, said plunger having a shoulder engaged by said screw to limit the outward movement of the plunger, substantially as described.

821,151. **SYNCHRONIZER.** MELBAR L. BALLARD, Durango, Colo. Filed Aug. 10, 1905. Serial No. 273,637.



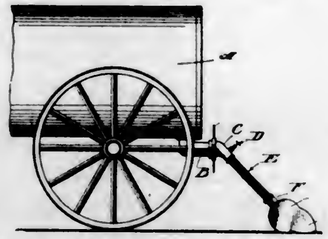
Claim.—1. The herein-described synchronizing system comprising a plurality of alternating-current generators, leads, conductors connecting the generators to the leads and each provided with a circuit-breaking switch; main bus-bars, conductors connecting them to the leads and each including a switch, synchronizer bus-bars, transformers 12, 13, having their respective primary coils connected to the main and synchronizer bus-bars and having translating devices in the circuit of their secondary coils; conductors 6 connecting the first-named generator-conductors to the synchronizer bus-bars and each having a switch, and synchronizing-transformers 18, 18, having their primary coils connected respectively to the synchronizer and main bus-bars and their secondary coils included in a circuit 20, which also includes an impedance-coil, a synchronizer-switch and a fuse, substantially as specified.

2. The herein-described synchronizing system comprising a plurality of alternating-current generators, leads, conductors connecting the generators to the leads and each provided with a circuit-breaking switch, main bus-bars, conductors connecting them to the leads and each including a switch, synchronizer bus-bars, transformers 12, 13, having their respective primary coils connected to the main and synchronizer bus-bars and each having a voltmeter in the circuit of its secondary coil, conductors 6 connecting the first-named generator-conductors to the synchronizer bus-bars and each having a switch; and synchronizing-transformers 18, 19, having their primary coils connected respectively to the synchronizer and main bus-bars and their secondary coils included in a circuit 20, which also includes an impedance-coil, a synchronizer-switch and a fuse, substantially as specified.

3. The herein-described synchronizing system comprising a plurality of alternating-current generators, leads, conductors connecting the generators to the leads and each provided with a circuit-breaking switch; main bus-bars, conductors connecting them to the leads and each including a switch, synchronizer bus-bars, transformers 12, 13, having their respective primary coils connected to the main and synchronizer bus-bars and having translating devices in the circuit of their secondary coils; conductors 6 connecting the first-mentioned generator-conductors to the synchronizer bus-bars and each having a switch; and synchronizing-transformers 18, 19, having their primary coils connected respectively to the synchronizer and main bus-bars and their secondary coils included in a circuit 20, which also includes an impedance-coil, a synchronizer-switch and a fuse, said circuit 20 having a shunt including an ammeter, substantially as specified.

4. The combination of a coil, a shaft slidable therethrough, a core upon said shaft within said coil, a stationary nut, screw-threads upon said end engaged with said nut, a gear keyed to rotate with said shaft but slidable longitudinally thereon, an operating-shaft, and a gear upon the latter in mesh with said gear upon the first-mentioned shaft, substantially as described.

821,152. **MEANS TO SPRINKLE CRUDE OIL ON DUSTY ROADS.** JOHN F. BLUNT, Los Angeles, Cal. Filed May 3, 1905. Serial No. 258,722.



Claim.—1. Means for sprinkling crude oil on dusty roads comprising in combination a portable oil-tank; a discharge-pipe leading therefrom; a sprinkling-cylinder carrying an apron and having connecting-nipples and flexible connection solely connecting the discharge-pipe with the nipples.

2. In combination with a portable oil-sprinkling tank a cylindrical oil-sprinkler having discharge-ports in the side walls thereof; an apron projecting from the sprinkler at a point on the cylinder above the ports therein, the sprinkler being connected with the discharge-pipe of the tank solely by a flexible connection.

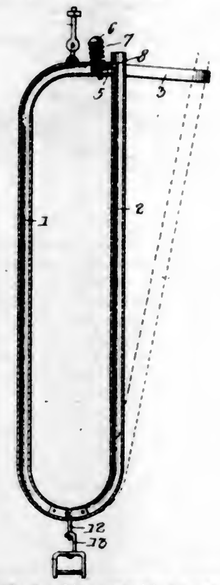
3. In an apparatus for sprinkling crude oil on road-beds comprising a portable oil-tank, a sprinkler having discharge-ports therein and a deflecting-apron disposed on said sprinkler above said oil-ports and adapted to divert the jets of oil downwardly the said sprinkler being in communication with the oil-tank solely by means of flexible connections.

4. In an oil-sprinkler of the character herein described a portable oil-tank, a sprinkler provided with discharge-ports in the side thereof and having an apron disposed above said ports closed at the tops and side and open at the bottom, and flexible tubing constituting the sole connection between tank and sprinkler.

5. The herein-described means to distribute crude oil evenly over uneven surfaces in the road-bed to be sprinkled comprising a portable oil-tank a sprinkler in communication with the oil-tank by means of flexible connections; and having a deflecting-apron disposed on said sprinkler and adapted to divert the jets of oil proceeding from the sprinkler downwardly in a thin sheet where the surface is being oiled.

6. The herein-described means to distribute crude oil on dusty roads comprising in combination the oil-tank A having secured thereto the discharge-pipe B carrying the three-way fitting C; a valve D on each branch of said fitting and the cylindrical sprinkler G having nipples F thereon; the said nipples being in communication with the three-way fitting C by means of the flexible connections E, the said cylindrical sprinkler being provided with discharge-ports H and the deflecting-apron I disposed on said sprinkler above the discharge-ports and adapted to divert the jets of oil ejected through the discharge ports downwardly in a uniform sheet.

821,153. **CATTLE-STANCHION.** RICHARD BREHM, Sheboygan, Wis. Filed Jan. 8, 1906. Serial No. 295,137.



Claim.—1. A cattle-stanchion comprising a main upright side bar having laterally-curved upper and lower ends, a movable side bar hingedly connected at its lower end to the laterally-curved lower end of said main bar, a pivoted guide to receive the upper end of said hinged bar, and a spring-projected catch to engage the upper end of the latter, thereby locking the same in closed position, substantially as described.

2. A cattle-stanchion comprising a main upright side bar having laterally-curved upper and lower ends, a movable side bar having a keeper at its upper end and a laterally-curved lower end hingedly connected to the curved lower end of said main side bar, a bail-shaped guide-loop pivotally connected to the upper curved end of said main side bar, and a spring-actuated catch arranged in said curved upper end of the main bar and adapted to engage the keeper in the upper end of said hinged bar, substantially as described.

3. A cattle-stanchion comprising a main upright side bar having laterally-curved upper and lower ends, a movable side bar having an aperture in its upper end forming a keeper and a laterally-curved lower end hingedly connected to the curved lower end of said main side bar, a bail-shaped guide-loop pivotally connected to the upper curved end of said main side bar, a spring-actuated catch arranged in said upper curved end of the main bar to engage the aperture forming a keeper in the upper end of said hinged bar, guide-luge arranged on the upper end of said hinged bar above and below said guide-loop, and means arranged at the upper and lower ends of said stanchion to loosely connect the same with suitable supports, substantially as described.

821,154. **AUTOMOBILE.** EDGAR P. BREWER, Spokane, Wash. Filed Feb. 4, 1905. Serial No. 244,114.



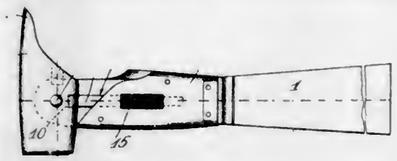
Claim.—1. The combination with a motor-vehicle, of a fixed rear seat, a front seat, a back and sides for the front seat hinged at the forward ends of said sides to the seat and adapted to be swung out of the way and means for spanning the space between seats and coöperate therewith to form a bed or couch.

2. The combination with a vehicle-body, of a fixed rear seat, a front seat, a back and sides for said front seat hinged to said seat and constructed to be swung longitudinally of the body, and vertical movable slides at the ends of the front seat forming when up, sides of the bed or couch.

3. The combination with a vehicle-body and a fixed rear seat, of a front seat, a back and sides for said front seat hinged at their forward edge to the front seat and adapted to be swung forwardly beyond the front seat, and means to bridge the space between the seats and coöperate with the latter to form a bed.

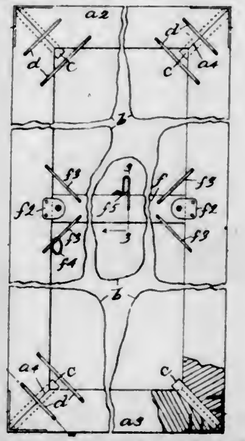
4. The combination with a vehicle-body and a fixed rear seat, of a front seat, means normally supported below said seats for bridging the space between the seats and a horizontally-movable slide normally supported beneath the front seat and constructed to be projected forward therefrom.

821,155. **COMBINATION-TOOL.** THOMAS R. CARLTON and JAMES D. MEADOW, Sherman, Tex. Filed Dec. 11, 1905. Serial No. 291,826.



Claim.—In a tool of the character described, a handle, a hammer-head and claw pivotally mounted on the shank of said handle and forming when in closed position a part of said handle, a locking-bolt slidably mounted in said handle to engage recesses formed in said hammer-head and claw when the same is in an open operative position or in a closed inoperative position, a spring arranged on said bolt to automatically project the same into engagement with said recesses, and a thumb-plate connected to said bolt whereby the same is retracted and disengaged from said recesses, substantially as described.

821,156. **SCENIC FRAME.** EDMUND B. CARNS, New York, N. Y. Filed Dec. 24, 1904. Serial No. 238,235.



Claim.—1. A scenic frame which is rectangular in form and provided with mitered corners, said corners being provided with dowel-keys which are driven therethrough on the line of the miters, and said corners being also provided with staples which are driven into the frame transversely of the line of the miters and from the back of the frame, and the front ends of which are clenched, said frame being also provided with a transverse member connected with the side members of the frame by staples driven therethrough and through said side members transversely of the angles formed by said transverse member and from the back of the frame, and the front ends of which are clenched, substantially as shown and described.

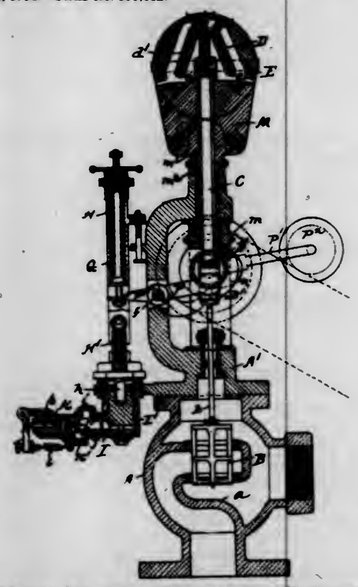
2. A scenic frame which is rectangular in form and provided with mitered corners, said corners being provided with dowel-keys which are driven therethrough on the line of the miters, and said corners being also provided with staples which are driven into the frame transversely of the line of the miters and from the back of the

frame, and the front ends of which are clenched, said frame being also provided with a transverse member connected with the side members of the frame by staples driven therethrough and through said side members transversely of the angles formed by said transverse member and from the back of the frame, and the front ends of which are clenched, and by plates secured to the ends of said transverse members and the side members at the back thereof, substantially as shown and described.

3. A scenic frame which is rectangular in form and the corners of which are connected by transverse staples driven therethrough from the back thereof, and the front ends of which are clenched, said corners being also provided with shoes, and said frame being also provided with a central transverse member connected with the side portions thereof by staples driven therethrough from the back of the frame across the angles formed by the transverse member and the front ends of which are clenched, substantially as shown and described.

4. A scenic frame which is rectangular in form and the corners of which are connected by transverse staples driven therethrough from the back thereof, and the front ends of which are clenched, said corners being also provided with shoes, and said frame being also provided with a central transverse member connected with the side portions thereof by staples driven therethrough from the back of the frame across the angles formed by the transverse member and the front ends of which are clenched, and by plates secured to the back of said transverse member and the back of the side members of the frame, substantially as shown and described.

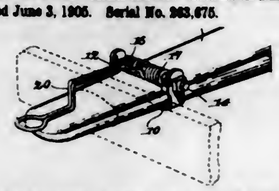
821,157. GOVERNOR. RUDOLPH CONRADER, Erie, Pa. Filed Mar. 14, 1904. Serial No. 196,083.



Claim.—1. In a governor, the combination with the centrifugal weights, the carrier for the same, a stem extending through the carrier, the top of the stem being exposed at the top of the governor, a centripetal element operating upon said stem, a governor-valve, a connection between the valve and the stem, said stem being arranged at the axis of the governor and having a passage along its axis for conveying oil from the exposed top of the stem to the carrier.

2. In a governor, the combination of the centrifugal weights, the carrier for the same, a stem extending through said carrier at the axis of the governor, links connecting said carrier with the weights, the top of the links being adjacent to the top of the stem, a centripetal element operating upon said stem, a governor-valve, devices connecting the governor-valve with the stem, said stem being exposed at the top of the governor and being adjacent to the tops of the links, said stem having a passage arranged at its axis to convey oil from its exposed top to the carrier of the governor, and said links having oil-channels extending through them, the channels in said links opening at points adjacent to the opening in the stem whereby the overflow of oil in the stem enters the channels in the links.

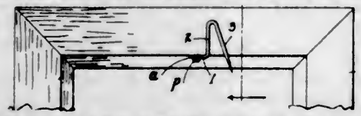
821,158. WHIFFLETREE-HOOK. ROBERT A. DILTS, Trade City, Pa. Filed June 3, 1905. Serial No. 263,675.



Claim.—1. In a trace-fastener, a subetantially U-shaped clip for embracing the whiffletree at one side, a clamp-bolt operating through the ends of said clip and extending over the whiffletree at the other side, and a trace-holding member formed from a single piece of wire folded centrally and with a loop at the fold for frictional engagement with the whiffletree and extending in advance of the end of the same, and with coils near the ends of the holding member for engaging said clamp-bolt and with the terminals bearing above the body of the whiffletree, said holding member having an intermediate bend for bearing over the trace when in position upon the whiffletree.

2. In a trace-fastener, a substantially U-shaped clip for embracing the whiffletree at one side and with spaced lugs extending partially over the whiffletree at the other side, a clamp-bolt operating through the ends of the clip member and extending over the whiffletree, and a trace-holding member in frictional engagement with said whiffletree and provided with spaced coils engaging said bolt and with the terminals extended for bearing upon said lugs and above the body of the whiffletree.

821,159. HANGER FOR PICTURE-FRAMES. LOUIS FELDMANN, Jr., St. Louis, Mo. Filed Oct. 23, 1905. Serial No. 284,092.



Claim.—1. A hanger composed of a basal portion adapted to oscillate about its free end, an intermediate portion deflected therefrom at an angle thereto, and a terminal prong or member deflected outwardly from the intermediate portion, substantially as set forth.

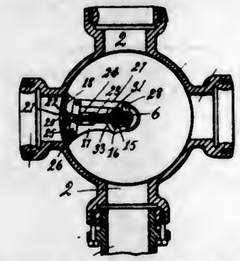
2. A hanger composed of a single piece of wire length and comprising a basal portion or member adapted to oscillate about its free end, an intermediate portion or member deflected therefrom at an angle thereto, and a terminal outwardly-deflected prong, the prong and intermediate member being disposed in a plane making an obtuse angle with the basal portion of the hook, substantially as set forth.

3. In combination with a picutre-frame member, a hook comprising a basal member pivotally secured along the under surface of the upper member of the frame, an intermediate member deflected from the basal member at an angle thereto, and a terminal outwardly-deflected prong at the upper end of the intermediate member, said prong and intermediate member being disposed in a plane making an obtuse angle with the basal member of the hook, the intermediate member engaging the rear face of the frame for the operative position of the hook, and the intermediate member and prong jointly folding against the face of the frame for the folded position of the hook, the basal member of the latter being disposed at an acute angle to the plane of the face engaged by the members of the hook, for the extreme positions of the hook, substantially as set forth.

4. As an article of manufacture, a hook composed of a single piece of wire and comprising a basal member terminating in an eye, an intermediate portion deflected at right angles thereto, and a third portion or prong deflected outwardly from the intermediate portion, the basal member making an obtuse angle to the plane of disposition of the intermediate portion and terminal prong, substantially as set forth.

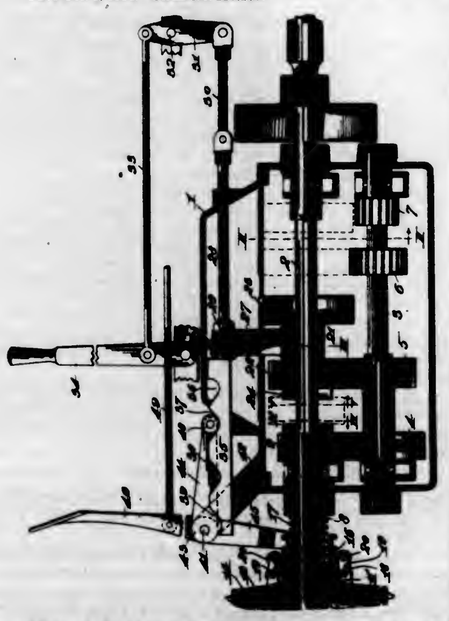
821,160. CONTROLLER FOR DISTRIBUTION OF FLUID IN CITIES. FRANK J. FOUREAUX, Alameda, Cal., assignor to Mutual Gas and Engineering Company, a Corporation of California. Filed Mar. 6, 1905. Serial No. 245,461.

Claim.—1. In an apparatus of the character described, the combination of a cylindrical valve-casing having ways, a stem arranged axially of the casing, arms secured upon said stem, a yoke-shaped valve-gate having sector-shaped holes in the arms of said yoke, said holes surrounding the valve-stem and the arms secured thereon, the middle portion of the yoke being cylindrical in form to move in contact with the cylindrical wall of the casing, the face of the gate having an opening therein, a relief-valve in said opening, means operated by the movement of the stem for withdrawing said relief-valve, the arms on the stem in their further movement being adapted to come into contact with the arms of the yoke-shaped gate to actuate the same, substantially as described.



2. In an apparatus of the character described, the combination of a cylindrical casing having ways for connecting with main pipes, a stem arranged axially in said casing, arms secured to said stem to rock therewith, a yoke-shaped valve-gate, the arms of which have holes surrounding the valve-stem, the arms on the stem moving loosely in said holes, the face of the gate having an opening, a relief-valve in said opening having a flange and guide-stem, said guide-stem being suitably guided in the gate, a lever to which said stem is loosely pivoted, an arm extending from the stem from a link connecting said lever and arm, a coiled spring around the relief-valve stem pressing it outward, and a coiled spring for pressing the gate outward, substantially as described.

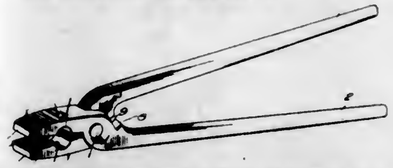
821,161. GEAR-CONTROLLING DEVICE FOR MOTOR-VEHICLES. EDWARD B. GADSBY and GEORGE P. DORRIS, St. Louis, Mo. Filed Oct. 5, 1904. Serial No. 227,207.



Claim.—1. In a gear-controlling device for motor-vehicles, the combination with a changeable gearing of the character described, of a spring-controlled clutch, a reciprocatory notched bar secured to a part of said gearing, a single lever for changing the gearing and reciprocating said bar, and means for releasing said clutch when the gearing is changed; said means comprising a bell-crank rocker having one of its arms connected to the clutch and having its other arm adapted to ride on said notched bar for vertical reciprocation thereon when the bar is reciprocated.

2. In a gear-controlling device for motor-vehicles, the combination with a changeable gearing of the character described, of a spring-controlled clutch, a reciprocatory notched bar secured to a part of said gearing, a single lever for changing the gearing and reciprocating said bar, and means for releasing said clutch when the gearing is changed; said means comprising a bell-crank rocker having one of its arms connected to the clutch and having a roller on its other arm adapted to ride on said notched bar for vertical reciprocation thereon when the bar is reciprocated.

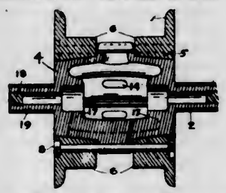
821,162. WIRE-COILING TOOL. OAKLEY A. GANT, Oakman, Ala. Filed Nov. 23, 1905. Serial No. 288,719.



Claim.—1. A wire-coiling tool comprising the two crossed pivoted levers having a pair of coöperating pincer-jaws, formed at their inner faces with registering similar transverse coil-receiving grooves terminating in reduced line-wire-receiving grooves, a jaw having a wire feeding and guiding perforation extending therethrough and opening into the floor of the coil-receiving groove, substantially as described.

2. A pair of pincers consisting of pivotally-united levers having at the end approximately similar coöperating jaws at their inner faces having the transverse registering grooves extending completely across the same, and the perforations extending through the jaws at right angles to the length thereof and to the axis of the passage formed by said grooves and opening into said passage intermediate the length thereof, one perforation being of greater diameter than the other, substantially as described.

821,163. TUMBLER FOR BUCKET ELEVATORS. JAMES H. GRAY, San Francisco, Cal. Filed Mar. 22, 1905. Serial No. 251,529.



Claim.—1. A tumbler for bucket elevators comprising a main body provided at its ends with bearings or trunnions of smaller diameter, polygonal heads around said main body at its ends, having outwardly-extending flanges at their outer sides, and means for removably securing said heads on said body, substantially as described.

2. A tumbler for bucket elevators comprising a main body provided at its ends with bearings or trunnions of smaller diameter, polygonal heads around said main body at its ends, having outwardly-extending flanges at their outer sides, and bolts for removably securing said heads on said body, substantially as described.

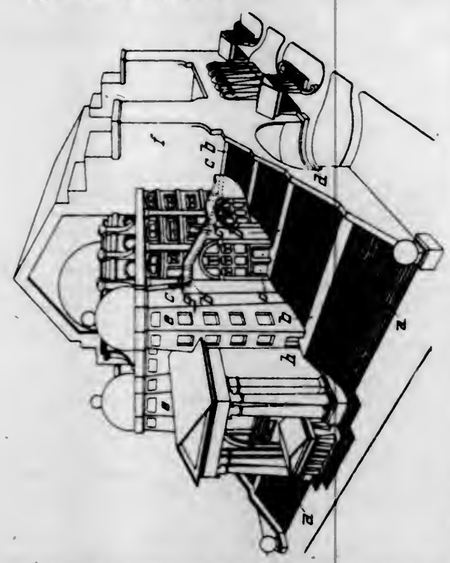
3. A tumbler for bucket elevators comprising a main body provided at its ends with bearings or trunnions of smaller diameter, polygonal heads around said main body at its ends, having outwardly-extending flanges at their outer sides, and bolts extending parallel with the main body, and securing the heads together, substantially as described.

4. A tumbler for bucket elevators comprising a main body having tapering ends and provided at its ends with bearings or trunnions of smaller diameter, polygonal heads around said main body at its ends, having outwardly-extending flanges at their outer sides, and bolts extending parallel with the main body, and securing the heads together, substantially as described.

5. A tumbler for bucket elevators comprising a main body having tapering ends, removable heads on said tapering ends, having outwardly-extending flanges, the middle portion of the main body being formed with ribs extending radially between the opposing ends of the heads, and bolts connecting the heads and lying between the ribs, substantially as described.

6. A tumbler for bucket elevators, comprising a shaft, a main body removably secured thereon, the shaft extending through the body at both ends, polygonal heads removably secured on the ends of said body and having outwardly-extending flanges, and means for retaining said heads thereon, substantially as described.

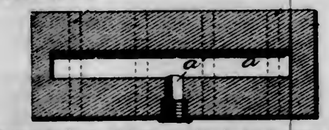
821,164. THEATER. HENRY HELBIG, Munich, Germany. Filed Sept. 6, 1905. Serial No. 277,243.



Claim.—1. In a building for theaters, circuses and other assembly-halls, the combination of exterior flights of stairs leading up at the side of the building, exits from each part of the house directly onto the said stairs, the said stairs being widened toward the lower parts to correspond with the increased number of exits.

2. In a building of the class specified, the combination of exterior flights of stairs arranged at each side of the house, in the open air, exits direct from each floor of the house to the stairs, the latter being gradually widened toward the lower parts.

821,165. OIL-BURNER. ISAAC HOLLENBACH, GUSTAVUS A. HAAGE, and JOHN G. HOLLENBACH, Reading, Pa. Filed Oct. 20, 1903. Serial No. 127,930.



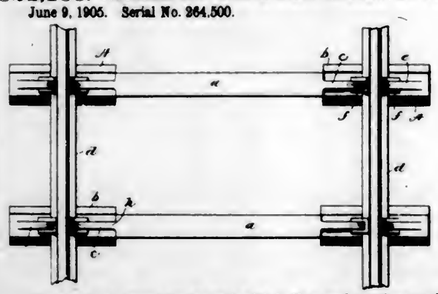
Claim.—1. In an oil-burner, a block of refractory material porous throughout, said block having an internal retort-chamber isolated by said porous material from the burning-surfaces of the block, and having a plurality of air-holes whose walls are formed by the porous material of the block, in combination with means for supplying oil to said retort-chamber.

2. In an oil-burner, a block of refractory material porous throughout, said block having an internal retort-chamber isolated by said porous material from the burning-surfaces of the block, and having a plurality of vertically-arranged air-holes whose walls are formed by the porous material of the block, in combination with means for supplying oil to said retort-chamber.

3. In an oil-burner, a block of solid refractory material porous throughout, said block having an internal cavity forming a retort-chamber, the walls of said cavity being formed of the said porous material, which isolates the cavity from the burning-surfaces of the block, said block having also a plurality of air-holes passing entirely through it, and an oil-inlet extending from the retort-chamber to the outer surface of the block, in combination with a bushing secured in said oil-inlet, a pipe connected to said bushing and a tank arranged to supply oil to the pipe.

4. In an oil-burner, a block of solid refractory material, porous throughout, said block having an internal unlined cavity forming a retort-chamber, and an oil-inlet extending from the said retort-chamber to the outer surface of the block, the walls of the retort-chamber being imperforate with the exception of the oil-inlet, said block also having a plurality of air-holes passing through the block.

821,166. METALLIC TIE. CHARLES HORRELL, Madison, Ill. Filed June 9, 1905. Serial No. 264,500.



Claim.—1. A metal tie formed with hollow end portions and a central solid connection of I-shaped formation, said end portions having lugs thereon.

2. A metal tie having lugs thereon, wedges adapted to be driven underneath said lugs and engage the rail, and a supporting-block between the lower portions of said wedges and adapted to engage with and support the rail.

3. A metal tie formed with recessed end portions having diverging sides and a solid bar joining the said end portions and integrally connected therewith, the said bar having offset portions extending over the end portions to a point above the base of the rail, constituting retaining-lugs.

4. A metal tie having a flat top and diverging side webs top lugs formed integrally with the same and wedges adapted to be driven underneath the said lugs and to engage and lock the rail on either side.

5. A metal tie formed with end pieces having lugs formed integral therewith, wedges adapted to be driven underneath said lugs and formed with reëntrant slots engaging each side of the rail and a supporting-block between the lower portions of said wedges and adapted to engage with and support the rail.

6. In a metallic tie the end pieces having diverging sides, *b*, *b*, outer lugs, *e*, *e*, inner lugs *c*, *c*, the wedges, *f*, *f* engaging the rail underneath the said lugs and the supporting-blocks, *g*, *g* formed integrally with the end pieces and located between the lower portions of the said wedges, substantially as shown and described.

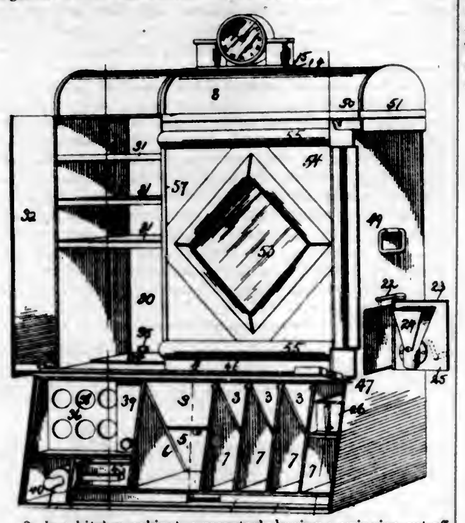
7. A metallic tie comprising oppositely-disposed end portions, and a connecting-bar of substantially I-shaped formation.

8. A metallic tie comprising oppositely-disposed end portions, and a connecting-bar of substantially I-shaped formation, the upper flange of the connection extending over the respective end portions and constituting lugs.

9. A metal tie comprising oppositely-disposed end portions, and a connecting-bar of substantially I-shaped cross-section, the upper flange of the connection extending beyond the ends of the web thereof and constituting lugs.

821,167. KITCHEN-CABINET. WILLIAM H. HURT, Fayette, Mo., and JOHN B. CRAIG, Cleveland, Tenn. Filed Nov. 18, 1905. Serial No. 287,963.

Claim.—1. In a kitchen-cabinet, a body portion provided at one side with a series of vertically-disposed bins having partitioned passages at the lower front portion of the cabinet and communicating therewith, a storage-compartment at one end of said bins and provided with a door at its front, a cover for said bins, a storage-compartment at one end of the partitioned passages, and a cover extending for the length of the front of the cabinet above the delivery-passages and the last-mentioned storage-compartment.



2. In a kitchen-cabinet, a receptacle having a swinging cut-off plate at its lower portion, a door communicating with the space beneath said plate and a latch-handle extending from the pivot of said plate to engage said door when the plate is open.

3. In a kitchen-cabinet, a receptacle having a swinging cut-off plate at its lower portion, a door communicating with the space beneath said plate, a latch-handle extending from the pivot of said plate to engage said door when the plate is open, and a closure for the upper portion of said receptacle provided with a slide to cover the opening therein.

4. In a kitchen-cabinet, a receptacle having a swinging cut-off plate at its lower portion, a door communicating with the space beneath said plate, a latch-handle extending from the pivot of said plate to engage said door when the plate is open, a grinding-mill mounted upon said door to lie beneath said cut-off plate when the door is closed.

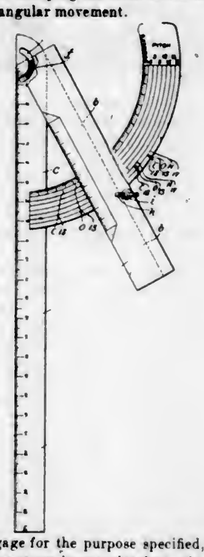
5. In a kitchen-cabinet, a receptacle having a swinging cut-off plate at its lower portion, a door communicating with the space beneath said plate, a latch-handle extending from the pivot of said plate to engage said door when the plate is open, a grinding-mill mounted upon said door to lie beneath said cut-off plate when the door is closed, and a drawer disposed upon the base of said receptacle beneath said mill.

6. In a kitchen-cabinet, a body portion provided at one side with a series of vertically-disposed bins having communicating partitioned passages at the front lower portion of the bins, a storage-compartment at the opposite end of the body portion from said bins and provided with a door at its front, a pivoted door above the delivery-spaces from the bins, a secret compartment beneath the rear of the storage-compartment, and an apertured supporting-plate provided at the front beneath said storage-compartment.

7. In a kitchen-cabinet, a body portion provided at one side with a series of vertically-disposed bins having communicating partitioned passages at the front lower portion of the bins, a storage-compartment at the opposite end of the body portion from said bins and provided with a door at its front, a pivoted door above the delivery-spaces from the bins, a secret compartment beneath the rear of the storage-compartment, an apertured supporting-plate provided at the front beneath said storage-compartment, a storage-receptacle at one end of said body portion parallel with said bins, a cut-off plate in said receptacle, a door mounted at the end of the body below said plate, a grinding-mill supported upon said door, and means extending from said plate to operate the same for establishing communication between the mill and receptacle when in engagement with said door.

821,168. RAFTER-GAGE. VICTOR A. JOHNSON, New Westminster, Canada. Filed July 21, 1905. Serial No. 270,677.

Claim.—1. In a bevel-gage for the purpose specified, the combination with a stock, of a blade member mounted on concentric arcs the center of which is coincident with the edge of the stock, one of which arcs toward the axis of movement is cut in the blade member and has an arc-bearing in the body of the stock, the other being an arc-segment secured to the blade and passing through the body of the stock, desired graduations on the face of the last-named arc-segment, and means for clamping the stock to the arc-segment at any desired position of angular movement.



2. In a bevel-gage for the purpose specified, the combination with a stock having a recess in one edge face, of a graduated blade member fitting the recess and mounted on concentric arc-bearings the center of which is coincident with the recessed edge of the stock the arc-bearing adjacent to the axis of movement of the blade being cut in the body of the blade and provided with a bearing-segment in the body of the stock, the other arc-segment secured to the blade member and passing through the body of the stock having means on the stock for clamping it in any desired position of angular movement, and a series of graduations on the face of the last-named arc-segment indicating the angles of bevel required for various slopes of roof-pitches, and numbered to give the cut of bevel for the rafter ends.

821,169. PULLEY. JACOB T. JOHNSON, Philadelphia, Pa. Filed July 17, 1905. Serial No. 270,084.



Claim.—1. In combination, a base-plate having a downwardly-extending flange at its front edge, the plate and flange being provided with openings for the passage of securing devices, a pair of spaced standards carried by the base-plate, a self-locking pulley mounted between said standards, and cord guides or guards extending inward from the standards over the front face of the pulley, said guards being spaced from each other at the central portion of the pulley to permit the free passage of the cord.

2. In combination, a base-flange having a pendent flange at its forward edge, the plate and flange having openings for the passage of securing devices, a pair of spaced standards rising from the base-plate, a self-locking pulley mounted in the standards and having a centrally-disposed peripheral groove, there being a similar groove formed in the upper face of the base-plate at a point opposite said annular groove, and a pair of cord-guides extending inward from the standards and spaced from each other a distance approximately equal to the width of said annular groove, said guides extending from the base-plate upward over the front and a portion of the top of the pulley.

821,170. BUCKLE. LEONIDAS M. KENTON, Ada, Ohio. Filed Nov. 2, 1905. Serial No. 285,690.

Claim.—1. A device of the character described, comprising a substantially rectangular frame consisting of side bars connected by

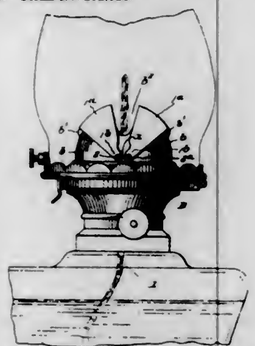
end bars and three intermediate cross-bars, two being arranged adjacent to each other at the central portion of said frame and one being arranged adjacent to one end of said frame, and swinging cross-bars arranged upon one of said side bars and adapted to engage the other of said side bars.



2. A device of the character described, comprising a substantially rectangular frame consisting of side bars connected by end bars and three intermediate cross-bars, two being arranged adjacent to each other at the central portion of said frame and one being arranged adjacent to one end of said frame, and swinging cross-bars having eyes at one end adapted to receive one of the side bars of said frame, said swinging cross-bars being adapted to have their free ends engage the opposite faces of the other of said side bars, substantially as described.

3. A buckle comprising a frame having side bars, end bars connecting them, and a plurality of intermediate cross-bars spaced apart and also connecting the side bars, and a pivoted cross-bar on one of the side bars between two of the intermediate cross-bars and adapted to have its free end engage the other side bar.

821,171. LAMP-BURNER. GEORGE KERR, Dallas, Oreg. Filed Dec. 21, 1905. Serial No. 293,836.



Claim.—1. A lamp-burner having an extinguisher which comprises a plate shaped to swing over the flame-slot, said plate being pivotally mounted on the burner, whereby to frictionally engage the burner-body when swung over the slot therein, for the purposes described.

2. In a lamp-burner of the character described, the combination with the slotted dome; of a pair of oppositely-disposed plates, each independently hinged on the outside of the dome whereby either of said plates is adapted to automatically swing over the dome-slot when the lamp is tipped in either direction, each plate being shaped to frictionally engage the dome when swung over the slot therein.

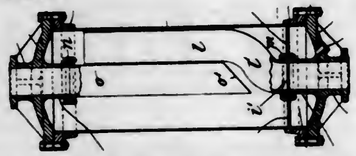
3. In a lamp-burner of the character described, a pair of oppositely-disposed plates pivotally mounted on the slotted dome portion, either of said plates being adapted to close over the dome-slot when the lamp is tipped in either direction and shaped to frictionally interlock with the said dome when they reach their slot-closing position.

4. In a lamp-burner of the character described, in combination with a slotted dome, the crown of which is curved on the arc of the circle, a pair of plates curved on an arc concentric with the dome-crown, means for pivotally mounting said plates on the dome whereby to freely swing to their down or normal position and out of contact and to frictionally engage the dome when swung in the other direction to close over the dome-slot, each plate being eccentric to the curvature of the dome, means on the dome for loosely sustaining the plates at their open or normal position, the pivotal connection of the plates being such that the plates are held from the crown when at their normal position, and whereby as either plate is swung over the crown-slot it will pass under the opposite plate and move into frictional engagement with the crown as set forth.

5. In a burner of the character described, an extinguishing means comprising a pair of oppositely-disposed plates shaped to swing over the flame-slot in the burner-dome, means for pivotally mounting said plates on the said dome whereby either of said plates will move over the slot in the dome and under the other plate when the lamp is turned, each plate having a portion to frictionally interlock with the dome when swung over the slot therein, for the purposes specified.

6. The combination with the slotted dome portion of the burner, said portion being curved on the arc of a circle; of a pair of oppositely-disposed plates, each curved concentrically to the curve of the dome, each plate being pivotally mounted on the outside of the dome to swing over the slot in the dome when the lamp is tipped, the pivots being eccentrically arranged with respect to the curvature of the slotted dome, each of said plates when swung down to their normal or open position, being held out of contact with the slotted dome, means projected from the dome for sustaining the plates at their normal position, the pivotal connection of the said plates to the dome being such that when either of the said plates is swung over the slot in the dome, it will frictionally engage with the dome and be thereby held to its closed position.

821,172. STEAM-SEPARATOR. RAGNAR L. KJERNER, Yonkers, N. Y., assignor of one-half to Standard Steam Specialty Company, New York, N. Y., a Corporation of New York. Filed Sept. 20, 1905. Serial No. 279,363.

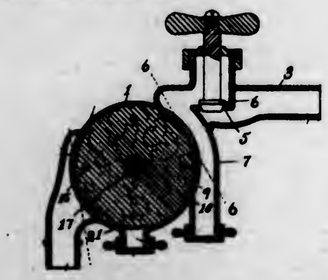


Claim.—1. A steam-separator, comprising a vertical, cylindrical drum, a steam-inlet extended downward centrally within the drum, a steam-outlet centrally located in the lower end of the drum and extended upwardly at one side, a perforated diaphragm extended across the drum at the lower end thereof, and an outlet for the water of condensation below the same, substantially as described.

2. A steam-separator, comprising a vertical drum, a steam-inlet pipe extended downward centrally within the drum and having its lower end cut obliquely, a steam-outlet centrally located in the lower end of the drum and extended upward at one side, a perforated diaphragm located near the bottom of the drum, and an outlet for the water of condensation below the same, substantially as described.

3. A steam-separator, comprising a cylindrical shell, upper and lower heads having flanged necks, a steam-inlet extension secured to the neck of the upper head, a steam-outlet extension secured to the neck of the lower head and bent to one side of the inlet extension, a perforated diaphragm near the lower end of the shell, and an outlet for the water of condensation in the lower head, substantially as described.

821,173. FILTER. FRANK K. KREUTS, San Francisco, Cal. Filed Dec. 1, 1905. Serial No. 289,766.



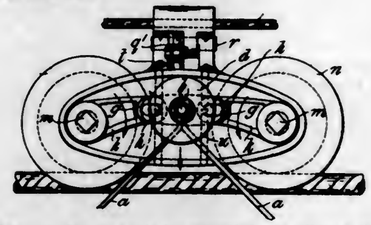
Claim.—1. A filter comprising a casing having a filtering-box, a service-pipe on one side of said box having an extension to form a settling-chamber, a discharge-pipe on the opposite side of said box, said service and discharge pipes opening through the circumference of said box over a large arc of said circumference, screens covering the passages between said pipes and box, compressed sponge in said box, and means for turning said sponge in said box, substantially as described.

2. A filter comprising a casing having a filtering-box, a service-pipe on one side of said box having an extension to form a settling-chamber, a discharge-pipe on the opposite side of said box, said service and discharge pipes opening through the circumference of said box over a large arc of said circumference, screens covering the passages between said pipes and box, compressed sponge in said box, and means for turning said sponge in said box, the box having a cleaning-outlet, and a coarse screen over said outlet, substantially as described.

3. A filter comprising a casing having a filtering-box, a service-pipe on one side of said box, a discharge-pipe on the opposite side of said box, said service and discharge pipes opening through the circumference of said box over a large arc of said circumference, screens covering the passages between said pipes and box, compressed sponge in said box, and means for turning said sponge in said box, substantially as described.

4. A filter comprising a casing having a filtering-box, a service-pipe on one side of said box, a discharge-pipe on the opposite side of said box, said service and discharge pipes opening through the circumference of said box over a large arc of said circumference, screens covering the passages between said pipes and box, compressed sponge in said box, the box having a cleaning-outlet, and a coarse screen over said outlet, substantially as described.

821,174. ROPE-GRIP FOR SUSPENDED ROPE RAILWAYS. ADOLF W. KÜTTER, Stötteritz, near Leipsic, Germany. Filed Jan. 2, 1906. Serial No. 294,326.



Claim.—1. In a rope-grip for suspended rope railways, the combination with a traveling frame and rollers and a rope-clamp supported thereby, of rocking shafts, arms on the shafts adapted to operate the rope-clamp, and means for actuating the shafts to which the load is directly connected.

2. In a rope-grip for suspended rope railways the combination with a traveling frame and rollers and a rope-clamp supported thereby, of rocking shafts, two opposite pairs of arms on the shafts, a cross-head arranged to connect one pair of opposite arms, means for connecting said cross-head to the gripping-jaws, and a cross-head connected with the other pair of arms and from which the load is directly suspended.

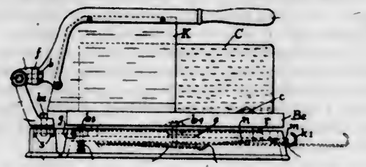
3. In a rope-grip for suspended rope railways the combination with a traveling frame and rollers and a rope-clamp supported thereby, of rocking shafts, two opposite pairs of arms on the shafts, a cross-head arranged to connect one pair of opposite arms, means for connecting said cross-head to the gripping-jaws, and a cross-head connected with the other pair of arms, a hanger to which the load is attached, and a direct connection between the hanger and the last-named cross-head.

4. In a rope-grip for suspended rope railways the combination with a traveling frame and rollers and a rope-clamp supported thereby, of rocking shafts, two opposite pairs of arms on the shafts, a cross-head arranged to connect one pair of opposite arms, a guide on the frame for said cross-head, means for connecting said cross-head to the gripping-jaws, and a cross-head connected with the other pair of arms and from which the load is directly suspended.

5. In a rope-grip for suspended rope railways the combination with a traveling frame and rollers and a rope-clamp supported thereby, of rocking shafts, two opposite pairs of arms on the shafts, a cross-head arranged to connect one pair of opposite arms, a guide on the frame for said cross-head, rods to connect the cross-head and gripping-jaws, and a cross-head connected with the other pair of arms and from which the load is directly suspended.

821,175. CHEESE-CUTTER. ARTHUR C. LA MAY, Rochester, N. Y., assignor to D. C. Giles, Elmira, N. Y. Filed Oct. 5, 1905. Serial No. 281,275.

Claim.—1. In a cheese-cutting machine, a base, a cheese-carrying board revolubly supported on such base, a cutting-blade, an arm for carrying such blade, a standard carrying a bearing fixed therein for such arm, and means for rigidly securing and adjusting such standard vertically on such base.



2. In a cheese-cutting machine, a revoluble cheese-carrying board, a cutting-blade pivotally supported to swing upon an axis practically parallel with the plane of the board and means for adjusting such pivotal support to vary the plane of motion of such cutting-blade relatively to the plane of such board.

3. In a cheese-cutting machine, a revoluble cheese-carrying board, a cutting-blade pivotally supported to swing upon an axis practically parallel with the plane of the board and means for adjusting such blade relatively to the plane of motion thereof.

4. In a cheese-cutting machine, a revoluble cheese-carrying board, mechanism for moving such board angularly on its center and for actuating such mechanism an operating element arranged to reciprocate in a direction practically radial to such cheese-carrying board.

5. In a cheese-cutting machine, a revoluble cheese-carrying board, mechanism for moving such board angularly on its center, for actuating such mechanism an operating element arranged to reciprocate in a direction practically radial to such cheese-carrying board and means for locking such operating element in its inmost position.

6. In a cheese-cutting machine, a revoluble cheese-carrying board, mechanism for moving such board angularly on its center, for actuating such mechanism an operating element arranged to reciprocate in a direction practically radial to such cheese-carrying board and a scale carried by such operating element arranged to be concealed within the machine when such element is in its inmost position.

7. In a cheese-cutting machine, a revoluble cheese-carrying board, mechanism for moving such board angularly on its center, for actuating such mechanism an operating element arranged to reciprocate in a direction practically radial to such cheese-carrying board, a scale carried by such operating element arranged to be concealed within the machine when such element is in its inmost position and means for locking such operating element in its inmost position.

8. In a cheese-cutting machine, a revoluble cheese-carrying board, mechanism for moving such board angularly on its center, for actuating such mechanism an operating element arranged to reciprocate in a direction practically radial to such cheese-carrying board, a scale carried by such operating element arranged to be concealed within the machine when such element is in its inmost position, means for locking such operating element in its inmost position and for limiting the motion of such operating element an adjustable screw-stop and coöperating therewith a member arranged to be actuated by such operating element.

9. In a cheese-cutting machine, a revoluble cheese-carrying board, mechanism for moving such board angularly on its center, for actuating such mechanism an operating element arranged to reciprocate in a direction practically radial to such cheese-carrying board, means for gaging and limiting the motion of such mechanism comprising a threaded element and an element fixed relatively thereto, such threaded element and such fixed element carrying coöperating scales whereby the scale on such fixed member is adapted to gage the longitudinal travel of such threaded member while the angular motion of such threaded member is indicated by the scale thereon coöperating with a line on such fixed member parallel with the axis of such threaded member, and a scale carried by such operating element and arranged to be concealed within the machine when such element is in its inmost position.

10. In a cheese-cutting machine, a revoluble cheese-carrying board, mechanism for moving such board angularly on its center and for actuating such mechanism an operating element, such operating element carrying a scale arranged to be concealed within the machine when such operating element is at its zero or initial position.

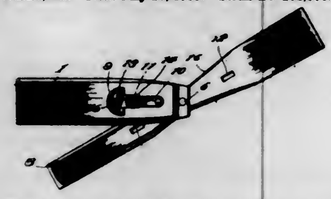
11. In a cheese-cutting machine, a revoluble cheese-carrying table, an operating device arranged to impart angular motion to

such cheese-carrying table, a cutting-knife and a handle therefor and means for preventing the movement of such operating device when the handle for such cutting-knife is in its downmost position.

12. In a cheese-cutting machine, a revoluble cheese-carrying table, an operating device arranged to impart angular motion to such cheese-carrying table, a cutting-knife and a handle therefor and means for preventing the movement of such operating device when such cutting-knife is down upon the cheese-carrying table.

13. In a cheese-cutting machine, a revoluble cheese-carrying table and means for imparting angular motion thereto, a cutting-knife and a handle therefor, such handle connected to such knife by a member encircling the machine on one or both sides and lying normally, when in its downmost position, in front of and below the plane of such cheese-carrying table.

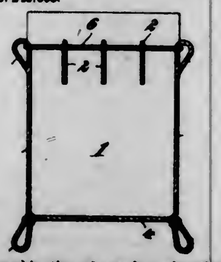
821,176. **PUTTY KNIFE AND CHISEL.** CHARLES S. LELAND, Mount Desert, Me. Filed July 27, 1905. Serial No. 271,506.



Claim.—1. A device of the character described comprising a handle provided with a recess in one of its sides, a member pivoted at a point intermediate its length to said handle, and having its respective ends formed so as to serve as different tools, said member being designed to swing on the handle so that one of its ends will be received therein and the other extended therefrom, a spring-catch secured at one end to the handle and provided at its other end with a lug accommodated by said recess and designed to engage the pivot member at either end thereof for the purpose set forth, and a finger-piece mounted on said spring-catch and designed to lie flush with the handle in the recess thereof and to be withdrawn from said recess in position to be grasped to withdraw the lug out of engagement with the pivot member.

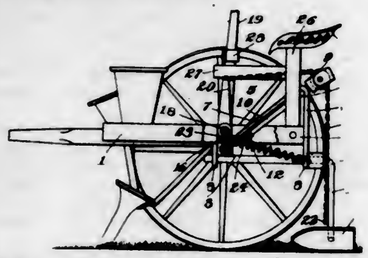
2. A device of the character described comprising a handle provided with a recess in one of its sides, a member having its respective ends formed so as to serve as different tools either being designed for insertion in the handle with the other end extending therefrom, a spring-catch secured at one end to the handle and provided at its other end with a lug accommodated by said recess and designed to engage the said tool member, and a finger-piece 13 provided with a shank formed with an opening receiving the said lug, whereby said finger-piece is designed to lie flush with the handle in the recess thereof and to be withdrawn from said recess in position to be grasped, as and for the purpose set forth.

821,177. **SACK.** GEORG LEUE, Berlin, Germany. Filed Jan. 11, 1905. Serial No. 240,665.



Claim.—The combination of a sack, a plurality of flexible eyes arranged solely on the exterior of the sack, and a single endless flexible fastener passing loosely through the eyes around the sack on the exterior thereof; said fastener being adapted to be pulled out from the sack at any two points to form two loops, one of which is adapted to be inserted through the other, and the eyes being spaced from the top of the sack such a distance as to permit one of the loops thus formed to surround the sack above the eyes, whereby a pull exerted on the other loop will cause a complete closure of the sack.

821,178. **LAND-MARKER.** JAMES C. LISTON, Chatsworth, Ill. Filed Aug. 23, 1905. Serial No. 275,445.



Claim.—1. In a land-marker, the combination with a suitable framework of a transverse bar or beam secured thereto, a bracket secured at one end to said beam and at the other end to the rear member of the frame, a shaft mounted on said bracket and below said beam, a marker-rod carrying the blade and secured to said shaft whereby it may turn from side to side, a rod mounted to turn in said bracket and provided at its upper end with a pulley or guide member, a lever mounted to turn on said beam, and a cable connecting said lever and marker-rod and passing over said pulley.

2. In a land-marker, the combination with a suitable frame of the transverse beam secured thereto, a bracket secured to the beam and to the rear bar of the frame the said bracket comprising an inclined member, a shaft mounted longitudinally of said bracket, a marker-rod secured to said shaft and carrying the blade designed to be moved to either side of the machine, a rod mounted in the inclined portion of said bracket and rotatable about its longitudinal axis, a pulley mounted on the upper side of said rod a lever mounted on said transverse rod or beam, a cable secured at one end to the marker-rod and passing over said pulley and an arm designed to move with said lever and secured to other end of said cable.

3. In a land-marker, the combination with a suitable framework including two transverse members, one in advance of the other a bracket secured to and between said members and rising therefrom, a rotatable rod mounted in said bracket provided at its upper end with a pulley, a longitudinally-extending shaft journaled in the frame, a marker-rod and blade carried by said shaft, a rod 18 mounted upon the forward transverse bar of the framework and provided with two outwardly-extending rods, and with an upwardly-extending arm in alinement with the bracket, a contractile spring connecting said lugs with the rear bar of the framework, a cable passing over said pulley and connected at its ends with a marker-rod and arm respectively and a lever connected with said rod 18 to move the same and designed for interlocking engagement with a portion of the framework.

821,179. **WHIFFLETREE.** ALBERT R. MEISTER and ALBERT E. WRIGHT, Sacramento, Cal. Filed May 15, 1905. Serial No. 260,480.

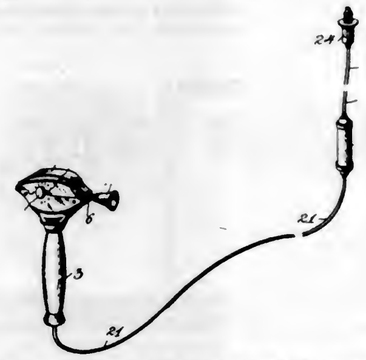


Claim.—A whiffletree comprising a body, a ferrule arranged on the end of the body and exteriorly and gradually tapered from its inner end to its outer end and having a longitudinal groove and transverse grooves, of V shape in cross-section, in its outer end, a turn-button shaped to form a continuation of the gradually-tapered ferrule and abutting against the outer end thereof and having a V-shaped rib on its inner edge and also having a shank journaled and movable endwise in the ferrule and provided with an enlargement, and a coiled spring arranged in the ferrule and between the outer end portion thereof and the enlargement on the button-shank.

821,180. **ELECTRIC MASSAGE AND VIBRATOR MACHINE.** SAMPSON W. MOON, Chicago, Ill., assignor to Horto Electric Company, Chicago, Ill. Filed May 18, 1905. Serial No. 260,960.

Claim.—1. In a massaging-machine, the combination with a casing having a handle, of an electromagnet arranged in said casing, a pivotally-mounted armature vibrated by said magnet, a vibrating tool-carrying arm arranged on said armature, a massage-cup secured

to said arm, means whereby said armature is balanced when in its inoperative position, and means whereby the speed and length of the vibrations of the same are controlled and indicated substantially as described.



2. In a massaging-machine, the combination with a casing having a handle, of an electromagnet arranged in said casing, a pivotally-mounted armature vibrated by said magnet, a vibrating tool-carrying arm arranged on said armature, means whereby said armature is balanced, a massage-cup secured to said arm, a spring-seated operating-knob whereby the speed and length of the vibrations of the same are controlled, and means whereby the armature is prevented from striking the poles of the magnet when vibrating, substantially as described.

3. In a massaging-machine, the combination with a casing having a handle, of an electromagnet arranged in said casing, a pivotally-mounted armature vibrated by said magnet, a vibrating tool-carrying arm arranged on said armature, a flexible massage-cup secured to said arm, springs connected to said armature to balance the same when the electromagnets are demagnetized, contact-spring fixed on said armature, an adjustable contact-point to coact with said spring whereby the vibrations of the armature are controlled and indicated, and means whereby the armature is prevented from striking the poles of the magnet, substantially as described.

4. In a massaging-machine, the combination, with a casing having a handle, of an electromagnet arranged in said casing, a pivotally-mounted armature vibrated by said magnet, a vibrating tool-carrying arm arranged on said armature, springs connected to said armature to balance the same in its movements, a contact-spring fixed on said armature, an adjustably-mounted screw having on its end a contact-point to coact with said spring, whereby the vibrations of the armature are controlled, an operating-knob secured to said screw, a spring arranged on said screw to hold the same in its adjusted positions, and an indicating-pointer arranged on said knob to coact with a scale on said casing, substantially as and for the purpose described.

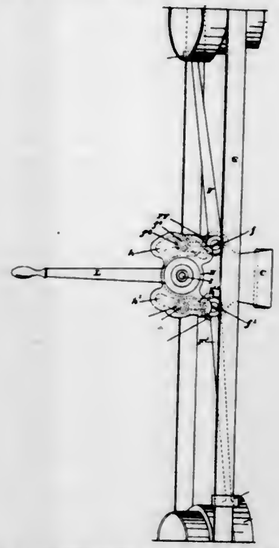
5. In a massaging-machine, the combination with a casing having a handle, of an electromagnet arranged in said casing, a pivotally-mounted armature vibrated by said magnet, a vibrating tool-carrying arm arranged on said armature and a cushioned bumper to prevent said armature from striking the poles of said magnet said cushion-bumper comprising a rubber plug seated in a tubular screw, substantially as described.

6. In a massaging-machine, the combination with a casing having a handle, of an electromagnet arranged in said casing, a pivotally-mounted armature vibrated by said magnet, a vibrating tool-carrying arm arranged on said armature, and an adjustable cushioned bumper to prevent said armature from striking the poles of the magnets, said cushion-bumper comprising a rubber plug, a tubular screw seated in a lug and adjustable toward and from the armature substantially as described.

7. In a massaging-machine, the combination with a casing having a handle of an electromagnet arranged in said casing, a pivotally-mounted armature vibrated by said magnet, a vibrating tool-carrying arm arranged on said armature, springs connected to said armature to balance the same in its movements, a contact-spring fixed on said armature, an adjustably-mounted screw having on its end a contact-point to coact with said spring, whereby the vibrations of the armature are controlled, an operating-knob secured to said screw, a spring arranged on said screw to hold the same in its adjusted positions, an adjustable cushioned bumper to prevent said armature from striking the poles of the magnet and a massage-tool removably secured to said vibrator-arm substantially as described.

8. In a massaging-machine the combination with a casing having a handle, of an electromagnet arranged in said casing, a pivotally-mounted armature vibrated by said magnet, a vibrating tool-carrying arm arranged on said armature, springs connected to said armature to balance the same in its movements, a contact-spring fixed on said armature, an adjustable contact-point to coact with said spring whereby the vibrations of the armature are controlled, means whereby said armature is prevented from engaging the poles of the magnet, conducting-wires connected with said magnet and armature, a condenser connected with said conductor-wires, and a plug connected to said condenser to attach the same to the socket of an electric circuit, substantially as described.

821,181. **BELT-SHIFTER.** EDWARD A. MULLER, Madisonville, Ohio, assignor to The King Machine Tool Company, Cincinnati, Ohio, a Corporation of Ohio. Filed Apr. 12, 1905. Serial No. 255,111.



Claim.—1. In combination with a pair of cone belt-pulleys, unitary mechanical means including operating-cams for shifting said belt to the different steps of said pulleys, at will.

2. The combination with a pair of cone belt-pulleys of a fixed bracket, two shifter-levers movably attached to said bracket, one arm of each of which extends to within controlling distance of one of each of the cone-pulleys and cams for suitably oscillating said shifter-levers, substantially as set forth.

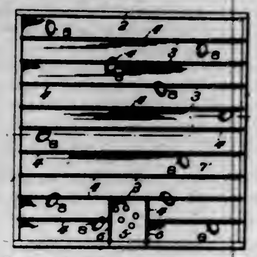
3. The combination with a pair of cone belt-pulleys of a fixed bracket, two shifter-levers movably attached thereto, one end of each of which extends to within controlling distance of one each of the cone-pulleys, a stud on the other end of each of said shifter-levers, a double-track cam operatively attached to said bracket having its tracks adapted to receive and actuate said studs and their levers, and means for actuating said cam, substantially as set forth.

4. In a machine having a shaft with a cone-pulley thereon, a counter-shaft with corresponding pulleys, said shaft journaled to the frame of the machine, and unitary cam-actuated means for shifting the belt to any of the several steps of said cone-pulleys, at will.

5. In a machine having a main shaft with a cone-pulley thereon, and a counter-shaft with a corresponding cone-pulley, said shafts journaled in the frame of the machine; in combination with cams and cam-actuated levers adapted to shift the belt to any of the several steps of said cone-pulley by a suitable movement of one lever, substantially as set forth.

6. The combination with a machine having an actuating-shaft, a counter-shaft and a cone-pulley affixed thereto said shafts being journaled in the frame of the machine; of levers and cams adapted to shift the belt to each of the several steps of said cone-pulleys, and unitary means for actuating the same, substantially as set forth.

821,182. PUZZLE. BILLY S. MCCAIN, Knox county, Ind. Filed June 14, 1905. Serial No. 265,264.



Claim.—1. In a puzzle, the combination of a base provided with a system of internal passages having communication with the surface thereof, a series of walls forming compartments having communication with each other through the interual passages, and balls adapted to roll through the passages.

2. In a puzzle the combination of a base provided with a system of internal passages comprising a central passage having arms extending therefrom and having communication with the surface, walls forming a series of compartments having communication with each other through the internal passages, and balls adapted to roll through the passages.

3. In a puzzle, the combination of a base provided with a system of internal passages, comprising a central longitudinal passage and transversely-extending arms in communication therewith, walls subdividing the base into a number of compartments having communication with each other through the internal passages, and balls adapted to roll through the passages.

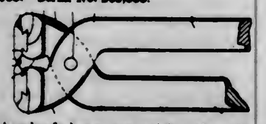
4. In a puzzle, the combination of a base formed with a system of internal passages comprising a central passage and arms extending therefrom, walls forming a series of compartments having communication with each other through the internal passages and through openings in the walls, and balls adapted to pass through the openings in the walls and the passages in the base.

5. In a puzzle, the combination of a base formed in sections, the middle one being provided with a number of slots, the upper one having openings in communication with said slots while the lower one forms a closure. walls forming a series of compartments having communication with each other through the internal passages in the base formed by the slots in the middle section thereof, and balls adapted to roll through the passages.

6. In a puzzle, the combination of a base formed with a system of internal passages having communication with the surface, a wall around the base, a series of parallel partitions forming compartments having communication with each other through the internal passages, a pen into which it is the object to get the balls, and balls adapted to roll through the passages in the base.

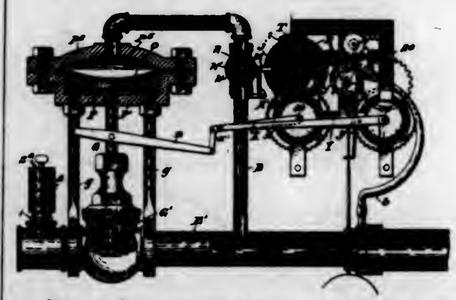
7. In a puzzle the combination of a base provided with a series of internal passages having communication with the surface thereof, a wall around said base, a series of approximately parallel partitions having openings therein and subdividing the base into a number of compartments, a pen formed by cutting away a portion of one of the parallel partitions and employing two transverse partitions one of them having an opening therein, and a number of balls adapted to pass through the openings in the partitions and the internal passages in the base.

821,183. NIPPERS. JOSEPH H. NETTLETON, Rockfall, Conn. Filed June 16, 1906. Serial No. 265,583.



Claim.—A pair of nippers comprising pivotally-connected members, each including a jaw, each of said jaws having a groove in its end and an adjacent slanting face at the other side of the groove, and a blade for each jaw having a stem removably engaged in the groove and adapted for reversal to present its longitudinal edges interchangeably at the inner side of the jaw, said edges being disposed in a common plane parallel to the outer face of the blade, the cutting edge of each blade being formed of a pair of outwardly-converging beveled faces, one of the beveled faces of each blade being disposed to lie in contact with the slanting face of the jaw, and means for holding the said blade against movement outwardly from said jaw.

821,184. TIME-CONTROLLED VALVE-ACTUATING MECHANISM. ARTHUR J. OAKES, Chanute, Kans. Filed Feb. 13, 1906. Serial No. 345,483.



Claim.—1. In an apparatus of the character described, a main air-line that discharges into the well, a main valve in said line automatically closed to cut off the main line from the well by the normal pressure in the main line, a second valve coöperatively joined with the main line for controlling the pressure-feed against the main valve said second valve having an exhaust-port and a two-way core, and an automatically-actuated means for shifting the said core at predetermined times to cut off the main-line pressure against the main valve for the purposes described.

2. In an apparatus of the character described, the combination with the main pipe-line for discharging a fluid under pressure into a well, a valved casing in said pipe-line; an air-chamber, a stem on the valve that works in said air-chamber, and a diaphragm within the said chamber that engages the valve-stem; of a supplemental pipe-line that joins with the main pipe-line and discharges into the aforesaid air-chamber against the diaphragm therein, a two-vay valve in said supplemental pipe-line adapted under one adjustment to connect the diaphragm-chamber with the main-line pipe and under another adjustment to bleed off the air-pressure in said chamber against the diaphragm whereby to permit the fluid-pressure in the main-line pipe to shift the main valve to its open position and an automatically-actuated means for shifting the said two-way valve at predetermined times, as set forth.

3. In an apparatus as described, the combination with the air-line and a valve therein normally held open, and a clock-actuated means for controlling the said valve to move it to its closed position at predetermined intervals, of a means for automatically rewinding the clock-spring actuated by the shifting of the cut-off valve, as set forth.

4. In an apparatus of the character described, the combination with the main pipe-line arranged to discharge fluid under pressure into a well, a main valve in said pipe that normally closes off the discharge through said pipe to the well, said valve having a projecting shank, a flexible diaphragm connected to the upper end of the stem, a supplement air-line from the main pipe-line that discharges against the diaphragm to move the main valve to its closing position, a two-way valve in said supplemental line adapted under one adjustment to open up communication between the main-line feed and the diaphragm-chamber, and under another adjustment to cut out the main line from said diaphragm-chamber and to open said chamber to atmosphere and means for automatically shifting the said two-way valve at predetermined times for the purposes specified.

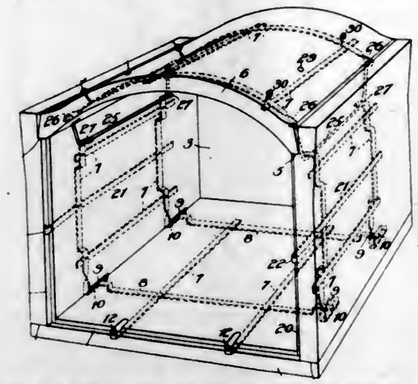
5. In an apparatus of the character described, in combination with a casing supported in the well closed at the bottom and having valved intakes, of a pipe-line that conveys fluid-pressure, that discharges into the top of the casing in the well, an oil-discharge pipe that extends into said casing, a valve in the pipe-line normally held open by the pressure in the air-line and automatically-actuating means for leading the main-line pressure against the said valve for closing said valve, said means being operable at predetermined times for the purposes specified.

6. In a well-flowing apparatus of the character stated, the combination with the pipe-line that conveys fluid-pressure into the well, and the cut-off valve therein, held open by the pressure in the pipe-line, of a supplemental air-line the pressure of which serves to close the cut-off valve, a two-way valve in said supplemental line, and a clock mechanism for controlling and shifting the two-way valve to close off the supplemental air-line from the main air-line whereby to release the back pressure on the cut-off valve in the main line, as stated.

7. In an apparatus of the character described, the combination with the air-line, the valve in said line, clock-actuated means for shifting the said valve to its closed position at predetermined periods, said means including the pronged wheel W, of the pressure-tube *b* connected to the main line and having its free end arranged to coöperate with the wheel W, for the purposes described.

8. In an apparatus of the character described, the combination with the main pipe-line the globe-valve connected therewith and normally held open by pressure in said pipe-line; of the casing P^3, the diaphragm O connected with the stem of the globe-valve, the supplemental air-line that connects with the main pipe-line and discharges into the casing P^3 against the diaphragm O, the two-way valve in the supplemental line, normally held to open the air from the main line against diaphragm O, and a clock mechanism for shifting the two-way valve at predetermined times to close off the air to the casing, as set forth.

821,185. CEMENT BURIAL-VAULT. GEORGE B. OKEY, Indianapolis, Ind., assignor to Acme Burial Vault Company, Indianapolis, Ind., a Corporation of Indiana. Filed Sept. 7, 1905. Serial No. 277,417.



Claim.—1. In a sectional burial-vault, a bottom of sections, an embedded frame in each section, each frame having a pair of arms each terminating in uncovered angle ends at the joining of said sections, said frame having also a pair of arms projecting at the opposite side edges and terminating in straight uncovered ends, side sections each having an embedded frame, each frame having a pair of vertical arms terminating in angle ends in recesses at the lower edges of said sides, the side projecting arms of the bottom frames freely engaging the said angle ends within said side recesses to lock the sides to the bottom, and means for securing the angle ends of said bottom frames together.

2. In a burial-vault of sections, the end sections, an embedded frame in each having a horizontal arm terminating at each vertical edge in an angle end or hook, the side sections each having an eye on their inner walls into which the hooks are adapted to be slid to lock the end sections to the sides, the said engaged parts being sealed in the side walls.

3. A burial-vault of two longitudinal half-sections, each half comprising bottom, side, end and lid sections, each section having an embedded frame, the frame of the bottom section having a pair of arms terminating in uncovered angle ends at the joining of the bottom sections, said frame also having a pair of arms terminating in uncovered ends at each side of said bottom section, the frame of the side sections having a pair of arms terminating in uncovered angle ends in recesses in the lower edges of the side sections for engagement with the uncovered ends of the arms of the bottom section, and means for securing the side sections to the end section consisting of a member of the embedded frame of said end section terminating in crank-hooks standing down at the side edges of said end section and eyes on the inner walls of the side sections into which the said hooks are adapted for slidable engagement, and means for securing the lid-sections to said side sections.

4. A burial-vault of two half longitudinal sections, each half comprising separate bottom, side, end and lid, an embedded frame in each section, means for securing the side sections together consisting of one or more arms projecting from said embedded frames terminating in a hook at the junction of said side sections and a vertical rod coupling said hooked ends, the hook-arm and the rod being embedded in the walls and means for securing the lid-sections to the side sections.

5. In a burial-vault and in combination with a metallic frame embedded in each of its vertical sides, and having members terminating in projections on the inner walls, a lid supported on said sides, a yoke pivotally mounted on the under side of the lid for engagement with said frame projections for locking the lid, and means attached to the under side of the lid whereby the yokes are held in positions to fall by gravity into locking engagement with said wall projections.

6. In a burial-vault, a lid, a yoke pivotally mounted on its under side at each edge and parallel thereto, a spring secured transversely of the lid with its free ends terminating in such relation to said yokes as to engage and hold them up out of locking positions, and means whereby each end of the spring may be depressed to trip the yokes to allow them to fall, and means for locking them.

7. In a vault-lid a transverse plate-spring on the under side of said lid terminating in free ends, a pair of yokes each pivotally mounted on the under side of said lid parallel with and near each side edge in such relation to the free ends of said spring as to be caused to become engaged therewith, projections on the inner side wall arranged to engage each end of the yoke, a hole in the lid at each free end of said spring, and means introduced through said holes in engagement with said free ends of the spring for tripping the yokes which are thereby caused to swing down in locking engagement with said side-wall projections.

8. In a vault, its vertical sides having inward wall projections, the lid, a pair of yokes mounted to swing up and down on the under side of the lid in locking relation to said wall projections, means carried by the lid for retaining the yokes out of locking engagement, and means whereby the yokes are tripped to cause them to swing by gravity into locking engagement with said wall projections

9. A burial-vault of separate molded sections, a frame embedded in each section, the frames in the side sections having each a pair of arms each terminating in an angle end in a recess at the lower edge of the inner wall, the frame of the bottom section having a pair of arms the ends whereof project into said wall-recesses in engagement with the angle ends of the side frames, thereby locking the side sections against vertical separation from the bottom.

10. A burial-vault of separate molded sections, a frame embedded in each section, the frames of the side sections having each a pair of arms each terminating in an angle end in a recess at the lower edge of the inner wall, the frame of the bottom section having a pair of arms the ends whereof project into said wall-recesses in engagement with the angle ends of the side frames thereby locking the side sections against vertical separation, the frames of the end sections having each a member the ends of which terminate in hooks at their opposite vertical edges, an eye on the inner vertical wall of each side section adapted to engage the hooks of the end section to lock the sides against lateral separation.

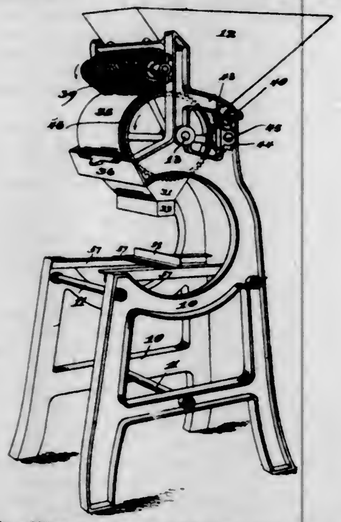
11. A lid for a burial-vault, an embedded frame therein, a pair of yokes each pivotally mounted in said frame on the under side of said lid in parallel relation to the edges of the lid, means carried by the lid adapted to engage and retain each yoke in a swung-up position at the under-side of the lid, means for releasing the yokes from their swung-up positions, the side sections, and means on their inner walls adapted to be engaged by said yokes.

821,186. FILLING-MACHINE. FRANK M. PETERS, Chicago, Ill. Filed Sept. 25, 1903. Serial No. 174,604.

Claim.—1. In a filling-machine, the combination of a receiving-hopper having a discharge-opening, a rotatable drum having a plurality of radially-disposed measuring-compartments separated by solid peripheral portions, a chute connecting said discharge-opening with the periphery of said drum, and a rotatable brush mounted to form one wall of said chute and to sweep the periphery of the drum to even off the contents of the measuring-compartments as they pass thereunder, substantially as described.

2. In a filling-machine, the combination of a receiving-hopper having a discharge-opening, a rotatable drum beneath said hopper having a plurality of radially-disposed measuring-compartments separated by solid peripheral portions, a chute connecting said discharge-opening with the periphery of said drum, a rotatable brush mounted to form one wall of said chute and to sweep the periphery of the drum to even off the contents of the measuring-compartments as they pass thereunder, and means to rotate said drum and brush in the same direction, substantially as described.

3. In a filling-machine the combination of a receiving-hopper having a discharge-opening formed in and through the lower portion of one of its inclined walls, a continuously-rotatable drum having a plurality of radially-disposed measuring-compartments separated by solid peripheral portions mounted beneath said hopper, a chute connecting said discharge-opening with one side of the periphery of said drum, a shield engaging the opposite side of said periphery, a rotary brush forming the upper wall of said chute and sweepingly contacting the top of said periphery, means to rotate said drum and brush in the same direction, and a discharge-chute covering the lower portion of said periphery, substantially as described.



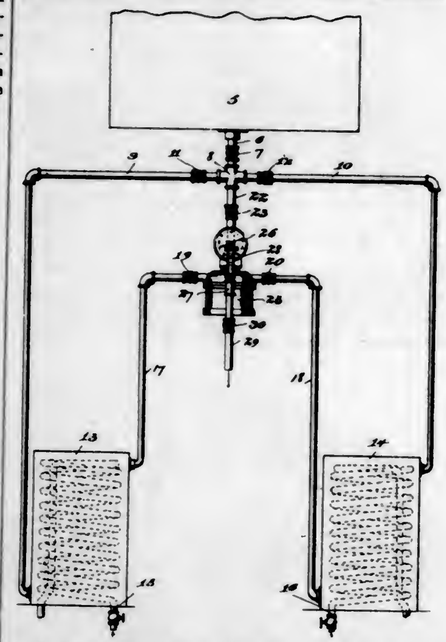
4. In a filling-machine, the combination with a receiving-hopper having a discharge-opening, of a rotating drum having a plurality of radially-disposed measuring-compartments mounted to rotate across and in register with the discharge-opening of the hopper, each of said compartments having a bottom movable inwardly and outwardly of the compartment to vary the capacity thereof, and cam means rotatable with said drum for simultaneously adjusting the positions of said bottoms, substantially as described.

5. In a filling-machine, the combination with a receiving-hopper having a discharge-opening, of a continuously-rotatable drum having a plurality of radially-disposed measuring-compartments mounted to rotate across and in register with the discharge-opening of the hopper, each of said compartments having a bottom movable inwardly and outwardly of the compartment to vary the capacity thereof, a shaft on which said drum is axially mounted, a series of forked stems secured to the inner sides of said movable bottoms and straddling said shaft, a disk adjustably mounted on said shaft and having a series of eccentric slots, and pins projecting from the faces of said stems and engaging said slots, whereby the rotary adjustment of said disk effects the inward and outward movement of said bottoms, substantially as described.

821,187. WATER ATTEMPERATING AND MEASURING SYSTEM. FRANK M. PETERS, Chicago, Ill. Filed Dec. 3, 1903. Serial No. 183,649.

Claim.—1. The combination with a source of water-supply, of a water measuring and commingling device, two valve-controlled pipe connections between said source and said measuring and commingling device, a water-heater and water-cooler interposed in said pipe connections, respectively, a valve-controlled pipe connection leading directly from said source to said measuring and commingling device, a pipe leading from the discharge side of the latter, and a thermometer applied to said last-named pipe, substantially as described.

2. The combination with a source of water-supply and a water measuring and commingling device, of a four-way coupling, a valve-controlled pipe leading from said source to one branch of said coupling, two valve-controlled pipe connections leading respectively from two other branches of said coupling to said measuring and commingling device, a water-heater and water-cooler interposed in said last-named connections, respectively, and a valve-controlled connection leading from the remaining branch of said four-way coupling directly to said measuring and commingling device, and a pipe leading from the discharge side of the latter, substantially as described.



3. A water attemperating and measuring system for use in bakeries, breweries, and similar establishments, comprising a source of water-supply, a water measuring and commingling device, a direct pipe connection from the former to the latter having two cut-off valves therein, two other pipes tapping said direct pipe connection between the cut-off valves thereof and leading into said water measuring and commingling device, a water-heating device interposed in one of said last-named pipes and a water-cooling device interposed in the other, cut-off valves in said last-named pipes, and a discharge-pipe from said water measuring and commingling device leading to the point of utilization, substantially as described.

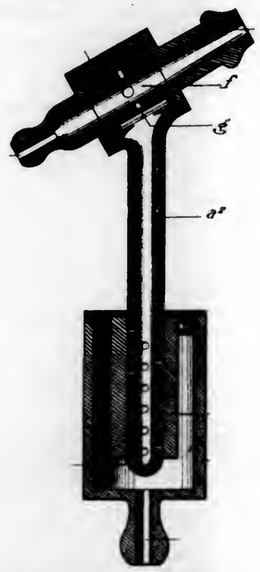
821,188. BLOWPIPE. CHARLES PICARD, Paris, France. Filed June 13, 1904. Serial No. 212,303.

Claim.—1. In a device of the class described, a gas-chamber forming a portion of the gas-passage, a metallic outlet-pipe closed at the inner end extending into the gas-chamber having a perforated peripheral wall, and a sleeve of porous material fitting tightly upon the end of the outlet-pipe within the casing so as to cover the peripheral perforations, substantially as shown and described.

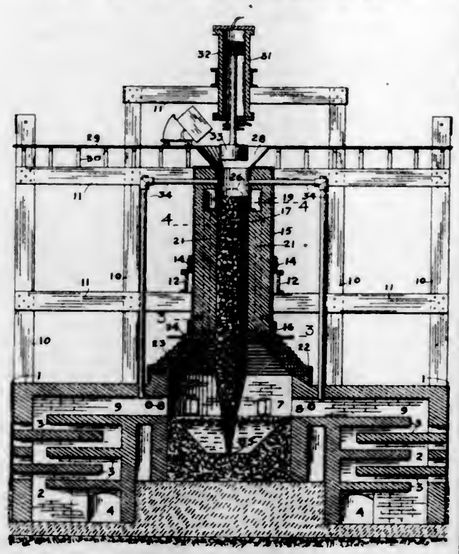
2. In a device of the class described, a gas-chamber forming a portion of the gas-passage, a metallic outlet-pipe closed at the inner end extending into the gas-chamber having a perforated peripheral wall, a sleeve of porous material fitting tightly upon the end of the outlet-pipe within the casing so as to cover the peripheral perforations, and an annular chamber at the outer end of the outlet-tube surrounding a central passage open at both ends and in communication therewith by way of openings through the annular dividing-wall, substantially as shown and described.

3. In a device of the class described, a gas-chamber forming a portion of the gas-passage, a metallic outlet-pipe closed at the inner end extending into the gas-chamber having a perforated peripheral wall, a sleeve of porous material fitting tightly upon the end of the outlet-pipe within the casing so as to cover the peripheral perforations, the axis of the inlet, the outlet-tube and that of the inlet-orifice of the gas-chamber being substantially coincident, substantially as shown and described.

4. In a device of the class described, a gas-chamber forming a portion of the gas-passage, a metallic outlet-pipe closed at the inner end extending into the gas-chamber having a perforated peripheral wall, a sleeve of porous material fitting tightly upon the end of the outlet-pipe within the casing so as to cover the peripheral perforations, the axis of the inlet, the outlet-tube and that of the inlet-orifice of the gas-chamber being substantially coincident, and an annular chamber at the outer end of the outlet-tube surrounding a central passage open at both ends and in communication therewith by way of openings through the annular dividing-wall, substantially as shown and described.



821,189. PROCESS OF SMELTING ORES. JOHN A. POTTER, San Francisco, Cal. Filed June 27, 1905. Serial No. 267,302.



Claim.—1. The process of smelting ores which consists in mixing the ore with a material which when heated forms with said ore a binder, passing the mixture downward through an open-bottomed retort, subjecting the mixture to a gradually-increasing heat as it passes through the retort, whereby the body of material so subjected is hardened to prevent collapse, and applying a melting heat to the material emerging from said retort, substantially as described.

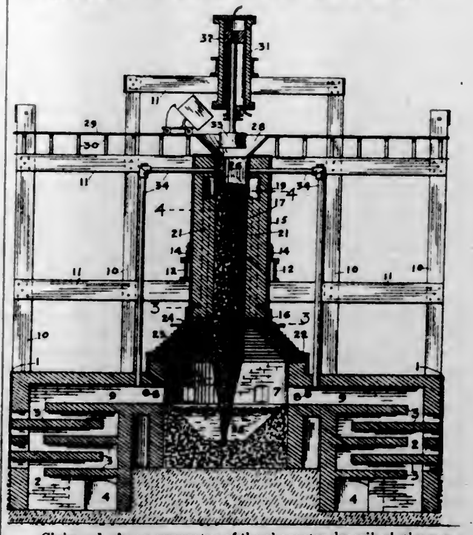
2. The process of smelting iron ore, which consists in mixing the ore with suitable quantities of limestone and hydrocarbonaceous material, passing the mixture so formed through a retort, gradually increasing the heat applied to said material as it passes through the retort, thereby charring, coking and hardening the body of material, and applying a melting heat to the material emerging from the retort, substantially as described.

3. The process of smelting iron ore, which consists in reducing the ore, together with suitable quantities of limestone and hydrocarbonaceous material, to a finely-divided condition and commingling the same, passing the mixture so formed into and through a retort, applying heat to the mixture increasing gradually as it passes through the retort to gasify, char and coke the hydrocarbonaceous material therein, applying products of combustion of fluid fuel to the exterior of the mixture to smelt the ore, drawing off the molten iron and slag at suitable intervals at one end of the apparatus and adding fresh material at suitable intervals at the other end of the apparatus, in a continuous process, substantially as described.

4. The process of smelting iron ore, which consists in finely dividing the ore and suitable quantities of limestone and hydrocarbonaceous material and commingling the same, applying heat to the mixture to distil hydrocarbon gases therefrom and form a hard self-supporting column, and projecting such hard column into the path of products of combustion to reduce and melt the metallic substances therein, substantially as described.

5. The process of smelting iron ore, which consists in reducing said ore, together with suitable quantities of limestone and tarry carbonaceous material, to a finely-divided condition and then commingling the same, continually feeding the mixture in proximity to increasing heats to form a hard column continually projecting said column into the path of products of combustion to reduce and melt the ore and metallic substances therein, and drawing off at suitable intervals the molten iron and slag, substantially as described.

821,190. APPARATUS FOR SMELTING ORES. JOHN A. POTTER, San Francisco, Cal. Filed June 27, 1905. Serial No. 267,303.



Claim.—1. In an apparatus of the character described, the combination of a smelting-chamber having an open hearth, a conduit arranged to conduct products of combustion over said hearth, a retort-chamber over said hearth, open at the bottom, whereby the material discharged from said retort-chamber descends into said hearth, and means for feeding the material into said retort-chamber, substantially as described.

2. In an apparatus of the character described, the combination of a smelting-chamber having an open hearth, a conduit arranged to conduct products of combustion over said hearth, regenerative chambers connected with said conduit, means for reversing the direction of the flow of the air and gas through said conduit and chambers, a

retort-chamber over said hearth, open at the bottom, whereby the material discharged from said retort-chamber descends into said hearth, and means for feeding the material into said retort-chamber, substantially as described.

3. In an apparatus of the character described, the combination of a smelting-chamber having an open hearth, a conduit arranged to conduct products of combustion over said hearth, a tubular retort-chamber, the lower end of the tube being open and discharging over the open hearth, and means for feeding material into the upper end of the tube, substantially as described.

4. In an apparatus of the character described, the combination of a smelting-chamber having an open hearth, a conduit arranged to conduct products of combustion over said hearth, a tubular retort-chamber, the lower end of the tube being open and discharging over the open hearth, means for passing hot gases from the smelting-chamber around the retort to heat the material therein, and means for feeding material into the upper end of the tube, substantially as described.

5. In an apparatus of the character described, the combination of a smelting-chamber having an open hearth, a conduit arranged to conduct products of combustion over said hearth, means for passing fluid fuel into said conduit along with the air, a retort-chamber over said hearth, open at the bottom, whereby the material discharged from said retort-chamber descends into said hearth, and means for feeding the material into said retort-chamber, substantially as described.

6. In an apparatus of the character described, the combination of a smelting-chamber having an open hearth, a conduit arranged to conduct products of combustion over said hearth, regenerative chambers connected with said conduit, means for reversing the direction of the flow of the air through said conduit and chambers, means for passing fluid fuel in either direction along said conduit with the air, a retort-chamber over said hearth, open at the bottom, whereby the material discharged from said retort-chamber descends into said hearth, and means for feeding the material into said retort-chamber, substantially as described.

7. In an apparatus of the character described, the combination of a smelting-chamber having an open hearth at the bottom thereof, and a dome of refractory material, an air-conduit leading over said open hearth substantially at the level thereof, means for passing fluid fuel into the conduit with the air, a tubular retort above said dome, open at the bottom to discharge the material into the open hearth, means for feeding the material into the upper end of said retort, and means for heating said retort, substantially as described.

8. In an apparatus of the character described, the combination of a smelting-chamber having an open hearth at the bottom thereof, and a dome of refractory material, an air-conduit leading over said open hearth substantially at the level thereof, means for passing fluid fuel into the conduit with the air, a tubular retort above said dome, open at the bottom to discharge the material into the open hearth, means for feeding the material into the upper end of said retort, and means for passing the hot gases from the smelting-chamber around the retort to heat the same, substantially as described.

9. In an apparatus of the character described, the combination of a smelting-chamber having an open hearth at the bottom thereof, and a dome of refractory material, and air-conduit leading over said open hearth substantially at the level thereof, means for passing fluid fuel into the conduit with the air, a tubular retort above said dome, open at the bottom to discharge the material into the open hearth, means for feeding the material into the upper end of said retort, a plunger for depressing the material in said retort, and means for heating said retort, substantially as described.

10. In an apparatus of the character described, the combination of a smelting-chamber having an open hearth at the bottom thereof, and a dome of refractory material, an air-conduit leading over said open hearth substantially at the level thereof, means for passing fluid fuel into the conduit with the air, a tubular retort above said dome, open at the bottom to discharge the material into the open hearth, means for feeding the material into the upper end of said retort, an apertured water-cooled top for said dome, and means for passing the hot gases from the smelting-chamber around the retort to heat the same, substantially as described.

11. In an apparatus of the character described, the combination of a smelting-chamber having an open hearth at the bottom thereof, and a dome of refractory material, an air-conduit leading over said open hearth substantially at the level thereof, means for passing fluid fuel into the conduit with the air, a tubular retort above said dome, open at the bottom to discharge the material into the open hearth, means for feeding the material into the upper end of said retort, a sectional apertured water-cooled top for said dome, and means for passing the hot gases from the smelting-chamber around the retort to heat the same, substantially as described.

12. In an apparatus of the character described, the combination of a smelting-chamber having an open hearth at the bottom thereof, and a dome of refractory material, an air-conduit leading over said open hearth substantially at the level thereof, means for passing fluid fuel into the conduit with the air, a tubular retort above said dome, open at the bottom to discharge the material into the open hearth, a hopper in the top of said retort having a depending ring extending into the retort, a plunger descending into said ring, and means for heating said retort, substantially as described.

13. In an apparatus of the character described, an open-bottomed tubular retort, means for heating the same, means for discharging material into the top of the retort, means for closing said top, means for drawing off the gases distilled from the material in the retort, and means for applying heat to the material descending from the lower end of the retort, substantially as described.

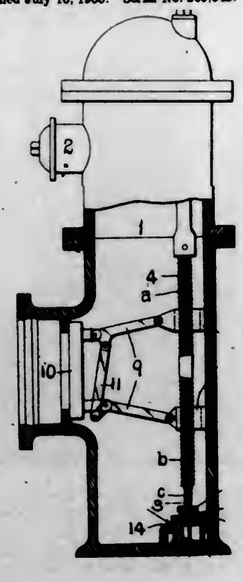
14. In an apparatus of the character described, the combination of an open-bottomed tubular retort, means for heating said retort, means for feeding material into one end thereof, means for drawing off the gases distilled from the material in said retort, and means for applying and smelting heat to the material emerging at the other end of the retort to smelt the ore therein, substantially as described.

15. In an apparatus of the character described, the combination of an open-bottomed tubular retort, means for heating said retort, means for feeding material into one end thereof, means for drawing off the gases distilled from the material in said retort, and means for burning fluid fuel in proximity to the material emerging from the other end of the retort, substantially as described.

16. In an apparatus of the character described, the combination of an open-bottomed tubular retort, means for heating said retort, means for feeding material into one end thereof, means for drawing off the gases distilled from the material in said retort, means for burning fluid fuel in proximity to the material emerging from the other end of the retort, means for storing up the heat of combustion, and means for utilizing said stored heat to heat the air in a succeeding step of the operation, substantially as described.

17. In an apparatus of the character described, the combination of an open-bottomed tubular retort, means for feeding material into one end thereof, means for drawing off the gases distilled from the material in said retort, means for burning fluid fuel in proximity to the material emerging from the other end of the retort, and means for passing part of the products of combustion around the retort to heat the same, substantially as described.

821,191. **FIRE-HYDRANT.** ROBERT M. PRINGLE, St. Louis, Mo., assignor to Corey Estate Company, St. Louis, Mo., a Corporation of Missouri. Filed July 10, 1905. Serial No. 269,045.



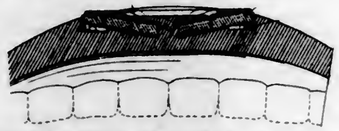
Claim.—1. In a fire-hydrant, the combination with a stand-pipe and its valve-seat, of a main valve, a valve-operating rod provided with oppositely-pitched threaded portions, nuts coöperating with said threaded portions, links pivotally connected to said nuts and to said main valve, and an independent connection between said links whereby said links are caused to approach each other to nearly parallelism, when the main valve is seated; substantially as described.

2. In a fire-hydrant, the combination with a stand-pipe and its valve-seat, of a main valve, a valve-operating rod provided with oppositely-pitched threaded portions, nuts coöperating with said threaded portions, links pivotally connected to said nuts and to said main valve, and a link 11 pivotally connected to said first-mentioned links on opposite sides of the pivotal points of connection of said first-mentioned links to the main valve; substantially as described.

3. In a main-valve-operating-mechanism for fire-hydrants, the combination with a valve-operating rod provided with two oppositely-pitched threaded portions, of a nut on each of said threaded portions, a main valve, a link extending from each nut and pivotally connected thereto and to the main valve, and a link coöperating with said links for maintaining the main valve in a vertical plane in its different adjusted positions; substantially as described.

4. In a fire-hydrant, the combination with a stand-pipe and its valve-seat, of a main valve, a valve-operating rod, a barrel for a drain-valve arranged in the lower portion of the stand-pipe, said barrel having interior longitudinally-disposed grooves in one of its ends, and a drain-valve connected to and operated by said operating-rod, said drain-valve in its movement passing the inner termini of said grooves; substantially as described.

821,192. **SET OF ARTIFICIAL TEETH.** CARL RAUHE, Düsseldorf, Germany. Filed Jan. 6, 1906. Serial No. 294,852.



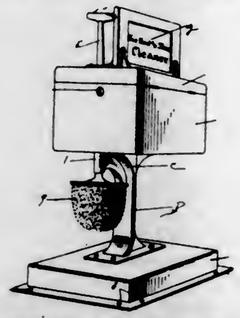
Claim.—1. Suction-cavity for artificial teeth with a bottom ascending angle from the center to give the suction-rubber the necessary cup-like form for suction, substantially as described and for the purpose set forth.

2. Suction-cavity for artificial teeth with a bottom ascending angle from the center and a stud for retaining the rubber disk with ascending line parallel to the bottom of the cavity, substantially as described and for the purpose set forth.

3. Suction-cavity for artificial teeth with a bottom ascending angle from the center and the outside edge or circumference of the bottom deepened, substantially as described and for the purpose set forth

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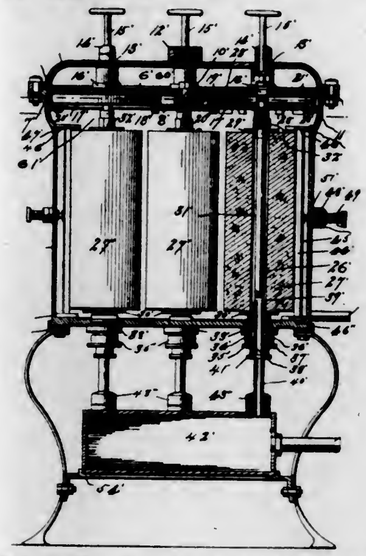
821,193. **BOOT AND SHOE CLEANER.** FREDERICK L. ROLPH, Fitchburg, Mass. Filed Sept. 13, 1904. Serial No. 224,256.



Claim.—1. In combination, a housing having a slot in one of its faces, a chute within the housing leading from the slot, a shaft within the housing, a dynamo carried by the shaft to rotate the same, two plates suitably spaced apart to form a continuation of the chute, one of said plates being immovable, while the remaining plate is pivoted, a weighted arm carried by the pivoted plate to hold it normally parallel with the first-named plate, a stop carried by the fixed plate, means operated by the shaft to contact with and impart motion to the pivoted plate, and a suitable connection from an electrical source to the plates and dynamo.

2. In combination, a housing having a slot in one of its faces, a chute within the housing leading from the slot, a shaft within the housing, a dynamo carried by the shaft to rotate the same, two plates suitably spaced apart to form a continuation of the chute, one of said plates being immovable, while the remaining plate is pivoted, a weighted arm carried by one end of the pivoted plate to hold said plate normally parallel with the fixed plate, an extension on the opposite end of the pivoted plate, means operated by the shaft adapted to contact with the extension of the pivoted plate to impart motion thereto and a suitable connection between an electrical source, plates and dynamo.

821,194. **WATER-FILTER.** ANDREW G. SHRAK, Binghamton, N. Y., assignor to The Nineteen Hundred Washer Co. Filed Dec. 1, 1904. Serial No. 235,094.



Claim.—1. The combination with a casing having an annular flange, of a cover having a complementary flange, a disk in the casing having a flange interposed between said flanges, a rotary filter having a bearing in said disk, a cleansing device adapted to bear against said filter, a hollow set-screw in the casing, a pin attached to said cleanser and located in said screw, and a spring in the set-screw bearing against said pin.

2. The combination with a filter-casing and a rotary filter therein of a cleanser adapted to bear against said filter, a set-screw connected to the casing, a pin located in said set-screw connected to the cleanser, and a spring in the set-screw bearing against said pin.

3. The combination with a casing having a receiving and a filtering chamber in communication, of filters in the filtering-chamber, means for cleaning said filters, water-wheels and means whereby the water in the receiving-chamber may be concentrated on one or more of the water-wheels of the filters to cleanse the same.

4. The combination with a casing having a receiving and a filtering compartment, of a plurality of filters in said filtering-compartment and means for cleaning said filters; water-wheels and valves between said compartments whereby the water from the receiving-compartment may be imposed on one or more of the water-wheels to rotate the filters to cleanse the same.

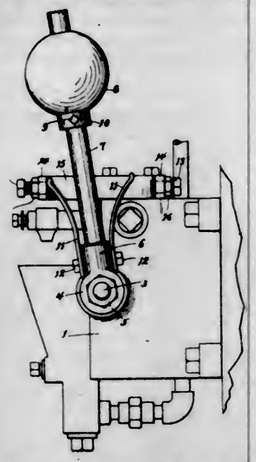
5. The combination with a casing having a partition forming a receiving and filtering compartment, valves between said compartments, rotary filters in the filtering-compartment, means for cleansing each filter and an inlet and outlet to the filtering-chamber.

6. The combination in a filter of a receiving-chamber and a filtering-chamber in communication, filters in said filtering-chamber, supporting-lugs on the casing and a plate thereon forming a bearing for each of said filters, and inlet and outlet pipes to said filter.

7. The combination in a filter of a receiving-chamber and a fil-

tering-chamber in communication, filters in said filtering-chamber, supporting-lugs on the casing and a plate thereon forming supporting means for a bearing for each said filter, outlets to each filter, a storage-tank, and connections from said outlets to the storage-tank.

821,195. OIL-PUMP MOTOR. WILLIS S. SHERMAN, Milwaukee, Wis., assignor to Sight Feed Oil Pump Company, Milwaukee, Wis., a Corporation of Wisconsin. Filed Feb. 20, 1904. Serial No. 194,577.



Claim.—1. A movable support, a lever-arm suitably pivoted thereto, a weight on the lever-arm, springs carried by the lever-arm, a bracket rigidly connected with the support and having laterally-extending lugs, and set-screws threaded through the lugs with binding-nuts to lock them in their adjustments, said springs being adapted to engage the set-screws to cushion the movements of the lever-arm.

2. A movable support, a shaft journaled thereon, an upwardly-extending lever-arm carried by the shaft, a weight on the lever-arm, a bracket rigidly connected with the support, laterally-projecting lugs on the bracket, set-screws with binding-nuts threaded through the nuts, and leaf-springs secured to the lever-arm and adapted to engage the set-screws to cushion the swing of the lever-arm and start its return movement.

3. In combination with an oil-pump having an oscillating shaft, a sleeve secured on the shaft, a lever-arm mounted in the sleeve and extending upwardly, a weight adjustably mounted on the lever-arm so as to be movable nearer to or farther from the shaft, leaf-springs mounted on the sleeve and bending away from the lever-arm, a bracket rigidly mounted on the pump and having arms standing in the path of movement of the lever-arm, and set-screws adjustably threaded in the arms of the bracket to be engaged by the leaf-springs and having jam-nuts threaded thereon to hold them in their adjustments.

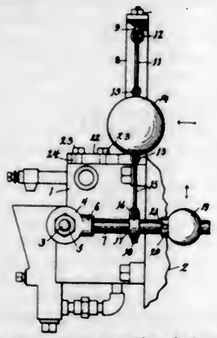
4. In combination with an oil-pump having an oscillating shaft, a lever-arm secured to the shaft and extending upwardly, a weight mounted on the lever-arm, a bracket secured to the pump with outstanding arms in the path of movement of the lever-arm, and set-screws adjustably threaded through said arms adapted to vary the arc of movement of the weight.

821,196. OIL-PUMP MOTOR. WILLIS S. SHERMAN, Milwaukee, Wis., and WILBER B. RICHARDSON, New York, N. Y., assignors to Sight Feed Oil Pump Company, Milwaukee, Wis., a Corporation of Wisconsin. Filed Feb. 23, 1904. Serial No. 194,690.

Claim.—1. A movable support, a weight suspended therefrom, an operated means connected with said weight and with the support, and a weight opposing the tendency of the first-named weight to move the operated means as the result of the inertia of said first-named weight during the movements of the support.

2. A movable support, an operating-shaft suitably journaled thereon, a lever-arm carried by the operating-shaft, and a weight having a yielding connection with the movable support and with the lever-arm.

3. A movable support, an operating-shaft suitably journaled thereon, a lever-arm carried by the operating-shaft, and a weight movably suspended between the lever-arm and the movable support and connected therewith.



4. A movable support, an operating-shaft suitably journaled thereon, a lever-arm carried by the operating-shaft, a bracket mounted on the movable support, and a weight suspended between the bracket and the lever-arm and connected therewith.

5. A movable support, an operating-shaft suitably journaled thereon, a lever-arm carried by the operating-shaft, a bracket adjustably mounted on the movable support, and a weight suspended between the bracket and the lever-arm and connected therewith.

6. A movable support, an operating-shaft suitably journaled thereon, a lever-arm carried by the operating-shaft, a bracket adjustably mounted on the movable support, a weight suspended from the bracket and having adjustable flexible connection with the lever-arm.

7. A movable support, an operating-shaft suitably journaled thereon, a lever-arm carried by the operating-shaft, a bracket mounted on the movable support, and a weight having link connections with the bracket and with the lever-arm.

8. A movable support, an operating-shaft suitably journaled thereon, a lever-arm carried by the operating-shaft, a bracket mounted on the movable support, an eyebolt adjustable through a perforation of the bracket, a link having pivotal connection with the eyebolt, a weight having pivotal connection with the link, a collar on the lever-arm, and a link having pivotal connections with the collar and the weight.

9. A movable support, an operating-shaft suitably journaled thereon, a lever-arm carried by the operating-shaft, a bracket adjustably mounted on the movable support, an eyebolt adjustable through a perforation of the bracket, a link having pivotal connection with the eyebolt, a weight having pivotal connection with the link, a collar adjustable on the lever-arm, and a link having pivotal connections with the collar and with the weight.

10. A movable support, an operating-shaft suitably journaled thereon, a lever-arm carried by the operating-shaft, a bracket mounted on the movable support, an eyebolt adjustable through a perforation of the bracket, a link having pivotal connection with the eyebolt, a weight having pivotal connection with the link, a collar on the lever-arm, a link having pivotal connections with the collar and the weight, and a weight on the lever-arm.

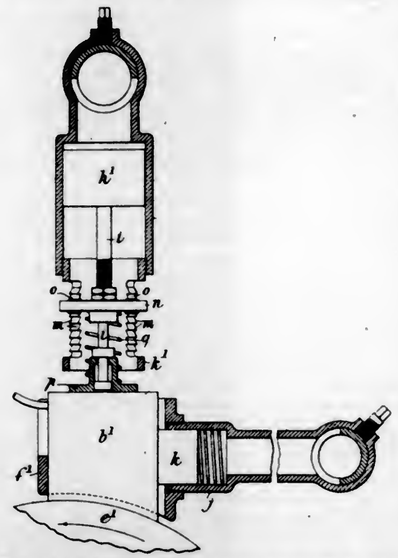
11. A movable support, an operating-shaft suitably journaled thereon, a lever-arm carried by the operating-shaft, a bracket mounted on the movable support, a weight suspended between the bracket and the lever-arm and connected therewith, and a second weight adjustable on the lever-arm.

12. A movable support, an operating-shaft thereon, a lever-arm carried by the operating-shaft, a bracket having a slotted extension adjustably secured to the movable support, and a weight suspended between the bracket and the lever-arm and connected therewith.

821,197. BRUSH-HOLDER FOR DYNAMO-ELECTRIC MACHINES AND THE LIKE. CHARLES W. SPEIRS, London, and JULIUS FRITH, Manchester, England. Filed Aug. 29, 1905. Serial No. 276,185.

Claim.—1. In a brush-holder for dynamo-electric machines or the like, the combination with a casing, of a brush movably mounted therein, a fluid-pressure device adapted to retain said brush in contact with the commutator, a fluid-supply pipe supporting the said casing, said casing being adapted to be adjusted thereon, substantially as described.

2. In a brush-holder for dynamo-electric machines or the like, the combination with a movable brush, of a fluid-pressure device adapted to retain said brush in contact with the commutator and means for preventing the back movement of said fluid-pressure device, substantially as described.



3. In a brush-holder for dynamo-electric machines or the like, the combination with a movable brush, of a pressure device adapted to retain said brush in contact with the commutator, and a secondary pressure device adapted to operate said brush when said former device is inoperative, substantially as described.

4. In a brush-holder for dynamo-electric machines or the like, the combination with a movable brush, of a fluid-pressure device adapted to retain said brush in contact with the commutator and a secondary pressure device adapted to operate said brush when said pneumatic-pressure device is inoperative, substantially as described.

5. In a brush-holder for dynamo-electric machines or the like, the combination with a movable brush, of a pressure device adapted to retain said brush in contact with the commutator, and a secondary pressure device located between said former device and said brush and adapted to operate said brush when said former pressure device is inoperative, substantially as described.

6. In a brush-holder for dynamo-electric machines or the like, the combination with a movable brush, of a fluid-pressure device adapted to retain said brush in contact with the commutator, a coiled spring located between said pressure device and said brush, means for retaining said spring in compression after said pressure device has become inoperative whereby said spring will retain said brush in contact with the commutator when said fluid-pressure device fails to operate, substantially as described.

7. In a brush-holder for dynamo-electric machines or the like, the combination with a movable brush, of a fluid-pressure device provided with a rod having at its ends a sliding foot, a cross-bar on said rod and a coiled spring around said rod between said cross-bar and said foot, substantially as described.

8. In a brush-holder for dynamo-electric machines or the like, the combination with a movable brush, of a fluid-pressure device provided with a rod having at its end a sliding foot-piece adapted to bear upon said brush, a cross-bar mounted on said rod, stationary racks, clips on said cross-bar adapted to engage said racks, and a coiled spring around said rod between said cross-bar and sliding foot, substantially as described.

9. In a brush-holder for dynamo-electric machines or the like, the combination with a movable brush, of a fluid-pressure device provided with a rod having at its end a sliding foot-piece adapted to bear upon said brush, a cross-bar mounted on said rod, stationary racks, clips on said cross-bar adapted to engage said racks, whereby said cross-bar is locked against backward movement when said pneumatic device fails to operate, a coiled spring around said rod between said cross-bar and said sliding foot, and a fluid-pressure device adapted to bear against the side of said brush to prevent lateral movement of the same, substantially as described.

10. In a brush-holder for dynamo-electric machines and the like, the combination with a box or cylinder, of a piston sliding therein, a rod for transmitting the movement from said piston to the brush, means for applying pneumatic pressure to said piston, a bar or plate upon the rod, a spring arranged between the bar or rod and the brush and mechanism for locking the plate to retain the spring under compression notwithstanding that the air-pressure is removed from the piston, substantially as described.

11. In a brush-holder for dynamo-electric machines, and the like, wherein a brush is acted upon by air under pressure, the combination with a guide in which the brush works, of a piston or presser, acting laterally upon the brush for retaining the same in contact with the guide-walls, substantially as and for the purpose described.

821,198. CLEANER FOR RIFLES AND SHOTGUNS. BASIL E. S. STOCKER, Wellington, New Zealand. Filed June 7, 1905. Serial No. 264,049.

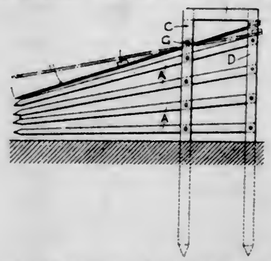


Claim.—1. A cleaner for rifles and shotguns consisting of a length of flexible wire rope which has sufficient rigidity to allow of it being pushed through the barrel of a rifle or shotgun, and to the end of which is rigidly attached a slotted bar adapted to pass freely through the barrel and to receive a cleaning material, substantially as specified.

2. A cleaner for rifles and shotguns consisting of a flexible wire rope which has sufficient rigidity to allow of its being pushed through the barrel of a rifle or shotgun, a slotted bar attached to the end of said rope and adapted to pass freely through the barrel and a brush or other cleaning device secured to the slotted bar by means of links, substantially as specified.

3. A cleaner for rifles and shotguns, consisting of a length of flexible wire rope, of sufficient rigidity to allow of it being pushed through the barrel of a rifle or shotgun, and a slotted bar attached to such rope by engagement of one end thereof into a bore formed in the bar of increasing diameter toward the bottom, and the strands of the wire being spread within the bore and soldered therein, substantially as specified.

821,199. MEANS AND APPARATUS FOR TRAPPING RABBITS AND OTHER ANIMALS. WILLIAM STRAWBRIDGE, Burnside, South Australia, Australia. Filed Aug. 6, 1903. Serial No. 168,435.



Claim.—1. An apparatus of the kind described, comprising outer and inner gate-like frames, flexible metallic laths pointed at the free ends and secured to the frames to form the sides of a diminishing entry-passage, and a top piece pivoted in the inner frame so as to swing vertically, the said top piece being also formed of metallic laths with the ends at the smaller part of the device left free and pointed.

2. An apparatus of the kind described, comprising an outer frame, an inner frame narrower than the outer frame, flexible strips secured to the frames forming the sides of a diminishing entry-passage, a top piece arranged to swing vertically and lying normally in

a position approximately parallel to the upper side strip, and a bar pivotally arranged in the inner frame, and being secured to the top at a point slightly outside the balancing-point of the top piece.

821,200. PROCESS FOR THE PRODUCTION OF PHOTOGRAPHS IN NATURAL COLORS. JAN SZCZEPANIK, Vienna, Austria-Hungary. Filed Aug. 16, 1902. Serial No. 119,837.

Claim.—1. The process of making colored photographs, which consists in producing photographic plates of the object having different color values, printing such plates on a paper containing colored particles and thereby causing those colors to fade not corresponding to the color value of the plates, substantially as described.

2. The process of making colored photographs, which consists in producing a plurality of photographic plates of the object having different color values, printing such plates in registered succession on actinic paper containing non-permanent colors, thereby causing those colors to fade not corresponding to the color value of the plate, substantially as described.

3. The process of making colored photographs, which consists in providing three registrable negatives produced with the aid of color-screens, obtaining diapositives from said negatives of different monochrome values and printing each monochrome diapositive, on an actinic paper containing fadable primary colors, under the influence of lights of color complementary to the color of the reflective screens used to produce the diapositives, substantially as described.

4. The process of making colored photographs, which consists in producing three registrable negatives with the aid of screens for primary colors, producing diapositives from said negatives, printing the diapositives on actinic paper containing fadable primary colors, each positive during printing being subjected to light complementary to that represented by said diapositive, substantially as described.

5. The process of making photographs, which consists in producing registrable monochrome diapositive having densities proportional to the primary colors, producing a transparent mirror-print in three colors from said diapositive and then printing from said transparent print on actinic paper containing fadable primary colors in recurring series, substantially as described.

6. The process of making photographs, which consists in producing three superposed transparent actinic sheets each colored with a fadable actinic color, successively printing on said sheets registrable monochrome diapositives having primary color values, subjecting each diapositive while covering the actinic sheets to light complementary to that which said diapositive represents, fixing the colors in the actinic sheets after exposure, then printing from the mirror-picture so formed on actinic paper containing fadable primary colors and fixing the print so formed, substantially as described.

7. The process of making photographs, which consists in producing registrable negatives of an object having primary color values, producing diapositives from said negatives, forming a superposed transparent three-ply film in fadable actinic primary colors, printing such diapositives on the film under the influence of light complementary in color to that represented by the respective diapositives, fixing the transparent mirror-print so made and then printing from said transparent print on actinic paper ruled with fadable primary colors, and fixing the latter print, substantially as described.

821,201. DOOR, WINDOW, AND THE LIKE. WILLIAM W. TAYLOR, Oxford, England. Filed Apr. 22, 1904. Serial No. 204,418.



Claim.—1. The combination with a door or window frame, of a door or window consisting of two members having unequal proportions, a line of hinges connecting one of said members with a side of the frame, a second line of hinges connecting the two members together, the distance between the two lines of hinges being approximately two-sevenths of the distance between the edge of the member which is hinged to the frame and the parallel free edge of the other member which is hinged to the frame and the parallel free edge of the other member whereby the door or window will be substantially in equilibrium for uniform wind-pressure when shut or nearly shut, a projection on the larger member of the door or window at a distance from the second line of hinges equal to the distance between the two lines of hinges and a guide in the frame within which said projection engages and is adapted to slide for the purpose specified.

2. The combination with a door or window frame, of a door or window consisting of two members having unequal proportions, a line of double swing-hinges connecting one of said members with a side of the frame, a second line of double swing-hinges connecting the two members together, the distance between the two lines of hinges being approximately two-sevenths of the distance between the edge of the member which is hinged to the frame and the parallel free edge of the other member whereby the door or window will be substantially in equilibrium for uniform wind-pressure when shut or nearly shut, a projection on the larger member of the door or window at a distance from the second line of hinges equal to the distance between the two lines of hinges and a guide in the frame within which said projection engages and is adapted to slide for the purpose specified.

3. The combination with a door or window frame, of a door or window consisting of two members having unequal proportions, a line of hinges connecting one of said members with a side of the frame, a second line of hinges connecting the two members together, the distance between the two lines of hinges being approximately two-sevenths of the distance between the edge of the member which is hinged to the frame and the parallel free edge of the other member whereby the door or window will be substantially in equilibrium for uniform wind-pressure when shut or nearly shut, a projection on the larger member of the door or window at a distance from the second line of hinges equal to the distance between the two lines of hinges, a guide in the frame within which said projection engages and is adapted to slide, and means for excluding draft between the framing and the edges of the door as and for the purpose specified.

4. The combination with a door or window frame, of a door or window consisting of two members having unequal proportions, a line of hinges connecting one of said members with a side of the frame, a second line of hinges connecting the two members together, the distance between the two lines of hinges being approximately two-sevenths of the distance between the edge of the member which is hinged to the frame and the parallel free edge of the outer member whereby the door or window will be substantially in equilibrium for uniform wind-pressure when shut or nearly shut, a projection on the larger member of the door or window at a distance from the second line of hinges equal to the distance between the two lines of hinges and a guide in the frame within which said projection engages and is adapted to slide for the purpose specified.

5. The combination with a door or window frame, of a door or window consisting of two members having unequal proportions, a line of double swing-hinges connecting one of said members with a side of the frame, a second line of double swing-hinges connecting the two members together, the distance between the two lines of hinges being approximately two-sevenths of the distance between the edge of the member which is hinged to the frame and the parallel free edge of the other member whereby the door or window will be substantially in equilibrium for uniform wind-pressure when shut or nearly shut, a projection on the larger member of the door or window at a distance from the second line of hinges equal to the distance between the two lines of hinges and a guide in the frame within which said projection engages and is adapted to slide for the purpose specified.

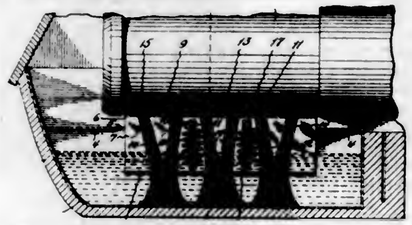
6. The combination with a door or window frame, of a door or window consisting of two members having unequal proportions, a line of hinges connecting one of said members with a side of the frame, a second line of hinges connecting the two members together, the distance between the two lines of hinges being approximately two-sevenths of the distance between the edge of the member which is hinged to the frame and the parallel free edge of the outer member whereby the door or window will be substantially in equilibrium for uniform wind-pressure when shut or nearly shut, a projection on the larger member of the door or window at a distance from the second line of hinges equal to the distance between the two lines of hinges, a guide in the frame within which said projection engages and is adapted to slide, and automatically-operating means for closing or balancing the door or window.

821,202. DRILL FOR DRILLING HOLES IN ROCK OR THE LIKE. JOHN H. THOMAS, Johannesburg, Transvaal. Filed Nov. 14, 1904. Serial No. 232,655.



Claim.—In a drill for drilling holes in rock and the like, in combination, the steel 1 beveled off on two opposite sides 3, 4, and formed with a transverse slot 6, rounded at the bottom 7 and beveled inward and upward to the top of the slot and tapered transversely, the end of the steel being beveled upwardly from the sides 5 to the edges of the slot, the cutter 2 shaped on the under side to fit the beveled end of the steel 1 and formed with a projection 12, 13 corresponding to the transverse slot 6 formed in the end of the steel 1, said cutter having its cutting edge of a greater length than the distance between the sides 3 and 4 of the steel 1, the width of said cutter being substantially the same as the diameter of the steel at right angles to the slot therein.

821,203. JOURNAL-LUBRICATOR. GEORGE TIBBETT, Jackson, Ohio, assignor of one-half to Simon L. David, Jackson, Ohio. Filed Oct. 26, 1905. Serial No. 284,421.

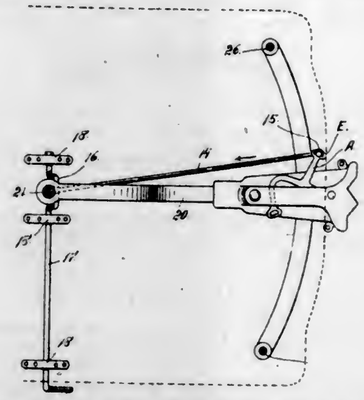


Claim.—1. The combination with a journal-box and an axle journaled therein, of a lubricant-receptacle fitting in the journal-box and provided with one or more inwardly-extending projections, a basket having a curved plate arranged in the receptacle, means having engagement with the projections of the receptacle for yieldably supporting the basket, and a mass or layer of fibrous material arranged on the curved plate of the basket in contact with the axle and having portions depending through the basket into the receptacle.

2. The combination with a journal-box and an axle journaled therein, of a basket arranged in the journal-box, springs confined within the basket, supports with which the springs have connection passing through the basket, means fixed with relation to the basket for receiving the supports, and a mass or layer of fibrous material arranged on the basket in contact with the axle and having portions depending through the basket into the receptacle.

3. The combination with a journal-box and an axle journaled therein, of a receptacle fitting in the journal-box and provided with projections or extensions, a basket arranged between the projections, springs arranged in the basket and connected to the bottom thereof, supports extending through the basket having connection with the springs and engaged at their ends with the projections, and a mass or layer of fibrous material arranged on the basket in contact with the axle and having wicks depending through the basket into the receptacle.

821,204. UNLOCKING MEANS FOR CAR-COUPLINGS. CHARLES H. TOMLINSON, Denver, Colo., assignor to The Tomlinson Coupler Company, Denver, Colo. Filed Sept. 12, 1905. Serial No. 278,191.



Claim.—1. In mechanism of the class described, the combination with a rotating draw-bar and an uncoupling device, of a shaft journaled to cause its axis to intersect, or approximately intersect, the axis or center of motion of a swinging draw-bar, and a rod connecting the shaft and uncoupling device of the draw-bar in operative relation, substantially as described.

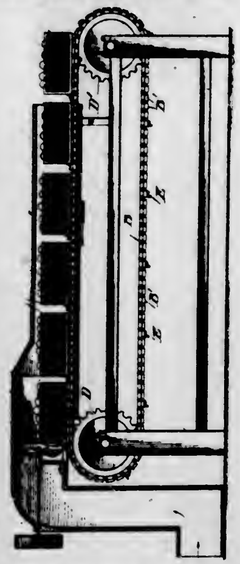
2. In unlocking devices for car-couplers, the combination with a rotating draw-bar and an uncoupling device, of a shaft journaled to cause its axis to intersect, or approximately intersect, the axis or center of motion of the swinging draw-bar, and means for connecting the shaft and the coupling device of the draw-bar in operative relation, substantially as described.

3. In unlocking devices for car-couplers, the combination with a radiating draw-bar and uncoupling device, of a rock-shaft journaled to cause its axis to intersect, or approximately intersect, the axis or center of motion of the swinging draw-bar, the rock-shaft having a crank and a rod loosely connected with the crank at one extremity, its opposite extremity being connected with the uncoupling device, substantially as described.

4. In unlocking mechanism for car-couplers, the combination with the radiating draw-bar and uncoupling device, of a rock-shaft journaled to cause its axis to intersect, or approximately intersect, the axis or center of motion of a swinging draw-bar, an unlocking device, a rod loosely connected at its respective extremities with the rock-shaft and draw-bar respectively.

5. In mechanism of the class described the combination with a radiating draw-bar and coupling device, of a rock-shaft journaled to intersect the axis of the swinging draw-bar, and a suitable operative connection between the rock-shaft and the coupling device, for uncoupling purposes whereby the parts will maintain their relation during the swinging movement of the draw-bar.

821,205. MEANS TO CURE FRUIT FOR TRANSPORTATION. JOHN P. TRIOLO, Corona, Cal. Filed Dec. 18, 1905. Serial No. 292,378.



Claim.—1. Means to cure citrus fruits for transportation, comprising a chamber closed on the top, bottom and sides; an endless fruit-carrying belt adapted to pass along the bottom thereof, the said belt being provided with projecting lugs dividing the belt into tray-receiving sections; fruit-receiving trays on said fruit-carrying belt; a stop in said chamber adapted to contact with the tray at the head of the chamber; an opening in said chamber at the head thereof for the removal of the tray; a closure therefor, and means to cause air to pass through said chamber.

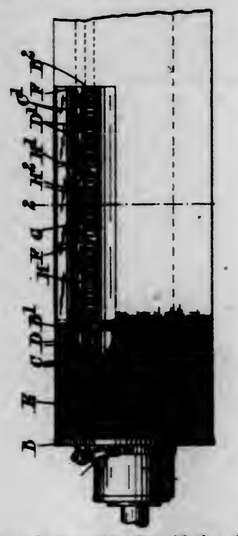
2. The herein-described means to cure citrous fruit tor transportation, comprising the chamber A, the endless fruit-carrying belt B adapted to pass along the bottom of said chamber, the said belt passing around sprocket-wheels D and carried thereby; an opening H in the head of the chamber for the removal of the fruit-trays; a door I adapted to form a closure for said opening and a blower F adapted upon the rotation thereof to cause a current of air to pass in at the head of the chamber and out at the foot thereof.

821,206. WATERMARKING OF PAPER. WALTER K. TROTMAN, Wood Green, England. Filed Oct. 5, 1905. Serial No. 281,442.

Claim.—1. A dandy-roll the cylindrical portion of which comprises a removable section carrying the watermarking devices for the purpose described.

2. In a dandy-roll the combination with the cylindrical portion of the roll having a space therein of a section of backing-sheet and a

covering carrying a watermarking device both arranged to fit into the space for the purpose described.



3. In a dandy-roll the combination with the cylindrical portion of the roll having a space therein of a section of backing-sheet and a detachable gauze covering carrying a watermarking device both arranged to fit into the space for the purpose described.

4. In a dandy-roll the combination with the cylindrical portion of the roll of a removable section and means for securing such section in place.

5. In a dandy-roll the combination with the cylindrical portion of the roll of a removable section engaging with the roll and a hook rotatably mounted on the roll and arranged to secure the removable section in place.

6. In a dandy-roll the combination with the cylindrical portion of the roll of a removable section, a detachable gauze covering on such section, a watermarking device carried by said covering and stiffeners attached to the covering and adapted to engage with the section.

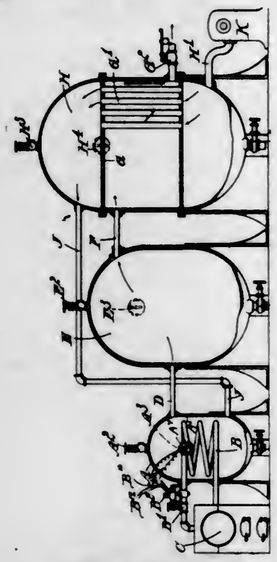
7. In a dandy-roll the combination of a cylindrical portion consisting of gauze supported upon the frame formed by disks B longitudinal rods C and backing-sheet D and having a space therein, a removable section consisting of segmental pieces F, bars C', backing-sheet D' and gauze covering E' carrying a watermarking device, means for engaging the gauze covering E' with the removable section and means for securing said section in place on the cylindrical portion substantially as described.

8. In an apparatus for watermarking paper, the combination with a wire frame having a space therein, of a removable section of the frame carrying the watermarking device for the purpose described.

821,207. LIQUID-PURIFIER. CHARLES TOCKFIELD, East Molesey, England. Filed Sept. 23, 1903. Serial No. 174,353.

Claim.—1. In apparatus for purifying liquids and separating matter therefrom, the combination of a vessel adapted to contain liquid under pressure, a second vessel, a conduit leading from the upper part of the first vessel to the second one, a third vessel, a chamber within such vessel, a conduit leading from the upper part of the second vessel to the inside of said chamber, tubes passing through the chamber, another conduit leading from the upper part of the third vessel to the lower part of the first one, an inlet at the lower part of the third vessel, a pressure-cock serving as an outlet to the chamber, means for forcing liquid through the inlet and causing it to fill the vessels and pass through the outlet, a steam-coil in the first vessel to raise its contents to a temperature above boiling-point, and blow-off cocks and scum-cocks for withdrawing the separated liquid and semisolid matter during the operation of the apparatus substantially as set forth.

2. In apparatus for purifying liquids and separating matter therefrom, the combination of a vessel adapted to contain liquid under pressure, a second vessel, a conduit leading from the upper part of the first vessel to the second one, a third vessel, a chamber within such vessel, a conduit leading from the upper part of the second vessel to the inside of said chamber, tubes passing through the chamber, another conduit leading from the upper part of the third vessel to the lower part of the first one, an inlet at the lower part of the third vessel, a pressure-cock serving as an outlet to the chamber, means for forcing liquid through the inlet and causing it to fill the vessels and pass through the outlet, a steam-coil in the first vessel to raise its contents to a temperature above boiling-point, electrically-operating means for automatically controlling the steam-supply to said coil, and blow-off cocks and scum-cocks for withdrawing the separated liquid and semisolid matter during the operation of the apparatus substantially as set forth.



821,208. BEER-GLASS TRAY. FRIEDRICH VOSS, Burg, in Dithmarschen, Germany. Filed Nov. 9, 1905. Serial No. 286,458.



Claim.—1. In a beer-glass tray, a plate having a raised grooved section, an upright flange extending from the edge of said raised section to the bottom of the plate, and a rim surrounding said plate, combined with a cloth covering the raised section and the upright flange, and means for securing the cloth to said flange, substantially as specified.

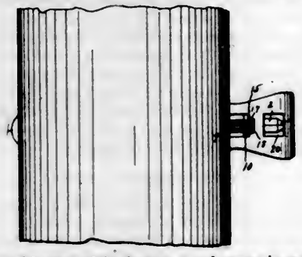
2. In a beer-glass tray, a plate having a raised grooved section, a grooved upright flange extending from the edge of said raised section to the bottom of the plate, and a rim surrounding said plate, combined with a cloth covering the raised section and the grooved flange, and a ring that engages the cloth and surrounds the grooved flange, substantially as specified.

3. In a beer-glass tray, a plate having a raised grooved section, a grooved upright flange extending from the edge of said raised section to the bottom of the plate, and a rim surrounding said plate, combined with a cloth covering the raised section and the grooved flange, and a perforated ring that engages the cloth and surrounds the grooved flange, substantially as specified.

821,209. DAMPER. CHARLES L. WAGANDT, Baltimore, Md., assignor to National Enameling & Stamping Company, a Corporation of New Jersey. Filed Mar. 27, 1905. Serial No. 252,179.

Claim.—1. The combination of a damper, a rod upon which the damper is secured having a shoulder near one end, and a handle comprising a body portion having two projections bent at right angles to the body portion and overlapping each other and each provided with an aperture through which the rod projects.

2. The combination of the damper, a rod upon which the damper is secured having a shoulder near one end, and a handle having two overlapping projections each provided with an aperture through which the rod projects and adapted to lock the handle upon the rod.



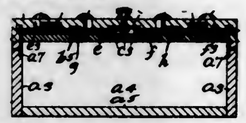
3. The combination of the damper, a rod square in cross-section having a shoulder near one end, and a handle having two overlapping projections each provided with an aperture through which the rod projects adapted to lock the handle upon the rod.

4. The combination of the damper, a rod square in cross-section having a shoulder near one end, and a handle having two projections each provided with an aperture through which the rod projects, one of said projections being provided with a locking-shoulder adapted to lock the said projections against the shoulder on the rod.

5. The combination of the damper, a rod square in cross-section having a shoulder near one end, a handle having two projections each provided with an aperture through which the rod projects and adapted to lock the handle upon the rod, and a projection provided with a square aperture through which the square end of the said rod projects, whereby when the handle is turned the rod, and consequently the damper, will also be turned.

6. The combination of the damper, a rod square in cross-section having a head on one end and a pointed opposite end, a shoulder near one end, and rounded at the two points which rest upon the sides of the pipe, a handle having two projections each provided with an aperture through which the rod projects and adapted to lock the handle upon the rod, and a projection provided with a square aperture through which the square end of the rod projects, whereby when the handle is turned the rod, and consequently the damper, will also be turned.

821,210. LOCK. VICTOR F. WALLIN, Brooklyn, N. Y. Filed Dec. 27, 1905. Serial No. 293,451.



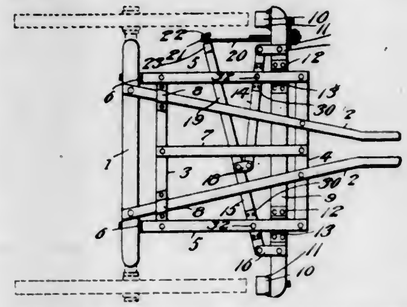
Claim.—1. In a lock, a stationary member, a swinging member hinged to the stationary member, a rotary disk mounted centrally of the inner side of the swinging member and operated by a knob on the outer side of said member, lock-bolts arranged radially of the rotary disk and longitudinally of the swinging member and transversely and forwardly of said swinging member, the inner ends of said lock-bolts being adapted to engage the rotary disk and the outer ends thereof being adapted to engage parts secured to the stationary member, a slide-bar arranged radially of said disk and rearwardly thereof and the inner end of which is adapted to engage said disk, and means for operating said lock-bolts and slide-bar, substantially as shown and described.

2. In a lock, a stationary member, a swinging member hinged thereto, a rotary disk mounted centrally of the inner side of the swinging member, three radially-arranged locking-bars movable toward and from said disk and adapted at their inner ends to engage said disk and at their outer ends to engage parts secured to the stationary member, a slide-bar arranged radially and rearwardly of said disk and adapted to engage said disk at its inner end, slide-bars mounted transversely of the swinging member and on the opposite sides of the rotary disk, sliding locking-bars mounted longitudinally of the swinging member and forwardly and backwardly of said disk and two of which are adapted at their inner ends to engage one of the lock-bolts and the other two of which are adapted to engage the first-named slide-bar, and means for operating said bars, substantially as shown and described.

3. In a lock, a stationary member, a swinging member hinged to the stationary member, a rotary disk mounted centrally of the inner side of the stationary member, three lock-bolts arranged radially of said disk and one of which is arranged forwardly thereof and the other two laterally thereto, said bolts being also adapted at their inner ends to engage said rotary disk and at their outer ends to engage parts secured to the stationary member, a slide-bar mounted radially and rearwardly of the rotary disk and adapted at its inner end to engage said disk, and means for operating said parts, substantially as shown and described.

4. In a lock, a stationary member, a swinging member hinged to the stationary member, locking devices mounted on the inner side of the swinging member, a slide secured to the swinging member adjacent to one of the hinges thereof, knobs mounted on the outer side of the swinging member, and means whereby the locking devices may be operated by said knobs and said slide, substantially as shown and described.

821,211. BRAKE. ROBERT L. ALCORN, Oneida, Tenn., assignor of one-half to J. T. Smith, Oneida, Tenn. Filed June 2, 1905. Serial No. 263,460.



Claim.—1. The combination with the running-gear of a vehicle, of a frame rigidly connected to a stationary part of the running-gear and comprising upper and lower parallel bars, a brake-beam mounted to slide back and forth between said parallel bars, equalizing-levers fulcrumed between the parallel bars and pivotally coupled to each other and to the beam, one of said levers having an operating arm or extension, and a hand-operating lever connected to said operating-arm.

2. The combination with the running-gear of a vehicle, of a guide-frame fastened to a stationary part of said running-gear and comprising upper and lower parallel bars, a brake-beam mounted to slide back and forth between said parallel bars, equalizing-levers pivotally coupled to each other and to the beam and working between the parallel bars, one of said levers having an operating arm or extension, a hand-lever fulcrumed on the brake-beam, and a connection between said hand-lever and the operating-arm of the brake-lever, substantially as described.

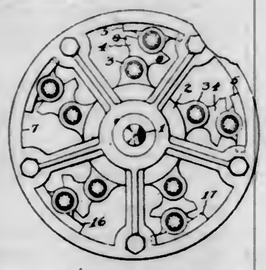
3. The combination with the running-gear of a vehicle, of a guide-frame fastened to a stationary part of the running-gear and comprising upper and lower parallel bars, a brake-beam mounted to slide laterally back and forth between said parallel bars, runners secured to the brake-beam and embracing the parallel bars, equalizing brake-levers pivotally coupled to each other and to the brake-beam, an operating-arm forming an extension of one of said brake-levers, and a hand-lever operatively connected to said operating-arm.

4. The combination with the running-gear of a vehicle, of a guide-frame fastened to a stationary part thereof and comprising upper and lower parallel bars, certain of which are bolted to the sand-board, a brake-beam mounted to slide between said parallel bars, equalizing-levers pivotally coupled to each other and to the brake-beam, an operating-arm forming an extension of one of said brake-levers, and a hand-lever connected to said operating-arm.

821,212. CLUTCH. FRANK M. ASHLEY, New York, N. Y. Filed June 14, 1899. Serial No. 720,510.

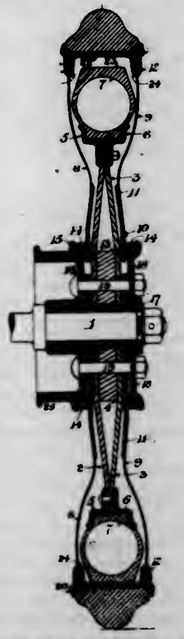
Claim.—1. The combination in a clutch, of a driven shaft having a hub revoluble therewith and provided with a projecting bearing, of a rim revolubly supported on said bearing, links pivotally connected to the hub and carrying shoes normally in juxtaposition to said rim, each link solely supporting its shoe normally to one side of

the link connection with the hub and in a direction opposite to that in which the rim is to be driven, whereby the revolution of the rim in one direction will cause the shoes to frictionally engage therewith and drive the hub and its shaft, and subsequently upon a speed of the rim lower than that of the hub and shaft result in a disengagement of said shoes with said rim.



2. The combination in a clutch, of a driven shaft having a hub revoluble therewith and provided with a projecting bearing, of a rim revolubly supported on said bearing, links pivotally connected to the hub and carrying shoes normally in juxtaposition to said rim, each link being of approximately triangular form to present oppositely-extending shoulders, and solely supporting its shoe normally to one side of the link connection with the hub and in a direction opposite to that in which the rim is to be driven, whereby the revolution of the rim in one direction will cause the shoes to frictionally engage therewith and drive the hub and its shaft, and subsequently upon a speed of the rim lower than that of the hub and shaft result in a disengagement of said shoes with said rim.

821,213. **WHEEL FOR ROAD-VEHICLES.** ANNIE C. BIRKIN, Nottingham, England. Filed Mar. 16, 1905. Serial No. 250,449.

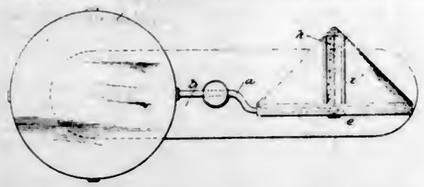


Claim.—1. The combination with a hub, of a wheel secured to said hub, a casing entirely surrounding the wheel consisting of two resilient metallic plates, and a rim and tire secured to the peripheries of the plates, and radially-extending arms for strengtheniag the plates, substantially as set forth.

2. The combination with a hub provided with a flange on its inner end, of a wheel removably mounted on said hub, a casing surrounding the wheel consisting of a plate arranged between the wheel and the flange and having a rim and tire secured to its periphery, a plate on the opposite side of the wheel detachably secured to the said rim, whereby access to the wheel is permitted, a flange on the outer end of the hub, and means for clamping the flanges and wheel together for securing the wheel to the hub, substantially as set forth.

3. The combination with the hub having a flange on its inner end, of a wheel removably mounted on the hub, a flange secured to the outer end of the hub, means for securing the flanges and wheel together to hold the latter in place, there being annular recesses formed between the wheel and the said flanges, a casing surrounding the wheel arranged to have its inner edges slide radially in said recesses, and means arranged within the recesses for guiding the wheel in its movements, substantially as set forth.

821,214. **WEIGHING-SCALE.** JOHN G. BLESSING, Chicago, Ill., assignor to Joseph E. Cochran, Chicago, Ill. Filed Mar. 18, 1905. Serial No. 250,817.



Claim.—1. In a weighing-scale, the combination with the scale-beam and beam-support, of a horizontal dial-shaft, a conical dial concentric with said shaft, a flat circular dial disposed transversely to and concentric with said shaft, a casing for concealing all but a certain portion of said dials for facilitating the reading thereof, and connections between the scale-beam and said dials for rotating the latter, said flat dial being coincident with the base of the conical dial, the two dials thereby constituting a single cone.

2. In a weighing-scale, the combination with the scale-beam and beam-support, of a horizontal dial-shaft, a conical dial concentric with said shaft, a flat dial concentric with said shaft and lying transverse thereto, said dials rotating as a single piece and the flat dial forming the base of a cone in which the conical dial forms the sides, and connecting means including gears for rotating said dials from the motion of the scale-beam, said connections lying outside of the cone formed by said two dials.

3. In a weighing-scale, the combination with the scale-beam and beam-support of a horizontal shaft, a conical dial concentric with said shaft, a flat circular dial disposed transversely to and concentric with said shaft, connections between the scale-beam and said dials for rotating the latter, said flat dial and conical dial being contiguous and together forming a cone, and a cone-shaped casing closely fitting over said dials, the connections from the dials to the scale-beam being located between the said flat dial and the adjacent portion of the casing, and said casing having apertures therein through which the dials may be read, and transparent glass plates covering said apertures and having a reading-line marked thereon, substantially as described.

821,215. **TOOTH FOR STEAM-SHOVELS.** JOHN C. CANTLEBERY and WILLIAM J. EDWARDS, Hillsville, Pa. Filed July 18, 1905. Serial No. 270,207.



Claim.—1. A tooth for steam-shovels comprising a body and a removable point, the body being provided with a mortise, a tenon projecting from the point and fitting into the mortise of the body, and interlocking recesses and extensions between the body and point at the upper and lower sides of the tooth.

2. A tooth for steam-shovels comprising a body provided with a mortise, a removable point having a tenon fitting into the mortise of the body, ribs formed longitudinally at opposite sides of the tenon, the mortise having grooves at opposite sides thereof to receive the ribs of the tenon, an extension projecting rearwardly from the point at its upper side, an extension projecting forwardly from the body at its under side, the body and point having recessed portions to receive the respective extensions aforesaid, and a transverse fastening passing through the body and the tenon and securing the same together.

3. A tooth for steam-shovels comprising a body portion adapted to be secured to the shovel, and a removable point for the tooth, said point and body portion being connected by an interlocking mortise and tenon, the mortise extending through to one side of the tooth and one side of the tenon being flush with a side of the tooth, the sections of the tooth being also provided with an interlocking extension and recess located on the opposite side of the tooth from which the beforementioned mortise extends.

4. A tooth for steam-shovels comprising a body portion adapted to be secured to the shovel, and a removable point for the tooth, said point and body portion being connected by an interlocking mortise and tenon, the mortise extending through to one side of the tooth and one side of the tenon being flush with a side of the tooth, the opposite sides of the mortise being provided with longitudinal grooves to receive corresponding ribs projecting from the tenon, the sections of the tooth being also provided with an interlocking extension and recess which are located on the opposite side of the tooth from which the before-mentioned mortise extends.

5. A tooth for steam-shovels comprising a body portion adapted to be secured to the shovel, and a removable point for the tooth, said point and body portion being connected by an interlocking mortise and tenon, the mortise extending through to one side of the tooth and one side of the tenon being flush with a side of the tooth, the body of the tooth being also provided with an extension extending into the mortise and fitting into a corresponding recess in the tenon.

821,216. **CHECKING OR UNCHECKING DEVICE.** CHARLES J. CASTERA, Jr., Los Angeles, Cal., assignor of one-half to Charles Castera, Sr., Los Angeles, Cal. Filed Aug. 12, 1904. Serial No. 220,494.



Claim.—1. A detachable check device comprising a body provided at one end with a socket having holes through the sides thereof, and an attaching device provided with two resilient limbs, each limb having a projection adapted to engage said holes.

2. A detachable check device comprising a body provided at one end with a socket having holes through the sides thereof, and an attaching device provided with two resilient limbs, each limb having a projection adapted to engage a hole, the said projections having inclined faces which are more abrupt on the side away from the free ends of the limbs so that the projections insert into the holes with greater ease than they withdraw.

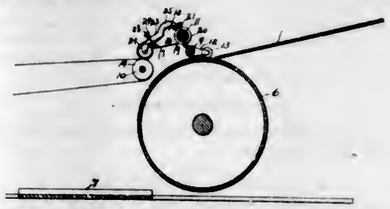
3. An extensible check device comprising a cylindrical barrel, a cylindrical member, said member and barrel being both provided with inturned flanges and with central perforations, a bolt passing through said perforations and extending within the barrel, a spring surrounding said bolt within the barrel, a nut on the bolt within the cylindrical member, loop-attaching means connected to the barrel, and loop-attaching means connected to the cylindrical member in position to prevent said nut from unscrewing.

4. A detachable and extensible check device comprising a cylindrical barrel and a cylindrical member both provided with inturned flanges and central perforations at their inner ends, a bolt extending through said perforations and provided with a nut within the cylindrical member and with a head at its other end within the barrel, a spring surrounding said bolt within the barrel and engaging with said head and with the inturned flange of said barrel, loop-engaging means connected to said cylindrical member, and loop-engaging means detachably engaging in the outer end of the barrel, said outer end of the barrel being flattened to form a slot for reception of said loop-engaging means.

5. An extensible check device comprising a barrel having an inturned flange at one end, a hollow member substantially in axial alinement with said barrel and also having an inturned flange at one end, said flanged ends normally being adjacent to and abutting against each other, there being perforations through said flanges, a bolt passing through said perforations and extending within the barrel, a spring surrounding said bolt within the barrel, means for retaining the end of the bolt within the cylindrical member, and harness-engaging means connected to the barrel and hollow member

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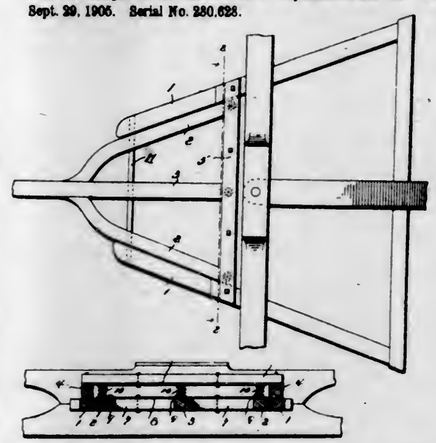
821,217. **PERFORATING ATTACHMENT FOR PRINTING-PRESSES.** HERSCHEL CATON, Kansas City, Mo. Filed June 8, 1905. Serial No. 264,262.



Claim.—1. In a perforating attachment for printing-presses, the combination of the cylinder, the delivery fly-shaft, fly-wheels and an independent smooth-rimmed wheel carried by said fly-shaft, a rod extending transversely above the cylinder, a bracket carried by said rod, and a perforating-disk carried by said bracket in engagement with the rim of said independent wheel.

2. In a perforating attachment for printing-presses, the combination of the cylinder, the delivery fly-shaft, fly-wheels and an independent smooth-rimmed wheel carried by said fly-shaft, a rod extending transversely above the cylinder, a bracket rigid on said rod, a semicircular flange 18, having an ear 22, on said bracket, an arm having a forward forked portion, a semicircular grooved rear portion on said arm fitting over flange 18, a pivot-pin extending through perforations in the curved portion of said arm and through a perforation in ear 22, a bolt pivoted to the forward end of said bracket and extending upwardly through a perforation in said arm, a coil-spring around said bolt above said arm, a thumb-nut on the loose end of said bolt, and a disk journaled between the forks of said arm and held in engagement with the rim of said independent wheel on the delivery fly-shaft.

821,218. **VEHICLE-TONGUE SUPPORT.** SHELVEY CHRISCO, Cobalt, Mo., assignor of one-half to John W. Copeland, Cobalt, Mo. Filed Sept. 29, 1905. Serial No. 280,628.

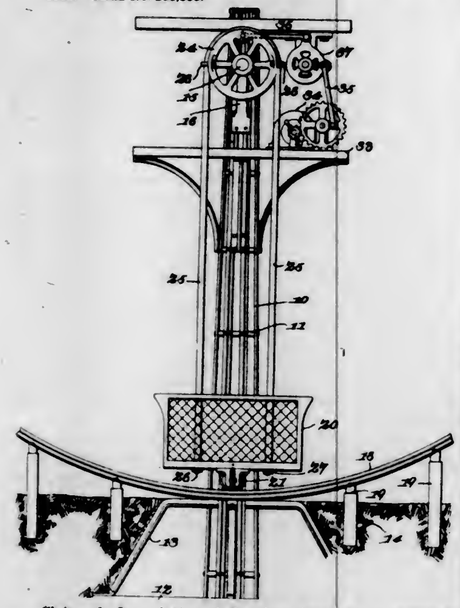


Claim.—1. A vehicle-tongue support comprising, in combination, the tongue, the outer, and the inner vehicle-hounds, a cross-bar carried by the outer hounds, with a frame interposed between the cross-bar and the inner hounds and tongue, said frame comprising an upper and a lower plate, the upper plate being secured to the cross-bar and extending longitudinally thereof, and the lower plate being secured to the inner hounds and extending parallel with the upper plate, said lower plate also being adapted to be engaged by the tongue, coil-springs arranged between the plates and adapted to exert their tension against same, and lugs or bolts carried by the upper frame and extending downwardly through the coil-springs to approximately half of the distance between the two plates to prevent lateral displacement of the springs and also to limit the movement of the lower plate.

2. A vehicle-tongue support comprising, in combination, the tongue, the outer, and the inner vehicle-hounds, of vertical projections carried by the outer hounds, a cross-bar connecting the projections and being supported thereby, a plate secured to the under side

of the cross-bar and extending longitudinally thereof, a plate secured to the inner bounds and connecting the same, said plate being parallel with and beneath the first-mentioned plate, coil-springs secured to the upper plate and adapted to be engaged by the lower plate, said springs being adapted to exert their tension against both plates, and lugs depending from the upper plate and arranged to extend inside of the coil-springs to prevent lateral displacement thereof, and also to limit the movement of the lower plate.

821,219. SWING. BENJAMIN CLOW, Dalton, Mass. Filed Oct. 4, 1905. Serial No. 281,338.



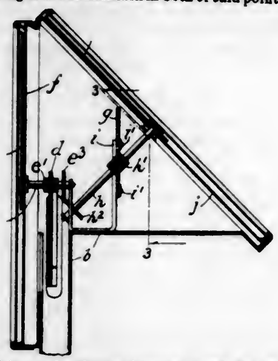
Claim.—1. In a device of the class described, a supporting structure, a bracket-frame extending laterally from said structure, a shaft carried by said bracket-frame and provided with a bearing extending beyond the same, a track curved concentric to said shaft and in vertical alinement with the bearing thereof, a car having wheels bearing upon said track, and connecting means between said car and bearing.

2. In a device of the class described, a supporting structure, a bracket-frame extending laterally from said structure, a shaft carried by said bracket-frame and provided with a bearing extending beyond the same, a track curved concentric to said shaft and in vertical alinement with the bearing thereof, a car having wheels bearing upon said track, a segmental member swinging upon said bearing, a U-shaped hanger bearing over said segmental member and coupled at the terminals to said car, and coupling means for clamping said hanger to said segmental member.

821,220. WEIGHING-SCALE. JOSEPH E. COCHRAN, Chicago, Ill. Filed Feb. 25, 1905. Serial No. 247,333.

Claim.—1. In a weighing-scale, the combination with the scale-beam and beam-support, of a plurality of circular dials the planes whereof are arranged obliquely with reference to each other; pointers adjacent to said dials and rotating in planes parallel thereto; shafts at right angles to said pointers for operating the same; a pinion on one of said pointer-shafts, a rack operated by the scale-beam and meshing with said pinion, a pinion on the second shaft, a weighted rack meshing with said second pinion, and intermeshing gear-wheels on said shafts for transmitting rotation from one to the other thereof, said weighted rack and scale-beam rack being arranged on opposite sides of the train of gears whereby the weight of the weighted rack yieldingly opposes the forward movement of the scale-beam rack, and said racks, being on opposite extremities of the train of gears, a single weighted rack tends to avoid backlash in both of the pointer-shafts.

2. In a weighing-scale, the combination with the scale-beam and beam-support, of a plurality of reading-pointers moving in planes oblique to each other; shafts at right angles to each of said pointers for operating the same, gear wheels connecting said shafts so as to rotate them equal amounts and one of said shafts being operated by the scale-beam; a gear-wheel on the other of said shafts and a toothed weighted rack meshing with said pinion for yieldingly opposing the rotation of said pointers in the positive direction, a single weighted rack thereby tending to avoid backlash in both of said pointer-shafts.



3. In a weighing-scale, the combination, with the scale-beam and beam-support, of a toothed rack upon said scale-beam, a horizontal pinion-shaft, a toothed pinion thereon operated by said rack, an inclined dial, a pointer-shaft at right angles thereto, a pointer on said shaft adapted to move in a plane parallel to said dial, toothed gears connecting said pinion-shaft and said pointer-shaft for driving the latter, a toothed pinion upon said pointer-shaft, and a toothed weighted rack adapted to mesh therewith for avoiding the effect of backlash upon the position of said pointer-shaft.

4. In a weighing-scale, the combination with the scale-beam and beam-support, of two dials disposed at an angle to each other, pointers adjacent to said dials, pointer-shafts geared together for operating said pointers, geared connections between one of said pointer-shafts and said scale-beam, a pinion h' upon the other of said pointer-shafts and a toothed weighted rack meshing with said pinion for avoiding the effect of backlash upon the positions of said pointers.

5. In a weighing-scale, the combination with the scale-beam and beam-support, of two dials disposed at an angle to each other, pointers adjacent to said dials, pointer-shafts geared together for operating said pointers, geared connections between one of said pointer-shafts and said scale-beam, a pinion upon the other of said shaft, and a weighted rack adapted to mesh with said pinion for avoiding the effect of backlash upon the positions of said pointers.

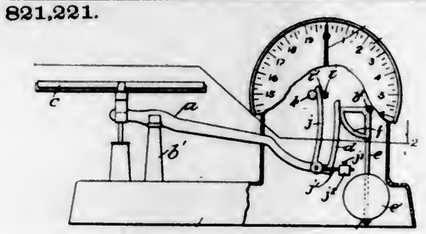
6. In a weighing-scale, the combination with the scale-beam and beam-support, of two dials disposed at an angle to each other, pointers adjacent to said dials, pointer-shafts geared together for operating said pointers, geared connections between one of said pointer-shafts and said scale-beam, a pinion upon the other of said shafts, and a weighted rack for avoiding the effect of backlash upon the positions of said pointers, said rack being movable in a vertical direction and having oblique-faced teeth for meshing with said pinion, substantially as described.

7. In a weighing-scale, the combination with the scale-beam and beam-support, of two dials disposed at an angle to each other, pointers adjacent to said dials, pointer-shafts geared together for operating said pointers, a pinion upon each of said shafts, and a rack meshing with each of said pinions, one of said racks being carried by the scale-beam for rotating said pointers in the positive direction and the weight of the other of said racks being opposed to the rotation of said pointers in the positive direction, for the purpose mentioned.

821,221. WEIGHING-SCALE. JOSEPH E. COCHRAN and OLIVER L. PLUMTREE, Chicago, Ill.; said Plumtree assignor to said Cochran. Filed Apr. 6, 1905. Serial No. 254,080.

Claim.—In a weighing-scale, the combination, with the scale-beam and beam-support of a weighted arm, a toothed segment rigid with said arm, a rack rigidly secured to said scale-beam and meshing with said segment, a second rack upon said beam, a rotatable reading member and a pinion for rotating the latter, said second rack meshing with said pinion for rotating it and the reading member.

821,221.

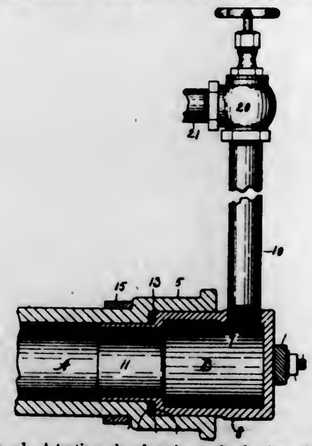


821,222. COW-TAIL FASTENER. GEORGE H. CORT and EARL C. CORT, Breckenridge, Mo. Filed Aug. 17, 1905. Serial No. 274,575.



Claim.—A cow-tail fastener comprising a pair of pivoted handles, one of which has a ring in the end, a spring disposed between the handles, a pair of opposing serrated jaws each rigidly secured to one handle by an outwardly-curved portion forming an approximately circular opening between the jaws and the pivot, a leg-embracing clamp rigidly secured to one jaw, and comprising a bar and a rigid curved arm, a similarly-curved arm pivoted to the rigid arm, a spring bearing against the jaw and the pivoted arms and sharply-outturned guides upon the extremities of the curved arms.

821,223. TESTING-PLUG FOR PIPE-MAINS. PATRICK J. COLEMAN, Bristol, Conn. Filed Sept. 5, 1905. Serial No. 277,010.

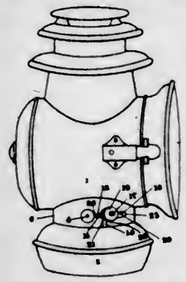


Claim.—1. A testing-plug for pipe-mains having a hollow body and reduced end with a shoulder between, the said body and end being adapted for entering the bell-mouth and body of a pipe-main, the body of the said plug extending outwardly beyond the bell-mouth with a pipe connection in its side and with a closed outer end while its inner end opens into the said main.

2. A testing-plug for pipe-mains, having a hollow body and reduced end with a shoulder between, the said body and end being adapted for entering the bell-mouth and end of a pipe-main into which its inner end opens, a two-part clamp fitted to the external shoulder of the said pipe-main and bolts extending forwardly from the said clamp to the outer end of the said plug for holding the plug in place.

3. The combination of a pipe-main with a hollow testing-plug fitted to the end of the said main, the said plug projecting beyond the said main and having a closed outer end, a stand-pipe extending from the side of the projecting plug, and means for securing the said plug and pipe-main together.

821,224. VEHICLE-LAMP. THOMAS J. CORCORAN, Cincinnati, Ohio. Filed Mar. 26, 1906. Serial No. 308,075.



Claim.—1. The combination of a lamp-body and a burner-support, the lamp-body and burner-support having mating engaging means, the said engaging means arranged to act upon relative turning between said lamp-body and burner-support, the lower portion of said lamp-body having a transverse slot and a downwardly-extending slot merging therewith, a plate at said slot, said plate having a slot arranged to receive the shaft of the burner of said burner-support, and a clamp extending from said plate through said transverse slot to outside said lamp-body for clamping the parts together after said relative turning between said lamp-body and burner-support.

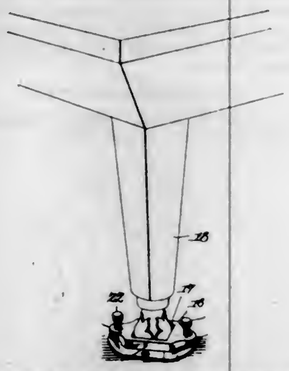
2. The combination of a lamp-body and a burner-support, the lower portion of said lamp-body having a downwardly-extending slot and laterally-projected slots extending from said first-named slot, a plate taking across said slots and having a slot therein adapted to register with said downwardly-extending slot in a given position between said plate and first-named slot, said burner-support having a part thereon adapted to take through one of said laterally-extending slots, and said plate having clamping means thereon extending through the other of said laterally-extending slots, substantially as described.

3. The combination of a lamp-body and a burner-support, the lower portion of said lamp-body forming a seat for said burner-support, and said burner-support adapted to be received by said seat and turned therein, the lower portion of said lamp-body provided with a T-slot, a plate adapted to take across said T-slot and having a slot adapted to register with the downwardly-extending stem of said T-slot, a screw-clamp on said plate having movement in one of the laterally-extended wings of said T-slot, the other of said laterally-extended wings of said T-slot adapted to receive the shaft of said burner-support, substantially as described.

4. The combination of a lamp-body and a burner-support, the lower portion of said lamp-body formed into a seat having inclined ways, the burner-support provided with pins arranged to travel on said ways, the shaft of the burner of said burner-support arranged to be placed substantially vertically of one of said pins, the lower portion of said lamp-body having a downwardly-extending and downwardly-opening slot arranged to receive said shaft and last-named pin, a plate having a downwardly-extending slot adapted to register with said first-named slot when receiving said shaft and pin, the lower portion of said lamp-body having a sidewardly-extending slot to each side of said first-named slot and merging therewith, a screw-clamp on said plate, said burner-support arranged to turn in said seat and thereby move said plate by contact of said last-named pin with the wall of the slot in said plate and thereby move said burner-shaft into one of the sidewardly-extending slots and the screw-clamp in the other of said sidewardly-extending slots and for drawing said burner-support toward said lamp-body, said screw-clamp arranged

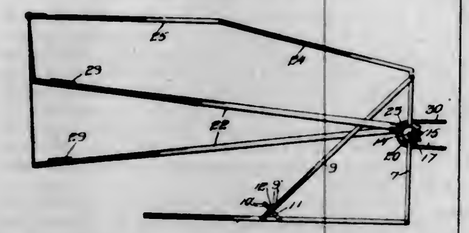
to clamp the burner-support to the lamp-body in drawn position, substantially as described.

821,225. BILLIARD-TABLE LEVELING AND HOLDING DEVICE. JAMES C. DOSHER, Baton Rouge, La. Filed Aug. 10, 1905. Serial No. 273,569.



Claim.—A combined securing and adjusting device for billiard-table legs, consisting of a base member having depressions near the ends and with a socket between the depressions and provided with means for permanent attachment to a floor, an upper member having a socket in the upper face and with a bearing depending from the lower face for engagement with the socket in the base member and with ears extending from the ends, means for securing the leg of a billiard-table in the socket of said upper member, and set-screws operating through said ears and bearing in the depressions in said base member.

821,226. POWER MECHANISM. JOSIAH C. DUNKELBARGER, Cheneyville, Ill. Filed July 18, 1905. Serial No. 270,257.

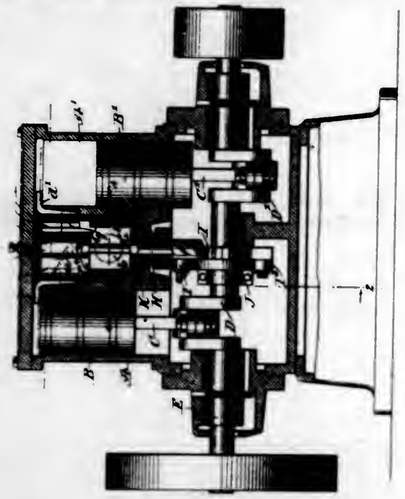


Claim.—A mechanism of the class described comprising a frame, a shaft journaled in the uprights, ratchet-wheels carried by the shaft, drums carried by the ratchet-wheels, bands engaged with the drums, levers secured to the bands, dogs pivoted to the bands and adapted for engagement of the ratchet-teeth for movement of the shaft therewith in one direction, connections between the levers, said connections being arranged to move one of the levers in one direction when the other lever is moved in the opposite direction and a sprocket-wheel mounted upon the shaft.

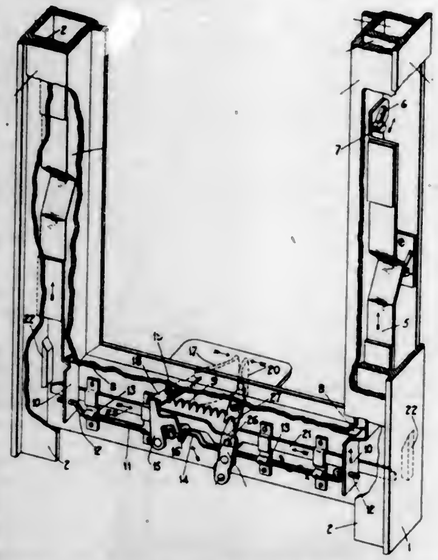
821,227. OSCILLATING VALVE FOR STEAM-ENGINES. THADDEUS V. ELLIOTT, New York, N.Y. Filed May 11, 1905. Serial No. 259,880.

Claim.—1. An engine comprising cylinders, pistons reciprocating therein, a main shaft having crank-arms standing at an angle and connected with the said pistons, an oscillating valve actuated from the said main shaft and controlling the admission and the exhaust of the motive agent to and from the said cylinders in the proper sequence, and mechanism for oscillating the said valve, comprising a cam on the main shaft and a yoke reciprocated by the said cam and engaging the stem of the said valve to rotate the latter.

2. An engine comprising cylinders, pistons reciprocating therein, a main shaft having crank-arms standing at an angle and connected with the said pistons, an oscillating valve having a fixed valve-stem provided with a spiral, a yoke engaging the said spiral, to oscillate the latter on reciprocating the yoke, and a cam on the main shaft, engaging the said yoke to reciprocate the same.



821,228. WINDOW CONSTRUCTION. EDMUND M. ERB, Jersey City, N. J., assignor to Robert M. Dixon, East Orange, N. J. Filed Dec. 28, 1905. Serial No. 293,566.



Claim.—1. In combination, a frame, a sash or the like mounted to slide therein, a member arranged between the sash and the frame adapted by its frictional engagement with the frame to hold the sash stationary in any position in its range of movement, revoluble means for vertically reciprocating said member to release the sash and permit free sliding, and a lever connected with said revoluble means adapted by movement in a horizontal direction to actuate the same.

2. In combination, a frame, a slidable sash or the like mounted therein, a member arranged between the sash and the frame, means for normally holding the said member in engagement with said frame to maintain the sash in any desired position within its range of movement, revoluble means for vertically reciprocating said member to release said sash and permit free sliding, and a lever connected with said revoluble means adapted by movement in a horizontal direction to actuate the same.

3. In combination, a frame, a slidable sash mounted therein, a member arranged between the sash and the frame and normally held in frictional engagement with the frame by spring-controlled means to hold the sash stationary in any position in its range of movement, revoluble means for vertically reciprocating said member to release the sash and permit free sliding, and a lever connected with said revoluble means adapted by a movement in a plane substantially at right angles to the movement of said member, to actuate said revoluble means.

4. In combination, a frame, a sash slidably mounted therein, a member carried by the sash which engages the frame frictionally and thereby holds the sash against sliding from any position to which it has been slid, a revoluble member having a crank adapted when actuated to vertically reciprocate said member and thereby release the sash and permit of free sliding, and a finger-lever pivoted for horizontally swinging on the sash and adapted when swung to actuate said revoluble member.

5. In window construction, in combination, a frame, a sash or the like mounted to slide therein, a member carried by said sash adapted by a movement relative thereto to force said sash into engagement with said frame thereby to restrain the movement thereof from any position in its range of movement, a revoluble rod having connection with said member adapted to reciprocate said member whereby the sash is freed from its frictional engagement with the frame and permitted a free sliding movement therein, and a lever mounted upon the sash and adapted to swing horizontally thereon, said lever being connected to and adapted for actuating said rod.

6. In window construction, in combination, a sash, a frame in which said sash is mounted to slide, a member loosely carried by said sash adapted by a movement relative thereto to force the same into engagement with a portion of said frame whereby said sash is normally restrained against sliding, spring-controlled means for normally urging said member to relative movement with respect to said sash whereby said sash is normally maintained against sliding, a revoluble rod for reciprocating said member thereby to release said sash to permit of free sliding, and a lever mounted to swing horizontally on said sash having connection with said actuator adapted to rotate the same and reciprocate said member.

7. In window construction, in combination, a frame, a sash or similar device adapted to slide in said frame, a member mounted loosely upon said sash adapted to be moved relative thereto whereby said sash is normally held in frictional engagement with a portion of said frame and prevented from sliding therein, spring-controlled means for normally urging said member to such relative movement, a revoluble rod journaled upon said sash adapted to actuate said member thereby to release said sash and permit of free sliding, and a lever pivoted to swing in a direction substantially at right angles to the reciprocating movement of said member connected with said rod adapted when moved to actuate the same and thereby reciprocate said member.

8. In window construction, in combination, a frame, a sash slidably mounted therein, a member provided with an inclined slot carried by said sash and adapted to be moved relative thereto into engagement with a portion of said frame whereby said sash is held in engagement with said frame to frictionally restrain the same against sliding, a device extending from said frame and located in said inclined slot of said member for guiding said member in its movement relative to said sash, a revoluble actuator for said member, and a lever connected with said actuator adapted to revolve the same when moved in a direction substantially at right angles to the sliding movement of said sash.

9. In window construction, in combination, a frame, a sash slidably mounted therein, a member provided with a plurality of inclined slots carried by said sash, said slots receiving projections extending from said sash, a revoluble actuator engaging said member for normally maintaining the same in engagement with a portion of said frame whereby said sash is frictionally engaged with said frame and restrained against sliding, said revoluble actuator being adapted to reciprocate said member from the portion of the frame with which it is normally engaged thereby to release the sash from the frame to permit the sash to slide freely therein, and a lever upon said sash which, by movement at substantially right angles to the movement of said member, is adapted to revolve said actuator and reciprocate said member.

10. In combination, a sash, a frame, a member fixed upon the frame, means adapted by movement relative to said sash to engage said member to force said sash into engagement therewith, and a revoluble actuator for said last-mentioned means.

11. In combination, a sash, a frame, a guide fixed upon the frame, means carried by the sash adapted by a movement relative thereto to engage said guide to force said sash into engagement therewith, and a revoluble actuator for said last-mentioned means.

12. In combination, a sash, a frame, a member fixed upon said frame extending within said sash, means carried by the sash adapted by a movement relative thereto to engage said member to force said sash into engagement therewith, and a revoluble actuator for said last-mentioned means.

13. In combination, a sash, a frame, a guide fixed upon the frame and extending within said sash, means carried by said sash adapted by a relative movement thereto to engage said guide and thereby force said sash into engagement therewith to frictionally hold the same against movement, and a revoluble actuator for said last-mentioned means.

14. In combination, a sash, a frame, a member fixed upon the frame, means adapted by a movement relative to said sash to engage said member and thereby force said sash into engagement therewith, a rotatably-mounted rod for actuating said last-mentioned means, and a finger-lever for actuating said rod at will.

15. In combination, a sash, a frame, a guide fixed upon the frame, means carried by the sash adapted by a movement relative thereto to engage said guide to force said sash into engagement therewith, a revoluble actuator for said last-mentioned means, and a finger-lever pivoted upon the sash for revolving said actuator.

16. In combination, a sash, a frame, a member fixed upon said frame extending within said sash, means carried by said sash adapted by a movement relative thereto to engage said member to force said sash into engagement therewith, a revoluble actuator for said last-mentioned means, and a finger-lever pivoted upon the sash adapted to revolve said actuator.

17. In combination, a sash, a frame, a guide fixed upon the frame extending within said sash, means carried by said sash adapted by a relative movement thereto to engage said guide and force said sash into engagement therewith, a revoluble actuator for said last-mentioned means, and a finger-lever for revolving said actuator.

18. In combination, a sash, a frame, a member fixed upon the frame, means adapted by a movement relative to said sash to engage said member and thereby force said sash into engagement therewith, a revoluble actuator for causing movement of said last-mentioned means, and spring means for normally holding said last-mentioned means in engagement with said member.

19. In combination, a sash, a frame, a member fixed upon the frame, means adapted by movement relative to said sash to engage said member and thereby force said sash into frictional engagement therewith, a revoluble actuator for said last-mentioned means, and a yielding device acting through said actuator to normally maintain said last-mentioned means in engagement with said member.

20. In combination, a sash, a frame, a guide fixed upon the frame extending within said sash, means carried by said sash adapted by a movement relative thereto to engage said guide to force said sash into engagement therewith, a revoluble actuator for said last-mentioned means, and a spring acting through said actuator to normally maintain said last-mentioned means into engagement with said guide.

21. In combination, a sash, a frame, a guide fixed upon the frame and extending within said sash, a member carried by said sash adapted by a movement relative thereto to engage said guide and force said sash into engagement therewith whereby said sash is normally restrained by friction against sliding in said frame, a revoluble rod having a cranked end which engages said member adapted when rotated to reciprocate the same whereby free sliding movement of said sash will be permitted, and a finger-lever mounted upon the sash adapted for rotating said rod.

22. In combination, a sash, a frame, a guide fixed upon said frame extending within a channel arranged longitudinally of said sash, a member adapted automatically to coact with said sash and said guide whereby said sash and said guide are forced into frictional contact to prevent relative movement thereof, and a revoluble actuator for said member.

23. In combination, a sash, a frame, a guide fixed upon said frame extending within a channel arranged longitudinally with said sash, a member carried by said sash mounted for movement relative thereto, means for causing said member to engage said guide whereby said sash will be frictionally engaged therewith and restrained by friction against sliding movement, and a rotatably-mounted rod

having a cranked connection with said member adapted to actuate the same.

24. In combination, a sash having a longitudinallly-extending channel, a frame, a guide fixed upon said frame extending within said channel, said guide being disposed in a parallel relation to the walls of said channel, a movable member carried by said sash and arranged within said channel, means adapted automatically to force said member into engagement with said guide whereby said sash is caused frictionally to be engaged therewith and thereby restrained by friction against sliding, a revoluble actuator for said movable member, and manually-controlled means adapted to actuate said said actuator.

25. In combination, a sash, a frame, a guide fixed upon said frame extending into a channel arranged longitudinally of said sash, means for positively locking said sash with said frame, means for frictionally locking said sash with said guide, a revoluble actuator adapted for moving said frictional locking means, and manually-operated means adapted simultaneously to release both of said locking means, said frictional locking means through said revoluble actuator being adapted automatically to relock said sash with said guide at any point in the range of movement thereof.

26. In combination, a sash, a frame, a guide fixed upon said frame extending into a channel arranged longitudinally of said sash, means for positively locking said sash with said frame, means for frictionally locking said sash with said guide, a rotatably-mounted member adapted for operating said frictional locking means, manually-operated means adapted simultaneously to release both of said locking means, and means acting through said rotatable member for relocking said frictional locking means with said guide at any point within the range of movement with said sash whereby the same is frictionally restrained against movement.

27. In combination, a sash, a frame, a guide fixed upon said frame extending within said sash, means for positively locking said sash with said frame, means for frictionally locking said sash with said guide, both of said locking means being carried by said sash, a revoluble actuator for said frictional locking means, devices adapted simultaneously to release both of said locking means whereby a movement of said sash along said guide is permitted, one of said devices acting through said revoluble actuator, and means adapted through said revoluble actuator to operate said frictional locking means whereby said sash is forced into engagement with said guide at will at any point in its range of movement.

28. In combination, a sash, a frame, a guide fixed upon the frame extending within the recess of said sash, a plurality of locking means carried by said sash, one of said locking means adapted positively to lock said sash with said frame, the other of said locking means being adapted frictionally to lock the same with said guide, a revolubly-mounted member connected eccentrically to said frictional locking means, means adapted simultaneously to release both of said locking means whereby said sash is freely movable, one of said releasing means operating through the means connected eccentrically with said frictional locking means, and means adapted automatically to operate said frictional locking means at any stage of movement of said sash.

29. In combination, a sash, a frame, said sash being provided with a longitudinally-extending channel, a guide fixed upon the frame extending within said channel, said guide being arranged in proximity to one of the walls of said channel, a plurality of locking means carried by said sash, one of which is adapted to lock the same positively with said sash, the other of said locking means being adapted frictionally to lock the same with said guide, a member journaled upon said sash having a portion which is eccentrically connected with said frictional locking means, a device carried by the sash adapted through said member to release said frictional locking means, a device carried by said sash adapted to release said positive locking means, said devices being adapted to be operated simultaneously whereby both of said locking means are operated at substantially the same instant.

30. In combination, a sash, a frame, a plurality of positive locks for said sash, a plurality of frictional locks for said sash, a rotatably-mounted actuator adapted to operate both of said frictional locks, and a single device adapted to operate both of said positive locks.

31. In combination, a sash, a frame, a plurality of positive locks for said sash, a plurality of frictional locks for said sash, and single means adapted to release both of said positive locks, a rotatably-mounted member carried by the sash adapted to release both of said frictional locks, said releasing means being capable of being manipulated whereby all of said locks are released simultaneously to allow a free sliding movement of said sash, said frictional locking means being adapted to relock said sash against movement at any stage of said range of movement.

32. In combination, a sash, a frame, said sash being provided with a longitudinally-extending channel in its lateral edge, a plurality of guides fixed upon said frame, one of which extends within each of said channels, a plurality of locking-bolts arranged to reciprocate in opposite directions within said sash, a rocker-lever to either end of which is connected one of said bolts whereby said bolts are reciprocated simultaneously in opposite directions, a single means connected with said rocker-lever for reciprocating said bolts means adapted normally to maintain said bolts in extended positions a plurality of frictional locking means positioned within said sash, a rotatably-mounted member connected eccentrically with each of said frictional locking means and adapted simultaneously to operate the same, and a single means for causing a rotative movement of said rotatably-mounted member whereby said frictional locking means are operated to unlock the sash and permit a free sliding movement thereof, the means for releasing said positive locking means and the means for releasing said frictional locking means being capable of being operated simultaneously.

33. In combination, a sash, a frame in which said sash is adapted to slide, a guide fixed upon said frame extending within said sash, a frictional locking member provided with an inclined slot mounted for movement upon said sash and normally held in engagement with said guide whereby said sash is held frictionally in engagement with said guide and restrained against sliding, means extended loosely through said inclined slot for connecting said member with said sash, and a rotatably-mounted rod connected with said member adapted, when actuated, to reciprocate said member and thereby cause said member through the engagement of the means extending loosely through the inclined slot thereof with the walls of said slot to be disengaged from said guide thereby disengaging the said sash from the guide to permit free sliding movement thereof.

34. In combination, a frame, a sash mounted to slide in said frame, a guide upon said frame extending within said sash a frictional locking member provided with a plurality of inclined slots, means extending loosely through said inclined slots to connect said frictional locking members movably with said sash, a revolubly-mounted actuator carried by said sash and having connection with said frictional locking member, means connected with said actuator adapted to urge the same in one direction whereby said frictional locking member through the instrumentality of the engagement of the walls of said slots with the means extending therethrough is normally held in engagement with said guide and the sash by its engagement with said guide restrained by friction against sliding, and means adapted to revolve said actuator to disengage said frictional locking member from said guide and thereby prevent a free sliding movement thereof.

35. In window construction, in combination, a sash having a recessed portion, a member projecting within said recessed portion, means positioned between said member and one of the walls of said recess adapted to force apart said wall and said member and force together said member and the opposite wall of said recess, and a revoluble actuator adapted to operate said aforementioned means.

36 In window construction, in combination, a sash having a recessed portion, a guiding member projecting within said recessed portion, means located within said recessed portion adapted to clamp said guiding member and lock said sash against movement in either direction, and a revoluble actuator for operating said aforementioned means.

37. In window construction, in combination, a sash having its lateral portions channeled, guiding members projecting within said channels, means within each of said channeled portions adapted to clamp each of said guiding members and lock said sash against movement in either direction, and a rotatably-mounted rod carried by said sash having cranked connections with said aforementioned means.

38. In window construction, in combination, a sash having its lateral portions channeled, guiding members projecting within said channels, reciprocating means within each of said channel portions adapted to clamp each of said guiding members and lock said sash against movement in either direction, and a revoluble rod eccentrically connected at either end to said guiding members from their clamped condition.

39. In window construction, in combination, a frame, a guiding member fixed upon the frame, a slidable sash, portions of which extend about said guide, a member carried by said sash and located therein adapted automatically to be forced laterally to carry said sash into frictional contact with said guide, a revolubly-mounted actuator carried by said sash having connection with said member, and a finger-lever for operating said actuator.

40. In window construction, in combination, a slidable sash provided with a recess, a stationary guide fixed to the frame and extending within said recess, and means located within said recess adapted automatically to force one of the walls of said recess into frictional contact with said guide, an actuator having a pivotal connection with the means located in said recess and adapted to be rotated to release the wall of said recess which is in engagement with said guide to free the sash and permit free sliding, and means for revolving said actuator.

41. In combination, a slidably-mounted sash or similar member having a channeled stile, a frame in which said sash is mounted to slide, a guide fixed to said frame extending within said channel, a friction member carried by said sash and adapted to be moved into engagement with said guide whereby a wall of said channel will be frictionally engaged with said guide, a revoluble rod having bearings in said sash which has a crank connection with said friction member so that when the same is rotated said friction member will be disengaged from said guide and the sash thereby released and permitted to slide freely in the frame.

42. In window construction, in combination, a slidable sash or similar member having a channeled edge, a guide extending within the channel in the edge of said sash, a movable member carried by said sash and located in the channel thereof, said guide adapted by a movement of said movable member to be clamped between the same and the flange of the channel in said sash, a revoluble actuator journaled in said sash and connected eccentrically with said movable member, and a finger-lever for rotating said revoluble member to carry said movable member from said guide thereby releasing said sash from frictional engagement therewith and permit free sliding movement thereof.

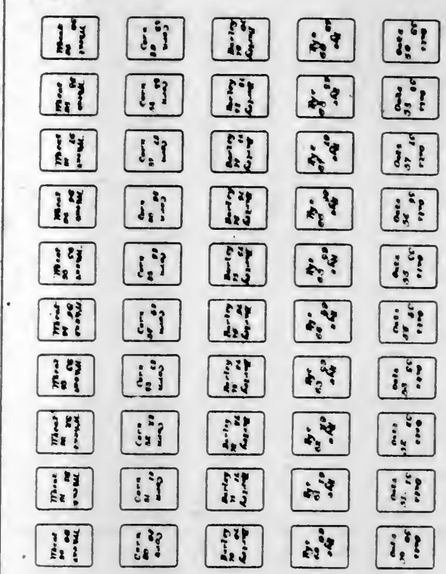
43. In window construction, in combination, a slidable sash or the like provided with a channel in the said stile thereof, a fixed guide extending within said channel, a friction member carried by said sash adapted to be reciprocated within said channel, means adapted automatically to force said friction member into engagement with said guide whereby a wall of said channel will be carried into frictional engagement with said guide and the sash restrained against sliding, a revoluble actuator for moving said friction member, a lever for moving said revoluble actuator and a spring acting upon said lever adapted to maintain said aforementioned parts in a normal condition whereby the sash is frictionally locked against sliding.

44. In window construction, in combination, a frame, a sash having each of its side stiles provided with longitudinally-extending channels, a pair of guides fixed to said frame, each of which extends within one of said channels in proximity to one of the side stiles thereof, a friction member provided with obliquely-extending slots located in each of said channels, studs extending from said stiles and entering said slots, a rotatively-mounted rod journaled in said sash and provided at either end thereof with cranked extensions connected with said friction members, said rod having a cranked portion intermediate its ends, a lever pivoted to said sash and having an arm which engages said last-mentioned crank portion, a finger-lever for operating said aforementioned lever, and a spring for opposing a movement of said finger-lever, said spring also operating through the connecting mechanism to normally hold said friction members into engagement with said guides whereby the walls of said channels in proximity to said guides will be clamped thereagainst and the sash frictionally held against sliding, said finger-lever when moved in opposition to the tension of said spring being adapted through the aforementioned mechanism to move said friction members thereby disengaging said sash from said guides and permit the same to slide freely in the frame.

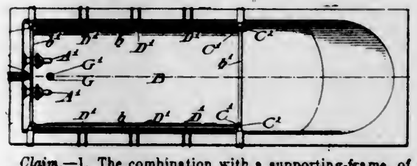
821,229. CARD GAME. JEAN G. A. FORTIER, St. Paul, Minn. Filed May 26, 1904. Serial No. 209,861.

Claim.—Game apparatus, comprising a deck of cards, all of said cards being numbered consecutively and necessary to complete a series and divided into groups, each group comprising an equal number of cards, each card bearing upon its face a name common to all the cards of such group, such name on the cards of one group differing from the names on the cards of all the other groups, said numbers indicating the individual value of each card as distinguished from every other card in the entire deck and having units and tens, said units differentiating the cards of each group and said tens indicating the permanent value of the group.

821,229.



821,230. PORTABLE BATH. DEL ROY F. FOWLER, Melrose, Pa. Filed May 15, 1905. Serial No. 260,554.



Claim.—1. The combination with a supporting-frame, of side and end stay-rods adapted to be secured thereto, a bag secured to the end stay-rods and hooks adjustably secured to the sides of the bag and adapted to engage the supporting-frame.

2. The combination of a supporting-frame, of side and end stay-rods detachably secured together and adapted to engage the supporting-frame, a bag of rubber or like material secured at opposite ends to the stay-rods and hooks adjustably fastened to the sides of the bag and adapted to engage the supporting-frame.

3. The combination of a supporting-frame, of long and short stay-rods threaded together and arranged within the supporting-frame, hooks connected to the ends of the short stay-rods and adapted to engage the supporting-frame, a bag secured at its ends to the short stay-rods and provided along its sides with straps, and hooks adjustably secured to the straps and adapted to engage the supporting-frame.

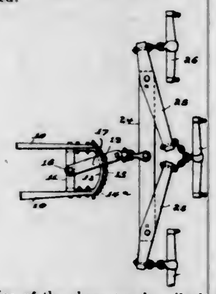
821,231. GANG-PLOW DRAFT-HITCH. ROBERT R. FREY, Dixon, Ill., assignor to Grand Detour Plow Company, Dixon, Ill., a Corporation of Illinois. Filed Jan. 29, 1906. Serial No. 298,531.

Claim.—1. In a device of the character described, the combination of spaced plow-beams, a cross-bar connecting said plow-beams, a draft-bar pivotally secured to said cross-bar midway between said plow-beams and adjustable laterally on the pivot, and means to maintain said draft-bar in adjusted position, substantially as described.

2. In a device of the character described, the combination of parallel plow-beams, a cross-bar connecting said plow-beams, a draft-bar pivotally secured to said cross-bar midway between said plow-beams and laterally adjustable on the pivot, a notched bar at the forward end of said plow-beams, and a pin coöperating with said draft-bar and notched bar to maintain said draft-bar in adjusted position, substantially as described.

3. In a device of the character described, the combination of parallel plow-beams, a cross-bar connecting said plow-beams, a draft-bar pivotally secured to said cross-bar midway between said

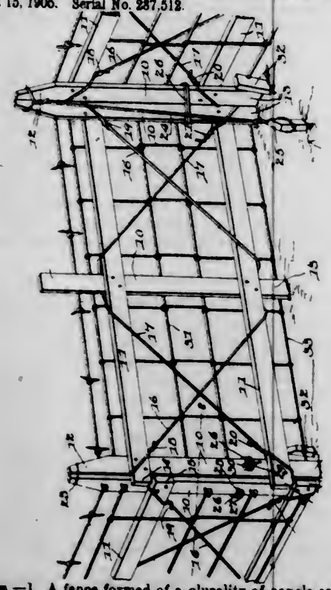
plow-beams and laterally adjustable on the pivot, a curved bar at the forward end of said plow-beams concentric with the pivotal point of said draft-bar, said curved bar having notches on its front portion, and a pin coöperating with said draft-bar and the notches of said curved bar to maintain said draft-bar in adjusted position, substantially as described.



4. In a device of the character described, the combination of parallel plow-beams, a cross-bar connecting said plow-beams, a draft-bar pivotally secured to said cross-bar midway between said plow-beams and laterally adjustable on its pivot, a brace secured to the forward ends of said plow-beams, the central portion of said brace being curved concentric with the pivotal point of said draft-bar, a curved bar secured to the curved forward face of said brace, said curved bar having notches on its front portion, and a pin coöperating with said draft-bar and curved notched bar to maintain said draft-bar in adjusted position, substantially as described.

5. In a device of the character described, the combination of parallel plow-beams, a cross-bar connecting said plow-beams, a draft-bar pivotally secured to said cross-bar midway between said plow-beams and laterally adjustable on its pivot, a U-shaped brace, the legs of said brace being connected to the plow-beams in front of said cross-bar and the central portion of said brace being curved concentric with the pivot of said draft-bar, a channel-bar secured to said brace and concentric to said draft-bar pivot, the flanges of said channel-bar being notched and extended forwardly, and a pin coöperating with said draft-bar and the notches of said curved channel-bar to maintain said draft-bar in adjusted position, substantially as described.

821,232. **FENCE.** CHARLES E. FRIXELL, Grandglaise, Ark. Filed Nov. 15, 1905. Serial No. 287,512.



Claim.—1. A fence formed of a plurality of panels each panel consisting of spaced rails, end posts and an intermediate post, said end and intermediate posts extending above and below the rails and said rails extending beyond the end posts and interlapping with the extensions of the rails of the adjacent panel, braces of wire looped around the end posts and rails at their crossing-points and deflected centrally and looped around the projecting ends of the intermediate posts, tie-wires bent centrally into U shape with hooks at the terminals engaging an eye on one of the end posts, and the bend of the tie passed over an eye on the adjacent end post and secured in place thereon.

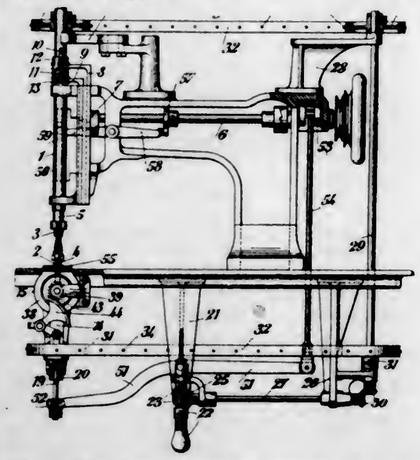
2. A fence consisting of a plurality of panels disposed end to end and formed of spaced horizontal rail members and spaced vertical post members extending above and below the rail members, wire braces connected at their ends to the upper corners of the panels and deflected centrally and connected to the panels at the lower edge, wire braces connected at their ends to the lower corners of the panels and deflected centrally and connected to the panels at the upper edge, tie-wires bent into U shape and with terminal hooks engaging an eye in one of the end posts of one of said panels and passed over an eye in the adjacent end post of the adjacent panel and secured in position by a pin inserted into the eye, and braces of wire looped at one end around the contiguous end posts of the panels and secured at the lower ends to stakes inserted into the ground and spaced from the line of the fence.

3. A fence consisting of a plurality of panels formed of spaced vertical post members and spaced horizontal rail members projecting at the ends beyond the post members and adapted to interlap when the panels are disposed end to end, wire braces connected at the ends to the corners of said panels and deflected centrally and united to the upper and lower edges of the panels, webs of fencing material connected to said panels, tie-wires uniting the adjacent ends of the panels, and stakes inserted into the ground and having notches bearing over the lower strands of said webbing members.

4. As a new article, a fence-panel consisting of spaced horizontal rails, vertical end posts and a vertical intermediate post, the end posts and intermediate posts extending above and below the rails and the rails extending beyond the end posts, and braces of wire having eyes at the ends and looped by said eyes around the projecting ends of the rails and end posts and deflected centrally and looped around the projecting ends of the intermediate post.

5. A fence formed of a plurality of panels each consisting of spaced horizontal rails, vertical end posts, and a vertical intermediate post, the end posts and intermediate post extending above and below the rails and the rails extending beyond the ends posts, and braces of wire having eyes at the ends and looped by said eyes around the projecting ends of the rails and end posts and deflected centrally and looped around the projecting ends of the intermediate posts, the projecting ends of the rails interlapping when the panels are disposed end to end.

821,233. **ORNAMENTAL-STITCHING AND EMBROIDERY MACHINE.** FRIEDRICH GEOAUF, Steckborn, Switzerland. Filed Sept. 6, 1904. Serial No. 223,558.



Claim.—1. In a hemstitch embroidering-machine, the combination with a pair of hook-shuttles having their axes in horizontal alinement and means for driving the shuttles about their axes; of a needle-carrying tube, a piercer-carrying tube surrounding the same and a needle-spreader tube in telescopic slidable relation, mechanisms to reciprocate the needle-carrying and piercer tubes, and the needle-spreader and mechanism to simultaneously revolve the tubes and shuttles during the driving of the latter.

2. In a hemstitch sewing-machine, the combination with telescoping tubes for the needles, piercer and needle-spreader respectively, and means to independently reciprocate them; of a sprocket-wheel on one of the tubes, a shaft at one end of the machine having sprocket-wheels thereon, a shuttle-carrier, mechanism to drive the shuttles therein, a sprocket-wheel on the carrier, endless bands connecting the sprocket-wheels on the shaft with those on the carrier and tubes respectively, and hand-operated mechanism to rotate the shaft.

3. In hemstitch sewing-machines, the combination with the needles and needle-tube, of vertical shuttle-races, hook-shuttles therein, an arcuate shuttle-driver 42 to rotate the shuttles about their horizontal axes, an arm 41 on which said driver is mounted, a pinion 43 on said arm, a sector 44 to drive the pinion, vertically-reciprocating mechanism to operate the sector and hand-operated mechanism to simultaneously rotate all of the foregoing parts, substantially as described.

4. In a hemstitch sewing-machine, the combination with a plurality of concentric tubes slidably connected, a piercer, a needle-spreader and a pair of needles carried by said tubes respectively, and mechanism to reciprocate the tubes, of a sprocket-wheel fixed on one of the tubes to rotate all of them in unison, a vertical shaft 29, a sprocket-wheel at its upper end, an endless perforated metallic band connecting the sprocket-wheels, a shuttle-carrier, shuttles therein, a shuttle-driver, a sector 44 to actuate the driver, a sprocket-wheel on the carrier and a similar sprocket-wheel near the lower end of the vertical shaft, a second endless perforated band connecting the sprocket-wheels, a rocker-arm 51 driven from the machine, means operatively connecting the rocker-arm and sector, and hand-operated mechanism to actuate the vertical shaft.

5. In a hemstitch embroidering-machine in combination, a presser-foot, a fabric-feeder operating within the presser-foot, a driving-tube, a needle-tube, needles mounted therein, a piercer-tube and piercer, all of said tubes concentric, a spreader mounted centrally in the tubes, the tubes and spreader slidably connected to the driving-tube, mechanism to rotate and operate the parts, a pair of hook-shuttles, a shuttle-carrier, mechanism to oscillate the same and devices to rotatably connect the driving-tube and shuttle-carrier whereby the mechanism connected to the tube and the shuttles will be simultaneously rotated.

6. In a hemstitch embroidering-machine, a driving-tube, a needle-carrying tube slidably connected thereto, springs normally held together in said tube, needles mounted on the springs and a needle-spreader slidably connected to the driving-tube and passing through both tubes between the springs and mechanism to operate the parts, whereby the needles will be intermittently spread, substantially as described.

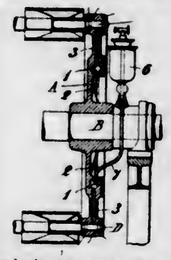
7. In a hemstitch embroidering-machine, a driving-tube, a needle-carrying tube slidably connected to the driving-tube, spring needle-carriers within the needle-tube and projecting therefrom, needles therein, a hollow needle-spreader within the tubes and slidably connected to the driving-tube to act as a thread-guide for the needle-threads and the lower end of which contacts with the projecting ends of the spring-carriers to periodically separate the needles.

8. In a hemstitch embroidering-machine, the combination with a driving-tube, of a needle-tube, spring needle-carriers therein projecting from the bottom of the tube, a piercer-tube slidably connected to the driving-tube, a piercer on the piercer-tube, yokes embracing the ends of the needle-carriers, needles held between the yokes and carriers, mechanism to independently reciprocate the spreader, piercer and needle-tubes, said spreader engaging between the lower projecting ends of the spring-carriers to laterally move the needles.

9. In a hemstitch embroidering-machine, the combination with a driving-tube of a needle-carrying tube, needles mounted therein, a hollow needle-spreader, said tube and spreader independently reciprocable in the driving-tube, said hollow spreader to guide the thread to the needles and likewise periodically separate them.

10. In a hemstitch embroidering-machine, a shuttle-carrier comprising a hollow stem having a slot therein and a head having a transverse circular opening therethrough and an internal flange to form two adjacent shuttle-races, shuttles in the races, a forked arcuate shuttle-driver projecting into the head and engaging the shuttles, a pinion in alinement with the center of the shuttle-races and to which said driver is connected, a sector on the carrier, a rod reciprocable within the stem of the carrier and a link connection between the sector and rod, substantially as described.

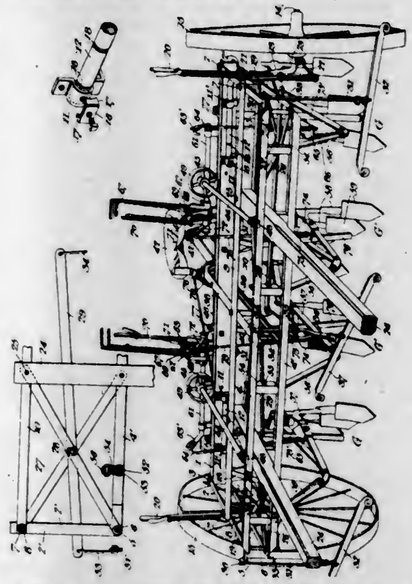
821,234. **APPARATUS FOR LUBRICATING THE BARREL-WHEEL BEARINGS OF BARREL GIG-MILLS.** ERNST H. GLANZBERG, München-Gladbach, Germany, assignor to Franz Müller, München-Gladbach, Germany. Filed Nov. 29, 1904. Serial No. 234,739.



Claim.—1. A barrel-wheel for gig-mills provided with a laterally-open annular lubricating-chamber, radial ducts entering said chamber, a series of journal-bearings communicating with said ducts, and means for supplying a lubricant to the open chamber, substantially as specified.

2. A barrel-wheel for gig-mills provided with a series of grooved journal-bearings, an absorbent within the grooves of the bearings, and deflecting-ducts communicating with said grooves, substantially as specified.

821,235. **CULTIVATOR.** GEORGE W. GOSS and CHARLES E. GOSS, Baltimore, Ohio, assignors to Roderick Lean Mfg. Co., Mansfield, Ohio. Filed June 27, 1905. Serial No. 267,272.



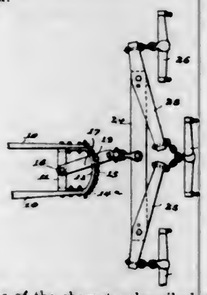
Claim.—1. A cultivator-frame including upper and lower front members extending transversely of the frame and bolts connecting said members, in combination with couplings engaging the bolts and cutlivator members connected with the couplings.

2. A cultivator-frame including upper and lower front members and bolts connecting said members, in combination with cultivator members connected for universal movement with said connecting-bolts.

3. A cultivator-frame including upper and lower front members, bolts connecting said members, spacing-sleeves upon said bolts, and clips pivotally engaging the spacing-sleeves; in combination with cultivator-beams connected pivotally with said clips.

4. A cultivator-frame including upper and lower front mem-

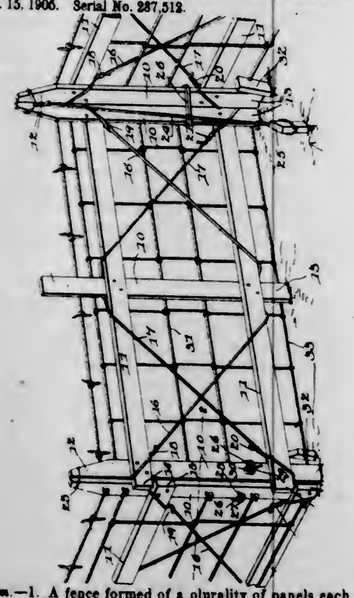
plow-beams and laterally adjustable on the pivot, a curved bar at the forward end of said plow-beams concentric with the pivotal point of said draft-bar, said curved bar having notches on its front portion, and a pin coöperating with said draft-bar and the notches of said curved bar to maintain said draft-bar in adjusted position, substantially as described.



4. In a device of the character described, the combination of parallel plow-beams, a cross-bar connecting said plow-beams, a draft-bar pivotally secured to said cross-bar midway between said plow-beams and laterally adjustable on its pivot, a brace secured to the forward ends of said plow-beams, the central portion of said brace being curved concentric with the pivotal point of said draft-bar, a curved bar secured to the curved forward face of said brace, said curved bar having notches on its front portion, and a pin coöperating with said draft-bar and curved notched bar to maintain said draft-bar in adjusted position, substantially as described.

5. In a device of the character described, the combination of parallel plow-beams, a cross-bar connecting said plow-beams, a draft-bar pivotally secured to said cross-bar midway between said plow-beams and laterally adjustable on its pivot, a U-shaped brace, the legs of said brace being connected to the plow-beams in front of said cross-bar and the central portion of said brace being curved concentric with the pivot of said draft-bar, a channel-bar secured to said brace and concentric to said draft-bar pivot, the flanges of said channel-bar being notched and extended forwardly, and a pin coöperating with said draft-bar and the notches of said curved channel-bar to maintain said draft-bar in adjusted position, substantially as described.

821,232. **FENCE.** CHARLES E. FRIZZELL, Grandglaise, Ark. Filed Nov. 15, 1905. Serial No. 287,512.



Claim.—1. A fence formed of a plurality of panels each panel consisting of spaced rails, end posts and an intermediate post, said end and intermediate posts extending above and below the rails and said rails extending beyond the end posts and interlapping with the extensions of the rails of the adjacent panel, braces of wire looped around the end posts and rails at their crossing-points and deflected centrally and looped around the projecting ends of the intermediate posts, tie-wires bent centrally into U shape with hooks at the terminals engaging an eye on one of the end posts, and the bend of the tie passed over an eye on the adjacent end post and secured in place thereon.

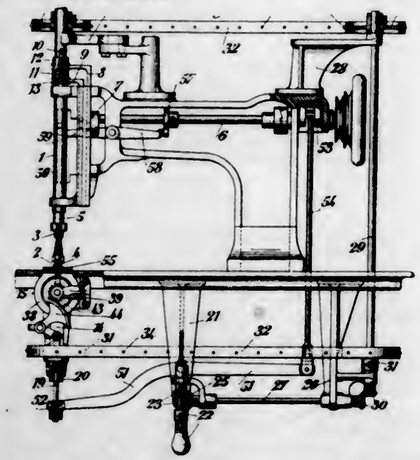
2. A fence consisting of a plurality of panels disposed end to end and formed of spaced horizontal rail members and spaced vertical post members extending above and below the rail members, wire braces connected at their ends to the upper corners of the panels and deflected centrally and connected to the panels at the lower edge, wire braces connected at their ends to the lower corners of the panels and deflected centrally and connected to the panels at the upper edge, tie-wires bent into U shape and with terminal hooks engaging an eye in one of the end posts of one of said panels and passed over an eye in the adjacent end post of the adjacent panel and secured in position by a pin inserted into the eye, and braces of wire looped at one end around the contiguous end posts of the panels and secured at the lower ends to stakes inserted into the ground and spaced from the line of the fence.

3. A fence consisting of a plurality of panels formed of spaced vertical post members and spaced horizontal rail members projecting at the ends beyond the post members and adapted to interlap when the panels are disposed end to end, wire braces connected at the ends to the corners of said panels and deflected centrally and united to the upper and lower edges of the panels, webs of fencing material connected to said panels, tie-wires uniting the adjacent ends of the panels, and stakes inserted into the ground and having notches bearing over the lower stranda of said webbing members.

4. As a new article, a fence-panel consisting of spaced horizontal rails, vertical end posts and a vertical intermediate post, the end posts and intermediate posts extending above and below the rails and the rails extending beyond the end posts, and braces of wire having eyes at the ends and looped by said eyes around the projecting ends of the rails and end posts and deflected centrally and looped around the projecting ends of the intermediate post.

5. A fence formed of a plurality of panels each consisting of spaced horizontal rails, vertical end posts, and a vertical intermediate post, the end posts and intermediate post extending above and below the rails and the rails extending beyond the ends posts, and braces of wire having eyes at the ends and looped by said eyes around the projecting ends of the rails and end posts and deflected centrally and looped around the projecting ends of the intermediate posts, the projecting ends of the rails interlapping when the panels are disposed end to end.

821,233. **ORNAMENTAL-STITCHING AND EMBROIDERY MACHINE.** FRIEDRICH GEGAUF, Steckborn, Switzerland. Filed Sept. 6, 1904. Serial No. 223,558.



Claim.—1. In a hemstitch embroidering-machine, the combination with a pair of hook-shuttles having their axes in horizontal alinement and means for driving the shuttles about their axes; of a needle-carrying tube, a piercer-carrying tube surrounding the same and a needle-spreader tube in telescopic slidable relation, mechanisms to reciprocate the needle-carrying and piercer tubes, and the needle-spreader and mechanism to simultaneously revolve the tubes and shuttles during the driving of the latter.

2. In a hemstitch sewing-machine, the combination with telescoping tubes for the needles, piercer and needle-spreader respectively, and means to independently reciprocate them; of a sprocket-wheel on one of the tubes, a shaft at one end of the machine having sprocket-wheels thereon, a shuttle-carrier, mechanism to drive the shuttles therein, a sprocket-wheel on the carrier, endless bands connecting the sprocket-wheels on the shaft with those on the carrier and tubes respectively, and hand-operated mechanism to rotate the shaft.

3. In hemstitch sewing-machines, the combination with the needles and needle-tube, of vertical shuttle-races, hook-shuttles therein, an arcuate shuttle-driver 42 to rotate the shuttles about their horizontal axes, an arm 41 on which said driver is mounted, a pinion 43 on said arm, a sector 44 to drive the pinion, vertically-reciprocating mechanism to operate the sector and hand-operated mechanism to simultaneously rotate all of the foregoing parts, substantially as described.

4. In a hemstitch sewing-machine, the combination with a plurality of concentric tubes slidably connected, a piercer, a needle-spreader and a pair of needles carried by said tubes respectively, and mechanism to reciprocate the tubes, of a sprocket-wheel fixed on one of the tubes to rotate all of them in unison, a vertical shaft 29, a sprocket-wheel at its upper end, an endless perforated metallic band connecting the sprocket-wheels, a shuttle-carrier, shuttles therein, a shuttle-driver, a sector 44 to actuate the driver, a sprocket-wheel on the carrier and a similar sprocket-wheel near the lower end of the vertical shaft, a second endless perforated band connecting the sprocket-wheels, a rocker-arm 51 driven from the machine, means operatively connecting the rocker-arm and sector, and hand-operated mechanism to actuate the vertical shaft.

5. In a hemstitch embroidering-machine in combination, a presser-foot, a fabric-feeder operating within the presser-foot, a driving-tube, a needle-tube, needles mounted therein, a piercer-tube and piercer, all of said tubes concentric, a spreader mounted centrally in the tubes, the tubes and spreader slidably connected to the driving-tube, mechanism to rotate and operate the parts, a pair of hook-shuttles, a shuttle-carrier, mechanism to oscillate the same and devices to rotatably connect the driving-tube and shuttle-carrier whereby the mechanism connected to the tube and the shuttles will be simultaneously rotated.

6. In a hemstitch embroidering-machine, a driving-tube, a needle-carrying tube slidably connected thereto, springs normally held together in said tube, needles mounted on the springs and a needle-spreader slidably connected to the driving-tube and passing through both tubes between the springs and mechanism to operate the parts, whereby the needles will be intermittently spread, substantially as described.

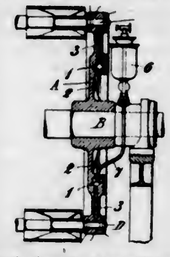
7. In a hemstitch embroidering-machine, a driving-tube, a needle-carrying tube slidably connected to the driving-tube, spring needle-carriers within the needle-tube and projecting therefrom, needles therein, a hollow needle-spreader within the tubes and slidably connected to the driving-tube to act as a thread-guide for the needle-threads and the lower end of which contacts with the projecting ends of the spring-carriers to periodically separate the needles.

8. In a hemstitch embroidering-machine, the combination with a driving-tube, of a needle-tube, spring needle-carriers therein projecting from the bottom of the tube, a piercer-tube slidably connected to the driving-tube, a piercer on the piercer-tube, yokes embracing the ends of the needle-carriers, needles held between the yokes and carriers, mechanism to independently reciprocate the spreader, piercer and needle-tubes, said spreader engaging between the lower projecting ends of the spring-carriers to laterally move the needles.

9. In a hemstitch embroidering-machine, the combination with a driving-tube of a needle-carrying tube, needles mounted therein, a hollow needle-spreader, said tube and spreader independently reciprocable in the driving-tube, said hollow spreader to guide the thread to the needles and likewise periodically separate them.

10. In a hemstitch embroidering-machine, a shuttle-carrier comprising a hollow stem having a slot therein and a head having a transverse circular opening therethrough and an internal flange to form two adjacent shuttle-races, shuttles in the races, a forked arcuate shuttle-driver projecting into the head and engaging the shuttles, a pinion in alinement with the center of the shuttle-races and to which said driver is connected, a sector on the carrier, a rod reciprocable within the stem of the carrier and a link connection between the sector and rod, substantially as described.

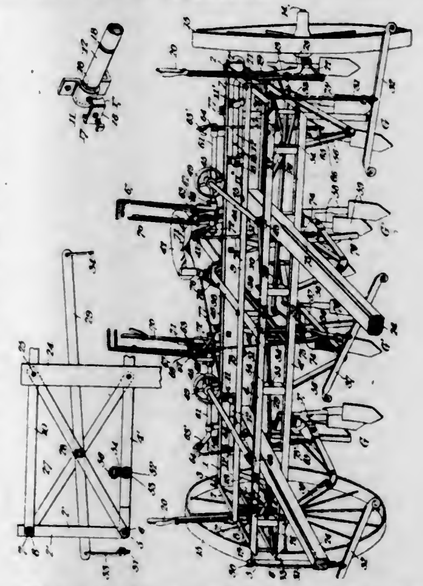
821,234. **APPARATUS FOR LUBRICATING THE BARREL-WHEEL BEARINGS OF BARREL GIG-MILLS.** ERNST H. GLANZBERG, München-Gladbach, Germany, assignor to Franz Müller, München-Gladbach, Germany. Filed Nov. 29, 1904. Serial No. 234,729.



Claim.—1. A barrel-wheel for gig-mills provided with a laterally-open annular lubricating-chamber, radial ducts entering said chamber, a series of journal-bearings communicating with said ducts, and means for supplying a lubricant to the open chamber, substantially as specified.

2. A barrel-wheel for gig-mills provided with a series of grooved journal-bearings, an absorbent within the grooves of the bearings, and deflecting-ducts communicating with said grooves, substantially as specified.

821,235. **CULTIVATOR.** GEORGE W. GOSS and CHARLES E. GOSS, Baltimore, Ohio, assignors to Roderick Lean Mfg. Co., Mansfield, Ohio. Filed June 27, 1905. Serial No. 267,272.



Claim.—1. A cultivator-frame including upper and lower front members extending transversely of the frame and bolts connecting said members, in combination with couplings engaging the bolts and cultivator members connected with the couplings.

2. A cultivator-frame including upper and lower front members and bolts connecting said members, in combination with cultivator members connected for universal movement with said connecting-bolts.

3. A cultivator-frame including upper and lower front members, bolts connecting said members, spacing-sleeves upon said bolts, and clips pivotally engaging the spacing-sleeves; in combination with cultivator-beams connected pivotally with said clips.

4. A cultivator-frame including upper and lower front mem-

bers, bolts connecting said members, spacing-sleeves upon said bolts, and clips pivotally engaging the spacing-sleeves; in combination with cultivator gang members having beams connected pivotally with the pivoted clips, and means for effecting vertical and lateral adjustment of the gang members.

5. A cultivator-frame including a rear bar and upper and lower side and front members suitably connected and spaced apart, bars connected pivotally with the upper front members and having depending rear ends, wheels supported for rotation upon said bars and traveling upon the upper side of the rear member of the frame, and a laterally-movable slide-bar connected with and supported by the pendent rear ends of said pivoted bars.

6. A cultivator-frame, bars connected pivotally with the front of the frame and having pendent rear ends, rollers upon said bars traveling upon the rear frame-beam, a slide-bar connected with and supported by the pendent rear ends of the pivoted bars, cultivator-gang members having beams connected pivotally with the front of the frame, arms connected adjustably with the slide-bar and having sliding engagement with the cultivator-gangs, and means for effecting lateral adjustment of the slide-bar.

7. A cultivator-frame, bars pivoted upon the front of said frame and having rollers engaging the rear frame-bar, a slide-bar connected with and supported by the rear ends of the pivoted bars, and rollers supported by the slide-bar and engaging the under side of the rear frame-bar.

8. A cultivator-frame, bars pivoted upon the front member of said frame and having rotary members engaging the rear frame-bar, a slide-bar connected with and supported by said pivoted bars, cultivator-gang members connected with the front frame-bar, arms depending from the slide-bar and having slidable engagement with said cultivator-gangs, and means connected with and supported by the slide-bar for effecting vertical adjustment of the cultivator-gangs.

9. A cultivator-frame, bars connected pivotally with the front of the frame and having rotary members engaging the upper side of the rear frame-bar, a slide-bar connected with and supported by said pivoted bars, means for preventing displacement in an upward direction of said frame-bar, cultivator-gangs connected with the front of the frame, means connected with the slide-bar to prevent lateral displacement of the cultivator-gangs, and means connected with and supported by the slide-bar for effecting vertical adjustment of the cultivator-gangs.

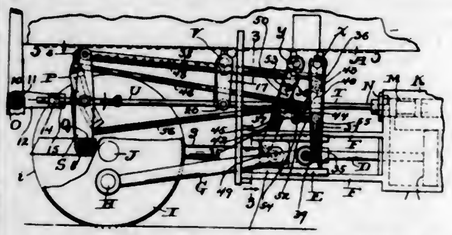
10. A cultivator-frame, bars pivoted upon the front of said frame and having rotary members engaging the upper side of the rear frame-bar, a slide-bar connected with and supported by said pivoted bars, cultivator-gang members connected with the front frame-bar, rock-shafts supported in bearings upon the slide-bar and having cranks at the outer ends, link-rods connecting said cranks with the outer gang members, adjusting-levers connected with said rock-shafts to operate the latter, auxiliary levers fulcrumed upon said rock-shafts and having extending arms, links connecting said lever-arms with the inner gang members, and means for retaining the several adjusting-levers at various adjustments.

11. A cultivator-frame, a slide-bar supported for lateral movement with relation to the rear frame-bar, means for preventing upward displacement of said slide-bar, cultivator-gangs connected with the frame, adjusting means for said gangs connected with the slide-bar, and means for effecting lateral adjustment of the latter.

12. A cultivator-frame, a slide-bar supported for lateral movement with relation to the rear frame-bar, means for preventing upward displacement of said slide-bar, cultivator-gangs connected with the frame, adjusting means for said gangs connected with and supported by the slide-bar, a seat-supporting bar, a lever-frame fulcrumed for movement in a horizontal plane upon said seat-bar and having depending members provided with treadles, an arm extending laterally from said lever-frame, and a link connecting said arm with the slide-bar to effect lateral adjustment of the latter.

821,236. VALVE-GEAR FOR ENGINES. THEODORE H. HABERKORN, Fort Wayne, Ind. Filed Dec. 5, 1905. Serial No. 290,382.

Claim.—1. In a valve-gear for a double engine operated by fluid under pressure, the combination, with the two valves and the two piston-operated cross-heads, of two parallel shafts provided respectively with a power-receiving arm and two power-transmitting arms, with the latter unequal in length and with the power-receiving arm of one of the shafts operatively connected with one of the cross-heads and with the power-receiving arm of the other shaft operatively connected with the other cross-head; a link connection between the shorter power-transmitting arm of each shaft and the longer power-transmitting arm of the other shaft, which link connection comprises two links of unequal length, with the longer link pivoted at one end to one end of the shorter link and at its opposite end to the shorter shaft-arm and with the shorter link pivoted at its opposite end to the longer shaft-arm; means for transmitting motion from the longer link of one of the link connections to one of the valves, and means for transmitting motion from the longer link of the other link connection to the other valve, and the axes of the pivotal connections of the shorter link of each link connection being spaced correspondingly with the distance between the axes of the shafts.



2. In a valve-gear for a double engine operated by fluid under pressure, the combination, with the two valves and the two pistons relatively arranged substantially as indicated, of two parallel shafts provided respectively with a power-receiving arm and two power-transmitting arms, with the latter unequal in length and with the power-receiving arm of one of the shafts operatively connected with one of the pistons and with the power-receiving arm of the other shaft operatively connected with the other piston; a link connection between the shorter power-transmitting arm of each shaft and the longer power-transmitting arm of the other shaft, which link connection comprises two links, with one of the links pivoted at one end to one end of the other link and at its opposite end to the-shorter shaft arm and with the last-mentioned link pivoted at its opposite end to the longer shaft-arm; means for transmitting motion from the first-mentioned link of one of the link connections to one of the valves, and means for transmitting motion from the first-mentioned link of the other link connection to the other valve, and the axes of the pivotal connections of the second-mentioned link of each link connection being spaced correspondingly with the distance between the axes of the shafts.

3. In a valve-gear for a double engine operated by fluid under pressure, the combination, with the two valves and the two pistons, of two parallel shafts provided respectively with a power-receiving arm and two power-transmitting arms, with the latter unequal in length and with the power-receiving arm of one of the shafts operatively connected with one of the pistons and with the power-receiving arm of the other shaft operatively connected with the other piston; a link connection between the shorter power-transmitting arm of each shaft and the longer power-transmitting arm of the other shaft, which link connection comprises two links, with one of the links pivoted at one end to one end of the other link and at its opposite end to the shorter shaft-arm and with the last-mentioned link pivoted at its opposite end to the longer shaft-arm; means for transmitting motion from one of the link connections to one of the valves, and means for transmitting motion from the other link connection to the other valve, all relatively arranged substantially as described and for the purpose set forth.

4. In a valve-gear for a double engine operated by fluid under pressure, the combination, with the two valves and the two piston-operated cross-heads, of two parallel shafts operatively connected with the piston and provided respectively with two power-transmitting arms unequal in length; an operative connection between the shafts and the cross-heads; a link connection between the shorter arm of each shaft and the longer arm of the other shaft, which link connection comprises two links of unequal length, with the longer link pivoted at one end to one end of the shorter link and at its opposite end to the shorter shaft-arm and with the shorter link pivoted at its opposite end to the longer shaft-arm; means for transmitting motion from the longer link of the other link connection to the other valve, and the axes of the pivotal connections of the shorter link of each link connection being spaced correspondingly with the distance between the axes of the shafts.

5. In a valve-gear for a double engine operated by fluid under pressure, the combination, with the two valves and the two pistons relatively arranged substantially as indicated, of two parallel shafts operatively connected with the shafts and provided respectively with two power-transmitting arms, a link connection between the shorter power-transmitting arm of each shaft and the longer power-transmitting arm of the other shaft, which link connection comprises two links, with one of the links pivoted at one end to one end of the other link and at its opposite end to the shorter shaft-arm and with the last-mentioned link pivoted at its opposite end to the longer shaft-arm; means for transmitting motion from the first-mentioned link of one of the link connections to one of the valves, and means for transmitting motion from the first-mentioned link of the other link connection to the other valve, and the axes of the pivotal connections of the second-mentioned link of each link connection being spaced correspondingly with the distance between the axes of the shafts.

6. In a valve-gear for a double engine operated by fluid under pressure, the combination, with the two valves and the two pistons, of two parallel shafts operatively connected with the piston and provided respectively with two power-transmitting arms unequal in length; a link connection between the shorter power-transmitting arm of each shaft and the longer power-transmitting arm of the other shaft, which link connection comprises two links, with one of the links pivoted at one end to one end of the other link and at its opposite end to the shorter shaft-arm and with the last-mentioned link pivoted at its opposite end to the longer shaft-arm; means for transmitting motion from one of the link connections to one of the valves, and means for transmitting motion from the other link connection to the other valve, all relatively arranged substantially as and for the purpose set forth.

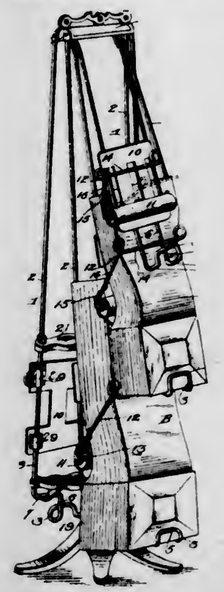
7. In a valve-gear for a double reversible engine operated by fluid under pressure, the combination, with the pistons; the valves; the reverse-shaft having two arms spaced longitudinally of the shaft and projecting toward the valve-rods; the blocks pivoted to the shaft-arms; rods extending loosely through the said blocks and operatively connected with the valves; the pivotally-supported link-hangers; the links pivotally supported from the hangers, and the shiftable link-blocks pivoted to the rods and connected with the links, of the two parallel shafts operatively connected with the pistons and operatively provided respectively with two power-transmitting arms unequal in length; two rods establishing operative connection between the shorter power-transmitting arm of the different parallel shafts respectively and the different link-hangers respectively, and a link connection between the longer power-transmitting arm of each of the said parallel shafts and the shorter power-transmitting arm of the other of the said shafts, which link connection comprises two links of unequal length, with the longer link pivoted at one end to one end of the shorter link and at its opposite end to the shorter shaft-arm and with the shorter link pivoted at its opposite end to the longer shaft-arm; two rods operatively connecting the longer link of the different last-mentioned link connections respectively and the link of the different link-hangers respectively, all relatively arranged and operating substantially as and for the purpose set forth.

8. In a valve-gear for a double reversible engine operated by fluid under pressure, the combination, with the two pistons; the two valves; the reverse-shaft; two rods operatively connected with the reverse-shaft and with the different valves respectively; the two pivotally-supported link-hangers; two links pivotally supported from the different hangers respectively, and the shiftable link-blocks pivoted to the different rods respectively and connected with the different links respectively, of the two parallel shafts operatively connected with the piston and provided respectively with two power-transmitting arms unequal in length; two rods establishing operative connection between the shorter power-transmitting arm of the different parallel shafts respectively and the different link-hangers respectively; and a link connection between the longer power-transmitting arm of each of the said parallel shafts and the shorter arm of the other of the said shafts, which link connection comprises two links of unequal length, with the longer link pivoted at one end to one end of the shorter link and at its opposite end to the shorter shaft-arm and with the shorter link pivoted at its opposite end to the longer shaft-arm; two rods operatively connecting the longer link of the different last-mentioned link connections respectively with the link of the different link-hangers respectively, all relatively arranged and operating substantially as and for the purpose set forth.

9. In a valve-gear for a double reversible engine operated by fluid under pressure, the combination, with the cylinders B and *b*; the pistons C and *c*; the suitably-guided cross-heads E and *e* operatively connected with the pistons C and *c* respectively; the valve-chests K and *k*; the valves M and *m*; the valve-rods T and *t* operatively connected with the valves M and *m* respectively; the reverse-shaft; the rods U and *u* operatively connected with the valve-rods T and *t* respectively and with the reverse-shaft; the pivotally-supported link-hangers S and *s*; the links P and *p* pivotally supported from the hangers S and *s* respectively, and the two shiftable link-blocks pivoted to the rods U and *u* respectively and connected with the links P and *p* respectively, of the two parallel shafts *x* and *y* operatively provided respectively with a power-receiving arm 35 and two power-transmitting arms 36 and 37, with the power-receiving arms operatively connected with the cross-heads and with the power-transmitting arms unequal in length; the rods 38 and 48 establishing operative connection between the shorter power-transmitting arm of the shafts *x* and *y* respectively and the link-hangers S and *s* respectively; the links 40 and 42; the rod 46; the links 50 and 52, and the rod 56, all relatively arranged and operating substantially as and for the purpose set forth.

10. In a valve-gear for a double reversible engine operated by fluid under pressure, the combination, with the cylinders B and *b*; the pistons C and *c*; the valve-chests K and *k*; the valves M and *m*; the valve-rods T and *t* operatively connected with the valves M and *m* respectively; the reverse-shaft; the rods U and *u* operatively connected with the reverse-shaft; the rocker-shaft V having the arms 17 and 18; the rocker-shaft *v* having the arms 27 and 28; the pivotally-supported link-hangers S and *s*; the links P and *p* pivotally supported from the hangers S and *s* respectively, and the two shiftable link-blocks pivoted to the rods U and *u* respectively and connected with the links P and *p* respectively, of the two parallel shafts *x* and *y* operatively connected with the pistons and provided respectively with two power-transmitting arms 36 and 37 unequal in length; the two rods 38 and 48 establishing operative connection between the shorter power-transmitting arm of the shafts *x* and *y* respectively and the link-hangers S and *s* respectively; the links 40 and 42; the rod 46; the links 50 and 52 and the rod 56, all relatively arranged and operating substantially as and for the purpose set forth.

821,237. BAG-HOLDER. EARL A. HALE, Dayton, Ohio. Filed June 26, 1905. Serial No. 267,127.



Claim.—1. The herein-described bag-holder comprising a pedestal, spiders mounted thereon, bag-supporting frames having upwardly-extending arms secured to the spiders, supporting lower portions 4 and outwardly-extending portions 5, plates connecting the arms of the said frames, rolls on the outer, lower portions of said plates, spring-actuated clamps pivoted in said rolls, and a support 9 to which the upper ends of the bag-supporting frames are secured.

2. A bag-holder comprising a frame having a hook-shaped support at its lower end, a plate upon said frame, a transversely-extending projection or enlargement upon said plate above said support, a

swinging clamp pivoted to said projection, and a spring for swinging the free end of said clamp to said plate, substantially as described.

3. A bag-holder comprising a frame formed by bending a piece of metal rod or wire to form a supporting-hook, a plate connecting the sides of the frame, a transversely-extending roll upon said plate, a spring-actuated clamp pivoted in said roll, and means for supporting said frame, substantially as described.

4. A bag-holder comprising a frame formed by bending a piece of metal rod or wire to form a supporting-hook, a plate connecting the sides of the frame, a transversely-extending roll upon said plate, a substantially U-shaped clamp pivoted in said roll and formed from a single piece of metal rod or wire, a spring for actuating said clamp and a support attached to the upper end of said frame, substantially as described.

821,238. **RING SPINNING AND TWISTING APPARATUS.** JOEL HAYDEN, Jr., Boston, Mass., assignor, by mesne assignments, to Hayden Machinery Company, a Corporation of Maine. Filed May 23, 1905. Serial No. 261,856.



Claim.—1. The combination with a spinning-ring, a supporting plate or holder, and an intermediate member or ring between the last two, of a curved separate member adapted to rest on said intermediate member and to engage by means of its inner edge the lower flange of said spinning-ring.

2. The combination with a spinning-ring, a supporting plate or holder, and an intermediate member or ring between the last two, of a curved separate member adapted to rest on said intermediate member and provided on its inner edge with a groove adapted to fit the lower flange of said spinning-ring.

3. The combination with a spinning-ring, a supporting plate or holder, and an intermediate member or ring between the last two provided with an upwardly and inwardly projecting lip, of a curved member adapted to rest on said intermediate member with its outer edge beneath said lip and with its inner edge adapted to engage the lower flange of said spinning-ring.

4. The combination with a spinning-ring, a supporting plate or holder, and an intermediate member or ring between the last two provided with an upwardly and inwardly projecting lip, of a curved member adapted to rest on said intermediate member with its outer edge beneath said lip and with its inner edge provided with a groove adapted to fit the lower flange of said spinning-ring.

5. The combination with a spinning-ring, a supporting plate or holder, and an intermediate member or ring between the last two and provided with an upwardly-extending flange, of a curved member adapted to rest on said intermediate member and to engage both the flange on the intermediate member and the lower flange on the spinning-ring to prevent vertical displacement and movement one on the other about the axis of said ring.

6. The combination with a spinning-ring, a supporting plate or holder, and an intermediate member or ring between the last two, of a separate member adapted to rest upon said intermediate member and to engage the lower flange of said spinning-ring on the same plane as said flange.

7. The combination with a spinning-ring, a supporting plate or holder, and an intermediate member or ring between the last two, of a separate member adapted to rest upon said intermediate member and to engage the lower flange of said spinning-ring on the same plane as said flange, and means secured to said intermediate member limiting the outward movement of said separate member and preventing movement about the axis of said spinning-ring.

8. The combination with a spinning-ring, a supporting plate or holder, and an intermediate member or ring between the last two, of a split adapter between said intermediate member and a flange of the spinning-ring, said adapter being provided on its inner edge with a groove whereby it directly supports said spinning-ring.

9. The combination with a spinning-ring, a supporting plate or holder, and an intermediate member or ring between the last two provided with an upwardly-extending flange, of a split adapter adapted to rest on said intermediate member and to abut said flange thereof, said adapter being provided with a groove on its inner edge whereby it engages the flange of the spinning-ring.

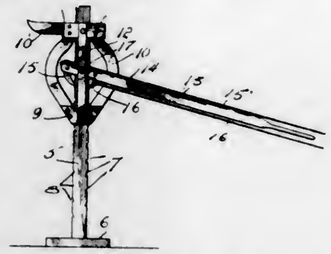
10. The combination of a spinning-ring, a supporting plate or holder, an intermediate member provided on its upper edge with an annular lip, and an adapter resting on said intermediate member between said lip and the outer edge of the lower flange of the spinning-ring, and directly supporting said spinning-ring by means of a groove on its inner edge which corresponds with the shape of the ring, said spinning-ring, adapter and intermediate member being held in connection by said slip.

11. The combination of a spinning-ring, a supporting plate or holder, an intermediate member provided on its upper edge with an annular lip, and a Z-shaped adapter resting on said intermediate member between the lip and the spinning-ring, and pressed against the outer edge of the lower flange of the spinning-ring by said lip, whereby it directly supports said spinning-ring and rigidly connects the spinning-ring and the intermediate member.

12. The combination of a spinning-ring, a supporting plate or holder, a member intermediate of said supporting plate or holder and the spinning-ring, an adapter between the intermediate member and the spinning-ring firmly contacting with both, and a traveler-clearer extending up from said adapter at a suitable distance from the flange of the spinning-ring on which the traveler moves.

13. The combination of a spinning-ring, a supporting plate or holder, a member intermediate of said supporting plate or holder and the spinning-ring, an adapter between the intermediate member and the spinning-ring and firmly contacting with both, and a traveler-clearer integral with and extending up from said adapter at a suitable distance from the flange of the spinnng-ring on which the traveler moves.

821,239. **JACK.** JAMES W. HEARN, Murfreesboro, Tenn. Filed Jan. 4, 1906. Serial No. 294,649.



Claim.—A jack comprising an upright having notches in its opposite edges, upper and lower pairs of plates disposed at opposite sides of the upright and extending laterally therebeyond, vertical members secured at their ends to the corresponding upper and lower plates and lying parallel with the upright and in spaced relation thereto, oppositely-extending bows secured between the laterally-extending portions of the plates with their concavities directed inwardly, one of said bows having an outwardly-extending load-receiving finger at its upper end, an operating-lever having a bifurcated inner end disposed with its spaced portions at the opposite sides of the upright and in the spaces between the upright and the vertical members, said spaced portions extending beyond the upright in opposite directions, pivot-pins engaged in the vertical members and in the spaced portions, depending dogs pivoted between the spaced portions at opposite sides of the upright and arranged for engagement of the notches, one of said bows lying between the spaced portions of the lever.

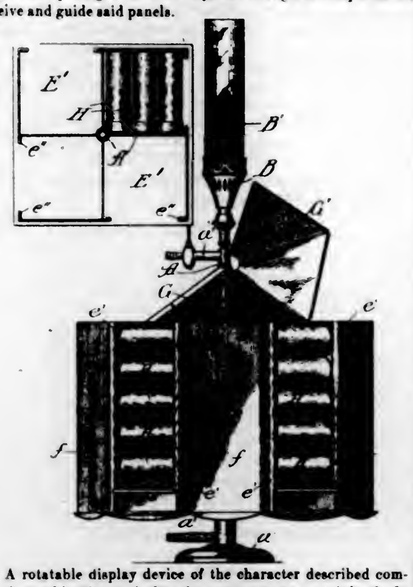
821,240. **ROTATABLE DISPLAY DEVICE.** MAX HERSKOVITS, Chicago, Ill. Filed May 20, 1905. Serial No. 261,350.

Claim.—1. A display device for packages of gas-mantles, comprising, in combination, a rotatably-supported body having a series of open-faced receptacles for said packages about its center of rotation, said receptacles being provided with flanged outer package-retaining edges, and means on said device for attaching thereto a burner.

2. A rotatable display device for packages of gas-mantles, comprising, in combination, a central shaft, a body rotatably mounted on said shaft and provided with a series of open-faced angular receptacles for said packages, having flanged outer package-retaining edges, and a mantle-equipped burner surmounting said shaft.

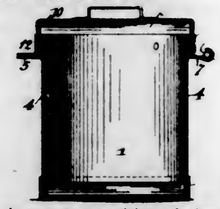
3. A rotatable display device of the character described, comprising, in combination, a gas-pipe terminating in a mantle-equipped burner and forming a shaft, and a body portion rotatably mounted thereon and comprising a central compartment and a series of compartments about said central compartment.

4. A rotatable display device of the character described comprising, in combination, a central shaft and a body portion rotatably mounted thereon and comprising a central compartment and a series of compartments about said central compartment consisting of rectangular compartments and triangular compartments alternating therewith and having removable closing panels, the said rectangular compartments having inturned hollow beaded outer edges provided with grooves opening toward the adjacent triangular compartments to receive and guide said panels.



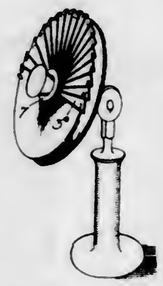
5. A rotatable display device of the character described comprising, in combination, a shaft and a compartment-containing body portion rotatably mounted on said shaft and composed of walls joined at their lateral edges and rising from a bottom and forming an angular central compartment about said shaft and provided with a cover having a swinging section, walls rising from said bottom at right angles to the walls of said central compartment and forming rectangular compartments at intervals to coincide with the walls of the central compartment and triangular compartments formed at intervals between said rectangular compartments by the walls thereof, each of said triangular compartments having a removable panel, and each rectangular compartment having the outer edges of its side walls inturned and rounded to form hollow beads having groove-openings adjacent to the triangular compartments into which grooves said panels are removably confined.

821,241. **GARBAGE-CAN.** ISAAC HIRSOHN, New York, N. Y. Filed May 4, 1905. Serial No. 258,873.



Claim.—A garbage-can comprising a body, a longitudinally-disposed reinforcing-strip attached to the sides of said body and extending across the bottom thereof, the ends of said strip being disposed adjacent the upper edge of the body and extending outwardly at approximately right angles therefrom, one of said ends being provided with a bead and the other having an aperture therein, a cover fitting over said body, and a cross-strip upon the upper face of said cover extending outwardly at its ends at approximately right angles to the sides of the cover, one end of said cross-strip being pierced with an aperture registering with the aperture in said reinforcing-strip, and the other end being provided with a hook embracing said bead.

821,242. **DISPLAY DEVICE.** FRANK P. HOUGH, Seattle, Wash. Filed Feb. 7, 1905. Serial No. 244,635.



Claim.—1. A display device comprising a plurality of superimposed rotatably-mounted sections, and clips carried by the sections, the clip of one section slidably engaging the underlying section.

2. A display device comprising a plurality of superimposed rotatably-mounted sections, and means carried by each section for engagement with the adjacent section to prevent the raising of the outer portion of one section from the other.

3. A display device comprising a plurality of sections arranged one on the other, said sections being provided with clips said clips serving as finger-pieces and the clip of one section slidably engaging another section on one side thereof.

4. A telephone-directory, comprising top, bottom and intermediate superimposed sections, rotatably mounted, each section being formed with a slit extending from its center to its outer edge forming opposite free portions, the top section having a portion thereof extending through the slits of the intermediate and bottom sections and having one of its free portions arranged beneath the bottom section.

5. A display device comprising a base, a plurality of sections rotatable on said base, said sections being provided with outwardly-projecting portions, adapted to be engaged by the operator for shifting the sections and a spring-catch extending from the base for engagement with the outwardly-projecting portion of one of said sections.

6. A telephone-directory comprising an alphabetical series of superimposed disks rotatable on a common axis, each disk being slitted from its center to its periphery forming right and left hand free ends, the left-hand free ends of the entire series being exposed in stepped relation, the right-hand free ends being arranged to be moved beneath the lowest of said left-hand ends.

7. A telephone-directory comprising an alphabetical series of superimposed disks rotatable on a common axis, each disk being slitted from its center to its periphery forming right and left hand free ends, the left-hand free ends being exposed in stepped relation, and means on the left-hand free ends for engagement with the free end of the adjacent underlying disk.

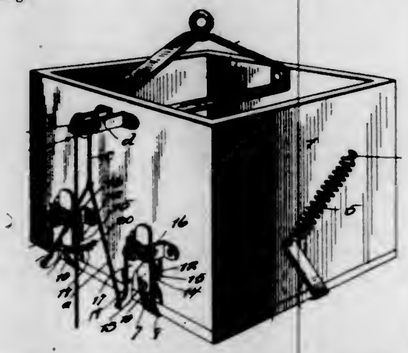
8. A telephone-directory comprising a plurality of superimposed rotatable disks, each slitted from its center to its periphery forming right and left hand free portions, the left-hand free portions being provided with clips embracing the perriphery of the next adjacent underlying disk, the clip on each underlying disk being arranged for engagement with the clip of the adjacent overlying disk, whereby relative rotation between the disks will be arrested.

821,243. **LOADER AND UNLOADER.** MONROE HUDGENS, O'Conners, Tenn. Filed Dec. 23, 1905. Serial No. 293,583.

Claim.—1. A device of the character described, comprising a rectangular boxing, a hinged bottom therefor, lock and catch devices for said bottom, comprising metallic strips, a shoulder carried by each strip, adapted to engage a similar shoulder secured to the face of the boxing, cammed levers to securely hold the shoulders in locked relation to one another, and means for holding the cammed levers in engagement with said strips, and means for raising and lowering the boxing.

2. A device of the character described, comprising a rectangular boxing, a hinged bottom therefor, means for restoring the bottom to its normal position, catch and lock devices for said bottom comprising metallic strips, a shoulder carried by each strip adapted to engage a similar shoulder secured to the face of the boxing, cammed levers to coöperate with said strips, springs to restore the cammed le-

vers to their normal positions, a cable connected to the arms of said levers, pulleys for said cable, and means for raising and lowering the boxing.



3. A device of the character described, comprising a rectangular boxing, a hinged bottom therefor, means for restoring said bottom to its normal position, lock and catch devices comprising metallic strips, a shoulder carried by each of said strips to engage a shouldered strip secured to the face of the boxing, means for holding the shoulders in locked relation with one another, and means for raising and lowering the rectangular boxing.

4. A device of the class described, comprising a bottom, hinged to a boxing, a shoulder secured to said bottom, and engaging a similar shoulder on said boxing, and a cammed lever holding said shoulders in engagement.

821,244. **COMPOSITION FOR KILLING GRASS.** CHARLEY M. HULSEY, Frost, Tex. Filed Sept. 5, 1905. Serial No. 277,061.

Claim.—1. A composition for killing grass, weeds and the like, consisting of kerosene-oil, soda, alum and citric acid.

2. The herein-described composition for killing grass, weeds, and the like, consisting of kerosene-oil, soda, alum and citric acid mixed in substantially the proportions stated.

821,245. **COMBINED SPONGE AND SOAP CAKE.** ROBERT H. HUTCHINSON, New York, N. Y., assignor of one-half to John D. Newton, New York, N. Y. Filed Aug. 30, 1905. Serial No. 276,446.



Claim.—1. An article of the character described, comprising a body of soap composed of sections, and a layer of sponge interposed between the sections, the sponge layer being thus of less thickness than the soap-body and having its edges exposed on opposite sides thereof, said soap-body completely covering the sides of the sponge layer.

2. An article of the character described, comprising a body of soap and a layer of sponge incorporated therein and extending from end to end thereof, substantially one-half of the soap-body being located on opposite sides of the sponge layer and completely covering said sides and said sponge also having its side edges exposed on opposite sides of the soap-body.

3. An article of the character described, comprising a soap-body, a sponge incorporated therein and having a portion exposed in said body, and a removable waterproof covering inclosing portions of the soap-body and the incorporated sponge layer.

4. An article of the character described, comprising a body of soap consisting of sections, a layer of sponge interposed between the sections, and a removable cover surrounding the sections and soap and maintaining the same in intimate relation.

5. An article of the character described, comprising a body of soap, and a dry sponge embedded therein and having its pores open or unfilled.

6. An article of the character described, comprising a body of soap, a sponge associated therewith, and a removable waterproof covering for the soap.

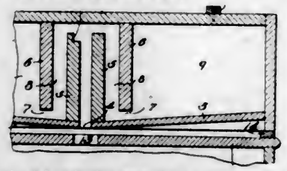
7. An article of the character described, comprising a body of soap, a sponge associated therewith, and a waterproof covering for the body and sponge, said covering constituting a holder that prevents the expansion of the portion of the sponge covered thereby.

8. An article of the character described, comprising a body of soap, a layer of sponge incorporated therein and extending from end to end thereof, said body of soap completely covering the sides of the sponge layer, but leaving the latter exposed at the ends.

9. An article of the character described, comprising a body of soap composed of sections, and a layer of sponge interposed between the sections.

10. An article of the character described, comprising a body of soap, a layer of sponge incorporated therein and extending from end to end thereof, substantially one-half of the soap-body being located on opposite sides of the sponge layer and completely covering said sides.

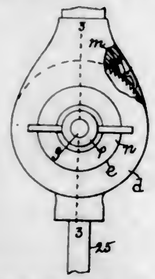
821,246. **BEE-FEEDER.** MICHAEL KEGERREIS, Lebanon, Pa. Filed Dec. 4, 1905. Serial No. 290,272.



Claim.—1. A bee-feeder comprising a receptacle having an entrance-opening in the bottom thereof, partitions rising from the bottom of the receptacle at opposite sides of the entrance-opening and terminating short of the top of the receptacle, other partitions extending from the top of the receptacle and terminating short of the bottom thereof, and a removable cover for the receptacle provided with a transverse cleat carried by one end portion of the cover and capable of being thrust with the cover into the open inner end of the passage leading from the entrance-opening.

2. A bee-feeder having an entrance-opening in the bottom thereof, partitions rising at opposite sides of the opening, one of the partitions having a shoulder upon its inner side adjacent its top, and a removable cover having a transverse cleat adjacent one end thereof, said cover capable of having one end thrust between the tops of the partitions with the cleat resting upon the shoulder of one of the partitions to close the space between said partitions.

821,247. **TELEPHONE-SUPPORT.** WILLIAM B. LEHMKUHL, Cambridge, Mass., assignor of one-half to Samuel B. Shapleigh, Boston, Mass. Filed June 9, 1905. Serial No. 264,448.



Claim.—1. In a support of the character described, in combination, two members pivotally connected, a ratchet-wheel carried by one of said members, a pawl carried by the other of said members and coöperating with said ratchet-wheel, and means to create resistance to the movement of said ratchet-wheel, substantially as described.

2. In a support of the character described, in combination, a member pivoted to turn in one direction, a second member pivoted to the first-mentioned member to turn in a direction substantially at right angles to the direction in which the first-mentioned member is turned, a ratchet-wheel carried by the first-mentioned member, a pawl carried by the second-mentioned member and coöperating with said ratchet-wheel, and means to frictionally hold said ratchet-wheel from turning until positively moved, substantially as described.

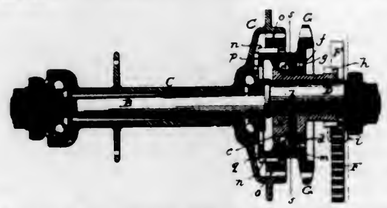
3. In a support of the character described, in combination, a member provided at one end with forks having openings, a second member provided with forks which are embraced by the forks of the first-mentioned member, a pivot pin or shaft supported by the forks of the second member, a ratchet-wheel mounted on said shaft or pivot between the forks of the second member, a pawl carried by the first member and engaging said ratchet-wheel, disks mounted on said pivot and extended into the openings in the forks of the first member to engage the forks of the second member, and means to move said disks toward each other, for the purpose specified.

4. In a support of the character described, in combination, a member pivoted to turn in one direction, means for supporting a telephone connected to said member, a second member pivoted to turn in a direction at an angle to the first-mentioned direction, a rotatable device carried by said second member, means carried by said first member to engage said rotatable device and effect movement thereof when the first-mentioned member is moved in one direction, and to permit movement of said first-mentioned member in the opposite direction independent of said rotatable device, substantially as described.

5. In a support of the character specified, in combination, a pivoted arm, means for supporting a telephone connected to said arm, a rotatable device, means carried by said arm and coöperating with said rotatable device to effect rotation thereof when said arm is moved in one direction, and means to retain said rotatable device stationary while under the influence of the weight of the telephone, substantially as described.

6. In a support of the character specified, in combination, a pivoted arm, a rotatable device, means carried by said arm and coöperating with said rotatable device to effect rotation thereof when said arm is moved in one direction, and means to retain said rotatable device stationary when the pivoted arm is moved in the opposite direction, substantially as described.

821,248. **CHANGEABLE GEAR.** CHARLES E. LIPE and ALEXANDER T. BROWN, Syracuse, N. Y. Filed June 15, 1894. Serial No. 514,661.



Claim.—1. In combination with a fixed axle having an eccentric extension; a wheel-hub encircling the body of the axle and provided with a clutch member; a rotatable member mounted on the eccentric extension of the axle and provided with an eccentric portion; a combined sprocket and gear carried by the eccentric portion of said rotatable member, formed with a clutching member, and movable at right angles to and also in the direction of the length of the axle; and means for so moving the combined sprocket and gear lengthwise of the axle; whereby it may be thrown into and out of gear with or clutched to and unclutched from the wheel-hub.

2. In combination with a fixed axle having an eccentric extension, a member to be driven, mounted loosely upon said axle and having a clutching portion; a combined sprocket and gear having a clutch member or portion adapted to clutch with the member to be driven; an eccentric sleeve mounted upon the eccentric extension of the axle and carrying the combined sprocket and gear; a cam connection between said sleeve and the extension on which it is mounted; and means for rotating said sleeve, such rotation serving to carry the combined sprocket and gear radially into and out of mesh with the member to be driven, and to move it longitudinally out of and into clutching relation with said member, the meshing and clutching relations occurring in alternation.

3. In combination with an axle having an eccentric portion; a hub thereon provided with a gear and with a clutch member; an eccentric sleeve mounted upon the eccentric portion of the axle; a combined sprocket and gear mounted upon the sleeve and provided with a clutch member; and means for actuating the sleeve, whereby the combined sprocket and gear may be brought into a position concentric with the axle and clutched directly to the hub, or into a position eccentric to the axle and thrown into gear with the hub.

4. In combination with an axle having an eccentric portion; a hub provided with gear-teeth and clutch-teeth and concentric with the body of the axle; a combined sprocket and gear wheel provided with clutching-teeth; an eccentric loosely encircling the eccentric portion of the axle, constituting a bearing for the combined sprocket and gear, and serving to move the latter at right angles to the axle to throw it directly into and out of gear with the hub; and means for moving the combined sprocket and gear longitudinally of the axle to clutch it directly to the hub or to unclutch it therefrom.

5. In combination with a fixed axle having an eccentric extension, a hub mounted upon the body of the axle, open at one end, and provided with clutch-teeth and internal gear-teeth; a combined sprocket and gear, also provided with clutch-teeth; and an eccentric sleeve, carrying the combined sprocket and gear, encircling the eccentric extension of the axle, and movable radially into and out of gear with the hub gear-teeth, and also movable axially to clutch with and unclutch from the hub clutch-teeth.

6. In combination with a fixed axle having an eccentric extension; a hub mounted upon the axle, open at one end, and provided at such open end with internal gear-teeth and with clutch-teeth; an independent sprocket and gear wheel provided with clutch-teeth; and an eccentric sleeve or support for the combined sprocket and gear, mounted upon the eccentric extension of the axle and movable both longitudinally and rotatively thereon, and adapted to carry said combined sprocket and gear into concentric and clutching relation with the open-ended hub, or out of clutching relation and into meshing eccentric relation therewith, according to the adjustment of said support.

7. In combination with a member to be driven, provided with a clutch member; an axle having a main body portion and a portion eccentric thereto; an eccentric sleeve mounted upon the eccentric portion of the axle; a combined sprocket and gear mounted upon the sleeve, provided with a clutch member, and adapted to be thrown into and out of gear with the member to be driven, or to be clutched to or uncluteched therefrom; and means for moving the combined sprocket and gear longitudinally of the axle, during the rotation of the sleeve by which it is moved radially.

8. In combination with an axle having an eccentric portion, a hub mounted to turn upon the axle and provided with gear and with clutching teeth; an eccentric sleeve upon the eccentric portion of the axle; a combined sprocket and gear carried by said sleeve and provided with clutching-teeth; and means for rotating the sleeve and for moving the combined sprocket and gear lengthwise of the axle.

9. In combination with an axle B, having a cam-slot *a*, and an eccentric end D; a hub C mounted upon the axle and provided with gear *o* and clutch-teeth *q*; an eccentric sleeve E provided with pin *b* and gear or pinion *h*; means for rotating the sleeve; and a sprocket-wheel G mounted upon the sleeve and provided with gear *s*, and clutch-teeth *p*.

10. In combination with an axle B provided with a cam-slot *a*, and an eccentric end portion D; a hub C mounted upon the axle and provided with gear *o* and clutch-teeth *q*; an eccentric sleeve whose eccentricity is equal to that of the axle end D; a pin *b* and gear *h* carried by the sleeve; means for rotating the sleeve; and a sprocket-wheel G provided with gear *s* and clutch teeth *p*.

11. In combination with an eccentric axle and a hub; the combined sprocket and gear wheel, adapted to be connected with and disconnected from the hub; the eccentric sleeve; a pinion *h*, and the reciprocating rack-bar F engaging the pinion for actuating the eccentric sleeve.

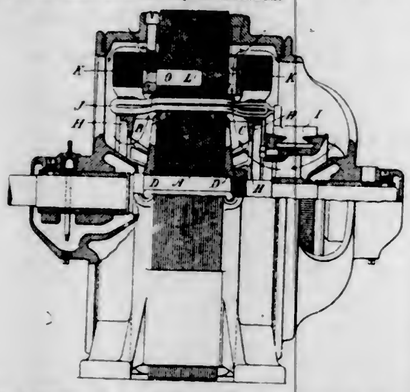
12. In combination with a supporting-shaft, a driving member loose thereon, provided with gear-teeth and with clutching-teeth; a member to be driven, also loose upon the supporting-shaft, and provided with gear-teeth and with clutching-teeth; and means for moving the driving member on the shaft at right angles to and also in the direction of the length of the shaft; whereby it may be thrown into and out of gear with and unclutched from or clutched to the other member.

13. In combination with a wheel to be driven, provided with clutch-teeth and with gear-teeth; a combined clutch and gear wheel; an eccentric sleeve constituting an axle for said combined clutch and gear wheel; and an eccentric axle for the sleeve; the two eccentric members serving to throw the combined clutch and gear radially into and out of gear with the gear-teeth of the driven wheel, substantially as set forth.

821,249. **DYNAMO-ELECTRIC MACHINE.** ROBERT LUNDELL, New York, N. Y. Filed May 20, 1905. Serial No. 261,380.

Claim.—1. A dynamo-electric machine having poles provided

with air-ducts and an armature having air-spaces between the heads of the armature-winding and the ends of the armature-core; in combination with means for forcing air successively through said air spaces and ducts, substantially as described.



2. A dynamo-electric machine having poles provided with air-ducts between the field-coils and the sides of the poles and an armature having air-spaces between the heads of the armature-winding and the ends of the armature-core; in combination with a blower carried by the armature for forcing air successively through said air spaces and ducts, substantially as described.

3. A dynamo-electric machine having laminated pole-cores; in combination with polar end plates provided with air-ducts through which air may be forced, substantially as described.

4. A dynamo-electric machine having laminated pole-cores; in combination with polar end plates provided with air-channels on their inner sides where they abut against the laminations, substantially as described.

5. A laminated pole-core having a pair of supporting end plates; in combination with a rivet-bar passing through the laminations and the end plates, said rivet-bar being provided with shoulders against which the end plates may be riveted so that the distance between the said end plates may be accurate while the laminations may be comparatively loose, substantially as described.

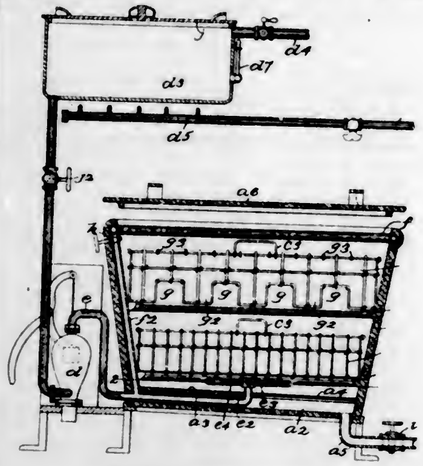
6. A dynamo-electric machine provided with an armature-core carrying armature-coils so wound thereon as to provide air-spaces between the ends of the windings; a field core or cores and field coil or coils therefor; in combination with air ducts or channels between said parts; together with means carried by and rotating with the armature for forcing air through said spaces and ducts or channels, substantially as described.

7. A dynamo-electric machine having air-spaces between the ends of the armature-coils and air ducts or channels extending around two sides of the field-coils; the field-core and a part of the frame of the machine constituting one wall of said ducts or channels, and the two sides of the coils the other wall thereof; in combination with means carried by and rotating with the armature for forcing air through the air-spaces of the armature-coils and the aforesaid air ducts or channels, whereby all parts of the machine are maintained at minimum temperature, substantially as described.

821,250. DISH-WASHING APPARATUS. CLARA B. MILLER, Sewaren, N. J. Filed Oct. 12, 1904. Serial No. 228,106.

Claim.—1. A dish-washing apparatus, comprising a tub the walls of which are inclined inwardly and downwardly and which is provided with a false bottom, a strainer forming a part of said bottom, an escape-pipe connected with the space beneath said false bottom, a rotary spraying device placed in the bottom portion of said tub, removable open trays placed thereover one above another and the top tray being provided with means for holding dishes and similar articles on edge, a spraying device placed around the top portion of said tub and means for supplying water under pressure to said spraying device, substantially as shown and described.

2. A dish-washing apparatus, comprising a tub having a false bottom, a strainer forming a part of said bottom, an escape-pipe connected with the space beneath said false bottom, a rotary spraying device in the bottom portion of said tub removable open trays placed thereover one above another, and the top tray being provided with means for holding dishes and similar articles in an upright position, a spraying device placed around the top portion of said tub and means for supplying water under pressure to said spraying device and means for heating said water, substantially as shown and described.



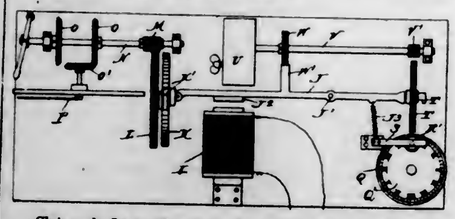
821,251. SWITCHBOARD. ALBERT T. NEWMAN, Greeley, Kans. Filed June 14, 1904. Serial No. 212,580.



Claim.—1. A device of the kind described comprising a casing, binding-posts thereon, a plurality of contacts arranged in pairs, a pivoted lever adapted to connect the plates of each pair, a spring-finger carried by each of the binding-posts, conductors connecting the binding-posts with the contact-plates, electrical conductors connected to the binding-posts and leading to external circuits, a roller journaled in the casing, ribs formed on the roller adapted to simultaneously engage all of the spring-fingers, means for holding the ribs normally out of engagement with said fingers, and means for rotating the roller and bringing the ribs into contact with the fingers.

2. A switchboard of the kind described comprising a pivoted contact-lever, contact-points arranged in pairs, wires leading therefrom, contact-fingers arranged also in pairs, contact-ribs and a roller for carrying the same, an arm projecting from said roller and a spring connected to the roller, and a spring-keeper for holding the lever, substantially as described.

821,252. RAILWAY-SIGNAL. JAMES P. NORWOOD, Chicago, Ill. Filed June 23, 1905. Serial No. 266,580.

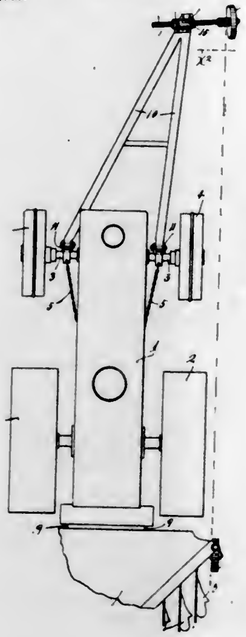


Claim.—1. In a railway-signal, electrically-operated registers located in each train and in certain stations along the road, two auxiliary rails arranged upon each side of the road-bed, half of the registers in each train and station being connected in series with one pair of auxiliary rails and the other half being connected in series with the other pair of auxiliary rails, a source of electricity carried by each train, a traveling contact electrically connected to one terminal of the source of electricity adapted to travel in constant contact with one auxiliary rail of one pair, contacts electrically connected to the other rail of the same pair, a traveling contact electrically connected to the other source of electricity adapted to strike said permanent contacts when in alinement with the same and thus operate the registers.

2. In a railway-signal, electrically-operated registers located in each train and in certain stations along the road and at the terminals, each of said registers provided with an indicator adapted to be moved one step each time the current flows through the register, two pairs of auxiliary rails extending parallel with the road insulated from the road-bed and from one another, permanent contact-strips electrically connected to one of the auxiliary rails in each pair and arranged equal distances apart, a source of electricity carried by each train, two traveling contacts connected in series with said source of electricity, one traveling contact adapted to travel so as to contact the permanent-contacts when in alinement with the same, the other traveling contact traveling in constant contact with the other auxiliary rail of the same pair, said traveling contacts so arranged that they will contact one pair of auxiliary rails when the train is traveling in one direction and the other pair when the train is traveling in the opposite direction, half of all the registers being connected in series with one pair of auxiliary rails and the other half connected in series with the other pair of auxiliary rails, the permanent contact-strips located at the regular stations being longer than the other permanent contact-strips so that the current will be caused to flow a greater length of time when these strips are reached, means located in each register for recording the time, said means adapted to be only operated when the current is caused to flow a predetermined length of time.

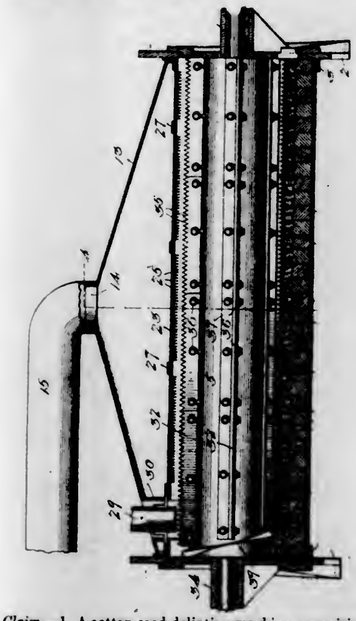
3. In combination with a railroad-signal of the character described, an electrically-operated register consisting of an indicator, a movable member connected with said indicator, a magnet adapted to move said indicator one step when the same is energized, a timepiece located in the register, a removable dial connected with said timepiece and adapted to revolve a perforator arranged above the dial, a spring-motor arranged within the register, means connected with said spring-motor adapted to operate the perforator so as to cause the same to perforate the dial, and means adapted to prevent the spring-motor actuating the perforator only when the magnet remains energized a predetermined length of time, as and for the purpose specified.

821,253. AUTOMATIC STEERING DEVICE FOR TRACTION-ENGINES. EDMUND F. PIPER, Fargo, N. D. Filed Apr. 29, 1905. Serial No. 258,006.



Claim.—The combination with a vehicle having a pivoted axle, of an automatic steering device therefor, comprising a steering-frame connected to said pivoted axle, and a steering-wheel mounted on the free end of said steering-frame, with its axis extending downward and forward with respect to said pivoted axle, in a direction toward the furrow side of the machine, substantially as described.

821,254. COTTON-SEED-DELINTING MACHINE. WILLIAM A. RAGSDALE, New Orleans, La., assignor to International Cotton Seed Delinting Company, Washington, D. C., a Corporation of Maine. Filed Oct. 18, 1905. Serial No. 283,357.



Claim.—1. A cotton-seed-delinting machine comprising a scouring-cylinder having an inner abrasive surface provided therein with conveying means, an agitator having a plurality of longitudinal pressure-blades provided with toothed edges operating in proximity to said surface and the conveying means thereof, an air-supply for the cylinder and a suction discharge-outlet.

2. In a cotton-seed-delinting machine, a scouring-cylinder having a lint-discharge, an agitator carrying a plurality of longitudinal pressure-blades each having continuously-toothed edges, and means for maintaining a relative rotation of the cylinder and agitator.

3. In a machine of the class described, a scouring-cylinder having an inner abrasive surface, conveying means for the seed, said scouring-cylinder also having oppositely-located seed-inlet and seed-outlet, a suction-chamber in communication with the working space of the scouring-cylinder and provided with a damper-controlled inlet providing means for regulating the speed of travel of the seed provided for by the conveying means, an independent air-inlet for the cylinder, and an agitator arranged within the cylinder.

4. In a cotton-seed-delinting machine, a scouring-cylinder having an inner solid abrasive surface, an agitator carrying a plurality of longitudinal rigid pressure-blades having saw-toothed edges operating in proximity to the abrasive surface, and a suction lint-discharge for the cylinder.

5. In a cotton-seed-delinting machine, a scouring-shell consisting of a plurality of matching abrasive blocks having sections of a spiral groove therein, and an agitator having toothed pressure-blades.

6. In a cotton-seed-delinting machine, a scouring-cylinder having an inner solid abrasive surface, and provided with a screened suction discharge-opening interrupting the abrasive surface and forming a continuation thereof, a suction-hood arranged over the screened discharge-opening and provided with a damper-controlled auxiliary air-inlet, and an independent air-inlet arranged about the seed-inlet for the scouring-cylinder.

7. In a machine of the class described, a scouring-cylinder, having a longitudinally-arranged screened suction discharge-opening, said cylinder being also provided at one end with an air-inlet in communication with the outer air and with a seed-feed spout centered within and spaced from the edges of said air-inlet, a seed-discharge opening arranged at the end opposite the feed-spout and also affording an air-inlet, an upwardly-convergent suction-hood arranged over the screened discharge-opening and having a fan connection therewith, and a rotary agitator arranged within the cylinder.

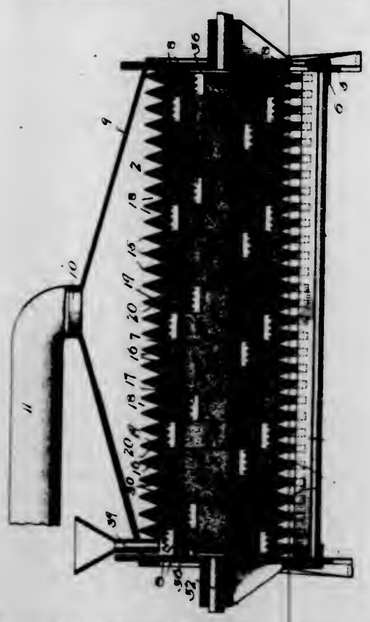
8. In a machine of the class described, a scouring-cylinder provided with a longitudinal suction discharge-opening interrupting its scouring-surface, a screen arranged to cover said opening and forming a continuation of said scouring-surface, a carrying-frame for said screen having a detachable support upon the scouring-cylinder, an agitator within the cylinder, and means for maintaining a draft through the screen.

9. In a machine of the class described, a scouring-cylinder having spirally-disposed grooves formed in the working face of its scouring-surface, and a rotating drum carrying blades working in proximity to said grooved surface.

10. In a machine of the class described, a scouring-cylinder having spirally-disposed grooves formed in the working face of its scouring-surface, and a rotating drum carrying toothed blades working in proximity to said grooved surface.

11. In a machine of the class described, a scouring-cylinder composed of a multiplicity of abrasive blocks and provided in one side with a suction discharge-opening, block-retaining means fitted to the cylinder at the edges of the opening, and a screen for said opening having a detachable support upon the block-retaining means.

821,255. **COTTON-SEED-DELINTING MACHINE.** WILLIAM A. RAGSDALE, New Orleans, La., assignor to International Cotton Seed Delinting Company, Washington, D. C., a Corporation of Maine. Filed Oct. 18, 1905. Serial No. 283,358.



Claim.—1. In a cotton-seed-delinting machine, a scouring-shell consisting of a series of parallel spaced abrasive rings each having a section of a spiral groove therein, and an agitator having pressure-blades cooperating with such rings.

2. In a machine of the class described a scouring-shell having an inner abrasive surface and a series of annular flaring spaces opening at their apices into the shell, a suction-chamber enveloping the shell, and an agitator carrying pressure-blades.

3. In a machine of the class described, a scouring-shell having an inner abrasive surface and a series of annular flaring discharge-spaces opening at their apices into the shell, a suction-chamber enveloping the shell, and an agitator provided with pressure-blades, and an abrasive surface.

4. In a machine of the class described, a scouring-shell having an inner abrasive surface and a series of annular flaring spaces opening at their apices into the shell, a suction-chamber about the shell, and an agitator provided with radially-projecting pressure-blades of a saw-tooth formation.

5. In a machine of the class described, a scouring-shell having an inner abrasive surface and a series of annular flaring spaces opening at their apices into the shell, a suction-chamber about the shell, and an agitator provided with an abrasive surface and rigid pressure-blades projecting beyond such surface and having toothed working edges.

6. In a machine of the class described, a scouring-shell having an inner abrasive surface, and an agitator working within the shell and having a continuous abrasive surface and blades projecting beyond such surface, said blades being of a saw-toothed formation.

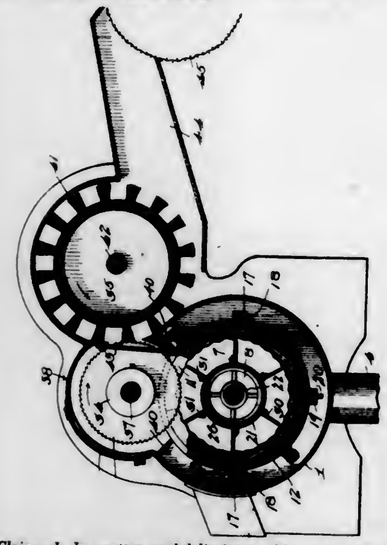
7. In a machine of the class described, a scouring-shell having an inner abrasive surface provided with a spiral groove, and an agitator having an exterior abrasive surface and a plurality of pressure-blades projecting beyond such surface, said blades having toothed edges and arranged in spiral order.

8. In a machine of the class described, a scouring-shell consisting of a series of parallel-spaced abrasive rings each having sections of a spiral groove therein, and an agitator having an abrasive surface and toothed pressure-blades projecting beyond such surface.

9. In a machine of the class described, a cylindrical scouring-shell comprising a continuous series of cross-sectionally triangular abrasive rings spaced apart to leave intervening discharge-slits, and an agitator working in said shell.

10. In a machine of the class described, a cylindrical scouring-shell comprising a series of circular holders arranged in spaced relation, each of said holders being provided with opposite side hangers and a bottom keeper-lug, an abrasive ring fitted in each of the holders, an outer suction-case having therein side supporting-bars engaged by said hangers and a bottom supporting-bar engaged by said lug, and an agitator working within the shell.

821,256. **COTTON-SEED-DELINTING MACHINE.** WILLIAM A. RAGSDALE, Washington, D. C., assignor to International Cotton Seed Delinting Company, Washington, D. C., a Corporation of Maine. Filed Nov. 17, 1905. Serial No. 287,812.



Claim.—1. In a cotton-seed-delinting machine, a scouring-shell having a perforate body portion, suction discharging means for maintaining a draft through said body portion, an agitator within the shell, and means for admiting air into the shell through the center thereof and circulating the same from the center outward through the perforate body portion of the shell.

2. In a delinting-machine, a cylindrical scouring-shell consisting of a series of spaced abrasive rings, an agitator within the shell, suction discharging means including an outer suction-case arranged about the shell, a closed saw-chamber disposed at one side of the suction-case, a brush-casing arranged at one side of the saw-chamber and in communication therewith, a ribbed draft-cut-off screen located between the brush-casing and the saw-chamber, a cylinder of rotary circular saws mounted within the saw-chamber and projecting into the shell through the spaces between the rings thereof, said saws also extending through said draft-cut-off screen, and a rotary discharging-brush arranged within the brush-casing and operating against the saws.

3. In a delinting-machine, a scouring-shell having a perforate body portion, an agitator within the shell, means for admitting air into the shell through the center thereof, suction discharging means including an outer suction-case arranged about the shell, and rotary circular separating-jaws projecting into the shell through the perforate body portion thereof.

4. In a delinting-machine, an abrasive scouring-shell having a perforate body portion, a combined agitator and air-feeding distributer arranged within the shell, suction discharging means for removing short fiber and trash from the perforate body portion, and separating-saws projecting into the shell through said perforate body portion.

5. In a delinting-machine, an outer case, a scouring-shell having an inner abrasive surface and a series of annular flaring spaces opening at their apices into the shell, an agitator, and circular rotating saws projecting into the shell through said flaring spaces.

6. In a delinting-machine, a cylindrical scouring-shell comprising a continuous series of cross-sectionally triangular abrasive rings spaced apart to leave intervening discharge-slits, suction discharging means for maintaining a suction through said slits, separating-saws projecting into the shell through said slits, and an agitator working in said shell.

7. In a delinting-machine, a scouring-shell having a perforate body portion, suction discharging means for maintaining a draft through the perforate body portion, and a combined rotary agitator and air-distributer arranged within the shell and having a hollow perforate body portion in communication with the outer air.

8. In a delinting-machine, a scouring-shell, and a combined rotary agitator and air-distributer working in the shell and having a hollow perforate body portion in communication with the outer air.

9. In a delinting-machine, a scouring-shell, and a combined rotary agitator and distributer operating within the shell and having a perforate body portion, and a plurality of rigid pressure-blades projecting through said body portion.

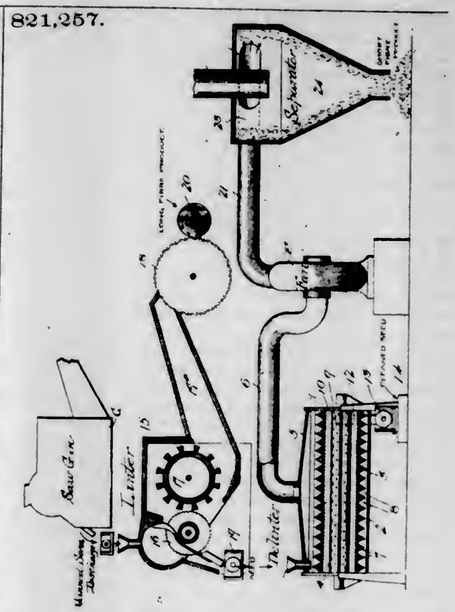
10. In a delinting-machine, a scouring-shell, and a combined rotary agitator and distributer operating within the shell and having a perforate body portion, and a plurality of rigid pressure-blades projecting through said body portion, said pressure-blades having saw-tooth working edges.

11. In a delinting-machine, a scouring-shell, and a combined rotary agitator and air-distributer consisting of a shaft, a plurality of spaced spiders mounted on the shaft and having double-flanged rim portions and radial fastening-lugs, a hollow air-drum made up of a plurality of axially-alined perforate shell-sections fitted on the rim portions of the spiders, and pressure-blades arranged on the drum and secured to said fastening-lugs, the said air-drum having communication at its ends with the outer air.

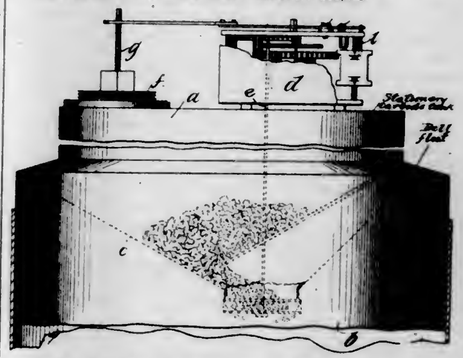
821,257. **SYSTEM OF DELINTING COTTON-SEED AND RECOVERING LINT.** WILLIAM A. RAGSDALE, Washington, D. C., assignor to International Cotton Seed Delinting Company, Washington, D. C., a Corporation of Maine. Filed Mar. 7, 1906. Serial No. 304,775.

Claim.—A system of treating cotton seed and lint consisting of the following instrumentalities: a ginning mechanism, a linting mechanism receiving the cotton-seed product from the ginning mechanism, and comprising means for removing from the seed a second-grade long fiber and eliminating such fiber from the succeeding delinting operation, a delinting mechanism receiving the linted seed from the linting mechanism and comprising means for moving from the seed the remaining short fiber thereon, said mechanism also having means for disintegrating the short fiber and trash as a step preliminary to the main separating step therefor, a suction appliance for drawing the short fiber from the delinting mechanism, and a separator receiving the discharge from the suction appliance, and comprising means for collecting from the blast a third-grade short fiber.

821,257.



821,258. **GAS-GENERATING APPARATUS.** HARRY B. ROUSE, Chicago, Ill. Filed Oct. 20, 1905. Serial No. 283,645.



Claim.—1. A gas-producing apparatus including a tank, a supply-chamber, a supply gate or plug for charging the supply-chamber, a feeding device for controlling the admission of material from the supply-chamber to the tank, a motor governing the operation of the feeding device, a member adapted when in one position to be interposed in the path of an element driven by said motor and when in another position to be removed from said path, said gate or plug serving when in closed position to prevent said member from arresting the operation of the motor-driven element, and means causing said member to be within the path of said motor-driven element when said member is free of said gate or plug.

2. A gas-producing apparatus including a tank, a supply-chamber, a supply gate or plug for charging the supply-chamber, a feeding device for controlling the admission of material from the supply-chamber to the tank, a motor governing the operation of the feeding device, a member adapted when in one position to be interposed in the path of an element driven by said motor and when in another position to be removed from said path, said gate or plug serving when in closed position to prevent said member from arresting the operation of the motor-driven element, and a spring causing said member to be within the path of said motor-driven element when said member is free of said gate or plug.

3. A gas-producing apparatus including a tank, a supply-cham-

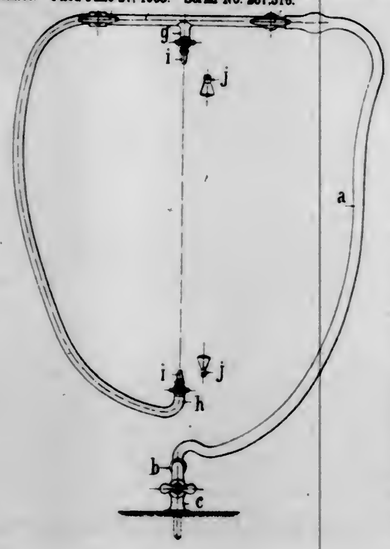
ber, a supply gate or plug for charging the supply-chamber, a feeding device for controlling the admission of material from the supply-chamber to the tank, a motor governing the operation of the feeding device, a member adapted when in one position to be interposed in the path of an element driven by said motor and when in another position to be removed from said path, said gate or plug serving when in closed position to prevent said member from arresting the operation of the motor-driven element, a spring causing said member to be within the path of said motor-driven element when said member is free of said gate or plug, and a stop limiting the movement of said member away from the path of said motor-driven element.

4. A gas-producing apparatus including a tank, a supply-chamber, a supply gate or plug for charging the supply-chamber, a feeding device for controlling the admission of material from the supply-chamber to the tank, a motor governing the operation of the feeding device, a member adapted when in one position to engage an element driven by said motor and when in another position removed from engagement with said motor-driven element, said gate or plug serving when in closed position to prevent said member from arresting the operation of the motor-driven element, a spring causing said member to engage said motor-driven element when said member is free of said gate or plug, and a stop limiting the movement of said member away from the path of said motor-driven element.

5. A gas-producing apparatus including a tank, a supply-chamber, a supply gate or plug for charging the supply-chamber, a feeding device for controlling the admission of material from the supply-chamber to the tank, a motor governing the operation of the feeding device, a member adapted when in one position to be interposed in the path of an element driven by said motor and when in another position to be removed from said path, said gate or plug serving when in closed position to prevent said member from arresting the operation of the motor-driven element, means causing said member to be within the path of said motor-driven element when said member is free of said gate or plug, and a stop limiting the movement of said member away from the path of said motor-driven element.

6. A gas-producing apparatus including a tank, a supply-chamber, a supply gate or plug for charging the supply-chamber, a feeding device for controlling the admission of material from the supply-chamber to the tank, a motor governing the operation of the feeding device, a member adapted when in one position to engage an element driven by said motor and when in another position removed from engagement with said motor-driven element, said gate or plug serving when in closed position to prevent said member from arresting the operation of the motor-driven element, means causing said member to engage said motor-driven element when said member is free of said gate or plug, and a stop limiting the movement of said member away from the path of said motor-driven element.

821,259. DOUCHE APPARATUS. CHARLES P. T. ROUX, Niort, France. Filed June 27, 1905. Serial No. 267,316.



Claim.—1. A douche apparatus comprising a rigid pipe adapted for attachment at one end to a flexible water-pipe and embodying a substantially straight portion, a branch extending laterally from said straight portion, a second branch or extension extending from the end of said pipe opposite the water connection and curved so that its discharge end opposes the discharge end of said first-named branch, and taps for independently controlling said branches.

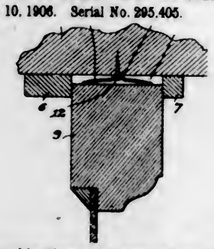
2. A douche apparatus comprising a rigid pipe having a substantially straight portion attached at one end to a flexible water-pipe, handles at either end of said straight portion, a tap operable by the handle adjacent the water connection, a rigid branch extending laterally from said straight portion intermediately thereof, a second branch or extension extending from the end of said straight portion which is opposite the water connection, and curved so that its discharge end opposes and is alined with said first-named branch, and taps for independently controlling said branches.

821,260. OIL-DRESSING FOR LEATHER. HEINRICH SCHOWALTER, Ladenburg, Germany. Filed Oct. 25, 1905. Serial No. 284,374.

Claim.—1. An improved preparation for the preservation and waterproofing of leather, consisting of train-oil mixed with a suitable quantity of a three-per-cent. solution of india-rubber in turpentine and one and one-half per cent. of anilin-oil.

2. A preparation for the preservation and waterproofing of leather, consisting of a train-oil mixed with anilin-oil and a solution of india-rubber in turpentine.

821,261. WEATHER-STRIP. EDWARD F. SHELLABERGER, Dekalb, Ill. Filed Jan. 10, 1906. Serial No. 295,405.



Claim.—The combination with a casing having a guide-groove, and a sash-stile having a plane edge throughout, of a transversely-flexible metal strip of shallow channel form throughout and having a narrow rounded bead on its outer surface coincident with its axis, said strip being secured through said bead to the bottom wall of the guide-groove and slidably contacting at its margins the adjacent edge of the stile inwardly of the corners of the latter, substantially as described.

821,262. SHIFT-KEY ACTION FOR TYPE-WRITERS. FRANK P. SHEPARD, Edmond, Okla., assignor to The Oliver Typewriter Company, Chicago, Ill., a Corporation of Illinois. Filed Dec. 15, 1904. Serial No. 236,973.



Claim.—1. In a type-writer of the "double-shift" type, the combination with a platen, a shifting frame and two shift-keys arranged to move the shifting frame in opposite directions from its central position and connections between each of said shift-keys and the shifting frame embracing two members which have limited relative movement, and springs applied to said members and holding the same yieldingly at one limit of such relative movement.

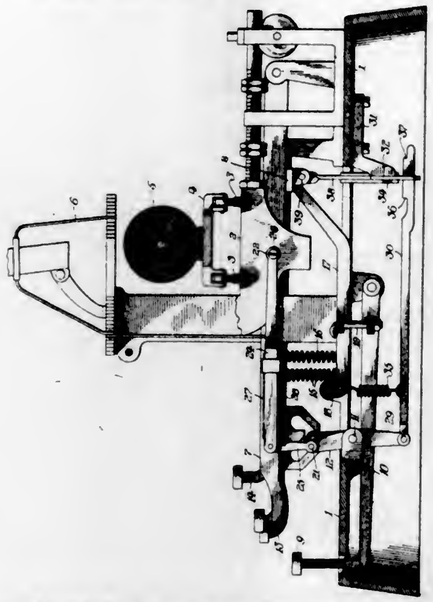
2. In a type-writer, the combination with a platen, shifting carriage and shift-key, of an elastic connection between the shift-key and shifting frame, comprising two concentrically-mounted rocking arms one of which is actuated by the shift-key and the other of which is connected with the shifting frame, and a spring yieldingly connecting said arms with each other.

3. In a type-writer, the combination with a platen, shifting frame and shift-key, of a connection between the shift-key and shifting frame, comprising two concentrically-mounted rocking arms one of which is actuated by the shift-key and the other of which is connected with the shifting frame, and a coiled spring, the opposite ends of which are connected with said rocking arms.

4. In a type-writing machine, the combination with a platen, shifting frame and shift-key, of a connection between the shift-key and the shifting frame embracing a rock-shaft provided with two rocking arms, one of which has limited rocking movement on the shaft, one of said arms being actuated by the shift-key and the other being connected with the shifting frame, and a coiled spring surrounding the shaft and connected at its ends with said arms.

5. In a type-writer, the combination with a platen, a shifting frame which shifts in both directions from a central position and two shift-keys, of connecting means between the shift-keys and the shifting frame embracing a rock-shaft provided with two rocking arms, both of which have limited rocking movement on the shaft, one of said arms being adapted for actuation by the shift-keys and the other being connected with the shifting frame, and two coiled springs each of which is connected at one end with one of said arms and at its opposite end with the said rock-shaft.

821,263. TYPE-WRITER. FRANK P. SHEPARD, Edmond, Okla., assignor to The Oliver Typewriter Company, Chicago, Ill., a Corporation of Illinois. Filed Dec. 15, 1904. Serial No. 236,974.



Claim.—1. In a type-writer, the combination with a platen, key-levers, a shifting frame and a shift-key, of a movable actuating member which is operated by the shift-key, an elastic connection between said movable actuating member and the shifting frame, means for locking the said movable actuating member in its shifted position, and means operated by the key-levers for releasing the said movable actuating member and permitting the same, together with the shifting frame, to return to their normal positions.

2. In a type-writer, the combination with a platen, key-levers, a universal bar, a shifting frame and a shift-key, of a movable actuating member which is operated by the shift-key, an elastic connection between said movable actuating member and the shifting frame, locking means for holding the said movable actuating member in its shifted position, and means operated by the universal bar for releasing the said movable actuating member.

3. In a type-writer, the combination with a platen, key-levers, a universal bar, a shifting frame and a shift-key, of a movable actuating member which is operated by the shift-key, an elastic connection between said movable actuating member and the shifting frame, locking means for the said movable actuating member embracing an endwise-moving locking-bar which is connected and moves with the said movable actuating member and is provided with a locking-shoulder, a stationary locking member coacting with said bar, a spring acting on the locking member to throw it into its locking position, and a releasing member connected with the universal bar and acting on the locking member to release the same.

4. In a type-writer, the combination with a platen, key-levers, a universal bar, a shifting frame and a shift-key, of a movable actuating member which is operated by the shift-key, an elastic connection between said movable actuating member and the shifting frame, a horizontally-arranged locking-bar which is connected and moved with the said movable actuating member, said locking-bar being provided with a locking-shoulder, a stationary locking member coacting with said locking-bar, a lifting-spring acting on said bar to throw its shoulder into engagement with the locking member, and a releasing-plunger connected and moving with the universal bar and which acts on the locking-bar to depress the same and release its locking-shoulder from said locking member.

5. In a type-writer, the combination with a platen, key-levers, a universal bar, a shifting frame and a shift-key, of a rock-shaft which is turned by the shift-key and is provided with a rigid arm having elastic connection with said shifting frame, locking means for said rocking shaft embracing a rigid arm on said shaft, a locking-bar pivoted to said arm and provided with a locking-shoulder, a stationary locking member coacting with said locking-bar, a spring acting on the locking-bar to effect engagement of the locking-shoulder thereon with said locking member, and a releasing-plunger connected and moving with the universal bar and acting on said locking-bar to release the same from said stationary locking member.

6. In a type-writer, the combination with a platen, a shifting frame, and a shift-key, of a connection between the said shift-key and the shifting frame embracing an endwise expansible and contractible connecting-rod consisting of two pivotally-connected members arranged in angular relation to each other, and a spring applied to yieldingly hold the outer ends of said members at a certain distance apart, whereby the effective length of the connecting-rod may be changed by the yielding of said spring.

7. In a type-writer, the combination with a platen, a shifting frame adapted to move in opposite directions from its normal position and two shift-keys, of a connection between the said shift-keys and the shifting frame embracing an endwise expansible and contractible connecting-rod consisting of two pivotally-connected members arranged in angular relation to each other, and two springs applied to yieldingly hold the outer ends of said members from spreading apart or moving toward each other, whereby the effective length of the connecting-rod may be increased or decreased by the yielding of one or the other of said springs.

8. In a type-writer, the combination with a platen, a shifting frame and a shift-key, of a connection between said shift-key and the shifting frame embracing an endwise expansible and contractible connecting-rod consisting of two pivotally-connected members one of which has the form of a bell-crank lever, and a spring applied to one of said members and acting on one arm of the bell-crank lever to yieldingly hold the other arm of said bell-crank lever in a certain angular relation to the other member, whereby the effective length of the connecting-rod may be changed by the yielding of said spring.

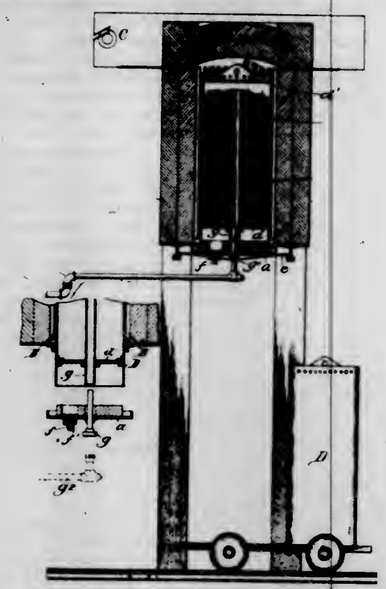
9. In a type-writer, the combination with a platen, a shifting frame, and a shift-key, of a connection between the shift-key and shifting frame embracing an endwise expansible and contractible connecting-bar consisting of two pivotally-connected members one of which has the form of a bell-crank lever having one of its arms normally at an angle to the other member and its other arm parallel therewith and two flat springs acting on the opposite sides of the parallel arm of the bell-crank lever to yieldingly hold the other arm of said bell-crank lever in a certain angular relation to the other member of said rod, whereby the effective length of said rod may be increased by the yielding of one or the other of said springs.

821,264. PROCESS OF TREATING WOOD FOR THE EXTRACTION OF TURPENTINE. FREDERICK T. SNYDER, Oak Park, Ill. Filed Dec. 1, 1905. Serial No. 289,731.

Claim.—1. The process of wood distillation which consists in inclosing the wood in a vessel having air-tight sides and top, heating said vessel in a furnace, drawing off the turpentine-vapors through the bottom of said vessel, removing said vessel in an upright position from the furnace to prevent access of air to the heated charcoal, and substituting in the furnace another vessel containing wood for similar treatment.

2. The continuous process of wood distillation which consists in maintaining the required temperature in a furnace having closed sides and top, charging said furnace with wood through an opening

in the bottom thereof, collecting the products of distillation, removing the resulting charcoal from the furnace through the bottom thereof while protecting said charcoal from access of external air thereto, separately cooling said charcoal apart from the furnace and in the absence of external air, and substituting a fresh charge of wood in the furnace while continuously maintaining the same at a temperature sufficient for distillation.



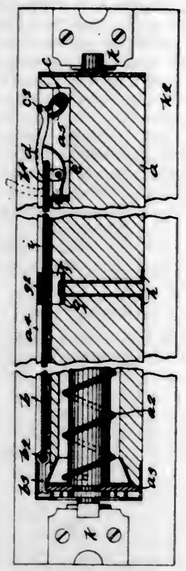
3. The herein-described process of treating wood which consists in inclosing the same in a vessel having air-tight sides and top, inserting said vessel in a furnace also having air-tight sides and top, through an opening in the bottom of said furnace, electrically developing heat in the interior of said furnace sufficient to produce destructive distillation of the wood, collecting the products of distillation, removing the said vessel with the resulting charcoal through the bottom of the furnace, while maintaining said vessel in an upright position to prevent the escape of the heated vapors and the consequent admission of air to the heated charcoal, and substituting another vessel containing wood for treatment, whereby the heat of the furnace is conserved and the charcoal removed therefrom in its heated condition without damage thereto by the external air.

821,265. WINDOW-SHADE ROLLER. JOHN R. STEPHENS, Lake Waccabuc, N. Y. Filed Sept. 26, 1905. Serial No. 280,163.

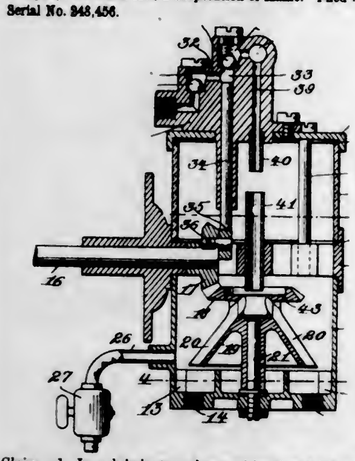
Claim.—1. A window-shade roller provided in one side thereof with a longitudinal groove, a rod pivoted in one end of said groove and adapted to lie therein and be swung outwardly therefrom, and means for locking said rod in said groove, comprising a curved arm pivoted in the end of the groove opposite that in which said rod is pivoted and adapted to pass through an eye in the end of said rod, and means for locking said arm in said groove, substantially as shown and described.

2. A window-shade roller provided in one side thereof with a longitudinal groove, a rod pivoted in one end of said groove and adapted to lie therein and be swung outwardly therefrom, and means for locking said rod in said groove, comprising a curved arm pivoted in the end of the groove opposite that in which said rod is pivoted and adapted to pass through an eye in the end of said rod, and means for locking said arm in said groove, consisting of a spring-hook adapted to engage the free end thereof, substantially as shown and described.

3. A window-shade roller provided in one side thereof with a longitudinal groove, a rod pivoted in one end of said groove and adapted to lie therein and be swung outwardly therefrom, and means for locking said rod in said groove, consisting of spring-clamps sunk in the middle portion of said groove and a curved spring-arm in the end portion of said groove opposite that in which said rod is pivoted and adapted to pass through an eye in the end of said rod and a fastening device operating in connection with said arm, substantially as shown and described.



821,266. LUBRICATOR. THOMAS L. STURTEVANT, Quincy, and THOMAS J. STURTEVANT, Wellesley, Mass., assignors to Sturtevant Mill Company, Portland, Me., a Corporation of Maine. Filed Mar. 6, 1905. Serial No. 248,456.



Claim.—1. In a lubricator, the combination with an inclosed chamber provided with a suitable inlet and with a series of oil receptacles or pockets each of which has an outlet, of a movable automatic distributer located within said chamber and overhanging said pockets, operating means, also within said chamber, for said distributer, and means for feeding oil to the outer surface of said distributer.

2. In a lubricating device, the combination with a chamber provided with a plurality of outlets and with a suitable inlet, of a downwardly-flaring conical rotary distributer within said chamber, and automatic means within said chamber for feeding oil to the outer surface of said distributer.

3. In a lubricating device, the combination with an inclosed chamber provided with a suitable inlet and with a series of oil receptacles or pockets each of which has an outlet, of a rotary distributer located within said chamber and overhanging said pockets, and a sight-feed delivering device, also within said chamber, for supplying oil to said distributer.

4. In a lubricating device, the combination with an inclosed chamber provided with a plurality of outlets and with a suitable inlet, of a rotary distributer located above said pockets within said chamber, and a sight-feed delivering device, also within said chamber, for supplying oil to said distributer.

5. In a lubricating device comprising an inclosed chamber provided with a plurality of outlets and a lubricant-inlet, of a rotary distributer within said chamber for distributing the liquid lubricant to the several outlets, force-feeding means, also within said chamber, for supplying the lubricant to said distributer, and a valved inlet to said chamber for enabling a lubricating fluid to be admitted to said chamber against internal pressure.

6. In a lubricating device comprising an inclosed chamber provided with a plurality of outlets and a lubricant-inlet, of a conical, grooved, rotary distributer within said chamber for distributing the liquid lubricant to the several outlets, means for supplying the lubricant to said distributer, and an inlet to said chamber by which fluid under pressure may be admitted thereto.

7. In a lubricating device, the combination with an inclosed chamber provided with a plurality of outlets and with a lubricant-inlet, of a force-pump within said chamber for feeding the lubricant to the said inlet, operating means for said force-pump, also within said chamber, and an oil-dividing mechanism, also within said chamber, for distributing the lubricant to the several outlets.

8. In a lubricating device, the combination with an inclosed chamber provided with a plurality of outlets and with a lubricant-inlet, of a force-pump within said chamber for feeding the lubricant to the said inlet, operating means for said force-pump, also within said chamber, and a movable distributer, also within said chamber, for delivering the lubricant to the said outlets.

9. In a lubricating device, the combination with an inclosed chamber provided with a plurality of outlets and with a lubricant-inlet, of a force-pump within said chamber for feeding the lubricant to the said inlet, a movable distributer, also within said chamber, for delivering the lubricant to the said outlets, and a sight-feed delivery device, also within said chamber, for supplying a liquid lubricant to said distributer.

10. In a lubricating device, the combination with an inclosed chamber provided with a plurality of outlets and with a lubricant-inlet, of a single force-pump for forcing the lubricant into said chamber, a downwardly-flaring, conical, rotary distributer for delivering the lubricant to the said outlets, and means for delivering from said force-pump to the outer surface of said distributer.

11. In a lubricating device, the combination with an inclosed chamber provided with a plurality of outlets and with a lubricant-inlet, of a single force-pump for forcing the lubricant into said chamber, a conical rotary distributer for delivering the lubricant to the said outlets, and a sight-feed delivery device for supplying a liquid lubricant to said distributer.

12. In a lubricator, the combination with an air-tight chamber provided with a suitable inlet and with a plurality of outlets, of a movable distributer within said chamber for delivering oil to said outlets, automatic means for operating said distributer, and means for admitting a pressure fluid to said chamber for forcing out the oil at said outlets.

13. In a lubricator, the combination with an air-tight chamber provided with a valved inlet and with a plurality of outlets, of a movable distributer within said chamber for delivering oil to said outlets, automatic means for operating said distributer, and means for admitting a pressure fluid to said chamber for forcing out the oil at said outlets.

14. In a lubricator, the combination with an air-tight chamber provided with a suitable inlet and with a plurality of oil receptacles or pockets each of which has an outlet, of a movable distributer within said chamber for delivering oil to the said receptacles or pockets, automatic means for operating said distributer, and means for admitting a pressure fluid to said chamber for forcing out the oil at said outlets.

15. In a lubricator, the combination with an air-tight chamber provided with a suitable inlet and with a plurality of oil receptacles or pockets each of which has an outlet, of a movable distributer within said chamber for delivering oil to the said receptacles or pockets, automatic means, also within said chamber, for operating said distributer, and means for admitting a pressure fluid to said chamber for forcing out the oil at said outlets.

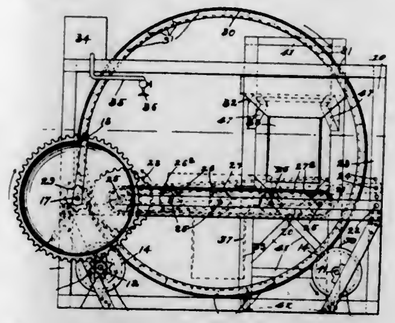
16. In a lubricator, the combination with an air-tight chamber provided with a valved inlet and with a plurality of oil receptacles or pockets each of which has an outlet, of a movable distributer within said chamber for delivering oil to the said receptacles or pockets, automatic means for operating said distributer, and means for admitting a pressure fluid to said chamber for forcing out the oil at said outlets.

17. In a lubricator, the combination with an air-tight chamber provided with a valved inlet, and with a plurality of oil receptacles or pockets each of which has an outlet, of a movable distributer within said chamber for delivering oil to the said receptacles or pockets, automatic means, also within said chamber, for operating said distributer, and means for admitting a pressure fluid to said chamber for forcing out the oil at said outlets.

18. In a lubricator, the combination with an inclosed chamber having a suitable inlet and a plurality of oil receptacles or pockets, of a horizontally-rotating distributer located within said chamber and overhanging said receptacles or pockets, and means, also located within said chamber, for feeding oil to said distributer.

19. In a lubricator, the combination with an inclosed chamber having a valved inlet and a plurality of oil receptacles or pockets, of a horizontally-rotating distributer located within said chamber and overhanging said receptacles or pockets, and means, also located within said chamber, for feeding oil to said inlet and thence to said distributer.

821,267. MIXING-MACHINE. THEODORE A. SWANSON and GEORGE E. BOYLE, Whittemore, Iowa. Filed May 27, 1905. Serial No. 262,534.



Claim.—1. In a mixing-machine, the combination with an open-ended rotatable drum, of an adjustably-supported endless conveyer located so as to travel within the drum and transversely thereof, means to raise and lower one end of the conveyer, and means to rotate the drum and to propel the conveyer, substantially as described.

2. In a mixing-machine, the combination with an open-ended rotatable drum having on its inner surface a series of ribs or cleats spaced apart, of an adjustably-supported endless conveyer located so as to travel within the drum and transversely thereof, means to retain the conveyer in a raised or lowered position, and means to rotate the drum and to propel the conveyer, substantially as described.

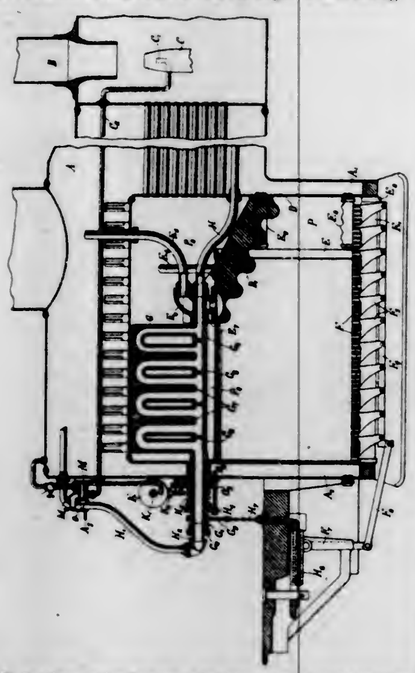
3. In a mixing-machine, the combination with an open-ended rotatable drum having on its inner surface a series of cleats or ribs spaced apart and curved in the direction opposite the movement of the drum, of an adjustably-supported endless conveyer located so as to travel within the drum and transversely thereof, means to raise and lower one end of the conveyer, a hopper having an inclined chute movably located so as to be used for supplying materials to the interior of the drum and adapted to be located so as to discharge the materials from the drum, and means to rotate the drum and to propel the conveyer, substantially as described.

4. In a mixing-machine, the combination with the main frame having horizontally-disposed beams at its sides, of a drum rotatably mounted within the main frame, a bar pivotally secured at one of its ends to each of said beams, rollers transversely journaled on said bars, an endless conveyer mounted on said rollers, means to secure the bars in a raised or lowered position, and means to rotate the drum and to propel the conveyer, substantially as described.

821,268. SMOKE-CONSUMING FURNACE. ROBERT L. WALKER, Brooklyn, N. Y. Filed Jan. 14, 1902. Serial No. 89,647.

Claim.—1. In a locomotive-furnace, a fire-box provided with a centrally-arranged vertical water-leg, a combustion-arch at the front end of the fire-box, there being a passage around the front end of the water-leg under said arch, a movable water-damper revolubly

mounted above said water-leg to close the passage on either side of said water-leg and behind said arch, said damper being formed with a sinuous tapering passage gradually increasing in cross-section from its inlet to its outlet, means to cause a circulation of water through said damper, a damper-sector secured to the shaft of said damper, a cylinder, a rack-frame actuated by said cylinder to operate said damper-sector, a controller to admit steam to said cylinder to operate said damper, said controller having a lower steam-inlet, opposite cylinder-pipes and an exhaust-pipe on the same level, a hollow tapered valve formed with a diagonal diaphragm, there being two exhaust-ports above said diaphragm and two steam-ports below said diaphragm to coact with said cylinder-pipes and said exhaust-pipe, a blast-pipe to cause an induced draft in said furnace, an automatic blast-valve to be operated by the throttle of said engine to increase the draft of said furnace when the engine is not running.



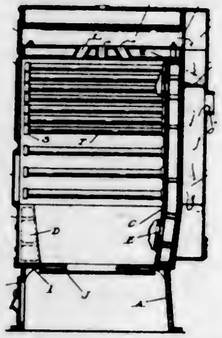
2. In a locomotive-furnace, a fire-box provided with grate-bars, a water-leg vertically arranged in the center of said fire-box, a frame upon which said water-leg is supported, said frame being mounted in brackets secured to said fire-box, trunnions formed on said frame to support said grate-bars, a combustion-arch in said fire-box extending across the forward end of the same, a water-cooled damper revolubly mounted in said fire-box above said water-leg to close the passage on either side of said water-leg, said damper being formed with a sinuous tapered passage gradually increasing in cross-section from the inlet to the outlet of said damper.

3. In a locomotive-furnace, a fire-box provided with a grate, a water-leg to divide said fire-box into two parts, a damper to close the passage on either side of said water-leg, a combustion-arch in said fire-box extending across the same in front of said damper, a blast-pipe to create an induced draft in said furnace and an automatic blast-valve normally operated by the throttle to admit steam to said blast-pipe when the engine is not operating, and means to prevent when desired the throttle operating the blast-valve.

4. In a locomotive-furnace, a fire-box provided with a grate, a water-leg to divide said fire-box into compartments, a movable damper mounted above said water-leg to close the top of one of said compartments while leaving a throat around said water-leg at the front of said fire-box and an automatic blast device normally adapted to cause an increased circulation of gases through said furnace when said engine is not running, and manually-operating means to prevent when desired automatic action of the blast device.

5. In a locomotive-furnace, a fire-box provided with a grate, a water-leg to divide said fire-box into compartments, a movable damper mounted above said water-leg to close the top of one of said compartments while leaving a throat around said water-leg at the front of said fire-box, an automatic blast device normally adapted to cause an increased circulation of gases through said furnace when said engine is not running, the throttle-lever, a lever normally adapted to engage with the throttle-lever and operate the blast device but so arranged that it can be swung upon its pivot out of the operating engagement with the throttle-lever, substantially as set forth.

821,269. HEATER. SEYMOUR D. WATSON, St. Johns, Mich. Filed July 31, 1905. Serial No. 272,063.



Claim.—1. In a heater, a horizontal water-wall forming the heater-top having a smoke-flue extending longitudinally therethrough and communicating with the interior of the heater, the said water-wall forming a jacket about the flue.

2. In a heater, the combination with a front, rear and side walls, and a horizontal water-wall forming the heater-top, provided with a smoke-flue extending longitudinally therethrough and one or more flues establishing communication between the smoke-flue and the heater interior.

3. In a heater, the combination with a heater-front, of side water-walls, an intermediate water-wall connecting the sides, a communicating horizontal water-wall forming the heater-top and having a smoke-flue extending longitudinally therethrough, and a plurality of vertically-extending flues leading from the interior of the heater into the horizontal flue.

4. In a heater, the combination with communicating side, intermediate and top water-walls, a smoke-flue leading longitudinally through the top wall and having communication with the interior of the heater, a smoke-box into which the smoke-flue leads and a detachable plate forming part of the heater-front, closing the forward end of said flue.

5. In a heater, the combination with front, rear and side walls, of a horizontal water-wall forming the heater-top having a horizontal smoke-flue formed therein and extending through one end, and a detachable plate forming a closure for said flue.

6. In a heater, the combination with side water-walls, of an intermediate water-wall connecting and communicating with the sides, and a front water-wall composed of independent complementary sections carried by the side walls.

7. In a heater, the combination with side water-walls and a front water-wall composed of independent abutting sections.

8. In a heater, the combination with side water-walls and a sectional water-wall forming the lower portion of the heater-front, the sections being relatively independent and having communication with the sides.

9. In a heater, the combination with inclosing water-walls forming the heater sides, rear and top, a vertical smoke-box having an outlet and an inlet at its upper end, a smoke-flue in the water-top having communication with the interior of the heater and with the smoke-box through its inlet, a return-flue between said inlet and outlet openings and means for compelling the passage of the smoke through said return-flue.

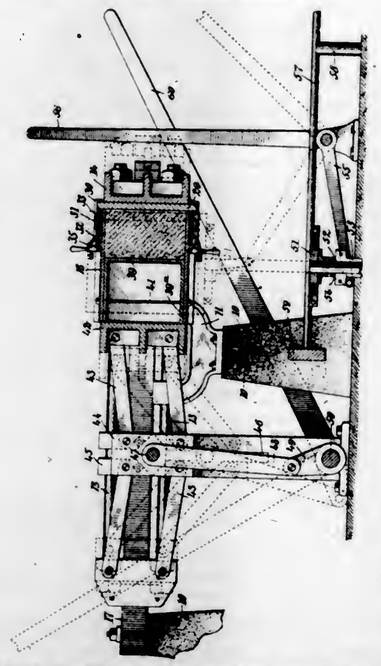
10. In a heater, the combination with the walls forming the front, rear, sides and top of the heater, of a vertical smoke-box having inlet and outlet openings in its upper end, a smoke-flue in adjacence to and extending horizontally of the top and having communication with the smoke-box through its inlet, a downwardly-extending return-flue connecting said inlet and outlet and a damper for permitting the direct discharge of the smoke or for compelling its passage through the return-flue.

11. In a heater, the combination with the heater-front, of communicating water-walls forming the heater sides, rear and top, a vertical smoke-box inclosing the rear wall of the heater and having inlet and outlet openings in its upper portion, a smoke-flue extending longitudinally through the top water-wall and communicating with the smoke-box through its inlet, a downwardly-extending return-flue within the smoke-box in communication with said inlet and outlet openings and a damper for compelling the discharge of the smoke through the return-flue.

12. In a heater, the combination with the heater front, rear and top, of a smoke-box provided with an outlet, a return-flue within the smoke-box, a smoke-flue establishing communication between the interior of the heater and the smoke-box near its outlet, and means for permitting the direct discharge of the smoke through the smoke-box or for compelling its passage through said return-flue.

13. In a heater, the combination with communicating front and side water-walls, of an intermediate water-wall connecting the sides, a plurality of communicating water-tubes supported by and projecting forwardly from the intermediate water-wall in the direction of the heater-front, a horizontal water-wall forming the heater-top and having communication with the sides, a smoke-flue extending longitudinally through the horizontal wall, and flues leading from the smoke-flue to the interior of the heater.

821,270. MOLDING-MACHINE. GEORGE P. WHITE, Wallace, Idaho. Filed Aug. 19, 1905. Serial No. 274,925.



Claim.—1. A molding-machine comprising a pair of heads, a movable press-head mounted between them, a toggle connecting said movable press-head with one of the first-mentioned heads, a cross-head connected with said toggle, and a toggle for operating said cross-head.

2. A molding-machine comprising a pair of heads, a movable press-head mounted between them, a toggle connecting said movable press-head with one of the first-mentioned heads, a cross-head connected with said toggle, a toggle for operating said cross-head, a shaft with which one member of the second toggle is rigidly connected, and means for oscillating the shaft.

3. In a molding-machine, the combination of a series of pillars or supports, chairs located on certain of said pillars, a rod supported by each chair, a pair of bars supported by others of said pillars in a position parallel to said rods, a head mounted on said rods, a second head movably mounted on said bars, means for forcing said second head away from the first head, a third head adjustably mounted on the rods, and an invertible mold mounted between the second and third heads.

4. In a molding-machine, the combination of a series of pillars or supports, chairs located on certain of said pillars, a rod supported by each chair, a pair of bars supported by others of said pillars in a position parallel to said rods, a head mounted on said rods, a second head movably mounted on said bars, means for forcing said second head away from the first head, a third head adjustably mounted on the rods, an invertible mold mounted between the second and third heads, said mold being mounted on trunnions located off center to balance the mold when filled with plastic material, and means on one of said trunnions for turning the mold.

5. In a molding-machine, the combination of a frame having horizontal guides, a press-head movable along said guides, a mold mounted between said guides and provided with trunnions, a plate for receiving said trunnions mounted on the guides, means on one of the trunnions for turning the mold about the trunnions as a center, and a stop-pin for the mold, said mold having recesses for receiving said stop-pin.

6. In a molding-machine, the combination of a frame having horizontal guides, a press-head movable along said guides, a mold mounted between said guides and provided with trunnions, a plate for receiving said trunnions mounted on the guides, means on one of the trunnions for turning the mold about the trunnions as a center, and a stop-pin for the mold, said mold having recesses for receiving said stop-pin, said recesses being located at an angle of ninety degrees to each other to provide for holding the mold in normal position, in inverted position, and on its side.

7. In a molding-machine, the combination of a mold provided with trunnions, a plate for receiving and supporting said trunnions, means on one of the trunnions for turning the mold about the trunnions as a center, and a stop-pin for the mold, said mold having recesses for receiving said stop-pin, and the recesses being located at an angle of ninety degrees to each other with respect to the center of the trunnion in order to provide for holding the mold in normal position, in inverted position, and on its side.

8. In a molding-machine, the combination of a mold provided with trunnions, a plate for supporting said trunnions, means for turning the mold about the trunnions as a center, and a stop-pin for the mold, said mold having recesses for receiving said stop-pin.

9. A molding-machine, comprising a mold having trunnions and a circular ledge on the end of the mold concentric with said trunnions and having a series of recesses, and a stop-pin adapted to enter the recesses in said ledge for holding the mold in different positions.

10. A molding-machine, comprising a frame, a mold mounted on trunnions on said frame, a stop-pin for said mold, a circular ledge on the end of the mold concentric with said trunnions, said ledge having a series of recesses for receiving said stop-pin, and a knee-lever for operating said stop-pin.

11. A molding-machine, comprising a frame, a mold mounted on trunnions on said frame, a stop-pin for said mold, and a circular ledge on the end of the mold concentric with said trunnions, said ledge having a series of recesses for receiving said stop-pin, said mold being provided with a movable core.

12. A molding-machine having an invertible mold provided with a plurality of core parts mounted to reciprocate different distances in the mold.

13. A molding-machine, comprising a mold having a core reciprocatingly mounted therein, and means for limiting the extent of reciprocation of said core, a reciprocable press-plate for operating the said core, and means for limiting the motion of said press-plate, the latter means giving a greater latitude of motion than the former means.

14. A molding-machine, comprising a mold having two bars, a core in the mold having a slot through which one of said bars passes, and a press-plate having a slot through which the other bar passes, said bars serving as stops for limiting the motion of the core and press-plate.

15. A molding-machine, comprising a mold having two series of bars extending across it, a core in the mold having a slot through which one of said bars passes, and a press-plate in the mold cooperating with the core and having a slot through which the other bar passes, said second slot being longer than the first.

16. A molding-machine, comprising a mold having two series of bars extending across it, a core in the mold having a slot through which one of said bars passes, and a press-plate in the mold cooperating with the core and having a slot through which the other bar

passes, said second slot being longer than the first, said slots being parallel with each other.

17. A molding-machine having a mold provided with a core, and a press-plate, said core and press-plate each being provided with a skirt normally extending beyond the rear side of the mold.

18. A molding-machine having a mold provided with a core, and a press-plate, said core and press-plate each being provided with a skirt normally extending beyond the rear side of the mold, the skirt of the press-plate extending farther from the surface of the mold than that of the core, the press-plate being provided with a perforation for receiving the core.

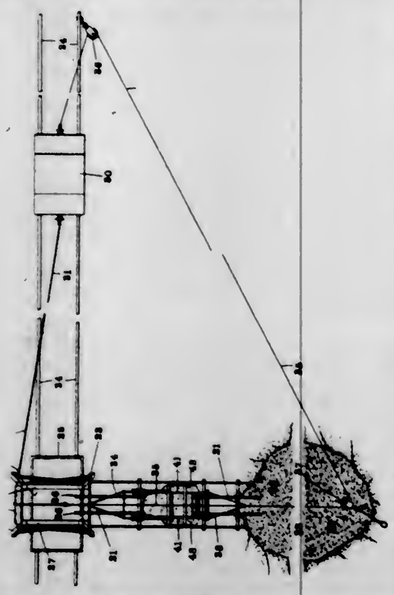
19. In a molding-machine, the combination of a frame, a mold mounted thereon, means for inverting the mold, a reciprocable core and a reciprocable press-plate in said mold, said press-plate having a perforation through which the core passes, and a platform adapted to be moved under the mold and to receive the molded article therefrom, the core and press-plate being adapted to descend a certain distance with the molded article as it is removed from the mold.

20. In a molding-machine, the combination of a mold, means on the mold for holding a pallet thereon, and means for releasing the pallet, comprising a hook movably mounted on the mold for engaging the pallet, resilient means for forcing the hook away from the pallet, and positive means for forcing the hook against the pallet.

21. In a molding-machine, the combination of an invertible mold, a platform mounted below said mold, means for raising the platform to a position adjacent to the bottom of the mold and for lowering the platform from the mold, means on the mold for holding a pallet on the top thereof, and means for releasing the pallet when the mold is inverted to deposit the pallet on said platform; said last-named means comprising a hook movably mounted on the mold for engaging the pallet, a spring for forcing the hook away from the pallet, and a cam for forcing the hook against the pallet.

22. In a molding-machine, the combination of a movable mold, a platform movably mounted below the mold, means for reciprocating the platform toward and from the mold, and a frame consisting of a pair of bars between which said platform is adapted to move, said bars being at such a distance apart as to admit the passage of the platform but to arrest the passage of the mold.

821,271. **EXCAVATING APPARATUS.** PAUL H. WHITE, Indianapolis, Ind. Filed July 10, 1905. Serial No. 269,046.



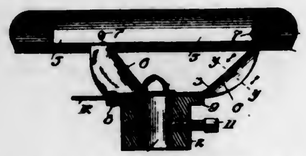
Claim.—1. An excavating apparatus comprising a railway-track, a locomotive adapted to travel reciprocally along said track, a trestle arranged over said track, a track leading from said trestle to the place whence the material is obtained, an excavator and carrier adapted to travel reciprocally over said last-named track, flexible connections connected to said excavator and carrier and running thence over suitable pulleys to said locomotive, and said pulleys.

2. The combination, in an excavator and carrier, of a frame, a bottom pivotally mounted on said frame, and a draft apparatus, said draft apparatus comprising a swinging bail, a catch for holding said bail, a member set in the path of the incoming load for disengaging said catch, and a link forming the immediate means of draft connected to said bail, whereby when the bail is held by the catch the excavator is caused to draw into the material and thus become loaded, and when detached from said catch the excavator is caused to draw up out of said material.

3. The combination, in an excavator and carrier, of a body, a pivoted bottom, a curved bail, a draft-link governed by said bail, a catch for said bail, and a member connected to said catch positioned in the path of the incoming load and thereby adapted to be operated to release the catch.

4. The combination, in an excavating apparatus, of an excavator and carrier having a pivoted bottom, a track over which said excavator and carrier travels whereby the bottom is normally held shut, which said track terminates at the point of discharge or dumping, and a second track onto which said excavator and carrier will pass as it is leaving said first-named track and whereby it will be suspended during the discharging operation.

821,272. **HAND-WHEEL.** HENRY J. WIEGAND, Milwaukee, Wis., assignor to The Cutler-Hammer Mfg. Co., Milwaukee, Wis., a Corporation of Wisconsin. Filed Feb. 21, 1903. Renewed Mar. 7, 1906. Serial No. 304,777.



Claim.—1. In a hand-wheel, the combination with an annular, substantially semicylindrical sheet-metal rim, of a spider for supporting said rim in position.

2. In a hand-wheel, the combination with an annular, substantially semicylindrical sheet-metal rim formed from a single piece of material, of a spider for supporting said rim in position.

3. In a hand-wheel, the combination with an annular, substantially semicylindrical sheet-metal rim, of a spider formed from sheet metal for supporting the same in position.

4. In a hand-wheel, the combination with an annular, substantially semicylindrical sheet-metal rim formed from a single piece of material, of a sheet-metal spider formed from a single piece of material for supporting said rim in position.

5. In a hand-wheel, the combination with an annular, substantially semicylindrical sheet-metal rim, of a spider formed from sheet metal and having the outer ends of its arms attached to the under side of said rim for supporting the rim in position.

6. In a hand-wheel, the combination with an annular, substantially semicylindrical sheet-metal rim, of a spider formed from sheet metal having the arms thereof curved transversely and inclined rearwardly from the rim for supporting the same.

7. In a hand-wheel, the combination with an annular substantially semicylindrical sheet-metal rim, of radial arms for supporting the same.

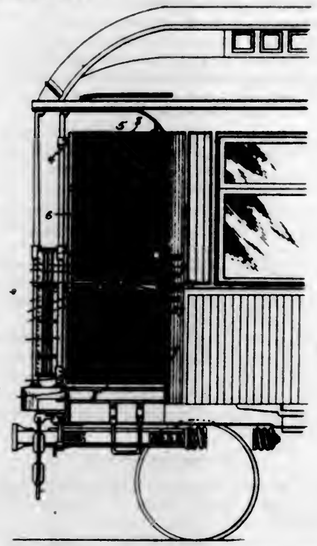
8. In a hand-wheel, the combination with an annular substantially semicylindrical sheet-metal rim, of radial sheet-metal arms for supporting the same.

9. In a hand-wheel, the combination with an annular substantially semicylindrical sheet-metal rim, of radial transversely-curved sheet-metal arms for supporting the same.

10. A hand-wheel comprising a rim adapted to be grasped by the hand of the operator and consisting of a circular sheet-metal transversely-curved plate, and a spider formed from sheet metal having the arms thereof attached to the inner face of the inside edge of said rim, substantially as described.

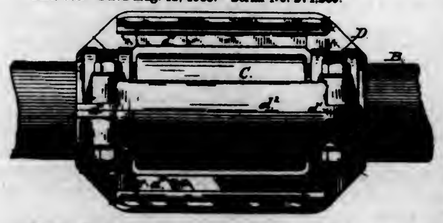
11. A hand-wheel comprising a hub, a spider formed from sheet metal mounted upon said hub and forming a cover for the opening therein, and a rim adapted to be grasped by the hand of the operator and consisting of a circular sheet-metal transversely-curved plate having its inner edge secured to the inner surface of said spider and its outer edge extended slightly farther beyond the face of the wheel than its inner edge, substantially as described.

821,273. **GATE-OPERATING MECHANISM FOR RAILWAY-CARS.** WILLIAM S. WRIGHT, Wheeling, W. Va. Filed Oct. 13, 1905. Serial No. 282,536.



Claim.—In a gate-operating mechanism for railway-cars, the combination with the front end of a car, of a two-section folding gate, the front section of which is hinged upon a suitable support on the corner of the front of the car-platform, and the rear section of which is hinged to the rear edge of said front section, the hinges connecting said sections being mounted upon the outer face of the gate, a horizontal slot in each of said gate-sections, parallel bars defining the edges of said slots, a bell-crank mounted on the inner side of the dash, a crank-handle carried by one of the arms of said crank, a pitman connected to the other arm of said crank, a guide-rod attached to said dash, a slide movable upon said guide-rod and connected to the opposite end of said pitman, a lever pivoted at one end to said slide and projected through the slot in the front section of the gate, a vertical pivot having its ends mounted in said parallel bars substantially midway between the edges of said front gate-section, said lever being pivoted intermediate its ends on said pivot, a second vertical pivot with its ends mounted in the parallel bars of the rear gate-section, and a second lever pivoted at one end to the outer end of the first-mentioned lever and at its opposite end on said second pivot, whereby a forward sliding movement communicated to the slide imparts a folding movement to said gate, the front section folding inward and the rear section folding outward against said front section.

821,274. **CLAMP-GUIDE FOR PUMP-RODS.** ALDEN T. AMES, Galt, Cal. Filed Aug. 15, 1905. Serial No. 274,260.



Claim.—1. A clamp for pump-rods having a joint, comprising a pair of bands with means for securing them upon the rod, at opposite sides of the joint, and a web extending over the joint connecting the said bands.

2. A clamp for pump-rods comprising a pair of bands, a rigid connection therebetween and each band consisting of opposing halves adapted to embrace the rod between them, and bolts for securing and tightening said halves upon the rod.

3. A clamp-guide for pump-rods comprising a pair of bands with means for securing them upon the rod, webs uniting the bands and shoes on the webs.

4. A clamp-guide for pump-rods comprising a pair of bands, each composed of opposing halves with bolts for tightening them upon the rod, webs uniting said bands and shoes on the webs.

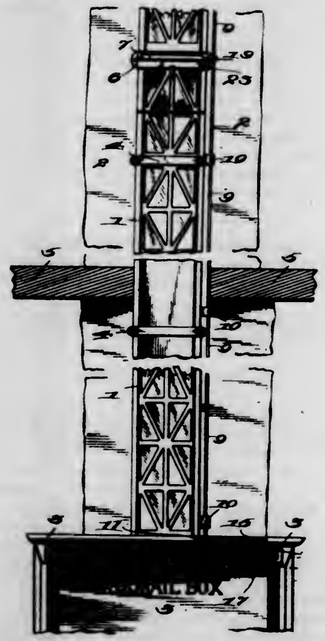
5. In combination with adjacent sections of a pump-rod and a coupling-sleeve into which their meeting ends are screwed, a pair of bands clamped upon said sections beyond the ends of said sleeve, and a web extending over said sleeve connecting said bands.

6. In combination with adjacent sections of a pump-rod and a coupling-sleeve into which their meeting ends are screwed, a pair of bands, each consisting of opposing halves fitted to the sections beyond the ends of said sleeves, separated webs for connecting the bands and bolts for clamping said halves upon the sections.

7. In combination with adjacent sections of a pump-rod and a coupling-sleeve into which their meeting ends are screwed, a pair of bands clamped upon said sections beyond the ends of said sleeve, webs uniting said bands and guide-shoes on said webs.

8. In combination with adjacent sections of a pump-rod and a coupling-sleeve into which their meeting ends are screwed, a pair of bands each consisting of opposing halves fitted to the sections beyond the ends of said sleeve, bolts for clamping said halves upon the sections, and webs uniting said bands and elongated guide-shoes on said webs.

821,275. **MAIL-CHUTE.** FRANK E. ANDERSON, New York, N. Y. Filed May 23, 1905. Serial No. 261,901.



Claim.—1. In a mail-chute having a plurality of mail-receiving apertures in different horizontal planes, covers for said apertures and means for simultaneously opening and closing said covers.

2. In a mail-chute having a plurality of mail-receiving apertures, covers for said apertures, devices for opening and closing said covers and means extending vertically along said chute whereby the operator may shift said covers simultaneously.

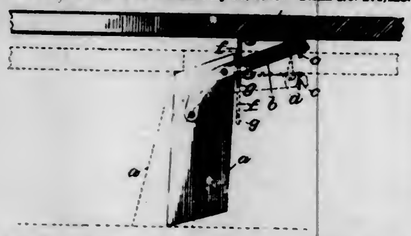
3. In a mail-chute having a plurality of mail-receiving apertures provided with covers, interdependent means for opening and closing said covers so that the entire chute may be placed simultaneously in operative or inoperative condition by an operator.

4. In a mail-chute having a plurality of mail-receiving aper-

tures provided with covers, means accessible only to authorized persons whereby said covers may be opened or closed simultaneously.

5. In a mail-chute having a plurality of mail-receiving apertures provided with covers, means for shifting said covers simultaneously to open or close the same, and means for securing all of said covers in open or closed position.

821,276. PIN-SETTER FOR BOWLING-ALLEYS. JOHN C. RACKUS, Smithport, Pa. Filed July 24, 1905. Serial No. 271,126.

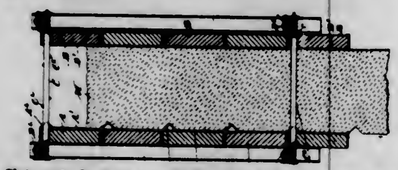


Claim.—1. In combination with a pin-setter frame having pin-openings, pin-guides disposed radially about said pin-openings and hinged to said frame at their upper ends, lugs limiting the swing of said guides about their hinges, said guides being of such length as to be operated by directly contacting the bed of the bowling-alley to come into a fixed position between said pin-cutter frame and said bowling-alley bed when same are brought adjacent to each other.

2. In combination with a pin-setter frame having pin-openings, the bed of a bowling-alley, three pin-guides disposed radially at angles of substantially one hundred and twenty degrees about each of said pin-openings and hinged to said frame at their upper ends, the lower unattached ends of said guides directly contacting the alley-bed and being operated thereby to slide thereon into a fixed position between said frame and said alley-bed when the frame is brought adjacent to the alley-bed.

3. Centering devices to be used in connection with pin-setting machines for bowling-alleys consisting of three centering members for each pin, each of said members being hinged to the pin-setting machine and of a length to directly contact with the alley-bed when in operation and in final operative position.

821,277. MEANS FOR CONSTRUCTING CONCRETE WALLS. CHARLES H. BELLARS, Lyndhurst, N. J. Filed Jan. 23, 1906. Serial No. 297,401.



Claim.—1. In an apparatus for constructing concrete walls, a series of moldboards for the exterior face of a wall, a series of moldboards for the interior face of said wall, stays for each of said series, located opposite each other in pairs, bolts extending through the lower portions of each pair of stays, through the lowermost board of each series and said wall, bolts extending through the upper portions of each pair of stays, and through the uppermost board of each series, and means carried by said bolts for engaging said wall when embedded therein, and means for disengaging said bolts.

2. In an apparatus for constructing concrete walls, a moldboard, bolt engaging said board and extending therethrough, and means carried by said bolt for engaging a wall when embedded therein, and means for disengaging said bolt.

3. A bolt for the purposes described, consisting of a tube, dogs pivotally mounted therein and constructed to swing through slots in said tube and protrude on the exterior thereof, and a rod adapted to be thrust through said tube and cause such protrusion and to be withdrawn to permit the retraction of said dogs.

4. In an apparatus of the character set forth, a stay, a bolt extending therethrough and having a screw-threaded or annularly-toothed end, a gear-wheel mounted on said stay and engaged with said screw-threads or teeth, means for turning said gear-wheel and moving said bolt and stay relatively to each other, and a controlling means for holding said gear-wheel against turning.

5. In an apparatus of the character set forth, two series of moldboards, a stay for each series, tubular bolts extending through said stays and the lowermost and uppermost boards of both series, teeth on the ends of said bolts, gear-wheels mounted on studs in said stays and engaged with said teeth, and nuts on said studs for frictionally holding said wheels when desired.

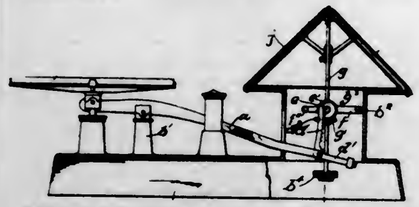
6. In an apparatus of the character described, moldboards constructed to match edge to edge to constitute a series, longitudinal ridges formed on the working faces of said boards, and removable transverse ridges constructed to engage the longitudinal ridges of two adjacent moldboards, substantially as and for the purposes set forth.

7. In an apparatus of the character described, moldboards constructed to match edge to edge to form a series, a metal covering for the working face of each of said boards, longitudinal ridges on said faces formed by shaping said metal covering, removable transverse ridges of sheet metal having tongues engaged in openings in the longitudinal ridges of two adjacent moldboards, substantially as and for the purposes set forth.

8. In an apparatus of the character set forth, an adjustable frame for forming openings in a wall, comprising vertical jamb-pieces, and laterally-extending adjustable hollow telescoping sections connecting said jamb-pieces.

9. In an apparatus of the character described, a moldboard having an opening extending longitudinally thereof, an outwardly-extending frame surrounding said opening, and having a slot in the upper face, and a slide received in said slot, all constructed to serve in forming a window-sill or like projection on a concrete wall, substantially as herein set forth.

821,278. WEIGHING-SCALE. JOHN G. BLESSING, Chicago, Ill., assignor to Joseph B. Cochran, Chicago, Ill. Filed Mar. 18, 1905. Serial No. 250,816.



Claim.—1. In a weighing-scale the combination with the scale-beam and beam-support of a rotatable dial having a conical exterior surface with product-numbers arranged in concentric rows thereon, a stationary reading member adjacent to said dial, a shaft whereto said dial is secured; a bevel gear-wheel fastened to said shaft for rotating it, and a second bevel gear-wheel adapted to mesh with the first, said second gear-wheel being bodily movable toward and from the first and being weight-influenced to approach it, said bodily-movable gear-wheel being driven from the scale-beam.

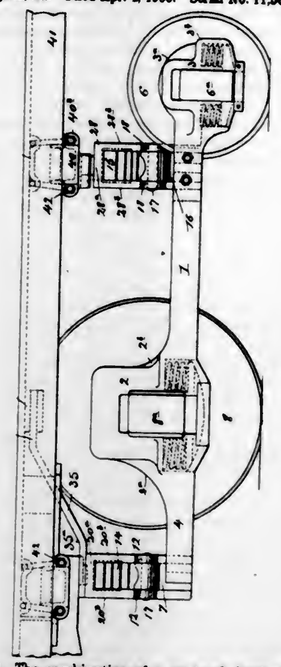
2. In a weighing-scale, the combination, with the scale-beam, beam-support and a reading member, of a dial rotatable about a vertical axis and operated by the scale-beam, said dial having product-numbers arranged in concentric rows thereon and having a conical exterior surface, a vertical shaft whereto said dial is secured, and a pair of intermeshing bevel-gears, one of which rotates said shaft and the other of which is rotated by the scale-beam, one of said gears being restrained from moving in an axial direction and the other being movable and weight-influenced to approach the first to thereby bring the dial to rest in correct position.

3. In a weighing-scale, the combination, with the scale-beam and beam-support, of a rotatable dial; means for reading said dial; a shaft whereon said dial is mounted; and a pair of intermeshing bevel-gears for rotating said dial, one of said bevel-gears being rigid on said shaft and the other being vertically movable and weight-influenced to approach the first for bringing the dial to rest in correct position, the vertically-movable bevel-gear being driven from the scale-beam.

4. In a weighing-scale, the combination, with the scale-beam and beam-support, of a rotatable dial; means for reading said dial; a shaft whereon said dial is mounted; and a pair of intermeshing bevel-gears, one of which rotates said shaft and the other of which is rotated by the scale-beam, one of said gears being restrained from moving in an axial direction and the other being movable and weight-influenced to approach the first to thereby bring the dial to rest in correct position.

5. In a weighing-scale, the combination, with the scale-beam and beam-support, of a rotatable dial; means for reading said dial; a shaft whereon said dial is mounted; and a pair of intermeshing bevel-gears for rotating said dial, one of said bevel-gears being rigid on said shaft, a pivotally-supported member wherein the other of said bevel-gears is mounted; said member being weighted for bringing its bevel-gear more closely into contact with the other bevel-gear; and gear connections between said movable bevel-gear and the scale-beam whereby the motion of said beam is imparted to the movable bevel-gear.

821,279. CAR-TRUCK. JOHN A. BRILL and WALTER S. ADAMS, Philadelphia, Pa. Filed Apr. 4, 1900. Serial No. 11,562.



Claim.—1. The combination of a car-truck having cross-bars and a spring extending transversely of the truck and movably supported by a cross-bar, with a bolster mounted upon said spring, and means interposed between the bolster and the cross-bar for permitting the bolster to have vertical movement while preventing lateral movement thereof.

2. The combination of a car-truck having a cross-bar and a spring extending transversely thereof and movably supported upon the cross-bar, with a bolster having a pair of opposed vertically-disposed plates spaced apart and receiving the spring between them and depending below the spring and receiving the cross-bar between them.

3. The combination of a car-truck having a cross-bar and a spring extending transversely thereof and movably supported upon the cross-bar, with a bolster having a pair of opposed vertically-disposed plates spaced apart and receiving the spring between them and depending below the spring and receiving the cross-bar between them, and a projection extending from the cross-bar and located in a vertical slot in the bolster.

4. The combination of a car-truck having cross-bars and a spring extending transversely thereof and movably connected with the cross-bar, with a bolster comprising a horizontal plate having depending webs provided with a space between them in which said spring lies, and means for retaining the spring within said space.

5. The combination of a car-truck having cross-bars and a spring movably connected with a cross-bar, with a bolster comprising a horizontal plate having depending webs provided with a space between them in which said spring lies, means for retaining the spring within said space, said bolster depending below the spring and straddling the cross-bar, and provided with a slot receiving a projection on said cross-bar.

6. The combination of a car-truck having cross-bars, with two springs extending transversely of the car and each movably connected with a cross-bar, a bolster supported by one spring, a yoke supported by the other spring, and means interposed between said bolster and yoke for supporting a car-body.

7. The combination of a car-truck having cross-bars, with a spring extending transversely thereof and movably connected with a cross-bar, a yoke connected with said spring and depending therefrom and guided by the cross-bar, a wear-piece upon said yoke, and a wear-plate carried by a car-body above said wear-piece.

8. The combination of a car-truck having cross-bars and a spring extending transversely of the truck and movably connected with a cross-bar, with a yoke connected with and depending from the spring, said yoke having a vertical slot, a projection carried by the cross-bar and entering said slot, a wear-piece upon said yoke, and a wear-plate carried by a car-body above the wear-piece.

9. The combination of a car-truck and a spring extending transversely thereof and connected therewith, with a bolster carried by said spring, a car-body above said bolster, and a draw-bar having a head portion and two arms extending therefrom and connected with said bolster, and a car-body to which the head portion of a draw-bar is pivotally connected.

10. The combination of a truck having cross-bars and a spring extending transversely thereof and movably connected therewith, with a bolster carried by said spring and a draw-bar having a horizontal portion secured to the bolster, an upwardly and outwardly extending portion, and a horizontally-disposed head at the end thereof pivotally connected with a car-body.

11. The combination in a car-body, a beam extending transversely thereof and bent downwardly at its ends under the side sills of the body and having eyes at its ends, and a tie-bar connected with said eyes and extending therefrom upwardly to the central portion of the car-body, and means for attaching it thereto.

12. The combination in a car-body, a channel-beam extending transversely thereof and having its ends bent to pass under the sills of the body and provided with eyes at the ends thereof, with a pair of tie-bars attached to said eyes and extending therefrom upwardly to the central portion of the car, and a clip secured to said car and attached to the central portion of the tie-bars, substantially as described.

13. In a car-truck, the side frames and a transverse cross connection, links pivotally connected on the cross connection, bolts connecting the free end of the links, combined with a transversely-disposed leaf-spring supported by said bolts, and a channeled bolster receiving and resting upon said spring.

14. In a car-truck, the combination with a cross-bar of the truck-frame, a half-elliptic spring movably supported on said bar, a guide extending from the center of said spring and coacting below with the cross-bar, a car-body bearing carried by said guide over the spring.

15. In a car-truck, the combination with the cross-bar of the truck-frame, of a half-elliptic spring suitably mounted on said cross-bar, movable supports for the ends of said spring, and a bearing over said spring having a rounded surface adapted to coact with a car-body.

16. The combination with a car-truck equipped with a center bearing, a car-body-supporting bolster, of a spring traction-regulating appliance located on the end of the truck adjacent one set of wheels, whereby variation in traction is obtained on the wheels adjacent the bolster.

17. In a car-truck, the combination with a bearing-bolster and the driving-wheels, of a half-elliptic spring movably supported on a cross-bar of the truck located on the outside of said wheels, and provided with a bearing adapted to coact with a car-body, substantially as described.

18. A bolster comprising a cross-piece with centrally-depressed depending webs and slots in said webs the walls of which are adapted to engage guides on the frame of the truck.

19. A bolster comprising a cross-piece with oppositely-disposed and centrally-depressed depending webs having slots in their lower portions and strengthening-webs on the sides of said slots.

20. A bolster comprising a cross-piece with oppositely-disposed and centrally-depressed depending webs, and a draw-bar secured to said bolster.

21. A bolster comprising a cross-piece with oppositely-dis-

posed and centrally-depressed depending webs, and a draw-bar secured to the said cross-piece.

22. A bolster comprising a cross-piece with oppositely-disposed and centrally-depressed slotted webs, and side bearings on said cross-piece.

23. A bolster comprising a cross-piece with oppositely-disposed and centrally-depressed slotted webs, and a center bearing secured to said cross-piece.

24. A bolster comprising a cross-piece with oppositely-disposed and centrally-depressed slotted webs, side bearings, and a center bearing on said cross-piece.

25. In a car-truck, a bolster comprising a cross-piece and oppositely-disposed and centrally-depressed webs, and a frame provided with a transversely-disposed leaf-spring secured to and supporting said bolster.

26. In a car-truck, a bolster comprising a cross-piece and oppositely-disposed and centrally-depressed webs, and a frame with a cross-bar engaging said webs.

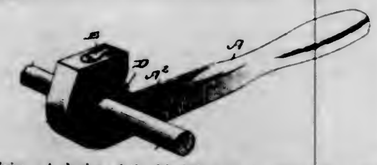
27. In a car-truck, a bolster comprising a cross-piece and oppositely-disposed and centrally-depressed webs with slots, a frame, a cross-piece on said frame engaging said webs, and projections on said cross-piece engaging said slots.

28. In a car-truck, a bolster comprising a cross-piece and oppositely-disposed and centrally-depressed webs, a frame, a leaf-spring supported by said frame, and secured to said bolster, and a cross-piece on said frame engaging said webs.

29. The combination of a car-truck having a cross member, a spring extending transversely thereof and adjacent the cross member, and movably supported by the cross member, a bolster supported by said spring, the spring, cross member, and bolster constituting the car-supporting means, a car-body above said bolster, and a draw-bar connected with said car-supporting means and with the car-body.

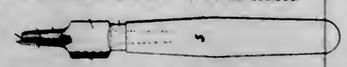
30. The combination of a truck having a cross member, a spring extending transversely thereof, and adjacent to the cross member, a bolster supported by the spring; the spring, cross member, and bolster constituting the car-supporting means, and a draw-bar connected with said car-supporting means, and adapted to be secured to the car-body.

821,280. **SPANNER-WRENCH.** THEODORE L. CHURCHILL and WILLIAM B. JONES, Winsted, Conn. Filed Sept. 5, 1903. Serial No. 172,107.



Claim.—A device of the kind described comprising a handle, said handle having a head portion bent back upon the handle, the said head and the adjacent portion of the handle being recessed, and the head having a slot formed in its periphery and communicating with the recess, said slot being enlarged adjacent its outer end to form shoulders, a flat spring secured upon the head and projecting over the slot, a plug carried by the spring and extending into the slot, and a pawl carried at the lower end of the plug, as and for the purpose set forth.

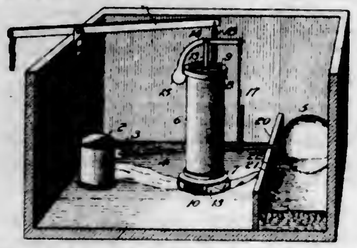
821,281. **BELT PUNCH AND CUTTER.** PATRICK F. COHEN, Newark, N. J. Filed Dec. 8, 1905. Serial No. 290,984.



Claim.—1. An article of the kind described, comprising a handle, and a flat blade set therein, said blade having a sharpened edge, and being bent on its outer end to form a cylindrical portion having a longitudinal slot, the cylindrical portion extending on both sides of the blade and having its free circular edge sharpened.

2. An article of the kind described, comprising a handle, and a flat blade set therein, said blade having a sharpened edge, and being bent on its outer end to form a tapered cylindrical portion having a longitudinal slot, the cylindrical portion extending on both sides of the blade and having the edges of the slot sharpened, the outer edge of the cylindrical portion being helical and sharpened.

821,282. **FLUSHING APPARATUS.** CHARLES H. COLVIN, Birmingham, Ala., assignor to Colvin Manufacturing Company, a Corporation of Alabama. Filed May 9, 1904. Serial No. 207,155.

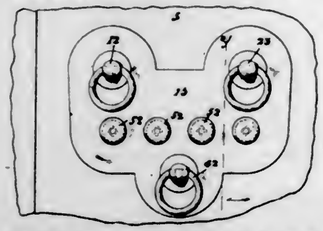


Claim.—1. The combination of a main tank, an auxiliary reservoir, an inlet-valve for the main tank, a float controlling said valve, a flush-valve, means to hold said flush-valve in its open position until tripped by said float in its descent, and means to reserve a body of water in said auxiliary reservoir for a determined time after the main tank is empty, said float being adapted to descend into said auxiliary reservoir whereby its movement toward the point where it will trip said flush-valve is retarded, the outflow of water from said auxiliary reservoir being unaffected by the water discharged into the main tank through said inlet-valve.

2. In combination, a main tank, an auxiliary reservoir, means to regulate the flow of water from said reservoir into the tank after the latter is substantially empty, a flush-valve to control the discharge of water from said tank, means to set said valve open, a float controlling the admission of water to the tank which descends into said auxiliary reservoir as the tank empties itself, said means, for setting said flush-valve open, being operated by said float to cause said flush-valve to seat when the float reaches a predetermined point in said reservoir.

3. In a flushing-tank, the combination therewith of an auxiliary reservoir an inlet-valve so disposed as not to discharge water into said reservoir after the main tank is emptied, a flush-valve, a float to control the operation of said inlet-valve and the closing of said flush-valve, said float being controlled and actuated by the water in the main tank throughout part of its operating positions, and by the water in said reservoir throughout the rest of its operating positions.

821,283. **LOCK.** ROBERTI DARIO, Newark, N. J. Filed June 17, 1905. Serial No. 265,748.



Claim.—1. The improved door-lock herein described, comprising a casing, adapted to be attached to the door, containing a latch-bolt, said bolt being arranged horizontally in bearings of said casing and at one end being beveled and at the opposite end provided with a handle, a spring within said casing to throw the bolt into engagement with a nosing, a handled bolt adapted to be operated from the outside of the door, a lever for transmitting motion from said handled bolt to said latch-bolt for drawing the latter when released back from the nosing, a series of tumblers adapted to lock said latch-bolt, a series of independent devices for operating the respective tumblers, said devices having manually-operated connections adapted to be operated at the outside of the door, substantially as set forth.

2. The improved door-lock herein described, comprising a casing, adapted to be attached to the door, containing a latch-bolt having notches, a series of tumblers disposed to enter said notches and lock said latch-bolt, ratcheted slides to operate the tumblers, pawls to operate said ratcheted slides and release said tumblers from the latch-bolt and manually-operated connections adapted to lie at the outside of the door and adapted to independently operate the tumblers, substantially as set forth.

3. The improved door-lock herein described, comprising a casing, adapted to be attached to the door, containing a latch-bolt having notches, a series of tumblers disposed to enter said notches and lock said latch-bolt, ratcheted slides to operate the tumblers, pawls to operate said ratcheted slides and release said tumblers trom the latch-bolt, and manually-operated connections adapted to lie at the outside of the door and adapted to independently operate the tumblers, and springs holding said ratcheted slides while the pawl makes return movements, substantially as set forth.

4. The improved door-lock herein described, comprising a casing, adapted to be attached to the door, containing a latch-bolt having notches, a series of tumblers disposed to enter said notches and lock said latch-bolt, ratcheted slides to operate the tumblers, pawls to operate said ratcheted slides and release said tumblers from the latch-bolt and manually-operated connections adapted to lie at the outside of the door and adapted to independently operate the tumblers, and means for holding said latch-bolt in its unlocking position, the last said means being operable from the outside of the door.

5. The improved door-lock herein described, comprising a casing, adapted to be attached to the door, containing a latch-bolt longer than said casing and at one end having an exposed handle and at the opposite end adapted to engage a nosing, said latch-bolt having a series of tumbler-notches, means for throwing said latch-bolt longitudinally to its unlatched position, said means being operable from the outside of the door, a series of tumblers adapted to lock said latch-bolt, a series of independent devices for operating the respective tumblers, said devices having manually-operated connections adapted to be operated at the outside of the door, substantially as set forth.

6. The combination with the box-like casing having slideways, of a notched latch-bolt and means for moving the same by hand and a spring to give return movement to said latch-bolt, a manually-operated bolt coöperating to draw the latch-bolt back from the outside of the door, a bell-crank lever having an arm engaging the latch-bolt and operated by said manually-operated bolt, a stop-bolt adapted to hold said latch-bolt in its unfastened relation, a series of tumblers of varying lengths carried in suitable slideways of the casing, a sliding tumbler locking and releasing bar, said bar being slotted and having means in its slots to limit the movement of said bar, said bar being toothed at one end, a pinion engaging the toothed part and a shaft or arbor for operating said pinion, ratcheted slides to engage the tumblers, pawls to engage said slides and means for operating said pawls from the outside of the door, springs serving to prevent the ratcheted slides from falling, and a pivoted plate and means for operating the same from the front of the door to bring the ratcheted slides to their initial positions, substantially as set forth.

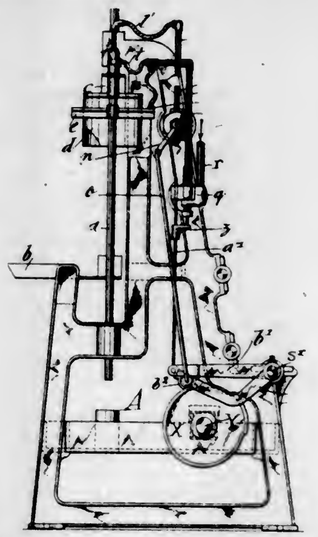
7. The combination with the box-like casing having slideways, of a notched latch-bolt and means for moving the same by hand and a spring to give return movement to said latch-bolt, a manually-operated bolt coöperating to draw the bolt back from the outside of the door, a bell-crank lever having an arm engaging the latch-bolt and operated by said manually-operated bolt, a stop-bolt adapted to hold said latch-bolt in its unfastened relation, a series of tumblers of varying lengths carried in suitable slideways of the casing, a sliding tumbler locking and releasing bar, said bar being slotted and having means in the slots to limit the movement of said bar, said bar being toothed at one end, a pinion engaging the toothed part and a shaft or arbor for operating said pinion, ratcheted slides to engage the tumblers, pawls to engage said slides and means for operating said pawls from the outside of the door, springs serving to prevent the ratcheted slides from falling, and a pivoted plate and means for operating the same from the front of the door to bring the ratcheted slides to their initial positions, said means comprising a link connection with the pivoted plate, a lever and manually-operated means for operating the lever.

821,284. **AUTOMATIC HAT-BLOCKING MACHINE.** CARL EICKEMEYER, Yonkers, N. Y., assignor to Turner Atherton & Co., Ltd., Stockport, England, a Corporation. Filed Oct. 25, 1905. Serial No. 284,366.

Claim.—1. In a hat-blocking machine, in combination, with the banding-shell, means for automatically supplying steam to the same during the banding operation, and automatic means for supplying water thereto during the setting operation.

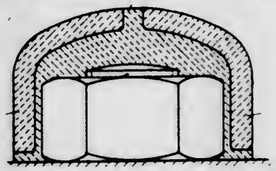
2. In a hat-blocking machine, a water-containing brim-setting ring provided at its under surface with a plurality of perforations.

3. In a hat-blocking machine, the combination, with the banding-shell, of a water-setting ring surrounding the same, means for automatically supplying steam to said shell during the banding operation, and means for automatically supplying water to said shell and ring during the setting operation.



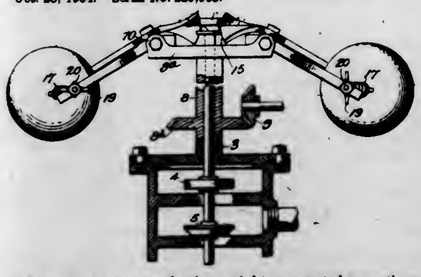
4. In a hat-blocking machine, a water-valve comprising a casing having an inlet at one side thereof, a valve-seat adjacent said inlet, a valve coöperating with said seat, a spindle for said valve guided in the upper portion of the casing, a spring surrounding said spindle and interposed between the valve and the upper portion of the casing, a shoe engaging the lower part of said spindle exteriorly of the casing, and means for raising and lowering said shoe.

821,285. **MEANS FOR THE PROTECTION OF SCREW-NUTS.** PAUL FEWSON, Hamburg, Germany. Filed May 29, 1905. Serial No. 262,928.



Claim.—Improved means for the protection of screw-nuts, rivets and bolt-heads in steam-boiler furnaces, consisting in a cap of fire-proof material for the reception of the screw-nut to be protected, said cap having a hole in its crown, substantially as described and shown and for the purpose set forth.

821,286. **ENGINE-GOVERNOR.** CHARLES GRANT, Brooklyn, N. Y., assignor of one-half to Richard Plunkett, New York, N. Y. Filed Oct. 25, 1904. Serial No. 229,965.



Claim.—1. A governor having weights supported upon the rotating frame by substantially universal joints so as to be capable of

lateral or vertical movement relatively to said frame, and means for utilizing both the lateral and vertical movements of said weights.

2. A governor having a rotated frame, yokes pivoted to the frame to swing vertically, and weights pivoted to the yokes to swing horizontally, and means for utilizing both the horizontal and the vertical movements.

3. A governor having a rotated frame, a lever mounted thereon with a substantially universal joint and carrying a weight at its outer end, and a cam at the inner end of said lever in engagement with the valve-stem to operate the same by the vertical movement of the weight and adapted also to operate the stem by the horizontal movement of the weight.

4. In a governor, the combination with a valve-stem, of a frame adapted to rotate about the same, yokes pivoted to the frame so as to move vertically, balls carried by laterally-moving arms pivoted to the yokes, springs connecting the balls with the yokes, and means connecting the arms with the valve-stems to operate the same when the balls change their relation with the yokes laterally or move vertically.

5. In a governor, the combination with a valve-stem, of a frame adapted to rotate about the same, pivoted yokes carried by the frame, laterally-swinging arms pivoted to the yokes and carrying the balls, a head on the valve-stem with an annular groove, cams on the inner ends of the arms and playing in the groove, and springs connecting the balls with the yokes.

6. A governor having its weights pivoted upon the rotated frame eccentrically to the same, and means for utilizing the momentum of the weights to operate the valve-stem when the rotary movement is varied.

7. A governor having its weights pivoted on lines radial to the valve-stem and at a point eccentric thereto, and springs for retaining the weights in normal position.

8. In a governor for engines, the combination with a valve-stem, of weights adapted to revolve around the stem, rotating means carrying the weights, springs attached to the weights and the rotating means and adapted to hold the weights normally in equilibrium, and means interposed between the stem and the weights whereby any change in the relation of the weights with the rotating means moves the stem while the springs tend to restore these parts to their normal relationship.

9. In a governor for engines, the combination with a valve-stem, of weights whose action is controlled by centrifugal force and gravity and the interruption of their momentum, and means connecting the weights with the stem to produce an accelerated movement of the latter when the rotation of the weights is interrupted.

10. In a governor for engines, the combination with a valve-stem, of weights and cams shaped to produce an accelerated movement of the valve-stem as the weights are shifted from their normal positions.

821,287. **MULTIPLE-UNIT CONTROL SYSTEM.** HENRY M. HARDING, New York, N. Y., and CHARLES M. CLARK, Summit, N. J. Filed Jan. 6, 1906. Serial No. 294,838.

Claim.—1. In a multiple-unit control system, a single pilot-wire extending throughout the train, and means for controlling the motor-circuits of the several cars to forward, stop, or reverse conditions therefrom.

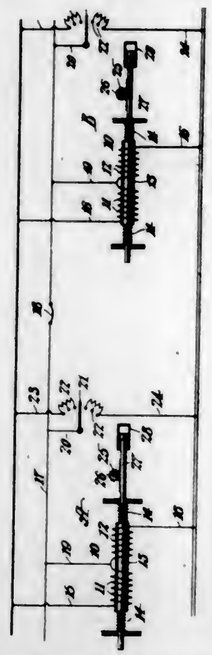
2. In a multiple-unit control system, a single pilot-wire extending throughout the train, and branch connections in the several cars for securing forward, stop, or reverse conditions of the car-motors by varying the potential of said pilot-wire.

3. In a multiple-unit control system, a single pilot-wire extending throughout the train, branch connections therefrom within the several cars, and magnetic devices within the several cars and operable from said pilot-wire for setting the motors to forward, zero, or reverse movement.

4. In a multiple-unit control system, a single pilot-wire extending throughout the train, magnetic devices within the several cars for controlling the motor-circuits thereof, and branch connections from said pilot-wire to said motor-circuits for arranging them in forward, zero or reverse relation of the motors.

5. In a multiple-unit control system, a single pilot-wire extending throughout the train, magnetic devices within the several cars for controlling the motor-circuits thereof, and branch connections from said pilot-wire for arranging said motor-circuits in any desired relation by varying the potential of said pilot-wire.

6. In a multiple-unit control system, magnetic devices within the several cars having differential or opposed windings, a single pilot-wire extending throughout the train, and connections from said pilot-wire to said magnetic devices at points between the opposed windings.



7. In a multiple-unit control system, magnetic devices upon the several cars having opposed or differential windings, means for normally impressing a continuous current in series through said opposed windings, a pilot-wire extending throughout the train, and branch connections from said pilot-wire to said magnetic devices at points between the opposed windings.

8. In a multiple-unit control system, magnetic devices on the several cars having opposed or differential windings, means for impressing a continuous current in series through said windings, a pilot-wire extending throughout the train and connected to said windings, and means for varying the potential of said pilot-wire whereby the relative effect of the opposed windings of each magnetic device is changed.

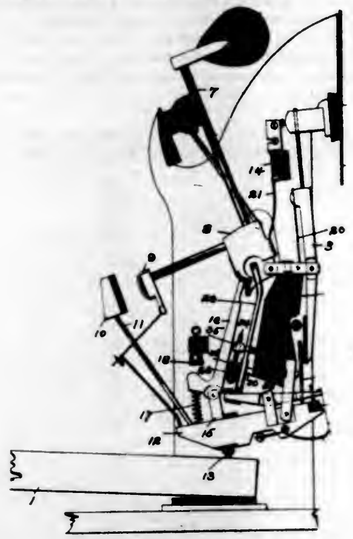
9. In a multiple-unit control system, a pilot-wire extending throughout the train, pilot-controller arms connected thereto, resistance-contacts in the path of said arms and respectively connected to the trolley and to the track-return, and magnetic devices upon the several cars for setting the motors to forward, zero or reverse rotation by the varying potential of said wire.

10. In a multiple-unit control system, magnetic devices upon the several cars having opposed windings through which the potential drops from its maximum value to zero, a pilot-wire extending throughout the train, and branch connections for varying the distribution of the potential drop through said windings of the magnetic devices.

11. In a multiple-unit system, a magnetic device constantly energized by the power-circuit, a pilot-wire connected to the windings of said magnetic device, and means for varying the potential of said pilot-wire.

821,288. **REPETITION PIANO-ACTION.** HENRY HAUSER, New Haven, Conn. Filed Mar. 30, 1905. Serial No. 253,809.

Claim.—In a piano-action, the combination with the action-rail; of a pivotally-mounted butt, having a hammer connected therewith; a wippen pivotally secured to said action-rail; a jack connected with said wippen and adapted to engage said butt; a repetition-lever pivotally secured between its ends to said wippen; spring means connected with said wippen and engaging one end of said repetition-lever; a stop-rail for limiting the movement of said repetition-lever and adjustable in the path of the free end thereof; and an auxiliary jack between said repetition-lever and butt, said auxiliary jack having contact with and adjacent to the free end of said repetition-lever and lying between said action-rail and stop-rail.



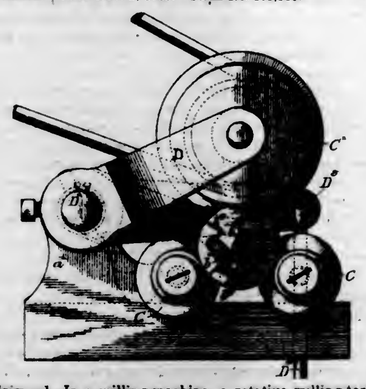
821,289. **NECKTIE.** FRANK L. HILL, Cincinnati, Ohio. Filed Sept. 13, 1905. Serial No. 278,214.



Claim.—1. A necktie, the inner side of which is provided at a predetermined distance from the ends thereof with holes or openings, and an elastic strip provided at its ends with hooks adapted to be inserted into said holes or openings, substantially as shown and described.

2. A necktie, the inner side of which is provided at a predetermined distance from the ends thereof with holes or openings, and an elastic strip provided at its ends with hooks adapted to be inserted into said holes or openings, said hooks being provided with backwardly-directed teeth, substantially as shown and described.

821,290. **MILLING-TOOL.** STEPHEN HORR, Woodstock, Ill., assignor to The Oliver Typewriter Company, Chicago, Ill., a Corporation of Illinois. Filed Nov. 2, 1903. Serial No. 179,506.



Claim.—1. In a milling-machine, a rotative milling-tool provided with an annular, peripheral bearing-surface, with a central bore which extends therethrough and, around said bore, with a milling-surface, said tool being constructed for the admission of the work through the periphery of the tool radially into the bore thereof, means engaging the said annular peripheral bearing-surface of the tool for supporting the same, and a rotative driving member engaging the said peripheral bearing-surface of the tool for giving thereto rotative motion.

2. In a milling-machine, a rotative milling-tool provided with a central bore which extends therethrough and around said bore with a milling-surface, said tool being made of two separable parts to permit the insertion of the work into the bore of the tool, and means engaging the periphery of the tool for giving rotative motion thereto.

3. In a milling-machine, a rotative milling-tool provided with a central bore which extends therethrough and around its central bore with a milling-surface, said tool being made of two separable parts to permit the insertion of the work into the bore of said tool, means for locking the parts of said tool together, and means engaging the periphery of the tool for giving rotative motion thereto.

4. In a milling-machine, a milling-tool comprising a centrally-apertured disk which is divided in a plane parallel with its axis, a longitudinally-divided tube seated in said aperture and extending at its ends beyond the opposing side faces of the disk and provided at its ends with milling-surfaces, and means engaging the periphery of the tool for giving rotative motion thereto.

5. In a milling-machine, a milling-tool comprising a centrally-apertured disk, a tube extending through the aperture of said disk and projecting at its ends beyond the opposing faces of the disk, and provided at its ends with milling-surfaces, said disk and tube being constructed for the admission of work radially into the central tube from the periphery of the disk, means for supporting the same engaging the periphery of the disk, and a rotative driving member engaging the periphery of the disk for giving rotative motion thereto.

6. In a milling-machine, a milling-tool comprising a disk which is centrally apertured to receive the work and is divided in a plane parallel with its axis, a milling-surface on the disk, a latch hinged to one of the parts of said disk and removably connected with the other part thereof, and means engaging the periphery of the tool for giving rotative motion thereto.

7. In a milling device, the combination with a milling-tool comprising a disk having a central aperture and provided around said aperture with a milling-surface, means whereby the work may be inserted into said aperture radially from the periphery of the tool, rotative supporting-disks with which said tool has peripheral engagement and upon which it is supported, and a driving-disk also having peripheral engagement with said tool.

8. In a milling-machine, the combination with a circular milling-tool provided with a milling-surface, supporting-rollers with which the tool has peripheral engagement and by which it is supported, a driving-disk having peripheral engagement with said tool, an arm in which said driving-disk is mounted, a rock-shaft rigid with said arm, means for rocking said shaft to move the driving-disk toward and away from the supporting-disk, a spring applied to said rock-shaft tending to normally hold said driving-disk away from the supporting-disk, and an arm adapted for connection with treadle or the like for depressing the driving-disk.

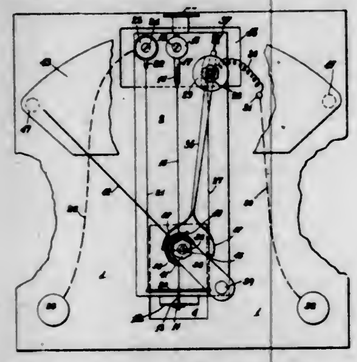
821,291. **BENZOYL SUCCINYL PEROXID AND PROCESS OF MAKING SAME.** ALEXIS C. HOUGHTON, Syracuse, N. Y. Filed Sept. 25, 1905. Serial No. 280,080. (Specimens.)

Claim.—1. An antiseptic compound, consisting of a monobasic peroxid derived from benzoic peracid and the anhydrid of succinic acid, which is characterized by the following properties: it is a colorless, crystalline body, posseses an aromatic odor and a sharp, peppery taste; in water it forms benzoic peracid and succinic acid, and it is an intense germicide.

2. An antiseptic compound, consisting of a monobasic peroxid derived from benzoic peracid and the anhydrid of succinic acid, which is characterized by the following properties; it is a colorless, crystalline body, posseses an aromatic odor and a sharp, peppery taste; it is soluble in chloroform, alcohol and benzene; insoluble in ligroin, and has a melting-point of about 96° centigrade; when placed in water it gradually goes into solution with the formation of benzoic peracid and succinic acid, and it is an intense germicide.

821,292. **ELECTRICAL MEASURING INSTRUMENT.** ADRIAN H. HOYT, Penacook, N. H., assignor to Whitney Electrical Instrument Company, a Corporation of New York. Filed June 7, 1904. Serial No. 211,479.

Claim.—1. In an electrical measuring instrument, the combination of a base, a support and all the working parts carried thereby, said support being movably mounted on said base, and a scale-plate fixed to said base, substantially as described.



2. In an electrical measuring instrument, the combination of a base, a support and all the working parts carried thereby, said support being pivoted on said base, and a scale-plate fixed to said base, substantially as described.

3. In an electrical measuring instrument, the combination of a base, a support and all the working parts carried thereby, said support being pivoted on said base, the axis of the pivoted support coinciding with the axis of the shaft carrying the indicating-needle, and a scale-plate fixed to said base, substantially as described.

4. In an electrical measuring instrument, the combination of a base, a support normally fixed during operation and having certain movable indicating parts carried thereby, said support being movably mounted on said base, and a scale-plate fixed to said base, substantially as described.

5. In an electrical measuring instrument, the combination of a support, a spring fixed to said support, a flexible strip pivotally mounted on said spring, compensating wires extending from said strip to a fixed support, a rod carried by said strip and at right angles thereto, a wire extending from one end of said rod to a fixed support, a second wire connected at the other end of said rod, and means connected with the opposite end of said second wire for taking up and indicating the expansion of said current-carrying wires, substantially as described.

6. In an electrical measuring instrument, the combination with a current-carrying wire, of means for multiplying the expansion of said wire, comprising a movable element, an arm carried by said movable element having two extensions, a pivoted shaft, and a connection between said two extensions and said pivoted shaft.

7. In an electrical measuring instrument, the combination with a current-carrying wire, of means for multiplying the expansion of said wire, comprising a movable element which takes up the expansion of said wire, two extensions carried by said element, a pivoted shaft, and a fiber connecting said two extensions and said pivoted shaft.

8. In an electrical measuring instrument, the combination with a current-carrying wire, of means for multiplying the expansion of said wire comprising a movable element which takes up the expansion of said wire, two extending parts carried by said element, a pivoted shaft, and a fiber from opposite sides of said pivoted shaft connected to said parts.

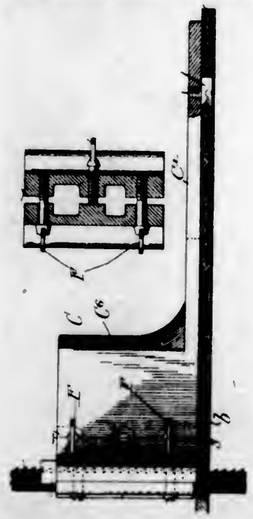
9. In a hot-wire instrument, the combination of an expansible wire, and means for multiplying the expansion of said wire comprising a movable element which maintains tension on said wire, two extensions carried by said element, at least one of said extensions being yieldable with reference to the other, a pivoted shaft, and a flexible connection between said extensions and said shaft.

10. In a hot-wire instrument, the combination of an expansible wire, and means for multiplying the expansion of said wire comprising a movable element which maintains tension on said wire, two extensions carried by said element, at least one of said extensions being yieldable with reference to the other, a pivoted shaft, and a fiber connected from opposite sides of said shaft to said extensions.

11. The combination of a current-carrying wire, a compensating wire, a pivoted shaft to which shaft said current-carrying wire is mechanically connected, and means for causing said pivoted shaft to turn and take up the expansion of said current-carrying wire, substantially as described.

12. The combination of a current-carrying wire, a compensating wire, a pivoted shaft to which shaft said current-carrying wire is mechanically connected, means for causing said pivoted shaft to turn and take up the expansion of said current-carrying wire, and means for multiplying the movement of said pivoted shaft, substantially as described.

821,293. **DEVICE FOR DRESSING BAND-SAWS.** HANS JOHANSEN, Chicago, Ill. Filed May 20, 1905. Serial No. 261,298.



Claim.—1. A device for dressing band-saws comprising a flat horizontal base adapted to rest upon the upper face of the saw-table, clamping-jaws extending forwardly therefrom and rising above the level of the base, said jaws being made integral with the base, and with each other at their rear margins, and provided near the forward margins of their proximate faces with vertical seats to receive abrading-bars, and means for adjusting the jaws toward each other.

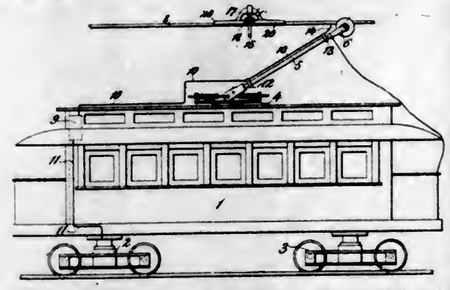
2. A device for dressing saws comprising a horizontal base formed at one end to constitute integral spring-arms, parallel holding-jaws rising from said spring-arms and provided on their inner faces at their forward margins with opposing vertical seats to receive abrading-bars or files, and means for adjusting said jaws toward and from each other.

3. A saw-dressing device comprising a horizontal base formed at one end to constitute spring-arms, parallel holding-jaws rising from and made integral with said spring-arms, said jaws being separated at their advanced margins to receive a saw, and provided in the proximate faces of their advance margins with vertical seats to receive abrading-bars or files, and means for adjusting said jaws toward and from each other, said jaws being connected at their rear margins by an integral web.

4. A device for dressing saws comprising parallel holding-jaws which are separated at their advance margins to receive a saw and provided on the inner faces of their advance margins with seats to receive abrading-bars or files, and means for adjusting the jaws toward and from each other comprising two screws extending loosely through one of the jaws and having screw-threaded engagement with the other jaw, and a third screw located between the other screws having screw-threaded engagement with the jaw through which the other screws loosely extend and bearing at its inner end against the other jaw.

821,294. **STATION-INDICATOR.** CHARLES E. JOHNSON, Indianapolis, Ind. Filed Jan. 20, 1905. Serial No. 243,433.

Claim.—1. In a station-indicator, the combination with a revoluble indicating-roller, a station-indicating belt or band partially encircling said indicating-roller and having its free ends extending backwardly therefrom, and a pair of winding or take-up rollers connected to the ends of said indicating belt or band, of a toothed wheel situated to contact with said indicating belt or band and arranged to rotate equally and simultaneously with the indicating-roller, opposing ratchets situated at the ends of said indicating-roller, pawl-levers or vibratory latches situated adjacent the ends of said indicating-roller, means for alternately throwing said pawls or vibratory latches into and out of engagement with their ratchets, means for swinging or vibrating said pawl-levers or vibratory latches and means for yieldingly checking and limiting the rotation of said indicating-roller.



2. In a station-indicator, the combination with a revoluble indicating-roller, a station-indicating belt or band partially encircling said indicating-roller and having its free ends extending backwardly therefrom, and a pair of winding or take-up rollers connected to the ends of said indicating band or belt, of a toothed wheel situated to contact with said band or belt and arranged to rotate equally and simultaneously with said indicating-roller, opposing ratchets situated at the ends of said indicating-roller, pawl-levers or vibratory latches adjacent the ends of said indicating-roller, means for alternately throwing said pawls or vibratory latches into and out of engagement with their ratchets, independently-operated electromagnets and independent lever connections connecting each of said levers or vibratory latches to said independently-operated electromagnets, and means for checking and limiting the rotation of said indicating-roller.

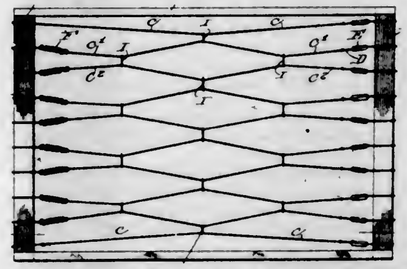
3. In a station-indicator, the combination with a revoluble indicating-roller, a station-indicating band or belt encircling the front peripheral surface of said indicating-roller and having its ends extending rearwardly therefrom, slidingly-supported trunnions or pivotal centers situated at each end of said indicating-roller whereon said indicating-roller freely turns, and means situated at each end of said indicating-roller for intermittently rotating the same in opposite directions, of a pair of take-up rollers provided with longitudinally-extending axial or concentric bores and situated to the rear of said indicating-roller, one of which rollers is connected to one end of said indicating belt or band and the other to the other end thereof, said rollers each comprising a longitudinally-extending spring-stem situated centrally within the bore of said roller, a coil-spring surrounding the said stem, said spring secured at one end to said spring-stem and at its opposite end to said roller, centers or trunnions slidingly supported at each of the ends of said take-up rollers, one of which trunnions is provided with a tongue adapted to engage the end of said spring-stem whereby the tension of the spring may be increased or diminished, and means for engaging said tongue-trunnion to prevent its rotation with the tension of the spring.

4. In a station-indicator, the combination with a revoluble indicating-roller, of a station-indicating band or belt encircling the front peripheral surface of said indicating-roller having its ends extending rearwardly thereof, slidingly-supported trunnions or pivotal centers situated at each end of said indicating-roller whereon said indicating-roller freely turns, opposing ratchets situated at the ends of said indicating-roller, pawl-levers or vibratory latches situated adjacent the ends of said indicating-roller, sleeves wherein said trunnions are slidingly supported, collars slidably mounted on said sleeves and means for yieldingly pressing said collars against said vibratory latches, a gear-wheel situated at one end of said indicating-roller between the ratchet and said roller, a gear-pinion meshing with the latter gear-wheel, a pinion-shaft and a knob for turning said shaft, and means for moving one of the pawl-levers or vibratory latches into engagement with its ratchet and disengaging the opposing pawl-lever or vibratory latch from its ratchet.

5. In a station-indicator, the combination with a revoluble indicating-roller of a station-indicating band or belt encircling the front peripheral surface of said indicating-roller having its ends extending rearwardly thereof, slidingly-supported trunnions or pivotal centers situated at each end of said indicating-roller whereon said indicating-roller freely turns, opposing ratchets situated at the ends of said indicating-roller, pawl-levers or vibratory latches situated adjacent the ends of said indicating-roller, sleeves wherein said trunnions are slidingly supported, collars suitably mounted on said sleeves, means for yieldingly pressing said collars against said vibratory latches, a gear-wheel situated at one of the ends of said indicating roller between the ratchet and said roller, a gear-pinion meshing with the latter gear-wheel, a pinion-shaft and a knob for turning said shaft, and means for retaining both of said pawl-latches or vibratory levers out of engagement with their ratchets to permit the free rotation of said indicating-roller.

6. In a station-indicator, the combination with a revoluble indicating-roller, of a station-indicating band or belt encircling the front peripheral surface of said indicating-roller having its ends extending rearwardly thereof, slidingly-supported trunnions or pivotal centers situated at each end of said indicating-roller whereon said indicating-roller freely turns, opposing ratchets situated at the ends of said indicating-roller, pawl-levers or vibratory latches situated adjacent the ends of said indicating-roller, pawl-lever-connecting rods, sleeves wherein said trunnions are slidably supported, collars slidably mounted on said sleeves, means for yieldingly pressing said collars against said vibratory latches, a gear-wheel situated at one of the ends of said indicating-roller between the ratchet and said roller, a gear-pinion meshing with the latter wheel, a pinion-shaft and a knob for turning said shaft, a pair of vertically-extending shafts situated adjacent each of said pawl-levers or vibratory latches, throw-out arms situated on each of said vertical shafts in position thereon to engage each of said connecting-rods to throw said pawls or vibratory latches out of engagement with their ratchet-wheels to permit the said indicating-roller to be operated by said knob-operated pinion, and means for simultaneously revolving both of said vertical shafts.

821,295. **SPRING-SUPPORT.** FRANCIS KARR, Holland, Mich. Filed Mar. 23, 1905. Serial No. 251,623.



Claim.—1. In an article of the class described, a detachable loop-guy in the form of a loop having two parallel sides of unequal length connected on an inclined side, one end of said loop being formed into a small loop on said inclined side and the other end being bent backwardly to form a part of said inclined side and having its extreme end formed into a loop adapted to detachably engage said small loop.

2. In an article of the class described, the combination with a spring, of means extending through said spring for limiting its extension, said means comprising an open link bent to form loops which project beyond said spring, each of said loops being formed with a shoulder tending to extend laterally beyond the coils of said spring, the free ends of said loops beyond said shoulder being projected inwardly.

3. The combination with a spring, of means extending through said spring for limiting its extension, said means comprising a link having one end thereof formed into a loop which projects longitudinally beyond said spring, part of said loop being bent so as to tend to extend laterally beyond said spring, the inner end of said loop being projected inwardly from said laterally-extending portion.

4. As a new article of manufacture, a spring-support, comprising a series of wires adjustably connected together by means of connecting-clips and secured to end pieces by means of loop-guys, said wires being attached to said loop-guys through the medium of loop, eyes, adjustment-strips, and limited springs.

5. As a new article of manufacture, a spring-support, comprising a series of wires adjustably connected together by means of connecting-clips and secured to end pieces by means of loop-guys, said

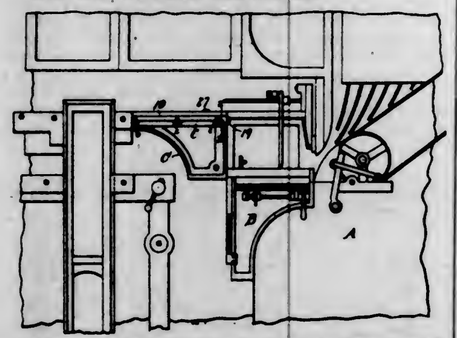
wires being attached at one end to said loop-guys through the medium of loop-eyes and adjustment-strips, and at the other end through the medium of loop-eyes and a limited spring.

6. As a new article of manufacture, a spring-support, comprising a series of wires secured to end pieces by means of loop-guys, the outer wires being attached without the use of springs, the inner wires being attached to the ends through the medium of loop-eyes, adjustment-strips and limited springs.

7. In an article of the class described, a spring-support and a reversible loop-guy, comprising a member adapted to be passed around a retaining-piece, one end of said member extending horizontally beyond the retaining-piece and turned backwardly at an acute angle terminating in a hook adapted to engage a hook formed on the other end of the member.

8. As a new article of manufacture, a spring-support comprising a series of inner wires connected together, and outer wires connected to the adjacent wires by means of limited springs, said wires being secured to the end pieces through the medium of loop-guys, loop-eyes and adjustment-strips.

821,296. **LINOTYPE-MACHINE.** PERRY B. KENT, Utica, N. Y., assignor to Mergenthaler Linotype Company, a Corporation of New York. Filed Oct. 20, 1905. Serial No. 283,089.



Claim.—1. In a linotype-machine, an adjustable matrix-guiding member disposed within the limits of the assembler in position to act on the outgoing matrices.

2. In a linotype-machine, an adjustable matrix-guide extending from the intermediate delivery-channel into the assembler.

3. In a linotype-machine, a guide-rail having an adjustable section arranged to extend into the assembler in position to act on the outgoing matrices.

4. In a linotype-machine, a guide-rail having an adjustable member arranged to present either a single or a double guideway for the matrix-lugs.

5. In a linotype-machine, a guide-rail adjustable to form either a single or a double guideway for the matrix-lugs.

6. In a linotype-machine, an intermediate channel having guide-rails, a portion of the rails being adjustable for engagement with the lugs of matrices delivered either in normal or raised position.

7. In a linotype-machine, a guide-rail forming a part of the intermediate delivery-channel, a block arranged at the entrance end of said rail and serving to direct the course of the matrices from the assembler to the rail, means for raising and lowering said block, and means for holding said block in the position to which it is adjusted.

8. In a linotype-machine, a guide-rail forming part of the intermediate delivery-channel, a preliminary guide-block arranged at the end of the rail, a manually-operable slide for adjusting the block, a link extending between the slide and block, a secondary link connecting the first link to a fixed portion of the rail, and a spring tending to hold the block in adjusted position.

9. In a linotype-machine, a guide-rail forming a part of the intermediate delivery-channel and having an adjustable section, and an adjusting means confined within the lines of the rail.

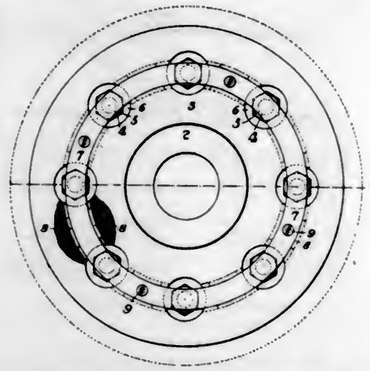
10. A matrix-guide having a vertically-yieldable section for engagement with the lower lugs of the matrices.

11. A matrix-guide having a vertically-yieldable portion for initial contact with the matrix-lugs.

12. A guide-rail having a cam-faced entrance end for engagement with the lower lugs of the matrices, a portion of the cam-face being vertically yieldable.

13. A guide-rail having a cam-shaped entrance end for engagement with the lower lugs of the matrices, and a pivotally-mounted spring-pressed member arranged to form a portion of said cam-face.

821,297. **BOLT-RETAINING DEVICE.** DAVID S. KOHLER, Pittsburg, Pa. Filed July 28, 1905. Serial No. 271,566.



Claim.—1. An element having a recess or pocket, a screw, stud or bolt, having a head or nut in the recess or pocket, and a retaining bar or strip arranged to be held in position over the recess or pocket by a partial rotation in either direction; substantially as described.

2. An element having a pocket with a nut, stud or bolt therein, and a retaining-bar arranged to be held by a partial rotation turning it into position over the pocket; substantially as described.

3. An element having a pocket with a nut, stud or bolt therein, a retaining-bar arranged to be held by a partial rotation turning it into position over the pocket, and means for holding the retainer in its turned position; substantially as described.

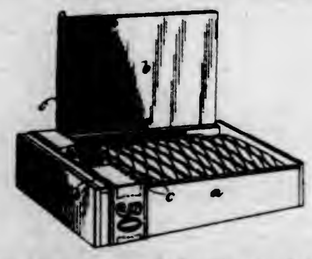
4. An element having a pocket or recess, and a retaining-plate held by its edges engaging undercut grooves in the element; substantially as described.

5. An element having a series of pockets or recesses, and a retaining-plate having edge portions held in retaining-grooves between the pockets; substantially as described.

6. An element having a series of pockets or recesses, a retaining-plate having edge portions held in undercut grooves between the pockets, and means for preventing movement of the retaining bar or plate; substantially as described.

7. A follower-ring having a circular row of pockets with arc-shaped grooves between them, and a retaining-ring held by lips within the grooves; substantially as described.

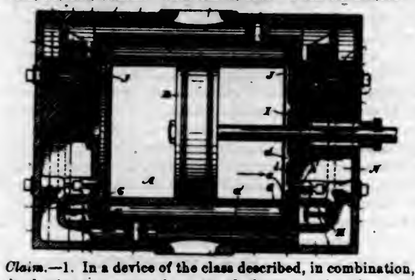
821,298. **BOX.** PATRICK H. LARKIN, Portsmouth, Va., assignor of one-third to Edward Anderson, Washington, D. C., and one-third to Robert T. Thorp, Norfolk, Va. Filed May 20, 1904. Serial No. 208,974.



Claim.—1. In a cigar-box, the hinged cover composed of two transverse separable sections of unequal size, connected by a weak bridge-joint, substantially as specified.

2. A box having a lid hinged at one edge and composed of sections having their adjoining edges extending at approximately a right angle to the hinge, and a breakable connection uniting said sections along the joint.

821,299. **AIR-COMPRESSOR AND THE LIKE.** ALPHONSE J. LAVOIE, Toronto, Canada. Filed Mar. 2, 1905. Serial No. 248,075.



Claim.—1. In a device of the class described, in combination, a cylinder having an open end, an annularly-arranged outlet-port, a water-jacket surrounding said cylinder, and inlet and outlet passages at opposite sides of said water-jacket, said jacket having ingress and egress ports, a head, having a centrally-disposed boss closing said open end, an annular partition surrounding and forming with said boss an annular inlet-port to said cylinder, a vertically-disposed partition forming with the annular partition-chambers to register with said passages, and annular inlet and outlet valves mounted in said head as and for the purpose specified.

2. In a device of the class described, in combination, a cylinder having an open end and an annularly-arranged outlet-port, a water-jacket surrounding said cylinder, inlet and outlet passages at opposite sides of said water-jacket, said jacket having ingress and egress ports, a head, having a centrally-disposed boss, an annular partition surrounding said boss and forming an annular port therewith, openings in said annular partition and chambers in communication with the open end of the cylinder, and annular valves mounted in said head and designed to open and close said inlet and outlet ports as and for the purpose specified.

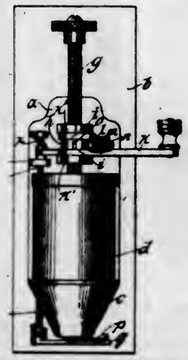
3. In a device of the class described, in combination, an open-end cylinder having an annularly-arranged outlet-port, a water-jacket surrounding said cylinder, inlet and outlet passages at opposite sides of said water-jacket, and a piston mounted in said cylinder, a head, having a centrally-disposed boss, an annular partition surrounding said boss and forming an annular port into said cylinder, stop-lugs extending outwardly and inwardly from said boss and partition respectively and forming bearings centrally disposed in relation to said port, a double-flanged valve supported in said bearings and closing said port, stop-lugs on said valve, lugs extending outwardly from said annular partition, similar lugs on the cylinder-head arranged to form with said lugs bearings centrally arranged in relation to said cylinder outlet-port, and a double-flanged valve guided in said bearings and designed to close said outlet-port as and for the purpose specified.

4. In a device of the class described, in combination, an open-end cylinder having annular outlet-ports, a water-jacket, inlet and outlet passages on opposite sides of said water-jacket and a piston mounted in said cylinder, a head, having a centrally-disposed boss, an annular partition surrounding said boss and forming an annular port into said cylinder, stop-lugs extending outwardly and inwardly from said boss and partition respectively and forming bearings centrally disposed in relation to said port, a double-flanged valve supported in said bearings and closing said port, stop-lugs on said valve, pins forming guides for the valve, recesses in said head, springs in said recesses, nuts on said pins, lugs extending outwardly from the annular partition, lugs extending laterally in radial relation with said lugs and forming therewith bearings centrally disposed in relation to said cylinder outlet-port, a double-flanged valve guided in said bearings, and springs located behind said valve, said valve being designed to close said outlet-port as and for the purpose specified.

5. In a device of the class described the combination with a cylinder, having an open end, of an annular outlet-port, radially-arranged inlet and outlet passages and a head inclosing said passages and cylinder proper and having an annular inlet-port and communicating passages thereto, of a double-flanged inlet-valve having stop-lugs and designed to close said inlet-port, and a double-flanged outlet-valve designed to close said outlet-port as and for the purpose specified.

821,300. **SOAP-FEEDING MACHINE.** ROBERT H. LITTLE, Chicago, Ill., assignor to Hoffheimer Soap Co., Chicago, Ill., a Corporation of Illinois. Filed June 3, 1905. Serial No. 263,513.

Claim.—1. A device of the class described, including a chamber for containing soap or other material and having an outlet, a piston therein, a threaded stem for the piston, a nut having threaded engagement with said stem and provided with a stationary mounting, and an operating-handle provided with a pawl adapted to engage said nut and rotate the same when the handle is moved in one direction, the pawl escaping the said nut when the handle is reversed in its movement.



2. A device of the class described, including a chamber for containing soap or other material and having an outlet, a piston therein, a threaded stem for the piston, a nut having threaded engagement with said stem and provided with a stationary mounting, an operating-handle provided with a pawl adapted to engage said nut and rotate the same when the handle is moved in one direction, the pawl escaping the said nut when the handle is reversed in its movement, and cutting mechanism operated by said handle.

3. A device of the class described, including a chamber for containing soap or other material and having an outlet, a piston therein, a threaded stem for the piston, a nut having threaded engagement with said stem and provided with a stationary mounting, an operating-handle provided with a pawl adapted to engage said nut and rotate the same when the handle is moved in one direction, the pawl escaping the said nut when the handle is reversed in its movement, cutting mechanism and an escapement device interposed between the handle and cutting mechanism whereby the cutter will not be operated while the handle is moving to effect a feed of the soap.

4. A device of the class described, including a chamber for containing the soap or other material and having an outlet, a feeding device including a threaded stem, a nut having threaded engagement with said stem, an operating-handle provided with a pawl adapted to engage said nut and rotate the same when the handle is moved in one direction, the pawl escaping the said nut when the handle is reversed in its movement, and a cutting device operated by said handle.

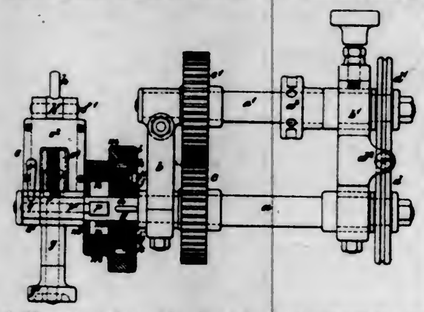
5. A device of the class described, including a chamber for containing soap or other material and having an outlet, feeding mechanism for feeding the material from the chamber, cutting mechanism for cutting the fed material, an oscillating handle operating both the feeding and cutting mechanisms, and an escapement device interposed between the cutting mechanism and the oscillating handle, whereby the cutting mechanism will not operate when the handle is moving in one direction to effect a feed of the soap, but which effects driving connection between the handle and cutting mechanism when the handle is operated in the reverse direction.

821,301. **INTERMITTENT GRIP DEVICE.** DWIGHT E. LYMAN, Hartford, Conn. Filed Sept. 22, 1905. Serial No. 279,067.

Claim.—1. The combination, with a shaft, of a clutch, comprising a friction-casing loosely mounted on the shaft, said casing having a friction-rim and a chamber, a disk secured to the shaft, and inclosed by said friction-rim, and carrying automatic means for interlocking said disk with said friction-rim in one direction, and an expansible and adjustable friction-ring seated in said chamber, a box loosely mounted for rotation on said shaft by the side of said clutch, said box carrying means for expanding said friction-ring and for rotating the same, whereby vibratory movement imparted to said box may be transmitted to stepwise rotate said shaft in one direction.

2. The combination, with a shaft, of a clutch, comprising a casing loosely mounted on the shaft, said casing having a friction-rim and a chamber, a disk secured to the shaft and inclosed by said fric-

tion-rim and carrying automatic means for interlocking said disk with said friction-rim in one direction, and a friction-ring seated in said chamber, means carried by said friction-ring for adjusting the same, a box loosely mounted on said shaft by the side of said clutch, said box carrying means for expanding said friction-ring and for rotating the same, whereby vibratory movement imparted to said box may be transmitted to stepwise rotate said shaft in one direction.



3. The combination, with a shaft, of a clutch, comprising a casing loosely mounted on the shaft, said casing having a friction-rim, and a chamber, a disk secured to the shaft and inclosed by said friction-rim and carrying automatic means for interlocking said disk with said friction-rim in one direction, and a friction-ring seated in said chamber, a set-screw in said friction-ring for adjusting the same, a box loosely mounted on said shaft by the side of said clutch, said box carrying means for expanding said friction-ring and for rotating the same, whereby vibratory movement imparted to said box may be transmitted to stepwise rotate said shaft in one direction.

4. The combination, with a shaft, of a clutch, comprising a casing loosely mounted on the shaft, said casing having a friction-rim and a chamber, a disk secured to the shaft, and inclosed by said friction-rim, and carrying cam-recesses and rollers for interlocking said disk with said friction-rim in one direction, and a friction-ring seated in said chamber, a box loosely mounted for rotation on said shaft by the side of said clutch, said box carrying means for expanding said friction-ring and for rotating the same, whereby vibratory movement imparted to said box may be transmitted to stepwise rotate said shaft in one direction.

5. The combination, with a shaft, of a clutch, comprising a casing loosely mounted on the shaft, said casing having a friction-rim and a chamber, a disk secured to the shaft, and inclosed by said friction-rim, and carrying cam-recesses and rollers and springs for holding said rollers in operative position for interlocking said disk with said friction-rim in one direction, and a friction-ring seated in said chamber, a box loosely mounted for rotation on said shaft by the side of said clutch, said box carrying means for expanding said friction-ring and for rotating the same, whereby vibratory movement imparted to said box may be transmitted to stepwise rotate said shaft in one direction.

6. The combination, with a shaft, of a clutch, comprising a casing loosely mounted on the shaft, said casing having a friction-rim and a chamber, a disk secured to the shaft and inclosed by said friction-rim and carrying cam-recesses and rollers for interlocking said disk with said friction-rim in one direction, and a friction-ring seated in said chamber, means carried by said friction-ring for adjusting the same, a box loosely mounted on said shaft by the side of said clutch, said box carrying means for expanding said friction-ring and for rotating the same, whereby vibratory movement imparted to said box may be transmitted to stepwise rotate said shaft in one direction.

7. The combination, with a shaft, of a clutch, comprising a casing loosely mounted on the shaft, said casing having a friction-rim and a chamber, a disk secured to the shaft and inclosed by said friction-rim and carrying cam-recesses and rollers and springs for holding said rollers in operative position for interlocking said disk with said friction-rim in one direction, and a friction-ring seated in said chamber, means carried by said friction-ring for adjusting the same, a box loosely mounted on said shaft by the side of said clutch, said box carrying means for expanding said friction-ring and for rotating the same, whereby vibratory movement imparted to said box may be transmitted to stepwise rotate said shaft in one direction.

8. The combination, with a shaft, of a clutch, comprising a casing loosely mounted on the shaft, said casing having a friction-rim and a chamber, a disk secured to the shaft and inclosed by the friction-rim and carrying cam-recesses and rollers for interlocking said disk with said friction-rim in one direction, and a friction-ring seated in said chamber, a set-screw in said friction-ring for adjusting the same, a box loosely mounted on said shaft by the side of said clutch, said box carrying means for expanding said friction-ring and for rotating the same, whereby vibratory movement imparted to said box may be transmitted to stepwise rotate said shaft in one direction.

9. The combination, with a shaft, of a clutch, comprising a casing loosely mounted on the shaft, said casing having a friction-rim and a chamber, a disk secured to the shaft and inclosed by said friction-rim, and carrying cam-recesses and rollers and springs for holding said rollers in operative position for interlocking said disk with said friction-rim in one direction, and a friction-ring seated in said chamber, a set-screw in said friction-ring for adjusting the same, a box loosely mounted on said shaft by the side of said clutch, said box carrying means for expanding said friction-ring and for rotating the same, whereby vibratory movement imparted to said box may be transmitted to stepwise rotate said shaft in one direction.

10. The combination, with a shaft, of a box loosely mounted on the shaft, a rod pivotally connected with said box, a friction-casing loosely mounted on said shaft, and a disk secured to said shaft, said friction-casing having a rim surrounding said disk, and having a chamber containing a friction-ring, means carried by said box for rotating said friction-ring, and automatic means carried by said disk for interlocking said disk with said friction-casing in one direction, whereby vibratory movement imparted to said box by said rod will stepwise rotate said shaft in one direction, substantially as and for the purpose specified.

11. The combination, with a shaft, of a slide-box loosely mounted on the shaft, a slide supported in said slide-box, a rod pivotally connected with said slide, a friction-casing loosely mounted on said shaft, a disk secured to said shaft, said friction-casing having a rim surrounding said disk and having a chamber containing a friction-ring, automatic means for interlocking said disk with said friction-casing in one direction, operative connection of said slide-box with the friction-ring, whereby vibratory movement imparted to said slide-box by said rod will stepwise rotate said shaft in one direction, substantially as and for the purpose described.

12. The combination, with a shaft, of a slide-box loosely mounted on the shaft, a slide supported in said slide-box, a screw for adjusting said slide in said box, a rod pivotally connected with said slide, a friction-casing loosely mounted on the shaft, a disk secured to said shaft, said friction-casing having a rim surrounding said disk and having a chamber containing a friction-ring, operative connection of said slide-box with the friction-ring, automatic means for interlocking said disk with said friction-casing in one direction, whereby vibratory movement imparted to said slide-box by said rod will transmit adjustable stepwise rotation to said shaft in one direction, substantially as and for the purpose specified.

13. The combination, with a shaft, of a slide-box loosely mounted on the shaft, a slide supported in said slide-box, a screw for adjusting said slide in said box, a rod pivotally connected with said slide, a friction-casing loosely mounted on the shaft, a disk secured to said shaft, said friction-casing having a rim surrounding said disk and having a chamber containing a friction-ring, operative connection of said slide-box with the friction-ring, cam-recesses and rollers in said disk for interlocking said disk with said friction-casing in one direction, whereby vibratory movement imparted to said slide-box by said rod will transmit adjustable stepwise rotation to said shaft in one direction, substantially as and for the purpose specified.

14. The combination, with a shaft, of a slide-box loosely mounted on the shaft, a slide supported in said slide-box, a screw for adjusting said slide in said box, a rod pivotally connected with said slide, a friction-casing loosely mounted on the shaft, a disk secured to said shaft, said friction-casing having a rim surrounding said disk and having a chamber containing a friction-ring, operative connection of said slide-box with the friction-ring, cam-recesses and rollers and springs for moving said rollers into operative position in said disk, for interlocking said disk with said friction-casing in one direction, whereby vibratory movement imparted to said slide-box by said rod will transmit adjustable stepwise rotation to said shaft in one direction, substantially as and for the purpose specified.

15. The combination, with a shaft, of a slide-box loosely mounted on the shaft, a slide supported in said slide-box, a rod pivotally connected with said slide, a friction-casing loosely mounted on said shaft, a disk secured to said shaft, said friction-casing having a rim surrounding said disk and having a chamber containing a friction-ring, automatic means for interlocking said disk with said friction-casing in one direction, a cam and a cam-shaft carried by said slide-box for expanding and rotating said friction-ring, whereby vibratory movement imparted to said slide-box by said rod will stepwise rotate said shaft in one direction, substantially as and for the purpose described.

16. The combination, with a shaft, of a slide-box loosely mounted on the shaft, a slide supported in said slide-box, a screw for adjusting said slide in said box, a rod pivotally connected with said slide, a friction-casing loosely mounted on the shaft, a disk secured to said shaft, said friction-casing having a rim surrounding said disk and having a chamber containing a friction-ring, a cam and cam-shaft carried by said slide-box for expanding and rotating said friction ring, automatic means for interlocking said disk with said friction-casing in one direction, whereby vibratory movement imparted to said slide-box by said rod will transmit adjustable stepwise rotation to said shaft in one direction, substantially as and for the purpose specified.

17. The combination, with a shaft, of a slide-box loosely mounted on the shaft, a slide supported in said slide-box, a screw for adjusting said slide in said box, a rod pivotally connected with said slide, a friction-casing loosely mounted on the shaft, a disk secured to said shaft, said friction-casing having a rim surrounding said disk and having a chamber containing a friction-ring, a cam and cam-shaft carried by said slide-box for expanding and rotating said friction-ring, cam-recesses and rollers in said disk for interlocking said disk with said friction-casing in one direction, whereby vibratory movement imparted to said slide-box by said rod will transmit adjustable stepwise rotation to said shaft in one direction, substantially as and for the purpose specified.

18. The combination, with a shaft, of a slide-box loosely mounted on the shaft, a slide supported in said slide-box, a screw for adjusting said slide in said box, a rod pivotally connected with said slide, a friction-casing loosely mounted on the shaft, a disk secured to said shaft, said friction-casing having a rim surrounding said disk and having a chamber containing a friction-ring, a cam and cam-shaft carried by said slide-box for expanding and rotating said friction-ring, cam-recesses and rollers and springs for moving said rollers into operative position in said disk, for interlocking said disk with said friction-casing in one direction, whereby vibratory movement imparted to said slide-box by said rod will transmit adjustable stepwise rotation to said shaft in one direction, substantially as and for the purpose specified.

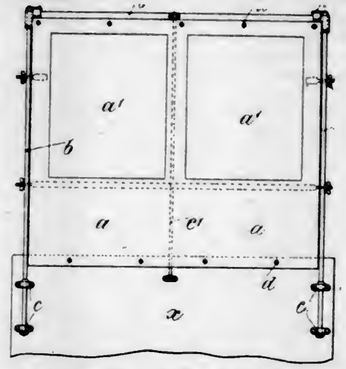
19. The combination, with a shaft, of a clutch comprising a disk secured to the shaft and having cam-recesses and rollers and springs to hold said rollers in operative position in the recesses, a casing loose on the shaft and having a friction-rim surrounding said disk and rollers, and having a closed chamber, a friction-ring seated in said chamber, and a cam carried in said chamber for expanding and rotating said friction-ring, a box loosely mounted by the side of said clutch on said shaft, and carrying a cam-shaft and a hand-lever for turning said cam, whereby rotary movement imparted to said box may be transmitted in one direction to said shaft, and whereby all operative members of said clutch and the means for actuating said clutch, with exception of said hand-lever, are covered and incased.

20. The combination, with a shaft, of a clutch comprising a disk secured to the shaft and having cam-recesses and rollers and springs to hold said rollers in operative position in the recesses, a casing loosely mounted on the shaft and having a friction-rim surrounding said disk and rollers, and having a closed chamber, a friction-ring seated in said chamber, and a cam carried in said chamber for expanding and rotating said friction-ring, a box loosely mounted by the side of said clutch on said shaft, and carrying a cam-shaft and a hand-lever for turning said cam, whereby, on raising said hand-lever, rotary movement imparted to said box will be transmitted in one direction to said shaft.

821,302. **MOTOR ROAD-VEHICLE.** WILLIAM B. MEGONE, Paddington, England. Filed Aug. 3, 1905. Serial No. 272,541.

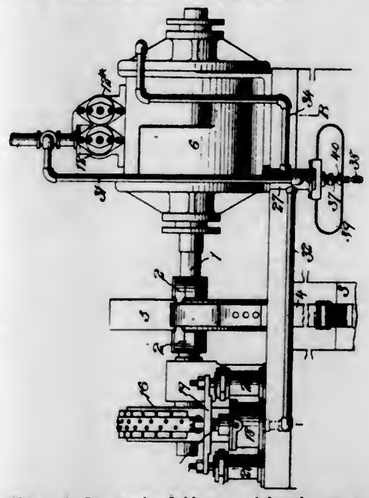
Claim.—1. In a motor road-vehicle a rain or wind shield comprising a foldable frame detachably carried by the dashboard of the vehicle, a shield consisting of a waterproof rollable material wholly or partially transparent, a box carried on said dashboard, a roller mounted to revolve in said box and carrying the lower edge of the shield, means for readily attaching and detaching the upper and side edges of said shield to and from the frame, and means for stretching said shield on the frame, substantially as set forth.

2. In a motor road-vehicle a rain or wind shield comprising a frame carried by the dashboard of the vehicle, a shield consisting of a waterproof rollable material wholly or partially transparent, means for readily and adjustably affixing said shield to the frame, and an auxiliary strip of transparent material carried on the upper part of said frame above the top edge of the shield, substantially as set forth.



3. In a motor road-vehicle a rain or wind shield comprising vertically-disposed and readily-removable uprights carried on the dashboard of the vehicle, horizontal rails carried by said uprights and forming therewith a supporting-frame, a shield consisting of a waterproof rollable material wholly or partially transparent, a box carried by said dashboard and adapted to contain the members of the supporting-frame when not in use, a roller mounted to revolve in said box and on which the shield is adapted to be wound, means whereby the shield may be readily fixed to and stretched on said frame, and an auxiliary strip of transparent material carried on the upper part of said frame above the top edge of the shield, substantially as set forth.

821,303. **DROP-HAMMER.** EDWARD W. MERRILL, Jr., New York, N. Y. Filed Dec. 3, 1904. Serial No. 235,295.



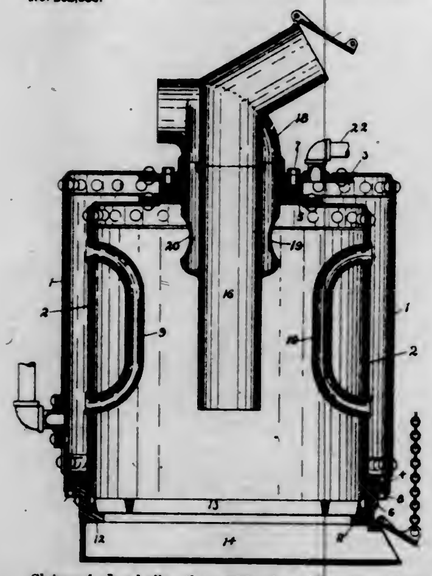
Claim.—1. In a motive-fluid-operated drop-hammer, a part-rotating shaft, a hammer arranged to be lifted thereby, a brake for the shaft, means for normally setting the brake, fluid-controlled means for simultaneously releasing the brake and rotating the shaft for raising the hammer, means arranged to permit the brake to act when the hammer reaches a predetermined point in its upward movement and additional means for releasing the brake and thereby the shaft to permit the hammer to drop.

2. In a motive-fluid-operated drop-hammer, a part-rotating shaft, a hammer arranged to be lifted thereby, its operating-piston, a brake for the shaft, means for normally setting the brake, a brake-releasing piston, means for simultaneously supplying the motive fluid to the brake-piston and the hammer-operating piston for releas-

ing the brake and rotating the shaft for raising the hammer, said means being arranged to cut off the power from the brake-piston and hammer-operating piston when the hammer reaches a predetermined point in its upward movement to permit the brake-setting means to act, and manually-controlled means for feeding the motive fluid to the brake-piston for releasing the brake and thereby the shaft to permit the hammer to drop.

3. In a motive-fluid-operated drop-hammer, a part-rotating shaft, a hammer arranged to be lifted thereby, a motive-fluid cylinder, a piston carried by the shaft within the cylinder, a brake for the shaft, means for normally setting the brake, a second cylinder, a brake-releasing piston therein, a valve for the part-rotating-shaft cylinder and piston arranged to simultaneously supply motive fluid to the shaft and brake-cylinders to release the brake and rotate the shaft for raising the hammer, to cut off the motive fluid from the cylinders when the hammer reaches a predetermined point to permit the setting of the brake and a controlling-valve arranged to feed the motive fluid to the brake-cylinder to release the brake and thereby the shaft to permit the hammer to drop.

821,304. **WATER-HEATING BOILER.** CHARLES H. MEYERS and EDWARD LOUDENSLAGER, Columbus, Ohio. Filed May 29, 1905. Serial No. 263,536.

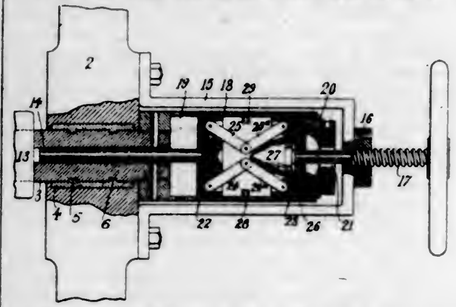


Claim.—1. In a boiler, the combination with an inner shell provided with rings at its top and bottom, the lower ring being provided with an inwardly-projecting flange, of an outer shell adapted to fit over the inner shell, and provided with similar rings at its top and bottom, the upper ring being provided with an outwardly-projecting perforated portion, the pipe secured in said perforation, and a magazine-pipe passing through the top rings of the inner and outer shells, and provided with a perforated smoke-flue, for the purpose described.

2. In a boiler, the combination with an inner shell, provided with flanged rings at its top and bottom, of an outer shell provided with rings adapted to rest on said flanges, the upper ring being provided with an apertured member, a grate resting on the flange of the inner shell, and an inlet-pipe projecting through the rings of the inner and outer shells, and surrounded by a smoke-flue having perforations formed adjacent its lower end, for the purpose described.

3. In a boiler, the combination with an inner shell provided with flanged rings at its top and bottom, of an outer shell provided with flanged rings at its top and bottom fitting over the inner shell, the flanges of the outer shell resting on the flanges of the inner shell and adapted to be bolted together, water-tubes projecting inwardly from the inner shell, a grate resting on the flange of the inner shell, inlet and outlet pipes communicating in the space between the shells, a magazine-pipe passing downwardly through the rings of the inner and outer shells, into the fire-chamber, provided with a door at its upper end, a chamber surrounding said pipe provided with an opening at its upper end and with perforations at its lower end, for the purpose described.

821,305. **ROPE-DRUM.** THOMAS S. MILLER, South Orange, N. J. Filed Mar. 16, 1903. Renewed Jan. 23, 1904. Serial No. 190,170.



Claim.—1. In combination with a rotating shaft, a rope-drum and clutch members mounted on said shaft, the following drum-thrusting mechanism for setting said clutch: a cross-key 13, a thrust-pin 14, a screw-shaft 17, a spreader swiveled to said screw-shaft and toggles operated by said spreader.

2. In combination, the rotating shaft, the clutch members, relatively rotating and non-rotating thrust-movers located in and adjacent to the end of the shaft and a rotating power-multiplying mechanism interposed between said thrust-movers.

3. In combination, the rotating shaft, the clutch members, relatively rotating and non-rotating thrust-movers in alinement with the shaft and a power-multiplying mechanism interposed between said thrust-movers.

4. In combination, the rotating shaft, a case mounted upon the end thereof, relatively rotating and non-rotating thrust-movers extending into said case and a power-multiplying mechanism carried by said case interposed between said thrust-movers.

5. In combination, the rotating shaft, the case carried thereby, toggle mechanism abutting at one end against said case and at the opposite end against a thrust-mover, said thrust-mover, a stationary frame, a thrust-mover mounted upon said stationary frame and provided with mechanism for operating said toggle mechanism.

6. In combination, a rotating shaft, clutch members, relatively rotating and non-rotating thrust-movers and a power-multiplying mechanism interposed between said thrust-movers and upon the end of the shaft outside the bearing thereof.

7. A device for transmitting power to the clutch-operating pin of a rotating shaft from a relatively non-rotating actuator which consists of a piece adapted to be fastened to the shaft, a reciprocating member adapted to operate the pin and a toggle adapted to be controlled by said actuator whereby said member is reciprocated relatively to said piece.

8. A device for transmitting power to the clutch-operating pin of a rotating shaft from a relatively non-rotating actuator which consists of a piece adapted to be fastened to the shaft, a member reciprocating on said piece and a power mechanism operatively interposed between said piece and member.

9. A device for transmitting power to the clutch-operating pin of a rotating shaft from a relatively non-rotating actuator which consists of a piece adapted to be fastened to the shaft, a reciprocating member adapted to bear on the pin and a power mechanism operatively interposed between said piece and member and adapted to be operated by said actuator.

10. A device for transmitting power to the clutch-operating pin of a rotating shaft from a relatively non-rotating actuator which consists of a piece adapted to be fastened to the shaft, a reciprocating member adapted to actuate said pin, a power mechanism operatively interposed between said piece and said member and means of adjustment.

11. A device for transmitting power to the clutch-operating pin of a rotating shaft from a relatively non-rotating actuator which consists of a piece adapted to be fastened to the shaft, a reciprocating member adapted to operate said pin, a power-transmitting mechanism operatively interposed between said piece and member and means whereby the relative position of said piece and member may be adjusted for a given position of said power mechanism.

12. In combination, a clutch, its shaft, a clutch-operating pin extending into the end of the shaft, a reciprocating member facing the end of said shaft and bearing against the end of said pin, a power mechanism pivoted to said member, an abutment for said power mechanism fixed to the shaft and an actuator for said mechanism supported independently of the shaft.

13. In combination, a clutch, its shaft, a power mechanism mounted on the end of the shaft, an actuator therefor, an independent support for said actuator and a connection from said power mechanism to said clutch.

14. In combination, a clutch, its shaft, a piece fixed around the end of said shaft, a reciprocating member facing the end of said shaft, a power-multiplying mechanism bearing on said piece and member and a connection whereby motion is transmitted from said member to the clutch.

15. In combination, a clutch, its shaft, a piece fixed to said shaft around its end, a reciprocating member facing the end of the shaft and having a bearing on said fixed piece, a power-multiplying mechanism operatively interposed between said piece and member and a connection whereby motion is transmitted from said reciprocating member to the clutch.

16. In combination, a clutch, its shaft, a piece fixed to the end of said shaft, a reciprocating member facing the end of the shaft and having a bearing on said fixed piece, a power mechanism bearing on said piece and member and a connection whereby motion is transmitted from said reciprocating member to the clutch.

17. In combination, a clutch, its shaft, a piece fixed to said shaft around its end, a reciprocating member facing the end of said shaft, a power-multiplying mechanism bearing on said piece and member, an operative connection between said member and the clutch and an actuator for said mechanism having stationary bearings.

18. In combination, a clutch, its rotating shaft, a piece and a member rotating with the shaft one of which is fixed to the end of said shaft and the other of which reciprocates facing the end of the shaft, a power mechanism rotating with the shaft and bearing on said piece and member, a connection rotating with the shaft and operatively connecting said member with the clutch and a relatively non-rotating actuator for said mechanism.

19. The combination with a clutch and its shaft, of a clutch-setting mechanism consisting of a pin concentric with the shaft, a relatively non-rotating actuator and a rotating power-multiplying mechanism interposed between said actuator and pin.

20. The combination with a clutch and its shaft, of a clutch-setting mechanism, consisting of a pin concentric in the shaft, a piece fixed to the end of the shaft, a rotating power mechanism bearing backward against said piece and forward against said pin and a relatively non-rotating actuator for said power-multiplying mechanism.

21. In combination with a clutch, its shaft, a connection extending beyond the end of the shaft and a relatively non-rotating actuator, of the following parts interposed between said actuator and connection; viz: a member carried by the shaft with freedom to reciprocate toward and from the end thereof, a power mechanism producing such reciprocations and controlled by said actuator.

22. In combination with a clutch, its shaft, a connection extending beyond the end of the shaft and a relatively non-rotating actuator, of the following parts interposed between said actuator and connection, viz: a member free to reciprocate toward and from the end of said shaft, a piece fixed to said shaft whereby the reciprocations of said member are guided and a power device producing such reciprocations and controlled by said actuator.

23. In combination with a clutch, its shaft, a connection extending beyond the end of the shaft and a relatively non-rotating actuator, of the following parts interposed between said actuator and connection, viz: a member reciprocating toward and from the end of said shaft, a piece secured to the shaft and containing an abutment and a power device bearing against said abutment whereby said reciprocations are produced and which is controlled by said actuator.

24. In combination with a clutch, its shaft, a connection extending beyond the end of the shaft and a relatively non-rotating actuator, of the following parts interposed between said actuator and connection, viz: a member reciprocating toward and from the end of said shaft, a power mechanism producing said reciprocations and controlled by said actuator and means of adjustment in the train of mechanism between said actuator and reciprocating member.

25. In combination with a clutch, its shaft, a connection extending beyond the end of the shaft and a relatively non-rotating actuator, of the following parts interposed between said actuator and connection, viz: a member reciprocating toward and from the end of said shaft and two power mechanisms controlled by said actuator whereby said reciprocations are produced arranged on opposite sides of the axial line of said shaft.

26. In combination with a clutch, its shaft, a connection extending beyond the end of the shaft and a relatively non-rotating actuator, of the following parts interposed between said actuator and connection, viz: an annular piece fixed to said shaft to form an extension thereof, a member guided by said piece to reciprocate toward and from the end of said shaft, a power mechanism which bears against said piece and produces said reciprocations under the control of said actuator.

27. In combination, a clutch, its shaft, a clutch-setting connection extending from the clutch beyond the end of the shaft, two oppositely-disposed power devices rotating with the shaft at the end thereof for operating said connection, a relatively non-rotating actuator and spreading mechanism through which said actuator operates said power devices.

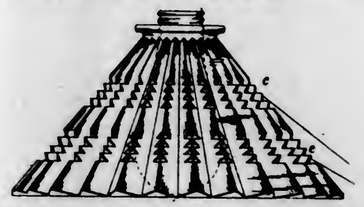
28. In combination, a clutch, a shaft, a power-multiplying clutch-setting device rotating therewith and extending beyond the end of the shaft and beyond the line of the shaft a spreader extending within the line thereof whereby said device is operated, a relatively non-rotating actuator for said spreader and a connection extending through the shaft from said device to the clutch.

29. In a clutch mechanism the combination of the clutch members, a shaft on which said members are mounted, bearings for the shaft, said clutch members being mounted on said shaft between said bearings, a clutch-actuating mechanism mounted on the shaft outside of said bearings comprising a longitudinally-movable member, thrust-levers connected thereto, means for actuating said thrust-levers, and devices for communicating the motion of the longitudinally-movable member to the clutch.

30. In combination, a rotating shaft, a clutch thereon, a thrust-pin extending into the shaft, a power-multiplying pin-thrusting mechanism, a holder for the same exteriorly secured to the shaft, an actuator for said mechanism extending into the end of said holder, and a non-rotating support for said actuator.

31. The combination of a shaft, a drive-gear fast thereon, a drum loosely mounted on said shaft and adapted to be shifted into engagement with said drive-gear, a casing at the end of the shaft, a thrust-pin extending from the casing into the drum-shaft, and means within the casing adapted to rotate therewith and to contact with the thrust-pin, said means including a member movable longitudinally within the casing, and a device for actuating said member, said device comprising a screw-shaft extending into the casing from the exterior thereof, and a hand-wheel for turning said screw-shaft to move the longitudinally-shiftable member into contact with the thrust member.

821,306. **PRISMATIC REFLECTOR.** OTIS A. MYGATT, New York, N. Y. Filed Dec. 14, 1903. Serial No. 185,125.



Claim.—1. A reflector composed of a single piece of glass in form of a frustum and having an open mouth, the outer surface having approximately vertical reflecting-prisms by which light-rays are returned and directed out at the open mouth, said reflecting-prisms interrupted in parts in definite patterns, whereby definite portions of light, from definite parts of the reflector-body, are permitted to pass through the reflector.

2. A reflector composed of a single piece of glass, having its outer surface provided with reflecting-prisms with their axes extending in a generally vertical or radial direction, some of said prisms mutilated by the introduction therein of plane surfaces calculated to transmit and direct light-rays.

3. A reflector composed of a single piece of glass and having its body in form of a frustum with an open mouth, and having on its outer surface reflecting-prisms arranged to return light-rays from within the reflector back and out at said mouth, certain of said prisms varied in parts by surfaces arranged to transmit light-rays through the reflector and to direct the rays after passage.

4. A reflector composed of a single piece of glass having on its

outer surface reflecting-prisms, certain of said prisms being mutilated by the introduction of light-transmitting surfaces varying in size.

821,307. DECORATIVE SHADE-REFLECTOR FOR ARTIFICIAL LIGHTS. OTIS A. MYGATT, New York, N. Y. Filed May 12, 1904. Serial No. 207,644.



Claim.—1. A shade-reflector of glass, in form of a frustum having an open mouth, and having on its outer surface integral light-reflecting bodies adapted to reflect light-rays from within back into the reflector and out at the open mouth thereof, said bodies being of different reflective power in different belts or zones surrounding the reflector.

2. In a shade-reflector composed of glass in form of a frustum and having an open mouth, a zone having external prisms arranged spirally and adapted to reflect light-rays back into the reflector and out at the open mouth, and another zone having prisms arranged radially and adapted to reflect light-rays back and out at the open mouth.

3. In a shade-reflector composed of a single piece of glass, in form of a frustum, and having an open mouth, a zone having external spirally-arranged prisms, and a second zone having reverse spiral prisms, all said prisms arranged to reflect some of the light-rays back into and out at the open mouth of the reflector.

821,308. DECORATIVE GLASS SHADE. OTIS A. MYGATT, New York, N. Y. Filed Dec. 21, 1904. Serial No. 237,838.



Claim.—1. A shade composed of a single piece of glass having its outer surface substantially covered with light-directing prisms, and having its generally smooth inner surface provided with figures which are out of the general surface level, which figures change the direction of many of the light-rays passing through them toward the said prisms.

2. A shade composed of a single piece of glass having its outer surface substantially covered with light-directing prisms, and its inner surface generally smooth except as to certain decorative forms varying the general inner surface level to a greater extent in some parts than in other parts, whereby certain rays of light passing through such forms are acted on to a greater extent than other rays.

3. A shade composed of glass provided externally with light-directing prisms, and having its interior generally smooth, but having variations from the general level producing forms which divert certain of the light-rays from their normal direction toward said prisms, whereby the action of the prisms is also modified.

821,309. DECORATED SHADE-REFLECTOR. OTIS A. MYGATT, New York, N. Y. Filed Dec. 30, 1904. Serial No. 238,966.

Claim.—1. A shade-reflector composed of a single piece of glass having a contracted neck which is internally provided with light-diverting bodies and is outwardly smooth, and a flared mouth portion having external reflecting-prisms arranged with their axes extending in a generally radial direction, the interior of this reflecting portion of the device being smooth, whereby the deterioration of the different parts of the device by the accumulation of dust is largely prevented.



2. A bell-mouthed reflector divided into two zones, the upper zone, through which the light passes out, having light-dispersing bodies on the inside and a smooth outer surface from which dust can be readily removed; the lower zone from which the light is reflected back and out of the mouth having light-reflecting bodies on the outside and being smooth inside.

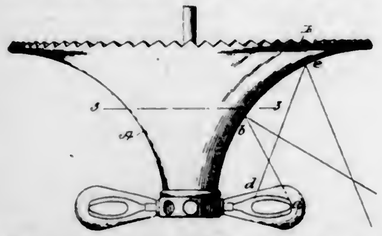
821,310. COMPOUND REFLECTOR FOR ARTIFICIAL LIGHTS. OTIS A. MYGATT, New York, N. Y. Filed July 13, 1905. Serial No. 269,549.



Claim.—1. The combination with a glass reflector having prisms on its outer surface, of a separate light-reflecting body, with whitish interior surface said inner surface being smooth and lying in a curve close to the apexes of the prisms and above the depressions between the prisms.

2. The combination with a frustum-shaped glass reflector having reflecting-prisms on its outer surface, of a similar-shaped opaque reflector of uniform thickness lying in a curve close to the apexes of the prisms.

821,311. PRISMATIC-GLASS REFLECTOR. OTIS A. MYGATT, New York, N. Y. Filed Jan. 11, 1906. Serial No. 295,657.



Claim.—1. The combination with an artificial light outside the reflector, of a reflector of prismatic glass in form of a frustum, having reflecting-prisms on its interior surface, and having its flared end overhanging the light.

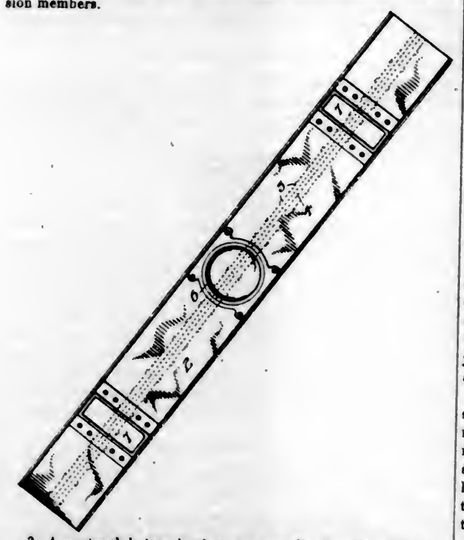
2. The combination with a cluster of electric lamps, of a reflector in form of a frustum surrounding a common center of the cluster, said reflector being composed of glass with a smooth outer surface, and having reflecting-prisms on its inner surface, the flared edge of the reflector overhanging the lamps.

3. The combination with a main reflector composed of glass, smooth on its outer surface and having reflecting-prisms on its inner surface, the body of said reflector being in form of a frustum flared outwardly and upwardly, of a suspended lamp outside said reflector, and a small reflector near the lamp and arranged to reflect light-rays from said lamp to the main reflector.

821,312. CAR-TRUCK BOLSTER. OSWALD S. PULLIAM, Pittsburg, Pa. Filed Oct. 6, 1905. Serial No. 281,647.

Claim.—1. A car-truck bolster comprising a compression member, a tension member and a web connecting said members constructed of three T-shaped pieces, and means for securing the T-pieces together.

2. A car-truck bolster substantially T-shaped in cross-section, comprising a compression member having edge flanges extending above and below said member throughout the length of the member, a tension member, and a web connecting the compression and tension members.



3. A car-truck bolster having a top member formed of two substantially T-shaped pieces, a bottom member and a web connecting the two members.

4. A car-truck bolster having a top member formed of two substantially T-shaped pieces, each provided with an engaging flange, a bottom member, and a web connecting the said members.

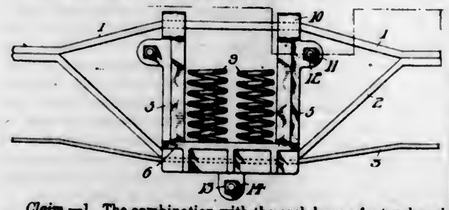
5. A car-truck bolster having a top member formed of two substantially T-shaped pieces, each provided with an engaging flange, means for securing the flanges together, a bottom member, and a web connecting said members.

6. A car-truck bolster having a top member formed of two substantially T-shaped pieces, each provided with an engaging flange, a bottom member, a web connecting said members, said web located between the two engaging flanges, and means for uniting the flanges and web.

7. A car-truck bolster having a top member formed of two substantially T-shaped pieces, a bottom member and web formed of a single substantially T-shaped piece, and means for securing the web to the top member.

8. A car-truck bolster having a top member formed of two substantially T-shaped pieces, each provided with an engaging flange, a bottom member and web formed of a single substantially T-shaped piece, said web located between the flanges and means for uniting the web and flanges.

821,313. TRUCK END CASTING. OSWALD S. PULLIAM, Pittsburg, Pa. Filed Oct. 6, 1905. Serial No. 281,649.



Claim.—1. The combination with the arch-bars, of a truck end casting comprising a two-part column, each part formed to clasp the arch-bars and with projecting apertured lugs through which bolts are adapted to pass.

2. The combination with the arch-bar, of a truck end casting comprising a pair of columns and a spring-seat formed of two parts, each part having two upright members and a cross member joining the lower ends of the uprights, each cross member formed with a recess extending throughout the length of the cross member and adapted when the parts are assembled to form a seat for the lower arch-bar.

3. The combination with the arch-bars, of a truck end casting comprising a pair of columns, each column formed of two similar parts, each part formed to clasp the arch-bars, and means for connecting the two parts constituting a column comprising apertured lugs formed integral with each column part, and bolts adapted to pass through said lugs.

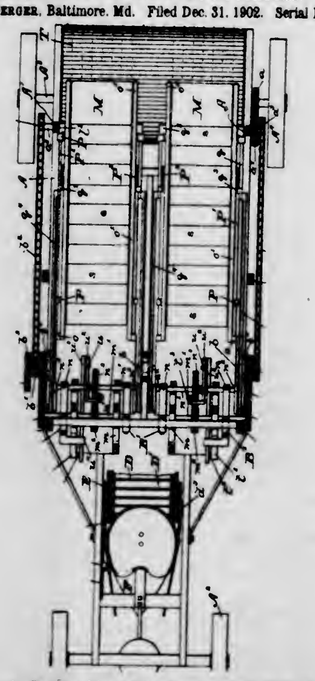
4. A truck end casting comprising a pair of columns and a spring-seat formed of two similar and interchangeable parts, and means for connecting the parts comprising projecting apertued lugs formed integral with each part.

5. A truck end casting comprising a pair of columns and a spring-seat formed of two similar and interchangeable parts, each part having two upright members and a cross member joining the lower ends of the uprights, each of said members formed with apertured lugs through which bolts are adapted to pass.

6. The combination with the arch-bar, of a truck end casting comprising a pair of columns and a spring-seat consisting of two similar parts, each part having two upright members and a cross member joining the lower ends of the uprights, each cross member formed with a recess extending from one upright to the other, projecting apertured lugs on the uprights, and a centrally-disposed apertured lug on each cross member.

7. A truck end casting comprising a pair of columns and a spring-seat formed of two similar parts, each part having two upright members and a cross member joining the lower ends of the uprights, means for connecting the uprights of one part to the corresponding uprights of the other part comprising projecting apertured lugs and bolts passing through said lugs, and means for connecting the cross members of each part comprising a centrally-located apertured lug formed on each cross member.

821,314. MACHINE FOR BAGGING POTATOES. GEORGE E. REHBERGER, Baltimore, Md. Filed Dec. 31, 1902. Serial No. 137,280.



Claim.—1. In a machine of the character described, the combination of a table pivoted to the frame thereof, gearing on a frame and the table, a bag-holding means carried by the table, means carried by the machine to engage the gearing of the table when said table is tilted, and suitable connections between the said means on the machine and the bag-holding means of the table to reciprocate said bag-holding means.

2. In a machine of the character described, the combination of a table pivoted to the frame thereof, gearing carried by a frame and the table, rotatable means carried by the machine comprising a crank-shaft deriving motion from the gearing when the said table is tilted, bag-holding means carried by the table to reciprocate thereon, and connections between the cranks of the shaft and the bag-holding means for reciprocating said bag-holding means when the crank-shaft is rotated.

3. In a machine of the character described, the combination of a shaft carried by the frame, a table pivotally secured to the shaft, a suitably-mounted gear-wheel on the table, connections between the shaft and gear-wheel for driving said gear-wheel, reciprocating bag-holding means on the table, a crank-shaft mounted on the frame, connections between the crank-shaft and bag-holding means for reciprocating said bag-holding means, and a gear-wheel on the crank-shaft adapted to mesh with the gear-wheel on the table when said table is tilted.

4. In combination, a pivoted table and bag-holding means carried by the table, said means comprising suitably-supported guide-bars, bags, blocks on the bags adapted to ride between the guide-bars, and means engaging the blocks of the bags to move said bags forward in one direction.

5. In combination, a pivoted table and bag-holding means carried by the table, said means comprising suitably-supported guide-bars, bags, blocks on the bags adapted to ride between the guide-bars, and means engaging the blocks of the bags to distend the mouth of the bag and to move said bag in one direction.

6. In combination, a suitably-pivoted table, bag-holding means carried thereby comprising guides, bags, blocks on the bags working within the guides, a follower working within the guides and means for imparting motion to the follower in one direction.

7. In a bag-holder, the combination of guides, slides carried by the guides, a second slide arranged with relation to each of the first-named slides and adapted to operate in conjunction therewith, pawls on the slides, bags, blocks on the bags to ride within the guides, said blocks being engaged by the pawls of the slides, and means for imparting reciprocatory motion to the slides, the movement of the second-named slides being independent of the first-named slides a portion of the distance of their travel.

8. In combination, a bag-holder comprising guides, each guide consisting of suitably-spaced bars, brackets secured to the bars, slides working within the brackets, pawls on the slides, bags, blocks on the bags sliding within the guides, said blocks being engaged by the pawls of the slides, and means for reciprocating the slides.

9. In combination, a bag-holder comprising suitable guides, a slide carried by each of the guides, said slide having a slot near its end, a second slide positioned with relation to the first-named slide and acting in conjunction therewith, a plate carried by the second slide riding in the slot of the first-named slide, bags, blocks on the bags, pawls on the slides engaging the blocks of the bags, and means for imparting a reciprocatory motion to the second-named slides.

10. In a bag-holder, the combination of suitable guides, bags, blocks on the bags riding within the guides, a follower, means for imparting motion to the follower in one direction, and means carried by the follower operating in conjunction with the guides for preventing retrograde movement of the follower.

11. In a bag-holder, the combination of guides, each guide comprising suitably-spaced bars, the opposing face of one of the bars being notched, bags, blocks on the bags riding within the guide, a follower riding within the guide, means for imparting motion to the follower in one direction, and a pawl carried by the follower to engage the notches of the guide to hold the follower against retrograde movement.

12. In a bag-holder, the combination of suitable guides, bags, blocks on the bags riding within the guides, a follower riding within the guides, slides carried by the guides, means for imparting motion to the slides, and means carried by the slides for engaging the follower.

13. In a bag-holder, the combination of guides, bags, blocks on the bags riding within the guides, a follower riding within the guides, the ends of the follower being notched, slides carried by the guides, pawls carried by the guides to engage the notches of the follower and means for imparting motion to the follower.

14. In a bag-holder, the combination of guides, each of the guides comprising suitably-spaced bars, the opposing face of one of the bars being provided with notches, catches carried by the notched bar of the guide, bags, blocks on the bags riding within the guides, and means carried by the guides engaging the blocks to force the bag in one direction.

15. In a machine of the character described, the combination of a pivoted table on the frame thereof, means for holding said table normally horizontal, bag-holding means carried by the table, means for intermittently reciprocating said bag-holding means, and additional means acting in conjunction with the first-named means for causing the complete backward-and-forward motion of the reciprocating means.

821,315. STETHOSCOPE. CHARLES M. ROOT, Philadelphia, Pa., assignor to Frederick Dittmar and Frank Claus, Philadelphia, Pa., trading as Penn Surgical Mfg. Co. Filed Sept. 14, 1905. Serial No. 278,373.



Claim.—1. A stethoscope, consisting of a base provided with deep depressions having openings and separated from each other by a central projection, a diaphragm removably secured to said base, tubular extensions connected with the openings of said base and flexible means connected therewith and by tubing with earpieces, substantially as and for the purposes described.

2. A stethoscope, consisting of a base provided with tapering depressions having openings therein, said depressions separated from each other by means of a conical projection, a diaphragm removably secured to said base, and tubular means connected with the openings of said base and with earpieces, substantially as and for the purposes described.

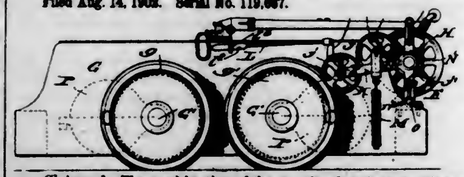
821,316. SASH-WEIGHT. FERDINAND C. SCHWEDTMAN, St. Louis, Mo. Filed Aug. 16, 1905. Serial No. 274,464.



Claim.—1. As a new article of manufacture, a weight composed of a core of ground barytes and a bonding agent surrounded by a shell of metal which fills the surface-pores of said core; substantially as described.

2. As a new article of manufacture, a weight composed of a shaped core which consists of ground barytes mixed with a boading agent, and having a fugitive coating of impervious material, and a shell of metal which fills the pores of the core formerly occupied by the impervious coating; substantially as described.

821,317. CONDUCTOR FOR ELECTRIC CARS. FRANK L. SESSIONS, Columbus, Ohio, assignor to Joseph A. Jeffrey, Columbus, Ohio. Filed Aug. 14, 1903. Serial No. 119,667.



Claim.—1. The combination of the car, the electric motor thereon, the portable electric conductor, the reel for winding the portable conductor, the reel-rotating devices adapted to be driven by the motor, and the swinging frame for the reel, and the devices which rotate it, substantially as set forth.

2. The combination of the car, the motor for propelling the car, the portable conductor on the car, the reel for winding the conductor, the vibratable frame for the reel, the driving devices for rotating the reel and adapted to engage with one of the car-track wheels, the spring for forcing the driving devices toward said track-wheel, means for regulating the speed of the drum, and devices under the control of the operator for bringing alternately into play said speed-controlling devices and said spring, substantially as set forth.

3. The combination in an electric locomotive, of a reel mounted on the frame thereof, a cable arranged to be wound upon said reel, means for throwing the reel in gear with a moving part of the locomotive so as to wind the cable on the reel, means independent of said first-described means and adapted to oppose the rotation of the reel in a direction to pay out the cable, and means for opposing the operation of the first-described means and retaining the reel out of connection with the driving mechanism of the locomotive, and in engagement with the said means for opposing its rotation in cable-paying-out direction.

4. The combination of the car, the reel-shaft mounted thereon, the reel on the said reel-shaft, the flexible cable carried by the reel, a train of power-transmitting devices interposed between said reel and a revolving part of said car, and having in said train a yielding connection, the elements of which are held in forced engagement with each other independent of the draft on the cable, and means for throwing said power-transmitting devices into and out of operation at will.

5. The combination with an electric car and a cable-reel mounted thereon, of a flexible cable adapted to be wound upon and paid off from said reel, a train of power-transmitting devices interposed between said reel and a revolving part of said car, and having in said train two friction elements held in engagement with each other independent of the draft on the cable and adapted to make the connection between said reel and said revolving part of the car a yielding one and means for throwing said train of power-transmitting devices into and out of operation at will.

6. The combination with a car and a cable-reel mounted thereon, of a flexible cable adapted to be wound upon and paid off from said reel, a train of power-transmitting devices interposed between said reel and a revolving part of the car, means for normally connecting said train of power transmitting devices yieldingly with the said reel independently of the draft on said cable, and means for throwing said train of power-transmitting devices into and out of operation at will.

7. The combination with a car and a cable-reel mounted thereon, of a flexible cable adapted to be wound upon and paid off from said reel, a power-driven shaft on the car, a train of power-transmitting devices interposed between said power-driven shaft and said cable-reel, and means for connecting said train of power-transmitting devices with said reel and maintaining the connection independent of the draft on the cable and means for disconnecting two elements of said train of power-transmitting devices and locking them in inactive relation to each other.

8. The combination with a car and a cable-reel mounted thereon, of a train of power-transmitting devices interposed between said cable-reel and a revolving shaft on the car, means for maintaining said train of power-transmitting devices yieldingly in operative driving engagement between said shaft and said reel independent of the tension on the cable, and means for locking said train of power-transmitting devices out of operative position.

9. In a mechanism for supplying current to an electric locomotive, the combination with an electric locomotive, of a flexible conductor, a reel for said flexible conductor movable with the locomotive, a train of power-transmitting devices for rotating said reel having in said train friction-driving elements held in forced engagement with each other independent of the draft on the cable, and a friction-retarding device operable independently of the draft on the cable to oppose the rotation of the said reel in cable-unwinding direction.

10. In a mechanism for supplying a current to an electric locomotive, the combination of a car, a flexible conductor, a reel for the flexible conductor movable with the car, a friction-driver for the reel having frictional surfaces forced together under substantially constant pressure independently of the draft on the cable, power devices for actuating the friction-driver, and means for rendering the friction-driver inoperative at will.

11. The combination with a car and a cable-reel mounted thereon, of a train of power-transmitting devices adapted to afford a yielding driving connection between one of the axles of said car and said reel and having in said train a spring-controlled friction-driving element adapted to be maintained in forced engagement with its cooperating friction element independently of the draft on the cable, and means operable at will for throwing said friction elements into and out of engagement with each other.

12. The combination of the car, the flexible conductor, the reel or winding devices for the flexible conductor, the power-driven devices for rotating the reel, means for disconnecting the power devices from the reel, and means independent of the flexible conductor and engaging with the reel for controlling its speed of rotation when subjected to draft by the cable.

13. The combination with the car, having track-engaging driving-wheels, the electric motor connected to and rotating with said track-wheels, the flexible electric conductor adapted to be connected with a conductor remote from the car, a reel for the said conductor, a friction-wheel for rotating the reel and engaging with the periphery of the track-wheel of the car, means for separating the friction-wheel from the track-wheel, and friction devices supported independently of the flexible conductor and engaging with the reel for regulating its speed of rotation.

14. The combination in an electric locomotive, of a cable-reel mounted on the frame thereof, a cable arranged to be wound upon said reel, means for throwing the reel into and out of gear with a movable part of the locomotive to wind the cable on the reel, said means including a friction-driving connection, and means operable independently of the tension on the cable for opposing the rotation of the reel.

15. The combination of a car, a cable-reel mounted thereon, a cable adapted to be wound upon said reel, power-transmitting mechanism interposed between said reel and a revoluble part of the car, said reel being normally maintained in frictional driving connection with said train of power-transmitting devices, independent of the tension on the cable, means for throwing said train of power-transmitting devices into and out of commission, and a friction device adapted to retard the rotation of said reel in the direction to pay out the cable.

16. The combination of a car, a flexible conductor, a reel or winding device for the flexible conductor, power-transmitting devices for rotating the reel, means for throwing the power-transmitting devices into and out of operation, and means independent of the cable and engaging with the reel for controlling its unwinding movements when subjected to draft by the cable.

17. The combination of a car, a relatively stationary conductor, a flexible conductor carried by the car and adapted to have one end connected to the said stationary conductor, a reel or winding device for the flexible conductor, power-transmitting devices for rotating said reel, means for throwing said power-transmitting devices into and out of operation, and means independent of the cable and independent of said power-driven devices for controlling the speed of rotation of said reel in cable-paying-out direction when subjected to draft by the cable.

18. The combination of a car, a flexible conductor carried by the car, a reel or winding device for said flexible conductor, power-driven devices for rotating the reel, and means independent of the flexible conductor and of said power-driven devices, for controlling the speed of rotation of said reel in cable-paying-out direction.

19. The combination of a car, supporting-wheels for the car, an electric motor adapted to rotate said wheels, a flexible conductor adapted to be connected to a conductor remote from the car, a reel for the said conductor, gearing for rotating said reel in the direction for winding up the flexible conductor thereon, means for throwing said gearing into and out of operation, and a friction-retarding device for said reel supported independently of said flexible conductor and engaging directly with the reel.

20. The combination of a car, a flexible cable, a motor on the car, a cable-winding reel, a cable on said reel, comprising two insulated wires, one wire being grounded to said drum, and the other wire extending through the insulated hub on said drum, and electrically connected with a collector-ring on the drum, a brush engaging with said collector-ring, and an electric conductor leading from said brush to the motor on the locomotive.

21. The combination of a car having supporting-wheels, a motor on the car adapted to drive certain of said supporting-wheels, a cable-reel, a flexible conductor adapted to be wound upon and paid out from said cable-reel, an electric conductor connecting said flexible conductor to the motor on the car, a bodily-adjustable wheel adapted to engage with a surface which will affect the rotation of the said wheel as the car travels in the direction to wind up the paid-out flexible conductor, and power-transmitting devices interposed between said bodily-movable wheel and the cable-reel, adapted to remain in operative relation to said wheel as it is moved into and out of operative position.

22. The combination of a car having supporting-wheels, a motor on the car adapted to drive certain of said supporting-wheels, a cable-reel, a flexible conductor adapted to be wound upon and paid out from said cable-reel, an electric conductor connecting said flexible conductor to the motor on the car, a bodily-adjustable wheel adapted to engage with a surface which will effect the rotation of the said wheel as the car travels in the direction to wind up the paid-out flexible conductor, means for normally holding said bodily-movable wheel yieldingly in engagement with its actuating-surface, and power-transmitting devices interposed between said bodily-movable wheel and the cable-reel adapted to remain in operative relation to said wheel as it is moved into and out of operative position.

23. The combination of a car having supporting-wheels, a motor on the car adapted to drive certain of said supporting-wheels, a cable-reel, a flexible conductor adapted to be wound upon and paid

out from said cable-reel, an electric conductor connecting said flexible conductor to the motor on the car, a vertically-adjustable wheel adapted to engage with a surface which will effect the rotation of the said wheel as the car travels in the direction to wind up the paid-out flexible conductor, and power-transmitting devices interposed between said bodily-movable wheel and the cable-reel, adapted to remain in operative relation to said wheel as it is moved into and out of operative position.

24. The combination of a car having supporting-wheels, a motor on the car adapted to drive certain of said supporting-wheels, a cable-reel, a flexible conductor adapted to be wound upon and paid out from said cable-reel, an electric conductor connecting said flexible conductor to the motor on the car, a bodily-adjustable wheel adapted to engage with a surface which will effect the rotation of the said wheel as the car travels in the direction of the paid-out flexible conductor, a wheel connected to the said cable-reel, and power-transmitting means between the said bodily-adjustable wheel and the said wheel connected to the cable-reel.

25. The combination of a car having supporting-wheels, a motor on the car adapted to drive certain of said supporting-wheels, a cable-reel, a flexible conductor adapted to be wound upon and paid out from said cable-reel, an electric conductor connecting said flexible conductor to the motor on the car, a bodily-adjustable wheel adapted to engage with a surface which will effect the rotation of the said wheel as the car travels in the direction of the paid-out flexible conductor, a wheel connected to the said cable-reel, power-transmitting means between said bodily-adjustable wheel and the said wheel connected to the cable-reel, and a brake adapted to engage said cable-reel in order to prevent too rapid rotation of the said reel as the cable is paid out therefrom.

26. The combination of a car having supporting-wheels, a motor on the car adapted to drive certain of said supporting-wheels, a cable-reel, a flexible conductor adapted to be wound upon and paid out from said cable-reel, an electric conductor connecting said flexible conductor to the motor on the car, a bodily-adjustable wheel adapted to engage with a surface which will effect the rotation of the said wheel as the car travels in the direction of the paid-out flexible conductor, a wheel connected to the said cable-reel, power-transmitting means between the said bodily-adjustable wheel and the said wheel connected to the cable-reel, and means for moving said bodily-adjustable wheel out of engagement with the surface which is adapted to cause its rotation, the said power-transmitting means being adapted to swing with the said bodily-adjustable wheel as it is moved into and out of engagement with the surface which is adapted to effect its rotation.

27. The combination of a car, a cable-reel on the car, a flexible conductor adapted to be wound upon and paid out from the said reel, means for driving said reel, said means including friction-driving elements normally maintained in forced contact with each other, independently of the tension upon the said flexible conductor, and means for throwing said reel-driving means into and out of operation.

28. The combination of a car, a cable-reel on the car, a flexible conductor adapted to be wound upon and paid out from said reel, frictional driving elements for effecting the rotation of the reel normally maintained in forced contact with each other, independently of the tension on said flexible conductor, and a friction-retarding device adapted to resist the rotation of said reel when the car is moved in one direction.

29. The combination of a car, a cable-reel on the car, a flexible conductor adapted to be wound upon and paid out from the said reel, frictional power-transmitting devices interposed between said reel and a revoluble part of the car, the elements of said friction-gearing being normally held in forced contact with each other, means for throwing said reel-driving mechanism into and out of operation, and a friction-retarding device adapted to resist the rotation of the reel when the cable is paid out therefrom, independently of the tension on the cable.

30. The combination of a car, having supporting wheels and axles, a reel carried by the car, a flexible conductor having one end attached to the reel, and the other adapted to be attached to a fixed point, a train of power-transmitting devices interposed between one of said car-axles and said reel, and having friction-driving elements normally held in forced contact with each other, means for actuating said train of power-transmitting devices when the car moves toward the said fixed point, and a frictional device arranged independently of the said flexible conductor and adapted to resist the rotation of the said reel when the car moves away from said fixed point.

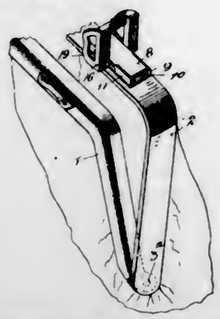
31. The combination of a car having supporting wheels and axles, a cable-reel carried thereby, a flexible conductor adapted to be wound upon and paid out from said reel, means for securing one end of said flexible conductor to a fixed conductor, driving means independent of the tension or draft on said flexible conductor and connected with one of said car-axles for rotating the reel when the vehicle moves toward the fixed conductor, and means for disconnecting said driving means from said axle at will.

32. The combination of a car, a cable-reel on the car, a flexible conductor adapted to be wound upon and paid out from said reel, friction-driving elements for imparting rotation to the said reel, normally held in forced engagement with each other independently of the tension on the flexible conductor, means for actuating said frictional driving elements when the vehicle moves in a direction to wind up the cable, and means separate from and independent of said friction-driving elements for frictionally resisting the rotation of the said reel when the vehicle moves in the opposite direction

33. The combination of a car, a cable-reel carried thereby, a flexible conductor on the said cable-reel, means for securing one end of said flexible conductor to a fixed conductor, means adapted to rotate the said cable-reel comprising frictionally-engaging elements which are forced together with a pressure which is independent of the draft on the flexible conductor, and means for throwing said reel-rotating means into and out of operation.

34. The combination of a car, a cable-reel carried thereby, a flexible conductor on the said cable-reel, means for securing one end of said flexible conductor to a fixed conductor, means adapted to rotate the said cable-reel comprising frictionally-engaging elements which are forced together with a pressure which is independent of the draft on the flexible conductor, means for throwing said reel-rotating means into and out of operation, and frictional devices independent of said reel-rotating devices for resisting the rotation of the reel when the cable is paid off therefrom.

821,318. **BAG-CLASP.** WILLIAM H. SLATTERY, New York, N. Y., assignor to Deitsch Brothers, New York, N. Y., a Firm. Filed July 15, 1905. Serial No. 269,900.



Claim.—1. A bag-clasp comprising a casing secured to one portion of the bag-frame, a catch mounted on said casing to swing vertically and to slide longitudinally relatively thereto, and a projecting portion on said casing to hold said catch in its closed position.

2. A bag-clasp comprising a casing secured to one portion of the bag-frame, a catch mounted on said slide to swing vertically and to slide longitudinally relatively thereto, a spring tending to raise said catch out of operative position and a projecting portion on said casing to hold said catch in its closed position.

3. A catch adapted to hold the hinged frame members of a bag together, comprising a vertically-swinging hinged member having depending sides for engagement with the bag-frame, a base secured to the bag-frame and to which the swinging member is attached so as to move longitudinally therein, the said base being adapted to engage the swinging member when the latter is lowered and moved longitudinally.

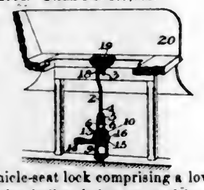
4. A catch adapted to hold the hinged frame members of a bag together, comprising a vertically-swinging hinged member having depending sides for engagement with the bag-frame, a spring adapted to force the said hinged member upwardly, a base adapted to be secured to the bag-frame and to which the swinging member is attached so as to move longitudinally therein, the said base being adapted to engage the swinging member when the latter is lowered and moved longitudinally.

5. A catch adapted to hold the hinged frame members of a bag together, comprising a vertically-swinging hinged member having depending sides for engagement with the bag-frame, a base-plate, a hinge-pin on the swinging member secured under the said base-plate and adapted to move longitudinally, a spring surrounding said pin, adapted to swing the hinged member upwardly, means for limiting the longitudinal movement of the swinging member, and means whereby the said base will engage the swinging member when in its lower position.

6. A catch adapted to hold the hinged frame members of a bag together, comprising a vertically-swinging hinged member 15, having depending sides to engage with the bag-frame, a base-plate 3, having sides 11 and end 9, means for securing the base-plate to a bag-frame, a cross-piece 12 and projecting end 14, openings in the sides of the casing thus formed, the said swinging member 15 being secured to the base by a pin 16 which is adapted to move therein, and a spring surrounding the pin 16 and adapted to move the member 15 upwardly, the said member 15 being adapted to engage under the end 14.

7. A catch adapted to hold the hinged frame members, of a bag together, comprising a vertically-swinging hinged member, having depending sides to engage the bag-frame, a spring adapted to force the swinging member into a vertical position, and means for holding the swinging member down against the action of the spring for securing the bag-frame in a closed position.

821,319. **VEHICLE-SEAT LOCK.** HENRY C. SWAN, Oshkosh, Wis. Filed Mar. 24, 1904. Serial No. 199,701.



Claim.—A vehicle-seat lock comprising a lower bracket having a vertical plate with a hollow hub supported by and projecting laterally therefrom, and an upper portion arranged to engage the seat and provided with a lower eccentric-strap having a stop thereon, a hand-lever having a lateral eccentric fitting within the strap around the hollow hub and provided with stops, and a bolt extending through the hollow hub and eccentric and holding the parts in position; substantially as described.

821,320. **FOLDING BRUSH.** MELBURN H. TUPPER, Buda, Canada. Filed June 7, 1905. Serial No. 264,048.



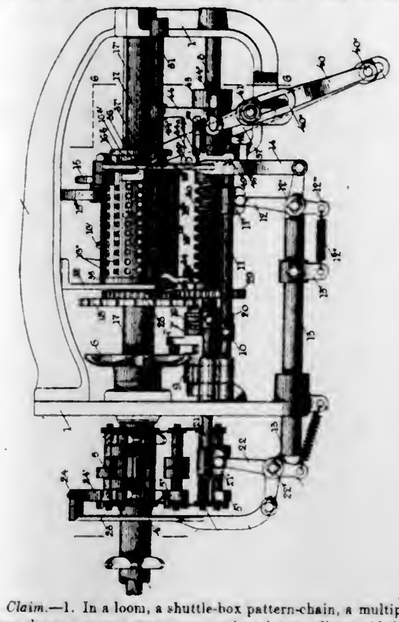
Claim.—1. In a device of the class described the combination with a substantially box-shaped body having the sides formed of a double thickness with an interior hollow portion, of the cross-pieces extending into slots formed in the inner portions of said side pieces, bars adapted to slide in between the walls of said hollow sides and support the ends of the pivotal rods, vertically-slotted resiliently-held bars fitting in the hollow portion in the side walls and adapted to coact with the slotted walls to removably retain the pivotal rods in position as and for the purpose specified.

2. In a device of the class described the combination with the substantially box-shaped body having the sides formed of a double thickness with an interior hollow portion, of the cross-pieces extending into slots formed in the inner portions of said side pieces, bars adapted to slide in between the walls of said hollow sides and support the ends of the pivotal rods, vertically-slotted bars slidably supported on the top of said bars and adapted to coact with the slotted walls to normally retain the pivotal rods in position, a spring resiliently holding said rod in position and a button extending through a slot in the casing for moving the said slotted bar longitudinally and releasing the cross-pieces thereof as and for the purpose specified.

3. In a device of the class described the combination with the body, of the cross-pieces formed of sheet metal secured to suitable rods, said cross-pieces each having one corner chamfered off and curved upwardly, of a rod located in the bottom portion of the body in the space formed by said chamfered portions when the bristles and cross-pieces are turned into the desired position and means whereby said rod may be moved laterally in relation to the body thereby engaging the chamfered corners of the cross-pieces and forcing the bristles into the substantially vertical position as and for the purpose specified.

4. In a device of the class described the combination with the body, the cross-pieces rotatably mounted in the sides of the body and the bristles carried thereby, of a rod located in the bottom of the body and spring means for causing said rod to rotate the cross-pieces and bring and hold them in an upright position therein as and for the purpose specified.

821,321. **LOOM-MULTIPLIER MECHANISM.** THOMAS P. WALSH, Worcester, Mass., assignor to Crompton & Knowles Loom Works, a Corporation of Massachusetts. Filed May 16, 1904. Serial No. 208,098.



Claim.—1. In a loom, a shuttle-box pattern-chain, a multiplier pattern-drum, a rotary worm, connections intermediate said drum and worm, to communicate a longitudinal motion in one direction to said drum, mechanism for moving the drum in the other direction, and connections intermediate the box pattern-chain and the pattern-drum.

2. In a loom-multiplier mechanism, a pattern-drum, a worm, intermediate connections between said drum and worm, to communicate from said worm a longitudinal motion to said drum in one direction, and means for communicating a longitudinal motion to said drum in the other direction, and means for communicating an intermittent rotary motion to said drum.

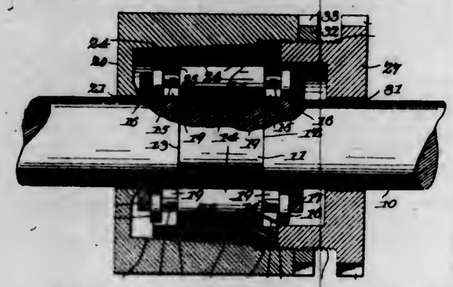
3. In a loom-multiplier mechanism, a box pattern-chain, a multiplier pattern-drum adapted to have a rotary motion, and also a longitudinal motion, intermediate connections between said chain and drum, means for communicating an intermittent rotary motion to the pattern-chain, means for communicating an intermittent rotary motion to the pattern-drum, and means for communicating a longitudinal motion to the pattern-drum in each direction.

821,322. **ROLLER-BEARING.** THOMAS M. WORRELL, Hatfield, Ark. Filed Aug. 30, 1905. Serial No. 276,406.

Claim.—1. In a bearing, a shaft, a plurality of split rings encircling the shaft and tapered externally on a continuous taper, a tapered box about the rings and means for moving the tapered rings in contact with the tapered box.

2. In a bearing, a shaft, a plurality of rings having a continuous cylindical bore encircling the shaft and each split obliquely to its edge and tapered externally on a continuous taper, a box about the

rings and having a tapered bore within which the rings are disposed and means for forcing the rings within the box longitudinally of the shaft and to contract the rings circumferentially about the shaft.



3. In a roller-bearing, a shaft, rollers around the shaft, split rings encircling the rollers and tapered laterally on a continuous taper and means to contract the rings.

4. In a roller-bearing, a shaft, rollers around the shaft, split rings encircling the rollers and tapered laterally on a continuous taper and means for moving the rings in contact with a continuously-tapered surface to contract them circumferentially.

5. In a roller-bearing, a shaft, rollers around the shaft, split rings encircling the rollers and provided with tongue-and-groove connection and means to contract the rings circumferentially and simultaneously.

6. In a roller-bearing, a shaft, rollers around the shaft, split rings encircling the rollers and tapered laterally and provided with tongue-and-groove connection and means to contract the rings circumferentially and simultaneously.

7. In a roller-bearing, a shaft, rollers around the shaft, split rings encircling the rollers and tapered laterally and provided with tongue-and-groove connection and means for moving the rings in contact with a tapered surface to contract them circumferentially.

8. In a roller-bearing, a shaft, rollers around the shaft, split rings encircling the rollers and tapered laterally, a box surrounding the rings and having a tapered bore within which the rings are disposed and means for moving the rings in contact with tapered bore of the box to contract the rings circumferentially.

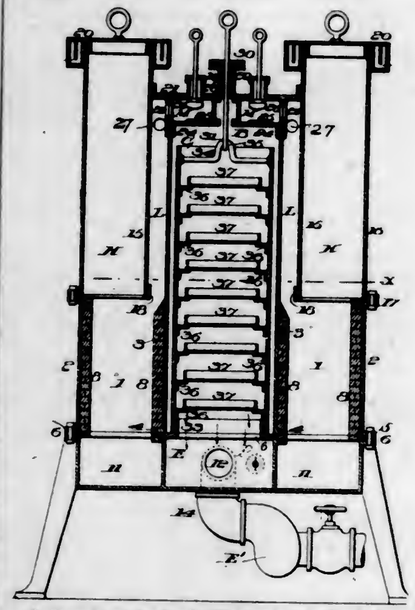
9. In a roller-bearing, a shaft, rollers around the shaft, split rings encircling the rollers and tapered laterally with the thin edge of one ring equal in thickness to the thick edge of the next, a box surrounding the rings and having a tapered bore within which the rings are disposed and means for moving the rings in contact with the tapered bore of the box to contract the rings circumferentially.

10. In a roller-bearing, a shaft having a peripheral channel, rollers about the shaft and disposed in the channel and with their ends abutting the sides of the channel, split rings encircling the rollers and tapered externally, a box surrounding the rollers and having a tapered bore within which the rollers are disposed, means for moving the rings within the box longitudinally of the shaft and toward the smaller end of the box-bore.

11. In a roller-bearing, a shaft having a peripheral channel, rollers about the shaft and disposed in the channel and with their ends abutting the sides of the channel and having axial spindles and heads on the spindles, pocketed collars surrounding the shaft and with the heads of the rollers disposed within the pockets, split rings encircling the rollers and tapered laterally and externally and having tongue-and-groove connections, a box surrounding the rollers and having a tapered bore within which the rings are disposed, a follower bearing against and arranged to force the rings within the tapered bore and to contract them circumferentially about the rollers and means for securing the follower at the desired adjustment.

821,323. APPARATUS FOR DISTILLING COALS AND OTHER HYDROCARBONACEOUS SUBSTANCES. HENRY WURTS, Newark, N. J., assignor to American Chemical Eduction Company, a Corporation. Filed Apr. 13, 1905. Serial No. 255,264.

Claim.—1. In an apparatus for distilling coals and other hydrocarbonaceous substances, spaced and staggered trays, for holding the substance to be distilled, inclosed in a compartment which is in communication on the one hand with a heat-flue from a fire-chamber adjoining the compartment, and on the other hand with an exhaust-pipe, and means for inducing currents of heated products of combustion to enter the compartment from the heat-flue and to zigzag over the substance on the trays, and under and around the ends of the trays and to draw the products of combustion and distillation out of the compartment and into the exhaust-pipe, substantially as specified.



2. In an apparatus for distilling coals and other hydrocarbonaceous substances, spaced and staggered trays, for holding the substance to be distilled, inclosed in a compartment which is in communication on the one hand with heat-flues from fire-chambers adjoining the two sides of the compartment, and on the other hand with an exhaust-pipe, and means for inducing currents of heated products of combustion to enter the compartment from the heat-flues and zigzag over the substance on the trays, and under and around the ends of the trays and to draw the products of combustion and distillation out of the compartment and into the exhaust-pipe, substantially as specified.

3. In an apparatus for distilling coals and other hydrocarbonaceous substances, spaced and staggered trays, for holding the substance to be distilled, inclosed in a compartment which is in communication on the one hand with heat-flues from fire-chambers adjoining the two sides of the compartment, and on the other hand with an exhaust-pipe, means for inducing currents of heated products of combustion to enter the compartment from the heat-flues and zigzag over the substance on the trays and under and around the ends of the trays, and to draw the products of combustion and distillation out of the compartment and into the exhaust-pipe, and means for controlling the inflow of the products of combustion to the compartment, substantially as specified.

4. In an apparatus for distilling coals and other hydrocarbonaceous substances, the combination of a fire-chamber and a compartment adjacent thereto, but separated therefrom by a wall, and a heat-flue leading from the fire-chamber, openings in the wall between the heat-flue and a compartment for the passage of the products of combustion into the compartment, trays supported one above the other in the compartment and staggered to form a zigzag passage through the compartment, an exhaust-pipe and an exhaust connected therewith to induce currents of products of combustion from the heat-flues into and through the compartment and to draw the products of combustion and distillation out of the compartment and into the exhaust-pipe, substantially as specified.

5. In an apparatus for distilling coals and other hydrocarbonaceous substances, the combination of fire-chambers and a compartment located between the same, heat-flues leading from the fire-chambers, openings leading to the heat-flues in the walls of the compartment, trays supported one above the other in the compartment and staggered to form a zigzag passage through the compartment, an exhaust-pipe and an exhaust connected therewith to induce the products of combustion from the heat-flues into and through the compartment and to draw the products of combustion and distillation out of the compartment and into the exhaust-pipe, substantially as specified.

6. In an apparatus for distilling coals and other hydrocarbonaceous substances; the combination of one or more fire-chambers, a compartment adjacent to the fire chamber or chambers, heat flue or flues leading from the fire chamber or chambers to the compartment, and a casing inserted in the compartment having trays arranged in the same for coal, substantially as specified.

7. The combination of one or more fire-chambers, a compartment adjacent thereto, a heat flue or flues leading from the fire chamber or chambers to the compartment, a casing open at top and bottom and having trays arranged therein to form a zigzag passage through the casing, and adapted to receive the coal to be distilled, substantially as specified.

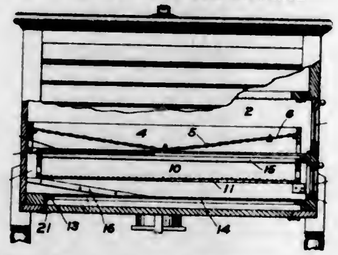
8. The combination of one or more fire-chambers, a fuel-magazine located above the fire-chambers having water-sealed tops, a compartment adjacent to the fire chamber or chambers but divided therefrom by a partition or partitions, heat flue or flues leading from the fire chamber or chambers to the compartment and a casing located in the compartment having trays arranged therein for the coal, substantially as specified.

9. The combination of one or more fire-chambers, a compartment adjacent thereto divided therefrom by a partition or partitions through which openings lead into the compartment, a valve chamber or chambers located in the compartment and valves for controlling the temperature in the compartment, substantially as specified.

10. The combination of one or more fire-chambers, a compartment adjacent thereto, heat flue or flues leading to the compartment, a casing arranged in the compartment and having trays arranged therein to receive the coal said casing adapted to be moved into the compartment during distillation and to be moved out of the same to discharge the residual coke and recharge with coal, all substantially as specified.

11. The combination of one or more fire-chambers, a compartment adjacent thereto, heat flue or flues leading to the compartment, valves for regulating the temperature in the compartment, a casing in the compartment having trays arranged therein for the coal, a trough under the casing to draw the products of combustion and the vapors arising from the distillation of the coal out of the casing, all substantially as specified.

821,324. INCUBATOR. CHARLES E. ADAIR, Buffalo, N. Y., assignor to Cyphers Incubator Company, Buffalo, N. Y., a Corporation of New York. Filed Oct. 11, 1905. Serial No. 282,314.



Claim.—1. The combination of an incubator, a chick-drawer therein, a sliding cover for said drawer, and a diaphragm hung in said incubator and adapted to rest normally upon the end of the chick-drawer and to be raised therefrom by the cover when sliding the same into place.

2. The combination of an incubator, a chick-drawer therein, a sliding cover for said drawer, and a diaphragm pivoted in said incubator in front of the rear end of said incubator and adapted to rest upon the rear end of the drawer and to be raised therefrom by the cover when sliding the same into place.

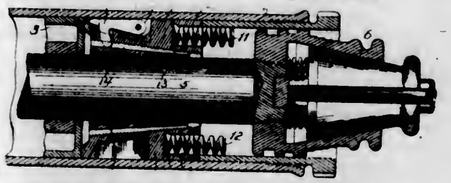
3. The combination of an incubator, an egg-tray therein, a removable chick-drawer therein, and supports for said drawer for guiding it upward as it is inserted in place and for holding it close to the bottom of the egg-tray.

4. The combination of an incubator, an egg-tray therein having an opening in its bottom, a removable chick-drawer, and supports for said drawer for guiding it upward as it is inserted in place and for holding it close to the bottom of the egg-tray.

5. The combination of an incubator, an egg-tray therein, a removable chick-drawer and forwardly-inclined rear supports for said drawer for guiding the rear end of the drawer upwardly and supporting it close to the bottom of the egg-tray, and a front support for holding the front end of said drawer close to the bottom of the egg-tray.

6. The combination of an incubator, an egg-tray therein, a removable chick-drawer and forwardly-inclined rear supports for said drawer for guiding the rear end of the drawer upwardly and supporting it close to the bottom of the egg-tray, and a stationary support for the front end of the drawer upon which said drawer may be moved forwardly to rest for holding the front end of said drawer close to the bottom of the egg-tray.

821,325. BEARING FOR ROCK-DRILLS. THOMAS E. ADAMS, Cleveland, Ohio. Filed June 7, 1905. Serial No. 264,132.



Claim.—1. A bearing-sleeve of low-carbon tough steel having interior grooves and having a hardened interior face, the latter confined to the portions of the interior face between the grooves.

2. A bearing-sleeve of low-carbon tough steel having a threaded exterior and having interior grooves, and also having a hardened interior face, the hardened portion confined to the portions of the interior face between the grooves.

3. A bearing-sleeve having interior longitudinal grooves, and having a case-hardened interior, the case-hardened interior being confined to the portions between the longitudinal grooves.

4. A bearing-sleeve made conical from end to end and having a slotted wall, said sleeve having exterior longitudinal grooves and internal longitudinal grooves, and the inner surface of said sleeve being hardened between said internal grooves.

5. The combination with a casing having a conical opening therein provided with a threaded wall, of a slotted conical bearing-sleeve having a threaded exterior, and having external longitudinal grooves, and a key attached to the casing and adapted to enter any one of said grooves.

6. The combination with a casing having a conical opening provided with a threaded interior, of a bearing-sleeve having a threaded exterior, and a key pivotally attached to the casing and adapted to engage the bearing-sleeve.

821,326. DESICCATED DISTILLERY SLOP AND PROCESS OF MAKING SAME. GEORGE F. AHLERS, Covington, Ky. Filed Nov. 20, 1905. Serial No. 288,327.

Claim.—1. In the process of producing dry feed from distillery slop, the process which consists in separating slop into liquid and solid portions, rendering the solid matters granular and absorbent, evaporating the liquid to a syrup, incorporating said syrup with and into the absorbent granules and drying the mixture.

2. In the process of producing dry feed from distillery slop, the process which consists in separating slop into liquid and solid portions, granulating and drying the solids to render them absorbent, evaporating the liquid to a syrup, incorporating said syrup with and into the absorbent granules and drying the mixture.

3. In the process of producing dry feed from distillery slop, the process which consists in separating slop into liquid and solid portions, rendering the solids granular and absorbent, evaporating the liquid to a syrup, incorporating said syrup with and into a granular absorbent comprising said solids, and drying the mixture.

4. In the process of producing dry feed from distillery slop, the process which consists in separating slop into liquid and solid portions, granulating and drying the solids to render them absorbent, evaporating the liquid to a syrup, incorporating said syrup with and into a granular absorbent comprising said solids, and drying the mixture.

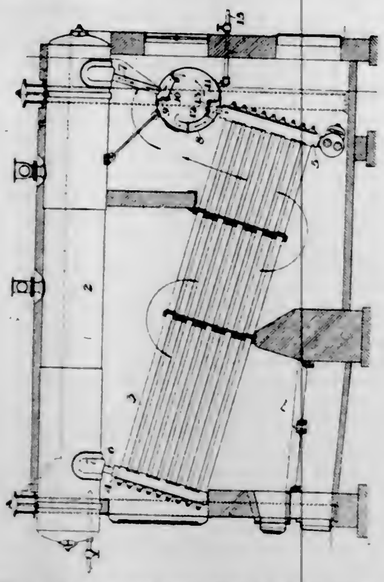
5. The process of producing a dry balanced ration from distillery slop which consists in separating slop into solid and liquid portions, drying and granulating the solids to render them absorbent,

evaporating the liquid to a syrup, incorporating said syrup with and into a granular absorbent comprising said solids, drying the mixture and admixing therewith starchy feeds in proportion sufficient to produce a balanced ration.

6. In the process of producing dry feed from distillery slop, the process which consists in separating slop into liquid and solid portions, rendering the solid matters granular and absorbent, evaporating the liquid to a syrup, incorporating said syrup with and into the absorbent granules in successive portions, drying the granules to restore their absorbent nature between additions, and finally drying the granules to a dry condition.

7. A concentrated feed in dry granular form comprising the soluble portion of distillery slop interiorly incorporated into and contained in the granulated insoluble portion of distillery slop, said feed comprising the total solid matter of such slop in a granulated, dry, unfermented form, having an initial sweetish taste and only developing a sour taste after mastication.

821,327. STEAM-BOILER. GEORGE H. BARRUS, Brookline, Mass. Filed Aug. 21, 1905. Serial No. 274,973.



Claim.—1. A water-tube boiler, having a bank of parallel inclined tubes, one or more steam and water drums above the tubes, headers connecting the tubes at the front and rear ends and themselves connected by circulating-tubes with the steam and water drum or drums at the front ends and at the rear ends, and a transverse settling-drum placed in the plane of the circulating-tubes with its axis intersecting the axes of said tubes, to which it is connected above and below; substantially as described.

2. A water-tube boiler having a bank of parallel inclined tubes, one or more steam and water drums above the tubes, into the front end of which the feed-water is supplied, headers connecting the tubes at the front and rear ends and themselves connected by circulating-tubes with the steam and water drum or drums at the front and rear ends, and a transverse settling-drum placed in the plane of the circulating-tubes with its axis intersecting the axes of said tubes, to which it is connected above and below; substantially as described.

3. A water-tube boiler, having a bank of parallel inclined tubes, one or more steam and water drums above the tubes, headers connecting the tubes at the front and rear ends and themselves connected by circulating-tubes with the steam and water drum or drums at the front ends and the rear ends, and a transverse settling-drum placed in the plane of the circulating-tubes with its axis intersecting the axes of said tubes, to which it is connected above and below, the velocity of circulation in said drum being less than the velocity of circulation at any other point; substantially as described.

4. A water-tube boiler, having a bank of parallel inclined tubes, one or more steam and water drums above the tubes, headers connecting the tubes at the front and rear ends and themselves connected with the steam and water drum or drums at the front end and by circulating-tubes at the rear ends, and a transverse settling-drum connected with the circulating-tubes above and below, said settling-drum having an upper transverse deflecting plate or partition and a lower transverse deflecting plate or partition for controlling the direction of the flow of water through the drum; substantially as described.

5. A water-tube boiler having a settling-drum provided with a deflecting plate or partition extending in a substantially circumferential direction along the inner circumference of the drum, and leading to a tube or tubes through which the water in the boiler circulates; substantially as described.

6. A water-tube boiler having a settling-drum provided with deflecting plates or partitions extending along the inner circumference of the drum and leading respectively from and to an inlet and outlet for the water in circulation; substantially as described.

7. A water-tube boiler having a settling-drum provided with deflecting plates or partitions extending along the inner circumference of the drum, and leading respectively from and to an inlet and outlet for the water in circulation, said plates or partitions extending in opposite directions; substantially as described.

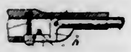
8. A water-tube boiler having a settling-drum provided with a deflecting plate or partition extending along the inner circumference of the drum, and leading to a tube or tubes through which the water in the boiler circulates, and being movable to afford access to said tube or tubes; substantially as described.

9. A water-tube boiler with an upper transverse deflecting plate or partition and a lower transverse deflecting plate or partition for controlling the direction of the flow of water through the drum, the upper one being removable and the lower one having a removable cover for access to the tubes entering and leaving the drum; substantially as described.

10. A water-tube boiler, having a bank of parallel inclined tubes, one or more steam and water drums above the tubes, headers connecting the tubes at the front and rear ends and themselves connected with the steam and water drum or drums by nipples at the front end and by circulating-tubes at the rear ends, and a transverse settling-drum placed in the plane of the circulating-tubes with its axis intersecting the axes of said tubes, to which it is connected above and below, said settling-drum having an upper transverse deflecting plate or partition and a lower transverse deflecting plate or partition for controlling the direction of the flow of water through the drum, the upper one being removable and the lower one having a removable cover for access to the tubes entering and leaving the drum, said settling-drum constituting the sole water connection between the rear ends of the steam and water drum or drums and the rear headers, whereby the whole body of water in circulation passes through the settling-drum before reaching the tubes, and said settling-drum being of sufficient capacity to greatly reduce the velocity of the water passing therethrough below the velocity of circulation in any other part of the boiler so that the impurities contained in the water may settle out and be removed; substantially as described.

11. A water-tube boiler, having a bank of parallel inclined tubes, one or more steam and water drums above the tubes, headers connecting the tubes at the front and rear ends and themselves connected with the steam and water drum or drums by nipples at the front ends and by circulating-tubes at the rear ends, and a transverse settling-drum placed in the plane of the circulating-tubes with its axis intersecting the axes of said tubes, to which it is connected above and below, and adapted to restrict the area of opening for the discharge of the products of combustion into the flue to that required for properly spreading and distributing these products of combustion, whereby the whole heating-surface of the boiler becomes efficient for the abstraction of heat; substantially as described.

821,328. HAND-OPERATED TOOL. HARRY D. BARTLETT, Chicago, Ill. Filed Sept. 7, 1905. Serial No. 277,347.



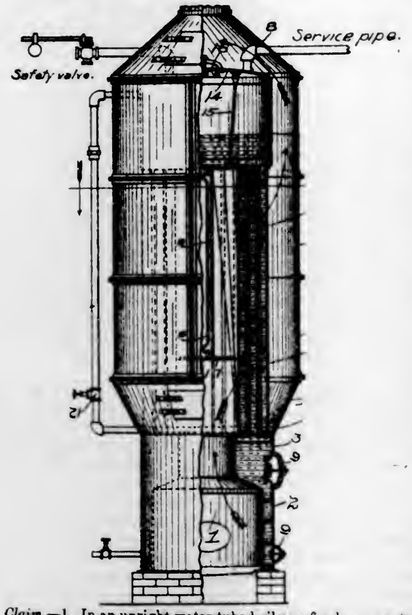
Claim.—1. A tool, including a handle, the tool-blade pivoted between the ends of the handle and adapted to be placed substantially in line with the handle and to be swung at an angle to the handle and provided with an angular extension, an abutment pivoted upon the handle and serving to engage the top of the extension to hold the handle and tool-blade in line, a spring for normally maintaining the abutment in engagement with said extension when the tool blade and handle are in line, and a lug provided upon the handle and serving to engage the abutment to prevent the spring from moving the abutment out of its said normal position.

2. A tool, including a handle, the tool-blade pivoted between the ends of the handle and adapted to be placed substantially in line with the handle and to be swung at an angle to the handle and provided with an angular extension, a manually-operable abutment pivoted upon the handle and serving to engage the top of the extension to hold the handle and tool-blade in line, and a spring for normally maintaining the abutment in engagement with said extension when the tool blade and handle are in line said abutment when manually operated acting in opposition to said spring and being then removed from the path of said angular extension as the tool-blade is rotated.

3. A tool, including a handle, the tool-blade pivoted between the ends of the handle and adapted to be placed substantially in line with the handle and to be swung at an angle to the handle and provided with an angular extension, and a manually-operable abutment pivoted upon the handle and serving to engage the top of the extension to hold the handle and tool-blade in line said abutment when manually operated escaping said angular extension as the tool-blade is rotated.

4. A tool, including a handle, the tool-blade pivoted between the ends of the handle and adapted to be placed substantially in line with the handle and to be swung at an angle to the handle and provided with an angular extension, and a manually-operable locking device engaging the top of the extension to maintain the blade in line with the handle said locking device, when manually operated, escaping said extension as the tool-blade is rotated.

821,329. WATER-TUBE BOILER. JOSEPH C. BECKLEY, Dayton, Ohio. Filed Feb. 10, 1906. Serial No. 300,519.



Claim.—1. In an upright water-tube boiler, a fire-box, a water-leg surrounding said fire-box and projecting inwardly above the sides of said fire-box, a cylindrical casing in sections mounted upon said water-leg, a steam-drum in the upper portion of said casing, a series of perpendicular water-tubes connecting the water-leg and the steam-drum, and a series of inclined water-tubes connecting the water-leg and steam-drum at points inwardly from the points of connection of the perpendicular tubes with said steam-drum.

2. In an upright water-tube boiler, a fire-box, a water-leg surrounding the sides of said fire-box and projecting inwardly at the top of the fire-box, said water-leg having a greater transverse area of space above the fire-box, a steam-drum, a series of perpendicular water-tubes connecting the water-leg with the steam-drum, a series of inclined water-tubes forming communications between the inner portion of the water-leg and the middle portion of the steam-drum, and a cleansing device consisting of a circular jet-pipe surrounding the base of the water-tubes, and a connection between the steam-drum and said jet-pipe.

3. In an upright water-tube boiler, a fire-box, a water-leg inclosing the sides of said fire-box and having its upper end increased in area and extending inwardly above the top of the fire-box and surrounding the space leading from the fire-box, a cylindrical casing mounted upon said water-leg, a steam-drum located at the upper end of said casing, a plurality of water-tubes connecting said water-leg with the steam-drum, the outer rows of said water-tubes and a portion of the innermost row of said water-tubes extending in perpendicular positions, and a portion of the innermost row of tubes extending in inclinations and connecting with the steam-drum at points inwardly from the connections thereof with the water-leg, a jet-pipe surrounding said water-tubes at the points of their connections with the water-leg, and a pipe connecting said jet-pipe with the steam-drum.

4. In an upright water-tube boiler, a fire-box, a water-leg inclosing the sides of said fire-box, the upper portion of said water-leg being increased in area to extend inwardly above the top of the fire-box and reduce the space leading from the fire-box, a cylindrical casing mounted upon said water-leg, a steam-drum in the upper portion of said casing near the outlet-flue in the top of said casing, a plurality of water-tubes connecting said water-leg with the steam-drum, portions of said tubes extending perpendicularly, and a portion of said tubes extending in inclinations and connecting with the steam-drum at points inwardly from the connections of the perpendicular pipes therewith, a deflecting-plate suspended centrally above the fire-box, and a jet-pipe inclosing the base of the water-tubes and having a connection with the steam-drum.

821,330. PROCESS OF SMELTING LEAD-SULFID ORES. ANSON G. BETTS, Troy, N. Y. Filed May 20, 1904. Serial No. 208,946.

Claim.—1. The process of reducing lead sulfid which consists in smelting it with a carbon-reducing agent, iron oxid, and a suitable oxygenated sodium compound, in proportions to produce metallic lead, and an iron-sodium matte, as set forth.

2. The process of reducing lead sulfid which consists in smelting it, with a carbon-reducing agent, and basic compounds of iron and sodium, in proportions to produce metallic lead, and an iron-sodium matte, as set forth.

3. The process of reducing lead sulfid which consists in smelting it by radiated heat with carbon and basic compounds of iron and sodium in proportions to produce metallic lead, and a fusible iron-sodium matte, as set forth.

4. The process of reducing galena which consists in smelting it with carbon, iron oxid and a basic sodium compound, to produce metallic lead, and a fusible iron-sodium matte, as set forth.

5. The process of reducing lead sulfid which consists in smelting it with carbon, iron oxid and sodium carbonate, to produce metallic lead and an iron-sodium matte in which iron and sodium sulfids are present in approximately the proportion given by the formula $Na_2S.FeS$.

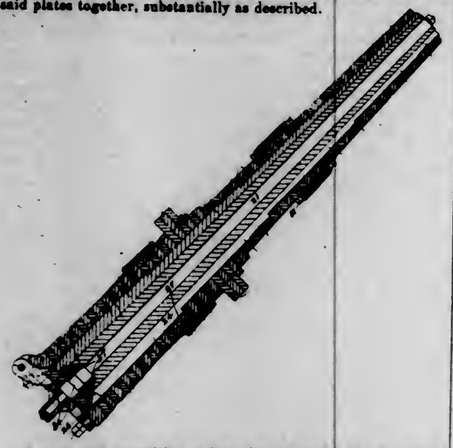
821,331. CANNON. EDWIN J. BLOOD, Chicago, Ill. Filed Sept. 5, 1905. Serial No. 276,938.

Claim.—1. A cannon comprising an inner barrel, a sleeve surrounding said barrel and reduced by steps or portions from its rear to its front end, a series of plates or disks located on the sleeve and presenting their edges to its outer surface, and means to secure said plates together and on the sleeve, substantially as described.

2. A cannon comprising an inner barrel tapered from its rear to its front end, a slotted sleeve reduced by steps or portions from its rear to its front end and surrounding the barrel, a breech-plate mounted on the rear portion of the sleeve and having apertured luge, an end plate mounted on the front portion of the sleeve and having apertured extensions, a series of tension plates or disks located on the sleeve intermediate the breech-plate and said end plate and presenting their edges to the outer surface of the sleeve, a plurality of ribs located longitudinally with respect to the barrel and on the outer surface of said plates, the said ribs having their ends secured in the breech-plate and end plate, substantially as described.

3. A cannon comprising an inner barrel tapered from its rear to its front end, a sleeve reduced by steps or portions from its rear to its front end and surrounding the barrel, screw-threads on each of the

said steps or portions, a series of plates or disks located on the sleeve and presenting their edges to its outer surface, and means to secure said plates together, substantially as described.



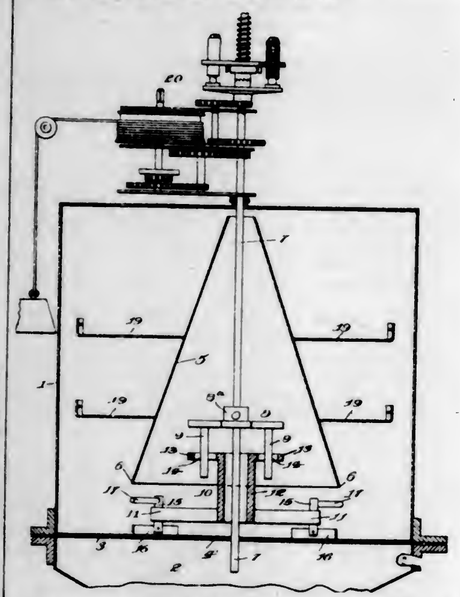
4. A cannon comprising an inner barrel having the rear end of its bore enlarged and screw-threaded, a sleeve reduced from its rear to its front end and surrounding the barrel, the said sleeve having the rear end of its bore enlarged and screw-threaded, a breech-plate mounted on the rear end of the sleeve, a series of plates or disks located on the sleeve, means to secure said plates together, an apertured piece or plug pivoted to the breech-plate, a breech-block swiveled in said plug and having screw-threaded portions to engage the rear ends of the barrel and sleeve and provided on its outer portion with a handle to turn the same, and means to lock the breech-block in its closed position, substantially as described.

5. A cannon comprising an inner barrel having the rear end of its bore enlarged and screw-threaded, of a surrounding sleeve reduced from its rear to its front end and provided with screw-threads in the rear end of its bore, a breech-plate mounted on the rear end of the sleeve, an end plate on the front end of the sleeve, a series of plates or disks located on the sleeve between the breech-plate and said end plate, segmental straps located on the outer surface of the breech-plate opposite each other, each of said straps having an inwardly-extending projection, ribs secured at their front ends to the end plate and at their rear ends to said straps, an apertured piece or plug pivotally secured to the breech-plate, a breech-block swiveled in the aperture of said piece and having screw-threaded portions to engage the rear ends of the barrel and sleeve and on its outer surface a handle to turn the same, oppositely-projecting extensions mounted on the breech-block to engage those of the straps, substantially as described.

6. A cannon comprising an inner barrel having the rear end of its bore enlarged and screw-threaded, a sleeve surrounding the barrel and reduced by steps or portions and having the rear end of its bore provided with screw-threads, a breech-plate mounted on the rear end of the sleeve, a series of tension-plates located on the sleeve and presenting their edges to the outer surface thereof, means to secure said plates together and on the sleeve, straps located on the outer surface of the breech-plate and opposite each other, each of said straps having an inwardly-extending projection, an apertured block or piece pivotally secured to the breech-plate, a breech-block swiveled in the aperture of said plug and having on its inner surface screw-threaded portions to engage the rear ends of the barrel and sleeve and on its outer portion a handle to turn the same, oppositely-extending projections on the breech-block to engage those on the said straps, substantially as described.

7. A cannon comprising an inner barrel having the rear end of its bore enlarged and screw-threaded, a sleeve surrounding the barrel and having the rear end of its bore screw-threaded, a breech-plate mounted on the rear end of the sleeve, a series of tension-plates located on the sleeve, means to secure said tension-plates in place on the sleeve, straps located on the outer surface of the breech-plate and opposite each other, each of said straps having an inwardly-extending projection, an apertured plug or piece pivotally secured to the breech-plate, a breech-block swiveled in the aperture of said plug, and having on its inner surface screw-threaded portions to engage the rear end of the barrel and sleeve and on its outer portion a handle to turn the same, and oppositely-extending projections on the breech-block to engage those on said straps, substantially as described.

821,332. CARBID-FEEDER. OTTO M. BRAUER, Marshalltown, Iowa. Filed Nov. 25, 1905. Serial No. 289,122.



Claim.—1. A carbid-feed device comprising a holder provided with a discharge-opening, a set of scraping devices in said holder, means for revolving said scraping devices, and means whereby all of said devices may yield vertically as a body and also yield vertically one independently of the others.

2. A carbid-feed device, comprising a holder provided with a discharge-opening, a revoluble shaft mounted in said holder, a set of scraping devices carried by said shaft, means whereby said devices may yield vertically as a body on said shaft, and means whereby each scraping device may yield vertically independently of the others.

3. A carbid-feed device comprising a holder provided with a discharge-opening, a revoluble shaft mounted in said holder, a spider yieldingly mounted on said shaft to move in a vertical direction, and a set of scraping devices each of which is pivotally mounted on said spider independently of the others and arranged to move vertically each independently of the others.

4. A carbid-feed device comprising a holder provided with a discharge-opening, a revoluble shaft mounted in said holder, a set of scraping devices in said holder, a connection between said shaft and said scraping devices whereby the rotation of the shaft will effect the revolution of the scraping devices, means whereby the scraping devices may yield as a whole vertically, and means whereby one scraping device may oscillate vertically independently of the others.

5. A carbid-feed device, comprising a holder provided with a discharge-opening, a revoluble shaft mounted in said holder, a set of scraping devices in said holder and designed to rest on the bottom thereof, means whereby the rotation of said shaft will effect a revolution of said scraping devices and means whereby each scraping device may rock vertically independently of the others.

6. A carbid-feed device, comprising a holder provided with a discharge-opening, a revoluble shaft mounted in said holder, a spider in said holder, scraping devices carried by said spider, means whereby said spider may move freely in a vertical direction on the shaft, and means whereby a rotation of said shaft will effect a rotation of the spider.

7. A carbid-feed device, comprising a holder provided with a bottom discharge-opening, a set of scraping devices mounted in said holder and resting on the bottom thereof, means for revolving the set of scraping devices around the bottom of the holder, means whereby the set of scraping devices may yield vertically as a body with respect to the revolving means, and means whereby each scraping device may yield vertically independently of the others.

8. A carbid-feed device, comprising a holder provided with a bottom discharge-opening, a set of scraping devices in said holder and designed to rest on the bottom thereof, and means for revolving said scraping devices around the bottom of the holder, said means including a vertically-yieldable support, and the scraping devices being pivotally mounted on said support, as and for the purpose set forth.

9. A carbid-feed device comprising a holder provided with a discharge-opening, a hood within said holder with its lower edge spaced from the bottom thereof and surrounding said discharge-opening, a spider mounted within the hood and provided at the outer ends of its arms with shafts, scraping devices carried on the lower ends of said shafts, agitators carried by the upper ends of said shafts, and means for rotating said spider.

10. A carbid-feed device comprising a holder provided with a discharge-opening, a spider mounted in said holder, a vertical shaft 15 carried by said spider, a scraping device pivotally mounted on the lower end of said shaft, a spring-agitator secured to the upper end of said shaft, and means for rotating said spider.

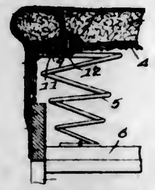
11. A carbid-feed device comprising a holder provided with a discharge-opening, a revoluble shaft mounted in said holder, depending fingers carried by said shaft, a spider provided with a yoke having apertures receiving said fingers, whereby the rotation of the shaft will impart movement to said spider, and a scraping device carried by said spider.

12. A carbid-feed device comprising a holder provided with a discharge-opening, a revoluble shaft within said holder a cross-bar secured to said shaft and provided with depending fingers, a spider provided with a stem surrounding and spaced from said shaft and also provided with an apertured yoke receiving said fingers, and scraping devices carried by said spider.

13. A carbid-feed device comprising a holder provided with a discharge-opening, a revoluble shaft mounted in said holder, a cross-bar secured to said shaft and provided with two downwardly-extending fingers, a spider surrounding and spaced from said shaft and provided at its upper end with an apertured yoke receiving said fingers, the said apertures in the yoke being of larger diameter than the fingers, and scraping devices carried by said spider.

14. A carbid-feed device comprising a holder provided with a bottom discharge-opening, a revoluble shaft mounted in said holder, a cross-bar provided with a sleeve by which it is secured to said shaft, in connection with a set-screw, said cross-bar being provided with two downwardly-extending fingers, a spider provided with a plurality of radial arms, vertical shafts carried at the outer ends of said arms, agitating devices secured to the upper ends of said shafts, scrapers secured to the lower end of said shafts and pivotally mounted thereon intermediate of their ends, said scrapers resting on the bottom of the holder, the said spider being further provided with a tubular stem surrounding and spaced from the lower end of the said shaft and formed at its upper end with an outwardly-projecting yoke, the arms of said yoke being formed with apertures loosely receiving the said downwardly-extending fingers, and means for revolving said shaft.

821,333. COUCH. MILES J. BUCKLEY, Waterbury, Conn. Filed Feb. 27, 1906. Serial No. 303,240.



Claim.—1. A cushion-frame including a bottom, strips extending longitudinally of the bottom at each side of the frame, a marginal cushion secured to each strip, a filling interposed between the cushions, and a covering engaging the cushions.

2. A cushion-frame having a woven-wire bottom, spaced strips extending longitudinally of the woven-wire bottom at each side of the frame, a marginal cushion secured to the strips, a filling interposed between the cushions, and a covering connecting the cushions.

3. A couch-frame having a woven-wire bottom, strips secured to the woven-wire bottom, and extending longitudinal of the frame and each side thereof, a marginal cushion secured to each strip and frame respectively, a filling interposed between the cushion and a covering connecting the cushion and fastened to the frame.

4. A couch-frame having a woven-wire bottom, a longitudinal strip secured to the upper and lower surface of the woven-wire bottom at each side of the frame, cushions supported by the strips, fastening devices passing through the strips and the adjacent cushions, a filling interposed between said cushions and a strip of fabric extending over the filling and engaging the cushions.

5. The combination with a couch-frame provided with transverse bars, a woven-wire bottom secured to the frame, spaced longitudinal strips secured to the woven-wire bottom on each side of the frame, marginal cushions supported by the strips and secured to the latter, said cushions defining an intermediate pocket, a filling disposed within the pocket, a strip of fabric covering the pocket and extending over the marginal cushions for engagement with the cushion-frame, and springs interposed between transverse bars and the woven-wire bottom.

821,334. PROCESS OF MAKING CHEESE. CHARLES J. BUSKIST, New Albion, and JOHN W. MUTTER, Wesley, N. Y. Filed Feb. 26, 1906. Serial No. 303,101.

Claim.—1. An improved process for making cheese which consists in producing a milk-curd, removing the whey, mellowing and softening the curd in water, and finally salting, pressing and curing the curd to form cheese.

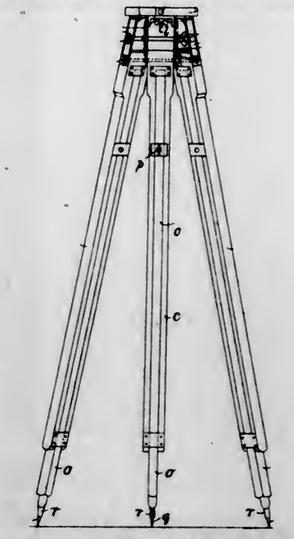
2. An improved process for making cheese which consists in producing a milk-curd, removing the whey, mellowing and softening the curd in pure cold water of about 50° Fahrenheit, and finally forming the curd into cheese.

3. An improved process for making cheese which consists in producing a milk-curd by fermentation, removing the whey, and mellowing and softening the curd partially with acid and partially with pure cold water and finally forming the curd into cheese.

4. An improved process for making cheese which consists in producing a curd from milk, mellowing and softening the curd at least in part by immersion in pure cold water of about 50° Fahrenheit and finally forming the curd into cheese.

5. An improved process for making cheese which consists in producing a curd from milk, mellowing and softening the curd partially by acid and partially by immersion in pure cold water of about 50° Fahrenheit and finally forming the curd into cheese.

821,335. STAND FOR PHOTOGRAPHIC CAMERAS, TELESCOPES, AND OTHER SCIENTIFIC INSTRUMENTS. WILLIAM BUTLER, Birkdale, England. Filed July 11, 1905. Serial No. 269,273.



Claim.—1. In a stand for the purposes specified, a head, a plurality of links, universal joints connecting said head to the respective links, and a leg pivoted to each link.

2. In a stand for the purposes specified, a head, a plurality of

links, universal joints located entirely below the lower surface of said head and connecting said head to the respective links, as many legs as there are links and pivot-joints between the links and the upper ends of the respective legs, the pivot for each leg being transverse to one of the axes of the universal joint of the same leg.

3. In a stand for the purposes specified a head, a plurality of blocks adapted to swivel on and secured to said head, links secured to said blocks, said blocks and links being provided with conea and corresponding recesses, means for tightening said blocks and links the one relative to the other, legs secured to said links, and means for gripping the ground on the ends of said legs.

4. In a stand for the purposes specified, a head, recesses on the under side of said head, a plurality of blocks adapted to swivel, a pin for each of said blocks, a head on each of said pins, further pins adapted to secure the heads of said pins to the head, nuts adapted to secure each of said blocks to said pin, links secured to each of said blocks, legs secured to said links, and means for gripping the ground on each of said legs.

5. In a stand for the purposes specified, a head, a plurality of blocks adapted to swivel on and secured to said head, links secured to said blocks, bolts and nuts for tightening each pair of said links relative to said blocks, a distance-piece on said bolts, legs secured to and adapted to turn relative to said links, and means for gripping the ground on the ends of said legs.

6. In a stand for the purposes specified, a head, a plurality of blocks respectively pivoted to said head, links pivoted to said blocks, and legs whose upper ends are pivoted to said links.

7. In a stand for the purposes specified, a head, a plurality of blocks respectively pivoted to said head, links pivoted to said blocks, legs whose upper ends are pivoted to said links, and feet pivoted to the lower ends of said legs.

8. In a stand for the purposes specified, a head, a plurality of blocks adapted to swivel on and secured to said head, legs, means pivotally connecting said blocks and legs for permitting the upper end of each leg to swing in an arc relative to its respective block in a plane parallel to the base of the head, and a pivoting-point on the ends of said legs.

9. In a stand for the purposes specified, a head, a plurality of legs each adapted to turn in a plane parallel to said head, a tube in the end of said legs, a holder adapted to slide in said tube, a pivoting-point adapted to pivot in said holder and provided with recesses in its head.

10. In a stand for the purposes specified, a head, legs secured to said head and capable of being turned in a plane parallel to said head and to swing in a plane at right angles to said head, a pivoting-point on the end of each of said legs, and means for holding said pivoting-point at an angle to said legs.

11. In a stand for the purposes specified, a head, legs secured to said head and adapted to be turned in a plane parallel with said head and to be moved in an arc about their point of attachment to said head, a sliding piece connected to each of said legs, and means for gripping the ground on the end of said legs.

12. In a stand for the purposes specified, a head, a plurality of pivots projecting downward from the under side of said head, blocks rotary on said pivots, pivot-pins on the respective blocks and at right angles to said pivots, links supported at one end by said pivot-pins, pivots at the other ends of said links parallel to said pivot-pins, and legs whose upper ends are respectively pivoted to the last-named pivots, and clamps for the first and last pivots.

13. In a stand for the purposes specified, a head, a plurality of blocks adapted to swivel on and secured to said head, links secured to each of said blocks, legs, extension-pieces adapted to be secured intermediate said head and said legs, a socket in the end of each of said legs, a sliding holder in each of said sockets, a pivoting-point in each of said holders, means for securing said pivoting-points both in alinement with and at an angle to their respective legs.

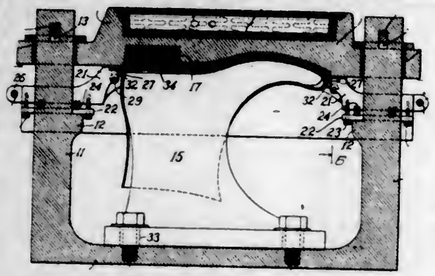
14. In a swiveling-point for the purposes specified, a socket, a sliding holder capable of longitudinal movement in said socket, a pivoting-point in said holder, means for securing said point in alinement with and at an angle to said socket.

15. In a stand for the purposes specified, a head, legs secured to said head, a holder-piece adapted to slide in each of said legs and guided by a bayonet-joint, a pivotal point in each of said holder-pieces, each provided with recesses in their respective heads, means on said legs for engaging the recesses of said points.

16. In a stand for the purposes specified, a pivotal point provided with recesses in its head a sliding holder for said point, a socket adapted to receive said sliding holder, a projecting edge on said socket adapted to be engaged by one of the recesses in the head of the point in the highest position of said holder and in the inclined position of said point, means for holding said holder in its inner position relative to said socket.

17. In a swiveling-point for the purposes specified, a socket, a holder capable of being turned in and of sliding in said socket a pivotal point in said holder means for securing said point in alinement and at an angle to said socket.

821,336. SHOE-SOLE VULCANIZING AND APPLYING APPARATUS. GEORGE F. BUTTERFIELD, Boston, Mass., assignor to Grace I. Butterfield, Boston, Mass. Filed May 29, 1905. Serial No. 262,721.



Claim.—1. In a vulcanizing apparatus, a holding-frame having a body or base portion and terminal uprights and an intermediate supporting device erected on said base for the article under treatment, in combination with a mold-plate to receive the rubber and apply it to said article, and formed with a chamber or space adapted to receive the heating means for vulcanizing the rubber, and with pressure mechanism for holding the parts in close contact during the operation, such combined mold-plate and heating-chamber and such article and pressure mechanism being together removable in said frame from the press, without interrupting the vulcanizing operation, substantially as set forth.

2. In a vulcanizing apparatus, a shoe-holding frame having a base, terminal uprights and an intermediate last or foot-form erected on said base for the shoe under treatment, in combination with a relatively movable section comprising a mold-plate and heating device formed integral, made removable from the end posts but connected thereto by pressure devices, and with marginal clamps fitting the outlines of the shoe and transverse sliding bars at the mold ends to prevent the escape of rubber, substantially as set forth.

3. In a vulcanizing apparatus, a shoe-holding frame having a base, terminal uprights and an intermediate last or foot-form secured thereon, in combination with a top section comprising an inverted mold-plate and a heating-chamber above and adjacent thereto, and with marginal clamps for the shoe edges arranged for lateral adjustment, the heated air rising from such elevated chamber producing no injurious effect upon the leather of the shoe-body during vulcanization, substantially as set forth.

4. In a vulcanizing apparatus, a shoe-holding frame having a base, vertical end posts provided with transverse keyways and an intermediate last or foot-form secured to said base, in combination with a removable top section recessed to admit the upper ends of the end posts and comprising a sole-shaped mold and a heating device formed integral, such top section extending normally somewhat above the end posts, secured thereto by keys in said keyways, and adapted to be pressed downwardly by the platens of a press in which said frame may be placed for additional pressure when required, substantially as set forth.

5. In a vulcanizing apparatus, a shoe-holding frame having a base, a last or foot-form erected thereon, vertical end posts with terminal pressure devices and projecting ledges at an intermediate point, in combination with marginal clamps for the shoe edges yieldingly supported from said ledges, a removable top section comprising a mold-plate to receive the rubber and a heating device for vulcanizing it, such section having a limited vertical movement with relation to the foot-form and clamps, varying according to the amount and nature of the pressure exerted, substantially as set forth.

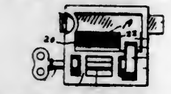
6. In a vulcanizing apparatus, a shoe-holding frame having a base, a last or foot-form erected thereon, vertical end posts with terminal pressure devices, projecting ledges at an intermediate point, and abutment-plates resting on such ledges, in combination with an integral mold-plate and heating device, marginal clamps for the sole edges, springs interposed between such clamps and the abutment-plates and adjusting-screws holding said springs to the clamps in proper position, substantially as set forth.

7. In a vulcanizing apparatus, a shoe-holding frame having vertical end posts and an intermediate last or foot-form erected on the base thereof, in combination with a removable top section comprising an inverted mold-plate to receive the rubber and a heating device for vulcanizing it, said section being recessed to admit the end posts to which it is applied vertically, a pair of marginal clamps conforming to the outlines of the shoe and recessed edgewise to fit around the end posts to which they are applied laterally, and with pressure mechanism serving to hold the mold, clamps and shoe in firm contact during the entire vulcanizing operation while the shoe is free from exposure to undue heat, substantially as set forth.

8. A shoe-sole vulcanizing and applying apparatus comprising a sole-shaped mold adapted to receive a body of vulcanizable or semivulcanized rubber compound, a shoe-holding frame connected thereto and comprising a foot-form and marginal clamps to secure the shoe in position and control the rubber during treatment, in combination with vulcanizing apparatus actuated by an electric heating-current, and with efficient pressure mechanism, serving to hold the shoe-bottom firmly upon the rubber in the mold with the clamps in proper marginal position during the vulcanizing operation, substantially as set forth.

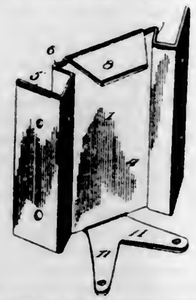
9. In a vulcanizing apparatus, a shoe-holding frame having a last or foot-form and vertical end posts erected on its base portion, in combination with a mold-plate, heating means and pressure mechanism for applying and vulcanizing the rubber sole, and marginal clamps to aid in confining the rubber in the mold, and with insulating material interposed between the marginal clamps and the shoe and between the heated mold-plate and the frame-posts, to limit the conduction of heat to the shoe, substantially as set forth.

821,337. WINDOW-SASH FASTENER. BENJAMIN F. CLINE, Indianapolis, Ind. Filed Apr. 22, 1905. Serial No. 256,899.



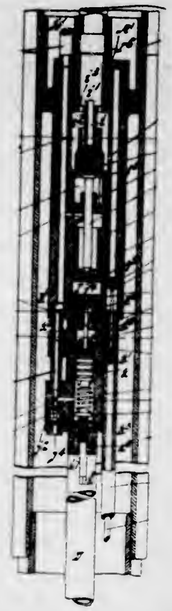
Claim.—The combination with the overlapping sashes of a window, of a fastener secured to the lower sash, a spring-actuated bolt in said fastener with a radial extension therefrom, a key-shaft parallel with said bolt, a finger on said key-shaft for engaging said extension to lock the bolt, a key for operating said key-shaft, and bolt-receiving holes provided in the upper sash of the window.

821,338. FURNITURE ATTACHMENT. JOSEPH C. CONDO, Alexandria, Ind. Filed Oct. 21, 1904. Serial No. 229,459.



Claim.—The combination of a casing, a block of dovetail form in cross-section applied to the casing, a metallic strip snugly fitting about the block and consisting of a body having the vertical edge portions thereof bent at an acute angle thereto to form sides extending toward each other, said sides being bent outwardly to form flanges, fastenings securing the flanges to the casing, spaced extensions projected from the strip at the lower portion thereof and extending across the lower end of the block beneath the lower edge portion of the casing part or parts to which said block is applied, fastenings securing said spaced extensions to the lower end portions of the casing parts aforesaid, and a flange bent from the upper edge portion of the strip above mentioned and overlapping the top of the block about which said strip fits.

821,339. APPARATUS FOR ACTUATING LIQUIDS. RUDOLPH CONRADER, Erie, Pa. Filed Dec. 24, 1902. Serial No. 136,431.



Claim.—1. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber; a connection between said chamber and a source of actuating-fluid supply; means controlled by the liquid entering the chamber for opening said connection; and means acting independently of the liquid in said chamber for closing said connection.

2. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber, by a following action through the lift of an actuating fluid; a connection between said chamber and a source of actuating-fluid supply; means controlled by the liquid entering the chamber for opening said connection; and means acting independently of the liquid in said chamber for closing said connection.

3. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber; a connection between said chamber and a source of actuating-fluid supply; means controlled by the gravity of the liquid entering the chamber for opening said connection; and means acting independently of the liquid in said chamber for closing said connection.

4. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber, by a following action through the lift of an actuating fluid; a connection between said chamber and a source of actuating-fluid supply; means controlled by the gravity of the liquid entering the chamber for opening said connection; and means acting independently of the liquid in said chamber for closing said connection.

5. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber; a connection between said chamber and a source of actuating-fluid supply; a float arranged in said chamber; means actuated by the float for effecting the opening of said connection; and means acting independently of said float for closing said connection.

6. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber by a following action through the lift of an actuating fluid; a connection between said chamber and a source of actuating-fluid supply; a float arranged in said chamber; means actuated by the float for effecting the opening of said connec-

tion; and means acting independently of said float for closing said connection.

7. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber; a connection between said chamber and a source of actuating-fluid supply; means controlled by the liquid entering the chamber for opening said connection; and means actuated at the arrival of the liquid forced from said chamber at a point remote from said chamber for closing said connection.

8. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber by a following action through the lift of an actuating fluid; a connection between said chamber and a source of actuating-fluid supply; means controlled by the liquid entering the chamber for opening said connection; and means actuated at the arrival of the liquid forced from said chamber at a point remote from said chamber for closing said connection.

9. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber; a connection between said chamber and a source of actuating-fluid supply; means controlled by the gravity of the liquid entering the chamber for opening said connection; and means actuated at the arrival of the liquid forced from said chamber at a point remote from said chamber for closing said connection.

10. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber; by a following action through the lift of an actuating fluid; a connection between said chamber and a source of actuating-fluid supply; means controlled by the gravity of the liquid entering the chamber for opening said connection; and means actuated at the arrival of the liquid forced from said chamber at a point remote from said chamber for closing said connection.

11. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber; a connection between said chamber and a source of actuating-fluid supply; means controlled by the liquid entering the chamber for opening said connection; and means acting independently of the liquid in the chamber and at the arrival of the liquid forced from said chamber at a point remote from said chamber for closing said connection.

12. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber by a following action through the lift of an actuating fluid; a connection between said chamber and a source of actuating-fluid supply; means controlled by the liquid entering the chamber for opening said connection; and means acting independently of the liquid in the chamber and at the arrival of the liquid forced from said chamber at a point remote from said chamber for closing said connection.

13. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber; a connection between said chamber and a source of actuating-fluid supply; means controlled by the gravity of the liquid entering the chamber for opening said connection; and means acting independently of the liquid in the chamber and at the arrival of the liquid forced from said chamber at a point remote from said chamber for closing said connection.

14. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber by a following action through the lift of an actuating fluid; a connection between said chamber and a source of actuating-fluid supply; means controlled by the gravity of the liquid entering the chamber for opening said connection; and means acting independently of the liquid in the chamber and at the arrival of the liquid forced from said chamber at a point remote from said chamber for closing said connection.

15. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber; a connection between said chamber and a source of actuating-fluid supply; a float in said chamber; means actuated by said float for effecting the opening of said connection; and means actuated at the arrival of the liquid forced from said chamber at a point remote from said chamber for closing said connection.

16. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber; by a following action through the lift of an actuating fluid; a connection between said chamber and a source of actuating-fluid supply; a float in said chamber; means actuated by said float for effecting the opening of said connection; and means actuated at the arrival of the liquid forced from said chamber at a point remote from said chamber for closing said connection.

17. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber; a connection between said chamber and a source of actuating-fluid supply; means controlled by the liquid entering the chamber for opening said connection; and means arranged at said chamber and actuated by an equalizing pressure thereon and independently of the liquid in the chamber for closing said connection.

18. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber; by a following action through the lift of an actuating fluid; a connection between said chamber and a source of actuating-fluid supply; means controlled by the liquid entering the chamber for opening said connection; and means arranged at said chamber and actuated by an equalizing pressure thereon and independently of the liquid in the chamber for closing said connection.

19. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquid to said chamber; means for carrying liquid from said chamber; a connection between said chamber and a source of actuating-fluid supply; means controlled by the gravity of the liquid entering the chamber for opening said connection; and means arranged at said chamber and actuated by an equalizing pressure thereon and independently of the liquid in the chamber for closing said connection.

20. In an apparatus for actuating liquids, the comibnation with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber; by a following action through the lift of an actuating fluid; a connection between said chamber and a source of actuating-fluid supply; means controlled by the gravity of the liquid entering the chamber for opening said connection; and means arranged at said chamber and actuated by an equalizing pressure thereon and independently of the liquid in the chamber for closing said connection.

21. In an apparatus for actuating liquids, the comoination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber; a connection between said chamber and a source of actuating-fluid supply; means controlled by the liquid entering the chamber for opening said connection; and means actuated by an equalizing pressure incident to the arrival of the liquid at a point remote from the chamber for closing said connection.

22. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber; a connection between said chamber and a source of actuating-fluid supply; means controlled by the liquid entering the chamber for opening said connection; and means arranged at the chamber and actuated by an equalizing pressure incident to the arrival of the liquid at a point remote from the chamber for closing said connection.

23. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber; a connection between said chamber and a source of actuating-fluid supply; means controlled by the gravity of the liquid entering the chamber for opening said connection; and means actuated by an equalizing pressure incident to the arrival of the liquid at a point remote from the chamber for closing said connection.

24. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber; a connection between said chamber and a source of actuating-fluid supply; and mechanism comprising a pressure device actuated by fluid-pressure in the chamber for holding open said connection.

25. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber, by a following action through the lift of an actuating fluid; a connection between said chamber and a source of actuating-fluid supply; and mechanism comprising a pressure device actuated by fluid-pressure in the chamber for holding open said connection.

26. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber; a connection between said chamber and a source of actuating-fluid supply; mechanism comprising a pressure device actuated by fluid-pressure in the chamber for holding open said connection; and a connection between said pressure device and the top of the chamber whereby said pressure device may be actuated directly by actuating fluid.

27. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber; a connection between said chamber and a source of actuating-fluid supply; mechanism comprising a pressure device actuated by fluid-pressure in the chamber for holding open said connection; and means acting independently of the liquid in the chamber for equalizing the pressure on said pressure device to effect the closing of said connection.

28. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber; a connection between said chamber and a source of actuating-fluid supply; mechanism comprising a pressure device actuated by fluid-pressure in the chamber for holding open said connection; means acting at the arrival of the liquid at a point remote from the chamber for equalizing the pressure on said pressure device to effect the closing of said connection.

29. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber; a connection between said chamber and a source of actuating-fluid supply; a valve controlling said connection; a pressure device controlling said valve; an auxiliary valve controlling the admission of actuating fluid to said pressure device; a motor controlling said auxiliary valve, said motor being arranged to be actuated by a fluid-pressure in the chamber during the expulsion of liquid.

30. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber by the following action through the lift of the actuating fluid; a connection between said chamber and a source of actuating-fluid supply; a valve controlling said connection; a pressure device controlling said valve; an auxiliary valve controlling the admission of actuating fluid to said pressure device; and a motor controlling said auxiliary valve, said motor being arranged to be actuated by a fluid-pressure in the chamber during the expulsion of liquid from said chamber.

31. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber; a connection between said chamber and a source of actuating-fluid supply; means controlled by the liquid entering the chamber for opening said connection; mechanism actuated by fluid-pressure in the chamber for holding open said connection.

32. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber by a following action through the lift of an actuating fluid; a connection between said chamber and a source of actuating-fluid supply; means controlled by the liquid entering the chamber for opening said connection; mechanism actuated by fluid-pressure in the chamber for holding open said connection.

33. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber; a connection between said chamber and a source of actuating-fluid supply; means controlled by gravity of the liquid entering the chamber for opening said connection; mechanism actuated by fluid-pressure in the chamber for holding open said connection.

34. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber; a connection between said chamber and a source of actuating-fluid supply; means controlled by the liquid entering the chamber for opening said connection; mechanism actuated by fluid-pressure in the chamber for holding open said connection; and means for equalizing the pressure on said mechanism to close the connection.

35. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber; a connection between said chamber and a source of actuating-fluid supply; means controlled by the liquid entering the chamber for opening said connection; mechanism actuated by fluid-pressure in the chamber for holding open said connection; and means acting independently of the liquid in the chamber for equalizing the pressure on said mechanism to close the connection.

36. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admittiog liquid to said chamber; means for conveying liquid from said chamber by a following action through the lift of an actuating fluid; a connection between said chamber and a source of actuating-fluid supply; means controlled by the liquid entering the chamber for opening said connection; mechanism actuated by fluid-pressure in the chamber for holding open said connection; and means acting independently of the liquid in the chamber for equalizing the pressure on said mechanism to close the connection.

37. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber; a connection between said chamber and a source of actuating-fluid supply; means controlled by the gravity of the liquid entering the chamber for opening said connection; mechanism actuated by fluid-pressure in the chamber for holding open said connection; and means acting independently of the liquid in the chamber for equalizing the pressure on said mechanism to close the connection.

38. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber; a connection between said chamber and a source of actuating-fluid supply; means controlled by the liquid entering the chamber for opening said connection; mechanism actuated by fluid-pressure in the chamber for holding open said connection; and means actuated at the arrival of liquid at a point remote from the chamber for equalizing the pressure of said mechanism to close the connection.

39. In an apparatus for actuating liquids, the combination with a pump-cylinder; means for admitting liquid to said chamber; means for conveying liquid from said chamber; a connection between said chamber and a source of actuating-fluid supply; means controlled by the gravity of the liquid entering the chamber for opening said connection; mechanism actuated by fluid-pressure in the chamber for holding open said connection; and means actuated at the arrival of liquid at a point remote from the chamber for equalizing the pressure of said mechanism to close the connection.

40. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquids from said chamber; a connection between said chamber and an actuating-fluid supply; a pressure-actuated device controlling the admission of actuating fluid from said connection; a by-pass between said connection and said device; mechanism actuated by the entrance of liquid to said chamber for opening said by-pass; and means for maintaining communication between said connection and device after the closing of said by-pass.

41. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquids from said chamber; a connection between said chamber and an actuating-fluid supply; a pressure-actuated device controlling the admission of actuating fluid from said connection; a by-pass between said connection and said device; mechanism actuated by the entrance of liquid to said chamber for opening said by-pass; and means actuated by pressure in the chamber for connecting said connection and device.

42. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquids from said chamber by a following action through the lift of an actuating fluid; a connection between said chamber and an actuating-fluid supply; a pressure-actuated device controlling the admission of actuating fluid from said connection; a by-pass between said connection and said device; mechanism actuated by the entrance of liquid to said chamber for opening said by-pass; and means actuated by pressure in the chamber for connecting said connection and device.

43. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquids from said chamber; a connection between said chamber and an actuating-fluid supply; a pressure-actuated device controlling the admission of actuating fluid from said connection; a by-pass between said connection and said device; mechanism actuated by the entrance of liquid to said chamber for opening said by-pass; and means actuated by pressure in the chamber for maintaining communication between said connection and device after the closing of said by-pass.

44. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquids from said chamber by a following action through the lift of an actuating fluid; a connection between said chamber and an actuating-fluid supply; a pressure-actuated device

controlling the admission of actuating fluid from said connection; a by-pass between said connection and said device; mechanism actuated by the entrance of liquid to said chamber for opening said by-pass; and means actuated by pressure in the chamber for maintaining communication between said connection and device after the closing of said by-pass.

45. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber; a connection between said chamber and an actuating-fluid supply; a pressure-actuated device controlling the admission of actuating fluid from said connection; a by-pass between said connection and said device; a float arranged in said chamber; mechanism actuated by said float for controlling said by-pass; and means for maintaining communication between said connection and device after the closing of said by-pass.

46. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquids from said chamber; a connection between said chamber and an actuating-fluid supply; a pressure-actuated device controlling the admission of actuating fluid from said connection; a by-pass between said connection and said device; mechanism actuated by the entrance of liquid to said chamber for opening said by-pass; and means for maintaining communication between said connection and device after the closing of said by-pass; and means for balancing the pressure on said device to close said connection.

47. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquids from said chamber; a connection between said chamber and actuating-fluid supply; a pressure-actuated device controlling the admission of actuating fluid from said connection; a by-pass between said connection and said device; mechanism actuated by the entrance of liquid to said chamber for opening said by-pass; and means for maintaining communication between said connection and device after the closing of said by-pass; and means acting independently of the liquid in the chamber for balancing the pressure on said device to close the connection.

48. In an apparatus for actuating liquid the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquids from said chamber; a connection between said chamber and an actuating-fluid supply; a main valve controlling said connection; a pressure-actuated device controlling said main valve; a by-pass between said connection and said pressure device; an auxiliary valve controlling said by-pass; mechanism for actuating said auxiliary valve; and a second auxiliary valve controlling the admission of actuating fluids to said pressure device; and means for maintaining said second auxiliary valve in its open position after the closing of the first auxiliary valve.

49. In an apparatus for actuating liquid the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquids from said chamber; a connection between said chamber and an actuating-fluid supply; a main valve controlling said connection; a pressure-actuated device controlling said main valve; a by-pass between said connection and said pressure device; an auxiliary valve controlling said by-pass; mechanism for actuating said auxiliary valve; a second auxiliary valve controlling the admission of actuating fluids to said pressure device a second pressure device controlling said second auxiliary valve; and a connection between said second pressure device and the pump-chamber.

50. In an apparatus for actuating liquid the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquids from said chamber by a following action through the lift of an actuating fluid; a connection between said chamber and an actuating-fluid supply; a main valve controlling said connection; a pressure-actuated device controlling said main valve; a by-pass between said connection and said pressure device; an auxiliary valve controlling said by-pass; mechanism for actuating said auxiliary valve; a second auxiliary valve controlling the admission of actuating fluids to said pressure device a second pressure device controlling said second auxiliary valve; and a connection between said second pressure device and the pump-chamber.

51. In an apparatus for actuating liquid the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquids from said chamber; a connection between said chamber and an actuating-fluid supply; a main valve controlling said connection; a pressure-actuated device controlling said main valve; a by-pass between said connection and said pressure device; an auxiliary valve controlling said by-pass; mechanism for actuating said auxiliary valve; a second auxiliary valve controlling a passage from said connection to said pressure device; a second pressure device controlling said second auxiliary valve; a connection between said pressure device and the pump-chamber; and means for closing said second auxiliary valve upon reduction of pressure in the chamber.

52. In an apparatus for actuating liquid the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquids from said chamber; a connection between said chamber and an actuating-fluid supply; a main valve controlling said connection; a pressure-actuated device controlling said main valve; a by-pass between said connection and said pressure device; an auxiliary valve controlling said by-pass; a float in said chamber; means acting with said float for controlling said auxiliary connection and device for the closing of said auxiliary valve.

53. In an apparatus for actuating liquid the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquids from said chamber; a connection between said chamber and an actuating-fluid supply; a main valve controlling said connection; a pressure-actuated device controlling said main valve; a by-pass between said connection and said pressure device; an auxiliary valve controlling said by-pass; a float in said chamber; means acting with said float for controlling said auxiliary valve; means for maintaining communication between said connection and device after the closing of said auxiliary valve; and means actuated at the arrival of the liquid at a point remote from the chamber for equalizing the pressure on said pressure device to admit the closing of said main valve.

54. In an apparatus for actuating liquid the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber; a connection between said chamber and an actuating-fluid supply; a main valve controlling said connection; a pressure-actuated device controlling said main valve; a by-pass between said connection and said pressure device; an auxiliary valve controlling said by-pass; a float in said chamber; means acting with said float for controlling said auxiliary valve; and means for maintaining communication between said connection and device after the closing of said auxiliary valve; and means acting independently of the liquid in the chamber controlling said pressure device to close the main valve.

55. In an apparatus for actuating liquid the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber by a following action through the lift of an actuating fluid; a connection between said chamber and an actuating-fluid supply; a main valve controlling said connection; a pressure-actuated device controlling said main valve; a by-pass between said connection and said pressure device; an auxiliary valve controlling said by-pass; a float in said chamber; means acting with said float for controlling said auxiliary valve; and means for maintaining communication between said connection and device after the closing of said auxiliary valve; and means acting independently of the liquid in the chamber controlling said pressure device to close the main valve.

56. In an apparatus for actuating liquid the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquids from said chamber; a connection between said chamber and an actuating-fluid supply; a main valve controlling said connection; a pressure-actuated device controlling said main valve; a by-pass between said connection and said pressure device; the valve g controlling said by-pass; the stem G′ extending from said valve; the rod G extending to the lever f carried in the chamber; and the float F arranged to operate upon the lever f.

57. In an apparatus for actuating liquids, the combination with the pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber; a connection between said chamber and an actuating-fluid supply; the valve I^4 controlling said connection; a pressure device comprising the chamber I, the piston I′ controlling said valve; a by-pass to the chamber I; an auxiliary valve controlling said by-pass; means actuated by the entering liquid for controlling said auxiliary valve; and means acting independently of the liquid in the chamber for balancing the pressure on the pressure device to effect the closing of the valve I^4.

58. In an apparatus for actuating liquids, the combination with the pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber; a connection between said chamber and an actuating-fluid supply; the valve I^4 controlling said connection; a pressure device comprising the chamber I, the piston I′, controlling said valve, said piston being provided with a vent i^4 and the chamber with an exhaust-passage i^5.

59. In an apparatus for actuating liquids, the combination of a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber; a connection between said chamber and an actuating-fluid supply; a pressure-actuated device controlling the admission of actuated fluid from said connection; the valve K′ for controlling the admission of fluid to said pressure device; an auxiliary pressure device controlling said valve K; a connection between said pressure device and the pump-chamber; and means for acting upon the pressure device for closing the valve K′ upon a reduction of pressure in the chamber.

60. In an apparatus for actuating liquids, the combination of a pump-chamber; means for admitting liquid to such chamber; means for conveying liquid from said chamber by a following action through the lift of an actuating fluid; a connection between said chamber and an actuating-fluid supply; a pressure-actuated device controlling the admission of actuated fluid from said connection; the valve K′ for controlling the admission of fluid to said pressure device; an auxiliary pressure device controlling said valve K; a connection between said pressure device and the pump-chamber; and means for acting upon the pressure device for closing the valve K′ upon a reduction of pressure in the chamber.

61. In an apparatus for actuating liquids, the combination of a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber; a connection between said chamber and an actuating-fluid supply; a pressure-actuated device controlling the admission of actuating fluid from said connection; the valve K′ for controlling the admission of fluid to said pressure device; an auxiliary pressure device controlling said valve K′; a connection between said pressure device and the pump-chamber; a spring k^4 acting upon said pressure device; means for adjusting the tension of said spring; and means for acting upon the pressure device for closing the valve K′ upon a reduction of pressure in the chamber.

62. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquids from said chamber; a connection between said chamber and an actuating-fluid supply; the valve I^4 controlling said connection; pressure device comprising the chamber I and piston I′ for actuating said valve; a by-pass leading to said pressure device; the valve g controlling said by-pass; means actuated by the entering liquid for actuating the valve g; the valve K′ controlling a connection for supplying actuating fluid to the chamber I; a pressure device comprising the chamber k and piston k'; a connection between the chamber k and the pump-chamber.

63. In an apparatus for actuating liquids, the combination with a pump-chamber formed of tubing; a fitting A′ secured in said tubing forming a top for said chamber, said fitting carrying the valve mechanism controlling the action of the pump; and the chamber H arranged above said fitting and forming a part of the actuating-fluid-supply connection.

64. In an apparatus for actuating liquids, the combination of a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber; a connection between said chamber and a source of actuating-fluid supply; the valve I^4 controlling said connection; the chamber I; the piston I′ arranged in said chamber; the stem I^3 connecting said piston with the valve I^4; the by-pass G^2; the valve g controlling said by-pass; connection g^2 between said by-pass and the chamber I; means actuated by the entering liquid for operating the valve g; the valve K′; a by-pass C^{11}; passage K^4 leading to said valve; a passage K^3 leading from said valve to the chamber I; the chamber k; the piston k' the rein; the passage k^3; pipe k^4 in the upper end of the chamber.

65. In an apparatus for actuating liquids, the combination of a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber; a connection between said chamber and a source of actuating-fluid supply; the valve I^4 controlling said connection; the chamber I; the piston I′ arranged in said chamber; the stem I^3 connecting said piston with the valve I^4; the by-pass G^2; the valve g controlling said by-pass; connection g^2 between said by-pass and the chamber I; means actuated by the entering liquid for operating the valve g; the valve K′; a by-pass C^{11}; passage K^4 leading to said valve, and a passage K^3 leading from said valve to the chamber I; the chamber k; the piston k' therein; the passage k^3; passage k^4 in the upper end of the chamber; the spring k^6 arranged against the piston k' and the adjusting-stud k^7.

66. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquid to said chamber, means for conveying liquid from said chamber; a connection between said chamber and an actuating-fluid supply; a pressure-actuated device controlling the admission of actusted fluids to said chamber; and means actuated with the pressure in said chamber for controlling the pressure device.

67. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber; a connection between said chamber and an actuating-fluid supply; a pressure-actuated device controlling the admission of actuated fluids to said chamber; means actuated with the pressure in said chamber for controlling the pressure device; a mechanism for adjusting said means to effect a closing at a desired pressure in the chamber.

68. In an apparatus for actuating liquids the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber; a connection between said chamber and a source of actuating-fluid supply; means for conveying energy supplied from a source independent of the liquid and from a point remote from said chamber to said connection at the chamber; means controlled by the energy so conveyed for closing said connection; and means actuated by the fluid forced from said chamber for controlling the energy conveyed.

69. In an apparatus for actuating liquids the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber by a following action through the lift of an actuating fluid; a connection between said chamber and a source of actuating-fluid supply; means for conveying energy supplied from a source independent of the liquid and from a point remote from said chamber to said connection; means controlled by the energy so conveyed for closing said connection and means actuated by the fluid forced from said chamber for controlling the energy conveyed.

70. In an apparatus for actuating liquids the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber by a following action through the lift of an actuating fluid; a connection between said chamber and a source of actuating-fluid supply; means for conveying energy supplied from a source independent of the liquid and from a point remote from said chamber to said connection at the chamber; means controlled by the energy so conveyed for closing said connection; and means actuated by the fluid forced from said chamber for controlling the energy conveyed.

71. In an apparatus for actuating liquids the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber; a connection between said chamber and a source of actuating-fluid supply; means for conveying energy from a point remote from said chamber to said connection; means controlled by the energy so conveyed for closing said connection; means actusted by the fluid forced from said chamber for controlling the energy conveyed; and means controlled by the liquid entering the chamber for opening said connection.

72. In an apparatus for actuating liquids the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber by a following action through the lift of an actuating fluid; a connection between said chamber and a source of actuating-fluid supply; means for conveying energy from a point remote from said chamber to said connection; means controlled by the energy so conveyed for closing said connection; means actuated by the fluid forced from said chamber for controlling the energy conveyed; and means controlled by the liquid entering the chamber for opening said connection.

73. In an apparatus for actuating liquids the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber; a connection between said chamber and a source of actuating-fluid supply; means for conveying energy from a point remote from said chamber to said connection; means controlled by the energy so conveyed for closing said connection; means actuated by the fluid forced from said chamber for controlling the energy conveyed; and means controlled by the gravity of the liquid entering the chamber for opening said connection.

74. In an apparatus for actuating liquids the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber by a following action through the lift of an actuating fluid; a connection between said chamber and a source of actuating-fluid supply; means for conveying energy from a point remote from said chamber to said connection; means controlled by the energy so conveyed for closing said connection; means actuated by the fluid forced from said chamber for controlling the energy conveyed; and means controlled by the gravity of the liquid entering the chamber for opening said connection.

75. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber; a connection between said chamber and a source of actuating-fluid supply; mechanism for closing said connection; a duct for conveying actuating fluid to said

mechanism from a point remote from the chamber; means actuated by the fluid forced from said chamber controlling said duct; and means controlled by the liquid entering the chamber for opening said connection.

76. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber; a connection between said chamber and a source of actuating-fluid supply; mechanism for closing said connection; a duct for conveying actuating fluid to said mechanism from a point remote from the chamber; means actuated by the fluid forced from said chamber controlling said duct; and means controlled by the gravity of the liquid entering the chamber for opening said connection.

77. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber; a connection between said chamber and a source of actuating-fluid supply; means controlled by the liquid entering the chamber for opening said connection; mechanism arranged at the chamber and actuated by an equalizing of pressure on the mechanism for closing said connection; a duct leading from a point remote from said chamber to said mechanism, the duct being arranged to convey actuating fluid to equalize the pressure on said mechanism; and means controlling said duct

78. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber by a following action through the lift of an actuating fluid; a connection between said chamber and a source of actuating-fluid supply; means controlled by the liquid entering the chamber for opening said connection; mechanism arranged at the chamber and actuated by an equalizing of pressure on the mechanism for closing said connection; a duct leading from a point remote from said chamber to said mechanism, the duct being arranged to convey actuating fluid to equalize the pressure on said mechanism; and means controlling said duct.

79. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber; a connection between said chamber and a source of actuating-fluid supply; means actuated by pressure in the chamber maintaining said connection in an open position; mechanism arranged at the chamber and actuated by an equalizing of pressure on the mechanism for closing said connection; a duct leading from a point remote from said chamber to said mechanism, the duct being arranged to convey actuating fluid to equalize the pressure on said mechanism; and means controlling said duct.

80. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber by a following action through the lift of an actuating fluid; a connection between said chamber and a source of actuating-fluid supply; means actuated by pressure in the chamber maintaining said connection in an open position; mechanism arranged at the chamber and actuated by an equalizing of pressure on the mechanism for closing said connection; a duct leading from a point remote from said chamber to said mechanism, the duct being arranged to convey actuating fluid to equalize the pressure on said mechanism; and means controlling said duct.

81. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber; a connection between said chamber and a source of actuating-fluid supply; means controlled by the liquid entering the chamber for opening said connection; mechanism arranged at the chamber and actuated by an equalizing pressure for closing said connection; a duct leading from a point remote from said chamber to said mechanism, the duct being arranged to convey actuating fluid to equalize the pressure on said mechanism; means controlling said duct; and means actuated by liquid forced from said chamber for controlling said duct.

82. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber; a connection between said chamber and a source of actuating-fluid supply; means controlled by the gravity of the liquid entering the chamber for opening said connection; mechanism arranged at the chamber and actuated by an equalizing pressure for closing said connection; a duct leading from a point remote from said chamber to said mechanism, the duct being arranged to convey actuating fluid to equalize the pressure on said mechanism; means controlling said duct; and means actuated by liquid forced from said chamber for controlling said duct.

83. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquids from said chamber; a connection between said chamber and an actuating-fluid supply; a pressure-actuated device controlling the admission of actuating fluid from said connection; a by-pass between said connection and said device; mechanism actuated by the entrance of liquid to said chamber for opening said by-pass; means for maintaining communication between said connection and device after the closing of said by-pass; a duct leading from a point remote from said chamber to said device, said duct being arranged to convey actuating fluid to said device and deliver it to said device to balance the pressure thereon; and means for controlling said duct.

84. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquids from said chamber; a connection between said chamber and an actuating-fluid supply; a pressure-actuated device controlling the admission of actuating fluid from said connection; a by-pass between said actuating fluid from said connection; a by-pass between said connection and said device; mechanism actuated by the entrance of liquid to said chamber for opening said by-pass; means for maintaining communication between said connection and device after the closing of said by-pass; a duct leading from a point remote from said chamber to said device, said duct being arranged to convey actuating fluid to said device and deliver it to said device to balance the pressure thereon; and means actuated by the liquid forced from the chamber for controlling said duct.

85. In an apparatus for actuating liquids the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber; a connection between said chamber and a source of actuating-fluid supply; means for conveying energy supplied from a source independent of the actuated liquid from a point remote from said chamber to said connection; means controlled by the energy so conveyed for closing said connection; the float-chamber N; means for conveying fluid from said chamber; the float N′ in said float-chamber; and means controlled by said float for controlling said energy.

86. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber; a connection between said chamber and a source of actuating-fluid supply; mechanism for closing said connection; a duct for conveying actuating fluid to said mechanism from a point remote from the chamber; the float-chamber N arranged in the means for conveying liquid from the chamber; the float N′ and means actuated by said float for controlling said duct.

87. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber; a connection between said chamber and a source of actuating-fluid supply; mechanism for closing said connection; a duct forming an exhaust-passage and a passage for conveying actuating fluid to said mechanism; the valve M comprising the valve m opening to the atmosphere; the valve m^3 opening to a source of actuating-fluid supply; the bell-crank lever m^3 for actuating said valves respectively; the float-chamber N and float N′ arranged to actuate said bell-crank levers.

88. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber; a connection between said chamber and an actuating-fluid supply; a valve controlling said connection; means for conveying actuating fluid to said pressure device to open the valve; a duct from said pressure device to a point remote from the chamber; and from the opposite part of the pressure device from that on which pressure is exerted, said duct forming initially an exhaust-passage; means for turning an actuating fluid into said duct to affect a counter-pressure on said pressure device to close the valve.

89. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber; a connection between said chamber and an actuating-fluid supply; a valve controlling said connection; a pressure device controlling said valve; the valve K′ controlling a connection to said pressure device; a pressure-actuated motor controlling said valve K′; a duct leading from the opposite side of the motor to which pressure is admitted; and means for turning in an actuating fluid for balancing said pressure device and motor to effect the closing of said valves.

90. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber by a following action through the lift of an actuating fluid; a connection between said chamber and an actuating-fluid supply; a valve controlling said connection; a pressure device controlling said valve; the valve K′ controlling a connection to said pressure device; a pressure-actuated motor controlling said valve K′; a duct leading from the opposite side of the motor to which pressure is admitted; and means for turning in an actuating fluid for balancing said pressure device and motor to effect the closing of said valves.

91. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber; a valve controlling said connection; a pressure device controlling said valve; a passage leading from said pressure device to a point remote from the chamber; the chamber j^3 at the bottom of said passage and valve j^3 arranged in said chamber for the purpose described.

92. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber; a valve controlling said connection; a pressure device controlling said valve; a passage conveying actuating fluid to said pressure device; a second valve controlling said passage; means actuated by the entering liquid for controlling said second valve; a pressure-actuated device for opening a second passage leading to said pressure device; a third valve controlling said second passage; a fluid-actuated motor controlling said valve; a duct from said pressure device and said motor forming initially an exhaust-passage therefor; and means for turning in an actuating fluid for balancing said pressure device and motor for closing the valves controlled by them.

93. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquid to said chamber; means for conveying liquid from said chamber by a following action through the lift of an actuating fluid; a valve controlling said connection; a pressure device controlling said valve; a passage conveying actuating fluid to said pressure device; a second valve controlling said passage; means actuated by the entering liquid for controlling said second valve; a pressure-actuated device for opening a second passage leading to said pressure device; a third valve controlling said second passage; a fluid-actuated motor controlling said valve; a duct from said pressure device and said motor forming initially an exhaust-passage therefor; and means for turning in an actuating fluid for balancing said pressure device and motor for closing the valves controlled by them.

94. In an apparatus for actuating liquid, the combination with a chamber; a connection leading to said chamber from a supply of actuating fluid; a float in said chamber; an inlet to said chamber; a valve for closing said inlet; and means actuated by the actuating fluid for opening said valve.

95. In an apparatus for actuating liquid, the combination of a chamber; a connection leading to said chamber from a supply of actuating fluid; a float in said chamber; an inlet to said chamber; a valve for closing said inlet; and means actuated by the actuating fluid for opening said valve; and means for closing said valve before excessive pressure is exerted in the chamber by the liquid.

96. In an apparatus for actuating liquid, the combination of a chamber; a connection leading to said chamber from a supply of actuating fluid; means for conveying fluid from said chamber by a following action through the lift of an actuating fluid; a float in said chamber; an inlet to said chamber; a valve for closing said inlet; and means actuated by the actuating fluid for opening said valve; and means for closing said valve before excessive pressure is exerted in the chamber by the liquid.

97. In an apparatus for actuating liquid, the combination of a chamber; a connection leading to said chamber from a supply of actuating fluid; a float in said chamber; an inlet to said chamber; a valve for closing said inlet; a pressure device controlling said valve, said pressure device being arranged to have the actuating fluid turned into it as the actuating fluid is turned into the apparatus; and means for balancing said pressure device to permit the closing of the valve, the actuation of said balancing means being effected by the entering liquid.

98. In an apparatus for actuating liquid, the combination of a chamber; a connection leading to said chamber from a supply of actuating fluid; a float in said chamber; an inlet to said chamber; a valve for closing said inlet; a pressure device controlling said valve comprising the chamber C^8, piston C^8; connection C^4 to a source of motor-fluid supply; and the connection C^{10} with the chamber.

99. In an apparatus for actuating liquids the combination of a chamber; a connection between said chamber and a source of actuating-fluid supply; means actuated by the entering liquid for opening said connection; a valve controlling the entrance of liquid; a pressure device controlling said valve, the side of the pressure device opening said valve being connected with the source of actuating-fluid supply; and a connection between the opposite side of said pressure device and the chamber.

100. In an apparatus for actuating liquids the combination of a chamber; a connection between said chamber and a source of actuating-fluid supply; means actuated by the entering liquid for opening said connection; a valve controlling the entrance of liquid; a pressure device controlling said valve, the side of the pressure device opening said valve being connected with the source of actuating-fluid supply; a connection between the opposite side of said pressure device and the chamber; and means for cutting off the connection between the chamber and actuating-fluid supply and for exhausting the pressure in the chamber.

101. In an apparatus for actuating liquids, the combination of a chamber; a connection between said chamber and a source of actuating-fluid supply; means actuated by the entering liquid for opening said connection; a valve controlling the entrance of liquid; a pressure device controlling said valve, the side of the pressure device opening said valve being connected with the source of actuating-fluid supply, and a connection between the opposite side of said pressure device and the chamber; the check-valves B^3 for preventing an outflow of liquid from the chamber.

102. In an apparatus for actuating liquids, the combination of a pump-chamber; an eduction-tube; a connection between the chamber and a source of actuating fluid; a float in said chamber; a passage in which said float is arranged, said passage being open at the bottom; a vent for said passage; and means controlled by said float for opening said connection.

103. In an apparatus for actuating liquids, the combination of a pump-chamber; an eduction-tube; means for conveying liquid through said tube by a following action through the lift of an actuating fluid; a connection between the chamber and a source of actuating fluid; a float in said chamber; a passage in which said float is arranged, said passage being open at the bottom; a vent for said passage; and means controlled by said float for opening said connection.

104. In an apparatus for actuating liquids, the combination of a pump-chamber; an eduction-tube; a connection between the chamber and a source of actuating fluid; a float in said chamber; a passage in which said float is arranged, said passage being open at the bottom; a vent for said passage; a valve controlled by said float, said valve being arranged to affect the admission of actuating fluid to said chamber and said valve being arranged to move in the direction of the pressure upon it of actuating fluid; a connecting mechanism between said valve and float arranged to utilize the pressure on the valve for balancing the float.

105. In an apparatus for actuating liquids, the combination of a pump-chamber; an eduction-tube; a connection between the chamber and a source of actuating fluid; a float in said chamber; a vent for said passage; a valve controlled by said float, said valve being arranged to effect the admission of actuating fluid to said chamber and said valve being arranged to move in the direction of the pressure of actuating fluid upon it; a connecting mechanism between said valve and float arranged to utilize the pressure on the valve for balancing the float.

106. In an apparatus for actuating liquids, the combination of a pump-chamber; an eduction-tube; a connection with an actuating-fluid supply; a float in said chamber; a passage in which said float is arranged; a vent for said chamber by way of said passage; a valve controlling said vent, said valve being arranged to be closed by said float; and means controlled by said float for opening said connection.

107. In an apparatus for actuating liquids, the combination of a pump-chamber; an eduction-tube; means for conveying liquid through said tube by a following action through the lift of an actuating fluid; a connection with an actuating-fluid supply; a float in said chamber; a passage in which said float is arranged; a vent for said chamber by way of said passage; a valve controlling said vent, said valve being arranged to be closed by said float; and means controlled by said float for opening said connection.

108. In an apparatus for actuating liquids, the combination of a pump-chamber; an eduction-tube; a connection with an actuating-fluid supply; a float in said chamber; a passage in which said float is arranged; a vent for said chamber by way of said passage, said vent leading to the eduction-tube.

109. In an apparatus for actuating liquids, the combination of a pump-chamber; an eduction-tube; means for conveying liquid through the tube by a following action through the lift of an actu-

ating fluid; a connection with an actuating-fluid supply; a float in said chamber; a passage in which said float is arranged; a vent for said chamber by way of said passage, said vent leading to the eduction-tube.

110. In an apparatus for actuating liquids, the combination of a pump-chamber; an eduction-tube; a connection with an actuating-fluid supply; a float in said chamber; a passage in which said float is arranged; a vent for said chamber by way of said passage, said vent leading to the eduction-tube; said eduction-tube having sufficient length between the connection with the vent and the chamber to cause a sufficient friction to reduce the pressure of liquid at the connection with the vent below the pressure of the liquid in the chamber.

111. In an apparatus for actuating liquids, the combination of a pump-chamber; an eduction-tube; means for conveying liquid through the tube by a following action through the lift of an actuating fluid; a connection with an actuating-fluid supply; a float in said chamber; a passage in which said float is arranged; a vent for said chamber by way of said passage, said vent leading to the eduction-tube; said eduction-tube having sufficient length between the connection with the vent and the chamber to cause a sufficient friction to reduce the pressure of liquid at the connection with the vent below the pressure of the liquid in the chamber.

112. In an apparatus for actuating liquids, the combination of a pump-chamber; an eduction-tube; a connection between the chamber and a source of actuating fluid; a float in said chamber; a passage in which said float is arranged, said passage being open at the bottom; vent E^3 leading from said passage, vent E^4 for connecting E^3 and the eduction-tube; valve E arranged to close said passage and to be closed by the float; and means controlled by said float for opening said connection.

113. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquids to said chamber; means for conveying liquids from said chamber; a connection between said chamber and a source of actuating-fluid supply; mechanism controlling said connection; a pressure device controlling said mechanism, said pressure device being connected with the pump-chamber and said connection being contracted relatively to the eduction-tube for the purpose described.

114. In an apparatus for actuating liquids, the combination with a pump-chamber; means for admitting liquids to said chamber; means for conveying liquids from said chamber by a following action through the lift of an actuating fluid; a connection between said chamber and a source of actuating-fluid supply; mechanism controlling said connection; a pressure device controlling said mechanism said pressure device being connected with the pump-chamber and said connection being contracted relatively to the eduction-tube for the purpose described.

115. In an apparatus of the character described, the combination of means controllable by air-pressure for intermittently forming the liquid within the well into successive columns of great height, and valve mechanism controllable automatically by fluid-pressure for successively forcing charges of air into said successive columns of said liquid.

116. In an apparatus of the character described, the combination of mechanism for forming a body of liquid into a vertical column, means for forcing a volume of air to a point below the surface of said liquid, and mechanism controllable automatically by pressure of said liquid for suddenly releasing said volume of air within said column of liquid.

117. In an apparatus of the character described, the combination of a barrel, tubing connected therewith for raising a liquid therefrom the surface of the earth, means for causing the formation within said barrel and said tubing, of a continuous column of liquid of considerable height, means for forcing an aeriform body below the upper surface of said column, and automatic mechanism controllable by pressure of said liquid for discharging a part of said aeriform body into said column so as to lift a portion of the same to the surface of the earth.

118. In an apparatus of the character described, the combination of mechanism for accommodating a volume of liquid of a considerable height, means for forcing a volume of air below the surface of said liquid thus formed into a column, and valve mechanism controllable automatically by pressure of the liquid for releasing said air-pressure at a point below the upper level of said column of liquid for the purpose of breaking said column in two and thereby lifting the upper portion thereof to the surface of the earth.

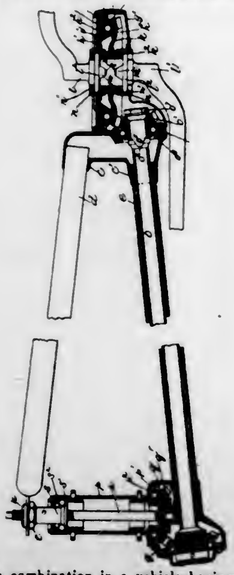
119. In an apparatus of the character described, the combination of means for forming a body of liquid into a vertical column, valve mechanism controllable automatically by pressure of said column for directing into said column, intermediate of the ends thereof, a supply of an aeriform body, and mechanism for supplying said aeriform body under pressure so as to break said column into two parts and elevate one of said parts to the surface of the earth.

120. In an apparatus of the character described, the combination of mechanism for forming a volume of liquid into a vertical column, means for applying air-pressure to said column for the purpose of increasing the height thereof, and valve mechanism controllable automatically by the liquid-pressure of said column for the purpose of discharging a volume of air into said column of liquid.

121. In an apparatus of the character described, the combination of mechanism for forming a volume of liquid into a vertical column, means for applying air-pressure to said column for the purpose of increasing the height thereof, and valve mechanism controllable automatically by the pressure of the liquid to be raised for discharging a volume of air into said column of liquid.

122. In an apparatus of the character described, the combination of a barrel, tubing connected therewith for elevating a liquid to the surface of the earth, a chamber-valve mounted within said barrel and controllable automatically by pressure of said liquid-column for establishing communication between said tubing and said liquid-column for the purpose of breaking the latter into two parts and elevating one of said parts to the surface of the earth.

821,340. **DRIVING MECHANISM FOR CHAINLESS BICYCLES.** JAMES S. COPELAND, Hartford, Conn., assignor, by mesne assignments, to Pope Manufacturing Company, Jersey City, N. J., a Corporation of New Jersey. Filed Nov. 26, 1897. Serial No. 659,805.



Claim.—1. In combination in a vehicle having gear driving mechanism, a driving-wheel, a crank-shaft bracket located in the central plane of the machine, a main bevel gear-wheel supported within the bracket, power-transmitting means operatively connecting the gear and driving wheel, a portion of the ball-race formed in the gear at or near its periphery, one section of a cone secured to the bracket, the other section of the cone secured to the first section, and a single row of balls located in the ball-race between the gear and sectional cone, all substantially as described.

2. In combination in a vehicle having driving mechanism, a crank-shaft bracket located in the central plane of the machine, a main gear-wheel, a driving-wheel, power-transmitting means operatively connecting the gear and driving-wheel, a portion of the ball-race located near or at the periphery of the gear, one section of a cone adjustably secured to the bracket, the opposite section of the cone adjustably secured to the first section, and balls located in the ball-race between the sectional cone and the gear, all substantially as described.

3. In combination in a vehicle having gear driving mechanism, a narrow crank-shaft bracket located in the central plane of the machine, a main gear-wheel supported within the bracket, a driving-wheel, power-transmitting means operatively connecting the gear and driving-wheel, a ball-race formed on the gear-wheel, a sectional cone adjustably secured to the bracket and forming a cover therefor, and balls supported between the cone and gear, all substantially as described.

4. In combination in a vehicle, consisting of a frame having a narrow crank-shaft bracket located in the central plane of the frame, a main gear-wheel supported centrally within the bracket, cranks secured to opposite sides of said gear-wheel and projecting without the bracket, a driving-wheel supported in the frame, and connections between said driving-wheel and main driving-gear.

5. In combination in a vehicle including a frame, supporting-wheels and driving mechanism, a bolt secured between side parts of the frame, a driving-wheel having its hub surrounding said bolt, connections between the driving-wheel and driving mechanism, a ball-case secured within the hub and facing inward, a thimble adjustably mounted upon the bolt and extending through said ball-case and having means for moving it along the bolt, said thimble having a cone located thereon within the hub.

6. In combination in a vehicle, a frame including a narrow crank-shaft bracket located in the central plane of the frame and of circular outline, rear fork sides connected to said bracket near the periphery thereof, and a casing for the pinion of a connecting-shaft formed on one of the fork sides in position for said pinion to project through the side wall of the crank-shaft bracket.

7. In combination in a vehicle, a crank-shaft bracket, one section of a cone adjustably supported at one end of the bracket and forming a portion of the cover therefor, a section of the cone adjustably supported by the first section and forming a portion of the cover for said bracket, a main bevel gear-wheel located in the bracket, ball-bearings located immediately back of the teeth on said bevel gear-wheel and between it and the sectional cone, a main driving-wheel mounted in the frame, power-transmitting means connecting the main gear-wheel and the driving-wheel, and means for operating the main gear-wheel, all substantially as described.

8. In a vehicle, in combination with a frame including a bracket, one section of a cone removably secured to said bracket, another section of a cone removably secured to the first section, a gear-wheel having a circular flange with a groove coöperating with the cone, balls located in the ball-race between the cone and flange, cranks removably secured to opposite sides of the hub of the gear, a driving-wheel, and operative connections between the gear and driving-wheel.

9. In combination in a vehicle having gear driving mechanism, a narrow crank-shaft bracket located in the central plane of the machine, a main gear-wheel supported within the bracket, a driving-wheel, power-transmitting means operatively connecting the gear and driving-wheel, a ball-race formed on the gear-wheel at a point near the back of the teeth thereon, a sectional cone adjustably secured to the bracket and forming a cover therefor, and balls supported in the ball-race between the cone and gear.

821,341. **SPINNING-TOP.** HENRY O. COSTELLO, Providence, R. I. Filed Feb. 7, 1906. Serial No. 299,964.



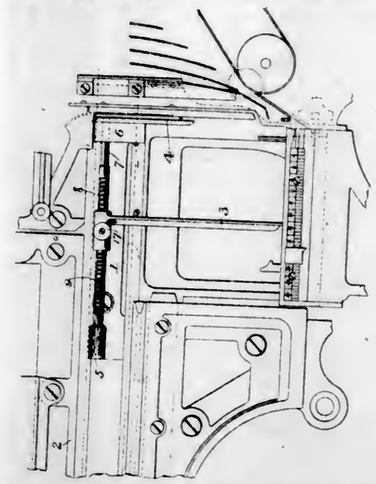
Claim.—1. A spinning-top provided with a holder-socket having a straight inner portion and a flaring outer portion, and further provided with an annular groove within the flared outer portion of the socket.

2. A spinning-top provided with a holder-socket having a straight inner portion, a flaring outer portion, and an annular retainer-lip adjacent to the entrance to said flaring portion of the socket.

3. A spinning-top comprising a body, an upstanding neck provided with a holder-socket having a straight inner portion and a flaring outer portion or throat leading to the straight inner portion, and a head at the upper end of the neck having an annular groove or recess communicating with the flared portion of the socket.

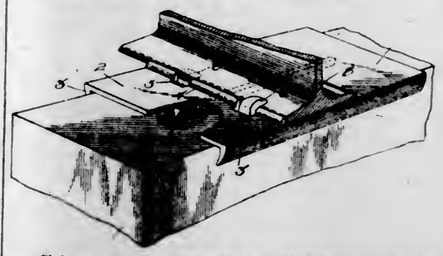
4. A spinning-top provided with a holder-socket having a straight inner portion and a flared outer portion communicating with the inner portion and embodying an internal annular retainer-lip, and a holder consisting of a rod or wire, one end of which is insertible in said socket.

821,342. **ATTACHMENT FOR LINOTYPE-MACHINES.** EDWIN S. DAY and HARRY B. HUBBARD, Bellingham, Wash. Filed Apr. 24, 1905. Serial No. 257,267.



Claim.—In a linotype-machine, a carriage, a rod carried thereby, having transverse grooves, a finger on the carriage, a finger slidable on the rod, said finger having a hollow boss on the end embracing the rod, said boss being provided with an annular shoulder within the bore, a bolt slidable in the boss, a head on the bolt engaging the transeverse grooves, a spring embracing the bolt and bearing against the head and the shoulder of the bore, and a finger-piece on the bolt, substantially as described.

821,343. **TIE-PLATE.** JULIUS T. DE SOUCHET, Chicago, Ill., assignor to The Railroad Supply Company, Chicago, Ill., a Corporation of Illinois. Filed Aug. 17, 1904. Serial No. 221,009.

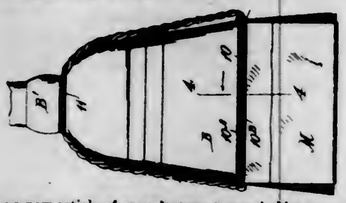


Claim.—A tie-plate provided with flanges projecting downwardly and inwardly over upon and closely embracing the tie upon which it is used and having ribs provided with cutting edges on its under face at a point intermediate said flanges, said ribs terminating at points inwardly removed from both ends of the tie-plate, said tie-plate being also provided with spike-holes and having on its upper face a transverse rib or ribs, the bases of which project inwardly beyond the inner walls of the spike-holes, whereby a tie-plate closely embraces both sides of a tie, moisture is excluded from the broken-down fibers thereof and the lateral thrust of the rail is removed from the spikes and sustained by the tie-plate, substantially as described.

821,344. **MOP-HOLDER FOR BROOMS.** JOHN F. DOEBLER, Jr., Hartford, Conn., assignor to himself and Sidney E. Clarke, Hartford, Conn. Filed Dec. 2, 1904. Serial No. 235,181.

Claim.—1. As a new article of manufacture, a mop-holder comprising a loop adapted to fit over a broom-handle, a band consisting of

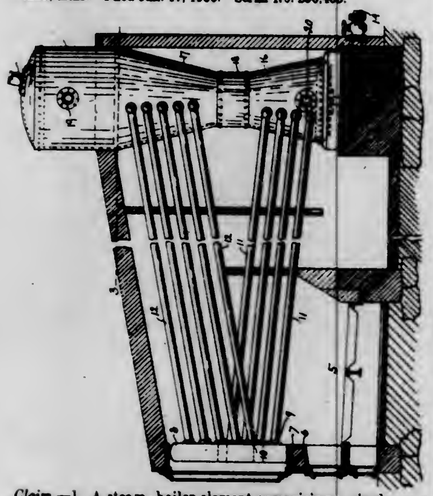
a pair of adjacent resilient clamping members to hold a mop-cloth, said band being adapted to embrace the body of the broom, and ties for connecting the loop and band.



2. As a new article of manufacture, a mop-holder comprising a loop adapted to fit over the handle of a broom a band consisting of a pair of adjacent resilient clamping members to hold a mop-cloth, said band being adapted to embrace the body of the broom, and ties for connecting the loop and band, the loop, band and ties, being formed of a single piece of material.

3. In a mop-holder for brooms, the combination with a loop adapted to fit over the handle of the broom; of a band adapted to embrace the body of the broom and consisting of a plurality of adjacent clamping members for holding a mop-cloth thereon, and ties for connecting said band with the loop at opposite points thereof.

821,345. **WATER-TUBE BOILER.** WESTON T. EASTMAN, Rockland, Mass. Filed Jan. 17, 1906. Serial No. 296,463.



Claim.—1. A steam-boiler element comprising a single-compartment vertical header two series of tubes, respectively for feeding water to and from said header, connected in said header the return-tubes alternating with the feed-tubes.

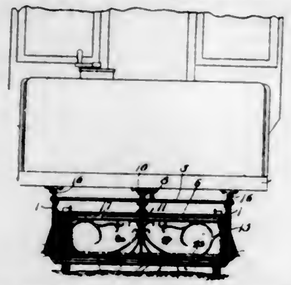
2. A boiler element comprising a rear vertical drum having oppositely-inclined tube-receiving plates, tubes connected in said inclined surfaces overlapping at their forward ends, and a front header in which both of said series of tubes are connected.

3. A steam-boiler element comprising a vertical header, a vertical series of forward feed-tubes connected in said header at one side the median line thereof, and a vertical series of return-tubes connected in said header at the other side of the median line of said header, the lowermost return-tube being connected in the header at a point above the lowermost forward feed-tube.

4. The combination with a vertical drum having two conical portions the walls of which are inclined in opposite directions, tubes connected respectively in the conical walls and extending forward, and a vertical header in which said tubes are connected in two vertical series.

821,346. **CAR-FENDER.** HARRY BERRY, San Pedro, Cal. Filed Oct. 31, 1905. Serial No. 285,318.

Claim.—1. The combination with a fender which is yieldably supported in an elevated position, of a trip member located in front of the fender and having a toggle connection therewith to positively depress the fender when the trip is moved rearwardly.



2. In a car-fender, the combination of a normally elevated pivotally-supported fender, a toggle connection between the fender and the car, a swinging trip located in front of the fender, and a connection between the trip and the toggle to straighten out the latter to depress the fender.

3. In a car-fender, the combination of a pivotally-supported fender comprising a frame having a cross-bar, a spring connected to the fender for yieldably supporting the same in an elevated position, toggle-links extending between the cross-bar and the car, a swinging trip disposed in front of the fender, and a connecting-rod extending between the trip and the toggle-links to straighten out the latter when the trip is swung rearwardly and thereby depress the fender.

821,347. **FRACTIONAL-SUPPLY STEAM AND GAS TURBINE.** JENS W. O. ELLING, Christiania, Norway. Filed Apr. 21, 1904. Serial No. 204,242.



Claim.—1. In steam or gas turbines with fractional supply, the combination with the ordinary guide-passages, of one or more passages having a smaller discharge area, and a smaller discharge-angle than the ordinary guide-passages, substantially as described.

2. The combination with steam or gas turbine guide-passages, of one or more auxiliary passages having smaller discharge areas per length of periphery and smaller discharge-angles than said first-named or ordinary passages, the arrangement being such that the supply admitted from said auxiliary passages will drive out or start in motion the dead gas in the wheel-buckets before the main supply is admitted to said buckets.

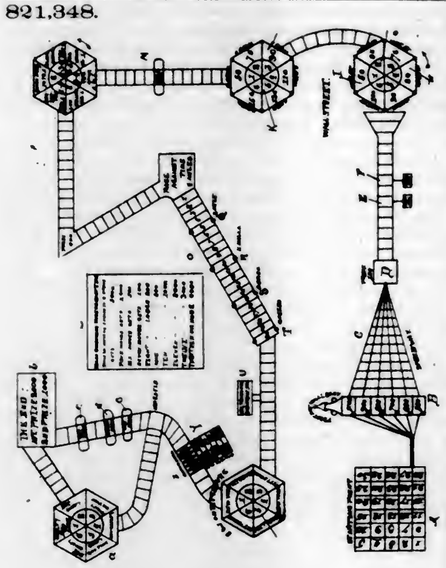
3. In fractional-supply steam and gas turbines, the combination with the ordinary supply-passages, of auxiliary acceleration-supply passages arranged in front of the ordinary supply-passages said auxiliary passages beginning with the first at a small angle of outlet and successively increasing the angle of outlet until the angle of the last passage nearly coincides with the angle of the ordinary supply-passages, and adapted to furnish live steam or gas to gradually set the dead steam or gas in the buckets in motion before the buckets reach the main supply-passages, substantially as described.

4. In fractional-supply steam and gas turbines, the combination with the ordinary supply-passages, of auxiliary passages commencing with a very small angle of outlet and approaching gradually the value of the angles of outlet of the ordinary supply-passages, substantially as and for the purpose specified.

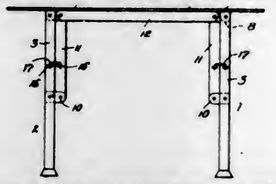
821,348. **GAME APPARATUS.** EDWARD S. FATKIN and EMIL B. RETEMAN, Pittsburg, Pa. Filed July 28, 1905. Serial No. 271,640.

Claim.—A game apparatus comprising a plat having a starting-point, a goal and a circuitous route leading from the starting-point to the goal, said route being provided with a plurality of stations, each station being divided into a plurality of numbered sections, certain of said sections representing a gain and others of said sections representing a loss in points.

821,348.



821,349. **COMBINATION FURNITURE.** JOHN FEDRAN, East Pittsburg, Pa. Filed Jan. 17, 1906. Serial No. 296,542.



Claim.—1. A combined table and bed structure embodying two frames, plates pivotally connected to the upper ends of said frames and adapted to form a table-top, sectional rails carried by said frames and adapted to fold upwardly to support said plates, means to hold said rails in a rigid position, and means to hold parts of said rails in horizontal alinement with said frames, substantially as described.

2. An article of furniture convertible into a table and a bed, comprising a pair of frames each embodying vertical legs, tie-rods connecting the legs of each frame, plates pivotally hung on said tie-rods and acting in one position to form a table-top and in another position to act as a head-piece and foot-piece respectively of a bed, and sectional rails pivotally connected to the frames and acting in one position to support the table-top and in another position acting as the side rails of a bed.

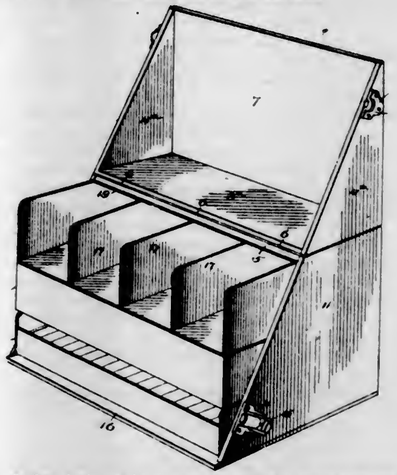
3. The combination with frames, of plates pivotally attached to said frames, and sectional side rails pivotally connected to said frames and acting both as side rails of a bed and as a support for the plates to form a table-top.

4. In an article of furniture, two frames, plates pivotally attached to said frames, and supporting-rails, each formed in three sections pivoted together and to the frames, as and for the purpose described.

821,350. **CABINET.** THOMAS A. FERRIS, Waxahachie, Tex. Filed Dec. 15, 1904. Serial No. 237,032.

Claim.—1. In a device of the character described, the combination of a receptacle, comprising a primary section and a cover, a tray mounted therein, said tray projecting beyond the opened end of said receptacle, and said cover adapted to partially inclose the ends and one of the sides of the tray.

2. In a device of the character described, the combination of a receptacle, comprising a primary section provided with a base, back, and end portions, said end portions of varying widths throughout their length, trays mounted one above the other within said primary section, said trays projecting beyond the ends of said primary section, one of said trays provided with an opened front, and a cover pivotally secured to said primary section and adapted to inclose portions of the ends of each tray and one of their sides.



3. In a device of the character described, the combination with a receptacle, comprising a primary section and a similarly-constructed, auxiliary section pivotally secured thereto, a tray positioned within said primary section and partially projecting beyond the end portion of the same, and said auxiliary section adapted to inclose the projecting portion of said tray when in a closed position upon said primary section.

4. In a device of the character described, the combination of a receptacle, said receptacle comprising a pair of similary-constructed sections, each section comprising a back wall, sides secured thereto, said sides varying in width throughout their length, a lower tray mounted within said casing, comprising a receptacle provided with a plurality of parallel partitions, transverse partitions interposed between said parallel partitions forming a scalloped base portion in each of the compartments formed by said parallel partitions, an intermediate tray mounted within said casing and above said lower tray, comprising a receptacle provided with a compartment extending its entire length and with a plurality of compartments provided with inclined floors, an upper tray comprising a receptacle provided with an opened side and with a plurality of pockets extending its entire width, and means for securing the sections of said receptacle in a closed position.

5. In a device of the character described, the combination with a receptacle, comprising two sections, of a tray positioned within said receptacle comprising a base, end and side walls secured to said base, parallel partitions spaced apart at varying widths within said tray forming compartments of different dimensions, and each compartment provided with a scalloped floor.

6. In a mechanism of the class described, the combination with a receptacle, of a tray removably positioned therein, comprising a base, end walls secured to said base, comparatively narrow sides secured to said end walls and base, parallel partitions positioned within said tray at different widths forming compartments therein, and the floor of each compartment provided with approximately V-shaped grooves.

7. A device of the character described, comprising a sectional receptacle, a tray removably positioned therein, comprising end walls, comparatively narrow side walls secured to said end walls, parallel partitions positioned between said end and side walls, said partitions spaced apart at different widths, each compartment provided with a floor having approximately V-shaped grooves of varying depths formed therein, and one of the compartments having the grooved portion of its floor formed in a different horizontal plane from that in which the remaining floors are constructed.

8. In a device of the character described, the combination of a sectional receptacle, comprising similarly-constructed sections, trays positioned within said receptacle and partially extending beyond an end of one of the sections, one of said trays provided with an opened side and a plurality of pockets, a top secured upon said tray

and partially inclosing said pockets, the other tray positioned within said receptacle provided with partitions forming compartments, each of said compartments provided with a scalloped floor.

9. In a device of the character described, the combination with a primary and an auxiliary section pivotally connected, each of said sections similarly constructed, a plurality of trays positioned within the primary section and extending beyond the end thereof, one of said trays provided with partitions forming compartments, said compartments having opened ends, and another of said trays provided with a narrow side portion and with a floor having approximately V-shaped grooves.

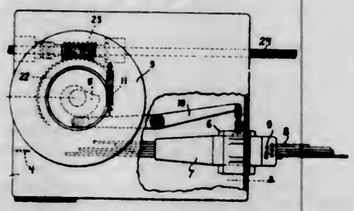
10. A device of the character described, comprising two similarly-constructed, pivotally-connected sections, trays positioned within one of said sections and projecting beyond the ends thereof, one of said trays provided with comparatively narrow sides and with compartments, said compartments having scalloped floors of varying dimensions, and means for retaining said sections in a folded position.

11. In a device of the character described, the combination of a primary section, said section provided with a pivotally-connected cover, differently-constructed trays positioned within said primary section and extending beyond the ends thereof, one of said trays provided with a floor having approximately V-shaped grooves formed therein, the cover adapted to partially inclose one end of each tray when closed upon said primary section, and means for retaining said cover in a positive closed position.

12. A cash and currency cabinet, comprising two pivotally-connected sections, trays removably positioned within said sections, one of said trays provided with a plurality of parallel partitions extending the entire width thereof, said partitions providing a plurality of compartments, said tray having an opened end, another tray provided with a transverse partition extending the entire width thereof, a longitudinal partition positioned within said tray, a plurality of transverse partitions connecting said longitudinal partition with the sides of said tray, another tray provided with comparatively narrow sides, and a plurality of parallel partitions positioned within said tray, said partitions forming compartments therein, said compartments provided with floors having substantially V-shaped grooves of varying dimensions formed therein.

13. In a device of the character described, the combination of a receptacle, comprising a base section and a cover, a partitioned tray mounted within the base-section, said tray projecting beyond the opened end of said section, and said cover adapted to be closed upon said section for inclosing the projecting portion of the tray.

821,351. TURRET-LATHE. CARL J. FORSBERG, Plainfield, N. J., assignor to Niles-Bement-Pond Company, Jersey City, N. J. Filed Mar. 30, 1904. Serial No. 200,839.



Claim.—1. In a turret-lathe, the combination, substantially as set forth, with a bed, turret-slide, turret, and feed-arresting arm, of a carriage mounted for sliding movement on the turret-slide in a direction transverse to the length of the bed, a series of stop-rods mounted in said carriage parallel with each other and with the lathe-bed and adapted to coöperate selectively with the feed-arresting arm, and operative connections between the turret and said carriage to shift the carriage in accordance with the turning of the turret.

2. In a turret-lathe, the combination, substantially as set forth, with a bed, turret-slide, turret, and feed-arresting arm, of a carriage mounted for sliding movement on the turret-slide in a direction transverse to the length of the bed, a series of stop-rods mounted in said carriage parallel with each other and with the lathe-bed and adapted to coöperate selectively with the feed-arresting arm, a cam fast with the turret and a lever pivoted on the turret-slide and having connections with said cam and carriage.

3. In a turret-lathe, the combination, substantially as set forth, with a bed, a turret-slide, a turret, a power-shaft, and transmitting mechanism between the power-shaft and the turret, of a clutch interposed in said transmitting mechanism, a rotary member geared to turn in harmony with the turret and carrying a notch, a clutch-throwing member to serve in engaging and releasing the clutch, and a tooth upon the clutch-throwing member in position to enter said notch when opposite thereto and permit the clutch-throwing member to throw the clutch to position of release.

4. In a turret-lathe, the combination, substantially as set forth, with a bed, a turret-slide, a turret, a power-shaft, and transmitting mechanism between the power-shaft and the turret, of a clutch interposed in said transmitting mechanism, a rotary member geared to turn in harmony with the turret and carrying a moving plain surface provided with a notch, a clutch-throwing member to serve in engaging and releasing the clutch, and a tooth upon the clutch-throwing member in position to enter said notch when opposite thereto and permit the clutch-throwing member to throw the clutch to position of release and adapted to bear against said plain surface when not opposite the notch.

5. In a turret-lathe, the combination, substantially as set forth, with a bed, a turret-slide, a turret, a power-shaft, and transmitting mechanism between the power-shaft and the turret, of a clutch interposed in said transmitting mechanism, a rotary member geared to turn in harmony with the turret and carrying a notch, a clutch-throwing member to serve in engaging and releasing the clutch, a tooth upon the clutch-throwing member in position to enter said notch when opposite thereto and permit the clutch-throwing member to throw the clutch to position of release, and a spring urging the clutch-throwing member to clutch-releasing position.

6. In a turret-lathe, the combination, substantially as set forth, with a bed, a turret-slide, a turret, a power-shaft, and transmitting mechanism between the power-shaft and the turret, of a friction-clutch interposed in said transmitting mechanism, a rotary member geared to turn in harmony with the turret and carrying a notch, a clutch-throwing member to serve in engaging and releasing the clutch, and a tooth upon the clutch-throwing member in position to enter said notch when opposite thereto and permit the clutch-throwing member to throw the clutch to position of release.

7. In a turret-lathe, the combination, substantially as set forth, with a bed, a turret-slide, a turret, a power-shaft, and transmitting mechanism between the power-shaft and the turret, of a clutch interposed in said transmitting mechanism, a rotary member geared to turn in harmony with the turret and carrying a notch, a clutch-throwing member to serve in engaging and releasing the clutch, a tooth upon the clutch-throwing member in position to enter said notch when opposite thereto and permit the clutch-throwing member to throw the clutch to position of release, a rod extending lengthwise of the bed and having connection with the clutch-throwing member, a tailwardly-presenting projection carried by the turret-slide, mechanism connected with said rod and disposed in the path of said projection, and a spring urging the clutch-throwing member to clutch-releasing position.

8. In a turret-lathe, the combination, substantially as set forth, with a bed, a turret-slide, a turret, a power-shaft, and transmitting mechanism between the power-shaft and the turret, of a clutch interposed in said transmitting mechanism, a rotary member geared to turn in harmony with the turret and carrying a notch, a clutch-throwing member to serve in engaging and releasing the clutch, a tooth upon the clutch-throwing member in position to enter said notch when opposite thereto and permit the clutch-throwing member to throw the clutch to position of release, a rod extending lengthwise of the bed and having connection with the clutch-throwing member, a tailwardly-presenting projection carried by the turret-slide, a member disposed in the path of said projection near said rod, means for locking said last-mentioned member to selective longitudinal positions upon said rod, and a spring urging the clutch-throwing member to clutch-releasing position.

9. In a turret-lathe, the combination, substantially as set forth, with a bed, a turret-slide, a turret, a power-shaft, and transmitting mechanism between the power-shaft and the turret, of a clutch interposed in said transmitting mechanism, a rotary member geared to turn in harmony with the turret and carrying a notch, a clutch-throwing member to serve in engaging and releasing the clutch, a tooth upon the clutch-throwing member in position to enter said notch when opposite thereto and permit the clutch-throwing member to throw the clutch to position of release, a rod extending lengthwise of the bed and having connection with the clutch-throwing member, a tailwardly-presenting projection carried by the turret-slide, mechanism connected with said rod and disposed in the path of said projection, a spring urging the clutch-throwing member to clutch-releasing position, and a spring-buffer acting between the turret-slide and the bed and adapted to be compressed by the turret-slide when the turret-slide moves tailwardly in the act of bringing said projection against said mechanism in its path.

10. In a turret-lathe, the combination, substantially as set forth, with a bed, a turret-slide, a turret, a power-shaft, and transmitting mechanism between the power-shaft and the turret, of a clutch interposed in said transmitting mechanism, a rotary member geared to turn in harmony with the turret and carrying a notch, a clutch-throwing member to serve in engaging and releasing the clutch, a tooth upon the clutch-throwing member in position to enter said notch when opposite thereto and permit the clutch-throwing member to throw the clutch to position of release, a block adjustable lengthwise of the bed between its tail end and the turret-slide, a rod extending lengthwise of the bed and having connection with the clutch-throwing member, a movable member mounted on said block and having connection with said rod at selective points along the length of the rod, a tailwardly-presenting projection carried by the turret-slide and adapted to engage the movable member on the block and shift the rod endwise, and a spring urging the clutch-throwing member to clutch-releasing position.

11. In a turret-lathe, the combination, substantially as set forth, with a bed, a turret-slide, a turret, a power-shaft, and transmitting-gears between the power-shaft and the turret, a clutch between the power-shaft and the turret, a gear turned by the power-shaft in harmony with the turret and carrying a notch, a clutch-throwing lever to serve in engaging and releasing the clutch, and a tooth upon the clutch-throwing lever in position to enter said notch when opposite thereto and permit the clutch-throwing member to throw the clutch to position of release.

12. In a turret-lathe, the combination, substantially as set forth, with a bed, a turret-slide, a turret, a power-shaft for turning the turret, and a train of transmitting-gearing between the power-shaft and the turret, of a clutch interposed between the power-shaft and the turret, a gear connected with said transmitting-gearing between the clutch and the turret and carrying a plain surface and a notch, a clutch-throwing lever, a spring urging said lever to clutch-releasing position, mechanism between the lever and the turret-slide to cause extreme tailward movement of the turret-slide to throw the lever to clutch-engaging position, and a tooth upon the clutch-lever bearing upon said plain surface when the clutch is engaged and entering said notch when opposite thereto and permitting the clutch to release.

13. The combination of a bed, a slide, a turret on said slide, power-driven means for revolving said turret, clutch means interposed in said power-driven means, a revoluble gear member impelled by said power-driven means and arranged to rotate once for a fractional part of the revolution of said turret, a clutch-throwing member, a tooth thereon, and a notch on said revoluble member adapted to be entered by said tooth.

14. The combination of a bed, a slide, a turret on said slide, power-driven means for revolving said turret, a clutch interposed in said power-driven means, an intermittently-revoluble member impelled by said power-driven means and having a definite speed of rotation with reference to that of said turret, a clutch-throwing member actuated by the movement of said slide for engaging said clutch, means carried by said revoluble member for engaging said clutch-throwing member and retaining said clutch in engagement for a determined period, and means for releasing said clutch.

15. The combination of a bed, a slide, a turret on said slide, power-driven means for revolving said turret, a clutch which may be engaged and disengaged interposed in said power-driven means, a revoluble member impelled by said power-driven means and having a definite speed of rotation with reference to that of said turret, means actuated by the movement of said slide for engaging said clutch, means carried by said revoluble member for retaining said clutch in engagement for a determined period independent of the position of the slide, and means independent of the slide for disengaging said clutch.

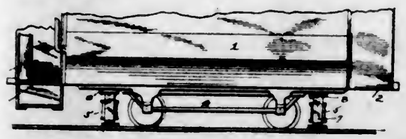
16. The combination of a bed, a slide, a turret on said slide, driving means for said turret, including gearing carried by the bed, and means acting upon a member of said gearing to lock said turret.

17. The combination of a bed, a slide, a turret bn said slide, driving mechanism for the turret, including gearing carried by the bed, a device for controlling rotation of the turret applied to a portion of said gearing, and means actuated by motion of said slide and coacting with said device for locking and unlocking the turret and for imparting rotative motion thereto through said gearing.

18. The combination of a bed, a slide, a turret on said slide, a stop-block on the bed, a movable member on said stop-block, driving means for said turret, including gearing carried on the bed, locking means acting through said gearing to normally hold said turret stationary with relation to said slide, additional locking means intermediate said slide and said turret, means acting on contact with a member of said stop-block to release said additional locking means, and means acting on contact with the movable member on said block to release said locking means first mentioned.

19. The combination of a bed, a slide, a turret on said slide, driving means for said turret, including gearing carried on the bed, a clutch interposed in said turret-driving means, a turret-stop member carried by a member of said gearing, turret-stop means carried on the slide, a stop-block adjustably mounted on the bed, clutch-operating means, a movable member on said block, connection between said movable member and said clutch-operating means, a member on said slide adapted to engage said movable member on said block, and an actuating-arm connected with the turret-stop means carried on the slide, and arranged to contact with said block.

821,352. TRACTION-INCREASING DEVICE FOR STREET-CARS. HARRY H. FOX, Duquesne Junction, Pa. Filed Dec. 5, 1905. Serial No. 290,445.



Claim.—1. In a traction-increasing device, the combination with a car, and the operating electric circuit thereof, of a plurality of pairs of electromagnets, immovably mounted on the bottom of said car, one pair being located at each end of the car, and beyond the wheel-base, one magnet of each pair being over one rail and the other magnet of the same pair being over the other rail, the said magnets being included in the said operating-circuit.

2. The combination with a car and the operating electric circuit thereof, of a yoke attached to the bottom of the car at each end thereof, and extending laterally beyond the wheels, a pair of electromagnets mounted in each yoke with one magnet over one rail and the other magnet over the opposite rail, said magnets being in circuit with the operating-circuit of the car.

821,353. TIGHT AND NOISELESS CASEMENT FOR SWINGING CLOSURES. SAMUEL W. FUNK, Glendora, Cal. Filed Aug. 5, 1904. Serial No. 219,594.



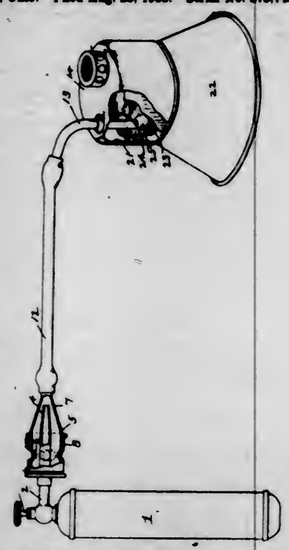
Claim.—1. A window-casing, a sash pivoted therein by pivots at one side of the sash and an elastic weather-strip clamped and secured to the window-casing, forming a tubular packing unbroken by the pivots and extending in a plane to one side of the pivots of the sash, in position to engage with the edges of the sash when the latter is closed.

2. A window-casing, a sash pivoted therein by pivots located intermediate the limits of width of the sash and at one side of the sash, and an elastic weather-strip clamped and secured to the window-casing, forming a tubular packing unbroken by the pivots and extending in a plane to one side of the pivots of the sash, in position to engage with the edges of the sash when the latter is closed.

3. A window-casing, a sash pivoted therein by pivots located intermediate the limits of width of the sash, near one edge of the sash and at one side of the sash, and an elastic weather-strip clamped and secured to the window-casing, forming a tubular packing unbroken by the pivots and extending in a plane to one side of the pivots of the sash, in position to engage with the edges of the sash when the latter is closed.

4. A window-casing, a sash pivoted therein by pivots at one side of the sash and an elastic weather-strip clamped and secured to the window-casing, forming a rounded packing unbroken by the pivots and extending in a plane to one side of the pivots of the sash, in position to engage with the edges of the sash when the latter is closed.

821,354. INHALING APPARATUS. THEOPHIL H. GERAUDS, Cleveland, Ohio. Filed Aug. 25, 1905. Serial No. 275,749.



Claim.—1. An inhaler for the administration of anesthetics, said inhaler having a connection for supplying an anesthetic thereto and a valve, said valve comprising a casing having openings in the side walls thereof, a vibratory disk within said casing, said disk having a perforation therethrough, and means for supporting said disk on either side of the openings in said casing, substantially as specified.

2. An inhaler for the administration of anesthetics, said inhaler comprising a casing having a removable cap thereon, said cap having a connection for supplying an anesthetic to the interior of the inhaler and a valve, said valve consisting of a casing carried by said cap, said valve-casing having openings in the walls thereof and a retaining-flange at the upper end thereof at a point beyond the openings, and a perforated disk within said casing, substantially as specified.

3. An apparatus for administering anesthetics comprising in combination a vaporizing-receptacle, an inhaler, a duct extending between said receptacle and inhaler, a mixer in said duct having means for admitting air in definite and regulable proportions thereto, and a valve in said inhaler, said valve having means for admitting a limited amount of fluid to the inhaler and means for automatically permitting the escape of a large quantity of fluid therefrom, substantially as specified.

4. An apparatus for administering anesthetics comprising in combination a vaporizing-receptacle, an inhaler, and a duct extending between said receptacle and said inhaler, a mixer in said duct, said mixer having means for admitting a definite and regulable proportion of air thereto and for entirely cutting off the supply of air thereto, and a valve in the inhaler, said valve comprising a casing having discharge-openings in the side thereof and a vibrating disk in said casing, said disk being perforated, substantially as specified.

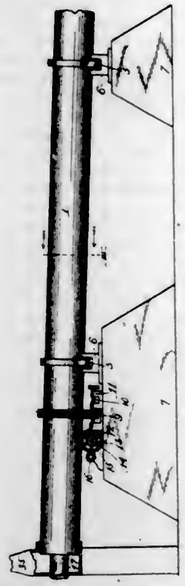
5. An inhaler for administering anesthetics, comprising a casing having an inlet for the anesthetics and a valve through which exhalations may escape, said valve being provided with means for admitting air to mingle with the anesthetic in the casing, substantially as specified.

6. An inhaler for administering anesthetics, comprising a casing having an inlet for anesthetics and a valve, said valve having a restricted inlet for the admission of air to be inhaled and a free outlet for the exhalations, substantially as specified.

821,355. ROTARY KILN. OSCAR GERLACH, Iola, Kans. Filed May 18, 1904. Serial No. 208,694.

Claim.—1. In a rotary kiln, two communicating cylinders suitably mounted one of which is provided with a furnace, and a blast arranged at the communicating ends of the cylinders for checking the flame from the furnace at the joint between the said communicating ends.

2. In a rotary kiln, two communicating cylinders independently mounted and arranged in axial alinement, one cylinder being larger in diameter than the other to receive the discharge end of the latter, a furnace communicating with one end of the large cylinder, and an annular nozzle communicating with the opposite end of said large cylinder and a blast.



3. In a rotary kiln, two communicating cylinders suitably mounted one of which is provided with a furnace, an annular nozzle arranged at the communicating ends of the cylinders, and an annular casing with which the nozzle communicates.

4. In a rotary kiln, a cylinder rotatably mounted, deflecting-walls suitably arranged in said cylinder, and supporting-walls suitably arranged in said cylinder, and supporting-columns interposed between the deflecting-walls and the wall of the cylinder.

5. In a rotary kiln, a cylinder rotatably mounted, and deflecting-walls suitably arranged in said cylinder and having steps at one side.

6. In a kiln or furnace two rotating cylinders in alinement having the delivery end of one cylinder arranged relatively to the second cylinder to deliver material directly from the rotary part of one to the rotary part of the other without either contacting with the other, and means for preventing the escape of air or products of combustion at the place where their ends are adjacent, substantially as set forth.

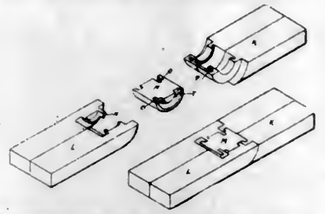
7. In a kiln or furnace two cylinders in alinement independently mounted and independently driven, one having its delivery end adjacent to the receiving end of the other and arranged to deliver material directly from the first to the second, and each being out of contact with the other, and means for preventing the escape of air or products of combustion at the place where their ends are adjacent, substantially as set forth.

8. In a rotary kiln, a rotary cylinder having a furnace at or communicating with one end thereof and having at the other a central or axial discharge for the products of combustion from the said furnace, and means for delivering streams or a current of air or equivalent agents at the interior peripheral part of said cylinder at the end opposite to the furnace to prevent or check the escape of products of combustion from said peripheral part, substantially as set forth.

9. In a rotary kiln, rotating communicating cylinders, one having its end inserted into the other without contacting therewith and means for preventing the escape of air or products of combustion at the place where they overlap, substantially as set forth.

821,356. FOLDING RULER. GEORGE C. GILLESPIE, New York, N. Y., assignor to Emry Davis, New York, N. Y. Filed Feb. 3, 1905. Serial No. 244,046.

Claim.—1. The combination in a folding ruler of legs or sections jointed with flush hinges, consisting of three segmentally-grooved members, two of which form a part of each of the abutting legs, are retained in contact by the interposition between them of a third segmental member, tongued and grooved to fit concentric grooves and tongues on the inner surfaces of both of the said leg members, in such a manner as to permit a sliding gyration around a common center; substantially as shown and described.



2. The combination in a folding ruler, of legs or sections jointed with flush hinges, consisting of three segmentally-grooved members, two of which form a part of each of the abutting legs are retained in contact by the interposition between them of a third segmental member, tongued and grooved to fit concentric grooves and tongues on the inner surfaces of both of the said leg members, wherein a portion of the two opposing tongues of the leg members, are extended somewhat into their corresponding grooves in the middle member, in such a manner that the said projected tongues will strike against projections in said grooves, to the end that the central member will be retained partly in both of the leg members during the entire movement of the joint; substantially as shown and described.

3. The combination in a folding ruler, of legs or sections jointed with flush hinges, consisting of three segmentally-grooved members, two of which form a part of each of the abutting legs, are retained in contact by the interposition between them of a third segmental member, tongued and grooved, to fit concentric grooves and tongues on the inner surfaces of both of the said leg members, in such a manner as to permit a sliding gyration around a common center; substantially as shown and described.

4. The combination in a folding ruler, of legs or sections jointed with flush hinges, consisting of three segmentally-grooved members, two of which form a part of each of the abutting legs, are retained in contact by the interposition between them of a third segmental member, tongued and grooved on the inner surfaces of both of the said leg members, wherein a segmental slot is provided in the two leg members for the interposition of stops secured to the central member, to the end that said central member shall be retained partly in both of the leg members, during the entire movement of the joint; substantially as shown and described.

5. The combination in a folding ruler, of legs or sections formed of rectangular tubing for the insertion reception and entire concealment of (when open) flush hinges; themselves externally rectangular to fit inside of and hinge together each two abutting tubes, said hinges consisting of two segmentally-grooved pieces or parts, each respectively inserted and secured to abutting tubes, said segmentally-grooved pieces being retained in contact by a third segmental piece tongued and grooved to fit concentric grooves and tongues of the aforesaid members in such a manner as to permit a gyration around a common center, to the end that a portion of each fixed leg member may fit into a recess of its opposite leg member and thus permit entire concealment of the entire hinge when the ruler is open; substantially as shown and described.

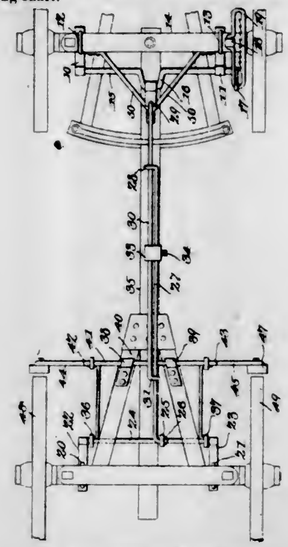
6. The specific or particular numbering of folding rulers, two or more feet in length, by numbering each foot in sequence of twelve inches each and subscribing each number after the first number twelve with minor or subservient relatively fixed numbers denoting the totals from the first number—1; thus—

1 2 3 4 5 6 7 8 9 10 11 12— 1 2 3 4 5 6 7 8 9 10 11 12—
13 14 15 16 17 18 19 20 21 22 23 24

substantially as shown and described.

821,357. WAGON-BRAKE. CHARLES H. GOSER, Roff, Ind. Ter., assignor of one-half to Randolph Lawrence, Roff, Ind. Ter. Filed Nov. 11, 1905. Serial No. 286,893.

Claim.—The combination with the running-gear of a wagon, of a shaft mounted for rotation upon the forward bolster and provided with an intermediate crank and an operating-handle, a shaft mounted for rotation upon the rear axle and provided with an upwardly-extending arm and spaced depending arms, a shaft mounted for rotation upon the rear hounds and having depending ends provided with spaced brake-shoes and with spaced depending arms, a rod coupled to the crank in said forward-bolster shaft and extending toward the rear axle and terminating in a lateral eye, a rod coupled to the upwardly-extending arm of said rear-axle shaft and leading toward the forward axle and through said lateral eye and terminating in a lateral eye engaging said rearwardly-extending rod, a sleeve inclosing said rods between said eyes and provided with a set-screw bearing upon said rods, and coupling elements between the depending arms of said rear-axle shaft and the depending arms of said brake-shoe-bearing shaft.



821,358. WHISTLE. EMMET P. GRAY, Detroit, Mich., assignor to Gray Manufacturing Company of Detroit, Detroit, Mich., a Corporation of Michigan. Filed Apr. 17, 1905. Serial No. 256,129.



Claim.—1. In a whistle, the combination of a lower portion, a stem screwed into the same and provided with an enlarged portion intermediate its ends, and a cylinder mounted on said stem, said lower portion comprising a cup-shaped bell extending longitudinally upward beyond the lower end of the cylinder to inclose the same.

2. In a whistle, the combination of a stem, a cylindrical bell mounted on said stem and provided with sound-openings, and a lower portion to support the stem and bell, said lower portion being provided with a cup-shaped projection which extends over the sound-openings in the bell.

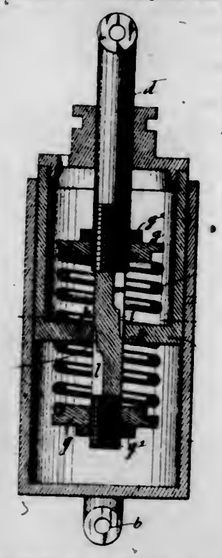
3. In a whistle, the combination of a cup-shaped lower portion, a stem screwed into the same and provided with an enlarged portion and a cap, and a cylindrical bell fitting over the enlarged portion of the stem and contacting with the bottom of the cup of the cup-shaped portion, said bell having a sound-opening a distance from its lower edge.

4. In a whistle, the combination of a cylinder having sound-openings, a flat stem within the cylinder dividing its interior into two chambers, a partition on said stem adapted to limit the length of one of said chambers, the stem being provided with an opening to permit the air in the space above the partition to vibrate in unison with the air in the other chamber, and a lower portion of the whistle to support the stem.

5. In a whistle, the combination of the lower portion, a stem screwed into the same and provided with an enlarged portion intermediate its ends and a cap, and a cylindrical bell extending over the enlarged portion of the stem and between the cap and the lower por-

tion of the whistle, said bell having a sound-opening a distance from its lower edge, and said stem having a plurality of lugs on the enlarged portion to position the lower end of the bell.

821,359. OIL-BRAKE FOR SPEED-GOVERNORS. MAX HAERBELEIN, Niagara Falls, N. Y. Filed Sept. 20, 1905. Serial No. 279,309.



Claim.—1. An oil-brake for directly and indirectly acting speed-governors for motors, which consists of a brake-cylinder, a piston in the same, a piston-rod connected with the governor and guided in the piston, and a regulating device which serves to close entirely the connection between the two oil-spaces in piston and cylinder at the relatively median position of the brake-piston, but opens the same, more or less, with variations in the speed of the governor, according to the extent of the regulation, so as to prevent with small differences of speed an equalization of pressure, while the same takes place slower or quicker with larger variations of speed of the governor.

2. An oil-brake for the speed-governors of motor-engines, consisting of a brake-cylinder, a piston in said cylinder, a piston-rod connected with the governor and guided in the bottom of the piston, said piston-rod being provided with longitudinal grooves terminating within the edges of the piston bottom, and pressure-springs acting on opposite sides of the piston bottom.

3. An oil-brake for the speed-governors of motor-engines, consisting of a brake-cylinder, a piston in said cylinder, a piston-rod connected with the speed-governor and guided in a central opening of the piston bottom, said piston-rod being provided with longitudinal grooves extending in opposite direction and terminating at one end between the edges of said bottom and having enlarged portions or cavities at their opposite ends, and pressure-springs acting on opposite sides of the bottom of the piston.

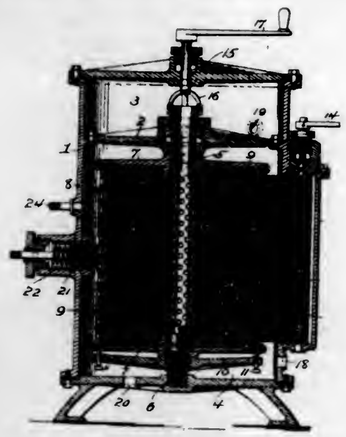
821,360. FILTER. FRANK B. HINKSON, New Castle, Pa., assignor to The Electric Liquid Purifying and Filtering Company, Pittsburg, Pa. Filed May 3, 1905. Serial No. 258,602.

Claim.—1. In a filter, the combination with a casing of electrically-conducting material and having water inlet and outlet ports, of a perforated shell of electrically-conducting material located within said casing, an electric circuit including said casing and shell, and filtering material within said shell.

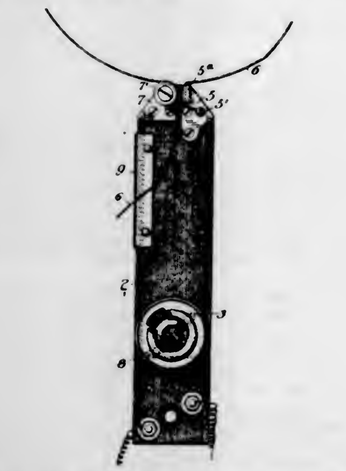
2. In a filter, the combination of a rotary filter comprising an outer perforated receptacle, means for electrically charging said receptacle and filtering material confined within the receptacle.

3. In a filter, the combination of a rotary filter comprising an outer perforated receptacle, means for electrically charging the same, filtering material within said receptacle, and an electric contact spring-pressed plunger engaging said receptacle.

4. In a filter, the combination of a metal-covered filter, and a metal casing inclosing the same, and an electric circuit including the metal covering of said filter and the metal casing.



821,361. DEVICE FOR CAPPING OFF GLASS CYLINDERS. HARRY F. HITNER, Wilkinsburg, Pa., assignor to Window Glass Machine Company, Pittsburg, Pa., a Corporation of New Jersey. Filed Mar. 6, 1905. Serial No. 248,528.



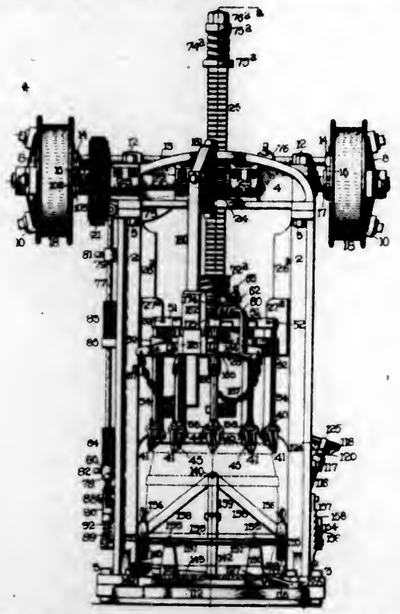
Claim.—1. A glass-severing tool having suitable conductors and terminals, and a heating-wire connected at one end to one of the terminals and free at the other end and adapted to be placed around the article to be severed and to have its free end put in contact with the second terminal.

2. A glass-severing tool, having suitable conductors with terminals arranged in close proximity to each other, and a heating-wire connecting the terminals and adapted to encircle the article to be severed, said wire being fixed to one terminal and adapted to be drawn loosely against the other.

3. A glass-severing tool having suitable conductors and terminals, and a heating-wire connected at one end to one of the terminals and free at the other end and adapted to be placed around the article to be severed and to have its free end put in contact with the second terminal, said terminals being in close proximity to each other.

4. A glass-severing tool, having suitable conductors with terminals arranged in close proximity to each other, and a heating-wire connecting the terminals and adapted to encircle the article to be severed, one of said terminals being constituted by a roller.

821,362. MACHINE FOR DRIVING BARREL-HOOPS. EDWARD HOLMES, BRITAIN HOLMES, and EDWIN F. BEUGLER, Buffalo, N. Y. Filed Apr. 10, 1903. Serial No. 151,964.



Claim.—1. In a vertical hoop-driving machine, a frame, a horizontal counter-shaft journaled in said frame, a friction-pulley on said counter-shaft, a pinion on the counter-shaft, a horizontal driving-shaft, a gear-wheel on the driving-shaft meshing with the pinion on the counter-shaft, a pinion on the driving-shaft a rack-bar meshing with the pinion on the driving-shaft, hoop-driving mechanism mounted on the lower end of the rack-bar and a friction device for preventing involuntary downward movement of the hoop-driving mechanism without interfering with its free upward movement, substantially as set forth.

2. In a machine of the character described, a frame, two shafts journaled in said frame, intermeshing gear-wheels operatively connecting said shafts; one of said gears having a friction-brake element mounted directly upon it which is freely rotatable in one direction, a pinion on one shaft, a friction driving device on the other, a vertical rack-bar meshing with the pinion and hoop-driving mechanism having support from the vertical rack-bar, substantially as set forth.

3. In a machine of the character described, a frame, a plurality of shafts journaled in said frame, means operatively connecting said shafts; one of said connecting means having a friction brake element mounted directly upon it which is freely rotatable in one direction, a pinion on one shaft, a friction driving device on another, a vertical rack-bar meshing with the pinion and hoop-driving mechanism having support from the vertical rack-bar, substantially as set forth.

4. In a machine of the character described, a frame having a base, a cross-head and connecting frame members, a counter-shaft journaled in the cross-head, a friction-pulley on the said counter-shaft, a pinion on the counter-shaft, a driving-shaft, a gear on the driving-shaft meshing with the pinion on the counter-shaft, a pinion on the driving-shaft, a vertical rack-bar meshing with the pinion on the driving-shaft, hoop-driving mechanism mounted on the lower end of the rack-bar and a friction device adapted to engage the gear-wheel on the driving-shaft for preventing downward movement of the hoop-driving mechanism when the counter-shaft is relieved from the friction-pulley and said friction device being freely rotatable in the opposite direction, substantially as set forth.

5. In a machine of the character described, a frame, a plurality of shafts journaled in said frame, means operatively connecting said shafts, a pinion on one shaft, a friction driving device on another, a vertical rack-bar meshing with the pinion, hoop-driving mechanism having support from the vertical rack-bar and a friction brake device on the first-mentioned shaft engaging one of the elements of the connecting means for preventing downward movement of the hoop-driving mechanism by gravity; said friction-brake being freely rotatable to raise the hoop-driving mechanism, substantially as set forth.

6. In a machine of the class described, a frame, a shaft in said frame, pulleys mounted near opposite ends and normally loose on said shaft, means for rotating said pulleys in opposite directions, frictional means for operatively connecting either one of said pulleys to said shaft and hoop-driving mechanism adapted to be raised and lowered by the rotation of said shaft and frictional means for retarding the rotation of the shaft in one direction sufficiently to prevent the dropping of the hoop-driving mechanism when both pulleys are loose on the shaft; said frictional means being freely rotatable in the opposite direction, substantially as set forth.

7. In a machine of the class described, a driving mechanism having a plurality of depending pivoted driving-arms, at least one of which is at least in part movable in a path at an angle to the ordinary opening and closing movement of the arms on their pivots, whereby it may be swung to one side to permit the removal of a barrel, substantially as set forth.

8. In a machine of the class described, a driving mechanism having a plurality of depending pivoted driving-arms, at least one of which has hinged sections with one section thereof having a movement at an angle to the radial opening and closing of the arms for the purposes specified.

9. In a machine of the character described, a frame, a plurality of shafts journaled in said frame, gear-wheels operatively connecting said shafts, a pinion on one shaft, a rack-bar meshing with said pinion, a driving friction on one of said shafts and a braking friction device and consisting of a friction-ring, a ring having an annular series of ratchet-teeth, a pawl attached to the frame and engaging the teeth and springs for holding the friction-ring against the face of one of the gear-wheels, substantially as set forth.

10. In a machine of the class described, a driving mechanism having a plurality of depending pivoted driving-arms, at least one of which is in sections and a pivot-pin hinging said sections which extends in radial alinement with the common center of the driving-arms, for the purposes specified.

11. In a machine of the class described, a driving mechanism consisting of a driving-head, a series of depending driving-arms pivoted to said head and one or more of said arms being in sections hinged to each other and said sections having a movement at an angle to the radial opening and closing pivotal movement of the arms, substantially as set forth.

12. In a machine of the class described, a driving mechanism having a plurality of depending pivoted driving-arms, at least one of which is hinged so as to have an independent swinging movement at an angle to the radial opening and closing movement of the arm and a weight attached to said hinged arm.

13. In a machine of the class described, a driving mechanism having a plurality of depending pivoted driving-arms, two of which at least are hinged and adapted to swing from each other on their hinges at an angle to the ordinary radial opening and closing movement of said arms for the purposes specified.

14. In a machine of the class described, a driving mechanism having a plurality of depending pivoted driving-arms, two of which at least are hinged and adapted to swing from each other on their hinges at an angle to the radial opening and closing movement of said arms and means for swinging said hinged arms from each other sufficiently for the passage of a barrel.

15. In a machine of the class described, a driving mechanism consisting of a driving-head, a series of driving-arms pivoted to said head, a hoop-driving device on each arm having a beveled-edge plate and a guide having beveled grooves corresponding to the beveled edge of the plate, substantially as set forth.

16. In a vertical hoop-driving machine, the combination with an upright frame having a base upon which a barrel is adapted to be supported upon one of its ends, hoop-driving mechanism mounted in the upper portion of the frame vertically above the base, and means for vertically raising and lowering said hoop-driving mechanism, of means for elevating and pivotally supporting a barrel at two opposite points whereby it may be turned after the hoops have been driven upon one end.

17. In an upright hoop-driving machine, the combination with an upright frame having a barrel-supporting base, hoop-driving mechanism in the frame above the base, of pivot-bars for engaging a barrel at two opposite points and means for supporting and elevating said pivot-bars whereby the barrel may be turned by hand without removing it from the machine, substantially as set forth.

18. In a hoop-driving machine, the combination with hoop-driving mechanism, of a support for a barrel or the like beneath the

hoop-driving mechanism, and means for elevating and pivotally supporting the barrel or the like above said support at two opposite points whereby said barrel or the like may be turned without removing it from the machine, substantially as set forth.

19. In a machine of the class described, a frame, a plurality of shafts journaled in said frame, a pinion on one shaft, a vertical rack-bar meshing with said pinion, hoop-driving mechanism having support from said rack-bar, a gear-wheel on one shaft and a combined power-transmitting gear and friction locking device on another shaft meshing with the last-mentioned gear-wheel, and rotatable freely to elevate the hoop-driving mechanism and against friction to lower the hoop-driving mechanism, substantially as set forth.

20. In a machine of the class described, the combination with the hoop-driving mechanism of means for raising and lowering said hoop-driving mechanism, including a gear-wheel, friction means engaging said gear-wheel and sufficient to hold the hoop-driving mechanism against gravity descent and means whereby said friction means is disengaged from the gear-wheel when said gear-wheel is rotated in a direction to raise the hoop-driving mechanism and frictionally locked to the gear-wheel when said gear-wheel is rotated in a direction to lower the hoop-driving mechanism, substantially as set forth.

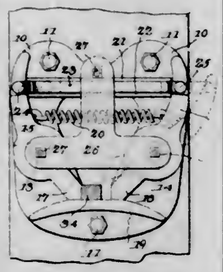
21. In a hoop-driving machine, the combination with hoop-driving mechanism, of means for supporting a barrel so that it may be turned after the hoops have been driven upon one end, comprising two bars having sharpened ends adapted to grip the barrel between them and means for elevating said bars whereby the barrel may be turned by hand, substantially as set forth.

22. In a hoop-driving machine, the combination with hoop-driving mechanism, of a support for a barrel or the like beneath the hoop-driving mechanism, and means for elevating and pivotally supporting the barrel or the like above said support at two opposite central points whereby said barrel or the like may be turned by hand without removing it from the machine, substantially as set forth.

23. In a hoop-driving machine, the combination with hoop-driving mechanism, of two angular bars having sharpened points adapted to grip a barrel, levers connecting to the bars, a vertical bar connecting to the levers, a second angular bar operatively connecting to the vertical bar, a foot-lever and connections between the foot-lever and the second angular bar, substantially as set forth.

24. In a machine of the class described, the combination with the hoop-driving mechanism, of means for raising and lowering said hoop-driving mechanism, including a gear-wheel, friction means engaging said gear-wheel and sufficient to hold the hoop-driving mechanism against gravity descent, and means for preventing rotation of the friction means in a direction to lower the hoop-driving mechanism; said friction means being rotatable in unison with the gear-wheel in the opposite direction, substantially as set forth.

821,363. GATE-LATCH. MILES I. JACKSON, Kentland, Ind. Filed Dec. 5, 1904. Serial No. 235,580.



Claim.—1. A gate-latch comprising a pair of pivoted spring-actuated latch members for attachment to a gate-post, a sliding bar mounted for longitudinal movement between said latch members, and a keeper for attachment to a gate and adapted to be positioned between said latch members when the gate is closed.

2. A gate-latch comprising a pair of pivoted latch members for attachment to a gate-post, a spring connecting said members, a sliding bar mounted for longitudinal movement between the latch members, and a keeper for attachment to a gate and adapted to be positioned between the free ends of the latch members when the gate is closed.

3. A gate-latch comprising a pair of oppositely-disposed latch members for attachment to a gate-post, and pivotally supported on the latter at points intermediate their ends, a spring connecting said members, a sliding bar mounted for longitudinal movement between said members and having its opposite ends overlapping the adjacent portions of the latch members and provided with finger-pieces, and a keeper for attachment to a gate and adapted to be positioned between the free ends of said latch members when the gate is closed.

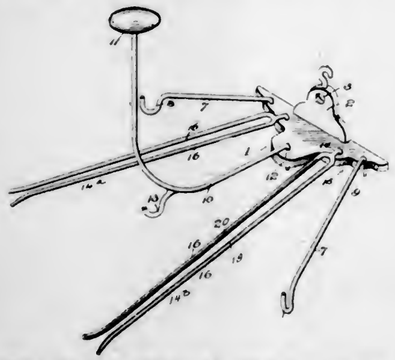
4. A gate-latch comprising a pair of oppositely-disposed pivoted latch members for attachment to a gate-post, a spring connecting said members, a sliding bar mounted for longitudinal movement between the latch members, and a keeper for attachment to a gate and consisting of an adjustable bar, the opposite ends of which extend beyond the general plane of the gate for engagement with the latch members when the gate is closed.

5. A gate-latch comprising a pair of pivoted latch members for attachment to a gate-post and having their upper ends connected by a coiled spring, a sliding bar mounted for longitudinal movement between said members and provided with finger-pieces, a threaded rod for attachment to the free end of a gate and adapted to be positioned between the free ends of the pivoted latch members when the gate is closed, and clamping-nuts engaging the threaded rod on each side of said gate.

6. A gate-latch comprising a supporting-plate for attachment to a gate-post and provided with transversely-disposed guiding-ribs, latch members pivoted to said plate and connected by a spring, a bar slidably mounted between said guiding-ribs and adapted to engage the connected ends of the latch members, and a keeper for attachment to a gate and adapted to be positioned between the free ends of said latch members when the gate is closed.

7. A gate-latch comprising a supporting-plate for attachment to a gate-post and provided with a laterally-projecting rib having its opposite ends inclined or beveled, latch members pivoted to said plate at points intermediate their ends and connected by a spring, a sliding bar mounted for longitudinal movement between the connected ends of the latch members, and a keeper for attachment to a gate and adapted to be positioned between the free ends of said latch members when the gate is closed.

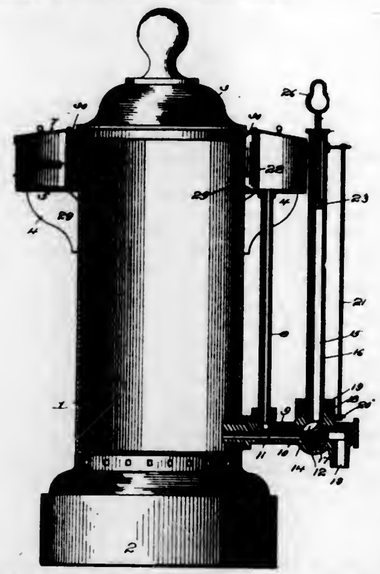
821,364. RACK. BERNARD L. JESSEL, Louisville, Ky. Filed Jan. 7, 1905. Serial No. 240,101.



Claim.—In a device of the class described, the combination of a bracket, comprising a horizontally-apertured plate, said plate provided with integral upper and lower right-angled extensions, a hook formed integrally upon said upper extension, a garment-suppporting bar carried by said horizontal plate, said bar comprising a shank provided with a right-angled integral stem, spring-tines integral with said shank, one of said tines having a longitudinally-extending bead thereon, and the other tine provided with a longitudinal groove, said stem positioned within the aperture of the horizontal plate of said bracket, and an auxiliary garment-supporting bar carried by said horizontal plate.

821,365. URN. CHARLES J. KAMPER and EUGENE H. SCHOFIELD, Atlanta, Ga., assignors to said Kamper. Filed Jan. 16, 1905. Serial No. 241,395.

Claim.—1. In a device of the character described, the combination with a tank, of a bracket positioned thereon near the upper end thereof, an annular receptacle mounted upon said bracket, a faucet provided with a plurality of passages and a single discharge-opening, a two-way valve removably positioned within said faucet, a tube connecting the receptacle and the faucet and providing communication between the interior of said receptacle and one of the passages of the faucet, a casing positioned upon said faucet and communicating with the passage which is in communication with the receptacle, the other passage of the faucet being in direct communication with the interior of the tank, and means carried by the casing mounted upon the faucet for adjusting the liquid-receiving capacity thereof.



2. In a device of the character described, the combination with a cylindrical tank provided with a base portion adapted to receive a burner, of a bracket structure secured near the upper end of said tank, a removable cover mounted upon said tank, an annular receptacle provided with parallel sides positioned upon said bracket, a faucet provided with a two-way valve positioned upon said tank, said faucet being provided with a single discharge-opening and an upper and a lower passage, the lower passage communicating directly with the interior of said tank, a tubing positioned upon said faucet and receptacle, providing communication between the upper passage of the faucet and the interior of the receptacle, an integral, annular portion formed upon said faucet, a removable cap positioned upon said annular portion, an extension provided with an approximately central opening and a plurality of apertures formed upon said receptacle, a transparent casing positioned upon the annular extension of said faucet and within the opening of the extension secured to the receptacle, said casing provided with an apertured cap, a tubular plunger adjustably positioned within the apertured portion of said cap, said plunger provided with a head upon one end and a vent-cap provided with apertures secured upon the opposite end, said vent-cap comprising a bulbed portion formed with a dome, and guard members positioned within the apertured portion of the extensions secured to said receptacle and positioned upon the faucet.

3. In a device of the character described, the combination of a tank and a receptacle, a faucet provided with measuring means secured to and in communication with said tank and receptacle, said measuring means comprising a casing, a plunger mounted therein, said plunger comprising a hollow body portion provided with a plunger-head, a vent-cap secured to the outer end of said plunger, said cap comprising an apertured bulbed body and a dome secured thereto.

4. In a device of the charater described, the combination with a tank and a receptacle, of a valved member connecting said tank and receptacle, said valved member provided with a casing, a slidable, hollow plunger positioned within said casing, and a vent-cap secured to the outer end of said plunger.

5. In a device of the character described, the combination with a tank and a receptacle, of a casing assembled with said tank and receptacle, a plunger supported by said casing, said plunger comprising a hollow body portion provided with a plunger-head, a vent-cap carried by the body portion of the plunger, and means for supplying liquids from said receptacle to said casing and subsequently from said casing and tank.

6. The combination with a tank, receptacle, and casing, means for permitting of the discharge of liquid from said receptacle to said casing and subsequently from said casing and tank, of means for adjusting the dimension of the liquid-chamber of said casing, said means comprising a bodily, slidable plunger, said plunger comprising a hollow body portion provided with a vent-cap.

7. In a device of the character described, the combination with a tank, of a faucet-casing provided with a single discharge-opening and with passages formed therein, said faucet-casing secured to said tank, one of said passages communicating with the interior of said tank, a two-way valve positioned within said faucet-casing, a receptacle positioned contiguous to said tank, a tubing secured to said faucet-casing and receptacle and providing communication between one of said passages formed in the faucet-casing and the interior of said receptacle, and a casing provided with an adjustable measuring-chamber positioned upon said faucet-casing and communicating with one of the passages therein, the valve being capable of permitting the synchronous discharge of liquids from the measuring-chamber and the tank.

8. In a device of the character described, the combination with a tank, a receptacle secured contiguous to said tank, of a faucet-casing provided with passages and a single discharge-opening, a two-way valve positioned within said faucet-casing, said faucet-casing secured to said tank, a tube connecting the receptacle and the faucet-casing and providing communication between the interior of said receptacle and one of the passages of the faucet-casing, a casing supported by said faucet-casing and communicating with the passage which is in communication with the receptacle, the other passage of the faucet being in direct communication with the interior of the tank, and means carried by the casing supported by the faucet-casing for adjusting the liquid-receiving capacity thereof.

9. In a device of the character described, the combination with a tank, a receptacle supported upon said tank, of a faucet provided with a two-way valve, positioned upon said tank, said faucet provided with a single discharge-opening and with an upper and a lower passage, the lower passage communicating directly with the interior of said tank, a tube connecting said faucet and receptacle and providing communication between the upper passage of the faucet and the interior of said receptacle, a casing positioned upon said faucet and capable of being placed in communication with the interior of said receptacle through one of the passages of said valve and the upper passage of said faucet, and tubing, and means for adjusting the liquid-containing capacity of said casing.

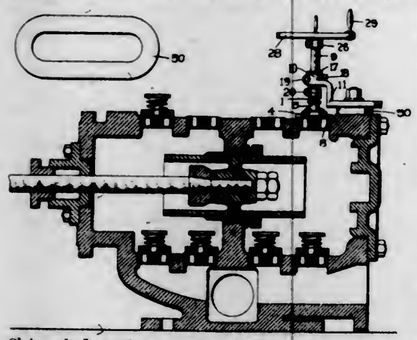
10. In a device of the character described, the combination with a tank, a receptacle positioned contiguous to said tank, of a faucet provided with a two-way valve and a single discharge-opening, secured to said tank, said faucet provided with an upper and a lower passage, the lower passage communicating directly with the interior of said tank, a tube connecting said faucet and said receptacle, said tube providing communication between the upper passage of the faucet and the interior of said receptacle. an integral, annular portion formed upon said faucet, a removable cap positioned upon said annular portion, an extension provided with a central opening and apertures, formed upon said receptacle, a casing positioned upon the annular portion of said faucet and within the opening of the extension secured to the receptacle, means for adjusting the liquid-receiving capacity of said casing, and guard members positioned within the apertures of the extension secured to said receptacle and engaging the faucet.

821,366. RAT-TRAP. FRANK KLOUSNITZER, Herman, Pa., assignor of one-half to Henry Cypher, Marwood, Pa. Filed Feb. 6, 1906. Serial No. 299,726.



Claim.—A trap embodying a casing having an opening formed therein, a tilting platform mounted within said casing, a closed shaft communicating with said casing and having an opening formed near its upper end, an ejector-plate pivotally mounted in said opening, a plurality of upwardly-projecting stationary prongs arranged within said shaft below the ejector-plate, downwardly-projecting prongs arranged above the ejector-plate, means to maintain said tilting platform in its normal position, and means to retain said ejector-plate in an elevated position, substantially as described.

821,367. TRUING DEVICE FOR VALVE-SEATS. JAMES D. MITCHELL, Lakewood, Ohio. Filed Mar. 26, 1904. Serial No. 200,219.



Claim.—1. In a valve-seat-truing device, a stem carrying a cutting-blade at its lower extremity, a centering-sleeve having an opening extending therethrough at an angle to the periphery of said sleeve in which the stem is rotatably mounted and a supporting-bar bolted to a suitable portion of the device having the seat to be trued and having a split collar provided with an opening extending therethrough at an angle to the periphery of said collar in which the centering-sleeve is adjustably supported, substantially as set forth.

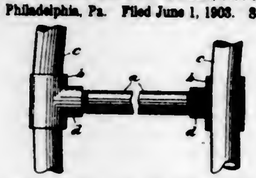
2. A valve-seat-truing device having a vertical stem, a recessed holding-block on the lower extremity of said stem, a cutting-blade supported by said holding-block, a centering-sleeve having an opening extending therethrough at an angle to the periphery of said sleeve in which the vertical stem is rotatably mounted, a supporting-bar bolted to a suitable portion of the device having the seat to be trued and having a split collar formed integral with said bar and provided with an opening extending therethrough at an angle to the periphery of said collar in which the centering-sleeve is adjustably supported, substantially as set forth.

3. In a valve-seat-truing device, a stem provided with a cutting-blade, a centering-sleeve in which the stem is rotatably mounted, a supporting-bar bolted to a suitable portion of the device having a seat to be trued and having a split collar provided with an opening formed at a slight angle to the perpendicular and of larger diameter than the diameter of the sleeve and a split ring fitting in the split collar and having an outside diameter equal to the diameter of the opening in the split collar and an opening formed at a slight angle from the perpendicular in which the centering-sleeve is adjustably supported, substantially as set forth.

4. A valve-seat-truing device having a vertical stem, a recessed holding-block on the lower extremity of said stem, a cutting-blade supported by said holding-block, a centering-sleeve having an opening formed at a slight angle to the perpendicular in which the vertical stem is rotatably mounted, a supporting-bar bolted to a suitable portion of the device having the seat to be trued and having a split collar provided with an opening formed at a slight angle to the perpendicular in which the centering-sleeve is adjustably supported, substantially as set forth.

5. A valve-seat-truing device having a vertical stem, a recessed holding-block on the lower extremity of said stem, a cutting-blade supported by said holding-block, a centering-sleeve in which the vertical stem is rotatably mounted, a supporting-bar bolted to a suitable portion of the device having a seat to be trued and having a split collar provided with an opening formed at a slight angle to the perpendicular and of larger diameter than the diameter of the sleeve, a split ring having an outside diameter equal to the diameter of the opening in the split collar and an opening formed at a slight angle from the perpendicular in which the centering-sleeve is adjustably supported, substantially as set forth.

821,368. CONSTRUCTION OF WALLS, FLOORS, &c. EDMOND MOLLOY, Philadelphia, Pa. Filed June 1, 1903. Serial No. 159,598.



Claim.—1. In a structure of the class described, suitable runners and tie-pieces and members sleeved on the runners and coöperating with the tie-pieces, whereby tension may be placed upon said runners.

2. In a structure of the class described, runners and tie-pieces and members sleeved on the runners and coöperating with the tie-pieces whereby tension may be placed upon said runners, the said structure being embedded in incasing material.

3. A wall or floor structure having continuous runners and sectional tie-pieces connecting said runners, and adapted to exert tension thereon, the individual tie-pieces staggering each other.

4. In a structure of the class described, the combination of runners, coupling members thereon but independent thereof, and tie-pieces coöperating with said coupling members and exerting a thrust on the runners.

5. In a wall or floor structure consisting of T-pieces, runners extending loosely therethrough, and connecting members passing through the T-pieces and adapted to contact endwise with the runners.

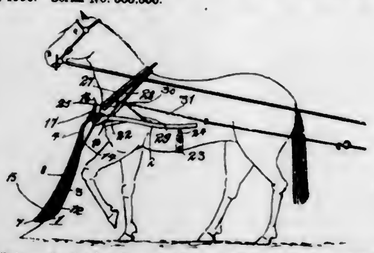
6. A wall or floor structure consisting of T-pieces, runners extending loosely therethrough and connecting members through the T-pieces and adapted to contact endwise with the runners, said structure being embedded in incasing material.

7. In a structure of the class described, the combination of runners, coupling members thereon but independent thereof, and tie-pieces coöperating with said coupling members and exerting a thrust on the runners, whereby the runners may be placed under tension, the said structure being embedded in incasing material.

8. A structure of the class described comprising runners, coupling members adapted to contact with a portion of the surface of said runners, and tie members connecting said coupling members, the ends of the latter members being adapted to contact with a different portion of the surface of the runners than that contacted by the coupling members whereby the runners are held between the contacting part of the coupling members and the ends of said tie members.

9. A structure of the class described, comprising runners, coupling members coöperating therewith, and substantially inflexible tie-pieces coöperating with said coupling members and the runners whereby thrust and tension are placed upon the runners, said tie-pieces being inclined with respect to the runners.

821,369. CORN-TURNER. JOHN MORAN, Chicago, Ill. Filed Mar. 2, 1906. Serial No. 303,835.



Claim.—1. An implement of the class described, comprising a fender, and means for removably securing the fender in front of a horse and in position to allow freedom of movement of the horse, substantially as described.

2. An implement of the class described, comprising shafts adapted to be secured to the harness of a horse, and a fender adapted to be removably secured to the forward projection of the shafts and held in front of the horse in position to allow freedom of movement of the horse, substantially as described.

3. An implement of the class described, comprising shafts, a belly-band adapted to hold the rear ends of the shafts in position, means for supporting the forward ends of the shafts from the hame of the horse, and a fender adapted to be removably secured to the forwardly-projecting ends of the shafts and held in position in front of the horse to allow freedom of movement of the horse, substantially as described.

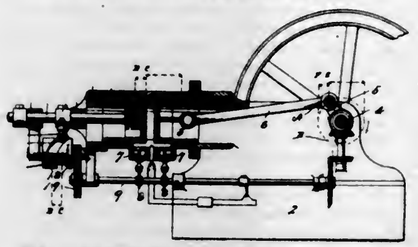
4. An implement of the class described, comprising shafts, a belly-band adapted to hold the rear ends of the shafts in position, means for supporting the forward ends of the shafts from the hame of the horse, a fender of wedge-shaped formation having a framework comprising side bars converging to a point at their lower forward ends, a center bar, and a mesh covering for the framework, the framework being removably secured to the forwardly-projecting ends to allow freedom of movement of the horse, substantially as described.

5. In an implement of the class described, the combination of shafts, a cross breast-bar connecting the shafts, a belly-band adapted to secure the rear ends of the shafts, a support connecting the shafts with the hame of the horse, sockets at the forward ends of the shafts, a cross brace-rod connecting the shafts rearwardly of the sockets, a fender-framework of wedge-shaped formation comprising side rails and a center rail, a pivotal cross-bar connecting the upper ends of the side rails, a hook on the upper end of the center rail and adapted to be hooked under the cross-brace for the shafts, and the sockets on the ends of the shafts being adapted to be hooked under the pivotal cross-bar of the frame, substantially as described.

6. In an implement of the class described, the combination of shafts, a cross breast-bar connecting the shafts, a belly-band adapted to secure the rear ends of the shafts, a support connecting the shafts with the hame of the horse, sockets at the forward ends of the shafts, a cross brace-rod connecting the shafts rearwardly of the sockets, a fender-framework of wedge-shaped formation comprising side rails and a center rail, a pivotal cross-bar connecting the upper ends of the side rails, a hook on the upper end of the center rail and adapted to be hooked under the cross-brace for the shafts, and the sockets on the ends of the shafts being adapted to be hooked under the pivotal cross-bar of the frame, lower cross-rods connecting the center and side rails of the frame, and brace-rods connecting the lower cross-rods with the pivotal cross-bar, substantially as described.

7. In an implement of the class described, the combination of shafts, a cross breast-bar connecting the shafts, a belly-band adapted to secure the rear ends of the shafts, a support connecting the shafts with the hame of the horse, sockets at the forward ends of the shafts, a cross brace-rod connecting the shafts rearwardly of the sockets, a fender-framework of wedge-shaped formation comprising side rails and a center rail, a pivotal cross-bar connecting the upper ends of the side rails, a hook on the upper end of the center rail and adapted to be hooked under the cross-brace for the shafts, and the sockets on the ends of the shafts being adapted to be hooked under the pivotal cross-bar of the frame, lower cross-rods connecting the center and side rails of the frame, brace-rods connecting the lower cross-rods with the pivotal cross-bar, and a mesh covering for the frame, substantially as described.

821,370. EXPLOSIVE-ENGINE. JAMES M. MORRISON, Sioux City, Iowa. Filed Dec. 30, 1904. Serial No. 238,989.



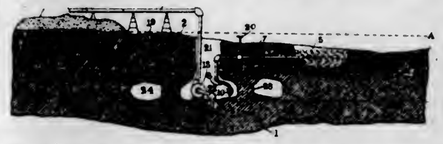
Claim.—An explosive-engine comprising a cylinder, a piston mounted to reciprocate within the cylinder, a rotating crank-arm, a link connecting the piston and the crank-arm, a cylinder-head mounted to reciprocate within the cylinder, an outwardly-extending rod secured to said cylinder-head, a cam-disk disposed for coöperation with the rod, connecting means whereby the rotation of the crank-arm produces a rotary movement of the disk which in turn produces an intermittent reciprocating movement of the cylinder-head in coöperation with and at a short distance from the piston while the piston is finishing its inward and beginning its outward stroke and means for producing the explosion after the piston has begun its outward stroke and after the crank-arm has passed the center and while the distance between the piston and the cylinder-head is at its minimum.

821,371. COMBINED PLUMB-BOB AND RULE. REYNOLDS MCDONALD, St. Louis, Mo. Filed Jan. 30, 1905. Serial No. 243,200.



Claim.—An improved plumb-bob, constructed with a beam, comprising a pair of rectangular bars and dovetail tongues connecting said bars, there being a distinguishing-mark formed on the face of one of the bars and extending longitudinally the entire length of the beam, there being shallow recesses formed in the face of the beam on which the mark is arranged, the centers of which recesses are in alinement with the distinguishing-mark, graduated plates removably positioned in said recesses, and gravity-fingers pivotally arranged on said plates within the recesses, the pivot-points of which plates are in alinement with each other upon the distinguishing-mark and said recesses being of such depth, the removable plates and the gravity-fingers of such thickness, as that the faces of said gravity-fingers occupy the same plane with the surface of the beam on which the distinguishing-mark is formed: substantially as specified.

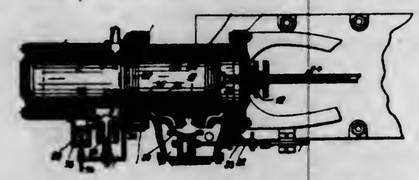
821,372. APPARATUS FOR MOVING AND MINING MATERIAL OF A GRANULAR AND COMMINUTED NATURE. ALEXANDER MCDOUGALL, Duluth, Minn. Filed July 25, 1902. Serial No. 116,919.



Claim.—1. In an apparatus for raising valuable material which lies in a layer at considerable depth below a layer of valueless material, the combination of the layer of valueless material having an opening therethrough and exposing the layer of valuable material, the said layer of valuable material having a chamber formed therein, and a sump within the chamber, columns or pillars sustaining the roof of the chamber, a reservoir formed on the layer of valueless material, a pipe or pipes connecting said reservoir and passing through the layer of valueless material and entering the chamber within the layer of valuable material, means for directing a stream or streams of water from said pipe or pipes against the valuable material, a lift pump or pumps within the chamber and having its or their inlet or inlets within the sump and discharging out through the opening in the layer of valueless material upon a dump formed upon the layer of valueless material, and means connecting the dump to the reservoir whereby the same water may be used for disintegrating the valuable material, carrying it in suspension to the sump and discharging it to the dump.

2. In an apparatus for raising valuable material which lies in a layer at considerable depth below a layer of valueless material, the combination of the layer of valueless material having an opening therethrough and exposing the layer of valuable material, the said layer of valuable material having a chamber within it and of greater extent than the opening in the layer of valueless material and immediately below said opening, a sump within the chamber, columns or pillars formed within the valuable material and sustaining the roof of the chamber in the layer of valuable material, a reservoir formed on the layer of valueless material, a pipe or pipes connecting said reservoir and passing through the opening in the valueless material and entering the chamber within the layer of valuable material, means for directing a stream or streams of water from said pipe or pipes against the valuable material, a lift pump or pumps within the chamber and having its or their inlet or inlets within the sump and discharging out through the opening in the layer of valueless material upon a dump formed upon the layer of valueless material, and a canal connecting the dump to the reservoir whereby the same water may be used for disintegrating the valuable material, carrying it in suspension to the sump and discharging it to the dump, and whereby an opening in the layer of the valueless material of the smallest size will be formed.

821,873. GAS AND STEAM ENGINE. HENRY B. NICODEMUS, Allegheny, Pa. Filed Oct. 27, 1904. Serial No. 230,237.



Claim.—1. The combination with a gas-engine cylinder, of a steam-engine cylinder, said steam-engine cylinder being of a larger diameter than said gas-engine cylinder, a piston operating in said cylinders, and having an enlarged head operating in said steam-cylinder, said gas-cylinder having an inlet and an exhaust port, said steam-cylinder having an inlet and an exhaust port, means for controlling the inlet of said gas, a sliding valve controlling said steam inlet and exhaust ports, and means for moving said sliding valve into and out of operative position, substantially as described.

2. In a combined steam and explosive engine, the combination of an alined steam-cylinder and gas-cylinder, the steam-cylinder being of greater internal diameter than the gas-cylinder, a piston operating in said cylinders and having an enlarged head at one end operating in the steam-cylinder, a gas-inlet and an exhaust for the gas-cylinder, a valve normally closing the gas-inlet, controlling means connected to said valve for automatically regulating the quantity of gas admitted through the gas-inlet, a port establishing communication between the gas-inlet and the steam-cylinder, and inlet-ports and an exhaust-port for said steam-cylinder, substantially as described.

3. In a combined steam and explosive engine, the combination of an alined steam-cylinder and gas-cylinder, the steam-cylinder being of greater internal diameter than the gas-cylinder, a piston operating in both of said cylinders, and having an enlarged head operating in the steam-cylinder, inlet and exhaust ports for the gas-cylinder, and independent inlet and exhaust ports for the steam-cylinder, the said steam-cylinder acting in conjunction with the gas-cylinder when the engine is being used as an explosive-engine, substantially as described.

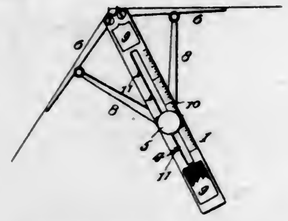
4. In a combined steam and explosive engine, an alined steam and gas cylinder, the steam-cylinder being of larger internal diameter than the gas-cylinder, a piston operating in both of said cylinders and having an enlarged head operating only in the steam-cylinder, both of said cylinders receiving gas and air when the engine is operated as an explosive-engine, and the steam-cylinder being used independently of the gas-cylinder when the engine is operated as a steam-engine.

5. A combined gas and explosive engine embodying an alined steam-cylinder and a gas-cylinder, a piston operating in both of said cylinders, and having a head operating only in the steam-cylinder, both of said cylinders receiving gas and air when the engine is operated as a gas-engine, and the steam-cylinder alone receiving steam when the engine is operated as a steam-cylinder.

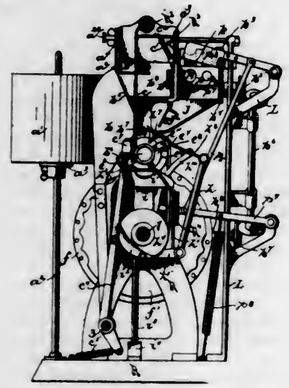
6. In a combined steam and explosive engine, the combination of a steam-cylinder, a steam-chest and a slide-valve in said steam-chest, said cylinder having ports leading from the steam-chest to its opposite ends and said steam-chest having inlet and exhaust ports, with means for placing said slide-valve in operative and inoperative positions relatively to the ports in the cylinder, a piston located in the cylinder, a gas-cylinder having an inlet-port and an exhaust-port, a valve governing the inlet-port of the gas-cylinder, a plunger located in the gas-cylinder and connected to the piston in the steam-cylinder, said cylinders being provided with a port leading from the gas-inlet to one of the ports of the steam-cylinder.

821,874. SQUARE. SAMUEL R. PARER, Maxwellton, Ga. Filed July 3, 1906. Serial No. 266,275.

Claim.—As a new article of manufacture a square for carpenters' use comprising a stock formed with a longitudinally-extending slot opening transversely therethrough and one of the sides produced by said slot being solid and formed at its inner edge with a recess the other side being formed with a slot 4, a block mounted to slide in the slot 4 and provided with a thumb-nut the bolt of which takes into the said groove, arms pivotally connected to one end of the stock, links connecting the respective arms to the said block and the face of the stock being provided with two sets of graduations, one set designed to indicate the angle between the said arms and stock while the other set is numbered to designate the number of sides in the polygon produced with an angle equal to the angle between the two pivoted arms.



821,875. WRAPPING-MACHINE. JOHN PFEIFER, Springfield, Ohio, assignor of one-third to F. R. Burton, Springfield, Ohio. Filed May 28, 1904. Serial No. 210,212.



Claim.—1. In a machine as described, the combination with article-feeding mechanism, of wrapper-feeding mechanism, article-wrapping and wrapper-twisting devices, article-holding devices, and means for intermittently rotating said wrapping and twisting devices in the same direction, substantially as specified.

2. In a machine as described, the combination with wrapper and article feeding mechanism, of revoluble article-wrapping mechanism arranged in duplicate, means for holding the inclosed article against rotation during a portion of the period of rotation of said article-wrapping devices, and means for twisting the ends of the wrapper on opposite sides of the article being wrapped by the continuous rotation of the article-wrapping devices, substantially as specified.

3. In a machine as described, the combination with wrapper-feeding mechanism, of wrapper-gripping fingers, means for giving to said wrapper-gripping fingers a partial rotation, whereby the wrapper will be formed in a trough for the reception of the article to be wrapped, article-feeding mechanism, whereby the article will be deposited in said trough, means for giving to said wrapper-gripping fingers additional rotation, and holding means whereby the inclosed article will be held stationary while the wrapper-gripping fingers continue to rotate the ends of the wrapper, substantially as specified.

4. In a machine as described, wrapper-feeding mechanism, wrapper-gripping devices, means for giving to said wrapper-gripping devices a partial rotation, whereby said wrapper will be given a substantial U or trough shape, article-feeding mechanism, means for continuing the rotation of said wrapper-gripping devices, whereby the edges of the wrapper are closed about the article, and means for holding the wrapped article stationary while the wrapper-gripping devices continue to rotate, thereby twisting the ends of said wrapper, substantially as specified.

5. In a machine as described, the combination with article-feeding mechanism, of wrapper-gripping means, actuating means for moving said wrapper-gripping devices to form of said wrapper a pocket for the reception of the article, means for closing the opposite edges of the wrapper over said article, clamping devices adapted to hold said article against rotation, and twisting devices for twisting the opposite ends of said wrapper, substantially as specified.

6. In a machine as described, the combination with article feeding and wrapping mechanism, of a reciprocating head, wrapper-gripping jaws located on said head, means for opening and closing said jaws at predetermined points, a cam, connections between said cam and reciprocating head, oppositely-disposed inclined faces on said cam, a "drop-off" terminating one of said inclined faces, and a "dead space" on the other inclined face, substantially as and for the purpose specified.

7. In a machine as described, the combination with article feeding and wrapping devices, of a reciprocating head, wrapper-gripping jaws on said head, means for giving to said head a sudden forward movement near the forward end of its stroke, and means for momentarily retarding the movement of said head during its rearward stroke, substantially as and for the purpose specified.

8. In a machine as described, the combination with article and wrapper feeding mechanism and article-wrapping mechanism, of a support for the web of wrapper material, a "friction-plate" adapted to maintain the end of the wrapper material in position for engagement by the feeding mechanism, a wrapper-cutting knife, and a hinged support coöperating with said friction-plate to support the wrapper material during the severing process, substantially as and for the purpose specified.

9. In a machine as described, the combination with article feeding and wrapping mechanism and wrapper feeding and severing mechanism, of a tympan-plate, a pressure-arm, and a pivoted head on said pressure-arm, whereby the severed wrapper may be moved to position to be engaged by said wrapping mechanism, and so held under even tension, substantially as and for the purpose specified.

10. In a machine as described, the combination with wrapper and article feeding mechanism, of wrapping and twisting mechanism arranged in duplicate, actuating means for intermittently rotating said wrapping and twisting mechanism and means for preventing a revoluble movement of said wrapping and twisting mechanism except when actuated by said actuating means, substantially as and for the purpose specified.

11. In a machine as described, the combination with wrapper-feeding devices, of article wrapping and twisting devices consisting of a longitudinally-movable shaft, a head on said shaft, gripping-fingers coöperating with said head to engage the ends of the wrapper, means to give to said wrapping and twisting devices substantially a half-rotation, whereby the wrapper will be formed into a trough for the reception of the article to be wrapped, means for continuing the rotation of said wrapping and twisting devices after the deposit of said article, and holding devices whereby the said article and adjacent portions of the wrapper will be held stationary during a portion of the continued rotary movement, substantially as specified.

12. In a machine for the purpose described, article feeding and wrapping and twisting mechanism consisting of a longitudinally-movable revoluble shaft, a head on said shaft, rods arranged parallel with said shaft and slidingly connected therewith, wrapper-gripping fingers provided with lateral arms pivoted to said rods, projections on said shaft adapted to be contacted by the lateral arms of said gripping-fingers when said rods are moved longitudinally, whereby said gripping-fingers will be moved about their pivotal connections, substantially as and for the purpose specified.

13. In a machine as described, article feeding and wrapping devices, consisting of a revoluble shaft, a head therein, pivoted gripping-fingers, sliding connections between said gripping-fingers and said revoluble shaft, and means for longitudinally moving said fingers, whereby when moved in one direction they will engage said head, and when moved in the opposite direction they will be disengaged from said head, substantially as and for the purpose specified.

14. In a machine for the purpose mentioned, article feeding and wrapping and twisting mechanism comprising a revoluble shaft, slidable members on said shaft, a head, and a hub carried by said shaft, parallel rods connected with said slidable members, wrapper-gripping fingers pivotally connected with said rods, and means for moving said slidable member whereby the fingers contact with said head and hub respectively when moved in opposite directions and are thereby moved about their pivotal points, substantially as and for the purpose specified.

15. In a machine as described, the combination of wrapper-feeding mechanism, means for feeding an article to be wrapped, and means for forming the wrapper into a casing about said article and open at opposite ends, holding means for the article to be wrapped, and means for moving into operative position said holding means during a portion of the rotation of said wrapping means, whereby the opposite ends of said wrapper will be twisted, substantially as specified.

16. In a machine as described, article feeding and wrapping mechanism consisting of a revoluble shaft, a head thereon, wrapper-gripping fingers adjacent thereto and adapted when moved longitudinally to coöperate with said head in engaging the wrapper, operating-cams, pivoted levers coöperating with said cams to longitudinally move said fingers, and means for intermittently rotating said revoluble shaft, substantially as specified.

17. In a machine as described, article feeding, and wrapping mechanism consisting of a longitudinally-movable revoluble shaft, a head thereon, wrapper-gripping fingers adjacent thereto and arranged in sets, means for separately operating said sets of gripping-fingers and for intermittently rotating said revoluble shaft, substantially as specified.

18. In a machine as described, article-wrapping mechanism consisting of a shaft, a head thereon, wrapper-gripping fingers located adjacent thereto, means for moving said wrapper-gripping fingers to cause their impingement on said head, and means for rotating said head and fingers, substantially as and for the purpose specified.

19. In a machine as described, the combination of means for feeding an article to be wrapped, wrapping and wrapper-twisting mechanism arranged in duplicate and on opposite sides of the article to be wrapped, article-clamping devices intermediate of said wrapping and twisting mechanism, said clamping devices being normally out of engagement with the article during the feeding and wrapping processes, and actuating means for said clamping devices whereby they will be caused to engage the article and hold same against rotation while the ends of the wrapper are being twisted, substantially as specified.

20. In a machine as described, means for feeding an article to be wrapped, of wrapping mechanism, twisting mechanism, means for holding stationary the article and the portion of wrapper immediately surrounding same while the ends of the wrapper are rotated both in the same direction, substantially as and for the purpose specified.

21. In a machine as described, the combination with article-feeding mechanism, wrapping and wrapper-twisting mechanism arranged in duplicate and on opposite sides of the article to be wrapped, article-clamping devices to engage said article after the completion of the wrapping process, actuating means for said clamping devices, and actuating means for said wrapping and wrapper-twisting mechanism, substantially as described.

22. In a machine as described, means for feeding an article to be wrapped, wrapping mechanism, a vertical-movable article-clamping member and a pivoted article-clamping member coöperating with said first-named clamping member to hold the article against rotation, and normally offset in its relation to said first-named clamping member, actuating means for said clamping members, and means for moving said pivoted clamping member laterally out of registry with said vertically-movable clamping member, substantially as specified.

23. In a machine as described, means for feeding an article to be wrapped, of wrapping mechanism, a vertical-movable clamping member, a pivoted spring-actuated clamping member coöperating with said first-named clamping member, and a pivoted spring-actuated support for said pivoted spring-actuated clamping member, and means to cause such members to engage the article, whereby the article will be held against rotation, substantially as and for the purpose specified.

24. In a machine as described, means for feeding an article to be wrapped, of wrapping mechanism, a vertically-movable clamping member, a cam for operating said clamping member, a pivoted clamping member, a pivoted support for said clamping member, a cam adapted to move said pivoted support on its pivotal connections, a link attached to said pivoted clamping member and a cam engaging with said link, whereby said clamping member will be moved independently of its pivoted support, substantially as and for the purpose specified.

25. In a machine as described, the combination with article-wrapping devices, of a hopper, a pivoted member, a finger normally projecting into said hopper and located on said pivoted member, means for advancing said pivoted member while said finger engages an article within the hopper, means for moving said pivoted member on its pivotal connection to depress said member at the forward limit of its movement, and means to retract said pivoted member while in its depressed position, substantially as specified.

26. In a machine as described, the combination with article-wrapping mechanism, of article-feeding mechanism comprising a hopper, a movable article-retaining member in said hopper, a recip-

rocatory ejector member intermittently protruding into said hopper, means for advancing said ejector member in an elevated position, and means for retracting said ejector member in a depressed position, substantially as specified.

27. In a machine as described, the combination of article and wrapper feeding devices, article-wrapping devices, and article-clamping devices, of a hopper to hold the articles to be wrapped, a projecting finger on one of said clamping devices whereby single articles will be ejected from said hopper, substantially as and for the purpose specified.

28. In a machine as described, means for feeding an article to be wrapped, means for feeding predetermined lengths of wrapper material, means to form the wrapper in a tube about the article to be wrapped, holding means for the middle portion of said tube and inclosed article means for rotating the opposite ends of said tube, substantially as specified.

29. In a machine as described, the combination with article-feeding and wrapper-feeding devices, of wrapping mechanism, means for holding the article and wrapper stationary, after the wrapping operation, and means for twisting both ends of said wrapper while the wrapper and article are being held stationary.

30. In a machine as described, the combination with article feeding and wrapping mechanism, of supporting means for a continuous web of wrapper material, means for feeding predetermined lengths of wrapper material, a pivoted wrapper-cutting knife, angularly-arranged cutting edges on said knife, actuating means for said knife, whereby the wrapper will be punctured and cut simultaneously in two directions, substantially as specified.

31. In a machine as described, the combination with article feeding, wrapping and twisting mechanism, supporting means for a continuous web of wrapper material, means for feeding predetermined lengths of wrapper material, a wrapper-cutting knife for severing such predetermined lengths of wrapper material, a stationary support and a movable support for the wrapper material during the severing process, substantially as specified.

32. In a machine as described, the combination with wrapper and article feeding mechanism, of wrapper-gripping devices arranged on opposite sides of the article to be wrapped, actuating means for intermittently rotating said wrapper-gripping devices, and clamping devices intermediate of said wrapper-gripping devices adapted to hold stationary the article during a portion of the rotation of said wrapper-gripping devices, substantially as and for the purpose specified.

33. In an article-wrapping machine, wrapper-feeding mechanism, article-feeding mechanism, rotary wrapping mechanism to form the wrapper in a tube about the article to be wrapped, article-holding mechanism, and means to continue the rotation of the rotary wrapping mechanism whereby the opposite ends of said tube will be twisted in the same direction, substantially as specified.

34. In an article-wrapping machine, a wrapper, feeding mechanism, means for forming the wrapper into a tube, means for holding a portion of said tube, means for twisting the other portion of said tube by the continued rotation of the tube-forming mechanism while the first-mentioned portion is being held, substantially as and for the purpose specified.

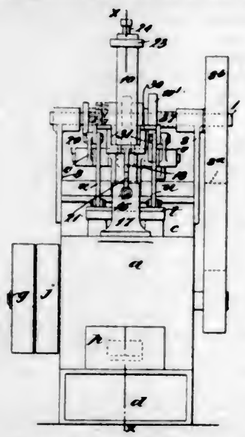
35. In a wrapping-machine, wrapper-feeding devices, wrapper-gripping devices, means for advancing the forward edge of the wrapper in a circular path about the article to be wrapped by rotating said wrapper-gripping devices, and means for twisting the opposite ends of the wrapper by a continued rotation of said wrapper-gripping devices, substantially as specified.

36. In a machine as described, wrapper-feeding devices, a rotary shaft, wrapper-gripping fingers thereon, means to rotate said shaft and fingers to carry the forward edge of the wrapper about the article to be wrapped, and means to twist the end of the wrapper by the continued rotation of said shaft and fingers, substantially as specified.

37. In a machine as described, wrapper-feeding devices, article-wrapping mechanism, and means for twisting the wrapper ends on opposite sides of the article to be wrapped by a continued rotation of said article-wrapping mechanism, substantially as specified.

38. In a machine as described, the combination with wrapper and article feeding mechanism, of rotary article-wrapping mechanism engaging the wrapper on opposite sides of the article to be wrapped, actuating devices for rotating said wrapping mechanism, holding devices for the article to be wrapped, and means for moving said holding devices into engagement with the article during a portion of the period of rotation of the wrapping devices, substantially as and for the purpose specified.

821,376. NUT TAPPING OR SCREWING MACHINE. JOHN M. RALSTON, Barrhead, Scotland. Filed July 25, 1905. Serial No. 271,150.



Claim.—1. The combination of tap-holding gripper mechanism comprising two sets of grips slidable toward and from the tap position, means for alternately drawing the sets of grips out of the tap-holding position and comprising oscillatory members each for engaging a grip from one set on one excursion and a grip from the other set on the return excursion, segments carried by the respective oscillatory members, racks engaging the segments, and means for reciprocating the racks.

2. The combination of a frame, means for revolving the same, a plurality of sets of grips in the frame, racks and segments for operating the grips for alternately grasping and holding a tap, means for forcing nut-blanks down and over the tap, a slide for automatically feeding the nut-blanks successively to the forcer, cams and levers for operating the forcer, the racks, and the slide, a driver for said cams, clutch mechanism for connecting the cams and driver, means controlled by the cams for throwing the clutch mechanism out of gear, and means controlled by the forcer for throwing the clutch mechanism into gear.

3. The combination with a rotatable member, of two sets of tap-holding grips carried thereby, spring-pressed means for feeding blanks over the tap, cam mechanism, clutch-controlled means for actuating the cam mechanism, means controlled by the cam mechanism for retracting the clutch after the release of the feeding means to the influence of its spring, means controlled by the cam mechanism for retracting the feeding means and tensioning the spring thereof, and means controlled by the feeding means on the completion of its feeding movement for throwing the clutch into operative position.

4. The combination with a rotatable member, of two sets of tap-holding grips carried thereby, spring-pressed means for feeding blanks over the tap, cam mechanism, clutch-controlled means for actuating the cam mechanism, means controlled by the cam mechanism for retracting the clutch after the release of the feeding means to the influence of its spring, means controlled by the cam mechanism for retracting the feeding means and tensioning the spring thereof, means controlled by the cam mechanism for presenting nut-blanks to the feeding means upon its retraction, and means controlled by the feeding means on the completion of its feeding movement for throwing the clutch into operative position.

5. In a nut-tapping machine, the combination with a rotatable member, of two sets of tap-holding grips carried thereby, means for closing the grips, an oscillatory member having means for engaging the grips of the respective sets and upon its oscillation in one direction retracting a grip of one set and upon its return retracting a grip of the other set, a sector carried by said oscillatory member, a reciprocatory rack in mesh therewith, and means for reciprocating said rack.

6. In a nut-tapping machine, the combination with a rotatable member, of two sets of tap-holding grips carried thereby, means for closing the grips, an oscillatory member having means for engaging the grips of the respective sets and upon its oscillation in one direction retracting a grip of one set and upon its return retracting a grip of the other set, a sector carried by said oscillatory member, a reciprocatory rack in mesh therewith, means for reciprocating said rack, means for locking one set of grips, and means carried by the racks for controlling said locking means.

7. In a nut-tapping machine, the combination with a rotary frame, of two sets of tap-holding grips carried thereby, means for closing the grips, an oscillatory member having means for engaging the grips of the respective sets and upon its oscillation in one direction retracting a grip in one set and upon its return retracting the grip in the other set, a toothed sector carried by said oscillatory member, a slide mounted on said frame for reciprocation axially thereof, a rack carried by the slide and in mesh with said sector, a ring held from rotation and engaging the slides, cam mechanism for reciprocating said ring axially of the frame, means for locking one set of grips in their closed position, and said slide provided with means for controlling said locking means.

821,377. CURTAIN-ROD. THOMAS C. RICHARDS, Winsted, Conn. Filed July 27, 1905. Serial No. 271,497.



Claim.—1. The combination with an ornamental device having an opening, of a cup seated on the ornamental device and having a depressed portion entering the opening therein, a rod clamped in said cup, a rod passing through the ornamental device and the depressed portion of the cup, and means on the rod engaging the cup and permanently securing the same in place.

2. The combination with an ornamental device, of a rod therethrough, a shoulder on the rod holding a cup against the ornamental device, a washer on the rod in the cup and secured by upsetting the rod, and a tubular curtain-rod in the cup and the latter clamped thereon.

3. A curtain-rod end comprising an ornamental device, a rod therethrough, a head into which a roughened or irregular end of the rod is driven, a cup on the rod, a shoulder on the rod in the cup, and a concavo-convex washer secured in the cup by upsetting the rod thereagainst.

4. A curtain-rod end, comprising an ornamental ball having opposite openings, a disk at one opening, a cup at the other opening, a rod passed through the cup, ball, and disk and having a shoulder in the cup, an ornamental head having a cylindrical bore into which the rod is tightly driven, a concavo-convex washer on the rod in the cup, and said rod upset against the washer.

821,378. BLUE SULFUR DYE AND PROCESS OF MAKING SAME. CHRISTOPHER RIS, Basel, Switzerland. Filed Oct. 28, 1905. Serial No. 284,827. (Specimens.)

Claim.—1. The process of manufacturing violet to blue sulfur dyes by treating the indophenols from para-diamins and alpha-naphthol in form of their leuco compounds with alkali-polysulfids at a high temperature, substantially as described.

2. The manufacture of a blue sulfur dye by heating the indophenol from dimethyl-para-phenylenediamin and alpha-naphthol in form of their leuco compounds with alkali-polysulfids.

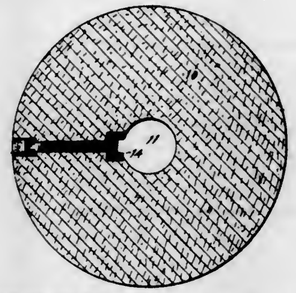
3. The new blue sulfur dyestuff obtainable from the indophenol from dimethyl-para-phenylenediamin and alpha-naphthol, substantially as described, which forms a dark-blue powder, insoluble in water, soluble in alcohol or benzene with blue color, soluble in sodium-sulfid solution with a clear greenish color, soluble in concentrated sulfuric acid with brownish color, while undergoing decomposition, and dyeing on unmordanted cotton beautiful blue shades.

821,379. PULLEY. WILLIAM M. ROCKWOOD, Indianapolis, Ind. Filed Feb. 6, 1905. Serial No. 244,450.

Claim.—1. A pulley made of wood, pulp, or other fibrous material from center to circumference having a central bore to receive a shaft, a metal bar embedded along the bore of the pulley throughout its width, and a set-screw in a hole extending radially from the circumference through the pulley and said bar for securing the pulley on the shaft

2. A pulley made of wood pulp or other fibrous material from center to circumference having a central bore to receive a shaft, a metal bar along the bore of the pulley throughout its width, and a plurality of set-screws in holes extending radially from the circumference through the pulley and said bar for securing the pulley on the shaft.

3. A pulley made of wood, pulp, or other fibrous material having a central bore to receive a shaft, a set-screw in said pulley extending radially to the bore of the pulley, and metallic means embedded in said pulley at the bore throughout the width of the pulley and with a threaded hole through the same for the passage of said set-screw, said metallic means being recessed in its inner surface so as to fit over a spline or key on the shaft.



4. The combination with a shaft having a spline or key, of a pulley made of wood, pulp, or other fibrous material having a central bore for the shaft, a metal bar embedded along the bore of the pulley throughout its width and longitudinally recessed to fit over the spline or key in the shaft, and a plurality of set-screws extending radially through the pulley and said bar for securing the pulley on the shaft.

821,380. PLATE-PRESS. GEORGE ROWDEN, Newark, N. J. Filed Dec. 27, 1905. Serial No. 293,522.

Claim.—1. In a press, the combination of a bed mounted for reciprocating movement for carrying a printing-plate, a pressure-roller arranged to advance said bed by engagement with the printing-plate carried thereby, and means for automatically locking said bed against return movement upon its release by said roller, substantially as described.

2. In a press, the combination of a bed mounted for reciprocating movement for carrying a printing-plate, a pressure-roller arranged to advance said bed by engagement with the printing-plate carried thereby, and means independent of said roller for locking said bed against return movement, substantially as described.

3. In a press, the combination of a bed mounted for reciprocating movement for carrying a printing-plate, a pressure-roller arranged to advance said bed by engagement with the printing-plate carried thereby, means for automatically locking said bed against

return movement upon its release by said roller, and means for releasing said automatic locking means, substantially as described.

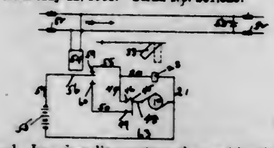
4. In a press, the combination of a bed mounted for reciprocating movement for carrying a printing-plate, a pressure-roller arranged to advance said bed by engagement with the printing-plate carried thereby, means independent of said roller for locking said bed against return movement, and manually-operated means for releasing said locking means, substantially as described.

5. In a press, the combination of a bed mounted for reciprocating movement for carrying a printing-plate, a pressure-roller arranged to advance said bed by engagement with the printing-plate carried thereby, and means yieldingly engaging said bed for automatically locking it against return movement upon its release by said roller, substantially as described.

6. In a press, the combination of a pressure-roller, power-driven means, a detachable connection between said roller and power-driven means, shiftable means for releasing said detachable connection, actuating means carried by said roller for engaging said shiftable means, movable means for releasing said shiftable means from engagement with said actuating means to permit locking adjustment of the detachable connection, means for adjusting said connection in locked position, and a common means for actuating said movable means and adjusting said connection, substantially as described.

7. In a press, the combination of a pressure-roller, power-driven means, a detachable connection between said roller and power-driven means, shiftable means for releasing said detachable connection, actuating means carried by said roller for engaging said shiftable means, movable means for releasing said shiftable means from engagement with said actuating means to permit locking adjustment of the detachable connection, means for adjusting said connection in locked position, and manually-operated means arranged to successively actuate said movable means and adjust said connection, substantially as described.

821,381. SIGNALING SYSTEM. WILMER W. SALMON, Buffalo, N. Y. Filed May 22, 1905. Serial No. 261,330.



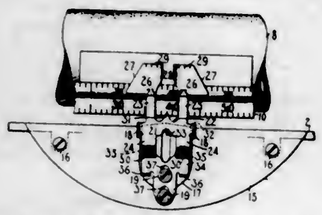
Claim.—1. In a signaling system, the combination with a signal and a suitable source of energy, of a motor, a controller, motor-driven means for moving the signal from "danger" to "safety," a clutch mechanism for holding the signal in a "safety" position, and motor-driven means for releasing said clutch mechanism when the controller is moved to a position which deenergizes the said clutch mechanism.

2. In a signaling system the combination with a signal and a suitable source of energy of a motor, a controller, motor-driven means for moving the signal from "danger" to "safety," means for establishing circuit through the controller and the motor when the controller is in one position and the signal is at "danger," means for establishing a circuit through the controller and the motor when the controller is in its opposite position and the signal is in the "safety" position, and means for breaking said circuits when the position of the signal corresponds to the position of the controller.

3. In a signaling system, the combination with a signal and a suitable source of energy, of a motor, a clutch mechanism and magnet for holding the signal in a "safety" position, motor-driven means for moving the signal from a "danger" to a safety" position, a stop placed in the path of the signal-blade, lugs on the signal-blade and its counterweight for engaging said stop and motor-driven means for forcing into engagement said stop and one of said lugs when the said clutch-magnet is deenergised.

821,382. TYPE-WRITING MACHINE. GEORGE A. SHIP, Syracuse, N. Y., assignor to The Monarch Typewriter Company, Syracuse, N. Y., a Corporation of New York. Filed July 24, 1903. Serial No. 170,267.

Claim.—1. In a type-writing machine, the combination of a platen; a pressure device pivoted on a stationary part of the machine and provided with a part adapted to engage the platen and also with a cam; and a locking-plate slidably mounted on a stationary part of the machine, said locking-plate being adapted to coact with the cam on said pressure device to bring said pressure device into positive engagement with the platen and to maintain it in said positive engagement.



2. In a type-writing machine, the combination of a platen; a pressure device pivotally mounted on a stationary part of the machine, one end of said pressure device being adapted to contact with the platen and the opposite end being formed with a cam; and a locking-plate slidably mounted and frictionally held on a stationary part of the machine and adapted to act on the cam of said pressure device to bring said pressure device into positive engagement with the platen and to maintain said pressure device locked in said engagement.

3. In a type-writing machine, the combination of a pressure device pivotally mounted on a stationary part of the machine, one end of said pressure device being adapted to engage with the platen and the other end being formed with a cam; a spring constantly tending to press said pressure device against the platen; and a locking-plate frictionally mounted on a stationary part of the machine and adapted to coöperate with the cam on the pressure device to force the latter into positive engagement with the platen and to maintain it in said engagement.

4. In a type-writing machine, the combination of a sheet-metal pressure device formed with a pair of resilient paper-fingers and a cam; a bracket fixedly secured to a stationary part of the machine and supporting a pivot-rod on which said pressure device is pivoted; and a locking-plate slidable on said bracket and frictionally held thereagainst, said plate being provided with a part adapted to engage the cam on said pressure device and being further provided with a finger-piece by which said engagement may be brought about to cause the paper-fingers of said pressure device to enter into and be maintained in positive engagement with said platen.

5. In a front-strike type-writing machine, the combination of a platen; a vertical supporting-bracket detachably secured at the front and center of the machine to a fixed part and having forwardly-turned ears; a pivot-rod secured in said ears; a vertical pressure device pivoted on said rod, said pressure device being adapted to contact with the platen and being provided with a cam; a coiled spring surrounding said pivot-rod and adapted to constantly press the pressure device against the platen; and a locking-plate slidably mounted on said supporting-bracket and adapted to coöperate with the cam on said pressure device to force said pressure device into a locked engagement with the platen.

6. In a front-strike type-writing machine, the combination of a platen; a vertical supporting-bracket arranged at the front and center of the machine and detachably secured to a fixed part, said bracket being provided with forwardly-turned ears; a pivot-rod secured in said ears; and a device pivoted on said pivot-rod and constantly spring-pressed toward the platen, said device being adapted to serve as a line-guide, a platen-scale and a printing-point indicator.

7. In a type-writing machine, the combination of an H-shaped pressure device mounted at the front of the machine and provided with upwardly-extending resilient arms which are constantly spring-pressed toward the platen and with downwardly-extending cam-shaped arms; a locking-plate having contact portions adapted to coact with said cam-shaped arms in such wise as to lock said upwardly-extending resilient arms in positive engagement with the platen.

8. In a type-writing machine, the combination of an H-shaped pressure device, two of the arms of said H-shaped device being resilient and adapted to guide and control the paper at or near the printing-point, the other two arms of said H-shaped device being provided with cams which are adapted to be acted on to force the first-named arms into a positive and locked engagement with the platen.

9. In a type-writing machine, the combination of an H-shaped pressure device, two of the arms of said H-shaped device being resilient and adapted to guide and control the paper at or near the printing-point, the other two arms of said H-shaped device being provided with cams which are adapted to be acted on to force the first-named arms into a positive and locked engagement with the platen, said first-named arms being formed with elongated tops which serve as a line-guide and being further provided with a platen-scale, and the space between said arms being adapted to serve as a printing-point indicator.

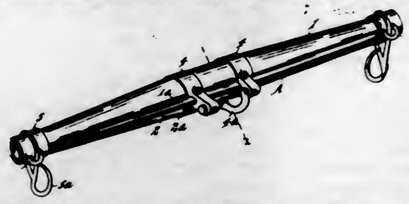
10. In a front-strike type-writing machine, the combination of a platen, an H-shaped pressure device pivotally secured at the front of said platen to a fixed part of the machine, two of the arms of said pressure device being adapted to contact with the platen and the other two arms of said pressure device being adapted to be cammed forward to lock the first-named arms against the platen, said first-named arms being provided at their inner and outer portions with lateral cam-like edges adapted to control the side edges of the paper.

11. In a front-strike type-writing machine, the combination of a platen; an H-shaped pressure device pivotally secured at the front of said platen to a fixed part of the machine, two of the arms of said pressure device being adapted to contact with the platen and the other two arms of said pressure device being adapted to be cammed forward to lock the first-named arms against the platen, said first-named arms being provided at their inner and outer edges with lateral cam-like portions adapted to control the side edges of the paper, and being further provided with a line-guide, a platen-scale and a printing-point indicator.

12. In a type-writing machine, the combination of a platen, a pressure device pivoted on a stationary part of the machine and provided with a part adapted to engage the platen; and a locking-plate slidably mounted on a stationary part of the machine, said locking-plate being adapted to coact with said pressure device to force the latter into positive engagement with the platen.

13. In a type-writing machine, the combination of a platen; a pressure device pivoted on a stationary part of the machine and provided with a part adapted to engage the platen; and a locking-plate slidably mounted on a stationary part of the machine, one of the two last-mentioned elements being provided with a cam which coacts with the other element, the result of the coaction being to force the pressure device into positive engagement with the platen.

821,383. WHIFFLETREE. WILLIAM H. SPILLMAN and FRANK FOWLER, St. Joseph, Mich. Filed Nov. 24, 1905. Serial No. 288,825.



Claim.—1. As a new article of manufacture, a plurality of complementary and concave sheet-metal sections having portions forming, when the adjacent edges of the complementary pieces are united, an outwardly-extending rib along its length, and a plurality of encircling hoops whereby said sections are held in place with respect to one another, substantially as described.

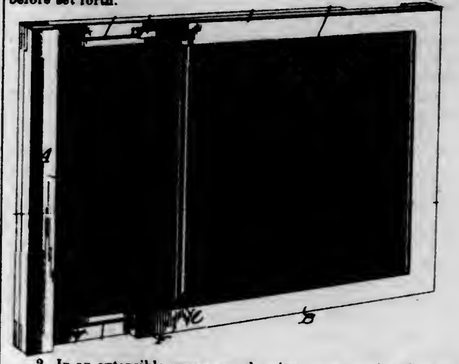
2. A metallic whiffletree, having in combination a plurality of concaved sections placed with their lateral edges adjacent to one another, one edge of each of said sections extending outwardly to form a longitudinal rib, and encircling hoops whereby the same are held in position with respect to one another.

3. A metallic whiffletree, having, in combination with encircling bands, a plurality of concaved metallic blanks placed with their lateral edges in contact one with the other, one edge of each of said blanks extending outwardly from the rounded body portion of the whiffletree to form, with a similar portion of the other blank, a longitudinally-extending rib external to the remainder of the article.

4. A new article of manufacture, consisting of sheet-metal blanks stamped to concave form and placed adjacent to one another, a lateral edge of each being extended outside the concaved portion to form with the corresponding part of the other section an external longitudinally-extending rib, and binding-hoops encircling the same at intervals.

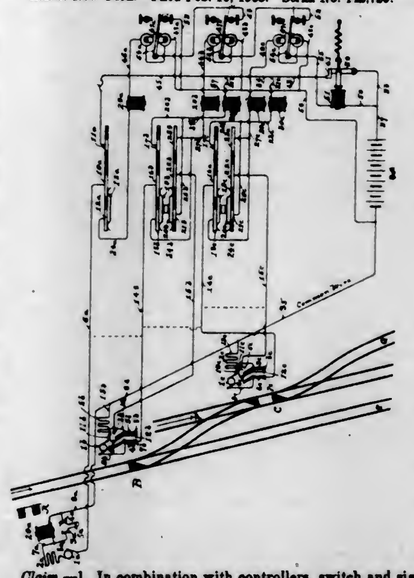
821,384. WINDOW-SCREEN. HENRY B. SOUTHWORTH, Colchester, Vt., assignor to Porter Screen Manufacturing Company, Burlington, Vt. Filed Sept. 10, 1904. Serial No. 223,955.

Claim.—1. In an extensible screen, overlapping screen-sections having in the meeting faces of their rails which overlap longitudinal rabbets and vertical retaining-grooves which extend from the bottom of the rabbets into the body of the rails, horizontal grooves which extend from the back of the rabbets into the body of the rails, coupling members applied to and uniting the sections as described, and "center irons" forming the inner vertical rails of the sections said center irons extending into the rabbets and having outwardly-turned hook ends which enter and engage the horizontal grooves at the back of the rabbets, substantially as and for the purposes hereinbefore set forth.



2. In an extensible screen, overlapping screen-sections having in the meeting faces of their rails which are arranged to overlap longitudinal rabbets, retaining-grooves which extend from the bottom of the rabbets into the body of the rails, and horizontal grooves which extend from the back of the rabbets into the body of the rails, substantially as described.

821,385. RAILWAY SWITCHING AND SIGNALING APPARATUS. JOHN D. TAYLOR, Buffalo, N. Y., assignor, by mesne assignments, to General Railway Signal Company, Buffalo, N. Y., a Corporation of New York. Filed Feb. 10, 1903. Serial No. 142,729.



Claim.—1. In combination with controllers, switch and signal apparatus, operating and indication circuits, a conductor common to all operating and indication circuits, a conductor common to all operating-circuits, a conductor common to all indication-circuits, a magnetic cut-out for breaking the operating common or the indication common, a circuit for said cut-out, polarized relays, one for each switch and one for each signal, or groups of switches or signals, having their coils in the indication-circuits of their respective switches

return movement upon its release by said roller, and means for releasing said automatic locking means, substantially as described.

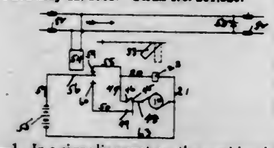
4. In a press, the combination of a bed mounted for reciprocating movement for carrying a printing-plate, a pressure-roller arranged to advance said bed by engagement with the printing-plate carried thereby, means independent of said roller for locking said bed against return movement, and manually-operated means for releasing said locking means, substantially as described.

5. In a press, the combination of a bed mounted for reciprocating movement for carrying a printing-plate, a pressure-roller arranged to advance said bed by engagement with the printing-plate carried thereby, and means yieldingly engaging said bed for automatically locking it against return movement upon its release by said roller, substantially as described.

6. In a press, the combination of a pressure-roller, power-driven means, a detachable connection between said roller and power-driven means, shiftable means for releasing said detachable connection, actuating means carried by said roller for engaging said shiftable means, movable means for releasing said shiftable means from engagement with said actuating means to permit locking adjustment of the detachable connection, means for adjusting said connection in locked position, and a common means for actuating said movable means and adjusting said connection, substantially as described.

7. In a press, the combination of a pressure-roller, power-driven means, a detachable connection between said roller and power-driven means, shiftable means for releasing said detachable connection, actuating means carried by said roller for engaging said shiftable means, movable means for releasing said shiftable means from engagement with said actuating means to permit locking adjustment of the detachable connection, means for adjusting said connection in locked position, and manually-operated means arranged to successively actuate said movable means and adjust said connection, substantially as described.

821,381. **SIGNALING SYSTEM.** WILMER W. SALMON, Buffalo, N. Y. Filed May 22, 1905. Serial No. 261,539.



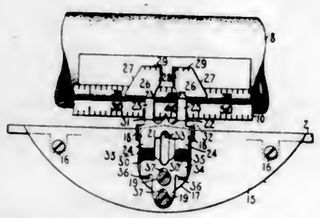
Claim.—1. In a signaling system, the combination with a signal and a suitable source of energy, of a motor, a controller, motor-driven means for moving the signal from "danger" to "safety," a clutch mechanism for holding the signal in a "safety" position, and motor-driven means for releasing said clutch mechanism when the controller is moved to a position which deënergizes the said clutch mechanism.

2. In a signaling system the combination with a signal and a suitable source of energy of a motor, a controller, motor-driven means for moving the signal from "danger" to "safety," means for establishing circuit through the controller and the motor when the controller is in one position and the signal is at "danger," means for establishing a circuit through the controller and the motor when the controller is in its opposite position and the signal is in the "safety" position, and means for breaking said circuits when the position of the signal corresponds to the position of the controller.

3. In a signaling system, the combination with a signal and a suitable source of energy, of a motor, a clutch mechanism and magnet for holding the signal in a "safety" position, motor-driven means for moving the signal from a "danger" to a safety" position, a stop placed in the path of the signal-blade, lugs on the signal-blade and its counterweight for engaging said stop and motor-driven means for forcing into engagement said stop and one of said lugs when the said clutch-magnet is deënergized.

821,382. **TYPE-WRITING MACHINE.** GEORGE A. SEE, Syracuse, N. Y., assignor to The Monarch Typewriter Company, Syracuse, N. Y., a Corporation of New York. Filed July 24, 1905. Serial No. 270,267.

Claim.—1. In a type-writing machine, the combination of a platen; a pressure device pivoted on a stationary part of the machine and provided with a part adapted to engage the platen and also with a cam; and a locking-plate slidably mounted on a stationary part of the machine, said locking-plate being adapted to coact with the cam on said pressure device to bring said pressure device into positive engagement with the platen and to maintain it in said positive engagement.



2. In a type-writing machine, the combination of a platen; a pressure device pivotally mounted on a stationary part of the machine, one end of said pressure device being adapted to contact with the platen and the opposite end being formed with a cam; and a locking-plate slidably mounted and frictionally held on a stationary part of the machine and adapted to act on the cam of said pressure device to bring said pressure device into positive engagement with the platen and to maintain said pressure device locked in said engagement.

3. In a type-writing machine, the combination of a pressure device pivotally mounted on a stationary part of the machine, one end of said pressure device being adapted to engage with the platen and the other end being formed with a cam; a spring constantly tending to press said pressure device against the platen; and a locking-plate frictionally mounted on a stationary part of the machine and adapted to coöperate with the cam on the pressure device to force the latter into positive engagement with the platen and to maintain it in said engagement.

4. In a type-writing machine, the combination of a sheet-metal pressure device formed with a pair of resilient paper-fingers and a cam; a bracket fixedly secured to a stationary part of the machine and supporting a pivot-rod on which said pressure device is pivoted; and a locking-plate slidable on said bracket and frictionally held thereagainst, said plate being provided with a part adapted to engage the cam on said pressure device and being further provided with a finger-piece by which said engagement may be brought about to cause the paper-fingers of said pressure device to enter into and be maintained in positive engagement with said platen.

5. In a front-strike type-writing machine, the combination of a platen; a vertical supporting-bracket detachably secured at the front and center of the machine to a fixed part and having forwardly-turned ears; a pivot-rod secured in said ears; a vertical pressure device pivoted on said rod, said pressure device being adapted to contact with the platen and being provided with a cam; a coiled spring surrounding said pivot-rod and adapted to constantly press the pressure device against the platen; and a locking-plate slidably mounted on said supporting-bracket and adapted to coöperate with the cam on said pressure device to force said pressure device into a locked engagement with the platen.

6. In a front-strike type-writing machine, the combination of a platen; a vertical supporting-bracket arranged at the front and center of the machine and detachably secured to a fixed part, said bracket being provided with forwardly-turned ears; a pivot-rod secured in said ears; and a device pivoted on said pivot-rod and constantly spring-pressed toward the platen, said device being adapted to serve as a line-guide, a platen-scale and a printing-point indicator.

7. In a type-writing machine, the combination of an H-shaped pressure device mounted at the front of the machine and provided with upwardly-extending resilient arms which are constantly spring-pressed toward the platen and with downwardly-extending cam-shaped arms; a locking-plate having contact portions adapted to coact with said cam-shaped arms in such wise as to lock said upwardly-extending resilient arms in positive engagement with the platen.

8. In a type-writing machine, the combination of an H-shaped pressure device, two of the arms of said H-shaped device being resilient and adapted to guide and control the paper at or near the printing-point, the other two arms of said H-shaped device being provided with cams which are adapted to be acted on to force the first-named arms into a positive and locked engagement with the platen.

9. In a type-writing machine, the combination of an H-shaped pressure device, two of the arms of said H-shaped device being resilient and adapted to guide and control the paper at or near the printing-point, the other two arms of said H-shaped device being provided with cams which are adapted to be acted on to force the first-named arms into a positive and locked engagement with the platen, said first-named arms being formed with elongated tops which serve as a line-guide and being further provided with a platen-scale, and the space between said arms being adapted to serve as a printing-point indicator.

10. In a front-strike type-writing machine, the combination of a platen, an H-shaped pressure device pivotally secured at the front of said platen to a fixed part of the machine, two of the arms of said pressure device being adapted to contact with the platen and the other two arms of said pressure device being adapted to be cammed forward to lock the first-named arms against the platen, said first-named arms being provided at their inner and outer portions with lateral cam-like edges adapted to control the side edges of the paper.

11. In a front-strike type-writing machine, the combination of a platen; an H-shaped pressure device pivotally secured at the front of said platen to a fixed part of the machine, two of the arms of said pressure device being adapted to contact with the platen and the other two arms of said pressure device being adapted to be cammed forward to lock the first-named arms against the platen, said first-named arms being provided at their inner and outer edges with lateral cam-like portions adapted to control the side edges of the paper, and being further provided with a line-guide, a platen-scale and a printing-point indicator.

12. In a type-writing machine, the combination of a platen, a pressure device pivoted on a stationary part of the machine and provided with a part adapted to engage the platen; and a locking-plate slidably mounted on a stationary part of the machine, said locking-plate being adapted to coact with said pressure device to force the latter into positive engagement with the platen.

13. In a type-writing machine, the combination of a platen; a pressure device pivoted on a stationary part of the machine and provided with a part adapted to engage the platen; and a locking-plate slidably mounted on a stationary part of the machine, one of the two last-mentioned elements being provided with a cam which coacts with the other element, the result of the coaction being to force the pressure device into positive engagement with the platen.

821,383. **WHIFFLETREE.** WILLIAM H. SPILLMAN and FRANK FOWLER, St. Joseph, Mich. Filed Nov. 24, 1906. Serial No. 288,825.



Claim.—1. As a new article of manufacture, a plurality of complementary and concave sheet-metal sections having portions forming, when the adjacent edges of the complementary pieces are united, an outwardly-extending rib along its length, and a plurality of encircling hoops whereby said sections are held in place with respect to one another, substantially as described.

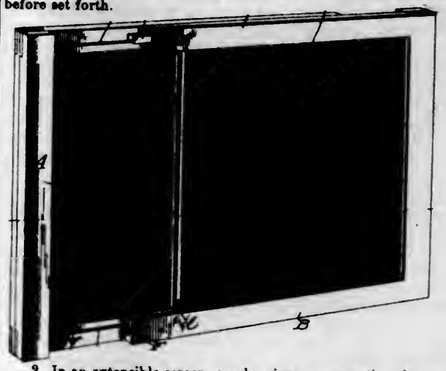
2. A metallic whiffletree, having in combination a plurality of concaved sections placed with their lateral edges adjacent to one another, one edge of each of said sections extending outwardly to form a longitudinal rib, and encircling hoops whereby the same are held in position with respect to one another.

3. A metallic whiffletree, having, in combination with encircling bands, a plurality of concaved metallic blanks placed with their lateral edges in contact one with the other, one edge of each of said blanks extending outwardly from the rounded body portion of the whiffletree to form, with a similar portion of the other blank, a longitudinally-extending rib external to the remainder of the article.

4. A new article of manufacture, consisting of sheet-metal blanks stamped to concave form and placed adjacent to one another, a lateral edge of each being extended outside the concaved portion to form with the corresponding part of the other section an external longitudinally-extending rib, and binding-hoops encircling the same at intervals.

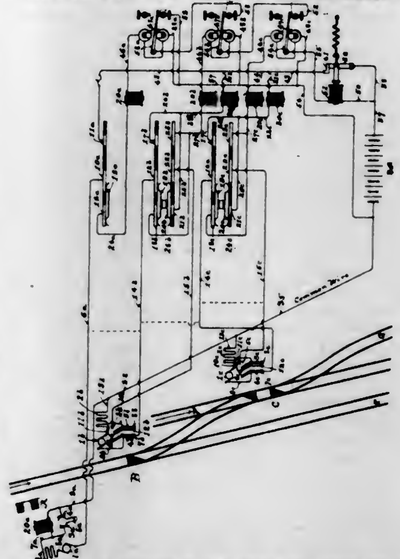
821,384. **WINDOW-SCREEN.** HENRY E. SOUTHWORTH, Colchester, Vt., assignor to Porter Screen Manufacturing Company, Burlington, Vt. Filed Sept. 10, 1904. Serial No. 223,955.

Claim.—1. In an extensible screen, overlapping screen-sections having in the meeting faces of their rails which overlap longitudinal rabbets and vertical retaining-grooves which extend from the bottom of the rabbets into the body of the rails, horizontal grooves which extend from the back of the rabbets into the body of the rails, coupling members applied to and uniting the sections as described, and "center irons" forming the inner vertical rails of the sections said center irons extending into the rabbets and having outwardly-turned hook ends which enter and engage the horizontal grooves at the back of the rabbets, substantially as and for the purposes hereinbefore set forth.



2. In an extensible screen, overlapping screen-sections having in the meeting faces of their rails which are arranged to overlap longitudinal rabbets, retaining-grooves which extend from the bottom of the rabbets into the body of the rails, and horizontal grooves which extend from the back of the rabbets into the body of the rails, substantially as described.

821,385. **RAILWAY SWITCHING AND SIGNALING APPARATUS.** JOHN D. TAYLOR, Buffalo, N. Y., assignor, by mesne assignments, to General Railway Signal Company, Buffalo, N. Y., a Corporation of New York. Filed Feb. 10, 1903. Serial No. 142,729.



Claim.—1. In combination with controllers, switch and signal apparatus, operating and indication circuits, a conductor common to all operating and indication circuits, a conductor common to all operating-circuits, a conductor common to all indication-circuits, a magnetic cut-out for breaking the operating common or the indication common, a circuit for said cut-out, polarized relays, one for each switch and one for each signal, or groups of switches or signals, having their coils in the indication-circuits of their respective switches

and signals, the circuit of the magnetic cut-out taken in series through the magnet of said relays, whereby a cross between any operating-wire and any indication-wire will cause a reverse current to flow through the coil of the relay of the indication-wire involved to open the cut-out circuit and thus break the circuit involved in the cross, substantially as and for the purposes set forth.

2. A source of electric energy, a plurality of motors, a plurality of controllers, a plurality of polarized relays, conductors connecting each of said motors through the energizing-coil of a polarized relay to one pole of the source of energy, and a wire connected to the other pole of the source of energy, a switch in said wire, a circuit governed by said relay, a magnet and a source of energy in said circuit governing said switch, whereby a cross between said last-named conductors will cause a current to flow through the coils of the relay in circuit with the wire crossed in the direction to cause the relay to open the circuit of said magnet, and thereby causing said switch to open, substantially as and for the purposes set forth.

3. In combination with controllers, switch and signal apparatus, operating and indication circuits, a conductor common to all circuits, a conductor common to all operating-circuits, a conductor common to all indication-circuits, a double-pole magnetic cut-out for breaking both operating and indication circuits, a circuit for said cut-out, polarized relays, one for each switch and signal, having their coils in the indication-circuits of their respective switches and signals, the circuit of the magnetic cut-out taking in series through the tongues of said relays, all so arranged that a cross between any operating-wire and any indication-wire will cause a reverse current to flow through the coil of the relay of the indication-wire involved to open the cut-out circuit and thus break all operating and indication circuits involved, substantially as and for the purposes set forth.

4. In combination with controllers, switch and signal apparatus, operating and indication circuits, a magnetic cut-out for breaking all operating-circuits, polarized relays, a circuit including the tongues of said relays for energizing the magnet of said cut-out to hold the same normally closed, polarized relays corresponding to each switch and signal with their coils in circuit with their respective indication-circuits, and each relay arranged so that in the event of a cross of its circuit with any operating-circuit, a reverse current will flow through the coil of the relay of the indication-wire involved and cause it to open said magnetic cut-out, substantially as and for the purposes set forth.

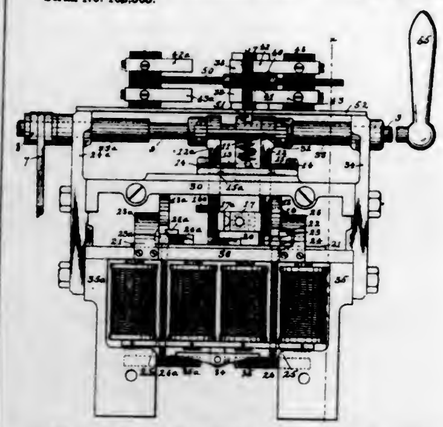
5. In combination with controllers, switch and signal apparatus, operating and indication circuits, a conductor common to all operating and indication circuits, a conductor common to all operating-circuits, a conductor common to all indication-circuits, polarized relays in the indication-circuits, a double-pole magnetic cut-out for breaking both operating and indication circuits, a circuit including the tongues of the polarized relays governing said cut-out, all so arranged that currents flowing normally all flow through the magnets of said relays in one direction, and the direction to hold said relays closed, and so that any current due to cross or ground flowing therethrough will flow in reverse direction, and thus break the circuit of said magnet of said cut-out, substantially as and for the purposes set forth.

6. In combination with switch and signal apparatus, operating and indication circuits, a controller normally in connection with the common wire, a conductor common to all operating and indication circuits, a conductor common to all operating-circuits, a conductor common to all indication-circuits, a double-pole magnetic cut-out for breaking both operating and indication circuits, a circuit for said cut-out, polarized relays, one for each switch and signal, having their coil sin the indication-circuits of their respective switches and signals, the circuit of the magnetic cut-out taking in series through the tongues of said polarized relays, all so arranged that a cross between any operating-wire and any indication-wire will cause a reverse current to flow through the relay of the indication-wire involved, and open the cut-out circuit, and thus break all operating and indication circuits involved, substantially as and for the purposes set forth.

7. In combination with switch and signal apparatus, operating and indication circuits, polarized relays in the indication-circuits, controllers normally connecting the indication-wires with their respective relays, a conductor common to all operating and indiction circuits, a conductor common to all operating-circuits, a conductor common to all indication-circuits, a double-pole magnetic cut-out for breaking both operating and indication circuits, a circuit including the tongues of the polarized relays governing said cut-out, all so arranged that currents flowing normally all flow through the magnets of said relays in one direction, and the direction to hold such relays closed, and so that any current due to cross or ground flowing therethrough will flow in reverse direction, and thus break the circuit of said magnet of said cut-out, substantially as and for the purposes set forth.

8. In combination with switch and signal apparatus, controllers normally connecting the indication-wires with their respective relays, a conductor common to all circuits, a conductor common to all operating-circuits, a conductor common to all indication-circuits, a double-pole magnetic cut-out for breaking both operating and indication circuits, a circuit including the tongues of the relays governing said cut-out, polarized relays in the indication-circuits, all so arranged that the currents flowing normally all flow through the magnets of said relays in one direction, and the direction to hold said relays closed, and so that any current due to cross or ground flowing therethrough will flow in reverse direction, and thus break the circuit of said magnet of said cut-out, substantially as and for the purpose set forth.

821,386. APPARATUS FOR OPERATING AND CONTROLLING RAILWAY SWITCHES AND SIGNALS. JOHN D. TAYLOR, Buffalo, N. Y., assignor, by mesne assignments, to General Railway Signal Company, Buffalo, N. Y., a Corporation of New York. Filed June 20, 1903. Serial No. 162,363.



Claim.—1. In combination with a source of energy, an operating and indication circuit, a circuit-controller, a motor and an electric switch, an operating-lever, means under the control of the operator for making the initial and middle movements of said operating-lever, a spring, means for setting up said spring by the initial rotation of said operating-lever, and electromagnetic means for releasing said spring at the proper time to produce the final movement of the lever, substantially as and for the purposes set forth.

2. In combination with a source of energy, an operating and an indication circuit, a circuit-controller, a motor and an electric switch, an operating-lever, means under the control of the operator for making the initial and middle movements and for storing up energy to produce the final movement and electromagnetic means for calling said stored-up energy into action to produce the final movement automatically, and means for locking said operating-lever against movement by accident in both of its final positions, substantially as and for the purposes set forth.

3. In combination with a mechanical interlocker, a source of energy, operating and indication circuits, a circuit-controller, a motor and an electric switch, an operating-lever manually actuated in its initial movement to store up energy to produce the final movement and to move an element of the mechanical interlocker and manually actuated in its middle movement to establish the operating-circuit, and electromagnetically-operated means to cause said stored-up energy to cause the final movement of said lever and to move an element of the mechanical interlocker, substantially as and for the purposes set forth.

4. An operating-lever having its initial movement in rotation at right angles to the axis of its main shaft, its medial movement longitudinally upon the axis of said main shaft, and its final movement in rotation upon the axis of said shaft but in reverse direction of rotation from that of the initial movement, means for locking against the medial movement longitudinally until after the initial movement in rotation is made, a stop for limiting the medial movement, means for locking against the final movement, and electromagnetic means for releasing said lock against final movement, substantially as and for the purposes set forth.

5. An apparatus for operating and controlling railway switches and signals, comprising, in combination with a mechanical interlocker, a source of energy, operating and indication circuits, a circuit-controller, a motor and an electric switch, an operating-lever mechanically connected to an element of the mechanical interlocker and mechanically connected to said circuit-controller, to actuate an element of said mechanical interlocker on the initial movement, and to actuate said circuit-controller on the middle movement, electromagnetically-operated means energized by the indication-current to automatically cause the final movement of the operating-lever, thereby causing the final movement of an element of the mechanical interlocker, substantially as and for the purposes set forth.

6. In combination with a mechanical interlocker, a source of energy, operating and indication circuits, a circuit-controller, a motor and an electric switch; an operating-lever, means for actuating elements of said mechanical interlocker by the initial movement of the operating-lever, means for closing the operating-circuit by the intermediate movement of the operating-lever, means for stopping the operating-lever at the end of the intermediate movement, and electromagnetically-operated means for releasing energy to cause the final movement of the operating-lever, substantially as and for the purposes set forth.

7. In an apparatus for operating and controlling railway switches and signals, mechanism to make the final movement of the operating-lever after indication is received entirely automatic, comprising—an operating-lever, indication magnets and armatures, a crank rigidly secured to said operating-lever, a pin on said crank, arms loose on said operating-lever, holes in said arms capable of receiving said pin on said crank, a spring interposed between said arms and tending to throw them out of plane, heads on the rods of said armatures, a reciprocating plate, wipers, and a lug secured to said plate, said lug being capable of engagement with said arms, and said wipers being capable of engagement with said heads, latches governing the rotational movement of said arms, and detents governing said latches and governed by said heads, whereby the final movement of the operating-lever is effected by the action of one of said heads upon one of said wipers moving said plate to release the other head from the other wiper to permit it to actuate its detent to release its latch, thus permitting the throw of said spring, substantially as and for the purposes set forth.

8. In an apparatus for operating and controlling railway switches and signals, mechanism to prevent false indication due to currents from field-magnet coils when the operating-lever is changed in position while the movement of a switch or signal is taking place, comprising—armature-rods and heads on said rods, a reciprocating plate, wipers on said plate engaging over said heads on said armature-rods, whereby the armature-rod of either indication-magnet is held against movement by its respective wiper coming in contact with the adjacent end of said reciprocating plate in case the other indication-magnet armature is raised to cause its respective wiper to engage the other end of said reciprocating plate, substantially as and for the purposes set forth.

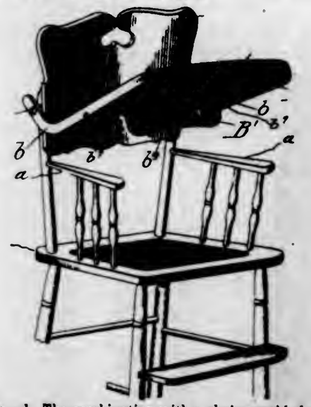
9. In an apparatus for operating and controlling railway switches and signals, mechanism to lock the operating-lever in both of its positions so that it cannot be accidentally moved, comprising, an operating-lever, a crank rigidly mounted thereon, a pin on said crank, a yoke on said operating-lever, arms carried within said yoke, a plate on the machine-frame, a slot in said plate, and notches in said slot capable of engaging said arms, and a spring for holding one of said arms in one of said notches, substantially as and for the purposes set forth.

10. In an apparatus for operating and controlling railway switches and signals, mechanism to prevent false indication due to cross between the operating and indication wire, comprising, indication magnets and armatures, a pivoted lever-bar, pins on said armatures, said pins and said lever being so positioned that when both magnets are energized in series by a cross, the indication-magnet cannot complete its stroke, substantially as and for the purposes set forth.

11. In an apparatus for operating and controlling railway switches and signals, mechanism to meet the force of the blow due to movement of the operating-lever when it is suddenly stopped at the indication-point, comprising—an operating-lever, arms mounted on said lever, a yoke mounted over said arms, a crank rigidly mounted upon said operating-lever between said arms, sleeves mounted loosely on the shaft of said operating-lever and of such length, respectively, as to abut against the frame and against said yoke to limit the axial movement of the operating-lever, substantially as and for the purposes set forth.

12. In combination with a source of energy, operating and indication circuits, a circuit-controller, a motor and an electric switch, an operating-lever having its initial and final movements rotatory and its middle movement axial, arms mounted loosely upon said operating-lever, a crank rigidly mounted upon said lever between said arms and imparting motion to said arms, a plate having a slot, and notches in said slot to engage said arms, a spring interposed between said arms and tending to hold them out of plane, a pin on said crank, holes in said arms capable of receiving said pin, a frame carrying pins capable of registration with said pin on said crank to hold one or the other of said arms from engaging in one of said notches, indication-magnets, armatures, and rods with beveled heads, a reciprocating plate, wipers secured thereto and capable of being acted upon by said heads, a lug on said plate capable of engagement with said arms, substantially as and for the purposes set forth..

821,387. HIGH CHAIR. ISAAC UNGER, Iron Mountain, Mich. Filed July 3, 1905. Serial No. 268,095.



Claim.—1. The combination with a chair provided with a seat and arms, and a tray of integral construction spanning the arms, of a guard applied to the rear edge portion of the tray, comprising a central body portion depending somewhat beneath the tray and clearing the seat and relatively narrow end portions extending to near the chair-arms, for the purpose set forth.

2. The combination with a chair having a seat and arms, and a movable integral tray spanning the arms, of a guard having a flange-forming portion applied to the rear edge of the tray and a depending guard portion occupying the central space beneath the tray at a distance above the chair-seat, substantially as and for the purpose set forth.

821,388. CHAIR-GUARD. ISAAC UNGER, Iron Mountain, Mich. Filed Nov. 27, 1905. Serial No. 289,280.

Claim.—1. The combination with the tray of a chair, of a depending guard adjustably supported from the tray, for the purpose set forth.

2. The combination with a chair having suitable arms, and a movable tray spanning the arms, of supports fixed to and depending from the tray, and a guard adjustably secured to said supports and movable in a plane substantially at right angles to the plane of the tray.

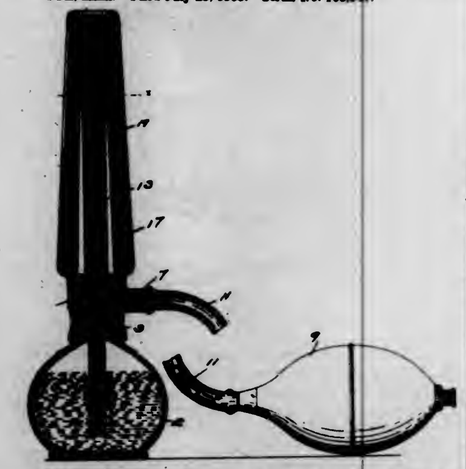
3. The combination with a chair having suitable arms, and a movable tray spanning the arms, of slotted brackets fixed to the lower side of the tray near the rear edge thereof, and a guard equipped with bolts received by the slots of the brackets, said bolts being adjustable from the front of the guard, for the purpose set forth.

4. The combination with a chair having arms, and a movable tray of integral construction spanning the arms, of a tray-supported guard depending from and adjustably connected with the rear portion of the tray, said guard having curved recesses at the downwardly-presented edge for receiving the limbs of a child, for the purpose set forth.

821,888.



821,889. MEDICINE-DISTRIBUTER. CHARLES L. WELLS, St. Paul, Minn. Filed July 25, 1903. Serial No. 166,947.



Claim.—A medicine-distributer, having a medicine-receptacle, a compressible bulb and a coupling between the receptacle and bulb, the combination therewith of a central tube extending through the coupling into the receptacle and provided with a series of openings around its outer end, and a dilator surrounding the central tube with its outer end fitting approximately close to the outer end of the tube, below the openings in the tube, said dilator having longitudinal grooves on its outer surface and being separable from the coupling, substantially as described.

821,890. SPRING-BOLT FOR WINDOWS. DANIEL WILDE, Washington, Iowa. Filed Dec. 31, 1904. Serial No. 239,231.

Claim.—1. The combination of a spring-actuated slide-bolt having a head thereon, of a wedge-shaped fastener having pivotally-sliding connection against the head and pressing in opposite direction from the pressure exerted by the spring for controlling the position of the bolt.

2. The combination with a sleeve or casing and a spring-actuated bolt having sliding connection therein, said bolt having a head on its outer protruding end, of a fastener having pivotal and wedging action between the head and adjacent end of the sleeve or casing for forcing the bolt endwise against the action of the spring.

3. The combination with a sleeve or casing, and a spring-actuated bolt slidable therein, one end of the bolt protruding beyond the end to the casing and having a head thereon, and a wedge-shaped fastener straddling the bolt and having sliding connection therewith between the sleeve or casing and the head.

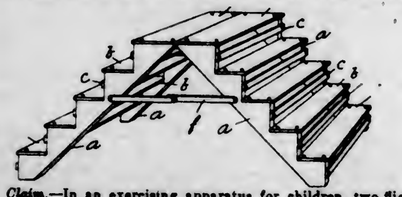
4. The combination with a sleeve or casing, and a spring-actuated bolt slidable therein, one end of the bolt protruding beyond the end of the casing and having a head thereon, and a wedge-shaped fastener straddling the bolt and having sliding connection therewith between the sleeve or casing and the head, the fastener flattened at the ends to afford increased bearing-seats for the head when the fastener is placed in either of its extreme positions.



5. The combination with a sleeve or casing and a spring-actuated bolt sliding therein, said bolt having a head or enlargement thereon, of a wedge-shaped fastening device mounted to slide and capable of turning on the bolt, one edge engaging the head thereon, and the opposite edge the adjacent end of the sleeve or casing whereby to force the bolt backward, and retain it in position.

6. The combination with a sleeve or casing and a spring-actuated bolt sliding therein, said bolt having a head or enlargement thereon, of a wedge-shaped fastening device mounted to slide on the bolt, one edge engaging the head thereon, and the opposite edge the adjacent end of the sleeve or casing whereby to force the bolt backward, and retain it in position, the ends of the wedge-shaped fastener having bearing-seats thereon.

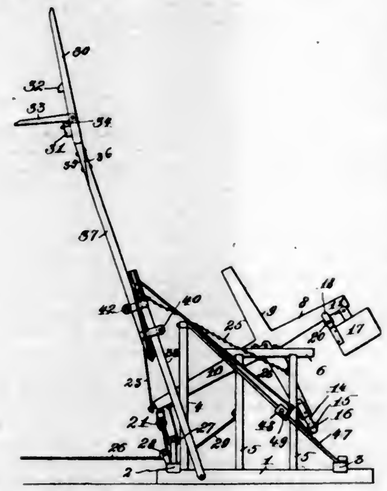
821,891. EXERCISING APPARATUS FOR CHILDREN. SARA E. WILTER, Boston, Mass. Filed Nov. 20, 1905. Serial No. 288,141.



Claim.—In an exercising apparatus for children, two flights of stairs, each consisting of a pair of side supports formed with tread-receiving portions and riser-receiving portions, treads secured to the tread-receiving portions thereof, and hand-engaging bars secured to the riser-receiving portions thereof, and means for connecting said flights together with the top treads in the same plane and abutted together, substantially as described.

821,892. HAY-STACKER. JOHN R. WRIGHT, Wheeling, Mo. Filed Mar. 1, 1905. Serial No. 247,900.

Claim.—1. In a stacker, the combination of a base, a support held by the base, a counterbalancing-frame mounted on the support and having an elongated arm, a fork having side bars pivotally connected to the base, the terminal of the elongated arm being attached to portions of the side bars, a counterbalancing-weight means acting in opposition to the said arm, and a draft device movably passing over a portion of the counterbalancing-frame and having one terminal thereof attached to the extremity of the arm adjacent to the point of connection of the latter with the side bars, a portion of the draft device also movably engaging the extremity of the arm attached to the side bar.



2. In a stacker, the combination of a base, a fork movably connected to the base to swing thereover, a counterbalancing-frame rotatably supported by the base and having an elongated arm connected to a portion of the fork, a weight means attached to the opposite extremity of the said arm, and a draft device engaging a portion of the base and passing over a part of the counterbalancing-frame and the weight means and terminally attached to the free extremity of the elongated arm.

3. In a stacker, the combination of a base, a fork pivotally supported by the base and movable thereover, a counterbalancing-frame rotatably held by the base and connected to a part of the fork and having rotatable devices on different portions thereof, a weight-receptacle carried by a part of the frame and also having rotatable devices thereon, and a draft device engaging a part of the base and the said rotatable devices of the counterbalancing-frame and weight-receptacle.

4. In a stacker, the combination of a base, a fork pivotally connected to the base and movable over the latter, a counterbalancing-frame attached to a portion of the fork, and a draft device having plies loosely movable over a portion of the counterbalancing-frame to distribute the draft force over a greater area of the latter, one terminal of the draft device being immovably connected to the extremity of the frame attached to the fork.

5. In a stacker, the combination of a base, a fork pivotally attached to the base and movable thereover, and adjustable devices cooperating with the fork to vary the elevation of the latter, a part of said devices being terminally slidable over the remaining portion thereof.

6. In a stacker, the combination of a base, side bars composed of members pivoted to the base, and slidable members coöperating with said pivoted members, a fork attached to the slidable members, flexible devices connected to the slidable members and movable over the pivoted members, adjustable means with which the flexible devices loosely engage, said flexible devices being terminally slidable on the adjusting means and draft means for operating the fork and the side bars.

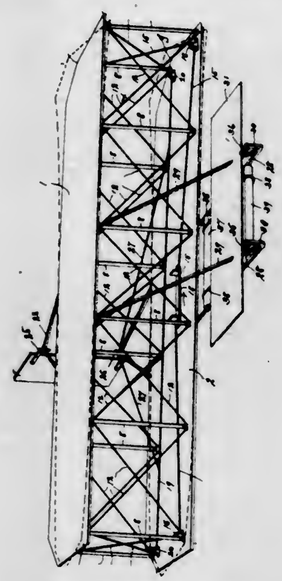
7. In a stacker, the combination of a base, side bars having members pivoted to the base and slidable members coöperating with said pivoted members, a fork attached to the slidable members, a counterbalancing-frame connected to a portion of the side bars, a draft device coöperating with the counterbalancing-frame, adjustable means adjacent to each side bar organization and including shiftable stop devices, and flexible connections between the slidable bars and the said adjustable means, the flexible connections being terminally movable on the adjustable means and adapted to be limited as to movement by the stop devices.

8. In a stacker, the combination of a base, inclined controlling-bars held on the base and having adjusting-sleeves thereon, a fork having extensible side bars pivotally attached to the base, flexible connections between the portions of the said side bars and the controlling-bars, and draft means coöperating with the fork and side bars.

9. In a stacker, the combination of a base, inclined controlling-bars having slides movably mounted thereon, extensible side bars pivoted to the base, flexible connections between portions of the side bars and the controlling-bars, said connections loosely engaging the controlling-bars, a fork carried by the side bars, and a draft means coöperating with the side bars and fork.

10. In a stacker, a fork composed of a series of main teeth, a head-bar attached to said teeth, shorter teeth pivoted to the main teeth, and an adjusting-bar continuing entirely across the fork and movably connected to the head-bar and insertible between the outer edge of the latter and the shorter teeth, the said adjusting-bar being approximately wedge-shaped in cross-section and disposed in a plane at right angles to the main teeth when inserted between the head-bar and the shorter pivoted teeth, the adjusting-bar when out of engagement with the shorter pivoted teeth being thrown over on the head-bar.

821,893. FLYING-MACHINE. ORVILLE WRIGHT and WILBUR WRIGHT, Dayton, Ohio. Filed Mar. 23, 1903. Serial No. 149,230.



Claim.—1. In a flying-machine, a normally flat aeroplane having lateral marginal portions capable of movement to different positions above or below the normal plane of the body of the aeroplane, such movement being about an axis transverse to the line of flight, whereby said lateral marginal portions may be moved to different angles relatively to the normal plane of the body of the aeroplane, so as to present to the atmosphere different angles of incidence, and means for so moving said lateral marginal portions, substantially as described.

2. In a flying-machine, the combination, with two normally parallel aeroplanes, superposed the one above the other, of upright standards connecting said planes at their margins, the connections between the standards and aeroplanes at the lateral portions of the aeroplanes being by means of flexible joints, each of said aeroplanes having lateral marginal portions capable of movement to different positions above or below the normal plane of the body of the aeroplane, such movement being about an axis transverse to the line of flight, whereby said lateral marginal portions may be moved to different angles relatively to the normal plane of the body of the aeroplane, so as to present to the atmosphere different angles of incidence, the standards maintaining a fixed distance between the portions of the aeroplanes which they connect, and means for imparting such movement to the lateral marginal portions of the aeroplanes, substantially as described.

3. In a flying-machine, a normally flat aeroplane having lateral marginal portions capable of movement to different positions above or below the normal plane of the body of the aeroplane, such movement being about an axis transverse to the line of flight; whereby said lateral marginal portions may be moved to different angles relatively to the normal plane of the body of the aeroplane, and also to different angles relatively to each other, so as to present to the atmosphere different angles of incidence, and means for simultaneously imparting such movement to said lateral marginal portions, substantially as described.

4. In a flying-machine, the combination, with parallel superposed aeroplanes, each having lateral marginal portions capable of movement to different positions above or below the normal plane of the body of the aeroplane, such movement being about an axis transverse to the line of flight, whereby said lateral marginal portions may be moved to different angles relatively to the normal plane of the body of the aeroplane, and to different angles relatively to each other, so as to present to the atmosphere different angles of incidence, of uprights connecting said aeroplanes at their edges, the uprights connecting the lateral portions of the aeroplanes being connected with said aeroplanes by flexible joints, and means for simultaneously imparting such movement to said lateral marginal portions, the standards maintaining a fixed distance between the parts which they connect, whereby the lateral portions on the same side of the machine are moved to the same angle, substantially as described.

5. In a flying-machine, an aeroplane having substantially the form of a normally flat rectangle elongated transversely to the line of flight, in combination with means for imparting to the lateral margins of said aeroplane a movement about an axis lying in the body of the aeroplane perpendicular to said lateral margins, and thereby moving said lateral margins into different angular relations to the normal plane of the body of the aeroplane, substantially as described.

6. In a flying-machine, the combination, with two superposed and normally parallel aeroplanes, each having substantially the form of a normally flat rectangle elongated transversely to the line of flight, of upright standards connecting the edges of said aeroplanes to maintain their equidistance, those standards at the lateral portions of said aeroplanes being connected therewith by flexible joints, and means for simultaneously imparting to both lateral margins of both aeroplanes a movement about axes which are perpendicular to said margins and in the planes of the bodies of the respective aeroplanes, and thereby moving the lateral margins on the opposite sides of the machine into different angular relations to the normal planes of the respective aeroplanes, the margins on the same side of the machine moving to the same angle, and the margins on one side of the machine moving to an angle different from the angle to which the margins on the other side of the machine move, substantially as described.

7. In a flying-machine, the combination, with an aeroplane, and means for simultaneously moving the lateral portions thereof into different angular relations to the normal plane of the body of the aeroplane and to each other, so as to present to the atmosphere different angles of incidence, of a vertical rudder, and means whereby said rudder is caused to present to the wind that side thereof nearest the side of the aeroplane having the smaller angle of incidence and offering the least resistance to the atmosphere, substantially as described.

8. In a flying-machine, the combination, with two superposed and normally parallel aeroplanes, upright standards connecting the edges of said aeroplanes to maintain their equidistance, those standards at the lateral portions of said aeroplanes being connected therewith by flexible joints, and means for simultaneously moving both lateral portions of both aeroplanes into different angular relations to the normal planes of the bodies of the respective aeroplanes, the lateral portions on one side of the machine being moved to an angle different from that to which the lateral portions on the other side of the machine are moved, so as to present different angles of incidence at the two sides of the machine, of a vertical rudder, and means whereby said rudder is caused to present to the wind that side thereof nearest the side of the aeroplanes having the smaller angle of incidence and offering the least resistance to the atmosphere, substantially as described.

9. In a flying-machine, an aeroplane normally flat and elongated transversely to the line of flight, in combination with means for imparting to said aeroplane a helicoidal warp around an axes transverse to the line of flight and extending centrally along the body of the aeroplane in the direction of the elongation of the aeroplane, substantially as described.

10. In a flying-machine, two aeroplanes, each normally flat and elongated transversely to the line of flight, and upright standards connecting the edges of said aeroplanes to maintain their equidistance, the connections between said standards and aeroplanes being by means of flexible joints, in combination with means for simultaneously imparting to each of said aeroplanes a helicoidal warp around an axis transverse to the line of flight and extending centrally along the body of the aeroplane in the direction of the elongation of the aeroplane, substantially as described.

11. In a flying-machine, two aeroplanes, each normally flat and elongated transversely to the line of flight, and upright standards connecting the edges of said aeroplanes to maintain their equidistance, the connections between such standards and aeroplanes being by means of flexible joints, in combination with means for simultaneously imparting to each of said aeroplanes a helicoidal warp around an axis transverse to the line of flight and extending centrally along the body of the aeroplane in the direction of the elongation of the aeroplane, a vertical rudder, and means whereby said rudder is caused to present to the wind that side thereof nearest the side of the aeroplanes having the smaller angle of incidence and offering the least resistance to the atmosphere, substantially as described.

12. In a flying-machine, the combination, with an aeroplane, of a normally flat and substantially horizontal flexible rudder, and means for curving said rudder rearwardly and upwardly or rearwardly and downwardly with respect to its normal plane, substantially as described.

13. In a flying-machine, the combination, with an aeroplane, of a normally flat and substantially horizontal flexible rudder pivotally mounted on an axis transverse to the line of flight near its center, springs resisting vertical movement of the front edge of said rudder, and means for moving the rear edge of said rudder above or below the normal plane thereof, substantially as described.

14. A flying-machine comprising superposed connected aeroplanes, means for moving the opposite lateral portions of said aeroplanes to different angles to the normal planes thereof, a vertical rudder, means for moving said vertical rudder toward that side of the machine presenting the smaller angle of incidence and the least resistance to the atmosphere, and a horizontal rudder provided with means for presenting its upper or under surface to the resistance of the atmosphere, substantially as described.

15. A flying-machine comprising superposed connected aeroplanes, means for moving the opposite lateral portions of said aeroplanes to different angles to the normal planes thereof, a vertical rudder, means for moving said vertical rudder toward that side of the machine presenting the smaller angle of incidence and the least resistance to the atmosphere, and a horizontal rudder provided with means for presenting its upper or under surface to the resistance of the atmosphere, said vertical rudder being located at the rear of the machine and said horizontal rudder at the front of the machine, substantially as described.

16. In a flying-machine, the combination, with two superposed and connected aeroplanes, of an arm extending rearward from each aeroplane, said arms being parallel and free to swing upward at their rear ends, and a vertical rudder pivotally mounted in the rear ends of said arms, substantially as described.

17. A flying-machine comprising two superposed aeroplanes, normally flat but flexible, upright standards connecting the margins of said aeroplanes, said standards being connected to said aeroplanes by universal joints, diagonal stay-wires connecting the opposite ends of the adjacent standards, a rope extending along the front edge of the lower aeroplane, passing through guides at the front corners thereof, and having its ends secured to the rear corners of the upper aeroplane, and a rope extending along the rear edge of the lower aeroplane, passing through guides at the rear corners thereof, and having its ends secured to the front corners of the upper aeroplane, substantially as described.

18. A flying-machine comprising two superposed aeroplanes, normally flat but flexible, upright standards connecting the margins of said aeroplanes, said standards being connected to said aeroplanes by universal joints, diagonal stay-wires connecting the opposite ends of the adjacent standards, a rope extending along the front edge of the lower aeroplane, passing through guides at the front corners thereof, and having its ends secured to the rear corners of the upper aeroplane, and a rope extending along the rear edge of the lower aeroplane, passing through guides at the rear corners thereof, and having its ends secured to the front corners of the upper aeroplane, in combination with a vertical rudder, and a tiller-rope connecting said rudder with the rope extending along the rear edge of the lower aeroplane, substantially as described.

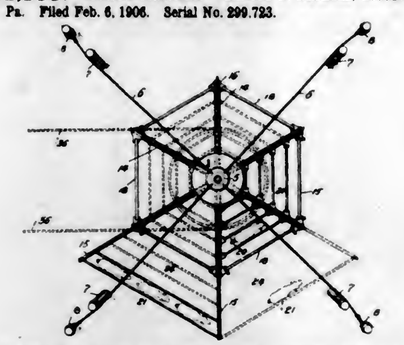
821,394. **DISSOLVING AND REGENERATING RUBBER.** PAUL ALEXANDER, Charlottenburg, Germany. Filed Aug. 10, 1905. Serial No. 273,644.

Claim.—1. The process herein described of producing solutions of caoutchouc in strong alkaline aqueous liquids, which consists in dissolving caoutchouc first in one of its well-known solvents, next treating the solution thus obtained with a strong alkaline aqueous liquid, and then subjecting the mixture to the action of steam until the solvent is distilled off from the solution and the caoutchouc is conveyed from the solvent into the aqueous liquid.

2. The process herein described of treating rubber waste, which consists in dissolving rubber waste first in one of the ordinary solvents of caoutchouc, next treating the solution thus obtained with a strong alkaline aqueous liquid, then subjecting the mixture to the action of steam until the solvent is distilled off from the solution and the caoutchouc conveyed from the solvent into the aqueous liquid, then separating the impurities contained in the alkaline solution from the same, and, lastly, precipitating the caoutchouc from the purified solution by means of an acid agent.

3. A solution of caoutchouc, consisting of caoutchouc dissolved in an alkaline liquid.

821,395. **HORSE-TRAINER.** SAMUEL B. ARTHURS, Brookville, Pa. Filed Feb. 6, 1906. Serial No. 299,723.



Claim.—1. A horse-trainer embodying a revoluble mast, a horizontal frame supported by said mast and consisting of a plurality of radially-disposed arms, extensions slidably mounted in the arms of said frame, bars detachably connected to said arms, separate bars detachably connected to said extensions, a brake-band carried by said frame, and engaging posts mounted adjacent to said mast and engaged by said brake-band, means to operate said brake-band, and a belt-wheel carried by said mast.

2. A horse trainer and exerciser embodying a revoluble mast, radially-disposed arms supported by said mast, extensions slidably mounted in said arms, bars detachably connected to said arms, separate bars detachably connected to said extensions, a platform carried by said arms, and means to retard the movement of said mast, substantially as described.

3. A horse-trainer embodying a mast, a socket-spider carried by said mast, a plurality of radially-disposed arms supported by said socket-spider and said mast, extensions slidably mounted in said arms, bars detachably connected to said arms, and separate bars detachably connected to said extensions, substantially as described.

4. A horse trainer and exerciser embodying a revoluble mast, radially-disposed arms carried by said mast, and means to retard the movement of said mast, substantially as described.

5. In a horse-trainer, a revoluble mast, a plurality of arms projecting radially from the mast near the base thereof, main guy-wires attached to said mast to steady the same and hold it in a vertical position, inner guy-wires attached at their upper ends to the mast and at their lower ends to said radially-projecting arms to support the latter, and bars detachably connected to said arms.

6. In a horse-trainer, a revoluble mast, power-transmitting mechanism carried by the mast, a plurality of radially-disposed arms carried by the mast, bars detachably connected to said arms, inner guy-wires connected to the mast and to said arms for supporting the latter, a plurality of anchor-posts, a clearance-post located adjacent each anchor-post, and main guy-wires connected at their upper ends to the mast and at their lower ends to the anchor-posts, said guy-wires intermediate their ends being looped around the clearance-posts.

7. A horse trainer and exerciser embodying a revoluble mast, power-transmitting mechanism carried by said mast, a plurality of stalls arranged around the mast, and means to retard the movement of said mast.

8. A horse trainer and exerciser, embodying a revoluble mast, power-transmitting mechanism carried by said mast, anchoring means for steadying the mast and holding the same in a vertical position, a plurality of radially-disposed arms carried by said mast, detachable means for forming one or more stalls between each pair of arms, and means supporting the arms from the mast.

9. In a horse trainer and exerciser, a revoluble mast, a plurality of radially-disposed arms carried by said mast, bars detachably connected to said arms, extension-arms engaging the first-named arms, and separate bars detachably connected to said extension-arms.

10. In a horse trainer and exerciser, a revoluble mast, power-transmitting mechanism carried by the mast, means for forming one or more stalls adjacent to the mast, and a brake for retarding the movement of the mast.

11. In a horse trainer and exerciser, a revoluble mast, a plurality of radially-extending arms carried by said mast, means for forming one or more stalls between each pair of arms, extension-arms engaging the first-named arms, and means for forming one or more stalls between each pair of extension-arms.

821,396. **JEWEL-PIN AND PALLET-STONE SETTER.** OLE O. AUNE, Waltham, Mass. Filed June 3, 1905. Serial No. 263,546.



Claim.—1. A tool comprising grippers for holding a jewel-pin, means for holding a balance in assembling relation to the pin, and a heat-conducting shield in close proximity thereto adapted to receive heat from a flame and to prevent the flame coming into contact with the jewel or any part of the balance.

2. A tool comprising a single body portion having a recess adapted to receive a jewel-pin and a recess for receiving a balance-staff, a gripper arranged to hold the jewel-pin against the body portion in the recess provided therefor, a second gripper arranged to engage the staff of a balance and clamp the latter to the body portion, and a shield mounted on the body portion adjacent the recesses and grippers.

3. A tool comprising a body portion having a recess adapted to receive a jewel-pin and a recess for receiving a balance-staff, grippers coacting with said body portion arranged to hold the jewel-pin and the staff of a balance in the respective recesses, the recesses and grippers being arranged in proper relation for setting the jewel-pin in the roller-table of the balance, and an adjustable plate mounted on the body portion in close proximity to the recesses and grippers.

4. A tool comprising a body portion having a recess in its end, a pivoted gripper having an arm movable toward and from the body portion adapted to retain a jewel-pin in such recess prior to its attachment to a balance, the body portion having also an elongated recess extending toward and away from the first recess, and a second gripper having a recess parallel to said elongated recess, the parallel recesses being adapted to receive the ends of a balance-staff and to permit adjustment of the balance toward and away from a jewel-pin held by the first-named gripper.

5. A tool comprising a body portion having an elongated recess for receiving a balance-staff, a gripper constructed to move laterally toward and from the body portion and to coöperate therewith in holding a balance and provided with a corresponding recess to receive the other end of the balance-staff and permit adjustment of the balance laterally with respect to its axis, the body portion having a notch in its end in line with the elongated recess, and a pivoted gripping-jaw adjacent the notch arranged to hold a jewel-pin in position to be attached to the roller-table of the balance prior to its attachment thereto.

6. A tool comprising a body portion having an elongated recess for receiving a balance-staff, a gripper constructed to coöperate with the body portion in holding a balance and provided with a corresponding recess to receive the other end of the balance-staff and permit adjustment thereof, the body portion having a notch in line with the elongated recess, a gripping-jaw adjacent the notch for holding a jewel-pin in position to be attached to the roller-table of the balance.

and an adjustable plate mounted on the body portion in position to adjust the jewel-pin longitudinally in the notch.

7. A tool comprising a body portion having an elongated recess for receiving a balance-staff, a gripper constructed to coöperate with the body portion in holding a balance and provided with a corresponding recess to receive the other end of the balance-staff and permit adjustment thereof, the body portion having in its end a notch formed with inclined sides in line with the elongated recess, a gripping-jaw provided with a flat surface pivoted to the body portion adjacent the notch for holding a jewel-pin with its flat side away from the balance-staff in position to be attached to the roller-table of the balance, a threaded projection extending from the body portion on the side opposite to the first said gripper, and a shield having a flat surface in adjustable threaded engagement with said projection.

8. A tool comprising a body portion, a screw attached to the body portion flush with the surface thereof and provided with a slot, a baffle-plate threaded on said screw and projecting beyond the body portion, a gripper movably mounted on the body portion adapted to clamp a balance thereto and having a notch parallel to the slot, a V-shaped notch in a side of the body portion in line with the slot, and a gripper pivoted to the body portion having a jaw adjacent the notched side thereof.

9. A tool comprising jaws adapted to hold a pallet and having recesses for receiving the staff of the pallet, and a clamp arranged to enter and engage the notch of a forked pallet.

10. A tool comprising jaws constructed for holding a pallet, and a holding device mounted for engagement with the fork of the pallet between the arms thereof.

11. A tool comprising jaws constructed for holding a pallet, and a clamp mounted movably on one of the jaws for entering the notch in the fork of the pallet.

12. A tool comprising a jaw having a recess for receiving the staff of a pallet and slots at right angles to each other radial to said recess, and a coöperating pallet-holding jaw.

13. A tool comprising a jaw having a recess for receiving the staff of a pallet and slots at right angles to each other radial to said recess, a clamp movably mounted in one of said slots, and a coöperating pallet-holding jaw.

14. A tool comprising jaws for holding a pallet, one of said jaws having a guideway, and a clamp formed and arranged to enter the notch of the pallet-fork mounted in the guideway in frictional engagement with the sides thereof.

15. A tool comprising jaws for holding a pallet, one of said jaws having a guideway, and a clamp consisting of a strip of resilient material mounted in the guideway and frictionally engaging by its resiliency the sides thereof.

16. A tool comprising a body portion formed in part as a guide and having provisions for holding a balance, a pallet-holder slidingly engaged with the guide and having provisions for holding a pallet, and a gripper coöperating with either the body portion or the slide for grasping a balance or a pallet respectively.

17. A tool comprising a body portion formed in part as a guide and having provisions for holding a balance, a slide mounted on the guide and having provisions for holding a pallet, a gripper coöperating with either the body portion or the slide for grasping a balance or a pallet respectively, and a baffle-plate mounted adjacent the end of the guide and adapted to be interposed between a flame and the balance or pallet.

18. A tool comprising a body portion formed in part as a guide and having provisions for holding a balance, a slide mounted on the guide embracing the sides thereof, a retaining member carried by the slide and adjustable to vary the friction between the slide and guide, provisions on the slide for holding a pallet, and a gripper for coöperating with the body portion and the slide for grasping a balance or a pallet.

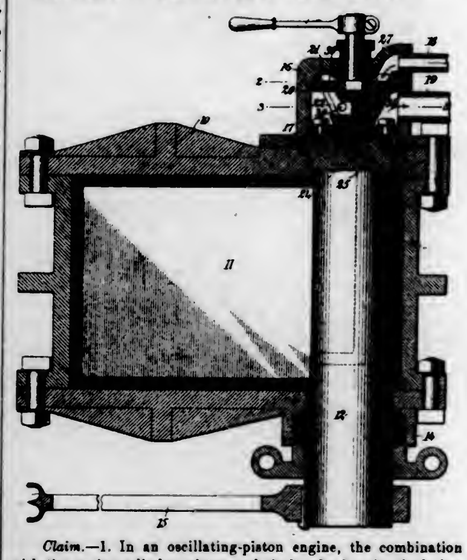
19. A tool comprising a body portion having a guiding portion provided with a slot near its end for receiving a balance-staff and a notch at its end for receiving a jewel-pin, grippers mounted on the body portion coöperating with the guide to hold a balance and a jewel-pin respectively, a slide mounted on the guide having provisions for retaining a pallet and movable toward the end of the guide into operative relation with the balance-gripper to coact therewith in securely holding a pallet.

821,397. RIVET. WILLIAM P. BARTH, Waltham, Mass., assignor to Judson L. Thomson M'f'g Company, a Corporation of Maine. Filed Feb. 16, 1905. Serial No. 245,841.

Claim.—As an article of manufacture, a rivet consisting of a cup-shaped head formed of sheet metal with a depression formed in the outside of said head, the bottom of said depression having a hole therein and an annular rim surrounding said hole; and a shank consisting of a stem with an annular flange at one end thereof fitting into said depression upon one side of said rim and another annular flange integral with said shank bearing against the opposite side of said rim, whereby said rim is securely held between said flanges, said stem projecting from the concave side of said cup-shaped head.



821,398. OSCILLATING-PISTON ENGINE. JOHN BERGESEN, New York, N. Y. Filed May 17, 1905. Serial No. 260,866.



Claim.—1. In an oscillating-piston engine, the combination with the engine-cylinder, piston and shaft, of a housing inclosing one end of the shaft, a valve-seat in the housing, the seat dividing the housing into live and exhaust steam compartments and being connected to the shaft, and a valve coacting with the seat.

2. In an oscillating-piston engine, the combination with the engine-cylinder, piston and shaft, of a housing inclosing one end of the shaft, a valve-seat in the housing, the seat dividing the housing into live and exhaust steam compartments and being connected to the shaft, and a valve coacting with the seat, said valve bearing on the live-steam side of the seat and being held into position by the steam-pressure.

3. In an oscillating-piston engine, the combination with the engine-cylinder, piston and shaft, of a housing inclosing one end of the shaft, a valve-seat in the housing, the seat dividing the housing into live and exhaust steam compartments and being connected to the shaft, and a valve coacting with the seat, said seat having a tapering cavity facing the live-steam compartment of the housing, and the valve being supported and fitted in the seat whereby to be held in place by the steam-pressure.

4. In an oscillating-piston engine, the combination with the engine-cylinder, piston and shaft, of a housing inclosing one end of the shaft, a valve-seat in the housing, the seat dividing the housing into live and exhaust steam compartments and being connected to the shaft, and a valve coacting with the seat, said seat having a tapering cavity with a flat surface at its end, and the valve being correspondingly formed and fitted in the cavity, for the purpose specified.

5. In an engine, the combination of a cylinder, an oscillating piston operating therein, a shaft to which the piston is fastened, a housing inclosing one end of the shaft and having steam admission and exhaust connections, a valve-seat within the housing and connected to the said end of the shaft, the seat engaging the housing between the admission and exhaust connections thereof to separate said connections, the seat having a port communicating with the exhaust connection of the housing, and two additional ports communicating with the cylinder respectively at the sides of the piston, and a valve operating on the side of the seat adjacent to the admission connection of the housing, said valve commanding the steam-flow to and from the additional ports of the seat and having a portion separating the exhaust side from the live-steam division of the housing.

6. In an engine, the combination of a cylinder, an oscillating piston operating therein, a shaft to which the piston is fastened, a housing inclosing one end of the shaft and having steam admission and exhaust connections, a valve-seat within the housing and connected to the said end of the shaft, the seat engaging the housing between the admission and exhaust connections thereof to separate said connections, the seat having a port communicating with the exhaust connection of the housing, and two additional ports communicating with the cylinder respectively at the sides of the piston, and a valve operating on the side of the seat adjacent to the admission connection of the housing, said valve commanding the steam-flow to and from the additional ports of the seat and having a portion separating the exhaust side from the live-steam division of the housing, the said additional ports of the valve-seat having diagonal walls adjacent to the steam-supply, for the purpose specified.

7. In an engine, the combination of a cylinder, an oscillating piston operating therein, a shaft to which the piston is fastened, a housing inclosing one end of the shaft, and having steam admission and exhaust connections, a valve-seat attached to the said end of the shaft, the valve-seat being contained within the housing and engaging the same between the admission and exhaust connections to divide the housing into two compartments, said valve-seat having a cavity on the side adjacent to the live-steam compartment and having a port therein communicating with the exhaust-steam compartment of the housing, and two additional ports respectively at the sides of the first-named ports and adapted to communicate with the cylinder on opposite sides of the piston thereof, and a valve located in the cavity in the seat and coacting with the ports thereof.

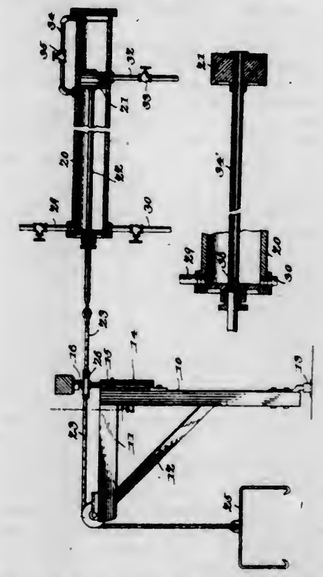
8. In an engine, the combination of a cylinder, an oscillating piston operating therein, a shaft to which the piston is fastened, a housing inclosing one end of the shaft, and having steam admission and exhaust connections, a valve-seat attached to the said end of the shaft, the valve-seat being contained within the housing and engaging the same between the admission and exhaust connections to divide the housing into two compartments, said valve-seat having a cavity on the side adjacent to the live-steam compartment and having a port therein communicating with the exhaust-steam compartment of the housing, and two additional ports respectively at the sides of the first-named ports and adapted to communicate with the cylinder on opposite sides of the piston thereof, and a valve located in the cavity in the seat and coacting with the ports thereof, said valve comprising a section reaching across between the two additional ports of the seat and controlling the steam-flow to and from the same, and a cover or top wall extending from said section of the valve over to the seat to separate the first-named port thereof from the live-steam compartment of the housing.

9. In an engine, the combination of a cylinder, an oscillating piston operating therein a shaft to which the piston is fastened, a housing inclosing one end of the shaft, and having steam admission and exhaust connections, a valve-seat attached to the said end of the shaft, the valve-seat being contained within the housing and engaging the same between the admission and exhaust connections to divide the housing into two compartments, said valve-seat having a cavity on the side adjacent to the live-steam compartment and having a port therein communicating with the exhaust-steam compartment of the housing, and two additional ports respectively at the sides of the first-named ports and adapted to communicate with the cylinder on opposite sides of the piston thereof, and a valve located in the cavity in the seat and coacting with the ports thereof, the said additional ports of the seat having diagonally-extending side walls, for the purpose specified.

10. In an engine, the combination of a cylinder, an oscillating piston operating therein, a shaft to which the piston is fastened, a housing inclosing one end of the shaft, and having steam admission and exhaust connections, a valve-seat attached to the said end of the shaft, the valve-seat being contained within the housing and engaging the same between the admission and exhaust connections to divide the housing into two compartments, said valve-seat having a cavity on the side adjacent to the live-steam compartment and having a port therein communicating with the exhaust-steam compartment of the housing, and two additional ports respectively at the sides of the first-named ports and adapted to communicate with the cylinder on opposite sides of the piston thereof, and a valve located in the cavity in the seat and coacting with the ports thereof, said valve comprising a section reaching across between the two additional ports of the seat and controlling the steam-flow to and from the same, and a cover or top wall extending from said section of the valve over to the seat to separate the first-named port thereof from the live-steam compartment of the housing, the said additional ports of the valve-seat having diagonal side walls, for the purpose specified.

11. In an engine, the combination of a cylinder, an oscillating piston operating therein, a shaft to which the piston is fastened, a housing inclosing one end of the shaft, and having steam admission and exhaust connections, a valve-seat attached to the said end of the shaft, the valve-seat being contained within the housing and engaging the same between the admission and exhaust connections to divide the housing into two compartments, said valve-seat having a cavity on the side adjacent to the live-steam compartment and having a port therein communicating with the exhaust-steam compartment of the housing, and two additional ports respectively at the sides of the first-named ports and adapted to communicate with the cylinder on opposite sides of the piston thereof, and a valve located in the cavity in the seat and coacting with the ports thereof, the cavity in the valve-seat tapering toward the shaft and terminating in a flat surface, and the valve engaging the walls of the cavity in the seat and being correspondingly formed.

821,399. HOISTING-CRANE. MILFORD F. BERRY, Fay, N. Y. Filed Dec. 23, 1904. Serial No. 238,132.



Claim.—In a crane, a mast having a lower pivot, an upper socket member secured to the mast, a pivot-rod extending within said socket member and provided with bifurcated arms, a support for receiving the ends of said arms, guiding-sheaves mounted on the bifurcated arms, a crane-arm also having guiding-sheaves, a hoisting-cable guided by the several sheaves, a stationary operating-cylinder, a piston disposed in said cylinder, a piston-rod, and means for connecting the cable to the piston-rod.

821,400. BALL-BEARING ELECTRIC TROLLEY-WHEEL. ROBERT S. BOYLE, Fort Branch, and WALTER G. CLEVELAND, Cynthiana, Ind. Filed June 16, 1904. Serial No. 212,863.

Claim.—1. In a trolley, the combination with a trolley wheel and axle, of a trolley head or harp comprising sections adapted for opening in relation to each other in a general transverse direction to the trolley-wheel axle, and removable ball-bearings for the axle which are held in position by the sections of the harp when closed.

2. In a trolley, the combination with a trolley harp or head comprising sections adapted to open and close in relation to each other and having means for holding bearings when closed, of bear-

ings removably held by said harp-sections when closed, and a trolley-wheel journaled in said bearings.



3. In a trolley, the combination with a trolley harp or head comprising separable sections adapted to open and close in relation to each other and having means for holding bearings when closed, of self-contained ball-bearings removably held by said harp-sections when closed, and a trolley-wheel journaled in said bearings.

4. In a trolley, the combination with a trolley harp or head comprising sections adapted to open and close in relation to each other and having boxes adapted to hold bearings when the sections are closed, of self-contained bearings received in said boxes and held there when the harp-sections are closed, and a trolley-wheel journaled in said bearings.

5. In a trolley, the combination with a trolley harp or head comprising sections adapted to open and close in relation to each other and having boxes adapted to hold bearings when the sections are closed, of self-contained ball-bearings received in said boxes and held there when the harp-sections are closed, and a trolley-wheel journaled in said ball-bearings.

6. In a trolley, a harp or head composed of relatively movable substantially U-shaped sections adapted to close together, said sections having boxes, self-contained removable bearings in said boxes, and a trolley-wheel journaled in said bearings.

7. In a trolley, a harp or head composed of relatively movable substantially U-shaped sections adapted to close together, said sections having boxes, self-contained removable ball-bearings in said boxes, and a trolley-wheel journaled in said ball-bearings.

8. In a trolley, the combination with a harp or head, of ball-bearings held by the arms of said harp or head and comprising plates having grooves which together form a ball-race, fastenings directly securing the plates together, a cone having a ball-race, balls in said ball-races, and a trolley-wheel supported by said cones.

9. In a trolley, the combination with a harp or head comprising substantially U-shaped relatively movable sections having matching polygonal boxes, of exteriorly-polygonal bearings removably received in said boxes, and a trolley-wheel supported by said bearings.

10. In a trolley, the combination with a harp or head comprising relatively movable sections having matching boxes, of bearings removably received in said boxes and held therein by the sections when closed, and a trolley-wheel supported by said bearings.

11. In a trolley, the combination with a harp or head comprising hinged sections having matching polygonal boxes, of exteriorly-polygonal bearings removably received in and fitting said boxes, and a trolley-wheel supported by said bearings.

12. A trolley-harp comprising a fixed bifurcated arm provided with bearings, a bifurcated upper arm hinged to the fixed arm, and a trolley-wheel lying between the branches of the arms and having integral trunnions engaging the bearings.

13. A trolley-harp comprising a fixed bifurcated arm provided with bearings, a trolley-wheel having integral trunnions which engage the bearings, a hinged bifurcated upper arm engaging the trunnion and means for locking the upper arm so that the wheel cannot be thrown from its bearings.

821,401. **INSULATOR.** TAYLOR CARTER, Frankfort, Ky. Filed May 23, 1905. Serial No. 261,726.

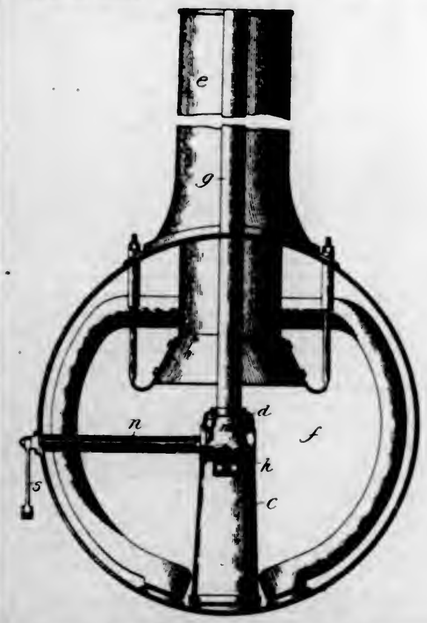


Claim.—1. An insulator comprising a member provided with a sinuous slot for receiving a line-wire, the walls of the slot being parallel and formed upon a series of regular alternately-reversed curves merging into each other, whereby abrupt curves in the line-wire are avoided, and provided with a horizontally-disposed slot substantially parallel to the sinuous slot, and at right angles to the walls thereof, and a key having means for engaging the line-wire and detachably mounted within such second slot.

2. An insulator comprising a member provided with a sinuous slot for receiving a line-wire, the walls of the slot being parallel and formed upon a series of regular alternately-reversed curves merging into each other, whereby abrupt curves in the line-wire are avoided, and provided with a horizontally-disposed slot substantially parallel to the sinuous slot, and at right angles to the walls thereof, and a key detachably mounted within such second slot, the ends of the key being recessed to form tongues adapted to be bent in order to retain the key in position.

3. In an insulator, the combination of a body member provided with a slot for engaging the wire, and another slot for engaging the key, and a key removably engaging said last-named slot, the ends of the key being recessed to form tongues adapted to be bent on each side of the line-wire in order to hold said key in position.

821,402. **LOCOMOTIVE EXHAUST MECHANISM.** JOHN J. CONOLLY and JOHN HERRON, Marquette, Mich. Filed Nov. 23, 1904. Serial No. 234,042.



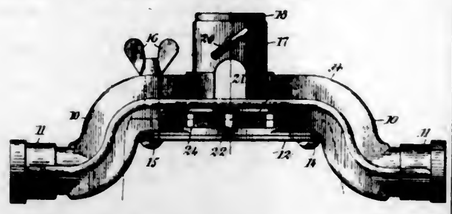
Claim.—1. In mechanisms of the class described, the combination of a locomotive provided with the usual main exhaust-pipe connected with the cylinders, an auxiliary exhaust-pipe, a detachable connection between the main and auxiliary exhaust-pipes, and valve mechanism in the connection the valve mechanism being wholly exterior to the main exhaust-pipe.

2. In mechanisms of the class described, the combination of a locomotive provided with the usual main exhaust-pipe connected with the cylinders, an auxiliary exhaust-pipe, a detachable connection between the main and auxiliary exhaust-pipes, and automatically-operating valve mechanism in the connection, the valve mechanism being wholly exterior to the main exhaust-pipe.

3. In mechanisms of the class described, the combination of a locomotive provided with a main exhaust-pipe connected with the cylinder mechanism, an auxiliary exhaust-pipe connected with the main exhaust-pipe in the smoke-box of the locomotive, valve mechanism in the connection between the main and auxiliary exhaust-pipes for opening and closing said auxiliary exhaust-valve, a lifting-shaft arm on said locomotive, a reach-rod pivotally connected therewith and leading to the cab of the locomotive, and auxiliary rod mechanism connected with the auxiliary valve mechanism and leading therefrom to the cab of the locomotive and having slotted engagement with the reach-rod mechanism so as to permit automatic and independent movements of said auxiliary valve, substantially as described.

4. In mechanisms of the class described, the combination of a locomotive provided with a main exhaust-pipe connected with the cylinder mechanism, an auxiliary exhaust-pipe connected with the main exhaust-pipe in the smoke-box of the locomotive, transversely-arranged auxiliary valve mechanism in the connection between the main and auxiliary exhaust-pipes, a valve-rod for said auxiliary valve mechanism arranged transversely of the smoke-box and extending outside of the same, a lifting-shaft arm for said locomotive, a reach-rod pivotally connected therewith and reaching to the cab of the locomotive, a reach-rod pin forming the pivotal connection between said reach-rod and lifting-shaft arm and having an outwardly-extending portion, compound auxiliary rod and lever mechanism having slotted engagement with said reach-rod pin connected with the rod of said auxiliary valve at one end and leading to the cab of the locomotive at the other end, whereby said auxiliary exhaust-valve may be operated automatically and independently as desired, substantially as described.

821,403. **STOCK AND DIE.** MATTHEW G. CORNELL, Jr., New York, N. Y. Filed July 25, 1905. Serial No. 271,127.



Claim.—1. In combination, a stock having a die-receiving socket, a die having a threaded opening, within the socket, the die and stock being provided with registering openings forming a communication between the side surface of the stock and the threaded opening of the die.

2. In a stock and die, a stock provided with a die-receiving chamber and openings in its side portions leading into the said chamber, and a die fitted to the said stock, which die is provided with openings in the corner portions of its side edges, said openings being in direct communication with the threaded openings in the die and the openings in the die being opposite the openings in the stock.

821,404. **SPIKE-PULLER.** OWEN B. CRAFT, Hawthorn, Pa., assignor of one-half to J. A. F. Hoy, Clarion, Pa. Filed June 6, 1905. Serial No. 263,965.

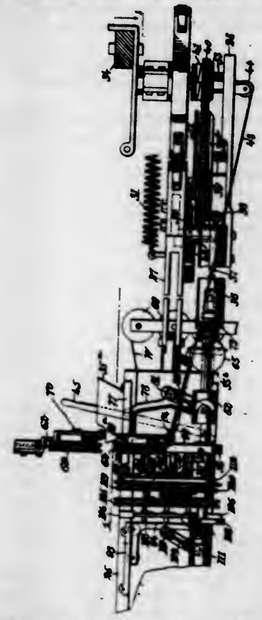


Claim.—In a device of the character described, a head having a recess, a handle for the head, a wheel mounted within the recess, said wheel having teeth projecting from its periphery, all of said teeth being inclined in one direction, claws carried by the free end of the head, a pocket formed in the head and communicating with the recess, said pocket having its inner end approximately V-shaped and having the walls of its V-shaped portion beveled inwardly, a pawl fitting within the pocket and extending within the recess and engaging the teeth of the wheel, said pawl having an end approximately V-shaped to fit within the V-shaped portion of the pocket, the edges of said V-shaped pawl being beveled outwardly to engage the bevel portion of the recess.

821,405. **BALING APPARATUS.** FRANK P. ELLIS, Messer, Kans. Filed Apr. 7, 1905. Serial No. 254,336.

Claim.—1. A baling apparatus comprising a casing, a reciprocating plunger therein, a driving-shaft, means for operating the plunger from the driving-shaft, and a locking device for the plunger controlled by the driving-shaft.

2. A baling apparatus comprising a casing, a reciprocating plunger therein, a driving-shaft, means for operating the plunger from the driving-shaft, a locking device for the plunger, and a cam operated by the driving-shaft for operating the locking device.



3. A baling apparatus comprising a casing, a reciprocating plunger, a driving-shaft, connections between the driving-shaft and plunger, a stop coöperating with said connections, and a cam rotatable by the driving-shaft for moving the stop.

4. A baling apparatus comprising a casing, a plunger operating in the casing, tying mechanism, a driving-shaft for operating the plunger situated beyond one end of the casing, gearing connecting the driving-shaft and tying mechanism, a clutch associated with the gearing, a clutch-lever, a hand-lever on the casing, and a flexible operating member connecting the clutch-lever and hand-lever, whereby the tying mechanism can be disconnected from the plunger to permit the latter to make an additional stroke when desired.

5. A baling apparatus comprising a casing, a plunger operating in the casing, tying mechanism, a frame, a driving-shaft for operating the plunger rotatable in the frame, a tubular member connecting the casing and frame, and a shaft extending through the tubular member and being geared to the tying mechanism and driving-shaft.

6. A baling apparatus comprising a casing, a plunger operating in the casing and having a groove across its face, tying mechanism including a needle movable through the plunger-groove, and means for locking the plunger with its groove in alinement with the needle.

7. The combination with a casing and a plunger operating therein, of tying mechanism comprising a tie-engaging needle movable across the casing, a spring for moving the needle in one direction, and power-operating means for moving the needle in the opposite direction.

8. The combination with a casing and a plunger operating therein, of tying mechanism comprising a tie-engaging needle movable across the casing, a spring for moving the needle in one direction, a mutilated gear for moving said needle in the opposite direction, and driving-gearing engaging the mutilated gear.

9. The combination with a casing and a plunger operating therein, of tying mechanism comprising a tie-engaging needle, a carrier for the needle, a flexible member extending from the carrier in opposite directions, and means for exerting tension upon the opposite ends of the flexible member.

10. The combination with a casing and a plunger operating therein, of tying mechanism comprising a tie-engaging needle, a carrier for the needle, a flexible member extending from the carrier in opposite directions, a spring connected with one end of the flexible member, and gearing connected with the opposite end.

11. Tying mechanism comprising tie-drawing means, jaws between which the tie-drawing means pass, one of said jaws being provided with a cutter, and means for operating the jaws, whereby when

the jaws are closed one strand will be severed and the other held thereby.

12. Tying mechanism comprising tie-drawing means, separated pairs of jaws, and means for moving one pair of jaws toward the other.

13. Tying mechanism comprising tie-drawing means, separated pairs of jaws, means for moving one pair of jaws toward the other, and means for successively opening the jaws.

14. Tying mechanism comprising tie-drawing means, a plurality of pairs of coöperating jaws, means for separating the jaws, and means for revolving all of said jaws about a common axis.

15. Tying mechanism comprising tie-drawing means, a shaft, a sleeve surrounding the shaft and having an opening, a pin extending from the shaft through the opening, a collar carried by the pin, and coöperating jaws mounted upon the collar and sleeve.

16. Tying mechanism comprising tie-drawing means, a shaft, a sleeve surrounding the shaft and having a slot, a jaw secured to the shaft and extending through the slot, a coöperating jaw carried by the sleeve, and a spring surrounding the sleeve and bearing against the jaw of the shaft.

17. Tying mechanism comprising tie-drawing means, separated pairs of jaws, a rotatable shaft upon which one of the pairs of jaws is mounted, and a spring exerting its tension upon the shaft to turn these last-named jaws toward the companion pair.

18. Tying mechanism comprising tie-drawing means, separated pairs of jaws, one of which is revoluble, means for normally holding said revoluble jaws turned toward the companion pair, and means for separating the revoluble jaws when in their normal position.

19. Tying mechanism comprising gripping members, and a drawing member movable between the gripping members.

20. Tying mechanism comprising gripping members, a cutter carried thereby, and a drawing member movable between the gripping members.

21. Tying mechanism comprising gripping members, a drawing member adapted to engage a double tie-strand and draw one of the strands between the gripping members, and means for grasping the other tie-strand.

22. Tying mechanism comprising gripping members, a drawing member movable between the gripping members adapted to engage a double tie-strand and draw one of the strands between the gripping members, means for cutting the strand at one side of the gripping members, and means for grasping the other strand.

23. Tying mechanism comprising gripping members, one of which is provided with a cutter, a drawing member adapted to engage a double tie-strand and draw the strands between the gripping members, means for operating the gripping members, whereby one strand will be severed and the other held, a twisting device, and means for grasping the severed strand and transferring it into proximity with the twisting device.

24. Tying mechanism comprising gripping members, a drawing member adapted to engage a double tie-strand and draw one of the strands between the gripping members, means for cutting the strand at one side of the gripping members, coöperating jaws separated from the gripping members, and means for moving the strand from the gripping members to the jaws.

25. Tying mechanism comprising gripping members, a drawing member adapted to engage a double tie-strand and draw one of the strands between the gripping members, means for cutting the strand at one side of the gripping members, coöperating jaws separated from the gripping members, and means for moving the gripping members toward the jaws.

26. Tying mechanism comprising gripping members, a drawing member adapted to engage a double tie-strand and draw one of the strands between the gripping members, means for cutting the strand at one side of the gripping members, coöperating jaws separated from the gripping members, means for moving the gripping members toward the jaws, and means for successively opening the jaws and gripping members.

27. Tying mechanism comprising gripping members, a twisting device, and transferring means movable between the gripping members and twisting device.

28. Tying mechanism comprising gripping members, a twisting device, transferring-carriers having engaging portions, and means for moving said engaging portions toward and from one another.

29. Tying mechanism comprising gripping members, a twisting device, transferring-carriers having engaging portions, and means for revolving said engaging portions upon the carriers.

30. Tying mechanism comprising gripping members, a twisting device, transferring-carriers having engaging portions, means for revolving said engaging portions upon the carriers, and means for moving the engaging portions toward and from one another.

31. Tying mechanism comprising gripping members, a twisting device, a transferring-carrier, a rod rotatable upon the carrier, a sleeve movable upon the rod, and engaging portions carried by the rod and sleeve.

32. Tying mechanism comprising gripping members, a twisting device, a transferring-carrier, a rod rotatable upon the carrier, a sleeve movable upon the rod, engaging portions carried by the rod and sleeve, and an operating-arm surrounding the sleeve and through which it is movable.

33. Tying mechanism comprising gripping members, a twisting device, a transferring-carrier, a rod rotatable upon the carrier and being provided with a cam-face, a sleeve movable upon the rod and coöperating with the cam-face, and engaging portions carried by the rod and sleeve.

34. Tying mechanism comprising gripping members, a twisting device, a transferring-carrier, a rod rotatable upon the carrier and being provided with a cam-face, a sleeve movable upon the rod and coöperating with the cam-face, engaging portions carried by the rod and sleeve, and means engaging the sleeve for simultaneously rotating said sleeve and the rod.

35. Tying mechanism comprising gripping members, a twisting device, a transferring-carrier, a rod rotatable upon the carrier, a sleeve movable upon the rod, engaging portions carried by the rod and sleeve, an operating-arm surrounding the sleeve and through which it is movable, and means for reciprocating the carrier.

36. Tying mechanism comprising a twisting device, coöperating jaws for holding the ends of a tie adjacent to the twisting device, and movable means for bringing the tie ends while thus held into cooperation with the twisting device.

37. Tying mechanism comprising a twisting device, coöperating jaws for holding the ends of a tie adjacent to the twisting device, and means movable toward and from the twisting device for bringing the tie ends into and out of coöperation with said twisting device.

38. Tying mechanism comprising a twisting device, means for holding the ends of a tie adjacent to the twisting device, and a carrier movable toward and from the twisting device and having a plurality of projections for contact with both ends of the tie.

39. Tying mechanism comprising a twisting device, means for holding the ends of a tie adjacent to the twisting device, and a carrier movable toward and from the twisting device and having a plurality of projections for contact with opposite sides of both ends of the tie.

40. Tying mechanism comprising a twisting device, means for holding the ends of a tie adjacent to the twisting device, a carrier movable toward and from the twisting device and having a projection for contact with the tie, and means for raising and lowering the carrier.

41. Tying mechanism comprising a twisting device, means for holding the ends of a tie adjacent to the twisting device, ways provided with a depression, and a carrier movable along the ways in cooperation with the depression and having an engaging projection.

42. Tying mechanism comprising a twisting device, means for holding the ends of a tie adjacent to the twisting device, ways provided with a depression, and a carrier movable along the ways in coöperation with the depression and having engaging projections adapted to contact with opposite sides of the tie.

43. In a baling apparatus, fixed and spaced plates, having alined recesses and slots, a toothed wheel mounted between the plates and having a radial slot, and an endless chain engaging the said wheel.

44. In a baling apparatus, a twisting mechanism comprising fixed and spaced plates having opposite slots, a wheel mounted between the plates and having a radial slot, and means for revolving the wheel, and means for engaging and disengaging the ends of the wire with the twisting mechanism.

45. In a baling apparatus, the combination with the plunger and a tying mechanism, of a driving-shaft, means for operating the plunger from the shaft, a gear-wheel loose on the shaft, a manually-operated clutch for connecting the gear-wheel with the shaft, and intermediate gearing between the said gear-wheel and the tying mechanism.

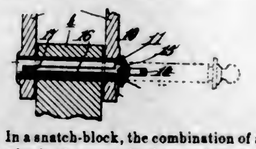
46. In a baling apparatus, the combination with the plunger and a tying mechanism, of a driving-shaft, arms on the shaft for operating the plunger, a gear-wheel loose on the shaft, a clutch for connecting the gear-wheel with the shaft, means for operating the clutch, and intermediate gearing between the said gear-wheel and the tying mechanism.

821,406. ALCOHOL-BURNER. JOHN H. ERNST, New York, N. Y., assignor to Silver & Company, Brooklyn, N. Y., a Corporation of New York. Filed July 15, 1905. Serial No. 269,815.



Claim.—In an alcohol-burner, the combination with a supporting-tripod of a burner-bowl consisting of two pieces united by a circumferential bead by which the burner is supported in its tripod, the uppermost piece having a flame-orifice, a circumferential bead about its upper edge and a circumferential series of air-admitting holes separated from each other by interspaces of greater width than the individual holes and located between the two circumferential beads, means for preventing the burner from rotating in the tripod, a band located between and confined in place by said beads and provided with air-holes and interspaces corresponding with said air-holes and interspaces in the upper portion of the bowl, and a handle to which the ends of said band are secured, substantially as hereinbefore specified.

821,407. SNATCH-BLOCK. NELSON FERGUSON, Ben Avon, Pa. Filed Jan. 22, 1906. Serial No. 297,232.

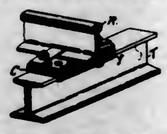


Claim.—1. In a snatch-block, the combination of a body, a head hinged to the body, having a projection, and a pin for separably holding the head to the body and having longitudinal and circumferential grooves which are engaged by the projection of the latter, the said pin being retained in connection with the head when the latter is opened.

2. In a block of the class set forth, the combination with a body having a pulley therein, of a hinged head having an opening in one side with a spline projection therein, the said opening being arranged to coincide with an opening in a part of the body, and a longitudinally and circumferentially grooved pin slidably mounted in the opening having a spline projection, the latter when in engagement with the circumferential groove operating to prevent outward movement of the pin and when in engagement with one terminal of the longitudinal groove obstructing separation of the pin from the head.

3. In a block of the class set forth, the combination of a body having a pulley therein, the body at the upper portions of the sides being provided with knuckles, a head hinged to one of said knuckles and separably connected to the opposite knuckle, a portion of the head separably coöperating with the one knuckle having an opening in a portion thereof with a spline projection extending thereinto, and a keeper-pin movably disposed in the portion of the head and the knuckle in separable relation, said keeper-pin having a circumferential groove close to one end and a longitudinal groove communicating with said circumferential groove and terminating abruptly at its opposite end, the said grooves being engaged by the spline projection.

821,408. RAIL-FASTENING. GEORGE S. FINKLE, East Greenbush, N. Y. Filed Jan. 25, 1906. Serial No. 297,741.



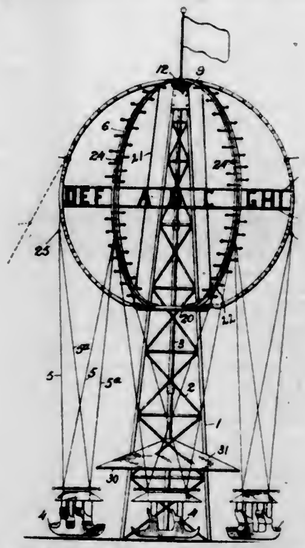
Claim.—1. In combination with a metal tie; a chair-cushion thereon; a rail-chair on said cushion, said rail-chair having depending flanges which span said cushion at its sides and lap the tie; and rail-clamps secured to said chair.

2. In combination with a metal tie; a chair-cushion thereon; a rail-chair on said cushion; a rail-supporting shim on said chair; depending flanges at the middle of said chair which span said cushion at its sides, lap the tie, and provide an unobstructed rail-seat; upwardly-turned flanges at the ends of said chair which span the rail-supporting shim at each side of the rail; and means for securing the rail to said chair and tie.

3. In combination with a metal tie; a chair-cushion thereon; a rail-chair formed of a slit plate having its relatively wide central tongues turned downwardly at substantially right angles to the chair-body to form a rail-seat, span said cushion, and lap the tie, and having its end flanges turned up at subtantially right angles; a shim resting upon said chair and confined against lateral movement by said end flanges; and means for securing the rail to said chair and tie.

4. A rail-chair formed of a metal plate laterally slit near its ends and having its central tongue portions bent downwardly at substantially right angles to form cushion and tie embracing flanges, and its end tongues bent upwardly at substantially right angles to form shim and tie-plate embracing flanges.

821,409. AMUSEMENT APPARATUS. THOMAS A. FULTON and THOMAS H. FULTON, New York, N. Y. Filed Feb. 4, 1905. Serial No. 244,119.



Claim.—1. The combination with a tower, of a frame having a bearing at the top thereof, said frame comprising ribs arranged in pairs, a top hub to which the ribs are connected, cables connected to the hub from which the cars are hung, and means for supporting the cables between the ribs of each pair, substantially as set forth.

2. The combination with a tower, of a spherical or globular frame having a bearing at the top of the tower and consisting essentially of ribs arranged in pairs, the members of the pairs being connected together to form guide-channels, and cars together with supporting-cables for the cars, which cables pass upward in the channels between the ribs and are connected to the upper part of the globular frame.

3. The combination with a tower, of a globular frame having a bearing at the top thereof, said frame consisting essentially of ribs, a top hub to which they are connected, and a ring for connecting the lower ends of them together, antifriction means carried by the tower for facilitating the rotation of the lower part of the globular frame.

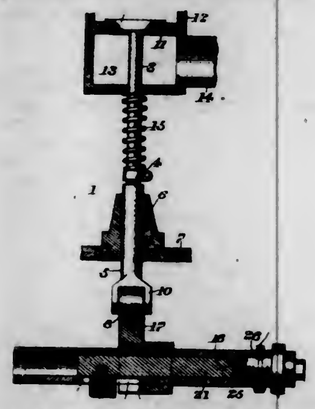
4. The combination with a tower, of a skeleton globular frame, consisting essentially of ribs arranged in pairs, pins connecting the members of each pair, a top hub to which the ribs are connected, a bail-bearing at the top of the tower, a series of rollers carried by the tower for facilitating the revolution of the lower portion of the globular frame and cars with their supporting-cables suspended from said frame.

5. The combination with a tower, cars, a frame overhanging the cars and supported on the tower, and cables running from the cars to the frame, of means for attaching the cables to the frame for limiting the outward swinging movement of the cars.

6. The combination with a tower, of a globular frame having ribs arranged in pairs, pins connecting said ribs, cars for carrying passengers and cables attached to the cars and lying between the ribs and in contact with the pins.

7. The combination with a tower, of a spherical frame having its bearing at the top of the tower, said frame being composed essentially of pairs of ribs, a series of pins connecting said ribs and bent inward at their middle portions between the ribs to form a groove, cars, and cables arranged to lie in said grooves for supporting the cars, substantially as set forth.

821,410. **RELIEF FOR EXPLOSIVE-GAS ENGINES.** PETER P. G. HALL, Jr., Philadelphia, Pa. Filed July 11, 1905. Serial No. 269,163.



Claim.—1. In a device of the character described, an exhaust-valve for the cylinder, means for holding the same normally in closed position, a lifter for said valve, a cam-shaft, a cam carried by said shaft and adapted to actuate said valve to open the same, an auxiliary shaft within said cam-shaft and means secured to said auxiliary shaft which can be moved into and out of alinement with said lifter for actuating said valve.

2. In a device of the character described, an exhaust-valve for the cylinder, means for normally holding the same in closed position, a lifter for said valve, a cam-shaft, a cam carried on said shaft and adapted to actuate said valve, an auxiliary cam-shaft mounted in said first-mentioned shaft and movable therein, and a cam directly connected to said auxiliary shaft, said cam-shaft and cam having slots into which said auxiliary cam is moved longitudinally by the movement of said auxiliary shaft.

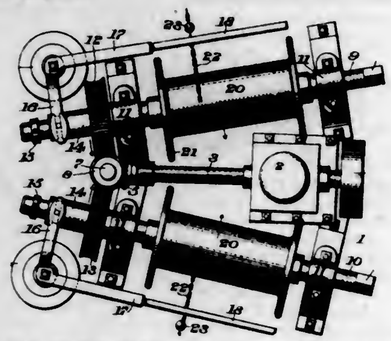
3. In a device of the character described, an exhaust-valve for the cylinder, means for normally holding the same in closed position, a lifter for said valve, a cam-shaft, a cam carried on said shaft and adapted to actuate said valve, an auxiliary cam-shaft mounted in said first-mentioned shaft and movable therein, a cam directly connected with said auxiliary shaft, said cam-shaft and cam having slots into which said auxiliary cam is moved longitudinally by the movement of said auxiliary shaft, and means for holding said auxiliary shaft in its adjusted position.

821,411. **OYSTER-DREDGING HOIST.** PETER P. G. HALL, Philadelphia, Pa. Filed Dec. 12, 1905. Serial No. 291,436.

Claim.—1. In an oyster-dredging hoist, shafts supported at an angle to each other, gears loosely mounted thereon, means for connecting said gears with said shafts, drums carried by each of said shafts and single means to which motion is imparted engaging with said gears for rotating the same, the top of both drums turning toward each other.

2. In an oyster-dredging hoist, a plurality of shafts supported at an angle to each other, gears loosely mounted thereon, means for connecting said gears with said shafts and means for releasing said gears automatically.

3. In a device of the character described, shafts supported at an angle to each other, gears loosely mounted thereon, a worm meshing with said gears, means for imparting motion to said worm, clutches for causing said gears to be connected with said shafts and means suitably mounted with respect to said shafts and connected with removable members of said clutches for throwing the same out of and into engagement.



4. In a device of the character described, shafts supported at an angle to each other, gears loosely mounted thereon, a worm meshing with said gears, means for imparting motion to said worm, clutches for causing said gears to be connected with said shaft and a forked arm suitably mounted with respect to said shafts and connected with the movable members of said clutch for throwing the same out of and into engagement.

5. In a device of the character described, shafts supported at an angle to each other, gears carried by said shafts, a worm meshing with said gears, clutch members adapted to connect said gears with said shafts, an engine adapted to impart motion to said worm, drums carried by said shafts, a forked arm situated in front of each of said drums and a chain adapted to pass between the arms of said fork and having a stop thereon for engagement with said arms.

6. In an oyster-dredging hoist, shafts suitably supported, gears loosely mounted thereon, means for connecting said gears with said shafts, drums carried by each of said shafts and single means to which motion is imparted engaging with said gears for rotating the same, the top of both drums turning toward each other.

7. In an oyster-dredging hoist, a plurality of shafts suitably supported, gears loosely mounted thereon, means for connecting said gears with said shafts and means for releasing said shafts automatically.

821,412. **WINDOW-SHADE FIXTURE.** WILLIAM D. HARPER, Loco, Ind. Ter. Filed July 12, 1905. Serial No. 269,286.



Claim.—1. A shade-fixture comprising duplicate bracket members each having points projecting beyond a face thereof, means between said members adapted by the reactionary force thereof when flexed, to cause said teeth to enter adjacent surface portions of the stiles of the window-frame between which the bracket members may be placed, said means embodying adjustable parallel wires, and a device for securing them in different positions.

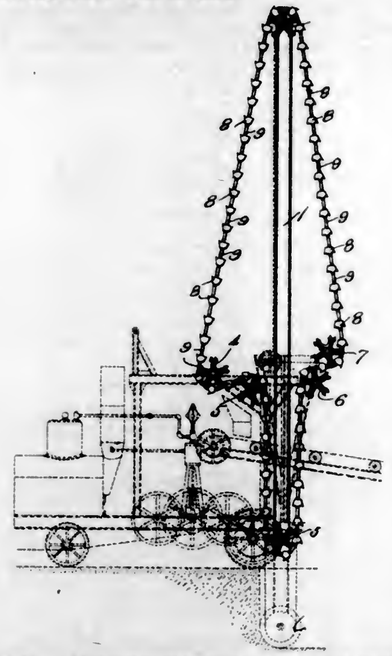
2. A shade-fixture, comprising duplicate bracket members each having points projecting beyond a face thereof, means between said members adapted by the reactionary force thereof when flexed, to cause said teeth to enter adjacent surface portions of the stiles of the window-frame between which the bracket members may be placed, said means embodying adjustable parallel wires lapping each other at their contiguous end portions, and a clamp and set-screw for securing the wires in different relation to each other lengthwise.

3. A shade-fixture, comprising duplicate bracket members each having points projecting beyond a face thereof, and means between said members adapted by the reactionary force thereof when flexed, to cause said teeth to enter adjacent surface portions of the stiles of the window-frame between which the bracket members may be placed, said bracket members having right-angled extensions at the outer edges thereof, terminating in upstanding members and intersecting ledges, as and for the purpose specified.

4. A shade-fixture comprising duplicate bracket members formed of body portions having points projecting from faces thereof.

said body portions having struck up therefrom corresponding pairs of curved members, spring-wires having loops at their outer ends, held by said pairs of curved members, said wires lapping each other at the free extremities thereof and adapted to be placed under tension on flexing the same, and a device for securing the wires in different relations to each other lengthwise.

821,418. **EXCAVATING-MACHINE.** JOHN HELM, St. Louis, Mo. Filed Apr. 10, 1905. Serial No. 254,631.



Claim.—1. In an excavating-machine, a bucket-chain having a plurality of strands and comprising chain-links arranged in pairs and buckets the end walls of which are connected to said pairs of chain-links and respectively constitute links of said strands of the chain, the bodies of said buckets being arranged substantially symmetrically with respect to a plane passing through said strands.

2. In an excavating-machine, a chain comprising a plurality of strands, each strand comprising chain-links and bucket-links having forwardly and rearwardly extending wings, and plates connecting said bucket-links of adjacent strands and forming buckets of which said bucket-links constitute the end walls, said buckets having their centers of gravity substantially in the plane passing through said strands.

3. In an excavating-machine, a bucket-chain comprising a plurality of strands, each strand comprising chain-links arranged in pairs and bucket-links connected at each end to pairs of said chain-links, and plates connecting said bucket-links of adjacent strands and forming buckets of which said bucket-links constitute the end walls, said buckets being arranged substantially symmetrically with respect to a plane passing through said strands.

4. In an excavating-machine, a bucket-chain comprising a plurality of strands each of which comprises chain-links and bucket-links having forwardly and rearwardly extending wings, plates connecting said bucket-links of adjacent strands in pairs, respectively, and forming buckets of which the bucket-links of the outside strands form the end walls and the bucket-links of the intermediate strand or strands form partition-walls.

5. A bucket-chain comprising a plurality of strands comprising chain-links and bucket-links having forwardly and rearwardly extending wings, plates connecting the bucket-links of said strands in pairs and forming the rear and bottom walls of buckets of which said bucket-links constitute the end walls, and plates forming the front walls of said buckets and secured to said first-mentioned plates and said bucket-links.

6. In an excavating-machine, a bucket-chain comprising a plurality of strands each of which comprises chain-links and bucket-links having forwardly and rearwardly extending wings, thin plates connecting said bucket-links of adjacent strands in pairs, respectively, and forming the rear and bottom walls of buckets of which said bucket-links constitute the end walls, and heavy plates provided with serrated edges forming the front walls of said buckets, respectively, and secured to said bucket-links and said thin plates.

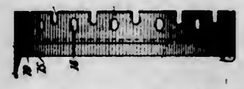
7. In an excavating-machine, a frame, a shaft mounted in said frame, sprockets mounted on said shaft and each having separated arms, said arms being provided with laterally-extending means to support the links of a chain and radially-extending means, and a bucket-chain having a plurality of strands each comprising parallel links and buckets carried by said strands, said parallel links being arranged to embrace said radially-extending means and rest upon said laterally-extending means as said chain passes around said sprockets and said buckets being arranged to enter the space between said arms.

8. In an excavating-machine, a frame, a shaft mounted in said frame, sprockets mounted on said shaft and each having separated arms, flanges near the ends of said arms, and a projection beyond each of said flanges to engage a chain, and a bucket-chain having parallel links arranged to embrace said projection.

9. In a machine, a bucket-chain comprising a plurality of strands each of which comprises chain-links arranged in pairs and bucket-links, plates connecting said bucket-links of adjacent strands in pairs and forming buckets of which said bucket-links constitute the end walls, said buckets projecting upon both sides of the plane passing through said strands, a frame, a plurality of sprockets corresponding in number to the number of said strands mounted in said frame and provided with recesses to receive said buckets and projections to enter the space between said pairs of chain-links.

10. In an excavating-machine, a bucket-chain comprising a plurality of strands each of which comprises chain-links arranged in pairs and bucket-links having forwardly and rearwardly extending wings and connected at each end to pairs of said chain-links, plates connecting said bucket-links of adjacent strands in pairs and forming buckets of which said bucket-links constitute the end walls, a frame, a shaft mounted in said frame, and a plurality of sprocket-wheels mounted on said shaft, the number of said sprocket-wheels corresponding to the number of said strands, said sprocket-wheels comprising divergent arms having projections on their ends arranged to pass between the links of said pairs of links, and flanges near their ends to support said links, and the ends of said arms being spaced apart far enough to receive said buckets therebetween.

821,414. **HORSESHOE-CALK.** OTTO J. HENNEBEUL, Wilkes-Barre, Pa. Filed Dec. 21, 1905. Serial No. 293,718.



Claim.—1. A horseshoe provided with a marginal recess in its under face extending nearly to the ends and provided at its end portions with grooves forming continuations of said recess, a continuous calk extending from end to end of the shoe and engaging the said marginal recess and the said grooves, said calk being provided with teeth at its lower edge, and fastening means for the calk.

2. A horseshoe, a calk fitted to the outer marginal portion of said shoe, extending from end to end of the shoe, the said calk being provided with teeth in its lower edge and with openings above the teeth, and means for securing the calk to the body of the shoe.

3. A horseshoe provided with an outer marginal recess in its under face, extending nearly to the ends and provided at its end portions with grooves forming continuations of the said recess, the said shoe being also provided with slots at its end portions which meet the said grooves, a continuous calk which enters the said recess and the said groove, extending from end to end of the shoe, and fastening devices for the calk.

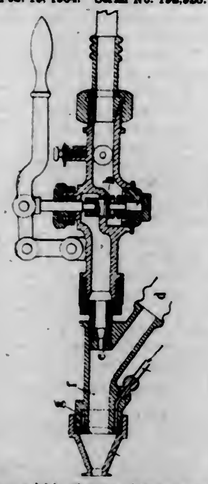
4. The combination with a horseshoe, of a calk which extends continuously from end to end of the shoe, which calk is located at the outer marginal portion of the shoe, said calk having one face tapered from the top downward, the said calk being also provided with series of teeth at its lower end and elongated openings above the teeth, and means for securing the calk to the shoe.

5. The combination with a horseshoe having a marginal recess at its outer edge in its under face, extending to a point near the heel

and grooves in the under face at the heel, which grooves form continuations of the said marginal recess, the said shoe being provided with slots in its ends which meet the said grooves and with vertical recesses at each side of the center of the shoe, which meet the said marginal recess, of a calk adapted to extend continuously from end to end of the shoe, said calk being tapered in a downward direction, the upper edge of the calk being fitted in the said recess and in the said grooves of the shoe, lugs extending from the forward portion of the calk, which lugs enter the forward recesses in the shoe, fastening devices for the said lugs extending into the shoe, and lugs at the end portions of the calk, which end lugs extend up through the end recesses in the shoe, terminating at their upper portions in forwardly-projecting heads, adapted when the calks is in position on the shoe to extend over the upper face of the shoe at the forward end portions of its end slots.

6. A horseshoe having slots at its end portions, and a marginal calk extending continuously from end to end of the shoe, the calk being provided with lugs at its end portions adapted to extend through the slots in the ends of the shoe, the said lugs terminating in projecting heads adapted to extend over the upper face of the shoe at the inner ends of said slots.

821,415. **SAND-BLAST MACHINE.** CHARLES A. P. HESS, Paris, France. Filed Feb. 10, 1904. Serial No. 192,928.



Claim.—1. In a sand-blasting machine, a mixing-chamber divided by a longitudinal partition into two compartments, a projecting nozzle secured to the chamber and provided with a partition in alinement with the partition of the chamber, and means for forcing air and sand into the compartments of said chamber.

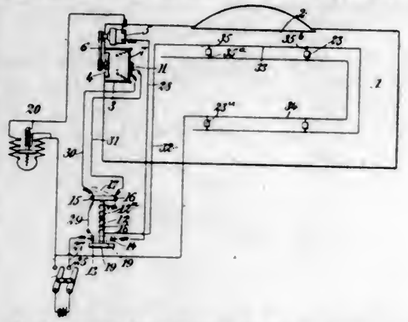
2. In a sand-blasting machine, a mixing-chamber having a longitudinal partition, a nozzle secured to the chamber and having a partition in alinement with the partition of the chamber, said partition having a wedge-shaped forward end terminating short of the end of the nozzle, and means for forcing air and sand into the compartments of the said chamber.

3. In a sand-blasting machine, a mixing-chamber, having an air-inlet in alinement therewith and a sand-inlet at an angle thereto and provided with a longitudinal partition extending from the air-inlet end of the chamber and into the sand-inlet, a nozzle provided with a partition in alinement with the partition of the chamber, and means for forcing air and sand into the said chamber.

4. In a sand-blasting machine, a mixing-chamber having a sand-conduit entering the same at an angle, and provided with a longitudinal partition extending into the sand-conduit, an air-nozzle secured to one end of the chamber and provided with two passages, a nozzle secured to the other end of the chamber and provided with a partition in alinement with the partition of the chamber, and means connected with the nozzle whereby air will be forced into said chamber.

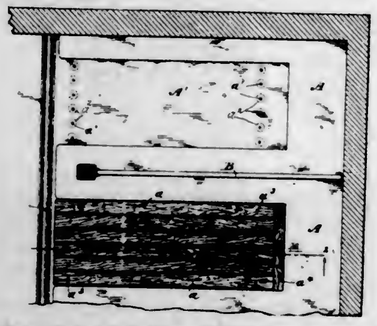
821,416. **AUTOMATIC VENTILATING APPARATUS.** JAMES H. HUMMEL, Mount Vernon, N. Y. Filed Apr. 6, 1905. Serial No. 254,116.

Claim.—1. In an apparatus of the class described in combination, an exhaust-fan, an electric motor therefor, automatically-operated circuit-closers for the motor-circuit, and a box for said fan having outwardly-swinging doors normally closed and arranged to be opened automatically by the air movement created by said fan.



2. In apparatus of the class described in combination, an exhaust-fan having an electric motor, a box for the same having doors adapted to swing in the direction of the air-current created by said fan, means normally tending to hold said doors in a closed position, an electrically-controlled latch normally locking said doors in said closed position, a plurality of thermostats and a circuit including said thermostats, said motor and said latch.

821,417. **STABLE-FLOORING.** ADOLPH G. HUPPEL, New York, N. Y., assignor to Michael Fleck, New York, N. Y. Filed Jan. 29, 1906. Serial No. 298,363.



Claim.—1. In a stall, the combination with a recessed foundation, of a series of pins projecting above the bottom of such recess, and flooring-slats fitted to such recess and provided with apertures adapted to register with said pins.

2. In a stall, the combination with a recessed foundation, of a series of pins embedded in said foundation and projecting above the bottom of such recess, and flooring-slats fitted to said recess and provided with apertures adapted to register with said pins.

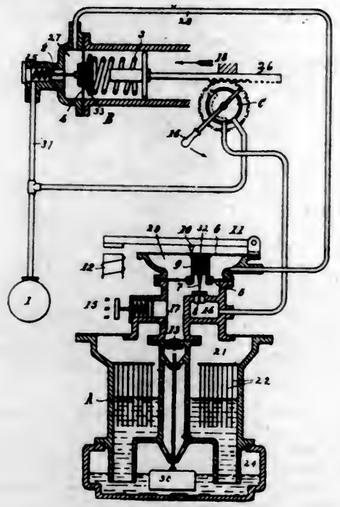
3. In a stall, the combination with a recessed foundation, of a series of pins embedded in said foundation and projecting above the bottom of such recess, and flooring-slats fitted to said recess and provided with apertures adapted to register with said pins; such apertures extending entirely through said slats, whereby the latter are adapted to be turned over.

4. In a stall, the combination with a recessed foundation, of a series of independent pins embedded in said foundation and projecting above the bottom of such recess, and flooring-slats fitted to said recess and provided with apertures adapted to register with said pins; such apertures extending entirely through said slats, whereby the latter are adapted to be turned over.

5. In a stall, the combination with a foundation having a recess therein, a series of pins embedded in said foundation near each end of said recess and projecting above the bottom of the latter, and flooring-slats fitted to said recess and provided with apertures adapted to register with said pins; the disposition of said pins and apertures being such as to permit the turning of said slats end for end, and said apertures extending entirely through said slats whereby the latter are adapted to be turned over.

6. In a stall, the combination with a recessed foundation, of a series of independent pins embedded in said foundation and projecting above the bottom of such recess, flooring-slats longitudinally fitted to said recess and provided with apertures adapted to register with said pins, and one or more transverse slats permanently secured in the forward end of said recess.

821,418. **AUTOMATICALLY-REGULATED LIQUID RHEOSTAT OPERATED BY MEANS OF COMPRESSED AIR.** COLOMAN DE KANDÓ, Budapest, Austria-Hungary, assignor to Railway Electric Power Company, a Corporation of Maine. Filed Nov. 27, 1903. Serial No. 183,700.



Claim.—1. A liquid rheostat combined with a supply of compressed air, a throttle-valve between said compressed-air supply and said rheostat adapted to control the supply of compressed air to the rheostat; said valve being controlled by the combined action of the electric current flowing through said rheostat and compressed-air pressure.

2. A liquid rheostat combined with a supply of compressed air, a throttle-valve between said compressed-air supply and said rheostat adapted to vary the rate of supply of compressed air to the rheostat; said valve being controlled by the combined action of the electric current flowing through said rheostat and compressed air.

3. A liquid rheostat combined with a supply of compressed air, a hand-operated valve for controlling the connection between said supply and said rheostat, a throttle-valve located in said connection, an electric device in circuit with said rheostat, a device operated by air-pressure and operating in opposition to said electric device to control the action of said throttle-valve.

4. A liquid rheostat combined with a supply of compressed air, a hand-operated valve for controlling the connection between said supply and said rheostat, a throttle-valve located in said connection and a supplemental device operated by compressed air to control the action of the throttle-valve.

5. A liquid rheostat combined with a supply of compressed air, a hand-operated valve for controlling the connection between said supply and said rheostat, a throttle-valve located in said connection, a device normally holding said throttle-valve closed and means for actuating said device to permit said throttle-valve to open.

6. A liquid rheostat combined with a supply of compressed air, a throttle-valve located in the connection between said rheostat and said compressed-air supply, a supplemental device operated by compressed air for controlling the position of said throttle-valve, a hand-operated valve for controlling the connection between said supply and said rheostat and also for controlling the flow of compressed air to said supplemental device.

7. A liquid rheostat combined with a supply of compressed air, a throttle-valve located in the connection between said rheostat and said compressed-air supply, a supplemental device operated by compressed air for controlling the position of said throttle-valve and a hand-operated device which initially controls the connection between said supply and said rheostat and subsequently controls the connection between said supply and said supplemental device.

8. In combination with a liquid rheostat, a supply of compressed air, an electric device in circuit with said rheostat and a throttle-valve in the connection between the compressed-air supply and the rheostat, of a device controlling said throttle-valve comprising a chamber having flexible walls of unequal area.

9. In combination with a liquid rheostat, a supply of compressed air, an electric device in circuit with said rheostat and a throttle-valve in the connection between the compressed-air supply and the rheostat, of a device controlling said throttle-valve comprising a chamber having flexible walls of unequal area; the wall of smaller area being subjected to equal pressures on opposite sides thereof.

10. In combination with a liquid rheostat, a supply of compressed air, an electric device in circuit with said rheostat and a throttle-valve in the connection between the compressed-air supply and the rheostat, of a device controlling said throttle-valve and a relief-passage controlled by a check-valve.

11. In combination with a liquid rheostat, a supply of compressed air, an electric device in circuit with said rheostat and a throttle-valve in the connection between the compressed-air supply and said rheostat, of a device controlling said throttle-valve, a check-valve controlling a passage communicating with the compressed-air chamber of the rheostat and the open air.

12. A liquid rheostat combined with a supply of compressed air, a throttle-valve between said compressed-air supply and said rheostat, adapted to control the supply of compressed air to said rheostat, said valve being controlled by the combined action of a force automatically exerted by the current flowing opposed by a variable force under the control of the operator.

13. A liquid rheostat combined with a supply of compressed air, a throttle-valve between said compressed-air supply and said rheostat, adapted to control the supply of compressed air to the rheostat, said valve being controlled by the combined action of the electric current flowing through said rheostat, and compressed-air pressure with mechanism controlled by the operator for varying said compressed-air pressure.

14. In combination with a liquid rheostat, a supply of compressed air, a device in circuit with said rheostat operated by the current flowing, a throttle-valve in the connection between the compressed-air supply and the rheostat, of a chamber having flexible walls of an equal area whereby the pressure of air within the same opposes the force exerted by the current to close the throttle-valve, and mechanism under the control of the operator whereby the pressure within said chamber may be varied.

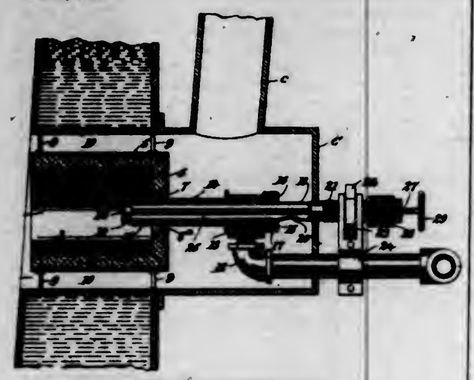
15. The combination with an electric motor of a starting resistance, means for varying said resistance, said means being controlled by an electrically-operated device in the circuit of the motor, a mechanically-operated device acting in opposition thereto, and means for adjusting said mechanically-operated device whereby the rate of variation of the starting resistance is controlled.

16. A starting-rheostat for induction-motors comprising a variable resistance interposed in the secondary of the motor, means for automatically diminishing said resistance as the speed of the motor increases, a device actuated by the current flowing to maintain the starting-current of substantially constant value while the resistance is changing and means for variably controlling said constant-current value.

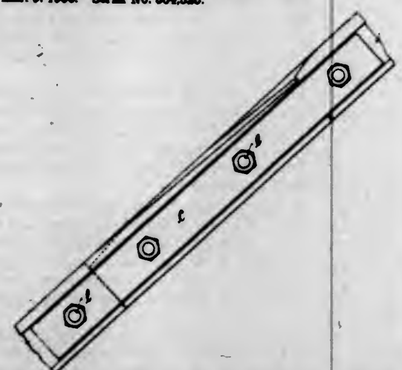
821,419. **HYDROCARBON-BURNER.** WILLIAM KEMP, Tucson, Ariz., assignor, by direct and mesne assignments, to The Kemp Hydro-Carbon Furnace Company, a Corporation of New York. Original application filed Aug. 7, 1902, Serial No. 118,748. Divided and this application filed Feb. 27, 1903. Serial No. 145,317.

Claim.—A hydrocarbon-burner, comprising a fuel-tube and a supply-pipe therefor, an air-tube slidable within the fuel-tube and projecting beyond the latter at one end, and having an external thread from this end and a controlling-valve for the fuel-tube at its other end, a closing-cap for the air-tube turning on said thread and provided with a central threaded opening, a valve for controlling the air-tube, provided with a stem having a threaded portion working in said opening, a bracket supported on the supply-pipe, and a nut held thereby and working on the same thread for effecting the adjustment of the air-tube.

821,419.



821,420. RAIL-JOINT. EWALD KILLING, Hagen, Germany. Filed Mar. 5, 1903. Serial No. 304,325.



Claim.—1. A mortised rail-joint in which the coacting parts of the rails to be joined are made of gradually-decreasing height toward their ends.

2. A rail-joint comprising a rail and provided with a recess and a rail end provided with a projection fitting into said recess, the coacting parts of the rails being gradually tapered downward toward their ends below the running-surface of the rails, and means for securing said rails together.

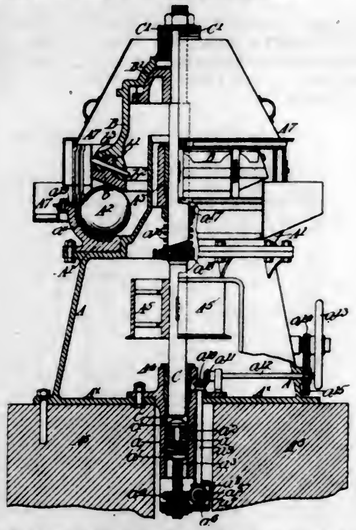
3. A rail-joint comprising a rail end provided with a central recess of substantially the width of the rail-web and a rail end provided with a tenon fitting into said recess, the coacting parts of the rails being gradually tapered toward their ends below the running-surface of the rails, fish-plates engaging the sides of said rails, and bolts extending through said fish-plates and rails.

821,421. CRUSHING OR PULVERISING APPARATUS. WALTER KITTO, Barnes, London, England. Filed Jan. 6, 1905. Serial No. 239,527.

Claim.—1. In a ball crushing-mill, the combination with a ball-raceway, a vertical driving-shaft extending through said raceway, and a bell-shaped ball-propeller driven by said shaft; of a resilient footstep for said shaft, a piston or platform vertically adjustable in said footstep and on which the lower end of said shaft directly rests, a spring interposed between said shaft and said piston, an adjustable buffer and means for adjusting the piston for the purpose specified.

2. In a ball crushing-mill, the combination with a ball-raceway, a vertical driving-shaft extending through said raceway, and a bell-shaped ball-propeller driven by said shaft; of a resilient footstep for said shaft, a piston or platform vertically adjustable in said footstep, a convex-headed piece adapted to bear against the convex end of the shaft, a spring interposed between said convex-headed piece and the piston, and means for adjusting the piston for the purpose specified.

3. In a ball crushing-mill, the combination with a ball-raceway, a driving-shaft extending through said raceway, and a bell-shaped ball-propeller driven by said shaft; of a resilient footstep for said shaft, a piston or platform vertically adjustable in said footstep, a convex-headed piece adapted to bear against the convex end of the shaft, a spring interposed between said convex-headed piece and the piston, a screw-threaded extension on said piston, a nut engaging with said screw-threaded extension, and means for revolving said nut substantially as and for the purpose specified.



4. In a ball crushing-mill, the combination with a ball-raceway, a vertical driving-shaft extending through said raceway, and a bell-shaped ball-propeller driven by said shaft; of an adjustable resilient footstep for said shaft and on the piston of which the end of said shaft directly rests, and a buffer-spring opposed to the resilient footstep substantially as and for the purpose specified.

5. In a ball crushing-mill, the combination with a ball-raceway, a vertical driving-shaft extending through said raceway, and a bell-shaped ball-propeller driven by said shaft; of an adjustable resilient footstep for said shaft and on the piston of which the end of said shaft directly rests, a spring situated around said shaft and adapted to abut at one end against a stationary part of the mill, a collar on said shaft against which the other end of said spring abuts, and means for adjusting said collar substantially as and for the purpose specified.

6. In a ball crushing-mill, the combination with a ball-raceway, a vertical driving-shaft extending through said raceway, and a bell-shaped ball-propeller driven by said shaft; of an adjustable resilient footstep for said shaft and on the piston of which the end of said shaft directly rests, a spring situated around said shaft and adapted to bear at its upper end against a stationary part of the mill, a screw-threaded collar situated beneath the inner end of said adjustable spring and adjustable on corresponding threads on said shaft, and means for locking said collar in its adjusted position substantially as and for the purpose specified.

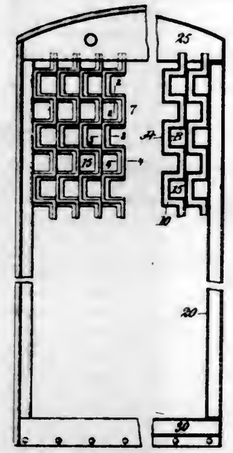
7. In a ball crushing-mill, the combination with a ball-raceway, a vertical driving-shaft extending through said raceway, and a bell-shaped ball-propeller driven by said shaft; of an active surface for said raceway composed of chilled metal except at the portion near the upper edge thereof which is of unhardened metal a ball-and-socket support at the upper end of said propeller and a yielding support for the lower end of said shaft, substantially as and for the purpose specified.

8. In a ball crushing-mill, the combination with a ball-raceway, a driving-shaft extending through said raceway, and a bell-shaped ball-propeller driven by said shaft; a ball-and-socket support at the upper end of said propeller, and a yielding support for the lower end of said shaft of a separable active edge for said ball-propeller, and means for detachably connecting said edge to said propeller and a detachable surface for the raceway having its upper edge unhardened substantially as and for the purpose specified.

9. In a ball crushing-mill, the combination with a ball-raceway, a driving-shaft extending through said raceway, and a bell-shaped ball-propeller driven by said shaft and a resilient footstep for said shaft and on the piston of which the end of said shaft directly rests; of a crushing-path in said raceway having vertical air-inlet openings below the active surface of said raceway therein, and a baffle or deflector situated above said openings substantially as and for the purpose specified.

10. In a ball crushing-mill, the combination with a ball-raceway, a driving-shaft extending through said raceway, and a bell-shaped ball-propeller driven by said shaft and a resilient footstep for said shaft and on the piston of which the end of said shaft directly rests; of a crushing-path in said raceway having vertical air-inlet openings therein, a baffle or deflector situated above said openings, an air-circulating conduit connected with said openings, and a tube of restricted area situated in said conduit and open to the atmosphere substantially as and for the purpose specified.

821,422. COOLING APPARATUS. D McRA LIVINGSTON, New York, N. Y. Filed Aug. 12, 1904. Serial No. 220,505.



Claim.—1. A cooler or like apparatus having walls forming conduits for one fluid and passages for another fluid at about right angles to the conduits, adjacent walls forming a conduit having their edges united by joints comprising an inwardly-disposed hook member on one wall and an outwardly-disposed member on the companion wall, the relative positions of the hook members and the members engaged thereby being reversed at the opposite edges.

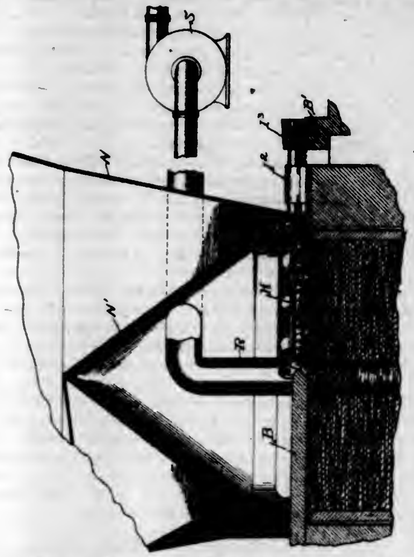
2. A cooler, having walls forming conduits for one fluid and passages for another fluid at about right angles to the conduits, adjacent walls forming a conduit having their edges united by joints comprising a hook member on one wall and a plane edge on the companion wall, the said plane edge being engaged by the said hook member, the hook being at one edge of one wall and at the opposite edge on the companion wall.

3. In a cooler or like apparatus, pairs of walls having right-angular corrugations forming three sides of a square and united at edges thereof by a double lap-joint following the lines of the corrugations at the said edges, the edge portions being offset, the spaces forming the conduit being unobstructed and the jointed edges constituting the sole support between the walls of each conduit.

4. In a cooler or like apparatus, pairs of walls having corrugations, a wall of a pair having a return-bend or hook portion ranging along an edge of the wall in a direction at right angles to the longitudinal direction of the corrugations, and at the opposite edge of the wall a plane edge portion, the plane portion of one wall being engaged by the hook portion of the companion wall.

5. In a cooler or like apparatus, pairs of walls having corrugations, a wall of a pair having a return-bend or hook portion ranging along an edge of the wall in a direction at right angles to the longitudinal direction of the corrugations and at the opposite edge of the wall a plane edge portion, the plane portion of one wall being engaged by the hook portion of the companion wall, and said engaging edge portions being soldered.

821,423. PROCESS OF GINNING COTTON. GEORGE A. LOWRY, Chicago, Ill., assignor, by mesne assignments, to Planters Compress Company, a Corporation of Maine. Filed Apr. 23, 1900. Serial No. 13,651.



Claim.—1. The method of ginning cotton which consists in producing and withdrawing from a mass of seed-cotton a concatenation of fibers by the engagement therewith and relative movement of an expansive mass of ginned fiber, passing one end of said concatenation beneath a restraining-abutment having relative movement with respect to the ginned fiber, the continued relative movement of the ginned fiber with respect to the seed-cotton continuously producing a concatenation of fibers, and the continued relative movement of the abutment and the ginned fiber passing the concatenation beneath the restraining-abutment, which prevents the seeds from following the concatenated fibers and strips fiber from seed.

2. The method of removing fibrous material from its seeds, which consists in confining the fibers of such material in contact with a mass of fibers of the same sort from which the seeds have been removed maintained under pressure, and relatively moving the same and restraining the seeds from following such fibers, whereby said fiber is forcibly drawn or stripped from the seed, as and for the purpose set forth.

3. The method which consists in confining the fiber of the material to be ginned in contact with a resilient mass of ginned fibers under pressure to grip or grasp such fibers, moving such mass, and restraining the seeds of the material to be ginned, whereby said fibers are drawn or stripped from the seeds, as and for the purpose set forth.

4. The method which consists in confining the fiber of the material to be ginned in contact with a resilient mass of ginned fibers under pressure to grip or grasp such fibers, then moving such mass and restraining the seeds of the material to be ginned, whereby the fiber is stripped or drawn from the seeds, and finally moving such seed material with reference to the line of draw exerted upon the fibers thereof, as and for the purpose set forth.

5. The method which consists in confining the fiber of the material to be ginned in contact with a mass of ginned fibers of the same material under pressure to grip or grasp such fiber, then moving such mass and restraining the seed of the material to be ginned, whereby the fiber is forcibly stripped or drawn from the seed, and finally removing the seed, as and for the purpose set forth.

6. The method which consists in moving a resilient mass of fibers maintained under pressure, then presenting seed material to an exposed portion of the surface of such mass, whereby the fiber of the seed material is gripped or grasped by such mass at the exposed point, and finally restraining the seed from following the movement of such mass, whereby the fiber of the seed material is forcibly stripped or drawn from its seed, as and for the purpose set forth.

7. The method which consists in relatively moving a mass of fibers that have been stripped of their seeds and are maintained

under pressure and a surface against which such mass bears, then presenting the fibers of the seed material to be grasped or engaged between such relatively moving surfaces, whereby such fibers are gripped or engaged by said previously-stripped fibers and are stripped from the seed, as and for the purpose set forth.

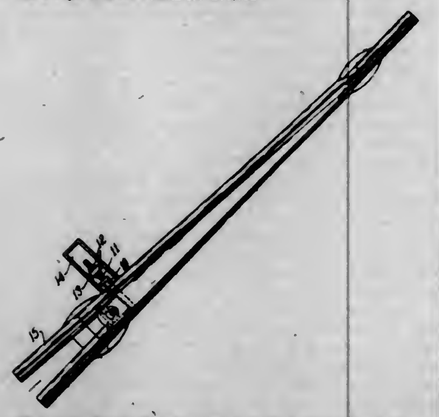
8. The method which consists in relatively moving a mass of stripped fibers maintained under pressure and a surface against which such mass bears, then presenting the fibers of seed material to be engaged or gripped between such relatively moving surfaces, whereby such fibers are gripped or engaged by such mass of fibers, and finally moving such seed material transverse to the line of draw exerted upon the fibers thereof, as and for the purpose set forth.

9. The method which consists in engaging the fiber of the material to be ginned with a mass of like fibers previously ginned and held under pressure to grip or grasp such fiber, then moving such mass and restraining the seeds of the material to be ginned, whereby said fibers are drawn or stripped from the seeds and added to such mass and condensed and compressed into bale form, as and for the purpose set forth.

10. The method of ginning cotton which consists in withdrawing from a mass of seed-cotton a body of fibers in the form of a stream or concatenation, condensing the said stream to a continually-increasing density and finally passing the same through a throat from which the seeds attached to the fibers are excluded by reason of their size.

11. The method of ginning cotton which consists in assembling seed-cotton into a mass, condensing a portion of the mass to a gradually-increasing density and at the same time drawing the condensed portion away from the mass, passing the same through a contracting throat too small to permit the entrance of seeds, and at the same time subjecting the material about to enter to a sidewise motion in a direction transverse to the line of draft of the fibers.

821,424. **RAILWAY-SWITCH.** HENRY R. LUTHER, Newton, Mass. Filed Sept. 1, 1905. Serial No. 276,732.



Claim.—1. In a railway-switch, a body part; a switch-tongue pivoted in said body part and laterally movable therein; a pivot-stud on said tongue; a groove in said pivot-stud; and means arranged to enter said groove to pull down the pivot-stud and press the heel of the switch-tongue against a socket formed by the abutting track-surfaces.

2. A railway-switch comprising a body part; a switch-tongue pivoted in the body part and laterally movable therein; a pivot-stud in said switch-tongue; a wedge-shaped plate arranged to pull downwardly on the tongue and press it against the ends of the abutting track; and an adjustable tapering key for adjusting said wedge-shaped plate.

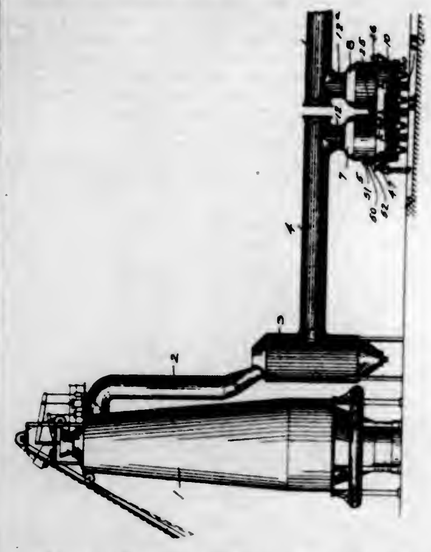
3. A railway-switch, comprising a body part, a laterally-movable tongue and a wedge-shaped plate arranged to pull the tongue down and press it against the ends of the abutting track.

4. A railway-switch, comprising a body part; a laterally-movable pivoted tongue; a wedge-shaped plate arranged to pull the tongue downwardly and press it against the abutting track; and a tapering adjusting-key.

5. A railway-switch, consisting of a body part; a tongue pivoted in said body part; a wedge-shaped adjusting-plate arranged to pull the tongue downwardly and press it endwise; a tapering adjusting-key; and an adjusting-screw.

6. In a railway-switch, a body part; a switch-tongue pivotally mounted in said body part; a wedge-shaped adjusting-plate arranged to adjust the tongue vertically and longitudinally; and means for adjusting said wedge-shaped plate.

821,425. **GAS-CLEANER.** PATRICK MEEHAN, Lowellville, Ohio. Filed Jan. 20, 1905. Serial No. 241,965.



Claim.—1. A gas-cleaner comprising a chamber containing water, a gas-inlet thereto, a gas-outlet therefrom, said chamber being arranged to separate the dust from the gas in a dry state and to discharge the dust against the surface of the water therein, a water-supply for said chamber, and an outlet-pipe projecting into said chamber and provided with a receiving-funnel located at the surface of the water and arranged to cause a current from the surface of the water into said funnel.

2. A gas-cleaner comprising a plurality of closed chambers containing water, passages extending from each chamber to the next, a gas-inlet to the first chamber, a gas-outlet from the last chamber, said chambers being constructed and arranged to separate the dust from the gas in a dry state and to discharge the dust against the surface of the water in said chambers, a water-supply for said chambers, and a water-outlet from within each chamber having a receiving-funnel located at the surface of the water and arranged to cause a current from the surface of the water into said outlet.

3. A gas-cleaner comprising a plurality of chambers containing water, said chambers being constructed and arranged to separate the dust from the gas in a dry state and to discharge the dust against the surface of the water, passages extending from each chamber to the next, a gas-inlet to the first chamber, a gas-outlet from the last chamber, a water-supply from said chambers, an outlet-pipe projecting into each chamber and provided with a receiving-funnel located at the surface of the water and arranged to cause a current from the surface of the water into said funnel, and a regulating-valve in each outlet-pipe.

4. A gas-cleaner comprising a chamber containing water constructed and arranged to separate the dust from the gas in a dry state and to discharge the dust against the surface of the water therein, a gas-inlet thereto, a gas-outlet therefrom, a water-supply for said chamber, an outlet-pipe projecting into said chamber and having a receiving-opening located at the surface of the water and arranged to produce a current from the surface of the water into said pipe, said pipe having a vertical discharge-opening, and a ball-valve for regulating said discharge-opening.

5. A gas-cleaner comprising a chamber containing water, a gas-outlet therefrom, and a gas-inlet thereto, said inlet extending into proximity to the surface of the water and being constructed and arranged to discharge the dust against the surface of the water with a gyrating or whirling movement.

6. A gas-cleaner comprising a chamber containing water, a gas-outlet therefrom, and a gas-inlet thereto, said gas-inlet being constructed and arranged to give a spiral or whirling motion to the gas to separate the dust from the gas while in a dry state and projecting downwardly with its lower end in proximity to the surface of the water thereby to direct the separated dust into the water.

7. A gas-cleaner comprising a chamber containing water, a gas-outlet therefrom, a gas-inlet thereto, said gas-inlet projecting downwardly and provided with spirally-arranged walls for imparting a spiral or whirling motion to the gas, said walls extending into proximity to the surface of the water to direct the separated dust therein.

8. A gas-cleaner comprising a chamber containing water, a gas-outlet therefrom, a gas-inlet thereto projecting downwardly into proximity to the surface of the water, and a series of spirally-arranged plates in said gas-inlet also extending downwardly into proximity to the surface of the water.

9. A gas-cleaner comprising a chamber containing water, a gas-outlet therefrom, a gas-inlet thereto projecting downwardly into proximity to the surface of the water, and spirally-arranged plates in said inlet extending below the lower end of said inlet-pipe.

10. A gas-cleaner comprising a chamber containing water, an inlet-pipe projecting down in said chamber and terminating above the surface of the water therein, an outlet from said chamber near the bottom thereof, and a partition located between the inlet-pipe and the outer wall of the chamber and having its lower end projecting into the water and its upper end extending into proximity to the top of the chamber, whereby the course of the gas is downwardly in the inlet-pipe, upwardly in the space between said pipe and the partition, and downwardly in the space between the partition and the outer wall of the chamber.

11. A gas-cleaner comprising a chamber containing water, an inlet-pipe projecting down in said chamber and terminating above the surface of the water therein, an outlet from said chamber near its bottom, a partition located between the inlet-pipe and outer wall of the chamber and having its lower end projecting into the water and its upper end extending into proximity to the top of the chamber, and spiral plates arranged radially in the space between the partition-wall and outer walls of the chamber and terminating above the surface of the water.

12. A gas-cleaner comprising a chamber containing water, an inlet-pipe projecting down in said chamber and terminating above the surface of the water therein, a gas-outlet from said chamber near the bottom thereof, a partition located between the inlet-pipe and outer walls of the chamber and having its lower end projecting into the water and its upper end extending into proximity to the top of the chamber, and spirally-arranged plates in the inlet-pipe and in the space between the partition and the outer walls of the chamber, the last-named plates terminating above the surface of the water.

13. A gas-cleaner comprising a plurality of chambers containing water, a passage connecting said chambers near their bottoms, an inlet-pipe to the first chamber, an outlet-pipe from the last chamber, said inlet and outlet pipes projecting down into the chambers and terminating above the surface of the water therein, and partitions in each chamber located between the inlet and outlet pipes, respectively and the outer walls of said chambers with their lower ends projecting into the water and their upper ends extending into proximity to the tops of the chambers.

14. A gas-cleaner comprising a plurality of chambers containing water, a passage connecting said chambers near their bottoms, a gas-inlet pipe into the first chamber, an outlet-pipe from the last chamber, said inlet and outlet pipes projecting down in said chambers and terminating above the surface of the water therein, partitions in each chamber located between the inlet and outlet pipes, respectively and the outer walls thereof with their lower ends projecting into the water and their upper ends extending into proximity to the tops of the chambers, and spirally-arranged plates in one or more of the spaces in said chambers wherein the gas has a downward flow.

15. A gas-cleaner comprising a plurality of chambers containing water, a gas-inlet into the first chamber, a gas-outlet from the last chamber, said chambers being constructed and arranged to separate the dust from the gas in a dry state and to discharge the dust against the surface of the water therein, an outlet from each of said chambers having an opening so located as to cause a current from the surface of the water into said outlet, a passage connecting said chambers, spraying means located in said passage, and gas-drying means in the outlet-chamber.

16. A gas-cleaner comprising a plurality of chambers containing water, a gas-inlet pipe into the first chamber, a gas-outlet pipe from the last chamber, said inlet and outlet pipes projecting down in said chambers into proximity to the surface of the water therein, partitions in each chamber located between the inlet and outlet pipes respectively and the outer walls thereof with their lower ends projecting into the water and their upper ends extending into proximity to the tops of the chambers, a passage-way connecting the chambers near their bottoms, and spray-pipes located in said passage-way.

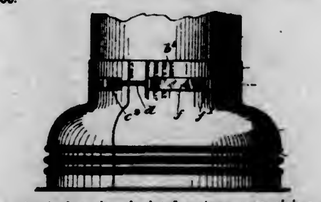
17. A gas-cleaner comprising a plurality of chambers containing water, a gas-inlet pipe into the first chamber, a gas-outlet pipe from the last chamber, said inlet and outlet pipes projecting down in said chambers and terminating above the surface of the water therein, partitions in each chamber located between the inlet and outlet pipes, respectively and the outer walls thereof with their lower ends projecting into the water and their upper ends extending into proximity to the tops of the chambers, a passage-way connecting the chambers near their bottoms, spray-pipes located in said passage-way, and baffle-plates located in the outlet-pipe.

18. A gas-cleaner comprising a plurality of chambers containing water, an inlet-pipe into the first chamber, an outlet-pipe from the last chamber, said inlet and outlet pipes projecting down into said chambers and terminating above the surface of the water therein, partitions in each chamber located between the inlet and outlet pipes, respectively and the outer walls with their lower ends projecting into the water and their upper ends extending into proximity to the tops of the chambers, spirally-arranged plates in the spaces in said chambers through which the gas flows downwardly, a passage-way connecting the chambers near their lower ends, spray-pipes located in the path of the gas through said chambers, and baffle-plates in the outlet-pipe.

19. A gas-cleaner comprising a tank having a trough-shaped bottom, cleaning-openings in said bottom provided with controlling-valves, means for maintaining the level of water in said tank, a chamber having an open lower end projecting below the surface of the water, a gas-inlet arranged to separate the dust from the gas in a dry state and to discharge the dust against the surface of the water, a water-supply for said tank, and an outlet-pipe projecting into said chamber and having a large receiving-opening located at the surface of the water and arranged to cause a current from the surface of the water into said outlet-pipe.

20. A gas-cleaner comprising a chamber containing water, a gas-inlet thereto, a gas-outlet therefrom, said chamber being arranged to separate the dust from the gas in a dry state and to discharge the dust against the surface of the water forming the seal, a water-supply for said chamber, an outlet-pipe projecting upwardly into said chamber and having a large opening located at the surface of the water and arranged to cause a current from the surface of the water into said pipe, and means permitting said pipe to be adjusted vertically.

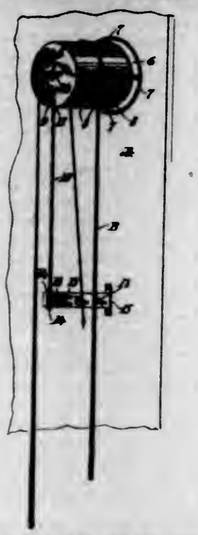
821,426. **ADJUSTABLE CLAMP FOR PIPES.** JOHN J. MEYER, New York, N. Y., assignor of one-third to John D. Gunn and one-third to John A. Sharp, New York, N. Y. Filed July 20, 1905. Serial No. 270,506.



Claim.—1. A clamping device for pipes, comprising an adjustable band, a pair of brackets thereon, each having a perforated flange, one of the brackets being elongated, a lengthening and strengthening piece located between the brackets and bearing against the band, said lengthening-piece having perforations, and a bolt passing through the perforations of the strengthening-piece and a perforation of one of the said brackets.

2. In a clamping device for pipes, comprising a band passing around the pipe, a pair of brackets on the band, a strengthening-piece between the said brackets having perforated flanges at its ends and adapted to bear against the band, said strengthening-piece being curved to conform substantially to the shape of the pipe, and means for adjustably securing the flanges of said strengthening-piece to the brackets.

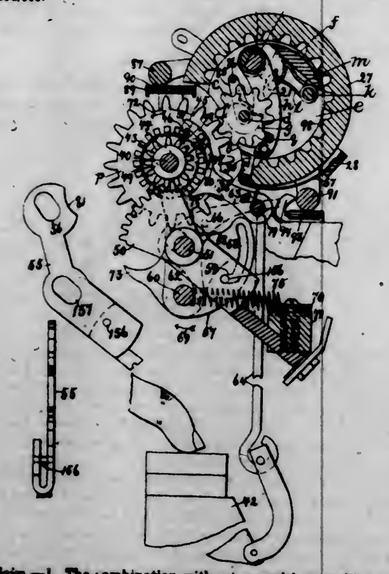
821,427. WHIP-HOLDER. LAFAYETTE MILLER, Saratoga Springs, N. Y. Filed July 23, 1903. Renewed Oct. 2, 1905. Serial No. 281,017.



Claim.—1. A device of the class described, comprising a curved supporting-body, a plurality of hooks secured to the body, a bracket mounted beneath said body, a rod connecting the body and the bracket, and clamping devices for retaining the ends of a whip, secured to said bracket, substantially as set forth.

2. A device of the class described comprising a whip-supporting body having on one end means whereby to attach it to a wall, a bracket mounted beneath the body and having means at one end for attachment to the wall, a clamping device on the bracket, and a rod connecting the free ends of the body and the bracket.

821,428. COMPUTING ATTACHMENT FOR TYPE-WRITING MACHINES. JAMES H. NEAL, Boston, Mass., assignor of one-half to Henry L. Wilson, Brookline, Mass. Filed July 2, 1903. Serial No. 164,009.



Claim.—1. The combination with a type-writing machine provided with numeral-keys and with a movable paper-carriage, of a totalizer attached to and movable with said carriage and provided with a plurality of numeral-wheels, a master-wheel with which said numeral-wheels are adapted to be engaged, a ratchet-wheel and a square-toothed driving-wheel attached to said master-wheel, a push-pawl provided with a nose or projection coöperating with the toothed driving-wheel, a pinion having secured to it an arm to which said pawl is pivoted, a toothed segment coöperating with said pinion, a rock-shaft upon which said toothed segment is mounted, a releasing-bar coöperating with said push-pawl, a cam-segment on said rock-shaft actuating said releasing-bar, a projection movable with said cam-segment to lock said master-wheel, dogs or arms fast on said rock-shaft, levers loose on said rock-shaft and coöperating with said dogs or arms to move said rock-shaft, tailpieces on said levers, a bar connected with said cam-segment and coöperating with the tailpieces of the said levers, and means connecting said levers with the numeral-keys, substantially as described.

2. The combination with a type-writing machine provided with a movable paper-carriage, of a totalizer supported by and movable with said carriage, and means interposed in the path of movement of the totalizer for engaging the same and effecting bodily movement of said totalizer and carriage in different directions substantially at right angles to each other, substantially as described.

3. The combination with a type-writing machine provided with a movable paper-carriage, of a totalizer supported by and movable with said carriage, cams attached to said totalizer, and devices interposed in the path of movement of said carriage and coöperating with said cams to simultaneously move said totalizer backward and upward, substantially as described.

4. The combination with a type-writing machine provided with numeral-keys, of a totalizer attached thereto and provided with numeral-wheels, a master-wheel coöperating with said numeral-wheels, a toothed wheel movable with said master-wheel, a pawl coöperating with said toothed wheel, a releasing device coöperating with said pawl to disengage it from said toothed wheel, and means operated by said numeral-keys for withdrawing said releasing device from engagement with said pawl to permit the latter to be engaged with the toothed wheel.

5. The combination with a type-writing machine provided with numeral-keys, of a totalizer attached thereto and provided with numeral-wheels, a master-wheel coöperating with said numeral-wheels, a rectangular toothed wheel movable with said master-wheel, a driving-pawl provided with a rectangular nose or projection to engage the said toothed wheel, means to disengage said pawl from said toothed wheel, means to move said pawl backward, a ratchet-wheel movable with said toothed wheel, a holding-pawl coöperating with said ratchet-wheel and with said driving-pawl to arrest the backward movement of said pawl and thereby properly position the same with relation to the toothed wheel, substantially as described.

6. The combination with a type-writing machine provided with numeral-keys, of a totalizer provided with a plurality of numeral-wheels, mechanism for connecting said numeral-wheels with said numeral-keys carrying forward levers coöperating with said wheels, pawls carried by said levers and engaging said wheels, and a yielding brake mechanism coöperating with said pawls, substantially as described.

7. The combination with a type-writing machine provided with numeral-keys, of a totalizer provided with end disks, a cross-bar connecting said disks and provided with a plurality of arms projecting from said cross-bar, a plurality of numeral-wheels, mechanism connecting said numeral-wheels with said numeral-keys carrying forward levers coöperating with said wheels and movable between said arms, and holding-pawls pivoted to said arms and engaging said wheels, substantially as described.

8. The combination with a type-writing machine provided with numeral-keys, of a totalizer provided with end disks and with a shell or drum rotatably mounted on said end disks, a plurality of numeral-wheels within said drum, mechanism connecting said numeral-wheels with said numeral-keys and a locking device carried by one of said end disks and coöperating with said drum to lock the same to the end disks, substantially as described.

9. The combination with a type-writing machine, provided with a paper-carriage, of a totalizer attached to the carriage to move therewith, cam-bars attached to said carriage, and means coöperating with said cam-bars to effect bodily movement of the totalizer in two directions substantially at right angles to each other, substantially as described.

10. The combination with a type-writing machine provided with numeral-keys, of a totalizer attached to said machine, a master-wheel for operating said totalizer, a toothed driving-wheel for rotating said master-wheel, a pawl coöperating with said toothed driving-wheel to rotate the same, and means operated by the depression of a numeral-key for disengaging the said pawl from said diving-wheel, substantially as described.

11. The combination with a type-writing machine, of a totalizer attached to said machine, a master-wheel for operating said totalizer, a toothed drving-wheel for rotating said master-wheel, a pawl for rotating said toothed wheel, a rock-shaft, a bar coöperating with said pawl to disengage it from said driving-wheel, and means on said rock-shaft for moving said bar into and out of engagement with said pawl, substantially as described.

12. The combination with a type-writing machine, of a totalizer attached to said machine, a master-wheel for operating said totalizer, a toothed driving-wheel for rotating said master-wheel, a pawl for rotating said toothed wheel, a rock-shaft, a bar coöperating with said pawl to disengage it from said driving-wheel, a cam-segment on said rock-shaft operatively connected with said bar to engage and disengage the latter with and from said pawl, substantially as described.

13. The combination with a type-writing machine, provided with numeral-keys, of a totalizer attached to said machine, a master-wheel for operating said totalizer, a rock-shaft, means for connecting said rock-shaft with said numeral-keys and means actuated by said rock-shaft for locking said master-wheel against movement by momentum, substantially as described.

14. The combination with a type-writing machine provided with numeral-keys, of a totalizer attached to said machine, a master-wheel to operate said totalizer, a rock-shaft operatively connected with said master-wheel, levers loose on said rock-shaft, means for connecting said levers with said numeral-keys, a bar extended substantially parallel with said rock-shaft, and adapted to be engaged by said levers, and means movable with said bar to lock the master-wheel from rotation by momentum, substantially as described.

15. The combination with a type-writing machine provided with numeral-keys, of a totalizer attached to said machine, a master-wheel to operate said totalizer, a rock-shaft operatively connected with said master-wheel, levers loose on said rock-shaft, means for connecting said levers with said numeral-keys, a cross-bar provided with adjustable stops coöperating with the levers loose on the rock-shaft, substantially as described.

16. The combination with a type-writing machine provided with numeral-keys, of a totalizer attached thereto, a master means to operate said totalizer, a rock-shaft, mechanism connecting said rock-shaft with said master means, mechanism connecting said rock-shaft with said numeral-keys, a bar or rod extended substantially parallel with said rock-shaft and movable with said numeral-keys, a device to engage said bar or rod and move it into a position wherein it is not operated by said numeral-keys, and means to lock said bar and device in said position, substantially as described.

17. The combination with a type-writing machine provided with a paper-carriage, of a totalizer, a bar or rod upon which said totalizer is mounted, and means for detachably securing said bar or rod to said paper-carriage, said means comprising threaded bosses attached to the paper-carriage and provided with longitudinally-extended slots for the reception of the totalizer-supporting bar, nuts engaging said threaded bosses, and keys fitted into the slots in said bosses and provided with external screw-threads in engagement with said nuts, whereby rotation of said nuts in one direction moves the said keys into engagement with said totalizer-supporting bar, substantially as described.

18. The combination with a type-writing machine, of a totalizer attached thereto, a master-wheel to operate said totalizer, a toothed driving-wheel movable with said master-wheel, a pawl coöperating with said driving-wheel and provided with a nose or projection adapted to enter the space between the teeth of said driving-pawl, a lug on said pawl, and means to engage said lug and remove the nose or projection on said pawl from between the teeth of the driving-wheel, substantially as described.

19. The combination with a type-writing machine provided with numeral-keys, of a totalizer provided with a plurality of numeral-wheels, carrying forward levers coöperating with said wheels, pawls carried by said levers and engaging said wheels, a yielding brake mechanism coöperating with each of said pawls and mechanism for connecting said numeral-wheels with said numeral-keys.

20. The combination with a type-writing machine provided with numeral-keys, of a totalizer attached thereto, a master-wheel to operate said totalizer, levers connected with said numeral-keys, and provided with tailpieces, a bar coöperating with and movable by said tailpieces, and a locking device for said master-wheel movable with said bar, substantially as described.

821,429. SCREEN. WILLIAM O'BYRNE, Port Chester, N. Y., assignor of one-fourth to Margaret Reichert, Port Chester, N. Y. Filed Aug. 23, 1905. Serial No. 276,046.

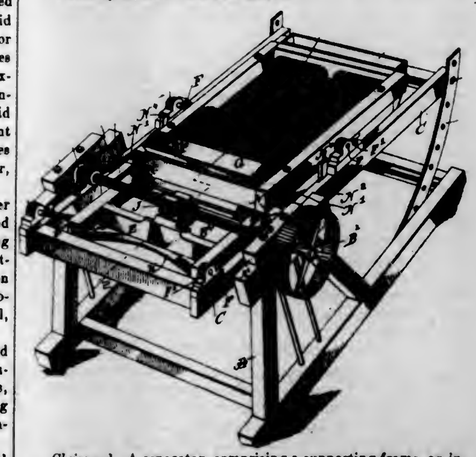


Claim.—1. In combination, a casement, a sash movably mounted therein, a member adapted for attachment to the sash and carrying an extensible screen, and a resilient plate attached to the side of said sash and affording means for retaining said member, said casement having a recess in the side thereof into which said plate may be forced for attaching said member to said sash.

2. In combination, a movable sash, a pair of oppositely-disposed plates attached to the sides of said sash and having pins on their inner faces, a member adapted to be engaged by said pins and retained thereby, a screen attached to said member, and a casement in which said sash is guided and having a recess into which one of said plates may be forced laterally in attaching said member between said plates.

3. In combination, a casement, an upper sash and a lower sash guided vertically therein, a roller attached to the under side of said lower sash and carrying a screen, a batten attached to said screen and attached at the sill of said casement, means carried by one side of said lower sash for engaging said roller, and a resilient plate carried by the opposite side of said sash and affording means for supporting the opposite end of said roller, said casement having a recess into which said resilient plate may be forced in mounting said roller.

821,430. ORE-SEPARATOR. ALBERT PERRY, Caribou, Colo. Filed July 14, 1904. Serial No. 216,505.



Claim.—1. A separator, comprising a supporting-frame, an inclined screen hung on inclined radius-rods in the frame, a leaf-spring secured at its center to the screen and having its ends pivotally connected with the frame for imparting an upward-and-rearward swinging motion to the screen, means for imparting a gradual downward-and-forward swinging motion to the screen, and a bumping device

at the forward end of the screen for bumping the same on the upstroke.

2. A separator comprising a main frame, inclined radius-rods fulcrumed on the said main frame, an inclined swing-frame hung on the said radius-rods, a screen supported on the said swing-frame, a leaf-spring secured at its middle on the upper end of said swing-frame, links pivotally supported from the said main frame and pivotally connected with the free ends of the said spring, a shoe on the upper end of the said swing-frame, a revoluble cam engaging the said shoe for imparting a downward-and-forward swinging motion to the said swing-frame and its screen, and bumping-blocks on the sides of the main frame, adapted to be engaged by blocks on the sides of the front end of the swing-frame on the upstroke of the latter.

3. A separator comprising a main frame, inclined radius-rods fulcrumed on the said main frame, an inclined swing-frame hung on the said radius-rods, a screen supported on the said swing-frame, a leaf-spring secured at its middle on the upper end of the said swing-frame, links pivotally supported from the said main frame and pivotally connected with the free ends of the said spring, a shoe on the upper end of the said swing-frame, a revoluble cam engaging the said shoe for imparting a downward-and-forward swinging motion to the said swing-frame and its screen, bumping-blocks on the sides of the main frame, adapted to be engaged by blocks on the sides of the front end of the swing-frame on the upstroke of the latter, said blocks having beveled ends and means for varying the inclination of the said main frame.

4. A separator comprising a main frame, inclined radius-rods fulcrumed on the said main frame, an inclined swing-frame hung on the said radius-rods, a screen supported on the said swing-frame, a leaf-spring secured at its middle on the upper end of the said swing-frame, links pivotally supported from the said main frame and pivotally connected with the free ends of the said spring, a shoe on the upper end of the said swing-frame, a revoluble cam engaging the said shoe for imparting a downward-and-forward swinging motion to the said swing-frame and its screen, bumping-blocks on the sides of the main frame, adapted to be engaged by blocks on the sides of the front end of the swing-frame on the upstroke of the latter, a feed-hopper secured to the upper end of the screen, a concentrate-receiving hopper attached to and arranged under the screen, and a tailings-hopper at the lower end of the screen.

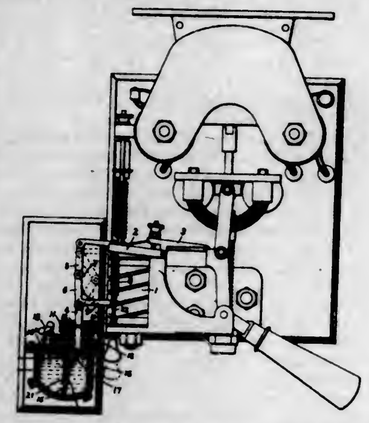
5. A separator comprising a main frame, inclined radius-rods fulcrumed on the said main frame, an inclined swing-frame hung on the said radius-rods, a screen supported on the said swing-frame, a leaf-spring secured at its middle on the upper end of the said swing-frame, links pivotally supported from the said main frame and pivotally connected with the free ends of the said spring, a shoe on the upper end of the said swing-frame, a revoluble cam engaging the said shoe for imparting a downward-and-forward swinging motion to the said swing-frame and its screen, bumping-blocks on the sides of the main frame, adapted to be engaged by blocks on the sides of the front end of the swing-frame on the upstroke of the latter, and means for varying the tension of the said spring.

6. A separator comprising a framework, a main frame having trunnions journaled in the said framework, inclined radius-rods fulcrumed on the said main frame, an inclined swing-frame hung on the said radius-rods, a screen supported on the said swing-frame, a leaf-spring secured at its middle on the upper end of the said swing-frame, links pivotally supported from the said main frame and pivotally connected with the free ends of the said spring, a shoe on the upper end of the said swing-frame, a revoluble cam engaging the said shoe for imparting a downward-and-forward swinging motion to the said swing-frame and its screen, the shaft of the cam being journaled in the said trunnions, means for adjustably holding the free end of the said main frame, and bumping-blocks on the sides of the main frame, adapted to be engaged by blocks on the sides of the front end of the swing-frame on the upstroke of the latter, said blocks having beveled ends.

821,431. TIME-LIMIT DASH-POT. WILLIAM D. POTTER, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed July 25, 1903. Serial No. 166,989.

Claim.—1. The combination with an automatic circuit-breaker, of a dash-pot having a pivoted abutment therein, means for connecting said abutment with the tripping mechanism of the breaker, and means for automatically disconnecting it after a definite time of movement.

2. The combination with an automatic circuit-breaker, of a dash-pot having a pivoted abutment therein, an arm on said abutment, a plunger connected with the tripping mechanism of the breaker and bearing on said arm, and means permitting said plunger to have a free movement independent of said arm after a predetermined time of movement together.



3. The combination with an automatic circuit-controller, of a dash-pot having a pivoted abutment therein, an arm on said abutment, and a plunger connected with the tripping mechanism of said breaker and bearing on said arm adjacent to the edge thereof.

4. The combination with an automatically-tripped circuit-controller, of a dash-pot comprising a receptacle having a curved bottom, a blade operatively connected to the tripping mechanism of said controller and pivoted in said receptacle concentrically with said bottom, an arm on said blade, a by-pass, and a regulating-screw therefor.

5. The combination with an automatically-tripped circuit-controller, of a dash-pot comprising a receptacle having a curved bottom, a blade operatively connected to the tripping mechanism of said controller and pivoted in said receptacle concentrically with said bottom and having a hole, a check-valve controlling said hole, an arm on the blade, and a plunger resting on the edge of said arm.

6. The combination with an automatic circuit-breaker, of a dash-pot, a plunger, and a toggle connecting said plunger with the tripping mechanism of the breaker.

7. The combination with an automatic circuit-breaker, of a dash-pot, a plunger, two links composing a toggle connecting said plunger with the tripping mechanism of the breaker, an arm on one of said links, and a spring and a rod attached to said arm.

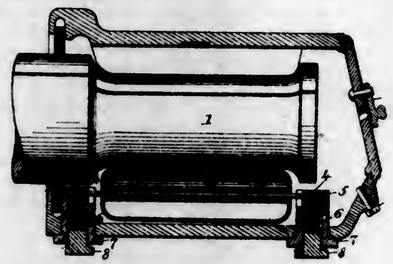
8. The combination with an automatic circuit-breaker, of a dash-pot, a plunger, two links composing a toggle connecting said plunger with the tripping mechanism of the breaker, an arm on one of said links, a spring and a rod attached to said arm, and means for holding said toggle normally extended.

9. The combination with an automatic circuit-controller, of a receptacle having a curved bottom, a lid having a rib extending across the entire width thereof, and containing a by-pass, a blade pivoted on the lower edge of said rib and fitting the curved concentric bottom of the receptacle, an arm on the blade, a box on top of the lid having a cover, a plunger passing through the box and bearing on the arm, a collar on the plunger inside the box, and a spring abutting between said collar and the bottom of the box.

821,432. LUBRICATING DEVICE. WILLIAM H. PROCTER, Jatni, India. Filed Nov. 25, 1904. Serial No. 234,219.

Claim.—1. In a lubricating device the combination with the journal, of a journal-box having a plurality of screw-threaded openings in its bottom, slotted nipples engaging said openings and having their outer ends internally screw-threaded, there being flanges on the nipples for engaging the outer ends of the journal-box, bearings slidably mounted on the nipples, springs for supporting the bearings, screw-threaded plugs engaging the screw-threaded openings of the nipples and supporting the springs, a spindle supported at each end by the bearings, and a roller on the spindle engaging the journal and adapted to be rotated thereby.

2. In a lubricating device, the combination with the journal, of a journal-box having a plurality of openings in its bottom, slotted nipples engaging the openings, there being flanges on the nipples for engaging the outer faces of the journal-box, bearings slidably mounted in the nipples, springs supporting the bearings, plugs within the nipples for supporting the springs, a spindle having its ends mounted in the bearings, and a roller on the spindle engaging the journal and adapted to be rotated thereby.

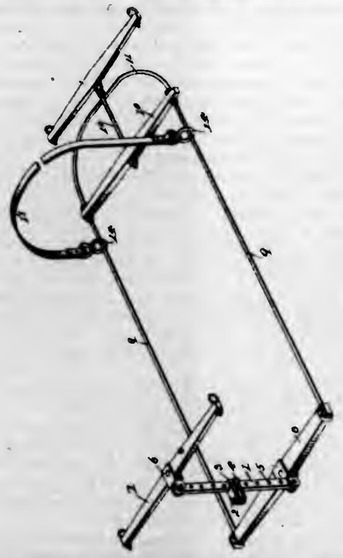


3. In a lubricating device, the combination with the journal, of the journal-box, slotted nipples traversing openings in the bottom of the journal-box, spring-actuated bearings in the nipples, means within the nipples for adjusting the springs, a spindle supported at each end by the bearings, and a roller on the spindle engaging the journal and adapted to be rotated thereby.

4. In a lubricating device, the combination with the journal, of the journal-box, spring-actuated bearings within the journal-box below the journal, means without the journal-box for adjusting the springs, a spindle supported at each end by the bearings, and a roller on the spindle engaging the journal and adapted to be rotated thereby.

5. In a lubricating device, the combination with the journal-box, of the journal, a spindle below the journal, a roller on the spindle and engaging the journal, spring-actuated bearings within the journal-box for supporting the spindle, and means without the journal-box for adjusting the bearings.

821,433. DRAFT-EQUALIZER. HUBERT T. RAILSBACK, Mountain View, Okla. Filed Sept. 12, 1905. Serial No. 278,157.



Claim.—1. A draft-equalizer comprising an equalizer-bar, a swingletree, a rigid device pivoted at opposite ends to said swingletree and one end of the equalizer-bar, there being a sufficient distance between the equalizer-bar and the swingletree to allow a draft-animal to stand therebetween, and a second swingletree movably connected to the other end of the equalizer-bar.

2. A draft-equalizer comprising an equalizer-bar adapted to be fulcrumed between its ends, a rigid frame movably connected to one end of said bar, said frame being sufficiently large to permit a draft-animal to stand therein, and swingletrees movably connected to the other end of the equalizer-bar and to the front end of the frame, respectively.

3. A draft-equalizer comprising an equalizer-bar adapted to be fulcrumed between its ends, a frame pivoted to said bar at one side of its fulcrum, said frame being sufficiently large to allow a draft-animal to stand therein, swingletrees pivoted to the equalizer-bar at the other side of its fulcrum and to the forward end of the frame, respectively, and a fender extending from the forward end of said frame.

4. A draft-equalizer comprising an equalizer-bar adapted to be fulcrumed between its ends, a frame pivoted to said bar at one side of its fulcrum, said frame being sufficiently large to allow a draft-animal to stand therein, swingletrees pivoted to the equalizer-bar at the other side of its fulcrum and to the forward end of the frame, respectively, a fender extending from the forward end of said frame, and supporting devices loosely engaging the sides of the frame and adapted to be fastened to the animal within the frame.

5. The combination with swingletrees disposed one in front of the other for use by draft-animals in tandem; of draft-equalizing means connecting said swingletrees, supporting means engaging one end of said equalizing means and adapted to be secured to the rear draft-animal, and a fender extending from the equalizing means.

6. The combination with swingletrees disposed one in front of the other for use by draft-animals in tandem; of draft-equalizing means connecting said swingletrees, and supporting means engaging one end of said equalizing means and adapted to be secured to the rear draft-animal.

821,434. PROCESS FOR MANUFACTURING ARTIFICIAL PARCHMENT. GUSTAV SACHSENRÖDER, Barmen-Unterbarmen, Germany. Filed Jan. 27, 1906. Serial No. 298,216.

Claim.—1. The process of manufacturing parchment-paper, consisting in adding to the parchmenting-bath an agent in a state of fine division which is capable of rendering the parchment-paper unable to absorb moisture, substantially as described.

2. The process of manufacturing parchment-paper, consisting in adding to the parchmenting-bath agents in a state of fine division capable of rendering the parchment-paper both opaque and incapable of absorbing moisture, substantially as described.

821,435. RAILWAY SWITCHING AND SIGNALING APAPRATUS. WILMER W. SALMON, Buffalo, N. Y., assignor, by mesne assignments, to General Railway Signal Company, Buffalo, N. Y., a Corporation of New York. Filed Mar. 23, 1904. Serial No. 200,337.

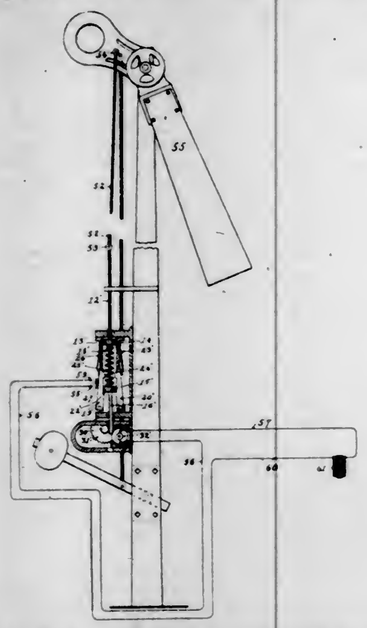
Claim.—1. In a railway switching apparatus, mechanism for moving and locking the rail-switch, an indicating device, mechanism for producing energy during the period of movement and locking of the rail-switch and means for retaining such energy for any predetermined length of time, means for calling said energy into action when or after the rail-switch is home and locked, means for generating an indicating-current, and mechanism for applying said energy to actuate said mechanism for generating said current, and a circuit connecting said generator with said indicating device for the purpose of producing the desired indication.

2. In a railway switching apparatus, mechanism for moving and locking the rail-switch, an indicating device, mechanism for producing energy during the period of movement and locking of the rail-switch and means for retaining such energy for any predetermined length of time, means for calling said energy into action when or after the rail-switch is home and locked, means for generating an indicating-current and mechanism for applying said energy to actuate said generator, a circuit connecting said generator with said indicating device, a switch in said circuit, and means for closing said circuit through said switch at or after the completion of the movement of the rail-switch, whereby said generator actuates said indicating device.

3. In a railway signaling apparatus, in combination with a signal and an indicating device, mechanism for actuating said signal, means for producing energy from and during a movement of said signal, a generator for producing an indicating-current, a circuit connecting said generator with said indicating device, and means for calling said energy into action to actuate said generator at or after a movement of said signal, whereby said indicating device is actuated.

4. In a railway signaling apparatus, in combination with a signal and an indicating device, mechanism for actuating said signal,

mechanism for producing energy from and during a movement of said signal, a generator for producing an indicating-current, a circuit connecting said generator with said indicating device, a switch in said circuit, means for calling said energy into action to actuate said generator, and means for closing said switch in said circuit when the signal has completed its movement, whereby said indicating device is actuated.



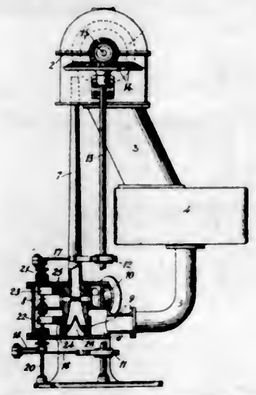
5. In a railway signaling apparatus, in combination with a signal and an indicating device, mechanism for actuating the signal, mechanism actuated by the movement of the signal-blade for producing energy while the signal-blade is going to danger, a generator for producing an indicating-current, a circuit connecting said generator with said indicating device, a switch in said circuit, means for causing said energy to actuate said generator when said signal-blade has gone to danger and means for coincidently closing said switch in said circuit, whereby said indicating device is actuated on the movement of the signal-blade.

6. In a railway switching apparatus, a source of energy, a switch-motor, mechanism for moving the rail-switch, a controller, an indicating device, and an operating and an indicating circuit, a pole-changing switch, mechanism for storing up energy during the period of rotation of said switch-motor, means for calling said energy into action when the rail-switch is home and locked, a generator for producing an indicating-current, and mechanism for applying said stored-up energy to actuate said generator and thereby cause indication through said indicating device.

821,436. MEANS FOR DRIVING TURBINES. WILLIAM B. SAYERS, Glasgow, Scotland. Original application filed Nov. 8, 1904, Serial No. 231,885. Divided and this application filed Nov. 7, 1905. Serial No. 286,221.

Claim.—1. Motor apparatus comprising a rotatable reaction-body, an expansion-tube arranged to direct working fluid against the reaction-surfaces of said body, and means for causing working fluid and driving fluid to flow alternately into said tube, which is adapted to cause each volume of said working fluid so admitted to said tube to have its velocity increased while passing through said tube by the expansion therein of a succeeding portion of said driving fluid, substantially as described.

2. Motor apparatus comprising a rotatable reaction-body, an expansion-tube arranged to direct working fluid against the reaction-surfaces of said body, a device for causing working fluid and driving fluid to flow alternately into said tube, which is adapted to cause each volume of said working fluid so admitted to said tube to have its velocity increased while passing through said tube by the expansion therein of a succeeding portion of said driving fluid, and gearing connecting said device to said reaction-body, substantially as described.



3. Motor apparatus comprising a rotatable reaction-body, a substantially straight expansion-tube arranged to direct working fluid against the reaction-surfaces of said body, and means for causing working fluid and driving fluid to enter said tube alternately.

4. Motor apparatus comprising a rotatable reaction-body, a substantially straight expansion-tube arranged to direct working fluid against the reaction-surfaces of said body, and means for causing working fluid and driving fluid to enter said tube alternately so that each separate volume of working fluid thus caused to enter and propelled therealong by the expansion of driving fluid confined behind it therein will fill said tube transversely like a piston and will be so short in relation to the length of said tube that its velocity of impact or contact against said reaction-surfaces will be substantially uniform throughout its length in the direction of its projection.

5. Motor apparatus comprising a rotatable reaction-body, a substantially straight expansion-tube arranged to direct working fluid against the reaction-surfaces of said body, and means for causing working fluid and driving fluid to enter said tube alternately so that each separate volume of working fluid thus caused to enter will fill the tube transversely like a piston and will be so short in relation to the length of said tube that its velocity of impact or contact against said reaction-surfaces will be substantially uniform throughout its length in the direction of its projection and that during its passage through said tube it will have transferred to it in a practically efficient manner the energy of the volume of driving fluid confined immediately behind it in said tube.

6. Motor apparatus comprising a rotatable reaction-body, a substantially straight expansion-tube arranged to direct working fluid against the reaction-surfaces of said body, two sets of valve apparatus adapted to admit working fluid and driving fluid respectively into said tube, and means for operating said two sets so as to admit said working fluid and said driving fluid alternately into said tube.

7. Motor apparatus comprising a rotatable reaction-body, a substantially straight expansion-tube which is arranged to direct working fluid against the reaction-surfaces of said body, has provision for the admission of working fluid and driving fluid, and flares outward internally at its inlet portion, a conoidal projection arranged centrally within its flaring portion, and means for admitting working fluid and driving fluid alternately into said tube.

8. Motor apparatus comprising a rotatable reaction-body, a substantially straight expansion-tube which is arranged to direct working fluid against the reaction-surfaces of said body and is provided with a ring of ports for the admission of said working fluid, and means for admitting both working fluid through said ports and also driving fluid alternately into said tube.

9. Motor apparatus comprising a rotatable reaction-body, a substantially straight expansion-tube which is arranged to direct working fluid against the reaction-surfaces of said body and is provided with a ring of ports for the admission of said working fluid and a ring of ports for the admission of driving fluid, said tube being elsewhere closed except at its outlet end, and means for admitting working fluid and driving fluid alternately into said tube and through their respective said rings of ports.

10. Motor apparatus comprising a rotatable reaction-body, a substantially straight expansion-tube which is arranged to direct working fluid against the reaction-surfaces of said body and is provided with a ring of ports for the admission of said working fluid and a ring of ports for the admission of driving fluid, said tube being elsewhere closed except at its outlet end, chambers surrounding said rings of ports, valves for controlling the flow of working fluid and driving fluid from said chambers through said ports, and means for operating said valves so as to admit working fluid and driving fluid alternately through said ports into said tube.

11. Motor apparatus comprising a rotatable reaction-body, a substantially straight expansion-tube arranged to direct working fluid against the reaction-surfaces of said body, means for causing working fluid and driving fluid to enter said tube alternately, and means for preventing the flow of said fluids in said tube in the direction opposite to that of said reaction-body.

12. Motor apparatus comprising a rotatable reaction-body, a substantially straight expansion-tube arranged to direct working fluid against the reaction-surfaces of said body and closed at its rear end, and means for causing working fluid and driving fluid to enter said tube alternately so that each separate volume of working fluid thus caused to enter and propelled therealong by the expansion of driving fluid confined behind it therein will fill said tube transversely like a piston and will be so short in relation to the length of said tube that its velocity of impact or contact against said reaction-surfaces will be substantially uniform throughout its length in the direction of its projection.

13. Motor apparatus comprising a rotatable reaction-body, a substantially straight expansion-tube arranged to direct working fluid against the reaction-surfaces of said body and closed at its rear end, and means for causing working fluid and driving fluid to enter said tube alternately so that each separate volume of working fluid thus caused to enter will fill the tube transversely like a piston and will be so short in relation to the length of said tube that its velocity of impact or contact against said reaction-surfaces will be substantially uniform throughout its length in the direction of its projection and that during its passage through said tube it will have transferred to it in a practically efficient manner the energy of the volume of driving fluid confined immediately behind it in said tube.

14. Motor apparatus comprising a rotatable reaction-body, a substantially straight expansion-tube arranged to direct working fluid against the reaction-surfaces of said body and closed at its rear end, two sets of valve apparatus adapted to admit working fluid and driving fluid respectively into said tube, and means for operating said two sets so as to admit said working fluid and said driving fluid alternately into said tube.

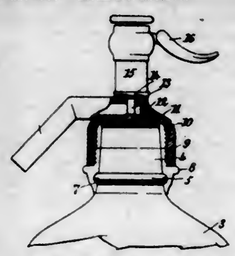
15. Motor apparatus comprising a rotatable reaction-body, a substantially straight expansion-tube which is arranged to direct working fluid against the reaction-surfaces of said body, has provision for the admission of working fluid and driving fluid, and flares outward internally at its inlet portion, a conoidal projection arranged centrally within and closing its flaring portion, and means for admitting working fluid and driving fluid alternately into said tube.

16. Motor apparatus comprising a rotatable reaction-body, a substantially straight expansion-tube which is arranged to direct working fluid against the reaction-surfaces of said body and is provided with a ring of ports for the admission of said working fluid, means for admitting both working fluid through said ports and also driving fluid alternately into said tube, and means for preventing the flow of said fluids in said tube in the direction opposite to that of said reaction-body.

17. Motor apparatus comprising a rotatable reaction-body, a substantially straight expansion-tube arranged to direct working fluid against the reaction-surfaces of said body and means for causing working fluid and driving fluid to enter said tube alternately, said means being adapted to cause each separate volume of driving fluid to enter said tube suddenly so that as nearly as practicable the full pressure will be exerted upon the next preceding volume of working fluid before it will have traveled a considerable portion of the length of said tube.

18. Motor apparatus comprising a rotatable reaction-body, a substantially straight expansion-tube arranged to direct working fluid against the reaction-surfaces of said body and means for causing working fluid and driving fluid to enter said tube alternately, said means being adapted to cause as nearly as practicable the whole of each separate volume of driving fluid to enter said tube before the next preceding volume of working fluid will have traveled a considerable portion of the length of said tube.

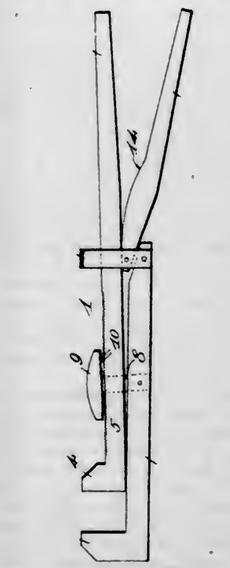
821,437. SIPHON-COLLAR. CARL R. SCHULTE, Murray Hill, N. J. Filed Jan. 23, 1906. Serial No. 297,194.



Claim.—1. In a device of the character described, the combination of a siphon-collar made in halves, each half being provided internally near its bottom with an arcuate groove for engaging an annular bead upon a bottle, each half being further provided with a thread and with an annular bead intermediate of said thread and the approximate position of said arcuate groove, and a siphon-head provided with a cap threaded internally for the purpose of engaging the threads of said halves.

2. A device of the character described, comprising a siphon-collar made in halves, each half being provided internally adjacent to its lower edge with an arcuate groove for engaging a bead upon a bottle, and being provided externally with a semicircular bead and with a semicircular shoulder bounding said bead, each of said halves being provided with a thread, and a siphon-head threaded internally for engaging said threads of said halves, said siphon-head being provided with a surface for engaging said shoulders.

821,438. WRENCH. HENRY R. SMITH, Gambrills, Md., assignor of one-third to Ann A. Joyce and one-third to Luther H. Gadd, Annapolis, Md. Filed Sept. 25, 1905. Serial No. 280,022.



Claim.—1. In a wrench, the combination with the stationary jaw and shank, of a movable jaw and shank, handles arranged on said shanks, a locking-dog 9 pivoted on said stationary-jaw shank, and means operated by the gripping of the wrench-handles to engage the shank of said movable jaw with said locking device, thereby holding said movable jaw in its adjusted position, substantially as described.

2. In a wrench, the combination with a stationary jaw and shank, of a movable jaw and shank, said movable-jaw shank having formed therein a longitudinally-disposed slot, a locking pawl or dog pivotally mounted in said stationary-jaw shank and adapted to pro-

ject through the slot in said movable-jaw shank, handles arranged on the inner ends of said jaw-shanks, and means operated by the gripping of said handles to engage said movable-jaw shank with said locking pawl or dog, substantially as described.

3. In a wrench, the combination with a stationary jaw and shank, of a movable jaw and shank, said movable-jaw shank having formed therein a longitudinally-disposed slot, a locking pawl or dog pivotally mounted in said stationary-jaw shank and adapted to project through the slot in said movable-jaw shank, a guide arranged on the inner end of said stationary-jaw shank, a rigid handle formed on said movable shank, a movable handle pivoted in said guide, and means whereby the gripping of said handles will engage said movable-jaw shank with said locking pawl or dog, substantially as described.

4. In a wrench, the combination with a stationary jaw and shank, of a movable jaw and shank, said movable-jaw shank having formed therein a longitudinally-disposed slot, teeth or serrations formed on the outer side of said shank, a post pivotally mounted in said stationary-jaw shank, and adapted to project through the slot in said movable-jaw shank, a pawl or dog arranged on the projecting end of said post, teeth formed on the inner side of said pawl to engage the teeth on said movable-jaw shank, a bail-shaped guide arranged on the inner end of said stationary-jaw shank, a rigid handle formed on said movable-jaw shank, a movable handle pivotally mounted in said bail-shaped guide and a cam formed on said movable handle to engage said movable-jaw shank whereby when said handles are gripped said movable-jaw shank will be engaged with said locking-pawl, substantially as described.

821,439. CATTLE-GUARD FOR RAILWAYS. NATHAN SMITH, Garrison, Mont. Filed Feb. 14, 1906. Serial No. 301,047.



Claim.—1. A cattle-guard comprising an intermediate section consisting of two series of guard-plates, and two outer series of guard-plates, the guard-plates of each series consisting of a vertically-extending portion and a right-angularly-extending portion.

2. A cattle-guard embodying an intermediate series of guard-plates and two outer series of guard-plates, each plate of each series of plates consisting of a vertically-extending portion and a right-angularly-extending portion arranged over and extending from the tie to which said plate is secured, and means for securing the vertically-extending portions of the guard-plates to railway-ties.

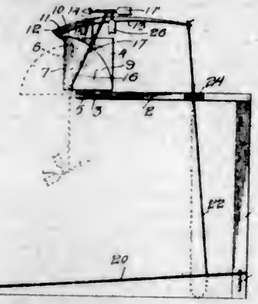
3. A cattle-guard comprising an intermediate section consisting of two series of guard-plates, and two outer series of guard-plates, the guard-plates of each series consisting of a vertically-extending portion and a right-angularly-extending portion, combined with beveled protecting members arranged at each end of each series of plates.

4. A cattle-guard embodying an intermediate series of guard-plates and two outer series of guard-plates, each plate in each series of plates consisting of a vertically-extending portion and a right-angularly-extending portion arranged over and extending from the tie to which said plate is secured, means for securing the vertically-extending portions on the guard-plates to railway-ties, and means interposed between the ties to which the guard-plates are secured for preventing spreading of the ties.

5. A cattle-guard embodying an intermediate series of guard-plates and two outer series of guard-plates, each plate of each series of plates consisting of a vertically-extending portion and a right-angularly-extending portion arranged over and extending from the tie to which said plate is secured, and means for securing the vertically-extending portions of the guard to railway-ties, combined with beveled protecting members arranged at each end of each series of plates, and means interposed between the ties to which the guard-plates are secured for preventing the spreading of the ties.

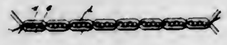
821,440. MAIL-BOX. ORREN F. SMITH, Ames, Iowa. Filed Sept. 19, 1905. Serial No. 279,109.

Claim.—1. The combination of a post having an arm at its upper end, the arm having a cross-piece at its free end; of a mail-box secured upon the cross-piece, a hinged door for the box provided at its top and sides with means for overlapping the top and sides of the box and also provided at its upper edge with an upwardly-directed lug, a post upon the top of the box, a lever pivotally mounted upon the post and provided at its outer end with a hook for engagement with said lug to lock the door with respect to the box, a signal device pivotally mounted upon the door, a spring trip-plate constructed and arranged for vertical movement in close proximity to the post, a flexible rope connected near one end of the said trip-plate and provided at its opposite end with a ring for engagement with one end of the lever, whereby the hooked end of the latter may be removed from engagement with the lug of the door by pressure upon the said trip-plate.



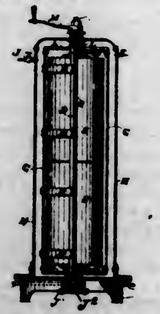
2. The combination with a post, a mail-box constructed and arranged for support by the post, a door for the mail-box, means for holding the door in locked position, a trip-plate, and a connection between the trip-plate and the locking means whereby the door may be opened by pressure upon the trip-plate.

821,441. WOVEN FABRIC. WILLIAM M. STEVENSON, Indian Orchard, Mass., assignor to Hodges Fiber Carpet Company, Portland, Me., a Corporation of Maine. Filed Aug. 4, 1905. Serial No. 272,757.



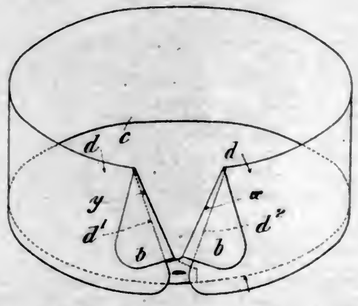
Claim.—A woven fabric, in which binding warp-threads are combined with weft-threads each consisting of a plurality of strands interwoven as a unit with said binding warp-threads, separate strands of each weft-thread being also interwoven with warp-threads independent of said binding warp-threads, substantially as specified.

821,442. FILTER. SAMUEL B. STEWART, New Orleans, La. Filed Feb. 14, 1906. Serial No. 345,596.



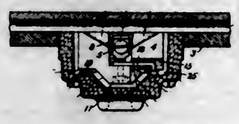
Claim.—In a filter, the combination with a casing, an inlet and an outlet near the top of said casing, said inlet and outlet provided with valves or cocks, a base portion upon which the casing rests having a central depending ring forming a chamber, a cap or covering for said chamber, a water-discharge pipe leading from said chamber, a flushing-outlet on one side of the base, a central discharge-pipe registering with said discharge-chamber, a stone rigidly mounted on said pipe, a stem rotatably mounted centrally in the top of the casing, a handle on said stem, a frame mounted on said stem and consisting of an upper and lower head or cross-piece having angular ends, flat vertical connecting-bars secured to said angular ends, a series of flat segmental curved spring-arms having one end secured to the said vertical connecting-bars, an angle-bar connected to the free ends of said curved spring-arms, a vertical scraper-bar connected to one face of the angle-bar, and a pair of coiled springs each having one end connected to the scraper-bar and their other ends connected to the upper and lower heads of the frame.

821,443. COLLAR FOR PERSONAL WEAR. JOHN THOMPSON and JOSEPH THOMPSON, Belfast, Ireland. Filed Aug. 9, 1905. Serial No. 273,436.



Claim.—A folded collar having in combination, a band having peaks deflected therefrom, an outer fold having beveled ends, said peaks being deflected over said ends.

821,444. ROSETTE. JULIUS C. TOURNIER, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Sept. 28, 1904. Serial No. 226,309.



Claim.—1. In a rosette for electrical conductors, the combination of a base-block provided at its upper part with side recesses and at its lower part with side depressions which communicate with said recesses, a contact-plate located in the recesses and depressions on each side of the block, and provided at both ends with binding-screws and an inclosing shell.

2. In a rosette for electrical conductors, the combination of an insulating base-block having in its upper part central side recesses and in its lower part diagonally-disposed side depressions each communicating with a recess, a contact-plate provided with binding-screws located in each set of connecting recesses and depressions, and a shell inclosing said base.

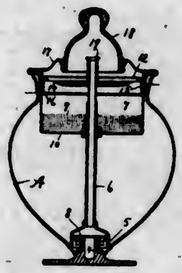
3. In a rosette for electrical conductors, the combination of an insulating-base having line-connectors on opposite sides thereof and a central transverse barrier on its lower surface, and an inclosing shell loosely supporting said base.

4. In a rosette for electrical conductors, the combination of an insulating-base having a central transverse barrier on its lower surface, contact-plates secured to the opposite sides of said base and having binding-screws in their upper ends for engaging the line-wires and in their lower ends for engaging the branch wires, and an inclosing shell provided with an internal seat for loosely supporting said base.

5. In a rosette for electrical conductors, the combination of an insulating-base having a central transverse barrier provided with a diagonal groove, binding-posts for the line-wires located on opposite sides of said base near its upper surface, binding-posts for the branch wires connected thereto and located near the lower surface of said block in line with said groove, and an inclosing shell provided with a seat for loosely supporting said base.

821,445. COFFEE-PERCOLATOR. ALONZO A. WARNER, New Britain, Conn., assignor to Landers, Frary and Clark, New Britain, Conn., a Corporation. Filed Dec. 23, 1905. Serial No. 292,943.

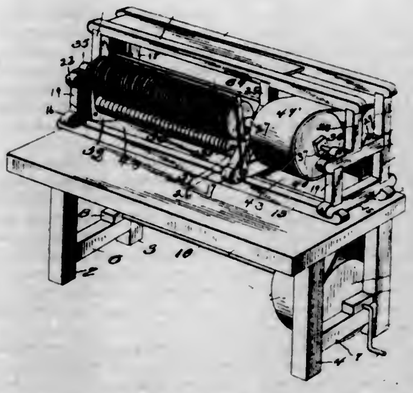
Claim.—1. A coffee-percolator comprising a vessel, a pumping-tube and means for forcing the fluid up through the tube when the vessel is properly heated, with a cup at the upper part of the said tube and vessel and a retainer for the said cup, the said cup having a suitable strainer for its lower part, an internal retainer-seat and outlets for its upper part, and the said retainer having a screen and a flanged rim fitted to the said cup for forming an annular overflow-space between the said cup and retainer.



2. In a coffee-percolator, the herein-described drip-cup having suitable draining-openings at its lower part, a retainer-seat and outlets leading therefrom, and a retainer consisting of a screen and flanged rim fitted to the said cup with an annular overflow-space between the said cup and retainer.

3. In a percolator, the combination of a drip-cup having suitable draining-openings at its lower part, an internal shoulder on its inner wall and overflow-openings above the said shoulder, with a strainer consisting of a screen and a flanged rim fitted to the said cup with the lower edge of said rim resting on the said shoulder and with the retainer-screen in a higher plane than that of the said shoulder.

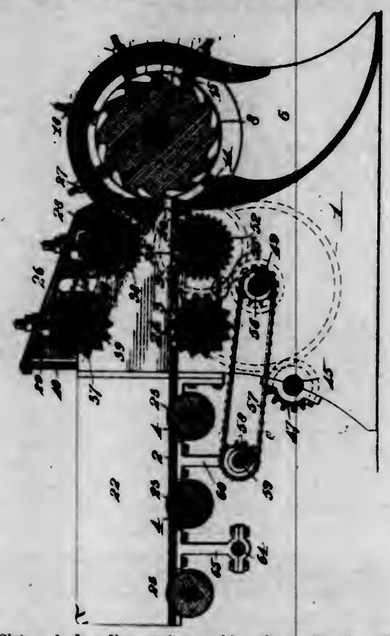
821,446. CLEANER FOR COTTON-GIN SAWS. JONATHAN N. WIGGS, Senath, Mo., assignor of one-half to John H. Bradley, Senath, Mo. Filed May 20, 1905. Serial No. 261,359.



Claim.—1. In gin-saw machinery, a table having a rotatable saw-shaft mounted thereabove, the said shaft carrying saws, a shelf disposed below the level of the said saw-shaft, curved guides mounted above the upper face of the table and extending from beneath the said saw-shaft, saw-cleaning disks, a shaft, for carrying the said disks, having its ends mounted for sliding movement in the said guides and adapted to support the said disks in alinement with and adjacent to the shelf when the said disks are thrown into operation with the said saws, means for rotating the saw-shaft and the cleaner-shaft, and means for sliding the cleaner-shaft in the aforesaid guide into and out of engagement with the saws during the operation of the machine.

2. In gin-saw machinery, a table, a saw-shaft mounted thereabove, oppositely-disposed guides arranged beneath the saw-shaft, the latter carrying saws, a cleaner-shaft mounted for rotation and sliding movement in the said guides, the cleaner-shaft carrying cleaning-disks, a crank-shaft arranged in the rear of the aforesaid shafts, connections between the cleaner-shaft and the crank-shaft, means for rotating the saw and cleaner shafts simultaneously, and connections between the cleaner-shaft and the crank-shaft whereby the latter may be moved in its guides into and out of contact with the saws of the saw-shaft during operation of the machine.

821,447. **FIBER-REDUCING MACHINE.** HERMAN S. ALBRECHT, St. Louis, Mo. Filed Oct. 10, 1904. Serial No. 227,814.



Claim.—1. In a fiber-cutting machine, the combination with a pair of upright directing-plates converging toward their inner ends, of two series of toothed feed-rollers arranged at the inner ends of the directing-plates to receive the material between them, the outer rollers of the two series being more widely separated and having larger teeth than the inner ones, a throat cutter-plate receiving the material from the inner rollers, and a cutter operating upon the material delivered from the throat cutter-plate.

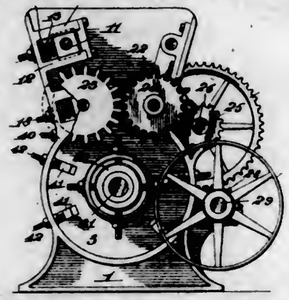
2. In a fiber-cutting machine, the combination with means for compressing the fiber and a throat cutter-plate through which the compressed material is delivered, of a cutter-casing into which the material is delivered, a plurality of cutter-bars arranged within said casing, a rotary cutter having a plurality of knives extending from one end of the cylinder to the other and pockets between the knives for holding the material cut from the supply and subjecting the same to the action of the cutter-bars within the casing, means for adjusting the rotary cutter toward the cutter-plate, and means for adjusting the cutter-bars toward the rotary cutter.

3. A feeding mechanism for fiber-cutting machines, comprising a table having transversely-extending slots, converging upright directing-plates mounted at the forward portion of the table, feed-rollers located below the table and operating in the slots, the rear two of which are toothed and are located beyond the converging directing-plates, a swinging frame yieldingly supported at one end above the lower toothed feed-rollers, and feed-rollers carried by the swinging frame, the outer one being a greater distance above the rollers below the table than the inner one.

4. In a machine of the character described, the combination of a casing, a cutter mounted in said casing, an apertured throat-plate at the entrance-way into said casing, a table leading to said throat-plate, lower feed-rollers operating through said table, an oscillating frame surmounting said table, upper feed-rollers surmounting said lower feed-rollers, boxes slidably positioned in said oscillating frame and in which said upper feed-rollers are journaled, springs surmounting said boxes, and means for yieldingly holding said oscillating frame, substantially as set forth.

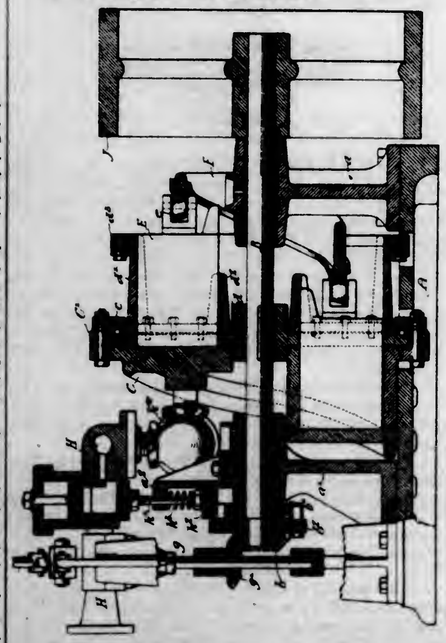
5. In a machine of the character described, the combination of a casing, a cutter mounted in said casing, an apertured throat-plate at the entrance-way into said casing, a table leading to said throat-plate, lower feed-rollers operating through said table, an oscillating frame surmounting said table, upper feed-rollers surmounting said lower feed-rollers, boxes slidably positioned in said oscillating frame and in which said upper feed-rollers are journaled, springs surmounting said boxes, and spring-controlled tension-rods connected to said oscillating frame, substantially as set forth.

821,448. **FIBER-REDUCING MACHINE.** HERMAN S. ALBRECHT, St. Louis, Mo. Filed Oct. 21, 1904. Serial No. 229,494.



Claim.—The combination of a cutter-casing having guideways on opposite sides thereof, a fixed throat cutter-bar, a presser-bar movable at its ends in said guideways, set-screws mounted in the casing, and springs each seated at one of its ends against the presser-bar and bearing at their other ends against said set-screws, substantially as set forth.

821,449. **ROTARY ENGINE.** GUSTAVE E. ANDERSON, Allegheny, Pa. Filed Aug. 9, 1905. Serial No. 273,432.



Claim.—1. An engine having an annular operating-chamber provided with a helically-formed surface substantially continuous throughout the three hundred and sixty degrees of its extent; two pistons having portions in engagement with said surface, and a cam structure for maintaining the pistons in engagement with said surface, one of the parts comprised by the pistons and the operating-chamber being revoluble relative to the other, there being an inlet for motive fluid and an exhaust-port placed to allow escape of motive fluid from the chamber when the volume of the space between the pistons has reached a maximum, substantially as described.

2. The combination of a structure formed as an operating-chamber, one of whose ends has its surface curved throughout the three hundred and sixty degrees of its extent, a cover for said chamber opposite said surface, a plurality of pistons having portions in engagement with the curved surface and movable through said cover-plate, means for revolubly supporting one of the members comprised by the cover-plate and the chamber structure, and means for maintaining the pistons in engagement with the curved surface during the revolution of said member, there being an inlet for motive fluid and a port placed to permit exhaust of the motive fluid when the plate has been moved to the point at which the motive fluid between the pistons has attained its maximum expansion, substantially as described.

3. The combination of a frame, a structure thereon formed as an annular operating-chamber, a shaft extending through said chamber concentric therewith, a plate carried by said shaft and forming a cover for the chamber, pistons carried by and movable through said cover into engagement with one end of the chamber, the surface of said end being curved throughout its extent, and means for causing movement of the pistons through said cover when the shaft is revolved, said pistons being one hundred and eighty degrees apart and there being inlet and exhaust ports two hundred and seventy degrees apart, substantially as described.

4. The combination of a frame, a structure thereon formed as an annular operating-chamber, a shaft extending through said chamber concentric therewith, a plate carried by said shaft and forming a cover for the chamber, a piston carried by and movable through said cover into the chamber, and means for causing movement of the piston through said cover when the shaft is revolved, with means for taking up wear between the piston and the cover, substantially as described.

5. The combination of a frame, a structure thereon formed as an annular operating-chamber, a shaft extending through said chamber concentric therewith, a plate carried by said shaft and forming a cover for the chamber, a piston carried by and movable through said cover into the chamber, and means for causing movement of the piston through said cover when the shaft is revolved, with a strip carried by the cover in engagement with the piston, and means for moving the strip toward the piston to take up wear thereof, substantially as described.

6. The combination of a frame, a structure thereon formed as an annular operating-chamber, a shaft extending through said chamber concentric therewith, a plate carried by said shaft and forming a cover for the chamber, a piston carried by and movable through said cover into the chamber, and means for causing movement of the piston through said cover when the shaft is revolved, with means for taking up the wear between the outer edge of the piston and the side of the chamber, substantially as described.

7. The combination of a frame, a structure thereon formed as an annular operating-chamber, a shaft extending through said chamber concentric therewith, a plate carried by said shaft and forming a cover for the chamber, a piston carried by and movable through said cover into the chamber, and means for causing movement of the piston through said cover when the shaft is revolved, with a wedge-shaped piece carried by the piston upon its outer edge having means whereby it may be moved to take up the wear between the piston and the side of the operating-chamber, substantially as described.

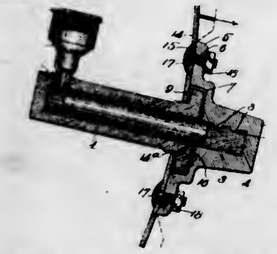
8. The combination of a frame provided with bearings, a shaft carried in said bearings, an annular structure on the frame concentric with the shaft, said structure having an operating-chamber open at one end and having a continuous helically-curved interior surface at its other end, a cover carried by the shaft and closing the open end of the operating-chamber, flat plates movable through said cover in lines parallel with the shaft, with means for pressing one edge of said plates in engagement with the curved interior surface of the end of the operating-chamber, there being inlet and exhaust ports to the operating-chamber so placed as to permit exhaust of motive fluid when the space between the plates in which it is contained has reached its greatest volume, substantially as described.

9. The combination of a supporting-frame, a structure carried thereon and formed as an annular operating-chamber, one end of said chamber being open, and the other being helically curved throughout the three hundred and sixty degrees of its extent, with its elements at right angles to the axis of the chamber, a flanged ring carried by said structure, a cover for the end of the structure opposite that having the helical curve, said cover being held in place by said ring, ball-bearings between the cover and the ring, a plurality of pistons formed as plates movable through said cover, and means for maintaining one edge of these plates in engagement with the helical surface of the operating-chamber, substantially as described.

10. An engine including a supporting-frame, a shaft revolubly carried thereon, a disk carried by said shaft, an annular structure concentric with the shaft and having an operating-chamber of which said disk forms the cover, the end of said chamber opposite said disk being curved so as to be of varying distances from said cover, guides on the cover, a plate movable in said guides and extending through the cover so as to engage the opposite ends of the operating-chamber, an annular cam for maintaining said piston in engagement with said end, and means for permitting revolution of one of the elements comprised by the shaft and the structure having the operating-chamber relatively to the other, substantially as described.

11. An engine including an annular structure formed as an operating-chamber, a shaft extending through said structure, a plate thereon serving as a cover for the operating-chamber, the end of the chamber opposite said cover being curved helically with reference to the shaft and approaching said cover a plurality of times in the three hundred and sixty degrees of the angular length of the operating-chamber, a flat plate forming a piston movable through the cover, and a cam structure engaging said piston for maintaining one edge of the same in engagement with the helical surface of the operating-chamber, substantially as described.

821,450. **COMBINED JOURNAL AND LUBRICATOR.** JOHN W. BARLOW, Kansas City, Mo., assignor to Western Implement Manufacturing Co., Kansas City, Mo., a Corporation of Missouri. Filed Jan. 19, 1906. Serial No. 296,791.



Claim.—1. In a device of the character described, a cap provided at its inner side with an axle and a recess surrounding said axle a sleeve journaled on the axle and having one end occupying said recess, and a rotary device secured rigidly to said cap and having a central hole or opening surrounding the sleeve and holding that portion of it occupying said recess reliably within the latter.

2. In a device of the character described, a cap provided at its inner side with an axle and a recess surrounding said axle, a sleeve journaled on the axle and provided with an enlargement occupying said recess and a rotary device secured to said cap fitting on the sleeve inward of said enlargement

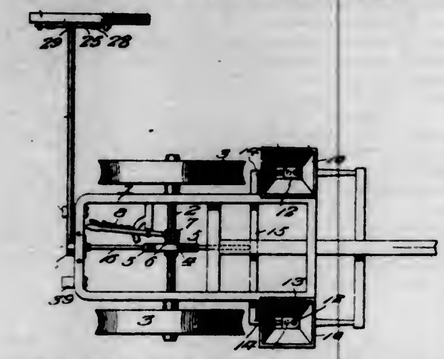
3. In a device of the character described, a cap provided at its inner side with an axle and a recess surrounding said axle, a sleeve journaled on the axle and provided with an enlargement occupying said recess, a rotary device fitting on said sleeve at the inner side of the enlargement thereof and said cap, bolts extending through said disk and cap, and retaining devices engaging said bolts and clamping the disk and cap tightly together.

4. In a device of the character described, a cap provided at its inner side with an axle and a recess surrounding said axle, a sleeve journaled on the axle and having one end occupying said recess, a rotary device secured rigidly to said cap and having a central hole surrounding the sleeve, and holding that portion of the latter occupying said recess reliably within the same, and means for forcing lubricant into said sleeve.

5. In a device of the character described, a cap provided at its inner side with an axle and a recess surrounding said axle, a sleeve journaled on the axle and having one end occupying said recess, a rotary device rigidly secured to said cap and having a central hole surrounding the sleeve, and holding that portion of the latter occupying said recess reliably within the same, a cup carried by and adapted to discharge into said sleeve, and an adjustable cap closing said cup.

6. In a device of the character described, a cap provided at its inner side with an axle and a recess surrounding said axle, a sleeve journaled on the axle and having one end occupying said recess and having its other end closed, a rotary device secured rigidly to said cap and having a central hole surrounding the sleeve and holding that portion of the latter occupying said recess reliably within the same, a lubricant-cup carried by and adapted to discharge into said sleeve, and a cap for said cup.

821,451. CORN-PLANTING MACHINE. JOSEPH S. BERRY, Wellersville, Ohio. Filed Oct. 31, 1905. Serial No. 285,905.



Claim.—1. In a corn-planter, a seed-dropping device, a land-marking device, a reciprocatory actuating member common to and for operating said devices, means for positively moving the member in one direction, and means for automatically moving the member in the other direction.

2. In a corn-planter, a seed-dropping device, a land-marking device, a longitudinally-movable actuating member operatively connected with and for operating said devices, a rotary shaft, an operating member designed for rotation therewith and adapted to operate the first-named member, and means for clamping the operating member to or releasing it from the shaft.

3. In a corn-planter, a frame, a rotary axle carried thereby and provided with transporting-wheels, an actuating member slidably sustained in the frame, a tubular supporting member extended transversely from the frame, a marker movably connected with the outer end of the supporting member, a traction element extended through the latter and operatively connected with the marker for moving the same, and operative connections between the element and actuating member.

4. In a corn-planter, a frame provided with an axle and transporting-wheels, an actuating element sustained in the frame, means operated by the wheels for moving the member, a tubular supporting member extended transversely from the frame, a marker-frame carried by the supporting member, a marker movably connected with the rear frame, a traction-rod extended through the supporting member and operatively connected with and for moving the marker, and a bell-crank lever pivotally connected adjacent the inner end of the supporting member and operatively engaged with the element and actuating member.

821,452. RHODAMIN DYE AND PROCESS OF MAKING SAME. HEINRICH A. BERNTSEN, Mannheim, Germany, assignor to Badische Anilin & Soda Fabrik, Ludwigshafen-on-the-Rhine, Germany, a Corporation. Filed Nov. 8, 1904. Serial No. 231,906. (Specimens.)

Claim.—1. The process for the production of rhodamin coloring-matters which consists in condensing phthalimid with a monoalkyl-meta-amido-phenol, saponifying the benzamid obtained and condensing the resulting product with a meta-amido-phenol.

2. The process for the production of rhodamin coloring-matters which consists in condensing phthalimid with a monoalkyl-meta-amido-phenol, saponifying the benzamid obtained, condensing the resulting product with a meta-amido-phenol, and esterifying the resulting condensation product.

3. The process for the production of rhodamin coloring-matters which consists in condensing phthalimid with a monoalkyl-meta-amido-phenol, saponifying the benzami obtained, and condensing the resulting product with para-methyl-meta-amido-phenol.

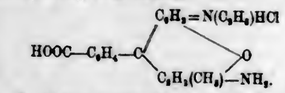
4. The process for the production of rhodamin coloring-matters which consists in condensing phthalimid with a monoalkyl-meta-amido-phenol, saponifying the benzamid obtained, condensing the resulting product with para-methyl-meta-amido-phenol, and esterifying the resulting condensation product.

5. The process for the production of rhodamin coloring-matters which consists in condensing phthalimid with monoethyl-meta-amido-phenol, saponifying the benzamid obtained, and condensing the resulting product with para-methyl-meta-amido-phenol.

6. The process for the production of rhodamin coloring-matters which consists in condensing phthalimid with a monoethyl-meta-amido-phenol, saponifying the benzamid obtained, condensing the resulting product with para-methyl-meta-amido-phenol and esterifying the resulting condensation product.

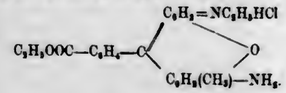
7. As new articles of manufacture the rhodamin coloring-matters obtainable by condensing a monoalkyl-rhodamin intermediate product with a meta-amido-phenol, which coloring-matters produce yellower shades of red than the rhodamins hitherto known in commerce, and in which only one hydrogen atom of the amido groups is substituted by an alkyl group.

8. As a new article of manufacture the rhodamin coloring-matter obtainable by condensing monoethyl-meta-amido-hydroxy-benzoyl-benzoic acid with para-methyl-meta-amido-phenol, which coloring-matter produces yellower shades of red than the rhodamins hitherto known in commerce, and in which only one hydrogen atom of the amido groups is substituted by an ethyl group, and which upon treatment with hydrochloric acid and a nitrite yields a colorless solution, or nearly so, which on pouring into an alkaline beta-naphthol solution produces an orange color, and which coloring-matter in the form of its hydrochloric-acid salt has the composition corresponding to the formula

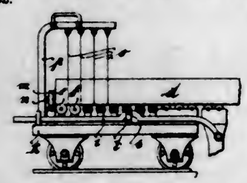


9. As new articles of manufacture the rhodamin coloring-matters obtainable by condensing a monoalkyl-rhodamin intermediate product with a meta-amido-phenol and esterifying the condensation product, which coloring-matters are completely soluble in cold water and which produce yellower shades of red than the rhodamins hitherto known in commerce, and in which only one hydrogen atom of the amido groups is substituted by an alkyl group.

10. As a new article of manufacture the rhodamin coloring-matter obtainable by condensing monoethyl-meta-amido-hydroxy-benzoyl-benzoic acid with para-methyl-meta-amido-phenol and esterifying the condensation product, which coloring-matter produces yellower shades of red than the rhodamins hitherto known in commerce, and in which only one hydrogen atom of the amido groups is substituted by an ethyl group, and which upon treatment with hydrochloric acid and a nitrite yields a red solution which on pouring into an alkaline beta-naphthol solution produces a dark precipitate and which in the form of its hydrochloric-acid salt has the composition corresponding to the formula



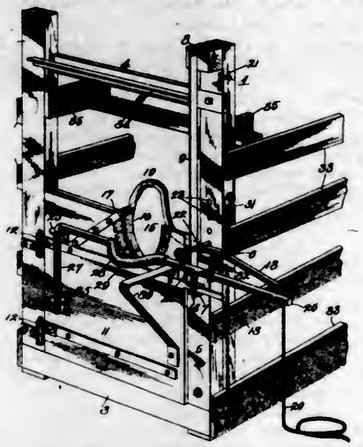
821,453. DEVICE FOR CUTTING AND SETTING BRICKS, &c. FRIEDRICH BEYER, Siegmar, Germany. Filed Feb. 29, 1904. Serial No. 195,832.



Claim.—1. A device for cutting and setting bricks made by a bar-press, comprising in combination rollers at the end of the bar of clay being provided with means adapted to move the bricks forward in groups with gaps between the end of the clay-bar and after every group of two or more bricks said means consisting of wheels *e*, *f* connected to the rollers *a*, *b* and adapted to coöperate with a bar *i* fitted on the frame of the press, substantially as described and shown and for the purpose set forth.

2. A device for cutting and setting bricks made by a bar-press, comprising in combination rollers at the end of the bar of clay being provided with means adapted to move the bricks forward in groups with gaps between the end of the clay-bar and after every group of two or more bricks, said means consisting of wheels *e*, *f* connected to the rollers *a*, *b* and adapted to coöperate with a bar *i* fitted on the frame of the press, said bar *i* being provided with means which press it against the driving-wheels *e* and *f* by a projection *s* on the frame, when the carriage separates the bricks from the mass of clay, while said means remove the bar *i* from the driving-wheels as long as the carriage moves backward and the mass of clay is being advanced, substantially as described and shown and for the purpose set forth.

821,454. DEHORNING-GATE. MARSHALL H. BIDWELL, Kansas City, Kans. Filed Jan. 16, 1906. Serial No. 296,256.



Claim.—1. A dehorning structure embodying gate-posts having slots or guideways at the upper end and latch-post side of the guideway, a gate hinged to the hinge-post, and provided with a recess in its upper edge, and a lever hinged to the gate at the side of said recess nearest the hinge-post and adapted to project through either of said slots or guideways and provided with an arched portion at its pivoted end.

2. A dehorning structure embodying gate-posts having slots or guideways at the upper end and latch-post side of the gateway, a gate hinged to the hinge-post, and provided with a recess in its upper edge, a lever hinged to the gate at the side of said recess nearest the hinge-post and adapted to project through either of said slots or guideways and provided with an arched portion at its pivoted end, and means to secure the lever depressed with its arched portion forming an opening in conjunction with said recess.

3. A dehorning structure embodying gate-posts having slots or guideways at the upper end and latch-post side of the gateway, a gate hinged to the hinge-post, and provided with a recess in its upper edge, a lever hinged to the gate at the side of said recess nearest the hinge-post and adapted to project through either of said slots or guideways and provided with an arched portion at its pivoted end, and a flexible connection attached to said lever.

4. A dehorning structure embodying gate-posts having slots or guideways at the upper end and latch-post side of the gateway, a gate hinged to the hinge-post, and provided with a recess in its upper edge, a lever hinged to the gate at the side of said recess nearest the hinge-post and adapted to project through either of said slots or guideways and provided with an arched portion at its pivoted end, a flexible connection attached to said lever, and a pin projecting outwardly from the latch-post to temporarily support said flexible connection.

5. A dehorning structure embodying gate-posts having slots or guideways at the upper end and latch-post side of the gateway, a gate hinged to the hinge-post, and provided with a recess in its upper edge, a lever hinged to the gate at the side of said recess nearest the hinge-post and adapted to project through one of said slots or guideways and provided with an arched portion at its pivoted end, a block to form a stop for the lever when depressed, and means to lock said lever upon said block.

6. A dehorning structure embodying gate-posts having slots or guideways at the upper end and latch-post side of the gateway, a gate hinged to the hinge-post and provided with a recess in its upper edge, a lever hinged to the gate at the side of said recess nearest the hinge-post and adapted to project through one of said slots or guideways and provided with an arched portion at its pivoted end, a block to form a stop for the lever when depressed, and a locking-pin to engage the latch-post above said lever.

7. A dehorning structure embodying gate-posts having slots or guideways at the upper end and a latch-post side of the gateway, a gate hinged to the hinge-post and provided with a recess in its upper edge, a lever hinged to the gate at the side of said recess nearest the hinge-post and adapted to project through one of said slots or guideways and provided with an arched portion at its pivoted end, a block to form a stop for the lever when depressed, a locking-pin to engage the latch-post above said lever, and a flexible connection between said pin and the latch-post side of the gateway.

8. A dehorning structure embodying gate-posts having slots or guideways at the upper end and latch-post side of the gateway, a gate hinged to the hinge-post and provided with a recess in its upper edge, a lever hinged to the gate at the side of said recess nearest the hinge-post and adapted to project through one of said slots or guideways and provided with an arched portion at its pivoted end, and a second lever hinged to the gate and provided forward of the same with a forwardly-projecting bowed portion.

9. A dehorning structure embodying gate-posts having slots or guideways at the upper end and latch-post side of the gateway, a gate hinged to the hinge-post and provided with a recess in its upper edge, a lever hinged to the gate at the side of said recess nearest the hinge-post and adapted to project through one of said slots or guideways and provided with an arched portion at its pivoted end, a second lever hinged to the gate and provided forward of the same with a forwardly-projecting bowed portion, and a bracket forming a support for the last-named lever between its bowed portion and free end.

10. A dehorning structure embodying gate-posts having slots or guideways at the upper end and latch-post side of the gateway, a gate hinged to the hinge-post and provided with a recess in its upper edge, a lever hinged to the gate at the side of said recess nearest the hinge-post and adapted to project through one of said slots or guideways and provided with an arched portion at its pivoted end, a second lever hinged to the gate and provided forward of the same with a forwardly-projecting bowed portion, a bracket forming a support for the last-named lever between its bowed portion and free end, and means to secure said last-named lever to the latch-post side of the gateway.

11. A dehorning structure embodying gate-posts having slots or guideways at the upper end and latch-post side of the gateway, a gate hinged to the hinge-post and provided with a recess in its upper edge, a lever hinged to the gate at the side of said recess nearest the hinge-post and adapted to project through one of said slots or guideways and provided with an arched portion at its pivoted end, a second lever hinged to the gate and provided forward of the same with a forwardly-projecting bowed portion, a bracket forming a support for the last-named lever between its bowed portion and free end, a pin rigidly projecting from the latch-post side of the gateway, and a flexible connection attached at one end to said side of the gateway and adapted to engage the last-named lever and said pin to lock the former reliably closed.

12. A dehorning-gate embodying gate-posts having slots or guideways at the upper end and latch-post side of the gateway, a gate hinged to the hinge-post, and provided with a recess in its upper edge, means to lock the gate closed, and a lever hinged to the gate at the side of said recess nearest the hinge-post and adapted to project through one of said slots or guideways and provided with an arched portion at its pivoted end.

13. A dehorning structure embodying gate-posts having slots or guideways at the upper end and latch-post side of the gateway, a gate hinged to the hinge-post, and provided with a recess in its upper edge, means to lock the gate closed, a lever hinged to the gate at the side of said recess nearest the hinge-post and adapted to project through one of said slots or guideways and provided with an arched portion at its pivoted end, and a second lever hinged to the gate and provided forward of the same with a forwardly-projecting bowed portion.

821,455. RAIL ATTACHMENT FOR PIANO-ACTIONS. FREDERICK G. BILLINGS, Milwaukee, Wis. Filed Oct. 31, 1905. Serial No. 285,354.

Claim.—1. The combination with the beaded rail of a piano-action, of a filler arranged on the front face of said rail and being provided in its rear face with a groove to receive the bead on the rail, and provided in its lower front edge with a groove; substantially as specified.

2. The combination with the beaded rail of a piano-action, of a filler arranged on the front face of said rail, and being provided in its rear face with a groove to receive the bead on the rail, and provided

in its lower front edge with a groove, and the grain of which filler extends at right angles to the grain of the rail; substantially as specified.



821,456. BOTTLE-STOPPER. HERMANN BÖGELMANN, Crefeld, Germany. Filed July 1, 1904. Serial No. 215,003.



Claim.—1. A bottle-stopper, comprising in combination, a plug, and a bail of wire which engages the plug above and has a bowed portion below adapted to embrace the bottle-neck under the head lateral portions extending from the plug to the bow and being twisted to form a coil above the said bowed portion at each side, substantially as described.

2. A bottle-stopper, comprising in combination, a horizontally-perforated plug, and a bail of wire which passes through the hole in the plug and has a bowed portion below adapted to embrace the bottle-neck under the head, lateral portions extending from the plug to the bow and being twisted to form a coil above the said bowed portion at each side, substantially as described.

3. A bottle-stopper, comprising in combination, a plug having a hemispherical horizontally-perforated head, and a bail of wire which passes through the hole in the plug and has a bowed portion below adapted to embrace the bottle-neck under the head, lateral portions extending from the plug to the bow and being twisted to form a coil above the said bowed portion at each side, substantially as described.

821,457. PRODUCTION OF CYANOGEN COMPOUNDS. CARL BOSCH, Ludwigshafen-on-the-Rhine, Germany, assignor to Badische Anilin & Soda Fabrik, Ludwigshafen-on-the-Rhine, Germany, a Corporation of Germany. Filed Apr. 1, 1905. Serial No. 253,818.

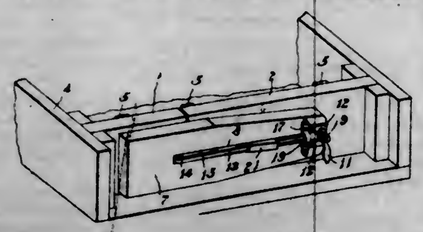
Claim.—1. The process for the production of technically-pure cyanogen compounds which consists in distilling crude cyanid melts with an ammonium salt in the presence of water.

2. The process for the production of technically-pure cyanogen compounds which consists in distilling in a vacuum crude cyanid melts with an ammonium salt in the presence of water.

3. The process for the production of technically-pure alkali cyanid which consists in distilling in a vacuum crude cyanid melts with an ammonium salt in the presence of water and treating the ammonium cyanid which distils over with caustic alkali.

4. The process for the production of technically-pure sodium cyanid which consists in heating in a vacuum crude cyanid melts with an ammonium salt in the presence of water and treating the ammonium cyanid which distils over with caustic soda.

821,458. COMBINED END-GATE AND LIFTING-JACK. ORSON BUCKLIN, Marietta, Minn. Filed Jan. 13, 1906. Serial No. 296,974.



Claim.—1. A device of the class described comprising hinged end-gate sections, a bar rigidly carried by one of the sections and overlapping the other section, a lifting-bar working upon the end-gate bar and pivotally connected to the other end-gate section, the first-mentioned end-gate section constituting a lifting-jack standard, and the other end-gate section constituting a lever for actuating the lifting-bar.

2. A device of the class described comprising hinged end-gate sections, a bar rigidly carried by one of the sections and overlapping the other section, said bar having a longitudinal slot, and a lifting-bar working in the slot and pivotally connected to the other end-gate member, the first-mentioned end-gate member constituting a lifting-jack standard, and the other end-gate member constituting a lever for actuating the lifting-bar.

3. A device of the class described comprising hinged end-gate members, a bar rigidly carried by one of the members and overlapping the other member, said bar having a bifurcation which intersects its free end, a lifting-bar mounted in the bifurcation and working through the outer end thereof and pivotally connected to the other end-gate member.

4. A device of the class described comprising hinged end-gate members, a bar rigidly carried by one of the members and overlapping the other member, said bar having a longitudinal bifurcation intersecting its free end and extending across the first-mentioned end-gate member, a lifting-bar working in the bifurcation, and an arm carried by the other end-gate member and pivotally connected to the inner end of the lifting-bar, said link projecting beyond the inner end of said other end-gage member and overlapping the first-mentioned end-gate member within the inner end of the bifurcation when the device is in use as an end-gate.

5. A device of the class described comprising hinged end-gate members, a longitudinally-slotted bar rigidly carried by one of the end-gate members and overlapping the other member, a lifting-bar working in the slot, a connection between the lifting-bar and the other end-gate member, said other member constituting a lever for controlling the lifting-bar, and a foot carried by the lifting-bar capable of being folded into the slot when the device is in use as an end-gate.

6. A device of the class described comprising hinged end-gate members, a longitudinally-slotted bar rigidly carried by one of the end-gate members and overlapping the other member, a lifting-bar working in the slot, a connection between the lifting-bar and the other end-gate member, said other member constituting a lever for controlling the lifting-bar, and a foot adjustable longitudinally upon the lifting-bar and foldable into the slot when the device is in use as an end-gate.

7. A device of the class described comprising hinged end-gate members, a longitudinally-slotted bar rigidly carried by one of the end-gate members and overlapping the other member, a lifting-bar working in the slot and connected to the other end-gate member which constitutes a lever for moving the lifting-bar, one edge of the lifting-bar being toothed, and a foot slidably straddling the lifting-bar and provided with transverse shoulders for respective engagements with the toothed side of the lifting-bar and the opposite side thereof, said foot capable of being folded into the slot when the device is in use as an end-gate.

8. A device of the class described comprising a base, a slotted standard rigidly rising from one side of the base, a lever hinged to the other side of the base, a lifting-bar working in the slot of the standard, and a connection between the lever and the lifting-bar for elevating the latter by moving the lever.

9. A device of the class described comprising a base, a slotted standard fixed upon one side of the base with its slot overlapping the base, a lever hinged to the other side of the base, a lifting-bar working in the slot of the standard, and an arm carried by the inner end of the lever and pivoted to the lifting-bar, the inner end of the lifting-bar and the projecting portion of the link lying in the inner end of the slot across the base when the lever is folded against the standard.

10. A lifting-jack having a lifting-bar and a foot carried by the bar and foldable against the same.

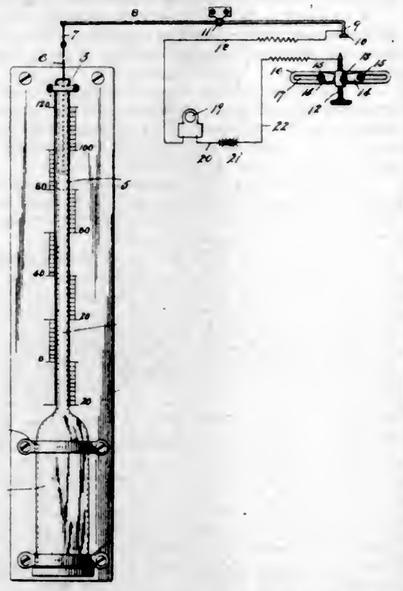
11. A lifting-jack having a lifting-bar, and a foot slidably adjustable upon the bar and capable of being folded thereagainst.

12. A lifting-jack having a toothed lifting-bar, means for elevating the bar and a slotted foot slidably embracing the bar independent of the elevating means and provided with shoulders for respective engagements with the toothed side of the bar and the opposite side thereof.

13. A lifting-jack having a toothed lifting-bar, and a foot having a longitudinal slot receiving the bar, flanges rising at opposite sides of the slot, and a pin extending between the flanges above the bottom of the foot for engagement with the teeth of the bar, the front wall of the slot being adapted to engage the front side of the lifting-bar, said foot capable of being swung upon the pin as a center to fold the foot against the bar.

14. A lifting-jack having a lifting-bar, and a lifting-foot carried thereby, the lifting-foot being provided with spaced upstanding longitudinal flanges and a terminal flange terminating short of the tops of the longitudinal flanges.

821,459. SIGNALING DEVICE. NEAL A. BUTLER, Hampton, Va., assignor of one-half to W. H. Boyenton, Hampton, Va. Filed Aug. 4, 1905. Serial No. 272,660.



Claim.—1. The combination with a thermometer and plunger therein, a pivoted lever, a rod and link connecting the lever and plunger, a contact-point on the lever, of a slotted plate, a sleeve adjustably secured thereto, and a screw in the sleeve adapted to be contacted by the first point.

2. The combination with a thermometer, a plunger therein, a lever connected with the plunger and having a contact-point, of a slotted plate and a sleeve adjustably secured thereto, a contact-screw in the sleeve, and an electric circuit and signaling device between the two contact-points.

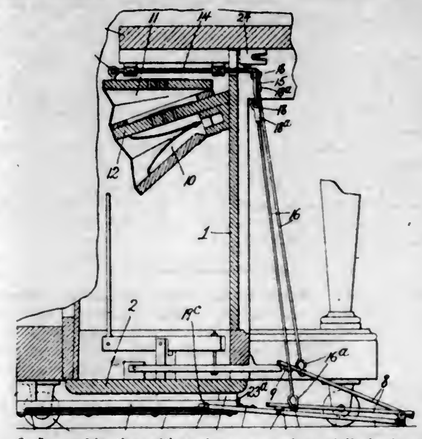
3. The combination with a thermometer having a plunger mounted therein, a pivoted lever, a rod and link connecting the same, a contact-point on the lever, a second contact-point consisting of a screw and sleeve, a slotted plate and adjusting-screw for attaching the sleeve to said plate, and an electric circuit and signal between said points.

4. The combination with a pivoted lever and link secured thereto, a contact-point on the lever, a second contact-point consisting of a screw and sleeve, a slotted plate to which the sleeve is adjustably secured, an electric circuit containing a signal connected between the contact-points, a thermometer having an enlarged bulb, a plunger in the tube thereof, said plunger connected with the link of the lever.

821,460. DISAPPEARING PEDAL FOR AUTOMATIC PIANOS. MELVILLE CLARK, Chicago, Ill. Filed Nov. 10, 1905. Serial No. 286,645.

Claim.—1. In combination with the bottom board of a piano-case, a pumper-pedal frame and pumper-pedals mounted thereon adapted to pass under the bottom board, and slide-bars for such frame supported on the under side of the bottom board.

2. In combination with a piano-case, parallel, substantially horizontal slideways extending fore and aft at the lower part of the case, the pedal-frame supported and adapted to slide on said slideways; pedals mounted on such frame and pumper-operating connections detachably connected to the pedals.



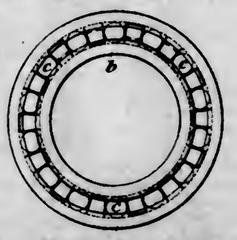
3. In combination with a piano-case, substantially horizontal fore-and-aft slideways at the lower part of the case; a pedal-frame mounted for sliding on said slideways adapted to be drawn thereon forward of the front board; pedals mounted on such frame and pumper-operating connecting-rods detachably connected at one end to the pedals respectively, and the pumper-operating levers to which the other ends of said rods are connected forward of the front board.

4. In combination with a piano-case, substantially horizontal fore-and-aft parallel slideways mounted on the case at the lower part; a pedal-frame adapted to be supported and to slide on said slideways, said frame having outwardly-extending stop-pins at the rear end; check-bars extending above the slideways respectively parallel thereto, overhanging the path of the stop-pins; stops at the forward ends of said check-bars in the path of the pins, the slideways being cut away at the forward ends to permit the pedal-frame to fulcrum thereon for swinging downward when the stop-pins reach the stops.

5. In combination with a piano-case, parallel fore-and-aft slideways suspended from the under side of the bottom board; a pedal-frame mounted for sliding on such slideways and pedals thereon, said frame and pedals being adapted to pass entirely under the bottom board in such sliding.

6. In combination with a piano-case having a bottom board, means for supporting the same to hold the bottom board slightly elevated from the floor; horizontal fore-and-aft slideways mounted on the under side of the bottom board; a pedal-frame and pedals thereon adapted to pass under the bottom board, said frame running on said slideways, and detachable pumper-operating connections at the forward side of the front board.

821,461. BALL-BEARING. ROBERT CONRAD, Berlin, Germany. Filed May 10, 1904. Serial No. 207,330.



Claim.—1. In a ball-bearing, the combination with the balls, of intermediate devices forming substantially closed walls in contact with the balls, a pair of such devices being between each pair of balls and the devices of such pair being pressed apart yieldingly.

2. In a ball-bearing, the combination with the balls, of intermediate devices forming substantially closed walls in contact with

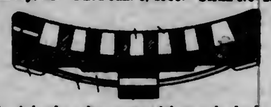
the balls, a pair of such devices being between each pair of balls, and a yielding body between and attached to the devices of such pair.

3. In a ball-bearing, the combination with the balls, of intermediate devices of substantially disk shape in contact with the balls, a pair of such devices being between each pair of balls and the devices of each such pair being pressed apart yieldingly.

4. In a ball-bearing, the combination with the balls, of intermediate devices forming substantially closed walls in contact with the balls, a pair of such devices being between each pair of balls, and a yielding body between and attached to the devices of such pair, each extremity of the yielding body employed engaging with a recess arranged in said devices.

5. In a ball-bearing, the combination with the balls, of intermediate devices forming substantially closed walls in contact with the balls, a pair of such devices being between each pair of balls, and a yielding body between and attached to the devices of such pair by a non-rotative connection so as to prevent relative movement of said devices and the yielding body.

821,462. **BRAKE-SHOE.** JOHN C. CORBEY and PATRICK J. BRADY, Harvey, Ill. Filed Jan. 6, 1906. Serial No. 294,905.

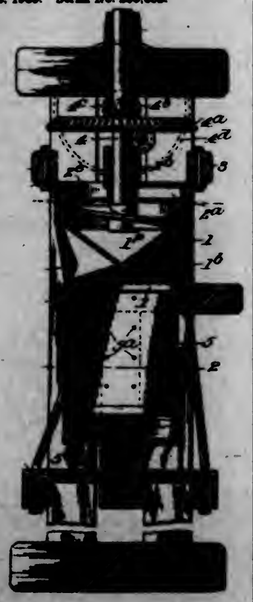


Claim.—1. A brake-shoe comprising a body having parallel webs or ribs along the back thereof, and truss-rods seated along the edges of said ribs and having their extremities inserted in the body of the shoe.

2. A brake-shoe provided with ribs or webs extending along its back and having their edges concaved to provide gutters, and truss-rods extending lengthwise of the ribs and seated in said gutters and having their ends connected fast to the body of the shoe.

3. A brake-shoe provided with a pocket extending lengthwise of the center of its working face and having a plurality of extensions leading off laterally from opposite sides thereof, and a pouring-hole located centrally of one end of the shoe in line with the main body portion of said pocket, and a chilled filling for said pocket introduced in the form of molten metal and chilled by contact with the body of the shoe, substantially as described.

821,463. **PACKING-MACHINE.** JOHN B. CORNWALL, Moline, Ill., assignor to Barnard and Leas Manufacturing Company, Moline, Ill. Filed Dec. 6, 1905. Serial No. 290,658.



Claim.—1. In a packing-machine, a packing-case, having a constriction in its lower end, and an auger operating in the case.

2. In a machine for packing light materials, the combination of a packing-case; with a packing-auger located in the upper end of the case, and a constriction in the case below the auger, substantially as described.

3. In a packing-machine, the combination of a packing-case having a constriction in its walls, and with a packing-auger operating in the case above the constriction, substantially as described.

4. In a packing-machine, the combination of a packing-case angular in cross-section, and having a constriction below the auger; with a packing-auger operating in the upper end of the case.

5. In a packing-machine, the combination of a packing-case having a plurality of constrictions; with a packing-auger operating in the case above the constrictions, substantially as described.

6. In a packing-machine, the combination of a perforated packing-case rectangular in cross-section, and having a constriction in its lower end; with a packing-auger operating in the case above the constriction.

7. In a packing-machine, the combination of the packing-case comprising an upper hopper portion, provided with a constriction near its lower end and beneath the lowest portion of the auger, and a tubular body portion suspended from the hopper portion; with a packing-auger, substantially as described

8. In a packing-machine, the combination of the packing-case comprising an upper hopper portion, and a body portion suspended from the hopper portion and provided with a constriction near its lower end; with a packing-auger.

9. In a packing-machine, the combination of a packing-case comprising an upper hopper-shaped portion provided with a constriction near its lower end, and a lower portion suspended from the hopper portion and provided with a constriction near its lower end; with a packing-auger, substantially as described.

10. In a packing-machine, the combination of a packing-case comprising an upper hopper-shaped portion provided with a constriction near its lower end, and a lower portion suspended from the hopper portion, and angular in cross-section, and provided with an inwardly-projecting flange or constriction near its lower end; with a packing-auger operating in the hopper above the constriction thereof, substantially as described.

11. In a packing-machine, the combination of a packing-auger and a packing-case comprising an upper hopper portion, provided with a constriction near its lower end extending beneath the lower end of the auger, and a tubular body portion suspended from the hopper portion; with means for operating the auger, and a movable platform to support the receptacle while being filled, substantially as described.

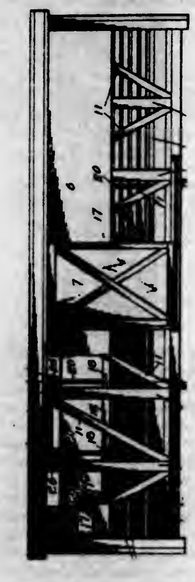
12. In a packing-machine, the combination of a packing-auger and a packing-case comprising an upper hopper portion, and a body portion suspended from the hopper portion and provided with a constriction near its lower end extending beneath the lower end of the auger; with means for operating the auger, and a movable platform to support the receptacle while being filled, substantially as described.

13. In a packing-machine, the combination of a packing-case comprising an upper hopper-shaped portion provided with a constriction near its lower end, and a lower portion suspended from the hopper portion and provided with a constriction near its lower end; with a packing-auger; means for operating the auger, and a movable platform to support the receptacle while being filled, substantially as described.

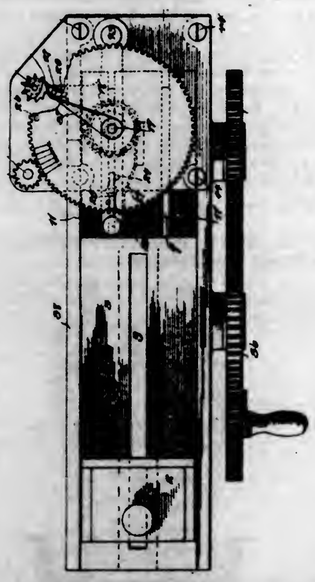
821,464. **CONVERTIBLE CAR.** JOHN K. COTHERN, Bowie, Tex. Filed June 26, 1905. Serial No. 267,033.

Claim.—1. The combination with a wall for cars having an open portion, of a closure for the open portion arranged for movement into and out of operative position, a jack-screw revolubly mounted in the wall, means for revolving the jack-screw, an ear carried by the closure and having a threaded perforation therein in which the jack-screw is engaged, said closure being arranged for movement into and out of operative position through rotation of the jack-screw, a notched disk carried by the jack-screw and a dog movable into and out of engagement with the notched disk to hold the jack-screw against rotation.

2. In a car, the combination with a wall including a lower open portion and an upper closed portion, of jack-screws mounted in the wall, a supplemental wall, ears carried by the supplemental wall and having threaded perforations in which the jack-screws are engaged, connections between the jack-screws for simultaneous operation thereof, a notched disk carried by one of the jack-screws, a dog pivoted for vertical movement into and out of engagement with the notches of the disk to hold the screws against movement, said dog being arranged to lie normally in operative position under the action of gravity, a rod connected with the dog, and a hook arranged for the reception of the rod to hold it with the dog in inoperative position.



821,465. **TICKET COUNTING AND CANCELING MACHINE.** WILLIAM J. COULTER, Lorain, Ohio. Filed July 17, 1905. Serial No. 269,994.



Claim.—1. In a counting and canceling machine, the combination of a spring-propelled automatic feeding device, a metallic friction-roller, a reversing register, a canceling device and means for operating the same, substantially as specified.

2. In a ticket-counting machine, the combination with a facewise feed, of a separating and transposing carrier, and means adapted to be automatically operated by the tickets in engagement with said carrier, to count said tickets and register the count, substantially as specified.

3. A ticket-counting machine having in combination with a facewise feed, means for separating the tickets and transposing them from facewise to edgewise succession, and ticket-operated means for count-registering devices, substantially as specified.

4. A ticket-counting machine having in combination with a facewise feed, rotary frictional means for separating the tickets and transposing them from facewise to edgewise succession, and means for positively moving such tickets in edgewise succession to operate the counting and registering devices, substantially as specified.

5. In a ticket-counting machine, the combination with the feed, of a recessed transposing and separating roller and a seat in close apposition to said roller whereby the feed is changed from facewise to regular edgewise progression, substantially as specified.

6. In a ticket-counting machine, the combination with a facewise feed, and rotary frictional means for transposing and separating the tickets and carrying them in regular edgewise succession, of means for counting and registering said tickets, substantially as specified.

7. In a ticket-counting machine, a transposing-roller having recesses at regular intervals in its periphery, and friction-plates depressed in said recesses, substantially as specified.

8. In a ticket-counting machine, the combination with a longitudinal feedway and means for feeding the tickets facewise thereon, of a semicylindrical seat at the end of said feedway, a recessed transposing-roller in close apposition to said seat, and depressed friction-plates in said roller, substantially as specified.

9. In a ticket-counting machine, the combination with an automatic feed of a transposing and separating friction-roller, its slotted seat, ticket-operated sprocket-wheels, their shaft, and count-registering devices in gear with said shaft, substantially as specified.

10. A ticket-counting machine, having a facewise feed, a transposing and separating carrying-roller, a slotted seat therefor, ticket-operated sprocket-wheels, their shaft, count-registering devices and gearing connecting the latter with said shaft, substantially as specified.

11. In a ticket-counting machine, the combination with a facewise feed, and count-registering devices, of a transposing and separating ticket-carrier, a slotted seat therefor, ticket-operated counting devices, and gearing connecting said counting devices and count-registering devices, substantially as specified.

12. In a ticket-counting machine, the combination with a feedway, terminating in a semicylindrical slotted seat, spring-actuated feeding devices, a transposing and separating carrying-roller, ticket-operated sprocket-wheels, their shaft, adjustable registering-dials, gearing in connection with said shaft and dials, an adjusting-lever, and means for resetting the dials, substantially as specified.

13. In a ticket counting and canceling machine, the combination with an automatic feed, count-registering devices and canceling-rolls, of a transposing and separating roller, its slotted seat, ticket-operated counting-wheels in gear with said count-registering devices, ticket-guiding fingers, and ticket-clearing fingers, substantially as specified.

14. In a machine of the class described, a separating and transposing carrier, ticket-counting means in the path of the tickets on the carrier, and ticket-canceling means, substantially as specified.

15. In a machine of the class described, a separating and transposing carrier having engagement with means for holding the tickets against movement, and ticket-counting means having a toothed wheel in the path of the tickets on the carrier, substantially as specified.

16. In a machine of the class described, means for separating and transposing the tickets in succession, means for holding the tickets against movement with relation to the separating and transposing means while in transit, and ticket-counting means in the path of the tickets, substantially as specified.

17. In a machine of the class described, a feeding means, means for separating and transposing the tickets in succession, means for holding the tickets against movement with relation to the separating and transposing means while in transit, and ticket-counting means in the path of the tickets, substantially as specified.

18. In a ticket counting and canceling machine, the combination of ticket-feeding means, ticket-counting means, and ticket-canceling means including a grooved roller, and a toothed roller the teeth of which engage the grooves of the grooved roller, substantially as specified.

821,466. GARMENT-CLASP. JOHN P. CROARMAIN, Berwyn, Pa., assignor to Frank A. Freeman, Philadelphia, Pa. Filed June 15, 1905. Serial No. 265,447.



Claim.—1. In a garment-clasp, the combination of a supporting web or cord, a button member secured thereto, a coöperating apertured member pivotally secured to the button member, a lever operating between said two members to lock them in the closed position having a manually-operative arm overlying the apertured member, and a body secured to the button member having an extension parallel with the axis of movement of the apertured member and inclined from said apertured member toward the web or cord.

2. In a garment-clasp, the combination of a button member, a button of yielding or resilient material secured thereto, an apertured member for coöperating therewith pivoted to the button member, a locking-lever operating between said two members having a manually-operative arm overlying the pivoted member and terminating in close proximity to the button and substantially flush with the top thereof.

3. In a garter-clasp, the combination of a button member having a flat extension and struck-up sides, an apertured member lying between and pivotally secured to said struck-up sides, a locking member operating between said two members and said struck-up sides and having a manually-operative arm overlying the pivoted member, said button member having a bent-over portion forming an inclined surface between the pivoted member and the flat side of the button member.

4. In a garment-clasp, the combination of a supporting cord or web, a button member secured to said cord or web and having a flat extension and struck-up sides, an apertured member lying between and pivotally secured to said struck-up sides, a locking member operating between said two members and said struck-up sides having a manually-operative arm overlying the pivoted member, said button member having a bent-over portion forming an inclined surface between the pivoted member and the supporting cord or web.

821,467. RAIL-FASTENING DEVICE. JOHN L. DAHL, Weehawken, N. J. Filed Sept. 21, 1905. Serial No. 279,485.



Claim.—1. The combination with a railway-tie having perforations, and a rail resting upon said tie and having a base portion formed with oppositely-inclined upper surfaces, of a bolt arranged transversely to the rail beneath the tie and having upwardly-extending diverging threaded ends, each of said ends being disposed at a right angle with respect to the adjacent inclined portion of the rail-base, and a nut upon each of the threaded ends of the bolt, each of the nuts being sufficiently large to overlap the adjacent inclined portion of the rail-base.

2. The combination with a metallic railway-tie having elongated perforations therein and a rail resting upon said tie, and having a base portion formed with oppositely-inclined upper surfaces, of a bolt arranged transversely to the rail beneath the tie and having upwardly-extending diverging threaded ends, each of said ends being disposed at a right angle with respect to the adjacent inclined portion of the rail-base, a washer surrounding each of the threaded ends, one side of each washer resting upon the adjacent inclined portion of the rail-base and being parallel therewith, and the opposite side of each washer contacting with the rail-tie and a nut upon each of the threaded ends for holding the washer in place, each of the nuts being sufficiently large to overlap the adjacent inclined portion of the rail-base.

3. The combination with a metallic railway-tie having a perforation and a rail resting upon said tie and having a base portion formed with an inclined upper surface of a bolt extending through the perforation of the rail-tie and having a threaded end disposed at a right angle with respect to the inclined surface, and a nut on the threaded end overlapping the inclined surface.

4. In a railway-tie fastening consisting of a U-shaped bolt having its ends extended through the tie and serving to clamp a rail to the tie, a deflected end to the bolt provided with a nut overlapping and bearing down upon the top of the rail-base and inclined to have an extended bearing on the rail-base, substantially as described.

821,468. TOY. RAYMOND G. DASHIELL, Baltimore, Md. Filed Nov. 28, 1905. Serial No. 289,401.

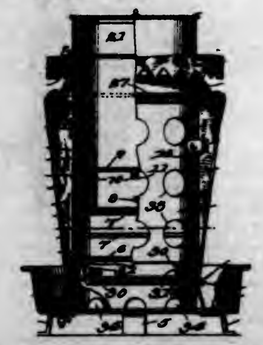


Claim.—1. A toy comprising a casing having an open end and a closed end and having registering longitudinal slots therein terminating short of the open end, said slots each having a lateral enlargement at its end opposite to the open end of the casing, said enlargements extending in opposite directions, a follower in the casing, guide members carried by the follower and engaged in the slots, said members being movable simultaneously into and out of the enlargements of the slots, a spring disposed between the follower and the closed end of the casing, a figure mounted upon the follower, and a plate secured to the figure, said figure being movable with the follower into and out of the casing, said plate being arranged to close the open end of the casing when the figure is within the latter.

2. In a toy, the combination with a casing having an open end, of a figure movable into and out of the casing, means for limiting the outward movement of the figure, means for holding the figure at the outward limit of its movement, means for holding the figure within the casing, an arm pivoted to the figure and disposed for engagement with the casing when the figure is moved in one direction to move the arm upon its pivot, and a plate carried by the figure and arranged to close the open end of the casing when the figure is within the latter.

3. In a toy, the combination with a casing having an open end, of a figure movable into and out of the casing, an arm pivoted at one end to the figure for movement of its opposite end toward and away from the figure, means for holding the arm yieldably with its free end at the limit of its movement away from the figure, said arm when in such position being disposed for engagement of the casing for movement of the arm toward the figure when the figure is moved into the casing, and a fan secured at one side to the arm and at its other side to the figure.

821,469. COOLER. JAMES O. DAUGHTRY, Hugo, Ind. Ter. Filed June 13, 1905. Serial No. 265,076.

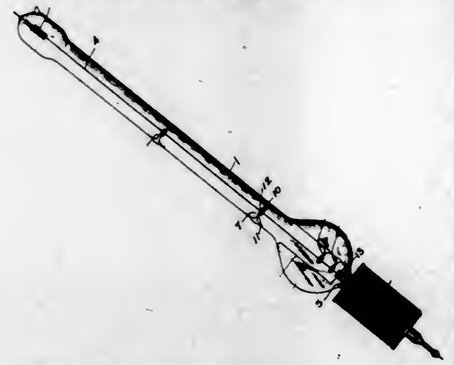


Claim.—1. In a cooler, a pan constituting a base, a bottom member supported in said pan, a top member fitted within and connected detachably with the upper end of said bottom member; said bottom and top members having coinciding door-openings and said top member being resilient to enable it to be sprung and telescoped upon the bottom member.

2. In a cooler, a pan constituting a base, a bottom member supported in said pan, a top member fitted within and connected detachably with the upper end of said bottom member; said bottom and top members having coinciding door-openings and said top member being resilient to enable it to be sprung and telescoped upon the bottom member; in combination with a door hingedly and detachably connected with the bottom and top members.

3. In a cooler, a bottom member, and a top member fitted within and connected detachably with the upper end of the bottom member; said top member being resilient and provided with an opening to enable it to be sprung and telescoped upon the bottom member.

821,470. ELECTRIC LAMP. JOHN T. H. DEMPSTER, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Dec. 19, 1903. Serial No. 185,770.



Claim.—1. The combination of an exhausted envelop, a filament therein, and an anchoring device for the filament consisting of a support and a bushing carried by the support and loosely surrounding the filament.

2. The combination of an exhausted envelop, a filament therein, and an anchoring device for the filament consisting of a support and a carbon bushing carried by the support and loosely surrounding the filament.

3. The combination of an exhausted envelop, a filament therein, and an anchoring device for the filament consisting of a support and a bushing carried by the support and loosely surrounding the filament, said bushing being of the same material as the filament.

4. The combination of an exhausted envelop, a filament therein, and an achoring device for the filament consisting of a support and a refractory bushing carried by the support and loosely surrounding the filament.

5. The combination of a filament, and a plurality of anchoring devices therefor, each having an engaging surface of carbon loosely embracing said filament.

6. The combination of an exhausted envelop, a filament therein, and a plurality of anchoring devices for the filament located at points along the filament, each anchoring device consisting of a support carrying a bushing loosely engaging said filament.

821,471. LOCKING DEVICE FOR SCREWS AND NUTS. CHARLES H. DEWETT and WALTER J. GRIFFITHS, London, England. Filed Sept. 9, 1905. Serial No. 277,649.



Claim.—1. In a device for holding screws and nuts against becoming unscrewed, the combination with a member to be turned, having a hole therein at about right angles to the axis thereof, of a locking-piece comprising a shank adapted to be inserted in the hole in the said member and a bent gripping portion adapted to be forced into contact with the surface of the part to which the said member is to be screwed.

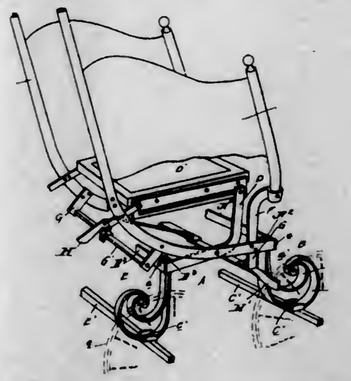
2. In devices for holding screws and nuts against becoming unscrewed; the combination with a screw having a hole extending entirely through the same at about right angles to the axis; of a steel-wire locking-piece composed of a shank and two bent end gripping portions, means for inserting the shank in said hole in the screw, the bent end gripping portions being inclined at opposite angles, the extremities of the bent gripping portions being both forced into gripping contact with the aforesaid surface, the pressure of the extremities of the bent portions upon the surface of the part receiving the said screw being maintained by torsion set up in the shank substantially as set forth.

3. In devices for holding screws and nuts against becoming unscrewed; the combination with a screw having a hole extending entirely through the same; of a steel-wire locking-piece, composed of a shank and two bent end portions, said shank being located in said hole, the bent end portions being turned downward toward the surface of the part receiving the nut or screw, and being inclined at opposite angles to the vertical, the extremities of the bent gripping portions being both forced into gripping contact with the aforesaid surface of the part receiving said screw, the pressure of said gripping portions being maintained on the said surface by the torsion set up in the shank, substantially as set forth.

4. In devices for holding screws and nuts against becoming unscrewed; the combination with a screw having a hole extending entirely through the same and having a slot cut across and extending down into the hole; of a steel-wire locking-piece of half-round section, composed of a shank and two bent end portions, said shank being inserted in said hole through said slot in the screw, the bent ends being turned downward toward the surface of the part receiving the screw, and being inclined at opposite angles to the vertical, the extremities of the bent gripping portions being both forced into contact with the surface of the part receiving the said screw, the pressure of said bent gripping portions being maintained on said surface by the torsion set up in said shank, substantially as set forth.

5. In a device for holding screws and nuts against becoming unscrewed, the combination with a member to be turned, having a hole therein at about right angles to the axis thereof, of a locking-piece comprising a shank adapted to be inserted in the hole in the said member, a bent gripping portion adapted to be forced into contact with the surface of the part to which the said member is to be screwed and means for preventing said shank member from turning.

821,472. SPRING FOR CHILDREN'S CARRIAGES. WILLIAM DIEMER, Toledo, Ohio, assignor to Gendron Wheel Company, Toledo, Ohio, a Corporation of Ohio. Filed Oct. 7, 1905. Serial No. 281,723.

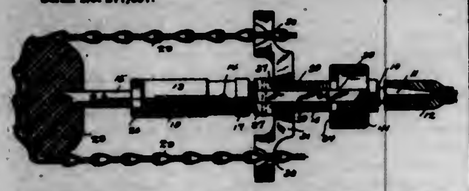


Claim.—1. In a child's carriage, the combination with a push-frame and a front axle connected thereto, of a seat-frame pivoted on said push-frame and having its lower ends bent laterally to form an angle, a rear axle, springs comprising pairs of C-springs, each pair being secured together at one end and attached to said rear axle at an intermediate point on one of said C-springs, and means for securing the other ends of each pair together and to the angled ends of said seat-frame.

2. In a child's carriage, the combination with frames secured together and having their lower ends bent laterally, of front and rear axles and springs comprising pairs of C-springs, each pair being se-

cured together at their ends and secured to one of said axles at an intermediate point on one of the springs, one end of each pair of springs being secured to the angled end of one of said frames, for the purpose described.

821,478. AUTOMATIC CHAIN-FEED DRILLING ATTACHMENT. JOSEPH S. DUNHAM, Torrington, Conn. Filed Sept. 9, 1905. Serial No. 277,697.



Claim.—1. In a device of the character described the combination with a drill-carrying shank and an externally-threaded sleeve through which the shank passes loosely, of a nut on said sleeve having means for connecting it with the work to be drilled, a relatively fixed gear through which the sleeve passes loosely, a feeding-gear concentric with the fixed gear and secured to the sleeve, said feeding-gear having one tooth more than the fixed gear, a pinion carried by the shank and engaging both the fixed gear and the feeding-gear, whereby the rotation of said pinion about the gears will impart slight rotary movement to the feeding-gear and will feed the sleeve forward, and disconnectible means between the nut and the relatively fixed gear for preventing rotation of the one relatively to the other.

2. In a device of the character described the combination with a drill-carrying shank and an externally-threaded sleeve through which the shank passes loosely and which is provided with a reduced end, of a nut on said sleeve having means for connecting it with the work to be drilled, a gear carried by a plate loose on the reduced end of the sleeve, disconnectible means between the nut and the gear-plate for locking said plate and gear against rotation, a feeding-gear concentric with the other gear and secured to the sleeve, said feeding-gear having one more tooth than the other gear, and a pinion carried by the shank and engaging both of said gears, substantially as described, for the purpose specified.

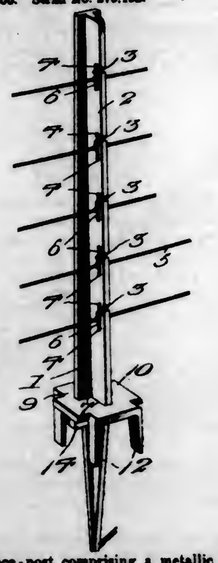
3. In a device of the character described the combination with a drill-carrying shank, an externally-threaded sleeve through which the shank passes loosely and which is provided with a reduced end and a cross-piece having a threaded opening through which the sleeve passes, of a gear carried by a plate loose on the reduced end of the sleeve, a movable latch carried by the cross-piece and adapted to lock the plate and gear against rotation, or to unlock them, a feeding-gear concentric with the other gear and secured to the sleeve, said feeding-gear having one more tooth than the other gear, and a pinion carried by the shank and engaging both of said gears, substantially as described, for the purpose specified.

4. In a device of the character described the combination with a drill-carrying shank, an externally-threaded sleeve through which the shank passes loosely and which is provided with a reduced end and a cross-piece having a threaded opening through which the sleeve passes, of a gear carried by a plate loose on the reduced end of the sleeve, a movable latch carried by the cross-piece and adapted to lock the plate and gear against rotation, or to unlock them, a spring for retaining the latch in the locking position, a feeding-gear concentric with the other gear and secured to the sleeve, said feeding-gear having one more tooth than the other gear, and a pinion carried by the shank and adapted to travel about the locked gear and the feeding-gear whereby rotary movement is imparted to the feeding-gear, substantially as described, for the purpose specified.

5. In a device of the character described the combination with a drill-carrying shank, an externally-threaded sleeve through which the shank passes loosely and which is provided with a reduced end and a cross-piece having a threaded opening through which the sleeve passes, of a plate through which the reduced end of the sleeve passes loosely and which is provided with a locking-notch, a gear carried by said plate, a latch carried by the cross-piece and having sliding engagement with the locking-notch to lock the plate and gear against rotation, a feeding-gear concentric with the gear on the plate and secured to the sleeve, said feeding-gear having one more tooth than the other gear, and a pinion carried by the shank and engaging both of said gears, substantially as described, for the purpose specified.

6. In a device of the character described the combination with a drill-carrying shank, an externally-threaded sleeve through which the shank passes loosely and which is provided with a reduced end and a cross-piece having a threaded opening through which the sleeve passes, of a gear carried by a plate loose on the reduced end of the sleeve, a latch carried by the cross-piece and adapted to lock the plate and gear against rotation, a feeding-gear concentric with the other gear and secured to the sleeve, said feeding-gear having one more tooth than the other gear, a gear-case carried by the shank and inclosing said gears and a pinion carried by the gear-case and engaging said gears, rotation of the pinion about the gears acting to impart a feeding rotation to the feeding-gear.

821,474. FENCE-POST. CHRISTOPHER C. DOLAN, Lockport, N. Y. Filed Sept. 19, 1905. Serial No. 279,182.



Claim.—A fence-post comprising a metallic body T-shaped in cross-section and pointed at the lower end, said body being formed above the pointed end to provide shoulders, the web of the post adjacent said shoulders being formed with an opening, in combination with an anchor-plate formed with an opening corresponding in contour to the sectional shape of the post and arranged to receive the post adjacent the shoulders, spurs formed integral with and depending from said plate, said spurs being extended from the corners of the plate to leave projecting members arranged intermediate and extending beyond the plane of the spurs, and a wedge-key adapted to be passed through the opening in the web and bear against the under surface of the anchor-plate and against the body of the post on each side of the opening.

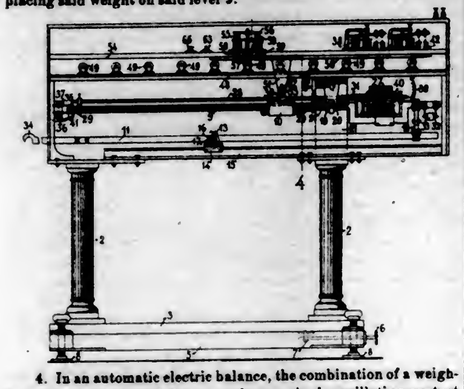
821,475. AUTOMATIC ELECTRICAL BALANCE. WINCENTY DWORZYNSKI, Warsaw, Russia. Filed July 11, 1904. Serial No. 216,063.

Claim.—1. In an automatic electric balance, the combination of a weigh-lever, contacts for coöperation with a single contact, a sliding weight and electric means mounted on said weigh-lever for automatically displacing said weight, individual relays, a single contact at the end of said lever adapted to energize said relays, and electrical connections, said relays being disposed for coöperation with said electric means.

2. In an automatic electric balance, a swinging lever, a weigh-lever, individual relays, a sliding weight, an electric motor arranged on the weigh-lever, and adapted to adjust said weight and controlled by the making contact by means of the freely-swinging lever end, a single contact at the end of the lever adapted to energize different relays, according to whether the lever moves upward or downward out of the position of equilibrium, and the said relays being adapted to close the motor-circuit in such a manner as to produce rotation in different direction and contacts for coöperation with said single contact.

3. In an automatic electric balance, the combination of a lever

9, a sliding weight 10, a double-armed transmission-lever 11, a link connection between said levers, and an electric motor mounted on said lever 9 and relays disposed for coöperation with said motor and connections between said motor and weight for automatically displacing said weight on said lever 9.



4. In an automatic electric balance, the combination of a weigh-lever, a motor mounted thereon, relays, a single oscillating contact carried by said weigh-lever, and an automatic recording mechanism having a member operatively connected to the sliding weight.

5. In an automatic electric balance the combination of a weigh-lever, a motor mounted thereon, relays, a single oscillating contact carried by said weigh-lever, and an automatic recording mechanism having a member operatively connected to the sliding weight, said recording mechanism embodying a removable band and electrically-operated means mounted for coöperation with said band.

821,476. GAME. EDWARD H. ENOS, Salem, Mass. Filed June 24, 1905. Serial No. 266,795.

Claim.—1. The combination of two hinged members, one of said members having its edges turned up forming a bottom portion to a box, the other member being flat and formed with cut-away portions in its lower edge.

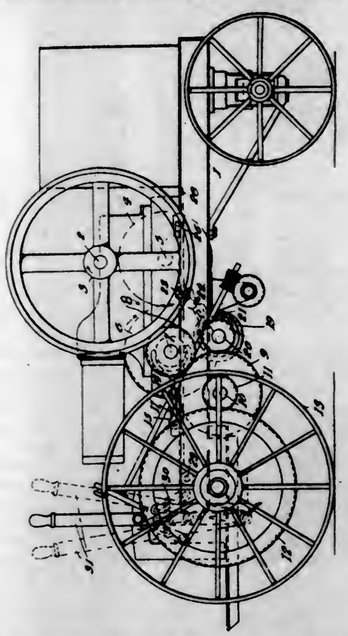
2. The combination of two hinged members, one of said members having its edges turned up to form a box-bottom, the other member forming a target having apertures provided in its lower edge, said member having the representation of a face or figure imprinted thereon or secured thereto.

3. The combination of two hinged members, one of said members having upturned edges to form the bottom portion of a box, the other member having a face or figure thereon, and cut-away portions formed in the lower edge of said member and conforming to the outline of the figure or face.

821,477. ACTUATING-GEAR FOR TRACTION-ENGINES. FREDERICK T. FLINCHBAUGH, York, Pa. Filed Oct. 12, 1905. Serial No. 282,466.

Claim.—1. The herein-described actuating-gear for traction-engines comprising, in combination with a wheel-supported framework and the prime mover mounted thereon gearing designed to turn the traveling wheels in one direction or the other, independent clutches for the respectivve gearing for the forward and backward movements, an operative connection between said gearing and the prime mover, two slide-bars mounted transversely of the framework and operatively connected to the respective clutches of the gearing, a third slide-bar mounted transversely of the framework and designed to couple the prime mover to the gearing and a longitudinally-extending shifting bar mounted to move longitudinally in the framework across the three slide-bars and provided with three cam-slots one for each of the slide-bars, the cam for the slide that is designed to couple and uncouple the prime mover being provided with an intermediate straight portion and two end inclined portions and the other two cams being provided with straight portions facing each other and with oppositely-extending inclined portions, as and for the purpose set forth.

2. Actuating-gear for traction-engines, comprising, in combination with the wheel-supported framework and prime mover mounted thereon, of two sets of gearing driven from said prime mover one set being designed to move the traction-engine forwardly and the other rearwardly, clutches designed to couple the gearing for forward movement and backward movement respectively said clutches including spring-pressed levers mounted on the framework, transverse slide-bars mounted across the framework and connected respectively to said levers, a third slide-bar mounted to move transversely on the framework and designed to couple and uncouple the prime mover to the said two sets of gearing, and a longitudinally-movable shifting bar mounted between the side bars of the frame and means for shifting the same, said shifting bar being provided with three independent or separate cam-slots one in advance of the other, one of said slots being operatively connected to the slide-bar for uncoupling the prime mover from the gearing and consisting of an intermediate straight portion and two inclined end portions and the other cam-slots being operatively connected to the other slide-bars respectively and provided with two straight portions facing each other and with two inclined portions extending in opposite directions from each other.

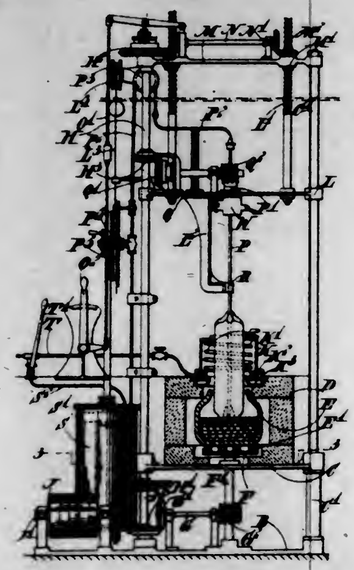


3. In a traction-engine, the combination with the wheel-supported framework and the prime mover thereon, of a shaft 7 designed to be turned by the prime mover always in the same direction two pinions carried by said shaft one being fast thereon and the other loose, a shaft 20 mounted in the framework and provided with a fast pinion and a loose pinion, the latter meshing directly with the fast pinion of the shaft 7, a shaft 10 designed to drive the traveling wheels and provided with a pinion meshing with the loose pinion of the shaft 7 and the fast pinion on the shaft 20, independently-acting clutches designed to couple the loose pinions with their respective shafts, transversely-extending slide-bars mounted in the framework and operatively connected to the clutches, a third slide-bar mounted transversely of the framework and designed to couple and uncouple the prime mover to and from the shaft 7 and a longitudinally-movable shifting bar in the framework and provided with three separate cams designed to actuate respectively the three slide-bars, the cam for the slide-bar designed to couple and uncouple the prime mover being formed with an intermediate straight portion and two inclined portions and the other cams being formed with straight portions facing each other and oppositely-extending inclined portions, as and for the purpose set forth.

821,478. APPARATUS FOR THE MANUFACTURE OF GLASS CYLINDERS. JOHN FORSTER, St. Helens, England. Filed Oct. 31, 1904. Serial No. 230,775.

Claim.—1. In apparatus for drawing glass the combination of a

heating-chamber, a vessel containing a reserve of molten glass within the chamber, a blowpipe, means for rotating the vessel and the blowpipe together about a vertical axis, means for raising and lowering the pipe relatively to the vessel and means for supplying air to the blowpipe.



2. In apparatus for drawing glass the combination of a heating-chamber, a vessel containing a reserve of molten glass within the chamber, a blowpipe, means for rotating the vessel and the blowpipe together about a vertical axis, means for raising and lowering the pipe relatively to the vessel means for supplying air to the blowpipe, and means for maintaining the blowpipe in vertical alinement.

3. In apparatus for drawing glass the combination of a heating-chamber, a vessel containing molten glass within the chamber, a blowpipe, means for rotating the vessel and the blowpipe, means for raising and lowering the pipe relatively to the vessel an air-compressor and means operated by the vertical movement of the blowpipe to displace from the compressor and force through the pipe a quantity of air proportional to the size of the glass cylinder being drawn.

4. In apparatus for drawing glass the combination of a heating-chamber, a vessel containing molten glass within the chamber, a blowpipe, means for rotating the vessel and the blowpipe, an air-compressor means for raising and lowering the pipe relatively to the vessel, means operated by the vertical movement of the blowpipe to displace from the compressor and force through the pipe a quantity of air proportional to the size of the glass cylinder being drawn and mechanically-operated means for removing the drawn cylinder.

5. In apparatus for drawing glass the combination of a heating-chamber, a vessel containing molten glass within the chamber, a blowpipe, means for rotating the vessel and the blowpipe, means for raising and lowering the pipe relatively to the vessel means operated by the vertical movement of the blowpipe for forcing through the pipe a quantity of air proportional to the size of the glass cylinder being drawn, means for admitting supplementary air to the blowpipe and mechanically-operated means for removing the drawn cylinder.

6. In apparatus for drawing glass the combination of a heating-chamber, a vessel containing molten glass within the chamber, a blowpipe, means for rotating the vessel and the blowpipe, means for raising and lowering the pipe relatively to the vessel means for supplying air to the pipe, an opening in the heating-chamber above the vessel and a graduated cooling-chamber upon said opening having upwardly-directed annular orifices and means for forcing cooling-air through the orifices to form cylinders outside the glass being drawn from the chamber.

7. In apparatus for drawing glass the combination of a heating-chamber, a vessel containing molten glass within the chamber, a blowpipe, means for rotating the vessel and the blowpipe, means for raising and lowering the pipe relatively to the vessel means for supplying air to the pipe, an opening in the heating-chamber above the vessel a graduated cooling-chamber upon said opening having annular orifices, means for forcing cooling-air through the orifices and outside the glass being drawn from the chamber, an air-supply for the graduated cooling-chamber and a valve-controlled connection between said air-supply pipe and the blowpipe.

8. In apparatus for drawing glass the combination of a heating-chamber, a vessel containing molten glass so supported that the heating agent can pass under and around it, a blowpipe, means for rotating the vessel and the blowpipe, means for raising and lowering the pipe relatively to the vessel, means operated by the vertical movement of the blowpipe for forcing through the pipe a quantity of air proportional to the size of the glass cylinder being drawn an opening in the heating-chamber above the vessel, a graduated cooling-chamber around said opening, means for supplying air to the graduated cooling-chamber and supplementary air to the blowpipe and mechanically-operated means for removing the drawn cylinder.

9. In apparatus for drawing glass the combination of a heating-chamber, a vertical rotatable shaft projecting into the chamber, a disk on the top of the shaft, a vessel containing molten glass within the chamber supported on the disk by blocks of refractory material so that the heating agent can pass under and around it, means for rotating the shaft and means for removing molten glass from the vessel.

10. In apparatus for drawing glass the combination of a heating-chamber, a vertical rotatable shaft projecting into the chamber, a disk on the top of the shaft, a vessel containing molten glass within the chamber supported on the disk by blocks of refractory material so that the heating agent can pass under and around it, means for rotating the shaft, a frame capable of vertical movement relatively to the vessel, a rotatable head mounted on the frame and adapted to receive a blowpipe, a centering-guide for the lower end of the blowpipe, and means for rotating the head and for supplying air thereto.

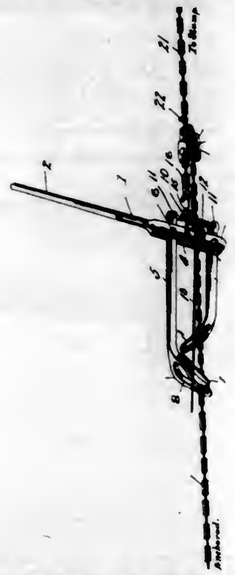
11. In apparatus for drawing glass the combination of a heating-chamber, a vertical rotatable shaft projecting into the chamber, a disk on the top of the shaft, a vessel containing molten glass within the chamber supported on the disk by blocks of refractory material so that the heating agent can pass under and around it, means for rotating the shaft, a frame capable of vertical movement relatively to the vessel, a rotatable head mounted on the frame and adapted to receive a blowpipe, a centering-guide for the lower end of the blowpipe a vertical driving-shaft, worm and bevel gearing between the driving-shaft and the vessel-supporting shaft and between the driving-shaft and the rotatable head whereby the vessel and blowpipe may be rotated at the same speed and means for supplying air to the blowpipe.

12. In apparatus for drawing glass the combination of a heating-chamber, a vertical rotatable shaft projecting into the chamber, a disk on the top of the shaft, a vessel containing molten glass within the chamber supported on the disk by blocks of refractory material so that the heating agent can pass under and around it, means for rotating the shaft, a frame capable of vertical movement relatively to the vessel, a rotatable head mounted on the frame and adapted to receive a blowpipe, a centering-guide for the lower end of the blowpipe, means for rotating the head, an air-compressor and the head and operative connections between the vertically-movable frame and the valve.

13. In apparatus for drawing glass the combination of a heating-chamber a vertical rotatable shaft projecting into the chamber, a disk on the top of the shaft, a vessel containing molten glass within the chamber supported on the disk by blocks of refractory material so that the heating agent can pass under and around it, means for rotating the shaft, a frame capable of vertical movement relatively to the vessel, a rotatable head mounted on the frame and adapted to receive a blowpipe, a centering-guide for the lower end of the blowpipe, means for rotating the head, an air-compressor, a valve-controlled pipe between the air-compressor and the head, operative connections between the vertically-movable frame and the valve and a frame provided with means for embracing the cylinder and rotatable upon a vertical and a horizontal axis.

14. In apparatus for drawing glass the combination of a heating-chamber, a vessel containing molten glass so supported that the heating agent can pass under and around it, a blowpipe, means for rotating the vessel and blowpipe, means for raising and lowering the pipe relatively to the vessel and for supplying air thereto, an opening in the heating-chamber above the vessel, a graduated cooling-chamber around said opening comprising an air-conduit means for supplying air thereto, a plurality of upwardly-directed annular orifices in the conduit whereby the air passes up in cylinders outside the glass being drawn from the chamber, and a coil of pipe and means for passing a cooling liquid through the coil.

821,479. **HAND-POWER STUMP-PULLER.** WILLIAM J. FULLER, Leaf, Wis. Filed Sept. 21, 1905. Serial No. 279,566.



Claim.—1. In a device of the character described, a chain adapted to be anchored, pulling means connected thereto, said means comprising an operating-lever, a plurality of arms pivoted thereto, grappling-yokes carried by said arms at one end thereof, elastic means tending to move the said grappling-yokes apart and means adapted to connect the said pulling means with a stump to be uprooted.

2. In a device of the character described, a chain adapted to be anchored, pulling means connected thereto, said means comprising an operating-lever, a chain-guide carried thereby and surrounding the said chain, a plurality of arms pivoted to the said lever, grappling-yokes carried thereby, said yokes surrounding the said chain and adapted to engage therewith, a guide-rod carried by the operating-lever, guide-yokes secured to the grappling-yokes and in engagement with the said guide-rod, and means adapted to connect the pulling means with a stump to be uprooted.

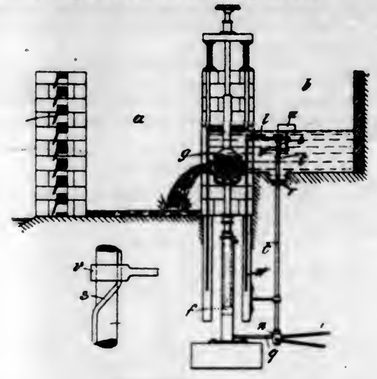
3. In a device of the character described, a chain adapted to be anchored, pulling means connected therewith, said means comprising an operating-lever, a chain-guide carried thereby and surrounding the said chain, a plurality of arms pivoted to the said lever, grappling members carried by the said arms and adapted to engage the said chain, a guide-rod carried by the operating-lever, guide-yokes secured to the grappling members and in engagement with the said guide-rods, a pulley about which the said chain passes, a hook carried by the pulling means to which one end of the said chain is attached, means adapted to connect the said pulley with a stump to be uprooted, and a pivoted hook interposed between the pulley and the said last-named means.

821,480. **WATER-MOTOR FOR UTILIZING THE EBB AND FLOW OF THE TIDE.** GEORG GEYER, Berlin, Germany. Filed Dec. 21, 1905. Serial No. 293,846.

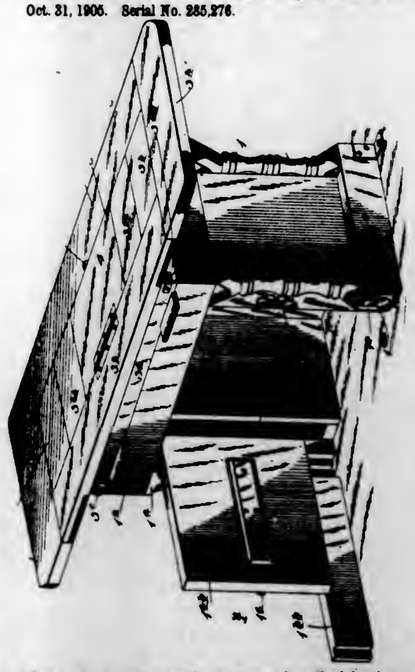
Claim.—1. In a tidal motor, the combination with two reservoirs, of a rising and falling turbine arranged between the reservoirs, and an automatically-controlled pressure-operated device for raising and lowering the turbine in harmony with the changing level of the water.

2. In a tidal motor, the combination with two reservoirs, of a rising and falling turbine arranged between the reservoirs, a pressure-operated device for raising and lowering the turbine, and an automatic controlling-valve device including a float located in one of the reservoirs.

3. In a tidal motor, the combination with two reservoirs, of a rising and falling turbine, a fluid-pressure cylinder and piston operatively related to the turbine for raising and lowering the same, a valve for said cylinder and a valve-operating mechanism including a valve-operating rod, and a float carried with the turbine-support and operatively engaging said rod for turning the same.



821,481. **KITCHEN-CABINET.** OSCAR GOODWIN, Berlin Mills, N. H., assignor of one-half to J. Howard Wight, Berlin, N. H. Filed Oct. 31, 1905. Serial No. 285,276.



Claim.—1. A cabinet of the character described, having a compartment-chamber, one compartment being provided with a bottom door hinged to the cabinet and an upper door also hinged to the cabinet for covering the entrance-opening of both compartments for the purpose set forth.

2. A cabinet of the character described, having a compartment-chamber, one compartment being separated by a partition from the other and having a bottom member secured to said partition and to the walls of said compartment, chamber, and doors hinged to the cabinet both controlling access to one of said compartments and one of said doors effective for controlling access to both of said compartments.

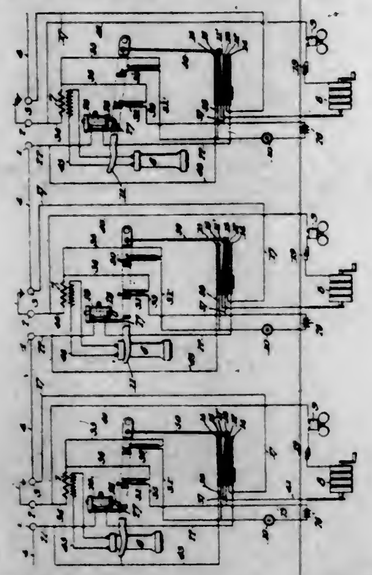
3. A cabinet of the character described, having a chamber for storing purposes, a bottom section or door hinged to the cabinet and

a second door having its bottom edge arranged immediately above the latter door, both effective for controlling access to said chamber as set forth.

4. A cabinet of the character described, comprising a hinged combined top and flour-board having a recess or chamber opening out through its top surface, and a prop or brace hinged to said closure or top and adapted to be received in said recess when said closure is "down" and effective when the latter is in open position to uphold it for use as a flour or kneading board.

5. A kitchen-cabinet, having a compartment-chamber one compartment adapted for storing a barrel of flour or food supplies, and opening clear through to the floor for the purpose stated, and doors each hinged to the cabinet, and the two adapted to close the entrance-opening to the compartment noted.

821,482. TELEPHONE SYSTEM. JAMES H. GORDEN, Cooper, Tex., assignor of one-half to James Patteson, Cooper, Tex. Filed June 10, 1903. Serial No. 160,839.



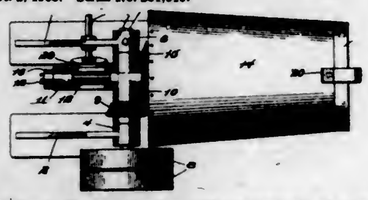
Claim.—1. In party-line telephone systems, a receiver-hook-locking magnet at each substation, all of said magnets being connected in series with a line-wire without including any of the local telephone or signaling apparatus, a return common to all of the stations, a local talking-circuit at each station normally disconnected from the return, and held disconnected by the receiver-hook-locking magnet when the line is energized, a receiver-hook, a plurality of connections under the control of the receiver-hook, and means for limiting movement of the receiver-hook to close signaling and talking circuits from the line-wire on either side of the station to the common return, and to cut out the line-wire connection on the opposite side.

2. In a party-line telephone system, a line-wire connecting the stations in series, a ground or common return to which the stations may be connected in multiple arc, a receiver-hook, a plurality of contacts under the control of the receiver-hook and means serving to limit movement of the latter to form a connection from the line-wire on one side of the station through the station to the common return and to cut out the connection with the line-wire on the opposite side, and on extended movement to form a similar connection with the said opposite line-wire and to cut out the previous connection, a receiver-hook-locking magnet in series with the line-wire, and a manually-operable catch for permitting extended movement of the receiver-hook.

3. In party-line systems, a plurality of substations, a line-wire extending from station to station, and serially connected thereto, a ground or common return, there being at each of the substations a receiver-hook, a receiver-hook-locking magnet, a plurality of contacts under the control of the receiver-hook, and telephonic and signaling devices, the receiver-hook-locking magnet being normally connected in series with the main line, and the telephonic apparatus being normally disconnected from the common return and being held disconnected while the electromagnet is energized, limited movement of the receiver-hook connecting the station to the common return and cutting off the line connection on one side of the telephone, and movement to a greater extent connecting the station to the line on the opposite side.

4. In telephony lock-outs, the combination with a receiver-hook, of an electromagnetically-controlled catch for locking the receiver-hook from any movement, and a second manually-manipulated catch adjustable to permit greater or less movement of said receiver-hook.

821,483. TUMBLER. DAVID T. GRAHAM, St. Louis, Mo. Filed Oct. 2, 1905. Serial No. 281,019.



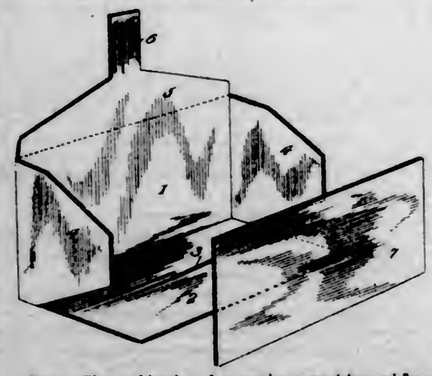
Claim.—1. The combination with a standard; of a tumbler-barrel, a stem projecting therefrom and pivotally supported by the standard, a rack pivoted to the stem at a point removed from its pivot, and a rotatable spiral mounted upon the standard and engaging the rack.

2. The combination with a standard; of a cross-head mounted thereon, a rotatable shaft constituting a pivot for the cross-head, a barrel, a rotatable stem projecting therefrom and into the cross-head, means for transmitting rotary motion to the barrel, a rack pivoted to the cross-head at a point removed from the pivot thereof, a rocking guide for the rack and mounted upon the standard, and a rotatable spiral engaging the rack.

3. The combination with standards; of a cross-head pivotally mounted therebetween and having a tubular arm, a barrrel, a stem projecting from the barrel and rotatably mounted within the arm, a bracket upon one of the standards, a rocking guide mounted within the bracket, a rack pivoted to the tubular arm at a point removed from the pivot of the cross-head, a shaft extending through one of the standards at an acute angle thereto, and an inclined spiral upon said shaft and engaging the rack and holding the stem within the guide.

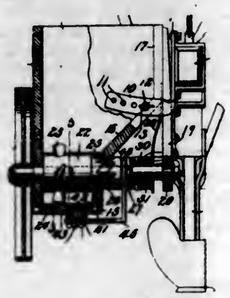
4. A tumbler-barrel having one end open, a screen-cap, means for detachably securing said cap upon the open end of the barrel, and a solid disk detachably mounted within the cap and closing the same.

821,484. ENVELOP. JOHN H. GREGG and AMOS J. WILLIAMS, Warsaw, Pa. Filed July 8, 1905. Serial No. 268,782.



Claim.—The combination of an envelop comprising end flaps, a sealing-tab, and a back, the latter being provided with an opening, and an independent intermediate slip having an opening therein corresponding to the opening in the back of the envelop, said intermediate slip being so placed as to confine the end flaps between itself and the back of the envelop, while the sealing-tab passes through the corresponding openings in the back of the envelop and the intermediate slip and has its end secured to the back of the latter.

821,485. FERTILIZER-DISTRIBUTER. FRED A. HAMILTON and WILLIAM A. LINKER, Arlington, N. C. Filed Oct. 2, 1905. Serial No. 280,439.



Claim.—1. A beam, clips upon said beam having side members extended laterally and quarter-twisted to form brackets, a hopper supported adjustably between said brackets adjacent to the beam, a bracket depending from the side of the box adjacent to the beam, a bottom compartment in the hopper, a shaft journaled in the depending bracket and in the outer side of the hopper and extending through the bottom compartment of the latter, and a carrying-wheel upon the outer end of said shaft.

2. A hopper having a bottom compartment and an inclined deflector, a bracket depending from the inner side member of the hopper adjacent to the deflector, a shaft having a bearing in said bracket and extending through the bottom compartment of the hopper, a sleeve supported for rotation upon the shaft within the bottom compartment and having radial agitators and a clutch member at one end, a clutch-sleeve slidably supported upon a non-circular portion of the shaft and adapted to engage the agitator-sleeve, and means for adjusting the clutch-sleeve and for retaining it at various adjustments.

3. A hopper having a bottom compartment adjacent to one side thereof, a driven shaft extending through said bottom compartment, an agitator-sleeve supported for rotation upon the shaft within the bottom compartment and having a clutch member at one end, a clutch-sleeve supported slidingly upon a non-circular portion of the shaft, a side supported adjacent to the under side of the bottom compartment and having a slot adapted to register with an escape-slot in the bottom compartment, and means for connecting the slide with the clutch-sleeve.

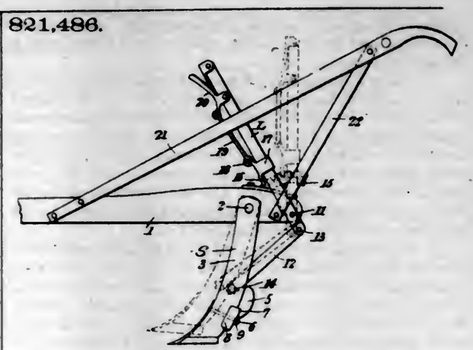
4. A hopper, a transverse driven shaft in said hopper, an agitator-sleeve supported for rotation upon the shaft within the hopper and having a clutch member at one end, a clutch-sleeve slidable upon a non-circular portion of the shaft, a bracket having a bifurcated member engaging an annular groove in the clutch-sleeve, a slide supported adjacent to the bottom of the hopper and having a slot adapted to be placed in registry with a slot in the bottom of the hopper, means for connecting the slide adjustably with the bifurcated bracket member engaging the clutch-sleeve, and means for manipulating the latter.

821,486. PLOW. FRED A. HAMILTON and WILLIAM A. LINKER, Arlington, N. C. Filed Oct. 2, 1905. Serial No. 280,937.

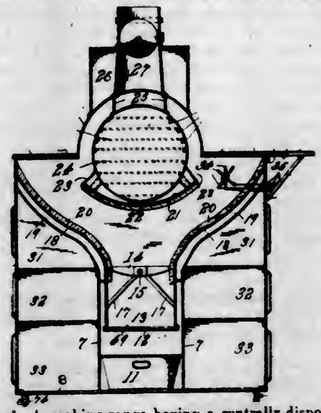
Claim.—1. In a plow, a pivoted stock or standard composed of two members spaced apart, a blade supported upon the standard, a plate engaging the rear side of the standard and having side flanges exteriorly engaging the side members thereof, and a bolt connecting said blade and plate.

2. A plow-beam, a standard comprising side members spaced by and pivotally engaging the beam, a rack-segment upon the latter, an adjusting-lever comprising side members contacting with each other at their upper ends and diverged at their lower ends for pivotal engagement with the sides of the beam, a link having its ends inserted between and pivotally connected with the side members of the standard and the lower spaced ends of the side members of the adjusting-lever, a sleeve slidable upon the contacting portion of the side members of the lever and having a lip engaging the rack-segment, spring-actuated handle, and a link connecting said handle with the sleeve.

821,486.



821,487. COOKING-RANGE. MARTIN V. HAMMACK, Jacksondale, Va. Filed Dec. 17, 1903. Renewed Oct. 31, 1905. Serial No. 285,349.



Claim.—1. A cooking-range having a centrally-disposed fire-chamber, a series of compartments upon opposite sides of said fire-chamber forming warming-ovens with a space between said fire-chamber and warming-ovens, and a substantially circular oven disposed centrally above the fire-chamber and a water-tank above said oven, and a shield-plate secured to the lower portion of said oven, substantially as described.

2. A cooking-range having a centrally-disposed fire-chamber, a series of compartments upon opposite sides of said fire-chamber forming warming-ovens with a space between said fire-chamber and warming-ovens, a substantially circular oven disposed centrally above the fire-chamber and a water-tank above said oven, and a shield-plate secured to the lower portion of said oven and a shield-plate beneath said circular oven.

3. A cooking-range having a centrally-disposed fire-chamber, a series of compartments upon opposite sides of said fire-chamber forming warming-ovens with a space between said fire-chamber and warming-ovens, a substantially circular oven disposed centrally above the fire-chamber, a shield-plate beneath said circular oven, and baffles interposed between said shield and oven.

4. A cooking-range having a centrally-disposed fire-chamber, a series of compartments upon opposite sides of said fire-chamber forming warming-ovens with a space between said fire-chamber and warming-ovens, a substantially circular oven disposed centrally above the fire-chamber, a shield-plate beneath said circular oven, baffles interposed between said shield and oven, a tank above said circular oven, and baffles between said tank and top of the oven and extending nearly the whole length of the latter.

5. A cooking-range having a centrally-disposed fire-chamber, a series of compartments upon opposite sides of said fire-chamber forming warming-ovens with a space between said fire-chambers and warming-ovens, a substantially circular oven disposed centrally above the fire-chamber, a shield-plate beneath said circular oven, baffles interposed between said shield and oven, a tank above said circular oven, baffles between said tank and the top of the oven and extending nearly the whole length of the latter, and a rotatable

damper in the space adjacent the circular oven for regulating the flow of gases and directing the heat against or away from covers in the top of the range.

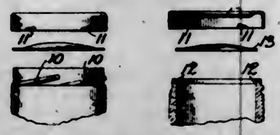
6. A cooking-range having a centrally-disposed fire-chamber, a series of compartments upon opposite sides of said fire-chamber forming warming-ovens with a space between said fire-chamber and warming-ovens, a substantially circular oven disposed centrally above the fire-chamber, a shield-plate beneath said circular oven, baffles interposed between said shield and oven, a tank above said circular oven, baffles between said tank and top of the oven and extending nearly the whole length of the latter, a smoke-pipe above the tank, and a water-tank around said smoke-stack.

7. A cooking-range having a centrally-disposed fire-chamber, a series of compartments upon opposite sides of said fire-chamber forming warming-ovens with a space between said fire-chamber and warming-ovens, a substantially circular oven disposed centrally above the fire-chamber, a shield-plate beneath said circular oven, baffles interposed between said shield and oven, a tank above said circular oven, baffles between said tank and top of the oven and extending nearly the whole length of the latter, a refractory lining on the curved sides of the fire-box, and a non-conducting covering on the under side of said shield-plate.

8. In a cooking-range, the combination with the shell having holes in its top, the centrally-disposed oven, the tank above said oven, the shield-plate for the oven, the central fire-chamber, the warming-ovens on each side of the fire-chamber, a leaf supported abreast of the top, tracks disposed transversely of said leaf on its upper surface with their upper surfaces flush with the top of the stove, the top being provided with tracks or runways communicating with those of the leaf.

9. A cooking-range consisting of a fire-chamber, a series of warming-compartments, a circular oven arranged adjacent to the fire-chamber, a shield-plate on the lower side of the oven, a top portion adjacent to the oven and in communication with the fire-chamber, a smoke-pipe, and a water-tank above the oven and surrounding the smoke-pipe.

821,488. **BOTTLE-CLOSURE.** CHARLES HANNER, New York, N. Y., assignor of one-third to Christian H. Werner, New York, N. Y. Filed July 26, 1905. Serial No. 271,613.



Claim.—1. A bottle or jar having a rabbeted portion, a dished disk adapted to fit said rabbeted portion, and a cap adapted to flatten said dished disk to increase its diameter.

2. A bottle or jar having a rabbeted portion, a dished disk adapted to fit into said rabbeted portion, and a cap having a depression in its end adapted to flatten the dished disk to increase its diameter.

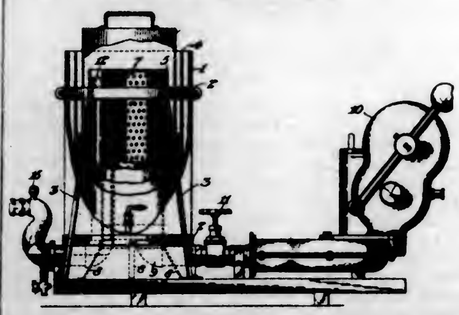
3. A bottle or jar having a rabbeted portion, an annular rib, and a plurality of separated spiral threads extending upward from the rib, a dished disk fitted into the rabbeted portion, and a cap having a depression to flatten the dished disk and a plurality of inclined notches in the lower edge thereof to form inward projections to engage the separated threads.

4. A bottle or jar provided with an annular shoulder and a plurality of superposed separated threads connecting at their lower ends with said shoulder, in combination with a cap having one or more inpunched projections at its lower edge to engage said threads, said projections being provided with inclined upper walls having an angular arrangement with relation to the lower edge of the cap conforming to the angular arrangement of the threads with relation to the shoulder, whereby stops are provided at the junction of the threads with the shoulder to limit the turning movement of the cap, the relative angular arrangement of the parts being such as to adapt the cap to be screwed down into close contact with the shoulder so that the inclined upper walls of the projections and basal edges of the inner walls thereof will respectively bear against the threads and shoulder and exert resisting pressures to prevent injury to the projections when the cap is screwed on.

5. A bottle or jar provided with an elongated neck having an annular rib or shoulder and a plurality of superposed separated threads connecting at their lower ends with said shoulder, in combination with a cap having one or more inpunched projections at its lower edge to engage said threads, said projections being provided with inclined upper walls having an angular arrangement with relation to the lower edge of the cap conforming to the angular arrangement of the threads with relation to the shoulder, whereby stops are provided at the junction of the threads with the shoulder to limit the turning movement of the cap, the relative angular movement of the parts being such as to adapt the cap to be screwed down into close contact with the shoulder so that the inclined upper walls of the projections and basal edges of the inner walls thereof will respectively bear against the threads and shoulder and exert resisting pressures to prevent injury to the projections when the cap is screwed on.

6. A bottle or jar having a rabbeted portion, and a plurality of separated threads, a dished disk adapted to fit said rabbeted portion, and a cap having a depression to flatten said disk, and means to engage the separated threads.

821,489. **SMOKE-MACHINE.** GEORGE W. HEILAND, New York, N. Y. Filed Apr. 10, 1905. Serial No. 254,725.



Claim.—1. A smoke-machine having a water-jacket inclosing a fire-box, a fire-box provided with a grate and open at the top and also having openings in the side thereof, and means for maintaining a continuous flow of air at a constant pressure through said fire-box to produce a continuous flow of smoke at a constant pressure from said machine.

2. A smoke-machine having a water-jacket inclosing a fire-box, a removable fire-box provided with a grate and open at the top and also having openings in the sides thereof, and means for maintaining a continuous flow of air at a constant pressure through said fire-box to produce a continuous flow of smoke at a constant pressure from said machine.

3. In a smoke-machine, the combination of a removable perforated fire-box, a water-reservoir surrounding said fire-box, a cylindrical float closed at its upper end and having the lower portion thereof immersed in the water in said reservoir, an outlet-pipe leading from the interior of said float to a connection for communicating with the pipes to be tested, and means for maintaining a continuous flow of air through said fire-box, substantially as described.

4. In a smoke-machine, the combination of a removable fire-box, a water-reservoir surrounding said fire-box, a cylindrical float closed at its upper end forming a smoke-chamber therein and having the lower portion thereof immersed in the water in said reservoir, an outlet-pipe leading from said smoke-chamber to a U-shaped connection at the lower part of said smoke-machine, said U-shaped connection forming a trap in which any water-vapors will be condensed and collected, an outlet and connection from said trap to the pipes to be tested, substantially as described.

5. In a device for the discovery of leaks in pipes, the combination of a reservoir having an inner and outer wall, a float closed at its upper end and having the lower portion thereof immersed in the water in said reservoir thus forming a chamber of variable size on the interior of said float and reservoir, means for supplying air in a continuous flow at a constant pressure to said chamber, an outlet-pipe leading from said chamber to a U-shaped connection at the lower part of said device, a U-shaped connection adapted to contain a peppermint solution in the lower portion thereof, and an outlet forming a connection to the pipes to be tested, substantially as described.

6. In a smoke-machine, the combination of a removable perforated fire-box, a water-reservoir surrounding said fire-box, a float closed at its upper end and having the lower portion thereof immersed in the water of said reservoir, an outlet-pipe leading from the interior of said float to a connection to the pipes to be tested, a blower having a rotary blade therein and adapted to maintain a continuous flow of air through said fire-box, substantially as described.

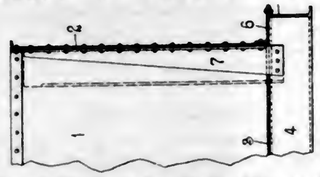
1. In a smoke-machine, the combination of a removable perforated fire-box, a water-reservoir surrounding said fire-box, a float closed at its upper end and having the lower portion thereof immersed in the water of said reservoir, an outlet-pipe leading from the interior of said float to a connection to the pipes to be tested, a blower having a plurality of rotary blades and adapted to maintain a continuous flow of air through said fire-box, substantially as described.

8. In a smoke-machine, the combination of a removable perforated fire-box, a water-reservoir surrounding said fire-box, a float closed at its upper end and having the lower portion thereof immersed in the water of said reservoir, an outlet-pipe leading from the interior of said float to a connection to the pipes to be tested, a blower having a rotary blade driven by means of a worm and gear and adapted to maintain a continuous flow of air through said fire-box, substantially as described.

9. In a smoke-machine, the combination of a removable perforated fire-box, a water-reservoir surrounding said fire-box, a float closed at its upper end and having the lower portion thereof immersed in the water of said reservoir, an outlet-pipe leading from the interior of said float to a connection to the pipes to be tested, a blower having a rotary blade driven by means of a series of gears and adapted to maintain a continuous flow of air through said fire-box, substantially as described.

10. A smoke-machine having a fire-box provided with a slide adapted to engage a fuel-block and retain the same in position in said fire-box.

821,490. **CAR CONSTRUCTION.** JULIUS C. HERRMANN, St. Louis, Mo., assignor to American Car & Foundry Company, St. Louis, Mo., a Corporation of New Jersey. Filed Feb. 5, 1906. Serial No. 299,497.



Claim.—The combination with the wall of the car, of an underframing for supporting the floor, a stake composed of a portion of a rolled flanged member whose web is cut diagonally and whose flanged portion is riveted to the wall of the car, said flange being cut away above the floor-line, and said web portion extending beneath the floor-line and being riveted to a member of the underframing; substantially as described.

821,491. **FELLER-FOOT FOR SEWING-MACHINES.** MAX HOFFERT, Cincinnati, Ohio. Filed Nov. 4, 1903. Serial No. 179,825.



Claim.—A feller-foot comprising a standard, an integral long toe having a flat base and upwardly-extending outer end, a short toe widely spaced from the long toe there being an elongated slot at the base of and transverse to said toes, and an adjustable guide secured to the top of the upwardly-extending end of the long toe and depending along the inner side of said end to a point in the plane of the flat base of the long toe.

821,492. **HARMONICA.** HANS HOHNER, New York, N. Y. Filed Jan. 9, 1906. Serial No. 295,217.

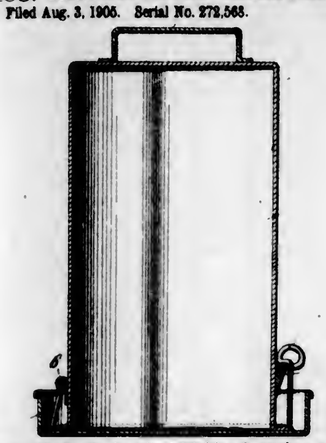


Claim.—1. A harmonica provided with a cell-block, a shell inclosing the back thereof, and end plates secured to the cell-block and engaging the shell, substantially as specified.

2. A harmonica provided with a cell-block, a U-shaped shell inclosing the back thereof, and flanged perforated end plates secured to the cell-block and engaging the shell, substantially as specified.

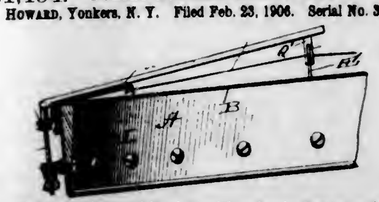
3. A harmonica provided with a cell-block, a U-shaped shell inclosing the back thereof, end plates secured to the cell-block and engaging the ends of the shell, and lip-guards flanking the cell-block and engaging the edges of the shell, substantially as specified.

821,493. **DRINKING-FOUNTAIN.** BENJAMIN F. HOUSE, Eureka, Ill. Filed Aug. 3, 1905. Serial No. 273,568.



Claim.—The herein-described drinking-fountain comprising the pan, the reservoir, conforming in shape to and of less width than the pan, closed at its upper end, open at its lower end, hinged near its lower end at one side to the pan and provided on the opposite side with the keeper 8, the said reservoir being further provided on its closed end with the broad U-shaped handle 4, for the purpose set forth, and the spring-catch 7 comprising the rod having its lower end secured to the pan and its upper end bent to form an eye and shoulder coacting with the keeper 8 to lock the reservoir to the pan.

821,494. **DULCET ATTACHMENT FOR BANJOS.** NORMAN HOWARD, Yonkers, N. Y. Filed Feb. 23, 1906. Serial No. 302,545.



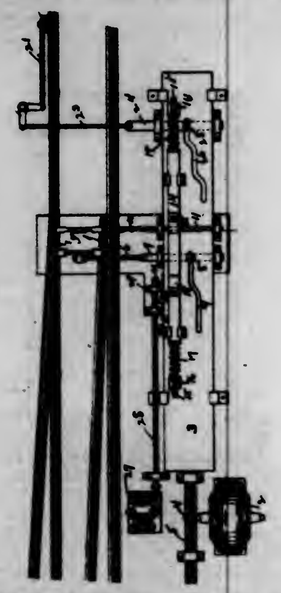
Claim.—1. In combination with a banjo having a head and bridge thereon, a tailpiece to which the strings of the instrument are held, a threaded rod engaging said tailpiece, whereby the latter may be held to the frame of the head, a tone-softening attachment pivotally connected to said rod and having a lateral projection which is slotted and adapted to frictionally engage said bridge, as set forth.

2. In combination with the head of a banjo and frame therefor, a bridge, a bracket-arm fixed to said frame, a threaded rod passing through an aperture in said arm, an adjusting-screw upon said rod, a tailpiece connected to said rod, one end of said rod bent to form a hook, a tone-softening attachment having an aperture at one end to receive said hook, and a lateral projection which is slotted and adapted to frictionally engage said bridge, as set forth.

3. In combination with the head of a banjo, and frame therefor, a bridge, a bracket-arm fixed to said frame and provided with an aperture, a threaded rod passing through the aperture of said arm, a tightening-nut upon said rod adapted to bear against said arm, a tailpiece having an aperture to receive said rod, a shoulder upon said rod and a tightening-nut adapted to hold the apertured end of said tailpiece against said shoulder, and a tone-softening strip having an aperture to receive the hooked end of said rod, a lateral projection of said strip having intersecting recesses and adapted to frictionally engage the bridge of the banjo, as set forth.

821,495. **RAILWAY SWITCHING AND SIGNALING APPARATUS.** WINTHROP K. HOWE, Buffalo, N. Y. Filed Aug. 29, 1905. Serial No. 276,289.

Claim.—1. The combination with a motor and a rail-switch of an arrangement of mechanisms for performing the functions of unlocking the switch-points, moving the switch-points and locking the same in sequence and means for providing a motor movement free of load with power applied after the last function of the sequence is performed.



2. The combination with a motor, a rail-switch and a detector-bar of an arrangement of mechanisms for performing the functions of raising the detector-bar, unlocking the switch-points, moving the switch-points, locking the same and lowering said detector-bar in sequence and means for providing a motor movement free of load with power applied after the last function of the sequence is performed.

3. The combination with a motor, a rail-switch and an electric switch controlling the operation of said motor of means for unlocking, moving and locking the rail-switch, means for freeing said motor of load after the rail-switch is moved and locked, and means for throwing said electric switch after said motor has had time to acquire ample momentum to produce dynamic indication.

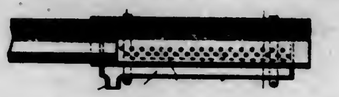
4. The combination with a motor, a lock-bolt and means for moving the same, of a switch-rod and means for moving the same, and an electric switch controlling the operation of said motor, the operation of said several means being timed in sequence and an interval of time being allowed to intervene after the rail-switch is moved and locked and prior to throwing said electric switch during which no load is on said motor.

5. The combination with a motor, a rail-switch, a detector-bar, a lock-bolt, and an electric switch controlling the operation of said motor of means for raising and lowering said detector-bar, means for locking and unlocking said rail-switch, means for moving said rail-switch, means for throwing said electric switch, and means for producing dynamic indication by the rotation of said motor due to momentum acting as a generator, said several functions being timed in sequence, and so timed as to permit said motor to race for an interval of time prior to throwing said electric switch so that sufficient momentum of said motor to produce indication is insured.

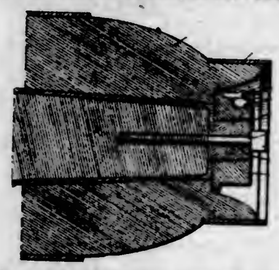
821,496. ATTACHMENT FOR THRESHING-MACHINES. JAMES I. HUTCHISON, St. Louis, Mo. Filed May 13, 1905. Serial No. 260,268.

Claim.—1. In a device of the class described, a stacker-duct provided with perforations, a casing housing the perforated portion of the duct and forming a compartment, a fan-casing, a duct connecting said compartment and casing for communication, and a fan housed and operable within the casing for creating a suction in the connecting-duct to draw material from the compartment to the casing.

2. In a device of the class described, an extensible stacker-duct provided with perforations, a casing housing the perforated portion of the duct and forming a compartment, a second casing, an extensible duct connecting said compartment and second casing for communication, and means in the last-named casing for creating a suction in the connecting-duct to draw material from the compartment.

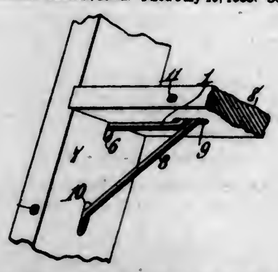


821,497. FASTENING DEVICE FOR WAGON-NUTS. LORING G. HUNTLEY, Des Moines, Iowa. Filed May 23, 1905. Serial No. 261,793.



Claim.—In a device of the class described, a bolt having a squared head secured to the axle, said squared head being outside of the end of the axle, a nut, a shoulder in the nut having a squared outer edge, a spring pivoted to the shoulder, designed to engage the squared edge of the shoulder and have its outer edge engage the squared head of the bolt for maintaining it in position against rotary movement, a lug inside of the nut, and a spring-catch secured to the spring for maintaining the spring securely in position.

821,498. BRACKET FOR STEP-LADDERS AND THE LIKE. JOHN JACKSON, Clinton, Iowa. Filed July 19, 1905. Serial No. 270,344.



Claim.—1. The combination with angularly-disposed structural members, one of which is vertical, of a bracket of the class set forth, formed from a single piece of material and having a horizontal supporting-arm, and an outwardly-inclined brace-arm, eyes being provided at the intersection of the two arms and at the lower terminal of the brace-arm, and disposed in planes parallel with said arms, the supporting-arm being projected through the said vertical member.

2. The combination with angularly-disposed structural members, one of which is vertical, of a bracket of the class set forth, having a horizontal supporting-arm, an outwardly-inclined brace-arm, and eyes at the intersection of the two arms and at the free terminal of the brace-arm, the eyes at the intersection of the two arms being elevated above the plane of the supporting-arm and parallel with the latter, the supporting-arm being projected through the said vertical member.

3. The combination with angularly-disposed structural members, one of which is vertical, of a bracket of the class set forth having a supporting-arm with a downwardly and outwardly inclined bracing-arm, and securing-eyes at the intersection of the two arms and at the lower terminal of the bracing-arm, the outer terminal of the securing-arm being formed with an angularly-disposed projection when applied and which is arranged in a horizontal plane, the supporting-arm being projected through the said vertical member.

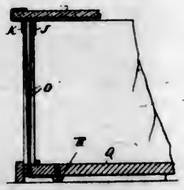
4. The combination with angularly-disposed structural members, one of which is vertical, of a bracket of the class set forth having a supporting-arm, and a downwardly and outwardly inclined bracing-arm, the two arms at their intersection and also at the lower end of the bracing-arm having means for fastening the same, the outer terminal of the supporting-arm being bent when applied, the supporting-arm being projected through the said vertical member.

5. The combination with angularly-disposed structural members such as a step and side rail of a step-ladder or a shelf and its vertical support, of a bracket having a horizontal supporting-arm with its outer extremity inserted through the ladder rail or vertical support, and a downwardly and outwardly inclined brace-arm, the two arms at their point of intersection and at the lower terminal of the brace-arm having eyes which are inserted in the contiguous structural members, and fastening devices inserted through the said members and eyes in planes at right angles to the latter, the outer terminal of the supporting-arm being bent at an angle when the bracket is applied.

6. The combination with a step and side rail of a step-ladder or analogous structure, of a bracket having a supporting-arm and an outwardly and downwardly inclined brace-arm provided with securing-eyes at their points of intersection and at the lower terminal of the brace-arm, the said securing-eyes being inserted in the under side of the step and inner side of the rail, and fastening means inserted through the step and rail and the eyes and disposed in planes parallel to the latter.

7. The combination with a step and side rail of a step-ladder or analogous structure, of a bracket having a horizontal arm inserted through the side rail, the outer terminal of this arm adapted to be bent when applied to extend transversely across the outer side of the said rail in planes at right angles to the grain of the latter, and a downwardly and outwardly inclined brace-arm, the two arms at their point of intersection and the brace-arm at its lower end having eyes which are embedded and secured to the step and side rail.

821,499. SHOW OR DISPLAY CASE. OTTO JAEGER, Ogontz, Pa. Filed Aug. 10, 1905. Serial No. 273,564.

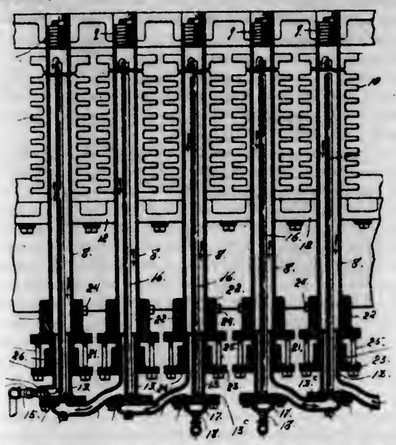


Claim.—1. In combination with a display-case, a fastener having two sections at right angles to each other, a series of tongues formed upon each section and bent downward for engaging the upper edges of the sides of the case, a tongue upon each of the sections bent downward for engaging a notch in each side of the case, a tongue on each section bent upward and inward for securing the top in place, a tension-wire for holding the fastener in position and drawing the sides of the case against the bottom thereof, as specified.

2. In combination with a display-case or the like, a fastener formed from sheet metal consisting of two sections at right angles to each other, a series of tongues on each section, bent downward for engaging the upper edges of the sides of the case and tongues E and I also formed on the section and bent downward, notches formed in the upper edges of the sides of the case with which said tongues E and I engage to prevent longitudinal movement of said sides, tongues D and K also formed with the sections and bent upward and inward for engaging and holding the top of the case in place, a tension-wire passing through the fastener downward and through the bottom of the case and means for tightening said tension-wire, as and for the purpose set forth.

821,500. WATER-COOLED GRATE. ALFRED E. JOHNSON, Denver, Colo., assignor to The Johnson Furnace and Engineering Company, Colorado Springs, Colo. Filed Dec. 2, 1904. Serial No. 235,254.

Claim.—1. A grate composed of hollow revoluble bars, long open-ended stationary water-pipes located within the bars, means for introducing water to one of the said pipes, and short stationary pipes each entering the extremity of a hollow grate-bar at one end of the grate and surrounding the corresponding extremity of the water-pipe therein, the said short pipes having lateral extensions, each long water-pipe after the one through which the water enters the grate, communicating at one end with the corresponding lateral extension of one of said short pipes, and at its other end with the interior of the grate-bar.



2. A grate composed of a number of hollow revoluble bars, long open-ended water-pipes within the bars and protruding from their extremities at one end of the grate, short stationary pipes each entering the end of a grate-bar at one end of the grate and surrounding the extremity of the water-pipe therein, and means for introducing water to one of the pipes within the hollow bars, the short pipes having lateral extensions, each long water-pipe after the one through which the water enters the grate, communicating at one end with the adjacent lateral extension of one of said short pipes, and at its other end with the interior of the grate-bar.

3. A grate composed of a number of hollow revoluble bars, long open-ended water-pipes located within the bars and protruding therefrom at one end of the grate, short stationary pipes each entering the extremity of a grate-bar at one end of the grate, surrounding the protruding extremity of the water-pipe therein and communicating with the grate-bar, means for forming a water-tight joint between the short pipes and the hollow revoluble bars, the short pipes having lateral extensions, each long water-pipe after the one through which the water enters the grate, communicating at one end with the adjacent lateral extension of one of said short pipes, and at its other end with the interior of the grate-bar.

4. A grate-bar composed of a number of hollow revoluble bars, short stationary pipes entering the forward extremities of the respective bars and communicating with the latter, long open-ended pipes located in the hollow bars, and means for delivering cooling fluid to the forward extremity of one of the pipes within the bars under sufficient pressure to cause the fluid to flow through a number of open-ended pipes in succession and back through the hollow bars, the short stationary pipes having lateral extensions, each long open-ended pipe after the one through which the water enters the grate, communicating at one end with the adjacent lateral extension of one of said short pipes, and at its other end with the interior of the grate-bar.

5. A grate composed of a number of hollow revoluble bars, short stationary pipes entering the forward extremities of the bars and communicating therewith, the short pipes having lateral extensions, long pipes located within the hollow bars, and means for delivering a cooling fluid to one of the pipes within the hollow bars under sufficient pressure to cause the fluid to circulate through the bars, each long pipe within a hollow bar after the one through which the fluid enters the grate, communicating at one end with the adjacent lateral extension of one of said short pipes, and at its other end with the interior of the grate-bar.

6. A grate composed of a number of hollow revoluble bars, short stationary pipes each entering the forward extremity of a bar and communicating therewith, the short pipes being provided with protruding lateral extensions, long open-ended water-pipes located within the hollow bars, and means for delivering water under pressure to one or more of the water-pipes within the hollow bars, each long water-pipe after the one through which the water enters the grate, communicating at one end with the adjacent lateral extension of one of said short pipes and at its other end with the interior of the grate-bar.

7. A grate composed of a number of hollow revoluble bars, short stationary pipes each entering the forward extremity of a bar and communicating therewith, the short pipes being provided with protruding lateral extensions, long open-ended pipes located within the hollow bars, means for introducing water to one of the long open-ended pipes under such pressure that the water is made to travel through the grate-bars, each long water-pipe after the one through which the water enters the grate, communicating at one end with the adjacent lateral extension of one of said short pipes, and at its other end with the interior of the grate-bar.

8. A grate composed of hollow revoluble bars, long stationary water-pipes located within the bars and protruding therefrom at one end of the grate, short stationary pipes each entering a grate-bar at one end of the grate and surrounding the protruding extremity of the water-pipe therein, the outer extremity of each short pipe being expanded to form a plate, the short pipes having lateral extensions connected with the plates of the adjacent short pipes, the said plates having openings to allow the lateral extensions to communicate with the long water-pipes of the grate-bars, the short pipes communicating with the grate-bars which they enter, each long water-pipe after the one through which the water enters the grate, communicating at one end with the adjacent lateral extension of one of said short pipes and at its other end with the interior of the grate-bar.

9. A grate composed of a number of hollow revoluble bars, long water-pipes located within the grate-bars, their forward extremities protruding from the grate-bars, short stationary pipes each entering the forward extremity of a grate-bar, surrounding the protruding extremity of the long water-pipe therein, and communicating with the grate-bar, the short pipes having plates at their forward extremities, the short pipes being also provided with lateral extensions connected with the plates of adjacent short pipes except where the water is originally introduced, the plates of the last-named pipes having openings forming a communication between the lateral extensions of the short pipes and the forward extremities of the long water-pipes within the hollow bars, the extensions of the short pipes having closable openings in line with the openings of the plates with which they are connected, and a number of supply-pipes for introducing water to a corresponding number of the water-pipes within the hollow bars, hollow plates attached to the plates of the stationary pipes and surrounding the long water-pipes where the water is introduced, the supply-pipes being connected with the hollow plates, each long water-pipe after the one through which the water enters the grate, communicating at one end with the adjacent lateral extension of o of said short pipes and at its other end with the interior of the grate-bar.

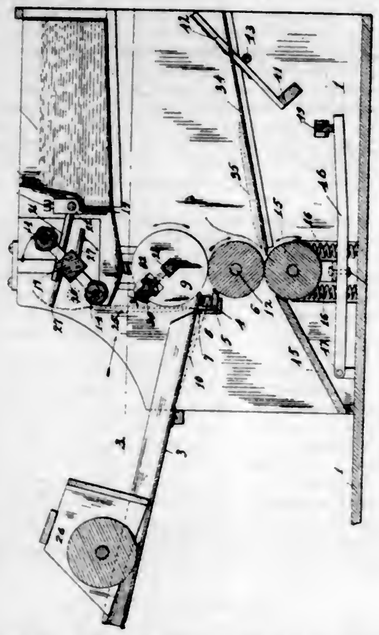
10. A grate composed of a number of sets or series of hollow grate-bars, a long open-ended fluid-pipe extending into each bar of the grate, means for introducing cooling fluid to one pipe of each series of grate-bars, short pipes each entering a hollow grate-bar at one end of the grate and surrounding the corresponding extremity of the fluid-pipe therein, each long fluid-pipe of each set of series of hollow bars after the one through which the water enters the grate, communicating at one end with the adjacent lateral extension of one of said short pipes of the same set or series of grate-bars and at its other end with the interior of the grate-bar.

821,501. AUTOMATIC ENVELOP FEEDING, MOISTENING, AND SEALING MACHINE. JOHN JOHNSTON, St. Louis, Mo. Filed May 4, 1903. Renewed Dec. 1, 1905. Serial No. 259,551.

Claim.—1. In an envelop feeder, moistener and sealer, the combination of devices for automatically feeding the envelops into the machine, means for moistening the flaps automatically while the envelop is being fed into the feed devices, means for opening the flaps if shut, sealing-rollers the uppermost thereof being also a part of the feed devices, and means for forcing the envelop automatically into the same substantially as set forth.

2. In an envelop feeder, moistener and sealer, the combination of an inclined feed-board, a follower, feed devices, sealing-rollers arranged one above the other, the upper one thereof being the lower part of the feed devices, moistening-rollers, a water-reservoir, and means for dampening said moistening-rollers from the water-reservoir, devices for straightening out the flaps if any are turned down and means for depressing said feed-board adjacent to the feed devices to prevent the envelops from being torn and to prevent strain upon the machine, all substantially as set forth.

3. In an envelop feeder, moistener and sealer the combination of a train of gears for furnishing the power from one main shaft or rod, feed devices arranged one above the other, the upper one being movable vertically when in use to prevent undue strain on the machine, sealing-rollers, the upper one thereof being the lower part of the feed devices, vertically-movable bearings for the lower sealing-roller so that it may yield when envelops pass through, and means for forcing the envelops between the sealing-rollers, all substantially as set forth.



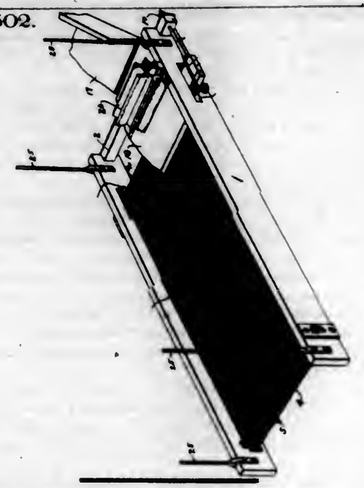
4. In an envelop feeder, moistener and sealer the combination of one feed-roller 6 and feed device 9 for carrying the envelop into the machine, an incline therein to receive the envelop and reverse the motion thereof, sealing devices consisting of the feed-roller 6 in conjunction with a roller 15 for sealing the envelop and ejecting it from the machine, means for automatically moistening the flaps of the envelops before they are drawn into the feed devices, means for automatically straightening the flaps, means for carrying the envelop into the machine without tearing it and without strain on the machine, and means for forcing the envelops into the sealing-rollers, all substantially as set forth.

5. In an envelop feeder, moistener and sealer, the combination of a main shaft and a train of gears for furnishing the power, one feed-roller 6 and feed device 9 driven by said shaft and gears for carrying the envelops into the machine, an incline on the inside of the machine for reversing the motion of the envelop, a movable roller arranged to operate in connection with the feed-roller 6 as sealing devices, means for moistening the flaps of the envelops before they are drawn into the feed devices, means for dampening the moistening-rollers, means for straightening the flaps, and means for forcing the envelops between the sealing-rollers, all substantially as set forth.

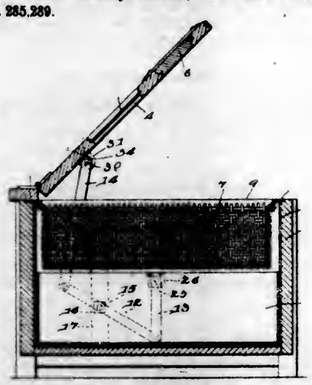
821,502. SCREEN. JOSEPH KEFFLER, Malvern, Ohio. Filed Oct. 7, 1905. Serial No. 281,829.

Claim.—In a screen of the class described, the combination of a suitable frame, wire-supporting bars provided with spaced grooves, said bars secured to the side members of the frame near the end thereof, non-metallic bars located near the ends of the frame, metal bars located against and in contact with the inner edges of the non-metallic bars, one of the metal and non-metallic bars adjustable with reference to the frame, means adapted to embrace the adjustable metal and non-metallic bars, metal plates secured to the non-metallic bars and their outer edges located in different vertical planes from that of the outer edges of the non-metallic bars, screen-wires seated against the outer edges of the non-metallic bars, and means for holding the adjustable non-metallic and metallic bars in fixed adjustment, substantially as and for the purpose specified.

821,502.



821,503. REFRIGERATOR. WILLIAM M. KEITH, Shawnee, Okla., assignor to John W. Beasley, Shawnee, Okla. Filed Oct. 31, 1905. Serial No. 285,289.



Claim.—1. A refrigerator comprising a shell, a stationary open-work holder therein, and a refrigerating-tank movable to and from the holder.

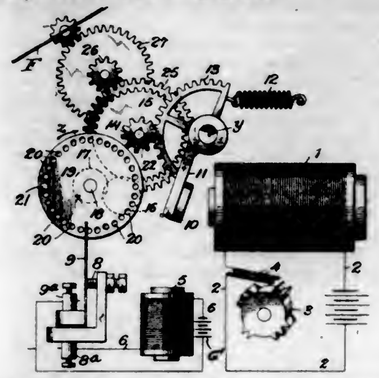
2. In a refrigerator, a stationary open-work holder, a refrigerating-tank, and mechanism connecting the tank and the cover of the refrigerator, whereby when the cover is raised, the tank will be moved away from the holder and when closed will be caused to house it.

3. A refrigerator comprising a shell, a removable open-work holder, normally stationary relatively to the shell, a refrigerating-tank, a cover hinged to the shell, a pair of pivoted levers, and links connecting the cover and tank with the levers.

821,504. RETARDING DEVICE FOR ELECTROMAGNETS. PATRICK KENNEDY, New York, N. Y. Filed Feb. 13, 1905. Renewed Oct. 21, 1905. Serial No. 283,806.

Claim.—1. A device for the purpose specified, having an electromagnet, its armature, armature-lever, and means for retracting the armature, an electric circuit, a make-and-break device in said circuit, a retarding device for the armature, and regulable, automatic means for actuating said make-and-break device, said means comprising a rotating carrier provided with an adjustable detent which acts on said make-and-break device, and mechanism between the armature-lever and said rotating carrier through which the former actuates the latter.

2. A device for the purpose specified, having an electromagnet, its armature, armature-lever, and means for retracting the armature, an electric circuit, a make-and-break device in said circuit, a retarding device for the armature, and regulable, automatic means for actuating said make-and-break device, said means comprising a rotating carrier provided with a plurality of sockets, a detent-stud to fix in said sockets, said stud being adapted to actuate said make-and-break device, and gearing between the armature-lever and said carrier through which the former rotates the latter.



3. A device for the purpose specified, having an electromagnet, its armature, armature-lever, and means for retracting the armature, an electric circuit, a make-and-break device in said circuit, a retarding device for the armature, and regulable, automatic means for actuating said make-and-break device, said means comprising a rotating carrier provided with an adjustable detent which acts on said make-and-break device, and mechanism between the armature-lever and said carrier which rotates the latter operatively when the magnet attracts its armature.

4. A device for the purpose specified, having an electromagnet, its armature, armature-lever, and retracting means, a retarding-train, the main wheel of which is loose on its arbor, the said arbor, another wheel adjacent to the former, loose on said arbor and having a boss with an oblique slot therein, a stud set in the arbor and engaging said slot, and a curved rack carried by the armature-lever and gearing with last-named wheel, said slot and pin serving to force the two wheels into frictional driving relations.

821,505. AUTOMATIC CAR-COUPLING. ELIJAH KING, Sams, Ky., assignor of one-fourth to Achiles Kelley, Pryse, Ky. Filed Nov. 29, 1905. Serial No. 289,643.

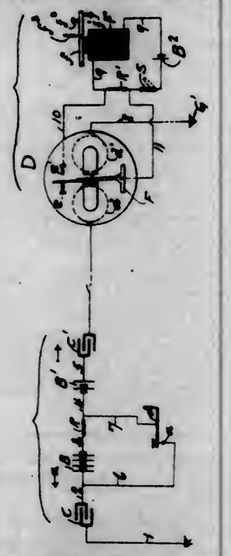


Claim.—1. In combination with a platform and sides therefor, a tilting coupler-bar mounted intermediate said sides, a spring bear-

ing against said coupler-bar, a pivotal angle-lever, a locking member pivoted to one of the arms of said angle-lever, and adapted to be normally positioned intermediate said coupler-bar and one of said sides, a link connecting the other arm of said angle-lever with the coupling-bar, and a rod connected to said bar and passing through one of said sides, as set forth.

2. In combination with a platform and sides therefor, a tilting coupler-bar mounted intermediate said sides, a spring bearing against said coupler-bar, a pivotal angle-lever, a locking member pivoted to one of the arms of said angle-lever, and adapted to be normally positioned intermediate said coupler-bar and one of said sides, a link connecting the other arm of said angle-lever with the coupling-bar, a rod connected to said bar and passing through one of said sides, and a curved resilient bar fastened to one of said sides and adapted to guide a coupling-bar as two cars come together to be coupled, as set forth.

821,506. **ELECTRIC TELEGRAPHY.** ISAAC KITSEE, Philadelphia, Pa. Filed Aug. 26, 1905. Serial No. 275,958.



Claim.—1. A telegraph-line having two unequal sources of electromotive force connected therein in opposition to each other, means comprising a single contact-key connected to said line with respect to said sources of electromotive force to cause the transmission of an electrical impulse of one polarity to line when the contact of said key is closed and an impulse of an opposite polarity to line when said contact is opened, and static means acting independently of said key to automatically limit the duration of said impulses.

2. A telegraph-line having two unequal sources of electromotive force connected therein in opposition to each other, a shunt around one of said sources, means to vary the resistance of said shunt in the transmission of signals, and static means to automatically limit the duration of the signaling impulses which pass to line.

3. A telegraph-line having two unequal sources of electromotive force connected therein in opposition to each other, a shunt around one of said sources, means to vary the resistance of said shunt in the transmission of signals, and static means acting independently of the resistance-varying means to automatically limit the duration of the signaling impulses passing over the line.

4. A telegraph-line having two sources of unequal electromotive force connected therein in opposition to each other, a single contact Morse key connected in the shunt around one of said sources, and a capacity connected in series between the terminals of said sources from which emanate impulses of the same polarity.

5. A telegraph-line having two sources of unequal electromotive force connected therein in opposition to each other, a single contact Morse key connected in shunt around one of said sources, a capacity connected in series between the terminals of said sources from which emanate impulses of the same polarity, a polarized receiving-relay having its coils connected in series with the main line, a resistance connected in series with the tongue and one contact of said relay, a closed circuit connected in shunt around said resistance, and a translating device connected to be operated by current in said shunt, substantially as described.

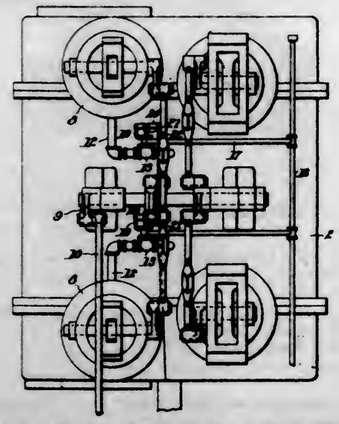
6. In telegraphy two sources of current connected normally in series as to each other and the line with the interposition of a condenser or condensers, one source adapted to furnish the signaling energy and the second adapted to furnish the spacing energy and means to shunt one of said sources in accordance with the impulses to be transmitted.

7. A system of telegraphy consisting of the line proper, a transmitting-station and a receiving-station connected to said line proper, the transmitting station embracing two sources of current, one of substantially double the strength of the other, the two sources connected in opposition as to each other, condenser or condensers interposed between said sources line and ground, a shunt around one of said sources and means to open and close said shunt in accordance with the characters to be transmitted, the receiving-station comprising a polarized relay and a translating device operatively connected to said relay.

8. In a system of telegraphy two sources of current, one of higher electromotive force than the other, said sources oppositely connected to each other, and means to shunt the source of higher electromotive force, said shunt embracing a transmitting-key and a resistance.

9. A transmitting device in electric telegraphy embracing two sources of current connected in opposition as to each other, the electromotive force of one source greater than the electromotive force of the second source, means to shunt the source of greater electromotive force and means to prevent the flow of current from any of said sources except for a short impulse due to the change in one of said sources.

821,507. **VALVE.** WILLIAM H. KLINE, Dunbar, Pa. Filed July 13, 1904. Serial No. 216,410.



Claim.—1. In a device of the character described, a storage-reservoir, a fluid-compressor provided with a port to admit fluid under pressure from the compressor to the reservoir, a port-closure adapted to control the flow of the fluid through the port and from the compressor to the reservoir, a piston adapted to operate said port-closure, a cylinder in which said piston is mounted to reciprocate, a pipe disposed to admit a fluid under pressure from the compressor to the cylinder to operate the piston, a valve located in said pipe and means for admitting a fluid from the reservoir to hold the said valve normally closed, the parts being so disposed that when the tension of the fluid in the compressor exceeds the tension of the fluid in the reservoir, the valve is opened to admit fluid to the cylinder.

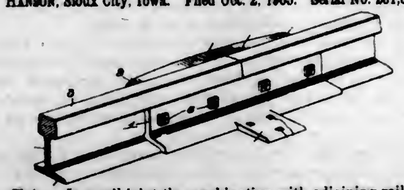
2. In a device of the character described, the combination of a reservoir for the storage of compressed fluid, a fluid-compressor provided with a port to admit the compressed fluid from the compressor to the reservoir, a port-closure, a cylinder, a piston within said cylinder connected with and adapted to operate said port-closure, a pipe to conduct a compressed fluid from the compressor to the cylinder, a reciprocating valve disposed in said pipe and a pipe connected with the reservoir and adapted to admit fluid under reservoir-pressure to the upper side of the reciprocating valve to hold said valve normally seated until the fluid in the compressor assumes a greater tension than the fluid in the reservior.

3. A device of the character described, comprising in combination a reservoir for the storage of compressed fluid, a fluid-compressor provided with a port-closure adapted to control the flow of said compressed fluid from the compressor to the reservoir, a cylinder, a piston mounted within said cylinder and secured to and adapted to operate said port-closure, a pipe to conduct the compressed fluid from the compressor to the cylinder, a reciprocating valve disposed in said pipe, a pipe connected with the reservoir and adapted to admit fluid under reservoir-pressure to the upper side of the reciprocating valve to hold said valve normally seated until the fluid in the compressor assumes a greater tension than the fluid in the reservoir and a by-pass provided with a check-valve adapted to permit the return-passage of the compressed fluid from the cylinder around the valve.

4. A device of the character described, comprising in combination, a reservoir for the storage of compressed fluid, a fluid-compressor provided with a port to permit the flow of fluid from the compressor to the reservoir, a port-closure adapted to control the flow of compressed fluid through the port, a cylinder, a piston mounted within said cylinder and connected with and adapted to operate the port-closure, a pipe to conduct compressed fluid from the compressor to the cylinder, a reciprocating valve disposed in said pipe, a pipe connected with the reservoir and arranged to admit fluid under reservior-pressure to the upper side of the reciprocating valve to hold said valve normally seated until the fluid in the compressor assumes a greater tension than the fluid in the reservoir, means connected with the pump-starting mechanism whereby the stopping of the compressor holds the reciprocating valve seated and means to permit the return-flow of the fluid from the cylinder around the valve.

5. A device of the character described, comprising in combination, a cylinder, a piston within the cylinder, a storage-reservior, a compressor provided with a port to permit the flow of a compressed fluid from the compressor to the reservoir, a port-closure connected to and operated by the piston, a pipe to conduct a fluid from the compressor to the cylinder to operate the piston and open the port-closure, a reciprocating valve disposed in said pipe, means for conducting a fluid under reservoir-pressure from the reservoir to hold the reciprocating valve normally closed, but adapted to be opened by the fluid in the pipe when the tension thereof becomes greater than the tension of the fluid in the reservoir, means for mechanically returning the piston and means to permit the fluid in the cylinder to flow back to the compressor and around the reciprocating valve upon the return of the piston.

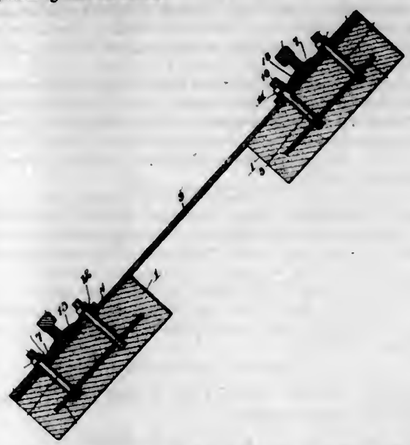
821,508. **DEVICE FOR BRIDGING AND UNITING RAILS.** JOHN D. KNEEDLER, NIAL VAN SICKLE, BUEL COUCH, and NELSON T. HANSON, Sioux City, Iowa. Filed Oct. 2, 1905. Serial No. 281,018.



Claim.—In a rail-joint the combination with adjoining rails, of clamping-plates disposed upon opposite sides of said rails opposite the joint therebetween and having lateral integral lips with spike-receiving openings, said plates fitting snugly between the heads and the base-flanges of the rail, a bridging-plate separate from the clamping-plate and having a base-flange resting upon the flange of one of the clamping-plates and having its upper face convex from end to end and the inner edge of said upper face straight, the ends of said upper face being disposed below the tops of the rails and the center of said face projecting above the rails and beveled from side to side upward away from the rails, the vertical face of said bridging-plate bearing against the face of the rail and of the adjacent clamping-plate, and securing means extended through the rail, the clamping-plates, and the bridging-plate and securing the whole together.

821,509. **SECURING MEANS FOR TRACK-RAILS.** JOHN D. KNEEDLER, Sioux City, Iowa, assignor of two-fifths to Buel Couch and one-fifth to Nelson T. Hanson, Sioux City, Iowa. Filed Dec. 22, 1905. Serial No. 293,013.

Claim.—1. The combination with bed-blocks and metallic plates embedded therein; of bolts adjustably engaging the plates and extending from the blocks, a tie uniting said blocks and engaged by said bolts, abutments at each end of said tie and secured thereto, braces interposed between said abutments and the outside of the rails, and movable means upon the tie for engaging the rails and holding them against the braces.

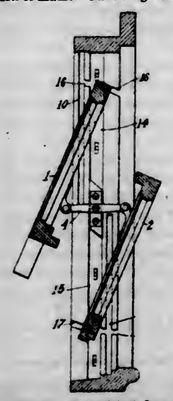


2. The combination with a bed-block and a plate embedded therein; of bolts engaging the plate and extending from the block, a tie mounted on the block and engaged by the bolts, said tie having an abutment thereon, a rail-brace upon the tie and against the abutment said brace being engaged by one of the bolts, means upon said bolt for clamping the rail-brace upon the tie, and movable means upon the other bolt for engaging the rail and holding it upon the brace.

3. The combination with a bed-block and a plate embedded therein; of bolts threaded into the plate and extending from the block, a tie upon the block and engaged by the bolts, a rail-brace upon the tie engaged by one of the bolts, adjustable means upon said bolt for clamping the brace upon the tie, and laterally-movable means upon the other bolt for engaging a rail and holding it in engagement with the brace.

4. The combination with bed-blocks and metallic plates embedded therein; of a tie uniting said blocks, bolts adjustably engaging said plates and tie, rail-braces upon the outer bolts, means carried by said tie and rigidly secured thereto to reinforce said braces, and laterally-movable holding-plates for engaging the inner side of the rails and holding them against the braces.

821,510. **BALANCED WINDOW.** ALEXANDER KNOX, Brisbane, Queensland, Australia, assignor to Austral Window Balance Company, a Corporation of Maine. Filed Aug. 2, 1905. Serial No. 272,309.



Claim.—1. In a window of the kind described, the combination with upper and lower sashes, of a frame therefor, a balancing-lever, pivoted to the frame and having its ends pivotally connected to the upper and lower sashes respectively, the frame being constructed to

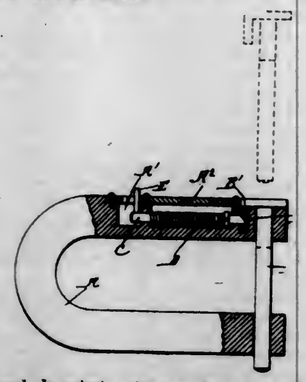
permit the sashes to be swung on their pivotal connections independently of each other, and devices removably secured to the frame to hold the sashes against such movement, as set forth.

2. In a window of the kind described, the combination with upper and lower sashes, of a frame therefor, and a balancing-lever pivoted to the frame and pivotally connected at its ends to the upper and lower sashes respectively, the frame being constructed to permit substantially vertical movement of the sashes and to permit the sashes to swing out of the frame independently of each other, as set forth.

3. In a window of the kind described, the combination with upper and lower sashes, of a frame therefor, and a one-piece balancing-lever pivoted to the frame and pivoted at its ends to the upper and lower sashes respectively, the frame being constructed to permit the sashes to be swung on their pivots and assume positions transverse to the frame, as set forth.

4. In a window of the kind described, the combination with upper and lower sashes, of a frame therefor having vertical grooves and transverse grooves crossing the latter, a balancing-lever pivoted at the side of the frame and pivotally connected at its ends with the upper and lower sashes, and studs projecting from the sides of the sashes into the vertical grooves and adapted to pass into the transverse grooves, whereby the sashes may be swung on their pivotal connections independently of each other and assume positions transverse to the frame, as set forth.

821,511. CLEVIS. HERMAN KRUSE, Campbell, Minn. Filed June 21, 1905. Serial No. 266,262.



Claim.—1. In a clevis, a frame having openings therein, a pin adapted to pass through said openings, an extension on the pin, and a bolt carried by the frame to engage the extension to hold the pin against displacement.

2. In a clevis, a frame having openings therein, a pin adapted to pass through said openings, an extension carried by the pin, said extension having an opening therethrough, and a bolt carried by the frame extending within said opening of the extension to hold the pin against displacement.

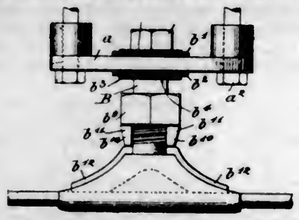
3. In a clevis, a frame having openings, a pin adapted to pass through said openings, said frame being provided with a recess, a bolt mounted in the recess to engage the pin to hold said pin against displacement, and means to hold said bolt out of engagement with the pin.

4. In a clevis, a frame having openings, said frame being provided with a recess adjacent one of the openings, a pin adapted to pass through the openings of the frame, an extension carried by the pin adapted to fit within the recess of the frame to engage the extension to hold the pin against displacement.

5. In a clevis, a frame having openings, a pin adapted to pass through said openings, said frame having a recess, a bolt arranged within the recess and adapted to engage the pin and hold it against displacement, a cover for the recess, said cover being provided with a slot, and a pin carried by the bolt and passing through the slot of the cover.

821,512. TROLLEY-WIRE HANGER. ADAM J. LAWRETT, Athens, Ohio. Filed Apr. 21, 1905. Serial No. 256,761.

Claim.—1. In a trolley-wire hanger, the combination of a cap, comprising a plate having a central opening, drift-bolts traversing the ends of the plate, arbors on the drift-bolts and above the plate, a stem having a reduced screw-threaded portion for engaging the central opening in the cap, insulating-washers encircling the stem above and below the plate, flanges on the washers extending into the central opening, a nut engaging the screw-threaded end of the stem above the washers, laterally-depending branches on the stem, transverse lugs at the junction of the branches and the stem and extending beyond the faces thereof, a clamp-nut loosely encircling the stem and supported on the lugs, and a U-shaped clamp inclosing the branches, and provided with reduced screw-threaded ends extending between the lugs and engaging the clamp-nut, substantially as described.



2. In a trolley-wire hanger, the combination of a cap comprising a plate having a central opening, drift-bolts traversing the ends of the plate, arbors around the drift-bolts above the plate, a stem having a reduced screw-threaded end engaging the central opening, means for securing the stem to the cap, means for insulating the stem from the cap, laterally-depending branches on the stem, transverse lugs on the stem at the junction of the branches and extending beyond the faces of the stem, a clamp-nut encircling the stem and supported by the lugs, and a U-shaped clamp partially inclosing the depending branches and having reduced screw-threaded ends extending between the lugs and engaging the clamp-nut, substantially as described.

3. In a trolley-wire hanger, the combination of a cap, a stem secured to the cap and insulated therefrom, laterally-depending branches on the stem, transverse lugs at the junction of the branches and the stem and extending beyond the faces thereof, a clamp-nut loosely mounted on the stem and supported by the lugs, and a U-shaped clamp partially inclosing the branches and having reduced screw-threaded ends extending between the lugs and engaging the branches.

4. In a trolley-wire hanger, the combination of a cap, a stem secured to the cap and insulated therefrom, laterally-depending branches on the stem, a U-shaped clamp for coacting with the depending branches, and provided with reduced screw-threaded ends, oppositely-disposed transverse lugs at the junction of the branches and the stem and extending beyond the faces thereof for receiving the reduced ends of the clamp and a clamp-nut supported on the lugs for engaging the screw-threaded ends of the clamp.

5. In a trolley-wire hanger the combination of a cap, a stem secured to the cap and insulated therefrom, a U-shaped clamp partially inclosing the lower portion of the stem, oppositely-disposed transverse lugs on the stem and extending beyond the faces thereof for receiving the ends of the clamp, and means supported by the lugs for securing the clamp in position.

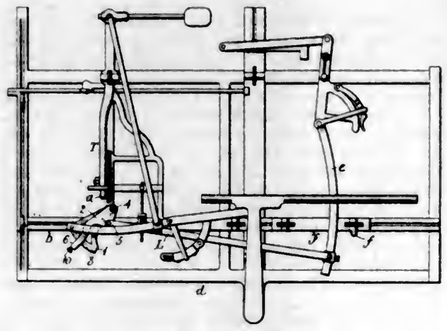
6. In a trolley-wire hanger the combination of a stem, a U-shaped clamping member inclosing the lower portion of the stem and provided with reduced screw-threaded ends, oppositely-disposed transverse lugs on the stem and extending beyond the faces thereof for receiving the reduced ends of the clamp, and means supported by the lugs for engaging the said reduced ends.

821,513. ATTACHMENT FOR GRADING-MACHINES. WARREN B. LEIGHTON, Lewiston, Me. Filed July 20, 1905. Serial No. 270,537.

Claim.—1. In a machine of the character described, the combination with tracing and following elements, of a connecting-bar attached to one of said elements, a plate connected to one of said elements, a lever pivoted upon said plate and pivotally connected to said rod for angular adjustment, and means for securing said lever upon said plate when adjusted.

2. In a machine of the character described, the combination with tracing and following elements, of a connecting-bar attached to one of said elements, a rack-plate connected to one of said elements, a lever pivoted upon said plate and pivotally connected to said rod, and a pawl carried by said lever and adapted to engage said rack-plate to hold said lever in an adjusted position, substantially as described.

3. In a machine of the character described, the combination with tracing and following elements, of a plate of substantially segmental form secured to one of said elements and having its curved end formed with notches, a lever pivoted to the opposite end of said plate, a pivot-stud upon said lever, a connecting-rod between said stud and the other of said elements, a sliding pawl or dog carried by said lever and adapted to engage the notches in said plate and a spring for holding said pawl in said notches, substantially as described.



821,514. VESSEL. ALEXANDER LESLIE, Walkerville, Canada, assignor of one-half to George E. Titcomb, Philadelphia, Pa. Filed Dec. 7, 1904. Serial No. 235,863.



Claim.—1. The combination of a vessel having a hold and having a series of transverse deck-beams with longitudinal rails mounted on said beams and extending to one end of the vessel, the space between the beams above the hold being open for the passage of a bucket for removing material from the hold, substantially as described.

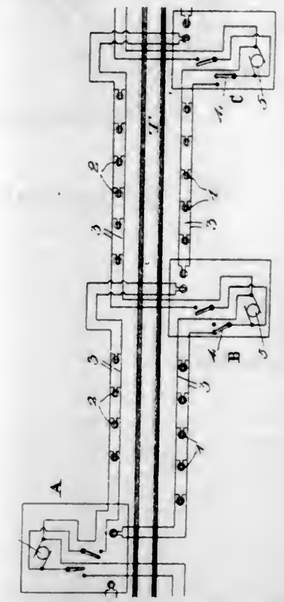
2. The combination of a vessel having a hold with a movable track extending over the hold and alining with a track on the deck of the vessel, said hold being open, when the track is moved, for the passage of a bucket for removing material from the hold, substantially as described.

3. The combination of a vessel having a hold for the storage of material, fixed tracks on the deck of the vessel, pivoted frames on which are mounted the movable tracks which aline with the fixed tracks of the vessel, said movable tracks, when in line with the fixed tracks, extending over the hold of the vessel, substantially as described.

4. The combination of a vessel having a hold for the storage of material, two fixed tracks extending from one end of the vessel to the hold, two series of movable tracks pivoted to the deck of the vessel and arranged to either swing over the hold and in alinement with the fixed tracks, or to be thrown back clear of the hold and out of alinement with the fixed tracks, substantially as described.

5. The combination of a vessel having a hold, transverse deck-beams extending across the hold, pivoted frames having tracks thereon, said frames being pivoted to brackets on the deck of the vessel and arranged, when in alinement with the fixed tracks on the vessel, to rest upon the deck-beams, and, when thrown back, to be clear of the hold, substantially as described.

821,515. RAILWAY-SIGNAL. JOHN B. LINEBACK, Siloam Springs, Ark., assignor of one-half to Robert S. Morris, Siloam Springs, Ark. Filed Dec. 14, 1905. Serial No. 291,772.



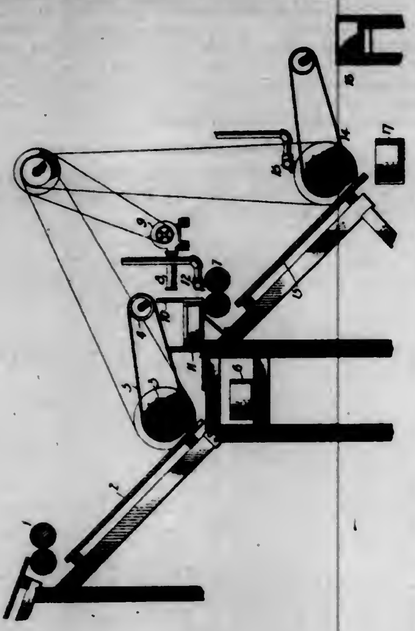
Claim.—1. The combination with a railway-track and stations located at intervals therealong, of electric circuits extending from each of said stations in opposite directions toward the next adjacent stations and arranged upon opposite sides of said track, translating devices in said circuits arranged at intervals along said track and at the next adjacent stations, electric generators at said stations for supplying electric current to said circuits and switches for opening and closing said circuits.

2. The combination with a railway-track and stations located at intervals therealong, of electric circuits extending from each of said stations in opposite directions toward the next adjacent stations and arranged upon opposite sides of said track, electric lamps in said circuits at intervals along said track and at the adjacent stations, electric generators at said stations for supplying electric current to said circuits and switches in said circuits at said stations, substantially as described and for the purpose set forth.

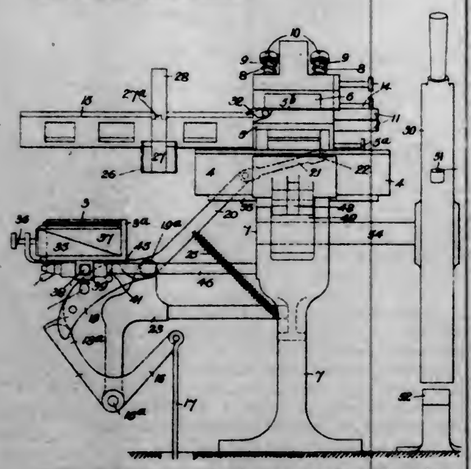
821,516. PROCESS OF RECOVERING COPPER AND OTHER VALUES FROM CERTAIN ORES. THOMAS J. LOVETT, Chicago, Ill. Filed Jan. 16, 1906. Serial No. 296,355.

Claim.—The herein-described combined dry and wet process of concentrating and collecting the non-magnetic sulfid and contained values in low-grade chalcopyrite ores carrying a material percentage of magnetic iron, which consists of the steps of coarse-crushing the ore in a dry state to reduce the sulfid and iron and allow of the dis-

lodgment of adhering sulfid powder, magnetically separating from the dry reduced mass the disunited iron particles, dislodging from said dry iron particles and collecting the adhering sulfid powder, comminuting the remaining attracted material in a wet state to a degree of fineness which disunites the remaining iron particles from the other constituents, magnetically separating the disunited remaining iron particles from the wet mass, and finally collecting and saving the sulfid concentrates from the recrushed mass.



821,517. PRESS. ALFRED MARSHALL, Leicester, England. Filed Mar. 13, 1905. Serial No. 249,937.



Claim.—1. In a press of the character described, the combination of a feed-table for sheets of gold or other leaf, a chase movable to bring it into or out of operative relation to the table, means for operating one of said elements to cause the sheets of gold or other leaf to be brought into contact with the chase, and a fire-box toward and from which the chase is movable all as described for the purposes specified.

2. In a press of the character described, the combination of a feed-table for sheets of gold or other leaf, a chase movable to bring it into and out of operative relation to the table, means for operating one of said elements to cause the sheets of gold or other leaf to be brought into contact with the chase, a fire-box toward and from which the chase is movable, and an oiling device arranged in the path of movement of the chase and adapted to oil the chase, for the purpose specified.

3. In a press of the character described, the combination of a feed-table for sheets of gold or other leaf, a chase movable to bring it into and out of operative relation to the table, means for operating one of said elements to cause the sheets of gold or other leaf to be brought into contact with the chase, a fire-box toward and from which the chase is movable, an oiling-pad, and means for bringing the pad into contact with the chase during the movement of the latter away from the fire-box and before receiving the sheet of gold-leaf.

4. In a press of the character described, the combination with a fire-box, and a race or track, of a chase mounted and adapted to slide upon said track toward and away from the fire-box, and means for moving the chase comprising a foot-pedal, a pivoted bell-crank lever having one arm connected with the foot-pedal, a second two-armed lever against one arm of which the other arm of the bell-crank lever is adapted to bear, and a link connected at one end to the other arm of said second lever and the other end of said link being connected with the chase.

5. In a press of the character described, the combination with a fire-box and a chase movable toward and away from the fire-box, of a feed-table for the sheets of gold or other leaf, and adapted to be moved relatively to the chase to bring the uppermost sheet into contact with the chase.

6. In a blocking or embossing press the combination with the fire-box, the chase and a carrier upon which the chase can be moved to and fro relatively to the fire-box, of an oiling device arranged in such a manner that the chase passes in contact therewith as it approaches the feed-table and passes clear of it on returning to the fire-box for the purpose described.

7. In a blocking or embossing press the combination with a fire-box, the chase and a carrier therefor, of an oiling device and means on the said chase to move the oiling device into contact with the chase after the latter leaves the fire-box for the purpose described.

8. In a blocking or embossing press the combination with the fire-box, the chase and a carrier for the chase, of means for automatically greasing the working face of the said chase as it leaves the fire-box for the purpose described.

9. In a blocking or embossing machine the combination with the chase and a carrier therefor of a feed-table carrying the pile of sheets of gold or other leaf having a universal adjustment in relation to the said chase and said chase being arranged and adapted for movement into operative position relatively to the table so as to receive the sheets of gold or other leaf, for the purpose described.

10. In a press of the character described, the combination with a fire-box and a chase movable toward and away from the fire-box, of a feed-table for the sheets of gold or other leaf arranged and adapted to be swung in an arc of a circle to bring the uppermost sheet of gold-leaf into contact with the chase.

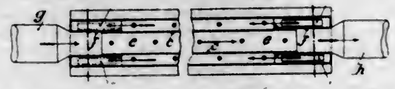
11. In a press of the character described, the combination with a fire-box and a chase movable toward and away from the fire-box, of a feed-table for the sheets of gold or other leaf arranged to be swung in an arc of a circle to cause the uppermost sheet of gold or other leaf to be brought into contact with the chase, and means for universally adjusting the table relatively to the chase, for the purpose specified.

12. In a press of the character described, the combination with a fire-box and a feed-table for the sheets of gold or other leaf, of the chase, a carrier upon which the chase is movable to and fro between the fire-box and feed-table respectively, and a platen having frisket-fingers arranged to exert pressure on the work as the platen approaches the chase and to release the work on the return of the platen.

13. In a press of the character described, the combination with the fire-box, a chase movable toward and from the fire-box and a carrier for the chase, of a platen, a series of toggle-levers and a hand-wheel for raising and lowering the said platen.

14. In a press of the character described, the combination with a fire-box, of a chase movable toward and from the fire-box, a feed-table for the sheets of gold-leaf consisting of two oppositely-disposed wedge-shaped blocks and means for moving one block so as to raise the other block to compensate for the reduction in the pile of sheets and to insure that the top sheet shall always meet the face of the chase.

821,518. REGENERATOR OR HEAT-EXCHANGING APPARATUS. EMILE MASLIN and CHARLES THERYC, Marseille, France, assignors to Société Anonyme des Procedes Maslin & Theryc, Marseille, France. Filed Feb. 5, 1903. Serial No. 92,736.

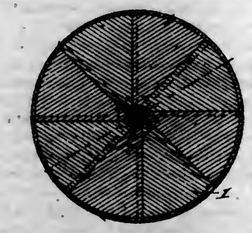


Claim.—1. A regenerator or heat-exchanging apparatus consisting of a casing, a plurality of superposed parallel flat plates arranged therein, distancing-strips interposed between the said plates and in connection with the casing forming a pair of side compartments and an intermediate compartment, said intermediate compartment of greater length than said side compartments and said compartments extending parallel with respect to one another, an inlet-pipe for the fluid for said intermediate compartment at one end of the casing, an outlet-pipe for the exhaust of the fluid from said intermediate compartment at the other end of the casing, an inlet-pipe for the entrance of another fluid to the side compartments at that end of the casing to which said exhaust-pipe is connected, an outlet-pipe for the exhaust of the fluid from said side compartments at that end of the casing to which the inlet-pipe for the intermediate compartment is connected, and means for tightening together the constitutive parts of the apparatus.

2. A regenerator or heat-exchanging apparatus comprising a casing, a plurality of superposed parallel flat plates arranged therein and having an extension at each end of less width than the body portion of the plate, distancing-strips interposed between the said plates and in connection with the casing forming a pair of side compartments and an intermediate compartment of greater length than the side compartments, an inlet-pipe for the fluid for said intermediate compartment at one end of the casing, an outlet-pipe for the exhaust of fluid from said intermediate compartment at the other end of the casing, said inlet-pipe and said outlet-pipe in connection with the casing forming chambers at each end thereof communicating with the side compartments, an inlet-pipe for the entrance of another fluid to the chambers at one end of the casing, an outlet-pipe for the exhaust of fluid from the said chambers at the other end of the casing, and means for securing together the constitutive elements of the apparatus.

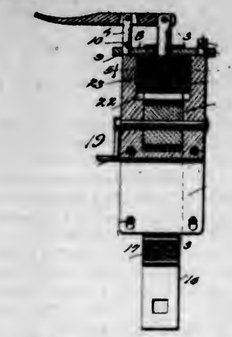
3. A regenerator or heat-exchanging apparatus comprising a casing, a plurality of superposed parallel flat plates arranged therein and having an extension at each end of less width than the body portion of the plate, distancing-strips interposed between the said plates and in connection with the casing forming a pair of side compartments and an intermediate compartment of greater length than the side compartments, an inlet-pipe for the fluid for said intermediate compartment at one end of the casing, an outlet-pipe for the exhaust of fluid from said intermediate compartment at the other end of the casing, said inlet-pipe and said outlet-pipe in connection with the casing forming chambers at each end thereof communicating with the side compartments, said casing provided with a pair of inlets for the chambers at one end thereof, said casing provided with a pair of outlets for the chambers at the other end thereof, a fluid-supply pipe communicating with said inlets for the chambers, and an exhaust-pipe communicating with said outlets for the chamber.

821,519. VEHICLE-WHEEL. GEORGE H. MITCHELL, North Yarmouth, Me. Filed Jan. 21, 1905. Serial No. 242,142.



Claim.—A wheel comprising a plurality of segmental sections provided with mortises and tenons for the entire length of the segments, a hub having inner and outer integral flanges, said inner flanges being spaced apart for the reception therebetween of the inner ends of the sections.

821,520. WHEEL-SUPPORT FOR PLOWS. SAMUEL MOELLER, Sebewaing, and JOHN MOELLER, Bay Port, Mich. Filed Aug. 29, 1905. Serial No. 276,285.

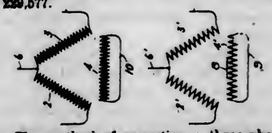


Claim.—1. A wheel-supporting attachment for plows comprising a frame having a chamber and provided with means of attachment to the beam of the plow, a wheel-supporting standard vertically adjustable on the frame and provided with rack-teeth, a toothed wheel disposed in said chamber and engaging said rack-teeth, a spring-actuated sliding dog within the chamber to engage and lock the wheel from rotation, and means for retracting the dog.

2. A wheel-supporting attachment for plows comprising a body portion having a chamber therein closed by a bottom wall adapted to rest upon the top of the beam, said bottom wall being provided with a depending bearing-plate adapted to rest against one side of the beam and an extension on the rear side forming a guide-passage communicating with said chamber, a wheel-supporting standard vertically adjustable in said guide-passage and provided with rack-teeth, a gear disposed in the lower portion of the chamber and engaging said rack-teeth, a vertically-movable dog in the upper portion of the chamber to engage and lock the gear from rotation, a spring for projecting said dog, means for retracting the dog, and clamping elements for securing the device in position upon the beam.

3. In a wheel-supporting attachment for plows, the combination of a frame having a chamber provided with grooves and a guide-passage communicating therewith, a supporting-standard provided with rack-teeth and mounted within said guide-passage, a gear-wheel adapted to engage the teeth of the supporting-standard and hold the same in adjusted position, the said chamber being open at one side for the insertion and removal of the wheel, a sliding spring-actuated dog mounted in the grooves and within the chamber, and a removable top plate on the chamber with means for fastening the same, whereby the dog-securing means may be assembled.

821,521. METHOD OF OPERATING A MULTIPHASE TRANSFORMER HAVING THE WINDINGS FOR ONE PHASE INOPERATIVE. WALTER S. MOODY, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Oct. 22, 1904. Serial No. 229,577.



Claim.—1. The method of operating a three-phase shell-type transformer, which consists in delta-connecting the windings for two of the phases into a three-phase system, and short-circuiting part or all of the windings of the other phases.

2. The method of operating a multiphase shell-type transformer, which consists in connecting the windings for some of the phases in a multiphase system and closing the remaining windings upon themselves.

3. The method of operating a multiphase shell-type transformer having a number of core portions normally surrounded by windings, each of said windings being normally connected into a multiphase system which consists in replacing one or more of said windings with windings short-circuited upon themselves.

4. The method of operating in a multiphase system, a multiphase shell-type transformer having as many core-sections as there are branches in the multiphase system, which consists in connecting

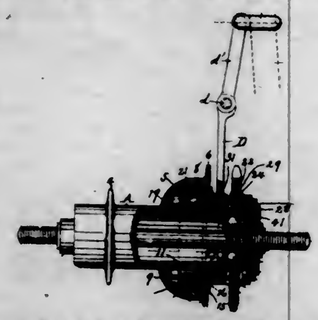
windings surrounding some of said core-sections into the multiphase system, and providing means for practically eliminating the passage of magnetic fluxes through the remaining of said core-sections.

5. The method of operating in a multiphase system, a multiphase shell-type transformer having as many circuits of magnetic material as there are branches in a multiphase system, which consists in connecting windings placed about certain of said circuits in a multiphase system, and short-circuiting windings placed about the remaining of said circuits.

6. The method of operating a multiphase transformer having a plurality of core-sections arranged and connected together so that a plurality of closed magnetic circuits are formed which include some of said sections but do not include one of said sections, which consists in practically eliminating the passage of magnetic fluxes through said one of said sections, and connecting windings surrounding others of said sections into a multiphase system.

7. The method of operating a multiphase transformer having a core comprising portions each of which normally forms a part of the paths for multiphase fluxes, which consists in practically eliminating the flux through one of said portions, while allowing multiphase fluxes to pass through others of said portions.

821,522. BACK-PEDALING BRAKE. ALEXANDER P. MORROW, Elmira, N. Y. Filed Nov. 26, 1901. Serial No. 83,749.



Claim.—1. In a back-pedaling brake, a wheel-hub, a brake member on said hub, a non-rotary brake member, means actuated by back-pedaling for making braking contact between the rotary member and the non-rotary member, a brake-arm rigidly attached to said non-rotary member and hinged or jointed between its ends to swing into positions at different angles to the axis of the hub, whereby the end of the brake-arm may be fastened to a frame-piece without disturbing said non-rotary member, and means for fastening said brake-arm to said frame-piece.

2. In a back-pedaling brake, a wheel-hub having a brake-surface, a non-rotary brake member movable against and away from said surface, a brake-arm connected to said non-rotary member and hinged or jointed between its ends to swing into positions at different angles to the axis of the hub, whereby the end of said brake-arm may be attached to the frame of a bicycle at various angles without affecting the non-rotary member, and means for fastening the end of said arm to said frame.

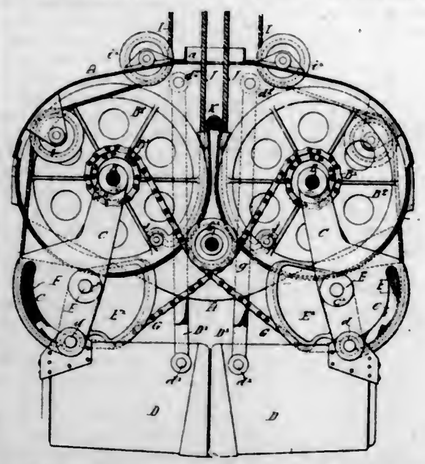
3. In a back-pedaling brake, a wheel-hub, a braking mechanism employed in conjunction with said wheel-hub and comprising a non-rotary brake member and means actuated by back-pedaling for making braking contact between said non-rotary member and said hub by a longitudinal movement along the axis of said hub, a brake-arm rigidly attached to said non-rotary device and hinged or jointed between its ends, and means for fastening the end of said brake-arm to a frame-piece, whereby the end of the brake-arm is held rigidly on the frame-piece and the non-rotary member may move as described.

4. In a back-pedaling brake comprising a non-rotary member and a rotary member, one of said members being longitudinally movable in the direction of the axis of such rotation, a brake-arm connected to said non-rotary member and hinged or jointed between its ends, and means for fastening the end of said arm to the frame of a bicycle, whereby the end of said brake-arm may be fastened firmly to said frame and said non-rotary member may move as described.

5. In a back-pedaling brake, a wheel-hub, a braking mechanism employed in conjunction with said hub and comprising a non-rotary brake member, means actuated by back-pedaling for making contact between a rotary part of the hub and said non-rotary member, and a brake-arm having a clip on its end comprising a screw-clamp composed of a bolt passing through said arm, whereby it is movable rotarily and longitudinally as to said arm and having an integral head forming one member of the clip and a second arm fitting on said bolt and forming the other member of the clip and mechanism for adjusting the position of the second arm with reference to the head whereby the clip is adapted to fit frame-pieces of various sizes and at various angles and heights with reference to the brake-arm, substantially as described.

6. In a back-pedaling brake, a wheel-hub, a braking mechanism employed in connection with said hub and comprising a non-rotary brake member, means actuated by back-pedaling for making contact between a rotary part of the hub and said non-rotary member, and a brake-arm having a clip on its end comprising a clamp composed of a bolt screwed through said arm and having an integral head forming one member of the clip, whereby the bolt is movable rotarily and longitudinally as to said arm, a second arm upon said bolt and adjustable means for adjusting the position of said second arm with reference to said head and clamping a frame-piece of a bicycle, whereby the clip is adapted to fit frame-pieces of various sizes and at various angles and heights with reference to the brake-arm, substantially as described.

821,523. HOISTING-BUCKET. ALFRED D. MOSBY, Philadelphia, Pa., assignor to The Dodge Coal Storage Company, Naugatuck, Conn., a Corporation of Connecticut. Filed Sept. 13, 1905. Serial No. 278,291.



Claim.—1. The combination in a hoisting-bucket of the clam-shell type, of a shell, arms pivoted to said shell, scoops hung from said arms and from the shell, with means for opening and closing the bucket, the parts being so arranged that there is a certain amount of lost motion between the arms and the scoops, whereby the path of the scoops in closing will be different from the path of the scoops in opening, substantially as described.

2. The combination in a hoisting-bucket of the clam-shell type, of a shell, shafts mounted on the shell, arms hung from the shafts and having segmental slots, shafts mounted in the said arms, segments mounted on said shafts, scoops attached at their outer ends to the segments and hung at their inner ends from the shell, said outer ends of the scoops being guided in slots of the arms, and opening and closing means connected to the segments, substantially as described.

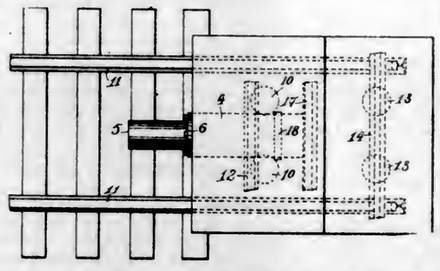
3. The combination in a hoisting-bucket of the clam-shell type, of a casing, scoops, links connecting the inner ends of the scoops with the casing, transverse shafts, arms hung from the shafts and having segmental slots therein, shafts carried by said arms, segments mounted on the said shafts, rods by which the said segments are attached to the scoops, said rods extending through the slots in the arms, and means for operating the said parts, substantially as described.

4. The combination in a hoisting-bucket of the clam-shell type, of a casing, shafts mounted in the casing, wheels mounted on the shafts, a closing-rope secured to each wheel and passing up through the shell, drums on the hubs of said wheels, arms hung from the said shafts, segmental slots in the arms, shafts carried by the said arms, inner and outer segments mounted on the shafts, rods carried by the segments, scoops hung from the rods at their outer ends, and links connecting the inner ends of the scoops with the shell, closing-chains attached to the drums crossing each other and passing around the inner segments to the rods, and opening-ropes passing from the said rods around the outer segments, substantially as described.

5. The combination in a hoisting-bucket of the clam-shell type, of a shell having side flanges forming stops, scoops, rods connecting the inner ends of the scoops with the shell, transverse shafts, arms hung from the said shafts, shafts carried by said arms, segments on the said shafts, rods carried by the segments and to which the outer ends of the scoops are connected, stops on the arms to limit the movement of the scoops in respect to the arms so that when the bucket is opened the arms will contact with the edges of the shell allowing the scoops to swing so that the bottoms of the scoops will assume such an angle that the material will readily discharge from the bucket, substantially as described.

6. The combination of a shell, scoops hung therefrom, the shell having stops at each end, arms hung from the shell and from which the scoops are indirectly hung, projections on the arms arranged to rest against the stops on the shell when the bucket is in the full-open position so that the shell resists the thrust directly relieving the mechanism of strain, substantially as described.

821,524. PNEUMATIC CONCRETE STEEL CAR-BUMPER. THOMAS MCCORMICK, Somerville, Mass. Filed Dec. 11, 1906. Serial No. 291,353.



Claim.—1. A car-bumper consisting in the combination of a mass of artificial stone anchored at the end of a railway-track and a buffer anchored therein.

2. A car-bumper consisting in the combination of a mass of concrete anchored at the end of a railway-track and a pneumatic buffer anchored therein.

3. A car-bumper consisting in the combination of a mass of concrete anchored on the rails of a railway and a buffer mounted in said mass.

4. A car-bumper consisting in the combination of a mass of concrete anchored to the ground by piles and a buffer mounted in said mass.

5. The combination with the rails of a railway-track, of a mass of concrete formed upon said rails, metal rods secured to said rails and embedded in the concrete and a buffer mounted in the mass of concrete.

6. The combination with the rails of a railway-track, of a mass of concrete formed upon said rails, metal rods secured to said rails and embedded in the concrete, piles secured in the ground and having their upper ends anchored in the concrete.

7. A car-bumper consisting in the combination of a mass of concrete anchored at the end of a railway-track, a pneumatic cylinder anchored therein, a plunger located in said cylinder and a spring for protruding the end of the plunger beyond the cylinder.

8. The combination with the rails of a railway-track, of a mass of concrete formed upon said rails, substantially as specified.

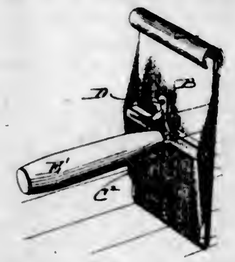
9. The combination with the rails of a railway-track, of a mass of concrete formed upon said rails, and anchored to the ground by piles, substantially as specified.

10. The combination with the rails of a railway-track, of a mass of concrete formed upon said rails, and anchored to the ground by piles, of a buffer supported by steel rods embedded in the concrete, substantially as specified.

11. The combination with the rails of a railway-track, of a mass of concrete formed upon said rails, and anchored to the ground by piles, of a buffer supported by steel rods embedded in the concrete and reinforced by turned rail ends and cross-pieces, substantially as specified.

12. The combination with the rails of a railway-track, of a mass of concrete formed upon said rails, and anchored to the ground by piles, of a pneumatic buffer composed of a pneumatic cylinder and a plunger or ram located within said cylinder, an escape cock or valve located at the rear of said cylinder, of a spring for protruding the end of the plunger beyond the edge of the cylinder, said pneumatic cylinder being supported by steel rods embedded in the concrete, reinforced by turned-rail ends and cross-pieces, all being anchored in the concrete, substantially as specified.

821,525. FLOOR-SCRAPER. ANDREW O. NORDQUIST, Minneapolis, Minn. Filed July 19, 1905. Serial No. 270,371.



Claim.—1. A scraper, comprising a body-plate, a bar pivotally mounted on said plate, a handle detachably secured in said bar, and adjusting-screws carried by said bar, for the purpose described.

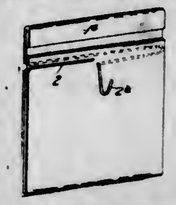
2. A scraper comprising a body-plate, provided with a guard at one end, sides projecting upwardly from said plate, a bar pivoted between said sides, a bit arranged on said plate between the sides, and a handle secured in said bar, adapted to engage the bit, for the purpose described.

3. A scraper comprising a body-plate, provided with a guard at one end, sides projecting upwardly from said plate, guideways formed at the other end of the plate, a bit sliding in said guideways, a bar pivoted between said sides provided with an adjusting-screw and a handle detachably carried by said bar, for the purpose described.

4. In a device of the kind described, the combination with a body-plate provided with sides, of a bar pivoted between said sides, guideways formed at one end of the plate, and a guard at the other, a bit sliding in said guideways and guard, and means carried by the bar, for securing said bit in the guideways.

5. In a device of the kind described, the combination with a body-plate, provided with upwardly-projecting sides, guideways formed by bending the sides downwardly adjacent one end, a guard formed at the other end, of the plate, a bit working in said guideways, and extending up in the guard, of a bar pivoted between said sides, a handle passing through said bar adapted to engage the bit, and an adjusting-screw carried by the bar, for the purpose described.

821,526. TICKET OR TAG. THOMAS H. O'BRIEN, Fond du Lac, Wis. Filed July 24, 1905. Serial No. 271,073.

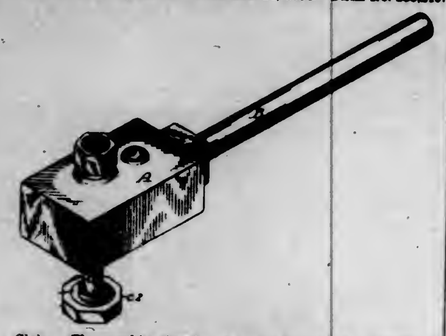


Claim.—1. A tag or ticket of the character described, having a flexibly-connected flap or guard, and a pin with its point-equipped portion bent over upon the front of said ticket and its other portion passed through the latter and bent at right angles to the aforesaid portion and down upon said flap or guard and effecting thereby the isolation of its point.

2. A tag or ticket of the character described, having a flexibly-connected flap, and a pin with its point-equipped portion overlying

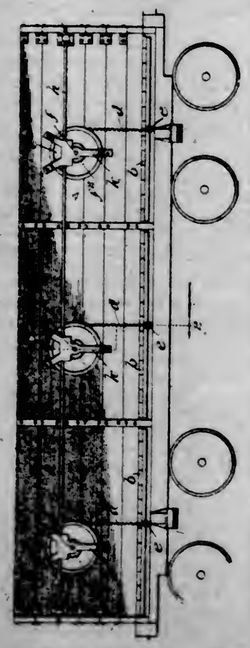
the front of said ticket, and returned upon itself and formed with duplicate right-angled looped portions passed through the ticket-body and effective to secure said flap upon the ticket-body, over the pin-point.

821,527. EXTENSION-TOOL. PHILIP O'REILLEY and FRANK G. FRIMER, Philadelphia, Pa. Filed Dec. 24, 1904. Serial No. 238,379.



Claim.—The combination in an extension-tool of a casing, a handle therefor, a driven spindle projecting from one end of the casing, a pinion having a head projecting from the other end of the casing and mounted on said spindle so as to be removable from the casing by movement in the line of the spindle, a screw carried by one of the members comprised by the pinion and the spindle for normally preventing removal of the pinion from said spindle while allowing it to turn freely thereon, a stud extending through the casing at one side of the spindle, a gear-wheel and a pinion mounted on said stud, the gear-wheel meshing with the pinion on the driven spindle, and a gear-wheel secured to the driven spindle and meshing with the last-mentioned pinion, substantially as described.

821,528. DUMP-CAR. SPENCER OTIS, Chicago, Ill., assignor to National Dump Car Company, Augusta, Me., a Corporation of Maine. Filed Mar. 3, 1906. Serial No. 304,057.



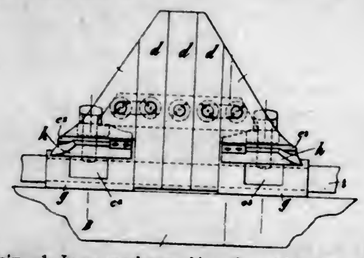
Claim.—1. A dump-car having a bottom comprising a series of dumping-doors, and means for successively closing the doors.

2. A dump-car having a bottom comprising a series of dumping-doors, a door-raising device connected to each door, means for operating the door-raising devices, and means for successively engaging the operating means with the door-raising devices.

3. A dump-car having a bottom comprising a series of dumping-doors, pulleys journaled on the car-body, means connecting the doors with the pulleys, and means for operating the pulleys successively to close the doors.

4. A dump-car having a bottom comprising a series of dumping-doors, a door-raising device connected to each door, a common operating means for the door-raising devices, and means for successively engaging the common operating means with the door-raising devices.

821,529. FOLDING MECHANISM FOR ENVELOP-MACHINES. BRUNO PAHLITZSCH, Berlin, Germany, assignor, by mesne assignments, to United States Envelope Company, a Corporation of Maine. Filed May 9, 1903. Serial No. 156,473.



Claim.—1. In an envelop-machine, the combination with the movable base-plate, of pairs of hinge-blocks arranged at opposite sides of the base-plate and adjustable over the face thereof, a rock-shaft journaled in each pair of hinge-blocks, a flap-folder secured to each shaft and movable into and out of contact with the base-plate, and a yieldable presser element supported from each flap-folder and located at the base end thereof.

2. In an envelop-machine, the combination with the base-plate, of a flap-folder having its under face movable to and from the upper face of the base-plate, means for adjusting the flap-folder toward and from the center of the base-plate, a movable presser element carried by the base end of the flap-folder, and means for yieldably supporting said presser element.

3. In an envelop-machine, the combination with the base-plate, of a hinge-block having its under side lying in the plane of the base-plate and adjustable over the face thereof, an angular boss on the inner end of the hinge-block, a rock-shaft journaled in said block, a flap-folder secured to said shaft and movable toward and from the base-plate, and a freely-movable presser element supported from the flap-folder and interposed between the base end thereof and the said angular boss.

4. In an envelop-machine, the combination with the base-plate, of a hinge-block having its under face lying in the plane of said plate and adjustable over the face thereof, a rock-shaft journaled in said block, a flap-folder secured to said shaft and movable toward and from the base-plate, and a freely-movable presser element supported from the flap-folder and located at the base end thereof.

5. In an envelop-machine, the combination with the base-plate, of a rock-shaft located above the plane of said plate and adjustable toward and from the center thereof, a flap-folder secured to said rock-shaft, a freely-movable presser element located at the base end of said flap-folder, and means for supporting said presser element.

6. In an envelop-machine, the combination with the base-plate, of a rock-shaft located above the plane of said plate and adjustable toward and from the center thereof, a flap-folder secured to said rock-shaft and adapted to make facial contact with the upper face of the base-plate, a freely-movable presser element located at the base end of said flap-folder, and yieldable means carried by the flap-folder for supporting said presser element.

7. In a flap-folder for envelop-machines, a fixed member, a movable member hinged thereto, a presser element interposed between the adjacent hinged ends of said members, means for movably supporting the presser element, and means for causing said presser element to move in an arc different from that of the movable member during the operation of the latter.

8. In a flap-folder for envelop-machines, a fixed member, a movable member hinged thereto, a yieldable presser element interposed between the adjacent hinged ends of said members, means carried by the movable member for supporting the presser element and means for causing said presser element to move in an arc different from that of the movable member during operation of the latter.

9. In a flap-folder for envelop-machines, a fixed member having a cam-face at one end, a movable member hinged to said fixed member, a presser element interposed between the adjacent hinged ends of said members, and means for movably supporting the presser element whereby the latter will be free to ride over the said cam-face on the fixed member during the downward movement of the movable member.

10. A flap-folder for envelop-machines comprising a folder member having a yieldable presser element located at the base end thereof, said element having a pressing-face normally situated slightly in advance of the under face of the said folder member.

11. In an envelop-machine, the combination with the movable base-plate, of an adjustable block having an angular extension at the front end thereof, the under face of said extension lying in surface contact with the upper face of the base-plate when the latter is in normal position and adjustable thereover, and the vertical wall of said angular extension constituting a stop or abutment for a folded edge of an envelop-blank, and a swinging flap-folder movable toward and from the base-plate and over the said angular extension.

12. In an envelop-machine, the combination with the movable base-plate, of an adjustable block having an angular extension at the front end thereof, the under face of said extension lying in substantially the plane of the upper face of the base-plate when the latter is in normal position and adjustable thereover, and the vertical wall of said angular extension constituting a stop or abutment for a folded edge of an envelop-blank, and a swinging flap-folder movable toward and from the base-plate and over the said angular extension.

13. In an envelop-machine, the combination with the movable base-plate, of an adjustable block having an angular extension at the front end thereof, the under face of said extension lying in substantially the plane of the upper face of the base-plate when the latter is in normal position and adjustable thereover, and the vertical wall of the extension constituting a stop or abutment for a folded edge of an envelop-blank, means for permitting forward adjustment of said block, and a swinging flap-folder movable toward and from the base-plate and over said angular extension.

14. In an envelop-machine, a flap-folder having a freely-movable presser element located at the base end thereof and provided with a presser-face normally situated slightly in advance of the under face of said folder, means for freely supporting said presser element, and means for causing the element to move bodily in the direction of length of the folder, during downward movement thereof.

15. A flap-folder comprising a folder member having a freely-movable presser element located at the base end thereof and provided with a presser-face normally situated slightly in advance of the under face of said folder member, and means for freely supporting said presser element whereby it may have a movement bodily in the direction of length of the folder.

16. A widthwise-adjustable flap-folder for envelop-machines, comprising two end plates, filling-pieces interposed between the adjacent edges of said plates, a bar attached at its opposite ends to said plates, and means for attaching said filling-pieces to the bar.

17. In a flap-folder for envelop-machines, a pair of hinge-blocks, a folder-plate hinged to each block, a removable filling-piece interposed between the adjacent edges of said plates, and a bar secured to said plates and said filling-piece.

18. In a flap-folder for envelop-machines, a pair of hinge-blocks, a shaft passing freely therethrough, a pair of folder-plates each secured at one end to said shaft, a removable spacer interposed between the adjacent edges of said plates, said spacer being grooved transversely at its rear end and partially embracing the said shaft, and means for removably attaching the spacer to the folder-plates.

821,530. HORSESHOE. GEORGE B. PAUL, Clinton, Mo. Filed Nov. 20, 1905. Serial No. 288,146.

Claim.—1. The combination with a horseshoe, of a bar secured transversely to the heel portions of said shoe, triangular elastic pads or cushions mounted upon the bar and adapted to embrace the frog of the hoof and fastening means mounted in the pads and engaging the bar.

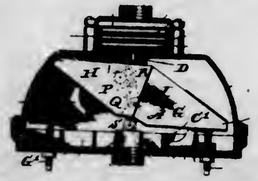
2. The combination with a horseshoe and a transverse bar secured to the heel portions of said shoe, of angularly-disposed elastic pads or cushions mounted upon the bar and fastening means passing through the bar and engaging the pads.

3. A horseshoe having a transverse bar secured to the heel portions thereof, and angularly-disposed elastic pads mounted upon and overhanging said bar said pads being oval-shaped and triangular in cross-section.



4. A horseshoe having a transverse bar secured to the heel portions thereof, angularly-disposed elastic pads mounted on the bar and adapted to embrace the frog of the hoof, said pads being oval in shape and triangular in cross-section and fastening means mounted in the pads and passing through the bar.

821,531. TIP-TANK WEIGHING-MACHINE OR METER. WILLIAM H. PEARCE, Oak Park, Ill. Filed July 20, 1903. Serial No. 166,397.



Claim.—1. In a tip-tank weighing-machine or meter, a casing made in separable parts and having a base, the said base part of the casing having a discharge-opening therethrough, and a flange surrounding the inner mouth of said opening, a tipping pan pivotally mounted within said casing and means operatively related to the pan, whereby the motion of the tank is cushioned, as and for the purpose set forth.

2. In a tip-tank weighing-machine or meter, a casing made in separable parts adapted to be secured together and having supply and exhaust openings arranged in line with each other, the base part of said casing having integral lugs, pivot-bolts tapped through said lugs, and a tipping pan pivotally supported by said bolts, the axis of said bolts intersecting the line between said openings, as and for the purpose set forth.

3. In a tip-tank weighing-machine or meter, a casing provided with an inlet, a tipping pan pivotally mounted to oscillate therein, the said casing having threaded openings in the bottom thereof, adjusting-screws disposed in said openings and within the path of movement of the pan, and lock-nuts mounted on said screws to secure the same in position.

4. In a tip-tank weighing-machine or meter, a casing, a tipping pan pivotally mounted to oscillate therein, a cushion-chamber carried by said tipping tank and coöperating with the fluid contained in the casing to cushion said tank in the oscillating movements thereof.

5. In a tip-tank weighing-machine or meter, a casing having supply and exhaust openings, a tipping pan pivotally mounted to oscillate within said casing, and a compartment having a series of division-plates adjacent the supply-opening, for delivering the material to be weighed or measured uniformly to said tipping pan.

6. In a tip-tank weighing-machine or meter, a casing having supply and exhaust openings, a tipping pan pivotally mounted to oscillate within said casing, a flange surrounding the inner mouth of said discharge-opening, whereby water is retained within the casing, and means carried by said pan and coöperating with the water for cushioning the tipping movement of said pan, as and for the purpose set forth.

7. In a tip-tank weighing-machine or meter, a casing having supply and exhaust openings, a tipping pan pivotally mounted within said casing, a chamber from which said supply-opening delivers, and means arranged within said chamber for causing the material to traverse a zigzag path before delivery into said casing, the delivery-opening of said casing being located in the vertical plane of the pivot-pin, as and for the purpose set forth.

8. In a tip-tank weighing-machine or meter, a casing having supply and exhaust openings, a tipping pan pivotally mounted to oscillate within said casing, a chamber from which said opening delivers into said casing, and partitions arranged within said chamber and having peripheral openings through alternate partitions and

central openings through the intermediate partition, whereby the material supplied is caused to traverse a zigzag path in order that it may be delivered uniformly to the tipping pan.

9. In a tip-tank weighing-machine or meter, a casing having supply and exhaust openings, a tipping pan pivotally mounted to oscillate within said casing, a chamber through which said supply-opening delivers, a cap for said chamber, and a screen comprising a series of plates separated slightly from one another, and disposed adjacent the opening.

10. In a tip-tank weighing-machine or meter, a casing having supply and exhaust openings, a tipping pan pivotally mounted to oscillate within said casing, a chamber from which said supply-opening delivers, partitions arranged within said chamber and having openings therethrough, the openings in alternate partitions being near the periphery and of the intermediate partitions being centrally with respect to said partitions, a screen also arranged within said chamber, and a cap for said chamber.

11. In a tip-tank weighing-machine or meter, a rocking pan, a stud carried thereby, a rock-shaft, a crank-arm carried thereby and having a forked end, said stud operating within the fork of said arm to produce lost motion whereby when said pan is rocked through a sufficient distance said arm is engaged and said shaft rocked, a registering mechanism, and means actuated by the rocking of said shaft for operating said registering mechanism.

12. In a tip-tank weighing-machine or meter, a casing, a tipping pan pivotally mounted within said casing and carrying a stud, a shaft arranged to extend within said casing and having a crank-arm, said crank-arm being forked, said stud operating between the forks of said arm, a recording mechanism arranged outside of said casing, and means actuated by the rocking movements of said shaft for operating said recording mechanism, as and for the purpose set forth.

13. In a tip-tank weighing-machine, a casing having inlet and discharge orifices, a flange surrounding the discharge-orifice, whereby a body of liquid is retained in said casing, a tank, and means cooperating with said liquid for cushioning the movements of said tank, as and for the purpose set forth.

14. In a tip-tank weighing-machine, a casing having inlet and discharge orifices, the discharge-orifice surrounded with a flange, whereby a body of liquid is retained within the casing, a tip-tank, and damping devices upon said tank coöperating with said liquid, as and for the purpose set forth.

15. In a tip-tank weighing-machine, a casing having an integral chamber with a delivery-orifice into the casing, a plurality of partitions disposed in staggered relation within said chamber for reducing the velocity of the liquid to be measured, and a tip-tank having top and end orifices for the admission and discharge of the liquid.

16. In a tip-tank weighing-machine, a casing having a chamber, an elongated orifice leading from the chamber into the casing, and a screen, a tip-tank having a substantially diamond-shaped contour pivotally mounted to oscillate in said delivery-chamber and in close proximity to said elongated orifice, said tank provided with admission and delivery orifices.

17. In a tip-tank weighing-machine, a casing having a flanged bottom provided with a delivery-orifice having a surrounding flange, whereby a body of liquid is retained on said flat bottom, a tip-tank pivoted in said casing, and means upon said tip-tank for coöperating with the body of liquid in the casing and cushioning the movements of said tank, as and for the purpose set forth.

821,532. IRONING WAX-PAD. GUSTAV PERTZ, New York, N. Y., assignor, by mesne assignments, to Thomas J. Moran, Arlington, N. J. Filed Aug. 24, 1903. Serial No. 170,507.

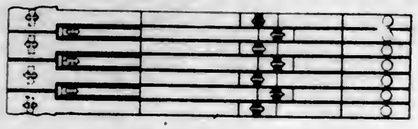
Claim.—1. As a new article of manufacture, an ironing wax-pad, comprising a base, a backing, connected superimposed sheets of wax-saturated material, a sheet of paper over said sheet of wax-saturated material, a cover of open fabric, and a binder overlapping the edges of said paper and fabric, passing over the edges of the base and secured to the under side thereof.

2. As a new article of manufacture, an ironing wax-pad, comprising a base, a backing, connected superimposed sheets of wax-saturated material, a sheet of waterproof paper between the backing and the said wax-saturated material, a sheet of paper over said sheets of wax-saturated material, a cover of open fabric, and a binder overlapping the edges of said paper and fabric, passing over the edges of the base and secured to the under side thereof.

3. As a new article of manufacture, an ironing wax-pad, comprising a base, a backing, connected superimposed sheets of wax-saturated material, a sheet of waterproof paper between the backing and the said wax-saturated material, a sheet of paper over said sheets of wax-saturated material, a cover of open fabric, and a binder overlapping the edges of said paper and fabric, passing over the edges of the base and secured to the under side thereof.

4. As a new article of manufacture, an ironing wax-pad comprising a base, a backing, connected superimposed sheets of wax-saturated material and a sheet of waterproof material between the backing and the superimposed sheets of wax-saturated material.

821,533. MOUNTING FOR KEYS OF MUSICAL INSTRUMENTS. CHARLES PEKAT, Chicago, Ill. Filed Dec. 31, 1904. Serial No. 239,231.



Claim.—1. The combination with a key provided with a casing-receiving mortise, of a casing positioned within the mortise, said casing comprising a substantially rectangular frame provided with reduced portions extending from the ends of said frame.

2. The combination with a key provided with a casing-receiving mortise, of a casing positioned within the mortise, said casing comprising a rectangular frame provided with reduced semicylindrical portions extending from the ends of said frame.

3. The combination with a key provided with a casing-receiving mortise, of a casing positioned within the mortise, said casing comprising a body portion, and bulged portions of less width than and extending from the ends of the casing.

4. The combination with a key having a mortise formed therein, of a casing positioned within the mortise portion of said key, a lining surrounding the sides and overlapping the outer edges of said casing and secured to the edge of the key.

5. The combination with a key having a mortise, of a casing positioned within the mortise portion of said key, flexible strips extending transversely of the sides of said casing and entirely surrounding said sides, each strip provided with portions overlapping the edge of one of the sides of the casing and one end of the strip and secured to the key.

6. The combination, with a key provided with a mortise, of metallic reinforcing means positioned within said mortise portion of the key, strips constituting a cushion surrounding the sides of said reinforcing means, one end of each of said strips resting against the edge of one side of the reinforcing means and the opposite end of the strip and a portion of the key.

7. The combination with a key having a mortise, of a casing positioned within said mortise, said casing comprising a frame having reduced semicylindrical portions extending from the ends of the same, and a flexible lining assembled with said casing.

8. The combination with a key having a mortise, of a casing positioned within said mortised portion, and flexible strips extending transversely of the sides of said casing and entirely surrounding said sides.

9. The combination with a key having a recessed portion, of a casing positioned within said recessed portion, a flexible lining for said casing, comprising strips, each of said strips entirely surrounding one of the sides of said casing and having one end projecting beyond one edge of said casing and overlapping the edge of the casing and the opposite end of said strip and secured against the outside of the key.

10. The combination with a key having a mortise, of a casing positioned within said mortise, a flexible strip interposed between the outer surface of one of the sides of said casing and the contiguous wall of the mortise portion of the key, said strip being positioned parallel with the side of the casing and within the same, and extending beyond the outer edge of the casing.

11. The combination, with a key having a mortise, of a casing positioned within said mortise, a lining constituting a cushion assembled with said casing, said lining comprising strips, each strip positioned upon the inner and outer surface of one side of the casing and extended beyond the outer edge of the casing and secured to the key.

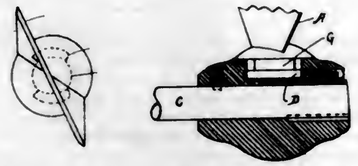
12. The combination with a key provided with a casing-receiving mortise, of a casing positioned within said mortise, said casing

comprising a body portion provided with parallel sides, a bulged portion integral with said casing, the bulged portion of less width than and extending from one of the walls of the body portion of the casing, and a lining for said casing.

13. The combination with a key, of a casing carried by said key, said casing comprising a body, said body provided with a vertical, bulged portion, said bulged portion being of less width than said body and extending from one of the ends of said body.

14. The combination with a key, of a casing carried by said key, said casing comprising a body provided with a vertical, bulged portion extending from one of the walls of said body, said bulged portion being of less width than said body and of the same length as the height of said body.

821,534. PROPELLER-WHEEL. HARRY J. PERKINS, Grand Rapids, Mich., assignor of one-third to Frederick L. Perkins and one-third to Charles E. Perkins, Grand Rapids, Mich. Filed June 2, 1905. Serial No. 263,483.



Claim.—1. In a propeller-wheel, the combination of a wheel-hub, detachable blades and hubs carried thereby, projections in opposite directions from the blade-hubs and located within the wheel-hub, the latter having an opening to receive said projections to permit rotation of the blades, means carried by the wheel-hub for detachable engagement with said blade-hub, and independent adjusting devices bearing in opposite directions against the opposing projections from the blade-hub.

2. In a propeller-wheel, the combination of a hub, propeller-blades, means for detachably connecting the hub and blades, means for permitting the blades to rotate in the hub whereby the pitch of said blades may be adjusted, and independent adjusting devices to act against separate parts of each blade to hold the latter in the desired pitch relation.

3. In a propeller-wheel, the combination of the wheel-hub, detachable blades and hubs carried thereby, projections in opposite directions from the blade-hubs and located within the wheel-hub, an opening within the wheel-hub to receive such projections and permitting rotation of the blade, means carried by the wheel-hub for detachable engagement with such blade-hub, and two adjusting and locking screws located within the wheel-hub and bearing in opposite directions against the opposing projections from the blade-hub.

821,535. FENCE-POST. WILLIAM M. PERKINS, North Manchester, Ind. Filed Sept. 27, 1905. Serial No. 280,358.



Claim.—1. An artificial-stone post keystone-shaped in cross-section and having flat metallic reinforcing-bars extending longitudinally therethrough along lines radiating from the longitudinal center of the post, the ends of said bars extending at right angles thereto and overlapping the ends of the post, staples having hooked ends engaging one of the reinforcing-bars and embedded within the post, the other ends of the staples adapted to engage a wire and hold it upon one face of the post.

2. An artificial-stone post keystone-shaped in cross-section and tapered from the bottom to the top, one face of the post being convex from side to side, flat metallic reinforcing-bars extending longitudinally through the post along lines radiating from the longitudinal center thereof, said bars being disposed adjacent the centers of the faces of the post, staples embedded within the curved face of the post and hooked at one end to engage the adjoining bar, the outwardly-projecting ends of the staples adapted to engage wires and hold them in contact with the post along the longitudinal center of its curved face, lateral extending ends integral with the reinforcing-bars and overlapping the ends of the posts to prevent longitudinal movement of the bars.

821,536. PIPE-COUPLING RING. WILLIAM W. PRICE, Dayton, Ohio. Filed Oct. 11, 1905. Serial No. 282,948.



Claim.—1. A pipe-coupling ring formed from a blank of sheet-steel and consisting of walls surrounding two openings of different diameters, the wall surrounding the opening of greater diameter terminating in a parallel extension which curves outwardly in a third parallel wall or flange, the surface which joins the two outermost walls being provided with a series of openings, substantially as specified.

2. As a new article of manufacture, a pipe-coupling ring formed from a blank of sheet-steel and consisting of walls 4 and 2 surrounding openings of different diameters, the wall 4 terminating in a parallel wall 8, said wall 8 extending in an outer parallel wall 6, the part intervening between the walls 8 and 6 being of sufficient width for the provision of a series of openings 7, and the said wall 6 lying a substantial distance from the wall 8, substantially as specified.

821,537. RING FOR PIPE-COUPLINGS. WILLIAM W. PRICE, Dayton, Ohio. Filed Nov. 10, 1905. Serial No. 286,649.



Claim.—1. A pipe-coupling ring, consisting of two members formed from sheet metal, the inner member having inwardly and outwardly extended flanges, and the outer member having a tapering wall which is supported and secured upon the outer flange of said inner member, and an inwardly-projecting wall which is supported and secured upon the inner flange of the inner member, said outer member having two series of bolt-holes, substantially as specified.

2. A coupling-ring for pipe-joints, the same being formed from sheet metal and consisting of two assembled members, the inner member having its edges turned in opposite directions and providing inner and outer laterally-extending flanges, the inner flange being of greater width, the outer member having a portion thereof disposed on a suitable incline to engage the outer flange of the inner member where it is rigidly secured, and the other portion of said outer member projecting inwardly and engaging the inner flange of said inner member where it is rigidly secured, a portion of said outer member having bolt-holes, and the other portion of said outer member having a corresponding number of slots within which the bolts penetrating said bolt-holes, lie, substantially as specified.

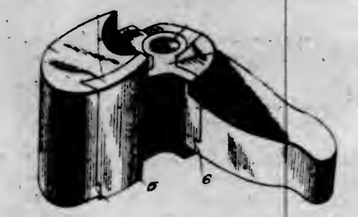
821,538. RING FOR PIPE-COUPLINGS. WILLIAM W. PRICE, Dayton, Ohio. Filed Nov. 10, 1905. Serial No. 286,650.



Claim.—1. A pipe-coupling ring consisting of two members formed from sheet metal, the inner member having a circumferential flange projecting outwardly from one end, and an inwardly-projecting circumferential flange which terminates in a laterally-extending flange surrounding the pipe-opening, the outer member having a cylindrical wall which lies adjacent to the body of the inner member, and an outer wall which converges and meets the cylindrical wall, the said converging walls engaging the outward flange of the inner member where they are secured, and the said outer member having bolt-holes, substantially as specified.

2. In a coupling-ring for pipe-joints, two members constructed from sheet metal, the inner member having at one end an outwardly-extending flange, and the other end projected inwardly and terminating in a flange surrounding the pipe-opening, the outer member of said ring consisting of a cylindrical wall and a tapering wall converging at one end of the member, and said converging end engaging the outward flange of the inner member where it is secured, said outer member having bolt-holes, substantially as specified.

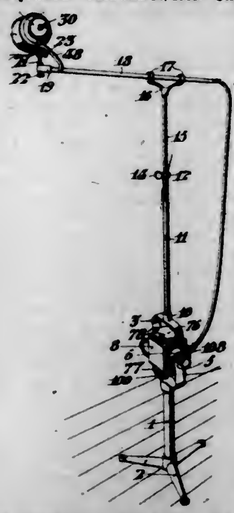
821,539. CAR-COUPLING. JOSEPH W. ROBERTSON, Hot Springs, Va. Filed Feb. 26, 1906. Serial No. 303,523.



Claim.—1. In a car-coupling, the combination of a knuckle provided with a vertical aperture to receive a pivot therefor, a detachable wear-plate applied to the working face of said knuckle, and an extension projecting from said wear-plate and having an aperture through which the pivot of the knuckle may pass.

2. In a car-coupling, the combination of a pivoted knuckle provided with a dovetailed seat in its working face, a wear-plate arranged in said seat, lugs projecting from the knuckle to prevent downward vertical displacement of said wear-plate, and an extension projecting from the wear-plate and provided with an opening to receive the pivot of the knuckle.

821,540. ACETYLENE-GAS APPARATUS. EDWIN M. ROSENBLUTH, Philadelphia, Pa. Filed Jan. 14, 1905. Serial No. 240,963.



Claim.—1. In acetylene-gas apparatus, the combination with a base comprising a yoke provided with bearings; of an acetylene-gas generator arranged to oscillate in said bearings from operative to inoperative positions; a gas-discharge nozzle on said generator; a vertical standard extending above said yoke; a rod arranged to telescope in said standard; a bearing-bracket carried by said rod; a tubular arm extending horizontally through said bracket, and comprising a gas-duct; a burner-casing; means connecting said burner-casing with said arm arranged to permit horizontal rotary and vertical oscillatory adjustment of said casing; a burner in said casing; a conduit connecting said burner with the gas-duct in said arm; and, a conduit connecting said arm-duct with said generator-nozzle, substantially as set forth.

2. In acetylene-gas apparatus, the combination with a base; of an acetylene-gas generator supported by said base; a gas-discharge nozzle on said generator; a tubular arm supported by said base, independent of said generator, and comprising a gas-duct; a conduit connecting said nozzle with said duct; and a burner operatively connected with said duct, substantially as set forth.

3. In acetylene-gas apparatus, the combination with a base provided with bearings; of an acetylene-gas generator provided with trunnions fitted to said bearings; and, a spring-pressed bolt in said frame arranged to engage one of said trunnions and thereby detain said generator in adjusted relation with said bearings, substantially as set forth.

4. In acetylene-gas apparatus, a casing inclosing a water-chamber and a carbid-chamber and having a circular series of openings through an outer wall in communication with said water-chamber; of a flange surrounding said openings; and, a lid for said flange, substantially as set forth.

5. In acetylene-gas apparatus, the combination with a burner; of a casing for said burner; a bracket carrying said casing; a coupling; a horizontal pivot connecting said bracket and said coupling; an arm provided with a vertical socket; and, means connecting said coupling with said arm-socket, arranged to permit relative rotation thereof, substantially as set forth.

6. In acetylene-gas apparatus, the combination with a burner; of a casing for said burner; a tubular arm supporting said casing; means connecting said burner through said arm with a source of gas-supply; and, a pivot-coupling between said burner-casing and said arm permitting relative horizontal and vertical adjustment thereof, substantially as set forth.

7. In acetylene-gas apparatus, the combination with a burner; of a casing for said burner; an arm; a pivotal support for said casing connecting it with said arm; and, a support for said arm permitting the longitudinal adjustment of the latter, substantially as set forth.

8. In acetylene-gas apparatus, the combination with a base; of an acetylene-gas container supported by said base; a gas-discharge nozzle on said container; a tubular arm supported by said base, independently of said generator, and comprising a gas-duct; a conduit connecting said nozzle with said duct; and a burner operatively connected with said duct, substantially as set forth.

9. In acetylene-gas apparatus, the combination with a support provided with bearings; of an acetylene-gas generator provided with trunnions fitted to said bearings; and means to positively stop said generator in predetermined rotary position, comprising complementary projections, respectively stationary on said generator and its support, substantially as set forth.

821,541. RECEPTACLE FOR DELIVERING GOODS. JAMES H. RUSSELL, Manistee, Mich. Filed Apr. 29, 1905. Serial No. 258,033.



Claim.—1. A portable device for the storage and delivery of goods, comprising a casing or body having at one end a compartment open at its top and closed permanently at its bottom, and having at its opposite end a second compartment closed at its top, a vertical partition separating said compartments, and a movable bottom for the second compartment.

2. A portable device for the storage and delivery of goods, comprising a casing or body having a delivery-compartment, a movable bottom for said compartment, and a removable tray or holder adapted to be confined in said compartment when the bottom is closed and receive direct support throughout its extent from the bottom, said tray adapted to be delivered therefrom with the contents of the compartment when the bottom is opened.

3. A device for the storage and delivery of goods comprising a casing or body, having at one end a compartment open at its top, closed permanently at its bottom and extending the full height of the casing; and having at its other end, and at the base of the casing, a non-communicating compartment closed at its top and extending for a portion only of the height of the casing, and a sliding bottom for the said non-communicating compartment.

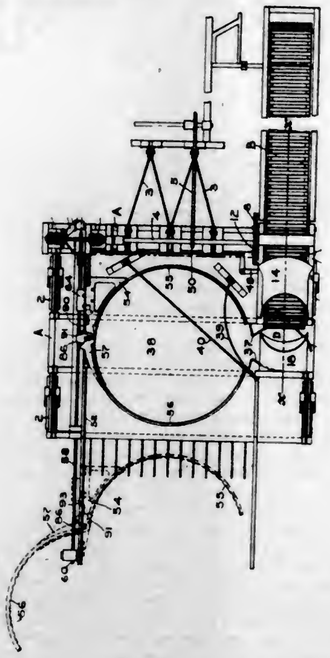
4. In a portable device for the storage and delivery of goods, the combination with a casing having at one end a delivery-compartment closed at its top and provided with a movable bottom, and having at its opposite end a compartment closed at its bottom and open at its top, of a carrying-handle extending transversely with the casing at the side of the delivery-compartment and situated below the top of said delivery-compartment.

5. A portable device for storing and delivering goods, comprising a rectangular casing having its bottom portion open at one end and closed at the other end; a horisontal partition extending inward from the end of the casing above the open bottom portion, and terminating midway or thereabout of the length of the casing; a transverse partition extending downward from the horizontal partition; whereby a compartment is formed at one end of the casing with an open bottom and a closed top; and a horizontal sliding bottom for said compartment.

6. A device for the storage and delivery of goods, comprising a casing or body having at one end a compartment open at its top, a fixed bottom for said compartment, a second non-communicating compartment in the other end of the casing closed at its top, and a sliding bottom for the second compartment adapted when moved to open position to slide over the bottom of the first compartment.

7. In a device for the storage and delivery of goods, the combination with a casing provided with a delivery-compartment, of a sliding bottom for said compartment formed near one edge with an opening or slot, and a spring locking-finger sustained by the casing beneath the said sliding bottom and adapted when the latter is in closed position to extend upward yieldingly in said slot opposite the front wall thereof; whereby the spring locking-finger may by one finger be depressed below the bottom, while with the other finger the latter may be withdrawn to open the delivery-compartment.

821,542. AUTOMATIC GRAIN-SHOCKING MACHINE. ALBERT G. A. SCHMIDT and LOUIS CHAMPEAU, St. Paul, Minn. Filed Jan. 9, 1905. Serial No. 240,183.



Claim.—1. In a machine of the class described, the combination with an upwardly-inclined conveyer for the grain-bundles, of a deflector arranged above and at the rear of the conveyer for turning the bundles into upright position with their butt-ends down, a plate arranged below the discharge end of the conveyer in position to receive the bundles as they drop therefrom, a shock-deck arranged at the side of the plate, and means controlled by the bundles as they drop for carrying them onto the shock-deck.

2. In a machine of the class described, the combination with means for receiving bundles of grain from a binder, of an upwardly-inclined conveyer, a U-shaped guide bridged across the conveyer in position to permit the conveyer and the bundles carried by it to pass therethrough, and a deflector arranged at the discharge end of the conveyer for turning the bundles into upright position with their butts downward, for the purpose described.

3. A machine of the class described comprising an upwardly-inclined conveyer adapted to receive bundles of grain to be shocked, a funnel arranged above the conveyer in position for the bundles to be carried therethrough, and a deflector-plate arranged at the rear of the discharge end of the conveyer to deflect the bundles to a vertical position with their butt-ends downward, for the purpose described.

4. A machine of the class described comprising an upwardly-inclined conveyer, a deflector arranged at the rear of the conveyer for turning the bundles into upright position butt-ends down, a tilting plate arranged below the discharge end of the conveyer, a shock-deck arranged at the side of the tilting plate, means operatively connected with the tilting plate for carrying bundles therefrom onto the shock-deck, and means for discharging the bundles from the shock-deck.

5. In a traction shocking-machine of the class described, the combination with a shock-deck and means for assembling thereon bundles of grain with their butt-ends down, of a pair of shock-encircling arms slidably supported above the shock-deck, one of said arms being fixedly mounted, and the other arm being pivotally mounted, so as to swing in a horizontal plane, suitable mechanism for moving said shock-encircling arms rearward at approximately the same rate of speed as the machine is being drawn forward, and mechanism for swinging said pivoted arm to one side as the shock is being deposited.

6. In a machine of the class described, the combination with an upwardly-inclined conveyer for the grain-bundles, of means arranged above and at the rear of the conveyer for turning the bundles into upright position with their butt-ends down, a receiving-plate arranged below the discharge end of the conveyer in position to receive the bundles as they drop therefrom, a shock-deck arranged at the side of the plate, means actuated by the bundles as they drop for carrying them onto the shock-deck, and means for discharging the bundles from the shock-deck whenever a predetermined number of bundles have been assembled thereon.

7. In a machine of the class described, the combination with a shock-deck and means for assembling thereon bundles of grain with their butt-ends down, of a traveling frame supported upon the one side of the machine, a pair of shock-encircling arms carried by said frame and extending over the shock-deck, one of said arms being fixedly mounted, and the other being pivotally mounted upon said frame so as to swing in a horizontal plane, means for reciprocating said frame, means for swinging said pivoted arm to one side when the frame is carried to discharging position, and means for returning said arm to normal position when the traveling frame is returned to normal position.

8. In a traction shocking-machine of the class described, the combination with a shock-deck and means for assembling thereon bundles of grain with their butt-ends down, of a traveling frame slidably supported upon one side of the machine, a pair of shock-encircling arms supported by said frame above the shock-deck, one of said arms being fixedly mounted and the other being pivotally mounted, a main driving-shaft, clutch mechanism interposed between said shaft and frame whereby, when a predetermined number of bundles have been deposited upon said shock-deck, said frame will be carried to discharging position, means for swinging said pivoted arm to one side as the shock is deposited, and means for actuating said clutch mechanism to cause said traveling frame to be returned to normal position.

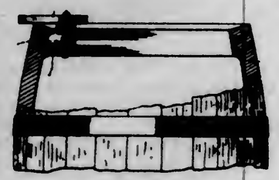
9. In a traction shocking-machine of the class described, the combination with a shock-deck and means for assembling thereon bundles of grain with their butt-ends down, of a traveling frame slidably supported upon one side of the machine, a pair of shock-encircling arms carried by said frame and extending over said shock-deck, one of said arms being fixedly mounted, and the other arm being pivotally mounted, so as to swing in a borizontal plane, a main shaft, an operative connection between said shaft and traveling frame for carrying said frame to discharging position and for returning the same to normal position, means for normally locking said pivoted arm in shock-encircling position, and means for releasing said arm and for swinging the same to one side when the frame is carried to discharging position.

821,543. COOPER'S PLANE. HERMANN SCHNEIDER, St. Louis, Mo. Filed Aug. 31, 1905. Serial No. 276,659.

Claim.—1. A barrel-plane comprising a suitable stock having an outer convex surface, a detachable clamp or clamping-plate having an outer convexity forming a continuation of said surface, the continuity of said surface being interrupted by a suitable mouth, a blade secured in position by said clamp with its cutting edge projecting across the mouth, and an opening formed in the stock discharging through the bottom wall, substantially as set forth.

2. A barrel-plane comprising a suitable stock having an outer convex surface, a detachable clamping-plate having an outer convexity forming a continuation of said surface, but separated there-

from by a suitable mouth, a discharge-opening leading from said mouth discharging through said bottom wall, a screw-bolt carried by the clamping-plate and passing loosely through the stock between the top and bottom walls thereof, a clamping-nut at the outer end of the bolt, a transversely-curved adjustable blade having an elongated recess for the free passage of the bolt, interposed between the clamping-plate and the stock, and a supporting-plate for the stock adapted to rest and travel over the edge of the barrel during the planing operation, the parts operating substantially as, and for the purpose set forth.



821,544. FISH-HOOK. WILSON A. SCOTT, Paul, Nebr. Filed Oct. 21, 1905. Serial No. 283,836.



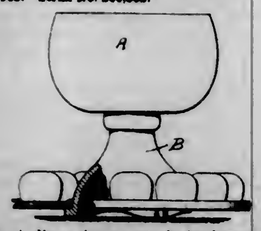
Claim.—1. A fish-hook having a bait-clamping means including a spring member having a pointed member, said pointed member being parallel with said spring member.

2. A fish-hook formed from a single piece of wire, comprising a hook member and a bait-clamping member having a U-shaped member extending around said hook member.

3. A fish-hook formed from a single piece of spring-wire, comprising a hook member and spring bait-clamping member, passing under said hook member.

4. A fish-hook composed of a single piece of spring-wire comprising a hook member, and spring bait-clamping member, having a pointed member extending at right angles thereto.

821,545. PUNCH-BOWL. JOSEPH SIEBEL, Detroit, Mich. Filed June 22, 1905. Serial No. 266,503.

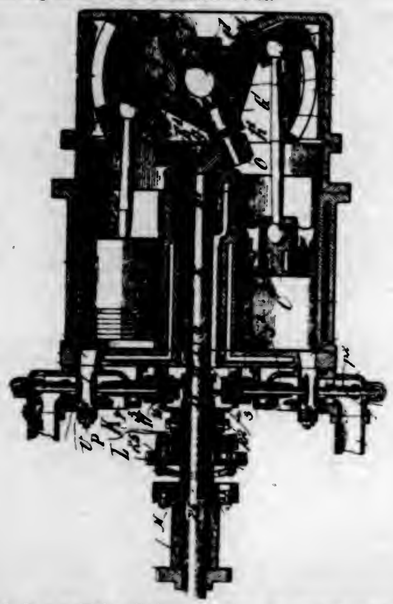


Claim.—1. A dispensing-receptacle for beverages comprising the bowl proper in combination with a detachable base-support formed with projecting means at its base, and a detachable annular tray supported on its lower face by said projecting means, substantially as described.

2. A dispensing-receptacle for beverages comprising the bowl proper in combination with a base-support, of projections formed at the bottom of said base-support, and a flanged tray detachably mounted on said projections and extending annularly around said base-support, substantially as described.

821,546. MULTIPLE-CYLINDER ENGINE. HARRY B. SHALLBOSE, Chicago, Ill. Filed Apr. 10, 1905. Serial No. 254,757.

Claim.—1. In a multiple-cylinder gas-engine, the combination of bodies one rotatable with relation to the other and consisting, respectively, of a central shaft and a series of piston-cylinders around the shaft, cylinder-exhaust valves, a sleeve on the shaft controlling the gas ignition and exhaust of all the cylinders, driving means for the sleeve turning it at half the speed of the said rotating body, and governing mechanism on the sleeve movable into and out of the path of closing movement of the exhaust-valves.



2. In a multiple-cylinder gas-engine, the combination with a central shaft and series of cylinders about the shaft having exhaust-ports, of spring-closed puppet-valves governing said ports and having stems, rotary, exhaust-valve-opening cams around the shaft in staggered relation, loose plunger-blocks on the stems, and staggered cam-engaging projections on the blocks in the paths of the respective cams.

3. In a multiple-cylinder gas-engine, the combination with a central shaft and series of cylinders about the shaft having exhaust-ports, of spring-closed puppet-valves governing said ports and having stems, rotary, exhaust-valve-opening cams around the shaft in staggered relation, loose plunger-blocks on the stems, staggered cam-engaging projections on the blocks in the paths of the respective cams, a shoulder on each plunger-block, the shoulders being respectively of different lengths, a governor, a sliding disk about the shaft connected with the governor and movable into the paths of said shoulders, thereby to hold the exhaust-valves open.

4. In a multiple-cylinder gas-engine, the combination of bodies, one rotatable with relation to the other and consisting, respectively, of a central shaft and series of cylinders around the shaft having exhaust-ports, a sleeve on the shaft controlling the gas iguition of all the cylinders, driving means for the sleeve turning it at half the speed of the said rotating body, exhaust-ports in the cylinders, spring-closed puppet-valves governing said ports and having stems, rotary exhaust-valve-opening cams on the said sleeve in staggered relation, loose plunger-blocks on the stems, and staggered cam-engaging projections on the blocks in the paths of the respective cams.

5. In a multiple-cylinder gas-engine, the combination with a central shaft and a series of cylinders about the shaft having exhaust-ports, of spring-closed puppet-valves governing said ports and having stems, rotary, exhaust-valve-opening cams around the shaft for moving said stems and opening the valves, shoulders movable with said stems, the shoulders at the respective stems being of different lengths, a governor, a sliding disk about the shaft operatively connected with the governor and movable into the paths of said shoulders, thereby to hold the exhaust-valves open, and a return-spring for the sliding disk acting counter to the governor mechanism.

821,547. BADGE. NELSON STAFFORD, Brooklyn, N. Y., assignor to H. Stafford Company, New York, N. Y., a Corporation of New Jersey. Filed Jan. 16, 1905. Serial No. 241,173.

Claim.—1. A badge, name or designation plate, comprising a recessed base-plate, a frame-plate fitting and received in the base-plate, a name-plate received into the frame-plate and fastening devices connecting the frame-plate and base-plate, concealed by the name-plate, and other devices for connecting the base-plate to an article for support.



2. A badge, name or designation plate, comprising a recessed base-plate, a frame-plate fitting and received in the base-plate, said frame-plate being composed of a strip of metal with an overturned rib edge on three sides, a removable end thereto comprising a plate adapted to set behind or back of the frame-plate and having a rib edge with beveled ends adapted to fit the beveled rib ends of the frame-plate and complete the continuity thereof, a name-plate received into the frame-plate and fastening devices connecting the frame-plate and base-plate, concealed by the name-plate, and other devices for connecting the base-plate to an article for support.

3. In a badge, name or designation plate, a recessed base-plate having depressed end portions and apertures therein for connection with a frame-plate, and other apertures to receive devices for connecting the said base-plate to an article for support, in combination with a frame-plate comprising a strip of metal with overturned rib edges forming a slideway, said frame-plate having recessed portions with apertures therein adjacent to the ends coinciding with the first-named apertures in the depressed ends of the base-plate, the said apertures providing for fastening devices of suitable character passing through the apertures of the frame-plate and the apertures of the base-plate to connect said two parts together when the frame-plate is fitted into the recessed base-plate.

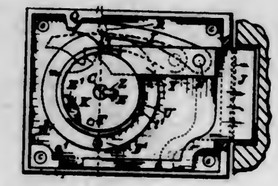
4. In a badge, name or designation plate, a recessed base-plate having depressed end portions and apertures therein for connection with a frame-plate, and other apertures to receive devices for connecting the said base-plate to an article for support, in combination with a frame-plate comprising a strip of metal with overturned rib edges forming a slideway, said frame-plate having recessed portions with apertures therein adjacent to the ends coinciding with the first-named apertures in the depressed ends of the base-plate, the said apertures providing for fastening devices of suitable character passing through the apertures of the frame-plate and the apertures of the base-plate to connect said two parts together when the frame-plate is fitted into the recessed base-plate, and a name-plate of celluloid or other similar suitable material adapted to be slipped into the said frame-plate and when in position to cover over and conceal the fastening devices connecting the frame-plate to the base-plate.

5. In a badge, name or designation plate, a recessed base-plate having depressed end portions and apertures therein for connection with a frame-plate, and other apertures to receive devices for connecting the said base-plate to an article for support, in combination with a frame-plate comprising a strip of metal with overturned rib edges forming a slideway, a removable end thereto comprising a plate adapted to set behind or back of the frame-plate and having a rib edge with beveled ends adapted to fit the bevel rib ends of the frame-plate and complete the continuity thereof, a name-plate received into the frame-plate, said frame-plate having recessed portions with apertures therein adjacent to the ends coinciding with the first-named apertures in the depressed ends of the base-plate, the said apertures providing for fastening devices of suitable character passing through the apertures of the frame-plate and the apertures of the base-plate to connect said two parts together when the frame-plate is fitted into the recessed base-plate.

821,548. PERMUTATION-LOCK. WILLIAM STREETER and EDWARD WALLIS, Rochester, N. Y. Filed Oct. 1, 1904. Serial No. 226,770.

Claim.—1. In a permutation-lock, the combination with a series of revolving permutation-wheels mounted on a central stationary hub, of suitable driving-flies mounted directly on said hub, stationary washers located on each side of said flies, and mechanism adapted to rotate said flies, substantially as described.

2. In a permutation-lock, the combination with a series of revolving permutation-wheels mounted on a central stationary hub, of suitable driving-flies mounted directly on said hub, stationary washers located on each side of said flies, and pins mounted on said permutation-wheels adapted to rotate said flies, substantially as described.



3. In a permutation-lock, the combination of a stationary central hub, permutation-wheels mounted thereon, each provided with an adjustable center, a corresponding series of rotatable flies mounted directly on said hub, and non-rotatable washers interposed between said flies and said permutation-wheels, substantially as described.

4. The combination with a permutation-lock, of the notched permutation-wheel having the adjustable center provided on one side with a projecting flange having a segment cut away, the rotatable fly adapted to engage in the cut-away portion of the flange, and the non-rotating washer interposed between the fly and the wheel, as and for the purposes set forth.

5. The combination with the central rotatable spindle, the stationary hub, and bolt-operating mechanism of a permutation-lock, of the permutation-wheels each provided with a flange having a segment cut away and mounted on said stationary hub, a rotatable fly mounted on said hub and adapted to engage in the cut-away portion of the flange and the non-rotatable washers interposed between each fly and its wheel, substantially as described.

6. The combination with the central rotatable spindle, of the stationary hub and bolt-operating mechanism of a permutation-lock, of the permutation-wheel each provided on one side with a flange having a segment cut away and mounted on said stationary hub, a rotatable fly mounted on said stationary hub and adapted to engage in the cut-away portion of the flange and a non-rotating washer interposed between each fly and its wheel and between each fly and the adjacent wheel, substantially as described.

7. In a permutation-lock, the combination with a casing, a locking-bolt, and an abutment fixed to said casing to limit the backward movement of said bolt, a pivoted dog mounted on said locking-bolt, of a series of revolving permutation-wheels mounted on a central stationery hub, suitable driving-flies mounted directly on said hub, stationary washers located on each side of said flies and mechanism adapted to rotate said flies, substantially as described.

8. In a permutation-lock, the combination with a casing, a locking-bolt, and an abutment fixed to said casing to limit the backward movement of said locking-bolt, a pivoted dog mounted on said locking-bolt, of a stationary central hub, permutation-wheels mounted thereon each provided with an adjustable center, a corresponding series of rotatable flies mounted directly on said hub, non-rotatable washers interposed between said flies and said wheels and mechanism adapted to rotate said flies, substantially as described.

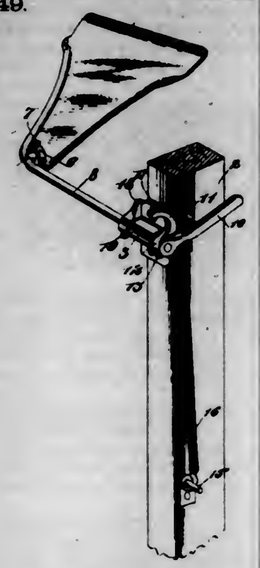
821,549. TENSION DEVICE FOR DRESSER-REELS. ALDEN B. TAPLIN, Keene, N. H. Filed May 25, 1905. Serial No. 262,266.

Claim.—1. The combination of a pivotally-mounted tension-plate, a tension-spring to normally engage the tension-plate with a yarn-spool, and means to automatically lock the tension-plate in position when the same has been disengaged from the spool.

2. The combination, in tension devices of the class described, of a bearing, a tension-plate, a pivot-shaft therefor, journaled in the bearing, a tension-spring connected to the pivot-shaft to normally engage the tension-plate with a spool, and means to automatically lock the pivot-shaft in position to hold the tension-plate out of engagement with the spool.

3. The combination, in tension devices of the class described, of a bearing, a pivot-shaft having revoluble and longitudinal movement in the bearing, a tension-plate carried by the pivot-shaft, a tension-spring to turn the shaft and tension-plate in one direction, a spring to move the shaft longitudinally in one direction, and locking means including a cam to move said shaft in the reverse direction and lock the same in position to support the tension-plate against the tension of the tension-spring.

821,549.



821,550. COMPOSITION BUILDING MATERIAL. ZANE B. TAYLOR, Orbisonia, Pa. Filed May 22, 1905. Serial No. 261,895.

Claim.—1. An artificial stone composed of thirty-four parts of silica; twelve parts of alumnia; fifty parts of lime; four parts of magnesia; twenty parts of cement, and twenty parts of clay, and sufficient water to bring the mass to a plastic condition suitable for molding.

2. An artificial stone composed of thirty-four parts of silica; twelve parts of alumina; fifty parts of lime; four parts of magnesia; twenty parts of cement, and twenty parts of clay and sand, and sufficient water to reduce the mass to a plastic condition suitable for molding.

3. An artificial stone composed of sixty parts of crushed slag containing thirty-four parts of silica; twelve parts of alumina; fifty parts of lime, and four parts of magnesia; adding thereto twenty parts of cement, twenty parts of clay or clay and sand, and sufficient water to reduce the mass to a plastic condition, and a suitable coloring material.

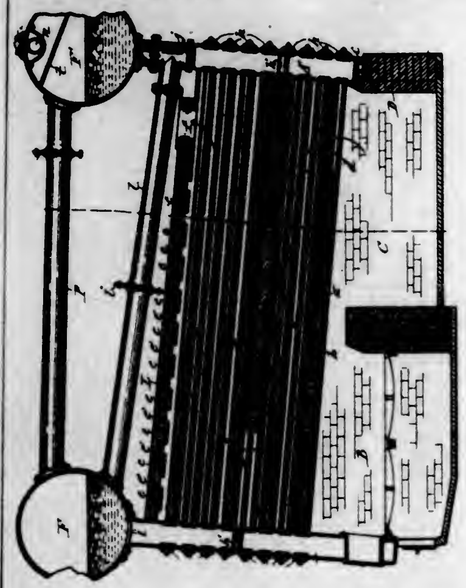
821,551. SHINGLE-BRACKET. JAMES THOMPSON and HERMAN H. SCHRADER, Greeley, Colo. Filed Feb. 10, 1905. Serial No. 245,063.



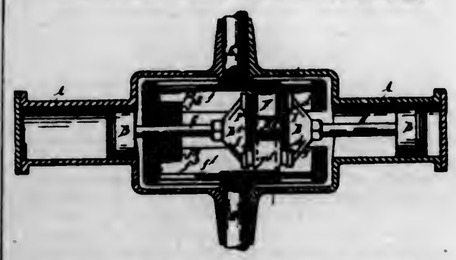
Claim.—A shingle-bracket comprising a lower member having a hook at its rear end and a transverse shoulder at its under side adjacent to its forward end and also having openings at opposite sides of its longitudinal center, an upper member, of resilient material, fixedly connected to the lower member and having an upwardly-bent rear end connected to the hook of the lower member and also having an upwardly-bent forward portion and openings at opposite sides of the longitudinal center of said forward portion, a bearing-piece having a transverse portion disposed under the lower member and in rear of the transverse shoulder thereof and connected to said member and also having standards extending upwardly from the transverse portion and through the said openings in the lower and upper members, a lever fulcrumed between and carried by the standards and having a cam-head and a handle, and a longitudinally-adjustable plate connected to the under side of the rear portion of the lower member and having depending teeth.

821,552. STEAM-BOILER. JOHN J. TOMKIN, Cayuga, N. Y., assignor to Oil Well Supply Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed Oct. 5, 1905. Serial No. 281,443.

Claim.—A water-tube boiler consisting of water-legs extending across the ends of the boiler, longitudinal water-tubes disposed inclined from the front water-leg to the rear water-leg and connecting said water-legs, drums disposed in corresponding planes transversely over the ends of the boiler and communicating with the aforesaid water-legs rearwardly-inclined water-circulating pipes disposed over opposite sides of the boiler and connected to the lower part of the front drum and communicating with the rear water-leg beneath the rear drum, an equalizing-pipe connected at its ends to the upper parts of the aforesaid drums, and a steam-outlet connected to the top of the rear drum as set forth.



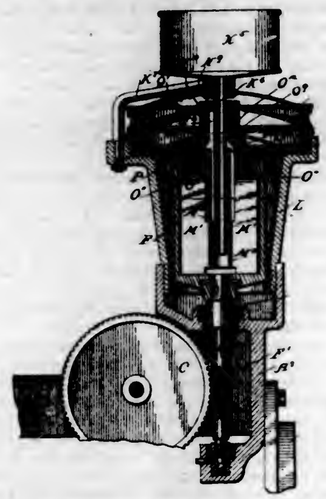
821,553. BALANCED ENGINE. HERBERT L. TOWLE, Richmond Hill, N. Y., assignor to The Waterbury Tool Company, Waterbury, Conn., a Corporation. Filed Nov. 20, 1905. Serial No. 288,126.



Claim.—1. In an engine, two cranks arranged to turn in opposite directions, crank-pins thereon, a reciprocating part adapted to actuate said cranks, counterweights connected with said cranks adapted to balance the inertia of the reciprocating parts, said weight being so located that the turning moment due to their centrifugal forces shall be substantially equal to the turning moment due to the centrifugal forces acting on the crank-pins.

2. In an engine, two cranks arranged to turn in opposite directions, crank-pins thereon, a reciprocating part adapted to actuate said cranks, counterweights connected with said cranks adapted to balance the centrifugal force of the crank-pins, and attached revolving parts, and also to balance the inertia of the reciprocating parts, said weights being so located that the turning moment about the axis of the reciprocating part due to their centrifugal forces, shall be substantially equal to the turning moment about the same axis due to the centrifugal forces acting on the crank-pin.

821,554. CENTRIFUGAL CREAM-SEPARATOR. EINA L. TRUESDELL, Camden, Ind. Filed July 6, 1905. Serial No. 268,366.



Claim.—1. The combination substantially as herein described of the bowl-casing, receptacles at the upper end thereof for the skim-milk and cream, the bowl operating within said casing, the bladed carrier within the bowl and comprising the blades and the central tube to which said blades are secured near their lower ends, the blades being cut away at their inner portions above the said tube, the skimmer-cone composed of the inner and outer sections, the outer section being provided with a lateral flange to rest upon the bowl and below the same with a tubular extension fitting within the bowl and provided in its outer side with a circumferential groove and with notches intersecting the same and said section being provided in its inner face with the longitudinal grooves or channels and at its upper end with the upwardly-projecting neck whose bore is eccentric to the bowl and provided at its upper end with the cream outlet or discharge and at its lower end with an outlet for skim-milk, the inner cover-section fitting within the outer section and closing the inner sides of the longitudinal channels therein and provided at its upper end with a neck projecting into that of the outer section and having its bore eccentric to the bowl and approximately concentric with the eccentric bore of the neck of the outer section and communicating on its longest side with the cream-outlet in the outer section, the spring-clasp engaging in the groove of the outer section and at its ends in the notches of the inner and outer sections and securing said sections detachably together, and a feed-tube discharging into the central tube of the bladed carrier, substantially as and for the purposes set forth.

2. In a centrifugal cream-separator a skimmer-cone composed of inner and outer sections having between them channels for the passage of skim-milk and provided at their upper ends with upwardly-projecting necks fitting one within the other and having their bores eccentrically disposed, the longer side of the bore of the inner neck forming a passage for the separated cream, substantially as set forth.

3. In a cream-separator a skimmer-cone composed of inner and outer sections fitting one within the other, the outer section being provided with longitudinal channels for the passage of skim-milk and with an outlet for said skim-milk, the inner section fitting within the outer section and closing the inner sides of said channels and having at its upper end a neck provided with a passage for the cream and a spring-clasp securing said sections detachably together substantially as set forth.

4. The combination of the outer skimmer-cone section provided at its lower end with a depending flange grooved in its outer side and having notches intersecting said groove, the inner section fitting in the outer section and having in its lower end notches registering with those in the depending tube of the outer section and the spring-clasp fitting in the groove of the outer section and having its ends arranged to engage in the notches of the inner and outer sections whereby to unite said sections and to hold same from turning independently of each other, substantially as set forth.

5. The combination of the bowl, the skimmer-cone having the upwardly-projecting neck arranged eccentric to the center of motion of the bowl and the feed-tube extending through said neck into the bowl and arranged concentric with the latter, substantially as set forth.

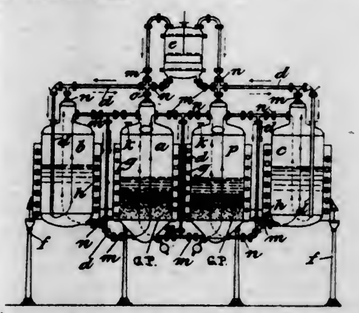
6. In a cream-separator the combination of the bowl, the skimmer-cone having means for discharging the skim-milk and cream, and a winged carrier operating in the bowl and having a series of blades and a central tube to which the said blades are secured at their inner edges, the blades being cut away on their inner edges above the tube to permit the cream to accumulate at the center of the carrier, the tube terminating at its lower end above the lower ends of the blades to permit the discharge of the milk at the bottom of the carrier, substantially as set forth.

7. The combination of the separator-bowl and the skimmer-cone composed of outer and inner sections fitting upon the bowl, longitudinal channels being provided between said sections and the said sections being provided at their upper ends with upwardly-projecting necks whose bores are concentric with each other and eccentric to the center of motion of the bowl, the outer section being provided with an outlet for the skim-milk and the inner section affording at the longer side of its bore a passage for the cream, substantially as and for the purpose set forth.

8. The combination in an apparatus substantially as described of the bowl, a skimmer-cone fitted thereon and composed of inner and outer sections having between them channels for the passage of skimmed milk and provided at their upper ends with upwardly-projecting necks fitting one within the other, the bore of the inner neck being eccentric to the bowl and a feed-tube extending through said bore and arranged concentrically with the bowl whereby a passage on the long side of the said bore will be provided alongside the concentrically-disposed feed-tube, substantially as set forth.

9. A centrifugally-operating separating-bowl having a skimmer-cone composed of inner and outer sections and provided with a neck whose interior or bore is eccentric to the bowl whereby the longer side of said bore will afford a passage alongside a feed-tube disposed concentrically to the bowl, substantially as set forth.

821,555. PROCESS OF PRODUCING MANURE FROM PEAT. CORNELIS H. J. VAN HAEFTEN, The Hague, Netherlands. Filed Apr. 29, 1905. Serial No. 258,116.



Claim.—1. The process for production of manure from peat, consisting in mixing ground peat with water, and circulating ammonia-gas through such mixture.

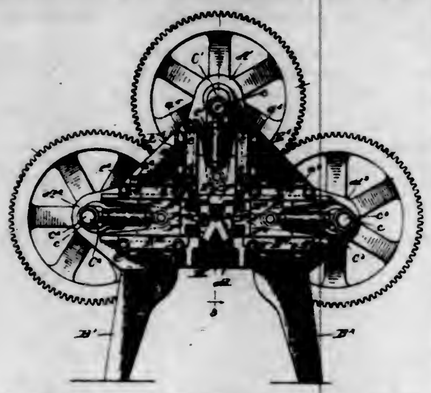
2. The process for production of manure from peat, consisting in mixing ground peat with water, circulating ammonia-gas through such mixture, and then circulating air through the mixture to drive off the ammonia.

3. The process for production of manure from peat, consisting in mixing ground peat with water, mixing ammonia-gas therewith, and subjecting the mass to suction to recover the ammonia.

821,556. MACHINE FOR MANUFACTURING CHANNEL-PINS. HENRY H. VAUGHAN, Cleveland, Ohio, assignor to The Railroad Supply Company, Chicago, Ill., a Corporation of Illinois. Filed June 21, 1902. Serial No. 112,633.

Claim.—1. In a machine of the character described, the combination with a pair of coöperating relatively movable dies, a stationary die, a third movable die coöperating with the stationary die, a shearing-knife coöperating with said stationary die, and means for operating said movable dies and said knife whereby said pair of

movable dies are moved apart and coincidentally said third movable die and said shearing-knife are moved toward said stationary die.

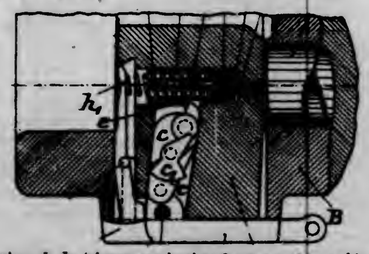


2. In a machine of the character described, the combination with a pair of reciprocating coöperating dies, a stationary die located in a plane out of but adjacent to the path of movement of said pair of dies, a third reciprocating die the path of movement of which is in alinement with said stationary die, a shearing-knife coöperating with said stationary die and movable in a path intercepting the path of movement of said pair of dies, and means for operating said reciprocating dies and said knife.

3. In a machine of the character described, the combination with a supporting-frame, of a pair of coöperating relatively movable dies guided on said frame, an upwardly-inclined stationary die mounted upon said frame and located out of the plane of movement of said pair of dies, a third movable die coöperating with said stationary die and guided upon said frame, a shearing-knife movable with said last-mentioned die and having a path of movement adjacent to said stationary die, and means for operating said movable dies and said knife.

4. In a machine of the character described, the combination with a frame, of a plurality of rotatable shafts journaled in said frame, cranks on the corresponding ends of said shafts, meshed gear-wheels secured to the opposite ends of said shafts, cross-heads operatively connected to said cranks, guides for said cross-heads adjustably secured to said frame, a pair of coöperating dies secured to a pair of said cross-heads, an upwardly-inclined stationary die mounted upon said frame, a third movable die coöperating with said stationary die and secured to another of said cross-heads, and a belt-pulley secured to one of said shafts for rotating the same.

821,557. **TRIGGER MECHANISM FOR GUNS.** KARL VÖLLER, Düsseldorf, Germany, assignor to Rheinische Metallwaren-und Maschinenfabrik, Düsseldorf-Derendorf, Germany. Filed Aug. 29, 1904. Serial No. 221,768.



Claim.—1. In trigger mechanism for guns, the combination, with a firing-pin, a coiled spring operating in the direction of its axis only and serving to project said pin forward, a trigger, and means for cocking and releasing the firing-pin when the trigger is drawn, of a lever serving as a rear abutment for the spring and adapted to transmit the force of the spring to the trigger and thereby to reset the same to its normal position.

2. In trigger mechanism for guns, the combination, with a firing-pin, a spring adapted to project the pin forward, a trigger, and means for cocking and releasing the said firing-pin when the trigger is drawn, of a lever inserted directly between the rear end of the said spring, and a cam-surface on said trigger.

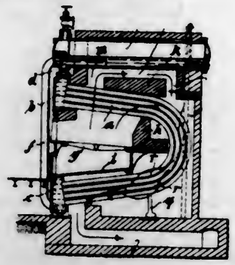
3. In trigger mechanism for guns, the combination, with a firing-pin, a coiled spring operating in the direction of its axis only and serving to project said pin forward, a trigger, and means for cocking and releasing said firing-pin when said trigger is drawn, of a lever having two arms and a fixed pivot, one arm of said lever bearing directly against the rear end of said spring and the other arm of said lever bearing against a cam-surface on said trigger, the whole mounted in a breech-block having an opening to the rear in line with the spring.

4. In trigger mechanism for guns, the combination, with a firing-pin, a spring for projecting said pin, a trigger rocking on a fixed pivot and provided with a cam-surface, means for cocking and releasing said firing-pin when said trigger is drawn, of a substantially straight lever rocking on another fixed pivot alongside the cocking and releasing mechanism and having two arms one of which is provided with a cam-surface adapted to coöperate with the cam-surface on the trigger and the other of which bears directly against the rear end of the said spring.

5. In a trigger mechanism for guns, the combination, with a firing-pin, a spring arranged to project said pin forward, a trigger, and means arranged in a substantially straight recess for cocking and releasing the firing-pin when the trigger is drawn, of a substantially straight lever arranged in a recess parallel to the first recess, one arm of said lever serving as a rear abutment for the spring and the other arm bearing against the trigger.

6. In a trigger mechanism for guns, the combination, with a firing-pin, a spring arranged to project said pin forward, a trigger, and means arranged in a substantially straight recess extending transversely of the firing-pin for cocking and releasing the pin when the trigger is drawn, of a substantially straight lever arranged in a recess also transverse to the firing-pin, one arm of the lever bearing directly against the rear end of the spring and the other arm of the lever having a cam engagement with the trigger.

821,558. **STEAM-BOILER.** HEINRICH W. WAGENER, Moscow, Russia. Filed Feb. 27, 1906. Serial No. 303,242.



Claim.—1. In a steam-boiler an arrangement of water-tubes similar to a Latin U, water-chambers connected by said tubes, a fire-bridge and means for producing heat, both provided between the shanks of the system of tubes, a body of fireproof substance arranged to permit only one part of the hot gases produced between the shanks of the water-tubes to pass over the fire-bridge, a branch channel provided above the said fireproof body, openings adapted to lead hot gases into and out of such branch channel, gas-passages adapted to lead the hot gases along the tubes and to the chimney, substantially as set forth.

2. In a steam-boiler an arrangement of water-tubes similar to a Latin U, water-chambers connected by said tubes, a fire-bridge and means for producing heat, both provided between the shanks of the system of tubes, a body of fireproof substance arranged to permit only one part of the hot gases produced between the shanks of the water-tubes to pass over the fire-bridge, a branch channel provided above the said fireproof body, openings adapted to lead hot gases into and out of such branch channel, gas-passages adapted to lead the hot gases along the tubes and to the chimney, a reservoir located above the fireproof body, and forming the upper limitation of the branch channel, substantially as set forth.

3. In a steam-boiler a system of water-tubes, each tube being bent into a shape similar to a Latin U, two water-chambers, connected by said tubes, a fire-bridge and means for producing heat both provided between the shanks of the system of tubes, a body of fireproof substance arranged to permit only one part of the hot gases, produced between the shanks of the water-tubes, to pass over the fire-bridge, a branch channel provided above the said fireproof body, openings adapted to lead hot gases into and out of such branchchannel, gas-passages adapted to lead the hot gases along the tubes and to the chimney, substantially as set forth.

4. In a steam-boiler a system of water-tubes, each tube being bent into a shape similar to a Latin U, two water-chambers connected by said tubes, a fire-bridge and means for producing heat both provided between the shanks of the system of tubes, a body of fireproof substance arranged to permit only one part of the hot gases produced between the shanks of the water-tubes to pass over the fire-bridge, a branch channel provided above the said fireproof body, openings adapted to lead hot gases into and out of such branch channel, gas-passages adapted to lead the hot gases along the tubes and to the chimney, a reservoir located above the fireproof body, and forming the upper limitation of the branch channel, substantially as set forth.

5. In a steam-boiler a system of water-tubes, each tube being bent into a shape similar to a Latin U, two water-chambers connected by said tubes, means for supporting the curved portions of the tubes, a fire-bridge and means for producing heat, both provided between the shanks of the system of tubes, a body of fireproof substance arranged to permit only one part of the hot gases, produced between the shanks of the water-tubes to pass over the fire-bridge, a branch channel provided above the said fireproof body, openings adapted to lead hot gases into and out of such branch channel, gas-passages adapted to lead the hot gases along the tubes and to the chimney, substantially as set forth.

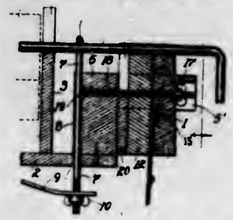
6. In a steam-boiler a system of water-tubes, each tube being bent into a shape similar to a Latin U, two water-chambers connected by said tubes, means for supporting the curved portions of the tubes, a fire-bridge and means for producing heat both provided between the shanks of the system of tubes, a body of fireproof substance arranged to permit only one part of the hot gases, produced between the shanks of the water-tubes to pass over the fire-bridge, a branch channel provided above the said fireproof body, openings adapted to lead hot gases into and out of such branch channel, gas-passages adapted to lead the hot gases along the tubes and to the chimney, a reservoir located above the fireproof body, and forming the upper limitation of the branch channel, substantially as set forth.

7. In a steam-boiler a system of water-tubes, each tube being bent into a shape similar to a Latin U, two water-chambers connected by said tubes, supporting-feet the upper ends of which being in engagement with the outer row of tubes while the lower ones movably rest on the basement of the boiler, other supporting-pieces located between the inner rows of tubes, a fire-bridge and means for producing heat both provided between the shanks of the system of tubes, a body of fireproof substance arranged to permit only one part of the hot gases, produced between the shanks of the water-tubes, to pass over the fire-bridge, a branch channel provided above the said fireproof body, openings adapted to lead hot gases into and out of such branch channel, gas-passages adapted to lead the hot gases along the tubes and to the chimney, substantially as set forth.

8. In a steam-boiler a system of water-tubes, each tube being bent into a shape similar to a Latin U, two water-chambers connected by said tubes, supporting-feet, the upper ends of which being in engagement with the outer row of tubes while the lower ones movably rest on the basement of the boiler, other supporting-pieces located between the inner rows of tubes, a fire-bridge and means for producing heat, both provided between the shanks of the system of tubes, a body of fireproof substance arranged to permit only one part of the hot gases produced between the shanks of the water-tubes to pass over the fire-bridge, a branch channel provided above the said fireproof body, openings adapted to lead hot gases into and out of such branch channel, gas-passages adapted to lead the hot gases along the tubes and to the chimney, a reservoir located above the fireproof body, and forming the upper limitation of the branch channel, substantially as set forth.

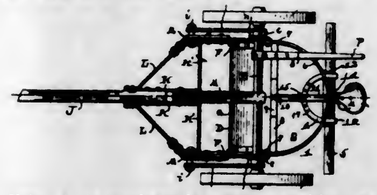
821,559. **SECURING-CLAMP FOR WASHING-MACHINES.** MICHAEL WARNER, St. Louis, Mo. Filed July 27, 1905. Serial No. 271,483.

Claim.—1. A clamp for washing-machines of the class described, comprising a head coupled to the machine-frame having a terminal channeled extension overlapping the edge of the tub, blocks passed through the base of the channel and serving to support the operating-shaft of the machine, a transverse groove formed on the inner face of the outer block, a bolt passing through and connecting the blocks to the head, a terminal clamping-nut at the outer end of the bolt, and a key for forcing the inner block toward the inner face of the wall of the tub and having a recess for the free passage of the bolt, said key being inserted between the inner block and the adjacent face of the head, substantially as set forth.



2. In combination with a tub having a marginal bead, blocks embracing the sides of the tub and the outer block being provided with a groove for embracing said bead, means for forcing the blocks into frictional engagement with the tub-walls, a head having a channeled extension overlapping the edge of the tub, the blocks being passed through the extension, a bolt coupling the blocks to the head, and a recessed key interposed between the head and the inner block, substantially as set forth.

821,560. **WHEELED SCRAPER.** WILLIAM P. WARREN, Sheridan, Ill. Filed Feb. 5, 1906. Serial No. 299,623.



Claim.—1. An attachment for scrapers comprising a vertically-swinging frame, a horizontally-swinging frame pivotally attached thereto, a blade carried by said horizontally-swinging frame, and means for securing said horizontally-swinging frame in an adjusted position.

2. An attachment for scrapers comprising a vertically-swinging frame, a horizontally-swinging frame consisting of a semicircular bar having downturned ends and a cross-bar, said cross-bar being pivoted at its center to said vertically-swinging frame, a scraper-blade upon the depending ends of said semicircular bar, and means for adjustably connecting said semicircular bar to said vertically-swinging frame.

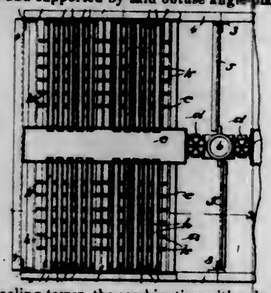
3. An attachment for scrapers comprising a vertically-swinging frame consisting of a semicircular bar having pivot-openings at its forwardly-projecting ends, a cross-bar and a longitudinal bar, a horizontally-swinging frame consisting of a semicircular bar having rearwardly-projecting downturned ends, and a cross-bar connecting said ends, the last-mentioned cross-bar being pivoted upon said longitudinal bar, the scraper-blade being secured to said depending ends, and a pin passed through alining openings in said longitudinal bar and in the semicircular bar of said horizontally-swinging frame, substantially as described and for the purpose set forth.

821,561. **COOLING-TOWER.** CLIFTON H. WHEELER, Philadelphia, Pa., and LOUIS L. PRATT, Milford, Del., assignors, by mesne assignments, to C. H. Wheeler Manufacturing Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Aug. 4, 1905. Serial No. 273,602.

Claim.—1. In a cooling-tower, the combination with devices for receiving and distributing water to be cooled, of vertical series of vertically-placed spaced-apart suspended slats, obtuse angle-plates of metal to which the series of slats are connected for receiving the liquid and distributing the same to the slats and means for suspending the said obtuse angle-plates and series of slats beneath and at right angles to the said distributing devices.

2. In a cooling-tower, the combination with devices for receiving and distributing water to be cooled, of parallel flanged beam-supports provided with suitable perforations, obtuse angle-plates

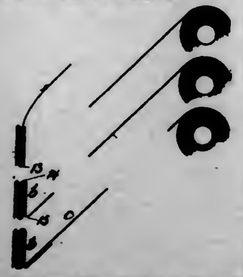
having perforations near their ends, hooks connected with the perforations of said obtuse angle-plates and received in the perforations of said beam-supports for suspending said plates between the said beam-supports, and vertical series of spaced-apart suspended slats connected to and supported by said obtuse angle-plates.



3. In a cooling-tower, the combination with a device for receiving water to be cooled, of troughs extending from the said device and provided with spaced-apart perforations in their under surfaces, obtuse angle-plates, means for suspending the same at right angles to the troughs so that one part of the said plates is inclined and the other part vertical, the inclined part being located beneath the said perforations in the troughs and receiving the water therefrom, and vertical series of spaced-apart vertical slats suspended from the obtuse angle-plates and parallel therewith, whereby the water to be cooled is delivered from the vertical portions of said obtuse angle-plates directly onto the slats of the series.

4. In a cooling-tower, the combination with a tank for receiving water to be cooled, of series of U-shaped troughs entering the said tank and extending out at right angles thereto, and supports for the opposite ends of said troughs, said troughs being provided with pairs of spaced-apart perforations in their curved under portions, obtuse angle-plates and means for suspending the same at right angles to the U-shaped troughs and so that the one part of said plates is inclined and the other vertical, and the inclined portions located beneath the pairs of perforations in the troughs, and vertical series of spaced-apart slats suspended from said obtuse angle-plates and parallel therewith whereby the water to be cooled is delivered from the vertical portions of said obtuse angle-plates directly onto the slats of the series.

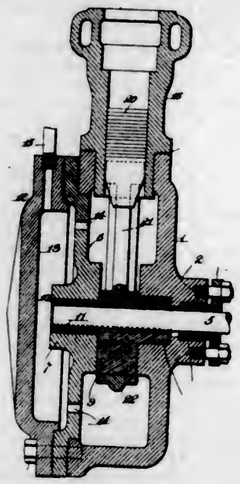
821,562. **PROCESS OR METHOD OF PRODUCING PACKAGES OF INTERFOLDED SHEETS.** SETH WHEELER, Castleton, N. Y. Filed June 6, 1905. Serial No. 263,947.



Claim.—1. The herein-described process or method of producing a package of interfolded sheets, which consists in severing a sheet from the web, partially folding the same, severing a new sheet, inserting the forward end of the new sheet into the partial fold of the preceding sheet, completing the fold of the preceding sheet, folding the new sheet over the end of the preceding sheet and partially backward upon itself, severing another sheet, inserting its forward end into the partial fold of the preceding sheet, and so on.

2. The herein-described process of producing a package of single sheets or units containing two or more superposed sheets, folded into books of three leaves, with their terminals interfolded, which consists in severing a unit from a web, partially folding the same over a new unit, inserting the forward end of the new unit into the incomplete last fold of the preceding unit, completing the terminal fold of the preceding unit, folding the new unit over the terminal of the preceding unit and partially backward upon itself, severing another unit, inserting its end into the incomplete terminal fold of the preceding unit, and so on.

821,563. **GAS-PUMP.** RICHARD WHITAKER, New Brunswick, N. J., assignor, by direct and mesne assignments, to Brunswick Refrigerating Company, a Corporation of New Jersey. Original application filed Jan. 11, 1904, Serial No. 188,612. Divided and this application filed Jan. 5, 1906. Serial No. 239,723.



Claim.—1. A gas-pump having an oil-chamber and a removable cover and a second cover attached thereto forming a condensing-chamber, and means for removing gas from the condensing-chamber.

2. A gas-pump having an oil-chamber and a condensing-chamber communicating therewith, the said condensing-chamber having a water-jacket.

3. In a gas-pump, having an oil-chamber and a condensing-chamber communicating therewith, the said condensing-chamber having a water-jacket communicating with the water-jacket of the pump.

4. In a gas-pump, the combination of a casing with a shaft-bearing, a cover for one side of the casing, the cover carrying the other bearing, a second cover attached to the casing-cover, forming a condensing-chamber, and a water-jacket on the condensing-chamber cover.

5. In a gas-pump, the combination with a casing, of a bearing-supporting cover, and a condensing-chamber cover, the two covers being secured together and to the casing by bolts.

6. In a gas-pump, the combination with a casing, of a condensing-chamber cover bolted thereto, and a bearing-supporting cover, bolted to the condensing-chamber cover, and entirely within the casing, so that only one joint will be made, and a water-jacket on the condensing-chamber cover, said water-jacket communicating with the water-jacket of the pump.

7. In a gas-pump, the combination with a casing, of a condensing-chamber cover bolted thereto, and having a shoulder on its inner face, and an inside cover secured to the condensing-chamber cover, and engaging with the shoulder, means for removing gas from the condensing-chamber, and a water-jacket on the condensing-chamber, said water-jacket communicating with the water-jacket of the pump.

821,564. **COUPLING FOR PIPES AND TUBES.** HERBERT J. WILKS and MAXIMILIAN KLAIBER, New York, N. Y., assignors to Modern Improvements Mfg. Co., Brooklyn, N. Y., a Corporation of New York. Filed Sept. 13, 1905. Serial No. 278,294.



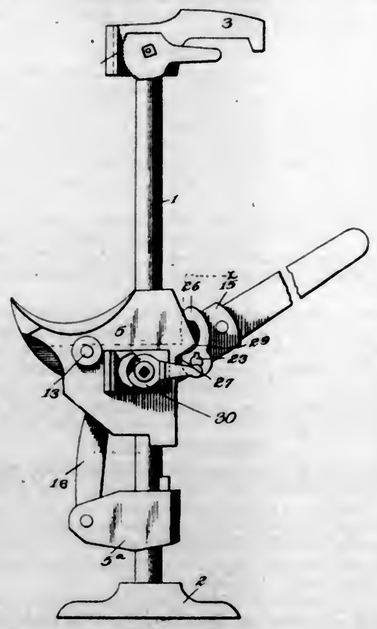
Claim.—1. In a coupling, the combination with a thimble and means for connecting thereto a pipe at one end, of a tapering or beveled end to said thimble, the surface of which is provided with axial or longitudinal teeth and grooves to be passed into the adjacent flare end of the pipe to be connected, and a sleeve or nut surrounding the end of the latter pipe and screwing upon the surface of the thimble.

2. In a coupling, the combination with a thimble and means for connecting thereto a pipe at one end, of a tapering or beveled end to said thimble, the surface of which is provided with axial or longitudinal teeth and grooves, and circumferential grooves intersecting the longitudinal teeth and grooves, to be passed into the adjacent flared end of the pipe to be connected, and a sleeve or nut surrounding the end of the latter pipe and screwing upon the surface of the thimble.

3. In a coupling, the combination with adjacent flared ends of pipes to be connected, of a thimble having tapering or beveled ends to pass into said flared ends, said thimble having screw-threaded exterior portions and the tapering or beveled ends with longitudinal or axial teeth and grooves, and sleeves or nuts surrounding the flared ends of said pipes and screwing upon the threaded surfaces of said thimble in connecting the parts.

4. In a coupling, the combination with adjacent flared ends of pipes to be connected, of a thimble having tapering or beveled ends to pass into said flared ends, said thimble having screw-threaded exterior portions and the tapering or beveled ends with longitudinal or axial teeth and grooves, and circumferential grooves intersecting the longitudinal teeth and the grooves, and sleeves or nuts surrounding the flared ends of said pipes and screwing upon the threaded surfaces of said thimble in connecting the parts.

821,565. **LIFTING-JACK AND WIRE-STRETCHER.** ALPONSO F. WILSON, Worthington, Ind. Filed Jan. 10, 1906. Serial No. 295,438.

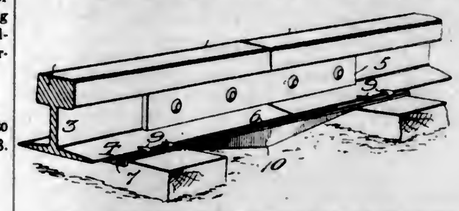


Claim.—1. In a device of the type described, the combination of upper and lower runners, provided with circular bores, a tubular standard circular in cross-section and snugly accommodated in said bores, a pitman connection between the runners, and an actuating-handle therefor and gripping-blocks mounted in the said runners and provided with toothed surfaces concave to fit the surface of the said standard, as and for the purpose set forth.

2. A device of the type described comprising a standard provided with a foot, upper and lower runners mounted on said standard, and provided with toothed gripping-blocks, the upper runner being provided with a recess and a curved slot communicating with said recess and opening outwardly through one side only in the runner and provided with a transversely-extending bearing-opening concentric to said slot, a thimble mounted to turn in said opening, a headed bolt mounted in said thimble, an actuating-handle secured to said bolt and provided with a stud extending through said slot into the recess and with a collar on said stud and working in said slot, and a pitman or link secured at one end to the lower runner and extending into said recess and provided at its upper end with an opening in which the said stud is fitted.

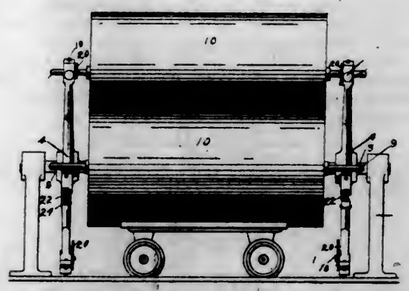
3. A device of the type described, comprising a standard upper and lower runners mounted on said standard and operatively connected together, and means for effecting a climbing movement of said runners on said standard, said means including a toothed gripping-block in the lower runner, a spring-pressed finger in the upper runner and provided with a toothed gripping-block designed to grip the standard and projecting out of said runner and provided with an offset lug formed with a wing, and a cam-lever having a keyhole-shaped slot by which it may be adjustably secured to the said offset on the finger, there being provided a shoulder 29 on the runner against which the cam-surface of the lever is designed to bear, as and for the purpose set forth.

821,566. **RAILWAY-RAIL-JOINT SUPPORT.** LINNAEUS WINANS, Hood River, Oreg. Filed Sept. 6, 1905. Serial No. 277,272.



Claim.—In a device of the character described, the combination with two adjacent railway-rails and the ties for supporting the same, of a rail-joint supporter of a width greater than that of the bases of said rails and having its ends turned down at right angles to provide flanges, said flanges being adapted to engage and lie flush with the outer vertical edges of two adjacent ties, and a strengthening-rib or web secured to the under side of that part of the rail-joint supporter which bridges the space between the two ties and being tapered from its center toward its ends.

821,567. **REEL.** WALTER E. WINES, Minneapolis, Minn. Filed Apr. 13, 1905. Serial No. 255,370.



Claim.—1. The combination, with the reel-arms having sockets and bearing brasses or blocks removably fitting therein, of a spindle journaled in said brasses, spring-pressed bolts carried by said arms and arranged to be projected across said sockets to lock said brasses and spindle therein, and levers pivoted on said arms and projecting across said sockets in the path of said spindle to be actuated by the insertion of the spindle into said sockets for tripping said spring-pressed bolts to lock the same, substantially as described.

2. The combination, with the reel-arms, of a spindle having bearings in said arms, a locking device arranged to prevent the accidental disengagement of said spindle from its bearings, a pivoted lever provided in the path of said spindle on each arm and arranged to trip said locking devices to automatically lock the same when said spindle is inserted into its bearings, said lever being normally held

by gravity in the path of said spindle and stops for limiting the movement of said lever in each direction, substantially as described.

3. The combination, with the reel-arms having sockets and bearing-brasses or blocks removably fitting therein, of a spindle journaled in said brasses, spring-pressed bolts mounted in said arms and arranged to be projected across said sockets to lock said brasses and spindle therein, pins provided on said bolts and adapted to slide in slots 17 and enter offsets 18 to lock said bolts in their retracted position, and levers pivoted on said arms in the path of said spindles and adapted to engage said pins to trip said bolts when the spindles are inserted into said sockets, substantially as described.

4. The combination, with a reel-arm having a socket and a bearing brass or block fitting therein, of a spindle journaled in said brass, a spring-pressed bolt carried by said arm and arranged to be projected across said socket to lock said brass and spindle therein, a lever pivoted on said arm independently of said bolt and normally held by gravity across said socket in the path of said spindle and said lever being adapted to engage and trip said bolt when said spindle enters said socket, substantially as described.

5. The combination, with a reel-arm having a socket and bearing-block therein, of a spindle removably fitting in said socket, a locking device arranged to be projected across said socket to lock said spindle therein, a lever pivoted on said arm independently of said locking device and normally projecting across said socket in the path of said spindle, and said lever being adapted when struck by said spindle to engage and trip said locking device, substantially as described.

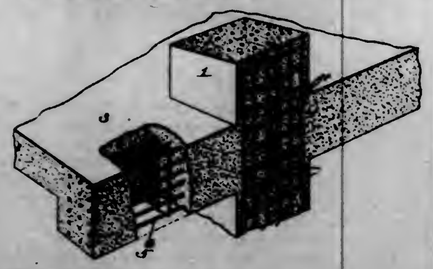
821,568. PNEUMATIC ACTION FOR MUSICAL INSTRUMENTS. FREDERICK W. WOOD, Kansas City, Mo. Filed June 13, 1905. Serial No. 265,111.



Claim.—1. A device for use in pneumatic actions for musical instruments, comprising a block having a central perforation and a recess, the latter being the full width of but terminating short of the ends of the block and communicating centrally with said perforation, and a diaphragm bridging said recess and secured at its ends to the ends of the block and at its sides to the side edges of the block and forming a chamber between it and the upper side of the block, which is air-tight except through the perforation of the latter.

2. A device for use in pneumatic actions for musical instruments, comprising a block having a central perforation and a recess, the latter being the full width of but terminating short of the ends of the block and communicating centrally with said perforation, a diaphragm bridging said recess and secured at its ends to the ends of the block and at its sides to the side edges of the block and forming a chamber between it and the upper side of the block, which is air-tight except through the perforation of the latter, and a block secured to the upper side of the diaphragm and capable with the latter of sinking into the recess of the first-named block.

821,569. ARMORED CEMENT. PIERRE SUCCO, Baltimore, Md. Filed June 28, 1905. Serial No. 267,473.

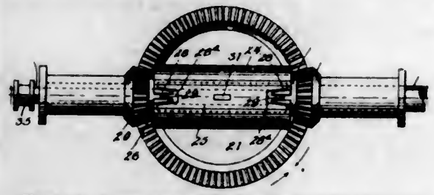


Claim.—1. In an invention of the class described, a series of rods formed by a number of short bars, crockets connecting the bars, the connections being staggered, binders or stirrups at an equal distance apart throughout the length of the rods, the said binders or stirrups consisting of a bar bent to form a rectangle within a rectangle, substantially as specified.

2. In an invention of the class described, a series of rods formed by a number of short bars, crocket connections between the bars, the connections being staggered, a series of binders or stirrups arranged alternately with respect to their free ends at regular intervals apart throughout the length of the rods, the said binders or stirrups consisting of a bar bent to form a rectangle within a rectangle, and cement or concrete incasing the entire structure, substantially as specified.

3. In an invention of the class described, a pillar consisting of a series of rods formed by a number of short bars connected by crockets, the connections in the rods being staggered, binders arranged at intervals throughout the length of the pillar, the binder consisting of a rod bent to form a rectangle within a rectangle, cement incasing the structure, a beam comprising a series of tension-rods formed of short bars, crocket connections between the bars, the connections being staggered, stirrups inclosing and supporting the tension-bars, and said stirrups consisting of a bar bent to form a rectangle within a rectangle, cement incasing the whole, a flooring consisting of a series of prepared armored slabs, a series of tension-bars supporting the slabs, and cement incasing the whole, substantially as specified.

821,570. CLUTCH MECHANISM. BENJAMIN J. ABBOTT, Chicago, Ill., assignor to Union Horse Nail Company, a Corporation of Connecticut. Filed Feb. 26, 1903. Serial No. 145,134.



Claim.—1. A reversing-clutch wherein are combined two tapering hubs, a shaft on which the hubs are mounted, ring-sections inclosing each hub and provided with outward projections at their ends, slides having tapering notches at their ends adapted to engage projections upon the ring-sections, means for moving the slides back and forth between the hubs so that they may close the sections of each alternately, and means for opening the ring-sections after they are released by the slides.

2. The combination with a reversing-clutch essentially such as that described, of a vertical rock-shaft controlling the clutch, an arm 51 projecting horizontally from the shaft and a yielding stop 52 encountering said arm and moving endwise, substantially as specified.

3. The combination with a reversing-clutch essentially such as that described, of a rock-shaft controlling the clutch, an arm 51 projecting from the shaft and having its end beveled in opposite directions and a yielding stop 52 encountering said arm, and having its end similarly beveled and yielding to allow it to pass and acting to hold the shaft stationary between the reversing operations, substantially as specified.

821,571. MACHINE FOR CLEANING FIBER. WILLIAM A. ADAMS, Winchester, Ky. Filed June 23, 1905. Serial No. 266,663.

Claim.—1. A machine for cleaning fiber, consisting of a revolving breaker, a breast between which and the revolving breaker the fiber is fed, and means for directing a pneumatic blast against the fiber after passing the breast and in a direction reverse to the direction of revolution of the breaker.

2. A machine for cleaning fiber, consisting of a revolving breaker, a breast between which and the revolving breaker the fiber is fed, means for directing a pneumatic blast against the fiber after passing the breast and in direction reverse to that of the revolving breaker, means for feeding the fiber into the machine and holding the same and means for reversing said feed to withdraw the fiber after having had one end acted upon.

3. A machine for cleaning fiber, comprising means for breaking the plants and for scraping and cleaning the same in two periods and means for pneumatically whipping the fiber between the said periods.

4. A machine for cleaning fiber, consisting of a revolving breaker, a breast between which and the revolving breaker the fiber is fed, a closed chamber extending forwardly below the breast and means for delivering a pneumatic blast below the breaker in reverse direction to the revolution of the latter.



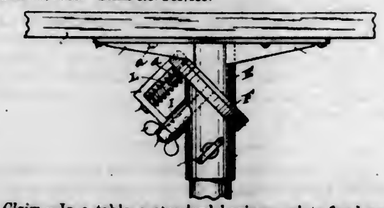
5. A machine for cleaning fiber, consisting of a revolving breaker, a breast between which and the revolving breaker the fiber is fed, a closed chamber extending forwardly below the breast, means for producing a pneumatic blast below the breaker and in the chamber below the breast and a deflector arranged below the breaker to separate the incoming and outgoing blast.

6. A machine for cleaning fiber, consisting of a revolving breaker, a breast between which and the revolving breaker the fiber is fed, a closed chamber extending forwardly below the breast and having an inclined upper surface and means for directing a pneumatic blast against the inclined surface to thresh the fiber as described.

7. A machine for cleaning fiber comprising a revolving breaker and means for directing a pneumatic blast against the revolving breaker in reverse direction to that of the breaker to strip the fiber off from the breaker and prevent wrapping around the same as described.

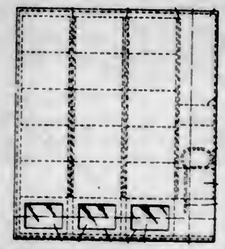
8. A machine for cleaning fiber, consisting of fiber breaking and cleaning devices, two pairs of feeding-rolls bearing upper and lower endless belts, means for reversing the feed of the same, a feed-table arranged on the level of the space between the feed-belts, a roller arranged between the adjacent ends of the feed-table and lower feed-belt to direct the cleaned fiber downwardly and a subjacent discharge-belt for removing the cleaned fiber substantially as described.

821,572. TABLE. DAVID H. ALLEN, Miamisburg, Ohio. Filed Feb. 13, 1905. Serial No. 245,418.



Claim.—In a table, a standard having a plate fixed upon the top thereof and inclined at an angle of approximately forty-five degrees, a top having a supporting-stem depending therefrom, a plate fixed upon the end of said stem and inclined similarly to said first-mentioned plate, said plates pivoted together in the center lines of the stem and pedestal, and means carried by said plates for automatically interlocking the same when the top is moved to a horizontal position.

821,573. DISPLAY-CASE. JAMES E. ALLISON, St. Louis, Mo., assignor to Dr. J. H. McLean Medicine Company, St. Louis, Mo., a Corporation of Missouri. Filed Dec. 4, 1905. Serial No. 290,170.



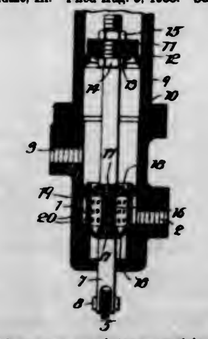
Claim.—1. A display case or receptacle adapted to hold a number of articles and having a side wall provided with a discharge-opening, means for supporting said receptacle in an upright position, and a movable locking device for preventing an article from being removed through said discharge-opening when said locking device is in its operative position; substantially as described.

2. A display case or receptacle constructed to hold a number of rows of articles and having a side wall provided with a discharge-opening in alinement with the lowermost articles of the rows, and a movable locking device adapted to prevent an article from being moved through the discharge-opening when said locking device is in its operative position; substantially as described.

3. A display case or receptacle adapted to hold a number of articles and provided with front and rear walls, the front wall being provided with an opening to expose to view some of the articles in the receptacle and the rear wall being provided with an opening to expose to view a portion of each article in the receptacle, said receptacle having a side wall provided with a discharge-opening through which the articles are removed, and a locking device adapted to be operated from the rear of the receptacle for preventing the articles from being moved through the discharge-opening; substantially as described.

4. A display case or receptacle of box-like construction provided with a plurality of guides for holding in position rows of articles, the front wall of said receptacle being provided with openings for exposing to view the lowermost article of each row and one of the side walls of said receptacle being provided with a discharge-opening in alinement with the lowermost articles of the rows, and a locking device mounted in the receptacle and normally occupying a position to prevent an article from being moved through said discharge-opening, the rear wall of said receptacle being provided with an opening for enabling the locking device to be actuated and with a second opening for enabling the articles to be engaged and moved through the discharge-opening; substantially as described.

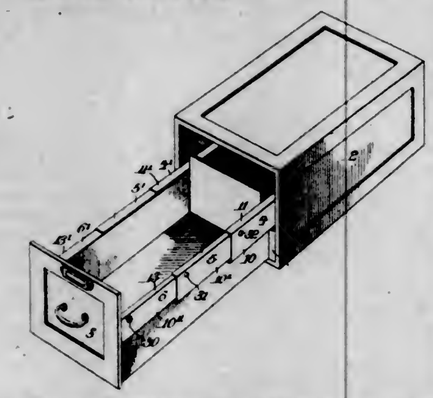
821,574. FLUID-PRESSURE REGULATOR. ALEXANDER ANDREWS, Carbondale, Ill. Filed Aug. 3, 1905. Serial No. 272,564.



Claim.—A fluid-pressure regulator comprising an outer cylinder 9, a casing 1 secured to said cylinder and provided with inlet and outlet openings, an inner perforated cylinder 19 secured within the casing 1, a piston provided with a large cup-shaped valve 12 seated upon a cup-shaped flange 11 for operating in the main cylinder, a spool-shaped valve-holder 16, a pair of oppositely-disposed cup-shaped valves 18, secured at the ends of said holder by screws 17, and

adapted to slide in the perforated cylinder 19, a lever pivoted to the casing and connected to the piston, and a weight adjustable upon the lever, substantially as described.

821,575. FILE-CABINET. ISAAC H. ATHEY, Chicago, Ill., assignor to Dust Proof Furniture Company, a Corporation of Illinois. Filed June 19, 1905. Serial No. 266,088.



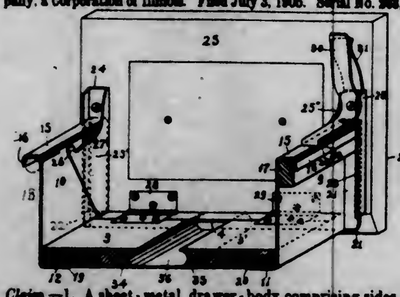
Claim.—1. The combination with a file-cabinet, or the like, and a drawer, or the like, of a series of telescoping extension-slides, ball-bearings for said slides, and means for supporting said slides upon each other so that the ball-bearing portions thereof will be held apart to prevent frictional slide contact.

2. The combination, with a cabinet case and drawer, of a plurality of telescopic slides, ball-bearings for said slides, said bearings being constructed to provide three-point bearings for said balls.

3. In combination, slide-supports, a plurality of extension-slides mounted on said slide-supports to move thereupon and upon each other, the intermediate of said extension-slides having sheet-metal bearings or ball-races provided with bottoms which serve as movable slide-bearings for the respective slides and as stationary ball-races for superposed extension-slides.

4. The combination, with a drawer or the like, of slide-supports, a plurality of slides all normally overlying said slide-supports and drawer, but extensible to support said drawer beyond the ends of said slide-supports, means for limiting the outward movement of each slide, and means for interlocking said slides so that they will move together as a unit, said means permitting release of each slide from interlocking engagement with its companion slide or slides when it reaches the end of its outward path of movement.

821,576. CONSTRUCTION OF DRAWERS AND THE LIKE. ISAAC H. ATHEY, Chicago, Ill., assignor to Dust Proof Furniture Company, a Corporation of Illinois. Filed July 3, 1905. Serial No. 268,268.



Claim.—1. A sheet-metal drawer-body comprising sides and back consisting of a single piece of sheet metal having integral bent portions which support the bottom and integral bent portions which support the drawer as a whole upon its bearings, an angularly-movable front, a bottom comprising a plurality of members arranged to be supported relatively to each other by said front and said sides and back, and means whereby said front may be moved to open and close same without leaving any openings between said front and said sides.

2. In a drawer, the combination of a back and sides made from a single piece of sheet metal, said sides and back having inturned flanges which constitute supporting-ledges, a bottom consisting of a plurality of members, such as 3 and 3', supported upon said ledges, and a front hinged to said members so that said front serves to support said bottom members relatively to each other at the forward end of the drawer.

3. In a drawer, the combination of a sheet-metal drawer-body the sides and back of which are one piece of sheet metal said sides and back having inwardly-turned flanges constituting supporting-ledges, the upper portions of said sides having channels formed by bending the metal outwardly and downwardly said channels adapted to serve either as ball-races or as supports for slide-rails such as rail 17 and a bottom supported on said ledges.

4. In a drawer, the combination with a bottom having saw-kerfs or grooves therein, of sides and a back made out of sheet metal, the lower edges of said sides and back bent inwardly, said inwardly-bent portions constituting ledges and said ledges having ribs thereon which enter said kerfs or grooves and support said bottom against sliding movement on said ledges, and a front hinged to the forward end of said bottom, said front provided with channel-pieces having wings which engage opposite faces of the forward ends of said sides and close the spaces between said end and front when the latter is tilted forward to its open position.

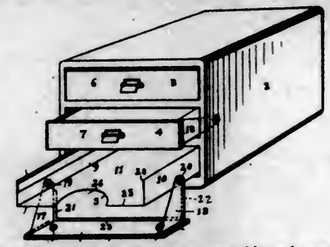
5. A sheet-metal drawer-body comprising sides and back; a bottom consisting of a plurality of separate members; means upon said sides and back which are integral parts thereof, for supporting said bottom in both a vertical and in a horizontal direction; an angular movable front, said front pivoted to said members separately and thereby serving to hold same against relative movement at the forward end of the drawer; means upon said front for closing the triangular spaces between the open position of said front and the forward ends of said sides, said means together with the pivoting of said front serving to support said sides, bottom and front rigidly relatively to each other when the front is closed, and means consisting of a locking-piece and an integral portion of said back for making the rear end of the drawer rigid.

6. A drawer having relatively immovable sides, back and bottom, said sides and back consisting of a single piece of sheet metal the lower edge of which is bent inwardly and the inwardly-bent portion constituting ledges for said bottom to rest upon, said bottom consisting of members 3 and 3' having in their adjacent edges grooves 34 and 35; the trough 36 fitted into and held by said grooves; a front 25 hinged separately to said members so that it binds the latter together and holds the forward end of said bottom relatively to said front; the curved strap 4 covering and supporting the forward ends of members 3, 3', said sides having upper portions in the form of channels adapted to serve as supports, the catch 30 pivoted to said front and arranged to interlock with one of said sides and the channel-pieces secured to said front, said channel-pieces having flanges which engage opposite faces of said sides and one thereof having a hook 26, the pin 27 which limits the outward swing of said hook and therewith the outward tilting movement of said front and the ribs 19 which enter the under side of said bottom and hold it against sliding movement on said ledges.

7. The combination, with a comparatively rigid bottom, of a sheet-metal body comprising sides and back having flanges which overlap said bottom at its edges and constitute supporting-ledges, the upper edge of said back being in the form of a hook-flange; a locking-piece arranged to be clamped between said hook-flange and said bottom for the purpose of making said sides, back and bottom relatively rigid, each of the outer vertical faces of the sides being provided with a channel-piece adapted to serve as a ball race or retainer for the slide-rail; the front hinged to the bottom; the channel members secured to said front and having wings or flanges which engage opposite faces of said sides, and means for locking said drawer in a closed or open position.

821,577. DROP-FRONT DRAWER FOR FILING-CABINETS. ISAAC H. ATHEY, Chicago, Ill., assignor to Dust Proof Furniture Company, a Corporation of Illinois. Filed July 3, 1905. Serial No. 268,269.

Claim.—1. A drawer consisting of a single piece of sheet metal bent to form the bottom, sides and rear end of a drawer, said sides and end having overlapping parts which are riveted together, and the overlaps arranged to extend vertically to said bottom, said bottom and end constructed to provide a continuous or unbroken surface where said bottom and sides come together, and a pivoted front constructed and arranged to normally close the front of the drawer and to overlap portions of the outer faces of the sides and under side of the bottom.



2. A filing-cabinet drawer open at one side and consisting of a plate of sheet metal cut and bent into a form, said form comprising a bottom and three sides, the latter, at their junction with said bottom arranged to form an unbroken or continuous surface, means for fastening the abutting sides of said ends together, and a pivotally-movable drop-front arranged to normally close the open side and to horizontally overlap the front edges of the bottom in such a manner that papers cannot drop edgewise past said front and front edges.

3. A filing-cabinet drawer, consisting of a plate of sheet metal cut and bent into a form which comprises a bottom and two sides 9 and 10 as well as a rear end or side 12, which are continuous with said bottom, said sides and end having overlapping portions or flanges, which are riveted to said rear end 12, and a drop-front constructed and arranged to normally close the front end of the drawer and to also close the slight space between the drop-front and sides and bottom, in planes at right angles to the plane of the drop-front when same is in its closed position.

4. A filing-cabinet drawer, consisting of a plate of sheet metal cut and bent in the form of a drawer, the sides 9 and 10 of which are riveted to the rear end 12, said sides and end being extensions of said bottom bent upwardly, and a pivoted drop-front formed from a single piece of sheet metal in such a manner as to provide stiffening-ribs which serve to support the front against bending strains.

5. A drawer, consisting of a single sheet of metal cut and bent to form a bottom, sides rear end and stiffening-ribs for the upper edges of said sides, and a drop-front also consisting of a single sheet of metal having integral stiffening-ribs arranged to normally lie against said bottom and sides.

6. A drawer, consisting of a single sheet of metal cut and bent to form a bottom, two sides and a rear end, means for securing said sides and end to each other, said sides and end having stiffening-ribs formed by bending a portion of the upper edges thereof upon themselves, and a front for said drawer which also consists of a single sheet of metal having integral therewith wings 17 and 18 pivoted to said sides, said front and wings having integral therewith flanges 21, 22 and 23 which overlap the front edges of the drawer, the flanges 21 and 22 arranged to serve as slide-bearings for said front, the flange 23 constructed to serve as a closure between said front and the bottom of said drawer, and all three of said flanges arranged to serve as stiffening-ribs for said front.

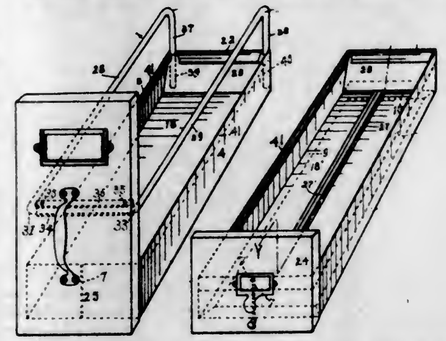
7. A drawer, consisting of a single sheet of metal cut and bent into a form which comprises the bottom 11, the sides 9 and 10 and the rear end 12, said bottom, sides and rear end being constructed so that their joints run along vertical lines relative to the bottom, whereby the latter is a continuation of said sides and end, and a sheet-metal front having integral wings 17 and 18, which are provided with flanges 21 and 22 that serve as slides upon which said front moves upon the bearings provided for the drawer as a whole.

8. A drawer, consisting of a single sheet of metal cut and bent into a form that comprises the bottom 11 and the sides 9 and 10 and rear end 12 extending from and integral with said bottom; means for fastening said sides and ends together; a drop-front for said drawer consisting of a single piece of sheet metal having bent portions 17 and 18 pivoted to the sides of said drawer; and flanges 21, 22 and 23 arranged to serve as stops limiting the upward movement of said front as well as stiffening-ribs; the flanges 21 and 22 thereof arranged to serve as runners or slides upon which said front is supported vertically when in a closed, or partly-closed position.

9. A drawer, consisting of a single piece of sheet metal cut and bent into the form which comprises the bottom 11, the sides 9 and 10 and the rear end 12; said sides, bottom and rear end being one continuous piece of metal, said sides and end having joints arranged vertically to said bottom; the front 8, having thereon the flanges or ribs 21, 22 and 23 and the wings 17 and 18 pivoted to the sides 9 and 10; and the false front 29 secured to the outer face of said front 8.

10. A sheet-metal drawer consisting of a single sheet of metal bent into a form which comprises the bottom 11, the sides 9 and 10 and rear end 12, said bottom, sides and rear end being constructed so that their joints are arranged on vertical lines relative to bottom; a front 8 having the wings 17 and 18 arranged to serve as supporting-brackets for said front, the latter provided with a flange 23, said wings provided with flanges 21 and 22; a false front 29 secured to said front 8, and a dust-proof strip having a wing 33 secured between said fronts 8 and 29.

821,578. SHEET-METAL DRAWER AND THE LIKE. ISAAC H. ATHEY, Chicago, Ill., assignor to Dust Proof Furniture Company, a Corporation of Illinois. Filed July 3, 1905. Serial No. 268,270.



Claim.—1. In a drawer, the combination, with a bottom, of sides and ends made of a single sheet of metal having flanges which overlap and sustain said bottom upon said sides and ends, and locking-pieces arranged to be held between overlapping portions of said ends and said bottom.

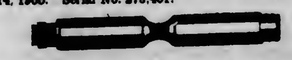
2. In a drawer, the combination with a comparatively rigid bottom, of sheet-metal sides and ends which have flanges which overlap said bottom at its edges and constitute supporting-ledges, the upper edges of said ends having hooked portions, and locking-pieces 20, 21 arranged to be clamped between said hooked portions and said bottom to make the sides and end rigidly fixed to said bottom.

3. In a drawer, the combination, with a bottom having kerfs or grooves therein, of sides and ends whose lower edges are bent inwardly and then upwardly to provide, respectively, supporting-ledges for said bottom and ribs which enter said kerfs or grooves to support sand bottom against sliding movement on said ledges.

4. In combination, a comparatively rigid bottom and flexible sides and ends, said sides and ends having inwardly-extended ledges such as 8, 9, 10, 11 and 12 which support said bottom, said ends having the hook-flanges 22 and 23, the locking-pieces 20 and 21 driven in between said hook-flanges and said bottom to support said sides and ends rigidly and the rails 28 and 29 having the bent portions 37 and 38 supported in apertures 39 and 40 in the ends of locking-piece 20, said rails having inwardly-bent portions at the front of the cabinet the ends of which abut, and a clamp 34 which covers the abutting ends of said rails and secures the forward ends of the latter to the front of the drawer.

5. A drawer having sheet-metal sides and ends, said sides and ends having supporting-ledges formed upon their lower edges, the upper edges of said sides being folded or bent to provide ribs 41 and the upper edges of said ends being inwardly bent to provide the hook-flanges 22 and 23, a comparatively rigid bottom supported upon said ledges, the wedge-shaped locking-pieces 20 and 21 which are wedged in between said bottom and hook-flanges, and screws or brads 19 which secure said ledges to said bottom.

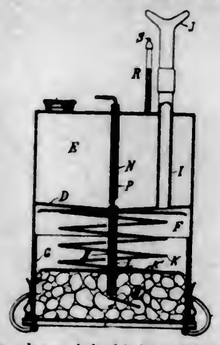
821,579. BOTTLE. EDWARD W. AUSTEN, Oswego, N. Y. Filed Sept. 14, 1905. Serial No. 278,401.



Claim.—As an improved article of manufacture, a bottle formed with communicating alining similar compartments formed in one continuous piece with an integral contracted portion and opening between adjacent ends of said compartments, a closure for the outer ends of said compartments, and a removable cork substantially hy-

perbolical in form and of less diameter than the openings in the neck of said compartments and forced into said contracted opening and confined within the said contracted portion and forming a bottom for each compartment, beyond the widest portion of the contraction, each compartment thus having a shoulder at each end and inclined walls adjacent said cork.

821,580. ACETYLENE-GAS-GENERATING LAMP. FREDERIC B. BALDWIN, New York, N. Y. Filed July 15, 1903. Serial No. 165,587.



Claim.—1. In a lamp of the kind described, the combination with a water-reservoir, and a receptacle for calcium carbid, of a tube extending from the former a considerable distance into the latter so as to be embedded in the mass of carbid contained in said receptacle, and a rod or stem extending through said tube into the carbid-receptacle and having its end formed as a stirrer to break up the slaked carbid around the outlet of the water-tube, as set forth.

2. In a lamp of the kind described, the combination with a water-reservoir, and a receptacle for calcium carbid, of a tube extending from the former into the latter so as to be embedded in the mass of carbid contained in the receptacle, a rod extending from a point outside of the lamp through the tube and into the carbid-chamber and having its end bent to form a stirrer for breaking up the slaked carbid around the outlet of the water-tube, as set forth.

3. In a lamp of the kind described, the combination with a water-reservoir, and a receptacle for calcium carbid, of a plurality of tubes extending from the former into the latter so as to be embedded in the mass of carbid contained in the receptacle, a stirrer passing through each tube adapted to break up the slaked carbid around the end of the tube, and means for actuating all the stirrers simultaneously, as set forth.

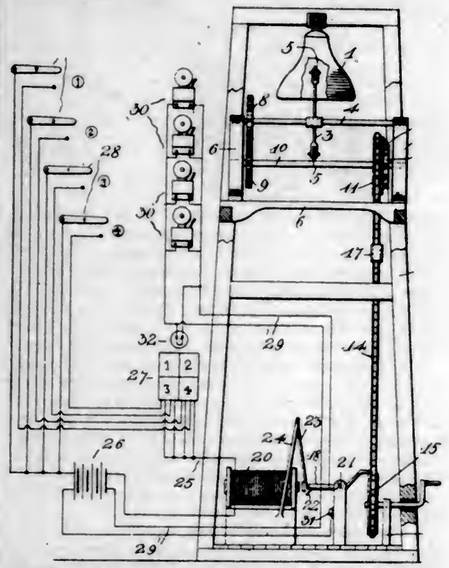
4. In a lamp of the kind described, the combination with a water-reservoir, and a receptacle for calcium carbid, of a water-tube extending from the former a considerable distance into the latter and adapted to be embedded in the mass of carbid in the receptacle, and a rod extending through the water-tube and constituting a stirrer to break up slaked carbid around the outlet of the water-tube, as set forth.

5. In a lamp of the kind described, the combination with a water-reservoir, a carbid-receptacle, and a tube restricted by a wire extending into the carbid-receptacle from outside the lamp and open to the water-reservoir, a tube exterior to the lamp, connected with the reservoir and adjacent to the main burner, and equipped with a burner, said auxiliary burner acting as an air-vent to admit air during the normal operation of the lamp.

821,581. FIRE-ALARM SYSTEM. BENJAMIN F. BRAME and ROY P. BENNETT, New Paris, Ohio. Filed July 10, 1905. Serial No. 269,103.

Claim.—1. In a fire-alarm system, the combination of a bell, a rotary clapper for said bell, a winding mechanism, a trip for holding said mechanism in inoperative condition, an electromagnet, an armature for actuating said trip for releasing the winding mechanism, an electric generator, an annunciator, circuit-closing devices, and an electric circuit including said generator, said annunciator, and said circuit-closing devices, substantially as described.

2. In a fire-alarm system, the combination of a sounding device, means for operating the sounding device, comprising a winding mechanism, an electromagnet, a trip actuated by the armature of said electromagnet for releasing said winding mechanism, an electric generator, a series of electric bells or other translating devices arranged at different points, and an electric circuit including said generator, said electric bells or translating devices, and said trip, substantially as described.



3. The combination of a suitable support, a bell mounted therein, a shaft, a rotary clapper upon the latter, a second shaft, gearing connecting said shafts, a rotary element, mounted upon said second shaft to turn therewith in one direction and independent thereof in the reverse direction, a second rotary element, an endless flexible connection passed about said elements, a weight carried by said flexible connection, a trip device for holding said second rotary element against movement, an electromagnet for controlling said trip-lever, and means for actuating said second electromagnet from different points, substantially as described.

4. The combination of a suitable support or tower, a bell mounted therein, a shaft disposed beneath said bell, a rotary clapper upon said shaft for sounding said bell, a second shaft, gearing between said shafts, a sprocket-wheel loosely mounted upon said second shaft, a pawl-and-ratchet connection between the latter and said sprocket-wheel, a second sprocket-wheel mounted in the lower portion of said tower, a sprocket-chain connecting said sprocket-wheel, a weight upon said sprocket-chain, a trip-lever for holding said second sprocket-wheel against rotation, and electrically-operated means for controlling said trip-lever, substantially as described.

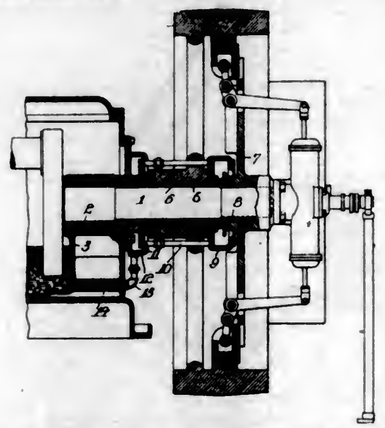
821,582. LUBRICATING MECHANISM. NIELS A. CHRISTENSEN, Milwaukee, Wis. Original application filed Aug. 21, 1903. Serial No. 170,546. Divided and this application filed Nov. 18, 1904. Serial No. 233,297.

Claim.—1. Oil-trapping mechanism for machines comprising, in combination with a shaft, a rotatable member thereon, a projection or ring thereon, a second rotatable member having an oil-cup arranged in proximity to said ring and receiving oil thrown therefrom, and means for draining the oil from said cup.

2. Oil-trapping mechanism for machines comprising, in combination with a shaft, a rotatable member thereon, a projection or ring on said member, a second rotatable member having an annular oil-cup receiving oil thrown by the ring, and means for draining the oil from said cup while the same is rotating.

3. Oil-trapping mechanism for machines comprising, in combination with a shaft, a rotatable member thereon, a projection or ring on said member, a second rotatable member having an annular oil-cup receiving oil thrown by the ring, and arranged in the plane of rotation of such ring, and means for draining the oil from said cup while the same is rotating.

4. Oil-trapping mechanism for machines comprising, in combination with a shaft, a rotatable member thereon, a projection or ring on said member, a second rotatable member having an annular oil-cup receiving oil thrown by the ring, a second ring arranged on said second member, a connection between said oil-cup and second ring for delivering oil to the latter, and means for collecting oil thrown from such second ring.



5. Oil-trapping mechanism for machines comprising, in combination with a shaft, a rotatable member thereon, a projection or ring on said member, a second rotatable member having an annular oil-cup receiving oil thrown by the ring, a second ring arranged on said second member, a connection between said oil-cup and second ring for delivering oil to the latter, and a stationary oil-receiver for collecting oil thrown from such second ring.

6. Oil-trapping mechanism for machines comprising, in combination with a shaft, a rotatable member thereon, a projection or ring on said member, a second rotatable member having on one side adjacent said ring an annular oil-cup receiving oil thrown from such ring, a second ring on the other side of such second member, pipes extending transversely of such latter member for conducting oil from such oil-cup to the face and edge of such second ring, and a stationary annular oil-cup arranged adjacent such second ring and receiving oil thrown therefrom.

7. Oil-trapping mechanism for the friction-clutch pulley of a compressor comprising, in combination with such pulley, an annular receptacle or cup arranged on the pulley and adapted to catch oil thrown from the bearing, pipes for conducting the oil from such cup, and a stationary receptacle coöperating with such pipes to receive the oil drained through them.

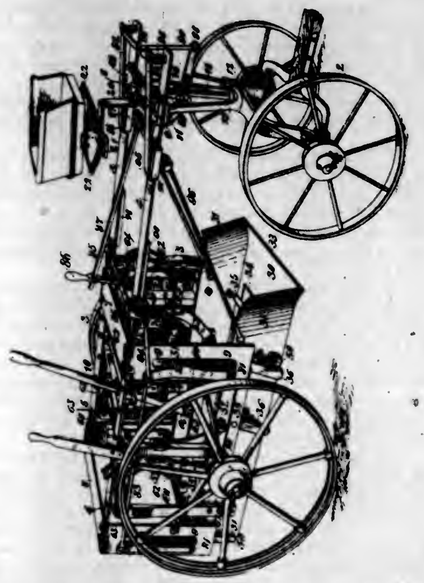
8. Oil-trapping mechanism for the friction-clutch pulley of a compressor comprising, in combination with such pulley, an annular receptacle or cup arranged on the pulley and adapted to catch oil thrown from the bearing, a second but stationary annular receptacle or cup arranged at the opposite side of said pulley, transverse pipes leading from the first cup and emptying into the second cup.

9. Oil-trapping mechanism for the friction-clutch of a compressor comprising, in connection with the driving-shaft and the pulley and clutch-arm arranged therein, a projecting flange or ring arranged on the clutch-arm adjacent the pulley and adapted to receive and throw the oil escaping from the pulley-bearing, an annular cup or receptacle secured to one side of the hub of such pulley and arranged to receive the oil thrown by said ring, a ring 11 secured at the other side of the hub, pipes communicating with said cup and extending transversely of the pulley and there secured to said ring 11, and a stationary oil-receiving annular cup or receptacle arranged to receive oil from said pipes.

10. Oil trapping and draining mechanism for the friction-clutch of a compressor comprising, in connection with the casing of the compressor, its driving-shaft, its pulley and its friction-arm, an annular cup or receptacle on the pulley arranged to receive oil escaping from the pulley-bearing, transverse pipes for conveying such oil from the cup to the other side of the pulley, a stationary cup or receptacle for receiving the oil from said pipes, and a pipe or passage leading from said stationary cup into the compressor-casing.

821,583. AUTOMATIC SCRAPING-MACHINE. JOHN F. COLEMAN, Everett, Mass. Filed Apr. 17, 1905. Serial No. 255,867.

Claim.—1. In a scraping-machine, the combination of a scraper mounted on wheels and provided with means for opening and closing its bottom, means to lower and to raise said scraper, and means to lock said scraper when raised.



2. In a scraping-machine, the combination of a suitable frame mounted upon wheels, a scraper hung in said frame and provided with means to open and to close its bottom, means to lower and to raise said scraper, and means to lock said scraper when raised.

3. In a scraping-machine, the combination of a suitable frame mounted upon wheels, a scraper provided with guides and adapted to move upwardly and downwardly in said frame, means to unload said scraper through its base, means to lower and to raise said scraper, and means to lock said scraper when raised.

4. In a scraping-machine, the combination of a frame mounted upon wheels, a scraper provided with supporting-guides which are in moving engagement with the sides of said frame, means to unload said scraper through its base, means to lower and to raise said scraper, and means to lock said scraper when raised.

5. In a scraping-machine, the combination of a frame mounted on wheels, and having depending slotted side braces, a scraper provided with supporting-guides which move in said slotted side braces, means to lower and to raise said scraper, and means to lock said scraper when raised.

6. In a scraping-machine, the combination of a frame mounted on wheels and having depending slotted sides, a scraper having supporting-guides which move in the slots in said sides, said scraper being provided with means whereby its base may be opened or closed, means to lower and to raise said scraper, and means to lock said scraper when raised.

7. In a scraping-machine, the combination of a frame mounted on wheels and having depending slotted side braces, a scraper provided with supporting-guides which move in said slotted side braces, a plurality of bell-crank levers, operatively connected to said scraper to raise and to lower it and means to lock said scraper when raised.

8. In a scraping-machine, the combination of a frame mounted on wheels and having depending side braces, a scraper hung on a plurality of bell-crank levers which are pivotally attached to said frame and whereby said scraper may be raised or lowered, means to lock said scraper when raised, and means to unload said scraper through its base.

9. In a scraping-machine, the combination of a frame mounted on wheels and having depending side braces, a scraper, provided with supporting-guides engaging said side braces, and hung on bell-crank levers pivotally attached to said frame whereby said scraper may be raised or lowered, means to operate said bell-crank levers, and means to lock said scraper when raised.

10. In a scraping-machine, the combination of a frame mounted on wheels, a scraper hung on bell-crank levers which are pivotally

mounted on said frame, said scraper being provided with a bottom which may be opened or closed, means whereby said bell-crank levers may be operated to raise or to lower said scraper and means to lock said scraper when raised.

11. In a scraping-machine, the combination of a frame mounted on wheels and having depending side braces, a scraper having a bottom provided with means for opening and closing it, supporting-guides for said scraper engaging said side braces, a plurality of bell-crank levers pivotally mounted on said frame and connected to said scraper, means whereby said bell-crank levers may be operated to raise or to lower said scraper, and means to lock said scraper when raised.

12. In a scraping-machine, the combination of a frame mounted on wheels and having depending slotted side braces, a scraper, guides supporting said scraper and in moving engagement with said slotted side braces, bell-crank levers pivotally mounted on said frame and attached to said scraper, means to operate said bell-crank levers to raise or to lower said scraper, and means to lock said scraper when raised.

13. In a scraping-machine, the combination of a frame mounted on wheels and having depending slotted side braces, a scraper provided with means for unloading through its base, guides supporting said scraper and in moving engagement with said slotted side braces, a plurality of bell-crank levers, pivotally mounted on said frame, one end of each being pivotally connected to said scraper, and the other end of each being operatively connected to a lever, said lever to operate said bell-crank levers to raise or to lower said scraper, and means to lock said scraper when raised.

14. In a scraping-machine, the combination of a frame mounted on wheels and having depending slotted side braces, a scraper, guides attached to said scraper and provided at their free ends with studs which move in the slots in said side braces, a plurality of bell-crank levers pivotally mounted on said frame one end of each being pivotally connected to said scraper and the other end of each being operatively connected to a lever, said lever to operate said bell-crank levers to raise or to lower said scraper, lock-bars pivotally mounted on said side braces and adapted to engage said guide-studs to lock said scraper in a raised position, and a lever operatively connected to said lock-bars to operate the same.

15. In a scraping-machine, the combination of a frame mounted on wheels and having depending slotted side braces, a scraper provided with means for unloading through its base, guides attached to said scraper and provided at their free ends with studs which move in the slots in said side braces, a plurality of bell-crank levers pivotally mounted on said frame, one end of each being pivotally connected to said scraper and the other end of each being operatively connected to a lever, said lever to operate said bell-crank levers to raise or to lower said scraper, lock-bars pivotally mounted on said side braces and adapted to engage said guide-studs to lock said scraper in a raised position, and a lever operatively connected to said lock-bars to operate the same.

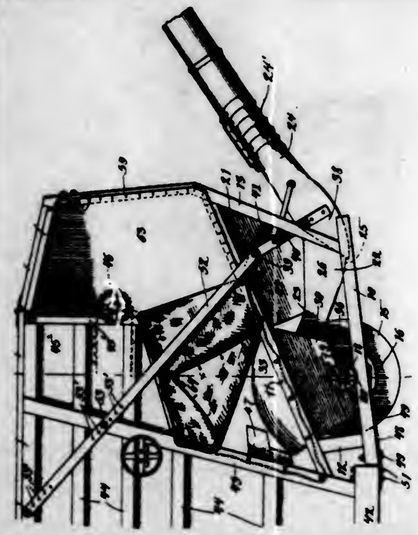
821,584. PNEUMATIC STACKER AND STACKER ATTACHMENT FOR THRESHING-MACHINES. SAMUEL D. PELSING, Crookston, Minn., assignor to The Indiana Manufacturing Company, Indianapolis, Ind., a Corporation of West Virginia. Filed Aug. 15, 1904. Serial No. 220,733.

Claim.—1. In pneumatic stacker attachments for threshing-machines, the combination with the stacker-frame and with the fan, hopper and delivery-chute mounted thereon, of means for connecting the stacker-frame to threshers, said connecting means being adjustable in accordance with the different widths of the threshers, substantially as described.

2. In pneumatic stacker attachments for threshing-machines, the combination with the stacker-frame and with the fan, hopper and delivery-chute mounted thereon, of adjustable means for connecting the stacker-frame to threshers of different widths and a hood having laterally-adjustable side sections for inclosing the space between the stacker-frame and the rear end of the thresher.

3. In pneumatic stacker attachments for threshing-machines, the combination with the stacker-frame, of laterally-adjustable connections for securing said frame to the sills of threshers of different widths, and a hood having sides of flexible sheeting for inclosing the space between the stacker-frame and the rear end of the thresher.

4. In pneumatic stacker attachments for threshing-machines, the combination with the stacker-frame and with the hopper, fan and delivery-chute mounted thereon, of straps arranged to extend beneath the adjacent ends of the sills of the stacker-frame and thresher, laterally-adjustable bolt connections for securing said straps in place, and suspension-rods connected to the rear end of said stacker-frame having adjustable bolt connections for engaging the thresher-frame.



5. In pneumatic stacker attachements for threshing-machines, the combination with the stacker-frame, of laterally-adjustable connections for securing said frame to threshers of different widths, a hood for inclosing the space between the thresher and said frame having laterally-adjustable side bars and side walls of flexible sheeting.

6. In pneumatic stacker attachements for threshing-machines, the combination with the stacker-frame, of laterally-adjustable connections for securing said frame to threshers of different widths, a hood for inclosing the space between the thresher and said hood comprising top and end sections, laterally-adjustable side bars pivoted to said end section and side walls of flexible sheeting secured to said side bars, end section and stacker-frame.

7. In pneumatic stacker attachments for threshing-machines, the combination with the stacker-frame, of connections for securing said frame to the rear end of the thresher, a hood for inclosing the space between the thresher and said frame comprising an end section mounted upon the rear end of said stacker-frame, side bars pivotally secured to the upper end of said end section to swing laterally and arranged to be secured to the rear, upper end of the thresher, a top section mounted on said side bars and side walls of flexible sheeting secured to said side bars, end section and stacker-frame.

8. In pneumatic stacker attachments for threshing-machines, the combination with the stacker-frame and with the hopper, fan and delivery-chute mounted thereon, of laterally-adjustable connections for securing the stacker to threshers of different widths, suspension-rods secured to the rear end of the stacker and having adjustable bolt connections for engaging the stacker-frame and a hood for inclosing the space between the thresher and said frame having side walls of flexible sheeting.

9. In pneumatic stacker attachments for threshing-machines, the combination with the stacker-frame and with the fan, hopper and delivery-chute carried thereby, of a vertically-yielding connection for securing the forward end of said frame to the rear end of said thresher, adjustable suspension-rods secured to the rear end of said frame and adapted to be secured to the thresher-frame and side walls of flexible sheeting extending between the thresher and said frame.

10. In pneumatic stacker attachments for threshing-machines, the combination with the stacker-frame and with the fan, hopper and delivery-chute carried thereby, of vertically-yielding, laterally-adjustable connections for securing said frame to the sills of threshers of different widths, suspension-rods pivoted to the rear end of said frame and having adjustable bolt connections for engaging the thresher-frame and a hood for inclosing the space between the thresher and said frame having side walls of flexible sheeting adapted to be secured to said stacker-frame and to the thresher-frame.

11. In pneumatic stacker attachments for threshing-machines,

the combination of the stacker-frame comprising lower sills and upper, forwardly-inclined side bars, a straw-hopper mounted within the rear end of said frame, a fan delivering into said hopper mounted within the forward end of said frame and arranged to receive the chaff from the thresher-sieves, laterally-adjustable connections for securing the stacker-frame to the sills of stackers of different widths, suspension-rods for supporting the rear ends of said frame and a hood having side walls of flexible sheeting extending between the side bars of said frame and the side walls of the thresher.

12. In pneumatic stacker attachments for threshing-machines, the combination of the stacker-frame comprising lower sills and upper, forwardly-inclined side bars, a straw-hopper mounted within the rear end of said frame, a fan delivering into said hopper mounted within the forward end of said frame and arranged to receive the chaff from the thresher-sieves, means for connecting the forward end of said frame to the thresher, suspension-rods for supporting the rear end of said frame and a hood comprising an end section mounted upon the rear edge of said hopper, laterally-adjustable side bars pivoted to the upper end of said end section and arranged to engage the thresher-frame, a top cover on said side bars and side walls of flexible sheeting secured to said side bars, end section and to the upper end bars of said stacker-frame.

13. In pneumatic stacker attachments for threshing-machines, the combination of the stacker-frame comprising lower sills and upper, forwardly-inclined side bars, a straw-hopper mounted within the rear end of said frame, a fan delivering into said hopper mounted within the forward end of said frame and arranged to receive the chaff from the thresher-sieves, laterally-adjustable connections for connecting the sills of said stacker-frame to the sills of threshers of different widths, adjustable suspension-rods for supporting the rear end of said frame, and a hood having side walls of flexible sheeting adapted to extend between the rear ends of the side walls of said thresher and the upper, side bars of said stacker-frame.

14. In pneumatic stackers for threshing-machines, the combination with the stacker-frame and with the hopper, fan and delivery-chute mounted thereon, of a hood for inclosing the space between the rear end of the thresher and said stacker-frame having an end section disposed in operative position opposite the end of the straw floor or rack of the thresher, said end section being adjustable on said stacker-frame to and from the end of said straw floor or rack.

15. In pneumatic stackers for threshing-machines, the combination with the stacker-frame and with the hopper, fan and delivery-chute mounted thereon, of a hood for inclosing the space between the rear end of the thresher and said stacker-frame, said hood comprising an end section mounted upon the rear end of said stacker-frame and adjustable thereon to and from the rear end of the thresher and side walls of flexible sheeting extending between said end section and stacker-frame.

16. In pneumatic stackers for threshing-machines, the combination with the stacker-frame and with the hopper, fan and delivery-chute mounted thereon, of a hood for inclosing the space between the rear end of the thresher and said stacker-frame, said hood comprising an end section mounted to swing upon the upper rear edge of said hopper, said bars for connecting the upper edge of said end section and the thresher-frame, and side walls of flexible sheeting secured to said side bars, end section and stacker-frame.

17. In pneumatic stacker attachments for threshing-machines, the combination with the stacker-frame and with the hopper, fan and delivery-chute carried thereby, of means for securing said frame to the rear end of the thresher and a hood for inclosing the space between the rear end of the thresher and said frame comprising an end section mounted upon the rear upper end of said frame and adjustable to and from the end of the thresher, and side walls of flexible sheeting adapted to extend between said end section and frame to the side walls of the thresher.

18. In pneumatic stacker attachments for threshing-machines, the combination with the stacker-frame, of laterally-adjustable connections for securing said frame to the sills of threshers of different widths and a hood for inclosing the space between the thresher and said frame, comprising an end section mounted to swing upon the rear, upper edge of said frame, side bars for connecting the upper edge of said section and the thresher-frame and side walls of flexible sheeting arranged to extend between said side bars, end section, stacker-frame and the rear end of the thresher.

19. In pneumatic stacker attachments for threshing-machines, the combination of a stacker-frame comprising lower sills and upper, forwardly-inclined side bars, a fan and hopper mounted within said frame, laterally-adjustable connections for securing the forward end of said frame to the sills of stackers of different widths, adjustable suspension-rods for supporting the rear end of said frame and a hood for inclosing the space between the thresher and said frame comprising an end section mounted upon the rear, upper edge of said hopper and adjustable to and from the end of the thresher and side-walls of flexible sheeting arranged to extend between said end section, said frame and the side walls of the thresher.

20. In pneumatic stacker attachments for threshing-machines, the combination of a stacker-frame comprising lower sills and upper, forwardly-inclined side bars, a fan and hopper mounted within said frame, laterally-adjustable connections for securing the forward end of said frame to the sills of stackers of different widths, adjustable suspension-rods for supporting the rear end of said frame and a hood for inclosing the space between the thresher and said frame comprising an end section mounted to swing upon the rear, upper edge of said hopper, adjustable side bars for connecting the upper edge of said end section and the thresher-frame, a top cover on said side bars and side walls of flexible sheeting arranged to extend between said side bars, end section, stacker-frame and the side walls of the thresher.

21. In pneumatic stacker attachments for threshing-machines, the combination of a stacker-frame comprising lower sills and upper, forwardly-inclined side bars, a fan and hopper mounted within said frame, a hood for inclosing the space between the thresher and said frame comprising a swinging end section mounted to swing upon the upper, rear edge of said hopper, side walls of flexible sheeting and a sheet-metal strip overlapping the joint between said end section and hopper.

22 In pneumatic stacker attachments for threshing-machines, the combination of a stacker-frame comprising lower sills and upper, forwardly-inclined side bars, a fan and hopper mounted within said frame, a hood for inclosing the space between the thresher and said frame comprising a swinging end section mounted to swing upon the upper, rear edge of said hopper, adjustable side bars arranged to extend between the top of said end section and the thresher-frame, a top cover on said side bars, and side walls of flexible sheeting connected to said side bars, end section and the upper, inclined side bars of said stacker-frame.

23. In pneumatic stackers, the combination with a frame, of vertically-disposed fans and fan-casings, inlet-openings in the inner side walls of said casings, a fan-shaft extending through the same, and a separator-plate mounted on said shaft between said casings, said separator-plate having an angular edge.

24. In pneumatic stackers, the combination with a frame, of vertically-disposed fans and fan-casings, inlet-openings in the inner side walls of said casings, a fan-shaft extending through the same and a transverse, vertical separator-plate mounted on said shaft having oppositely-deflected portions on either side of said shaft.

25. In pneumatic stackers, the combination with a frame, of vertically-disposed fans and fan-casings, openings in opposite sides of each of said casings, a hopper leading to said openings, a fan-shaft extending through said casing and agitators mounted on said shaft between said casings beyond the outer sides thereof.

821,585. CASTER-SOCKET FOR METALLIC BEDSTEADS. WILLIAM C. FISCHER, Huntington, N. Y., assignor of fifty one-hundredths to Maurice Lachman, New York, N. Y. Continuation of application Serial No. 195,890, filed Feb. 20, 1904. This application filed July 27, 1905. Serial No. 271,539.

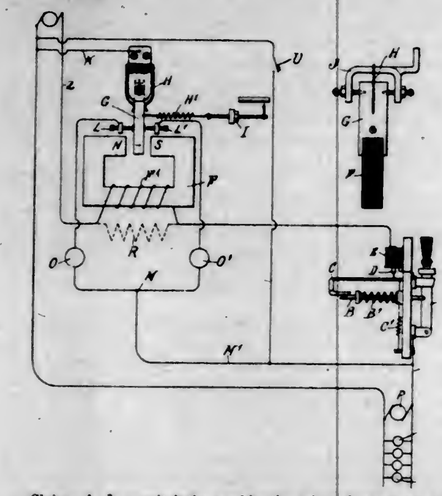


Claim.—1. An attaching device for casters comprising a plate having its ends bent to form spring-wings to retain the device in a socket and having its intermediate portion provided with longitudinal slits forming bands between them, the said bands being bent laterally in opposite directions from the plate to receive the pintle of a caster between them.

2. A spring attaching device for casters comprising a plate having ends reversely curved to form spring-wings and having its inter-

mediate portion provided with longitudinal slits forming bands between them, the said bands being bent laterally in opposite directions from the plate to receive the pintle of the caster between them.

821,586. CIRCUIT-BREAKER. EDGAR W. GOUDY, Great Barrington, Mass., assignor to Stanley Instrument Company, Great Barrington, Mass., a Corporation of Massachusetts. Filed Dec. 30, 1904. Serial No. 238,913.



Claim.—1. In a switch the combination of an electromagnet, a polarized armature therefor and means controlled by said electromagnet and armature for opening said circuit when the current is abnormally large or is reversed in direction.

2. In a switch, the combination of a switch-arm, a catch holding same closed, an electromagnet and means controlled by said electromagnet for releasing said catch when the current passing through said electromagnet is abnormal in amount or is reversed in direction.

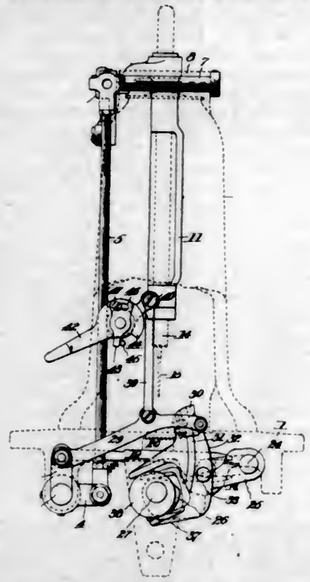
3. In combination, a source of current, a circuit leading therefrom, a switch controlling said circuit, a restraining-catch for said switch, an electromagnet in series with said switch, a polarized armature therefor, an electromagnetic device for releasing said restraining-catch and a local circuit for energizing said electromagnetic device, said local circuit having contacts adapted to be engaged by a movement of said armature in either direction and close the circuit through said electromagnetic device whenever the current through the electromagnet is abnormal in amount or is reversed in direction.

4. In combination, a source of electric current, a circuit leading therefrom, a switch for opening and closing said circuit, means tending to open said switch, a catch for restraining the same, a magnet energized from said source, an electromagnetic device for releasing said catch, a local circuit for energizing said electromagnetic device, contacts for said local circuit, means actuated by said magnet when energized either by a current abnormal in amount or by a reversed current to so engage said contacts as to close said local circuit.

5. In combination, a switch-arm, a spring actuating the same, a catch restraining said spring, a magnet for actuating said catch, a local circuit for said magnet, contacts for said local circuit, a second magnet, means actuated by said second magnet for engaging said contacts so as to close said local circuit whenever the current through said second circuit is abnormal in amount or is reversed in direction.

821,587. FEEDING MECHANISM FOR SEWING-MACHINES. CHARLES F. GRAY, Bridgeport, Conn., assignor to Wheeler & Wilson Manufacturing Company, Bridgeport, Conn., a Corporation of Connecticut. Filed Mar. 26, 1904. Serial No. 200,183.

Claim.—1. In a feeding mechanism for sewing-machines, the combination of a needle, means for reciprocating it and means for vibrating it, an underfeed-dog, means for imparting horizontal and vertical movements to the underfeed-dog and connections between the needle-vibrating mechanism and the underfeed mechanism for operating them conjointly to feed the work, and an adjusting mechanism for conjointly adjusting these two mechanisms and maintain the relative timing of the two feed mechanisms with respect to each other and to the reciprocating movement of the needle throughout their range of adjustment for effecting the proper feed of the work.



2. In a feeding mechanism for sewing-machines, the combination of a needle, means for reciprocating and means for vibrating said needle, an underfeed-dog, means including rock-shafts for imparting horizontal and vertical movements to the underfeed-dog, and means connecting the needle-vibrating and the underfeed mechanisms so that they conjointly feed the work, and a common adjusting mechanism therefor whereby the needle mechanism and the underfeed mechanism may be conjointly adjusted and the relative timing of the two with respect to each other and to the reciprocating movement of the needle maintained throughout their range of adjustment.

821,588. STANCHION. CHARLES E. GREEN and EMORY GREEN, Cohoskill, N. Y.; said Emory Green assignor to said Charles E. Green. Filed Aug. 7, 1905. Serial No. 273,065.



Claim.—1. In a stanchion the combination with a head and base and a side bar rigidly connecting the same; of a movable side bar pivotally connected to the base and adapted to swing into engagement with the head, and a lever pivoted upon the head, and means upon the bar adapted to be locked against movement by the said lever.

2. In a stanchion the combination with a head and base and a side bar rigidly connecting the same; of a side bar pivoted to the base and adapted to swing into the head, a lever pivoted upon the head, means upon the pivoted side bar adapted to be automatically locked against movement by said lever, and means integral with the lever for limiting the movement of said bar when unlocked.

3. In a stanchion the combination with a head and base and a side bar rigidly connecting them; of a movable side bar pivoted to the base and adapted to swing into the head, a locking device pivotally mounted upon the head, means connected to the movable side bar adapted to be engaged by the pivoted locking device for securing the said side bar against movement.

4. In a stanchion the combination with a head and base and a side bar rigidly connecting them; of a movable side bar pivoted to the base and adapted to swing into the head, a locking device pivotally mounted upon the head, means pivotally connected to the movable side bar adapted to be engaged by the locking device for securing said side bar against movement, and means integral with the locking device for limiting the movement of the side bar when unlocked.

5. In a stanchion the combination with a head and base each comprising a block and side plates; of a side bar rigidly secured between the side plates and the head and base, a movable side bar pivoted between the side plates of the base and adapted to swing upon the side plates of the head, a locking-lever pivoted upon the head, and a loop extending from the movable side bar and adapted to be automatically engaged by said lever.

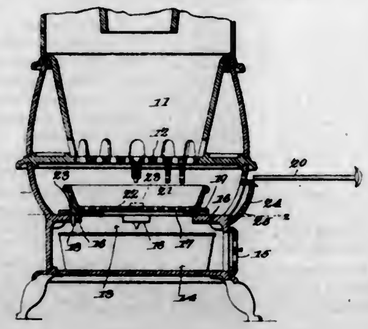
6. In a stanchion the combination with a head and base and a side bar rigidly connecting them; of a movable bar pivoted to the base and adapted to swing into engagement with the head, a loop extending from said movable bar and overlapping the head, a lever pivoted upon the head and normally engaging said loop by gravity, and means integral with the lever for limiting the movement of the loop when the movable side bar is opened.

7. In a stanchion the combination with a head and base and a side bar rigidly connecting the same; of a movable side bar pivoted to the base and adapted to swing into the head, ears extending from the head, a lever fulcrumed therebetween, a head upon the lever, a loop extending from the movable side bar and adapted to be automatically engaged by the head of the lever, means integral with the lever for limiting the movement of the loop in one direction, and connecting devices secured to the ears of the head and to the base, respectively.

8. A stanchion comprising a connected base and head, a movable side bar, a loop extending from said bar, a gravity-operated locking device pivoted to the head for automatically engaging the loop to hold the side bar against movement, and means integral with the locking device for limiting the movement of the loop in one direction.

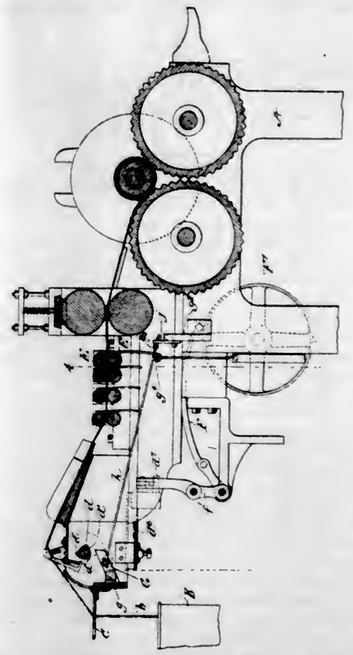
9. A stanchion comprising a connected base and head; a movable side bar, a loop extending from said bar, a gravity-operated locking device for automatically engaging the loop to hold the side bar against movement, and means integral with the gravity-operated device for limiting the movement of the loop and side bar in one direction.

821,589. STOVE ATTACHMENT. EDWARD F. HEAD, Sault Ste. Marie, Canada. Filed May 31, 1904. Serial No. 210,547.



Claim.—In a stove, the combination of a casing having a fire-pot and grate and provided with a door at a point below the grate, said casing having a plurality of inwardly-extending spaced brackets, a supporting-frame mounted on the brackets and having a stud entering and opening in one of them, said frame being further provided with a plurality of spaced ears or lugs, and a screening device mounted on the frame and held from displacement by said ears or lugs.

821,590. STOP-MOTION FOR SLIVER LAP-MACHINES. WILLIAM HENRY, New Bedford, Mass., assignor to Stoddard, Haserick, Richards & Company, Boston, Mass., a Firm. Filed Apr. 13, 1905. Serial No. 255,418.



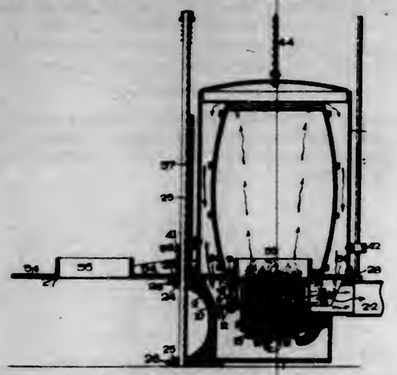
Claim.—1. In a machine of the kind described, a drawing-frame comprising top and bottom rolls, a spoon-shaft, a pawl pivotally mounted on the frame of the machine and movable into the path of one of the wings of said shaft and when so moved lying in a line at right angles to the face of said wing, whereby such wing may abut against the end of said pawl and means operated by the lifting of a top roll to move said pawl as described.

2. In a machine of the kind described, a drawing-frame comprising top and bottom rolls, a spoon-shaft, a pawl pivotally mounted on the frame of the machine and adapted to engage with one of the wings of said spoon-shaft, and means operated by the lifting of a top roll, whereby said pawl will be brought into engagement with such wing and in a line at right angles to the face thereof.

3. In a machine of the kind described, a drawing-frame comprising top and bottom rolls, a spoon-shaft, a pawl mounted on the machine-frame, a pair of stirrups connected with one of said top rolls, a cross-bar connected by said stirrups, and means engaging said cross-bar and connected with said pawl-lever to form therewith a toggle, whereby the lifting of the stirrups will cause said pawl to move into the path of one of the wings of said spoon-shaft and into position at right angles to the face of said wing and abut with its end against such wing, as and for the purposes described.

4. In a machine of the kind described, a drawing-frame comprising top and bottom rolls, a spoon-shaft, a pawl mounted on the frame of the machine and adapted to be thrown into engagement with said spoon-shaft, the end of said pawl being shaped as shown in order that pressure of a wing on said spoon-shaft against said pawl will tend to prevent the disengagement of said pawl and spoon-shaft, and means operated by the lifting of a top roll, whereby the engagement of the pawl and spoon-shaft will be primarily caused.

821,591. **BARREL-HEATER.** BRYAIN HOLMES and EDWIN F. BROOKS, Buffalo, N. Y., assignors to H. & B. Holmes Machinery Company, Buffalo, N. Y. Filed Oct. 26, 1904. Serial No. 230,153.



Claim.—1. In a barrel-heater, a base containing a fire-box, a standard located at one side of said base and a support for a plurality of barrels revolubly mounted on said standard.

2. In a barrel-heater, a base, a fire-box in said base, a standard extending from the base, a support for a plurality of barrels rotatably mounted on said standard and a vertically-movable inclosing housing above the base.

3. In a barrel-heater, the combination with the base, of a standard at one side of said base and a rotatable barrel-support rotatably mounted on said standard and composed of a plurality of members fastened together, each of said members constituting an individual support for a barrel.

4. In a barrel-heater, the combination with the base, of a rotatable barrel-support composed of a plurality of substantially annular members fastened together, each of said members constituting an individual support for a barrel and each being adapted to be swung into and out of heating position by rotation of the barrel-support.

5. In a barrel-heater, the combination with a base having a fire-box and a vertical standard extending from one side of said base, of a barrel-support composed of a plurality of members each adapted to support a barrel; said barrel-support being adapted to be turned on the standard when the barrel on one member thereof is sufficiently heated to move said member and heated barrel out of heating proximity and bring another member and the barrel thereon into heating position substantially as set forth.

6. In a barrel-heater, the combination with the base, of a rotatable barrel-support composed of a plurality of members fastened together, each of said members constituting an individual support for a barrel.

7. In a barrel-heater, the combination with the base, of a rotatable barrel-support composed of a plurality of substantially annular members fastened together, each of said members constituting an individual support for a barrel.

8. In a barrel-heater, the combination with the base, of a rotatable barrel-support composed of a plurality of substantially annular members each having a short projecting portion provided with a flat edge and bolts passed through said projecting portions to secure the members together.

9. In a barrel-heater, the combination with the base, and a vertical standard extending from said base, of a rotatable barrel-support composed of a plurality of substantially annular members each having a short projecting portion provided with a flat edge, a semicircular recess and a vertical extension above the recess semicircular in cross-section constituting one-half of a bearing-collar which fits around the standard and bolts passed through said projecting portions to secure the members together.

10. In a barrel-heater, the combination with the base, and a vertical standard extending from said base, of a barrel-support rotatably mounted on said standard composed of two substantially annular members each having a central opening surrounded by a flange and an annular series of small openings around said central opening.

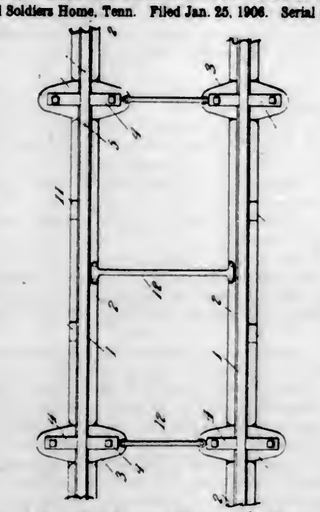
11. In a barrel-heater, the combination with the base and a vertical standard extending from said base, of a barrel-support rotatably mounted on said standard composed of two substantially annular members each having a central opening surrounded by a flange and barrel-centering devices on each member.

12. In a barrel-heater, the combination with the base and a vertical standard extending from said base, of a barrel-support rotatably mounted on said standard composed of two substantially annular members and a diagonally upward and outward handle extending from each member.

13. In a barrel-heater, the combination with a base, of two standards, each extending vertically from the base and from opposite sides thereof, a support for a plurality of barrels rotatably mounted on one standard, and an inclosing housing slidably mounted on both standards and vertically above the base.

14. In a barrel-heater, the combination with a base, of two standards, each extending vertically from the base and from opposite sides thereof, a support for a plurality of barrels rotatably mounted on one standard, an inclosing housing slidably mounted on both standards and vertically above the base and a counterbalance-weight connected by chain to said housing.

821,592. **RAILWAY CONSTRUCTION.** PHINEAS HOLMES, National Soldiers Home, Tenn. Filed Jan. 25, 1906. Serial No. 297,840.



Claim.—1. In railroad construction, track-supporting means including longitudinal sleepers, transverse truss and connecting sections connecting said sleepers, and tie-rods connecting the sleepers and sections at one side of the track with those at the other side of the track.

2. In railroad construction, track-supporting means including longitudinal sleepers, transverse connecting-sections connecting the sleepers at one side of the track, rails mounted upon said longitudinal sleepers and connecting-sections, and brace means applied to the connecting-sections to support the rails.

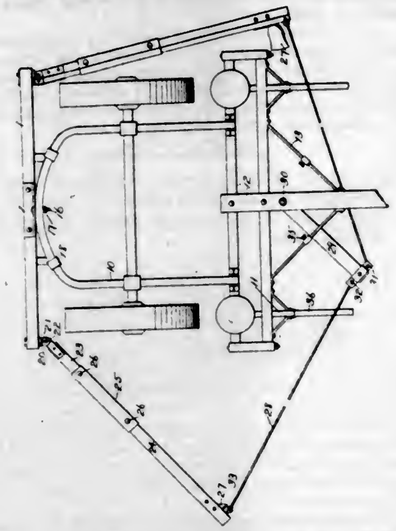
3. In railroad construction, track-supporting means including longitudinal sleepers, transverse connecting-sections connecting the sleepers at one side of the track, rails mounted upon said longitudinal sleepers and connecting-sections, brace means applied to the connecting-sections to support the rails, and tie-rods connecting the sleepers and sections at one side of the track with those at the other side of the track.

4. In railroad construction, track-supporting means including longitudinal sleepers and transverse connecting-sections connecting said sleepers, rails mounted upon said longitudinal sleepers and connecting-sections, and brace means applied to the connecting-sections to support the rails, each of the transverse sections comprising a top portion and sides, the sides of the transverse section being connected by a web longitudinal with reference to the sleepers.

5. In railroad construction, track-supporting means including longitudinal sleepers, transverse sections connecting said sleepers, lateral wings projecting from opposite sides of the sections, and pins projecting upwardly from the lateral wings and engaging the ends of the sleepers and to establish an interlocking connection between the sections and the sleepers.

6. In railroad construction, track-supporting means including longitudinal sleepers and transverse sections connecting said sleepers, tie-rods connecting sleepers and sections at one side of the track with those at the other side, each transverse section being formed with a web on its under side longitudinally of the sleepers, each sleeper having a longitudinal web upon its under side, lateral wings projecting from opposite sides of the transverse sections, and members projecting from said wings to establish interlocking connection between the same and the sleepers.

821,593. **MARKER FOR CORN-PLANTERS.** LEROY J. LINDSAY, Seymour, Iowa, assignor of one-half to James E. Armintrout and one-half to Ira E. Armintrout, Seymour, Iowa. Filed Oct. 6, 1905. Serial No. 281,620.



Claim.—1. The combination with a planter, of a marker-arm pivotally supported on the planter-frame, a swinging arm pivotally supported on the marker-frame in front of the marker-arm, and a connecting device attached to the marker-arm and the swinging arm.

2. The combination with a planter, of a marker-arm pivotally supported on the planter-frame, a swinging arm pivotally supported on the marker-frame in front of the marker-arm, a connecting device attached to the marker-arm and the swinging arm, and a bracket attached to the planter-frame to engage the connecting means and thereby elevate the marker-arm when moved to a position adjacent to the planter-frame.

3. The combination with a planter, of a marker-arm pivotally supported on the planter-frame, a swinging arm pivotally supported on the planter-frame in front of the marker-arm, and a connecting device attached to the marker-arm and the swinging arm, and a stop for limiting the movement of the swinging arm.

4. The combination with a planter, of a marker-arm pivotally supported on the planter-frame, a swinging arm pivotally supported on the planter-frame in front of the marker-arm, and a connecting device attached to the marker-arm and the swinging arm, and an adjustable stop for limiting the movement of the swinging arm.

5. The combination with a planter-frame, of a supporting-beam fixed to the rear thereto, a marker-arm pivotally attached to each end of the beam, and a connecting means attached to the forward ends of the marker-arm and extending across the front of the planter-frame, and means coacting with the connecting means attached to the front of the planter-frame for elevating the marker-arm as it swings toward the planter-frame, said means permitting the marker-arm to move downwardly as it swings away from the planter-frame.

6. The combination with a planter-frame of two marker-arms pivotally supported at the rear of the planter-frame, rigid connecting-rods pivoted to the front ends of the marker-arms and a swinging arm pivoted at the front of the planter-frame and pivotally connected with both of the said rods.

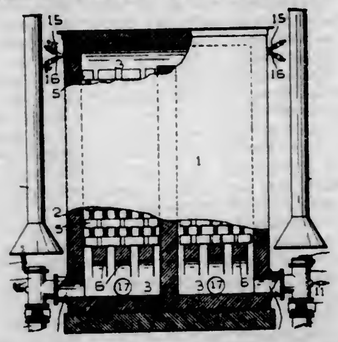
7. The combination with a planter-frame of two marker-arms pivotally supported at the rear of the planter-frame, rigid connecting-rods pivoted to the front ends of the marker-arms, a swinging arm pivoted at the front of the planter-frame and pivotally connected with both of the said rods, and an adjustable stop for limiting swinging movement of said arms.

8. The combination with a planter-frame of two marker-arms pivotally supported at the rear of the planter-frame, rigid connecting-rods pivoted to the front ends of the marker-arms, a swinging arm pivoted at the front of the planter-frame and pivotally connected with both of the said rods, and a bracket secured to the planter-frame to be engaged by the rods and to elevate the forward ends of the marker-arms as they swing toward the planter-frame.

9. The combination with a planter-frame of two marker-arms pivotally supported at the rear of the planter-frame, rigid connecting-rods pivoted to the front ends of the marker-arms, a swinging arm pivoted at the front of the planter-frame and pivotally connected with both of the said rods, and means for adjusting the marker-arms longitudinally.

10. In a marker attachment for a planter, the combination of a beam, an angular plate secured to the central portion of the beam, a single bolt in the angular plate to be attached to the planter-frame and two pliable-metal straps secured to the beam and capable of folding over the rear of a planter-frame to prevent tilting movements of the beam.

821,594. **APPARATUS FOR MAKING GAS.** LEON P. LOWE, San Francisco, Cal. Filed Nov. 8, 1905. Serial No. 286,339.



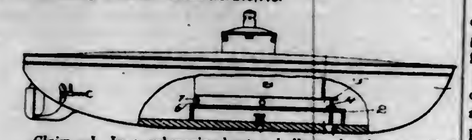
Claim.—1. In an apparatus of the character described, the combination of a suitably-lined casing having a central wall extending from the bottom of the casing to a level near but spaced from the top thereof and dividing the casing into two compartments, communicating with each other over the top of said wall, regenerative material in each compartment, an oil-supply pipe discharging direct into the chamber common to both compartments above the top of said wall, steam and air supply inlets at the bottom of each compartment an outlet for the products of combustion connected with the bottom of each compartment, means for independently controlling said inlets and outlets, and a conduit to carry off the manufactured gas leading from the bottom of each compartment, substantially as described.

2. In an apparatus of the character described, the combination of a suitably-lined casing having a central wall extending from the bottom of the casing to a level near but spaced from the top thereof and dividing the casing into two compartments communicating with each other over the top of said wall, regenerative material in the compartments, arranged in a continuous pile from the top to the bottom, an oil-supply pipe discharging direct into the chamber common to both compartments above the top of said wall, steam and air supply inlets at the bottom of each compartment, an outlet for the products of combustion connected with the bottom of each compartment, means for independently controlling said inlets and outlets, and a conduit to carry off the manufactured gas leading from the bottom of each compartment, substantially as described.

3. In an apparatus of the character described, the combination of a suitably-lined casing having a central wall extending from the bottom of the casing to a level near but spaced from the top thereof and dividing the casing into two compartments communicating with each other over the top of said wall, regenerative material in each compartment, an oil-supply pipe discharging direct into the chamber common to both compartments above the top of said wall, steam and air supply inlets at the bottom of each compartment, an outlet for the products of combustion connected with the bottom of each compartment, means for independently controlling said inlets and outlets, a conduit to carry off the manufactured gas leading from the bottom of

each compartment, a common washer into which both of said conduits lead, and means for controlling the passage of the gas through either of said conduits, substantially as described.

821,595. SUBMARINE BOAT. ERNST NIEBOFF, Brooklyn, N. Y. Filed Aug. 11, 1905. Serial No. 273,775.



Claim.—1. In a submarine boat, a ballast-chamber provided with a plurality of apertures communicating with the exterior of the boat, an outwardly-opening spring-actuated valve closing one of the apertures, an inwardly-opening valve disposed to close the other aperture and having a stem piereing the wall of the chamber and extending within the interior of the boat, means carried by the stem for manipulating the valve, means to admit air under tension to the ballast-chamber, a valve disposed to control the flow of air, a cylinder opening externally of the body, a piston slidably mounted in the cylinder, a stem connecting the piston, an air-controlling valve, and means to exert variable stress upon the piston.

2. In a submarine boat, a ballast-chamber disposed in the bottom of the boat, and provided with a plurality of apertures through the bottom communicating with the exterior of the boat, an outwardly-opening spring-actuated valve closing one of the apertures, an inwardly-opening valve disposed to close the other aperture and having a stem piercing the wall of the chamber and extending within the interior of the boat, means carried by the stem for manipulating the valve, means to admit air under tension to the ballast-chamber, of a valve disposed to control the flow of air, a cylinder opening externally of the boat, a piston slidably mounted in the cylinder, a stem connecting the piston and air-controlling valve, and means to exert variable stress upon the piston.

3. In a submarine boat, a ballast-chamber, provided with a plurality of apertures communicating with the exterior of the boat, an outwardly-opening spring-actuated valve closing one of the apertures, an inwardly-opening valve disposed to close the other aperture and having a stem piereing the wall of the chamber and extending within the interior of the boat, means carried by the stem for manipulating the valve, air-reservoirs secured to and conforming with the sides of the boat above the ballast-chamber, and adapted to receive and store air under tension, means to admit air from the reservoirs to the ballast-chamber, a valve disposed to control the flow of air, a cylinder opening externally of the boat, a piston slidably mounted in the cylinder, a stem connecting the piston and air-controlling valve, and means to exert variable stress upon the piston.

4. In a submarine boat, a ballast-chamber disposed in and extending along the bottom of the boat and provided with a plurality of apertures through the bottom and communicating with the exterior of the boat, an outwardly-opening check-valve closing one of the apertures, an inwardly-opening valve disposed to close the other aperture and having a stem piercing the wall of the chamber and extending within the interior of the boat, means carried by the stem for manipulating the valve, air-tanks secured to and conforming with the sides of the boat, and disposed above the ballast-chamber and adapted to receive and store air under tension, means to admit air from the reservoir to the ballast-chamber, a valve disposed to control the flow of air, a cylinder opening externally of the boat, a piston slidably mounted in the cylinder, a stem connecting the piston and air-controlling valve, and means to exert variable stress upon the piston.

821,596. JAR-CLOSURE. CHARLES C. PARKER, Baltimore, Md., assignor of one-half to Mott G. Gillette, Brooklyn, N. Y. Filed Dec. 27, 1905. Serial No. 293,447.



Claim.—1. A jar-closure comprising a fibrous cap having converging slots whereby two of the ends of the slots are nearer together than the other portions of the slots.

2. A jar-closure comprising a pulp cap provided with a perforated portion adapted to be broken away, said perforations being filled with paraffin, or similar material, for the purpose set forth.

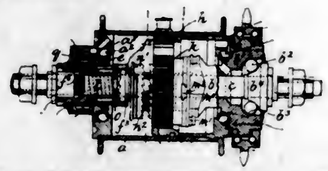
3. A jar-closure comprising a pulp cap provided with semicircular slots sufficiently close together to render the intervening bridge easily breakable, for the purpose set forth.

4. A jar-closure comprising a pulp cap provided with semicircular slots oppositely disposed and so related that they are nearer together at one end than at the opposite end, as and for the purpose set forth.

5. A jar-closure comprising a pulp cap provided with semicircular slots whereby a portion thereof is made easily breakable, said slots being filled with paraffin, or similar material, as and for the purpose set forth.

6. The combination with a jar having the contents thereof covered with prepared paper, of a jar-closure comprising a pulp cap provided with semicircular slots oppositely disposed and nearer together at one end than at the other; said cap being mounted a sufficient distance above said paper to allow of the breaking and depression of said slotted portion, for the purpose set forth.

821,597. VARIABLE-SPEED MECHANISM. CHARLES F. POUCHER, Birmingham, England, assignor to The Birmingham Small Arms Company Limited, Birmingham, England. Filed Oct. 6, 1905. Serial No. 281,621.



Claim.—1. In a variable-speed mechanism, a controlling-eccentric, a driving-pinion loosely mounted upon the same, a locking element, and a sliding toothed clutch device for positively connecting the said eccentric either to the driving-pinion or to said stationary locking element.

2. In a variable-speed mechaniam, a controlling-eccentric, a driving-pinion loosely mounted upon the controlling-eccentric, a locking element, a sliding clutch device having two sets of teeth adapted when actuated to engage respectively with corresponding teeth on the driving-pinion and on the locking element, the latter being fixed to the frame of a machine and whereby when the clutch is in one position, the said eccentric is positively connected to the pinion to provide for transmission of the drive of the high speed, and when in another position the eccentric is positively engaged with the locking device and constitutes a bearing around which the free or loose pinion revolves when transmitting the drive at the reduced speed.

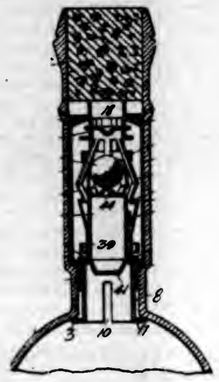
3. In a mechanism of the class described, a controlling-eccentric, a driving-pinion loosely mounted upon the controlling-eccentric and having teeth, a clutch device movable upon a fixed axle and provided at one portion thereof with a series of teeth adapted to engage with the corresponding teeth on the driving-pinion, and a locking-ring fixed to the frame and adapted for engagement with the clutch device.

4. In a mechanism of the class described, a driving-pinion, a controlling-eccentric supporting said pinion, and a fixed internally-toothed driving element, a locking element, a sliding toothed clutch device adapted to positively connect the said eccentric either to the driving-pinion or to the locking element, and means for actuating the clutch device.

5. In a mechanism of the class described, a controlling-eccentric, a driving-pinion loosely mounted thereon, a stationary locking-ring, a sliding toothed clutch device adapted to positively connect the eccentric either to the driving-pinion or said locking-ring, and an externally-operative clutch-actuating slide connected with said clutch device for operating the same.

821,598. NON-REFILLABLE BOTTLE. JOHN P. STENDEBACH, San Francisco, Cal. Continuation of application Serial No. 184,406, filed Dec. 9, 1903. This application filed June 13, 1905. Serial No. 265,113.

Claim.—1. In a non-refillable bottle, the combination, with the neck of the bottle and a valve, of a valve-seat having a lower portion slit longitudinally at its lower end and there bent outward to form a flange engaging the lower end of the neck of the bottle, substantially as described.



2. In a non-refillable bottle, in combination with the neck of the bottle having a shoulder, a valve-seat having a flanged portion resting on said shoulder and a lower portion slit longitudinally, and having a flange engaging the lower end of the neck of the bottle, and a valve resting on said seat, substantially as described.

3. In a non-refillable bottle, in combination with the neck of the bottle, and a valve therein, said neck having a shoulder, a valve-seat having a flange portion resting on said shoulder and having a portion extending downward in the neck of the bottle, said latter portion having two opposite longitudinal slits at its lower end, and having its lower edge bent outward to form a flange engaging the lower end of the neck of the bottle, substantially as described.

4. In a non-refillable bottle, in combination with the neck of the bottle, and a valve therein, said neck having a shoulder, a valve-seat having a flange portion resting on said shoulder and having a portion extending downward in the neck of the bottle, said latter portion having two opposite longitudinal slits at its lower end, and having its lower edge bent outward to form a flange engaging the lower end of the neck of the bottle, and a cylinder of cork surrounding the upper end only of said downwardly-extending portion, between the same and the neck of the bottle, substantially as described.

5. In a non-refillable bottle, in combination with a valve-seat and a valve, a casing therefor having a main cylindrical portion fitting accurately within the neck of the bottle, and having a head, and a central cylindrical mouth, means for retaining the casing within the neck, a disk of thin metal around said mouth upon said head, and cement securing said disk to said head and to the neck of the bottle, substantially as described.

6. In a non-refillable bottle, in combination with a valve-seat and a vale, a casing therefor having a main cylindrical portion fitting accurately within the neck of the bottle and having a head, provided with a pouring-orifice, means for retaining the casing within the neck, a disk of thin metal around said pouring-orifice upon said head, and cement securing said disk to said head and to the neck of the bottle, substantially as described.

7. In a non-refillable bottle, the combination of a valve-seat, a float-valve therefor having a flange, and pivoted latches arranged to engage said flange and hold the valve to its seat, substantially as described.

8. In a non-refillable bottle, the combination, with the neck of the bottle, and a valve-seat therein, of a float-valve, and a circular series of pivoted devices for holding said valve to its seat, at least one of said devices operating except when the bottle is inverted, substantially as described.

9. In a non-refillable bottle, the combination, with the neck of the bottle and valve-seat therein, of a partially-cylindrical float-valve therefor, having an annular flange with perforations therein, guide-strips for said flange, a heavy ball above said float, and a guide for said ball extending downwardly, whereby when the bottle is held in a horizontal position said ball will always run downhill to push the float-valve to its seat, substantially as described.

10. In a non-refillable bottle, the combination, with the neck of the bottle and a valve-seat therein, of a partially-cylindrical float-valve therefor having an annular flange with perforations, guide-strips for said flange, a heavy ball above said float, and a guide for said ball extending downwardly, whereby when the bottle is held in a horizontal position said ball will always run downhill to push the float-valve to its seat, the upper end of said float-valve having a central boss to receive the pressure of the ball centrally, substantially as described.

11. In a non-refillable bottle, the combination, with the neck of the bottle having a valve-seat, and a valve, of latches for holding the valve to its seat, a ring on which said latches are pivoted, and a valve-guide depressed to receive said ring and hold the same in position, substantially as described.

12. In a non-refillable bottle, the combination, with the neck of the bottle having a valve-seat, and a valve, of latches for holding said valve to its seat, a ring on which said latches are pivoted, and a valve-guide, said guide comprising strips bent inwardly to form sockets for said ring, substantially as described.

13. In a non-refillable bottle, in combination with the neck of the bottle having a vale-seat, and a valve, latches for holding said valve to its seat, and a valve-guide comprising strips bent inward to form sockets for pivoting said latches, substantially as described.

14. In a non-refillable bottle, in combination with the neck of the bottle having a seat and a valve, a valve-guide having a substantially cylindrical guiding portion for the valve, said guide expanding upward from a lower portion on its outer surface and having movably mounted thereon latches to hold the valve to its seat, substantially as described.

15. In a non-refillable bottle, in combination with the neck of the bottle having a valve-seat and valve, a valve-guide comprising strips the lower ends of which are split, part of each strip at its lower end being bent backward to form a bearing for said valve, substantially as described.

16. In a non-refillable bottle, in combination with the neck having a valve-seat and a valve, pivoted latches for holding said valve to its seat, each having ears bent up and perforated, and a ring passing through said perforations, substantially as described.

17. In a non-refillable bottle, in combination with the neck of the bottle having a valve-seat and a valve, a valve-guide, latches pivoted thereon for holding the valve to its seat, and upper and lower rings engaging said latches, the upper ring being within the upper ends of the latches and the lower ring around the lower ends, substantially as described.

18. In a non-refillable bottle, in combination with the neck of the bottle, and a valve-seat, a valve having a conical portion fitting the said seat and with a hollow cylindrical portion forming a float, the whole in one piece, said valve having an annular perforated flange, and guide-strips through said perforations, substantially as described.

19. In a non-refillable bottle, in combination with the neck of the bottle and a device in said neck for preventing refilling, said neck having an annular groove or recess above said device, means secured in said groove above said device, indicating by its removal the tampering with or mutilation of said device, substantially as described.

20. In a non-refillable bottle, in combination with the neck of the bottle having a valve-seat, a valve, a valve-guide, and latches pivoted thereon for holding the valve to its seat, said latches having shoulders extending outward above the pivots, whereby, when the bottle is inverted, the latches swing outward at their ends in proximity to said valve, substantially as described.

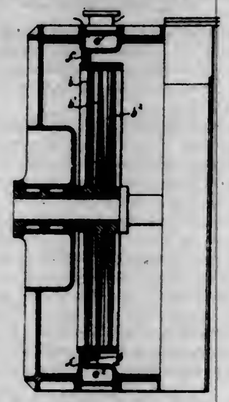
21. In a non-refillable bottle, in combination with the neck of the bottle having a valve-seat and a valve, pivoted latches for holding the valve to its seat, said latches having shoulders above their pivots and a ring surrounding the latches below said pivots, substantially as described.

22. In a non-refillable bottle, in combination with the neck of the bottle having a valve-seat, and a valve, a guide for said valve having recesses formed in its upper end, and a disk provided with teeth and notches which register with said recesses, the valve-guide being also formed with a circular series of teeth alternating vertically with the teeth in the disk, substantially as described.

23. In a non-refillable bottle, in combination with the neck of the bottle and a valve-seat therein, a valve, a guide for said valve having guide-strips and depressions in the valve-seat into which the ends of the guide-strips are seated, substantially as described.

24. In a non-refillable bottle, in combination with the neck of the bottle and a valve-seat having a flange and notches in said flange, a casing fitting accurately within the neck of the bottle having teeth passed through said notches and bent against the under side of the flange, and a valve on said valve-seat, and a suitable guide for said valve within said casing, substantially as described.

821,599. STEAM-TURBINE. JOHANN STUMPF, Charlottenburg, Germany, assignor to General Electric Company, a Corporation of New York. Filed Feb. 24, 1903. Serial No. 144,680.



Claim.—1. In a steam or gas turbine, the combination with several rows of turbine-wheel buckets, a nozzle-rim consisting of one row of nozzles situated around the turbine-wheel, the nozzles of this nozzle-rim being divided in several groups, a separate steam-admission chamber for each group of nozzles and a different number of rows of return-buckets fixed to each group of nozzles, substantially as described and for the purpose set forth.

2. In an elastic-fluid turbine, the combination of wheel-buckets, devices for discharging motive fluid against the buckets, and other buckets which cause the fluid from one device to act on the wheel-buckets a greater number of times than the fluid from another device.

3. In a variable-speed turbine, the combination of rows of wheel-buckets, a nozzle discharging motive fluid against the initial row of buckets to produce a given speed, a second nozzle discharging motive fluid against the initial buckets to give a lower speed, and return-buckets coöperating with the second nozzle to cause the motive fluid to act on a greater number of buckets than the fluid from the first nozzle.

4. In an elastic-fluid turbine, the combination of wheel-buckets arranged in rows, nozzles for discharging motive fluid against the buckets in a manner to produce variations in speed, the passages in the nozzles being arranged at different inclinations with respect to the buckets, and other buckets arranged in sets and progressively increasing in number for conveying fluid from one row of wheel-buckets to the next and causing it to give up its energy in an increasing number of operations.

5. In an elastic-fluid turbine, the combination of a number of rows of wheel-buckets, a casing therefor, a nozzle for discharging fluid against the buckets to produce a given rotative speed, one or more other nozzles, and one or more serially-arranged buckets coöperating with the last-mentioned nozzle or nozzles for conveying motive fluid from one row of wheel-buckets to the next to produce a decrease in the rotative speed.

6. In an elastic-fluid turbine, the combination with a number of rows of rotating wheel-buckets, and a shaft, of a plurality of nozzles arranged to discharge fluid against the wheels, the angle of discharge of the nozzles with respect to the buckets progressively changing to cause different rotative speeds of the wheel-shaft, and buckets for conveying fluid from one wheel-bucket to another.

7. In an elastic-fluid turbine, the combination with a number of rotating wheels, of a plurality of nozzles arranged to discharge fluid against the wheels, the angle of discharge of the nozzles with respect to the buckets progressively changing as the rotative speed of the wheels is varied, and stationary buckets which convey motive fluid from one row of wheel-buckets to the next progressively increasing in number in the direction of flow of the fluid as the rotative speed is decreased.

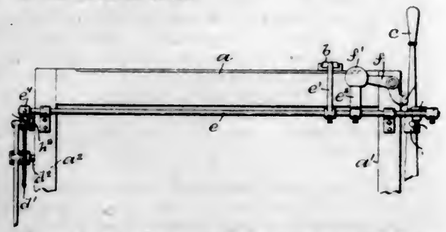
8. In an elastic-fluid turbine, the combination of nozzles arranged in groups, wheel-buckets acted upon by the nozzles of said groups, and return-buckets which when in action coöperate with the nozzles and successively increase in number in serial relation from one group to the next to decrease the rotative speed of the wheel-buckets when in action.

9. In an elastic-fluid turbine, the combination of wheel-buckets, a plurality of closely-associated nozzle-passages arranged in groups, and presenting their discharge ends to the same row of wheel-buckets, the angle of the discharge-passages in each group being the same, but that of the groups varying one with respect to the other, and return-buckets coöperating with one or more of the groups to decrease the rotative speed of the wheel-buckets by causing the fluid to act an increasing number of times on the buckets.

10. In an elastic-fluid turbine, the combination of wheel-buckets, nozzles arranged in groups to produce different rotative speeds, the angle of discharge of the nozzles in each group successively increasing with respect to the wheel-buckets as the rotative speed of the buckets is decreased, and means coöperating with certain of the nozzles to decrease the rotative speed of the buckets by causing the fluid to act a greater number of times before exhausting.

11. In an elastic-fluid turbine, the combination of peripheral wheel-buckets, a nozzle-rim which surrounds the buckets, nozzles arranged in groups in the rim which discharge motive fluid tangentially against the buckets, and return-buckets supported by the nozzle-rim which successively increase in number as the rotative speed of the wheel-buckets is decreased.

821,600. LOOM. PATRICK E. VICTORY, Manville, R. I. Filed Apr. 28, 1905. Serial No. 257,437.



Claim.—1. In a loom, a release mechanism comprising a rock-shaft, a vertical arm on the rock-shaft adapted to engage with the weft-fork slide, a horizontal arm on the rock-shaft, a latch on the shipper-lever adapted to raise the horizontal arm and partly rotate the rock-shaft, a pawl on the rock-shaft engaging with the ratchet-gear of the take-up mechanism, the ratchet-gear, the take-up mechanism, means for connecting the pawl on the rock-shaft with the pawl of the take-up mechanism, and means for limiting the reverse movement of the ratchet-gear, whereby on the starting of the loom the take-up mechanism of the loom is released and the cloth allowed to run back the equivalent of the number of picks lost, as described.

2. In a loom, a release mechanism comprising a rock-shaft, a vertical arm on the rock-shaft adapted to engage with the weft-fork slide, a vertical stop-arm on the rock-shaft adapted to bear on the face of the breast-beam, a weighted bell-crank lever adapted to engage with the vertical stop-arm and the shipper-lever, a horizontal arm on the rock-shaft, a latch on the shipper-lever adapted to raise the horizontal arm and pivotally rotate the rock-shaft, a pawl on the rock-shaft engaging with the ratchet-gear of the take-up mechanism, the ratchet-gear, the take-up mechanism, the pawl of the take-up mechanism, means for connecting the pawl on the rock-shaft with the pawl of the take-up mechanism , and mechanism for limiting the reverse movement of the take-up mechanism, whereby on the starting of the loom the take-up mechanism of the loom is released and the cloth allowed to run back the equivalent of the number of picks lost, as described.

3. In a loom, a release mechanism comprising a rock-shaft, a vertical arm on the rock-shaft adapted to engage with the weft-fork slide, a horizontal arm on the rock-shaft, a latch on the shipper-lever adapted to raise the horizontal arm and partly rotate the rock-shaft, a pawl on the rock-shaft engaging with the ratchet-gear of the take-up mechanism of the loom, the ratchet-gear, a pivoted arm, a link connecting the pivoted arm with the pawl on the rock-shaft, the pawl on the rock-shaft, the pawl of the take-up mechanism, a pin on the pawl of the take-up mechanism in a position to engage with the free end of the pivoted arm, the stop-pawl, and adjustable stop, whereby on the starting of the loom the take-up mechanism of the loom is released and the cloth allowed to run back by the tension of the warp-threads the equivalent of the number of weft-threads lost, as described.

4. In a loom, a release mechanism comprising a rock-shaft, a vertical arm on the rock-shaft adapted to engage with the weft-fork slide, a vertical stop-arm on the rock-shaft adapted to bear on the face of the breast-beam, a weighted bell-crank lever adapted to engage with the vertical stop-arm and the shipper-lever, a horizontal arm on the rock-shaft, a latch on the shipper-lever adapted to raise the horizontal arm and partly rotate the rock-shaft, a pawl on the rock-shaft engaging with the ratchet-gear of the take-up mechanism, the ratchet-gear, the pawl of the take-up mechanism, means for connecting the pawl on the rock-shaft with the pawl of the take-up mechanism, the take-up mechanism, a segmental stop-pawl having teeth adapted to engage with the teeth of the ratchet-gear of the take-up mechanism, and an adjustable stop adapted to engage with the stop-pawl to limit the movement of the pawl, whereby on the starting of the loom the take-up mechanism of the loom is released and the cloth allowed to run back by the tension of the warp-threads the equivalent of the number of weft-threads lost governed by the stop-pawl, as described.

5. The combination with a loom having the weft-fork slide b, the shipper-lever c and the take-up mechanism d, of a release mechanism comprising a rock-shaft e, a vertical arm e' on the rock-shaft adapted to engage with the weft-fork slide b, a vertical stop-arm e^2 on the rock-shaft, a horizontal lever e^3 on the rock-shaft extending toward the rear of the loom, a pawl e^4 on the rock-shaft in a position to engage with the ratchet-gear of the take-up mechanism d, the take-up mechanism comprising the lever d^2, the pawl d^4, the gear d' and the train of gears c' c^2 c^3, a bell-crank lever f having the weighted end f' and the L-shaped end f^2 pivotally secured to the loom in a position for the end f' to be held by the stop-arm e^2 and the end f^2 to engage with the shipper-lever c, a latch g having the upper beveled surface g', the lower beveled surface g^2 and the square shank g^3 supported in the bearing g^4 on the plate g^5 which in turn is secured to the shipper-lever c in a position for the latch to engage with the lever e^3, a segmental stop-pawl h having the teeth h' and pivotally secured to a stud h^2 on a bracket h^3 which in turn is secured to the loom in a position for the teeth h' to engage with the teeth of the ratchet-gear of the take-up mechanism d, a plate h^4 having the stop h^5 and adjustably secured to the stud h^3 by the set-bolt h^6, the stud h^3, an arm h^7 pivotally secured to the stud h^3, a link h^8 pivotally connecting the arm h^7 to the pawl e^4, and a pin h^9 secured to the pawl of the take-up mechanism in a position to engage with the free end of the arm h^7, whereby on the starting of the loom the take-up mechanism of the loom is released and the cloth allowed to run back the equivalent of the number of weft-threads lost, as described.

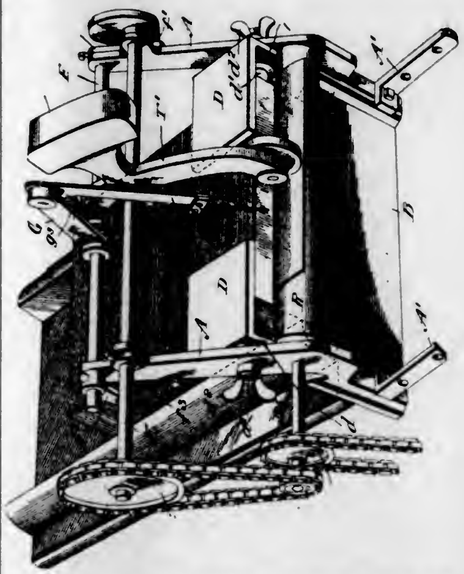
6. In a release mechanism for looms, the combination with a shipper-lever c of a rock-shaft e, a vertical stop-arm e^2 on the rock-shaft, a horizontal lever e^3 on the rock-shaft, a bell-crank lever f having the weighted end f' and the end f^2 pivotally secured to the loom in a position for the end f' to be supported on the arm e^2 and the end f^2 to engage with the shipper-lever c, a latch g having the upper beveled surface g', the lower beveled surface g^2, and the shank g^3 supported in the bearing g^4 on the plate g^5 which in turn is secured to the shipper-lever c in a position for the latch to engage with the lever e^3, means for limiting the reverse movement of the take-up mechanism, and means for operatively connecting the rock-shaft with the weft-fork slide and take-up mechanism of a loom, whereby on the starting of the loom the take-up mechanism of the loom is released and the cloth permitted to run back a predetermined number of picks, as described.

821,601. AUTOMATIC FEEDING DEVICE FOR SHEETS, CARDS, AND ENVELOPS. ROBERT E. KEMPER and ARTHUR KEMPER, Rensselaer, N. Y. Filed Mar. 10, 1905. Serial No. 249,494.

Claim.—1. In an automatic feeding device for sheets, cards, and envelops, the combination with means for supporting a plurality of articles to be fed, of feeding mechanism located adjacent thereto, a separating device comprising a blade of metal having one of its longitudinal edges provided with teeth each having an abrupt feeding-face, and an inclined shoulder, and means for drawing said separating device longitudinally in both directions across the edge of the first of said articles, substantially as described.

2. In a feeding device for sheets, cards, and envelops, the combination with means for holding a plurality of articles to be fed, of a feeding-roller, adjacent to said holding means, a separating device movable transversely across the edge of the first of said articles and constructed to engage said edge and bend the article into engagement with the said feeding-roller, a movable pressure-roller adapted to clamp said separated article against the feeding-roller and means for positively moving said pressure-roller toward and from the feeding-roller, substantially as described.

3. In a feeding device for sheets, cards, and envelops, the combination with means for holding a plurality of articles to be fed, of a feeding-roller, adjacent to the first of said articles, a pressure-roller, means for moving said pressure-roller toward and from said feeding-roller, means for driving one of said rollers, and a separating device movable transversely across the edge of the first of said articles and constructed to engage said edge and bend a portion of the article into position to be engaged between the said rollers, substantially as described.



4. In a feeding device for sheets, cards, and envelops, the combination with a hopper comprising an inclined feeding-plate, a stop adjacent to the lower end of said plate, a feeding-roller, adjacent to said stop, adapted to engage the lowest of the articles held in said hopper, a presser-roller movable toward and from said feed-roller, and a vertically and forwardly movable separating device provided with a tooth or projection for engaging the first of the articles in the hopper and bending it forwardly between the feeding-roller and said pressure-roller, substantially as described.

5. In a feeding device for sheets, cards, and envelops, the combination with a hopper comprising an inclined feed-plate, a stop adjacent to the lower end of said plate, a feeding-roller, adjacent to said stop, adapted to engage the lowest of the articles held in said hopper, a pressure-roller movable toward and from said feed-roller, a separating device for engaging the article in the hopper nearest the feeding-roller and bending it forwardly between said roller and the pressure-roller, and means for retaining the other articles in said hopper from displacement, substantially as described.

6. In a feeding device for sheets, cards, and envelops, the combination with a hopper comprising an inclined feed-plate, a stop adjacent to the lower end of said plate, a feeding-roller, adjacent to said stop, adapted to engage the first of the articles held in said hopper, a pressure-roller movable toward and from said feed-roller, a separating device for engaging the article in the hopper nearest the feeding-roller and bending it forwardly between said roller and the pressure-roller, and retaining devices for engaging the upper edges of the next adjacent articles in the hopper to prevent their vertical displacement as the article nearest the roller is withdrawn, substantially as described.

7. In an automatic feeding device for sheets, cards, and envelops, the combination with a support for the articles to be fed having a part constructed to engage a portion only of the front face of the first of said articles, feeding mechanism located adjacent to said support, a separating device movable transversely across the free edge of the first of said articles and constructed to engage said edge to bend said first article into position to be engaged by said feeding devices, and retaining devices for preventing the removal of all of said articles except the one so separated substantially as described.

8. In an automatic feeding device for sheets, cards, and envelops, the combination with a hopper for supporting the articles in a vertically-disposed position comprising a bottom plate for support-

ing the lower edges of said articles, and a stop for engaging a portion only of the face of the first of said articles, feeding devices arranged in proximity to said stop, a separating device comprising a thin metal blade having one of its longitudinal edges provided with teeth and mechanism for moving said separating device longitudinally across the edge of the said first article in said hopper, to bend in into position to be engaged by said feeding devices, substantially as described.

9. In an automatic feeding device for sheets, cards, and envelops, the combination with a hopper for supporting the articles to be fed, upon edge, comprising a bottom plate for supporting the lower edges of said articles, a stop for engaging a portion of the face of the first of said articles and said hopper being so constructed as to advance the articles toward said stop as the articles adjacent thereto are removed, and feeding devices adjacent to said stop, of a separating device comprising a metal blade provided on one of its longitudinal edges with teeth, means for moving said blade across an edge of the article adjacent to said stop, and a retaining device for engaging the edges of said articles nearest to said stop, opposite the edges engaged by the supporting-hopper bottom, substantially as described.

10. In an automatic feeding device for sheets, cards, and envelops, the combination with a hopper for supporting the articles to be fed, upon edge, said hopper comprising an inclined bottom for supporting the lower edges of said articles, a stop for engaging a portion of the face of the first article, adjustable retaining devices arranged above the articles adjacent to said stop, feeding devices adjacent to said stop, a separating device consisting of a metal blade provided with teeth, and mechanism for moving said blade longitudinally across the top edge of the first article held in said hopper, to bend it into position to be engaged by the said feeding devices, substantially as described.

11. In an automatic feeding device for sheets, cards, and envelops, the combination with means for supporting a plurality of articles, feeding mechanism located adjacent thereto, a rock-shaft, an operating-arm connected therewith, a separating device consisting of a metal blade pivotally connected to said arm and provided with a series of teeth or projections for engaging an edge of the first of said articles, and bending it into position to engage said feeding devices and a retracting-spring for said separating device, substantially as described.

12. In an automatic feeding device for sheets, cards, and envelops, the combination with a hopper for supporting a plurality of the articles to be fed, on edge, including a supporting-plate for engaging a portion of the face of the first article supported in the hopper, feeding devices adjacent to said stop, a separating device for engaging the first of the articles held in the hopper and bending it into position to engage said feeding devices, and means for adjusting said supporting-plate vertically with respect to said feeding devices, substantially as described.

13. In an automatic feeding device for sheets, cards, and envelops, the combination with a hopper for supporting a plurality of articles to be fed, on edge, including a supporting-plate for engaging the lower edges of the articles, of a stop adjacent to one end of said supporting-plate for engaging a portion of the face of the first of said articles, feeding devices adjacent to said stop, a separating device consisting of a metal blade provided on one of its longitudinal edges with teeth and movable transversely across an edge of the first of the articles held in the hopper, and constructed to engage said edge and bend the article into position to engage the feeding devices, and adjustable guides secured to the upper side of said supporting-plate to accommodate devices of varying width, substantially as described.

14. In an automatic feeding device for sheets, cards, and envelops, the combination with a hopper for supporting a plurality of articles, on edge, including a supporting-plate for engaging a portion of the front face of the first of said articles, feeding devices adjacent to said stop, a separating device for engaging the first of said articles held in the hopper and bending it into position to engage said feeding devices, means for adjusting said supporting-plate vertically with respect to said feeding devices to accommodate articles of different vertical width and adjustable side guides secured to the upper face of said supporting-plate for accommodating articles of different lateral width, substantially as described.

15. In an automatic feeding device for sheets, cards and envelops, the combination with a hopper for supporting a plurality of articles, on edge, including a supporting-plate for engaging the lower edges of said articles, of a stop adjacent to one end of said supporting-plate for engaging a portion of the front face of the first of said articles, feeding devices adjacent to said stop, a separating device for engaging the first of the articles held in the hopper and bending it into position to engage said feeding devices, retaining devices for engaging the upper edges of the articles held on said supporting-plate, and means for adjusting said supporting-plate vertically with respect to the feeding devices and said retaining devices, substantially as described.

16. In an automatic feeding device for sheets, cards, and envelops, the combination with a hopper for supporting a plurality of articles, on edge, including a supporting-plate for engaging the lower edges of said articles, of a stop adjacent to one end of said supporting-plate for engaging a portion of the face of the first of said articles, feeding devices adjacent to said stop, a separating device for engaging the first of the articles held in the hopper and bending it into position to engage said feeding devices, vertically-adjustable retaining devices, for engaging the upper edges of the articles held on the supporting-plate, and means for adjusting said supporting-plate vertically with respect to the feeding devices and said retaining devices, substantially as described.

17. In an automatic feeding device for sheets, cards and envelops, the combination with a hopper for supporting a plurality of articles, on edge, including a supporting-plate for supporting the lower edges of said articles, of a stop adjacent to one end of said supporting-plate for engaging a portion of the face of the first of said articles, feeding devices adjacent to said stop, a separating device for engaging the first of the articles held in the hopper and bending it into position to engage said feeding devices, retaining devices for engaging the upper edges of the articles supported in said hopper and means for adjusting said retaining devices vertically with respect to said feeding devices, substantially as described.

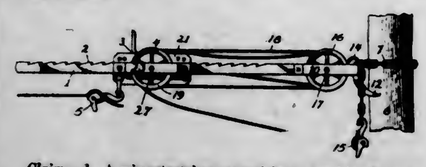
18. In an automatic device for feeding sheets, cards, and envelops, the combination with the hopper, and a feeding-roller located adjacent to one end of the same, of a pressure-roller, movable toward and from the feeding-roller, a pivoted arm carrying said pressure-roller, a rock-shaft, an operating-arm carried thereby, a separating device pivotally connected to said operating-arm, and provided with teeth or projections, a retracting-spring for said separating device, a cam-shaft and cams on said shaft for operating said pressure-roller-carrying arm, and said rock-shaft, substantially as described.

19. In an automatic device for feeding sheets, cards, and envelops, the combination with the inclined feeding-plate for supporting the lower edges of a plurality of articles, the stop-plate for engaging a portion of the outer face of the first of said articles, means for adjusting said feeding-plate vertically with respect to said stop-plate, and lateral adjustable guides on said feeding-plate, of a feeding-roller above said stop-plate, a pressure-roller movable toward and from the feeding-roller, a swinging arm carrying said pressure-roller, and provided with a weight, a rock-shaft, an operating-arm carried thereby, a separating device pivotally connected to said arm and including a metal blade having a longitudinal edge provided with a series of fine teeth or projections, a retracting-spring for said separating device, means for operating said rock-shaft and pressure-roller-carrying arm, and vertically-adjustable retaining devices provided with portions for engaging the top edges of articles supported on said feeding-plate, substantially as described.

20. In an automatic feeding device for sheets, cards, and envelops, the combination with means for supporting a plurality of articles to be fed, of feeding mechanism located adjacent thereto, a separating device having a longitudinal portion provided with teeth each having an abrupt feeding-face and an inclined shoulder, and means for drawing said separating device longitudinally in both directions across the edge of the first of said articles, substantially as described.

REISSUES.

12,484. **WIRE-STRETCHER.** ARTHUR A. SMITH, Goldfield, Iowa. Filed Jan. 20, 1906. Serial No. 296,506. Original No. 769,027, dated Aug. 30, 1904.



Claim.—1. A wire-stretcher comprising a combined guide and ratchet-bar provided at one end with means for securing it to a post, a slide having an opening for the bar and movable along the same and provided with means for connecting it with a wire, means carried by the slide for engaging the bar, pulleys mounted on the slide and on the inner end of the bar, a flexible connection arranged on the pulleys for operating the slide, substantially as described.

2. A wire-stretcher comprising a bar provided at one end with means for securing it to a post; a slide movable along the bar and provided with means for connecting it with a wire; coöperating sets of power-multiplying pulleys mounted respectively on the bar and on the slide; a cable passing around the pulleys for such power-multiplication, and means for automatically holding the slide to the bar against retraction by the wire, for retaining the gain made by the operation of the cord and pulleys.

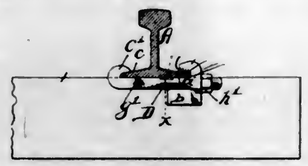
3. A wire-stretcher comprising a bar provided at one end with means for securing to a post; a slide movable along the bar and provided with means for connecting it with a wire; pulleys arranged in sets of equal number, one set mounted upon the bar and the other upon the slide; a cable suitably encompassing said pulleys in order, for multiplying power, the slide and bar being provided with coöperating means for retaining the gain of the slide on the bar obtained by the operation of the cord and pulley against the pull of the wire on the slide.

4. A wire-stretcher comprising a combined guide and ratchet-bar provided at one end with means for securing it to a post or support, a slide mounted on the said bar and provided with a pawl or dog for engaging the same, and having means for connecting it with a wire, pulleys arranged in pairs and mounted on the slide and the bar and arranged at opposite sides of the latter, and a flexible connection arranged on the pulleys for operating the slide, substantially as described.

5. A wire-stretcher comprising a longitudinal bar, side pieces connected with the bar at one end thereof and laterally opposite from the same and provided with depending post-engaging hooks, a flexible connection secured to one of the side pieces and adjustably connected with the other, pulleys mounted in the spaces between the bar and the side pieces, a slide mounted on the bar and provided at opposite sides thereof with pulleys, and a flexible connection arranged on the pulleys for operating the slide, substantially as described.

6. A wire-stretcher comprising a combined guide and ratchet-bar provided at its inner end with means for connecting it with a post, a pair of pulleys mounted on the inner portion of the bar at opposite sides thereof, a slide mounted on the bar, and comprising plates spaced apart to receive the guide-bar and braces mounted on the plates and forming openings, pulleys mounted on the slide and arranged in the openings thereof, a spring-actuated dog located between the said plates and engaging the ratchet-bar, and a flexible connection arranged on the pulley for operating the slide, substantially as described.

12,485. **RAILWAY-RAIL STAY.** HIRAM H. SPONENBURG, Wadsworth, Ill., assignor of one-half to Edward Laas, Ottumwa, Iowa. Filed Mar. 31, 1906. Serial No. 309,230. Original No. 799,361, dated Sept. 12, 1905.



Claim.—1. The improved rail-stay comprising a jaw abutting against the side of the cross-tie and formed with a groove receiving the rail-flange, a flange-gripping plate confined at the top of said groove, and a bolt passing across the under side of the rail and clamping the jaw onto the rail as set forth.

2. The improved rail-stay comprising a cast-metal jaw abutting against the side of the cross-tie and formed with a groove receiving the rail-flange, a hard-metal flange-gripping plate confined in the groove and provided with serrations or teeth adapted to embed themselves in the top of the flange, and means for clamping the jaw onto the rail as set forth.

3. The improved rail-stay comprising a jaw provided with means for clamping the same onto the rail-flange and with means abutting against the side of the cross-tie, said jaw being formed with a surface gripping the bottom of the flange and with an undercut overhanging lip, and a plate confined in said undercut portion and gripping the top of the flange as set forth.

4. A railway-rail stay comprising a jaw abutting against the cross-tie and formed with a groove receiving the rail-flange, a hard-metal flange-gripping plate disposed in the top of the groove, the said jaw being provided with bent portions confining the plate in its position, and means clamping the jaw onto the rail as set forth.

5. A railway-rail stay comprising a jaw consisting of a block provided with an aperture and formed with an abutment engaging the cross-tie and with a groove receiving the rail-flange, and the top of the groove provided with a recess, a chilled-iron serrated plate disposed in said recess and gripping the top of the flange, tongues formed on the said jaw at the groove and locking the plate in the recess, and a suitably-supported bolt passing across the under side of the rail and extending through the aperture of the jaw and provided with a nut engaging the outer face of the jaw and forcing the jaw onto the rail and causing the serrations of the aforesaid plate to be embedded in the flange as set forth.

6. A railway-rail stay comprising a jaw consisting of a block formed with a breast projecting at right angles therefrom and abutting against the cross-tie and with a correspondingly-projecting ear, said breast and ear provided with bearings gripping the bottom of the rail-flange and the block provided with a transverse aperture disposed between the breast and ear, an overhanging lip formed on the jaw and provided with an undercut recess, a chilled iron or steel plate confined in said recess and provided with a serrated face gripping the top of the rail-flange, a suitably-sustained bolt passing across the under side of the rail and extending through said aperture, and a nut on the bolt and engaging the outer face of the block for the purpose set forth.

7. A railway-rail stay comprising a jaw abutting against the side of the cross-tie and formed with a groove receiving one of the rail-flanges and provided with a serrated flange-gripping plate confined at the top of the groove, a suitable jaw gripping the other rail-flange, and a bolt drawing said jaws into clamping positions as set forth.

8. A railway-rail stay comprising a jaw abutting against the cross-tie and formed with a groove receiving one of the rail-flanges and with a recess in the top of the groove, a chilled iron or steel plate disposed in said recess and provided with a serrated face for gripping the top of said flange, a hook-shaped jaw gripping the other rail-flange and abutting against the cross-tie, and a bolt forcing said jaws into clamping positions as set forth.

9. A railway-rail stay comprising a jaw abutting against the side of the cross-tie and formed with a groove receiving one of the rail-flanges and provided with a serrated hard-metal flange-gripping plate confined at the top of the groove, and a transverse aperture below the groove, a hook-shaped jaw gripping the other rail-flange, a bolt formed integral with the latter jaw and passing across the under side of the rail and through the aforesaid aperture, and a nut on said bolt and engaging the outer face of this apertured jaw as and for the purpose set forth.

10. In an anticreeping device for rails, the combination of a jaw having upper and lower members adapted to grip over the edge of a rail-flange, and a piece set in one of said jaws and arranged to bite into the upper face of said flange.

11. In an anticreeping device for rails, the combination of a jaw having upper and lower members adapted to grip over the edge of a rail-flange, and a piece set in one of said jaw members and provided with a tooth arranged to bite into a horizontal face of said flange.

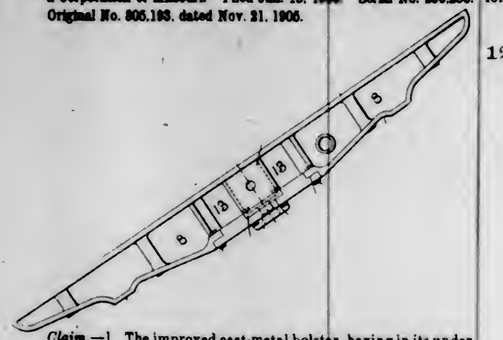
12. The combination of a pair of jaws adapted to grip opposite edges of the flange of a railway-rail, of a toothed member inserted in one of said jaws and arranged to bite into said flange with a wedging action when said jaws are forced toward each other, so as to grip said flange.

13. The combination with a railway-rail having a horizontally-tapered flange, of a pair of jaws adapted to engage opposite edges of said flange, and a toothed member inserted in one of said jaws so as to bite into a horizontal face of the rail-flange when the jaw carrying said toothed member is wedged upon said rail-flange.

14. An anticreeping device for railway-rails, comprising a jaw having upper and lower members adapted to grip over the edge of a rail-flange, a separate hard-metal piece, having a sharpened edge, set in one of said members in such manner that said edge extends transversely to the rail, and means for drawing said jaw transversely over the edge of the rail-flange, whereby said sharpened edge is caused to bite into a face of said rail-flange.

15. An anticreeping device for rails, comprising a clamping-jaw having a wedge-shaped recess adapted to receive the edge of the rail-flange, a knife-edge set transversely in one face of said recess and adapted to bite into a face of the rail-flange when said jaw is forced thereover, and means for holding said jaw in position on said flange.

12,486. **BODY-BOLSTER.** THOMAS M. GALLAGHER, Old Orchard, Mo., assignor to Scullin-Gallagher Iron & Steel Company, St. Louis, Mo., a Corporation of Missouri. Filed Jan. 15, 1904. Serial No. 289,236. Original No. 805,193, dated Nov. 21, 1905.



Claim.—1. The improved cast-metal bolster, having in its under side the usual sill-recess and recess for the removable compression-plate, the vertical walls of said compression-plate recess being curved; substantially as described.

2. The improved cast-metal bolster, having in its under side the usual sill-recess and recess for the removable compression-plate, the vertical walls of said compression-plate recess being curved, and a combined compression-plate and center-bearing having its ends curved and located within the said compression-plate recess; substantially as described.

3. The improved cast-metal bolster, having in its under side the usual sill-recess and recess for the removable compression-plate, the vertical walls of said compression-plate recess being curved, and a combined compression-plate and center-bearing, having curved ends, which are located within said compression-plate recess at a point exterior of the outer walls of the said sill-recess, said compression-plate itself being recessed upon its upper side to receive the flanged central part of the bolster; substantially as described.

4. A bolster having a sill-recess, and a compression member closing said recess and interlocking at its ends with said bolster whereby said compression member is prevented from moving transversely of the bolster; substantially as described.

5. A bolster having a sill-recess, and a compression member closing said recess and interlocking at its center with said bolster so that rotary movement of said member relatively to the bolster is prevented; substantially as described.

6. A bolster having a sill-recess, and a compression member closing said recess and interlocking at its center, the ends of said compression member interlocking with the bolster to prevent said member from moving transversely of the bolster; substantially as described.

7. A bolster provided at its under side with a sill-recess, a compression member closing said recess, and coöperating non-circular parts on said bolster and compression member at approximately the centers thereof for preventing said member from rotating relatively to the bolster; substantially as described.

8. A bolster provided at its under side with a sill-recess, and a compression member closing said recess and having its ends engaging portions of said bolster, the ends of said member and the coöperating portions of the bolster being so formed that said member cannot move transversely of the bolster; substantially as described.

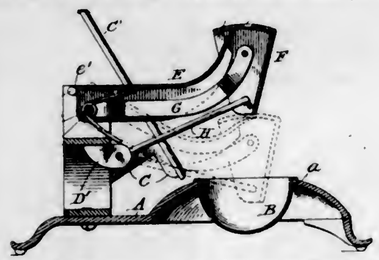
9. A bolster provided at its under side with a sill-recess, a compression member closing said recess and provided with a center-bearing, securing means for holding said compression member in position, and interlocking parts on the bolster and the ends of the compression member which relieve said securing means from longitudinal strains; substantially as described.

10. A bolster provided at its under side with sill-recesses, a compression-plate closing said recesses and provided with a center-bearing, and a non-circular part on the bolster intermediate said recesses which coöperates with a portion on the compression-plate to prevent rotary movement thereof; substantially as described.

11. A bolster provided at its under side with a sill-recess, and a compression-plate located under said recess and provided with a center-bearing, the ends of said plate and the walls of said recess being so formed that said plate cannot move transversely of the bolster; substantially as described.

12. A bolster provided with a sill-recess, a combined compression-plate and center-bearing located under said recess and having its ends interlocking with the end walls of the recess, and coöperating means on said plate and bolster at approximately the centers thereof for preventing said plate from rotating; substantially as described.

12,487. **CIGAR-TIP CUTTER.** EDWIN WALKER, Erie, Pa., assignor to The Brunhoff Manufacturing Company, Cincinnati, Ohio. Filed Apr. 23, 1904. Serial No. 204,652. Original No. 753,941, dated Mar. 8, 1904.



Claim.—1. The combination in a cigar-tip cutter, of a frame, a pair of arms pivoted thereto one above the other, a hollow cutter-head pivoted to the free ends of said arms, a cutter within said hollow cutter-head, a cutter-arm pivoted to said frame and connected with said cutter for operating the same, and a spring operating to raise the cutter-head, substantially as set forth.

2. The combination in a cigar-tip cutter, of a frame, a pair of arms pivoted thereto, one above the other, a hollow cutter-head pivoted to the free ends of said arms, a cutter-arm pivoted to said frame and operating a cutter-blade under the top of the cutter-head, and a spring operating on one or more of said arms to raise and yieldingly support the cutter-head, substantially as set forth.

3. The combination in a cigar-tip cutter, of a frame, an arm pivoted to said frame having its outer end curved upward, another arm pivoted to said frame below the first-named arm, a hollow head pivoted to the outer ends of said arms, a cutter-arm pivoted to the frame on the same axis as the upper arm above referred to, and having its outer end curved upward under the top of the hollow head, a cutter-blade on the end of said arm, and a spring operating on said cutter-arm, substantially as set forth.

4. The combination in a cigar-tip cutter, of a frame having an advertising-display plate thereon, an upright on said frame, a pair of arms pivoted therein one above the other, a hollow head having cigar-tip openings therein pivoted to the outer ends of said arms, a cutter-arm pivoted to the frame on a common axis with the upper one of the arms pivoted in the hollow head, a stop on the upright engaging said cutter-arm so as to limit its upward movement, a spring operating on said cutter-arm to normally support it in a raised position, and a cutting-blade on the free end of the cutter-arm under the inside of the top of the cutter-head adapted to closely contact therewith when downward pressure is applied to said head, substantially as set forth.

5. A cigar-cutter having a cutting device consisting of two members, one of which is a cutting member and the other is a cutting-head with a tip-opening, swinging arms for supporting the cutter-device members in coöperative relation and permitting them to have an up-and-down movement, and operating to impart to both of said members a bodily movement toward and away from each other.

6. A cigar-cutter having a plurality of pivoted arms, a blade, and a cutter-head, the latter being supported by one of said arms and actuated by another of the arms to have a traversing movement relative to the blade.

7. A cigar-cutter having a cutter-head provided with a tip-opening, a blade, and a plurality of swinging arms arranged to support the blade and cutter-head in coöperative relation and operating to simultaneously move the cutter-head and the blade in opposite directions.

8. A cigar-cutter having a plurality of arms mounted to swing on different centers, a blade operated by one of said arms, and a cutter-head pivoted to other arms and actuated thereby to have a traversing movement relative to the blade.

9. A cigar-cutter having two arms, a cutter-head pivoted thereto, a third arm, and a cutter-blade actuated by said third arm.

10. A cigar-cutter having three arms, a blade operated by one of said arms, and a cutter-head pivoted to certain of the arms and coöperating with the blade, one of the arms being effective in giving a traversing movement to the cutter-head relative to the blade.

11. A cigar-cutter having a spring-actuated arm, a cutter operated by said arm, a cutter-head coöperating with said cutter, and other arms swinging on centers in different axial alinement and connected with said cutter-head for imparting movement thereto.

12. A cigar-cutter having an arm, a blade adapted to be operated thereby, a cutter-head operatively related to the blade, other arms swinging on different centers from each other and pivoted to the cutter-head, and means for holding said parts normally in raised positions.

13. A cigar-cutter having three arms, a cutter operated by one of said arms, and a cutter-head pivoted to two of said arms, said cutter-head being detachably connected to one of said arms and removably fitted to the cutter.

14. A cigar-cutter having two arms mounted to swing on the same center, a blade operated by one arm, a cutter-head pivoted to the other arm, and a third arm turning on a different center and connected to the cutter-head.

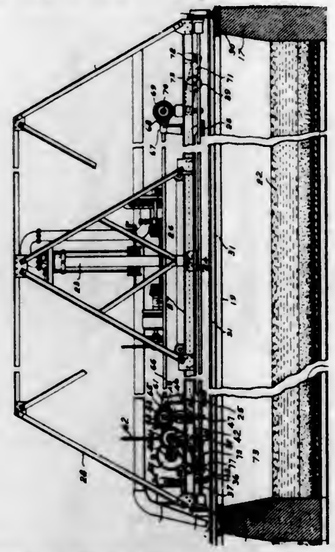
15. A cigar-cutter having two arms mounted to swing on a common axis, a blade operated by one arm, a cutter-head pivoted to the other arm and coöperating with the blade, a third arm mounted for movement on a different center and connected detachably to the cutter-head, and means for holding all the parts normally in a raised position.

16. A cigar-cutter having two arms mounted for movement on a common axis, a blade operated by one arm, a hollow cutter-head pivoted to the other arm, said cutter-head being closed on three sides and having an apertured top plate, and a third arm swinging on different center from the two first-named arms and pivoted to the cutter-head.

17. A cigar-cutter having a plurality of pivoted arms, a cutter-head pivoted to said arms, cutting mechanism, and means separate from said pivoted arms for operating said cutting mechanism.

18. In a cigar-cutter, a pivoted cutter-head, a cutting-blade, and pivoted members adapted when operated to cause the said cutter-head and cutting-blade to approach toward and recede from each other.

12,488. **APPARATUS FOR CLEANING FILTER-BEDS.** HIRAM W. BLAISDELL, Los Angeles, Cal., assignor to Blaisdell Filtration Company, Los Angeles, Cal., a Corporation of California. Filed Sept. 29, 1903. Serial No. 175,094. Original No. 729,722, dated June 2, 1903.



Claim.—1. A plurality of filter-beds, mechanism to remove impurities therefrom, a traveling structure supporting said mechanism and adapted to carry the same over said beds and means carried by said structure to transfer said structure and mechanism laterally from one of said beds to another.

2. A plurality of filter-beds, a traveling structure constructed to move thereover, mechanism upon said structure to remove impurities from said beds, means carried by said structure to transfer said structure and mechanism laterally from one of said beds to another and means for actuating the parts.

3. A plurality of filter-beds, ways thereon, a structure arranged to travel on said ways, mechanism for removing impurities from said beds mounted on said structure and means carried by said structure to transfer said structure and mechanism from one to another of said ways.

4. A plurality of filter-beds, ways thereon, a structure arranged to travel upon said ways, mechanism carried by said structure for removing impurities from said beds, ways arranged transversely of said first-mentioned ways and means carried by said structure to effect the transfer thereof from one to another of said ways.

5. A plurality of filter-beds, means for removing the impurities therefrom, a traveling structure supporting the latter and means carried by said structure to carry said structure and mechanism longitudinally of each of said filter-beds and transversely from one filter-bed to another.

6. A plurality of filter-beds, tracks extending longitudinally thereof, a traveling structure constructed to be progressed over said tracks, mechanism upon said structure to remove impurities from said beds and means carried by said structure for effecting the transfer thereof from one set of longitudinal tracks to another.

7. A plurality of filter-beds, tracks extending longitudinally thereof, a traveling structure constructed to travel upon said tracks, mechanism upon said structure for removing impurities from said beds, transverse tracks and means to effect the transfer of said structure from said longitudinal to said transverse tracks.

8. A plurality of filter-beds, tracks extending longitudinally thereof, a traveling structure having wheels to travel upon said tracks, mechanism upon said structure to remove impurities from said beds, transverse tracks, instrumentalities upon said structure to effect the transfer thereof from said longitudinal to said transverse tracks.

9. A plurality of filter-beds, tracks extending longitudinally thereof, a traveling structure having wheels to travel upon said tracks, mechanism upon said structure to remove impurities from said beds, transverse tracks, wheels upon said structure arranged to travel upon said transverse tracks and means to operate said wheels.

10. A plurality of filter-beds, longitudinal tracks, a structure having wheels arranged to travel on said tracks, mechanism upon said structure to remove impurities from said beds, transverse tracks, wheels upon said structure arranged to travel on said transverse tracks and means to lower and raise said latter wheels into and out of contact respectively with said transverse tracks.

11. A plurality of filter-beds, longitudinal tracks, a structure carrying wheels to travel on said tracks, mechanism upon said structure to remove impurities from said beds, transverse tracks, wheels to travel upon the latter and means to lower said latter wheels into contact with said transverse tracks to raise said structure and disengage the first-mentioned wheels from said longitudinal tracks.

12. A plurality of filter-beds, longitudinal tracks, a structure carrying wheels arranged to travel on said tracks, mechanism on said structure to remove impurities from said beds, instrumentalities to propel said structure over said tracks, transverse tracks, wheels upon said structure to travel upon said latter tracks and means to effect the disengagement of the former wheels and the engagement of the latter wheels

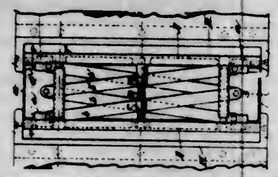
13. A plurality of filter-beds, longitudinal tracks, a structure having devices constructed to travel on said tracks, mechanism on said structure to remove the impurities from said beds, instrumentalities to propel said structure over said tracks, tracks extending transversely of said longitudinal tracks, wheels to travel on said transverse tracks, means to lower said wheels into contact with said transverse tracks and instrumentalities to propel said structure over said transverse tracks.

12,489. **TEMPORARY BINDER.** FREDERICK W. REINDEL, Cleveland, Ohio, assignor to Plew & Motter, Chicago, Ill., a Copartnership. Filed Apr. 17, 1905. Serial No. 256,156. Original No. 715,865, dated Dec. 16, 1902.

Claim.—1. In a temporary binder, the combination with back mechanism comprising two relatively retractable lateral members and retracting mechanism therefor, of two cover-hinge members each comprising a yoke having two rams, said arms including said lateral members and pivoted to the ends thereof.

2. In a temporary binder, the combination with back mechanism comprising two parallel lateral members, a series of pivoted cross-bars connecting such members and adapted to make them retractable, and retracting means, said bars adapted to maintain the

parallel position of such members, of two hinge members each comprising a yoke having two arms, said arms including said lateral members and pivoted to the ends thereof.



3. In a temporary binder, the combination with back mechanism, and relatively retractable casing members, of two cover members, each provided with a yoke having two end arms, the arms of each such cover member being pivoted to the respective ends of one such casing member.

4. In a temporary binder, back mechanism comprising two parallel lateral members, two pairs of cross-bars, the two outer ends of the bars of each pair pivoted to a lateral member, the two contiguous inner ends of each pair pivoted to each other, a nut pivotally secured at the crossing-point of the two bars of each pair, and a screw having two threads of opposite trend respectively engaging such nuts.

5. In a mechanism of the class described, the combination of a binding means comprising two relatively movable side members, crossed levers pivoted at their longitudinal centers having their ends operatively connected with such side members, a back connected with the side members, and a screw operatively connected with such levers for operating them and thereby the side members, substantially as described.

6. In a loose-leaf binder, the combination of a pair of side binder-frames provided with binder-pin mechanism thereon, crossed levers pivoted together and having their ends operatively connected with such side binder-frames, and a screw operatively connected with such levers for operating them and thereby the side binder-frames, substantially as described.

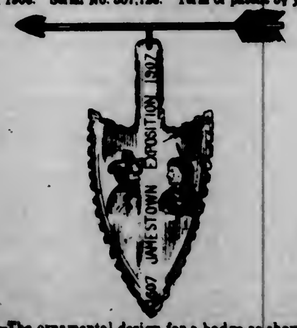
7. In a mechanism of the class described, the combination of a binding means comprising two relatively movable members, crossed levers having their ends operatively connected to such side members and provided with means for engaging a screw, and a screw operatively connected with such levers for oscillating them and thereby operating the side members, substantially as described.

8. In a loose-leaf binder, the combination of a pair of side binder-frames provided with binder-pin mechanism thereon, crossed levers pivoted together and having their ends operatively connected with such side binder-frames, and a screw operatively connected with such levers for operating them and thereby the side binder-frames, substantially as described.

9. In a mechanism of the class described, the combination of two relatively movable side binder members, intersecting and pivoted levers having their ends operatively connected with said side members, a leverage mechanism operatively engaged with said crossed levers for moving the latter to change their angle of intersection and thereby effect the approach or retraction of said side members.

DESIGNS.

38,017. BADGE. DALLETH S. MERCHANT, Portsmouth, Va. Filed Mar. 23, 1906. Serial No. 307,736. Term of patent 3½ years.



Claim.—The ornamental design for a badge as shown.

38,018. HANDLE FOR SPOONS, FORKS, OR SIMILAR ARTICLES. JOHN CLULEE, Wallingford, Conn., assignor to International Silver Co., Meriden, Conn., a Corporation of New Jersey. Filed Apr. 9, 1906. Serial No. 310,883. Term of patent 7 years.



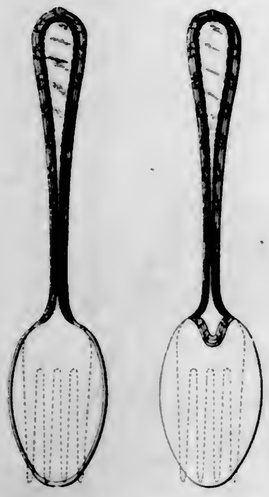
Claim.—The ornamental design for a handle for a spoon, fork or similar article, as shown.

38,019. HANDLE FOR SPOONS, FORKS, OR SIMILAR ARTICLES. JOHN CLULEE, Wallingford, Conn., assignor to International Silver Co., Meriden, Conn., a Corporation of New Jersey. Filed Apr. 9, 1906. Serial No. 310,883. Term of patent 7 years.



Claim.—The ornamental design for a handle for a spoon, fork or similar article, as shown.

38,020. HANDLE FOR SPOONS, FORKS, OR SIMILAR ARTICLES. WILLIAM C. CODMAN, Providence, R. I., assignor to Gorham Manufacturing Company, Providence, R. I., a Corporation. Filed Apr. 12, 1906. Serial No. 311,398. Term of patent 14 years.



Claim.—The ornamental design for the handle of a spoon, fork or similar article, as shown.

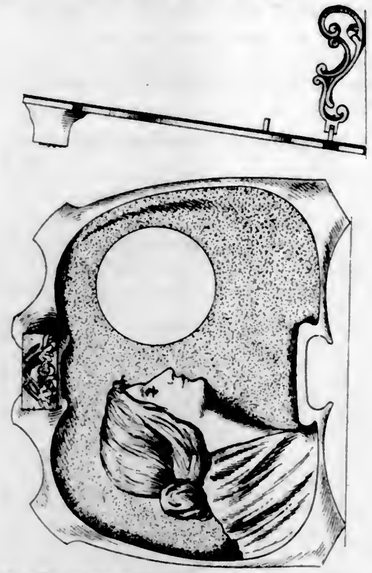
38,021. BACK FOR BRUSHES, MIRRORS, OR SIMILAR ARTICLES. SIDNEY A. KELLER, New York, N. Y., assignor to The William H. Saart Company, a Corporation of Massachusetts. Filed Apr. 7, 1906. Serial No. 310,562. Term of patent 3½ years.

38,021.



Claim.—The ornamental design for a back for brushes, mirrors, or similar articles, as shown.

38,022. CLOCK-FRAME. STANLEY M. LAWSON, Cincinnati, Ohio. Filed Apr. 4, 1906. Serial No. 309,945. Term of patent 3½ years.



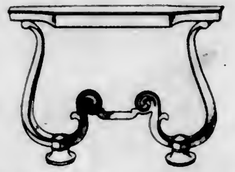
Claim.—The ornamental design for a clock-frame as shown.

38,023. MATCH-HOLDER. MORITZ MAYER, New York, N. Y. Filed Apr. 5, 1906. Serial No. 310,182. Term of patent 3½ years.



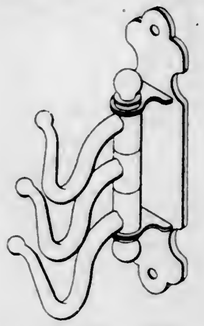
Claim.—The ornamental design for a match-holder as shown.

38,024. SCALE-SUPPORTING STAND. WILLIS H. SARGENT, St. Johnsbury, Vt., assignor to The E. and T. Fairbanks and Company, St. Johnsbury, Vt., a Corporation of Vermont. Filed Jan. 12, 1906. Serial No. 295,822. Term of patent 14 years.



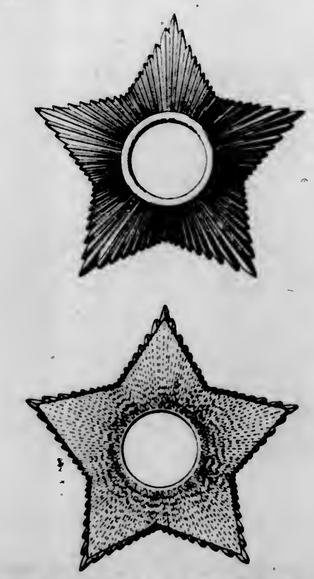
Claim.—The ornamental design for a scale-supporting stand, as shown.

38,025. BATH-ROOM HOOK. ALBERT N. LATTIN, Brooklyn, N. Y., assignor to S. Sternau & Company, Brooklyn, N. Y., a Firm. Filed Apr. 6, 1906. Serial No. 310,386. Term of patent 7 years.



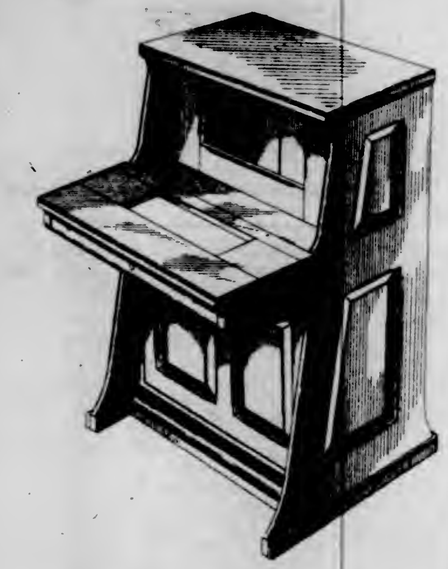
Claim.—The ornamental design for a bath-room hook, as shown.

38,026. PRISMATIC-GLASS REFLECTOR. OTIS A. MYGATT, New York, N. Y. Filed Mar. 9, 1906. Serial No. 305,183. Term of patent 14 years.



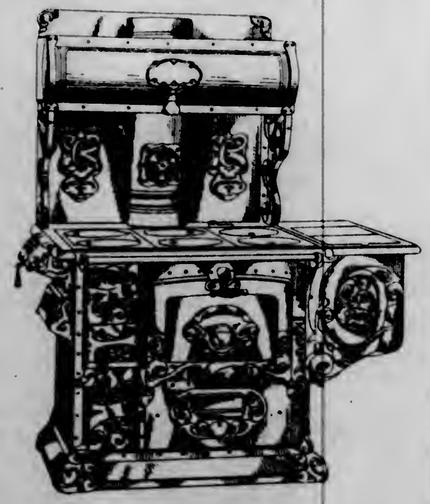
Claim.—The ornamental design for a prismatic-glass reflector as shown and described.

38,027. TELEPHONE-SWITCHBOARD CASING. FRANK R. McBERTY, Evanston, Ill., assignor to Western Electric Company, Chicago, Ill., a Corporation of Illinois. Filed Mar. 26, 1906. Serial No. 308,184. Term of patent 14 years.



Claim.—The ornamental design for a telephone-switchboard casing, as shown.

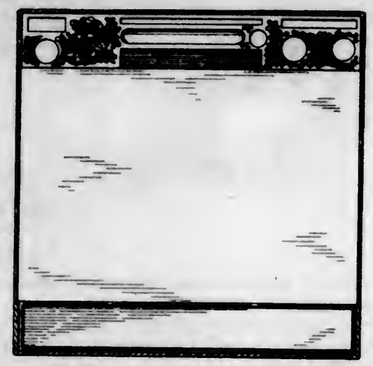
38,028. COOKING-RANGE. FRANK J. FREY, Quincy, Ill., assignor to C. H. Wurst Company, Quincy, Ill. Filed Apr. 5, 1906. Serial No. 310,180. Term of patent 7 years.



Claim.—The ornamental design for a cooking-range as shown.

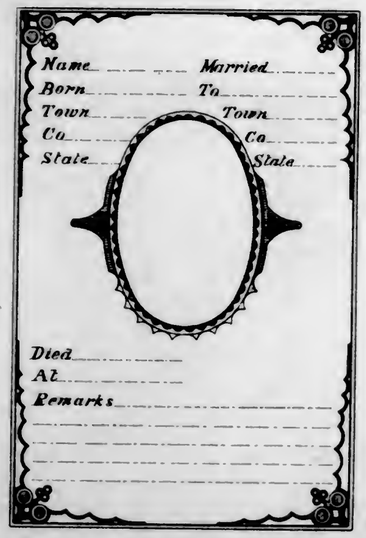
38,029. HOTEL-REGISTER DESK. FRANK F. DOLBERY, Seattle, Wash. Filed Mar. 17, 1906. Serial No. 306,662. Term of patent 3½ years.

38,029.



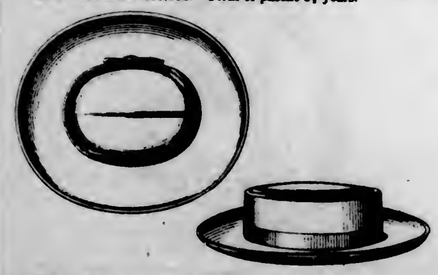
Claim.—The ornamental design for a hotel-register desk, as shown.

38,030. FAMILY-RECORD-BOOK LEAF. FRANK A. BROWN, West Pike, Pa. Filed Apr. 5, 1906. Serial No. 310,183. Term of patent 14 years.



Claim.—The ornamental design for a family-record-book leaf, as shown.

38,031. HAT. SAMUEL MUNDHEIM, Brooklyn, N. Y. Filed Mar. 9, 1906. Serial No. 305,181. Term of patent 3½ years.



Claim.—The ornamental design for a hat, as shown.

TRADE-MARKS

PUBLISHED MAY 22, 1906.

The following trade-marks have been adjudged entitled to registration under the act of February 20, 1905, and are published in compliance with section 6 of said act. Said section provides:

"Any person who believes he would be damaged by the registration of a mark may oppose the same by filing notice of opposition, stating the grounds therefor, in the Patent Office within thirty days after the publication of the mark sought to be registered, which said notice of opposition shall be verified by the person filing the same before one of the officers mentioned in section two of this act. If no notice of opposition is filed within said time the Commissioner shall issue a certificate of registration therefor, as hereinafter provided for."

Marks which are stated to have been "Used ten years" are registrable under the last proviso of section 5 of said act, which is as follows:

"And provided further, That nothing herein shall prevent the registration of any mark used by the applicant or his predecessors, or by those from whom title to the mark is derived, in commerce with foreign nations or among the several States, or with Indian tribes, which was in actual and exclusive use as a trade-mark of the applicant or his predecessors from whom he derived title for ten years next preceding the passage of this act."

Section 14 of said act provides for the following fee:

"On filing notice of opposition to the registration of a trade-mark, ten dollars."

SER. No. 101. DRESS-SHIRTS AND NEGLIGÉE SHIRTS. COLUMBUS SHIRT COMPANY, Chicago, Ill. Filed Apr. 1, 1905. Used ten years.

COLUMBUS SHIRT CO

The name "COLUMBUS SHIRT CO."

SER. No. 268. MEDICINE FOR HEADACHE AND NEURALGIA. KLOCZEWSKI & Co., Washington, D. C. Filed Apr. 3, 1905.

LIFT

The word "LIFT" appearing on a panel.

SER. No. 887. DENTIFRICE. SANITOL CHEMICAL LABORATORY CO., St. Louis, Mo. Filed Apr. 8, 1905.

SANITOL

The word "SANITOL."

SER. No. 791. AUTOMOBILE-TIRES AND TIRE-TREADS. CHARLES J. BAILEY, Boston, Mass. Filed Apr. 8, 1905.



A cross-sectional view of a tire with a portion of the tread arbitrarily shown in perspective, the cross-sectional portion surrounding the words BAILEY'S "WON'T SLIP" AUTOMOBILE TIRES.

SER. No. 962. LAUNDRY SOAP. J. G. HAAS SOAP CO., St. Louis, Mo. Filed Apr. 10, 1905. Used ten years.

AMERICAN STAR

The words "AMERICAN STAR."

SER. No. 965. MUCILAGE, PASTE, LIQUID GLUE, AND LIQUID CEMENT. DIAMOND INK COMPANY, Milwaukee, Wis. Filed Apr. 10, 1905. Used ten years.

DIAMOND

The representation of a red diamond or lozenge-shaped figure and the word "DIAMOND."

SER. No. 981. CORN-PLANTERS. THE BELCHER & TAYLOR AGRICULTURAL TOOL CO., Chicopee Falls, Mass. Filed Apr. 10, 1905. Used ten years.

ECLIPSE

The word ECLIPSE.

SER. No. 1,025. LAUNDRY SOAP. CHAS W YOUNG & Co. Philadelphia, Pa. Filed Apr. 10, 1905.

PEARL

The word "PEARL."

SER. No. 1,383. CULTIVATORS. THE OHIO CULTIVATOR COMPANY, Bellevue, Ohio. Filed Apr. 13, 1905. Used ten years.

FAMOUS OHIO

The words "FAMOUS OHIO."

SER. No. 2,032. PURIFIED WATER. ADAM SCHANTZ, Jr., Dayton, Ohio, trustee of estate of Adam Schantz, Sr. Filed Apr. 17, 1905.



. . Water . .

The representation of a lily with leaves, the stems of which are united by a ribbon bow, and below the picture is the word "WATER" with two diamond-shaped figures.

SER. No. 2,429. GLASS CHIMNEYS, LANTERN-GLOBES, AND REFLECTORS. GILL BROTHERS COMPANY, Steubenville, Ohio. Filed Apr. 20, 1905. Used ten years.

BESSEMER

The word "BESSEMER."

SER. No. 2,543. BITTERS. ISA MONHEIMER, Chicago, Ill. Filed Apr. 21, 1905.



The words "RED JACKET" and the picture of an Indian carrying a gun.

SER. No. 2,718. SCISSORS AND SHEARS. EWALD KRUSIUS, New York, N. Y. Filed Apr. 22, 1905.

SER. No. 2,718.

KB EXTRA

The letters K B, associated with the word EXTRA.

SER. No. 2,933. VALVES AND FAUCETS. H. MUELLER MANUFACTURING COMPANY, Decatur, Ill. Filed Apr. 24, 1905.

H◇M

The letters "H" and "M" arranged on the opposite sides of a diamond-shaped figure having concave sides, the whole surrounded by a six-sided figure having concave sides.

SER. No. 2,985. LINIMENT. J. S. BURTON, Sherman, Tex. Filed Apr. 24, 1905. Used ten years.

REX OIL

The words REX OIL.

SER. No. 2,991. PERFUMES. THE C. B. WOODWORTH SONS CO., Rochester, N. Y. Filed Apr. 25, 1905.

BLUE LILIES

The arbitrarily-selected words BLUE LILIES.

SER. No. 3,064. STONE BUILDING-BLOCKS. FRIEDRICH ADOLF RICHTER, Rudolstadt, Germany, and New York, N. Y. Filed Apr. 26, 1905.

Imperator

The word "IMPERATOR."

SER. No. 3,217. TROUSERS. DUTCHESS MANUFACTURING CO., Poughkeepsie, N. Y. Filed Apr. 27, 1905. Used ten years

SER. No. 3,217.

DUTCHESS MANUFACTURING COMPANY.

A circular field with the words "DUTCHESS MANUFACTURING COMPANY." in a circular arrangement about the same.

SER. No. 3,412. SEWING-MACHINE OIL. GEORGE THOMPSON ROBIE, Chicago, Ill. Filed Apr. 28, 1905.



The representation of a drummer boy in Continental uniform appearing upon a shield.

SER. No. 3,439. RIVETS, WASHERS, AND BURS OF COPPER OR BRASS. THE PLUME & ATWOOD MFG. CO., Waterbury, Conn., and New York, N. Y. Filed Apr. 28, 1905.



The representation of an eagle with spread wings resting upon a base.

SER. No. 3,443. DRAPERIES, HANGINGS, AND WOVEN FABRICS ADAPTED TO BE ATTACHED TO WALLS. H. B. WIGGIN'S SONS COMPANY, Bloomfield, N. J. Filed Apr. 28, 1905.

Fab-ri-ko-na

The hyphenated word FAB-RI-KO-NA.

SER. No. 4,013. TURKEY-RED OIL, ALSO CALLED SOLUBLE OIL AND SOLUBLE GREASE, AS USED FOR DYEING, LUBRICATING, FINISHING, AND SOFTENING PURPOSES. THE ARABOL M'F'G CO., New York, N. Y. Filed May 2, 1905.

Arabol

The word "ARABOL."

SER. No. 4,086. STOUT. JOHN LABATT, London, Canada. Filed May 3, 1905.

SER. No. 4,086.



Essentially concentric panels, an arrow-head produced upon one panel, a ribbon-like band extending in opposite directions from the arrow-head, and sheaves of grain at each end of the ribbon band, the facsimile signature, JOHN LABATT, the applicant, being produced upon the ribbon band, the letters "X X X" above and "STOUT" below the band, the word "LABATT'S" above the "X X X" and the words "LONDON CANADA" below the word "STOUT" and the representation of medals below the concentric panels and overlapping each other and the lower edge of the upper or main portion of the mark.

SER. No. 4,088. CALFSKIN, KID, AND OTHER UPPER LEATHERS. ALBERT TROSTEL & SONS, Milwaukee, Wis. Filed May 3, 1905 Used ten years.

PHŒNIX

The word PHŒNIX.

SER. No. 4,533. VALVES AND HYDRANTS. CHAPMAN VALVE MANUFACTURING COMPANY, Indian Orchard, Mass. Filed May 6, 1905.



A monogram composed of the letters C and V, and an ornamental bar upon which appear the abbreviations M'F'G. Co.

SER. No. 4,554. WHISKY. ROBERT STEEL, Philadelphia, Pa. Filed May 6, 1905.



The representation of a shield bearing the monogram R S in letters upon its face.

SER. No. 4,764. GUM-SHELLAC. GEO A ALDEN & CO. Boston, Mass. Filed May 8, 1905.



A monogram composed of the letter "A" and the numeral "1," said monogram being inclosed within a diamond-shaped figure.

SER. No. 4,961. COTTON PIECE GOODS. TREMONT & SUFFOLK MILLS, Lowell, Mass. Filed May 10, 1905. Used ten years.

GERMANIA

The word GERMANIA.

SER. No. 4,963. COTTON PIECE GOODS. TREMONT & SUFFOLK MILLS, Lowell, Mass. Filed May 10, 1905. Used ten years.

LAWRENCE

The arbitrarily-selected word "LAWRENCE."

SER. No. 4,975. SHEETINGS, SHIRTINGS, DRILLINGS, DUCKS, OSNABURGS, DENIMS, AND CANTON-FLANNEL. MASSACHUSETTS COTTON MILLS, Lowell, Mass. Filed May 10, 1905.



The neckless head of an eagle with the beak widely open.

SER. No. 5,021. CANNED VEGETABLES. SAUQUOIT CANNING COMPANY, Utica, N. Y. Filed May 11, 1905.



The words "SPRING HOUSE BRAND," inclosed in a panel of ornamental scrollwork crossed by a scroll-ribbon.

SER. No. 5,287. DENIMS, DUCKS, CHEVIOTS, AND COLORED CHECKS AND STRIPES. MASSACHUSETTS COTTON MILLS, Lowell, Mass. Filed May 11, 1905.



The representation of an ostrich, the ostrich having its head erect and represented as in the act of walking.

SER. No. 5,266. SMOKING AND CHEWING TOBACCO. HERMAN RIPPEN, Perth Amboy, N. J. Filed May 11, 1905.

RÁKÓCZY



The word "RÁKÓCZY" arranged above a fanciful picture, the representation of the head and shoulders of a man appearing in Hungarian costume and surrounded by a rectangular ornamental frame.

SER. No. 5,498. STEEL BARS, RODS, BILLETS, BLOOMS, SHEETS, PLATES, SLABS, STRIPS, BLOCKS, AND FORGINGS. CRUCIBLE STEEL COMPANY OF AMERICA, Pittsburg, Pa. Filed May 13, 1905.

EAGLE

The word EAGLE.

SER. No. 5,568. VALVES, COCKS, AND FAUCETS. THE HAYDENVILLE COMPANY, Haydenville, Mass. Filed May 13, 1905. Used ten years.

H

The letter "H."

SER. No. 5,713. POTASH. PENNSYLVANIA SALT MANUF'G CO., Philadelphia, Pa. Filed May 15, 1905. Used ten years.

GREENWICH
CRUSHED
POTASH

The words "GREENWICH CRUSHED POTASH."

SER. No. 5,715. LYE. PENNSYLVANIA SALT MANUF'G CO., Philadelphia, Pa. Filed May 15, 1905. Used ten years.

GREENWICH CONCENTRATED
LYE

The words "GREENWICH CONCENTRATED LYE."

SER. No. 5,716. LYE. PENNSYLVANIA SALT MANUF'G CO., Philadelphia, Pa. Filed May 15, 1905. Used ten years.

AMERICAN
CONCENTRATED
LYE

The words "AMERICAN CONCENTRATED LYE."

SER. No. 5,717. LYE. PENNSYLVANIA SALT MANUF'G CO., Philadelphia, Pa. Filed May 15, 1905. Used ten years.

LEWIS' LYE

The words "LEWIS' LYE."

SER. No. 5,785. CIGARS, CHEROOTS, STOGIES, TOBIES, AND ALL-TOBACCO CIGARETTES. NATHAN DIVVENS, Uniontown, Pa. Filed May 15, 1905.

SER. No. 5,785.

N. D.

The letters "N. D."

SER. No. 5,853. LEATHER SHOES. PETERS SHOE CO., St. Louis, Mo. Filed May 16, 1905.

Peters
DIAMOND SPECIAL $3.00

The words PETERS DIAMOND SPECIAL, together with the sign $ followed by the numerals 3.00, which words, numerals, and sign are printed in a rectangular space inclosed by a border line.

SER. No. 5,950. CANDIES, BONBONS, AND CHOCOLATE CANDIES. MENGO L. MORGENTHAU, New York, N.Y. Filed May 18, 1905

MIRROR

The arbitrary word "MIRROR."

SER. No. 5,972. WEIGHING-SCALES AND APPURTENANCES THEREOF. E. AND T. FAIRBANKS AND COMPANY, St. Johnsbury, Vt. Filed May 18, 1905. Used ten years.

FAIRBANKS

The word "FAIRBANKS."

SER. No. 6,133. VEGETABLE LIQUID COMPOUND OF A LAXATIVE AND TONIC NATURE. WILLIAM SLEEPER WINDLE, Oskaloosa, Iowa. Filed May 20, 1905.



The word KASENA arranged on a scroll, backed by senna leaves.

SER. No. 6,269. HARNESS-LEATHER. HAFFNER BROS., Cincinnati, Ohio. Filed May 22, 1905.



The words "PIONEER BRAND" in connection with a drawing representing a pioneer's home. In the background is a log cabin and a dog. In the foreground a pioneer is standing with a gun in his hand on which he is leaning. On either side of him a dog is shown one gazing up at his master. Trees and stumps are also shown.

SER. No. 6,494. LAUNDRY SOAP. WILLIAM WALTKE & CO., St. Louis, Mo. Filed May 24, 1905.



The words "BUSY BEE" appearing upon a scroll, and in the center of said scroll between said words appears the pictorial representation of a beehive, upon and around which are shown bees.

SER. No. 6,663. BLOOD-PURIFIER FOR THE TREATMENT OF STOMACH, LIVER, AND KIDNEY DISEASES. BENJAMIN J. BRUNS, San Francisco, Cal. Filed May 25, 1905.

BRO.
BENJAMIN'S



The words BRO. BENJAMIN'S and the bust representation of an old man in Quaker garb.

SER. No. 6,832. POCKET AND TABLE KNIVES AND RAZORS. DILLEMANN FILS & CO, Paris, France. Filed May 27, 1905.



The arbitrary words EL CORREO appearing between two concentric oval lines and associated with the words CALIDAD SUPERIOR, also appearing between said lines, and the representation of a hand holding a sealed envelop, the hand and envelop appearing in the space bounded by the inner line.

SER. No. 7,009. WHISKY. JABSER BROS CO, Dubuque, Iowa. Filed May 29, 1905.

WM. PENN

The words WM. PENN, associated with the monogram J B Co.

SER. No. 7,027. ROOFING-TILES. LUDOWICI ROOFING TILE COMPANY, Chicago and Chicago Heights, Ill., and Ludowici, Ga. Filed May 29, 1905.

LUDOWICI
DIXIE

The words DIXIE and LUDOWICI written with the latter directly above the former.

SER. No. 7,081. REMEDY FOR DISEASES OF THE SKIN AND SCALP. ERNEST W. ROSE, St. Louis, Mo. Filed May 31, 1905.



The word "ZEMO" displayed on a clouded background, with the representation of a red Greek cross with rays radiating therefrom arranged at each end of said word.

SER. No. 7,268. LEATHER SHOES. W. H. MILES SHOE CO., INC., Richmond, Va. Filed June 2, 1905.



The representation of a locomotive having on the front of its boiler the name "MILES" associated with the words "ALWAYS MILES AHEAD."

SER. No. 7,276. POCKET-KNIVES AND RAZORS. NORTHFIELD KNIFE COMPANY, Northfield, Conn. Filed June 2, 1905. Used ten years.

UN-X-LD

The letters and characters "UN-X-LD."

SER. No. 7,511. WASHING COMPOUND. FERDINAND STEEL, Philadelphia, Pa. Filed June 5, 1905.

UWANTA

The word UWANTA.

SER. No. 7,525. FRESH FRUITS AND VEGETABLES. CHARLES & CO, New York, N. Y. Filed June 6, 1905.



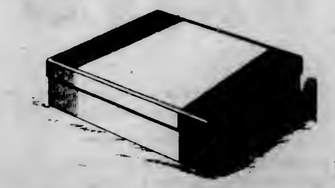
A representation of a wicker-basket apparently filled and covered over the top, the cover and the basket being wound about with a cord. A tag is shown as slipped under the cord on the cover bearing the words "PLEASE DELIVER QUICKLY." A tag is shown suspended from one side of the handle bearing the words "CHARLES & CO."

SER. No. 7,576. MOHAIR PILE FABRICS. LISTER & COMPANY, LIMITED, Bradford, England, and New York, N. Y. Filed June 7, 1905.

LISANGO

The word LISANGO.

SER. No. 7,584. CANDY. PHILIP WUNDERLE, Philadelphia, Pa. Filed June 7, 1905.



The representation of a box having parallel stripes on the body and lid thereof.

SER. No. 7,588. CANDY. PHILIP WUERMELE, Philadelphia, Pa. Filed June 7, 1906.



The representation of an open scroll with a seal thereon.

SER. No. 7,600. MEDICINAL BEVERAGE. LAWSON O. READ, Memphis, Tenn. Filed June 7, 1905.



The hyphenated word SAR-SA printed in script.

SER. No. 7,781. WHEAT-FLOUR. THE NEW CENTURY MILLING COMPANY, Dallas, Tex. Filed June 9, 1905.



A star on the face of which appears the representation of a cotton boll and blossom and leaves, and the words COTTON WHITE.

SER. No. 7,784. LEATHER BOOTS AND SHOES AND LEATHER USED IN THEIR MANUFACTURE. RICE & HUTCHINS INCORPORATED, Boston, Mass., assignor to Rice and Hutchins Incorporated, a Corporation of Maine. Filed June 10, 1905.

SER. No. 7,784.



The representation of a boy and a girl dressed in fancy costume, the words "EDUCATOR SHOE" appearing therebeneath, while the two lines "LETS THE CHILD'S FOOT" and "GROW AS IT SHOULD" are placed below the words "EDUCATOR SHOE" in smaller type, the whole being represented as inclosed within a frame.

SER. No. 7,790. LEATHER BOOTS AND SHOES AND LEATHER USED IN THEIR MANUFACTURE. RICE & HUTCHINS INCORPORATED, Boston, Mass., assignor to Rice and Hutchins Incorporated, a Corporation of Maine. Filed June 10, 1905.



The representation of two sea-horses facing each other and supporting a shield or escutcheon, said shield having the word "SHOE" thereon, the words "FOR HEALTH" appearing on a scroll beneath said shield. Above the shield is the representation of an anchor, the whole being encircled by the representation of a rope knotted therebeneath with its free ends extending in opposite directions above the word "AQUATIGHT."

SER. No. 7,791. LEATHER BOOTS AND SHOES AND LEATHER USED IN THEIR MANUFACTURE. RICE & HUTCHINS INCORPORATED, Boston, Mass., assignor to Rice and Hutchins Incorporated, a Corporation of Maine. Filed June 10, 1905.

A symbol or character resembling a reversed capital letter R combined with a capital letter H, surrounded by a circular band having the words ON SHOES, located at the top of said band above the reversed capital letters R and H, and the words MARK OF MERIT below said reversed capital letters R and H.

SER. No. 7,793. LEATHER BOOTS AND SHOES AND LEATHER USED IN THEIR MANUFACTURE. RICE & HUTCHINS INCORPORATED, Boston, Mass., assignor to Rice and Hutchins Incorporated, a Corporation of Maine. Filed June 10, 1905.

SER. No. 7,793.



The words BIKE COMFORT inclosed in a rectangle, the word BIKE being located above the word COMFORT. Beneath the word COMFORT, in smaller type, appear the words TAN DUCK and GRIP SOLE.

SER. No. 7,798. LEATHER BOOTS AND SHOES AND LEATHER USED IN THEIR MANUFACTURE. RICE & HUTCHINS INCORPORATED, Boston, Mass., assignor to Rice and Hutchins Incorporated, a Corporation of Maine. Filed June 10, 1905. Used ten years.



A rectangular panel bearing a representation of a book with a shoe thereon, a monogram of the letters R H surrounded by a circular band bearing the words "ON SHOES" and "MARK OF MERIT" being located in the upper right-hand corner of said panel, and the words "SCHOOL SHOES" appearing beneath said panel.

SER. No. 7,799. LEATHER BOOTS AND SHOES AND LEATHER USED IN THEIR MANUFACTURE. RICE & HUTCHINS INCORPORATED, Boston, Mass., assignor to Rice and Hutchins Incorporated, a Corporation of Maine. Filed June 10, 1905. Used ten years.



The word CAMEO located beneath the monogram "R H" surrounded by a circular band, said band having thereon the words "ON SHOES" and the words "MARK OF MERIT."

SER. No. 7,923. FILES AND RASPS. G. & H. BARNETT COMPANY, Philadelphia, Pa. Filed June 12, 1905.



A figure in the shape of a diamond, associated with a representation of a file.

SER. No. 7,967. REMEDIES FOR THE STOMACH TROUBLES OF CHILDREN. DANIEL P. BYRNE, New York, N. Y. Filed June 12, 1905.



An oval-shaped panel arranged in a vertical position and having an ornamental scroll border inclosing the words "BYRNE'S BABY RELIEF."

SER. No. 8,044. GLOVES. V. PERRIN & CIE, New York, N. Y., and Grenoble, France. Filed June 13, 1905. Used ten years.



The figure or representation of a female goat and a kid in the act of suckling the same, on a background of the rising sun.

SER. No. 8,065. INDIA-RUBBER PENCIL-ERASERS. L & C HARDTMUTH, Vienna and Budweis, Austro-Hungary, and London, England. Filed June 14, 1905.



The letter "H," two stars and a circle surrounding the letter "H" and the stars.

SER. No. 8,068. LEAD-PENCILS. L & C HARDTMUTH, Vienna and Budweis, Austro-Hungary, and London, England. Filed June 14, 1905.

Mephisto

The word "MEPHISTO."

SER. No. 8,070. LEAD-PENCILS. L & C HARDTMUTH, Vienna and Budweis, Austro-Hungary, and London, England. Filed June 14, 1905.

PLUTO

The word "PLUTO."

SER. No. 8,248. INDIA-RUBBER AND GUTTA-PERCHA POUCHES AND RECEPTACLES FOR HOLDING TOBACCO. ADOLPH FRANKAU & CO. LTD., London, England. Filed June 15, 1905.



The letters B B B.

SER. No. 8,291. KNITTED UNDERGARMENTS OF WOOL, COTTON, SILK, FLAX, OR ADMIXTURES OF THESE FIBERS. WINSHIP, BOIT & Co., Wakefield, Mass. Filed June 15, 1905. Used ten years.

SER. No. 8,291.

Harvard Mills

The words "HARVARD MILLS," in script with a paraph beneath.

SER. No. 8,368. TWIST-DRILLS, REAMERS, TAPS, COUNTERBORES, AND CUTTERS FOR MILLING METAL SURFACES. THE CLEVELAND TWIST DRILL COMPANY, Cleveland, Ohio. Filed June 16, 1905.



The letter "C" inclosed in a lozenge-shaped figure having concaved sides.

SER. No. 8,369. TWIST-DRILLS, REAMERS, TAPS, COUNTERBORES, AND CUTTERS FOR MILLING METAL SURFACES. THE CLEVELAND TWIST DRILL COMPANY, Cleveland, Ohio. Filed June 16, 1905.



A representation of a lozenge-shaped figure having concaved sides.

SER. No. 8,654. PIPE-JOINTS. MORAN FLEXIBLE JOINT CO., Louisville, Ky. Filed June 21, 1905. Used ten years.

MORAN'S

The word "MORAN'S."

SER. No. 8,910. WHISKIES. THE MCCART-MOSSBY CO, Cleveland, Ohio. Filed June 24, 1905.

RED BAND

The words "RED BAND," above a plain red band in the center whereof is the monogram "McC M Co" under the word THE, inclosed in a circular figure.

SER. No. 9,120. DOVETAILED CORRUGATED SHEET METAL. THE BROWN HOISTING MACHINERY COMPANY, Cleveland, Ohio. Filed June 26, 1905.

Ferroinclave

The word FERROINCLAVE arranged within a line representing two dovetail-shaped corrugations.

SER. No. 9,152. WHEAT-FLOUR. PHOENIX MILLING CO, Sacramento, Cal. Filed June 27, 1905.

PHOENIX



The words "PHOENIX MILLS" and the representation of a phenix.

SER. No. 9,388. CIGARS. COMPAÑIA GENERAL DE TABACOS DE FILIPINAS, Barcelona, Spain. Filed June 29, 1905.



A representation of a shield capped with a coat-of-arms, including a crown, said coat-of-arms bearing a tower and a mythological animal and inclosed by ornamental scrollwork, a palm-tree and a bunch of tobacco-leaves and shrubbery being shown on each side of said shield, said shield bearing the following words: "MANILA COMPAÑIA GENERAL DE TABACOS DE FILIPINAS. FABRICAS FLOR DE LA ISABELA LA MONTAÑESA MEISIC MALABON-PRINCESA CAVITE" the whole being inclosed by a rectangular border.

SER. No. 9,516. REMEDY FOR LEPROSY AND DISEASES OF THE BLOOD. ANICETO P. TORO, New York, N. Y., and Mexico, Mexico. Filed June 30, 1905.

SER. No. 9,516.



Three concentric circles having different radii, the first circumscribing a circular seal of black having thereon the monogram "A F T" in white. In the annular space between the second and third circles are two inscriptions one above and one below, separated from each other by stars, the upper reading "ESPECIFICO DIVINO," and the other "BALSAMO DEL DR. A. T."

SER. No. 9,549. CANNED FRUITS AND CANNED VEGETABLES. GRIGGS, COOPER AND COMPANY, St. Paul, Minn. Filed July 1, 1905.



The arbitrary words "STONE WALL" together with the representation of a stone wall.

SER. No. 9,674. CHEMICAL SOLVENTS FOR GUMS AND OILS. COMMONWEALTH MANUFACTURING CO, Portland, Me., and Boston, Mass. Filed July 3, 1905.

EAGLE SPIRITS

The words EAGLE SPIRITS.

SER. No. 9,753. CANDY. LITTLEFIELD & STEERE CO., Knoxville, Tenn. Filed July 3, 1905.



The words "RED SEAL" in white letters on a red background representing a seal—also the monogram "L & S Co." in white below the words RED SEAL.

SER. No. 9,800. INSECTICIDE FOR BUGS AND BLIGHT. BENJAMIN HAMMOND, Fishkill Landing, N. Y. Filed July 3, 1905.



An oval-shaped panel, bearing the representation of a potato-bug, in an upright position and run through with a sword in the hand of a typical devil in a kneeling position, associated with the words "I SLAY BUGS."

SER. No. 9,799. FUNGICIDE. BENJAMIN HAMMOND, Fishkill Landing, N. Y. Filed July 3, 1905.



A representation of a bull dog holding in its mouth a bunch of grapes and having a collar about its neck upon which are the words, GRAPE DUST, and the words A SURE PROTECTOR arranged beneath the dog, all surrounded by an annular band upon which appear, the words HAMMOND'S GRAPE DUST KILLS MILDEW, the figures 1886 and a representation of a hand pointing to the words "KILLS MILDEW."

SER. No. 9,852. SPECIFIC FOR RHEUMATISM, GOUT, AND NEURALGIA. FRIEDRICH ADOLPH SCHULZ, Leipsic, Germany. Filed July 6, 1905.

Indoform

The word "INDOFORM."

SER. No. 9,970. CORSETS. KABO CORSET COMPANY, Chicago, Ill. Filed July 10, 1905.

Le Chic

The arbitrarily-selected words LE CHIC.

SER. No. 9,971. CORSETS. KABO CORSET COMPANY, Chicago, Ill. Filed July 10, 1905.

Du Barry

The arbitrarily-selected words DU BARRY.

SER. No. 10,082. SILK DRESS GOODS IN THE PIECE. ROGERS & THOMPSON, New York, N. Y. Filed July 11, 1905.

Roglomp

The word ROOTOMP in fancy script letters surrounded by an oval.

SER. No. 10,087. RUBBER BOOTS, SHOES, AND OVERSHOES. M. D. WELLS CO., Chicago, Ill. Filed July 11, 1905.



The representation of a child having her arm about a dog's neck, together with the words "BEST ON EARTH," the figures and words being arranged on a background representing the earth, the Western continent being shown.

SER. No. 10,290. PREPARATIONS OF SODIUM THEOBROMATE AND SODIUM SALICYLATE FOR KIDNEY AND HEART DISEASES IN POWDER FORM, ALSO IN PILL AND TABLET FORM. KNOLL & CO, Ludwigshafen-on-the-Rhine, Germany. Filed July 14, 1905.

DIURETIN

The arbitrarily-selected word-symbol DIURETIN.

SER. No. 10,368. GUAIACOL CARBONATE FOR INTERNAL USE. CHEMISCHE FABRIK VON HEYDEN, AKTIENGESELLSCHAFT, Radebeul, near Dresden, Germany. Filed July 15, 1905.

DUOTAL

The arbitrary word-symbol "DUOTAL."

SER. No. 10,369. CREOSOTE CARBONATE FOR MEDICAL PURPOSES. CHEMISCHE FABRIK VON HEYDEN, AKTIENGESELLSCHAFT, Radebeul, near Dresden, Germany. Filed July 15, 1905.

Creosotal

The arbitrary word-symbol "CREOSOTAL."

SER. No. 10,444. PAPER-LINED BAGS AND PAPER LININGS FOR BAGS AND BARRELS AND LIKE RECEPTACLES. ARKELL SAFETY BAG COMPANY, New York, N. Y. Filed July 17, 1905.

ARKSAFE

The word "ARKSAFE."

SER. No. 10,474. PAINT-OILS. THE KAY AND ESS CO, Dayton, Ohio. Filed July 17, 1905.

Dalonia

The word DALONIA inclosed in a scroll.

SER. No. 10,475. MIXED PAINTS. THE KAY AND ESS CO, Dayton, Ohio. Filed July 17, 1905.

PRUDENTIAL

The word PRUDENTIAL.

SER. No. 10,555. GLOVES. V. PERRIN & CIE, New York, N. Y., and Grenoble, France. Filed July 19, 1905. Used ten years.



The representation of an ace of spades.

SER. No. 10,556. GLOVES. V. PERRIN & CIE, New York, N. Y., and Grenoble, France. Filed July 19, 1905. Used ten years.



The representation of a heart-shaped figure.

SER. No. 10,557. GLOVES. V. PERRIN & CIE, New York, N. Y., and Grenoble, France. Filed July 19, 1905. Used ten years.



The representation of an ace of clubs.

SER. No. 10,615. GLOVES. V. PERRIN & CIE, New York, N. Y., and Grenoble, France. Filed July 20, 1905. Used ten years.

A LA CHEVRETTE

The words A LA CHEVRETTE.

SER. No. 10,621. PAPER-TRIMMERS. WEBSTER & PERRIS TOOL COMPANY, Springfield, Ohio. Filed July 20, 1905.

SER. No. 10,621.

SIMPLEX

The word "SIMPLEX."

SER. No. 10,624. WHEAT-FLOUR. SAGINAW MILLING COMPANY, Saginaw, Mich. Filed July 20, 1905.



The words "UPPER CRUST" associated with the figure of a cook in the act of placing the upper crust on a pie.

SER. No. 10,652. GLOVES. V. PERRIN & CIE, New York, N. Y., and Grenoble, France. Filed July 21, 1905. Used ten years.



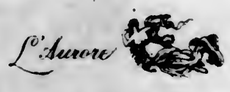
The representation of a fleur-de-lis.

SER. No. 10,658. GLOVES. V. PERRIN & CIE, New York, N. Y., and Grenoble, France. Filed July 21, 1905. Used ten years.



The name PERRIN FRÈRES in signature form.

SER. No. 10,672. COMBS. DR. HEINRICH TRAUN & SÖHNE, Hamburg, Germany. Filed July 21, 1905.



The word "L'AURORE" and the representation of a female figure in a reclining position with floating drapery.

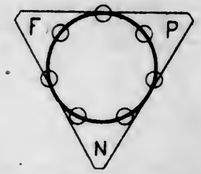
SER. No. 10,703. COCOA. C. J. VAN HOUTEN & ZOON, Weesp, Holland. Filed July 23, 1905. Used ten years.

SER. No. 10,703.



A rectangular field, the upper corners of which contain floral ornamentations and upon which appears a ribbon bearing the words "PURE SOLUBLE COCOA" above which is the word "VAN HOUTEN'S" and below which are the words "ROYAL COCOA FACTORY OF C. J. VAN HOUTEN & ZOON, WEESP, HOLLAND" and below these words is the representation of an eagle perched on a rock and arranged above a panel bearing the words "GUARANTEED TO CONTAIN PURE SOLUBLE COCOA OF THE FINEST QUALITY AND FULL WEIGHT." Below the panel is a facsimile of the signature of C J Van Houten & Zoon.

SER. No. 10,706. COLLARS, CUFFS, AND SHIRT-FRONTS. F. PETER'S NACHFOLGER, Vienna, Austria-Hungary. Filed July 22, 1905.



A triangle the corners of which are cut off and in which a ring consisting of two concentric circles is inscribed, said ring having seven small circles crossing its periphery and the letters F, P, and N appearing within the angles of the triangle.

SER. No. 10,781. REMEDY FOR THE CURE OF HEAVES IN HORSES. MINERAL HEAVE REMEDY CO., Pittsburg, Pa. Filed July 25, 1905.



The representation of a horse, with the words "CURES HEAVES" on the side thereof, and the words "MINERAL HEAVE REMEDY" arranged above the representation of the horse.

SER. No. 10,838. COTTON DUCK. MOUNT VERNON-WOODBERRY COTTON DUCK COMPANY, Baltimore, Md. Filed July 26, 1905.

EXCELSIOR

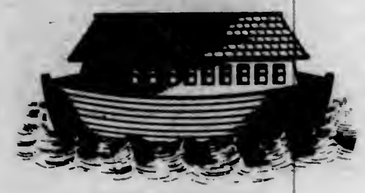
The word EXCELSIOR.

SER. No. 10,889. COTTON DUCK. MOUNT VERNON-WOODBERRY COTTON DUCK COMPANY, Baltimore, Md. Filed July 26, 1905.

ELKWOOD

The word ELKWOOD.

SER. No. 11,159. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill. Filed Aug. 2, 1905. Used ten years.



The representation of an ark.

SER. No. 11,164. PREPARED FATTY OLEAGINOUS OR UNCTUOUS FOOD SUBSTANCES. THE N. K. FAIRBANK COMPANY, Chicago, Ill. Filed Aug. 2, 1905. Used ten years.



A representation of a partial wreath and blossoms.

SER. No. 11,218. PIECE GOODS MADE PARTLY OR WHOLLY OF SILK AND HAVING A SMOOTH SURFACE. A. WERTHEIMER AND BROTHER, New York, N. Y. Filed Aug. 3, 1905.

KAMEO

The word "KAMEO."

SER. No. 11,315. WHEAT-FLOUR. FARWELL & RHINES, Watertown, N. Y. Filed Aug. 7, 1905. Used ten years.

GLUTEN

The word "GLUTEN," across which is a panel upon which appear the words "FARWELL & RHINES."

SER. No. 11,382. FISHING-LINES OF ALL KINDS. THOS J CONROY, New York, N. Y. Filed Aug. 7, 1905.

SER. No. 11,382.

HERCULES

The word HERCULES.

SER. No. 11,392. MINERAL LUBRICATING-OILS. ERNST SCHLIEMANNS OELWERKE GESELLSCHAFT MIT BESCHRANKTER HAFTUNG, Hamburg, Germany. Filed Aug. 7, 1905.

The representation of a square, in broken outline, from the center of which four arrows radiate.

SER. No. 11,409. CRACKERS AND BISCUITS. GERHARD H. TIMMERMAN, St. Louis, Mo. Filed Aug. 7, 1905.

PAN-PAN

The hyphenated word PAN-PAN.

SER. No. 11,468. NECKTIES OR CRAVATS. RALPH P. CHEEVER, Boston, Mass. Filed Aug. 10, 1905.



An ornamental shield bearing the words, "CHEEVER CRAVATS."

SER. No. 11,545. CANNED FRUITS AND CANNED VEGETABLES. THOMAS KENNETT & Co, Baltimore, Md. Filed Aug. 11, 1905.

IMPERIAL

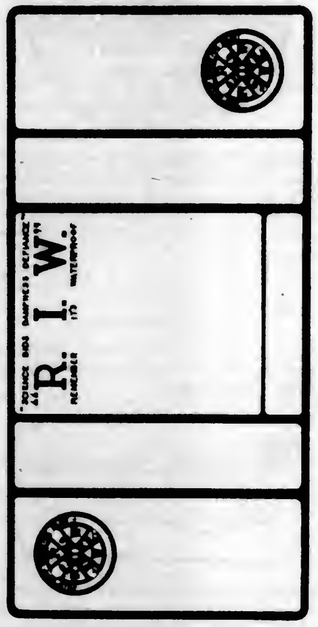
The word "IMPERIAL."

SER. No. 11,556. EYEGLASSES, SPECTACLES, OPERA AND FIELD GLASSES, AND FRAMES AND LENSES THEREFOR. GLOBE OPTICAL CO., Boston, Mass. Filed Aug. 11, 1905.



The representation of a globe having thereon the designating prescription-symbol ℞ and scrolls bearing the words; THE HOUSE OF NEW ENGLAND.

SER. No. 11,581. DAMP-RESISTING PAINTS. TOCH BROTHERS, New York, N. Y. Filed Aug. 12, 1905. Used ten years.



A rectangular panel divided by four vertical lines and one horizontal line. In two alternate corners of the panel are shown disks or wheels each having at center the letter "I" and the letters "R R W W" appearing on sectors of disk and the words "R. I. W. DAMP RESISTING PAINT" shown on edge of disk. At center of panel, near the top, the letters "R. I. W." appear inclosed in quotation-marks, associated with the quoted words "SCIENCE SIDS DAMPNESS DEFIANCE" and "REMEMBER IT'S WATERPROOF."

SER. No. 11,644. LEATHER BOOTS, SHOES, AND SLIPPERS. PARKER HOLMES & COMPANY, Boston, Mass. Filed Aug. 14, 1905.

Boulevard

The word BOULEVARD.

SER. No. 11,649. EXPLOSIVE-ENGINES. BAKER MANUFACTURING CO, Evansville, Wis. Filed Aug. 14, 1905.

Monitor

The word MONITOR.

SER. No. 11,717. PERFUMED WATERPROOF SHOE-BLACKING. SOCIETE GENERALE DES CIRAGES FRANÇAIS, Paris, France. Filed Aug. 11, 1905.



A disk on the center of which is a panel bearing the word "DERNIER" and two scrolls concentric with the edge of disk, one bearing the words "CIRAGE VÉGÉTAL" and the other the words "SOCIÉTÉ GÉNÉRALE DES CIRAGES FRANÇAIS," and associated with the words "PERFUMED WATERPROOF BLACKING PARIS" appearing on the disk.

SER. No. 11,752. SHIP-LOGS, SHIP-LOG LINES FOR SOUNDING AND MEASURING, AND LINES FOR ALL KINDS OF NAUTICAL INSTRUMENTS. THOMAS WALKER & SON LTD, Birmingham, England. Filed Aug. 18, 1905. Used ten years.

NEPTUNE

The word NEPTUNE.

SER. No. 11,772. TIRE BOLTS AND RIVETS. AMERICAN SCREW COMPANY, Providence, R. I. Filed Aug. 18, 1905. Used ten years.

BAY STATE

The words BAY STATE.

SER. No. 11,828. SAFETY-PINS. THE AMERICAN PIN Co., Waterville, Conn. Filed Aug. 19, 1905. Used ten years.

STERLING



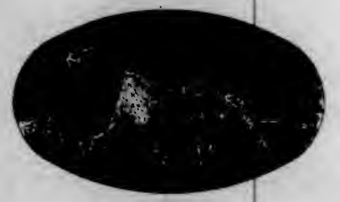
A red seal with the conventional sign for pound sterling printed thereon in black, associated with the word "STERLING."

SER. No. 11,858. BUTTER. THE H. J. GRELL BUTTER & EGG COMPANY, Johnson Creek, Wis. Filed Aug. 21, 1906.



The words "ROSE LEAF BRAND" and a representation of a rose-leaf.

SER. No. 11,866. WHISKY. THE GOTTSCHALK CO., Baltimore, Md. Filed Aug. 21, 1906.



The representation of a dog in the act of "pointing" game.

SER. No. 11,952. DRESS-SHIELDS. LEVI & BLUM, New York, N. Y. Filed Aug. 23, 1905.



The word CHARM.

SER. No. 12,085. EAU DE COLOGNE. JOHANN MARIA FARINA GEGENÜBER DEM JÜLICHS-PLATZ, Köln-on-the-Rhine, Prussia. Filed Aug. 30, 1905. Used ten years.



Two concentric circles, in the space between which appear the words "GEGENÜBER DEM JÜLICHS-PLATZ," the inner circle being divided by cross-lines into quadrants, in the upper one of which appears a conventional representation of an eye, in the remaining quadrants appear the initials "I M F." Surrounding the circles is a heavy concentric line which terminates with two parallel straight lines, between which latter is a heavy parallel line.

SER. No. 12,186. SARSAPARILLA. CANTRELL & COCHRANE, Limited, Dublin, Ireland, and New York, N. Y. Filed Sept. 1, 1905. Used ten years.

SER. No. 12,186.



A circular figure, in the upper part of which is a diamond-shape figure containing a representation of a tray on which are a number of bottles, and in the lower part of the circle a number of medallions superposed on each other. Printed upon the said figure are the words "CANTRELL & COCHRANE'S SARSPARILLA AS INTRODUCED BY CANTRELL & COCHRANE, A. D. 1856. MANUFACTURED BY HER MAJESTY'S ROYAL LETTERS PATENT, DUBLIN & BELFAST. PRIZE MEDALS DUBLIN & VIENNA. GOLD MEDAL PARIS EXHIBN."

SER. No. 12,222. EAU DE COLOGNE. JOHANN MARIA FARINA GEGENÜBER DEM JÜLICHS-PLATZ, Köln-on-the-Rhine, Prussia. Filed Sept. 5, 1905. Used ten years.



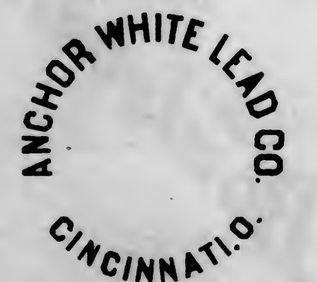
The signature of the applicant with a flourish below the same. A coat-of-arms comprising an eagle and a pot with ears of corn surrounded by heraldic design is shown to the left of the signature. Between the signature and coat-of-arms are two slanting dashes with two dots. The whole is surrounded by a broad and a narrow marginal border line.

SER. No. 12,311. CHEMICAL COMPOUND USED AS A CLEANSER, DISINFECTANT, DEODORIZER, INSECTICIDE, BACTERICIDE, DETERGENT, AND ANTISEPTIC. GEORGE W. ROYCE, Passaic, N. J. Filed Sept. 7, 1905.

CLEN-O-ZONE

The word "CLEN-O-ZONE."

SER. No. 12,444. OXIDS OF LEAD AND WHITE LEAD. NATIONAL LEAD COMPANY, Jersey City, N. J., and New York, N. Y. Filed Sept. 11, 1905. Used ten years.



The words and abbreviations "ANCHOR WHITE LEAD CO. CINCINNATI, O."

SER. No. 12,474. MEDICINAL PLASTERS. MEDICAL LAKE SALTS MFG. CO., Spokane, Wash. Filed Sept. 11, 1905.



The words "INDIAN HEAD" and the representation of an Indian's head inclosed within a circle.

SER. No. 12,494. MEDICAL PREPARATION IN PILL FORM FOR DISEASES OF THE DIGESTIVE TRACT AND ITS ACCESSORY ORGANS. JAMES COCKLE & CO., London, England. Filed Sept. 12, 1905. Used ten years.



A circular panel composed of two double-lined concentric circles containing the words COMPOUND "ANTIBILIOUS PILLS" in the annular space formed by these circles, and the following words within the inner circle "AS PREPARED BY THE LATE JAMES COCKLE, SURGEON, BEING HIS ONLY PREPARATION, 4, GREAT ORMOND STREET, LONDON, (GREAT BRITAIN.)

SER. No. 12,832. WHEAT-FLOUR. MOUNTAIN CITY MILL CO., Chattanooga, Tenn. Filed Sept. 20, 1905.

3/4

The fractional numeral "¾."

SER. No. 12,913. MACHETES, TERCADOS, SWORDS, BUSH-KNIVES, HUNTING-KNIVES, SKINNING-KNIVES, RUBBER-KNIVES, COFFEE-KNIVES, AND KNIVES OF THE LIKE CHARACTER. THE COLLINS COMPANY, Collinsville, Conn. Filed Sept. 22, 1905. Used ten years.

COLLINS.

The word "COLLINS."

SER. No. 12,926. BUTTER. G. W. MARTIN & BRO., New York, N. Y. Filed Sept. 22, 1905.

COLUMBO

The word "COLUMBO."

SER. No. 12,942. REMEDY FOR THE DISEASES OF THE DIGESTIVE SYSTEM. S. GROVER GRAHAM CO., Newburgh, N. Y. Filed Sept. 23, 1905.

AIS-PEP-SYD

The hyphenated word, AIS-PEP-SYD.

SER. No. 12,993. WHITE LEAD AND OXIDS OF LEAD. NATIONAL LEAD & OIL CO. OF PA., Pittsburg, Pa. Filed Sept. 25, 1905. Used ten years.



The words DAVIS, CHAMBERS associated with the words and abbreviations "LEAD CO. PITTSBURGH, PA."

SER. No. 12,995. WHITE LEAD AND OXIDS OF LEAD. NATIONAL LEAD & OIL CO. OF PA., Pittsburg, Pa. Filed Sept. 25, 1905. Used ten years.



The word "FAHNESTOCK" associated with the words and abbreviations WHITE LEAD CO., PITTSBURGH, PA."

SER. No. 13,097. DISINFECTANT. THE ALBO CHEMICAL CO., Cincinnati, Ohio. Filed Sept. 28, 1905.

HYDROPHENE

The word HYDROPHENE.

SER. No. 18,114. ALE. SUFFOLK BREWING COMPANY, Boston, Mass. Filed Sept. 28, 1905. Used ten years.

SER. No. 13,114.



An oval panel bearing the words STANLEY'S AKROS BRAND INDIA PALE ALE. BREWED AND BOTTLED ONLY BY THE SUFFOLK BREWING CO. BOSTON, MASS. FOR EXPORT. A pennant upon which is inscribed the Greek word 'AKPOΣ and a winged serpent arranged in the form of the letter S.

SER. No. 13,226. SHOW-CASES. THE SUN MANUFACTURING COMPANY, Columbus, Ohio. Filed Oct. 2, 1905.



The word "SUN," formed of a capital letter "S" and the small letters "u" and "n" in the arms of the letter "S," and inclosed in concentric circles with flaming rays radiating from the outer circle to represent the sun.

SER. No. 13,344. OVERALLS, OVERALL SUITS, PANTS, COATS, AND BLOUSES. BROWN, DURRELL & CO., Boston, Mass., assignors, by mesne assignments, to Brown, Durrell Co., Boston, Mass., a Corporation of Massachusetts. Filed Oct. 5, 1905. Used ten years.

WORKMAN

The word WORKMAN.

SER. No. 13,379. WASHING-POWDER USED IN LAUNDERING AND CLEANING GENERALLY. RUSCHHAUPT BROS., Fresno, Cal. Filed Oct. 6, 1906.



The words VALLEY QUEEN and the representation of a landscape with mountains in the background and a female figure in the foreground, having a halo and standing in the midst of fruit and other products of the soil and holding fruit in her lap, some of which is falling to the ground.

SER. No. 13,385. CREOSOTE AND GUAIACOL. HARTMANN & HAUERS, Hanover, Germany. Filed Oct. 6, 1905.



The interlocked letters H H appearing upon the face of a crucible-like vessel provided with a cover and surmounted by three flower-like five-lobed figures provided with stems extending toward the cover of the vessel, a scroll nearly surrounding the vessel, and a triangular figure below the vessel simulating a seal, appearing upon a dark background inclosed by a hexagonal equilateral figure formed by two parallel lines.

SER. No. 13,461. LEATHER BOOTS AND SHOES. GEO. D. WITT SHOE CO., Lynchburg, Va. Filed Oct. 9, 1905.



The picture or representation of a young lady, shown standing, stylishly attired, with upraised parasol in hand.

SER. No. 13,507. WHEAT-FLOUR. SITLEY & SON, INC., Camden, N. J. Filed Oct. 11, 1905.



The representation of the head and bust of a woman, inclosed in an annular band, on which appears the name "SITLEY & SON, INC." and the words "GOLDEN BEAUTY HIGHEST QUALITY," with the words "SPRING WHEAT PATENT" arranged above the head of the female.

SER. No. 13,576. PERFUMES. LEUTLER MFG. CO., New York, N. Y. Filed Oct. 13, 1905.



A monogram of the letters P P one of said letters facing to the right and the other to the left, forming an oval-shaped space between them, inclosed in a circle, and associated with the word PERFECTION.

SER. No. 13,664. DENTAL ABSORBENTS. JOHNSON & JOHNSON, New Brunswick, N. J. Filed Oct. 17, 1905.



A representation of a red Greek cross.

SER. No. 13,732. HARD AND SOFT CANDY. QUAKER CITY CHOCOLATE AND CONFECTIONERY COMPANY, Philadelphia, Pa. Filed Oct. 18, 1905. Used ten years.



The words QUAKER CITY.

SER. No. 13,814. HAIR-TONIC. FRANK W. PETERSON, Minneapolis, Minn. Filed Oct. 21, 1905.

SAPPHINE

The word "SAPPHINE."

SER. No. 13,837. SILVER AND SILVER-PLATED HOLLOW WARE, FLAT WARE, AND TABLEWARE. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill. Filed Oct. 21, 1905. Used ten years.



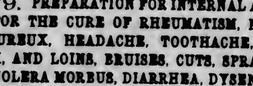
The letters O V B with a panel extending across the same upon which appear the words OUR VERY BEST.

SER. No. 13,847. MIXED PAINTS. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill. Filed Oct. 21, 1905.

HIBSPEBAR

The coined word "HIBSPEBAR."

SER. No. 13,851. FISHING-RODS. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill. Filed Oct. 21, 1905. Used ten years.



The letters O V B with a panel extending across the same upon which appear the words OUR VERY BEST.

SER. No. 13,864. RAZORS. GEORGE WOSTENHOLM & SON, LIMITED, Sheffield, England, and New York, N. Y. Filed Oct. 23, 1905.



The representation of a tobacco-pipe with a long stem.

SER. No. 13,865. POCKET AND TABLE KNIVES, BUTCHERS, BOWIE, AND FARRIERS' KNIVES AND RAZORS. GEORGE WOSTENHOLM & SON, LIMITED, Sheffield, England, and New York, N. Y. Filed Oct. 23, 1905.

I·X L

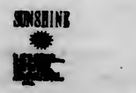
The letters I X L, arranged in the order given. The I separated from the X L by a star.

SER. No. 13,935. PILLS, POWDERS, LOZENGES, TABLETS, AND DRAGEES FOR THE CURE OF ANEMIA, BRONCHIAL, CATARRHAL, LARYNGEAL, AND PHARYNGEAL TROUBLES AND FOR A SYSTEMIC TONIC. MARIANI & CO., New York, N. Y. Filed Oct. 25, 1905. Used ten years.

MARIANI

The word MARIANI.

SER. No. 13,979. PREPARATION FOR INTERNAL AND EXTERNAL USE FOR THE CURE OF RHEUMATISM, NEURALGIA, TIC-DOULOUREUX, HEADACHE, TOOTHACHE, PAINS IN SIDE, BACK, AND LOINS, BRUISES, CUTS, SPRAINS, GOUT, CRAMPS, CHOLERA MORBUS, DIARRHEA, DYSENTERY, AND ANALGOUS DISEASES. MATTHEW J. DOW, Muskegon, Mich. Filed Oct. 27, 1905.



The word "SUNSHINE" associated with a representation of the sun and the lines:

IN PLACE OF CLOUDS
THERE WILL BE SUNSHINE
IN PLACE OF NIGHT
THERE WILL BE DAY.
TAKE ME AS DIRECTED
AND I'LL DRIVE ALL PAINS AWAY.

SER. NO. 13,644. REFINED COCOANUT-FAT. T. M. DUCHE & SONS, New York, N. Y. Filed Oct. 25, 1905.



The word NUTTO and the representation of a star formed of superimposed triangles and having the letters D F thereon, all inclosed in a diamond-shaped figure.

SER. NO. 14,084. PREPARATION FOR CLEANING CLOTH. CHRISTIAN PETERSEN, Chicago, Ill. Filed Oct. 30, 1905.



The words "WHITE CROSS" with the representation of a Latin cross arranged between the words.

SER. NO. 14,167. BROAD SILKS. LAUREL SILK WORKS, New York, N. Y. Filed Nov. 1, 1905.

LAUREL

The word LAUREL.

SER. NO. 14,218. HEAVE CURE. LUNDIN & LUNDIN, Litchfield, Minn. Filed Nov. 2, 1905.



The letter "L," inclosed in a circle or circular band and associated with the expression "CIRCLE 'L.'"

SER. NO. 14,244. WOOLEN BATISTES. BLODGETT, ORDWAY & WHEELER, Boston, Mass. Filed Nov. 3, 1905.

SER. NO. 14,244.

2874

The numerals "2874."

SER. NO. 14,321. BAKERY PRODUCTS, CONSISTING OF PIES, CAKES, ROLLS, BISCUITS, SANDWICHES, AND DOUGHNUTS, BOTH ROUND AND TWISTED. HARRY S. KELSEY, Providence, R. I. Filed Nov. 4, 1905.



The words "WALDORF LUNCH" and "WE DO OUR OWN BAKING" and the conventional representation of a bird with spread wings.

SER. NO. 14,341. SHEETINGS, SHIRTINGS, DRILLINGS, DUCKS, OSNABURGS, DENIMS, CANTON-FLANNELS, AND COTTON PIECE GOODS. EVERETT MILLS, Lawrence, Mass. Filed Nov. 4, 1905. Used ten years.

ESSEX

The word ESSEX.

SER. NO. 14,385. LEATHER SHOES. G. LYMAN SNOW, Boston, Mass. Filed Nov. 1, 1905.

Elite

The word ELITE.

SER. NO. 14,467. BUTTER. JAMES ROWLAND & COMPANY, New York, N. Y. Filed Nov. 9, 1905.



The representation of a gold seal, bearing the words "GOLD SEAL" in script included between parallel lines.

SER. NO. 14,516. DYESTUFF. BADISCHE ANILIN- & SODA-FABRIK, Ludwigshafen-on-the-Rhine, Germany. Filed Nov. 11, 1905.

FUSCANTHRENE.

The word FUSCANTHRENE.

SER. NO. 14,535. GRAIN-HEADERS, GRAIN-BINDERS, REAPERS, MOWERS, AND PARTS THEREOF. ACME HARVESTING MACHINE COMPANY, Peoria, Ill. Filed Nov. 13, 1905. Used ten years.

ACME

The word ACME.

SER. NO. 14,536. GRAIN-HEADERS AND PARTS THEREOF. ACME HARVESTING MACHINE COMPANY, Peoria, Ill. Filed Nov. 13, 1905. Used ten years.

RANDOLPH

The word RANDOLPH.

SER. NO. 14,537. GRAIN-HEADERS AND PARTS THEREOF. ACME HARVESTING MACHINE COMPANY, Peoria, Ill. Filed Nov. 13, 1905. Used ten years.

CRAVER

The word "CRAVER."

SER. NO. 14,598. RUBBER PACKING. PEERLESS RUBBER MANUFACTURING COMPANY, New York, N. Y. Filed Nov. 14, 1905. Used ten years.



The letter P, inclosed in a diamond-shaped outline figure.

SER. NO. 14,599. RUBBER PACKING. PEERLESS RUBBER MANUFACTURING COMPANY, New York, N. Y. Filed Nov. 14, 1905. Used ten years.

PEERLESS

The word PEERLESS.

SER. NO. 14,703. BLEACHED AND UNBLEACHED SHIRTINGS AND SHEETINGS, CAMBRICS, AND LONG CLOTHS. GRINNELL WILLIS & CO., New York, N. Y. Filed Nov. 16, 1905.



A rectangular panel bearing the words "DIAMOND HILL" and a diamond-shaped figure inclosing a heraldic device composed of a shield divided horizontally into panels, the lower panel of which bears a series of wide, diagonal bars on a red field, the upper panel bearing the representation of a ship, said shield being surmounted by a heraldic ermine on a roll or wreath, ornamental scroll-like figures appearing on opposite sides of the diamond-shaped figure.

SER. NO. 14,730. CANNED SALMON. BANDON PACKING CO., Bandon, Oreg. Filed Nov. 16, 1905.



The word CARNATION and the representation of a spray of carnations.

SER. NO. 14,782. BREADS, ROLLS, CAKES, AND PIES. DANIEL S. GOSS, Rutherford, N. J. Filed Nov. 17, 1905.

SER. NO. 14,782.



A circular panel bearing the representation of a white Greek cross and the words THE WHITE CROSS PURE FOOD CO.

SER. NO. 15,045. BOTTLES AND SIPHONS. C. STÖLZLE'S SÖHNE, ACTIENGESELLSCHAFT FÜR GLASFABRIKATION, Vienna, Austria. Filed Nov. 28, 1905.



The representation of an air-balloon, in the center of which there is a strip bearing the initials C. ST. S.

SER. NO. 15,094. ROPE, CORD, LINES, AND TWINE MANUFACTURED FROM VEGETABLE FIBER. THE AMERICAN MANUFACTURING COMPANY, New York, N. Y. Filed Dec. 1, 1905.

ZEBRA

The word ZEBRA.

SER. NO. 15,125. CHECK-PROTECTORS. CHARLES P. NUTTER, Boston, Mass. Filed Dec. 1, 1905.



An ornamental letter "C" inclosing in three lines the letters, characters and figures UTLINE, HECK, UTTER, $1.00, the characters UTTER, $1.00 and letter "C" being crossed by a plurality of parallel lines.

SER. NO. 15,148. SERUM SIMILAR TO ANTIDIPHTHERITIC SERUM AND USED IN BASEDOW'S DISEASE OR GRAVES' DISEASE. E. MERCK, Darmstadt, Germany. Filed Dec. 2, 1905.

ANTITHYREOIDIN MOEBIUS

The arbitrary words "ANTITHYREOIDIN MOEBIUS."

SER. NO. 15,142. LINOLEUMS. P. O. JUDSON & CO., New York, N. Y. Filed Dec. 2, 1905.



A representation of fanciful linoleum associated with the words TRUE TO NATURE.

SER. NO. 15,174. CHOCOLATE AND COCOA. KASSELER HAFER-KAKAO-FABRIK, HAUSEN & CO, ACTIEN-GESELLSCHAFT, Cassel, Germany. Filed Dec. 4, 1905.



Kasseler-Hafer-Kakao.

A beehive with bees swarming around its top in connection with the words "KASSELER-HAFER-KAKAO."

SER. NO. 15,192. FLOUR PASTE. EMIL HOFFMANN, Leipzig-Lindenau, Germany. Filed Dec. 4, 1905.

Lipsia-Kleister.

The word LIPSIA-KLEISTER.

SER. NO. 15,287. SHOTGUNS, RIFLES, REVOLVERS, AND PARTS THEREOF. THE MARLIN FIRE ARMS COMPANY, New Haven, Conn. Filed Dec. 6, 1905. Used ten years.

Marlin

The name MARLIN.

SER. NO. 15,235. WATER-HEATERS. EAGLE WATER HEATER COMPANY, New York, N. Y. Filed Dec. 6, 1905.



The representation of an eagle with outstretched wings, holding in one claw a water-heater.

SER. NO. 15,238. COFFEE. BROWNING & BAINES, INC, Washington, D. C. Filed Dec. 6, 1905.

St. Regis

The arbitrarily-selected word-symbol ST. REGIS.

SER. NO. 15,250. CHEWING-GUM. F. J. BANTA & SON, Lima, Ohio. Filed Dec. 7, 1905.

LOVE ME
If you like
CHEWING GUM

The words LOVE ME IF YOU LIKE CHEWING GUM.

SER. NO. 15,269. BEER. THE WACKER & BIRK BR'G & M'LT'G CO., Chicago, Ill. Filed Dec. 8, 1905. Used ten years.

Ulmer

The word ULMER.

SER. NO. 15,270. BEER. THE WACKER & BIRK BR'G & M'LT'G CO., Chicago, Ill. Filed Dec. 8, 1905.



The representation of a shield having three bands extending respectively from its upper and its right and left lower margins and surmounted by a sunburst and a caravel. At the lower left side is a hop-vine in bloom and on the lower right are three barley-heads

SER. NO. 15,281. PARCHMENTIZED PAPER-BOARD. THE LEATHEROID MANUFACTURING COMPANY, Kennebunk, Me. Filed Dec. 8, 1905. Used ten years.

Leatheroid

The word LEATHEROID.

SER. NO. 15,340. FIREPLACE-GRATES. ALDINE GRATE & MANTEL CO. Grand Rapids, Mich. Filed Dec. 11, 1905.

ALDINE

The word "ALDINE."

SER. NO. 15,348. HOSIERY. WEEKS AND ASCHER, New York, N. Y. Filed Dec. 11, 1905.



The representation of St. George and the dragon, St. George being shown on horseback.

SER. NO. 15,468. VEGETABLE EXTRACTS CONTAINING CAFFEINE, THEINE, AND CAFFEO-TANNIC ACID. DR. GRAF & COMP., Schoeneberg, near Berlin, Germany. Filed Dec. 16, 1905.

Yer

The word "YER."

SER. NO. 15,516. TOILET POWDERS FOR THE PERSON AND THE BATH. THE SANITOL CHEMICAL LABORATORY CO., St. Louis, Mo. Filed Dec. 19, 1905.

SANITOL

The word "SANITOL."

SER. NO. 15,517. TOILET SOAP FOR THE HANDS AND FOR SHAVING. THE SANITOL CHEMICAL LABORATORY CO., St. Louis, Mo. Filed Dec. 19, 1905.

SANITOL

The word "SANITOL."

SER. No. 15,518. FACE-CREAM. THE SANITOL CHEMICAL LABORATORY CO., St. Louis, Mo. Filed Dec. 19, 1905.

SANITOL

The word "SANITOL."

SER. No. 15,519. TOOTH-BRUSHES. THE SANITOL CHEMICAL LABORATORY CO., St. Louis, Mo. Filed Dec. 19, 1905.

SANITOL

The word "SANITOL."

SER. No. 15,661. HOSIERY. DES MOINES HOSIERY MILLS, Des Moines, Iowa. Filed Dec. 26, 1905.

ARMOR PLATE

The words "ARMOR PLATE."

SER. No. 15,662. LEATHER SHOES. PETERS SHOE COMPANY, St. Louis, Mo. Filed Dec. 26, 1905.

Peters Classic

The words, PETERS CLASSIC printed within a rectangular space inclosed by a border-line.

SER. No. 15,688. MEDICINAL OIL FOR EXTERNAL AND INTERNAL USE AND WHICH IS COMMONLY KNOWN AS "HAARLEM OIL." HOLLAND MEDICINE COMPANY, Philadelphia, Pa. Filed Dec. 27, 1905. Used ten years.

C. DE KONING TILLY

The words or name C. DE KONING TILLY.

SER. No. 15,735. COCOA AND PREPARATIONS THEREOF. BALDWIN REIL RUDZ, Oberlossnitz, Saxony, Germany. Filed Dec. 28, 1905.

Cacaol

The arbitrary word, CACAOL.

SER. No. 15,706. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio. Filed Dec. 28, 1905.



The representation of four motor-vehicle wheels, in two of which are arranged the representation of a motor-vehicle. In the other two are arranged representations of a winged wheel flying among clouds, the whole being associated with the representation of four motors for motor-vehicles, two in an inverted position.

SER. No. 15,791. WHISKIES. MILLER BROS., Washington, D. C. Filed Dec. 30, 1905. Used ten years.

"You're Looking Good!"

The words "YOU'RE LOOKING GOOD," followed by an exclamation point and in quotation.

SER. No. 15,819. COUGH REMEDIES. PITTSBURG PHARMACAL COMPANY, Pittsburg, Pa. Filed Jan. 2, 1906.

CROUPLENE

THE CHILDREN'S SAFE GUARD.

The word "CROUPLENE" and a scroll bearing the words "THE CHILDREN'S SAFE GUARD" surmounted by an eagle, and lines radiating therefrom.

SER. No. 15,892. VITREOUS EARTHENWARE WATER-CLOSETS, URINALS, AND LAVATORIES. POTTERIES SELLING COMPANY, Trenton, N. J. Filed Jan. 4, 1906.

Sy-Clo

The hyphenated word "SY-CLO."

SER. No. 15,934. BEER. STANDARD BREWERY CO. OF BALTIMORE CITY, Baltimore, Md. Filed Jan. 5, 1906.

SER. No. 15,934.

Bismarck

The word "BISMARCK" in script, surmounted by a pictorial representation of the late Count Bismarck, surrounded by a wreath.

SER. No. 16,044. POWER-OPERATED WASHING-MACHINES. PETER T. COFFIELD & SON, Dayton, Ohio. Filed Jan. 8, 1906.

"I AM FOR WOMEN"

The words I AM FOR WOMEN, together with the quotation-marks at each end of said words.

SER. No. 16,069. REMEDY FOR RHEUMATISM, KIDNEY, BLADDER, AND CATARRHAL DISEASES. KRUPP REMEDY CO., Chicago, Ill. Filed Jan. 9, 1906.

SAL-LAC

The word "SAL-LAC," hyphenated.

SER. No. 16,115. CIGARETTES AND TOBACCO FOR CIGARETTES. NESTOR GIANACLIS COMPANY, Boston, Mass. Filed Jan. 11, 1906. Used ten years.

NESTOR

The word "NESTOR."

SER. No. 16,171. COAL. THE WHITE OAK COAL CO, Macdonald, W. Va. Filed Jan. 13, 1906.

WHITE OAK

The words "WHITE OAK" appear on a diamond-shaped background.

SER. No. 16,181. LIQUID HEADACHE MEDICINE. TREADWELL & MOORE, Dallas, Tex. Filed Jan. 13, 1906.



The representation of the forward portion of an engine and its headlight, the engine being represented as on a track and within a border. The word HED appears also within the border, above the headlight, and the word LYTE and the representation of the face of a woman are made to appear in the rays of light from the headlight, also within the border.

SER. No. 16,201. ROASTED COFFEE. MERCHANTS COFFEE CO. Baltimore, Md. Filed Jan. 15, 1906.

Maryland Club

The words MARYLAND CLUB.

SER. No. 16,339. WOOLEN PIECE GOODS. THE BERES-WEBBER COMPANY, Holyoke, Mass. Filed Jan. 20, 1906.

HOLYOKE WORSTED MILLS

A diamond-shaped figure bearing the word, letters and abbreviation "THE B. W. CO." and the representation of screw-heads, and associated with the words HOLYOKE WORSTED MILLS.

SER. No. 16,347. TEA. PEEK BROS. & WINCH, LIMITED, London, England. Filed Jan. 20, 1906.



An oblong panel containing the picture of a Cingalese woman in national costume holding with uplifted arm a tray whereon are represented several articles of tea-service. Above the picture is the distinctive word "IMATRA."

SER. No. 16,349. BEER. ROBERT PORTER & COMPANY, LIMITED, London, England. Filed Jan. 20, 1906.



An oval panel containing in the center the representation of a bulldog, across the body of which is the signature "ROBT. PORTER & Co." Upon a band forming the edge of the panel are the words "ROBERT PORTER & Co. LIMITED" "EXPORT KING'S CROSS LONDON BOTTLERS."

SER. No. 16,362. ALL DESCRIPTIONS OF WOVEN DRIVING-BELTING WITH OR WITHOUT AN ENVELOP OR COVERING OF INDIA-RUBBER OR GUTTA-PERCHA. F REDDAWAY & Co. LIMITED, Manchester, England. Filed Jan. 20, 1906.

CHOUCAMEL

The word CHOUCAMEL.

SER. No. 16,376. METAL-POLISH IN SOAP FORM. MYERS & GORDON, New York, N. Y. Filed Jan. 23, 1906.

SILVER-GLO

The hyphenated word SILVER-GLO.

SER. No. 16,468. RAZOR-STROPS. WHIPPENBACH MFG. CO., Chicago, Ill. Filed Jan. 24, 1906.

REX

The word REX.

SER. No. 16,386. OIL LINIMENT. MERCHANTS GASOLINE OIL COMPANY, Lockport, N. Y. Filed Jan. 22, 1906. Used ten years.



The words MERCHANT'S CELEBRATED GASOLINE OIL FOR MAN AND BEAST and the representation of a man clad in Persian costume holding a horse, also another man, similarly clad, kneeling beside the horse bathing the fore leg.

SER. No. 16,547. VIOLINS, VIOLONCELLOS, VIOLAS, AND PARTS OF SUCH INSTRUMENTS. MARSHALL BROWNE HERN, London, England. Filed Jan. 26, 1906.

RESONATONE

The word RESONATONE.

SER. No. 16,549. CLOTHS AND STUFFS OF WOOL, WORSTED, OR HAIR. EDWARD RIPLEY & SON, LIMITED, Bradford, England. Filed Jan. 26, 1906.

LEUTINA

The invented word "LEUTINA."

SER. No. 16,552. PORTLAND CEMENT. I. C. JOHNSON & Co., LIMITED, London, England. Filed Jan. 26, 1906.



The representation of an elephant inclosed within a diamond-shaped outline. Above this device is the word "PORTLAND" and below it the word "CEMENT." The whole is inclosed within a circular band bearing in the upper part the name "JOHNSON & Cos." and in the lower part the words "LONDON AND NEWCASTLE."

SER. No. 16,576. LIQUID MAGNESIA PREPARATION. THE CHAS H PHILLIPS CHEMICAL Co, New York, N. Y. Filed Jan. 26, 1906. Used ten years.

SER. No. 16,576.



The words, PHILLIPS' MILK OF MAGNESIA, and a monogram, disposed between the words, MILK OF, and the word, MAGNESIA, said monogram containing the letters of the word PHILLIPS on a shield which is surrounded by a buckled strap.

SER. No. 16,596. ARTIFICIAL MILK FOR REARING CALVES, SUCKING PIGS, LAMBS, FOALS, AND SUCH LIKE ANIMALS. JOSEPH ADOLPHE PANCHAUD, Vevay, Switzerland. Filed Jan. 29, 1906.



The representation of an anchor and rope having upon the stock the letters V V and disposed between the arms the word VEVEY. Between the stock and arms is a representation of an oval buckler bearing the words LACTINA SUISSE, A. PANCHAUD, and centrally disposed the letters A. P. The entire device is surmounted by a scroll.

SER. No. 16,603. RUBBER BELTING. CAROLINA SUPPLY CO., Greenville, S. C. Filed Jan. 29, 1906.

Squaredeal

The word SQUAREDEAL.

SER. No. 16,637. WATCH-MOVEMENTS AND WATCHCASES. LOUIS MANHEIMER & BROS., Chicago, Ill. Filed Jan. 31, 1906.

ATLAS

The word ATLAS.

SER. No. 16,640. PIANOS. B H JANSSEN, New York, N. Y. Filed Jan. 31, 1906.



A harp surrounded by a laurel wreath, held in the center by a knotted ribbon.

SER. No. 16,663. ROOF-PRESERVING PAINT AND THE HEAVY PUTTY-LIKE CEMENT FOR FILLING THE CREVICES AND CRACKS IN ROOFS AND ELSEWHERE AND WHICH SO-CALLED CEMENT IS A HEAVY OR CONDENSED FORM OF THE ROOF-PRESERVING PAINT. AUGUST H MAIRE, Minneapolis, Minn. Filed Feb. 1, 1906.



A monogram of the letters M and O, with the picture or portrait of the applicant placed within the monogram and contained within a rectangular frame, and the words MAIRE'S OWN INDESTRUCTIBLE ROOF PRESERVER AND CEMENT. A. E. MAIRE, MANUFACTURER & SOLE OWNER displayed around the letter O.

SER. No. 16,696. STOCK AND POULTRY FOOD. WILLIAM S. BROWN, Rogersville, Tenn. Filed Feb. 2, 1906.



William S. Brown

The picture and facsimile signature of William S. Brown.

SER. No. 16,725. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio. Filed Feb. 3, 1906.



The representations of three wheels within each other, associated with the representations of four wings, together with a star arranged in a circle.

SER. No. 16,745. CATHARTIC PILLS. JOHN TALFORD, Brooklyn, N. Y. Filed Feb. 5, 1906.



The representation of an angel with a sprig of herbs in one hand.

SER. No. 16,746. DISINFECTANTS IN LIQUID AND POWDERED FORM. MASURY, YOUNG & CO, Boston, Mass. Filed Feb. 5, 1906.

MYCO—
DISINFECTO

The hyphenated word MYCO-DISINFECTO.

SER. No. 16,756. VETERINARY LINIMENTS. M M GORDLEY, Mount Olivet, Ky. Filed Feb. 5, 1906.

GORDLEY'S
LINIMENT!



The words GORDLEY'S LINIMENT and the portrait of the proprietor.

SER. No. 16,765. REPLAY-CARD-GAME APPARATUS. THE DUPLICATE WHIST COMPANY, New York, N.Y. Filed Feb. 5, 1906. Used ten years.

Duplicate

The word DUPLICATE.

SER. No. 16,788. ROUND BOTTLES, SUBSTANTIALLY ONE-HALF OF WHICH ARE THE BODIES AND ONE-HALF THE NECKS, THE BODIES BEING SHORT AND SQUAT AND THE NECKS TAPERING TO THE TOP. MARIANI & CO, New York, N. Y. Filed Feb. 6, 1906. Used ten years.

COCA MARIANI

The words COCA MARIANI.

SER. No. 16,798. TOOTH-POWDER. WILLIAM BRUSH, Hoboken, N. J. Filed Feb. 6, 1906.



The picture of applicant holding a plaster teeth-impression in his hands, and surrounded by four tooth-brushes.

SER. No. 16,878. NAPHTHA. STANDARD OIL CO. OF NEW YORK, New York, N. Y. Filed Feb. 7, 1906.



The representation of an automobile and the people therein. Above the automobile appears the word "NAPHTHA" and above this the words "PRATT'S MOTOR CAR SPIRITS" with a star before the first word and a star after the last word. Below the automobile are the words "STANDARD OIL CO. OF NEW YORK", and below these the address "26 BROADWAY, NEW YORK, U.S.A.," the whole being inclosed in a heavy circular line.

SER. No. 16,889. ALMOND PASTE. HENRY HEIDE, New York, N. Y. Filed Feb. 10, 1906. Used ten years.

GENUINE.

The word GENUINE.

SER. No. 16,902. WHISK-BROOMS. JAMES S. BARRON & COMPANY, New York, N. Y. Filed Feb. 10, 1906.

"MUDWISK"

The arbitrarily-selected and fanciful word "MUDWISK" inclosed in quotation-marks.

SER. No. 16,962. GOTHIC-SHAPED BOTTLES WITH GOTHIC DECORATIONS AND GOTHIC ROSACE IN AMPHORA SHAPE. MARIANI & CO, New York, N. Y. Filed Feb. 12, 1906.

MARIANI-LIQUEUR

The hyphenated word MARIANI-LIQUEUR in the fanciful type shown.

SER. No. 16,968. COTTON PIECE GOODS. AMORY, BROWNE & CO, Boston, Mass. Filed Feb. 12, 1906.

FORTUNE

A wheel with a wing attached thereto, in connection with the word FORTUNE.

SER. No. 17,032. RIBBONS. KOHN, ADLER & CO. Philadelphia, Pa. Filed Feb. 14, 1906.



A portrait of William Penn within a circle, having the following words printed thereon. "WM. PENN FOUNDER OF PENNSYLVANIA."

SER. No. 17,114. READY FELT ROOFING. NATIONAL COAL TAR COMPANY, Boston, Mass. Filed Feb. 16, 1906.



The representation of a caoutchouc-tree, the sap from which is being collected by a man standing upon the ground. Across the upper part of the tree appear the words "KACHOOKA ROOFING."

SER. No. 17,186. CIGARS. HEINEMAN BROS., Baltimore, Md. Filed Feb. 19, 1906.



The words "THE SQUIRE," associated with the representation of the head of a man in silk hat smoking a cigar.

SER. No. 17,194. SERIAL PUBLICATIONS RELATING TO THE BUSINESS OF RAILROADS AND CONTAINING INFORMATION WITH RESPECT THERETO. THE RAILWAY EQUIPMENT & PUBLICATION CO, New York, N. Y. Filed Feb. 20, 1906.

THE OFFICIAL RAILWAY EQUIPMENT REGISTER

The words "THE OFFICIAL RAILWAY EQUIPMENT REGISTER."

SER. No. 17,195. SERIAL PUBLICATIONS RELATING TO THE BUSINESS OF RAILROADS AND CONTAINING INFORMATION WITH RESPECT THERETO. THE RAILWAY EQUIPMENT & PUBLICATION CO, New York, N. Y. Filed Feb. 20, 1906. Used ten years.

THE POCKET LIST
OF
RAILROAD OFFICIALS.

The words "THE POCKET LIST OF RAILROAD OFFICIALS."

SER. No. 17,219. KNITTING-MACHINE NEEDLES. EXCELSIOR NEEDLE COMPANY, Torrington, Conn. Filed Feb. 21, 1906. Used ten years.



The word STANDARD upon a strip across the representation of a shield.

SER. No. 17,328. NEGLIGÉE SHIRTS, GOLF-SHIRTS, STIFF-BOSOM SHIRTS, DRESS-SHIRTS, AND FLANNEL OUTING-SHIRTS. REGENT SHIRT COMPANY, New York, N. Y. Filed Feb. 24, 1906.



The words "FIG LEAF," associated with the representation of a fig-leaf.

SER. No. 17,333. PRINTED COTTON FABRICS. PACIFIC MILLS, Lawrence, Mass. Filed Feb. 24, 1906.



The representation of a twig of an olive-tree with leaves and fruit thereon, and inclosed by an oval border.

SER. No. 17,395. HEEL-SHAVES AND DUPLICATE BLADES FOR HEEL-SHAVES. SNELL & ATHERTON, Brockton, Mass. Filed Feb. 28, 1906. Used ten years.

SER. No. 17,395.

O. E. D.

The letters O. E. D.

SER. No. 17,418. GAME. CHILDREN'S AMUSEMENT CO., West Haven, Conn. Filed Feb. 26, 1906.

IMADOLL

The word "IMADOLL."

SER. No. 17,432. DRIED FRUIT. CASTLE BROTHERS, INCORPORATED, San Francisco, Cal. Filed Mar. 1, 1906. Used ten years.



The representation of a stem bearing primroses and foliage

SER. No. 17,433. DRIED FRUIT. CASTLE BROTHERS, INCORPORATED, San Francisco, Cal. Filed Mar. 1, 1906.



The representation of a girl shooting an arrow from a bow into the center of a target affixed to a tree.

SER. No. 17,434. DRIED FRUIT. CASTLE BROTHERS, INCORPORATED, San Francisco, Cal. Filed Mar. 1, 1906. Used ten years.



The representation of a castle in a circle.

SER. No. 17,446. PRINTED AND DYED TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa. Filed Mar. 1, 1906.



The letter I arranged between two leafed branches and surmounted by a crown.

SER. No. 17,450. SHOTGUNS. VON LENGERKE & DETMOLD, New York, N. Y. Filed Mar. 1, 1906.

KNOCK-ABOUT

The hyphenated word "KNOCK-ABOUT."

SER. No. 17,465. GINGHAMS. JULIUS H PRIOR, New York, N. Y. Filed Mar. 2, 1906.



The word "EQUITY" above and below which are scrolls, and on opposite sides, the words "EQUITY" and "STAPLES" each of the latter two words being contained within an oblong design of approximately rectangular outline.

SER. No. 17,494. TWIST DRILLS. B. M. JONES & CO INCOR. Boston, Mass. Filed Mar. 3, 1906. Used ten years.

MUSHET

The word "MUSHET."

SER. No. 17,496. MOCCASINS. M. L. GETCHELL COMPANY, Monmouth, Me. Filed Mar. 3, 1906. Used ten years.



The characters X X in connection with the words MONMOUTH MOCCASINS.

SER. No. 17,615. SCRUBBING-SOAP. FRED FEAR & COMPANY, New York, N. Y. Filed Mar. 6, 1906.

SCRUB-E-Z

The word SCRUB-E-Z.

SER. No. 17,605. HAVANA CIGARS. HAVANA COMMERCIAL COMPANY, Jersey City, N. J., and New York, N. Y. Filed Mar. 6, 1906. Used ten years.

A DE VILLAR
AVY
Y VILLAR

The words and abbreviation A DE VILLAR located above a monogram composed of the letters A V Y V, and of the abbreviation and word Y VILLAR located below said monogram.

SER. No. 17,636. COAL. THE LEHIGH COAL & NAVIGATION COMPANY, Philadelphia, Pa. Filed Mar. 7, 1906.



A red circular figure and the words "OLD COMPANY'S LEHIGH" arranged in a circle about the same.

SER. No. 17,650. CHOCOLATE CANDIES. TROWBRIDGE CHOCOLATE CHIP COMPANY, Meadville, Pa. Filed Mar. 8, 1906.

TROWCO

The word TROWCO.

SER. No. 17,655. CHEWING-TOBACCO. HOFFMAN AND CO, Red Hook, N. Y. Filed Mar. 8, 1906.

YELLOW SPOT

The words "YELLOW SPOT," and the representation of a yellow disk surrounded by a border of smaller disks.

SER. No. 17,692. PIPE AND CIGARETTE TOBACCO. THE SUBRUG COMPANY, New York, N. Y. Filed Mar. 9, 1906.

Grain

The word "GRAIN."

SER. No. 17,697. LEATHER BOOTS AND SHOES. THE SELBY SHOE CO, Portsmouth, Ohio. Filed Mar. 9, 1906.



The words "THE SELBY SHOE CO" located within a border representing a tied shoe-lace, the ends whereof pass through eyelets, and between the eyelets the monogram "THE S S Co." is produced.

SER. No. 17,797. WHISKY. JAMES R HOGG, Poplar Bluff, Mo. Filed Mar. 13, 1906.



The word JIM, associated with the pictorial representation of a number of hogs and ears of corn, arranged above the word "WHISKEY."

SER. No. 17,802. CANNED FRUITS AND VEGETABLES. BOOTH PACKING COMPANY, Baltimore, Md. Filed Mar. 14, 1906. Used ten years.



Concentric diamond-shaped figures bearing the words "DIAMOND BRAND" and rays radiating from the outer figure.

SER. No. 17,816. SELF-SEALING GLASS JARS. FISHER, BRUCE & Co., Philadelphia, Pa. Filed Mar. 14, 1906.

BANNER

The word BANNER.

SER. No. 17,834. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 15, 1906. Used ten years.

DOUBLE ANCHOR

The words DOUBLE ANCHOR.

SER. No. 17,849. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 15, 1906. Used ten years.

MARRIMANS

The word MARRIMANS.

SER. No. 17,905. HAIR AND WOOL CLIPPERS AND THEIR PARTS. AMERICAN SHEARER MANUFACTURING CO, Nashua, N. H. Filed Mar. 15, 1906. Used ten years.

PRIEST'S

The word PRIEST'S.

SER. No. 17,910. TEA. CHASE & SANBORN, Boston, Mass. Filed Mar. 15, 1906.

EMPERORS

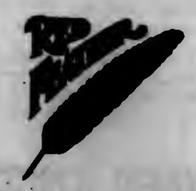
The word EMPERORS in block Roman capital letters.

SER. No. 17,943. WHISKY. BACHTOLD & ACKERMANN, Walla Walla, Wash. Filed Mar. 16, 1906.



The words "BLUE STEM" on a shaded background and embellished with leaves and heads of grain.

SER. No. 17,944. SMOKING AND CHEWING TOBACCO. WESTERN TOBACCO WORKS, La Crosse, Wis. Filed Mar. 16, 1906.



The words "RED FEATHER." Associated therewith is the pictorial representation of a red feather.

SER. No. 17,947. WHISKY. SCHUTZ & KLAWANS, Chicago, Ill. Filed Mar. 16, 1906.



The word "CELESTIAL," associated with a design showing five flying angels inclosed in concentric circles surrounded by a shaded background representing a portion of the sky and showing a number of small ornamental stars above the circular design and between the letters of the word.

SER. No. 17,973. LEATHER SHOES. FREDERICK LOESER & CO, New York, N. Y. Filed Mar. 17, 1906.

GRENADIER

The word "GRENADIER."

SER. No. 18,008. TOILET SOAPS. DAVID S. BROWN, New York, N. Y. Filed Mar. 19, 1906. Used ten years.

COLD CREAM AND GLYCERINE

The words COLD CREAM AND GLYCERINE.

SER. No. 18,020. STRAW HATS. BLUM & KOCH, New York, N. Y. Filed Mar. 19, 1906.

B&K

The letter B, the letter K and the character & between them.

SER. No. 18,048. BRUSSELS RUGS. SCHOFIELD, MASON & CO., Philadelphia, Pa. Filed Mar. 20, 1906.

ARUNDEL

The word "ARUNDEL."

SER. No. 18,058. CIGARS, CHEROOTS, AND STOGIES. VICENTE PORTUONDO CIGAR MANUFACTURING COMPANY, Philadelphia, Pa. Filed Mar. 20, 1906.

SER. No. 18,058.

Vicente Portuondo

The facsimile signature of the late Vicente Portuondo, together with the letters "V" and "P" joined by the representation of a cigar.

SER. No. 18,110. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 22, 1906.

V C

The letters V C.

SER. No. 18,319. SOAP. THE MAZO MANUFACTURING COMPANY, St. Louis, Mo. Filed Mar. 26, 1906.



The word "MAZO."

SER. No. 18,350. CIGARS. LAWRENCE K. POPE, Chicago, Ill. Filed Mar. 29, 1906.



The representation of an Indian in the act of discharging a cigar-shaped arrow upon which appears the word "ARROW."

SER. No. 18,354. TRADE JOURNALS. WARE BROS. COMPANY, Philadelphia, Pa. Filed Mar. 29, 1906.

VEHICLE DEALER

The words "VEHICLE DEALER."

SER. No. 18,380. CIRCULAR, BAND, HAND, AND CROSSCUT SAWS. JOSHUA OLDHAM AND SONS, Brooklyn, N. Y. Filed Mar. 30, 1906. Used ten years.

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STERLING

The symbol of the English pound-sterling and the United States dollar-mark arranged in alinement one with the other in the order noted, with the word STERLING arranged thereunder.

SER. No. 18,387. SAFETY-PINS. THE AMERICAN PIN COMPANY, Waterville, Conn. Filed Mar. 31, 1906.



A red Greek cross, printed upon a white background.

SER. No. 18,509. SOAP. CRESENOLA SOAP CO, Gloversville, N. Y. Filed Apr. 4, 1906.

CRESENOLA

The word "CRESENOLA."

SER. No. 18,560. SOAP. PRATT FOOD COMPANY, Philadelphia, Pa. Filed Apr. 6, 1906.



The head of a horse in harness upon a contrasting background and circumscribed by a ring, the whole being arranged centrally upon a serrated seal, having the words "PRATTS HARNESS SOAP" circularly arranged between said ring and the edge of said seal.

SER. No. 18,603. CHEWING-TOBACCO. BAILEY BROTHERS INC, Winston-Salem, N. C. Filed Apr. 7, 1906.



The words "BIG STICK," and the pictorial representation of a big stick, or club.

SER. No. 18,615. SMOKING-TOBACCO. THE J. P. LAHR TOBACCO CO., Toledo, Ohio. Filed Apr. 9, 1906.

OLD CHRISTOPHER

The words "OLD CHRISTOPHER."

SER. No. 18,867. TOOL-STEEL. FIFTH STERLING STEEL COMPANY, Pittsburg, Pa. Filed Apr. 17, 1906.

SPEEDICUT

The word "SPEEDICUT."

SER. No. 18,899. SHOTGUNS, RIFLES, AND PISTOLS. THE MARLIN FIRE ARMS COMPANY, New Haven, Conn. Filed Apr. 18, 1906.

M. F. A. Co

The letters and abbreviation M. F. A. Co.

SER. No. 19,021. RUSKS. HERKES-VANDER MAATEN CO, Orange City, Iowa. Filed Apr. 23, 1906.



The representation of a shield which is within a scroll-border, and upon which shield the monogram E M Co. is produced, together with the representation of sprays of grain, and said shield is shown as supported by a Dutch boy and a Dutch girl, represented as standing on the bottom portion of the scroll, one at each side of the shield.

PHOTO-LITHOGRAPHED BY
SACKETT & WILHELMS
LITHOGRAPHING & PRINTING CO.
NEW YORK

TRADE-MARKS

REGISTERED MAY 22, 1906.

52,825. LEATHER BOOTS AND SHOES. BRADLEY & METCALF COMPANY, Milwaukee, Wis.

The figure of a boot mounted on wheels and drawn by a pair of running horses having a driver seated on the boot, this driver being a bearded man in scant flowing drapery, carrying a scythe, the blade of which scythe extends forward over his left shoulder.

Filed April 10, 1905. Serial No. 1,033. PUBLISHED MARCH 27, 1906.

52,826. WOMEN'S BONNETS, HATS, AND HEAD-DRESSES. KATHARINE GANDY, New York, N. Y.

A full-faced representation of the head of a cat centrally placed in a circular background slightly larger than the head aforesaid, the ears of the cat projecting beyond the limits of the circular background.

Filed April 29, 1905. Serial No. 3,603. PUBLISHED MARCH 27, 1906.

52,827. SAFES. HERRING-HALL-MARVIN SAFE COMPANY, Hamilton, Ohio, and New York, N. Y.

A monogram composed of the letters "H," "H," and "M," the letters "H" having one vertical member in common, while the outer members of the letter "M" are formed by the lower portions of the outer vertical members of the letters "H," said monogram being encircled by letters forming the word "SAFECRAFT" reading in opposite directions, the letters "S" and "T" being present but once, while the remaining letters are repeated to the right and left, respectively.

Filed May 31, 1905. Serial No. 7,107. PUBLISHED MARCH 27, 1906.

52,828. RAIN-PROOF COATS. LIPPMAN E. HESS, Philadelphia, Pa.

The words "ALL WEATHER" in quotation-marks inclosed in concentric circles.

Filed April 13, 1905. Serial No. 1,364. PUBLISHED MARCH 27, 1906.

52,829. LEATHER BOOTS AND SHOES. J. B. HUNTER, Zanesville, Ohio.

A symbol comprising a scroll formed of a central portion having convex upper and lower edges from which extend end portions having outer convex edges and upper and lower sides which converge toward the central portion.

Filed April 26, 1905. Serial No. 3,100. PUBLISHED MARCH 27, 1906.

52,830. BRUSHES OF ALL KINDS. JOHN L. WHITING & SON CO., Boston, Mass.

The word "NUBIAN." Used ten years.

Filed April 29, 1905. Serial No. 3,572. PUBLISHED MARCH 27, 1906.

52,831. BRUSHES OF ALL KINDS. JOHN L. WHITING & SON CO., Boston, Mass.

The word "STERLING." Used ten years.

Filed April 29, 1905. Serial No. 3,573. PUBLISHED MARCH 27, 1906.

52,832. BRUSHES OF ALL KINDS. JOHN L. WHITING & SON CO., Boston, Mass.

The word "NATIONAL." Used ten years.

Filed April 29, 1905. Serial No. 3,575. PUBLISHED MARCH 27, 1906.

52,833. BRUSHES OF ALL KINDS. JOHN L. WHITING & SON CO., Boston, Mass.

The word "KING." Used ten years.

Filed April 29, 1905. Serial No. 3,577. PUBLISHED MARCH 27, 1906.

52,834. BRUSHES OF ALL KINDS. JOHN L. WHITING & SON CO., Boston, Mass.

The word "ACHILLES." Used ten years.

Filed April 29, 1905. Serial No. 3,578. PUBLISHED MARCH 27, 1906.

52,835. BRUSHES OF ALL KINDS. JOHN L. WHITING & SON CO., Boston, Mass.

The word "NABOB."

Filed April 29, 1905. Serial No. 3,580. PUBLISHED MARCH 27, 1906.

52,836. BRUSHES OF ALL KINDS. JOHN L. WHITING & SON CO., Boston, Mass.

The word "PEARL." Used ten years.

Filed April 29, 1905. Serial No. 3,581. PUBLISHED MARCH 27, 1906.

52,837. BRUSHES OF ALL KINDS. JOHN L. WHITING & SON CO., Boston, Mass.

The word "KAISER." Used ten years.

Filed April 29, 1905. Serial No. 3,582. PUBLISHED MARCH 27, 1906.

52,838. BRUSHES OF ALL KINDS. JOHN L. WHITING & SON CO., Boston, Mass.

The word "DUDE." Used ten years.

Filed April 29, 1905. Serial No. 3,583. PUBLISHED MARCH 27, 1906.

52,839. WATCHES, WATCHCASES, WATCH-MOVEMENTS, AND PARTS THEREOF. NEW YORK STANDARD WATCH CO., Jersey City, N. J.

The representation of a globe surrounded by clouds and on which is perched an eagle with outstretched wings and having a timepiece suspended from its beak, the globe bearing the words "THE BEST WATCH IN THE WORLD FOR THE MONEY."

Filed April 19, 1905. Serial No. 2,271. PUBLISHED MARCH 27, 1906.

52,840. STERLING-SILVER JEWELRY FOR PERSONAL ADORNMENT. THEODORE W. FOSTER & BRO. CO., Providence, R. I.

The letters and character "F. & B."

Filed June 9, 1905. Serial No. 7,755. PUBLISHED MARCH 27, 1906.

52,841. COLLARS AND CUFFS. WILLIAM BARKER COMPANY, Watervliet, N. Y.

The pictorial representation of a dog's head holding in its mouth a shirt-collar and having around its neck a dog-collar on which the word "BARKER" appears, the dog's head being disposed within a double ring or border in which the words "BARKER BRAND" appear.

Filed May 9, 1905. Serial No. 4,805. PUBLISHED MARCH 27, 1906.

52,842. PERIODICALLY-ISSUED STORY-PAPER. THE A. D. PORTER COMPANY, New York, N. Y.

The words "THE HOUSEWIFE."

Filed June 7, 1905. Serial No. 7,616. PUBLISHED MARCH 27, 1906.

52,843. DETONATING-CAPS AND BLASTING-FUSES. THE AETNA POWDER CO., Chicago, Ill.

The representation of a shield bearing the words "LION BRAND" and the representation of a lion rampant.

Filed May 15, 1905. Serial No. 5,659. PUBLISHED MARCH 27, 1906.

52,844. ELECTRIC SWITCHES AND PARTS THEREOF AND MOUNTINGS AND INCLOSURES THEREFOR. D. & W. FUSE CO., Providence, R. I.

The letters and character "D & W."

Filed May 11, 1905. Serial No. 5,130. PUBLISHED MARCH 27, 1906.

52,845. BONE FERTILIZER. F. S. ROYSTER GUANO CO., Norfolk, Va.

The words "FARMER'S BONE." Used ten years.

Filed April 20, 1905. Serial No. 2,469. PUBLISHED MARCH 27, 1906.

52,846. LUMBER-HANDLING LEVER. JOHN M. FERRISS, Jr., Tacoma, Wash.

The hyphenated word "MACK-JACK."

Filed December 2, 1905. Serial No. 15,154. PUBLISHED MARCH 27, 1906.

52,847. CERTAIN NAMED PRINTERS' SUPPLIES. GERSTENDORFER BROS., New York, N. Y.

The representation of a star having a circular field within the same upon which appears the letter "G" inclosing the representation of an easel supporting a panel upon which is arranged the abbreviation "BROS."

Filed April 26, 1905. Serial No. 3,060. PUBLISHED MARCH 27, 1906.

52,848. CERTAIN NAMED ELECTRICAL APPLIANCES. THE HART MANUFACTURING COMPANY, Hartford, Conn.

The word "DIAMOND," associated with the letter "H."

Filed May 23, 1905. Serial No. 6,355. PUBLISHED MARCH 27, 1906.

52,849. ASH-SIFTERS. JOSEPH P. HILL, Worcester, Mass.

The word "HUSTLER," which has quotation-marks before and after it.

Filed June 8, 1905. Serial No. 7,716. PUBLISHED MARCH 27, 1906.

52,850. LAUNDRY SOAP. J. G. HAAS SOAP CO., St. Louis, Mo.

The word "CALICO" printed in the upper left-hand corner of a rectangular field, and across the lower right-hand corner of which field appears a straight band, and in the lower right-hand corner of the field, below this band, is a rectangular field on which appears a shield bearing the letters "O K" in the form of a monogram, there being the representation of an eagle above said shield, the representation of a unicorn on the left-hand side of said shield, and the representation of a lion on the right-hand side of said shield.

Filed April 10, 1905. Serial No. 960. PUBLISHED MARCH 27, 1906.

52,851. BRUSHES OF ALL KINDS. JOHN L. WHITING & SON CO., Boston, Mass.

The word "VULCAN." Used ten years.

Filed April 29, 1905. Serial No. 3,591. PUBLISHED MARCH 27, 1906.

52,852. BRUSHES OF ALL KINDS. JOHN L. WHITING & SON CO., Boston, Mass.

The word "KRAKO." Used ten years.

Filed April 29, 1905. Serial No. 3,592. PUBLISHED MARCH 27, 1906.

52,853. POCKET-KNIVES. ADOLPH KASTOR & BROS., New York, N. Y.

The arbitrary words "TIP TOP."

Filed June 2, 1905. Serial No. 7,288. PUBLISHED MARCH 27, 1906.

52,854. FARM-WAGONS. KENTUCKY WAGON MANUFACTURING COMPANY, Louisville, Ky.

The word "BLUEGRASS."

Filed April 29, 1905. Serial No. 3,652. PUBLISHED MARCH 27, 1906.

52,855. FARM-WAGONS AND DUMP-CARTS. KENTUCKY WAGON MANUFACTURING COMPANY, Louisville, Ky.

The words "OLD HICKORY."

Filed May 5, 1905. Serial No. 4,413. PUBLISHED MARCH 27, 1906.

52,856. FARM-WAGONS. KENTUCKY WAGON MANUFACTURING COMPANY, Louisville, Ky.

The word "TENNESSEE" in quotation-marks on a panel. Used ten years.

Filed May 12, 1905. Serial No. 5,355. PUBLISHED MARCH 27, 1906.

52,857. INSULATING-TAPE. MASSACHUSETTS CHEMICAL COMPANY, Walpole, Mass.

The word "DEYFIELD."

Filed December 13, 1905. Serial No. 15,383. PUBLISHED MARCH 27, 1906.

52,858. BISCUIT OR CRACKERS. THE NATURAL FOOD COMPANY, Niagara Falls, N. Y.

The conventional representation of the mythological character Ceres represented as holding a lighted torch in one hand and a sheaf of wheat in the other.

Filed June 3, 1905. Serial No. 7,383. PUBLISHED MARCH 27, 1906.

52,859. WATCHES, WATCHCASES, AND WATCH-MOVEMENTS. PHILADELPHIA WATCH CASE CO., Riverside, N. J.

The word "EXCELSIOR."

Filed May 8, 1905. Serial No. 4,595. PUBLISHED MARCH 27, 1906.

52,860. METALLIC PENS. THE SPENCERIAN PEN CO., New York, N. Y.

The arbitrarily-coined word "SPENCERIAN."

Filed May 6, 1905. Serial No. 4,468. PUBLISHED MARCH 27, 1906.

52,861. TELEPHONE-SWITCHBOARDS. THE SUMTER TELEPHONE MFG. CO., Sumter, S. C.

The arbitrary word-symbol "UNITYPE."

Filed December 1, 1905. Serial No. 15,118. PUBLISHED MARCH 27, 1906.

52,862. LEATHER TURNED SHOES. CHARLES O. TIMSON, Lynn, Mass.

The word "FOOT-EASE" arranged on a panel extending across the middle of the representation of a human foot which is surrounded by the outline of a shoe.

Filed May 13, 1905. Serial No. 5,563. PUBLISHED MARCH 27, 1906.

52,863. CULTIVATORS. THE WHITMAN & BARNES MANUFACTURING COMPANY, Akron, Ohio.

A representation of a diamond-shaped figure with the letters and character "W" "&" "B" "Co" placed in the respective corners thereof.

Filed December 15, 1905. Serial No. 15,445. PUBLISHED MARCH 27, 1906.

52,864. BRUSHES OF ALL KINDS. JOHN L. WHITING & SON CO., Boston, Mass.

The word "OKATEX."

Filed April 29, 1905. Serial No. 3,571. PUBLISHED MARCH 27, 1906.

52,865. BRUSHES OF ALL KINDS. JOHN L. WHITING & SON CO., Boston, Mass.

The word "PURITAN." Used ten years.

Filed April 29, 1905. Serial No. 3,584. PUBLISHED MARCH 27, 1906.

52,866. BRUSHES OF ALL KINDS. JOHN L. WHITING & SON CO., Boston, Mass.

The words "HARD PAN." Used ten years.

Filed April 29, 1905. Serial No. 3,586. PUBLISHED MARCH 27, 1906.

52,867. BRUSHES OF ALL KINDS. JOHN L. WHITING & SON CO., Boston, Mass.

The word "CONQUEROR." Used ten years.

Filed April 29, 1905. Serial No. 3,587. PUBLISHED MARCH 27, 1906.

52,868. BRUSHES OF ALL KINDS. JOHN L. WHITING & SON CO., Boston, Mass.

The word "MECHANIC." Used ten years.

Filed April 29, 1905. Serial No. 3,588. PUBLISHED MARCH 27, 1906.

52,869. BRUSHES OF ALL KINDS. JOHN L. WHITING & SON CO., Boston, Mass.

The word "HERCULES." Used ten years.

Filed April 29, 1905. Serial No. 3,589. PUBLISHED MARCH 27, 1906.

52,870. BRUSHES OF ALL KINDS. JOHN L. WHITING & SON CO., Boston, Mass.

The word "PILGRIM." Used ten years.

Filed April 29, 1905. Serial No. 3,590. PUBLISHED MARCH 27, 1906.

52,871. FEED-WATER HEATERS. THE NATIONAL PIPE BENDING COMPANY, New Haven, Conn.

The word "NATIONAL." Used ten years.

Filed November 20, 1905. Serial No. 14,845. PUBLISHED MARCH 27 1906.

52,872. MOTOR-VEHICLES, COMMONLY KNOWN AS AUTOMOBILES. PREMIER MOTOR MANUFACTURING COMPANY, Indianapolis, Ind.

The word "PREMIER."

Filed November 21, 1905. Serial No. 14,876. PUBLISHED MARCH 27, 1906.

52,873. GRINDSTONE-FRAMES. THE WHITMAN & BARNES MANUFACTURING COMPANY, Akron, Ohio.

A representation of a diamond-shaped figure with the letters and character "W" "&" "B" "Co" placed in the respective corners thereof.

Filed November 14, 1905. Serial No. 14,597. PUBLISHED MARCH 27, 1906.

52,874. TACK-CLAWS. THE WHITMAN & BARNES MANUFACTURING COMPANY, Akron, Ohio.

A representation of a diamond-shaped figure with the letters and character "W" "&" "B" "Co" placed in the respective corners thereof.

Filed November 16, 1905. Serial No. 14,712. PUBLISHED MARCH 27, 1906.

52,875. SCREW-DRIVERS. THE WHITMAN & BARNES MANUFACTURING COMPANY, Akron, Ohio.

A representation of a diamond-shaped figure with the letters and character "W" "&" "B" "Co" placed in the respective corners thereof.

Filed November 16, 1905. Serial No. 14,716. PUBLISHED MARCH 27, 1906.

52,876. KNIFE-SECTIONS. THE WHITMAN & BARNES MANUFACTURING COMPANY, Akron, Ohio.

A representation of a diamond-shaped figure with the letters and character "W" "&" "B" "Co" placed in the respective corners thereof.

Filed November 16, 1905. Serial No. 14,717. PUBLISHED MARCH 27, 1906.

52,877. HOSIERY. ERNEST BLOOD, Philadelphia, Pa.

The written autograph signature "THE BLOOD MFG. CO." in the handwriting of Ernest Blood, the applicant.

Filed January 11, 1906. Serial No. 16,189. PUBLISHED MARCH 27, 1906.

52,878. ACCORDIONS. CHARLES BRUNO, New York, N. Y.

The representation of a lyre used in connection with the word "LYRA."

Filed December 8, 1905. Serial No. 15,278. PUBLISHED MARCH 27, 1906.

52,879. ENVELOPS AND PAPER. CHARLES J. COHEN & SON, Philadelphia, Pa.

The fanciful title "CARPE DIEM."

Filed November 25, 1905. Serial No. 14,983. PUBLISHED MARCH 27, 1906.

52,880. ENVELOPS AND PAPER. CHARLES J. COHEN & SON, Philadelphia, Pa.

The representation of an envelop and a terrestrial globe emerging therefrom.

Filed November 25, 1905. Serial No. 14,984. PUBLISHED MARCH 27, 1906.

52,881. ENVELOPS AND PAPER. CHARLES J. COHEN & SON, Philadelphia, Pa.

The fanciful title "ZENITH."

Filed November 25, 1905. Serial No. 14,985. PUBLISHED MARCH 27, 1906.

52,882. WHEAT-FLOUR. CORDELL GIN & MILLING COMPANY, Cordell, Okla. Ter.

On a background consisting of radiating lines the letter "X," on which is imposed the word "RAY."

Filed December 14, 1905. Serial No. 15,422. PUBLISHED MARCH 27, 1906.

52,883. WHEAT-FLOUR. ELLENDALE MILLING COMPANY, Ellendale, N. D.

The word "BEAUTIFUL," associated with a bust picture of a woman wearing a high ruff and a crown. Used ten years.

Filed November 27, 1905. Serial No. 15,024. PUBLISHED MARCH 27, 1906.

52,884. OVERALLS. THE GLOBE OVERALL CO., Cincinnati, Ohio.

The representation of a workman swinging a lantern, the position of the lantern being in what is known in railway signaling language as "safe" or "all right," and the word "ALRITE" extending across the representation of the man and inclosed in quotation-marks.

Filed December 20, 1905. Serial No. 15,544. PUBLISHED MARCH 27, 1906.

52,885. BUTTER. FERDINAND GRUNERT, Chicago, Ill.

The words "BLUE LABEL" disposed in two horizontal lines upon a rectangular blue figure or background, said background being disposed obliquely of the margin of the label. Used ten years.

Filed December 7, 1905. Serial No. 15,256. PUBLISHED MARCH 27, 1906.

52,886. HOLLOW ENAMELED STEELWARE. LEFFLER, THIELE & CO., New York, N. Y.

The arbitrarily-selected word "PYROLITE" arranged on an oblong block held in the jaws of a lion's head which is surrounded by a circular band on which the words "IMPORTED QUADRUPLE-COATED WARE" are placed.

Filed December 9, 1905. Serial No. 15,312. PUBLISHED MARCH 27, 1906.

52,887. SPICES. OKLAHOMA WHOLESALE GROCER CO., Oklahoma, Okla. Ter.

The word "QUAIL" and the picture of a quail inclosed by two concentric circles, with grass in the background and with ornamental scrollwork at each side of the circle.

Filed January 23, 1906. Serial No. 16,418. PUBLISHED MARCH 27, 1906.

52,888. STEEL PENS. PAYOT, UPHAM & CO., San Francisco, Cal.

The representation of a similtar and a swastika or fylfot superposed thereon.

Filed December 19, 1905. Serial No. 15,503. PUBLISHED MARCH 27, 1906.

52,889. STEEL PENS. PAYOT, UPHAM & CO., San Francisco, Cal.

The word "AKBAR."

Filed December 19, 1905. Serial No. 15,504. PUBLISHED MARCH 27, 1906.

52,890. CHEESE. POPPER, GRAY & CO., New York, N. Y.

The representation of an ornamental bow of ribbon, upon the knot portion of which appear the letters and abbreviation "P G & Co." in monogram form. Above the bow appear the words "MANHATTAN BRAND" and below the bow the words "CREAM CHEESE," the whole being inclosed within a rectangular border.

Filed January 23, 1906. Serial No. 16,423. PUBLISHED MARCH 27, 1906.

52,891. DRIED FRUITS. S. C. TOOKER & CO., Minneapolis, Minn.

The word "LASS-O."

Filed December 11, 1905. Serial No. 15,336. PUBLISHED MARCH 27, 1906.

52,892. HYDRAULIC CEMENT. UTICA CEMENT MFG. CO., Utica, Ill.

The words "BLACK BALL BRAND" and the representation of a black ball.

Filed December 4, 1905. Serial No. 15,168. PUBLISHED MARCH 27, 1906.

52,893. STUFFED OLIVES. S. J. VALK & BRO., New York, N. Y.

The words "LITTLE ELVES" and the representation of an elf or tiny quaint human figure with one arm akimbo and the other extended holding a stuffed olive.

Filed January 23, 1906. Serial No. 16,433. PUBLISHED MARCH 27, 1906.

52,894. CONDENSED MILK. VERMONT CONDENSED MILK CO., Richmond, Vt., and New York, N. Y.

The representation of a cut and set ruby with its divergent rays, above which is the arbitrarily-selected word "RUBY," associated with the word "BRAND," the whole inclosed in a series of concentric circles.

Filed June 10, 1905. Serial No. 7,837. PUBLISHED MARCH 27, 1906.

52,895. AUTOMOBILES. THE AEROCAR COMPANY, Detroit, Mich.

The word "AEROCAR."

Filed February 23, 1906. Serial No. 17,250. PUBLISHED MARCH 27, 1906.

52,896. AUTOMOBILES. THE AEROCAR COMPANY, Detroit, Mich.

Two concentrically-arranged circles having arranged within the word "AEROCAR" on vertical and horizontal panels intersecting in the form of a cross.

Filed February 23, 1906. Serial No. 17,251. PUBLISHED MARCH 27, 1906.

52,897. BUTTONS. ALMA MANUFACTURING CO., Baltimore, Md.

The arbitrary word "To-Go" and the words "IVORY FINISH," all placed within a circle.

Filed November 18, 1905. Serial No. 14,798. PUBLISHED MARCH 27, 1906.

52,898. CRAYONS. THE AMERICAN CRAYON CO., Sandusky, Ohio.

The words "GILT EDGE." Used ten years.

Filed February 23, 1906. Serial No. 17,246. PUBLISHED MARCH 27, 1906.

52,899. CRAYONS. THE AMERICAN CRAYON CO., Sandusky, Ohio.

The word "HYGIEIA."

Filed February 23, 1906. Serial No. 17,247. PUBLISHED MARCH 27, 1906.

52,900. ELECTRIC SOLDERING-TOOLS. L. P. BROWN & COMPANY, Chicago, Ill.

The word "VULCAN" inclosed in a panel or frame approximately rectangular in outline and having the corners slightly indented.

Filed July 24, 1905. Serial No. 10,743. PUBLISHED MARCH 27, 1906.

52,901. INSULATING COMPOUND. EMIL CALMAN & Co., New York, N. Y.

The name "OHM-LAC."

Filed January 22, 1906. Serial No. 18,403. PUBLISHED MARCH 27, 1906.

52,902. CIGARS, CHEROOTS, AND CIGARETTES MADE OF CIGAR-TOBACCO. CAYEY-CAGUAS TOBACCO CO., New York, N. Y., and Caguas, Porto Rico.

The word "DIADONA."

Filed June 17, 1905. Serial No. 8,433. PUBLISHED MARCH 27, 1906.

52,903. PISTOLS. COLT'S PATENT FIRE ARMS MANUFACTURING COMPANY, Hartford, Conn.

The representation of a colt rampant carrying parts of a spear in its mouth and parts of a spear between its fore legs.

Filed August 1, 1905. Serial No. 11,091. PUBLISHED MARCH 27, 1906.

52,904. PISTOLS. COLT'S PATENT FIRE ARMS MANUFACTURING COMPANY, Hartford, Conn.

The word "COLT" above the representation of a colt rampant carrying parts of a spear in its mouth and parts of a spear between its fore legs, the whole inclosed in a circular panel.

Filed August 1, 1905. Serial No. 11,092. PUBLISHED MARCH 27, 1906.

52,905. FIELD-SEEDS AND GRASS-SEEDS, INCLUDING CLOVER-SEEDS. HORACE E. CONKLIN, Binghamton, N. Y.

The letters "I X L."

Filed March 1, 1906. Serial No. 17,445. PUBLISHED MARCH 27, 1906.

52,906. MAGAZINE OR PERIODICAL. CURRIER-BOYCE COMPANY, Chicago, Ill.

The words "WOMAN'S WORLD."

Filed December 26, 1905. Serial No. 15,650. PUBLISHED MARCH 27, 1906.

52,907. STEEL. CRUCIBLE STEEL COMPANY OF AMERICA, Pittsburg, Pa.

The word "ELECTRO."

Filed February 19, 1906. Serial No. 17,179. PUBLISHED MARCH 27, 1906.

52,908. SCISSORS AND SHEARS. EMIL FORQUIGNON, New York, N. Y.

The word "NEEDLEPOINT."

Filed September 28, 1905. Serial No. 13,109. PUBLISHED MARCH 27, 1906.

52,909. DEVICES FOR CONNECTING BRANCH AND MAIN CIRCUITS. H. T. PAISTE CO., Philadelphia, Pa.

The word "TAPLETE."

Filed February 28, 1906. Serial No. 17,396. PUBLISHED MARCH 27, 1906.

52,910. HORSESHOES. THE INTERNATIONAL UNION OF JOURNEYMEN HORSESHOERS, Denver, Colo.

The letters "J H U" arranged in the form of a monogram.

Filed December 27, 1905. Serial No. 16,060. PUBLISHED MARCH 27 1906.

52,911. MEN'S AND BOYS' LEATHER BOOTS, SHOES, AND SLIPPERS. JAMES A. BANISTER COMPANY, Newark, N. J.

The word "BANISTER." Used ten years.

Filed February 23, 1906. Serial No. 17,269. PUBLISHED MARCH 27, 1906.

52,912. WINDOW-SHADE CLOTH AND SHADES. JAY C. WEMPLE CO., New York, N. Y.

The word "EMPIRE."

Filed November 6, 1905. Serial No. 14,355. PUBLISHED MARCH 27, 1906.

52,913. CIGARETTE-PAPER IN ALL FORMS. LEOPOLD KEHLMANN, New York, N. Y.

The word "SUNRISE."

Filed February 26, 1906. Serial No. 17,365. PUBLISHED MARCH 27, 1906.

52,914. CULINARY UTENSILS MADE OF GALVANIZED WARE. THE LISK MANUFACTURING CO., LIMITED, Canandaigua, N. Y.

The representation of a Maltese cross and the word "LISK" in the middle of the cross. Used ten years.

Filed February 19, 1906. Serial No. 17,164. PUBLISHED MARCH 27, 1906.

52,915. COTTON-BATTING. WILLIAM LOWENTHAL, Cohoes, N. Y.

The word "LILY."

Filed November 21, 1905. Serial No. 14,883. PUBLISHED MARCH 27, 1906.

52,916. VERTICAL-PLANE CAR-COUPLINGS. THE NATIONAL MALLEABLE CASTINGS COMPANY, Cleveland, Ohio.

The word "TOWER." Used ten years.

Filed April 13, 1905. Serial No. 1,335. PUBLISHED MARCH 27, 1906.

52,917. HORSESHOES AND CALKS. THE NEVERSLIP MANUFACTURING COMPANY, New Brunswick, N. J.

The word "NEVERSLIP." Used ten years.

Filed August 12, 1905. Serial No. 11,569. PUBLISHED MARCH 27, 1906.

52,918. TOILET-PAPER. THOMAS F. SPRIGG, Baltimore, Md.

The representation of a growing bush appearing in connection with the words "SANITARY HIGH GRADE THOROUGHLY MEDICATED WITCH-HAZEL TOILET PAPER. EXPRESSLY PREPARED, AND FOR FINE DRUGGISTS' TRADE."

Filed December 26, 1905. Serial No. 15,648. PUBLISHED MARCH 27 1906.

52,919. BUCKETS FOR PUMP-BUCKET CHAINS. THE TEMPLE PUMP COMPANY, Chicago, Ill.

The word "VICTOR." Used ten years.

Filed February 12, 1906. Serial No. 16,949. PUBLISHED MARCH 27, 1906.

52,920. GAS OR OIL ENGINES. THE TEMPLE PUMP COMPANY, Chicago, Ill.

The words "MASTER WORKMAN."

Filed February 23, 1906. Serial No. 17,374. PUBLISHED MARCH 27, 1906.

52,921. CIGARS. JOSEPH WEINREICH, Dayton, Ohio.

The words "U. S. SUPREME JUDGE."

Filed June 12, 1905. Serial No. 7,951. PUBLISHED MARCH 27. 1906.

52,922. MOWER, BINDER, REAPER, AND HEADER KNIFE AND SICKLE HEADS. THE WHITMAN & BARNES MANUFACTURING COMPANY, Akron, Ohio.

A representation of a diamond-shaped figure with the letters and character "W" "&" "B" "Co" placed in the respective corners thereof.

Filed November 14, 1905. Serial No. 14,594 PUBLISHED MARCH 27, 1906.

52,923. CANNED LOBSTER. WILKINSON, GADDIS & Co., Newark, N. J.

The word "IDEAL."

Filed June 17, 1905. Serial No. 8,391. PUBLISHED MARCH 27, 1906.

52,924. CANNED FRUITS AND VEGETABLES. WILKINSON, GADDIS & Co., Newark, N. J.

The word "IDEAL."

Filed June 17, 1905. Serial No. 8,392. PUBLISHED MARCH 27, 1906.

52,925. SEWING-MACHINES AND SEWING-MACHINE PARTS AND ATTACHMENTS. WILLCOX & GIBBS SEWING MACHINE CO., New York, N. Y.

The words "WILLCOX & GIBBS SEWING MACHINE CO." Used ten years.

Filed February 24, 1906. Serial No. 17,318. PUBLISHED MARCH 27, 1906.

52,926. SEWING-MACHINES AND SEWING-MACHINE PARTS AND ATTACHMENTS. WILLCOX & GIBBS SEWING MACHINE CO., New York, N. Y.

The words and letters "WILLCOX & GIBBS S. M. CO." Used ten years.

Filed February 24, 1906. Serial No. 17,320. PUBLISHED MARCH 27, 1906.

52,927. SHOTGUNS AND RIFLES. WINCHESTER REPEATING ARMS CO., New Haven, Conn.

A monogram of the letters "P W" inclosed by an oval.

Filed August 14, 1905. Serial No. 11,627. PUBLISHED MARCH 27, 1906.

52,928. FRESH BEEF, PORK, AND MUTTON. THE AGAR PACKING COMPANY, Des Moines, Iowa.

The capital letter "A" with the head of a hog projecting through said letter "A" and above the bar therein, said letter "A" being placed on a background in which the representation of the sun forms the central portion.

Filed May 18, 1905. Serial No. 6,212. PUBLISHED MARCH 27, 1906.

52,929. MAINSPRINGS FOR TIMEPIECES. BENJAMIN ALLEN, Chicago, Ill.

The letters, character, and abbreviation "B A & Co" on a diamond-shaped figure.

Filed September 7, 1905. Serial No. 12,352. PUBLISHED MARCH 27, 1906.

52,930. SHEETINGS. CAREY, BAYNE & SMITH COMPANY, (INCORPORATED,) New York, N. Y.

The words "COPPER FASTENED" arranged within the representation of a frame on which metal straps are indicated.

Filed November 8, 1905. Serial No. 14,427. PUBLISHED MARCH 27, 1906.

52,931. PAPER AND ENVELOPS. FITZ ALLEN FLINN, New York, N. Y.

The representation of a bell having in its side or face a crack, split, mutilation, or irregular fracture.

Filed October 25, 1905. Serial No. 13,946. PUBLISHED MARCH 27, 1906.

52,932. LEATHER BOOTS AND SHOES. J. B. HUNTER, Zanesville, Ohio.

The word "GOLD."

Filed April 26, 1905. Serial No. 3,101. PUBLISHED MARCH 27, 1906.

52,933. SOAP. MONAHAN ANTISEPTIC CO., Chicago, Ill.

The words "GREEN OIL SOAP." Used ten years.

Filed April 15, 1905. Serial No. 1,754. PUBLISHED MARCH 27, 1906.

52,934. BOOKS ON SALESMANSHIP. THE NATIONAL SCHOOL OF SALESMANSHIP, Minneapolis, Minn.

A representation of the earth resting upon a base having thereon the words "SUCCESS" "FAITH" "WORK" "ROCK OF TRUTH," the whole surrounded by an oval border containing the words "THE NATIONAL SCHOOL OF SALESMANSHIP, MINNEAPOLIS."

Filed October 5, 1905. Serial No. 13,352. PUBLISHED MARCH 27, 1906.

52,935. LEATHER BOOTS AND SHOES. AL. A. ROSENBUSH & Co., Boston, Mass.

The representation of a black eagle with wings outspread standing on a pedestal behind a red shield, with scroll ribbons flowing from the shield, upon which appear the words "BLACK EAGLE."

Filed June 5, 1905. Serial No. 7,474. PUBLISHED MARCH 27, 1906.

52,936. CANNED FRUITS AND VEGETABLES. S. HAMILL COMPANY, Keokuk, Iowa.

The words "OLIVE BRANCH," beneath which are arranged two olive branches bearing clusters of olives, and between which branches is a central ornamental figure.

Filed April 1, 1905. Serial No. 78. PUBLISHED MARCH 27, 1906.

52,937. CHOCOLATE. SOCIÉTÉ GÉNÉRALE SUISSE DE CHOCOLATS, Vevay, Switzerland.

The word "GALA."

Filed August 23, 1905. Serial No. 11,935. PUBLISHED MARCH 27, 1906.

52,938. CHOCOLATE. SOCIÉTÉ GÉNÉRALE SUISSE DE CHOCOLATS, Vevay, Switzerland.

The word "DELTA."

Filed August 24, 1905. Serial No. 11,953. PUBLISHED MARCH 27, 1906.

52,939. ENAMELED-STEELWARE HOUSEHOLD AND COOKING UTENSILS. MAURICE STRANSKY, New York, N. Y.

The words "THE WARE THAT WEARS." Used ten years.

Filed October 9, 1905. Serial No. 13,432. PUBLISHED MARCH 27. 1906.

52,940. CONDENSED MILK. VERMONT CONDENSED MILK Co., Richmond, Vt., and New York N. Y.

The representation of the bust of a child in night-cap and night-gown surrounded by a scroll or wreath and dots and above the whole the arbitrarily-selected word "DOT," associated with the word "BRAND."

Filed June 10, 1905. Serial No. 7,831. PUBLISHED MARCH 27, 1906.

52,941. CONDENSED MILK. VERMONT CONDENSED MILK Co., Richmond, Vt., and New York, N. Y.

The arbitrarily-selected words "ECLIPSE JUNIOR."

Filed June 10, 1905. Serial No. 7,834. PUBLISHED MARCH 27. 1906.

52,942. GAS-BURNERS AND MANTLES THEREFOR. WELSBACH LIGHT COMPANY, Gloucester City, N. J.

The word "WELSBACH." Used ten years.

Filed October 17, 1905. Serial No. 13,700. PUBLISHED MARCH 27, 1906.

52,943. AXES. AMERICAN TOOL COMPANY, Highland Park, Ky.

The name "W. K. THOMPSON" printed or impressed in the particular or distinctive manner disclosed—that is to say, the letters of said name increasing gradually in height from the center to the opposite ends of the name, said name being associated with scrolls arranged above and below the same.

Filed October 6, 1905. Serial No. 13,363. PUBLISHED MARCH 27, 1906.

52,944. CHEWING AND SMOKING TOBACCO. THE BLOCH BROS. TOBACCO CO., Wheeling, W. Va.

The words "MERRY WORLD," associated with a conventional representation of the world upon which is delineated a smiling face, parallels of latitude and longitude appearing on the world where the features of the depicted face are not thereby rendered indistinct.

Filed December 4, 1905. Serial No. 15,193. PUBLISHED MARCH 27, 1906.

52,945. CARBONATED TONIC BEVERAGE AND THE EXTRACT FOR MAKING THE SAME. BLUE SEAL SUPPLY CO., Boston, Mass.

The representation of a bear standing erect and holding a stick in its paws, associated with the hyphenated word "RON-BRE," both being inclosed in scroll ornamentation and all being inclosed in a rhombus.

Filed September 12, 1905. Serial No. 12,506. PUBLISHED MARCH 27, 1906.

52,946. FURS IN THE PIECE AND FUR GARMENTS. MAX BOWSKY, New York, N. Y.

The representation of the head of a dog wearing a collar on which appear the words "OLD RELIABLE."

Filed October 14, 1905. Serial No. 13,597. PUBLISHED MARCH 27, 1906.

52,947. SKIRTS AND PETTICOATS. BROWN, DURRELL & Co., Boston, Mass., assignors, by mesne assignments, to Brown, Durrell Co., Boston, Mass., a Corporation of Massachusetts.

The word "KINGSTON." Used ten years.

Filed October 5, 1905. Serial No. 13,143. PUBLISHED MARCH 27, 1906.

52,948. SHEETINGS AND DRILLINGS. BUFFALO COTTON MILLS, Buffalo, S. C.

The representation of a Chinese boy having an apple on his shoulder, the whole being arranged within a circular border, and below the same the word "ORCHARD" and the representation of two apples.

Filed November 8, 1905. Serial No. 14,424. PUBLISHED MARCH 27, 1906.

52,949. VANILLA-OIL. CORRIZO EXTRACT CO., New York, N. Y.

The word "VANOLEUM."

Filed November 6, 1905. Serial No. 14,366. PUBLISHED MARCH 27, 1906.

52,950. DRY BATTERIES. EMPIRE STATE DRY BATTERY Co., New York, N. Y.

A star-shaped figure, and inscribed in a circle around which are printed the words "PROMPTITUDE RELIABILITY QUALITY HONESTY EXPERIENCE." In the middle of the star are printed the words "WHITE STAR."

Filed October 16, 1905. Serial No. 13,647. PUBLISHED MARCH 27, 1906.

52,951. WHEAT-FLOUR. THE GEARY MILLING & ELEVATOR COMPANY, Geary, Okla. Ter.

The representation of a dog's head, the words "THE FLOUR OF PURITY" above, and the words, character, and abbreviation "GEARY MILL & ELEVATOR CO'S TRUE FRIEND, GEARY, OKLA.," which, together with ornamental scrolls, are inclosed in an elliptical frame below the representation of the dog's head.

Filed November 22, 1905. Serial No. 14,901. PUBLISHED MARCH 27, 1906.

52,952. WORSTED, WOOLEN, AND COTTON MIXED PIECE GOODS. GRIFFON COMPANY, New York, N. Y.

The words "GOLD SELVEDGE."

Filed October 7, 1905. Serial No. 13,416. PUBLISHED MARCH 27, 1906.

52,953. SPECTACLES, EYEGLASSES, AND LENSES. A. K. HAWKES, Atlanta, Ga.

The representation of two eyes, the word "HAWKES" and a scroll being placed between said eyes, and a pair of spectacles located below said eyes and showing on the center of the same a crystal with rays radiating therefrom and the words "CRYSTALIZED LENSES" below the spectacles, the whole being surrounded by a plain border straight at the upper part and curved at the sides and lower part. Used ten years.

Filed November 1, 1905. Serial No. 14,161. PUBLISHED MARCH 27, 1906.

52,954. WHEAT-FLOUR. HIGHLAND MILLING COMPANY, Highland, Ill.

The words "HIGHLAND BEAUTY."

Filed November 24, 1905. Serial No. 14,964. PUBLISHED MARCH 27, 1906.

52,955. ADHESIVE PLASTERS. JOHNSON & JOHNSON, New Brunswick, N. J.

The letters "Z O."

Filed October 28, 1905. Serial No. 13,991. PUBLISHED MARCH 27, 1906.

52,956. FELTED ABSORBENT COTTON. JOHNSON & JOHNSON, New Brunswick, N. J.

The coined word "LINTINE." Used ten years.

Filed October 28, 1905. Serial No. 14,005. PUBLISHED MARCH 27, 1906.

52,957. FELTED ABSORBENT COTTON. JOHNSON & JOHNSON, New Brunswick, N. J.

The coined word "COTTONOID." Used ten years.

Filed October 28, 1905. Serial No. 14,009. PUBLISHED MARCH 27, 1906.

52,958. EARTH-SCRAPERS. THE KILBOURNE & JACOBS MANUFACTURING COMPANY, Columbus, Ohio.

The letters and character "K & J" inclosed in quotation-marks.

Filed October 2, 1905. Serial No. 13,204. PUBLISHED MARCH 27, 1906.

52,959. COATS, VESTS, TROUSERS, AND OVERCOATS. M. WILE & COMPANY, Buffalo, N. Y.

The words "CLOTHES OF QUALITY" flanked by quotation-marks.

Filed August 29, 1905. Serial No. 12,074. PUBLISHED MARCH 27, 1906.

52,960. COTTON PIECE GOODS. EVERETT MILLS, Lawrence, Mass.

The representation of the head and shoulders of a tiger.

Filed February 8, 1906. Serial No. 16,834. PUBLISHED MARCH 27, 1906.

52,961. BISCUIT OR CRACKERS. THE NATURAL FOOD COMPANY, Niagara Falls, N. Y.

The word "TRISCUIT."

Filed October 24, 1905. Serial No. 13,896. PUBLISHED MARCH 27, 1906.

52,962. COTTON DAMASK. ROSEMARY MANUFACTURING COMPANY, Roanoke Rapids, N. C.

The words "BLUE RIBBON."

Filed October 19, 1905. Serial No. 13,768. PUBLISHED MARCH 27, 1906.

52,963. SALT. PETER J. L. SEARING, New York, N. Y.

The representation of two colored women facing each other and standing at a kitchen-table. One of the colored women wears a turban, and she is endeavoring to shake salt out of a salt-box, while the other colored woman is bareheaded and holds in her hand a salt-box from which the salt is flowing freely, with the disengaged hand pointing to the said colored woman with the turban.

Filed November 13, 1905. Serial No. 14,527. PUBLISHED MARCH 27, 1906.

52,964. POCKET-KNIVES. SUPPLEE HARDWARE COMPANY, Philadelphia, Pa.

The representation of a mural crown and an arrow projected across the same.

Filed October 21, 1905. Serial No. 13,820. PUBLISHED MARCH 27, 1906.

52,965. SHOVELS. SUPPLEE HARDWARE COMPANY, Philadelphia, Pa.

The word "FAIRMOUNT" and the representation of a diamond-shaped figure within which said word is contained, a bar and angular figures above and below the latter, said bar and angular figures being inclosed by said diamond-shaped figure. Used ten years.

Filed October 21, 1905. Serial No. 13,824. PUBLISHED MARCH 27, 1906.

52,966. WRENCHES. THE WHITMAN & BARNES MANUFACTURING COMPANY, Akron, Ohio.

A representation of a diamond-shaped figure with the letters and character "W" "&" "B" "Co" placed in the respective corners thereof.

Filed November 14, 1905. Serial No. 14,591. PUBLISHED MARCH 27, 1906.

52,967. WITHDRAWN.

52,968. BAKING-POWDER. FRANK L. ZABRISKIE, New York, N. Y.

The phrase "JEWEL BAKING POWDER," in connection with a picture showing in front view a waitress wearing an apron and a cap and carrying in both hands a tray, said picture being surrounded by a fanciful border and a band or panel embellished by the representation of sparkling jewels.

Filed October 21, 1905. Serial No. 13,808. PUBLISHED MARCH 27, 1906.

52,969. WHEAT-FLOUR. BALLARD & BALLARD CO., Louisville, Ky.

The words and numeral "TIPO 2 ESPECIAL."

Filed September 21, 1905. Serial No. 12,833. PUBLISHED MARCH 27, 1906.

52,970. WHEAT-FLOUR. BALLARD & BALLARD CO., Louisville, Ky.

The words and numeral "HARINA SUPERIOR TIPO 2 ESPECIAL" inclosed in an ornamental border.

Filed September 21, 1905. Serial No. 12,834. PUBLISHED MARCH 27, 1906.

52,971. MACARONI, VERMICELLI, SPAGHETTI, AND NOODLES. LOUIS BASTRUP and KICKHAM SCANLAN, Chicago, Ill., administrators of the estate of John B. Canepa, deceased, assignors to The John B. Canepa Company, Chicago, Ill., a Corporation of Illinois.

The representation of an eagle with outstretched wings and standing upon a scroll and the words "DELL' AQUILA."

Filed June 10, 1905. Serial No. 8,374. PUBLISHED MARCH 27, 1906.

52,972. WITHDRAWN.

52,973. CANDY. THE DARBY CANDY CO., Baltimore, Md.

The phrase "MADE BY DARBY." Used ten years.

Filed October 12, 1905. Serial No. 13,529. PUBLISHED MARCH 27, 1906.

52,974. PIANOS. DECKER & SON, New York, N. Y.

An emblem in the form of a coat-of-arms, associated with the name "DECKER & SON" and having as characteristics the representation of a shield charged with the head and fore legs of a deer erased, with an arrow directed upward between the fore legs, surmounted by head and neck armor with the vizor closed beneath ornamental scrolls and above a ribbon bearing the inscription "ESTABLISHED 1856," the whole superposed upon a sable mantle, with a lioness rampant regardant as the crest.

Filed July 12, 1905. Serial No. 10,196. PUBLISHED MARCH 27, 1906.

52,975. OSTRICH-FEATHERS. W. FREYSTADT STRAUSSFEDER FABRIK, Berlin, Germany.

The representation of a negro's head surrounded by two ostrich-feathers and the word "NEGRO."

Filed July 3, 1905. Serial No. 10,582. PUBLISHED MARCH 27, 1906.

52,976. SPICES. GENNERICH & VON BREMEN, New York, N. Y.

The representation in cherry-red color of a diamond composed of four bars intersecting each other and of the word-symbol "CHERRY DIAMOND" set in ornamental type on a curved line above the representation of the diamond.

Filed October 19, 1905. Serial No. 13,765. PUBLISHED MARCH 27, 1906.

52,977. COTTON SHEETINGS AND DRILLINGS. GREENWOOD COTTON MILL, Greenwood, S. C.

The representation of the chimney and roof of a house, with apples lying thereon and two cats in crouching attitude.

Filed May 15, 1905. Serial No. 5,648. PUBLISHED MARCH 27, 1906.

52,978. SCRAPPLE. THOMAS HARRIS, New York, N. Y.

The arbitrary word "PANAP."

Filed September 8, 1905. Serial No. 12,375. PUBLISHED MARCH 27, 1906.

52,979. CANNED CORN. P. HOHENADEL, Jr., Janesville, Wis., and Rochelle, Ill.

The word "RIVERVIEW" and the picture of a river scene, showing a river with both its vegetation-covered banks.

Filed July 12, 1905. Serial No. 10,163. PUBLISHED MARCH 27, 1906.

52,980. MACARONI, SPAGHETTI, AND VERMICELLI. THE JOHN B. CANEPA COMPANY, Chicago, Ill.

The word "STAR" and the representation of a five-pointed star. Used ten years.

Filed September 5, 1905. Serial No. 12,214. PUBLISHED MARCH 27, 1906.

52,981. LIQUID GLUE, GUM, AND MUCILAGE. LYONS INK, LIMITED, Manchester, England.

The word "CLUCINE."

Filed August 14, 1905. Serial No. 11,652. PUBLISHED MARCH 27, 1906.

52,982. STOCK-FOOD. THE MOLASSINE COMPANY, LD., London, England.

A bull's head with a ring through its nose, pigs for eyes, and lambs for nostrils, said head flanked by a horse and bull rampant, supported by a scroll with a ram's head in center thereof and stalks of corn thrust through its horns, and of a boar's head above the bull's head as a crest on a bar on a background of radiating rays bearing the word "MOLASSINE."

Filed August 25, 1905. Serial No. 11,986. PUBLISHED MARCH 27, 1906.

52,983. MACHINERY-PACKING. CHARLES NUHRING, Cincinnati, Ohio.

The letters "I X L."

Filed September 6, 1905. Serial No. 12,274. PUBLISHED MARCH 27, 1906.

52,984. EXTRACT OF BEEF. THE PIONEER PACKING COMPANY, Omaha, Nebr.

The word "MARSHALL'S," in the possessive, in script.

Filed October 19, 1905. Serial No. 13,741. PUBLISHED MARCH 27, 1906.

52,985. GRASS AND FIELD SEEDS. WM. G. SCARLETT, Baltimore, Md.

The representation of an acorn on which is the letter "S," above which is the word "ACORN" and under which is the word "BRAND."

Filed August 24, 1905. Serial No. 11,968. PUBLISHED MARCH 27, 1906.

52,986. WHEAT-FLOUR. THE SECURITY MILLING COMPANY, Abilene, Kans.

The word "HAVASAK," which is displayed upon a transverse scroll the ends of which inclose stalks of wheat, the pictorial representation of a bag of flour bearing the word "HAVASAK" upon a truck, about which are representations of brownies, across the top, in slightly-overlapping curved lines, the words "SECURITY MILLING CO," across the bottom a scroll bearing the words "THE CREAM OF KANSAS WHEAT."

Filed October 5, 1905. Serial No. 13,300. PUBLISHED MARCH 27, 1906.

52,987. CONDENSED MILK. VERMONT CONDENSED MILK Co., Richmond, Vt., and New York, N. Y.

A picture or representation of a lone palmetto-tree behind which the sun appears half sunken below the horizon and above the whole the arbitrarily-selected word "PALMETTO," associated with the word "BRAND."

Filed June 10, 1905. Serial No. 7,835. PUBLISHED MARCH 27, 1906.

52,988. ROOFING, SHEATHING, WATERPROOFING, AND BUILDING FELT. WARREN-EHRET COMPANY, Philadelphia, Pa.

The word "ACME." Used ten years.

Filed August 26, 1905. Serial No. 12,039. PUBLISHED MARCH 27, 1906.

52,989. CLOCKS AND WATCHES. THE WESTERN CLOCK MFG. CO., La Salle, Ill.

The letters "O. K." inclosed in quotation-marks.

Filed November 9, 1905. Serial No. 14,444. PUBLISHED MARCH 27, 1906.

52,990. CANNED SARDINES. WILLIAM UNDERWOOD COMPANY, Boston, Mass.

The letters "A T."

Filed September 8, 1905. Serial No. 12,390. PUBLISHED MARCH 27, 1906.

52,991. GUNPOWDER. AMERICAN POWDER MILLS, Boston, Mass.

The representation of a duck with outstretched wings.

Filed June 19, 1905. Serial No. 8,513. PUBLISHED MARCH 27, 1906.

52,992. BEER. ANHEUSER-BUSCH BREWING ASSOCIATION, St. Louis, Mo.

The pictorial representation of a bottle-cork with a wire fastened around it and twisted and the word "BUDWEISER" appearing thereon. Used ten years.

Filed July 3, 1905. Serial No. 9,782. PUBLISHED MARCH 27, 1906.

52,993. CANNED FRUITS AND VEGETABLES. THE BOOTH PACKING COMPANY, Baltimore, Md.

The representation of a gold seal on a blue ribbon, said seal having a scroll-shaped figure thereon. Used ten years.

Filed July 3, 1905. Serial No. 9,675. PUBLISHED MARCH 27, 1906.

52,994. BAKING-POWDER. CLEVELAND BAKING POWDER COMPANY, New York, N. Y.

The word "CLEVELAND'S." Used ten years.

Filed August 7, 1905. Serial No. 11,320. PUBLISHED MARCH 27, 1906.

52,995. CREAM-SEPARATORS. THE DE LAVAL SEPARATOR COMPANY, New York and Poughkeepsie, N. Y.

The word "DAISY."

Filed June 30, 1905. Serial No. 9,450. PUBLISHED DECEMBER 5, 1905.

52,996. CREAM-SEPARATORS. THE DE LAVAL SEPARATOR COMPANY, New York and Poughkeepsie, N. Y.

The words "HUMMING BIRD."

Filed June 30, 1905. Serial No. 9,451. PUBLISHED JANUARY 9, 1906.

52,997. REMEDIES FOR CERTAIN NAMED DISEASES. HENRY F. EDSALL, San Francisco, Cal.
The word "PINUS." Used ten years.
Filed December 12, 1905. Serial No. 15,362. PUBLISHED MARCH 27, 1906.

52,998. SYRUP FOR BEVERAGES. MILTON L. EPPSTEIN, Fort Worth, Tex.
The word "PEACOCK" and the representation of a woman clad in drapery and standing on the back of a peacock, holding a glass in her hand.
Filed June 24, 1905. Serial No. 8,943. PUBLISHED MARCH 27, 1906.

52,999. COMPRESSED YEAST. THE FLEISCHMANN CO., Cincinnati, Ohio, and New York, N. Y.
A rectangular panel bearing the words "FLEISCHMANN'S COMPRESSED YEAST" and a design of a sheaf of wheat inclosed in concentric circles surmounted by an eagle, panels, and scrolls, with a lion rampant on each side of the circles and a scroll beneath and circular fields on each side of the design, showing medals.
Filed June 21, 1905. Serial No. 8,706. PUBLISHED MARCH 27, 1906.

53,000. COMPRESSED YEAST. THE FLEISCHMANN CO., Cincinnati, Ohio, and New York, N. Y.
The words and abbreviation "THE FLEISCHMANN CO."
Filed June 21, 1905. Serial No. 8,707. PUBLISHED MARCH 27, 1906.

53,001. SHOE-DRESSING. GEO. E. KEITH COMPANY, Brockton, Mass.
The representation of a man in evening dress walking over a shoe.
Filed June 21, 1905. Serial No. 8,701. PUBLISHED MARCH 27, 1906.

53,002. PURE MALT SCOTCH WHISKY. GEORGE SMITH GRANT, Inveraven, Scotland.
The word "GLENLIVET." Used ten years.
Filed January 26, 1906. Serial No. 16,555. PUBLISHED MARCH 27, 1906.

53,003. WINE. HENRY BLOCK CO. LIMITED, New Orleans, La.
The representation of a winged head with three legs extending therefrom inclosed in a circle and the words "VINO MARSALINO."
Filed May 12, 1905. Serial No. 5,310. PUBLISHED MARCH 27, 1906.

53,004. CANDIES, BONBONS, AND CHOCOLATE CANDY. MENGO L. MORGENTHAU, New York, N. Y.
The word "TELEPHONE."
Filed July 28, 1905. Serial No. 10,966. PUBLISHED MARCH 27, 1906.

53,005. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill.
The word "ANTILLIA."
Filed July 13, 1905. Serial No. 10,210. PUBLISHED MARCH 27, 1906.

53,006. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill.
The word "CHERUB." Used ten years.
Filed July 13, 1905. Serial No. 10,214. PUBLISHED MARCH 27, 1906.

53,007. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill.
The representation of the head and shoulders of a woman wearing a tall crowned hat. Used ten years.
Filed August 2, 1905. Serial No. 11,161. PUBLISHED MARCH 27, 1906.

53,008. BUTTER. OWL'S HEAD CREAMERY COMPANY, Enosburg Falls, Vt.
The representation of an owl perched on a limb, with its head appearing through an elliptically-shaped figure.
Filed August 16, 1905. Serial No. 11,694. PUBLISHED MARCH 27, 1906.

53,009. COMBINATION SASH ADJUSTERS AND LOCKS. LOUIS PETRACCIONE, New York, N. Y.
The word "FENDO."
Filed July 3, 1905. Serial No. 9,740. PUBLISHED MARCH 27, 1906.

53,010. CANDY. THE ROBERT F. MACKENZIE CO., Cleveland, Ohio.
The words "OLD HICKORY" and the picture of Andrew Jackson inclosed in an oval and a hickory-tree with bluebells growing around it.
Filed June 15, 1905. Serial No. 8,202. PUBLISHED MARCH 27, 1906.

53,011. STOCK-FOOD. MARION W. SAVAGE, Minneapolis, Minn.
The word "INTERNATIONAL" and the monogram, "M W S." Used ten years.
Filed June 15, 1905. Serial No. 8,196. PUBLISHED MARCH 27, 1906.

53,012. POULTRY-FOOD. MARION W. SAVAGE, Minneapolis, Minn.
The word "INTERNATIONAL" and the monogram, "M W S." Used ten years.
Filed June 15, 1905. Serial No. 8,197. PUBLISHED MARCH 27, 1906.

53,013. BAKING-POWDER. SPRAGUE, WARNER & COMPANY, Chicago, Ill.
The arbitrarily-selected word "RICHELIEU."
Filed July 3, 1905. Serial No. 9,793. PUBLISHED MARCH 27, 1906.

53,014. EXTRACTS. SPRAGUE, WARNER & COMPANY, Chicago, Ill.
The arbitrarily-selected word "RICHELIEU."
Filed July 3, 1905. Serial No. 9,798. PUBLISHED MARCH 27, 1906.

53,015. TURPENTINE. STANDARD OIL CO. OF NEW YORK, New York, N. Y.
The words "FROM PRATT WORKS NEW YORK, U. S. A.," appearing in three curved lines embraced at either end by scrolls, the words "SPIRITS OF" and "TURPENTINE" in two lines curving in opposite directions, between which an ornamental figure or dash appears, and below in two curved lines "THE GUARANTY" and "PATENT CANS." Used ten years.
Filed June 16, 1905. Serial No. 8,332. PUBLISHED MARCH 27, 1906.

53,016. BATH-TUBS. STANDARD SANITARY MFG. CO., Pittsburg, Pa.
The word "PERFECTO."
Filed September 29, 1905. Serial No. 13,134. PUBLISHED MARCH 27, 1906.

53,017. ALBUMEN OBTAINED FROM THE TREATMENT OF STARCH. TOLHAUSEN & KLEIN, Frankfort-on-the-Main, Germany.
The word "TOLLY" arranged in the space formed by two oppositely-disposed intersecting triangles.
Filed August 23, 1905. Serial No. 11,940. PUBLISHED MARCH 27, 1906.

53,018. CERTAIN NAMED FABRICS. UNION FIBRE CO., Winona, Minn.
The word "LINOFELT."
Filed June 15, 1905. Serial No. 8,198. PUBLISHED MARCH 27, 1906.

53,019. CONDENSED MILK. VERMONT CONDENSED MILK CO., Richmond, Vt., and New York, N. Y.
The representation of a rural scene showing a windmill, keeper's house, trees, and a man and in the distance a sailing vessel upon a lake and above the whole the arbitrarily-selected words "WIND MILL."
Filed June 10, 1905. Serial No. 7,838. PUBLISHED MARCH 27, 1906.

53,020. CONDENSED MILK. VERMONT CONDENSED MILK CO., Richmond, Vt., and New York, N. Y.
The words "SILVER CORD," represented as formed in script by a cord and having a knot at the end thereof.
Filed August 1, 1905. Serial No. 11,116. PUBLISHED MARCH 27, 1906.

53,021. TORPEDO-FIREWORKS. EDWARD H. WAGNER, New York, N. Y.
The words "WILL-O'-THE-WISP."
Filed July 17, 1905. Serial No. 10,428. PUBLISHED MARCH 27, 1906.

53,022. TORPEDO-FIREWORKS. EDWARD H. WAGNER, New York, N. Y.
The words "GATLING BATTERY TORPEDO."
Filed July 17, 1905. Serial No. 10,431. PUBLISHED MARCH 27, 1906.

53,023. HAND STICK-FIREWORKS. EDWARD H. WAGNER, New York, N. Y.
The words "METEOR STICKS."
Filed July 17, 1905. Serial No. 10,434. PUBLISHED MARCH 27, 1906.

53,024. TORPEDO-FIREWORKS. EDW. H. WAGNER, New York, N. Y.
The words "ERUPTING VOLCANO."
Filed July 17, 1905. Serial No. 10,435. PUBLISHED MARCH 27, 1906.

53,025. WHEAT BREAKFAST-FOOD. THE WHEATENA COMPANY, New York, N. Y.
The word "WHEATENA." Used ten years.
Filed June 28, 1905. Serial No. 9,356. PUBLISHED MARCH 27, 1906.

53,026. GAS-STOVES. WILLIAM M. CRANE CO., New York, N. Y.
The word "OMEGA."
Filed July 18, 1905. Serial No. 10,538. PUBLISHED MARCH 27, 1906.

53,027. WHISKY. CHARLES W. BAUER, St. Louis, Mo.
The words "KING BEE."
Filed April 20, 1905. Serial No. 2,493. PUBLISHED MARCH 27, 1906.

53,028. DIETETIC ALBUMINOUS PREPARATIONS. BAUER & Co., Berlin, Germany.
The word "SANATOGEN."
Filed January 19, 1906. Serial No. 16,310. PUBLISHED MARCH 27, 1906.

53,029. WHISKY. BLUTHENTHAL & BICKART, Atlanta, Ga.
The words "MOUNTAIN DELL."
Filed April 28, 1905. Serial No. 3,352. PUBLISHED MARCH 27, 1906.

53,030. MEDICINAL PREPARATIONS, IN LIQUID AND SOLID FORM, FOR INTERNAL USE. BRISTOL-MYERS COMPANY, Brooklyn, N. Y.
The word "GASTROGEN."
Filed February 3, 1906. Serial No. 16,717. PUBLISHED MARCH 27, 1906.

53,031. MEDICINAL PREPARATIONS, IN LIQUID AND SOLID FORM, FOR INTERNAL USE. BRISTOL-MYERS COMPANY, Brooklyn, N. Y.
The word "PAP-A-SINE."
Filed February 3, 1906. Serial No. 16,718. PUBLISHED MARCH 27, 1906.

53,032. WINE. CHARLES & Co., New York, N. Y.
The representation of a wicker basket apparently filled and covered over the top and partly down the sides. A cord holds the cover close to the basket, and a label is on the top with a corner slipped under the cord, the label bearing the words "PLEASE DELIVER QUICKLY." A tag is suspended on one side of the handle and bears the words "CHARLES & CO." Used ten years.
Filed June 6, 1905. Serial No. 7,526. PUBLISHED MARCH 27, 1906.

53,033. WHISKY. CHICAGO DISTILLING CO., Chicago, Ill.
The words "WHITE LINE."
Filed July 11, 1905. Serial No. 10,045. PUBLISHED MARCH 27, 1906.

53,034. WHISKY. JOSEPH M. DAVIS, Minneapolis, Minn.
The word "SHERIDAN." Used ten years.
Filed June 26, 1905. Serial No. 9,036. PUBLISHED MARCH 27, 1906.

53,035. WHISKY. E. H. TAYLOR, JR. & SONS, INCORPORATED, Frankfort, Ky.
The words, character, and abbreviatione "E. H. TAYLOR, JR. & SONS."
Filed April 11, 1905. Serial No. 1,077. PUBLISHED MARCH 27, 1906.

53,036. WHISKY. FEUCHTER BROS., Cairo, Ill.
The word "HE-NO" and the representation of a cane above and below said word, with a Chinese lantern bearing a monogram of the letters "F B" suspended from the lower cane and a circular ornamental panel arranged above the upper cane and having on each side torches connected by chains with scroll ornamentation above.
Filed May 22, 1905. Serial No. 6,241. PUBLISHED MARCH 27, 1906.

53,037. MEDICINE FOR AFFECTIONS OF THE THROAT AND BRONCHIAL TUBES. FREDERICK STEARNS & Co., Detroit, Mich.
The words "ZYMOLE TROKEYS."
Filed January 19, 1906. Serial No. 16,305. PUBLISHED MARCH 27, 1906.

53,038. WHISKY. FREIBERG & KAHN, Cincinnati, Ohio.
The word "MAGNET," behind which is a drawing representing a magnet and its armature.
Filed June 24, 1905. Serial No. 8,948. PUBLISHED MARCH 27, 1906.

53,039. BRANDY. PHILIP FREILER, Elgin, Ill.
The word "PEERLESS." Used ten years.
Filed April 20, 1905. Serial No. 2,341. PUBLISHED MARCH 27, 1906.

53,040. WINES. P. GARGIULO & Co., New York, N. Y.
The word "CRACNANO," associated with a pictorial representation, the words "EXTRA SUPERIOR," and the representation of a shield having a crown above it and a scroll below it. Said pictorial representation is of a city with a volcano and mountain ranges behind it and a body of water to one side. Said shield displays a coat-of-arms consisting of a tower, a tree, and a hand holding a branch. Said scroll displays the words "STEMMA DI CRACNANO."
Filed June 22, 1905. Serial No. 8,781. PUBLISHED MARCH 27, 1906.

53,041. SKIN-FOODS AND COMPLEXION CREAMS AND OINTMENTS. GRAHAM BROS. & Co., Chicago, Ill.
The word "LANA."
Filed July 10, 1905. Serial No. 10,578. PUBLISHED MARCH 27, 1906.

53,042. WHISKY. ASHER GUCKENHEIMER & BROS., Pittsburg, Pa.
The word "MONTROSE." Used ten years.
Filed May 22, 1905. Serial No. 6,278. PUBLISHED MARCH 27, 1906.

53,043. WHISKY. H. L. GRIESEDIECK DIST'G Co., St. Louis, Mo.
The word "SCENTER."
Filed June 19, 1905. Serial No. 8,479. PUBLISHED MARCH 27, 1906.

53,044. PILLS. ROBERT HENRY NEVILL JOHNSON, London, England.
The facsimile representation of the signature of "EUGENE LE CLERC."
Filed September 5, 1905. Serial No. 12,232. PUBLISHED MARCH 27, 1906.

53,045. WHISKY. W. H. JONES AND Co., Boston, Mass.
The words "OLD GOLD."
Filed April 3, 1905. Serial No. 250. PUBLISHED MARCH 27, 1906.

53,046. WINE. W. H. JONES AND Co., Boston, Mass.
The word "RAINBOW."
Filed May 3, 1905. Serial No. 4,130. PUBLISHED MARCH 27, 1906.

53,047. WHISKY. KAUFMANN, BAER & Co., Cincinnati, Ohio.
The words "ROCKY FORK." Used ten years.
Filed May 6, 1905. Serial No. 4,509. PUBLISHED MARCH 27, 1906.

53,048. ALE. JOHN LABATT, London, Canada.
An open oval portion having a central octagonal figure in which is the representation of an arrow-head surrounded by a border which cuts the border of the octagonal figure. On each side of the octagonal figure is a band extending horizontally to the circumference of the oval, having to the left and right of the figure the words "JOHN" and "LABATT," forming a facsimile signature of the applicant, and terminating at each end in a small oval, with sheaves of barley in the small ovals. In the upper portion of the main oval is printed the word "LABATT'S," immediately below is printed the word "INDIA," and lower the word "PALE." Below is printed the word "ALE," and next to the margin of the main oval are printed the words "LONDON, CANADA." On the margin of said main oval is a row of small oval figures in each of which is printed the letter "L." Below the main oval are two circles overlapping each other and the said oval, representing the respective sides of a medal awarded to the applicant, John Labatt, at the International Exposition of Paris in 1878.
Filed May 3, 1905. Serial No. 4,087. PUBLISHED MARCH 27, 1906.

53,049. HAIR-CURLERS. MAGIC CURLER COMPANY, Philadelphia, Pa.
A bar having a mass of hair wound thereon.

Filed February 27, 1906. Serial No. 17,384. PUBLISHED MARCH 27, 1906.

53,050. WHISKY. JOS. A. MAGNUS & CO., Cincinnati, Ohio.

The words "MURRAY HILL CLUB" and a fanciful heraldic design showing six crossed arrows bound together above a heraldic roll and a crowned lion holding a branch bearing an acorn in one of its paws and issuant from a heraldic roll.

Filed April 17, 1905. Serial No. 2,040. PUBLISHED MARCH 27, 1906.

53,051. BRUSHES. S. MAW, SON & SONS, London, England.

A representation of a trefoil within which is a monogram consisting of the letters "S C M & T," and arranged in a circle about the whole are the words "S. MAW, SON & SONS, LONDON." Used ten years.

Filed May 26, 1905. Serial No. 6,730. PUBLISHED MARCH 27, 1906.

53,052. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.

The representation of a steamship under headway, the view being almost bow on and from the starboard side. At each side of the view is shown a curved rope, the ends of the rope terminating at the top and bottom in circular designs surmounted by a crown and showing at the center a lion rampant supporting a globe. Upon the top device are the words "THE CUNARD STEAMSHIP CO. LIMITED," and upon the bottom device are the words "ROYAL MAIL STEAMSHIPS."

Filed July 1, 1905. Serial No. 9,573. PUBLISHED MARCH 27, 1906.

53,053. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.

A rectangular design upon which the representation of Napoleon the First appears clad in robes of state and standing on a dias beneath a canopy, holding in his left hand a scepter, while his right arm is outstretched over an open book and an emblem surmounted by a cross which rest upon a draped table.

Filed July 1, 1905. Serial No. 9,575. PUBLISHED MARCH 27, 1906.

53,054. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.

A rectangular design showing the representation of the Flatiron building in New York city, with the buildings and streets adjacent, the view being taken as the spectator looks in a southerly direction from Madison Square.

Filed July 1, 1905. Serial No. 9,578. PUBLISHED MARCH 27, 1906.

53,055. BRANDY. P. J. BOWLIN LIQUOR CO., St. Paul, Minn.

The words "SAN DIEGO," associated with the words "PURE CALIFORNIA BRANDY P. J. BOWLIN LIQUOR CO., ST. PAUL, MINN.," inclosed in an ornamental circular border. Used ten years.

Filed June 21, 1905. Serial No. 8,630. PUBLISHED MARCH 27, 1906.

53,056. WHISKY. JOSEPH H. SCHWARTZ, Plymouth, Pa.

The word "REDSTONE."

Filed September 15, 1905. Serial No. 12,566. PUBLISHED MARCH 27, 1906.

53,057. WHISKY. THE STAR DISTILLERY CO., Cincinnati, Ohio.

The word "CHESTERFIELD." Used ten years.

Filed May 24, 1905. Serial No. 6,487. PUBLISHED MARCH 27, 1906.

53,058. WHISKY. FRED J. TABER, Boston, Mass.

The word "ASHLAWN." Used ten years.

Filed July 19, 1905. Serial No. 10,583. PUBLISHED MARCH 27, 1906.

53,059. WHISKY. FRED J. TABER, Boston, Mass.

An oval design terminating at the top and bottom in birds' heads, with the words, letters, and figures "G. W. T. Co., ESTABD. 1836."

Filed July 21, 1905. Serial No. 10,647. PUBLISHED MARCH 27, 1906.

53,060. WHISKY. FRED J. TABER, Boston, Mass.

The words "OLD BELFRY." Used ten years.

Filed July 21, 1905. Serial No. 10,648. PUBLISHED MARCH 27, 1906.

53,061. TONIC FOR THE SCALP AND SKIN. GUST TIMEN, Chicago, Ill.

The word "TIME" and the letter "N" inclosed in a triangle.

Filed July 27, 1905. Serial No. 10,913. PUBLISHED MARCH 27, 1906.

53,062. MEDICINAL TONIC AND CORDIAL. UDOLPHO WOLFE COMPANY, New York, N. Y.

The words "WOLFE'S AROMATIC SCHIEDAM SCHNAPPS" and the facsimile signatures of "UDOLPHO WOLFE" and "JOEL B. WOLFE."

Filed June 20, 1905. Serial No. 8,617. PUBLISHED MARCH 27, 1906.

53,063. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio.

The word "ALUMINUM."

Filed April 15, 1905. Serial No. 1,588. PUBLISHED MARCH 27, 1906.

53,064. WHISKY. W. L. WELLER & SONS, Louisville, Ky.

The words "HARLEM CLUB" and the representation of a fanciful animal's head with pointed ears and snake-like mouth with protruding tongue and resting on a heraldic roll within a scroll design.

Filed April 21, 1905. Serial No. 2,568. PUBLISHED MARCH 27, 1906.

53,065. REMEDIES FOR DIPHTHERIA AND OTHER DISEASES OF THE THROAT. LUIGI D'AMBROSIO, New York, N. Y.

The coined word "HYLDA" and a monogram of the letters "I. D A."

Filed June 6, 1905. Serial No. 9,849. PUBLISHED MARCH 27, 1906.

53,066. REMEDY FOR THE CURE OF RHEUMATISM AND GOUT. ERNST BISCHOFF, New York, N. Y.

The word "SPIROFORM."

Filed January 13, 1906. Serial No. 16,173. PUBLISHED MARCH 27, 1906.

53,067. POULTRY MEDICINE FOR LIMBER NECK AND ROUP. CHARLES J. CLARKE, Paris, Ky.

The words "CLARKE'S LIMBER NECK AND ROUP CURE." Used ten years.

Filed January 12, 1906. Serial No. 16,155. PUBLISHED MARCH 27, 1906.

53,068. PILLS FOR LIVER AND BOWEL COMPLAINTS. B. T. DAVIS, Huntington, W. Va.

A panel bearing the representation of a volcano in eruption and the words "DR. WINSTON'S MOUNTAIN ROOT PILLS FOR THE LIVER."

Filed July 20, 1905. Serial No. 10,603. PUBLISHED MARCH 27, 1906.

53,069. REMEDIES FOR DISEASES COMMON TO CHILDREN. E. C. DE WITT & CO., Chicago, Ill.

The words "DE WITT'S SOOTHING SYRUP," the words "SOOTHING SYRUP" being arranged in a curved line on a fancy scroll with the words "DE WITT'S" above.

Filed April 6, 1905. Serial No. 592. PUBLISHED JUNE 29, 1905.

53,070. LIQUID SMOKE DISTILLED FROM WOOD. THE E. H. WRIGHT COMPANY, LTD., Kansas City, Mo.

The representation of a grove of trees with foliage simulating smoke and a smoking ham suspended in the foliage and the words "WRIGHT'S CONDENSED SMOKE."

Filed May 16, 1905. Serial No. 5,518. PUBLISHED MARCH 27, 1906.

53,071. ALTERATIVE, TONIC, AND BLOOD-PURIFYING COMPOUNDS. SAMUEL K. ELLIOTT, Los Angeles, Cal.

The letter-symbol "S. K. E."

Filed January 16, 1906. Serial No. 16,218. PUBLISHED MARCH 27, 1906.

53,072. ANESTHETICS. FARBWERKE VORM. MEISTER LUCIUS & BRÜNING, Höchst-on-the-Main, Germany.

The word "NOVOCAIN."

Filed November 2, 1905. Serial No. 14,207. PUBLISHED MARCH 27, 1906.

53,073. CATHARTIC PILLS AND TABLETS. FOSTER-MCCLELLAN COMPANY, Buffalo, N. Y.

The representation of a human eye having wings extending from each side thereof in a downwardly direction. In the open space between these wings beneath the eye is a portrait of James Doan, below which are printed the words "DOAN'S DINNER PILLS." On the wing at the left of the portrait is the word "DOAN'S" and on the one at the right the word "SPECIALTIES."

Filed January 16, 1906. Serial No. 16,209. PUBLISHED MARCH 27, 1906.

53,074. CATHARTIC PILLS AND TABLETS. FOSTER-MCCLELLAN COMPANY, Buffalo, N. Y.

The representation of a human eye having wings extending from each side thereof in a downwardly direction. In the open space between the wings beneath the eye is a portrait of James Foster, below which are printed the words "FOSTER'S DINNER PILLS." On the wing at the left of the portrait is the word "FOSTER'S" and on the one at the right the word "SPECIALTIES."

Filed January 16, 1906. Serial No. 16,210. PUBLISHED MARCH 27, 1906.

53,075. OINTMENTS. FOSTER-MCCLELLAN COMPANY, Buffalo, N. Y.

An inclosing band or circle having on opposite sides thereof, extending inwardly for some distance from its circumference, opposing scrolls or ribbons. In the space above the scrolls or ribbons, on a segmental solid field concentric with the inclosing circle and adjacent thereto, are arranged the words "FOSTER'S OINTMENT." Directly below this solid segmental field is a concentric open or skeleton field. In the space below this open field and opposite the inner ends of the scrolls or ribbons is arranged the portrait of James Foster, above which is the representation of a human eye having wings extending downwardly from each side thereof and partially inclosing said portrait. On the wing at the left of the portrait is the word "FOSTER'S" and on the wing at the right the word "SPECIALITIES." Below the portrait is a band or circle concentric with the inclosing circle and connecting the scrolls or ribbons.

Filed January 16, 1906. Serial No. 16,212. PUBLISHED MARCH 27, 1906.

53,076. LAXATIVES. FREDERICK STEARNS & CO., Detroit, Mich.

The word "KASAGRA."

Filed January 19, 1906. Serial No. 16,301. PUBLISHED MARCH 27, 1906.

53,077. NEURALGIA AND HEADACHE REMEDY. FREDERICK STEARNS & CO., Detroit, Mich.

The word "SHAC."

Filed January 19, 1906. Serial No. 16,302. PUBLISHED MARCH 27, 1906.

53,078. NEURALGIA AND HEADACHE REMEDY. FREDERICK STEARNS & CO., Detroit, Mich.

A blue triangular field.

Filed January 19, 1906. Serial No. 16,303. PUBLISHED MARCH 27, 1906.

53,079. MEDICINE FOR CERTAIN NAMED DISEASES. FREDERICK STEARNS & CO., Detroit, Mich.

The word "METHYLOIDS."

Filed January 19, 1906. Serial No. 16,304. PUBLISHED MARCH 27, 1906.

53,080. OINTMENT. PRESLEY GARY, Tiptonville, Tenn.

The words "DR. GARY'S VEGETABLE OINTMENT FOR FEMALE DISEASES." Used ten years.

Filed January 15, 1906. Serial No. 16,198. PUBLISHED MARCH 27, 1906.

53,081. HEAVE-POWDER. DR. HESS & CLARK, Ashland, Ohio.

A panel bearing the words "DR. HESS HEAVE POWDER" and representations of a man and the head of a horse, the man holding in one hand a package of powder and the horse's head resting on his other hand.

Filed June 15, 1905. Serial No. 8,185. PUBLISHED MARCH 27, 1906.

53,082. PREPARATIONS FOR THE TREATMENT OF THE HEAD AND HAIR. HUDSON & CO. INC., New York, N. Y.

The word "CARPINE."

Filed April 21, 1905. Serial No. 3,207. PUBLISHED MARCH 27, 1906.

53,083. LAXATIVES. K K K MEDICINE COMPANY, Keokuk, Iowa.

The letters "K K K."

Filed April 1, 1905. Serial No. 65. PUBLISHED MARCH 27, 1906.

53,084. TONICS AND MEDICATED WINES. MARIANI & CO., New York, N. Y.

The words "VIN TONIQUE MARIANI A LA COCA DU PÉROU," together with the representation of the top of a bottle-cap resting on the upper end of the neck of a bottle. On the said bottle-cap, inclosed in a circle, are the words and figures "MARIANI 41, BD. HAUSSMANN" and the representation of coca-seed. On the side of the capsule, at the end of the neck of the bottle, is the facsimile signature "A. MARIANI," and on the top of said capsule is the representation of the seed of the coca-plant. Used ten years.

Filed October 26, 1905. Serial No. 13,956. PUBLISHED MARCH 27, 1906.

53,085. HEADACHE SPECIFIC PUT UP IN TABULAR FORM. MIGRANOSE IMPORTING CO., Philadelphia, Pa.

The representation of an emblem which comprises the representation of a shield bearing the picture of a beaver at work, a crowned helmet supporting a crest of two wings, and filigree or scroll work arranged above and on each side of the shield.

Filed October 11, 1905. Serial No. 13,504. PUBLISHED MARCH 27, 1906.

53,086. REMEDY FOR CERTAIN NAMED DISEASES. THE MORO MEDICAL CO., Montreal, Canada.

The fanciful representation of a man's head in the garb of a friar or monk, associated with the words "MORO'S PILLS FOR MEN." The head is surrounded by a circular border, from the opposite sides of which extend panels.

Filed September 1, 1905. Serial No. 12,149. PUBLISHED MARCH 27, 1906.

53,087. REMEDIES FOR THE CURE OF RHEUMATISM AND SIMILAR DISEASES. JAMES LEONARD ODOM, Lester, S. C.

The photograph of the registrant.

Filed May 29, 1905. Serial No. 6,856. PUBLISHED MARCH 27, 1906.

53,088. CERTAIN NAMED MEDICINE. FLORIAN JOSEPH SCHMIDT, Chicago, Ill.

The portrait and facsimile signature of the registrant and the words "SCHMIDT'S SYSTEM RENOVATOR."

Filed June 9, 1905. Serial No. 7,747. PUBLISHED MARCH 27, 1906.

53,089. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio.

The words "FIVE HUNDRED."

Filed August 22, 1905. Serial No. 11,919. PUBLISHED OCTOBER 10, 1905.

53,090. CATARRHAL REMEDY. GEORGE WILSON, Farrell, Miss.

The picture of the registrant.

Filed July 18, 1905. Serial No. 11,623. PUBLISHED MARCH 27, 1906.

LABELS

REGISTERED MAY 22, 1906.

12,883.—*Title:* "PRIDE OF GLOUCESTER." (For Cream-Codfish.) B. S. WEBBER FISH CO., Gloucester, Mass. Filed April 24, 1906.

12,884.—*Title:* "PRIDE OF GLOUCESTER." (For Sliced Smoked Halibut.) B. S. WEBBER FISH CO., Gloucester, Mass. Filed April 24, 1906.

12,885.—*Title:* "CINGALA." (For Tea.) B. FISCHER & CO., New York, N. Y. Filed April 13, 1906.

12,886.—*Title:* "SABO BLEND." (For Roasted Coffees.) WOOLSON SPICE COMPANY, Toledo, Ohio. Filed April 11, 1906.

12,887.—*Title:* "CRESCENT." (For Port-Wine.) A. M. SMITH, Minneapolis, Minn. Filed April 5, 1906.

12,888.—*Title:* "PENNANT." (For Whisky.) AUTHOR M. SMITH, Minneapolis, Minn. Filed April 9, 1906.

12,889.—*Title:* "TADELLOS." (For Beer.) THE RUEHL BROTHERS BREWING COMPANY, Chicago, Ill. Filed April 16, 1906.

12,890.—*Title:* "JETTER'S MALT TONIC." (For Malt Tonics.) WILMANNS BROS. CO., Milwaukee, Wis. Filed April 21, 1906.

12,891.—*Title:* "FERRO-CHINA IAVARONE." (For a Medicine and Tonic.) GIUSEPPE JAVARONE, Naples, Italy. Filed April 24, 1906.

12,892.—*Title:* "MULL'S PAIN CURE." (For Medicine.) E. EDWARD MULL, Chicago, Ill. Filed April 14, 1906.

12,893.—*Title:* "PINOZONE." (For a Proprietary Medicine.) THE LAKEWOOD PINE CO., Jersey City, N. J. Filed April 30, 1906.

12,894.—*Title:* "RADIOZONE." (For Medicated Preparations and Articles.) DR. WARNER REMEDY CO., Chicago, Ill. Filed July 7, 1905.

12,895.—*Title:* "WRIGHT'S ELECTRIC CATARRH CURE." (For a Jelly-Like Substance for Relief and Cure of Catarrh.) GEORGE H. WRIGHT, Denver, Colo. Filed April 30, 1906.

12,896.—*Title:* "PURE BREATH TABLETS." (For Breath-Tablets.) THE CAPRON CHEMICAL CO., Malone, N. Y. Filed April 20, 1906.

12,897.—*Title:* "KAROTONE." (For Hair-Tonic.) NICHOLAS CAROLA, New York, N. Y. Filed April 26, 1906.

12,898.—*Title:* "FLOR DE P. GARCIA & BROS." (For Cigars.) PERFECTO GARCIA & BROS., Chicago, Ill. Filed April 14, 1906.

12,899.—*Title:* "JOHN MILTON." (For Cigars.) H. SOMMER COMPANY, Quakertown, Pa. Filed April 24, 1906.

12,900.—*Title:* "DON RENATO." (For Cigars.) A. C. HENSCHEL & Co., Chicago, Ill. Filed March 26, 1906.

12,901.—*Title:* "CHASTAN." (For Cigars.) CHAS. P. STANLEY CIGAR CO., St. Louis, Mo. Filed April 18, 1906.

12,902.—*Title:* "BLUE RIBBON CRYSTALAC." (For Interior Varnishes.) BECKWITH-CHANDLER COMPANY, Newark, N. J. Filed April 20, 1906.

12,903.—*Title:* "DON'T USE CAN OPENER; USE A NAIL OR SOMETHING SIMILAR." (For Cans.) WILLIAM UNDERWOOD & Co., Boston, Mass. Filed April 25, 1906.

12,904.—*Title:* "RELIANCE." (For Ladies' Shirt-Waists.) SAMUEL SCHLEIN, Philadelphia, Pa. Filed April 6, 1906.

12,905.—*Title:* "FOLDUM." (For Toilet-Paper.) SCOTT PAPER CO., Philadelphia, Pa. Filed April 25, 1906.

12,906.—*Title:* "PROTECTED ROOFING." (For Roofing.) THE HYNDMAN ROOFING COMPANY, Cincinnati, Ohio. Filed April 21, 1906.

PRINTS

REGISTERED MAY 22, 1906.

1,666.—*Title:* "DERE AINT GO'N'ER BE NO LEAVIN'S." (For Food Product.) BATTLE CREEK BREAKFAST FOOD CO. LTD., Quincy, Ill. Filed April 19, 1906.

1,667.—*Title:* "COULSON'S EGG FOOD." (For Egg-Food.) COULSON POULTRY & STOCK FOOD CO., Petaluma, Cal. Filed April 2, 1906.

1,668.—*Title:* "AT YOUR SERVICE." (For Wheat.) BUTCHER & CO., Minneapolis, Minn. Filed April 26, 1906.

1,669.—*Title:* "OTOE PRESERVING CO." (For Canned Cream Sugar-Corn.) OTOE PRESERVING COMPANY, Nebraska City, Nebr. Filed April 2, 1906.

1,670.—*Title:* "HUYLER'S CHOCOLATE." (For Huyler's Chocolate.) STAHL AND JAEGER INC., New York, N. Y. Filed April 10, 1906.

1,671.—*Title:* "LIQUID FRUITS AND DIAMOND BRAND CRUSHED FRUITS." (For Fruit-Syrups and Crushed Fruits.) THE LIQUID CARBONIC COMPANY, Chicago, Ill. Filed April 26, 1906.

1,672.—*Title:* "NATURE'S ROMANCE." (For Beer.) THE MEEK COMPANY, Coshocton, Ohio. Filed March 3, 1906.

1,673.—*Title:* "THE HOME OF SIERRA." (For Beer.) THE MEEK COMPANY, Coshocton, Ohio. Filed March 3, 1906.

1,674.—*Title:* "CAROLINA BRIGHTS CIGARETTES MANUFACTURED BY WELLS-WHITEHEAD TOBACCO CO." (For Cigarettes.) WELLS-WHITEHEAD TOBACCO CO., Wilson, N. C. Filed April 30, 1906.

1,675.—*Title:* "THE POSITIVE MILK FEVER CURE." (For a Milk-Fever Remedy for Cattle.) C. A. COE JR. CO., Oshkosh, Wis. Filed April 25, 1906.

1,676.—*Title:* "COULSON'S HOG FATTENING MEAL." (For Hog-Fattening Meal.) COULSON POULTRY & STOCK FOOD CO., Petaluma, Cal. Filed April 2, 1906.

1,677.—*Title:* "WALES-GOODYEAR RUBBERS." (For Rubbers.) UNITED STATES RUBBER COMPANY, New York, N. Y. Filed April 24, 1906.

1,678.—*Title:* "READY FOR THE STORM." (For Rubbers.) UNITED STATES RUBBER COMPANY, New York, N. Y. Filed April 24, 1906.

1,679.—*Title:* "THE HOOSIER KITCHEN CABINET, CABINET NO. 142." (For a Kitchen-Cabinet.) THE HOOSIER MANUFACTURING CO., Newcastle, Ind. Filed April 28, 1906.

1,680.—*Title:* "THE HOOSIER KITCHEN CABINET, CABINET NO. 111." (For a Kitchen-Cabinet.) THE HOOSIER MANUFACTURING CO., Newcastle, Ind. Filed April 28, 1906.

1,681.—*Title:* "SLACK COOPERAGE STOCK." (For Slack Cooperage Stock.) TINDLE & JACKSON, Buffalo, N. Y. Filed April 9, 1906.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

DURYEA AND WHITE *v.* RICE, JR.

Decided March 10, 1906.

1. INTERFERENCE—APPEAL—JURISDICTION TO REHEAR DENIED.

Where a petition is brought that jurisdiction be restored to the Examiners-in-Chief in order that they may rehear the appeal upon priority of invention and it does not appear that the Examiners-in-Chief desire to reconsider their decision, *Held* that they should not be required to do so.

2. SAME—REFERENCE UNDER RULE 126—CONFLICTING DECISIONS.

Where the Examiners-in-Chief upon appeal on priority call attention under Rule 126 to the fact that in their opinion the device of one of the parties is inoperative and the Primary Examiner, in the light of numerous affidavits and arguments by both parties, reaches the conclusion that the device is operative and the opposing party makes no attempt at the hearing before the Commissioner to point out any supposed errors in the Examiner's decision and no good reason appears for doubting the correctness of the conclusions stated therein, *Held* that these conclusions will be accepted as correct.

PETITION, priority, and reference.

SELF-CONTAINED POWER-DRILLS.

Mr. James R. Townsend and *Messrs. Dyrenforth, Dyrenforth & Lee* for Duryea and White.

Mr. Fred E. Tasker for Rice, Jr.

ALLEN, *Commissioner:*

This case is now before me in the first place upon the petition of Duryea and White that jurisdiction be restored to the Examiners-in-Chief in order that they may rehear the appeal from which their decision on priority of invention was rendered; in the second place, upon appeal by Duryea and White from the decision of the Examiners-in-Chief awarding priority of invention to Rice, and, in the third place, it is before me in view of an apparent conflict between the conclusions of the Examiners-in-Chief and Primary Examiner upon a matter to which attention was called in the decision of the Examiners-in-Chief under Rule 126 and which was referred under that rule for consideration by the Primary Examiner.

The petition of Duryea and White that jurisdiction of this case be restored to the Examiners-in-Chief in order that they may rehear the appeal upon priority of invention discloses no good reason why it should be granted. It does not appear that the Examiners-in-Chief desire to reconsider their decision, and I do not believe that they should be required to do so. The petitioners have rightly sought relief from the alleged error in the decision of the Examiners-in-Chief by bringing their case to me upon the present appeal. In disposing of this appeal, and I shall dispose of it herein, the alleged error in the decision of the Examiners-in-Chief, in view of which the rehearing is desired, becomes of no effect and entirely inconsequential.

The petition is denied.

The questions presented by the appeal from the decision of the Examiners-in-Chief upon priority and by the difference of opinion between the Examiners-in-Chief and the Primary Examiner upon the matter to which attention was called under Rule 126 are one and the same—namely, whether the machine disclosed by the applications of Rice is operative. This question was considered by the Primary Examiner after the suggestion of inoperativeness by the Examiners-in-Chief in the light of numerous affidavits filed by each party and of arguments, written and oral, upon both sides. His conclusion, expressed in an ample and convincing opinion, was in favor of the operativeness of the Rice device. This decision has been reviewed without discovering any good reason to doubt the correctness of the conclusion therein stated. Nor have Duryea and White made any attempt to take advantage of the opportunity presented by this appeal and by the hearing given them, in view of the character of the decision of the Primary Examiner, to point out any supposed errors therein. I am of the opinion that the conclusion of the Primary Examiner is correct.

Judgment of priority of invention is hereby rendered in favor of Rice on the ground that his applications show that he was in possession of the operative invention in issue prior to the date of invention alleged by Duryea and White in their preliminary statement.

HEWITT *v.* STEINMETZ.

Decided March 10, 1906.

INTERFERENCE—MOTION FOR DISSOLUTION—OBSERVANCE OF LIMIT OF APPEAL.

Where the decision of the Primary Examiner fully disposed of the motion and fixed a limit of appeal, but contained a statement which might raise a doubt as to the condition in which the case was left by the Examiner, *Held* that a party was not justified in assuming that he could ignore the limit of appeal fixed and obtain a rehearing or take appeals at later dates.

ON PETITION.

ELECTRIC LIGHTING.

Mr. Charles A. Terry for Hewitt. (*Mr. G. H. Stockbridge* of counsel.)

Mr. Albert G. Davis for Steinmetz. (*Mr. A. D. Lunt* of counsel.)

ALLEN, *Commissioner:*

I have before me three petitions by Hewitt each requesting, in effect, restoration of jurisdiction to the Pri-

mary Examiner for purposes of reconsideration and appeal from his decision upon the motion of Steinmetz for dissolution.

The decision of the Primary Examiner was rendered on September 28, 1905. The time set for appeal expired on December 1, 1905. The petitioner claims that he was misled by the concluding statement of the Examiner's decision to believe that the case before the Examiner was not fully disposed of by that decision and that he could await further action upon the part of the Office before considering such questions as those of rehearing or appeal. The portion of the Examiner's decision to which the petitioner refers reads as follows:

> This interference has been suspended under the provisions of Rule 128 for the purpose of enabling the Examiner to apply to the issue the British patent to Rapieff, No. 211 of 1879.

Immediately preceding this, however, the decision states:

> The motions to dissolve are granted as to counts 4, 6 and 13 and denied as to counts 1, 2, 3, 5, 7, 8, 9, 10, 11, 12, 14, 15 and 16. The interference is continued as to counts 1, 2, 3, 5, 7, 8, 9, 10, 11, 12, 14, 15 and 16. The limit of appeal will expire December 1, 1905.

The decision also shows consideration of the British patent to Rapieff, No. 211 of 1879. In view of the fact that the decision of the Primary Examiner dated September 28, 1905, fully disposed of the motion and fixed a limit of appeal, Hewitt was not justified in assuming that he could ignore this limit and bring requests for rehearing and appeals at later dates. The circumstances to which he calls attention at most justify a doubt in his mind as to the condition in which the case was left by the Examiner. If possessed of such a doubt, it was his duty to take steps at once toward dispelling the same.

The petitions are denied.

HEWITT *v.* STEINMETZ.

Decided March 10, 1906.

INTERFERENCE—RESUMPTION OF PROCEEDINGS AFTER MOTION FOR DISSOLUTION.

The times fixed for taking testimony do not commence to run after suspension of proceedings for consideration of motions for dissolution until the cases are returned to the Examiner of Interferences and formal resumption of proceedings is noted.

APPEAL on motion.

ELECTRIC LIGHTING.

Mr. Charles A. Terry for Hewitt. (*Mr. G. H. Stockbridge* of counsel.)

Mr. Albert G. Davis for Steinmetz. (*Mr. A. D. Lunt* of counsel.)

ALLEN, *Commissioner:*

This is an appeal by Steinmetz from the decision of the Examiner of Interferences denying a motion by Steinmetz that judgment be entered against Hewitt.

The motion of Steinmetz for judgment purported to be based on Rule 119, providing as follows:

> 119. Whenever the time for taking the testimony of a party to an interference shall have expired, and no testimony shall have been taken by such party, any senior party may, by motion based on a showing properly verified and served on such party in default, have an order entering judgment against such defaulting party, unless the latter shall, at a day set and not less than ten days after the hearing of the motion, show good and sufficient cause why the judgment shall not be entered.

The Examiner of Interferences denied the motion, because in his opinion the time for taking testimony by Hewitt has not yet expired. It appears that while the times fixed for taking testimony were running proceedings were suspended for consideration by the Primary Examiner of the question of dissolution. The Primary Examiner held that the interference should continue. The limit of appeal from his decision expired December 1, 1905. The files were not returned to the Examiner of Interferences, however, until February 17, 1906. Steinmetz contends that the unexpired times for taking testimony commenced to run immediately upon final determination of the question of dissolution. If such were the case, Hewitt's time for taking testimony would have expired, and Steinmetz's motion should have been granted. The Examiner of Interferences, however, holds that times for taking testimony do not commence to run after suspension until the cases are returned to him and formal resumption of proceedings is noted.

The conclusion of the Examiner of Interferences is considered correct, and his decision is affirmed.

EX PARTE FLINDALL.

Decided March 19, 1906.

FINAL REJECTION.

Where the prior Office actions clearly disclose the grounds on which each of the claims under final rejection stands rejected and the letter of final action contains a mere restatement at greater length of said grounds, *Held* that the final rejection was in order.

ON PETITION.

TILTING CHAIR.

Mr. John H. Whipple for the applicant.

ALLEN, *Commissioner:*

This is a petition from the Examiner's refusal to enter and consider an amendment presented after final rejection.

Certain claims in this case were placed under final rejection April 14, 1905. These claims are in the same form as when the case was originally filed. Three actions were made on said claims prior to the final rejection. The references have been discussed by applicant with apparently a clear understanding of what they contain. The main contention on applicant's part is that the particular grounds on which each claim was rejected were not stated prior to the letter of final action.

A review of the first three Office actions clearly discloses the grounds on which each of the claims under final rejection stands rejected, and the letter of final action appears to be a mere restatement at greater length of said grounds. The mere fact that the letter closing primary consideration of the case stated the grounds of rejection at greater length than they had been before stated does not present new reasons for rejection. The final rejection was in order and was properly given.

The petition is denied.

GARCIA *v.* PONS.

Decided March 19, 1906.

INTERFERENCE—MOTION TO DISSOLVE—DEFINITENESS.

A motion to dissolve on the ground of non-interference in fact which alleges that no interference in fact exists, for the reason that certain specified elements of specified counts cannot be read on the constructions of both parties with the same meaning, is not open to the objection of indefiniteness. It is not necessary for the motion to state the grounds on which the allegations are based, as this is a matter of argument.

APPEAL on motion.

FIBER-CLEANING MACHINE.

Mr. J. Odell Fowler, Jr., for Garcia.

Mr. Albert C. Tanner and *Messrs. Davis & Davis* for Pons.

ALLEN, *Commissioner:*

This is an appeal by Pons from a decision of the Examiner of Interferences transmitting to the Primary Examiner that part of Garcia's motion for dissolution alleging non-interference in fact.

The transmission of this part of the motion is opposed on the ground that it does not comply with the recently-established practice with regard to definiteness.

The motion alleges that—

> * * * no interference in fact exists for the reason that the element "a series of platens having elastic means" or "a series of superimposed differential devices to yield a greater or less degree" of counts 1 and 2 of the issue cannot be read on the construction of both parties to this interference with the same meaning, notwithstanding that the above elements may be allowed both parties to the interference when viewed in respect to their respective disclosures.

It is to be observed that the motion does not state simply that there is no interference in fact, but it specifies the particular counts and the particular elements of those counts which are alleged not to interfere. Appellant contends that—

> * * * as the motion papers stand Pons is not informed of Garcia's grounds for the allegation that the elements cannot be read on the construction of both parties with the same meaning.

While this contention is true, it furnishes no reason for refusing the transmission of the motion, as the practice does not require that the motion shall be accompanied by the arguments upon which the moving party intends to rely to support his allegations. It is required that motions shall distinctly and definitely set forth the points to be argued, but not the arguments themselves. The motion complies with these requirements, and it was properly transmitted to the Primary Examiner for his consideration.

The decision of the Examiner of Interferences is affirmed.

KOLB *v.* HEMINGWAY *v.* CURTIS.

Decided March 19, 1906.

INTERFERENCE—DISSOLUTION—ALLEGED SUPERIOR CONSTRUCTION OF ONE PARTY.

Where interfering parties have different specific constructions, but the claims cover common features thereof, the fact that the device of one party is superior to that of another does not warrant a dissolution of the interference.

APPEAL on motion.

ELASTIC-FLUID TURBINE.

Messrs. Foster, Freeman & Watson for Kolb.

Mr. Charles B. Hemingway pro se.

Messrs. Dyer & Dyer for Curtis.

ALLEN, *Commissioner:*

Hemingway has filed a paper in this case entitled "Appeal by Hemingway on motion;" but it appears therefrom that it is in reality a request for reconsideration of his appeal which was decided on January 3, 1906. In addition to the request for reconsideration the paper includes a protest against the issue of a patent to Curtis.

It appears from the paper filed that Hemingway regards his invention as more efficient than that of his opponent, Curtis, and urges that it would be unjust to allow the patent to Curtis. So long as the parties are claiming common features of the invention it is not of consequence which is superior, and the alleged superiority of one over the other is no ground for a dissolution of the interference.

The contention that the claim of the issue should not be allowed to either party is a question which is not appealable under the express provisions of Rule 124. If Hemingway does not regard the claim as patentable, he is at liberty to abandon it.

The petition must be denied on the merits; but it is to be noted, also, that copies were not served upon the opposing parties and that therefore it is informal.

The petition is denied.

EX PARTE NENNINGER.

Decided March 19, 1906.

AMENDMENTS—DRAWINGS—NEW MATTER—APPEAL.

Where a proposed change in the drawings is offered and the Examiner rejects on the ground of new matter and the feature sought to be illustrated is a part of structure held to be inoperative, on which ground the application is also rejected, *Held* that the question is clearly one of merits and should be reviewed in the first instance by the Examiners-in-Chief.

ON PETITION.

WATER-STILL.

Messrs. Munn & Co. for the applicant.

ALLEN, *Commissioner:*

This is a petition from the refusal of the Examiner to admit an amendment to the drawing on the ground that it is not warranted by the original disclosure.

The proposed amendment to the drawing shows an alleged sectional view of the coupling at the top of the condensing-cylinder.

The Examiner has rejected on the ground of new matter and appears to be of the opinion that the proposed change includes structure not originally disclosed and involving the merits of the claims. The Examiner has also raised the question of inoperativeness of applicant's device as originally filed and has rejected for this reason. By the proposed change in the drawing the applicant would amend the structure which is held by the Examiner to be inoperative and which forms a part of the unitary device upon which the claims are drawn.

The Examiner having rejected on the ground of new matter and the feature sought to be illustrated being a part of the structure held to be inoperative, on which ground the application is also rejected, the question is clearly one of merits and should be reviewed in the first instance by the Examiners-in-Chief.

The petition is dismissed.

DICKINSON *v.* HILDRETH.

Decided March 21, 1906.

1. INTERFERENCE—MOTION TO DISSOLVE—ALLEGATIONS TOO INDEFINITE.

A motion to dissolve on the ground of non-interference in fact which alleges that neither party should be permitted to secure claims broad enough to cover the other's construction is indefinite and should not be transmitted to the Primary Examiner.

2. SAME—SAME—EFFECTIVE DATE OF APPLICATION NOT A QUESTION OF RIGHT TO MAKE CLAIMS.

A motion to dissolve on the ground that the opposing party has no right to make the claims which raises the question whether such party is entitled to the date of the earlier one of two applications mentioned in the notice of interference should not be transmitted to the Primary Examiner, as the question raised is one to be determined by the Examiner of Interferences and not the Primary Examiner.

APPEAL on motion.

CANDY-PULLING MACHINE.

Mr. Edward Taggart and *Mr. John C. Pennie* for Dickinson.

Messrs. Macleod, Calver, Copeland & Dike for Hildreth.

ALLEN, *Commissioner:*

This is an appeal by Hildreth from the decision of the Examiner of Interferences refusing to transmit to the Primary Examiner his motion to dissolve the interference on the ground that there is no interference in fact. It is also alleged that the Examiner erred in refusing to transmit for consideration two paragraphs of the motion relating to the right of Dickinson to make the claims involved in the interference.

Under the head of interference in fact Hildreth alleges that neither party should be permitted to secure claims broad enough to cover the other's construction; but there is no specific allegation that the claim actually made does not have the same meaning in both cases. The allegations, therefore, in regard to interference in fact are not clear and make it seem probable that the question intended to be argued under that head relates to the right of the parties to make the claims involved in the interference. The Examiner's objection to this part of the motion is well founded. The right of the appellant to allege and urge that there is no interference in fact is recognized, but under the present practice of the Office he is required to make clear upon what point he intends to base his argument.

Paragraphs *c* and *d* of the motion relating to Dickinson's right to make the claims raised the question whether Dickinson is entitled to the date of the earlier one of two applications mentioned in the notice of interference. It is urged that the earlier application does not disclose the invention, and it is very clear that this is a matter which is to be considered and determined by the Examiner of Interferences and not the Primary Examiner. (*Raulet and Nicholson* v. *Adams*, 114 O. G., 1827.)

The decision of the Examiner of Interferences is affirmed

CONKLIN AND SON *v.* THE ALBERT DICKINSON COMPANY.

Decided April 11, 1906.

1. TRADE-MARKS—SAME DESCRIPTIVE PROPERTIES.

Timothy-seed and clover-seed are goods of the same descriptive properties, so that the use of a mark by a party upon the former excludes the right of other parties to use the same mark upon the latter.

2. TRADE-MARK INTERFERENCE—PRIORITY—IDENTITY OF APPLICANT.

Whether the party named in an application for registration is the real owner of the rights represented by that application will not be considered in connection with priority, as the question is one for *exparte* determination by the Examiner of Trade-Marks after the question of priority has been finally settled.

ON PRIORITY.

TRADE-MARK FOR GRASS-SEED.

Messrs. Munn & Company for Conklin & Son.

Mr. H. N. Low for The Albert Dickinson Company.

ALLEN, *Commissioner:*

This is an appeal from the decision of the Examiner of Interferences awarding to E. W. Conklin & Son priority of adoption and use of the word "King" as a trade-mark for grass-seed.

The Examiner of Interferences found from the evidence that E. W. Conklin & Son adopted the word "King" as a trade-mark for timothy-seed in the year 1899 and that they have used it continuously since that time. He also found that The Albert Dickinson Company has used the word "King" as a mark upon clover-seed and redtop-seed since the year 1901. His conclusion in favor of E. W. Conklin & Son was based on these findings.

No error in these findings is alleged, and none is found; but it is contended by appellants that they do not support judgment of priority against them. This contention is based on the grounds, first, that the right of the appellees to use the mark upon timothy-seed does not exclude the right of others to use the same upon clover-seed, and, second, that there is no such firm as E. W. Conklin & Son, the real owner of the rights represented by the appellees' specification being Horace E. Conklin personally.

As to the first ground, the question is whether timothy-seed and clover-seed are goods of the same descriptive properties. I am of the opinion that they are. As to the second ground, the question is one for *ex parte* determination by the Examiner of Trade-Marks after the question of priority has been finally determined.

The decision of the Examiner of Interferences is affirmed.

DECISIONS OF THE U. S. COURTS.

Court of Appeals of the District of Columbia.

HENRY *v.* DOBLE.

Decided February 6, 1906.

1. INTERFERENCE—ORIGINALITY—DILIGENCE.

Where the evidence shows that H. is not an original inventor, *Held* that the question of the diligence of D. is immaterial.

2. SAME—SAME.

Where plans and specifications submitted to the construction company with which H. was connected disclosed the invention and H. prepared a proposal to meet said requirements, *Held* that H. is not an original inventor.

3. SAME—SAME—ADMISSION CONCLUSIVE.

If there could be any doubt that the invention of the issue was disclosed by certain specifications to the perception of H., who undertook the preparation of a proposal to meet their requirements, it is removed by his own admission under examination as a witness that they suggest the subject-matter of the interference.

Mr. L. S. Bacon and *Mr. J. H. Milans* for Henry.

Mr. Charles E. Foster for Doble.

SHEPARD, *J.:*

This interference, as declared, involved the applications of three parties, namely, that of George J. Henry, filed April 18, 1902; that of William R. Eckart, filed May 18, 1903; and that of William A. Doble, filed October 17, 1903.

The issue embraces twelve counts, as follows:

1. In a water-wheel nozzle, devices to move or deflect the same so that the jet therefrom will impinge upon wholly, in part, or pass the water-wheel buckets, and in combination therewith, devices separately adjustable within the nozzle to control the volume of water discharged therethrough, substantially as described.

2. In combination with a pivoted nozzle of the character described, means for adjusting said nozzle on its pivot, and instrumentalities for regulating the cross-sectional area of discharge from the nozzle, said instrumentalities being carried by the nozzle and free to move therewith whereby the same may be adjusted irrespective of the position of the nozzle, substantially as described.

3. In combination with a nozzle of the character described, primary means whereby an approximate adjustment may be given said nozzle to vary the position of the stream discharged therefrom, and secondary means on the nozzle for regulating the cross-sectional area of the stream to correspond with the adjustment of the stream's position, substantially as described.

4. In combination with a pivoted nozzle mounted to swing in vertical planes and of the character described, means for regulating the cross-sectional area of discharge from the nozzle, said instrumentalities being carried by the nozzle and free to move therewith whereby the same may be adjusted irrespective of the position of the nozzle, substantially as described.

5. In combination with a single-discharge nozzle of the character described, primary means whereby an approximate adjustment may be given said nozzle to vary the position of the stream discharged therefrom, and secondary means on the nozzle for regulating the cross-sectional area of the stream to correspond with the adjustment of the stream's position, substantially as described.

6. The combination with the line or supply pipe, of a discharge-nozzle movably connected thereto, means for raising and lowering the nozzle in accordance with the load variations, and means whereby the outlet area for the stream ejected from the nozzle is varied to meet the requirements of the load changes.

7. The combination with a nozzle, of means for raising or lowering the same proportionate to the load variations, and means for varying the stream's area in accordance with the variation of the nozzle to the load changes.

8. The combination with a deflectable nozzle, of means for varying the position thereof in accordance with the load variations, a longitudinally-movable plug located within the nozzle, and means whereby the plug is moved in or out to vary the outlet area for the stream to correspond with the variation of the nozzle.

9. The combination with a nozzle, of means for varying the direction of the stream ejected therefrom to meet the requirements of the load variations, and means whereby the outlet area for the stream is varied to compensate for the load changes.

10. A nozzle of the character described provided with means for adjusting the position thereof, in combination with means whereby the discharge from the nozzle may be regulated when said nozzle occupies any of its adjusted positions without interfering with such adjustment, substantially as described.

11. In a hydraulic nozzle, mechanism for regulating the amount of water discharged therefrom, in combination with mechanism for moving the nozzle so as to direct or deflect the stream substantially as described.

12. In a hydraulic nozzle, mechanism for regulating the amount of water discharged therefrom, in combination with automatic mechanism for moving the nozzle so as to direct or deflect the stream, substantially as described.

The Examiner of Interferences described the invention and the meaning of the several counts of the issue in the following language, which we adopt:

The invention in controversy is an improvement in that form of water-wheel in which a jet of water under high pressure is directed tangentially toward the wheel and impacts upon buckets mounted on the periphery thereof. In order to compensate for the variations in the load upon the machinery driven by the water-wheel, it has been the practice to either reduce the flow of water by means of a valve or gate, or to deflect the jet from the buckets by turning a pivoted nozzle or by interposing a deflecting plate or hood in the path of the water projected from a stationary nozzle. All of these expedients are old. The issue of the interference, in its broadest aspect, is the combination of means for deflecting the stream from the buckets of the water-wheel, with means for varying the flow of water. The advantage of this combination lies in the fact that it permits compensation for the momentary variations in load by the action of a governor upon the mechanism for deflecting the jet of water, and also provides for controlling the volume of water in the jet to compensate for the less frequent changes in load or to meet variations in the water-supply. The disadvantage of the former means of control, that by deflecting the jet, lies in the resulting waste of water. Its advantage is that rapid changes in load can be met without injury to any part of the system. Owing to the fact that impact water-wheels are operated under a head of water often upwards of a thousand feet, it is not practicable to compensate for rapid variations in load by throttling the water-supply, as the sudden stoppage of the flow of water causes a "pipe-ram" or "pounding" which sometimes results in rupturing the pipe. The less frequent variations in load may, however, be successfully taken care of by gradually throttling the water-supply, and this means has the advantage of economizing water.

Counts 1 to 8 inclusive, 10, 11 and 12 of the issue are limited to a movable nozzle for deflecting the jet of water. Count 9 is broad enough to cover a stationary nozzle in connection with a plate or hood for deflecting the stream after it has left the nozzle, the only limitation being the phrase "means for varying the direction of the stream ejected therefrom."

Count 1 is limited to "devices within the nozzle" to control the volume of water, and count 8 is limited to a "longitudinally-movable plug located within the nozzle" for the same purpose. The remaining claims are broad enough to cover other controlling means, including certain devices referred to in the testimony in which the amount of water flowing from the nozzle is controlled by a "cut-off hood" which moves transversely over the end of the nozzle and is external thereto. The "cut-off hood" differs from the deflecting-plate or deflecting-hood above referred to in that the former reduces the amount of water by contracting the outlet-orifice but does not change the direction of the stream, while the deflecting-plate does not affect the amount of water or change the outlet area of the nozzle, but changes the direction of the stream after it has left the nozzle.

From the foregoing it appears that counts 2 to 7, 10, 11 and 12 are limited to the combination of a movable nozzle with means for regulating the amount of water discharged, said means being broadly stated so as to cover either an internal needle, a cut-off hood, or other form of valve. Count 1 is limited to the combination of a movable nozzle with means "within the nozzle" to control the volume of water discharged, and count 8 to the combination of a movable nozzle with "a longitudinally-movable plug located within the nozzle." Count 9 is the broadest claim and is limited merely to the combination of "means for varying the direction of the stream" with means for varying the outlet area thereof.

After an exhaustive review of the evidence, the Examiner of Interferences awarded priority to Doble, but under the provisions of Rule 126 directed the attention of the Commissioner to the fact that he was of the opinion, that Doble's evidence established *prima facie* the existence of the statutory bar of public use as to count 9 of the issue.

Eckart, who was a witness in the case took no appeal from this decision, and has, therefore, passed out of the case.

Henry appealed to the Examiners-in-Chief who likewise awarded priority to Doble. They did not agree with the Examiner of Interferences as to the public use of the invention as described in count 9, and further called the attention of the Commissioner to the fact that in their opinion counts 10, 11, and 12 are not patentable because anticipated by the old construction comprising a movable nozzle connected with a Lombard governor, a supply-pipe connected to the nozzle, and a gate-valve in the supply-pipe.

On appeal by Henry to the Commissioner the decision awarding priority to Doble was affirmed. Apparently he took no notice of the suggestion of the Examiners-in-Chief respecting counts 10, 11, and 12. The question of public use he expressly reserved for consideration after the question of priority shall have been finally settled.

Neither the Examiner of Interferences nor the Commissioner assigns any particular date to the conception of Doble, but find merely that he had it prior to April, 1900. The Examiners-in-Chief fix the date of his conception as early in 1898.

As Eckart, who seems moreover not to have been an inventor at all, is out of consideration, it is immaterial to determine whether Doble is entitled to the earlier date. Henry's testimony is insufficient to show that he had any knowledge of the invention earlier than April 23, 1900, and all of the tribunals have concurred in finding that he was not an original inventor at all. If he was not, the question of Doble's diligence is immaterial.

It appears that on April 23, 1900, the Standard Electric Company submitted plans and specifications to several construction companies for the construction of a proposed power plant. These were submitted, among others, to the Pelton Water Wheel Company, of which Henry was then an employee. Acting for that company, Henry made some drawings, between April 23 and May 10, 1900, in connection with their proposal for the construction aforesaid, which he claims as his disclosure of the invention.

Among the specifications of the Standard Electric Company appears the following:

NOZZLES.

Deflecting-nozzles with changeable tips of approved design and material will be used, one for each runner. The mechanism, under control of a Lombard governor, will be such, that one nozzle at a time will be deflected, but in case of a short circuit both nozzles will be acted upon to the extent of deflecting both streams off of the wheels. The object of this arrangement is to enable one wheel-gate to be closed at any time, and by means of the other wheel to operate the generator at half-power. Further, to provide for a three-quarter load without excessive waste of water, one of the deflecting-nozzles will be fitted with a "needle-valve" so arranged that a nozzle of three-inch diameter can have its area reduced one-half (full closure is not required) while the generator is running. This adjustment is to be made by hand without in any way interfering with governors' action on the deflecting-nozzles. All nozzles must be operated in a vertical plane, and must be guided so that the stream from the nozzles will properly impinge upon the buckets in every position. The nozzles will be properly balanced with levers and adjustable weights, so that the governors' action may be uniform. The rock-shaft and lever mechanism between the governor and nozzles must be properly arranged and secured to prevent accident from bolts or pins working loose, or levers breaking.

At that time, both the deflecting-nozzle and the needle-valve were well-known devices; and the evidence tended to show that Doble suggested the combination of the specification.

The drawings accompanying the specifications show the general arrangement of the proposed construction comprising the main supply-pipe, two branch supply-pipes leading to each of two wheels, a gate-valve in each supply-pipe, and a Lombard governor. This governor acts to deflect the pivoted nozzle toward or away from the axis of the wheel so that more or less of the water-jet may strike its buckets.

It is conceded by counsel for Henry that if the specifications aforesaid disclose the invention, he cannot be found to have conceived the broad invention of the issue. He contends, however, that they merely suggest the desirability of providing an automatic governing device with means for hand control, that is to say a result to be accomplished, without describing the means by which that result may be attained.

The contention is without foundation. The specifications expressly require the deflecting or deflectable nozzle provided with a needle-valve to reduce the area of its outlet as occasion might from time to time require. This reduction is to be one-half. Merely reducing the supply of water to the nozzle would not have that effect. To reduce the area of the outlet, therefore, it was obviously necessary to place the specified needle-valve in the outlet; and this is all that Henry did.

If there could be any doubt that the invention of the issue was disclosed by these specifications to the perception of Henry, who undertook the preparation of a proposal to meet their requirements, it is removed by his own admission under examination as a witness. The specifications, with which of course he was perfectly familiar, having been read to him, he was asked if they did not suggest the subject-matter of the interference. His reply was:

Yes, I consider that it suggests it.

It is unnecessary to prolong the discussion. The Commissioner was right in holding that Henry cannot be regarded as an original inventor, and in awarding priority to Doble. His decision must therefore be affirmed. It is so ordered, and that this decision be certified to the Commissioner of Patents as required by law. Affirmed.

NEW TRADE-MARK LAW.

[PUBLIC—No. 146.]

An Act to amend the laws of the United States relating to the registration of trade-marks.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That section one of the Act entitled "An Act to authorize the registration of trade-marks used in commerce with foreign nations or among the several States or with Indian tribes, and to protect the same," approved February twentieth, nineteen hundred and five, be, and is hereby, amended by inserting after the words "description of the trade-mark itself," the words "only when needed to express colors not shown in the drawings," so that the section, as amended, shall read as follows:

"That the owner of a trade-mark used in commerce with foreign nations, or among the several States, or with Indian tribes, provided such owner shall be domiciled within the territory of the United States or resides in or is located in any foreign country which, by treaty, convention, or law affords similar privileges to the citizens of the United States, may obtain registration for such trade-mark by complying with the following requirements: First, by filing in the Patent Office an application therefor, in writing, addressed to the Commissioner of Patents, signed by the applicant, specifying his name, domicile, location, and citizenship; the class of merchandise and the particular description of goods comprised in such class to which the trade-mark is appropriated; a description of the trade-mark itself, only when needed to express colors not shown in the drawing, and a statement of the mode in which the same is applied and affixed to goods, and the length of time during which the trade-mark has been used. With this statement shall be filed a drawing of the trade-mark, signed by the applicant, or his attorney, and such number of specimens of the trade-mark as actually used as may be required by the Commissioner of Patents. Second, by paying into the Treasury of the United States the sum of ten dollars, and otherwise complying with the requirements of this Act and such regulations as may be prescribed by the Commissioner of Patents."

SEC. 2. That the Commissioner of Patents shall establish classes of merchandise for the purpose of trade-mark registration, and shall determine the particular descriptions of goods comprised in each class. On a single application for registration of a trade-mark the trade-mark may be registered at the option of the applicant for any or all goods upon which the mark has actually been used comprised in a single class of merchandise, provided the particular descriptions of goods be stated.

SEC. 3. That any owner of a trade-mark who shall have a manufacturing establishment within the territory of the United States shall be accorded, so far as the registration and protection of trade-marks used on the products of such establishment are concerned, the same rights and privileges that are accorded to owners of trade-marks domiciled within the territory of the United States by the Act entitled "An Act to authorize the registration of trade-marks used in commerce with foreign nations or among the several States or with Indian tribes, and to protect the same," approved February twentieth, nineteen hundred and five.

SEC. 4. That this Act shall take effect July first, nineteen hundred and six.

Approved, May 4, 1906.

TRADE MARKS.

Classification of Merchandise.

GROUP 1.—RAW MATERIALS.

1. Animal.
2. Mineral.
3. Vegetable.

GROUP 2.—MANUFACTURED MATERIALS.

4. Abrasive and polishing materials not included in classes 8 and 16.
5. Adhesives.
6. Chemicals not otherwise classified.
7. Cordage not included in class 13.
8. Detergents.
9. Explosives.
10. Fertilizers.
11. Leather blackings and dressings.
12. Masonry materials.
13. Metal manufactures not otherwise classified.
14. Metals, unwrought and partly wrought.
15. Oils and greases not included in classes 6, 16, and 50.
16. Paints and painters' materials.
17. Wood manufactures not otherwise classified.

GROUP 3.—TOOLS, MACHINERY, AND VEHICLES.

18. Agricultural and dairy machinery and parts of such machinery.
19. Boats and road-vehicles.
20. Cutlery not included in class 61, and edge-tools.
21. Electrical apparatus, machines, and supplies.
22. Firearms, and equipments and projectiles not otherwise classified.
23. Hand-tools not otherwise classified.
24. Laundry appliances and machines.
25. Locks and safes.
26. Machinery and parts of machinery not otherwise classified.
27. Railway equipment not otherwise classified, and railway rolling-stock.
28. Sewing-machines and attachments.

GROUP 4.—FURNITURE AND HOUSEHOLD ARTICLES.

29. Brooms, brushes, and dusters.
30. Crockery, earthenware, and porcelain.
31. Filters and refrigerators.
32. Furniture and upholstery not otherwise classified.
33. Glassware not otherwise classified.
34. Heating, lighting, and ventilating apparatus not included in class 21.

GROUP 5.—LEATHER, PAPER, AND RUBBER GOODS.

35. Belting, hose, and machinery-packing.
36. Leather and leather manufactures not otherwise classified.
37. Paper and paper manufactures not otherwise classified.
38. Rubber and minor plastics not otherwise classified.

GROUP 6.—DRY GOODS AND CLOTHING.

39. Clothing not otherwise classified.
40. Fancy goods, furnishings, and notions.
41. Knitted, netted, and lace goods.
42. Textiles not otherwise classified.
43. Thread and yarn.

GROUP 7.—FOODS.

44. Bakery products, cereal foods, and yeast.
45. Beverages, non-alcoholic.
46. Coffee, tea, and substitutes.
47. Confectionery.
48. Dairy products.
49. Distilled alcoholic liquors.
50. Foods not otherwise classified.
51. Malt liquors.
52. Packing-house products.
53. Saccharine foods not included in class 47.
54. Sea foods.
55. Wines.

GROUP 8.—MISCELLANEOUS.

56. Canes, parasols, and umbrellas.
57. Dental machines, apparatus, and supplies.
58. Games and toys, and sporting goods not otherwise classified.
59. Horological instruments.
60. Inks and inking materials.
61. Jewelry, and solid and plated precious-metal ware.
62. Linoleum and oiled cloth.
63. Measuring and scientific apparatus, appliances, and instruments.
64. Medical and surgical apparatus, appliances, and instruments.
65. Musical instruments and talking-machines and supplies therefor.
66. Objects of art and ornament.
67. Pharmaceutical preparations, plasters, and proprietary and veterinary medicines.
68. Publications.
69. Smokers' articles not included in class 71.
70. Stationery not otherwise classified.
71. Tobacco products.
72. Merchandise not otherwise classified.

NOTICE.—The classes of merchandise contained in the foregoing schedule are approved and will be given effect upon the first day of July, 1906, according to the provisions of section 2 of the act entitled "An Act to amend the laws of the United States relating to the registration of trade-marks," approved May 4, 1906.

F. I. ALLEN,
Commissioner.

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

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TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama	2	.....	Nevada	1	.....
Alaska, District of	.....	.....	New Hampshire	1	1
Arizona Territory	2	.....	New Jersey	36	29
Arkansas	2	.....	New Mexico Ter't'y	1	.....
California	17	5	New York	91	49
Colorado	6	3	North Carolina	3	.....
Connecticut	16	5	North Dakota	5	2
Delaware	3	.....	Ohio	40	10
District of Columbia	1	5	Oklahoma Territ'y	.....	.....
Florida	4	.....	Oregon	4	.....
Georgia	3	1	Pennsylvania	57	35
Hawaii Territory	.....	3	Porto Rico	.....	.....
Idaho	.....	.....	Rhode Island	7	2
Illinois	63	35	South Carolina	1	1
Indian Territory	1	.....	South Dakota	3	1
Indiana	11	4	Tennessee	4	7
Iowa	12	3	Texas	5	3
Kansas	8	1	Utah	2	.....
Kentucky	5	1	Vermont	2	1
Louisiana	3	5	Virginia	3	5
Maine	2	2	Washington	6	2
Maryland	8	3	West Virginia	6	1
Massachusetts	42	28	Wisconsin	17	1
Michigan	26	3	Wyoming	.....	.....
Minnesota	13	5	U. S. Army	.....	.....
Mississippi	.....	.....	U. S. Navy	1	.....
Missouri	21	10			
Montana	.....	.....	Total to citizens of the United States	573	272
Nebraska	6	.....			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina	.....	.....	Netherlands	.....	.....
Austria-Hungary	1	.....	Newfoundland	.....	.....
Belgium	.....	.....	New South Wales	.....	.....
Brazil	.....	.....	New Zealand	3	.....
British West Indies	.....	.....	Norway	.....	.....
Canada	13	.....	Persia	.....	.....
Cape Colony	.....	.....	Queensland	.....	.....
Chile	.....	.....	Roumania	.....	.....
China	.....	.....	Russia	.....	.....
Costa Rica	.....	.....	San Salvador	.....	.....
Cuba	.....	.....	Scotland	1	1
Denmark	1	.....	South Africa	.....	.....
Ecuador	.....	.....	Spain	.....	.....
England	19	5	Sweden	1	.....
France	4	2	Switzerland	2	.....
Germany	21	8	Transvaal, South Africa	.....	.....
Guatemala	.....	.....	Victoria	3	.....
Ireland	.....	.....	Western Australia	1	.....
Italy	1	.....			
Japan	2	.....	Total to citizens of foreign countries	73	16
Mexico	.....	.....			
Natal	.....	.....			

Notice.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., May 10, 1906.

Notice is hereby given that no cases will be docketed or heard by the Commissioner or the Assistant Commissioner in the months of July and August, 1906, except when required to avoid irreparable injury.

F. I. ALLEN,
Commissioner.

Complete Applications.

It is hereby ordered that applications shall not be given serial numbers as complete applications and forwarded to the examining divisions for examination (1) when the petition has not been signed by the inventor; (2) when the specification and claims have not been signed by the inventor and the signature attested by two witnesses; (sec. 4888, Rev. Stats.;) (3) when the drawing has not been signed by the inventor or his attorney in fact and the signature attested by two witnesses; (sec. 4889, Rev. Stats.;) and (4) when the oath to the application does not fill the requirements of sections 4887 and 4892, Revised Statutes.

The requirements of section 4896, Revised Statutes, respecting the right of executor or administrator to make application for a patent for the invention of a deceased person must also be observed before the application will be considered as complete and forwarded for examination.

* * * * * * *

This order, so far as applicable, relates to applications for the registration of trade-marks, labels, and prints, which must in all respects comply with the requirements of the statutes.

[Sections 4887, 4892, and 4896, Revised Statutes, above mentioned, were amended by the act of March 3, 1903.]

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business May 22, 1906.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended		New.	No. of applications awaiting action.
	In arrears—Under fifteen days.				
322	XXXVI. Curtains, Shades, and Screens, Drafting, Driers, Measuring Instruments, and Wind-Wheels.	May	9	Apr. 25	241
304	XXXIV. Railways, Railway-Brakes, Rolling-Stock.	May	9	Mar. 17	414
154	XI. Boot and Shoe Making, Boots, Shoes, and Leggings, Button, Eyelet, and Rivet Setting, Leather Manufacturing, Nailing and Stapling, Check-Controlled Apparatus, Whips and Whip Apparatus.	May	9	Feb. 10	355
148	XXXII. Carbonating Beverages, Dispensing Beverages, Dispensing-Cans, Metallic Shipping and Storing Vessels, Packaging Liquids, Paper Receptacles, Refrigeration, Wooden Receptacles.	May	9	Jan. 2	690
332	X. Carriages and Wagons.....	May	9	Dec. 16	1009
378	XXXVIII. Artesian and Oil Wells, Bottles and Jars, Care of Live Stock, Fishing and Trapping, Stationery, Stone-Working.	May	8	Apr. 16	279
303	XVII. Linotyping, Printing, Matrix-Making, Nut and Bolt Locks.	May	8	Mar. 5	322
244	XXXV. Baggage, Buckles, Buttons, and Clasps, Card, Picture, and Sign Exhibiting, Deposit and Collection Receptacles, Package and Article Carriers, Packing and Storing Vessels, Photography.	May	8	Feb. 23	718
137	VIII. Beds, Chairs, Furniture, Kitchen and Table Articles. Store Furniture.	May	8	Jan. 22	621
330	XIII. Arms, Projectiles, and Explosive Charges, Making, Metal-Working, Needle and Pin Making.	May	8	Nov. 2	585
179	XX. Artificial Limbs, Builders' Hardware, Dentistry, Locks and Latches, Safes, Undertaking.	May	8	Sept. 26	487
175	III. Annealing and Tempering, Coating with Metal, Electro-chemistry, Metal-Founding, Metallurgy, Shaping Fluid Metal.	May	7	Mar. 28	342
107	XXXVII. Electricity, Conductors, Lighting, Special Apparatus.	May	7	Sept. 27	837
	Under one month.				
128	II. Bee Culture, Dairy, Label-Affixers, Paper Files and Binders, Presses, Store-Service, Tobacco, etc.	May	3	Feb. 19	331
308	XV. Bread, Pastry, and Confections, Making, Coating, Laminated Sheets and Fabrics, Fuel, Glass, Hydraulic Lime and Cement, Paper-Making, Paving, and Plastics.	May	2	Mar. 12	471
105	XXVI. Electricity, Generation, Electric Heaters, Electric Railways, Motive Power.	May	2	Oct. 19	768
164	XXXIII. Canes, Canopies, Cutlery, Domestic Cooking Vessels, Electricity, Medical and Surgical, Electric Signaling, Fireproof Buildings, Harness, Masonry, Tents, and Umbrellas.	May	1	Nov. 21	728
321	I. Tillage, etc., Fences, and Railway Draft Appliances.	Apr.	30	Apr. 2	252
122	XIX. Stoves and Furnaces and Steam-Boiler Furnaces.	Apr.	28	Nov. 20	725
172	XXXI. Alcohol, Charcoal and Coke, Distillation, Gas, Heating and Illuminating, Hides, Skins, and Leather, Liquid Coating Compositions, Oils, Fats, and Glue, Water Purification.	Apr.	28	Mar. 21	287
318	VI. Bleaching and Dyeing, Chemicals, Explosives, Fertilizers, Medicines, Preserving, Sugar and Salt.	Apr.	28	Feb. 3	407

Applications Under Examination—Continued.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
152	XXX. Fluid-Pressure Regulators, Lamps and Gas-Fittings, Type-Writing Machines.	Apr. 26	Oct. 24	700
	Between one and two months.			
312	VII. Velocipedes, Clutches, Fire-Escapes, Games and Toys, Ladders, Mechanical Motors, and Paper Manufactures.	Apr. 21	Dec. 14	487
133	XXII. Air-Guns, Ammunition and Explosive Devices, Boats and Buoys, Catapults and Targets, Firearms, Marine Propulsion, Ordnance, Ships.	Apr. 21	Oct. 30	322
327	XVIII. Steam-Engineering, etc ...	Apr. 20	Jan. 22	427
379	XXIII. Acoustics, Coin-Handling, Horology, Recorders, Registers, Optics, Signals, Time Controlling Mechanism.	Apr. 18	Nov. 30	734
147	XXIX. Coopering, Roofs, Wheelwright-Machines, Wooden Buildings, Wood-Sawing, Wood-Turning, Woodworking-Tools.	Apr. 16	Jan. 13	525
144	XXIV. Apparel, Apparel Apparatus, Sewing-Machines, Surgery, Toilet.	Apr. 16	Dec. 1	675
232	IV. Bridges, Conveyers, Cranes and Derricks, Excavating, Hoisting, Hydraulic Engineering, Loading and Unloading, and Towers.	Apr. 12	Apr. 18	417
109	XVI. Telegraphy and Telephony..	Apr. 11	Mar. 5	389
167	V. Fine Arts, Bookbinding, Harvesters, Jewelry, and Music.	Apr. 10	Feb. 7	469
324	XII. Elevators, Journal-Boxes, Lubricators, Machine Elements, Pulleys and Shafting.	Apr 9	Mar. 17	514
142	IX. Baths and Closets, Fire-Extinguishers, Hydraulic Motors, Pumps, Sewerage, and Water Distribution.	Apr. 9	Sept. 22	1195
307	XIV. Cutting and Punching Sheets and Bars, Farriery, Metal-Bending, Metal-Ornamenting, Metal Personal Wear, Making, Sheet-Metal Ware, Making, Tools, Wire-Working.	Apr. 2	Jan. 11	377
375	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, Washing Apparatus.	Mar. 28	Nov. 3	826
	Between two and three months.			
315	XXV. Butchering, Mills, Threshing, and Vegetable Cutters and Crushers.	Mar. 21	Dec. 19	588
112	XXI. Textiles, Carding, Knitting, Spinning, Weaving, etc.	Mar. 1	Sept. 19	712
382	XXVIII. Air and Gas Engines, Air and Gas Pumps, Pneumatics.	Feb. 27	Aug. 15	1281

Total number of applications awaiting action 21,507

159	TRADE-MARKS, DESIGNS, LABELS AND PRINTS.			
	Under one month.			
	Trade-Marks.....	May 2	Mar. 1	2069
	Under fifteen days.			
	Designs.....	May 7	May 1	47
	Labels and Prints.....	May 18	May 16	12

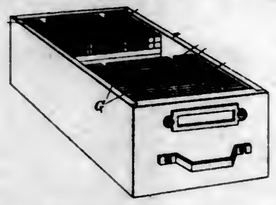
Amendments to Amendments.

RULE 74. When an amendatory clause is amended, it must be wholly rewritten, so that no interlineation or erasure shall appear in the clause, as finally amended, when the application is passed to issue. If the number or nature of the amendments shall render it otherwise difficult to consider the case or to arrange the papers for printing or copying, the Examiner or Commissioner may require the entire specification to be rewritten.

PATENTS

GRANTED MAY 29, 1906.

821,602. **CARD-INDEX.** EDWARD C. ALBREE, Swampscott, Mass. Filed Aug. 23, 1905. Serial No. 275,941.



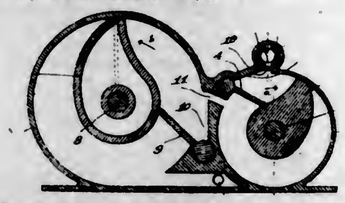
Claim.—1. The improved card-index system which comprises cards in subdivisions, the cards in each subdivision being provided with notches on a portion of the card which is visible when the cards are in place, the notches on all the cards in a subdivision registering with each other but the notches in no two subdivisions being alike, whereby a visual indicator of a misplaced card is formed.

2. The improved card-index system which comprises cards in subdivisions, said cards being divided into spaces along the top and provided with symbols in the said spaces, all the cards in a subdivision being provided with registering notches corresponding to one or more of the said spaces, but the notches in no two subdivisions being alike, whereby attention is called to a misplaced card.

3. The improved card-index system which comprises cards in subdivisions provided with spaces across the top and having symbols therein, one or more spaces being punched out to indicate the subdivision to which the card belongs and all the cards in a subdivision being punched alike and being unlike the cards in any other subdivision.

4. The improved card-index system which comprises cards in subdivisions provided with spaces across the top numbered for "tens" and "units," one or more spaces being punched out to indicate the number of the subdivision, all the cards in a subdivision being punched alike and being unlike the cards in any other subdivision.

821,603. **COMPOUND ROTARY ENGINE.** WILLFRED J. ARTIBER, Chazy, N. Y., assignor of one-half to Clarence H. Jones, Chazy, N. Y. Filed Sept. 5, 1905. Serial No. 277,028.



Claim.—1. A compound rotary engine comprising a plurality of separable and independent high-pressure cylinders, a rotary piston in each of the cylinders, a rotary shaft connecting the pistons in the high-pressure cylinders, a steam-chest, a distribution-valve controlling the live steam into the high-pressure cylinders, a plurality of low-pressure cylinders corresponding to the number of high-pressure cylinders, a port connecting each one of the high-pressure cylinders with a corresponding low-pressure cylinder, a separate rotary shaft connecting the pistons in the low-pressure cylinders and an exhaust for the low-pressure cylinders.

2. A compound rotary engine comprising a plurality of separable and independent high-pressure cylinders, a rotary piston in each of the cylinders, an abutment in each of the cylinders, a rotary shaft connecting the pistons in the high-pressure cylinders, a steam-chest, a distribution-valve controlling the live steam into the high-pressure cylinders, a plurality of low-pressure cylinders corresponding to the number of high-pressure cylinders, an abutment in each of the low-pressure cylinders, a port connecting each one of the high-pressure cylinders with a corresponding low-pressure cylinder, a separate rotary shaft connecting the pistons in the low-pressure cylinders, an exhaust for the low-pressure cylinders and means for properly operating the distribution-valve.

3. A compound rotary engine comprising a plurality of high-pressure cylinders, a rotary piston in each of said cylinders, a rotary shaft connecting the pistons, a steam-chest, a distribution-valve in the steam-chest and controlling the live steam to the high-pressure cylinders, a plurality of low-pressure cylinders, a port connecting each of the high-pressure cylinders with a low-pressure cylinder, a rotary piston in each of the low-pressure cylinders, a separate rotary shaft connecting the pistons in the low-pressure cylinders, an exhaust-port for the low-pressure cylinders, and means for properly operating the distribution-valve.

821,604. **TERRET FOR HARNESS.** GORDON W. BEGOLE, Grand Rapids, Mich., assignor to Grand Rapids Saddlery Hardware Manufacturing Company, Limited, Grand Rapids, Mich., a Corporation of Michigan. Filed Sept. 3, 1904. Renewed Nov. 2, 1905. Serial No. 285,590.



Claim.—1. A hollow terret-ring composed of two parts of stamped sheet metal provided with lateral extensions, a stud having a segmental T-head inserted in the ring said stud being surrounded and engaged by said extensions, and means for securing the parts of the ring to each other.

2. The combination of a ring composed of two hollow sheet-metal sections having lateral extensions and inwardly-turned flanges, and a screw-threaded stud having a segmental T-head inserted in the hollow ring and a groove engaged by the flanges.

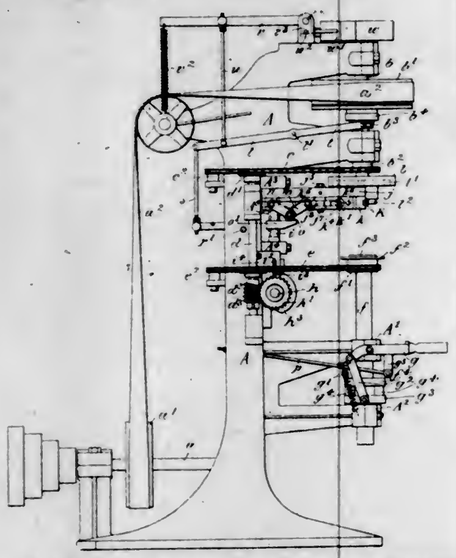
3. The combination of a stud having a segmental T-head, a divided hollow ring inclosing the T-head, and also having a lateral extension and inwardly-turned flanges surrounding the stud, and means for securing the parts of the ring to each other.

4. The combination of a hollow ring consisting of two equal stamped sheet-metal portions, each portion having a lateral extension provided with a base consisting of an inwardly-turned flange, a screw-threaded stud having a segmental T-head located within the ring and also having a circumferential groove engaged by the flanges, and rivets extending through the ring to secure the parts in place.

821,605. **CAN-HEADING MACHINE.** JULIUS BERENBERG, Mount Vernon, N. Y., assignor to Sanitary Can Machinery Company, Ellsworth, Me., a Corporation of Maine. Filed June 15, 1905. Serial No. 265,407.

Claim.—1. In a can-heading machine, a guide-lever, a seaming-

lever, a spindle on which both levers are fulcrumed, a seaming-roller carried by the seaming-lever, and means for operating the levers, substantially as specified.



2. In a can-heading machine, a guide-lever and a seaming-lever having coincident pivots, a cam engaged by the guide-lever, and means for operating the seaming-lever, substantially as specified.

3. In a can-heading machine, a guide-lever, a seaming-lever, a spindle on which both levers are fulcrumed, a cam engaged by the guide-lever, and a horizontally-slidable wedge adapted to operate the seaming-lever, substantially as specified.

4. In a can-heading machine, a guide-lever, a seaming-lever, a spindle on which both levers are fulcrumed, a wedge between the levers, and means for operating the wedge, substantially as specified.

5. In a can-heading machine, a guide-lever and a seaming-lever having coincident pivots, an abutment on one of said levers, and a wedge between said abutment and the other lever, substantially as specified.

6. In a can-heading machine, a guide-lever and a seaming-lever having coincident pivots, a pin on one of said levers, a roller on said pin, and a wedge between said roller and the other lever, substantially as specified.

7. In a can-heading machine, a guide-lever and a seaming-lever having coincident pivots, an abutment on one of said levers, a wedge between said abutment and the other lever, and means for reciprocating the wedge, substantially as specified.

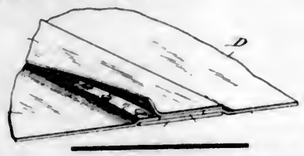
8. In a can-heading machine, a guide-lever, a seaming-lever, a spindle on which both levers are fulcrumed, an abutment on one of said levers, a wedge between said abutment and the other lever, and means for reciprocating the wedge, substantially as specified.

9. In a can-heading machine, a guide-lever, a seaming-lever, a wedge between the levers, a toggle-joint for operating the wedge, a roller on the toggle-joint, and a vertically-movable disk engaging the roller, substantially as specified.

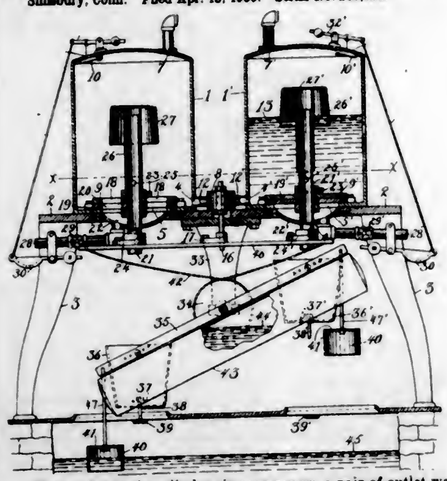
10. In a can-heading machine, a guide-lever, a seaming-lever composed of two sections and having a pivot coincident with the guide-lever, a cushion between the seaming-lever sections, and a seaming-roller carried by one of said sections, substantially as specified.

821,606. ROOFING-LAP. EDWARD N. BROGAN, Boundbrook, N. J. Filed Aug. 17, 1904. Serial No. 221,294.

Claim.—A fabric batten for fabric roofs, comprising two outer strips of suitable saturated fabric and an intermediate strip narrower than the outer strips, the outer strips overlapping the same at both edges and leaving space to receive the edge of adjoining sheets of roofing fabric, and making a lap-joint therefor, the projecting portions of the upper strip being adapted so as to be turned up for the insertion of the edges of roofing-sheets and for securing the same to the lower strip, and the roof and also to be turned down and cemented upon the said roofing-sheet.

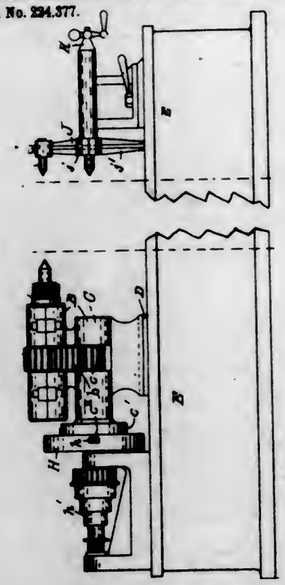


821,607. HYDRAULIC AIR-COMPRESSOR. FRANK C. CARR, Simsbury, Conn. Filed Apr. 15, 1905. Serial No. 255,686.



Claim.—In a twin-cylinder air-compressor, a pair of outlet water-valves and a two-way supply-cock, provided each with a torsional stem, having a lever-arm, which is pinned to a common reciprocable rod, in combination with an oscillating governor, which carries a shifting load, and is connected with said reciprocable rod by means of a pulley and a slack rope.

821,608. ATTACHMENT FOR INCREASING THE SWING OF LATHES. ARTHUR V. CARROLL, Batavia, Ohio. Filed Sept. 14, 1904. Serial No. 224,377.



Claim.—1. In a lathe, the combination of a frame; a base-plate adapted to be secured to said frame and to a lathe-bed; means for detachably securing said base-plate to the frame and the lathe-bed; a shaft rotatably mounted in said frame; a crank-pin carried by said shaft and adapted to engage a slot in a face-plate on the live lathe-spindle; a supplemental live lathe-spindle mounted in said frame at a higher elevation than the regular live lathe-spindle; and a driving connection between said shaft and said supplemental live lathe-spindle; substantially as specified.

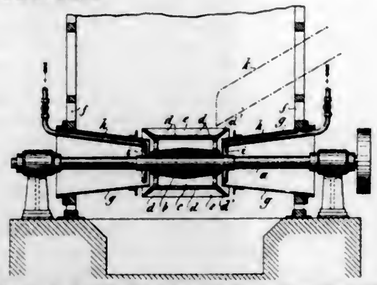
2. In a lathe, the combination of a frame adapted to be secured to a lathe-bed; a shaft rotatably mounted in said frame; a crank-pin carried by said shaft and adapted to engage a slot in a face-plate on the live lathe-spindle; a supplemental live lathe-spindle mounted in said frame at a higher elevation than the regular live lathe-spindle; and a driving connection between said shaft and said supplemental live lathe-spindle, substantially as specified.

3. In a lathe, the combination of a frame adapted to be secured to a lathe-bed; a shaft rotatably mounted in said frame; a plate carried by said shaft and provided with non-central pins adapted to engage slots in a face-plate on the live lathe-spindle; a supplemental live lathe-spindle mounted in said frame at a higher elevation than the regular live lathe-spindle; and a driving connection between said shaft and said supplemental live lathe-spindle, substantially as specified.

4. In a lathe, the combination of frame B carrying supplemental spindle A and shaft C; gears *a*, *b* and *c* connecting spindle A and shaft C; base-plate D having grooves *d*; clamp G and bolt F for securing frame B to the lathe-bed; plate *c'* carrying pins *c''*; and face-plate H on the regular live lathe-spindle, substantially as specified.

5. A lathe attachment comprising a frame J having a split hub adapted to engage the dead lathe-spindle; bolt *j* for securing frame J to said spindle; dead-center piece I carried by frame J; and arm *j'* constructed to have sliding connection with the lathe-bed, substantially as specified.

821,609. APPARATUS FOR PULVERIZING BLAST-FURNACE SLAG. HEINRICH COLLOSEUS, Berlin, Germany. Filed Aug. 14, 1905. Serial No. 274,160.



Claim.—1. Apparatus for disintegrating, granulating and powdering molten slags, comprising in combination a hollow open-ended substantially cylindrical rotary drum with a perforated circumferential wall, liquid delivering and distributing means in said open ends, and tubular stationary extensions of said cylindrical drum, substantially in axial alinement with the same and surrounding said liquid-delivering means.

2. Apparatus for disintegrating, granulating and powdering molten slag, comprising in combination a hollow open-ended, substantially cylindrical rotary drum with a perforated circumferential wall, annular liquid delivering and distributing means at said open ends and substantially concentric with the outer circumferential walls of said drum, and tubular, outwardly-flaring, stationary extensions at said open ends in axial alinement with the same and surrounding said liquid-delivering means.

3. Apparatus for disintegrating, granulating and powdering molten slags, comprising in combination a hollow, open ended, substantially cylindrical drum with a perforated circumferential wall, liquid-delivering means in said open ends and substantially concentric with the outer circumferential wall of the drum, tubular, stationary extensions at said open ends and substantially in axial alinement with the same, and means for delivering the molten material upon the outer circumferential wall only and means for preventing the molten material from flowing over the end parts of the cylindrical drum.

4. Apparatus for disintegrating, granulating and powdering molten slags, comprising the combination with molten-slag-delivering means of a hollow, rotary, substantially cylindrical, open-ended drum with a perforated circumferential wall, means in said open ends for conveying air-currents into the interoir of said drum, liquid-supplying means, substantially concentric with the outer circumferential wall at said open ends, and projections at the edges of said circumferential wall for preventing the molten material from flowing to the lower-lying parts of said drum.

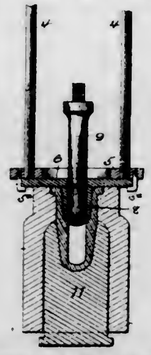
5. In apparatus for pulverizing blast-furnace slag, the combination of a rotatable drum having orifices in its outer circumferential wall, and divided into a plurality of compartments in communication with said orifices, means for conveying molten slag onto said drum, means whereby air is supplied to said drum-compartments by the rotation of the latter and means for supply of liquid under pressure to the drum-compartments aforesaid substantially as described.

6. In apparatus for pulverizing blast-furnace slag, the combination of an outer chamber, a rotatable drum therein having orifices in its outer circumferential wall, and divided into a plurality of compartments in communication with said orifices, means for conveying molten slag onto the drum, air-conduits extending within the chamber and terminating adjacent the ends of the drum and means for supplying liquid under pressure to the aforesaid drum-compartments substantially as described.

7. In apparatus for pulverizing blast-furnace slag the combination of an outer chamber, a rotatable drum therein having orifices in its outer circumferential wall, and divided into a plurality of compartments in communication with said orifices, longitudinal ribs on the exterior of said drum, means for conveying molten slag onto the latter, air-conduits extending within the chamber and terminating adjacent the ends of the drum, liquid-supply pipes traversing said conduits, and annular perforated tubes in communication with said supply-pipes and adapted to discharge liquid into the compartments of the drum.

8. In apparatus for pulverizing blast-furnace slag the combination of an outer chamber, a rotatable drum therein having orifices in its outer circumferential wall, partitions and longitudinal ribs in the interior and on the exterior of said drum respectively, inclined circumferential flanges located at the ends of the drum, a chute for conveying molten slag onto the latter, conical air-conduits extending within the chamber and terminating adjacent the ends of the drum, liquid-supply pipes traversing said conduits, and annular perforated tubes in communication with said supply-pipes and adapted to discharge liquid into the drum substantially as described.

821,610. BOTTLE-MAKING APPARATUS. JAMES D. COX, Bridgeton, N. J. Filed June 29, 1903. Serial No. 163,575.

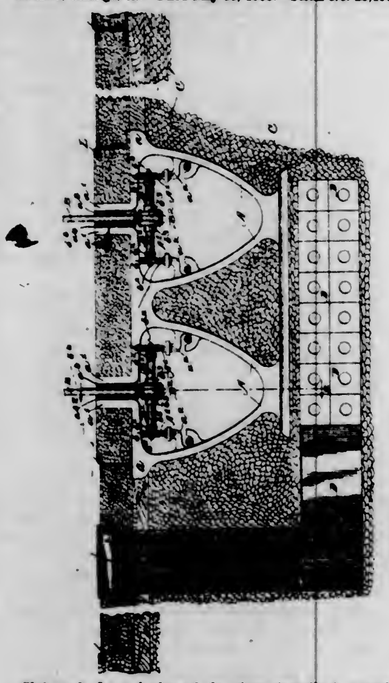


Claim.—1. The combination in a bottle-making machine, of means for preventing the formation of inequalities within the neck of the bottle, said means comprising a follower-plate having a tubular neck-former rigid therewith and depending therefrom, a plunger fitting the bore of the neck-former and closing the lower end thereof in either of its extreme positions to prevent glass entering the neck-former, and means for raising and lowering the plunger.

2. The combination in a bottle-making machine, of means for preventing the formation of inequalities within the neck of the bottle, said means comprising a follower-plate having a tubular neck-former rigid therewith and depending therefrom, a plunger fitting the bore of the neck-former and closing the lower end thereof in either of its extreme positions to prevent glass entering the neck-

former, means for forcing the plunger downward in the neck-former to press the glass around the outside of the neck-former, and a spring to return the plunger to a position approximately flush with the lower end of the neck and effectually closing the lower end of the latter.

821,611. TROLLEY FOR ELECTRIC RAILWAYS. EDWARD F. CREHVY, Chicago, Ill. Filed July 11, 1900. Serial No. 23,190.



Claim.—1. In a device of the class described, a trolley-arm adapted to be pivotally supported upon a car or the like and to depend therefrom into a conduit the lower end of said arm being provided with a centrally-apertured head said aperture in said head having greater diameter vertically than horizontally, an axle pivoted in said aperture transversely of the trolley-arm and adapted to oscillate vertically and means for holding said axle in rigid alinement longitudinally of said trolley-arm.

2. In a device of the class described, a trolley-axle comprising a central shaft of non-conducting material provided centrally with a circumferential band or ring provided on opposite sides with trunnions, means at each end of said axle for securing thereon a trolley a trolley-wheel and electrical connections communicating with the same.

3. In a device of the class described, a trolley-axle comprising a central shaft of non-conducting material provided centrally with a circumferential band or ring provided on opposite sides with trunnions, whereby the axle is pivoted to a trolley-arm, stub-shafts secured at each end of said axle, trolley-wheels thereon and conductors leading inwardly from said stub-shafts and adapted to be connected with a motor.

4. The combination with a trolley-arm pivoted laterally on a car and adapted to oscillate vertically and laterally and extending at its lower end within a conduit located below and at one side of the track, an apertured head at the lower end of said trolley-arm and means for securing an axle therein acting to permit vertical oscillation of the ends thereof.

5. The combination with a trolley-arm adapted to be pivoted laterally on a car and to extend downwardly within a conduit below the same, of an axle pivoted at the lower end of said trolley-arm, a trolley-wheel at each end of said axle adapted for contact in said conduit with a conductor and conductor-wires having contact with said trolley-wheels and leading therefrom to a motor supported on the car.

6. In a device of the class described a trolley-arm adapted to depend within a conduit, means adapted to permit vertical oscillation only of said arm, comprising a yoke secured on a car-frame provided at its end with a bearing adapted to receive lateral trunnions on said trolley-arm, the upper end of said trolley-arm being directed forwardly and adapted to be engaged between oppositely-acting springs secured between the yoke-arms.

7. In a device of the class described, a rearwardly and downwardly directed trolley-arm provided at its lower end with a head adapted to afford engagement for a vertically-oscillating axle provided at its ends with contact devices, means for permitting said trolley-arm to oscillate vertically comprising a bearing supported from a car or the like and beyond which the upper end of said trolley-arm extends, and springs engaging said end of said trolley-arm and acting to hold the same in operative position.

8. The combination with a vertically-oscillating trolley-arm adapted to depend within a conduit and provided at its lower end with a laterally-apertured head, an axle of non-conducting material pivoted in the aperture in said head and provided at its ends with clamps adapted to engage metallic stub-axles, a trolley-wheel on each stub-axle and a conductor located within the axle leading from each stub-axle upwardly along the trolley-arm and adapted to afford electrical connection with an electric motor.

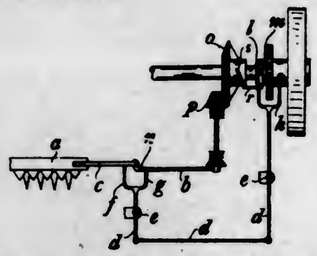
9. The combination with a rearwardly and downwardly directed trolley-arm adapted to be pivoted on a car-frame and adapted to oscillate vertically while rigidly secured from lateral oscillation, and provided at its lower end with a head having a lateral aperture extending therethrough, an axle of non-conducting material provided centrally with laterally-directed trunnions having a bearing in forwardly and rearwardly directed sockets in said head opening into said aperture, contact devices secured on each end of said axle and conductors connected with said contact devices and leading through said axle and upwardly along said trolley-arm.

10. The combination with a downwardly and rearwardly directed trolley-arm having an apertured head on the lower end thereof of a shaft pivoted at its center in said head and adapted for vertical oscillation, an adjustable cap on each end of said head, an axle rigidly engaged therein, a wheel journaled on each axle and an electrical conductor connecting said axles.

11. In a device of the class described the combination with a trolley-arm of a transversely-apertured head thereon, a shaft adapted to extend through said head, a ring rigidly engaged centrally on said shaft and provided with trunnions adapted to engage in sockets in said head, a trolley-wheel journaled at each end of said shaft, a conductor-wire exteeding through the shaft and connecting said wheel with the trolley-arm and means permitting vertical oscillation of said trolley-arm.

12. In a device of the class described the combination with a trolley-arm of a transverse shaft pivoted centrally at one end thereof, means on each end of said shaft adapted to engage electrical conductors, a yoke affording a pivotal support for said arm and springs in said yoke adapted to normally hold said arm centrally thereof.

821,612. AUTOMATIC DISENGAGING DEVICE FOR THE KNIFE-GEAR OF MOWING-MACHINES. CHRISTIAN DAHL, Gross Nustrup, and CHRISTIAN LUND, Porsgrd, Germany. Filed Oct. 31, 1904. Serial No. 230,725.



Claim.—In a device for disengaging the knife-gear in mowing-machines, the combination with the knife-carrier *a* and the actuating-rod *l*, a bent spring *c* connecting the knife-carrier *a* to the actuating-rod *b* and allowing of the latter moving when the knife-carrier is accidentally stopped, a peg *n* provided on the upper side of the actuating-rod near its connection with the bent spring *c*, a fork *f*, *g* one prong *f* whereof is adapted to be engaged and actuated by one end of the said bent spring, while the other prong *g* is adapted to be engaged and actuated by the said peg *n*, a system of levers *d* adapted to communicate the motion of the fork *f*, *g* to another fork *h*, a toothed wheel *k* mounted freely upon the axle of the machine and the teeth of which are adapted to be engaged by the fork *h*, a disengaging-lever *l* also loosely mounted upon the axle and connected to the said toothed wheel by a U-shaped spring *m*, an arm *r* extending from the said lever the driving bevel-wheel *o* slidably mounted on the axle, an oblique slot provided in the hub of the said driving-wheel and engaged by the free end of the said arm *r*, substantially as and for the purpose set forth.

821,613. TURNER FOR FLUE-CLEANERS. CYRUS S. DEAN, Fort Erie, Canada, assignor of one-half to The Sherwood Manufacturing Company, Buffalo, N. Y., a Corporation of New York. Filed Mar. 1, 1904. Serial No. 195,958.



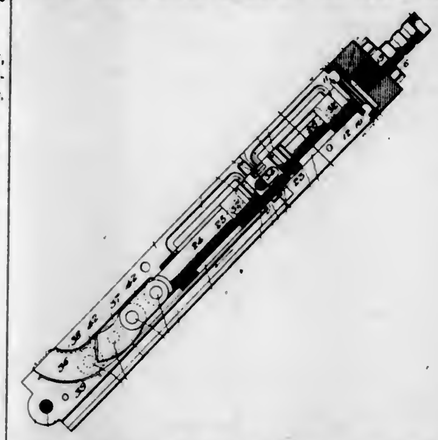
Claim.—1. In a flue-cleaner the combination with a non-rotary part and a rotary part provided with a hammer, of means for causing rotation of the part carrying the hammer, comprising a reciprocable plate actuated by the engine, an engine in said rotary part, a lever pivoted to said rotary part and reciprocated by said driving-plate, a worm, a ratchet mechanism for rotating said worm and actuated by said lever, a gear mounted upon said non-rotary part and engaging said worm, whereby said hammer is caused to rotate.

2. A flue-cleaner comprising the combination of a rotary part and a non-rotary part of an engine carried by said rotary part, a driving-plate actuated by said engine, a reciprocable lever actuated by said driving-plate, said lever being pivoted to said rotary part, a worm mounted upon said rotary part, a ratchet upon said worm, dogs pivoted to said reciprocable lever, and engaging said ratchet, said dogs being pivoted oppositely upon the head of said lever in such manner that when said lever is reciprocated in one direction, one dog will engage said ratchet and move it, and the other will engage it to take a fresh bite, and upon the opposite movement of said lever the dog having obtained a fresh bite moves said ratchet while the opposite dog obtains a fresh bite, a gear engaging said worm and mounted upon said non-rotary part, whereby movement in the same direction is given to the said ratchet and said worm by both movements of said lever.

3. A flue-cleaner comprising the combination with a rotary part and a non-rotary part of an engine carried by said rotary part, a reciprocable plate provided with a slot inclined to the axis of the machine, said plate being actuated by said engine and reciprocating in a plane parallel with the axis of the machine, a reciprocable lever, a roller on said lever engaging in said inclined slot upon said reciprocable plate, said reciprocating lever being pivoted to said rotary part, a worm pivoted in said rotary part, a ratchet on the head of said worm, dogs pivoted to said reciprocable lever and engaging said ratchet, said dogs being pivoted to said lever diametrically opposite the pivot of said lever, and both dogs engaging upon the same side of said ratchet, a gear rigidly mounted upon said non-rotary part and engaging said worm, whereby the reciprocatory movement of said engine, through said reciprocable plate and said reciprocable lever causes alternate movement of said dogs, thus imparting movement in one direction of said rotary part.

4. In a flue-cleaner the combination with a non-rotary part, a rotary part provided with a hammer, and an engine for actuating said hammer, of means for causing the movement of said rotary part comprising a reciprocable plate provided with an inclined slot, a reciprocable lever pivoted to said rotary part, a roller on said lever engaging in said slot, dogs pivoted to said reciprocable lever, a worm on said rotary part, a gear mounted upon said non-rotary part engaging said worm, and a serrated or toothed head on said worm engaging said dogs.

821,614. TUBE-CLEANER. GEORGE W. DEAN, Fort Erie, Canada, assignor of one-half to Sherwood Manufacturing Company, Buffalo, N. Y. Filed Mar. 13, 1902. Renewed Mar. 1, 1904. Serial No. 196,052.



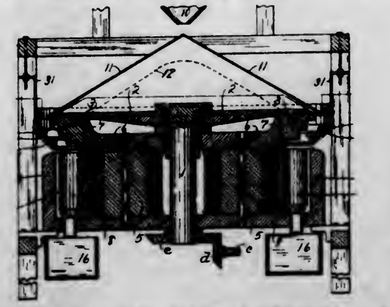
Claim.—1. In a tube or flue cleaner, the combination with a casing made in separable parts and provided with a cylinder and grooves which match and form an annular groove, of a removable head for the cylinder comprising a circular member or cap which has a flange received in the annular groove.

2. In a tube or flue cleaner, the combination with a casing formed in separable parts each having a semi-annular ledge at one end which match and form an annular ledge extending outwardly from said end, said ledge being provided with a taper or bevel, of a head adapted for connection to the parts of the casing and provided with a flange adapted to engage the beveled portion on the annular ledge.

3. In a tube or flue cleaner, the combination, with a cylinder; of a piston-rod provided with a piston having a cup or recess in its face surrounding the piston-rod, and a valve through which the piston-rod slides having a projecting portion surrounding the piston-rod, and adapted to telescope in the cup or recess and thereby cushion the impact of the piston with the valve.

4. In a tube or flue cleaner, the combination, with cylinders; of a piston-rod provided with pistons each having a cup or recess in its face surrounding the piston-rod and a valve through which the piston-rod slides having projecting portions surrounding the piston-rod and adapted to telescope in the cups or recesses and thereby cushion the impact of the pistons with the valve.

821,615. MAGNETIC SEPARATOR. MYRON DINGS, Milwaukee, Wis. Filed Sept. 15, 1904. Serial No. 224,519.



Claim.—1. In a magnetic separator, the combination of a rotary magnetizable carrier: opposing segmental pieces disposed in sets with pieces of opposite polarity in each set on opposite sides of the

carrier, and said sets being symmetrically arranged with reference to the carrier to balance the magnetic pull thereon; segmental non-magnetic shields extending between the carrier and one pole-piece of each set, and means for distributing material to said shields.

2. In a magnetic separator, the combination of an upwardly-extending driving-shaft; a non-magnetic support mounted to rotate with said shaft; a magnetizable ring connected with said support; a set of magnets, arranged with cores parallel to the shaft at a less radius than that of said ring; segmental upper pole-pieces symmetrically balanced, and extending outwardly into close proximity to the inner faces of said ring; segmental lower pole-pieces of opposite polarity extending outwardly and upwardly into proximity to the outer faces of said ring; inclined non-magnetic shields extending downwardly and inwardly between said pole-pieces; and chutes extending from the lower ends of the shields downwardly through suitable apertures in the lower pole-pieces.

3. In a magnetic separator, the combination of an upwardly-extending driving-shaft; a non-magnetic support mounted to rotate with said shaft; a magnetizable ring connected with said support; a set of magnets, arranged with cores parallel to the shaft at a less radius than that of said ring; segmental upper pole-pieces symmetrically balanced and extending outwardly into close proximity to the inner faces of said ring; segmental lower pole-pieces of opposite polarity extending outwardly and upwardly in proximity to the outer faces of said ring; inclined non-magnetic shields extending downwardly and inwardly between said pole-pieces; and chutes extending from the lower ends of the shields downwardly through suitable apertures in the lower pole-pieces; the opposing faces of said shield and ring being provided with ribs having opposing edges in close proximity, whereby magnetic zones of alternating greater and less intensity are produced.

4. In a magnetic separator, the combination of opposing segmental pole-pieces; a magnetizable carrier-ring arranged to travel between the pole-pieces; and a shield extending downwardly and inwardly between said ring and one of the pole-pieces; the opposing faces of the shield and ring being ribbed and arranged to approach and recede in zones parallel to that of ring rotation, whereby narrow magnetic zones of great intensity are provided with minimum liability of clogging.

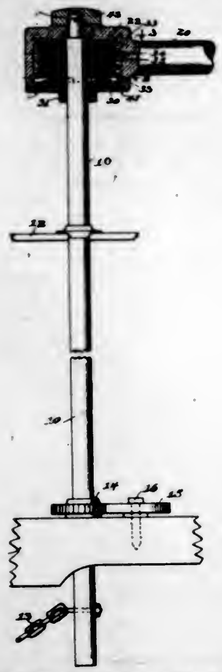
5. In a magnetic separator, the combination of opposing segmental pole-pieces; a magnetizable carrier arranged to travel between the pole-pieces, and provided with a downwardly and inwardly receding series of annular ribs; a segmental shield arranged to extend downwardly and inwardly between the carrier and one of the pole-pieces, and adapted to convey material along the under surfaces of the overhanging carrier-ribs.

6. In a magnetic separator, the combination of opposing segmental pole-pieces; a magnetizable carrier arranged to travel between the pole-pieces, and provided with a downwardly and inwardly receding series of annular ribs; a segmental shield arranged to extend downwardly and inwardly between the carrier and one of the pole-pieces, and adapted to convey material along the under surfaces of the overhanging carrier-ribs, said shield being supported by vertically-adjustable hangers.

7. In a magnetic separator, the combination of an upwardly-extending shaft; a carrier supported to rotate therewith, and provided with an annular series of magnetizable segments; magnets arranged with their axes extending parallel to the shaft and provided with stationary segmental pole-pieces extended to opposite sides of the path of said segments, and with pieces of like polarity extended in opposite directions; a segmental cone arranged above the magnets and with its apex above the shaft and adapted to deliver material into the magnetic zones formed by said pole-pieces; said pole-pieces being symmetrically arranged with reference to the shaft, whereby the magnetic pull upon said ring is balanced.

8. In a magnetic separator, the combination of a rotary magnetizable carrier; opposing segmental magnetic pole-pieces disposed in sets, with pieces of opposite polarity in each set on opposite sides of the carrier and symmetrically arranged in reference to the carrier to balance the magnetic pull thereon; segmental non-magnetic shields extending between the carrier and one pole-piece of each set; and means for distributing matter to said shields; intermediate shields between the sets of pole-pieces disposed along and adjacent to the outer face of the carrier; and chutes composed of annular walls extending downwardly from said shields and subdivided segmentally, some of said chutes being arranged to lead downwardly through the lower pole-pieces, and other of said chutes being arranged to lead downwardly between the pole-pieces and a suction-chamber connected with the lower ends of said last-mentioned chutes.

821,616. ACTUATING MECHANISM FOR CAR-BRAKES. ETHAN I. DODDS, Pullman, Ill., assignor to The Pullman Company, Chicago, Ill., a Corporation of Illinois. Filed Sept. 18, 1905. Serial No. 278,929.



Claim.—1. In a device of the character described, the combination of a shaft, a handle therefor, coöperating friction devices carried by said shaft and handle, respectively, and means for forcing said friction devices into holding engagement as said handle is turned, substantially as described.

2. In a device of the character described, the combination of a shaft, a rotatable handle therefor, friction devices non-rotatable relatively to said handle and shaft, respectively, and means for forcing said friction devices into holding engagement on the forward movement of said handle, substantially as described.

3. In a device of the character described, the combination of a brake-shaft, a rotatable handle therefor, friction devices non-rotatable relatively to said handle and shaft, respectively, means for forcing said friction devices into holding engagement on the forward movement of said handle, and means to prevent backward movement of said brake-shaft, substantially as described.

4. In a device of the character described, the combination of a shaft, one or more friction-disks movable with said shaft, a shaft-operating device, one or more friction-disks movable with said shaft-operating device, and means serving to force said friction-disks together to secure an operative frictional connection between said shaft-operating device and shaft as the former is actuated, substantially as described.

5. In a device of the character described, the combination of a brake-shaft, one or more friction-disks movable with said shaft, a rotatable brake-handle, one or more friction-disks movable with said brake-handle, means serving to force said friction-disks together to secure an operative frictional connection between said handle and shaft as the former is turned forwardly, and means to prevent backward turning of said shaft, substantially as described.

6. In a device of the character described, the combination of a brake-shaft, a rotatable brake-handle, friction devices movable with said shaft, other friction devices movable with said handle, cam devices serving to force said friction devices into holding engagement with each other as said handle is turned forwardly, and means to prevent backward turning movement of said shaft, substantially as described.

7. In a device of the character described, the combination of a shaft, one or more friction-disks movable with said shaft, a handle, one or more friction-disks movable with said handle, and cam devices operative upon a forward turning movement of said handle to force said friction-disks together and secure an operative frictional connection between said handle and shaft, substantially as described.

8. In a device of the character described, the combination of a brake-shaft, one or more friction-disks movable with said brake-shaft, a rotatable brake-handle, one or more friction-disks movable with said handle, cam devices serving to force said friction-disks together as said handle is turned forwardly, and means to prevent backward movement of said shaft, substantially as described.

9. In a device of the character described, the combination of a shaft, operating means therefor, a friction device movable with said shaft, a friction device movable with said operating means, a cam slidable on said shaft, and means actuated by said shaft-operating means coöperating with said cam to force said friction devices into holding engagement with each other, substantially as described.

10. In a device of the character described, the combination of a brake-shaft, a rotatable brake-handle, a friction device movable with said brake-shaft, a friction device movable with said brake-handle, a cam slidable on said shaft, means on said handle coöperating with said cam to force said friction devices together as the handle is turned forwardly, and means to prevent backward movement of said shaft, substantially as described.

11. In a device of the character described, the combination of a shaft, a shaft-operating means, a friction device movable with said shaft, a friction device movable with said shaft-operating means, a cam slidable on said shaft and having a lost-motion connection with said operating means, and means actuated by said operating means coöperating with said cam to force said friction devices together on the forward turning movement of said shaft-operating means, substantially as described.

12. In a device of the character described, the combination of a brake-shaft, a rotatable handle therefor, one or more friction-disks movable with said shaft, one or more friction-disks movable with said handle, a cam slidable with said shaft and having a lost-motion connection with said handle, means actuated by said handle with said cam when said handle is turned forwardly to force said friction-disks together, and means to prevent backward movement of said shaft, substantially as described.

13. In a device of the character described, the combination of a shaft, a handle therefor, one or more friction-disks movable with said shaft, one or more friction-disks movable with said handle, a disk slidablymounted on said shaft and provided with a cam-surface, and a projection on said handle adapted, on the forward movement of the handle, to override said cam-surface and force said friction-disks into holding engagement with each other, substantially as described.

14. In a device of the character described, the combination of a brake-shaft, a rotatable brake-handle, one or more friction-disks movable with said shaft, one or more friction-disks movable with said handle, a pair of disks having cam-surfaces slidably mounted on said shaft above and below said friction-disks, respectively, projections on said handle adapted to override said cam-surfaces and thereby force said disks upon said friction-disks on the forward movement of said handle, and means to prevent backward rotation of said shaft, substantially as described.

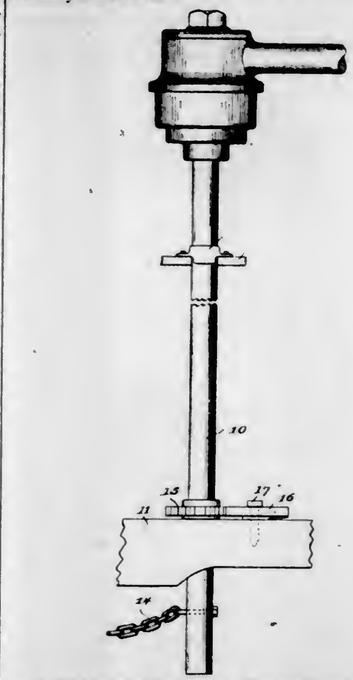
821,617. CAR-BRAKE-OPERATING MECHANISM. ETHAN I. DODDS, Pullman, Ill., assignor to The Pullman Company, Chicago, Ill., a Corporation of Illinois. Filed Sept. 18, 1905. Serial No. 278,930.

Claim.—1. In a device of the character described, the combination of a brake-shaft having a friction-surface, a movable brake-handle having an integral coöperating friction-surface, and means to force said friction-surfaces together to secure an operative frictional connection between said handle and shaft as the former is moved, substantially as described.

2. In a device of the character described, the combination of a brake-shaft having a conical friction-surface, a movable brake-handle having a coöperating conical friction-surface, and means to force said friction-surfaces together to secure an operative frictional connection between said handle and shaft as the former is moved, substantially as described.

3. In a device of the character described, the combination of a brake-shaft having a conical friction-surface, a rotatable brake-handle having a coöperating conical friction-surface, and cam means to force said conical surfaces together to secure an operative frictional connection between said handle and shaft as the former is rotated, substantially as described.

4. In a device of the character described, the combination of a brake-shaft having a conical friction-surface, a brake-handle having a coöperating conical friction-surface rotatably mounted on said shaft, and cam means having interlocking teeth adapted to force said friction-surfaces together to secure an operative frictional connection between said handle and shaft as the former is rotated, substantially as described.



5. In a device of the character described, the combination of a brake-shaft having a friction-surface, a rotatable brake-handle having a coöperating friction-surface, a cam keyed to said brake-shaft and slidable thereon, and means actuated by said handle adapted to coöperate with said cam to force said friction-surfaces together in order to secure an operative frictional connection between said handle and shaft as the former is rotated, substantially as described.

6. In a device of the character described, the combination of a brake-shaft having a friction-surface, a brake-handle having a coöperating friction-surface rotatably mounted on said shaft, a spring-pressed cam keyed to said shaft and slidable thereon, and means coöperating with said cam and actuated by said handle to force said friction-surfaces together in order to secure an operative frictional connection between said handle and shaft as the former is rotated, substantially as described.

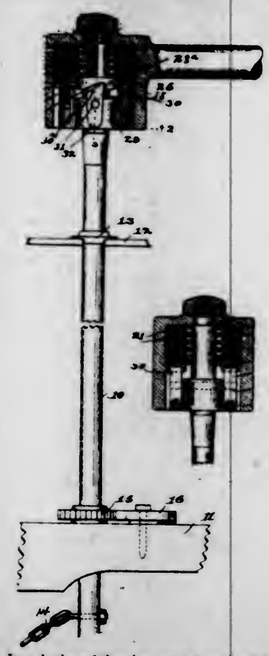
7. In a device of the character described, the combination of a brake-shaft having a conical friction-surface, a brake-handle having a coöperating conical friction-surface rotatably mounted on said shaft, a spring-pressed cam keyed to said shaft and slidable thereon, and means actuated by said handle adapted to coöperate with said cam to force said conical friction-surfaces together in order to secure an operative frictional connection between said handle and shaft as the former is rotated, substantially as described.

8. In a device of the character described, the combination of a brake-shaft having a conical friction-surface, a brake-handle having a coöperating conical friction-surface rotatably mounted on said brake-shaft, a spring-pressed cam having teeth keyed to said shaft and slidable thereon, teeth on said handle adapted to coöperate with said cam-teeth to force said friction-surfaces together in order to secure an operative frictional connection between said handle and shaft as the former is rotated forwardly, and means to prevent backward movement of said shaft, substantially as described.

9. In a device of the character described, the combination with a brake-shaft and an operating-handle therefor, of frictional and positive driving connections between said handle and shaft, substantially as described.

10. In a device of the character described, the combination with a brake-shaft and an operating-handle therefor, of positive driving connections between said handle and shaft, and frictional driving connections between said handle and shaft rendered active through the actuation of said positive driving connections, substantially as described.

821,618. OPERATING MECHANISM FOR CAR-BRAKES. BYRAN I. DODDS, Pullman, Ill., assignor to The Pullman Company, Chicago, Ill., a Corporation of Illinois. Filed Sept. 18, 1905. Serial No. 278,931.



Claim.—1. In a device of the character described, the combination with a shaft and a handle mounted thereon, of coöperating friction devices carried by said shaft and handle, respectively, a compressing member mounted on and slidable longitudinally of said shaft, and a thrust member pivotally mounted on said shaft and cooperating with said compression member when the handle is turned forwardly to force said friction devices into operative engagement through said compression member, substantially as described.

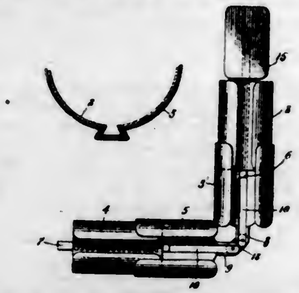
2. In a device of the character described, the combination with a shaft and a handle mounted thereon, of coöperating friction-disks carried by said shaft and handle, respectively, a compression-disk mounted on and slidable longitudinally of said shaft, and a thrust member pivotally mounted on said shaft and engaged by said compression-disk when the handle is turned forwardly in a manner to force said friction-disks into operative engagement through said compression-disk, substantially as described.

3. In a device of the character described, the combination with a shaft and a handle mounted thereon, of coöperating friction-disks carried by said shaft and handle, respectively, a compression-disk mounted on and slidable longitudinally of said shaft, and one or more counterweighted fingers pivotally mounted on said shaft and engaged at one end by said compression-disk when the handle is turned forwardly in a manner to force said friction-disks into operative engagement through said compression member, substantially as described.

4. In a device of the character described, the combination with a shaft and a handle mounted thereon, of coöperating friction-disks carried by said shaft and handle, respectively, a compression-disk mounted on and slidable longitudinally of said shaft and having a notched surface, and one or more counterweighted fingers pivotally mounted on said shaft and having pointed ends engaged by the notches of said compression-disk when the handle is turned forwardly in a manner to turn said fingers toward a position parallel with the shaft and thereby force said compression member upon said friction-disks, substantially as described.

5. In a device of the character described, the combination with a shaft and a handle mounted thereon having a depending casing, of coöperating friction-disks within said casing, alternate disks being non-rotatable relatively to the casing and shaft, respectively, a compression-disk mounted on and slidable longitudinally of said shaft and non-rotatable relatively to said casing, said compression-disk having a notched lower surface, and one or more counterweighted fingers pivotally mounted on said shaft beneath said compression-disk, said fingers having inclined upper ends operatively engaging the notches of said compression-disk when the handle is turned forwardly and idly engaging said notches when the handle is turned backwardly, substantially as described.

821,619. SURGICAL ARM-SPLINT. EZRA N. DRIER, Vancouver, Canada. Filed Sept. 25, 1905. Serial No. 279,949.



Claim.—1. In a surgical arm-splint; circumferentially-flexible arm-encircling portions slidable telescopically one within the other and means for securing said portions at any desired position of lengthwise adjustment.

2. In a surgical arm-splint; circumferentially-flexible arm-encircling portions for arm and forearm hinged at the elbow by a joint the plane of movement of which is parallel to the axes of the arm-encircling portions, and a chest-plate hinged to the extreme end of the arm member the plane of joint movement of which is approximately at right angles to that of the elbow-joint.

3. A surgical arm-splint comprising telescopically-slidable arm-encircling structures of circumferentially-flexible material for arm and forearm, said structures being hinged at the elbow by a joint the plane of movement of which is parallel to the axes of the arm-encircling portions, a chest-plate secured to the upper end of the arm portion and adapted to be bandaged under the armpit of the patient, and means for securing the telescopically-slidable arm-encircling portions in any desired position of endwise movement.

4. A surgical arm-splint comprising the circumferentially-flexible members 2 and 3 for the arm, the bar 6 secured to 2 and endwise slidable in the groove 10 of the bar 8 secured to 3, the forearm members 4 and 5, the bar 7 secured to 4 and endwise slidable in the groove 10 of the bar 9 secured to 5, the screws 11 in 8 and 9, the articulated joint 12 between 8 and 9, the plate 15 connected to the bar 6 by the hinge 14, and the blow-cap 16 having dovetailed attachment 17 designed to fit the groove 10, and the screw 18 in 8 or 9.

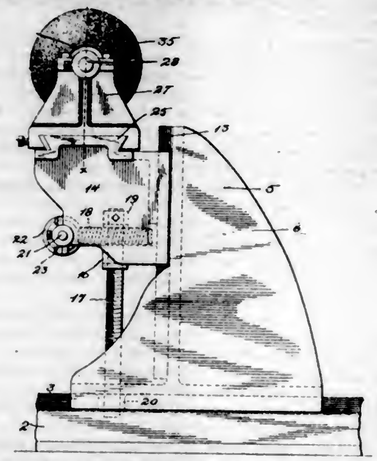
5. In a surgical arm-splint; an arm-encircling member having endwise-slidable movement and adjustment, a chest-plate secured to the upper end of said arm-encircling member, and a forearm-splint hinged to the lower end.

821,620. CASEIN SOLUTION AND METHOD OF PRODUCING SAME. HENRY V. DUNHAM, Bellows Falls, Vt., assignor to Casein Company of America, a Corporation of New Jersey. Filed Jan. 27, 1905. Serial No. 243,863.

Claim.—1. The herein-described casein solution comprising casein, alcohol, an alkaline hydrate soluble in alcohol, and formaldehyde.

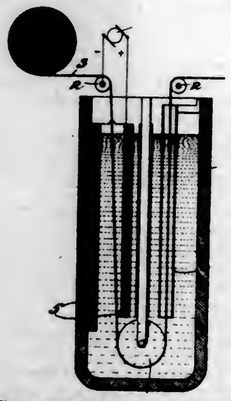
2. The herein-described method of producing a casein solution which, when dried out, will be waterproof or insoluble in water, consisting in dissolving casein in a mixture of alcohol and an alkaline hydrate soluble in alcohol, neutralizing the mixture, and then adding formaldehyde to the solution.

821,621. GRINDING APPARATUS. MICHAEL DUNN, Columbus, Ohio. Filed Feb. 6, 1905. Serial No. 244,295.



Claim.—An apparatus for grinding the metallic tires of wheels comprising a plurality of grinding-machines arranged to be simultaneously operated, each comprising a standard, a grinding-wheel carried by the standard, means for adjusting the grinding-wheel vertically, means for adjusting the grinding-wheel transversely on the standard, and means for adjusting the standard longitudinally.

821,622. PROCESS OF CLEANING METALLIC SURFACES. THOMAS A. EDISON, Llewellyn Park, N. J. Filed June 29, 1904. Serial No. 214,652.



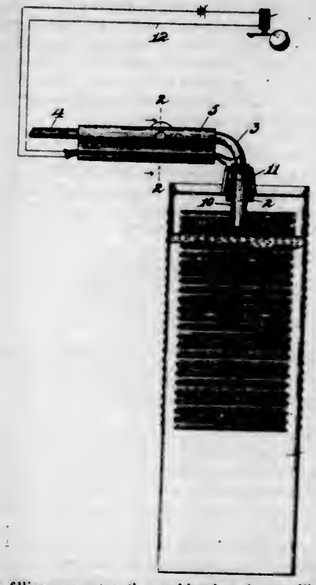
Claim.—1. The process of cleaning continuous metallic strips which consists in passing the strip through a suitable cleansing-bath and in removing the strip from said bath through a conduit extending below the surface thereof, substantially as set forth.

2. The process of cleaning continuous metallic strips, which consists in passing the strip as a cathode through an electrolytic solution opposed to an anode not attacked by the solution and in removing the strip from the solution through a closed conduit, leading below the surface of the solution, substantially as set forth.

3. The process of cleaning continuous metallic strips, which consists in passing the strip as a cathode through an alkaline solution opposed to a carbon anode and in removing the strip from the solution through a closed conduit leading below the surface of the solution, substantially as set forth.

821,623. STORAGE-BATTERY-FILLING APPARATUS. THOMAS A. EDISON, Llewellyn Park, N. J., assignor to Edison Storage Battery Company, West Orange, N. J., a Corporation of New Jersey. Filed Nov. 3, 1904. Serial No. 231,063.

Claim.—1. In a filling apparatus, the combination of a supply-tube, a nozzle connected thereto, a pair of conductors connected to opposite poles of a source of current, one of said conductors being electrically connected with said nozzle and the other conductor being carried by said nozzle but insulated therefrom and being electrically in circuit with the liquid within the receptacle to be filled, and means for controlling the flow of liquid through said supply-tube, substantially as set forth.



2. In a filling apparatus, the combination of a metallic receptacle, a supply-tube, a nozzle connected thereto, a pair of conductors connected to opposite poles of a source of current, one of said conductors being electrically connected with said receptacle and the other with said nozzle, whereby the circuit will be closed through the liquid within the receptacle, substantially as set forth.

3. In a filling apparatus, a handle carrying a pair of rigid electrodes electrically connected to opposite poles of a source of current, one electrode being elongated and extending below the other, whereby the first electrode may be passed through an opening in a receptacle and the other electrode contact with the wall surrounding said opening, substantially as set forth.

4. In a filling apparatus, a handle carrying a pair of rigid electrodes electrically connected to opposite poles of a source of current, one electrode being in the form of a pipe or tube extending below the other electrode, whereby the tubular electrode may be passed through an opening in the receptacle and the other electrode contact with the metal surrounding said opening, substantially as set forth.

5. The combination with a metallic receptacle into which a conducting solution is introduced, of a tubular electrode within the receptacle but insulated therefrom and through which the solution is introduced into the receptacle, a controlling-magnet and a circuit having terminals at said electrode and receptacle respectively, whereby said circuit will be closed when the solution makes contact with said electrode, substantially as set forth.

6. The combination with a metallic receptacle, of a tubular electrode adapted to enter the receptacle but insulated therefrom and through which a conducting solution is introduced into the receptacle, a controlling-magnet and a circuit terminating at said electrode and receptacle respectively adapted to be closed when the solution makes contact with said electrode, substantially as set forth.

7. The combination with a metallic receptacle, of a tubular electrode adapted to enter the same and through which a conducting solution is introduced within the receptacle, an insulating-sleeve surrounding the electrode, contact-fingers carried by said sleeve and making contact with said receptacle, a controlling-magnet and circuit terminating at said electrode and contact-fingers respectively, substantially as set forth.

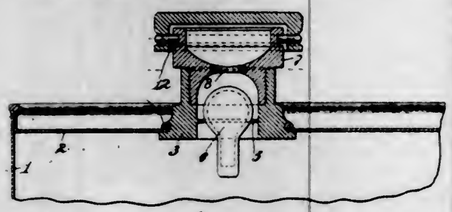
8. In a filling apparatus for metallic storage-battery cans, the combination of a tubular electrode, an insulating-bushing surround-

ing the same, contact-fingers carried by said bushing, a controlling-magnet, and a circuit terminating at the contact-fingers and electrode respectively, substantially as set forth.

9. In a filling apparatus for metallic storage-battery cans, the combination of a tubular electrode, an insulating-bushing surrounding the same, contact-fingers carried by said bushing, a controlling-magnet, a circuit terminating at the contact-fingers and electrode respectively, and a valve controlling the flow of solution through said tubular electrode, substantially as set forth.

10. In a filling apparatus for metallic storage-battery cans, the combination of a handle, a valve in said handle, a tubular electrode carried by said handle, an insulating-bushing surrounding said electrode, contact-fingers carried by said bushing, a controlling-magnet and a circuit terminating at said contact-fingers and electrode respectively, substantially as set forth.

821,624. GAS-SEPARATOR FOR STORAGE BATTERIES. THOMAS A. EDISON, Llewellyn Park, N. J., assignor to Edison Storage Battery Company, West Orange, N. J., a Corporation of New Jersey. Filed Nov. 2, 1904. Serial No. 231,064.



Claim.—1. In a storage battery, the combination with a valve-casing and separating-valve, of an auxiliary valve forming a cover for the casing and normally closing the same, as and for the purposes set forth.

2. In a storage battery, the combination with a valve-casing and separating-valve, of an auxiliary valve forming a cover for the casing and normally closing the same and means for limiting the movements of the auxiliary valve, as and for the purposes set forth.

3. In a storage battery, the combination of a valve-casing and separating-valve, of an auxiliary valve forming a cover for the valve-casing, and a series of projections carried by the auxiliary valve and engaging a groove or channel in said casing, as and for the purposes set forth.

4. In a storage battery, the combination with a valve-casing and separating-valve, of an auxiliary valve forming a cover for the valve-casing, and a series of connected projections carried by the auxiliary valve and engaging a groove or channel in said casing, as and for the purposes set forth.

5. In a storage battery, the combination of a tubular member having a valve-seat and valve, an auxiliary valve-seat above said first valve-seat and a valve normally resting on said auxiliary valve-seat and forming a protecting-cover for said tubular member, substantially as set forth.

6. In a storage battery, the combination of a tubular member having a valve-seat and valve, an auxiliary valve-seat above said first valve-seat, a valve normally resting on said auxiliary valve-seat and forming a protecting-cover for said tubular member, and means for limiting the movement of said cover-valve, substantially as set forth.

7. In a storage battery, the combination of a tubular member having a valve below the top thereof and an auxiliary valve covering the top of said tubular member and depending around the same, substantially as set forth.

8. In a storage battery, the combination of a tubular member having a valve below the top thereof, an auxiliary valve covering the top of said tubular member and depending around the same, and means for limiting the movement of said cover-valve, substantially as set forth.

821,625. PROCESS OF TREATING ALKALINE STORAGE BATTERIES. THOMAS A. EDISON, Llewellyn Park, N. J., assignor to Edison Storage Battery Company, West Orange, N. J., a Corporation of New Jersey. Filed Nov. 5, 1904. Serial No. 231,486.

Claim.—1. The process of eliminating soluble impurities from storage batteries employing depolarizing masses of nickel-oxygen compounds, which consists in opposing the nickel mass to a suitable anode in an alkaline solution, in then passing a reverse current through the nickel mass to generate hydrogen therein, and result in the heating of the solution, whereby the soluble impurities will be driven off into the solution, and finally, in pouring off the solution, substantially as set forth.

2. The process of eliminating soluble impurities from alkaline storage batteries employing active masses of oxygen compounds of nickel and iron respectively, which consists in opposing both active masses as cathodes to a suitable anode in an alkaline solution, and in then passing a reverse current through the same to heat the solution and generate hydrogen gas in the active masses to thereby force the impurities therefrom into the solution, and in finally, removing the solution, substantially as set forth.

3. The process of removing soluble impurities from the depolarizing mass of an alkaline storage battery, which consists in connecting the positive electrode thereof in circuit with an inactive conducting surface in an alkaline solution, in passing a reverse current between the two, whereby the solution will be heated and hydrogen gas developed in the active mass, and in finally, pouring off the solution, substantially as set forth.

4. The process of removing soluble impurities from the active masses of an alkaline storage battery, which consists in connecting the two electrodes as cathodes in circuit with an inactive conducting anode in an alkaline solution, in passing a reverse current between the two, whereby the solution will be heated and hydrogen gas will be developed in the active masses, and in finally, pouring off the solution, substantially as set forth.

5. The process of removing soluble impurities from alkaline storage batteries, employing conducting-receptacles of an insoluble metal, which consists in connecting the depolarizing mass as a cathode in circuit with the conducting-receptacle in an alkaline solution, in passing a reverse current between the two to heat the solution and generate hodrogen gas in the active mass, and in finally pouring off the solution, substantially as set forth.

6. The process of removing soluble impurities from the active masses of an alkaline storage battery employing conducting receptacles of an insoluble metal, which consists in connecting the two electrodes as cathodes in circuit with the conducting-receptacle as an anode in an alkaline solution, in passing a reverse current between the two to heat the solution and generate hydrogen gas in the active masses and finally, in pouring off the solution, substantially as set forth.

7. The process of removing soluble impurities from alkaline storage batteries, employing conducting-receptacles of an insoluble metal, which consists in insulating the receptacles to reduce the dissipation of heat, in connecting the positive mass in circuit with the conducting-receptacle in an alkaline solution, in passing a reverse current between the two to heat the solution and generate hydrogen gas in the active masses and in finally, pouring off the solution, substantially as set forth.

8. The process of removing soluble impurities from the active masses of an alkaline storage battery employing a conducting-receptacle of insoluble metal, which consists in insulating the receptacle to reduce the dissipation of heat, in connecting the two negative masses as cathodes in circuit with the conducting-receptacle as an anode in an alkaline solution, in passing a reverse current between the two to heat the solution and generate hydrogen gas in the active masses, and in finally, pouring off the solution, substantially as set forth.

821,626. PROCESS OF MAKING METALLIC FILMS OR FLAKES. THOMAS A. EDISON, Llewellyn Park, N. J., assignor to Edison Storage Battery Company, West Orange, N. J., a Corporation of New Jersey. Filed Mar. 30, 1905. Serial No. 253,933.

Claim.—1. The process of making metallic films, which consists in depositing a soluble metal on a cathode, then in electrodepositing a film of an insoluble metal or metals thereon, and in finally dissolving the soluble metal to detach the insoluble film, substantially as set forth.

2. The process of making metallic films, which consists in depositing a soluble metal on a cathode, then in electrodepositing a film of insoluble metal or metals thereon and finally immersing the plated cathode in an acid-bath to attack the soluble metal and separate the insoluble film, substantially as set forth.

3. The process of making metallic films, which consists in depositing a soluble metal on a suitable cathode, in electrodepositing an insoluble metallic film thereon, and in subjecting the plated cathode to the effect of the acid which dissolves the insoluble metal and results in the evolution of gas to separate and detach the insoluble film, substantially as set forth.

4. The process of making metallic films, which consists in depositing a thin film of zinc on a suitable cathode, in electrodepositing an insoluble film on the zinc, and in subjecting the plated cathode to dilute acid to dissolve the zinc and generate hydrogen gas, as and for the purposes set forth.

5. The process of making metallic films, which consists in depositing a soluble metallic film on a suitable cathode, in electrodepositing thereon a thin film of metallic cobalt or cobalt alloy and in dissolving the soluble metal to detach the insoluble film, substantially as set forth.

6. The process of making metallic films, which consists in depositing a thin film of zinc on a suitable cathode, in electrodepositing thereon a thin film of cobalt or cobalt alloy and in subjecting the plated cathode to dilute acid to thereby dissolve the zinc and effect the separation of the insoluble film, substantially as set forth.

7. The process of making metallic films, which consists in depositing a soluble metallic film on a suitable cathode, in electrodepositing thereon a thin film of metallic cobalt or cobalt alloy and in dissolving the soluble metal to detach the insoluble film, and in finally annealing the separated film in a hydrogen atmosphere, substantially as set forth.

8. The process of making metallic films, which consists in depositing a thin film of zinc on a suitable cathode, in electrodepositing thereon a thin film of cobalt or cobalt alloy and in subjecting the plated cathode to dilute acid to thereby dissolve the zinc and effect the separation of the insoluble film, and in finally annealing the separated film in a hydrogen atmosphere, as and for the purposes set forth.

821,627. PROCESS OF MAKING METALLIC FLAKES OR SCALES. THOMAS A. EDISON, Llewellyn Park, N. J., assignor to Edison Storage Battery Company, West Orange, N. J., a Corporation of New Jersey. Filed Mar. 30, 1905. Serial No. 252,934.

Claim.—1. The process of making metallic scales or flakes which consists in subliming a metallic chlorid to form scale-like or crystalline flakes thereof, then in reducing the chlorid flakes to the hydroxid state, and finally in reducing the hydroxid to the metallic state, substantially as set forth.

2. The process of making scales or flakes of metallic cobalt, which consists in subliming chlorid of cobalt to deposit the same in the form of scale-like or crystalline flakes, then in reducing the chlorid flakes to the hydroxid state, and finally in reducing the hydroxid to the metallic state, substantially as set forth.

3. The process of making flakes or scales of nickel and cobalt, which consists in subliming mixed chlorids of nickel and cobalt to secure compound scale-like or crystalline flakes of the two chlorids, then in reducing the chlorid flakes to the hydroxid state, and finally in reducing the hydroxids to the metallic state, substantially as set forth.

821,628. PROCESS FOR MAKING CONDUCTING-FILMS. THOMAS A. EDISON, Llewellyn Park, N. J., assignor to Edison Storage Battery Company, West Orange, N. J., a Corporation of New Jersey. Filed May 26, 1905. Serial No. 262,476.

Claim.—1. The process of making conducting-films, which includes fusing a sulfur compound of a metal or metals, in cooling the fused mass to result in the crystallization of the metallic sulfur compound in thin scales or films, in separating such scales or films, and in finally converting the latter to the metallic state, substantially as set forth.

2. The process of making conducting-films, which consists in fusing a sulfur compound of a metal or metals, in cooling the fused mass to result in the crystallization of the metallic sulfur compound in thin scales or films, in separating the latter, in roasting the scales or films to oxidize the same, and in finally reducing the scales or films to the metallic state, substantially as set forth.

3. The process of making conducting-films, which consists in fusing a sulfur compound of a metal or metals, in cooling the fused mass to result in the crystallization of the metallic sulfur compound in thin scales or films, in separating the latter, in roasting the scales or films to oxidize the same, and in finally reducing the scales or films in a hydrogen atmosphere to the metallic state, substantially as set forth.

4. The process of making conducting-films, which includes fusing a sulfur compound of the metal or metals, in cooling the fused mass to result in the crystallization of the metallic sulfur compound in thin scales or films, in screening the scales or films to eliminate non-scaly crystals, and in finally reducing the scales or films to the metallic state, substantially as set forth.

5. The process of making conducting-films, which includes fusing a mixture of a sulfur compound of the metal or metals with an alkaline sulfid, in cooling the fused mass to result in the crystallization of the metallic sulfur compound in thin scales or films, in removing the alkaline sulfid therefrom, and in finally reducing the scales or films to the metallic state, substantially as set forth.

6. The process of making conducting-films, which consists in fusing a mixture of a sulfur compound of the metal or metals with an alkaline sulfid, in cooling the fused mass to result in the crystallization of the metallic sulfur compound in thin scales or films, in removing the alkaline sulfid therefrom, in oxidizing the scales or films, and in finally reducing the same to the metallic state, substantially as set forth.

7. The process of making conducting-films, which includes fusing a sulfur compound of cobalt, in cooling the fused mass to result in the crystallization of the sulfur compound in thin scales or films, and in finally reducing the scales or films to the metallic state, substantially as set forth.

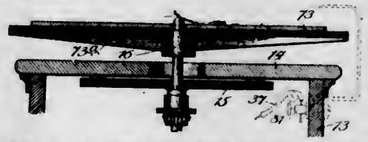
8. The process of making conducting-films, which consists in fusing a sulfur compound of cobalt, in cooling the fused mass to result in the crystallization of the metallic sulfur compound in thin scales or films, in oxidizing the scales or films, and in finally reducing the same to the metallic state, substantially as set forth.

9. The process of making conducting-films, which consists in fusing a sulfur compound of cobalt, in cooling the fused mass to result in the crystallization of the metallic sulfur compound in thin scales or films, in roasting the scales or films to eliminate sulfur and oxidize the same, and finally in reducing the oxid to the metallic state, substantially as set forth.

10. The process of making conducting-films, which consists in fusing a sulfur compound of cobalt, in cooling the fused mass to result in the crystallization of the metallic sulfur compound in thin scales or films, in screening the mass to eliminate non-scaly crystals, in roasting the scales or films to eliminate sulfur and oxidize the same, and in finally reducing the oxid to the metallic state, substantially as set forth.

11. The process of making conducting-films, which includes fusing a mixture of a sulfur compound of cobalt and alkaline sulfid, in cooling the fused mass to result in the crystallization of the metallic compound in thin scales or films, in washing the mass to eliminate the alkaline sulfid, and in finally reducing the scales or films, substantially as set forth.

821,629. AUTOMATIC CUT-OFF FOR SOUND-REPRODUCING MACHINES. JOSEPH EIFEL, Chicago, Ill. Filed June 13, 1904. Serial No. 212,261.



Claim.—1. In a sound reproducing machine, the combination with driving mechanism and electric means for braking the driving mechanism of co-operating means carried by the frame and sound box holder respectively, whereby the driving mechanism will be stopped by the brake at any predetermined point.

2. In a sound reproducing machine the combination with a brake and electric means for releasing the brake to stop the driving mechanism, and two terminals for the electric circuit carried one on the record, and one on the sound box holder whereby the driving mechanism will be stopped at a predetermined point on the record.

3. The combination with driving mechanism, for a sound record, and electro-magnetic means for stopping said driving mechanism, of a moving contact forming part of the electric circuit, and a contact carried by the record to co-operate with the first mentioned contact to close the circuit and operate the stopping mechanism, substantially as described.

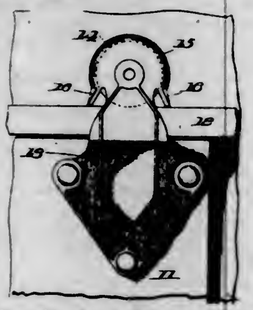
4. In a sound recording machine the combination with a driving mechanism and brake therefor, of an electro-magnetic device for manipulating the brake and means for closing the circuit for this purpose comprising a terminal on the record, and a contact on the moving sound box holder, the terminal being adjustable and operating automatically to stop the movement of the record at the termination of the sound groove.

5. In a phonograph the combination with electro-magnetic means for stopping the driving mechanism thereof, of a circuit for the mag-

net comprising one terminal carried by the sound box or its holder and another terminal placed at a predetermined position on the sound record, and adapted to close the circuit to stop the machine at a predetermined point.

6. The combination with the driving mechanism, of an electric brake, means for closing the electric circuit comprising contact points carried on the sound box, and on a fixed part of the machine, and the position of said latter contact point being adjustable, substantially as described.

821,680. **DOOR-HANGER.** PERCY M. ELLIOTT, Chicago, Ill., assignor to G & H Company, a Corporation of Illinois. Filed Nov. 16, 1904. Serial No. 233,094.



Claim.—1. In combination, a car-door hanger adapted to travel on a track, a plow carried by the hanger and arranged to travel over and in proximity with the horizontal surface of the track.

2. In combination, a car-door hanger adapted to travel on a track, a plow carried by the hanger and arranged to travel over and in proximity with the horizontal surface of the track, the face of the plow being oblique to the direction of travel.

3. In combination, a car-door, and a supporting-hanger adapted to run on a track and having a forwardly-projecting plow, the lower face of which is adjacent to the plane of bearing of the hanger.

4. A car-door hanger having the lower edges of the end walls of its head directed forwardly and being approximately horizontal.

821,681. **CAR-AXLE GEARING.** CHARLES E. FELT, Chicago, Ill., assignor to Electric Specialty Co., Chicago, Ill., a Corporation of Illinois. Filed May 15, 1903. Serial No. 157,500.



Claim.—1. In a device for the purpose described the combination with the shaft to be driven and a rotary driving-disk, of rotary motion-transmitting members engaging opposite faces of said driving-disk for deriving motion therefrom, means for imparting the rotation of one of said motion-transmitting members to said shaft to be driven when the driving-disk rotates in one direction, and means for imparting the rotation of the other one of said transmitting members to said shaft when the driving-disk moves in the opposite direction, substantially as set forth.

2. In a device for the purpose described the combination with the shaft to be driven and a rotary driving member, of rotary motion-transmitting members engaging opposite sides of said driving member and movable toward and from the center of said driving member, means for imparting the rotation of one of said transmitting members to the shaft to be driven when the driving member rotates in one direction and means for imparting the rotation of the other one of said transmitting members to said shaft when the driving member moves in the opposite direction, substantially as set forth.

3. In a device for the purpose described the combination with a shaft to be driven and rotary driving members, of rotary motion-transmitting members engaging opposite sides of said driving member and movable toward and from the center of said driving member, a governor operatively connected with said transmitting members for moving them lengthwise of the diameter of said driving member, means for imparting the rotation of one of said transmitting members to the shaft to be driven when said driving member rotates in one direction and means for imparting the rotation of the other one of said transmitting members to said shaft when the driving member moves in the opposite direction, substantially as set forth.

4. In a device for the purpose described the combination with a shaft to be driven and a driving member rotatable in opposite directions, of two driving-shafts movable longitudinally of said first shaft and operatively connected therewith, means impinging said driving member for imparting the two rotary motions thereof to said driving-shafts respectively and means for moving said driving-shafts lengthwise of the diameter of said driving member, substantially as set forth.

5. In a device for the purpose described the combination with a shaft to be driven and a driving member rotatable in opposite directions, of two driving-shafts, two rotary motion-transmitting members for said driving-shafts respectively impinging opposite sides of said driving member, means for each of said driving-shafts for imparting the rotation of its said motion-transmitting member thereto when revolving in one direction and permitting said member to run free thereon when revolving in the opposite direction and means operatively connecting both of said driving-shafts with the said shaft to be driven, substantially as set forth.

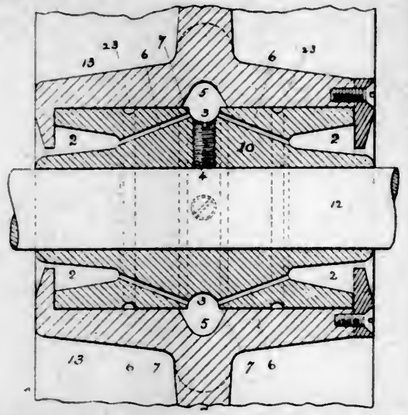
6. In a device for the purpose described the combination with a shaft to be driven and a driving member rotatable in opposite directions, of two driving-shafts, rotary motion-transmitting members on said shafts respectively impinging opposite sides of said driving member and each being free to revolve in one direction without rotating its shaft, a centrifugal governor secured to revolve with said shaft to be driven and means securing said governor to said driving-shafts for moving the latter lengthwise of the diameter of said driving member, substantially as set forth.

7. In a device for the purpose described the combination with a shaft to be driven and a driving member rotatable in opposite directions, of two driving-shafts operatively connected with said driving member for respectively receiving rotation therefrom as it rotates in opposite directions, pinions on said shafts intermeshing with one another for imparting the rotation of the driving-shafts to said shaft to be driven, the pinion on the shaft to be driven being movable independently longitudinally thereof, springs for forcing said driving-shafts in one direction, a sleeve on the shaft to be driven movable longitudinally thereof, swivel connection between said sleeve and driving-shafts, governor-balls, links connecting said balls with said sleeve and links for limiting the movement of said balls longitudinally on the shaft to be driven, substantially as set forth.

8. In a device for the purpose described, the combination with a shaft to be driven and a driving member rotatable in opposite directions, of two power-transmitting members operatively connected with said shaft to be driven and impinging said driving member and movable thereon lengthwise of the diameter thereof, the power-transmitting movements of said power-transmitting members being effective on said shaft to be driven, in opposite directions, and means for moving said power-transmitting members lengthwise of the diameter of said driving member.

821,682. **SELF-LUBRICATING LOOSE PULLEY.** LYMAN O. GOODWIN, Worcester, Mass., assignor of one-half to Joseph M. Bennett and George M. Bennett, Worcester, Mass., a Firm. Filed Feb. 19, 1906. Serial No. 301,790.

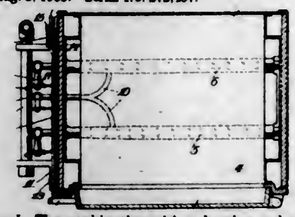
Claim.—1. A self-lubricating loose pulley comprising an inner hub provided with annular end chambers, and passages leading therefrom to a central groove about its peripheral surface, means for securing said inner hub rigidly upon a shaft, an outer hub carrying the pulley rim or wheel and fitted to run loose upon the periphery of said inner hub and having a circular interior groove coincident with the groove of the inner hub, said outer hub provided with inwardly-projecting annular flanges adjacent to the ends of the inner hub and inclosing the outer portion of the chamber-openings, substantially as set forth.



2. In a self-lubricating loose pulley, the combination with the shaft, of the cylindrical annularly-chambered inner hub having inclined oil-passages from the inner ends of its chambers to the central circumference of said hub, set-screws disposed in the body thereof between said chambers for securing the hub to the shaft, an outer hub mounted to run loose upon said inner hub and having the pulley rim or wheel formed thereon, said outer hub provided with an internal circumferential groove with which said oil-passages communicate, there being inward annular guard-flanges on the ends of said hub, one of which flanges is removable, and means for securing said removable flange to the end of the hub.

3. A self-lubricating pulley comprising a cylindrical inner hub having a circumferential channel about its periphery, oil-chambers within its ends with outwardly-inclined passages leading therefrom into said channel, means for securing said inner hub upon a shaft, an outer hub integral with the pulley rim or wheel mounted to turn upon said inner hub and having an internal channel oppositely coincident with but of greater width than the channel of the inner hub, thereby affording plain ledges of the cylindrical surface of the inner hub at each side of said channel, and means at the ends of said hubs for arresting the outflow of oil when the pulley is idle, substantially as set forth.

821,683. **GAS-STOVE.** GEORGE W. GRAVES, Rochester, N. Y. Filed Aug. 3, 1905. Serial No. 273,457.



Claim.—1. The combination with a chamber, a door for closing said chamber, a gas-burner and a gas-supply pipe connected to the burner having a valve therein, of means tending to prevent the opening of the valve when the door is closed, said means being thrown out of engagement with the valve when the door is open.

2. The combination with a chamber, a door for closing said chamber, a gas-burner, a supply-pipe connected to the gas-burner and a valve therein, of a member operated by the door which tends to prevent the opening but permits the closing of the valve by hand when the door is closed.

3. In a stove, the combination with a chamber having a door, a burner, a valve for controlling the supply of gas to the burner, of a sliding member having means for locking the valve in closed position, said means being out of operative relation to the valve-handle when the door is open.

4. In a gas-stove, the combination with an oven having a door, burners and a pilot-light for said burners, valves for controlling the supply of gas to said burners and pilot-light, of a sliding member provided with projections for engaging the valves to hold them closed, means for operating the sliding member to cause the projections to be disengaged from the valves and a projection on the door coöperating with the member when the door is closed to cause the engagement of the projections on the bar with the valves.

5. In a gas-stove provided with an oven or chamber having a door, a gas-burner, a valve controlling the flow of gas to the burner, of a yielding catch coöperating with the valve-handle adapted to be moved into locking position when the door is closed.

821,684. **SNOW-PLOW.** HOWARD GRIMES, Newcomb, N. Y. Filed Feb. 2, 1906. Serial No. 299,202.



Claim.—1. The combination with a sled, of a plow across the front thereof, and means for changing the position of the plow to throw to either side.

2. The combination with a sled, of a plow across the front thereof, a moldboard, and means for moving the plow and moldboard to throw to either side.

3. In a snow-plow, the combination with a sled, of a plow across the front thereof, a moldboard at the side of the sled and forming a continuation of the plow, and means for simultaneously shifting the plow and moldboard to throw the snow to the opposite side of the sled.

4. In a snow-plow, the combination with a sled, of a plow across the front thereof, a vertical shaft supporting the plow between the ends of the latter to tilt the plow to either side, a moldboard, and means for swinging the moldboard to either side of the sled simultaneously with the movement of the plow.

5. In a snow-plow, the combination with a sled, of a vertical shaft at the front end of the sled, a horizontal plow secured between its ends to the vertical shaft, a gear-wheel on the upper end of the shaft, a longitudinal shaft on the sled, a gear-wheel thereon meshing with the first-mentioned gear-wheel, a moldboard, and links connecting the same with the longitudinal shaft so that when the shaft is turned to move the plow to its opposite position, the moldboard will be swung over to the other side of the sled in operative position.

6. In a snow-plow, the combination with a sled, of a central longitudinal bar supported on the sled, a horizontal plow supported by the forward end of the bar, and means for vertically moving the bar and parts carried thereby.

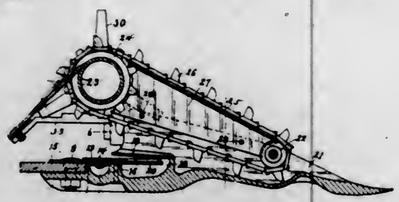
7. In a snow-plow, the combination with a sled, of a central longitudinal bar supported on the sled, a horizontal plow, a vertical shaft carried by the bar and to which the plow is secured midway its ends, a gear on the upper end of the shaft, a longitudinal shaft supported on the bar, a gear thereon meshing with the first-mentioned gear, and a moldboard secured to the longitudinal shaft.

8. In a snow-plow, the combination with a sled, of a longitudinal shaft thereon, a plow across the front of the sled, a moldboard, links connecting the moldboard with sleeves on the shaft, one of said sleeves keyed to slide on the shaft, and a lever constructed to adjust the sleeve on the shaft to change the angle of the moldboard and regulate the width of the path plowed.

9. In a snow-plow, the combination with a sled, of a longitudinal bar thereon, a plow across the front of the sled secured to the bar, a shaft on said bar, a moldboard secured to the shaft, and a lever constructed to raise and lower the bar and move the plow and moldboard out of or into operative position, and a screw to adjust the position of the bar with relation to the sled.

10. In a snow-plow, the combination with a sled, of a longitudinal bar thereon and pivotally secured near its rear end a vertical shaft, at the forward end of the bar, a horizontal plow secured between its ends on the shaft, a gear-wheel on the upper end of the shaft, a longitudinal shaft supported on the bar, a gear on the forward end of the longitudinal shaft meshing with the first-mentioned gear, a hand-wheel on the rear end of the shaft to turn the same and change the angle of the plow to throw to either side, a moldboard and links connecting the same with the longitudinal shaft so that the moldboard will be swung to either side of the sled as the plow is turned, and ratchet means for locking the shaft against movement.

821,635. **GUARD-FINGER FOR MOWERS OR REAPERS.** FRANK HAMACHEK, Kewaunee, Wis. Filed Nov. 21, 1904. Serial No. 233,562.



Claim.—1. A guard-finger for cutting mechanism, comprising a guard-finger body portion, a movable conveyer carried thereby, and means for operating the conveyer during the operation of the cutting mechanism.

2. A guard-finger for cutting mechanism, comprising a guard-finger body portion, and a suitably-operated chain conveyer carried by the body portion adapted to operate during the operation of the cutting mechanism.

3. A guard-finger for cutting mechanism, comprising a guard-finger body portion adapted to extend in advance of the cutting-teeth of said cutting mechanism, and a suitably-operated chain conveyer carried by the body portion and arranged to move at an incline over the cutting-teeth of the cutting mechanism during the operation of said cutting mechanism.

4. A guard-finger for cutting mechanism, comprising a guard-finger body portion, a suitably-operated chain conveyer carried thereby and moving from the front part thereof at an incline to beyond the cutting-teeth of the cutting mechanism during the operation of the cutting mechanism, and means for removing material from the chain conveyer and depositing it in the rear of the cutting mechanism.

5. A guard-finger for cutting mechanism, comprising a guard-finger body portion, a suitably-operated toothed chain conveyer carried thereby, and means for removing material from the chain conveyer comprising clearing-wheels having radially-projecting fingers arranged on either side of the chain conveyer and adapted to discharge the material at the rear of the cutting mechanism.

6. A guard-finger for cutting mechanism, comprising a guard-finger body portion adapted to extend in advance of the cutting-teeth of the cutting mechanism, a roller journaled near the front of the body portion, a sprocket-wheel suitably mounted and driven above and to the rear of the cutting-teeth of the cutting mechanism, and a chain conveyer passing around said sprocket-wheel and roller.

7. A guard-finger for cutting mechanism, comprising a guard-finger body portion adapted to extend in front of the cutting-teeth of the cutting mechanism, a roller journaled in the body portion, a suitably-operated shaft located higher than the cutting-teeth of the cutting mechanism, a sprocket-wheel carried by said shaft, a chain conveyer traveling around the roller and the sprocket-wheel, and clearing-wheels mounted on said shaft on each side of the sprocket-wheel and provided with radial fingers for removing material from the chain conveyer and discharging it in the rear of the cutting mechanism.

8. A guard-finger for cutting mechanism, comprising a guard-finger body portion adapted to extend in advance of the cutting-teeth of the cutting mechanism, a roller carried by the body portion, a suitably-operated shaft located higher than the cutting-teeth of the cutting mechanism, a sprocket-wheel mounted on said shaft, a chain conveyer traveling around the roller and the sprocket-wheel, and means for removing material from the chain conveyer comprising suitably-mounted spring-fingers bearing upon the shaft on either side of the sprocket-wheel.

9. A guard-finger for cutting mechanism, comprising a guard-finger body portion adapted to extend in advance of the cutting-teeth of the cutting mechanism, a roller carried by the body portion, a suitably-operated shaft located higher than the cutting-teeth of the cutting mechanism, a sprocket-wheel carried by the shaft, a chain conveyer connecting the roller and the sprocket-wheel, clearing-wheels mounted on the shaft on either side of the sprocket-wheel and provided with pairs of radial fingers for removing material from the chain conveyer, and a series of spring stripping-fingers suitably supported and bearing on the shaft between the sprocket-wheel and the clearing-wheels and on the clearing-wheels between the fingers thereof.

10. A guard-finger for cutting mechanism, comprising a guard-finger body portion adapted to extend in advance of the cutting-teeth of the cutting mechanism, a roller carried by the body portion, a suitably-operated shaft, a sprocket-wheel mounted on the shaft, a chain conveyer passing around the roller and the sprocket-wheel at an incline, clearing-wheels mounted on the shaft on either side of the sprocket-wheel and provided with pairs of radial fingers for removing material from the chain conveyer, a suitably-supported strip, and a series of inclined spring-fingers mounted on said strip and bearing on the shaft between the clearing-wheels and the sprocket-wheel and on the clearing-wheels between the arms thereof, said inclined spring-fingers adapted to keep the sprocket-wheel and the clearing-wheels free from entanglements and receiving the material from the clearing-wheels and discharging it at the rear of the cutting mechanism.

11. A guard-finger for cutting mechanism, comprising a guard-finger body portion adapted to extend in front of the cutting-teeth of the cutting mechanism, said body portion having upwardly-extending side walls, a roller journaled between the side walls of the body portion, a suitably-operated sprocket-wheel located above the cutting-teeth of the cutting mechanism, and a chain conveyer passing around the roller and the sprocket-wheel.

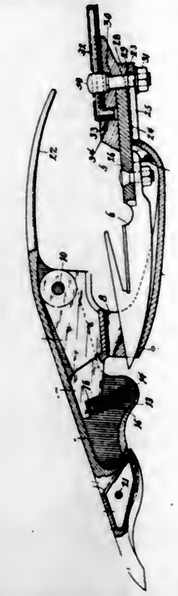
12. A guard-finger for cutting mechanism, comprising a guard-finger body portion adapted to extend in advance of the cutting-teeth of the cutting mechanism, said body portion having upwardly-extending side walls, a roller journaled between the side walls of the body portion, a sprocket-wheel suitably mounted and driven above the cutting-teeth of the cutting mechanism, a chain conveyer traveling around the roller and the sprocket-wheel, and means completing a casing with the upwardly-extending side walls of the body portion to protect the lower part of the chain conveyer from engagement with the material.

13. A guard-finger for cutting mechanism, comprising a guard-finger body portion having upwardly-extending side walls, a roller journaled between the side walls of the body portion, a sprocket-wheel suitably mounted and driven above the cutting-teeth of the cutting mechanism, a conveyer-chain traveling around the roller and the sprocket-wheel, and means for completing a casing with the upwardly-extending side walls of the body portion for protecting the lower part of the chain conveyer from engagement with the material, comprising a shell U-shaped in cross-section and having its edges overlapping the edges of said side walls and connected thereto.

14. A guard-finger for cutting mechanism, comprising a guard-finger body portion, adapted to extend in advance of the cutting-teeth of the cutting mechanism, said body portion having upwardly-extending side walls, a roller journaled between the side walls of the body portion, a sprocket-wheel suitably mounted and driven above the cutting-teeth of the cutting mechanism, a conveyer-chain traveling around the roller and the sprocket-wheel, and means for completing a casing with the upwardly-extending side walls of the body portion for protecting the lower part of the conveyer-chain from engagement with the material, and comprising a shell U-shaped in cross-section and having its edges fitting within the edges of the side walls of the body portion and secured thereto, said shell having its ends curved to conform to the curvature of the roller and the sprocket-wheel.

15. A guard-finger for cutting mechanism, comprising a guard-finger body portion adapted to extend in advance of the cutting-teeth of the cutting mechanism, said body portion having upwardly-extending parallel side walls with inclined top edges, a roller journaled between the side walls of the body portion, a sprocket-wheel suitably mounted and driven above the cutting-teeth of the cutting mechanism, and a chain conveyer traveling around the roller and the sprocket-wheel and adapted to carry the material upwardly and rearwardly into engagement with the cutting-teeth of the cutting mechanism and discharge it in the rear of the cutting mechanism, the bottom of the body portion being indented in advance of the roller to form an inclined guide for leading the material to the chain conveyer.

821,636. **ATTACHMENT FOR CUTTING MECHANISM.** FRANK HAMACHEK, Kewaunee, Wis. Filed Feb. 17, 1905. Serial No. 245,998.



Claim.—1. An attachment for cutting mechanism, comprising a body portion having means for engaging the front end of a guard-finger of the cutting mechanism, teeth formed on the body portion, a clamp-plate having teeth engaging the teeth of the body portion, a bolt connecting the clamp-plate with the body portion to clamp the finger-bar between the clamp-plate and the body portion, and a leading-rod connected to the clamp-plate.

2. An attachment for cutting mechanism, comprising a body portion having means for connecting with the front end of a guard-finger of the cutting mechanism, a clamp-plate for engaging the finger-bar of the cutting mechanism, a bolt connecting the clamp-plate with the body portion, and a leading-rod connected to the bolt, said bolt serving to clamp the finger-bar between the clamp-plate and the body portion.

3. An attachment for cutting mechanism, comprising a body portion which engages the front end of a guard-finger of the cutting mechanism, a clamp-plate which engages the finger-bar of the cutting mechanism, an eyebolt connecting the clamp-plate with the body portion, and a leading-rod passed through the eye of the bolt, said bolt serving to clamp the leading-rod in place and to clamp the finger-bar between the clamp-plate and the body portion.

4. An attachment for cutting mechanism, comprising a body portion which engages the front end of a guard-finger of the cutting mechanism, a clamp-plate which engages the finger-bar of the cutting mechanism, an eyebolt connecting the clamp-plate with the body portion, and a leading-rod passing through the eye of the bolt and fitting in a groove in the clamp-plate, said bolt serving to hold the leading-rod in place and clamp the finger-bar between the clamp-plate and the body portion.

5. An attachment for cutting mechanism, comprising a body portion which engages the front end of a guard-finger of the cutting mechanism, a clamp-plate which engages the finger-bar of the cutting mechanism, an eyebolt connecting the clamp-plate with the body portion, and a leading-rod passing through the eye of the bolt and having its end inserted in an opening of the clamp-plate, said bolt serving to clamp the leading-rod in place and to clamp the finger-bar between the clamp-plate and the body portion.

6. An attachment for cutting mechanism, comprising a body portion which engages the front end of a guard-finger of the cutting mechanism, a clamp-plate which engages the finger-bar of the cutting mechanism, an eyebolt connecting the clamp-plate with the body portion, and a leading-rod passing through the eyebolt and adjustably secured thereby to the clamp-plate whereby the leading-rod may have its angle adjusted with relation to the finger-bar.

7. An attachment for cutting mechanism, comprising a body portion which engages the front end of a guard-finger of the cutting mechanism, a clamp-plate which engages the finger-bar of the cutting mechanism and provided with a series of openings, an eyebolt connecting the clamp-plate with the body portion, and a leading-rod passed through the eye of the bolt having its end bent at an angle and adapted to engage with the openings in the clamp-plate to adjust the angle of the leading-rod with relation to the finger-bar.

8. An attachment for cutting mechanism, comprising a body portion which engages the front end of a guard-finger of the cutting mechanism, a clamp-plate which engages the finger-bar of the cutting mechanism and provided with a series of openings, an eyebolt connecting the clamp-plate with the body portion, and a leading-rod passed through the eye of the bolt and having its end bent at an angle and adapted to be inserted in the openings in the clamp-plate to adjust the angle of the leading-rod, said clamp-plate having grooves leading from the openings in which the leading-rod may lie, said bolt serving to clamp the leading-rod in its angular adjustments and to clamp the finger-bar between the clamp-plate and the body portion.

9. An attachment for cutting mechanism, comprising a body portion which engages the front end of a guard-finger of the cutting mechanism, a clamp-plate which engages the finger-bar of the cutting mechanism, an eyebolt connecting the clamp-plate with the body portion, a leading-rod passed through the eye of the bolt and engaging the clamp-plate, and a shoulder on the clamp-plate engaging the rear edge of the finger-bar.

10. An attachment for cutting mechanism, comprising a body portion having an opening to receive the front end of a guard-finger of the cutting mechanism, teeth on the rear end of the body portion, a clamp-plate bearing on the finger-bar of the cutting mechanism and provided with a series of openings, a depending flange on the clamp-plate bearing on the rear edge of the finger-bar, teeth on the flange engaging the teeth of the body portion, an eyebolt connected to the clamp-plate and passing through an elongated slot of the body portion, and a leading-rod passed through the eye of the bolt and having an angularly-bent end adapted to engage with the openings in the clamp-plate, said clamp-plate having grooves in which the leading-rod rests when so engaged and having a beveled front edge, said bolt serving to clamp the leading-rod in its adjustments and adapted to clamp the finger-bar between the clamp-plate and the body portion.

11. An attachment for cutting mechanism, comprising a body portion having means for engaging the front end of a guard-finger of the cutting mechanism, a clamp for connecting the body portion to the finger-bar of the cutting mechanism, a web formed on the body portion, a movable member pivotally mounted thereon, a head on the web extending into a recess of the movable member and forming a stop for limiting the movements thereof, a lug on the head, a lug on the wall of the recess of the movable member, and a coil-spring mounted on the two lugs for holding the movable member in its lower position.

12. An attachment for cutting mechanism, comprising a body portion having means at different elevations for engaging the front end of a guard-finger of the cutting mechanism, a clamp for connecting the body portion to the finger-bar of the cutting mechanism, a web on the body portion, a movable member pivotally mounted thereon, a head on the web projecting into a recess of the movable member and forming a stop for limiting the movements of the movable member, a lug on the head, a lug on the wall of the recess of said movable member, a coil-spring mounted on the two lugs, and a guide-finger on the movable member extending over the cutting mechanism.

13. An attachment for cutting mechanism, comprising a body portion having a pair of openings at different elevations for receiving the front end of a guard-finger of the cutting mechanism, a clamp for connecting the body portion to the finger-bar of the cutting mechanism, a leading-rod secured to the clamp, a web on the body portion, a movable member pivotally mounted on the web, a head formed on the web projecting into a recess of the movable member and forming a stop to limit the movements of the movable member, a spring for normally holding the movable member in its lowermost position, a guide-finger on the movable member extending over the cutting mechanism and adapted to guide cut material onto the leading-rod, a shouldered shank formed on the front end of the movable member, and a removable point fitting on the shank having a downwardly-bent front end and a rounded flattened rear end, substantially as described.

821,637. PROCESS OF TREATING ORES. JAMES O. HANDY, Pittsburg, Pa. Filed Feb. 24, 1906. Serial No. 302,734.

Claim.—1. In the treatment of arseniferous cobalt and nickel ores containing silver, the process which consists in powdering and sifting the ore to separate metallics, sulfating the fine ore, reducing and recovering the silver, removing iron and arsenic together, and separating and recovering cobalt and nickel.

2. In the treatment of arseniferous cobalt and nickel ores containing silver, the process which consists in sulfating the ore, reducing and recovering the silver, removing iron and arsenic together and separating and recovering cobalt and nickel.

3. In the treatment of arseniferous cobalt and nickel ores containing silver, the process which consists in sulfating the ore, reducing and recovering the silver with a fresh portion of the ore, removing iron and arsenic together, and separating and recovering cobalt and nickel.

4. In the treatment of arseniferous cobalt ores, the process of reducing silver and dissolving cobalt which consists in treating a solution of sulfate of silver with an arsenid ore of cobalt.

5. In the treatment of arseniferous cobalt and nickel ores containing silver, the process which consists in oxidizing the ore in the presence of a molten acid flux to expel and recover arsenic, bringing the soluble matters of the melt into solution and reducing and recovering the silver, removing iron and residual arsenic together from the solution, and precipitating cobalt and nickel.

6. In the treatment of arseniferous cobalt and nickel ores containing silver, the process which consists in oxidizing the ore in the presence of a molten acid flux to expel and recover arsenic, bringing the soluble matters of the melt into solution and reducing and recovering the silver, removing iron and residual arsenic together from the solution, and separating cobalt and nickel by fractional precipitation.

7. In the treatment of arseniferous cobalt and nickel ores containing silver, the process which consists in oxidizing the ore in the presence of a molten acid flux to expel and recover arsenic, bringing the soluble matters of the melt into solution and reducing and recovering the silver, removing iron and residual arsenic together from the solution, and separating cobalt and nickel by fractional precipitation with hypochlorite.

8. In the treatment of arseniferous cobalt and nickel ores containing silver, the process which consists in fusing the ore with sodium bisulfate to expel and recover arsenic, bringing the soluble matters of the melt into solution and reducing and recovering the silver, removing iron and residual arsenic together from the solution, and precipitating cobalt and nickel therefrom.

9. In the treatment of arseniferous cobalt and nickel ores containing silver, the process which consists in fusing the ore with sodium bisulfate to expel and recover arsenic, bringing the soluble matters of the melt into solution and reducing and recovering the silver, removing iron and residual arsenic together from the solution, and separating cobalt and nickel by fractional precipitation.

10. In the treatment of arseniferous cobalt and nickel ores containing silver, the process which consists in fusing the ore with sodium bisulfate to expel and recover arsenic, bringing the soluble matters of the melt into solution and reducing and recovering the silver, and separating cobalt and nickel by fractional precipitation with hypochlorite.

11. In the treatment of arseniferous cobalt ores, the process which consists in fusing the ore with sodium bisulfate to expel and recover arsenic.

12. In the treatment of arseniferous ores containing silver, the process which consists in fusing the ore with sodium bisulfate to expel and recover arsenic, bringing the soluble matters of the melt into solution, and reducing and recovering the silver.

13. In the treatment of arseniferous cobalt and nickel ores containing silver, the process which consists in fusing the ore with sodium bisulfate to expel and recover arsenic, bringing the soluble matters of the melt into solution, and precipitating dissolved silver by a fresh portion of ore.

14. In the treatment of arseniferous cobalt and nickel ores containing silver, the process which consists in fusing the same with an acid flux to expel and recover arsenic, bringing the soluble matters of the melt into solution and reducing and recovering the silver.

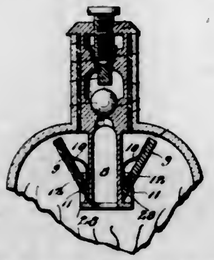
15. In the treatment of arseniferous cobalt and nickel ores containing silver, the process which consists in fusing the ore with sodium bisulfate to expel and recover arsenic, bringing the soluble matters of the melt into solution and reducing and recovering the silver, removing iron and residual arsenic together from the solution, precipitating cobalt and nickel therefrom and evaporating and crystallizing to recover sodium sulfate for reuse.

16. The process of extracting cobalt from arseniferous cobalt and nickel ores containing silver which consists in oxidizing the same in the presence of a molten acid flux, leaching the melt and reducing the same to precipitate silver, removing iron and residual arsenic together from the solution, precipitating cobalt together with a little nickel by the addition of slightly more of an oxidizing agent than corresponds to the cobalt present, and treating the precipitate with a fresh portion of a cobalt solution to dissolve out the nickel therefrom.

17. The process of extracting cobalt from arseniferous cobalt and nickel ores containing silver which consists in fusing the same with sodium bisulfate, leaching the melt and reducing the same to precipitate silver, removing iron and residual arsenic together, precipitating cobalt by the addition of slightly more hypochlorite solution than corresponds to the cobalt present, and treating the precipitate with a fresh portion of the iron and arsenic-free solution to dissolve out the nickel.

18. In the treatment of arseniferous cobalt and nickel ores containing silver, the process which consists in grinding and sifting the same to eighty-mesh fineness to separate metallics, fusing the sifted ore with sodium bisulfate to expel and recover arsenic, dissolving the melt and reducing dissolved silver with a fresh portion of ore, removing iron and residual arsenic together from the solution, removing cobalt and nickel by fractional precipitation with hypochlorite, and recovering sodium sulfate for reuse.

821,638. BOTTLE-STOPPER. MICHAEL J. HARRINGTON and JOHN J. HARRINGTON, Laurium, Mich. Filed Oct. 31, 1905. Serial No. 285,263.



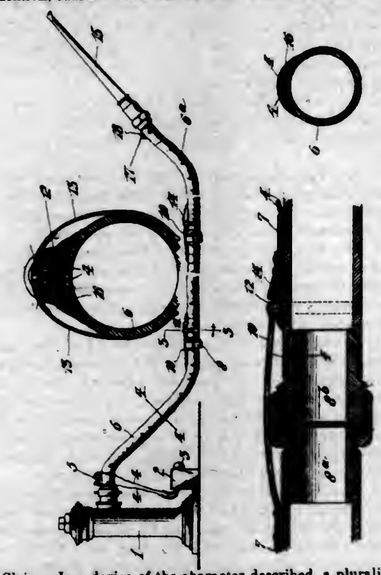
Claim.—1. A bottle-stopper having at its top end a discharge-opening, and a valve under the same and a removable plug for closing the discharge-opening, and bearing on the valve to hold it seated.

2. A bottle-stopper comprising a cylinder having a cap provided with a threaded outlet-opening and a valve within the cylinder and a screw-plug fitting in said opening and adapted when inserted to bear upon the valve and hold it closed.

3. A bottle-stopper comprising a cylinder of sufficient length to project at its lower end below the neck of the bottle into the body thereof, and having a rigid catch which is pivoted at its lower end in the wall of the said lower end of the cylinder and has a spring which acts to force out its upper end under the shoulder of the bottle.

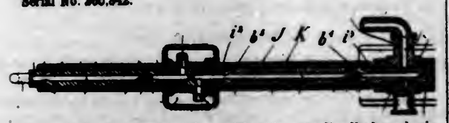
4. The combination with a bottle having an internal shoulder, of a stopper comprising a valved cylinder which extends at its inner end below said shoulder and has recesses in the sides of said end, and rigid catches which are pivoted in said recesses and have springs adapted to force their upper ends out behind the shoulder.

821,639. FIREMAN'S SIGNALING SYSTEM. ALAN J. HART, Montreal, Canada. Filed Dec. 12, 1904. Serial No. 236,453.



Claim.—In a device of the character described, a plurality of hose-sections, insulated wires carried by each section, a flexible insulated member secured to one end of each hose-section and adapted to receive said wires, plugs on said wires adjacent the free end of each of said flexible insulated members, a contacting member carried by each of the hose-sections, a shoulder adjacent to each of said contacting members, a segmental spring-clip secured to each of said flexible members and adapted to engage the adjacent hose-section, a push-button at one end of said wires, an alarm at the other end thereof, and a source of electrical energy for said wires.

821,640. COOLING DEVICE FOR PISTON-RODS. RUDOLF HARTWIG, Essen-on-the-Ruhr, Germany, assignor to Fried. Krupp Aktiengesellschaft, Essen-on-the-Ruhr, Germany. Filed May 17, 1905. Serial No. 260,842.



Claim.—1. The combination with a longitudinally-bored piston-rod, of a mantle surrounding the same and spaced therefrom, an inlet for the cooling medium at one end of the rod, and an outlet at the other end of the rod, the rod being provided with a passage connecting the bore in the rod with the mantle near the cooling-medium inlet, to provide a flow in the same direction through the rod and the mantle.

2. The combination with a longitudinally-bored piston-rod, of a mantle surrounding the same and spaced therefrom, an inlet for the cooling medium at one end of the rod, an outlet at the other end of the rod, the rod being provided with a passage connecting the bore in the rod with the mantle near the cooling-medium inlet and a passage connecting the mantle-space with the rod-bore near the outlet of said medium, to provide a flow in the same direction through the rod and the mantle.

3. The combination with a longitudinally-bored piston-rod, of a mantle surrounding the same and spaced therefrom, an inlet for the cooling medium at one end of the rod, an outlet at the other end of the rod, the rod being provided with a passage connecting the bore in the rod with the mantle near the cooling medium inlet, and a passage connecting the mantle-space with the rod-bore near the outlet of said medium, to provide a flow in the same direction through the rod and the mantle, and means between the two passages for retarding the flow through the rod.

4. The combination with a longitudinally-bored piston-rod, of a mantle surrounding the same and spaced therefrom, an inlet for the cooling medium at one end of the rod and an outlet for the cooling medium at the other end of the rod, the rod being provided with a transverse passage connecting the bore and the mantle-space near the inlet and inclined in one direction, and with an oppositely-inclined transverse passage connecting the mantle-space and the bore near the outlet.

5. The combination with a hollow piston, of a piston-rod extending from opposite sides of the piston and provided with two longitudinal bores, a mantle surrounding each projecting portion of the rod, and spaced therefrom, communication between each bore and the hollow piston, a cooling-medium-supply pipe connected to one end of the piston-rod and its bore, and an outlet-pipe connected to the other end of the piston-rod and its bore, the piston-rod being provided with transverse passages connecting the bores with the mantle-spaces near each end of each mantle.

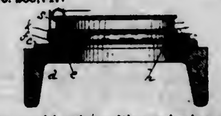
6. The combination of a longitudinally-perforated piston-rod, a perforated plug fitted in the perforation, a mantle surrounding the rod and spaced therefrom, and transverse perforations in the rod leading to the space between the mantle and the rod.

7. The combination with a piston-rod, of a mantle spaced from the rod to provide a cooling-chamber, said mantle being secured at one end to the rod and having its other end free to expand and contract and provided with a flange tightly fitting the piston-rod.

8. A cooling device for longitudinally-perforated piston-rods comprising a mantle surrounding the rod and spaced therefrom, means providing communication between the longitudinal perforation of the piston-rod and the space between the mantle and the rod, means for supplying a cooling medium to the rod and means for permitting a part of the cooling medium to pass through the rod without going through said intermediate space.

9. A cooling device for piston-rods comprising a mantle surrounding the rod and spaced therefrom, means securing said mantle to said rod by one end only and thus permitting the mantle to expand freely, and means for passing a cooling medium through the space between the mantle and the piston-rod.

821,641. RING SPINNING AND TWISTING APPARATUS. JOEL HAYDEN, Jr., Boston, Mass., assignor, by mesne assignments, to Hayden Machinery Company, a Corporation of Maine. Filed Dec. 29, 1904. Serial No. 238,747.



Claim.—1. The combination with a spinning-ring, its traveler and a supporting-plate, of an intermediate member interposed between said ring and plate, a traveler-clearer extending from said member to a point a suitable distance from the path of the traveler, and means permitting said intermediate member to move in relation to said ring-rail so that the clearer is retained at the same distance from the flange of the spinning-ring on which the traveler moves.

2. The combination with a spinning-ring, its traveler and a supporting-plate, of a moving member rigid with the spinning-ring, and a traveler-clearer extending from said moving member to a point at a suitable distance from the path of the traveler.

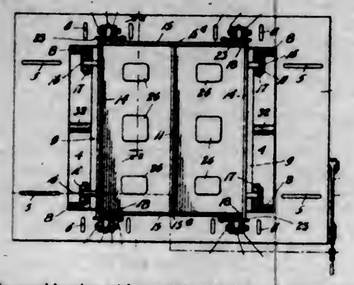
3. The combination with a moving or vibrating spinning-ring and a supporting-plate therefor, of a member interposed between said ring and plate and rigid with relation to said spinning-ring, a traveler on said ring, and a traveler-clearer extending from said member to a point at a suitable distance from the path of the traveler.

4. The combination with a moving or vibrating spinning-ring and a supporting-plate therefor, of a member interposed between said ring and plate and rigid with relation to said spinning-ring, a traveler on said ring, and a traveler-clearer made of bendable material extending from said member to a point at a suitable distance from the path of the traveler.

821,642. CONCRETE-BLOCK MACHINE. THOMAS C. HOLT, Minneapolis, Minn., assignor of one-half to Theodore Dunn, Minneapolis, Minn. Filed May 18, 1905. Serial No. 260,821.

Claim.—1. The combination with a molding-flask, of a vertically-movable partition-plate working in said flask, a pair of vertically-movable bars having cores working in the compartments of said flask, and a lifting-bail having an actuating-lever and operative on said partition-plate and on said core-supporting bars, to simul-

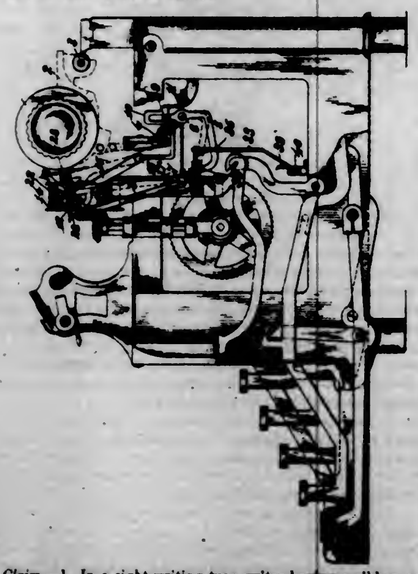
taneously raise and simultaneously lower the same, substantially as described.



2. The combination with a molding-flask having separable and laterally-adjustable side plates and a vertically-movable partition-plate, of vertically-movable bars provided with cores working in the compartments of said flask, vertically-disposed laterally-adjustable guides in which the ends of said core-supporting bars work, and a lever-actuated lifting-bail operating on the said partition-plate and on said core-supporting bars to simultaneously raise and simultaneously lower said partition-plate and said cores, substantially as described.

3. The combination with a molding-flask, of a dividing-partition in said flask, a pair of vertically-movable cores working in the compartments of said flask, guides for said cores arranged for lateral adjustments so as to move the cores bodily, toward and from said partition-plate, and means for simultaneously moving said cores into working positions and from working positions, substantially as described.

821,643. **RIBBON ATTACHMENT FOR SIGHT-WRITING TYPE-WRITERS.** CARL A. JOERRENS, Washington, D. C. Filed Mar. 30, 1905. Serial No. 253,904.



Claim.—1. In a sight-writing type-writer having a ribbon assuming a position adjacent and substantially tangential to the printing-platen at each imprint, a ribbon attachment comprising a ribbon-holder normally assuming a position at an angle to and removed from the printing position and means turning the ribbon-holder, with the ribbon, from the angular to the tangential position in either of two directions, at will of the operater, to determine the portion of the ribbon-holder to be uppermost and moving it bodily to bring the ribbon to and from the platen.

2. In a sight-writing machine, a ribbon-guide, and means for rotating it about one axis in either of two directions and moving it about a second axis distant from the first to bring it into a printing position substantially tangential to the platen and returning it by a reversal of said movement to its normal position of rest at an angle to said printing position.

3. In a sight-writing machine, a ribbon-guide, a swinging arm in which the ribbon-guide is trunnioned, and means operating during the printing stroke to oscillate the ribbon-guide on its trunions and swing the arm to and from the platen.

4. In a sight-writing machine, a ribbon-guide having trunnions whose axis is substantially coincident with the middle line of the ribbon and means for oscillating the ribbon-guide upon its trunnions.

5. In a sight-writing type-writer, the combination of a trunnioned ribbon-guide mounted to move bodily to and from the platen in addition to oscillating upon its trunnions, and a connection imparting said movements to the ribbon-guide successively.

6. In a type-writing machine, a trunnioned ribbon-guide, a swinging arm on which said guide is trunnioned, a connecting-rod engaging the guide eccentrically to its trunnions and a stop limiting the rotation of the guide and causing continued movement of the connecting-rod to impart throw to the swinging arm.

7. In a writing-machine, a ribbon-guide, a part upon which the ribbon-guide is trunnioned and by which it is movable bodily to and from the platen, a connecting-rod whose throw rotates the ribbon-guide and moves it to and from the platen, eccentric connections into engagement with which the connecting-rod is movable laterally and a reversing-gear interposed in one of said connections whereby when the ribbon-guide is moved by it, the ribbon turns in the opposite direction to that in which it is turned by the other connection.

8. In a sight-writing machine, a trunnioned ribbon-guide, a connecting-rod through which the guide is turned on its trunnions and means for shifting the connecting-rod to determine the direction of turning movement imparted to the guide, and a pivoted ribbon-interposing lever connected with and imparting the throw to said rod.

9. In a sight-writing machine, a ribbon-guide, a connecting-rod, means for shifting the connecting-rod into engagement with the ribbon-guide to determine the direction in which the guide is to be moved, a ribbon-inverting lever by which the connecting-rod is moved, in determining its point of engagement with the guide and a ribbon-feed-shifting means having controlling connection with said pivoted lever.

10. In a sight-writing machine, a ribbon-guide, a connecting-rod, means for shifting the connecting-rod into engagement having shiftable connection with the ribbon-guide to determine the direction in which the guide is to be moved, a ribbon-inverting lever by which the connecting-rod is moved, in determining its point of engagement with the guide and a ribbon-feed-shifting means having controlling connection with said inverting-lever the connection with the ribbon-feed shift being adjustable at will.

821,644. **CAN-END-SOLDERING MACHINE.** OLIVER J. JOHNSON, Wheeling, W. Va. Filed May 25, 1904. Serial No. 209,604.

Claim.—1. The combination of a frame having horizontal side rails arranged with their greatest width vertically, a solder-box supported between said side rails, and tracks on which the cans travel supported by said side rails above and out of contact with said solder-box, substantially as set forth.

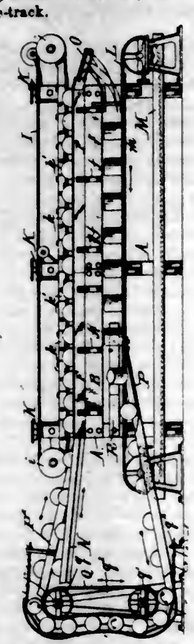
2. The combination of a frame having horizontal side rails arranged with their greatest width vertically, a solder-box supported between said side rails and having side walls which depend below the bottom of the box and tracks on which the cans travel supported by said side rails above and out of contact with said solder-box, substantially as set forth.

3. The combination of a frame having horizontal side rails, a solder-box arranged between and spaced from said side rails, said solder-box being loosely supported by said side rails whereby the warping of the solder-box will not affect the side rails, and tracks on which the cans travel supported by said side rails above and out of contact with the solder-box, substantially as set forth.

4. The combination of upper and lower chutes or runways for the cans, a guide connecting the same, and a traveling belt adjacent to said guide which engages the cans and rolls the same up said guide, substantially as set forth.

5. The combination of upper and lower runways for the cans, an elevating guide-track leading from the lower to the upper runway, and a traveling belt adjacent to said guide-track which engages and revolves the cans and thereby rolls the same up said guide-track, substantially as set forth.

6. The combination of upper and lower runways for the cans, a substantially upright elevating guide-track leading from the lower to the upper runway, and a traveling belt adjacent to said guide-track which engages and revolves the cans and thereby rolls the same up said guide-track.



7. The combination of upper and lower chutes or runways for the cans, an upright guide having curved ends connecting with said chutes, belt-pulleys substantially concentric with said curved ends of the guide, and an elevator-belt passing around said pulleys with one portion thereof substantially parallel with said guide for rolling the cans up said guide, substantially as set forth.

8. The combination of upper and lower chutes or runways for the cans, an upright guide having curved ends connecting with said chutes, belt-pulleys substantially concentric with said curved ends of the guide, and an elevator-belt passing around said pulleys with one portion thereof substantially parallel with said guide for rolling the cans up said guide, said guide being bowed toward said belt between said pulleys, substantially as set forth.

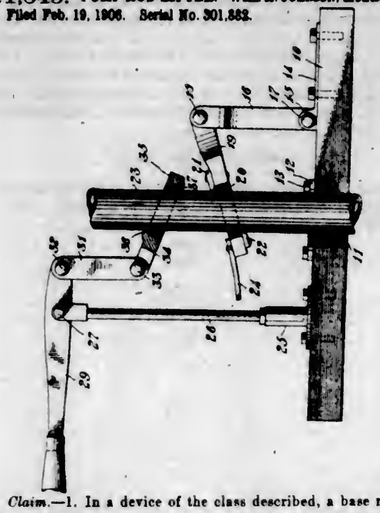
9. The combination of upper and lower chutes or runways for the cans, a guide between the same, pulleys, a traveling belt running around said pulleys, and tension-belts adjacent to said pulleys and connected to said guide for pressing the cans against said traveling belt, substantially as set forth.

10. The combination of upper and lower chutes or runways for the cans, a guide between the same, pulleys, a traveling belt running around said pulleys, and flexible tension-belts adjacent to said pulleys and each connected at one end to said guide, and springs connected to the opposite ends of said tension-belts for pressing the cans against said traveling belt, substantially as set forth.

11. The combination with a solder-bath, can-tracks at opposite sides thereof, a cooling-belt, and means for directing the cans from one of said tracks to said cooling-belt with the soldered ends down, of a substantially straight inclined chute, means for moving the cans from said cooling-belt into said chute with the unsoldered ends outermost, an upright elevator which takes the cans from said chute, and a substantially straight inclined chute arranged with one end directly above said first-mentioned chute and leading from the upper end of said elevator to the can-track at the opposite side of the machine, substantially as set forth.

12. The combination with a solder-bath, can-tracks at opposite sides thereof, a cooling-belt, and means for directing the cans from one of said tracks to said cooling-belt with the soldered ends down, of a substantially straight inclined chute, means for moving the cans from said cooling-belt into said chute with the unsoldered ends outermost, a substantially straight inclined chute above said other chute leading to said other can-track, and an elevator-guide and traveling belt for conveying the cans from said first chute to said upper chute, substantially as set forth.

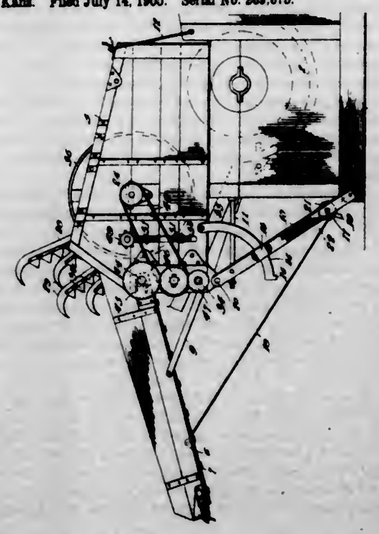
821,645. **PUMP-ROD LIFTER.** WILL R. JOHNSON, Montfort, Wis. Filed Feb. 19, 1906. Serial No. 301,583.



Claim.—1. In a device of the class described, a base member having a lateral recess, a U-shape plate forming a binding to said recess, a standard swinging from said base contiguous to said recess, an arm swinging from the free end of said standard and having a U-shaped terminal for receiving the rod to be elevated, nip-plates at opposite sides of said U-shaped terminal for bearing against opposite sides of said rod, and means for elevating said rod.

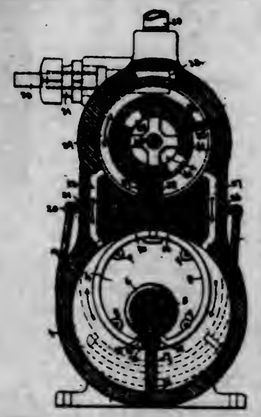
2. In a device of the class described, a base member having a lateral recess, a U-shape plate forming a binding to said recess, a standard swinging from said base contiguous to said recess, an arm swinging from the free end of said standard and having a U-shaped terminal for receiving the rod to be elevated, nip-plates at opposite sides of said U-shaped terminals for bearing against opposite sides of said rod, a socket upon said base member, a standard rotatively disposed in said socket a lever swinging from said rotative standard, a grip-band through which said rod passes, and coupling means between said band and lever.

821,646. **BAND-CUTTER AND FEEDER.** FRANK JUNO, Timken, Kans. Filed July 14, 1905. Serial No. 269,675.



Claim.—In a mechanism of the character set forth, the combination of a threshing mechanism, inclined bars extended from the framework thereof, stay-rods between the upper end portions of the inclined bars and the framework, a band-cutter and feeder mounted for tilting movement, a rod pivotally connecting the band-cutter and feeder with said inclined bars, curved bars and keepers for directing and steadying the band-cutter and feeder in its tilting movements, means for tilting said band-cutter and feeder, a grain-pan, a shaft having crank portions supporting the outer end portion of the grain-pan, a support 35 for the inner end portion of said grain-pan, and rod connecting the support 35 with the rod pivotally connecting the band-cutter and feeder with its supporting-bars.

821,647. ROTARY ENGINE. ALONZO G. KENYON and JOHN R. SAUNDERS, Hornellsville, N. Y. Filed Sept. 13, 1905. Serial No. 278,242.



Claim.—1. The combination, in an engine, of a valve, a movable valve-seat provided with a port-opening, a stationary abutment in said opening, passages with which the port-opening registers leading to opposite ends of the engine-cylinder from opposite sides of said abutment, and means for shifting the seat to cause the ends of the port-opening to approach or recede from the abutment at either side thereof to change the point of cut-off or reverse the flow of motive fluid in the engine.

2. The combination, in an engine, of a pair of cylinders placed tandem, oppositely-disposed pistons in the two cylinders, a valve-chamber extending across the cylinders, a movable valve-seat in said chamber provided with a port-opening opposite each cylinder, a stationary abutment in each of said openings, passages with which the port-openings register leading to opposite ends of the respective engine-cylinders from opposite sides of said abutments, a valve having port-openings adapted to register with the port-openings in the valve-seat, said valve-ports being so positioned as to admit the motive fluid to the respective cylinders at the beginning of each piston-stroke and means for shifting the valve-seat to cause the ends of the port-openings to approach or recede from the abutments at either side thereof to change the point of cut-off or reverse the flow of motive fluid in the engine.

3. The combination, in an engine, of a revoluble cylindrical valve, into which the motive fluid is delivered, a port or ports passing through the walls of the valve, a cylindrical seat within which the valve is mounted, a port-opening passing through said seat with which the valve port or ports register, a passage leading from said port-opening to one end of the engine-cylinder, a stationary abutment in the port-opening at one side of said passage, a groove in the outer periphery of the valve-seat opposite the port-opening, a passage leading from said groove to the other end of the engine-cylinder, an outlet for the exhaust in communication with said groove, and means for turning the valve-seat to change the point of cut-off.

4. The combination, in an engine, of a rotary cylindrical valve into which the motive fluid is delivered, a port or ports passing through the walls of the valve, a cylindrical seat within which the valve rotates, a port-opening passing through said seat with which the valve port or ports register, passages with which said port-opening registers leading to opposite ends of the engine-cylinder, a stationary abutment in the port-opening between said passages, a groove in the outer periphery of the valve-seat extending around from one end of the port-opening to the other, partitions between the groove and the port-opening, an outlet for the exhaust in communication with the groove at all times, and means for turning the valve-seat to change the point of cut-off or reverse the flow of motive fluid in the engine.

5. The combination, in an engine, of a pair of cylinders placed tandem, rotary pistons in the cylinders set diametrically opposite one another upon a driving-shaft, a valve-chamber extending across the cylinders, a movable cylindrical valve-seat in said chamber, a port-opening passing through the valve-seat opposite each cylinder, stationary abutments in the port-openings, passages leading to opposite ends of the cylinders from opposite sides of said abutments, grooves in the outer periphery of the valve-seat extending around from one end of the port-openings to the other, partitions between the grooves and the port-openings, exhaust-passages leading from said grooves to a common outlet, a cylindrical valve mounted on a shaft to rotate within the valve-seat, diametrically opposite ports in the valve to register with each port-opening in the valve-seat, the ports at one end of the valve being set at an angle of ninety degrees with respect to the ports at the other end, means for transmitting motion from the driving-shaft to the valve-shaft at one-half speed, and means for turning the valve-seat to change the point of cut-off or to reverse the flow of motive fluid in the engine.

6. The combination, in a rotary engine, of a cylinder, a wing-piston and an abutment-cylinder rotating therein, balance-chambers at each side of the engine-cylinder inclosing the ends of the abutment-cylinder, and means for admitting the motive fluid to said chambers against the periphery of the abutment-cylinder upon the side opposite to that which receives the pressure in the main cylinder.

7. The combination, in a rotary engine, of a cylinder, a wing-piston and an abutment-cylinder rotating therein, admission and exhaust passages leading the motive fluid to and from the engine-cylinder, balance-chambers at each side of said cylinder inclosing the ends of the abutment-cylinder, grooves in said chambers partly surrounding the abutment-cylinder and terminating opposite the dead-point, packing-plates set into the periphery of the abutment-cylinder opposite the piston and engaging said grooves, and ducts leading to the opposite ends of said grooves from the respectively opposite admission and exhaust passages.

8. The combination, in a rotary engine, of a cylinder, a wing-piston and an abutment-cylinder rotating therein, said abutment-cylinder being divided transversely, a packing-roller provided with a slot through which the piston passes pivotally mounted in a slot formed in the halves of the abutment-cylinder, and packing-strips in the sides of the roller between the piston and the sides of the slot in the abutment-cylinder.

821,648. HANDLE. CHARLES KOPP, Newark, N. J. Filed Feb. 28, 1905. Serial No. 247,660.



Claim.—1. An article of manufacture, comprising two apertured spherical end members, a flexible connection secured to said end members through the apertures therein.

2. An article of manufacture, comprising two apertured and grooved spherical end members, a flexible connection passing through the apertures and secured in the grooves of said end members.

3. A device of the class described comprising spherical end members, grooves in said end members and means fitted into said grooves and connecting said end members capable of being bent into different shapes.

4. A device of the class described comprising grooved and apertured end members and a wire passing through the apertures and secured in the grooves of the said grooved and apertured end members.

5. A device of the class described comprising wooden grooved and apertured end members and a wire passing through the apertures and secured in the grooves of the said grooved and apertured end members.

6. A handle of the class described comprising a central wire, end members secured to said wire and a continuous covering over said wire and end members.

7. As an article of manufacture, a central stiffening-wire for bag-handles, provided with a pair of spherical members secured to the extremities thereof.

8. As an article of manufacture, a central stiffening-wire for bag-handles and a pair of circumferentially-grooved spherical members having apertures therethrough, the extremities of said wire passing through said apertures and bent around and fitted in said grooves.

9. As an article of manufacture, a central stiffening-wire for bag-handles, provided with a pair of spherical end members secured to the extremities thereof, and a cover surrounding said wire and the spherical members.

10. A bag-handle stiffener, comprising a wire having forms secured to the ends of said wire and a continuous one-piece covering inclosing said wire and forms.

821,649. EYEGLASSES. JOSEPH KOVACS, Newark, N. J. Filed Feb. 6, 1906. Serial No. 299,696.

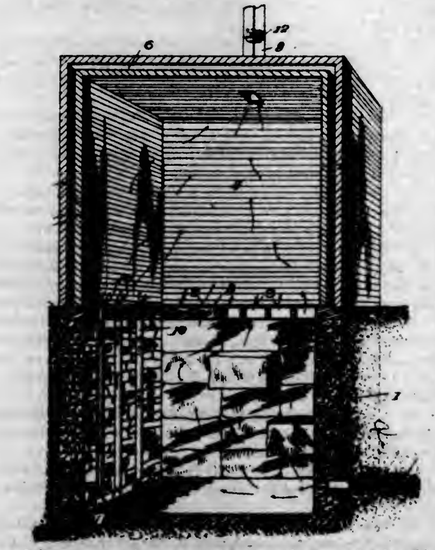


Claim.—1. The herein-described nose-clamps for eyeglasses, said nose-clamps comprising a head member provided at one end with two separate fingers which project therefrom and are curved outwardly and backwardly at an angle thereto, the end portions of said fingers being approximately parallel, substantially as shown and described.

2. The herein-described nose-clamps for eyeglasses, said nose-clamps comprising a head member provided at one end with two fingers which project therefrom and are curved outwardly and backwardly at an angle thereto, the end portions of said fingers being approximately parallel, said end portions of said fingers being also provided with cushions, substantially as shown and described.

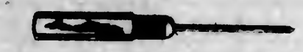
3. The herein-described nose-clamps for eyeglasses, said nose-clamps comprising a head member provided at one end with two fingers which project therefrom and are curved outwardly and backwardly at an angle thereto, the end portions of said fingers being approximately parallel, said end portions of said fingers being also provided with cushions, consisting of rubber sleeves which are secured thereon, substantially as shown and described.

821,650. REFRIGERATOR. RUDOLPH KROLL, Spearfish, S. D. Filed June 13, 1905. Serial No. 265,053.



Claim.—An ice-house comprising non-heat-conducting sides and a roof, a perforated floor dividing the ice-house into a lower compartment which is used as an ice-chamber and an upper compartment which is used as a provision-chamber, the ice-chamber being located beneath the surface of the ground, an air-inlet pipe leading into one side of the ice-chamber at a point near the bottom thereof, a series of pipes extending from the floor to the lower portion of the ice-chamber and located diametrically opposite to the air-inlet pipe, an air-outlet pipe leading from the upper portion of the provision-chamber, and a fan located in said pipe and adapted to produce a circulation of air from the ice-chamber to the provision-chamber.

821,651. WORK-CENTERING DEVICE FOR DRILL-PRESSES, LATHES, &c. JOSEPH LANDGRAF and PHILIP B. LANDGRAF, Chicago, Ill.; said Joseph Landgraf assignor to said Philip B. Landgraf. Filed Mar. 20, 1905. Serial No. 251,029.



Claim.—1. In an implement of the character described, the combination of a chuck or handle portion adapted to be clamped in a chuck or other support, a needle or point, means giving the needle or point universal-joint connection with said handle; said needle or point being movable laterally and longitudinally, and means for yieldingly holding the needle against both of said movements.

2. In an implement of the character described, a chuck or handle portion, a cap connected therewith and having a ball-bearing formed therein, a point or needle having a ball on the end thereof, said ball adapted to be seated in said bearing, and a spring arranged to bear upon said ball.

3. In an implement of the character described, a chuck or handle portion and having a counterbore in the end thereof, a cap adapted to be received upon the end of said handle portion and formed with a ball-bearing, a point or needle having a ball on the end thereof arranged to be recevied in said bearing, and a spring arranged to be received in said counterbore and bearing upon said ball.

4. An implement of the character described, comprising a chuck or handle portion having a reduced exteriorly-threaded shoulder and a counterbore at one end thereof, an open-ended cap adapted to be received upon said threaded shoulder, a point or needle having a ball on the end thereof, said ball being inclosed and seated within said cap, a friction-plate bearing upon said ball, and a spring seated in said counterbore and bearing upon said friction-plate.

5. An implement of the character described, comprising a chuck or handle portion having a reduced exteriorly-threaded shoulder and a counterbore at one end, an open-ended cap adapted to be screwed upon said threaded shoulder and inclosing the counterbore, said cap having a circular bearing-seat surrounding the opening at the free end thereof, a tool point or needle having its shank extending through the open free end of said cap and provided with a ball on the inner end thereof, said ball being received in said seat, a friction-plate arranged within said cap and bearing upon said ball to retain the same in its seat, and a spring seated in said counterbore and bearing against said friction-plate.

821,652. POTATO-CUTTER. ISAAC B. LANSFORD, Crockett, Tex. Filed Apr. 25, 1905. Serial No. 257,331.

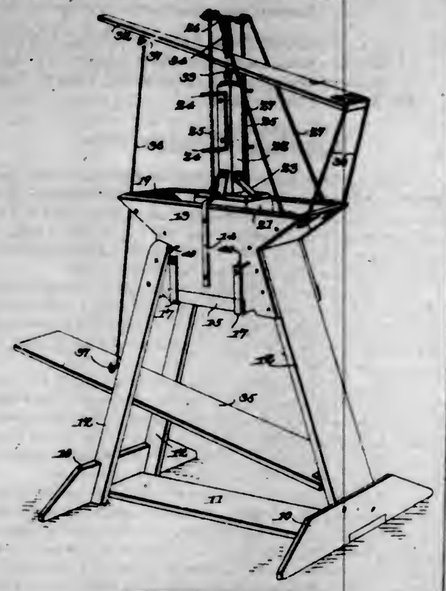
Claim.—1. The combination in a vegetable-cutter, of a hopper having cheek-plates recessed at their lower edges, a knife-carrying frame fitting in the recesses, pivoted straps carried by the cheek-plates and serving as supports for the knife-frame, and a plunger movable vertically within the hopper.

2. The combination in a vegetable-cutter, of a hopper including cheek-plates having recessed edges, removable knife-carrying frames fitting in said recesses and forming the bottom of the hopper, U-shaped straps pivoted to the cheek-plates and forming supports for the knife-frames and serving also to prevent lateral play of the frames, and a reciprocating plunger within the hopper.

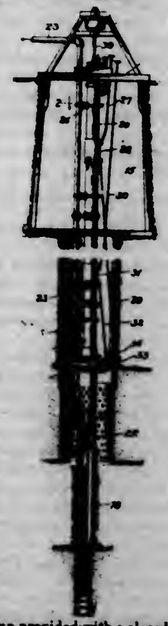
3. In a vegetable-cutter, the combination with a hopper including chutes and cheek-plates, of cutting-knives arranged at the bottom of the hopper, said chutes serving to direct the vegetables to a position above the knives, a reciprocating plunger movable within the hopper, a plunger-stem, guide-rods carried by the cheek-plates, brackets secured to the stem and having openings for the passage of the guide-rods, and an operating-lever connected to the upper end of the stem.

4. In a vegetable-cutter, the combination with a hopper including recessed cheek-plates, a detachable knife-carrying frame seated in the recesses, means for supporting the knife-frames in place, inclined runways or chutes forming part of the hopper and serving to direct the vegetables into position above the knives, vertical guide-rods carried by the cheek-plates, a plunger, a plunger-stem having brackets engaging said guide-rods, guide-rod braces connected to the upper ends of said guide-rods and to the cheek-plates, a cross-

bar connecting the upper ends of the guide-rods, an operating-lever having a linked connection with the plunger, a spring extending between the operating-lever, and the cross-bar, and a pedal-lever having a detachable connection with the operating-lever.



821,653. **WELL MECHANISM.** MARLON B. LAYNE, Houston, Tex. Filed Apr. 26, 1903. Serial No. 154,704.



Claim.—1. A pump provided with a closed driving shaft casing extending to the top of the well from the pump, a pipe extending downward from the pump casing and means for fixing the pump at any desired point in the well casing, substantially as described.

2. A pump provided with a closed driving shaft casing extending to the top of the well from the pump, a pipe extending downward from the pump casing and means for fixing the pump at any desired point in the center of the well casing and sealing said shaft off from water in the well, substantially as described.

3. The combination with a pump of an extensible pump shaft therefor means for supporting the pump at any desired point in the well, and independent supports for the shaft.

4. The combination of a rotary pump, and extensible pump shaft and protecting casing for the shaft, and means for supporting the pump and shaft and casing at any desired point within the well.

5. The combination with a rotary pump, of a sectional pump shaft casing surrounding the pump shaft and extending to the top of the well and means for fixing the pump in position at any desired point of the well casing.

6. In well mechanism in combination with a pump, a series of wedges operated from the top of the well by means of links, a series of wedges carried by the pump casing and operated by toggle links attached to a rod extended to the top of the well, for the purposes specified.

7. In combination with a well casing and a pump, a series of wedges suspended by rods from the top of the well for operating the same to wedge the pump casing against the well casing, substantially as described.

8. In well mechanism a pump casing provided with a series of wedges mounted upon toggle links therein to wedge the said casing against the side walls of the well casing, substantially as described.

9. In well mechanism the combination with a pump casing, of a rotary pump of a jointed pump shaft and a closed casing surrounding the pump shaft from the pump to the top of the well.

10. In well mechanism in combination with a pump and a closed shaft casing, a pump shaft supported at intervals by blocks pinned thereto and having splined joints in said blocks whereby the different sections of the pump shaft may have vertical play with relation to each other.

11. A pump casing provided with a stuffing box and stuffing box plug, a closed shaft casing protecting the bearings from the water screws for raising and lowering said plug and means for moving all of said screws at once and means for operating the screws from the top of the well, substantially as described.

12. In pump mechanism the combination with wedges for fixing the pump in the well casing, of a casing for the pump shaft, a collar thereon and links extending from said collar to the top of the well and to the said wedges.

13. The combination with a pump and its actuating shaft of a sectional casing therefor provided at each end of each section with a fixed block with bearings for the shaft, the casing being closed at the top and provided with an air vent.

14. The combination with a pump of a pump shaft casing closed at the top and bottom and provided with an interiorly disposed hollow rod for the escape of liquid from the shaft casing and an air inlet at the top of the casing.

15. In well mechanism the combination with a rotary pump of a pump shaft made in sections independently supported and joined by blocks and keys in the blocks and ends of the shaft sections, and a closed casing around the shaft.

16. A pump shaft made in sections, each section being suspended on a bearing by means of a block pinned to the shaft section and the next section being splined into said block to rotate therewith.

17. The combination with a rotary pump, of a pump shaft and shaft casing surrounding the shaft, the shaft and casing being in sections and connected by bearings at each end, and the shaft section being separately supported in each section of the casing, as described.

18. In well apparatus the combination with a pump and means for suspending it from the top of the well, of a casing separating the pump and bearings from the well, and devices for fixing it at any desired point in the well casing, and means for operating the fixing devices from the top of the well.

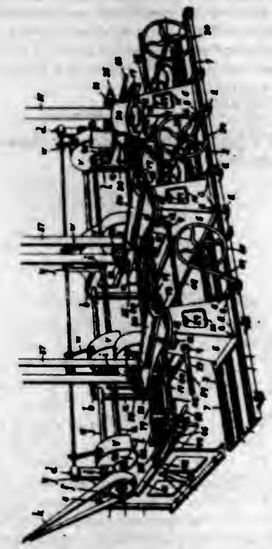
19. A pump shaft made in independently supported sections and suspended in a closed pipe and provided with bearings and means for lubricating the same.

20. The combination of a well casing, a rotary pump therein, and a line shaft for the pump entirely closed off from the water in the well.

21. The combination of a well casing, a rotary pump therein, means for fixing it at any desired point in the well, an extensible line shaft for the pump and a shaft casing entirely inclosing the shaft and bearings.

22. The combination of a well casing, a rotary pump therein, means for fixing it at any desired point, a shaft casing, and a discharge outlet from the pump independent of the shaft casing and communicating with the pump casing only at the bottom of the well.

821,654. **GAINING-MACHINE.** ALEXANDER LECLAIR, Montreal, Canada. Filed Feb. 16, 1906. Serial No. 301,430.



Claim.—1. In a machine of the class described, in combination, a plurality of standards, a shaft journaled in the upper and the inner portion of said standards, a plurality of rotating knives mounted on said shaft, a carriage formed of a pair of inverted-U-shaped blocks having rollers mounted therein traveling on a prepared track on said standards, and a plurality of rods extending the full length of said machine and supported in said blocks, and brackets secured to said rods having a table portion, a suitable guideway in proximity thereto, clamps having a suitable tailpiece and a rack on said tailpiece and traveling in said guideways on said brackets, segmental gears meshing with said racks and mounted on a rotatable shaft therebeneath, levers fixedly secured to said shaft, angle-irons secured to said brackets opposite said clamp, a bed-plate extending along the front of the machine, pedestals slidably arranged on said bed-plate, turrets mounted on said pedestals having extending portions forming guideways, crowns slidably arranged on said guideways, bearings supported by said crowns at the inner ends thereof, a shaft journaled in said bearings, rotating knives mounted on said shaft, means for moving the aforesaid carriage, and means for adjusting said crowns, as and for the purpose specified.

2. In a machine of the class described, in combination, a plurality of standards, shafts journaled in said standards, rotating knives mounted on said shafts, a carriage traveling on said standards, and a clamping mechanism secured on the brackets forming the body of said carriage and formed of a fixed angle-iron secured to said brackets and a movable angle-iron opposed thereto, a shoe supporting said movable angle-iron having a tailpiece traveling in a suitable guideway on said brackets, and means for controlling the movements of said tailpiece in said bracket, as and for the purpose specified.

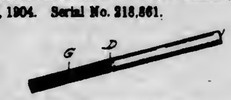
3. In a machine of the class described, in combination, a plurality of standards, shafts journaled therein, rotating knives mounted on said shafts, a carriage traveling on said standards, a clamping mechanism secured to the brackets forming the body of said carriage and formed of an angle-iron fixedly secured to the table portion of said brackets, a movable angle-iron opposed thereto, a shoe supporting said movable angle-iron having a tailpiece traveling in a guideway in said bracket, said tailpiece having a rack forming part therewith, a gear meshing with said rack and mounted on one of said shafts, and a lever secured to said shafts and operating said gear, as and for the purpose specified.

4. In a machine of the class described, in combination, a plurality of standards, shafts journaled in said standards, rotating knives mounted on said shafts, a carriage supported by a suitable running-gear mounted on said standards and having shafts extending the full length of said machine supported in said running-gear and brackets secured on said shafts, a table extending the full length of said machine and supported on the table portions of said brackets, a clamping mechanism formed of an angle-iron fixedly secured to each of said brackets and abutting the side of said cable, a movable angle-iron opposed to said fixed angle-iron moving along the surface of said table, a shoe at the rear of said movable angle-iron, having a tailpiece traveling in the guideway on said brackets, a buffer between said shoe and said angle-iron, bolts inserted through said shoe, and said buffer supporting said movable angle-iron, and means contacting with said tailpiece for controlling the movement of said angle-iron, as and for the purpose specified.

5. In a machine of the class described, in combination, a plurality of standards, shafts journaled therein, rotating knives mounted on said shafts a carriage formed of a plurality of shafts extending the full length of the machine supported in a suitable running-gear traveling on said standards, a plurality of brackets secured to said shafts, a removable table supported on the table portions of said brackets, a clamping mechanism secured to said brackets formed of a fixed angle-iron having an angularly-shaped section extending over the material to be operated upon, and its upright section abutting said table, a movable angle-iron opposing said fixed angle-iron and moving over the upper surface of said table, a shoe having a plurality of recesses in the face thereof and a tailpiece extending therefrom sliding in a dovetail groove formed on said bracket, said tailpiece having a rack forming part therewith, a buffer between said shoe and said movable angle-iron, a plurality of bolts extending from the rear of said shoe into said recesses and through said buffers and into said movable angle-iron, a plurality of coil-springs inserted in said recesses and exerting an equalizing pressure on the back of said buffer, segmental gears mounted on one of said carriage-shafts and meshing with the racks on said tailpieces, and a plurality of levers fixedly secured to said carriage-shaft carrying said segmental gears and operating said clamping mechanism, as and for the purpose specified.

6. In a machine of the class described, in combination, a plurality of standards, shafts journaled therein, rotating knives mounted on said shafts, a carriage formed of a suitable running-gear traveling in said standards, a plurality of shafts extending between and supported by said running-gear, and a plurality of brackets secured to said shafts having suitable table portions and a dovetail groove forming a guideway, a clamping mechanism formed of an angle-iron fixedly secured to said bracket and having its upper horizontal section thereof extending over the material to be operated, a movable angle-iron opposing said fixed angle-iron and supported by a shoe having a dovetail tailpiece, traveling in said dovetail groove and supporting and controlling said movable angle-iron, said dovetail tailpiece having a rack forming part therewith, a segmental gear mounted on one of said carriage-shafts and meshing with said rack, a lever fixedly secured to said carriage-shaft and operating said segmental gear, a ratchet-wheel secured to said carriage-shaft, a pivoted pawl on said running-gear frame engaging said ratchet-wheel and having a weighted handle insuring its non-engagement with said ratchet-wheel, and a dog pivoted on said running-gear frame contacting with said handle and locking said pawl to its engagement with said ratchet-wheel, as and for the purpose specified.

821,655. **RADIUM SURFACE.** HUGO LIEBER, New York, N. Y. Filed July 30, 1904. Serial No. 218,861.



Claim.—1. A radio-active body containing a radio-active substance protected by suitable protecting material, substantially as described.

2. A radio-active body, containing radium protected by suitable protecting material, substantially as described.

3. A surface of indifferent solid material provided with an adhering radio-active coating of an exceedingly thin film of radium in a finely-divided state, substantially as described.

4. A surface of solid material provided with an adhering radio-active coating of an exceedingly thin film of radium in a finely-divided state and an exceedingly thin coating of suitable material protecting the film of radium, substantially as described.

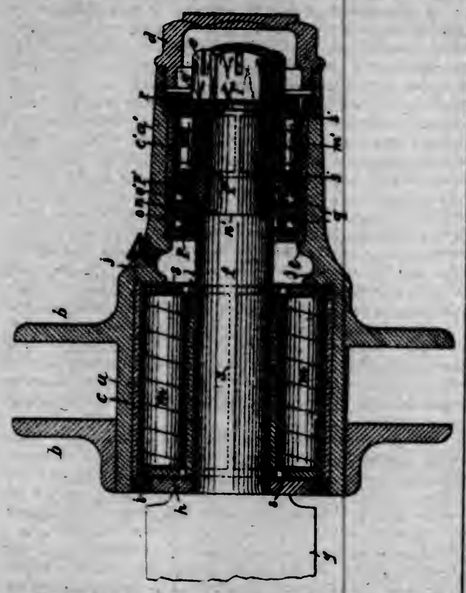
5. A surface of celluloid provided with an adhering radio-active coating of an exceedingly thin film of radium in a finely-divided state, substantially as described.

6. A surface of celluloid provided with an adhering coating of an exceedingly thin film of radium in a finely-divided state, and an

exceedingly thin coating of suitable material protecting the film of radium, substantially as described.

7. A support provided with a radio-active surface, carrying a radio-active substance protected by a film of suitable protecting material, substantially as described.

821,656. ROLLER-BEARING. CHARLES S. LOCKWOOD, Newark, N. J., assignor to Hyatt Roller Bearing Company, Harrison, N. J., a Corporation of New Jersey. Filed Nov. 23, 1904. Serial No. 234,264.



Claim.—1. In a roller-bearing, the combination, with a casing and a journal having the shoulders *n'* and *t* facing in the same direction, of the thrust-collar *n* fitted to one of said shoulders, the abutment-rings with balls *q* fitted to the thrust-collar, the casing having the lining *c'* and the journal having the sleeve *l'* with a set of anti-friction-rolls *m'* fitted between the same, and nuts operating respectively upon the lining *c'* and upon the sleeve *l'*, one of said nuts operating to adjust the abutment-rings in relation to the thrust-collar, the whole arranged and operated substantially as herein set forth.

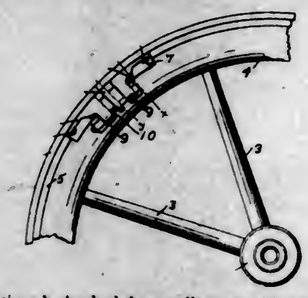
2. In a roller-bearing, the combination, with a casing and a journal having shoulders *n'* and *t* facing in the same direction, of the thrust-collar *n* fitted to the shoulder upon the journal, and abutment-rings *p*, *p'*, with balls *q* fitted to the thrust-collar, the abutment-ring *p* being fitted to the shoulder upon the casing and the casing having the lining *c'* movable against the abutment-ring *p'*, with the annular nut *r* for adjusting such lining and abutment-ring, and the journal having the sleeve *l'* with nut *e* for clamping the thrust-collar *n* against the shoulder *n'*, and a set of antifriction-rolls *m'* fitted between the sleeve *l'* and the lining *c'*, the whole arranged and operated substantially as herein set forth.

821,657. HASP-LOCK. JOHN A. LOFTIN, Troy, N. C. Filed Jan. 2, 1906. Serial No. 294,209.



Claim.—A hasp provided with a staple-receiving eye and with a perpendicular flange the outer portion 4^b of which extends transversely of the hasp and is provided with cut-away portions 4^a at its ends, a plate secured to said flange and forming with the same a lock-receiving casing, a ring-like latch provided with an inwardly-extending arm pivotally and concentrically mounted upon the hasp and designed to contact with the outer portion 4^b of the flange to limit the movement of said latch, the latch being provided with a cut-away portion or opening designed to register with the eye in the hasp and such opening being so arranged with respect to the inwardly-extending arm of the latch that the opening will register with said eye when said arm contacts with the above-mentioned portion of the flange, means for turning said latch whereby to project it across the eye and a spring-pressed tumbler bearing against said latch and tending to enter the said opening therein.

821,658. TIRE-COUPLING. JOSEPH P. LOTTER, Kent, Minn. Filed May 20, 1905. Serial No. 262,748.

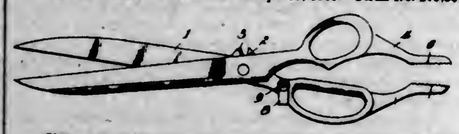


Claim.—1. A wheel-tire coupling comprising angle-plates arranged in pairs secured to the tire near its edges, said plates having lugs and bolts connecting them and being reversible on the tire to adapt it for use on a wide or narrow felly, substantially as described.

2. A wheel-tire coupling comprising angle-plates 7 arranged in pairs upon each side of the wheel-felly and provided with lugs having connecting-bolts 10, and said plates having a flange on one edge to adapt them for use on a wide or narrow felly, substantially as described.

3. A wheel-tire coupling comprising angle-plates secured to the tire near its edges and having lugs and bolts connecting them, and a removable washer adapted to project across and outside the felly between the ends of the tire and having arms projecting inwardly on each side of the felly and provided with holes 12 to receive said bolts, substantially as described.

821,659. COMBINED SCISSORS AND PLIERS. CHARLES W. LURTEY, Little Rock, Ark. Filed Sept. 19, 1905. Serial No. 279,066.



Claim.—1. Scissors or shears provided with relatively long plier members secured to the outermost ends of the scissors or shears handles and projecting freely outwardly from and beyond said handles in an opposite direction to said scissors or shears blades and having gripping-jaws on their outer adjacent faces.

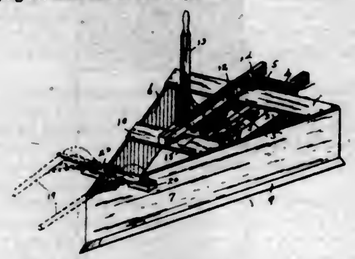
2. Scissors or shears provided with relatively long plier members secured to the outermost ends of the scissors or shears handles and projecting freely outwardly from and beyond said handles in an opposite direction to the scissors or shears blades, said plier members being cut out or recessed on their adjacent faces for a portion of their length outwardly from the handles aforesaid and provided with gripping-jaws beyond said cut-out portions.

821,660. SNOW-PLOW. ABRAHAM MASTEN, Milan, and HERBERT S. MASTEN, Detroit, Mich. Filed Feb. 2, 1906. Serial No. 299,072.

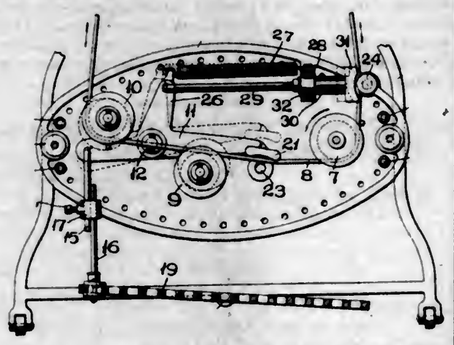
Claim.—1. In a snow-plow, the combination of a pair of sleigh-runners, cross-pieces carried thereby, a beam carried by the cross-pieces, links in pairs carried by the beam and the rear ends of the runners, a snow-plow comprising sides and cross-pieces, said links pivoted at their upper ends to the cross-pieces of the plow, and a lever mounted on the cross-pieces of the plow for determining the position of the plow with reference to the sleigh-runners.

2. In a snow-plow, the combination of a sleigh, links mounted pivotally on said sleigh, and a plow mounted on the ends of said links.

3. In a snow-plow, the combination of a sleigh, a plow, links for movably connecting said sleigh and plow and adapted to carry the plow when elevated above the sleigh, and a lever pivoted on the plow for swinging the same above the sleigh.



821,661. MACHINE-OPERATING MECHANISM. CHARLES R. MERTON, St. Louis, Mo., assignor to Emerson Electric Manufacturing Company, St. Louis, Mo., a Corporation of Missouri. Filed Sept. 18, 1905. Serial No. 278,953.



Claim.—1. In a device of the class described, the combination with a drive-pulley, of a belt thereon, a brake-lever, a belt-tightening pulley carried by the brake-lever, a brake-shoe operable by the brake-lever to clamp said belt, an abutment adjacent to the brake-shoe and coöperating therewith, and means for actuating the brake-lever to simultaneously cause the brake-shoe to release the belt and the pulley on the brake-lever to bind against the belt or vice versa; substantially as described.

2. In a device of the class described, a support, a device movably mounted on said support and provided with a plurality of brake-shoes which move at an angle to each other as said device is moved, and a removable abutment carried by said support and adapted to be placed in a position for coöperating with either of said brake-shoes; substantially as described.

3. In a device of the class described, the combination with an attaching-plate adapted to be secured to the frame of a machine, of a rotatable drive-shaft carried by said attaching-plate, a pulley on said drive-shaft, a brake-lever pivoted to the plate, brake-shoes connected to said lever, a brake-abutment carried by said plate and adapted to be placed in position for coöperating with either of said brake-shoes, and a belt-tightening pulley carried by said lever; substantially as described.

4. In a device of the class described the combination with a plate, of a drive-pulley on said plate, a spring-controlled brake-lever on said plate, a brake-shoe carried by said brake-lever, a brake-abutment adjacent the brake-shoe, a belt-tightening pulley on said brake-lever, and means for actuating the brake-lever; substantially as described.

5. In combination with a machine having a frame and provided with a treadle, a plate secured to said frame, a drive-pulley carried by said plate, a brake-lever carried by said plate, a brake-abutment, a brake-shoe carried by said brake-lever and adjacent to the brake-abutment, a belt-tightening pulley carried by said brake-lever, and a connection between the brake-lever and the treadle of the machine; substantially as described.

6. In combination with a machine having a frame and provided with a treadle, a plate secured to said frame, a drive-pulley carried by said plate, a brake-lever carried by said plate, a brake-abutment, a brake-shoe carried by said brake-lever and adjacent to the brake-abutment, a belt-tightening pulley carried by said brake-lever, and an adjustable connection between the brake-lever and the treadle of the machine; substantially as described.

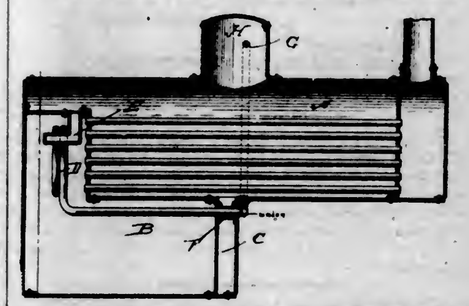
7. In combination with a machine having a frame and provided with a treadle, a plate secured to said frame, a drive-pulley carried by said plate, a spring-controlled brake-lever carried by said plate, a brake-abutment, a brake-shoe carried by said spring-controlled brake-lever and adjacent to the brake-abutment, and a connection between the brake-lever and the treadle of the machine; substantially as described.

8. In a device of the class described, the combination with a plate, of a drive-pulley carried by said plate, a pivoted brake-lever carried by said plate and provided with an upstanding projection, a spring connected to the plate and to the upstanding projection, a rod connected to said projection, a brake-shoe connected to said rod and having a groove for a belt, a removable abutment carried by said plate and adapted to be placed in position to coöperate with either of said shoes for clamping the belts, and means for actuating the brake-lever to move the operative brake-shoe out of clamping position with respect to said abutment; substantially as described.

9. In a device of the class described, the combination with a plate, of a drive-pulley on said plate, a brake-lever having a brake-shoe for retarding the movement of the belt driven by said pulley, an idler-pulley carried by said brake-lever, a belt-tightening pulley carried by said brake-lever, means for actuating said brake-lever, and a brake-abutment adjacent to the brake-shoe; substantially as described.

10. A brake-lever comprising a body portion having projections 14 and 26 and a brake-shoe 21; substantially as described.

821,662. SUPERHEATER FOR BOILER FIRE-BOXES. GIDEON D. MILLER, Springs, Pa. Filed Nov. 10, 1904. Serial No. 232,168.



Claim.—1. In a steam-boiler, a fire-box, terminating in a depending water-leg, in combination with a superheating-pipe arranged in the fire-box, and passing through the said water-leg, and a depending water-bracket for supporting said pipe.

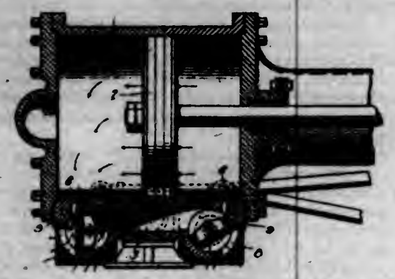
2. In a steam-boiler, the combination with a fire-box terminating in a depending water-leg, and extending upwardly in advance of the fire-tubes, at its forward end, of a superheating-pipe arranged in said fire-box, and having the ends passed through the depending water-leg, a pipe connecting the superheating pipe with the steam-dome, a pipe leading to the engine and a depending water-bracket for supporting said pipe in the elevated portion of the fire-box.

3. In a steam-boiler, the combination with a fire-box, terminating in a depending water-leg, and extending upwardly in advance of the fire-tube at its forward end, of a superheating coil-pipe supported in an elevated position in the fire-box, by a depending water-bracket, the ends of the coil passing out through thimbles arranged in the water-leg, a pipe connecting one of these ends with the steam-dome, and a pipe connected to the other end of the coil leading to the engine, for the purpose described.

821,663. FLUID-PRESSURE CYLINDER. THOMAS J. MITCHELL, Connellsville, Pa. Filed Sept. 13, 1905. Serial No. 278,207.

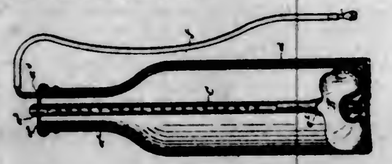
Claim.—1. The combination with a fluid-pressure cylinder having a valve-chamber provided with a circular wall in which are two ports of different area, the larger port being open, and at all times permitting free communication between the valve-chamber and the outer air, and an oscillatory valve arranged within said chamber and

having a straight wall-port that is movable to a position in alinement with one of the walls of the smaller port leading from the cylinder, the ports opening downward to permit the escape of moisture by gravity.



2. The combination with a fluid-pressure cylinder having a valve-chamber in which a portion is cut away to form an exhaust-port of extensive area, open at all times to the atmosphere, a cylinder-port leading between the cylinder and the valve-chamber, and an oscillatory valve disposed within said chamber and movable to place the port either in communication with a source of pressure-supply, or directly with the outer air, the discharge-opening formed by the valve and its casing at the end of said cylinder-port, being of gradually-increasing area from the end of the cylinder-port to the final discharge-port.

821,664. SPIROMETER. JAMES A. MORRIS, Atlanta, Ga. Filed Jan. 30, 1905. Serial No. 243,206.



Claim.—In a spirometer, a bottle having a perforated cap, a tube slidably arranged in said bottle and passing through said cap, said tube provided with a graduated scale, an expansible element arranged within said bottle and adapted to support said slidable tube, and an inflating-tube having a portion extending through the mouth of the bottle and communicating with the expansible element and a flexible pipe communicating with said inflating-tube, substantially as described.

821,665. WINDOW. PHILIP MCGINNIS, London, Canada. Filed July 30, 1904. Serial No. 218,860.



Claim.—1. The combination of the frame, the sliding sash provided with a projection, a hinge carried by said frame and adapted to swing about an axis parallel with the direction in which the sash moves, said hinge having a seat for said projection, and a latch carried by said hinge, to lock the projection to the hinge.

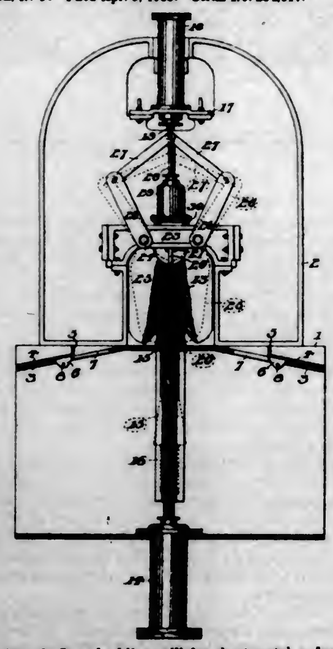
2. The combination with the frame and the sliding sash, of a double hinge adapted to connect with the sash in a predetermined position thereof, said hinge comprising a section pivoted to the frame about an axis transverse to the direction in which the sash slides, and another slotted section adapted to engage a rigid projection on the sash and permanently carried by and pivoted to the first-named section about an axis parallel with the path in which the sash slides.

821,666. MAILING-ENVELOP. JACOB NEHEUSEL, New Orleans, La., assignor of one-half to Morris Levy, New Orleans, La. Filed July 10, 1905. Serial No. 269,049.



Claim.—The combination with an envelop, of a metallic fastener of substantially flattened I shape secured within the main body of the envelop adjacent to one end thereof; said fastener having its lateral arms of less width than the main body of the envelop and the fastener being adapted to be folded upon itself at its restricted portion to securely close the envelop.

821,667. DOUBLER FOR SHEET METAL. EDWIN NORTON, New York, N. Y. Filed Apr. 8, 1905. Serial No. 254,617.



Claim.—1. In a doubling-mill for sheet metal, a feeding-floor, gages normally retracted so as to be beneath said floor to permit the sheets to be fed thereover and between which gages the sheets are fed, means for causing the gages to project above the floor and travel toward each other at equal speeds.

2. In a doubling-mill for sheet metal, laterally-movable female-dies, a male die, coöperative therewith, and a clamping member operating in conjunction with the male member to clamp the sheets therebetween at the commencement of the bending operation.

3. In a doubling-mill for sheet metal, laterally-moving female dies, a male die coöperative therewith, and a non-bending clamping member movable to engage the sheets on the side opposite the male die, and means for causing the latter and the said member to move together during the bending operation.

4. In a doubling-mill for sheet metal, a female die composed of movable sections, a male die arranged to enter between said sections, means for moving the sections of the female die toward each other as the male die retires and means located between the sides of the female die and acting in conjunction with the male die to clamp the sheets.

5. In a doubling-mill for sheet metal, a female die composed of movable sections, a male die arranged to enter between said sections, means for moving the sections toward each other as the male die retires so as to clamp the doubled sheets between said sections, and means independent of the dies for supporting the doubled sheet after the male die retires.

6. In a doubling-mill for sheet metal, a female die composed of movable sections, a male die arranged to enter between said sections, means for moving the sections toward each other as the male die retires so as to clamp the doubled sheets between said sections, means for supporting the doubled sheet after the male die retires and means for ejecting the sheet after being released from the said sections.

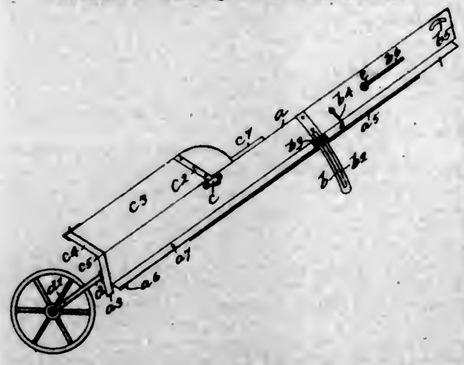
7. In a doubling-mill for sheet metal, laterally-movable female dies, a pair of plungers to engage opposite surfaces of a sheet, means to move the plungers in the same direction after said engagement, one plunger constituting a male die coöperative with the female die, the remaining plunger passing beyond the working faces of the female dies at the close of the bending operation.

8. In a doubling-mill for metal sheets, dies for bending the sheets double, and means for ejecting the doubled sheets from the dies in substantially a prolongation of the planes which they include in the dies.

9. In a doubling-mill for sheet metal, vertical dies for bending the sheets and a support for the sheets movable beneath the same after the bending operation and into the path of one of the dies after the latter has retired from said path.

10. In a doubling-mill for sheet metal, female dies, a male die coöperative therewith, means for retracting the male die after the bending operation, a support for the doubled sheet, and means for moving the same below the doubled sheet after the retraction of the male die.

821,668. COMBINATION-VEHICLE. JOSEPH W. NUSSBAUM, Whitestone, N. Y. Filed Aug. 16, 1905. Serial No. 274,378.



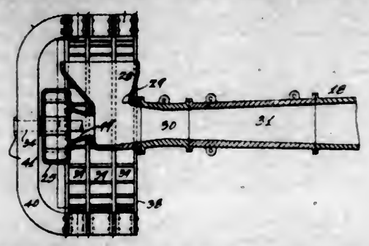
Claim.—1. A combination device of the class described, comprising a step-ladder provided with hinged legs, a detachable wheel-support connected with one end of the ladder, and box members also connected with said end, substantially as shown and described.

2. A combination-vehicle, comprising a step-ladder, a wheel connected with one end thereof, a head member pivotally connected with the top of said step-ladder, wing members adapted to engage said head member and the sides of said step-ladder, and a bottom plate adapted to be engaged in said wing members and thereby form a box on said step-ladder, substantially as shown and described.

3. A combination-vehicle comprising a step-ladder, a wheel detachably connected with one end thereof, guide members for the legs of said step-ladder serving also as legs for my vehicle, and a knock-down box mounted on said step-ladder, substantially as shown and described.

4. A combination-vehicle, comprising a step-ladder, a wheel mounted at one end thereof, guide members for the legs of said step-ladder serving as legs for said vehicle and the side members of said step-ladder serving as handles for said vehicle, a knockdown box on said step-ladder, and devices for holding the lowest step in a position adjacent to the succeeding step, substantially as shown and described.

821,669. DREDGE. LEVIN S. PARKER, New York, N. Y., assignor to The James Reilly Repair and Supply Company, New York, N. Y., a Corporation of New Jersey. Filed Feb. 21, 1906. Serial No. 302,158.



Claim.—1. A dredge comprising a water-supply pipe-line, a delivery pipe-line for the material dredged, a water-chest connecting adjacent ends of said pipe-lines, a hopper adjacent to said water-chest to receive the material to be carried away, and means adapted to elevate said material to said hopper, combined with a pump connected in said supply pipe-line for pumping the water to itself and then, under pressure, driving the water through said line and into said chest and thence through said delivery pipe-line, the volume of water under pressure passing below said hopper and carrying with it the material descending through the same; substantially as set forth.

2. A dredge comprising a water-supply pipe-line, a delivery-pipe for the material dredged, a water-chest connecting adjacent ends of said pipe-lines, a hopper adjacent to said water-chest to receive the material to be carried away, and means adapted to elevate said material to said hopper, a jet-nozzle being formed at the outlet end of said chest to direct the water below and by the throat of said hopper, combined with a pump connected in said supply pipe-line for pumping the water to itself and then, under pressure, driving the water through said line and into said chest and thence through said delivery pipe-line, the volume of water under pressure passing below said hopper and carrying with it the material descending through the same; substantially as set forth.

3. A dredge comprising a water-supply pipe-line, a delivery pipe-line for the material dredged, a water-chest connecting adjacent ends of said pipe-lines, a hopper adjacent to said water-chest to receive the material to be carried away, and means adapted to elevate said material to said hopper, a jet-nozzle being formed at the outlet end of said chest to direct the water below and by the throat of said hopper, and said delivery-pipe beyond said nozzle having a contracted bore, whence the bore of said pipe expands to the general diameter of the main bore through said pipe, combined with a pump connected in said supply pipe-line for pumping the water to itself and then, under pressure, driving the water through said line and into said chest and thence through said delivery pipe-line, the volume of water under pressure passing below said hopper and carrying with it the material descending through the same; substantially as set forth.

4. A dredge comprising a water-supply pipe-line, a delivery pipe-line for the material dredged, a water-chest connecting adjacent ends of said pipe-lines, a hopper adjacent to said water-chest to receive the material to be carried away, a rotator having buckets adapted to elevate said material and deposit the same into said hopper, and means for actuating said rotator, combined with a pump connected in said supply pipe-line for pumping the water to itself and then, under pressure, driving the water through said line and into said chest and thence through said delivery pipe-line, the volume of water under pressure passing below said hopper and carrying with it the material descending through the same; substantially as set forth.

5. A dredge comprising a water-supply pipe-line, a delivery pipe-line for the material dredged, a water-chest connecting adjacent ends of said pipe-lines, a hopper adjacent to said water-chest to receive the material to be carried away, a rotator having buckets adapted to elevate said material and deposit the same into said hopper, and means for actuating said rotator, a jet-nozzle being formed at the outlet from said chest to direct the water below and by the throat of said hopper, combined with a pump connected in said supply pipe-line for pumping the water to itself and then, under pressure, driving

the water through said line and into said chest and thence through said delivery pipe-line, the volume of water under pressure passing below said hopper and carrying with it the material descending through the same; substantially as set forth.

6. A dredge comprising a water-supply pipe-line, a delivery pipe-line for the material dredged, a water-chest connecting adjacent ends of said pipe-lines, a hopper adjacent to said water-chest to receive the material to be carried away, a rotator having buckets adapted to elevate said material and deposit the same into said hopper, and means for actuating said rotator, a jet-nozzle being formed at the outlet from said chest to direct the water below and by the throat of said hopper, and said delivery-pipe beyond said nozzle having a contracted bore, whence the bore of said pipe expands to the general diameter of the main bore through said pipe, combined with a pump connected in said supply pipe-line for pumping the water to itself and then, under pressure, driving the water through said line and into said chest and thence through said delivery pipe-line, the volume of water under pressure passing below said hopper and carrying with it the material descending through the same; substantially as set forth.

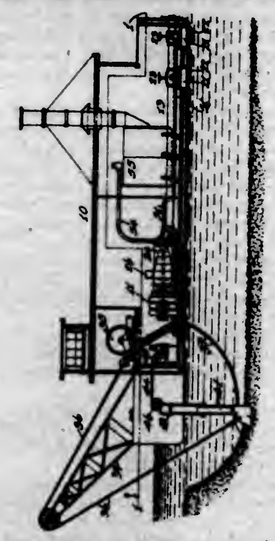
7. A dredge comprising a water-supply pipe-line, a delivery pipe-line for the material dredged, a water-chest connecting adjacent ends of said pipe-lines, a hopper adjacent to said water-chest to receive the material to be carried away, a rotator or open wheel encompassing said hopper and comprising the series of buckets to elevate and deposit said material into said hopper and, on its outer side, the series of blades adapted to loosen up the sand and the like preparatory to the same being taken by said buckets, and means for actuating said rotator, a jet-nozzle being formed at the outlet from said chest to direct the water below and by the throat of said hopper, combined with a pump connected in said supply pipe-line for pumping the water to itself and then, under pressure, driving the water through said line and into said chest and thence through said delivery pipe-line, the volume of water under pressure passing below said hopper and carrying with it the material descending through the same; substantially as set forth.

8. A dredge comprising a water-supply pipe-line, a delivery pipe-line for the material dredged, a water-chest connecting adjacent ends of said pipe-lines, a hopper adjacent to said water-chest to receive the material to be carried away, a rotator or open wheel encompassing said hopper and comprising the series of buckets to elevate and deposit said material into said hopper and, on its outer side, the series of blades adapted to loosen up the sand and the like preparatory to the same being taken by said buckets, and means for actuating said rotator, a jet-nozzle being formed at the outlet from said chest to direct the water below and by the throat of said hopper, and said delivery-pipe beyond said nozzle having a contracted bore, combined with a pump connected in said supply pipe-line for pumping the water to itself and then, under pressure, driving the water through said line and into said chest and thence through said delivery pipe-line, the volume of water under pressure passing below said hopper and carrying with it the material descending through the same; substantially as set forth.

9. A dredge comprising a water-supply pipe-line, a delivery pipe-line, a water-chest connecting adjacent ends of said pipe-lines, a hopper adjacent to said water-chest to receive the material to be carried away, a rotator having means to loosen up the material and buckets to deliver the same to said hopper, and means for actuating said rotator, a jet-nozzle being formed at the outlet from said chest to direct the water below and by the throat of said hopper, combined with a centrifugal multistage high-pressure pump connected in said supply pipe-line for pumping the water to itself and then, under pressure, driving the water through said line and into said chest and thence through said delivery pipe-line, the volume of water under pressure passing below said hopper and carrying with it the material descending through the same; substantially as set forth.

10. A dredge comprising a vessel, a water-supply pipe-line having a section mounted on said vessel and an outboard section swiveled thereto, a delivery pipe-line having a section mounted on said vessel and an upcast section swiveled thereto and at its lower end being in communication with said outboard section, a hopper at the lower end of said upcast section, an open rotator encompassing said hopper and having buckets for elevating the material to be carried away and delivering the same to said hopper, a shaft extending between said outboard and upcast pipe-sections and upon the lower end of which said rotator is secured, means on said vessel for driving said shaft, and means on said vessel for raising and lowering the outer ends of said outboard and upcast sections and said shaft with said rotator, combined with a pump connected in said supply-line for driving the supply-water through said line and up through and along said delivery pipe-line, said water passing, under pressure, below the outlet from said hopper and carrying with it the material descending through the same; substantially as set forth.

821,670. **DREDGE.** LEVIN S. PARKER, New York, N. Y., assignor to The James Reilly Repair and Supply Company, New York, N. Y., a Corporation of New Jersey. Filed Mar. 20, 1906. Serial No. 306,644.



Claim.—1. A dredge comprising a water-supply pipe-line, a delivery pipe-line for the material to be dredged, said pipe-lines having outhanging swiveled sections, a water-chest connecting the lower ends of said sections, and a scoop carried at the lower ends of said sections to take up the material to be carried away and having an inner discharge-orifice through which the material passes into said section of the delivery pipe-line, combined with a pump connected in said supply pipe-line for pumping the water to itself and then, under pressure, driving the same through said line and into said chest and thence through said delivery pipe-line, the volume of water under pressure meeting and carrying with it the material discharging from said scoop; substantially as set forth.

2. A dredge comprising a water-supply pipe-line, a delivery pipe-line for the material to be dredged, said pipe-lines having outhanging swiveled sections, a water-chest connecting the lower ends of said sections, and a scoop carried at the lower ends of said sections to take up the material to be carried away and having an inner discharge-orifice through which the material passes into said section of the delivery pipe-line, a jet-nozzle being formed at the outlet from said chest to direct the water upwardly by the discharge from said scoop, combined with a pump connected in said supply pipe-line for pumping the water to itself and then, under pressure, driving the same through said line and into said chest and thence through said delivery pipe-line, the volume of water under pressure meeting and carrying with it the material discharging from said scoop; substantially as set forth.

3. A dredge comprising a water-supply pipe-line, a delivery pipe-line for the material to be dredged, said pipe-lines having outhanging swiveled sections, a water-chest connecting the lower ends of said sections, and a scoop carried at the lower ends of said sections to take up the material to be carried away and having an inner discharge-orifice through which the material passes into said section of the delivery pipe-line, a jet-nozzle being formed at the outlet from said chest to direct the water upwardly by the discharge from said scoop, combined with a pump connected in said supply pipe-line for pumping the water to itself and then, under pressure, driving the same through said line and into said chest and thence through said delivery pipe-line, the volume of water under pressure meeting and carrying with it the material discharging from said scoop; substantially as set forth.

4. A dredge comprising a water-supply pipe-line, a delivery pipe-line for the material to be dredged, said pipe-lines having outhanging swiveled sections, a water-chest connecting the lower ends of said sections, and a scoop carried at the lower ends of said sections to take up the material to be carried away and having an inner discharge-orifice through which the material passes into said section of the delivery pipe-line, combined with a centrifugal high-pressure multistage-pump connected in said supply pipe-line for pumping the water to itself and then, under pressure, driving the same through said line and into said chest and thence through said delivery pipe-line, the volume of water under pressure meeting and carrying with it the material discharging from said scoop; substantially as set forth.

5. A dredge comprising a water-supply pipe-line, a delivery pipe-line for the material to be dredged, said pipe-lines having outhanging swiveled sections, a water-chest connecting the lower ends of said sections, and means carried at the lower ends of said sections for taking up the material and conducting the same to the outhanging delivery-pipe section, combined with a centrifugal high-pressure multistage-pump having two independent valved branches leading from separate chambers thereof and connected in said supply pipe-line for pumping water to itself and then, under pressure, driving the same through said line and into said chest and thence through said delivery pipe-line, the volume of water under pressure meeting and carrying with it the dredged material; substantially as set forth.

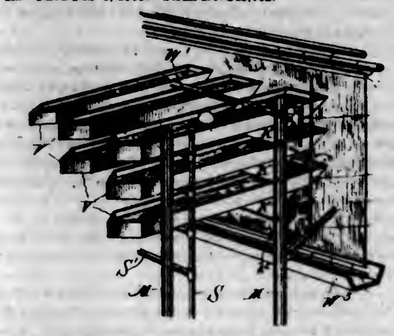
6. A dredge comprising a water-supply pipe-line, a delivery pipe-line for the material to be dredged, said pipe-lines having outhanging swiveled sections, a water-chest connecting the lower ends of said sections, and means carried at the lower ends of said sections for taking up the material and conducting the same to the outhanging delivery-pipe section, said outhanging sections having lower lengths adapted to telescope with respect to the upper lengths thereof, whereby said sections may be adjusted as to their reach, combined with means for adjusting the said lower lengths of said sections, a pump connected in said supply pipe-line for pumping water to itself and then, under pressure, driving the same through said line and into said chest and thence through said delivery pipe-line, the volume of water under pressure meeting and carrying with it the dredged material; substantially as set forth.

7. A dredge comprising a water-supply pipe-line, a delivery pipe-line for the material to be dredged, said pipe-lines having outhanging swiveled sections, a water-chest connecting the lower ends of said sections, and means carried at the lower ends of said sections for taking up the material and conducting the same to the outhanging delivery-pipe section, combined with a pump connected in said supply pipe-line for pumping water to itself and then, under pressure, driving the same through said line and into said chest and thence through said delivery pipe-line for carrying away the dredged material, a sea-chest in communication with the suction-section of said supply pipe-line, and a pipe leading from said pump to said sea-chest for conducting the water under pressure to the same for cleaning the same out when required; substantially as set forth.

8. A dredge comprising a water-supply pipe-line, a delivery pipe-line for the material to be dredged, said pipe-lines having outhanging swiveled sections, a water-chest connecting the lower ends of said sections, and means carried at the lower ends of said sections for taking up the material and conducting the same to the outhanging delivery-pipe section, combined with a pump connected in said supply pipe-line for pumping water to itself and then, under pressure, driving the same through said line and into said chest and thence through said delivery pipe-line for carrying away the dredged material, a plurality of independent sea-chests in communication with the suction-section of said supply pipe-line, independent valves in said section for cutting off one of said sea-chests while the other is in use, and a valved pipe leading from said pump to said sea-chest for conducting the water under pressure to the same for cleaning the same out when required; substantially as set forth.

9. A dredge comprising a water-supply pipe-line, a delivery pipe-line for the material to be dredged, said pipe-lines having outhanging swiveled sections, a water-chest connecting the lower ends of said sections and having a jet-nozzle at its discharge end, means forming a chamber 29 above said jet-nozzle, a manganese-steel contractor 31 seated in the delivery-pipe section directly above said chamber, and means carried at the lower ends of said sections for taking up the material dredged and conducting the same to said chamber 29, combined with a pump connected in said supply pipe-line for pumping the water to itself and then, under pressure, driving the same through said line and into said chest and thence through said nozzle, chamber, contractor and delivery pipe-line, the volume of water under pressure meeting and carrying with it the dredged material; substantially as set forth.

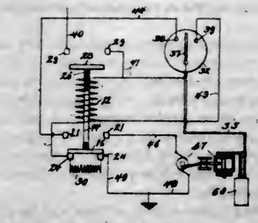
821,671. **APPARATUS FOR HEATING, PURIFYING, AND DISTRIBUTING AIR IN BUILDINGS.** WILLIAM J. RAFFERTY, Chicago, Ill. Filed Feb 1, 1905. Serial No. 243,762.



Claim.—1. In an apparatus of the kind stated, an air-moistener comprising a series of superposed air-pans placed across the air-current, which flows horizontally therebetween, and adjustable deflectors located between the pans and extending horizontally, across the current.

2. An air-moistening apparatus comprising a horizontal passage through which air is forced, a plurality of water-pans arranged in a series of horizontal rows one above the other and extending across said passage, and adjustable deflectors extending horizontally across said passage between the rows of pans.

821,672. **AUTOMATIC CONTROLLER FOR MOTOR-COMPRESSORS.** WALTER J. RICHARDS, Milwaukee, Wis. Filed Mar. 9, 1904. Serial No. 197,317.



Claim.—1. In a fluid-pressure system, a controller for a motor-compressor comprising a solenoid in shunt with the motor, a gravity-retracted core for said solenoid, a main switch for the motor connected with the core, a primary switch for controlling the operation of the solenoid in series therewith and actuated by the pressure of the fluid-pressure system, and means operated by the core of the solenoid for short-circuiting the solenoid-energizing contact of the primary switch.

2. In a fluid-pressure system, a controller for the motor-compressor thereof comprising a magnet, a main switch for the motor actuated thereby, and adapted to oppose the influence of the magnet, a primary switch for controlling the operation of said magnet in series therewith and actuated by the pressure of the fluid-pressure system, and a circuit controlled by the primary switch for short-circuiting the magnet.

3. In a fluid-pressure system, a controller for the motor-compressor thereof, comprising a primary switch actuated by the pressure of the fluid-pressure system, a magnet controlled by the primary switch in series therewith and in shunt with the motor-compressor, a main switch for the motor-compressor operated by the magnet, means for automatically short-circuiting the connection made by the primary switch to energize the magnet, and means for automatically inserting a resistance in series with the magnet while the said magnet is energized and for removing said resistance from the magnet-circuit when the magnet is deenergized.

4. In a device of the character described, a solenoid, a movable core operated thereby, a contact carried by the core, a pair of contacts adapted to be connected by the core-contact when the solenoid is deenergized, a resistance between the pair of contacts adapted to be placed in series with the solenoid when the core-contact is removed from the pair of contacts, a second pair of contacts adapted to be engaged by the core-contact to complete a motor-circuit, a pri-

mary switch adapted to make a connection to send current to the solenoid when in one position and to make a connection to short-circuit the solenoid when in another position, and means controlled by the movements of the core for short-circuiting the first-mentioned connection made by the primary switch.

5. In a device of the character described, a solenoid, a movable core operated thereby, a contact carried by the core, a pair of contacts to be connected by the core-contact when the solenoid is deënergized, a resistance between the pair of contacts to be placed in series connection with the solenoid when the core-contact is removed from the pair of contacts, a second pair of contacts adapted to be engaged by the core-contact to complete a motor-circuit, a primary switch adapted to make a connection to send current to the solenoid when in one position and to make a connection to short-circuit the solenoid when in another position and a second contact carried by the core coöperating with another pair of contacts to short-circuit the first-mentioned connection made by the primary switch when the core is operated.

6. In a device of the character described, a solenoid, a movable core operated thereby, a contact carried by the core, a pair of contacts capable of being connected by the core-contact when the solenoid is deënergized, a resistance between the pair of contacts and placed in series with the solenoid when the core-contact is removed from the pair of contacts, a second pair of contacts adapted to be engaged by the core-contact to complete a motor-circuit, a primary switch adapted to make a connection to send current to the solenoid when in one position and to make a connection to short-circuit the solenoid when in another position, and another contact engaging the core-contact to short-circuit the first-mentioned connection made by the primary switch when the movement of the core is effected.

7. In a fluid-pressure system, a controller for the motor-compressor thereof, comprising a magnet in shunt with the motor, a main switch for the motor actuated thereby, and adapted to oppose the influence of the magnet, a primary switch for controlling the operation of the magnet in series therewith and actuated by the pressure of the fluid-pressure system, and means for short-circuiting the magnet-energizing contact of the primary switch when the magnet is energized.

8. In a fluid-pressure system, a controller for the motor-compressor thereof comprising a magnet in shunt with the motor, a main switch for the motor actuated thereby, and adapted to oppose the influence of the magnet, a primary switch actuated by the pressure of the fluid-pressure system adapted to make an electrical connection to energize the magnet, and means for short-circuiting the said connection of the primary switch when the magnet is energized, said primary switch being also adapted to make another connection, for deënergizing the magnet.

9. In a fluid-pressure system, a controller for the motor-compressor thereof comprising a magnet in shunt with the motor, a main switch for the motor actuated thereby, and adapted to oppose the influence of the magnet, a primary switch for directly controlling the operation of said magnet in series therewith and actuated by the pressure of the fluid-pressure system, and a circuit controlled by the primary switch for short-circuiting the magnet.

10. In a fluid-pressure system, a controller for the motor-compressor thereof, comprising a primary switch actuated by the pressure of the fluid-pressure system, a magnet in series with and controlled by the primary switch, a main switch for the motor-compressor operated by the magnet, means for automatically short-circuiting the connection made by the primary switch to energize the magnet, means for automatically inserting resistance in series with the magnet while said magnet is energized and for removing said resistance from the magnet-circuit when the magnet is deënergized, and means for opposing the withdrawal of the main switch from the magnet adapted to assist the magnet in operating the main switch.

11. In a fluid-pressure system, a controller for the motor-compressor thereof, comprising a magnet in shunt with the motor-compressor, a main switch for the motor-compressor operated by the magnet, a primary switch actuated by the pressure of the fluid-pressure system and adapted to control the operation of the magnet, said magnet adapted to be deënergized by having its winding short-circuited, and a resistance in series with the magnet to prevent the short circuit of the magnet constituting a short circuit of the motor-compressor.

12. In a fluid-pressure system, a controller for the motor-compressor thereof, comprising a primary switch actuated by the pressure of the fluid-pressure system, a magnet adapted to be energized and deënergized by said primary switch, a main switch for the motor-compressor operated by the magnet, said magnet being in shunt with the motor-compressor and adapted to be deënergized by having its winding short-circuited, and means operated by the magnet for inserting a resistance in series with the magnet whereby the short-circuiting of the magnet is prevented from short-circuiting the motor-compressor.

13. In a fluid-pressure system, a controller for the motor-compressor thereof, comprising a primary switch actuated by the pressure of the fluid-pressure system, a magnet adapted to be energized and deënergized by the primary switch, a main switch for the motor-compressor operated by the magnet, said magnet being in shunt with the motor-compressor and adapted to be deënergized by having its winding short-circuited, and a resistance in series with the magnet short-circuited by the main switch when the magnet is not energized and included in the circuit with the magnet when the magnet is energized whereby the short-circuiting of the magnet for deënergizing it does not short-circuit the motor-compressor.

14. In a fluid-pressure system, a controller for the motor-compressor thereof, comprising a primary switch actuated by the pressure of the fluid-pressure system, a magnet in shunt with the motor-compressor and in series with the primary switch and adapted to be energized by one contact made by the primary switch, a main switch for the motor-compressor operated by the magnet, said magnet being adapted to be deënergized by having its winding short-circuited by another contact made by the primary switch, and a resistance in series with the magnet whereby the short-circuiting of the magnet does not short-circuit the motor-compressor.

15. In a fluid-pressure system, a controller for the motor-compressor thereof, comprising a primary switch actuated by the pressure of the fluid-pressure system, a magnet in shunt with the motor-compressor and in series with the primary switch and adapted to be energized by one contact made by the primary switch, a main switch for the motor-compressor operated by the magnet, said magnet being adapted to be deënergized by having its winding short-circuited by another contact made by the primary switch, and means operated by the magnet for inserting a resistance in series with the magnet when the magnet is energized whereby the short-circuiting of the magnet by the primary switch does not short-circuit the motor-compressor.

16. In a fluid-pressure system, a controller for the motor-compressor thereof, comprising a primary switch actuated by the pressure of the fluid-pressure system, a magnet in shunt with the motor-compressor and in series with the primary switch and adapted to be energized by a contact made by the primary switch, a main switch for the motor-compressor operated by the magnet, means operated by the magnet for short-circuiting the magnet-energizing contact of the primary switch when the magnet is energized, said magnet adapted to be deënergized by having its winding short-circuited by another contact made by the primary switch, and means operated by the magnet for inserting a resistance in series with the magnet when the magnet is energized whereby the short-circuiting of the magnet by the primary switch does not short-circuit the motor-compressor.

821,673. SYSTEM OF FLUID-PRESSURE CONTROL. WALTER J. RICHARDS, Milwaukee, Wis. Filed Mar. 21, 1904. Serial No. 199,240.

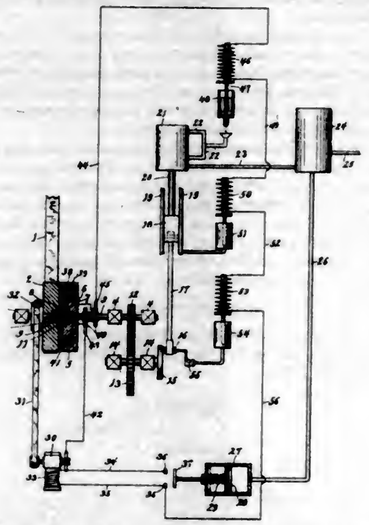
Claim.—1. A system for fluid-pressure control, comprising a driving mechanism, a pump, an electrically-controlled means for connecting the pump with the driving mechanism, an electric generator driven by the driving mechanism and supplying current to the said electrically-controlled means, and a switch sensitive to the fluid-pressure for controlling the flow of current to said electrically-controlled means.

2. A system for fluid-pressure control, comprising a driving mechanism, a pump, an electrically-controlled means for connecting the pump with the driving mechanism, a series-wound electric generator driven by the driving mechanism and supplying current to the electrically-controlled means, and a switch sensitive to the fluid-pressure for short-circuiting the field-winding of said generator.

3. A system for fluid-pressure control, comprising a driving mechanism, a pump, an electrically-controlled clutch for connecting the pump with the driving mechanism, an electric generator driven by the driving mechanism and supplying current to the electrically-controlled clutch, and a switch sensitive to the fluid-pressure for controlling the flow of current to said electrically-controlled clutch.

4. A system for fluid-pressure control, comprising a driving mechanism, a pump, an electrically-controlled clutch for connecting the pump with the driving mechanism, a series-wound electric generator driven by the driving mechanism and supplying current to the said electrically-controlled clutch, and a switch sensitive to the fluid-pressure for short-circuiting the field-winding of said generator.

5. A system for fluid-pressure control comprising a driving mechanism, a pump, a magnetically-operated clutch for connecting the pump with the driving mechanism, an electric generator driven by the driving mechanism and supplying current to the clutch-operating magnet, and a switch sensitive to the fluid-pressure for controlling the flow of current to said magnet.



6. A system for fluid-pressure control, comprising a driving mechanism, a pump, a magnetically-operated clutch for connecting the pump with the driving mechanism, a series-wound electric generator driven by the driving mechanism and supplying current to the clutch-operating magnet, and a switch sensitive to the fluid-pressure for short-circuiting the field of said generator.

821,674. STEAM-PUMP. WILLIAM H. SHAFER, Cincinnati, Ohio, assignor to The Ahrens Fire Engine Company, Cincinnati, Ohio, a Corporation of Ohio. Filed Aug. 10, 1905. Serial No. 273,670.

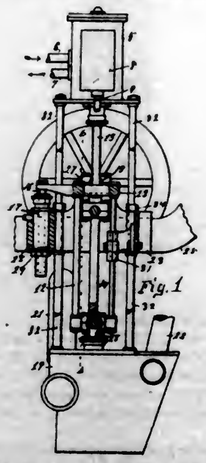


Fig. 1.

Claim.—1. A steam-pump having in combination with a bed-plate in the form of a rectangular frame, a series of columns secured thereto and extending therefrom in opposite directions parallel with each other, and steam and water portions of the pumping mechanism supported thereon adjacent to respective opposite sides of the bed-plate.

2. A steam-pump having in combination, a bed-plate in the form of a hollow rectangular frame, a crank-shaft mounted thereon, columns extending from the bed-plate, and steam and water portions of the pumping mechanism secured thereto and in alinement on opposite sides respectively of the bed-plate.

3. A steam-pump of the designated character, having in combination, drag-bars, a bed-plate in the form of a rectangular frame removably supported thereon, parallel columns extending in opposite directions from the bed-plate and a motor and pump secured respectively on the opposite ends thereof.

4. A steam-pump of the designated character having in combination, a bed-plate in the form of a rectangular open frame, columns extending therefrom, a motor and pump secured thereto on respective opposite sides of the bed-plate, and reciprocating mechanism extending between them and movable through the opening in the bed-plate.

5. A steam-pump of the designated character, having in combination with drag-bars, a bed-plate in the form of a rectangular frame adapted to be supported by and between the drag-bars, a crank-shaft mounted thereon, parallel columns extending in opposite directions from the bed-plate and steam and water portions of the pumping mechanism supported in alinement thereon.

6. A steam-pump of the designated character having in combination with drag-bars, a bed-plate adapted to be exclusively supported thereon, said bed-plate being formed with a series of openings and with a pocket, parallel columns adapted to be removably secured within said respective openings, steam and water portions of the pumping mechanism adapted to be exclusively supported thereby, a feed-pump adapted to be removably secured within said pocket, and a crank-shaft supported on the bed-plate.

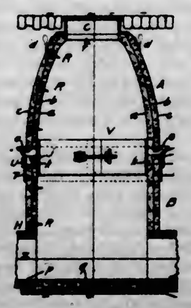
7. A steam-pump of the designated character having in combination, a bed-plate in the form of a rectangular frame, columns projecting therefrom, reciprocating pumping mechanism supported thereby, a guide therefor adjustably secured on the bed-plate, and a feed-pump removably secured on the bed-plate in parallel alinement with said mechanism.

8. A steam-pump of the designated character having in combination a bed-plate in the form of a rectangular open frame, steam and water portions of the pumping mechanism assembled on respective opposite sides thereof, and the reciprocating mechanism movable between said portions through said opening in the frame without contact therewith.

9. As a new article of manufacture, a rectangular bed-plate consisting of a single casting formed with supports for a crank-shaft, with a pocket wherein a feed-pump may be removably secured, with flanges on opposite sides adapted to engage with respective drag-bars, and with a series of parallel openings for the insertion therethrough of columns, for the purpose specified.

10. As a new article of manufacture, a bed-plate consisting of a single casting in the form of a rectangular frame having a central partition extending between its side walls and formed with a series of vertical openings wherein columns may be secured, said partition and the end walls being formed to support a crank-shaft.

821,675. SEWER APPURTENANCE. FREDERICK R. SHAW, Providence, R. I. Filed Mar. 23, 1904. Serial No. 199,617.



Claim.—The sectional sewer structrue herein described, consisting of a plurality of transverse sections made of concrete, one of which sections has a curved top or dome and another of which is cemented to a suitable bottom, said sections being united on the contiguous edges by a layer of cement or other connecting plastic material forming a wall continuous with the walls of said sections, substantially as specified.

821,676. SINGEING-MACHINE. HENRY H. SHEPHERDSON, WILLIAM L. WHITEHEAD, and WILLIAM H. SHARER, Philadelphia, Pa. Filed Aug. 26, 1904. Serial No. 222,265.



Claim.—1. In a singeing-machine having one or more sets of feed-rollers and burner-tubes, the combination of a feed-hopper, a feeding-table, an automatic feeding device for feeding fabric-supporting forms from the hopper onto said feeding-table and into the center of the machine, and means for automatically feeding the said forms between the said feeding-rollers, substantially as and for the purposes set forth.

2. In a singeing-machine having one or more sets of feed-rollers and burner-tubes, the combination of a feed-hopper, a feeding-table and an automatic feeding device for feeding fabric-supporting forms from the feed-hopper to and between the said feed-rollers, said feeding device comprising two sliding bars extending partly above the feeding-table and adapted to remove from the said hopper the lowermost of the forms contained therein and deposit the same in the center of the machine, a lever journaled in the frame of the machine and adapted to push the fabric-supporting form between the said feed-rollers, and means for actuating said feeding device from the main shaft of the machine, substantially as and for the purposes set forth.

3. In a singeing-machine having one or more sets of feed-rollers and burner-tubes, the combination of a feed-hopper, a feeding-table and an automatic feeding device for feeding fabric-supporting forms from the hopper into the center of the machine and between said feed-rollers at one end of the machine, a movable apron at the other end of the machine, an adjustable bumper beyond said apron, a set of return-feed rollers adjacent to said apron adapted to move the said fabric-supporting forms toward the hopper end of the machine, substantially as and for the purposes set forth.

4. In a singeing-machine having one or more sets of feed-rollers and burner-tubes, the combination of a feed-hopper, a feeding-table, an automatic feeding device for feeding fabric-supporting forms from the hopper into the center of the machine and between said feed-rollers at one end of the machine, a movable apron at the other end of the machine to receive the said forms, a set of return-feed rollers, said apron adapted to bring the said forms between the said return-feed rollers, substantially as and for the purposes set forth.

5. In a singeing-machine having one or more sets of feed-rollers, burner-tubes and means for automatically feeding fabric-supporting forms into the center of the machine and between said feed-rollers and burner-tubes, in combination with a traveling apron adapted to receive the said forms, and a stripper comprising a frame and two resilient flaps adapted to remove the fabric from the supporting-forms, substantially as and for the purposes set forth.

6. In a singeing-machine, having one or more sets of feed-rollers, burner-tubes and means for automatically feeding fabric-supporting forms into the center of the machine and between said feed-rollers and burner-tubes, in combination with a traveling apron, an adjustable bumper, and a stripper, the latter comprising a frame and two resilient flaps hinged to said frame and adapted to remove the fabric from the supporting-forms, while the forms are being advanced by the said feed-rollers, substantially as and for the purposes set forth.

7. In a singeing-machine, the combination of feed-rollers and burner-tubes, said rollers adapted to feed fabric-supporting forms between said burner-tubes, with a traveling apron, a bumper, return-feed rollers and a stripper, the latter comprising a frame and two resilient flaps pivoted to said frame and adapted to remove fabric from a supporting-form while the form is moved along by the said return-feed rollers, substantially as and for the purposes set forth.

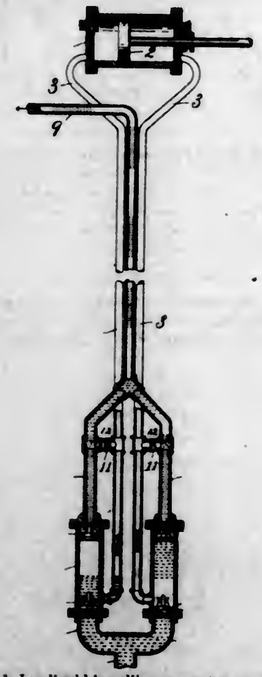
8. In a singeing-machine the combination of feed-rollers, and burner-tubes, said rollers adapted to feed fabric-supporting forms between said burner-tubes, means for automatically feeding fabric-supporting forms into the center of the machine and between said feed-rollers, of an adjustable bumper, a traveling apron, return-feed rollers, a stripper, a receptacle for the stripped fabric and a receptacle for the supporting-forms, substantially as and for the purposes set forth.

9. In a singeing-machine the combination of feeding mechanism with a stripper for removing the fabric from a form after the same has been treated by the machine, said stripper comprising a frame secured to the machine-frame, a flap pivoted to the said frame above the path of the said form, a flap pivoted to the frame below the path of the said form, pins extending from the rear of the flaps, a helical spring attached to said pins and a back stop for each of the flaps impinging on the frame of the stripper, substantially as and for the purposes set forth.

10. In a singeing-machine the combination of feeding mechanism with a stripper for removing the treated fabric from a form, said stripper comprising a frame attached to the machine, two flaps pivoted in said frame, back stops on said flaps to impinge on the frame and a spring or springs to hold the said flaps in normal position, substantially as and for the purposes set forth.

11. In a singeing-machine the combination of feeding mechanism with a stripper for removing the treated fabric from a form, said stripper comprising a frame, a flap above the path of the form, a flap below the path of the form, the latter having its pivots outside of a vertical line through the pivots of the upper flap, means for limiting the movement of the said flaps around their pivots and a spring or springs adapted to hold the flaps in normal position, substantially as and for the purposes set forth.

821,677. LIQUID-IMPELLING APPARATUS. DANVILLE W. STARRETT, Oakland, Cal. Filed June 12, 1903. Renewed Nov. 20, 1905. Serial No. 288,273.



Claim.—1. In a liquid-impelling apparatus, a receiver, a check-valve admitting the liquid to the receiver, a liquid-discharge pipe from the receiver, a check-valve between them, a compressed-air pipe having separate communications with the receiver and with the liquid-discharge pipe, and means for producing alternately positive and negative pressures in the compressed-air pipe, substantially as described.

2. In a liquid-impelling apparatus, a receiver, a check-valve admitting the liquid to the receiver, a liquid-discharge pipe from the receiver, a check-valve between them, a compressed-air pipe having separate communications with the receiver and with the liquid-discharge pipe, the passage from the compressed-air pipe to the liquid-discharge pipe being sufficiently large, free and unobstructed that the compressed air can pass therethrough at each impulse thereof in a sufficiently large proportion to the amount of liquid forced by such impulse from the receiver into the discharge-pipe as to form a solid column or piston of air in the liquid-discharge pipe, completely separating two such columns or pistons of liquid therein, substantially as described.

3. In a liquid-impelling apparatus, a receiver, a check-valve admitting the liquid to the receiver, a liquid-discharge pipe from the receiver, a check-valve between them, a compressed-air pipe having separate communications with the receiver and with the liquid-discharge pipe, the passage from the compressed-air pipe to the liquid-discharge pipe being sufficiently large, free and unobstructed that the compressed air can pass therethrough at each impulse thereof in a sufficiently large proportion to the amount of liquid forced by such impulse from the receiver into the discharge-pipe as to form a solid column or piston of air in the liquid-discharge pipe completely separating two such columns or pistons of liquid therein, and means for producing alternately positive and negative pressures in the compressed-air pipe, substantially as described.

4. In a liquid-impelling apparatus, a receiver, a check-valve admitting the liquid to the receiver, a compressed-air pipe leading to the receiver, means for compressing the air in said pipe, a liquid-discharge pipe leading from the receiver, and a check-valve between the discharge-pipe and the receiver, the compressed-air pipe opening into the discharge-pipe above the check-valve at a point relatively near the receiver, and the size of the passage from the compressed-air pipe to the liquid-discharge pipe being so regulated relatively to the height of said latter pipe and the pressure of the compressed air that a sufficiently large proportion of air to liquid is admitted into the discharge-pipe to distribute the liquid through the whole length of said pipe to such an extent that the weight of the entire amount of liquid therein shall not overbalance the pressure of the compressed air, substantially as described.

5. In a liquid-impelling apparatus, a receiver, a check-valve admitting the liquid to the receiver, a compressed-air pipe leading to the receiver, means for compressing the air in said pipe, a liquid-discharge pipe leading from the receiver, and a check-valve between the discharge-pipe and the receiver, the compressed-air pipe opening into the discharge-pipe at a point above said receiver, and the size of the passage from the compressed-air pipe to the liquid-discharge pipe being so regulated relatively to the height of said latter pipe and the pressure of the compressed air that a sufficiently large proportion of air to liquid is admitted into the discharge-pipe to distribute the liquid through the whole length of such pipe to such an extent that the weight of the entire amount of liquid shall not overbalance the pressure of the compressed air, and means for producing alternately positive and negative pressures in the compressed-air pipe, substantially as described.

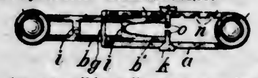
6. In a liquid-impelling apparatus, a pair of receivers, check-valves admitting the liquid to the receivers, a compressed-air pipe leading to each receiver, means for producing alternately positive and negative pressures in the respective pipes, a branch liquid-discharge pipe leading from each receiver, a common discharge-pipe into which said branch pipes conduct, and a check-valve between each receiver and the discharge-pipe leading therefrom, the compressed-air pipe opening into the corresponding branch discharge-pipe above the check-valve, substantially as described.

7. In a liquid-impelling apparatus, a pair of receivers, check-valves admitting the liquid to the receivers, a compressed-air pipe leading to each receiver, means for compressing the air alternately in said pipes, a branch liquid-discharge pipe leading from each receiver, a common discharge-pipe into which said branch pipes conduct, and a check-valve between each receiver and the discharge-pipe leading therefrom, the compressed-air pipe opening into the corresponding branch discharge-pipe above the check-valve, the passage from the compressed-air pipe to the liquid-discharge pipe being sufficiently large, free and unobstructed that the compressed air can pass therethrough at each impulse thereof in a sufficiently large proportion to the amount of liquid forced by such impulse from the receiver into the discharge-pipe as to form a solid column or piston of air in the liquid-discharge pipe, completely separating two such columns or pistons of liquid therein, substantially as described.

8. In a liquid-impelling apparatus, a pair of receivers, check-valves admitting the liquid to the receivers, a compressed-air pipe leading to each receiver, means for compressing the air alternately in said pipes, a branch liquid-discharge pipe leading from each receiver, a common discharge-pipe into which said branch pipes conduct, and a check-valve between each receiver and the discharge-pipe leading therefrom, the compressed-air pipe opening into the corresponding branch discharge-pipe above the check-valve and relatively near the receiver, the size of the passage from the compressed-air pipe to the liquid-discharge pipe being so regulated relatively to the height of said latter pipe and the pressure of the compressed air that a sufficiently large proportion of air to liquid is admitted into the discharge-pipe to distribute the liquid through the whole length of said pipe to such an extent that the weight of the entire amount of liquid therein shall not overbalance the pressure of the compressed air, substantially as described.

9. In a liquid-impelling apparatus, a receiver, a check-valve admitting the liquid to the receiver, a liquid-discharge pipe leading from the receiver, and a check-valve between the discharge-pipe and the receiver, a compressed-air pipe and means for compressing the air therein, said compressed-air pipe opening into the discharge-pipe relatively near the receiver, and the size of the passage from the compressed-air pipe to the liquid-discharge pipe being so regulated relatively to the height of said latter pipe and the pressure of the compressed air that a sufficiently large proportion of air to liquid is admitted into the discharge-pipe to distribute the liquid through the whole length of said pipe to such an extent that the weight of the entire amount of liquid therein shall not overbalance the pressure of the compressed air, and means for applying the force of the compressed air to force the liquid from the receiver into the discharge-pipe, substantially as described.

821,678. COLLAR-SUPPORTER. JOHN H. THEBERATH, South Orange, N. J., assignor to Bippart, Griscom & Osborn, Newark, N. J., a Firm. Filed July 28, 1905. Serial No. 271,593.



Claim.—1. An extensible collar-supporter having members formed of skeleton frames, the outer member having side bars *a* with stud at one end, and at the other end the ties *g*, and having the notches *n* within one of the side bars, and the inner member having side bars *b* fitted to slide within the ties *g* with transverse stud at the outer end, and a tooth carried by such inner member with means for engaging it detachably with the notches *n* within the outer member.

2. The extension-bar having members formed of skeleton frames, the outer member having side bars *a* connected at one end by ties *g* and having the notches *n* in one of said side bars, and the inner member having side bars *b* fitted to slide within the side bars *a* and having the fork at its inner end with arms *b'* compressible toward one another, one of the arms having the tooth *m* to engage the notches *n*, and the arms having thumb-pieces to press them together, whereby the members may be positively locked when adjusted.

3. An extensible collar-supporter having members formed of skeleton frames, the outer member having side bars *a* with transverse stud at one end, and at the other end the ties *g*, and having the notches *n* in one of the side bars, and the inner member having side bars *b* fitted to slide within the ties *g*, with transverse stud at the outer end, and forked at the inner end with yielding arms *b'*, one of the arms having the tooth *m* to engage the notches *n* and the arms having a stop to limit inward movement, and thumb-pieces extended outside of the bars *a*, whereby the tooth can be disengaged from and reëngaged with the notches *n* at pleasure.

821,679. TIRE FOR VEHICLE-WHEELS. JOHN THOMSON, Invercargill, New Zealand. Filed Apr. 27, 1905. Serial No. 257,710.



Claim.—1. A vehicle-tire comprising in combination a tire-rim having inwardly-curved edges, a series of transverse substantially flat springs having their lower ends hooked engaging said curved edges and extending round the whole circumference of the tire-rim, means for connecting the upper ends of each pair of transverse springs, and supports secured to the tire-rim for said springs substantially as described.

2. A vehicle-tire wheel comprising in combination a tire-rim having inwardly-curved edges, a series of similar transverse substantially flat springs having their lower ends hooked engaging said curved edges and extending round the whole circumference of the

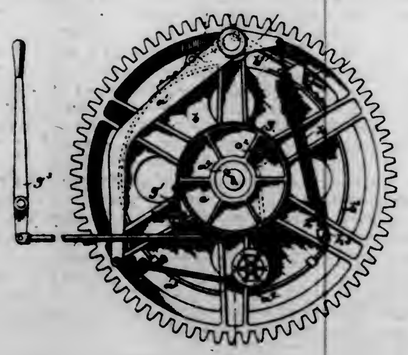
tire-rim, and having their upper ends U-shaped and engaging each other, links uniting each pair of said U-shaped upper ends, and supports secured to the tire-rim for said springs, substantially as described.

3. A vehicle-tire comprising in combination a tire-rim having inwardly-curved edges, a pair of wire rings lying side by side round the tire circumference, a series of similar transverse substantially flat springs having hooked edges and extending round the whole circumference of the tire-rim their lower ends engaging said curved edges and their upper ends engaging said wire rings, curved hook-ended clips connecting said wire rings, and supports secured to the tire-rim for said transverse springs substantially as described.

4. A vehicle-tire comprising in combination a tire-rim having inwardly-curved edges, a series of similar transverse substantially flat springs having their lower ends hooked engaging said curved edges and extending round the whole circumference of the tire-rim, means for connecting the upper ends of each pair of transverse springs, supports secured to the tire-rim for said springs, an elastic tire-cover having its edges thickened secured within the curved edges of the tire-rim by the outward pressure of said springs, binding means running round the circumference of the tire securing the cover to the upper ends of the transverse springs, and a tread solutioned to said binding means and tire-cover, substantially as described.

5. In a tire for vehicle-wheels, in combination a tire-rim provided with inwardly-curved edges, transverse similar springs in paire laid side by side round the whole circumference of the tire-rim, said springs having their lower ends hooked so as to engage the curved edges of the rim and means for connecting the upper ends of each pair of springs, substantially as and for the purposes set forth.

821,680. **FRICTION-CLUTCH.** GEORGE B. TURNER, Bellefontaine, Ohio, assignor to The Bellefontaine Foundry & Machine Company, Bellefontaine, Ohio, a Corporation of Ohio. Filed July 30, 1904. Serial No. 218,811.



Claim.—1. The combination of a shaft, a driving member on said shaft, a rotatable body formed with a friction-surface, a friction-band to engage said surface, an operating-lever mounted in said driving member and adapted upon oscillation to operate said friction-band, a projecting hub on said driving member forming a bearing for a drum or reel, a drum journaled on said projecting hub, a flexible connection between said drum and said lever whereby the line of force as applied through said flexible connection will be substantially tangent to the path of travel of the point of application to said lever, and means to revolubly change the relation of said drum and driving member to tighten said flexible member, substantially as specified.

2. The combination with a shaft, of a driving member thereon, a driven member, a friction-band, a lever mounted on the driving member, and of a length greater than the radius thereof, said lever being adapted upon oscillation to operate said friction-band, a drum adjacent to said driving member, a pulley on said driving member and substantially diametrically opposite the fulcrum of said lever, a flexible connection passing about said pulley and connecting said drum and lever, and means for varying the relative speed of said drum and driving member to cause a revoluble movement of said drum in relation with said driving member, substantially as specified.

821,681. **COMBINED STRAIGHT-EDGE AND PAPER-CUTTER.** JOHN L. VANDERMARK, Chicago, Ill., assignor, by mesne assignments, to The Ridgely Trimmer Company, Springfield, Ohio, a Corporation of West Virginia. Filed Nov. 28, 1902. Serial No. 133,155.



Claim.—1. In a cutter or trimmer, the body consisting of a shell or casing having a lateral side extension; a lever provided with a cutting-disk which is arranged within the casing; antifriction-rolls arranged at opposite sides of the axis of the cutting-disk; and antifriction-rolls arranged at one side of the cutting-disk.

2. In a cutter or trimmer, a body having lips arranged to engage under flanges on a straight-edge; a yoke-lever provided with a cutting-disk and pivoted upon the body and antifriction-rolls attached to the body and arranged with two of such rolls respectively at opposite sides of the axis of the cutting-disk, and a third roll lower than said two rolls and opposite one side of the cutting-disk.

3. The combination of a cutter or trimmer having lips for engaging the under flanges on a straight-edge; and a groove with overhanging flanges, said groove being provided with a metal plate along its bottom, and the cutter or trimmer being provided with an antifriction-roll arranged to traverse said plate when a lip on the cutter or trimmer is in position to engage under a flange overhanging said groove in the straight-edge.

4. The combination with a straight-edge having a longitudinal groove and a metal plate extending along the bottom of said groove and flanged to form a ledge or flange overhanging the groove of a cutter or trimmer having a lip adapted to engage under said ledge or flange, and a roller arranged to bear on the metal plate along the bottom of the groove in the straight-edge.

5. In a cutter or trimmer, the body constructed with a shell open along the bottom and having lips for engaging a straight-edge; a fork-shaped lever arranged to straddle the shell and having its arms pivoted at one end of the latter and having its handle portion overhanging the opposite portion of the shell; a spring confined between the handle portion of the lever and the shell; and a cutter arranged within the shell and connected with the arms of the lever.

6. In a cutter or trimmer, the body constructed with a shell open along the bottom and having lips for engaging a straight-edge; a fork-shaped lever arranged to straddle the shell and having its arms pivoted at one end of the latter and having its handle portion overhanging the opposite portion of the shell; a spring confined between the handle portion of the lever and the shell; a cutter arranged within the shell and connected with the arms of the lever; and antifriction-rolls attached to the shell and distributed to prevent the shell and its lugs from binding against the straight-edge.

7. In a paper-trimmer, a gage, slotted openings therein, a frame pivoted to and extending on opposite sides of said gage, a knife-carrying arbor secured to said frame and extending through the slotted openings in said gage, and a spring between said gage and frame, substantially as specified.

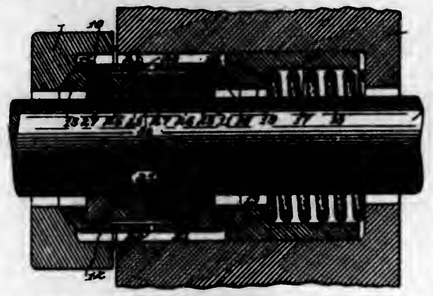
8. In a paper-trimmer, a gage, a frame pivoted thereto, a knife-carrying arbor extending through said gage, and having its opposite ends supported in said frame, and a slotted opening in said gage to permit the vertical swinging movement of said frame, substantially as specified.

9. In a cutting-tool, a gage provided with engaging parts for a straight-edge, a slotted opening in said gage, a frame pivoted to and inclosing said gage, a spring between said frame and gage, a knife-carrying arbor having its opposite ends secured in said frame, said arbor extending through the slotted openings of said gage, substantially as and for the purpose specified.

10. In a cutting-tool, a frame, an arbor secured thereto, a knife mounted on said arbor having engaging devices for a straight-edge, said gage being provided with slotted openings, said arbor being extended through said slotted openings and engaging with said frame on opposite sides of said gage, the upper ends of said slotted openings being adapted to form a stop for said arbor to limit the upper movement of said frame and knife, and a spring between said gage and frame, substantially as specified.

821,682. **PACKING.** ADRIAN O. VAN DERVOORT, Troy, N. Y. Filed Sept. 14, 1905. Serial No. 278,260.

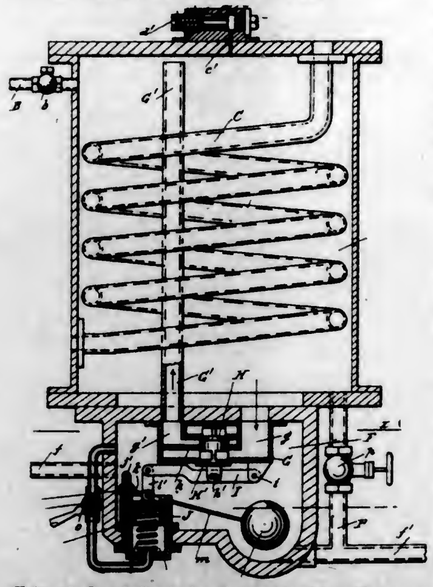
Claim.—1. A packing-ring embodying a casing, comprising segments together constituting less than a circle, composed of metal soft and mobile under the influence of the heat of steam under pressure, and a radially-reducible ring of similar metal located within the casing and radially reducible under the compression of the casing upon the application of heat and circumferential pressure thereto.



2. The packing-ring embodying a ring comprised of a number of segments having a bearing-face for the rod and composed of metal soft, re-formable and mobile under the influence of the heat and pressure of steam, and a casing of similar metal for said ring and comprised of a number of spaced-apart sections in engagement with the outer perimeter of said ring, said casing having faces on the outer perimeter of the sections for receiving fluid-pressure and pressing the ring against the rod and circumferentially compressing the ring and re-forming the bearing-surface as the same is reduced and worn away.

3. The packing-ring embodying a soft, re-formable, mobile metal ring comprised of a number of segments, and having a bearing-face for the rod, and having its outer perimeter cylindrical, and a soft, re-formable, mobile metal casing for said ring comprised of a number of spaced-apart sections presenting a cylindrical inner face in engagement with the cylindrical outer perimeter of said ring, said casing having faces on the outer perimeter of the sections for receiving fluid-pressure and pressing the ring against the rod and circumferentially compressing the ring and re-forming the bearing-surfaces as the same is reduced and worn away.

821,683. **BOILER-FEEDER.** ROBERT W. WALLACE, San Francisco, Cal. Filed July 13, 1905. Serial No. 269,353.



Claim.—1. In a boiler-feeder, the combination, with a steam and water chamber provided with boiler connection pipes at different levels, of a cylinder having an open upper end arranged inside the said chamber and having also a passage for connecting its lower end with the atmosphere, a float-valve arranged inside the said chamber and controlling the said passage, a piston in the said cylinder, a reservoir arranged above the said chamber, and valve mechanism also arranged inside the said chamber and connected with the said piston and operating to control the flow of steam and water between the said chamber and reservoir.

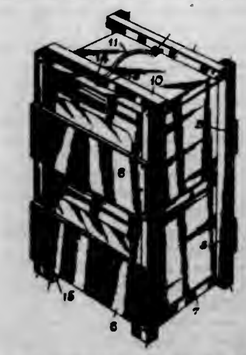
2. In a boiler-feeder, the combination, with a steam and water chamber provided with boiler connection pipes at different levels, of a cylinder having an open upper end arranged inside the said chamber and having also a passage for connecting its lower end with the atmosphere, a three-way valve arranged inside the said chamber and controlling the said passage and admitting steam from the said chamber to the lower part of the cylinder, a lever and float operating the said valve, a double valve for steam and water also arranged inside the said cylinder, a reservoir arranged above the said chamber and controlled by the said double valve, a piston in the said cylinder, and lever-connecting mechanism also arranged inside the said chamber between the said double valve and the said piston

3. In a boiler-feeder, the combination, with a chamber arranged at the water-level of a boiler and provided with pipes for connecting it with the boiler above and below its mean water-level respectively, of a cylinder having its upper end in contsant communication with the said chamber and provided with a passage for connecting its lower end with the atmosphere, a float-valve arranged in the said chamber and controlling the said passage automatically, a piston slidable in the said cylinder, valve mechanism connected with the said piston and operating automatically to equalize the pressure in the said chamber and reservoir and to admit water from the said reservoir to the said chamber when the mean water-level is reduced, and a hand-operated valve arranged outside the said chamber and placing the lower end of the said cylinder in communication with the atmosphere.

4. In a boiler-feeder, the combination, with a chamber arranged at the water-level of a boiler and provided with pipes for connecting it constantly and directly with the boiler above and below its mean water-level respectively, of a reservoir arranged above the said chamber, a casing provided with a passage connecting the lower part of the reservoir with the said chamber and having also a passage and a pipe for connecting the steam-space of the said chamber with the upper part of the said reservoir, portions of the said passages being arranged to overlap each other and the said casing being secured inside the said chamber, two valves connected together and controlling the said passages, and means for operating the said valves.

5. In a boiler-feeder, the combination, with a chamber provided with boiler connections which maintain the water in the said chamber constantly at the same level as the water in the boiler, of a water-reservoir arranged above the said chamber, valve mechanism arranged inside the said chamber and operating to control the flow of water from the said reservoir to the said chamber, and a cylinder also arranged inside the said chamber and provided with a float-valve and intermediate connections also arranged inside the said chamber for operating the said valve mechanism.

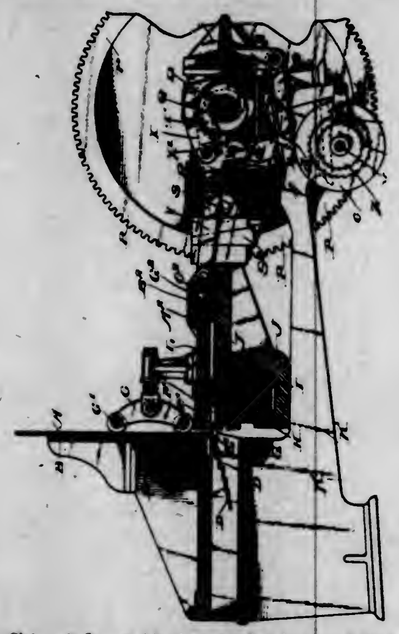
821,684. **CARRIER-CRATE.** FREDERICK L. WETSEL, St. Louis, Mo., assignor to Columbia Biscuit Company, St. Louis, Mo., a Corporation of Missouri. Filed Dec. 8, 1904. Serial No. 236,007.



Claim.—A crate comprising two parallel sides each of which consists of two longitudinals connected by cross-strips, rigid cross-

bars 7 and 8 connected by pivots 15 to the inner sides of the lower ends of said longitudinals, cross-bars 9 and 10 connected to the inner sides of the upper ends of said longitudinals, a handle-piece 11 pivotally connected to the cross-bar 9 and extending through an opening in the cross-bar 10, and a yielding locking device carried by the cross-bar 10 and engaging an eye in the end of the handle-piece; substantially as described.

821,685. MACHINE FOR EXPANDING METAL. HERBERT E. WHITE, Youngstown, Ohio, assignor to The General Fireproofing Company, Youngstown, Ohio, a Corporation of Ohio. Filed Mar. 2, 1904. Renewed Apr. 11, 1906. Serial No. 311,129.



Claim.—1. In a machine for expanding sheet metal, the combination of means for supporting the sheet in an upright position, and means for slitting and expanding the sheet substantially horizontally, for substantially the purposes set forth.

2. In a machine for expanding sheet metal, the combination of means for supporting the sheet in an upright position, means for slitting and expanding the sheet substantially horizontally, and provision for permitting the sheet to feed downward by gravity, for substantially the purposes set forth.

3. In a machine for expanding sheet metal, the combination of means for supporting the sheet in an upright position, a reciprocating punch-bar arranged to slit and expand the lower edge of the sheet, provision for permitting the sheet to feed downwardly by gravity, and means for shifting the punch-bar transversely after each stroke, for substantially the purposes set forth.

4. In a machine for expanding sheet metal, the combination of means for supporting the sheet in an upright position, a reciprocating punch-bar, means for shifting said bar transversely to the direction of reciprocation, and a clamp for holding the sheet and preventing feeding, for substantially the purposes set forth.

5. In a machine for expanding sheet metal, the combination with provision for maintaining the sheet in an upright position, of a punch-bar having a reciprocating movement in two directions at an angle to each other in a substantially horizontal plane, for substantially the purposes set forth.

6. In a machine for expanding sheet metal, the combination of a support for supporting the sheet in an upright position, clamping means for maintaining said sheet in such position, a reciprocating punch-bar, and means independent of said clamping means for automatically clamping the sheet as said sheet is cut and expanded by the punch-bar, for substantially the purposes set forth.

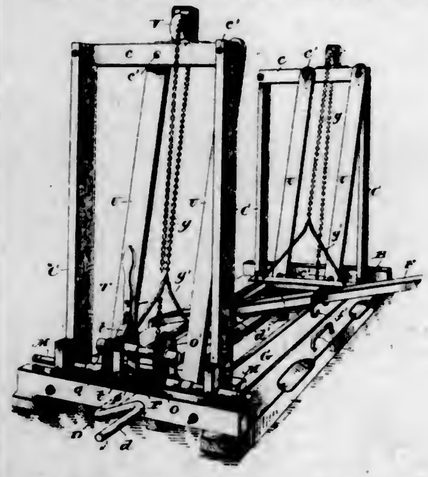
7. In a machine for expanding sheet metal, the combination of means for supporting the sheet in an upright position, a reciprocating punch-bar for slitting and expanding the sheet substantially horizontally, and means for automatically clamping the sheet at each stroke of the punch-bar, for substantially the purposes set forth.

8. In a machine for expanding sheet metal, the combination of a support for supporting the sheet in an upright position, another support against which the sheet is held by spring-pressure, and means for slitting and expanding the sheet substantially horizontally.

9. In a machine for expanding sheet metal, the combination of suitable supports for supporting the sheet in an upright position, devices for maintaining the sheet in said position, means for slitting and expanding the sheet substantially horizontally, and a horizontally-movable clamp for clamping the sheet against one of its supports to prevent feeding.

10. In a machine for expanding sheet metal, the combination of means for supporting the sheet in an upright position, a punch-bar provided with knives or cutters, a block or support for said punch-bar movable transversely of the machine, a transversely-movable carriage for said support, means for shifting the carriage transversely, a slidable carriage actuated to and from the sheet to be operated upon, and a cutter adapted to coöperate with said movable knives or cutters.

821,686. PORTABLE WAGON-DUMP. JOHN F. WHITE, Bloomington, Ill., assignor to Portable Wagon Dump and Elevator Company, a Corporation of Illinois. Filed Dec. 29, 1904. Serial No. 238,776.



Claim.—1. In a wagon-dump, an elevator adapted to support the forward end of a wagon, means for raising and lowering said elevator, and means for imparting a lateral movement to said elevator to either side of the dump during its upward movement.

2. In a wagon-dump, an elevator, means for raising and lowering said elevator, and means reversible from one side of the dump to the other for imparting a lateral movement to the elevator during its upward movement.

3. In a wagon-dump, an elevator adapted to support the forward end of a wagon, means for raising and lowering said elevator, and means reversible from one side of the dump to the other for causing the elevator to travel substantially in the arc of a circle during its upward movement.

4. In a wagon-dump, an elevator adapted to support the forward end of a wagon, means for raising and lowering said elevator, and adjustable means for imparting a lateral movement to the elevator during its upward movement.

5. In a wagon-dump, a frame, an elevator, means for raising and lowering said elevator in said frame, and adjustable inclined guides secured to said frame and in engagement with said elevator, whereby a lateral movement will be imparted to said elevator during its upward movement.

6. In a wagon-dump, a frame, an elevator, means for raising and lowering said elevator in said frame, and reversible inclined guide-bars secured to said frame and in engagement with said elevator.

7. In a wagon-dump, a frame comprising uprights and cross-bars secured to the upper ends thereof, an elevator in said frame, a drum-shaft, hoisting-cables having one of their ends secured to the drum-shaft and their other ends secured to the elevator, a pair of guide-bars pivotally secured at their lower ends to each side of the frame and having their upper ends adjustably connected to the cross-bars secured to the uprights, and supporting-pulleys for the hoisting-cables secured to said cross-bars intermediate the ends of the guide-bars.

8. In a wagon-dump, a frame comprising a base and a pair of adjustable inclined supporting-bars secured to opposite sides of said base, an elevator adapted to support the forward end of a wagon secured in said frame and in slidable engagement with said supporting-bars, and means for raising and lowering said elevator.

9. In a wagon-dump, a frame comprising a base and pairs of adjustable inclined supporting-bars secured to opposite sides thereof, cross-bars secured to the upper ends of each pair of supporting-bars, an elevator in said frame, and in slidable engagement with said supporting-bars, supporting-pulleys secured to said cross-bars intermediate the ends of the supporting-bars, and hoisting-cables supported on said pulleys and secured to the elevator.

10. In a wagon-dump, a frame, carrying-wheels movably secured to said frame and normally occupying a position permitting the frame to rest upon the ground, a draft-tongue movably secured to said frame, and means whereby when said tongue is moved to an operative position the carrying-wheels will be lowered to raise the frame from off the ground.

11. In a wagon-dump, a frame, carrying-wheels movably secured to said frame and normally occupying a position permitting the frame to rest on the ground, a draft-tongue pivotally secured to said frame, and means whereby when the tongue is moved to an operative position, the carrying-wheels will be lowered to raise the frame from off the ground.

12. In a wagon-dump, a frame, an axle journaled in said frame and provided with projecting cranked portions, carrying-wheels secured to said cranked portions and normally occupying a position permitting the frame to rest on the ground, a draft-tongue pivotally connected to said frame, and means whereby when said tongue is moved to an operative position, the axle will be rocked to lower the carrying-wheels.

13. In a wagon-dump, a frame, an axle journaled in said frame and provided at its ends with cranked portions and intermediate its ends with a laterally-projecting arm, carrying-wheels secured to said cranked portions and normally occupying a position permitting the frame to rest on the ground, and a tongue pivotally connected to said frame and adapted when in an operative position to overlie the projecting arm secured to the axle and hold the carrying-wheels in their lowered position.

14. In a wagon-dump, a frame, an axle journaled in said frame and provided at its ends with cranked portions and intermediate its ends with a laterally-projecting arm, carrying-wheels secured to said cranked portions and normally occupying a position permitting the frame to rest on the ground, a tongue pivotally connected to said frame and adapted when in an operative position to overlie the projecting arm secured to the axle and hold the carrying-wheels in their lowered position, and means for locking the tongue in its operative position.

15. In a wagon-dump, an elevator, a drum-shaft adapted upon rotation to raise and lower said elevator, a gear-wheel secured to said shaft, a drive-shaft, a gear loosely mounted on said drive-shaft and meshing with the gear on said drum-shaft, a sprocket-wheel loosely mounted on the drive-shaft, a counter-shaft, a gear-wheel loosely mounted on the drive-shaft, a sprocket-wheel and gear keyed to said counter-shaft and geared with the sprocket-wheel and gear on the drive-shaft, and a clutch interposed between the sprocket-wheel and gear-wheel on the drive-shaft.

16. In a wagon-dump, an elevator, a drum-shaft adapted upon rotation to raise and lower said elevator, a gear-wheel secured to said shaft, a drive-shaft, a gear loosely mounted on said drive-shaft, a worm-screw secured to said gear and meshing with the gear on the drum-shaft, a sprocket-wheel loosely mounted on the drive-shaft, a counter-shaft, a sprocket-wheel and gear keyed to said counter-shaft and geared with the sprocket-wheel and gear on the drive-shaft, and a clutch for causing either the sprocket-wheel or gear on the drive-shaft to run therewith.

17. In a wagon-dump, a frame, an axle journaled in said frame and provided with crank portions and with a lateral-projecting portion, carrying-wheels secured to said crank portions and normally occupying a position permitting the frame to rest on the ground, and a member adapted to overlie the laterally-projecting portion and hold the carrying-wheels in their lowered position.

18. In a wagon-dump, a frame, an elevator therein, means for raising and lowering the elevator, adjustable carrying-wheels for said frame, a draft-tongue associated with said frame, and mechanism actuated by said tongue for adjusting the carrying-wheels.

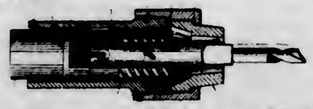
19. In a wagon-dump, an elevator, means for raising and lowering said elevator including a drum-shaft, and a worm-gear for actuating the same, a drive-shaft, a counter-shaft geared thereto, means for imparting a direct movement to said worm-gear from the drive-shaft, and means for imparting an indirect movement and at a different speed to said worm-gear from said counter-shaft.

20. In a wagon-dump, an elevator, means for raising and lowering said elevator including a drum-shaft, a drive-shaft, a counter-shaft, a gear carried by one of said shafts and meshing with the gear on the drum-shaft, a gear connection between said shafts, a sprocket connection between said shafts, and a clutch for connecting either the gear or sprocket connection with the shafts.

21. In a device of the class described, the combination with a base, a platform adapted to be elevated and lowered on the said base, a drive-shaft, a worm-wheel shaft, differential gearing loosely carried on the drive-shaft and continuously in connection with the worm-wheel shaft, clutch devices for controlling the connection of the differential gears with the drive-shaft, and cables in connection with the said worm-wheel shaft and said platform, substantially as specified.

22. In a wagon-dump, a frame, an axle journaled in said frame and provided at its ends with crank portions and intermediate its ends with a laterally-projecting portion, carrying-wheels secured to said crank portions and normally occupying a position permitting the frame to rest on the ground, a member carried by the frame and movable to a position to overlie the laterally-projecting portion of the axle and hold the carrying-wheels in a lowered position, and means for locking said member in its operative position.

821,687. CHUCK. PARDON A. WHITNEY and ROBERT C. ELLRICH, Southington, Conn., assignor to Peck, Stow & Wilcox Company, Southington, Conn., a Corporation of Connecticut. Filed Oct. 22, 1904. Serial No. 229,581.



Claim.—1. In a chuck a spindle, jaws carried thereby, and means for closing said jaws comprising a quick-acting sleeve mounted on said spindle and adapted to cause the initial closing of said jaws, automatic means for locking said quick-acting sleeve to the spindle after it has operated, and a slow-acting sleeve mounted on said quick-acting sleeve and adapted for operation after said quick-acting sleeve is locked, substantially as described.

2. In a chuck the combination with the spindle and the jaws carried thereby, of means for closing said jaws, said means comprising a quick-acting sleeve mounted on the spindle and adapted to effect the initial closing of the jaws, automatic means for locking said sleeve to the spindle after it has operated, and a slow-acting sleeve mounted on said quick-acting sleeve and adapted to finally close said jaws, said slow-acting sleeve adapted for rotary and lengthwise movement relative to the quick-acting sleeve after the latter is locked.

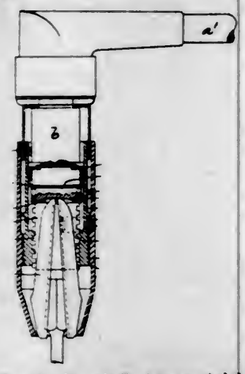
3. In a chuck the combination with the slotted spindle and the jaws located in the slot in the spindle, of means for closing said jaws comprising a quick-acting sleeve mounted on the spindle adapted to effect the initial closing of the jaws, an expansible gripping device located in the slot in the spindle behind the jaws and adapted to be expanded by the rearward movement of the jaws under the influence of said quick-acting sleeve to lock said sleeve to the spindle, and a slow-acting sleeve mounted on said quick-acting sleeve and operative, after the last-mentioned sleeve is locked, to effect the final closing of the jaws.

4. In a chuck the combination with the slotted spindle and expansible gripping device located in said slot, and the jaws located in said slot with their rear ends resting on said gripping device, of a quick-acting sleeve mounted on the spindle and adapted to effect the initial closing of the jaws and the spreading of the gripping device to lock said sleeve to the spindle, and a slow-acting sleeve mounted on said quick-acting sleeve and adapted to effect the final closing of the jaws after the quick-acting sleeve is locked, a conical end member carried by said slow-acting sleeve, and antifriction devices for said end member.

5. In a chuck a spindle, jaws carried thereby, and means for closing said jaws comprising a quick-acting sleeve mounted on said spindle and adapted to cause the initial closing of said jaws, means for locking said quick-acting sleeve to the spindle after it has operated, and a slow-acting sleeve mounted on said quick-acting sleeve and adapted for operation after said quick-acting sleeve is locked, subetantially as described.

6. In a chuck a spindle, jaws carried thereby, and means for closing said jaws comprising a quick-acting sleeve mounted on said spindle and adapted to cause the initial closing of said jaws, means for holding said sleeve against movement after the initial closing is effected, and a slow-acting sleeve operative independently of and after said quick-acting sleeve has ceased to act for effecting the final closing of said jaws.

821,688. **CHUCK.** PARDON A. WHITNEY and ROBERT C. ELLRICH, Southington, Conn., assignors to Peck, Stow & Wilcox Company, Southington, Conn., a Corporation of Connecticut. Filed Dec. 27, 1904. Serial No. 238,319.



Claim.—1. In a chuck a spindle, jaws carried thereby, a pair of sleeves one of which is contained within the other, interengaging threads of fine pitch on said sleeves, a further and yielding frictional connection between said sleeves, and interengaging threads of coarse pitch on the spindle and said inner sleeve, all substantially as described and for the purposes set forth.

2. In a chuck a spindle, jaws carried thereby, a pair of sleeves one of which is contained within the other, interengaging threads of fine pitch on said sleeves, a further and yielding frictional connection between said sleeves, and interengaging threads of coarse pitch on the spindle and the inner sleeve.

3. In a chuck a spindle, jaws carried thereby, a pair of sleeves one of which is contained within the other, interengaging threads of fine pitch on said sleeves, a further and yielding frictional connection between said sleeves, interengaging threads of coarse pitch on the spindle and said inner sleeve, and a gripping device carried by the spindle and operated upon the closing of the jaws to engage the inner sleeve and lock it to the spindle.

4. In a chuck a spindle, jaws carried thereby, a pair of sleeves one of which is contained within the other, interengaging threads of fine pitch on said sleeves, the outer sleeve being adapted for movement independently of the inner sleeve but having a further and yielding frictional connection therewith to normally cause them to rotate together, and interengaging threads of coarse pitch on the spindle and the inner sleeve.

5. In a chuck a spindle, jaws carried thereby, a pair of sleeves one of which is contained within the other, interengaging threads of fine pitch on said sleeves, interengaging threads of coarse pitch on the spindle and said inner sleeve, said outer sleeve terminating in a conical jaw-closing end, a further and yielding frictional engagement between said sleeves whereby they are caused to move together to effect the initial closing of the jaws, and means for locking the inner sleeve to the spindle when the initial closing of the jaws has been accomplished.

6. In a chuck a spindle, jaws carried thereby, a pair of sleeves one of which is contained within the other, interengaging threads of fine pitch on said sleeves, interengaging threads of coarse pitch on the spindle and said inner sleeve, said outer sleeve terminating in a conical jaw-closing end, a further and yielding frictional engagement between said sleeves to cause their simultaneous initial movement on the coarse thread to close the jaws, means for locking the inner sleeve to the spindle after said initial movement, said outer sleeve being adapted to further movement on said fine thread independently of the inner sleeve to finally close said jaws.

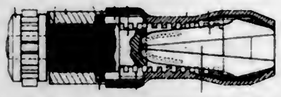
7. The combination in a chuck with the slotted spindle and the jaws located in said slot, of a pair of sleeves located one within the other, the inner sleeve being threaded onto said spindle by threads of coarse pitch and the outer sleeve being threaded onto said inner sleeve by threads of fine pitch, a further and yielding frictional engagement between said sleeves, means for varying the intensity of said engagement, and an expansible gripping device carried by the spindle and adapted to engage the inner sleeve, all subetantially as described and for the purposes set forth.

8. A chuck comprising in combination a spindle and jaws; two operating-sleeves interthreaded upon each other and one threaded upon the spindle, the pitch of said threads being materially different, and a single gripping means for rotating both sleeves; and yielding means apart from said threads for causing one sleeve to turn with the other until the jaws are initially closed by the action of the thread of greatest pitch but then permitting one sleeve to thread upon the other to bring greater power to close the jaws.

9. A chuck comprising in combination a spindle, jaws carried thereby, an internal quick-acting sleeve mounted on said spindle and an external slow-acting sleeve threaded on and inclosing said quick-acting sleeve, and means apart from said threads for normally causing the rotation of the slow-acting sleeve to rotate the quick-acting sleeve to rapidly close the jaws, but capable of yielding when the jaws are approximtely closed permitting the slow-acting sleeve to be operated to more forcibly close the jaws.

10. In a chuck a spindle, jaws carried thereby, a pair of sleeves one of which is contained within the other, interengaging threads of fine pitch on said sleeves, a spring carried by one sleeve and having frictional engagement with the other, and interengaging threads of coarse pitch on the spindle and said inner sleeve, all subetantially as described and for the purposes set forth.

821,689. **CHUCK.** PARDON A. WHITNEY and ROBERT C. ELLRICH, Southington, Conn., assignors to Peck, Stow & Wilcox Company, Southington, Conn., a Corporation of Connecticut. Filed Dec. 27, 1904. Serial No. 238,320.



Claim.—In a chuck a spindle, jaws carried thereby, a jaw-closing sleeve threaded onto said spindle, a second sleeve threaded onto said spindle behind the closing-sleeve, a block supporting the rear ends of said jaws, a washer back of said block, and antifriction devices between said washer and said second sleeve.

821,690. **BUSHING.** CHARLES A. WIDMER, Syracuse, N. Y., assignor to Picrome Hide Company, Syracuse, N. Y., a Corporation of New York. Filed Aug. 21, 1905. Serial No. 275,092.

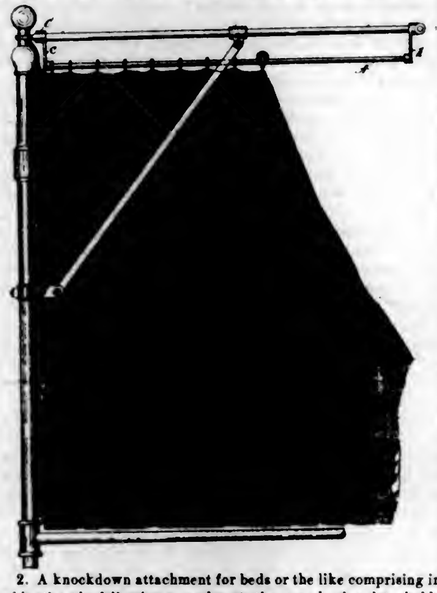


Claim.—1. A bushing comprising inner semicylindrical sections, and outer semicylindrical casing—sections having their end edges crimped or bent inwardly against the ends of the inner semicylindrical sections.

2. A split bushing comprising inner semicylinders each composed of semicircular laminations pressed together face to face, and semicylindrical casing-sections of sheet metal inclosing said inner sections and having their ends crimped or bent inwardly upon the end faces of the inner sections.

821,691. **ATTACHMENT FOR BEDS.** JAMES P. WILLIAMS, Boston, Mass., assignor, by mesne assignments, to Victor Manufacturing Company, a Corporation of Maine. Filed July 20, 1905. Serial No. 271,573.

Claim.—1. A knockdown attachment for beds or the like comprising in combination the following-named parts the same having detachable connections to permit boxing in a narrow box, namely: duplicate apertured castings, as C, having openings for detachable connection of duplicate braced rods, said duplicate braced rods forwardly extending from said castings, duplicate ring-rods removably supported below said braced rods, duplicate diagonal braces for the braced rods, a cross-brace, a cross-rod sliding on said ring-rods, and a canopy or the like supported from said ring-rods and cross-rod.



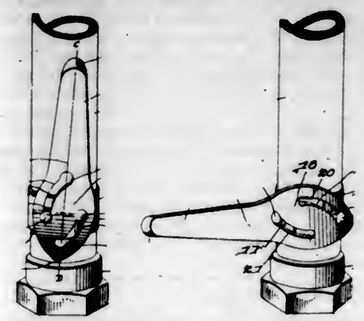
2. A knockdown attachment for beds or the like comprising in combination the following-named parts the same having detachable connections to permit boxing in a narrow box, namely: duplicate apertured castings, as C, having openings for detachable connection of duplicate braced rods, said duplicate braced rods forwardly extending from said castings, duplicate ring-rods removably supported below said braced rods, duplicate diagonal braces for the braced rods, a cross-brace, a cross-rod sliding on said ring-rods, and a canopy or the like supported from said ring-rods and cross-rod, and a top rod connecting with the duplicate apertured castings, preventing turning thereof.

3. A knockdown attachment for beds or the like comprising in combination the following-named parts the same having detachable connections to permit boxing in a narrow box, namely: duplicate apertured castings, as C, having openings for detachable connection of duplicate braced rods, said duplicate braced rods forwardly extending from said castings, duplicate ring-rods removably supported below said braced rods, duplicate diagonal braces for the braced rods, a cross-brace, a cross-rod sliding on said ring-rods, and a canopy or the like supported from said ring-rods and cross-rod, said cross-brace and cross-rod being extensible.

4. A knockdown attachment for beds or the like comprising in combination the following-named parts the same having detachable connections to permit boxing in a narrow box, namely: duplicate apertured castings, as C, having openings for detachable connection of duplicate braced rods, said duplicate braced rods forwardly extending from said castings, duplicate ring-rods removably supported below said braced rods, duplicate diagonal braces for the braced rods, a cross-brace, a cross-rod sliding on said ring-rods, and a canopy or the like supported from said ring-rods and cross-rod, and a top rod connecting with the duplicate apertured castings, preventing turning thereof, said cross-brace, cross-rod and top rod being extensible.

5. In combination, a casting for attachment to a bed or the like, having an opening for the detachable engagement of a braced rod, with a hook and pin device, substantially as described intermediate the casting and braced rod and holding the two in easily-removable normal engagement, a casting or extension on the braced rod for the reception of a ring-rod, said braced rod and ring-rod, and detachable connection for the forward ends of the same, substantially as and for the purposes described.

821,692. **HOSE-CLAMP.** JOSEPH W. ADAMS, Pasadena, Cal. Filed Sept. 26, 1905. Serial No. 280,216.



Claim.—1. A hose-clamp comprising a hose-embracing band provided with terminal studs, and a handle member provided with oppositely-directed cam-slots engaging the studs and so curved that both ends contact with the hose.

2. A hose-clamp comprising a hose-embracing band, provided with terminal studs, a guard member slidably mounted thereon and bridging the interval between the terminals and a handle member provided with oppositely-directed cam-slots and so curved that both ends contact with the hose.

3. A hose-clamp embodying a flexible band carrying rigid studs, a handle engaging the studs to clamp the band upon the hose and means whereby the handle is held from a return movement of the hose.

4. A hose-clamp embodying a flexible band, studs radially outstanding from the band adjacent the free ends, a handle engaging the studs to clamp the band upon the hose and means whereby the handle is held from a return movement by the hose.

5. A hose-clamp embodying a flexible band, studs radially outstanding from the band adjacent the free ends, a handle having cam-slots engaging the studs to clamp the band upon the hose and means whereby the handle is held from a return movement by the hose.

6. A hose-clamp embodying a flexible band, headed studs radially outstanding from the bsnd adjacent the free ends, a handle having cam-slots engaging the studs to clamp the band upon the hose, and means whereby the handle is held from a return movement by the hose.

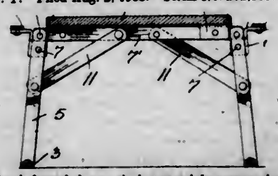
7. A hose-clamp embodying a flexible band provided with a circumferentially-adjustable guard-section, a handle for clamping the band upon the hose and relative to the guard-section and means whereby the handle is held from a return movement by the hose.

8. A hose-clamp embodying a flexible band provided with a circumferentially-adjustable guard-section, and headed studs radially outstanding from the band adjacent the ends connected with the guard-section, a handle having eccentric cam-slots engaging the studs to clamp band upon the hose and means whereby the handle is held from a return movement by the hose.

9. A hose-clamp comprising a flat band and a lever having oppositely-directed cam-slots detachably engaging the ends of the band, said ends being incapable of independent lateral movement.

10. A hose-clamp comprising a flat band having studs upon its end portions and a lever having oppositely-directed cam-slots constituting guides for the studs, the ends of said band being incapable of independent lateral movement.

821,693. **KNOCKDOWN SLED.** PRESTON K. ALBRIGHT, Binghamton, N. Y. Filed Aug. 2, 1905. Serial No. 272,385.



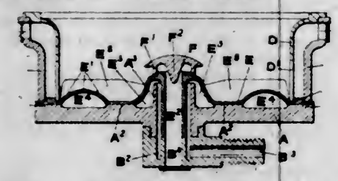
Claim.—1. A knockdown sled comprising cross-bars and runners, standards rising from the runners and having their upper ends detachably connected to the outer ends of the cross-bars, and in-

clined braces having their opposite ends pivotally connected to the standards and cross-bars, substantially as described.

2. A knockdown sled comprising a pair of runners each curving upward at the front and backward to form an integral parallel side rail, standards rising from the runners and secured to the side rails, cross-bars having their ends detachably connected to the upper ends of the standards, and inclined braces having their ends pivotally connected to the standards and cross-bars, substantially as described.

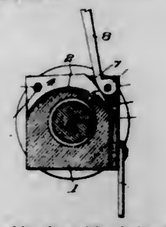
3. A knockdown sled comprising a pair of runners and side rails, two-part standards rising from the runners, a bracket clamped between the two parts of each standard and connected to the rail, cross-bars having their ends resting between the standards and on said brackets, braces pivotally connecting the cross-bars and standards, a seat-board, and clips clamping said board to the cross-bars and serving as stops against which the upper ends of the standards abut, substantially as described.

821,694. GAS-BURNER. LOUIS H. BACQUE, Three Rivers, Canada. Filed May 27, 1905. Serial No. 263,601.



Claim.—In a gas-burner, the combination of a base-plate, a burner-plate mounted thereon, enlarged mixing-chambers connected by shallow channels between the base-plate and the burner-plate, a central air-passage through the base-plate, apertures opening therefrom at right angles to the combustion-chamber, a pair of outer cylindrical drums having an annular space between them, the inner of said drums having apertures opening into the combustion-chamber, and the outer drum having adjustable apertures for admitting air to the annular chamber.

821,695. LOCK-NUT. HENRY J. BAKER, Chicago, Ill. Filed Jan. 23, 1906. Serial No. 297,175.



Claim.—1. The combination with a bolt, of a nut therefor having an opening extending through one of its side walls to said bolt, a dog pivotally mounted on said side wall near one edge of the same, the free end of the dog extending approximately to the next adjacent edge, a projection on said dog adapted to enter said opening, a lever pivoted above the free end of the dog, said lever having a cam-surface adapted to bear upon the free end of said dog to press said projection into engagement with the bolt.

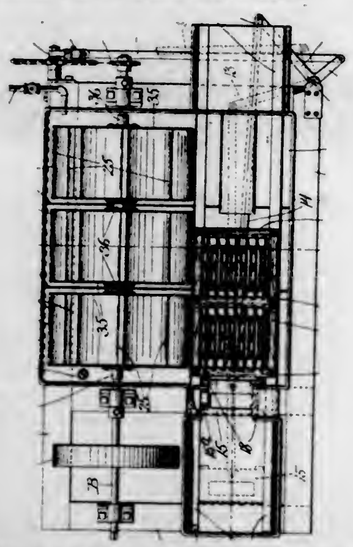
2. The combination with a bolt, of a nut therefor having an opening extending from the face of the nut to the bolt, a dog pivoted upon the nut the free end of the dog being beveled, a projection on said dog beneath said beveled end adapted to enter said opening and engage the bolt, a lever pivoted above the free end of the dog, and a cam upon said lever adapted upon the depression of the lever to bear upon the beveled end of said dog and thereby to bring said projection into locking engagement with the bolt.

3. The combination with a threaded bolt, of a nut therefor having a channel in its face and an opening extending from said channel to the threads of the bolt, a dog pivoted in the channel, the free end of the dog being beveled, a projection on said dog having a chisel edge adapted to enter said opening and to bite into the threads of the bolt, a lever pivoted in said channel, a cam upon said lever adapted upon the depression of the lever to bear upon the beveled end of said dog and thereby to press said chisel edge into engagement with the threads of the bolt, and means for holding said lever in its depressed position.

4. The combination with a threaded bolt, of a nut therefor having communicating channels in two of its adjacent faces and an opening extending from one of said channels to the threads of the bolt, a dog pivotally mounted in said latter channel, the free end of the dog being beveled, a projection on said dog having a chisel edge adapted to enter said opening, a lever pivoted at the edge of the nut above the beveled end of the dog and adapted to lie in the other of said channels, said lever having a cam-surface adapted to bear upon the beveled end of said dog when the lever is depressed into the groove, and thereby to press said dog into engagement with the threads of the bolt, and a latch for holding said lever locked in the groove.

5. The combination with a threaded bolt, of a nut therefor having communicating channels in two of its adjacent faces, and an opening extending from a point near the junction of said channels to the threads of the bolt, a dog pivotally mounted at one edge of the nut and adapted to lie in one of said channels, said dog being beveled at at its free end with a chisel-edged projection on its under side adapted to enter said opening, a lever pivoted at the edge of the nut above the end of the dog and adapted to lie in the other of said channels, said lever having a cam upon its pivoted end adapted to bear upon the beveled end of said dog and force the same into locking engagement with the bolt, and a latch for holding said lever in its locking position.

821,696. DISH-WASHING MACHINE. ALLEN W. BODELL, Wilmette, Ill. Filed July 12, 1905. Serial No. 269,282.



Claim.—1. A dish-washer comprising an aerial carrier for the dishes; means for moving said carrier; a plurality of paddle-wheels arranged alongside the path of the carrier; different water-sources from which the paddle-wheels are supplied; and means for rotating the paddle-wheels and causing them to throw the water taken from the different sources over and onto the contents of the carrier.

2. A dish-washer comprising a water-receptacle; a plurality of paddle-wheels arranged in a row; dish-carrying mechanism consisting of a track located alongside the row of paddle-wheels and running parallel with the axes of the paddle-wheels; a carrier supported on said track; step-by-step feed mechanism for engaging the carrier to advance it along the track; means for supplying the paddle-wheels with water, and means for rotating them toward the carrier at the upper side for throwing the water onto the dishes.

3. A dish-washer comprising a dish-carrying mechanism, consisting of a track; baskets supported on the track; step-by-step feed mechanism for engaging the baskets to advance them along the track; a plurality of paddle-wheels having their axes parallel with the track and located alongside thereof; means for supplying the paddle-wheels with water and means for rotating them toward the baskets at the upper side for throwing the water onto the dishes.

4. A dish-washer comprising a dish-carrying mechanism consisting of a track; baskets adapted to be supported and moved on the track; mechanism for advancing them therealong step by step with halting intervals between the successive steps; a plurality of paddle-wheels arranged successively alongside the track respectively opposite the halting positions of the baskets; means for supplying the paddle-wheels with water and for rotating them over toward the baskets at the upper side to throw water onto the dishes from the latter.

5. A dish-washer comprising a dish-carrying mechanism, consisting of a track; racks or baskets for holding the dishes lodged upon and adapted to be advanced along the track; mechanism for so advancing them; a receptacle in which both the track and the paddle-wheels are contained, having at the lower part compartments for the wheels respectively; means for supplying water to the last receptacle along the path of the dishes, said receptacles having communication successively from the last back to the first, and means for rotating the paddle-wheels in direction to carry them over toward the racks or baskets at the upper side for throwing the water from the receptacle onto the dishes.

6. In a dish-washer in combination with a receptacle for water, a dish-carrying mechanism comprising a track extending through said receptacle along one side; dish-carrying racks or baskets lodged on the track and adapted to be moved therealong; a feeder reciprocating under the path of the baskets having trip devices for engaging said baskets in one direction, adapted to be retracted idly under them in the opposite direction for advancing them step by step along the track, and means for showering water onto the dishes while they are thus advanced.

7. In a dish-washer, in combination with a receptacle for cleansing fluid; a track extending through said receptacle along one side; racks or baskets for carrying dishes mounted on and adapted to be advanced along the track; a shaft extending parallel with the track overhanging the receptacle; a plurality of paddle-wheels mounted on the shaft; means for revolving the shaft to cause the paddle-wheels to revolve over toward the track at the upper side for dipping the fluid from the receptacle and showering it onto the dishes, said receptacle being partitioned at the lower part to form separate compartments in which the paddle-wheels respectively dip; means for supplying fluid to the last of said compartments along the path of advance of the dish-carrier, said compartments having communication with each other for receiving the fluid, successively, from the last back to the first along the path.

8. In a dish-washer, in combination with a receptacle having compartments at the lower part for cleansing fluid; a track extending along one side of the receptacle; means operating on the track for advancing the dishes therealong; paddle-wheels dipping in the compartments respectively; means for revolving the wheels with the vanes concave side forward and toward the track at the upper side for dipping up the fluid from their respective compartments and throwing it onto the dishes.

9. In a dish-washer, in combination with a receptacle having compartments at the lower part at one side for cleansing fluid; a track extending along the other side of the receptacle, the receptacle being extended at both ends at that side; racks or baskets for holding the dishes, mounted on the track and adapted to be moved therealong from the extended portion at one end past the compartments and into the extended portion at the other end, and means for so moving them; paddle-wheels in the compartments respectively and means for revolving them in direction to cause them to dip the fluid from their respective compartments and throw the fluid from the upper side onto the racks or baskets.

10. In a dish-washer, in combination with a receptacle, the track extending along one side thereof, said receptacle having at the other side, opposite the middle portion, a plurality of compartments; a shaft extending parallel with the track above said compartments; paddle-wheels on the shaft revolved thereby in the several compartments; a reciprocating feeder having trip-fingers for engaging the carrier and actuating the same in one of the directions of its reciprocation, and operating connections from the shaft for actuating the feeder.

11. In a dish-washer, in combination with a receptacle, a track extending along one side thereof, said receptacle having at the other side opposite the middle portion a plurality of compartments; a shaft extending parallel with the track above said compartments; paddle-wheels on the shaft revolved thereby, each in its own compartment; a dish-carrier on the track; a feeder for actuating it, and operating connections from the shaft to the feeder.

12. In a dish-washer, in combination with a receptacle, a track extending along one side thereof, said receptacle having at the other side, opposite the middle portion, a plurality of compartments; a shaft extending parallel with the tracks above said compartments; paddle-wheels on the shaft revolved thereby, each in a separate compartment; a carrier; a reciprocating feeder having trip-fingers for actuating the carrier in one of the directions of its reciprocation; a crank-wheel and connections for rotating it; a rocking lever connected with the crank, and a link or pitman connected with such lever and with the feeder for reciprocating the latter.

13. In a dish-washer, a liquid-receptacle having a plurality of liquid-compartments arranged in a row and divided from each other; a plurality of paddle-wheels rotatively mounted, each in a separate one of said compartments; a track extending parallel with the row of compartments and the axes of the paddle-wheels therein; a carrier movable along said track; means for moving the carrier along the track and subjecting the contents thereof successively to the paddle-wheels which dip the liquid from their respective compartments and throw the same over onto the dishes.

14. A dish-washer comprising a liquid-receptacle; a row of compartments or stalls therein; a dish-carrier movable in front of the several compartments or stalls; paddle-wheels arranged each in one of said compartments or stalls, and means for actuating said wheels and causing them to dip the liquid from their respective compartments or stalls and shower the same over the dishes as the carrier arrives in front of the compartments or stalls.

15. A dish-washer comprising a liquid-receptacle; a row of compartments or stalls therein; a dish-carrier movable in front of the several compartments or stalls; paddle-wheels arranged each in one of said compartments or stalls; means for actuating said wheels and causing them to dip the liquid from their respective compartments or stalls and shower the same over the dishes as the carrier arrives in front of the compartments or stalls; and means for conducting the liquid from one compartment or stall to another without coming in contact with the dishes.

16. A paddle-wheel for a purpose such as indicated, made from a strip of metal folded upon itself at intervals to form offsetting two-ply flanges, and connected end to end, and heads or disks abutting on the lateral edges of the flanged element.

17. A paddle-wheel for the purpose indicated, comprising a middle element consisting of a single strip of metal folded upon itself at intervals to form two-ply flanges and having its ends joined, the two-ply flanges being curved concavo-convex all in the same direction, and heads secured to said metal element at opposite sides abutting on the ends of the flanges.

821,697. ELECTRIC-CURRENT CONTROLLER. LYNDE BRADLEY, Milwaukee, Wis., assignor to Compression Rheostat Company, Milwaukee, Wis., a Corporation of Wisconsin. Filed June 9, 1904. Serial No. 211,742.

Claim.—1. In an electric-current controller the combination of a resistance medium and mechanically-operated means adapted to subject said medium to pressure and to act with augmented power as the pressure upon said medium is increased, substantially as described.

2. In an electric-current controller the combination of a resistance medium whose electrical conductivity is increased when it is subjected to pressure, and manually-operated means adapted to exert an increasing pressure upon said medium with a substantially constant expenditure of energy, substantially as described.

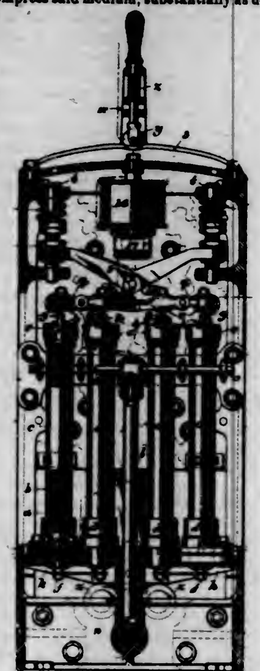
3. In an electric-current controller the combination of a compressible resistance medium whose conductivity is increased by pressure, and mechanically-operated means adapted to exert a gradually-increasing pressure upon said medium as its reaction under augmented pressure increases, without the application of correspondingly-increasing energy, substantially as described.

4. In an electric-current controller the combination of a resistance medium whose electrical conductivity is increased by pressure, a manually-operated lever adapted to exert pressure upon said medium, and means for increasing the power exerted by said lever as the reaction of said medium is augmented by increased compression, substantially as described.

5. In an electric-current controller the combination of a resistance medium whose electrical conductivity is varied by pressure, means for compressing said medium and means for storing the power exerted by the reaction of said medium upon said compressing means and for applying such stored power to the operation of said compressing means, substantially as described.

6. In an electric-current controller the combination of a compressible resistance medium whose electrical conductivity is in-

creased by pressure, a lever arranged to compress said medium and means for storing the power exerted by the reaction of said medium upon said lever when moved in one direction and for applying such stored power to the operation of said lever when moved in the other direction to compress said medium, substantially as described.



7. In an electric-current controller the combination of a compressible resistance medium, means for subjecting said medium to a varible pressure to gradually change its electrical conductivity and means tending to equalize the power applied to operate the controller for different degrees of compression, substantially as described.

8. In an electric-current controller the combination of a resistance medium, a lever arranged to gradually compress said medium and provided with a roller movably mounted thereon, a track or runway for said roller and means holding said roller with yielding pressure against said track or runway, which has a varying curvature or inclination constructed and arranged to hold said lever at rest in any position in which it may be left, substantially as described.

9. In an electric-current controller the combination of a resistance medium, a lever arranged to gradually compress said medium and provided with a roller movably mounted thereon, a runway gradually approaching the fulcrum of said lever toward the end opposite the initial or neutral position of the lever, and means tending to force said roller against said runway, substantially as described.

10. In an electric-current controller the combination of a compressible resistance medium whose electrical conductivity is varied by pressure, a lever arranged to gradually compress said medium and provided with a roller movably mounted thereon, a track or runway for said roller having a depression, and means yieldingly pressing said roller against said track and adapted to automatically complete the return movement of said lever to its neutral position, substantially as described.

11. In an electric-current controller the combination of a compressible resistance medium whose electrical conductivity is varied by pressure, a lever arranged to gradually compress said medium and provided with a roller movably mounted thereon, a track or runway having a depression, switch-contact pieces, one of which is carried by said lever, and means yieldingly pressing said roller against said track and adapted to automatically complete the return of said lever to its neutral position and to quickly break the circuit, substantially as described.

12. In an electric-current controller the combination of a resistance medium, a lever arranged to gradually compress said medium and provided with a roller movably mounted thereon, a runway having a depression and gradually approaching the fulcrum of said lever as it recedes from said depression, and means holding said roller against said runway and tending to move the lever away from said depression with gradually-increasing power, and to quickly complete its return movement to the neutral position when said roller is carried to one side of said depression, substantially as described.

13. In an electric-current controller the combination of a carriage, a compressible resistance medium mounted upon and movable with said carriage, an abutment against which said medium is arranged to be compressed, a lever adapted to move said carriage toward said abutment and provided with a roller movably mounted thereon, a track having a depression, and means yieldingly holding said roller against said track and adapted to quickly complete its return movement when the roller reaches said depression and to jar said resistance medium as the carriage is brought to a stop, substantially as described.

14. In an electric-current controller the combination of a resistance medium whose electrical conductivity is varied by pressure, means for exerting a variable pressure upon said resistance medium, and means for restoring and maintaining the normal resistance of said medium, substantially as described.

15. In an electric-current controller the combination of a resistance medium whose electrical conductivity is increased by pressure, means for subjecting said medium to a variable pressure, and means for jarring said medium whereby it is restored to its original state of high resistance, substantially as described.

16. In an electric-current controller the combination of a movable resistance medium whose electrical conductivity is increased by pressure, an abutment or bearing, and means for subjecting said medium to a variable pressure by moving it with more or less force against said abutment and for jarring said medium and restoring its normal resistance in moving it back to its initial position, substantially as described.

17. In an electric-current controller the combination of a suitable frame, provided with an abutment, a movable support, a case mounted upon said support and movable therewith toward said abutment, a compressible resistance medium inclosed in said case and means for moving said support with said case and resistance medium toward said abutment and gradually compressing said resistance medium, substantially as described.

18. In an electric-current controller the combination of a carriage or movable support, a number of resistance units mounted upon and movable with said carriage, a yielding equalizer toward and from which said resistance units are movable, and means for moving said carriage to and pressing said resistance units with more or less force against said equalizer, substantially as described.

19. In an electric-current controller the combination of a carriage or movable support, a number of resistance units mounted upon and movable with said carriage, a yielding equalizer and an operating-lever arranged to move said carriage and resistance units with more or less force against said equalizer and to subject said resistance units to an equally-distributed variable pressure, substantially as described.

20. In an electric-current controller the combination of a yielding equalizer, a carriage movable toward and from said equalizer, a number of resistance units whose electrical conductivity is increased by pressure, mounted upon said carriage, a lever adapted to move said resistance units with said carriage against said equalizer, and provided with a roller movably mounted thereon, a runway for said roller gradually approaching the fulcrum of said lever as it recedes from its neutral position, and means tending to force said roller against said runway, substantially as described.

21. In an electric-current controller the combination with a suitable frame, of a resistance medium whose electrical conductivity is varied by pressure, removably mounted in said frame and having detachable electrical connections and means for subjecting said medium to pressure, substantially as described.

22. In an electric controller the combination with a suitable frame, of a compressible resistance removably mounted in said frame, means insuring its being placed and held in the proper position in said frame, and means for subjecting said resistance to pressure, substantially as described.

23. In an electric-current controller the combination with a suitable frame, of a number of tubes loosely held at one end in said frame and containing a resistance medium whose electrical conductivity is increased by pressure, a rack on said frame provided with one or more removable rods for holding said tubes in place therein, and means for subjecting the resistance medium to a variable pressure, substantially as described.

24. In an electric-current controller the combination of a variable resistance, means for closing and opening the circuit through said resistance, a blow-out magnet arranged to extinguish arcs formed by breaking the circuit through said resistance, and means for cutting out said magnet before all the resistance has been cut out of the circuit and for bringing said magnet into the circuit before it is broken and while it includes such resistance, substantially as described.

25. In an electric-current controller the combination of a variable resistance, means for closing and opening the circuit through said resistance comprising movable and insulated contact-pieces, and a blow-out magnet connected across the space between the insulated contact-pieces over which the movable contact-piece passes only when high resistance is included in the circuit, substantially as described.

26. In an electric-current controller, the combination of a resistance medium whose electrical conductivity is varied by pressure, a stationary switch-base provided with insulated contact-plates connected and arranged to reverse the current and to open and close the circuit through said resistance medium, and an operating-lever provided with brushes or contact-pieces and adapted to be moved in opposite directions from a normal or neutral position and when moved from such position in either direction to first close the circuit through said resistance medium and then subject the same to a gradually-increasing pressure, substantially as described.

27. In an electric-current controller the combination of a number of resistance units whose electrical conductivity is varied by pressure, means for subjecting said resistance units to a variable pressure, and switching devices arranged to cut out or short-circuit said resistance units in groups or sections one after another when they are subjected to high compression and offer little or no resistance to the current, substantially as described.

28. In an electric-current controller the combination of a carriage, resistance mounted thereon and composed of material whose electrical conductivity is increased by pressure, an abutment against which said resistance is pressed by the movement of said carriage, and an operating-lever provided with a roller which is adapted to engage with said carriage and to approach a perpendicular to the carriage passing through the fulcrum of the lever as said lever is moved away from its neutral position, substantially as described.

29. In an electric-current controller the combination of a carriage, resistance mounted thereon and variable by compression, an abutment against which said resistance is pressed by the movement of said carriage, and an operating-lever provided in a line transverse to its axis with two rollers each of which is arranged to approach a perpendicular passing through the fulcrum of the lever to the carriage when said lever is moved in one direction away from its neutral position and to move said carriage toward said abutment with gradually-increasing power, substantially as described.

30. In an electric-current controller, a resistance unit composed of a column of current-conducting disks, having a cover of non-combustible insulating material loosely wrapped around it and inclosed in a protecting and supporting tube, substantially as described.

31. In an electric-current controller the combination of a compressible resistance medium, and a yielding equalizer against which said resistance is compressed, comprising a bar, screw-threaded guide-rods on which said bar is adjustably secured and adjustable springs tending to press said bar toward said resistance medium, substantially as described.

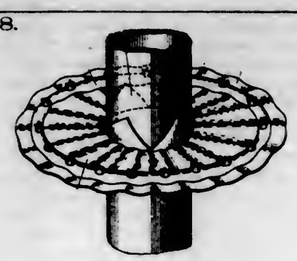
32. In an electric-current controller the combination of a compressible resistance medium and a carbon-tipped metallic electrode, adapted to bear against and form an electrical contact with said resistance medium, substantially as described.

33. In an electric-current controller the combination of a compressible resistance medium whose electrical conductivity is increased by compression and a lever adapted to compress said medium and to act thereon with greater power as the compression and reaction of said medium are increased, substantially as described.

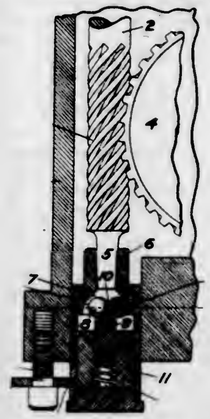
821,698. RADIATOR-DISK. BENJAMIN BRISCOE, Detroit, Mich. Filed Oct. 17, 1904. Serial No. 228,869.

Claim.—A radiator-fin comprising a sheet-metal disk having its central portion severed and struck out to form bearings for engagement with the conduit, a crimped or corrugated zone surrounding the central aperture, a bead surrounding said crimped or corrugated zone, the said bead having a series of apertures formed therein, the metal around said apertures being struck out to form projecting points.

821,698.



821,699. VERTICAL-SHAFT BEARING. EDGAR W. BROOMALL, Rochester, N. Y. Filed May 13, 1905. Serial No. 260,341.



Claim.—1. The combination with a shaft having a recess at its lower end, of a spring-seated plug in longitudinal alinement with the shaft and having a tapering upper end, a plurality of balls between the said recess and tapered end of the plug, and a support within which said parts are held.

2. The combination with a shaft having a recess at its lower end, of a longitudinally-bored block, a plug in said bore, balls between said plug and said recess, a spring on which the lower end of the plug is seated, a sleeve in which said parts are mounted and a cap closing the lower end of the sleeve and securing the said parts in place.

3. The combination with a sleeve having an annular internal shoulder around its upper end and a cap closing its lower end, of a bearing-collar passed up through the sleeve and having its lower end provided with a recess and an external shoulder, a longitudinally-bored block in said sleeve, a plug mounted in the bore of said block, balls between said plug and the recess, and a spring in the lower end of the bore of the block, held in place by said cap.

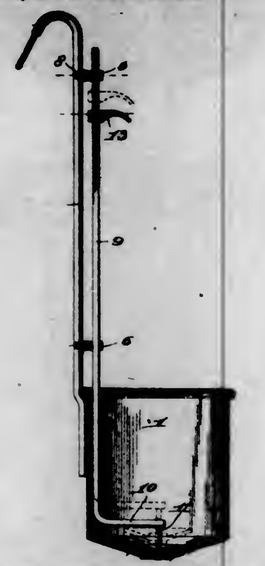
4. The combination with a sleeve having a cap closing its lower end, of a centrally-bored block held in the sleeve by said cap, a spring in the lower end of the bore of the block, a plug resting on the spring and having a conical upper end projecting above the block, a bearing-collar in the upper end of the sleeve and having a tapering recess in its lower side and balls between the conical plug and the said recess.

5. The combination with a sleeve having a contracted upper end and a cap closing its lower end, of a bearing-collar extending through said contracted upper end and having its lower end enlarged or shouldered to hold it from vertical displacement, a centrally-bored block held in the sleeve by said cap, a plug mounted in the block and balls between the plug and the said bearing-collar.

6. The combination with a casing, a sleeve mounted therein and having a cap closing its lower end, and means for adjusting the sleeve in the casing, of a bearing-collar mounted in the upper end of the sleeve, a spring-supported plug held in the sleeve by said cap and balls between said plug and the said collar.

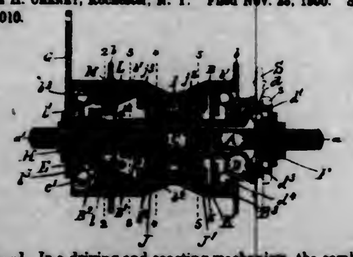
7. The combination with a casing, and a sleeve mounted therein and having a cap closing its lower end, of a shaft-bearing comprising upper and lower members within said sleeve and a spring held in place by said cap and forming a seat for the lower member of the bearing.

821,700. **MILK-DIPPER.** BURRIS BURRIS, St. Louis, Mo., assignor of one-seventh to J. W. McClellan, one-seventh to Thos. F. Erwin, one-seventh to Bismarck Levins, one-seventh to U. S. Bolen, one-seventh to Geo. McD. Wright, and one-seventh to W. J. Rodgers, St. Louis, Mo. Filed July 1, 1905. Serial No. 267,260.



Claim.—In a milk-dipper, a cup having a centrally-arranged discharge-opening in its bottom, a handle fixed to and extending upwardly from one side of said cup, a hook formed at the upper end of said handle, a pair of vertically-alined blocks detachably secured to the handle which blocks are provided with square openings, a square rod operating through the openings in said blocks and extending downwardly into the cup, the lower end of which rod is bent laterally, a pin carried by the outer end of the laterally-bent end, a flexible disk carried by the lower end of the pin and adapted to normally close the opening in the bottom of the cup, a finger-hold provided at one end with a square opening and arranged to be vertically adjusted upon the upper portion of the square rod, and a set-screw passing through the end of the finger-hold to lock it on said rod; substantially as specified.

821,701. **DRIVING, BRAKING, AND COASTING MECHANISM.** GEORGE H. CHENEY, Rochester, N. Y. Filed Nov. 28, 1900. Serial No. 38,016.



Claim.—1. In a driving and coasting mechanism, the combination of a hollow hub having bearings in its ends, a driving mechanism extending within the hub, a two-part clamping mechanism within the hub, means operated by said driving mechanism for moving the two parts of the clamping mechanism to and from each other, and a part attached to said hub and adapted to be clamped by the two parts of said clamping mechanism.

2. In a driving and coasting mechanism, the combination of a hollow hub having bearings at its ends, a driving mechanism including a part extending within the hub, an externally-threaded sleeve upon the part of the driving mechanism within the hub and longitudinally movable thereon but non-rotative with reference thereto, a two-part clamping mechanism upon said sleeve, said two parts being adapted to be moved to and from each other by said threaded sleeve, and a part within the hub and attached to the same and adapted to be clamped by said clamping mechanism.

3. In a driving and coasting mechanism, the combination of a hollow hub having bearings in its ends, a driving mechanism having a part extending within the hub, a sleeve having right and left threads thereon, said sleeve being upon said part of the driving mechanism within the hub and longitudinally movable thereon but non-rotative with reference thereto, a clamping mechanism consisting of two blocks upon the respective right and left hand threads of said sleeve and adapted to be moved to and from each other thereby, and a part within the hub and attached to the same and adapted to be clamped by said clamping mechanism.

4. In a driving and coasting mechanism, the combination of the hub B, having bearings in its ends, a driving mechanism comprising a sleeve C within the hub, a second sleeve I having external right and left hand threads thereon, the sleeve I being carried by the sleeve C and movable longitudinally thereon but non-rotative with reference thereto, internally-threaded conical clutch-blocks J, J′ upon the respective right and left hand threads of the sleeves I, and conical clutch-surfaces b^3, b^3 within the hub, adapted to be clamped by said blocks, and a brake mechanism actuated by said clamping mechanism.

5. In a coaster-brake mechanism, a hollow hub having bearings in its ends, a driving mechanism extending within the hub, a two-part clamping mechanism within the hub, means operated by said driving mechanism for moving the two parts of the clamping mechanism to and from each other, a part attached to said hub and adapted to be clamped by the two parts of said clamping mechanism, and a brake mechanism actuated by said clamping mechanism.

6. In a coaster-brake mechanism, the combination of a hollow hub having bearings in its ends, a driving mechanism extending within the hub, a two-part clamping mechanism within the hub, screw mechanism upon said driving mechanism adapted to operate the two parts of said clamping mechanism, a part within the hub and attached thereto and adapted to be clamped by the two parts of said clamping mechanism, and a brake mechanism actuated by said clamping mechanism.

7. In a coaster-brake mechanism, the combination of a hollow hub having bearings at its ends, a driving mechanism including a part extending within the hub, an externally-threaded sleeve upon the part of the driving mechanism within the hub, and longitudinally movable thereon but non-rotative with reference thereto, a two-part clamping mechanism upon said sleeve, said two parts being adapted to be moved to and from each other by said threaded sleeve, a part within the hub and attached to the same and adapted to be clamped by said clamping mechanism, and a brake mechanism actuated by said clamping mechanism.

8. In a coaster-brake mechanism, the combination of a hollow hub having bearings in its ends, a driving mechanism having a part extending within the hub, a sleeve having right and left threads thereon, said sleeve being upon said part of the driving mechanism within the hub and longitudinally movable thereon but non-rotative with reference thereto, a clamping mechanism consisting of two blocks upon the respective right and left hand threads of said sleeve and adapted to be moved to and from each other thereby, a part within the hub and attached to the same and adapted to be clamped by said clamping mechanism, and a brake mechanism actuated by said clamping mechanism.

9. In a coaster-brake mechanism, the combination of the hub B, having bearings in its ends, an axle A therefor, a driving mechanism comprising a sleeve C within the hub, a second sleeve I having external right and left hand threads thereon, the sleeve I being carried by the sleeve C and movable longitudinally thereon but non-rotative with reference thereto, internally-threaded conical clutch-blocks J, J′, upon the respective right and left hand threads of the sleeve I, conical clutch-surfaces b^3, b^3, within the hub adapted to be clamped by said blocks, and a brake mechanism actuated by one of said blocks.

10. In a driving and coasting mechanism, the combination of a frame, a hub revoluble on fixed bearings in the frame, a driving mechanism, a screw device rotating with said driving mechanism and capable of longitudinal movement with reference thereto, and a clamping mechanism consisting of two parts operated by said screw device to and from each other and adapted to clamp the hub for driving the same.

11. In a driving and coasting mechanism, the combination of a frame, a hub revoluble on fixed bearings in the frame, a driving mechanism, a screw device operated thereby, and a clamping mechanism consisting of two parts operated by said screw device to and from each other, and adapted to clamp the hub for driving the same.

12. A hollow wheel-hub, having bearings at its ends, and between said bearings a circumferential depression forming on the interior of the hub a surface adapted to be clamped by suitable mechanism for clamping and driving the hub, in combination with suitable clamping and driving mechanism.

13. In a brake mechanism for vehicle-wheels, the combination of a hub bearing an internal cylindrical brake-surface, a stationary block having a portion non-cylindrical on its exterior, a series of brake-blocks fitting around said non-cylindrical portion, a driving mechanism for said hub adapted to be released therefrom, and means operated by backward movement of the driving mechanism to cause the brake-blocks to turn upon said stationary block whereby they are pressed against said brake-surface.

14. In a brake mechanism for vehicle-wheels, the combination of a hub bearing an internal cylindrical brake-surface, a stationary block having a squared portion, a series of brake-blocks fitting around said squared portion, a driving mechanism for said hub adapted to be released therefrom, and means operated by backward movement of the driving mechanism to cause the brake-blocks to turn upon said stationary block whereby they are pressed against said brake-surface.

15. In a coaster-brake mechanism, the combination of a hub having bearings, a driving mechanism, a screw device rotating with said driving mechanism and capable of longitudinal movement with reference thereto, a clamping mechanism consisting of two parts operated by said screw device to move longitudinally in opposite directions to and from each other as the driving mechanism is moved forward or backward, and adapted to clamp the hub by movement to or from each other for driving the same on forward movement of the driving mechanism, and brake devices operated to press against the hub upon backward movement of the driving mechanism.

16. The combination of a hub, having a brake-surface and a clutch-surface therein, a non-rotative brake-shoe and a rotative clutch within the hub, said brake-shoe and clutch being movable longitudinally as to the hub, a driving mechanism and means actuated by the driving mechanism for operating said brake-shoe and clutch, whereby when the same are moved in one direction the clutch is set and the brake released, and when moved in the other direction, the brake is set and the clutch released, and when in an intermediate position, the hub is disconnected from both and said clutch is operated positively to clutch and to release the hub.

17. In a coaster-brake mechanism, the combination of a hollow hub having interior clutch and brake surfaces, a driving mechanism, friction means within the hub for connecting the driving mechanism with said clutch and brake surfaces, means within the hub opratively connected with the driving mechanism for moving said friction means longitudinally of the hub, and means adapted to be attached to the frame and extending within the hub for preventing rotation of the said friction means when engaging said brake-surface, substantially as described.

18. In a coaster-brake mechanism, the combination of the hollow hub B having bearings in its ends, a driving mechanism comprising a sleeve C within the hub, a second sleeve I having external right and left hand threads thereon, the sleeve I being carried by the sleeve C and movable longitudinally thereon but non-rotative with reference thereto, internally-threaded conical clutch-blocks J, J′, upon the respective right and left hand threads of the sleeve I, the clutch-block J being conical on its outer end, conical clutch-surfaces b^3, b^3, within the hub adapted to be clamped by said blocks, an abutment at one end of the hub, an internally conical brake-shoe in the other end of the hub composed of clutch-blocks L′, L^3, L^3, L^4, and the squared block E attached to the frame and fitting within said clutch-blocks.

19. In a coaster-brake mechanism, the combination of the hollow hub B having bearings in its ends, a driving mechanism comprising a sleeve C within the hub, a second sleeve I having external right and left hand threads thereon, the sleeve I being carried by the sleeve C and movable longitudinally thereon but non-rotative with reference thereto, internally-threaded conical clutch-blocks J, J′ upon the respective right and left hand threads of the sleeve I, the clutch-block J being conical on its outer end, conical clutch-surfaces b^3, b^3, within the hub adapted to be clamped by said blocks, an abutment at one end of the hub, an internally conical brake-shoe in the other end of the hub composed of clutch-blocks L′, L^3, L^3, L^4, the squared block E attached to the frame and fitting within said clutch-blocks, and a lip on said brake-blocks engaging the outer surface of the clutch-block J.

20. In a coaster-brake mechanism, the combination of the hollow hub B having bearings in its ends, a driving mechanism comprising a sleeve C within the hub, a second sleeve I having external right and left hand threads thereon, the sleeve I being carried by the sleeve C and movable longitudinally thereon but non-rotative with reference thereto, internally-threaded conical clutch-blocks J, J′, upon the respective right and left hand threads of the sleeve I, the clutch-block J being conical on its outer end, conical clutch-surfaces b^3, b^3, within the hub adapted to be clamped by said blocks, an abutment at one end of the hub, an internally conical brake-shoe in the other end of the hub composed of clutch-blocks L′, L^3, L^3 L^4, the squared block E attached to the frame and fitting within said clutch-blocks, and a spring device upon the clutch-block J for engaging notches on the inner surface of the brake-blocks and preventing the rotation of said clutch-block backward with relation thereto.

21. In a coaster-brake mechanism the combination of a hub having ball-bearings, a brake-surface and a clutch-surface; a brake-shoe; a friction-clutch movable longitudinally as to the hub and adapted to operate directly on the brake-shoe to force it into engagement with the hub when moving in one direction and directly on the clutch-surface when moving in the other direction; a driving mechanism; and operating means for said clutch, actuated by the driving mechanism whereby when the clutch is moved in one direction the clutch is set and the brake released, and when moved in the other direction the brake is set and the clutch released, and when in any intermediate position the hub is disconnected from both.

22. In a coaster-brake mechanism, the combination of a hub having ball-bearings; a brake-surface and a clutch-surface; an expansible brake-shoe; a friction-clutch, movable longitudinally as to the hub and adapted to operate directly both on the brake-shoe so as to expand the same without rotation, and on the clutch-surface; a driving mechanism; and operating means for said clutch actuated by the driving mechanism whereby when the clutch is moved in one direction the clutch is set and the brake released, and when moved in the other direction, the brake is set and the clutch released, and when in any intermediate position the hub is disconnected from both.

23. The combination of an axle, a wheel-hub mounted to rotate about said axle and provided with a brake-surface and a clutch-face, a brake-shoe located in and movable longitudinally in the hub, means for holding said brake-shoe from rotation, a longitudinally-movable clutch device arranged between said brake-shoe and said clutch-face on the wheel-hub, said clutch device having a driving clutch-face coöperating with said clutch-face on the hub, a shifting device for moving said clutch device longitudinally to move said brake-shoe longitudinally, means for operating the shifting device, and a holding device to hold said clutch device from rotation while being moved longitudinally.

24. The combination of an axle, a wheel-hub mounted to rotate about said axle and provided with a brake-surface and a clutch-face, a part consisting of a brake-shoe longitudinally movable in said hub and having a brake-surface coöperating with said brake-surface on the hub, means for holding the brake-shoe from rotation, a second part consisting of a longitudinally-movable clutch device arranged between said brake-shoe and said clutch-face on the hub, said clutch device having a driving clutch-face coöperating with said clutch-face on the hub and having a portion adapted to engage said brake-shoe to move the same longitudinally, means for shifting said clutch device longitudinally, and holding means carried by one of said parts and acting to hold said clutch device from rotation while being moved longitudinally.

25. The combination of an axle, a wheel-hub mounted to rotate about said axle and provided with a brake-surface and a clutch-face, a part consisting of a brake-shoe longitudinally movable in said hub and having a brake-surface coöperating with said brake-surface on the hub, means for holding the brake-shoe from rotation, a rotatable driving-sleeve, a second part consisting of a longitudinally-movable clutch device provided with a clutch-face coöperating with said clutch-face on the hub and with a face coöperating with a face on said brake-shoe, means operated by said driving-sleeve for shifting said clutch device longitudinally, and a friction device carried by one of said parts adapted to cause frictional engagement between said two parts.

26. The combination of an axle, a wheel-hub mounted to rotate about said axle and provided with a brake-surface and a clutch-face, a part consisting of a brake-shoe located in and longitudinally movable in the hub and provided with a braking-surface coöperating with said braking-surface on the hub, means for holding said brake-shoe from rotation, a rotatable driving-sleeve, a second part consisting of a longitudinally-movable clutch device provided with a clutch-face coöperating with said clutch-face on the hub, and with a face coöp-

erating with a face on said brake-shoe, screw-threaded means operated by said driving-sleeve for shifting said clutch device longitudinally, and a friction device carried by one of said parts and adapted to cause frictional engagement between said two parts.

27. The combination of an axle, a wheel-hub mounted to rotate about said axle and provided with a brake-surface and a clutch-face, a brake-shoe located in and longitudinally movable in the hub and provided with a braking-surface coöperating with said braking-surface on the hub and with a second friction-surface, means for holding said brake-shoe from rotation, a rotatable driving-sleeve, a longitudinally-movable clutch device provided with a clutch-face coöperating with said clutch-face on the hub, and with a face coöperating with a face on said brake-shoe, means operated by said driving-sleeve for shifting said clutch device longitudinally, and a friction-surface carried by said clutch device and adapted to frictionally engage with the friction-surface carried by the brake-shoe, substantially as set forth.

28. The combination of an axle, a wheel-hub mounted to rotate thereon and provided with a brake-surface and a clutch-face, a part consisting of a brake-shoe arranged in said hub between said brake-surface and said clutch-face and having a face coöperating with said brake-surface and a friction-face, a part consisting of a longitudinally-movable clutch device arranged between said shoe and said clutch-face on the hub, means for moving the same longitudinally, a clutch-face on said clutch device coöperating with said clutch-face on the hub, friction means carried by one of said parts, and means for holding said friction means toward said friction-face on the brake-shoe and said clutch-face on the hub, substantially as set forth.

29. The combination of an axle, a hub mounted to rotate thereon and provided with a brake-surface and a clutch-face, a brake-shoe located in and longitudinally and radially movable in said hub between said brake-surface and said clutch-face and having an internal face, means for holding said brake-shoe from rotation, a clutch-ring arranged between said brake-shoe and said clutch-face on the hub and surrounded by said internal friction-face of the brake-shoe, a spring-pressed friction holding device seated in a recess in said clutch-ring and with said internal face on the brake-shoe, and means for shifting said clutch-ring longitudinally.

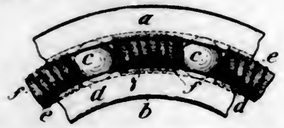
30. The combination of an axle, a hub mounted to rotate thereon and provided with a brake-surface and a clutch-face, a brake-shoe located in and longitudinally and radially movable in said hub between said brake-surface and said clutch-face and having internal notches and a friction-face, means for holding said brake-shoe from rotation, a clutch-ring arranged between said brake-shoe and said clutch-face on the hub and surrounded by said internal friction-face of the brake-shoe, a spring-pressed friction holding device seated in a recess in said clutch-ring and coöperating with said internal notches on the brake-shoe, and means for shifting said clutch-ring longitudinally, substantially as set forth.

31. The combination of an axle, a hub mounted to rotate thereon and provided with a brake-surface and a clutch-face, a brake-shoe arranged in the hub between said brake-surface and said clutch-face and provided with an internal face, means for holding said brake-shoe from rotation, a longitudinally-movable clutch-ring having a clutch-face coöperating with said clutch-face on the wheel-hub, and surrounded by said friction-faces on said brake-shoe, said clutch-ring having a slot or depression therein, a holding device located in said slot or depression in the clutch-ring, a spring in said slot beneath said holding device and acting to move the same outwardly and into engagement with the internal face on the brake-shoe, and means for moving said clutch-ring laterally and rotating the same, substantially as set forth.

32. The combination of an axle, a wheel-hub mounted to rotate thereon and having a brake-surface and a conical clutch-face, a brake-shoe arranged in said hub between said brake-surface and said conical clutch-face and having an internal face, means for holding said brake-shoe from rotation, a threaded operating-sleeve, a clutch-ring having threads running on the threads of said sleeve and arranged between said brake-shoe and said conical clutch-face on the hub, and provided with a conical clutch-face and extending within said internal face of the brake-shoe, said clutch-ring having a slot therein, a holding device arranged in said slot, a spring in said slot beneath said friction holding device and tending to move the same into engagement with said internal face on the brake-shoe, means for holding said friction holding device and spring from longitudinal movement on the clutch-ring, substantially as set forth.

33. The combination of an axle, a wheel-hub mounted to rotate about said axle and provided with a brake-surface and a clutch-face, a brake-shoe longitudinally movable in said hub and having a brake-surface coöperating with said brake-surface on the hub, means for holding the brake-shoe from rotation, a longitudinally-movable clutch device arranged between said brake-shoe and said clutch-face on the hub, said clutch device having a driving clutch-face coöperating with said clutch-face on the hub, and having a part adapted to engage said brake-shoe to move the same longitudinally, means for shifting said clutch device longitudinally, and holding devices carried by said clutch device and acting to hold the same from rotation while being moved longitudinally, substantially as set forth.

821,702. BALL-BEARING. ROBERT CONRAD, Berlin, Germany. Filed Aug. 13, 1904. Serial No. 220,653.



Claim.—1. In a ball-bearing, a yielding lubricating device interposed between adjacent balls, said balls being free to move toward each other and to compress the lubricating device between them.

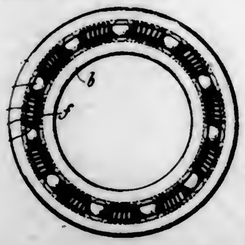
2. In a ball-bearing, a lubricating device interposed between adjacent balls, said device having a pair of end plates movable toward and from each other, and a lubricating material carried between said plates.

3. In a ball-bearing, a lubricating device interposed between adjacent balls, said device having a pair of end plates, a yielding connection between such plates, and a lubricating material carried by said connection.

4. In a ball-bearing, a lubricating device interposed between adjacent balls, said device having a pair of end plates, a spring between such plates, and a lubricating material carried by said spring connection.

5. In a ball-bearing, a lubricating device interposed between adjacent balls, said device having a pair of end plates inclosing a lubricating material, and having provisions for releasing the lubricating material from the space between said end plates to the inner raceway.

821,703. BALL-BEARING. ROBERT CONRAD, Berlin, Germany. Filed May 12, 1904. Serial No. 207,598.

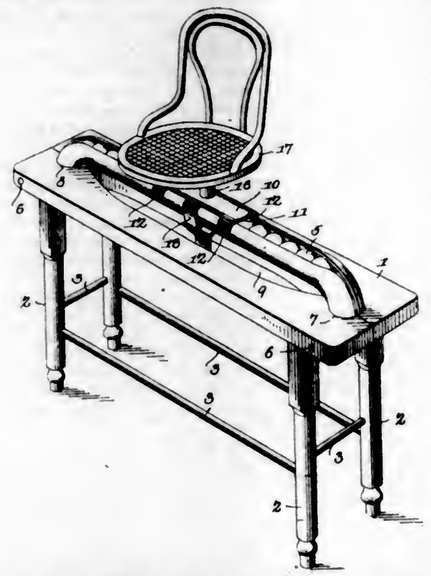


Claim.—1. A ball-bearing including in combination balls and separating devices between said balls, the intermediate portions of said ball-separating devices being of material capable of absorbing and gradually releasing a lubricant, said intermediate portions being combined with protectors, and with end plates separating the same from the balls.

2. A ball-bearing including in combination balls and separating devices between said balls, the intermediate portions of said ball-separating devices being of material capable of absorbing and gradually releasing a lubricant, said intermediate portions being combined with protectors for their outer parts consisting essentially of inverted troughs approximately oil-proof at the outer side to prevent the oil being thrown off by centrifugal force, and open at the inner side to permit absorption of oil.

821,704. STOOL. FRANKIE M. CONWAY, Ortonville, Minn. Filed Nov. 4, 1905. Serial No. 285,910.

Claim.—1. A seat comprising a platform, a ball-bearing track supported thereby and having one member disposed above and the other below the platform, and a seat-support having a portion to engage with the balls of the upper member, and with guides to engage the lower member.



2. A seat comprising a platform, a ball-bearing track supported thereby and having one of its members disposed above and the other below the platform, the balls in the upper member being exposed to view, and a seat-support having a portion to engage the balls in the last-named member and provided with means to hold it against twisting movement relatively thereto.

3. A seat comprising a platform, a ball-bearing track supported thereby, one member of which is disposed above and the other below the platform, the balls of the upper track member being exposed to view, a seat-support having a downward-extending portion to engage the balls of the upper member and ears to hold the support against twisting movement relatively to the track, and arms carried by the support and having members to engage the lower track member.

4. A seat comprising a platform, an approximately elliptical ball-bearing track supported thereby, the balls of the upper member being exposed to view, and a seat-support having portions to engage respectively with the balls of the upper member and with the lower member.

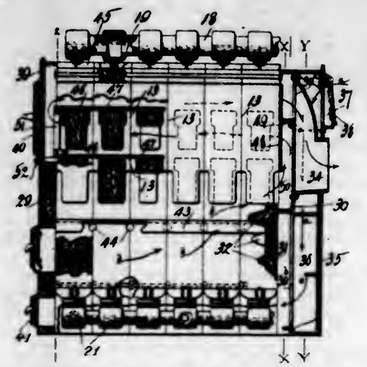
5. A seat comprising a platform, an approximately elliptical ball-bearing track carried thereby, the upper member of which is longitudinally slitted to expose the balls therein to view, and a seat-support having portions to engage the balls of the upper member and provided with means for holding it against twisting movement relatively thereto.

821,705. SECTIONAL BOILER. MAURICE A. COOK, Peoria, Ill., assignor to The Cook Heater Company, Peoria, Ill. Filed May 10, 1905. Serial No. 259,986.

Claim.—1. A sectional boiler, comprising duplicate, hollow, separable sections arched at the upper portions thereof to form an intermediate chamber, the lower portions of the sections forming a fire-chamber and an ash-pit, an air-chamber communicating with the ash-pit, and having a valved inlet, an exit for the products of combustion, a dome centrally of said sections above the same, and communicating vertical nipples supporting the dome upon the sections.

2. A sectional boiler comprising duplicate hollow sections provided at their upper portions with heads, having hanging members, said sections being formed with openings extending from front to rear thereof, the bottom parts of said members having branches connecting with the sections and formed with depending pockets.

3. A sectional boiler comprising duplicate hollow sections provided at their upper portions with abutting heads, having hanging members, said sections being formed with openings extending from front to rear thereof, the tops of said openings being in connection with the sections and formed with depending pockets.



4. A sectional boiler comprising duplicate hollow sections provided at their upper portions with coöperating heads, having hanging members, said sections being formed with openings extending from front to rear thereof, the parts forming the bottom and top of each of said openings being formed with depending pockets.

5. A sectional boiler, comprising duplicate series of hollow sections coöperating at the upper portions thereof to form an intermediate chamber, the lower portions of said duplicate series forming a fire-chamber and an ash-pit, headers connecting the sections of each series, a steam-dome connecting the sections of the two series, an air-supply, an exit for the products of combustion, and a water-back having forwardly-projecting pockets.

6. A sectional boiler, comprising duplicate series of hollow sections coöperating at the upper portions thereof to form an intermediate chamber, the lower portions of said duplicate series forming a fire-chamber and an ash-pit, headers connecting the sections of each series, a steam-dome connecting the sections of the two series, an air-supply, an exit for the products of combustion and a water-back having forwardly-projecting pockets, said steam-dome extending within said intermediate chamber between the sections.

7. A sectional boiler, comprising duplicate series of hollow sections coöperating at the upper portions thereof to form an intermediate chamber, the lower portions of said duplicate series forming a fire-chamber and an ash-pit, headers connecting the sections of each series, a steam-dome connecting the sections of the two series, an air-supply, an exit for the products of combustion and a water-back having forwardly-projecting pockets, said steam-dome extending within said intermediate chamber between the sections, and the adjacent sides of the sections of each series being constructed with recesses to form air-inlet passages, substantially as shown and described.

8. A sectional boiler, comprising duplicate series of hollow sections coöperating at the upper portions thereof to form an intermediate chamber, the lower portions of said duplicate series forming a fire-chamber and an ash-pit, headers connecting the sections of each series, a steam-dome connecting the sections of the two series, an air-supply, an exit for the products of combustion and a water-back having forwardly-projecting pockets, said steam-dome extending within said intermediate chamber between the sections, and the adjacent sides of the sections of each series being constructed with recesses to form air-inlet passages, substantially as shown and described, the inner surfaces of the sections having baffle-plates located above the inner ends of said passages.

9. A sectional boiler comprising duplicate hollow sections provided at their upper portions with abutting heads, having hanging members and being formed with openings extending from front to rear thereof, the upper portion of adjacent sections being spaced apart for a portion of their length to provide vertical passages therebetween which are adapted to be in communication with the openings in the said sections, and the tops of said openings being in connection with the sections and formed with depending pockets.

10. A sectional boiler comprising hollow sections provided at their upper portions with coöperating heads, having hanging members and being formed with openings extending from front to rear thereof, the upper portion of adjacent sections being spaced apart for a portion of their length to provide vertical passages therebetween which are adapted to be in communication with the openings in the

said sections, the parts forming the bottom and top of each of said openings being formed with depending pockets.

11. A sectional boiler comprising duplicate hollow sections provided at their upper portions with heads, having hanging members, said sections being formed with openings extending from front to rear thereof, the bottom parts of said members having branches connecting with the sections and formed with depending pockets, and said pockets being provided with a central partition, substantially as shown.

12. A sectional boiler comprising duplicate hollow sections provided at their upper portions with abutting heads, having hanging members, said sections being formed with openings extending from front to rear thereof, the tops of said openings being in connection with the sections and formed with depending pockets, and said pockets being provided with a central partition, substantially as shown.

13. A sectional boiler comprising duplicate hollow sections provided at their upper portions with coöperating heads, having hanging members, said sections being formed with openings extending from front to rear thereof, the parts forming the bottom and top of each of said openings being formed with depending pockets, and said pockets being provided with central vertical partitions substantially as shown.

14. A sectional boiler comprising duplicate hollow sections provided at their upper portions with heads, having hanging members and being formed with openings extending from front to rear thereof, the upper portions of adjacent sections being spaced apart for a portion of their length to provide vertical passages therebetween which are adapted to be in communication with the openings in the said sections, the bottom parts of said members having branches connecting with the sections and formed with depending pockets.

15. A sectional boiler, comprising duplicate, hollow, separable sections, arched at the upper portions thereof, to form an intermediate chamber, the lower portions of the sections forming a fire-chamber and an ash-pit, the adjacent sections formed with upper and lower intercommunicating openings to provide return-flues longitudinally disposed through the said sections, a closure for the rear end of the chamber formed intermediate the upper portions of said sections, an air-supply at the rear of the said boiler, an exit for the products of combustion in communication with the upper intercommunicating openings through the said sections and a dome centrally of said sections above the same, and communicating vertical nipples supporting the dome upon the sections.

16. A sectional boiler, comprising duplicate, hollow, separable sections, arched at the upper portions thereof to form an intermediate chamber, the lower portions of the sections forming a fire-chamber and an ash-pit, the adjacent sections formed with upper and lower intercommunicating openings to provide return-flues longitudinally disposed through the said sections and the upper portions of adjacent sections being spaced apart for a portion of their length to provide vertical passages therebetween which are adapted to be in communication with the openings through the said sections, a closure for the rear end of the chamber formed intermediate the upper portions of said sections, an air-supply at the rear of said boiler, an exit for the products of combustion in communication with the upper intercommunicating openings through the said sections, and a dome central of said sections above the same, and communicating vertical nipples supporting the dome upon the sections.

17. A sectional boiler comprising duplicate, hollow, separable sections arched at the upper portions thereof to form an intermediate chamber, the lower portions of the sections forming a fire-chamber and an ash-pit, the adjacent sections formed with upper and lower intercommunicating openings to provide return-flues longitudinally disposed through the said sections and the upper portion of adjacent sections being spaced apart for a portion of their length to provide vertical passages therebetween which are adapted to be in communication with the openings through the said sections, a closure for the rear end of the chamber formed intermediate the upper portions of said sections, dampers for shutting off the communication between the passages intermediate the said sections and the openings therethrough, means for operating the said dampers, an air-supply at the rear of said boiler, an exit for the products of combustion in communication with the upper intercommunicating openings through the said sections, and a dome central of said sections above the same, and communicating vertical nipples supporting the dome upon the sections.

18. A sectional boiler, comprising duplicate series of hollow sections coöperating at the upper portions thereof to form an intermediate chamber, the lower portions of said duplicate series forming a fire-chamber and an ash-pit, a frame spaced beyond the rear faces of the rearward sections of the duplicate series and provided with upper and lower openings therethrough, the adjacent sections formed with upper and lower intercommunicating openings to provide return-flues longitudinally disposed through the said sections, a plate supported by the said frame and forming a closure for the rear end of the chamber formed intermediate the upper portions of said sections, an air-supply at the rear of the said frame adapted to have communication with the ash-pit through the lower opening in the said frame, and an exit for the products of combustion in communication through the upper opening in the frame with the upper intercommunicating openings through the said sections.

19. A sectional boiler, comprising duplicate series of hollow sections coöperating at the upper portions thereof to form an intermediate chamber, the lower portions of said duplicate series forming a fire-chamber and an ash-pit, a frame spaced beyond the rear faces of the rearward sections of the duplicate series and provided with upper and lower openings therethrough, the adjacent sections formed with upper and lower intercommunicating openings to provide return-flues through the said sections, a plate supported by the said frame and forming a closure for the rear end of the chamber formed intermediate the upper portions of said sections, a steam-dome connecting the sections of the two series, a water-back disposed in front of the lower opening of the said frame and having forwardly-projecting pockets, an air-supply, and an exit for the products of combustion, the same being in communication with the upper intercommunicating openings through said sections.

20. A sectional boiler comprising duplicate series of hollow sections coöperating at the upper portion thereof to form an intermediate chamber, a closure for the rear end of the said chamber, the lower portions of said duplicate series forming a fire-chamber and an ash-pit, and the adjacent sides of the lower portions of the sections of each series being constructed with recesses to form air-inlet passages, inwardly and downwardly projecting baffle-plates attached to the inner faces of said sections in front of the inner ends of said passages, an air-supply controlled by a valve-inlet at the rear of the said boiler, and an exit for the products of combustion.

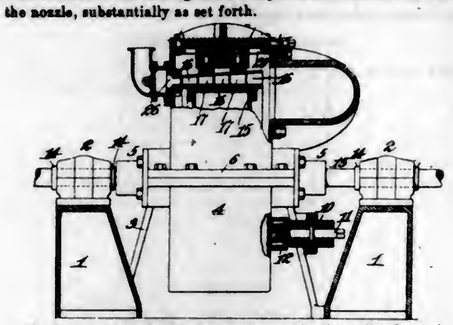
21. A sectional boiler, comprising duplicate series of hollow sections having intercommunicating openings to provide return-flues through the said sections, and coöperating at the upper portions thereof, to form an intermediate chamber, a closure for the rear end of the said chamber, the lower portions of said duplicate series forming a fire-chamber and an ash-pit, and the adjacent sides of the sections of each series being constructed with recesses to form air-inlet passages, and baffle-plates formed on each section and located in the front of the inner ends of said air-inlet passages, an air-supply controlled by a valve-inlet at the rear of the said boiler, and an exit for the products of combustion, the same communicating with the upper openings through the said sections.

22. A sectional boiler, comprising duplicate series of hollow sections having intercommunicating openings to provide return-flues through the said sections, and coöperating at the upper portions thereof, to form an intermediate chamber, a closure for the rear end of the said chamber, the lower portions of said duplicate series forming a fire-chamber and an ash-pit, and the adjacent sides of the sections of each series being constructed with recesses to form air-inlet passages, and baffle-plates formed on each section and located in the front of the inner ends of said air-inlet passages, a steam-dome connecting the sections of the two series, an air-supply controlled by a valve-inlet at the rear of the said boiler, an exit for the products of combustion, the same communicating with the upper openings through the said sections, and a water-back located at or near the rear end of the boiler and having forwardly-projecting pockets.

821,706. ELASTIC-FLUID TURBINE. CHARLES G. CURTIS, New York, N. Y., assignor, by mesne assignments, to General Electric Company, a Corporation of New York. Filed May 14, 1903. Serial No. 157,067.

Claim.—1. In an elastic-fluid turbine, the combination with the casing and the wheel therein carrying two or more rows of moving vanes, of one or more sets of intermediate vanes carried by a support which is adjustable lengthwise of the fluid passage-way so as to adjust the clearances between the moving and stationary vanes, substantially as set forth.

2. In an elastic-fluid turbine, the combination with the casing, the wheel therein carrying moving vanes, the stationary intermediate vanes and the nozzle, of means for adjusting the nozzle and stationary intermediate vanes simultaneously with relation to the moving vanes, and means for adjusting the stationary intermediate vanes with relation to the moving vanes independent of the adjustment of the nozzle, substantially as set forth.



3. In an elastic-fluid turbine, the combination with the casing and the wheel therein carrying moving vanes, of one or more sets of stationary intermediate vanes, means for adjusting said intermediate stationary vanes lengthwise of the fluid passage-way, and means for clamping such vanes in place, both said means being external to the casing, substantially as set forth.

4. In an elastic-fluid turbine, the combination with the casing and the wheel carrying moving vanes, of the intermediates supported by a covering-plate, covering an opening in the casing, means for adjusting the plate over said opening lengthwise of the fluid passage-way, and means for clamping the plate in different positions of adjustment substantially as set forth.

5. In an elastic-fluid turbine, the combination with the casing and the nozzle and stationary intermediates carried thereby, of the wheel within the casing carrying moving vanes, said wheel being held against displacement lengthwise of the shaft, means for adjusting the position of the casing upon the shaft so as to adjust the clearances between the moving and stationary parts of the turbine, and means for clamping the shell in each position of adjustment, substantially as set forth.

6. In an elastic-fluid turbine, the combination with the casing, the nozzle carried thereby, and the wheel within the casing carrying the moving vanes and held against displacement, of means for moving the casing lengthwise of the wheel-shaft, the stationary intermediate vanes carried by a covering-plate secured to the casing, and means for adjusting the covering-plate upon the casing, substantially as set forth.

7. In an elastic-fluid turbine, the combination with the casing and the nozzle and stationary intermediates carried thereby, of the wheel within the casing carrying moving vanes, the said wheel being held against displacement lengthwise of the shaft, means for adjusting the position of the casing upon the shaft so as to adjust the clearances between the moving and stationary parts of the turbine, and means for adjusting the intermediates in relation to the casing, substantially as set forth.

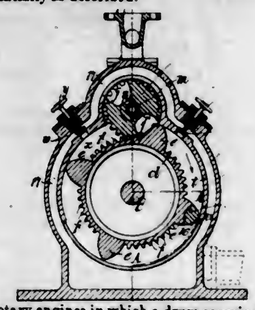
8. In an elastic-fluid turbine, the combination with the casing and the nozzle and stationary intermediates carried thereby, of the wheel within the casing carrying moving vanes, the said wheel being held against displacement lengthwise of the shaft, means for adjusting the position of the casing upon the shaft so as to adjust the clearances between the moving and stationary parts of the turbine, means for clamping the shell in each position of adjustment and means for adjusting the intermediates in relation to the casing, substantially as set forth.

9. In an elastic-fluid turbine, the combination with the casing and the wheel therein carrying two or more rows of moving vanes, of one or more sets of intermediate vanes, and means for adjusting the intermediate vanes lengthwise of the fluid passage-way so as to adjust the clearances between the moving and stationary vanes, substantially as set forth.

821,707. ROTARY ENGINE. WILLIAM R. DAWE, Sheffield, England. Filed Jan. 24, 1903. Serial No. 237,657.

Claim.—1. In rotary engines in which a drum carrying a plurality of pistons rotates within a casing, the combination with a steam-admission and cut-off valve geared directly to the said rotating drum, of an auxiliary valve situated within the said admission and cut-off valve, which auxiliary valve is adjustable axially for the purpose of regulating the amount of steam supplied to the engine and is adjustable angularly for the purpose of regulating the point of cut-off, substantially as described.

2. In rotary engines, in combination, a casing, a drum adapted to rotate within the casing, a plurality of pistons carried by said drum, a tubular steam-admission and cut-off valve provided with a plurality of central ports adapted to admit steam to act on said pistons, an auxiliary tubular valve situated within the said steam-admission and cut-off valve and provided with ports at its ends and means for adjusting the said auxiliary valve both axially and angularly, substantially as described.

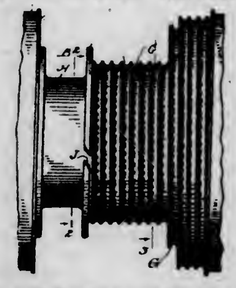


3. In rotary engines in which a drum carrying a plurality of pistons rotates within a casing, the combination with a steam-admission and cut-off valve of an auxiliary valve, ports provided in said auxiliary valve, recesses provided round said ports for supplying steam thereto, a governor acting on said auxiliary valve to move said ports out of coincidence with said recesses and so regulate the amount of steam supplied to the engine, substantially as described.

4. In rotary engines in which a drum carrying a plurality of pistons is mounted on a shaft and rotates within a casing, the combination with a steam-admission and cut-off valve of an auxiliary valve situated within the said steam-admission and cut-off valve and of a centrifugal governor mounted on the aforesaid shaft and adapted to give an axial movement to the said auxiliary valve, substantially as described.

5. In rotary engines, in combination, a casing, a drum adapted to rotate within the casing, three sets of teeth and a plurality of tooth-like pistons carried by said drum, the outside sets of teeth being placed different amounts in advance of the central set, substantially as described.

821,708. WINDING-DRUM. WILLIAM S. EDWARD, Sault Ste. Marie, Mich. Filed Mar. 20, 1905. Serial No. 251,053.
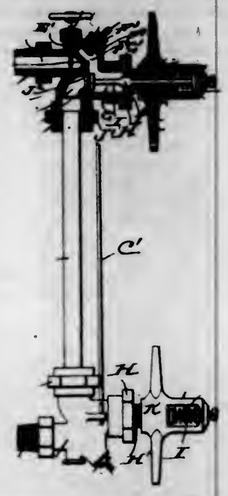


Claim.—1. A winding-drum provided with retaining devices at its ends, and intermediate means dividing the drum into complementary cable-receiving sections, one of said sections comprising cylindrical subsections of different diameter and a helical section connecting the subsections.

2. A winding-drum consisting of a working section formed of two cylindrical and scored subsections of different diameter, and a connecting helical section, and a storage-section for surplus cable of less diameter than either of the subsections.

821,709. AUTOMATIC WATER-GAGE. NORMAN O. FLEMING, Mansfield, Ohio. Filed Mar. 23, 1905. Serial No. 251,617.

Claim.—1. In a water-gage for boilers, the combination with an upper and lower casing, of a glass tube connecting the said casings, a plug carried by each casing, for connecting it to the boiler, a passage formed in the plug, a chamber provided with an automatic valve closing a passage leading to the glass tube and a passage connecting

the passage in the plug to the passage leading into the glass tube and an auxiliary valve adapted to close the passage connecting the plug to the chamber, for the purpose described.



2. In a water-gage for boilers, the combination with an upper and lower casing, of a glass tube connecting the said casings, means carried by each casing for securing it to the boiler, a passage leading into the casing provided with a valve-seat at its end, a chamber provided with an automatic valve closing the passage leading to the glass tube, and an auxiliary valve closing the passage leading into the casing and a passage connecting the said passages, as set forth.

3. In a water-gage for boilers, the combination with an upper and lower casing, of a glass tube connecting the said casings, a plug provided with a passage leading into a chamber in each casing, a passage leading into the glass tube, means for closing said passage, and means for closing the passage in the plug and an auxiliary passage connecting the passage in the plug to the passage leading to the glass tube, for the purpose described.

4. In a water-gage for boilers, the combination with an upper and lower casing, of a glass tube connecting said casings, a plug provided with a passage leading into a chamber in said casing, a valve-seat formed at the end of said passage a valve working in said chamber, adapted to be seated in said valve-seat, a passage leading from said chamber to the glass tube, a valve closing said passage and a passage connecting the two said passages controlled by a valve for the purpose described.

5. In a water-gage for boilers, the combination with an upper and lower casing, connected by a glass tube, a passage leading into the casing provided with a valve-seat, at its end, a chamber connected to the said passage by a passage, said passage being provided with a valve, said chamber being provided with an automatic valve closing the passage leading to the glass tube, and an auxiliary passage connecting the passages leading to the boiler and the glass tube said passage being controlled by a valve, as set forth.

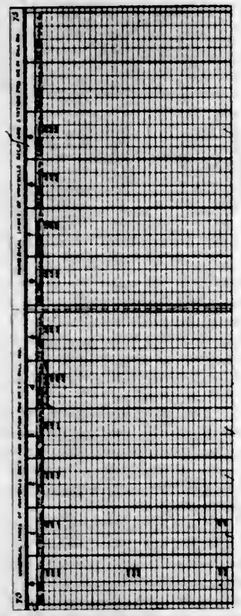
6. In a water-gage for boilers, the combination with an upper and lower casing, of a chamber formed in said casings, of a plug provided with a passage valve-controlled leading into each chamber, a passage leading from each casing, a glass tube connecting said passages and a passage connecting the passage in the plug, with the passage leading to the glass tube, for the purpose described.

821,710. INDEX SYSTEM. DOUGLAS B. FREEMAN, Tampa, Fla., assignor of one-half to Charles K. Grable, Tampa, Fla. Filed Oct. 9, 1905. Serial No. 282,089.

Claim.—1. An index-sheet having a sheet-number, and numbered columns of stock-figures, each column of figures being made up of the sheet-number and the column-number.

2. An index-sheet having a sheet-number, and numbered columns of stock-figures, each column of figures being made up of the sheet-number and the column-number prefixed thereto.

3. An index-sheet having a sheet-number, a series of ruled columns numbered consecutively from "0" to "9," each column having a column of stock-figures made up of the page-number and the column-number prefixed thereto.



4. An index-sheet having a sheet-number, and numbered columns of stock-figures, each column of figures being made up of the sheet-number and the column-number, there being a space in front of each column of figures for the entry of characters prefixed to the stock-figures.

5. An index-sheet having a sheet-number and a series of numbered ruled columns which are subdivided, one subdivision of each column having a column of figures made up of the sheet-number and the column-number, there being a space in front of each column of figures for the entry of characters prefixed to the stock-figures.

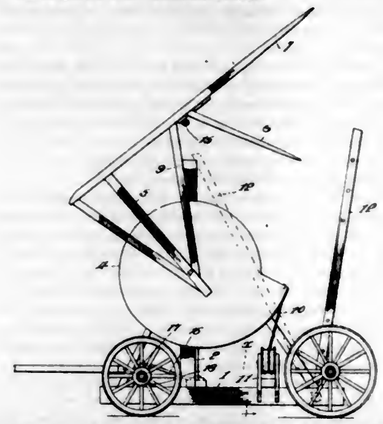
6. An index-book having its initial pages successively numbered "00," "01" and so on to "09," the succeeding pages being consecutively numbered from "10" upward, each page being divided into a series of columns numbered from "0" to "9," each column being subdivided into supplemental columns, and one supplemental column of each main column having a column of stock-figures made up of the page-number with the column-number prefixed thereto, there being a space in front of each column of figures for the entry of characters to be prefixed to the figures.

7. An index-sheet having a sheet-number, the sheet being divided into a plurality of main columns numbered consecutively from "0" to "9," each main column being subdivided into supplemental columns which have the respective headings "W. B. From," "W. B. Date," "W. B. No.," and "Station Pro.," the "W. B. No." column having a column of figures made up of the sheet-number with the respective main-column number prefixed thereto, there being a space in front of each column of figures for the entry of characters to be prefixed thereto.

8. An index-sheet having a sheet-number, the sheet being divided into a plurality of main columns numbered consecutively from "0" to "9," each main column being subdivided into supplemental columns which have the respective headings "W. B. From," "W. B. Date," "W. B. No.," and "Station Pro.," the "W. B. No." column having a column of figures made up of the sheet-number with the respective main-column number prefixed thereto, there being a space in front of each column of figures for the entry of characters to be prefixed thereto, the "Station Pro." column being divided into two columns which are respectively headed "Date" and "No."

9. An index-sheet having a sheet-number and a series of numbered main columns, each main column being subdivided into supplemental columns, one of the supplemental columns being subdivided and its subdivisions respectively headed "Date" and "No.," the adjacent supplemental column being provided with a column of stock-figures made up of the sheet-number to which is prefixed the main-column number, there being a space in front of the column of figures for the entry of characters to be prefixed thereto.

821,711. HAY-STACKER. JACOB M. GANOW, Pullman, Wash. Filed Sept. 20, 1905. Serial No. 279,335.



Claim.—1. In a device of the character described, the traveling wagon provided with a vertical framework mounted thereon, a rake supported by said framework and mounted to swing in a vertical plane with its prongs extending above the same, means for swinging said rake, and a pivoted ladder carried by said wagon arranged to be supported with its free end resting against the upper end of said framework.

2. In an apparatus of the character described, the traveling wagon, a vertical framework mounted on the body thereof, a transverse shaft mounted in said framework, pulleys mounted on said shaft and provided with radial arms, a depositing-rake carried by said arms and arranged to be swung thereby in front of said framework and up over the upper end of the same, cables secured to said pulleys for the actuation thereof, and a ladder pivotally mounted at its lower end on the body of the wagon in the rear of said framework.

3. In an apparatus of the character described, the traveling wagon, a vertical framework mounted thereon, a transverse shaft mounted in said framework, a swinging rake supported by said shaft and mounted to swing in front of the framework and up over the upper end of same, said rake being provided with eyes and latches suspended from the framework and designed to engage with said eyes whereby to maintain the rake in its uppermost position.

4. A hay-stacker comprising a wagon, a vertical framework mounted on the body thereof, a transverse shaft mounted in said framework, relatively large grooved pulleys on said shaft and provided with radial arms, a depositing-rake secured to the free ends of said arms and said rake being provided with eyes, cables secured to the said pulleys and arranged to turn the same whereby to swing the rake upwardly against the upper cross-bar of the framework at one side thereof, a detachable connection engaged to enter said eyes to maintain the rake in its uppermost position, a ladder pivotally mounted at its lower ends on the rear end of the wagon-body and designed to rest with its upper end against the other side of said cross-bar, and detachable means for maintaining the front axle of the wagon in a rigid position.

821,712. STROPPING-MACHINE. EDWARD B. GIFFORD, Adrian, Mich., assignor to Henrie Clauss, Fremont, Ohio. Filed Jan. 23, 1905. Serial No. 242,219.



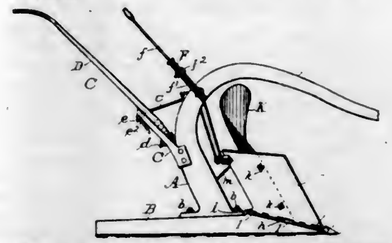
Claim.—1. In a blade-stropping device, the combination of the movable blade-holder, the friction-roller and movable arm, gearing connecting said roller and arm, said arm having a slidable engagement with the blade-holder.

2. In a blade-stropping device, the combination with the blade-holder, a friction-roller journaled between the ends of the blade-holder, a pivoted arm, gearing connecting said roller and arm, a pin upon the blade-holder having a slidable engagement with said arm, and a spring in said arm engaging said pin.

3. In a blade-stropping device, the combination with the movable blade-holder, of a friction-roller, a gear-wheel thereon, a second gear-wheel meshing therewith, a shaft upon which said second gear-wheel is fixed, a movable arm fixed to the end of said shaft, said arm having a slot therein and a socket extending from said slot, a coiled spring seated in said socket, and a pin upon the blade-holder lying in said slot and engaging said pin.

4. In a stropping device, the combination of the blade-holder having a longitudinal slot in the bottom thereof, a friction-roller, means connected with said roller for swinging the blade-holder from side to side, a slidable spring-arm in the blade-holder, said arm having a rivet engaging in the slot in the bottom of the blade-holder and having jaws adapted to clamp the handle of the razor.

821,713. PLOW. HYRUM S. HARKER, Murray, Utah, assignor of one-half to Jesse Hulse, Murray, Utah. Filed Aug. 21, 1905. Serial No. 275,153.



Claim.—1. In a plow a runner having an inclined upper front part, eyes on said front part, a share having eyes on its lower edge alinable alternately with the eyes on said runner, a bolt through said eyes and a head on said bolt having cutting edges, for the purpose herein described.

2. In a reversible plow a vertical support on the rear part of the plow-body, a vertical lever pivoted on said support, a spring-catch on said lever adapted to engage notches on said support, lateral branches on said lever and rods connecting said branches with hinged plowshares as described.

3. In a plow a double right and left moldboard detachably secured to adjustable shares and a brace having a ball at each end adapted to engage at one end a socket in the plow-body and at its other end a socket in said moldboard as described.

4. A plow provided with a laterally-movable lever having lateral branches and mounted on the plow-body, shares hinged by a bolt to the plow-runner, a reversible head having cutting edges on said bolt, rods pivotally connecting said lever branches with said shares, a double moldboard removably attached to said shares and a movable brace to support said moldboard as herein set forth.

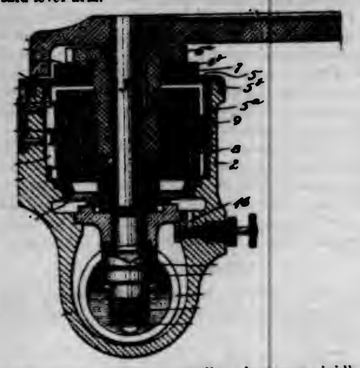
5. A reversible plow comprising a body, a vertical support on the rear part of said body, a vertical lever pivoted on said support, a spring-catch on said lever adapted to engage notches on said support, lateral branches on said lever, rods connecting said branches with the plowshares, a runner having an inclined upper front part, eyes on said front part, said shares having eyes on their lower edges alinable alternately with the eyes on said runner, a bolt through said eyes and a head on said bolt having cutting edges as herein set forth.

821,714. DOOR CLOSER AND CHECK. WILLIAM K. HENRY, New Britain, Conn., assignor to P. & F. Corbin, New Britain, Conn., a Corporation of Connecticut. Filed May 6, 1905. Serial No. 259,062.

Claim.—1. In a door-closer, a spindle, a lever-arm rigidly secured thereon and having a rearward extension, a spring surrounding the spindle, a stop at the rear of the closer-case and externally thereof, and adjustable connecting means engaged by the ends of the spring and arranged to engage said lever-arm extension and said stop, whereby the former is normally held under spring restraint in a definite position relatively to said stop.

2. In a door-closer, a spindle, a lever-arm rigidly mounted thereon and having a rearward extension, a spring surrounding said spindle, a stop at the rear of the closer-case and externally thereof, a rotatable member engaging one end of said spring and in turn engaging one side of said lever extension and said stop, a second rotatable member engaged by the other end of the spring and in turn engaging

the other side of said lever extension and said stop, said rotatable members being independently movable upon the rotation of said spindle by said lever-arm.



3. In a door-closer, a casing, a spindle, a lever-arm rigidly secured thereon and having a rearward extension, a flat coiled spring surrounding the spindle, a stop at the rear of the said casing and externally thereof, a sleeve rotatably mounted on said spindle and engaging the inner end of said spring, a second rotatable member surrounding said sleeve and engaging the outer end of said spring, said rotatable members engaging respectively on opposite sides of the aforesaid lever extension and stop, but being independently rotatable by the movement of said lever-arm.

4. In a door-closer, a casing, a spindle, a flat coiled spring, a sleeve rotatably mounted on the spindle and engaging the inner end of the spring, a second rotatable member surrounding said sleeve and engaging the outer end of the spring, lugs on said rotatable members above the spring, a lever having a rearward hooked extension adapted to stand between said lugs, and a stop on the rear of the casing adjacent said lever extension but out of the path of movement of the same, said lugs being arranged to engage against said stop.

821,715. SPLIT OR DIVIDED PULLEY. EDWIN A. HILDRETH, Harvard, Mass. Filed Mar. 16, 1905. Serial No. 250,373.



Claim.—1. A split pulley comprising separable halves each having an arm constituting a broad, flat hub-seat having a transverse recess parallel to the pulley-axis, the two recesses being diametrically opposite when the pulley-halves are assembled, combined with a two-part detachable hub each member thereof having an enlarged flat base to rest directly on the adjacent hub-seat and provided with a projecting portion to enter the transverse recess in the seat, whereby the hub members are accurately positioned and centralized with relation to each other and to the axis of the pulley, there being cooperating means on each seat and hub-base to prevent reversal of the hub members, and means coöperating simultaneously with the two hub members and the pulley-halves to clamp the latter together and bind the former upon a shaft.

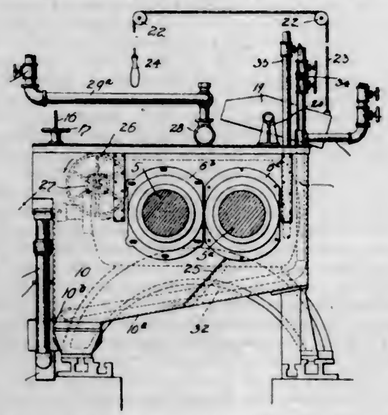
2. In a split pulley, broad, flat hub-seats and detachable two-part hub members, there being lugs on the one and recesses in the other parallel to the pulley-axis, the lugs entering the recesses and centralizing the hub members with relation to the pulley-axis, each hub member having an enlarged base to rest directly on the adjacent hub-seat, each of the latter having a non-centralized pit or depression, there being a lug on each hub-base to enter the same and prevent reversal of the hub member, and clamping-bolts passed directly through the hub-seats and the hub members, to clamp the halves of the pulley together and bind the hub members upon a shaft.

3. A split pulley comprising separable halves, each comprising a rim-section and a rigidly-attached flat hub-seat having a transverse central recess therein parallel to the pulley-axis, a detachable, two-part hub, each member having a flat base provided with positioning-lugs to enter the recess in the seat and thereby accurately centralize the hub members with relation to the pulley-axis, there being other means to prevent axial movement of the hub members on the hub-seats, and clamping-bolts extended through the seats and the hub members to simultaneously connect the halves of the pulley to the hub members and to clamp the latter upon a shaft.

4. A split pulley comprising separable halves each having a hub-seat, means to clamp the halves together with the seats opposed and in parallelism, each seat having a transverse recess parallel to the pulley-axis, and diametrically opposite the recess in the other seat, and a second recess in each seat offset from the transverse recess, combined with a two-part, detachable hub each member thereof having a semicylindrical recess for the shaft and a flat base adapted to rest on the seat and provided with lugs to enter the recesses therein and centralize the shaft-recess with relation to the pulley-axis and prevent reversal of the hub members.

5. A split pulley comprising separable halves each having a hub-seat, means to clamp the halves together with the seats opposed and in parallelism, a semicircular rim-section and a rigidly-attached, flat hub-seat provided with an elongated alining recess and a laterally offset pit or recess, a two-part hub the members of which have flat bases to rest upon the seats and projections to enter the recesses therein, to accurately position and centralize the hub members with relation to each other and to the axis of the pulley, and clamping-bolts extended through the seats and the bases of the hub members, to clamp the halves of the pulley together and bind the hub members upon a shaft.

821,716. MACHINE FOR WASHING RUBBER. FREDERIC C. HOOD, Brookline, Mass. Filed Mar. 14, 1905. Serial No. 250,109.



Claim.—1. In a device for washing rubber, a tank, a pair of coacting rolls therein at a fixed elevation and means for maintaining the washing liquid therein at a height above the nip of the rolls, substantially as described.

2. In a device for washing rubber, a tank, a pair of coacting rolls journaled therein with means for operating them, means for supplying washing liquid thereto to maintain a level above the nip of the rolls, and a liquid-outlet at the surface for removing floating impurities, substantially as described.

3. In a device for washing rubber, a tank, a pair of coacting rolls journaled therein, an outlet at the bottom of the tank, a second outlet from the surface, and means whereby liquid may be supplied to the tank in excess of that passing out by the bottom outlet, substantially as described

4. In a device for washing rubber, a tank, a pair of coacting rolls journaled therein, means for maintaining liquid in said tank at a level above the nip of the rolls, and means for automatically returning the rubber to the nip of the rolls as it rises to the surface, substantially as described.

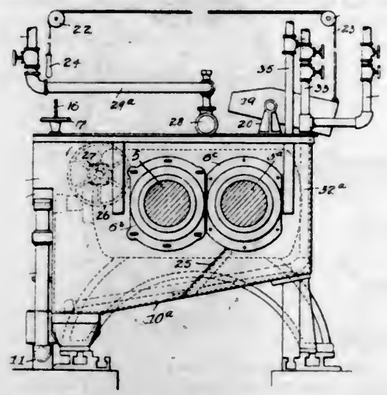
5. In a device for washing rubber, a tank, a pair of coacting rolls journaled therein, means for supplying liquid to the tank, a liquid-outlet near the upper part of the tank, and a device located between the rolls and said outlet and operated so as to automatically return the rubber to the upper side of the rolls, substantially as described.

6. In a device for washing rubber, a tank, a pair of rolls journaled therein in the same horizontal plane, means located above the nip of the rolls for supplying hot and cold liquid thereto, upper and lower water-outlets from said tank with means for regulating the flow of liquid therethrough, substantially as described.

7. In a device for washing rubber, a tank, a pair of rolls journaled side by side therein, a liquid-supply, a surface outlet at the front of the machine where the washed rubber is removed, a tilting hopper at the back of the machine for holding a charge of unwashed rubber, and means extending to the front of the machine for tilting said hopper to deliver its contents upon the rolls, substantially as described.

8. In a device for washing rubber, a tank, a liquid-supply thereto, washing-rolls journaled therein in the same horizontal plane, a liquid-outlet from the tank above the level of the nip of the rolls, and means located in the tank for varying the temperature of the liquid therein, substantially as described.

821,717. PROCESS OF PURIFYING RUBBER. FREDERIC C. HOOD, Brookline, Mass. Filed Mar. 24, 1905. Serial No. 251,324.



Claim.—1. The herein-described process of purifying rubber and the like which consists in compressing or shredding it between coacting rolls and passing it through a body of purifying liquid whereby the liquid has access to all sides of the material permitting the heavier impurities to fall through the liquid and the lighter impurities to rise, substantially as described.

2. The herein-described process of purifying rubber and the like which consists in compressing or shredding it while suspended in a body of purifying liquid whereby the liquid has access to all sides of the material permitting the heavier impurities to fall through the liquid and the lighter impurities to rise, substantially as described.

3. The herein-described process of purifying rubber and the like, which consists in passing it between coacting rolls while submerged in the purifying liquid, and automatically returning the sheet issuing from between the rolls to the nip of the rolls for a fresh pass, substantially as described.

4. The herein-described process of purifying rubber and the like which consists in passing it between coacting rolls while submerged in a current of purifying liquid, and utilizing said current to return the rubber issuing from the rolls to the nip of the rolls for a fresh pass, substantially as described.

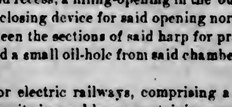
821,718. MOLD FOR CASTING METALS. JOHN JANITSCHEK, Mount Vernon, N. Y. Filed Dec. 7, 1905. Serial No. 290,830.

Claim.—1. A mold for casting metals comprising three parts of plaster-of-paris, two parts of ashes, one part of whiting and one part of coarsely-ground slag-wool, with water, substantially as herein specified.

2. A mold for casting metals comprising plaster-of-paris, coarsely-ground slag-wool, ashes and water in about the proportions designated, the inner face being compacted upon a suitable pattern with a thin uniform coating of oil interposed, all substantially as herein specified.

3. A mold for casting metals composed of plaster-of-paris, slag-wool, whiting, ashes, alum, and water, combined in substantially the proportions and having porosity hardness and strength, as herein set forth.

821,719. TROLLEY. MINAS H. KASHIAN, Amesbury, Mass. Filed Sept. 26, 1904. Serial No. 225,751.



Claim.—1. A trolley for electric railways, comprising a wheel-frame having a hub provided with an axle projecting at its opposite ends, a supporting-harp, removable lubricating journal-boxes carried by said harp supporting the opposite ends of said axle, and a removable annular wear-plate carried by said wheel-frame, the latter comprising two separable parts provided with means coöperating with said axle for clamping said wear-plate between them.

2. A trolley for electric railways, comprising a wheel-frame provided with a hub, having a fixed axle projecting rigidly therefrom at its opposite ends, and an annular wear-plate peripherally grooved to engage the trolley-wire, said frame comprising two separable parts, one of which is laterally removable from the other endwise of said axle, clamping means carried by said parts, recesses formed in said frame opening laterally, and said wear-plate having projections on its inner side to interlock with said recesses.

3. A trolley for electric railways, comprising a wheel-frame provided with a hub, having a fixed axle projecting rigidly therefrom at its opposite ends, and an annular wear-plate peripherally grooved to engage the trolley-wire, said frame comprising two separable parts, one of which is laterally removable from the other endwise of said axle, clamping means carried by said parts, said separable parts and wear-plate having their coöperating surfaces conical in shape and inclined toward each other for affording strong gripping engagement with each other when clamped together.

4. A trolley for electric railways, comprising a wheel-frame having a hub, provided with an axle projecting at its opposite ends, a supporting-harp composed of horizontally-separable sections, removable lubricating journal-boxes carried by said harp supporting the opposite ends of said axle, said boxes each having a central recess closed at its outer end for surrounding said axle, and a closed annular oil-chamber about said recess provided with a small opening into said recess, and said harp having recesses for removably retaining said boxes when the harp is closed.

5. A trolley for electric railways, comprising a wheel-frame having a hub provided with an axle projecting at its opposite ends, a supporting-harp composed of horizontally-separable sections, removable lubricating journal-boxes carried by said harp supporting the opposite ends of said axle, each of said boxes having a central recess closed at its outer end for receiving the end of said axle, and a closed oil-chamber surrounding said recess and provided with a small opening into said recess on the under side thereof when the box is in working position, and said harp having recesses for removably retaining said boxes when the harp is closed.

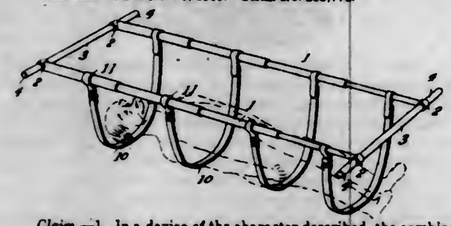
6. A trolley for electric railways, comprising a wheel-frame having an axle, a trolley-harp composed of horizontally-separable sections, a removable annular journal-box fitted to a correspondingly-shaped seat in the adjacent faces of the sections of said harp, a central recess in said box for the end of the said axle, a closed oil-chamber surrounding said recess, a filling-opening in the outer peripheral wall of said box, a closing device for said opening normally projecting therefrom between the sections of said harp for preventing rotation of said box, and a small oil-hole from said chamber into the bottom of said recess.

7. A trolley for electric railways, comprising a trolley-wheel having an axle, opposite journal-boxes containing annular lubricating-chambers fitting over the ends of said axle and removable endwise therefrom, a trolley-harp composed of two parts separable horizontally and having coöperating recesses for removably receiving said boxes, said boxes and harp having means for automatically re-

taining said wheel, boxes, and harp in proper operative position simply by the placing of said wheel and boxes in said recesses and closing the harp.

8. A trolley for electric railways, comprising a trolley-wheel, having an axle projecting at its opposite ends, cap-like journal-boxes containing annular lubricating-chambers fitting over the ends of said axle and removable therewith, a trolley-harp composed of two parts horizontally pivoted together at their outer ends, and containing recesses for clamping between them said journal-boxes, the latter containing means for automatically holding them in proper operative position when the trolley-harp is closed, said harp at the inner end of its said parts having a sleeve held in yielding engagement with said parts for locking the harp closed.

821,720. **DEVICE FOR HANDLING CORPSES.** GEORGE B. KIDD, Bloomfield, Ind., assignor of one-half to John B. McLaughlin, Bloomfield, Ind. Filed Nov. 3, 1905. Serial No. 285,770.

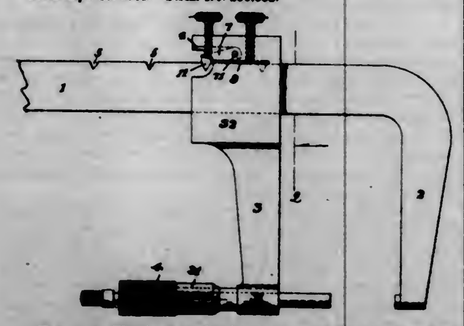


Claim.—1. In a device of the character described, the combination of a frame comprising telescoping members, said telescoping members having a threaded connection when distended, and suspending means connected to said frame.

2. In a device of the character described, the combination of a frame comprising spaced side pieces formed of telescopic sections and connected by end bars, and suspending-straps having one of their ends permanently secured to one of the sides of the frame while their opposite ends are detachably connected to the opposite side of the frame.

3. In a device of the character described, the combination of a framework comprising side pieces formed in telescopic sections and connected by end bars, the outer end of each of the larger sections being provided with internally-projecting threads which coöperate with externally-projecting threads on the inner end of the next smaller section to form a rigid joint when the sections are distended, while the smallest section telescopes freely within the next larger section to allow the length of the framework to be adjusted to suit the length of the corpse, and suspending-straps connecting opposite sides of the framework.

821,721. **MICROMETER.** LOUIS KREUTZKAMP, Newark, N. J. Filed Sept. 25, 1905. Serial No. 280,008.



Claim.—1. The improved micrometer-gage herein described, comprising a beam having a fixed jaw and a movable jaw slidably disposed thereon, the said movable jaw having an enlargement in its beam-perforation to receive a pawl, a pawl pivotally arranged in said perforation, and a set-screw seated in said movable jaw and engaging the pawl or dog to hold the same, substantially as set forth.

2. The improved micrometer-gage herein described, comprising a notched beam having a fixed jaw extending laterally therefrom, a movable jaw arranged on said beam, a micrometer-screw having its bearings on said jaw, a pawl pivoted on said jaw and adapted to enter a notch of the beam, a set-screw adapted to hold said pawl within said notch, and a spring for throwing the pawl out of the notch, substantially as set forth.

3. The improved micrometer-gage herein described, comprising a notched beam having a fixed jaw extending laterally therefrom, a movable jaw arranged on said beam, a micrometer-screw having its bearings on said jaw, a pawl pivoted on said jaw and adapted to enter a notch of the beam, a set-screw adapted to hold said pawl within said notch, and a spring for throwing the pawl out of the notch, substantially as set forth.

4. The improved micrometer-gage herein described, comprising a notched beam having a fixed jaw extending laterally therefrom, a movable jaw arranged on said beam, a micrometer-screw having its bearings on said jaw, a pawl pivoted on said jaw and adapted to enter a notch of the beam, a set-screw adapted to hold said pawl within said notch, and a second set-screw seated in the movable jaw at a distance from the first and bearing against the spring, substantially as set forth.

821,722. **STRIKING-BAG OR OTHER FLUID-RECEPTACLE.** CLARENCE A. LINDSAY, New York, N. Y. Filed June 24, 1905. Serial No. 266,834.



Claim.—1. An elastic fluid-receptacle provided with a tubular neck, an annulus within the neck, a flexible tube through which the receptacle is inflated, secured to said annulus and having a bulbous inner end constructed to form a valve exposed to the pressure of the fluid within the receptacle, and a detachable closure in the outer end of said tube.

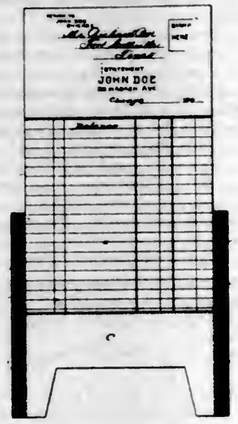
2. An elastic fluid-receptacle provided with a tubular neck, an annulus within the neck, a flexible tube through which the receptacle is inflated, secured to said annulus, having a bulbous inner end constructed to form a valve, and a contraction adjacent to said inner end, and a detachable closure in the outer end of the tube.

3. An elastic fluid-receptacle provided with a tubular neck, an annulus within the neck, a flexible tube through which the receptacle is inflated, secured to said annulus and having a valve within the receptacle, an opening surrounded by a resilient or flexible wall, and a detachable closure in said opening.

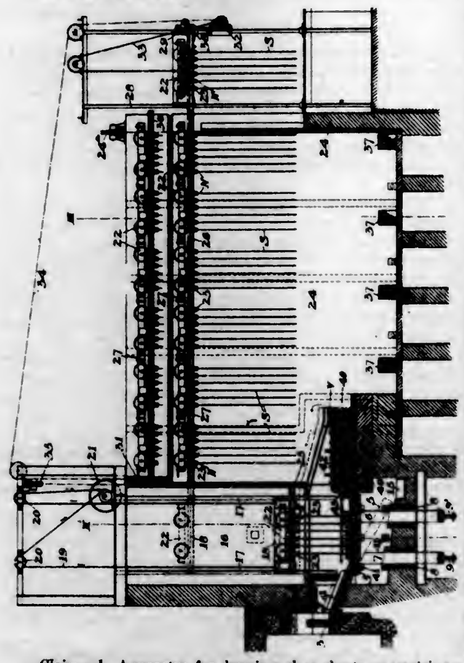
821,728. **COMBINED STATEMENT AND ENVELOP.** ARTHUR D. LORD, Chicago, Ill. Filed Feb. 8, 1906. Serial No. 300,096.

Claim.—A sheet of paper comprising a statement-head and a statement-body, the lower half of the statement-body being provided upon each side with wings and at its end with a flap, said flap having wings forming continuations of the wings of the statement-body, said flap being adapted to be folded upon the lower portion of the statement to inclose the folded upper portion of the sheet, said wings of the flap overlying the wings of the statement and adapted to be secured thereto outside the edges of the inclosed portion of the sheet, and said flap being substantially U-shaped with the opening of the U at the end of the flap; whereby the superscription at the head

of the statement is rendered visible and constitutes the address of the folded statement, and a postage-stamp upon the face thereof may be utilized for sealing the inner folds of the sheet from withdrawal from the inclosing outer folds.



821,724. **APPARATUS FOR DRAWING GLASS SHEETS.** JOHN H. LUBBERS, Allegheny, Pa., assignor to Window Glass Machine Company, Pittsburg, Pa., a Corporation of New Jersey. Filed Aug. 12, 1904. Serial No. 220,485.



Claim.—1. Apparatus for drawing glass sheets, comprising a carrier having connected thereto a group of glass-drawing baits adapted to be raised from the glass and to be drawn from the chamber as a unit whereby the outer sheets of the group of drawn sheets protect the inner ones from warping; substantially as described.

2. Glass-drawing apparatus comprising a car carrying a group of baits, and means by which the car is raised from the glass and transferred to an annealing-chamber with the glass plates or sheets suspended in adjacent parallel planes, flatwise of the chamber; substantially as described.

3. Glass-drawing apparatus comprising a drawing-chamber, an annealing-chamber, tracks leading from the drawing-chamber into the annealing-chamber, and a return-track leading to the drawing-chamber; substantially as described.

4. Glass-drawing apparatus comprising a drawing-chamber, an annealing-chamber, tracks leading from the drawing-chamber to the annealing-chamber, and cars carrying groups of baits the parts being arranged to carry the groups of drawn plates or sheets suspended in adjacent parallel planes flatwise through the annealing-chamber; substantially as described.

5. Glass-drawing apparatus comprising a drawing-chamber and an annealing-chamber through which the glass sheets are carried flatwise in adjacent parallel planes, said annealing-chamber having a deep space below the glass sheet; substantially as described.

6. Glass-drawing apparatus comprising an annealing-chamber mechanism for carrying suspended glass sheets through the annealing-chamber and outlet-flues leading from the lower end of the chamber; substantially as described.

7. Glass-drawing apparatus comprising an annealing-chamber through which the glass sheets are carried in series in vertical position, hollow walls, and flues leading from the base of the chamber into the hollow walls; substantially as described.

8. Glass-drawing apparatus having means for drawing glass sheets, and shield members interposed between the sheets, and means by which the open spaces between the sheets are narrowed without moving the sheets; substantially as described.

9. Glass-drawing apparatus having means for drawing glass sheets, and means by which the open spaces between the sheets are narrowed without moving the sheets; substantially as described.

10. Glass-drawing apparatus having means for drawing glass sheets shield members interposed between the glass sheets and adapted to be turned to narrow the space between the sheets; substantially as described.

11. Glass-drawing apparatus having means for drawing glass sheets shield members interposed between the glass sheets and adapted to be turned to narrow the space between the sheets, and means for supplying heat to the glass below the shield for the purpose of burning off the sheets from the residual glass; substantially as described.

12. A shield comprising a series of water-cooled bars oblong in cross-section, and means for rotating the bars; substantially as described.

13. A shield comprising a series of water-cooled bars oblong in cross-section, means for rotating the bars, and means for raising and lowering the shield; substantially as described.

14. Glass-drawing apparatus comprising a drawing-chamber, an upwardly-movable lift, cars adapted to be carried by the lift, an annealing-chamber into which the cars are transferred from the lift, and means for returning the cars; substantially as described.

15. In glass-drawing apparatus, a drawing-pan having opposite walls provided with a number of inward projections separated by intermediate spaces or recesses; substantially as described.

16. In glass-drawing apparatus, a drawing-pan having opposite walls formed with a number of beveled inward projections separated by intermediate spaces or recesses; substantially as described.

17. In a glass-drawing apparatus, a drawing-pan having opposite walls formed with a number of inward projections having beveled and inclined surfaces, and separated by intermediate spaces or recesses; substantially as described.

18. In glass-drawing apparatus, a drawing-pan deeper underneath the center portion of the article being drawn than at the end portions thereof; substantially as described.

19. In glass-drawing apparatus, a receptacle or receptacles for molten glass, a common drawing-chamber above the same, and mechanism for simultaneously drawing a plurality of sheets upwardly within the drawing-chamber, whereby the outer sheets protect the inner sheets from warping; substantially as described.

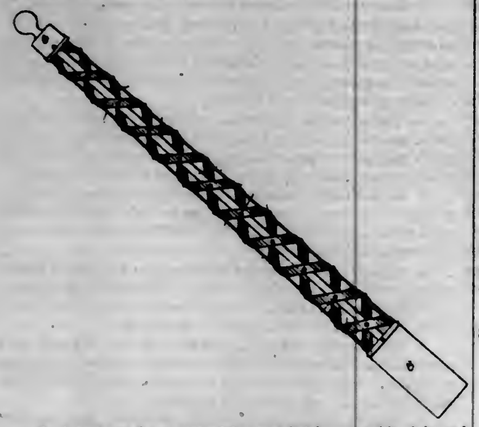
20. In glass-drawing apparatus, a drawing-chamber within which the sheets are drawn and having an inclosed atmosphere, and drawing mechanism arranged to simultaneously draw a series of sheets upwardly within the chamber whereby the outer sheets protect the inner ones from warping; substantially as described.

821,725. **METALLIC POST.** STEPHEN MOLTRUP, Beaver Falls, Pa. Filed Nov. 30, 1904. Renewed Nov. 2, 1905. Serial No. 285,609.

Claim.—1. A post or column comprising metal stripes wound in right and left hand helices, and members extending in alinement with the intersections of said stripes, and connected therewith at said intersections; substantially as described.

2. A post or column comprising metal stripes wound in right and left hand tapering helices, and members extending in alinement with

the intersection of said strips, and connected therewith at said intersections; substantially as described.

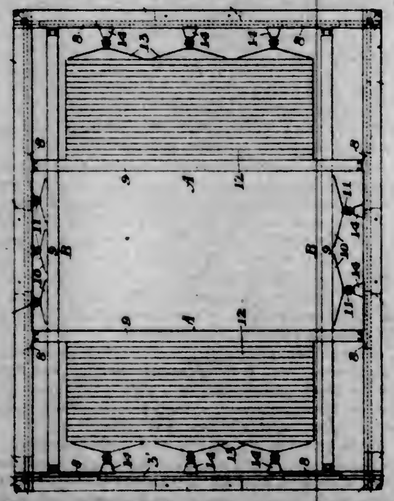


3. A post or column comprising metal strips wound in right and left hand helices, having substantially equal pitch, and members extending in alinement with the intersections of said strips, and connected therewith at said intersections; substantially as described.

4. A post or column comprising metal strips wound in right and left hand tapering helices, having substantially equal pitch, and members extending in alinement with the intersections of said strips, and connected therewith at said intersections; substantially as described.

5. A post or column comprising metal strips wound in right and left hand helices, having substantially equal pitch, and members extending between said strips in alinement with the intersections thereof and riveted thereto at each intersection; substantially as described.

821,726. PRINTER'S CHASE. STEPHEN MOLTRUP and WILLIAM L. HORNER, Beaver Falls, Pa. Filed May 26, 1905. Serial No. 262,491.



Claim.—1. A printer's chase having a frame made up of separated members, with guideways between them, interfitting slotted longitudinal and transverse clamping-bars, and guide-heads adapted to slide in said ways, said heads having elongated sliding portions and shank portions slotted to receive the end portions of said bars, together with quoins arranged to hold the bars in clamping positions, substantially as described.

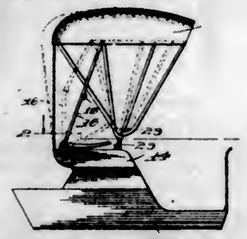
2. A printer's chase having a frame with upper and lower bars, said bars abutting against each other at the corner and having a spacing-block with strips forced into mating recesses in the corner-block and ends of the corner members; substantially as described.

3. A printer's chase having a frame with upper and lower bars, said bars abutting against each other at the corner and having a spacing-block with strips forced into mating recesses in the corner-block and ends of the four corner members, and transverse rivets or pins extending through the spacing-block and four members; substantially as described.

4. A printer's chase having a frame with upper and lower plates beveled at the corners of the frame, a spacing-block between the plates at the corner, said block having ribs fitting within recesses in the plates and removable strips or bars fitting in grooves in the spacing-block and frame members; substantially as described.

5. A printer's chase having a frame with upper and lower plates or bars beveled and fitting together at the corner, a spacing-block between the four plates at the corner, said block having ribs fitting within grooves in the upper and lower plates, the block and plates having cross-grooves, removable bars fitting in said grooves, and pins arranged to hold the bars and block together; substantially as described.

821,727. TOP-BUGGY. JAMES MORRIS, Streator, Ill., assignor to Streator Metal Stamping Company, Streator, Ill., a Corporation of Illinois. Filed Aug. 20, 1904. Serial No. 221,498.



Claim.—1. In a vehicle, the combination of a seat, a folding top therefor, jointed braces for holding said top in position, a shaft with which the lower end portions of said braces are connected, the end portions of said shaft being squared, bearings in which the rounded portions of said shaft are fitted, a lever rotatably fitted upon said shaft, a disk non-rotatably fitted upon a squared portion of said shaft, and means coacting with said disk for connecting said lever with said shaft.

2. In a vehicle, the combination of a seat, a folding top therefor, jointed braces for said top, a rock-shaft with which the lower end portions of said braces are connected, apertured brackets secured to the seat, said shaft extended through and journaled in said brackets, a lever rotatably mounted on said shaft adjacent to one of said brackets, a disk non-rotatably mounted on said shaft adjacent to said lever, and means coacting with said disk for connecting said lever therewith when the buggy-top is in its raised position.

3. In a vehicle, the combination of a seat, a rock-shaft journaled thereon and having its ends projecting beyond the side edges of the seat, a folding top, jointed braces for holding said top in its raised position, the lower end portions of said braces being connected with said shaft, a lever for rotating said shaft, springs mounted upon the projecting end portions of said shaft, one end of each of said springs being connected with said shaft and the other end with a stationary support, and sleeves inclosing said springs, substantially as described.

4. The combination with a buggy-body and its movable top, of a shaft extending across said body and having connected to it near its ends a pair of braces secured to said top, supports in which said shaft is axially movable, two plates, one of which is fixed and the other of which is loose on said shaft, said loose plate carrying a projection adapted to engage the fixed plate, and a lever adapted to be moved against said projection, substantially as described.

5. The combination with a buggy-body, and its movable top, of a shaft extending across said body and having connected to it near its ends a pair of braces secured to said top, supports in which said shaft is axially movable, a plate secured to said shaft so as to turn therewith and provided with a notched edge, a second plate loose on said shaft and provided with a lateral projection adapted to engage the notched edge of said first-named plate, and a lever for moving said plates, substantially as described.

6. The combination with a buggy-body and its movable top, of a shaft extending across said body and having connected to it near its ends a pair of braces secured to said top, supports in which said shaft is axially movable, a plate secured to said shaft so as to turn therewith and provided with a notched edge, a second plate loose on said shaft and provided with a lateral projection adapted to engage the notched edge of said first-named plate, and a lever loosely mounted on said shaft between said plates and adapted to be turned to strike against said projection, substantially as described.

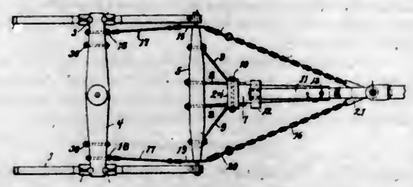
7. The combination with a buggy-body and its movable top, of a shaft that is angular in cross-section at its ends and having mounted at its ends a pair of braces secured to said top, supports for said shaft having enlarged openings to permit the shaft to turn axially, two plates one of which is fitted upon said shaft to turn therewith and the other of which is loose thereon, a projection carried by the loose-fitting plate and engaging the fixed plate, a lever loosely carried on said shaft between said plates and adapted to be turned to strike against said projection, and connections between said shaft and pair of top braces to cause said braces to move with the axial movement of the shaft, substantially as described.

8. The combination with a buggy-body and a movable top therefor, of a rock-shaft extending across said body, a pair of brackets secured to said body, each of said brackets having a vertical ear through which said shaft passes and one or more notches on its outer face, a sleeve around said shaft beyond each of said ears, a coiled spring in each sleeve, one end of each spring being held in one of the said notches on the adjacent bracket, top braces carried by and movable with the shaft, and a lever for rocking said shaft, substantially as described.

9. The combination with a buggy-body and its movable top, of a rock-shaft extending across said body, a bracket having an ear through which said shaft passes, a sleeve having one of its ends closed by said ear, and having its other end closed by a plate that is carried by and turns with said shaft, a coiled spring within said sleeve, one end of said spring being secured to said bracket, a buggy-top brace mounted on said shaft, means carried by said plate for engaging said brace, a nut on said shaft, and a lever for rocking said shaft, substantially as described

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821,728. LOGGING-SLED. ALEXANDER D. MCDONELL, Medford, Wis., assignor of one-half to Lee W. Gibson, Medford, Wis. Filed May 8, 1905. Serial No. 259,299.



Claim.—1. In a logging-sled, a medially-disposed transverse beam, a roller in the front end of the sled, the roller being provided with a tongue, draft-chains secured to said beam and passing the ends of the roller by which the chains are held in place apart from each other and coming together in front of the roller, and means for connecting the front ends of the chains and coupling them to a hauling device.

2. A sled having a medially-disposed transverse fixed beam, draft-chains secured at their rear ends to this medially-disposed sled-beam, a roller provided with a tongue, and a coupling device on the tongue at a distance in front of the sled to which the chains at their front ends are directly secured and which coupling device is adapted to couple the chains up to a hauling means.

3. A sled having a fixed medially-disposed transverse beam, draft-chains secured to the beam, plate-links in the chain provided with longitudinal slots, a roller in the front end of the sled, said roller having pin-pivot terminals that pass through the slots in the plate-links, and means for coupling the chains at their front ends to a hauling means.

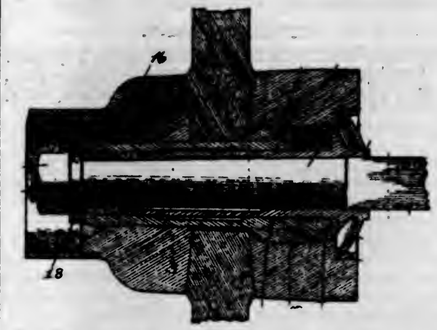
4. In a sled, a roller, a tongue fixed to the roller, an extension-tongue secured detachably to the tongue and having means for securing it detachably to a hauling means, and means other than the tongue secured to the sled at the rear of the roller adapted to be attached in front of the roller detachably to the hauling means for pulling the sled along.

5. In a sled, a roller having a thereto-secured rigid tongue, a detachable tongue-extension having furcate legs adapted to straddle and fit on the tongue, a band on the ends of the legs also adapted to fit on the tongue, said tongue extension being provided with pin-holes for pins to secure it to the tongue, and to a hauling means.

6. In combination, a sled with a medially-disposed fixed beam, draft-chains secured at a distance apart severally to the beam, a tongue-roller interposed between the chains keeping them apart at the front end of the sled a distance substantially equal to the width of the sled, and a coupling device to which the front ends of the chains are secured near together and having means for coupling it to a hauling means.

7. In combination, a plurality of sleds one following another, a roller between and mounted in the front ends of the runners of each sled, a single transverse beam medially on and secured to the runners, a pair of sled-connecting chains attached at a distance apart to the beam of the preceding sled and at their rear ends to the beam of the following sled, said chains being crossed medially and held apart by the roller of the following sled.

821,729. AXLE-SKEIN AND SAND-COLLAR. THOMAS R. MCKNIGHT, Aurora, Ill., assignor to Western Wheeled Scraper Company, Aurora, Ill., a Corporation of Illinois. Filed Mar. 3, 1904. Serial No. 197,183.



Claim.—1. An axle-skein, consisting of a sleeve adapted to fit upon an axle-spindle, said sleeve having an external bearing-surface, a collar carried by said sleeve near the inner end thereof, and an intermediate collar carried by said sleeve, said collars being spaced a distance apart and said intermediate collar having an annular channel in the outer face thereof.

2. An axle-skein, consisting of a sleeve adapted to fit non-rotatably upon an axle-spindle, said sleeve having an external bearing-surface, a dished collar carried by said sleeve near its inner end, and a scraper carried by said collar.

3. An axle-skein, consisting of a sleeve adapted to fit non-rotatably upon an axle-spindle, said sleeve having an external bearing-surface, a collar carried by said sleeve near the inner end thereof, and a scraper carried by said collar and adapted to scrape the wheel-hub.

4. An axle-skein, consisting of a sleeve adapted to fit non-rotatably upon an axle-spindle, said sleeve having an external bearing-surface, a collar carried by said sleeve near the inner end thereof, a scraper carried by said collar and adapted to scrape the wheel-hub, and an intermediate collar carried by said sleeve, said collars being spaced a distance apart.

5. The combination of a sleeve open at both ends adapted to fit upon an axle-spindle, said sleeve having an external bearing-surface, a plurality of collars carried by said sleeve near the inner end thereof, said collars being spaced apart, one of said collars having an annular recess adapted to receive the end of a pipe-box, and a pipe-box adapted to fit into said recess, substantially as described.

6. An axle-skein, consisting of a sleeve adapted to fit upon an axle-spindle, said sleeve having an external bearing-surface, a collar carried by said sleeve near the inner end thereof and having an annular channel in its outer face, and means for shielding said collar from dirt.

7. An axle-skein, consisting of a sleeve open at both ends adapted to fit upon an axle-spindle and having means for engaging the axle, said sleeve having an external bearing-surface, a collar carried by said sleeve near its inner end, and a scraper carried by said collar and adapted to scrape dirt from the wheel-hub, in combination with a wheel having its hub countersunk to receive said collar, substantially as described.

8. An axle-skein, consisting of a sleeve open at both ends adapted to fit upon an axle-spindle and having means for engaging the axle, said sleeve having an external bearing-surface, a dished collar

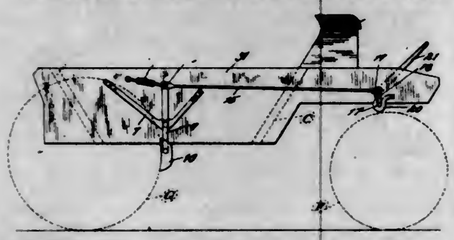
carried by said sleeve near its inner end, a scraper carried by said collar and adapted to scrape dirt from the wheel-hub, in combination with a wheel having its hub countersunk to receive said collar, and means for preventing said sleeve from rotating, substantially as described.

9. An axle-skein, consisting of a sleeve adapted to fit upon an axle-spindle, said sleeve having an external bearing-surface, a collar carried by said sleeve near the inner end thereof and having an annular channel in its outer face, and a second collar carried by said sleeve for shielding said channeled collar from dirt.

10. The combination of a sleeve adapted to fit upon an axle-spindle, a collar carried by said sleeve near its inner end and having a recess in its outer face, a pipe-box mounted on said sleeve, its inner end fitting in said recess, a hub on said pipe-box extending over said collar, and a second collar carried by said sleeve and extending out beyond said first-mentioned collar.

11. An axle-skein, consisting of a sleeve adapted to fit non-rotatably upon an axle-spindle, said sleeve having an external bearing-surface, a dished collar carried by said sleeve near its inner end, and a peripheral scraper carried by said collar.

821,730. **BRAKE FOR DUMP-WAGONS.** THOMAS R. MCKNIGHT, Aurora, Ill., assignor to Western Wheeled Scraper Company, Aurora, Ill., a Corporation of Illinois. Filed Nov. 2, 1905. Serial No. 285,604.



Claim.—1. The combination with a wagon-body of a bracket secured to the outer face of each side thereof, each bracket consisting of two diagonal arms and an intermediate straight portion, a sleeve carried by each bracket and adapted to bear at its inner end against one of the sides of the wagon-body, two levers each having an arm journaled in one of said sleeves, a brake-shoe at the lower end of each lever, and means for turning said levers on their journals, substantially as specified.

2. The combination with a wagon-body of a bracket secured to the outer face of each side thereof, each bracket consisting of two diagonal arms, an inwardly-projecting sleeve carried by each of said brackets adapted to bear at its inner end on one of the sides of the wagon-body, two levers each having an arm journaled in one of said sleeves, a brake-shoe at the lower end of each lever, and means for turning said levers on their journals, substantially as specified.

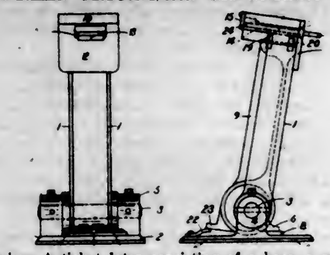
3. The combination with a wagon-body of a bracket secured to the outer face of each side thereof, two sleeves each supported at its outer end by one of said brackets and at its inner end by the wagon-body, two levers each having an arm journaled in one of said sleeves, means for securing said arms against endwise movement in said sleeves, a brake-shoe at the lower end of each lever, and means for turning said levers of their journals, substantially as specified.

4. The combination with a dump-wagon of a bracket secured at its ends to the wagon-body and having its central portion extended away from said body, a sleeve supported at its outer end by said bracket and at its inner end by said wagon-body, a lever having a laterally-extended arm journaled in said sleeve, a brake-shoe carried by said lever, and means for operating said lever, substantially as specified.

5. The combination with a dump-wagon, of a bracket secured to the wagon-body, said bracket comprising a horizontal sleeve and a diagonal bracing-arm, a lever arranged opposite the outer end of said sleeve and connected therewith, a brake-shoe carried by said lever, and means for operating said lever, substantially as specified.

6. The combination with a dump-wagon, of a bracket secured to the wagon-body, said bracket comprising a horizontal sleeve and a diagonal bracing-arm, a lever arranged opposite the outer end of said sleeve and connected therewith, a brake-shoe carried by said lever, means for operating said lever, and a spring connected to said lever and to the wagon-body and adapted to hold the brake-shoe out of operative position.

821,731. **TICKET-DATER.** WILLIAM P. NOLAN, Milton, Otago, New Zealand. Filed Feb. 2, 1905. Serial No. 243,884.



Claim.—A ticket-dater consisting of a base, a pin mounted therein, a vertical guard member oscillating on said pin, a top 10 on said member, a slotted plate 14 connected to said top and being parallel thereto and leaving a space between itself and the said top, said guard member having a slot therein communicating with said space, and a type-carrying standard eccentrically mounted on said pin so as to have oscillating movement with the guard member, said standard having its type-carrying end situated just below the slotted plate 14 so that the type will pass through the slots therein on the forward movement of the device.

821,732. **ARTIFICIAL FISH-BAIT.** CARL H. OLSBY, Valley City, N. D. Filed July 20, 1905. Serial No. 270,493.



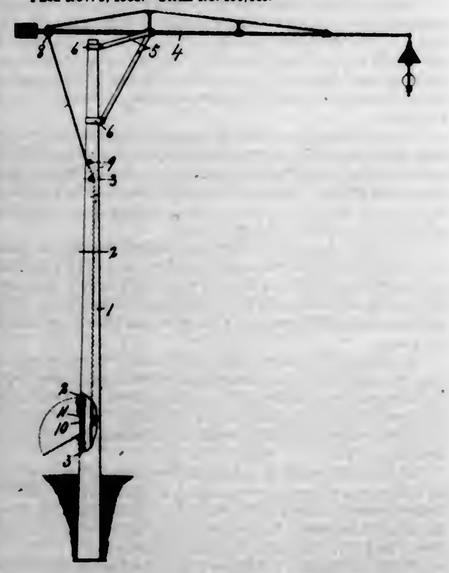
Claim.—1. An artificial bait constructed of rubber or similar material made in imitation of an angle-worm, and having a permanently-coiled section and a pliable section, substantially as described.

2. An artificial bait made in imitation of an angle-worm having a pliable lower end section formed near its extremity with an eye.

3. An artificial bait constructed of rubber or similar pliable material made in imitation of an angle-worm and formed with a permanently-coiled section 2 and with a hollow pliable section 3, substantially as described.

4. An artificial bait constructed of rubber or similar material made in imitation of an angle-worm and formed with a permanently-coiled portion 2, and a pliable hollow portion 3, said portion 3 having near its extremity an eye 4, substantially as described.

821,733. **TELEGRAPH-POLE.** DUNCAN W. PECK, Syracuse, N. Y. Filed Nov. 9, 1903. Serial No. 180,440.

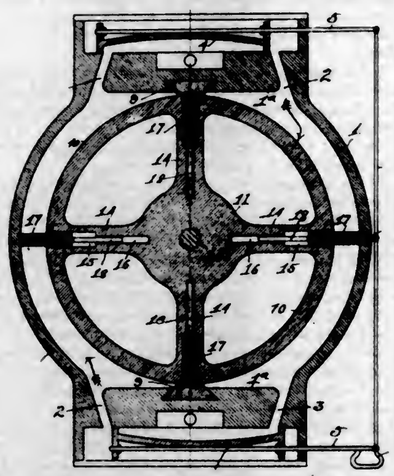


Claim.—1. A hollow metal pole, a swinging arm mounted on the pole, a cable having one end connected with the arm and its other end extending downwardly within the pole, said pole having an opening near the bottom to permit access to the interior and a closure for the opening.

2. A metal pole comprising a metal plate angular in cross-section and open at one side, the edges at the open side being bent inwardly, a second plate which is flat and straight from edge to edge and inserted within the inturned edges of the other plate and a plurality of braces fitting within and engaging the inner sides of the pole.

3. A metal pole comprising a metal plate angular in cross-section and open at one side with the edges inturned at the open side, a second plate of straight flat form inserted in the open side within said inturned edges, a plurality of segregated braces arranged within and engaging the sides of the pole, a plurality of clamps engaging the exterior of the pole, a brace or bracket attached to said clamps and an arm pivotally attached to said bracket.

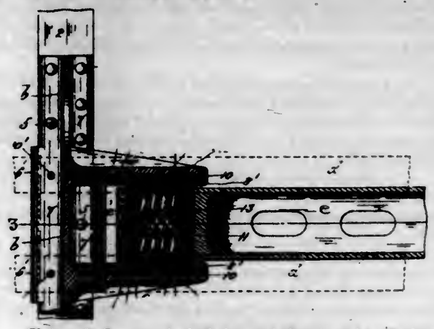
821,734. **ROTARY ENGINE.** JACOB E. PETERSON and JACOB M. PETERSON, Dayton, Ohio. Filed Feb. 26, 1906. Serial No. 303,840.



Claim.—1. In a reversible rotary engine, a cylindrical casing having its ends terminated in inturned flanges, said casing having oppositely-disposed flat portions with oppositely-disposed inlet and outlet ports lying between said flattened portions and the adjacent sides of said casing, rings having cam-races on their inner sides and united to the ends of the cylindrical casing beyond the inturned end flanges of said casing, a rotating piston having its ends terminated in outwardly and annularly extending flanges which meet the inturned flanges of the casing, the diameter of the piston being uniform between said end flanges, a series of vanes mounted within the piston, roller connections between the ends of said vanes and the cam-rings on the ends of the cylindrical casing, and packing-strips placed at opposite points in the flattened portions of the casing, said packing-strips presenting to the piston-vanes a straight surface throughout the length of said piston-vanes, and slides controlling the oppositely-disposed inlet and outlet ports.

2. In a reversible rotary engine, a cylindrical casing having oppositely-disposed inlet and outlet ports, the ends of said casing terminating in inturned flanges, a rotating piston having its ends terminated in outwardly-extending annular flanges which meet the inturned flanges at the ends of the casing, rings united to the ends of the casing and providing suitable annular packing-pockets on the exterior of the ends of the casing and the piston, said rings having cam-races which lie inwardly from a circle at opposite points, piston-vanes mounted in the periphery of the piston between the end flanges of said piston and the end flanges of the casing, arms supporting rollers extending from the ends of the piston-vanes, said rollers lying in the cam-races in the rings attached to the ends of the casing, and packing-strips united to the upper and lower flattened sides of the casing and presenting to the moving vanes a uniform surface, substantially as specified.

821,735. **COMBINED BRACE AND DRAW-BAR POCKET FOR CAR-BODY BOLSTERS.** HARRY M. PFLAGER, St. Louis, Mo. Filed Feb. 3, 1906. Serial No. 299,321.



Claim.—1. In a car-body bolster of the class described, the combination of a brace interposed between, and extending part way along the top and bottom plates of the bolster on each side of the longitudinal center line of the car, means for rigidly fixing the brace to the said plates, a draw-bar pocket projecting from and integral with the said brace, and means for fixing the said pocket to the middle longitudinal sills of the car, substantially as described.

2. In a car-body bolster of the class described, the combination of a brace interposed between, and extending part way along the top and bottom plates of the bolster on each side of the longitudinal center line of the car, means for rigidly fixing the brace to the said plates, a draw-bar pocket consisting of two opposite upright side walls adapted on their inner faces to support and limit the movement of the follower-plates of the draft-gear, and connected to each other at the top by a horizontal wall, the said walls being integral with the brace, and means for fixing the said pocket to the middle longitudinal sills of the car, substantially as described.

821,736. **MANHOLE-COVER.** ALEXANDER POTTER, Newark, N. J. Filed Feb. 6, 1905. Serial No. 244,427.



Claim.—1. In an apertured cover, the combination of a substantially square, depending, reinforcing-rib, a removable member positioned within said rib and normally closing the apertures of the cover, and means for securing said removable member in its normal position between the inner sides of said rib.

2. The combination with an apertured cover, of a depending rib formed upon said cover providing a socket, a removable plate positioned between the sides of said rib and within the socket, and means engaging the lower surface of said plate for securing the same in a fixed position upon said cover.

3. A cover, comprising a body portion provided with a beveled, bottom surface, a removable plate provided with an upper, beveled and a lower, flat surface engaging the beveled bottom surface of the cover, and means for securing said cover and plate in a fixed position.

4. A cover of the character described, comprising an apertured body portion, movable grip members carried by said body portion, a reinforcing-rib provided with beveled, inner surfaces formed upon the bottom of said body portion, the bottom surface of said body portion beveled outwardly from the center, a removable member engaging the bottom surface of said body portion and the rib, said removable member provided with an upper surface and edges conforming to the construction of the bottom surface of the body and the inner surface of the rib.

5. A cover, comprising a body provided with an aperture, beveled, reinforcing means secured to said body, a removable member engaging the beveled portion of said reinforcing means and closing said aperture, and means for securing said member in a fixed position with said body portion.

6. A cover, comprising an apertured body portion, grip means secured to said body portion, reinforcing means provided with an inner, beveled surface secured to said body portion, a removable member provided with beveled edges engaging the inner, beveled surface

of said reinforcing means, and means for securing said removable member in a fixed position with said body portion.

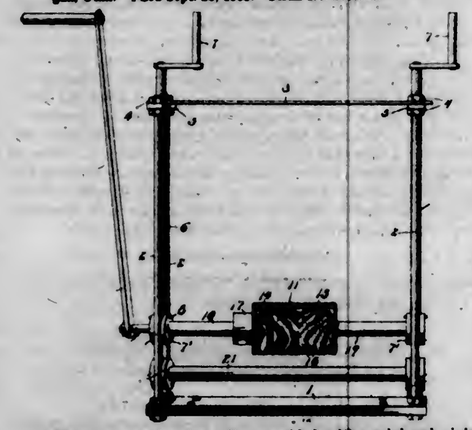
7. A cover, comprising a body portion, a depending portion secured to said body portion upon the inner face thereof, said depending portion provided with a beveled, inner surface, and a plate positioned between the depending portion and engaging the beveled inner surface thereof.

8. A manhole-cover, comprising a body portion provided with an integral rib depending from the inner face thereof, a detachable member positioned entirely within the ribbed portion of said body, and means for securing said detachable member in a fixed position with said body.

9. A manhole-cover, comprising an apertured body provided with a ribbed, inner face, and means positioned entirely within the ribbed portion of said inner face for closing the aperture of said body.

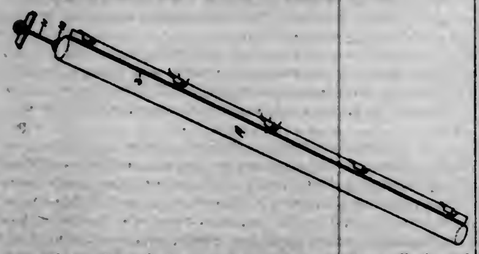
10. A cover, comprising an apertured body provided with a rib formed upon its inner surface, said body beveled between the ribbed portion thereof, and means provided with an upper, angular and a lower flat surface positioned between the ribbed portion of said body and closing the aperture of the same.

821,787. **WOOD-EMBOSSING MACHINE.** JOHN J. POWELL, Logan, Utah. Filed Sept. 30, 1905. Serial No. 280,341.



Claim.—An embossing-roller provided with peripheral right and left hand spirally-disposed embossing-ribs that diverge from the center of the roller to its ends, and have portions routed or removed.

821,788. **MOLD FOR CONCRETE POSTS.** LEVERETT A. PRATT, Bay City, Mich. Filed Dec. 2, 1905. Serial No. 289,968.



Claim.—1. A flask comprising a one-part integrally-formed mold-body slotted longitudinally of itself, the walls of the slot being flanged outwardly and normally tending to lie apart from each other, and reinforcing members carried by the flanged walls.

2. A flask comprising a one-part integrally-formed mold-body slotted longitudinally of itself, the walls of the slot being flanged outwardly and normally tending to lie apart from each other, and reinforcing members carried by the flanged walls, one of the members provided with slots formed therein to receive projections from the core.

3. A flask comprising a one-part integrally-formed mold-body slotted longitudinally of itself, the walls of the slot being flanged outwardly and normally tending to lie apart from each other, and reinforcing members carried by the flanged walls, one of said reinforcing members being grooved to receive the opposite reinforcing member.

4. A flask comprising a one-part integrally-formed mold-body slotted longitudinally of itself, the walls of the slot being flanged outwardly and normally tending to lie apart from each other, and reinforcing members carried by the flanged walls, one of said reinforcing members being grooved to receive the opposite reinforcing member, and provided with recesses to receive projections on the article being molded, the opposite reinforcing member adapted to engage said projections.

5. The combination with a core capable of suspension at its upper end, of a mold adapted to inclose the core and means carried by the core and engaged by the mold for supporting the mold.

6. A flask comprising a slotted mold-body, the walls of the slot projecting outwardly and adapted to lie adjacent each other, and latches pivoted at one end to one of the walls of the slot, the latches each provided with a wedge-shaped groove, the widest portion of which is nearest the pivotal point of the latch.

7. A flask comprising a longitudinally-slotted mold-body, a core received therein, projections carried by the core, a reinforcing member removably secured to one wall of the slot and provided with recesses set a predetermined distance apart to receive the projections of the core.

8. The combination with a suitable core, and projections therefrom, of a longitudinally-slotted mold, a channel-iron carried by one wall of the slot, the inner rib of such iron being recessed to receive the projections, a filling-piece carried by the opposite wall of the slot, and receivable within the channel-iron to engage the projections and means for retaining the walls of th slot together.

9. The combination with a flask having an opening at one end, and a core receivable in the flask, of a cap for one end of the flask, the cap comprising a plurality of sections, the meeting edges of the sections being correspondingly recessed and a projection permanently carried by the core and extending into the aperture formed by the registering recesses when the sections of the cap are assembled.

10. The combination with an expansible flask, of a projecting member removably secured to the inner face and of less length than the flask to leave a brace-receiving recess in the article molded.

11. A flask comprising a mold-body formed of resilient material and longitudinally slotted, the walls of the slot normally tending at all times to lie apart from each other, means for retaining the walls of the slot together, a core received in the mold-body and forming a part of the article molded, means connecting the core and mold-body, means on the core for permitting the suspension of the core and mold-body and a two-part cap for closing one end of the mold-body, the cap being grasped by the mold-body when in contracted position, and adapted to drop away from the molded article when the mold-body expands to its normal position.

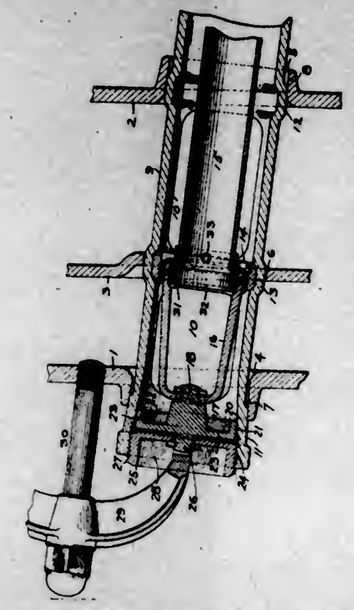
12. The combination with a flask and a core receivable therein, of a member having a socket extending in a plane transverse to the longitudinal axis of the flask, said member mounted on the core and projecting therefrom, the outer open end of the socket member adapted to engage and be closed by the inner surface of the flask, when the latter is in closed position to prevent the access of the plastic material to the socket.

13. The combination with a flask and a core received therein, of a member carried by and projecting from the core in a plane transverse to the longitudinal axis of the core, the outer end of the member abutting and engaging the inner face of the flask to prevent access thereto of the material of which the article molded is composed, the member also being contained entirely within the contour of the article molded.

821,789. **LANTERN AND PLUG FOR WATER-TUBE BOILERS.** JOHN P. PRENTICE, Barberton, Ohio, assignor to The Sterling Company, a Corporation of New Jersey. Filed Sept. 11, 1905. Serial No. 277,951.

Claim.—1. In a water-tube boiler, the combination of an outer tube or lantern provided with a seat on its inner face, a plug having a face arranged to bear against said seat, and a nut connected to said plug and having threads on its outer face adapted to coöperate with threads on the inner face of the outer tube or lantern in front of its seat.

2. In a water-tube boiler, the combination of an outer tube or lantern provided with a seat on its inner face, a plug having a face arranged to bear against said seat, and a nut located in front of said plug and having threads on its outer face adapted to coöperate with threads on the inner face of the outer tube or lantern in front of its seat.



3. In a water-tube boiler, the combination of an outer tube or lantern provided with a seat on its inner face, a plug having a face arranged to bear against said seat, a member swiveled to said plug on its outer side, and spirally-arranged coöperating connecting means on said member and outer tube and lantern.

4. In a water-tube boiler, the combination of an outer tube or lantern provided with a seat on its inner face, a plug having a face arranged to bear against said seat, a nut swiveled to said plug, and coöperating threads on said nut and outer tube or lantern.

5. In a water-tube boiler, the combination of an outer tube or lantern provided with a conical seat on its inner face, a plug provided with a face of less taper than said seat and arranged to have its end bear against said seat, and coöperating continuous screw-thread formed on the outer face of said plug and inner face of the outer tube or lantern and located in front of the bearing-faces thereon and serving to force said plug inwardly and hold it in engagement with said conical seat, the threads on the outer tube or lantern running out to the end thereof.

6. In a water-tube boiler, the combination of an outer tube or lantern provided with a conical seat on its inner face, a plug having a groove or recess formed in its rear end face thus leaving an annular wall or shell surrounding the same, said plug being provided with a face of less taper than said seat and arranged to have its end bear against the conical seat in the outer tube or lantern, and coöperating continuous screw-threads formed on the outer face of said plug and the inner face of the outer tube or lantern and located in front of the bearing-faces thereon and serving to force said plug inwardly and hold it in engagement with the conical seat in the outer tube or lantern.

7. In a water-tube boiler, the combination of an outer tube or lantern provided with a conical seat on its inner face, a plug provided with swivel connections for having the inner circulating-tube connected thereto and provided with a face of less taper than said seat and arranged to have its end bear against the conical seat in the outer tube or lantern, and coöperating continuous screw-threads on said plug and outer tube or lantern and in front of the bearing-faces thereon and serving to force said plug inwardly and hold it in engagement with said conical seat, the thread in the outer tube or lantern running out to the end thereof.

8. In a water-tube boiler, the combination of an outer tube or lantern, an inner circulating-tube, a plug secured to the outer tube or lantern, a U-shaped skeleton frame attached at its base to said plug and having the ends of its legs riveted to the forward end of the inner tube.

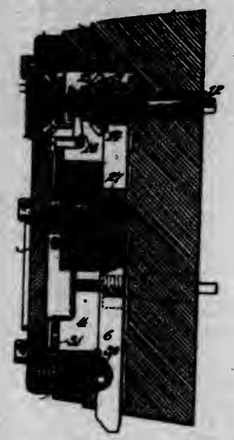
9. In a water-tube boiler, the combination of an outer tube or lantern, an inner circulating-tube, a cup-shaped member secured to the forward end of said inner tube, a plug secured in the lantern or outer tube, a U-shaped skeleton frame having its base secured to said plug and having the ends of its legs riveted to the cup-shaped member on the forward end of the inner tube.

10. An outer tube for water-tube boilers having an expanded portion and a reinforcing-ring therein.

11. A plug for water-tube boilers comprising a body provided with a seating-face, and a member swiveled to the body and provided with means for engaging the tube or lantern.

12. A plug for water-tube boilers comprising a body provided with a seating-face, and a nut swiveled to said body.

821,740. **SAFE OR VAULT DOOR BOLTING MECHANISM.** ORVET PRICE, Plainfield, N. J., assignor, by mesne assignments, to Taylor Iron & Steel Company, High Bridge, N. J., a Corporation of New Jersey. Filed Oct. 10, 1904. Serial No. 227,781.



Claim.—1. A safe or vault, comprising a body, a door, and lock-controlled bolting mechanism located interiorly of the door, said body and bolts having coöperating plane faces, and one only of such coöperating parts also having a tapered face or faces, so that the door will be first drawn to its seat under tension and then held therein with the tapered face or faces entirely relieved from tension or strain, so that the bolts will be free from tendency to creep back from their bolting position.

2. A safe or vault, comprising a body having only a plane-faced bolt-engaging wall or walls, a door, lock-controlled bolting mechanism located interiorly of the door and comprising bolts each having its face nearest the front of such door both tapered and terminating in a plane face, and means for projecting said bolts so that the tapered faces thereof will first draw the door to its seat and then the plane faces of such bolts be shot into position to coact with the plane faces of the body and entirely relieve any strain on the tapered portions of the bolts, while the door is held in its jamb under tension.

3. A safe or vault, comprising a body having a plane-faced bolt-engaging wall or walls, a door, bolting mechanism comprising bolts each having a tapered face at its outer side merging at such side into a plane face, means for shooting such bolts so that the plane faces thereof will be projected beyond the periphery of the door after the door is placed under tension and entirely relieve the strain on the tapered faces of the bolts, and means in engagement with the inner ends of said bolts for preventing premature retraction thereof.

4. A safe or vault, comprising a body having only a plane-faced bolt-engaging wall or walls, a door, bolting mechanism comprising bolts having their inner ends abutting, and each bolt of which is provided nearest the front of such door with a tapered or inclined face terminating in a plane face, and means for shooting such bolts so that the door will be first drawn to its seat by the tapered portions of the bolts, and then the plane-faced portions of the bolts be shot beyond the periphery of the door adjacent thereto and into position to engage the plane-faced bolt-engaging walls of the body and entirely disengage the tapered faces of the bolts from the body-walls, while the door is held in its jamb under tension.

5. A safe or vault door having a centrally-located rocking mem-

ber, a plurality of swinging, integral bolts each having its inner end directly pivoted to said member so that in one position the lines of centers of said member and bolts will coincide, and means for rocking said member into position to throw said bolts to and beyond their dead-centers thereby to prevent the premature retraction thereof.

6. A safe or vault door bolting mechanism comprising a plurality of swinging bolts having their inner ends abutting, means for throwing said bolts to and beyond their dead-centers thereby to prevent the retraction thereof, and means in position to engage the inner ends of such bolts.

7. A safe or vault door having bolt-openings, bolting mechanism comprising bolts supported for swinging reciprocatory movement, means for shifting said bolts beyond their dead-centers, further movement of said bolts in the same direction being limited by the walls of such bolt-openings, and means in position to engage the inner ends of said bolts so that they cannot be retracted except they be swung back past their dead-centers.

8. A safe or vault door having bolt-openings, bolting mechanism comprising swinging bolts, means comprising a spindle and worm-gearing connected therewith and with the bolts for shifting said bolts beyond their dead-centers, further movement of said bolts in the same direction being limited by the walls of such bolt-openings, and means in position to engage the inner ends of said bolts so that they cannot be retracted except they be swung back past their dead-centers.

9. A safe or vault door having bolt-openings, bolting mechanism comprising swinging bolts, means comprising a spindle, worm-gearing connected therewith and with the bolts, and clutch mechanism for controlling connection between said spindle and gearing for shifting said bolts beyond their dead-centers, further movement of said bolts in the same direction being limited by the walls of such bolt-openings, and means in position to engage the inner ends of said bolts so that they cannot be retracted except they be swung back past their dead-centers.

10. A safe or vault comprising a body, a door, bolting mechanism carried by the door and comprising swinging bolts, each bolt and the body having, one a plane or straight face and the other a coöperating tapered face and a straight or plane face, and means for shooting said bolts so that the plane faces of the body and bolts will engage and hold the door under tension without tendency of the bolts to creep back, and the inner ends of said bolts be carried to and beyond their dead-centers.

11. A safe or vault door bolting mechanism comprising swinging bolts each having a tapered face at its front side merging at such side into a plane face, means for shooting said bolts so that the plane faces thereof will be projected beyond the periphery of the door to engage a plane-faced jamb-wall and the inner ends of said bolts be carried to and beyond their dead-centers, and means located at the inner ends of said bolts for preventing premature retraction thereof.

12. A safe or vault comprising a body having its jamb provided with an opening having a plane-faced wall at the side nearest the front of said body, a door, bolting mechanism comprising a plurality of bolts having their inner ends abutting and each having on its front side a tapered face terminating in a plane face, means for swinging said bolts to and beyond their dead-centers to protract the same so that the tapered faces thereof will first engage the wall of the bolt-opening and draw the door to its seat and then the plane faces of said wall and bolts engage, and a stop in position to prevent inward movement of such bolts when swung beyond their dead-centers.

13. A safe or vault door bolting mechanism comprising swinging bolts each having at its front side a tapered face merging into a plane face, and means for shooting said bolts so that the plane faces thereof will be projected beyond the periphery of the door to engage a plane-faced jamb-wall and the inner ends of said bolts be carried to and beyond their dead-centers, and comprising a worm-wheel plate to which the inner ends of said bolts are connected, a worm in engagement therewith, a spindle, gearing for imparting movement from said spindle to said worm, and clutch mechanism for controlling the connection between said spindle and worm.

14. A safe or vault door bolting mechanism comprising swinging bolts each having at its front side a tapered face merging at the rear thereof into a plane face, means for shooting said bolts so that the plane faces thereof will be projected beyond the periphery of the door to engage a plane-faced jamb-wall and the inner ends of said bolts be carried to and beyond their dead-centers, and comprising a rocking plate to which the inner ends of said bolts are connected, a device for shifting said plate, a spindle, and means connecting said spindle and plate, and lock mechanism for controlling such connection.

15. A safe or vault door bolting mechanism comprising swinging bolts each having at its front side a tapered face merging at the rear thereof into a plane face, means for shooting said bolts so that the plane faces thereof will be projected beyond the periphery of the door to engage a plane-faced jamb-wall and the inner ends of said bolts be carried to and beyond their dead-centers and comprising a worm-wheel pivotally connected to the inner ends of said bolts, a worm-shaft having its teeth in engagement with said worm-wheel, a spindle carried by the door, a pair of bevel-gears for transmitting motion from said spindle to the shaft, one fixed and the other idle, a clutch, and combination lock-controlled means for shifting one member of said clutch into engagement with the other, and means at the inner ends of said bolts for preventing the retraction thereof.

16. A safe or vault door bolting mechanism comprising bolts, means for shifting said bolts, rim-dog mechanism for dogging said bolts, comprising a series of bolts intersecting said main bolts, a gear-ring for operating said intersecting bolts, and means for imparting motion to said gear-ring and comprising a spindle, a bevel-gear idle thereon and imparting motion to a pinion permanently in mesh with said gear-ring, and means for communicating motion from said spindle to said bevel-gear.

17. A safe or vault door bolting mechanism comprising bolts, a worm-wheel plate to which the inner ends of said bolts are pivoted, a worm-shaft for imparting motion to said plate, a bevel-gear fixed to said shaft, rim-dogging means for dogging said bolts, and means for imparting movement thereto and to said worm-gearing and comprising a spindle carrying a pair of idle bevel-gears in mesh with the gear carried by said shaft, and means for making and breaking connection between said spindle and one of said bevel-gears.

18. A safe or vault door bolting mechanism, comprising swinging bolts, means for shifting said bolts to and beyond their dead-centers, and means including intersecting bolts for dogging said bolts.

19. A safe or vault door bolting mechanism, comprising swinging bolts, means for shifting said bolts to and beyond their dead-centers, and means including rotary intersecting bolts for dogging said bolts.

20. A safe or vault door bolting mechanism, comprising bolts having their ends, together with coöperating surfaces of the safe or vault body, constructed to first draw the door to its seat and then hold it there under tension without tendency of the bolts to creep back, and lock-controlled spindle-operated means including intersecting bolts for dogging said bolts to prevent the retraction thereof.

21. A safe or vault door bolting mechanism, comprising bolts having their outer ends, together with coöperating surfaces of the safe or vault body, constructed to first draw the door to its seat and then hold it there under tension without tendency of the bolts to creep back, and dogging means including rotary bolts intersecting said bolts to prevent the retraction thereof.

22. A safe or vault door bolting mechanism comprising swinging bolts having their ends together with coöperating surfaces of the safe or vault body constructed to first draw the door to its seat and then hold it there without any tendency of such bolts to creep back, means for shifting said bolts toward and beyond their dead-centers, and means for dogging said bolts to positively prevent the retraction thereof.

23. A safe or vault door bolting mechanism comprising swinging bolts having their outer ends together with coöperating surfaces of the safe or vault body constructed to first draw the door to its seat and hold it there without any tendency of such bolts to creep back, means for shifting said bolts to and beyond their dead-centers, and rim-dog mechanism for dogging said bolts to positively prevent the retraction thereof.

24. A safe or vault door bolting mechanism comprising swinging bolts having their outer ends together with coöperating surfaces of the safe or vault body constructed to first draw the door to its seat and hold it there without any tendency of such bolts to creep back, means for shifting said bolts to and beyond their dead-centers, means for dogging said bolts to positively prevent the retraction thereof and comprising intersecting bolts, said dogging mechanism and main bolts being operative simultaneously, and means for engaging the inner ends of said bolts when in their protracted position.

25. A safe or vault comprising a body, a door, bolting mechanism comprising bolts having their outer ends together with coöperating surfaces of the safe or vault body constructed to first draw the door to its seat and then disengage and render such portions ineffective while holding the door under tension without tendency of the bolts to creep back, and lock-controlled means comprising intersecting devices for engaging and preventing the premature retraction of the bolts.

26. A safe or vault comprising a body having a conically-formed jamb, a door conforming to and tightly fitting such jamb, with the front surfaces around and at the end termination of the joint relatively flat and substantially flush, and spindle-operated bolting mechanism comprising bolts having their outer ends together with coöperating surfaces of the safe or vault body constructed to first draw the door to its seat and then hold it there under tension without tendency of the bolts to creep back and means substantially as shown and described, comprising intersecting devices for engaging and preventing the premature retraction of the bolts.

27. A safe or vault door having a device supported centrally of the door, and integral, swinging, radially-shiftable bolts having their inner ends directly connected with said device, so that in one position the lines of centers of said device and bolts will coincide, means for throwing said bolts to and beyond their dead-centers, and means for preventing the premature retraction of such bolts.

28. A safe or vault door having swinging bolts provided with abutting portions, a device connected with said bolts and supported so that in one position the lines of centers of said device and bolts will coincide, and means for shifting said device to throw the bolts beyond their dead-centers.

29. A safe or vault, comprising a body, a door, and bolting mechanism comprising swinging bolts having abutting portions and constructed, together with coöperating surfaces of the body, to first draw the door to its seat and then hold it there under tension without tendency of the bolts to creep back from their bolting position and means for throwing said bolts to and beyond their dead-center positions.

30. A safe or vault, comprising a body, a door, bolting mechanism comprising swinging bolts having abutting portions and constructed, together with coöperating surfaces of the body, to first draw the door to its seat and then hold it there under tension without tendency of the bolts to creep back from their bolting position, a device connected with said bolts and supported so that in one position the lines of centers of said device and bolts will coincide, and means for shifting said device to throw the bolts beyond their dead-centers.

31. A safe or vault, comprising a body, a door, bolting mechanism comprising swinging bolts having abutting portions and constructed, together with coöperating surfaces of the body, to first draw the door to its seat and then hold it there under tension without tendency of the bolts to creep back from their bolting position, a device connected with said bolts and supported so that in one position the lines of centers of said device and bolts will coincide, means for shifting said device to throw the bolts beyond their dead-centers, and means located adjacent to the inner end of said bolts for preventing the retraction thereof when shifted beyond their dead-centers.

32. A safe or vault comprising a body, a door, bolts supported for swinging reciprocatory movement, a device connected with said bolts and supported so that in one position the lines of centers of said device and bolts will coincide, and means for throwing said bolts to and beyond their dead-centers, the walls of the bolt-openings through which the bolts pass preventing further swinging movement in the same direction.

33. A safe or vault, comprising a body, a door, bolts supported on the door for swinging, radial movement, means supported in position and connected with the inner ends of said bolts so that in one position and prior to the complete locking of the door the lines of centers of said means and bolts will coincide, and means for throwing said bolts off such lines of centers, said body and bolts being so constructed that the bolts will first draw the door to its seat and then hold it there under tension without tendency of the bolts to creep back.

34. A safe or vault comprising a body, a door, bolts supported on the door for swinging reciprocatory movement, a rocking device supported in position and connected with said bolts so that in one position the lines of centers of said rocking device and bolts will coincide, said body and bolts being so constructed that the bolts will first draw the door to its seat and then hold it there under tension without tendency of the bolts to creep back, and means for swinging the bolts to and beyond their dead-centers.

35. A safe or vault comprising a body, a door, bolts supported on the door for swinging radial movement, a device pivoted centrally of the door and connected to said bolts so that in one position the lines of centers of said device and bolts will coincide, and means for swinging the bolts to and beyond their dead-centers, said bolts having their outer ends together with coöperating surfaces of the body so constructed that they will first draw the door to its seat and then hold it there under tension without tendency of the bolts to creep back.

36. A safe or vault comprising a body, a door, bolts supported on the door for swinging radial movement, a device pivoted centrally of the door and connected to said bolts so that in one position the lines of centers of said device and bolts will coincide, means for swinging the bolts to and beyond their dead-centers, said bolts having their outer ends together with coöperating surfaces of the body so constructed that they will first draw the door to its seat and then hold it there under tension without tendency of the bolts to creep back, and means for preventing the retraction of the bolts.

37. A safe or vault comprising a body, a door and bolts supported by the walls of the door adjacent to their outer ends for movement in the arc of a circle and limited in their swinging movement by such walls, a device pivoted centrally of the door to which the inner ends of said bolts are pivoted, the organization being such that in one position of said device and bolts the lines of centers of said device and bolts will coincide, and means for shifting said bolts to and beyond their dead-centers.

38. A safe or vault comprising a body, a door and bolts supported by the walls of the door adjacent to their outer ends for movement in the arc of a circle and limited in their swinging movement by such walls, a device pivoted centrally of the door to which the inner ends of said bolts are pivoted, the organization being such that in one position of said device and bolts the lines of centers of said device and bolts will coincide, means for shifting said bolts to and beyond their dead-centers, and an integral boss for preventing the retraction of said bolts.

39. A safe or vault comprising a body having a conically-shaped jamb, a door conforming to and fitting tightly therein, bolts supported by the walls of the door adjacent to their outer ends for movement in the arc of a circle and limited in such movement by such walls a disk pivoted centrally of the door and to which the inner ends of said bolts are pivoted, the organization being such that in one position the lines of centers of said disk and bolts will coincide, means for shifting said bolts to and beyond their dead-centers, and means for preventing the improper retraction thereof, said bolts being constructed at their outer ends together with coöperating surfaces of the body to draw the door to its seat under tension and then hold it there without tendency of the bolts to creep back.

40. A safe or vault comprising a body, a door, a series of diverging bolts located around the door and means for shooting the bolts under pressure, the body and bolts constructed to first draw the door to its seat and then hold it there under tension, such bolt and body having one plane or straight face only and the other a coöperating tapered face and a straight or plane face, so that when the bolts are first shot out the tapered face on one of said parts will draw the body to its seat and then as the tapered face passes from its region of effectiveness the plane faces will only engage and hold the door under tension thus to prevent tendency of the bolts to creeep back under vibration in a manner similar to that when the tapered surfaces remain in engagement.

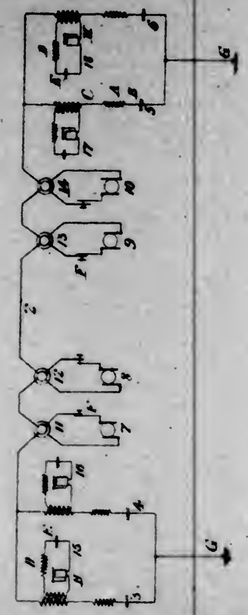
821,741. TELEGRAPHY. MICHAEL I. PUPIN, New York, N. Y. Filed Jan. 28, 1895. Serial No. 536,488.

Claim.—1. In an electrical system the combination of a main line, means for throwing several electromotive forces of different frequencies onto the main line through transformers having cores which form closed magnetic circuits and having large magnetic leakage, selective parts connected to the main line, and means for tuning each selective part to respond to one of the electromotive forces thrown upon the main line, substantially as described.

2. The combination in a telegraphic system containing two or more circuits of means for imposing upon said system electromotive forces of predetermined periodicities, means for electrically tuning each of said circuits to an approximate resonance with one of said electromotive forces, by properly proportioning its electromagnetic constants with respect to the system, a circuit in inductive relation with each of said tuned circuits tuned to a complete resonance with one of said periodic electromotive forces and independently of the rest of the system, substantially as described.

3. The combination in a telegraphic system of two or more circuits and a means of imposing upon said system an electromotive force of previously-selected periodicity and in one of said circuits means for electrically tuning it to approximate resonance with said electromotive force (by properly proportioning its electrical constants with respect to the rest of the system) a circuit in inductive relation to said tuned circuit including a self-induction coil and a capacity; the said coil being so proportioned as to produce in the circuit, a self-induction very large as compared with the whole self-induction of

the circuit; whereby said secondary circuit may be electrically tuned in resonance with said periodic electromotive force and independently of the rest of the system.



4. The combination in a telegraphic system of a line conductor, two branch circuits each including a primary coil, a self-induction coil and a capacity, two secondary circuits containing a secondary coil (in inductive proximity to one of said primary coils) a self-induction coil, and a capacity and a telegraphic receiving apparatus, means of imposing two periodic electromotive forces upon said line, and telegraphic transmitting apparatus arranged to vary said electromotive forces: the said parts being constructed and combined so that each branch circuit is tuned in approximate electrical resonance, and the induced secondary circuit thereof in electrical resonance with one of said imposed electromotive forces.

5. In an electrical system the combination of a common conductor, means for throwing several electromotive forces at different frequencies onto the common conductor through transformers having cores which form closed magnetic circuits and having large magnetic leakage, selective parts receiving energy from the common conductor, and means for tuning each selective part to respond to one of the electromotive forces thrown upon the common conductor, substantially as described.

6. The combination in a telegraphic system of a common conductor, two branch circuits each including a primary coil, a self-induction coil and a capacity, two secondary circuits containing a secondary coil (in inductive proximity to one of said primary coils) a self-induction coil, and a capactiy and a telegraphic receiving apparatus, means of imposing two periodic electromotive forces upon said conductor, and telegraphic transmitting apparatus arranged to vary said electromotive forces; the said parts being constructed and combined so that each branch circuit is tuned in approximate electrical resonance, and the induced secondary circuits thereof in electrical resonance with one of said imposed electromotive forces.

821,742. GARMENT-HOLDER. VICTOR H. REA, Elgin, Ill. Filed Nov. 5, 1904. Serial No. 231,525.

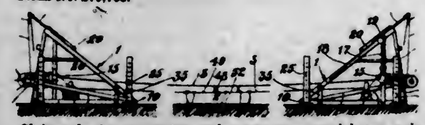
Claim.—1. A garment-holder of the character described in two parts, the one part comprising oppositely-disposed outer arms terminating at one end in a pair of U-shaped loops, the inner arms of which are connected to form an inverted loop, said U-shaped loops and inverted loop being in substantially the same plane as said outer arms; and the coöperating part comprising arms having portions offset laterally at one end of the arms and having connected thereto an intermediate U-shaped locking-loop, the locking-loop being offset laterally in a reverse direction with respect to said offset portions, whereby said locking-loop will normally occupy a position to engage with the inverted loop of said first-mentioned part to prevent separation of the parts when in operative relation.



2. A garment-holder in two parts, the one part comprising oppositely-disposed outer arms terminating at one end in a pair of U-shaped loops, the inner arms of which are connected at their upper ends to form an inverted loop, said U-shaped loops and inverted loop being in substantially the same plane as said outer arms, and the coöperating part comprising arms having a pair of U-shaped loops offset laterally with respect to the adjoining portions of the arms and connected by a locking-loop offset laterally in a reverse direction with respect to said U-shaped loops, whereby said locking-loop will normally occupy a position to engage the inverted loop of said first-mentioned part to prevent separation of the parts when in operative relation.

3. A garment-holder of the character described in two parts, the one part comprising oppositely-disposed outer arms terminating at one end in a pair of substantially U-shaped loops, the inner arms of which are connected, and the coöperating part comprising arms terminating at one end in a pair of substantially U-shaped loops, the inner arms of which are connected, the loops of the respective parts being complementarily formed to engage one with the other and lie in substantially the same plane, and one of said parts having an offset portion at its connection between the loops whereby the parts are locked in position when engaged.

821,743. AUTOMATICALLY-ANCHORING EXCAVATOR AND CONVEYER. EDWIN M. REESE, Yuma, Ariz. Filed July 22, 1905. Serial No. 270,760.



Claim.—1. An excavator and conveyer comprising a pair of conveying-hoists each of which has a drum and means for adjusting the same up and down, and an excavating device between said hoists and operatively connected to said drums.

2. An excavator and conveyer comprising a pair of hoists having adjustable drums and anchorages therefor, and an excavating device between and operatively connected to the adjustable drums of said joists.

3. In an excavator and conveyer, an excavating device provided with pivoted tools, some of which are arranged to operate in one direction and others of which are arranged to operate in the other direction, and means for moving said device on the ground in one and the other direction to cause the reversely-arranged pivoted tools to operate on the ground in alternation.

4. An excavator and conveyer comprising a digger and scraper provided with pivoted tools, and hoists respectively connected to the forward and rear ends of said digger and scraper.

5. An excavator and conveyer, comprising a shell, and reversely-operating tools mounted pivotally in said shell, and means for moving the shell on the ground in one and the other direction.

6. In an excavator and conveyer, a digger and scraper comprising a shell provided with runners, and tools pivoted in said shell.

7. An excavator provided with pivotally-mounted tools comprising diggers in combination with a pivotally-mounted scraper, and means for moving the same on the ground in one and the other direction; said diggers being reversely arranged so that one will operate in one direction and the other will operate in the other direction.

8. A conveying-hoist comprising an anchorage, thrust-beams pivoted on said anchorage, and a hoist mounted on said beams.

9. A conveying-hoist comprising an anchorage, thrust-beams pivoted on said anchorage, and a movable hoist and reversing means therefor, said hoist being mounted on said thrust-beams.

10. In a conveying-hoist, an adjustable anchor provided with a crossed lower end.

11. A conveying-hoist comprising thrust-beams pivotally secured to anchorage and a conveying-drum mounted on the free ends of said thrust-beams.

12. A conveying-hoist comprising thrust-beams pivoted to anchorage and spaced apart by a beam at their upper ends, said ends being free to move up and down, a conveying-drum carried by said free ends, and means to raise and lower the free ends of said thrust-beams.

13. A conveying-hoist comprising thrust-beams pivotally anchored at one end and carrying a transverse shaft on their free ends, a drum on said shaft provided with means for shifting longitudinally of said shaft, and means to operate said drum.

14. A conveying-hoist comprising spaced thrust-beams pivotally secured to an anchorage, a frame on said anchorage provided with means for raising and lowering said thrust-beams, and a longitudinally-movable conveying-drum mounted on and between said beams.

15. A conveying-hoist comprising spaced thrust-beams pivotally secured to an anchorage, a conveying-drum mounted on and between said thrust-beams and adapted to move through the distance between them, means for raising and lowering said thrust-beams and the drum mounted on them.

16. In an excavating apparatus, in combination, two adjustable traction members, an excavating device adapted to reciprocate horizontally between said members, said excavating device being provided with soil-moving attachements adapted to automatically assume an operative position when the excavator moves toward one, and an inoperative position when the excavator moves toward the other traction member, and means operatively connecting said excavating device with said traction members.

17. In an excavating apparatus, in combination, an excavating device adapted to be drawn upon the ground, and traction means for operating said excavating device, said device provided with a soil-moving attachement, said attachment having a heel adapted to enter the soil and thereby throw said attachment into operative position.

18. In an excavating apparatus, in combination, two traction members, an excavating device adapted to reciprocate horizontally between said members, and a flexible connection operatively connecting said excavating device with said members, a drum being provided for said connection to pass over and means for raising and lowering said drum.

19. In an excavating apparatus, in combination, an excavating device adapted to be drawn over the ground, a flexible connection secured to said excavating device for drawing the same, a drum for said connection to pass over, a horizontal rotary shaft on which said drum is slidably mounted to rotate therewith, means for rotating said shaft, and means for supporting said shaft and raising and lowering the same.

20. In an excavating apparatus, in combination, an excavating device adapted to be drawn over the ground, a flexible connection secured to said excavating device for drawing the same, a drum for said connection to wind upon, a horizontal rotary shaft upon which said drum is slidably mounted to rotate therewith, pivoted thrust-beams having their free ends secured to said shaft, means for swinging said beams on their pivots, and means for rotating said drum.

21. In an excavating apparatus, in combination, a horizontally-movable excavating device, a flexible connection secured to said excavating device, for moving the same, a drum for said connection to wind upon, a horizontal shaft upon which said drum is mounted, vertically-movable means upon which said shaft is mounted, a frame supporting said movable means, a motor, and reversible means operatively connecting said motor with said shaft.

22. In an excavating apparatus, in combination, a horizontally-movable excavator, a connection for moving the same, a frame, a drum mounted thereon, for said connection to wind upon, means for supporting said drum and raising and lowering the same, an adjusting-pulley, a slide on which said pulley is mounted, an adjusting-beam carrying said slide and pivoted to swing toward and from said drum, a motor, and flexible connections operatively connecting said pulley with said drum and motor.

23. In an excavating apparatus, in combination, an excavator adapted to reciprocate over the surface of the ground, and means for reciprocating said excavator, said excavator being provided with a scraper and plows adapted to automatically assume operative position during one reciprocation of the excavator, and to automatically assume inoperative position during the other reciprocation thereof, said scraper being mounted in a position behind the plows during the reciprocation in which said scraper and plows operate.

24. An excavating apparatus provided with an anchorage having two legs and constructed to straddle the ground to be excavated.

25. An excavating apparatus provided with an anchorage having two legs, the feet of which are parallel with each other and are long and narrow, said legs being arranged to straddle the ground to be excavated.

26. An excavating apparatus provided with an anchorage having two legs, the feet of which are parallel with each other and are long and narrow, and anchors at front and rear of said legs

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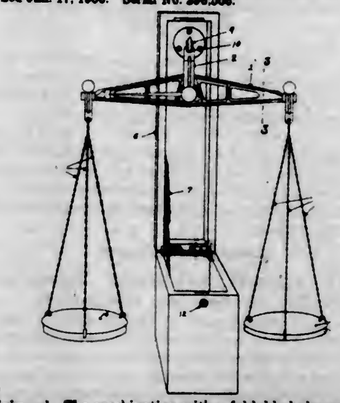
821,744. MANUFACTURE OF STEEL FROM PHOSPHORITIC IRON. JACOB REESE, Sharon Hill, Pa., assignor to The Steel Patents Company, a Corporation of Pennsylvania. Filed Sept. 23, 1905. Serial No. 279,867.

Claim.—1. The process herein described in the manufacture of steel from phosphoritic iron, which consists in desiliconizing and decarbonizing the metal, in a Bessemer converter, then conveying it into a basic-lined open hearth and therein at a high temperature subjecting it to the action of basic additions containing phosphate of lime, until the phosphorus is removed from the metal and is held in the slag as a phosphate, substantially as and for the purpose set forth.

2. In the manufacture of steel from phosphoritic iron, the method of dephosphorizing the metal by the use of basic additions containing phosphates, which consists in desiliconizing molten iron, then placing it in a basic-lined open hearth, then subjecting it to a high temperature while treated with basic additions containing phosphate of lime, until the metal has been purified, and the slag formed by the basic additions contains at least fifteen per cent. of phosphoric acid.

3. The process herein described for the manufacture of iron and steel and the production of a slag high in phosphoric acid from iron low in phosphorus, consisting in first desiliconizing and decarburizing the molten metal in a Bessemer converter, then transferring the molten metal from the converter to a basic-lined open-hearth furnace and subjecting the molten metal therein to a basic bath having a percentage of phosphoric acid which when added to the phosphorus of the metal shall produce a slag having not less than fifteen (15) per cent. nor more than twenty two (22) per cent. of phosphoric acid, the temperature and fluidity of the bath being maintained during said additions to the molten metal.

821,745. PORTABLE BALANCE. FRITZ REICHMANN, Troy, N. Y., assignor to W. & L. E. Gurley, Troy, N. Y., a Corporation of New York. Filed Jan. 17, 1906. Serial No. 296,506.



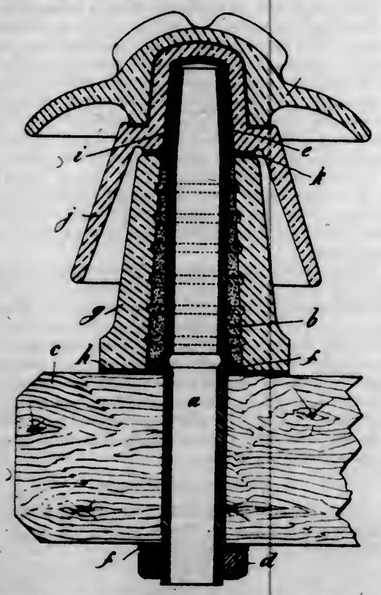
Claim.—1. The combination with a foldable balance, comprising in part a balance-beam and a fulcrum-support therefor; of a covered inclosure adapted to contain said balance when folded; means for supporting the cover perpendicularly to the body of said inclosure; and an offset projecting from the inner side of said cover, adapted to receive and support the fulcrum-support of the balance.

2. The combination with a foldable balance, comprising in part a balance-beam and a fulcrum-support therefor: of a covered

inclosure adapted to contain said balance when folded, said cover being hinged to the body of the inclosure; a foldable brace adapted to extend diagonally from the body of the inclosure to the cover when the latter is raised to a perpendicular position; and a hook projecting from the inner side of the cover near its swinging end, adapted to receive and suspend therefrom the fulcrum-support for the balance-beam.

3. The combination with a foldable balance, comprising in part a balance-beam and a fulcrum-yoke therefor having a suspension eye; of a covered inclosure adapted to receive said balance when folded, and having the cover thereof hinged at one end of the body of the inclosure and provided with flanges extending inwardly from the top of the cover; means for supporting the cover perpendicularly to the body of the inclosure; and a hook projecting from the top of the cover to a greater distance than the cover-flanges, and adapted to receive the suspension-eye of the fulcrum-yoke of the balance.

821,746. INSULATOR. AUGUSTO RICHARD, Milan, Italy. Filed Mar. 17, 1904. Serial No. 198,696.



Claim.—1. An insulator having a cup-shaped metallic bush having its inner end closed, a thin layer of cement securing the bush to the insulator, and a paraffined washer surrounding and abutting the bush to prevent the entrance of moisture to the cement.

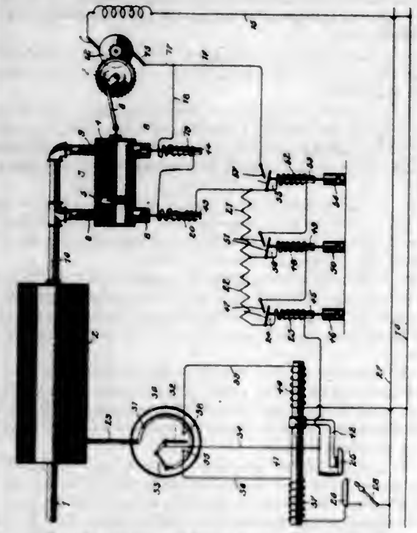
2. The combination with the metallic post having a screw-threaded upper end, of a shell surrounding the post, below the top thereof, an insulator having a metallic bush, cemented therein, to engage the post and a paraffined washer interposed between the shell and the insulator and preventing the entrance of moisture to the cement securing the bush.

821,747. CONTROLLING APPARATUS. WALTER J. RICHARDS, Milwaukee, Wis. Filed July 2, 1903. Serial No. 164,695.

Claim.—1. In combination, an electric motor, a fluid-pump driven thereby, a pressure system supplied by said pump, switching means controlled by the pressure in said system to govern the circuit for said motor, and electrical means for preventing the operation of the suction-valves of said pump upon the closure of the circuit through said motor.

2. In combination, an electric motor, a fluid-pump driven thereby, switching means for controlling the circuit through said motor, and electrical means for preventing the operation of the valves of said pump upon the closure of the circuit through said motor.

3. In combination, an electric motor, a fluid-pump driven thereby, switching means for controlling the circuit through said motor, and automatic electrical means for preventing the operation of a suction-valve of said pump during the initial supply of current to said motor.



4. In combination, an electric motor, an air-compressor driven thereby, a pressure system supplied by said air-compressor, switching means governed by the pressure in said system to control the circuit through said motor, and electrical means for preventing the operation of the valves of said compressor during the initial supply of current to said motor.

5. In combination, an electric motor, a fluid-pump driven thereby, switching means for controlling the circuit through said motor, automatic electrical means for preventing the operation of the valves of said pump during the initial supply of current to said motor, and means for permitting the operation of said valves upon the lapse of a suitable interval after the closure of said motor-circuit.

6. In combination, an electric motor, a fluid-pump driven thereby, a pressure system supplied by said pump, switching means controlled by the pressure in said system to close the motor-circuit upon a decrease in the pressure in said system to a minimum and to open the motor-circuit upon an increase in the pressure in said system to a maximum limit, and electrical means for preventing the operation of the suction-valves of said pump upon the closure of the circuit through said motor.

7. In combination, an electric motor, a fluid-pump driven thereby, a pressure system supplied by said pump, switching means controlled by the pressure in said system to close the motor-circuit upon a decrease in the pressure in said system to a minimum limit and to open the motor-circuit upon an increase in the pressure in said system to a maximum limit, and electrical means for preventing the operation of the valves of said pump during the initial supply of current to said motor.

8. In combination, an electric motor, a fluid-pump driven thereby, a pressure system supplied by said pump, switching means controlled by the pressure in said system to close the motor-circuit upon a decrease in the pressure in said system to a minimum limit and to open the motor-circuit upon an increase in the pressure in said system to a maximum limit, means for preventing the operation of the valves of said pump during the initial supply of current to said motor, and electrical means for permitting the operation of said valves upon the lapse of a suitable interval after the closure of said motor-circuit.

9. In combination, an electric motor, a fluid-pump driven thereby, a pressure system supplied by said pump, switching means controlled by the pressure in said system to control the motor-circuit, means for restricting the supply of current to said motor at starting, means for preventing the operation of the valves of said pump upon the closure of the motor-circuit and electrical means for permitting the operation of said valves upon the lapse of a suitable interval after the closure of said motor-circuit.

10. In combination, an electric motor, a fluid-pump driven thereby, a pressure system supplied by said pump, switching means controlled by the pressure in said system to control the motor-circuit, means for restricting the supply of current to said motor at starting, and electromagnetic means for preventing the operation of the valves of said pump upon the closure of the motor-circuit.

11. In combination, an electric motor, a fluid-pump driven thereby, a pressure system supplied by said pump, switching means controlled by the pressure in said system to control the motor-circuit, means for restricting the supply of current to said motor at starting, electromagnetic means for preventing the operation of the valves of said pump upon the closure of the motor-circuit and additional electromagnetic means for permitting the operation of said valves after the removal of the restriction of the supply of current to said motor.

12. In combination, an electric motor, a fluid-pump driven thereby, a pressure system supplied by said pump, switching means controlled by the pressure in said system to control the circuit through said motor, means for restricting the supply of current to said motor at starting, means for preventing the closure of the suction-valves of said pump upon the initial supply of current to said motor, and electrical means for permitting the operation of said valves and for removing the restriction of the supply of current to said motor after the lapse of a suitable interval after the closure of said motor-circuit.

13. In combination, an electric motor, a fluid-pump driven thereby, means for controlling the motor-circuit, means for restricting the supply of current to said motor at starting, and means for preventing the operation of the valves of said pump upon the closure of the motor-circuit and for permitting the operation of said valves after the removal of the restriction of the supply of current to said motor.

14. In combination, an electric motor, a fluid-pump driven thereby, means for controlling the motor-circuit, means for restricting the supply of current to said motor at starting, electrical means for preventing the closure of the suction-valves of said pump upon the initial supply of current to said motor, and means for permitting the operation of said valves and for removing the restriction of the supply of current to said motor after the lapse of a suitable interval after the closure of said motor-circuit.

15. In combination, an electric motor, an air-compressor driven thereby, a pressure system supplied by said air-compressor, switching means governed by the pressure in said system to control the circuit for said motor, an automatic rheostat in the motor-circuit, means for preventing the operation of the valves of said pump during the initial supply of current of said motor, and electrical means for permitting the operation of said valves upon the lapse of a suitable interval after the closure of said motor-circuit.

16. In combination, an electric motor, a fluid-pump driven thereby, switching means for controlling the circuit through said motor, a resistance normally included in the motor-circuit, automatic means for gradually cutting said resistance out of the motor-circuit upon the closure of said circuit, electromagnetic mechanism normally included in the motor-circuit adapted upon the closure of the motor-circuit to prevent the operation of the valves of said compressor, and a slow-acting electromagnetic mechanism adapted to permit the operation of said valves after the lapse of a suitable interval after the closure of said motor-circuit.

17. In combination, a fluid-pump, a pressure system supplied thereby, motor means adapted to drive said pump, means governed by the pressure in said system for controlling the supply of energy to said motor means, and means for automatically raising the suction-valves of said pump off their seats during the initial supply of energy to said motor means.

18. In combination, a fluid-pump, a pressure system supplied thereby, motor means adapted to drive said pump, means for controlling the supply of energy to said motor means, and electrical means for automatically preventing the operation of the suction-valves of said pump during the initial supply of energy to said motor means.

19. In combination, an electric motor, a fluid-pump driven thereby, switching means for controlling the motor-circuit, and automatic electrical means for preventing the operation of a valve of said pump during a limited period after the closure of the motor-circuit.

20. In combination, an air-compressor, an electric motor for driving said compressor, and automatic electrical means for preventing the operation of the suction-valves of said compressor during the initial supply of energy to said electric motor.

21. In combination, a fluid-pump, motor means for driving said pump, automatic electrical means for preventing the operation of the suction-valves of said pump upon the initial supply of energy to said motor means, and automatic means for allowing the operation of said suction-valves after the lapse of a suitable interval after the initial supply of energy to said motor means.

22. In combination, a fluid-pump having discharge-valves, an electric motor to drive said pump to normally cause compression of the fluid therein, whereby said discharge-valves are actuated, and electrical mechanism adapted upon closure of the motor-circuit to prevent compression of the fluid, whereby said valves are rendered inoperative.

23. In combination, a fluid-pump having discharge-valves, motor means for driving said pump for normally causing compression of the fluid therein and actuation of said discharge-valves, and electrical mechanism adapted during the initial supply of energy to said motor to automatically prevent compression of the fluid whereby said valves are rendered inoperative.

24. In combination, a fluid-pump, an electric motor for driving said pump, a pressure system supplied by said pump, switching means controlled by the pressure in said system to close the motor-circuit upon a decrease in the pressure in said system to a minimum limit and to open the motor-circuit upon an increase in the pressure in said system to a maximum limit, and automatic electromagnetic means adapted to prevent the operation of the suction-valves of said pump upon the closure of the motor-circuit.

25. In combination, a fluid-pump having discharge-valves, an electric motor for driving said pump to normally compress the fluid therein to cause actuation of said valves, a pressure system supplied by said pump, switching means controlled by the pressure in said system to close the motor-circuit upon a decrease in the pressure in said system to a minimum limit, and automatic electromagnetic mechanism adapted upon the closure of the motor-circuit to prevent compression of fluid to render the valves inoperative.

26. In combination, an air-compressor having discharge-valves, an electric motor for driving said air-compressor to normally cause compression of air therein and actuation of the discharge-valves, a pneumatic pressure system supplied by said compressor, switching mechanism governed by the pressure in said system to cause the closure of the circuit through said motor upon a decrease in the pressure in said system to a minimum limit and to cause a break in the motor-circuit upon an increase in the pressure in said system to a maximum limit, a slow-acting automatic rheostat in the motor-circuit adapted to gradually short-circuit the resistances normally included in the motor-circuit after the closure of the motor-circuit, electromagnetic mechanism normally included in the motor-circuit adapted upon energization due to the closure of said motor-circuit to prevent compression of fluid and actuation of said valves, and a slow-acting electromagnetic switching device adapted to be actuated upon the short-circuiting of the last of said resistances to short-circuit the solenoids of said electromagnetic mechanism to allow compression of said fluid.

27. In combination, an electric motor, an air-compressor driven thereby, switching mechanism adapted to control the circuit for said motor, a slow-acting automatic rheostat in the motor-circuit adapted gradually to short-circuit resistances normally included in the motor-circuit after the closure of the motor-circuit, electromagnetic mechanism normally included in the motor-circuit adapted upon energization to prevent the operation of the suction-valves of said pump, and a slow-acting electromagnetic switching device adapted to be actuated after the lapse of a suitable interval of time to short-circuit the solenoids of said electromagnetic mechanism to permit the actuation of said valves.

82. In combination, a fluid-pump having discharge-valves, an electric motor for driving said pump, a pressure system supplied by said pump, means governed by the pressure in said system to control the motor-circuit, actuation of said motor normally causing compression of fluid in said pump and actuation of said discharge-valves, electromagnetic mechanism normally included in the motor-circuit adapted upon energization to prevent compression of fluid and actuation of said valves, and a slow-acting electromagnetic device included in the motor-circuit adapted to cause the deënergization of said electromagnetic mechanism after the lapse of a suitable interval of time after the closure of the motor-circuit.

29. In combination, a fluid-pump having discharge-valves, an electric motor for same, a pressure system supplied by said pump, means governed by the pressure in said system to control the motor-circuit, operation of said pump normally causing compression of fluid therein and actuation of the discharge-valves, electromagnetic mechanism included in the motor-circuit adapted upon energization to prevent compression of fluid and actuation of said valves, and a slow-acting electromagnetic device included in the motor-circuit adapted to cause the deënergization of said electromagnetic mechanism after the termination of a limited period following the closure of the motor-circuit.

30. In combination, a fluid-pump having discharge-valves, an

electric motor for driving said pump, the fluid in said pump being normally compressed and said valves actuated, electromagnetic mechanism normally included in the motor-circuit, adapted upon energization to prevent compression of fluid and actuation of said valves, and a slow-acting electromagnetic device included in the motor-circuit, adapted to cause the demagnetization of said electromagnetic mechanism after the lapse of a suitable interval of time after the closure of the motor-circuit.

31. In combination, a fluid-pump having discharge-valves, an electric motor for driving said pump for normally causing compression of fluid therein and the actuation of said discharge-valves, electromagnetic mechanism included in the motor-circuit adapted upon energization to prevent compression of fluid and actuation of the valves, and a slow-acting electromagnetic device included in the motor-circuit adapted to cause the demagnetization of said electromagnetic mechanism after the lapse of a suitable interval of time after the closure of the motor-circuit.

32. In combination, an electric motor, a fluid-pump driven thereby, a pressure system supplied by said pump, means governed by the pressure in said system to control the motor-circuit, electromagnetic means included in the motor-circuit adapted upon energization to prevent the operation of the suction-valves of said pump, and electromagnetic means adapted to permit the operation of said valves after the lapse of a suitable interval after the closure of the motor-circuit.

33. In combination, an electric motor, a fluid-pump driven thereby, a pressure system supplied by said pump, switching means controlled by the pressure in said system to control the circuit for said motor, electromagnetic mechanism included in the motor-circuit adapted upon energization to actuate the suction-valves of said pump to prevent the operation thereof, and slow-acting electromagnetic switching devices adapted to short-circuit and thereby cause the demagnetization of said electromagnetic mechanism to permit the operation of said valves.

34. In combination, an electric motor, a fluid-pump driven thereby, switching means for controlling the circuit through said motor, actuation of said pump normally causing compression of fluid therein and actuation of the valves thereof, and electrical mechanism adapted upon the closure of the motor-circuit to prevent compression of fluid and the actuation of said valves.

35. In combination with an electric motor, a fluid-pump driven thereby, switching means for controlling the circuit through said motor, the fluid in said pump being normally compressed to cause actuation of the valves of the pump, and automatic electrical mechanism adapted during the initial supply of current to said motor to prevent compression of fluid and actuation of the valves.

36. In combination, a fluid-pump, motor means for driving said pump, means for controlling the supply of energy to said motor means, the fluid in said pump being normally compressed therein to cause actuation of the valves of the pump, and automatic electrical mechanism adapted during a suitable period following the initiation of the supply of energy to said motor means for preventing compression of fluid and the actuation of said valves.

37. In combination, an electric motor, a fluid-pump driven thereby, a pressure system supplied by said pump, switching means controlled by the pressure in said system to govern the circuit for said motor, and means associated with the suction-valves of said pump and included in the motor-circuit for preventing the operation of said valves upon the closure of the circuit through said motor.

38. In combination, a fluid-pump, an electric motor driving said pump, a pressure system supplied by said pump, a controlling-valve for said pump, an electric circuit for said motor controlled by the pressure in said system, a resistance associated with the motor-circuit for restricting the current-flow to said motor, electromagnetic means controlled by the pressure in said system for removing said resistance from circuit, and means controlled by the pressure in said system for preventing operation of said controlling-valves before said resistance is cut from circuit.

39. In combination, an electric motor, a fluid-pump driven thereby, a pressure system supplied by said pump, means directly subjected to the pressure in said system for controlling the circuit for said motor, electromagnetic means for preventing the operation of the valves of said pump during the initial supply of current to said motor, and additional electromagnetic means for incapacitating said other electromagnetic means when said motor has reached normal speed whereby said valves become operative.

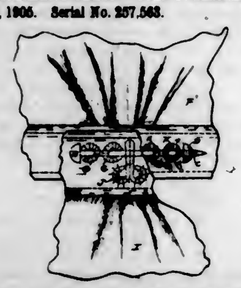
40. In combination, an electric motor, a fluid-pump driven thereby, a pressure system supplied by said pump, switching means positively controlled by the pressure in said system to govern the circuit for said motor, and electromagnetic means for preventing the operation of the suction-valves of said pump upon closure of the circuit through said motor.

41. An unloader for an air-compressor and electrically-controlled means arranged to complete a circuit for operating the unloader to cause it to unload the compressor before the compressor is started.

42. An unloader for an air-compressor and electrically-controlled means for operating the unloader to cause it to unload the compressor before the compressor is started and to throw the load onto the compressor at a predetermined point after the compressor is started.

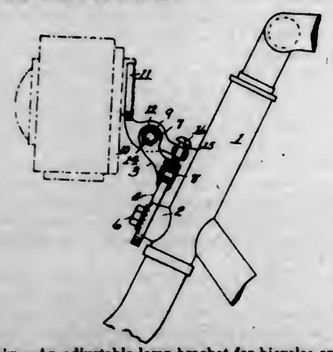
43. An unloader for an air-compressor and electrically-operated means for controlling the unloader comprising a rheostat and an electromagnet forming part of the rheostat resistance.

821,748. GARMENT-CLASP. JOHN F. SALCHLI, Frankfort, Ky. Filed Apr. 27, 1905. Serial No. 257,563.



Claim.—The combination of a dress-waist provided with a plurality of eyelets formed in two sets of two eyelets each, a skirt, a hook secured to said skirt and a pin provided at one end with a fixed head and at its opposite end with a removable screw-threaded nut, said pin being secured in said eyelets by said nut, while the suspension-hook of said skirt is adapted to engage the central portion of said pin between the respective sets of eyelets, all substantially as and for the purpose specified.

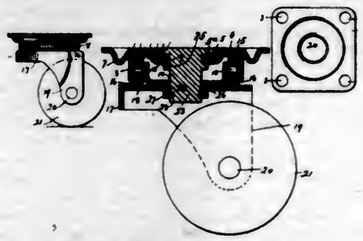
821,749. ADJUSTABLE LAMP-BRACKET. WILLIAM G. SCHARPFF, Reading, Pa., assignor to William F. Rompppis, Reading, Pa. Filed Feb. 3, 1906. Serial No. 299,304.



Claim.—An adjustable lamp-bracket for bicycles or like vehicles comprising two members pivotally joined together by means of a bolt and nut, one member having a perforated right-angled ear, a slotted body portion and an internally-screw-threaded lug at its top, the other member having a lamp-carrying blade, a perforated angled portion adapted to be pivotally connected to said ear and an opening in its extreme rear end at right angles to said perforation and an adjusting-screw adapted to pass through said opening and enter the said screw-threaded lug on the first-named member, substantially as and for the purpose described.

821,750. SHEET-METAL ROLLER-BEARING FURNITURE-CASTER. MARTIN B. SCHENCK, Meriden, Conn. Filed Mar. 14, 1905. Serial No. 249,614.

Claim.—1. In a sheet-metal roller-bearing furniture-caster, the combination with a short stud-like pintle formed at its upper end with a head, of an attaching-plate mounted thereupon, a wheel-frame swiveled directly upon the lower end of the said pintle and formed with a flat bearing-face, an inverted cup rigidly secured to the upper end of the pintle which for that purpose is backset to form an annular flange engaging with the central portion of the lower face of the cup, an inner runway-piece arranged concentrically within the cup than which it is smaller in diameter so as to form a continuous runway, and rollers located in the said runway and bearing upon the said bearing-face of the wheel-frame and also within the inverted cup.



2. In a sheet-metal roller-bearing caster, the combination with a short stud-like pintle having a head at its upper end, of an attaching-plate mounted upon the upper end of the said pintle and having an annular channel in its lower face, an inverted cup having an annular rib entering the said channel, whereby the cup is centered and held against lateral displacement, an inner runway-piece located within the said cup than which it is made smaller in diameter so as to form a continuous runway, a wheel-frame swiveled directly upon the lower end of the pintle and having a bearing-face, and rollers located in the said runway and riding upon the said bearing-face and upon the cup, the said pintle being backset to form an annular flange between which and the head of the pintle the attaching-plate and the cup are rigidly held.

3. In a sheet-metal roller-bearing caster, the combination with an attaching-plate having a recess in its upper face and an annular channel in its lower face, of an inverted cup having a concentric rib upon its upper face entering the said channel, an inner runway-piece located within the said cup than which it is made smaller so as to form a runway, a wheel-frame having a flat bearing-face, rollers located in the said runway and riding upon the said bearing-face; a short stud-like pintle passing through the said plate, cup and wheel-frame and having at its upper end a head located in the recess in the upper face of the said plate and backset to form an annular flange seated against the inner face of the cup, whereby the said plate and cup are rigidly secured together; and a retaining-washer located upon the projecting lower end of the said pintle which, in being backset, is also formed with a shoulder against which the said washer is seated.

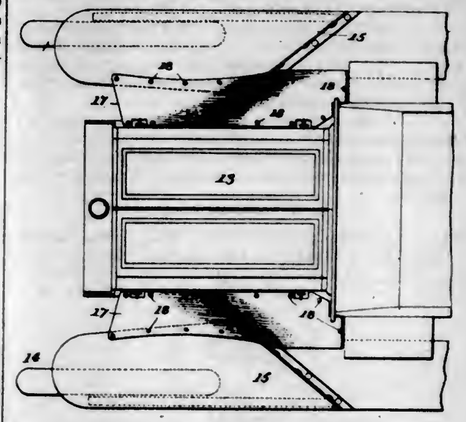
4. In a sheet-metal roller-bearing furniture-caster, the combination with an inverted outer cup, of an inner cup enough smaller than the outer cup to form a runway between them, a wheel-frame, rollers located in the said runway and riding upon the said wheel-frame, a short stud-like pintle passing through the said cups and formed at its upper end with a head and backset to form an annular flange and having the said frame swiveled upon it, the outer cup being rigidly secured to the said pintle by means of the said head and flange and means mounted upon the upper end of the said pintle for securing the caster in place.

821,751. MUD-GUARD FOR MOTOR-VEHICLES. CHARLES SCHMIDT, Detroit, Mich., assignor to Packard Motor Car Company, Detroit, Mich., a Corporation of West Virginia. Filed Mar. 10, 1905. Serial No. 249,443.

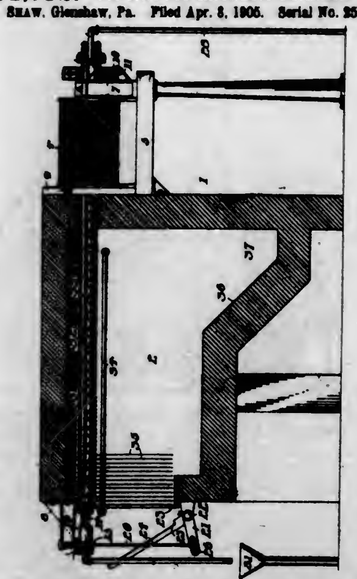
Claim.—1. In a motor-vehicle, the combination with the vehicle-body and the wheels, of the relatively fixed mud-guards extending over said wheels, and the flexible and detachable mud-guards extending between the fixed mud-guards and the vehicle-body.

2. In a motor-vehicle, the combination with the vehicle-body and the wheels, of the relatively fixed mud-guards extending over the wheels, and the flexible mud-guards between the fixed mud-guards and the vehicle-body, the outer edges of said flexible guards being detachably connected to the fixed guards, and the inner edges of said flexible guards being detachably connected with the vehicle-body, for the purpose set forth.

3. In a motor-vehicle, the combination with the vehicle-body and the vehicle-wheels, of the fixed mud-guards extending over the wheels, and the warped flexible mud-guards between the fixed guards and the vehicle-body, the said flexible guards being detachably connected at their outer edges by suitable fastenings with the fixed mud-guards and at their inner edges by suitable fastenings with the vehicle-body, for the purpose set forth.



821,752. CONTINUOUS MAGNETIC FURNACE. HENRY C. SHAW, Glenshaw, Pa. Filed Apr. 8, 1905. Serial No. 254,598.



Claim.—1. In a furnace, oven or the like, a magnet, and means for moving the same so as to advance relatively to the magnet magnetic material within its influence into or through the furnace, oven or the like.

2. In a furnace, oven or the like, a magnet and means for causing magnetic material within its influence to travel therealong.

3. In a furnace, oven or the like, a screw, means for magnetizing the screw, and means for rotating the same, whereby magnetic material between the threads thereof may be advanced along the said screw.

4. In a furnace, oven or the like, a hollow screw, means for admitting a cooling fluid to the interior of the screw, and means for magnetizing and rotating the screw, whereby magnetic material between the threads thereof may be advanced along the said screw.

5. In a furnace, oven or the like, a hollow screw, means within the screw for preventing the deposition of foreign matter, means for

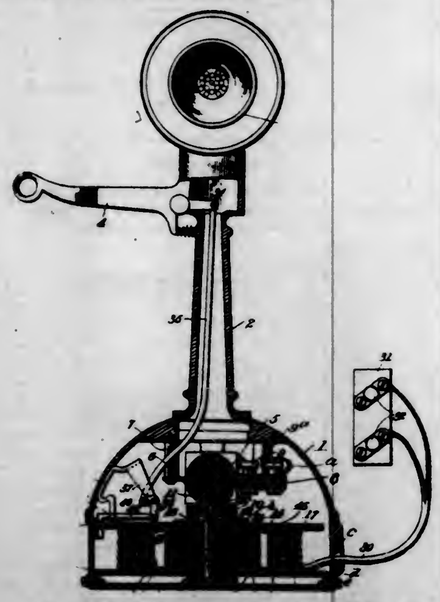
admitting a cooling fluid to the interior of the screw, and means for magnetizing and rotating the screw, whereby magnetic material between the threads thereof may be advanced along the said screw.

6. In a furnace, oven or the like, a hollow screw, magnetic material movable within the same, means for admitting a cooling fluid to the interior of the screw, and means for magnetizing and rotating the screw, whereby magnetic material between the threads thereof may be advanced along the said screw.

7. In a furnace, oven or the like, a hollow screw, a grooved rod rotatable within the same, means for admitting a cooling fluid to the interior of the screw, and means for magnetizing and rotating the screw, whereby magnetic material between the threads thereof may be advanced along the said screw.

8. In a heating-chamber, a conveyer, and means for causing a temporary connection between said conveyer and articles to be heated in said chamber and for causing said articles to travel relatively to said conveyer, the said connection being of a nature to be broken by the heat.

821,753. **PORTABLE TELEPHONE.** WILL A. SHIRER, Rochester, N. Y. Filed Oct. 3, 1905. Serial No. 281,156.



Claim.—1. In combination with telephone apparatus, a hollow base, a post mounted upon the base, a receiver-hook pivotally mounted at the upper end of the post and having one end extending into the post, a reel mounted in said base for rotation therein, a conductor-cord passed into the base and connected to said reel, said cord being unwound from the reel upon movement of the base, means for preventing backward movement of the reel when rotated by movement of the base, and means connected with the receiver-hook to release the reel and permit the reverse movement of the latter upon placing the receiver of the apparatus upon the said hook.

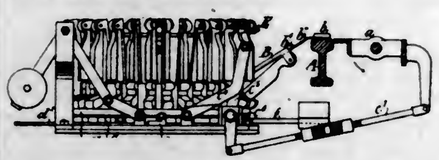
2. A desk-telephone attachment, comprising a hollow base and post, a receiver-hook pivotally mounted upon the post, a spring-actuated reel within said base, the reel including upper and lower disks, one of the disks having a toothed periphery, a conductor-cord passed into the base and connected to the reel whereby the latter may be rotated against the action of its spring by a pull upon said cord, a dog arranged within the base to engage the teeth of the upper disk to hold the reel against backward movement to relieve said cord of strain when pulled outwardly of the base, and a connection between the receiver-hook and the base for engagement with the said dog to release it from engagement with the toothed edge of the upper disk and permit winding of the reel.

3. A desk-telephone attachment comprising a hollow base and standard, a spring-actuated reel arranged within the base, a receiver-hook mounted at the upper end of the standard and extending into the latter, a conductor-cord passing into the base and connecting with the said reel whereby the latter may be rotated by a pull upon said cord to move the attachment from one place to another, means engaging the reel to hold it against backward movement when rotated by a pull upon the cord, a connection between the receiver-hook and the base of the attachment for engagement with the said reel, and means adapted for engagement with the holding means to disengage it from the reel to permit backward movement of the latter.

4. A desk-telephone attachment comprising a hollow base and standard, a receiver-hook for the support of a receiver, a conductor-cord passing into the base and secured therein to permit shortening or lengthening of the cord, a rod connected with the receiver-hook and arranged within the base and standard, and a connection between the rod and the cord to relieve the latter of strain and prevent twisting thereof when pulled outwardly of the base.

5. A desk-telephone attachment comprising a hollow base and standard, an induction-coil mounted within the base, a shelf mounted within the base in alinement with the induction-coil, a reel mounted within the base beneath the induction-coil and shelf, electrical conductor-cords connecting the induction-coil and shelf, conductor elements between the reel and shelf, said reel including upper and lower disks, one of the disks having a toothed periphery, a conductor-cord passed into the base and engaged with the reel whereby the latter may be rotated in one direction by exerting a pull upon the conductor-cord, a dog engaging the toothed periphery of one of the said disks to hold the reel against backward movement when rotated by exerting a pull upon the last-named cord, a receiver-hook pivotally mounted upon said standard, and a rod connected with said hook and having its lower end arranged for engagement with said dog to permit backward movement of the reel upon a downward movement of said hook.

821,754. **RAILWAY SIGNALING APPARATUS.** WILLIAM SKELTON, Surbiton, and HENRY DE JERSEY CHUDLEIGH, Acton, England. Filed Jan. 27, 1906. Serial No. 298,283.



Claim.—1. The improved railway signaling apparatus for use with detonating signals and comprising a series of radially-arranged and pivotally-mounted arms erected upon a rotatable carrier, an intermittent rotative movement being imparted to the said carrier by means of a bar, placed in the path of the locomotive wheel-flange, with the effect that detonators with which the outer extremities of the pivotally-mounted arms are respectively charged are successively placed in operative position upon the rail, substantially as herein described.

2. In a railway signaling apparatus for use with detonating signals, a series of radially-arranged and pivotally-mounted arms charged with detonators and erected upon a rotatable carrier formed as a ratchet, a bar, mounted in the path of the locomotive wheel-flange serving by means of suitable connections to operate a pawl which engages with the teeth of the said ratchet, and to actuate the carrier by a gradual rotative movement, substantially as herein described.

3. In a fog signaling apparatus of the kind herein referred to, the herein-described means for bringing the detonator-charged arms into and out of operative position, same comprising a ring or a circular plate adapted to support each arm during its rotative movement and formed with a cam-surface whereby the arm is first moved into the operative position for placing the detonator upon the rail and subsequently raised to its original position, substantially as herein described.

4. In a fog signaling apparatus, the herein-described means for rendering the apparatus operative or inoperative, according to whether the signal is at danger or at safety; same comprising a pivotally-mounted pawl, and a block operated from the signal-wire and arranged in such a manner that, when the signal is at danger, the said block arrives against the pawl, prevents it turning about its pivot, and thereby renders it operative for the purpose of rotating the carrier whereon the detonator-charged arms are mounted.

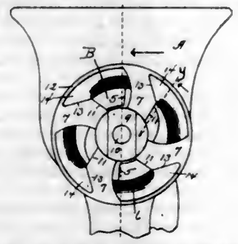
821,755. **BATH-TUB.** EUGENE H. SLOMAN, Detroit, Mich. Filed Apr. 22, 1905. Serial No. 256,863.



Claim.—1. A bath-tub made from a single sheet of metal in which the metal is in such a state of rest that it can be reheated without distortion when cooled.

2. A porcelain-coated bath-tub in which the metal body is formed from a sheet of metal in such a state of rest that on reheating it to apply the porcelain it was not distorted when cooled.

821,756. **FOOD-CHOPPER.** CHARLES F. SMITH, New Britain, Conn., assignor to Landers, Frary and Clark, New Britain, Conn., a Corporation. Filed Aug. 13, 1904. Serial No. 220,636.



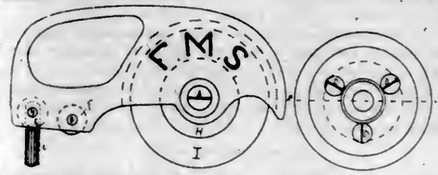
Claim.—1. The combination of a forcer, having cutting-teeth on its delivery end with a perforated plate mounted on the said forcer, and the case having a series of cutting-arms arranged inside of the said perforated plate and outside the outer end of the forcer, with the inner ends of the said arms having cutting edges extended within the diameter of the said forcer for coacting with the teeth thereon, the said case having an enlarged delivery extending radially beyond the diameter of the said forcer, the outer ends of the said arms having cutting edges that slant forwardly and outwardly, and which with the said enlarged delivery of the case form confining-pockets at the outer ends of the said arms, the said pockets being made shallow in the longitudinal direction of the case by means of a wall of the said enlargement which closes the said pockets on that side which is opposite the face of the said perforated plate.

2. The combination of a forcer having cutting-teeth at its end with a perforated plate driven by the said forcer, and a case having cutting-arms between the said teeth and plate and extending outwardly beyond the diameter of the forcer, the inner ends of the said arms having cutting edges arranged in a circle of about the same diameter as the forcer and their outer ends having cutting edges arranged at an angle to said inner cutting edges and in a circle outside of the said inner cutting edges, substantially as described.

3. The combination of the case having cutting-arms at the delivery end with inner cutting edges at the inner ends of the said arms, with a forcer rotating within the said case and having cutting-teeth at its outer end coacting with the said inner cutting edges at the inner ends of the said arms and operating to do all of their cutting within the diameter of the said forcer, the said arms of the case having also outer cutting edges at their outer ends arranged for cutting on a circle outside of the circle occupied by the said inner cutting edges, and a perforated plate which is imperforate in front of the inner cutting edges at the inner ends of the said arms, and provided with perforations outside the circle occupied by the said inner cutting edges and operating to do all of its cutting outside of the circle within which all the cutting is done at the inner edges of the said arms.

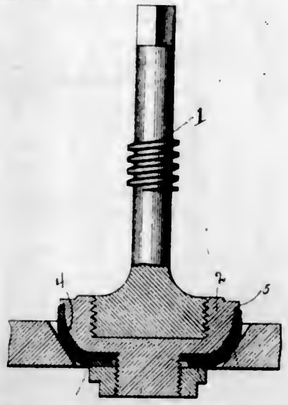
821,757. **ROTARY PAPER-TRIMMER.** FRANCIS M. SMITH, Woodstock, Canada. Filed Oct. 13, 1905. Serial No. 282,565.

Claim.—1. The combination in a paper-trimming machine of a circular knife having a rough or tooth edged cylinder attached by means of screws, and a small cylinder or traveler running on the same level and following the rough or tooth edged cylinder, and a small cylinder or guide running behind the knife on a small pivot said pivot being attached to a small set-screw, all substantially as set forth.



2. The combination in a paper-trimming machine of a circular knife having a rough or tooth edged cylinder attached and a small cylinder or guide running behind the knife on a small pivot, said pivot being attached to a small set-screw, all substantially as set forth.

821,758. **VALVE.** FRANK L. SMITH, Chicago, Ill., assignor of two-thirds to Alva C. Ricksecker and one-third to Lewis A. Nichols, Chicago, Ill. Filed July 18, 1904. Serial No. 216,935.



Claim.—1. A valve comprising a head and a removable metal concavo-convex annular disk lodged on the head and supported thereon at the outer circumference with the convex surface outward and constituting the seating-face of the valve, the head being formed to protrude into the concavity of said disk back of said outer seating-face for centering the disk on the head.

2. A valve comprising a head and a removable metal concavo-convex annular disk approximately a spherical segment in form, the head being formed to protrude into the annular cavity of the disk and proximate the inner surface thereof back of or opposite the seating-face, and means for securing the disk to the head.

3. A valve comprising a head and a removable metal disk having an annular concavo-convex portion whose convex surface constitutes the seating-face of the valve, the valve-head being formed to approximately coincide with the concave inner surface of said disk opposite its said seating-face and to diverge slightly from the rear inner circumference for centering the disk on the head, the head having a marginal flange for positively supporting the disk, and means for binding the disk to the head.

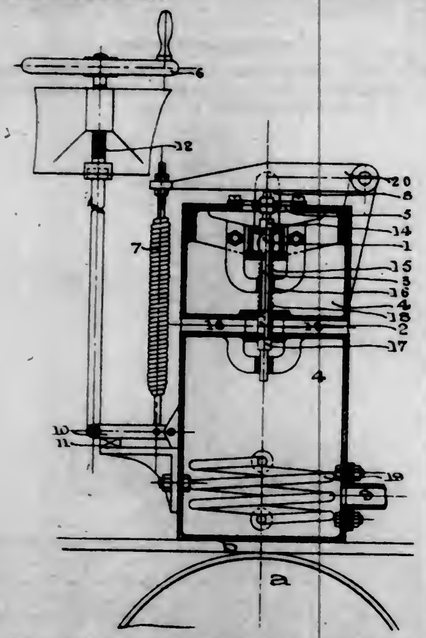
4. A valve comprising a head and a removable metal disk having a concavo-convex annular portion whose outer surface constitutes the seating-face of the valve, the head being formed to protrude into the cavity of such concavo-convex portion to reinforce the disk and having a marginal flange for affording positive lodgment and support for the rear edge of the disk, the forward surface of said flange making an acute angle to the axis of the valve.

5. A valve comprising a head and a removable metal disk having a concavo-convex annular portion and a portion encompassed by such annular portion, said disk being supported at its outer circumference on the head and centered thereon with the convex face of the annulus outward and constituting the seating-face of the valve; means for clamping said encompassed portion of the disk to the head and a gasket interposed between the head and the disk at said clamped portion.

6. A valve comprising a head having a threaded post projecting from its face, a disk having a central aperture to receive said post, and having a valve-face, and having its outer edge seated on the face of the head, a gasket surrounding the post between the disk and head, and a nut on said post exterior of the disk.

7. A valve comprising a head having a threaded post projecting from its face, a disk having its outer edge seated on the face of the head, and having a central aperture to receive said post, and having an annular concave-convex forming the valve-face, a nut on said post exterior of the disk, and means surrounding the post and adapted to prevent the passage of fluid through the aperture in the disk.

821,759. **DRIVER'S BRAKE-VALVE FOR COMPRESSED-AIR BRAKES.** WILLIAM R. SMITH, West Norwood, London, England, assignor to Thomas Henry Passo, London, England. Filed Aug. 24, 1903. Serial No. 170,510.



Claim.—1. In compressed-air brakes, a driver's brake-valve, consisting of two double-beat or other suitable valves moving on one spindle within an expansion-chest, both valves worked by up-and-down movements of a diaphragm under the variation of pressure of the compressed air within the expansion-chest, as regulated by the driver's brake-handle controlling the tension on the main spring of the diaphragm as above described.

2. In compressed-air brakes, the combination of the driver's brake-handle with a pair of levers, spring, and stop; to regulate the admission of compressed air to the expansion-chest, train-pipe, and auxiliary reservoirs when the brake-handle is screwed hard down on the stop, and the lowering of the pressure in the expansion-chest and train-pipe to put on the brakes when the brake-handle is unscrewed and the main spring relaxed as above described.

3. In compressed-air brakes, an improved isothermal reducing-valve, combined with the driver's brake-valve consisting of a balanced double-beat valve worked by a diaphragm and spring for reducing the pressure of the compressed air from that contained in the main reservoir to the pressure required in the main pipe and restoring the heat required for isothermal expansion by a hot-water or steam circulating coil in an expansion-chest, as above described.

4. In a compressed-air brake apparatus, a main reservoir for compressed air, an expansion-chest adapted to be connected thereto, and heating means for the latter for preventing sudden lowering of the temperature by the expansion due to the admission of a large volume of compressed air from said reservoir into said chest.

5. In a compressed-air brake apparatus, a main reservoir for compressed air, an expansion-chest adapted to be connected thereto, and a heater contained within said chest for preventing sudden lowering of the temperature by the expansion due to the admission of a large volume of compressed air from said reservoir into said chest.

6. In a compressed-air brake apparatus, a source of compressed-air supply liable to be charged at varying pressures, an expansion-chest, reducing means provided for automatically admitting to said chest a predetermined pressure of air from said supply, and a heating-coil of steam-pipe within said chest for effecting isothermal expansion therein.

7. In a compressed-air brake apparatus, a train-pipe for the pneumatic operation of a series of brakes, a source of compressed-air supply, means for transmitting said compressed air to said pipe, including an expansion-chest, an atmospheric valve opening out of said chest, the said chest having large capacity whereby the reaction caused by the escaping of air at said valve operates on the large volume of air within said chest to reduce without surging and simultaneously, the pressure along the whole length of said pipe.

8. In a compressed-air brake apparatus, an expansion-chest, a flexible diaphragm therein, a fixed valve-seat, said valve having a valve-stem secured to said diaphragm, a lever pivoted adjacent said diaphragm to coöperate with said stem, a spring for regulating the pressure of said lever, and means for adjusting the tension of said spring.

9. In a compressed-air brake apparatus, an expansion-chest, a diaphragm therein, a valve controlled by the movements of said diaphragm, a lever mounted adjacent said diaphragm for transmitting pressure thereto, a driver's brake-handle, a pivoted lever connected therewith, and a pressure-spring connecting said two levers for regulating the pressure on said diaphragm.

10. In a compressed-air brake apparatus, an expansion-chest, a flexible diaphragm at one end thereof, a valve for said chest, having its stem secured to said diaphragm, a lever pivoted across the outer end of said chest to coöperate with said stem, and an adjustable spring connected to the free end of said lever for governing the pressure thereof on said valve.

11. In a compressed-air brake apparatus, an expansion-chest, a reducing-valve therefor, an atmospheric valve, a stem for operating both of said valves, and a flexible diaphragm to which said stem is secured.

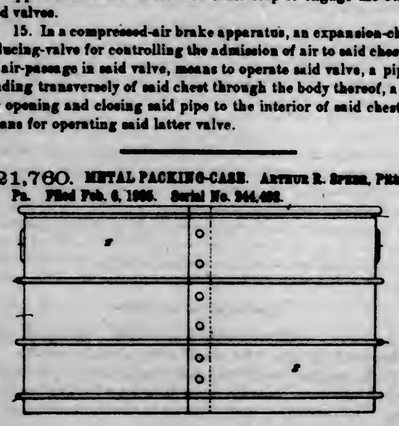
12. In a compressed-air brake apparatus, an expansion-chest, a reducing-valve therefor, an atmospheric valve, a stem for operating both of said valves, and a flexible diaphragm to which said stem is secured, said atmospheric valve having a limited sliding movement on said stem.

13. In a compressed-air brake apparatus, an expansion-chest, a reducing-valve therefor, an atmospheric valve, a stem for operating both of said valves, and a flexible diaphragm to which said stem is secured, said reducing-valve having a limited sliding movement on said stem.

14. In a compressed-air brake apparatus, an expansion-chest, a reducing-valve therefor, an atmospheric valve, a stem for operating both of said valves, and a flexible diaphragm to which said stem is secured, said two valves being slidingly mounted on said stem, and the latter carrying stops operating respectively on the opposite sides of said respective valves, whereby movement of said stem in one direction causes a stop to engage one of said valves and movement in the opposite direction causes the other stop to engage the other of said valves.

15. In a compressed-air brake apparatus, an expansion-chest, a reducing-valve for controlling the admission of air to said chest, and an air-passage in said valve, means to operate said valve, a pipe extending transversely of said chest through the body thereof, a valve for opening and closing said pipe to the interior of said chest, and means for operating said latter valve.

821,760. **METAL PACKING-CASE.** ARTHUR R. SPEER, Pittsburg, Pa. Filed Feb. 6, 1905. Serial No. 244,692.



Claim.—1. In a shipping-case, the combination of a plurality of surrounding sections of sheet metal bent into rectangular form with rounded ends, said sections being joined together by the metal at the edge of one section embracing a terminal flange of the next adjacent section so as to provide outwardly-extending strengthening-ribs, with a separate similarly-attached bottom portion, and an upper inwardly-extending lid-supporting flange, substantially as set forth.

2. In a shipping-case, the combination of a plurality of surrounding sections of sheet metal bent into rectangular form with rounded ends, said sections being joined together by the metal at the edge of one section embracing a terminal flange of the next adjacent section so as to provide outwardly-extending strengthening-ribs, with a separate similarly-attached bottom portion and an upper top-receiving extension similarly secured to the lower adjacent section by inwardly-extending connected flanges providing a lid-supporting ledge, substantially as set forth.

3. A shipping-case of sheet metal having a downwardly-extending surrounding bottom flange, a top portion deflected inwardly beyond the inner walls of said bottom flange and adapted to fit within said bottom flange of an adjacent case, with an inwardly-projecting strengthening and lid-supporting flange, substantially as set forth.

4. In a shipping-case, the combination of a plurality of superimposed sections having flat sides and ends and rounded corners, said sections being joined together by doubling the edges upon each other to form surrounding ribs, a bottom secured to the lower section, an upper portion similarly secured to the upper section and forming an inwardly-extending flange, and a cover adapted to rest upon said flange, substantially as set forth.

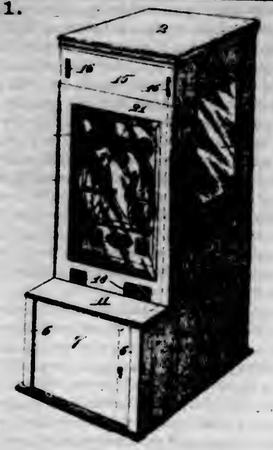
5. In a shipping-case, the combination of a plurality of superimposed sections having flat sides and ends and rounded corners, said sections being joined together by doubling the edges upon each other to form surrounding ribs, a bottom secured to the lower section and having downwardly-extending supporting-flanges, and an upper portion located inwardly within the plane of the inner faces of said bottom flanges, substantially as set forth.

6. In a shipping-case, the combination of a plurality of superimposed sections having flat sides and ends and rounded corners, said sections being joined together by doubling the edges upon each other to form surrounding ribs, a bottom secured to the lower section and having downwardly-extending supporting-flanges, and an upper portion located inwardly within the plane of the inner faces of said bottom flanges, said upper portion being connected to the upper section by doubling the meeting edges to form an inwardly-extending lid-supporting flange, substantially as set forth.

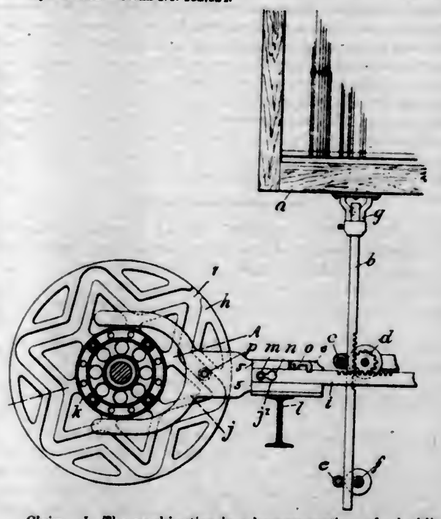
7. In a shipping-case, the combination of a plurality of surrounding sections joined together by folding the edge of one section around the edge of the next adjacent section, a bottom connected with the lower section in a similar manner, and a top portion connected with the upper section so as to provide an inwardly-extending lid-supporting flange, substantially as set forth.

8. A shipping-case having sides and ends composed of a plurality of connected sections with intervening joints providing outwardly-extending encircling ribs, and a bottom connected with the lower section and provided with a downwardly-extending supporting-flange, substantially as set forth.

821,761.



821,762. **HARNESS-MOTION FOR LOOMS.** MERRILL O. STEERE, Pawtucket, and SIMON W. WARDWELL, Providence, R. I., assignors to Brindle-Steere Company, Portland, Me., a Corporation of Maine. Filed Apr. 9, 1903. Serial No. 102,194.



Claim.—1. The combination in a harness-motion, of a heddle-frame, positively-reciprocated heddle-frame rods having racks, a cam, a cam-rod having a rack and a yoke supported on and guided by the hub of the cam, and gears connecting the cam-rod with the heddle-frame rods, whereby the latter are reciprocated to operate the heddle-frames.

2. In a harness-motion for looms, the combination of a cam *h*, a cam-rod *i* and a connecting member *j* between the cam and the cam-rod, whose forked extremity is supported on the cam-hub *h*, and in whose opposite extremity is formed a channel to receive the rod *i*, a button or headed stud mounted on the member *j* to engage the rod *i*, and a catch also mounted on the member *j*, to engage the rod to hold it in engagement with the button aforesaid.

3. In a harness-motion, the combination of a cam *h*, a cam-rod *i* having a "buttonhole" *n* and a side notch, of a member *j* whose forked end is supported on the cam-hub *h*, and in whose opposite end is formed a channel to receive the rod *i*, a button *m*, mounted in the channel to engage the "buttonhole" *n* in the rod *i*, and a swinging latch mounted on the side of the member *j* to engage the notch in the edge of the rod *i* after the latter has been secured on the button *m*, substantially as described.

4. In a harness-motion for looms, the combination of a cam *h*, a yoke member *j* supported by one end on the hub of the cam and at

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821,761. **CIGAR-VENDING MACHINE.** ALBERT M. STANLEY, Wellington, Kans. Filed Dec. 5, 1904. Serial No. 235,470.

Claim.—1. In a cigar-vending machine, the combination of a cigar-receptacle, a carrier provided with means for ejecting the cigars from said receptacle, a motor having a controlling-shaft, a coin-actuated trigger for engagement with said controlling-shaft, a coin-chute in which said trigger enters to support a coin therein, and means actuated by said carrier for tripping said trigger; said last-named means consisting of a rock-shaft, a blade carried by said rock-shaft and positioned in the path of travel of said carrier, and an arm fixed to said rock-shaft and adapted to be moved into engagement with said trigger, substantially as set forth.

2. In a cigar-vending machine, the combination of a cigar-receptacle, a carrier provided with means for ejecting the cigars from said receptacle, a motor having a controlling-shaft, a coin-actuated trigger for engagement with said controlling-shaft, a coin-chute in which said trigger enters to support a coin therein, and means actuated by said carrier for tripping said trigger; said last-named means consisting of a rock-shaft, a blade carried by said rock-shaft and positioned in the path of travel of said carrier, an arm fixed to said rock-shaft and adapted to be moved into engagement with said trigger, and a weighted stem slidably positioned above said trigger, substantially as set forth.

its other end by the bearing *l*, a roll *p* mounted on the member *j* and engaging the groove of the cam *h*, a rod *i*, having rack-teeth and secured to the member *j*, a gear *d*, meshing with the teeth of the rack, vertically-moving rods *b* also provided with rack-teeth that mesh with the gear *d*, guides to direct the movement of the rods *b*, and a heddle-frame mounted on the said rods *b*, substantially as described.

5. The combination in a loom of two parallel sets of harness, a driving-shaft, and means carried thereby for operating each set of harness from the shaft, and devices carried by the shaft for connecting said means operatively with and disconnecting the same from the shaft, substantially as described.

6. The combination in a loom with two sets of harness, two sets of cams, one to operate each harness, and a single main driving-shaft for both sets of cams, of means for rotatively adjusting one set of cams with relation to the other to vary the relative times of action of the two sets of harness.

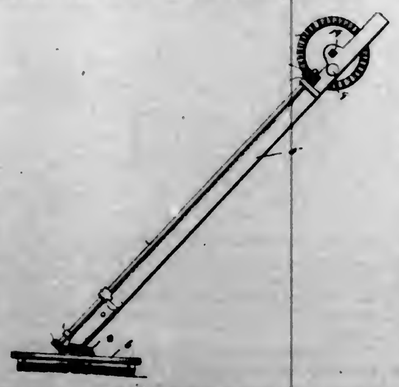
7. The combination in a loom of two sets of harness, a cam driving each set of harness, a driving-shaft and gears between the latter and said cams, and independent devices connecting one of said gears detachably with each cam, substantially as described.

8. The combination in a loom-harness motion, with one main driving-shaft for the loom, of two sets of harness, two sets of cams for said harness, a shaft having two sections in alinement and on which said cams are mounted and connections between the sectional shaft and the driving-shaft whereby both sections can be driven as one shaft or either section independently.

9. The combination in a loom-harness motion with two sets of harness, two sets of cams to actuate them, and devices for actuating the cams, of two shaft-sections in line with each other on which the cams are mounted, and connections between the shaft-sections whereby either set of cams may be disconnected from the actuating devices, and whereby the relative rotative position of the shaft-sections may be adjusted to adjust the relative action of the two sets of cams.

10. The combination in a loom-harness motion, of two independent sets of harness, two sets of cams to drive them, two abutting shaft-sections to support the cams, a flanged member mounted on each shaft-section, and a wheel whereby the shaft-sections are driven, mounted on the abutting ends of each shaft-section, and to which both flange members are independently secured.

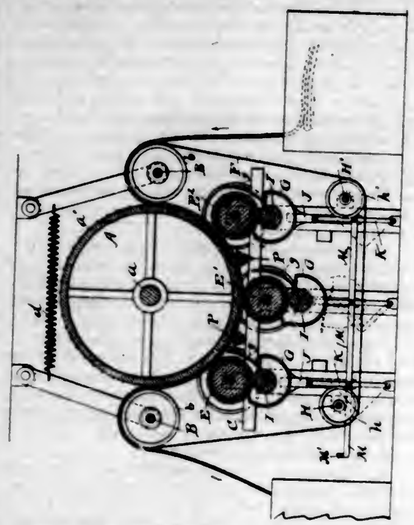
821,763. FLOOR-POLISHER. WILLIAM H. STRANGE, Chicago, Ill., assignor of one-half to John P. Sullivan and Robert H. Langston, Chicago, Ill. Filed Oct. 31, 1905. Serial No. 285,257.



Claim.—1. In a device of the kind stated, the combination with a handle-bar having a fixed pivot-pin extending at an angle at one end, and a crank-wheel at the other, of a head and a bevel gear-wheel fixed thereto, rotatable on the pin, and a shaft extending along the bar and having gears at its opposite ends which mesh with said bevel-gear and the crank-wheel respectively.

2. In a device of the kind stated, the combination with an inclined handle-bar having at one end a vertical pivot-pin fixed thereto, a head and a bevel-gear rotatable horizontally on said pivot, a handle extending laterally on one side of the other end of the bar, a crank-wheel supported on the other side of the bar, a shaft extending along parallel to the bar and supported in bearings thereon and having at its ends gear-wheels in mesh with the crank-wheel and the bevel-gear.

821,764. CARPET-CLEANING MACHINE. HENRY W. STRAUSBURGER, Cleveland, Ohio. Filed Feb. 11, 1904. Renewed Nov. 1, 1905. Serial No. 285,263.



Claim.—1. The combination of a rotatable cylinder, rollers on either side thereof over which the carpet may pass, a plurality of endless bands or the like passing over said rollers and under said cylinder, and other guide-rollers under which said bands also pass with a plurality of rotatable brushes located below said cylinder, and means for charging them with cleaning fluid.

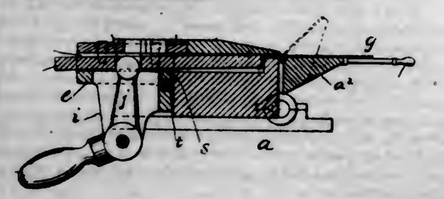
2. The combination of a rotatable cylinder, rollers on either side thereof over which the carpet may pass, a plurality of rotatable brushes located below said cylinder, and means for charging them with cleaning fluid.

3. The combination of a rotatable cylinder under which the carpet may pass, rotatable rollers, lying on opposite sides of said cylinder, and over which the carpet may pass, means for yieldingly pressing said rollers toward said cylinder, and a plurality of scrubbing-brushes, which engage with the carpet upon the cylinder and means for operating said brushes.

4. The combination of a rotatable cylinder under which the carpet may pass, rollers on opposite sides of the cylinder over which the carpet may pass, means for holding the carpet between said rollers against the surface of the cylinder, a plurality of rotatable brushes contacting with the surface of said carpet, vertically-movable pans for containing cleaning fluid, feed-rollers in said pans, and means for raising and lowering said pans.

5. The combination of a rotatable cylinder under which the carpet may pass, rollers on opposite sides of the cylinder over which the carpet may pass, means for holding that part of the carpet which is between said rollers against the surface of the cylinder, a plurality of rotatable brushes contacting with the surface of said carpet, vertically-movable pans for containing cleaning fluid, feed-rollers in said pans, and means for raising and lowering said pans, and a cover for each pan hinged thereto.

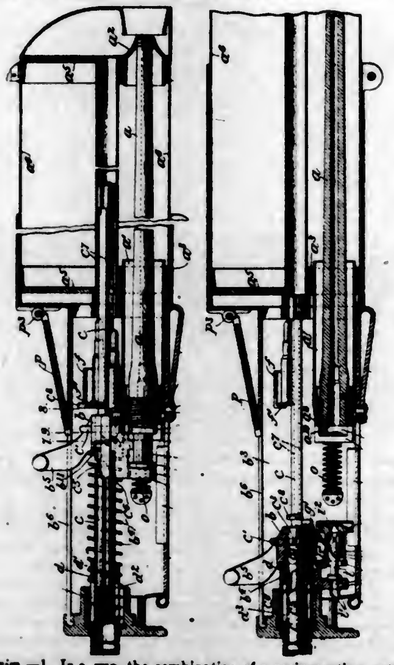
821,765. MACHINE FOR FOLDING SHEET METAL. ELMER W. TALMADGE, Plantsville, Conn., assignor to Peck, Stow & Wilcox Company, Southington, Conn., a Corporation of Connecticut. Filed June 24, 1905. Serial No. 266,962.



Claim.—1. The combination with a metal-working machine, of a gage comprising the channeled bed, a gage-plate slidingly mounted therein and having a mortise, and a lever pivotally supported on said bed having one end projecting into said mortise, and an indicator carried by said gage-plate and coöperating with graduations on the bed to determine the amount of adjustment of the gage-plate, substantially as described and for the purposes set forth.

2. The combination with a metal-working machine, of a gage comprising the channeled bed, a gage-plate slidingly mounted therein and having a mortise, and a lever pivotally supported on said bed having one end projecting into said mortise, and an indicator carried by said gage-plate and coöperating with graduations on the bed to determine the amount of adjustment of the gage-plate, and means for locking said gage-plate in adjusted position, substantially as described and for the purposes set forth.

821,766. FIREARM. CECIL H. TAYLOR, Philadelphia, Pa., assignor, by mesne assignments, to Knox Taylor, High Bridge, N. J. Filed Feb. 14, 1903. Renewed May 24, 1905. Serial No. 262,067.



Claim.—1. In a gun, the combination of a reciprocating, rotatable cartridge-feeder, grooved longitudinally to engage and feed the cartridges transversely, a reciprocating breech-block having a bearing for said feeder, means to reciprocate said feeder, and means to rotate said feeder as it is reciprocated.

2. In a gun, a cartridge-feeding device having a reciprocating block, a cartridge-feeder rotatable in said block and reciprocating therewith, and means whereby the rotation of the cartridge-feeder is effected through said reciprocation.

3. In a gun, a reciprocating block and a cartridge-feeder grooved longitudinally to engage the cartridges, one of said parts having a bearing on the other of said parts and being movable in said bearings, and devices whereby a rotary movement of said feeder is derived through the reciprocation of said block, the rotation of said feeder effecting a feeding of the cartridges in a direction transverse to the gun and the reciprocation of said block effecting a feeding of the cartridges in a longitudinal direction.

4. In a gun, the combination of a block, a feed-spindle grooved longitudinally to engage the cartridges rotatable therein, a relatively non-rotatable part, said spindle and non-rotatable part having relative longitudinal movement, and means on the spindle coacting with means on said part to rotate the spindle.

5. In a gun, the combination of a block, a feed-spindle grooved longitudinally to engage the cartridges rotatable therein, a relatively non-rotatable part, said spindle and non-rotatable part having relative longitudinal movement, a cam-groove and coacting lug one on the spindle, the other on said non-rotatable part to rotate the spindle.

6. In a gun, the combination of a reciprocating block, a longitudinally-grooved feed-spindle rotatable therein and provided with a cam at one end, means for reciprocating said block and spindle and means engaging with said cam to rotate the spindle as the same is reciprocated.

7. In a gun, the combination of a rotatable longitudinally-grooved feed-spindle, a part relatively non-rotatable said feed-spindle being longitudinally movable, and means elastically supported by one of said parts to effect the rotation of said spindle.

8. In a gun, the combination of a rotatable longitudinally-grooved feed-spindle, a part relatively non-rotatable, said feeding-spindle being longitudinally movable, and means elastically supported by one of said parts to effect rotation of said spindle.

9. In a gun, the combination of a rotatable longitudinally-grooved feed-spindle, a relatively non-rotatable part, said feeding-spindle being longitudinally movable, a cam on one of said parts, a lug on the other part engaging said cam, the lug being mounted elastically to cushion its contact with the cam.

10. In a gun, the combination of a rotating and reciprocating part having a cam-surface, and a relatively fixed lug to coact with said cam to rotate said part, said lug being supported elastically to cushion the contact between it and the cam.

11. In a gun, the combination of a rotatable part, a bearing therefor, and a lock engaging said rotatable part and its bearing to limit the longitudinal movement of said part and prevent its rotation in one direction with respect to the bearing.

12. In a gun, the combination of a reciprocating part, a rotatable feed part mounted on said reciprocating part, and a lock engaging said parts to hold the same against relative longitudinal movement and prevent the rotation of the rotatable part in one direction.

13. In a gun, the combination of a block, a feed-spindle mounted in said block and rotatable independently thereof, and a spindle-lock engaging said feed-spindle and block to hold said spindle against longitudinal movement and prevent rotation thereof with relation to the block in one direction.

14. In a gun, the combination of a reciprocating block, a spindle mounted to rotate in said block and having longitudinal grooves to engage the cartridges, and means whereby said spindle is rotated partially at each reciprocation of the block.

15. In a gun, the combination of a reciprocating block, an extractor mounted on said block, a spindle mounted to rotate in said block and having longitudinal grooves to engage the cartridges, and means whereby said spindle is rotated partially at each reciprocation of the block.

16. In a gun, the combination of a reciprocating block, an extractor mounted thereon, cartridge-feeding means, a cartridge-belt guide and flanges offset from each other to engage the rims of the cartridges in the belt, one in front of said rims and the other behind the same.

17. In a gun, the combination of a reciprocating block, an extractor mounted on said block, a spindle mounted to rotate in said block and having longitudinal grooves to engage the cartridges, a cartridge-belt guide having flanges to engage the rims of the cartridge, and means whereby the spindle is partially rotated at each reciprocation of the block.

18. In a gun, the combination of a reciprocating block, a cartridge-feeding spindle mounted to rotate in said block and having a cam-groove, and a sleeve having a lug to engage said cam-groove.

19. In a gun, the combination of a block, a cartridge-feeding spindle mounted to rotate in said block and having a cam-groove, and a sleeve having a lug to engage said cam-groove, said sleeve being slitted to give the lug a yielding support.

20. In a gun, the combination of a reciprocating block, a cartridge-feeding spindle mounted to rotate in said block and having ratchet-teeth formed within its bearing in the block, a lock engaging said block and the ratchet-teeth of the spindle to prevent rotation of the spindle in one direction, and means whereby the spindle receives a partial rotation at each reciprocation of the block.

21. In a gun, the combination of a barrel, a block, an extractor on said block, a firing-pin on said block, a breech-bolt mounted on said firing-pin and adapted to engage a cartridge, and means for feeding a cartridge from said extractor to said bolt.

22. In a gun, the combination of a barrel, a breech-bolt having a rotary and longitudinal movement and having devices to engage and guide a cartridge, a non-rotary extractor and means for feeding a cartridge from said extractor to said bolt.

23. In a gun, the combination of a breech-bolt having a rotary and longitudinal movement and having an undercut groove in its face to receive a cartridge, a non-rotary extractor and means for feeding a cartridge from said extractor to said groove.

24. In a gun, the combination of a breech-bolt having a rotary and longitudinal movement and having devices to engage and guide a cartridge, a guide to engage said bolt and prevent rotation thereof during a portion of its reciprocation, a non-rotary extractor and means for feeding a cartridge from said extractor to said bolt.

25. In a gun, the combination of a reciprocating block, an extractor on said block, a breech-bolt reciprocating with said block, a spindle mounted to rotate in said block and having a cam for feeding a cartridge from the extractor to the bolt, and means for rotating said spindle.

26. In a gun, the combination of a reciprocating block, an extractor on said block, a firing-pin carried by said block, a breech-bolt mounted on said firing-pin, a spindle mounted to rotate in said block and having a cam for feeding a cartridge from the extractor to the bolt, and means for rotating said spindle.

27. In a gun, the combination of a reciprocating block, a spindle mounted to rotate in said block and provided with longitudinal cartridge-receiving grooves, an extractor mounted on said block, a breech-bolt reciprocating with said block, a cam on said spindle for feeding a cartridge from the extractor to the bolt, and means for rotating said spindle.

28. In a gun, the combination of an extractor, a spindle having a cam for feeding a cartridge from the extractor and means for rotating said spindle.

29. In a gun, the combination of a reciprocating block, a spindle mounted to rotate in said block and having longitudinal cartridge-receiving grooves, an extractor mounted on said block, a cam on said spindle for feeding a cartridge from said extractor, and means for rotating said spindle.

30. In a gun, the combination of a frame or casing, a barrel having a limited reciprocation in the frame or casing, and a stop for said barrel consisting of a strip of the casing turned backward upon itself and engaging the barrel at its free end, whereby the movement of the barrel is cushioned.

31. In a gun, a trigger having a sear-arm and an operating-arm, one of said arms having a relative springing movement in one direction, and provided with a stop to prevent springing movement in the opposite direction.

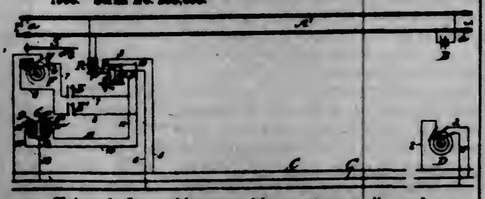
32. In a gun, a trigger having a sear-arm and an operating-arm, said operating-arm being flexible in one direction and provided with a stop to prevent springing movement in the opposite direction.

33. In a gun, a trigger having a sear and an operating-arm, said arm having a slit cut therein to render the arm flexible in one direction only and provided with a stop to prevent springing movement in the opposite direction.

34. In a gun, the combination of a bolt having devices to engage and guide a cartridge, a spindle having wings or cams for feeding the cartridge engaged and guided by said devices, and means to rotate said spindle.

35. In a gun, the combination of a reciprocating bolt having devices to engage and guide a cartridge, a reciprocating spindle having wings or cams for feeding the cartridge engaged and guided by said devices, means for rotating said spindle, and means for reciprocating said bolt and spindle.

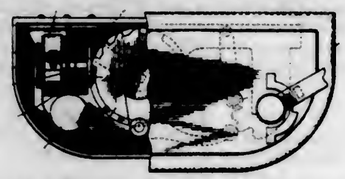
821,767. **RAILWAY SIGNALING SYSTEM.** LOUIS H. THULLEN, Edgewood Park, Pa., assignor to The Union Switch and Signal Company, Swissvale, Pa., a Corporation of Pennsylvania. Filed Jan. 12, 1906. Serial No. 295,695.



Claim.—1. In combination with a part or appliance for controlling the passage of a car or train along a railway, a motor for operating the same from one position to another, an electromagnetic device for holding the part or appliance in the position to which it has been moved, and a source of multiphase-current supply for said electromagnetic device.

2. In combination with a part or appliance for controlling the passage of a car or train along a railway, a multiphase motor for operating the same from one position to another, an electromagnetic device for holding the part or appliance in the position to which it has been moved, and a source of multiphase-current supply for said multiphase motor and electromagnetic device.

821,768. **CONTROLLER-REGULATOR.** JOSEPH V. E. TITUS, Keokuk, Iowa, assignor to Electrical Devices Company, Keokuk, Iowa, a Corporation. Filed Apr. 11, 1904. Serial No. 202,618.



Claim.—1. The combination with a controller, of a device for retarding the movement thereof in the "on" direction, said device including means arranged to render it operative continuously while the operating-circuit is on, and means for rendering said device inoperative when the operating-circuit is broken to permit an unimpeded movement of the controller.

2. The combination with a controller-regulator, of electrically-controlled means for rendering said regulator operative continuously while the operating-current is turned on, means for rendering said regulator inoperative when the operating-current is cut off to permit an unimpeded movement of the controller.

3. The combination with a controller, of a device for retarding the movement thereof in the "on" direction when the motor-circuit is made, said device including means connected therewith which renders it operative independently of the strength of the current in the motor-circuit.

4. The combination with a controller, of a device for retarding the movement thereof in the "on" direction when the motor-circuit is made, said device including means connected therewith which renders it operative independently of the strength of the current in the motor-circuit, and means automatically rendering said device inoperative when the motor-circuit is broken.

5. In a controller-regulator, means controlled by a magnet for rendering said regulator operative continuously while the operating-circuit is made to permit an impeded movement of the controller in the "on" direction.

6. In a controller-regulator, means operated by a magnet connected in parallel with the motors for rendering said regulator operative continuously while the operating-circuit is made to permit an impeded movement of the controller in the "on" direction.

7. The combination with a controller, of a regulator therefor, means controlled by a magnet for rendering said regulator operative continuously while the operating-circuit is made to permit an impeded movement of the controller in the "on" direction, and means automatically rendering said regulator inoperative when the current to the motors is cut off.

8. The combination with a controller, of a regulator therefor, means operated by a magnet connected in parallel with the motors for rendering said regulator operative continuously while the operating-circuit is made to permit an impeded movement of the controller in the "on" direction, and means for automatically rendering said regulator inoperative when the current to the motors is cut off.

9. The combination with a controller, of a regulator therefor, means controlled by a magnet for rendering said regulator operative continuously while the operating-circuit is made to permit an impeded movement of the controller in the "on" direction, means automatically rendering said regulator inoperative when the current to the motors is cut off, and a suitable resistance for said magnet.

10. The combination with a controller, of means independent of the strength of current for retarding the movement of said controller, and means for automatically rendering said retarding means inoperative when the current is cut off.

11. The combination with a controller, of means independent of the current for retarding the movement of said controller and electrically-operated means for rendering said retarding means operative.

12. The combination with a controller, of means independent of the current for retarding the movement of said controller, and electrically-operated means for rendering said retarding means inoperative when the current is cut off.

13. The combination with a controller, of means independent of the current for retarding the movements thereof, electrically-operated means for maintaining said retarding means in operative position, and means for rendering said retarding means inoperative.

14. The combination with a controller, of means retarding the movement thereof, of electrically-operated means for maintaining said retarding means in operative relation continuously during the passage of current through the motor, and means for rendering said retarding means inoperative when current is cut off from the motor.

15. The combination with a controller, of means for retarding the movement of said controller, a magnet for maintaining said retarding means in operative relation continuously while the operating-circuit is made; and means for rendering said retarding means inoperative when the operating-circuit is broken.

16. The combination with a controller, of means for retarding the movement thereof, a magnet for maintaining said retarding means in operative relation, a resistance for said magnet, and means for rendering said retarding means inoperative when said magnet is deënergized.

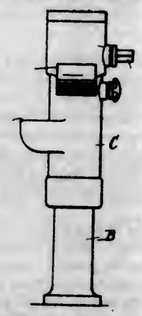
17. The combination with a controller, of regulating means to permit only an intermittent movement of said controller in one direction, but a continuous movement thereof in a reverse direction, and electrically-operated means for rendering said regulating means operative continuously while the operating-current is made.

18. The combination with a controller, of regulating means for permitting only an intermittent movement of said controller in one direction, and a continuous movement of said controller in a reverse direction, electrically-operated means for rendering said regulating means operative continuously while the current is on, and means for automatically rendering said regulating means inoperative when the current is cut off.

19. The combination with a controller, of regulating means to permit only an intermittent movement of the controller in one direction, and a continuous movement thereof in an opposite direction, of a magnet for maintaining said regulating means in operative relation continuously while the operative circuit is made, and means for rendering said regulating means inoperative when the said magnet is deënergized.

20. In a controller-regulator, the combination with operating means for said controller, of a series of stops, a movable dog, and a series of cams to move said dog into engagement with said stops, and electromagnetic means for rendering said dog inoperative.

821,769. **LIFTING-JACK.** WILLIAM TREWHELLA, Trentham, Victoria, Australia, assignor to himself and Benjamin Trewhella, Trentham, Victoria, Australia. Filed Oct. 17, 1904. Serial No. 228,770.

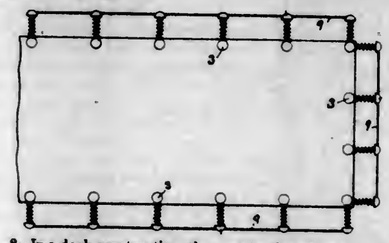


Claim.—1. A lifting-jack of the type described comprising a support and a non-rotatable casing slidable vertically thereon, said casing closed at top to form one rest for a load to be lifted and provided between its upper and lower ends with a plurality of other fixed rests at different levels, for the purposes set forth.

2. A lifting-jack of the type described comprising a support and a non-rotatable casing slidable vertically thereon, said casing closed at top to form one rest for a load to be lifted, and provided between its upper and lower ends with a plurality of other fixed rests at different levels and in different vertical planes, for the purposes set forth.

821,770. **FENDER.** JOHN TWAY, Long Branch, N. J. Filed Oct. 26, 1905. Serial No. 284,269.

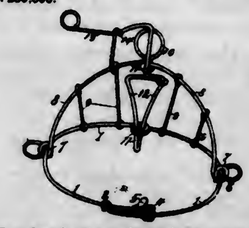
Claim.—1. In a dock construction, the combination of a series of piles, a plurality of rods slidably mounted in each pile, a fender mounted on the outer ends of said rods, springs between said fender and said pile, washers on the inner ends of said rods, springs mounted between the said pile and washers, and means connecting the lower ends of adjacent fenders, said fenders having inwardly-projecting lugs at each end adapted to contact with the pile to prevent injury to the springs.



2. In a dock construction, the combination of a series of piles, a plurality of rods slidably mounted in each pile, a fender mounted on the outer ends of said rods, springs between said fender and said pile, washers on the inner ends of said rods, springs mounted between the said pile and washers, and means connecting the lower ends of adjacent fenders.

3. The combination of a pile, a plurality of rods slidably mounted in each pile, a fender mounted on the outer ends of said rods, springs between said fender and said pile, washers on the inner ends of said rods, and springs mounted between said pile and washers.

821,771. **BAG-HOLDER.** ISAAC H. WEAVER, Toledo, Ohio, assignor of one-half to Frank Powell, Toledo, Ohio. Filed Dec. 1, 1905. Serial No. 289,896.



Claim.—In a bag-holder, a frame having a hoop with overlapping ends adapted to slide one upon the other, means for securing the said ends in adjusted relation, in combination with an open swivel mounted in said frame, and a lever connected with said swivel for turning the same.

821,772. **RAILWAY-SWITCH.** LA FAYETTE T. WEVER, Crawfordville, Fla., assignor of one-third to J. D. Cay and one-third to Chas. A. Cay, Tallahassee, Fla. Filed Jan. 26, 1906. Serial No. 297,535.

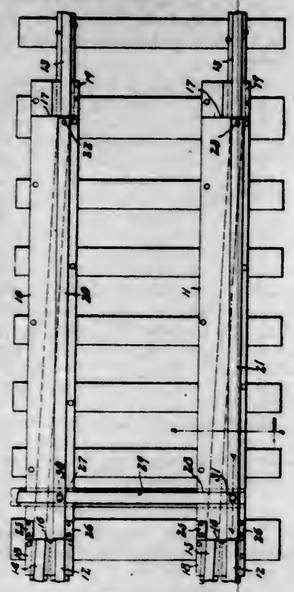
Claim.—1. In a railway-switch, spaced bed-plates having the ends of the main-line rails and the side-track rails abutting against the same and less in thickness than the height of the rails, spaced switch-rails bearing upon said bed-plates and swinging laterally for alternate alinement with the main-line rails and side-track rails, and means for coupling said switch-rails for simultaneous operation.

2. In a railway-switch spaced bed-plates having at the ends means for supporting the ends of the main-line rails and side-track rails and with the intermediate portion of less thickness than the height of the rails, whereby shoulders are formed against which the ends of the rails abut and means for coupling said switch-rails for simultaneous operation.

3. In a railway-switch, spaced bed-plates having transverse dovetailed grooves and with the ends of the main-line and side-track rails abutting against the same, said plates being less in thickness than the height of the rails, spaced switch-rails bearing upon said bed-plates and swinging laterally thereon for alternate engagement with the main-line rails and side-track rails, a rod having dovetailed sides and slidable through said dovetailed grooves and pins connecting said rod movably to said switch-rails.

4. In a railway-switch, spaced bed-plates having the ends of the main-line rails and the side-track rails abutting against the same and less in thickness than the height of the rails, spaced switch-rails hav-

ing uniform side faces and interchangeably and reversibly disposed upon said plates and swinging laterally thereon for alternate alinement with said main-line and side-track rails, and means for coupling said switch-rails for simultaneous operation.



821,778. PRESSER-FOOT FOR SEWING-MACHINES. RUSSEL G. WOODWARD, Waukegan, Ill., assignor to The Union Special Sewing Machine Co., Chicago, Ill., a Corporation of Illinois. Filed Apr. 8, 1901. Serial No. 54,896.



Claim.—1. A presser-foot for sewing-machines having slots on its under side to coöperate in forming and guiding tucks on the face on a fabric, and having cut-away portions so arranged with relation to the slots that the sides of said cut-away portions will flatten out said tucks; substantially as described.

2. A presser-foot for sewing-machines having slots on its under side to coöperate in forming and guiding tucks on the face of a fabric, and having in rear thereof cut-away portions, so arranged with relation to the slots that the sides of said cut-away portions will flatten out said tucks; substantially as described.

3. A presser-foot for sewing-machines having slots on its under side coöperating to form and guide tucks on the face of the fabric, with openings *d*, *d*, in rear thereof said openings having walls to guide and deflect the tucks; substantially as described.

4. A presser-foot for sewing-machines having slots on its under side coöperating to form and guide tucks on the face of the fabric, with openings *d*, *d*, in rear thereof, said presser-foot being provided with a forwardly-projecting tongue *c*; substantially as described.

5. A presser-foot for sewing-machines, having a plurality of needle-openings, and having also slots coöperating to form and guide tucks on the face of the fabric, and opening into said needle-openings, with means on said presser-foot in rear of the needle-openings to guide and deflect said tucks, substantially as described.

6. A presser-foot for sewing-machines, having a plurality of needle-openings arranged in a plane oblique to each other respecting the longitudinal axis of a presser-foot, said presser-foot having a plurality of slots coöperating to form and guide tucks on the face of the fabric, and opening into the needle-openings, with means on said presser-foot in rear of the needle-openings to guide and deflect said tucks; substantially as described.

7. A presser-foot for sewing-machines, having suitable needle-openings arranged in a line oblique to the longitudinal axis of the presser-foot, and having a plurality of slots coöperating to form and guide tucks on the face of the fabric, said presser-foot having cut-away portions upon opposite sides of a center line, in rear of said needle-opening; substantially as described.

8. A presser-foot for sewing-machines, having suitable needle-openings arranged in a line oblique to the longitudinal axis of the presser-foot, and having guiding-slots extending into the needle-openings, and having cut-away portions arranged obliquely to each other; substantially as described.

9. A presser-foot for sewing-machines having a suitable needle-opening and guiding-slot in advance of the needle-opening, and another guiding-slot in rear thereof, terminating in a cut-out portion the walls of said cut-out portion bearing on the material to flatten out the tucks formed therein; substantially as described.

10. A presser-foot having means to guide a vertical tuck to the needle-opening and deflect it to lie in a horizontal plane in rear of said opening; substantially as described.

11. A presser-foot having a plurality of vertical slots to guide vertical tucks to a plurality of needle-openings and a plurality of deflecting-surfaces to deflect the upright or vertical tucks to lie in a horizontal plane; substantially as described.

12. A presser-foot for sewing-machines having slots on its under side to coöperate in forming and guiding tucks on the face of the fabric, and provided with suitable needle-openings in which the slots terminate, said presser-foot having cut-away portions in rear of the said needle-openings and slots between said needle-openings and the cut-away portions, the sides of said cut-away portions being so formed as to flatten out said tucks; substantially as described.

821,774. TUCK-FORMING ATTACHMENT FOR SEWING-MACHINES. RUSSEL G. WOODWARD, Waukegan, and CHESTER MCNEIL, Chicago, Ill., assignors to The Union Special Sewing Machine Co., Chicago, Ill., a Corporation of Illinois. Filed Apr. 16, 1901. Serial No. 56,063.



Claim.—1. A sewing-machine having a plurality of needles, a presser-foot and throat-plate having complemental ridges, fins or plates, and grooves, whereby a series of parallel continuous tucks is formed in the fabric, complemental stitch-forming mechanism coöperating with the needles to hold the ridges or tucks permanently in the fabric and means on the presser-foot for flattening out the ridges or tucks said needles being arranged in pairs, the needles of each pair operating upon opposite sides of the fins and grooves; substantially as described.

2. A sewing-machine having a plurality of needles, a presser-foot and throat-plate having complemental ridges, fins or plates, and grooves, whereby a series of parallel continuous tucks is formed in the fabric, complemental stitch-forming mechanism coöperating with the needles to hold the ridges or tucks permanently in the fabric and means on the presser-foot in rear of the needles for flattening out the ridges; substantially as described.

3. A sewing-machine having a plurality of sets of needles, each set composed of two or more needles set abreast and the sets arranged so that the plane containing them is oblique to line of feed, a presser-foot and throat-plate having complemental ridges, fins, or plates, and grooves, whereby a series of parallel continuous tucks is formed in the fabric, complemental stitch-forming mechanism coöperating with the needles to hold the ridges or tucks permanently in the fabric and means on the presser-foot in rear of the needles for flattening out the ridges; substantially as described.

4. A sewing-machine having a plurality of sets of needles, each set composed of two or more needles set abreast and the sets arranged so that a plane containing them is oblique to the line of feed, a presser-foot and throat-plate having complemental ridges, fins or plates, and grooves, whereby a series of parallel continuous tucks is formed in the fabric, complemental stitch-forming mechanism coöperating with the needles to hold the ridges or tucks permanently in the fabric and means on the presser-foot in rear of the needles for flattening out the ridges in opposite directions, thus forming a box-plait; substantially as described.

5. A sewing-machine provided with a plurality of needles and complemental stitch-forming mechanism, a presser-foot and throat-plate having coöperating fins and grooves to form ridges in the fabric, said presser-foot being cut away in rear of the needle-openings and arranged to deflect the ridges in the fabric; substantially as described.

6. A sewing-machine provided with a plurality of needles and with a presser-foot having a series of grooves in its under side, a throat-plate having fins or ridges registering with said grooves and means on said presser-foot in rear of said needles for deflecting the tucks in the fabric; substantially as described.

7. A sewing-machine, provided with a presser-foot, having a series of grooves in its under side, a throat-plate having fins or ridges registering with said grooves and opening into the needle-openings and means on said presser-foot in rear of the needles for deflecting the tucks in the fabric; substantially as described.

8. In a sewing-machine provided with a presser-foot having a series of grooves on its under side, a throat-plate having fins or ridges registering with said grooves, one of said fins or ridges being higher than the other; substantially as described.

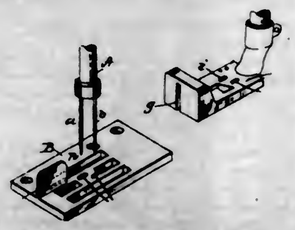
9. In a sewing-machine provided with a presser-foot having a plurality of grooves on its under side, one of said grooves being deeper than the other, a throat-plate having a plurality of fins or ridges of varying heights registering with said grooves; substantially as described.

10. In a sewing-machine provided with a plurality of needles arranged so that a line joining them is oblique to the line of feed, and complemental stitch-forming mechanism, a presser-foot and throat-plate having coöperating fins and grooves, so arranged that a line joining the rear ends of said fins and grooves respectively is substantially parallel with the line joining the needles; substantially as described.

11. In a sewing-machine provided with a presser-foot having grooves on its under side and also having suitable needle-openings, a throat-plate having ribs registering with said grooves and having suitable needle-openings registering with those in the presser-foot, said needle-openings being arranged obliquely to the line of feed, and a plurality of cut-out spaces also arranged obliquely to the line of feed; substantially as described.

12. In a sewing-machine having suitable stitch-forming mechanism, and a presser-foot and throat-plate, said presser-foot and throat-plate being provided with complemental grooves and ridges for forming a tuck in the fabric and the stitch-forming mechanism including a pair of needles reciprocating upon opposite sides of the tuck, whereby the same may be permanently held in place, means for deflecting the tuck in rear of the stitch-forming mechanism to lie in a horizontal plane; substantially as described.

821,775. TUCK-FORMING ATTACHMENT FOR SEWING-MACHINES. RUSSEL G. WOODWARD, Waukegan, and CHESTER MCNEIL, Chicago, Ill., assignors to The Union Special Machine Company, Chicago, Ill., a Corporation of Illinois. Original application filed Apr. 16, 1901, Serial No. 56,063. Divided and this application filed Jan. 5, 1905. Serial No. 239,774.



Claim.—1. In a sewing-machine, provided with a presser-foot and throat-plate and suitable stitch-forming mechanism, coöperating means on the presser-foot and throat-plate to form and guide a vertical tuck, and means to deflect the tuck to lie in a horizontal plane, said forming and guiding and deflecting means being in advance of the stitch-forming mechanism, substantially as described.

2. In a sewing-machine, provided with a presser-foot, throat-plate, and stitch-forming mechanism, means on the presser-foot coöperating with means on the throat-plate and in advance of the stitch-forming mechanism for forming and guiding a vertical tuck and means also on said presser-foot, in advance of the stitch-forming mechanism to deflect said vertical tuck to lie in a horizontal plane, substantially as described.

3. In a sewing-machine, provided with a presser-foot, having a groove on its under side and having a needle-opening, a throat-plate, having a fin or plate registering with the groove and having a needle-opening registering with that on the presser-foot, and a cut-out portion on said presser-foot, in advance of the needle-opening the walls of which cut-out portion deflect the tuck to horizontal position, substantially as described.

4. In a sewing-machine, provided with a presser-foot, having a groove on its under side and having a needle-opening, a throat-plate, having a fin or plate registering with the groove and having a needle-opening registering with that on the presser-foot, and a cut-out portion on said presser-foot, in advance of the needle-opening the walls of which cut-out portion deflect the tuck to horizontal position, said fin or plate having a guiding-tongue projecting into the cut-out portion, substantially as described.

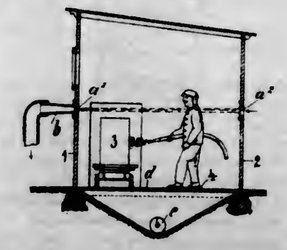
5. In a two-needle machine, suitable stitch-forming mechanism, a presser-foot, vertically-arranged means located in advance of one of the needles to form a vertical tuck, means to guide said vertical tuck and means on said presser-foot to deflect said vertical tuck to lie in a horizontal plane, said vertical means forming a vertical tuck, which when laid out flat, will be sewed down by both needles; substantially as described.

6. In a two-needle machine, suitable stitch-forming mechanism, including a presser-foot and a throat-plate, coöperating means on the presser-foot and throat-plate to form and guide a vertical tuck, and means on the presser-foot to deflect said tuck to lie in a horizontal plane, said tuck-forming means being of sufficient capacity to form a tuck wider than the rows of stitching apart; substantially as described.

7. In a sewing-machine, suitable stitch-forming mechanism, including a needle, a presser-foot, means to form a vertical tuck, means to guide said tuck, means to deflect said tuck to lie in a horizontal plane, said deflecting means being located on the presser-foot between the needle and tuck forming and guiding means; substantially as described.

8. In a sewing-machine provided with a presser-foot and throat-plate, a stitch-forming mechanism including a plurality of needles, coöperating means on the presser-foot and throat-plate to form and guide a vertical tuck, and means to deflect the tuck to lie in a horizontal plane, said tuck-forming means being of sufficient capacity to form a tuck wider than the width of the seam, said forming and guiding and said deflecting means being in advance of the stitch-forming mechanism, whereby the tuck when laid out flat will be sewed down by both needles; substantially as described.

821,776. MEANS FOR REMOVING DUST. CARL F. W. ZÖLLER, Altona-Ottensen, Germany, assignor to The Firm of Alfred Gutmann Actien Gesellschaft für Maschinenbau, Altona-Ottensen, Germany. Filed June 28, 1905. Serial No. 267,490.



Claim.—A device of the character specified, comprising a chamber having openings in the walls arranged opposite to one another, means for mounting an article to be cleaned below said openings, a perforated floor in said chamber, a free sand-jet in the latter, and an air-exhaust in communication with one set of openings for the purpose of establishing an air-current zone at a lower level than the res-

pinatory organs of an operator of the sand-jet and above the highest article to be cleaned.

821,777. SCREEN. MOSES BENJAMIN, Atlanta, Ga. Filed Oct. 21, 1905. Serial No. 283,302.



Claim.—1. The combination with a frame having an opening with upper, lower and side bearings, of a screen with its edges seated on said bearings, movable bars B, B, for bearing on the side edges of the screen, and sectional bands A connected to shift the bars and bearing on the upper and lower edges of the screen, and means for applying tension to said bands, substantially as set forth.

2. The combination with a frame having an opening with upper, lower and side bearings, of a screen with its edges seated on said bearings, movable bars B, B, for bearing on the side edges of the screen, sectional flexible bands A connected to shift the bars and bearing on the upper and lower edges of the screen, and means for applying tension to said bands, substantially as set forth.

3. The combination with a frame having an opening and edge bearings, of two pivoted bars, two sectional bands engaging said bars at the outer ends, and means for drawing the sections of each band longitudinally toward each other, and for swinging the bars, substantially as set forth.

4. The combination of a frame having side bearings and intermediate upper and lower curved bearings, movable bars B, B, sectional curved bands connected to shift the bars, and means for drawing together the sections of each bar, substantially as set forth.

5. The combination with the frame having side bearings and upper and lower curved bearings, of bars pivoted to swing opposite the side bearings, and sectional bands opposite the curved bearings connected at the ends to swing the bars, and provided with means for drawing the sections toward each other, substantially as set forth.

6. The combination with the frame having side bearings and upper and lower curved bearings, of bars pivoted to swing opposite the side bearings, and sectional flexible bands opposite the curved bearings connected at the ends to swing the bars, and provided with means for drawing the sections toward each other, substantially as set forth.

7. The combination with the frame having side bearings and upper and lower curved bearings, of bars pivoted to swing opposite the side bearings, sectional bands opposite the curved bearings having hooked ends fitting notches of the bars, and means for drawing the sections of each bar toward each other, substantially as set forth.

821,778. TELEPHONE TOLL-BOX. OSCAR BRIMSON, Chicago, Ill., assignor of one-half to The Turner Brass Works, Chicago, Ill., a Corporation of Illinois. Filed May 1, 1905. Serial No. 258,277.



Claim.—1. In a signaling apparatus for telephone systems, the combination with two main lines normally closed at one point, a shunt-circuit having a battery grounded at one end and signaling means interposed therein, normally connected with said main lines, an electromagnet disposed in each of said main lines, a grounded armature adapted to be actuated by either of said electromagnets, circuit-closers carried by said armature and connected with said main lines, said circuit-closers being adapted to be actuated by a coin to connect said lines with each other and with the ground to close the shunt-circuit, a second shunt-circuit having a battery disposed therein grounded at one end and bridged to both said lines through circuit-closing devices, and means for opening said main lines at said first-named point simultaneously with said shunt-circuit to enable either of said electromagnets to be energized through said second shunt-circuit to actuate said armature and throw said coin to reopen said main lines.

2. In a signaling apparatus for telephone systems, the combination with two main lines normally closed at one point, a shunt-circuit having a battery grounded at one end and signaling means interposed therein, normally connected with said main lines, an electromagnet disposed in each of said main lines, a grounded armature adapted to be actuated by either of said electromagnets, circuit-closers carried by said armature and connected with said main lines, said circuit-closers being adapted to be actuated by a coin to connect said lines with each other and with the ground to close said shunt-circuit, a second shunt-circuit having a battery disposed therein grounded at one end and bridged to both of said lines through circuit-closing devices, a shunt-circuit from one of said main lines to the ground, a coin-actuated circuit-closer disposed therein, signaling means disposed in a part of the aforesaid circuits in operative relation to said last-named shunt-circuit and adapted to be actuated by closing the circuit through the latter and one side of the second-named shunt-circuit, and means for opening said main lines at first-named point simultaneously with said shunt-circuit to enable either of said electromagnets to be energized through said second shunt-circuit to actuate said armature and throw said coin to reopen said main lines.

3. In a telephone toll-box having a coin-chute, the combination with an electrically-actuated device for supporting and deflecting a coin, of a signal-circuit closer carried thereby and adapted to be closed by said coin, and a shunt-circuit partially controlled by said circuit-closer for actuating said support to deflect and release said coin.

4. In a telephone toll-box having a coin-chute, the combination with an electrically-actuated device for supporting and deflecting coins, a circuit controlling the means for electrically actuating said device normally open, a shunt-circuit connected therewith and having signaling means disposed therein, of a circuit-closer carried by said supporting device and controlling said first-named circuit and said shunt-circuit and adapted to be actuated by the supported coin, and means including a shunt-circuit for throwing an impulse through one side of said first-named circuit to actuate said supporting and deflecting device to release said coin.

5. In a telephone toll-box, the combination with devices disposed in the path of the coin for supporting and deflecting same, a circuit-closer carried thereby and adapted to be actuated by the coin, electrically-controlled devices actuating said supporting and deflecting devices, a main circuit controlling same, a signal-circuit connected with said main circuit, both said circuits being partially controlled by said circuit-closer, a second shunt-circuit connected with said main circuit and having signaling means disposed therein, hand-operated circuit-closing means disposed in said shunt-circuit and adapted to be actuated to close a circuit through the devices controlling said supporting and deflecting devices to release the coin, a third shunt-circuit connected with said main circuit and receiving its impulse from said second shunt-circuit, a circuit-closer disposed in said third shunt-circuit, and devices for closing same disposed in the path of the released coin to signal its passage.

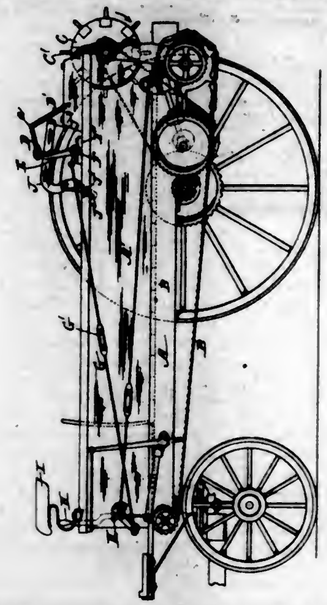
821,779. MANURE-SPREADER. THEOPHILUS BROWN, Worcester, Mass., assignor to Richardson Manufacturing Co., Worcester, Mass., a Corporation of Massachusetts. Filed Aug. 16, 1904. Serial No. 220,731.

Claim.—1. In a manure-spreader, an end-gate formed of two pivoted sections, means for raising and lowering said end-gate attached to the upper of said sections, and an arm with one end pivotally attached to a stationary bearing and with the other end pivoted to the lower section of the end-gate, whereby the path of the movement of said lower section is determined independently of the means of lifting said end-gate.

2. The combination of the cart-body, its hinged end-gate D D', and the lifting-lever E attached to the upper part of said end-gate, with the arm J pivoted at one end to said cart-body and at its other end to the bottom part of the end-gate, substantially as set forth.

3. In a manure-spreader, an end-gate formed of two pivoted sections, means for raising and lowering said end-gate, and means for yieldingly guiding the lower of said sections in a path independent of the path of the upper section.

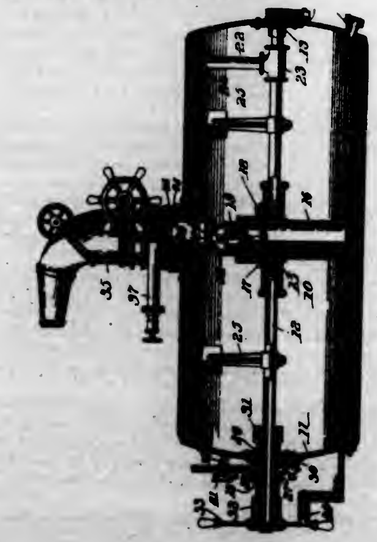
4. In a manure-spreader, an end-gate formed of two pivoted sections, means for raising and lowering said end-gate, an arm with one end pivoted to the lower section of the end-gate and with the other end pivotally attached to the cart-body, and means whereby the length of said arm between said pivots is automatically varied.



5. In a manure-spreader, the combination with an end-gate, and means for raising and lowering said end-gate, of an arm with one end pivoted to said end-gate and with the other end pivotally attached to the cart-body, and means whereby the length of said arm between said pivots is automatically varied.

6. In a manure-spreader, an end-gate formed of two pivoted sections, means for raising and lowering said end-gate, and means for guiding the lower of said sections in a path independent of the path of the upper section.

821,780. FIRE-EXTINGUISHER. THOMAS N. BURKE, Chicago, Ill. Filed Dec. 26, 1903. Serial No. 186,613.



Claim.—1. In a fire-extinguisher, the combination of a fixed cylinder, a tubular shaft journaled in bearings at the ends of the cylinder, said shaft being divided within the cylinder and its ends connected by a tubular ring, an acid-receptacle supported in said ring, an outlet-pipe connected to the shaft, and means for turning the shaft.

2. The combination of a cylinder of a chemical fire-extinguisher, one or more valved inlet-fittings therein, a pipe-section in the top of said cylinder projecting down therein to permit an air-chamber to be formed above its lower end within the cylinder, and a turret-nozzle connected to said pipe-section.

821,781. PLAYING-CARDS. BARRETT CADWALLADER, La Grange, Ill. Filed Dec. 28, 1904. Serial No. 237,885.



Claim.—1. A playing-card having its face provided with pips of different suits in combination with characters distinct from said pips to indicate that one suit is subordinate to the other.

2. A playing-card having two selective denominations on its face in combination with other characters to indicate that one denomination is subordinate to the other.

3. A playing-card having two suits of different denominations on its face in combination with other characters indicating that one suit is a master suit.

4. A playing-card having two selective suits on its face, and an arrow arranged to point at and thereby designate the master suit.

5. A playing-card having selective suits on its face, indicators therefor, and a character so arranged in connection with one of said indicators as to designate the master suit.

6. A playing-card having selective suits on its face, and means associated with one of said suits to designate it the master suit.

7. A pack of playing-cards each card of which is provided with two card values and characters to indicate that one value is a master and the other a subordinate, the number and variety of the former equaling that of an ordinary pack.

8. A pack of playing-cards each card of which is provided with two card values, indicators for each card value, a character associated with one of said indicators to designate it to be the master suit with the other subordinate thereto, the number and variety of the former equaling that of an ordinary pack.

9. A pack of playing-cards consisting of four master suits each suit having ten spot-cards, one to ten, and three face-cards, namely the knave, queen and king, each card of said pack being provided with another card value subordinate to said master suit, and characters distinct from the other characters on said card to indicate the master suit.

10. A pack of playing-cards consisting of four master suits each suit having thirteen card values, each card of said pack also having a subordinate card value, and characters distinct from the other characters on said card to indicate the master suit.

11. A pack of playing-cards consisting of four suits each suit of which has one-half as many card values as there are cards in the pack.

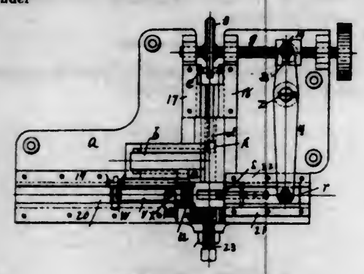
12. A pack of playing-cards consisting of four suits each suit of which has one-half as many card values as there are cards in the pack each card value of each suit being on a different card.

13. A pack of playing-cards consisting of four suits each suit of which has duplicate denominations on different cards in combination with distinct characters associated with one of said denominations to indicate that it outranks the other.

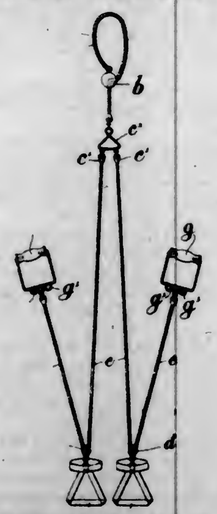
821,782. MACHINE FOR ASSEMBLING METALLIC LINKS. MARSHALL F. CAPRON, Detroit, Mich. Filed June 4, 1904. Serial No. 211,199.

Claim.—In a machine for assembling metallic links the combination of a support, an upwardly-extended runway, arranged to feed the links with the hook end of the link downward, a guideway, a cylinder upon the bed cut away at one side and at one end thereof to re-

ceive and hold a link in position, a reciprocatory slide to move a link from the foot of the runway through said cylinder into the path of the guideway and engage the hook end of the link so carried into the guideway with the opposite end of the preceding link, and means to force the link into the guideway and to simultaneously throw said link into a horizontal position with the hook end foremost, said slide provided with a shoe to contact with the hook end of the link, said runway provided, at its lower end, with a cap for a portion of said cylinder



821,783. APPARATUS FOR PROMOTING MUSCULAR OR PHYSICAL DEVELOPMENT. FREDERICK M. CLEASE, London, England. Filed Nov. 16, 1905. Serial No. 287,632.



Claim.—1. In an exercising apparatus, a flexible body-engaging member, a cleat carried by one end of the flexible member through which the other end of the member passes for adjusting said member, means adapted to be engaged by the feet and a connection between the body member and the foot member.

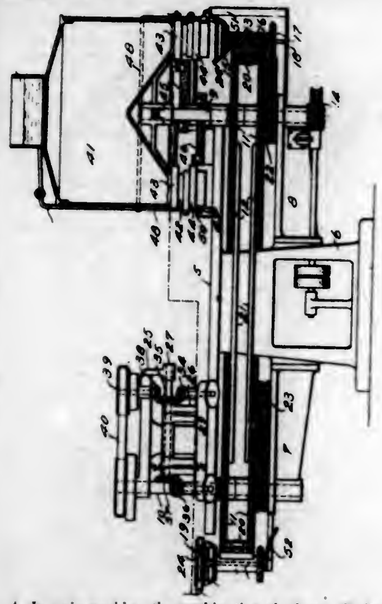
2. In an exercising apparatus, a flexible body-engaging member, means carried by one end of the member engaging the member to form an adjustable loop, cords secured to the body-engaging member and hand-grasps carried by the cords.

821,784. PIE-MAKING MACHINE. OLIVER COLBORNE, Chicago, Ill. Filed Jan. 27, 1906. Serial No. 298,263.

Claim.—1. In a pie-machine, the combination of a frame, a crust-trimming device mounted in said frame, and a conveyer adapted to carry a pie-tin and deliver the same to said trimming device, said trimming device being adapted to engage the edge of the tin for trimming a pie-crust thereon while said conveyer is in motion.

2. In a pie-machine, the combination of a frame, a horizontally-disposed conveyer for carrying pie-tins along said frame, a crust-trimming device mounted on said frame near the path of said conveyer and adapted to engage the edges of the pie-tins for trimming a pie-crust thereon while said conveyer is in motion.

3. In a pie-machine, the combination of a frame, an endless-belt conveyer for carrying pie-tins in succession along said frame and adapted to be continuously driven, a crust-trimming device mounted on said frame near the path of said conveyer and adapted to engage the edges of the pie-tins for trimming a crust thereon while said conveyer is in motion.



4. In a pie-machine, the combination of a frame, feeding mechanism for carrying the pie-tins singly and in succession along said frame, crust-trimming mechanism mounted in said frame and adapted to engage the edges of the pie-tins carried by said feeding mechanism for trimming pie-crusts thereon while the tins are being carried along by said conveyer.

5. In a pie-machine, the combination of a frame and horizontally-disposed conveyer in said frame and adapted to be continuously driven, individual carriers for pie-tins on said conveyer, trimming mechanism disposed above said conveyer and adapted to engage the edges of the pie-tins for trimming pie-crusts thereon while said conveyer is in motion, and means for rotating the tins about their own axes while in contact with said trimming mechanism.

6. In a pie-machine, the combination of a frame, a horizontally-disposed conveyer in said frame and adapted to be continuously driven, individual carriers for pie-tins on said conveyer, trimming mechanism disposed above said conveyer and adapted to engage the edges of the pie-tins for trimming pie-crusts thereon, and means for rotating the tins about their own axes while in contact with said trimming mechanism.

7. The combination of a pie-crust-trimming device, feeding mechanism for conveying pie-tins in succession to said trimming device, means for rotating the pie-tins when in contact with said trimming device, said trimming device having movable trimming members adapted to engage the edges of a pie-tin for trimming a crust thereon and being driven to have rolling contact with said pie-tins, and means for adjusting said trimming members to suit a plurality of different sizes of pie-tins.

8. In a pie-machine, the combination of a horizontally-disposed conveyer adapted to carry a series of pie-tins, a trimming-belt located along the path of said conveyer and adapted to engage the edges of the pie-tins for trimming pie-crusts thereon, mechanism for rotating the tins while in contact with said belt, and means for preventing said tins from tilting on said conveyer through the pressure of said belt.

9. In a pie-machine, the combination of a continuously-moving conveyer for pie-tins, an inclined trimming-surface disposed along the path of said conveyer and adapted to bear upon the edges of the tins carried by said conveyer, means for rotating the tins while in contact with said surface, to insure rolling contact between said surface and the edges of the tins.

10. In a pie-machine, the combination of a continuously-moving conveyer for pie-tins, an inclined trimming-surface disposed along the path of said conveyer and adapted to bear upon the edges of the tins carried by said conveyer for trimming pie-crusts thereon, means for rotating the tins while in contact with said surface to insure rolling contact between said surface and the edges of the tins, a second trimming-surface disposed along said conveyer on the side opposite said first surface, said second surface being driven to travel at the same peripheral speed as the tins.

11. In a pie-machine, the combination of a continuously-moving conveyer for pie-tins, an inclined trimming-surface disposed along the path of said conveyer and adapted to bear upon the edges of the tins carried by said conveyer for trimming pie-crusts thereon, means for rotating the tins while in contact with said surface to insure rolling contact between said surface and the edges of the tins, and a second trimming-surface disposed along said conveyer on the side opposite said first surface, said second surface being driven to travel at the same peripheral speed as the tins, said surfaces being normally urged toward each other.

12. In a pie-machine, the combination of a horizontally-disposed conveyer adapted to carry a pie-tin along a pair of endless belts disposed along a portion of the path of said conveyer, being located at opposite sides thereof, and adapted to simultaneously engage the edges of the pie-tin, means other than said belts for rotating the pie-tin while in contact with the belts, and mechanism for driving said belts at speeds respectively equal to those of the tin at its points of contact with the belts.

13. In a pie-machine, the combination of a horizontally-disposed conveyer adapted to carry a pie-tin along, a pair of endless belts disposed along a portion of the path of said conveyer, being located at opposite sides thereof, and adapted to simultaneously engage the edges of the pie-tin, means other than said belts for rotating the pie-tin while in contact with the belts, mechanism for driving said belts at speeds respectively equal to those of the tin at its points of contact with the belts, said belts being normally urged toward each other, and an adjustable stop for limiting the movement of said belts.

14. In a pie-machine, the combination of a horizontally-disposed conveyer having thereon a plurality of carriers for pie-tins, a delivery-chute extending across the path of said conveyer at a point above the normal position of the tins on the carriers, and mechanism for lifting the tins from said carriers and delivering the same to said chute, substantially as described.

15. In a pie-machine, the combination of a horizontally-disposed conveyer, a carrier on said conveyer adapted to support a pie-tin, a vertically-disposed rod mounted in said carrier below the tin and being vertically slidable therein, a delivery-chute extending across the path of the conveyer above the normal position of the tin on the carrier, and a track near said delivery-chute adapted to engage said rod and lift the same for raising the pie-tin to cause the same to be deposited into the chute by the movement of the conveyer.

16. In a pie-machine, the combination of a horizontally-disposed conveyer, a carrier on said conveyer adapted to support a pie-tin, a vertically-disposed rod mounted in said carrier below the tins and being vertically slidable therein, a delivery-chute extending across the path of the conveyer above the normal position of the tin on the carrier, a track near said delivery-chute adapted to engage said rod and lift the same for raising the pie-tin above the level of said chute, said rod being normally urged toward its lowered position and said track being adapted to release said rod when the pie-tin is in position to be supported by said delivery-chute.

17. In a pie-machine, the combination of a horizontally-disposed conveyer for pie-tins, filling apparatus mounted above said conveyer and adapted to discharge pie-filling material into the tins while said tins and conveyer are in motion.

18. In a pie-machine, the combination of a horizontally-disposed conveyer for pie-tins, filling apparatus mounted above said conveyer and adapted to discharge pie-filling material into the tins while said tins are being carried along by said conveyer, and means for rotating the tins on their own axes while receiving material from said filling mechanism.

19. In a pie-machine, the combination of a horizontally-disposed conveyer for carrying pie-tins in a horizontal position, a rotating pie-filling device mounted above the conveyer, the path of said conveyer conforming at one part to the path of said filling device, said conveyer and filling device being driven to travel at equal speeds and said filling device being adapted to deliver a measured quantity of filling material to a tin while said tin is being carried along by the conveyer.

20. In a pie-machine, the combination of an endless-belt conveyer, sheaves journaled on vertically-disposed axes and carrying said conveyer, a plurality of carriers on said conveyer each adapted to support a pie-tin in a substantially horizontal position, a rotating filling device mounted above one of said sheaves and in axial alinement therewith, said filling device being adapted to travel with a pie-tin while the same is passing around said sheave and to discharge a measured quantity of filling material into the tin while the tin is being carried along by the conveyer.

21. In a pie-machine, the combination of an endless-belt conveyer, sheaves journaled on vertically-disposed axes and carrying said conveyer, a plurality of carriers on said conveyer, each adapted to support a pie-tin in a substantially horizontal position, a receptacle for pie-filling material above one of said sheaves and rotatable therewith, and means for discharging a measured quantity of filling material from said receptacle into each tin while said tin is passing around said sheave.

22. In a pie-machine, the combination of an endless-belt conveyer, sheaves journaled on vertically-disposed axes and carrying said conveyer, a plurality of carriers on said conveyer, each adapted to support a pie-tin in a substantially horizontal position, a receptacle for pie-filling material mounted above one of said sheaves and rotatable therewith, a spout extending from said tank toward the path of the tins on said conveyer, a measuring device in said spout controlling the discharge thereon and mechanism for operating said measuring device for discharging a predetermined quantity of filling material into each tin while such tin is opposed to said spout.

23. In a pie-machine, the combination of an endless-belt conveyer, sheaves journaled on vertically-disposed axes and carrying said conveyer, a plurality of carriers on said conveyer, each adapted to support a pie-tin in a substantially horizontal position, a receptacle for pie-filling material mounted above one of said sheaves and rotatable therewith, a spout for conducting material from said tank toward the position occupied by a pie-tin in passing around said sheave, a pair of slides extending across said spout and spaced apart, and mechanism for operating said slides to control the flow of filling material through said spout and discharge a measured quantity thereof into each tin while opposed to said spout.

24. In a pie-machine, the combination of a horizontally-disposed conveyer, sheaves on vertically-disposed axes, a receptacle mounted above one of said sheaves and rotatable therewith, a series of carriers on said conveyer, each adapted to support a pie-tin in a horizontally-disposed position, a plurality of spouts extending downward from said receptacle and spaced apart to correspond with the spacing of the carriers, measuring devices in said spouts, and mechanism controlling the discharge of said spouts whereby material will be delivered to the pie-tins while said tins are being carried around the sheave.

25. In a pie-machine, the combination of a horizontally-disposed conveyer, sheaves on vertically-disposed axes, a receptacle mounted above one of said sheaves and rotatable therewith, a series of carriers on said conveyer each adapted to support a pie-tin in a horizontally-disposed position, a plurality of depending spouts extending downward from said receptacle and spaced apart to correspond with the spacing of the carriers, measuring devices in said spouts, mechanism controlling the discharge of said spouts whereby material will be delivered to the pie-tins while said tins are being carried around the sheave, a spraying-nozzle adjacent to each of said spouts and in position for wetting the pie-crust near the rim of the tin, and means for discharging a spray of water upon the crust while the conveyer is in motion.

26. In a pie-machine, the combination of a support for pie-tins adapted to carry the same singly and in succession along a circular path, filling apparatus adapted to move along said path with the pie-tin and to discharge a measured quantity of filling material into the tin while said tin is in motion, and mechanism for rotating the tin while opposed to said filling mechanism.

27. In a pie-machine, the combination of a support adapted to hold a pie-tin in a horizontally-disposed position, a spraying-nozzle adapted to discharge a spray of water upon the edge of the tins, and mechanism for rotating said tin while said spray is in operation.

28. In a pie-machine, the combination of a movable carrier adapted to support a pie-tin in a substantially horizontal position and carry the same along a horizontally-disposed path, a spraying-nozzle mounted above said carrier adjacent to the edge of the tin, said nozzle being adapted to move along said path with the carrier, and mechanism for rotating the tin about its own axis while said nozzle is discharging a spray upon said tin.

29. In a pie-machine, the combination of a movable carrier adapted to support a pie-tin in a substantially horizontal position and carry the same along a horizontally-disposed path, a spraying-nozzle mounted above said carrier adjacent to the edge of the tin, said

nozzle being adapted to move along said path with the carrier, and mechanism for rotating the tin about its own axis while said nozzle is discharging a spray thereon, a valve controlling said nozzle and means for automatically opening and closing said valve for discharging a predetermined quantity of water upon the pie-tin.

30. In a pie-machine, the combination of a conveyer adapted to carry pie-tins singly and in succession along a horizontal path, filling mechanism arranged to operate automatically for discharging a measured quantity of filling material into each tin, crust-trimming mechanism adapted to have rolling contact with the edges of the tins for trimming pie-crusts thereon, all arranged to operate while said conveyer is moving continuously.

31. In a pie-machine, the combination of a conveyer adapted to carry a plurality of pie-tins singly and in succession around a horizontally-disposed path, a rotating filling device located at one part of the path of said conveyer, a crust-trimming device located at another point along said path, each of said devices having parts moving with the conveyer and adapted to perform their respective operations while the pie-tins and conveyer are moving continuously.

32. In a pie-machine, the combination of a central pedestal having a pair of horizontally-disposed arms extending in opposite directions; a vertical shaft journaled near the outer end of each of said arms; horizontally-disposed sheaves carried by said shafts; an endless-belt conveyer mounted on said sheaves and having thereon a plurality of carriers each adapted to support a pie-tin in a substantially horizontal position; a receptacle for pie-filling material mounted on one of said sheaves above the conveyer, being rotatable therewith and having a spout extending to a position close to the conveyer and adapted to discharge a quantity of filling material into the pie-tin while the same is being carried along by the conveyer.

33. In a pie-machine, the combination of a central pedestal having a pair of horizontally-disposed arms extending in opposite directions; a vertical shaft journaled near the outer end of each of said arms; horizontally-disposed sheaves carried by said shafts; an endless-belt conveyer mounted on said sheaves and having thereon a plurality of carriers each adapted to support a pie-tin in a substantially horizontal position; a receptacle for pie-filling material mounted on one of said shafts above the conveyer, being rotatable therewith and having a spout extending to a position close to the conveyer and adapted to discharge a quantity of filling material into the pie-tin while the same is being carried along by the conveyer; and a crust-trimming mechanism mounted above the conveyer near the other shaft and adapted to engage the edges of the tins for trimming the crusts thereon, said trimming mechanism being driven by said other shaft.

34. In a pie-machine, the combination of a central pedestal having a pair of horizontally-disposed arms extending in opposite directions, a vertical shaft journaled near the outer end of each of said arms, horizontally-disposed sheaves carried by said shafts, an endless-belt conveyer mounted on said sheaves and having thereon a plurality of carriers each adapted to support a pie-tin in a substantially horizontal position.

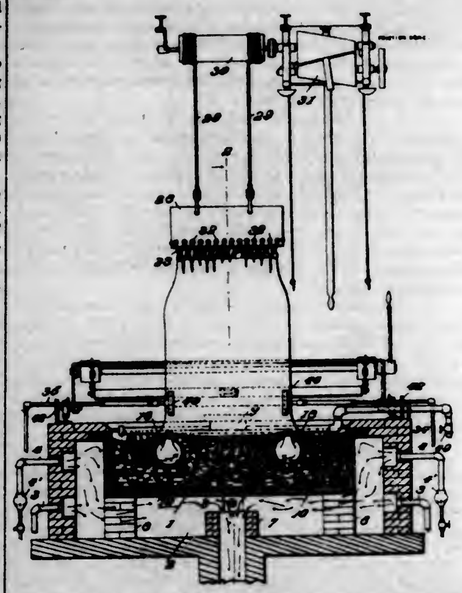
821,785. PROCESS AND APPARATUS FOR DRAWING SHEET-GLASS. IRVING W. COLBURN, EDGAR WASHBURN, and CLIFTON W. IRWIN, Franklin, Pa.; said Washburn and said Irwin assignors to said Colburn. Filed May 26, 1904. Serial No. 210,203.

Claim.—1. The method of drawing sheet-glass which consists in preparing a mass of molten glass, drawing a sheet of glass therefrom, simultaneously imparting movement to the surface portion of the molten mass in opposite directions away from the medial line and toward the edges of said sheet, and cooling the edges of the sheet as drawn.

2. The method of drawing sheet-glass which consists in preparing a mass of molten glass, drawing a sheet of glass therefrom while the surface portion of said mass is kept moving away from the medial line of the sheet toward its edges, cooling the edges of the sheet as it emerges from the molten mass, and supplying heat to the surface of said molten mass.

3. The method of drawing sheet-glass which consists in preparing a mass of molten glass, drawing a sheet of glass therefrom while the surface portion of said mass is kept moving away from the medial line of said sheet toward its edges, and cooling the edge portions of said sheet at points which are gradually moved farther apart during the drawing of the sheet.

4. In an apparatus for drawing glass, the combination of a receptacle containing molten glass, means for drawing a sheet of glass therefrom, means imparting motion to the surface of the molten glass in the receptacle away from the medial line of the sheet during the drawing operation, and means for cooling the edge of the sheet as drawn.



5. In an apparatus for drawing sheet-glass, the combination of a receptacle containing a mass of molten glass, means for drawing a sheet of glass therefrom, means imparting motion to the surface of said mass away from the medial line of the sheet and toward its edges during the drawing operation, and cooling means adjacent to the surface of the molten glass and acting on the sheet of glass near its edges.

6. In an apparatus for drawing sheet-glass, the combination of a receptacle containing a mass of molten glass, means applying heat to the bottom of said mass, means for delivering heat to the working surface of said mass, means drawing a sheet of glass from said mass, and means cooling the edges only of said sheet during the drawing operation.

7. In an apparatus for drawing sheet-glass, a receptacle containing a mass of molten glass, means for drawing a sheet of glass therefrom, means directing air-jets against the edges of the sheet of glass as drawn, said last-named means being adjustable toward and from the medial line of the sheet being drawn.

8. In an apparatus for drawing sheet-glass, a receptacle containing a mass of molten glass, means for drawing a sheet of glass therefrom, and a pair of air-jets located upon the structure of said receptacle and adjustable both in vertical and horizontal planes.

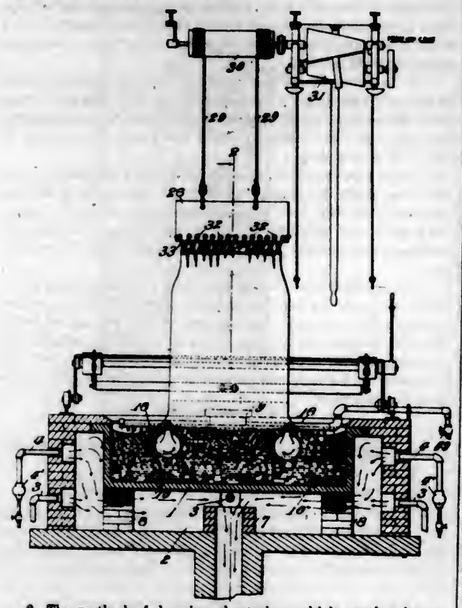
9. The method of drawing sheet-glass, which consists in preparing a mass of molten glass, drawing a sheet of glass therefrom, moving the surface of said mass away from the edges of the sheet as the drawing proceeds, and directing a cooling fluid against the edge portions of the sheet only.

10. The method of drawing sheet-glass which consists in preparing a mass of molten glass, drawing a sheet of glass therefrom, applying sufficient heat to the working surface of the molten mass where it draws away from the confining-walls to break up wave formations, and cooling the edge portions of the sheet as it emerges from the molten mass.

11. The method of drawing sheet-glass, which consists in preparing a mass of molten glass, drawing a sheet of glass therefrom, moving the surface of said mass away from the edges of said sheet as the drawing proceeds, applying heat to the working surface of said mass where it draws away from the confining-walls, and cooling the edge portions of the sheet as it emerges from the molten mass.

821,786. PROCESS AND APPARATUS FOR DRAWING SHEET-GLASS. IRVING W. COLBURN and EDGAR WASHBURN, Franklin, Pa.; said Washburn assignor to said Colburn. Filed Mar. 3, 1905. Serial No. 248,203.

Claim.—1. The method of drawing sheet-glass which consists in preparing a mass of molten glass, drawing a sheet of glass therefrom, and simultaneously imparting movement to the surface portion of the molten mass away from the medial line of the sheet and in the direction of the edges of the sheet.



2. The method of drawing sheet-glass which consists in preparing a mass of molten glass, drawing a sheet of glass therefrom, and simultaneously imparting movement to the surface portion of the molten mass in opposite directions away from the medial line of the sheet and in the direction of the edges of the sheet.

3. The method of drawing sheet-glass which consists in preparing a mass of molten glass, drawing a sheet of glass therefrom, simultaneously imparting movement to the surface portion of the molten mass in opposite directions away from the medial line and toward the edges of the sheet, and imparting heat to the surface of the molten mass on opposite sides of the sheet.

4. The method of drawing sheet-glass which consists in preparing a mass of molten glass, drawing a sheet of glass therefrom while the surface portion of the mass adjacent to said sheet is kept moving away from the medial line of the sheet toward its edges, and supplying heat to the surface of said molten mass.

5. The method of drawing sheet-glass which consists in preparing a mass of molten glass, and drawing a sheet of glass therefrom while the surface portion of said mass is kept moving away from the medial line of the sheet toward the edges.

6. In glass-drawing apparatus, the combination of a receptacle containing molten glass, means for drawing a sheet of glass therefrom, and means moving the surface portion of the molten glass away from the medial line of the sheet toward its edges.

7. In glass-drawing apparatus, the combination of a receptacle containing molten glass, means for drawing a sheet of glass therefrom, and means imparting movement to the surface portion of said molten glass in opposite directions from the middle thereof.

8. In glass-drawing apparatus, the combination of a receptacle containing a mass of molten glass, means for drawing a sheet of glass therefrom, and means within said mass for stretching said sheet as drawn.

9. In glass-drawing apparatus, the combination of a receptacle containing a mass of molten glass, means for drawing a sheet of glass therefrom, and a plurality of revolving bodies beneath the surface of said mass.

10. In glass-drawing apparatus, the combination of a receptacle containing a mass of molten glass, means for drawing a sheet of glass therefrom, and a plurality of bodies revolving in opposite directions beneath the surface of said mass.

11. In glass-drawing apparatus, the combination of a receptacle containing a mass of molten glass, two revolving bodies beneath the surface of the mass, and means for drawing a sheet of glass from the said mass between said bodies.

12. In glass-drawing apparatus, the combination of a receptacle containing a mass of molten glass, two spherical bodies revoluble in opposite directions beneath the surface of said mass, means for revolving said bodies, and means for drawing a sheet of glass from the mass between said bodies.

13. In an apparatus for drawing sheet-glass, the combination of a receptacle containing a mass of molten glass, means for drawing a sheet of glass therefrom, means for imparting heat to the bottom of said mass of molten glass, and means located below the surface of the mass and acting to impart motion to said surface away from the medial line of the sheet and toward its edges during the drawing operation.

14. In apparatus for drawing sheet-glass, the combination of a receptacle containing a mass of molten glass, means for drawing a sheet of glass therefrom, means for heating said mass of molten glass at its bottom, means for heating the upper surface of said mass during the drawing operation, and means located below the surface of said molten mass and imparting an outward movement to the surface of the mass from the medial line of the sheet toward its edges.

15. In an apparatus for drawing sheet-glass, the combination of a receptacle containing a mass of molten glass, means for drawing a sheet of glass therefrom, two bodies located beneath the surface of said mass adjacent to the edges of the sheet as drawn, and means for revolving said bodies in opposite directions.

16. In an apparatus for drawing sheet-glass, the combination of a receptacle containing a mass of molten glass, means for drawing a sheet of glass therefrom, two spheres located beneath the surface of said mass and adjacent to the edges of the sheet being drawn, and means revolving said spheres in opposite directions during the drawing operation.

17. In apparatus for drawing sheet-glass, the combination of a receptacle containing a mass of molten glass, a plurality of burners the flames of which converge to a common point under said receptacle, means for drawing a sheet of glass from said mass, and a burner directing jets of flame in a downward and outward direction upon the surface of said mass on opposite sides of the sheet as drawn.

18. In apparatus for drawing sheet-glass, a receptacle containing a mass of molten glass, means for drawing a sheet of glass therefrom, and a burner surrounding said sheet and directing jets of flame in a downward and outward direction upon the surface of said mass during the drawing operation.

19. In an apparatus for drawing sheet-glass, the combination of a receptacle containing a mass of molten glass, means for drawing a sheet of glass therefrom one of the walls of said receptacle having a pair of upwardly and outwardly inclined lips, a pair of upwardly and outwardly inclined shafts revolving in said lips and a pair of revoluble bodies operatively connected to said shafts below the surface of said molten mass.

20. In an apparatus for drawing sheet-glass, the combination of a receptacle containing a mass of molten glass, and a bait for drawing a sheet of glass therefrom, said bait consisting of a plate having a horizontally-disposed metallic coil secured thereto.

21. In apparatus for drawing sheet-glass, a receptacle containing a mass of molten glass, a bait for drawing a sheet of glass therefrom, said bait consisting of a metallic plate having a horizontally-disposed coil of wire secured thereto, and means for operating said bait.

22. In apparatus for drawing sheet-glass, a receptacle containing a mass of molten glass, a bait for drawing a sheet of glass therefrom, said bait consisting of a plate having a series of holes along its lower edge, and a coil of wire threaded through said holes, and means for operating said bait.

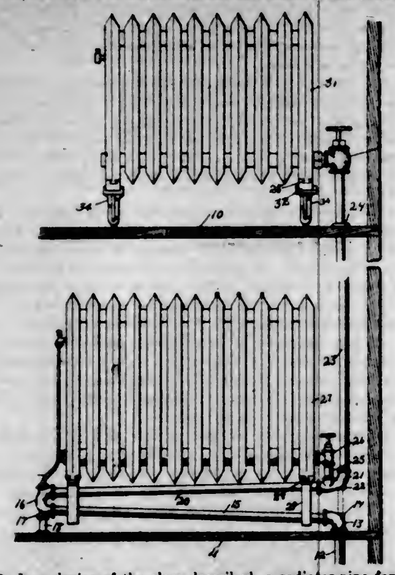
23. In an apparatus for drawing sheet-glass, the combination of a receptacle containing a mass of molten glass, a pair of inclined shafts operatively connected to two revoluble bodies beneath the surface of said mass and having worm-gears on their outer ends, a right and left hand worm engaging said gears, and means for operating said worm.

24. In glass-drawing apparatus, the combination of a receptacle containing a mass of molten glass, means for drawing a sheet therefrom, and means moving within said mass for counteracting the narrowing tendency of the sheet.

821,787. RADIATOR SUPPLY-PIPE AND BRACKET. JOHN COLLIS, Des Moines, Iowa. Filed May 20, 1905. Serial No. 261,725.

Claim.—1. In a device of the class described, a radiator-pipe formed with a lateral extension to form an expansion member and a radiator supported upon said extension.

2. In a device of the class described, a radiator-pipe formed with a lateral extension to form an expansion member, a radiator and a bracket connected to the radiator and to said lateral extension.



3. In a device of the class described, a radiator-pipe formed with a lateral extension to form an expansion member, a radiator and a bracket adjustably connected with the radiator and supported upon said extension.

4. In a device of the class described, a radiator-pipe formed with a lateral extension to from an expansion member, a radiator, and a bracket adjustably connected with the radiator and adjustably supported upon said extension.

5. The combination of a radiator, brackets connected to the radiator and capable of adjustment transversely thereof and supports for the brackets slidingly connected therewith to be capable of movement longitudinally of the radiator.

6. The combination of a radiator formed with dovetailed ribs at the bottom of its end sections, brackets having dovetailed grooves therein to receive said ribs and a supporting device for the bracket arranged to permit the brackets to move longitudinally of the radiator but not laterally.

7. The combination of a radiator formed with dovetailed ribs at the lower ends of its end sections, brackets formed with dovetailed grooves to receive them, said brackets formed with legs at their lower ends spaced apart.

8. The combination of a radiator formed with dovetailed ribs at the lower ends of its end sections, brackets formed with dovetailed grooves to receive them, said brackets formed with legs at their lower ends spaced apart, a radiator supply-pipe formed with a lateral extension designed to enter between the legs of said brackets.

9. In a device of the class described, an upright radiator-pipe, a lateral extension thereon having upper and lower portions designed to receive a temporary supporting-brace between them.

10. In a device of the class described, a radiator-pipe comprising an upright portion, a part extended laterally and upwardly and communicating at one end with said upright portion, another part extending laterally and upwardly and communicating at one end with the first-mentioned lateral portion and an upright portion at the other end of the last-mentioned inclined portion, said upright portions designed to receive a detachable temporary supporting-piece between them.

11. In a device of the class described, a radiator-pipe comprising an upright portion, an elbow formed with a lug, an inclined portion communicating with the elbow, a U-coupling, a second inclined portion communicating with the U-coupling, a second elbow in the other end of the last inclined portion and an upright portion communicating with said elbow, said elbow formed with a lug, said lugs designed to receive a temporary detachable supporting-brace between them.

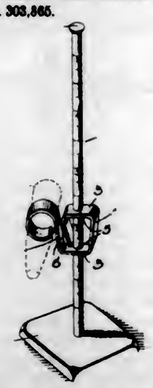
12. In a device of the class described, a radiator-pipe comprising an upright portion, an elbow formed with a lug, an inclined portion communicating with the elbow, a U-coupling, a second inclined portion communicating with the U-coupling, a second elbow in the other end of the last inclined portion, an upright portion communicating with said elbow, said elbow formed with a lug, said lugs designed to receive a temporary detachable supporting-brace between them, a radiator-valve connected with the last-mentioned elbow, a radiator, and brackets mounted upon the said inclined portions and supporting said radiator.

13. In a device of the class described, the combination of a horizontally-arranged support or floor, a radiator-pipe resting thereon, an expansion-joint in the radiator-pipe below said floor and comprising upper and lower inclined portions and a radiator supported on said inclined portions.

14. In a device of the class described, the combination of two floors, one above the other, a radiator-pipe fixed to the upper floor and also to the lower floor against downward movement, an expansion-joint in said pipe adjacent to the lower floor, a radiator supported on said expansion-joint and communicating with the radiator-pipe.

15. In a device of the class described, the combination of two floors, one above the other, a radiator-pipe fixed to the upper floor and also to the lower floor against downward movement, an expansion-joint in said pipe adjacent to the lower floor, a radiator supported on said expansion-joint and communicating with the radiator-pipe and a leg supporting the outer end of the expansion-joint upon the lower floor.

821,788. **SKIRT-GAGE.** MARY CONNOR, Denver, Colo. Filed Mar. 2, 1906. Serial No. 303,865.



Claim.—1. In a gage the combination with a graduated stem and a base for holding the stem, of a slide mounted on the stem, a finger integral therewith for clasping the stem, and an expansible crayon-holder upon the slide.

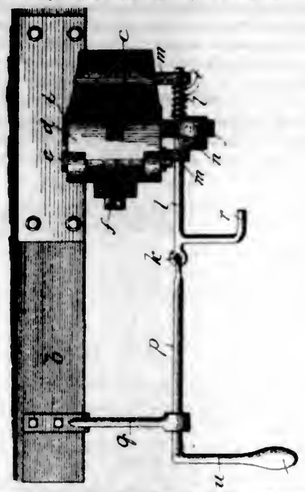
2. In a gage the combination of a base and an upstanding graduated stem thereon; of a slide formed of a single strip of spring metal comprising connected parallel apertured arms sufrounding the stem, a clasping-finger integral with one of the arms and bearing upon the stem to hold the slide in adjusted position, and a resilient crayon-holder integral with the other arm.

3. A skirt-gage comprising a base, a graduated stem supported thereby, and a slide mounted upon the stem formed in a single strip of spring metal, said slide comprising parallel apertured connected arms, a clasping-finger depending from one of the arms and bearing on the stem, an upstanding extension on the other arm, and resilient crayon-clasp at the end of the extension.

821,789. **CAR-COUPLING.** CHARLES DIETZ, Chicago, Ill. Filed Dec. 5, 1903. Serial No. 183,969.

Claim.—1. In a car-coupler of the class described, the combination of a coupler-head, a coupling-knuckle pivotally mounted therein, a vertically-arranged and movable locking-pin for holding and locking the coupling-knuckle in closed position, and a rock-shaft journaled in the coupling-head for moving the pin to release position and locking it in locked position, substantially as described.

2. In a car-coupler of the class described, the combination of a coupler-head, a coupling-knuckle pivotally mounted therein, a vertically-arranged and movable locking-pin for holding and locking the coupling-knuckle in closed position, a yoke portion on said coupling-pin, and a rock-shaft provided with a cam portion passed through said yoke portion for moving the pin to release position and locking it in locked position, substantially as described.



3. In a car-coupler of the class described, the combination of a coupler-head, a coupling-knuckle pivotally mounted therein, a locking-pin for holding and locking the coupling-knuckle in closed position, a yoke portion removably secured to the lower part of the coupling pin, and a rock-shaft provided with a cam portion passed through the yoke portion and having a rotary and longitudinal movement for moving the locking-pin to release position, locking it in locked position and swinging the coupling-knuckle to open position, substantially as described.

4. In a car-coupler of the class described, the combination of a coupler-head, a coupling-knuckle pivotally mounted therein, a vertically-movable locking-pin, means comprising a single rock-shaft for moving the locking-pin to locking and releasing positions and for swinging the knuckle to open position, and means for locking the locking-pin in releasing and locking positions.

5. In a car-coupler of the class described, the combination of a coupler-head, a coupling-knuckle pivotally mounted therein, a vertically-arranged and movable locking pin for holding and locking the coupling-knuckle in closed position, and a rock-shaft having a rotary and longitudinal movement and adapted to operatively engage the coupling-knuckle for moving the pin to release position and swinging the coupling-knuckle to open position, substantially as described.

6. In a car-coupler of the class described, the combination of a coupler-head, a coupler-knuckle pivotally mounted therein, a vertically-movable locking-pin for holding and locking the coupling-knuckle in closed position, and a rock-shaft journaled in the coupling-head having a rotary and longitudinal movement engaging with the locking-pin at the lower portion thereof for raising the same to release position during its rotary movement and swinging the coupling-knuckle to open position during its longitudinal movement, substantially as described.

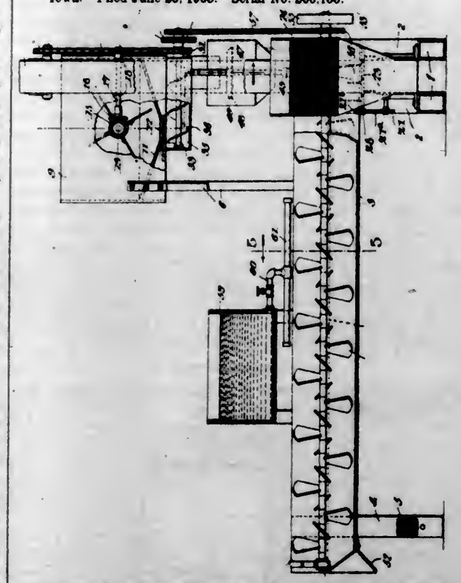
7. In a car-coupler of the class described, the combination of a coupler-head provided with an opening in its side wall, a coupling-knuckle pivotally mounted therein and provided with a tail portion extending back and adjacent to the perforation in the side wall of the coupler-head, a vertically-arranged and movable locking-pin for locking and holding the coupling-knuckle in closed position, a rock-shaft journaled in the coupling-head having a rotary and longitudinal movement for moving the locking-pin to release position during its rotary motion and adapted to contact the tail of the coupler-knuckle through the perforation in the side wall of the coupler-head and swing it to open position during its longitudinal movement, substantially as described.

8. In a car-coupler of the class described, the combination of a coupler-head provided with an opening or perforation in its side wall and an L-shaped wall on such side portion forming one of the walls to said perforation or opening, a coupling-knuckle pivotally mounted in the coupler-head and provided with an L-shaped tail portion extending through the perforation of the side wall of the coupler-head and adapted to engage the L-shaped wall thereof, a vertically-arranged and movable locking-pin for holding the coupling-knuckle locked in closed position, a longitudinally-movable rock-shaft journaled in the coupling-head arranged to engage with the locking-pin and move the same to release position during its rotary movement and to swing the coupler-knuckle to open position during its longitudinal movement, substantially as described.

9. In a car-coupler of the class described, the combination of a coupler-head provided with an opening or perforation in its side wall and an L-shaped wall on such side portion forming one of the walls to said perforation or opening, a coupling-knuckle pivotally mounted in the coupler-head and provided with an L-shaped tail portion extending through the perforation of the side wall of the coupler-head and adapted to engage the L-shaped wall thereof, a vertically-arranged and movable locking-pin for holding the coupling-knuckle locked in closed position, a longitudinally-movable rock-shaft partially mounted on the coupler-head and partially in the car-frame xetending out to the side portion of the car-frame and made in two parts pivotally secured together and adapted to move the locking-pin to release position during its rotary movement and swing the coupling-knuckle to open position during its longitudinal movement, substantially as described.

10. In a car-coupler of the class described, the combination of a coupler-head provided with an opening or perforation in its side wall and an L-shaped wall on such side portion forming one of the walls to said perforation or opening, a coupling-knuckle pivotally mounted in the coupling-head and provided with an L-shaped tail portion extending through the perforation of the side wall of the coupler-head and adapted to engage the L-shaped wall thereof, a locking-pin for holding the coupling-knuckle locked in closed position, a longitudinally-movable rock-shaft partially mounted in the coupler-head and on the car-frame and extending out to the side portion of the car-frame and made in two parts pivotally secured together to move the locking-pin to release position during its rotary movement and swing the coupling-knuckle to open position during its longitudinal movement, and spring mechanism for moving and normally holding the rock-shaft at its outer limit of longitudinal movement, substantially as described.

821,790. **CONCRETE-MIXER.** JOSEPH DORWEILER, West Bend, Iowa. Filed June 20, 1905. Serial No. 266,135.

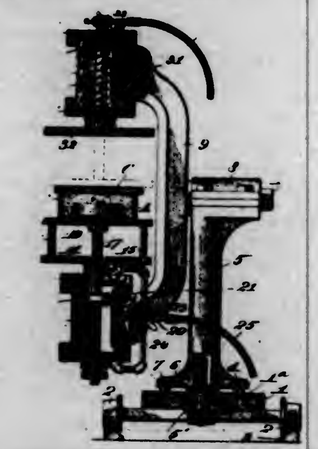


Claim.—1. In a concrete-mixer, the combination of an endless conveyer, a feed-hopper forming a continuation of the lower end thereof and provided with a screen, a two-part discharge-hopper arranged at the upper end of the conveyer and into one of which it discharges, rotary beaters arranged within the discharge-hoppers,

means for removing the materials from the discharge-hoppers, means for breaking up the mixed materials as they escape from the removing means, and a mixing-trough, including agitating and hydrating mechanisms, into which the materials discharge.

2. In a concrete-mixer, the combination of an endless conveyer, a feed-hopper forming a continuation of the lower end thereof and provided with a screen, agitating mechanism arranged within the hopper, a two-part discharge-hopper arranged at the upper end of the conveyer and into one of which it discharges, rotary beaters arranged within the discharge-hoppers, means for removing materials from the latter hoppers, means for breaking up the mixed materials as they escape from the removing means, and a mixing-trough including agitating and hydrating mechanisms into which the materials discharge.

821,791. MOLDING-MACHINE. WILLIAM M. DUNCAN, Alton, Ill. Filed Mar. 13, 1905. Serial No. 249,896.



Claim.—1. In a molding-machine, the combination of a support, a rotatable frame pivoted to said support, a fluid-cylinder carried by said frame, a piston operating in said cylinder, a piston-rod by which said piston is carried, a pattern-carrying plate fixed to said piston, a table-ring carried by said cylinder and into which said pattern-carrying plate is adapted to move, a second cylinder carried by said frame, a piston operating in said second cylinder, a piston-rod carried by said piston, and a platen carried by said piston-rod and adapted to be moved toward said table-ring, substantially as set forth.

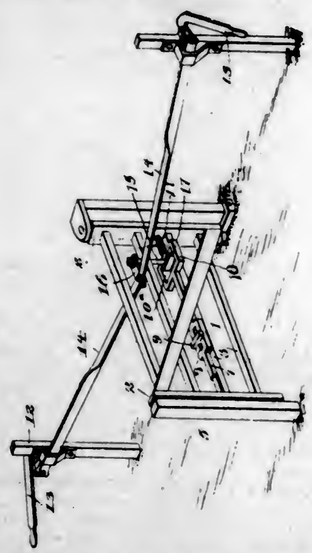
2. In a molding-machine, the combination of a support, a rotatable frame pivoted to said support, a fluid-cylinder carried by said frame, a piston operating in said cylinder, a piston-rod by which said piston is carried, a pattern-carrying plate fixed to said piston, a table-ring carried by said cylinder and into which said pattern-carrying plate is adapted to move, a second cylinder carried by said frame, a piston operating in said second cylinder, a piston-rod carried by said piston, a platen carried by said piston-rod and adapted to be moved toward said table-ring, and a retracting-spring surrounding said piston-rod within said second cylinder, substantially as set forth.

821,792. PLUB-STOPPER. CHARLES L. HERSHEY, Lincoln, Nebr. Filed Mar. 20, 1906. Serial No. 306,631.



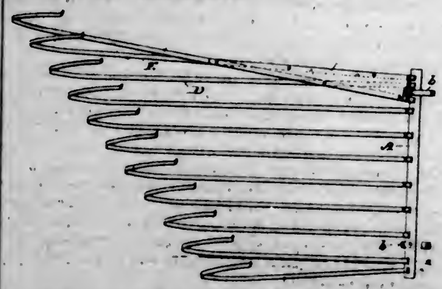
Claim.—In a device of the character described, the combination with a sheet-metal cone-shaped stopper, comprising a disk having a portion removed to provide overlapping edges, so that the peripheral edge of said cone-shaped stopper may be adjusted to fuse of different sizes, an ear secured near each overlapping edge within the dished side of said cover, a U-shaped expansion-spring secured to said ears to normally exert an outward pressure to distend the peripheral edge of said cone, a bracket secured within the dish of said cone-shaped stopper, and a thimble-cover provided with an ear engaging said bracket.

821,798. GATE. JOHN FEARS, Timpson, Tex., assignor of one-third to James F. Carter and one-third to H. L. Bussey, Timpson, Tex. Filed Oct. 6, 1905. Serial No. 281,691.



Claim.—In combination, a gate embodying longitudinal bars or rails, a latch-post, a latch-bar slidably mounted for movement longitudinally on one of the longitudinal rails of the gate, a spring coacting with the latch-bar to normally hold the same in engagement with the latch-post, the latch-bar being provided with an opening at a point in its length, a crank-shaft extended at an angle to the latch-bar and mounted on the gate, oppositely-projecting lugs extending from the crank-shaft and operating in the opening of the latch-bar, supporting-posts on opposite sides of the gate, operating mechanism on said supporting-posts and connected with the crank-shaft of the gate, and guide means for guiding the latch-bar in its movement.

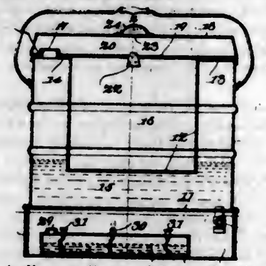
821,794. WINDROWER. LOUIS FRANKENBERGER, Newton, Wis. Filed Mar. 13, 1905. Serial No. 249,732.



Claim.—1. A windrower comprising a bar for attachment to the rear of the finger-bar of a mowing-machine, slats having their forward ends fastened to the bar first aforesaid and rearwardly extended on a horizontal plane below the same, the outermost slat being the shortest, the others of gradually-increasing length, the longest crossed on the next two, the latter being rearwardly divergent from one another and all of them having forwardly-bowed rear ends; and a plate surmounting the horizontal portions of the crossed slats.

2. A windrower comprising a bar for attachment to the rear of the finger-bar of a mowing-machine, slats having their forward ends fastened to the bar first aforesaid and rearwardly extended on a horizontal plane below the same, the outermost slat being the shortest and rearwardly divergent from the one next outermost, the others of gradually-increasing length, the longest crossed on the next two, the latter being rearwardly divergent from one another and all of them having forwardly-bowed rear ends; and a plate surmounting the horizontal portions of the crossed slats.

821,795. DINNER-PAIL. GEORGE L. GERLACH, Harrison, Nebr. Filed Oct. 12, 1905. Serial No. 282,453.

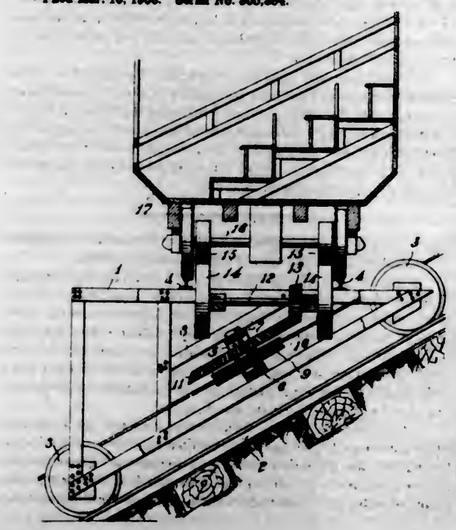


Claim.—1. A dinner-pail comprising, a liquid-reservoir provided with a closable opening, a victual-receptacle disposed within the reservoir, a heating element positioned to heat the liquid, and a cover for the pail provided with means to conduct heated vapor from the reservoir to the receptacle.

2. A dinner-pail comprising, a liquid-reservoir, a closure for the reservoir, a victual-receptacle disposed within the reservoir, a hollow cover proportioned to cover the receptacle and reservoir, a heating element positioned to heat the reservoir and means whereby the heated vapor from the reservoir may escape through the hollow cover or selectively directed into the victual-receptacle.

3. A dinner-pail comprising, a liquid-reservoir, a victual-receptacle, a heating element positioned to heat the liquid, a double cover provided with an opening communicating with the reservoir and with an opening communicating with the receptacle also an opening communicating with the exterior.

821,796. RAILWAY. LEWIS GIBSON, Colorado Springs, Colo. Filed Mar. 10, 1906. Serial No. 305,284.



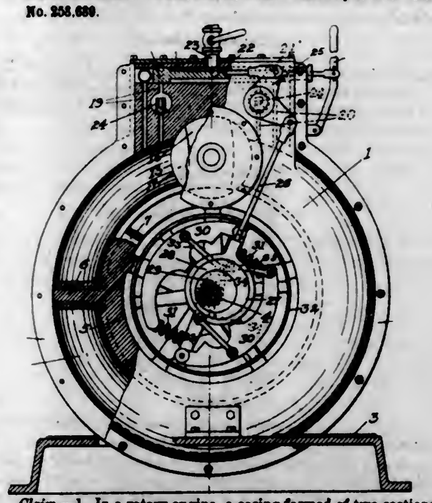
Claim.—1. The combination of an inclined track, an elevator traveling thereon, a drum carried by the elevator, a cable wound upon the drum with one end anchored at the top of the track and the other end anchored at the bottom of the track, and means actuated by a motor-car upon the track for rotating the drum to raise and lower the truck.

2. The combination of an inclined track, a truck running thereon, a drum mounted upon the truck, a cable wound upon the drum with its free end anchored at the top of the truck and its lower end anchored at the bottom of the track, a gear connected to the drum, a drive-shaft mounted upon the truck, a gear upon the drive-shaft and in mesh with the first-mentioned gear, and a drive-wheel mounted upon the shaft and projecting above the top of the truck.

3. The combination of an inclined track, a truck running thereon, a track upon the top of the truck at substantially right angles to the first-mentioned track, and truck-elevating means carried by the truck and including a drive-wheel rising above the top of the truck between the track-rails thereon.

4. The combination of an inclined track, a truck running thereon, a drum mounted upon an upright axis upon the truck, a cable wound upon the drum with one end anchored at the top of the track and the other end anchored at the bottom of the track, a substantially horizontal drive-shaft mounted upon the truck and operatively connected to the drum, and a drive-wheel carried by the drive-shaft and rising above the top of the truck.

821,797. ROTARY ENGINE. EDWARD HARRIGAN, Everett, Wash., assignor of one-fourth to Daniel R. Dwyer, Washington, D. C., and one-fourth to Edwin E. Vernon, Seattle, Wash. Filed May 3, 1905. Serial No. 258,689.



Claim.—1. In a rotary engine, a casing formed of two sections secured together, a carrier rotatable within the bounds of the casing, and having its rim projecting between said sections, packing on opposite sides of said rim of the carrier, said packing consisting of a plurality of rings, means for forcing the same against the rim of the carrier, and a piston secured to the rim of the carrier and operating in said casing.

2. In a rotary engine, a casing formed of two sections, a carrier rotatably mounted and having its rim projecting between said sections, said casing being formed with external flanges on opposite sides of said carrier, packing arranged between said flanges and the rim of the carrier, means for forcing said packing against the rim of the carrier, and a piston secured to the rim of the carrier and being slidable in said casing.

3. In a rotary engine, a casing formed of two sections, a carrier rotatably mounted and having its rim projecting between said sections, flanges on said sections on opposite sides of the carrier, packing arranged between said flanges and the rim of the carrier, said packing consisting of a plurality of rings having their inner faces formed with grooves, and metal circular in cross-section arranged in the grooves of said rings, means for forcing the packing against the rim of the carrier, and a piston secured to the rim of the carrier and being arranged in said casing.

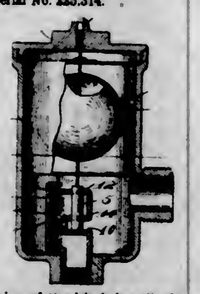
4. In a rotary engine, a casing, a steam-chest having ports leading therefrom to the casing, said ports being arranged in pairs, an oscillatory abutment arranged in said casing between said pairs of ports, a piston slidable in the casing, means for swinging the abutment to allow the piston to pass the same, and valves arranged in the steam-chest for alternately opening and closing the respective ports of the said pairs.

5. In a rotary engine, a casing, a steam-chest having ports leading therefrom to the casing, said ports being arranged in pairs, an oscillatory abutment arranged in said casing between said pairs of ports, a piston slidable in the casing, means for swinging the abutment to allow the piston to pass the same, valves arranged in one port of each pair, and valves in said steam-chest for alternately closing the respective ports of said pairs, said valves closing the inner port of one pair while closing the outer port of the other pair of ports, and means for operating the first-named valves.

6. In a rotary engine, a casing formed of two sections secured together, a carrier rotatable within the bounds of the casing and having its rim projecting between said sections, flanges on opposite sides of the rim of the carrier, packing arranged between said flanges and the rim of said carrier, means removably secured to said flanges and projecting over said packing for preventing displacement thereof, and a piston secured to the rim of the carrier and arranged in said casing.

7. In a rotary engine, a casing, a steam-chest having ports leading therefrom to the casing, said ports being arranged in pairs, an oscillatory abutment arranged in said casing between said pairs of ports, a piston in the casing, means for swinging the abutment to allow the piston to pass the same, valves for alternately closing the respective ports of said pairs of ports, and valves independent of the first-named valves arranged in one port of each pair.

821,798. **AUTOMATIC RELIEF-VALVE.** AMOS HARRISON, Chicago, Ill., assignor, by direct and mesne assignments, to Warren Webster and Company, Camden, N. J., a Corporation of New Jersey. Filed Sept. 21, 1904. Serial No. 225,314.



Claim.—1. A device of the kind described, comprising an inclosing shell provided with an inlet-port and a discharge-port, an internal wall provided with a plurality of valve-ports and arranged to form a chamber inclosing the discharge-port, and means for connecting the shell in a heating system, in combination with an open tubular valve for controlling said valve-ports, and a float arranged within the shell connected with and controlling the movements of said valve.

2. A device of the kind described, comprising an inclosing shell provided with an inlet-port and a discharge-port, an internal wall having substantially parallel horizontal walls arranged one above the other, registering valve-ports extending through a plurality of said horizontal walls, said internal wall forming a chamber inclosing the discharge-port, and means for connecting the shell in a heating system, in combination with a sliding tubular valve for said valve-ports provided with a seat for each horizontal wall-opening and having openings formed therein which are normally covered by said horizontal walls inclosing the valve but are uncovered when the valve is moved to permit the escape of the fluid from the main chamber into the inclosing chamber, and a float arranged within the shell connected with and controlling the movements of said valve.

3. A device of the kind described, comprising an inclosing shell provided with an inlet-port and a discharge-port, an internal wall forming a chamber inclosing the discharge-port and having substantially horizontal walls arranged one above the other, registering valve-ports extending through a plurality of said horizontal walls, a vent through said wall connecting with the main chamber, and means for connecting the shell in a heating system, in combination with a sliding tubular valve for said valve-ports provided with a seat for each horizontal wall-opening and having openings or ports formed therein which are normally covered by said horizontal walls, but when the valve is moved uncover said ports to permit the escape of the fluid from the main chamber into the inclosing chamber, a float arranged within the shell connected with and controlling the movements of said valve, substantially as described.

4. A device of the kind described, comprising an inclosing shell provided with an inlet-port and a discharge-port, an internal wall arranged to form a chamber inclosing the discharge-port and provided with valve-ports and a vent, and means for connecting the shell in a heating system, in combination with an open tubular valve for said valve-ports and a float arranged within the shell connected with and controlling the movements of the said valve.

5. A device of the kind described, comprising an inclosing shell provided with an inlet-port and a discharge-port, an internal wall arranged to form a chamber inclosing the discharge-port and provided with a valve-port and a vent, and means for connecting the shell in a heating system, in combination with a valve for said valve-port, a valve for said vent, and a float arranged within the shell connected with and controlling the movements of said first-mentioned valve and adapted by its movement to control the operation of the vent-valve.

6. In a device of the kind described, an inclosing shell provided with an inlet-port and a discharge-port, an internal wall having a plurality of valve-ports and a vent connecting with the main chamber in the shell formed therein, the said wall forming a chamber inclosing the discharge-port, and means for connecting the shell in a heating system, in combination with a single valve provided with a valve-seat for each valve-port, a valve controlling said vent, a float arranged within the shell connected with and controlling the movements of said first-mentioned valve and by its movements also controlling said vent-valve.

7. A device of the kind described, comprising an inclosing shell provided with an inlet-port and a discharge-port, an internal wall forming a chamber inclosing a discharge-port and having substantially horizontal walls arranged one above the other, substantially registering valve-ports extending through a plurality of said horizontal walls a vent through said internal wall connecting with the main chamber, and means for connecting the shell in a heating system, in combination with a sliding tubular valve for said valve-ports provided with a seat for each horizontal wall-opening and having openings or ports formed therein which are normally covered by said horizontal walls but when the valve is moved uncover said ports and permit the escape of fluid from the main chamber into the inclosing chamber, a valve arranged to control said vent, and a float arranged within the shell and adapted to control the movements of said valves.

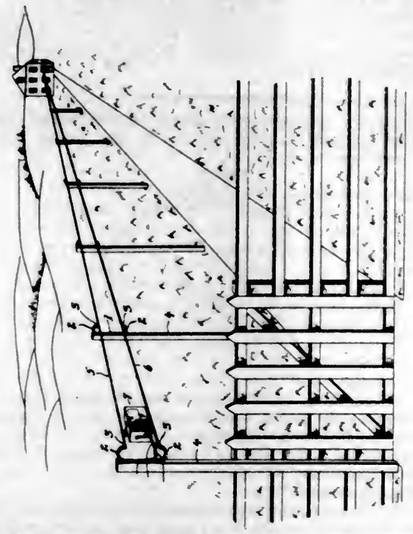
8. A device of the kind described, comprising an inclosing shell provided with an inlet-port and a discharge-port, an internal wall arranged to form a chamber inclosing the discharge-port and provided with a plurality of valve-ports, and means for connecting the shell in a heating system, in combination with an open tubular valve for controlling said valve-ports, a float provided with an air-chamber and arranged within the shell connected with and controlling the movements of said valve.

9. In an automatic valve for the purpose described, the combination of an inclosing shell having an inlet-port and a discharge-port, an internal wall forming a chamber inclosing the discharge-port, said chamber having a valve-port and an air-vent to the interior of the shell, and valves controlled by the accumulation of water of condensation in the shell to control the valve-port and air-vent to the discharge-chamber in said internal wall.

821,799. **SUSPENDED RAILWAY.** LYCURGUS C. HARRISON, Stockwell, Ind. Filed Mar. 12, 1906. Serial No. 305,637.

Claim.—1. A device of the character described comprising a suspended track, a wheeled carrier thereon, a motor within the carrier for operating the same, means for reversing the operating mechanism to cause the carrier to travel in either direction, means for regulating and controlling the speed of the carrier, means for holding the carrier in elevated position on the track, and a brake comprising a horizontally-diverging spring adapted to be encountered by the carrier whereby it is stopped at its destination.

2. A device of the character described comprising a suspended track, a wheeled carrier thereon, a motor within the carrier for operating the same, means for reversing the operating mechanism to cause the carrier to travel in either direction, means for regulating and controlling the speed of the carrier, means for holding the carrier in elevated position on the track, a brake comprising a leaf-spring mounted at one end on a suitable support and having its free end adapted to encounter the carrier and against which its tension is exerted to gradually stop the same, and a resilient bumper arranged adjacent the spring.



3. A device of the character described comprising a suspended track, a wheeled carrier traveling thereon, a cable suspended above the track, a spring-actuated trolley-pole mounted on the carrier, a trolley-wheel on the pole adapted to travel on the cable, a spring-motor within the carrier, a sprocket wheel and chain connection between the wheels of the carrier, sprocket-wheels actuated by the spring-motor, said wheels meshing with each other and adapted to engage the sprocket-chain, a chain of gearing connecting the spring-motor with the last-mentioned sprocket-wheels, means for throwing the chain into and out of engagement with said sprocket-wheels, and pneumatic means for controlling the speed of the carrier.

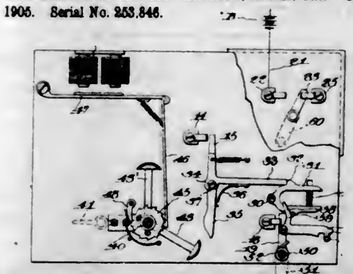
4. A device of the character described comprising a suspended track, a wheeled carrier thereon, said carrier being divided into compartments, a cable suspended above the track, means connecting the carrier with the cable to hold it in upright position on the track, sprocket-wheels fixed on the axles of the carrier, an endless sprocket-chain connecting said sprocket-wheels, other sprocket-wheels mounted on the carrier meshing with each other and also adapted to mesh with the sprocket-chain, a spring-motor within the carrier, a chain of gearing connecting the last-mentioned sprocket-wheels and the motor, means for bringing the sprocket-chain into and out of engagement with the last-mentioned sprocket-wheels, and pneumatic means for regulating the speed of the carrier.

5. A device of the character described comprising a suspended track, a wheeled carrier thereon, said carrier being divided into compartments, a cable suspended above the track, means connecting the carrier with the cable to hold it in upright position on the track, sprocket-wheels fixed on the axles of the carrier, an endless sprocket-chain connecting said sprocket-wheels, other sprocket-wheels mounted on the carrier meshing with each other and also adapted to mesh with the sprocket-chain, a spring-motor within the carrier, a chain of gearing connecting the last-mentioned sprocket-wheels and the motor, means for bringing the sprocket-chain into and out of engagement with the last-mentioned sprocket-wheels, pneumatic means for regulating the speed of the carrier, and a brake comprising a leaf-spring fixed at one end on a suitable support arranged in the path of the carrier and having its free end adapted to engage and bear against the sprocket-chain to check the speed of the carrier and gradually stop the same.

6. A device of the character described comprising a plurality of standards, brackets mounted thereon, a cable-track held suspended between the lower ends of the brackets, a cable held suspended by the upper ends of the brackets and extending parallel and in alinement with the track, a wheeled carrier mounted on the track, said carrier being divided into compartments, a spring-actuated trolley-pole mounted on the carrier, a trolley-wheel carried by the upper end of the pole and adapted to travel on the cable, sprocket-wheels fixed on the axles of the carrier, an endless sprocket-chain connecting the wheels, a spring-motor within the carrier, other sprocket-wheels meshing with each other and also adapted to mesh with the sprocket-chain, a chain of gearing connecting the spring-motor with the last-mentioned sprocket-wheels whereby the same are actuated, a pneumatic regulator connected with one of the last-mentioned sprocket-wheels and adapted to control the speed of the car, a plate slidably mounted adjacent the sprocket-chain, rollers carried by the plate and adapted to engage the chain, a lever having one end pivoted on the plate, a vertical slidably-mounted arm pivoted on the other end of the lever whereby it is operated to throw the rollers into and out of engagement with the chain for the purpose of bringing the chain into and out of engagement with the last-mentioned sprocket-wheels, and means for holding the arm in raised or lowered position.

7. A device of the character described comprising a plurality of standards, brackets mounted thereon, a cable-track held suspended between the lower ends of the brackets, a cable held suspended by the upper ends of the brackets and extending parallel and in alinement with the track, a wheeled carrier mounted on the track, said carrier being divided into compartments, a spring-actuated trolley-pole mounted on the carrier, a trolley-wheel carried by the upper end of the pole and adapted to travel on the cable, sprocket-wheels fixed on the axles of the carrier, an endless sprocket-chain connecting the wheels, a spring-motor within the carrier, other sprocket-wheels meshing with each other and also adapted to mesh with the sprocket-chain, a chain of gearing connecting the spring-motor with the last-mentioned sprocket-wheels whereby the same are actuated, a pneumatic regulator connected with one of the last-mentioned sprocket-wheels and adapted to control the speed of the car, a plate slidably mounted adjacent the sprocket-chain, rollers carried by the plate and adapted to engage the chain, a lever having one end pivoted on the plate, a vertical slidably-mounted arm pivoted on the other end of the lever whereby it is operated to throw the rollers into and out of engagement with the chain for the purpose of bringing the chain into and out of engagement with the last-mentioned sprocket-wheels, means for holding the arm in raised or lowered position, and brakes arranged at the terminals of the track to yieldingly engage the sprocket-chain and gradually stop the car.

821,800. **LOCK-OUT DEVICE FOR TELEPHONES.** RUBEN C. M. HASTINGS and THURSTON MATHENY, Athens, Ohio. Filed Apr. 4, 1905. Serial No. 253,846.



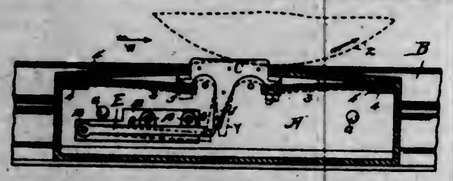
Claim.—1. In telephone system, a plurality of substations connected on a party-line, a receiver-hook at each station, a receiver-hook-locking member provided with a projecting shoulder, a pivotally-mounted lever having one arm movable into engagement with the shoulder, the second arm of said lever having a give-way connection, and a selector arranged to engage the second arm of the lever.

2. In telephone systems, a plurality of substations connected on a party-line, a receiver-hook arranged at each station, a receiver-hook-locking member provided with a projecting shoulder, a pivotally-mounted lever having one arm engaging the shoulder and a second yieldably-mounted arm having a give-way connection, and a step-by-step selector having a member arranged to engage the yieldably-mounted arm to effect release of the receiver-hook when the latter is depressed by the weight of the receiver.

3. In telephone selecting mechanism, a receiver-hook-engaging member, means for locking the same in position, a selecting mechanism controlling the movement of the locking means, a selecting-line to which all of the selecting mechanisms are connected in series, and a switch for opening and closing the line, said switch being under the control of the receiver-hook-engaging member.

4. In a telephone system, an electromagnetic selecting means at each station, a selector-line to which all of the mechanisms are connected in series, a switch arranged in the line, a spring tending normally to hold the same in closed position, a catch carried by the switch, means with which said catch may engage to retain the switch in open position, a cam carried by the catch, and means under the control of the selecting mechanism and the receiver-hook for preventing movement of the switch while the receiver is on the hook, and for releasing the catch when the receiver is replaced on the hook.

821,801. ELECTRIC RAILROAD SIGNALING DEVICE. HENRY A. HOSKINSON, Omaha, Nebr. Filed May 2, 1905. Serial No. 258,465.

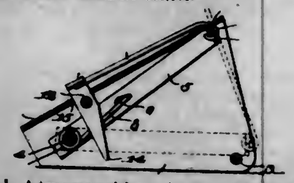


Claim.—1. In a railroad signaling device, the combination with the electric generator, the armature, the movable head provided with the downwardly-projecting leg for reciprocating said armature when depressed by passing vehicles, and springs for normally supporting aforesaid movable head, substantially as specified.

2. A railway signaling device comprising a suitable housing, of an electric generator, a pivotally-supported armature, a movable head partly projecting through and beyond the top of aforesaid housing, springs adapted to normally support said movable head at its extreme ends, said head being provided with a downwardly-projecting leg, said leg when pressed downward and forward by the passing car-wheels, adapted to reciprocate aforesaid armature, substantially as and for the purpose set forth.

3. In a railway signaling device, the combination of a suitable housing secured to the rail, a second housing secured to said first housing, an electric generator such as described and shown held within said second housing, a pivotally-supported armature adapted to be reciprocated by means of the aforesaid head operated by the passing car-wheels, causing a current to be generated which is communicated by means of wires to a suitable alarm, suitable springs adapted to normally support aforesaid movable head substantially as shown and described.

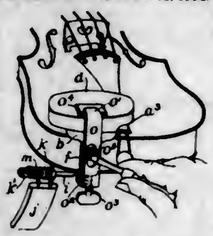
821,802. ANIMAL-TRAP. WILLIAM C. HOOKER, Abingdon, Ill. Filed Feb. 10, 1906. Serial No. 300,870.



Claim.—1. A trap comprising a sheet-metal frame bent to form a top and downturned sides, the lower edges of the sides being inclined to support the top in an upwardly and forwardly inclined position, said top having front and rear openings, upper and lower rear cross-bars connecting the sides of the frame, a yoke-shaped jaw having its ends pivoted upon the lower rear cross-bar, a spring embracing the lower cross-bar with one end engaging the top of the frame and the other end engaging the jaw with a tendency to force the latter downwardly, a trigger pivoted intermediate of its ends upon the upper cross-bar and working through the rear opening in the top of the frame, the upper free end of the trigger having a lateral projection and the lower end constituting a bait-holder, and a latch pivotally carried by the free end of the jaw and working through the opening in the front of the top of the frame for engagement with the projection of the trigger.

2. A trap including a frame having a sheet-metal top and downturned sides, with the lower edges of the sides inclined to support the top in an upwardly and forwardly inclined position, the top having front and rear openings, a front cross-bar connecting the lower portions of the sides, upper and lower rear cross-bars, a yoke-shaped jaw having its ends pivoted upon the lower rear cross-bar, one of the sides of the jaw having an offset portion, a helical spring embracing the lower rear cross-bar with one end engaging the top of the trap and the other end passed through an opening in the shoulder formed by the offset portion of the jaw, a trigger pivoted intermediate of its ends upon the upper cross-bar and working through the rear opening in the top of the trap, the lower end of the trigger constituting a bait-holder, and the upper end being bent into a hook, and a latch pivotally connected to the free end of the jaw and working through the opening in the front of the top of the trap for engagement with the hook of the trigger.

821,803. BODY-REST FOR MUSICAL INSTRUMENTS. JAMES W. HUGHES, Camden, N. J. Filed Nov. 12, 1904. Serial No. 232,472.



Claim.—1. A combined chin and shoulder rest for musical instruments, consisting of a chin-rest, a clamping device for securing said chin-rest to the instrument and a shoulder-rest carried by said clamping device with provision for lateral adjustment with reference thereto to bring said shoulder-rest nearer to or farther from the line of the chin-rest.

2. The combination with a clamping device adapted to be secured to a musical instrument, of a shoulder-rest carried thereby and having provision for lateral adjustment with reference thereto.

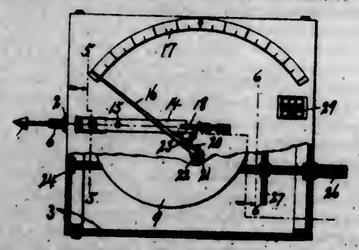
3. The combination with a clamping device adapted to be secured to a musical instrument, of a shoulder-rest carried thereby and adjustable both angularly and laterally with reference thereto.

4. The combination of a clamping device adapted to be secured to a musical instrument, a rod extending laterally therefrom, a sleeve carried by said rod and free to turn thereon, means to lock said sleeve in adjusted position, and a shoulder-rest carried by said sleeve.

5. The combination of a clamping device adapted to be secured to a musical instrument, a rod extending laterally therefrom, a clutch-sleeve carried by said rod and free to turn thereon, a second clutch-sleeve secured to said rod and adapted to engage said loose sleeve and lock it in adjusted position, and a shoulder-rest carried by said loose clutch-sleeve.

6. The combination of a clamping device adapted to be secured to a musical instrument, a rod extending laterally therefrom, a clutch-sleeve carried by said rod and free to turn thereon, a second clutch-sleeve secured to said rod and adapted to engage said loose sleeve and lock it in adjusted position, a spring between said clutch-sleeves, and a shoulder-rest carried by said loose clutch-sleeve.

821,804. MECHANICAL SPEED-INDICATOR. THOMAS HOOKER, Syracuse, N. Y. Filed Sept. 12, 1903. Serial No. 172,908.



Claim.—1. A mechanical speed-indicator comprising a revolving element having an independent centrifugal movement produced by its rotation, means actuated by the centrifugal movement of said element to indicate its speed of rotation, variable-speed driving means to rotate said element, and manually-operated means for adjusting said driving means to cause said element to revolve at a constant speed.

2. A speed-indicator comprising a revolving element having an independent centrifugal movement, variable-speed driving means to rotate said element, manually-operated means for adjusting said driving means to cause said element to revolve at a constant speed, and a movable index-finger operatively connected to said element and actuated by its centrifugal movement.

3. A speed-indicator comprising a revolving disk and variable-speed driving means therefor adjustable to keep said disk at a constant speed, a centrifugally-actuated element on the disk, and a movable indicating member operatively connected to and actuated by said element.

4. A speed-indicator comprising a revolving disk and variable-speed driving means therefor adjustable to keep said disk at a constant speed, a centrifugally-actuated element on the disk, a plunger actuated by said element and an indicating-finger operatively connected to and actuated by said plunger.

5. A speed-indicator comprising a revolving disk and variable-speed driving means therefor and adjustable to keep said disk at a constant speed, a centrifugally-actuated element on the disk, a plunger actuated by said element and means actuated by the plunger to indicate the speed of rotation of the disk.

6. A mechanical speed-indicator comprising a revolving element having an independent centrifugal movement produced by its rotation, a plunger actuated by the centrifugal movement of said element, a variable-speed driving means movable axially to keep the revolving element at a constant speed, manually-operated means for adjusting said driving means axially, and means actuated by the plunger to indicate the speed of such rotation.

7. A speed-indicator comprising a revoluble element having an independent centrifugal movement, a spring connected to act against such movement, means for adjusting the tension of the spring, variable-speed driving means to rotate said element and to cause it to rotate at a constant speed, and an index-finger operatively connected to and actuated by said element to indicate said constant speed.

8. A speed-indicator comprising a revolving disk and variable-speed driving means therefor adjustable to bring the disk to a constant speed, a centrifugally-operated element on the disk and actuated by its rotation, a movable indicating member operatively connected to and actuated by the centrifugally-operated element to indicate said constant speed and means to return said element to its normal position.

9. In a speed-indicator the combination of a rotary disk, a variable-speed driving-disk frictionally engaged with the former disk and adjustable axially to bring the former disk to a constant speed, a centrifugally-operated element carried by the former disk and actuated by its rotation, a plunger actuated by said element, and an index-finger operatively connected to and actuated by the plunger to indicate said constant speed.

10. In a speed-indicator the combination of a rotary disk, a variable-speed driving-disk frictionally engaged with the former disk and adjustable axially to bring the former disk to a constant speed, a centrifugally-operated element carried by the former disk and actuated by its rotation, a plunger actuated by said element, and an index-finger operatively connected to and actuated by the plunger to indicate said constant speed, and a spring for retracting the plunger.

11. A speed-indicator comprising a revolving element having an independent centrifugal movement, variable-speed driving mechanism for rotating said element, said mechanism being adjustable to bring the revolving element to a constant speed, manually-operated means for adjusting said driving mechanism and a movable indicating member operatively connected to and actuated by said revolving element to indicate such constant speed.

12. A speed-indicator, comprising a driving member operable under variable speeds and a driven member actuated thereby, and manually-operated means for adjusting the driving member to cause the driven member to rotate at uniform normal speed.

13. A speed-indicator comprising a revolving element having an independent centrifugal movement, variable-speed driving mechanism for rotating said element, manually-operated means connected to change the position of the driving means to vary the speed of said element, an index-finger connected to and actuated by said element, and an index operatively connected to and actuated by the manually-operated means.

14. A speed-indicator comprising two rotary disks in frictional contact, one driving the other, the driving-disk being movable endwise to change the position of contact and to vary the speed of the driven disk, a centrifugally-operated element on the driven disk and an indicating member operatively connected to and actuated thereby, a screw connected to shift the driving-disk, and a cyclometer connected to and actuated by the screw.

15. A speed-indicator comprising a revolving disk and operating means therefor, a centrifugally-actuated element on the disk, and a movable indicating member operatively connected to and actuated by said element, a manually-operated screw connected to shift the position of the disk, operating means to change the speed of rotation of the disk and a cyclometer actuated by the screw, for the purpose set forth.

16. In a speed-indicator, a variable-speed driving member and a rotary driven member, one member being adjustable at the will of the operator relatively to the other to keep the driven member at a constant speed and manually-operated means for adjusting said adjustable member.

17. In a speed-indicator, a variable-speed driving member, and a rotary driven member, one member being adjustable relatively to the other at the will of the operator to keep the driven member at a constant speed, manually-operated means to adjust said adjustable member, and means to indicate when the driven member is revolved at a constant speed.

18. In a speed-indicator, a variable-speed driving member and a rotary driven member, one member being adjustable relatively to the other at the will of the operator to keep the driven member at a constant speed, means to adjust the adjustable member and a speed-registering device actuated by said means.

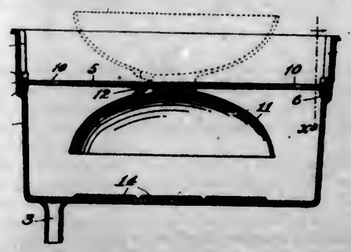
19. In a speed-indicator, a variable-speed driving member and a rotary driven member, one member being adjustable relatively to the other at the will of the operator to keep the driven member at a constant speed, manually-operated means to adjust said adjustable member, and means actuated by the driven member to indicate when it is revolving at a constant speed.

20. In a speed-indicator, a variable-speed driving member and a rotary driven member, one member being adjustable relatively to the other to keep the driven member at a constant speed, and means actuated by the driven member to indicate when it is revolving at a constant speed, additional means to adjust the adjustable member, and a speed-indicating device actuated by the additional means.

21. In a speed-indicator, a variable-speed driving member and a rotary driven member, one member being adjustable relatively to the other at the will of the operator to keep the driven member at a constant speed and manually-operated means for adjusting said adjustable member in combination with a multiplying attachment operatively connected to the driving member and adapted to be applied to the part, the speed of which is to be tested.

22. In a speed-indicator, a variable-speed driving member and a rotary driven member, one member being adjustable relatively to the other at the will of the operator to keep the driven member at a constant speed and manually-operated means for adjusting said adjustable member, a speed-multiplying device operatively connected to the driving member and adapted to be applied to the part, the speed of which is to be tested and means brought into action by the adjustment of the manually-adjustable member to indicate such speed.

821,805. COMBINATION TUB, SINK, AND WASHBOWL. WILLARD C. JAMES, Los Angeles, Cal. Filed June 20, 1904. Serial No. 213,273.



Claim.—1. The combination with a tub, of a false bottom detachably secured to the inner walls of said tub and forming with the upper part of the tub, a sink.

2. The combination with a tub, of a reversible false bottom, detachably supported therein and provided on one side with a bowl.

3. A tub having grooves in its inner walls extending downwardly from the top thereof, and a false bottom provided with a bowl on one side thereof and having projections adapted to rotate partially

in the bottom of said grooves, said projection and grooves adapted to interlock to hold the bottom against rotation when in a horizontal position.

4. A tub having shoulders and lugs on its walls, and a false bottom having projections thereon to engage said shoulders, said projections having notches to engage said lugs.

5. A tub having recess in its walls formed with shoulders and lugs at the bottom thereof, and a false bottom having projections at each end to enter said recess, and formed with notches at top and bottom of said projections to interchangeably engage said lugs, when the false bottom is turned either side up.

6. A tub provided with supports and a false bottom having projections engaging said supports and partially rotatable thereon, said false bottom being formed with a bowl on one side, and said supports adapted to lock said false bottom in a horizontal position either side up.

7. A tub having shoulders on its walls and a reversible false bottom provided with a bowl on one side and having projections engaging said shoulders and partially rotatable thereon, said false bottom adapted to be grasped by the hand from either side when in a horizontal position in the tub.

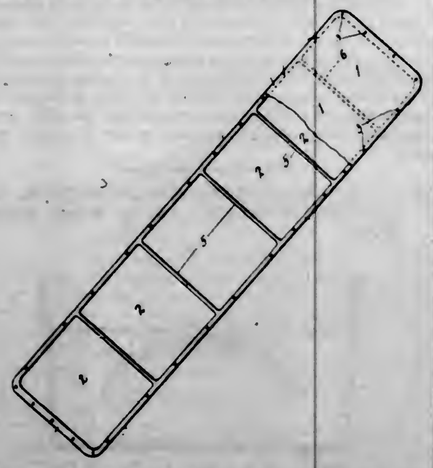
8. A tub having shoulders on its walls and a reversible false bottom provided with a bowl on one side and having projections engaging said shoulders and partially rotatable thereon, said false bottom having holes to enable it to be grasped by the hand when in a horizontal position in the tub.

9. The combination of a stationary tub having a water-supply and an outlet, and a reversible false bottom removably supported in said tub, and provided with a bowl on one side adapted to receive water from the water-supply of the tub, and having an outlet draining to the tub.

10. A tub provided with supports and a false bottom having projections engaging said supports and partially rotatable thereon, said false bottom being formed with a bowl on one side, and said projections and supports non-revolubly engaging each other when the false bottom is in a horizontal position.

11. The combination with a tub, of a reversible false-bottom tub being provided with means below the level of the top of the tub in the inner walls thereof, adapted to lock the false bottom in a horizontal position either side up.

821,806. **PNEUMATIC SURF-BOARD.** ALBERT S. JOHNSTON, Los Angeles, Cal. Filed May 19, 1905. Serial No. 261,206.



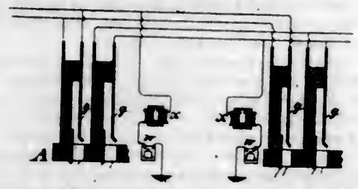
Claim.—1. A pneumatic surf-board provided with sections having half-cleats or braces, half-flanges extending around said sections and means for securing the said sections together.

2. A surf-board consisting of curved sections having half-cleats or braces made integral with said sections, said sections provided with flanges extending around the sections, the said sections, cleats or braces and flanges forming air and water tight compartments and means for securing said sections together.

3. A pneumatic surf-board provided with an upper portion or section having cleats or braces and a downwardly-extending flange surrounding said portion or section, an under portion or section having cleats or braces and an upwardly-extending flange surrounding said under portion or section and means for connecting the said portions or sections together.

4. A pneumatic surf-board provided with an upper portion or section having half-cleats or braces and a downwardly-extending half-flange surrounding said portion or section, an under portion or section having half-cleats or braces and an upwardly-extending flange surrounding said under portion or section, the said portions or sections, the cleats or braces and the flanges surrounding the sections forming separate air and water tight compartments, and means for securing the said sections, cleats or braces and flanges together.

821,807. **MULTIPLE SWITCHBOARD FOR TELEPHONE-EXCHANGES.** MILO G. KELLOGG, Chicago, Ill., assignor to Kellogg Switchboard and Supply Company, Chicago, Ill., a Corporation of Illinois. Filed Nov. 30, 1891. Serial No. 413,605.



Claim.—1. In a telephone-exchange system, metallic-circuit lines and polarized annunciators, one for each line through which one side or branch of the line is permanently grounded, in combination with switching apparatus to switch any two of said lines into a metallic circuit for conversation which does not include their annunciators, clearing-out annunciators, one in a bridge connection across each metallic circuit thus established, and calling apparatus at each subscriber's station with commutator and switch parts to send at will a current of one polarity in a grounded circuit through the line-annunciator or when the line is stretched a current of the other polarity in the metallic circuit through the clearing-out annunciator, substantially as set forth.

2. In a telephone-exchange system, a metallic-circuit line, one side or branch of which is normally grounded at the central office a calling-generator, commutator and switch apparatus at the subscriber's station to at will send a current of either polarity into the line, and switch-contacts to ground the line while the generator is being operated, substantially as set forth.

3. In a telephone-exchange system, a metallic-circuit line, a calling-generator, commutator and switch apparatus at the subscriber's station to at will send a current of either polarity into the line, and switch-contacts automatically operated by the generator to ground the line while the generator is being operated, substantially as set forth.

4. In a telephone-exchange system, a pair of loop-switch plugs, the two contact-pieces of one of which are respectively connected to the two contact-pieces of the other by two flexible switch-conductors, in combination with an operator's telephone and a test-battery in a temporary bridge connection across said conductors, substantially as set forth.

5. In a telephone-exchange system, a pair of loop-switch plugs the two contact-pieces of one of which are respectively connected with the two contact-pieces of the other by two flexible switch-conductors, in combination with a loop containing an operator's telephone and a test-battery, another loop containing a clearing-out annunciator and a test-battery, and a looping-in switch with contacts and connections to at will connect either of said loops in a bridge connection across said conductors, substantially as set forth.

6. In a telephone-exchange system, two telephone-lines connected together in metallic circuit for conversation, in combination with an operator's telephone and test-battery in a temporary bridge connection across said circuit, substantially as set forth.

7. In a telephone-exchange system, two telephone-lines connected together in metallic circuit for conversation, in combination with a loop containing an operator's telephone and a test-battery, another loop containing a clearing-out annunciator and a test-battery, and a looping-in switch with contacts and connections to at will connect either of said loops in a bridge connection across said circuit, substantially as set forth.

8. In a telephone-exchange system, multiple switchboards, metallic-circuit lines connected to the boards, and two of said lines connected together in metallic circuit with one side of the circuit grounded, in combination with a loop containing a clearing-out annunciator and test-battery, another loop containing an operator's telephone and test-battery, a looping-in switch with contacts and connections to at will connect either of said loops in a bridge connection across said circuit, and test-receiving instruments, one at each board, each grounded on one side and connected on the other side to a plug or device adapted to be brought, for testing one of said lines, into connection with the other side of said circuit, substantially as set forth.

9. In a telephone-exchange, multiple switchboards, metallic-circuit lines connected to the boards, and two of said lines connected together in metallic circuit with one side of the circuit grounded through a retarding-coil, in combination with a loop containing an operator's telephone and test-battery, another loop containing a clearing-out annunciator and test-battery, a looping-in switch with contacts and connections to at will connect either of said loops in a bridge connection across said circuit, and test-receiving instruments, one at each board, each grounded on one side and connected on the other side to a plug or device adapted to be brought, for testing one of said lines, into connection with the other side of said circuit, substantially as set forth.

10. In a telephone-exchange, multiple switchboards, metallic-circuit lines connected to the boards, and two of said lines connected together in metallic circuit with one side of the circuit grounded through the annunciator of one of said lines, in combination with a loop containing an operator's telephone and test-battery, another loop containing a clearing-out annunciator and test-battery, a looping-in switch with contacts and connections to at will connect either of said loops in a bridge connection across said circuit, and test-receiving instruments, one at each board, each grounded on one side and connected on the other side to a plug or device adapted to be brought for testing said lines into connection with the other side of said circuit, substantially as set forth.

11. In a telephone-exchange system, a pair of loop-switch plugs the two contact-pieces of one of which are respectively connected with the two contact-pieces of the other by two flexible switch-conductors, in combination with a loop containing an operator's telephone and a test-battery, another loop containing a clearing-out annunciator and a test-battery, another loop containing a calling-generator, and a looping-in switch with contact and connections to at will connect either of said loops in a bridge connection across said conductors, substantially as set forth.

12. In a telephone-exchange system, two telephone-lines connected together in metallic circuit for conversation, in combination with a loop containing an operator's telephone and a test-battery, another loop containing a clearing-out annunciator and a test-battery, another loop containing a calling-generator, and a looping-in switch with contacts and connections to at will connect either of said loops in a bridge connection across such circuit, substantially as set forth.

13. In a telephone-exchange system, multiple switchboards, metallic-circuit lines connected to the boards, and two of said lines connected together in metallic circuit with one side of the circuit grounded, in combination with a loop containing an operator's telephone and test-battery, another loop containing a clearing-out annunciator and test-battery, another loop containing a calling-generator, a looping-in switch with contacts and connections to at will connect either of said loops in a bridge connection across said circuit, and test-receiving instruments, one at each board, each grounded on one side and connected on the other side to a plug or device adapted to be brought, for testing one of said lines, into connection with the other side of said circuit, substantially as set forth.

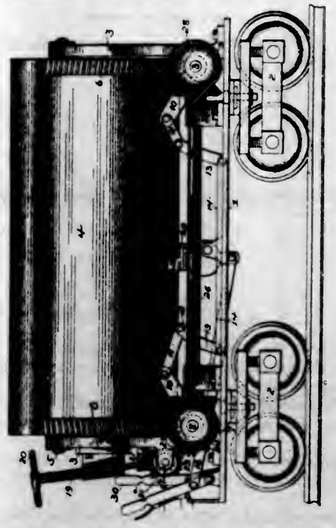
14. In a telephone-exchange system, multiple switchboards, a metallic-circuit telephone-line grounded on one side at the central office and temporarily switched in a metallic circuit for conversation, in combination with a test-battery in a bridge connection across the two sides of the line, a battery at the subscriber's station in the circuit of the line while the subscriber's telephone is switched for use and only then, and test-receiving instruments, one at each board, grounded on one side and connected on its other side to a plug or device adapted to be brought for testing into connection with the line on its other side, substantially as set forth.

15. In a telephone-exchange system, multiple switchboards, a metallic-circuit telephone-line grounded on one side at the central office and temporarily switched in a metallic circuit for conversation, in combination with a test-battery and a retarding-coil in a bridge connection across the two sides of the line, a battery at the subscriber's station in the circuit of the line while the subscriber's telephone is switched for use and only then, and test-receiving instruments, one at each board, grounded on one side and connected on its other side to a plug or device adapted to be brought for testing into connection with the line on its other side, substantially as set forth.

16. In a telephone-exchange system, multiple switchboards, a metallic-circuit telephone-line grounded on one side at the central office through a retarding-coil and temporarily switched in a metallic circuit for conversation, in combination with a test-battery in a bridge connection across the two sides of the line, a battery at the subscriber's station in the circuit of the line while the subscriber's telephone is switched for use and only then, and test-receiving instruments, one at each board, grounded on one side and connected on its other side to a plug or device adapted to be brought for testing into connection with the line on its other side, substantially as set forth.

17. In a telephone-exchange system, two telephone-lines temporarily connected together into a complete circuit for conversation, in combination with a calling-generator at one of the subscriber's stations of the two lines, operated to send a current of one polarity only to give the primary or calling signals of the line and to send a current of the other polarity only to give a clearing-out signal when the lines are thus connected, and a special clearing-out annunciator and the line-annunciators of the two lines which are then or when the clearing-out signal is sent in closed circuit with said calling-generator, said clearing-out annunciator responding or indicating and said line-annunciators being in circuit with their generators when operated and polarized and connected in polarity so as not to respond to the current thus sent from the generator for the clearing-out signal, but to respond to the current sent for the primary calling-signal.

821,808. **DUMPING-CAR.** JOHN KNITTEL, Allegheny, Pa. Filed Jan. 29, 1906. Serial No. 298,481.



Claim.—1. In a dumping-car, the combination with a transversely-curved body having a curved closed bottom, and means for pivotally supporting the same, of a curved rack secured directly to said curved bottom of the body and means under the body engaging the rack for tilting said body.

2. In a dumping-car, the combination with a pivotally-supported body and a series of worm-racks thereon, worms engaging said racks, operating means for each rack, and devices connecting said operating means, whereby all of said operating means can be actuated simultaneously by a single operator at one end of the car.

3. In a dumping-car, the combination with a pivotally-supported body, and a rack thereon, of operating means for the rack and means for moving the operating means into and out of engagement with the rack.

4. In a dumping-car, the combination with a pivotally-supported body, and a series of racks thereon, of a series of operating means for the racks, and means for moving all of said operating means, simultaneously into or out of engagement with the racks.

5. In a dumping-car, the combination with a pivotally-sup-

pected body and a series of worm-racks secured thereto, of worms for actuating said racks to turn the body and means for raising said worms into mesh with said racks or lowering them therefrom.

6. In a dumping-car, the combination with a pivotally-supported body, of actuating means for tilting the body, means for throwing said actuating means out of gear, whereby the body will be permitted by gravity to return to its normal position, and a brake for controlling such return movement.

7. In a dumping-car, the combination of a semicylindrical car-body pivotally supported at its ends, worm-racks around the body, worms meshing with the racks, means for turning the worms, and means for moving the worms out of mesh with the racks and into mesh therewith.

8. In a dumping-car, the combination of a semicylindrical body pivotally supported at its ends, worm-racks around the body at both ends, worms meshing with the racks, shafts supporting the worms, eccentric bearings for said shafts, means for turning the shafts simultaneously, and means for turning the eccentric bearings to move the worms into or out of mesh with the racks.

9. In a dumping-car, the combination of a semicylindrical body pivotally supported at its ends, worm-racks on the body, worms meshing with the racks, means for turning the worms to tilt the body, means for throwing the worms out of mesh with the racks, and a brake engaging the body to govern the momentum of the return movement of the body to normal position.

10. In a dumping-car, the combination with a car-platform standards thereon, a semicylindrical body, and trunnions on the ends of the body supported in the standards, of worm-racks on the body, worms meshing therewith, means at one end of the car to turn the worms, a lever at the same end of the car to throw the worms out of mesh with the racks, and a brake-lever at this same end of the car to control the momentum of the body in its return movement.

821,809. DIPPING-TANK. ANDREW A. KRAMER, Kansas City, Mo. Filed Oct. 2, 1905. Serial No. 280,967.



Claim.—1. The combination with a dipping-tank, of a combined cover and guard pivotally connected therewith, and keepers for maintaining the guard in raised position.

2. The combination with a dipping-tank embodying a chute, of a combined cover and drain-board movable to cover or uncover the chute.

3. The combination with a dipping-tank embodying a chute, of a combined cover and drain-board pivotally connected with the chute.

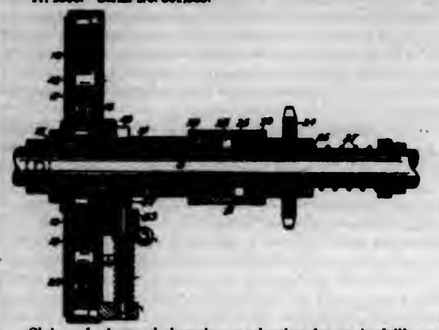
4. The combination with a dipping-tank, of a combined cover and guard pivotally connected therewith, keepers for maintaining the guard in raised position, and splash-guards arranged below the cover.

5. The combination with a dipping-tank, of a combined cover and guard pivotally connected therewith, keepers for maintaining the guard in raised position, and inward-projecting splash-guards carried by the upper portion of the tank.

6. An apparatus of the class described embodying an approximately rectangular tank, an incline or chute connected therewith, a combined cover or guard pivotally connected to the tank and having a keeper assembled therewith, and a combined cover and drain-board pivotally connected with the chute.

7. An apparatus of the class described embodying an approximately rectangular tank, an incline or chute connected therewith, a combined cover or guard pivotally connected to the tank and having a keeper assembled therewith, splash-guards carried by the tank below the cover, a ladder disposed upon the chute, means for holding the ladder in position, and a combined cover and drain-board pivotally connected with the chute.

821,810. SPEED-CHANGING MECHANISM FOR GRAIN-DRILLS. ROBERT C. LIVERAT, Hamilton, Canada, assignor to International Harvester Company, a Corporation of New Jersey. Filed Feb. 17, 1905. Serial No. 245,869.



Claim.—1. A speed-changing mechanism for grain-drills comprising, in combination, a driving and a driven shaft, a pinion secured to the driving-shaft, a sleeve rotatably mounted on said driving-shaft and having radially-projecting arms, a disk rotatably mounted upon the sleeve and having an internal toothed rim, pinions mounted upon said arms and meshing with said fixed pinion and said toothed rim, clutching mechanism operative between said disk and sleeve, and motion-transmitting means connected with said sleeve and said driven shaft.

2. A speed-changing mechanism for grain-drills comprising, in combination, a driving and a driven shaft, a pinion secured to the driving-shaft, a sleeve rotatably mounted on said driving-shaft and having radially-projecting arms, a disk rotatably mounted upon the sleeve and having an internal toothed rim, pinions mounted upon said arms and meshing with said fixed pinion and said toothed rim, clutching mechanism operative between said disk and sleeve comprising a sliding bolt mounted upon the disk and adapted to engage with the sleeve, and motion-transmitting means connected with said sleeve and said driven shaft.

3. A speed-changing mechanism for grain-drills comprising, in combination, a driving and a driven shaft, a pinion secured to the driving-shaft, a sleeve rotatably mounted on said driving-shaft and having radially-projecting arms, a disk rotatably mounted upon the sleeve and having an internal toothed rim, pinions mounted upon said arms and meshing with said fixed pinion and said toothed rim, clutching mechanism operative between said disk and sleeve and between said disk and a fixed part of the machine, means for adjusting said clutch mechanism in a manner to engage the disk with said sleeve or with a fixed part of the machine, and motion-transmitting means connected with said sleeve and said driven shaft.

4. A speed-changing mechanism for grain-drills comprising, in combination, a driving and a driven shaft, a pinion secured to the driving-shaft, a sleeve rotatably mounted on said driving-shaft and having radially-projecting arms, a disk rotatably mounted upon the sleeve and having an internal toothed rim, pinions mounted upon said arms and meshing with said fixed pinion and said toothed rim, clutching mechanism operative between said disk and sleeve and between said disk and a fixed part of the machine comprising a sliding bolt mounted upon said disk and adapted to engage with either the sleeve or a fixed part of the machine, and motion-transmitting means connected with said sleeve and said driven shaft.

5. A speed-changing mechanism for grain-drills comprising, in combination, a driving and a driven shaft, a pinion secured to the driving-shaft, a sleeve rotatably mounted on said driving-shaft and having radially-projecting arms, a disk rotatably mounted upon said sleeve and having an internal toothed rim, pinions mounted upon said arms and meshing with said fixed pinion and said toothed rim, clutching mechanism operative between said disk and sleeve comprising a spring-pressed bolt slidably mounted upon the disk, one or more teeth upon the sleeve adapted to engage with one end of the spring-pressed bolt, and motion-transmitting means connected with said sleeve and said driven shaft.

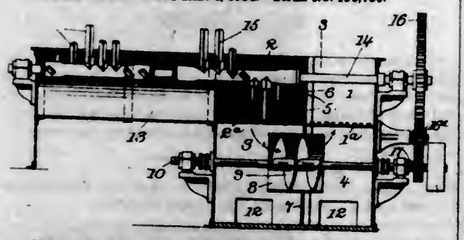
6. A speed-changing mechanism for grain-drills comprising, in combination, a driving and a driven shaft, a pinion secured to the driving-shaft, a sleeve rotatably mounted on said driving-shaft and having radially-projecting arms, a disk rotatably mounted upon said sleeve and having an internal toothed rim, pinions mounted upon said arms and meshing with said fixed pinion and said toothed rim, clutching mechanism operative between said disk and sleeve and between said disk and a fixed part of the machine comprising a spring-pressed bolt slidably mounted upon said disk, one or more teeth upon the sleeve adapted to engage with one end of the spring-pressed bolt, means for disengaging said bolt from said sleeve and engaging it with a fixed part of the machine, and motion-transmitting means connected with said sleeve and said driven shaft.

7. A speed-changing mechanism for grain-drills comprising, in combination, a main frame member, a driving and a driven shaft, a pinion secured to the driving-shaft, a sleeve rotatably mounted upon said driving-shaft and having radially-projecting arms, a disk rotatably mounted upon said sleeve and having an internal toothed rim, pinions mounted upon said arms and meshing with said fixed pinion and said toothed rim, clutching mechanism operative between said disk and sleeve comprising a spring-pressed bolt slidably mounted upon the face of said disk and arranged radially relative to the sleeve, one or more teeth upon the sleeve adapted to engage with one end of the spring-pressed bolt, a stop-block secured to said frame member, means for disengaging said bolt from said sleeve and engaging it with said stop-block, and motion-transmitting means connected with said sleeve and said driven shaft.

8. A speed-changing mechanism for grain-drills comprising, in combination, a main frame member, a driving and a driven shaft, a pinion secured to the driving-shaft, a sleeve rotatably mounted upon said driving-shaft and having radially-projecting arms, a disk rotatably mounted upon said sleeve and having an internal toothed rim, pinions mounted upon said arms and meshing with said fixed pinion and said internal toothed rim, clutching mechanism operative between said disk and sleeve comprising a spring-pressed bolt slidably and rotatably mounted in laterally-projecting ears upon the face of said disk and arranged radially relative to said sleeve, one or more teeth upon the sleeve adapted to engage with one end of the spring-pressed bolt when it is moved in one direction, a stop-block secured to said frame member and adapted to engage with said bolt when it is moved in an opposite direction, means for adjusting said bolt toward said block, and motion-transmitting means connected with said sleeve and said driven shaft.

9. A speed-changing mechanism for grain-drills comprising, in combination, a main frame member, a driving and a driven shaft, a pinion secured to the driving-shaft, a sleeve rotatably mounted upon said driving-shaft and having radially-projecting arms, a disk rotatably mounted upon said sleeve and having an internal toothed rim, pinions mounted upon said arms and meshing with said fixed pinion and said toothed rim, clutching mechanism operative between said disk and sleeve comprising a bolt slidably and rotatably mounted in laterally-projecting ears integral with said disk, said bolt being arranged radially relative to said sleeve, one or more teeth upon said sleeve adapted to engage with one end of said bolt when moved in one direction, a laterally-projecting pin connected with said bolt, a coiled spring surrounding said bolt and operative between one of said ears and said pin to press the bolt toward the sleeve, an ear arranged at one side of said bolt and adapted to contact with said pin in a manner to hold the bolt in its adjusted position when the bolt is moved longitudinally away from the sleeve and rotated upon its axis.

821,811. BEET-WASHING MACHINE. ALFRED MAGUIN, Charmes, France. Filed Mar. 4, 1904. Serial No. 196,706.



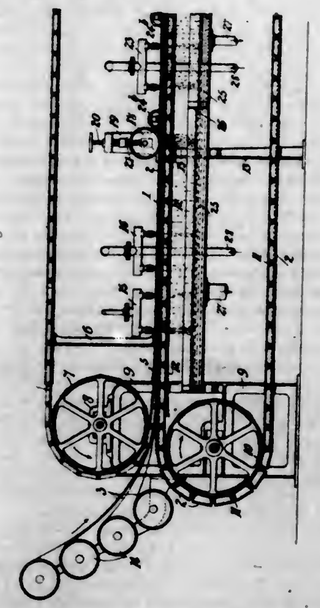
Claim.—1. A beet-washing machine, comprising a series of connected chambers, including a receiving, a discharging, and a washing chamber, a grating in the bottom of the receiving-chamber, agitating and propelling means in the washing-chamber, and means for maintaining a body of water in circulation by drawing it from the discharging-chamber and delivering it in an upward direction through the grating into the receiving-chamber.

2. In a beet-washing machine, the combination of a series of connected chambers, located on the same level, including a receiving, a discharging, and a washing chamber, a partition cut away at the top between the receiving and discharging chambers, a grating in the bottom of the receiving-chamber, and means whereby a body of water may be drawn from the discharging-chamber and projected upward, through the grating, and into the receiving-chamber.

3. In a beet-washing machine, the combination of a series of connected chambers, including a receiving, a discharging, a washing and a propelling chamber, a partition cut away at the top between the receiving and discharging chambers, a grating in the bottom of the receiving-chamber, a partition having a central opening dividing the propelling-chamber, and water-propelling means in said propelling-chamber, whereby water may be drawn from the discharging-chamber and projected in an upward direction, through the grating, and into the receiving-chamber.

4. In a beet-washing machine, the combination of a series of connected chambers forming a closed fluid-circulating system including a receiving and a discharging chamber, on approximately the same level, and having perforated bottoms, a partition between these chambers cut away at the top, and means for drawing the fluid down through the bottom of the discharging-chamber and forcing it up through the bottom of the receiving-chamber, a fluid-tight extension to said discharge-chamber, and means for gradually forcing the beets in said discharge-chamber into said extension.

821,812. APPARATUS FOR MERCERIZING. WILLIAM MATHER, JULIUS HÜBNER, and WILLIAM J. POPE, Manchester, England. Filed May 27, 1905. Serial No. 262,438.



Claim.—1. In apparatus for mercerizing and in combination perforated plates, links for joining said plates to form an endless flexible pervious bed, an endless flexible pervious surface and means for pressing the surface upon the bed to hold the material under treatment therebetween.

2. In apparatus for mercerizing and in combination, curved perforated plates, links for joining said plates to form an endless flexible pervious bed, an endless pervious flexible band, linked chains jointed to the sides of band, said guides upon which said bed and band are respectively adapted to travel, and rollers for pressing the band upon the bed to hold the material to be treated therebetween.

3. In apparatus for mercerizing and in combination corrugated perforated plates, links for joining said plates to form an endless flexible pervious bed, parallel rods linked together to form an endless pervious surface and means for compressing the material undergoing treatment between the surface and the bed.

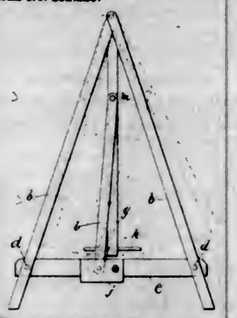
4. In apparatus for mercerizing and in combination parallel rods having a space between each, links joining same to form an end-

less pervious bed, similar perforated rods linked to form an upper endless pervious surface, and means for compressing the material undergoing treatment between the surface and the bed.

5. In apparatus for mercerizing and in combination, perforated plates having angular transverse ridges on the upper side, links joining same to form an endless pervious bed, a wire-gauze band forming a pervious endless upper apron, and means for pressing the gauze band upon the ridges of the plates forming the bed, to compress the material under treatment between said apron and the bed.

6. In apparatus for mercerizing and in combination, a lower endless pervious surface forming a bed, an upper pervious endless surface, means for compressing the material to be treated between the bed and the surface, and means comprising a steam-supply device, a saturating-liquid-supply device and a mercerizing-liquor device arranged to successively treat the material while held between the surface and the bed.

821,813. **SWING.** GEORGE B. MELLEN, Chicago, Ill. Filed Mar. 27, 1905. Serial No. 252,223.



Claim.—1. The combination with one of the suspending-bars of a swing, of a pitman having one end jointedly connected to said bar, said pitman being arranged to stand normally at an angle to the plane of rest of the swing, a crank in operative connection with said pitman, and means for actuating said crank, whereby the latter may serve to impart vibratory impulses to the swing upon one side of its plane of rest, while its rotation may be arrested during the vibration of said swing upon the other side of said plane.

2. The combination with a suspending-bar of a swing, of a pitman jointedly connected thereto at one end, said pitman being arranged to stand at an acute angle to said bar when the swing is at rest, and means for reciprocating said pitman to impart a maximum movement thereto only upon one side of the plane of rest of the swing.

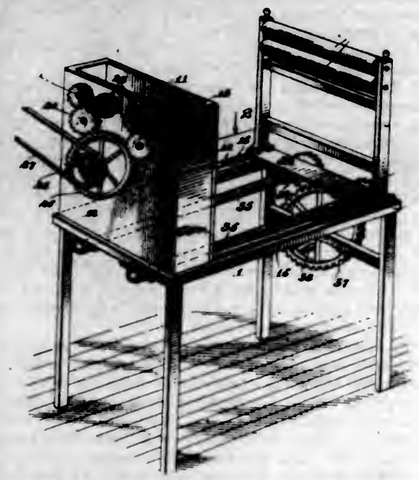
3. The combination with a suspending-bar of a swing, of a primary pitman having its lower end jointedly connected to said bar, said pitman being arranged to stand at an acute angle to said bar when the swing is at rest, a link jointedly connected to the frame and to the upper end of said pitman for guiding the movement thereof, a secondary pitman jointedly connected to said primary pitman, and a motor and crank for actuating said secondary pitman.

4. The combination with a suspending-bar of a swing, of a primary pitman having its lower end jointedly connected to said bar near the lower end of the latter, said pitman being arranged to stand at an acute angle to said bar when the swing is at rest, a link jointedly connected to the frame and to the upper end of said pitman, a secondary pitman having its upper end jointedly connected to the upper end of said primary pitman and a motor at or near the bottom of the swing having a crank connected to the lower end of said secondary pitman.

821,814. **TWISTING-MACHINE.** DAVID MEYSON, New York, N. Y. Filed May 31, 1905. Serial No. 262,574.

Claim.—1. In a twisting-machine, a rotary flier having tubular ends in alinement with each other, and an intermediate curved tubular portion, said curved portion and said ends forming a continuous tubular passage for the chenille in combination with a guide for removing the spun cord from said flier and means for altering the distance between said flier and said guide.

2. In a twisting-machine, a rotary flier having tubular ends forming bearings on which it rotates, and an intermediate curved tubular portion, said curved portion and said ends forming a continuous tubular passage for the chenille in combination with a guide for removing the spun cord from said flier and means for altering the distance between said flier and said guide.

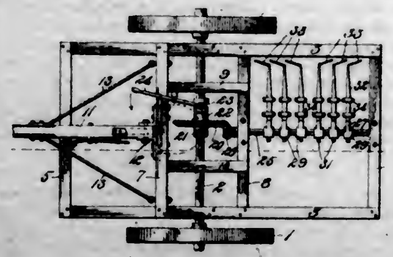


3. In a twisting-machine, a rotary flier having tubular ends in alinement with each other, an intermediate curved portion, said curved portion and said ends forming a continuous tubular passage for the chenille, and a counterpoise for said curved portion in combination with a guide for removing the spun cord from said flier and means for altering the distance between said flier and said guide.

4. In a twisting-machine, a rotary flier, a guide for removing the spun cord from said flier, and means for altering the distance between said flier and said guide.

5. In a twisting-machine, a plurality of rotary fliers, a guide for removing the spun cord from all of said fliers, a frame on which said fliers and said guide are mounted, and means on said frame for altering the distance between said fliers and said guide.

821,815. **COTTON-CHOPPER.** SILAS B. MUIRHEID, St. Louis, Mo. Filed Apr. 8, 1905. Serial No. 254,436.



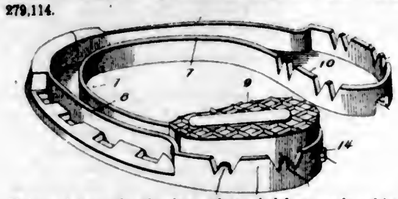
Claim.—In a cotton-chopper, the combination of a rotatable shaft, a series of cutters mounted on said shaft and having shanks and cutter-blades extending obliquely from the shanks, and a second series of cutters having shanks and cutter-blades extending in the opposite direction of the cutter-blades of the first-named series.

821,816. **PIPE OR TUBE CUTTER.** THOMAS W. MYRICK, Woonsocket, R. I. Filed Nov. 14, 1905. Serial No. 287,272.



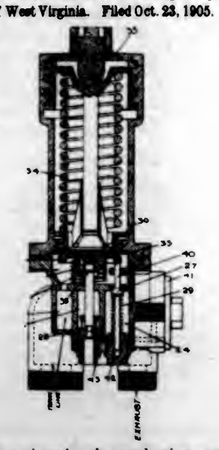
Claim.—In a cutter of the class set forth, the combination of a stock having a longitudinal triangular bore extending therethrough and openings therein at intermediate points in circumferential alinement, a rotatable spindle extending centrally through the triangular bore and having reverse screw-threads thereon, the said spindle being longitudinally immovable, carriers radially movable in the stock and having springs engaging the opposite extremities thereof to normally force the same inwardly, the inner sides of the cariers at the end being beveled outwardly, rotatable cutters loosely held in the central portions of the carriers and projecting through the circumferentially-alined openings of the stock, and truncated triangular nuts having their sides closely fitting within the triangular bore of the stock and engaging the reverse screw-threads on the spindle, the reduced extremities of the nuts being projected inwardly toward each other and the outwardly-inclined ends of the inner sides of the carriers being engaged by the faces of the nuts to force the said carriers outwardly against the resistance of the springs operating to move the said carriers inwardly.

821,817. **SOFT-TREAD HORSESHOE.** JAMES MCDERMOTT and JOHN C. MCBEAN, Chicago, Ill. Filed Sept. 19, 1905. Serial No. 279,114.



Claim.—A horseshoe having a channeled face produced by ribs which are expanded at the heels to form recesses the walls of which have holes at the ends of the shoe and also have teeth on opposite sides, and rubber blocks fitting in said recesses and into which the teeth are hammered, and having lugs projecting into said holes.

821,818. **ENGINEER'S VALVE.** JAMES F. MCELROY, Albany, N. Y., assignor to Consolidated Car Heating Company, Albany, N. Y., a Corporation of West Virginia. Filed Oct. 23, 1905. Serial No. 283,918.



Claim.—1. An engineer's valve mechanism comprising separate and independently-movable valves controlling respectively the inlet to and exhaust from the train-pipe and each having a piston working in a cylinder and adapted to permit leakage past it into the cylinder-chamber behind the piston, springs for closing said valves, means for establishing the main reservoir-pressure and the train-pipe pressure respectively on the front sides of the pistons, oppositely-opening relay-valves controlling the exhaust from the respective cylinder-chambers, a movable partition for operating said relay-valves, having on one side of it the train-pipe pressure, a spring pressing on the opposite side of said partition, and means for manually varying the tension of said spring.

2. An engineer's valve mechanism comprising primary means for admitting air to and exhausting it from the train-pipe to release and set the brakes, leakage piston mechanism controlling said means and operated in one direction by air-pressure and in the other direction by spring-pressure, and relay-valve mechanism for exhausting the leakage air and permitting the air-pressure to operate said means.

3. An engineer's valve mechanism comprising a train-pipe, independently-movable normally closing inlet and exhaust valves therefor, cylinders for the respective valves, pistons attached to the valves and having a leaking fit in said cylinders, and alternately-opening relay-valves controlling the exhaust of leakage air from said cylinders.

4. An engineer's valve mechanism comprising inlet and outlet valves controlling the train-pipe pressure, means for opening said valves by the pressure of the main reservoir and the train-pipe respectively, means for venting the air which operates the valves to permit their closure, and alternately-operating valves for exhausting the vented air to cause the opening of the train-pipe valves.

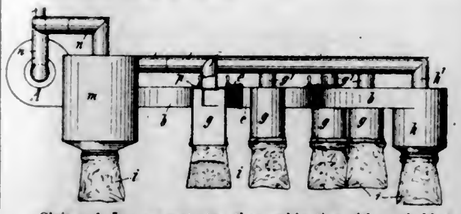
5. An engineer's valve comprising inlet and outlet valves controlling train-pipe pressure and opened by reservoir and train-pipe pressure respectively, means for venting the valve-operating air to permit closure of the valves, and means subject differentially to train-pipe pressure and a manually-adjustable pressure for alternately exhausting the bodies of vented air.

6. An engineer's valve mechanism comprising two cylinders open respectively at one end to the main reservoir and to the train-pipe, oppositely-opening relay-valves for exhausting the other ends of said cylinders, a common operating mechanism for said valves, loose-fitting pistons in said cylinders having valves controlling the inlet and exhaust of the train-pipe respectively, and springs tending to move the pistons to valve-closing position.

7. An engineer's valve mechanism comprising primary means for charging and discharging the train-pipe to release and set the brakes, said means including a cylinder, a leaking piston therein having a primary valve controlling the train-pipe air and opened by air-pressure on the piston, means exerting a constant valve-closing pressure, a relay-valve for exhausting the leakage air, a movable partition for operating said relay-valve having train-pipe pressure on one side thereof, a spring pressing on the opposite side of said partition, and an engineer's manual adjuster for varying the tension of said spring and producing the operation of said primary means.

8. An engineer's valve mechanism comprising a cylinder, a leaking piston therein having a valve controlling the exhaust of the train-pipe and opened by train-pipe pressure, a spring for closing said valve, and a relay-valve for exhausting that end of said cylinder containing the leakage air.

821,819. **CONCENTRATOR FOR PULVERULENT MATERIALS.** RICHARD G. NEUMANN, Wandsbek, near Hamburg, Germany, assignor to The Firm of Kakao-Compagnie Theodor Reichardt Gesellschaft mit Beschränkter Haftung, Wandsbek, near Hamburg, Germany. Filed Apr. 2, 1902. Serial No. 101,086.



Claim.—1. In a concentrator, the combination with an air-blast, of a horizontal serpentine conduit connected at one end to the delivery end of said blast and at the other end to the suction end of the blast to form a closed air-blast circuit, discharge-passages from the conduit and receptacles connected thereto to receive separated material, substantially as described.

2. In a concentrator, the combination with an air-blast, of a closed horizontal serpentine conduit rectangular in cross-section and having discharge-ports in its vertical walls, channels leading from said ports in the direction of the flow of air in the conduit, doors mounted at said ports adapted to extend into the path of the current of air, collecting vessels in communication with said channels, and air-passages leading from the collectors to the air-blast, substantially as and for the purpose specified.

3. In a concentrator, the combination with an air-blast, of a serpentine conduit having vertical sides, connected at one end to the delivery end of the air-blast and a pipe connection between the other end of the conduit and the suction end of the air-blast, thereby forming a closed circuit, a dust-collector connected to the said pipe and closed receptacles connected to the conduit to receive the separated material, substantially as described.

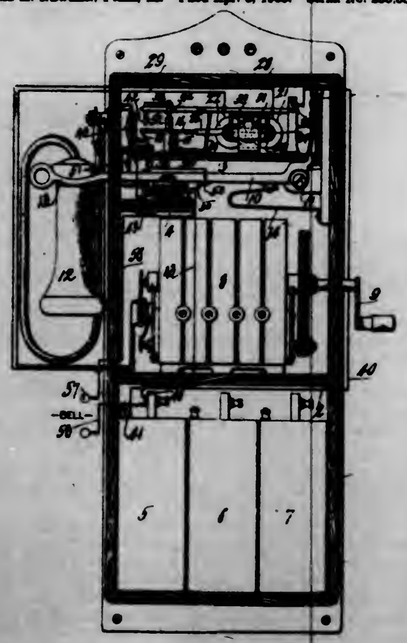
4. In a concentrator, the combination with an air-blast, of a closed horizontally-arranged serpentine conduit rectangular in cross-section, a plurality of lateral discharge-channels leading from the ports in the vertical walls of the conduit and mounted in the direction of the flow of air, doors hinged at the mouths of said channels, means for adjusting said doors into the path of the air-current, a collecting vessel communicating with each of said channels, an air-passage leading from each collector and communicating with a main passage for the return of air to the blast, and an air-collecting vessel interposed between the main return-passage and the blast, substantially as and for the purpose specified.

5. In a concentrator, the combination with an air-blast, and a feed-pipe, of a horizontally-arranged serpentine conduit rectangular in cross-section, a plurality of lateral discharge-channels leading from ports formed in the vertical side walls of said conduit, said channels being mounted in the direction of the flow of air in the conduit, doors mounted at the receiving end of said channels, handles for positioning and locking said doors into the path of the current of air in the conduit, a collecting vessel for each discharge-channel, an air-passage leading from the top of each collecting vessel, a main passage communicating with the aforesaid air-passage, and an air-collector interposed between said main passage and feed-pipe, substantially as described.

6. In a concentrator, the combination with an air-blast, of a horizontal serpentine or sinusoidal conduit having ports in the sides thereof and connected at one end to the air-blast, a pipe connection between the other end of said conduit and the suction side of said air-blast, a plurality of lateral discharge-channels leading from the ports, and means to individually control the opening of said ports, whereby the particles following first one side then deflected to the other side of said conduit will be separated in the order of their gravities, the heavier and larger particles passing into the discharge-channels nearer the air-blast.

7. In a concentrator, the combination with an air-blast, of a serpentine conduit having a continuous bottom and serpentine or zigzag side walls having openings therein, adjustable doors to control said openings, and means connected to the conduit at the openings to receive the separated material, whereby the heavier particles will pass through the openings nearest the air-blast, being moved first against one wall and then against the other in a substantially horizontal direction as described.

821,820. **SELECTIVE RINGING AND LOCKING DEVICE.** ORIN H. NEWMAN, Pekin, Ill. Filed Apr. 3, 1905. Serial No. 253,553.



Claim.—1. In a device of the class described, the combination of an electromagnet, a selector-disk provided with an aperture, an armature-lever adapted to be oscillated during the alternate energizing and deënergizing of the coils of the magnet, and provided with means for imparting a step-by-step movement to the disk, a lever pivotally supported at one end and having its opposite end in operative connection with an arm supported above the said disk, the said arm adapted to have an invariable movement at intervals when it engages the face of the disk; and a variable movement also at intervals, said lever being actuated by the energizing of said magnet and the parts being so arranged that the said arm will pass through the aperture of said disk when the magnet is deënergized, and a magneto governing the movement of the disk according to the number of revolutions imparted to said magneto.

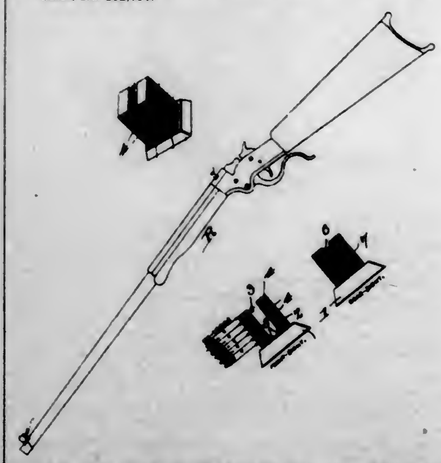
2. In a device of the class described, the combination of a receiver-hook, devices for locking said hook, a selector-disk for controlling said hook-locking devices, also a signaling-circuit, an electromagnet, a lever, and means for holding the lever raised upon the energizing of said magnet, and lowered when the magnet is deënergized, a regulating-stop in operative engagement with the lever and adapted to engage with the disk, and a magneto for energizing said magnet.

3. In a device of the class described, a selector-disk having an elongated aperture, an armature-lever for moving said disk, an electromagnet for energizing the said armature, means for energizing the magnet, a lever adapted to be controlled by the disk, contact-plates adapted to be engaged by the lever, one of such contact-plates in a circuit controlling a receiver-hook-locking device, and the other contact-plate in a circuit containing a signaling-bell.

4. In a device of the class described, a selector-disk having an elongated aperture, means for moving the disk in a step-by-step movement, a receiver-hook, a locking device for said hook, a lever, means for holding the lever raised at predetermined intervals, a contact-plate arranged in a circuit containing the receiver-hook-locking devices, and a stop regulated by the body of the disk and aperture therein for controlling the engagement of the lever with the contact-plate.

5. In a device of the character described, the combination of a toothed selector-disk for controlling a signaling-circuit, also the movement of a receiver-hook, a magnet, means actuated by the energizing of the magnet for moving the disk, two electric circuits, one containing the call-bell, the other locking devices for controlling the receiver-hook, means having a variable movement for closing both of said circuits at predetermined intervals, and means for energizing the said magnet.

821,821. **GUN-SIGHT.** JAMES H. NICKERSON, Nelson, Canada, assignor to Francis G. Nickerson, Winnipeg, Canada. Filed Oct. 14, 1905. Serial No. 282,797.



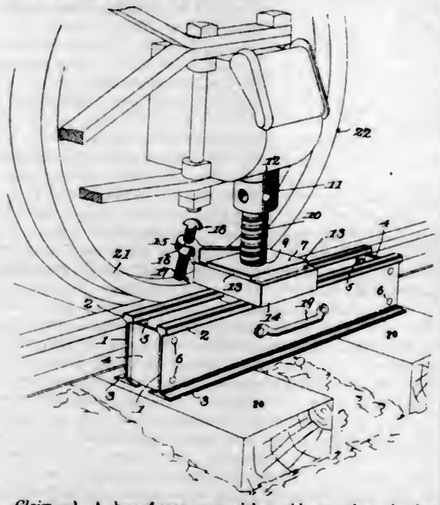
Claim.—In a gun, the combination with a rear sight provided with a V-sight nick, of a front sight having a focusing-slot terminating in a V-sight nick, the walls of the slot being parallel to each other, and opened sight-guides of bright color disposed at right angles to the slot.

821,822. **DEVICE FOR HOLDING EXPANDED UMBRELLAS.** ERNST NOOTBAAR, Dresden, Germany. Filed Aug. 17, 1904. Serial No. 221,105.



Claim.—A device of the character described, comprising a clamp, an arm secured thereto, said arm comprising a plurality of links pivoted together, a cup secured on the outer end of said arm and being provided with a concaved socket, a ball arranged in said socket, an integral arm extending from said ball, a second arm pivoted thereto, and having a rearwardly-extending portion, and a set-screw carried by said rearwardly-extending portion and bearing against the first-named arm.

821,823. **LIFTING-JACK AND CAR-WHEEL HOLDER.** WILLIAM B. ORR and WILLIAM J. MCGEE, Montgomery, Ala. Filed Sept. 15, 1905. Serial No. 278,642.



Claim.—1. A base-frame comprising side members having heads at their upper ends and flanges at their lower ends and end plates connecting said side members, in combination with a nut having grooves slidably engaging the heads of the side members, and a jack-screw engaging the nut.

2. A base-frame, a nut connected with and longitudinally slidable with relation to the frame, a jack-screw carried by the nut, and wheel-flange-engaging means adjustably connected with the nut.

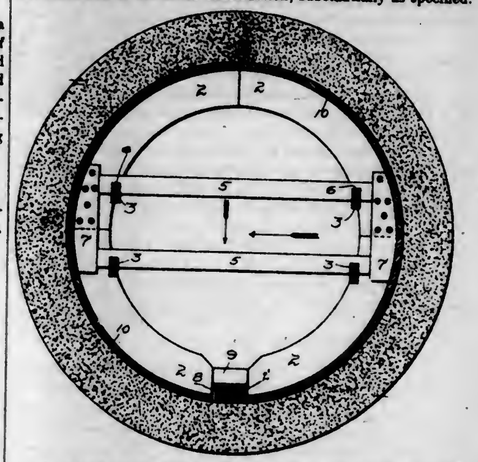
3. A nut supported for longitudinal sliding movement, a jack-screw carried by the nut, a frame connected with the nut for transverse sliding movement, and a wheel-flange-engaging screw carried by said frame.

4. A supporting-frame, a jack-screw-carrying nut slidably connected therewith and having laterally-extending flanges, a frame slidable transversely between said flanges and the upper edges of the side members of the supporting-frame, and a wheel-flange-engaging screw carried by said frame.

821,824. **FORM FOR CONCRETE-SEWER CONSTRUCTION.** ROBERT J. PAUL and WILLIAM C. KRESSNER, Dayton, Ohio. Filed Sept. 11, 1905. Serial No. 278,019.

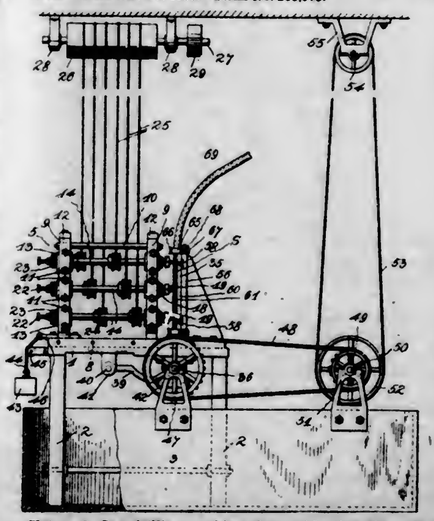
Claim.—1. A form for concrete-sewer work, consisting of sections when brought together forming a circle in cross-section, said sections engaging each other, and held by horizontal cross-braces extending from one side to the other of the structure, the two lower sections having inserted between them a series of removable keys which, when in position, serve to rigidly lock the sections together, and a rail longitudinally insertible below said keys within the space between the longitudinal edges of the lower sections, substantially as specified.

2. A form for concrete-sewer work consisting of a series of four sections which, when brought together, complete a circle in cross-section, horizontal cross-braces uniting the sections adjacent to the horizontal abutting edges of said sections, a rail insertible longitudinally within the space between the lower sections and completing the circle of the assembled sections, and a series of blocks within said space above the rail and serving to tie the sections together during the formation of the sewer construction, substantially as specified.



3. A form for concrete-sewer construction, consisting of a series of sections assembled to form a circle in cross-section, two horizontal cross-braces joining the opposite sections adjacent to their horizontal abutting edges, said cross-sections engaging the longitudinal rails of said sections, a loose rail insertible longitudinally within the space between the lower sections and completing the circular form of the structure, and a series of blocks interposed between the edges of the lower sections above the loose rail and serving to key the assembled sections during the construction of the sewer, substantially as described.

821,825. **DRILLING-MACHINE.** DE WITT K. PECK, New Britain, Conn. Filed May 18, 1905. Serial No. 260,978.



Claim.—1. In a drilling-machine, the combination of a reciprocatory slide carrying drilling devices movable therewith, relatively fixed means to feed the work across the path of the drilling devices, a moving work-ejecting element coacting with the work-feeding means to hold the work stationary while being drilled, means controlled by the work-ejecting element to move the slide in the required direction to feed the drilling devices to the work, and alternately-acting means to move the slide in the reverse direction while the

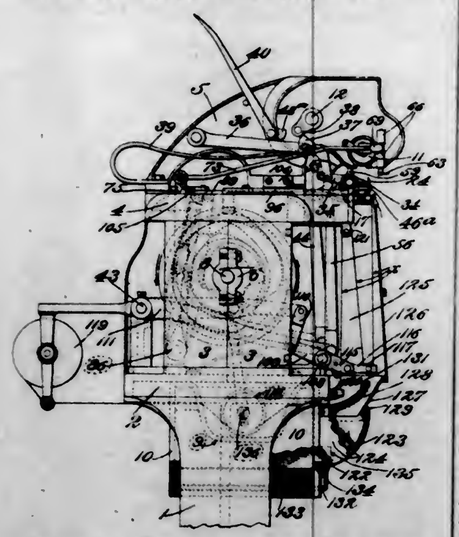
work-ejecting element is effective to remove the work from the work-feeding means.

2. In a drilling-machine, the combination of a reciprocatory slide carrying drilling devices movable therewith, relatively fixed means to feed the work across the path of the drilling devices, a revolving work-ejecting element coacting with the work-feeding means to hold the work stationary while being drilled and having pockets to register with the work-feeding means and receive the work therefrom, means controlled by the work-ejecting element to move the slide in the required direction to feed the drilling devices to the work, and alternately-acting means to move the slide in the reverse direction while the work-ejecting element is receiving the work from the work-feeding means.

3. In a drilling-machine, the combination of a reciprocatory slide carrying drilling devices movable therewith, relatively fixed means to feed the work across the path of the drilling devices, a revolving work-ejecting element coacting with the work-feeding means to hold the work stationary while being drilled and having pockets to successively register with the work-feeding means and receive the work therefrom, a cam revoluble with the revolving work-ejecting element, means coacting with said cam to move the slide in the required direction to feed the drilling devices to the work, and alternately-acting means to move the slide in the reverse direction while a pocket of the work-ejecting element is in register with the work-feeding means.

4. A feeding device for door-knob-spindle-drilling machines, comprising a suitable support, a right-angular plate thereon and formed with grooves in its upright portion, blocks slidably and adjustably mounted in said grooves, channeled end guides carried by said blocks, a guide-bracket adjustably secured upon said support and adapted to engage the front of the work to hold the same in said channeled end guides, and U-shaped brackets upon said guide-bracket adjustably secured to the upright portion of said plate.

821,826. **SEWING-MACHINE.** CHRISTIAN PEDERSEN, St. Louis, Mo., assignor to Landis Machine Company, St. Louis, Mo., a Corporation of Missouri. Filed Sept. 16, 1905. Serial No. 278,410.



Claim.—1. In a sewing-machine, the combination with stitch-forming mechanism, of a support having a journal-opening therein, a sleeve journaled in said opening, a shaft in said sleeve and having longitudinal movement in the same, means for preventing said shaft from turning in said sleeve, means for rocking said sleeve, means for longitudinally reciprocating said shaft, a work-shifting tool connected to said shaft to rock therewith, a second tool which coöperates with said work-shifting tool in the operation of sewing, said second tool being mounted upon said shaft, and means for rocking said second tool; substantially as described.

2. In a sewing-machine, the combination with stitch-forming mechanism, of a support having a journal-opening therein, a sleeve journaled in said opening, a shaft in said sleeve and having longitudinal movement in the same, means for preventing said shaft from turning in said sleeve, means for rocking said sleeve, means for longitudinally reciprocating said shaft, an awl connected to said shaft to rock therewith, a needle-carrier mounted about said shaft, and means for rocking said needle-carrier; substantially as described.

3. In a sewing-machine, a support having a journal-opening therein, a sleeve having a reduced portion journaled in said opening, a plate secured upon the end of said reduced portion, whereby said support is received between the said plate and the body portion of said sleeve, means for rocking said sleeve, a shaft in said sleeve and having longitudinal reciprocation therein, means for preventing rocking of said shaft with relation to said sleeve, a work-shifting tool secured to said shaft to rock therewith, a second tool which coöperates with said work-shifting tool in the operation of sewing, said second tool being mounted about said sleeve, and means for rocking said second tool; substantially as described.

4. In a sewing-machine, a support having a journal-opening therein, a sleeve having a reduced portion journaled in said opening, a plate secured upon the end of said reduced portion, whereby said support is received between the said plate and the body portion of said sleeve, means for rocking said sleeve, a shaft in said sleeve and having longitudinal reciprocation therein, means for preventing rocking of said shaft with relation to said sleeve, an awl secured to said shaft to rock therewith, a needle-carrier mounted about said sleeve, and means for rocking said needle-carrier; substantially as described.

5. In a sewing-machine, the combination with stitch-forming mechanism, of a support provided with a journal-opening, a sleeve journaled in said support, means for rocking said sleeve, a shaft longitudinally movable in said sleeve and connected to said sleeve to move therewith, a work-shifting tool connected to said shaft to rock therewith, a lever, means for reciprocating said lever, and connection between said lever and said shaft whereby in the reciprocations of the former said shaft is reciprocated longitudinally; substantially as described.

6. In a sewing-machine, the combination with stitch-forming mechanism, of a support provided with a journal-opening, a sleeve journaled in said support, means for rocking said sleeve, a shaft longitudinally movable in said sleeve and connected to said sleeve to move therewith, an awl connected to said shaft to rock therewith, a lever, means for reciprocating said lever, and connection between said lever and said shaft whereby in the reciprocations of the former said shaft is reciprocated longitudinally; substantially as described.

7. In a sewing-machine, the combination with stitch-forming mechanism, of a support having a journal-opening, a sleeve in said opening, means for rocking said sleeve, a shaft longitudinally movable in said sleeve and connected to the same to rock therewith, said shaft being provided with a groove, a work-shifting tool supported upon said shaft to rock therewith, a lever having a portion entering said groove, and means for reciprocating said lever; substantially as described.

8. In a sewing-machine, the combination with stitch-forming mechanism, of a support having a journal-opening, a sleeve in said opening, means for rocking said sleeve, a shaft longitudinally movable in said sleeve and connected to the same to rock therewith, said shaft being provided with a groove, an awl supported upon said shaft to rock therewith, a lever having a portion entering said groove, and means for reciprocating said lever; substantially as described.

9. In a sewing-machine, the combination with stitch-forming mechanism, of a support, a sleeve therein and having one of the elements of said stitch-forming mechanism mounted thereon and movable with respect to the same, means for so moving said element, a shaft movably mounted in said sleeve, means for moving said shaft with respect to said sleeve, and operative connection between said shaft and one of the elements of said stitch-forming mechanism; substantially as described.

10. In a sewing-machine, the combination with stitch-forming mechanism, of a support, a sleeve therein, a shaft journaled in said sleeve, a needle-carrier mounted upon said sleeve to rock thereon, means for rocking said needle-carrier, and operative connection between said shaft and an element of said stitch-forming mechanism; substantially as described.

11. In a sewing-machine, the combination with stitch-forming mechanism, of a support, a sleeve in said support, a shaft journaled in said sleeve, a needle-carrier upon said sleeve, a presser-foot carrier upon said sleeve, means for rocking said needle-carrier, and said presser-foot carrier, and operative connection between said shaft and an element of said stitch-forming mechanism; substantially as described.

12. In a sewing-machine, the combination with stitch-forming mechanism, of a support having a journal-opening therein, a sleeve journaled in said support, means for rocking said sleeve, a second support, a second sleeve non-rotatably mounted upon said support and having one of the elements of said stitch-forming mechanism mounted thereon to move with respect thereto, means for so moving said element, a longitudinally-reciprocatory shaft journaled in said second sleeve and also entering said first-mentioned sleeve, means for connecting said first-mentioned sleeve and said shaft to cause said elements to rock together, means for longitudinally reciprocating said shaft, and operative connection between said shaft and one of the elements of said stitch-forming mechanism; substantially as described.

13. In a sewing-machine, the combination with stitch-forming mechanism, of a support having a journal-opening therein, a sleeve journaled in said support, means for rocking said sleeve, a second support, a second sleeve non-rotatably mounted upon said support, a longitudinally-reciprocatory shaft journaled in said second sleeve and also entering said first-mentioned sleeve, means for connecting said first-mentioned sleeve and said shaft to cause said elements to rock together, a needle-carrier mounted upon said second-mentioned sleeve, means for rocking said needle-carrier, an awl carried by said shaft, and means for longitudinally reciprocating said shaft; substantially as described.

14. In a sewing-machine, the combination with stitch-forming mechanism, of a rock-shaft, a loop-spreader thereon, a rock-arm upon said rock-shaft, a connector having rocking connection about said rock-arm, an operating-lever, and a link having one end in connection with said operating-lever and its other end pivoted upon said connector; substantially as described.

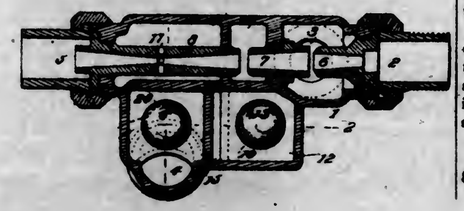
15. In a sewing-machine, the combination with stitch-forming mechanism, of a rock-shaft, a loop-spreader thereon, an arm upon said rock-shaft, a connector having a socket receiving said arm, whereby said connector can rock about said arm, an operating-lever, a connector having rocking connection with said operating-lever, and a link pivoted to said connectors; substantially as described.

16. In a sewing-machine, the combination with stitch-forming mechanism, of a longitudinally-reciprocatory arm provided with a thread-guide, an operating-lever, a connector pivotally mounted upon said lever by having a socket receiving the end of said lever, whereby said connector can rock about said lever as a pivot, pivotal connection between said connector and said arm, and means for rocking said arm transversely; substantially as described.

17. In a sewing-machine, the combination with stitch-forming mechanism, of a longitudinally-reciprocatory arm provided with a thread-guide, an operating-lever, a connector pivotally mounted upon said lever by having a socket receiving the end of said lever, whereby said connector can rock about said lever as a pivot, pivotal connection between said connector and said arm, a second lever, means for rocking said second lever, and pivotal connection between said second lever and said arm, whereby in the reciprocations of said second lever said arm is rocked transversely; substantially as described.

18. In a sewing-machine, the combination with stitch-forming mechanism, of a longitudinally-reciprocatory arm provided with a thread-guide, an operating-lever, a connector, connection between said connector and said operating-lever whereby said connector can rock about said lever, pivotal connection between said connector and said arm, a second lever, means for rocking said second lever, pivotal connection between said second lever and said arm whereby movement of said second lever causes said arm to rock transversely, a relatively stationary guide, and guiding connection between said guide and said arm; substantially as described.

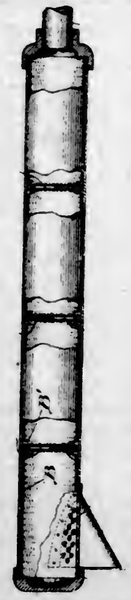
821,827. **STEAM-INJECTOR.** WILLIAM PENBERTHY, Chicago, Ill.; The American Trust and Savings Bank administrator of William Penberthy, deceased. Filed June 14, 1905. Serial No. 265,213.



Claim.—1. In a horizontal steam-injector, the casing having at one side a lateral extension and a primary overflow-chamber extended into said extension, said extension having an inner wall or diaphragm above said chamber formed with an outlet-opening, the main overflow-chamber also extended into said extension, which latter has an outlet-opening for the main overflow, loosely-mounted ball-valves normally fitted over both of said outlet-openings, and a channel or passage-way leading from the outlet-opening of the primary overflow to one side of the opening of the main overflow.

2. In a horizontal steam-injector, a casing having at one side a lateral extension, and a primary overflow-chamber extended into said extension, said extension having an inner wall or diaphragm above said chamber formed with an outlet-opening, the main overflow-chamber also extended into said extension, which latter has an outlet-opening for the main overflow, loosely-mounted ball-valves normally fitted over both of said outlet-openings, the overflow-outlet branch in transverse line with the main overflow, and a channel leading from said primary overflow-outlet directly to the main over flow branch.

821,828. **MUFFLER.** LUCIUS J. PHELPS, Stoneham, Mass., assignor, by mesne assignments, to Shawmut Motor Company, Boston, Mass., a Corporation of Massachusetts. Filed Apr. 10, 1905. Serial No. 254,797.



Claim.—1. In a muffler, the combination of a shell having an inlet and an outlet, a lining composed of woven-wire sections flanged at their ends, and apertured partitions of asbestos felt held between sheets of woven wire.

2. In a muffler, the combination of a shell, an inlet and an outlet therefor, a lining composed of woven-wire sections, flanged at the ends, and partitions consisting of apertured plates of asbestos felt, clamped between woven-wire sheets, the said plates set with their apertures offset.

3. In a muffler, the combination of a shell, a reticulated lining therefor, an inlet to the shell, an outlet therefrom consisting of lateral perforations, and a deflecting-shield secured to the shell outside the outlet-perforations.

4. In a muffler, the combination of a cylindrical shell, an inlet at one end thereof, a cap at the other end, and lateral outlet-perforations in the shell near the cap, a lining composed of woven wire, and apertured transverse partitions composed of asbestos sheets inclosed in woven wire, and a scoop-shaped deflecting-shield secured to the shell externally adjacent to the outlet-perforations.

821,829. **ROPE AND ROPE-SOCKET PROTECTOR.** ELMER FOSTER, Monticello, Ky. Filed Apr. 20, 1905. Serial No. 256,113.

Claim.—1. A protector comprising a metallic sleeve adapted to rest upon the upper end of a rope-socket and connected thereto and to the rope, as set forth.

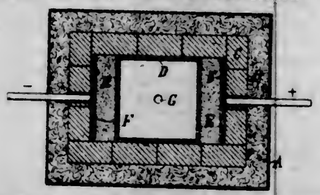


2. A rope and rope-socket protector consisting of a steel sleeve closed at its upper end, said closed end having a central opening produced therein, the edges of which are rounded and means for connecting the protector to the rope and rope-socket for the purpose set forth.

3. The combination with a rope-socket having an annular shoulder of a protector-sleeve surrounding the upper end of the rope-socket and resting upon the annular shoulder and means for connecting the socket and protector-sleeve as set forth.

4. The combination with a rope-socket having a beveled annular shoulder, of a protector-sleeve having a beveled lower end adapted to rest upon the beveled shoulder of the socket, the rope fixed in the socket and a rivet passing through the rope, socket and protector-sleeve, substantially as described.

821,830. **METALLURGICAL FURNACE.** ISAIAH L. ROBERTS, New York, N. Y., assignor of one-half to James Turner Morehead, New York, N. Y. Filed May 31, 1904. Serial No. 210,204.



Claim.—1. In a furnace of the kind described, the combination of a chamber, a vessel of conducting material in the chamber, a mass of resistance material in contact with the vessel, an electrode in electrical connection with the said mass, and a second electrode electrically disconnected with the said mass save through the said conducting vessel, as set forth.

2. In a furnace of the kind described, the combination of a conducting vessel, masses of resistance material on opposite sides of the vessel and in contact therewith but out of contact with each other, and electrodes connected with the said masses of resistance material, as set forth.

3. In a furnace of the kind described, the combination of a receptacle or jacket, a lining of heat-insulating material, a chamber having refractory walls within the lined jacket, a conducting vessel in the chamber, masses of resistance material on opposite sides of the vessel and in contact therewith but out of contact with each other, and electrodes connected with the said masses of resistance material, as set forth.

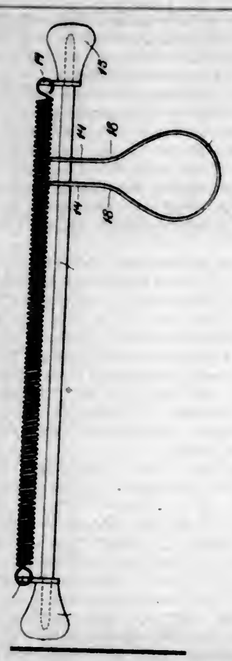
821,831. **VIBRATOR.** HENRY F. ROONEY, Randolph, Mass., assignor to Cornelius B. Hale, Walpole, Mass. Filed July 10, 1905. Serial No. 268,958.

Claim.—1. A vibrator comprising a rod having an applicator, and a slide having two rod gripping and releasing members separated by an intervening space, and each having an orifice the wall of which is in close sliding contact with the rod, and a spring connection between said members, whereby pressure applied to one member lengthwise of the rod is yieldingly communicated to the other member.

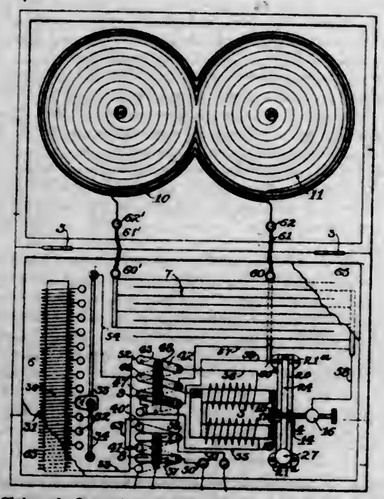
2. A vibrator comprising a rod having an applicator, and a slide having two rod gripping and releasing members separated byan intervening space, and each having an orifice the wall of whic h is in close sliding contact with the rod, and a resilient shank yieldingly connecting said members, said shank having oppositely-inclined finger-rests.

3. A vibrator comprising a rod having an applicator, a rod-vibrating slide movable on the rod, and arms rigidly attached to the end portions of the rod, and one or more helical springs connected at their ends with the said arms and maintained under tension between the same, said springs being vibrated by the vibrations of the rod.

821,831.



821,832. **ELECTRICAL DISCHARGE APPARATUS.** JAMES E. SHELBY, Los Angeles, Cal., assignor to Sychronous Static Co., Los Angeles, Cal., a Corporation of California. Filed Jan. 25, 1905. Serial No. 242,503.



Claim.—1. In an electrical apparatus for the purpose described, a self-inductive coil, an interrupter, an operating-magnet therefor, energizing connections for direct-current operation establishing a circuit including the self-inductive coil, the interrupter-operating magnet and the interrupter, in series, energizing connections for alternating-current operation establishing a circuit including the interrupter-operating magnet exclusive of the interrupter, and a circuit including the self-inductive coil and the interrupter, exclusive of the interrupter-operating magnet, a switch for cutting in and out the alternating and direct current circuits alternatively, a condenser, an induction-coil, and a discharge-circuit including the condenser, the primary of the induction-coil and the interrupter.

2. An electrical apparatus for the purpose described, a self-inductive coil, an interrupter, an operating-magnet therefor, energizing connections establishing a circuit including the self-inductive coil, the interrupter-operating magnet and the interrupter, in series, a circuit including the interrupter-operating magnet exclusive of the interrupter, and a circuit including the self-inductive coil and the interrupter exclusive of the interrupter-operating magnet, a switch connected to the respective circuits and operating in one position to close the first-mentioned circuit, and in another position to close the other two of said circuits in parallel relation, a condenser, an induction-coil, and a discharge-circuit including the condenser, the primary of the induction-coil and the interrupter.

3. In an electrical apparatus for the purpose described, a self-inductive coil, comprising a plurality of sections and contact devices for including a variable number of said sections in circuit, an interrupter, an operating-magnet therefor, energizing connections for direct-current operation establishing a circuit, including the self-inductive coil, the interrupter-operating magnet and the interrupter, in series, energizing connections for alternating-current operation establishing a circuit including the interrupter-operating magnet exclusive of the interrupter, and a circuit including the self-inductive coil and the interrupter, exclusive of the interrupter-operating magnet, a switch for cutting in and out the alternating and direct current circuits alternatively, a condenser, an induction-coil, and a discharge-circuit including the condenser, the primary of the induction-coil and the interrupter.

4. An electrical apparatus comprising a condenser, charging connections therefor including an electromagnetic induction device and a vibratory interrupter, an operating-magnet for said interrupter, an energizing connection for said induction device exclusive of the interrupter for control thereof by alternating current, and a discharge-circuit including an induction-coil having its primary connected in circuit with the condenser and interrupter.

5. An electrical apparatus comprising a condenser, charging connections therefor including an electromagnetic induction device and a vibratory interrupter, means for adjusting the rate of vibration of said interrupter, an operating-magnet for said interrupter, an energizing connection for said induction device exclusive of the interrupter for control thereof by alternating current, and discharge-circuit including an induction-coil having its primary connected in circuit with the condenser and interrupter.

6. An electrical apparatus comprising a condenser, charging connections therefor including an electromagnetic induction device and a vibratory interrupter, means for adjusting the rate of vibration of said interrupter, consisting of an elastic support, and means for adjusting the tension of said support, an operating-magnet for said interrupter, an energizing connection for said induction device exclusive of the interrupter for control thereof by alternating current, and a discharge-circuit including an induction-coil having its primary connected in circuit with the condenser and interrupter.

7. In an electrical apparatus for the purpose described, an induction-coil comprising two secondary coils side by side, and a primary coil surrounding both the secondary coils.

8. In an electrical apparatus for the purpose described, an induction-coil comprising two secondary coils side by side, and a primary coil surrounding both the secondary coils and projecting inwardly between the secondary coils.

9. In an electrical apparatus for the purpose described, an induction-coil comprising two secondary coils side by side, and a primary coil surrounding both the secondary coils, the outer ends of the secondary coils being connected to the ends of the primary coil, and discharge-terminals connected to the inner ends of the secondary coils.

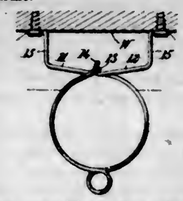
10. In an electrical apparatus for the purpose described, an induction-coil comprising two secondary coils side by side, a primary coil surrounding both the secondary coils, and discharge-terminals connected to the inner ends of the secondary coils.

821,833. **SUPPORT.** GEORGE SHAFFNER, Dallas City, Ill., assignor of one-third to George Shaffner, one-third to Claude Shaffner, and one-third to Robert H. Gray, Dallas City, Ill. Filed Feb. 6, 1905. Serial No. 244,469.

Claim.—1. A pipe-hanger comprising a loop adapted to embrace the pipe and having its side walls at the open end of the loop provided with interlocking parts terminating in oppositely-disposed supporting-arms.

2. A pipe-hanger comprising a loop adapted to embrace the pipe and formed with a laterally-extending eye, the side walls of the loop at the open end thereof being provided with interlocking parts terminating in oppositely-disposed supporting-arms.

3. A pipe-hanger comprising a loop adapted to embrace the pipe and having one of its side walls at the open end of the loop bent to form a hook and its opposite side wall provided with a keeper adapted to receive the hook, said hook and keeper being extended laterally in opposite directions and in the same plane with the loop to form supporting-arms.



4. A pipe-hanger comprising a loop adapted to embrace the pipe and having one of its side walls at the open end of the loop bent to form a hook and its opposite side wall provided with a keeper adapted to receive the hook, said hook and keeper being extended laterally in opposite directions and in the same plane with the loop to form supporting-arms, there being an eye formed in the walls of the loop and disposed in alinement with the hook.

5. A pipe-hanger comprising a loop adapted to embrace the pipe and having one of its side walls at the open end of the loop bent upon itself and extended laterally in spaced relation to the adjacent wall of the loop to form a keeper and its opposite side wall bent to form a hook adapted to engage said keeper, there being an eye formed in the walls of said loop for the reception of a clamping-tool.

6. A pipe-hanger comprising a loop adapted to embrace the pipe and having one of its side walls at the open end of the loop bent upon itself and extended laterally in spaced relation to the adjacent wall of the loop to form a keeper and its opposite side wall bent at substantially right angles to the longitudinal axis of the loop to form a hook adapted to engage said keeper, there being an eye formed in the wall of the loop and extending in the same plane therewith.

7. As a new article of manufacture, a pipe-hanger formed of a single piece of wire an intermediate portion of which is bent to form an eye and thence curved laterally to produce a supporting-loop, a portion of one end of the wire at the open end of the loop being bent to form a keeper and the end thereof extended laterally to form a supporting-arm terminating in an eye, the opposite end of said wire at the open end of the loop being bent to form a hook for engagement with the keeper and thence extended laterally to form a similar supporting-arm terminating in a corresponding eye.

821,834. **STEP-LADDER.** JUSTIN B. SHALER, New York, N. Y., assignor of one-half to William J. O'Hearn, Brooklyn, N. Y. Filed Nov. 19, 1904. Serial No. 233,401.



Claim.—1. A step-ladder comprising a stair portion consisting of side risers and treads, a rear support consisting of a horizontal connecting member and legs rigidly secured to said member at their upper ends and adapted to swing in line with and adjacent the outer side of said risers, and unitary means for pivotally attaching said rear support to said stair portion and for limiting their relative pivotal movement.

2. A step-ladder comprising a stair portion consisting of side risers and treads, a rear support composed of metal rods or tubes and comprising a horizontal connecting member and legs rigidly secured at their upper ends to said connecting member and adapted to swing in line with and adjacent the outer side of said risers, and unitary

means attached to said risers for engaging with the horizontal member of said rear support and for limiting its pivotal movement with respect to said stair portion.

3. A step-ladder comprising a stair portion consisting of side risers and treads, a rear support made from metal rods or tubing and comprising a connecting horizontal member and legs rigidly secured at their upper ends to said connecting member and adapted to swing in line with and adjacent the outer side of said risers, and side plates each pierced for pivotal engagement with the horizontal member of said rear support and provided with laterally-extending portions for limiting the pivotal movement of said support with respect to said stair portion.

4. A step-ladder comprising a stair portion consisting of side risers and treads, a rear support consisting of a horizontal pivotal member and legs rigidly secured thereto, and unitary means attached to said risers pierced to pivotally support the horizontal member of said rear support and provided with means for limiting the pivotal movement of the vertical members of said rear support with respect to said stair portion.

5. A step-ladder comprising a stair portion consisting of side risers and treads, a rear support consisting of a horizontal pivotal member and legs rigidly secured hereto, and side plates, one of which is attached to each of said risers near its upper end, is pierced to receive the horizontal member of said rear support and is provided with laterally-extending flanges adapted to limit the movement of one of the vertical members of said rear support in both directions.

6. A step-ladder comprising a stair portion consisting of side risers and treads, a rear support pivotally attached to said side risers, and means detachably engaged between said risers and the legs of said rear support approximately at the apex of the angle formed by said risers and the legs of said support for preventing the accidental dislodgment of said rear support.

7. A step-ladder comprising a stair portion consisting of side risers and treads, an inverted-U-shaped rear support, the horizontal member of which is pivoted in said risers, and a movable portion connected with said horizontal member and adapted to detachably engage between said risers and the legs of said rear support to prevent the accidental dislodgment of the latter.

8. A step-ladder comprising a stair portion consisting of side risers and treads, an inverted-U-shaped rear support, the horizontal member of which is pivoted in said risers, and a resilient rod secured on said horizontal member and having a laterally-extending portion adapted to engage between the leg of said support and one of said risers to prevent the accidental dislodgment of the support.

9. A step-ladder comprising a stair portion consisting of side risers and treads, a rear support composed of metal rods or tubes and comprising a horizontal member and legs rigidly secured to said horizontal member at their upper ends, said horizontal member extending between said risers adjacent their upper ends, a shelf pivotally attached to said horizontal member, and coöperating bolts and eyes common to the tread adjacent said horizontal member and to said shelf for detachably maintaining the latter in a horizontal position.

10. A step-ladder comprising a stair portion consisting of side risers and treads, a rear support including a horizontal member extending between said side risers adjacent their upper ends, a shelf pivotally attached to said horizontal member, coöperating bolts and eyes common to the tread adjacent said horizontal member and to said shelf for detachably maintaining the latter in a horizontal position, and a resilient rod secured on said horizontal member and having a laterally-extending portion adapted to engage between a leg of said rear support and one of said risers to prevent the accidental dislodgment of the support.

821,835. RAILWAY-SIGNAL. William A. D. Short, Lexington, Ky. Filed Sept. 14, 1905. Serial No. 278,430.

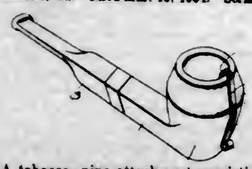
Claim.—1. In a railway-signal, the combination of a casing having a transparent face, an opaque background, a semaphore-indicator arranged to operate in front of said background, said background having an opening therein, a lamp behind said opening, a colored transparent disk arranged to operate behind said opening and in front of the lamp, and means for operating said signals.

2. In a railway-signal, the combination of an inclosing casing having a transparent face and an opaque background, a signal-shaft, a semaphore-indicator operated by said shaft and arranged to move in front of said background, a colored transparent disk also operated by said shaft and arranged to move behind said background and opposite an opening therein, and a lamp behind the disk.

3. In a railway-signal, the combination of a casing having a transparent face, an opaque background, a semaphore-indicator arranged to operate in front of said background, said background having an opening therein, a lamp behind said opening, a colored transparent disk arranged to operate behind said opening and in front of the lamp, a lens between the lamp and the disk and means for operating said signals.



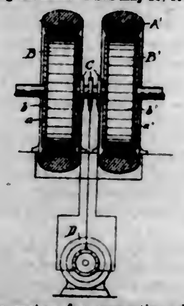
821,836. TOBACCO-PIPE. Muscoe L. Spotswood and Turner A. Weller, Richmond, Va. Filed Mar. 10, 1904. Serial No. 197,457.



Claim.—1. A tobacco-pipe attachment consisting of a perforated plate and a spring-clip formed from sheet metal, the inner clip member being flat and the outer member having oppositely-inclined portions as and for the purpose described.

2. A new article of manufacture, a tobacco-pipe attachment, the same comprising a perforated plate and a spring-clip formed of a sheet-metal blank, the clip members being flat and adapted to lie close against the inner and outer walls of the pipe-bowl, the outer member being longer than the inner member and composed of oppositely-inclined parts, substantially as specified.

821,837. DYNAMO-ELECTRIC APPARATUS. William Stanley, Great Barrington, Mass. Filed May 25, 1905. Serial No. 262,225.



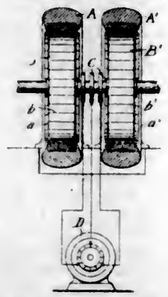
Claim.—1. In a system for generating electric currents, the combination of two generating elements having opposite normal potential gradients and common supply-mains leading therefrom.

2. In a system for generating alternating currents, the combination of two generating elements each consisting of a field-producing winding and an induced winding, an alternating-current exciter supplying currents to said field-producing windings such as to set up poles revolving magnetically in opposite directions, common mains connected to said induced windings, and means for producing mechanical motion between said field-producing and said induced windings, the windings being such that the periodicities of said induced windings are equal.

3. In an alternator, the combination of a pair of stators and a pair of rotors, multiphase windings upon one of said pairs, forming unequal numbers of poles, circuits for supplying alternating currents to said multiphase windings such as to produce fields rotating in opposite directions, induced windings upon the other of said pairs, and means for revolving the rotors at a rate such that the periodicities of the electromotive forces generated in the induced windings shall be equal.

4. In an alternator, the combination of two stators and two rotors, said rotors being each provided with multiphase windings, one of said windings producing a larger number of poles than the other, the poles produced by the two windings rotating magnetically in opposite directions, means for supplying alternating currents to said windings, and means for rotating said rotors so that the periodicities of the stators shall be the same.

821,838. METHOD OF GENERATING ALTERNATING CURRENTS. William Stanley, Great Barrington, Mass. Original application filed May 25, 1905, Serial No. 262,225. Divided and this application filed June 6, 1905. Serial No. 263,904.



Claim.—1. The method of generating alternating currents of constant potential for variations of currents delivered which consists in generating two electromotive forces of equal frequency but opposite potential gradient, and neutralizing the variations of one such potential by the other.

2. The method of generating alternating currents which consists in producing two magnetic fields rotating magnetically in opposite directions, relatively to each other, inducing by such fields and the aid of mechanical motion electromotive forces of equal periodicities, combining said electromotive forces and producing alternating currents thereby.

3. The method of generating alternating currents which consists in producing by means of low-frequency alternating currents two electromagnetic fields rotating magnetically in opposite directions, inducing by such fields and the aid of mechanical motion electromotive forces of equal periodicities, combining said electromotive forces, producing work-currents thereby and maintaining the potential gradient of the exciting-currents complementary to the normal resultant potential gradient of such work-currents.

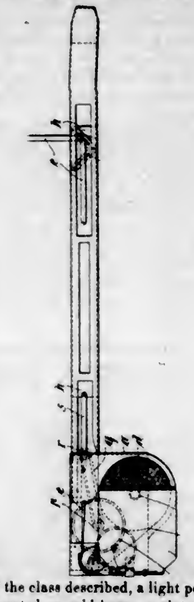
4. The method of generating alternating currents which consists in generating low-frequency currents, dividing said currents and producing by the division thereof two magnetic fields rotating magnetically in opposite directions relatively to each other, inducing by said fields and the aid of mechanical motion electromotive forces of equal periodicities, combining said electromotive forces and producing alternating currents thereby.

821,839. MEASURING OF FABRICS. Friedrich C. Stephan, Crimmitschau, Germany. Filed May 21, 1904. Serial No. 209,117.

Claim.—1. In a machine for laying a measuring-strip between the folds or convolutions of a fabric, the combination of a friction-roller adapted to be rotated by the measuring-strip, a guide for laying the measuring-strip between the convolutions of the fabric, and means for effecting a reciprocation of the guide from the rotation of the friction-roller.

2. In a machine for laying a measuring-strip between the folds or convolutions of a fabric, the combination of a beam, a strip-laying guide mounted on said arm, a friction-roller mounted at one end of said beam and adapted to be rotated by the measuring-strip, gearing connected to said friction-roller for converting the motion of the friction-roller into reciprocating motion, and connections between said guide and said gearing for communicating said reciprocating motion to the guide.

3. In a machine of the class described, the combination of a beam, a guide mounted on said beam and adapted to lay a ribbon at substantially right angles to said beam, of means mounted on one end of said beam for reciprocating the guide, said means being actuated by the material which is passed through said guide.

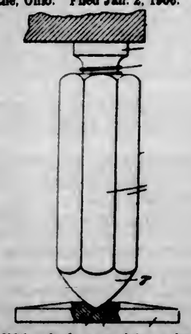


4. In a machine of the class described, a light portable beam, a reciprocating guide mounted on said beam, a plate for supporting and positioning said beam, and means mounted on one end of said beam for reciprocating said guide, said means being actuated by the measuring-strip.

5. In a machine for laying a measuring-strip upon the folds or the convolutions of a fabric, the combination with a beam and a receptacle containing a roll of measuring-tape mounted on said beam, of a friction-roller mounted in the receptacle and over which the tape is adapted to pass, a guide located at a short distance from the receptacle and means connected to said friction-roller and to said guide for reciprocating the guide from said friction-roller.

6. In a machine for laying a measuring-strip between the folds or convolutions of the fabric, the combination of a light portable beam, a reciprocating guide mounted on said beam, a box at one end of said beam for containing the measuring-strip, a friction-roller also mounted in said box and adapted to be driven by the measuring-strip, gearing attached to the friction-roller for reciprocating said guide, and a cover for said box adapted to retain the measuring-strip within the box and to apply friction thereto.

821,840. LIFTING-JACK. Willard A. Story and William A. Hall, Chillicothe, Ohio. Filed Jan. 2, 1906. Serial No. 294,172.



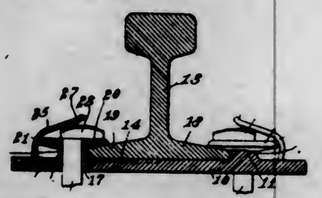
Claim.—1. A lifting-jack comprising a body portion of polygonal cross-section and adapted to turn and provided with a screw-

threaded bore, means, at one end of the body portion to engage a support and a lifting-screw engaged in the threaded bore of the body portion and provided with a head to engage a load to be shifted.

2. A lifting-jack comprising a rotatory body portion provided with an axial bore, the latter being open at its upper end only and provided with screw-threads part way down the body portion and closed at the lower opposite end of said body portion, said lower closed end of the body portion being tapered to a central bearing-tip or solid conical point alined with the axis of the body portion and a non-rotatory lifting-screw threaded for engagement with the threaded portion of the bore of the body portion and having a head to engage a load to be shifted.

3. A lifting-jack comprising a body portion adapted to turn and provided with an axial bore open at its upper end only and provided with screw-threads part way down the body portion from said upper end and closed at the lower, opposite end of said body portion, said lower closed end of the body portion being tapered to a solid central tip or conical point alined with the axis of the body portion, a base-plate engageable with a support and having a central recess or niche to receive the closed tapered tip or conical point of the body portion and a non-rotatory lifting-screw threaded for engagement with the threaded bore of the body portion and provided with a head to engage a load to be shifted.

821,841. **RAIL-FASTENER.** WILLIAM G. TOWER, Corona, Cal. Filed Dec. 4, 1905. Serial No. 290,257.



Claim.—1. A rail-fastener comprising a tie-plate provided with a spike-opening and a groove adjacent the opening and a keeper proportioned to be seated in the groove beneath a rail and to extend over and bear upon the head of a spike.

2. A rail-fastener comprising a tie-plate provided with a groove in its rail-receiving surface and with a spike-opening within the limits of the groove and a bifurcated keeper proportioned to be seated within the groove and to embrace the shank of a spike and to extend over and bear upon the top of the spike.

3. A rail-fastener comprising an annular disk proportioned to bear upon the top of the base-flange of a rail and provided with concentric means to bear against the edge of the flange and means to pivot the disk to a tie.

4. A rail-fastener comprising a rotatable disk provided with a central opening and with a laterally-extending boss about the opening and proportioned to be pivoted adjacent a rail with the disk engaging the upper surface and the boss engaging the edge of the base-flange said disk adapted to be rotated by the expansion or contraction of the rail.

5. A rail-fastener comprising a fastening for penetrating the tie and a roller centrally pivoted upon the fastening and engaging the base-flange of the rail.

6. A rail-fastener comprising a pivot rigidly secured adjacent the rail and a rotatable disk mounted at its center upon the pivot and engaging the top and having a boss engaging the edge of the base-flange said disk adapted to be rotated by the expansion or contraction of the rail.

7. A rail-fastener comprising a tie-plate provided with rail-engaging ribs, a roller pivoted upon the plate and engaging the top and edge of the base-flange.

8. A rail-fastener comprising a tie-plate, a roller engaging the top and edge of the base-flange and means to pivot the roller upon the plate and the plate upon a tie.

9. A rail-fastener comprising a tie-plate provided with a spike-opening, a roller engaging the top and edge of the base-flange and a fastening proportioned for insertion through the plate-opening and to penetrate a tie and to pivot the roller in operative position.

10. A rail-fastener comprising a tie-plate provided with a groove within the rail-engaging surface and with a spike-opening within the limits of the groove, a roller proportioned to engage the top and edge of the base-flange and having an axial spike-receiving opening and a keeper proportioned to be seated in the groove and to extend over and bear upon the top of a spike.

11. A rail-fastener comprising a tie-plate having longitudinal rail-engaging ribs and provided with grooves formed in the rail-engaging surface and cutting the ribs and with spike-openings within the limits of the grooves, a disk bearing upon the top of the base-flange and having an axial spike-receiving opening, a boss formed upon the face of the disk and about the axial opening and proportioned to bear against the edge of the base-flange, a bifurcated keeper proportioned to embrace the shank of a spike and be seated in the groove and with the outer end bent to extend over and bear upon the head of a spike.

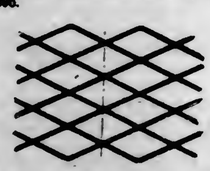
821,842. **SASH-LOCK.** JAMES B. VINCENT, Flatbush, N. Y. Filed Jan. 26, 1906. Serial No. 297,950.



Claim.—1. A sash-lock comprising an oblong chamber formed in the front surface of the top rail of a bottom sash, a dog pivoted in said chamber and provided at one end with a nose adapted to pass backwardly through said rail and to enter a recess formed in the front wall of the bottom rail of the top sash, and means for holding the dog in both the operative and inoperative position, substantially as shown and described.

2. A sash-lock comprising an oblong chamber formed in the front surface of the top rail of a bottom sash, a dog pivoted in said chamber and provided at one end with a nose adapted to pass backwardly through said rail and to enter a recess formed in the front wall of the bottom rail of the top sash, and means for holding the dog in both the operative and inoperative position, comprising a catch pivoted to the top rail of the bottom sash and a recess formed in the head of the dog and adapted to receive said catch when the dog is in its inoperative position, substantially as shown and described.

821,843. **ART OF EXPANDING SHEET METAL.** HERBERT E. WHITE, Youngstown, Ohio, assignor to The General Fireproofing Company, Youngstown, Ohio, a Corporation of Ohio. Filed June 10, 1905. Serial No. 264,566.



Claim.—1. In the art of making expanded metal and the like, the improvement that consists in first corrugating a sheet to correspond with the opening or expansion and subsequently slitting and expanding or opening the metal, one line of slits after another thereby straightening out the corrugations, leaving unsevered joints or connections between the rows of strands so formed, for substantially the purposes set forth.

2. In the art of making expanded metal and the like, the improvement that consists in first corrugating the sheet to shorten it and afford provision for the expansion or opening without substantial stretching, and then slitting transversely to the said corrugations and pressing and forming the strands away from the general plane of the corrugated sheet thereby straightening out the corrugations to form a row of meshes or part meshes and then successively slitting and forming other rows in like manner leaving uncut connections between the strands of adjacent rows, substantially as described.

3. In the art of making expanded metal and the like, the improvement that consists in first crimping or corrugating the sheet in a manner to shorten it in the direction of the slits to be formed and then simultaneously slitting and bending portions of the sheet in such manner as to substantially straighten out the corrugations in the strands so formed while leaving such strands connected to the body of the sheet between such slits, and then simultaneously slitting and bending in like manner in places alternate to the first-mentioned portions, thus producing the finished expanded sheet metal of substantially the same length as the corrugated or shortened sheet, substantially as described.

4. The improvement in the art of making expanded metal and

the like, that consists in first corrugating, crimping, or shortening the sheet in the direction of the slits to be formed, and then simultaneously slitting and opening portions of the sheet thereby straightening out the corrugations to form meshes or part meshes.

5. The improvement in the art of making expanded metal and the like, that consists in first corrugating, crimping, or shortening the sheet in the direction of the slits to be formed, and then slitting and expanding portions of the metal thereby straightening out the corrugations to form an open or reticulated expanded structure without substantial stretching of the metal itself.

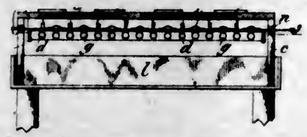
6. The method substantially as herein described of making expanded or reticulated metal-work, which consists in simultaneously slitting and bending portions of a sheet of metal without stretching or elongating the strands connecting the slit portions and body of the sheet, and then similarly slitting and bending in places alternate to the first-mentioned portions, thus producing the finished expanded sheet metal of the same length as the original sheet.

7. The method substantially as herein described of making expanded or reticulated metal-work, which consists in simultaneously slitting and bending portions of a corrugated sheet of metal without stretching or elongating the strands connecting the slit portions and body of the sheet, and then similarly slitting and bending in places alternate to the first-mentioned portions, thus producing the finished expanded sheet metal of the same length as the original sheet.

821,844. **BOILER-CLEANSING COMPOUND.** JOSEPH WILLIAMS, Jr., Pittsburg, Pa. Filed Aug. 19, 1905. Serial No. 274,869.

Claim.—The herein-described boiler-cleansing compound consisting of a mixture of water, caustic soda, saltpeter, soda-ash and sal-soda in the proportions given, substantially as set forth.

821,845. **APPARATUS FOR BACKING UP OF ELECTROS.** EUGEN ALBERT, Munich, Germany. Filed June 21, 1905. Serial No. 266,231.



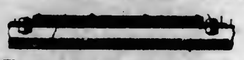
Claim.—1. In an apparatus of the character described, means to heat electros, means to cool electros, and means to protect one of said means while the other of said means is in operation.

2. In an apparatus of the character described, means to support electros, means to heat electros, means to cool electros, and means to cover the second-named means while the third-named means is in operation.

3. In an apparatus of the character described, a plate to support electros, gas-pipes for heating electros, water-pipes for cooling electros, and means to cover the gas-pipes while the water is issuing from the water-pipes.

4. In an apparatus of the character described, a plate to support electros, gas-pipes thereunder for heating said plate, water-pipes also underneath said plate and alternating with the gas-pipes for cooling said plate, and a slidable frame adapted to cover the gas-pipes while the water is issuing from the water-pipes.

821,846. **MIRROR ATTACHMENT FOR GAS-STOVE DOORS.** BENJAMIN F. ALLEN and GEORGE R. FORD, St. Louis, Mo.; said Allen assignor to said Ford. Filed May 23, 1905. Serial No. 261,660.

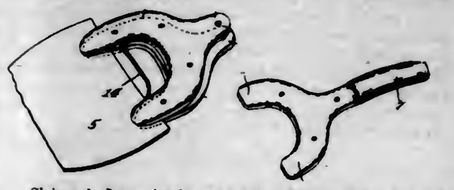


Claim.—1. The combination with a gas-stove oven-door, of a mirror-frame provided with air-holes at the rear side thereof, and a mirror seated in said frame, substantially as set forth.

2. The combination with a gas-stove oven-door having an apertured lining, of a mirror-frame secured to said door at the location of the aperture in said lining and provided with air-holes, and a mirror seated in said frame, substantially as set forth.

3. The combination with a gas-stove oven-door having a lining provided with an aperture, of a mirror-frame secured to said door and having a plurality of air-holes registering with the aperture in the lining, a mirror seated in said frame, and a protective sheet at the rear of said mirror, substantially as set forth.

821,847. **SHOVEL.** LUIS ARNAVAT, Tampa, Fla. Filed Dec. 27, 1905. Serial No. 293,515.



Claim.—1. In an implement of the character described, the combination of a blade, a pair of U-shaped parts secured one on each side of the blade at its upper part, a handle having a forked end portion secured between said U-shaped parts, said parts having their edges extending toward each other and substantially embracing the forked portion of the handle.

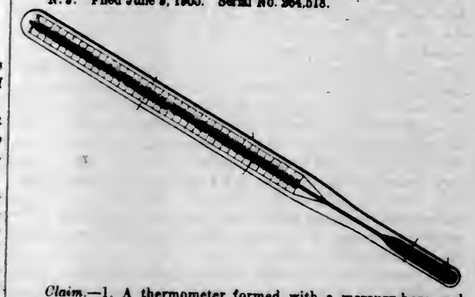
2. The combination of a blade, and a handle secured thereto, the device having a U-shaped connection between the handle portion and the blade providing a central aperture at the top of the blade, the blade having a projecting portion on one side at the middle portion of its upper edge.

3. In an implement of the kind set forth, the combination of a blade, a pair of U-shaped parts secured one on each side of the blade on its upper part, and a handle whose shank has an integral forked extremity secured between said U-shaped parts.

4. In an implement of the character described, the combination of a blade member having a looped extension at its upper portion and a handle member whose shank has an integral forked extension at its lower end that is secured to the looped portion of the blade member.

5. In an implement of the kind set forth, the combination of a blade member provided with looped portions at its upper part, one extending from the front and one from the back of the blade, and a handle member whose shank has an integral forked extension secured between said looped portions of the blade member.

821,848. **THERMOMETER.** MILLARD F. BECTON, Jersey City, N. J. Filed June 9, 1905. Serial No. 264,518.



Claim.—1. A thermometer formed with a mercury-bore and with a second bore in rear of said mercury-bore, a hollow scale-strip inserted in said second bore, and light-reflecting means within said hollow strip.

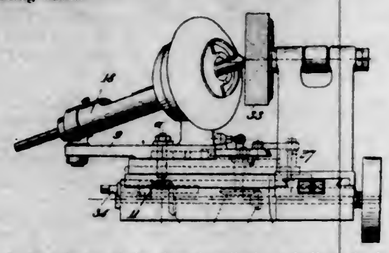
2. A thermometer formed with a longitudinally-arranged bore in rear of the mercury column, a hollow scale-strip within said bore, and a light-reflecting strip inserted within and fitting the hollow bore of the scale-strip.

3. A thermometer formed with a longitudinal bore in rear of the mercury column, a hollow scale-strip fitting within said bore, and a light-reflecting backing-strip within the scale-strip, the edges of said backing-strip being colored contrastingly with the remainder of the strip.

4. A thermometer formed with a longitudinal bore in rear of the mercury column, a semicylindrical hollow scale-strip fitting within said bore, and a light-reflecting backing-strip fitting snugly within the scale-strip, the edges of the backing-strip being colored.

821,849. **TWIST-DRILL-GRINDING APPARATUS.** GEORG BENICKE, Offenbach-on-the-Main, Germany, assignor of one-half to The Firm of Erste Offenbacher Specialfabrik für Schmirgelwaarenfabrikation Mayer & Schmidt, Offenbach-on-the-Main, Germany. Filed Apr. 6, 1905. Serial No. 254,121.

Claim.—1. In a device of the class described a grinding-wheel, means for rotating the grinding-wheel, a drill-holder, means for securing the drill in the holder, means for yieldingly forcing the drill-holder toward the grinding-wheel so as to keep the drill in contact therewith, means for rotating the drill-holder and means for vibrating the drill-holder on an axis at an angle to the axis of the grinding-wheel.



2. In a device of the class described a grinding-wheel means for rotating the grinding-wheel, a drill-holder, means for securing the drill in the holder, means for yieldingly forcing the drill-holder toward the grinding-wheel so as to keep the drill in contact therewith, means for automatically rotating the drill-holder, and means for automatically vibrating the drill-holder on an axis at an angle to the axis of the grinding-wheel.

3. In a device of the class described, a grinding-wheel, means for rotating the grinding-wheel, a drill-holder means for securing the drill in the holder, means for yieldingly forcing the drill-holder toward the grinding-wheel so as to keep the drill in contact therewith and means for automatically shifting the axis of the drill during the grinding.

4. In a device of the class described, a grinding-wheel, means for rotating the grinding-wheel, a drill-holder means for securing the drill in the holder, means for yieldingly forcing the drill-holder toward the grinding-wheel so as to keep the drill in contact therewith and means for automatically shifting the angle of inclination of the drill and for rotating the same during grinding.

5. In a device of the class described a grinding-wheel means for rotating the grinding-wheel, a drill-holder means for securing the drill in the holder, means for yieldingly forcing the drill-holder toward the grinding-wheel so as to keep the drill in contact therewith, means for rotating the drill-holder, means for vibrating the drill-holder on an axis at an angle to the axis of the grinding-wheel, and means for regulating the distance traversed by the drill-point.

6. In a device of the class described a grinding-wheel, means for rotating the grinding-wheel, a drill-holder, means for securing the drill in the holder, means for yieldingly forcing the drill-holder toward the grinding-wheel so as to keep the drill in contact therewith, means for automatically rotating the drill-holder, means for automatically vibrating the drill-holder on an axis at an angle to the axis of the grinding-wheel, and means for regulating the distance traversed by the drill-point.

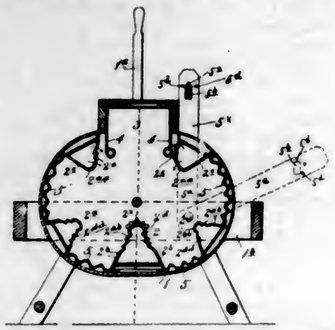
7. In a device of the class described, a grinding-wheel, means for rotating the grinding-wheel, a drill-holder means for securing the drill in the holder, means for yieldingly forcing the drill-holder toward the grinding-wheel so as to keep the drill in contact therewith, means for automatically shifting the axis of the drill during the grinding, and means for regulating the distance traversed by the drill-point.

8. In a device of the class described, a grinding-wheel, means for rotating the grinding-wheel, a drill-holder means for securing the drill in the holder, means for yieldingly forcing the drill-holder toward the grinding-wheel so as to keep the drill in contact therewith, means for automatically shifting the angle of inclination of the drill and for rotating the same during grinding, and means for regulating the distance traversed by the drill-point.

9. In a device of the class described, a support, a sliding plate, means for normally forcing the sliding plate toward the grinding-wheel, a vibrating lever carried by the sliding plate, a drill-holder carried by the vibrating lever, and means for vibrating the lever and rotating the drill-holder during the grinding operation.

821,850. **WASHING-MACHINE.** HENRY A. BUBLEY, Portsmouth, Ohio. Filed Sept. 29, 1904. Serial No. 226,468.

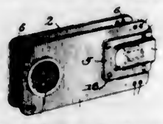
Claim.—1. A washing-machine, having a main rubber, whose lateral walls are provided with longitudinal corrugations, and a rub-bar having corresponding corrugations removably applied to said rubber.



2. A washing-machine, having arranged therein at certain intervals apart a number of tapered rubbers, each having its tapered portion presented toward the center of the fabrics-chamber and having corrugated engaging surfaces, the relatively centrally arranged rubber having, in continuation of its lateral corrugated surface, a correspondingly-corrugated rub-bar readily removed therefrom.

3. A washing-machine having applied to its clothes-receptacle support, a frame comprising lateral bars pivotally connected to said support, a wringer-supporting cross-bar pivoted to said lateral bars, and means upon said cross-bar and said lateral bars adapted to hold a wringer substantially vertical.

821,851. **GARMENT-FASTENER.** CLARENCE B. BOWLING, Detroit, Mich. Filed Apr. 4, 1905. Serial No. 253,835.



Claim.—1. A garment-fastener comprising a front and a back plate, the back plate being provided with a yielding head rigid with the plate, and the front plate being provided with a socketed member to engage the head and capable of longitudinal movement relatively to the front plate.

2. A garment-fastener comprising a back plate having at one end a yielding head and at its other end a headed stud, a front plate having at one end a socket adapted for limited longitudinal movement relatively to the front plate and adapted to engage the head, and at its other end a keyhole-opening to be engaged by the stud, and a guard disposed over the opening.

3. A garment-fastener comprising a front plate provided at one end with a keyhole-opening and with a guard disposed over the opening and integral with the plate, and at its other end with a socketed locking member combined for limited longitudinal movement relatively to the front plate, and a back plate provided at one end with a headed stud to engage the keyhole-opening, and at its other end with a yielding head to engage the socketed member.

821,852. **INK-WELL.** BLOOMFIELD BROWER, New York, N. Y. Filed Sept. 15, 1904. Serial No. 224,434.



Claim.—1. The combination with an ink-chamber and a float-chamber supplied with ink therefrom, of an ink-displacing float in the float-chamber, the sides of the float being spaced from the walls of the float-chamber so that ink in the latter is caused to rise between the float and the walls of the float-chamber and pass over the top of the float, and a valve controlling said ink-passage so as to permit such return of the ink but prevent entrance of the ink into the lower end of said passage as the float is depressed, substantially as described.

2. The combination with an ink-chamber and a float-chamber supplied with ink therefrom, of an ink-displacing float in the float-chamber, the sides of the float being spaced from the walls of the float-chamber so that ink in the latter is caused to rise between the float and the walls of the float-chamber and pass over the top of the float when the latter is depressed by a pen, said float having an ink-passage for returning to the float-chamber the ink thus passing over the top of the float, and a float-valve controlling said ink-passage so as to permit such return of the ink but prevent entrance of the ink into the lower end of said passage as the float is depressed, substantially as described.

3. The combination with an ink-chamber and a float-chamber supplied with ink therefrom, of an ink-displacing float in the float-chamber, the sides of the float being spaced from the walls of the float-chamber so that ink in the latter is caused to rise between the float and the walls of the float-chamber and pass over the top of the float when the latter is depressed by a pen, said float having an ink-passage for returning to the float-chamber the ink thus passing over the top of the float, and a disk-like float-valve controlling said ink-passage so as to permit such return of the ink but prevent entrance of the ink into the lower end of said passage as the float is depressed, substantially as described.

4. The combination with an ink-chamber and a float-chamber supplied with ink therefrom, of an ink-displacing float in the float-chamber, the sides of the float being spaced from the walls of the float-chamber so that ink in the latter is caused to rise between the float and the walls of the float-chamber and pass over the top of the float when the latter is depressed by a pen, a dipping-cup in the top of the float, said float having an ink-passage for returning to the float-chamber the ink thus passing over the top of the float, and a valve controlling said ink-passage so as to permit such return of the ink but prevent entrance of the ink into the lower end of said passage as the float is depressed, substantially as described.

5. The combination with an ink-chamber and a float-chamber having side openings through which it communicates with said ink-chamber, of an ink-displacing float in the float-chamber, the sides of the float being spaced from the walls of the float-chamber so that ink in the latter is caused to rise between the float and the walls of the float-chamber and pass over the top of the float when the latter is depressed by a pen, said float having an ink-passage for returning to the body of the float-chamber the ink thus passing over the top of the float, and a valve controlling said ink-passage so as to permit such return of the ink but prevent entrance of the ink into the lower end of said passage from the body of the float-chamber as the float is depressed, substantially as described.

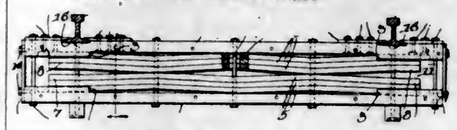
6. The combination with an ink-chamber and a float-chamber having side openings through which it communicates with said ink-chamber, of an ink-displacing float in the float-chamber, the sides of the float being spaced from the walls of the float-chamber so that ink in the latter is caused to rise between the float and the walls of the float-chamber and pass over the top of the float when the latter is depressed by a pen, said float having an ink-passage for returning to the body of the float-chamber the ink thus passing over the top of the float, a valve controlling said ink-passage so as to permit such return of the ink but prevent entrance of the ink into the lower end of said passage from the body of the float-chamber as the float is depressed, and a cap having a substantially air-tight fit in the upper end of the well and with the under side of which the upper end of the float makes contact, substantially as described.

7. The combination with an ink-chamber and a float-chamber supplied with ink therefrom, of an ink-displacing float in the float-chamber, the sides of the float being spaced from the walls of the float-chamber so that ink in the latter is caused to rise between the float and the walls of the float-chamber and pass over the top of the float when the float is depressed by a pen, said float having an ink-passage, and said float-chamber having side openings through which ink is supplied to it from the ink-chamber, substantially as described.

8. The combination with an ink-chamber and a float-chamber located in a lower plane and supplied with ink therefrom, of an ink-displacing float in the float-chamber, the sides of the float being spaced from the walls of the float-chamber so that ink in the latter is caused to rise between the float and the walls of the float-chamber and pass over the top of the float when the latter is depressed by a pen, said float having an ink-passage, and said float-chamber having side openings substantially in line with the bottom of the ink-chamber through which ink is supplied to it from the ink-chamber, substantially as described.

9. The combination with an ink-chamber and a float-chamber located in a lower plane and supplied with ink therefrom, of an ink-displacing float in the float-chamber, the sides of the float being spaced from the walls of the float-chamber so that ink in the latter is caused to rise between the float and the walls of the float-chamber and pass over the top of the float when the float is depressed by a pen, said float having an ink-passage, and said float-chamber having side openings substantially in line with the bottom of the ink-chamber through which ink is supplied to it from the ink-chamber, substantially as described.

821,853. **RAILWAY-TIE.** JOHN S. BRUBAKER, Sinnamahoning, Pa. Filed Jan. 15, 1906. Serial No. 296,194.



Claim.—1. A railway-tie comprising tie-sections, and an interposed zigzag spring-plate.

2. A railway-tie comprising tie-sections, and interposed longitudinally-disposed zigzag spring-plates.

3. A railway-tie comprising tie-sections, and an interposed longitudinally-disposed zigzag spring having certain of its zigzag portions bearing against the tie-sections.

4. A railway-tie comprising tie-sections, and an interposed longitudinally-disposed zigzag spring with certain of its zigzag portions bearing against the tie-sections and its ends disposed in substantially parallelism with the tie-sections.

5. A railway-tie comprising spaced tie-sections having terminal seats upon their inner faces, the seats being open at their inner ends, and a zigzag spring disposed longitudinally between the sections and bearing thereagainst with their ends received within the respective seats.

6. A railway-tie comprising spaced tie-sections having terminal seats upon their inner faces, each seat being formed by spaced longitudinal flanges and an outer transverse flange, and a zigzag spring interposed between the tie-sections with its zigzag portions bearing thereagainst and its ends disposed in substantial parallelism with the tie-sections and received in the respective seats.

7. A railway-tie comprising tie-sections, a spring interposed between the sections, and guard-plates closing the space between the tie-sections, each plate being rigidly carried by the lower tie-section and having a slotted connection with the upper section.

8. A railway-tie comprising tie-sections, a spring interposed therebetween, and guard-plates closing the space between the tie-sections, said guard-plates being carried by the lower section and loose upon the upper section to permit yielding of the upper tie-section.

9. A railway-tie comprising upper and lower sections, a spring interposed between the sections, guard-plates applied to opposite sides of the tie and closing the space between the tie-sections, and fastenings connecting the plates with the sections, the plates being slotted to slidably receive some of the fastenings.

10. A railway-tie comprising spaced upper and lower sections, and a pair of superposed zigzag spring-plates interposed between the sections and bearing against one another and the respective tie-sections.

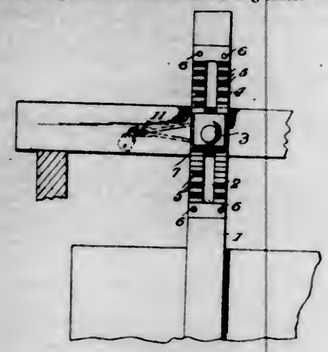
821,854. **LOCK FOR WATER-GATES.** FRANK S. BURROUGHS, Zillah, Wash. Filed June 20, 1905. Serial No. 266,144.

Claim.—1. In a lock for water-gates the combination of a gate-post, a clamp member having an interlocking connection therewith, a bolt holding the clamp member in engagement with the gate-post, a nut coöperating with the bolt, and a member pivotally connected to the nut and engaging with a suitable projection to prevent the turning of the nut.

2. In a lock for water-gates the combination of a gate-post having a longitudinal slot and provided with a recess on one side thereof, a metal plate fitting in said recess and having a roughened surface and also having a slot corresponding to the slot in the gate-post, a clamping member having a roughened surface adapted to coöperate with the before-mentioned plate to lock the gate in position, a bolt having connection with the clamping member and passing through the slot, and means for locking the bolt against working loose.

3. In a lock for water-gates the combination of a gate-post provided with a longitudinal slot and having a recess on one side thereof,

a metal plate fitting in said recess and having a series of transverse notches therein and also having a slot corresponding to the slot in the gate-post, a clamping member having a series of transverse teeth adapted to engage the notches on the plate to lock the gate in position, a bolt connected to the clamping member and passing through the slot, and means to prevent the bolt from turning loose.



821,855. FRUIT-PICKER. AMOS E. BURWELL, Butler, Pa. Filed Jan. 19, 1905. Renewed Mar. 13, 1906. Serial No. 305,884.

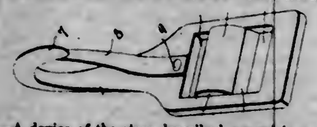


Claim.—1. A fruit-picker comprising a frame having angularly-projecting, parallel-extending, spaced picking-jaws, a handle upon the ends of said jaws, and a conveying spout or sack secured upon said frame and its jaws.

2. A fruit-picker comprising a loop-frame having its ends bent angularly and extending parallel with each other to form picking-jaws, a handle secured upon the ends of said jaws, and a tubular conveyer spout or sack having one of its open ends covering said frame and its jaws, and its other open end depending from the same, substantially as described.

3. A fruit-picker comprising a handle having a longitudinally-extending slot in one of its ends, a frame terminating in spring-jaws having outturned ends, and a band or ferrule upon the slotted end of said handle for securing the ends of said jaws in said slot, the outturned portions of said ends being adapted to project out of said slot beneath said band or ferrule.

821,856. COMBINED SNAP-HOOK AND BUCKLE. ELBERT L. CARROLL, Creston, Iowa. Filed Oct. 9, 1905. Serial No. 282,044.



Claim.—A device of the class described comprising a flat substantially rectangular frame having one end thereof extended longitudinally to form a snap-hook, a cross-bar extending transversely across the frame and having a curved unobstructed bearing-surface defining a pair of spaced strap-receiving openings the opposite walls of one of which are curved downwardly and rearwardly, said bar having its curved bearing-surface extended above the sides of the frame and one longitudinal edge thereof curved rearwardly and downwardly in substantially parallel relation with the opposite wall of the adjacent strap-receiving opening.

821,857. TIME EGG-BOILER. HORACE H. CHEBBROUGH, Southpart, Wash. Filed Sept. 15, 1905. Serial No. 278,588.

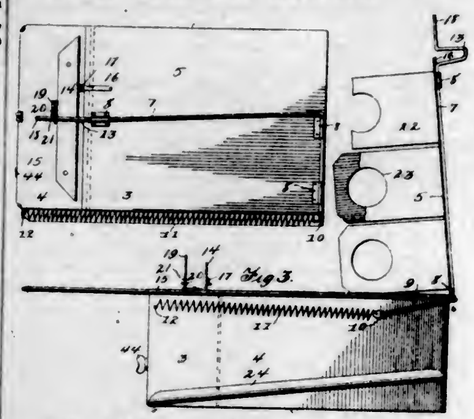


Fig 3.

Claim.—1. In an apparatus of the character described, the combination of a receptacle for water, a lid hinged to said receptacle, a spring connected to said lid and to the receptacle, and adapted to open the lid, a rod carried by said lid, a clockwork mechanism arranged in the receptacle and including a minute-hand arbor and a balance-wheel, a latch pivotally mounted on the frame of the clockwork mechanism and adapted to engage said rod, an arc-shaped plate carried by the minute-hand arbor of the clockwork mechanism and adapted to engage said latch, a hand carried by the minute-hand arbor of the clockwork mechanism and adapted to indicate on a fixed scale the movement of said arbor, a swinging arm carried on the frame of the clockwork mechanism and adapted to engage the balance-wheel of said mechanism and a pin carried by said latch and adapted when the latch is engaged with said rod to throw said arm out of engagement with the balance-wheel.

2. In a device of the character described, a receptacle having a compartment to contain water, a spring-operated hinged lid covering said compartment, egg-holders carried by said lid, a latch adapted to maintain the lid in closed position, a projection on said latch, a clockwork mechanism including a minute-hand arbor, a plate carried by the minute-hand arbor of the clockwork mechanism and adapted to maintain the latch in engagement with the lid, a hand carried by the minute-hand arbor of the clockwork mechanism and adapted to indicate the movement of said arbor on a fixed scale and a movable arm adapted to engage a moving part of the clockwork mechanism, said arm being adapted to be engaged by the projection on said latch.

3. In a device of the character described, a receptacle adapted to contain water, a movable lid covering said receptacle, egg-holders carried by said lid, a latch adapted to maintain the lid in closed position, clockwork including an arbor mechanism, means carried thereby for holding the latch in engagement with the lid, means carried by the said arbor of the clockwork mechanism for setting said mechanism to run for a predetermined period, and means operable by said latch for stopping the clockwork mechanism when said period has elapsed.

821,858. PNEUMATIC TIRE. HANS L. CHRISTIANSEN, Boston, Mass., assignor of one-third to Harald Tidemand and one-third to Ole Worm Dahl, Boston, Mass. Filed May 24, 1905. Serial No. 261,933.



Claim.—1. The combination with a wheel, of a pneumatic tire therefor provided with transverse passage-ways, and lacings extended through said passage-ways and about the rim of the wheel for attaching the tire to the wheel, substantially as described.

2. The combination with a wheel, of a pneumatic tire therefor provided with transverse passage-ways, a shoe or covering for said tire, and means extended through said passage-ways and through said shoe for attaching the latter to the tire and the tire to the wheel, substantially as described.

3. The combination with a wheel, of a pneumatic tire therefor provided with transverse passage-ways, a shoe or covering for said tire, an armor interposed between said shoe and tire, and flexible means extended through said passage-ways for attaching the tire to said wheel.

4. The combination with a wheel having sockets on the inner circumference of its rim, a pneumatic tire having lugs or projections extended into said sockets, and provided with passage-ways extended through it, and flexible means extended through said passage-ways for attaching the tire to the said rim, substantially as described.

5. The combination with a wheel, of a pneumatic tire therefor provided with transverse passage-ways, a shoe or covering for said tire, and devices for attaching said shoe or covering to said tire, said devices being extended into the transverse passage-ways of said tire, substantially as described.

821,859. AUTOMATIC AIR-BRAKE CONTROLLER. THOMAS CLEGG, Winnipeg, Canada, assignor of one-third to Alexander McKinny and one-third to Robert Andrew Bonnar, Winnipeg, Canada. Filed Nov. 20, 1905. Serial No. 288,285.



Claim.—1. In an automatic air-brake controller, a cylindrical casing having threaded ends and an intermediate contracted portion providing an interior annular shoulder, a valve-seat resting against said shoulder and having a beveled inner face, and a spring-pressed valve having a correspondingly-beveled edge and a by-pass, substantially as described.

2. In an automatic air-brake controller, a substantially cylindrical casing having interiorly-threaded ends with an annular shoulder at the base of the threads at each end, a coupling member screwed into each end, a guide or spider clamped by each coupling member against the corresponding shoulder, a normally open, spring-pressed valve within the casing, and a port in said valve, and a valve-spindle extending from each side thereof and guided in said spiders, substantially as described.

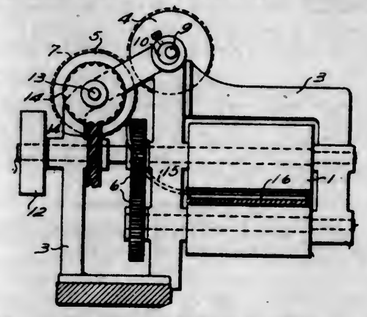
3. In an automatic air-brake controller the combination with the main casing, the valve-seat secured therein, the valve, and the port through said valve, of a supplementary casing attached to and continuous with the main casing, as and for the purpose specified.

4. In an automatic air-brake controller the combination with the main casing, containing the valve-seat in the central portion and an outlet at the end thereof, of a supplementary casing attached to the main casing and having an inlet at the extremity, a valve having a port-hole extending therethrough, means for supporting and constraining the motion of the said valve, and convenient means for attaching said controller to the train-pipe, as and for the purpose specified.

5. In an automatic air-brake controller the combination with the main casing containing the valve-seat in the central portion and an outlet at the end thereof, of a supplementary casing, attached to the main casing and containing an inlet at its extremity, a valve having a port-hole extending therethrough, a spindle passing into and through the valve, and extending on either side, spiders forming bearings for said spindle, a shoulder on said spindle designed to limit the valve's outward play, a compression-spring attached to the face of the valve and continuously pressing it from its seat, and means for attaching said controller to the train-pipe, as and for the purpose specified.

6. In an automatic air-brake controller, the combination of a cylindrical casing, having a contracted portion and annular enlarged threaded ends, a chambered member, continuous with and designed to screw into said casing, a threaded opening in the outstanding end of said chamber, a valve, a valve-seat rigidly secured in the cylindrical casing, and resting on the abutment formed, by the contraction in the central portion of the casing, a spindle passing into and through said valve and extending on either side thereof, cap-nuts screwing into the threaded end portions and connecting the controller to the train-pipes, spiders forming bearings for the valve-spindle, resting and secured between the abutments formed by the annular threaded enlargements and the inner faces of the threaded members, approaching and screwed to the said casing, a shoulder forming part of or secured to the valve-spindle, and limiting the valve's outward play, a spiral compression-spring encircling the spindle and abutting at its extremities a spider and the valve-face, and a port-hole located in the said valve, and designed for gradually equalizing the pressures on the opposing faces thereof, when the valve is in its closed positon.

821,860. PIE-CRUST-ROLLING MACHINE. OLIVER COLBORNE and FRED DEUERLING, Chicago, Ill.; said Deuerling assignor to said Colborne. Filed Dec. 22, 1904. Serial No. 237,987.



Claim.—1. A device of the class described, comprising a frame; a pair of opposed rollers journaled in said frame and geared to rotate in opposite directions and adapted to elongate a mass of plastic material passing between; a second pair of opposed rollers journaled at right angles to the first pair and similarly geared; and a stationary guiding-surface in the frame, extending from the first pair of rollers into and along the trough of the second pair of rollers, for conveying material from the first pair of rollers to the second, said second pair of rollers being adapted to elongate the mass of material in a direction at an angle to the elongation effected by the first pair, substantially as described.
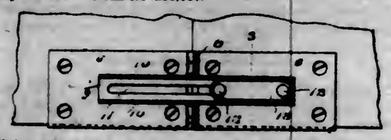
2. A device of the class described, comprising a frame; a pair of opposed rollers journaled in said frame and geared to rotate in opposite directions and adapted to elongate a mass of plastic material passing between; a second pair of opposed rollers journaled at right angles to the first pair, similarly geared, and located a considerable distance below the said first pair of rollers; and an inclined stationary guiding-surface extending from the first pair of rollers into and along the trough of the second pair of rollers, for causing material, after passing between the first rollers, to slide to a position for delivery to the second rollers, to be elongated in a direction transverse to the elongation effected by the first rollers, substantially as described.

3. A device of the class described, comprising a frame; a pair of opposed rollers journaled on parallel axes and spaced apart, said rollers being geared together to rotate in opposite directions for elongating a mass of plastic material passed between them; a second pair of opposed rollers spaced more closely together and similarly geared together; and a stationary guiding-surface extending from the first pair of rollers into and along the trough of the second pair of rollers and adapted to receive material, delivered from said first set of rollers, and guide the material into position for delivery to the second set of rollers, to be elongated in the same plane but at an angle to the elongation effected by the first rollers, substantially as described.

4. A device of the class described, comprising a frame, a pair of parallel horizontally-disposed shafts journaled in said frame one above the other, gears connecting said shafts for driving the same in opposite directions, a roller mounted on each of said shafts, said rollers having their peripheries opposed to each other and adapted to elongate a mass of plastic material passed between, a second pair of parallel horizontally-disposed shafts journaled in said frame below and at an angle to the first pair of shafts, said second pair of shafts being geared together and having thereon a pair of rollers having their peripheries opposed to each other for elongating plastic mate-

rial passed between, a pair of spiral gears connecting the shaft of one of said first pair of rollers with one of the shafts of said second pair of rollers, and an inclined stationary guiding-surface extending from the first pair of rollers into and along the trough of the second pair of rollers and adapted to receive the material passed between said first pair of rollers and slide the same to said second pair of rollers in such manner as to cause the material to be elongated in two directions to form a flat disk.

821,861. LOCK-HINGE. Willard D. Crosy, Medina, Ohio. Filed July 25, 1904. Serial No. 218,667.



Claim.—1. A hinge the leaves of which have laterally-extending flanges at the lower or side edges thereof, adapted to fit under and support the parts to which the hinge is attached, substantially as described.

2. In a lock-hinge, the combination of the pivotally-connected leaves thereof having laterally-extended supporting-flanges at the lower edges thereof adapted to fit under and support the parts to which the hinge is attached, with means mounted on one of said leaves for locking the hinge and the movable parts to which it is attached in an open position.

821,862. HAY-CAP RETAINER. George M. Depew, Canandaigua, N. Y. Filed Jan. 22, 1906. Serial No. 297,290.



Claim.—1. The flexible hay or grain cover combined with a band-retainer of relatively rigid material secured thereto at a plurality of points.

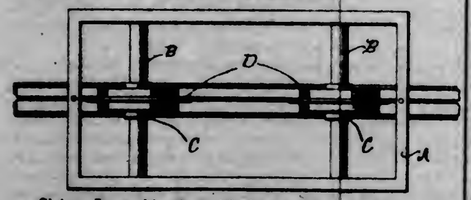
2. The flexible hay or grain cover combined with a band-retainer of relatively rigid material secured thereto at a plurality of points along its edge.

3. The flexible hay or grain cover combined with a band-retainer of relatively rigid material secured thereto at a plurality of points, said band consisting of a single piece of metal.

4. The flexible hay or grain cover of substantially angular outline combined with a band-retainer secured at its angles.

5. A hay-cover of flexible material combined with a metal cover-retaining band secured to its edge.

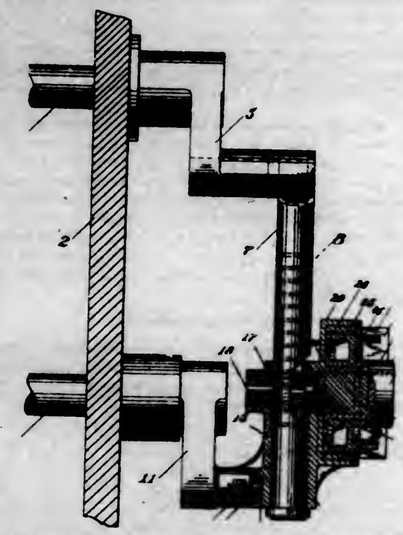
821,863. SINGLE-TRACK RAILWAY. Frank P. Dunn, Baltimore, Md. Filed Jan. 27, 1906. Serial No. 298,256.



Claim.—In combination with the truck of a car having axles mounted thereon, wheels rotating with said axles and provided each with a central flange, tracks having their inner ends angled and extending into a slot of a conduit and adapted to hold said flange vertically in the slot of the conduit, pilots having shank portions journaled in the end of the track and having winged ends adapted to travel in said slot, the upper edge of the winged portion being inclined backward and upward from the level of the track, as shown and described.

821,864. POWER-TRANSMITTING MECHANISM. Talbot C. Dexter, Pearl River, N. Y. Filed Dec. 14, 1905. Serial No. 291,767.

Claim.—1. In a power-transmitting mechanism, the combination of two relatively movable members, one of which is to be driven by the other, rack-teeth on one of said members, a spur gear or pinion journaled upon the other of said members and meshing with said rack-teeth, and two clutches interposed between said spur gear or pinion and the member on which it is journaled for controlling the rotation of the spur gear or pinion.



2. In a power-transmitting mechanism, the combination of two relatively movable members, one of which is to be driven by the other, rack-teeth on one of said members, a spur gear or pinion journaled upon the other of said members and meshing with said rack-teeth, a friction-clutch interposed between said spur gear or pinion and the member upon which it is journaled for controlling the rotation of the spur gear or pinion, and a second clutch interposed between said spur gear or pinion and one member of said friction-clutch.

3. In a power-transmitting mechanism, the combination of two relatively movable members, one of which is to be driven by the other, a shaft journaled in one of said members, gearing between said shaft and the other member, a frictional clutch supported upon the member in which said shaft is journaled, and a second clutch interposed between one member of the friction-clutch and said shaft and adapted to prevent relative rotation of the shaft and friction-clutch in one direction and allow relative rotation between said parts in the opposite direction.

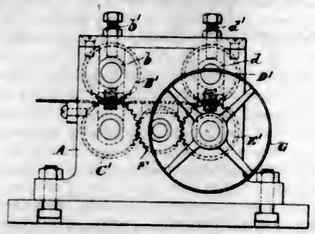
4. In a power-transmitting mechanism, the combination of two cranks, one of which is to be driven by the other, two relatively movable members sliding one upon the other, one of which is connected to each of said cranks, rack-teeth on one of said members, a shaft journaled upon the other of said members, a spur gear or pinion upon said shaft meshing with said rack-teeth, a friction-clutch supported upon the member in which said shaft is journaled, and a positive clutch interposed between one member of the friction-clutch and said shaft and adapted to prevent relative rotation of the shaft and friction-clutch in one direction and allow relative rotation between said parts in an opposite direction.

5. In a power-transmitting mechanism, the combination of the coöperating telescoping piston and casing, a shaft journaled in the casing, gearing between the shaft and piston, a friction-clutch one member of which is freely journaled upon the shaft, and the other member of which is secured to the casing, a positive clutch adapted to lock the freely-journaled member of the friction-clutch against movement in one direction upon the shaft, and allow it free movement in the reverse direction, and means of engagement between the piston and casing.

6. In a power-transmitting mechanism, the combination of the coöperating telescoping piston and casing, a shaft journaled in the casing, gearing between the shaft and piston, a friction-clutch one member of which is freely journaled upon the shaft, and the other member of which is secured to the casing, a positive clutch adapted to lock the freely-journaled member of the friction-clutch against movement in one direction upon the shaft, and allow it free movement in the reverse direction, and a tappet ring or collar secured to the end of the piston in position to be engaged by the return movement of the casing for restoring the piston to normal position of starting.

7. In a power-transmitting mechanism, the combination of the coöperating telescoping piston and casing, a shaft journaled in the casing, gearing between the shaft and piston, clutch mechanism between said shaft and casing adapted to hold the shaft against free rotation in one direction in the casing and allow free rotation in the reverse direction, and a tappet ring or collar secured to the end of the piston in position to be engaged by the return movement of the casing for restoring the piston to normal position of starting.

821,865. MACHINE FOR MAKING COMB-POWDER. Charles Dobbs and John R. Pitman, Haskell, N. J., assignors to The E. I. Du Pont de Nemours Powder Company, Wilmington, Del., a Corporation of New Jersey. Filed June 28, 1905. Serial No. 267,328.



Claim.—1. In a machine for forming comb-powder, a roll having one end formed of sets of converging angular cutting edges and straight cutting edges, extending from the divergent ends of each set of angular cutting edges, there being a cut-away portion of the roll at the opposite end of said straight cutting edges.

2. In a machine for forming comb-powder, a roll having one end formed of sets of converging angular cutting edges and straight cutting edges, extending from the divergent ends of each set of angular cutting edges, there being a cut-away portion of the roll at the opposite end of said straight cutting edges, and a plain surface beyond said straight cutting edges of less diameter than the cutting edges.

3. In a machine for forming comb-powder, a roll provided with angular cutting edges at one end thereof and longitudinal cutting edges extending therefrom, and a plain surface beyond said cutting edges of less diameter than the cutting edges, and a cutting edge at the end of said last-mentioned surface of diameter equal to the last-mentioned cutting edges.

4. In a machine for forming comb-powder, a roll provided with angular cutting edges at one end thereof, and longitudinal cutting edges extending therefrom, there being a cut-away portion of the roll at the opposite end of said longitudinal cutting edges, and a plain surface beyond said cutting edges of less diameter than the cutting edges, and a cutting edge at the end of said last-mentioned surface of diameter equal to the last-mentioned cutting edges and a plain-surfaced roll resting upon said first-mentioned roll.

5. In a machine for forming comb-powder, a roll having one end formed of sets of converging angular cutting edges and straight cutting edges, extending from the divergent ends of each set of angular cutting edges, there being a cut-away portion of the roll at the opposite end of said straight cutting edges, and a plain-surfaced roll resting upon said first-mentioned roll.

6. In a machine for forming comb-powder, a roll having one end formed of sets of converging angular cutting edges and straight cutting edges, extending from the divergent ends of each set of angular cutting edges, there being a cut-away portion of the roll at the opposite end of said straight cutting edges, a plain-surfaced roll resting upon said first-mentioned roll, and means to vary the pressure of the rolls.

7. In a machine for forming comb-powder, a roll having one end formed of sets of converging angular cutting edges and straight cutting edges, extending from the divergent ends of each set of angular cutting edges, there being a cut-away portion of the roll at the opposite end of said straight cutting edges, and a plain surface beyond said straight cutting edges of less diameter than the cutting edges, and a plain-surfaced roll resting upon said first-mentioned roll.

8. In a machine for forming comb-powder, a roll having one end formed of sets of converging angular cutting edges and straight cutting edges, extending from the divergent ends of each set of angular cutting edges, there being a cut-away portion of the roll at the opposite end of said straight cutting edges, a plain surface beyond said straight cutting edges of less diameter than the cutting edges, a plain-surfaced roll resting upon said first-mentioned roll, and means to vary the pressure of the rolls.

9. In a machine for forming comb-powder in combination, a roll provided with angular cutting edges at one end thereof and longitudinal cutting edges extending therefrom and a plain surface beyond said cutting edges of less diameter than the cutting edges and a cutting edge at the end of said last-mentioned surface of diameter equal to the last-mentioned cutting edges and a plain-surfaced roll resting upon said first-mentioned roll.

10. In a machine for forming comb-powder, in combination, a roll provided with angular cutting edges at one end thereof and longitudinal cutting edges extending therefrom and a plain surface beyond said cutting edges of less diameter than the cutting edges and a cutting edge at the end of said last-mentioned surface of diameter equal to the last-mentioned cutting edges and a plain-surfaced roll resting upon said first-mentioned roll, and means to vary the pressure of the rolls.

11. In a machine for forming comb-powder, in combination, a roll provided with angular cutting edges at one end thereof and longitudinal cutting edges extending therefrom, there being a cut-away portion of the roll at the opposite end of said longitudinal cutting edges, and a plain surface beyond said cutting edges of less diameter than the cutting edges, and a cutting edge at the end of said last-mentioned surface of diameter equal to the last-mentioned cutting edges, and a plain-surfaced roll resting upon said first-mentioned roll.

12. In a machine for forming comb-powder, in combination, a roll provided with angular cutting edges at one end thereof and longitudinal cutting edges extending therefrom, there being a cut-away portion of the roll at the opposite end of said longitudinal cutting edges, and a plain surface beyond said cutting edges of less diameter than the cutting edges, and a cutting edge at the end of said last-mentioned surface of diameter equal to the last-mentioned cutting edge, and a plain-surfaced roll resting upon said first-mentioned roll, and means to vary the pressure of the rolls.

13. A cutting device for forming comb-powder, comprising sets of angular cutting edges forming one end of said device and straight cutting edges extending from the divergent ends of each set of angular cutting edges, and a cut-away portion or pocket at the opposite end of said straight cutting edges.

14. A cutting device for forming comb-powder comprising angular cutting edges at one end and longitudinal cutting edges extending therefrom, and a cut-away portion or pocket at the opposite end of said longitudinal cutting edges, and a plain surface beyond said cutting edges and at a lower plane than said cutting edges.

15. A cutting device for forming comb-powder comprising angular cutting edges at one end and longitudinal cutting edges extending therefrom and a plain surface beyond said cutting edges and at a lower plane than said cutting edges, and a cutting edge at the end of said last-mentioned surface in the same plane as the last-mentioned cutting edges.

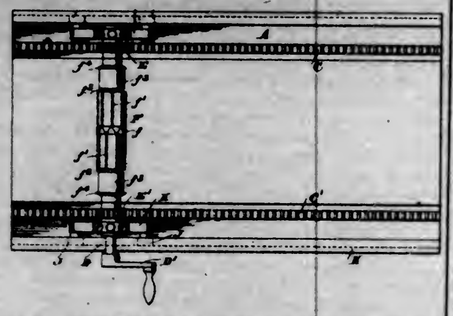
16. A cutting device for forming comb-powder, comprising angular cutting edges at one end and longitudinal cutting edges extending therefrom, and a cut-away portion or pocket at the opposite end of said longitudinal cutting edge a plain surface beyond said cutting edges and at a lower plane than said cutting edges, and a cutting edge at the end of said last-mentioned surface in the same plane as the last-mentioned cutting edges.

821,866. MACHINE FOR MAKING COMB-POWDER. Charles Dobbs and John R. Pitman, Haskell, N. J., assignors to The E. I. Du Pont de Nemours Powder Company, Wilmington, Del., a Corporation of New Jersey. Filed June 28, 1905. Serial No. 267,329.

Claim.—1. In a machine for forming comb-powder, in combination, a bed-plate adapted to receive the powder block or strip and a roller, one of said devices having angular cutting edges forming one end and straight cutting edges extending therefrom, a cut-away portion or pocket beyond straight cutting edges, and means to cause said roller to rotate and travel over said bed-plate.

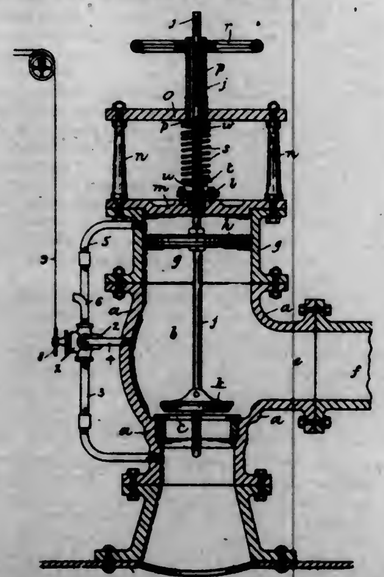
2. In a machine for forming comb-powder, in combination, a bed-plate adapted to receive the powder block or strip and a roller, one of said devices having angular cutting edges forming one end and straight cutting edges extending therefrom, a cut-away portion or pocket beyond said straight cutting edges, a plain surface beyond said cutting edges and at a lower plane than said cutting edges, means to cause said roller to rotate and travel over said bed-plate.

3. In a machine for forming comb-powder, in combination, a bed-plate adapted to receive the powder block or strip and a roller, one of said devices having angular cutting edges forming one end and straight cutting edges extending therefrom, and a plain surface beyond said cutting edges and at a lower plane than said cutting edges, and a cutting edge at the end of said last-mentioned surface in the same plane as the last-mentioned cutting edges, and means to cause said roller to rotate and travel over said bed-plate.



4. In a machine for forming comb-powder, in combination, a bed-plate adapted to receive the powder block or strip and a roller, one of said devices having angular cutting edges forming one end and straight cutting edges extending therefrom, and a cut-away portion or pocket beyond said straight cutting edges, a plain surface beyond said cutting edges and at a lower plane than said cutting edges, a cutting edge at the end of said last-mentioned surface in the same plane as the last-mentioned cutting edges, and means to cause said roller to rotate and travel over said bed-plate.

821,867. **STEAM-VALVE.** ALBERT H. FARMER, Devonport, New Zealand. Filed Aug. 29, 1905. Serial No. 276,227.



Claim.—1. In steam-valves, a cylinder above the valve-chamber and connected thereto, a piston in such cylinder, a rod connected with such piston, a valve smaller than the piston and arranged to move therewith, steam-pipes leading into the cylinder at points above and below the piston, a steam-pipe leading from the valve below the valve-seat, a four-way cock connected to all of such pipes, and adapted to make connections between any two of them, and means whereby the cock may be operated at any distance therefrom, as and for the purpose specified.

2. In steam-valves, a cylinder above the valve-chamber and connecting therewith, a piston fitting within such cylinder, a valve-rod connected at its bottom end to the valve, passing upward through and secured to the piston and through and beyond the cylinder-cover, a spring in compression bearing at its top end against a plate fixed above the valve and at its bottom end upon a plate fixed on the rod, and a sleeve screwing through the fixed plate above the cylinder and resting at its bottom end upon a collar secured upon the rod, substantially as specified.

3. In steam-valves, a cylinder above the valve-chamber and connecting therewith, a piston fitting within such cylinder, a valve-rod connected at its bottom end to the valve, passing upward through and secured to the piston and through and beyond the cylinder-cover, a spring in compression bearing at its top end against a plate fixed above the valve and at its bottom end upon a plate fixed on the rod, a sleeve screwing through the fixed plate above the cylinder and resting at its bottom end upon a collar secured upon the rod, and means whereby steam may be conducted from below the valve-seat to the cylinder at points alternately above or below the piston within such cylinder, substantially as specified.

4. In steam-valves, a cylinder above the valve-chamber and connected therewith, a piston fitting within such cylinder, a valve-rod passing through and secured to the piston, the bottom of which is connected to the valve while its top end projects outside of the cover of the cylinder, a second cylinder in open connection with the valve, at a point below the valve-seat, a piston fitting within said cylinder, a rod passing upward from such piston, and outside of the cylinder-cover, and a rocking beam pivoted upon the valve-cover and having its respective ends articulately connected with the valve-rod and second piston-rod at points outside of the valve-cover, substantially as specified.

5. In steam-valves, a cylinder above the valve-chamber, and connected therewith, the piston fitting within such cylinder, a valve-rod passing through and secured to the piston, the bottom end of which is connected to a valve while its top end projects outside of the cover of the cylinder, a second cylinder formed parallel with the valve-chamber and in open connection with the valve, at a point below the valve-seat, a piston fitting within such cylinder, a rod passing upward from such piston, and outside the cylinder-cover, a rocking beam pivoted above the valve-cover and having its respective ends articulately connected with the valve-rod and a second piston-rod at points above the valve-cover, and means whereby the steam may be conducted from below the valve-seat into the cylinder above the valve-chamber to points alternately below or above the piston therein, substantially as specified.

6. In steam-valves, a cylinder above the valve-chamber and connecting therewith, a piston in such cylinder, a rod passing through such piston and fastened thereto, a valve connected to the bottom end of the rod, said valve being smaller than the piston, means whereby steam may be admitted to the cylinder from below the valve-seat alternatively to points above or below the piston, means, separate from the piston and valve, for normally pressing the valve down upon its seat, and means, outside of the valve-body, for adjusting the valve, substantially as specified.

821,868. **ARMOR FOR CYCLE-TIRES.** EMANUEL GRIEMER, Ditzenbach, Germany. Filed Apr. 27, 1905. Serial No. 257,687.

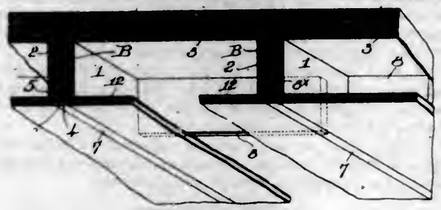


Claim.—1. Armor for cycle-wheels, comprising a plurality of stationary and movable guards covering the tire, the stationary guards being secured to a suitable part of the cycle, while the movable ones slide on the stationary ones, a plurality of pairs of radial stays secured to the ends of the hub of the wheel, and bridging over the guards, and means for securing the guards in the position in which they have been adjusted, substantially as described.

2. In combination, wheels having a laterally-grooved rim, a plurality of stationary and movable guards covering the tire, with their edges fitting into the grooves in the wheel-rim, the stationary guards being secured to a suitable part of the cycle, while the movable ones slide on the stationary ones, a plurality of pairs of radial stays secured to the ends of the hub of the wheel, and bridging over the guards, and means for securing the guards in the position in which they have been adjusted, substantially as described.

3. In combination, wheels having a laterally-grooved rim, a plurality of stationary and movable guards covering the tire, with their edges fitting into the grooves in the wheel-rim, the stationary guards being secured to a suitable part of the cycle, while the movable ones slide on the stationary ones, a plurality of pairs of radial stays secured to the ends of the hub of the wheel, and bridging over the guards, means for securing the sliding guards in their retracted position, and means for locking them in their extended position, substantially as described.

821,869. **FORM FOR CONCRETE CONSTRUCTION.** HAROLD W. HATHAWAY, Dayton, Ohio. Filed Dec. 1, 1905. Serial No. 289,763.



Claim.—1. In concrete building construction, a series of light metallic forms each comprising two beam side molding portions, and an intervening floor-slab support or molding portion, and elongated channel-like members to lock the lower edges of said forms together from end to end and complete the beam-molding portions.

2. In concrete building construction, a series of metallic forms adapted when assembled to mold a plurality of beams and intervening floor-slabs, means to lock said forms in assembled position, and means to sustain ceiling-lathing between the beam-molding parts of the forms.

3. In concrete building construction, a series of longitudinally-telescopic adjustable sheet-metal forms adapted when assembled to mold a plurality of beams and intervening floor-slabs, and means to lock said adjustable forms in assembled position.

4. A sheet-metal form for concrete construction, comprising two longitudinally-telescopic members each having a floor-slab-molding portion and at each side a depending portion to mold one side of a beam, and means to lock a depending portion of one form to a similar portion of another form.

5. In concrete construction, separable metallic forms to constitute molds for beams and floor-slabs, means to interlock a plurality of such forms in operative position, and means to sustain metallic ceiling-lathing on such interlocked forms.

6. In concrete construction, separable metallic forms to constitute molds for beams and floor-slabs, the lower edges of the side portions of each beam-mold having longitudinally-extended and continuous locking-lips, and a locking member for each beam-mold provided with portions to interlock with the said extended locking-lips and thereby maintain a series of forms in operative position.

7. A metallic form member for concrete construction, comprising a floor-slab support, a downturned portion at each side thereof to constitute the side of a beam-mold, transverse bracing between such downturned portions, and locking means on the latter whereby two adjacent members may be locked together.

8. In concrete construction, sheet-metal forms comprising depending beam-molding portions having locking means on their lower edges, slab-supporting portions connecting the adjacent sides of two beam-molding portions, and an elongated locking member to coöperate with the locking means on the lower edges of each coöperating pair of beam-molding portions from end to end of said edges.

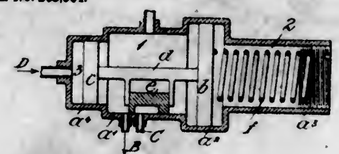
9. In concrete construction, cellular floor-slab portions, depending sheet-metal portions detachably connected therewith, to mold the sides of the beams, and means extending the length of and to lock together in operative position adjacent pairs of beam side molding portions.

10. A cellular, metallic member for concrete construction, having a depression in one of its longitudinal edges and a tongue on its opposite edge.

11. In concrete wall construction, a series of cellular, metallic members set in upright position one upon another in tiers, one longitudinal edge of each member having a groove and its opposite edge having a tongue, upright standards, sockets in which their lower ends are fixed, and means to detachably clamp the cellular members to the standards.

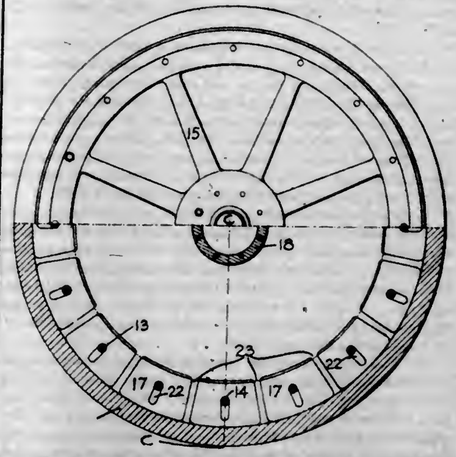
12. Metallic forms for concrete construction, comprising separable members constituting sides for beam-molds and having integral lateral extensions to support intervening floor-slabs, and means extending longitudinally of the lower edges of the members to lock together said members in pairs along the bottom of the beam-mold

821,870. **REGULATOR FOR AIR-PUMPS.** WILHELM HILDEBRAND, Gross-Lichterfelde, near Berlin, Germany. Filed June 6, 1905. Serial No. 263,964.



Claim.—A pump-regulator for air-brakes comprising a casing of varying diameters, two pistons therein of different diameters dividing the casing into three chambers 1, 2, 3, the chambers 1 and 2 being on opposite sides of the large piston and the chamber 3 on the rear side of the small piston, a rod connecting the pistons together, lugs on said rod, means for connecting the chamber 3 with the brake-pipe, means for connecting the chamber 1 with the main reservoir, a pipe B connecting the chamber 1 with the cut-off device of the pump, a pipe C adjacent said pipe B leading to the atmosphere, a slide-valve connected to the rod by the lugs thereon, said valve in one position connecting the pipe B with the pipe C and in its other position permitting pipe B to communicate with the chambers 1 and a spring in chamber 2 for controlling the movement of the pistons.

821,871. **CUSHIONED PNEUMATIC TIRE.** DAVID B. HISLOP, Aberdeen, Scotland. Filed Sept. 16, 1905. Serial No. 278,839.

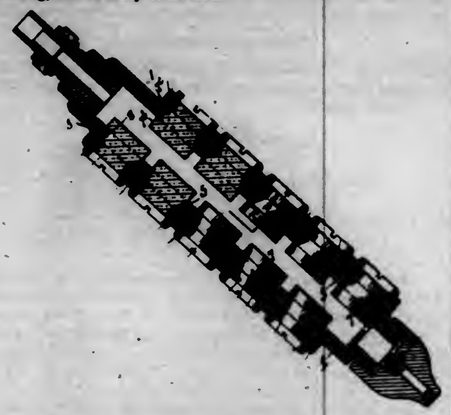


Claim.—A wheel comprising a hub, side members secured thereto, an elastic cushion 10 gripped between the outer edges of said members, bolts 13 adjacent the outer edges of said members for holding the members in gripping relation with the cushion, a plurality of blocks having slots therein through which the bolts pass, said blocks lying between the members, an annular inflatable bag arranged between the side members and the hub and blocks and a cushion 21 between the outer edge of said bag and the inner edges of the blocks, said blocks being arranged with a space between their adjacent edges.

821,872. **GAGE-GLASS.** CLARENCE B. HODGES and FREDERICK W. HODGES, Detroit, Mich. Filed Dec. 24, 1903. Serial No. 186,496.

Claim.—1. A gage-glass consisting of a metallic casing having an aperture, combined with an observation-glass adapted for inser-

tion in said aperture and having sides inclined with reference to a line drawn horizontally through said glass from front to rear and at a right angle to the front face of the casing, the sides of said glass diverging from the exterior toward the interior of the casing, a packing inclosed within said aperture and embracing the inclined sides of the glass, and means for engaging said packing, the construction being such that the glass under internal pressure is self-seating against the packing, substantially as set forth.



2. A gage-glass consisting of a metallic casing having apertures upon opposite sides thereof, combined with observation-glasses each adapted for insertion in one of said apertures and having sides inclined with reference to a line drawn horizontally through said glass from front to rear and at a right angle to the front face of the casing, the sides of said glass diverging from the exterior toward the interior of the casing, a packing for each glass inclosed within one of said apertures and embracing the sides of the glass, and means for engaging said packing, the construction being such that the glass under internal pressure is self-seating against the packing, substantially as set forth.

3. A gage-glass consisting of a perforated metallic casing combined with transparent means having sides inclined with reference to a line drawn horizontally through said means from front to rear and at a right angle to the front face of the casing, the sides of said transparent means diverging from the exterior to the interior of the casing, reflecting means in the rear of said transparent means, a packing for the transparent means, and means for engaging said packing, the construction being such that the transparent means under pressure is self-seating against the packing, substantially as set forth.

4. A gage-glass consisting of a metallic casing having an aperture combined with an observation-glass adapted to fit said aperture but leaving an annular space between the sides of the glass and the walls of the aperture, said space converging from the exterior toward the interior of the casing, a packing inclosed within said annular space, and means for retaining said packing in place, the construction being such that the strain of the packing is on the sides of the glass, substantially as set forth.

5. A gage-glass consisting of a metallic casing having an aperture combined with an observation-glass having its sides inclined with reference to a line drawn horizontally through said glass from front to rear and at a right angle to the front face of the casing, the sides of said glass diverging from the exterior toward the interior of the casing, the inclined sides of the observation-glass being arranged to internally reflect the movement of the liquid within the casing, and a packing against which the glass under internal pressure is self-seating, substantially as set forth.

821,878. **ELECTRIC FUSE.** OTTO C. HOFFMANN, Buffalo, N. Y., assignor to The Fuse Wire & Manufacturing Company, Buffalo, N. Y., a Corporation of New York. Filed Apr. 26, 1904. Serial No. 204,767.



Claim.—1. A fuse for electric circuits consisting of an integral cylindrical conductor flattened to a thin sheet-like section and thus presenting the greatest area at its fusing-point.

2. A fuse for electric circuits consisting of an integral conductor presenting the greatest area and a thinner section at a predetermined point along its length which is to become its fusing-point.

3. A fuse for electric circuits consisting of an integral cylindrical conductor presenting the greatest area and the smallest cross-section at a predetermined point along its length which is to become its fusing-point.

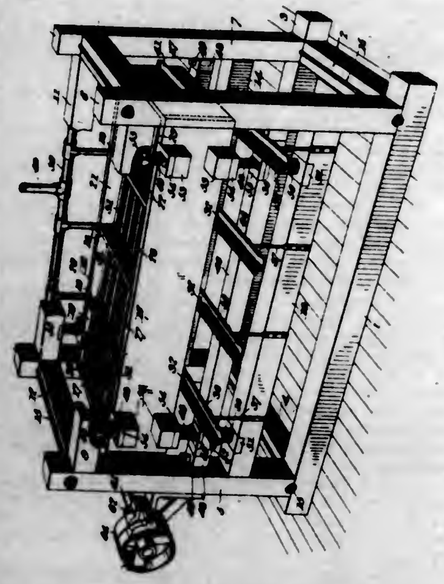
4. In an inclosed fuse, a casing, an indicator for the fuse consisting of a fine difficultly-visible wire flattened and greatly extended as to area so as to be visible at a predetermined point in its length, and a depression extending partially through the wall of the casing in which the indicator lies, for the purpose set forth.

5. In an inclosed fuse an indicator consisting of a fusible conductor of small size passing from the interior to the exterior of the inclosure flattened so as to be visible at a point outside the inclosure, and a backing for the fuse depressed below the general surface of the surrounding material against which the flattened part lies, the walls of the depression of different color than the surroundings.

6. In an inclosed fuse an indicator consisting of a fusible conductor of small size flattened so as to be visible at a predetermined point in its length, a backing for the fuse, the fuse lying upon the backing and a varnish for covering the fuse.

7. In an inclosed fuse an indicator consisting of a fusible conductor of small size, a discolorable backing, the fuse lying upon the backing and a discolorable varnish covering the fuse.

821,874. **ORE-CONCENTRATOR.** JOHN G. KIRKNEY, Carthage, Mo. Filed Apr. 17, 1905. Serial No. 256,008.



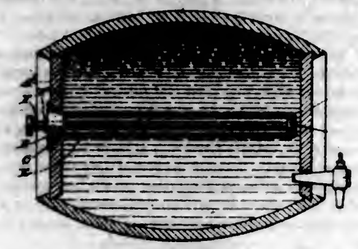
Claim.—1. In a concentrator, a screen-box provided with a plurality of compartments each having an inclined floor, and all of the floors being disposed in like planes, spacing-stripe secured to each of the floors, screens of different mesh secured to the spacing-stripe, an oversize discharge-pipe arranged at the lower end of each compartment, and a triangular material-divider combined with each of the pipes.

2. In a concentrator, a screen-box provided with a plurality of transverse partitions each having a plurality of openings, an inclined floor or bottom for each compartment, spacing-stripe having their opposed faces arranged in alinement with the openings, screens secured to the spacing-stripe, and oversize discharge-pipes disposed at the lower ends of the compartments.

3. In a concentrator, the combination with a supporting-frame, of a screen-box provided with outward-projecting lugs near each end thereof, spring-pressed beams disposed beneath the box, and toggle members engaging the lugs, spring-pressed beams, and a plurality of the frame-bars.

4. In a concentrator, the combination with a screen-box provided with a plurality of compartments, each having screens of different mesh, an oversize discharge-pipe arranged near the lower end of each compartment, a triangular material-divider combined with each of the pipes and having its apex disposed toward the feed end of the box, and means for imparting longitudinal reciprocatory and vertical oscillatory movements to the box.

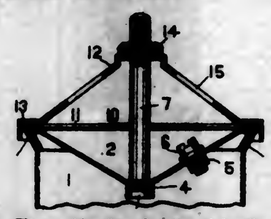
821,875. **MEANS FOR EMPTYING RECEPTACLES.** GEORGE M. KNEUPER, New York, N. Y. Filed Feb. 21, 1903. Serial No. 144,456.



Claim.—1. The combination with a receptacle having an outlet for its contents, of a holder extending within said receptacle, and an expansible bag stretched or distended over the end of said holder, within the receptacle, and communicating with the outer air.

2. The combination with a receptacle having an outlet for its contents, of a tubular perforated holder communicating with the outer air and located within the receptacle, and an expansible bag located within the said receptacle and stretched over the end of said holder so as to be held permanently in a distended condition.

821,876. **CAP FOR PIPES.** JOHN C. LAUTH, Rochester, N. Y. Filed July 31, 1905. Serial No. 272,117.



Claim.—1. The combination of a pipe of ductile material having an inwardly-projecting integral flange, a flange-plate situate within the pipe and adapted to fit against said flange, a cap-plate outside of said flange and fitting upon the same, and means for clamping the said two plates together upon the flange of said pipe.

2. The combination of a pipe of ductile material having an inwardly-projecting integral flange, a conical flange-plate situate within the pipe and having a base-surface adapted to fit against said flange and to expand said pipe, a cap-plate outside of said flange and fitting upon the same, and means for clamping the said two plates together upon the flange of said pipe.

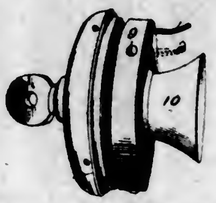
3. The combination of a pipe of ductile material having an inwardly-projecting integral flange, a flange-plate situate within the pipe and adapted to fit against said flange, a cap-plate outside of said flange and fitting upon the same, a gasket between one of said plates and the flange of said pipe, and means for clamping the said two plates and the gasket together upon the flange of said pipe.

4. The combination of a pipe of ductile material having an inwardly-projecting integral flange, a conical flange-plate situate within the pipe and having a base-surface adapted to fit against said flange and to expand said pipe, a cap-plate outside of said flange and fitting upon the same, a gasket between one of said plates and the flange of said pipe, and means for clamping the said two plates and the gasket together upon the flange of said pipe.

5. The combination of a pipe of ductile material having an inwardly-projecting integral flange, a dished flange-plate having its convexity adapted to project into the interior of the pipe and having its edge adapted to fit against the inner side of said flange, a dished cap-plate outside of said flange and fitting upon the outer surface of said flange, and means for clamping the said two plates together upon the said flange.

6. The combination of a pipe of ductile material having an inwardly-projecting integral flange, a flange-plate situate within the pipe and adapted to fit against the inner surface of said flange, a test-screw in said flange-plate, a cap-plate outside of said flange and fitting upon the same and having an opening for access to the test-screw, and means for fastening the said two plates together upon the flange of said pipe.

821,877. **MUFFLER FOR TELEPHONE-TRANSMITTERS.** GEORGE A. LOWE, Hartford, Conn. Filed Mar. 1, 1904. Serial No. 196,067.



Claim.—1. A telephone-transmitter including a casing having an opening thereinto, a muffler-case removably secured thereto and comprising a casing, and a shutter arranged to slide within the removable casing.

2. A telephone-transmitter including a casing with an opening thereinto for the reception of a mouthpiece, a muffler-casing adapted to be secured within said opening, said muffler-casing having an opening to receive the mouthpiece, and a muffler-shutter arranged to slide within the removable casing.

3. A telephone-transmitter having a casing with an opening thereinto to receive a mouthpiece, a muffler-casing arranged to be removably secured within said opening and having an opening to receive said mouthpiece, and a muffler normally located within the muffler-casing to permit passage of sound to the diaphragm in the transmitter, and means for moving the muffler to prevent vibration of the diaphragm.

4. A telephone-transmitter having an opening for the reception of a mouthpiece, a muffler-casing arranged to be removably secured within said opening and having an opening for said mouthpiece, a muffler located within the muffler-casing, and means for moving the muffler to prevent vibration of the diaphragm.

5. A telephone including a casing with a diaphragm arranged therein, a mouthpiece-opening to said diaphragm for the passage of sounds, an inclosed shutter having an aperture normally registering with the opening of the mouthpiece, means for moving said shutter into position with its aperture out of registering position with said mouthpiece, and means for returning said shutter to normal position after movement.

6. A telephone-transmitter, a casing, means for securing the casing to the transmitter, said casing comprising two parts one adapted to receive the other, means for drawing the two parts together and securing them, and a shutter arranged to slide within the casing.

7. A telephone-transmitter, a muffler-case comprising two parts, one of which has a flange overlying the other, screws extending through said flange, and an angular groove formed in one of said parts and adapted to be engaged by said screws whereby the parts of the muffler-case are drawn together and secured.

8. A telephone-transmitter including a casing having an aperture thereinto, a muffler removably secured thereto and comprising a casing with means for securing said casing appurtenant to the opening in the transmitter, a shutter arranged to slide within the casing, and means for holding the shutter normally at one limit of its play.

9. In combination with a telephone-transmitter including a casing with an opening thereinto, a removable muffler including a casing having an opening registering with that of the transmitter, interengaging screw-threads for securing said muffler-casing to the transmitter, a shutter arranged to move within the casing, means for holding said shutter at one limit of its play, and means extending without the casing for actuating the shutter.

10. A telephone-transmitter, a muffler including a casing, a slideway formed in the casing, spring-pockets arranged adjacent to

the slideway, a muffler-shutter provided with an opening therethrough and having lugs overlying said spring, and means for depressing the muffler-shutter.

821,878. AUTOMATICALLY-ADJUSTABLE DRAWING-PEN. JOHN A. MARTIN-COOKE, Louisville, Ky. Filed May 6, 1905. Serial No. 259,166.

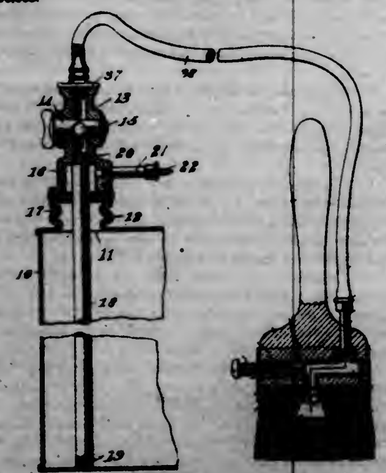


Claim.—1. In a drawing-pen, the combination of a pen and means adapted to work in contact with the paper or other stationary surface in the plane of the paper for automatically spreading the blades of said pen while a line is being drawn.

2. In a drawing-pen, the combination of blades, means for setting the normal spread of said blades, and means adapted to work in contact with the paper or other stationary surface in the plane of the paper for automatically spreading said blades while drawing a line.

3. In a drawing-pen, the combination of blades, a set-screw for regulating the normal spread of said blades and an arm clamped on said set-screw and adapted to work with its free end in contact with the paper or other surface in the plane of the paper and regulate the spread of said blades.

821,879. FOUNTAIN PAINT-BRUSH. GOTTFRIED MEYER and CHARLES G. BRAUN, Philadelphia, Pa. Filed Nov. 23, 1905. Serial No. 288,563.

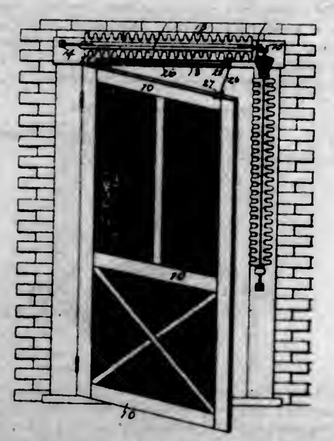


Claim.—1. In a device of the class described, a brush having a transverse recess in the head portion, a tubular member within said recess, a web of flexible material depending from said tubular member and with the sides converging to the discharge end and disposed among the bristles of the brush, said tubular member provided with an outlet communicating with the interior of the flexible web, a feed-tube connected to said tubular member and leading outwardly from said brush-head, a plunger slidable in said tubular member and adapted to cut off the flow of the material therefrom, and means for supplying paint under pressure to the feed-tube.

2. In a device of the class described, a brush having a transverse recess in the head portion and opening outwardly therefrom, a tubular member within said recess, a casing of sheet metal inclosing said head portion and closing said recess, a web of flexible material depending from said tubular member and with the sides converging to the discharge end and disposed among the bristles of the brush, a feed-tube connected to said tubular member and leading outwardly through said brush-head, a plunger slidable in said tubular member and adapted to cut off the flow of the material therefrom, and means for supplying paint under pressure to the feed-tube.

3. In a device of the class described, a brush having a transverse recess in the head portion, a tubular member within said recess, a branch depending from said tubular member, a tubular web depending from said branch and with the sides converging to the discharge end and disposed among the bristles of the brush, a feed-tube connected to the tubular member, a plunger slidable in said tubular member, and adapted to cut off the flow of the material therefrom and with an operating-stem extending beyond the head portion, a spring operating to maintain said plunger and stem yieldably in withdrawn position, and means for supplying paint under pressure to the feed-tube.

821,880. AUTOMATIC FLY-BRUSH AND DOOR-CLOSER. ABRAHAM MILLER, Newton, Iowa. Filed Mar. 7, 1904. Serial No. 197,062.



Claim.—1. In an automatic fly-brush and door-closer, a brush-carrying tube, a cone-shaped spirally-grooved pulley fixed in the top of the tube, a shaft extending axially in said tube and pulley, a toothed wheel fixed to the shaft, detent means engaging said toothed wheel a spring connected to the tube and the shaft, and fixed bearings for supporting the shaft in position.

2. An automatic fly-brush and door-closer comprising a horizontal rotatable brush having a shaft, bearings for said shaft fixed to the door-casing, a disk on said shaft, a vertically-extending brush at the side of the door having a cone-shaped pulley at its top, the said disk engaging the top of said cone-shaped pulley, a shaft for the last-named brush, fixed bearings for said last-named shaft, a spring connected to the shaft and the brush, detent means for holding the shaft and spring against back movement, and a cord connected to the top of the cone-shaped pulley and to the door.

3. An automatic fly-brush and door-closer comprising a rotatable brush having a shaft mounted in bearings fixed to a door-casing to extend horizontally, a disk on said shaft, a spring-actuated brush having a cone-shaped pulley at its top mounted in fixed bearings to extend vertically at the side of a door, the said disk engaging the top of said cone-shaped pulley, a spur-wheel on the lower end of the axis of the brush, a pawl to engage said spur-wheel, a cord fixed to the top of the cone-shaped pulley and extended over directing-pulleys attached to the door-casing and fixed to the top of a hinged door, all arranged and combined to operate in the manner set forth for the purposes stated.

4. In an automatic fly-brush and door-closer, a tube having longitudinal grooves, wires extended through the grooves and brush material clamped to the tube under the wires, and means for fastening the wires to the ends of the tube, arranged and combined for the purposes stated.

821,881. HOCKEY-GAME APPARATUS. JOHN L. B. PELL and EDWARD L. C. CLARK, Great Barrington, Mass. Filed May 13, 1905. Serial No. 260,218.



Claim.—The herein-described game apparatus consisting of a field composed of a sheet of fabric, two opposite boundary-strips secured to said fabric, two removable boundary-strips, and means for securing them at the ends to the strips secured to the fabric, raised goal-pieces secured to the fabric at a distance from the boundary-strips in combination with a puck and an implement to propel the same.

821,882. ROLLER-BEARING. JULIUS A. PERKINS, Omaha, Nebr., assignor to Moffett Bearing Company, Council Bluffs, Iowa. Filed Nov. 14, 1903. Serial No. 181,134.



Claim.—1. In a roller-bearing, an axle, a box, a rider, a plurality of leader-rolls sustained therein, and a series of detached bearing-rollers and separators maintained in parallelism with and by said leader-rolls.

2. In a roller-bearing, an axle, a box, a series of bearing-rollers and separators interposed between said axle and box, a rider, and a plurality of leader-rolls mounted therein, said leader-rolls maintained with their axes in parallelism serving to maintain the axes of the bearing-rollers and separators in parallelism.

3. In a roller-bearing, an axle, a box, a rider, a plurality of leader-rolls sustained therein, and a series of detached bearing-rollers and interposed separators, said detached rollers and separators traveling with the rider and its leader-rolls in their movement about the longitudinal axis of the axle.

821,883. FUSE. FRANCIS I. DU PONT, Wilmington, Del., assignor to The E. I. Du Pont de Nemours Powder Company, Wilmington, Del., a Corporation of New Jersey. Filed Jan. 5, 1906. Serial No. 294,719.

Claim.—1. In combination, a plurality of fuses, or sets of fuses, each fuse comprising a casing containing fulminate of mercury, a block of smokeless powder above said mercury, said block in the fuses, or sets of fuses, being of different thicknesses, and an electric circuit including all of said fuses.

2. In combination, a plurality of fuses, or sets of fuses, each fuse comprising a casing containing fulminate of mercury, a block of smokeless powder above said mercury, said block in the fuses, or sets of fuses, being of different thicknesses, and black powder above said block, and said electric circuit including all of said fuses.

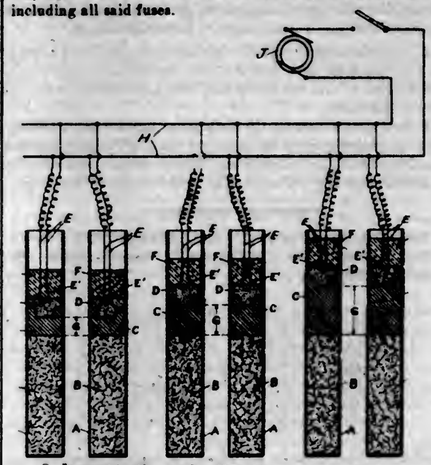
3. A fuse, comprising a casing, containing fulminate of mercury, a block of smokeless powder above said mercury.

4. A fuse comprising a casing, containing fulminate of mercury, a block of smokeless powder above said mercury, and black powder above said block.

5. A fuse comprising a casing, containing fulminate of mercury, a block of smokeless powder above said mercury, said block being of predetermined thickness.

6. A fuse comprising a casing, containing fulminate of mercury, a block of smokeless powder above said mercury, and black powder above said block, said block being of predetermined thickness.

7. A plurality of fuses, or sets of fuses, each fuse comprising a casing containing fulminate of mercury, a body of smokeless powder above said mercury, the thickness of the body of smokeless powder varying in the different fuses, or sets of fuses, and an electric circuit including all said fuses.



8. In combination, a plurality of fuses, or sets of fuses, each fuse comprising a casing containing fulminate of mercury, a body of smokeless powder above said mercury, said body in the fuses, or sets of fuses, being of different thicknesses, a black powder above said smokeless powder, and an electric circuit including all of said fuses.

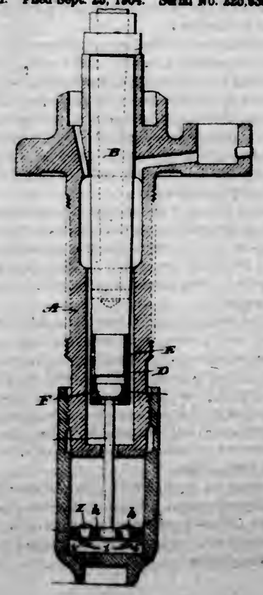
9. A fuse, comprising a casing containing fulminate of mercury, a body of smokeless powder above said mercury.

10. A fuse, comprising a casing containing fulminate of mercury, a body of smokeless powder above said mercury, and black powder above said smokeless powder.

11. A fuse, comprising a casing containing fulminate of mercury, a body of smokeless powder above said mercury, said body of smokeless powder being of predetermined thickness.

12. A fuse, comprising a casing containing fulminate of mercury, a body of smokeless powder above said mercury, and black powder above said smokeless powder, said body of smokeless powder being of predetermined thickness.

821,884. SPINDLE. JAMES C. POTTER, Pawtucket, R. I., assignor to American Spindle Company, Pawtucket, R. I., a Corporation of Rhode Island. Filed Sept. 23, 1904. Serial No. 225,630.

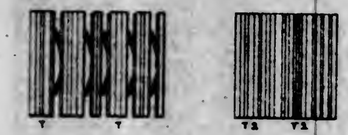


Claim.—1. In a spindle-bearing, the combination of a bolster, a bolster-case, a piston secured to the lower end of the bolster-case, and means for offering resistance to the upward movement of the piston while permitting a free downward movement thereof.

2. In a spindle-bearing, the combination of a bolster, a bolster-case, a rod jointedly secured to the lower end of the bolster-case, a piston secured to said rod and loosely fitting the bolster-case, and valves in said piston.

3. In a spindle-bearing, the combination of a bolster, a bolster-case, a rod jointedly secured to the lower end of the bolster, a piston secured to said rod, and loosely fitting the bolster-case, and valves in said piston consisting of conical plugs seated in conical openings.

821,885. **SPACE FOR JUSTIFYING LINES OF TYPE.** DAVID B. RAY, New York, N. Y. Filed Sept. 6, 1905. Renewed Nov. 26, 1905. Serial No. 289,434.



Claim.—1. A space for use for setting type having a body portion of a single thickness, and a compressible non-resilient tongue of the same thickness as the body of the space-piece and normally at an angle to said body portion.

2. A space for use in setting type consisting of a body portion, a compressible, non-resilient tongue integral therewith and normally projecting at an angle therefrom said tongue being adapted to be pressed back to the plane of the base-piece and adapted to lie within the margins of the ends of the body part.

3. A space for use in justifying lines of type consisting of a base-piece and integral outward-projecting compressible, non-resilient tongues equal in thickness to the base-piece and the tongues being adapted to be pressed back to the plane of the base-piece, the base-piece extending to the ends of the tongues when said tongues are in the plane of the base-piece.

4. A space for use in justifying lines of type consisting of a non-resilient blank divided longitudinally near each of its ends to form outward-extending compressible, non-resilient tongues, said tongues normally standing at an acute angle to the base-piece, and one of said tongues being formed at each end of the base.

5. A space for use in setting type, having an incompressible body portion, and a compressible but non-resilient tongue shorter than the body and being struck out of the blank of the said body portion, substantially as described.

6. A space for use in setting type, having an incompressible body portion and oppositely-disposed compressible but non-resilient tongues integral with the said body portion the said body portion being longer than the tongues, substantially as described.

7. A space for use for setting type, having an incompressible body portion and oppositely-disposed compressible but non-resilient tongues integral with the said body portion the said body portion being longer than the tongues and provided with a foot as wide as a type, substantially as described.

8. A space for use in setting type, the same consisting of a non-resilient blank divided longitudinally from its ends toward the center on a median line, two of said divisions forming a straight body portion, and the other two of said divisions being bent outwardly from the blank to form projecting non-resilient tongues, substantially as described.

9. A space for use in setting type, consisting of a non-resilient body portion, having a non-resilient tongue struck up therefrom, the said tongue being cut out from the blank of the body and adapted to be forced back into the plane of said body, substantially as described.

10. A space for use in justifying type having a straight flat incompressible body part and oppositely-disposed compressible tongues integral with the said body part said body part extending to the ends of the tongues and on which the space is adapted to rest when in position in the lines of type.

11. A space for use in justifying lines of type having a flat body part and tongues integral with said body part and extending at an angle thereto, the body part extending to the ends of the tongues and being provided with a foot on which it is adapted to rest when in position in a line of type.

12. A space for use in justifying lines of type having a flat body part and oppositely-disposed compressible tongues struck up from said body part and normally extending at an angle thereto, said tongues being adapted to be pressed back into the plane of the body part, said body part extending to the ends of the tongues when the same are compressed, whereby the space-pieces will rest on each end of the body part when in position in a line of type.

13. For use in setting type, a compressible non-elastic space made of a single thickness of metal, and not folded on itself, having branches extending outward from near the middle part thereof.

14. For use in setting type a compressible non-elastic space made of a single thickness of metal and not doubled over, having branches exteading outward from near the middle part thereof so constructed that said branches can be compressed into the same plane with said middle part.

15. For use in setting type, a compressible non-elastic space made of a single thickness of metal, not folded over, divided lengthwise from a point near the middle part thereof to a point near the end of the same, thereby forming branches extending from said middle part.

16. For use in setting type a compressible non-elastic space having branches of equal length one or more of which when undergoing compression exerts a downward pressure and the other an equal upward pressure against the adjoining type whereby the words in a line are braced apart equally and the type are not pushed upward.

821,886. **WHEEL.** ARCHIBALD J. ROBERTSON, Chicago, Ill. Filed Oct. 6, 1905. Serial No. 281,646.



Claim.—1. In a wheel, the combination with an inner rotating element having in one of its surfaces an annular recess extending from its periphery inwardly, of an annular plate detachably secured to said element in said recess and having a peripheral groove, and an independently-rotatable rim supporting said element and plate against the peripheries thereof.

2. In a wheel, the combination with an inner rotating element having in one of its faces an annular recess extending from its periphery inwardly, of an annular plate detachably secured to said element in said recess and having a peripheral groove, an independently-rotatable rim supporting said element and plate against their peripheries, and means for supporting said rim against lateral movement with respect to the inner element.

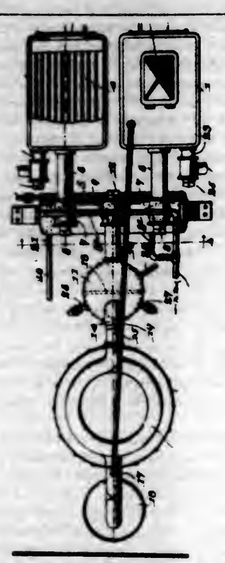
3. In a wheel, the combination with an inner rotating element having in one of its surfaces an annular recess extending from its periphery inwardly, of an annular plate detachably secured to said element in said recess and having a peripheral groove, an independently-rotatable rim supporting said element and plate against the peripheries thereof and having on its inner periphery an inwardly-extending rib to operate in the said groove.

4. In a wheel, the combination with an inner rotating element having in one of its faces an annular recess extending from its periphery inwardly and terminating with an outwardly-beveled shoulder, the intermediate part of the wall of said recess being outwardly inclined, of an annular plate detachably secured to said element in said recess and having a peripheral groove, the inner periphery and inner surface of said plate being formed to correspond with the inclination of the wall and shoulder of said recess, an independently-rotatable rim supporting said element and plate against their peripheries and having on its inner periphery an inwardly-extending rib to operate in the said groove.

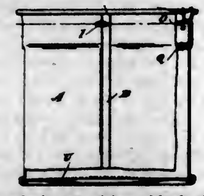
821,887. **TURPENTINE-STILL.** DAVID M. ROSS and FRANKLIN T. EDWARDS, Fletcher, Ga. Filed Nov. 11, 1904. Serial No. 232,344.

Claim.—In a distillation plant, the combination with a pair of kilns, of an inclined separator adjacent thereto, a pipe connecting with each of the kilns and projecting downward into the separator close to its bottom, spraying means coacting with the separator, a purifier containing a baffle, a pipe connecting with the upper side of the separator intermediate of its ends and communicating with the upper portion of the purifier on one side of the baffle, and a condensing-coil communicating with the purifier on the other side of the baffle.

821,887.



821,888. **CAN.** JOHN F. ROSS, Toronto, Canada, assignor of two-fifths to Percy Forster Ross, two-fifths to William Edwin Ross, and one-fifth to Charles Fred Vanhorn, all of Toronto, Canada. Filed June 24, 1905. Serial No. 266,882.



Claim.—1. A can-body comprising a blank of sheet metal bent into cylindrical form, and provided with a bell-shaped mouth; said can-body being stretched at its upper portion for a suitable distance downward from said bell-shaped mouth so that its diameter at its stretched portion is greater than its diameter below said stretched portion; a lug or brace stamped out from said body in its stretched portion at the joint or seam formed in said can-body by the securing of the ends of said blank together, thus forming a brace to prevent the opening of said joint or seam, and soldering material filling the joint or seam and said lug or brace so that the surface of the can at said joint or seam and lug or brace will be flush with the rest of the surface of the can.

2. A can comprising a blank of sheet metal bent into cylindrical form and provided with a bell-shaped mouth, and being stretched at its upper portion for a suitable distance downward from said bell-shaped mouth so that its diameter at its stretched portion is greater than its diameter below said stretched portion, and soldering material filling the joint on the inside of said can so that the surface of the can at said joint or seam will be flush with the rest of the surface of the can, a circular lid or cover made out of sheet metal, comprising the top integrally provided on its edge with an annular flange which overhangs an integrally-formed first downwardly-extending vertical flange the lower edge of which integrally forms part of a horizontal outwardly-extending flange the outer edge of which integrally forms part of a second downwardly-extending vertical flange, the diameter of said lid or cover being greater at said second-mentioned vertical flange than at said first-mentioned vertical flange, the relation of the outside diameter of the top of said lid or cover to the diameter of said can at its top being such that there is an annular space left between the edge of said flange lid and the top of said can.

3. A can comprising a blank of sheet metal bent into cylindrical form, and provided with a bell-shaped mouth, and being stretched at its upper portion for a suitable distance downward from said bell-shaped mouth so that its diameter at its stretched portion is greater than its diameter below said stretched portion; a lug or brace stamped out from said body in its stretched portion at the joint or seam formed in said can by the securing of the ends of said blank together, thus forming a brace to prevent the opening of said joint or seam; soldering material filling the joint or seam and said lug or brace so that the surface of the can at said joint or seam and lug or brace will be flush with the rest of the surface of the can, and a flexible bottom for said can, a circular lid or cover made out of sheet metal, comprising the top integrally provided on its edge with an annular flange which overhangs an integrally-formed first downwardly-exteading vertical flange the lower edge of which integrally forms part of a horizontal outwardly-extending flange the outer edge of which integrally forms part of a second downwardly-extending vertical flange which is provided with a small hole, the diameter of said lid or cover being greater at said second-mentioned vertical flange than at said first-mentioned vertical flange, the relation of the outside diameter of the top of said lid or cover to the diameter of said can at its top being such that there is an annular space left between the edge flange of said lid and the top of said can.

4. A can comprising a blank of sheet metal bent into cylindrical form, and provided with a bell-shaped mouth, and being stretched at its upper portion for a suitable distance downward from said bell-shaped mouth so that its diameter at its stretched portion is greater than its diameter below said stretched portion; a lug or brace stamped out from said body in its stretched portion where the greatest bursting strain is applied at the joint or seam formed in said can by the securing of the ends of said blank together, thus forming a brace to prevent the opening of said joint or seam; soldering material filling the joint or seam and said lug or brace so that the surface of the can at said joint or seam and lug or brace will be flush with the rest of the surface of the can, and a flexible bottom for said can; a circular lid or cover made out of sheet metal, comprising the top integrally provided on its edge with an annular flange which overhangs an integrally-formed first downwardly-extending vertical flange the lower edge of which integrally forms part of a horizontal outwardly-extending flange the outer edge of which integrally forms part of a second downwardly-extending vertical flange which is provided with a small hole, the diameter of said lid or cover being greater at said second-mentioned vertical flange than at said first-mentioned vertical flange, the relation of the outside diameter of the top of said lid or cover to the diameter of said can at its top being such that there is an annular space left between the edge flange of said lid and the top of said can.

5. A can-body comprising a blank of sheet metal bent into cylindrical form, and being stretched at its upper portion for a suitable distance downward so that its diameter at its stretched portion is greater than its diameter below said stretched portion, and a lug or brace stamped out from said body in its stretched portion at the joint or seam formed in said can-body by the securing of the ends of said blank together, and soldering material filling the joint or seam and said lug or brace so that the surface of said can at said joint or seam or lug or brace will be flush with the rest of the surface of the can.

6. A can comprising a blank of sheet metal bent into cylindrical form, and being stretched at its upper portion for a suitable distance downward so that its diameter at its stretched portion is greater than its diameter below said stretched portion; a lug or brace stamped out from said body in its stretched portion at the joint or seam formed in said can-body by the securing of the ends of said blank together; soldering material filling the joint or seam and said lug or brace so that the surface of said can at said joint or seam or lug or brace will be flush with the rest of the surface of the can; a flexible bottom for said can, and a circular lid or cover made of sheet metal, comprising a top integrally provided on its top with an annular flange which overhangs an inwardly-formed portion with which is integrally formed an outwardly-extending flange with which is integrally formed a downwardly-extending flange provided with a small hole, the diameter of said lid being greatest when measured through said upwardly-extending flange.

7. A can-body comprising a blank of sheet metal bent into cylindrical form, and a lug or brace stamped out from said body at the joint or seam formed therein by the securing of the ends of said blank together thus forming a brace to prevent the opening of said joint or seam, and soldering material filling the joint or seam and said lug or brace.

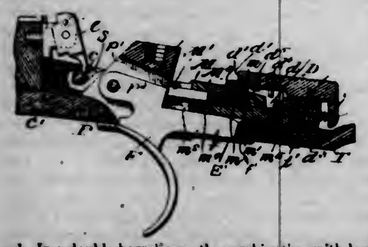
8. A can comprising a blank of sheet metal bent into cylindrical form and provided with a bell-shaped mouth which construction places the abutting points of the metal out of the plane of a stretching force applied to said can; said can being stretched at its upper portion, by said stretching force, for a suitable distance downward from said bell-shaped mouth, so that the diameter at its stretched

portion is greater than its diameter below said stretched portion, and soldering material filling the joint on the inside of said can so that the surface of the can at said joint or seam will be flush with the rest of the surface of the can; a circular lid or cover made out of sheet metal, comprising the top integrally provided on its edge with an annular flange which overhangs an inwardly-formed portion with which is integrally formed an outwardly-extending flange, with which is integrally formed a downwardly-extending flange, the diameter of said lid being greatest when measured through said downwardly-extending flange, which greatest diameter is slightly greater than the internal diameter of the stretched portion of the can so that the can may be hermetically sealed.

9. A can comprising a blank of sheet metal bent into cylindrical form and provided with a bell-shaped mouth, which construction places the abutting points of the metal out of the plane of a stretching force applied to the said can; said can being stretched at its upper portion by said stretching force, for a suitable distance downward from said bell-shaped mouth, so that the diameter at its stretched portion is greater than its diameter below said stretched portion; a lug or brace stamped out from said can in its stretched portion at the joint or seam formed in said can by the securing of the ends of said blank together, and in that position where the greatest bursting strain is applied by the insertion of the lid, thus forming a brace to prevent the opening of said joint or seam; soldering material filling the joint or seam and lug or brace so that the surface of the can at said joint or seam and lug or brace will be flushed with the rest of the surface of the can; a circular lid or cover made out of sheet metal, comprising the top integrally provided on its edge with an annular flange which overhangs an inwardly-formed portion with which is integrally formed an outwardly-extending flange, with which is integrally formed a downwardly-extending flange, the diameter of said lid being greatest when measured through said downwardly-extending flange, which greatest diameter is slightly greater than the internal diameter of the stretched portion of the can so that the can may be hermetically sealed.

10. A can-body comprising a blank of sheet metal bent into cylindrical form and having its ends secured together by an outside lock-seam, and a lug or brace stamped from the inside of said body outward at the joint or seam formed therein by said lock-seam, so that its greatest length will be substantially at right angles to said joint or seam thus forming a brace to prevent the opening of said joint or seam, and soldering material filling said joint or seam.

821,889. TRIGGER MECHANISM. JOHN D. RUSS, Spencer, W. Va., assignor of five-twelfths to Frederick F. McIntosh and two-twelfths to Augustus J. Lyons, Spencer, W. Va. Filed Dec. 10, 1904. Serial No. 236,333.



Claim.—1. In a double-barrel gun, the combination with hammer-sears, of a single finger-trigger piece, of mechanism actuated by said finger-trigger piece to effect release of said sears successively and comprising a reciprocable member and a detent distinct from the sears, said detent being arranged to engage said member and to be moved out of engagement thereby under the actuation of the finger-trigger piece, and of setting means for moving the member in one direction into initial releasing position where it is held by the detent, said member being movable in the opposite direction toward second releasing position on disengagement of the detent.

2. In a double-barrel gun, the combination with hammer-sears, of mechanism for effecting release of said sears successively, comprising a reciprocable member and a detent distinct from the sears, of setting means for moving said member in one direction into first releasing position, where it is held by said detent, a single finger-trigger piece arranged to actuate said member simultaneously to move the detent out of engagement and to bring about first sear release, and means for urging the member to travel in the opposite direction toward second releasing position where it is operable by the finger-trigger piece to releasingly engage the unreleased sear.

3. In a double-barrel gun, the combination with hammer-sears, of a reciprocable member movable in one direction into initial releasing position and in the opposite direction to enable it to occupy releasing positions with reference to the sears successively, a detent distinct from the sears for retaining the member in initial releasing position, and single manual means for actuating the member to releasingly engage the sears, said member being arranged to disengage the detent under the actuation of said manual means.

4. In a double-barrel gun, the combination with the hammers, of mechanism vertically movable to bring about release of said hammers successively and comprising a horizontally-reciprocable slide and a horizontally-pivoted detent overlying said slide, said detent having an engaging tip arranged to detainingly engage with the slide and said slide having a detent-engaging region arranged on vertical movement of the slide to contact liftingly with the detent between pivot and tip, of setting means for moving the slide in one direction into initial releasing position where retained by said detent, the slide after disengagement of the detent being movable toward second releasing position in a direction opposite to the setting movement.

5. In a double-barrel gun, the combination with the hammers, of mechanism vertically movable to bring about hammer release successively and comprising a horizontally-reciprocable slide and a horizontally-pivoted detent overlying said slide, said detent having an engaging tip arranged to detainingly engage with the slide and a depending adjustable pin disposed intermediate the pivot and tip, and said slide having a detent-disengaging region arranged on vertical movement of the slide to contact liftingly with said pin, of setting means for moving the slide in one direction into initial releasing position where retained by said detent, the slide after disengagement of the detent being movable toward second releasing position in the direction opposite to the setting movement.

6. In a double-barrel gun, the combination with the hammer-sears, of a horizontally-reciprocable slide capable of pivotal movement about a horizontal axis and arranged to occupy releasing positions with reference to said sears successively, a horizontally-pivoted detent overlying said slide and having an engaging tip, setting means for moving the slide in one direction into first releasing position, and actuating means arranged to elevate the latter at releasing positions to bring about sear release, the slide being provided with a shoulder engaged by the tip of the detent at first releasing position and with a detent-disengaging region located farther from the horizontal axis than said shoulder and arranged on vertical movement of the slide to contact liftingly with the detent between pivot and tip, the slide after disengagement of the detent being arranged to move to second releasing position in the direction opposite to the setting movement.

7. In a single-trigger mechanism, the combination of a member adapted to occupy releasing positions successively, a detent, setting means for moving said member in one direction into first releasing position where it is held by said detent, actuating means operative at releasing positions to elevate said member to bring about hammer release and also operative at first releasing position to disengage said detent, means for urging said member to travel in the direction opposite to the setting movement toward second releasing position, and means carried by the detent operative during the elevation of the member at first releasing position to prevent said member assuming second releasing position.

8. In a single-trigger mechanism, the combination of a horizontally-reciprocable slide movable in one direction into first releasing position and in the opposite direction into second releasing position, a horizontally-pivoted detent overlying said slide and having an engaging tip arranged automatically to engage and detain the slide at first releasing position, actuating means arranged to elevate the same at releasing positions to bring about hammer release, said slide being provided with a detent-disengaging region arranged to contact liftingly with the detent between pivot and tip during elevation at first releasing position, and a stop depending from the detent and arranged to arrest the slide in advance of second releasing position during such elevation.

9. In a single-trigger mechanism, the combination of a horizontally-reciprocable slide movable in one direction into first releasing position and in the opposite direction into second releasing position, a horizontally-pivoted detent overlying said slide and having an engaging tip, and actuating means arranged to elevate the latter at releasing positions to bring about sear release, the slide being provided with a detent-disengaging region arranged to contact liftingly with the detent between pivot and tip during elevation at first releasing position, and an adjustable pin depending from the detent and arranged to arrest the slide in advance of second releasing position during such elevation.

10. In a single-trigger mechanism, the combination of a horizontally-reciprocable slide movable in one direction into first releasing position and in the opposite direction into second releasing position, a horizontally-pivoted detent overlying said slide and having an engaging tip arranged to automatically engage and detain said slide at first releasing position, actuating means arranged to elevate the same at releasing positions to bring about hammer release, said slide being provided with a detent-disengaging region arranged to contact liftingly with the detent between pivot and tip during elevation at first releasing position, and a stop depending from the detent and arranged to arrest the slide in advance of second releasing position during such elevation, said slide being provided on its upper surface with a recess to receive said stop during elevation at second releasing position.

11. In a single-trigger mechanism, the combination of a horizontally-reciprocable slide movable in one direction into first releasing position and in the opposite direction into second releasing position, a horizontally-pivoted detent overlying said slide and having an engaging tip arranged to automatically engage and detain the slide at first releasing position, said detent being further provided between pivot and tip with a longitudinally-disposed pair of depending adjustable pins, and actuating means arranged to elevate the same at releasing positions to bring about hammer release, said slide being provided with a detent-disengaging region arranged during elevation at first releasing position to contact with the bottom of the first pin to disengage the detent and then with the side of the second pin to arrest the slide temporarily in advance of second releasing position.

12. In a single-trigger mechanism, the combination of a horizontally-reciprocable slide movable in one direction into first releasing position and in the opposite direction into second releasing position, a horizontally-pivoted detent overlying said slide and having an engaging tip arranged to automatically engage and detain the slide at first releasing position, said detent being further provided between pivot and tip with a depending adjustable pin and between pivot and pin with a depending stop, and actuating means for elevating the slide at releasing positions to bring about hammer release, said slide being provided with a detent-disengaging region arranged during elevation at first releasing position to contact liftingly with said pin, the slide being then temporarily arrested by the stop in advance of second releasing position.

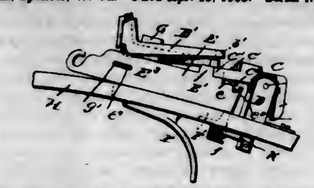
13. In a double-barrel gun, the combination with hammer-sears provided with projections raisable to effect hammer release, of mechanism for effecting release of said sears successively including a reciprocable member provided with a releasing-lug, said member being movable in one direction to position said lug in advance of the projection on the second released sear and in the opposite direction to bring said lug beneath said sear projection without engagement therewith, the opposed faces of the lug and sear end transverse to the path of movement being formed on an inclination to tend to depress the sear in event of engagement during the release positioning movement.

14. In a double-barrel gun, the combination with hammer-sears provided with projections raisable to effect hammer release, of mechanism for effecting release of said sears successively including a reciprocable member provided with a releasing-lug, said member being movable in one direction to position said lug beneath the projection on the first-released sear and in the opposite direction to position said lug in rear of said sear projection, the opposed faces of the lug and sear end transverse to the path of movement being formed on inclination to tend to depress the sear in event of engagement under the influence of recoil.

15. In a single-trigger mechanism, the combination with a slide having a shoulder on its upper surface and movable in one direction into first releasing position and in the return direction into second releasing position, actuating means for causing said member to bring about hammer release at releasing positions, an automatic detent arranged to detainingly engage with the shoulder on the slide at first releasing position, a pin passing up through the slide behind said shoulder, and manually-operated means for elevating said pin to lift the detent out of engagement.

16. In a single-trigger mechanism, the combination of a slide having a shoulder on its upper surface and movable from first to second releasing positions and return to first releasing position, actuating means for causing said member to bring about hammer release at releasing positions, an automatic detent arranged to detainingly engage with the shoulder on the slide at first releasing position, a pin passing up through the slide behind said shoulder, and a manually-operated slide having an inclined surface for receiving and elevating said pin to lift the detent out of engagement.

821,890. FIREARM. JOHN D. RUSS, Spencer, W. Va., assignor of five-twelfths to Frederick F. McIntosh and two-twelfths to Augustus J. Lyons, Spencer, W. Va. Filed Apr. 15, 1905. Serial No. 255,756.



Claim.—1. In a single-trigger mechanism, the combination with the hammer-sears; of a sear-releasing member normally in releasing position with reference to one of said sears, a releasing member for the other sear unconnected with the other releasing member, setting means for positioning the latter member in advance of releasing position with reference to the corresponding sear, and single means for successively actuating the members to release the sears.

2. In a single-trigger mechanism, the combination with the hammer-sears; of an initial sear-releasing member, a second sear-releasing member unconnected with said initial member, setting means for moving said second releasing member longitudinally to a point in advance of releasing position, and single means for actuating said releasing members successively to effect sear release.

3. In a single-trigger mechanism, the combination with the hammer-sears; of an initial sear-releasing member arranged to occupy releasing position with reference to one of the sears, a second sear-releasing member unconnected with said initial member, and setting means for disposing said second member in advance of releasing position, said second member being arranged, after release of the first sear by the initial member, to occupy releasing position with reference to the second sear.

4. In a single-trigger mechanism, the combination with the hammer-sears; of an initial releasing member arranged to occupy releasing position with reference to one of the sears, a second releasing member constructed and arranged to actuate said initial member in firing action, and setting means for disposing said second member in advance of releasing position where operable to actuate the initial releasing member to effect release of the first sear, the second releasing member then moving to assume releasing position with reference to the second sear.

5. In a single-trigger mechanism, the combination with the hammer-sears: of an initial releasing member for the first sear, and a second releasing member for the second sear arranged to actuate said initial member in firing action.

6. In a single-trigger mechanism, the combination with the hammer-sears; of an initial releasing member for the first sear, a second releasing member for the second sear arranged to operatively engage said initial releasing member in firing action, and a single finger-trigger piece arranged to actuate said second releasing member.

7. In a single-trigger mechanism, the combination with the hammer-sears; of an initial releasing member for the first sear, and a second releasing member for the second sear unconnected with said initial member but arranged to actuate said member in firing action.

8. In a single-trigger mechanism, the combination with the hammer-sears, an initial releasing member for the first sear, and a second releasing member for the second sear arranged to actuate the initial releasing member; of setting means for positioning said second releasing member in advance of releasing position, and manual actuating means whereby said second releasing member is released to move toward releasing position and simultaneously actuates the initial releasing member to effect release of the first sear, said means being then operable to actuate said second releasing member to effect release of the second sear.

9. In a single-trigger mechanism, the combination with the hammer-sears raisable to release the hammers; of a vertically-movable initial releasing member arranged to underlie one of said sears, a second longitudinally-slidable releasing member underlying said initial member, setting means for moving said second member longi-

tudinally in advance of releasing position beneath the other sear though still beneath the initial releasing member, and manual actuating means arranged to bring about sear-releasing elevation of said second releasing member, elevation of said member while advanced operating to raise the initial member into releasing engagement with its sear, the second releasing member then moving to take up releasing position with reference to its sear.

10. In a single-trigger mechanism, the combination with the hammer-sears raisable to release the hammers; of a horizontally-pivoted initial releasing member arranged to underlie one of said sears, a second longitudinally-slidable releasing member underlying said initial member at one side of its pivot, setting means for moving said second member longitudinally in advance of releasing position beneath the other sear though still beneath the initial releasing member, and manual actuating means arranged to bring about sear-releasing elevation of said second releasing member, elevation of said member while advanced operating to raise the initial member into releasing engagement with its sear, the second releasing member then moving to take up releasing position with reference to its sear.

11. In a single-trigger mechanism, the combination with the hammer-sears; of an initial releasing member for the first sear, and a releasing member for the second sear, said initial member being arranged to serve as a detent to retain the other releasing member in advance of releasing position prior to the release of the first sear.

12. In a single-trigger mechanism, the combination with the hammer-sears; of an initial releasing member for the first sear, a releasing member for the second sear, and setting means for positioning said second releasing member in advance of releasing position, said initial releasing member being arranged to serve as a detent to retain temporarily the second releasing member in such advanced position, and of means for actuating said releasing members to effect sear release successively.

13. In a single-trigger mechanism, the combination with the hammer-sears; of an initial releasing member for the first sear, a slide movable to effect release of the second sear, setting means for moving said slide longitudinally in advance of releasing position, said initial releasing member being arranged to serve as a detent to temporarily retain said slide in such advanced position, and of actuating means for causing said member and slide to effect hammer release successively.

14. In a single-trigger mechanism, the combination with the hammer-sears; of an initial releasing member for the first sear, a releasing member for the second sear, setting means for positioning said second member in advance of releasing position, said initial member being arranged to serve as a detent for temporarily retaining said second member in such advanced position, and of actuating means for simultaneously removing said initial releasing member from retaining engagement and causing it to effect sear release, said means being afterward operable to actuate the remaining releasing member to effect sear release.

15. In a single-trigger mechanism, the combination with the hammer-sears; of an initial releasing member for the first sear, a member for releasing the second sear, setting means for positioning said second member in advance of releasing position, said initial releasing member being arranged to be actuated by the second member and to serve as a detent for temporarily retaining said second member in advanced position, and of means arranged to actuate said second releasing member to disengage the initial releasing member and simultaneously to cause said initial member to effect sear release, said means being afterward operable to cause the second releasing member to effect release of the second sear.

16. In a single-trigger mechanism, the combination with the hammer-sears; of an initial releasing member for the first sear, a releasing member for the second sear, and setting means for positioning said second releasing member in advance of releasing position, said initial releasing member being arranged to serve as a detent to retain temporarily the second releasing member in such advanced position and again to arrest said member before reaching releasing position.

17. In a single-trigger mechanism, the combination with the hammer-sears; of an initial releasing member arranged to occupy releasing position with reference to the first sear, and a longitudinally-movable releasing member for the second sear arranged to have a setting movement in one longitudinal direction to a point in advance of releasing position and a return movement to releasing position, both of said members being raisable to effect initial sear release, and said initial releasing member serving as a detent to retain temporarily the second releasing member in such advanced position and again, during the elevation of the second releasing member for initial sear release, to arrest such member before reaching releasing position.

18. In a single-trigger mechanism, the combination with the hammer-sears; of a longitudinally-reciprocable slide for releasing one of the sears having a setting movement in one longitudinal direction to a point in advance of releasing position and a return movement into releasing position, and being provided on its upper surface with a recess, of an initial releasing member arranged, while said slide is advanced, to occupy releasing position with reference to the other sear, and overlying said slide and serving as a detent to retain the same in advanced position, of means for elevating the releasing members at releasing positions to bring about sear release, elevation at initial releasing position freeing the slide to take up movement toward second releasing position, and of a stop depending from the initial releasing member and arranged, during elevation of the slide for initial release, to arrest the slide before reaching releasing position, said stop during elevation of the slide at second releasing position being received in the recess in said slide.

19. In a single-trigger mechanism, the combination with the hammer-sears; of a selective releasing member movable to effect release of either of the sears as desired, and a second independently-mounted releasing member arranged to actuate the selective member in firing action and movable to release the other sear after the operation of the selective member.

20. In a single-trigger mechanism, the combination with the hammer-sears; of a selective releasing member movable at will to occupy releasing position with reference to either of the sears, and a second independently-mounted releasing member arranged to actuate said selective member in firing action and movable, after release of the first sear by said selective member, to occupy releasing position with reference to the other sear.

21. In a single-trigger mechanism, the combination with the hammer-sears; of a selective releasing member movable at will to occupy releasing position with reference to either of the sears, a second releasing member movable, after release of the first sear by said selective member, to occupy releasing position beneath both of the sears, and of means for preventing said second member assuming releasing position in event of failure of the selective member to release either sear.

22. In a single-trigger mechanism, the combination with the hammer-sears; of a selective releasing member located between the sears and transversely shiftable at will to occupy releasing position with reference to either of the sears but incapable in mid-position of occupying releasing position with reference to either sear, and a second releasing member operable only after the release of the first sear to release the remaining sear.

23. In a single-trigger mechanism, the combination with the hammer-sears; of a selective releasing member movable to effect release of either of the sears as desired, and a second releasing member movable to release the other sear after the operation of the selective member, said selective member serving as a detent for retaining the second releasing member in advance of releasing position until after the release of the first sear by said selective member.

24. In a single-trigger mechanism, the combination with the hammer-sears; of a transversely-shiftable selective releasing member movable to effect release of either of the sears as desired, and a longitudinally-movable independently-mounted member arranged to actuate said selective member in firing action and having releasing means for effecting release of the other hammer after the operation of the selective member.

25. In a single-trigger mechanism, the combination with the hammer-sears; of a transversely-shiftable selective releasing member movable to effect release of either of the sears as desired, and a longitudinally-movable member arranged to actuate said selective member in firing action and having means for effecting release of the other sear after the operation of the selective member, said selective member being movable transversely without partaking of the longitudinal travel of the slide.

26. In a single-trigger mechanism, the combination with the hammer-sears; of a transversely-swinging selective member movable to effect release of either of the sears as desired, and a longitudinally-movable member arranged to actuate said selective member in firing action and movable to effect release of the other sear after the operation of the selective member.

27. In a single-trigger mechanism, the combination with the hammer-sears, located at either side of the lock-chamber, raisable to release the hammers; of a selective releasing member mounted intermediate the sears on vertical and horizontal axes so as to be capable of raising either of the sears as desired, and a second releasing member arranged to actuate said selective member in firing action and capable of raising the other sear after the operation of the selective member.

28. In a single-trigger mechanism, the combination with the hammer-sears, located at either side of the lock-chamber, raisable to release the hammers; of the trigger-plate, a post intermediate the sears mounted on said plate on a vertical axis, a selective releasing member carried by said post to swing laterally therewith beneath either sear as desired and mounted on a horizontal axis to bring about the elevation of the sears, and a second releasing member capable of raising the other sear after the operation of the selective member.

29. In a single-trigger mechanism, the combination with the hammer-sears, located at either side of the lock-chamber, raisable to release the hammers; of a selective releasing member mounted intermediate the sears and laterally shiftable to occupy releasing position beneath either of them, and a slide positioned below said selective member and having a transverse releasing region arranged to underlie both of said sears at once, said slide being longitudinally movable, after release of one of said sears by the selective member, to carry said ridge to such point beneath both of the sears as to be in position to raise either of the sears not raised by the selective member.

30. In a single-trigger mechanism, the combination with the hammer-sears disposed longitudinally and raisable to release the hammers; of a releasing member longitudinally movable in one direction to a point in advance of releasing position and a return movement into releasing position, and being provided on its upper surface with a transverse releasing ridge of such length as to underlie both of the sears at once and with a transverse shoulder in rear of said ridge having its wall extended upward at the center, of a selective releasing member mounted intermediate the sears and laterally shiftable to occupy releasing position beneath either of them but incapable in mid-position of underlying either of them, said selective member serving as a detent to engage with the shoulder on the longitudinally-movable member to hold the latter in advanced position, and of means for elevating said longitudinally-movable member at such advanced position to cause the selective member to release one of the sears, such elevation also removing the selective member from engagement with said shoulder, but being incapable of raising the selective member free of the shoulder when said member occupies mid-position in rear of the extension of the shoulder.

31. In a single-trigger mechanism, the combination with the hammers and the hammer-sears pivoted above the hammers and raisable to release the hammers, with a selective releasing member movable to release either of the hammers as desired, a second releasing member movable to release the other hammer after the operation of the selective member, and manual means for actuating said members; of beveled lugs disposed upon the sears to engage with the backs of the hammers during firing, whereby each hammer when down maintains its sear sufficiently elevated to escape further engagement with the corresponding releasing member.

821,891. **UNIVERSAL SHADE-HOLDER.** JOSEPH S. RYNELL, Pittsburg, and WILLIAM A. PAINTER and JOHN C. MILLER, Allegheny, Pa., assignors to Pittsburg Lamp, Brass & Glass Company, Pittsburg, Pa., a Corporation of New Jersey. Filed Apr. 25, 1904. Serial No. 204,661.

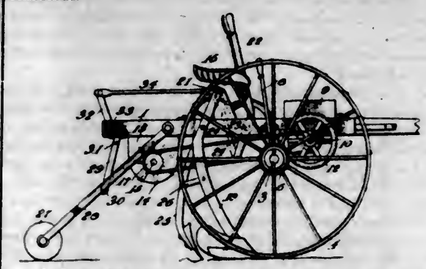


Claim.—A shade-holder having a central plate with a slot leading to a central hole therein, said hole having a guide and stop arranged to be engaged by the stem of the lamp device; substantially as described.

821,892. **AGRICULTURAL IMPLEMENT.** THEODORE G. SHULER, Hilcrest, S. C. Filed Aug. 26, 1905. Serial No. 276,153.

Claim.—1. In an implement of the character described, the combination of the main frame, standards pivotally connected thereto, means for adjusting said standards to regulate the pitch of the shovels, an intermediate standard connected with the upper ends of the first-mentioned standards, and braces connecting the lower portions of the several standards.

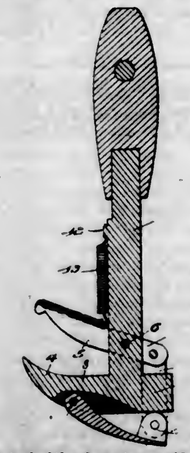
2. In an implement of the character described, the combination of the main frame, standards pivoted thereto at a point between their ends, a transverse rod connecting the upper ends of said standards, means for adjusting the standards to vary the pitch of the shovels, an intermediate standard connected at its upper end to the said transverse rod, and braces connecting the lower portions of the several standards.



3. In combination, a main frame, standards pivoted thereto, a transverse rod connecting the upper ends of the standards and arranged above said main frame, and stepped rests adjustable upon the main frame and adapted to receive the said transverse rod and hold the standards in the adjusted position.

4. In combination, a main frame, standards pivoted thereto and provided with shovels, bars pivoted to the said frame and provided with a device to operate in the rear of said shovels, a lever pivotally connected to the main frame a short distance from its upper end and having a portion extended across the path of one of said pivoted bars, a coöperating lever pivoted near its lower end to the main frame, and an operating-lever adapted to effect simultaneous movement of the standards and pivoted bars.

821,893. **STAPLE EXTRACTOR AND HOLDER.** EDWARD M. SMITH, Plevna, Kans. Filed Jan. 31, 1905. Serial No. 243,583.



Claim.—1. A tool of the character specified comprising a shank having a cross-head at one end tapered to a point and inwardly curved at one of its ends, a pressure member arranged exterior to the cross-head and pivoted at one end to the tapered portion thereof, a gripping member arranged crosswise of the shank and having an end portion bifurcated to embrace said shank and pivoted thereto and adapted to coöperate with the tapered end of the said cross-head, link connections between the gripping and pressure members embracing opposite sides of the butt-end of the cross-head, and a spring normally exerting a force upon the gripping member to hold its gripping end away from the pointed end of the aforementioned cross-head.

2. A tool of the character set forth comprising a shank having a cross-head tapered to a point and inwardly curved at one of its ends, a pressure member located exterior to the cross-head and pivoted at one end to the tapered end portion thereof and having transversely-spaced lugs at its opposite end to embrace and clear the sides of the cross-head, a gripping member arranged crosswise of the shank upon the inner side of the cross-head and having an end por-

tion bifurcated to embrace said shank and pivoted thereto and having the opposite end provided with a claw for cooperation with the pointed end of the cross-head, links embracing opposite sides of the butt portion of the aforementioned cross-head and pivoted at one end to the bifurcations of the gripping members and having pivotal connection at their opposite ends with the lugs of said pressure member, and a spring normally exerting a force upon the gripping member to hold its gripping end away from the pointed end of the aforementioned cross-head.

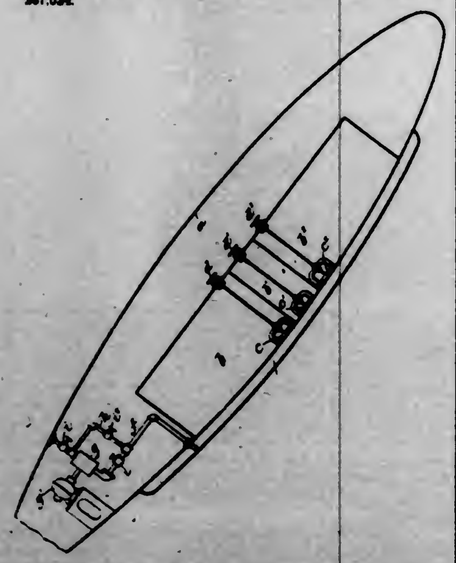
3. A tool substantially as herein set forth comprising a shank having an integral cross-head at one end recessed upon its outer side and having an end portion tapered to a point and inwardly curved, a pressure member arranged exterior to said cross-head and having an end portion pivoted within the recess provided in the outer side of said cross-head and having its opposite end formed with transversely-spaced lugs to embrace and clear the sides of the butt portion of the cross-head, a gripping member having an end portion bifurcated and embracing the shank and pivoted thereto and having its opposite end provided with a claw for coöperation with the pointed end of said cross-head, the latter being arranged between the gripping end pressure members, links embracing opposite sides of the butt portion of the cross-head and having their opposite ends pivoted to, respectively, the bifurcations of the gripping member and the lugs of the pressure member, and a spring normally exerting a force upon the gripping member to hold its gripping end away from the pointed end of the aforementioned cross-head.

821,894. **BRUSH.** AMSON L. SOWS, Troy, N. Y. Filed May 27, 1905. Serial No. 263,536.



Claim.—The combination of a substantially flat brush-back; a plate having openings for bristles; a flange around the edge of said plate; composition placed upon said brush-back; bristles being embedded in said composition and passing through said openings in said plate; the flange on said plate being embedded in the brush-back.

821,895. **DUCT-KEEL FOR SUBMARINE BOATS.** LAWRENCE Y. SPEAR, Quincy, Mass., assignor to Electric Boat Company, Bayonne, N. J., a Corporation of New Jersey. Filed June 26, 1905. Serial No. 267,034.



Claim.—1. A submarine or submergible boat, having a hollow keel constituting a longitudinal duct communicating with the several water-ballast tanks, and with the exterior of the boat.

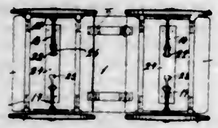
2. A submarine or submergible boat, having a hollow keel, constituting a duct, communicating with the several water-ballast tanks and with the exterior of the boat, and a discharge-pump connected with said keel.

3. A submarine or submergible boat, having a hollow keel, constituting a duct, communicating with the several water-ballast tanks, a discharge-pump connecting with said keel and with the exterior of said boat, and a by-pass around said pump to admit water to said keel and ballast-tanks.

4. A submarine or submergible boat, having a hollow keel, constituting a duct, communicating with the exterior of the boat, and valved connections between the water-ballast tanks and said hollow keel.

5. A submarine or submergible boat, having a hollow keel constituting a duct, a valve-controlled communication between the keel and the exterior of the boat, and valved connections between the several water-ballast tanks and said hollow keel.

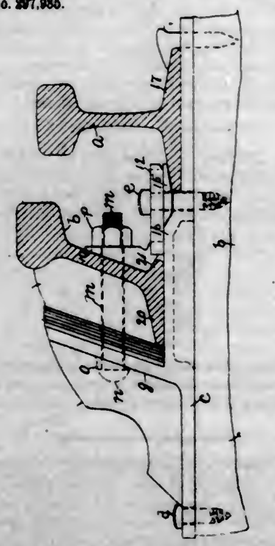
821,896. **COLLAPSIBLE BABY-CARRIAGE.** ALEXANDER STEIN, Berlin, Germany. Filed May 10, 1906. Serial No. 259,707.



Claim.—1. In a collapsible vehicle, in combination, a grooved bottom, cranked axes mounted to turn on the same, springs adapted to carry the wheels secured to the said axes, and stays presenting resilient bifurcated arms having terminal projections engaging in the vehicle-bottom, the grooves in which present shoulders to retain the stays in the position in which they are adjusted, substantially as described.

2. In a collapsible vehicle, in combination, a grooved bottom, cranked axes mounted to turn on the same, springs adapted to carry the wheels secured to the said axes, and stays presenting resilient bifurcated arms having terminal projections engaging in the vehicle-bottom, the grooves in which present widened ends to retain the stays in the position in which they are adjusted, substantially as described.

821,897. **DEVICE FOR SUPPORTING AND SPACING GUARD-RAILS.** HARRY M. STEWARD, Somerville, Mass. Filed Jan. 26, 1906. Serial No. 297,935.



Claim.—1. In a device of the character described, in combination, a running-rail, a guard-rail, a support for said guard-rail provided with an upright wall or abutment, means interposed between said guard-rail and said abutment to space said guard-rail from said running-rail, and a bolt extended through said guard-rail, spacing means and abutment to secure said guard-rail to said abutment, substantially as described.

2. In a device of the character described, in combination, a running-rail, a guard-rail, a support for said guard-rail provided with an upright wall or abutment, means interposed between said guard-rail and said abutment to space said guard-rail from said running-rail, a bolt extended through said guard-rail, spacing means and abutment to secure said guard-rail to said abutment, a washer on said bolt in engagement with said guard-rail and provided with a foot or extension having a slot and coöperating with said running-rail to hold the same in position, and means extended through said slot for securing said foot or extension in its operative position, substantially as described.

3. In a device of the character described, in combination, a running-rail, a guard-rail, a tie-plate provided with an upright wall or abutment and upon which said guard-rail is supported, spacing means interposed between said guard-rail and said abutment, a bolt extended through said abutment, spacing means, and said guard-rail, a washer on said bolt having a foot or extension provided with a slot, a nut on said bolt to engage said washer, and means extended through said slotted foot and said tie-plate, substantially as described.

4. In a device of the character described, in combination, a tie-plate provided with an upright wall or abutment, a guard-rail resting on said tie-plate and movable thereon toward and from said abutment, spacing means interposed between said guard-rail and said abutment, and means to positively secure said guard-rail and spacing means to said abutment, substantially as described.

5. In combination, a tie, a tie-plate secured to said tie and provided with an upright wall or abutment, a running-rail supported upon said tie-plate, a guard-rail supported upon said tie-plate between said running-rail and said abutment and movable toward and from said running-rail, spacing means interposed between said guard-rail and said abutment, and means extended through said spacing means to fasten the said spacing means to said abutment and guard-rail, substantially as described.

6. In combination, a running-rail, an abutment, a guard-rail interposed between said running-rail and said abutment and movable toward and from said running-rail, and means to positively secure said guard-rail to said abutment, substantially as described.

7. In combination, a tie-plate provided with an upright wall or abutment, a running-rail resting on said tie-plate, a guard-rail interposed between said running-rail and said abutment and movable toward and from said running-rail, and means to positively secure said guard-rail in its adjusted position to said abutment, substantially as described.

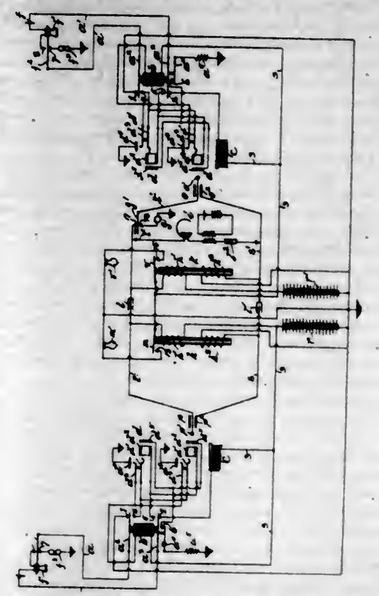
8. The tie-plate *c* having an upright wall *g* and reinforcing-braces *h* separated from each other and integral with said upright wall and tie-plate, substantially as described.

821,898. **CENTRAL-ENERGY TELEPHONE SYSTEM.** WILLIAM A. TAYLOR, Chicago, Ill., assignor to Kellogg Switchboard and Supply Company, Chicago, Ill., a Corporation of Illinois. Filed Feb. 4, 1901. Renewed Sept. 17, 1904. Serial No. 224,805.

Claim.—1. The combination with a pair of telephone-lines, of condensers through which the same are adapted to be united for conversation, a signal-controlling electromagnet bridged between the two limbs of the talking-circuit of one of said lines, said electromagnet having two windings and possessing impedance to the passage of talking-currents, and a charging source of electricity adapted to send current through said windings in a direction to cause the same to neutralize each other, substantially as described.

2. The combination with a pair of telephone-lines, of condensers through which the same are adapted to be united for conversation, a signal-controlling electromagnet bridged between the two limbs of the talking-circuit of one of said lines and having two windings and possessing impedance to the passage of talking-currents, a charging source of electricity and a switch at the substation for closing the circuit of said source through one or both of the windings of said electromagnet, substantially as described.

3. The combination with a pair of telephone-lines, of condensers through which the same are adapted to be united for conversation, a signal-controlling electromagnet bridged between the two limbs of the talking-circuit of one of said lines, said electromagnet having two windings possessing impedance to the passage of talking-currents, a charging source of electricity and a switch at the substation for closing the circuit of said source through both of the windings of said electromagnet, or for closing the same through one only of said windings, substantially as described.



4. The combination with a pair of telephone-lines, of a pair of condensers through which the same are adapted to be united for conversation, a signal-controlling electromagnet bridged between the two limbs of the talking-circuit of one of said lines, said electromagnet having two windings and possessing impedance to the passage of talking-currents, a charging source of electricity interposed between said windings, a third conductor connected with one pole of said source and a switch at the substation for closing the circuit of said source through both of said windings, or for closing the circuit of said source through one of said windings with return through said third conductor, substantially as described.

5. The combination with a pair of telephone-lines, of a pair of condensers through which the same are adapted to be united for conversation, a signal-controlling electromagnet bridged between the two limbs of the talking-circuit of each of said lines, each of said electromagnets having two windings and possessing impedance to the passage of talking-currents, a charging source of electricity adapted to be connected in circuit with the winding of each of said electromagnets, and a switch at each of the substations for controlling the passage of current through one or both of the windings of the electromagnet corresponding thereto, substantially as described.

6. The combination with a pair of telephone-lines, of cord connectors for uniting the same for conversation, a condenser interposed in each strand of said cord connector, a pair of signal-controlling electromagnets bridged between the said strands upon opposite sides of said condensers, each of said electromagnets having two windings and possessing impedance to the passage of talking-currents, and a switch at each substation for sending current through one or both of the windings of the electromagnet connected with said substation, substantially as described.

7. The combination with a pair of telephone-lines, of a cord-circuit for uniting the same for conversation, a condenser interposed in each strand of the cord-circuit, a pair of signal-controlling electromagnets bridged between the strands of the cord-circuit upon opposite sides of said condensers, each of said electromagnets having two differential windings and possessing impedance to the passage of talking-currents, a source of current connected between the windings of each said electromagnet and adapted to send current over the metallic line through said windings for conversational purposes and to render said magnet neutral, and means controlled from each substation for sending an excess current from said source through one winding of the corresponding magnet to actuate the same, substantially as described.

8. The combination with a pair of telephone-lines, of a cord-circuit for uniting the same for conversation, a condenser interposed in

each strand of said cord-circuit, an electromagnet connected between the strands of the cord-circuit upon each side of said condensers, said magnets having two differential windings possessing impedance to the passage of talking-currents, a source of current at the central office connected between said windings and adapted to send current over the metallic circuit for talking purposes, said magnet being neutral to said current during conversation, a supervisory signal controlled by each of the electromagnets, and means controlled from each substation for causing an excess current from the source to flow through one winding of the corresponding electromagnet to operate the same, substantially as described.

9. The combination with a pair of telephone-lines, of a cord-circuit for uniting the same for conversation, a condenser interposed in each strand of the cord-circuit, a pair of signal-controlling electromagnets bridged between said strands, each of said electromagnets having two differential windings and possessing impedance to the passage of talking-currents, a source of current at the central office adapted to send current through said winding, and a switch at each substation for admitting current to flow from said source through both of the windings of said electromagnets during conversation and to render the same inoperative, or to permit the flow through one of said windings to operate the said electromagnet at the termination of the conversation, substantially as described.

10. The combination with a pair of telephone-lines, of a cord-circuit for uniting the same for conversation, a condenser interposed in each strand of the cord-circuit, a signal-controlling magnet for each end of the cord-circuit and upon opposite sides of the condensers, each of said electromagnets having two differential coils connected between the opposite strands of the cord-circuit and possessing impedance to the passage of voice-currents, a source of grounded charging-current connected between said windings, and a hook-switch at the substation of each of said lines whereby the said source is allowed to send current over the metallic circuit of the corresponding line without energizing said electromagnet, or over one limb of said line and ground return to energize said electromagnet, substantially as described.

11. The combination with a pair of telephone-lines, of a cord-circuit to connect said lines together for conversation, a condenser in each strand of the cord-circuit, a differential supervisory-signal-controlling magnet bridged across each end of the cord-circuit upon opposite sides of the condensers, a battery connected between the windings of each electromagnet and having one pole grounded, a supervisory signal controlled by each said electromagnet, a hook-switch and a grounded signaling-bell at the substation of each line, each said switch being adapted to close the circuit from said battery over one line-wire and through one electromagnet-winding and through the grounded bell when the receiver is upon the switch-hook whereby the electromagnet is operated and to close the circuit over the metallic line from said source when the receiver is displaced to render the electromagnet inoperative, substantially as described.

12. The combination with a pair of telephone-lines, of a cord-circuit to unite said lines for conversation, condensers in the opposite strands of the cord-circuit, a differential signal-controlling electromagnet for each end of the cord-circuit bridged thereacross and possessing impedance to the passage of voice-currents, a separate source of grounded charging-current connected between the windings of each of the electromagnets, and a switch at the substation of each of said lines whereby each said source is allowed to send current over the metallic line-circuit of the corresponding line without deenergizing said electromagnet and over one limb only of said line and ground return to energize said electromagnet, substantially as described.

13. The combination with a pair of telephone-lines, of condensers through which the same are adapted to be united for conversation, a signal-controlling electromagnet bridged between the two limbs of the talking-circuit of one of said lines, said electromagnet having two windings and possessing impedance to the passage of the talking-currents, and a separate charging source of electricity for each line, one of said sources being adapted to send current through said windings in a direction to cause the same to neutralize each other, substantially as described.

14. The combination with a pair of telephone-lines, of a pair of condensers through which the same are adapted to be united for conversation, a signal-controlling electromagnet bridged between the two limbs of the talking-circuits of each said lines, each of said electromagnets having two differential windings and possessing impedance to the passage of talking-currents, a separate charging source of electricity adapted to be connected in circuit with the windings of each of said electromagnets, and means at each of the substations for controlling the passage of current through one or both of the said electromagnets corresponding thereto, substantially as described.

15. The combination with a pair of telephone-lines, of cord connectors for uniting the same for conversation, a condenser interposed in each strand of said cord connector, a pair of signal-controlling electromagnets bridged between the said strands upon opposite sides of said condensers, each of the said electromagnets having two windings possessing impedance to the passage of the talking-currents, a separate source of charging-current adapted to be connected in the metallic circuit with the windings of each of said electromagnets, a switch at each substation for permitting current to flow through one or both of the windings of the electromagnet connected with the said substation, substantially as described.

16. The combination with a telephone-line and a connection-terminal therefor normally in inoperative relation with said line, of a connecting-plug and cord-circuit adapted to coöperate with said line, condensers interposed in the strands of the cord-circuit, a supervisory signal-controlling electromagnet having two differential windings upon each side of the condensers, a battery connected between said windings and adapted to send current over the metallic line for conversation and through said windings, a switch at the subscriber's station, and means controlled by the insertion of the plug into the connection-terminal for placing said connection-terminal in operative relation with the line whereby said signal-controlling electromagnet is placed under the control of the subscriber, substantially as described.

17. The combination with a telephone-line, and a connection-terminal in the form of a spring-jack, of a central source of current associated with the line-circuit to furnish current for talking purposes, a cord-circuit, condensers interposed in the strands of the cord-circuit, a supervisory signal-controlling electromagnet having differential coils bridged across the cord-circuit upon one side of the condensers and possessing impedance to the passage of voice-currents, the windings of said electromagnets being connected in the path of current from said source over the metallic line, and a relay actuated from said source by the insertion of the plug into and its withdrawal from said jack for controlling the operative relation of said jack with the line, substantially as described.

18. In a telephone system, a metallic circuit-line, a connection-terminal in the form of a spring-jack normally not in operative relation with said line, a connecting-plug and a cord-circuit, condensers interposed in the strands of the cord-circuit, a line-signaling device normally in operative relation with said line, a central source of current and a supervisory signal-controlling electromagnet associated with said line and cord-circuit, said magnet having two differential windings bridged across the cord-circuit and possessing impedance to the passage of voice-currents, said source being connected between said windings and adapted to furnish current for talking purposes, and a relay actuated from said source when the plug is inserted in said jack to place said device in inoperative relation with said line and said jack in operative relation with said line, substantially as described.

19. The combination with a telephone-line, of a line-signal therefor, a cord-circuit to establish conversational circuits with the line, condensers interposed in the strands of the cord-circuit, a source of current associated with the cord-circuit and adapted to be included in the metallic line to furnish current for talking, a supervisory signal-controlling electromagnet bridged across the cord-circuit and having differential windings disposed one in each side of the path of current from said source over the metallic line, said magnet being actuated when the magnetic effects in its coils are unbalanced, and a cut-off device for the line energized from said source when a connection is established by the cord-circuit with the line to render said line-circuit inoperative and at the same time without unbalancing said supervisory signal-controlling electromagnet or operating said line-signal by the act of making the connection, substantially as described.

20. The combination with a telephone-line, of a connection-terminal therefor normally disconnected from the line, a line-signaling device for the line, a cord-circuit, condensers interposed in the strands of the cord-circuit, a source of current to send current over the metallic line for talking, a supervisory signal-controlling electromagnet bridged across the cord-circuit and having differential windings disposed in the path of current from said source over the line-circuit, said magnet being rendered neutral by current over the metallic circuit during conversation and energized by current over one side of the line at the termination of the conversation, a cut-off relay for the line to connect said terminal with the line, and means to energize said relay from said source by the act of connecting the cord-circuit with the line without operating said signal by current over its circuit or unbalancing said electromagnet, substantially as described.

21. In a telephone system, the combination of subscribers' lines, a suitable jack connected with each line, an operator's cord-circuit provided with plugs adapted for insertion in said jacks, a condenser in each talking-strand of said cord-circuit, two independent sources of current bridged across the cord-circuit at each side of said condensers, said sources of current thereby being adapted to supply current to the lines through the talking-strands of the cord-circuit, suitable supervisory relay-coils interposed between the said cord-strands and the said independent sources of current, and supervisory signal devices controlled by said relay-coils, substantially as described.

22. In a telephone system, the combination of subscribers' lines, subscribers' hook-switches for opening and closing the line-circuits, jacks connected with the lines, an operator's cord-circuit provided with plugs adapted for insertion in said jacks, a condenser in each talking-strand of the cord-circuit, two independent sources of current bridged across the cord-circuit at points each side of said condensers, relays having their coils interposed between the cord-strands and the said independent sources of current, and supervisory lamps associated with the cord-circuit and having normally open local circuits controlled by said relays, said lamps being adapted to light up or glow when the line-circuits are opened by said switches, substantially as described.

23. In a telephone system, the combination with subscribers' lines having connection-terminals and line-signaling devices at the central office, of a cord-circuit to establish connections between the lines for conversation, said cord-circuit having a strand in each side of the talking-circuit, a condenser interposed in each strand, means at the central office for supplying current to the lines for conversation, supervisory relay-windings connected between said means for supplying current and said cord-strands upon each side of the said two coudensers, and supervisory signals controlled by said windings, substantially as described.

24. In a telephone system, the combination with subscribers' lines having connection-terminals and line-signaling devices at the central office, of a cord-circuit to establish connections between the lines for conversation, said cord-circuit having a strand in each side of the talking-circuit, a condenser interposed in each strand, means at the central office for supplying current to the lines for conversation, supervisory relay-windings connected between said means for supplying current and said cord-strands upon each side of the said two condensers, a normally inoperative supervisory signal for each end of the cord-circuit controlled respectively by the said windings on the same side of the condensers, the excitation of one of the said windings on each side of the condensers causing the operation of the corresponding signal and the simultaneous excitation of the associated winding causing the said signal to become inoperative, substantially as described.

25. In a telephone system, the combination with subscribers' lines having connection-terminals and line-signaling devices at the central office, of a cord-circuit to establish connections between the lines for conversation, said cord-circuit having a strand in each side of the talking-circuit, a condenser interposed in each strand, current supplying means bridged across the cord-circuit at each side of said condensers to supply current to the lines for talking, supervisory relay-windings interposed in the connections between the said means and each of the cord-strands, a supervisory signal for each end of the cord-circuit, the said windings serving to prevent the passage of voice-currents and to control the operation of the said signals during connections, substantially as described.

26. In a telephone system, the combination with subscribers' lines having connection-terminals and line-signaling devices at the central office, of a cord-circuit to establish connections between the lines for conversation, said cord-circuit having a strand in each side of the talking-circuit, a condenser interposed in each strand, current-supplying means bridged across the cord-circuit at each side of said condensers to supply current to the lines for talking, a supervisory relay for each end of the cord-circuit having double windings, one winding interposed between said means and one strand and the other winding interposed between the said means and the other strand on the same side of the condensers, and a supervisory signal controlled by each said relay during connections, substantially as described.

27. In a telephone system, the combination with subscribers' lines having connection-terminals and line-signaling devices at the central office, of a cord-circuit to establish connections between the lines for conversation, said cord-circuit having a strand in each side of the talking-circuit, a condenser interposed in each strand, means at the central office for supplying current to the lines for conversation, supervisory relay-windings connected between said means for supplying current and said cord-strands upon each side of the said two condensers, a normally inoperative supervisory signal for each end of the cord-circuit controlled respectively by the said windings on the same side of the condensers, one of said windings for each signal being energized by current from said means over one side of the talking-circuit and the substation ground connection when a connection exists to thereby cause the operation of the supervisory signal, and the other associated winding being energized by current from said source over the other side of the talking-circuit to thereby render the said signal inoperative, substantially as described.

28. In a telephone system, the combination with subscribers' lines having connection-terminals and line-signaling devices at the central office, of a cord-circuit to establish connections between the lines for conversation, said cord-circuit having a strand in each side of the talking-circuit, a condenser interposed in each strand, current-supplying means bridged across the cord-circuit at each side of said condensers to supply current to the lines for talking, supervisory windings interposed in the connections between the said means, and each of the cord-strands, a supervisory signal for each end of the cord-circuit, one winding on each side of the condensers being energized over one of the strands of the cord-circuit and a third conductor to cause the operation of the associated signal and the other winding on the same side of the condensers being energized over the metallic line to render the said signal inoperative, substantially as described.

29. In a telephone system, the combination with subscribers' lines having connection-terminals and line-signaling devices at the central office and normal ground connections at the substations, of a cord-circuit to establish connections between the lines for conversation, said cord-circuit having a strand in each side of the talking-circuit, a condenser interposed in each strand, means at the central office for supplying current to the lines for conversation, supervisory relay-windings connected between said means for supplying current and said cord-strands upon each side of the said two condensers, a normally inoperative supervisory signal for each end of the cord-circuit controlled respectively by the said windings on the same side of the condensers, one of said windings for each signal being energized by current from said means over one side of the talking-circuit and the substation ground connection when a connection exists to thereby cause the operation of the supervisory signal, and both windings being energized from said source over the metallic line during conversation to render said signal inoperative.

30. In a telephone system, the combination with subscribers' lines having connection-terminals and line-signaling device at the central office and grounded signaling-bells at the substations, of a cord-circuit to establish connections between the lines for conversation, said cord-circuit having a strand in each side of the talking-circuit, a condenser interposed in each strand, means at the central office for supplying current to the lines for conversation, supervisory relay-windings connected between said means for supplying current and said cord-strands upon each side of the said two condensers, a normally inoperative supervisory signal for each end of the cord-circuit controlled respectively by the said windings on the same side of the condensers, one of said windings for each signal being energized by current from said source over one side of the talking-circuit and through the corresponding grounded bell at the substation when a connection exists to thereby cause the operation of the supervisory signal, and both windings being energized by current from said source over the metallic line during conversation to render the said signal inoperative.

821,899. RAILWAY-SIGNAL-OPERATING MECHANISM.

LOUIS H. THULLEN, Edgewood Park, Pa., assignor to The Union Switch and Signal Company, Swissvale, Pa., a Corporation of Pennsylvania.

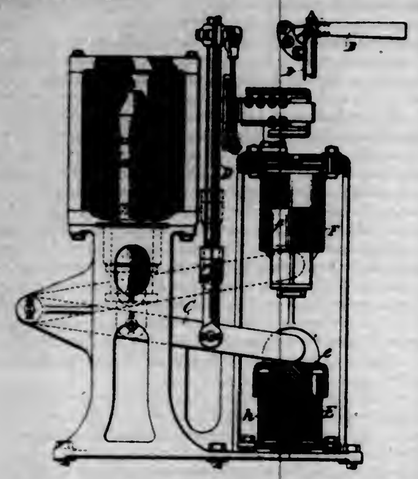
Filed Mar. 24, 1906. Serial No. 307,333.

Claim.—1. The combination with a mechanism for operating a railway-signal comprising an electromagnetic device, of a buffer or cushion device, a movable part controlled by said electromagnetic device, and adapted to engage the said buffer or cushion device upon a movement of said signal in either direction, and a connection between said movable part and the signal.

2. The combination with a mechanism for operating a railway-signal comprising an electromagnetic device, of a buffer or cushion device, a movable part controlled by said electromagnetic device and adapted to engage said buffer or cushion device after a partial movement of said signal has been effected in either direction, and a connection between said movable part and the signal arm or blade.

3. The combination with a mechanism for operating a railway-

signal comprising an electromagnetic device, of a buffer or cushion device comprising two cylinders and coacting plungers, a movable part adapted to alternately engage the plungers upon a movement of said signal in either direction, and a connection between said movable part and the signal.



4. The combination with a mechanism for operating a railway-signal comprising an electromagnetic device, of a buffer or cushion device comprising two cylinders and coacting plungers separated from each other to provide a space therebetween, a movable part adapted to travel between the respective plungers and to engage them after a partial movement of the signal has been effected in either direction, and a connection between the movable part and the signal.

5. The combination with a mechanism for operating a railway-signal, comprising an electromagnetic device, of a buffer or cushion device, a pivotally-mounted movable part controlled by said electromagnetic device and adapted to engage said buffer or cushion device after a partial movement of the signal has been effected in either direction, and a connection between the movable part and the signal.

6. The combination with a mechanism for operating a railway-signal, comprising an electromagnetic device, of a buffer or cushion device comprising two cylinders and coacting plungers separated from each other to provide a space therebetween, a resilient device so disposed with relation to one or both of said plungers as to move them in one direction, a movable part adapted to alternately engage the plungers only after a partial movement of the signal in either direction has been effected, and a connection between said movable part and the signal.

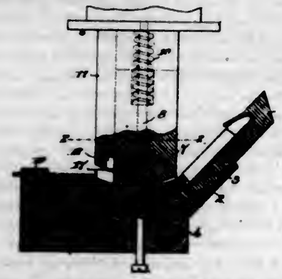
7. The combination with a mechanism for operating a railway-signal, comprising an electromagnetic device, of a buffer or cushion device comprising two cylinders and coacting plungers separated from each other to provide a space therebetween, a spring so disposed with relation to one of said plungers as to move it in one direction, a movable part comprising a lever adapted to have a free and unobstructed movement between the plungers and to alternately engage them only after a partial movement of the signal in either direction has been effected, and a connection between said movable part and the signal.

821,900. MACHINE FOR COVERING EYEGLASS-CASES.

FRANK A. TIBBALS, Weymouth Center, Mass., assignor to Wilton E. Drake, Boston, Mass. Filed June 12, 1902. Serial No. 111,431.

Claim.—1. A covering-machine, having, in combination, a yieldingly-supported member for receiving the article to be covered, a member closely embracing said member, a plunger adapted upon its descent to press the article and the receiving member downward below the surface of the embracing member to cause the embracing member to fold upward the edges of the covering material at the edges of the article, and means for actuating the plunger, substantially as described.

2. A covering-machine, having, in combination, a yieldingly-supported receiving member for holding the article to be covered, an embracing member shaped to conform closely to the receiving member, a plunger adapted to descend and press the article and the receiving member downward below the surface of the embracing member to cause the latter to bend up the edges of the covering material, an auxiliary plunger adapted to press down and affix the edges of the covering material upon the upper surface of the article to be covered, and means for actuating the pressing-plunger and the auxiliary plunger to cause them to engage successively the article to be covered, substantially as described.



3. A covering-machine, having, in combination, a yieldingly-supported receiving member for holding the article to be covered, an embracing member closely conforming to the receiving member, a plunger adapted to engage the middle portion of the upper side of the article to be covered and to press it and the receiving member downwardly below the surface of the embracing member to cause the latter to fold up the edges of the covering material, wipers for bending over the edges of the covering material, an auxiliary plunger adapted to engage the edges of the covering material to affix them to the upper side of the article, and means for actuating the plungers to cause them to engage the work successively, substantially as described.

4. A machine for operating upon eyeglass-cases, having, in combination, a form to receive the case and covering material to be applied thereto, a plunger yieldingly supported upon a head adapted to descend and engage and hold the covering material and the case, and an auxiliary plunger rigidly secured to the head adapted to descend and press the covering material and the case to press them together, substantially as described.

5. A machine for covering eyeglass-cases, having, in combination, a form, a yieldingly-supported form-receiver, a plurality of wipers, a yieldingly-mounted plunger adapted to descend and engage the case to hold the covering material and case in position, thereby bending the margin of the covering material upwardly, and an auxiliary plunger adapted thereafter to descend and to press down the margin of the cover upon the upper surface of the case, substantially as described.

6. A machine for covering the lids of eyeglass-cases, having, in combination, a form adapted to receive a lid, end wipers for bending over the end margins of the covering material, side wipers for bending over the margin of one side of the covering material, means for actuating the wipers, a pressing-plunger adapted to descend and to bear upon the central portion of the lid, an auxiliary plunger embracing the ends and one side of the pressing-plunger and adapted to descend upon and press down the bent-over edges of the covering material, and means for actuating successively the said plungers, substantially as described.

7. A machine for covering lids of eyeglass-cases, having, in combination, a form adapted to receive the lid, a yieldingly-supported form-carrier shaped to receive and support the form, a yielding plunger adapted to descend and bear upon the central portion of the lid, wipers for bending over the margins of the covering material, means for actuating the wipers, an auxiliary plunger embracing the ends and sides of the yieldingly-mounted plunger and adapted to descend and press down the bent-over edges of the covering material, and means for successively actuating the plungers, substantially as described.

8. A machine for covering lids of eyeglass-cases, having, in combination, a form adapted to receive the lid, a spring-support for the form, an embracing member closely conforming to the outline of the form, a main plunger adapted to engage the middle portion of the upper side of the lid, an auxiliary plunger adapted to engage the marginal portion of the upper side of the lid, a head for actuating the plungers, to which the auxiliary plunger is rigidly attached, and a spring connection between the main plunger and the head, the spring-supports for the frame and the main plunger being of such relative

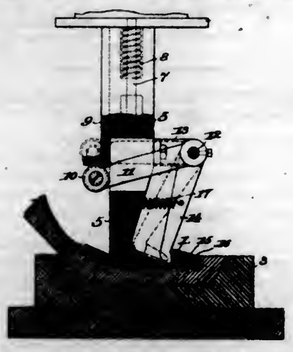
strength that during the downward movement of the head the form will yield first causing the embracing member to bend upward the margin of the covering material, and thereafter the main plunger will yield permitting the auxiliary plunger to engage the covering material and affix it to the upper surface of the covering, substantially as described.

9. A covering-machine, having, in combination, a movable member for receiving the article to be covered, a folding member closely embracing said receiving member and normally located substantially on a level therewith, a plunger for holding the article to be covered against the receiving member, and means for moving the plunger and the receiving member downward to cause the folding member to bend upward the edges of the covering material at the edges of the said article, substantially as described.

10. A covering-machine, having, in combination, a yieldingly-supported receiving member for receiving the article to be covered, an embracing folding member shaped to conform closely to the receiving member and located normally substantially on a level therewith, a plunger arranged to descend and press the article and the receiving member downward below the surface of the folding member to cause the latter to bend up the edges of the covering material, an auxiliary plunger adapted to press down and affix the edges of the covering material upon the upper surface of the article to be covered, and means for actuating the plungers to cause them to engage successively the article to be covered, substantially as described.

821,901. MACHINE FOR LINING EYEGLASS-CASES.

FRANK A. TIBBALS, Weymouth Center, Mass., assignor to Wilton E. Drake, Boston, Mass. Filed June 12, 1902. Serial No. 111,432.



Claim.—1. A machine for lining articles, having, in combination, a support for the article to be lined, a plurality of pressing members for engaging different parts of the lining and pressing it into the article, and means for actuating the pressing members independently during the pressing operation, substantially as described.

2. A machine for lining articles, having, in combination, a support for the article to be lined, a presser for pressing a part of the lining into place and holding it, a presser for engaging another part of the lining and pressing it into the article in a different direction from the direction of pressure of the former presser, and means for successively actuating the pressers, substantially as described.

3. A machine for lining recessed articles, having, in combination, a main presser for lining the exposed part of the article to be lined, an auxiliary presser for lining the recessed part, and means for actuating the pressers, substantially as described.

4. A machine for lining recessed articles, having, in combination, a main presser for lining the exposed part of the article to be lined, an auxiliary presser for lining the recessed part, and means for successively actuating the pressers, substantially as described.

5. A machine for lining recessed articles, having, in combination, a main presser for lining the exposed part of the article, an auxiliary presser moving substantially at right angles to the direction of action of the main presser to line the recessed part of the article, and means for successively actuating the said pressers, substantially as described.

6. A machine for lining lipped eyeglass-cases, having, in combination, a main plunger, a laterally-moving presser-bar, and means for actuating first the main plunger and then the presser-bar to line respectively the exposed part and the lipped part of the eyeglass-case, substantially as described.

7. A machine for lining lipped eyeglass-cases, having, in combination, a main plunger, an auxiliary plunger, a presser-bar, means for actuating successively the said plungers, and operative connections between the auxiliary plunger and the presser-bar, substantially as described.

8. A machine for lining lipped eyeglass-cases, having, in combination, a support for an eyeglass-case, a head movable in a direction substantially normal to the surface thereof, means for actuating the head, an auxiliary plunger carried by the head, a main plunger yieldingly mounted on the head, a presser-bar and means for operating the presser-bar actuated by engagement with the auxiliary plunger and so located as to be engaged by the same after the head had moved enough to bring the main plunger into contact with the lining, substantially as described.

9. A machine for lining lipped eyeglass-cases having, in combination, a support for an eyeglass-case, a head movable in a direction substantially normal to the surface thereof, means for actuating the head, an auxiliary plunger carried by the head, a main plunger yieldingly mounted on the head, a presser-bar, and means pivotally secured to the main plunger for supporting and actuating the presser-bar, the said means being so located as to be engaged and actuated by the auxiliary plunger to cause the presser-bar to move laterally, substantially as described.

10. A machine for lining recessed articles, having, in combination, a main presser for lining the exposed part of the interior surface of the article, an auxiliary presser for lining the recessed part of the article, and means for actuating the pressers operating to move them first in unison so as to enter the article, and then to move the auxiliary presser away from the main presser and into the recessed part of the article, substantially as described.

821,902. STATIC-INDUCTION GENERATOR.

HENRY B. TODD, Meriden, Conn. Filed Feb. 18, 1905. Serial No. 246,242.



Claim.—1. A generating plate or cylinder for static machines composed of fibrous material and sulfur substantially as described.

2. A generating plate or cylinder for static-induction generators composed of a body of fibrous material saturated with sulfur by immersion in a melted bath substantially as described.

3. In a static-induction generator the combination with the usual driving, supporting and collecting mechanism of a plate or disk formed of fibrous material and sulfur substantially as described.

4. In a static-induction generator in combination with the usual driving and collecting mechanism; the plates, comb-supports, and other parts and appliances that are usually made of hard rubber or glass formed of a fibrous material saturated with sulfur substantially as described.

821,903. NON-REFILLABLE BOTTLE.

HUGO TOLKE, New York, N. Y., WILLIAM T. HERBERT, Philadelphia, Pa., and HERBERT HERBERT, New York, N. Y. Filed Mar. 7, 1906. Serial No. 304,639.

Claim.—1. A non-refillable bottle having the valve *d* located in the junction of the neck with the body of the bottle, the stopper fitted within the neck above the valve and constructed of hour-glass shape as herein described with the middle portion much smaller than the ends and provided with the flange *p*, and the stopper having the central passages *j* and *k* in opposite ends with diaphragm *s* between the same, and the ports *l*, *l'* opening from such passages upon the opposite sides of the stopper above and below the flange, whereby all of the fluid moves in and out of the stopper upon its central line, and passes spirally around the stopper and past the flange *p* in its movement from the port *l'* to the port *l*, and the neck of the bottle having

the expanded chamber *q* surrounding the flange *p* to afford free passage for the fluid.



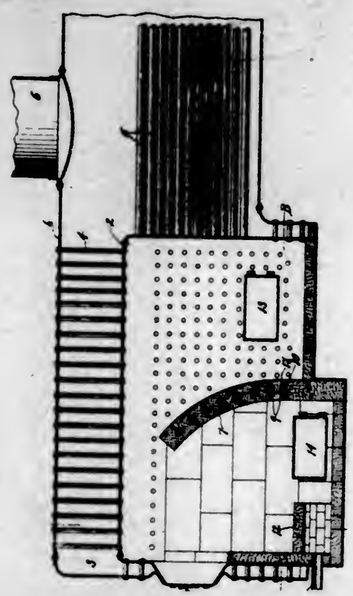
3. A non-refillable bottle having a valve-seat located at the junction of the neck with the body of the bottle and an enlarged chamber in the neck above the valve-seat, the shoulder upon the neck above such chamber the passage through such shoulder being smaller than the outlet of the bottle-neck, the valve *d* fitted to the valve-seat with check-ball *f* in the chamber above such seat, and the stopper fitted within the neck and constructed as herein described with the central passages *j* and *k* in opposite ends with diaphragm *s* and flange *p* between the same, and the ports *l*, *l'* opening from such passages upon the opposite sides of the stopper above and below the flange, whereby all of the fluid moves in and out of the stopper upon its central line, and passes spirally around the stopper in its flow from the port *l'* to the port *l*, and the stopper having ribs *k'* upon the inner side of the passage *k* to support the ball *f* and permit the flow of the liquid past the ball into such passage, when the bottle is inverted, substantially as set forth.

3. A non-refillable bottle having a valve-seat located at the junction of the neck with the body of the bottle, and an enlarged chamber in the neck above such seat, a shoulder upon the neck above such chamber, a passage through such shoulder being smaller than the outlet of the bottle-neck, the neck having a chamber larger than the neck adjacent to such shoulder with annular groove *o* near its upper end, a valve fitted to the valve-seat with check-ball in the chamber above the same, the hour-glass-shaped stopper fitted to the shoulder and provided with the pockets *j*, and *k* in its opposite ends separated by the diaphragm *s* and having the ports *l*, *l'* opening from the passages upon opposite sides of the stopper, and the stopper having the inclined recesses *m* with balls *n* fitted loosely therein and adapted to engage the groove *o* to lock the stopper in place.

821,904. LOCOMOTIVE-BOILER. HERBERT J. TRAVIS, New York, N. Y. Filed May 12, 1905. Serial No. 260,668.

Claim.—The combination with the fire-chamber of a locomotive provided with an opening through its rear wall for the admission of a blast of pulverized fuel, of a wall extending upwardly and rearwardly from the bottom of the chamber intermediate of the ends of the chamber and opposite the inflow of the pulverized fuel, the said wall consisting of superposed bricks and transverse water-circulating tubes engaged with the opposite walls of the fire-chamber and housed within and forming a support for the superposed bricks.

821,904.



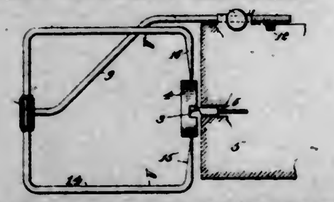
821,905. HANDLE-BAR. BOHUMIL TULKA, Prague, Austria-Hungary. Filed Jan. 10, 1905. Serial No. 240,444.



Claim.—1. The combination with a bicycle-stem having a rectangular-shaped end, of a handle-bar having a rectangular part connected thereto, said part being adapted to slide vertically on the rectangularly-shaped end of the stem, a substantially U-shaped part adapted to slide on the stem embracing the upper and lower faces of the part carried by the handle, and means carried by the parts for locking them to the stem.

2. In combination with a bicycle or like vehicle, the stems thereof having a rectangularly-shaped end, the handle-bar having a part connected thereto, said part being adapted to slide vertically on the said end of the stem, a second part also adapted to slide on the end of the stem, a screw-bolt carried by one part and engaging with the other part and a nut engaging with said bolt for locking the parts together and to the stem, substantially as described.

821,906. CLOTH-GUIDING DEVICE. EDWARD VAN WINKLE, Jersey City, N. J. Filed Oct. 3, 1905. Serial No. 281,172.



Claim.—1. In an overseaming attachment for sewing-machines, a work-shifting device in combination with a guiding device comprising a wire having tapering cloth-guiding ends spaced apart and on opposite sides of said shifting device.

2. In an overseaming attachment for sewing-machines, a work-shifting device in combination with a pivotally-mounted guiding device comprising two guiding-faces spaced apart and on opposite sides of said shifting device.

3. In an overseaming attachment for sewing-machines, a work-shifting device in combination with a pivotally-mounted guiding device comprising a wire having tapered cloth-guiding ends on opposite sides of said work-shifting device and means to adjust the afore said tapered ends to and from the work-shifting device.

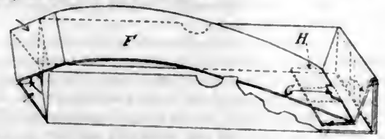
4. In an overseaming attachment for sewing-machines, a work-shifting device in combination with a cloth-guiding device comprising a bent wire tapered at both ends, forming a broken hollow square having the extreme outer faces of the tapered ends in one plane and on opposite sides of the said work-shifting device.

5. In an overseaming attachment for sewing-machines a work-shifting device in combination with a guiding device comprising a bent wire forming a broken hollow square, adjustably mounted, having two cloth-guiding ends spaced apart with their extreme outer faces in one plane, whereby the guiding-faces can be adjusted in the plane of the needle-bar.

6. In an overseaming attachment for sewing-machines a work-shifting device, in combination with a pivotally-mounted guiding device comprising a wire having tapered cloth-guiding ends spaced apart and on opposite sides of said shifting device.

7. In an overseaming attachment for sewing-machines a work-shifting device in combination with a guiding device comprising a wire having tapering cloth-guiding ends spaced apart and pivotally mounted in a supporting member provided with means for lateral adjustment of the cloth-guiding member.

821,907. PAPER BOX. PETER R. WARREN, Brookline, Mass. Filed Aug. 18, 1905. Serial No. 274,696.



Claim.—1. A folding paper box having bottom, side and end portions, one of the end-forming portions having an extension which is folded to form a false inner bottom for the box, the opposite end-forming portion having an extension which forms a double end, and a further extension which rests on the bottom and is slitted back from the end to form a tongue between which and the body of said slitted extension the end of said false bottom is received.

2. A folding paper box comprising a bottom portion, side-forming flaps and end-forming flaps, an extension of one end of said bottom portion forming a double end, and a false bottom, the opposite end of said bottom portion having an extension which forms a double end, and a further extension which is slitted back from the end to form a tongue between which and the body of said slitted extension the end of said false bottom is received.

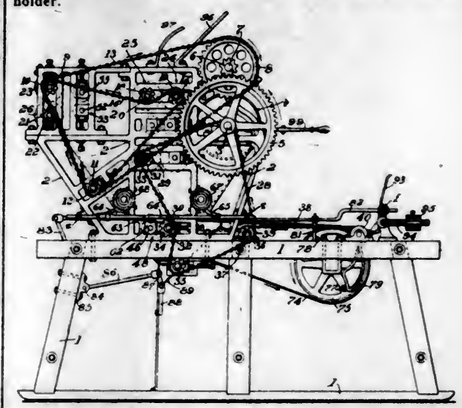
3. A folding paper box formed of a single blank, having a bottom portion, two wings which form the sides, each side wing having flaps which turn inward to form ends, the bottom having at one end an extension which folds up over the outer side and down on the inner side of the end-forming flaps of the side wings, and a further extension which forms a false inner bottom for said box, the opposite end of said bottom portion having an extension which folds up on the outer side and down in the inner side of the end-forming flaps of the side wings, and a further extension which is slitted to form a tongue between which and the body of said extension the end of said false bottom is received.

821,908. MACHINE FOR CLEANING TIN PLATES. WILLIAM C. WEICHSEL and ULYSSES G. KNUPPENBURG, Avonmore, Pa. Filed Sept. 9, 1904. Serial No. 223,863.

Claim.—1. In a machine for cleaning tin or terne plates or sheets, the combination of a conveyer, a vertically-disposed plate-feeder, means to transfer the sheet from said conveyer to said feeder, a series of horizontally-disposed rolls in vertical alinement, and means to elevate the sheet-feeder to enter the sheet in the pass of the first set of rolls.

2. In a machine for cleaning tin and terne sheets or plates, the combination of a movable conveyer, a sheet-receiver, means to transfer the sheet from said receiver to the movable conveyer, a sheet-feeder, and means to transfer the sheets successively from said movable conveyer to said feeder.

3. In a tin-sheet-cleaning machine, the combination of a power-shaft, a series of sets of rolls in vertical alinement, means connecting said power-shaft and said rolls whereby said rolls are driven in the same direction, a sheet-conveyer, means to operate said conveyer from said power-shaft, a vertically-disposed sheet-feeder in alinement with the pass of one of said sets of rolls, a wheel carrying two knockers and rotated by power from one of said rolls, a rod carrying an adjustable finger, the said rod being rotated with reference to said wheel so as to enable the knockers thereon to contact with said finger, levers connecting said rod and said sheet-feeder, a normally vertically disposed sheet-holder mounted on a shaft, a counterweighted arm mounted on said shaft, a finger mounted on said shaft and adapted to engage the knockers on said wheel, whereby the rotation of said wheel successively elevates the feeder and depresses the sheet-holder.



4. In a machine for cleaning tin or terne plates or sheets, the combination with a reciprocating sheet-feeder, of cleaning-rolls adapted to receive the sheet, and means for subjecting the sheet to a cleaning material as it is passing from the reciprocating feeder to the cleaning-rolls.

5. In a machine for cleaning tin or terne plates or sheets, the combination with a reciprocating sheet-feeder, of feeding-rolls adapted to take the sheet from the reciprocating feeder, cleaning-rolls adapted to receive the sheet fed by the feeding-rolls, and means for subjecting the sheet to a cleaning material as it is passing from the feeding-rolls to the cleaning-rolls.

6. In a machine for cleaning tin or terne plates or sheets, the combination with a receptacle for containing the cleaning material, of a single set of rolls adapted to feed the sheets into the cleaning material, and cleaning-rolls positioned to receive the sheet as it emerges from the cleaning material.

7. In a machine for cleaning tin or terne plates or sheets, the combination with a receptacle for containing the cleaning material, of a single set of rolls adapted to feed the sheets into the cleaning material, cleaning-rolls positioned to receive the sheet as it emerges from the cleaning material, and an automatic feeder for delivering the sheets to the feeding-rolls.

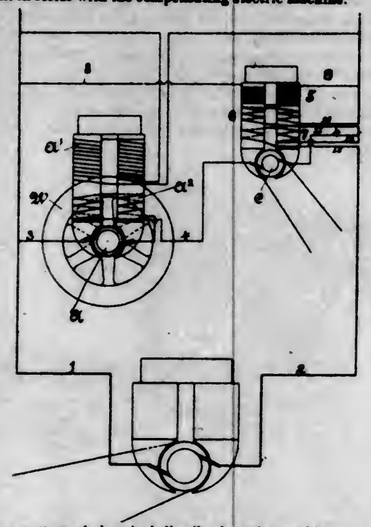
8. In a machine for cleaning tin or terne plates or sheets, the combination with cleaning means, of a reciprocating feeder for successively delivering the sheets to the cleaning means, an inclined sheet-supporter for feeding the sheets to the sheet-feeder, a conveyer for delivering the sheets to the inclined sheet-supporter, a tilting sheet-receiver for initially receiving the sheets and adapted to deliver the sheets to the conveyer, and mechanism adapted to automatically operate the devices aforesaid, whereby the sheets are successively fed from the sheet-receiver to the conveyer, thence to the sheet-supporter, and finally from the sheet-feeder to the cleaning means.

821,909. APPARATUS FOR THE REGULATION OF ELECTRIC SYSTEMS. GEORGE A. WELLS, Jr., New York, N. Y. Filed Nov. 10, 1903. Serial No. 180,536.

Claim.—1. In a system of electrical distribution, the combination of a generator adapted to supply the line conductors with the working current, a compensating electric machine adapted to store mechanical energy and release it subsequently as electric energy and connected with the line conductors, and a booster interposed in the connection between the said compensating electric machine and one of the line conductors.

2. In a system of electrical distribution, the combination of a generator adapted to supply the line conductors with the working

circuit, a compensating electric machine adapted to store mechanical energy and to release it subsequently as electric energy, and connected in multiple with the generator, and a booster interposed in the circuit in series with the compensating electric machine.

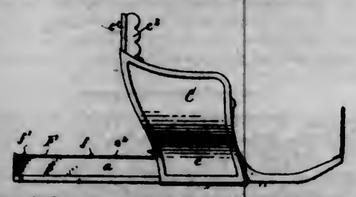


3. In a system of electrical distribution, the combination of a generator adapted to supply the line conductors with the working current, a compensating electric machine in electrical connection with the line conductors, and adapted to store mechanical energy and subsequently release it as electric energy, and a booster provided with a shunt-field with approximately constant excitation, and provided further with one or more series windings opposed to the shunt-field and connected in the main circuit, said booster having its armature interposed in the electrical connection of the compensating electric machine with the main circuit.

4. In a system of electrical distribution, the combination of a generator adapted to supply the main circuit with the working current, a compensating electric machine embodying a rotary armature, adapted to store mechanical energy and subsequently release it as electric energy, and having its armature connected in multiple with the generator, and a booster provided with a shunt-field with approximately constant excitation, and a plurality of windings opposed to the shunt-field, and connected in series in the main current, said booster having its armature connected in series with the armature of the compensating electric machine.

5. In a system of electrical distribution, the combination with a generator, of compensating mechanism adapted to store mechanical work or energy and subsequently release it as electric energy, and a governing mechanism therefor, subject in its governing action to the variations of the working current, and adapted to generate electromotive force in accordance with said variations of current.

821,910. SHIFTING-SEAT CARRIAGE. CHRISTIAN WEBB, Buffalo, N. Y. Filed Sept. 18, 1905. Serial No. 278,833.



Claim.—1. In a convertible vehicle, the combination of a front seat, and a rear seat mounted to slide toward the front seat and having a bottom which is movable out of its operative horizontal position to allow the rear seat to embrace the sides and back of the front seat, substantially as set forth.

2. In a convertible vehicle, the combination of a stationary front seat, and a rear seat mounted to slide toward the front seat and comprising rigidly-connected sides and back and a bottom which is movable from between said sides to allow the rear seat to embrace the sides and back of the front seat, substantially as set forth.

3. In a convertible vehicle, the combination of a stationary front seat comprising sides, a back and a bottom all rigidly connected, and a rear seat which is of substantially the same form but of greater width than the front seat and is mounted to slide toward the front seat, said rear seat comprising rigidly-connected sides and back and a bottom which is movable from its operative position to allow the rear seat to embrace the sides and back of the front seat, substantially as set forth.

4. In a convertible vehicle, the combination of a front seat, a rear seat mounted to slide toward the front seat and having a bottom which is movable out of its operative horizontal position to enable the rear seat to embrace the sides and back of the front seat, and means for supporting said bottom in operative position and which cooperate with said bottom to lock said rear seat from forward movement, substantially as set forth.

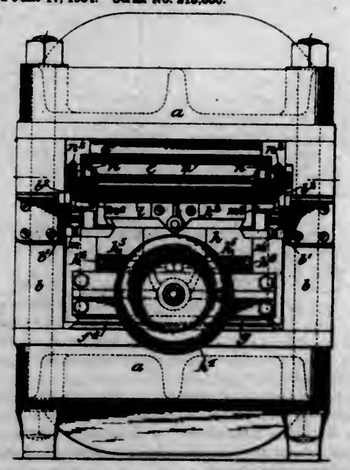
5. In a convertible vehicle, the combination of a front seat, a box projecting to the rear of the front seat, and a rear seat mounted to slide over said box toward the front seat and having a bottom which is movable from its operative position to allow the rear seat to embrace the front seat, and to form a partial deck for said box, substantially as set forth.

6. In a convertible vehicle, the combination of a front seat, a box projecting to the rear of the front seat, and a rear seat mounted to slide over said box toward the front seat and having a movable bottom, a deck-board hinged at its rear to said box and at its front to said bottom, said bottom being arranged to turn down and lowered with said deck-board and form with the deck-board a deck for said box, substantially as set forth.

7. In a convertible vehicle, the combination of a front seat, a box projecting to the rear of the front seat, and a rear seat mounted to slide over said box toward the front seat and having a movable bottom, a deck-board hinged at its rear to said box and at its front to said bottom, a front support for said bottom connected to said deck-board, and rear supports for said bottom on the back of said rear seat, substantially as set forth.

8. In a convertible vehicle, the combination of a front seat, a box projecting to the rear of the front seat, and a rear seat mounted to slide over said box toward the front seat and having a bottom which is movable from its operative position to allow the rear seat to embrace the front seat, and to form a partial deck for said box, said bottom having at one edge a strip or cleat which bears on supports to hold the bottom in operative position and closes the space between the back of the rear seat and said box when the bottom is moved out of operative position and the rear seat is moved forwardly, substantially as set forth.

821,911. TRANSFER-PRESS. GEORGE WHITE, Jersey City, N. J. Filed June 17, 1904. Serial No. 213,050.



Claim.—1. In a transfer-press, the combination of a frame, a working plate and a plate-supporting block movable vertically, the one with respect to the other, a master-roll carriage and a track or ways upon which the carriage with the master-roll may be guided to position between the working plate and the plate-supporting block, substantially as described.

2. In a transfer-press, the combination of a frame, a working plate and a plate-supporting block movable vertically, the one with respect to the other, a master-roll carriage, a track or ways upon which the carriage with the master-roll will be guided to position between the working plate and the plate-supporting block and a guide for said carriage, substantially as described.

3. In a transfer-press, the combination of a frame, a working plate and a plate-supporting block movable vertically, the one with respect to the other, a master-roll carriage, a track or ways upon which the carriage with the master-roll will be guided to position between the working plate and the plate-supporting block a guide-rod secured to said carriage, and a guide-block mounted on the frame, substantially as described.

4. In a transfer-press, the combination of a frame, a working plate and a plate-supporting block movable vertically, the one with respect to the other, a master-roll carriage, a track or ways upon which the carriage with the master-roll will be guided to position between the working plate and the plate-supporting block a guide-rod secured to said carriage, and a guide-block pivotally mounted on the frame, substantially as described.

5. In a transfer-press, the combination of a frame, a working plate and a plate-supporting block movable vertically, the one with respect to the other, a master-roll carriage, a track or ways upon which the carriage with the master-roll may be guided to position between the working plate and the plate-supporting block, and a positioning-pin adapted to engage one of the side frames of the carriage and the master-roll, substantially as described.

6. In a transfer-press, the combination of a frame, a working plate and a plate-supporting block movable vertically, the one with respect to the other, a master-roll carriage, a track or ways upon which the carriage with the master-roll may be guided to position between the working plate and the plate-supporting block, and a positioning-pin mounted on the frame and adapted to engage the master-roll, substantially as described.

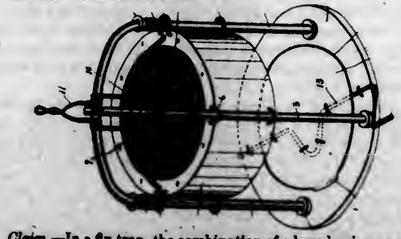
7. In a transfer-press, the combination of a frame, a working plate and a plate-supporting block movable vertically, the one with respect to the other, a master-roll and a positioning-pin mounted on the frame and adapted to engage the master-roll, substantially as described.

821,912. BLOTTER-HOLDER. ERNEST M. WHITTINGTON, Nashville, Tenn. Filed Aug. 23, 1905. Serial No. 275,419.



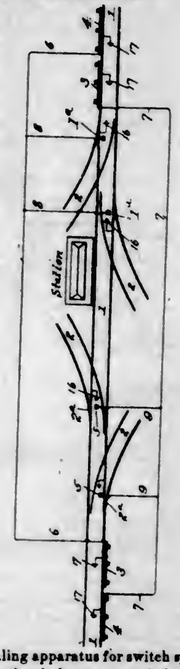
Claim.—A blotter-holder comprising a metal plate having integral clips at each end, said clips being bent back upon the under side of the plate and adapted to hold a blotter, an upwardly-extending loop punched from the plate adjacent one end, a finger punched from the plate adjacent the opposite end, a ring fastened upon the said loop, and an adjustable strap connected to said ring and carrying a ring at its opposite end adapted to engage said finger, all of said parts being arranged substantially as described.

821,913. FLY-TRAP. FRANK G. WILSON, Platte, Mich. Filed June 15, 1905. Serial No. 265,338.



Claim.—In a fly-trap, the combination of a base having an opening therethrough, a shaft extending transversely of said opening, a closure for said opening mounted for tilting movement upon the said shaft, vertical guides secured to the said base an open-bottom cage vertically movable on said guides and a trigger adapted to hold the cage in an elevated position.

821,914. AUTOMATIC ELECTRIC SIGNALING DEVICE FOR RAILWAY SWITCH SYSTEMS. DAVID C. WOLFE, Lyons, Kans. Filed Aug. 9, 1905. Serial No. 273,465.



Claim.—A signaling apparatus for switch systems comprising a main track, a series of switches connected thereto and adapted to side-track trains moving in opposite directions a pair of contact-rails adjacent to said track and at each end of the switch system, said rails being beyond the outermost switch, a switch-point-contact device located adjacent to each switch-point, one of the contact-rails at one end of switch system being connected to one of the contact-rails at the other end of the switch system, and to one set of switch-point devices, the other contact-rail being connected to the distant switch-point-contact devices and to the other contact-rail at the other end of the switch system, an alarm mechanism carried by the locomotive, a contact device carried by the locomotive and adapted to engage the contact-rails whereby an alarm will be given in the locomotive if an adjacent or distant switch is open.

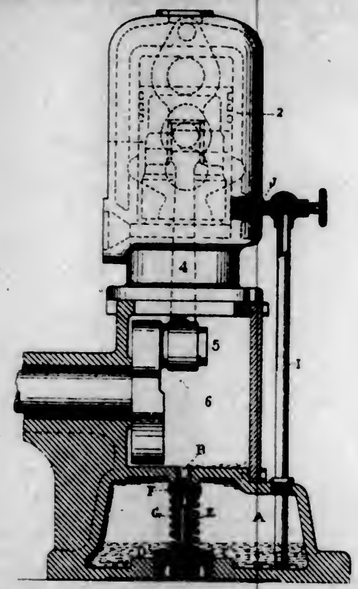
821,915. LUBRICATING DEVICE FOR INTERNAL-COMBUSTION ENGINES. GEORGE J. ALTHAM, Swansea, Mass. Filed July 17, 1905. Serial No. 269,913.

Claim.—1. In an internal-combustion motor, a reciprocating piston; a crank-chamber; an oil-reservoir located lower than the crank-chamber; means whereby the crank-chamber and the oil-reservoir are in communication; and a valve controlling the communication between the crank-chamber and the oil-reservoir, the movements of said valve being controlled by the compression and rarefaction of the atmosphere in the crank-chamber.

2. In a motor, a crank-chamber; a piston; a connecting-rod and crank in said crank-chamber; an oil-reservoir located in the base of the motor and below the crank-chamber; an inlet leading from the piston-chamber into the oil-reservoir; a valve located in the oil-reservoir to control the opening and closing of the inlet, said valve being controlled by the compression and rarefaction of the atmosphere in the crank-chamber, by the reciprocating piston.

3. In a motor, a reciprocating piston; a crank-chamber; an oil-reservoir; means whereby the crank-chamber and the oil-reservoir are in communication; a valve controlling the said communication; said valve and said oil-reservoir being so designed that there is an

air-space in said reservoir to form a cushion for the lubricant in said reservoir, the said valve being controlled by alternate compressions and rarefactions of the atmosphere in the crank-chamber, by the reciprocating piston; and a delivery-pipe leading from said oil-reservoir; all designed to subject and deliver the lubricant whenever and wherever desired at a substantially uniform pressure.



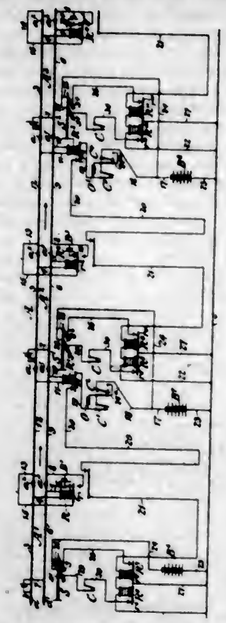
4. In a motor, a reciprocating piston; a crank-chamber; an oil-reservoir located lower than the crank-chamber; an inlet leading from the crank-chamber downward into the oil-reservoir; a valve controlling said inlet whereby when the said valve is opened, any lubricant in the crank-chamber may flow past said valve and be caught in the oil-reservoir, there being air between the surface of said liquid and said valve; said valve being controlled by the compression and rarefaction of the atmosphere in the crank-chamber by the reciprocating piston; and the atmosphere in the oil-reservoir forming an air-cushion, whereby a substantially uniform pressure is exerted upon the lubricant in the oil-reservoir; and a delivery-pipe whereby the lubricant can be delivered whenever and wherever desired at a uniform pressure.

5. In a motor, a crank-chamber; an oil-reservoir; an inlet connecting the former with the latter; a threaded opening in the wall of the oil-reservoir, and opposite to the inlet; a threaded plug to close the threaded opening; and a valve operatively mounted upon the plug to open and close the inlet between the crank-chamber and the oil-reservoir; all designed to render the assemblage of the parts, and access to the oil-chamber, easy.

821,916. RAILWAY SIGNALING SYSTEM. ABEL AHRS, Jr., Cleveland, Ohio, and JOHN S. HOUSTON, Edgewood Park, Pa., assignors to The Union Switch and Signal Company, Swissvale, Pa., a Corporation of Pennsylvania. Filed Feb. 24, 1903. Serial No. 144,751.

Claim.—1. In a block-signaling system, the combination of a home semaphore and a distant semaphore located at the entrance end of each block-section, a relay of one resistance for controlling a home signal, and a relay of a different resistance for controlling a distant signal, a line-circuit and battery for each pair of relays a resistance, and means for cutting said resistance into and out of said line-circuit, the operation being such that when the resistance is in circuit with the relays only one of such relays will be energized by the battery in such circuit to attract its armature but when the resistance is cut out of the circuit both of the relays will be energized by current from the battery in such circuit to attract their armatures.

2. In a block-signaling system, the combination with a signal device having a plurality of positions of indication, located at the entrance end of a block-section, a relay of one resistance for controlling the indication of the signaling device for one block, and a relay of a different resistance for controlling the indication of the signaling device for another block, both relays being located at the same point, a line-circuit and battery for each pair of relays, a resistance, and means for cutting said resistance into and out of said line-circuit, the operation being such that when the resistance is in circuit with the relays only of one of such relays will be energized by the battery in such circuit to attract its armature but when the resistance is cut out of the circuit both of the relays will be energized by current from the battery in such circuit to attract their armatures.



3. In a block-signaling system, the combination of a home semaphore and a distant semaphore located at the entrance end of each block-section, a relay of one resistance for controlling a home signal, and a relay of a different resistance for controlling a distant signal, both relays being located at the same point, a line-circuit and battery for each pair of relays, a resistance, and means operated by a home signal of a different block-section for cutting said resistance into and out of said line-circuit, the operation being such that when the resistance is in circuit with the relays only one of such relays will be energized by the battery in such circuit to attract its armature but when the resistance is cut out of the circuit both of the relays will be energized by current from the battery in such circuit to attract their armatures.

4. In a block-signaling system, the combination of a home semaphore and a distant semaphore located at the entrance end of each block-section, a relay of one resistance for controlling a home signal, and a relay of a different resistance for controlling a distant signal, both relays being located at the same point, a line-circuit and battery for each pair of relays, a resistance, and a circuit-controller operated by a home signal of a different block-section for cutting said resistance into and out of said line-circuit, the operation being such that when the resistance is in circuit with the relays only one of such relays will be energized by the battery in such circuit to attract its armature but when the resistance is cut out of the circuit both of the relays will be energized by current from the battery in such circuit to attract their armatures.

5. In a block-signaling system, the combination of a home semaphore and a distant semaphore located at the entrance end of each block-section, a relay of one resistance for controlling a home signal, and a relay of a different resistance for controlling a distant signal, both relays being located at the same point, a line-circuit and battery for each pair of relays, a resistance, and a circuit-controller operated by a home signal of a different block-section for cutting said resistance into and out of said line-circuit, the operation being such that when the resistance is in circuit with the relays only one of such relays will be energized by the battery in such circuit to attract its armature but when the resistance is cut out of the circuit both of the relays will be energized by current from the battery in such circuit to attract their armatures.

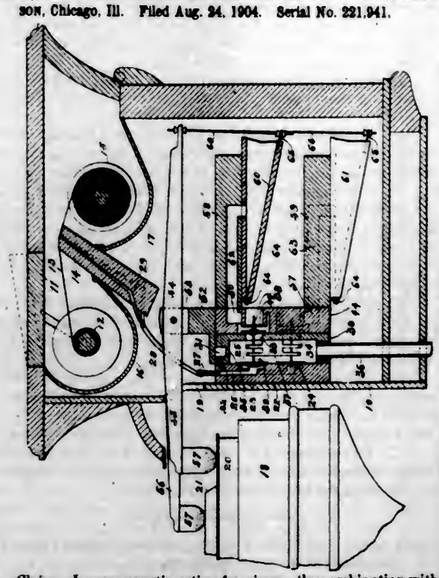
6. In a block-signaling system, the combination of a home semaphore and a distant semaphore located at the entrance end of each block-section, a relay of one resistance and slow acting for controlling a home signal, and a relay of a different resistance for controlling a distant signal, both relays being located at the same point, a line-circuit and battery for each pair of relays, a resistance, and a circuit-controller operated by a home signal, of a different block-section for cutting said resistance into and out of said line-circuit, the operation being such that when the resistance is in circuit with the relays only one of such relays will be energized by the battery in such circuit to attract its armature but when the resistance is cut out of the circuit both of the relays will be energized by current from the battery in such circuit to attract their armatures.

7. In a block-signaling system, the combination of a home and distant semaphore for each block-section, a relay for each home and each distant semaphore included in series with a battery in the same line-circuit, a resistance, and train-controlled means for cutting said resistance into and out of the line-circuit.

8. In a block-signaling system, the combination of a home and distant semaphore for each block-section, a relay for each home and distant semaphore included in series with a battery in the same line-circuit, and train-controlled means for varying the resistance in said line-circuit whereby one or both of said relays may be made to respond to close the circuit on its semaphore.

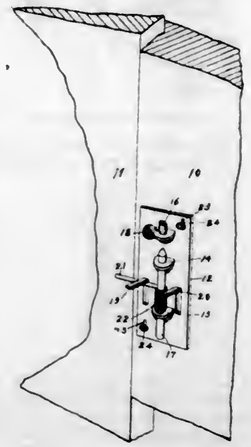
9. In a block-signaling system, the combination of a home and distant semaphore for each block-section, a relay for each home and each distant semaphore included in series with a battery in the same line-circuit, a resistance and means operated from a second home signal for cutting said resistance into and out of the line-circuit of the two relays, the operation being that when the resistance is in the line-circuit only one of the relays will respond to the current of the battery, but when cut out of the circuit both relays will respond to the current of the battery.

821,917. PNEUMATIC ACTION FOR PIANOS. ALFRED ANDERSON, Chicago, Ill. Filed Aug. 24, 1904. Serial No. 221,941.



Claim.—In a pneumatic action for pianos, the combination with the casing, of a series of key-actuating levers fulcrumed therein, a tracker-board mounted near said levers and having a series of channels, a primary board located in the front part of the casing and having a series of recesses provided with channels having communication with the channels of the tracker-board, a diaphragm mounted over each of said recesses, a hollow supporting-board for the valves located on the inner surface of the primary board and having a series of openings registering with the diaphragm-recesses, the cavity of said valve-supporting board having communication with each of the channels leading from the diaphragm-recesses, a series of valve-supporting brackets each having its ends bifurcated and provided with apertures, said brackets being secured in an inclined position on the inner surface of the rear portion of said supporting-board, a main valve-seat board located on the rear surface of said supporting-board and having a series of openings each provided with a tubular valve-seat therein, said main board having in its rear surface a series of openings communicating with the openings in the front surface thereof, the tubular valve-seats and the openings in the front surface of the main board registering with the openings in the supporting-board, a series of valves movably mounted on the brackets of the supporting-board to open and close the openings therein as well as to open and close the tubular valve-seats, the stems of said valves adapted to impinge at one of their ends the diaphragms, a series of bellows having communication with the openings on the rear surface of said main board, adjustable connections uniting the rear ends of the striking-levers to the bellows, and means to supply air to the cavity of the supporting-board, substantially as described.

821,918. BURGLAR-ALARM. ANDREW M. ANDERSEN and HARRY H. ACHERSHAUG, Chicago, Ill.; said Achershaug assignor to said Andersen. Filed Sept. 13, 1905. Serial No. 278,209.



Claim.—A burglar-alarm consisting of a plate provided with means to secure it to a support, a plurality of alined apertured projections formed out of the plate and integral therewith and at right angles to the same, a disk pivotally secured on the projection near one end of the plate, a spring-actuated bolt located in the other projections and having a laterally-extending arm projecting beyond the side of the plate, and a catch or locking projection formed out of the plate and integral therewith and located on each side of the bolt, substantially as described.

821,919. TREATMENT OF TOBACCO. ALFRED C. BEDORTHA and GEORGE Q. BEDORTHA, Windsor, Conn. Filed Apr. 19, 1900. Serial No. 13,452.

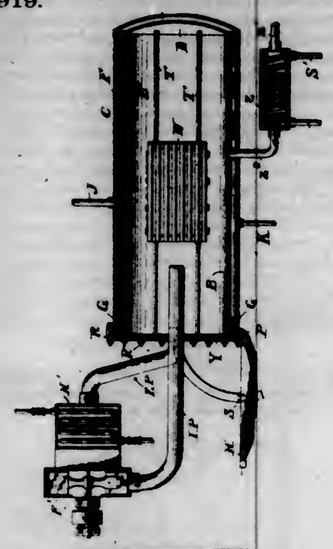
Claim.—1. The process of treatment of tobacco, consisting in, first, completely drying the leaves of the tobacco, and then sterilizing the tobacco by subjecting the same to the action of hot air under pressure, substantially as and for the purpose described.

2. The process of treatment of tobacco, consisting in, first, completely drying the leaves of the tobacco, and then sterilizing the tobacco by subjecting the same to the action of a sterilizing medium, substantially as and for the purpose described.

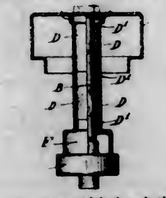
3. The process of treatment of tobacco, consisting in sterilizing the tobacco by subjecting the same to the action of hot air in artificial circulation, and in direct contact with the tobacco, substantially as and for the purpose described.

4. The process of treatment of tobacco, consisting in sterilizing the tobacco by subjecting the same to the action of hot air in circulation, and subsequently to the action of hot air under pressure greater than that of the atmosphere, substantially as and for the purpose described.

821,919.



821,920. INSULATING APPLIANCE. WILLIAM A. BONNELL, Brooklyn, N. Y. Filed Apr. 8, 1905. Serial No. 253,532.



Claim.—1. In combination with insulating appliances, pipe-outlets and outlet-boxes, said insulating appliances comprising tubular and ring members, said ring members provided with an inner recess, and all of said members adapted to pass over and insulate said pipe-outlets.

2. In combination with insulating appliances, pipe-outlets and an outlet-box, some of said insulating appliances comprising tubular members and other of said insulating appliances comprising U-shaped members, any of said members adapted to be joined together, and all of said members adapted to pass over and insulate said pipe-outlets.

821,921. AUTOMATIC MAGAZINE-GUN. ANDREW BURGESS, Owego, N. Y. Filed Oct. 17, 1903. Serial No. 177,413.



Claim.—1. In a magazine-gun, a longitudinally-reciprocating barrel having a shoulder thereon, a frame in which said barrel slides, and a retaining-ring surrounding the barrel and held by the frame, said ring having elastic fingers against which the shoulder of the barrel abuts in the forward movement, all combined.

2. In a magazine-gun a frame, a longitudinally-moving barrel provided with an inclined shoulder, and a ring surrounding the barrel and held by the frame, said ring having spring-fingers with inclined ends projecting toward the inclined shoulder of the barrel, all combined.

3. In a magazine-gun, a frame bored from its front to receive a cylindrical barrel, a removable retaining-ring, a barrel generally cylindrical but having notched sides, and a forked lever hung in the frame and having its arms in the notches in the barrel, whereby the removable barrel moves the lever or the lever the barrel in both directions.

4. The combination with the barrel having notches in its sides, of a forked lever pivoted in the frame and having its fork-arms in said notches, a butt-piece hinged to the stock, and a push-piece interposed between said forked lever and said butt-piece.

5. In a magazine-gun, the combination of a frame, a longitudinally-reciprocating barrel, a swinging magazine having an incline, and an abutment on the barrel acting to swing the magazine by engaging the incline thereof.

6. In a magazine-gun, a longitudinally-movable barrel, a pivoted endwise-feeding movable magazine, and a lever operated by the barrel to swing the magazine, all combined.

7. In a magazine-gun, a longitudinally-moving barrel, a movable swinging magazine, and a lever pivoted in the frame, said barrel in part of its movement acting on an arm of the lever to bear on the magazine, and in another part releasing the lever and magazine.

8. In an automatic gun, a longitudinally-moving barrel, a movable magazine, lever-actuated by the barrel in its forward movement to move the magazine into the line of movement of the barrel, and a trigger connected to the magazine for the removal of the same from the path of the barrel.

9. In a magazine-gun, a curved magazine pivoted in the stock and having its front end movable into line with the rear of the barrel, and a flexible loading-tube constructed to enter said magazine and to conform to the curve thereof.

10. In a magazine-gun, a longitudinally-reciprocating barrel, a firing-pin laterally and longitudinally movable in the frame, and an incline in the frame by which the lateral movement of the firing-pin in one direction also advances said pin, all combined.

11. In a magazine-gun, a longitudinally-reciprocating barrel, a firing-pin laterally and longitudinally movable in the frame, an incline on the frame against which the head of the firing-pin bears, and a movable piece connected to the trigger by which the firing-pin may be forced along said incline, all combined.

12. In combination with a curved magazine, a flexible loading-tube constructed to enter said magazine and to conform to the curve thereof.

13. In combination with a curved magazine, a loading-tube constructed to enter said magazine said loading-tube having a series of transverse cuts in its sides, so as to flex in the magazine.

14. In a magazine-gun, the combination of the barrel, trigger pivoted in the frame and having a shoulder thereon, a pull-piece and a firing-pin coöperating with the trigger, and a mainspring arranged to bear on either the rear or the top of the trigger-shoulder as described, so as to bear the trigger in one direction or swing it forcibly in the other direction.

15. The combination of the frame, a trigger pivoted therein and having a shoulder below the pivot, a mainspring bearing on said shoulder, a pull-piece engaging the trigger above the pivot, and a firing-pin coöperating with the pull-piece.

16. The combination of the frame, a trigger pivoted therein, the mainspring bearing on an abutment of the trigger from the rear, or striking the trigger from above according to the position of the trigger, and means connected to the trigger for firing the cartridge.

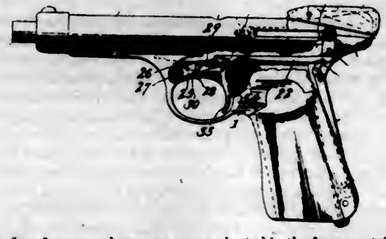
17. The combination of a reciprocating barrel, a cartridge-holding pin, and a spring in the frame and bearing on the cartridge-holding pin when the barrel is in forward position.

821,922. AUTOMATIC GUN. ANDREW BURGESS, Owego, N. Y. Filed Nov. 4, 1904. Serial No. 231,494.

Claim.—1. The combination with a rigid barrel and frame, of a rigidly-connected breech-closing piece and barrel-casing, a spring to press the casing and breech-piece forward, a pivoted inertia-brake or retarder, and a spring acting to move the brake into the path of movement of the breech-piece.

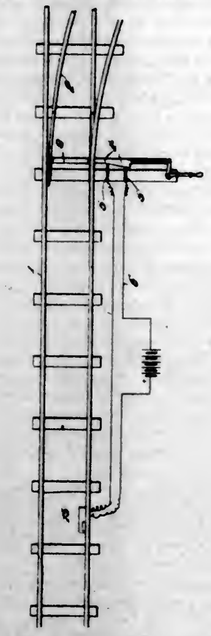
2. The combination with the barrel and frame, a rearwardly-moving breech-piece, a pivoted brake acting on said breech-piece, a longitudinally-sliding hammer, and a spring bearing on said hammer and brake to operate both in opposite directions.

3. The combination with the barrel, frame, and rearwardly-moving breech-piece, of a brake-piece pivoted to the frame, and having a short arm acted on by the backwardly-moving breech-piece, a long arm which is thereby rocked into the path of movement of the breech-piece, said breech-piece having a depression into which the short arm of the brake is rocked, to retard the breech-closing movement.



4. In a firearm, a hammer, a sear pivoted in the frame, a trigger separately pivoted in the frame, a dog pivoted to the sear and having a hook with which the trigger engages and by which the sear is released from the hammer, said dog extending into the path of movement of the hammer and being released from the trigger by the striking movement of the hammer, all combined substantially as described.

821,923. RAILROAD-SIGNAL. WALTER C. BURTON, Fitchburg, Mass. Filed Sept. 30, 1905. Serial No. 280,800.



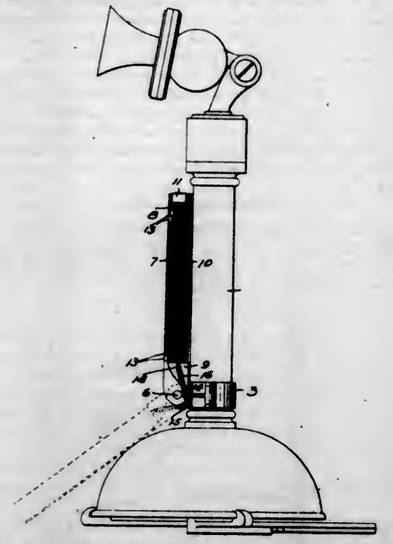
Claim.—1. In a signaling apparatus for railroads, the combination of a switch, detonating mechanism including a magazine for explosive charges, an exploder operable by the rolling-stock, a feeding-plate adapted to remove a charge from the magazine and place it in a position wherein it will be exploded by the exploder aforesaid, and means electrically connecting the feeding-plate with the switch for effecting actuation of the feeding-plate.

2. In a signaling apparatus for railroads, the combination of the main track, a switch, detonating mechanism in the length of the main track including an exploder, and means electrically connected for operation by the switch and adapted to place an explosive charge in a position wherein it will be operated upon by the exploder, the exploder being operable by the rolling-stock.

3. In a signaling apparatus for railroads, the combination of the main track, a switch, a switch-bar, an electric circuit including terminal contacts adjacent the switch-bar, a circuit-closing contact carried by the switch-bar to close the circuit aforesaid, an exploder in the length of the main track operable by the rolling-stock, a magazine for explosive charges, a feeding-plate for feeding an explosive charge from the magazine to the exploder, an electromagnet in the length of the circuit aforesaid, and an armature operable by said electromagnet and connected with the feeding-plate.

4. In a signaling apparatus for railroads, the combination of the main track, a switch, a switch-bar, an electric circuit including terminal contacts adjacent the switch-bar, a circuit-closing contact carried by the switch-bar to close the circuit aforesaid, an exploder in the length of the main track operable by the rolling-stock, a magazine for explosive charges, a feeding-plate for feeding an explosive charge from the magazine to the exploder, an electromagnet in the length of the circuit aforesaid, an armature operable by the said electromagnet and connected with the feeding-plate, a spring coacting with the armature to normally hold the feeding-plate in a position to receive a charge from the magazine, and spring means coacting with the exploder to normally hold the same in a position wherein it will be operable by the rolling-stock.

821,924. ATTACHMENT FOR TELEPHONES. HENRY L. CARPENTER, Minneapolis, Minn. Filed Jan. 30, 1905. Serial No. 243,230.



Claim.—1. A telephone attachment comprising a holder and a clamp for detachably securing it on a telephone-standard, said holder having a pivotal connection with said clamp and adapted to be swung to a vertical inoperative position against the standard and turned down preparatory to using, and said holder being provided with retaining means for a memorandum-pad, substantially as described.

2. A telephone attachment comprising a holder and a clamp for detachably securing it on a telephone-standard, said holder having a pivotal connection with said clamp and adapted to be swung to a vertical inoperative position against the standard and turned down preparatory to using, and said holder being provided on one side with a retaining means for a paper pad and on the other side with retaining means for indexed sheets or a card, substantially as described.

3. In combination with a suitable support, a telephone attachment comprising holders arranged one above another and having a common pivot at one end on said support and adapted to be swung to an upright position when not in use and turned down to an inclined position preparatory to using, substantially as described.

4. The combination, with a telephone-standard, of a clamp secured thereon, a holder pivoted on said clamp and adapted to be swung to a vertical position against the standard when not in use, and said holder being provided with retaining means for a memorandum-pad, a spring arranged to retain said holder in its raised or lowered position, and said holder resting upon the base of the standard when in use.

5. The combination, with a telephone-standard, of a clamp secured thereon and provided with a bracket having ears, holders pivoted on said ears and movable independently of one another, one holder having retaining means for a memorandum-pad, and the other having retaining means for a series of sheets or a card, and springs connecting said holders with said bracket.

6. The combination, with a telephone-standard, of a holder pivoted at one end thereon and adapted to be swung to a vertical position against said standard when not in use and provided on one side with retaining means for a memorandum-pad and having openings through which the under side of the pad is visible when the holder is raised to its inoperative position, substantially as described.

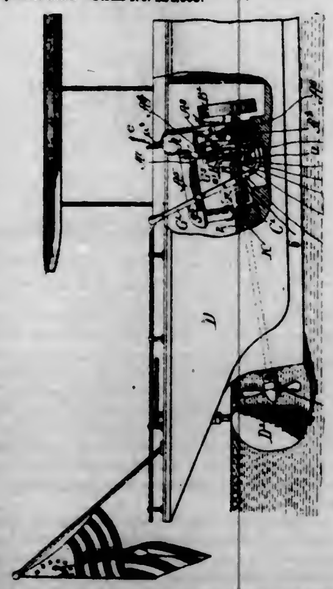
7. The combination, with a telephone-standard, of a clamp secured thereon, holders pivotally supported by said clamp and movable independently of one another, one holder having retaining means for a memorandum-pad and the other having retaining means for a series of sheets or a card, springs connected with said holders and one of said holders having openings through which the under side of the card or sheet thereon is visible when the holder is raised to a vertical position, substantially as described.

8. The combination, with a telephone-standard, of holders pivoted at one end thereon one above another and adapted to be swung to a vertical position against said standard when not in use and turned down to an inclined position preparatory to using.

9. The combination, with a telephone standard or support, of a memorandum-pad holder hinged at one end thereon and adapted to be swung to a vertical position against said support when not in use and turned down to an inclined position preparatory to using.

10. The combination, with a telephone-standard, of a spring-pressed holder pivoted thereon and adapted to be swung to a vertical inoperative position against the standard and turned down to an inclined position preparatory to using, and said holder being provided on one side with retaining means for a memorandum-pad and having a sheet for telephone-numbers on the other side, substantially as described.

821,825. POWER TRANSMISSION FOR EXPLOSIVE-MOTOR-DRIVEN BOATS. WILLIAM B. COLLIER, Muskegon, Mich., assignor to Racine Boat Mfg. Co., Muskegon, Mich., a Corporation of Michigan. Filed Sept. 16, 1904. Serial No. 224,655.



Claim.—1. A propelling mechanism for boats comprising an explosive-engine, its crank-shaft, a valve mechanism for controlling the supply of explosive admixture to the engine, an electric ignition mechanism provided with a member which is adjustable to change the sparking period, a propeller-wheel provided with blades which are angularly adjustable to vary the pitch thereof, an endwise-movable propeller-shaft connected with the propeller-blades and acting by its endwise movement to change the pitch of said blades, a cam-plate movable in a direction endwise of the shaft, operative connections between the said cam-plate and the crank-shaft producing movement of said cam-plate with the crank-shaft in the endwise movement of the latter, and operative connections between said cam-plate, the valve mechanism and the adjustable member of the ignition mechanism, whereby the propeller-blades, the valve mechanism and the ignition mechanism are adjusted in unison.

2. A propelling mechanism for boats comprising an explosive-engine, its crank-shaft, a valve mechanism for controlling the supply of explosive admixture to the engine, an electric ignition mechanism provided with a member which is adjustable to change the sparking period, a propeller-wheel provided with blades which are angularly adjustable to vary the pitch thereof, an endwise-movable propeller-shaft connected with the propeller-blades and acting, by its endwise movement, to change the pitch of said blades, a cam-plate movable in a direction endwise of the shaft, operative connections between the said cam-plate and the crank-shaft producing movement of said cam-plate with the crank-shaft in the endwise movement of the latter, and operative connections between said cam-plate, the valve mechanism and the adjustable member of the ignition mechanism, whereby the propeller-blades, the valve mechanism and the ignition mechanism are adjusted in unison.

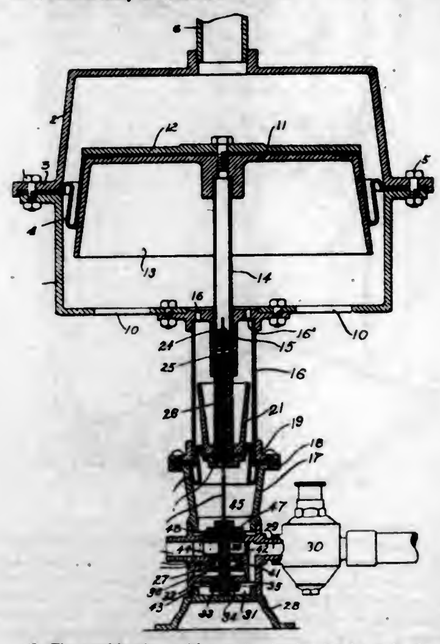
3. A propelling mechanism for boats comprising an explosive-engine, its crank-shaft, a valve mechanism for controlling the supply of explosive admixture to the engine, an electric ignition mechanism provided with a member which is adjustable to change the sparking period, a propeller-wheel provided with propeller-blades adapted for angular adjustment to vary the pitch thereof, an endwise-movable propeller-shaft connected with the propeller-blades and acting by its endwise movement to change the pitch of said blades, a coupling-sleeve attached to the said propeller-shaft and having sliding connection with the crank-shaft of the engine but rotating therewith, a non-rotative collar engaging said coupling-sleeve, a cam-plate attached to said collar and moving therewith in a direction endwise of the crank-shaft, a hand-lever connected with said non-rotative collar and operative connections between the said cam-plate, the said valve mechanism and the adjustable member of the ignition mechanism, whereby the propeller-blades, said valve mechanism and the ignition mechanism are adjusted in unison.

4. A propelling mechanism comprising an explosive-engine, its crank-shaft, a valve mechanism controlling the supply of explosive admixture to the engine, an electric ignition mechanism embracing a member which is carried by the crank-shaft, and a member which is adjustable to vary the sparking period, a propeller-wheel provided with propeller-blades which are angularly adjustable to vary the pitch thereof, an endwise-movable propeller-shaft connected with the propeller-blades and acting by its endwise movement to change the pitch of said blades, a coupling-sleeve attached to the propeller-shaft and having sliding connection with the crank-shaft of the engine but rotating therewith, a non-rotative sleeve or collar engaged with said coupling-sleeve, a hand-lever connected with said collar, and operative connections between said collar, the valve mechanism of the engine and the adjustable member of the ignition mechanism, whereby said propeller-blades, the valve mechanism and the ignition mechanism are adjustable in unison.

5. A propelling mechanism for boats comprising an explosive-engine, its crank-shaft, a valve mechanism for controlling the supply of explosive admixture to the engine, ignition mechanism embracing a member which is carried by the crank-shaft, and a member which is adjustable to vary the sparking period, a propeller-wheel provided with propeller-blades which are angularly adjustable to vary the pitch thereof, an endwise-movable propeller-shaft connected with the said blades, and acting by its endwise movement to change the pitch of said blades, a coupling-sleeve attached to said propeller-shaft and having endwise sliding connection with said crank-shaft but rotating therewith, a non-rotative collar engaged with said coupling-sleeve, a cam-plate attached to said collar and movable therewith in a direction endwise of the crank-shaft, a hand-lever connected with said collar for giving endwise movement to said sleeve, and operative connections between said cam-plate, the valve mechanism of the engine and the adjustable member of the ignition mechanism, whereby the propeller-blades, the valve mechanism and the ignition mechanism are adjusted in unison.

821,926. AIR-COMPRESSOR. HARRY B. COLLINS, Minneapolis, Minn., assignor of two-thirds to P. Peterson, Glenwood, Minn. Filed Feb. 2, 1905. Serial No. 243,798.

Claim.—1. The combination, with a casing having intake and exhaust ports arranged one above another and intake and exhaust valves, said intake-valve being normally open and said exhaust-valve closed, and said valves having a rod or stem, of a diaphragm within said casing above said valves and having an opening to receive said rod, means interposed between said diaphragm and the upper free end of said rod for raising said rod to close said intake-valve and open the exhaust, and a spring put under tension by the initial movement of said diaphragm to aid in seating said intake-valve, substantially as described.



2. The combination, with a casing having intake and exhaust ports and valves therefor provided with a stem or rod, the intake-valve being normally open and the exhaust-valve closed, of a diaphragm within said casing having an opening to receive said rod, means interposed between said diaphragm and the free end of said rod for causing the longitudinal movement of said rod and the closing of said intake-valve and the opening of the exhaust when said diaphragm is raised, and an air-compressing diaphragm connected with said first-named diaphragm and of greater diameter whereby a larger volume of air will be compressed.

3. The combination, with a casing having intake and exhaust ports and valves therefor, the intake-valve being normally open and the exhaust-valve closed by gravity, of a diaphragm located within said casing, a valve stem or rod projecting through said diaphragm and provided with a stop, a coil-spring provided on said rod between said stop and diaphragm and put under compression by the initial upward movement of said diaphragm, and a tube carried by said diaphragm within said spring and arranged to engage said stop during the final upward movement of said diaphragm to close said intake-valve and open the exhaust.

4. The combination, with a casing having intake and exhaust ports and valves therefor, said valves having a common stem and one being normally open and the other closed, of a diaphragm provided on said stem between said ports and separating one from the other, and said casing having a port leading from said intake-valve around said diaphragm and said exhaust-valve, a second diaphragm provided in said casing above said exhaust-valve, means arranged to operate said valves when said second diaphragm has moved upward a certain predetermined distance, and a third diaphragm of greater area than said second diaphragm and located above the same and connected therewith whereby a larger volume of air will be compressed, substantially as described.

5. The combination, with a casing having intake and exhaust ports one above the other and valves therefor provided with a stem or rod, said intake-valve being normally open and said exhaust-valve normally closed, and the exhaust-passage communicating with said exhaust-port being located between said valves, of a diaphragm within said casing above said valves, means arranged to be actuated by the upward movement of said diaphragm for moving said rod to close said intake-valve and open said exhaust, and said casing being provided with a port leading from said intake-valve to a point beneath said diaphragm around said exhaust-passage and said exhaust-valve, substantially as described.

6. The combination, with a casing having intake and exhaust ports and valves therefor, said intake being normally open and said exhaust-valve closed, the said casing having an exhaust-passage communicating with said exhaust-port and being between said valves, and a port leading from said inlet-valve around said exhaust-valve, said valve having a stem connecting them one with another, and a rod forming a continuation of said stem, of a diaphragm inclosing said stem between said valves, a second diaphragm within said casing above said valves, and means arranged to be actuated by the upward movement of said second-named diaphragm to impart a longitudinal movement to said rod to seat said inlet-valve and open the exhaust, substantially as described.

7. The combination, with a casing having intake and exhaust ports and valves therefor, said intake-valve being normally open and said exhaust-valve normally closed by gravity, and said valves being provided with a stem or rod, of a diaphragm having an opening through which said rod extends, a coil-spring provided on said rod and arranged to be compressed by the initial upward movement of said diaphragm to aid in seating said intake-valve when said diaphragm has moved to a predetermined point, and a second diaphragm of greater area than said first-named diaphragm and connected therewith, whereby a larger volume of air will be compressed.

8. The combination, with a casing having intake and exhaust ports and valves therefor provided with a stem or rod, said intake-valve being normally open and said exhaust-valve closed by gravity, of a diaphragm having an opening through which said rod extends, a spring provided on said rod and arranged to be put under tension by the initial upward movement of said diaphragm, and means operated during the final movement of said diaphragm for positively actuating said rod to seat said inlet-valve and open said exhaust-valve, substantially as described.

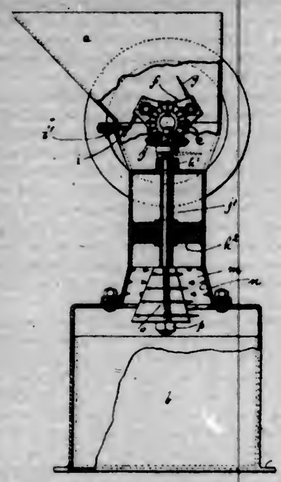
9. The combination, with a casing having intake and exhaust ports and valves provided with a rod, the intake-valve being normally open and the exhaust closed, of a diaphragm located within said casing above said valves and having an opening to receive said rod, means operated by the upward movement of said diaphragm for seating said intake-valve and opening said exhaust, a second diaphragm above and connected with said first-named diaphragm and operating simultaneously therewith and of greater area, whereby a larger volume of air will be compressed, the said diaphragms being provided with cups or castings whereby when the pressure is relieved beneath them said diaphragms will drop by gravity and open said intake-valve and close said exhaust-valve, substantially as described.

10. The combination with a casing having intake and exhaust ports and valves therefor provided with a stem or rod, said intake-valve being normally open and said exhaust-valve closed, the said casing having an exhaust-passage communicating with said exhaust-port between said valves, a chamber 45 above said exhaust-valve and a chamber 36 above said intake-valve, the said casing having a port leading from said chamber 36 to said chamber 45, of a diaphragm inclosing said stem between said valves and separating said chamber 36 from said exhaust-passage, a second diaphragm located in said chamber 45, and having a sliding connection with said rod, and means actuated by the upward movement of said second diaphragm for imparting a longitudinal movement to said rod to seat said inlet-valve and open the exhaust, substantially as described.

821,927. ICE-BREAKING DEVICE. JOHN H. DALE, Newark, N. J., assignor of two-thirds to Frank Marsh, Newark, N. J., and Ralph R. Hoyt, New York, N. Y. Filed Oct. 21, 1904. Serial No. 229,363.

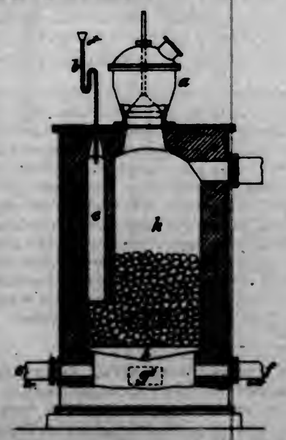
Claim.—1. In an ice-breaking device, the combination of a hopper having an inclined wall at the base of which is disposed a picker-head revolving about a horizontal axis and having projecting teeth, a series of fixed teeth between which the teeth upon the picker-head pass, a receptacle for broken ice, a section of inclined casing extending from the base of the hopper to the receptacle and terminating in a circular, outwardly-flaring conical opening having ice-breaking teeth upon its inner surface, a tapered picker-head disposed in said conical chamber and carrying teeth projecting therefrom, a vertical

shaft upon which the lower picker-head is mounted, bearings therefor, a beveled gear splined thereto and a corresponding beveled gear on the shaft of the horizontally-disposed picker-head.



2. In an ice-breaking device, the combination of a hopper having an inclined wall at the base of which is disposed a picker-head revolving upon a horizontal axis and having projecting teeth, a series of fixed teeth between which the teeth upon the picker-head pass, a receptacle for broken ice, a section of inclined casing extending from the base of the hopper to the receptacle and terminating in a circular outwardly-flaring conical opening having ice-breaking teeth upon its inner surface, a tapered picker-head disposed in said conical chamber and carrying teeth projecting therefrom, a vertical shaft upon which the lower picker-head is mounted, bearings therefor, a beveled gear splined thereto and a corresponding beveled gear on the shaft of the horizontally-disposed picker-head, and means for adjusting the shaft of the tapered picker-head, for the purpose set forth.

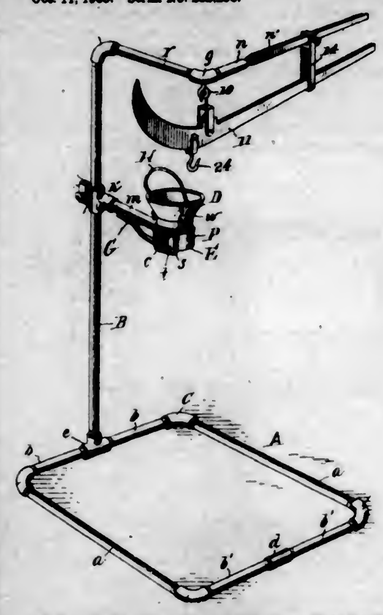
821,928. PROCESS OF MAKING GAS. FRITZ DANNERT, Berlin, Germany, assignor to Julius A. Hutmacher, Berlin, Germany. Filed Oct. 23, 1905. Serial No. 283,876.



Claim.—1. The process herein described of making gas, which consists in vaporizing a liquid hydrocarbon by the heat of the combustion-chamber, and then conducting the vapors thus generated into the zone of reduction of the glowing fuel at the temperature of such zone.

2. The process herein described of making gas, which consists in vaporizing the liquid hydrocarbon by the heat of the combustion-chamber, then conducting the vapors thus generated into the zone of reduction at the temperature of such zone, and supplying the steam to the glowing fuel, and conducting off the resulting carbureted water-gas.

821,929. BAG-HOLDER. GEORGE B. DAWSON, Clare, Mich. Filed Oct. 11, 1905. Serial No. 282,290.



Claim.—1. In combination, a base, an upright carried thereby, a tubular arm projecting from said upright, a funnel-shaped head having a socket on its exterior surface, clamping means carried by the head for holding the bag to the head, an angular arm, one portion of the arm fitting within the socket of the head, while the opposite portion of the arm extends within the tubular arm, and means carried by the tubular arm for engaging the angular arm for holding the angular arm against displacement from within the tubular arm.

2. In combination, a base, an upright supported thereon, a bag-holder laterally and vertically adjustable on said upright and consisting of a detachable head with a clamping-strap, an angular arm connected with said upright and having a scale-beam detachably connected therewith, and means adapted to connect said head and scale-beam.

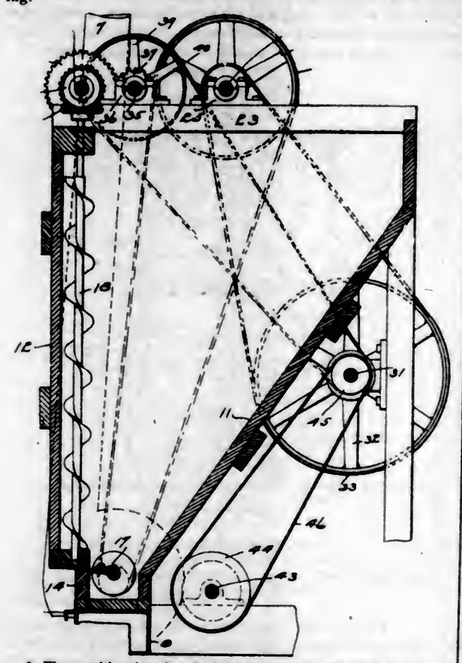
821,930. FUEL-FEEDER. HENRY L. DAY, Minneapolis, Minn. Filed Aug. 13, 1904. Serial No. 220,680.

Claim.—1. The combination, in a fuel-feeder, with a suitable hopper provided with a discharge-opening, of a conveyer arranged in said hopper and adapted to move material to said discharge-opening, and a conveyer arranged in said hopper and operating to move a portion of the material away from said discharge-opening.

2. The combination, in a fuel-feeder with a suitable hopper provided with a discharge-opening, of a conveyer arranged in said hopper and adapted to move material to said discharge-opening, and a series of conveyers arranged in said hopper and extending at an angle to said first-named conveyer and operating to move the material affected thereby away from said discharge-opening in the hopper in a loose condition.

3. The combination, in a fuel-feeder, with a suitable hopper provided with a discharge-opening, of a conveyer arranged in said hopper and adapted to move material in said discharge-opening, and a series of conveyers arranged in said hopper and extending upward therein and operating to move the material affected thereby away from said discharge-opening.

4. The combination, in a fuel-feeder with a suitable hopper provided with a discharge-opening, of a conveyer arranged in said hopper and adapted to move material to said discharge-opening, and a series of conveyers arranged in said hopper and extending substantially at a right angle to said first-named conveyer and operating to move the material affected thereby away from said discharge-opening.



5. The combination, in a fuel-feeder, with a suitable hopper provided with a discharge-opening, of a conveyer arranged in said hopper and serving to move material to said discharge-opening, a conveyer arranged in said hopper and extending upward therein, and means for rotating said last-named conveyer so as to move the material upward in the hopper and prevent it from bridging above said hopper-opening, substantially as described.

6. The combination, in a fuel-feeder with a suitable hopper provided with a discharge-opening, of a conveyer arranged in said hopper and adapted to move material to said discharge-opening, and a series of conveyers arranged in said hopper and extending upward therein, and means for rotating said last-named conveyers so as to move material upward in said hopper whereby the material in the hopper may be maintained in a loose condition and prevented from bridging between the walls of said hopper.

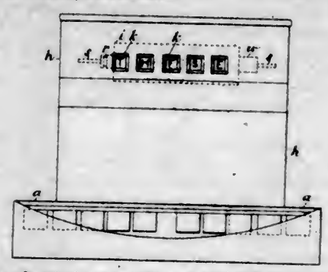
7. The combination, in a fuel-feeder, with a hopper having a discharge-opening, of a conveyer operating to move the material in said hopper to said discharge-opening, and a conveyer operating to prevent the material from bridging above said first-named conveyer, for the purpose specified.

8. The combination, in a fuel-feeder, with a hopper having a discharge-opening, of a conveyer operating to move the material to said opening, and a series of conveyers arranged substantially parallel with one another and operating close to a side wall of said hopper to prevent the material from bridging between the hopper-walls, substantially as described.

9. The combination, in a fuel-feeder, with a hopper having a discharge-opening, of a conveyer operating to move the material to said discharge-opening, and a series of conveyers operating close to a side wall of said hopper to move the material affected thereby upward and prevent the formation of bridges between the hopper-walls, substantially as described.

821,931. ELECTRICAL TRANSMITTING AND RECEIVING APPARATUS. JOHN P. L. DONLEVY, London, England. Filed Aug. 21, 1905. Serial No. 275,095.

Claim.—1. Electrical transmitting and receiving apparatus comprising a detachable keyboard-transmitter and sight-reading receiver, the said transmitter consisting essentially of key-actuated electrical devices, and the receiver of a series of rotatable and longitudinally-movable drums carrying the letters, words or signs, of sight-holes controlled by shutters, and means for effecting the movements of the said drums and shutters from the keyboard of the transmitter, substantially as described.

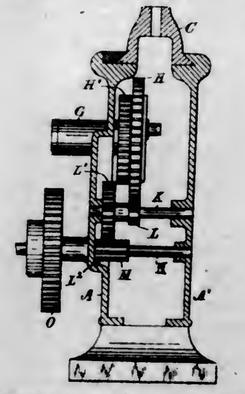


2. An electrical transmitting and receiving apparatus comprising a keyboard having spring-keys and electrical contact devices in connection therewith, a casing, having sight-holes therein shutters for said holes, type-drums in said casing and means for rotating and traversing the drums and operating the shutters from the keyboard.

3. An electrical transmitting and receiving apparatus comprising a detachable keyboard having spring-keys, contact devices carried by said keys, a casing having sight-holes therein, shutters for said holes, a pivoted arm for each shutter, an armature connected to said arm, magnets controlling the armatures, a type-drum in said casing, an arm connected to said drum for giving the drum a longitudinal movement, a magnet and armature for operating said arms, a pinion on the drum, a sector-rack engaging with the pinion and armatures and magnets for rocking said sector-rack, all of said magnets being controlled from the keyboard.

4. An electrical transmitting and receiving apparatus comprising a sight-reading device contained within a casing and consisting of a series of drums upon which letters, signs, or words are intermittently displayed through sight-holes pierced in the casing aforesaid, means for independently traversing and rotating such drum to any desired position, a shutter for each sight-hole and independent means for operating such shutters individually or collectively, substantially as and for the purposes herein described.

821,932. METAL-PLANING MACHINE. HENRY E. EBERHARDT and FRED L. EBERHARDT, Newark, N. J., assignors to Gould & Eberhardt, Newark, N. J., a Corporation of New Jersey. Filed June 3, 1903. Serial No. 159,846.



Claim.—1. In a metal-shaper having a frame with ram C in the top and a pitman B vibrated to reciprocate the same, the combination, with the frame, having the bearing G at one side of the pitman, of the crank-gear shaft I journaled therein, the crank-gears H and H', of diverse sizes secured together upon such shaft within the frame and the gear H next the pitman B having the crank-pin J to engage the pitman, the driving-shaft N having the double-face gear-wheel M, the intermediate shaft K with the pair of pinions L and L' of diverse sizes connected by a sleeve and mounted to move longitudinally thereon, and adapted to mesh respectively with the crank-gears H and H' and to clear the larger gear H when required, the sliding rod I' extended through the frame at the edge of the pinion L' and provided at its inner end with the jaws I' to embrace the rim of

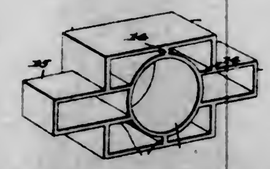
said pinion, and at its outer end with the lever V, the frame having the recess L^3 to receive the pinion L' when retracted from the gear H' and the driving gear-wheel M located partly in said recess, and the larger pinion L' meshing at all times with the gear-wheel M and operating merely as an intermediate without affecting the speed when meshed with the wheel H', and the two pinions L, L' operating as a reduction-gear when the pinion L is meshed with the larger wheel H, the whole arranged and operated substantially as herein set forth.

2. The metal-shaper having a rectangular box-frame, the ram C upon the top of the frame, and a vibrating pitman to propel the same, with a crank-gear inside the frame to vibrate the pitman, the driving-shaft N extended across the frame with gearing connected to such crank-gear, the motor E attached to the rear side of the box-frame and having its spindle projected beyond one side of the frame and provided with the pinion S', the gear-wheel O upon the driving-shaft at the same side of the frame meshing with the pinion S', the clutch for connecting the gear-wheel O with the shaft N at pleasure, the guard-case O' sustained upon the frame and inclosing the motor-pinion and the gear-wheel O, bearings upon the guard-case, and a journal Q' fitted to the said bearings and provided with the clutch-fork P' and with the clutch-lever Q projected toward the cross-head of the machine, the whole arranged and operated substantially as herein set forth.

3. In a metal-planing machine, driving mechanism therefor, consisting of a high-speed driving-shaft, a double-faced pinion secured to said shaft, an intermediate shaft, having slidingly mounted thereon a pair of intermediate gears of diverse size, rigidly connected together, the larger of said gears meshing at all times with said double-faced pinion, a third shaft having secured thereto a pair of gears of diverse size, means whereby said intermediate gears may be alternately shifted respectively into engagement with the gears on said third shaft, and means for connecting said last-mentioned gears with driven parts of the planing-machine.

4. A metal-planing machine having in combination, a reciprocating tool-carrying ram, a driving-pitman connected to said ram, means for driving said pitman compriaing a driving-shaft having secured thereto a double-faced gear, an intermediate sliding gear of larger diameter meshing at all times with said double-faced gear, a gear of smaller diameter spaced from but secured to said intermediate gear to slide and rotate with the same, and two large gears of diverse size connected to rotate together and designed to engage alternately the intermediate gears, and means connecting said large gears with said pitman.

821,933. CHIMNEY-FLUE THIMBLE. CYPHER C. ELLIOTT and NOYES B. ELLIOTT, Gilman, Iowa. Filed June 30, 1905. Serial No. 267,960.



Claim.—A chimney-flue thimble comprising a hollow casing conforming to a plurality of the bricks of the chimney and adapted to replace the same and an integral flue-section extending therethrough for receiving the stovepipe, and lateral extensions conforming to the bricks at the side of the casing and adapted to replace the same, said casing extending flush with the outer face of the plaster and said extensions extending flush with the wall of the chimney

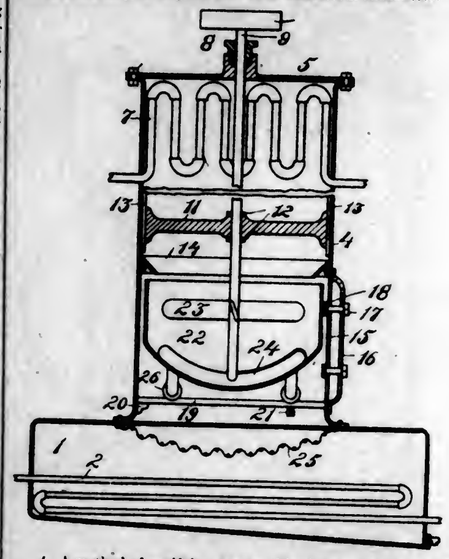
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821,934. PROCESS OF TREATING GUM. ARCHIE P. EVES, Akron, Ohio. Filed Apr. 14, 1905. Serial No. 255,599.

Claim.—1. A process of refining gum used in the manufacture of rubber comprising heating the material by the action of solvent vapors and then condensing said vapors and allowing the products of condensation to mingle with the heated material, thereby freeing the mass from deleterious substances.

2. A process of refining gum used in the manufacture of rubber comprising heating the material by alcoholic vapors and then condensing said vapors and allowing the products of condensation to mingle with the heated material, thereby freeing the mass from deleterious substances.

3. A process of refining gum used in the manufacture of rubber comprising heating the material by alcoholic vapors while said material is in the state of agitation, and then condensing said vapors and allowing the products of condensation to mingle with the heated material, thereby freeing the mass from deleterious substances.

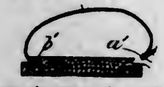


4. A method of purifying gum used in the manufacture of rubber which consists in passing solvent vapors upward and through and around the material to be treated and to a condenser, and at the same time causing the condensed solvent to descend through the rising vapor upon the gum, whereby the heat of the vapor is utilized and the solvent and gum made to undergo treatment at as high a temperature as is practicable.

5. A method of purifying rubber which consists in passing alcoholic vapors through and around the material to be treated to a condenser, and at the same time causing the condensed solvent to descend through the rising vapor upon the gum, whereby the heat of the vapor is utilized and the solvent and gum made to undergo treatment at as high a temperature as is practicable.

6. A process of refining rubber comprising the heating by solvent vapors of the material to be treated while the material is in the state of agitation, and then condensing said vapors and allowing the products of condensation to mingle with the heated material, thereby freeing the mass from deleterious substances.

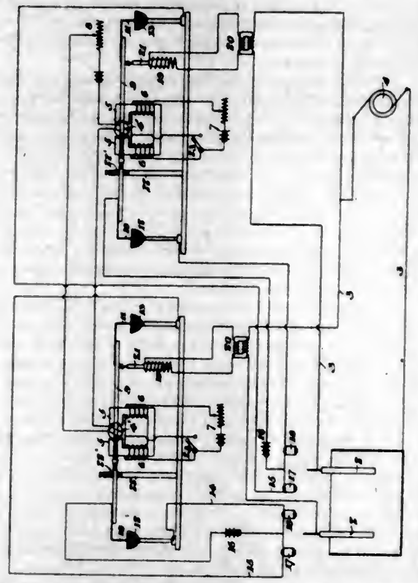
821,935. SHOE. AVEDIS J. GABRIELIAN, Jamaica Plain, Mass. Filed July 3, 1905. Serial No. 268,035.



Claim.—A shoe having its outer sole provided with a horizontal peripheral channel forming an integral thick and rigid overhanging ledge, an upper and welt, the bottom edge of the upper and the inner edge of the welt being stitched flat against each other, and pressed firmly into the bottom of said channel and beneath said rigid ledge whereby the upper is retained by its engagement with the sole, said welt resting flat upon the lower side of said horizontal channel and having its outer edge sewed directly to the outer edge of said sole.

821,936. CURRENT-REGULATOR. WILLIAM K. GIBBONEY, Buffalo, N. Y., assignor to The Pittsburgh Reduction Company, New Kensington, Pa., a Corporation of Pennsylvania. Filed Nov. 19, 1904. Serial No. 233,301.

Claim.—1. Means for regulating furnace-electrodes, consisting of motive devices arranged to move the electrode in opposite directions, normally open circuits for the motive devices, an electromagnetic regulating device operated by current derived from the electrode-circuit and proportional thereto, said device being arranged to control the circuits of the motive devices, and a magnetic device arranged to oppose the action of the regulating device and energized from a separate source; substantially as described.



2. Means for regulating furnace-electrodes, comprising motive devices for feeding the electrode, normally open circuits for the motive devices, an electromagnetic regulating device operated by current derived from the main current and proportional thereto, said regulating device controlling the circuit of the motive devices, a magnetic device arranged to oppose the action of the said regulating device energized from a separate source, and means for varying the force of the opposing magnetic device; substantially as described.

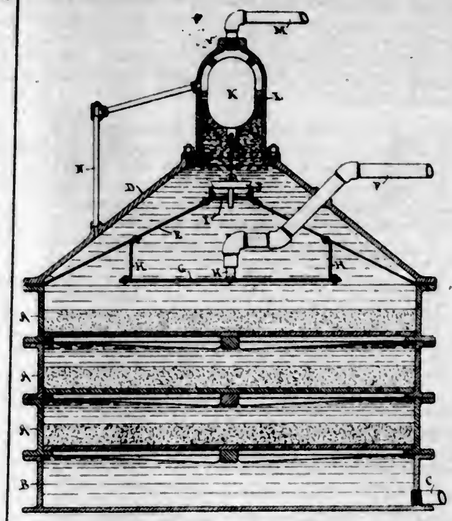
3. The combination with a group of electrodes, each of which is provided with motive devices for raising and lowering it, of electromagnetic regulating devices operated by current derived from the main current and proportional thereto, each of the regulating devices being arranged to control the circuits of the motive devices of one of the electrodes, magnetic devices energized from a separate source, and arranged to oppose the action of the first-named regulating devices and means for adjusting the force of the opposing magnetic devices; substantially as described.

4. In means for regulating furnace-electrodes, the combination with separate motive devices for raising and lowering the electrode, of a regulator comprising an armature and field, in circuit with a source of current independent of the current to be regulated, an electromagnetic device operated by a current derived from the main current and proportional thereto and arranged to act in opposition to the armature, and circuit-closing means for the motive devices controlled by the conjoint operation of the armature and of the opposing device; substantially as described.

5. Means for regulating furnace-electrodes, consisting of separate motive devices for raising and lowering the electrode, normally open circuits therefor, an armature and field in circuit with a source of current independent of the current to be regulated, an electromagnetic device operated by a current derived from the main current and proportional thereto, and circuit-controlling means for the circuits of the motive devices operated by the opposing actions of said armature and electromagnetic device, together with means for regulating the torque of the armature; substantially as described.

6. A current-regulator, comprising an armature and field in circuit with a source of current independent of the current to be regulated, normally open circuits including motive devices, a lever carried by the armature-shaft, and carrying contact devices for controlling said circuits, and an electromagnetic device operated by a current derived from the main current and proportional thereto and acting upon said lever in opposition to the armature, together with means for adjusting the force of the opposing actions of said armature and electromagnetic device; substantially as described.

821,937. FILTER. JACOB L. GREATSINGER, Brooklyn, N. Y. Filed Sept. 7, 1905. Serial No. 277,359.



Claim.—1. The combination with a filter of a removable intake-chamber in which the water to be filtered is received, means therein for separating oil from the water and collecting the oil in the upper portion of the chamber, means for drawing off the oil as it accumulates, and means for preventing the backflow of oil through the chamber.

2. The combination with a filter of an intake-chamber divided into upper and lower compartments, an inlet for water into the lower compartment, a passage-way between compartments whereby oil separated from the water will rise into the upper compartment, and means for closing said passage-way to prevent the backflow of oil.

3. The combination with a filter of an intake-chamber divided into upper and lower compartments, an inlet for water into the lower compartment, a baffle-plate between the inlet and the filter, and a passage-way between the compartments whereby oil separated from the water will rise into the upper compartment.

4. The combination with a filter of an intake-chamber, a conical diaphragm therein dividing the chamber into two compartments, an inlet for water into the lower compartment, a baffle-plate having upwardly-inclined sides positioned between the inlet and the filter, and a passage-way at the top of the diaphragm whereby oil separated from the water will rise into the upper compartment.

5. The combination with a filter of an intake-chamber divided into upper and lower compartments, an inlet for water into the lower compartment, a baffle-plate having upwardly-inclined sides with radiating lines of perforations and upturned corrugations between the rows of perforations positioned between the inlet and the filter, and a passage-way between the compartments whereby oil separated from the water will rise into the upper compartment.
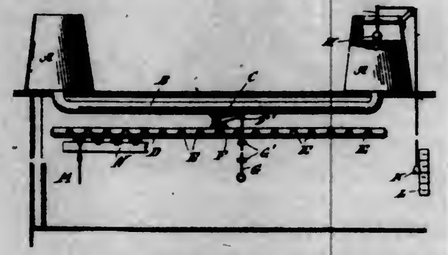
6. The combination with a filter of an inlet-chamber, a conical diaphragm therein dividing the chamber into two compartments, a passage-way at the top of the diaphragm, a valve for said passage-way held normally open, and means whereby the valve will close to prevent backflow through said passage-way.

7. The combination with a filter of an inlet-chamber, a diaphragm therein dividing the chamber into two compartments, a passage-way through the diaphragm, a valve to close said passage-way, and a float in the upper compartment attached to said valve.

8. A filter, comprising a plurality of filter-sections stacked one upon another, in combination with a chambered cap adapted to be secured to the top section, a diaphragm in said cap dividing its chamber into two compartments, means for delivering water to the lower compartment, a passage-way through the diaphragm, and means for closing said passage-way to prevent backflow from the upper to the lower compartment.

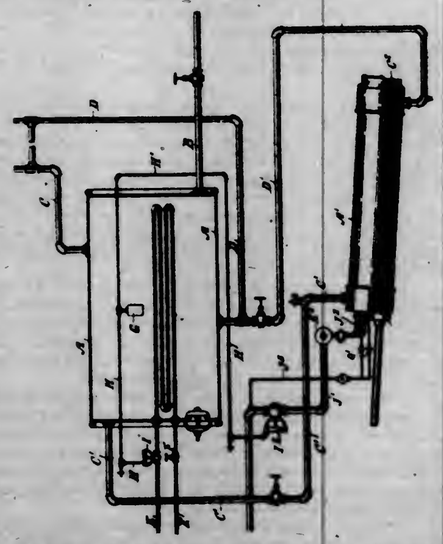
821,938. FIRE-EXTINGUISHING DEVICE. OSCAR HARNEBSTEIN, New York, N. Y. Filed Jan. 11, 1904. Serial No. 188,453.

Claim.—1. A fire-extinguishing device comprising heads, apertured pipes connecting said heads, a plurality of tanks for each head, pipes connecting the tanks belonging to each head, a branch pipe extending from each connecting-pipe to the corresponding head, a valve in said branch pipe, an actuating device for said valve, and a device for indicating the amount of water in said tanks, said indicating device being located at about the same level as the handle of the actuating device.



2. A fire-extinguishing device comprising heads, apertured pipes connecting said heads, a plurality of tanks for each head, pipes connecting the tanks belonging to each head, a branch pipe extending from each connecting-pipe to the corresponding head, a valve in said branch pipe, and an actuating device for said valve.

821,939. **WATER-HEATER.** RICHARD B. HARRIS, New York, N. Y. Filed Apr. 12, 1905. Serial No. 255,180.



Claim.—1. A water-heating system embracing a heating-chamber and one or more heating-tubes located therein, in combination with one or more perforated tubular burners located inside said heating-tubes; together with one or more outlet pipes or tubes located also in the heating-chamber and connected to the heating-tubes through an independent chamber at one end of said heating-chamber, and to an additional chamber at the other end thereof and having a common outlet-pipe, substantially as described.

2. A water-heating system embracing a heating-chamber; a series of heating-tubes located therein, and a series of perforated tubular burners located one in each heating-tube; in combination with a second series of tubes located also in the heating-chamber and connected through a common interconnecting chamber to the first-named tubes in such manner as to convey the products of combustion to a common outlet surrounding the outlet ends of all of the second series of tubes; together with a nozzle for each burner and a supplemental or pilot burner for each nozzle, substantially as described.

3. A water-heating system embracing a heating-chamber provided with heating-tubes sustained in the heads thereof, and inclosing each a perforated tubular burner similarly sustained at each end; in combination with a series of outlet-tubes for the products of combustion sustained also by the heads of the heating-chamber, all being interconnected through an independent chamber at one end and the outlet-tubes connected to a common outlet-chamber at the outlet end and to an outlet-tube extending to a point outside a building, substantially as described.

4. A water-heating system embracing a heating-chamber and an outlet and inlet pipe therefor; in combination with a series of heating-tubes sustained by the heads of the chamber; perforated tubular burners, one for each heating-tube located inside the same and similarly sustained at their opposite ends; together with a gas burner or nozzle for each perforated burner and a series of outlet pipes or tubes sustained also by the heads of a chamber, the outlet ends of the heating-tubes and the inlet ends of the outlet pipes or tubes being surrounded by an additional chamber; while the opposite ends of said outlet-tubes are connected to a common chamber which in turn is connected to an outlet-tube for carrying away the products of combustion, substantially as described.

5. A water-heating system embracing a heating-chamber and a series of heating-tubes located therein and having their inlet ends connected to a common outlet-pipe; a series of perforated heating-burners located within said tubes; a series of gas-burner nozzles, one for each perforated burner; in combination with a ventilating or regulating damper for each nozzle, and a series of supplemental gas-pilot burners, one for each nozzle, substantially as described.

6. A water-heating system embracing a heating-chamber; a series of heating-tubes sustained therein and having their inlet ends connected to a common outlet-pipe; a series of concentric perforated burners, one for each heating-tube; a gas-burner nozzle and a damper or draft-regulator for each nozzle; in combination with a pilot-burner for each nozzle, said pilot-burners being located between the surface of the heating-tubes and the outer surface of the perforated burners, substantially as described.

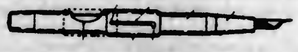
7. A water-heating system embracing a main heating-chamber and means within said chamber connected to a source of heat-supply for heating the water therein; in combination with a supplemental heating-chamber having one or more heating-pipes secured therein and one or more perforated tubular burners located inside of said heating-pipes; together with one or more outlet pipes or tubes located also in the supplemental heating-chamber and connected to the heating-tubes thereof at one end and to a common outlet-pipe, substantially as described.

8. A water-heating system embracing a main heating-chamber provided with means located therein operatively connected with a source of heat-supply for heating the water; in combination with a supplemental heating-chamber embracing a series of heating-tubes secured therein and each provided with a perforated tubular burner operatively connected with an independent source of heat-supply; together with a series of outlet pipes or tubes located also in said supplemental heating-chamber and additional chambers at each end of the supplemental chamber for conveying the products of combustion to the exterior air; together with interconnecting pipes for conveying the water from the supplemental heating-chamber to and through the main heating-chamber, substantially as described.

9. A water-heating system embracing a main heating-chamber provided with means located therein and operatively connected to an external source of heat for heating the water; a supplemental heating-chamber provided with a series of heating-tubes secured therein and surrounding each a perforated tubular burner operatively connected with an independent source of heat-supply; additional pipes or tubes located in said supplemental heating-chamber and additional chambers at the opposite ends of said supplemental chamber for conveying the products of combustion in two directions through said chamber and to the exterior air; together with interconnecting water-conveying pipes between the main and the supplemental heating-chamber, and a thermostatic heat-regulating device located in the main heating-chamber and operatively connected with means for cutting off the supply of heat both to the main heating-chamber and the supplemental chamber, substantially as described.

10. A water-heating system embracing a heating-chamber and two series of heating-tubes located therein, one end of one of the series communicating with the open air and surrounding the nozzles of burners; one end of the other series being connected with an outlet-pipe extending to a flue or chimney, the remaining ends of both series being connected to an intercommunicating chamber, said heating-chamber being provided with a water-inlet and a water-outlet pipe, substantially as described.

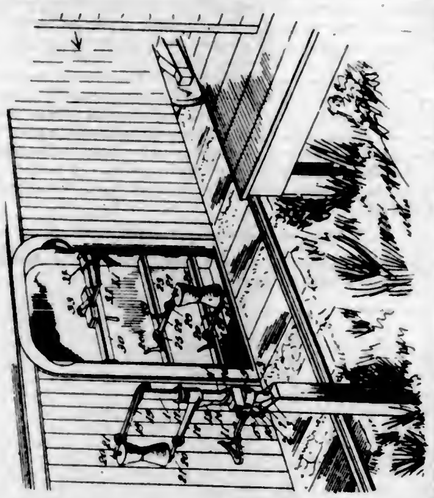
821,940. **FOUNTAIN-PEN.** JOHN HOLLAND, Cincinnati, Ohio. Filed Feb. 17, 1906. Serial No. 301,551.



Claim.—1. In combination with a fountain-pen having an opening in the side of its barrel, a sleeve sliding on the barrel and having longitudinal notches in one end, said end being turned inward at the notched end, thus forming a contraction for gripping the barrel.

2. In combination with a fountain-pen having an opening in the side of its barrel, a stud projecting from the barrel adjacent to the opening, a sleeve upon the barrel having a slot to engage the stud, said stud having a notch at one end for engaging the stud when the sleeve covers the opening, said sleeve having notches in one end, said notched end being turned inward, thus forming a contraction for gripping the barrel.

821,941. **MAIL RECEIVING AND DELIVERY APPARATUS.** FRANK M. HURLEY, Blanfield, Ohio. Filed Sept. 14, 1905. Serial No. 278,478.



Claim.—1. In an apparatus of the character described, a supporting-post, a sleeve mounted to move freely on said post both in an axial and vertical direction, the post being provided with a base and surfaces descending therefrom, and the sleeve being provided with a foot designed to rest on said base and ride downwardly on said surfaces, and a bag-catching hook carried by the said sleeve.

2. In an apparatus of the character described a supporting-post provided with a base and surfaces descending therefrom, a sleeve mounted to move freely both axially and in a vertical direction on said post and provided with a foot designed to rest on said base and ride on said surfaces, and a bag-catching hook carried by said sleeve and axially adjustable thereon.

3. In an apparatus of the character described, a supporting-post provided with a base and surfaces descending therefrom, a sleeve mounted to move freely both axially and in a vertical direction on said post and provided with a foot designed to rest on said base and ride on said surfaces and a bag-catching hook carried by said sleeve and provided with an arm for supporting the bag thereon.

4. In an apparatus of the character described a supporting-post provided with a base and surfaces descending therefrom, a sleeve arranged to turn freely on said post both axially and in a vertical direction and provided with a foot designed to rest on said base and ride on surfaces, a bag-catching hook carried by said sleeve, and a stop for preventing the movement of said parts in one direction.

5. In an apparatus of the character described, a supporting-post provided with a base and surfaces descending therefrom, a sleeve arranged to turn freely on said post both axially and in a vertical direction and provided with a foot designed to rest on said base and ride on said surfaces, a bag-catching hook carried by said sleeve, and an adjustable stop for preventing the movement of said parts in one direction.

6. In an apparatus of the character described, the combination of a supporting-post, a bag-catching hook designed to swing axially around said post and to move vertically upon the same, and a stop mounted on the post and arranged to prevent or limit the movement of said hook in one direction.

7. In an apparatus of the character described a supporting-post and a bag-delivering device supported thereon, the same consisting of a lower member movable both axially and vertically on said post, and an upper member mounted on said post to swing in a vertical plane.

8. In an apparatus of the character described, a supporting-post, a bag-delivering device mounted thereon, the same consisting of upper and lower members designed to hold the mail-bag, the lowermost being mounted to turn axially and also to move in a vertical direction, and said member being provided with a foot, and the post provided with inclined surfaces designed to effect a turning and lowering of said member.

9. In an apparatus of the character described, a supporting-post and a bag-delivering device carried thereby, the same comprising a lower member and an upper member, the latter of which is mounted on the post to swing in a vertical plane, a tension device for said upper member and means whereby in the operation of securing the mail-bag to said members, said tension device will be compressed in condition to automatically throw back said upper member when the bag is released therefrom.

10. In an apparatus of the character described a bag-holding device for the car the same comprising arms mounted to swing in a horizontal plane and pivoted fingers supported on said arms and designed to hold between them the mail-bag, each of said fingers being provided with means whereby it may be locked in different angular positions with respect to its arm.

11. In an apparatus of the character described a bag-holding device for the car comprising arms, bag-holding fingers pivotally mounted on the free ends of said arms and each of said fingers being provided at its pivot portion with a plurality of sockets, a dog designed to enter said sockets whereby to lock the fingers in different angular positions with respect to the arms.

12. In an apparatus of the character described, a bag-catching device for the car, the same comprising an axially-rotatable support or bar provided with a bearing, a hook mounted with its shank rotatable in said bearing and said shank provided on its rear end with a bifurcated extension, an arm or lever carried by said bearing and designed to enter said extension to hold the hook in different positions.

13. In an apparatus of the character described a supporting-post provided with a base and inclined surfaces descending therefrom a sleeve mounted to turn freely on said post both axially and in a vertical direction and provided with a foot designed to rest on said base and ride on said surfaces, a bag-catching hook carried by said sleeve and a stop 8 mounted on said post above said sleeve and provided with a downwardly-extending finger designed to lie on one side or the other of said sleeve whereby to prevent movement of the said sleeve in one general direction.

14. In an apparatus of the character described, a supporting-post and a bag-delivery device supported thereon, the same comprising a lower member designed to hold the lower end of the bag, and an upper member designed to coact with the lower member, the upper member being hinged at the upper end of the said post and arranged to lie thereon, and a spring secured to the upper end of said post and arranged to be compressed by the said upper member when the latter is projected from the upper end of the post whereby when the bag is released the said spring will throw said upper member backwardly from the post into an inoperative position.

15. In an apparatus of the character described, a bag-catching device comprising a supporting-bar mounted to rotate about its longitudinal axis, a hook mounted on said bar and axially turnable thereon, and an arm or lever 33 pivotally carried by said bar above the same and provided with a handle designed for locking engagement with the shank of the hook, whereby said arm or lever performs the double function of locking the hook in an axially-disposed position and serving as a handle which the operator may grasp to rock the support and swing the hook backwardly into the car.

16. In an apparatus of the character described, a bag-catching device for the car comprising a support in the form of a rotatable cross-bar, a hook having its shank mounted to turn axially on said cross-bar at right angles to the movement thereof, and a pivoted arm 33, provided with a handle portion designed to enter the shank of the hook whereby to hold the latter in different adjusted positions with respect to its supporting-bar, said handle also serving as means whereby the operator may rock the bar and turn the hook bodily backward into the car.

821,942. MECHANICAL DETONATING TOY. WILLIAM H. JOHNSON, Brandon, Vt., assignor of one-half to Willard B. Kimball, Thompsonville, Conn. Filed July 26, 1905. Serial No. 271,295.



Claim.—1. In a device of the character described, the combination with a support, a hammer pivoted to said support and a ratchet-toothed cap-disk carrier rotatable on said support, of a pawl-carrier having a reciprocatory movement relatively to and projecting below the lower end of said support, provided with a member to engage said hammer, and having a pawl coacting with said ratcheted cap-disk carrier.

2. In a device of the character described, the combination with a support, a hammer pivoted to said support, a ratchet-toothed cap-disk carrier rotatable on said support and a disk having a marginal series of detonating caps mounted on and rotatable with said ratcheted carrier, of a pawl-carrier having a reciprocatory movement relatively to, and projecting below, the lower end of said support, provided with a member to engage said hammer, and provided with a pawl coacting with said ratcheted cap-disk carrier.

3. In a device of the character described, the combination with a support, a hammer pivoted to said support, and a ratchet-toothed cap-disk carrier rotatable on said support, and provided with a plurality of forwardly-projecting pins, of a pawl-carrier having a reciprocatory movement relatively to and projecting below the lower end of said support, provided with a member to engage said hammer, and provided with a pawl coacting with said ratcheted cap-disk carrier.

4. In a device of the character described, the combination with a support, a hammer pivoted to said support, a ratchet-toothed cap-disk carrier rotatable on said support and provided with a plurality of forwardly-projecting pins, and a disk, having a marginal series of detonating caps, mounted on and rotatable with said ratcheted carrier, and having a plurality of holes therein through which said pins engage, of a pawl-carrier having a reciprocatory movement relatively to, and projecting below, the lower end of said support, provided with a member to engage said hammer, and provided with a pawl coacting with said ratcheted cap-disk carrier.

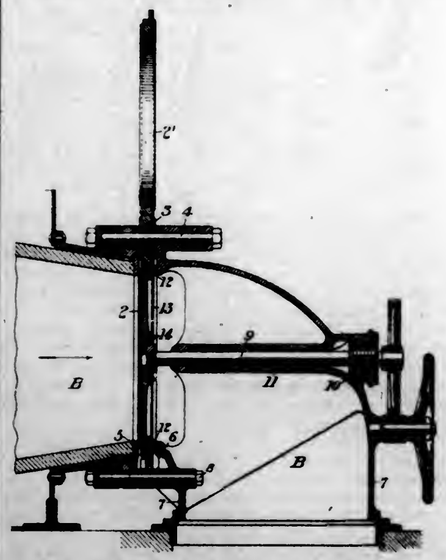
5. In a device of the character described, the combination with a support, a hammer pivoted to said support and a ratchet-toothed cap-disk carrier rotatable on said support, of a pawl-carrier having a reciprocatory movement relatively to and projecting below the lower end of said support, provided with a member to engage said hammer, and provided with a pawl coacting with said ratcheted cap-disk carrier, a detent-pawl engaging said ratchet-toothed carrier, and a spring reacting downwardly against the pawl-carrier.

6. In a device of the character described, the combination with a support, a hammer pivoted to said support, a ratchet-toothed cap-disk carrier rotatable on said support and a disk having a marginal series of detonating caps mounted on and rotatable with said ratcheted carrier, and said disk having a series of cap-separating cuts at its margin, of a pawl-carrier having a reciprocatory movement relatively to, and projecting below, the lower end of said support, provided with a member to engage said hammer, and provided with a pawl coacting with said ratcheted cap-disk carrier.

7. In a device of the character described, the combination with a support, a hammer pivoted to said support, a cap-disk carrier rotatable on said support, and relatively to which the hammer has its striking movements, a disk having a circular marginal series of detonating caps and made with a series of cuts between, and for separating, the caps, means for rotating the disk-carrier, and means for operating the hammer.

8. A support or frame having circular forwardly-opening recess therein and made with a central forwardly-extending boss and with downwardly-extending separated ear-lugs, an upwardly-extending shank having a cane-receiving socket leading downwardly from its open upper end to said recess, and said supporting-frame having an opening in its lower portion extending between said ear-lugs, the three-membered hammer pivotally connected to and between said ear-lugs, a ratchet-wheel pivoted to rotate on said boss and having forwardly-projecting studs, the pawl-carrier in said recess having an apertured middle portion embracing said boss, having an upwardly-extending shouldered member and having a downwardly-extending member projecting through said passage below the lower ends of the ear-lugs and forwardly return bent extremity *j* to engage the hammer, a pawl on said pawl-carrier to engage said ratchet-wheel, a spring in said socketed shank reacting downwardly against the pawl-carier, and the cane or stick engaged in said socketed shank of the frame.

821,943. VALVE. JULIAN KENNEDY, Pittsburg, Pa. Filed July 21, 1905. Serial No. 270,632.



Claim.—1. A flue having a valve consisting of a frame or rim portion mounted to move edgewise into the flue, and a disk portion having a marginal seat on the frame or rim portion, flexible connections between the two portions and means for forcing the disk portion away from its seat on the frame portion to close the valve; substantially as described.

2. A valve consisting of a rim portion, and a disk portion having a marginal seat on the rim portion, flexible connections between the two portions arranged to permit independent rotary movement of the disk portion, and means for moving the disk portion to close the valve; substantially as described.

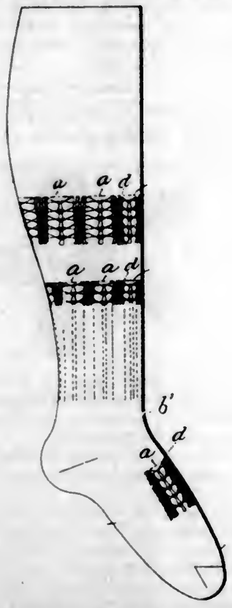
3. A flue provided with a valve consisting of a circular frame or rim portion mounted to move edgewise into the flue, and a circular disk portion inclosed by the frame portion and having a marginal seat thereon, flexible connections between the two portions, and a stem for forcing the disk portion away from the rim portion to close the valve; substantially as described.

4. A valve having an inclosing frame, a valve portion set on one side of the frame and having a spring-plate bearing on the other side of the frame, and means for forcing the valve to its seat; substantially as described.

5. A valve comprising a frame adapted to move edgewise into closing position, a valve portion flexibly connected to the frame, and a movable clamp bearing on the valve portion and adapted to force it to its seat together with a casing supporting said clamp; substantially as described.

6. A spectacle-valve comprising a frame having an annular open portion, a second frame having a valve portion flexibly connected thereto, and a movable clamp extending into the flue and adapted to bear upon the middle portion of the flexibly-connected member together with a casing supporting the clamp; substantially as described.

821,944. MANUFACTURE OF SEAMLESS HOSIERY. EDWARD B. KILBOURN, New Brunswick, N. J., assignor to the Kilbourn Knitting Machine Company. Filed Jan. 30, 1903. Serial No. 141,128.



Claim.—1. The herein-described machine-knit seamless stocking having open-work with drop-stitches therein, a solid plain-knitted portion preceding such open-work, the dropped stitches preceding the open-work being secured from raveling back into the plain knitting.

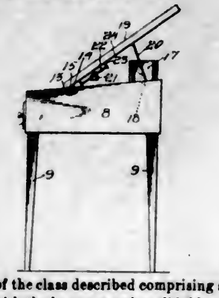
2. The herein-described machine-knit seamless stocking having alternating plain and lace or open-work portions and having tuck-stitches in one or more courses just preceding the change from plain to open-work or lacework knitting.

3. A machine-knit seamless stocking having a plain-knitted portion at the top of the stocking, a plain-knitted portion at the toe of the stocking, and a portion having open-work with drop-stitches therein between said plain portions and tuck-stitches for securing the stitches to begin such open-work, substantially as described.

4. A machine-knit seamless stocking having a plain-knitted portion at the top, an open-work portion following the same having drop-stitches therein, and tuck-stitches securing the stitches dropped to begin the open-work, substantially as described.

821,945. DESK. EDWARD B. LEWIS, Howardsville, Va. Filed Jan. 19, 1905. Serial No. 241,808.

Claim.—1. An article of the class described comprising supporting-legs, boards connected with the legs, and having guides therein, a member slidably engaged at its ends in the guides, a board hinged to the member for movement to extend in opposite directions therefrom, a cabinet arranged for movement to lie below the plane of the board or to extend thereabove, and means for moving the cabinet into position to extend above the board when the board is moved to extend rearwardly from the member.



2. An article of the class described comprising supporting-legs, guides connected with the legs, a member slidably and pivotally engaged at its ends in the guides, a board hinged to the member and extending in opposite directions therefrom, a cabinet arranged for movment to lie below the plane of the board or to extend thereabove, and means connected with the board and with the cabinet for moving the latter vertically when the former is moved.

3. An article of the class described comprising a frame, supporting-legs connected with the frame, a board connected with the frame for sliding and for pivotal movement with respect thereto, said board being arranged to lie above the frame to cover the inclosure thereof at times, and at times to lie with a portion of the inclosure of the frame exposed, a cabinet arranged for vertical movement into and out of the inclosure of the frame, and connections between the board and the cabinet for movement of the cabinet vertically when the board is moved slidably and pivotally.

4. An article of the class described comprising a frame, supporting-legs connected with the frame, spaced guideways on said frame, a member slidably engaged in the guideways, a board hinged to the member for movement to extend in opposite directions therefrom, a cabinet arranged for vertical movement in the frame, pulleys mounted in the frame, and cords connected with the cabinet and with the board and engaged with the pulleys, said cords being arranged for movement to raise the cabinet when the board is moved pivotally in one direction.

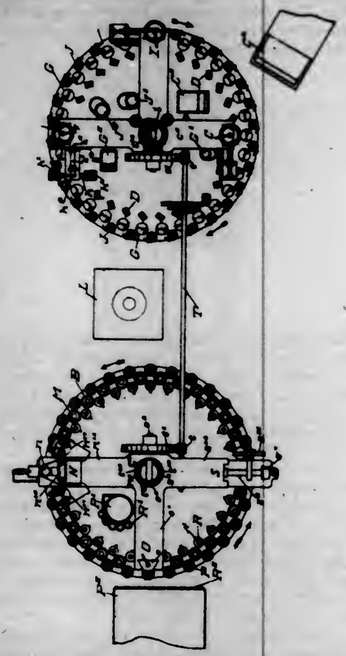
5. An article of the class described comprising a rectangular frame including front and rear boards and end boards, the latter extending above the former and having channels formed in the inner faces of the upwardly-extending portions and terminating short of the rear board, supporting-legs connected with the frame, a cross member having pins slidably engaged in the channels, vertically-extending guides secured to the inner faces of the end boards between the rear board and the adjacent ends of the channels, a cabinet engaged with the guides for vertical movement to lie within the inclosure of the frame or to extend thereabove, a writing-board hinged to the upper forward portion of the cross member for movement to extend rearwardly thereof and to lie thereupon at times, and at times to extend forwardly thereover, said board being arranged to cover the inclosure of the frame when it is in position to extend rearwardly from the cross member, and when said cross member is at the forward limit of its movement, said cabinet being adapted to lie within the inclosure of the frame and below the board when the latter is in its rearwardly-extending position, and means for raising the cabinet when the board is moved out of its rearwardly-extending position.

821,946. ASSEMBLING APPARATUS. NORMAN MARSHALL, Newton, Mass. Filed Jan. 19, 1905. Serial No. 241,334.

Claim.—1. An assembling apparatus comprising mechanisms for performing successive operations upon the work, a series of work-supporting jigs corresponding to each mechanism for carrying the parts and presenting them to the corresponding mechanism, and mechanism for intermittently advancing said series of jigs in paths adjacent to each other at one or more points in their travel.

2. An assembling apparatus comprising mechanisms for performing successive operations upon the work, a series of work-supporting jigs corresponding to each mechanism, a carrier for said series of jigs, and mechanism for intermittently advancing said carrier

to bring the jigs in each series successively into position to cooperate with the corresponding mechanism for operating upon the work, and means for operating said mechanisms during the interval between successive movements of the carrier.



3. An assembling apparatus comprising a plurality of mechanisms for performing successive operations upon the work, a plurality of series of work-supporting jigs corresponding to said mechanisms, a rotary table upon which said jigs are carried, mechanism for intermittently advancing said table, and means for operating said plurality of mechanisms during the intervals between the advance movements of the table.

4. An assembling apparatus comprising a plurality of screw-driving mechanisms, a series of work-supporting jigs corresponding to each mechanism for carrying the parts to be secured together and presenting them to the corresponding screw-driving mechanism, and means for intermittently advancing said series of jigs in adjacent paths.

5. An assembling apparatus comprising a plurality of screw-driving mechanisms, a series of work-supporting jigs corresponding to each mechanism for carrying the parts to be secured together and presenting them to the corresponding screw-driving mechanism, a carrier for said series of jigs, and mechanism for intermittently advancing said carrier to bring the jigs in each series successively into position to coöperate with the corresponding screw-driving mechanism.

6. An assembling apparatus comprising mechanisms for performing successive operations upon the work, a series of work-supporting jigs corresponding to each mechanism for carrying the parts and presenting them to the corresponding mechanism, mechanism for intermittently advancing said series of jigs in adjacent paths, and means for delivering the parts to be applied to the jigs adjacent to the paths of travel of said jigs.

7. An assembling apparatus comprising a rotary carrier, two or more series of jigs carried by said carrier, mechanism for intermittently advancing said carrier, mechanisms for operating on the parts carried by the jigs corresponding to each series, and mechanism for intermittently operating said mechanisms.

8. An assembling apparatus comprising a rotary table, two or more series of jigs carried by the table, mechanism for intermittently advancing the table, mechanisms for operating on the parts carried by the jigs corresponding to each series, and means for delivering the parts to be assembled adjacent to the paths of travel of the jigs.

9. An assembling apparatus comprising two screw-driving mechanisms, a carrier, two series of jigs secured to said carrier corresponding to said screw-driving mechanisms, mechanism for intermittently advancing the carrier, a screw-feeding mechanism corresponding to each screw-driving mechanism, and mechanisms for intermittently operating the screw-driving mechanisms.

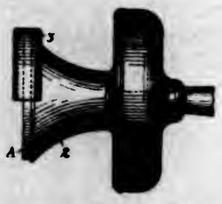
10. An assembling apparatus comprising two screw-driving mechanisms, a series of jigs provided with devices for holding the key-frame and base of a socket in proper relation, a second series of jigs provided with devices for holding the base and screw-shell-securing nuts in proper relation, mechanism for bringing each series of jigs successively to a screw-driving mechanism, and means for intermittently operating said screw-driving mechanisms.

11. An assembling apparatus comprising three screw-driving mechanisms, a series of jigs provided with devices for holding the key-frame and base of a socket in proper relation, a series of jigs provided with devices for holding the base and screw-shell-securing nuts in proper relation, a series of jigs provided with devices for holding the base and center terminal in proper relation, mechanism for bringing the jigs in each series successively to a corresponding screw-driving mechanism, and mechanisms for intermittently operating the screw-driving mechanism.

821,947. PROCESS OF PRESERVING. EPHRAIM B. MELTON, Decatur, Tex. Filed July 25, 1905. Serial No. 271,200.

Claim.—A process of preserving consisting in washing the article in salicylic acid and lime-water, and then subjecting the article to the vapor rising from the slaking lime.

821,948. ANTISEPTIC TELEPHONE-MOUTHPIECE ATTACHMENT. GEORGE W. MERRITT, San Francisco, Cal. Filed Mar. 28, 1905. Serial No. 252,463.



Claim.—1. An antiseptic telephone-mouthpiece attachment comprising a perforated inflexible plate, having means to detachably secure it over the end of a mouthpiece, and a pocket-case having an antiseptic lining for the attachment.

2. The combination with a perforated plate having means to attach it to a telephone-mouthpiece of an antiseptic case for the plate.

3. The combination with an antiseptic case, of an inflexible plate adapted to fit said case and having means for detachably and reversibly hanging it over the end of a telephone-mouthpiece.

4. The combination of a case having an antiseptic lining, and an inflexible, perforated plate having a peripheral reinforcing-rim and means for detachably and reversibly securing said plate over the end of a telephone-mouthpiece.

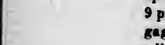
5. The combination of a case having an antiseptic lining, a perforated diaphragm having a reinforcing-rim said rim projecting right and left of the plate and having its inner surface circumferentially grooved to enable the plate to be hooked over the rim of the telephone-mouthpiece.

6. A telephone-mouthpiece attachment, comprising a thin diaphragm having a reinforcing-rim and peripheral flanges on said rim on opposite sides of the plane of the diaphragm, said flanges being grooved on their under side to permit the attachment to be loosely hung over the end of the mouthpiece.

7. A telephone-mouthpiece attachment comprising a diaphragm having a reinforcing-rim, said rim having a segmental lateral grooved flange to hook over the mouthpiece, and spring clamp members carried by the flange to grip the sides of the mouthpiece.

821,949. HOSE-SUPPORTER CLASP. HARRISY MILES, New York, N. Y., assignor to Nesbea Company, a Corporation of New York. Filed Nov. 30, 1904. Serial No. 234,999.

Claim.—1. A garment-supporter clasp comprising a rigid loop, an integral button and flexible back plate, means engaging the upper end of said back plate for securing said back plate rigidly to said loop, said loop and said flexible back plate being each provided with an opening for receiving a supporting-web.



2. A garment-supporter clasp comprising a rigid loop, an integral button and flexible back plate, means integral with said loop engaging the upper end of said back plate for securing said back plate rigidly to said loop, said loop and said flexible back plate being each provided with an opening for receiving a supporting-web.

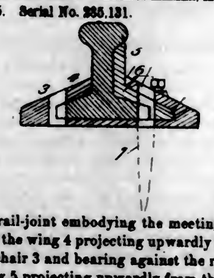
3. A garment-supporter clasp comprising a rigid loop having a web-engaging slot at its upper end, an integral button and flexible back plate, and means integral with said loop and independent of said slot engaging the upper end of said back plate for securing said back plate rigidly to said loop.

4. A garment-supporter clasp comprising an integral button and flexible back plate, a metal loop formed with lugs at its upper end engaging with the back plate for rigidly retaining the latter in operative position, said loop and said flexible back plate being each provided with an opening for receiving a supporting-web.

5. A garment-supporter clasp comprising an integral button and flexible back plate provided with apertures, a metal loop formed with lugs at its upper end engaging into said apertures in the back plate for retaining it in operative position, said loop and said flexible back plate being each provided with an opening for receiving a supporting-web.

6. A garment-supporter clasp comprising an integral button and flexible back plate, and a metal loop formed with lugs at its upper end engaging with the back plate for retaining the latter in operative position and with a slot for slidingly engaging a supporting-web.

821,950. RAIL-JOINT. PETER J. MILLER, Mountaintop, Pa. Filed Oct. 30, 1905. Serial No. 285,131.



Claim.—A rail-joint embodying the meeting ends of rails, the chair 3 therefor, the wing 4 projecting upwardly from one longitudinal edge of the chair 3 and bearing against the rail ends at one side thereof, the wing 5 projecting upwardly from the chair 3 at the opposite edge thereof and in spaced relation to the rail ends, the wedging angle-bar 6 wedged into the space between the flange 5 and the adjacent side portion of the rail ends, the fastenings 7 passing vertically through the chair 3 and flange 4 on one side of the rail ends, the fastenings 7 passing through the chair 3, the flange 5 and the angle-bar 6 at the opposite side of the rail ends and preventing displacement of the angle-bar 6, the angle-bar 6 being formed with elongated openings through which the said fastenings 7 pass, and the set-screw 9 passing through the wing or flange 5 and having its lower end engaged with the upper side of the angle-bar 6 to hold the same in an adjusted position, as specified.

821,951. METALLIC RAILWAY-TIE. ANDREW MORRISON, Pittsburg, Pa. Filed Jan. 9, 1905. Serial No. 240,538.

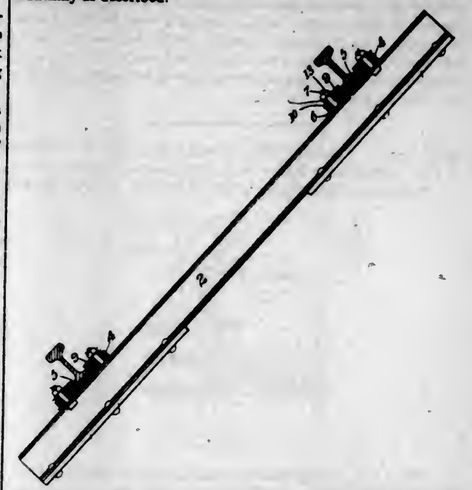
Claim.—1. A metallic tie of I-beam form having open ends, and plates wider than the I-beam secured to the end portions of its base; substantially as described.

2. A metallic tie of I-beam form having plates wider than the I-beam secured beneath its end portions extending about equidistantly on either side of the rail-base; substantially as described.

3. A metallic tie consisting of a single I-beam having a metallic chafing-plate between the rail-base and the tie, said plate being secured to the tie by connections extending through its flanges, and separate clips and bolts for securing the rail to the tie; substantially as described.

4. A metallic tie having a metallic chafing-plate between the rail-base and the tie, said plate being secured to the tie by connections extending through the top of the tie and being wider than said top, and means for securing the rail to the tie; substantially as described.

5. A flanged metallic tie having a metallic chafing-plate secured to its top flanges and of greater length in the direction of the longitudinal axis of the tie, than the width of the rail-base, and separate clips resting on the chafing-plate and securing the rails in place; substantially as described.



6. A metallic tie consisting of an I-beam having a chafing-plate secured to its top flanges and provided with a shoulder or shoulders extending crosswise of the plate; substantially as described.

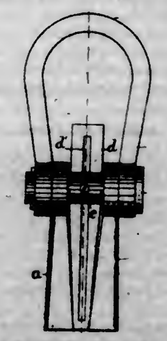
7. A metallic tie having a chafing-plate secured to its top and provided with a shoulder or shoulders extending crosswise of the plate and spaced apart from the rail-base, and a separate clip fitting between the shoulder and rail-base; substantially as described.

8. A railway-track having metallic ties, rails rigidly supported on the ties, and a clip device securing the rails to the ties, said device being arranged to allow a slight up-and-down movement of the rail relative to the tie; substantially as described.

9. The combination with a metallic tie, rails rigidly supported on the ties, and of a clip device for holding the rail, said device being arranged with a clearance-space between it and the flange of the rail to allow of a slight up-and-down movement of the rail relative to the tie; substantially as described.

10. A metallic tie having a chafing-plate secured to its top and provided with a shoulder or shoulders extending crosswise of the plate and spaced apart from the rail-base, and separate clips fitting between the shoulders and rail-base, said clips having bolts securing them to the tie; substantially as described.

821,952. LEWIS-BOLT. JOHN P. MURPHY, Portland, and NAPOLEON W. RANCOURT, Lewiston, Me. Filed May 24, 1905. Serial No. 263,080.



Claim.—1. The herein-described lewis-bolt consisting of a pair of inverted-wedge-shaped members each having an eye at the upper end, a pin passing through said eyes, said pin having a central opening therethrough, a wedge-shaped key passing through said opening

and having a longitudinal slot therein, terminating back from the ends of the key and a screw in said pin adapted to enter said slot to hold said key in place.

2. The herein-described lewis-bolt consisting of a pair of inverted wedge-shaped members each having an eye at its upper end, a pin passing through said eyes, said pin having a central opening therethrough, a wedge-shaped key passing through said opening having a longitudinal slot therein terminating back from the ends of the key, a screw in said pin adapted to enter said slot to hold said key in place and a shackle secured by said pin.

821,953. CAR-COUPLING. WILLIAM MCCONWAY, JR., Pittsburg, Pa., assignor to The McConway & Torley Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed Jan. 23, 1906. Serial No. 297,429.



Claim.—1. A car-coupling having a coupler-head, a knuckle pivoted on said head, a knuckle-opener device, and a lock for said knuckle, said lock having a knuckle-opener-actuating portion, and said knuckle being constructed to afford clearance for the knuckle-opener-actuating portion of the lock as the knuckle moves outwardly prior to the complete withdrawal of said lock from in front of said knuckle.

2. A car-coupling having a coupler-head, a knuckle, locking mechanism for said knuckle, and means for supporting the locking mechanism in unlocked position to permit a subsequent uncoupling rotation of the knuckle, said knuckle and said locking mechanism having wedging engagement between them when in a locked position, whereby the pressure transmitted to said locking mechanism by a pulling strain upon the knuckle tends to cause an unlocking movement of the said lock.

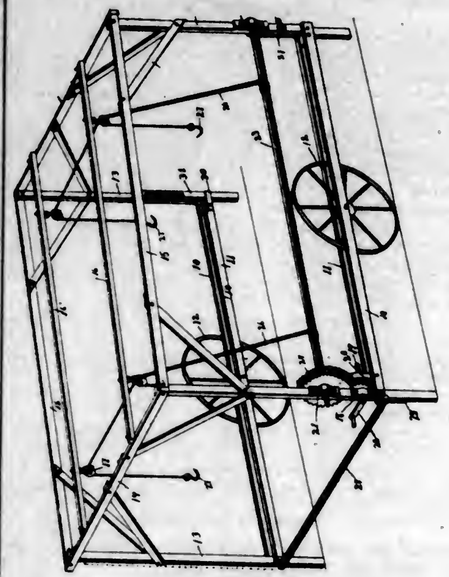
3. A car-coupling having a coupler-head, a knuckle pivotally mounted on said head, locking mechanism for said knuckle, and means operative by the knuckle-locking mechanism for causing said knuckle to be rotated outwardly to uncoupled position subsequent to the complete withdrawal of said locking mechanism from in front of said knuckle, said knuckle and said locking mechanism having mating inclined faces whereby an unlocking movement of said knuckle-locking mechanism permits an immediate outward movement of said knuckle prior to the complete withdrawal of said locking mechanism from in front of said knuckle.

4. In a car-coupling, the combination with a coupler-head, of a knuckle, knuckle-locking mechanism which is adapted to be maintained in unlocked position by the said knuckle after the latter has been rotated to an uncoupled position, means carried by said locking mechanism for preventing an unlocking movement of said lock, and mating inclines upon said knuckle and said locking mechanism whereby the locking mechanism tends to assume an unlocked position under the pressure transmitted thereto when the knuckle is subjected to a pulling strain.

821,954. PORTABLE DERRICK. JOHN MCCORMICK, Northville, S. D. Filed July 31, 1905. Serial No. 271,962.

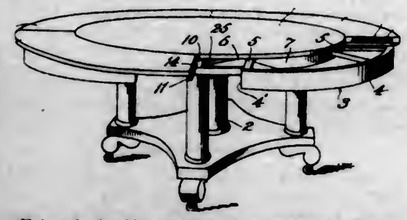
Claim.—1. A derrick-frame designed to receive a wagon within it, two supporting-wheels at the sides thereof spaced apart from the center, stationary legs at the corners of the frame farthest away from the supporting-wheels, adjustable legs at the other corners, pulleys at the top of the frame, cables passed over said pulleys, hooks on the cables and means connected with the frame for winding up said cables jointly.

2. A derrick-frame designed to receive a wagon within it, two supporting-wheels at the sides thereof spaced apart from the center, stationary legs at the corners of the frame farthest away from the supporting-wheels, adjustable legs at the other corners, pulleys at the top of the frame, cables passed over said pulleys, hooks on the cables and means connected with the frame for winding up said cables jointly and a handle extended across one end of the frame and capable of being withdrawn from said position.



3. In a portable derrick, the combination of two pairs of parallel side rails spaced apart, a supporting-wheel between each pair of rails, uprights at the ends of the rails, an elevated frame supported by said uprights, a handle extended across one end of the frame and capable of being withdrawn from said position, fixed legs at the end of the frame adjacent to the handle, adjustable legs at the other end of the frame, set-screws for securing said adjustable legs in position, four pulleys supported by the elevated frame, two cables at each end of the frame, both passed over one of the pulleys and one passed over the other pulley at said end, a hook on each cable, a rotatable shaft having said cables fixed thereto, a large pinion thereon, a small pinion in mesh with the large one and a crank capable of being connected with the shaft of either pinion.

821,955. EXTENSION-TABLE. CARL B. NASH, Pasadena, Cal. Filed Apr. 21, 1905. Serial No. 256,735.



Claim.—1. A table comprising a central member having a top with fixed legs and a flange extending downwardly from the top, said flange having openings, sector members slidably mounted and vertically supported in said openings and removable leaves resting on said sector members, said sector members having segmental outer parts which come in juxtaposition when the sector members are in innermost position and provided with radial arms extending inwardly from the ends of the end portions of the sector members, said arms engaging in the openings aforesaid to support the sector members and leaves resting thereon.

2. A table comprising a central member having a top with fixed legs and having a downwardly-extending flange with openings therein, sector members comprising radial arms slidable in said openings and outer segment parts connecting said arms externally of the aforesaid flange, means for radially guiding said sectors, plates connected to the central member and extending below the inner parts of the slidable arms, and leaves removably resting on said sector members.

3. A table comprising a central member having a top with fixed legs, a plurality of sector members slidably mounted below the top and having segmental outer parts, removable leaves resting on said sector members, bars slidably mounted on the central member to extend below the joint between said leaves, and fastening means on the adjacent edges of the leaves for fastening them together.

4. A table comprising a central member having a top with fixed legs and having a downwardly-extending flange with openings therein, sector members comprising radial arms slidable in said openings and outer segment parts connecting said arms externally of the aforesaid flange, means for radially guiding said sectors, plates connected to the central member and extending below the inner parts of the slidable arms, and leaves removably resting on said sector members, and provided with lugs to extend under the central member.

5. A table comprising a central member having a top with fixed legs, a plurality of sector members slidably mounted below the top and having segmental outer parts, removable leaves resting on said sector members and provided with lugs extending under the central member, bars slidably mounted on the central member to extend below the joint between said leaves, and fastening means on the adjacent edges of the leaves for fastening them together.

6. A table comprising a central member having a top with fixed legs, a plurality of sector members slidably mounted below the top and having segmental outer parts, a plurality of annular series of removable leaves resting on said sector members, each leaf having lugs extending under the part adjacent to its inner edge, bars slidably mounted on the central member to extend below the joint between said leaves, and fastening means on the adjacent edges of the leaves fastening them together.

821,956. SASH-LOCK. RUFUS NEAL, Indianapolis, Ind. Filed Aug. 3, 1905. Serial No. 272,575.

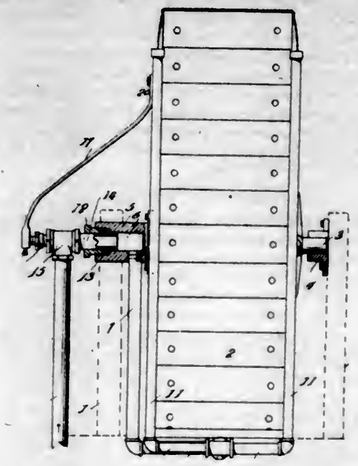


Claim.—A sash-fastener comprising a casing to be secured in the window-frame, a locking-bar approximately equal in length and thickness to the interior dimensions of the casing and slidably secured therein, the forward edge of said bar being formed with teeth, a spring bearing between the rear edge of said bar and the rear wall of the casing, a cam seated in a circular opening formed in the bar, said cam being of a thickness equal to the thickness of the bar, and concentric portions projecting from opposite sides of the cam and seating in openings formed in the side plates of the casing, said concentric portions of the cam being equal in thickness to the thickness of the casing side plates, means for operating the cam, and a rack-bar fixed in the sash-rail adjacent the casing and formed with teeth to coöperate with the teeth on the locking-bar.

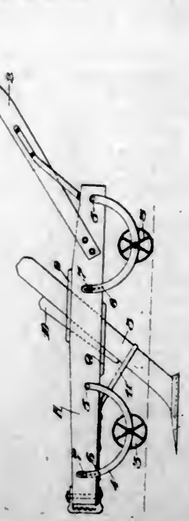
821,957. APPARATUS FOR THAWING ICE FROM ICE-CANS. THEODORE G. NICHWARNER, Belington, W. Va., assignor of one-fourth to George B. Cain, one-fourth to William Worth Teter, and one-fourth to Ware & Viquesney, a Firm. Filed Sept. 29, 1905. Serial No. 280,712.

Claim.—1. An apparatus of the character described, comprising standards, a box or casing provided with trunnions journaled in said standards whereby the casing is arranged to tilt, one of said trunnions constituting a hollow hub, spray-pipes for said casing, a pipe establishing communication between said hollow hub and said spray-pipes, a supply-pipe or similar device designed to communicate with the interior of said hub, a valve controlling said communication, and provided with a plug, and a lever connected at one end to said plug and connected at its other end to the casing, whereby the tilting of the casing will swing the said lever and cause the same to turn the plug, as and for the purpose set forth.

2. An apparatus of the character described, comprising standards, a box or casing provided with trunnions journaled in said standards whereby the casing is arranged to tilt, one of said trunnions constituting a hollow hub, spray-pipes for said casing, a pipe establishing communication between said hub and the spray-pipes a supply-pipe designed to communicate with the interior of said hub, a valve controlling said communication and provided with a turning plug, and a lever having axially-adjustable connection with the plug at one end and having a slot-and-pin connection with a side of the casing at its other end, as and for the purpose set forth.



821,958. SUBSOIL-PLOW. JOHN C. OGDEN, Tonopah, Nev. Filed Jan. 25, 1906. Serial No. 297,765.



Claim.—1. An improved plow having in combination a beam having handles and hauling attachments, bearing-wheels at front and rear, and means for raising or depressing the plow-beams upon said wheels, a colter-bar extending diagonally through the plow-beam with its lower end in advance, a horizontally-disposed, wedge-shaped shoe removably secured to the lower end of the colter, plates fixed to the top and bottom of the plow-beam and slotted to allow the colter to slide in the slots, a wedge-shaped key passing vertically through the plates and beam and extending longitudinally along the shank of the colter and adapted to bind the shank between itself and the end walls of the slots in the plates, to lock the colter to the beam, a curved brace-bar fitting the front of the beam extending downwardly and slotted to fit the lower part of the colter.

2. In a plow of the character described, a beam with handles and hauling attachments, wheels upon which the front and rear end of the beam are adjustably supported, an inclined colter extending diagonally through the beam, means for adjusting, locking and bracing it with relation to the beam, said colter having the lower end in

the form of a dovetailed tenon, a horizontally-disposed wedge-shaped shoe having a correspondingly-dovetailed slot made in its upper surface adapted to fit and interlock with the tenon of the colter.

3. An agricultural implement comprising a beam with handles and hauling attachments, wheels at the front and rear, curved segments pivoted at one end to the beam and having the other end adjustable about the pivot, said segments carrying the wheel-journals, a colter extending diagonally through the beam, an inclined brace through which it is slidable, means for adjusting and locking the colter in the beam, a dovetailed tenon at the lower end, and a horizontally-disposed shoe convergent from the rear to the front, having its surface transversely arched, and a dovetailed slot therein to interlock with the tenon of the colter.

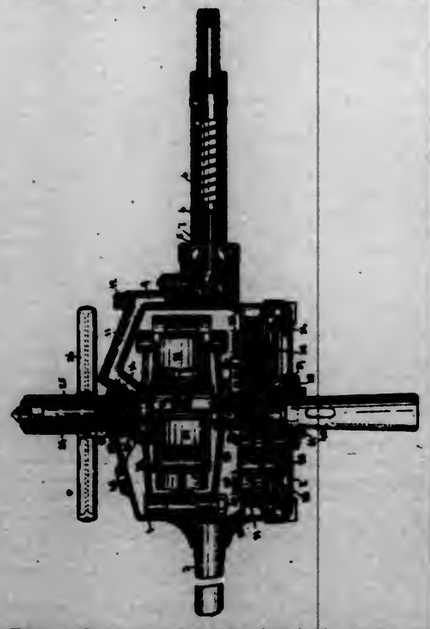
821,959. MITER-GAGE. THOMAS H. OXNAM, Los Angeles, Cal. Filed Feb. 5, 1906. Serial No. 299,459.



Claim.—1. A miter-gage comprising a plate which is substantially ⅂ shape in cross-section, both ends of the plate being beveled and lying in convergent planes which are perpendicular to the intermediate body portion of the plate.

2. A miter-gage comprising a plate with oblique ends lying in planes at right angles to the plate, said plate having a lateral longitudinal projection along one of its edges and extending at right angles to the plate, and said plate having another projection parallel with the first one along the opposite edge of the plate but on the opposite side thereof, said projections having their ends beveled in planes coincident with the bevels of the ends of the plate, said projections operating one as a stop to hold the tool against the work and the other as a guide to the saw.

821,960. PNEUMATIC-MOTOR TOOL-STOCK. FREDERICK W. PARSONS, Tarrytown, N. Y. Filed Jan. 7, 1905. Serial No. 240,013.



Claim.—1. In a pneumatic-motor tool-stock, the combination of a casing having a motor secured to one of its heads, admission and exhaust passages leading from the motor through the head and down the shell of the casing to a chambered boss formed thereon, a throttle-valve in said chamber, a sleeve through which air is admitted to the valve, said sleeve acting as one of the handles of the tool-stock, and means on said sleeve for shifting the valve to shut off or change the direction of flow through the said passages.

2. In a pneumatic-motor tool-stock, the combination of a casing having a head formed integrally therewith, a motor secured to said head within the casing, admission and exhaust passages leading from the motor through the head to corresponding passages formed on the head and extending down one side of the shell of the casing, a handle-boss having a valve-chamber into which said passages lead, a valve in said chamber, a sleeve extending out from said boss through which air is admitted to the valve and which also serves as a handle for the tool, and means on said sleeve for shifting the valve to shut off or change the direction of flow through the said passages.

3. In a pneumatic-motor tool-stock, the combination of a casing having a boss formed on the inside of one of its heads, a crank-pin with side bearings for a rotary reciprocating-piston motor secured to said boss by means of a stud passing through the boss, a cup-shaped nut on said stud entering a cavity at the outer side of the casing-boss, a feed-screw screwed onto the stud against said nut, and a feed-nut adapted to be run down into the cavity of said nut.

4. In a pneumatic-motor tool-stock, the combination of a crank-pin with side bearings formed at each end, side frames journaled on said bearings, a plurality of cylinders journaled on the crank-pin between the side frames, connections between the side frames and cylinders whereby rotation is imparted from one to the other, a hub on one of the side frames projecting beyond its bearing, a pinion having teeth engaging corresponding notches in an inturned flange at the end of said hub, and a screw inserted in the hub to secure the pinion in place, said screw having its head positioned between the end of the bearing and the flange when the parts are assembled.

5. In a pneumatic-motor tool-stock, the combination of a casing, a motor within the casing, a driving-pinion on the motor, a gear-head in line with said pinion journaled in a removable head of the casing, gears carried by the gear-head meshing with the pinion, a gear-ring inserted in the casing with which said gears also mesh, said gear-ring being held in place on one side by projections formed on the casing-shell and on the other side by a thrust-bearing between it and the gear-head, and means to lock the gear-ring against rotation in the casing.

6. In a pneumatic-motor tool-stock, the combination of a casing, a motor within the casing, a driving-pinion on the motor, a gear-head in line with said pinion, a casing-head provided with a packing-box through which a hub on the gear-head passes, an angular hole in said hub, a tool-holder fitted in said hole, a lock-nut by which the tool-holder is fastened in the hub, a stationary gear-ring in the casing, gears carried by the gear-head in mesh with the driving-pinion and gear-ring, and a thrust-bearing between the gear-head and gear-ring.

7. In a pneumatic-motor tool-stock, the combination of a motor and reducing-gear inclosed in an oil-containing casing, a gear-head for the reducing-gear provided with a thrust-bearing within the casing and with an outwardly-projecting hub, a head for the casing provided with a packing-box through which said hub passes, a tool-holder shaped to fit into an inwardly-closed socket provided therefor in said hub, and means for fastening the holder in the socket.

8. In a pneumatic-motor tool-stock, the combination of a motor and reducing-gear inclosed in an oil-containing casing, a gear-head for the reducing-gear provided with an outwardly-projecting hub, a head for the casing provided with a packing-box through which said hub passes, an angular hole at the inner end of said hub, an oil-tight closure for said hole, a tool-holder having an angled shank to fit said hole, and a lock-nut by which said tool-holder is fastened in the hub.

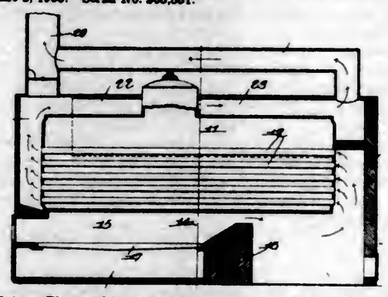
9. In a pneumatic-motor tool-stock, the combination with a motor inclosed within a casing, of a reducing-gear comprising a pinion on the motor, a stationary gear-ring secured to the shell of the casing, a gear-head journaled in one of the casing-heads, gears carried by said gear-head in mesh with the pinion and gear-ring, and a thrust-bearing between the gear-head and gear-ring comprising balls running in ball-races formed on the outer and inner peripheries of the gear-head and gear-ring respectively, the bearing-surfaces of said ball-races lying in planes at right angles to the axis of rotation.

10. In a pneumatic-motor tool-stock, the combination, with a gear-head carrying the reducing-gear, of a thrust-bearing therefor comprising balls and ball-races, the ball-races being formed on the gear-head at its outer periphery and on a stationary member of the tool-stock with their bearing-surfaces lying in planes at right angles to the axis of rotation.

11. In a pneumatic-motor tool-stock, the combination of a casing-shell having a head formed integrally therewith, ridges formed on the outside of the head and shell and extending from near the center of the head to a valve-chamber at the side of the shell, passages for the admission and exhaust drilled into said ridges to form continuous passages from inside the head to the valve-chamber, the open ends where the passages intersect being closed by suitable plugs.

12. In a pneumatic-motor tool-stock, the combination, with the casing, of a gear-ring adapted to be inserted through the open end of the casing, and means within the casing to secure the gear-ring against rotation therein comprising a toothed plate fastened to the casing and engaging corresponding notches in the periphery of the gear-ring.

821,961. FURNACE, &c. WILLIAM PETT, Muskegon, Mich. Filed June 5, 1905. Serial No. 263,831.



Claim.—The combination with a boiler, a furnace and a smoke-arch at the front end of the boiler, of a semicircular casing supported upon the furnace-walls above the boiler and spaced from the latter the intermediate space communicating at its front end with the smoke-arch, a stack rising from the latter, a smoke-conductor connecting the stack with the rear end of the space between the semicircular casing and the boiler, and a damper in the stack between the smoke-conductor and the smoke-arch.

821,962. CORN-HUSKER. ROBERT G. RATE, Iowa City, Iowa. Filed Oct. 6, 1905. Serial No. 281,664.



Claim.—1. In a corn-husker, the combination with a base, of a husk-engaging device pivotally mounted thereon, and a device for holding the husk-engaging device against swinging movement, said husk-engaging device being movable to different positions with respect to the holding device and having an adjustable interfitting engagement with said holding device for maintaining the husk-engaging device in said different positions.

2. In a corn-husker, the combination with a base, of a husk-engaging device movably mounted thereon, and a device for holding the husking device against movement, one of said devices having a plurality of teeth, the other having a portion that adjustably interlocks with the teeth.

3. In a corn-husker, the combination with a base, of a husk-engaging device movably mounted thereon, and a device for holding the husking device against movement, one of said devices having a plurality of sockets, the other having a tooth that engages in the sockets to hold the husk-engaging device in different positions upon the base.

4. In a corn-husker, the combination with a base, of a husk-engaging device pivotally mounted thereon, and a device for holding the husk-engaging device against its pivotal movement, one of said devices having a circular series of teeth, forming sockets between them, the other having a tooth that is arranged to engage in said sockets between the teeth.

5. In a corn-husker, the combination with a base, of a husk-engaging device pivotally mounted thereon, a holding device secured against movement on the base, a plurality of sockets formed in the holding device, and a tooth carried by the husk-engaging device and arranged to engage in the sockets.

6. In a corn-husker, the combination with a base-plate, of a husk-engaging hook located thereon, a holding-plate overlying a portion of the hook and having an interlocking engagement with the base-plate, a bolt connecting the base-plate, the hook, and holding-plate, said holding-plate having a plurality of sockets, and an outstanding tooth carried by the hook and adjustably engaging in the sockets.

7. In a corn-husker, the combination with a base, of a husk-engaging device adjustably mounted thereon, a holding device for the husk-engaging device also adjustable on the base, said devices being furthermore adjustable with respect to each other, and a pivot-bolt for the husk-engaging device, said bolt also constituting means for securing the holding device to the base and being adjustable on said base.

8. In a corn-husker, the combination with a base, of a husk-engaging device adjustable thereon, a pivot for the husk-engaging device, a holding device, interlocking means for securing the devices against relative movement, and other means interlocking the base and holding device for maintaining the same against relative movement.

9. In a corn-husker, the combination with a base, of a husk-engaging device adjustable thereon, a holding device for the husk-engaging device adjustable with respect to the base and with respect to said husk-engaging device, a pivot-bolt for the husk-engaging device, said bolt also constituting means for securing the holding device to the base, and means interlocking the base and holding device for maintaining the same against relative movement.

10. In a corn-husker, the combination with a base, of a husk-engaging device adjustably mounted thereon, a holding device for the husk-engaging device, said holding device being adjustable with respect to the base and with respect to the husk-engaging device, a pivot for the husk-engaging device, said pivot also constituting means for securing the husk-engaging device to the base and being adjustable on said base, and means interlocking the base and holding device for maintaining the same against relative movement, said latter means being also adjustable to permit the holding device being secured in different positions on the base.

11. In a corn-husker, the combination with a base-plate having a plurality of sockets, of a husk-engaging hook having a shank that bears upon the base-plate, a holding-plate fitted over the shank of the hook and having a plurality of sockets, an upstanding tooth carried by the shank and being arranged to engage in the sockets, a pivot and holding-bolt passing through the holding-plate, the shank, and the base, and being adjustable to different positions in said base, and a holding-tooth for the holding-plate, said tooth engaging in the different sockets in the base.

12. In a corn-husker, the combination with a base, of a husk-engaging hook adjustable thereon, a holding device for the hook having one portion interlocked therewith, and another portion that interlocks with different parts of the base and a holding-bolt for the device engaging said device and the base and being adjustable to different positions in the latter.

13. In a corn-husker, the combination with a base, of a husk-engaging device mounted on the base, and a holding device also connected to the base, said husk-engaging and holding devices being provided, one with a series of sockets, the other with a tooth portion that is received in the different sockets to hold the husk-engaging device in different relations upon the base.

14. In a corn-husker, the combination with a base, of a husk-engaging device mounted on the base, and a holding device also connected to the base, said holding device having a series of teeth and the husk-engaging device having a portion that interfits therewith to hold said husk-engaging device in different relations upon the base.

15. In a corn-husker, the combination with a base, of a husk-engaging device mounted upon the base, and a holding device comprising a plate overlying the husk-engaging device, said husk-engaging device being adjustable to different positions with respect to the holding device and having an adjustable interfitting engagement therewith to hold said husk-engaging device in different relations upon the base and in different positions with respect to the holding device.

16. In a corn-husker, the combination with a base, of a husk-engaging device mounted upon the base, and a holding device comprising a plate overlying the husk-engaging device and having a plurality of teeth at one edge that interfit with a portion of the husk-engaging device to hold the same in different relations upon the base.

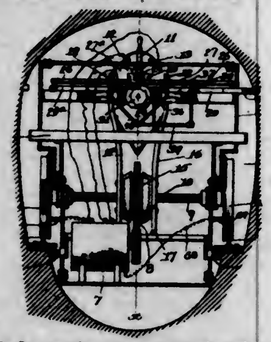
17. In a corn-husker, the combination with a base, of a husk-engaging device mounted thereon, a holding-plate having one portion adjustably interlocked with the device and another portion interlocked with the base, and means for securing the base, the device and the plate together.

18. In a corn-husker, the combination with a base, of a husk-engaging device mounted thereon, a holding-plate having teeth on one portion that adjustably interlock with the device and a tooth on another portion that interlits with the base, and a pivot-bolt securing the base, the husk-engaging device and the plate together, said device swinging upon the bolt.

19. In a corn-husker, the combination with a base, of a husk-engaging device, a holding device for the husk-engaging device, said husk-engaging device being adjustable with respect to the base and the holding device and having an adjustable engagement with the latter, and means connecting the base, the husk-engaging device and the holding device to secure the same against relative movement.

20. In a corn-husker, the combination with a base, of a husk-engaging hook, a holding-plate overlying the hook and having an engagement with the base at one side of the same, said hook and plate having an adjustable interlocking engagement with each other, and a pivot-bolt connecting the base, the hook, and the plate to secure the same against relative movement.

821,968. **CARRIER SYSTEM.** JOSEPH O. RAYMOND, Concord, N. H. Filed Sept. 13, 1905. Serial No. 278,572.



Claim.—1. In a carrier system, a car adapted to travel in both directions on a single track, automatic means to stop the car at predetermined points along the track when going in one direction, and other automatic means to stop said car at said points when the car is traveling in the opposite direction.

2. In a device of the class described, a car adapted to travel in either direction on a track, two separate automatically-operated brake-applying mechanisms, means to render one mechanism operative when the car reaches one terminal of the route, and means to render the other mechanism operative when the car reaches the other terminal of the route.

3. In a device of the class described, a car adapted to travel in either direction upon a track, two separate brake-applying mechanisms, means operated by one mechanism to render the other mechanism operative when the car reaches one terminal of the route, and means actuated by the latter mechanism to render the former operative when the car reaches the other terminal of the route.

4. In a device of the class described, a car adapted to travel in either direction on a track, two separate automatically-operating brake-applying mechanisms, one being operative when the car travels in one direction and the other when the car travels in the opposite direction, and means actuated by the operative brake-applying mechanism to render the inoperative mechanism operative when the car reaches the end of the route.

5. In a device of the class described, a car, a brake therefor, a brake-actuator to apply the brake, and a cam at each point where the car is to stop along the route, said cam being situated to be engaged by the actuator as the car moves over the track whereby said actuator is moved by the cam to cause the brakes to be applied.

6. In a device of the class described, a car, a brake therefor, a brake-actuator operative when the car moves in one direction only, and a fixed cam at each point where the car is to stop, said cam being situated to be engaged by the actuator as the car moves over the track in one direction.

7. In a device of the class described, a car, two brakes therefor, two brake-actuators, one being operative when the car moves in one direction and the other when the car moves in the opposite direction, a fixed cam for each actuator, each cam being situated to be engaged by the corresponding actuator during movement of the car.

8. In a device of the class described, a car, two brakes therefor, an actuator for each brake, one actuator being operative when the car moves in one direction and the other when the car moves in the opposite direction, means to engage the inoperative actuator and thus stop the car at predetermined points, and means to render operative the inoperative actuator at each terminal of the route.

9. In a device of the class described, a car, two independently-movable swinging frames thereon, a brake which is set by the inward swinging movement of each frame, a sliding actuator for each frame, and means to engage one actuator and thereby move the corresponding frame when the car is moving in one direction, and other means to engage the other actuator to thereby swing the other frame when the car moves in the opposite direction.

10. In a device of the class described, a car, two independently-movable swinging frames thereon, a brake which is set by the inward swinging movement of each frame, a sliding actuator for each frame, one actuator being operative when the car is moving in one direction and the other when the car is moving in the opposite direction, means to engage the operative actuator and thereby set the brake at predetermined points along the route, and means operated by the operative actuator to render the other actuator operative at each terminal of the route.

11. In a device of the class described, a car, a brake therefor, a brake-actuator, a cam at each point where the car is to stop along the route, said cam being situated to be engaged by the actuator as the car moves over the track, and means to bring the car to rest at a predetermined point.

12. In a device of the class described, a car, a brake therefor, a brake-actuator, a cam at each point where the car is to stop along the route, said cam being situated to be engaged by the actuator as the car moves over the track, and a stopping device to engage the car after the brakes are set and bring it to a rest at a predetermined point.

13. In a device of the class described, a car, a motor thereon for propelling the car, a switch for controlling the motor, a brake for the car, a brake-actuator, a cam at each point where the car is to stop along the route, each cam being situated to engage the actuator and thereby cause the brake to be applied, and means controlled by the actuator to automatically open the switch and cut the motor out when the brake is applied.

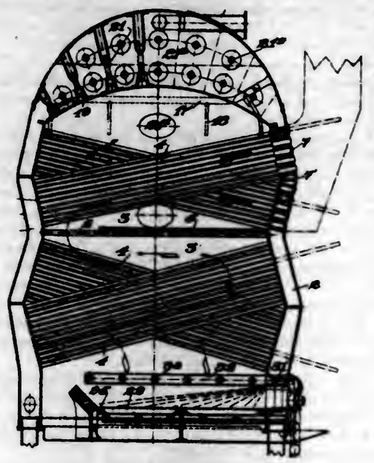
14. In a device of the class described, a car, a motor for propelling the car, a reversing-switch controlling the motor, two brakes, an actuator for each brake, one actuator being operative when the car moves in one direction and the other when the car moves in the opposite direction, means to engage the operative actuator at the points where the car is to stop and thereby apply the brake, and means to open the switch by the movement of either actuator.

15. In a device of the class described, a car, a motor thereon for propelling said car, a switch for controlling the motor, a brake for the car, a mechanically-operated brake-actuator, a cam at each point where the car is to stop along the route, said cams being situated to engage the actuator and thereby move the latter positively to cause the brake to be applied, and means to automatically open the switch and cut the motor out when the brake is applied.

821,964. **WATER-TUBE BOILER.** JOHN C. SHERRY, Vallejo, Cal. Filed Aug. 21, 1905. Serial No. 275,082.

Claim.—1. A boiler having in combination a combustion-chamber and fire-box, inner and outer shells inclosing water-spaces at the front, back, sides and top of the combustion-chamber, said spaces being in free communication with one another around the inner shell, nests of tubes arranged over the fire-box, a horizontal partition dividing the furnace into a plurality of compartments said partition having an opening at the back whereby the upper and lower compartments are in communication, said water-tube nests inclining upwardly and alternately from front and rear, an uptake, and smoke-tubes connecting therewith and passing through both shells and alternating in vertical rows with the water-tubes.

2. An improved boiler having in combination a combustion-chamber and fire-box, inner and outer shells inclosing water-spaces at the front, back, sides and top of the combustion-chamber, said spaces being in free communication with one another around the inner shell, a horizontal partition dividing the furnace into a plurality of compartments said partition having an opening which connects one compartment with the other, nests of tubes in the respective compartments said tubes inclining upwardly and alternately from front and rear, an uptake, some tubes connecting with the uptake and passing through both shells and alternating in vertical rows with the water-tubes, a feed-water inlet-pipe, means for supplying heat beneath the lowermost nest of tubes, and valve-controlled air-trunks and connections for producing a downdraft on the grate.



821,965. **FLY-TRAP.** JOHN R. SOURBY and ROBERT J. RILEY, Zion City, Ill. Filed May 23, 1905. Serial No. 261,562.



Claim.—1. A fly-trap composed of front and rear walls connected together at their side edges and spaced apart at the bottom to provide a large opening or entrance, and a trapping device extending into the trap at the opening or entrance and having a small opening.

2. A fly-trap composed of front and rear walls connected together at their side edges and spaced apart at the bottom to provide a large opening or entrance, and a trapping device located at the said opening or entrance and consisting of inturned extensions of the front and rear walls.

3. A fly-trap having an upwardly-tapered body and composed of a flat rear wall and an outwardly-bowed front wall secured at the side edges to the side edges of the rear wall, said front and rear walls being spaced apart at their lower edges to provide a large entrance or opening, and a tapering trapping device extending into the trap from the bottom thereof at the entrance or opening and provided with a small opening.

4. A fly-trap having a tapered body and comprising front and rear walls united at their side edges and spaced apart at the bottom, a marginal supporting-frame receiving and securing the contiguous side edges of the said walls together, and a trapping device extending into the trap from the bottom entrance or opening.

5. A trap, comprising a body provided at the upper portion with an opening, a hanger located at the opening, a door for covering the opening, and a fastening device securing the hanger to the trap and forming a pivot for the door.

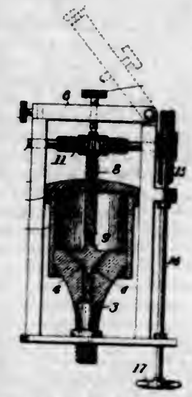
6. A trap having a body and comprising an outwardly-bowed front wall and a flat rear wall, said walls being secured together at their side edges and spaced apart at the bottom and provided thereat with inturned tapering extensions also united at the side edges to form a trapping device, the latter being provided at the top with an opening.

7. A fly-trap composed of front and rear walls secured together at their side edges and spaced apart at the bottom to provide a large opening or entrance, and a plurality of trapping devices extending into the trap at the opening or entrance thereof and provided with small openings communicating with the interior of the trap.

8. A fly-trap composed of front and rear walls spaced apart at the bottom to form a large opening or entrance, said front and rear walls being provided at the opening or entrance with inturned extensions cut away or recessed to form corresponding tapered portions, the latter being secured together at their side edges and forming a plurality of trapping devices.

9. The combination with a screen, of a removable trap extending entirely across the same and provided at the bottom with an enlarged entrance or opening, said trap being also provided at the enlarged entrance or opening with a plurality of inwardly-extending tapering fly-trapping devices connected with and supported by the walls of the trap, each fly-trapping device consisting of two tapering pieces secured together at their side edges.

821,966. **AUTOMATIC POWER-COMPRESSION GREASE-CUP.** EDMUND T. SPEAKE, Plymouth, Pa. Filed Sept. 22, 1905. Serial No. 279,706.



Claim.—1. In an apparatus of the character described, the combination with a lubricator comprising a cup or lubricant-receptacle having an opening at one end and a stationary guide extending into said opening in the cup and provided with a duct or passage for conveying lubricant from the cup to the part to be lubricated, of a feed-screw engaging the closed end of the lubricant-cup, and means for automatically rotating said screw to move said cup or lubricant-receptacle over said guide and force lubricant into and through the duct or passage therein.

2. In an apparatus of the character described, the combination with a lubricator comprising a cup or lubricant-receptacle having an opening at one end and a stationary guide extending into said opening in the cup and provided with a duct or passage for conveying lubricant from the cup to the part to be lubricated, of a feed-screw extending through and engaging the closed end of the lubricant-receptacle, one end of said screw bearing against the end of said guide within the lubricant-cup, an adjustable bearing for the other end of said screw whereby said screw and the lubricant-receptacle may be removed from the guide when desired, and a train of gearing adapted to engage said screw when the lubricant-container is in position on said guide, substantially as and for the purpose described.

3. In an apparatus of the character described, the combination with a lubricator comprising a cup or lubricant-receptacle having an opening at one end and a stationary guide extending into said opening in the cup and provided with a duct or passage for conveying lubricant from the cup to the part to be lubricated, of a feed-screw extending through and engaging the closed end of the lubricant-receptacle, one end of said screw bearing against the end of said guide within the lubricant-cup, a gear fixed to said screw outside the lubricant-container, and means for automatically rotating said gear.

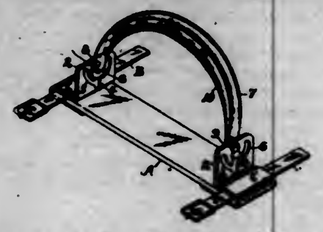
821,967. **CARRYING-HANDLE.** JULIUS STRAUSS, Astoria, Oreg. Filed Oct. 4, 1905. Serial No. 281,261.

Claim.—1. A package-carrying handle comprising two separable parts, shiftable pivotal connections for each of said parts, and means for attaching said parts to the package to be carried.

2. A package-carrying handle comprising two separable parts, independent pivots for each of said parts, means whereby the position of said pivots may be varied to allow the pivots to stand vertically in line and to be separated transversely, and means for attaching said parts to the package to be carried.

3. In a carrying-handle two independently-pivoted parts one of

said parts having a convex gripping-surface and the other part having a concaved gripping-surface to receive said convex surface whereby the two parts of the handle unite to form a single handle.

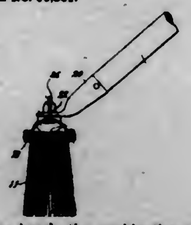


4. In a carrying-handle, two parts, one part being substantially circular in cross-section, the other part segmental and adapted to fit the lower part of the first-named section, pins projecting outwardly from the ends of each of the handle members, and slotted plates through which said pins pass and within which they are movable to separate the handle members divergently from each other.

5. In a carrying-handle, two parts, one substantially circular in cross-section, and the other segmental and adapted to fit the lower part of the first-named portion, pins projecting from the ends of each of said handle parts, a plate at each end of the handle parts said plate having a vertical slot in which said pins lie one above the other when the handle is united to form a single structure, and having slots divergent from the vertical slot into which the handles of each of the sections may be transferred to separate the handle-sections divergently from each other to form separate grips.

6. A handle composed of two curved independent sections, the lowermost of said sections being segmental in transverse section, and the uppermost part being circular and adapted to fit within the segmental portion, pins projecting from the ends of each of the handle-sections and having retaining-heads upon the outer ends, plates having vertical slots within which the pins of both handle-sections may lie one above the other when said sections are united into one, said plates having, also, slots divergent upon opposite sides of the vertical slots and opening thereinto, the slots on one side intersecting the vertical slots above those upon the opposite side, and each capable of receiving the pins of one portion of the handle which is thereby separated into two distinct parts.

821,968. **BRUSH.** JOHN P. WEBB, Milwaukee, Wis. Filed Dec. 18, 1901. Serial No. 86,261.



Claim.—1. In a brush, the combination of a brush-back provided on its upper side with an oil-chamber and having a series of openings extending from its under side upwardly, all of said openings leading into the oil-chamber, absorbent and non-absorbent tufts extending from and secured in the openings, and means plugging up the upper ends of the openings in which the non-absorbent tufts are secured so as to permit the oil to pass from the oil-chamber only through the openings in which the absorbent tufts are secured and onto said absorbent tufts.

2. In a brush, the combination of a brush-back provided on its upper side with an oil-chamber and having a series of openings extending from its under side upwardly, all of said openings leading into the oil-chamber, absorbent and non-absorbent tufts extending from and secured in the openings, an oil-proof coatant coated over the bottom of the oil-chamber and filling in the upper ends of the openings in which the non-absorbent tufts are secured so as to permit the oil to pass from the oil-chamber only through the openings in which the absorbent tufts are secured, and onto said tufts, and means for supplying oil to said oil-chamber.

3. In a brush, the combination of a brush-back formed or provided with a series of openings extending therethrough, and also provided on its upper side with an oil-chamber into which the openings extend, absorbent and non-absorbent tufts doubled over medially with the bends thereof inserted into the openings, wires extending over the upper side of the brush-back and inserted through the loops formed by the bends or doubled-over portions of the tufts, means plugging up the upper ends of the openings in which the non-absorbent tufts are secured, so as to permit the oil to pass from the oil-chamber only through the openings in which the absorbent tufts are secured and onto said absorbent tufts, and means for supplying oil to the oil-chamber.

4. In a brush, the combination of a wooden brush-back formed or provided with a series of openings extending therethrough, an upwardly-bulged, open-bottom metallic top or cover secured over the upper side of the brush-back, and forming an oil-chamber between it and said upper side of the brush-back, and into which chamber the openings of the brush-back extend, absorbent and non-absorbent tufts extending from and secured in the openings, an oil-proof coating over the upper side of the wooden brush-back and filling in the upper ends of the openings in which the non-absorbent tufts are secured, so as to permit the oil to pass from the oil-chamber only through the openings in which the absorbent tufts are secured and onto said absorbent tufts, and means for supplying oil to the oil-chamber.

5. In a brush, the combination of a brush-back provided on its upper side with a liquid-chamber and having a series of perforations extending entirely therethrough and opening into the liquid-chamber, tufts seated in the said perforations, and impervious plugs inserted in some of the perforations.

6. In a brush, the combination of a brush-back provided on its upper side with a liquid-chamber and having a series of perforations extending entirely therethrough and opening into the liquid-chamber, tufts seated in the said perforations and plastic impervious plugs inserted in some of the perforations.

7. In a brush, the combiantion of a brush-back provided on its upper side with a liquid-chamber and having a series of perforations extending entirely therethrough and opening into the liquid-chamber, tufts seated in the said perforations, and a plastic impervious coating applied over the brush-back and filling in some of the perforations.

8. In a brush, the combination of a brush-back, a top or cover secured to the brush-back and forming a chamber therewith, said brush-back having perforations extending entirely therethrough and opening into the chamber, tufts secured in the perforations, and means within the chamber for plugging some of the perforations.

9. In a brush, the combination of a brush-back, an oil-chamber carried thereby, said oil-chamber having the back of the brush for its bottom, said brush-back having tuft-openings extending entirely therethrough, tufts seated in the tuft-openings, and a coating of cement on the bottom of the oil-chamber closing some of the tuft-openings.

821,969. **STOP-MOTION DEVICE FOR KNITTING-MACHINES.** LOUIS N. D. WILLIAMS, Ashbourne, Pa., assignor of one-half to Robert W. Scott, Philadelphia, Pa. Filed May 20, 1903. Serial No. 158,188.

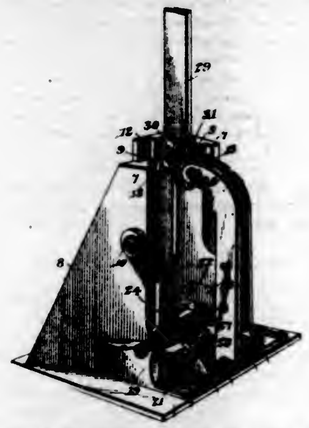


Claim.—1. The combination in a stop-motion device for circular-knitting machines, of a shipper-controlling rod or tripper, with a multiple protector, having a plurality of connected units disposed around the machine, one of said units engaging the shipper-controlling rod, and each of said units being disposed so as to be engaged by the fabric under abnormal conditions, substantially as specified.

2. The combination in a stop-motion device for circular-knitting machines, of a shipper-controlling rod or tripper, with a multiple protector, having a plurality of units disposed around the machine, one of said units engaging the shipper-controlling rod, and each of said units being disposed so as to be engaged by the fabric under abnormal conditions, and means for connecting corresponding members of each of said units, substantially as specified.

3. The combination in a stop-motion device for circular-knitting machines, of a shipper-controlling rod or tripper, with a multiple protector, having a plurality of units disposed around the machine, one of said units engaging the shipper-controlling rod, and each of said units being disposed so as to be engaged by the fabric under abnormal conditions, and a rod extending transversely across the machine and directly connecting corresponding members of each of said units, substantially as specified.

821,970. **CALKING-MACHINE.** CARL YOUNGSTROM, Meckling, S. D. Filed Sept. 24, 1904. Serial No. 225,846.



Claim.—1. In a calking-machine, the combination with a base having spaced guide-standards, of a ledger-blade located between the lower portions of the same, a cutter-blade slidably mounted between the standards and movable toward and from the edge of the ledger-blade and along one side of said blade, a clamping device movably mounted on the base and movable toward and from the opposite side of the ledger-blade, and means connected to the cutter-blade and clamp for effecting their said movements toward and from the ledger-blade.

2. In a calking-machine, the combination with a reciprocatory cutter-blade, of a pivoted swinging clamp, an actuating-lever having a pivoted fulcrum connection with the clamp, and a pivoted connection with the reciprocatory cutter.

3. In a machine of the character described, the combination with a movable cutter, of a pivotally-mounted swinging clamp, a lever pivotally fulcrumed on the cutter, and a longitudinally-movable link pivoted to the lever and to the swinging clamp.

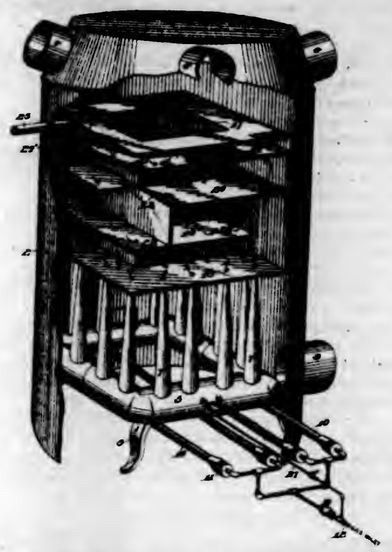
4. In a calking-machine, the combination with a ledger-blade, of a clamping device pivoted at one side of the same and arranged to hold an article upon the ledger-blade, a reciprocatory cutter-blade, and an actuating-lever pivotally connected to the cutter-blade for reciprocating the same and having a pivotal connection with the clamping device for swinging said device.

5. In a calking-machine, the combination with a base having spaced guide-standards, of a ledger-blade located at the lower ends of the standards, a reciprocatory plunger slidably mounted between the standards and having a cutter-blade at its lower end that coacts with the ledger-blade, a clamping-block pivoted upon the base at one side of the standards and swinging toward and from the ledger-blade transversely of the cutter-blade, a link pivoted to the clamping-block, and a lever fulcrumed upon the link and having a pivotal connection with the plunger.

6. In a machine of the character described, the combination with a base having an opening therethrough, of upright guide-standards carried by the base at opposite sides of the opening, a ledger-blade arranged between the standards and at one side of the opening, a reciprocatory cutter mounted in the guides and movable toward and from the opening, a clamp pivoted on the base on the side of the ledger-blade opposite the opening, and common means for reciprocating the cutter and swinging the clamp.

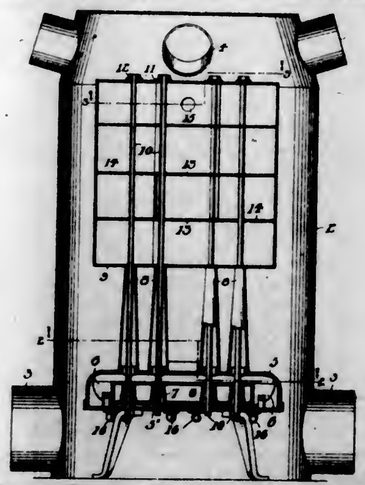
821,971. **HEATING APPARATUS.** JULIUS F. ADAMS and FRIEDRICH O. ADAMS, Allegheny, Pa. Filed Apr. 9, 1903. Serial No. 151,337.

Claim.—1. Improved heating apparatus comprising a combustion-chamber, a fume-drum above the chamber, a plurality of relatively small upwardly-tapering fume-tubes rising from the said chamber and communicating with the drum, and gas-burning means within the chamber.



2. Improved heating apparatus comprising a combustion-chamber of tube-like form extending around or inclosing a vertically-open air-space, a fume-drum above the combustion-chamber, the drum having an air-passage formed therethrough from top to bottom which is in line with the air-space around which the combustion-chamber extends, a plurality of upwardly-tapering fume-tubes connecting the chamber and drum, and gas-burning means within said chamber.

821,972. **HEATING-FURNACE.** JULIUS F. ADAMS and FRIEDRICH O. ADAMS, Allegheny, Pa. Filed May 29, 1906. Serial No. 262,733.



Claim.—1. The combination of a combustion-chamber, a fume-drum above the combustion-chamber, fume-tubes connecting said chamber and drum, and air-pipes extending through the tubes and drum.

2. The combination of a vertically-open combustion-chamber, a vertically-open fume-drum above the combustion-chamber, fume-tubes connecting the chamber and drum, the vertical openings in the chamber and drum affording free circulation of air, and air-pipes extending through both the chamber and drum.

3. The combination of a combustion-chamber, flue-tubes rising

therefrom, a gas-burner within the combustion-chamber having vertical passages in line with the flue-tubes, and air-circulating pipes extending through the combustion-chamber the burner-passages and said tubes.

4. The combination of a combustion-chamber, fume-tubes rising therefrom, a fume-drum into the bottom of which said tubes open, and air-circulating pipes extending through the combustion-chamber and through said tubes and drum.

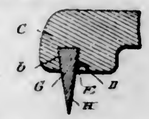
5. The combination of a combustion-chamber, upwardly-tapering tubes rising therefrom, a fume-drum into the lower end of which the tubes open, and air-circulating pipes extending through the fume-tubes and drum, said pipes being of such size as not to wholly close the fume-tubes.

6. The combination of a combustion-chamber, fume-tubes rising therefrom, a fume-drum into the lower end of which the tubes open, a gas-burner within the combustion-chamber and formed with vertical passages in line with the fume-tubes, and air-circulating pipes extending through the combustion-chamber and the burner and through the fume-tubes and drum.

7. The combination of a combustion-chamber, a fume-drum above the chamber and open from top to bottom for the circulation of air, fume-tubes rising from and connecting the combustion-chamber with the drum, and air-circulating pipes extending through the tubes and through the inclosed portions of the drum.

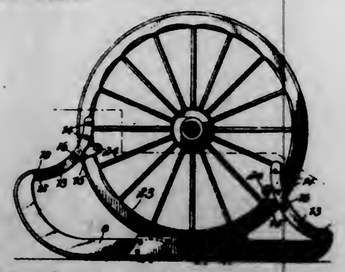
8. The combination of a combustion-chamber in form of a hollow square, a gas-burner section in each side thereof, fume-tubes rising from each side of the chamber, a fume-drum into the lower end of which the tubes open, and air-circulating pipes extending through the tubes and through the drum.

821,973. HORSESHOE. ALMON G. ALBRO, Corry, Pa. Filed Feb. 21, 1906. Serial No. 302,223.



Claim.—In a horseshoe, a calk of dovetail form in cross-section having a vertical groove H in one of its sides extending throughout its height, in combination with a calk-holder having a groove of dovetail form in cross-section in its under side into which the calk is introduced endwise and also having an indentation in the under portion of one of the side walls of the groove; the inner wall of the said indentation protruding into the groove of the holder and resting in the vertical groove of the calk.

821,974. SLEIGH-RUNNER ATTACHMENT FOR VEHICLE-WHEELS. LOUIS J. ALLARD, Fall River, Mass. Filed Apr. 29, 1905. Serial No. 258,079.



Claim.—1. In a runner attachment, the combination with a runner, of means for connecting the runner to a wheel, said means comprising a link connected to the runner, a rim-embracing clip arranged to extend transversely around a wheel-rim, and a pivot connecting the link and clip and disposed transversely of the runner, said clip and pivot being adjustable longitudinally along the link.

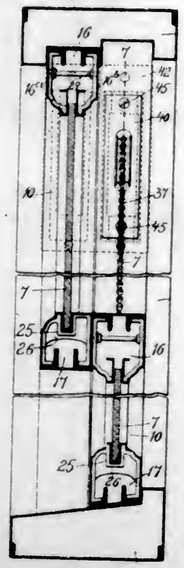
2. In a runner attachment, the combination with a runner, of means for connecting the runner to a wheel, said means comprising a curved link pivotally connected to the runner, a wheel-embracing clip and a pivot connecting the link and clip, said pivot being adjustable longitudinally along the link.

3. In a runner attachment, the combination with a runner having a front upturned end and a depressed wheel-receiving seat between its ends, of upstanding retaining-flanges carried by the runner and located on opposite sides of the seat, curved links pivoted to the front and rear ends of the runner, and wheel-embracing clips adjustable to different positions along the links and pivotally associated therewith.

4. In a runner attachment, the combination with a runner, of spaced links connected thereto, a wheel-embracing clip comprising spaced side members associated with the link, a connection passing through the links and side members, and an extensible spacing device located on the connection between the links and side members.

5. In a runner attachment, the combination with a runner, of spaced links pivotally connected thereto, a wheel-embracing clip comprising spaced side plates associated with the links, a bolt connecting the links and plates and bridging the space between the same, a coiled spring located on the bolt between the links and side plates, and a clamping-bolt for connecting the free ends of the side plates.

821,975. FIREPROOF WINDOW. DANIEL B. BADGER, Winchester, and ARTHUR C. BADGER, Boston, Mass. Filed June 27, 1905. Serial No. 267,223.



Claim.—1. In a fireproof window, a sheet-metal sash having a cross-rail composed of two strips having the edges of one overlapped and folded together with the edges of the other, the strips being separated from each other at their intermediate portions and indented longitudinally to form pane-receiving grooves.

2. In a fireproof window, a sheet-metal sash having a cross-rail composed of two strips having the edges of one overlapped and folded together with the edges of the other, the strips being separated from each other at their intermediate portions and indented longitudinally to form pane-receiving grooves and an internal stiffening member extended across said rail between the edges of said strips.

3. A cross-rail for a fireproof window-sash consisting of two strips of sheet metal arranged with the edges of one adjacent those of the other and interlocked and their intermediate portions separated, each of said strips being bent to provide grooves for receiving the window-panes, and a longitudinal stiffening-web located within the rail extending across the same and in engagement with the interlocked edges of said strips.

4. A fireproof window-sash having exterior rails, a hollow cross-rail, and connecting members held at their ends in the exterior rails and extending into and through said cross-rail.

5. In a fireproof window, a sheet-metal frame having a sash-guide provided with an opening, a rigid plate extending across such opening and secured to the frame, and a pulley-frame located in the opening and fastened to said plate.

6. In a fireproof window-frame, a sheet-metal side rail, a rigid metal plate secured to a wall of the side rail on the interior of the rail, the said wall and plate having registering openings, webs formed on said plate extending across the ends of said openings, and a pulley-frame located in the openings carrying a pulley projected into the interior of the rail and comprising in part a face-plate secured at its ends to said webs, and covering said openings.

7. In a fireproof window-frame, a sheet-metal side rail, a rigid metal plate secured to a wall of the side rail on the interior of the rail, the said wall and plate having registering openings, webs formed on said plate extending across the ends of said openings, a pulley-frame comprising a face-plate and laterally-extending pulley-supporting wings located in said openings, the face-plate being secured at its ends to said webs and covering the openings and the pulley-supporting wings extending through the openings into the interior of the side rail, and a pulley pivoted to said wings.

8. A fireproof window-sash having exterior rails of sheet metal with indented portions forming pane-receiving grooves, a hollow cross-rail, strips located within the cross-rail and extending longitudinally thereof, projections extending from said strips into the interior of the adjacent exterior rail and bent over on their ends to form hooks, and a cross-piece extending transversely of said exterior rail in engagement with the indented portion thereof and engaged by said hooks.

9. A fireproof window-sash having exterior rails of sheet metal with indented portions forming pane-receiving grooves, a hollow cross-rail, transverse tie members located in the exterior rails engaging the indented portions, a strip located within the cross-rail and extending across and longitudinally thereof, and projections extending from the ends of the strip into the interior of the exterior rails adjacent the ends of the cross-rail, on opposite sides of the indented portions of the exterior rails, and connected with the transverse tie members.

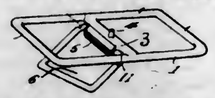
10. A fireproof window-sash having exterior rails of sheet metal with indented portions forming pane-receiving grooves, a hollow cross-rail, transverse tie members located in the exterior rails extending across the same in engagement with the indented portions thereof, and a plurality of strips extending longitudinally of the cross-rail in the interior thereof and having projecting portions extending into the interior of the exterior rails on opposite sides of the tie members, the ends of said projecting portions being bent around the outer edges of the tie members.

11. In a window, a sash having a tubular side rail formed with an external channel on the side toward the adjacent rail of the window-frame, a sash-supporting cord or chain located in said channel, and a hanger having a portion located in the channel engaged with the cord or chain and detachably connected to the sash-rail.

12. In a window, a sash having a tubular side rail formed with an external channel on the side toward the adjacent rail of the window-frame, a sash-supporting cord or chain located in said channel, and a hanger having an eye located in the channel engaged with the cord or chain and a holding portion extending into the interior of and detachably engaged with the sash-rail.

13. In a window, a sash having a tubular side rail and provided with an elongated slot in the portion adjacent the window-frame, and a hanger having an eye adapted to be engaged with a sash-supporting weight chain or cord and having also an offset portion and a lateral retaining-bar adapted to extend through the sash-rail and engage the same in the interior thereof.

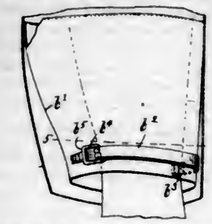
821,976. CROSS-LINE BUCKLE. CLARENCE A. BAKER, Phoenix Mills, N. Y. Filed June 3, 1905. Serial No. 263,618.



Claim.—1. In a cross-line buckle, the combination of a frame comprising side pieces, end bars, and an intermediate cross-bar having a stud upon one side and a hook upon the opposite side, said hook having a mouth smaller than the diameter of the opening therethrough and the before-mentioned side pieces being curved to allow the long line to pass through the buckle without bending, and a link one end of which is of such a size as to fit in the opening through the hook, one of the sides of the link being notched at a point adjacent said end so that it can be slipped into the hook from the side and cannot be disengaged when turned in the opposite direction.

2. In a cross-line buckle, the combination of a frame comprising side pieces and connecting cross-bars, an intermediate cross-bar being provided with a stud upon one side and a hook upon the opposite side, and a link which is detachably connected to the frame by the above-mentioned hook.

821,977. GARMENT. WALTER S. BARKER, Cambridge, Mass. Filed Oct. 2, 1905. Serial No. 280,865.

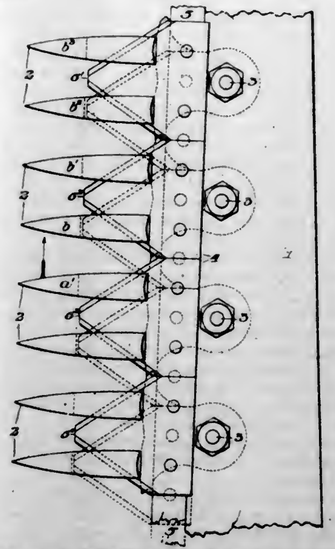


Claim.—1. A garment having a sleeve, a buckle attached to said sleeve and a strap passing through said buckle, both ends of which are attached to the sleeve at a point remote from the buckle, thereby forming a loop, the outer portion of which is adapted to be engaged by hand to draw the same through the buckle, substantially as described.

2. A garment having a sleeve, a buckle attached to said sleeve having a finger-engaging portion, and a strap passing through said buckle, both ends of which are attached to the sleeve at a point remote from the buckle, thereby forming a loop, along which the buckle is drawn by pulling on its finger-engaging portion, substantially as described.

3. A garment having loose-fitting sleeves and inner sleeves attached at their upper ends to the aforesaid sleeves, a buckle attached to each inner sleeve which is concealed by the loose-fitting sleeve, and a strap also concealed by said loose-fitting sleeve passing through each buckle, both ends of which are attached to the inner sleeve at a point remote from the buckle, thereby forming a loop, the outer member of which serves as a hand-engaging portion, substantially as described.

821,978. CUTTING APPARATUS FOR MOWERS. GEORGE H. BARTLETT, Madison, Wis., assignor to International Harvester Company, a Corporation of New Jersey. Filed Nov. 20, 1905. Serial No. 288,116.

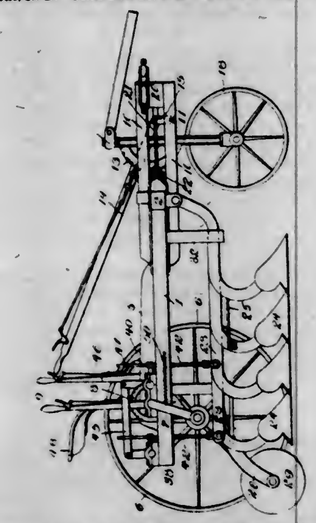


Claim.—1. A cutting apparatus for mowers comprising, in combination, reciprocating devices a series of pairs of guard-fingers having intervening spaces, a reciprocating knife comprising a series of sections in operative relation with said fingers, the stroke being such and said sections being so arranged relative to said pairs of fin-

gers that their points when at the end of strokes of said knife in opposite directions will be approximately coincident with the medial lines of the intervening spaces between the members of adjacent pairs of guard-fingers.

2. A cutting apparatus for mowers comprising, in combination, reciprocating devices a series of groups of guard-fingers having substantially equal intervening spaces, a reciprocating knife comprising a corresponding series of sections in operative relation with said fingers, means for reciprocating said knife in a manner whereby the point of each section will register with a medial line of a space between two guards of one group of guard-fingers at the end of one stroke, and with a medial line of a space between two guards of an adjacent group at the end of the opposite stroke.

821,979. GANG-CULTIVATOR. CHARLES BJORKLUND, Bowesmont, N. D. Filed Dec. 21, 1905. Serial No. 293,777.



Claim.—1. A gang-cultivator comprising a framework, two sets of draw-bars pivotally mounted at their front ends underneath the framework and carrying cultivating devices arranged in two oppositely and diagonally extending gangs, two transverse shafts in alinement with each other and journaled in the rear end of the framework, two other shafts in advance of the first-named shafts and also in alinement with each other and journaled in the framework parallel with the first-named shafts, two hand-levers each of which is arranged to actuate one of the advanced shafts, a connection between each of said advanced shafts and the shaft in the rear thereof whereby the shafts that are one in advance of the other will operate simultaneously, and upwardly-yielding connections between sundry of the draw-bars and all of said shafts.

2. A gang-cultivator comprising a framework, draw-bars pivotally mounted at their front ends in said framework, manually-operable means connected to the rear ends of said draw-bars for raising and lowering the same, cultivator-shovels carried by the rear ends of said draw-bars, and guide-brackets rigidly secured to the framework and designed to hold said draw-bars as against lateral strain.

3. A gang-cultivator comprising a framework, draw-bars pivotally mounted at their front ends in said framework, manually-operable means connected to the rear ends of said draw-bars for raising and lowering the same cultivator-shovels carried by the rear ends of said draw-bars, and bifurcated brackets secured to said framework and embracing the draw-bars and designed to guide the same in their vertical movement.

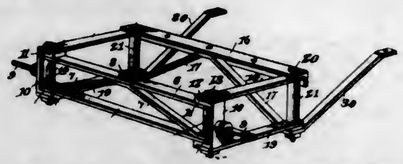
4. A gang-cultivator comprising a framework, rearwardly-extending draw-bars pivotally connected at their front ends to said framework and carrying cultivating devices, braces connecting together every two adjacent draw-bars whereby the latter are arranged in pairs, and brackets secured to the framework and straddling one draw-bar of each pair, as and for the purpose set forth.

5. A cultivator provided at its rear with main traveling wheels and at its front end with a vertically-adjustable truck mounted to freely tilt from side to side, and front traveling wheels mounted at the ends of said truck.

6. In a cultivator, a truck for the front end thereof embodying upper and lower horizontal bars spaced apart from each other, a vertically and axially movable post mounted in said bars and provided with a tongue-supporting arm, a bracket secured to said post, a quadrant attached to the bracket, a hand-lever fulcrumed intermediate of its ends on the bracket and having a link connection with one of said bars and arranged for adjustable engagement with the quadrant and a laterally-tiltable wheeled truck mounted on the lower end of said post.

7. In a cultivator of the type described the combination of a framework, traveling wheels therefor independent crank-axles for said traveling wheels, means for independently actuating said axles, and a vertically-adjustable and tilting truck on which the front end of the framework is mounted.

821,980. RIDING ATTACHMENT FOR AGRICULTURAL IMPLEMENTS. NICKLAS H. BLOOM, Nashua, Iowa. Filed July 25, 1905. Serial No. 271,211.



Claim.—1. In a riding attachment of the character described, the combination with a support including wheel-spindles movable in opposite directions, of means for connecting the support to an implement, said means effecting the said movements of the spindles when the implement is turned, and a seat mounted on the connecting means and movable laterally with the same.

2. In a riding attachment of the character described, the combination with a supporting-frame, of separate wheel-spindles pivoted thereto, means for connecting the frame to an implement and effecting the pivotal movements of the spindles, and a seat mounted on and movable with the connecting means.

3. In a riding attachment of the character described, the combination with a support including an axle, of wheel-spindles separately pivoted thereto, means for connecting the support to an implement and effecting the pivotal movements of the spindles, and a seat carried by and swinging with the said connecting means.

4. In a riding attachment of the character described, the combination with separately-movable wheel-spindles, of wheels journaled thereupon, a reach for connection with the implement, said reach having connections with the spindles for effecting their pivotal movements, and a seat supported on and swinging with the reach.

5. In a riding attachment of the character described, the combination with a supporting-frame, of wheel-carriers movably mounted thereon and movable in opposite directions, means for effecting the opposite movements of the wheel-carriers, said means including a reach for attachment to an implement, and a seat rigidly affixed to the reach and movable therewith.

6. In a riding attachment of the character described, the combination with a supporting-frame, of wheel-spindles pivoted to the opposite side portions thereof, and means for effecting the pivotal movements of the spindles, said means including a reach for attachment to an implement, and a seat rigidly affixed to the said means and being movable therewith and with the spindles.

7. In a riding attachment of the character described, the combination with an axle, of wheel-spindles pivoted to the axle, a seat-support connected to the spindles and movable therewith, and means for connecting the seat-support to an implement.

8. In a riding attachment of the character described, the combination with an axle, of a seat-supporting frame having pivotal connection with the axle, wheel-spindles pivoted to the axle and movable with the seat-supporting frame, and means for connecting the seat-supporting frame to an implement.

9. In a riding attachment of the character described, the combination with connected pivotal wheel-carriers, of a seat-support, link connections between the carriers and seat-support, and means for connecting the structure to an implement.

10. In a riding attachment of the character described, the combination with an axle comprising a frame, of wheel-spindles pivoted thereto, a seat-supporting frame, links pivotally connecting the frame and interlocked with the spindles, and reach-bars connected to the seat-supporting frame.

11. In a riding attachment of the character described, the combination with an axle, of wheel-spindles movable with respect thereto, means for effecting the movement of the spindles, said means being pivoted to the axle, and a seat carried by the said means and swinging therewith and thus with respect to the axle.

12. In a riding attachment of the character described, the combination with an axle, of a seat-support, links pivotally connecting the axle and seat-support, and means for connecting the same to an implement.

13. In a riding attachment of the character described, the combination with an axle, of wheel-spindles connected thereto, a seat-support, and links pivotally connecting the axle and seat-support, said links and wheel-spindles being held against relative movement.

14. In a riding attachment of the character described, the combination with an axle, of a wheel-spindle pivoted thereto and projecting beyond one end of the same, a reach having connections with the spindle for holding it in projected relation and effecting its pivotal movement, and a seat carried by the reach and swinging therewith.

15. In a riding attachment of the character described, the combination with a frame, of an axle, a wheel-spindle pivoted to the axle and projecting beyond the same, a reach, means connected to the reach and having an interlocked connection with the spindle for holding it in projecting relation and effecting its pivotal movement, and a seat swinging with the reach and spindle.

16. In a riding attachment of the character described, the combination with a frame, of a wheel-spindle having spaced connections pivotally connected to the frame, and means for connecting the frame to an implement, said means having spaced connections with the spindle for determining the position of the same with respect to the frame.

17. In a riding attachment of the character described, the combination with a frame including spaced bars, of a wheel-spindle having spaced ears pivotally connected to the spaced bars of the frame, and means for connecting the frame to an implement, said means being interlocked with the spaced ears of the spindle for determining the position of the spindle with respect to the frame.

18. In a riding attachment of the character described, the combination with an axle-frame, of spindles projecting beyond opposite ends thereof and having uprights at their inner ends that are provided with ears, said ears being pivotally connected to the ends of the axle, and means for connecting the frame to an implement, said means being also connected to the ears of the axle-spindles.

19. In a riding attachment of the character described, the combination with an axle-frame including upper and lower bars, of wheel-spindles having uprights provided with offset ears overlapping the ends of the bars, sleeves interposed between the ends of the bars, bolts passing through the bars, the ears, and sleeves, and means for connecting the axle to an implement, said means including links having connections with the spindles

20. In a riding attachment of the character described, the combination with an axle, of wheels carried by the opposite portions thereof, a seat-supporting frame having pivotal connections with the axle, a seat mounted on the frame and movable therewith, and means for connecting the frame to an implement.

21. In a riding attachment of the character described, the combination with an axle, of wheels carried by the opposite portions thereof, a seat-supporting frame, links pivoted to the axle and to the frame, and reach-bars connected to the frame.

22. In a riding attachment of the character described, the combination with an axle, of wheels carried by the opposite portions thereof, a seat-supporting frame, links pivoted to the axle and to the frame, reach-bars connected to the frame, and a seat connected to the reach-bars and frame.

23. In a riding attachment of the character described, the combination with an axle, of wheels carried by the opposite portions thereof, a seat-supporting frame, links pivoted to the ends of the axle and to the ends of the frame, reach-bars connected to the frame and extending in rear of the same between the links, and a seat having a standard secured to the rear ends of the reach-bars.

24. In a riding attachment of the character described, the combination with a supporting-frame comprising transverse bars, of an axle-frame having transverse bars, links connecting the corresponding ends of the frames, upright bolts passing through the frame-bars and links, spindles connected to and movable with the links, said spindles being associated with the axle, and reach-bars connected to the supporting-frame.

25. In a riding attachment of the character described, the combination with a supporting-frame comprising transverse bars having intermediate portions secured together, of upright bolts connecting the ends of the bars, sleeves located on the bolts, swinging links mounted on the bolts, an axle-frame disposed in rear of the supporting-frame and comprising transverse bars having a brace between them, wheel-spindles having uprights provided with offset ears interlocked with the rear ends of the links, upright bolts passing through the links, the connections, and the axle-bars, divergently-disposed reach-bars secured to the supporting-frame and extending in rear of the same, and a seat having a standard connected to the rear ends of the reach-bars and to the supporting-frame.

26. In a riding attachment of the character described, the combination with a support including an axle and wheel-spindles connected thereto and movable in opposite directions, of means for connecting the support to an implement and turning the spindles, and a seat mounted on the connecting means independently of the axle and turning with said connecting means.

27. In a riding attachment of the character described, the combination with a support including an axle and wheel-spindles pivoted thereto and movable in opposite directions, of means for connecting the support to an implement and turning the spindles, a seat-standard mounted on the connecting means and extending in rear of the axle, and a seat mounted on the rearwardly-extending end.

28. In a riding attachment of the character described, the combination with a support including an axle and wheel-spindles connected thereto and movable in opposite directions, of a cross-bar connected to the spindles, a reach connected to the cross-bar and extending in rear of the same, said reach having its rear end separate from and independent of the axle, a seat-standard mounted on said rear end of the reach, and a seat carried by the standard.

821,981. TELEPHONE-SWITCH. ADDINGTON L. BRINCKLE, Philadelphia, Pa. Filed Dec. 13, 1904. Serial No. 236,655.



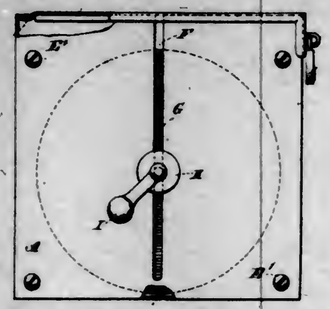
Claim.—In a stand-telephone set, a standard having a portion thereof adapted to be grasped by the hand of the user to support the instrument, a transmitter located at the upper portion of the standard, a head-telephone receiver connected to the said standard, a bell-ringing circuit and a talking-circuit, having terminals disposed within the said standard, and a switch located within the said standard and capable upon being manipulated of connecting the line alternately with the bell-ringing circuit and the talking-circuit and of maintaining itself in either connection and means for operating the switch extending without the standard.

821,982. SOAP-SHAVER. GEORGE W. BROWNE, New York, N. Y. Filed Apr. 24, 1905. Serial No. 257,075.

Claim.—1. The combination with the case having a cutter or knife-edge, of a rotatable holder movable bodily toward said cutter as the material on said holder is used up the holder's axis of rotation being transverse to the direction of the bodily movement of the holder.

2. The combination with the case having a cutter or knife-edge and a guideway extending upwardly above said cutter, of a rotatable holder having an axial portion engaging said guideway and movable bodily toward said cutter by gravity as the material is used up the

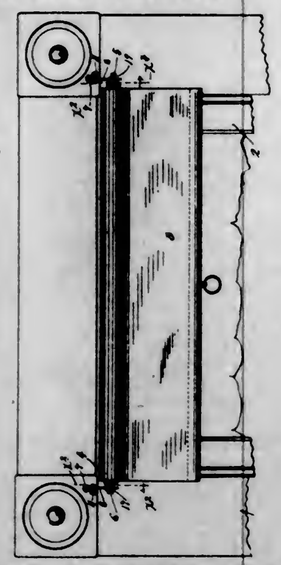
holder's axis of rotation being transverse to the direction of the bodily movement of the holder.



3. The combination with the case having a cutter or knife-edge, and a guideway extending upwardly above said cutter, of a rotatable weighted holder having a portion movable on said guideway toward the cutter and an operating-handle for turning the holder the holder's axis of rotation being transverse to the direction of the bodily movement of the holder.

4. The combination with the case having a guideway extending up and down and a cutter or knife-edge at the lower portion of said guideway, of a rotatable holder, the axis whereof extends transversely of said guideway and moves lengthwise thereof.

821,983. **WINDOW-BRACKET.** ANTONI BIESTKOT, Minneapolis, Minn. Filed Jan. 2, 1906. Serial No. 294,039.

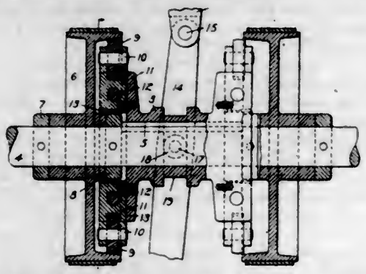


Claim.—A window-bracket comprising a supporting-rod and a body portion adjustably supported therefrom, which body portion is formed from a thin strip of metal having parallel edges, the said body being slit at 14 and being pressed in reverse directions at 15 and 16, to form a trunnion-seat, substantially as described.

821,984. **CLUTCH AND COUNTER-SHAFT MECHANISM.** BERNHARD T. BURCHARDI and VERNER J. WAHLSTROM, Brooklyn, N. Y. Filed Dec. 10, 1904. Serial No. 236,230.

Claim.—1. The combination with a clutch member, of an eccentric roller carried by said member, a coöperating clutch member, and means for moving one of said members on a line parallel to the axis of the roller to position said roller so that it may engage the other member, substantially as described.

2. The combination with a clutch member, of a plurality of eccentric rollers carried by said member, a coöperating clutch member, and means for moving one of said members on a line parallel to the axis of the rollers to position said rollers so that they may engage the other member, substantially as described.



3. The combination with a clutch member, of a plurality of eccentric rollers carried by said member, a coöperating clutch member, and means for moving said member on a line parallel to the axes of the rollers to position said rollers so that they may engage said coöperating member, substantially as described.

4. The combination with a clutch member, of a plurality of pivoted arms carried by said member, a plurality of eccentric rollers mounted in said arms, a coöperating clutch member, and means for moving said member to position said rollers so that they may engage said coöperating member, substantially as described.

5. The combination with a clutch member, of a spring-pressed pivoted arm carried by said member, an eccentric roller mounted in said arm, a coöperating clutch member, and means for giving one of said members a movement with respect to the other to position said roller so that it may engage the other member, substantially as described.

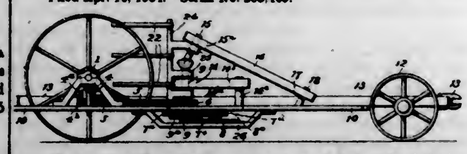
6. The combination with a clutch member, of two sets of eccentric rollers carried by said member, of two coöperating members, and means for giving one of said members a movement with respect to the other to position one set of rollers so that said rollers may engage another of said members, substantially as described.

7. The combination with a clutch member, of two sets of eccentric rollers carried by said member, of two coöperating members spaced apart, and means for moving said member to position one set of rollers so that said rollers may engage one of said coöperating members, substantially as described.

8. The combination with a shaft, of a clutch member slidably mounted on said shaft, a plurality of eccentric rollers carried by said member, of a coöperating clutch member mounted to rotate on said shaft, and means for sliding said member on said shaft to position said rollers so that they may engage said coöperating member, substantially as described.

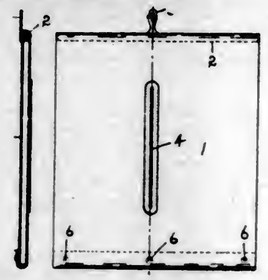
9. The combination with a shaft, of a clutch member slidably mounted on said shaft, two sets of eccentric rollers carried by said member, two coöperating clutch members spaced apart and mounted to rotate on said shaft, and means for sliding said member on said shaft to position one set of rollers so that said rollers may engage one of said coöperating members, substantially as described.

821,985. **STALK-CUTTER.** RALPH A. CLARK, Choteau, Ind. Ter. Filed Apr. 16, 1904. Serial No. 203,469.



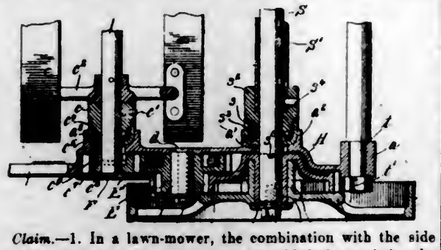
Claim.—A stalk-cutting apparatus comprising a wheeled platform having an opening therein extending rearwardly from the front thereof, a pair of uprights secured to said platform on opposite sides of and in rear of the opening therein, a stalk-receiving frame supported by said uprights, laterally-extending arms projecting from said uprights, a pair of intergeared upwardly-extending shafts journaled in said arms and positioned on opposite sides of and in rear of the opening in said platform, gearing between one of said shafts and the drive-wheels, a rotary cutter geared to one of said shafts and extending transversely across the opening in the platform, two pairs of upwardly-extending shafts secured to the forward portion of the platform on opposite sides of the opening therein and positioned adjacent the forward edge of the cutter, and belts connecting the upper and lower ends of the shafts in rear of the platform-opening with the shafts secured to the forward portion of the platform, the upper belts inclining upwardly toward the stalk-receiving frame.

821,986. **LAUNDRY-BAG.** SUSAN G. COBURN, Buffalo, N. Y. Filed Oct. 6, 1905. Serial No. 281,586.



Claim.—A laundry-bag provided with an open bottom, a stiffening-rod across its upper edge, a central vertical slit in one of its faces and a flap along one of its lower edges, adapted to be removably secured to the other lower edge of the open bottom, to close the same, as and for the purpose stated.

821,987. **LAWN-MOWER.** WILLIAM H. COLDWELL, Newburgh, N. Y. Filed Dec. 11, 1905. Serial No. 291,328.



Claim.—1. In a lawn-mower, the combination with the side frames of a driving-shaft, ball-bearings for said shaft permitting the longitudinal movement of the shaft therethrough at all times, ground-wheels secured to said driving-shaft, a rotary cutter mounted in the side frames, and connections between the driving-shaft and the rotary cutter, substantially as described.

2. In a lawn-mower, the combination with the side frames provided with bearing members, of a driving-shaft extending loosely through said bearing members, and provided with bearing members mounted thereon to rotate therewith but permitting the longitudinal movement of the shaft therethrough at all times, a connection exterior to the shaft connecting the bearing members carried thereby, means for adjusting one of the said shaft-engaging bearing members with respect to said connection for simultaneously adjusting both of the shaft-bearings, ground-wheels secured to said shaft, a rotary cutter mounted in the side frames and connections between said driving-shaft and said rotary cutter, substantially as described.

3. In a lawn-mower, the combination with the side frames of bearing-cups supported thereby, a driving-shaft extending loosely through said bearing-cups and provided with bearing-cones connected to said shaft for rotation therewith, by devices permitting the longitudinal movement of the shaft therethrough, a connection exterior to said shaft extending from one cone to the other, said cones and connection being provided with means for adjusting said cones toward and from each other, balls located between said cones and cups, ground-engaging wheels mounted on said driving-shaft, a rotary cutter mounted in the side frames, and gearing connecting said driving-shaft with said rotary cutter, substantially as described.

4. A lawn-mower having two side frames, non-rotatable bearing members for the driving-shaft, and non-rotatable bearing members for the cutter-shaft detachably secured therein, a driving-shaft extending loosely through its said non-rotatable bearing members, bearing members secured to rotate with said shaft, but permitting the endwise movement of the shaft therethrough, and coöperating with said non-rotatable bearing members, a rotary cutter provided with rotary bearing members coöperating with its said non-rotatable bearing members, a driving-pinion connected with said rotary cutter, a driving gear-wheel operatively connected with said driving-shaft, an intermediate pinion connecting said driving gear and pinion, and a stud supporting said intermediate pinion and detachably connected to one of said side frames, substantially as described.

5. In a lawn-mower, the combination with the side frames of a driving-shaft extending therethrough cup-shaped bearing members for said shaft carried by said side frames, conical bearing members carried by said shaft and connected to rotate therewith but permitting the longitudinal movement of the shaft therethrough, a driving gear-wheel operatively connected with said shaft, devices exterior to said shaft connecting said conical bearing members, for adjusting them with respect to their coöperating cup-shaped bearing members, a rotary cutter carried by said side frames, and arranged with its axis parallel to said driving-shaft, bearings comprising cup and cone members for said rotary cutter, a driving-pinion for said rotary cutter, an intermediate pinion arranged between said driving-gear and said pinion and provided with a stationary axis, and means for adjusting the bearings of said rotary cutter, substantially as described.

6. In a lawn-mower, the combination with the side frames, of a driving-shaft, bearings therefor comprising non-rotatable cup-shaped members, secured to said side frames, and cone-shaped members carried by said shaft but permitting it to move longitudinally therethrough, a driving gear-wheel mounted on said shaft and secured to rotate therewith, said gear-wheel being provided with an elongated hub, having an exterior bearing-surface, a ground-wheel mounted rotatably upon the exterior of said gear-wheel hub, a pawl-and-ratchet connection between said ground-wheel and said gear-wheel, a rotary cutter carried in the side frames, and connections between said gear-wheel and said rotary cutter, substantially as described.

7. In a lawn-mower, the combination with the main driving-shaft, of a driving gear-wheel mounted thereon and secured to rotate therewith, said gear-wheel being provided with an elongated hub, having an exterior bearing-surface, a ground-wheel provided with a hub engaging the exterior of the gear-wheel hub, a pawl-and-ratchet connection between said ground-wheel and gear-wheel, a retaining device secured to said gear-wheel hub and extending over the end of said ground-wheel hub, a rotary cutter and connections between said gear-wheel and rotary cutter, substantially as described.

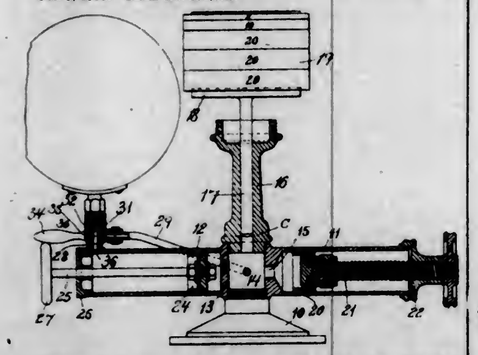
8. In a lawn-mower, the combination with the main driving-shaft, of a driving gear-wheel mounted thereon and secured to rotate therewith, said gear-wheel being provided with an elongated hub, having an exterior bearing-surface, a ground-wheel provided with a hub, engaging the exterior of the gear-wheel hub, a pawl-and-ratchet connection between said ground-wheel and gear-wheel, a retaining-washer engaging the end of said gear-wheel hub, said parts being provided with interlocking portions, a screw connecting said washer to said shaft, a rotary cutter and connections between the rotary cutter and said gear-wheel, substantially as described.

9. In a lawn-mower, the combination with the driving-shaft provided adjacent to its end with projecting portions extending laterally therefrom, a driving gear-wheel having a hub provided with an exterior bearing portion, and with recessed portions to engage said projecting portions on said shaft, when the hub is slipped over said shaft, a ground-wheel having a hub mounted on the exterior of the gear-wheel hub, a pawl-and-ratchet connection between said ground-wheel and gear-wheel, a retaining device secured to the hub of said gear-wheel for securing the ground-wheel, the rotary cutter and connections between said driving gear-wheel and said rotary cutter, substantially as described.

10. In a lawn-mower, the combination with the side frames provided with bearing-cups on their inner sides, of a main driving-shaft extending through said side frames and provided with bearing-cones coöperating with said bearing-cups, a sleeve surrounding said shaft, extending from one of said cones to the other, and adjustably connected to one of said cones, a connection between said cones and said shaft causing them to rotate together but permitting the endwise movement of the shaft therethrough, a driving-gear secured to said shaft at each end and provided with elongated hubs having exterior bearing portions, ground-wheels mounted upon the hubs of said gear-wheels, ratchet-and-pawl connections between said ground-wheels and gear-wheels, a rotary cutter mounted in said side frames and provided with pinions, and gearing connecting said gear-wheels and said pinions, substantially as described.

11. In a lawn-mower, the combination with the side frames, provided with bearing-cups on their inner sides, of a main driving-shaft extending through said side frames and provided with bearing-cones cooperating with said bearing-cups, a sleeve surrounding said shaft, extending from one of said cones to the other, and adjustably connected to one of said cones, a connection between said cones and said shaft causing them to rotate together but permitting the end-wise movement of the shaft therethrough, a driving-gear secured to said shaft at each end and provided with elongated hubs having exterior bearing portions, ground-wheels mounted upon the hubs of said gear-wheels, ratchet-and-pawl connections between said ground wheels and gear-wheels, a rotary cutter mounted in said side frames and provded with pinions each having a recessed portion engaging projecting portions on the shaft of the rotary cutter, intermediate pinions connecting said cutter-pinions and said driving-gears, studs detachably secured to said frames and carrying said intermediate pinions, said side frames having a recessed portion inclosing said driving gear-wheels intermediate pinions and cutter-pinions, said ground-wheels having solid central portions forming closures for said recessed portions of the side frames, and detachable gear-casings for covering said intermediate pinions and cutter-pinions, substantially as described.

821,988. GAGE-TESTING APPARATUS. CHARLES H. CRAIG, Jr., Wrentham, Mass., assignor to American Steam Gauge & Valve Manufacturing Company, Boston, Mass., a Corporation of New Jersey. Filed Oct. 5, 1905. Serial No. 281,386.



Claim.—1. A gage-testing apparatus comprising a gage-holder, pressure-applying means, a connection between the gage-holder and the pressure-applying means, a fluid-supply pump communicating with the gage-holder, and means for shutting off the pump from the gage-holder during the testing operation.

2. A gage-testing apparatus comprising a gage-holder, pressure-applying means, a connection between the gage-holder and the pressure-applying means, a fluid-supply pump communicating with the gage-holder, and a valve which may establish communication between either the gage-holder and the pump, or the gage-holder and the pressure-applying means.

3. A gage-testing apparatus comprising a gage-holder, a pressure-pump connected with the gage-holder, and a supply-pump connected with the gage-holder independently of the pressure-pump, and means for making either of the connections between the gage-holder and the pumps operative, and the other connection inoperative.

4. A gage-testing apparatus comprising a gage-holder, a pressure-pump, a supply-pump independent of the pressure-pump, and connections between said elements, including a three-way valve.

5. The combination with a casing having a plurality of chambers, of a pressure-piston operating in one chamber, a supply-piston movable in another chamber, a gage-holder, and means for connecting the gage-holder with either chamber, and at the same time disconnecting it from the other chamber.

6. The combination with a casing having a plurality of chambers, of a pressure-piston operating in one chamber, a supply-piston movable in another chamber, a gage-holder connected by separate passages with the two chambers, and means for simultaneously opening either passage and closing the other.

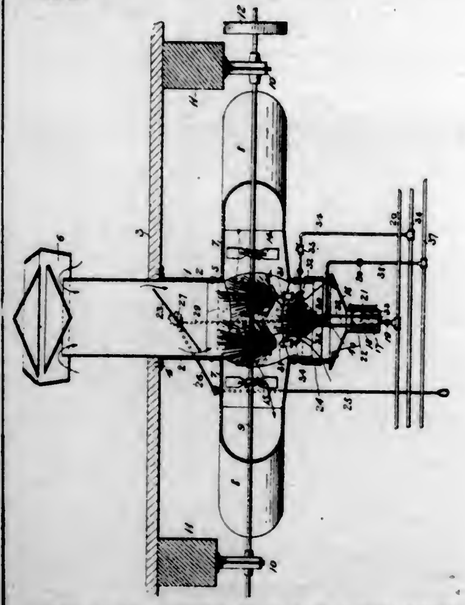
7. The combination with a casing having a plurality of chambers, of a pressure-piston operating in one chamber, a supply-piston movable in another chamber, a gage-holder carried by the chamber of the supply-piston, passages connecting said holder with the said chambers and means for making either passage operative and the other inoperative.

8. The combination with a casing having a plurality of pressure-chambers, and a supply-chamber, of a weight-piston, and an adjusting-piston operable in one of the pressure-chambers, a gage-holder communicating with the supply-chamber, a passage connecting the gage-holder with the pressure-chambers, and a three-way valve controlling communication between the gage-holder and the chambers.

9. The combination with a casing having a plurality of pressure-chambers, and a supply-chamber, of a weight-piston, and an adjusting-piston operable in one of the pressure-chambers, a gage-holder carried by the supply-chamber and communicating therewith, a pipe leading from the gage-holder to the pressure-chambers, and means for controlling communication between the gage-holder and the said chambers.

10. The combination with a casing having a plurality of pressure-chambers, and a supply-chamber, of a weight-piston, and an adjusting-piston operable in one of the pressure-chambers, a gage-holder carried by the supply-chamber, a pipe leading from the gage-holder to the pressure-chambers, and a three-way valve controlling communication between the gage-holder and the pipe.

821,989. HUMIDIFYING AND VENTILATING APPARATUS. STUART W. CRAMER, Charlotte, N. C. Filed June 1, 1905. Serial No. 263,239.



Claim.—1. An air-tempering device having a casing provided with a vertical inlet and horizontal discharge members, a shaft extending through the horizontal members, a fan on said shaft, and a spray-head for supplying fluid to said casing.

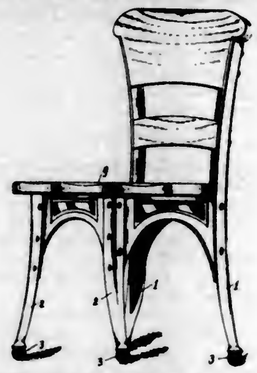
2. An air-tempering device having a casing provided with a vertical inlet and horizontal discharge members, a shaft extending through the horizontal members, a fan on said shaft, and a plurality of spray-heads for supplying fluid to said casing.

3. An air-tempering device having a casing provided with a vertical inlet and horizontal discharge members, a shaft extending through the horizontal members, a fan on said shaft, a spray-head, means for supplying fluid to said spray-head, an air-inlet at the top, and an air-inlet at the bottom of the casing, means for controlling the supply of air admitted through said inlets, and a bifurcated discharge at the outer ends of the horizontal members of the casing.

4. An air-tempering device having a casing provided with a vertical inlet and horizontal discharge members, a shaft extending through and supported beyond the horizontal members, opposite fans on said shaft, a spray-head, means for supplying fluid to said spray-head, air-inlets at the top and at the bottom of the casing, means for controlling the supply of air to the casing, an extension to the casing, a ventilator on said extension, and a bifurcated discharge at the end of each horizontal member.

5. An air-tempering device having a casing provided with a vertical inlet and horizontal discharge members, a shaft extending through the horizontal members and provided with right and left fans, means for supplying spray, and means for supplying steam to said casing.

821,990. FURNITURE. WILLIAM R. DEAN, McKeesport, Pa. Filed Jan. 18, 1905. Serial No. 241,579.



Claim.—1. In a chair the combination with a seat, of four angular metallic legs and four metallic frames, each frame consisting of a single piece of metal having an inwardly-extending pierced flange along its upper edge, each frame being attached at its ends to two of said legs, and the seat being attached to the inwardly-extending flanges of all of said frames.

2. In a chair, the combination with a seat, and a back, of angular metallic legs, two of said legs extending above the seat and embracing the two corners of the seat and the edges of the back, four metallic frames consisting each of a single piece of metal having an inwardly-extending pierced flange along its upper edge, each frame being attached at its ends to two of said legs, and the said seat being attached to the inwardly-extending flanges of all of said frames.

3. A chair-frame comprising in combination angular metallic legs, two of said legs extending above the other two, and being adapted to receive the corner of the seat and the edges of the back, and four metallic frames consisting each of a single piece of metal having an inwardly-extending pierced flange along its upper edge, said frames being attached at their ends to said legs.

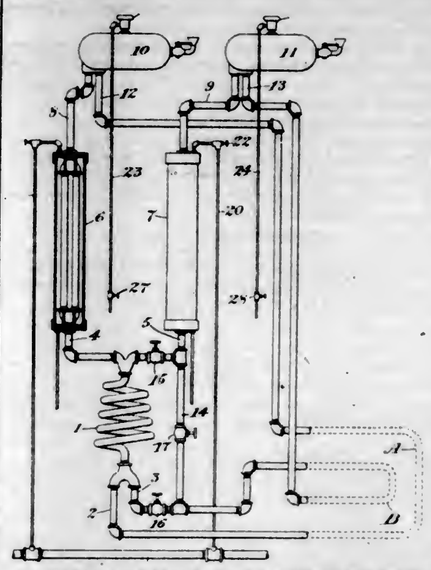
4. In a chair, the combination of four metallic legs, each leg being formed of an angle-iron of L shape in cross-section and metallic frames, each frame consisting of a single piece of metal having an inwardly-extending pierced flange along its upper edge, each frame being attached at its ends to the inner surface of one of the angular sides of two legs, and the seat being attached to the inwardly-extending flanges of the frames.

821,991. HOT-WATER HEATING SYSTEM. JAMES G. DEMAREST, West Hoboken, N. J., assignor to Clara A. Baker, New York, N. Y. Filed July 7, 1904. Serial No. 215,600.

Claim.—1. In a hot-water heating system, a plurality of independent water-circulating circuits, each of said circuits including expansion means, a heating-coil included in one of said circuits, with means for bringing said coil into communication with the other circuit, and an independent steam-heating attachment in operative connection with each of said circuits, whereby each of said circuits may be operated independently or they may all be heated by the said heating-coil, substantially as described.

2. In a hot-water heating system, two independent circulating-circuits, each of said circuits including an independent expansion vessel, a heating-coil included in one of said independent circuits with means for bringing said coil into communication with the other circuit, and a separate steam-heater for operating each of said circuits, whereby each circuit may be operated independently or they may both be operated by said heating-coil, substantially as described.

3. In a hot-water heating system two independent circulating-circuits, each of said circuits including an independent expansion vessel, a heating-coil included in one of said independent circuits with means for bringing said coil into communication with the other circuit, and a separate steam-heater above the coil for operating each of said circuits whereby each circuit may be operated independently or they may both be operated by said heating-coil, substantially as described.



4. In a hot-water heating system, two independent circulating-circuits, each of said circuits including an independent expansion vessel, a single heating-coil included in one of said independent circuits with means for bringing said coil into communication with the other circuits, and a shunt-pipe in such other circuit around the coil, an independent steam-heater for operating each of said circuits, whereby each of said circuits may be operated independently or they may both be operated by said coil, substantially as described.

5. In a hot-water heating system, two independent circulating-circuits, each of said circuits including an expansion vessel, a single heating-coil included in one of said independent circuits with means for bringing said coil into communication with the other circuit, and a shunt-pipe in such other circuit around the coil, an independent steam-heater located above the coil for operating each of said circuits, whereby each of said circuits may be operated independently or they may both be operated by the said coil, substantially as described.

6. In a hot-water heating system, a plurality of water-circulating circuits, each of said circuits including expansion means, a single coil included in one of said circulating-circuits, and means for bringing said coil into communication with the other circuit, an independent steam-heating attachment upon each of said circuits, whereby each of the said circuits may be operated independently or they may both be operated by the said coil, and an air-vent connecting the highest points in the system, substantially as described.

7. In a hot-water heating system, two independent circulating-circuits, each of said circuits including an expansion vessel, a single coil included in one of said independent circuits, and means for bringing said coil into communication with the other circuit, an independent steam-heater for operating each of said circuits whereby the said circuits may be operated independently of the said coil, or they may both be operated by the said coil, and an air-vent connecting with the highest points in the system, substantially as described.

8. In a hot-water heating system, two independent circulating-circuits, each of said circuits including an expansion vessel, a single coil included in one of said independent circuits, and means for bringing said coil into communication with the other circuit, an independent steam-heater for operating each of said circuits located above the coil, whereby the said circuits may be operated independently of the said coil, or they may both be operated by the said coil, and an air-vent connecting with the highest points in the system, substantially as described.

9. In a hot-water heating system, two independent circulating-

circuits, each of said circuits including an expansion vessel, a single coil included in one of said independent circuits, and means for bringing said coil into communication with the other circuit, a shunt-pipe in such other circuit around the coil, and an independent steam-heater for operating each of said circuits, whereby the said circuits may be operated independently of the said coil, or they may both be operated by the said coil, and an air-vent connecting with the highest points in the system, substantially as described.

10. In a hot-water heating system, two independent circulating-circuits, each of said circuits including an expansion vessel, a single coil included in one of said independent circuits, and means for for bringing said coil into communication with the other circuit, a shunt-pipe included in such other circuit around the coil, an independent steam-heater located above the coil for operating each of said circuits whereby the said circuits may be operated independently of the said coil, or they may both be operated by the said coil, and an air-vent connecting with the highest points in the system, substantially as described.

821,992. **RELAY DEVICE.** JOHN P. DOWNS, Cleveland, Ohio, assignor to The North Electric Company, Cleveland, Ohio, a Corporation of Ohio. Filed May 1, 1903. Serial No. 155,529.



Claim.—1. The combination with a helix-wound core having a polar extension, of an armature responsive thereto, magnetically engaging the extension in normal condition substantially throughout an area equal to their effective cross-sections, a knife-edge being provided for and freely supporting the armature, and contact parts adapted to be actuated by the said armature substantially as set forth.

2. The combination with a helix-wound core having a polar extension, of an armature responsive thereto, magnetically engaging the extension in normal condition substantially throughout an area equal to their effective cross-sections, a knife-edge being provided for and freely supporting the armature, contact parts adapted to be actuated by the said armature and a protective shell inclosing the said parts substantially as set forth.

3. The combination with a helix-covered core, of its polar extension, an armature mounted before and responsive thereto, the same magnetically engaging the extension in normal condition substantially throughout an area equal to their effective cross-sections, a countersunk or beveled portion of the armature providing a practically frictionless support therefor and a movable spring or part actuated by the armature substantially as set forth.

4. In a relay device, the combination with its helix-wound core, of a polar extension thereof, contact-springs disposed substantially parallel therewith, and an armature mounted between said parts substantially at right angles therewith; said armature and polar extension abutting in their normal position over areas substantially equal to their unimpaired or effective cross-section, the armature being positioned to rock between an opposing contact-spring and the polar extension and react against the former to effect a change of electrical contact, upon the excitation of the helix-wound core, substantially as set forth.

5. The combination with a helix-wound core, having a supporting polar extension, of an armature movable under the influence of the excited helix, the same being mounted before the extremity of the polar extension in position to present a maximum magnetic circuit therebetween, electrical contact parts positioned for actuation by said armature, and an interposed roller part associated therewith, substantially as described.

6. In a relay device, the combination with a helix-wound core, of its polar extension, contact-springs disposed substantially parallel with said core and extension, an armature part bodily positioned at right angles between the springs and extension, and a knife-edge bearing for the armature permitting its engagement with the extension over an area substantially equal to their effective cross-sections; said armature thus being positioned to rock between an opposing contact-spring and the supporting polar extension, and react against the spring to effect a change of its electrical contact, upon the magnetic excitation of the said extension, substantially as set forth.

7. In a device of the class described, the combination with the helix-covered core, of an extension thereof substantially parallel and terminating in practically the same plane therewith, an armature freely movable before the said core and extension and in magnetic contact with the latter throughout substantially their entire effective cross-sections, a knife-edge mounting provided therebetween, and a plurality of contact-springs adapted to move into and out of engagement with each other under the influence of said armature, substantially as set forth.

8. In an electric relay device the combination with the exciting-helix, of its core, a polar extension thereof, an armature mounted before the same in position to be attracted by the core, the said armature contacting with the pole-piece substantially throughout their widths and resting freely upon a knife-edge formed by a countersunk hole in the armature, and a plurality of contact-springs adapted to be actuated into and out of electrical engagement by the movements of the armature, substantially as set forth.

9. In a device of the class described the combination with an exciting-helix, of a pole-piece adapted to be energized thereby, an armature abutting or magnetically engaging the same and adapted to be actuated when the helix is excited, said armature being provided with a countersunk or beveled opening and hung or mounted upon the sharp edge thereof in position to be attracted when the helix is excited and contact-springs adapted to be moved into and out of electrical engagement by the armature, substantially as set forth.

10. In a telephone-relay the combination with a helix-wound core, of a polar extension substantially parallel therewith an armature having a countersunk opening supported from the acute edge thereof before said polar extension and in magnetic contact therewith substantially throughout their widths, a roller part carried thereby and a plurality of contact-springs adapted to be actuated into and out of electrical engagement by the movements of the armature, substantially as set forth.

11. In a telephone-relay the combination with a helix-wound core of a polar extension substantially parallel therewith an armature having a countersunk opening supported from the acute edge thereof before said polar extension and in magnetic contact therewith substantially throughout their widths, a roller part carried thereby a plurality of contact-springs adapted to be actuated into and out of electrical engagement by the movements of the armature and a protective casing therefor inclosing the relay parts substantially as set forth.

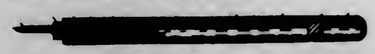
12. The herein-described telephone-relay, comprising a single helix-wound core, a polar extension parallel therewith, an armature supported at the end of, and magnetically engaging the same, in position to be attracted by the core, the armature having knife-edges formed therein to support it, an adjusting screw and nut, a rotatable roller part carried by the armature, contact-springs adapted to be actuated by the roller part into and out of electrical engagement, and a protective casing for the relay parts, substantially as set forth.

13. In a relay device, the combination with a helix-wound core, of its polar extension, an armature mounted before the core and extension, and magnetically engaging the abutting end of the latter, countersunk or beveled holes in the armature providing acute-angled supporting portions therefor, and contact parts adapted to be actuated into and out of electrical engagement by the movements of the armature, substantially as set forth.

14. In a relay device, the combination with a helix-wound core, of its polar extension terminating approximately in the plane of the forward end of said core, an armature mounted before the core and extension, and magnetically engaging the abutting end of the latter, beveled or countersunk holes in the armature providing acute-angled supporting portions therefor, an actuating part operated by the armature, and contact parts adapted to be actuated thereby into and out of electrical engagement, substantially as set forth

15. In a relay device, the combination with a helix-wound core, of its polar extension, an armature mounted at the end of said extension, and magnetically engaging the same throughout an area substantially equal to their effective cross-sections, and contact parts adapted to be actuated into and out of electrical engagement by the movements of the armature, substantially as set forth.

821,993. **PENHOLDER.** CHARLES DUNN, New York, N. Y. Filed June 30, 1905. Serial No. 267,696.



Claim.—1. A pen-section provided with two pens, one located at each end thereof and a member having an ink-duct in communication with each of said pens.

2. In a fountain-pen, a pen-section provided with two pens, one at each end thereof, substantially as described.

3. In a fountain-pen, a pen-section adapted to hold two pens, one at each end thereof, and means whereby said section may be united to a section-holder.

4. In a fountain-pen, a pen-section adapted to hold two pens, one at each end thereof, and means for conducting a fluid through said section to one of said pens.

5. In a fountain-pen, a pen-section provided with two ink-ducts, one on each side thereof, and means for holding two pens, one at each end of said section.

6. In a fountain-pen, a pen-section provided with two pens, one at each end thereof, a member provided with two ink-ducts, said member being adjustable relative to said pens.

7. In a fountain-pen, a pen-section provided with two pens, one at each end thereof, a holder for said section provided with a reservoir for ink, and means for supplying either of said pens with ink from said reservoir.

8. A pen-section adapted to hold two pens, one at each end thereof, and provided with two ink-ducts, and means for holding said section to a penholder; substantially as described.

821,994. **BLAST-FLAME FURNACE.** BYRON E. ELDRED, Bronxville, N. Y., assignor to Combustion Utilities Company, New York, N. Y., a Corporation of New York. Filed Apr. 14, 1905. Serial No. 255,662.



Claim.—1. A furnace comprising a combustion-chamber having means for feeding material along its floor, a blast-nozzle for projecting a flame over the material in the opposite direction to the travel of the material, fuel and blast-current connections to said nozzle, an auxiliary nozzle directed at an angle to the axis of the blast-nozzle toward the floor of the combustion-chamber and commanding a portion of the blast-current, means for supplying a high-pressure gaseous fluid to said auxiliary nozzle and means for supplying a low-pressure gaseous fluid thereto.

2. A furnace comprising a combustion-chamber, a blast-nozzle directed thereinto, a receptacle for powdered coal connected with said nozzle, means to supply a blast-current through said nozzle, and an auxiliary jet-nozzle commanding a portion of the blast and directed at an angle to the axis of the blast-nozzle, said nozzle comprising concentric pipes connected to different fluid sources.

3. A furnace comprising a rotary inclined barrel, material-supplying means at the higher end thereof, a discharge-outlet at the lower end, a blast-nozzle directed into said barrel substantially axial therewith, and an auxiliary nozzle directed across the axis of said nozzle toward the floor of the barrel, said nozzle comprising concentric pipes connected to different fluid sources.

4. A furnace comprising a combustion-chamber, means for producing regions of combustion of different intensities therein, and means for relatively adjusting said regions longitudinally of the furnace.

5. A furnace comprising a combustion-chamber, means for producing a main combustion of relatively low temperature therein, means for producing a local combustion of higher temperature, means for adjusting one of said combustions relatively to the other and means for adjusting both, longitudinally of said chamber.

6. A furnace comprising a combustion-chamber, means for producing a main flame and an auxiliary flame therein, and means for independently adjusting both of said flames longitudinally of the chamber.

7. A furnace comprising a combustion-chamber having means for feeding the material therethrough, a blast-nozzle at one end thereof for supplying a main axial flame, means for supplying a local high-temperature flame in contact with the materials near the discharge end, and means for relatively adjusting said flames longitudinally of said kilns.

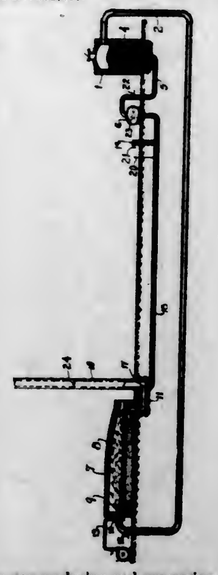
8. A furnace comprising a combustion-chamber having a stack at one end, a blast-nozzle at the other end, means additional to said nozzle for producing a local high temperature at the nozzle end, and damper mechanism at the stack end for varying the position of the main-nozzle flame within the combustion-chamber.

9. A furnace comprising a combustion-chamber having a stack at one end, a blast-nozzle at the other end, an auxiliary nozzle for producing a local flame, said nozzle adjustable in direction, and damper mechanism for varying the position of the main flame.

10. A furnace comprising a combustion-chamber, a main blast-nozzle, an auxiliary deflecting-nozzle having two pipes, and means for supplying fluids of different pressures through the respective pipes.

11. A furnace comprising a combustion-chamber, a main blast-nozzle, an auxiliary deflecting-nozzle having outer and inner pipes, an air-compressor connected with the inner pipe, and a fan-blower connected with the outer pipe.

821,995. **GAS PRODUCING AND CONSUMING APPARATUS.** CARLETON ELLIS, New York, N. Y., assignor to Combustion Utilities Company, New York, N. Y., a Corporation of New York. Filed Mar. 28, 1905. Serial No. 252,487.



Claim.—1. In a gas producing and consuming apparatus, the combination of a gas-producer adapted to contain a deep bed of fuel, a gas-consuming metallurgical furnace, a heat-insulated pipe connection delivering gas from the producer to the furnace, a heat-insulated pipe connection abstracting burned gases from the furnace and delivering them beneath said fuel, and means for admixing air with the gases in said latter heat-insulated pipe connection prior to the delivery to the producer.

2. In a gas producing and consuming apparatus, the combina-

tion of a gas-producer adapted to contain a deep bed of fuel, a gas-consuming metallurgical furnace, a pie connection delivering gas from the producer to the furnace, a heat-insulated pipe connection abstracting burned gases from the furnace and delivering them beneath said fuel, a power-driven admixing and propelling device in said heat-insulated pipe connection and a valve-controlled inlet-opening to the atmosphere in the pipe connection on the suction side of said device, whereby the burned gases and cold air will be admixed in regulated proportions.

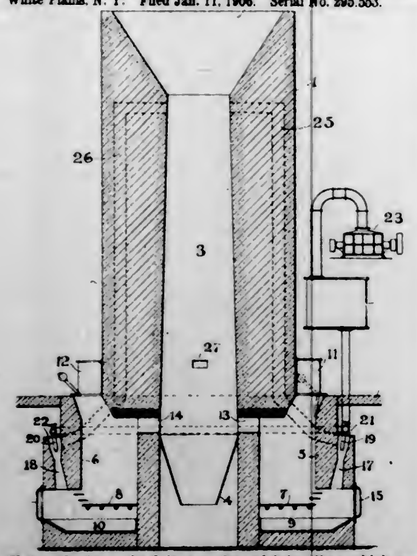
3. In a gas producing and consuming apparatus, the combination of a gas-producer adapted to contain a deep bed of fuel, a gas-consuming metallurgical furnace, a heat-insulated pipe connection delivering gas from the producer to the furnace, a heated insulated pipe connection abstracting burned gases from the furnace and delivering them beneath said fuel, a power-driven mixing and propelling device in said latter heat-insulated pipe connection, and a valve-controlled inlet-opening to the atmosphere in the pipe connection on the suction side of said device, whereby the burned gases and cold air will be admixed in regulated proportions.

4. In a gas producing and consuming apparatus, the combination of a gas-producer adapted to contain a deep bed of fuel, a gas-consuming metallurgical furnace, a pipe connection delivering gas from the producer to the furnace, an underground pipe connection abstracting burned gases from the furnace and delivering them beneath said fuel, and means for admixing air with the gases in said underground pipe.

5. In a gas producing and consuming apparatus, the combination of a gas-producer adapted to contain a deep bed of fuel, a gas-consuming metallurgical furnace, an underground pipe connection delivering gas from the producer to the furnace, an underground pipe connection abstracting burned gases from the furnace and delivering them beneath said fuel, and means for admixing air with the gases in said underground pipe.

6. In a gas producing and consuming apparatus, the combination of a gas-producer adapted to contain a deep bed of fuel, a gas-consuming metallurgical furnace, a pipe connection delivering gas from the producer to the furnace, means for abstracting a portion of waste gases from the furnace and delivering the same with their heat conserved into the gas-producer, and means for admixing regulated amounts of air with said gases prior to their entry into the producer.

821,996. APPARATUS FOR BURNING LIME. CARLETON ELLIS, White Plains, N. Y. Filed Jan. 11, 1906. Serial No. 295,553.

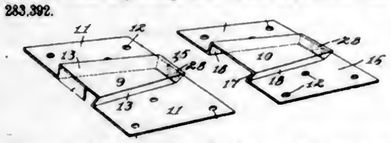


Claim.—1. A gas-fired furnace for calcining lime which comprises a vertical-shaft calcination-chamber having thick walls; a gas-generator adapted to contain a deep bed of fuel, opening thereinto; an inductor for entering air and products of combustion into said generator; and a flue in the walls of said chamber connecting the upper portion thereof with said inductor.

2. A gas-fired furnace for calcining lime which comprises a vertical-shaft calcining-chamber; at the base thereof a deep-chambered gasifier adapted to contain a deep bed of coal; an opening from the upper part of said gasifier into the lower part of said chamber; means for the admission of air to said chamber; and means for entering into said gasifier in its lower part a draft-current containing regulated amounts of air and products of combustion.

3. A gas-fired furnace for calcining lime which comprises a calcining-chamber; at the base thereof a deep-chambered gasifier; a passage from the upper part of said gasifier into the lower part of said chamber; means for the admission of air to said chamber; and means for entering into said gasifier a draft-current containing regulated amounts of air and products of combustion.

821,997. DOVETAIL FOR PATTERNS. JOSEPH P. EXTON and JESSE M. HAHN, High Bridge, N. J. Filed Oct. 19, 1905. Serial No. 283,392.



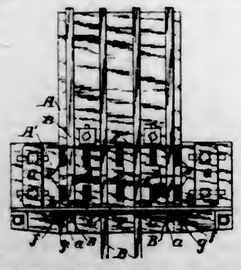
Claim.—1. A securing device for the parts of wooden patterns comprising wing-plates for securement to the pattern and an undercut taper member bent up from said wings and the wings having securing portions extending toward each other at the smaller end of said member.

2. A securing device for the parts of wooden patterns, comprising a sheet-metal structure embodying wing-plates for securement to the pattern, and an undercut taper male member bent up from said wings and having end closures for preventing the entrance of sand.

3. A pattern having a main portion and a "pick-in" portion in combination with securing devices carried thereby, one of these comprising wing-plates secured to one portion, and an undercut taper male member bent up from said wings and the wings having securing portions extending toward each other at the smaller end of the member, and the other of these comprising wing-plates secured to the other portion, and an undercut taper female member bent in from said wings, and the wings having securing portions extending toward each other at the smaller end of the said member.

4. A pattern having a main portion and a "pick-in" portion in combination with sheet-metal securing devices carried thereby, one of these comprising wing-plates secured to one portion, and an undercut taper male member bent up from said wings and the wings having securing portions extending toward each other at the smaller end of the member, and said member having a closure at each end for preventing the entrance of sand, and the other of these comprising wing-plates secured to the other portion, and an undercut taper female member bent in from said wings and the wings having securing portions extending toward each other at the smaller end of the said member.

821,998. AUTOMATIC BLANK-FEED FOR CAN-BODY-MAKING MACHINES. PAUL FOSS, Chicago, Ill. Filed Dec. 15, 1905. Serial No. 291,847.



Claim.—1. The combination of a base, guides on the base to form a receptacle for a pile of can-body blanks, the lower edge of the guide forming the forward wall of the receptacle raised above the base to permit the bottom one of the pile of can-body blanks placed in the receptacle to be forced from under such pile and out of the receptacle, adjustable fingers on such forward guide, means to secure the respective fingers in an adjusted position, rollers rotatably mounted on the base to coact with the adjustable fingers, respectively, with means to force blanks from the receptacle between the fingers and the coacting rollers; substantially as described.

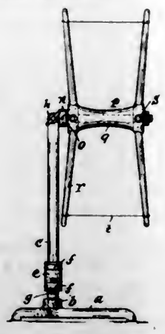
2. The combination of a base, guides on the base to form a receptacle for a pile of can-body blanks, the lower edge of the forward guide not extending to contact with the base, an adjustable finger on such forward guide, means to secure the adjustable finger in an adjusted position relative to the base, longitudinally-movable bars, and levers respectively placed in such longitudinally-movable bars to engage with the bottom one of the pile of can-body blanks and force the same out from under the pile and underneath the lower edge of the forward guide.

3. The combination of a base, guides on the base to form a receptacle for a pile of can-body blanks the lower edge of the forward guide not in contact with the base, an adjustable finger on such forward guide, means to secure the adjustable finger in an adjusted position relative to the base, longitudinally-movable bars, provided respectively with a recess therein, levers respectively pivotally mounted in the recess in such longitudinally-movable bars such levers provided with a vertical wall to engage with the bottom one of the pile of can-body blanks and adjustable mechanism to vary the operative height of the vertical wall and means to actuate the horizontally-movable bars and force a can-body blank out from under the pile thereof and underneath the lower edge of the forward guide.

4. The combination of a base, guides on the base to form a receptacle for a pile of can-body blanks, the lower edge of the forward guide not extending to contact with the base, adjustable fingers on such forward guide, means to secure the respective adjustable fingers in an adjusted position relative to the base, rollers rotatably mounted on the base to coact with the adjustable fingers, respectively, longitudinally-movable bars, and levers respectively placed in such longitudinally-movable bars to engage with the bottom one of the pile of can-body blanks and force the same out from under the pile and underneath the lower edge of the forward guide.

5. The combination of a base, guides on the base to form a receptacle for a pile of can-body blanks the lower edge of the forward guide not in contact with the base, adjustable fingers on such forward guide, means to secure the adjustable fingers in an adjusted position relative to the base, rollers rotatably mounted on the base to coact with the adjustable fingers, respectively, longitudinally-movable bars provided respectively with a recess therein, levers pivotally mounted in the recess in such longitudinally-movable bars, respectively, such levers provided with a vertical wall to engage with the bottom one of the pile of can-body blanks and adjustable mechanism to vary the operative height of the vertical wall, and means to actuate the horizontally-movable bars, and force a can-body out from under the pile thereof and underneath the lower edge of the forward guide.

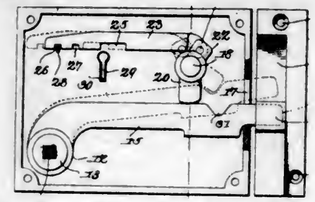
821,999. COMBINED SWIFT AND SUPPORT THEREFOR. HARRY B. FROST and ANTHONY B. VAN RIPER, Paterson, N. J. Filed Nov. 19, 1904. Serial No. 233,463.



Claim.—1. The combination of an upright, a spindle carried by said upright, and pivoted thereto to swing in a vertical plane, a swift journaled on said spindle, a shoulder adjacent one end of said spindle adapted to abut against said upright to limit the pivotal movement of said spindle and having the face thereof toward the swift convex, and a nut screwed on the other end of said spindle and coöperating with said shoulder to limit axial movement of the swift, substantially as described.

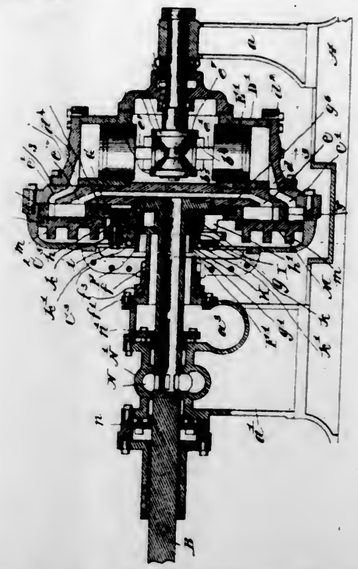
2. In a combined swift and support therefor, the combination of a swift, an upright, a spindle carried by said upright, said swift being journaled on the spindle, and a sleeve secured on said upright for adjustment longitudinally thereof and carrying clamping-arms, substantially as described.

822,000. LOCK. EDWIN GEORGE, Dickson, Tenn., assignor of one-sixth to William E. Cullum and one-sixth to Jesse Crosby, Dickson, Tenn. Filed May 8, 1905. Serial No. 259,485.



Claim.—In a lock, the combination of a casing having a knob-spindle mounted for rotation therethrough, a bolt carried by said spindle and partaking of its movement, a keeper for receiving the free end of said bolt, a shaft journaled in said casing and provided with a stop member extending into the path of the bolt when the is in one position and withdrawn from the path of the bolt when the shaft is in its other position, a stationary stop within said casing, an arm movably coupled to said stop member and provided with spaced recesses, and a key adapted to actuate said bar and cause the recesses therein to be alternately engaged with said stationary stop.

822,001. STEAM-ENGINE. CLIFFORD A. HOLCOMB, Chicago, Ill., assignor to Holcomb Automatic Engine Company, a Corporation of South Dakota. Filed Oct. 12, 1903. Renewed Nov. 2, 1905. Serial No. 285,589.



Claim.—1. In an engine the combination with a plurality of cylinders and the pistons therein, of a valve-frame, means actuating the same and a valve for each cylinder slidably engaged on and operated by said valve-frame.

2. In a rotating engine the combination with a plurality of cylinders and the pistons therein, of a gyratory valve-frame, means actuating the same and a valve for each cylinder slidably engaged on and operated by said valve-frame and affording maximum port-opening and complete closure at dead-centers.

3. In an engine the combination with a plurality of cylinders and pistons therein, of a valve-frame, means imparting gyratory motion thereto, and a valve for each cylinder slidably engaged by and

carried on said valve-frame and a governor acting to move said valve laterally of their normal movement.

4. In a rotating engine the combination with a plurality of cylinders and the pistons therein, of a valve-frame, means imparting gyratory motion thereto, and a valve for each cylinder slidably engaged by and carried on said valve-frame and a governor acting to move said valves laterally of their normal movement.

5. In an engine the combination with a plurality of cylinders and the pistons therein, of a valve-frame centrally disposed with respect to the cylinders, means actuating said valve-frame, a valve for each cylinder positively connected with and actuated by said valve-frame and means acting to move said valves laterally of the normal movement of the valves comprising a governor.

6. In a rotating engine the combination with a plurality of cylinders and the pistons therein, of a gyratory valve-frame centrally disposed with respect to the cylinders, means actuating said valve-frame, a valve for each cylinder positively connected with and actuated by said valve-frame and centrifugally-operated means acting to move said valves laterally of the normal movement of the valves comprising a governor.

7. In an engine the combination with a plurality of cylinders and pistons therein, of a valve-frame disposed centrally of the cylinders, means for actuating said valve-frame, a valve for each cylinder slidably carried thereon and means carried on the valve-frame and movable independently thereof acting to slide the valves on the valve-frame comprising a centrifugal governor.

8. In a rotating engine the combination with a plurality of radially-disposed cylinders and pistons therein, of a valve-frame disposed centrally of the cylinders, means for actuating said valve-frame, a valve for each cylinder slidably carried thereon and means carried on the valve-frame and movable independently thereof acting to slide the valves on the valve-frame comprising a centrifugal governor.

9. In an engine the combination with a cylinder and its piston, of a valve-frame, means actuating the valve-frame, a valve slidably carried on said frame and a centrifugal governor also carried on the valve-frame, positive connections between the governor and the valve acting to slide the same on the valve-frame and affording the cut-off.

10. In a rotating engine the combination with a cylinder and its piston, of a valve-frame, means actuating the valve-frame, a valve slidably carried on said frame and a centrifugal governor also carried on the valve-frame, positive connections between the governor and the valve acting to slide the same on the valve-frame and affording the cut-off.

11. In an engine the combination with a valve-frame located centrally, of one or more valves carried thereby and movable therewith and independently thereof and a centrifugal governor mounted on the valve-frame and acting to vary the position of the valves with respect to the valve-frame and port-openings.

12. In a rotating engine comprising a plurality of radially-disposed cylinders the combination with a valve-frame located centrally, of one or more valves carried thereby and movable with and independently thereof and a centrifugal governor mounted on the valve-frame and acting to vary the position of the valves with respect to the valve-frame and port-openings.

13. In a rotating engine comprising a plurality of radially-disposed cylinders the combination with a valve-frame located centrally, of one or more valves carried thereby and movable with and independently thereof and a centrifugal governor mounted on the valve-frame and acting to vary the position of the valves tangentially with respect to the valve-frame and port-openings.

14. In a rotating engine the combination with a non-rotative eccentric, of a valve-frame revoluble thereon, one or more steam-valves adjustably carried on said valve-frame and movable therewith and independently thereof, and a centrifugal governor carried on the valve-frame and positively connected with the valve or valves and acting to shift the same on the frame to cut off admission of steam to the port.

15. In a rotating engine the combination with a non-rotative eccentric of a valve-frame revoluble thereon, of steam-valves adjustably carried thereby and movable with and independently thereof and provided with apertures normally registering with an inlet-passage and a port respectively and normally acting to admit steam therethrough to the port at dead-centers and a centrifugal governor on the valve-frame and acting to shift the valves laterally cutting off the steam from passage through the valves.

16. In an engine the combination with a plurality of oppositely-disposed cylinders, their pistons and crank-shaft, of a valve-frame positioned centrally of the cylinders, means imparting gyratory motion thereto, a valve for each cylinder carried thereon and movable therewith and a weighted lever pivoted on the valve-frame and positively connected with the valves and acting centrifugally to vary the adjustment thereof with the frame.

17. In a rotative engine the combination with a plurality of oppositely-disposed cylinders and their pistons, of a non-rotative crank with which the pistons are connected, a valve-frame positioned centrally of and eccentrically connected with the cylinders, means imparting gyratory motion thereto, a valve for each cylinder carried thereon and movable therewith and normally at dead-centers affording full port-opening and complete closure respectively, and a weighted lever pivoted on the valve-frame and positively connected with the valves and acting centrifugally to vary the adjustment thereof with the valve-frame varying the cut-off.

18. In a rotative engine the combination with a plurality of oppositely-disposed cylinders and their pistons, of a non-rotative crank with which the inner ends of the pistons are connected, a valve-frame positioned centrally of the cylinders and rotating therewith, means imparting gyratory motion thereto, a chambered valve for each cylinder carried on said valve-frame and movable therewith and through which the steam is conveyed to the ports and a weighted lever pivoted on the valve-frame and positively connected with the valves and acting centrifugally to vary the adjustment thereof with the frame and limiting the passage of steam through said valves.

19. In a rotative engine the combination with a plurality of radially-disposed cylinders and their pistons and piston-rods, of a non-rotative crank with which the inner ends of the piston-rods are connected, a non-rotative eccentric positioned centrally of the cylinders, a valve-frame journaled thereon and eccentrically connected with the cylinders and revoluble therewith, a valve for each cylinder carried thereon and movable therewith and a weighted lever pivoted on the valve-frame and positively connected with the valves and acting centrifugally to vary the adjustment thereof with the frame.

20. In a rotative engine the combination with a plurality of radially-disposed cylinders, their pistons and piston-rods, of a non-rotative crank operatively connected with the piston-rods and about which the engine rotates, a valve-frame positioned centrally of the cylinders, means imparting gyratory motion thereto, a valve for each cylinder carried thereon and movable therewith to afford full port-openings and complete closure thereof at dead-centers and a centrifugally-operating governor movable with the valve-frame and independently thereof and acting to move the valves laterally to afford a cut-off.

21. In a rotative engine the combination with a plurality of radially-disposed cylinders and the pistons therein, of a non-rotative crank connected with said pistons, a centrally-disposed eccentric, a valve-frame thereon afforded gyratory motion thereby, a valve for each cylinder adjustably connected with said valve-frame and a plurality of weighted and mutually counterbalancing levers pivoted on said valve-frame and operatively connected with said valves and acting centrifugally to move the valves laterally with respect to the valve-frame.

22. In a rotating engine the combination with a plurality of radially-disposed cylinders and their pistons, of a fixed crank with which each piston is connected, a port at the outer end of each cylinder, a tubular shaft rigidly secured at the axis of rotation of the cylinders, means admitting steam therethrough, passages leading therefrom and opening adjacent said ports, a non-rotative eccentric through which said shaft passes, a valve-frame mounted thereon, an eccentric-guide connecting the same with the cylinders, a valve for each cylinder carried on the valve-frame and positioned to normally afford full opening and closure of said ports and a centrifugal governor carried on said valve-frame and acting to shift the valves laterally to vary the port-openings.

23. In a rotating engine the combination with a plurality of radially-disposed cylinders and their pistons, of a fixed crank with which each piston is operatively connected and about which the engine rotates, of a port at the outer end of each cylinder, a tubular rotative shaft rigidly secured at the axis of rotation of the cylinders and adapted to admit steam therethrough, passages leading therefrom and opening adjacent said ports, a non-rotative eccentric through which the shaft passes, a valve-frame mounted thereon, an eccentric-guide connecting the same with the cylinders, a valve for each cylinder carried on the valve-frame and provided with a plurality of apertures therethrough which normally register with the open end of the passage and with the ports respectively, thereby normally affording full opening and closure of the ports at dead-centers and a centrifugal governor carried on the frame and acting to shift the valves laterally to restrict or prevent the passage of steam through said valves and ports.

24. In a rotative engine the combination with a plurality of radially-disposed cylinders, their pistons and piston-rods, of a non-rotative crank positioned centrally of the cylinders and means affording a connection thereof with the piston-rods comprising an adjusting-bolt passing axially through the crank, inwardly-facing cones journaled on the crank one of which is movable by the bolt, a laterally-extended head on each piston-rod shaped to engage said cones and rings engaging around said heads and cones within the flanges of the latter and acting to hold the ends of said piston-rods in operative engagement therewith.

25. In a rotative engine the combination with a plurality of radially-disposed cylinders, their pistons and piston-rods, of a non-rotative crank positioned centrally of the cylinders and means affording a connection thereof with the piston-rods comprising an adjusting-bolt passing axially through the crank, inwardly-facing cones journaled on the crank one of which is movable by the bolt, a laterally-extended head on each piston-rod shaped to engage said cones and rings engaging around said heads and cones within the flanges of the latter and acting to hold the ends of said piston-rods in operative engagement therewith, and a washer having a greater diameter than the crank carried on said bolt and engaging against the larger base of one of said cones and acting to draw the cones inwardly toward each other.

26. The combination with a non-rotative shaft provided with a fixed crank thereon, of a rotative tubular shaft in alinement therewith, a disk comprising an engine-frame secured thereon and provided with substantially radial passages extending therethrough and registering with the bore of the shaft, radial cylinders secured on said frame, pistons therein, operative connections between the pistons thereof and said fixed crank, a non-rotative eccentric on the tubular shaft, a valve-frame mounted thereon and eccentrically connected with the engine-frame, and revoluble therewith, valves movable thereby and connected therewith to afford normally full opening and complete closure of the ports at centers and a governor movable with the valve-frame and independently thereof and acting to shift the valves laterally of their normal movement to afford a cut-off.

27. In an engine the combination with integrally-connected radially-disposed revoluble cylinders and the pistons therein, of a fixed crank connected with said pistons and about which the engine revolves, ports at the outer ends of the cylinders, a central non-rotative eccentric, a valve-frame operated thereby and revoluble with the cylinders, valves carried by said valve-frame and movable normally to afford full opening and closure of the ports and a governor mounted on said valve-frame and comprising a governor-ring, integral arms thereon, positive connections between said arms and said valves and weighted levers pivoted on said valve-frame and connected with said arms and acting centrifugally to partly revolve said governor-ring on the valve-frame thereby moving said valves to limit the opening of the ports.

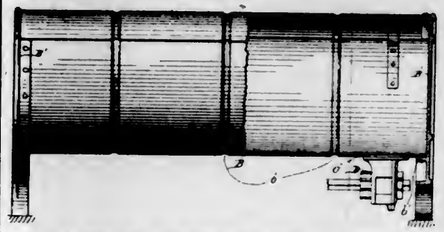
28. In a rotating engine provided with a plurality of ports disposed near the periphery thereof, a non-rotative eccentric positioned at the axis of rotation, a valve-frame mounted thereon, eccentric-guides affording connection thereof with the engine, valves carried on and operated by said valve-frame to open and close said ports, and a governor comprising a plurality of integrally-connected arms pivoted on said valve-frame and each connected with one of said valves, levers also pivoted on the valve-frame and connected at their ends with said arms and springs acting normally to hold said valves in position to permit maximum opening of the ports.

29. In a rotating engine the combination with a rotative shaft of a plurality of cylinders rigidly engaged thereon, a stationary crank-pin eccentric with said shaft, a plurality of inwardly-facing cones adjustably engaged thereon, pistons operatively connected with said cones, ports opening into said cylinders, slide-valves controlling said ports and centrifugally-operated means acting to regulate said valves.

30. In a rotary engine the combination with a plurality of oppositely-disposed cylinders, of a chambered disk rigidly engaged thereon, a shaft rigidly engaged on said disk, a non-rotative eccentric on said shaft, an apertured valve-frame thereon, a plurality of stud-shafts on said disk, antifriction-rollers thereon adapted to engage in the apertures in said frame and a plurality of laterally-movable valve-plates carried on said frame.

822,002. SEEDBOX FOR GRAIN-DRILLS. WILL F. HOYT, Dowagiac, Mich. Filed Mar. 3, 1906. Serial No. 304,075.

Claim.—1. In a seedbox, the combination of metal end pieces having inwardly-projecting, annular flanges thereon; a cylindrical body portion formed of a single piece of sheet metal, having seed-delivery openings in the bottom thereof, secured to the said flanges on said end pieces; and a cover formed of a single piece of sheet metal curved to form a segment of the cylindrical body, said lid and body having circumferential corrugations therein, and hinges for said cover secured upon the inside of said body and cover, for the purpose specified.



2. In a seedbox, the combination of metal end pieces having inwardly-projecting, annular flanges thereon; a cylindrical body portion formed of a single piece of sheet metal, having seed-delivery openings in the bottom thereof, secured to the said flanges on said end pieces; and a cover formed of a single piece of sheet metal curved to form a segment of the cylindrical body and hinges for said cover secured upon the inside of said body and cover, for the purpose specified.

3. In a seedbox, the combination of metal end pieces having inwardly-projecting, annular flanges thereon; a cylindrical body portion formed of a single piece of sheet metal, having seed-delivery openings in the bottom thereof, secured to the said flanges on said end pieces; and a cover formed of a single piece of sheet metal curved to form a segment of the cylindrical body and body having circumferential corrugations therein, for the purpose specified.

4. In a seedbox, the combination of metal end pieces having inwardly-projecting, annular flanges thereon; a cylindrical body portion formed of a single piece of sheet metal, having seed-delivery openings in the bottom thereof, secured to the said flanges on said end pieces; and a cover formed of a single piece of sheet metal curved to form a segment of the cylindrical body, for the purpose specified.

5. In a seedbox, the combination of end pieces; a cylindrical body portion formed of a single piece of sheet metal, having seed-delivery openings in the bottom thereof, secured to said end pieces; and a cover formed of a single piece of sheet metal curved to form a segment of the cylindrical body, said cover and body having circumferential corrugations therein, and hinges secured upon the inside of said body and cover; for the purpose specified.

6. In a seedbox, the combination of end pieces; a cylindrical body portion formed of a single piece of sheet metal, having seed-delivery openings in the bottom thereof, secured to said end pieces; and a cover formed of a single piece of sheet metal curved to form a segment of cylindrical body; and hinges secured upon the inside of said body and cover, for the purpose specified.

7. In a seedbox, the combination of end pieces; a cylindrical body portion formed of a single piece of sheet metal, having seed-delivery openings in the bottom thereof, secured to said end pieces; and a cover formed of a single piece of sheet metal curved to form a segment of the cylindrical body, said cover and body having circumferential corrugations therein, for the purpose specified.

8. In a seedbox, the combination of end pieces; a cylindrical body portion formed of a single piece of sheet metal, having seed-delivery openings in the bottom thereof, secured to said end pieces; and a cover formed of a single piece of sheet metal curved to form a segment of the cylindrical body, for the purpose specified.

9. In a seedbox, the combination of metal end pieces having inwardly-projecting annular flanges thereon; a cylindrical body portion formed of a single piece of sheet metal, having seed-delivery openings in the bottom thereof secured to the said flanges on said end pieces; and a cover formed of a single piece of sheet metal. for the purpose specified.

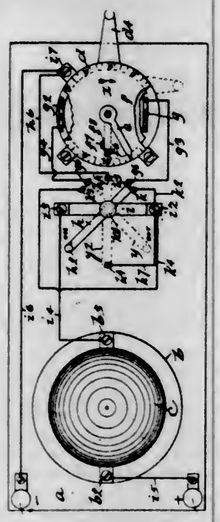
10. In a seedbox, the combination of end pieces; a cylindrical body portion formed of sheet metal, having seed-delivery openings in the bottom thereof, secured to said end pieces; and a cover formed of a single piece of sheet metal, for the purpose specified.

11. In a seedbox, the combination of metal end pieces having inwardly-projecting annular flanges thereon; a cylindrical body portion formed of a single piece of sheet metal, having seed-delivery

openings in the bottom thereof, secured to the said flanges on said end pieces, for the purpose specified.

12. In a seedbox, the combination of end pieces; a cylindrical body portion formed of sheet metal having seed-delivery openings in the bottom thereof, secured to said end pieces, substantially as described.

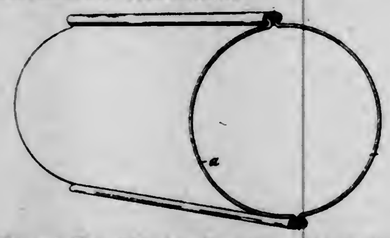
822,003. ELECTRIC TIME-SWITCH. FREDERICK C. HUBER and JOHN H. MANSEL, Rosebank, N. Y. Filed May 23, 1905. Serial No. 261,753.



Claim.—1. An electric time-switch, comprising an electric lamp arranged in an electric circuit, a time mechanism intercepting said circuit, a switch in said circuit, a lever in operative connection with the winding mechanism of said time mechanism, a rotatable dial on said time mechanism and in operative connection with said lever, said lever when operated being adapted to wind said time mechanism for a predetermined period and to rotate said dial for approximately the same period, substantially as shown and described.

2. A time-switch, comprising an electric-lighting circuit, a time mechanism intercepting said circuit, a switch in said circuit, a mainspring in said time mechanism, a rotatable dial on said time mechanism, devices for winding said mainspring and operating also to rotate said dial correspondingly, and devices for closing said circuit through said time mechanism in one position of said switch, and devices for opening said circuit through said time mechanism in another position of said switch, substantially as shown and described.

822,004. LOCK-BAR PIPE. MAX KRONAUER, Paterson, N. J. Filed June 17, 1905. Serial No. 265,653.



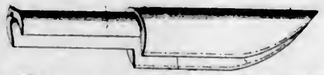
Claim.—1. The combination of two sheet-metal bodies having their edge portions lying in substantially the same plane and projecting toward each other and a lock-bar joining and securing together said edge portions, the extremities of said edge portions being bent up out of said plane to form flanges and said lock-bar having longitudinal parallel grooves formed in the side thereof next adjacent said edge portions and receiving said flanges, each edge portion or flange having, within the lock-bar, a longitudinal bend or kink, and said lock-bar being interiorly shaped to substantially conform with said flanges, substantially as described.

2. The combination of two sheet-metal bodies having their edge portions lying in substantially the same plane and projecting toward each other and a lock-bar joining and securing together said edge portions, the extremities of said edge portions being bent up together out of said plane to form flanges and said lock-bar having longitudinal parallel grooves formed in the side thereof next said edge portions and receiving said flanges, the portions of said flanges within the lock-bar having their free edges bent away from each other, and said lock-bar being interiorly shaped to substantially conform with said flanges, substantially as described.

822,005. ANTISLIPPAGE DRESSING FOR BELTING. JOHN B. LEONARD, Memphis, Tenn. Filed Mar. 13, 1903. Serial No. 147,663.

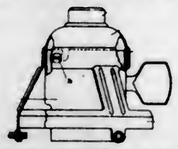
Claim.—An antislippage composition for belting, consisting of, and in the proportions, substantially, rosin, three parts, beeswax, two parts, and animal oil, five parts, said composition being adapted for application by melting and to form when cold a tough, elastic and non-absorbable skin or coating for the belt-surface.

822,006. PROTECTOR FOR TOOL-HANDLES. JOHN H. LYONS, Lyons, Oreg. Filed Feb. 27, 1905. Serial No. 247,499.



Claim.—The combination with a tool and its handles, of a detachable shield embracing the handle and comprising a soft-iron body portion having its parallel longitudinal edges tempered and spaced apart to conform to the shape of the tool-handles and gradually increasing in thickness from said edges to the center of the body portion and inclined toward one end of the latter, said body portion being provided at its opposite end with an annular shoulder for engagement with the base of the tool and having a reduced extension of approximately one-half the width of the body portion and forming a socket adapted to receive the adjacent longitudinal edge of the handle, the end of the extension being bent to form a central laterally-projecting lug for engagement with the head of the tool and provided with a longitudinal key-receiving recess extending laterally through the walls of said extension and communicating with the eye of the tool, and a key seated in said recess and adapted to pierce the handle.

822,007. INCANDESCENT-LAMP SOCKET. NORMAN MARSHALL, Newton, Mass. Filed Apr. 22, 1904. Serial No. 204,419.



Claim.—1. An incandescent-lamp socket having in combination a cap provided with means for securing it to a fixture or support, a shell detachably connected with the cap and a shade-holder permanently secured to and forming a part of the cap, substantially as described.

2. An incandescent-lamp socket having in combination, a cap provided with means for securing it to a fixture or support and having a cylindrical portion, a shell fitting the cylindrical portion and detachably connected with the cap, a shade-holder having a part fitting the cylindrical part of the cap and permanently secured thereto, substantially as described.

822,008. PENHOLDER. ALONZO H. MEACH, Blissfield, Mich. Filed Jan. 24, 1906. Serial No. 297,632.

Claim.—1. A penholder comprising a handle, a sleeve engaged with the handle and extending forwardly therebeyond, said forwardly-extending portion being cut away at its lower portion to form a transversely-arcuate portion open at its bottom, a member including a curved upper wall and a bottom wall, the forward portion of the sleeve being engaged within said member for sliding movement of the member thereupon, said bottom wall having a transverse upper curvature to bring its central portion between the lower edges of the forward portion of the sleeve, a depending finger-piece carried by the rearward end of the bottom wall, and a core connected with the member and arranged to lie against the inner surface of the forward portion of the sleeve when the member is at the rearward limit of its movement, and to lie forwardly of the sleeve when the member is at the forward limit of its movement, and means for limiting the movement of the member in both directions.



2. A penholder comprising a handle, a sleeve engaged with the handle and having a cut-away portion at its lower side, a hollow member in which the sleeve is slidably engaged, said hollow member having a lower wall curved to extend into the cut-away portion of the sleeve, said hollow member having wings at its forward end and being movable upon the sleeve to bring its wings into and out of the sleeve, means for limiting the movement of the member in both directions, and a downwardly-extending finger-piece carried by the member.

822,009. CURTAIN-FIXTURE. JOHN M. MILLS, Tiskilwa, Ill. Filed July 15, 1905. Serial No. 269,575.



Claim.—As a new article of manufacture, a curtain-fixture or supporting-bracket comprising a shank consisting of a single length of wire or like material threaded at one end so as to be screwed into a support, said shank being projected laterally at a point between its ends to form a horizontal offset portion or shoulder adapted to limit the penetration of the threaded portion aforesaid, the outer portion of the shank extending outwardly from the outer end of the shoulder and at an angle to the axis of the threaded portion above mentioned, the outer extremity of the angularly-arranged portion of the shank being bent to form a member for supporting a curtain-roller, said supporting member being arranged in a plane at approximately a right angle to the plane including the offset and threaded portions of the shank.

822,010. BASE FOR LOG-LOADERS. JOHN R. MCGIFFERT, Duluth, Minn., assignor to Clyde Iron Works, Duluth, Minn., a Corporation of Minnesota. Filed Dec. 30, 1904. Serial No. 238,983.

Claim.—1. In a base for log-loading machines, the combination with a frame, of a plurality of rollers mounted thereon and having their axes inclined relatively to the median of said frame.

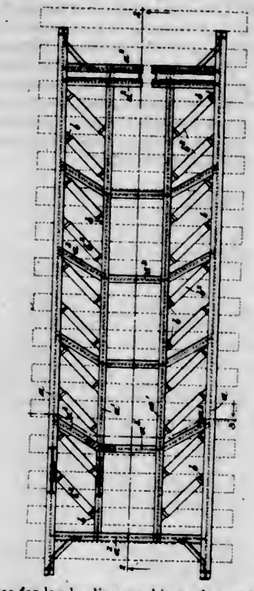
2. In a base for log-loading machines, the combination with a frame structure, of a plurality of rollers mounted thereon having their axes obliquely inclined relatively to the median of said structure and parallel with each other.

3. In a base for log-loading machines, the combination with a frame, of two sets of rollers mounted thereon, the axes of the rollers of one set being inclined relatively to the axes of the rollers of the other set.

4. In a base for log-loading machines, the combination with a frame structure, of two sets of rollers mounted upon opposite sides of a given plane, one set of such rollers having its axes inclined in one direction relatively to said plane, and the other set having its axes inclined in the opposite direction, relatively thereto.

5. In a base for log-loading machines, the combination with a frame structure including two pairs of parallel longitudinal frame members and rollers mounted between and having their axes inclined relatively to the members of each pair of such frame members.

6. In a base for log-loading machines, the combination with a frame structure comprising two pairs of parallel beams and transverse connecting members therefor, of two sets of rollers mounted between the members of each pair of beams and having their axes inclined relatively thereto, the axes of the one set of rollers being inclined relatively to the axes of the other set.



7. In a base for log-loading machines, the combination with a frame structure comprising two side beams, two beams parallel with and included between said side beams, cross-braces joining said two beams, and rollers mounted between said side beams and adjacent parallel beams respectively, said rollers projecting below the lower surfaces of said side and parallel beams.

822,011. STUD OR BUTTON. ALFRED J. O'DONNELL, St. Louis, Mo. Filed Aug. 18, 1905. Serial No. 274,902.



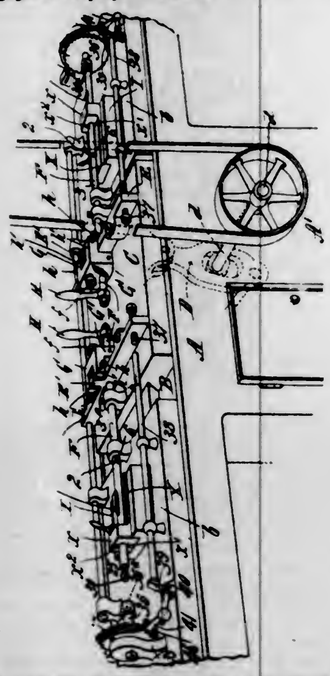
Claim.—1. A device of the class described comprising a base, a needle formed upon said base and provided with a recess formed at the rear of the point and extending around the entire periphery, a head member having a perforation formed therein for the insertion of the needle, a pair of leaf-springs riveted within the head, the free ends curved to receive the needle to lodge within the recess and retain the same in locked position, substantially as specified.

2. A device of the class described comprising a base, a needle rigidly mounted within said base, said needle having a recess to the rear of the point 9 and extending around the entire periphery, a head member having a perforation formed therein for the insertion of the needle, a pair of leaf-springs located within the head member, the edges 13 of the perforation in said head member being curved to hold the ends of the leaf-springs, said leaf-springs bent inwardly so that the free ends come in contact with the recess formed on the needle to hold the head member in position thereon, substantially as specified.

3. A stud or button comprising a base 5, a needle 6 having a recess 8 and a point 9, in combination with a head 10 having a perforation 12 formed therein, a pair of leaf-springs 14 secured to the inner surface of said head by rivets, the edges 13 of the perforation in said head member being curved inwardly, and crimped over the ends of the leaf-springs to hold the same in position, said leaf-springs having their free ends bent inwardly to come in contact with the needle-point and lock the same in position, substantially as specified.

822,012. SLOTTING-MACHINE. GEORGE A. OWEN, Springfield, Mass. Filed Nov. 16, 1904. Serial No. 233,979.

Claim.—1. In a machine of the character described, a bed or support having a reciprocatory carriage located at its intermediate portion, a plurality of work-holders on said bed, a plurality of arbors mounted on and bodily movable with the carriage, and each arbor having an adjustable cutting-tool, and a tool-adjusting means comprising a member rotatively movable relatively to the arbor, and at the outer end portion thereof, combined with shafts located at the opposite ends of the machine and in alinement with the arbors, each of said shafts having at its inner end a wrench-head with which said rotatable member comprised in the tool-adjusting means alternately moves to, and withdraws from, engagement, ratchet-wheels affixed on said shafts, oscillatory carriers having pawls coacting with the ratchet-wheels, and a device, adjacent to and operable on each pawl-carrier, and with which the carriage in its alternating endwise movements engages for the purposes set forth.



2. In a machine of the character described, the combination with a support and an intermediately-arranged, reciprocatory carriage carrying arbors provided with cutting-tools, and with tool-adjusting devices rotationally operable and respectively located at the ends of the arbors which are toward the opposite ends of the machine, of the devices at the opposite ends of the machine, each comprising a shaft having a wrench-head and a ratchet-wheel, the pawl-carriers and pawls coacting with the ratchet-wheels, and the elbow-levers 39 engaging the pawl-carrier, together with the rods 38, 38, coöperative with the elbow-levers, and the adjustable contact-screws 37, 37, on the carriage, alined with the slide-rods for the purposes set forth.

3. In a mechanism of the character described, the combination with a work-holder, and a reciprocatory carriage, having an arbor mounted thereon which comprises a tool adjustably supported therein, a cam-bar coöperative with the tool to successively set it outwardly, and a rotative position-changing sleeve coacting with the cam-bar at the end portion of the arbor and provided with wrench-head-engaging means, a shaft alined with the arbor at the end of the machine having a wrench-head, pawl-and-ratchet mechanism for rotating said shaft and intermittently operable by the coaction therewith of the reciprocatory carriage.

4. In a mechanism of the character described, the combination with a tool-carrying arbor constructed with an opening for a tool therein and a cutting-tool in said opening, and having a cam-ended rod adjustably movable but non-rotatable within the arbor and adapted to impinge against, and outwardly set, the tool, and having a sleeve, screw-engaging and endwise movable relatively to the arbor-body, and rotatable about the cam-rod, but constrained for movement in unison with such rod, and provided with a squared end portion, in combination with an arbor-carriage, a shaft having a wrench-head in axial alinement with the arbor, and provided with a ratchet-wheel, a pawl-carrier and pawl coacting with said ratchet-wheel, the elbow-lever 39 engaging the pawl-carrier and the slide-rod engaged by the carriage and coacting with said elbow-lever.

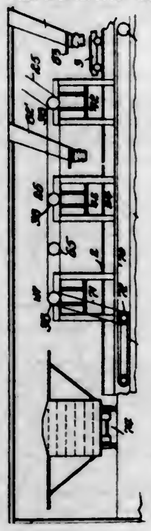
5. In a mechanism of the character described, the combination with a main support or bed having a stationary work-holder and a reciprocatory carriage provided with the longitudinally-ranging part 37 endwise adjustable, and with an arbor mounted on the carriage and comprising the adjustable tool, the longitudinally-movable cam-bar, and the cam-bar-advancing sleeve, rotatable relatively to the arbor, and having a polygonal end portion and screw engaging in the arbor-body, of a ratchet-wheel having a socketed portion 36, 36ª into which the polygonal end of the sleeve may come to engagement, periodically, a pawl-carrier provided with a pawl, the angular lever 39 engaging the pawl-carrier, and the rod 38 coöperative with the said lever and in alinement with the said part 37, for the purposes set forth.

6. In a mechanism of the character described, the combination with the carriage C having the arbor-hole *e* and the upstanding member E′, of the tool-carrying arbor-body, extended through said arbor-hole, the L-shaped block, G provided with the separated ear-lugs *h*′, *h*′, having the arbor passed therethrough and secured thereto, and the set-screws *h h* passing through the block-lugs *h*′ *h*′ to adjustment confining engagements at opposite sides of the carriage-supported lug E′.

7. In a mechanism of the character described, the combination with the carriage C having the arbor-hole *e* and the upstanding member E′, of the tool-carrying arbor-body extended through said arbor-hole, the L-shaped block, G provided with the separated ear-lugs *h*′ *h*′, having the arbor passed therethrough and secured thereto, the set-screws *h h* passing through the block-lugs *h*′ *h*′ to adjustment-confining engagements at opposite sides of the carriage-supported lug E′, and the longitudinal adjusting-screw coöperative relatively between the block G and the upstanding rib member of the carriage.

8. In a mechanism of the character described, the combination with the carriage C having the arbor-hole *e* and the upstanding member E′, of the tool-carrying arbor-body extended through said arbor-hole and provided with the arbor-handle H, the L-shaped block G, provided with the separated ear-lugs *h*′, *h*′, having the arbor passed therethrough and secured thereto, the set-screws *h h* passing through the block-lugs *h*′, *h*′, to adjustment-confining engagements at opposite sides of the carriage-supported lug E′, and the longitudinal adjusting-screw coöperative relatively between the block G and the upstanding rib member of the carriage.

822,013. APPARATUS FOR FORMING ARTIFICIAL-STONE BUILDING-BLOCKS FROM CONCRETE. ALBERT A. PAULY, Youngstown, Ohio. Filed Jan. 22, 1906. Serial No. 297,167.



Claim.—1. In an apparatus, the combination of a trackway, a plurality of presses erected above said trackway, a car adapted to travel upon said trackway beneath said presses, a molding-frame carried by said car and comprising hinged gates, detachable dies carried by said presses, a polishing device mounted between said presses above said trackway, said polishing device consisting of a plurality of rotary polishers, an endless conveyer mounted adjacent to said presses, means to vertically reciprocate said dies, means to revolve said polishers, and means to simultaneously operate said conveyer, substantially as described.

2. An apparatus of the type described embodying a trackway, a car mounted upon said trackway, a molding-frame carried by said car and consisting of a plurality of interlocking gates, presses mounted above said trackway, vertically-reciprocating interchangeable dies carried by said presses, a polishing device mounted between two of said presses, and means to simultaneously operate and independently control said presses and said polishing device, substantially as described.

3. An apparatus of the type described embodying a plurality of presses, a movable car located beneath said presses, a molding-frame carried by said car and adapted to receive concrete, pallets mounted in said molding-frame, vertically-reciprocating dies carried by said presses and adapted to engage said concrete, an adjustable polishing device mounted between two of said presses, means to operate said presses, means to operate said polishing device, means to strip said molding-frame, substantially as described.

4. An apparatus of the type described embodying a plurality of presses, a movable car located beneath said presses, a molding-frame carried by said car, vertically-reciprocating detachable dies carried by said presses, an adjustable polishing device supported between two of said presses, means to operate said presses, and means to operate said polishing device, substantially as described.

5. In an apparatus, the combination with a trackway, of a car mounted upon said trackway, a molding-frame carried by said car, interlocking gates hinged to said frame, pallets mounted in said frame, presses mounted above said trackway, a plurality of detachable dies carried by said presses, a polishing device supported between two of said presses, revoluble polishers adjustably carried by said device, an endless conveyer mounted adjacent to said presses, means to strip said molding-frame, means to operate said presses, means to operate said polishing device, means to operate said conveyer, and means to independently control said presses, said device and said conveyer, substantially as described.

6. In an apparatus, the combination with a trackway and a car mounted thereon, of a molding-frame carried by said car, interlocking gates hinged to said frame, pallets mounted in said frame, a plurality of presses mounted above said trackway, vertically-reciprocating dies detachably carried by said presses, a polishing device supported between two of said presses, means to reciprocate said dies, and means to operate said polishing device, substantially as described.

7. In an apparatus, the combination with a molding-frame, interlocking gates carried by said frame, pallets supported by said frame, of a plurality of presses, vertically-reciprocating dies detachably carried by said presses, a polishing device mounted between two of said presses, means to operate said presses, means to operate said device, and means to move said molding-frame beneath said presses and said device, substantially as described.

8. In an apparatus, the combination of a molding-frame, pallets carried by said frame, a plurality of presses, detachable dies carried by said presses, a polishing device mounted between two of said presses, means to vertically reciprocate said dies, means to operate said device, and means to move said molding-frame beneath said dies and said polishing device, substantially as described.

9. In an apparatus, the combination with a trackway and a car mounted thereon, of a molding-frame carried by said car and adapted to receive concrete, interlocking gates hinged to said frame, pallets carried by said frame, means to strip said frame, means to lock said gates, means to subject the concrete in said frame to an initial pressure and a refilling pressure, and means to smooth and polish the concrete in said frame, substantially as described.

10. In an apparatus, the combination with a trackway and a car, of a molding-frame carried by said car and adapted to receive concrete, interlocking side gates and end gates carried by said frame, supplementary side gates and supplementary end gates mounted within the first-named side gate and end gates, pallets carried by said frame, means to strip said frame, means to subject the concrete of said frame to pressure, substantially as described.

11. In an apparatus, the combination with a trackway and a car, of a molding-frame adapted to receive concrete, interlocking side gates and end gates carried by said frame, supplementary side gates and supplementary end gates mounted within and interlocked with the first-named gates, means to strip said frame, means to subject the concrete of said frame to pressure, substantially as described.

12. In an apparatus, the combination with a trackway and a car, of a molding-frame carried by said car, presses mounted above said trackway, movable dies carried by said presses, a polishing device supported between two of said presses, a conveyer arranged adjacent to said trackway, means to operate said presses, means to operate said polishing device, and means to operate said conveyer, substantially as described.

13. An apparatus of the type described embodying a plurality of presses, detachable dies carried by said presses, a movable molding-frame adapted to travel beneath said dies, means to vertically reciprocate said dies, and means to move said frame, substantially as described.

14. An apparatus of the type described embodying a plurality of presses, dies carried by said presses, a molding-frame, a polishing device interposed between said presses, means to move said molding-frame beneath said presses and said polishing device, and means to independently operate said presses and said polishing device, substantially as described.

15. An apparatus of the type described embodying a plurality of vertically-reciprocating dies, a movable molding-frame adapted to travel beneath said dies, a polishing device mounted adjacent to said dies, and means to independently operate said dies and said polishing device, substantially as described.

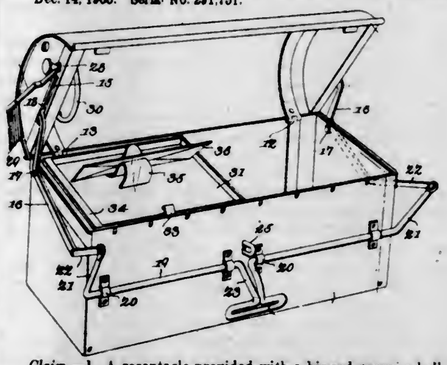
16. An apparatus embodying a plurality of sets of vertically-reciprocating dies, a molding-frame, and means to move said frame from one set of dies to another set of dies, substantially as described.

17. An apparatus consisting of a polishing device, a molding-frame adapted to contain concrete, means to subject the concrete of said frame to pressure, and means to move said frame to meet said polishing device to be polished thereby, substantially as described.

18. An apparatus consisting of a molding-frame, presses, a polishing device, a conveyer, and means for simultaneously operating the presses and polishing device substantially as and for the purpose described.

19. An apparatus consisting of a molding-frame, presses, a polishing device, and means for simultaneously operating the presses and polishing device substantially as and for the purpose described.

822,014. MAIL-BOX. JOHN M. PETERSON, Colegrove, Pa. Filed Dec. 14, 1906. Serial No. 291,751.



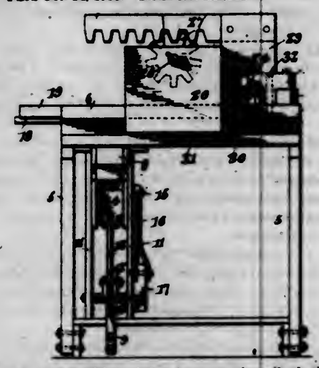
Claim.—1. A receptacle provided with a hinged cover, a bell-crank lever pivoted upon the end of the receptacle with one arm in slidable engagement with and to operate the cover, a rock-shaft journaled longitudinally upon the front of the receptacle and having an angularly-disposed arm extending rearwardly at the end, a link connecting the end of the arm and the lever and a handle rigid with and to operate the shaft.

2. A mail-box comprising a receptacle, a cover for the receptacle, a target pivoted to the end and disposed without and with a curved bar within the cover, a letter-tray hinged within the receptacle and a catch carried by the tray to secure the tray in operative position and in the path of the curved rod and to raise the target.

3. In a mail-box, the combination with a receptacle having a cover movably connected thereto, of a target mounted upon the cover, a letter-tray within the receptacle and means for locking the tray in position to actuate the target when the cover is closed.

4. In a mail-box, the combination with a receptacle and a cover movably connected thereto; of a target pivoted upon the cover, a rod movable with the target and extending into the cover, a tray within the receptacle and means for locking the tray in the path of the rod to actuate the target.

822,015. MOLDING-MACHINE. LEWIS M. PRATT, Belleville, Kans. Filed Oct. 14, 1905. Serial No. 282,813.



Claim.—1. In a machine of the character described, the combination with a mold, of feeding means movable with the mold, an agitator movable with and with respect to the feeding means, a pinion movable with the feeding means and connected to the agitator to move the same with respect to the feeding means, and a rack with which the pinion movably engages upon the movement of the feeding means.

2. In a machine of the character described, the combination with a support having a mold, of feeding means movable on the support and over the mold, an agitator movably mounted on the feeding means, a pinion connected to the agitator, and a rack secured to the support, said rack being movably engaged by and rotating the pinion upon the movement of the feeding means.

3. In a machine of the character described, the combination with a mold, of feeding means including a hopper movable from and to a position over the mold, an agitator rotatably mounted in the hopper, a pinion connected to the agitator and movable with the hopper, and a stationary rack engaging the pinion.

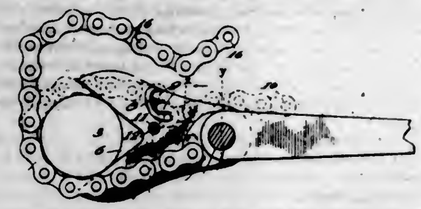
4. In a machine of the character described, the combination with a table, of a mold located in the table, a carriage movable over the table and having a hopper that is movable into and out of alinement with the mold, a rotary agitator journaled in the hopper and having a pinion, a rack carried by the table, said pinion meshing with the rack, and means for operating the carriage.

822,016. SQUARE. JAMES A. RANKIN, Wheeling, W. Va., assignor of one-third to Frank R. Scroggins, Wheeling, W. Va. Filed Dec. 23, 1905. Serial No. 293,114.



Claim.—In a carpenter's square, two separable arms or members, one member provided with a plain mitered end, a tapered dovetail channel in the face of said member and extending longitudinally therein from said mitered end, a mitered edge at the end of the second member for coinciding with the mitered end of the first-mentioned member, an integral tapered tongue carried by the mitered end of said second member and overlying the mitered edge thereof, said tongue having its edges and point beveled for fitting in said channel, a substantially semicircular recess in the first-mentioned member, said recess being of equal depth with said channel and in communication therewith, a similarly-shaped recess in the edge of said tongue, said recesses being adapted to register when said tongue is in position in said channel, and a substantially semicircular turn-button pivoted in the first-mentioned recess and adapted for turning into engagement with the last-mentioned recess to interlock said members.

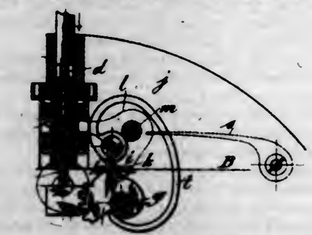
822,017. PIPE-WRENCH. JOSEPH ROEMER, Santa Maria, Cal. Filed Apr. 14, 1905. Serial No. 255,646.



Claim.—1. A wrench comprising a head, an operating-lever pivoted to said head and having its end extended beyond the pivot connection toward the gripping end of said head, and a flexible grip attached at one end to the extended end of the operating-lever to one side of the axis or center of movement of said lever when the latter is in normal or central position, and adapted to have its opposite end connected to the wrench-head upon the side thereof opposite to the fast end of the grip, the parts being arranged to admit of the axis of the operating-lever, the point of connection of the grip therewith and the point of contact of the grip with the work occupying a substantially straight line when the wrench is initially applied to the work, with the fast end of the grip occupying an intermediate position, whereby movement of said operating-lever either to the right or to the left of said straight line causes the grip to instantly tighten, thereby permitting the work to be turned backward or forward without removing the wrench therefrom.

2. A wrench comprising a head having a work-receiving seat in its outer end, an operating-lever pivoted near one end to the inner end of the wrench-head, a flexible grip pivoted to the inner end of the operating-lever to one side of the axis thereof when said lever is standing straight with the wrench-head and work, the axis of the lever, the pivot connection of the grip therewith and the point of contact of the fast end of the grip with the work being in a substantially straight line when the lever is in normal position, whereby a movement of the lever in either direction will instantly tighten the grip to admit of turning the work either forward or backward by a ratchet action without removing the wrench therefrom, and means for adjustably connecting the opposite end of the grip directly to the wrench-head on the side opposite to the fast end of the grip.

822,018. STEM-WINDING WATCH. HENRI ROSAT, Fils, Le Locle, Switzerland. Filed May 24, 1905. Serial No. 263,042.

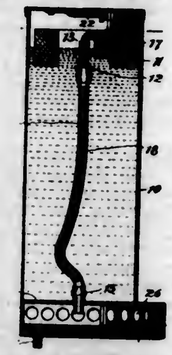


Claim.—1. A stem-winding mechanism for watches comprising a winding-pinion provided with a clutch member and a projecting spindle, a setting-pinion, an intermediate shiftable member slidably and non-rotatively mounted on said spindle and adapted for engagement with said clutch member or setting-pinion, a spring-actuated rocking lever holding said intermediate member in engagement with said clutch member, a presser-rod slidably mounted in a bore formed in said spindle, a false stem engaging said rod, a rack engaged by said rod, and a spring-actuated sector meshing with said rack and having a spring of higher tension than the lever, said sector and lever having engaging portions, substantially as described.

2. A stem-winding mechanism for watches comprising a winding-pinion provided with a clutch member and a projecting spindle, a setting-pinion, an intermediate shiftable member slidably and non-rotatively mounted on said spindle and adapted for engagement with said clutch member or setting-pinion, a spring-actuated rocking lever holding said intermediate member in engagement with said clutch member, a presser-rod slidably mounted in a bore formed in said spindle, a rack engaged by said rod, and a spring-actuated sector meshing with said rack and having a spring of higher tension than the lever, said sector and lever having engaging portions, substantially as described.

3. A stem-winding mechanism for watches comprising a winding-pinion provided with a clutch member and a projecting spindle, a setting-pinion, an intermediate shiftable member slidably and non-rotatively mounted on said spindle and adapted for engagement with said clutch member or setting-pinion, a spring-actuated rocking lever holding said intermediate member in engagement with said clutch member, a presser-rod slidably mounted in a bore formed in said spindle, a rack engaged by said rod, and a spring-actuated sector meshing with said rack, said sector and lever having engaging portions, substantially as described.

822,019. DISINFECTING APPARATUS. WILLIAM H. ROSE, Baltimore, Md. Filed May 4, 1905. Serial No. 258,852.



Claim.—1. In a disinfecting apparatus, the combination with a receptacle for disinfecting fluid and a float therein, of a flexible tube depending from the float and connecting the float with a discharge-opening, and a wick carried by the float and arranged to discharge into said tube.

2. In a disinfecting apparatus, the combination with a receptacle for disinfecting fluid, of a float therein, a depending flexible tube having one end connected centrally with the float and having its other end connected with a discharge-opening, and a wick carried by said tube and depending in the fluid, said wick being arranged to discharge said fluid into said tube.

3. In a disinfecting apparatus, the combination with a receptacle for disinfecting fluid having a discharge-opening in its lower end, of a float within the receptacle, a flexible tube connected with the float and with the discharge-opening, and capillary means carried by the float for admitting a restricted flow of fluid to said flexible tube.

4. In a disinfecting apparatus, the combination with a receptacle for disinfecting fluid having a discharge-opening in its lower end, of a float within the receptacle, a flexible tube connected with the float and with the discharge-opening, and a wick having one end communicating with said flexible tube and its other end depending in said fluid.

5. In a disinfecting apparatus, the combination with a receptacle having a discharge-opening in its lower portion, of a float, a flexible tube connecting the float with said discharge-opening, means in said tube to prevent it from collapsing, and means carried by the float for admitting fluid to the upper end of the tube.

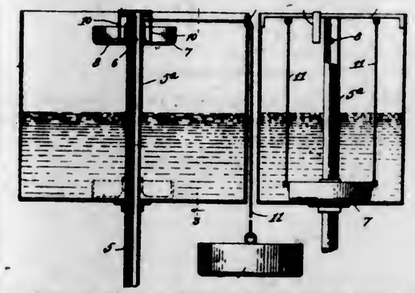
6. In a disinfecting apparatus, the combination with a receptacle having a discharge-opening in its lower portion, of a float, a flexible tube connecting the float with said discharge-opening, a chain in said tube to prevent it from collapsing, and means carried by the float for admitting fluid to the upper end of the tube.

7. In a disinfecting apparatus, the combination with a receptacle for disinfecting fluid having a discharge-opening in its lower portion of a float carrying a wick-tube arranged to extend above the fluid, a flexible tube connecting said wick-tube with said opening, and a wick arranged in said wick-tube and having its outer end depending in the fluid.

8. In a disinfecting apparatus, the combination with a receptacle for disinfecting fluid, a float within the receptacle and a wick carried by the float, of means for conveying fluid from the wick to a discharge-opening in the receptacle, a filling-opening arranged above said wick, and means for normally closing said opening.

9. In a disinfecting apparatus, the combination with a receptacle for disinfecting fluid having a discharge-opening, of a float therein having a central opening, a wick-tube supported centrally in said opening, a wick in said tube, and a flexible tube connecting said wick-tube with the discharge-opening.

822,020. DISINFECTING APPARATUS. WILLIAM H. ROSE, Baltimore, Md. Filed July 23, 1905. Serial No. 270,826.



Claim.—1. The combination with a closet-tank having a discharge-pipe and a valve therefor, of a receptacle for disinfecting fluid, a pipe leading from said receptacle and terminating within the closet-tank adjacent to the said valve, and means for transferring measured quantities of disinfecting fluid from said receptacle into said pipe during the outflow of water from the tank, said means being controlled by a float in the closet-tank, whereby the said measured quantities of disinfecting fluid are permitted to mix with the water in said tank as said water enters the discharge-pipe, for the purpose set forth.

2. The combination with a closet-tank, its discharge-pipe and valve therefor, of a receptacle for disinfecting fluid, a pipe extending downwardly from said receptacle, a pan adapted to slide on said pipe, means operated by the fall and rise of water in the tank for raising and lowering the said pan, and means for discharging the contents of the pan into said pipe.

3. The combination with a closet-tank, its discharge-pipe and valve therefor, of a receptacle for disinfecting fluid, a pipe leading from said receptacle to said discharge-valve and having a portion arranged vertically within the said receptacle, a pan sliding on said pipe within said receptacle, corresponding openings in said pan and pipe through which the contents of the pan may be discharged into the pipe, a stop for the pan to cause said openings to register, and means for automatically raising and lowering the pan.

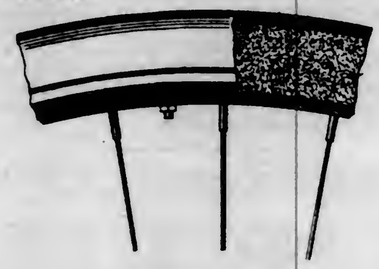
4. The combination with a closet-tank, its discharge-pipe, and valve therefor, of a receptacle for disinfecting fluid having a discharge-pipe terminating at the said discharge-valve, said pipe having a vertically-arranged portion within the said receptacle, a pan sliding on said vertically-arranged portion, a float in said tank connected with said pan to raise and lower the latter, and discharge-openings in the pan adapted to register with similar openings in the upper part of the disinfecting-discharge pipe, substantially as described.

822,021. TIRE FOR VEHICLES AND THE PROCESS OF MAKING THE SAME. THOMAS C. SANDERSON, West New Brighton, N. Y. Filed July 14, 1905. Serial No. 269,574.

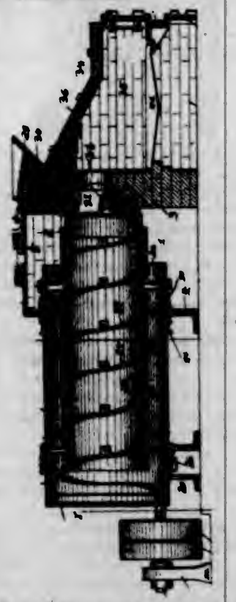
Claim.—1. The process of making a vehicle-tire which consists in forming a cellular mass containing a suitable gaseous fluid under pressure, filling an annular tube with a suitable compressed fluid, and forcing the cellular substance with its contained gaseous fluid into the annular tube and simultaneously expelling the fluid contained in the annular tube while maintaining the contained gaseous fluid under pressure.

2. The process of making a vehicle-tire which consists in form-

ing a viscous cellular mass containing a suitable gaseous fluid under pressure, filling an annular tube with a suitable compressed fluid, forcing the cellular substance with its contained gaseous fluid into the annular tube and simultaneously expelling the fluid contained in the annular tube while maintaining the contained gaseous fluid under pressure and causing the viscous cellular mass to set before removing the pressure thereon.



822,022. SAND-DRIER. FRANK M. SCHAEFFER, Indianapolis, Ind., assignor of one-half to Stoughton A. Fletcher, Indianapolis, Ind. Filed Jan. 13, 1906. Serial No. 295,911.



Claim.—1. In a drying apparatus, the combination with a furnace of a compartment arranged at the rear of said furnace, a chimney carried by said compartment, an outer drum protruding into said compartment, a supplementary drum mounted within said outer drum and extending into said compartment, the inner walls of said drums having spirally-arranged conveyers mounted therein, a chute mounted in said compartment and protruding within said supplementary drum, a peripheral rack carried by said outer drum, a weighted gate arranged within said chute, means to revolubly support said drums, and means engaging said peripheral rack to revolve said drums, substantially as described.

2. In a drying apparatus, the combination with a furnace, of a compartment arranged at the rear end of said furnace, drums extending into said compartment, spirally-arranged conveyers carried by the inner walls of said compartment, a chute mounted in said compartment and extending into one of said drums, means to revolubly support said drums, and means to revolve said drums, substantially as described.

3. In a drying apparatus, the combination with a furnace, of a compartment arranged at the rear of said furnace and communicating therewith, said compartment having an outlet, drums revolubly mounted adjacent to said compartment and protruding therein, a chute mounted in said compartment and extending into one of said drums, spirally-arranged conveyers mounted in said drums, and means to revolve said drums, substantially as described.

4. In a drying apparatus, a drum-supporting plate made in two sections secured together, rollers carried by one of said sections, an outer drum revolubly mounted in said supporting-plate and having a circular track resting on said rollers, a plate closing one end of said drum, a spiral conveyer carried by the inner wall of the drum and arranged to carry material toward the open end of the drum, an inner drum mounted within the outer drum open at both ends, said inner drum being rigidly connected to the outer drum and of considerably less diameter than the outer drum to form a space between the two drums, a spiral conveyer carried by the inner drum and arranged oppositely to that of the outer drum, and means for revolving said drums.

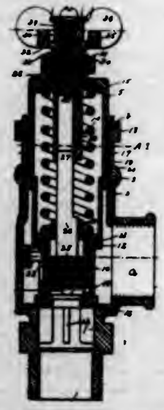
5. In a drying apparatus, an inner and an outer drum, the outer drum closed at one end and open at the other end, and the inner drum open at both ends and having one end extending beyond the open end of the outer drum, a spiral conveyer carried by the inner drum arranged to convey material toward the closed end of the outer drum, a spiral conveyer carried by the outer drum arranged to convey material toward the open end of said outer drum, and a hopper having a circular discharge end receiving the extending end of the inner drum which revolves thereon.

6. In a drying apparatus, two drums arranged one within the other, and rigidly connected to be revolved in unison, spiral conveyers carried by the drums and arranged in opposite directions, a pair of rollers arranged near one end of the drums on which the outer drum revolves, and a roller and a pinion arranged near the other end of the drums on which the outer drum revolves, a rack carried by the outer drum meshing with said pinion, and means for rotating said pinion to revolve the drums.

7. In a drying apparatus, an inner and an outer drum connected together to revolve in unison, the inner drum being spaced away from the outer drum and having its receiving end projecting beyond the adjacent end of the outer drum, a plate closing the one end of the outer drum, a spiral conveyer within the inner drum arranged to convey material toward the closed end of the outer drum, and a reversely-arranged spiral conveyer within the outer drum to convey the material to the open end of said outer drum.

8. In a drying apparatus, a feeding chute or hopper terminating in an open cylindrical discharge end, and a furnace having an outlet-opening in alinement with said discharge end, combined with an inner drum open at both ends with one end received on the discharge end of the chute or hopper, an outer drum closed at one end and rigidly connected to the inner drum, conveyers in said drums, and means for rotating the drums.

822,023. VALVE. FRANK SCHREIDT, Mansfield, Ohio. Filed Nov. 27, 1905. Serial No. 289,171.



Claim.—1. In a relief-valve, a spring-case secured thereto, a valve-holder movably fitted to the inner periphery of said spring-case, a spiral spring inclosed within said case and holder, a thread-concealing lock-nut adapted to engage with the threaded exterior of the spring-case having a depending flange with its end tapered and

adapted to seat on the inclined annular rib formed on the body portion of the valve.

2. A relief-valve composed of a body having a projecting portion with an inclined annular face formed in the end, a valve-case having its ends screw-threaded and adapted to engage with the screw-threaded interior of the projecting portion of the valve, a valve-holder having an inwardly-extending shoulder, a flanged washer resting thereon, a spiral spring compressed between the upper portion of the valve-case and washer exerting a pressure against the valve keeping it in contact with the valve-seat, means for varying the tension of the spring to permit the valve to be opened at a predetermined pressure, an inclined annular face formed adjacent to the inner periphery of the projecting portion of the valve, a thread-concealing lock-nut adapted to connect said projecting portion with the valve-case.

3. In a relief-valve, a valve-case secured to the body portion, a nut adapted to connect said valve-case to the body and to prevent the escape of steam or air, a spiral spring compressed and inclosed within said case, a valve-holder telescoped within the valve-case and adapted to reciprocate, wings secured to the valve-holder and fitted to the inlet-aperture keeping the valve in alinement when movement is imparted to it, a valve-disk having a threaded exterior adapted to engage with the threaded aperture of the valve-holder, a stem with its free end extending upward, a socket fitted to an aperture in top of the valve-case with the end depending into the case and the free end of the valve-stem telescoping with the aperture provided in the socket.

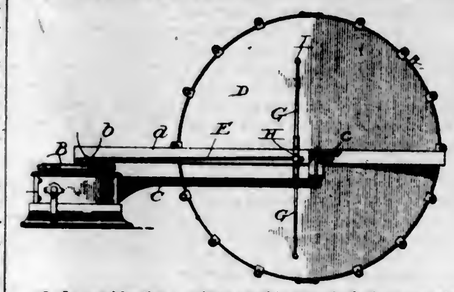
4. In a valve the combination of a body having a projecting portion with an inclined annular groove formed in the end of the projecting portion, a valve-case secured thereto, a thread-concealing lock-nut adapted to connect said valve-case to the bottom of the valve, a valve-holder having a disk made integral therewith with the end fitted to the inner periphery of the valve-case, a screw-threaded aperture provided in the lower portion of the valve holder and disk, a valve secured therein, a valve-stem secured to said valve and extending upward into the valve-case, a socket secured to an aperture on the top of said valve-case, a disk having an annular rib formed in the top of the case, a wheel secured to said disk, means for securely seating said annular rib in the annular groove, means to open said valve manually.

5. In a valve composed of body portion having a valve-case secured thereto, a locking-nut adapted to connect said valve-case and body portion, a valve-holder having a valve-disk made integral therewith with wings depending therefrom, a spiral spring inclosed and compressed within the tubular portion of the valve-case and valve-holder adapted to exert a pressure against the valve-holder keeping the valve in contact with the seat, means for regulating the tension of the spring, a valve secured to the threaded aperture of the valve-holder, a stem secured to said valve, a socket secured to upper portion of the valve-case having an aperture therein telescoping with the free end of the valve-stem, means for securing said socket to the valve-case, means for opening said valve manually, means for varying the tension of the spiral spring to conform to the pressure desired to automatically release said valve.

6. In a valve the combination of an automatic and hand-relief valve composed of a body portion having a projecting portion made integral with an inclined annular rib formed in the end, a valve-case having its end screw-threaded and adapted to engage with the threaded inner periphery of the valve, a thread-concealing lock-nut having a depending flange with the end inclined and adapted to contact with the annular rib formed on the projecting portion of the valve, a valve-holder having its free end telescoped within the valve-case, a spiral spring inclosed within the tubular end of the valve-case and holder, a washer resting on an inwardly-extending annular shoulder and adapted to support one end of said spiral spring, a valve secured to an aperture provided in the valve-holder having a stem extending upwardly into the valve-case, a socket secured to the upper portion of the valve-chamber having an aperture adapted to fit the free end of the stem, a disk secured to the projecting end of the socket having an annular rib formed on the bottom, a wheel secured to said projecting portion, and adapted to force the rib in contact with the annular groove formed in the top of and adjacent to the aperture in the top of the valve-case, means for manually opening said valve, means for varying the tension of the spiral spring as described and set forth.

822,024. PHONOGRAPH, GRAMOPHONE, AND OTHER SIMILAR SOUND-REPRODUCING MACHINES. FRANK F. SHANKS, Chicago, Ill. Filed Feb. 20, 1905. Serial No. 246,612.

Claim.—1. In combination, a phonographic record; devices engaging the sound-interlineations thereon; a solid bar for transmitting the vibrations resulting from said engagement to a point beyond the range of the synchronous sympathetic vibrations of said devices; and disconnected means for audibly reproducing said vibrations at the opposite end of said bar.



2. In combination, a phonographic record; devices engaging the sound-interlineations thereon; a solid bar directly engaging said devices which transmit the vibrations resulting from said engagement to a point beyond the range of the synchronous sympathetic vibrations of said devices; and disconnected means for audibly reproducing said vibrations at the opposite end of said bar.

3. In combination, a phonographic record; a needle engaging the sound-interlineations thereon; a rod for transmitting the vibrations resulting from said engagement to a point beyond the range of the synchronous sympathetic vibrations of said needle; a vibratory arm carried by said rod; and means for reproducing said vibrations at the end of said rod nearest said vibratory arm.

4. In combination, a phonographic record; a needle engaging the sound-interlineations thereon; a fulcrumed rod for transmitting the vibrations resulting from said engagement to a point beyond the range of the synchronous sympathetic vibrations of said needle; a vibratory arm carried by said rod; and means for reproducing said vibrations at the end of said rod nearest said vibratory arm.

5. In combination, a phonographic record; a needle engaging the sound-interlineations thereon; a yieldingly-fulcrumed rod for transmitting the vibrations resulting from said engagement to a point beyond the range of the synchronous sympathetic vibrations of said needle; a vibratory arm carried by said rod; and means for reproducing said vibrations at the end of said rod nearest said vibratory arm.

6. In combination, a phonographic record; a needle engaging the sound-interlineations thereon; a rod for transmitting the vibrations resulting from said engagement to a point beyond the range of the synchronous sympathetic vibrations of said needle; an adjustable vibratory arm carried by said rod; and means for reproducing said vibrations at the end of said rod nearest said vibratory arm.

7. In combination, a phonographic record; a needle engaging the sound-interlineations thereon; a rod for transmitting the vibrations resulting from said engagement to a point beyond the range of the synchronous sympathetic vibrations of said needle; an adjustable fulcrumed arm carried by said rod; and means for reproducing said vibrations at the end of said rod nearest said vibratory arm.

8. In combination, a phonographic record; a needle engaging the sound-interlineations thereon; a yieldingly-fulcrumed rod for transmitting the vibrations resulting from said engagement to a point beyond the range of the synchronous sympathetic vibrations of said needle; an adjustable fulcrumed vibratory arm carried by said rod; and means for reproducing said vibrations at the end of said rod nearest said vibratory arm.

9. In combination, a phonographic record; a needle engaging the sound-interlineations thereon; a rod for transmitting the vibrations resulting from said engagement to a point beyond the range of the synchronous sympathetic vibrations of said needle; vibratory arms each fulcrumed mediate their length and carried by said rod; and means for reproducing said vibrations at the end of said rod nearest said vibratory arm.

10. In combination, a phonographic record; a needle engaging the sound-interlineations thereon; a fulcrumed rod for transmitting the vibrations resulting from said engagement to a point beyond the range of the synchronous sympathetic vibrations of said needle; vibratory arms each fulcrumed mediate their length and carried by said rod; and means for reproducing said vibrations at the end of said rod nearest said vibratory arm.

11. In combination, a phonographic record; a needle engaging

the sound-interlineations thereon; a yieldingly-fulcrumed rod for transmitting the vibrations resulting from said engagement to a point beyond the range of the synchronous sympathetic vibrations of said needle; vibratory arms each fulcrumed mediate their length and carried by said rod; and means for reproducing said vibrations at the end of said rod nearest said vibratory arm.

12. In combination, a phonographic record; a needle engaging the sound-interlineations thereon; a rod for transmitting the vibrations resulting from said engagement to a point beyond the range of the synchronous sympathetic vibrations of said needle; adjustable vibratory arms each fulcrumed mediate their length and carried by said rod; and means for reproducing said vibrations at the end of said rod nearest said vibratory arm.

13. In combination, a phonographic record; a needle engaging the sound-interlineations thereon; a rod for transmitting the vibrations resulting from said engagement to a point beyond the range of the synchronous sympathetic vibrations of said needle; adjustable fulcrumed vibratory arms each pivoted mediate their length and carried by said rod; and means for reproducing said vibrations at the end of said rod nearest said vibratory arm.

14. In combination, a phonographic record; a needle engaging the sound-interlineations thereon; a yieldingly-fulcrumed rod for transmitting the vibrations resulting from said engagement to a point beyond the range of the synchronous sympathetic vibrations of said needle; adjustable fulcrumed vibratory arms each pivoted mediate their length and carried by said rod; and means for reproducing said vibrations at the end of said rod nearest said vibratory arm.

15. In combination, a phonographic record; a needle engaging the sound-interlineations thereon; a rod for transmitting the vibrations resulting from said engagement to a point beyond the range of the synchronous sympathetic vibrations of said needle; vibratory arms carried by said rod that are fulcrumed mediate their length and adjustable independent of each other; and means for reproducing said vibrations at the end of said rod nearest said vibratory arm.

16. In combination, a phonographic record; a needle engaging the sound-interlineations thereon; a fulcrumed rod for transmitting the vibrations resulting from said engagement to a point beyond the range of the synchronous sympathetic vibrations of said needle; vibratory arms carried by said rod that are fulcrumed mediate their length and adjustable independent of each other; and means for reproducing said vibrations at the end of said rod nearest said vibratory arm.

17. In combination, a phonographic record; a needle engaging the sound-interlineations thereon; a yieldingly-fulcrumed rod for transmitting the vibrations resulting from said engagement to a point beyond the range of the synchronous sympathetic vibrations of said needle; vibratory arms carried by said rod that are fulcrumed mediate their length and adjustable independent of each other; and means for reproducing said vibrations at the end of said rod nearest said vibratory arm.

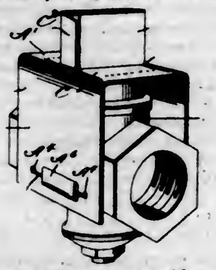
18. In combination, a phonographic record; a needle engaging the sound-interlineations thereon; a rod for transmitting the vibrations resulting from said engagement to a point beyond the range of the synchronous sympathetic vibrations of said needle; adjustable vibratory arms carried by said rod that are fulcrumed mediate their length and adjustable independent of each other, and means for reproducing said vibrations at the end of said rod nearest said vibratory arm.

19. In combination, a phonographic record; a needle engaging the sound-interlineations thereon; a rod for transmitting the vibrations resulting from said engagement to a point beyond the range of the synchronous sympathetic vibrations of said needle; adjustable fulcrumed vibratory arms carried by said rod that are pivoted mediate their length independent of each other; and means for reproducing said vibrations at the end of said rod nearest said vibratory arm.

20. In a phonograph, the combination with a record having superficial sound-interlineations thereon, and mechanism for revolving the same; of devices engaging said sound-interlineations, consisting of a horizontal rod extending from within the circumference of said record to a point beyond the same; a needle carried on the inner end thereof and adapted to engage said interlineations; a vibratory arm mounted on the opposite end of said rod; and disconnected means for audibly reproducing the vibrations caused by the engagement between said needle and said interlineations.

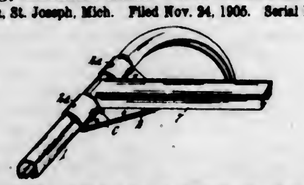
822,025. **SEAL FOR STOP-COCKS.** HENRY C. SHOO, Anderson, Ind., assignor of one-half to H. L. Millspaugh, Anderson, Ind. Filed July 31, 1905. Serial No. 272,060.

Claim.—1. A seal for stop-cocks comprising a stirrup provided with angularly-disposed side walls adapted to contact with the cock and having an upwardly-extending angular cap secured to its top portion to embrace the operating-head of said cock.



2. In a stop-cock, a stirrup provided with an aperture in its upper portion, a cap adapted to inclose the head of said cock and provided with lateral flanges disposed beneath said stirrup, and means for securing said stirrup in position.

822,026. **METALLIC THILL.** WILLIAM H. SPILLMAN and FRANK FOWLER, St. Joseph, Mich. Filed Nov. 24, 1905. Serial No. 288,634.



Claim.—1. In a tubular thill, in combination with a longitudinal member, a cross-piece having its end fitting closely thereagainst, and having on each side of its end portions ears through which securing-bolts may be passed, and a plurality of brace members encircling said longitudinal member, and each adapted to be attached to one of the ears on said cross-piece, substantially as described.

2. A metallic thill, having in combination a tubular side piece, a plurality of ear members with their body portions engaging about said side piece, and a cross-piece adapted to contact said side piece between said ear members, and having ears projecting from each side of its end portion adapted to register with and be secured to said ear members, substantially as described.

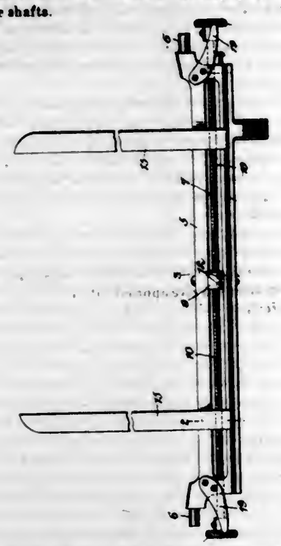
3. A metal thill, having in combination with tubular side pieces, a tubular cross-piece extending from one to the other of said side pieces, and provided at each end with laterally-projecting ears adapted to furnish, in combination with a terminal shoulder on the body portion of the piece, a plurality of bearing-points for engagement against its adjacent side member, and a plurality of attaching struts engaging about each side piece on each side of the point of contact therewith of the cross-piece, said struts having projecting ears adapted to be attached to the ears on the end of said cross-piece, substantially as described.

4. Metal thills, having in combination side pieces bent to tubular form from blanks of sheet metal, and having projecting from their lateral edges and spaced from one another a plurality of pairs of ears, and a cross-piece, adapted to fit closely with its ends against that portion of each side piece between said ears, and provided with ears projecting from each side of each end adapted to register with and be secured to said first-named ears, substantially as described.

5. A pair of metal thills, having in combination with side pieces bent to form from blanks a cross-piece similarly formed from a blank and terminating at each end in a shoulder adapted to engage closely against said side pieces at right angles thereto, there being on each side of said shoulder portion laterally-projecting ears adapted to engage against said side pieces, and a plurality of brace members attached to said side pieces one on each side of the point of contact of said brace member therewith and adapted to be attached to said ears on the cross-piece, substantially as described.

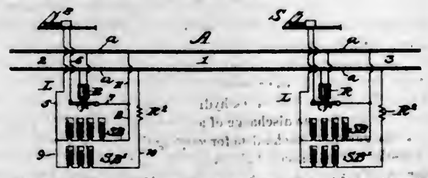
822,027. **GRIPPER FOR PRINTING-PRESSES.** FRANK R. STEARNS, Greeley, Colo. Filed July 25, 1905. Serial No. 271,208.

Claim.—1. In a gripping device of the character described, a pivotal frame-bar having a longitudinal slot and a block located in an intermediate portion of the slot, independent screw or worm shafts having their inner ends journaled in the block and their outer ends journaled in the ends of the frame-bar, said shafts extending longitudinally in the slot, gripper-fingers disposed transversely of the frame-bar and having enlargements located in the slot, said enlargements being in threaded engagement with the shafts, retaining devices for the shafts mounted in the block and engaging the inner ends of said shafts journaled in said block, and holding devices mounted on the ends of the frame-bar and engaging the outer end portions of the shafts.



2. In a gripping device of the character described, a pivotal frame-bar having spaced longitudinal slots opening through the same side of the bar, a journal-bearing located in one of the slots, independent screw or worm shafts having their inner ends journaled in the bearing and their outer ends journaled in the ends of the frame-bar, said shafts extending longitudinally in the slot having the bearing and being provided at their outer ends with knurled heads, spring-clips secured to the frame-bar and yieldingly engaging the knurled heads to normally hold the same and thereby the shafts against rotation, gripper-fingers disposed transversely of the frame-bar and having terminals slidably engaged in one of the slots, said fingers being furthermore provided with enlargements located in the slot having the shaft and being in threaded engagement with said shafts.

822,028. **RAILWAY SIGNALING SYSTEM.** JACOB B. STRUBLE, New York, N. Y., assignor to The Union Switch and Signal Company, Swissvale, Pa., a Corporation of Pennsylvania. Filed July 13, 1904. Renewed Mar. 7, 1905. Serial No. 248,940.



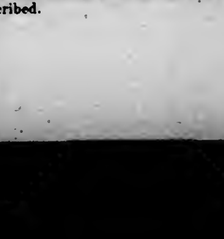
Claim.—1. In a railway signaling system, the combination with a plurality of block-sections, a railway-signal for each block-section comprising electrically operated or controlled mechanism, storage batteries for operating the railway-signal of a block-section, a track-circuit for each block-section obtaining its current-supply from said storage batteries, and means for producing a counter force to the storage batteries connected with the track-circuit.

2. In a railway signaling system, the combination with a plurality of block-sections, a railway-signal for each block-section comprising electrically operated or controlled mechanism, a set of storage batteries for the mechanism of the railway-signal for a block-section, a track-circuit for each block-section and having electrical connection with an adjacent set of storage batteries whereby they may supply current to a track-circuit, and other storage batteries in said electrical connection serving as a counter force to the first-mentioned set of storage batteries.

3. In a railway signaling system, the combination with a plurality of block-sections, a railway-signal for each block-section comprising electrically operated or controlled mechanism, a set of storage batteries for the mechanism of the railway-signal for a block-section, a track-circuit for each block-section and having electrical connection with an adjacent set of storage batteries whereby they may supply current to a track-circuit, and means in said electrical connection for producing a counter force to said set of storage batteries.

4. The combination with a plurality of circuits each containing a translating apparatus and requiring different electromotive forces, a generator of current common to all of said circuits and means in one or more of the circuits for offering a counter force to the electromotive force of the current from the generator, whereby the electromotive force of the generator in said circuits is reduced.

822,029. **TIME RELAY RECORDING-CLOCK AND SIGNAL MECHANISM.** GUY P. THURBER, Pittsburg, Pa. Filed May 11, 1905. Serial No. 259,921.



Claim.—1. In a time relay recording-clock, the combination with an electrically-actuated air-brake system, and a shaft driven by a clock mechanism, of wheels mounted upon said shaft, brushes engaging two of said wheels, a dog engaging one of said wheels, a relay operated by a track block-circuit and adapted to elevate said dog to permit of the movement of its respective wheel, the breaking of said circuit releasing said dog and stopping said wheel at a predetermined time, and breaking electrical circuit through said brushes to set said air-brakes, substantially as described.

2. The combination with an air-brake system and a shaft driven by a clock mechanism, of means to lock said shaft from rotation, electrically-actuated means operated by a track block-circuit to release said shaft, means to automatically stop said shaft, and means carried by said shaft for breaking a circuit and thereby actuating devices to set said air-brakes.

3. In apparatus of the type described, the combination with an electrically-actuated air-brake, and a shaft driven by clock mechanism, of brushes, a relay operated by a track block-circuit and adapted to stop the rotation of said shaft at a predetermined time, an electrical circuit broken through said brushes, mechanism included in circuit with said brushes and adapted when the circuit through the brush is broken to set said air-brakes, substantially as described.

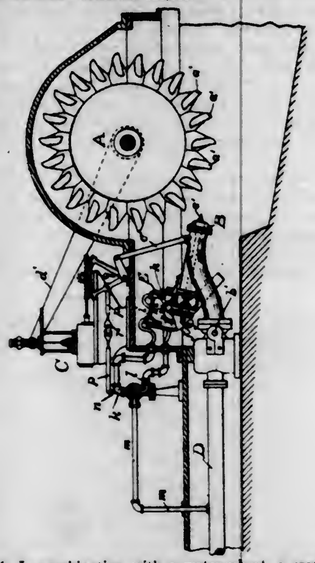
4. The combination with an air-brake system, and a drive-shaft normally held stationary, of circuit making and breaking devices carried by the shaft and electrically-actuated means adapted to set said air-brakes by the breaking of the circuits resulting from the rotation of said shaft, substantially as described.

5. A system of the class described comprising a driven shaft, a pivoted dog adapted to normally hold said shaft from rotation, a relay actuated by a block-circuit to release said dog, said dog being adapted to automatically stop the shaft after a predetermined amount of rotation, and electrical means mounted adjacent to said shaft to set air-brakes by the rotation of said shaft.

6. A system of the class described comprising a driven shaft normally held stationary, electrical means to release said shaft to automatically set air-brakes, and means operated by said shaft for recording the time when the air-brakes are set, substantially as described.

7. A system of the class described comprising a driven shaft normally held stationary, electrical means to release said shaft to automatically set air-brakes, and electrically-actuated means operated by the movement of said shaft for recording the time the brakes are set and means manually operated to release said air-brakes, substantially as described.

822,080. SPEED-REGULATING DEVICE FOR WATER-WHEELS. HENRY R. WARREN, Newton, Mass., assignor to The Lombard Governor Company, Boston, Mass., a Corporation of New Jersey. Filed Sept. 18, 1902. Serial No. 123,960.



Claim.—1. In combination with a water-wheel, a water-supply pipe, automatically-operated means to change the direction of flow of water from the pipe against the wheel, a valve to regulate the flow of water from the pipe and interconnecting mechanism between the said flow-changing means and the valve, which tends to move the valve whenever the flow-changing means are out of their predetermined normal positions.

2. In combination with a water-wheel, a water-supply pipe, automatically-operated means to change the direction of flow of water from the pipe against the wheel, a valve to regulate the flow of water from the pipe, mechanism to operate the valve, which mechanism is controlled by said direction-changing means, and a speed-governor which primarily operates said means.

3. In combination with a water-wheel, a water-supply pipe means for automatically turning a portion of the water flowing from the pipe, away from or toward the wheel, a valve to regulate the flow of water from the pipe, a speed-governor, and interconnecting operating mechanism between the governor and the automatic turning means, and the said valve.

4. In combination with a water-wheel, a water-supply pipe, means to deflect the water flowing therefrom, a speed-governor, mechanism which connects the governor and the water-deflector, a valve to regulate the flow of water from the supply-pipe, and an automatically-controlled motor which tends to close the valve by the action of the mechanism which moves the deflecting means from their normal position to decrease the impact of water upon the wheel, and to open the valve by the action of the mechanism which moves the deflecting means from their normal position to increase the impact of water upon the wheel.

5. In combination with a water-wheel; a tilting supply-nozzle; mechanism to tilt the nozzle automatically either away from or toward the wheel whenever it changes in speed; a valve to regulate the flow of water from the nozzle, and valve-operating mechanism which is controlled by the mechanism that tilts the nozzle.

6. In combination with a water-wheel, a tilting supply-nozzle; a speed-governor; mechanism actuated by the governor which is connected with and tilts the nozzle; a valve to regulate the flow of water from the nozzle, and means to operate the valve which means are controlled by the tilting mechanism of the nozzle.

7. In combination with a water-wheel; a tilting supply-nozzle; interconnecting mechanism between the water-wheel and the nozzle to tilt the latter either away from or toward the wheel whenever it changes in speed; a valve to regulate the flow of water from the nozzle; a motor which is controlled by the nozzle-tilting mechanism to close the valve when the nozzle is moved from its normal position away from the wheel and to open the valve when the nozzle is moved from its normal position toward the wheel.

8. In combination with a pivoted nozzle of the character described, means for adjusting the nozzle upon its pivot, mechanism carried by the nozzle, to regulate the cross-sectional area of its discharge and which is free to be operated irrespective of the position of the nozzle, and automatic means for operating said mechanism.

9. In combination with a water-wheel nozzle, primary means to give it approximate adjustments to vary the direction of the stream discharged therefrom, secondary means upon the nozzle, to regulate the cross-sectional area of said stream to correspond substantially with the portion which strikes the wheel after an approximate adjustment of the nozzle, and mechanism to automatically adjust said secondary means.

10. In combination with a single discharge-nozzle for a water-wheel, means to adjust the nozzle in relation to the water-wheel, mechanism which is carried by the nozzle and is free to move therewith, to regulate the cross-sectional area of the stream discharged therefrom, and which is adapted to be operated irrespective of the position of the nozzle, and means to automatically operate said regulating mechanism.

11. In combination with a single discharge-nozzle for a water-wheel, primary means to give approximate adjustments of the nozzle to vary the direction of the stream discharged therefrom, in relation to the water-wheel, secondary means upon the nozzle to regulate the cross-sectional area of the stream to correspond with that which strikes the wheel after any approximate adjustment of the nozzle, and mechanism to automatically operate said secondary means.

12. In combination with a supply-nozzle for a water-wheel, means to move the nozzle to direct the stream issuing therefrom, wholly or in part against the buckets of the wheel, or outside of the buckets, devices within the nozzle to regulate the amount of water flowing therefrom, and means to automatically adjust said devices.

13. In hydraulic regulating means, the combination with the hydraulic motor, of a pivoted nozzle, means for automatically adjusting said nozzle on its pivot, means for regulating the cross-sectional area of the discharge-opening of the nozzle to vary the discharge proportionately to the working load of the motor, and devices for automatically operating the means which vary the cross-sectional area of the nozzle's discharge.

14. The combination with a hydraulic motor of the described character, of governor mechanism, a pivoted nozzle, means actuated by the governor mechanism for automatically adjusting said nozzle on its pivot, means for varying the cross-sectional area of the discharge-opening of the nozzle to vary the amount discharged therefrom proportionately to the working load of the motor, and devices controlled by the governor mechanism for actuating the means for varying the outlet area of the nozzle.

15. The combination with a hydraulic motor, of governor mechanism, a nozzle for the discharge of an impact or propelling stream onto the motor, means actuated by the governor mechanism for varying the direction of the discharged stream, means for varying the discharge from the nozzle proportionately to the working load of the motor, and devices controlled by the governor mechanism for operating the means for varying the discharge from the nozzle.

16. The combination with a hydraulic motor, of governor mechanism, a nozzle for the discharge of an impact-stream, devices operated by the governor for varying the direction of the impact-stream and associated devices controlled by said governor mechanism for varying the discharge of the stream from the nozzle proportionately to the working load of the motor.

17. The combination with a hydraulic motor, of governor mechanism, a nozzle for the discharge of an impact-stream, devices actuated by the governor mechanism for varying the direction of the nozzle's discharge, and associated devices controlled by said governor mechanism for varying the cross-sectional area of discharge proportionately to the working load of the motor, said devices comprising means for actuating the same with a more rapid movement during the increase of the outlet area of the nozzle than the movement imparted thereto during the decrease of said outlet area.

18. The combination with a hydraulic motor, of governor mechanism, a nozzle for the discharge of an impact-stream to operate the motor, means actuated by the governor mechanism to vary the direction of the nozzle's discharge in accordance with the working load of the motor, and means actuated by the pressure of the water-supply for adjusting the cross-sectional area of discharge from the nozzle, to correspond with the amount of water which strikes the motor at each changed direction or position of the stream discharged.

19. The combination with the line or supply-pipe for a water-wheel, a discharge-nozzle movably connected thereto, means for raising and lowering the nozzle in accordance with the load variations on the wheel, and means to automatically vary the outlet area for the stream ejected from the nozzle to meet the requirements of the load changes.

20. In combination with a water-wheel nozzle, means for raising or lowering it proportionately to the load variations on the wheel, and means for automatically varying the area of the stream discharged in accordance with the changes in position of the nozzle due to said load variations.

21. In combination with a deflectable water-wheel nozzle, means for varying the position thereof in accordance with load variations on the wheel, a longitudinally-movable plug located within the nozzle, and means for automatically moving the plug in or out to change the outlet area for the stream to correspond with the variations in position of the nozzle.

22. In combination with a water-wheel nozzle, means for varying the direction of the stream ejected therefrom, to meet the requirements of the load variations on the wheel, and means whereby the outlet area for the stream is automatically varied to compensate for such load changes.

23. A water-wheel nozzle provided with means for adjusting the position thereof in relation to the wheel, combined with means whereby the discharge from the nozzle may be regulated automatically while the nozzle is in any of its adjusted positions and without interference with such adjustment.

24. The combination with a hydraulic motor, of a tilting nozzle for the discharge of an impact-stream, governor mechanism to operate the nozzle, means controlled by the said mechanism for varying the discharge of the nozzle proportionately to the working load of the motor, and means operated through the movement of the nozzle to cause said discharge-varying means to cease to act when the nozzle-discharge has been proportioned to the working load of the motor.

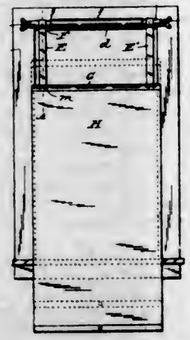
25. The combination with a hydraulic motor, of governor mechanism, a nozzle for the discharge of an impact or propelling stream upon the motor, means actuated by the governor mechanism for varying the direction of the stream discharged, automatically-operated means for varying the nozzle-discharge proportionately to the working load of the motor, which means are controlled by the mechanism which varies the direction of the stream, to cause said discharge-varying means to cease action when the nozzle-discharge has assumed its normal direction and has been proportioned to the working load of the motor.

26. In combination with a pivoted water-wheel nozzle adapted to move in a vertical plane, means for automatically adjusting the nozzle on its pivot, mechanism carried by the nozzle and free to move therewith for regulating the cross-sectional area of the discharge therefrom, and automatic means for operating the regulating mechanism when the nozzle is tilted.

27. In a hydraulic nozzle for a water-wheel, mechanism for automatically regulating the amount of water discharged therefrom, combined with mechanism for directing the nozzle's discharge toward or deflecting it from the wheel.

28. In a hydraulic nozzle for a water-wheel, mechanism for automatically regulating the amount of water discharged therefrom combined with automatically-operated mechanism for directing the nozzle-outlet toward or deflecting it from the wheel.

822,031. ROLL-DROP WINDOW-SHADE. CHEEVER L. WEBSTER, Galion, Ohio. Filed June 7, 1905. Serial No. 264,043.



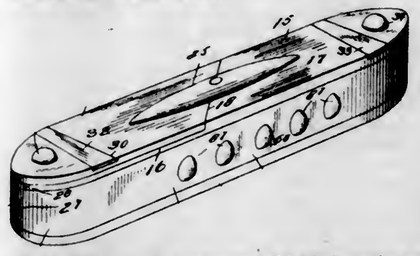
Claim.—1. A window attachment including a spring-roller, a window-shade provided at an end thereof with a suspender-bar formed of a plate turned over the end of the shade and having apertures therein, and a plurality of narrow suspenders attached to the spring-roller and extending through the apertures of the suspender-bar and secured to the shade and to the suspender-bar.

2. A window-shade provided at an end thereof with a suspender-bar formed of a plate turned over to form two walls and having one edge turned under between the two walls and forming a gripping edge engaging the shade, staples securing the two walls of the suspender-bar to the shade, a plurality of suspenders secured to the suspender-bar, and a spring-roller attached to the plurality of suspenders.

3. A window-shade provided at an end thereof with a suspender-bar that is concavo-convex in cross-section and having apertures therein, devices securing the suspender-bar to the shade, a plurality of suspenders extending through the apertures of the suspender-bar and secured to the shade and to the suspender-bar, and a spring-roller attached to the plurality of suspenders.

4. A window-shade provided at an end thereof with a suspender-bar formed of a plate turned over to form two opposing walls, the inner face of one wall being concave and the inner face of the other wall being convex, devices securing the shade between the two walls of the suspender-bar, a plurality of suspenders connected to the suspender-bar and to the shade, a spring-roller attached to the plurality of suspenders, and clasps attached to the spring-roller and also each to a suspender.

822,032. SAFETY-BOX. INGOLF J. WESTBY, Kinloss, N. D. Filed June 10, 1905. Serial No. 264,696.



Claim.—1. In a box the combination with a body portion open at its top, of a closure for the opening, said closure being vertically reduced throughout a portion of its length and having a longitudinal slot in its reduced portion, a pin carried by the body portion and engaged in the slot for sliding movement of the closure thereupon, a projection carried by the body portion, said closure having a groove therein, said closure being arranged for movement upon the pin to bring the projection into and out of the groove, said closure being movable pivotally upon the pin, said projection when in the groove being arranged to hold the closure against pivotal movement, a plate pivoted upon the pin and disposed upon the reduced portion of the closure, said plate being movable into and out of position to hold the closure against sliding movement, means for holding the plate in its operative position, and additional means for holding the closure against sliding and pivotal movement, said plate lying normally in position to hold said additional means in operative position.

2. In a receptacle the combination with a body portion, of a closure therefor movable into and out of operative position, a slide removably engaged in the body portion and the closure to hold the latter in operative position, a plate movably connected with the closure and lying normally in position to hold the slide in operative position, said plate having an opening for the passage of the slide therethrough and being movable to bring said opening into position to receive the slide, and a removable closure for the opening.

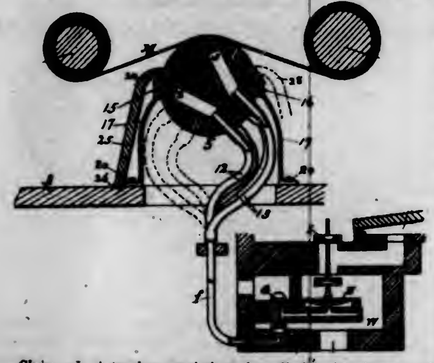
3. In a lock the combination with a fixed member, of a movable member connected therewith for sliding and pivotal movement, means for holding the member against pivotal movement, said member being movable slidably into and out of operative relation to said means, means movable into and out of operative position for holding the movable member against pivotal and sliding movement, means movable into and out of operative position for holding the second-named means in operative position and for holding the movable member against sliding movement, and means for holding the third-named means in operative position.

4. In a box the combination with a body portion, of a closure therefor, means for holding the closure in operative position, means

for holding the first-named means in operative position, means for holding the second-named means in operative position, means for holding the third-named means in operative position, means for holding the fourth-named means in operative position, means for holding the fifth-named means in operative position and additional means for holding the third-named means in operative position, the several holding means being movable into and out of operative position and finger-pieces connected with said means for movement thereof, said finger-pieces forming a portion of the decoration upon the box.

5. In a lock the combination with a support, of a latch slidably mounted in the support, a rod slidably mounted in the support for movement into and out of position to hold the latter against movement, a disk revolubly mounted in the support for movement into and out of position to hold the rod against movement, a slide in the disk movable into and out of position to hold the disk against movement, an operating device connected with the slide and with the disk for operation thereof, a second rod movable into and out of position to hold the disk against movement, a plate movable into and out of position to hold the second rod against movement and a member movable into and out of position to hold the plate against movement.

822,088. TRACKER MECHANISM FOR AUTOMATIC MUSIC-PLAYING MECHANISMS. FRANK C. WHITE and GEORGE W. HAYWOOD, Meriden, Conn., assignors to Wilcox & White Co., Meriden, Conn., a Corporation of Connecticut. Filed Oct. 4, 1905. Serial No. 281,249.



Claim.—1. A tracker consisting of a cylindrical body rotatably supported on its central axis, and having a plurality of rows of ducts with orifices formed on different scales, in combination with flexible tracker-duct pipes attached to the respective ducts, and means for controlling the duct-orifices.

2. In an autopneumatic music-playing instrument, a tracker consisting of a cylindrical tracker bar or body having two separate rows of tracker-ducts with their mouth-orifices spaced on different scales, central axis-supports on which said cylindrical body is partially rotatable, a pair of opposite longitudinal mouth-stopping shoes fitting the cylindrical surface of said body, and yieldable members that support and press said shoes against the cylindrical surface.

3. In a pneumatic music-playing instrument a tracker-bar having a cylindrical surface, a supporting-axis concentric therewith, and a plurality of series of air-ducts with their mouth-orifices ranged in separated longitudinal rows on said cylindrical surface; in combination with stationary mouth-stopping devices oppositely fitting against said cylindrical surface and positioned at front and rear of said tracker in alinement with the respective rows of mouth-orifices when the latter are at non-operative position.

4. In a mechanical music-playing instrument, in combination with a perforated music-sheet and a system of primary and action-playing pneumatics, a cylindrical tracker-bar provided with a plurality of longitudinal rows of pneumatic ducts located at different radial positions, and having the orifices of the respective rows spaced on different scales; a series of flexible pipes connecting the other ends of said ducts from the cylindrical bar to the conduits of the primary pneumatic system, and means for stopping the tracker mouth-orifices when rotated from playing position.

5. The combination with the cylindrical rotatable tracker, of a yieldable presser pad or shoe composed of a metal strip having a face covering of leather, matching against the surface of the cylinder, and yieldable supporting devices for pressing said shoe toward the tracker-surface.

6. The combination, with the rotatable cylindrical tracker-bar and its pneumatic connecting-pipes; of a guard-panel supported on the frame to shield said pipes, and having its upper edge turned inward and fitting adjacent to the surface of the tracker-cylinder.

7. A rotatable cylindrical tracker provided with metal end disks having axles or axis-bearings thereon.

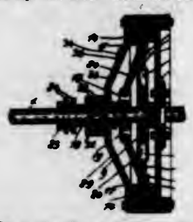
8. In an autopneumatic music-playing instrument, a rotatable tracker comprising a cylindrical body provided with two rows of mouth-orifices and tracker-ducts, in combination with metal end supporting-disks having central axles or bearing devices, and provided at its periphery with stop notches or lugs, and means for engagement therewith, for the purpose set forth.

9. In combination with a perforated music note-sheet, a cylindrical tracker-bar comprising a body portion having a plurality of rows of tracker-ducts with their mouth-orifices formed on different scales, axially-arranged end bearings for centering and supporting said tracker-bar for partial rotative action, engaging notches or lugs, and a resilient catch device positioned to retain said cylinder with either row of orifices at a predetermined position for coacting with the note-sheet.

10. In a mechanical musical instrument, a cylindrical tracker-bar having its body composed of united section members, and comprising two internal channeled section members, a central V-shaped member, two mouth-section members having tracker-orifices therein, opposite side covering members, a bottom member provided with openings or pipe-connecting ducts therethrough, and end disks provided with axles or bearing centers, for the purpose set forth.

11. In an autopneumatic music-playing instrument, in combination, a rotatable cylindrical tracker having two longitudinal rows of ducts with mouth-orifices formed on different scales, and provided at its ends with axis-supports; the pneumatic pipes connected with the tracker-ducts, two hinged guard-shields for the pipe-inclosing space, having their upper edges oppositely disposed adjacent to the cylindrical surface, means for stopping each row of the tracker-orifices at its idle position, and suitable spring devices for yieldingly pressing said stopping means toward the cylindrical tracker.

822,034. CLUTCH MECHANISM. KARL E. WRIGHT, New Brighton, Pa. Filed Apr. 17, 1905. Serial No. 255,931.



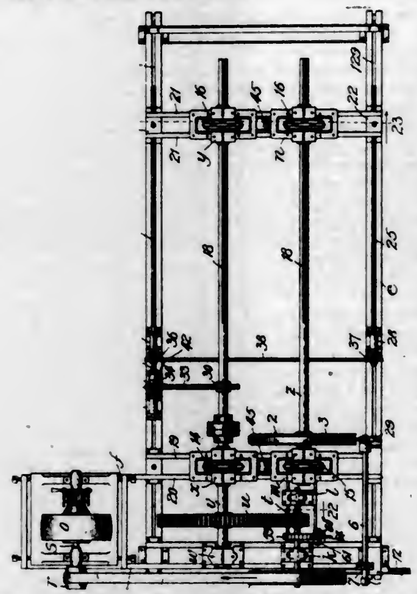
Claim.—1. In a clutch mechanism, the combination with a driven shaft, of a driving-shaft rotatably connected to the end of said driven shaft, a wheel carried by said driving-shaft, a plate mounted upon said driven shaft, outwardly-extending arms carried by said plate, segment-shaped shoes slidably mounted upon said arms and adapted to engage the inner surface of the rim of said wheel, a sleeve slidably mounted upon said driven shaft, rods connecting said shoes and said sleeve, a casing secured to the side of said wheel and inclosing the above-mentioned elements, said casing having an opening formed therein, a plug detachably mounted in said opening, means to normally hold said shoes in engagement with said wheel, and means to move said shoes out of engagement with said wheel, substantially as described.

2. In a clutch mechanism the combination with a wheel having an annular internal gripping-surface, of a shaft revolubly connected to said wheel, a plate secured to said shaft, arms carried by said plate, shoes slidably mounted upon said arms, a sleeve slidably mounted upon said shaft, rods connecting said shoes and said sleeves, a casing carried by said wheel and forming an annular compartment upon one side of said wheel, said casing having an opening formed therein, a plug detachably mounted in said opening, and means to hold said shoes in engagement with said gripping-surface, substantially as described.

3. In a clutch mechanism, the combination with a connected driven shaft and a drive-shaft, of a wheel mounted on the drive-shaft and having an internal gripping-surface, a plate secured on the driven shaft, and having outwardly-projecting hollow standards, rods threaded into said standards, shoes slidably mounted on the outer ends of said rods and adapted to engage the internal gripping-surface of the wheel, lugs carried by said shoes, a sleeve slidably mounted on the driven shaft and having lugs, rods pivotally connected to said lugs and to the aforesaid lugs of the shoes, a collar surrounding a part of said sleeve and connected to said wheel, and having an inwardly-flanged outer end, and a spring surrounding said sleeve between the lugs thereof and the inwardly-flanged outer end of the collar.

4. A clutch for coupling parallel shafts, consisting of a wheel having an internal gripping-surface, a plate, radially-disposed arms carried by said plate, shoes movably mounted on the outer ends of said arms and adapted to engage the internal gripping-surface of the wheel, a movable sleeve, rods pivotally connected to one end of said sleeve and to said shoes, a casing connected to the rim of the wheel, and having a collar surrounding a part of said sleeve, and a spring surrounding the sleeve and inclosed by said casing and collar, substantially as described.

822,035. FLUE-RATTLER. FRANK H. ADAMS, Topeka, Kans. Filed Apr. 24, 1905. Serial No. 257,248.



Claim.—1. In a mechanism of the class described, the combination of a framework, suspended chain mechanism movably mounted and having depending loop portions supported by such framework for raising and tumbling flues back upon each other in such loop portions, and means for raising and lowering such flue-carrying loop portions of the chains and thereby the flues contained therein, substantially as described.

2. In a mechanism of the class described, the combination of a framework, a plurality of suspended chains movably mounted and having depending loop portions supported by such framework, means for driving such chains and thereby raising and tumbling the flues contained therein back upon each other in the loops, and means for increasing and decreasing the length of the flue-containing loop portions of such chains, substantially as described.

3. In a mechanism of the class described, the combination of a framework, a plurality of suspended chains movably mounted and having depending loop portions supported by such framework, means for driving such chains and thereby raising and tumbling the flues contained therein back upon each other in the loops, mechanism for winding up the loop portions of the chains, and mechanism for holding a portion of each loop against the action of such winding mechanism, substantially as described.

4. In a mechanism of the class described, the combination of a framework, a plurality of suspended chains movably mounted and having depending loop portions supported by such framework, means for driving such chains and thereby raising and tumbling the flues contained therein back upon each other in such loop portions, means for increasing and decreasing the length of the flue-containing loop portions of such chains, and means for varying the distance between such chains, substantially as described.

5. In a mechanism of the class described, the combination of a framework, suspended chain mechanism movably mounted and having depending loop portions supported by such framework for raising and tumbling flues back upon each other in such loop portions, means for driving such chains, mechanism for moving the chains to different distances from each other, and means for operatively connecting the mechanism for moving the chains to different distances from each other with the mechanism for driving the chains, substantially as described.

6. In a mechanism of the class described, the combination of a framework, a plurality of suspended chains movably mounted and having depending loop portions supported by such framework, a dynamo or similar source of power, and mechanism for driving such chains and for raising the loop portions thereof operatively connected with and adapted to be operated by the same source of power, substantially as described.

7. In a mechanism of the class described, the combination of a framework, a plurality of suspended chains movably mounted and having depending loop portions supported by such framework, means for supporting one of such chains and permitting it to be moved to different distances from the other, and means for driving the chains provided with means for raising and lowering the flue-containing loop portions thereof, substantially as described.

8. In a mechanism of the class described, the combination of a framework, a tank, a plurality of suspended chains movably mounted and having depending loop portions supported by such framework over and extending transversely of the track, and mechanism for driving such chains provided with means for raising and lowering the loop portions thereof, substantially as described.

9. In a mechanism of the class described, the combination of a framework, a tank, a plurality of suspended chains movably mounted and having depending loop portions supported by said framework, means for moving one of such chains to different distances from the other, mechanism for driving such chains provided with means for raising and lowering the loop portions thereof into and out of the tank, and means for limiting the longitudinal movement of the flues contained in the loop portions of such chains, substantially as described.

10. In a mechanism of the class described, the combination of a tank, track-rails extending longitudinally of such tank, a framework, suspended chains supported by such framework and having loop portions extending into such tank and transversely thereof, means for driving such chains, and means for spreading the downwardly-extending portions of the chain mechanism to opposite sides of the track formed by such track-rails, substantially as described.

11. In a mechanism of the class described, the combination of a pair of track-rails, a framework extending above such track-rails, chain mechanism supported by such framework and having depending loop portions extending transversely of the track, and track-rail portions each movable to open position to permit a loop portion of such chain mechanism to pass from one side to the other of the rail, substantially as described.

12. In a mechanism of the class described, the combination of a pair of track-rails, a framework extending above such track-rails, chain mechanism supported by said framework and having depending loop portions extending transversely of the track, track-rail portions each movable to open position to permit a loop portion of such chain mechanism to pass from one side to the other of the rail, and means for spreading the sides of a loop portion of the chain mechanism to the outside of such track-rails, substantially as described.

13. In a mechanism of the class described, the combination of a pair of track-rails, a framework extending above such track-rails, chain mechanism supported by such framework and having depending loop portions extending transversely of the track, track-rail portions each movable to open position to permit a loop portion of such chain mechanism to pass from one side to the other of the rail, and means for supporting and permitting the movement of one of such loop portions to different distances from the other, substantially as described.

14. In a mechanism of the class described, the combination of a framework, a driven shaft rotatably mounted in such framework and provided with sprocket-wheels mounted thereon, an idler-shaft extending parallel with such driven shaft and provided with idler sprocket-wheels mounted in alinement with the sprocket-wheels upon such driven shaft, chains suspended from such sprocket-wheels

each having a depending loop portion in engagement with one of such idler sprocket-wheels and with one of the sprocket-wheels upon the driven shaft, and means for preventing the rotation of either of such shafts as desired, substantially as described.

15. In a mechanism of the class described, the combination of a framework, a driven shaft rotatably mounted in such framework and provided with sprocket-wheels mounted thereon, an idler-shaft extending parallel with such driven shaft and provided with idler sprocket-wheels mounted in alinement with the sprocket-wheels upon such driven shaft, chains suspended from such sprocket-wheels each having a depending loop portion in engagement with one of such idler sprocket-wheels and with one of the sprocket-wheels upon the driven shaft, means for preventing the rotation of such idler sprocket-wheels, and track-rails extending beneath such loop portions and provided with movable rail portions for permitting the passage of loop portions of the chain mechanism from one side to the other of such track-rails, substantially as described.

16. In a mechanism of the class described, the combination of a tank, a framework extending over such tank, sprocket-wheels supported by such framework, chains suspended from such sprocket-wheels and having loop portions extending into the tank, mechanism for driving such sprocket-wheels and thereby the chains provided with means for raising and lowering the loop portions of the chains into and out of the tank, and track-rails extending longitudinally of the tank each provided with a movable portion for permitting the chain mechanism to be passed from the inside to the outside of such rails, substantially as described.

17. In a mechanism of the class described, the combination of a tank, a framework extending over such tank, sprocket-wheels supported by such framework, chains suspended from such sprocket-wheels and having loop portions extending into the tank, mechanism for driving such sprocket-wheels and thereby the chains provided with means for raising and lowering the loop portion of the chains into and out of the tank, track-rails extending longitudinally of the tank each provided with a movable portion for permitting the chain mechanism to be passed from the inside to the outside of such rails, and means for spreading the loop portion of one of such chains to the outside of such track-rails for permitting a loaded car to pass through the loop portion of such chain, substantially as described.

18. In a mechanism of the class described, the combination of a tank, a framework extending over such tank, sprocket-wheels supported by such framework, chains suspended from such sprocket-wheels and having loop portions extending into the tank, mechanism for driving such sprocket-wheels and thereby the chains provided with means for raising and lowering the loop portion of the chains into and out of the tank, track-rails extending longitudinally of the tank each provided with a movable portion for permitting chain mechanism to be passed from the inside to the outside of such rails, means for spreading the loop portion of one of such chains to the outside of such track-rails for permitting a car to pass through the loop portion of such chain, and means for moving one of such chains to different distances from the other, substantially as described.

19. In a mechanism of the class described, the combination of a supporting-framework, a driven shaft rotatably mounted in such supporting-framework and provided with sprocket-wheels mounted thereon, idler sprocket-wheels rotatably mounted in alinement with the sprocket-wheels upon such driven shaft, chains suspended from such sprocket-wheels each having a loop portion in engagement with one of such idler sprocket-wheels and with one of the sprocket-wheels upon the driven shaft, and means for moving one of the sprocket-wheels upon such driven shaft and the idler sprocket-wheel in alinement therewith longitudinally of the driven shaft, substantially as described.

20. In a mechanism of the class described, the combination of a supporting-framework, a driven shaft rotatably mounted in such supporting-framework and provided with sprocket-wheels mounted thereon, idler sprocket-wheels rotatably mounted in alinement with the sprocket-wheels upon such driven shaft, chains suspended from such sprocket-wheels each having a loop portion in engagement with one of such idler sprocket-wheels and with one of the sprocket-wheels upon the driven shaft, means for moving one of the sprocket-wheels upon such driven shaft and the idler sprocket-wheel in alinement therewith longitudinally of the driven shaft, and means for preventing the rotation of such idler sprocket-wheels during the rotation of the driven shaft with its sprocket-wheels and thereby permitting the raising of the loop portions of the chain when desired, substantially as described.

21. In a mechanism of the class described, the combination of a supporting-framework, a driven shaft rotatably mounted in such supporting-framework and connected with a suitable source of power, a sprocket-wheel mounted upon and in fixed relation to such driven shaft, an idler sprocket-wheel mounted in alinement with such sprocket-wheel, a chain suspended from such sprocket-wheels and having a depending loop portion, a carriage movably mounted upon the supporting-framework and provided with sprocket-wheels movable therewith, and a chain suspended from the sprocket-wheels of such carriage having a depending loop portion, substantially as described.

22. In a mechanism to the class described, the combination of a supporting-framework, a driven shaft rotatably mounted in such supporting-framework and connected with a suitable source of power, a sprocket-wheel mounted upon and in fixed relation to such driven shaft, an idler sprocket-wheel mounted in alinement with such sprocket-wheel, a chain suspended from such sprocket-wheels and having a depending loop portion, a carriage movably mounted upon the supporting-framework and provided with sprocket-wheels movable therewith, a chain suspended from the sprocket-wheels of such carriage having a depending loop portion, and means for moving such carriage and thereby the sprocket-wheels and chain mechanism supported thereby, substantially as described.

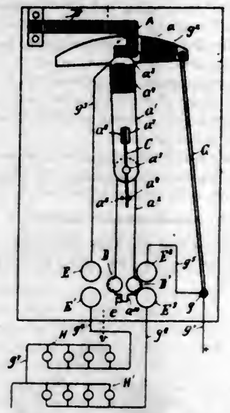
23. In a mechanism of the class described, the combination of a supporting-framework, a driven shaft rotatably mounted in such supporting-framework and connected with a suitable source of power, a sprocket-wheel mounted upon and in fixed relation to such driven shaft, an idler sprocket-wheel mounted in alinement with such sprocket-wheel, a chain suspended from such sprocket-wheels and having a depending loop portion, a carriage movably mounted upon the supporting-framework and provided with sprocket-wheels movable therewith, a chain suspended from the sprocket-wheels of such carriage having a depending loop portion, and threaded rods operatively connected with such carriage for moving it and thereby the sprocket-wheels and chain mechanism supported thereby, substantially as described

24. In a mechanism of the class described, the combination of a supporting-framework, a driven shaft rotatably mounted in such supporting-framework and connected with a suitable source of power, a sprocket-wheel mounted upon and in fixed relation to such driven shaft, an idler sprocket-wheel mounted in alinement with such sprocket-wheel, a chain suspended from such sprocket-wheels and having a depending loop portion, a carriage movably mounted upon the supporting-framework and provided with sprocket-wheels movable therewith, a chain suspended from the sprocket-wheels of such carriage having a depending loop portion, threaded rods operatively connected with such carriage for moving it and thereby the sprocket-wheel and chain mechanism supported thereby, a rotatable shaft connecting such idler sprocket-wheels, and brake mechanism for preventing the rotation of such shaft and the idler sprocket-wheels mounted thereon during the rotation of the driven shaft with its sprocket-wheels when desired, substantially as described.

25. In a mechanism of the class described, the combination of a supporting-framework, a driven shaft rotatably mounted in such supporting-framework and connected with a suitable source of power, a sprocket-wheel mounted upon and in fixed relation to such driven shaft, an idler sprocket-wheel mounted in alinement with such sprocket-wheel, a chain suspended from such sprocket-wheels and having a depending loop portion, a carriage movably mounted upon the supporting-framework and provided with sprocket-wheels movable therewith, a chain suspended from the sprocket-wheels of such carriage having a depending loop portion, threaded rods operatively connected with such carriage for moving it and thereby the sprocket-wheels and chain mechanism supported thereby, means for preventing the rotation of the idler sprocket-wheels during the rotation of such main driven shaft when desired, and means for preventing the backward rotation of such main driven shaft, substantially as described.

26. In a mechanism of the class described, the combination of a framework, a driven shaft rotatably mounted in such framework and provided with sprocket-wheels mounted thereon, an idler-shaft extending parallel with such driven shaft and provided with idler sprocket-wheels mounted in alinement with the sprocket-wheels upon such driven shaft, chains suspended from such sprocket-wheels each having a depending loop portion in engagement with one of such idler sprocket-wheels and with one of the sprocket-wheels upon the driven shaft, and a carriage movably mounted upon such framework in engagement with one of the sprockets on the driven shaft and with the idler sprocket-wheel in alinement therewith for moving such sprocket-wheels upon the shafts, substantially as described.

822,086. **ELECTRICAL SWITCH.** EARL C. BACON, Indianapolis, Ind., assignor, by direct and mesne assignments, to The Flash Light Sign Company, Connersville, Ind., a Corporation of Indiana. Filed Dec. 3, 1904. Serial No. 236,042.



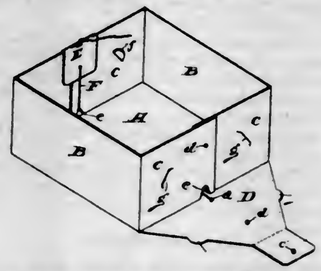
Claim.—1. In combination a lever having an arm upon each side of its pivot-point, a link of a material expanded by heat connected at one end to one arm of the lever and secured in place at the other end, contact-pieces carried by the other arm of the lever, terminals adjacent to the contact-pieces, independent sets of lamps one in communication with one set of terminals, the other in communication with the other set of terminals, a divided feed-wire one branch of which leads to the link and the other to one set of terminals, a resistance in communication with the link to be heated by the current therefrom and to convey the heat to the link, and a wire leading from the resistance to the other set of terminals.

2. In combination a lever having an arm upon each side of its pivot-point, one of its arms consisting of two parts pivoted together, a spring to hold the parts normally in alinement with each other, a lug at the lower end of the pivoted arm, a metallic link of a material expanded by heat connected at one end to the other arm of the lever and secured in place at its other end, contact-pieces carried by the first arm of the lever, terminals adjacent to the contact-pieces, a stud between the terminals for contacting the lug, independent sets of lamps one in communication with one set of terminals, the other in communication with the other set of terminals, a divided feed-wire, one branch of which leads to the link and the other to one of the sets of terminals, a resistance in communication with the link to be heated by the current therefrom and to convey the heat to link, and a wire leading from the resistance to the other set of terminals.

3. In combination a lever consisting of a short metallic arm and a long arm, a pivot between the arms, an insulation in the longer arm, contact-pieces at the lower end of the longer arm, terminals upon each side of the longer arm adjacent to the contact-pieces, a link connected at one end to the metallic arm and at the other end secured to a pivot-post, a resistance surrounding the metallic arm and insulated therefrom and electrically connected to the link, a wire leading from the other end of the resistance to one of the terminals, a feed-wire leading to the binding-post of the link, a feed-wire leading from the post to the second set of terminals, two sets of lamps one in communication with one set of terminals, and the other in communication with the other set of terminals.

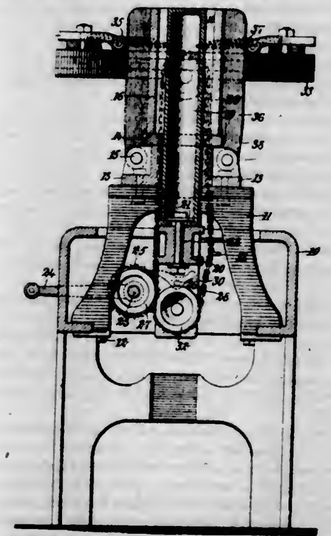
822,087. **KNOCKDOWN PAPER BOX.** FREDERICK H. BEROLD, Jr., Cincinnati, Ohio. Filed Jan. 23, 1905. Serial No. 242,313.

Claim.—1. A collapsible folded blank box made of suitable paper material cut and scored to form the bottom and side parts, and flaps on said bottom and side parts to form the end parts, said side flaps at each end adapted to fold in and overlap, and said bottom flaps adapted to fold up outside the overlapped side flaps, said side flaps each having a notch and a perforation so located therein as to register respectively with the notch and perforation of its overlapping side flap, the bottom flaps having perforations so located as to register respectively with the registering notches and perforations in the side flaps when the parts are folded, and a cord passing beneath the box, through the notch-registering perforation in the bottom flap, then engaging the notches, thence along the inside of the box and out through the registering side and bottom flap perforations, substantially as and for the purpose set forth.



2. A collapsible folded blank box made of suitable paper material cut and scored to form the bottom and side parts, flaps on said bottom and side parts to form the end parts, and a tongue on each bottom flap, said side flaps at each end adapted to fold in and overlap, said bottom flaps adapted to fold up outside the overlapped side flaps, and said tongue adapted to fold down over said overlapped side flaps, said side flaps each having a notch and a perforation so located therein as to register respectively with the notch and perforation of its overlapping side flap, the bottom flaps having perforations so located as to register respectively with the registering notches and perforations in the side flaps when the parts are folded, said tongue having a perforation so located as to register with the registering side and bottom flap perforations, and a cord passing beneath the box, through the notch-registering perforation in the bottom flap, then engaging the notches, thence along the inside of the box and out through the registering tongue, side flap, and bottom-flap perforations, substantially as and for the purpose set forth.

822,088. **TILE-MOLDING DEVICE.** HERMAN BESSER, Alpena, Mich. Filed Oct. 19, 1905. Serial No. 283,416.



Claim.—1. A molding-machine comprising a movable core-support, pulleys journaled thereon, a shaft having a drum, and a flexible member wound on said drum and passing over said pulleys, the ends of said member being fixed to a stationary part of the machine.

2. A molding-machine, comprising a movable member for opening the mold, a pair of pulleys journaled upon said member near opposite ends thereof, a shaft located at a point between the two pulleys, a drum on said shaft, and a flexible member wound around said drum and passing under one of the pulleys and over the other, the ends of said connection being secured to a fixed part of the machine.

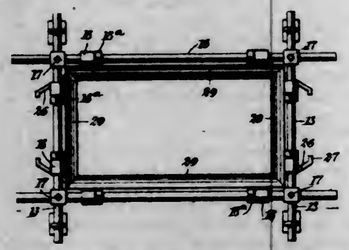
3. A molding-machine, comprising a mold having movable

walls, a core within the mold, means for withdrawing the core from the mold, means for retaining the mold-walls in closed position and means whereby said withdrawing means will release said retaining means after the withdrawal of the core.

4. A molding-machine, comprising a mold having movable walls, springs for opening the mold-walls, a core within the mold, means for retaining the mold-walls in closed position, and means whereby the withdrawing means will release the retaining means after the withdrawal of the core.

5. A molding-machine, comprising a mold, a core within the mold, a support for the core, vertical bars secured to the ends of the support, pulleys on the ends of the bars, a drum intermediate the pulleys, and a flexible member wound upon the drum and having each of its ends passing over a pulley and connected to a stationary part of the machine.

822,039. MOLDING DEVICE. HERMAN BESSER, Alpena, Mich. Filed Dec. 13, 1905. Serial No. 291,560.



Claim.—1. In a device of the class described, an expansible mold comprising a substantially rectangular frame, side and end walls hinged to the frame, means connected with the end walls for moving the same, and means connected with the side walls and engaging said moving means whereby to move the side walls in unison with the end walls.

2. In a device of the character described, an expansible mold comprising a substantially rectangular frame, side and end walls depending from the frame, handles movably connected with the end walls for swinging the same, and means connected with the side walls and engaging said handles whereby to move the side walls in unison with the end walls.

3. A molding device comprising movable mold-walls, a plate on one wall, and a movable latch on another wall for locking said plate, said plate having a bend for engaging the edge of the other wall and limiting the motion of both walls.

4. A molding device comprising movable mold-walls, a plate on one wall, and a movable latch on another wall for locking said plate, said plate having a bend for engaging the edge of the other wall and limiting the motion of both walls, said latch having a projection on the outside of said plate for engaging the latter and forcing it inwardly.

5. A molding device comprising movable mold-walls, a plate on one wall having inwardly-projecting ends beyond the ends of said wall, a movable latch on another wall adapted to engage said plate and lock the two adjacent walls together, the second wall being adapted to engage the projection on said plate for forcing the first wall outwardly, and means on the latch for engaging the outer edge of said plate.

6. A molding device comprising movable mold-walls, a plate on one wall having inwardly-projecting ends beyond the ends of said wall, a movable latch on another wall adapted to engage said plate and lock the two adjacent walls together, the second wall being adapted to engage the projection on said plate for forcing the first wall outwardly, means on the latch for engaging the outer edge of said plate, and means for swingingly mounting said walls, said means comprising hinge-pieces extending from each wall across the mold to the opposite side thereof, the outer ends of said hinge-pieces being pivotally mounted.

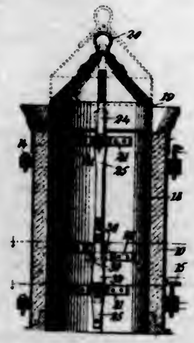
7. In a molding device, the combination of a frame comprising a plurality of adjustably-mounted rods, hinge-pieces pivotally mounted on each rod and extending across the device, mold-walls mounted on the hinge-pieces, means on the mold-walls for simultaneously and automatically swinging each wall outwardly when the device is lifted, and set-collars secured to the rods against the hinge-pieces.

8. In a molding device, the combination of a frame, bearings thereon, a pair of rods mounted in parallel position in said bearings, blocks mounted adjustably on said rods, a second pair of rods adjustably mounted on said blocks and located at an angle to the first-named rods, a series of hinge-pieces pivoted to each of said rods, mold-walls suspended from said hinge-pieces, handles connected with sundry of said mold-walls, and means whereby said handles may simultaneously swing all of said walls outwardly.

9. In a molding device, the combination of a frame having bearings, a pair of rods mounted thereon, a pair of blocks adjustably mounted on each rod, a second pair of rods adjustably supported by said blocks, hinge-pieces pivotally connected with each rod, inclined walls constituting a hopper mounted on said hinge-pieces, and mold-walls mounted on said hinge-pieces.

10. A molding device comprising movable side and end walls, handles in connection with said end walls, and means connecting the handles and the side walls whereby to move all of the walls in unison.

822,040. MOLD FOR HOLLOW ARTICLES. HERMAN BESSER, Alpena, Mich. Filed Jan. 6, 1906. Serial No. 294,572.



Claim.—1. In a device of the character described, the combination with the mold, of a collapsible core, a cap connected to the core, and means whereby traction upon the cap will collapse the core.

2. In a device of the character described, the combination with the mold, of a collapsible core, a cap movably connected with the core, and means whereby the movement of the cap from the core may contract said core and whereby movement of the cap toward the core may expand the said core.

3. In a device of the character described, the combination with a mold, of a core, means for contracting and expanding said core, a cap in connection with the core, means whereby a preliminary movement of the cap with respect to the core will operate said means to contract the core, and whereby a further movement will lift said core.

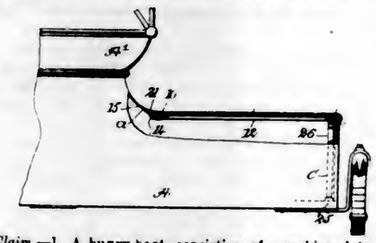
4. In a device of the character described, the combination with the mold, of a collapsible core, a cap having a lost-motion connection with said core whereby to permit a limited relative movement of the cap and core, and means whereby the relative movement of said cap and core will expand and contract the core.

5. In a core the combination of a flexible shell having overlapping edges, a pair of brackets located opposite each other near said edges, said brackets having projections extending toward and overlapping each other, and outwardly-facing extensions on the ends of said projections, said extensions having bearing-surfaces facing each other, and a wedge adapted to pass between said surfaces and engaging them for positively contracting the shell.

6. In a core the combination of a flexible shell having two free edges, two pairs of brackets located opposite each other near said edges, each bracket having a bearing-surface facing the opposite bracket, a second pair of brackets located opposite each other near said edges, a third pair of brackets each having overlapping projections provided with bearing-surfaces facing each other, and a bar provided with a pair of wedges for engaging the first two pairs of brackets, and a third wedge facing in the opposite direction for engaging the third pair of brackets.

7. In a core the combination of a flexible shell, means for collapsing and expanding the shell comprising a bar having wedges thereon, a cap at the end of the core to which said bar is fixedly connected, and a cross-tie connected with said bar at a point within the core and connected with the cap at the side opposite to that at which the bar is connected with it.

822,041. BUGGY-BOOT AND FASTENER. PETER J. BLASER, Fostoria, Ohio. Filed Dec. 5, 1905. Serial No. 290,361.



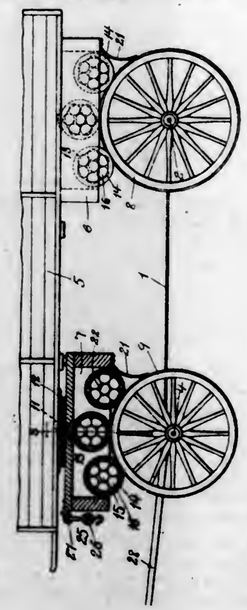
Claim.—1. A buggy-boot, consisting of a cushioned frame, a hinged member for the frame, whereby to connect it with the body of the buggy, and means for locking the boot to a vehicle-body.

2. A buggy-boot, consisting of a frame, a cushion attached to the frame, a bail hinged to the forward portion of the frame, a cover for the bail, a bolt secured to the rear portion of the frame, and a latch device for the bolt, adapted for attachment to the vehicle-body.

3. A buggy-boot consisting of a skeleton frame, bars extending from front to rear of the frame, a cushion supported on said bars and by said frame, which cushion is attached to the latter, a bail hinged to the forward portion of the frame, a portion of the said cushion being carried over and attached to the bail, forming a mouth at the forward portion of the cushion for the introduction of a filling material, and a locking device in two sections, one section being secured to the rear portion of the frame and the other section being adapted for attachment to the body of the buggy.

4. The combination with a frame, a cushion carried by and secured to the said frame, a bail hinged to the forward portion of the frame, and a cover for the bail constituting a portion of the said cushion, of a bolt secured to the rear portion of the frame, which bolt is provided with a downwardly-extending, arrow-shaped head, a keeper consisting of spring members placed face to face and connected for a portion of their length, their upper ends being free and oppositely curved, forming jaws adapted to receive and engage with the side edges of the said arrow-shaped head, outwardly and oppositely extending lips for the upper ends of the said jaws, and means for attaching the said members of the keeper to the body of a vehicle.

822,042. WAGON. WASHINGTON I. BROWN, Clinton, Me. Filed Apr. 26, 1905. Serial No. 257,435.



Claim.—1. A wagon having the sole support for its body portion on the upper portions of the wheel-rims, antifriction means between the wheel-rims and body having a roller-bearing connection with the body and in rolling engagement with the wheel-rims, and provisions for applying the draft to the wagon above the wheels.

2. A wagon having the sole support for its body portion on the upper portions of the wheel-rims, antifriction means between the wheel-rims and body having a roller-bearing connection with the body and in rolling engagement with the wheel-rims, means for retaining said antifriction means in engagement with the wheels, and provisions for applying the draft to the wagon above the wheels.

3. A wagon comprising a wheel-frame including an angularly-movable front axle and wheels connected to said frame, means connected to the axle whereby the same may be turned, a body, roller-frames, and rollers carried thereby having an antifriction-roller connection therewith arranged to rest upon the several wheels of the wagon, the roller-frames for the forward wheels being pivotally connected to the wagon-body and connected to the front axle to turn therewith.

4. A wagon comprising a wheel-frame including an angularly-movable front axle and wheels connected to said frame, means connected to the axle whereby the same may be turned, a body, roller-frames, and rollers carried thereby having an antifriction-roller connection therewith arranged to rest upon the several wheels of the wagon, the roller-frames for the rear wheels being rigidly connected to the wagon-body and those for the forward wheels being pivotally connected to the body and having connections with the front axle whereby turning of the latter causes said roller-frames to turn therewith.

5. A wagon comprising a body, a plurality of sets of rollers carried by said body and arranged to rest on the upper portions of the peripheries of the wheels of the wagon, said rollers constituting the sole support for the body and scrapers mounted in rear of each of said sets of rollers engaging the rims of the wheels.

6. In a wagon, a body, frames located at the rear thereof and rigidly secured thereto, a pair of frames secured to each other and pivotally connected to the forward part of the body, the several frames being arranged in the same relative positions as the wheels of the wagon, and rollers rotatably mounted in antifriction-roller engagement with said frames and adapted to engage the rims of the wagon-wheels.

7. In a wagon, a frame, rollers carried by the frame and arranged to engage and rest on one of the wheels of the wagon, and a scraper connected to the frame and engaging the wheel-rim in rear of the rollers.

8. In a wagon, a frame, and rollers mounted in the frame, comprising annular rims, the outer surfaces of which are adapted to engage the rim of one of the wagon-wheels, pins rigidly mounted in the frame, and antifriction means arranged between said pins and rims, engaging the peripheries of the pins and the inner surfaces of the rims.

9. In a wagon, a frame, and rollers mounted in the frame, each of said rollers consisting of an annular rim adapted to engage the rim of one of the wagon-wheels, a pin rigidly mounted in the frame having the side away from the wagon-wheel flattened, and rolls between the pin and rim engaging the periphery of the pin and the inner surface of the rim.

10. A roller-bearing for wagons consisting of a pin rigidly mounted, rolls concentrically arranged about the pin in engagement with the periphery thereof, and an outer annular rim or band surrounding the rolls and in engagement therewith, said rim or band being adapted to engage the rim of one of the wagon-wheels.

11. A roller-bearing for wagons consisting of a pin rigidly mounted, rolls concentrically arranged about the pin in engagement with the periphery thereof, and an outer annular rim or band surrounding the rolls and in engagement therewith, said rim or band being adapted to engage the rim of one of the wagon-wheels and having external and internal flanges to project over the sides of the wheel-rim and the ends of the rolls respectively.

12. A roller-bearing for wagons consisting of a pin rigidly mounted having a portion above its axis removed to form a flat surface, rolls concentrically arranged about the pin in engagement with the lower portion of the periphery thereof, and an outer annular rim or band surrounding the rolls and in engagement therewith, said rim or band being adapted to engage the rim of one of the wagon-wheels.

822,043. AUTOMATIC INSULATOR. GAETAN M. CORELL, New York, N. Y. Filed Dec. 21, 1904. Serial No. 287,905.

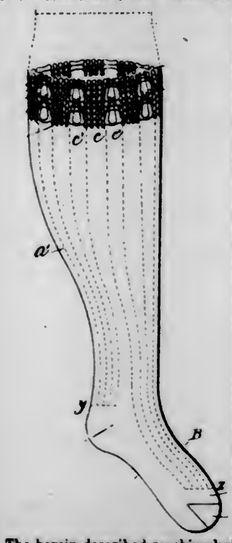
Claim.—1. In a device of the class described, in combination, an insulating-body of substantially cylindrical form, removable plugs seated in the extremities of said body, plungers slidably mounted in said plugs said body having a longitudinally-disposed duct formed in the wall thereof and a conductor disposed in said duct and having laterally-disposed legs passing into said plugs, contact-plates carried by said plungers and engaging said legs, springs pressing said plungers and line-wires attached to said contact-plates.



2. In a device of the class described, in combination, an insulating-body, a conductor having legs with breaks therein and mounted within said body, movable plungers mounted within said body, contact-plates carried thereby which may bridge said breaks, springs constraining said plungers in the direction of said legs, and other contact-plates carried by said plungers and engaging said conductor at other points.

3. In a device of the class described, in combination, an insulating-body, a conductor disposed longitudinally in said body and having its extremities disposed in the extremities of said body, said conductor having laterally-disposed legs at substantially the middle portion of said body, said legs having breaks, movable plungers mounted in said body, springs constraining said plungers in the direction of said legs, contact-plates carried by said plungers and which may bridge said breaks, and other contact-plates carried at the opposite extremities of said plungers and engaging the extremities of said conductor.

822,044. **SEAMLESS HOSIERY.** GEORGE H. GILBERT, Germantown, Pa., assignor to The Kilburn Knitting Machine Company, New Brunswick, N. J. Filed June 7, 1901. Serial No. 63,622.



Claim.—1. The herein-described machine-knit seamless stocking having open or lace work portions, and solid plain-knit portions preceding the lacework portions, substantially as described.

2. The herein-described machine-knit seamless stocking having open or lace work portions, and solid plain-knit portions preceding the open or lace work portions and solid plain knitting following the open or lace work portions, substantially as described.

3. The herein-described machine-knit seamless stocking having solid plain knitting at the top of the leg for the hem or welt and open or lace work following such hem, substantially as described.

4. The herein-described machine-knit seamless stocking having solid plain knitting and open or lace work alternating longitudinally of the stocking and having solid plain knitting for forming the joining at the toe of the stocking substantially as described.

5. The herein-described machine-knit stocking having a plain-knitted portion at the top of the stocking, and having an open-work portion in which there are dropped stitches, and a plain-knitted portion between the dropped stitches and the toe of the stocking, substantially as described.

6. A machine-knit seamless stocking having lacework on the back and front of the stocking and having the lacework extending down upon the top of the foot of the stocking and having a plain-knitted portion preceding the lacework and a plain-knitted portion following said lacework, substantially as described.

7. A machine-knit seamless stocking having lacework on the back and on the front of the leg of the stocking, and having a plain-knit portion at the top of the stocking above the lacework, substantially as described.

8. A machine-knit seamless stocking having lacework on the back as well as on the front of the stocking, a plain-knitted portion preceding the lacework, and a plain-knitted heel, bottom of the foot and toe, substantially as described.

9. A machine-knit seamless stocking having open-work on the back and on the front of the stocking, a plain-knitted portion preceding the lacework, a plain-knitted heel, bottom of foot and toe, and a plain-knitted portion between the lacework and the toe of the stocking, substantially as described.

10. A machine-knit seamless stocking having open or lace work upon the top of the foot of the stocking and having plain solid knitting between said lacework and the top of the stocking, substantially as described.

11. A machine-knit seamless stocking having open or lace work on the top of the foot of the stocking and solid plain knitting above the lacework, substantially as described.

12. A machine-knit seamless stocking having open or lace work on the top of the foot of the stocking and solid plain knitting preceding said open or lace work and solid plain knitting following said lacework, substantially as described.

13. A machine-knit seamless stocking having open or lace work on the top of the foot of the stocking and having solid plain knitting between said open or lace work and the top of the stocking and solid plain knitting between the open or lace work and the toe of the stocking, substantially as described.

14. A machine-knit seamless stocking, knit in one continuous operation, having open or lace work on the back and on the front of the stocking with plain knitting above the open or lace work, substantially as described.

15. A machine-knit seamless stocking knit in one continuous operation having open or lace work upon the top of the foot of the stocking and plain knitting above said open or lace work and plain knitting between said open or lace work and the toe of the stocking, substantially as described.

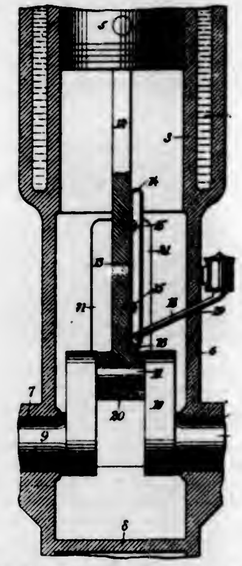
16. A machine-knit seamless stocking having a toe, foot and leg portion formed of a continuous thread or threads knit in one operation, and having the entire leg portion formed of sections of open or lace work alternated with plain sections, with portions of plain loops between the open or lace work and the top of the stocking and between the open or lace work and the toe of the stocking, the heel bottom of the foot and toe portions being also composed of plain loops, substantially as described.

822,045. **OILER.** DANIEL HERRMANN, Guttenburg, N. J. Filed Aug. 19, 1905. Serial No. 274,913.

Claim.—1. In an oiler, the combination of a connecting-rod, an oil-plate of substantially elliptical form mounted thereupon and provided with a concave edge to guide the flow of oil, said bearing-plate being further provided with a duct, a stationary oil-spout projecting to a point immediately adjacent to said edge for discharging oil thereinto, and a bearing in communication with said duct and oiled thereby.

2. In a device of the character described, the combination of a crank provided with a crank-pin, a connecting-rod provided with a bearing engaging said crank-pin, said connecting-rod being adapted to undergo a high speed, an oil-plate of substantially elliptical form connected rigidly with said connecting-rod and movable therewith in an orbit represented substantially by an ellipse, said oil-plate being provided with a cupped edge and with a duct leading from said cupped edge to said bearing, and mechanism for discharging oil into said oil-plate immediately adjacent to said cupped edge.

3. In an oiler, the combination of a connecting-rod, an oil-plate mounted thereupon and adapted to move in a substantially elliptical orbit, said oil-plate being provided with a cupped edge of substantially elliptical form, and a stationary spout so disposed relatively to said cupped edge as to be always immediately adjacent to some portion thereof.



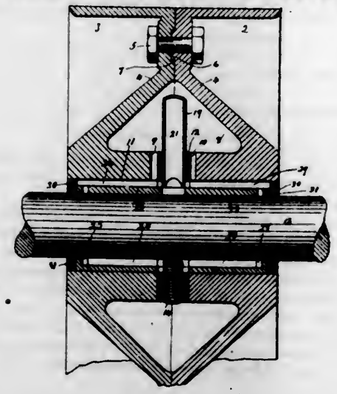
4. In an oiler, the combination of a bearing, an oil-plate communicating therewith and provided with a cupped edge having a substantially elliptical form, a stationary spout, and means for constantly maintaining some portion of said cupped edge at a predetermined distance from said spout.

5. In an oiler, the combination of a connecting-rod having an angular movement, an oil-plate mounted upon said connecting-rod and provided with a cupped edge, a bearing connected with said oil-plate, and a stationary spout projecting to a point immediately adjacent to said cupped edge.

6. In an oiler, the combination of a bearing encircling a crank-pin, a connecting-rod engaging said bearing and having an angular movement, a member mounted directly upon said connecting-rod and provided with a cupped edge and with a duct leading from said cupped edge to said crank-pin, and an oil-spout projecting to a point adjacent to said cupped edge for the purpose of feeding oil thereinto.

7. In an oiler, the combination of a connecting-rod adapted to move angularly, an oil-plate mounted upon said connecting-rod and provided with a surface adapted to guide the flow of oil and also provided with a duct, a bearing fed by said duct, means for conferring upon said connecting-rod a comparatively high speed, and mechanism for discharging oil immediately adjacent to said surface for guiding the flow of said oil.

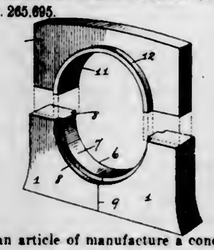
822,046. **LUBRICATOR FOR LOOSE PULLEYS.** LOUIS C. HOBART, Southington, Conn. Filed Jan. 13, 1906. Serial No. 295,955.



Claim.—1. The combination with a shaft, of a pulley formed in two parts, recessed at their inner faces to form a chamber and to provide space for the ring, a ring located between said parts and secured to said shaft, said ring having a central bore to closely fit said shaft and concentric recesses on each side, bushings surrounding said shaft and closely fitting the interior of the pulley on opposite sides of the ring, said bushings formed with internal and external longitudinal channels connected by an annular channel near the outer ends of the bushings, a tube mounted in said ring and formed with two passages opening onto said shaft and into said chamber, the openings in the chamber turned in opposite directions an absorbent washer at the outer ends of said bushings, and metal washers to hold the same in place, substantially as described.

2. The combination with a shaft, of a pulley formed in two parts, recessed at their inner faces to form a chamber and to provide space for the ring, a ring located between said parts and secured to said shaft, said ring having a central bore to closely fit said shaft, and a concentric recess on each side, bushings surrounding said shaft and closely fitting the interior of the pulley on opposite sides of the ring, said bushings formed with internal and external longitudinal channels connected by an annular channel near the outer ends of the bushings, and a double tube mounted in said ring and opening into said recesses and into said chamber whereby oil is conducted from said chamber to the shaft and returned to the chamber.

822,047. **TUBULAR CONCRETE-METAL CONSTRUCTION.** WALTER C. HOOPER and PIERRE ZUCCO, Baltimore, Md. Filed June 17, 1905. Serial No. 265,695.

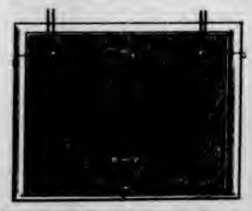


Claim.—1. As an article of manufacture a concrete pier comprising a base-supporting section having an upper concave inner face and also having a curved recess or rabbet adjacent said concave face, and an arch-top section having a concave inner face and a flange on two opposite sides projecting laterally from said concave face.

2. As an article of manufacture a concrete pier comprising base-supporting sections each having a concave inner face which is provided with a central rib to form a recess at each side and a top section also having a curved inner face which is flush with but broader than the rib on the supporting-sections.

3. A tunnel, sewer or conduit having concrete piers each formed from a plurality of reinforced sections and the lower sections of the piers having concave faces with centrally-projecting ribs and the upper sections of the piers having concave faces with flanges projecting laterally adjacent said concave faces, and a concrete tube of a plurality of sections and the ends of said tube-sections overlapping the pier-sections whereby to form a flush joint.

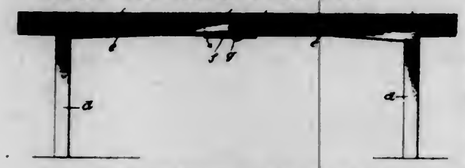
822,048. **PICTURE-HANGING DEVICE.** LEONARD HORINKO, New York, N. Y. Filed Aug. 22, 1905. Serial No. 275,222.



Claim.—1. In a picture-hanging device, the combination with the picture-frame, of brackets adapted for attachment to opposite corner portions thereof, each of said brackets being provided with a friction-roller, a third bracket adapted to be located on the picture-frame between the corner-brackets and below them, friction-rollers mounted in the said lower bracket, and a holder adapted to have bearing against the under portion of the picture-frame, all of the said parts being arranged to operate in the manner described.

2. In a picture-hanging device, the combination with the picture-frame and molding-hooks, of opposing brackets attached to opposite corners of the picture-frame, each of said brackets being provided with a single friction-roller, a third bracket located between and below the corner-brackets, the lower bracket being provided with two friction-rollers, a supporting member consisting substantially of L-shaped construction, the foot member whereof is adapted to engage with the bottom of the picture-frame, the vertical member extending up at the back of said picture-frame, being provided with opposing slots in its vertical edges, cords, one of which cords is attached to each of the corner-brackets at one end, each of said cords being passed over the molding-hook and down, one cord over a pulley in each corner-bracket, from whence the two cords are passed each to an engagement with one of the pulleys in the lower bracket, the ends of the cords passing through the slots of the supporting member, and means for securing the ends of the cords.

822,049. FOLDING FURNITURE-LEG. LEWIS B. JEFFCOTT, New York, N. Y. Filed June 8, 1905. Serial No. 264,373.



Claim.—1. The combination with a cot having a body part and a wing mounted on the body to occupy either a horizontal or vertical position, of two legs pivoted to the inner side of the side rail of the wing, links respectively pivoted to said legs, and a rotatable connecting-piece mounted at the inner side of the side rail and pivoted to the links.

2. The combination with a cot having a body part and a wing mounted on the body to occupy either a horizontal or vertical position, of two legs pivoted to the inner side of the side rail of the wing, links respectively pivoted to said legs, a rotatable connecting-piece mounted at the inner side of the side rail and pivoted to the links, one end of the connecting member being longer than the other, and a stop on the inner side of the side rail adapted to be engaged by said long end of the connecting member.

3. The combination with the part to be supported, of two legs pivoted thereto, links respectively pivoted to said legs, a rotatable connecting-piece to which the links are pivoted, a pin mounting said connecting-piece and extending through said part to be supported, and an operating device connected to the outer end of the pin.

4. The combination with the part to be supported, of two legs pivoted thereto, links respectively pivoted to said legs, a rotatable connecting-piece to which the links are pivoted, a pin mounting the connecting-piece and extending through said part to be supported, an operating device connected to the outer end of the pin, said connecting-piece having one end longer than the other, and a stop at the inner side of the said part to be supported and adapted to be engaged by the long end of the connecting-piece.

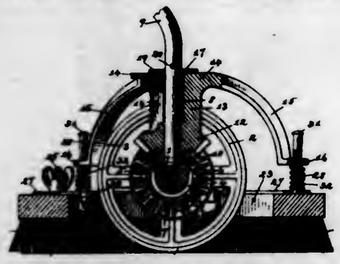
5. The combination with the part to be supported, of two legs pivotally mounted thereon, links respectively pivoted to the legs, a rotatable connecting-piece to which said links are pivoted, one end of the connecting-piece being longer than the other, and a stop on the part to be supported and adapted to be engaged by the long end of the connecting-piece, the short end of the connecting-piece being arranged to clear said stop.

822,050. ROTARY SCRUBBING-MACHINE. THOMAS R. JENKINS, Jr., Baltimore, Md. Filed Mar. 8, 1905. Serial No. 249,012.

Claim.—1. In a machine of the character described the combination with the driving-wheels, of gears revolved by the rotation of said wheels; a head carried by and revolving with one of said gears; a ring-plate yieldingly sustained below said head, and a plurality of brush-sections detachably secured to said ring-plate.

2. In a machine of the character described the combination with the driving-wheels, of gears revolved by the rotation of said wheels; a head revolving with one of said gears; a ring-plate having a plurality of perforations; a brush comprising a plurality of sections each of which is provided with a perforation; a bolt passing through each of said sections and also through a perforation in the ring-plate, and means for connecting the head and ring-plate.

3. In a machine of the character described the combination with the driving-wheels, of gears revolved by the rotation of said wheels; a head revolving with one of said gears; a ring-plate surrounding said driving-wheels; a brush having a plurality of segmental sections; a bolt for securing each of said sections to the ring-plate; means on the ring-plate for preventing the brush-sections from turning on said bolt, and means for connecting the head and ring-plate.



4. In a machine of the character described the combination with the driving-wheels, of gears revolved by the rotation of said wheels; a head revolving with one of said gears; a ring-plate having a plurality of perforations and also having a plurality of spring-arms; a brush having a plurality of brush-sections and each section being provided with means at its side with which the spring-arms on the ring-plate engage; a bolt passing through each section and also through a perforation in the ring-plate for holding the sections against the ring-plate, and connections between the head and ring-plate.

822,051. MILK-PAIL. GEORGE A. JONES, Ottawa, Kans. Filed Oct. 11, 1905. Serial No. 282,271.



Claim.—1. A milk-pail having a body presenting a projecting edge and a removable strainer having a lip adapted to project under said edge to retain the same, said strainer having a rim adapted to seat on the edge of said body, and means for retaining said rim.

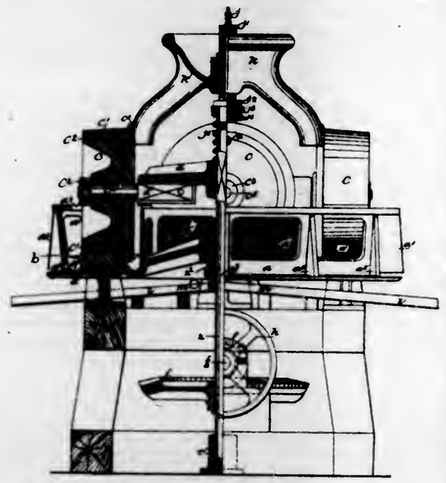
2. A milk-pail having a body presenting a transversely-disposed edge, a strainer having a lip adapted to be thrust under said edge and presenting a rim seating on the edge of said body, and a catch attached to said body opposite said transverse edge and adapted to engage said rim to retain said strainer.

3. A milk-pail having a body with a cowl presenting an edge in substantial alinement with the edge of said body and extending transversely thereof, and a strainer having a lip at its forward edge received under said cowl, said strainer having a rim seating upon the edge of said body, and means for retaining said rim upon said body at a point removed from said cowl.

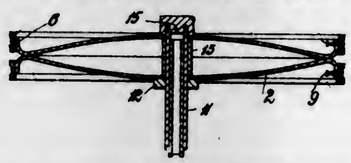
822,052. MACHINE FOR CRUSHING AND AMALGAMATING METALLIFEROUS ORES. HIRAM JONES, Ascot Vale, Victoria, Australia. Filed May 17, 1904. Serial No. 208,436.

Claim.—1. A machine for reducing ores comprising an annular trough, an inclined circular die therein, said trough having discharge-openings on both sides of the die, crushing-rollers running on said die, a central rotating shaft, a carrier mounted on said shaft and having vertical movement thereon and coupling-pins connected to the rollers and having pivotal movement in the carrier.

2. A crushing-machine comprising an annular trough, an inclined circular die therein, channels on each side of said die, said trough having discharge-openings therein on both sides thereof above the channels, crushing-rollers running on said die each roller having a tire thereon provided with a depending flange on one edge, a central rotatable shaft, a carrier having radiating hollow arms mounted to rotate with said shaft, said carrier having vertical movement on said shaft, coupling-pins fitting in said hollow arms and having pivotal movement therein, said pins being connected to the rollers, a spring surrounding said shaft and pressing on the carrier and means for adjusting the tension of the spring.



822,053. PISTON. HORATIO T. JONES, Melbourne, Victoria, Australia, assignor of one-half to John Peter Ludeman, Melbourne, Victoria, Australia. Filed Jan. 27, 1905. Serial No. 242,934.



Claim.—1. An improved piston-head comprising a dished plate, a flange on the outer edge thereof, a packing of felt abutting against and detachably connected to the flange, substantially as set forth.

2. A piston comprising a dished plate, a flange on the outer edge thereof, a packing of felt detachably connected thereto and spring-hoops seated on the edge of the flange and engaging the inner face of the felt, substantially as set forth.

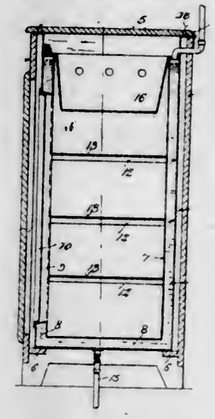
3. A piston comprising a pair of dished plates, flanges thereon respectively bent upwardly and downwardly, and a packing of suitable material abutting against and detachably secured to each plate, substantially as set forth.

4. In a piston, a hollow head comprising a pair of abutting dished plates with an annular felt packing around the flanges thereof and means for drawing the plates toward each other, substantially as set forth.

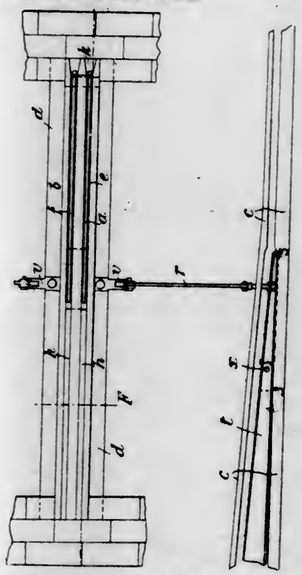
5. A piston comprising a pair of dished-shaped plates, each provided with a flange, a packing abutting against the periphery of the flanges and of greater width, and means for detachably securing the packing to the flanges.

822,054. REFRIGERATING APPARATUS. CHRISTIAN G. KAMBER, Milwaukee, Wis. Filed Sept. 6, 1904. Serial No. 223,314.

Claim.—The hereinbefore-described refrigerating apparatus, comprising an inclosing case of wood or analogous material, open at the bottom and there provided with a skeleton supporting-frame and provided with a hinged door and top; a double-walled sheet-metal refrigerator resting on said frame, and having a front opening covered by a protecting hinged door; and an open top; an ice-box resting on the top of the described double walls, the space between said walls being in communication, at front, back, ends, and bottom; a water-inlet pipe communicating with the top of said double-wall space and a cock-controlled outlet-pipe communicating with the bottom of said space, and there being communicating air-spaces surrounding the sides and ends of said refrigerator, between it and the said inclosing case, and the hinged top having air-openings therethrough communicating with the said air-spaces surrounding said refrigerator.



822,055. TRAMWAY-POINT. WILLIAM KNEEN, London, England. Filed Dec. 27, 1904. Serial No. 238,546.



Claim.—1. In a railway-switch of the character specified, the combination of a two-part jointed switch-rail, the end section thereof having a portion extending beyond the pivot of the joint and adapted to bear against the adjacent track-rail, and means for moving one section of the switch-rail adapted to be actuated from a passing car.

2. In a railway-switch automatically operable from a passing car, the combination of a two-part jointed switch-rail, a lever extending longitudinally of the track and depressible on its pivot or fulcrum, and connections for transmitting movement from said lever to the end section of said switch-rail.

3. In a railway-switch automatically operable from a passing car, the combination of a two-part jointed switch-rail, the end section having a portion extending beyond the pivot of the joint and adapted to bear against the adjacent track-rail, a lever extending longitudinally of the track and depressible on its pivot or fulcrum, and con-

nections for transmitting movement from said lever to the end section of said switch-rail.

4. In combination, a switch-rail, a casting therefor, apertures in the sides and near the base thereof and boxes for receiving the sediment pushed through said apertures, the boxes being fitted with removable interiors fitted with wooden blocks, but leaving spaces for sediment, substantially as hereinbefore set forth.

5. In a railway-switch, the combination with a switch-rail, of a casing therefor having apertures each partly in a side wall and partly in the base of the casing, said apertures being sloped downward and splayed outward, substantially as and for the purpose set forth.

6. In a railway-switch automatically operable from a passing car, the combination of a switch-rail, of two levers extending longitudinally of the track and each depressible on its pivot or fulcrum, and connections for imparting movement from each of said levers to the other and to the switch-rail, whereby depression of one lever elevates the other lever and moves the switch-rail in one direction, and vice versa.

7. In a railway-switch automatically operable from a passing car, the combination of a switch-rail, of two levers extending longitudinally of the track and each depressible at one end on a fulcrum or pivot at its other end, and connections comprising a bell-crank lever and a link between said levers for imparting movement from each of said levers to the other and to the switch-rail, whereby depression of one lever elevates the other lever and moves the switch-rail in one direction, and vice versa

822,056. **PORTABLE SAWING-MACHINE.** HARRY A. KNOX, Springfield, Mass. Filed Mar. 1, 1904. Serial No. 196,030.



Claim.—1. The combination with a band-saw and pulleys supporting the same, of a frame comprising a pair of side rods each supporting one of the pulleys, distancing-rods connecting said side rods and provided with adjusting means whereby the side rods may be moved with relation to each other, and means to permit a movement of the distancing-rods longitudinally of the side rods.

2. In combination with a band-saw and pulleys supporting the same, of a frame comprising a pair of side rods each supporting one of the pulleys, distancing-rods connecting said side rods and provided with adjusting means whereby the side rods may be moved with relation to each other, means to permit a movement of the distancing-rods longitudinally of the side rods, and a motor carried by one of the end rods and geared to the pulley mounted on said rod.

3. The combination with a band-saw and pulleys supporting the same, of a frame comprising a pair of side rods each supporting one of the pulleys, distancing-rods connecting said side rods and provided with adjusting means whereby the side rods may be moved with relation to each other, means to permit a movement of the distancing-rods longitudinally of the side rods, and means for clamping said side and distancing rods to each other.

4. The combination with a band-saw and pulleys supporting the same, of a frame comprising a pair of side rods each supporting one of the pulleys, distancing-rods connecting said side rods and provided with adjusting means whereby the side rods may be moved with relation to each other, means to permit a movement of the distancing-rods longitudinally of the side rods, means comprising a split hub carried by the distancing-rods and receiving the side rods, and means for clamping said hub to said side rods.

5. In a sawing-machine, a portable frame comprising a pair of side rods and a pair of end rods having laterally-adjustable connections with said side rods, a pulley journaled on each side rod, an endless band-saw supported by said pulleys and having different running portions in close proximity and a motor mounted on one of the side rods and having a gear connection with the pulley thereon.

6. In a sawing-machine, a portable frame comprising a pair of side rods, and a pair of end rods having laterally-adjustable connections with said side rods, a pulley journaled on each side rod, an endless band-saw supported by said pulleys and having different running portions in close proximity, a bracket-arm carried by each side rod and extending within the bounds of the frame, and spaced tensioning-rollers carried by each arm, and arranged on opposite sides of the saw-runs, said rollers having peripheral flanges constituting abutments for the rear edge of the saw to prevent lateral thrust.

7. In a sawing-machine, a portable frame comprising a pair of side rods, and a pair of end rods having laterally-adjustable connections, a pulley journaled on each side rod, an endless band-saw supported by said pulleys and having different running portions in close proximity, a bracket-arm carried by each side rod and extending within the bounds of the frame, and an idler-pulley carried by each bracket-arm for maintaining the runs of the saw in facial contact, said idler-pulleys having peripheral flanges constituting abutments for the rear edge of the saw to prevent lateral thrust thereof.

8. The combination with a band-saw arranged with different running portions thereof in proximity, and pulleys supporting the same, of a knockdown frame comprising a pair of side rods for supporting said pulleys, distancing-rods having hubs to receive said side rods, and clamping members for securing said side rods and distancing-rods, together.

9. The combination with a band-saw, and pulleys supporting the same, of a knockdown frame, comprising a pair of side rods for supporting said pulleys, distancing-rods having hubs to receive said side rods, clamping members for securing said side rods and distancing-rods, together, and a motor mounted on one of said rods and connected with one of said pulleys.

10. In a portable sawing-machine, a portable frame comprising in part a pair of side rods, a pulley journaled on each rod, an endless band-saw supported by said pulleys, and a motor mounted on one of the side rods and having a gear connection with the pulley thereon.

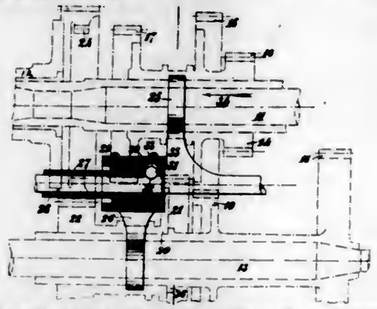
11. In a portable sawing-machine, a portable supporting-frame therefor comprising a pair of side rods and a pair of end rods, a pulley supported by each side rod, an endless band-saw supported by said pulleys and having different running portions in close proximity, a motor supported by one of said side rods, and gearing connecting said motor with the pulley thereon.

822,057. **SYSTEM OF LOCKING.** ARTHUR KREBS, Paris, France, assignor to Société Anonyme des Anciens Etablissements Panhard et Levassor, Paris, France. Filed Oct. 9, 1905. Serial No. 282,066.

Claim.—1. A mechanism of the class described including a movable recessed member, a shiftable member surrounding the movable member and having a recess therein for receiving a displaceable element, a displaceable element in said recess for locking the respective members together, and a fixed member having a recess for receiving the displaceable element when one of the members is actuated.

2. In an interlocking device, a plurality of members movable with respect to one another, a fixed member, each of the said members provided with recesses, and a displaceable element mounted to move with said movable members for locking the same together when one of said members is shifted.

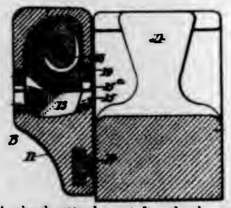
3. In mechanism of the class described, a plurality of shiftable members arranged one within the other, each provided with recesses adapted to be brought in register with one another, a displaceable element of a greater diameter than the depth of the recesses for locking the movable members together, and a fixed member having a recess for receiving the displaceable element when one of the members is moved in one direction.



4. In mechanism of the class described, a shiftable recessed member, a recessed member surrounding the said movable member and adapted for movement on the same, a displaceable element mounted in the recess of the last-mentioned member for locking the respective members together when either of the same are actuated in one direction, and a fixed member having a recess for receiving the displaceable element when one of the members is moved in an opposite direction.

5. In a gear-changing mechanism, a recessed shiftable rod, a movable member surrounding the same and having a recess adapted to be brought into register with the recess in the rod, a ball of greater diameter than the thickness of the member mounted in the recess of the latter for locking the rod to the said member when the recesses are in register with one another, and a fixed member having a recess adapted to register with the recesses in the respective rod and said member for receiving the ball and for locking said member against movement when the rod is moved in one direction.

822,058. **CHECK ATTACHMENT FOR PULLEYS AND CHOCKS.** RUDOLPH KURELLA, Brooklyn, N. Y. Filed July 7, 1905. Serial No. 268,689.



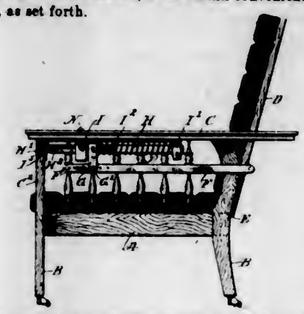
Claim.—1. A check attachment for chocks and pulleys, comprising a body provided with a chamber having one of its walls concaved, a fan-shaped cam mounted to turn in the said chamber, which cam at its longest peripheral portion is provided with serrations and is provided at its pivot portion with a peripheral groove, and means for turning the cam.

2. A check attachment for pulleys and chocks, which check attachment consists of a body having opposing openings and a chamber in communication with said openings, the chamber being provided with a concaved rear wall forming a continuation of the corresponding walls of the openings, the said chamber being provided at its concaved portion with a longitudinal groove in communication with the end openings, a shaft mounted to turn in the said chamber, a cam secured on the shaft within the chamber, which cam is provided with serrations at the point farthest away from the shaft, and with a peripheral groove adjacent to the connection of the said cam with the shaft, and a handle for the said shaft, whereby to turn the same.

822,059. **RECLINING-CHAIR.** JOHN LANDAU, New York, N. Y., assignor to Ferdinand Fraas and George C. Miller, Brooklyn, N. Y. Filed Sept. 20, 1905. Serial No. 279,253.

Claim.—1. An operating mechanism for the back of a reclining-chair, comprising a notched bar mounted to slide longitudinally on the under side of the arm-rest of the chair, bearings in which said bar

slides, a spring pressing the bar in a forward direction, and a locking and releasing device for the said bar, mounted on one of said bearings, and having a button extending to the top face of the arm-rest near the forward end thereof, to be within convenient reach of the operator, as set forth.



2. An operating mechanism for the back of a reclining-chair, comprising bearings adapted to be secured to the under side of the arm-rest of the chair, a notched bar mounted to slide lengthwise in said bearings, a spring pressing the bar in a forward direction, a link connecting the said bar with the hinged back of the reclining-chair, and a locking and releasing device for the said bar, consisting of a spring-pressed catch mounted to slide up and down in one of said bearings, and having a lug for engaging one of the notches on the said sliding bar and a button on the catch, extending through an opening in the arm-rest to the top thereof, to be within convenient reach of the user of the chair, as set forth.

3. An operating mechanism for the back of a reclining-chair, comprising depending bearings on the under side of the arm-rest of the chair, a notched bar mounted to slide lengthwise in said bearings, a spring pressing the bar in a forward direction, a link connecting the said bar with the hinged back of the reclining-chair, and a locking and releasing device for the said bar, consisting of a spring-pressed catch mounted to slide up and down in one of said bearings and having a lug for engaging one of the notches on the said sliding bar and a button on the catch, extending through an opening in the arm-rest to the top thereof, to be within convenient reach of the user of the chair, the said button being held vertically adjustable to fit different thicknesses of arm-rests, as set forth.

4. An operating mechanism for the hinged back of a reclining-chair, comprising a plate secured to the under side of the arm-rest of the reclining-chair, the plate being provided with depending bearings, a bar mounted to slide in the said bearings, lengthwise of the arm-rest and having spaced notches on the under side, a link connecting the bar with the said hinged back, a spring pressing the bar in a forward direction, and a locking and releasing device for the said bar, mounted on one of the bearings, to engage one of the notches in the said bar, the said device having a button extending through an opening in the arm-rest to the top thereof, as set forth.

5. An operating mechanism for the hinged back of a reclining-chair, comprising a plate adapted to be secured to the under side of the arm-rest of the reclining-chair, a stop-plate hinged to the forward end of the said plate and adapted to be fastened to the front upright for the arm-rest, bearings depending from the said plate, a bar mounted to slide in bearings, lengthwise of the arm-rest and adapted to abut against said stop-plate, a link connecting the said bar with the hinged back, and a spring pressing the bar in a forward direction, as set forth.

6. An operating mechanism for the hinged back of a reclining-chair, comprising a plate adapted to be secured to the under side of the arm-rest of the reclining-chair, a stop-plate hinged to the forward end of the said plate and adapted to be fastened to the front upright for the arm-rest, bearings depending from the said plate, a bar mounted to slide in bearings, lengthwise of the arm-rest and adapted to abut against said stop-plate, a link connecting the said bar with the hinged back, a spring pressing the bar in a forward direction, and a locking and releasing device for the said bar, mounted on one of the bearings, to engage one of a series of notches in the said bar, the said device having a button extending through an opening in the arm-rest to the top thereof, as set forth.

7. An operating mechanism for the back of a reclining-chair, comprising bearings on the under side of the arm-rests for the chair, the rear bearing carrying a friction-roller in its bottom and the forward bearing carrying a transverse pin, a bar having an elongated slot in its forward end, through which extends the said pin, the rear

end of the said bar traveling on the said friction-roller, the bar being provided at its under side with spaced notches, an arm depending from the bar, between the said bearings and connected by a link with the hinged chair-back, a spring coiled on the bar and abutting with one end on the rear bearing and at its forward end on the said arm, to press the bar in a forward direction, a catch mounted to slide vertically in the forward bearing and having a lug at its bottom for engaging one of the notches in the said bar, a spring interposed between the bottom of the bearing and the bottom of the catch, and a button pivotally connected with the said catch, at the top thereof, and fitted to slide in a bearing in the arm-rest, the top of the button extending above the top face of the arm-rest, as set forth.

8. An operating mechanism for the back of a reclining-chair, comprising bearings on the under side of the arm-rests for the chair, the rear bearing carrying a friction-roller in its bottom and the forward bearing carrying a transverse pin, a bar having an elongated slot in its forward end, through which extends the said pin, the rear end of the said bar traveling on the said friction-roller, the bar being provided at its under side with spaced notches, an arm depending from the bar, between the said bearings and connected by a link with the hinged chair-back, a spring coiled on the bar and abutting with one end on the rear bearing and at its forward end on the said arm, to press the bar in a forward direction, a catch mounted to slide vertically in the forward bearing and having a lug at its bottom for engaging one of the notches in the said bar, a spring interposed between the bottom of the bearing and the bottom of the catch, and a button pivotally connected with the said catch, at the top thereof, and fitted to slide in a bearing in the arm-rest, the top of the button extending above the top face of the arm-rest, and the said button being vertically adjustable, to suit different thicknesses of arm-rests, as set forth.

9. An operating mechanism for the hinged back of a reclining-chair, comprising a longitudinally-movable notched bar arranged lengthwise beneath the arm-rest of the chair, the said bar being provided with an elongated slot at one end, a connection between said bar and the back of the chair, a fixed pin extending through the slot in the end of the bar, a support on which the other end of the bar is mounted to travel, a spring pressing the bar in a forward direction, a catch having a vertical elongated slot through which extends the said fixed pin, and a spring for normally holding said catch in engagment with the notched bar.

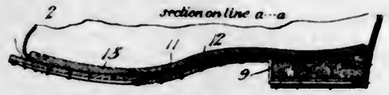
10. An operating mechanism for the hinged back of a reclining-chair, comprising a notched bar extending longitudinally on the under side of the arm-rest of the chair, the said bar having an elongated slot in its forward end, a link connecting said bar with the back of the chair, a fixed pin extending through said slot, a support on which the rear end of the bar travels, a spring pressing the bar in a forward direction, a catch having a vertical elongated slot through which extends the said fixed pin, a spring for normally holding the catch in an uppermost position, the said catch having a lug at its bottom for engaging one of the notches in the said bar, and a button on the catch extending to the top face of the arm-rest near the forward end thereof, as set forth.

822,060. EMBROIDERY-SILK HOLDER. JAMES J. LAWLER, Winsted, Conn., assignor to Winsted Silk Company, West Winsted, Conn. Filed Sept. 27, 1905. Serial No. 280,327.



Claim.—An embroidery-silk holder, comprising a strip of cardboard or the like, provided at one end with an aperture having a slot leading therefrom to the edge of the strip, and having at the other end a pair of spaced apertures provided with slots leading therefrom to the adjacent edge of the end of the strip, said slots converging toward the end of the strip whereby to facilitate the placing of a loop of silk within the spaced apertures.

822,061. SHOE. JAMES H. LEE, Carbon Hill, Ala. Filed Oct. 7, 1905. Serial No. 281,815.



Claim.—A shoe comprising an upper, a sole and a heel, a protecting-strip applied to the outer face of and marginally around the sole, said strip being extended down the breast of the heel and marginally around the latter and having its ends attached to the heel at the rear of the latter, strengthening-strips applied to the inner face of the sole at the shank portion of the sole and to overlie the adjacent portions of the protecting-strip, and fastening members extended through the protecting-strip and sole at the shank portion of the latter and engaged at their inner ends with the strengthening-strips.

822,062. LOCK. RALPH L. MACDONALD, Niagara Falls, N. Y. Filed Aug. 27, 1904. Serial No. 223,416.



Claim.—1. The combination in a lock, of an inclosing shell composed of a continuous side piece, a bottom plate, a top plate and an end plate, said side piece being extended beyond the shell to form an open loop, a sliding bolt in the shell adapted to move through an end opening in the shell within the loop toward and from said loop and a lever journaled in the shell to engage with the bolt, said shell being provided with a keyhole for an unlocking-key.

2. The combination in a lock of an elongated metallic inclosing shell composed of a continuous side plate, a top plate, a bottom plate and end plates, said side plate being extended beyond the shell to form an open loop at one end, the shell being provided at the opposite end with an extension by which the shell is secured in position, a sliding bolt, slotted at its outer end and arranged in the shell, and a lever journaled in the shell and adapted to engage with an inclined surface on the bolt.

3. In a lock, the combination with a metallic shell having the sides extended to form a loop at one end, a bolt in the shell adapted to slide to and from the loop, and a lever arranged in the shell and adapted to engage the bolt.

4. In a lock, the combination with a metallic shell having the sides formed of a single piece extended at one end to form an open loop, of a bolt in the shell adapted to move into and out of engagement with the loop, and a lever journaled in the shell and adapted to engage with the bolt to maintain said bolt in locked position, the shell being provided with a keyhole for a key to engage with the lever.

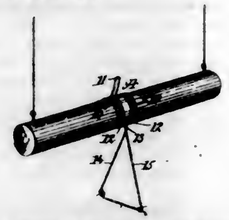
5. In a lock, the combination with a flat elongated shell, of greater width than thickness, having an integral open loop on one end, a bolt arranged in the shell and adapted to slide freely therein to coöperate with the loop, a lever journaled in the shell to engage with the bolt, and a spring to engage with the moving parts to retain the bolt in closed position in engagement with the loop, substantially as described and shown.

6. The combination in a lock for arc-lamp cables, with a metallic shell, having an open loop at one end of the shell and extensions at the opposite end, of an insulating-piece secured between the extensions for the attachment of the cable, a bolt in the shell adapted to slide out through an end opening into the loop and means to retain the bolt in closed position.

7. The combination in a lock for arc-lamp cables, of a metallic shell, having the sides of the shell formed of a single piece extended at one end into an open loop and at the other end into parallel extensions, with a porcelain roller journaled between said extensions for the attachment of the cable, a bolt arranged in the shell and adapted to slide toward and from the loop, and a lever journaled in the shell to engage with the bolt and maintain it in closed position, substantially as described.

8. In a lock, the combination with an elongated metallic inclosing shell, extended at one end to form an integral loop, of a bolt in the shell adapted to be moved toward and from the loop in the axis of the shell, a lever pivoted in the shell to swing into engagement with a portion of the bolt and hold it in closed position, and a spring engaging with one of the moving parts and tending to hold the bolt closed.

822,063. HOLDER. JOHN P. MERLINE, Oconto, Wis. Filed May 17, 1905. Serial No. 260,906.



Claim.—1. A holder formed from a single piece of material and comprising a supporting portion having laterally-extending means for engaging a support, and a central upwardly-projecting member adapted to be grasped to apply or remove the holder, and a carrier projecting from the supporting portion and having separated members.

2. A holder comprising a supporting portion having laterally-extended means for engaging a support, a projecting member on said supporting portion adapted to be grasped to apply or remove the holder, carrier-arms diverging from the supporting portion, a carrier-bar movably mounted upon one of the arms, and an engaging device for the carrier-bar mounted upon the other arm.

3. A holder comprising a series of alternate oppositely-extending spring supporting members, carrier-arms projecting from the outer members, and a carrier-bar connecting the arms.

4. A holder comprising a series of alternate oppositely-extending spring supporting members, carrier-arms projecting from the outer members, and a carrier-bar having spring connection with one arm and separable connection with the other.

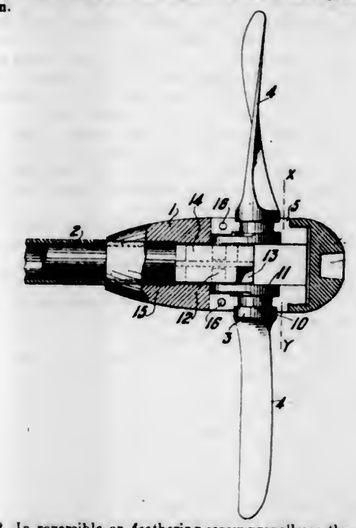
5. A holder comprising a series of alternate oppositely-extending spring supporting members, a portion of said members extending outwardly from their companions to furnish an engaging portion, carrier-arms projecting from the outer members, and a carrier-bar connecting the arms.

6. A holder comprising a series of alternate oppositely-extending spring supporting members, overlapping carrier-arms projecting from the outer members forced toward one another at the point of overlapping by the tension of the supporting members, and a carrier-bar connecting the arms.

7. A holder comprising a curved supporting portion having laterally-extended means for engaging a support, and an upwardly-extending central member adapted to be grasped to apply or remove the holder, diverging carrier-arms extending downward from the lower end of the supporting portion at the center thereof, and a carrier-bar arranged to connect the arms.

822,064. REVERSIBLE OR FEATHERING SCREW-PROPELLER. HARRY K. MILHAM, Twickenham, England. Filed Dec. 21, 1905. Serial No. 292,729.

Claim.—1. In reversible or feathering screw-propellers; the combination with propeller-blades having spindle ends, and a hollow hub to receive the spindle ends of said blades said hub having an aperture through its wall extending forwardly from the rear end of same, the planes of the longitudinal edges of the wall of said hub at said aperture containing the axes of said blades said edges each having a semicircular recess at said axes adapted to receive half of a blade-spindle, and the forward edge of the wall of said aperture being inclined rearwardly; of a removable cover for said aperture, the longitudinal edges of said cover having semicircular recesses each adapted to embrace the remaining half of each blade-spindle, the forward edge of said cover being formed to contact and interlock with the forward edge of the wall of the hub at said aperture, means for detachably securing the rear end of the cover to the hub, mechanism contained within the hub for adjusting the blades about their axes, a tubular driving-shaft to carry the hub, and a rod passing through the driving-shaft for operating the blade-adjusting mechanism.



2. In reversible or feathering screw-propellers; the combination with propeller-blades having spindle ends, and a hollow hub to receive the spindle ends of said blades, said hub being open at its rear end and having an aperture extending from the rearward open end forwardly beyond the propeller-blade spindles, the longitudinal edges of the wall of said hub at such aperture having each a half-bearing to embrace half a blade-spindle, and the curved edge of the hub at the forward end of such aperture being inclined rearwardly; of a removable cover for closing the aperture, said cover having longitudinal edges contacting with the longitudinal edges of the hub-aperture and having at each of said longitudinal edges a half-bearing to embrace the remaining half of each blade-spindle, the forward end of the cover being formed to contact and interlock with the rearwardly-inclined forward edge of the hub-aperture, an end cap for closing the rear open end of the hub and overlying the rear end of the cover to hold the latter in place, means for detachably fixing said end cap in position, mechanism contained within the hub for adjusting the blades about their axes, a tubular driving-shaft to carry the hub and a rod passing through the driving-shaft for operating the blade-adjusting mechanism substantially as set forth.

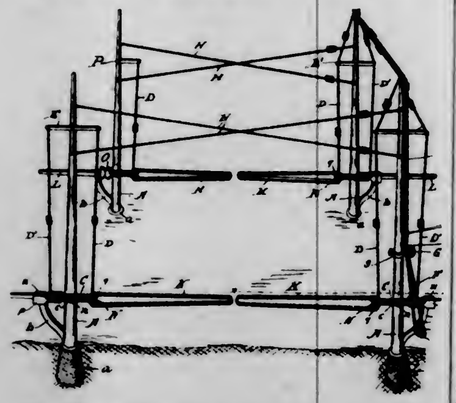
3. In reversible or feathering screw-propellers; the combination with radial propeller-blades having spindle ends, and a hollow hub to receive the spindle ends of said blades said hub being open at its rear end and having an aperture extending from the rearward open end forwardly beyond the propeller-blade spindles, the longitudinal edges of the wall of said hub at such aperture having each a half-bearing to embrace half a blade-spindle, the curved edge of the hub at the forward end of such aperture being inclined rearwardly, and the open end of the hub being formed with a screw-thread; of a removable cover for closing the aperture, the said cover having longitudinal edges contacting with the longitudinal edges of the hub-aperture and having at each of said longitudinal edges a half-bearing to embrace the remaining half of each blade-spindle, the forward end of the cover being formed to contact and interlock with the rearwardly-inclined forward edge of the hub-aperture, an end cap for closing the rear open end of the hub having a screw-thread formed at its interior forward edge to engage the screw-thread on the rearward end of the hub and overlying the rear end of the cover when screwed up to hold the latter in place, mechanism contained within the hub for adjusting the blades about their axes, a tubular driving-shaft to carry the hub, and a rod passing through the driving-shaft for operating the blade-adjusting mechanism substantially as set forth.

4. In reversible or feathering screw-propellers; the combination with propeller-blades having spindle ends, and a hollow hub to receive the spindle ends of said blades said hub having an aperture through its wall extending forwardly from the rear end of same, the longitudinal edges of said hub at such aperture having each a half-bearing to embrace half a blade-spindle, the curved edge of the hub at the forward end of such aperture being inclined rearwardly, a removable cover for closing the aperture having longitudinal edges contacting with the longitudinal edges of the hub-aperture and hav-

ing at each of said longitudinal edges a half-bearing to embrace the remaining half of each radial blade-spindle, the forward end of the cover being formed to contact and interlock with the rearwardly-inclined forward edge of the hub-aperture, means for detachably securing the rear end of the cover to the hub, and a guideway within the hub extending longitudinally thereof; of a crank upon each blade-spindle within the hollow of the hub, a block located in the guideway within the hub said block having an inclined groove formed on one of its faces and an oppositely-inclined groove upon its opposite face, means for longitudinally reciprocating the block, a pin on the crank of each blade-spindle entering a groove in the block, and means for reciprocating the block within the hub for adjusting the blades about their axes substantially as set forth.

5. In reversible or feathering screw-propellers; the combination with radial propeller-blades having spindle ends, and a hollow hub to receive the spindle ends of said blades, said hub being open at its rear end and having an aperture extending from the rearward open end forwardly beyond the propeller-blade spindles, the longitudinal edges of the wall of said hub at such aperture having each a half-bearing to embrace half a blade-spindle, the curved edge of the hub at the forward end of such aperture being inclined rearwardly, the rear end of the hub being formed with a screw-thread, a removable cover for closing the hub-aperture, said cover having longitudinal edges contacting with the longitudinal edges of the hub-aperture and having at each of said longitudinal edges a half-bearing to embrace the remaining half of each radial blade-spindle, the forward end of the cover being formed to contact and interlock with the rearwardly-inclined forward edge of the hub-aperture, and an end cap for closing the rear open end of the hub having a screw-thread formed at its interior forward edge to engage the screw-thread on the rearward end of the hub and overlying the rear end of the cover when screwed up to hold the latter in place, and a guideway within the hub extending longitudinally thereof, of a crank upon each blade-spindle within the hollow of the hub, a block located in the guideway within the hub, said block having an inclined groove formed on one of its faces and an oppositely-inclined groove upon its opposite face, a pin on the crank of each blade-spindle entering a groove in the block, a tubular driving-shaft to carry the hub, and an operating-rod passing through the driving-shaft and connected to the block for reciprocating the latter to adjust the blades about their axes substantially as set forth.

822,065. RAILROAD-GATE. WILLIAM W. MOORE, Lansing, Mich. Filed June 1, 1905. Serial No. 263,317.



Claim.—1. In combination, vertical towers, gates pivotally mounted on said towers and near the base thereof, rotatable members pivotally mounted on said towers and near the top thereof, links connecting opposite extremities of said rotatable members with said gates, and means for revolving said members on their mountings.

2. In combination with towers, gates pivotally mounted near the base of said towers, four-armed levers pivotally mounted near the top of said towers, links connecting two opposite arms of said levers with said gates and the other arms of said levers with the corresponding arms of the levers on the opposite towers, pulleys at the top of one or more of said towers, chains passing over said pulleys and connecting with the opposite arms of one of the before-mentioned four-armed levers and means for producing a tractional tension in said cords.

3. In combination with towers, gates pivotally mounted near the base of said towers, rotatable members pivotally mounted near the top of said towers, links connecting two opposite extremities of said members with said gates and means for revolving said members on their pivoted mountings.

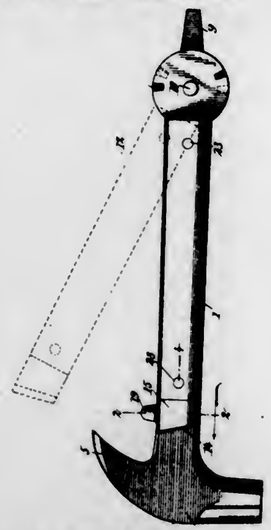
4. In combination with a pair of oppositely-disposed gates, rotatable members, connection between said gates and opposite extremities of said rotatable members and means for actuating said rotatable members for operating the gates equally and simultaneously.

5. In combination with towers, gates pivotally mounted near the base of said towers, four-armed levers pivotally mounted near the top of said towers, links connecting two opposite arms of said levers with said gates, cross connections between the other arms of said levers and means for revolving said four-armed levers.

6. In combination with towers, gates pivotally mounted near the base of said towers, levers pivotally mounted near the top of said towers, pulleys at the top of said towers, flexible instrumentalities passing over said pulleys and connecting with the horizontal extremities of said levers, links connecting said extremities with said gates, and means for producing tractional tension in said flexible instrumentalities.

7. In combination with towers, gates pivotally mounted near the base of said towers, guides mounted near the top of one or more of said towers, rotatable members pivotally mounted below said guides, flexible connections passing over said guides and connecting with two opposite extremities of said rotatable members and levers connecting the other two extremities of said rotatable members with the corresponding extremities of the rotatable member of the opposite tower.

822,066. COMBINATION-TOOL. SAMUEL MORKERT, Querida, Colo. Filed May 20, 1905. Serial No. 261,349.

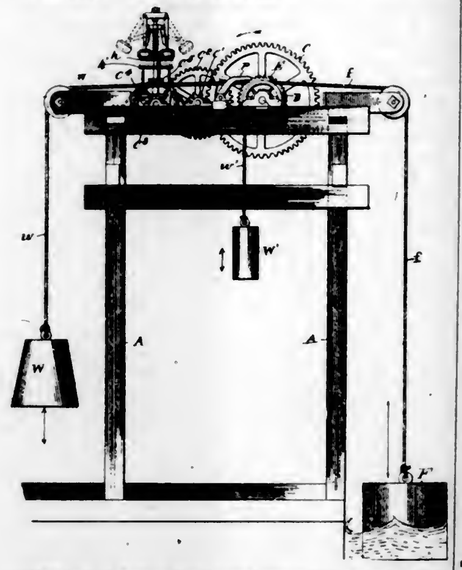


Claim.—1. A hammer having a shank with a flat side face and a rounded side face, a movable section pivoted on said shank against said flat face and sliding laterally across the same, said section having a rounded outer face and coöperating with said shank to form a handle, said shank and said section having coöperating edges constituting a wire-cutter, and a catch for securing said section to said shank.

2. A hammer having a head and a shank with a flat side face lying in substantially the same plane with the axis of said head, a movable section pivoted against said flat side face near the extremity of said shank remote from said head, said movable section and said shank having coöperating edges constituting a wire-cutter, said shank having a shoulder in the path of said movable section when swinging in the direction in which the hammer strikes, and a catch on said handle for retaining said movable section against said shoulder.

3. A hammer having a head and a shank, a movable section pivoted to said shank at the extremity remote from said head and coöperating with said shank to form a complete handle for said hammer, said movable section and shank having coöperating edges constituting a wire-cutter, said shank having an inclined shoulder in the path of the extremity of said movable section when rotated on its pivot in the direction in which said hammer strikes, said movable section having an inclined extremity engaging said shoulder, and a catch on said handle for retaining said movable section against said shoulder.

822,067. WAVE-MOTOR. DANIEL H. MOWEN, Myersville, Md. Filed Sept. 21, 1905. Serial No. 279,528.



Claim.—1. A wave and tide motor, comprising a float, a flexible connection for the same, an oscillating drum having said flexible connection wound thereon, a weight with a flexible connection wound upon the drum in opposite directions to that of the float, a main actuating-weight with flexible connection, an oscillating drum receiving the same, means for transferring the oscillations of the first-named drum to the second oscillating drum, and means for converting the oscillations of the second drum into continuous rotary motion.

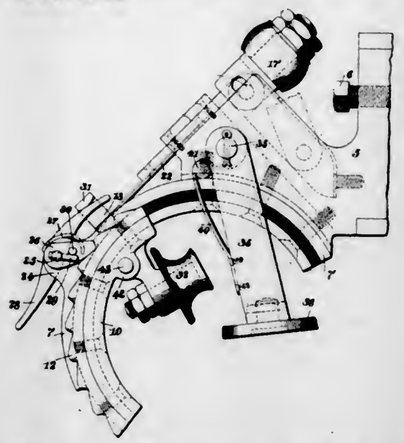
2. A wave and tide motor, comprising a float, a flexible connection for the same, an oscillating drum having said flexible connection wound thereon, a weight with a flexible connection wound upon the drum in opposite directions to that of the float, a main actuating-weight with flexible connection, an oscillating drum receiving the same, means for transferring the oscillations of the first-named drum to the second oscillating drum, means for converting the oscillations of the second drum into continuous rotary motion, and a governor for regulating the speed.

3. A wave and tide motor comprising a float, a flexible connection for the same, an oscillating drum having said flexible connection wound thereon, a weight with a flexible connection wound upon the drum in opposite directions to that of the float, a main actuating-weight with flexible connection, an oscillating drum receiving the same, means for transferring the oscillations of the first-named drum to the second drum consisting of a ratchet-wheel fixed to the first drum, an independent ratchet-wheel bearing pawls engaging the first-named ratchet-wheel and bearing also a concentric bevel-gear, a detent and means for converting the oscillations of the second drum into continuous rotary motion consisting of one or more radially-arranged bevel-gears housed in the second drum and engaging on one side the bevel-gear of the ratchet-wheel and a sleeve having a bevel-gear engaging the opposite side of the housed bevel-gear and actuated thereby with an accelerated speed.

4. A wave and tide motor, comprising a shaft, a loose drum thereon, a float and an oppositely-acting weight with cords wound on said drum for storing up the power, a second drum on the same shaft, a main weight with cord wound on said second drum for receiving the stored-up power and means for converting the gravitating movements of the main weight into continuous rotation.

5. A wave and tide motor, comprising a float and an oppositely-acting weight with cords, an oscillating drum having rigidly-attached ratchet-wheel, a juxtaposed ratchet-wheel with a pawl on one side engaging the first-named ratchet-wheel, and a concentric bevel-gear on the other side, a detent for the pawl-carrying ratchet-wheel, a loose drum arranged beside the pawl-carrying ratchet-wheel and having one or more radially-arranged and housed bevel-gears engaging the bevel-gear of the ratchet-wheel, a main weight with cord wrapped around said last-named drum and a second bevel-gear engaging the housed bevel-gears and deriving therefrom a continuous rotation.

822,068. MACHINE FOR CRIMPING OR BENDING THE ENDS OF CYLINDERS FORMED OF PLASTIC OR FLEXIBLE MATERIAL. ARTHUR J. MOXHAM, Wilmington, Del. Filed May 25, 1905. Serial No. 262,142.



Claim.—1. In a crimping-machine, in combination, a rotary spindle, a frame secured to rotate with said spindle, a slide having a rack supported on and movable along said frame, an operating-pawl for said rack, and means to operate said pawl at each revolution of the spindle to advance the slide the distance of one tooth and a crimping-roller carried by said slide.

2. In a crimping-machine, in combination, a rotary spindle, a frame secured to rotate with said spindle, a slide having a rack supported on and movable along said frame, an operating-pawl for said rack, and means to operate said pawl at each revolution of the spindle to advance the slide the distance of one tooth, a crimping-roller carried by said slide, and a backing-roller adapted to coöperate with said crimping-roller.

3. In a crimping-machine, in combination, a rotary spindle, a frame secured to rotate with said spindle, a slide supported by and movable along said frame, means to move said slide, a crimping-roller carried by said slide, and a backing-roller, a pivotal support for said backing-roller, said support being in line of movement of said crimping-roller slide.

4. In a crimping-machine, in combination, a rotary spindle, a frame secured to rotate with said spindle, a slide supported by and movable along said frame, means to move said slide, a crimping-roller carried by said slide and a backing-roller adapted to coöperate with said crimping-roller.

5. In a crimping-machine, in combination, a frame, means to rotate said frame, a slide supported by and movable along said frame, a crimping-roller supported by said slide and means to move said slide.

6. In a crimping-machine, in combination, a frame, means to rotate said frame, a slide supported by and movable along said frame, means to give said slide a step-by-step movement along said frame, and a crimping-roller supported by said slide.

7. In a crimping-machine, in combination, a frame, means to rotate said frame, a slide supported by and movable along said frame, means to give said slide a step-by-step movement along said frame, a crimping-roller supported by said slide, and a backing-roller adapted to coöperate with said crimping-roller.

8. In a crimping-machine, in combination, a frame, means to

rotate said frame, a slide supported by and movable along said frame, a crimping-roller supported by said slide, a backing-roller a pivotal support for said backing-roller, said support being in line of movement of said slide.

9. In a crimping-machine, in combination, a frame, means to rotate said frame, a slide supported by said frame, means to move said slide along said frame a crimping-roller supported by said slide, and a backing-roller adapted to cooperate with said crimping-roller.

10. In a crimping-machine, in combination, a rotary spindle, a frame secured to rotate with said spindle, a slide having two racks, supported so as to be movable along said frame, an operating-pawl for one rack and a holding-pawl for the other rack, means to operate said operative pawl at each revolution of the spindle and a crimping-roller carried by said slide.

11. In a crimping-machine, in combination, a rotary spindle, a frame secured to rotate with said spindle, a slide, having two racks, supported so as to be movable along said frame, an operating-pawl for one rack and a holding-pawl for the other rack, means to operate said operative pawl at each revolution of the spindle, means to simultaneously release said operating and holding pawls and a crimping-roller carried by said slide.

12. In a crimping-machine, in combination, a rotary spindle, a frame and operating-pawl rotatable with said spindle, a slide, having two racks supported so as to be movable along said frame, a spring tending to move the pawl in one direction, a projection on the machine, adapted in the revolution of the pawl to move the pawl in the opposite direction and a crimping-roller carried by said slide.

13. In a crimping-machine, in combination, a rotary spindle, a frame and operating-pawl rotatable with said spindle, a slide, having two racks, supported so as to be movable along said frame, a spring tending to move the pawl in one direction, a projection on the machine, adapted in the revolution of the pawl to move the pawl in the opposite direction, and a holding-pawl for the other rack and a crimping-roller carried by said slide.

14. In a crimping-machine, in combination, a rotary spindle, a frame and operating-pawl rotatable with said spindle, a slide, having two racks, supported so as to be movable along said frame, a spring tending to move the pawl in one direction, a projection on the machine, adapted in the revolution of the pawl to move the pawl in the opposite direction, a holding-pawl for the other rack, means to simultaneously release said operating and holding pawls and a crimping-roller carried by said slide.

15. In a crimping-machine, in combination, a rotary spindle, a frame secured to rotate with said spindle, a slide, having a rack supported so as to be movable along said frame, an operating-pawl, a pivoted lever, said operating-pawl being in line of movement of said lever, whereby, when said lever is operated, said pawl is moved from operative position with reference to its rack and a crimping-roller carried by said slide.

16. In a crimping-machine, in combination, a rotary spindle, a frame and operating-pawl rotatable with said spindle, a slide, having two racks, supported so as to be movable along said frame, said operating-pawl coacting with one rack and a holding-pawl for the other rack, means to operate said operative pawl at each revolution of the spindle, a pivoted lever, said operating-pawl being in line of movement of said lever, a trip movable with said lever, a pin carried by said holding-pawl in line of movement of said trip whereby, when said lever is operated, said operating and holding pawls are released from operative position with respect to their racks and a crimping-roller carried by said slide.

17. In a crimping-machine, in combination, a rotary spindle, a frame secured to rotate with said spindle, a slide supported by and movable along said frame, a crimping-roller carried by said slide, a backing-roller a pivoted support for said backing-roller, said support being in line of movement of said crimping-roller slide, and a spring for holding in and returning said backing-roller to operative position.

18. In a crimping-machine, in combination, a frame, means to rotate said frame, a slide supported by and movable along said frame, a crimping-roller supported by said slide, a backing-roller, a pivoted support for said backing-roller, said support being in line of movement of said slide, and a spring for holding in, and returning said backing-roller to operative position.

19. In a crimping-machine, in combination, a rotary spindle, a frame secured to rotate with said spindle, a slide supported by and movable along said frame, a crimping-roller carried by said slide, a backing-roller, a pivoted support for said backing-roller, said support being in line of movement of said crimping-roller slide, a table or support upon which the keg or vessel to be crimped is adapted to be placed, means to elevate and depress said table, said crimping and backing rollers in the elevated position of the table or support being in line respectively with the upper exterior and upper interior of the vessel.

20. In a crimping-machine, in combination, a rotary spindle, a frame secured to rotate with said spindle, a slide supported by and movable along said frame, a crimping-roller carried by said slide, a backing-roller a pivoted support for said backing-roller, said support being in line of movement of said crimping-roller slide, a table or support upon which the keg or vessel to be crimped is adapted to be placed, means to elevate and depress said table said crimping and backing rollers in the elevated position of the table or support being in line with the upper exterior of the vessel, and a shield adapted to surround the vessel up to the crimping-line.

21. In a crimping-machine, in combination, a frame, means to rotate said frame, a slide supported by and movable along said frame, means to give said slide a step-by-step movement along said frame, a crimping-roller supported by said slide, a table or support upon which the keg or vessel to be crimped is adapted to be placed, means to elevate and depress said table said crimping-roller in the elevated position of the table or support being in line with the upper exterior of the vessel.

22. In a crimping-machine, in combination, a frame, means to rotate said frame, a slide supported by and movable along said frame, means to give said slide a step-by-step movement along said frame, a crimping-roller supported by said slide, a table or support upon which the keg or vessel to be crimped is adapted to be placed, means to elevate and depress said table said crimping-roller in the elevated position of the table or support being in line with the upper exterior of the vessel and a shield adapted to surround the vessel up to the crimping-line.

23. In a crimping-machine, in combination, a frame, means to rotate said frame, a slide supported by and movable along said frame, a crimping-roller supported by said slide, a backing-roller a pivoted support for said backing-roller, said support being in line of movement of said slide, a table or support upon which the keg or vessel to be crimped is adapted to be placed, means to elevate and depress said table said crimping and backing rollers in the elevated position of the table or support being in line respectively with the upper exterior and the upper interior of the vessel.

24. In a crimping-machine, in combination, a frame, means to rotate said frame, a slide supported by and movable along said frame, a crimping-roller supported by said slide, a backing-roller a pivoted support for said backing-roller, said support being in line of movement of said slide, a table or support upon which the keg or vessel to be crimped is adapted to be placed, means to elevate and depress said table said crimping and backing rollers in the elevated position of the table or support being in line respectively with the upper exterior and the upper interior of the vessel, and a shield adapted to surround the vessel up to the crimping-line.

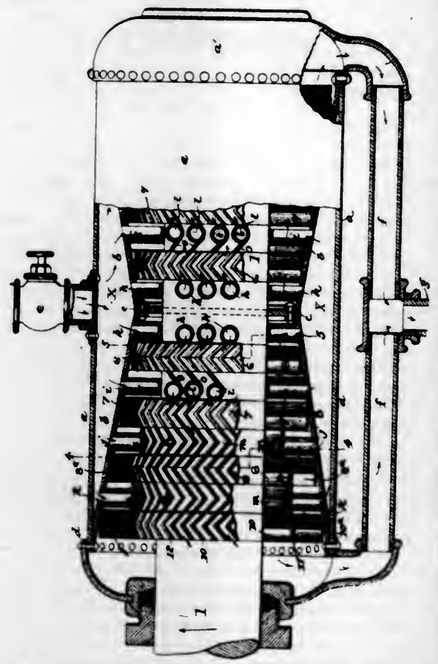
822,069. TURBINE. GEORG L. MUNDIGLER, Milwaukee, Wis. Filed Mar. 7, 1906. Serial No. 304,721.

Claim.—1. In a turbine of the class indicated, the combination with a rotary shaft and an outer casing, of an inner casing of conical form, the two casings being rigidly connected and a free steam-space intervening them, a series of steam-inlet tubes attached to and arranged radially in circular rows in the inner casing and provided with openings in the outer side, and a series of radial blades fixed on the shaft and intervening such tubes, substantially as described.

2. In a turbine of the class indicated, the combination with a rotary shaft having a series of radial blades, and an outer casing, of an inner casing of conical form, the two casings being separated to provide a steam-space, a series of steam-inlet tubes attached to and arranged radially within the inner casing, and provided with tangential lateral guides, substantially as described.

3. The combination with a rotary shaft having a series of radial blades, and an outer casing, of an inner casing having a double conical form and its enlarged ends being secured to the outer casing, an annular partition separating the inner casing-sections from each other, a series of steam-inlet tubes arranged radially in and secured to the inner casing, and provided with openings in their outer sides and tangential flanges on their rear or inner sides, substantially as described.

4. The combination with a rotary shaft having circumferential rows of blades, and an outer casing, of an inner casing having a conical form and secured to the outer casing, and a space intervening them for free admission of steam, a series of steam-inlet tubes attached to and arranged within the inner casing and provided with openings in their outer sides which are adjacent to the rows of shaft-blades, the shaft being of uniform diameter and the steam admitted at the several points by the several series of tubes passing axially and gradually expanding between the shaft and the gradually-enlarging space provided by the conical form of the casing, substantially as set forth.



5. The combination with a rotary shaft having a uniform diameter and the several series of radial blades, and an outer cylindrical casing, of an inner casing secured at its outer ends to the outer casing and having a conical form, steam-inlet tubes arranged radially within the inner casing and secured to the periphery thereof, the same being arranged in circumferential rows and spaced apart, and intervening the shaft-blades, several of the outer series of shaft-blades being divided radially into two sets by a ring which joins the outer ends of the inner set and forms a firm base for the outer set, substantially as described.

6. The combination with a rotary shaft and an outer casing, of an inner casing having a conical form and provided with several series of steam-inlet tubes having slots in their outer sides adjacent to the shaft-blades, the tubes nearest the inner end of the conical casing extending to the shaft and adjacent the shaft-blades extending to the periphery of the casing, the succeeding or outer series of steam-inlet tubes extending but part way to the shaft, their inner ends being connected by rings and a series of steam-guides being attached to said ring and projecting radially inward, and the shaft-blades which coact with such guides being correspondingly divided each into two sets, a ring intervening the two sets and connecting the outer ends of the inner set and furnishing the base for the outer set, substantially as described.

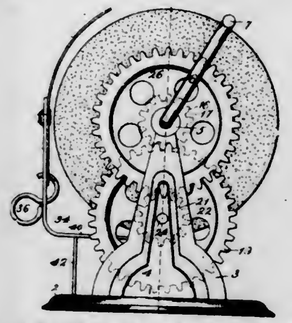
7. The combination with a rotary shaft and an outer and inner casing rigidly connected thereto, of a series of steam-inlet tubes having openings in their outer sides, the tubes of the several series being approximately uniform in length so that those in the outer rows are removed from the shaft, while the inner ones approach it closely, the outer series being rigidly connected at their inner ends, and a series of guide-blades *m* being attached thereto and projecting radially inward, the shaft being provided with several series of radial blades intervening a series of tubes, whereby steam admitted to the tubes at the inner end of the casing acts upon the adjacent blades throughout their whole length while the steam entering the tubes of the outer series acts only upon the outer portion of the blades, substantially as described.

8. The combination with a shaft having a uniform diameter, of a surrounding casing which is tapered from one end to the other, a series of steam-inlet tubes arranged radially within and secured to the periphery of the casing and provided with slots on the side toward the outer end of the casing, the tubes of the several series being of nearly the same length, and a ring rigidly connecting their inner ends, and a series of inner tubes arranged radially within the ring and their outer ends attached thereto, a series of blades projecting inward from the ring and serving as steam-guides, the blades on that portion of the shaft adjacent to the inner tubes being extended to the length permitted by the diameter of the casing and the blades on the outer portion of the shaft being formed in two sets with an intervening ring to which they are secured, steam having thus direct passage from the inner end of the casing to the outer end parallel to the shaft, and another portion of the steam passing over the guides and blades adjacent to the casing, substantially as described.

9. The combination with a shaft having radial blades and a surrounding casing, of steam-inlet tubes secured to the said casing and projecting inward between the shaft-blades and provided with openings on the sides which are close to the latter and on their opposite sides with guide-flanges that extend to the row of blades in rear of the tubes, substantially as described.

10. The combination with a shaft having radial blades and a surrounding casing, of a series of steam-inlet tubes attached to and projecting inward from the periphery of the casing and having on their outer sides openings for discharge of steam upon the adjacent blades, substantially as described.

822,070. SHARPENING-MACHINE. ALVORD M. MCLERAN, Kansas City, Mo., assignor to Two-Edge Manufacturing Company, Kansas City, Mo., a Corporation of South Dakota. Filed June 2, 1905. Serial No. 263,494.



Claim.—1. In a sharpening-machine, a journaled shaft, a bushing journaled upon said shaft, means driven by the shaft for rotating the bushing faster than said shaft, and a sharpening-wheel fixed upon the bushing.

2. In a sharpening-machine, a journaled shaft, a bushing journaled upon said shaft, a train of gear-wheels driven by the shaft which rotates the bushing faster than said shaft, and a sharpening-wheel mounted upon the bushing, substantially as described.

3. In a sharpening-machine, a journaled shaft, a bushing journaled upon said shaft, a train of gear-wheels driven by the shaft which rotates the bushing faster than said shaft, a sharpening-wheel mounted upon the bushing, and a gage arranged near the periphery of the sharpening-wheel for supporting articles being sharpened, substantially as described.

4. In a sharpening-machine, a journaled shaft, a master gear-wheel rigidly mounted thereon, a bushing journaled upon said shaft having a threaded end and a shoulder near said end, a pinion rigidly mounted upon the opposite end of said bushing, intermediate gear-wheels in train with the master-gear and the pinion, a sharpening-wheel having a centrally-disposed internal flange in alinement with the shoulder, a clamping-disk mounted upon the bushing and abutting against one side of the shoulder and the flange, and a companion clamping-disk abutting against the opposite side of the flange, said clamping-disks being held in frictional engagement with the flange by a nut engaging the threaded end of the bushing, substantially as described.

5. In a sharpening-machine, a journaled shaft, a master gear-wheel rigidly mounted thereon, a bushing journaled upon said shaft having a threaded end and a shoulder near said end, a pinion rigidly

mounted upon the opposite end of said bushing, intermediate gear-wheels in train with the master-gear and the pinion, a sharpening-wheel having a centrally-disposed internal shaft in alinement with the shoulder, a clamping-disk mounted upon the bushing and abutting against one side of the shoulder and the flange, a spacing-sleeve interposed between said clamping-disk and the pinion, a companion clamping-disk abutting against the opposite side of the flange, a nut engaging the threaded end of the bushing for holding the clamping-disks in frictional engagement with the flange, and an adjustable gage mounted adjacent to the sharpening-wheel, substantially as described.

6. In a sharpening-machine, a journaled shaft, a master gear-wheel mounted thereon, a bushing journaled upon said shaft, a pinion rigidly mounted upon said bushing, a pair of guide-disks rigidly mounted upon the bushing at opposite sides of the pinion, intermediate gear-wheels in train with the master-gear and the pinion the intermediate gear meshing with the pinion being held from lateral movement by the guide-disks, and a sharpening-wheel mounted upon the bushing, substantially as described.

7. In a sharpening-machine, a journaled shaft, a master gear-wheel mounted thereon, a bushing journaled upon said shaft, a pinion fixed upon said bushing, a pinion meshing with the master gear-wheel, a large gear-wheel fixed to the last-mentioned pinion and intermeshing with the pinion on the bushing, a pair of guide-disks at the opposite sides of each pinion, a sharpening-wheel mounted upon the bushing, and a gage mounted adjacent to the sharpening-wheel, substantially as described.

8. In a sharpening-machine, a journaled shaft, a master gear-wheel fixed thereon, a bushing journaled upon said shaft, a pinion fixed upon said bushing, intermediate gears in train with the master-gear and the pinion, a sharpening-wheel, a clamping-disk mounted upon the bushing and abutting against one side of the sharpening-wheel, and a companion clamping-disk frictionally engaging the opposite side of the sharpening-wheel, substantially as described.

9. In a sharpening-machine, a journaled shaft, a master gear-wheel fixed thereon, a bushing journaled upon said shaft having a shoulder near one end, a pinion fixed upon the opposite end of said bushing, intermediate gears in train with the master-gear and the pinion, a sharpening-wheel having an internal flange in alinement with the shoulder, a clamping-disk mounted upon the bushing and abutting against one side of the shoulder and the flange, a companion clamping-disk abutting against the opposite side of the shoulder and the flange, and means engaging the bushing for holding said companion clamping-disk in position.

10. In a sharpening-machine, a sharpening-wheel rotatably mounted and provided at its opposite sides with grinding-surfaces, and a gage having a pair of slots converging toward their lower ends and intersecting the grinding-surfaces of said sharpening-wheel, substantially as described.

11. In a sharpening-machine, a sharpening-wheel rotatably mounted, a support arranged adjacent to said sharpening-wheel, a curved key slidably arranged in said support, and a gage pivotally secured to said support and provided with openings any one of which may be engaged by the key for the purpose set forth and described.

12. In a sharpening-machine, a base-plate, standards secured thereto, a sharpening-wheel supported by said standards, a right-angle support consisting of a horizontal portion abutting against the adjacent sides of the standards and secured at its downwardly-curved rear end to one side of the base-plate, a supporting-leg secured to the opposite side of the base-plate, and a vertical portion communicating with the forward end of said horizontal portion, in combination with a gage carried by said vertical portion.

822,071. LIFTER-ROD HOLDER AND GUIDE. ALBERT F. NORRIS and CLIFTON H. NORRIS, Boston, Mass. Filed Dec. 31, 1904. Serial No. 239,260.

Claim.—1. In a device of the class described, the combination with a piano or the like, and a lifter-rod therefor, of a bar extending from one of the walls of the piano, and formed at its free end with an opening having an intermediate annular rib and a lining snugly fitting the wall of said opening and overhanging the rib, said lining being designed to receive and guide said lifter-rod.

2. In a device of the class described, the combination with a casing, of a bracket secured thereto, a frustum extending from said bracket, a bar supported by said bracket and formed with a socket inclosing said frustum, an aperture being formed in said bar and restricted centrally and flaring outwardly to its ends, and a cushion-lining arranged within and conforming to the contour of said aperture.

3. In a device of the class described, the combination with a piano, of a bar connected therewith and formed with an aperture, a cushion-bushing mounted within said aperture, a rib projecting from the walls of the aperture into and partly filling the aperture and positioned centrally for being overhung by a portion of the bushing for maintaining said bushing against removal therefrom, and a lifter passed through said opening.



4. In a device of the class described, the combination with a piano or the like, of a bar extending from the walls thereof, and formed at its free end with an opening having an intermediate annular rib, a lining snugly fitting the walls of said opening and overhanging the rib, and a lifter-rod passed through said opening.

5. A device of the class described comprising a horizontally-movable bar formed with an aperture, means for securing said bar against movement, said aperture being provided with a ribbed surface, and a cushion-lining for the walls of said aperture.

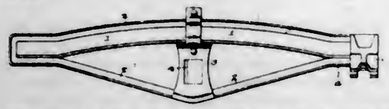
6. In a device of the class described, the combination with a piano or the like, of a bar connected therewith and formed with an aperture having a double-beveled wall, a lifter-rod passing therethrough, and a cushion-lining arranged within said aperture, one side of said lining conforming to the contour of the walls thereof and supported thereby.

7. In a device of the class described, the combination with a piano, and a lifter-rod therefor, of a bar connected with the piano and formed with an aperture having a restricted portion intermediate its length and a cushion-lining for said aperture, part of said lining overhanging the restricted portion of the aperture, said lifter-rod being surrounded and guided by said lining.

8. In a device of the class described, the combination with a piano, of a bar connected therewith and formed with an aperture, the wall of said aperture being formed into an interior bead intermediate the length of the aperture and being flared in opposite direction from the bead, a lining snugly fitting the wall of said aperture and overhanging said bead for being sustained in position, and a lifter-rod passed through the aperture.

9. In a device of the class described, the combination with a piano, of a bar connected therewith, and formed with an oppositely-flared aperture, a cushion-lining snugly fitting the wall of said aperture, and a lifter-rod passed through the aperture.

822,072. METAL BRAKE-BEAM. JOHN R. ONDERDONK, Baltimore, Md. Filed Dec. 2, 1903. Renewed Mar. 16, 1906. Serial No. 306,385.



Claim.—1. A brake-beam consisting of a pair of rolled shapes one longitudinally enveloping the other and in contact with the back of the same, substantially as described.

2. A brake-beam consisting of a pair of rolled shapes one enveloping the other and in contact with the back of the same but having its front member separated therefrom at the center of the beam by an interposed strut, so as to form a truss, substantially as specified.

3. A brake-beam consisting of a pair of longitudinal T-bars, one longitudinally enveloping the other and in contact with the back of the same, substantially as specified.

4. A brake-beam consisting of a pair of longitudinal T-bars one longitudinally enveloping the other and in contact with the back of the same, the front member of said enveloping bar being centrally separated from the main bar by means of an interposed strut, substantially as specified.

5. A brake-beam consisting of a pair of T-bars one longitudinally enveloping the other and in contact with the back of the same, the webs of the two bars abutting edge to edge, on the back of the beam, substantially as specified.

6. A brake-beam consisting of a pair of T-bars one longitudinally enveloping the other, the webs of the two bars abutting edge to edge, on the back of the beam, and the edge of the web of one bar being grooved for the reception of the other, substantially as specified.

7. A brake-beam consisting of a pair of T-bars one longitudinally enveloping the other, the webs of the two bars abutting, edge to edge, on the back of the beam and the front member of the enveloping bar being centrally separated from the main bar by means of an interposed strut, substantially as specified.

8. A brake-beam consisting of a pair of T-bars one longitudinally enveloping the other, the webs of the two bars abutting, edge to edge, on the back of the beam and the front member of the enveloping bar being centrally separated from the main bar by means of an interposed strut, the edge of the web of one bar being grooved for the reception of the other, substantially as specified.

9. A brake-beam consisting of two rolled shapes, one of smaller cross-section than the other, the smaller member longitudinally enveloping the other and in contact with the back of the same, substantially as specified.

10. A brake-beam consisting of two rolled shapes, one of smaller cross-section than the other, the smaller member longitudinally enveloping the other and in contact with the back of the same, but having its central front portion separated therefrom by means of an interposed strut, substantially as specified.

11. A brake-beam consisting of a pair of T-bars, one of smaller cross-section than the other, the smaller bar longitudinally enveloping the larger bar and in contact with the back of the same, substantially as specified.

12. A brake-beam consisting of a pair of T-bars, one of smaller cross-section than the other, the smaller bar longitudinally enveloping the larger bar and in contact with the back of the same and having its central front portion separated therefrom by means of an interposed strut, substantially as specified.

13. A brake-beam consisting of a pair of T-bars one of smaller cross-section than the other, and longitudinally enveloping the larger bar, the webs of the bars abutting, edge to edge, on the back of the beam, substantially as specified.

14. A brake-beam consisting of a pair of T-bars one of smaller cross-section than the other, and longitudinally enveloping the larger bar, the webs of the bars abutting, edge to edge, on the back of the beam, and the edge of the web of the larger bar being grooved for the reception of that of the smaller bar, substantially as specified.

15. A brake-beam consisting of a pair of T-bars one of smaller cross-section than the other, and longitudinally enveloping said larger bar, the webs of the bars abutting, edge to edge, on the back of the beam but the front member of the enveloping bar being separated from the main bar by means of an interposed strut, substantially as specified.

16. A brake-beam consisting of a pair of T-bars one of smaller cross-section than the other, and longitudinally enveloping said larger bar, the webs of the bars abutting, edge to edge, on the back of the beam but the front member of the enveloping bar being separated from the main bar by means of an interposed strut, the edge of the web of the larger bar being grooved for the reception of that of the smaller bar, substantially as specified.

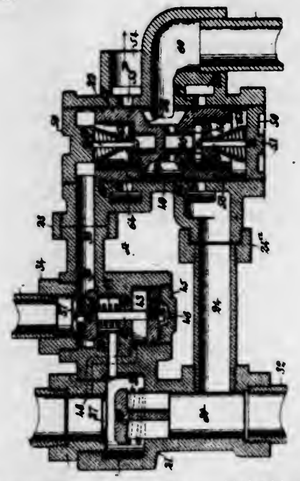
17. A brake-beam consisting of a pair of rolled shapes, one longitudinally enveloping the other but having its front member separated therefrom by means of an interposed strut, the latter having a longitudinally-divided portion for the reception of the main bar of the beam, substantially as specified.

18. A brake-beam consisting of a pair of rolled shapes one longitudinally enveloping the other but having its front member separated therefrom by means of an interposed strut, the latter having a longitudinally-divided portion for the reception of the main bar of the beam, but having a single portion providing a bearing for the separated front member, substantially as specified.

822,073. AIR-BRAKE SYSTEM. ARTHUR I. PERRY, New York, N. Y. Filed May 26, 1905. Serial No. 262,363.

Claim.—1. In an air-brake system, the combination with a supply-pipe and a controlling-pipe, of a source of pressure connected with the supply-pipe, primary and secondary controlling-valves connected with the supply-pipe and controlling-pipe, said secondary controlling-valve comprising a piston-valve which may be simultaneously subjected to the influence of the pressure in the supply and controlling pipes and check-valves for closing the supply-pipe and controlling-pipe, and a brake-cylinder communicating with the secondary controlling-valve.

2. A valve comprising a casing provided with admission and exhaust ports and controlling and supply passages, a body portion having opposite heads between which is a space and one of which coacts with each of the ports, and opposed springs situated at opposite ends of the body portion and operating to maintain normal closure of the ports.



3. A valve comprising a casing provided with admission and exhaust ports, controlling and main and auxiliary supply-passages and a passage connecting the controlling-passage and a supply-passage, a piston coöperating with the ports, and a check-valve operating between the connecting-passage and the controlling-passage.

4. A valve comprising a casing provided with admission and exhaust ports, controlling and main and auxiliary supply-passages and a passage connecting the controlling-passage and a supply-passage, a piston coöperating with the ports, a check-valve operating between the connecting-passage and the controlling-passage, and a piston movable with the check-valve and being under the influence of conditions in the supply-passages.

5. A valve comprising a casing provided with admission and exhaust ports, controlling and main and auxiliary supply-passages and a passage connecting the controlling-passage and the auxiliary supply-passage, a piston coöperating with the ports, a check-valve operating between the connecting-passage and the controlling-passage, a piston movable with the check-valve and being under the influence of conditions in the supply-passages, and a check-valve coöperating with the main supply-passage.

6. An air-brake system having a source of fluid-pressure, a brake-cylinder, a valve controlling the communication between the source of pressure and the cylinder, said valve also controlling the exhaust from the brake-cylinder, means tending yieldingly to hold the valve in one position, devices for applying fluid-pressure to the valve to move it from said position, means establishing communication between said devices and the source of fluid-pressure, a manually-operated valve controlling such communication, an auxiliary reservoir means establishing communication between the auxiliary reservoir and said devices for applying fluid-pressure to the valve, and an automatic valve controlling the last-named communication, for the purpose specified.

7. A brake system having a train-pipe adapted to communicate with the source of fluid-pressure, a controlling-pipe, a valve-controlled communication between the two pipes to permit any desired pressure to be introduced into the controlling-pipe, a brake-cylinder, an auxiliary reservoir with which the train-pipe and brake-cylinder communicate, a check-valve serving to prevent the return of pressure from the auxiliary reservoir to the train-pipe, a valve controlling the communication between the auxiliary reservoir and train-pipe, and the brake-cylinder, said valve also controlling the brake-cylinder exhaust, means connecting the controlling-pipe with said valve to operate the valve by the controlling-pipe pressure, means establishing communication between the auxiliary reservoir and said means connecting the controlling-pipe with the valve, and devices controlled by the train-pipe pressure for normally closing the communication between the auxiliary reservoir and the means connecting the control-pipe with the valve, said devices being capable of movement to open such communication and close communication between the control-pipe and the means connecting it with the valve, whereby upon

the rupture of the train and controlling pipes to permit the auxiliary-reservoir pressure to operate the valve.

8. A brake system having a train-pipe adapted to communicate with the source of fluid-pressure, a controlling-pipe, a valve-controlled communication between the two pipes to permit any desired pressure to be introduced into the controlling-pipe, a brake-cylinder, an auxiliary reservoir with which the train-pipe and brake-cylinder communicate, a check-valve serving to prevent the return of pressure from the auxiliary reservoir to the train-pipe, a valve controlling the communication between the auxiliary reservoir and train-pipe, and the brake-cylinder, said valve also controlling the brake-cylinder exhaust, means connecting the controlling-pipe with said valve to operate the valve by the controlling-pipe pressure, means establishing communication between the auxiliary reservoir and said means connecting the controlling-pipe with the valve, and devices controlled by the train-pipe pressure for normally closing the communication between the auxiliary reservoir and the means connecting the control-pipe with the valve, said devices being capable of movement to open such communication and close communication between the control-pipe and the means connecting it with the valve, whereby upon the rupture of the train and controlling pipes to permit the auxiliary-reservior pressure to operate the valve, said devices for normally closing the communication between the auxiliary reservoir and means connecting the control-pipe with the valve compriaing a double-face valve movable between two seats, for the purpose specified, a spring tending yieldingly to hold the valve in one position, and means for exerting the train-line pressure on the valve to hold it against the spring in its second or normal position.

9. An air-brake system comprising a train-line adapted to communicate with the source of pressure, a brake-cylinder, a double-headed valve controlling communication between the train-liae and brake-cylinder, and also controlling the exhaust from the brake-cylinder, means tending yieldingly to hold the valve in an intermediate position, in which position the brake-cylinder is cut off from the train-line and exhaust-orifice, said valve having a passage therein permitting the train-line pressure to be exerted on one head of the valve, a control-pipe, means for permitting the control-pipe pressure to be exerted on the opposite head of the valve, and a valve-controlled communication between the train-pipe and control-pipe whereby the pressure of the control-pipe may be varied to move the valve to the desired position.

10. An air-brake system comprising a train-line adapted to communicate with the source of pressure, a brake-cylinder, a double-headed valve controlling communication between the train-line and brake-cyliader, and also controlling the exhaust from the brake-cylinder, means tending yieldingly to hold the valve in an intermediate position, in which position the brake-cylinder is cut off from the train-line and brake-orifice, said valve having a passage therein permitting the train-line pressure to be exerted on one head of the valve, a control-pipe, means for permitting the control-pipe pressure to be exerted on the opposite head of the valve, and a valve-controlled communication between the train-pipe and control-pipe whereby the pressure of the control-pipe may be varied to move the valve to the desired position, an auxiliary reservoir, and emergency devices for permitting the auxiliary-reservoir pressure to act on the said second head of the valve upon the rupture of the train-pipe.

11. An air-brake system having a source of fluid-pressure, a brake-cylinder, a valve controlling communication between the source of pressure and the cylinder and also controlling the exhaust from the brake-cylinder, devices for applying fluid-pressure to the valve to operate it, means establishing communication between said devices and the source of pressure, a manually-operated valve controlling such communication, an auxiliary means establishing communication between the source of pressure and said devices, and an automatic valve controlling said auxiliary means.

12. An air-brake system comprising a train-line adapted to communicate with the source of pressure, a brake-cylinder, a double-headed valve controlling communication between the train-line and brake-cylinder and also controlling the exhaust from the brake-cylinder, means tending yieldingly to hold the valve in an intermediate position, in which position the brake-cylinder is cut off from the train-line and exhaust-orifice, said valve having a passage therein permitting the train-line pressure to be exerted on one head of the valve, a control-pipe, means permitting the control-pipe pressure to be exerted on the opposite head of the valve, a valve-controlled communication between the train-line and control-pipe whereby the pressure of the control-pipe may be varied to move the valve to the desired position, an auxiliary reservoir, means establishing communication between the same and said means permitting the control-pipe pressure to be exerted on the valve, and valve devices automatically controlling the last-named communication for the purpose specified.

13. An air-brake system having a source of fluid-pressure, a brake-cylinder, a valve controlling communication between the source of pressure and the brake-cylinder, and also controlling the exhaust from the brake-cylinder, devices for applying fluid-pressure to the valve to operate it, means establishing communication between said devices and the source of pressure, a manually-operative valve controlling such communication, an auxiliary means establishing communication between the source of pressure and said devices, an automatic valve controlling said auxiliary means, and an auxiliary reservoir communicating with the source of pressure and with said auxiliary means.

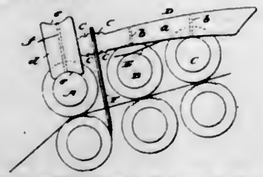
14. An air-brake system having a source of fluid-pressure, a brake-cylinder, a valve controlling communication between the source of pressure and the brake-cylinder, and also controlling the exhaust from the brake-cylinder, devices for applying fluid-pressure to the valve for operating it, means establishing communication between said devices and the fluid-pressure, a manually-operative valve controlling said communication, an auxiliary means establishing communication between the source of pressure and said devices, in automatic valve controlling said auxiliary means, an auxiliary reservoir communicating with the source of pressure and said auxiliary means, and an automatic valve for closing communication between the source of pressure and the auxiliary reservoir upon a rapid decrease of pressure in the source.

822,074. **VENTILATOR.** CHARLES L. PULLMAN, Pequanac, N. J., assignor to The Pullman Automatic Ventilator Company, Washington, D. C., a Corporation of West Virginia. Filed July 19, 1900. Serial No. 24,215.



Claim.—In a ventilator, a casing, bridging an opening communicating with the chamber to be ventilated, the opposite ends of the casing being open and its outer wall being hipped to form a deflector, a curved valve pivotally mounted within the casing, and movable automatically to cut off communication between either end of the casing and the chamber-opening, a lug secured to the outer face of the valve and having a pocket or opening, a lever pivoted to the outer wall of the casing and extending through an opening therein, one arm of the lever extending into the pocket or opening of the lug, and a vane carried by the opposite arm of said lever.

822,075. **SADDLE FOR THE TOP ROLLS OF SPINNING-MACHINES.** WILLIAM RAINVILLE, Woonsocket, R. I. Filed Nov. 18, 1905. Serial No. 287,959.

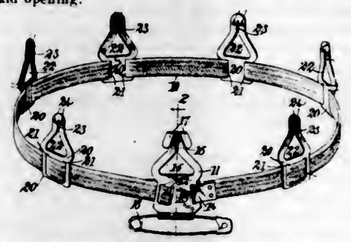


Claim.—1. A saddle for top rolls comprising a body having a longitudinal portion and a head extending in opposite directions from the longitudinal portion and provided at its ends with bearing portions, and a spring carried by the longitudinal portion of the body and adapted in one position of the body to exert pressure or weight on the middle one of the top rolls.

2. A saddle for top rolls comprising a body having a longitudinal portion provided with lubricant-ducts and seats at the lower and upper edges of its forward portion and also having a head extending in opposite directions from the forward end of the longitudinal portion and provided at its ends with concaved bearings and also provided with a duct extending between said bearings, and a spring carried by the longitudinal portion of the body and adapted in one position of the body to exert pressure or weight on the middle one of the top rolls.

822,076. **GARMENT-SECURING DEVICE.** JOHN H. RHODES, New York, N. Y. Filed May 22, 1905. Serial No. 261,563.

Claim.—1. A garment-securing device comprising a belt, a clasp mounted upon the belt and being provided with an opening to receive a portion of a garment, garment-engaging means situated on said clasp adjacent to the opening, and a connector for the ends of the belt, said connector having an opening to receive a part of a garment and also being provided with a garment-engaging hook outside of said opening.



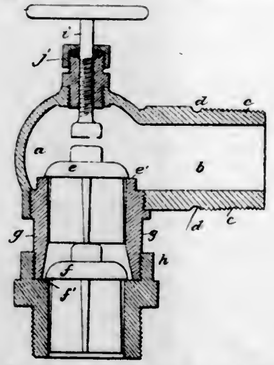
2. A garment-securing device comprising a belt, a clasp mounted upon the belt and being provided with an opening to receive a portion of a garment, garment-engaging means situated adjacent to the opening, and a connector for the ends of the belt, said connector having an opening to receive a part of a garment and at its opposite ends a hook and a safety-pin.

3. A garment-securing device comprising a belt, a clasp mounted on the belt, and a connector for the ends of the belt, said connector having an opening to receive a part of the garment, and provided at its opposite ends with a hook and a safety-pin.

4. A garment-securing device, comprising a belt, and a connector for the ends of the belt, said connector having an opening to receive a part of a garment, and being provided at its upper and lower ends respectively with a hook and a safety-pin.

5. A garment-securing device comprising a plate provided with belt-openings and an opening having a contracted portion, a hook projecting from the plate at the end of the contracted portion, and an attaching device mounted upon the plate at the opposite side of the openings from the hook.

822,077. **CHECK-VALVE.** GEORGE W. RICH, Memphis, Tenn., assignor of one-half to James S. Lightburne, Memphis, Tenn. Filed Sept. 5, 1905. Serial No. 277,079.



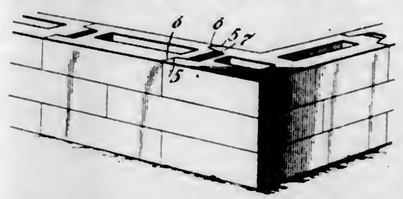
Claim.—1. A check-valve for the purposes set forth embodying in its construction a casing provided with a screw-threaded stem, two connections, each provided with a valve-seat, one connection being adapted to be screwed into the casing and the other adapted to be attached to the first named by screw-threaded means, a wing-valve seated in each connection, a stuffing-box in the casing over the center of the upper valve, a stem extended through said stuffing-box and a handle on the outer end of the said stem to enable it to be turned down on the upper valve and press it down to a steam-tight degree upon its seat.

2. A check-valve for the purposes set forth embodying in its construction a casing provided with a screw-threaded stem, two connections, each provided with a valve-seat, one connection being adapted to be screwed into the casing and the other adapted to be attached to the first named by screw-threaded means, a wing-valve seated in each connection, a stuffing-box in the casing over the center of the upper valve, and means extended through said stuffing-box and adapted to act upon the valve therebelow to press it down and hold it upon its seat.

3. A check-valve comprising a casing, means for securing the casing to a steam-boiler, two connections each provided with a valve-seat, and a wing-valve seated in each connection, in combination with means for securing one valve rigidly upon its seat.

4. A check-valve comprising a casing, means for securing the casing to a steam-boiler, two connections each provided with a valve-seat, and a wing-valve seated in each connection, one above the other, in combination with means for securing the upper valve rigidly upon its seat and permitting the lower valve and its connection to be removed.

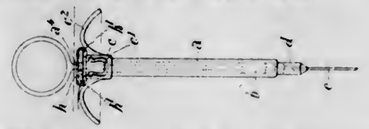
822,078. **CEMENT BUILDING-BLOCK.** GEORGE W. ROBERTS, Ravenna, Nebr. Filed May 10, 1905. Serial No. 259,798.



Claim.—1. A building-block comprising a body formed with a central vertically-arranged opening, one end of the body being formed with a dovetailed groove extending vertically thereof and of greater width at its inner end than the width of said opening, the opposite end of the body being provided with a wedge-shaped rib of less length than the depth of the groove, the dovetailed groove and rib being of greater extent transverse the block than the similar dimension of the vertically-arranged opening, whereby to provide the maximum air-space at the ends of the block.

2. A building-block comprising a body including two integral sections arranged at a right angle to each other, and each of the sections being formed with centrally-arranged openings, the terminal of one section having a wedge-shaped groove, and the terminal of the other section being formed with a wedge-shaped rib of less length than the depth of the groove, the dovetailed groove and rib being of greater extent transverse the block than the similar dimension of the vertically-arranged opening, whereby to provide the maximum air-space at the ends of the block.

822,079. **HYPODERMIC SYRINGE.** LOUIS ROUSSY, Geneva, Switzerland. Filed May 11, 1905. Serial No. 260,056.



Claim.—1. The combination, with a syringe barrel or cylinder having a laterally-extending flange with cut-away portions or recesses in its outer edge, of a plunger-limiting disk having hooks embracing said flange at points other than said recesses but adapted to register with the latter when said disk is partially rotated.

2. In a hypodermic syringe, a finger-hook-carrying sleeve having barrel-engaging spring-fingers formed in the wall thereof.

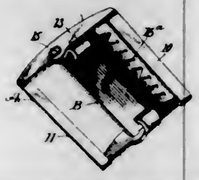
3. In a hypodermic syringe, a finger-hook-carrying sleeve having formed in the wall thereof longitudinally-disposed barrel-engaging spring-fingers.

4. In a hypodermic syringe, a finger-hook-carrying collar or sleeve c provided in its side wall with U-shaped slots c' forming barrel-gripping fingers.

5. The combination, with a syringe-barrel having an outwardly-disposed flange, of a finger-hook-carrying sleeve embracing said barrel and retained against backward movement thereabout by said flange, said sleeve being provided in its wall with slots forming fingers which frictionally engage said barrel and are disposed toward the needle end thereof.

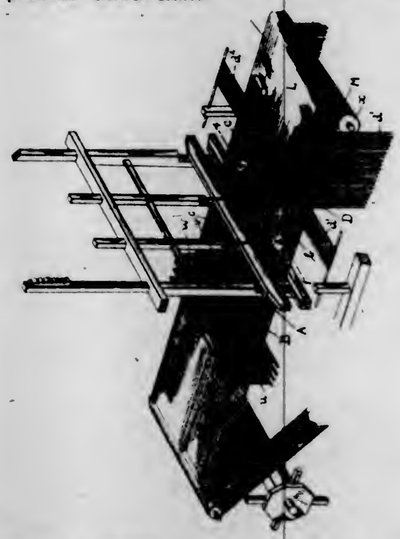
822,080. **BUCKLE.** LOUIS SANDERS, New York, N. Y. Filed Dec. 23, 1905. Serial No. 293,094.

Claim.—1. A buckle comprising a tongue a skeleton frame provided with means for supporting the tongue, the tongue being pivotally mounted in the frame behind said supporting means and extending the full width of said frame, the edge of the tongue being substantially flush with the inner edge of the front bar of the buckle when the tongue is resting upon the supporting means, and said frame being provided with means extending inwardly therefrom and engaging the body of the tongue whereby to retain it in its closed position.



2. A buckle consisting of a skeleton frame and tongue-supports extending from the end portions of the said frame, each tongue-support having an outwardly-extending member at its free end, a tongue pivoted in the said frame above and to the rear of the tongue-supports, the biting edge of which tongue is substantially flush with the forward bar of the frame when the tongue is in closed position and resting upon the said tongue-supports, the said tongue being provided with slots in its body portion which receive the outwardly-extending members of the tongue-supports, the said outwardly-extending members when the tongue is closed being in close frictional engagement with the outer walls of the said slots.

822,081. **SEAMLESS-BOTTOM SACK OR BAG AND THE PROCESS OF MAKING THE SAME.** KASHICHI SANO, Tokyo, Japan. Filed Apr. 20, 1905. Serial No. 256,599.



Claim.—1. A bottomed seamless bag, substantially as described.

2. A seamless bag having its bottom substantially flat and at right angles to its sides.

3. A seamless bag of woven fabric, the warp-threads of which are common to all the sides and the bottom of the bag.

4. A seamless-bottomed bag of woven fabric the weft-threads of which are common to all the sides of the bag.

5. A bottomed seamless bag of woven fabric, the warp-threads of which are common to the sides and bottom of the bag and the weft-threads of which are common to the sides of the bag.

6. A seamless-bottomed bag woven from one set of warp and weft threads.

7. A seamless-bottomed bag the bottom of which is formed of interwoven warp-threads only.

8. A bottomed seamless bag of woven fabric the warp-threads of which are common to the sides and bottom of the bag, the weft-threads of which are common to the sides of the bag, and the bottom of the bag being formed of warp-threads only, a portion of the warp-threads forming the weft for the bottom of the bag.

9. The process of weaving a seamless-bottomed bag which consists in weaving the weft across the warp around the four sides of the bag, and weaving a portion of the warp-threads as a weft into the remaining portion of the warp to form the bottom of the bag.

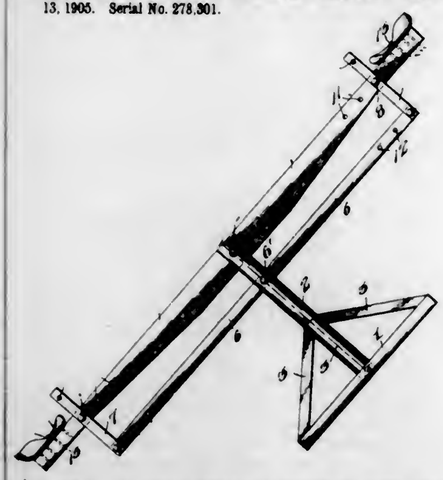
10. The process of weaving a seamless-bottomed bag which consists of weaving a length of fabric to form the front and two adjacent sides of the bag leaving a length of free weft-threads at each side of the fabric, cutting the outer warp-threads at each side at a distance beyond the woven portion of the fabric to leave free ends of said cut threads, folding up the sides of the woven fabric which form the sides of the bag, weaving the said free ends of the warp-threads as a weft into the uncut warp-threads from each side to form the bottom of the bag, then folding the woven portion of the bag and weaving the free weft-threads from both sides into the uncut warp-threads to form the back of the bag substantially as described.

11. The process of weaving a seamless-bottomed bag, which consists in arranging a warp, dividing the warp into three sets of threads, weaving a portion of said warp including all three sets of threads with a weft to form the front and two sides of the bag, leaving the weft with a length of free ends at each side, cutting the outer two sets of warp-threads to leave a length of free ends of the cut warp, weaving said free ends of warp into the middle set of warp-threads to form the bottom of the bag, and weaving the free ends of the weft into the middle set of warp-threads to form the back of the bag.

822,082. **MANUFACTURE OF STEEL.** JOHN W. SPENCER, Newcastle-upon-Tyne, England. Filed July 31, 1903. Serial No. 167,782.

Claim.—The herein-described process consisting in melting a charge of iron normally containing from .05 per centum to .25 per centum of carbon and maintaining the charge in a melted condition, and introducing into the molten mass .75 per centum to two per centum of silicon to produce a modified steel for use in making plates, forging steels and the like.

822,083. **SEESAW.** FAY W. STEVENS, Wichita, Kans. Filed Sept. 13, 1905. Serial No. 278,301.

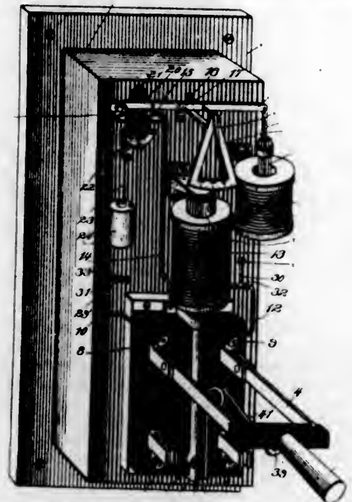


Claim.—1. A seesaw comprising a supporting-frame, balancing and lever beams pivotally mounted upon the frame to swing in parallel relation and provided each with a series of openings at its ends, seats upon the ends of the balancing-beam, and links pivotally connected with the ends of the beams by pins or bolts passing through said openings and adjustable to regulate their position with respect to the seats, said links extending above the balancing-beam and being provided at their upper ends with handles.

2. In a seesaw, a supporting-frame, balancing and lever beams pivoted thereto, link-bars adjustably connecting the beams for movement in parallel relation and provided above the beams with handles, and seats at the ends of the beams, each seat having a pivotal connection with the lever-beam and a slot-and-pin connection with the balancing-beam.

3. In a seesaw, a supporting-frame, balancing and lever beams pivoted thereto, link-bars pivotally connecting the ends of the beams and extending above the same and provided at their upper ends with handles, the bars and beams being provided with means for varying the point of pivotal connection of the bars, and seats upon the ends of the balancing-beam.

822,084. **ELECTRIC-CIRCUIT BREAKER.** GEORGE G. STOUT, Parkersburg, W. Va. Filed Mar. 30, 1905. Serial No. 252,827.



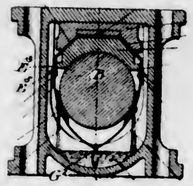
Claim.—1. In an electric-circuit breaker, the combination with a switch, of a resistance-coil connected across the poles of said switch, a magnet-core loosely suspended within said coil, a balance-beam connected to said suspended core and actuated thereby in such manner that the voltage may be determined, a magnet-coil connected across the poles of said switch with an open-circuit switch, a locking-bolt associated with said latter coil, a movable contact adapted to be moved by said balance-beam to close said open circuit and cause said latter coil to actuate said switch-locking bolt to release said switch.

2. In an electric-circuit breaker, the combination with a switch, of a resistance-coil connected across the poles of said switch, an armature associated with said coil, a magnet-coil connected across the poles of said switch with an open-circuit switch, connecting means between said open-circuit switch and said armature, a switch-locking element associated with said last-mentioned coil, said open-circuit switch being adapted to be closed by the movement of said armature which causes said last-mentioned coil to actuate said switch-locking element to release said switch.

3. In an electric-circuit breaker, the combination with a switch, of a series of resistance-coils connected in series to each other and in multiple on the circuit, a magnet-core loosely suspended within one of said resistance-coils, a balance-beam connected to said suspended core and actuated thereby in such manner that the voltage can be determined, a magnet-coil connected across the poles of said switch with an open-circuit switch, a locking-bolt associated with said latter coil, a movable contact adapted to be moved by said balance-beam to close said open circuit and cause said latter coil to actuate said switch-locking bolt to release said switch.

822,085. **AXLE-LUBRICATING DEVICE.** WALTER G. TATNALL, Wilmington, Del., assignor, by direct and mesne assignments, to himself, and Ernest Armstrong, Woodbury, N. J., and one-third to Walter G. Tatnall, Jr., Wilmington, Del. Filed Oct. 27, 1905. Serial No. 284,602.

Claim.—1. In combination with an axle-box and an axle supported therein, a wick-oiler having its ends supported in the box out of contact with the axle above the center thereof, and one on each side thereof, and its intermediate part forming a loop extending below the axle as described, and so as to contact lightly with the sides thereof by gravity.



2. In combination with an axle-box and an axle supported therein, a wick-oiler having its ends supported in the box out of contact with the axle above the center thereof, and one on each side thereof, and its intermediate part forming a loop extending below the axle as described, said looped wick-oiler having swab-pads attached to it at points adapted to contact with the sides of the axle.

3. In combination with an axle-box and an axle supported therein, a wick-oiler having its ends supported in the box out of contact with the axle above the center thereof, and one on each side thereof, and its intermediate part forming a loop extending below the axle as described, said looped wick-oiler having swab-pads attached to it at points adapted to contact with the sides of the axle, and auxiliary wicks depending from said swab-pads.

4. In combination with an axle-box and an axle-journal therein, a wick-supporting frame extending over the bearing, and a wick-oiler supported at each end on said frame and arranged to extend beneath the axle.

5. In combination with an axle-box and an axle-bearing in the upper side thereof, a wick-supporting frame of thin sheet metal extending over the bearing, and a wick-oiler supported at each end on said frame and arranged to extend beneath the axle.

6. In combination with an axle-box and an axle-bearing in the upper side thereof, a wick-supporting frame of thin sheet metal having upwardly-turned flanges adapted to fit against shoulders occupying a normally fixed position in the box, extending over the bearing, and a wick-oiler supported at each end on said frame and arranged to extend beneath the axle.

7. In combination with an axle-box, a bearing supported therein, and an axle contacting with the bearing, a sheet-metal wick-support conformed to the shape of the top of the bearing and fitting between the same and the surface against which it rests.

8. In combination with an axle-box, a bearing supported therein, and an axle contacting with the bearing, a sheet-metal wick-support conformed to the shape of the top of the bearing and fitting between the same and the surface against which it rests, said support having flanges adapted to fit against a shoulder or shoulders occupying normally a fixed position in the box.

9. In combination with an axle-box, a bearing supported therein, and an axle contacting with the bearing, a sheet-metal wick-support conformed to the shape of the top of the bearing and fitting between the same and the surface against which it rests, and wick-supporting rods detachably secured to the ends of the sheet-metal support.

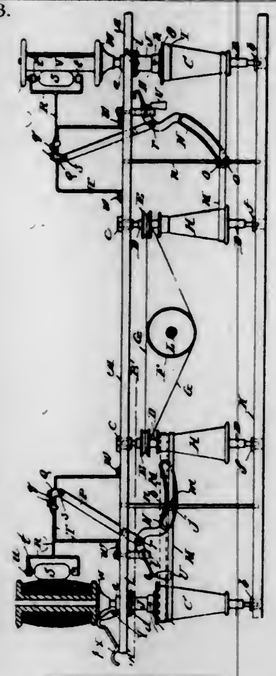
822,086. **YARN-WINDING FRAME.** PERCIVAL TAYLOR, Smithills, Bolton, England. Filed May 17, 1905. Serial No. 260,775.

Claim.—1. In a yarn-winding frame, a bobbin-carrying spindle, a cone-pulley connected with the spindle, a second cone-pulley, a driving-belt between the cone-pulleys, means set in operation by the yarn as it is wound on the bobbin for moving the belt along said pulleys, and a pulley rotative around said spindle and onto which said belt is transferable.

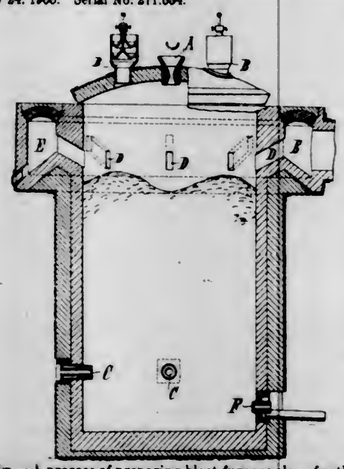
2. In a yarn-winding frame, a bobbin-carrying spindle, a feeler movable by the yarn wound onto the bobbin, a slide to which the feeler is connected, a weighted lever having a link connection with the slide, a pair of cone-pulleys and a belt connecting the same, one of the belt-pulleys being fastened to said spindle, and belt-shifting means operable by said weighted lever.

3. In a yarn-winding frame, a bobbin-carrying spindle, a feeler movable by the yarn wound onto the bobbin, a slide to which the feeler is connected, a pair of cone-pulleys, a belt connecting said cone-pulleys, one of the pulleys being fastened to said spindle, a belt-shifting device, a lever fulcrumed between its ends, one arm of the lever being provided with a weight and the other arm thereof having a slot to receive a projecting part of the said belt-shifting device, and a link connected with the feeler-slide and with the slotted arm of the lever.

822,086.



822,087. PROCESS FOR DISSOLVING SOLID FLUXES IN FLUID SLAG. FRIEDRICH C. W. TIMM, Hamburg, Germany. Filed July 24, 1905. Serial No. 271,034.

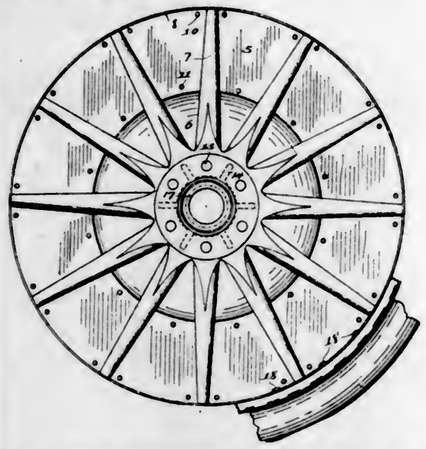


Claim.—A process of preparing blast-furnace slags for the manufacture of cement, mineral wool, glass, building-stone and the like, consisting in piling up a suitable flux within a furnace and then passing simultaneously through said flux, fluid slag and heating-gases.

822,088. WHEEL. SAMUEL J. TURNER, Chicago, Ill., assignor of one-half to Harry J. Fish, Chicago, Ill. Filed Sept. 1, 1905. Serial No. 276,714.

Claim.—1. A wheel-body comprising a pair of solid metal disks having outer annular portions parallel to each other and rigidly united and central oppositely-dished portions adapted to receive the hub, said disks also having integral laterally-offset spokes formed therein extending from hub to rim, substantially as described.

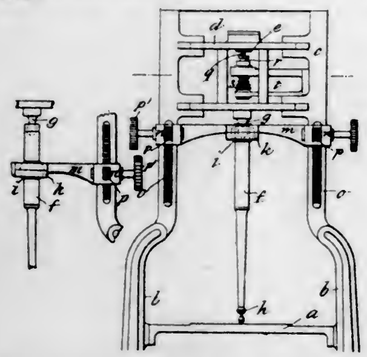
2. A wheel-body comprising a pair of solid metal disks having outer annular portions parallel to each other and rigidly united in surface contact with each other, and central oppositely-dished portions adapted to receive the hub, said disks also having integral spokes outwardly pressed therefrom and extending from hub to rim, substantially as described.



3. A wheel-body comprising a pair of solid thin metal disks having outer annular portions parallel to each other and rigidly united in surface contact with each other, oppositely-extending peripheral flanges unitedly constituting a seat for the rim, and central oppositely-dished portions adapted to receive the hub, said disks also having integral spokes outwardly pressed from the metal of said annular and dished portions, substantially as described.

4. A metal wheel comprising a pair of solid thin metal disks each formed with a flat outer annular portion, a peripheral flange, a central dished portion, and a series of outwardly-pressed radial reinforcing-ribs extending across the full width of both the annular and dished portions, said disks being rigidly united with their annular portions in contact with each other, a rim mounted upon said peripheral flanges, and a hub secured to the inner margins of the dished portions, substantially as described.

822,089. PUNCH-CUTTING OR ENGRAVING APPARATUS. FREDERICK WICKS, Esher, England. Filed Mar. 7, 1905. Serial No. 248,811.



Claim.—In an apparatus of the character described, a fixed table, a frame movable in a plane parallel to the table, a plate carried by the frame, a pivoted tracer adapted to be moved over said table, a ball-and-socket joint connecting the movable frame and tracer, a second ball-and-socket joint connecting the tracer with its pivot-support, and means for varying the distance between the centers of the two ball-and-socket joints continuously from zero to an appreciable amount, substantially as and for the purpose set forth.

822,090. TRACK FOR DOOR-HANGERS. GUSTAVUS WIDEMAN, Aurora, Ill., assignor to The Richards Manufacturing Company, Aurora, Ill., a Corporation of Illinois. Filed July 25, 1904. Renewed Nov. 18, 1905. Serial No. 288,061.



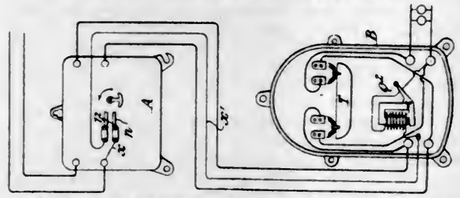
Claim.—1. A bracket for a door-hanger track, composed of a single piece of metal cut and bent to form a central portion and lateral converging wings, said wings arranged vertically to the track, and having portions parallel with each other, means for securing said bracket to a support and means for securing the wings to a track.

2. A bracket for a door-hanger track, composed of a single piece of metal, formed with a central portion adapted to be attached to a supporting structure, and also formed with vertical wings on each side of and at an angle to said central portion, said wings adapted to be attached at their outer ends to a door-hanger track.

3. A bracket for a door-hanger track having openings therein, composed of a single piece of metal cut and bent to form a central portion with holes therein, and also to form wings on each side of and at an angle to said central portion, said wings having tongues on their outer ends adapted to fit the openings in the track.

4. A bracket for a door-hanger track having openings therein, composed of a single piece of metal formed with a central portion adapted to be attached to a supporting structure, and also formed with vertical wings on each side of said central portion, said wings extending inwardly to meet at a line median to the central portion, and for a part of their length lying side by side, and vertical tongues formed on the ends of said wings adapted to fit the openings in said track.

822,091. PREPAYMENT ELECTRIC METER. JAMES J. WOOD, Fort Wayne, Ind. Filed June 12, 1905. Serial No. 264,850.



Claim.—1. In a prepayment meter, an indicator having a limited range of movement, a relatively long spring therefor, adapted to exert a substantially uniform stress through such range of movement, a counting-up device for turning said indicator against the stress of said spring, a releasing device for permitting the return or counting-down movements of said indicator, and an electromagnet operating said releasing device, whereby the work performed at each excitation of the magnet is substantially unvarying:

2. In a prepayment-meter, an indicator having a limited range of movement, a spring of many turns therefor, adapted to exert a substantially uniform stress through such range of movement, a counting-up device for turning said indicator against the stress of said spring, an escapement-train, an escapement for permitting the return or counting-down movements of said indicator, and an electromagnet operating said escapement whereby the substantially uniform torque of the spring is diminished through said train, and renders the work imposed upon the magnet very light and substantially uniform.

3. In a prepayment-meter, an indicator having a limited range of movement, a spring of many turns therefor, adapted to exert a substantially uniform stress through such range of movement, a planet-wheel, a counting-up device acting through said planet-wheel to turn said indicator against the stress of said spring, an escapement-train actuated from said spring through said planet-wheel, an escapement for permitting the return or counting-down movements of said indicator, and an electromagnet operating said escapement.

4. In a prepayment-meter an indicator, a spring therefor, a counting-up device, and a magnetically-operated escapement, the latter comprising an escape-tooth, a release-arm therefor, and an electromagnet the armature of which is connected to and operates said release-arm.

5. In a prepayment-meter, an indicator, a spring therefor, a counting-up device, a magnetically-operated escapement, the latter comprising an escape-tooth, a stop-arm, and a release-arm engaging said tooth, and an electromagnet with its armature connected to operate said arms.

6. In a prepayment-meter, an indicator, a spring therefor, a counting-up device, a magnetically-operated escapement, the latter comprising an escape-tooth, a stop-arm, a release-arm engaging said tooth, an electromagnet with its armature connected to said release-arm, and a cam for operating said stop-arm in one direction, said arm being engaged by the release-arm to be operated in the opposite direction.

7. In a prepayment electric meter, an indicator, a spring therefor, a counting-up device, and a counting-down mechanism comprising an escapement, an electromagnet operating it, its armature, the release-arm of said escapement, an actuating-arm connected thereto, and a separable joint forming a direct pivotal connection between said arm and the armature.

8. In a prepayment electric meter, a magnetically-operated counting-down mechanism, combined with an actuating electromagnet having a laminated core, an exciting-coil, and a closed circuit of low resistance adapted to diminish the self-induction of the coil and render the magnet effective on either an alternating or a direct current.

9. In a prepayment electric meter, a circuit-closer operated by the totalizer, comprising a spindle geared to the totalizer in such ratio as to make a half-turn for each circuit-closure, circuit-closing contacts, and a weight loosely hung on said spindle, with means for elevating it during each successive half-turn of the spindle and thereupon releasing it and permitting it to fall and close the circuit.

10. In a prepayment electric meter, a circuit-closer operated by the totalizer comprising a spindle geared to the totalizer in such ratio as to make a half-turn for each circuit-closure, circuit-closing contacts, a weight loosely hung on said spindle, and a two-toothed ratchet and pawl connecting said weight to said spindle, whereby the weight is elevated and released to each half-turn of the spindle.

11. In a prepayment electric meter, a circuit-closer driven by the totalizer comprising a spindle and circuit-closing contacts, and a frame carrying them adjustable relatively to the totalizer.

12. In a prepayment electric meter, a circuit-closer driven by the totalizer, comprising a spindle and circuit-closing contacts, and an adjustable frame carrying them pivoted to the totalizer-frame and adapted to swing around its pivot.

13. In a prepayment electric meter, a circuit-closer driven by the totalizer, comprising a spindle and circuit-closing contacts, and an adjustable frame carrying them, having a removable bushing forming one pivotal bearing for said spindle.

14. In a prepayment electric meter, a circuit-closer operated by the totalizer, comprising a spindle, a weight hung loosely thereon, circuit-closing contacts operated by said weight, and an adjustable frame carrying said spindle and contacts.

15. In a prepayment electric meter, a circuit-closer operated by the totalizer, comprising a spindle, a weight hung loosely thereon, a connection between said spindle and weight whereby the weight is alternately elevated and released, circuit-closing contacts operated by the fall of the weight, and a retarder connected to said weight for retarding its fall and prolonging the contact.

16. In a prepayment electric meter, a circuit-closer operated by the totalizer, comprising a spindle, a weight hung loosely thereon, a connection between said spindle and weight whereby the weight is alternately elevated and released, circuit-closing contacts operated by the fall of the weight, a retarder for the weight to prolong the circuit-closure, and an accelerator for hastening the fall of the weight.

17. In a prepayment electric meter, a circuit-closer operated by the totalizer, comprising a spindle, a weight hung loosely thereon, a connection between said spindle and weight whereby the weight is alternately elevated and released, circuit-closing contacts operated by the fall of the weight, a retarder for the weight to prolong the circuit-closure, and an accelerator for hastening the fall of the weight, comprising a spring flexed by the weight in its ascent and reacting against the weight in its descent.

18. In a prepayment electric meter, a circuit-closer operated by the totalizer, comprising a spindle, a weight hung loosely thereon, a connection between said spindle and weight whereby the weight is alternately elevated and released, circuit-closing contacts operated by the fall of the weight, a retarder for the weight to prolong the circuit-closure, and an accelerator for hastening the fall of the weight, comprising a spring having a flat surface engaged by the projection on the weight, and an inclined portion reacting against said projection as the weight begins to fall.

19. In a prepayment electric meter, a circuit-closer operated by the totalizer, comprising a spindle, a weight hung loosely thereon, a

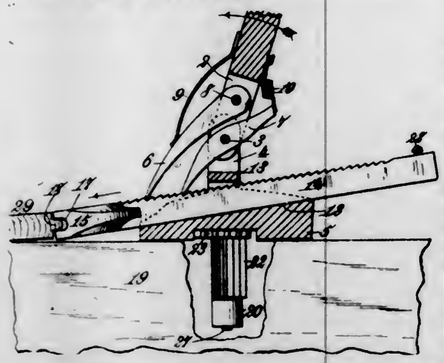
connection between said spindle and weight whereby the weight is alternately elevated and released, circuit-closing contacts operated by the fall of the weight and a spring engaged by the weight when approximately half lifted, arranged to equalize the load by the increasing resistance of the spring as the effective gravitation of the weight diminishes.

822,092. SURGICAL APPLIANCE. WILLIAM L. WOODRUFF, Troy, Ariz. Filed Dec. 28, 1904. Serial No. 238,640.



Claim.—As an improved article of manufacture, a penile cap or hood comprising a body portion hemispherical in shape and having adhesive material applied to its inner face, the said cap having a central opening, and a hollow nipple of soft waterproof material of less diameter than the cap and closed at one end, the other or open end of the nipple being secured to the surface of the cap around the said opening.

822,093. CARPENTER'S JACK. IRA E. WYER, Portsmouth, Ohio. Filed Oct. 26, 1905. Serial No. 284,572.



Claim.—1. A carpenter's jack comprising a base, a rack-bar slidably mounted therein in an inclined position, a forcing and a holding dog cooperating with said rack-bar, and means for operating said dogs.

2. A carpenter's jack comprising a base, a rack-bar slidably mounted therein, an operating-lever, a forcing-dog pivotally mounted on said lever, a holding-dog, a pivot-pin in said base common to said holding-dog and lever, and springs carried by said lever for controlling the action of said dogs.

3. A carpenter's jack comprising a base, a rack-bar slidably mounted therein in an inclined position, an operating-lever pivotally mounted in said base, a forcing-dog pivotally mounted on said lever, a holding-dog pivotally mounted intermediate its ends on the pivot of said lever, and springs operating to hold said dogs normally in engagement with the teeth of said rack-bar.

4. In a carpenter's jack, in combination with the base, a pair of intermeshing gears rotatably mounted on the base, and a gripping member carried by each gear.

5. In a carpenter's jack, in combination with the base, a pair of intermeshing gears rotatably mounted on the base, and a pair of eccentrically-mounted gripping members carried, respectively, by said gears.

6. In a carpenter's jack, in combination with the base, a pair of intermeshing gears rotatably mounted on the base, and a pair of eccentrically-mounted, corrugated, gripping members carried, respectively, by said gears.

7. In a carpenter's jack, in combination with a base provided with recesses, a pair of intermeshing gears rotatably mounted in said recesses, and a gripping-cam carried by each gear.

822,094. GAGE OR MARKER AND RULE. ANTHONY D. ZIEMER, Russell, N. D. Filed Oct. 4, 1905. Serial No. 281,345.

Claim.—A gage or marker for use in fitting base-boards to the base-block of a room, comprising two members 1 pivotally connected together at one end and provided at their pivoted ends with inwardly-extending extensions 4 provided with right-angled faces or edges, two of said faces being designed to abut against each other to hold said members in parallel relation, so that the device may be conveniently straddled upon the base-board and the latter marked at the proper point.



822,095. LIFTING-MAGNET. CHARLES E. F. AHLM, Cleveland, Ohio, assignor to Cleveland Armature Works, Cleveland, Ohio, a Partnership. Filed Aug. 28, 1905. Serial No. 276,058.



Claim.—1. A lifting-magnet comprising a top plate having a plurality of pole-pieces depending therefrom and a plurality of coils arranged on said depending pole-pieces and wound to create a number of magnetic poles in excess of the number of coils.

2. A lifting-magnet comprising a top plate having pole-pieces depending therefrom and a plurality of coils arranged on said depending pole-pieces and wound to create practically concentric zones of magnetic poles, the alternate zones being of the same polarity.

3. A lifting-magnet comprising a top plate having pole-pieces depending therefrom disposed around a center and so arranged that a radial line from the center of the magnet outward will cut at least three polar faces, the winding for the pole-pieces arranged on said depending pole-pieces and wound to have at least one less coil than the number of pole-pieces.

4. A lifting-magnet comprising a top plate having pole-pieces depending therefrom disposed around a center and so arranged that a radial line from the center of the magnet outward will cut at least three polar faces alternate as to their polarity, the winding for the magnet arranged on said depending pole-pieces and wound to have at least one less coil than the number of pole-pieces.

5. A lifting-magnet having coils wound to form poles some of which are enveloped within the others, the number of poles at one end of the magnet always being in excess of the number of coils.

6. A lifting-magnet having a succession of at least three pole-pieces, one pole-piece being encircled by the others and coils wound to cause the lines of force of each pole-piece to pass to or from the adjacent pole-piece.

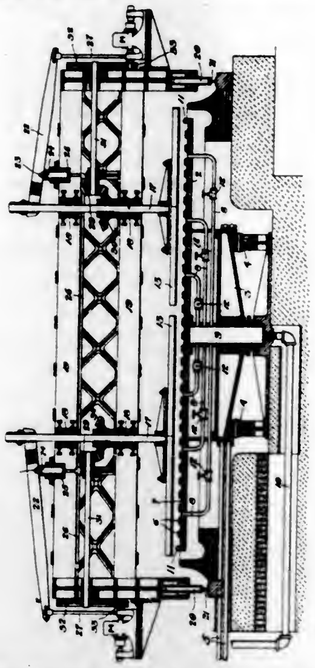
822,096. APPARATUS FOR GRINDING, SMOOTHING, AND POLISHING PLATE-GLASS. EDWARD BAGNALL, Pittsburg, Pa., assignor to Zoffer Plate Glass Manufacturing Company, Pittsburg, Pa., a Corporation of West Virginia. Filed June 24, 1905. Serial No. 266,809.

Claim.—1. In apparatus for smoothing plate-glass, the combination of a rotating table, an integral covering therefor of impervious resilient material as rubber having a plurality of upwardly-extending supporting projections and a connected series of intervening air-circulation spaces, an independent surrounding cushioning device, means for exhausting the air from the cushioning spaces whereby a superimposed plate is caused to compress the bearing projections to make an air-tight engagement, means for rotating the supporting-table in one direction, and superimposed runners, with means for rotating them in the opposite direction, substantially as set forth.

2. In apparatus for smoothing plate-glass, a rotating table provided with a series of resilient supporting-abutments and intervening communicating air-circulation spaces, and a surrounding cushion, with means for exhausting the air from the circulation-spaces, substantially as set forth.

3. In apparatus for smoothing plate-glass, a rotating table provided with a series of resilient supporting-abutments and intervening communicating air-circulation spaces, and a surrounding pneumatic cushion, with means for exhausting the air from the circulation-spaces, substantially as set forth.

4. In apparatus for smoothing plate-glass, a rotating table provided with a series of resilient supporting-abutments and intervening air-circulation spaces, with means for exhausting the air therefrom, substantially as set forth.



5. In apparatus for smoothing plate-glass, a rotating table provided with a series of integrally-connected resilient supporting-abutments and intervening communicating air-circulation spaces with means for exhausting the air from said spaces, substantially as set forth.

6. In apparatus for smoothing plate-glass, a rotating table provided with a plurality of series of resilient supporting-abutments and intervening air-circulation spaces with means for exhausting the air from the spaces of each of said series independently, substantially as set forth.

7. In apparatus for smoothing plate-glass, a rotating table provided with a plurality of series of supporting-abutments extending above the surface of the table and intervening air-circulation spaces, cushioning devices surrounding each of said series of abutments, with means for exhausting the air from the spaces of each of said series independently, substantially as set forth.

8. In apparatus for smoothing plate-glass, a rotating table provided with a flat base having an upwardly-extending series of rubber supporting-abutments and intervening air-circulation spaces, a surrounding compressible cushion extending slightly above the normal level of the abutments, with means for exhausting the air from the circulation-spaces, substantially as set forth.

9. In apparatus for smoothing plate-glass, the combination of a rotating table provided with a flat base having an upwardly-extending series of resilient supporting-abutments and intervening air-circulation spaces, a surrounding cushioning device, a central hollow mast, pipes communicating with said mast and with the air-circulation spaces, and means for exhausting the air from the hollow mast, substantially as set forth.

10. In apparatus for smoothing plate-glass, the combination of a rotating table provided with a flat base having an upwardly-extending series of resilient supporting-abutments and intervening air-circulation spaces, a surrounding cushioning device, a central hollow mast, pipes communicating with said mast and with the air-circulation spaces, provided with valves, and means for exhausting the air from the hollow mast, substantially as set forth.

11. In apparatus for smoothing plate-glass, the combination of a rotating table provided with a flat base having an upwardly-extending series of resilient supporting-abutments and intervening air-circulation spaces, a surrounding cushioning device, a central hollow mast, pipes communicating with said mast and with the air-circulation spaces, means for exhausting the air from the hollow mast, and a superimposed rotating runner, substantially as set forth.

12. In apparatus for smoothing plate-glass, the combination of a rotating table provided with a flat base having an upwardly-extending series of resilient supporting-abutments and intervening air-circulation spaces, a surrounding cushioning device, a central hollow mast, pipes communicating with said mast and with the air-circulation spaces, means for exhausting the air from the hollow mast, and a plurality of superimposed runners, substantially as set forth.

13. In apparatus for smoothing plate-glass, the combination of a rotating table provided with a flat base having an upwardly-extending series of resilient supporting-abutments and intervening air-circulation spaces, a surrounding cushioning device, a central hollow mast, pipes communicating with said mast and with the air-circulation spaces, means for exhausting the air from the hollow mast, and a superimposed runner, with means for rotating the runner in a direction opposite to the rotation of the table, substantially as set forth.

14. In apparatus for smoothing plate-glass, the combination of a rotating table provided with a series of upwardly-extending resilient supporting-abutments and intervening air-circulation spaces, a surrounding cushioning device, a central hollow mast, pipes communicating with said mast and with the air-circulation spaces, means for exhausting the air from the hollow mast, and a plurality of superimposed runners, with means for rotating the runners in a direction opposite to the rotation of the table, substantially as set forth.

15. In apparatus for smoothing plate-glass, the combination of a rotating table provided with a series of upwardly-extending resilient supporting-abutments and intervening air-circulation spaces, a surrounding cushioning device, a central hollow mast, pipes communicating with said mast and with the air-circulation spaces, means for exhausting the air from the hollow mast, and a plurality of superimposed runners of different diameters, with means for rotating the runners in a direction opposite to the rotation of the table, substantially as set forth.

16. In apparatus for smoothing plate-glass, the combination of a rotating table provided with a series of upwardly-extending resilient supporting-abutments and intervening air-circulation spaces, a surrounding cushioning device, a central hollow mast, pipes communicating with said mast and with the air-circulation spaces, means for exhausting the air from the hollow mast, and a superimposed traveling carriage provided with vertically-adjustable rotating runners, substantially as set forth.

17. In apparatus for smoothing plate-glass, the combination of a rotating table provided with a series of upwardly-extending resilient supporting-abutments and intervening air-circulation spaces, a surrounding cushioning device, a central hollow mast, pipes communicating with said mast and with the air-circulation spaces, means for exhausting the air from the hollow mast, and a superimposed traveling carriage provided with vertically-adjustable rotating runners, and means mounted on the carriage for actuating the runners, substantially as set forth.

18. In apparatus for smoothing plate-glass the combination of a rotating table provided with a series of supporting-abutments and intervening air-circulation spaces, a surrounding cushioning device, a central hollow mast, pipes communicating with said mast and with the air-circulation spaces, means for exhausting the air from the hollow mast, and a superimposed traveling carriage provided with vertically-adjustable rotating runners, levers arranged to raise and lower the runners, fluid-actuated mechanism arranged to elevate the fulcrums of said levers, and screw mechanism for adjusting the levers on their fulcrums, said mechanism being mounted on the carriage, substantially as set forth.

19. The combination with the rotating table of a glass-smoothing apparatus, of a glass-supporting cushion consisting of a layer of rubber provided with upwardly-extending abutments, substantially as set forth.

20. The combination with the rotating table of a glass-smoothing apparatus, of a glass-supporting cushion consisting of a layer of rubber provided with upwardly-extending abutments, and intervening communicating air-circulation openings, substantially as set forth.

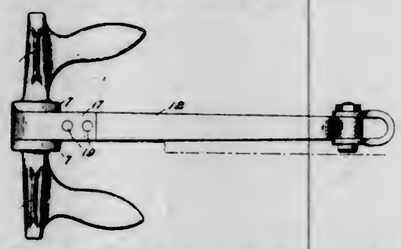
21. The combination with the rotating table of a glass-smoothing apparatus, of a glass-supporting cushion consisting of a layer of rubber provided with upwardly-extending abutments, and intervening communicating air-circulation openings, with a surrounding cushioning device extending slightly above the normal top level of the abutments, substantially as set forth.

22. The combination with the rotating table of a glass-smoothing apparatus, of a glass-supporting cushion consisting of a layer of rubber provided with upwardly-extending abutments, and intervening communicating air-circulation openings, with a surrounding inflated pneumatic tube extending slightly above the normal top level of the abutments, substantially as set forth.

23. The combination with the rotating table of a glass-smoothing apparatus, of a glass-supporting cushion consisting of a layer of rubber provided with upwardly-extending abutments, and intervening communicating air-circulation openings, with a surrounding inflated pneumatic tube extending slightly above the normal top level of the abutments, and means for exhausting the air from the air-circulation openings, substantially as set forth.

24. In glass-smoothing apparatus, the combination with the hollow spindle of a rotating runner, of a removable tube for supplying abrasive material to the under portion of the runner, substantially as set forth.

822,097. STOCKLESS ANCHOR. GEORGE W. BOWEN, Lidley Park, Pa. Filed Dec. 6, 1904. Serial No. 235,794.



Claim.—1. In a stockless anchor, the combination with the shank, of a concaved seat on the lower end of the shank and stops formed on the shank to one side of and above the said seat.

2. A shank for a stockless anchor comprising a reduced wedge-shaped portion at its lower end, a concaved seat in the extreme lower end and stops adjacent to the concave seat.

3. A shank for a stockless anchor comprising a reduced wedge-shaped portion at its lower end, lugs projecting from said portion, a concaved seat in the extreme lower end and stops between the reduced portion and concaved seat.

4. In a stockless anchor, the combination with a head, of a shank having a reduced wedge-shaped lower end, a lug extending laterally from two opposite sides of said end and a strap provided with recesses for the reception of said lugs, said strap extending from the shank around the head and means rigidly securing the ends of said strap to the reduced end of the shank.

5. In a stockless anchor, the combination with a head having an annular groove between its flukes, of a shank, a concaved seat on the extreme lower end of the shank, stops on each side of said seat, and a strap revolubly securing the head and shank together.

6. In a stockless anchor, the combination with the head having an annular groove between its flukes, a convex seat in said groove of less arc than the groove, of a shank seated in said groove and a strap revolubly securing the shank and head together.

7. In a stockless anchor, the combination with the head having an annular groove between its flukes one hundred and eighty degrees of which is deeper than the remainder, a convex seat in the deeper portion of the groove diametrically opposite stops in the groove, of a shank, a concaved seat on the lower end of the shank adapted to engage the convex seat in the head, and a strap revolubly securing the head and shank together.

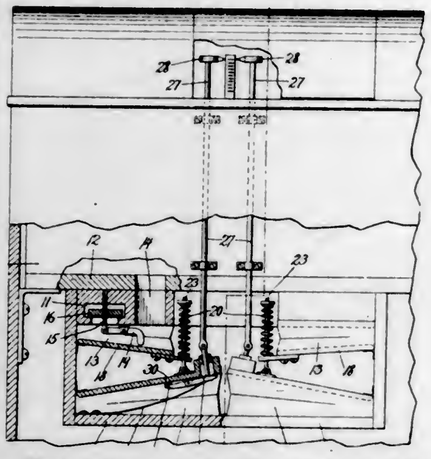
8. In a stockless anchor, the combination with the head having an annular groove between its flukes, one-half of which is deeper than the other, a convex seat in the deeper groove stops at juncture of the two portions of the groove, of a shank having a wedge-shaped reduced lower end, lugs extending from two opposite faces of said end, and a strap the ends of which are provided with recesses adapted to receive said lugs, said straps being positioned in the groove in said head while its ends are rigidly secured to the reduced end of the shank, thereby revolubly securing the shank and head together.

9. In a stockless anchor, the combination with the shank, a concaved seat formed on the lower end thereof and stops formed on the shank, of a solid strap inclosing the seat and stops and two sides of the shank.

10. In a stockless anchor, the combination with the head and two annular lugs cast integral therewith forming an annular groove on the head, of a shank, a concaved seat formed on the lower end of the shank, stops integral with the shank and a solid strap positioned in said groove and secured to the shank; the strap and said lugs completely inclosing the stops, seat and lower end of the shank.

11. In a stockless anchor, the combination with the head, two annular lugs cast integral therewith forming an annular groove, and shoulders in said groove constituting stops, of a shank, a concaved seat formed on the end of the shank adapted to engage the stops in said groove and a solid strap positioned in said groove and secured to the shank, the strap and said lugs completely inclosing the stops, seat and lower end of the shank.

822,098. EXPRESSION-CONTROLLING DEVICE FOR MUSICAL INSTRUMENTS. CHARLES S. BURTON, Oak Park, Ill. Filed Aug. 1, 1904. Serial No. 219,047.



Claim.—1. An automatic musical instrument or player having pneumatically-operated playing devices and an air-chamber from which is derived the pneumatic tension for operating said devices; a pneumatically-operated valve for governing the tension, means for causing yielding resistance to its action, a pneumatic operatively connected with said means for modifying the resistance by collapse and expansion of the pneumatic, and means for governing the collapse and expansion of said pneumatic at will.

2. An automatic musical instrument or player having pneumatically-operated playing devices and an air-chamber from which is derived the pneumatic tension for operating said devices and; a pneumatically-operated valve for governing the tension; means for causing yielding resistance to its action; a pneumatic operatively connected with said means for modifying the resistance by collapse and expansion of the pneumatic; a valve which controls said pneumatic and a stop for operating said valve at will.

3. An automatic musical instrument or player having pneumatically-operated playing devices and an air-chamber from which is derived the pneumatic tension for operating said devices; a pneumatically-operated valve for governing the tension; means for causing yielding resistance to its action; a pneumatic operatively connected with said means for modifying the resistance by collapse and expansion of the pneumatic; a valve which controls said pneumatic; a stop for operating said valve at will, said valve being mounted on the movable wall of the pneumatic and its opening movement being in the same direction as the collapsing movement of said moving wall.

4. An automatic musical instrument or player comprising, in combination with an exhaust-bellows or equalizer, an air-chamber in communication therewith; motor-pneumatics which are exhausted into said air-chamber; a pneumatic which is at all times exposed to the exhaust tension of said air-chamber; a valve which controls communication between the exhaust-bellows and the air-chamber operatively related to said pneumatic for being seated by the action of the latter which is caused by the exhaust tension of the air-chamber; means for yieldingly resisting such action; a pneumatic which communicates with the exhaust-bellows having its moving wall connected with said means for yielding resistance adapted for varying said resistance by its movement; a valve which controls the communication of the bellows with said last-mentioned pneumatic by moving relatively to said moving wall, and means for so moving it whose movement for opening the valve is in the same direction as the movement of said wall caused by such opening.

5. An automatic musical instrument or player comprising, in combination with an exhaust-bellows, an air-chamber communicating therewith and motor-pneumatics for operating the playing devices which are actuated for such operation by communication with the air-chamber; a pneumatic which constitutes part of the air-passage from the bellows to the air-chamber; a valve operatively related to the pneumatic for closing such passage when the pneumatic collapses; a spring which yieldingly resists such collapse; a second pneumatic having its moving wall connected with the spring for tensioning the latter when said second pneumatic collapses, said second pneumatic having communication through its moving wall with the exhaust-bellows; a valve which controls such communication adapted to be moved off its seat in the direction in which the moving wall moves in the collapse of the pneumatic, and a stop device for forcing the valve off its seat adapted to be moved to follow up the collapsing movement of said moving wall.

6. An automatic musical instrument comprising, in combination with an exhaust-bellows, an air-chamber in communication with the bellows; motor-pneumatics for operating the playing devices deriving their action by communication with said air-chamber; a pneumatic which constitutes part of the passage of communication between the exhaust-bellows and the air-chamber; a valve in said passage which is closed by the collapse of the pneumatic; a spring which yieldingly resists such collapse; a second pneumatic connected with said spring for tensioning the same when said second pneumatic collapses, said second pneumatic having communication through its moving wall with the exhaust-bellows; a valve which controls said communication mounted on and carried by the moving wall and adapted to be moved for opening in the direction in which the moving wall moves in the collapse of the pneumatic, said second pneumatic having a leak-port; a valve for closing such leak-port so connected to the valve which controls communication of said pneumatic with the exhaust-bellows as to be seated when the latter valve is opened and opened when the latter valve is seated, and a stop device for opening said latter valve adapted to follow up the movement of said valve with the moving wall of the pneumatic.

822,099. BOTTLE-CAP. CLARENCE P. BYRNES, Sewickley, Pa. Filed Mar. 12, 1906. Serial No. 305,469.



Claim.—1. A bottle or jar having a glass neck with one or more separated protuberances projecting laterally for part of its circumference, and a cap having a plain wall of a diameter normally smaller than the neck plus the protuberance, forced over the neck and locked by contraction of the metal under the protuberance; substantially as described.

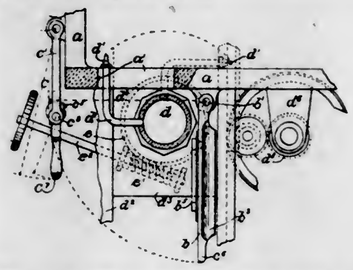
2. A bottle or jar having a neck with a projecting protuberance or protuberances, and a metal cap having a plain wall forced upon the neck and locked by engagement of the metal under the protuberance or protuberances, said neck having a sharp shoulder arranged to cover and protect the edge portion of the metal cap; substantially as described.

3. A bottle having an external shoulder, and a protuberance above the shoulder, and a cap having a plain wall and a lower flange, forced upon the neck and locked under the protuberance, the normal diameter of the cap being less than the neck plus the protuberance; substantially as described.

4. A bottle having a neck with an annular shoulder, and a protuberance above the shoulder, and a cap having a plain wall and a lower flange, said cap being forced endwise upon the neck and locked under the protuberance.

5. A bottle or jar having a glass neck provided with a plurality of outwardly-projecting protuberances at separated points in its circumference, and a metal cap normally smaller than the neck plus the protuberance, forced over the neck and locked by engagement of the metal under the protuberances; substantially as described.

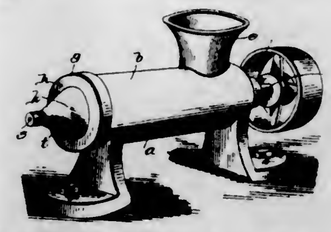
822,100. SLUICE-DISCHARGE CONSTRUCTION OF FILTER-PRESSES. JOHN CHISHOLM, Kalgoorlie, Western Australia, Australia. Filed Aug. 4, 1905. Serial No. 272,792.



Claim.—1. The combination with filter-press frames having openings therein, of a sluice-pipe *d* having nozzles thereon, means for raising and lowering said pipe, and means for rotating the same so as to cause the nozzles to enter the opening.

2. The combination with filter-press frames having openings therein, of a door for each opening, a link and a cam carried thereby for locking the door, a water-pipe provided with sluicing-nozzles, means for raising and lowering the pipe, and means for rotating the same to cause the nozzles to enter the openings.

822,101. MACHINE FOR FORMING PILL-MASS ROLLS. HENRY COPLESTON, Cincinnati, Ohio. Filed Oct. 3, 1905. Serial No. 281,158.

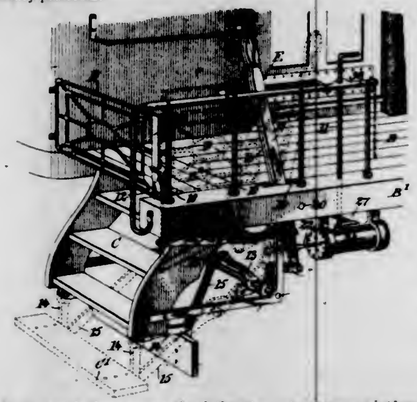


Claim.—A pill-roll-forming machine, having a cylindrical chamber one head of the cylinder being provided with a journal-seat, a hopper at the same end of the cylinder as said seat, a conically-recessed molding-head at the other end of said chamber, said molding-head having an axial outward extension provided with a central perforation and an axial integral inner extension provided with a journal-seat, and converging passages formed in the wall joining said inner axial extension with the molding-head in rear of the inner axial extension opening into the conical recess of the head and joining the central perforation of the outer axial extension to which they have a branched relation, and a spiral compressor having bearings in said journal-seats, substantially as specified.

822,102. FOLDING AND EXTENSION CAR-STEP. JASPER S. COXEY, Aberdeen, Wash. Filed Aug. 22, 1905. Serial No. 275,200.

Claim.—1. A car-platform, steps fixed thereto, an auxiliary step having a hinged connection with the fixed steps, a temporary platform having hinged connection with the main platform and located over the fixed steps, an air-cylinder, means for supplying air thereto and controlling the supply, and devices connected with the temporary platform, the auxiliary step and the piston-rod of the said cylinder, for moving the auxiliary step and raising and lowering the temporary platform.

2. A car-platform, steps fixed thereto, an auxiliary step having hinged connection with the fixed steps, a temporary platform hinged to the main platform and located over the fixed steps, a gate pivoted on the platform above the said fixed steps, an air-cylinder, a shifting device for the said gate, a device for raising and lowering the said temporary platform, and connections between the piston-rod of the said cylinder, the shifting device for the gates, the operating device for the temporary platform and the auxillary step, whereby at one operation of the piston of the said air-cylinder to simultaneouly operate the auxiliary step, open or close the gate and raise or lower the auxiliary platform.



3. A car-platform, steps fixed thereto, a temporary platform hinged to the main platform, a gate mounted to swing on the main platform, the swing-post whereof is spiral at its lower portion, an auxiliary step hinged to the main steps, a rock-shaft, connections between the rock-shaft and the auxiliary step, to carry the latter forward or rearward, a lever fulcrumed upon the platform, a shifting bar having a forked head which moves along the swing-post of the gate, a lever-arm connected with the said shifting bar, a cam-lever connected with the lever-arm, a connection between the cam-lever and the lever fulcrumed on the platform, a connection between the latter lever and the said rock-shaft, a link connection between the cam-lever and the temporary platform, an air-cylinder, the piston of which is connected with the lever fulcrumed on the platform, and means for controlling the supply and the outlet of air to the said cylinder.

4. A platform for a car, steps fixed thereto, an auxiliary step hinged to the fixed step, a temporary platform hinged to the main platform, a gate mounted to turn on the main platform, an operating-lever in two sections, a latch connection between the sections, each section of the lever being adapted for independent operation, an air-cylinder, means for controlling the supply thereto, a connection between the piston-rod of the said cylinder and one section of said operating-lever and an operating connection between the section of the lever connected with the cylinder and the auxiliary step, means for operating the gate and for raising and lowering the temporary platform, and an operative mechanism carried by the other section of the said operating-lever and connected with the operating means for the temporary platform and the gate.

5. A platform for a car, a gate mounted to turn on the said platform, provided with a swing-post having a spiral lower section, a temporary platform hinged to the main platform, a lever pivoted on the main platform, a triangular cam-lever fulcrumed beneath the said platform at its wider end, a link connection between the narrower end of the said cam-lever and the operating-lever, a link connection between the wider end of the said cam-lever and the temporary platform to raise and lower the platform, a lever-arm fulcrumed beneath the main platform and pivotally connected with the wider end of the cam-lever, a shifting rod connected with the opposite end of the lever-arm, and a forked head at the upper end of the shifting rod, adapted to travel over the swing-post of the gate and particularly over the spiral portion of said post.

6. A car-platform, steps fixed thereto, an auxiliary step having a hinged connection with the fixed steps, a temporary platform having hinged connection with the main platform and located over the fixed steps, a gate pivoted on the platform above the fixed steps, and a single means for moving the auxiliary step, for raising and lowering the platform and for opening and closing the gate.

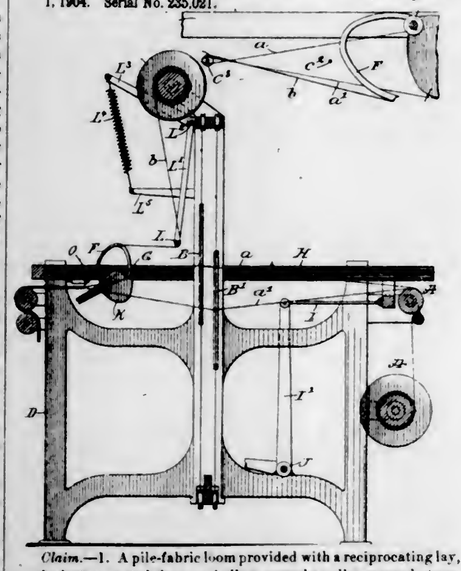
7. A car-platform, steps fixed thereto, an auxiliary step having a hinged connection with the fixed steps, a temporary platform having hinged connection with the main platform and located over the fixed steps, a gate pivoted on the said platform above the fixed steps, a single means for moving the auxiliary step, for raising and lowering the platform and for opening and closing the gate, and a separate means for moving the platform and opening the gate.

8. A car-platform, steps fixed thereto, an auxiliary step having a hinged connection with the fixed steps, a temporary platform having a hinged connection with the main platform and located over the fixed steps, a single means for moving the auxiliary step and for raising and lowering the platform, and a separate means for raising and lowering the platform.

9. A car-platform, steps fixed thereto, an auxiliary step having a hinged connection with the fixed steps, a temporary platform having hinged connection with the main platform and located over the fixed steps, a gate pivoted on the platform above the fixed steps, means for moving the steps, means for raising and lowering the platform and for opening and closing the gate, and means whereby to connect said first and last named means.

10. A car-platform, steps fixed thereto, an auxiliary step having a hinged connection with the fixed steps, a temporary platform having hinged connection with the main platform and located over the fixed steps, a gate pivoted on the platform above the fixed steps, means for moving the steps, means for opening and closing the gate and for raising and lowering the platform normally connected with said first-named means, and means whereby to disconnect said first and last named means.

822,103. PILE-FABRIC LOOM. JAMES K. DALKRANIAN, New York, N. Y., assignor to Nazar Costikyan, New York, N. Y. Filed Dec. 1, 1904. Serial No. 235,021.



Claim.—1. A pile-fabric loom provided with a reciprocating lay, a rock-shaft mounted thereon, hollow curved needles secured at one end to the said rock-shaft, and pushers secured on the rock-shaft and lying in the same plane as the said needles.

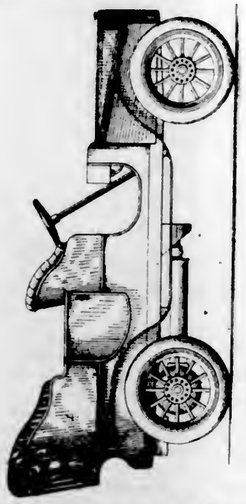
2. A pile-fabric loom provided with a reciprocating lay, a rock-shaft mounted thereon, hollow curved needles secured at one end to the said rock-shaft, and pushers secured on the rock-shaft and lying in the same plane as the said needles, the point of each needle being a short distance from the peripheral edge of the corresponding pusher.

3. A pile-fabric loom comprising a warp-beam for the ground warp-threads, a warp-beam for the pile warp-thread, heddles for the ground warp-threads, a reciprocating lay provided with a rock-shaft, hollow curved needles on the said rock-shaft, a tension-rod intermediate the said needles and the said warp-beam for the pile-warp threads, pushers on the said shaft in the form of flat plates lying in the same plane as the said needles, and means for the insertion of the weft.

4. A pile-fabric loom comprising a warp-beam for the ground warp-threads, a warp-beam for the pile warp-thread, heddles for the ground warp-threads, a reciprocating lay provided with a rock-shaft, hollow curved needles on the said rock-shaft, a tension-rod intermediate the said needles and the said warp-beam for the pile warp-threads, pushers on the said shaft in the form of flat plates lying in the same plane as the said needles, means for the insertion of the weft, and a shogging device for the pile warp-threads.

5. A pile-fabric loom provided with a segmental hollow needle for the passage of the pile warp-thread and mounted to rock, a spring-pressed tension-rod mounted to swing and engaging the said pile warp-thread, a reciprocating lay on which the needle is mounted to rock, means for the insertion of the weft, and means on the said lay, operating in unison with the said needle, for pushing the weft out of the needle and beating in the said weft.

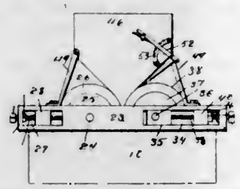
822,104. MOTOR-CAR. MICHAEL EHRET, Philadelphia, Pa. Filed Dec. 30, 1905. Serial No. 293,904.



Claim.—1. A motor-car provided with a tonneau structure, having an extended back portion with a double casing inclosing a chamber for receiving a spare tire or tires.

2. A motor-car provided with a tonneau structure having an extended back with double casing inclosing a tire-receiving chamber, and seat-cushions extending over the top of said extended back portion of the tonneau.

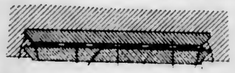
822,105. DEVICE FOR SEPARATING COCKLE FROM GRAIN. JOHN A. EKLUND, Verndale, Minn. Filed Feb. 28, 1905. Serial No. 247,653.



Claim.—1. In a device of the class described, the combination of a supporting-frame, bars, at each end of the frame, provided with slots 27 and 34, an adhesive roller mounted between the said bars, a brush-holder movable in the slots 27 of the bars, screws extending through the ends of the bars and the said holder, nuts mounted on the screws, at the inner sides of the outer end walls of the slots 27, blocks movable in the slots 34 of the bars, an adhesive roller mounted in said blocks, a brush-holder also movable in said slots 34, screws extending through the outer end walls of the slots 34 and the brush-holder and connected to the blocks, nuts mounted on said screws at the outer side of the brush-holder, and other nuta mounted on the screws and disposed at the inner sides of the outer end walls of the slots 34.

2. A device of the class described, comprising a supporting-frame, a hopper having an inclined bottom and a discharge-opening leading from the lower portion of the inclined bottom, a slide for controlling the said discharge-opening, a lever fulcrumed at an intermediate point of its length on the hopper, a rod connecting the slide and the lower arm of the lever, a segmental rack fixed on the hopper, means on the upper arm of the lever for engaging said rack, bars, at each end of the supporting-frame, provided with slots 27 and 34, an adhesive roller mounted between the said bars, a brush-holder movable in the slots 27 of the bars, screws extending through the ends of the bars and the said holder, nuts mounted on the screws, at the inner sides of the outer end walls of the slots 27, blocks movable in the slots 34 of the bars, an adhesive roller mounted in said blocks, a brush-holder also movable in said slots 34, screws extending through the outer end walls of the slots 34 and the brush-holder and connected to the blocks, nuts mounted on said screws at the outer side of the brush-holder, and other nuts mounted on the screws and disposed at the inner sides of the outer end walls of the slots 34.

822,106. SECURING PHOTOGRAPHS, NAME AND RECORD TABLETS TO MONUMENTS AND GRAVE-MARKERS. REUBEN FANCHER, Crown Point, Ind. Filed Feb. 19, 1906. Serial No. 301,550.



Claim.—1. For monuments, head-stones and the like, a concrete structure a backing-plate embedded within the wall thereof, a shoulder surrounding and the edge of said plate projecting in front of its outer face, and a glass front or face-plate seated upon said concrete shoulder and forming thereby an inclosed chamber or receptacle between the two plates for a photograph, letters or other device to be exhibited, the said plates having beveled edges standing toward the outer face and secured and sealed within the wall in the operation of erecting the concrete around the edges of the embedded plates.

2. In a monument, a concrete structure, an inner and an outer plate embedded within the wall thereof and forming a chamber between them, a shoulder formed by the concrete between said plates and overlapping the front edges of the inner plate, and a shoulder formed by the concrete overlapping the outer edges of the outer plate, each plate having its edges independently incased whereby both plates are rendered self-securing and self-sealing in erecting the monument.

3. In a concrete structure, an inner and an outer plate embedded therein, the edges of the outer plate supported between an inner and an outer shoulder formed integral with the structure, each shoulder being packed around the inner and the outer sides of said plate to incase its edges, whereby to render its joints water and moisture proof, the inner shoulder overlapping the edges of the inner plate and forming a chamber between the plates as a receptacle for memorial records.

822,107. BASE OR SUPPORT FOR PHOTOGRAPHIC SENSITIVE EMULSIONS. JAMES FINDLAY, Ilford, England, assignor to Bromar Limited, London, England. Filed Mar. 6, 1905. Serial No. 248,749.

Claim.—1. A non-inflammable transparent and white base or support for photographic sensitive emulsions composed of dinitrocellulose, gelatin or glue and glacial acetic acid into which is dissolved chloral hydrate, and an alkaline solution for rendering the base non-inflammable.

2. A non-inflammable base or support for photographic sensitive emulsions composed of dinitrocellulose, gelatin or glue, glacial acetic acid into which is dissolved chloral hydrate, gum-dammar and gum-storax, in or about the proportions given.

3. A non-inflammable transparent and white base or support for photographic sensitive emulsions composed of dinitrocellulose, gelatin or glue and glacial acetic acid into which is dissolved chloral hydrate, and rendered non-inflammable by treatment in an alkaline shellac solution.

4. A method of manufacturing a base or support for photographic sensitive emulsions consisting in adding to a suitable quantity of a nitro derivative of cellulose and gelatin or glue, a solution of chloral hydrate in glacial acetic acid slowly heating the mass until the ingredients are thoroughly dissolved, then adding an alcoholic solution of gum, and then suitably molding or forming the mass into sheets, slabs or films.

5. A method of manufacturing a base or support for photo-

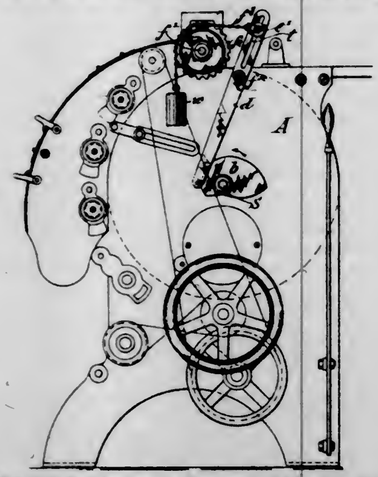
graphic sensitive emulsions consisting in adding to a suitable quantity of a nitro derivative of cellulose and gelatin or glue, a solution of chloral hydrate in glacial acetic acid, slowly heating the mass until the ingredients are thoroughly dissolved, then adding an alcoholic solution of gum, then suitably molding or forming the mass into sheets, slabs or films, and then subjecting the sheets, slabs or films to a suitable solution to impart non-inflammability thereto.

6. A method of manufacturing a base or support for photographic sensitive emulsions consisting in adding to a suitable quantity of a nitro derivative of cellulose and gelatin or glue, a solution of chloral hydrate in glacial acetic acid, slowly heating the mass until the ingredients are thoroughly dissolved, then adding an alcoholic solution of gum, then suitably molding or forming the mass into sheets, slabs or films, and then subjecting the sheets, slabs or films to an alkaline shellac solution so as to render said sheets, slabs or films non-inflammable.

7. A method of manufacturing a base or support for photographic sensitive emulsions, consisting in adding to a suitable quantity of a nitro derivative of cellulose and a gelatinous substance, a solution of chloral hydrate and glacial acetic acid, then heating the mass until the ingredients are thoroughly dissolved, then adding to the mass a gelatinous solution, and then suitably molding the mass into sheets, slabs or films.

8. A method of manufacturing a base or support for photographic sensitive emulsions, consisting in adding to a suitable quantity of a nitro derivative of cellulose and a gelatinous substance, a solution of chloral hydrate and glacial acetic acid, then heating the mass until the ingredients are thoroughly dissolved, then adding to the mass a gelatinous solution, then suitably molding the mass into sheets, slabs or films, and then subjecting the sheets, slabs or films to an alkaline shellac solution so as to render them non-inflammable.

822,108. **BRONZING-MACHINE.** MAX FRITSCHE, Carlstadt, N. J., assignor to Joseph A. Kapp, New York, N. Y., and Louis Heugstier, Weehawken, N. J. Filed Feb. 8, 1906. Serial No. 300,180.



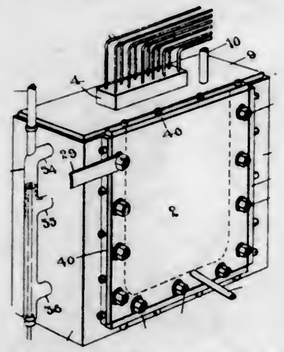
Claim.—1. In a bronzing-machine, the combination, with the shaft of the sheet-carrying cylinder-shaft and the feed-roller shaft, of a sprocket-wheel on the latter, a pawl-and-ratchet mechanism between the sprocket-wheel and shaft, an oscillating motion-transmitting lever, a weighted chain connected with said lever and passing over the sprocket-wheel, and a cam on the shaft of the sheet-carrying cylinder for actuating the lower end of the motion-transmitting lever.

2. In a bronzing-machine, the combination, with the sheet-carrying cylinder and the feed-roller shaft, of a sprocket-wheel placed loosely on the latter, a pawl-and-ratchet mechanism between the sprocket-wheel and shaft, an oscillating lever fulcrumed to the supporting-frame of the machine, a weighted sprocket-chain engaging said sprocket-wheel and connected adjustably to the upper end of the oscillating lever, and a cam on the shaft of the sheet-carrying cylinder engaging the lower end of said oscillating lever.

3. In a bronzing-machine, the combination, with the feed-roller shaft, of a sprocket-wheel rotatable thereon, a ratchet-wheel fixed to said shaft adjacent said sprocket-wheel, parallel pawls pivoted to the face of said sprocket-wheel and normally engaging said ratchet-wheel, said pawls being of such relative lengths as to permit the adjustment of said ratchet-wheel to the extent of half a tooth, and means for moving said sprocket-wheel alternately in opposite directions.

4. In a bronzing-machine, in combination, with the feed-roller shaft, a ratchet-wheel keyed thereto, a sprocket-wheel rotatable on said shaft, a pawl pivoted to said sprocket-wheel and normally engaging said ratchet-wheel, a handle pivoted to the pivot of said pawl and having an arm adapted to engage under the latter, and means for alternately moving said sprocket-wheel in opposite directions.

822,109. **ELECTROLYTIC CELL.** GEORGE A. GABRIEL, New York, N. Y., assignor to Bleach & Caustic Process Company, New York, N. Y., a Corporation of New York. Filed Feb. 26, 1906. Serial No. 302,854.



Claim.—1. In combination with an electrode, one face only of which is in contact with the active electrolyte, of liquid-conduits extending from the opposite face thereof for conveying liquid away from said face.

2. In combination with a permeable electrode, one face only of which is in contact with the active electrolyte, of projections extending from the opposite face thereof for conveying liquid away from said face.

3. In combination with an electrode, of downwardly-inclined liquid-conduits extending from a plurality of points on the face thereof, for draining liquids from substantially the entire face thereof by gravity.

4. In combination with a substantially upright electrode, of downwardly-inclined projections extending from the face thereof for conveying liquid away from said face by gravity.

5. In combination with an electrode, mechanical means coacting with the face thereof for removing and maintaining liquid out of contact with said face.

6. In an electrolytic cell, a porous diaphragm, a cathode located exteriorly of said diaphragm and in contact therewith, and mechanical means coacting with the face of the cathode for conveying liquid which percolates through said diaphragm away from the face of said cathode at a plurality of points.

7. In an electrolytic cell, a porous diaphragm, a cathode located exteriorly of said diaphragm and in contact therewith, and conduits for conveying liquid which percolates through said diaphragm away from the face of said cathode at a plurality of points.

8. In an electrolytic cell, a porous diaphragm, a cathode contacting exteriorly therewith, and downwardly-extending projections for conveying the liquid which percolates through said diaphragm away from said cathode.

9. In an electrolytic cell, a porous diaphragm, a foraminous cathode contacting therewith on one side, and projections extending from the opposite side of said cathode for draining the same.

10. In an electrolytic cell, a porous diaphragm, a foraminous cathode contacting therewith on one side, liquid-conduits on the opposite side of said cathode and a plate engaging said conduits.

11. In an electrolytic cell, a porous diaphragm, a foraminous cathode contacting with one cell thereof, liquid-conduits on the opposite side of said cathode, a plate engaging said conduits and means for forcing said plate toward said cathode and diaphragm.

12. The combination with a vertical cathode, of conduits extending downwardly from a plurality of points in the face thereof for draining the same.

13. The combination with a vertical cathode, of conduits extending downwardly from a plurality of points in the face thereof and means forming connections between said conduits at their lower ends.

14. The combination with a vertical cathode of conduits extending downwardly from a plurality of points in the face thereof and a foraminous drain-plate forming connections between said conduits at their lower ends.

15. In combination with an electrolytic cell, an exterior vertical conduit communicating directly with the interior of the anode-chamber at points removed from the top and adjacent the bottom respectively to allow of circulation of the electrolyte.

16. In combination with an electrolytic cell, an exterior circulating-conduit and an adjustable overflow-pipe connecting with said conduit.

17. In combination with an electrolytic cell, an exterior vertical transparent conduit communicating with the interior thereof, and an adjustable overflow-tube located within said conduit.

18. In combination with an electrolytic cell, of a circulating means comprising an exterior vertical transparent conduit having connecting portions which communicate with the interior of the cell, one connection being above the surface of the electrolyte, one slightly below the surface and one near the bottom of the anode-chamber.

19. In combination with an electrolytic cell, of an exterior conduit communicating with the interior thereof above and below the surface of the electrolyte, an adjustable overflow-tube connected therewith, and a gas-discharging tube connected with the top of said conduit.

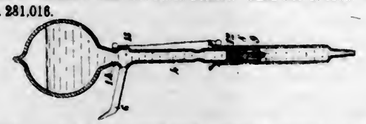
20. A continuous anode for electrolytic cells having horizontal and vertical passages therein for the circulation of the electrolyte and cathodes of substantially similar outline located adjacent the opposite active faces of said anode.

21. In an electrolytic cell, the combination with a porous diaphragm, of a foraminous cathode in contact with one side thereof, an anode having an active face adjacent the opposite side of said diaphragm and insulating material on the inner side of said diaphragm for limiting the exposed face thereof to an area smaller than that of the cathode.

22. In an electrolytic cell, the combination with a porous diaphragm, of a foraminous cathode in contact with one side thereof, an anode having an active face adjacent the opposite side of said diaphragm and insulating material on the inner side of said diaphragm for limiting the exposed surface thereof to approximately the size of said active face, the active area of said cathode being greater than inner exposed surface of said diaphragm.

23. In an electrolytic cell, the combination with a porous diaphragm of a foraminous cathode in contact with one side thereof, a second diaphragm on the opposite side thereof having gauze embedded therein, insulating material for limiting the active surface of the first porous diaphragm, and means for draining said cathode and acting upon substantially the entire surface thereof.

822,110. **SYRINGE FOR SUBCUTANEOUS OR OTHER INJECTIONS.** ANNE A. GAILLOT, Paris, France. Filed Oct. 2, 1905. Serial No. 281,016.

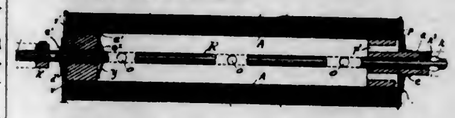


Claim.—1. A syringe comprising a cylinder having a nozzle, a hollow piston inserted in said cylinder and having in its lower end an opening and being otherwise air-tight, and a gravity-valve associated with said opening and actuated by suction and pressure, respectively, to open and close the same, the combination operating as described.

2. A syringe comprising a cylinder having a nozzle, a hollow piston inserted in said cylinder and having at its lower end an opening and being otherwise air-tight, and a gravity-valve working in said opening and adapted to close upwardly, said valve being actuated by suction and pressure, respectively, to open and close said opening, the combination operating as described.

3. A syringe comprising a cylinder having a nozzle, a hollow piston inserted in said cylinder and having an opening in its lower end, a gravity-valve working in said opening and adapted to close upwardly, said valve being actuated by suction and pressure, respectively, to open and close said opening, and a bulb formed as a continuation of said piston and adapted, with said piston, to contain the fluid to be injected by the syringe.

822,111. **MUSIC-SHEET AND SPOOL FOR SELF-PLAYING MUSICAL APPARATUS.** ROBERT A. GALLY, Brooklyn, N. Y. Filed July 9, 1903. Serial No. 164,910.



Claim.—1. A spindle or core, a perforated or indicated paper music-sheet for self-playing musical apparatus disposed in several superimposed coils in roll form on said spindle or core, one or more of the outer coils being more resistant to absorption of moisture than the main part of the sheet.

2. A hollow tube or core, a perforated or indicated paper music sheet for self-playing musical apparatus disposed in several superimposed coils in roll form on said tube or core, one or more of the outer coils being more resistant to absorption of moisture than the main part of the sheet.

3. A core variable in its length from hygrometric causes, end pieces or hubs at each end of said core, a perforated or indicated paper music-sheet for self-playing musical apparatus disposed in several superimposed coils in roll form on said core, one or more of the outer coils being more resistant to absorption of moisture than the main part of the sheet.

4. A music-spool, a perforated or indicated paper music-sheet for self-playing musical apparatus disposed in several superimposed coils in roll form on said spool, one or more of the outer coils being more resistant to absorption of moisture than the main part of the sheet.

5. A music-spool, a perforated or indicated paper music-sheet for a self-playing musical apparatus disposed in several superimposed coils in roll form on said spool, the outer end of the sheet preceding the note perforations or indications being more resistant to absorption of moisture than the main part of the sheet.

6. A music-spool, a perforated or indicated paper music-sheet for a self-playing musical apparatus disposed in several superimposed coils in roll form on said spool, the outermost coil being more resistant to absorption of moisture than the main part of the sheet.

7. A music-spool, a perforated or indicated music-sheet for self-playing musical apparatus disposed in several superimposed layers in roll form on said spool, the outermost coil being moisture-protected on its outer surface to a greater degree of resistance to moisure absorption than the main part of sheet.

8. A music-spool, a perforated or indicated paper music-sheet for self-playing musical apparatus disposed in several superimposed layers in roll form on said spool, one or more of the outer coils being more resistant to moisture absorption and wider than the main part of the sheet and abutting the flanges or heads of said spool.

9. A music-spool, a perforated or indicated paper music-sheet for self-playing musical apparatus disposed in several superimposed layers in roll form on said spool, one or more of the outer coils being wider than the main part of the sheet and abutting the flanges or heads of said spool.

10. A music-spool, a perforated or indicated paper music-sheet coiled upon said spool and having its forward end portion longitudinally split and rejointed in spread position of said split, said split-and-spread portion of the sheet being wider than its main part and abutting the flanges or heads of said spool.

11. A music-spool, a perforated or indicated music-sheet for self-playing musical apparatus disposed in several superimposed layers in roll form on said spool, a single ring or catch at the forward end of one side only of said sheet, and a coacting catch or engaging means on only the one corresponding head or flange of the spool, said head or flange being fixedly revoluble with the spindle of said spool.

12. A music-sheet spool having a flange fixedly revoluble with the spool-spindle and a permanent sheet-engaging means on said one flange only.

13. A music-roll core variable in its length from hygrometric causes, a music-sheet wound thereon, flanges or heads to said core, and one or more vents from the outer air to the ends of the coils of said sheet and the end of said core but not opened to any other part of the structure.

14. A music-spool, a perforated or indicated paper music-sheet for self-playing musical apparatus disposed in several superimposed

layers in roll form on said spool, the spool-heads and the outer coils of the roll adapted to close passage of air between them, the inner coils being slightly less in width than the distance between said spool-heads.

15. A music-roll core, hollow, and variable in its length from hygrometric causes, a head or flange thereto having a vent connecting the end of said core to the outer air, and means normally closing the interior of said core from the outer air.

16. A music-roll core variable in its length from hygrometric causes, a perforated or indicated paper music-sheet for self-playing musical apparatus having its web disposed in several superimposed layers in roll form on said core, and a head or flange to said core having one or more vents through the flange portion to said core arranged in position to be opened and closed by the respective unwinding and winding of the sheet on said core.

17. A core, hollow, and variable in its length from hygrometric causes, a perforated or indicated paper music-sheet for self-playing musical apparatus having its web disposed in several superimposed layers in roll form on said hollow core, vent-holes in the wall of said hollow core and perforations in the music-sheet between the core and any note perforations or indications of said sheet and in position to correspond with the vents of the core as the sheet is wound thereon.

18. A music-roll spool having a core variable in its length from hygrometric causes, an end piece to said core having one or more vents to said core and means arranged in position to open said vents when the roll is operated in the apparatus and close them when it is not in operation.

19. A core, hollow, and variable in its length from hygrometric causes, a perforated or indicated paper music-sheet for self-playing musical apparatus having its web disposed in several superimposed layers in roll form on said hollow core, and an end piece to said core having one or more vents to the interior of said core arranged in position to be opened and closed by the respective unwinding and winding of the sheet on said core.

20. A core, hollow, and variable in its length from hygrometric causes, a perforated or indicated paper music-sheet for self-playing musical apparatus having its web disposed in several superimposed layers in roll form on said hollow core and vents through the wall of said hollow core arranged in position to be opened and closed by the respective unwinding and winding of the sheet on said core.

21. A music-spool, a perforated or indicated paper music-sheet for self-playing musical apparatus disposed in several superimposed layers in roll form on said spool, and one or more ventilating-spaces in the inner face of the spool-head and opposite to several coils of the sheet when it is wound but entirely within the circumference of the outermost coil.

22. A music-spool having a core variable in its length from hygrometric causes, a perforated or indicated paper music-sheet for self-playing musical apparatus disposed in several superimposed layers in roll form on said spool, and one or more ventilating-spaces in the inner face of the spool-head and opposite to several coils of the sheet when it is wound but entirely within the circumference of the outermost coil, and air-passages from said ventilating-spaces to the surface of the said variable core of the spool.

23. A music-spool having a core, hollow, and variable in its length from hygrometric causes, a perforated or indicated paper music-sheet for self-playing musical apparatus disposed in several superimposed layers in roll form on said spool, and one or more ventilating-spaces in the inner face of the spool-head and opposite to several coils of the sheet when it is wound but entirely within the circumference of the outermost coil, and one or more air-passages from said ventilating-spaces to the interior of the said hollow variable core of the spool.

24. A music-sheet spool and a music-sheet wound thereon, said spool having one or more vents from the outer air to the ends of the coils of said music-sheet and to no other part of the structure.

25. A music-sheet spool and a music-sheet wound thereon, said spool having one or more perforations through a flange or head of the spool opposite to the ends of the coils of said music-sheet and not connected to any other part of the structure.

26. A music-sheet spool and a music-sheet wound thereon, said spool having one or more perforations through a flange or head of the spool from one face to the other of said flange opposite to the ends of the coils of said music-sheet.

27. A music-sheet spool having a composite head consisting of two or more disks with joined faces, one or more perforations in the inner disk, and an imperforate part of the outer disk completely covering the perforations of the inner disk.

28. A music-sheet spool having two flanges or heads and an end check means adapted to abut against the outer end of the bearing or journal of the apparatus with which the spool is to engage, the flange or head adjacent to said end check means being automatically variable in its adjustment relatively to said end check means.

29. A music-sheet spool having an axial shaft, a flange or head movable longitudinally thereof, a core variable in its length from hygrometric causes and connected to said flange or head, and a check or abutment on said shaft adapted to abut against a part of the apparatus with which the spool is to engage, the abutting part of said check or abutment being outside of the said movable head but inside of the extreme end of the shaft or journal-pin of said spool.

30. A music-sheet spool having a composite head consisting of two or more disks faced together and held by axial eyelets or upset thimbles extending through the several disks of a head.

31. A music-sheet spool having a composite head consisting of two or more disks faced together, a sleeve, hub or spindle supporting said head, and an axial eyelet or thimble clamping said composite head to its said sleeve, hub or spindle.

32. A music-sheet spool having a head consisting of a disk; a sleeve, hub or spindle supporting said head; and an axial eyelet or thimble clamping said head to its said sleeve, hub or spindle.

33. A music-sheet spool having a head consisting of a disk; a shouldered hub or spindle supporting said head against its shoulder; and an eyelet, thimble or sleeve on the smaller part of the hub or spindle and fixed firmly against the head and clamping it to the shoulder.

34. A music-sheet spool having two end pieces and a core variable in its length from hygrometric causes, and connected to said two end pieces, one said end piece having an axial extension rigid therewith and extending through the other end piece in a free manner, the said second end piece being guided upon but free to move longitudinally of said axial extension.

35. A music-sheet spool having two end pieces and a core variable in its length from hygrometric causes, and connected to said two end pieces, one said end piece having an axial extension rigid therewith and extending into the axis of the other end piece in a free manner, the said second end piece being guided upon but free to move longitudinally of said axial extension.

36. A music-sheet spool having an end piece thereof longitudinally movable on an axis, and bearing upon said axis at substantially each extremity only of said end piece and free for longitudinal movement of said end piece upon said axis.

37. A music-sheet spool having an end piece thereof longitudinally movable on an axis, the bore of said end piece being larger than said axis, and an eyelet, sleeve or bush fitted in said end piece and of less length than the bore of said end piece and centering upon said axis but free for longitudinal movement of the end piece upon the axis.

38. A music-sheet spool having a core variable in its length from hygrometric causes, two end pieces connected by said core, and spring means tending to extend the two said end pieces relatively to each other.

39. A music-sheet spool having a core variable in its length from hygrometric causes, two end pieces connected by said core, and spring means intermediate the said two end pieces and tending to extend them relatively to each other.

40. A music-sheet spool having an axial shaft or journal-pin, two flanges automatically adjustable to and from each other longitudinally of the spool, and an end check means adjustable longitudinally of the spool relatively to its flanges and axial shaft or journal-pin, and adapted to abut against the endwise-guiding part of the apparatus with which the spool is to engage and guide.

41. A music-sheet spool having a music-sheet mounted thereon which is variable in its width from hygrometric causes, two end pieces automatically adjustable to and from each other longitudinally of the spool and correspondingly to the width of said sheet, and an end check means adjustable longitudinally of the spool to various distances from the music-sheet position thereon and the said end pieces and adapted to abut against the outer end of the endwise-guiding bearing or journal of the apparatus with which the spool is to engage.

42. A music-sheet spool having a shaft, a flange or head movable longitudinally thereof, a core variable in its length from hygrometric causes and connected to said flange or head for effecting its said movement, and a check on the shaft of said spool outside of and clear of the said movable head but inside of and clear of the extreme end of said shaft and adapted to abut against a part of the apparatus with which the spool is to engage.

43. A music-sheet spool having a shaft, a flange or head movable longitudinally of the spool, a core variable in its length from hygrometric causes and connected to said flange or head and a longitudinally-adjustable check on the shaft of said spool outside of and clear

of the said movable head but inside of and clear of the extreme end of said spool and adapted to abut against a part of the apparatus with which the spool is to engage.

44. A music-sheet spool or cylinder having a permanent sheet-engaging means at only one of the two ends thereof and adapted to engage a coacting catch of a music-sheet.

45. A core variable in its length from hygrometric causes, a perforated or indicated paper music-sheet for self-playing musical apparatus having its web disposed in several superimposed layers in roll form on said core, and an end piece to said core having one or more vents to said core arranged in position to be opened and closed by the respective unwinding and winding of the sheet on said core.

46. A music-spool, a perforated or indicated music-sheet for self-playing musical apparatus disposed in several superimposed layers in roll form on said spool and having its forward end of slanted or diagonal form, a ring or catch at the forward part of the long side of said slanted or diagonal end of the sheet, and a coacting catch or engaging means on the corresponding head or flange of the spool, said head or flange being fixedly revoluble with said spool.

47. A music-spool, a perforated or indicated music-sheet for self-playing musical apparatus disposed in several superimposed layers in roll form on said spool and having its forward end of slanted or diagonal form, and a ring or catch at the forward part of the long side of said slanted or diagonal end of the sheet, and a coacting catch on the corresponding end of said spool.

48. A music-sheet spool having a spindle, core or carrier for supporting such sheet, a head or flange, and an axial eyelet or thimble holding said head or flange to the said spindle, core or carrier.

49. In combination; an automatic music-sheet having a single ring or catch at the forward end of one side only of said sheet, and a spool or cylinder having a permanent sheet-engaging means at the end thereof corresponding with the said side of the sheet having said catch.

50. A music-sheet spool having two flanges or heads, a driving-clutch at one end of the spool, and an end check means adjustable longitudinally of the spool relatively to its adjacent flange or head and the clutch and adapted to abut a part of the apparatus with which the spool and its clutch are to engage.

51. A music-sheet spool having two flanges or heads, a driving-clutch at one end of the spool, and an end check means adjustable longitudinally of the spool relatively to its adjacent flange or head and the clutch and adapted to abut the endwise-guiding means of the apparatus with which the spool and its clutch are to engage.

52. A music-sheet spool having two flanges or heads, a driving-clutch at one end of the spool, and an end check means adjustable longitudinally of the spool relatively to its adjacent flange or head and adapted to abut against the clutch-engaging and driving means of the apparatus with which the spool and its clutch are to engage and operate, the abutting part of said end check means being outside of its adjacent flange or head but inside of the extreme end of the driving-clutch of the spool.

53. A music-sheet spool having two flanges or heads, a driving-clutch at one end of the spool, and an end check means adjustable longitudinally of the spool relatively to its adjacent flange or head and adapted to abut against the clutch engaging and driving means of the apparatus with which the spool and its clutch are to engage and operate, the abutting part of said end check means being inside of the extreme end of the driving-clutch of the spool.

54. A music-sheet spool having two flanges or heads, a driving-clutch at one end of the spool, and an end check means adjustable longitudinally of the spool relatively to its adjacent flange or head and the clutch and adapted to abut against the clutch engaging and driving means of the apparatus with which the spool and its clutch are to engage and operate, the abutting part of said end check means being outside of its adjacent flange or head but inside of the extreme end of the driving-clutch of the spool.

55. A music-sheet spool having two flanges or heads, a driving-clutch at one end of the spool, and an end check means adjustable longitudinally of the spool relatively to its adjacent flange or head and adapted to abut against the endwise-guiding and clutch engaging and driving means of the apparatus with which the spool and its clutch are to guide, engage and operate, the abutting part of said end check means being outside of its adjacent flange or head but inside of the extreme end of the driving-clutch of the spool.

56. A music-sheet spool having two flanges or heads automatically adjustable to and from each other longitudinally of the spool, a core variable in its length from hygrometric causes and connected with said flanges or heads for effecting their said adjustment, a driving-clutch at one end of the spool, and an end check means adjustable longitudinally of the spool relatively to its adjacent flange or head and adapted to abut against the clutch engaging and driving means of the apparatus with which the spool and its clutch are to engage and operate, the abutting part of said end check means being inside of the extreme end of the driving-clutch of the spool.

57. A music-sheet spool having two flanges or heads automatically adjustable to and from each other longitudinally of the spool, a core variable in its length from hygrometric causes and connected with said flanges or heads for effecting their said adjustment, and an end check means adapted to abut against the outer end of the bearing or journal of the apparatus with which the spool is to engage, the flange or head adjacent to said end check means being automatically variable in its adjustment relatively to said end check means.

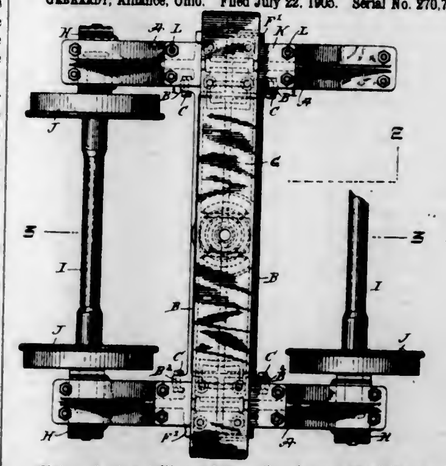
58. A music-sheet spool having an axial shaft, two flanges or heads automatically adjustable to and from each other longitudinally of the spool, a core variable in its length from hygrometric causes and connected with said flanges or heads for effecting their said adjustment, and an end check means adjustable longitudinally of the spool relatively to its flanges and axial shaft or journal-pin, and adapted to abut against a part of the apparatus with which the spool is to engage.

59. A music-sheet spool having an axial shaft, two flanges or heads automatically adjustable to and from each other longitudinally of the spool, a core variable in its length from hygrometric causes and connected with said flanges or heads for effecting their said adjustment, and an end check means adjustable longitudinally of the spool to various distances form the sheet-guiding faces of said flanges or heads and adapted to abut against the outer end of the bearing or journal of the apparatus with which the spool is to engage.

60. A music-sheet spool having a shaft, a flange or head movable longitudinally thereof, a core variable in its length from hygrometric causes and coacting with said flange or head to regulate its said movement, and a check on the shaft of said spool outside and clear of the said movable head, but inside of and clear of the extreme end of said shaft and adapted to abut against a part of the apparatus with which the spool is to engage.

61. A music-sheet spool having a shaft, a flange or head movable longitudinally thereof, a core variable in its length from hygrometric causes and coacting with said flange or head to regulate its said movement, and a longitudinally-adjustable check on said spool outside of and clear of the said movable head but inside of and clear of the extreme end of the shaft of said spool and adapted to abut against a part of the apparatus with which the spool is to engage.

822,112. METALLIC TRUCK FOR RAILROAD-CARS. FREDRICK GEBHARDT, Alliance, Ohio. Filed July 22, 1905. Serial No. 270,787.



Claim.—1. A metallic truck for railroad-cars comprising a pair of side frames having vertical guideways, a cross channel-bar rigidly connecting the side frames with each other and having its terminals seated in the bottoms of the said guideways, a truck-bolster having its ends extending into the said guideways, spring-seats mounted to rock transversely on the terminals of the said cross-bar and under the ends of the said truck-bolster and springs interposed between the said seats.

2. A metallic truck for railroad-cars comprising a pair of side frames having vertical guideways, a cross channel-bar rigidly connecting the side frames with each other and having its terminals seated in the bottoms of the said guideways, a truck-bolster having its ends extending into the said guideways, spring-seats mounted to rock transversely on the terminals of the said cross-bar under the ends of the said truck-bolster and springs interposed between the said seats, and a body-bolster mounted to turn on the said truck-bolster and having friction-rollers mounted to travel on track-surfaces formed on the top of the truck-bolster.

3. A metallic truck for railroad-cars comprising a pair of side frames having vertical guideways, a cross channel-bar rigidly connecting the side frames with each other and having its terminals seated in the bottoms of the said guideways, a truck-bolster having its ends extending into the said guideways, spring-seats mounted to rock transversely on the terminals of the said cross-bar and under the ends of the said truck-bolster and springs interposed between the said seats, and yokes secured to the side frames and extending over the guideways to close the same and limit the upward movement of the truck-bolster.

822,113. **FISHING-REEL.** WILLIAM H. GLOCKER, Philadelphia, Pa., assignor to Harry W. Scott, Philadelphia, Pa. Filed Jan. 27, 1906. Serial No. 298,275.



Claim.—1. In a reel, a crank mechanism rotatably mounted and including a crank-arm, a reel-body having sides loosely mounted on said mechanism, friction material interposed between the sides of said reel-body and said crank mechanism, and means engaging said crank-arm for varying the frictional engagement between the sides of said reel-body and said mechanism.

2. In a reel, a central support, a sleeve provided with a flange rotatably mounted thereon, a handle non-rotatably secured to said sleeve near one end thereof, a reel-body having sides loosely mounted on said sleeve between said flange and said handle, and friction material interposed between said flange and handle and the contiguous sides of said reel-body.

3. In a reel, a central support, a sleeve mounted thereon, a flange secured to said sleeve, a handle non-rotatably mounted on said sleeve, a reel-body having sides loosely mounted on said sleeve, friction material between said flange and the contiguous side of said reel-body and between said crank-arm and the side of said body contiguous thereto, and a nut on said sleeve for adjusting the frictional engagement between the sides of said body, said flange and crank-arm.

4. In a reel, a central support, a sleeve mounted thereon, a disk secured to said sleeve, a handle non-rotatably mounted on said sleeve, a reel-body having sides loosely mounted on said sleeve, friction material between said disk and the contiguous side of said reel-body and between said crank-arm and the side of said reel-body contiguous thereto, a nut on said sleeve for adjusting the frictional engagement between the sides of said body and said disk and crank-arm, and means for locking said nut in the adjusted position given thereto.

5. In a reel, a central support, a sleeve mounted thereon, a disk secured to said sleeve, a handle non-rotatably mounted on said sleeve, a reel-body having sides loosely mounted on said sleeve, friction material between said crank-arm and the contiguous side of said reel-body, and between the crank-arm and the side of said body contiguous thereto, a nut on said sleeve for adjusting the frictional engagement between the sides of said body and said disk and crank-arm, a screw having threaded engagement with the outer end of said central support, and a washer interposed between the head of said screw and said nut.

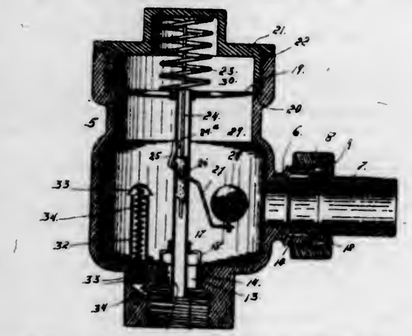
6. In a reel, a central support having different diameters, a sleeve having a flange at one end thereof loosely mounted on said support, a handle non-rotatably mounted on said sleeve, a reel-body having sides loosely mounted on said sleeve between said flange and said crank-arm, friction material interposed between said flange and the contiguous side of said body and between said crank-arm and the side of said body contiguous thereto, and means mounted on said sleeve for adjusting the frictional engagement between the sides of said body and said flange and crank-arm.

7. In a reel, a central support having different diameters, a sleeve having a flange at one end thereof loosely mounted on said support, a handle non-rotatably mounted on said sleeve, a reel-body having sides loosely mounted on said sleeve between said flange and said crank-arm, friction material interposed between said flange and the contiguous side of said body and between said crank-arm and the side of said body contiguous thereto, a nut having threaded engagement with the end of said sleeve, a washer interposed between said nut and said crank-arm, and means for locking said nut in the different positions given thereto.

8. In a reel mechanism, a supporting-bracket, an arm extending angularly therefrom, a central support carried by said arm, a sleeve having a flange at one end mounted on said support, a crank-arm non-rotatably carried by said sleeve, a reel-body having sides loosely mounted on said sleeve between said flange and said crank-arm, friction material interposed between said flange and crank-arm and the contiguous sides of said body, and means engaging said crank-arm for varying the frictional engagement between the sides of said body and said flange and crank-arm.

9. In a reel, a central support, a sleeve mounted thereon, a flange secured to said sleeve, a crank-arm non-rotatably mounted on said sleeve, a reel-body having sides loosely mounted on said sleeve, friction material between said flange and between the contiguous side of said reel-body and between said crank-arm and the side of said body contiguous thereto, and means on said sleeve for adjusting the frictional engagement between the sides of said body, said flange and crank-arm.

822,114. **VALVE FOR HEATING OR OTHER SYSTEMS WHERE STEAM IS EMPLOYED.** FRANK C. GOFF and HOWARD H. FIELDING, Denver, Colo. Filed Mar. 27, 1905. Serial No. 252,176.



Claim.—1. The combination with a steam system, of a casing connected with the system and having an opening for the escape of the water of condensation, an alternating fluid-actuated device movably mounted in the casing and separating its chamber into two compartments, a valve for controlling said opening, a stem connected with the valve and with the fluid-actuated device, the valve-stem having a longitudinal passage and an orifice forming communication between the two compartments, a float, means connected therewith for controlling said orifice, and means for normally holding the valve open.

2. The combination with a steam system, of a casing connected with the system, an opening in the casing for the passage of water of condensation, a valve for controlling said opening, an alternating fluid-actuated device connected with the valve and separating the casing-chamber into two compartments, a passage forming communication between the two compartments of the casing-chamber, a float-regulated valve for controlling said passage, and means for holding the first-named valve normally open.

3. In a device of the class described, the combination with a fluid system, of a casing having an escape-opening, a valve for controlling said opening, an alternating fluid-actuated device connected with the valve, and dividing the casing into two compartments, mechanical means acting on the said device to hold the valve open in the absence of fluid-controlling influence, a passage connecting the two compartments of the casing, and float-regulated means for controlling said passage.

4. In a device of the class described, the combination with a fluid system, of a casing connected therewith and having an escape-opening, a valve for controlling said opening, a hollow valve-stem, a device connected with the valve-stem, and movably mounted in the casing, the said device separating the casing into two compartments, the valve-stem being provided with an orifice which when open allows the pressure in the two compartments to equalize, a spring acting on the movable device for holding the valve open in the absence of fluid-controlling influence, and a float-controlled valve for regulating the orifice in the hollow valve-stem.

5. In a device of the class described, the combination with a fluid system, of a casing communicating with said system and having an escape-opening in the lower part thereof, a valve for controlling said opening, a flexible diaphragm mounted in the casing and separating the chamber of the latter into two compartments, a valve-stem connecting the valve and the diaphragm, a spring acting on the diaphragm to hold the valve open in the absence of fluid-controlling influence, a passage forming communication between the two chamber-compartments, and fluid-regulated means for controlling said passage.

6. The combination with a system of the class described, of a casing connected therewith and having a bottom opening, a valve for controlling said opening, a flexible diaphragm separating the casing-chamber into two compartments, a hollow valve-stem connecting the diaphragm and valve, the said stem being provided with an orifice which when open forms communication between the two chamber-compartments, a lever fulcrumed on the valve-stem, one extremity being adapted to control said orifice, a float connected with the lever, a spring acting on the diaphragm to hold the valve open in the absence of fluid-controlling influence, a stop mounted on the valve-stem to limit the movement of the latter in the valve-opening direction.

7. The combination with a system of the class described, of a casing provided with a water-escape opening in its bottom, a valve for controlling said opening, an alternating fluid-actuated device connected with the valve, mechanical means acting on the valve to hold the latter open in the absence of fluid-controlling influence, the said device separating the casing-chamber into two compartments, a passage forming a communication between the two compartments, float-controlled means for regulating said passage, and suitable means mounted in the casing for permitting the escape of air from the system independently of the mechanism for regulating the water-escape.

8. In a device of the class described, the combination with a fluid system, of a casing connected with the system to receive the water of condensation therefrom, said casing having a water-escape opening, a valve for controlling said opening, an alternating motor connected with the valve, said motor being operated by the fluid-pressure of the system, and mechanical means acting on the motor to hold the valve open in the absence of fluid-controlling influence.

9. The combination with a fluid system, of a casing connected with the system to receive the water of condensation therefrom, a motor-controlled valve operated by the fluid-pressure of the system for regulating the discharge of water from the casing, and means for holding the valve open in the absence of fluid-controlling influence.

10. The combination with a radiating device, of a casing connected with the device to receive the water of condensation therefrom, a motor-controlled valve operated by the fluid-pressure of the system for regulating the discharge of water from the casing, and means acting on the motor to hold the valve open in the absence of fluid-controlling influence.

11. The combination with a fluid system, of a casing connected to receive the water of condensation therefrom, and a motor-controlled valve operated by the fluid-pressure of the system for regulating the discharge of water from the casing, the said valve being open in the absence of fluid-controlling influence.

12. In a device of the class described, the combination with a fluid system, of a casing connected therewith to receive the water of condensation therefrom and having an escape-opening, a valve operated by the fluid-pressure of the system for controlling the said opening, a hollow valve-stem open at both ends, a fluid-actuated device connected with the valve-stem and dividing the casing-chamber into two compartments, the lower compartment being in connection with the fluid system, and the upper compartment in communication with the discharge-outlet of the casing below the escape-opening, and means for holding the valve open in the absence of fluid-controlling influence.

13. The combination with a fluid system, of a casing connected with the system to receive the water of condensation therefrom, a motor-controlled valve operated by the fluid-pressure of the system for regulating the removal of water from the system, and means for holding the valve open in the absence of fluid-controlling influence.

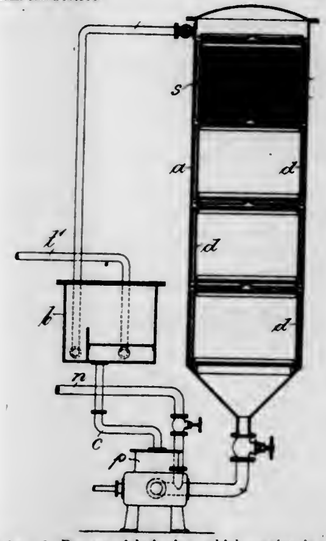
14. The combination with a radiating device, of a casing connected with the device to receive the water of condensation therefrom, a motor-controlled valve operated by the fluid-pressure of the system for regulating the removal of water from the system, and means acting on the motor to hold the valve open in the absence of fluid-controlling influence.

15. The combination with a fluid system, of a casing connected to receive the water of condensation therefrom, and a motor-controlled valve operated by the fluid-pressure of the system, located in the casing for regulating the removal of water from the system, the said valve being open in the absence of fluid-controlling influence.

16. In a device of the class described, the combination with a fluid system, of a casing connected to receive the water of condensation therefrom, a motor-controlled valve located in the casing for regulating the removal of water from the system, said valve being open in the absence of fluid-controlling influence, and an automatically-controlled air-valve located within the casing of the main valve but distinct and separate therefrom and operated independently thereof.

17. The combination with a fluid system, of a casing, a discharge-pipe, a main valve within the casing, a pressure-motor for operating the valve, means for holding the valve open in the absence of fluid-controlling influence, and an automatically-controlled air-valve having its discharge-opening in communication with the return or discharge pipe, the air-valve being located within the casing of the main valve but distinct and separate therefrom and operated independently thereof.

822,115. **METHOD OF DETINNING.** KARL GOLDSCHMIDT and JOSEF WEBER, Essen-on-the-Ruhr, Germany, assignors to The Firm of Th. Goldschmidt, Essen-on-the-Ruhr, Germany. Filed June 29, 1905. Serial No. 267,580.



Claim.—1. Process of detinning, which consists in compressing loose tin-scrap, and treating said compressed scrap in a vessel, with an inert anhydrous fluid, in combination with an inert gas and with chloria gas.

2. Process of detinning, which consists in compressing loose tin-scrap, and treating said compressed scrap in a vessel with an inert anhydrous fluid containing chlorin, in combination with an inert gas.

3. Process of detinning, which consists in compressing loose tin-scrap, and treating said compressed scrap in a vessel with an inert anhydrous fluid in which chlorin gas is dissolved in combination with an inert gas.

4. Process of detinning, which consists in compressing loose tin-scrap, and treating said compressed scrap in a vessel with an inert anhydrous fluid in which chlorin gas is dissolved and with chlorin gas, in combination with an inert gas.

5. Process of detinning, which consists in compressing loose tin-scrap, and treating said compressed scrap in a vessel with an inert anhydrous fluid and with chlorin gas and altering the pressure in the vessel during the detinning.

6. Process of detinning, which consists in compressing loose tin-scrap, and treating said compressed scrap in a vessel with an inert

anhydrous fluid containing chlorin and altering the pressure in the vessel during the detinning.

7. Process of detinning, which consists in compressing loose tin-scrap, and treating said compressed scrap in a vessel with an inert anhydrous fluid in which chlorin gas is dissolved and altering the pressure in the vessel during the detinning.

8. Process of detinning, which consists in compressing loose tin-scrap, and treating said compressed scrap in a vessel with an inert anhydrous fluid in which chlorin gas is dissolved and with chlorin gas and altering the pressure in the vessel during the detinning.

9. Process of detinning, which consists in compressing loose tin-scrap, and treating said compressed scrap in a vessel with an inert anhydrous fluid and with chlorin gas and increasing the pressure in the vessel during the detinning.

10. Process of detinning, which consists in compressing loose tin-scrap, and treating said compressed scrap in a vessel with an inert anhydrous fluid containing chlorin and increasing the pressure in the vessel during the detinning.

11. Process of detinning, which consists in compressing loose tin-scrap, and treating said compressed scrap in a vessel with an inert anhydrous fluid in which chlorin gas is dissolved and increasing the pressure in the vessel during the detinning.

12. Process of detinning, which consists in compressing loose tin-scrap, and treating said compressed scrap in a vessel with an inert anhydrous fluid in which chlorin gas is dissolved and with chlorin gas and increasing the pressure in the vessel during the detinning.

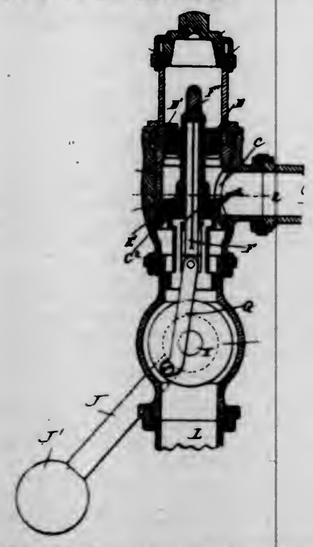
13. Process of detinning, which consists in compressing loose tin-scrap, and treating said compressed scrap in a vessel with an inert anhydrous fluid and with chlorin gas, increasing the pressure in the vessel during the process and then diminishing the same.

14. Process of detinning, which consists in compressing loose tin-scrap, and treating said compressed scrap in a vessel with an inert anhydrous fluid containing chlorin, increasing the pressure in the vessel during the process and then diminishing the same.

15. Process of detinning, which consists in compressing loose tin-scrap, and treating said compressed scrap in a vessel with an inert anhydrous fluid, in which chlorin gas is dissolved, increasing the pressure in the vessel during the process and then diminishing the same.

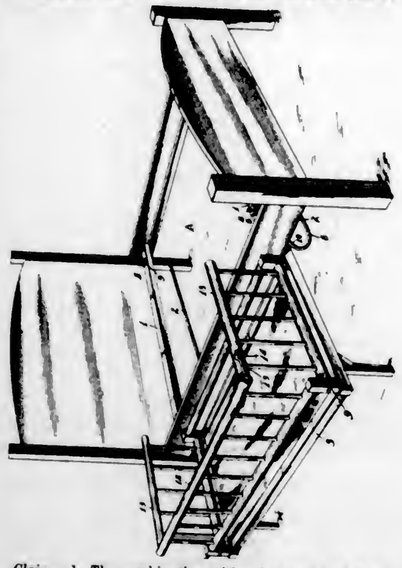
16. Process of detinning, which consists in compressing loose tin-scrap, and treating said compressed scrap in a vessel with an inert anhydrous fluid in which chlorin gas is dissolved and with chlorin gas, increasing the pressure in the vessel during the process and then diminishing the same.

822,116. **FLUSHOMETER.** JOHN W. GRANTLAND, Philadelphia, Pa. Filed Apr. 13, 1905. Serial No. 255,429.



Claim.—In combination, a valve-casing, a supply-pipe leading into the valve-casing, an exhaust-pipe communicating with the valve-casing, a hollow rotary valve-plug for the supply-pipe fitting within the valve-casing, said plug having a valve-seat formed on its interior, a reciprocating valve for the exhaust-pipe fitting within the hollow plug and adapted to rest on the valve-seat within the plug, said reciprocating valve having a passage through its upper portion communicating with the portion of the hollow plug above the valve and communicating with the supply-pipe when the passage of the supply-pipe is unobstructed, and means for operating the reciprocating valve.

822,117. **BEDSTEAD.** EDWIN GRIFFITH and WILLIAM E. LOGAN, Washington, Iowa. Filed Nov. 27, 1905. Serial No. 289,306.



Claim.—1. The combination with a bedstead and a crib, of a pair of crib-rails secured to the bedstead, one end of the crib having permanent, sliding and pivotal connection with said crib-rails, the rails bowed at one end and having shoulders formed therein for the support of either edge of the crib.

2. The combination with a bedstead and a crib, of a pair of crib-rails secured to the bedstead, one end of the crib having permanent, sliding and pivotal connection with said crib-rails, the rails bowed at one end and having shoulders formed therein for the support of either edge of the crib, said crib-rails being vertically adjustable.

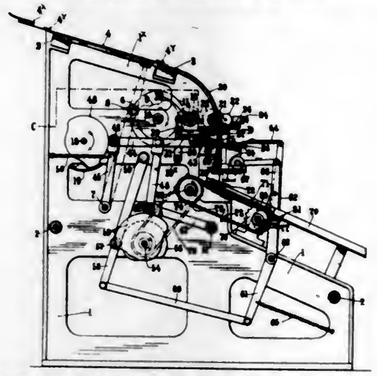
3. The combination with a bedstead and crib-rails depending therefrom, said crib-rails having shoulders formed at one end, of a crib and a rod pivotally connected with one edge of the crib and having eyes at opposite ends thereof which have pivotally-sliding connection with the crib-rails.

4. The combination with a bedstead, of cross-bars secured thereto and crib-rails secured to the cross-bars, said crib-rails bowed at one end and provided with shoulders, of a folding crib having a rod pivotally connected therewith, said rod having eyes at its opposite ends mounted on the crib-rails and the crib provided with pins at the opposite edge adapted to rest upon the shoulders of the bowed ends of the crib-rails when the crib is slid beneath the bed.

822,118. **LABELING AND WRAPPING MACHINE.** FREDERICK GROVER, Leeds, England, assignor to The Forgrove Machinery Company, Limited, Leeds, England. Filed Sept. 30, 1905. Serial No. 280,755.

Claim.—1. A machine for wrapping and affixing labels around rectangular tablets, comprising in combination a tray adapted to deliver a length or strip of labels to a pair of feed-rollers, a pocket adapted to receive the strip from the rollers in an upstanding position, a horizontal knife adapted to work through a slot or gap in the pocket for severing or subdividing the labels, a traveling belt adapted to feed forward the tablets, a stop against which the first tablet rests, a transverse opening formed in the pocket, a pusher adapted to carry the delivered tablet and the subdivided label through the transverse

opening in the pocket to wrap the upper portion of the label around the forward end of the tablet, a gumming device for applying adhesive substance to the label, a gripper adapted to receive the partially-labeled tablet and carry it downward, a stationary curved plate against which the rear edge of the tablet and its label is carried by the gripper to partially bring the rear portion of the label around the rear end of the tablet, and means for completely turning down the rear portion of the label over the tablet and causing the two portions of the label to adhere together, substantially as set forth.

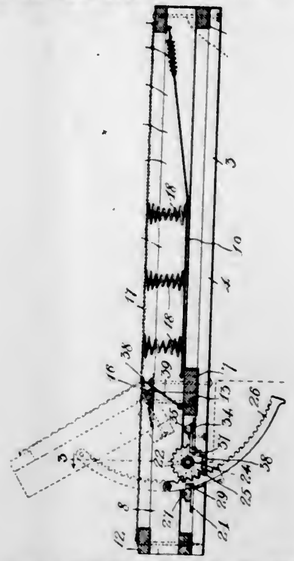


2. A machine for wrapping and affixing labels around rectangular tablets, comprising in combination, frames 1 provided with cross-stays 3 and a curved plate 20, a tray 4 for the lengths or strips of labels and means for sliding the said tray 4 forward on the cross-stays 3 at the required times to deliver the strips over the curved plate 20, intermittently-driven feed-rollers 21, 22, for receiving the said strips from the tray 4 vertically-arranged pockets 25 for receiving the said strips from the feed-rollers 21, 22, in an upstanding position, a horizontal knife 27 working intermittently through a slot or gap 26 in the pockets 25 for severing the strips, a traveling belt 34 for feeding forward the tablets, a stop 35 against which the first tablet rests, openings 33 formed in the pockets 25, a pusher 64 and mechanism for moving the same intermittently to push the tablets and the subdivided labels through the said openings 33 in the pockets 25 and wrap the upper portion of the labels around the forward ends of the tablets, gumming-rollers 67 and means for operating the same at the required times to apply adhesive substance to the labels, a gripper 43 for receiving the partially-labeled tablets and mechanism for carrying the gripper 43 with its engaged tablets downward a curved plate 69 against which the rear edges of the tablets and their labels are carried by the gripper 43 to partially bring the rear portions of the labels around the rear ends of the tablets, guide-rails 71 and brushes 72 for receiving the rear edges of the partially-labeled tablets from the gripper 43, traveling chains 73 for carrying the tablets beneath the brushes 72 to turn down the rear portions of the labels over the tablets and cause the two portions of each label to adhere together, and a conductor-spout 70 for delivering the completely-labeled tablets, substantially as set forth.

3. In a machine for wrapping and affixing labels around rectangular tablets, the combination with vertically-arranged receiver-pockets 25, of mechanism for delivering strips of labels in an upstanding position into the said pockets 25, a horizontal knife 27 adapted to sever the strips, means for feeding forward the tablets, openings 33 formed in the said pockets 25, a pusher 64 for carrying the tablets and the subdivided labels through the openings 33 to wrap the upper portions of the labels around the forward ends of the tablets, means for applying adhesive substance to the labels, a gripper 43 adapted to receive the partially-labeled tablets and carry the same downward, a curved plate 69 against which the rear edges of the tablets and their labels are carried by the gripper 43 to partially bring the rear portions of the labels around the rear ends of the tablets, and means for completely turning down the rear portions of the labels over the tablets and causing the said labels to adhere together, substantially as set forth.

4. In a machine for wrapping tablets in a covering material such as tin-foil, the combination with vertically-arranged receiver-pockets 25, of mechanism for delivering strips of wrapping material in an upstanding position into the said pockets 25, a horizontal knife 27 adapted to sever the strips of wrapping material, means for feeding forward the tablets, openings 33 formed in the said pockets 25, a pusher 64 for carrying the tablets and the subdivided wrappers through the openings 33 to wrap the upper portions of the wrappers around the forward sides of the tablets, a gripper 43 adapted to receive the partially-wrapped tablets and carry the same downward, a curved plate 69 against which the rear sides of the tablets and their labels are carried by the gripper 43 to partially bring the rear portions of the wrappers around the rear sides of the tablets and means for turning the ends of the wrappers down and under the tablets, substantially as set forth.

822,119. **INVALID-BED.** GEORGE HARDEN, Toledo, Ohio. Filed Nov. 23, 1905. Serial No. 288,795.



Claim.—1. In a bed of the character described, the combination with the stationary foot-section of the bed, of a movable head-section hinged to said foot-section, an elevating mechanism to raise said head-section, said mechanism comprising segmental racks and pinions, pivoted locking-plates for engaging the teeth of the pinions for locking the hinged section in adjusted position, said locking-plates each provided with a recess through which the pinions move, a stop-lug and a thumb-piece, and a flexible connection for preventing the sagging of the woven-wire mattress when the hinged section is elevated, substantially as described.

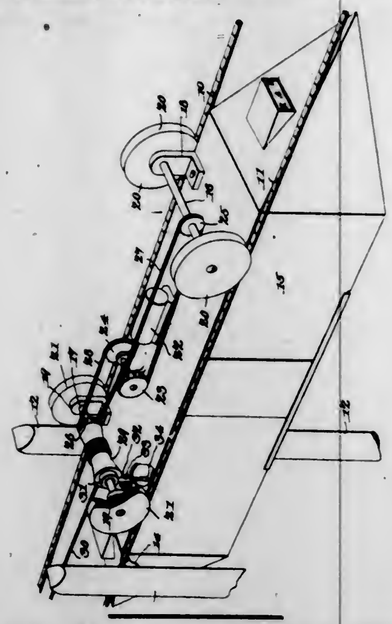
2. In a bed of the character described, a foot-section, a hinged head-section, a woven-wire mattress connected to said sections, a series of springs under said mattress, said springs being seated upon longitudinal wires 19, springs 20 connected to said wires, racks and pinions for elevating the head-section, pivoted locking-plates for locking the pinions, and a flexible connection 39 connected to the woven-wire mattress and to a cross-bar to prevent the sagging of the mattress.

822,120. **OVERHEAD RAILWAY.** BARNETT W. HARRIS, Mattoon, Ill. Filed Oct. 18, 1905. Serial No. 283,308.

Claim.—1. The combination with an overhead track, of a car suspended from said track and mounted for travel thereon, a drum journaled on the car, a cable one end of which is attached to a stationary support and the opposite end thereof to said drum, and a motor carried by the car and operatively connected with the drum for rotating the latter.

2. The combination with an overhead track, of a car suspended from the track and provided with wheels for engagement with said track, a drum secured to one of the axles of the wheels, a cable one end of which is attached to a stationary support and the opposite end thereof to said drum, a motor carried by the car and operatively connected with the drum for rotating the latter, and a brake adapted to engage the drum and provided with an operating-handle the free end of which projects through an opening in the top of the car and extends within the latter.

3. The combination with an overhead cable, of a car suspended from the cable and provided with grooved wheels for engagement with said cable, a drum secured to one of the axles of the wheels, a cable one end of which is secured to a stationary support and the opposite end thereof to said drum, a motor carried by the car and operatively connected with the drum for rotating the latter, and a brake pivotally mounted in bearings on the top of the car and having one end thereof embracing the adjacent axle for engagement with the drum and its free end projecting through an opening in the top of the car and extending within the latter.



822,121. SWITCH FOR OVERHEAD RAILWAYS. BARNETT W. HARRIS, Mattoon, Ill. Filed Oct. 23, 1905. Serial No. 284,057.

Claim.—1. In elevated railways, a main track, a siding spaced vertically from the main track, and a switch at each end of the siding one of which is normally open and the other closed.

2. In elevated railways, a main track, a siding, and a switch at each end of the siding one of which is yieldably supported in open position and the other movable to closed position by gravity.

3. In elevated railways, a main track, a siding, a switch at each end of the siding and adapted to engage the main track, and a spring for normally supporting one of the switches in open position, the opposite switch being normally maintained in closed position by its own weight.

4. In elevated railways, a main track, a siding spaced vertically from the main track, and a switch disposed above the main track at each end of the siding, one of said switches being normally open and the other closed.

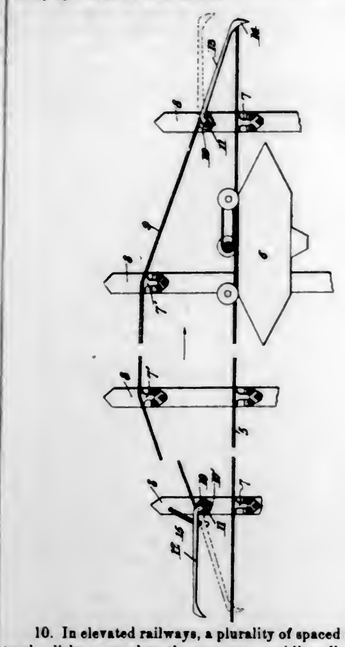
5. In elevated railways, a main track, a siding, and switches for controlling the entrance to the siding from opposite ends of the main track said switches being provided with terminal forks adapted to span the main track when in closed position.

6. In elevated railways, a main track, a siding disposed above the main track, and switches for controlling the entrance to the siding from opposite ends of the main track, one of said switches being normally open and the other closed.

7. In elevated railways, a plurality of spaced supports, a main track supported thereby, a siding spaced vertically from the main track, and a switch pivotally mounted on one of the supports at each end of the siding, and adapted to engage the main track, one of said switches being normally open and the other closed.

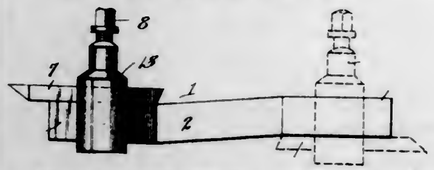
8. In elevated railways, a plurality of spaced supports, a main track, a siding spaced vertically from the main track and a switch pivotally mounted on one of the supports at each end of the siding and each having its free end bifurcated for the reception of the main track.

9. In elevated railways, a plurality of spaced supports, a main track, disks secured to the supports, a siding disposed above the main track and consisting of a cable having its opposite ends fastened to said disks, and switches pivotally mounted on the disks and adapted to engage the main track, one of said switches being normally open and the other closed.



10. In elevated railways, a plurality of spaced supports, a main track, disks secured to the supports, a siding disposed above the main track and consisting of a cable having its opposite ends fastened to said disks, switches pivotally mounted on the disks and having their free ends bifurcated to accommodate the main track, a lug extending laterally from one switch, a spring secured to the lug and the adjacent support respectively, for normally supporting said switch in open position, the opposite switch being movable to closed position by gravity.

822,122. TOOL-HOLDER FOR LATHES. HENRY W. HATHORN, Grinnell, Iowa. Filed July 3, 1905. Serial No. 268,173.



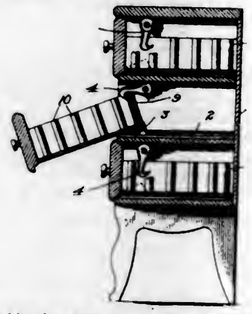
Claim.—A tool-holder comprising a shank having its end portions respectively bent obliquely to the right and left, the upper and lower faces of said end portions forming tool-seats, the end portions also being bent obliquely in opposite directions in planes at right angles to the right and left bends, and means for securing a tool against any of said seats.

822,123. DRAWER. JOHN HERSOG, Saginaw, Mich., assignor to Herzog Art Furniture Co., Saginaw, Mich., a Corporation of Michigan. Filed Dec. 20, 1905. Serial No. 292,580.

Claim.—1. The combination with a cabinet and a drawer fitted to slide therein, of a hook pivoted on the side of the cabinet and arranged to engage the rear end of the drawer when the same is opened.

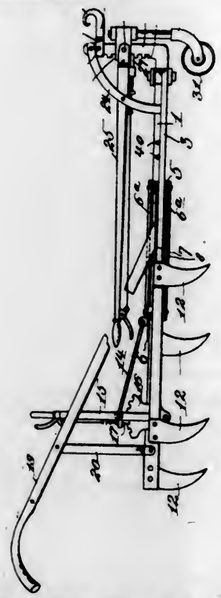
2. The combination with a cabinet and a drawer fitted to slide therein and having a transverse groove in its rear end near the upper edge of the same, of a hook pivoted on the side of the cabinet and arranged to engage said groove when the drawer is opened.

3. The combination with a cabinet and a drawer fitted to slide therein, the drawer having a transverse groove in its rear end near its upper edge, of a hook pivoted on the side of the cabinet above the drawer and arranged to engage said groove, the shank of the hook being arranged to clear the side of the drawer.



4. The combination with a cabinet having horizontal grooves in its sides and triangular recesses at the front ends of said grooves, of a drawer having cleats engaging the said grooves and entering said recesses when the drawer is opened, and a hook pivoted on the side of the cabinet above the drawer and arranged to engage the rear end of the same when the drawer is opened.

822,124. CULTIVATOR. JOHN P. HILL, Seffner, Fla. Filed Aug. 8, 1905. Serial No. 273,255.



Claim.—1. In a cultivator of the class set forth, the combination of a main beam, supplemental beams disposed on opposite sides of the main beam at the rear extremity of the latter and arranged at angles of inclination, adjusting-bars connected to the supplemental beams and movable longitudinally of the main beam, and side beams attached to intermediate portions of the supplemental beams and to the forward extremity of the main beam, the main beam and supplemental beams carrying cultivating devices or plows.

2. In a cultivating device of the class set forth, a main beam, supplemental beams on opposite sides of the main beam and arranged at angles of inclination, means for adjusting the supplemental beams inwardly and outwardly with respect to the main beam, side beams attached to the supplemental beams and the forward extremity of the main beam and provided with outwardly-curved projected rear extremities, and cultivating devices carried at the rear extremity of the main beam, the opposite extremities of the supplemental beams, and by the outwardly-projected rear extremities of the side beams.

3. In a cultivating device of the class set forth, the combination of a main or central beam, supplemental beams disposed on opposite sides of the main beam and arranged at angles of inclination with respect to the latter, and having their opposite extremities free, connecting devices between the supplemental beams and the main beam, the said connecting devices being attached to the supplemental beams inwardly from the ends thereof, a part of said connecting devices being adjustable to move the supplemental beams inwardly and outwardly with relation to the main beam, and cultivating devices carried by the main beam and supplemental beams.

4. In a cultivator of the class set forth, the combination of a main beam carrying a cultivating device at its rear extremity, supplemental beams on opposite sides of the main beam and disposed at angles of inclination with respect to said main beam, the forward and rear extremities of the supplemental beams being arranged parallel to the main beam, cultivating devices carried by the said forward and rear extremities of the supplemental beams, and means for adjusting the supplemental beams inwardly and outwardly with respect to the main beam.

5. In a cultivator of the class set forth, the combination of a main beam, supplemental beams disposed on opposite sides of the main beam and arranged at angles of inclination and converging toward the rear end of said main beam and having their opposite extremities free, adjusting-bars attached to the supplemental beams, boxes slidably mounted on the main beam and having the inner ends of the adjusting-bars attached thereto, side beams movably attached to intermediate portions of the supplemental beams and to the forward extremity of the main beam, cultivating devices carried by the several beams, and means connected to the slide-boxes for moving the same to regulate the inward and outward position of the supplemental beams with respect to the main beam.

6. In a cultivator of the class set forth, the combination of a main beam, cultivating devices suppported thereby, a post rising from the forward end of the main beam and having teeth at its inner edge, an adjusting-lever fulcrumed on the post and projecting rearwardly therefrom and carrying a catch device to engage the teeth of the post, and a gage-wheel having a swivel-sleeve connected to the lever and adjustable by the latter to elevate or depress the forward extremity of the main beam.

7. In a cultivator of the class set forth, the combination of a main beam, carrying cultivating devices, a post rising from the forward extremity of said beam and having a rearwardly-projecting adjusting-lever fulcrumed thereto for raising and lowering the front extremity of the beam, a gage-wheel adjustably arranged in connection with said post, and a clevis device fitted over the upper extremity of the post and having a front hooked terminal for application thereto of draft appliances, the clevis device being disposed over the upper portion of the gage-wheel and vertically adjustable with the post.

8. In a cultivator of the class set forth, the combination of a main beam, supplemental beams disposed on opposite sides of the main beam and arranged at angles of inclination, adjusting-bars comprising upper and lower members connected to the supplemental beams and movable longitudinally of the main beam, and side beams attached to intermediate portions of the supplemental beams and to the forward extremity of the main beam, said side beams projecting through the upper and lower members of the adjusting-bars and the main and supplemental beams carrying supplemental devices or plows.

9. In a cultivating device of the class set forth, a main beam, supplemental beams on opposite sides of the main beam and arranged at angles of inclination, means for adjusting the supplemental beams inwardly and outwardly with respect to the main beam, side beams attached to the supplemental beams and the forward extremity of the main beam, boxes slidable on the main beam and connected by longitudinally-extending straps, the means for adjusting the supplemental beams being attached to said boxes, and cultivating devices carried by the main and supplemental beams.

10. In a cultivating device of the class set forth, a main beam, supplemental beams on opposite sides of the main beam and arranged at angles of inclination, means for adjusting the supplemental beams inwardly and outwardly, side beams attached to the supplemental beams between the points of attachment thereto of the said means and also movably secured to the forward extremity of the main beam and provided with outwardly-curved projected rear extremities, and cultivating devices carried at the rear extremity of the main beam, the opposite extremities of the supplemental beams and the outwardly-projected rear extremities of the side beams.

822,125. ALARM. FRANCIS M. HOBBS, Halesboro, Tex. Filed Oct. 21, 1905. Serial No. 283,783.

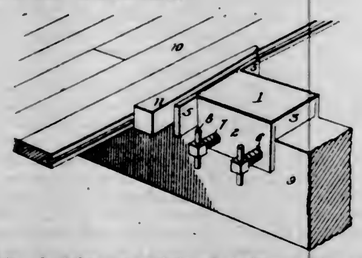


Claim.—1. The combination in an alarm, of an arm pivoted between its ends to a suitable support, leaving one end extended, providing a finger end, whereby to operate the lever, an operating-wheel at the other end of the arm, a tappet-wheel on said arm driven through ratchet means upon rotation in one direction of the operating-wheel, a suitably-supported bell, an oscillating arm having one end in contact with the tappet-wheel and its other end adapted to strike the bell, a spring holding the oscillating arm under tension, and a spring under the finger end of the pivoted arm holding same yieldingly elevated, substantially as described.

2. The combination in an alarm, of a suitable base, an arm pivoted between its ends, to the base, an operating-wheel at one end of said arm, a tappet-wheel at the same end of said arm, ratchet-teeth on the tappet-wheel, a yielding dog on the operating-wheel, the dog being arranged in engagement with said ratchet-teeth, a suitably-supported bell, an oscillating arm having pivotal support on the pivoted arm, the oscillating arm having one end in engagement with the tappet-wheel and its other end adapted to strike the bell, a spring holding the pivoted arm under tension, a spring holding the oscillating arm under tension, and means limiting movement of the pivoted arm, substantially as described.

3. The combination in an alarm, of a suitable base, an arm pivoted between its ends to the base, an operating-wheel at one end of said arm, a tappet-wheel at the same end of the arm, ratchet-teeth on the tappet-wheel, a pin on the operating-wheel held yieldingly in engagement with said ratchet-teeth, a bell having support on the pivoted arm, an oscillating arm having support on the pivoted arm, springs holding the pivoted and oscillating arms under tension, the oscillating arm having one end in engagement with the tappet-wheel, and its other end adapted to strike the bell, and a screw on the pivoted arm adapted for adjustment limiting movement of the pivoted arm, substantially as described.

822,126. FLOOR-SET. CHARLES L. HOPKINS, Allemands, La. Filed Jan. 13, 1905. Serial No. 240,838.



Claim.—1. A floor-set consisting of a body comprising connected side portions and clamping means on one of said portions, and an inclined head at one end of the body, and wings extending laterally from the head.

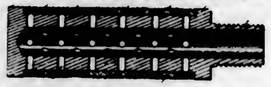
2. A floor-set consisting of a body comprising connected side portions and a securing device on one of said portions, and a head connected to the body, and wings extending laterally therefrom.

3. A floor-set consisting of a body comprising connected side portions, a securing device on one of said portions, and a supporting-flange at one end of the body, and a supporting-head at the other end of the body, and wings extending therefrom.

4. A floor-set consisting of a body comprising connected side portions, a securing device on one of said portions, and a supporting-flange at one end of the body, and an inclined supporting-head at the other end of the body, and alining wings extending laterally from the head.

5. A floor-set formed in a single sheet of metal and comprising a top plate, side flanges, an end supporting-flange, a head at the other end of the top plate and overlapping the ends of the side flanges, and wings integral with the head.

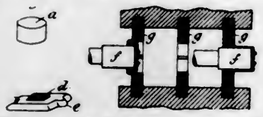
822,127. NOISELESS STEAM WATER-HEATER. JOHN O. HUFNAGEL, Scranton, Pa. Filed Dec. 8, 1905. Serial No. 290,943.



Claim.—1. A device of the character described, comprising a primary cylinder, formed with rows of staggered radiating apertures therein, enlarged ends formed integral with said cylinder, an auxiliary wire-mesh cylinder secured to said primary cylinder and lying flush with the outer surface thereof, and a cylinder of fibrous material interposed between said primary and auxiliary cylinders.

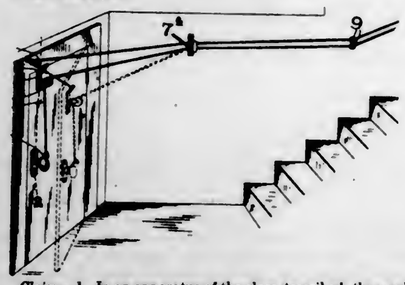
2. A device of the character described, comprising a cylinder, formed with staggered apertures therein, closed at one end, a tubular threaded portion upon its opposite end, a wire-mesh cylinder positioned between the ends of said primary cylinder, and a hemp filling positioned between said primary and auxiliary cylinder.

822,128. MANUFACTURE OF AXLE-BOXES. EDWARD W. M. HUGHES, Westminster, England. Filed Aug. 1, 1904. Serial No. 219,118.



Claim.—The process for the manufacture of axle-boxes which consists in first compressing between one pair of dies a metallic block to mold a hollow cavity in one end of it and bring the opposite end of it to the exact form required for the top of the box while at the same time forming projecting lumps on the exterior of two of its opposite sides, then after reheating the molded block placing it onto the end of a mandrel and causing the mandrel to carry it forward through a series of fixed dies to draw the sides down to the shape and thickness required and mold each of the lumps into two parallel guide-ribs, afterward quickly removing the drawn-down block from the mandrel and without reheating cutting off all superfluous metal from its open end and causing this end while still hot to embrace the sides of a tray which is to form the bottom of the box so that the tray may be gripped and held as the sides of the body of the box cool down.

822,129. DOOR OPENING AND CLOSING APPARATUS. RICHARD HUITT and CHARLES C. HUITT, St. Louis, Mo. Filed Nov. 14, 1905. Serial No. 287,332.



Claim.—1. In an apparatus of the class described, the combination with a door, of a lever detachably fixed to the door-latch-operating shaft, a bracket fixed to the top of the door, a pulley secured to the door adjacent the bracket, a pulley secured to the door-casing adjacent the point occupied by the bracket, and an operating-cable secured at one end to the lever and at its opposite end to the bracket said cable being extended to a point remote from the door; substantially as specified.

2. In an apparatus of the class described, the combination with a door, of a lever secured to the door-latch-operating shaft, a bracket secured to the inner face of the door, a cable secured at one end to the lever and at the opposite end to the bracket, and suitably-located guides over which said cable passes to a convenient point; substantially as specified.

3. In an apparatus of the class described, the combination with a door, of a lever detachably fixed to and extending horizontally from the door-latch-operating shaft, a bracket fixed to the inner face of the door and extending upwardly and outwardly from the top edge of said door which bracket is in vertical alinement with the door-knob, a grooved pulley carried by said bracket, a grooved pulley secured to the door-casing to the rear of said bracket, a cable secured at one end to the outer end of the lever and at its opposite end to the upper end of the bracket, which cable passes over the grooved pulleys, said cable being extended to a point remote from the door; substantially as specified.

822,130. SLIDING-DOOR CONSTRUCTION. JOHN R. HUSSEY, Indianapolis, Ind. Filed Apr. 1, 1905. Serial No. 253,244.



Claim.—1. The combination with a structure having a plurality of openings, and doors for closing said openings, a stationary track-section between each pair of door-openings, a double-track section opposite each door, means for moving said double-track section so as to bring either track thereof into alinement with the stationary track-section, and means for supporting the door on the inner one of said drouble tracks in a closed position when the outer one of said double tracks is in alinement with said stationary track-section and so as to be movable longitudinally thereon when the inner one of said double tracks is in alinement with said stationary track-section.

2. The combination with a structure having a plurality of openings, of stationary track-sections between said openings, a truss-beam extending the full width of each opening and carrying two parallel track-sections, said truss-beam being movable toward or away from said structure so as to bring either of said movable track-sections in line with the stationary track-sections, and doors for closing said openings, each door being movably mounted on the inner truss track-section and to be in a closing position when the outer track of the double-track section is in line with the stationary track-section.

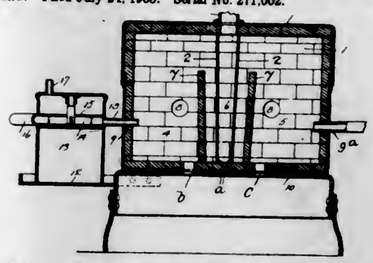
3. The combination with a structure having a plurality of openings, of doors for closing said openings, a pair of supports secured to the structure one at each side of each opening, and in line with each other, a truss-beam mounted on each pair of side supports to be slidable toward and away from said structure, two parallel track-sections secured to each truss-beam, each being adapted to support movably the entire door, and stationary track-sections secured between the truss-beams with which either track-section on the truss-beams may be moved into alinement, the arrangement being such that the door may be supported in a closed position by the inner one of said parallel track-sections when the outer one is in line with said stationary track-section.

822,131. PROTECTOR FOR TELEGRAPH AND TELEPHONE POLES. BENJAMIN W. HYDER, Rutherfordton, N. C. Filed Feb. 27, 1906. Serial No. 303,300.

Claim.—A device of the class described comprising a tubular metal casing designed to inclose the lower end of a pole, a shield fitted on the latter to house the upper end of the casing, said shield having a tubular portion, and a flexible, impervious guard fitted on the tubular portion of the shield and arranged to tightly embrace the pole at a point above the same.



822,132. GAS-GENERATOR. ABRAM H. JONES, Hartford City, Ind. Filed July 24, 1905. Serial No. 271,002.



Claim.—1. In a gas-machine, the combination with a supporting-base, of a generator arranged thereon, said generator having formed therein separate generating-compartments to receive oil and coal-dust, breaker-walls in said compartments, means whereby said oil is mixed with steam and injected into one compartment of said generator, means for the injection of said coal-dust into the generator, means for igniting said oil and coal-dust, means whereby the gas from said oil and coal-dust is mixed in said generator and a series of scrubbers and purifiers arranged on said base to receive the mixed gas from said generator, substantially as described.

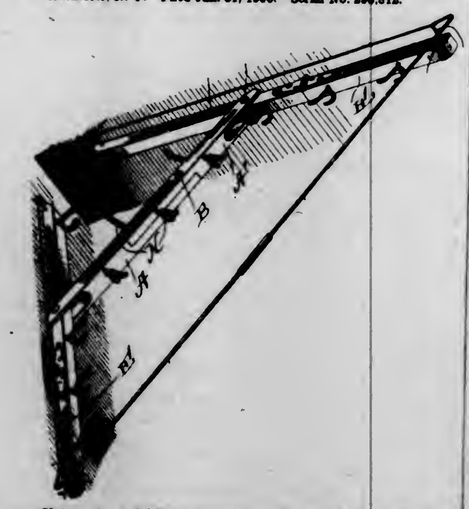
2. In a gas-machine, the combination with a supporting-base, of a generator arranged on said base, said generator having arranged therein partitions to divide the same into generating and mixing compartments, breaker-walls in said compartments, means whereby oil and coal-dust are injected into said generating-compartment in the form of a spray, the gas from said oil and coal being commingled in said mixing-compartment, wet scrubbers arranged on said base to receive the gas from said mixing-compartment and a dry scrubber to receive the gas from said wet scrubbers, substantially as described.

3. In a gas-machine of the character described, the combination with a supporting-base, of a generator arranged thereon, said generator having arranged therein a dome-shaped cover, transversely-disposed partitions arranged in said generator to divide the same into generating and mixing compartments, said partitions having formed in their lower ends a series of apertures forming passages between the generating and mixing compartments, means for injecting oil, steam and coal-dust into said compartments, breaker-walls arranged in said generating-compartments adjacent to said apertured partitions, and extending only part way up in said compartments, whereby gas from the oil and coal in the latter may pass over said walls and be drawn through the apertured partitions into said mixing-chamber, wet scrubbers arranged on said base to receive the commingled gases from said mixing-chamber and a dry scrubber to receive the gas from said wet scrubbers, substantially as described.

4. In a gas-machine, the combination with a supporting-base, of a generator arranged thereon, said generator having formed therein separate generating-compartments to receive fire, steam and coal-dust, means for injecting oil steam and coal-dust into said compartments, and mixing-compartment in which the gases from said generating-compartments are commingled, a centrifugal oil and steam mixing and injecting device adapted to spray oil and steam into one of said generating-compartments, wet scrubbers to receive the gas from said mixing-compartment, and a dry scrubber to receive the gas from said wet scrubbers, substantially as described.

5. In a gas-machine, the combination with a supporting-base, of a generator arranged thereon, said generator having formed therein separate generating-compartments to receive oil and coal-dust, and a mixing-compartment into which the gas from said generating-compartment is drawn and commingled, a centrifugal oil and steam mixing and injecting device to spray oil and steam into one of said generating-compartments, said mixing and injecting device consisting of a cylindrical casing, a turbine-wheel revolubly mounted in said casing, a perforated plate arranged above said wheel, a steam-inlet pipe arranged in said casing tangent to said turbine-wheel, an oil-inlet pipe arranged in the top of said casing, and a steam and coal discharge pipe arranged in the side of the casing opposite to said steam-inlet pipe and in communication with one of the generating-compartments of said generator, and wet and dry scrubbers to receive the gas from the mixing-compartment of said generator, substantially as described.

822,133. **FOLDING WARDROBE-RACK.** JOHN W. KENNEDY, Rochester, N. Y. Filed Jan. 31, 1906. Serial No. 298,812.



Claim.—1. A folding wardrobe-rack comprising strips which are pivoted together, means for holding said strips in alinement with each other, arm-supporting pieces pivoted to the outer ends of said strips, and spur-plates secured to the faces of said pieces, as set forth.

2. A folding wardrobe-rack comprising strips which are pivoted together, means for holding the strips in alinement with each other, pieces pivoted in the recessed ends of said strips, folding arms mounted upon said pieces, and spur-plates upon the outer faces of said pieces, as set forth.

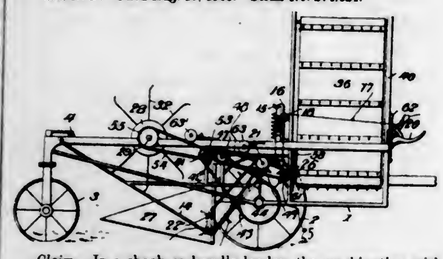
3. A folding wardrobe-rack comprising strips which are pivoted together, means for holding said strips in alinement with each other, pieces pivoted in the recessed ends of said strips, folding arms mounted upon said pieces, and drapery-supporting rods having angled ends mounted in apertures in said folding arms, as set forth.

4. A folding wardrobe-rack comprising two strips having their inner ends recessed, a pivotal pin connecting the inner ends of said strips, hooks, one mounted in each of said strips and adapted to be turned in such position as to hold the strips in alinement with each other, pieces pivoted in the recessed ends of said strips, and folding arms hinged to said pieces, as set forth.

5. A folding wardrobe-rack comprising horizontally-movable toggle-link strips which are pivoted together, wall-engaging pieces pivotally connected to the outer ends of said strips, spur-plates upon the faces of said pieces, said strips being adapted, when in alinement, to hold said spur-plates in engagement with the walls of a room, to support the rack, as set forth.

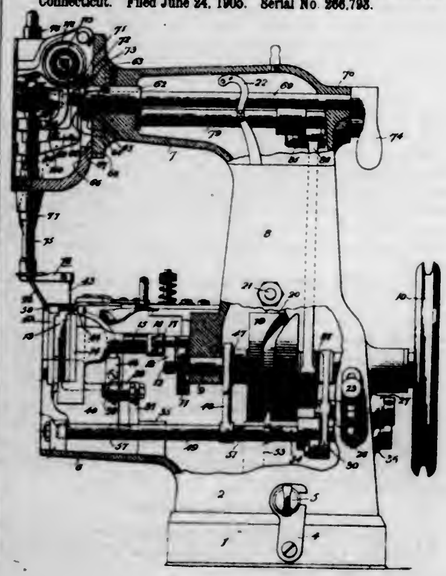
6. A folding wardrobe-rack comprising horizontally-movable toggle-link strips which are pivoted together, wall-engaging pieces pivotally connected to the outer ends of said strips, spur-plates upon the faces of said pieces, said strips being adapted, when in alinement, to hold said spur-plates in engagement with the walls of a room, to support the rack, and means for holding the strips in alinement with each other, as set forth.

822,134. **SHOCK AND BUNDLE LOADER.** ERNEST KIRK, Niagara, N. D. Filed Aug. 17, 1905. Serial No. 274,621.



Claim.—In a shock or bundle loader, the combination with a supporting-frame having rear supporting-wheels, and front steering-wheels, of a steering mechanism connected to said front wheels and operated from the rear of the machine, a front elevator-frame hinged at its forward end to said supporting-frame, means whereby said frame is yieldingly and adjustably supported at its rear end, a driving-roll journaled in the upper rear end of said elevator-frame, two guide-rolls journaled one above the other in the forward lower end of said frame, an endless toothed conveyer-belt arranged on said rolls, the lower end of said belt traveling in a vertical plane between said lower guide-rolls, a spring-toothed reel journaled on said supporting-frame, a rear transversely-disposed conveyer and elevator arranged on the rear end of said supporting-frame, and means whereby said conveyers and reel are driven by said supporting-wheels, substantially as described.

822,135. **MACHINE FOR SEWING SWEAT-BANDS IN HATS.** ALEXANDER LAUBSCHER, Bridgeport, Conn., assignor to Wheeler & Wilson Manufacturing Company, Bridgeport, Conn., a Corporation of Connecticut. Filed June 24, 1905. Serial No. 266,793.



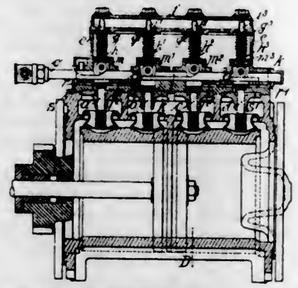
Claim.—1. In a sewing-machine, an overhanging arm provided with a swinging head, a needle-bar-actuating shaft mounted in said arm, a needle-bar and a presser-bar mounted in said head, and connections between said needle-bar-actuating shaft and needle-bar, in combination with a locking device operatively connected with the presser-bar for securing said head against accidental movement when adjusted to sewing position.

2. In a sewing-machine, a work-support, an overhanging arm, a head pivoted to said arm, a needle-bar and a presser-bar mounted in said head, a horizontal rock-shaft mounted in the overhanging arm and provided with a hand-lever at one end and connected with said pivoted head at its other end and adapted to rock said head on its pivot to throw the needle-bar and presser-bar to one side of the work-support, an automatic locking device for locking the head to the arm in its sewing position, and means actuated by the presser-bar to unlock the locking mechanism to permit the head to be swung out of sewing position.

3. In a sewing-machine, the combination of a main shaft, a needle-carrying bar, a presser-bar, a stationary overhanging arm, a needle-bar-carrying head adjustably secured to said arm, a needle-actuating shaft and connections between said needle-bar and its actuating-shaft, a loop-taker connected with the main shaft and connections between said main shaft and needle-actuating shaft, a locking device carried by said adjustably-secured head and connected with the presser-bar, and stops for limiting the movements of said swinging head in opposite directions.

4. In a sewing-machine, a work-support, an overhanging arm, a head pivoted to said arm, a needle-bar and a presser-bar mounted in said head, means to rock said head on its pivot to throw the needle-bar and presser-bar to one side of the work-support, an automatic locking device for locking the head to the arm in its sewing position, and means actuated by the presser-bar to unlock the locking mechanism to permit the head to be swung out of sewing position.

822,136. **VALVE-GEAR FOR ENGINES.** HUGO LENTZ, Berlin, Germany, assignor of one-half to Charles Bellens, Neuilly-sur-Seine, France. Filed Oct. 10, 1905. Serial No. 282,177.



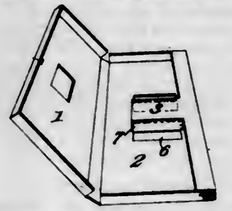
Claim.—1. A valve-gear for engines having lift-valves actuated by a lifter-rod, a tubular guide presenting a longitudinal guideway for the rod and guideways for the valve-stems located at right angles to the longitudinal guideway and open at the top, and a single casing inclosing all of the valve-stem guideways and provided with a cover, substantially as described.

2. A valve-gear for engines having lift-valves actuated by a lifter-rod, a tubular guide presenting a longitudinal guideway for the rod and guideways for the valve-stems located at right angles to the longitudinal guideway and open at the top, and a casing inclosing the valve-stem guideways and closed by a hollow cover which serves as lubricant-container, substantially as described.

3. A valve-gear for engines having lift-valves actuated by a lifter-rod, a tubular guide presenting a longitudinal guideway for the rod and guideways for the valve-stems located at right angles to the longitudinal guideway and open at the top, and presenting oil-channels located between the valve-stem guideways and below the lifter-rod, and a covered casing inclosing the valve-stem guideways and communicating with the said channels, substantially as described.

822,137. **PROTECTOR FOR SPECTACLES.** CHARLES E. LINNIG, Peru, Ill. Filed June 8, 1905. Serial No. 264,323.

Claim.—1. A protector-case for eyeglasses and spectacles made from a flat paper blank, said case consisting of guard-walls cut from the bottom of the blank, scored and bent at right angles thereto, a tailpiece having three walls bent upwardly therefrom, and a ledge forming a stop for the cover, said tailpiece and walls being secured to the guard-walls, substantially as described.



2. A case or protector for eyeglasses or spectacles, comprising guard-walls formed by slitting the bottom of the case longitudinally and centrally to form guards, said guards being scored at their bases and bent at right angles to the bottom, a tailpiece, a ledge from which the tailpiece projects, three walls formed on the tailpiece by scoring the bases thereof, said tailpiece and ledge being bent down over the guard-walls and secured in place to form an artificial nose for eyeglasses or spectacles, substantially as described.

3. A case or protector for eyeglasses or spectacles made from a single sheet-blank and comprising a box-body and cover therefor, guard-walls cut from the bottom of the box-body and bent at right angles to said bottom, a tailpiece extending partially across the box-body and consisting of two side walls and an end wall bent downward and inclosing the guard-walls, and a ledge connected to said tailpiece and forming a stop for the cover, substantially as described.

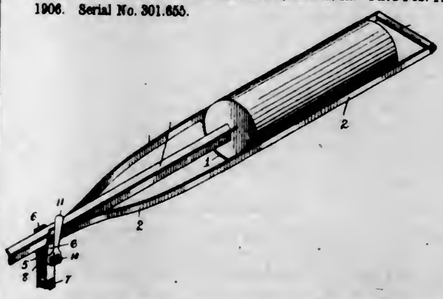
822,138. **ARCH-SUPPORTER.** ALEXANDER E. LITTLE, Lynn, Mass., assignor to A. E. Little & Company, Lynn, Mass., a Firm. Filed Nov. Filed Nov. 29, 1905. Serial No. 289,603.



Claim.—1. An arch-supporter comprising a body portion of soft, flexible material shaped to extend under the arch of a person's foot, the portion of the arch-supporter beneath the arch of the foot being provided with a pad-receiving pocket which is open at one side, and a removable pad to be placed within the pocket, said body portion having an elastic band to extend over the instep of the foot.

2. An arch-supporter comprising a body portion made entirely of soft, flexible material and shaped to inclose the heel and to extend under the arch of the foot, the portion beneath the arch of the foot being provided with a pad-receiving pocket open at the side, and a pad removably placed within the pocket.

822,139. **PALLET.** CHARLES S. LONG, Aurora, Ill. Filed Feb. 17, 1906. Serial No. 301,655.



Claim.—1. A pallet for use in molding plastic material upon an article, having a body portion to receive the plastic material, and a clamp for engaging the article.

2. A pallet for use in molding plastic material upon an article, comprising a body portion for receiving the plastic material, a handle at one end of said body portion, projecting means at the other

end of said body portion adapted to serve as a handle, and means on said projecting means for engaging the article.

3. A pallet comprising a body portion in receptacle form, side members fixed to and projecting from said body portion, and a clamping device attached to said side members.

4. A pallet comprising a body portion in receptacle form, two side bars fixed to and projecting from said body portion, and a clamping device comprising a jaw fixed to each of said side bars.

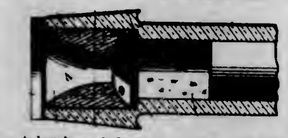
5. A pallet comprising a body portion in receptacle form, two side bars fixed to said body portion and extending from its opposite ends, the ends of said bars at one end of the body portion being joined to form a handle, and a clamping device comprising a jaw fixed to the opposite end of each of said side bars.

822,140. **WELL-PIT-MOLD FRAME.** WILLIAM H. LUCAS, Newark, Ohio. Filed Oct. 30, 1905. Serial No. 285,206.



Claim.—The herein-described mold comprising a cylindrical metal body portion 1, having overlapping edges, the innermost edge being provided with transversely-extending slots 4, screws 5, provided with heads 7, secured to the outer overlapping edge of the body portion by means of rivets 8, said screws 5 extending through the slots 4 and fitted with winged nuts 9 for adjusting the size of the body portion, and a ring 11 fitted around the upper end of the cistern outside the body portion 1, essentially as described.

822,141. **BOTTLE-CLOSURE.** CHARLES H. LYONS, Silver City, N. Mex. Filed Dec. 13, 1905. Serial No. 291,617.

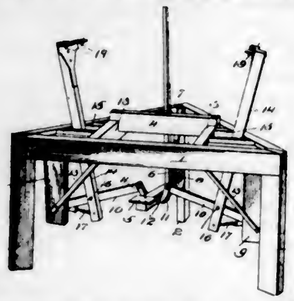


Claim.—A bottle-neck having an inner shoulder disposed at a point remote from the outer end of the neck, a stopper seated in the latter below and having its upper end flush with the shoulder, a separating-disk arranged in the neck to rest on the shoulder and upper end of the stopper, a sealing-stopper disposed above the separating-disk, said sealing-stopper comprising a substantially conical body portion provided at its lower end with a head designed to seat upon the disk and at its upper end with a projecting flange to bear on the upper end of the neck, and a cement filling surrounding the sealing member within the neck.

822,142. **MACHINE FOR NAILING FRUIT-BOXES.** ALLISON A. MACY and BENJAMIN T. DUNCAN, Wenatchee, Wash., assignors of one-third to Herbert M. Roys, Wenatchee, Wash. Filed Sept. 21, 1905. Serial No. 279,227.

Claim.—1. A machine of the class described, comprising means for supporting the ends of a receptacle, means for holding the ends of the top for the receptacle in position for nailing, and means carried by the end-holding means to engage and carry a cleat.

2. A machine of the class described, comprising means for supporting the ends of a receptacle, means for holding the ends of the top for the said receptacle in position for nailing, and spurs depending from and carried by the end-holding means to engage and carry a cleat.



3. In a machine of the class described, a frame provided with means to support a box, means to engage the top of the box, means to exert a clamping pressure on the top-engaging means, means to secure the pressure-exerting means in clamping position, and a throw-off extending above the frame.

4. In a machine of the class described, a frame provided with means to support a box, means to engage the top of the box, a foot-lever arranged to exert a clamping pressure on the top-engaging means, means to secure the foot-lever in a pressure-exerting position, and a throw-off lever extending above the frame.

5. A device of the class described comprising a frame mounted upon suitable standards, said frame having supporting means for receiving a box or receptacle which is to be covered or closed, longitudinally-swinging gripping-bars having top-engaging spaced ears at their upper ends, and levers for throwing said gripping means against the ends of the boxes and thus holding the cover in position.

6. A device of the class described, comprising a frame mounted upon suitable standards, said frame having supporting means for receiving a box, longitudinally-swinging gripping-bars having top-engaging spaced ears at their upper ends, levers for throwing said gripping means against the ends of the box to hold the cover in position, and a downwardly-depending spur carried by each of said ears arranged to engage and hold a cleat.

7. A machine of the class described, comprising a supporting-frame having end supports for a box to be nailed, inwardly-extending levers secured to the machine-frame, box-gripping means carried thereby, and a foot-lever connected with the said inwardly-extending levers for operating them simultaneously.

8. A machine of the class described comprising a frame mounted upon suitable standards, box-gripping bars movable in said frame, levers pivoted to the standards of the frame, and projecting inwardly therefrom, and an operating-lever pivotally secured to one of said standards and movably connected with said levers for operating both of them.

9. A machine of the class described comprising a box-support, box-gripping means comprising an apertured plate, a foot-lever for operating the same, and a rack mechanism for locking the foot-lever and thus holding the gripping means in their box-holding positions.

10. A machine of the class described, comprising a frame for supporting the ends of a box to be nailed, inwardly-extending pivoted levers mounted below the support, gripping-bars carried by said levers, springs for forcing the bars against the end of the box when they are depressed, and a foot-lever connected with said bar-carrying levers for operating them simultaneously.

11. A machine of the class described, comprising a box-supporting frame, gripping means for holding the portions of the box together for nailing, a foot-lever for operating the gripping means, a spring normally tending to lift the foot-lever, a rack-bar capable of locking the foot-lever in its depressed positions, and means connecting the spring and the rack-bar for holding the rack-bar against its lock, when the foot-lever is depressed.

12. A machine of the class described, comprising a frame capable of supporting a box to be nailed, gripping means for holding the parts of the box together, a foot-lever for operating said gripping means, a spring for lifting the foot-lever, a rack-bar having ratchet-teeth formed thereon, a guide-plate and detent for engaging said ratchet-teeth, and a link connecting the rack-bar with the spring of the foot-lever, the tautness of the spring operating to hold the rack-bar against the detent, and the gripping means thus in position.

13. A machine of the class described, comprising a frame for supporting the parts of the box to be nailed, gripping-bars operable for holding the parts in a nailing position, and angle-plates having points or spurs for engaging the material of the cover and preventing its slipping when the parts are being nailed.

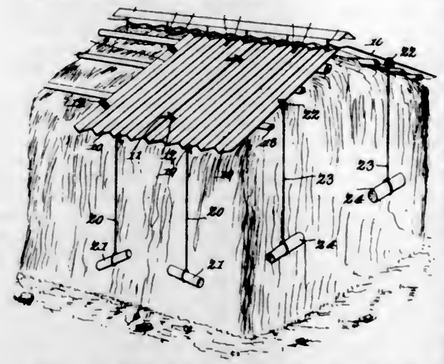
14. A machine of the class described, comprising a frame for supporting the parts of the box to be nailed, a hinged foot-lever mounted on the frame, gripping-bars extending upwardly through the frame opposite the ends of the box, levers carrying said gripping-bars, and connecting-links for joining the bar-carrying levers and the foot-lever, the depression of the foot-lever causing the operation of the other levers to draw the gripping-bars in place.

15. A machine of the class described, comprising a frame capable of supporting the parts of a box to be nailed, gripping-bars for engaging the parts of the box, inwardly-projecting spaced ends carried by the said gripping-bars and arranged to hold the cover of the box in place for nailing, the spaces between said ends, permitting of the use of intermediate as well as end nails.

16. A machine of the class described, comprising a frame arranged to support the parts of a box for nailing at its ends only, gripping-bars for engaging the ends only of the cover of the box, the said gripping-bars having inwardly-turned ends provided with spurs or points, the said brads facilitating the holding of cleats upon the ends of the cover, and means for depressing the gripping-bars and throwing their upper ends inwardly.

17. A machine of the class described comprising a box-supporting frame, levers projecting inwardly therefrom, gripping-bars bolted to said levers, their lower ends projecting below the levers, springs connecting their lower ends with rigid portions of the frame, and means for depressing the levers which carry said bars, the said springs upon such depression causing the upper ends of the bars to be thrown inwardly.

822,143. **STACK-COVER.** ALEXANDER MANN, Berkshire, Mich. Filed Nov. 25, 1905. Serial No. 289,069.

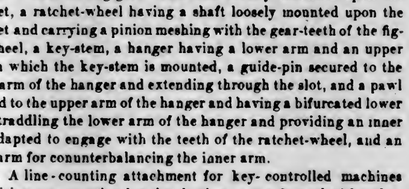


Claim.—1. A cover for stacks comprising a plurality of plates corrugated longitudinally with the corrugations at the edges interlapping, and hooks and loops the elements of which are rigidly connected respectively to the terminal corrugations of one plate and an intermediate corrugation of the next plate whereby the plates may be coupled and uncoupled only when disposed in inoperative position.

2. A device of the class described comprising a plurality of plates corrugated longitudinally with the corrugations at the edges interlapping and disposed upon the stack at opposite sides of the center with the inner ends spaced apart, hooks and loops the elements of which are rigidly connected respectively to the terminal corrugations of one plate and an intermediate corrugation of the next plate, means for detachably coupling said plates at their adjacent spaced ends, a ridge member spaced above the intervals between the ends of the plate and overlapping the same, and standards depending from said ridge member and adapted to be inserted into the stack.

822,144. **LINE-COUNTING ATTACHMENT FOR KEY-CONTROLLED MACHINES.** GEORGE B. MARLATT, Allegheny, Pa. Filed May 25, 1905. Serial No. 263,196.

Claim.—1. A line-counting attachment for key-controlled machines comprising a supporting-bracket having a pointer, a figure-wheel having gear-teeth and loosely mounted upon the bracket, a ratchet-wheel having a shaft loosely mounted upon the bracket and carrying a pinion meshing with the gear-teeth of the figure-wheel, and a key-stem adapted to slide upon the bracket and carrying a pawl having an arm adapted to engage with the teeth of the ratchet-wheel.



2. A line-counting attachment for key-controlled machines comprising a supporting-bracket having an arm provided with a laterally-extending pointer, a figure-wheel having gear-teeth and loosely mounted upon the bracket so as to turn beneath the pointer, a ratchet-wheel having a shaft loosely mounted upon the bracket and carrying a pinion meshing with the gear-teeth of the figure-wheel, and a key-stem adapted to slide upon the bracket and carrying a pawl having an arm adapted to engage with the teeth of the ratchet-wheel.

3. A line-counting attachment for key-controlled machines comprising a supporting-bracket having a stud, a figure-wheel having gear-teeth and loosely mounted upon the stud of the bracket, a ratchet-wheel having a shaft loosely mounted upon the bracket and carrying a pinion meshing with the gear-teeth of the figure-wheel and a key-stem adapted to slide upon the bracket and carrying a pawl having an arm adapted to engage with the teeth of the ratchet-wheel.

4. A line-counting attachment for key-controlled machines comprising a supporting-bracket having an arm formed with a cam-shaped slot, a figure-wheel having gear-teeth and loosely mounted upon the bracket, a ratchet-wheel having a shaft loosely mounted upon the bracket and carrying a pinion meshing with the gear-teeth of the figure-wheel, and a key-stem adapted to slide upon the arm of the bracket and carrying a pawl having an arm adapted to engage with the teeth of the ratchet-wheel and provided with a pintle adapted to travel in the cam-shaped slot.

5. A line-counting attachment for key-controlled machines comprising a supporting-bracket having an arm formed with an oblong slot, a figure-wheel having gear-teeth and loosely mounted upon the bracket, a ratchet-wheel having a shaft loosely mounted upon the bracket and carrying a pinion meshing with the gear-teeth of the figure-wheel, a key-stem, a hanger having a lower arm and an upper arm in which the key-stem is adjustably mounted, a guide-pin extending through the oblong slot and the lower arm of the hanger and securing the hanger to the key-stem, and a pawl pivoted to the upper arm of the hanger and having an arm adapted to engage with the teeth of the ratchet-wheel.

6. A line-counting attachment for key-controlled machines comprising a supporting-bracket having an arm formed with a slot, a figure-wheel having gear-teeth and loosely mounted upon the bracket, a ratchet-wheel having a shaft loosely mounted upon the bracket and carrying a pinion meshing with the gear-teeth of the figure-wheel, a key-stem, a hanger having a lower arm and an upper arm in which the key-stem is mounted, a guide-pin secured to the lower arm of the hanger and extending through the slot, and a pawl pivoted to the upper arm of the hanger and having a bifurcated lower part straddling the lower arm of the hanger and providing an inner arm adapted to engage with the teeth of the ratchet-wheel, and an outer arm for counterbalancing the inner arm.

7. A line-counting attachment for key-controlled machines comprising a supporting-bracket having an arm formed with a slot, a figure-wheel having gear-teeth and loosely mounted upon the bracket, a ratchet-wheel having a shaft loosely mounted upon the bracket and carrying a pinion meshing with the gear-teeth of the figure-wheel, a hanger having a lower arm, and an upper arm formed with a depending lug, a key-stem mounted in the arm of the hanger, a guide-pin secured to the lower arm of the hanger and extending through the slot, and a pawl located within the hanger, formed with a recessed upper end, fitting between the depending lug and the body of the bracket, and with an arm adapted to engage with the teeth of the ratchet-wheel, and a pivot-pin whereby the pawl is suspended from the depending lug.

8. A line-counting attachment for key-controlled machines comprising a supporting-bracket, an inner figure-wheel loosely mounted upon the bracket, an outer figure-wheel having gear-teeth and loosely mounted upon the bracket, an intermediate bearing-block fixed to the bracket, a shaft mounted in the intermediate bear-

ing-block and carrying an intermediate gear-wheel at its inner end and a pinion meshing with the gear-teeth of the outer figure-wheel at its outer end, a pointer for the outer figure-wheel, means carried by the inner figure-wheel for operating the intermittent gear-wheel, and means for rotating the inner figure-wheel.

9. A line-counting attachment for key-controlled machines comprising a supporting-bracket, an inner figure-wheel loosely mounted upon the bracket, an outer figure-wheel having gear-teeth and loosely mounted upon the bracket, an intermediate bearing-block fixed to the bracket, a shaft mounted in the intermediate bearing-block and carrying an intermittent gear-wheel at its inner end, and a pinion meshing with the gear-teeth of the outer figure-wheel at its outer end, a pointer for the outer figure-wheel, a pointer-slide carried by the inner figure-wheel, a traveling reversible pointer mounted upon the pointer-slide, having a pivot-pin provided with an eccentrically-arranged pin adapted to engage the intermittent gear-wheel and means for rotating the inner figure-wheel.

10. A line-counting attachment for key-controlled machines comprising a supporting-bracket, an inner figure-wheel loosely mounted upon the bracket, an outer figure-wheel having gear-teeth, an intermediate bearing-block fixed to the bracket, a shaft mounted in the intermediate bearing-block and carrying an intermittent gear-wheel at its inner end and a pinion meshing with the gear-teeth of the outer figure-wheel at its outer end, a pointer for the outer figure-wheel, having a striker mounted thereon, a gong, mounted adjacent to the striker, a pointer-slide carried by the inner figure-wheel, a traveling reversible pointer, mounted upon the pointer-slide, having a pivot-pin provided with an eccentrically-arranged pin adapted to engage the intermittent gear-wheel, and a trip-pin adapted to engage the striker, and means for rotating the inner figure-wheel.

11. A line-counting attachment for key-controlled machines comprising a supporting-bracket, an inner figure-wheel loosely mounted upon the bracket having a circumferential spring-groove, an outer figure-wheel having gear-teeth, an intermediate bearing-block fixed to the bracket, a shaft mounted in the intermediate bearing-block and carrying an intermittent gear-wheel at its inner end and a pinion meshing with the gear-teeth of the outer figure-wheel at its outer end, a pointer for the outer figure-wheel, a pointer-slide carried by the inner figure-wheel, a traveling reversible pointer mounted upon the pointer-slide having a recess at one side and a pivot-pin provided with an eccentrically-arranged pin adapted to engage the intermittent gear-wheel or to be swung clear thereof, a stop-pin secured to the pointer-slide and fitting in the side recess of the traveling reversible pointer, and means for rotating the figure-wheel.

12. A line-counting attachment for key-controlled machines comprising a supporting-bracket, an inner figure-wheel loosely mounted upon the bracket, an outer figure-wheel having gear-teeth, an intermediate bearing-block fixed to the bracket, a shaft mounted in the intermediate bearing-block and carrying an intermittent gear-wheel at its inner end and a pinion meshing with the gear-teeth of the outer figure-wheel at its outer end, a pointer for the outer figure-wheel, a pointer-slide, carried by the inner figure-wheel, formed with an outer spring-groove, a traveling reversible pointer mounted upon the pointer-slide having a recess at one side, and a pivot-pin provided with spring-recesses and an eccentrically-arranged pin adapted to engage the intermittent gear-wheel or to be swung clear thereof, a stop-pin secured to the pointer-slide and fitting in the side recess of the traveling reversible pointer, a spring located in the circumferential inner spring-groove, outer spring-groove and a spring-recess, and embracing the pointer-slide and means for rotating the inner figure-wheel.

13. A supporting-bracket for line-counting attachments for key-controlled machines, constructed with an arm formed with a longitudinal opening for the attaching means, a transverse arm formed with a pointer, an arm formed with a shaft-bearing, and with a transverse cam-shaped slot, with a transverse oblong slot, and a centrally-located stud.

14. An inner figure-wheel for line-counting attachments for key-controlled machines formed with a central stud-opening, peripheral gear-teeth, an annular wide outer rib having peripheral figures, a circumferential inner spring-groove, and an inwardly-beveled edge, an annular narrow inner rib having an inwardly-beveled edge, and an annular groove located between the ribs.

15. A pointer-slide for line-counting attachments for key-controlled machines constructed with a segmental runner with a beveled outer edge, with a beveled inner groove, with an outer spring-groove, and with a pivot-bearing extending across the outer spring-groove.

16. A pointer-slide for line-counting attachments for key-controlled machines constructed with a segmental runner, with a beveled outer edge, with a beveled inner groove, with an outer spring-groove, with a pivot-bearing extending across the outer spring-groove, and with a hole in the front of the pointer-slide, a pivot-pin having an eccentric-pin and mounted in the pivot-bearing, a traveling reversible pointer having a trip-pin and a recess at one side, and a stop-pin inserted in the front hole of the pointer-slide.

17. A line-counting attachment for key-controlled machines comprising a supporting-bracket, an inner figure-wheel loosely mounted upon the bracket formed with an annular outer rib having peripheral figures and a circumferential inner spring-groove, an annular inner rib, and an annular groove located between the ribs, an outer figure-wheel loosely mounted upon the bracket formed with an annular rim having peripheral figures, and peripheral gear-teeth, an intermediate bearing-block fixed to the bracket, a shaft mounted in the intermediate bearing-block and carrying an intermittent gear-wheel at its inner end, and a pinion meshing with the gear-teeth of the outer figure-wheel at its outer end, a pointer for the outer figure-wheel, a pointer-slide carried by the inner figure-wheel, formed with a runner fitting in the annular groove of the inner figure-wheel, with a groove adapted to fit the annular inner rib of the inner figure-wheel and with an outer spring-groove, a traveling reversible pointer mounted upon the pointer-slide having a pivot formed with a spring-recess and provided with an eccentrically-arranged pin adapted to engage the intermittent gear-wheel, a spring seated in the circumferential inner groove, outer spring-groove and spring-recess and embracing the pointer-slide, and means for rotating the inner figure-wheel.

18. A line-counting attachment for key-controlled machines comprising a supporting-bracket, an inner figure-wheel loosely mounted upon the bracket, an outer figure-wheel having gear-teeth, an intermediate bearing-block, fixed to the bracket, having outer and inner spring-apertures, a shaft mounted in the intermediate bearing-block and carrying an intermittent gear-wheel at its inner end and a pinion meshing with the gear-teeth of the outer figure-wheel at its outer end, a pointer for the outer figure-wheel, means carried by the inner figure-wheel for operating the intermittent gear-wheel, expansion coil-springs located in the spring-apertures between the intermittent gear-wheel and the outer figure-wheel, and the inner figure-wheel and the outer figure-wheel respectively, and means for rotating the inner figure-wheel.

19. A line-counting attachment for key-controlled machines comprising a supporting-bracket, a hub projecting from said bracket, inner and outer figure-wheels mounted upon said hub and provided with gear-teeth, an actuating key-stem, a pawl and ratchet interposed between said stem and the teeth of said inner figure-wheel, means for holding the pawl out of engagement with its ratchet when at rest, means for guiding the travel of said key-stem, a stationary pointer, a bearing-block intermediate of the figure-wheels, and means for intermittently rotating said outer figure-wheel by agency of the inner figure-wheel.

20. A line-counting attachment for key-controlled machines comprising a supporting-bracket, inner and outer toothed figure-wheels rotatably mounted upon said bracket, a fixed bearing-block intermediate of said figure-wheels, an intermittent gear mounted upon said block, a pinion driven by said intermittent gear for transmitting motion from said inner to said outer figure-wheel, and friction-springs for retarding rotation of the figure-wheels.

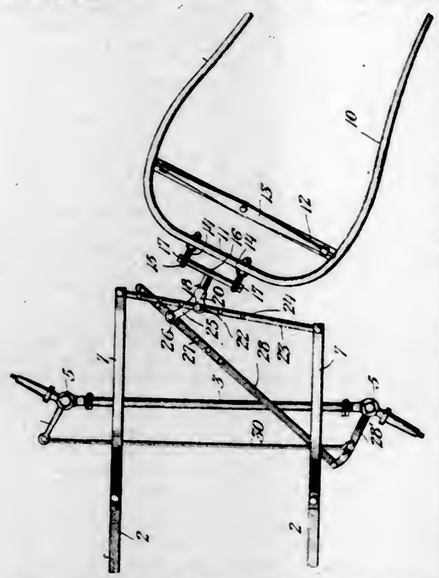
21. A line-counting attachment for key-controlled machines comprising a supporting-bracket, a figure-wheel, a key-stem, and means for rotating said figure-wheel by agency of said stem, of an annular groove and adjacent annular ribs upon the face of said figure-wheel, a pointer-slide located in said annular groove, a pointer carried by said slide, and a secondary annular groove in one of said ribs for retaining said pointer-slide in operative position.

22. A line-counting attachment for key-controlled machines comprising a figure-wheel containing figures on its periphery and moving or sliding parts each secured to said figure-wheel by a spring passing through them and sliding in a secondary annular groove of said wheel, and each carrying a pointer to be set to said figures, and also carrying a point or tooth integral with said pointer for the purpose of transferring intermittent motion from said figure-wheel to a smaller-figure-wheel.

23. A line-counting attachment for key-controlled machines comprising a keyboard, a supporting-bracket, inner and outer toothed figure-wheels rotatably mounted upon said bracket, an actuating key-stem connected to the restoring-key of the keyboard, a pawl-hanger adjustably secured to said stem, a pawl pivoted in said hanger and normally retained out of operative position, a ratchet interposed between said key-stem and inner figure-wheel, and a ratchet-driven pinion for transmitting motion to the inner figure-wheel.

24. A line-counting attachment for key-controlled machines comprising a keyboard, a supporting-bracket, inner and outer toothed figure-wheels rotatably mounted upon said bracket, an actuating key-stem connected to the restoring-key of the keyboard, means for rotating said figure-wheels by agency of said key-stem and intermediate connections, fixed pointers for said figure-wheels, a gong secured to said bracket, and a striker for said gong adapted to be tripped by the rotary action of said inner figure-wheel.

822,145. **DRAFT AND STEERING GEAR FOR VEHICLES.** PENNELL W. MARTIN, Lake Eunice, Minn. Filed Oct. 28, 1905. Serial No. 284,847.



Claim.—1. In a vehicle, a stationary axle, wheeled supporting-spindles pivotally connected thereto and provided with rearwardly-extending arms, a rod pivotally connecting said arms, an angularly-arranged steering-bar pivoted at one end to one of the arms in rear of the pivotal connection of the rod therewith, and a draft appliance pivotally mounted upon the frame of the vehicle in advance of the axle and connected with the other end of the bar.

2. In a vehicle, a stationary axle, spindles pivotally mounted thereon, a connection between the spindles arranged in rear of the axle to adapt them to swing in unison, a diagonally-arranged bar operatively attached at one end to said connections, and a draft appliance pivotally mounted upon the frame in advance of the axle and connected with the opposite end of said bar.

3. In a vehicle, a stationary axle, wheeled supporting-spindles pivotally connected thereto, connections including a lever for swinging said spindles, and a draft appliance pivotally mounted upon the frame in advance of the axle, said appliance being adjustably connected with the frame and lever.

4. In a vehicle, a stationary axle, spindles pivotally connected therewith, connections for simultaneously swinging said spindles including a diagonally-arranged lever, and a draft appliance pivotally connected with the frame of the vehicle in advance of the axle, said appliance being adjustable at an angle transversely of the frame to vary the line of draft and adjustably connected with the lever.

5. In a vehicle, a stationary axle, wheeled supporting-spindles pivotally connected therewith and provided with rearwardly-extending arms, a connecting-rod joining said arms, a diagonally-arranged operating-bar pivotally connected at its rear end with one of the arms in rear of the point of connection of the rod therewith, and a draft appliance pivotally mounted upon the frame in advance of the axle, said appliance being adjustably connected with the frame and forward end of the bar to vary the line of draft.

6. In a vehicle, a stationary axle having pivoted spindles, connecting means between the spindles arranged in rear of the axle, a draft appliance pivotally mounted upon the frame in advance of the axle, and a diagonally-arranged bar pivotally connected at its forward end with the draft appliance and at its rear end with the spindle-connecting means.

7. In a vehicle, a stationary axle, spindles pivotally connected therewith, the frame of the vehicle being provided with a supporting portion arranged in advance of the axle and at an angle thereto, a draft appliance adjustably mounted upon said supporting portion to vary the line of draft, and lever mechanism connecting said draft appliance with the spindles.

8. In a vehicle, a stationary axle, spindles pivotally connected therewith, connecting means between the spindles arranged in rear of the axle, the frame of the vehicle being provided in advance of the axle with a supporting portion disposed at an angle thereto, a diagonally-arranged bar pivotally connected at its rear end with the spindle-connecting means, and a draft appliance adjustably mounted upon the inclined portion of the frame and adjustably connected with the forward end of the bar.

9. In a vehicle, reach-bars carrying a stationary axle and provided with extension-arms projecting in superposed relation in advance of the axle, transverse frame-bars connected with said arms, a draft appliance, a bracket connected therewith and pivotally connected with the frame-bars and provided with a rearwardly-extending arm, spindles pivoted to the axle and provided with rearwardly-extending arms, a connecting-rod uniting said arms, and a bar pivotally connected at its rear end to one of said arms and at its forward end to the arm of the bracket.

822,146. **PNEUMATIC HAMMER.** EDWARD C. MEISSNER, St. Louis, Mo., assignor, by mesne assignments, to Chicago Pneumatic Tool Company, a Corporation of New Jersey. Filed Nov. 12, 1900. Serial No. 36,212.

Claim.—1. A pneumatic hammer comprising a cylinder having ports for the admission and escape of air, a piston in said cylinder, and a valve for controlling the admission and release of air, said cylinder having a supplemental exhaust-port located in the forward portion thereof in position to be uncovered by the piston shortly after the initiation of its return movement and before the completion of such return movement, substantially as described.

2. A pneumatic hammer comprising a cylinder having ports for the admission and escape of air, a piston in said cylinder, and a valve

for controlling the admission and release of air, said cylinder having a supplemental exhaust-port located in the forward portion thereof in position to be uncovered by the piston shortly after the initiation of its return movement and before the completion of such return movement, said supplemental exhaust-port being permanently open to the atmosphere, substantially as described.

3. A pneumatic hammer comprising a cylinder having ports for the admission and release of air, a piston in said cylinder, a handle portion fastened to said cylinder and having a cylindrical socket-piece closed at one end and nested therein, and a cylindrical valve in said socket-piece in alinement with said cylinder, said valve having grooves in its side to coöperate with the inlet and exhaust ports, substantially as described.

4. A pneumatic hammer comprising a cylinder having ports for the admission and release of air, a piston in said cylinder, a handle portion fastened to said cylinder and having a cylindrical socket-piece closed at one end and nested therein, said cylinder having a reduced end portion fitting within said socket-piece, and a cylindrical valve in said socket-piece in alinement with said cylinder for controlling the inlet and exhaust ports, substantially as described.

5. A pneumatic hammer comprising a handle portion having ports for the admission and release of air, a cylinder, a piston in said cylinder and an imperforate valve for controlling the admission and release of air, one of said ports being in the rear of said valve and communicating through a passage-way with the middle portion of said cylinder, said valve having two grooves in its side for coöperation with some of said ports, and having its rear end of larger diameter than its front end, substantially as described.

6. A pneumatic hammer comprising a cylinder having ports for the admission and release of air, a piston in said cylinder, and a handle clamped to said cylinder and having a cylindrical socket portion, the outer portion of said socket being enlarged and the end of said cylinder being reduced to fit tight therein, and a valve-bushing in the rear portion of said socket provided with ports for the admission and release of air, and a longitudinally-movable valve in said bushing adapted to coöperate with said bushing-ports, substantially as described.

7. A pneumatic hammer comprising a cylinder, a piston therein, a handle having a cylindrical socket portion, a valve-bushing in said socket and a valve in said bushing, the rear end of said valve being enlarged and fitting in the enlarged bore of said bushing, and the front end of said valve fitting loosely in said bushing to permit the leakage of air by said front end, said hammer being provided with ports and passage-ways arranged to be controlled by said valve and said piston, substantially as described.

8. A pneumatic hammer comprising a cylinder having ports for the admission and release of air, a piston in said cylinder, and a valve for controlling the admission and release of air, said cylinder having a supplemental exhaust-port located in the forward portion thereof in position to be uncovered by the rear end of the piston shortly before the forward limit of the piston-stroke, and by the front end of the piston soon after the beginning of its rearward stroke, substantially as described.

9. A pneumatic hammer comprising a cylinder having ports for the admission and release of air, a piston in said cylinder, and a valve for controlling the admission and release of air, said cylinder having a supplemental exhaust-port located in the forward portion thereof in position to be uncovered by the rear end of the piston shortly before the forward limit of the piston-stroke and by its front end shortly after the beginning of its rearward stroke, said supplemental exhaust-port being permanently open to the atmosphere, substantially as described.

10. A pneumatic hammer comprising a cylinder having ports for the admission and release of air, a piston in said cylinder, and a handle clamped to said cylinder and having a cylindrical socket portion, the outer portion of said socket being enlarged and the end of said cylinder being reduced to fit tight therein, substantially as described.

11. A pneumatic hammer comprising a cylinder having ports for the admission and release of air, a piston in said cylinder, and a handle clamped to said cylinder and having a cylindrical socket portion, the outer portion of said socket being enlarged and the end of said cylinder being reduced to fit tight therein, and a valve-bushing in the rear portion of said socket provided with ports for the admission and release of air, and having its bore enlarged at the rear end, a cylindrical valve in said bushing having a shoulder at its rear end fitting in the enlarged portion of the bushing-bore and having grooves for coöperating with ports in said bushing, one of the ports in said bushing being located at the rear of said valve and communicating through a passage-way in the socket portion and cylinder-wall with a port near the middle portion of the cylinder, substantially as described.

12. A pneumatic hammer comprising a cylinder having ports for the admission and release of air, a piston in said cylinder, and a handle clamped to said cylinder and having a cylindrical socket portion, and a valve-bushing in said socket provided with ports for the admission and release of air and having its bore enlarged at the rear end, a cylindrical valve in said bushing having a shoulder at its rear end fitting in the enlarged portion of the bushing-bore and having grooves for coöperating with ports in said bushing, one of the ports in said bushing being located at the rear of said valve and communicating through a passage-way in said socket portion and cylinder-wall with a port near the middle portion of the cylinder, substantially as described.

13. A pneumatic hammer comprising a cylinder, a piston therein, a handle portion fastened to said cylinder and having a socket constituting a continuation of the cylinder-chamber, a valve-bushing in said socket, and a valve in said bushing, said valve having two circumferential grooves and being enlarged at its rear end, and said hammer having a passage-way extending from the rear of said valve to the middle portion of said cylinder, and a main admission-port in position to be covered by the front end of said valve in its forward position and to be uncovered when the valve is in its rearward position, and a main exhaust-port in position to register with the two grooves alternately, and a passage-way extending from the front end of the cylinder to a port which registers with the front groove of the valve, and a passage-way which extends from the rear portion of the cylinder to a port which registers with the rear groove of the valve, and a supplemental admission-port in position to register with the front groove of the valve when said valve is in its forward position, substantially as described.

14. A pneumatic hammer comprising a cylinder, a piston therein, a handle portion fastened to said cylinder and having a socket portion, a valve-bushing in said socket, and a valve in said bushing, said valve having two circumferential grooves and being enlarged at its rear end, and said hammer having a passage-way extending from the rear of said valve to the middle portion of said cylinder, and a main admission-port in position to be covered by the front end of said valve in its forward position and to be uncovered when the valve is in its rearward position, and a main exhaust-port in position to register with the two grooves alternately, and a passage-way extending from the front end of the cylinder to a port which registers with the front groove of the valve, and a passage-way which extends from the rear portion of the cylinder to a port which registers with the rear groove of the valve and a supplemental admission-port in position to register with the front groove of the valve when said valve is in its forward position, and a supplemental exhaust-port leading from the middle portion of the cylinder to the atmosphere, substantially as described.

15. A long-stroke pneumatic hammer comprising a cylinder having its front end closed with the shank of a tool, and a handle fastened to said cylinder and having a cylindrical socket portion, a bushing in said socket having its bore enlarged at the rear end, a valve enlarged at the rear end and fitting in said bushing, and a piston in said cylinder, said bushing having circumferential grooves in its outer surface and ports extending through said bushing from said groove and arranged to be controlled by said valve, said hammer having passage-ways extending from said groove to the atmosphere and to the front and rear ends of the cylinder, and a passage-way extending from the rear of the valve to the middle portion of the cylinder, substantially as described.

16. A pneumatic hammer comprising a cylinder, a piston therein, a handle fastened to said cylinder in alinement therewith and having a cylindrical socket portion, a bushing in said socket and a valve in said bushing, said bushing having circumferential grooves with ports leading therefrom to the interior of said bushing, the main admission-ports being in position to be covered and uncovered by the front end of said valve, and said hammer having passage-ways extending from three intermediate grooves in said bushing to the front and rear ends of the cylinder and to the atmosphere respectively, substantially as described.

17. A pneumatic hammer comprising a cylinder, a piston therein, a handle fastened to said cylinder in alinement therewith and having a cylindrical socket portion, a bushing in said socket and a valve in said bushing, said bushing having circumferential grooves with ports leading therefrom to the interior of said bushing, the main admission-ports being in position to be covered and uncovered by the front end of said valve, and the rearmost port being at the rear of said valve, and said hammer having passage-ways extending from three intermediate grooves in said bushing to the front and rear ends of the cylinder and to the atmosphere respectively, substantially as described.

18. A pneumatic hammer comprising a cylinder, a piston therein, a handle having a socket, the outer or forward end of the socket-piece being enlarged and the rearward end of the cylinder being correspondingly reduced to fit into said enlarged end of the socket-piece, a valve-bushing located in the socket-piece and having ports and passages for the admission and exhaust of the motive fluid to and from the cylinder, and a valve arranged in the valve-bushing for governing said ports and passages; substantially as described.

19. A pneumatic hammer comprising a handle portion having ports for the admission and release of air, a cylinder clamped to said handle portion, a piston in said cylinder, and a valve in said handle portion for controlling the admission and release of air, said valve having a groove therein and said handle portion having a small duct inclined forwardly in position to cause the air to impinge against the front wall of said groove, substantially as described.

20. A pneumatic hammer comprising a handle portion having ports for the admission and release of air, a cylinder clamped to said handle portion, a piston in said cylinder, and a valve in said handle portion for controlling the admission and release of air, said valve having a groove therein and said handle portion having a small duct inclined in position to cause the air to impinge against the wall of said groove, substantially as described.

21. A pneumatic hammer comprising a cylinder, a piston therein, ports for the admission and release of air, a valve for controlling the admission and release of air, and a duct leading from the air-supply duct and opening in position and direction to cause the air to impinge against the valve in the general direction of its line of motion, substantially as described.

22. A pneumatic hammer comprising a handle portion having a cylindrical socket, a socket-piece therein, a bushing in said socket-piece and a valve in said bushing, and a cylinder clamped to said handle portion in alinement therewith, and a piston in said cylinder, said bushing, handle portion and cylinder having continuous passage-ways therethrough for the admission and release of air, and all of said passage-ways being controlled entirely by said valve and piston, substantially as described.

23. A pneumatic hammer comprising a handle portion having ports for the admission and release of air, a cylinder, a piston in said cylinder, and a valve for controlling the admission and release of air, said valve being located back of said cylinder and in alinement therewith, and an imperforate plate in the rear end of said cylinder, substantially as described.

24. A pneumatic hammer comprising a cylinder having ports for the admission and release of air, an imperforate plate at the rear end of said cylinder, a piston in said cylinder, and a handle clamped to said cylinder and having a cylindrical socket portion, a valve-bushing in said socket portion, and a valve in said bushing in alinement with the cylinder, the pressure-admission port extending from the space back of said plate to a point in the piston-chamber sufficiently far from the rear end thereof to constitute an air-cushion therein, substantially as described.

25. A pneumatic hammer comprising a cylinder having passage-ways for the admission and exhaust of pressure, and a valve controlling said passage-ways and constructed to permit leakage of air from the valve-chamber to the rear end of the cylinder; substantially as described.

26. A pneumatic hammer comprising a cylinder having passage-ways for the admission and release of air, and a reciprocating valve for controlling said passage-ways, said hammer having a passage-way extending from the supply-duct to the end of the valve-chamber beyond the range of movement of the valve, substantially as described.

27. The combination, in an impact-tool, of a cylinder, a piston reciprocable therein, inlet and exhaust passages for the motive fluid, and a valve movable in a chamber at one end of the cylinder and serving to control the flow of motive fluid to and from each end of the cylinder, one face of said valve being open to a chamber in which motive fluid is compressed by the piston as the latter approaches one end of its stroke, and the other face of the valve being open to a chamber to which motive fluid under normal pressure is admitted.

28. The combination in an impact-tool, of a cylinder, a piston reciprocable therein, inlet and exhaust passages for the motive fluid, and a valve movable in a chamber at one end of the cylinder and serving to control the flow of motive fluid to and from each end of the cylinder, said valve having one face open to a chamber in which motive fluid is compressed by the piston as the latter approaches one end of its stroke, and another face of larger area than the first open to a chamber to which motive fluid under normal pressure is admitted.

29. In a pneumatic tool of the type described, a valve to control the admission and exhaust to and from the cylinder, said valve being actuated by direct air-pressure at one stroke of the piston and by compression of the air between it and the piston at the return stroke.

30. The combination in an impact-tool, of a cylinder, a piston reciprocable therein, inlet and exhaust passages for the motive fluid, a valve movable in a chamber at one end of the cylinder and serving to control the flow of motive fluid to and from each end of the cylinder, said valve having an enlarged head, and one face of the valve being open to a chamber in which the motive fluid is compressed by the piston as the latter approaches one end of its stroke, and a passage leading from the chamber which receives the enlarged head of the valve to a point in the cylinder where it will be uncovered by the piston when the latter reaches the forward limit of its stroke, whereby the valve will be moved in one direction by motive fluid compressed by the piston at one end of its stroke, and in the other direction by motive fluid under normal pressure when the piston reaches the other limit of its stroke.

31. In a fluid-pressure-operated tool, the combination with a cylinder, of a reciprocating piston therein, a valve-casing, a differential piston-valve in said casing controlling the supply and exhaust of fluid-pressure to and from the opposite ends of the cylinder, said valve-casing and cylinder having ports and passages whereby the valve is moved in one direction by air compressed by the piston and in the other direction by fluid-pressure flowing through the cylinder from the supply-port.

32. In a pneumatic hammer comprising a cylinder having passage-ways for the admission and release of pressure and a reciprocating valve for controlling said passage-ways, said valve having one end fitting against leakage in the valve-chamber and having its other end arranged to permit a leakage of air into one end of the valve-chamber to insure the movement of said valve, substantially as described.

33. In a pneumatic hammer, a valve to control the admission and exhaust of motive fluid to and from opposite ends of the cylinder, said valve being moved in one direction by air compressed by the piston and in the opposite direction by the motive fluid.

34. In a pneumatic hammer, a valve to control the admission and exhaust of motive fluid to and from opposite ends of the cylinder, said valve being shifted at the forward movement of the piston by motive fluid admitted to one of its pressure areas through a port controlled by the piston, to cause the valve to admit motive fluid in front of the piston to drive the latter rearward, and being shifted in the opposite direction by air compressed by the piston at its backward stroke, to admit motive fluid to the rear end of the cylinder to drive the piston forward again.

35. In a pneumatic hammer, a differential valve to control the admission and exhaust of motive fluid to and from the opposite ends of the cylinder, said valve being moved in one direction by air compressed by the piston and in the opposite direction by the motive fluid.

36. In a pneumatic hammer, a differential valve to control the admission and exhaust of motive fluid to and from the opposite ends of the cylinder, said valve being moved in one direction by motive fluid admitted to the larger pressure area of the valve at the forward stroke of the piston, and in the opposite direction by air compressed by the piston at its return stroke and acting upon the smaller pressure area of the valve.

37. In a pneumatic hammer, a valve to control the admission and exhaust of motive fluid to and from the opposite ends of the cylinder, said valve being located at the rear end of the cylinder and in line therewith and moved in one direction by air compressed by the piston and in the opposite direction by the motive fluid.

38. In a pneumatic hammer, a differential valve to control the admission and exhaust of motive fluid to and from the opposite ends of the cylinder, said valve being located at the rear ends of the cylinder and in line therewith and moved in one direction by motive fluid admitted to its larger pressure area at the forward stroke of the piston, and in the opposite direction by air compressed by the piston at its return stroke and acting against the smaller pressure area of the valve.

39. In a pneumatic hammer, the combination of a cylinder, a piston therein, a valve for controlling the movements of the piston and having one of its pressure areas in communication with the rear end of the piston-chamber, means for admitting motive fluid to the opposite pressure area of the valve, and an exhaust-port for the rear end of the piston-chamber arranged to be closed by the piston during

its return stroke to cause the air compressed by the further movement of the piston to shift the valve.

40. In a pneumatic hammer, the combination of a cylinder, a piston therein, a differential valve for controlling the movements of the piston, and having its smaller pressure area in communication with the rear end of the piston-chamber, a port and passage leading from the piston-chamber to the larger pressure area of the valve and arranged to be uncovered by the piston at its forward stroke, and an exhaust-port for the rear end of the piston-chamber arranged to be closed by the piston during its return stroke to cause the air compressed by the piston during its further movement to shift the valve.

41. In a pneumatic hammer, a valve to control the admission and exhaust of motive fluid to and from the opposite epds of the cylinder, said valve being shifted in one direction by motive-fluid pressure at the forward movement of the piston and in the opposite direction by air compressed by the piston at its return stoke, and means for permitting a leakage of motive fluid into the rear end of the piston-chamber during the return stroke of the piston.

42. In a pneumatic hammer, the combination of a cylinder, a piston therein, a valve for controlling the movements of the piston and having one of its pressure areas in communication with the rear end of the piston-chamber, a port controlled by the piston for admitting motive fluid to the opposite pressure area of the valve at the forward stroke of the piston, an exhaust-port for the rear end of the piston-chamber arranged to be closed by the piston during its return stroke, and means for permitting a leakage of motive fluid into the rear end of the piston-chamber during the return stroke of the piston.

43. In a pneumatic hammer, the combination of a cylinder, a piston therein, a differential valve for controlling the movements of the piston and having one of its pressure areas in communication with the rear end of the piston-chamber, means for admitting motive fluid to its opposite pressure area, an exhaust-port for the rear end of the piston-chamber arranged to be closed by the piston during its return stroke, and means for permitting leakage of motive fluid into the rear end of the piston-chamber during the return stroke of the piston.

44. In a pneumatic hammer, the combination of a cylinder, a piston therein, a differential valve for controlling the movements of the piston and having its smaller pressure area in communication with the rear end of the piston-chamber, a port and passage leading from the piston-chamber to the larger pressure area of the valve and arranged to be uncovered by the piston at its forward stroke, an exhaust-port for the rear end of the piston-chamber arranged to be closed by the piston during its return stroke, and means for permitting a leakage of motive fluid into the rear end of the piston-chamber during the return stroke of the piston.

45. In a pneumatic hammer, the combination of a cylinder, a piston of uniform diameter therein, a valve for controlling the admission and exhaust of motive fluid to and from the opposite ends of the cylinder, and a passage leading from one pressure area of the valve to the piston-chamber and opening into the latter by a port uncovered by the rear end of the piston at the forward stroke of the latter, to admit motive fluid from the piston-chamber to said pressure area of the valve, and uncovered by the front end of the piston, at the rearward stroke of the latter to permit said motive fluid to exhaust into the front end of the piston-chamber.

46. In a pneumatic hammer, the combination of a cylinder, a piston therein, a valve block or bushing at the rear end of the cylinder provded with a series of ports and passages communicating with the motive-fluid supply, the front end of the cylinder, the atmosphere, and the rear end of the cylinder, respectively, and a valve operating in said valve block or bushing and having along its length two grooves or recesses for governing said series of ports, said valve having one end exposed to the rear end of the piston-chamber and its other end in communication with the piston-chamber through a port controlled by the piston.

47. In a pneumatic hammer, the combination of a cylinder having a piston-chamber and ports for the admission and exhaust of the motive fluid, means for closing the rear end of the chamber to form an air-cushion therein, a valve for controlling said ports and arranged in rear of the piston-chamber, the inlet-port opening into the piston-chamber at a point forward of the rear end thereof so as to form an air-cushion therein, and a piston operating to close said inlet-port on its rearward stroke and be cushioned by the air trapped in the rear end of the piston-chamber.

48. A pneumatic hammer having a cylinder with ports and passages for the admission and exhaust of motive fluid to and from its opposite ends, and a permanently-open supplemental exhaust-port located intermediate the length of the cylinder in position to be uncovered by the rear end of the piston shortly before the forward end of the piston-stroke, to thereby exhaust the motive fluid behind the piston, and to be uncovered by the front end of the piston shortly after the initiation of the return piston-stroke, to thereby exhaust the motive fluid in front of the piston.

49. A pneumatic hammer having a cylinder with ports and passages for the admission and exhaust of motive fluid to and from its opposite ends, and a supplemental exhaust port and passage controlled by the piston and arranged to exhaust the cylinder on opposite sides of the piston, said supplemental passage extending from the piston-chamber rearwardly and longitudinally through the cylinder-wall to the main or regular exhaust-port adjacent the rear end of the hammer.

50. A pneumatic hammer having a cylinder with ports and passages for the admission and exhaust of motive fluid to and from its opposite ends, a valve for controlling said ports and passages, and means for exhausting the front end of the cylinder independently of the valve before the piston approaches the rear end of its stroke.

51. A pneumatic hammer having a cylinder with ports and passages for the admission and exhaust of motive fluid to and from its opposite ends, a valve for controlling said ports and passages, and means independent of the valve for exhausting the cylinder on opposite sides of the piston at the rear end of its forward stroke and near the beginning of its rearward stroke.

52. A pneumatic hammer having a cylinder with ports and passages for the admission and exhaust of motive fluid to and from its opposite ends, a valve controlling said ports and passages and moved in one direction by air compressed by the piston and in the other direction by motive fluid controlled by the piston, and means for exhausting the front end of the cylinder independently of said valve.

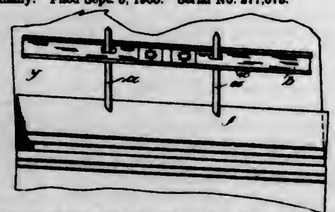
53. A pneumatic hammer having a cylinder with ports and passages for the admission and exhaust of motive fluid to and from its opposite ends, a valve controlling said ports and passages and moved in one direction by air compressed by the piston and in the other direction by motive fluid controlled by the piston, and means independent of the valve for exhausting the cylinder on opposite sides of the piston.

54. A pneumatic hammer having a cylinder with ports and passages for the admission and exhaust of motive fluid to and from its opposite ends, and a valve controlling said ports and passages and constructed to permit leakage of motive fluid to the rear end of the cylinder when in position to otherwise cut off the supply of motive fluid thereto.

55. A pneumatic hammer having a cylinder with ports and passages for the admission and exhaust of motive fluid to and from its opposite ends, and a valve controlling said ports and passages and having at its front end a piston-head governing the admission of the motive fluid to the rear end of the cylinder, said piston-head being arranged to permit leakage of the motive fluid to the rear end of the cylinder when the valve is in position to otherwise cut off the supply of motive fluid thereto.

56. In a pneumatic hammer, the combination of a cylinder, a valve-bushing having ports and passages for the admission and exhaust of motive fluid to and from the cylinder, said bushing having a circumferential groove located adjacent the rear end of the cylinder and containing a constant supply of motive fluid, a valve operating in said bushing and controlling said ports and passages, and a constantly open but restricted passage between said groove and the rear end of the cylinder.

822,147. **LETTER-FILE AND THE LIKE.** GUSTAV MEZ, Baden, Germany. Filed Sept. 5, 1905. Serial No. 277,076.



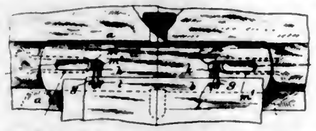
Claim.—1. In a top bar for files such as described, a sheet-metal strip having perforations, the lateral edges of said bar being turned upward and over to form grooves, and slides held in the grooves and between the turned edges to slide over the perforations.

2. In a top bar for files such as described, a perforated sheet-metal strip having its lateral edges turned upward and over to form grooves, slides held in said grooves and indentations in the overturned edges to limit the movement of the slides.

3. In a top bar for files such as described, a sheet-metal strip having perforations and upwardly-overturned edges to form lateral grooves, and a rib formed on its bottom, in combination with slides extending between and held in said grooves, substantially as described.

4. In a top bar for files such as described, a sheet-metal strip having perforations, upwardly-overturned edges to form lateral grooves and a medial depressed rib, depressions in the overturned edges and slides mounted between the overturned edges in the grooves formed thereby to slide over the perforations, said depressions in the edges acting as stops to limit the movement of the slides.

822,148. **SKIRT, WAIST, AND BELT HOLDER.** GEORGE W. MITCHELL, Lunenberg, Canada. Filed Dec. 9, 1903. Serial No. 184,501.



Claim.—1. In a skirt-supporter, the two longitudinally, interslidable, flattened horizontally-elongated clasping members adapted to form a holding-loop in the cloth of the waist and having a longitudinal curvature to conform to the waist of the wearer and a lateral fastening device for the skirt carried by and exerting a strain transversely of one of said members, substantially as specified.

2. In a skirt-supporter, the combination of the flattened horizontally-elongated outer member having longitudinal inturned upper and lower flanges directed toward each other, the inner member engaging said flanges, and a lateral fastening device for the skirt carried by said outer member and exerting a strain transversely thereof, substantially as specified.

3. A garment-supporter, having in combination a body member provided with longitudinal bearing-flanges, a slidable spring member engaging said flanges, a lateral fastening device for the skirt carried by said outer member, and a belt-engaging device, substantially as specified.

4. In a garment-supporter, the two flattened horizontally-elongated longitudinally-interslidable elastically-engaging waist-clasping members, and a fastening device carried by one of said members, substantially as specified.

5. In a garment-supporter, the combination of the two longitudinally-interslidable elastically-engaging waist-clasping members, a fastening device for the skirt carried by one of said members, and a belt-engaging device, substantially as specified.

6. A garment-supporter, having in combination an outer member having longitudinal inturned flanges directed toward each other, an inner spring skeleton slidable member engaging said flanges, and a fastening device carried by one of said members, substantially as specified.

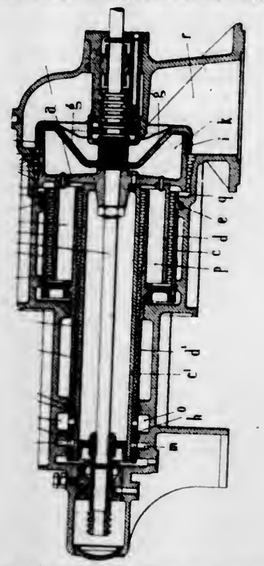
7. A garment-supporter, having in combination an outer member, having inturned longitudinal flanges, an inner spring skeleton slidable member engaging said flanges, transverse fastening devices at each end of said outer member, and a belt-engaging device, substantially as specified.

8. In a skirt-supporter, the combination of a flattened elongated horizontal body member having a longitudinal curvature to conform to that of the waist of the wearer, and a horizontal longitudinally-slidable elastic member engaging said body member to form a horizontal holding-loop in the cloth of the waist, said body member having a cut-away portion provided with a horizontal holding-wall and end stop-walls for connection of a vertical fastening device for the skirt, substantially as specified.

9. In a skirt-supporter, the combination with a flattened elongated horizontal body member having a longitudinal curvature to conform to that of the waist of the wearer and having inturned upper and lower flanges directed toward each other, of a longitudinally-slidable elastic member engaging said flanges of the body member to form a horizontal holding-loop on the cloth of the waist, said body member having cut-away portions provided with horizontal holding-walls for engagement of a vertical fastening device for the skirt, substantially as specified.

10. In a skirt-supporter, the combination with a flattened elongated horizontal body member having a longitudinal curvature to conform to that of the waist of the wearer and provided with longitudinal bearing-flanges, said body member having a cut-away portion provided with a horizontal holding-wall for connection of a vertical fastening device for the skirt, of an elastic member engaging the flanges of said body member to form a horizontal holding-bend in the cloth of the waist, substantially as specified.

822,149. **MULTIPLE-STAGE-REACTION TURBINE.** PHILIP F. ODDIE, London, England. Filed Dec. 19, 1905. Serial No. 292,488.



Claim.—1. In a turbine, the combination of a supporting-frame a casing therein provided with fixed blades, said casing being fastened at one end and free to expand at the other end, and a rotary part carrying blades located within said casing, said rotary part being fastened at one end to a support, and free to expand at the other end, substantially as described.

2. In a turbine, the combination of a supporting-frame, a casing therein provided with fixed blades, said casing being fastened at one end and free to expand at the other end, and a rotary part carrying blades located within said casing, said rotary part being fastened at one end to a support and free to expand at the other end, said casing and rotary part being fastened at opposite ends so as to expand and contract telescopically in opposite directions, substantially as described.

3. In a turbine, the combination of a supporting-frame, a casing mounted therein, and provided with fixed blades, a rotary part provided with blades mounted within said casing, said rotary part being provided with two sets of labyrinth packing-rings of different diameters, one set being located near each end, said casing and said rotary part being each fastened at one end only and adapted to expand in opposite directions, substantially as described.

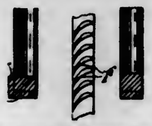
4. In a turbine, the combination of a casing provided with fixed blades, a rotary part therein provided with blades, two sets of labyrinth packing-rings on said rotary part, one set near each end, and said sets being of different diameters and arranged to face in opposite directions, said casing and rotary part being each fastened at one end only and free to expand in opposite directions, substantially as described.

5. In a turbine, the combination of a supporting-frame and a two-part casing, each part being provided with fixed blades, mounted on said support, one of said casings being larger than the other and concentric therewith leaving a steam-chamber therebetween, and a rotary part composed of two parts each carrying blades, one part being larger and arranged concentrically relatively to the other, and said casing and said rotary part being fastened at one end only and free to expand at the other in opposite directions, substantially as described.

6. In a turbine, a rotary part therefor comprising an axle, a disk firmly secured to said axle, a cylindrical part provided with blades on its outside secured at one end to said disk, the other end being

free to expand, and a larger cylinder carrying blades concentric with said first-named cylinder and fastened at one end to said disk and free to expand at the other end, substantially as described.

822,150. STEAM-TURBINE. CHARLES A. PARSONS and GEORGE G. STONEY, Newcastle-upon-Tyne, England. Filed Sept. 19, 1904. Serial No. 226,114.



Claim.—1. As a new article of manufacture, a combined holding-ring with blades therein swaged together into one substantially integral structure.

2. As a new article of manufacture, a combined holding-ring with blades therein swaged together into one substantially integral structure with substantially smooth and parallel sides.

3. As a new article of manufacture, a detached bladed ring for turbines having blades firmly swaged therein.

4. As a new article of manufacture, a bladed strip for turbines and the like having in combination a strip of rectangular section having faced grooves formed therein, blades inserted in said grooves from the face so that the roots lie along the bottom of the grooves and held in said grooves by pressure due to a flow of the metal of the strip to uniformly grip the roots of the blades, the whole bladed strip being then ready for insertion in the turbine-drum without further calking of the strip for the purpose of securing the blades.

5. A bladed strip for turbines having grooves, blades located in the grooves and held in place by the metal between the roots of the blades, which metal is swaged by means of pressure applied transversely of the strip, substantially as described.

822,151. WHEEL. JOHN F. PEASE and EBERHARD SCHUMACHER, Darlington, England. Filed July 31, 1905. Serial No. 271,979.



Claim.—1. A metallic wheel formed from two circular sections centrally spaced apart and joined at their peripheries, and means internally trussing the central spaced portion thereof comprising trussing members centrally abutting and diverging into engagement with said circular section, substantially as described.

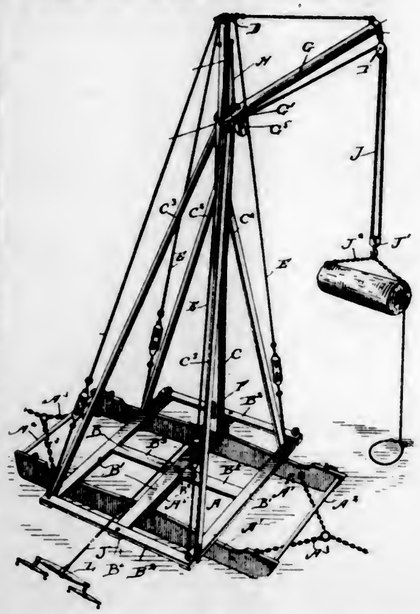
2. A metallic wheel formed from two circular sections centrally spaced apart and joined at their peripheries, and means internally trussing the central spaced portion thereof, comprising trussing-plates centrally abutting and diverging outwardly and engaging said circular sections, substantially as described.

3. A metallic wheel formed from two circular sections having complementary center plates and peripheral plates, said center plates being spaced apart and the peripheral plates joined together to form the felly, in combination with trussing-plates, within said spaced portion, abutting centrally and projecting outwardly into engagement with said sections, forming with said center plates an internal truss for the hub of the wheel, substantially as described.

4. A metallic wheel formed from two circular sections having complementary center plates and peripheral plates, said center plates being dish-shaped and spaced apart and the peripheral plates joined together to form the felly, in combination with trussing-plates, within said spaced portion, abutting centrally and projecting outwardly into engagement with said sections, forming with said center plates an internal truss for the hub of the wheel, substantially as described.

5. A metallic wheel made from two disks each stamped out to form an apertured central plate, with spokes radiating therefrom and terminating in an annular rim, said central plates being spaced apart and said annular rims being joined and formed into the wheel-felly, in combination with apertured abutting plates located between said spaced central plates and diverging outwardly at their outer edges into engagement with said central plates substantially at the place of joinder between said plates and spokes, and an axle member passing transversely through said apertured plates, with means for forcing same toward each other and holding same locked on said axle member, substantially as described.

822,152. LOG-HOIST AND CAR-LOADER. OSCAR L. RAYMOND, Marinette, Wis. Filed Nov. 7, 1905. Serial No. 286,278.



Claim.—1. In a device of the kind described, the combination with a sled having a bar loosely mounted thereon, of a platform pivoted to said bar, and means for adjusting said platform, for the purpose described.

2. In a device of the kind described, the combination with a pair of sled-runners loosely connected together, of a bar loosely mounted on said runners, a platform pivoted on said bar, carrying a derrick and means for adjusting said platform for the purpose described.

3. In a device of the kind described, the combination with a pair of sled-runners provided with notches, of an oval bar working in said notches, a platform pivoted to said bar, provided with a mast provided with a boom, carrying block and tackle, and means for adjusting said platform, on said sled, for the purpose described.

4. In a device of the kind described, the combination with a sled, of a rocker-bar mounted on said sled, a frame pivoted on said bar, a mast secured on said platform, a cap secured on said mast, a boom carrying block and tackle mounted on said mast, and means for adjusting said platform, for the purpose described.

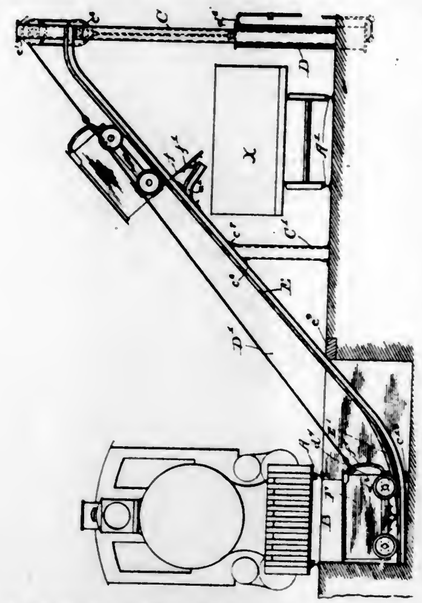
5. In a device of the kind described, the combination of a pair of runners, loosely connected together at each end, notches formed in said runners, a bar provided with oval ends adapted to rock in said notches, means for securing said bar in the notches, a platform pivoted to said bar provided with a derrick, and means for adjusting the platform in an inclined position to the runners, for the purpose described.

822,153. MATERIAL AND CINDER-PIT ELEVATOR. WILLIAM ROBERTSON, Chicago, Ill. Filed Oct. 17, 1904. Renewed Nov. 2, 1905. Serial No. 285,606.

Claim.—1. In an elevator of the class described, an inclined way, a car movable thereon, a cable operating from the top of said incline for moving the car, a central vertically-disposed traveler at the front end of the car extending from top to bottom thereof and a sheave engaging said traveler and to which the end of the cable is attached whereby the draft of the cable is at all times in alinement with the center of gravity of the load.

2. In a dumping-elevator, an inclined track having the lower end thereof bent to approximately a horizontal position an intermediate track-rail having a downturned upper end, a car movable on said track, a bottom section hinged at the rear end of the car and extending forwardly to near the middle of the car, a roller on said bottom adapted to track on said intermediate rail, a portion of said intermediate rail adjacent the bend in the track-rails having a curve of

a different radius from the track-rails and a cable operated from the top of the incline and having a vertically-sliding connection with the car end whereby the daft on said cable is at all times applied in alinement with the center of gravity of the car and its load.



3. A car of the class described comprising a car-body having a permanent bottom extending from the front end thereof, toward the middle, a bottom section hinged at the rear end of the car and extending forwardly to the fixed bottom and a truck or roller at approximately the center of said car permanently secured on said hinged bottom section, and a traveler on the front end of the car slightly outcurved and connected with the top and bottom of the car.

4. A car of the class described comprising a car-body having a fixed bottom section extending from the front end thereof toward the middle, a bottom section hinged at the rear end of the car and extending forwardly to the fixed bottom section, a truck or roller at approximately the center of said car permanently secured on said hinged bottom section and adapted to track on an intermediate rail thereby holding the bottom closed to the end of the rail and vertically-disposed means affording an adjustable attachment for a cable at the front end of the car.

5. A cinder-pit elevator-car of the class described comprising a car-body having a permanent bottom extending from the front end thereof, toward the middle, a bottom section hinged at the rear end of the car and extending forwardly to the fixed bottom and a truck or roller at approximately the center of said car permanently secured on said hinged bottom section and a vertical traveler located centrally on the front end of the car and affording a sliding connection for the cable whereby the car is operated.

6. A cinder-pit car of the class described comprising a receptacle having a dumping-bottom, track-wheels thereon, a cable adapted to operate said car and an outwardly-curved traveler secured at the top and bottom of the car at its front end and shaped to adapt the draft of said cable to be in alinement approximately with the center of gravity of the car.

7. The combination with a cinder-pit of an inclined track leading thereinto and having the lower ends curved to approximately horizontal, a central rail also leading into the pit and having the lower curvature of a greater radius than the track-rails, a cinder-pit elevator-car, a hinged bottom at its rear end, a roller on said bottom at approximately the middle of the car and pneumatically-operated means to actuate the car.

8. In a device of the class described the combination with a pit of an inclined track leading therefrom and having a horizontal section in said pit, a car on said track a pivoted bottom thereon, means for holding said bottom in position when the car moves from the horizontal to the inclined portion of the track, a cable and means connecting said cable with the car adapting it to adjust itself to the line of draft.

9. In a device of the class described the combination with a cinder-pit of an inclined track leading upwardly therefrom and provided with a horizontal section in the bottom of said pit, an intermediate rail raised for a portion of its length above said track, a car, a pivoted bottom section thereon, a wheel on the forward end of said section adapted to track on said intermediate rail, a vertical traveler on the front of the car and a cable movably attached thereto.

822,154. BUFFING-MACHINE. ANDREW W. ROGERS, Beverly, Mass., assignor to Sidney W. Winslow, trustee, Beverly, Mass. Filed Jan. 4, 1904. Serial No. 187,663.



Claim.—1. The combination with a holder formed with a plurality of holes, of an abrading device comprising a plurality of pieces of abrasive material arranged in layers and having corresponding holes, and means extending through the holes for securing the device in position on the holder.

2. The combination with a holder and an abrading device comprising a plurality of pieces of abrasive material arranged in layers, of means for securing said device to the holder, and additional securing means for entering the abrasive material.

3. The combination with a support of non-abrasive material, of an abrading device comprising a plurality of pieces of abrasive material of varying diameters arranged in layers with the smallest layer next to the support, said support being of a diameter slightly less than the said smallest layer whereby to support said layer from its center to within a short distance of its edge.

4. The combination with a holder and an abrading device, of a securing device comprising a stem extending centrally through the abrading device and into the holder and provided with arms having prongs to engage the abrading device and holder at two or more points to prevent relative rotative movement of said parts.

5. The combination with a rotary holder and an abrading device, of a securing device comprising a stem extending through the abrading device and provided with an arm arranged to engage said device eccentrically, and means for securing the stem in position in the holder.

6. A device of the class described comprising a plurality of pieces of material, each having an abrasive surface, said pieces being of circular form and of varying diameters and being placed in layers with their abrasive surfaces on the same side.

7. In a machine of the class described, the combination of an abrading device comprising a plurality of circular layers of abrasive material of diameters varying from the largest in the outer layer to the smallest in the inner layer, with means for supporting and actuating said device, the combination being arranged to permit continuous use of said abrading device while successive layers of the abrasive material are being worn out.

8. As a new article of manufacture, an abrading device comprising a plurality of pieces of material, each having an abrasive surface, said pieces being of circular form and being placed in layers with their abrasive surfaces on the same side, and also being secured together.

9. As a new article of manufacture, an abrading device comprising a plurality of pieces of material, each having an abrasive surface, said pieces being of circular form and being arranged in concentric layers with their abrasive surfaces all on the same side, said device having provision for securing the pieces together at two or more points to prevent relative rotative movement thereof.

10. As a new article of manufacture, an abrading device comprising a plurality of circular pieces of abrasive material, said pieces being of varying diameters and being placed in concentric layers, and also being secured together at two or more points.

11. As a new article of manufacture, an abrading device comprising a plurality of layers of flexible abrasive material secured together, the marginal portions of said layers of material being free to move relatively.

12. A device of the class described, comprising a plurality of superposed pieces of abrasive material arranged in layers of diminishing size with their abrasive surfaces on the same side.

13. An abrading device comprising a plurality of superposed layers of flexible abrasive material, the marginal portions of the lay-

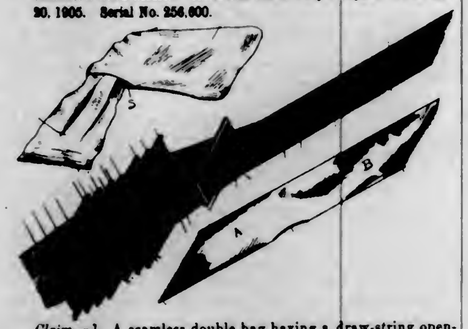
ers of material being disconnected to permit said portions to move relatively, said superposed layers being of diminishing size whereby the upper layers will not project beyond the periphery of the lowest one when the device is bent upwardly.

14. As a new article of manufacture, an abrading device comprising a plurality of pieces of abrasive material of circular form and of varying diameters, said device presenting a convex abrasive surface near its edge.

15. As a new article of manufacture, an abrading device comprising a plurality of pieces of abrasive material of circular form and of varying diameters and a backing of non-abrasive material secured thereto.

16. As a new article of manufacture, an abrading device comprising a plurality of circular pieces of abrasive material arranged in concentric layers and secured together at a plurality of points.

822,155. **SEAMLESS BAG OR SACK AND THE PROCESS OF MAKING THE SAME.** KAMEICHI SANO, Tokyo, Japan. Filed Apr. 20, 1905. Serial No. 256,600.



Claim.—1. A seamless double bag having a draw-string opening formed therein in the process of weaving said bag.

2. A seamless double bag having the right or fair side of the fabric forming the outer surface and the inner surface thereof, and the rough side and the unfinished weaving or raw edges within the double walls and bottoms of the bags.

3. A fabric for the purposes described having its ends single and the portion intermediate the ends tubular with an opening in said tubular portion.

4. A fabric for the purposes described, said fabric being woven in one piece tubular in form, the end portions thereof being closed, and an opening woven in the tubular portion intermediate the ends.

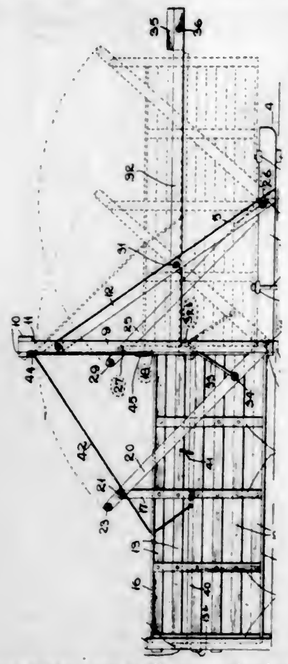
5. The process of making a seamless double bag which consists in weaving a tubular fabric with closed ends and an opening intermediate the ends, reversing the portion of the fabric between the opening and one end through the opening, then reversing the other portion of the fabric between the opening and the other end through the opening and arranging the latter portion within the former portion to form a bag, substantially as described.

6. The process of making a seamless double bag which consists in weaving a fabric in successive single and tubular portions with an opening in each tubular portion intermediate the single portions, separating said fabric into sections each section having a single portion at each end thereof, drawing one of the single end portions of a section from inside the tubular portion outwardly through the opening, then drawing the other single end portion through said opening and into the inside of the first tubular portion, substantially as described.

822,156. **FARM-GATE.** CHARLES E. SARGENT, Greenville, Ill. Filed Mar. 12, 1906. Serial No. 305,593.

Claim.—1. In a farm-gate, a pair of sills, a frame fixed to and supported upon said sills, a gate supported by and arranged to swing through said frame, means whereby said gate is swung from one position to another, a cross-piece positioned on the sills the ends of which extend beyond said sills, anchor-rods passing through the extended ends of the cross-piece and extending downwardly into the earth below the sills, and blocks located upon the lower ends of said rods; substantially as specified.

2. In a farm-gate, a frame, a gate supported by and arranged to swing through said frame, means whereby said gate is shifted from one position to another, a pair of parallel levers fulcrumed in the frame, links connecting the forward ends of said levers with the gate-shifting mechanism, a weight-box rigidly connecting the rear ends of said levers, and filler-stakes positioned between the sides of the frame and the sides of the gate, which stakes act as guides for the gate during its swing from one position to another; substantially as specified.



3. In a farm-gate, a pair of sills, a cross-piece located on top of said sills the ends of which cross-piece are extended, anchor-rods passing through the extended ends of the cross-piece and being extended into the ground beneath the sills, blocks located on the lower ends of said rods, a frame fixed to and supported by the sills, a gate supported by and arranged to swing through the frame, means whereby said gate is shifted from one position to another, a pair of parallel levers fulcrumed in the frame, links connecting the forward ends of said levers with the gate-shifting mechanism, and a weight-box rigidly uniting the rear ends of the levers; substantially as specified.

822,157. **LIFTING-JACK.** THEOBALD SCHRAMM, Columbus, Ohio. Filed June 27, 1905. Serial No. 267,258.



Claim.—In a lifting-jack, the combination of a base, of hollow form, a screw mounted for vertical movement in the hollow portion of the base, said base being provided with a slot vertically of the side and communicating with the hollow portion thereof, a member projected laterally from the lower extremity of the screw through the slot aforesaid to prevent turning of the screw, a head swiveled on the upper extremity of the screw, and a turning-nut at the upper end of the base having a bearing thereon and arranged to actuate the screw, the hollow portion of the base being provided with an interior vertical rib opposite the slot in the base and forming a bearing for the screw when a load is being elevated.

822,158. **HORSESHOEING-STAND.** FRANK SEWARD, Wentworth, Mo. Filed Aug. 29, 1905. Serial No. 276,275.

Claim.—1. A shoeing-stand comprising a knee-rest made in sections hinged together, and supports for the free ends of the sections, one of said supports being longitudinally adjustable.

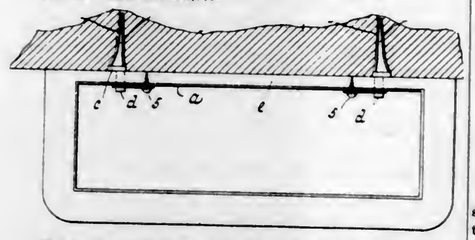
2. A knee-rest comprising hinged strips, and adjustable supports for the free end of one of said strips, a support for the free end of the other of the strips, and an auxiliary rest adjustably connected with the latter support.



3. A shoeing-stand comprising a knee-rest made in movably-connected sections, an adjustable support for the free end of one section, a support for the free end of the other section, said latter support being hinged to its section, and an auxiliary rest adjustably connected with said support.

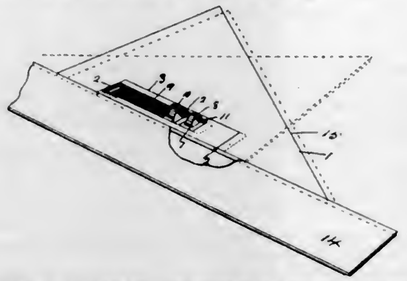
4. In a shoeing-stand a knee-rest comprising movably-connected sections, a padded covering for each section, supports for the free ends of the respective sections, and an auxiliary rest adapted for adjustable connection with one of the supports.

822,159. **TANK-SUPPORT.** ALBERT SHARE, Baltimore, Md., assignor of one-third to Edward C. Regester, Baltimore, Md. Filed June 24, 1905. Serial No. 266,768.



Claim.—In combination with a tank, a support for the same which consists of a tapered flat shank having a collar and a cylindrical stud which is inserted through the rear wall of the tank, the said stud being placed out of central alinement with the said collar and provided with rabbets near its end, and a hook pivoted to the inner surface of the rear wall of the tank adapted to engage with the rabbeted portion of the stud, substantially as specified.

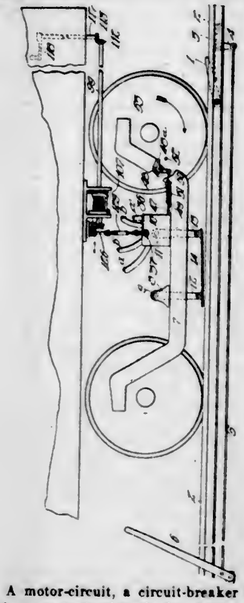
822,160. **SECTION-LINER.** CARL S. SHILLING and ALVIA L. LINK, Chicago, Ill. Filed Feb. 26, 1906. Serial No. 302,888.



Claim.—1. A section-liner consisting of a triangle; a longitudinally-slotted guide-plate removably mounted in the base of the triangle; a spacing means slidably mounted in the slot of the guide-plate and consisting of a pair of plates in horizontal alinement; and means for adjustably connecting the said plates, which have a limited vertical play in their bearings for the purpose described.

2. In a section-liner the combination of a triangle, a guide-plate removably mounted in the base of the triangle and having a longitudinal slot therein for the spacing means; a pair of spacing-plates in horizontal alinement slidably mounted in the said slot, and having a limited vertical play therein to permit a free sliding movement between the said plates and the guide-plate when either is held firmly upon the supporting-surface; and means for adjustably connecting the said spacing-plates.

822,161. **AUTOMATIC CAR-STOPPING DEVICE.** ARTHUR D. SKILLMAN, Los Angeles, Cal., assignor to American Switch and Signal Company, Los Angeles, Cal., a Corporation of Arizona. Filed July 24, 1905. Serial No. 270,918.



Claim.—1. A motor-circuit, a circuit-breaker for controlling said circuit, and means back of a wheel and substantially in line therewith and operated by a trip-lever on the track for opening said circuit-breaker.

2. Brake apparatus, and means back of a wheel and substantially in line therewith and operated by a trip-lever on the track for operating said brake apparatus.

3. A motor-circuit, a circuit-breaker in said circuit, brake apparatus, and means back of a wheel and substantially in line therewith and operated by a trip-lever on the track for operating the circuit-breaker and brake apparatus.

4. A signal, and means back of a wheel and substantially in line therewith and operated by a trip-lever on the track for operating the signal.

5. A motor-circuit, a circuit-breaker in the circuit, brake apparatus, a signal, and means back of a wheel and substantially in line therewith and operated by a trip-lever on the track for operating the circuit-breaker, brake apparatus, and signal.

6. Car-stopping mechanism, and means back of the car-wheel and substantially in line therewith and operated by a trip-lever on the track for operating the car-stopping mechanism.

7. Car-stopping mechanism, means operated by the first-met protective trip-lever for temporarily applying said car-stopping mechanism, means operative from the car for resetting part of said car-stopping mechanism, and means operating automatically during the movement of the car for resetting the remainder of the car-stopping mechanism.

8. Means for checking the movement of a car, means operated by a protective trip-lever for causing the first means to check the speed of the car, and means automatically operating by the movement of the car for releasing said checking mechanism.

9. A car, brake apparatus therefor, means operated by a protective trip-lever for setting the brake apparatus, and means operating by the movement of the car for automatically subsequently releasing the brake apparatus.

10. A car, brake apparatus therefor, means operated by a protective trip-lever for setting the brake apparatus, means operating by the movement of the car for automatically subsequently releasing the brake apparatus, and means operated by a later-met protective trip-lever for again finally setting the brake apparatus.

11. Brake apparatus, means operated by the first-met protective trip-lever for temporarily setting the brake apparatus, means operated by the second-met trip-lever if in protective condition for again finally setting the brake apparatus, and means operated by the third-

met trip-lever, if the second-met trip-lever was not in protective condition for temporarily setting the brake apparatus again.

12. A motor-circuit, a circuit-breaker in the circuit, means operated by the first-met protective trip-lever for snapping open the circuit-breaker, means operative from the car for restoring said circuit-breaker, and means operated by the next-met protective trip-lever for again opening the circuit-breaker.

13. A motor-circuit, a circuit-breaker in the circuit, means operated by the first-met protective trip-lever for opening the circuit-breaker, means operative from the car for restoring said circuit-breaker if the second-met trip-lever is non-protective, and means operated by the third-met protective trip-lever for again opening the circuit-breaker if the said second-met trip-lever was not in protective position.

14. A motor-circuit, a circuit-breaker in the circuit, means operated by the first-met protective trip-lever for opening the circuit-breaker, means operative from the car for restoring said circuit-breaker, and means operated by the second-met trip-lever if in protective position for preventing the restoring of the circuit-breaker from the car.

15. In car-stopping apparatus, a motor-circuit, a circuit-breaker in the circuit, brake apparatus, means operated by the first-met protective trip-lever for snapping open said circuit-breaker and for applying the brake apparatus, and means operative from the car for restoring said circuit-breaker.

16. In car-stopping apparatus, a motor-circuit, a circuit-breaker in the circuit, brake apparatus, means operated by the first-met protective trip-lever for opening said circuit-breaker and for temporarily applying the brake apparatus, means operative from the car for restoring the circuit-breaker, means for again opening the circuit-breaker and applying the brake apparatus if the second-met trip-lever is in protective position.

17. In car-stopping apparatus, a motor-circuit, a circuit-breaker in the circuit, brake apparatus, means operated by the first-met protective trip-lever for temporarily applying the brake apparatus, means operative from the car for restoring the circuit-breaker, means operated by the second-met protective trip-lever for again applying the brake apparatus and opening the circuit-breaker and for preventing the resetting of the circuit-breaker from the car, and means operative from a point other than on the car for resetting the brake apparatus.

18. In car-stopping apparatus, a motor-circuit, a circuit-breaker in the circuit, brake apparatus, means operated by the first-met protective trip-lever for temporarily applying the brake apparatus, means operative from the car for restoring the circuit-breaker, means operated by the second-met protective trip-lever for again applying the brake and opening the circuit-breaker and for preventing the resetting of the circuit-breaker from the car, and means operative from a point other than on the car for resetting the brake apparatus and for placing the circuit-breaker in condition to then be reset from the car.

19. In car-stopping apparatus, a signal, means operated by a protective trip-lever for operating the signal, and means operating automatically by the movement of the car for stopping the operation of the signal.

20. In car-stopping apparatus, a signal means operated by a protective trip-lever for temporarily operating the signal, means operated by the next-met trip-lever if in protective position for again operating the signal, and means operative from a point other than on the car for stopping the operation of the signal.

21. In car-stopping apparatus, brake mechanism, a motor-circuit, a circuit-breaker in the circuit, a valve for controlling the brake mechanism, means connected with the valve for controlling the circuit-breaker, and means operated by a protective trip-lever for actuating said valve once, and means operated by fluid-pressure for automatically subsequently operating the valve a second time.

22. In car-stopping apparatus, brake mechanism, a motor-circuit, a circuit-breaker in the circuit, a valve for controlling the brake mechanism, means connected with the valve for controlling the circuit-breaker, means operated by the first-met protective trip-lever for actuating said valve once, means operated by fluid-pressure for automatically subsequently operating the valve a second time, means operated by the second-met trip-lever if in protective position for operating the valve a third time and for preventing the fluid-pressure means from subsequently operating the valve.

23. In car-stopping apparatus, brake mechanism, a motor-circuit, a circuit-breaker in the circuit, a valve for controlling the brake mechanism, means connected with the valve for controlling the circuit-breaker, means operated by the first-met protective trip-lever for actuating said valve once, means operated by fluid-pressure for automatically subsequently operating the valve a second time, means operated by the second-met trip-lever if in protective position for operating the valve a third time and for preventing the fluid-pressure means from subsequently operating the valve, and means for normally again operating the valve from a point other than on the car.

24. In car-stopping apparatus, brake mechanism, a motor-circuit, a circuit-breaker in the circuit, a valve for controlling the brake mechanism, means connected with the valve for controlling the circuit-breaker, a ratchet-wheel connected with the valve, a pawl for operating the ratchet, means operated by a protective trip-lever for operating said pawl and fluid-pressure means for subsequently again operating the pawl.

25. In car-stopping apparatus, brake mechanism, a motor-circuit, a circuit-breaker in the circuit, a valve for controlling the brake mechanism, means connected with the valve for controlling the circuit-breaker, a ratchet-wheel connected with the valve, a pawl for operating the ratchet, means operated by the first-met protective trip-lever for operating said pawl, fluid-pressure means for subsequently again operating the pawl, means operated by the second-met trip-lever if in protective position for again operating the pawl, and means for preventing the subsequent operation of the pawl by the fluid-pressure means.

26. In car-stopping apparatus, brake mechanism, a valve for controlling the brake mechanism, and means operated by a protective trip-lever for actuating said valve once, and means operated by fluid-pressure for automatically subsequently operating the valve a second time.

27. In car-stopping apparatus, brake mechanism, a valve for controlling the brake mechanism, means operated by the first-met protective trip-lever for actuating said valve once, means operated by fluid-pressure for automatically subsequently operating the valve a second time, means operated by the second-met trip-lever if in protective position for, operating the valve a third time and means for preventing the fluid-pressure means from subsequently operating the valve.

28. In car-stopping apparatus, brake mechanism, a valve for controlling the brake mechanism, means operated by the first-met protective trip-lever for actuating said valve once, means operated by fluid-pressure for automatically subsequently operating the valve a second time, means operated by the second-met trip-lever if in protective position for operating the valve a third time and for preventing the fluid-pressure means from subsequently operating the valve, and means for manually again operating the valve from a point other than on the car.

29. In car-stopping apparatus, brake mechanism, a valve for controlling the brake mechanism, a ratchet-wheel connected with the valve, a pawl for operating the ratchet, means operated by a protective trip-lever for operating said pawl, and fluid-pressure means for subsequently again operating the pawl.

30. In car-stopping apparatus, brake mechanism, a valve for controlling the brake mechanism, a ratchet-wheel connected with the valve, a pawl for operating the ratchet, means operated by the first-met protective trip-lever for operating said pawl, fluid-pressure means for subsequently again operating the pawl, means operated by the second-met trip-lever if in protective position for again operating the pawl, and means for preventing the subsequent operation of the pawl by the fluid-pressure means.

31. In car-stopping apparatus, brake mechanism, a valve for controlling the brake mechanism, a ratchet-wheel on the valve, a pawl-carrier, a pawl on the pawl-carrier for operating the ratchet, means operated by a trip-lever for actuating the pawl-carrier, a cylinder, a piston therein, means carried by the piston-rod for actuating the pawl-carrier, and means for conveying fluid-pressure from said valve to said cylinder.

32. In car-stopping apparatus, brake mechanism, a valve for controlling the brake mechanism, a ratchet-wheel on the valve, a pawl-carrier, a pawl on the pawl-carrier for operating the ratchet, means operated by a trip-lever for actuating the pawl-carrier, a cylinder, a piston therein, a hook on the pawl-carrier, and means operated by the piston for engaging the hook and operating the pawl-carrier.

33. In car-stopping apparatus, brake mechanism, a valve for controlling the brake mechanism, a ratchet-wheel on the valve, a pawl-carrier, a pawl on the pawl-carrier for operating the ratchet, means operated by a trip-lever for actuating the pawl-carrier, a cylinder, a pistoa therein, a hook on the pawl-carrier, and means operated by the piston for engaging the hook and operating the pawl-carrier, and means operating automatically during the movement of the car for preventing said piston-operated means from engaging said hook.

34. In car-stopping apparatus, brake mechanism, a valve for controlling the brake mechanism, a ratchet-wheel on the valve, a shaft, a pawl-carrier mounted loosely on the shaft, a pawl on the pawl-carrier for operating the ratchet, means on the shaft for rocking the pawl-carrier, a hook on the pawl-carrier, a slide-block, fluid-pressure means for moving the slide-block, a pawl carried by the slide-block for engaging the hook, a ratchet mounted on said shaft and having a tooth-recess, a pawl normally freely playing in said recess, means for automatically reciprocating the pawl as the car moves, all but one of the teeth of the second ratchet being shrouded, a dog on the pawl-carrier normally resting on the shrouded rim, a cam carried by the second ratchet, and means operated by said cam for controlling the pawl which engages said hook.

35. In a car-stopping apparatus, brake mechanism, a revoluble valve for controlling the brake mechanism, a ratchet carried by the valve, a pawl for operating the ratchet, a pivoted pawl-carrier, means for rocking the pawl-carrier in one direction, and means for retracting the pawl-carrier comprising a chain attached to the pawl-carrier, a yoke attached to the chain and springs connected to the yoke.

36. In a car-stopping apparatus, brake mechanism, a revoluble valve for controlling the brake mechanism, a ratchet carried by the valve, a pawl for operating the ratchet, a pivoted pawl-carrier, means for rocking the pawl-carrier in one direction, and means for retracting the pawl-carrier comprising a chain attached to the pawl-carrier, a yoke attached to the chain and springs connected to the yoke, a yoke for supporting the springs, and a screw-bolt passing through the latter yoke for adjusting the tension of the springs.

37. In car-stopping apparatus, brake mechanism, a valve for controlling the brake mechanism, a ratchet on the valve, a pawl for operating the ratchet, a shaft, a lug on the shaft, a pawl-carrier on the shaft and having a segmental recess into which said lug projects, means operated by a trip-lever for rocking the shaft and actuating the pawl-carrier, and additional means for automatically rocking the pawl-carrier independently of the shaft.

38. In a car-stopping device, a motor-circuit, a circuit-breaker in said circuit embracing a blade, means for maintaining a pressure on the blade tending to open it, a detent engaging the blade and holding it shut, and means operated by a trip-lever for releasing the detent.

39. In a car-stopping device, a motor-circuit, a circuit-breaker in said circuit embracing a blade, said blade having a slot, an operating-disk, a pin carried thereby and projecting into the slot, a winding-disk, a coil-spring connecting the winding-disk and the operating-disk, a detent normally holding the winding-disk from unwinding, a cam, a shaft, a pair of detents mounted on the shaft, a block pivoted on the shaft, a pair of studs on the block, means for yieldingly holding portions of said detents against said studs, a bar loosely connected with said block, a pin on the bar working against said cam, and means operated by a trip-lever for turning said cam.

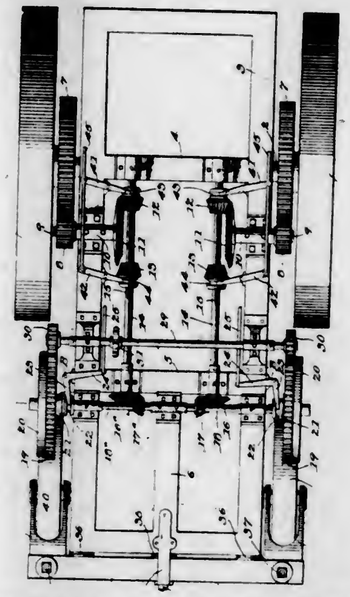
40. In a car-stopping device, a motor-circuit, a circuit-breaker in said circuit embracing a blade, said blade having a slot, an operating-disk, a pin carried thereby and projecting into the slot, a winding-disk, a coil-spring connecting the winding-disk and the operating-disk, a detent normally holding the winding-disk from unwinding, a cam, a shaft, a pair of detents mounted on the shaft, a block pivoted on the shaft, a pair of studs on the block, means for yieldingly holding portions of said detents against said studs, a bar loosely connected with said block, a pin on the bar working against said cam, and means operated by a trip-lever for turning said cam, and means for normally turning said cam.

41. In car-stopping mechanism, brake apparatus, means operated by a protective trip-lever for temporarily applying the brake apparatus, a ratchet, means operating during the traveling of the car for operating said ratchet, and means operated by the next-met protective trip-lever for again applying the brake apparatus, and means operated by said ratchet for preventing the automatic resetting of the brake apparatus after the same has been applied by the second protective trip-lever.

42. In car-stopping apparatus, mechanism operated by a protective trip-lever for stopping the car, means for automatically releasing the first means, means operated by the travel of the car for restoring said mechanism and former means to normal condition at a point between the second and third met trip-levers if the second-met trip-lever is not in protective position.

43. In car-stopping apparatus, mechanism operated by a protective trip-lever for stopping the car, means for automatically releasing the first means, means operated by the travel of the car for restoring said mechanism and former means to normal condition at a point between the second and third met trip-levers if the second-met trip-lever is not in protective position and means for preventing the operation of the said second-named means when the car travels backward.

822,162. MOTOR-VEHICLE. CHARLES STUMMA, Brandon, Iowa. Filed Aug. 11, 1905. Serial No. 273,780.



Claim.—1. In a motor-vehicle, traction-wheels having spur-gears connected therewith, shafts having pinions meshing with said spur-gears and provided at their inner ends with bevel-gears, and means for driving the latter including shafts supported independently for rotation, pairs of pinions slidable upon and rotatable with said shafts, and means for effecting simultaneous adjustment of the pair of pinions upon each of said shafts independently of those upon the other shaft.

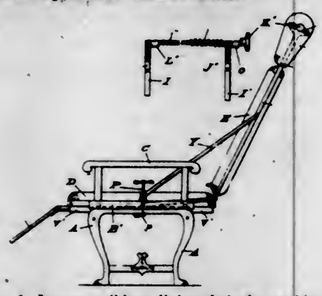
2. In a motor-vehicle, a pair of independent alined shafts, a driven shaft parallel thereto and having pinions at the ends thereof, spur-gears upon the independent shafts meshing with said pinions, friction means for connecting the spur-gears with the shafts upon which they are loosely mounted, a pair of traction-wheels, and means for transmitting motion from the independent shafts to the respective traction-wheels.

3. In a motor-vehicle, a pair of independent alined shafts, a driven shaft parallel thereto and provided with pinions, spur-gears upon the independent shafts meshing with said pinions, friction means for connecting the spur-gears with the shafts upon which they are loosely mounted, a pair of traction-wheels, and means for transmitting motion from each of the independent shafts to one of the traction-wheels; said means including means for reversing the direction of rotation of said traction-wheels.

4. In a motor-vehicle, a frame, a pair of independent alined shafts, spur-wheels upon said shafts having band-wheels formed integral therewith, friction means for connecting said wheels with the shafts upon which they are loosely mounted, a driven shaft, and pinions upon said shaft meshing with the spur-wheels upon the independent shafts.

5. In a motor-vehicle, a pair of independent alined shafts, combined spur and band wheels mounted loosely thereon, clutch means for connecting said wheels with their respective shafts for rotation, a driven shaft having pinions meshing with the spur-wheels, means for independently operating the clutch means of the two shafts, a pair of traction-wheels, and means for transmitting motion from each of the independent alined shafts to one of the traction-wheels; said means including mechanism for reversing the direction of rotation of said traction-wheels.

822,163. REVERSIBLE RECLINING RAILROAD-COACH CHAIR. LAWSON TARWATER and CHARLES K. MCKNIGHT, St. Joseph, Mo. Filed Aug. 26, 1905. Serial No. 275,913.



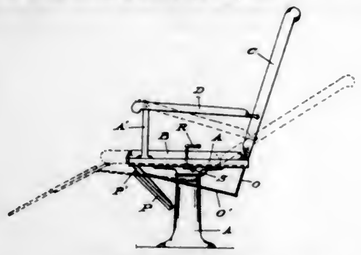
Claim.—1. In a reversible reclining-chair the combination of a chair-frame, a seat and the channel-bars and rollers at the sides of the seat permitting it to be moved forward or backward, a chair-back and head-rest, metal strips rigidly fastened to the sides of the chair-back and the prong ends thereof engaging with pins on the rear ends of the seat side pieces, slotted guides forming connection between said side pieces and said strips and the reversing supporting-rods pivotally connected with said side pieces and metal strips, a lever and an arm thereon, a two-way toothed plate rigidly fastened on the bottom of the chair-seat, a cross-bar at right angles with said plate attached at one end to said lever-arm the other end operating in a slot in a side piece, a lug on said cross-bar and a spring adapted to draw and hold said lug back in engagement with said teeth after being withdrawn by a half-turn of said lever, a rod and spring operating in said head-rest, a shoulder and lug on said rod adapted to engage the racks at the upper ends of the metal strips on the chair-back and allow said head-rest to be adjusted, and a foldable adjustable foot-rest and the guides therefor spaced below the seat, substantially as described and shown.

2. In a reversible reclining railway-coach chair the combination with the chair-frame, arms, seat and back, of vertical strips rigidly fastened to sides of the chair-back and the prongs thereof engaging with pins on the sides of the seat near the back, slotted pivoted guides forming connection between the sides of the seat and said vertical strips and reversing supporting-rods pivotally connected with said seat sides and the chair-back, a lever supported by a side piece of the frame and an arm thereon, a two-way toothed plate rigidly fastened on the bottom of the chair-seat, a cross-bar at right angles with said plate attached at one end to said lever-arm the other end operating in a slot in the opposite side piece of the frame, a lug on said cross-bar and a spring adapted to draw and hold said lug back in engagement with said teeth after being withdrawn by a half-turn of the lever, substantially as shown and described.

3. The combination with the frame and seat of an adjustable chair, of a hand-lever adapted to be operated through a side piece of said frame and the arm thereon, a two-way toothed plate rigidly fastened on the bottom of said seat, a cross-bar at a right angle with said plate attached at one end to said lever-arm the other end operating in a slot in the opposite side piece of said frame, a lug on said cross-bar and a spring adapted to draw and hold said lug back in engagement with said two-way teeth when disengaged therefrom by withdrawal by a half-turn of said lever, substantially as shown and set forth.

822,164. REVOLUBLE RECLINING RAILROAD-COACH CHAIR. LAWSON TARWATER and CHARLES K. MCKNIGHT, St. Joseph, Mo. Filed Aug. 26, 1905. Serial No. 275,914.

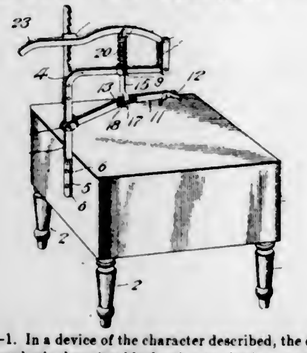
Claim.—In a revoluble reclining coach-chair the combination with the pedestal, frame and back, of arm-posts at the front of the frame, arms pivotally attached to said posts and the sides of the chair-back, cleats extending downward from the chair-back and rigidly attached thereto, a foldable foot-rest and the duplicate supporters therefor pivotally carried on the front edge of the seat-frame, duplicate rods having pivotal connection with said supporters and cleats, a plate rigidly fastened on top of the pedestal provided with a partitioned groove, a plate carried by the chair-frame spaced below the chair-seat and provided with a groove, the roller-bearings adapted to travel in said partitioned groove, L-shape metal strips rigidly fastened to the edge of the top plate and adapted to travel in a groove in the pedestal as the chair revolves, shoulders forming a recess and brackets pivotally supporting a lock-rod provided with a perforation in its upper end and adapted to engage with said recess and a spring to hold said rod back in said recess, channel-bars and their rollers between which the chair-seat travels backward and forward, a lever and its arm carried in a side frame-piece, a strip pivotally attached to said arm at one end, the opposite end carried in a slot in an opposite frame-piece, a lug thereon projecting upward and a plate at a right angle with said strip rigidly attached to the bottom of the chair-seat and provided with one-way teeth with which said lug is adapted to engage, substantially as shown and described.



822,165. PROCESS OF MAKING DIALKYL-BARBITURIC ACIDS. WILHELM TRAUBE, Berlin, Germany. Filed July 6, 1905. Serial No. 268,529.

Claim.—A process for making dialkyl-barbituric acids consisting in heating one molecular weight dialkyl-malonyl chlorid with two to three molecular weights alkyl-carbamates at a suitable temperature until the copious evolution of hydrochloric acid slackens, treating the dialkyl-malonyl dialkyl-carbamates formed thereby with condensing agents, as sodium alcoholate, and isolating the products of the reaction.

822,166. CLAMP FOR HOLDING MEAT. JOSEPH TREMBLEY, Argyle, Minn. Filed Oct. 7, 1905. Serial No. 281,806.



Claim.—1. In a device of the character described, the combination with a butcher's chopping-block, of a standard secured thereto, said standard being provided with a horizontally-disposed arm extending across the working face of the block, a clamping-lever pivotally secured to the standard, a plunger movably mounted upon the horizontal arm and having connection with the clamping-lever, a lever pivotally secured to the horizontal arm and adapted to engage the plunger, and a spring carried by the plunger and serving to retain the clamping-arm normally elevated.

2. In a device of the character described, the combination with a butcher's chopping-block, of a standard secured thereto, said standard being provided with a horizontally-disposed arm extending above the working face of the block and provided with a bearing, a clamping-lever pivotally secured to the standard and having its free end provided with fingers, said lever being provided with a curved and elongated slot, a plunger movably mounted in said bearing, means passing through said slot and engaging the plunger to provide a loose connection therebetween, a rack-bar secured to the standard, a lever pivotally mounted upon the horizontal arm and provided with a curved portion adapted to engage the plunger, and a ratchet carried by said operating-lever and adapted to engage one of the teeth of the said bar.

3. In a device of the character described, the combination with a butcher's block, of a standard secured thereto, a clamping-arm pivotally secured to the standard and provided with a curved elongated opening, a movably-mounted plunger, means passing through said opening and engaging the plunger to provide a loose connection therebetween, and a pivotally-mounted operating-lever having a curved portion adapted to engage said plunger.

822,167. BED WARMER OR COOLER. CHARLES C. VAUGHN, San Francisco, Cal., assignor, by mesne assignments, to G. X. Wendling, San Francisco, Cal. Filed June 19, 1905. Serial No. 266,074.



Claim.—A device for changing the temperature in beds comprising a casing having its bottom open and a small opening in its top, a plug 3 entirely closing said small opening, a motor-casing carried by said plug and extending into the main casing, a motor therein and a fan in the main casing connected to the motor-shaft.

822,168. CHANNEL-PIN. EUGENE W. VOGEL, Chicago, Ill., assignor to The Railroad Supply Company, Chicago, Ill., a Corporation of Illinois. Filed July 27, 1906. Serial No. 271,414.



Claim.—1. A channel-pin for electrically securing a small conductor within a hole in a large conductor, comprising a body portion having a concave surface coated with a soft metal of a thickness to have embedded therein the engaged surface of the small conductor.

2. A channel-pin for electrically securing a small conductor within a hole in a large conductor, comprising a body portion, a concave surface, and a metal coating of approximately the same contact potential as the engaged surface of the small conductor.

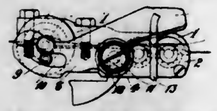
3. A channel-pin for electrically securing a small conductor within a hole in a large conductor comprising a body portion, a concave surface, and a soft-metal coating of approximately the same contact potential as the engaged surface of the small conductor and of a thickness to have embedded therein the engaged surface of the small conductor.

4. A bonding-pin for electrically uniting conductors comprising a body portion covered with a coating of tin.

5. A channel-pin for electrically securing a small conductor within a hole in a larger conductor comprising a body portion having a concave surface coated with tin.

6. A channel-pin for electrically securing a small conductor within a hole in a large conductor, comprising a body portion having a convex surface coated with tin.

822,169. THREAD-CUTTING DEVICE. ALBERT E. WALKER, ARTHUR WALKER, and GEORGE WALKER, Norwood Green, near Halifax, England. Filed Nov. 18, 1904. Serial No. 233,345.



Claim.—1. In cutting devices for automatic weft-replenishing looms and in combination, a temple, a pair of cutting-blades and means operated by the movement of the fabric for reciprocating one of said blades upon the other to sever the threads of the weft-supply from the fabric.

2. In cutting devices for automatic weft-replenishing looms and in combination, a temple, a pair of associated cutting-blades, and means operated by the movement of the fabric and coöperating with one of said cutting-blades to move same with an accelerated action upon the other of said cutting-blades for severing the threads of the weft-supply from the fabric.

3. In cutting devices for automatic weft-replenishing looms and in combination, a temple, a lower fixed cutting-blade, an upper movable cutting-blade, and means operated by the movement of the fabric for so reciprocating the upper blade upon the lower, that the blades have a slow opening action and a quickened cutting action.

4. In cutting devices for automatic weft-replenishing looms and in combination, a temple, a lower fixed cutting-blade, an upper movable cutting-blade fulcrumed to reciprocate upon said lower blade, a slotted arm on said upper blade, means eccentrically operated by one of the temple-rollers for engaging the slot in said arm, whereby the movable blade has an accelerated cutting action imparted thereto.

5. In cutting devices for automatic weft-replenishing looms and in combination a temple, a pair of cutting-blades, mounted thereon to sever the threads of the weft-supply from the fabric, a spring for keeping the one blade in contact with the other and a pin for tightening the weft-thread.

6. In cutting devices for automatic weft-replenishing looms and in combination, a temple, a pair of cutting-blades mounted thereon, auxiliary blades carried by each of said cutting-blades, and means for reciprocating the one set of cutting and auxiliary blades upon the other set to sever the connection of the weft-supply with the fabric by the cutting-blades while it is held and tightened by the auxiliary blades.

7. In cutting devices for automatic weft-replenishing looms and in combination, a temple, a movable cutting-blade, an auxiliary securing-blade connected to and movable with same, a fixed cutting-blade, auxiliary seizing and tightening blades connected thereto, a thread-tightening pin adjacent to the blades, and means operated by the rearward movement of the fabric for reciprocating the movable blades upon the fixed blades to seize, secure, tighten and sever the connection of the weft-supply with the fabric.

822,170. CURTAIN-POLE BRACKET. ISAAC H. WEBB, Emlenton, Pa. Filed May 25, 1905. Serial No. 262,220.



Claim.—A new article of manufacture comprising a curtain-pole bracket and pole end ornament formed of a single piece of turned wood, the connected ends of the bracket and ornament being partly separated by a well-defined groove formed during the turning operation and leaving a relatively small connection between the two which may be readily severed to permit separation of the parts, the opposite ends of said article having flattened faces from which project securing members, and the bracket being shaped to form a support for the pole end ornament and pole, substantially as described.

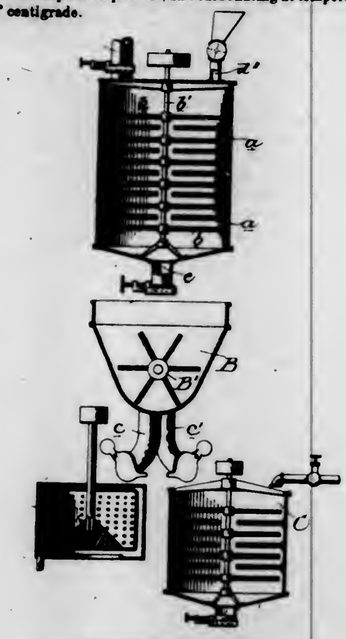
822,171. PROCESS OF PURIFYING MASSE-CUITE OR SYRUP. MORIS WEINRICH, Yonkers, N. Y. Filed May 22, 1905. Serial No. 261,587.

Claim.—1. The process of purifying masse-cuite or impure sugar solutions which consists, essentially, in bringing the solution to a density of at least 36° Baumé; warming said solution to about 43° to 45° centigrade; mixing intimately and substantially uniformly therewith an amount of dry, finely-powdered, caustic lime equal to about one-half to two-thirds of the impurities present; and carbonating at temperatures below 45° centigrade.

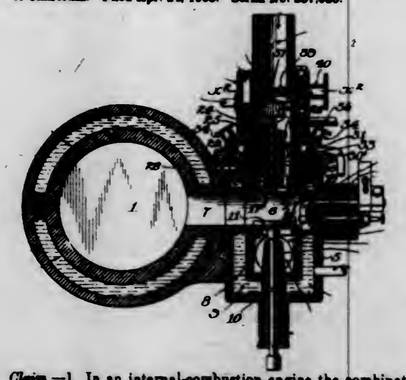
2. The process of purifying masse-cuite or impure sugar solutions which consists essentially in bringing the solution to a density of a about 42° Baumé; warming to a temperature at which the lime will decompose and combine with the impurities present, but below that which will destroy the fruit-sugar present or form caramel; mixing intimately and substantially uniformly therewith a quantity of dry, finely-powdered, caustic lime equal to one-half to two-thirds of the impurities present; and carbonating the mixture at temperatures as defined above.

3. The process of purifying masse-cuite or impure sugar solutions which consists, essentially, in bringing the solution to a density of at least 36° Baumé; warming said solution to about 43° to 45° centigrade; mixing intimately and substantially uniformly therewith an

amount of dry, finely-powdered lime, equal to about one-half to two-thirds of the impurities present; and carbonating at temperatures below 45° centigrade.



822,172. INTERNAL-COMBUSTION ENGINE. SOLON B. WELCOME, Los Angeles, Cal., assignor to Western Iron Works, a Corporation of California. Filed Apr. 24, 1905. Serial No. 257,035.



Claim.—1. In an internal-combustion engine the combination with the cylinder provided with an air-inlet extending upwardly therefrom and open at its upper end, an oil-supply connection having an outlet opening into said air-inlet and a water-supply connection having an outlet opening into the air-inlet, between the oil-outlet and the cylinder.

2. In an internal-combustion engine the combination with the cylinder provided with an air-inlet, an oil-supply connection having an outlet opening into said air-inlet, and a water-supply connection having an outlet opening into the air-inlet, between the oil-outlet and the cylinder; said water-outlet being divided to distribute the issuing water.

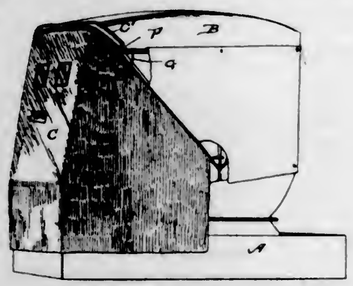
3. In an internal-combustion engine the combination with the cylinder provided with an air-inlet, an oil-supply connection having an outlet opening into said air-inlet, and a water-supply connection having an outlet opening into the air-inlet, between the oil-outlet and the cylinder, a water-supply chamber connected to the water-outlet, and means for maintaining the water in said chamber at a level below the water-outlet.

4. In combination with the cylinder of an internal-combustion engine formed with a combined inlet and exhaust passage leading through the wall thereof, a casing attached to the cylinder and having a passage communicating with the said cylinder-passage, said chamber being formed with an exhaust-outlet leading from the passage therein, an annular water-chamber above said casing and secured thereto and having an air-passage formed therein, said annular water-chamber communicating with said air-passage, an annular oil-chamber above and secured to the water-chamber and having an air-passage therethrough, the said water-chamber communicating with said air-passage, the said air-passages in said chambers forming an air-inlet leading to the passage in said casing, and valves controlling said air-inlet and the exhaust-outlet.

5. In combination with an internal-combustion-engine cylinder having a water-jacket and provided with a combined inlet and exhaust passage leading through the wall of the cylinder, a casing attached to the cylinder and having a passage communicating with the said cylinder-passage and provided with an exhaust-outlet, an annular water-chamber above and secured thereto, and having an air-passage therethrough communicating into the said casing-passage, said annular water-chamber communicating with the water-jacket of the cylinder and with the said air-passage within said water-chamber, an oil-chamber above and secured to the water-chamber, the central opening of said annular water-chamber forming an air-passage communicating through the central opening of the water-chamber with the casing-passage, and said oil-chamber communicating with said air-passage within the same, and valves controlling the air-inlet and exhaust-outlet.

6. The combination with an internal-combustion-engine cylinder having a water-jacket and a passage leading through the wall of the cylinder and water-jacket, a casing attached to the cylinder and having a passage communicating with the cylinder-passage and provided with an exhaust-outlet, an annular fitting above and secured to said casing and formed with an annular water-chamber and with a supply-duct leading thereto from the water-jacket, and an overflow leading therefrom, a water-outlet communicating with said water-chamber and with the space within the annular water-chamber, valves controlling said water-supply duct and the said water-outlet, an annular fitting above and secured to the aforesaid fitting, and having an annular oil-chamber and an oil-outlet opening into the space within the annular fitting, and a valve device controlling said oil-outlet and overflow means for said oil-chamber, the space within the said fittings forming an air-inlet communicating with the casing-passage, and valves controlling the air-inlet and exhaust-outlet.

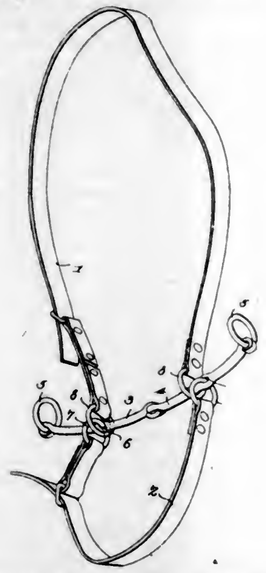
822,173. STORM-FRONT FOR BUGGIES. JOHN A. WILSON, Georgetown, Ohio, assignor, by mesne assignments, of one-half to Lora Dunn Wilson, Georgetown, Ohio. Filed May 26, 1905. Serial No. 263,449.



Claim.—A storm-front for buggies comprising an apron provided with straps connected together by a buckle, a strap connected to said buckle-strap provided with a hook at its free end, a strap enveloped in a hem formed along the upper edge of the apron, said strap terminating short of the side edges of the apron, carrying coil-springs at its end within the hem, hooks loosely connected to the ends of said springs, hand-straps connected to the free ends of said hooks, and straps carried by each side of the apron provided with spring-clasps, for the purpose set forth.

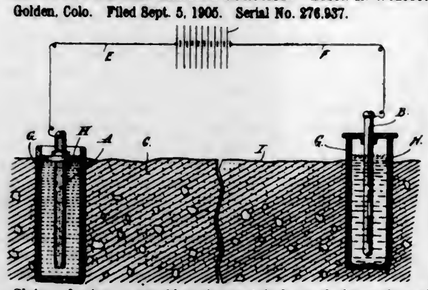
822,174. DRIVING-BIT. JAMES L. WINGERT, Randolph, Nebr. Filed Nov. 6, 1905. Serial No. 286,073.

Claim.—1. A bit comprising a pair of swiveled bit-bars, rings secured to the outer terminals of the bars, rings secured intermediate of the ends of the bar, and rings disposed upon the bit-bars between the last-named rings.



2. The combination with a pair of swiveled bit-bars having a pair of terminal rings, of a second pair of rings connected with the bit-bars intermediate of their ends, a nose-strap connected with the second pair of rings, a third pair of rings disposed upon the bit-bars between the second pair of rings, and an overhead strap connected with the last-named pair of rings.

822,175. PROCESS OF LOCATING AND EXTRACTING METALS BENEATH THE EARTH'S SURFACE. EDSON R. WOLCOTT, Golden, Colo. Filed Sept. 5, 1905. Serial No. 276,937.



Claim.—1. A process of locating metals beneath the surface of the earth consisting in placing electrodes having the relation of anode and cathode in the earth and passing an electric current between them and causing the metals in solution in the vicinity of the electrodes to move through the earth and be deposited upon the cathode, substantially as described.

2. The herein-described process of locating metals, consisting in placing electrodes in the earth, moistening the earth between the electrodes and passing a current of electricity from the anode to the cathode whereby the metals in the vicinity are caused to travel toward and deposited at or upon the cathode.

3. The herein-described process consisting in placing electrodes having the relation of anode and cathode, in the earth, saturating the earth with a suitable substance to dissolve the metals in the vicinity of the electrodes, and passing a current of electricity from the anode to the cathode whereby the dissolved metals are deposited at or upon the cathode.

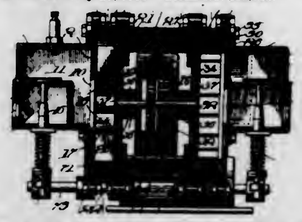
4. The herein-described process of locating and extracting metals, consisting in placing electrodes having the relation of anode and cathode in the earth, surrounding the cathode by a porous jar containing a suitable electrolyte, applying a solution to the earth in the vicinity of the electrodes, adapted to dissolve the metals contained therein, and finally passing a current of electricity from the anode to the cathode whereby the dissolved metals are deposited upon the cathode.

5. The herein-described process of locating and saving metals and such non-metals as can be electrolytically set free or precipitated by secondary reactions, said process consisting in placing in the earth electrodes having the relation of anode and cathode, surrounding each electrode by a porous jar containing a suitable electrolyte and passing a current of electricity from the anode to the cathode whereby the metals are deposited at or upon the cathode and the non-metals at or upon the anode.

6. The herein-described process consisting in placing electrodes in the earth and passing a current of electricity from the anode to the cathode whereby such non-metals in the vicinity as can be electrolytically set free or precipitated by secondary reactions, are caused to travel toward or deposited at or upon the anode.

7. The herein-described process of locating and saving such substance as can be electrolytically set free or precipitated by secondary reactions, said process consisting in placing in the earth electrodes having the relation of anode and cathode, surrounding each electrode by a porous jar containing a suitable electrolyte, and passing a current of electricity between the electrodes whereby the said substances are deposited at or upon the anode.

822,176. HYDROCARBON TURBINE-ENGINE. JOHN ZANDER, Chicago, Ill. Filed May 23, 1905. Serial No. 261,763.



Claim.—1. In a hydrocarbon turbine-engine, the combination of a shaft, a fan secured to the shaft and rotatable therewith, a fan-casing within which the fan is located, an explosion-chamber in communication with the fan-casing, a turbine-casing in communication with the fan-casing and consisting of an inner cylindrical chamber provided with a central opening at its discharge side and an annular distributing-chamber surrounding the inner chamber, nozzles between the two chambers, a turbine-wheel located within the cylindrical chamber and provided with an open outer face adapted to discharge the products of combustion through the central opening in the cylindrical chamber, substantially as described.

2. In a hydrocarbon turbine-engine, the combination of a shaft, a fan secured to the shaft and rotatable therewith, a fan-casing within which the fan is located, an explosion-chamber in communication with the fan-casing, a turbine-casing in communication with the fan-casing and consisting of an inner cylindrical chamber provided with a central opening at its discharge side and an annular distributing-chamber surrounding the inner chamber, nozzles between the two chambers, a turbine-wheel located within the cylindrical chamber and provided with an open outer face adapted to discharge the products of combustion through the central opening in the cylindrical chamber, a direct outlet leading from the central opening in the cylindrical chamber, and valve-controlled passages leading from the annular chamber to the direct outlet, substantially as described.

3. In a hydrocarbon turbine-engine, the combination of a shaft, a fan secured to the shaft, a fan-casing within which the fan is located, an explosion-chamber in communication with the fan-casing, a turbine-casing in communication with the fan-casing and consisting of an inner cylindrical chamber and an outer annular distributing-chamber, nozzles between the two chambers, a turbine-wheel open at its outer face and located within the cylindrical inner chamber, passages leading from the annular distributing-chamber, a discharge-chamber opening from the cylindrical turbine-chamber, a valve between the discharge-chamber and the passages leading from the annular distributing-chamber, and a valve controlling the admission of hydrocarbon vapor to the explosion-chamber, substantially as described.

4. In a hydrocarbon turbine-engine, the combination of a shaft.

a fan secured to the shaft and provided with blades set in parallel relation to the plane of the axial center of the fan, a fan-casing within which the fan is located, an explosion-chamber in communication with the fan-casing, a turbine-casing in communication with the fan-casing and consisting of an inner cylindrical chamber and an outer annular distributing-chamber, nozzles between the two chambers, a turbine-wheel open at its outer face and located within the cylindrical inner chamber, passages leading from the annular distributing-chamber, a discharge-chamber open from the cylindrical turbine-chamber, a valve between the discharge-chamber and the passages leading from the annular distributing-chamber, and a valve controlling the admission of hydrocarbon vapor to the explosion-chamber, substantially as described.

5. In a hydrocarbon turbine-engine, the combination of a shaft, a fan secured to the shaft and provided with blades set in parallel relation to the axial center of the fan, a fan-casing within which the fan is located and having walls eccentrically curved with respect to the fan and to each other, said walls terminating in shoulders or abutments, an explosion-chamber in communication with the fan-casing, a turbine-casing in communication with the fan-casing and consisting of an inner cylindrical chamber and an outer annular distributing-chamber, nozzles between the two chambers, a turbine-wheel open at its outer face and located within the cylindrical inner chamber, passages leading from the annular distributing-chamber, a discharge-chamber opening from the cylindrical turbine-chamber, a valve between the discharge-chamber and the passages leading from the annular distributing-chamber, and a valve controlling the admission of hydrocarbon vapor to the explosion-chamber, substantially as described.

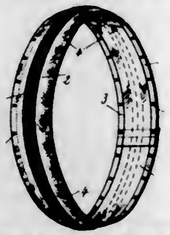
6. In a hydrocarbon turbine-engine, the combination of a fan-casing having an outer end wall provided with an inlet-port, a peripheral wall consisting of two sections eccentrically curved with respect to one another and terminating in oppositely-disposed shoulders or abutments, passages opening into the fan-chamber adjacent to the shoulders or abutments, an annular distributing-chamber to which the passages lead, an inner cylindrical turbine-chamber within the annular chamber, diagonally-disposed nozzles leading from the annular chamber to the inner turbine-chamber, an explosion-chamber in communication with the port in the outer side wall of the fan-casing, a discharge-chamber having an open port in communication with the turbine-chamber, passages leading from the annular distributing-chamber to the discharge-chamber, a valve for controlling the communication between said passages and the discharge-chamber, a shaft, a fan on the shaft and located within the fan-casing, a turbine-wheel on the shaft and located within the turbine-chamber, a valve for controlling the admission of hydrocarbon vapor to the explosion-chamber, and means for actuating the valves, substantially as described.

7. In a hydrocarbon turbine-engine, the combination of a fan-casing having an outer end wall provided with an inlet-port, a peripheral wall consisting of two sections eccentrically curved with respect to one another and terminating in oppositely-disposed shoulders or abutments, passages opening into the fan-chamber adjacent to the shoulders or abutments, an annular distributing-chamber to which the passages lead, an inner cylindrical turbine-chamber within the annular chamber, diagonally-disposed nozzles leading from the annular chamber to the inner turbine-chamber, an explosion-chamber in communication with the port in the outer side wall of the fan-casing, a discharge-chamber having an open port in communication with the turbine-chamber, passages leading from the annular distributing-chamber to the discharge-chamber, a valve for controlling the communication between said passages and the discharge-chamber, a shaft, a fan on the shaft and located within the fan-casing, and a turbine-wheel on the shaft and located within the turbine-chamber, a valve for controlling the admission of hydrocarbon vapor to the explosion-chamber, a cam actuated by the shaft, a rock-shaft provided with an arm actuated by the cam, and valve-actuating arms on the rock-shaft for actuating the valves, substantially as described.

8. In a hydrocarbon turbine-engine, the combination of a shaft, a fan secured to the shaft and provided with blades set in parallel relation to the axial center of the fan, a fan-casing within which the fan is located and having walls eccentrically curved with respect to the fan and to each other, said walls terminating in shoulders or abutments, an explosion-chamber in communication with the fan-casing, a turbine-casing in communication with the fan-casing and consisting of an inner cylindrical chamber and an outer annular distributing-chamber, nozzles between the two chambers, a turbine-wheel open at its outer face and located within the cylindrical inner chamber, passages leading from the annular distributing-chamber, a discharge-chamber opening from the cylindrical turbine-chamber, a valve between the discharge-chamber and the passages leading from the annular distributing-chamber, and a valve controlling the admission of hydrocarbon vapor to the explosion-chamber, an intermediate shaft actuated by the power-shaft, a motor-shaft actuated by the intermediate shaft, a cam slidably mounted on the motor-shaft, a governor for automatically moving the cam after a predetermined speed of revolution has been attained, a rock-shaft provided with an arm normally in engagement with the cam, and valve-actuating arms on the rock-shaft for actuating the valves to control the admission to and discharge from the engine, substantially as described.

9. In a hydrocarbon turbine-engine, the combination of a fan-casing having flat end walls, and a peripheral wall consisting of two sections eccentrically curved with respect to one another and terminating in shoulders or abutments, a shaft projecting into the fan-casing centrally of the abutments, a fan mounted on the shaft and consisting of a flat back plate, and blades set edgewise in transverse relation thereto and open toward the outer side of the fan-casing, an explosion-chamber in communication with the fan-chamber and the exposed blades of the fan, a turbine-chamber, a turbine therein mounted on the shaft carrying the fan, passages leading from the fan-chamber adjacent to the abutments therein and communicating with the turbine-chamber, and valves for controlling the admission of hydrocarbon vapor to the explosion-chamber, and the discharge of products of combustion from the engine, substantially as described.

822,177. **PROTECTING-COVER FOR PNEUMATIC TIRES.** EUGÈNE BARDOU, LOUIS CLERC, and BERNARD DESOUCHES, Paris, France. Filed Nov. 14, 1905. Serial No. 287,274.



Claim.—1. A protecting-cover for pneumatic tires composed of a flexible annular base, means for attaching such base on the tire and wheel, and a pad fixed onto said base at the tread and made of fibers twisted into cords which are then united together.

2. A protecting-cover for pneumatic tires composed of a flexible annular base, means for attaching such base on the tire and wheel, and a pad fixed onto said base at the tread and made of fibers twisted into cords which are then united together and coated with an adhesive material.

3. A protecting-cover for pneumatic tires composed of a flexible annular base indented on its edges, means for attaching such base on the tire and wheel, and a pad fixed onto said base at the tread and made of fibers twisted into cords which are then united together.

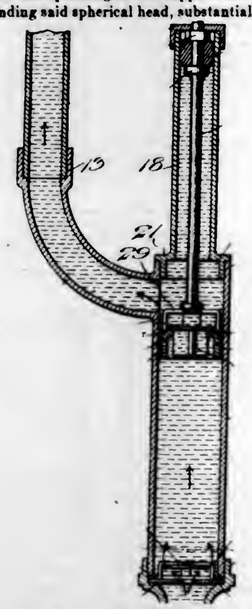
4. A protecting-cover for pneumatic tires composed of a flexible annular base strengthened at the edges, means on said strengthened edges for attaching such base on the tire and wheel, and a pad fixed onto said base at the tread and made of fibers twisted into cords which are then united together.

5. A protecting-cover for pneumatic tires composed of a flexible annular base, the edges of which are strengthened and formed with indentures between which tongues are left to which eyelets are fixed for attaching such base on the tire and wheel by lacing, and a pad fixed onto said base at the tread and made of fibers twisted into cords which are then united together and coated with an adhesive material.

822,178. **PUMP.** ARTHUR C. BERRY, Hyannis, Mass., assignor of one-half to Charles Lothrop Berry, Hyannis, Mass. Filed Mar. 25, 1905. Serial No. 252,041.

Claim.—In a pump, the combination of a pump-cylinder, a suction-pipe connected with the inlet end of the pump-cylinder, said suction-pipe being provided with a shoulder or seat, an inlet-valve comprising a ported body engaging said seat and held in contact therewith by the end of the cylinder and a valve member controlling the

port therein, a supplementary cylinder detachably connected to the opposite end of the pump-cylinder, and closed at its outer end by a head, an outlet-pipe leading from the pump-cylinder adjacent to the lower end of said supplementary cylinder, a rod operating in said cylinders, a valved piston operating in the pump-cylinder connected to said rod, a spherical packing-head and supplementary piston connected to the rod and operating in said supplementary cylinder, and means for extending said spherical head, substantially as described.



822,179. **CANCELING-TOOL.** WILBER E. BOWERSOCK, Burlington, Iowa. Filed Oct. 12, 1905. Serial No. 282,453.



Claim.—1. In a cutter, a circular head having an outstanding shank and a recess adjacent the shank, cutting-disks mounted upon opposite sides of the head, and a lateral scraping edge occupying the interval between the disks.

2. In a cutter, a circular head having an outstanding shank and a recess adjacent the shank, defining a lateral scraping edge, cutting-disks mounted upon opposite sides of the head, and with the lateral scraping edge occupying the interval between the disks.

3. In a cutter, a circular head having an outstanding shank and a recess adjacent the shank, cutting-disks corresponding in size to and mounted to rotate upon opposite sides of the head, and a lateral scraping edge occupying the interval between the disks.

4. In a cutter, a circular head having an outstanding shank and a recess adjacent the shank defining a lateral scraping edge, cutting-disks corresponding in size to and mounted to rotate upon opposite sides of the head, and with the lateral scraping edge occupying the interval between the disks.

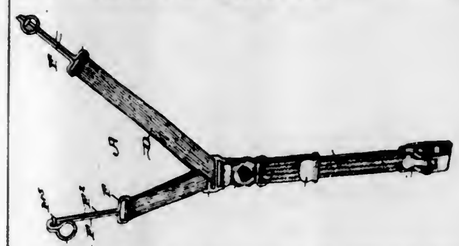
5. In a cutter, a circular head having an outstanding shank and a recess adjacent the shank defining a lateral scraping edge formed at the periphery of the head, cutting-disks mounted upon opposite sides of the head and with the lateral scraping edge occupying the interval between the disks.

6. In a cutter, a circular head having an outstanding shank and a recess adjacent the shank defining a lateral scraping edge formed at the periphery of the head, cutting-disks corresponding in size to and mounted to rotate upon opposite sides of the head, with the lateral cutting edge occupying the interval between the disks.

7. In a cutter, a circular head having an outstanding shank and a recess adjacent the shank, cutting-disks corresponding in size to and mounted to rotate upon opposite sides of the head and with their cutting peripheries in juxtaposition thereto, and a lateral scraping edge occupying the interval between the disks.

8. In a cutter, a circular head having an outstanding shank and a recess adjacent the shank defining a lateral scraping edge formed at the periphery of the head, cutting-disks corresponding in size to and mounted to rotate upon opposite sides of the head and with their cutting peripheries in juxtaposition thereto, and with the lateral scraping edge occupying the interval between the disks.

822,180. **BOY'S SIDE GARTER.** WARREN H. BRISTOL, Brooklyn, N. Y. Filed Oct. 18, 1904. Serial No. 229,005.



Claim.—1. A device of the kind described comprising upper and lower sections, said upper section comprising a double-loop band having a metallic loop slidably connected therewith, and means connected to the ends of the band, for securing the band to a waist-band, the said lower section comprising an elastic strap having a spring-actuated clasp connected to the lower end of the said lower section and a spring-clasp adapted for detachable connection to the metallic loop carried by the upper section.

2. A device of the kind described, comprising an upper section formed of a double-loop band having spring-fasteners connected at their ends and a metallic loop slidably retained upon the band, and an elastic lower section having means carried by one end to adapt the section to be secured to a stocking and a spring-actuated clasp adapted for connection with the said metallic loop.

3. A device of the kind described comprising the upper and lower sections, spring-fasteners carried by the upper section, said fasteners comprising the loop portions, having shanks projecting therefrom, the outer ends of which terminate in hooks and the extreme ends bent to form semicircular portions, the rings operating upon the shanks, the clasp carried by the lower section and the spring-clasp carried by the lower section and adapted for engagement with the upper section.

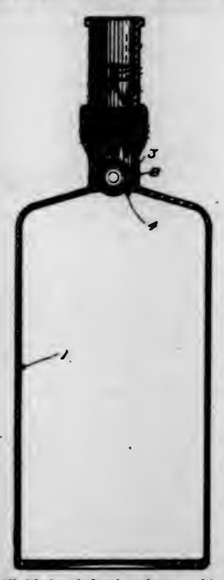
4. A device of the kind described, comprising an upper section composed of a non-elastic band arranged to provide a double loop and having spring-fasteners connected to the ends thereof adapted to secure same to a waistband, a metallic loop slidably held upon each section of the band-loops, the lower section comprising an elastic band having a spring-clasp for engagement with the said metallic loop and a spring-clasp connected to its lower end for attachment to a stocking.

822,181. **NON-REFILLABLE BOTTLE.** DIEDRICH BRUMMERHOP, Boston, Mass. Filed Nov. 8, 1904. Serial No. 231,898.

Claim.—1. The non-refillable bottle having the movable valve, the valve-seat, the raised guides extending lengthwise of the bottle-neck parallel with one another throughout their length and constituting a race of uniform diameter within which the said valve is confined, and having longitudinal spaces between such guides for the flow of liquid past the valve when the latter is separated from its seat, the retaining-shoulder at the outer ends of the said guides and an adjacent guard-supporting shoulder, and the anchor-retainer having opposite projections engaging with the retaining-shoulder and also having a guard device to preclude access to the interior parts, the said guard device engaging with the said guard-supporting shoulder.

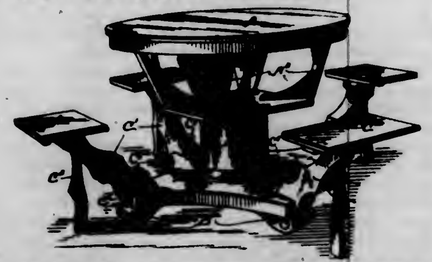
2. The non-refillable bottle having the movable valve, the valve-seat, the raised guides extending lengthwise of the bottle-neck parallel with one another throughout their length and constituting a race of uniform diameter within which the said valve is confined, and having longitudinal spaces between such guides for the flow of liquid past the valve when the latter is separated from its seat, the retaining-shoulder at the outer ends of the said guides and an adjacent guard-supporting shoulder, and the anchor-retainer having opposite projections engaging with the retaining-shoulder and also having the guards 9 and 10 to preclude access to the interior parts, one of the said guards engaging with the said guard-supporting shoulder.

3. The non-refillable bottle having the movable valve, the valve-seat against which the said valve rests without wedging therein, the raised guides extending lengthwise of the bottle-neck parallel with one another throughout their length and constituting a race of uniform diameter throughout its length within which the said valve is confined, and having longitudinal spaces between such guides for the flow of liquid past the valve when the latter is separated from its seat, the retaining-shoulder at the outer ends of the said guides, the anchor-retainer engaging with the said shoulder, and the guard device.



4. The non-refillable bottle having the movable valve, the valve-seat, the guides extending lengthwise of the bottle-neck and equidistant throughout their length diametrically of the bottle-neck to constitute a race of uniform diameter within which the said valve is confined, and having intervening spaces between such guides to form passage-ways through which the contents of the bottle may flow around the valve when the latter is separated from its seat, the retaining-shoulder at the outer ends of the said guides, an adjacent guard-supporting shoulder, the anchor-retainer having opposite projections engaging with the retaining-shoulder, and the guard device.

822,182. FOLDING TABLE-SEAT. EDWARD H. CASSEL, Allentown, Pa. Filed July 26, 1905. Serial No. 271,192.



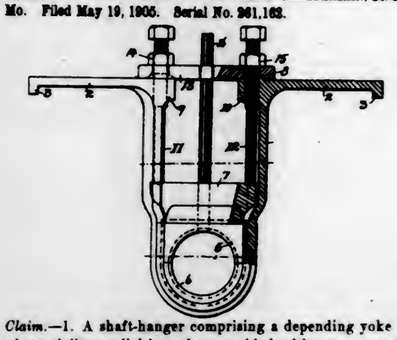
Claim.—1. The combination with a table having a receptacle formed below the top and partially open at sides, of seat-standards pivoted to the table at their lower ends, seats carried by the said standards, said standards being adapted to support the same when in position for use, the said seats being adapted to form side portions of the receptacle when the standards are folded against the table.

2. The combination with a table having a receptacle formed below the top, side pieces, spaced apart and forming a portion of the side walls of the receptacle, standards hinged to and adapted to be folded against the table, supporting-legs pivoted to and carried by the standards, seats carried by the standards and adapted to fit in the space between the side pieces of the receptacle when the standards are folded.

3. A device of the kind described comprising a table having a base portion, said base portion having cut-out portions, standards pivoted at their lower ends in the said cut-out portions and longitudinally grooved in their upper faces, supporting-legs pivoted in the upper portions of said grooves and adapted to be folded within the groove, and seat portions carried by the upper end of each standard, said standards and seat portions being adapted to be swung inwardly and upwardly beneath the table.

4. A table of the kind described comprising a base having cut-out portions, a center post carried by the base, a platform carried by the post, fixed side pieces, spaced apart carried by the platform, the top supported by the side pieces, seat-standards pivoted in the cut-out portions of the base, a supporting-leg pivoted to each of said standards, and seats carried by the standards and adapted when the standards are folded beneath the table, to fit in the spaces between the side pieces.

822,183. SHAFT-HANGER. GEORGE E. CHAMBERLAIN, St. Louis, Mo. Filed May 19, 1905. Serial No. 261,163.



Claim.—1. A shaft-hanger comprising a depending yoke having substantially parallel branches provided with grooves on their inner sides, said yoke having lateral extensions on the outer sides of its branches and lugs on the inner sides of its branches provided with threaded holes alined with said grooves, a journal-bearing removably arranged in the lower portion of said yoke and screws to secure said bearing in position passing through said holes in said lugs and lying in said grooves.

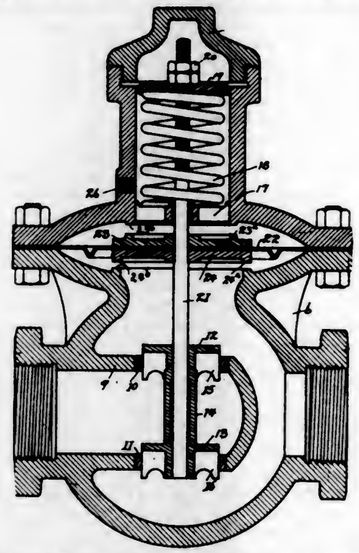
2. A shaft-hanger comprising a depending yoke, a bearing mounted in the lower portion of said yoke, the upper portion of said yoke being open, a cover-plate closing said yoke at the top, and screws securing said cover-plate to said yoke and engaging said bearing and securing the same in position.

3. A shaft-hanger comprising a depending yoke having branches separated from each other at the top and having lugs on the inner faces of the upper ends of said branches provided with tapped holes, a cover-plate connecting the upper ends of said branches and provided with holes in alinement with said tapped holes, a bearing removably mounted in the lower portion of said yoke, and screws passing through said holes in said cover-plate and said lugs and engaging said bearing.

4. A shaft-hanger comprising a depending yoke having substantially parallel branches separated from each other at the top and provided with grooves on the inner sides between their ends and lugs at their upper ends provided with tapped holes alined with said grooves, a cover-plate connecting the upper ends of said branches and having holes in alinement with said tapped holes, a bearing removably mounted in the lower portion of said yoke, and screws passing through said holes in said cover-plate and said lugs, lying in said grooves and engaging said bearing.

822,184. PUMP-REGULATING SYSTEM. GEORGE E. CHAMBERLAIN, St. Louis, Mo., and JOSEPH J. MERRILL, Chicago, Ill. Filed June 15, 1905. Serial No. 265,320.

Claim.—1. A system for regulating pumps comprising a pump, a fluid-pressure motor operatively connected to said pump to actuate the same, a valve to control the supply of motive fluid to said motor, a mechanically-distended diaphragm operatively connected to said valve, non-communicating chambers upon opposite sides of said diaphragm, means to produce the pressure of the motive fluid in one chamber, and means to produce in the other chamber the pressure of the liquid delivered by the pump, the areas of the two sides of the diaphragm exposed to such pressures being substantially equal.



2. A system for regulating pumps comprising a pump, a fluid-pressure motor operatively connected to said pump to actuate the same, a valve to control the supply of motive fluid to said motor, a spring-distended diaphragm operatively connected to said valve, non-communicating chambers upon opposite sides of said diaphragm, means to produce the pressure of the motive fluid in one chamber, and means to produce in the other chamber the pressure of the liquid delivered by the pump, the areas of the two sides of the diaphragm exposed to such pressures being substantially equal.

3. A system for regulating pumps comprising a pump, a fluid-pressure motor operatively connected to said pump to actuate the same, a pipe to conduct the motive fluid to said motor provided with a regulating-valve having non-communicating chambers, a diaphragm between said chambers, and a balanced valve operatively connected to said diaphragm, the motive fluid filling one of said chambers, a pipe to convey the liquid delivered by said pump, and means to transmit the pressure in said last-mentioned pipe to the other of said chambers, the areas of the two sides of the diaphragm exposed to pressure being substantially equal.

4. A system of pump-regulation comprising a pump, a fluid-pressure motor operatively connected to said pump to actuate the same, a pipe to conduct the motive fluid to said motor, a pipe to carry the liquid discharged by said pump, and a regulating-valve having non-communicating chambers in communication, respectively, with said pipes, and having a valve arranged to be actuated by the difference between the pressures of said motive-fluid pressure and of said liquid, and a spring arranged to exert force upon said valve in the direction of one of said pressures, the pressure areas of said valve being substantially equal.

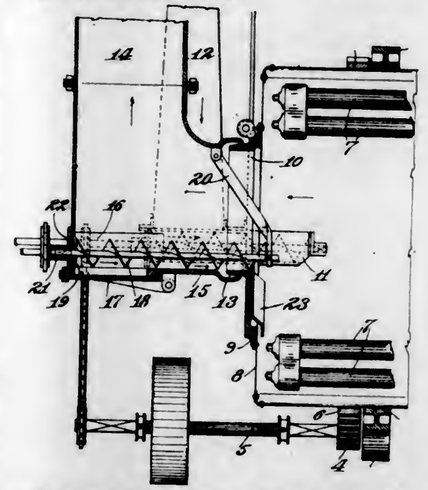
5. A system for regulating feed-water pumps comprising a boiler, a pump, a pipe connecting said pump and said boiler, a steam-engine operatively connected to said pump, a steam-pipe connecting said engine and said boiler and provided with a regulating-valve having non-communicating chambers, a diaphragm between said chambers, one of said chambers being filled with steam and a spring arranged to coact with the steam on said diaphragm, and a pipe leading from said water-pipe to the other chamber of said valve, whereby the pressure in said pipe may be induced in said chamber, the respective pressure areas of said diaphragm being substantially equal.

6. A regulating-valve comprising a casing, a flexible diaphragm separating said casing into two non-communicating chambers, a spring-seat mounted in one of said chambers, a spring seated on said spring-seat, a valve in the other of said chambers, and a rod connecting said valve, diaphragm and spring.

7. A regulating-valve comprising a casing, a flexible diaphragm separating said casing into two non-communicating chambers, a spring-seat mounted in one of said chambers, a spring seated on said seat, a rod connected to said diaphragm and adjustably connected to said spring, and a balanced valve in the other of said chambers and connected to said diaphragm to move therewith.

8. A regulating-valve comprising a casing, a flexible diaphragm separating said casing into non-communicating chambers, a balanced valve operatively connected to said diaphragm, members secured to said diaphragm having bearing-surfaces, and stops on said casing coöperating with said members to limit the amplitude of vibration of said diaphragm.

822,185. DRIER. GEORGE E. CHAMBERLAIN, St. Louis, Mo. Filed Sept. 15, 1905. Serial No. 278,557.



Claim.—1. A drier comprising a drying-chamber, a flue communicating with said chamber, a feeding-conveyer and a flue-cleaning conveyer arranged in the lower portion of said flue.

2. A drier comprising a drying-chamber, a flue communicating with the same, means for feeding said chamber, and a flue-cleaning conveyer removably mounted in the bottom of said flue.

3. A drier comprising a drying-chamber and means for feeding the same, a flue communicating with said chamber and having a trough-shaped lower portion, and a rotatable screw mounted in said trough-shaped portion of said flue.

4. A drier comprising a rotary cylinder and means for feeding the same, a flue communicating with said cylinder, and a flue-cleaning conveyer arranged in the bottom of said flue.

5. A drier comprising a rotary cylinder, a flue communicating with said cylinder, a conveyer for feeding said cylinder and a flue-cleaning conveyer arranged in the bottom of said flue to carry material into said cylinder, and an apron arranged beneath the discharge end of said conveyer.

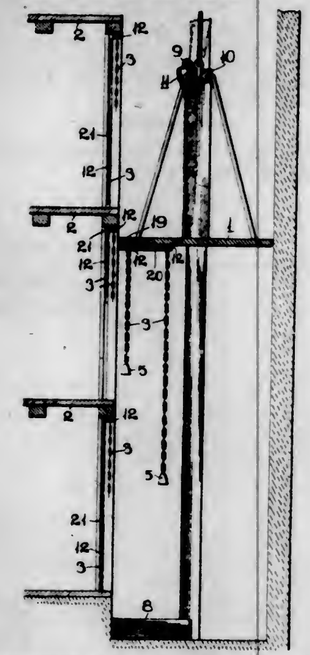
6. A drier comprising a draft-flue, a rotary cylinder opening into said draft-flue, a feed-conveyer arranged to deliver material into said cylinder to one side of the opening into said draft-flue, and a flue-cleaning conveyer arranged in the bottom of said draft-flue to deliver material into said cylinder in position to mingle with the material delivered by said feed-conveyer.

7. A drier comprising a rotary cylinder, a flue communicating with said cylinder, a feed-conveyer arranged to deliver material to be dried into said cylinder, a flue-cleaning conveyer arranged in the bottom of said flue, means to actuate said rotary cylinder, and gearing connecting said means and said conveyer, whereby said cylinder and said conveyer will always be simultaneously actuated.

822,186. ELEVATOR SAFETY-ALARM. PENROSE E. CHAPMAN, St. Louis, Mo. Filed Apr. 11, 1904. Serial No. 203,707.

Claim.—1. The combination with an elevator-platform, of yokes provided with perforations and arranged beneath the platform, fastening devices engaged in the perforations of said yokes, and a series of chains suspended from said fastening devices and having roughened exterior surfaces; substantially as specified.

2. The combination with an elevator-platform, of series of yokes secured to said platform, series of ticklers secured to said yokes and depending therefrom, and suitable signaling devices carried by said ticklers, substantially as described.



3. The combination with an elevator-platform, of series of yokes secured to said platform, series of ticklers secured to said yokes, and a trough located in the elevator-shaft for receiving said ticklers, substantially as described.

4. The combination with an elevator-platform, of a spacing-gage, a yoke connected to said spacing-gage, and a series of ticklers depending from said yoke, substantially as described.

5. In an elevator safety-alarm, the combination with an elevator-platform, of yokes secured to the under side of said platform, a series of chains depending from said yokes, a bell secured to the lower link of each chain, and a clapper within each bell secured to the lower link of each chain; substantially as described.

6. The combination with an elevator-platform, of yokes secured to the under side thereof, fastening devices carried by said yokes, a series of ticklers suspended from said fastening devices, sounding devices carried by the lower ends of said ticklers, and a metallic trough located in the elevator-shaft for receiving said ticklers; substantially as specified.

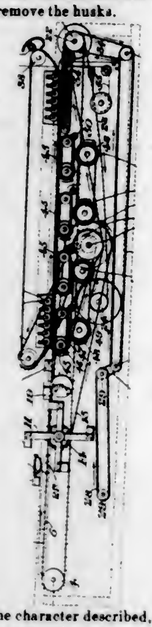
7. The combination with an elevator-platform, of a spacing-gage secured to the under side thereof, a yoke connected to said spacing-gage which yoke is provided adjacent its ends with weakened points, and a series of ticklers depending from the yoke; substantially as specified.

8. The combination with an elevator-platform, of a spacing-gage secured to the under side thereof, a plurality of yokes secured to said spacing-gage in which yokes are formed weakened points, a series of ticklers depending from said yokes, signaling devices carried by the lower ends of said ticklers, and a trough located in the elevator-shaft for receiving said ticklers; substantially as specified.

9. In an elevator safety-alarm, the combination with an elevator-platform, of a spacing-gage secured to the under side of said platform, a plurality of yokes carried by said gage, a series of ticklers depending from said yokes, a bell secured to the lower end of each tickler, a clapper within each bell secured to the lower end of each tickler, and a trough arranged in the lower end of the elevator-shaft to receive the ticklers; substantially as specified.

822,187. CORN-HUSKING MACHINE. WILLIAM G. CONOVER, Philadelphia, Pa. Filed Aug. 16, 1905. Serial No. 274,373.

Claim.—1. In a device of the character described, a plurality of carriers adapted to receive and convey the corn, a guide adjacent said carriers against which the corn is adapted to contact, cutting means adapted to be actuated in order to remove the end of the corn, a spring adapted to engage with the ears for holding the same as the cutting means strikes the ears, a belt having a plurality of movable idlers engaging therewith, a belt having teeth thereon situated beneath said first-mentioned belt and between which the corn is adapted to pass in order to remove the husks.



2. In a device of the character described, a plurality of carriers adapted to receive and convey the corn, a guide adjacent said carriers against which the corn is adapted to contact, a knife adapted to be actuated in order to remove the end of the corn as it is conveyed by the carriers, a spring adapted to engage with the ears for holding the same as the knife strikes the ears, a belt having a plurality of movable idlers engaging therewith, a plurality of belts having teeth thereon situated beneath said first-mentioned belt, and between which the corn is adapted to pass in order to remove the husks and means for removing the husks from the belts.

3. In a device of the character described, a plurality of chains adapted to receive and convey the corn, a guide adjacent said chains against which the corn is adapted to contact, a knife adapted to be actuated in order to remove the end of the corn as it is conveyed by the chains, a spring adapted to engage with the ears as the knife strikes the same, a belt having a plurality of movable idlers engaging therewith, a plurality of belts having teeth thereon situated beneath said first-mentioned belt, and between which the corn is adapted to pass in order to remove the husks, means for removing the husks from the belts, and means for removing the silk from the corn.

4. In a device of the character described, cutting means, means for properly directing the corn to said cutting means, a plurality of teeth adapted to be suitably actuated, means for directing the corn to said teeth which latter are adapted to engage with and remove the husks from said corn, and freely-movable means for rotating and properly holding the corn in suitable relation with respect to said teeth.

5. In a device of the character described, cutting means, means for conveying the corn to said cutting means, a plurality of belts adapted to be suitably actuated, hooks on said belts and a belt situated above said plurality of belts and between which and the plurality of the belts corn is adapted to be conveyed, said belt moving continuously and holding said corn in suitable position with respect to said plurality of belts.

6. In a device of the character described, cutting means, means for conveying the corn thereto, a belt adapted to be suitably actuated, teeth on said belt, a belt suitably actuated and situated above said toothed belt and a plurality of freely-movable idlers in engagement with said last-mentioned belt.

7. In a device of the character described, cutting means, means for conveying the corn thereto, a plurality of belts adapted to be suitably actuated, teeth on said belts, a belt suitably actuated and situated above said plurality of belts, movable idlers in engagement with said last-mentioned belt, and means for cleaning said belts and teeth.

8. In a device of the character described, cutting means, means for conveying the corn thereto, means for actuating said cutting means, a plurality of belts, hooks on said belts, a plurality of rotary brushes and a belt adapted to be suitably actuated and extending over said plurality of belts and said brushes and between which the corn is adapted to pass.

9. In a device of the character described, a plurality of chains adapted to convey the corn, guides for properly locating the corn with respect to said chains, knives adapted to be suitably actuated in order to remove the ends of the corn, means adapted to engage the ears during the removal of the ends, another set of chains adapted to receive the corn after the cutting, guides for properly locating the corn, a plurality of belts situated between said last-mentioned chains, hooks on said belts, means for cleaning said belts, a plurality of brushes suitably rotated, a belt extending over said hook, belts and said brushes, and movable idlers engaging with said belt, the corn being adapted to be carried by said second set of chains between said hook-belts and the upper belt.

10. In a device of the character described, a plurality of chains adapted to receive and convey the corn, a guide adjacent said chains against which the corn is adapted to contact, a knife adapted to be actuated in order to remove the end of the corn as it is conveyed by the chains, a spring adapted to engage with the ear for holding the same as the knife strikes the ear, a belt having a plurality of movable idlers engaging therewith and a plurality of belts having teeth thereon, situated beneath said last-mentioned belt, and between which the corn is adapted to pass in order to remove the husks.

11. In a device of the character described, cutting means, means for conveying the corn thereto, means for removing the husks from the corn, means for conveying the corn over the husking means and freely-movable means adapted to rotate said corn and to hold the same in proper position with respect to said husk-removing means said means permitting the passage of corn of various diameters.

12. In a device of the character described, means for removing the end of the corn, a belt adapted to be suitably actuated, a second belt having teeth thereon situated adjacent said first-mentioned belt, and between which belts the corn is adapted to pass in order to remove the husks, and a plurality of movable idlers mounted in close proximity to each other and adapted to bear against the first-mentioned belt, in order to hold the same in proper relation to said second-mentioned belt, said idlers being so situated that the corn in its passage between the belts will always have one of said idlers resting thereupon, whereby the corn will be held in proper position with respect to the tooth-belt and the passage of corn of different diameters is permitted.

13. In a device of the character described, cutting means for removing the ends of the corn, a belt adapted to be suitably actuated, a plurality of freely-movable idlers engaging with said belt situated in close proximity to each other, a second belt situated beneath said first-mentioned belt and having a plurality of teeth thereon and between which belts the corn is adapted to pass one of said idlers being adapted to always press the corn against the tooth-belt in order to remove the husks and silk-removing means with which the corn is adapted to contact after the removal of the husks.

14. In a device of the character described, cutting means for removing the ends of the corn, a belt suitably actuated, a plurality of rotatable idlers mounted to freely move in a vertical direction and in close proximity to each other and in engagement with said belt, a second belt situated beneath said first-mentioned belt and having teeth thereon between which belts the corn is adapted to pass to remove the husks, said rollers being adapted to positively hold the corn at all times in its passage between the belts in proper position with respect to said tooth-belt and automatically accommodate themselves to corn of various diameters whereby the same will all be properly husked.

15. In a device of the character described, cutting means for removing the ends of the corn, a belt suitably actuated, a plurality of rotatable idlers mounted in close proximity to each other and to freely move in a vertical direction and in engagement with said belt, a second belt situated beneath said first-mentioned belt and having teeth thereon between which belts the corn is adapted to pass to remove the husks, each of said idlers in turn being adapted to positively hold the corn in proper position with respect to said tooth-belt and automatically accommodate themselves to corn of various diameters, whereby the same will be properly husked and a third belt suitably situated in order to receive the husks and refuse and remove the same to a suitable point.

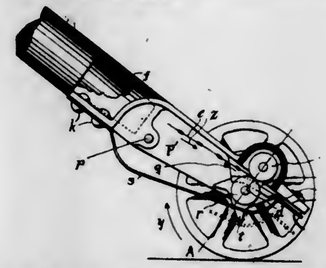
16. In a device of the character described, a belt adapted to be suitably actuated and situated between a portion of the frame of the device with which the corn is adapted to contact, teeth on said belt, a second belt adapted to be suitably actuated and situated adjacent said toothed belt and between which belts the corn is adapted to pass and a plurality of freely-movable idlers bearing upon said second-mentioned belt and adapted to hold the same in proper relation to said toothed belt, said idlers being adapted to be raised by the corn in its passage and being of such number as to insure the proper husking of a small ear of corn, should the same follow or precede a larger ear.

17. In a device of the character described, a carrier adapted to be actuated, projections on said carrier, a belt suitably actuated and situated adjacent said carrier, a plurality of freely-movable idlers engaging with said last-mentioned belt and between which and said tooth-carrier the corn is adapted to be passed in order to remove the husks and means for conveying the corn therebetween and said belts and idlers being so situated and arranged that when one idler is raised by the corn the adjacent idlers are not disturbed but hold the belt in such position that the next ear of corn is properly husked.

18. In a device of the character described, means for rotating the corn, a belt adapted to be suitably actuated, teeth on said belt, a belt suitably actuated and situated adjacent said toothed belt, and a plurality of freely-movable idlers engaging with said last-mentioned belt for rotating and properly holding the corn in suitable relation with respect to said teeth on said belt.

19. In a device of the character described, a carrier adapted to be actuated, teeth or hooks on said carrier means for conveying the corn over the carrier and means for rotating the corn during its passage over said carrier whereby the corn is husked.

822,188. TOY. WILLIAM C. CORYELL, Youngstown, Ohio. Filed Sept. 23, 1904. Serial No. 225,663.



Claim.—1. In a device of the character described, the combination with a casing, a handle secured thereto, of a shaft journaled in said casing, a roller secured to the shaft, a toothed wheel mounted upon said shaft, a driving-wheel secured to said shaft, a frictional roller carried by said casing and normally in engagement with said roller secured to the shaft, guiding means formed upon said casing contiguous to said rollers, an anvil formed upon said casing, a spring member having a flat outer end adapted to engage said anvil, said toothed wheel adapted to impart movement to said spring member, and means for supporting tape which is to be passed between the rollers and the anvil and its engaging spring members.

2. A detonating-machine, comprising a casing provided with a magazine formed therein near one end, a plurality of rolls, and a toothed wheel journaled in said casing within the forward end thereof, guiding means formed upon each side of said rolls, an anvil secured upon the forward end of said casing, cushioned reciprocatory hammer means carried by said casing and normally in engagement with said toothed wheel and adapted to strike against the anvil, and means secured upon the outside of said casing and connected to said toothed wheel and rolls for imparting movement thereto.

3. A detonating mechanism, comprising a casing provided with a hollow end portion and a magazine formed therein, a handle secured within said hollow end portion, a feeding mechanism mounted within said casing, guiding means formed within said casing, an anvil carried by said casing contiguous to said guiding means, a reciprocatory spring-hammer secured to the handle portion of said casing and adapted to engage said anvil, said feeding mechanism nor-

mally in engagement with said hammer, and means for imparting movement to said feeding mechanism and hammer.

4. In a detonating mechanism, the combination of a casing provided with an opened base and a hollow end, a handle positioned in said hollow end, said casing provided with a converging recessed portion formed upon each side thereof, a feeding mechanism carried within said casing contiguous to said converging recessed portion, and exploding means carried by said casing and coacting with said feeding mechanism.

5. A detonating mechanism, comprising a casing, said casing provided with an opened bottom extending its full length, a handle secured to one end of said casing, a shaft journaled in the opposite end of said casing, a drive-wheel secured to said shaft outside of said casing, a toothed wheel secured to said shaft within the casing, a roller secured to said shaft, a friction-roller secured within said casing above said shaft, an anvil formed upon the outside of said casing contiguous to said shaft, tape-supporting means carried by said casing, a spring-hammer secured to the bottom portion of said casing and extending its entire length, said toothed wheel normally in engagement with said hammer and adapted to cause reciprocal movement of the hammer, when the drive-wheel is actuated.

6. In a mechanism of the class described, the combination with a casing, of a transverse shaft journaled within said casing, a drive-wheel secured to said shaft, a toothed member secured to the shaft within said casing, a roller secured to said shaft and spaced apart from said toothed wheel, an anvil formed upon said casing, a spring-hammer provided with a lateral extension secured beneath said casing, the lateral extension of said hammer adapted to be engaged by said toothed wheel, tape-supporting means carried by said casing, and guiding means projecting from opposite sides of said casing.

7. In a mechanism of the class described, the combination of a casing having an opened bottom, a shaft journaled in the forward end of said casing, a drive-wheel secured to one end of said shaft, a roller and a toothed wheel spaced apart within said casing and secured to the shaft, a frictional roller mounted within said casing and normally engaging the roller secured to the shaft, a hammer secured to the bottom of said casing, an anvil formed upon the forward portion of said casing, said hammer normally engaging the anvil, and tape-supporting and guiding means carried by said casing.

8. A detonating mechanism, comprising a casing having an anvil projecting from the front end thereof, a feeding mechanism mounted within said casing, a drive-wheel positioned upon the outside of said casing and connected to said feeding mechanism, a flexible hammer secured to the rear portion of said casing and capable of engaging said anvil, means carried by the casing for actuating said hammer, and means for supporting an explosive, which is to be fed through said feeding mechanism to the anvil.

9. A mechanism of the class described, comprising a casing, a shaft journaled in said casing, a drive-wheel secured upon the outside of said casing and to one end of said shaft, a toothed wheel secured within said casing and to said shaft, a roller secured to said shaft within the casing, guiding means formed upon each side of said roller and upon one side of said toothed wheel, a frictional roller journaled upon said casing and normally engaging said roller secured to the shaft, an anvil formed upon said casing, a reciprocatory hammer carried by said casing, and means formed upon said casing for supporting an explosive.

10. A detonating mechanism, comprising a casing provided with a central, depending extension, a shaft journaled in each side of said casing, a drive-wheel secured to said shaft outside of said casing, a toothed wheel secured to said shaft between said extension and one side of said casing, a roller secured to said shaft upon the opposite side of said extension, a friction-roller journaled in one side of said casing and the extension, an anvil formed upon said casing, a hammer carried by said casing and normally engaging said anvil, means for actuating said hammer, and means for supplying an explosive to said rollers and anvil.

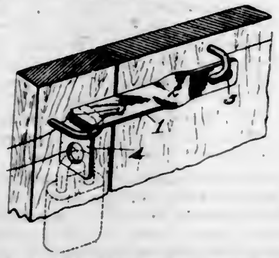
11. A mechanism of the class described, comprising a casing provided with a central, depending extension, a feeding mechanism positioned within said casing, guiding means formed upon one side of said casing and the extension contiguous to said feeding means, an anvil projecting from one end of said casing, a hammer secured to said casing and coacting with said anvil, means for actuating said feeding means and hammer, and an explosive-supporting means carried by said casing.

12. A mechanism of the class described, comprising a casing provided with an approximately central depending extension, feeding means positioned within said casing, guiding means formed upon one side of said casing and on said extension contiguous to said feeding means, an anvil formed upon said casing, a hammer secured to said casing and coacting with said anvil, means for actuating said feeding means and hammer, and explosive-supporting means carried by said casing.

13. A detonating mechanism comprising a casing or frame, said casing provided with an anvil, a feeding mechanism provided with a toothed wheel carried by said casing, and a spring-hammer provided with a lateral extension carried by said casing, the lateral extension of said hammer adapted to be engaged by the toothed wheel for reciprocating said hammer.

14. A detonating mechanism comprising a casing or frame, an anvil carried by said casing, a feeding mechanism provided with a toothed wheel carried by said casing, and an integral spring-hammer provided with a flat free end, and an integral lateral extension, fixedly secured at one end to said casing, the toothed wheel adapted to engage the lateral extension of said handle for causing the hammer to reciprocate, when movement is imparted to said wheel.

822,189. **COMBINED HASP AND HOOK.** THEODORE E. CRECELIUS, St. Louis, Mo., assignor, by mesne assignments, to Woodhouse Hardware Manufacturing Company, St. Louis, Mo., a Corporation. Filed May 24, 1905. Serial No. 261,832.



Claim.—1. A combined hasp and hook consisting of a body and a hook portion; said hook portion being bent at right angles to the body and being twisted to substantially a quarter-turn, substantially as set forth.

2. A combined hasp and hook consisting of a body and a hook portion twisted into a plane at right angles to the axis of said body and provided with an aperture, substantially as set forth.

3. A combined hasp and hook consisting of a body, and a tongue; said tongue being provided with a notch at each of its sides, substantially as and for the purpose set forth.

4. A combined hasp and hook consisting of a body, and a tongue; said tongue being provided with a notch at each of its sides and having an eye therein, substantially as set forth.

5. A combined hasp and hook consisting of a body having its forward portion twisted to a position at right angles to its rear portion, and having a tongue at its forward end bent at right angles to its forward portion and provided at each side with a notch, substantially as and for the purpose set forth.

822,190. **BEAN-SHOOTER.** JAMES H. CURRY, Wilkinsburg, Pa. Filed Aug. 7, 1905. Serial No. 273,900.

Claim.—1. A fork for a bean-shooter comprising a handle, and fork-arms separately pivoted to the handle and adapted to fold thereon.

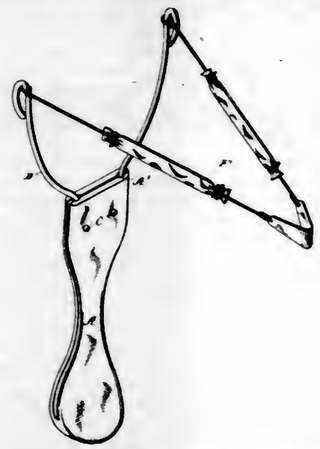
2. A fork for a bean-shooter comprising a handle adapted to exert arm-holding pressure, and arms separately secured to the handle and adapted to be held by the pressure thereof in adjusted position.

3. A fork for a bean-shooter comprising a recessed handle, and fork-arms secured in the handle-recess and adapted to fold thereon in opposite directions.

4. A fork for a bean-shooter comprising a recessed handle, and fork-arms pivoted in the handle-recess and adapted to fold thereon, the frictional pressure of the handle members operating to hold the arms either in outturned or in folded position.

5. A fork for a bean-shooter comprising a recessed handle, and fork-arms pivoted in the handle-recess and having their pivoted ends reduced or tapered and closely fitting the recess and with the full section of the forks adapted to enter the handle-recess when the forks are turned outward and also when folded upon the handle.

6. A fork for a bean-shooter comprising a recessed handle, and fork-arms pivoted in the handle-recess and having their pivoted ends reduced and closely fitting the recess, the faces of the recess having depressions to receive the forks when the latter are turned outward.



7. A fork for a bean-shooter comprising two handle members connected at their lower ends, and fork-arms pivoted between the handle members and adapted to fold backward into the space between the latter, the pivoted ends of the arms closely fitting the recess and adapted to be held by the frictional pressure of the handle members either in outturned or in folded position.

8. A fork for a bean-shooter comprising a handle, and fork-arms separately pivoted to the handle and adapted respectively to fold backward on opposite sides thereof.

822,191. **BOOK-SUPPORT.** JOSEPH C. DANA, Modesto, Cal. Filed May 27, 1905. Serial No. 262,631.

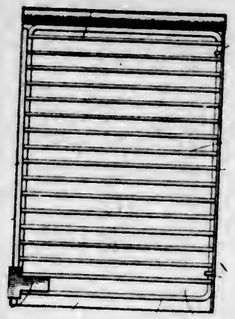


Claim.—1. In a support of the character described, the combination of a hollow standard, a bracket vertically adjustable therein and mounted for rotary movement, means for securing the bracket in adjusted position, a head rotatably mounted upon the bracket, a holder hinged to the head, a guide member carried by the holder, a runner adjustably mounted on the guide member, and a hinged brace connecting the runner with the head.

2. In a support of the character described, the combination of a hollow standard, a bearing-sleeve vertically adjustable therein, means for securing the bearing-sleeve in adjusted position, an angular bracket having vertical and horizontal arms, the vertical arm being journaled in said sleeve and the horizontal arm resting thereon, a head rotatably mounted on the horizontal arm of the bracket, a holder hinged to the head, a guide member carried by the holder, a runner adjustably mounted on the guide member, and a hinged brace connecting the runner with the head.

3. In a support of the character described, the combination of a bracket, a head rotatably mounted thereon, a holder hinged to the head, a guide member carried by the holder, a runner adjustably mounted on the guide member, and a hinged brace connecting the runner with the head, substantially as described.

822,192. **WRITING-GUIDE.** JOSEPH C. DANA, Modesto, Cal. Filed June 21, 1905. Serial No. 266,338.



Claim.—1. A device of the class described, comprising a bed or platen, line-guides associated therewith, and a line-indicator carried by the bed or platen.

2. A device of the class described, comprising a bed or platen, line-guides associated therewith, and a line-indicator permanently and movably mounted upon the bed or platen.

3. A device of the class described, comprising a bed or platen, line-guides associated therewith, a guide member mounted upon the bed or platen, and a line-indicator movably mounted upon the guide member.

4. A device of the class described, comprising a bed or platen, line-guides associated therewith, a guide member secured to the platen, and a line-indicator movably mounted upon the guide member, said line-indicator being provided with a turn-down engaging portion.

5. A device of the class described, comprising a bed or platen, line-guides associated therewith, and a line-indicator movably mounted upon the bed or platen, said line-indicator being provided with a turn-down engaging portion.

6. A device of the class described, comprising a bed or platen provided with flanges, a frame provided with guide elements, said frame being hingedly secured to one of the flanges of the bed or platen, and a line-indicator movably mounted upon the bed or platen.

822,193. **RELAY DEVICE.** JOHN P. DOWNE, Boston, Mass., assignor to The North Electric Company, Cleveland, Ohio, a Corporation of Ohio. Original application filed May 1, 1902, Serial No. 105,529. Divided and this application filed Oct. 14, 1904. Serial No. 228,479.



Claim.—1. In an electromagnetic appliance, the combination with an electromagnet, of a protective shell or casing therefor, and a thumb-nut permanently and rotatably secured to said shell, and adapted to secure the same removably in position over the parts of said appliance, substantially as set forth.

2. In an electromagnetic appliance of the general character described, the combination with electromagnetic apparatus, of a protective shell or casing therefor, a forwardly-positioned flanged seat for one end thereof, a rearwardly-positioned screw, and a thumb-nut or tapped retaining part permanently and rotatably secured to said shell and adapted to removably hold the same in position over the parts of said appliance, substantially as set forth.

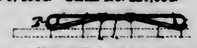
3. In an electromagnetic telephone appliance, the combination with an electromagnet, an armature controlled thereby, a threaded adjusting-screw and nut therefor, a protective shell or casing and a thumb-nut adapted removably to secure the shell in position over said parts, the said thumb-nut engaging the extremity of the threaded adjusting-screw, substantially as set forth.

4. In an electromagnetic appliance of the general class described, the combination with an electromagnet, an armature controlled thereby, a threaded screw extending rearwardly from said electromagnet, an adjusting-nut thereon, a protective shell or casing, and a thumb-nut rotatably mounted therein, adapted removably to secure the shell in position over said parts, the thumb-nut and ad-

justing-nut being mounted upon said rearwardly-extending screw, substantially as set forth.

5. In an electromagnetic appliance of the general class described, the combination with electromagnetic apparatus, including an armature movable thereby, a combined adjusting and retaining screw extending rearwardly from the core of said electromagnet, an adjusting-nut thereon for the armature, a cylindrical shell or casing surrounding the parts, and a threaded retaining part or thumb-nut thereon adapted removably to secure the shell in position, the threaded part and adjusting-nut being mounted upon the screw extending rearwardly from the magnet, substantially as set forth.

822,194. METALLIC PALLET. JOHN H. HARLEY, Philadelphia, Pa. Filed Oct. 8, 1904. Serial No. 227,664.



Claim.—1. A metallic pallet comprising a plane sheet-metal panel provided with bracing-flanges at its opposite longitudinal edges and runner-bars at its ends; said bars having central portions in contact with said panel and having their free ends bent to overlap said flanges exterior thereto, substantially as set forth.

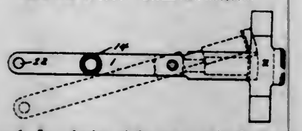
2. A metallic pallet provided with integral cylindriform curved bracing-flanges at its opposite longitudinal edges, and primarily separate runner-bars secured at its opposite ends beneath said panel; the free ends of said bars being arranged to engage said longitudinal flanges; and, rivets securing said runner-bars to said panels, substantially as set forth.

3. A metallic pallet comprising a plane sheet-metal panel having its opposite longitudinal edges curled beneath it in integral cylindriform bracing-flanges, the edges of said flanges being apart from the under surface of said panel; runner-bars at the ends of said panel upon the same side as said cylindriform flanges; said bars having central portions in contact with said panel and having their ends bent to overlap said flanges; and, rivets extending through said panel and said bars, substantially as set forth.

4. A metallic pallet comprising a plane sheet-metal panel provided with bracing-flanges at its opposite longitudinal edges; and, runner-bars at its ends; the free ends of said bars extending away from said panel and forming supports respectively local to the opposite longitudinal edges of said panel, substantially as set forth.

5. A metallic pallet comprising a plane sheet-metal panel provided with bracing-flanges at its opposite longitudinal edges, and, runner-bars at its ends; the free ends of said bars extending away from said panel and forming upwardly-curved supports respectively local to the opposite longitudinal edges of said panel, substantially as set forth.

822,195. RAILWAY SIGNAL DEVICE. JAMES M. EATON, Scranton, Pa. Filed Jan. 3, 1906. Serial No. 294,098.



Claim.—1. In a device of the type set forth, a pair of members bearing a pivotal relation to one another, the inner ends of each of said members being shaped to embrace the rail-head, and means whereby said members may be positioned and removed with respect to the rail.

2. A railway signal device consisting of a lower member engaging one side of the rail-head, and an upper member overlying said lower member and engaging the opposite side of said rail-head, said upper member having a swinging and reciprocating movement with respect to said lower head.

3. A railway signal device consisting of a pair of members having a pivotal relation and having their inner ends formed to engage the rail-head, and means for resiliently mounting the inner end of one of said members.

4. A railway signal device consisting of an upper member having its end enlarged to provide a portion to engage the top face of the rail-head and having the portion therebeyond formed to engage the rail-head, and a member secured to said upper member and having its end formed to engage the rail-head.

5. A railway signal device consisting of a top member, having its inner end formed to embrace the rail-head, a lower member pivoted to said upper member and having a sleeve received on one end thereof, said sleeve being formed to engage the rail-head and being spring-mounted with respect to said lower member.

6. A railway signal device consisting of a top member having its inner end formed to embrace the rail-head, an under member pivoted to the upper member, a sleeve received by said under member and having its inner end formed to embrace the rail-head, and a spring interposed between said under member and said sleeve.

7. A railway signal device consisting of a pair of members bearing a pivotal relation to one another, one of said members having its end formed to engage the rail and being resiliently mounted with respect to the remainder thereof, the other member having one end cooperating with the first-named member to retain the rail therebetween.

8. A railway signal device consisting of a pair of pivotally-mounted members, the inner ends of said members being formed to receive the rail therebetween, one of said ends being spring-mounted.

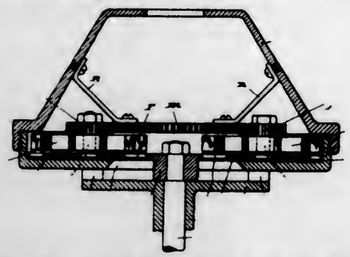
9. A railway signal device consisting of a pair of members having their ends formed to embrace the rail therebetween, one of said members having an element which is spring-mounted with respect to the remainder thereof, and means to lock said member and said element to prevent the same from being removed from the rail.

10. A railway signal device consisting of a pair of members receiving the rail therebetween, one of said members having its rail-engaging part spring-mounted with respect to the remainder thereof, and means to lock said member so as to prevent disengagement of said spring-mounted part thereof from said rail.

11. A railway signal device consisting of two movable members arranged one above the other and having their inner ends formed to receive the rail therebetween, the upper of said members having an enlarged part engaging and seating on the rail-head, and means to lock said members.

12. A railway signal device consisting of a pair of members movably mounted with respect to one another to engage the rail therebetween, one of said members being swingingly mounted with respect to the other and having a part thereof capable of reciprocating movement.

822,196. CENTRIFUGAL MACHINE. ANDERS J. ERICSSON, Stockholm, Sweden, assignor to Aktiebolaget Separator, Stockholm, Sweden. Filed May 19, 1905. Serial No. 261,140.



Claim.—1. In a centrifugal machine the combination with the rotary bowl, having rotating scraper-wheels located therein for conveying the solid matters stratified on the walls to a point nearer the center line of the bowl, of arc-shaped guides for and partly embracing each scraper-wheel said guide having a pointed end located near the wall of the bowl, said arc-shaped guides serving as guides and as catchers for the solid matters stratified on the walls of the bowl.

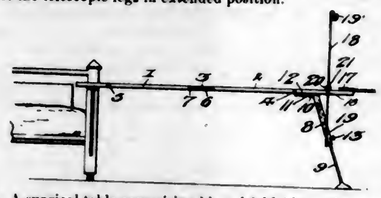
2. In a centrifugal machine, in combination, a rotary bowl, a rotating scraper-wheel, a curved guide eccentric to and partially surrounding the scraper-wheel.

3. In a centrifugal machine, in combination, a rotary bowl, a rotating scraper-wheel, a curved guide eccentric to and partially surrounding the scraper-wheel, said guide extending from the periphery of the bowl toward the center of the bowl and diverging from the scraper-wheel toward the center of the bowl.

4. In a centrifugal machine, in combination, a rotary bowl, a rotary scraper-wheel, a curved guide partially surrounding the scraper-wheel, said guide extending from the periphery of the bowl toward the center and having the end contiguous to the wall of the bowl pointed.

822,197. SURGICAL TABLE. WILLIAM EVANS, Norfolk, Va. Filed Sept. 26, 1905. Serial No. 280,282.

Claim.—1. A surgical table comprising two hinged sections adapted to fold one over upon the other, means for securing the sections in folded position, hinged telescopic legs upon one of the sections provided with guide-brackets, and rods extending through said section and provided at their upper ends with supporting members and having their lower ends passing through said guide-brackets to support the telescopic legs in extended position.

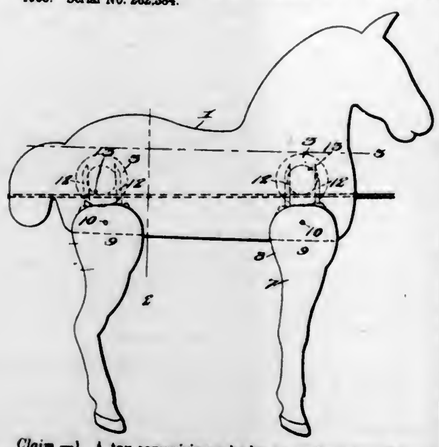


2. A surgical table comprising hinged foldable sections, means for securing said section in opened and closed positions, hinged telescopic legs upon one of the sections, and rods adapted to be passed through said section and connected with the legs to hold the latter in supporting position and provided at their upper ends with supporting members.

3. A surgical table comprising hinged sections adapted to fold one upon the other, means for securing said sections in opened and closed positions, one of the sections being provided with vertical guide-openings, telescopic legs comprising relatively stationary and adjustable members, said relatively stationary members being hinged to the section and provided with guide-brackets, rods extending through the openings in the section and projecting at their lower ends through said guide-brackets and provided at their upper ends with supporting devices, and collars upon the rods provided with set-screws to fix them thereto, said collars being adapted to engage the table-section and hold the rods from downward movement.

4. A surgical table comprising two hinged sections adapted to fold one over upon the other, means for securing said sections in opened and closed positions, spacing-blocks upon the upper and under surfaces of one of the sections, said section also being provided with vertical openings between said blocks, telescopic legs hinged to the lower blocks, stirrup-brackets hinged to the upper blocks and adapted to fold over upon the free end of the other section of the table when the latter is folded, rods slidable in the vertical openings, and provided at their upper ends with supporting devices, means for connecting the lower ends of the rods with the telescopic legs to hold the latter in extended position, and means upon the rods to engage the table and hold them from downward movement.

822,198. TOY. PETER J. FAHRNE, Rochester, N. Y. Filed May 26, 1905. Serial No. 262,384.

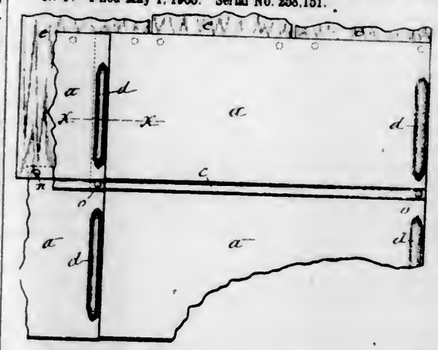


Claim.—1. A toy comprising a body, a member pivotally connected thereto, a wheel mounted within the body and adapted for revolution in the movement of the toy, a pin projecting from said wheel, and arms projecting from the member and spaced apart and adapted to be operated in the movement of said pin, said arms being so spaced relative to the diameter of the pin as to avoid contact with the latter at predetermined points in its path of travel.

2. A toy comprising a body, members pivotally connected thereto, flanged wheels mounted within the body and adapted for revolution in the movement of the toy, a pin projecting from each of said wheels, and arms projecting from each of said members and lying in the path of travel of said pin, said arms being so spaced as to permit contact of the pin only at diametrically opposite points in its path of travel.

3. A toy comprising a body, members pivotally connected thereto, wheels mounted within the body, arms projecting from the members and spaced apart slightly less than the diameter of said wheels, and a pin adapted for adjustable connection with the wheels and serving for respective and opposite contact with the arms at predemined points in its path of travel.

822,199. METALLIC SHINGLE. CONRAD FICHTER, Syracuse, N. Y. Filed May 1, 1905. Serial No. 258,151.



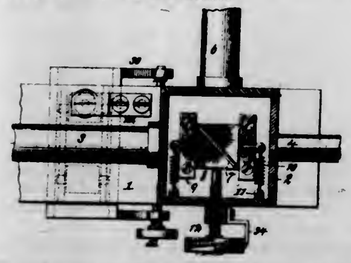
Claim.—A sheathing for shingled roofs consisting of sheet-metal plates formed with their top margins in the same plane with the bodies of the plates, the bottom margins formed with downwardly-sloping portions terminating in flanges at right angles to the plane of the bodies of the plates and disposed to bear on the top margins of the subjacent plates and remote from the butts of the underlying shingles, and the side margins of the plates formed with concavo-convex overlapping ridges terminating beneath the top margin and above the bottom margin substantially as described and shown.

822,200. COLLAR-BUTTON. CATHERINE C. FIGGATT, New York, N. Y. Filed Feb. 9, 1905. Serial No. 244,952.



Claim.—A button consisting of a stem, a head, a base and a disk mounted between the base and the head, the said base and disk each being formed with a semicircular-shaped portion on one side of the stem and a semi-elliptical-shaped portion on the other side of the stem, the semicircular portion of the disk being arranged on the opposite side of the stem from the semicircular portion of the base, and all of the parts of the button being integral, substantially as set forth.

822,201. RANGE-FINDER. BRADLEY A. FISKE, U. S. Navy. Filed Sept. 27, 1905. Serial No. 280,285.



Claim.—1. Two telescopes disposed at right angles and reflectors associated therewith constructed to project two diverging

groups of rays from a distant object to the same focal plane, and means for displacing in said plane the image due to one telescope with respect to the image due to the other telescope.

2. Two telescopes disposed at right angles and reflectors associated therewith constructed to project two diverging groups of rays from a distant object to the same focal plane, and means for moving one of said reflectors and thereby displacing in said plane the image due to one telescope with respect to the image due to the other telescope.

3. Means for producing two partial and separated images of a distant object, reflectors constructed to reflect said images to the same focal plane, and means for bodily moving one of said reflectors to bring one of said partial images into alinement with the other.

4. A support, two telescopes relatively at right angles, a common eyepiece for both of said telescopes, the said telescopes and eyepiece having a common focal plane, and means for displacing on said plane the image formed by one of said telescopes with respect to the image formed by the other telescope.

5. Two telescopes disposed at an angle in the same plane, and having lenses of the same focal length, reflectors associated with said telescopes and constructed to reflect the two partial images of a distant object projected by said telescopes to the same focal plane, and means for displacing in said plane one of said partial images and bringing said image into alinement with the other partial image and thereby forming a complete image.

6. A support, and, located thereon, a telescope, an inclined reflector fixed at a distance from said telescope and in the line of sight thereof, an eyepiece in line with said telescope, an inclined reflector 1 between said telescope and eyepiece 2 parallel to said first-named reflector 3 disposed with reference to the central axis of said telescope 4, and a second telescope 1 at right angles to and 2 having its central axis in the same plane as that of said first telescope; the said eyepiece and telescopes having a common focal plane.

7. In a range-finder, a supporting-bar whereon is established an arbitrary base-line, parallel reflectors on said bar at opposite ends of said base-line, an eyepiece, means for projecting the image of a distant object received by one reflector to the focal plane of said eyepiece, means for projecting another image of said object to the second reflector whereby said image is reflected to the same focal plane, and means for displacing one image until it is alined with the other image.

8. In a range-finder, a supporting-bar, a reflector at one end thereof, a chamber at the other end thereof, a telescope secured in one wall of said chamber and disposed parallel to said bar, an eyepiece secured in the opposite wall of said chamber, a telescope secured in another wall of said chamber and at right angles to said first telescope, a reflector in said chamber located at one side of the plane including the axes of said telescopes and eyepiece, and means for moving said last-named reflector in a path at right angles to the axis of said first-named telescope.

9. In a range-finder, a base, optical members, a bar carrying said members, a central pivot-support for said bar fixed on said base, and end supports for said bar movable on said base; the said supports having rectilinear upper edges disposed in a line parallel to the longitudinal axis of said bar, and the said bar having bearings receiving said edges.

10. In a range-finder comprising an elongated bar and two telescopes carried by said bar, one of said telescopes being parallel to and the other at right angles to said bar, means for supporting and equilibrating said bar on an axis parallel to the axis of said first-named telescope.

11. In a range-finder, a base, optical members, a bar carrying said members and means for supporting said bar on said base; the said supporting means being constructed and arranged to permit said bar to be oscillated on a longitudinal axis independently of said base.

12. In a range-finder, a base, optical members, a bar carrying said members and having openings, supports extending upward from said base and passing through said openings and means on said bar for suspending the same on the upper extremities of said supports.

13. In a range-finder, a base, optical members, a bar carrying said members and having openings, supports extending upward from said base and passing through said openings, means on said bar for suspending the same on the upper extremities of said supports and means for moving said bar in azimuth around one of said supports as a pivot.

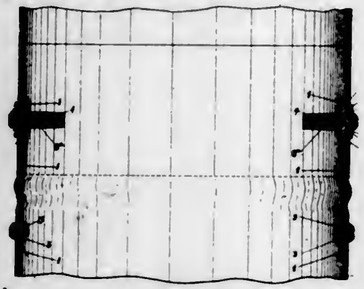
14. In combination with and carrying the optical members of a range-finder, a bar and a support having a rectilinear upper edge, on which edge said bar is equilibrated.

15. In a range-finder, optical members, a bar, and a purality of supports each having a rectilinear upper edge and the said edges being in line; the said bar carrying said optical members and itself carried by and equilibrated on said support edges.

16. In a range-finder, optical members, a bar, a plurality of supports each having a rectilinear upper edge and the said edges being in line; the said bar carrying said optical members and itself carried by and equilibrated on said support edges, and means for moving said bar in azimuth around one of said supports as a pivot.

17. In a range-finder, a bar having a longitudinal groove, optical members carried on said bar, a loose sleeve having at its upper edge a knife-edge constructed to fit in said groove and a rod carrying said sleeve.

822,202. **STOVEPIPE-COUPLING.** ALVERNIS G. FLAGG, Richmond, Ind., assignor of one-fourth to George H. Kramer, Richmond, Ind. Filed Oct. 20, 1905. Serial No. 283,613.



Claim.—1. A stovepipe-coupling comprising in combination with two telescoping pipe-sections, a flat spring member secured at one end to one of the pipe-sections and having a square aperture therethrough, a barrel adapted to rest in said square aperture, a screw threaded into said barrel and adapted to pass through registering apertures therefor formed through the overlapping ends of the pipe-sections, a washer adapted to surround the stem of the screw outside the pipe-sections, and so formed as to permit its removal without removing the screw, all substantially as set forth.

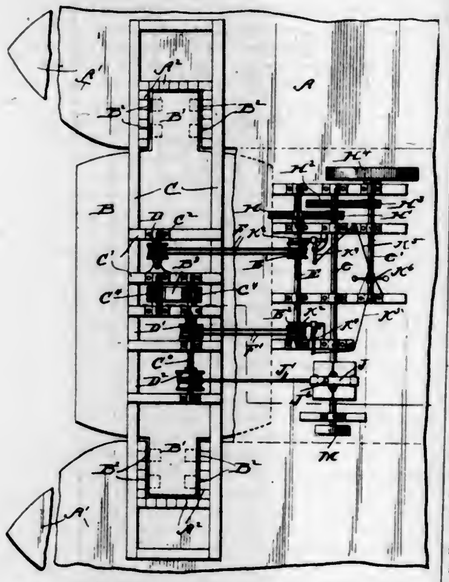
2. In combination with two sections of stovepipe telescoping together in the usual manner and having registering holes therethrough in their overlapping portions, a flat spring secured to one of the sections and extending inside the pipe over the other section, a barrel carried by said spring, a screw-insertible in said barrel with its head adapted to pass through said holes in the pipe-sections, a washer carried by said screw outside the pipe-sections and being of larger diameter than said holes in the pipe-sections, and being so formed as to permit its removal without removing said screw, all substantially as described and for the purposes set forth.

3. In combination with two sections of stovepipe joined together in the usual manner with apertures formed therethrough in their overlapping portions, a flat spring secured on the inside of one of the pipe-sections and having a square aperture therethrough, a barrel seated in said square aperture and having a threaded aperture extending thereinto, a screw adapted to run in said threaded aperture with its head adapted to pass through said apertures in the pipe-section, a flat shank formed in a portion of the length of said screw, a washer having a slot adapted to pass over said flat shank of the screw and of a size which will not permit it to pass through said apertures in the pipe-sections and located on the screw outside the pipe-sections, whereby as the screw is tightened the pipe-sections will be clamped together at that point, all substantially as and for the purposes set forth.

822,203. **WAVE-MOTOR.** JAMES A. J. FLEMING, Newport, Oreg. Filed July 7, 1905. Serial No. 268,627.

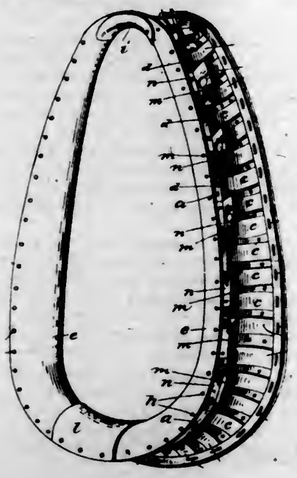
Claim.—1. A wave-motor comprising a float, a double rack-pinion, parallel shafts, pinions on the shafts adapted to mesh with said rack, a drum on each of said shafts, a shaft parallel to the pinion-carrying shaft, drums loose thereon, ratchets adjacent the drums, pawls on the drums engaging the ratchets during rotation in one direction and slipping during reverse rotation, and cables running over the drums on the pinion-carrying shafts and the drums on the ratchet-carrying shaft

2. A wave-motor comprising a float, a rack-bar carried by the float, shafts adjacent the rack-bar, pinions thereon meshing with the bar, drums on the shafts, a drive-shaft, means for transmitting rotation of two of the drums on the first-mentioned shafts to the drive-shaft, a tower, a pulley, a cable running over said pulley and one of the drums on one of the first-mentioned shafts, a weight suspended by the free end of the cable adapted to rise and fall with the float, and means for transmitting downward movement of the weight into rotary motion in the drive-shaft.



3. The combination with a float and a drive-shaft rotated by rise of said float, of a weight, a drum rotated by rise and fall of the float, a cable running over the drum and connected to the weight, the weight rising and falling synchronously with the drum, said weight having a threaded aperture, a vertical, spirally-threaded shaft working in the threaded aperture of the weight and rotated by rise fall of the weight, and means for connecting the said shaft to the drive-shaft during the fall of the weight, as and for the purpose set forth.

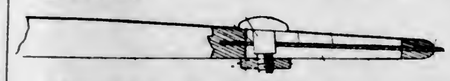
822,204. **HORSE-COLLAR.** HERMAN A. FONTAINE, Auburn, N. Y., assignor of one-half to Dan W. Kellogg, Auburn, N. Y. Filed Sept. 19, 1905. Serial No. 279,171.



Claim.—1. A hames-rest for a horse-collar consisting of a plate on which the hames may bear, a right-angular flanged base provided with perforations for attachment to the collar, and triangular side flanges the bases of which are adapted to bear loosely on a part of the collar.

2. A hames-rest for a horse-collar having a flat plate or part on which the hames may bear, a right-angular flanged base provided with perforations, and a slot, and triangular lateral flanges the bases of which are adapted to bear loosely on the collar, combined with a collar-pad spring a part of which is adapted to be passed through the said slot in the base, and means for securing the base to the spring-strip.

822,205. **STONE-CUTTER'S CHISEL.** JOHN W. FOX, East Huntingdon township, Westmoreland county, Pa. Filed Mar. 1, 1906. Serial No. 303,699.



Claim.—1. A chisel, comprising a handle which is beveled and split at its end and formed with a slot, a bit fitted in the split end, said bit having an opening a threaded clamp having a stem which passes through the slot in the handle and the opening in the bit and having a head at an angle, the angle of the head corresponding to the adjacent beveled side of the handle, and a nut engaging the threaded end of the clamp and bearing on the opposite beveled side of the handle, to clamp the bit in the split end of said handle, whereby when a blow is imparted to the chisel the bit will be more rigidly held to the handle.

2. A chisel, comprising a handle which is beveled and split at its end and formed with a slot, a bit fitted in the split end, said bit having an opening, clamping means passing through the slot in the handle and the opening in the bit and including means fitting the beveled sides of the handle, whereby when a blow is imparted to the chisel the bit will be more rigidly held to the handle.

3. A chisel, comprising a beveled handle which is split at its end and formed with a slot, a bit fitting in the split end and formed with a square opening, a clamp having a square portion and a head at an angle to said square portion, said head impinging one beveled side of the handle and the square portion passing through the slot and the square opening in the bit, and a nut screwed on the clamp and impinging the opposite beveled surface of the handle, a blow on the chisel causing the bolt to clamp the bit and handle together.

4. A chisel, comprising a beveled handle split at one end and formed with a slot, a bit having an opening with one wall straight, a clamp having a flat surface extending through the slot in the handle and the opening in the bit on a line at a right angle to one of the beveled surfaces of the handle and including a head to engage one beveled surface, and adjusting means which fits against the opposite beveled surface of the handle to bind the bit in the split end, the flat surface of the clamp coöperating with the straight wall of the opening in the bit to prevent said clamp turning.

5. A chisel comprising a handle which is beveled and split at its end and formed with a slot, flanges formed at the edges of the split to embrace a bit, a bit fitted in the split end of the handle and formed with a clamp-receiving opening, a clamp passing through the slot in the handle and the opening in the bit and engaging the opposite sides of the beveled handle.

822,206. **SHOE-FASTENER.** HANS FREDRICKSON, Portland, Oreg. Filed Jan. 9, 1905. Serial No. 240,243.

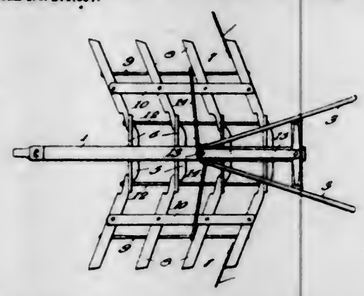


Claim.—1. The combination with a housing cut out on opposite sides, of a toothed catch working through the said housing, a curved locking-lever projecting through one of the cut-out portions of the housing and pivoted within the housing, adjacent its inner end, a spring secured at one end to the housing and at the opposite end to the said locking-lever, and a shoulder formed upon said lever and adapted to engage the teeth of the catch.

2. A shoe-fastener comprising a plate, a toothed shank carried by the plate, a second plate, a housing carried by the plate and cut out upon opposite sides, a curved locking-lever having trunnions formed at its inner end, said trunnions being pivoted respectively in the top of the housing and in the plate carrying the housing, the outer end

portion of the locking-lever engaging an outer side of the housing and being roughened upon its outer face and cut away on its lower edge adjacent said roughened portion, thereby forming a shoulder, and a spring fastened at one end to the housing and carried around the pivotal point of the lever and secured at its other end to the lever, adjacent the cut-out portion as and for the purpose set forth.

822,207. **DRAG.** ANDREW J. HARPER, Dalton, Ky., assignor of one-half to Leander F. Shelton, Sr., Providence, Ky. Filed Sept. 22, 1905. Serial No. 279,697.



Claim.—1. In a device of the character described, the combination of a framework, a series of transversely-arranged scraping-blades secured thereto, wings pivoted on each side thereof and formed with obliquely-arranged scraping-blades, and means for adjusting the slope of the wings.

2. In a device of the character described, the combination of a framework, a series of transversely-arranged scraping-blades secured thereto, wings pivotally mounted on each side thereof and formed with obliquely-arranged scraping-blades, said wings being reversible to throw the dirt either away from or toward the center of the device, and means for adjusting the slope of the wings.

3. In a device of the character described, the combination of a framework, a series of transversely-arranged scraping-blades secured thereto, wings pivotally mounted on each side thereof and formed with obliquely-arranged scraping-blades, one of the scraping-blades on each wing being provided with an adjustable extension, and means for adjusting the slope of the wings.

4. In a device of the character described, the combination of a framework, a series of transversely-arranged scraping-blades secured thereto, transverse members located adjacent the scraping-blades and projecting beyond the ends thereof, wings formed with a series of obliquely-arranged scraping-blades having one of their ends pivotally attached to the projecting portions of the before-mentioned transverse members, and means for adjusting the slope of the wings.

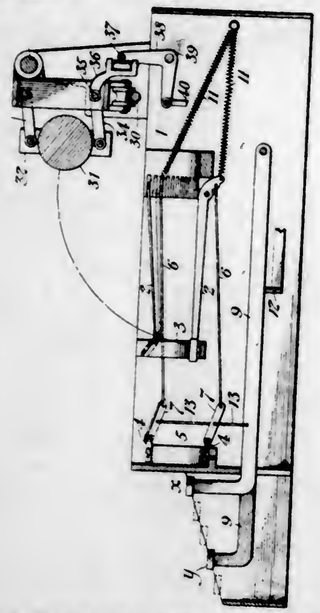
5. In a device of the character described, the combination of a beam having notches on one side thereof, a series of transversely-arranged scraping-blades secured in said notches, wings pivotally mounted on each side thereof and formed with obliquely-arranged scraping-blades, and means for adjusting the slope of the wings.

6. In a device of the character described, the combination of a beam having a series of notches on one side, a series of transversely-arranged scraping-blades secured in said notches, transverse members adjacent said scraping-blades and projecting beyond the ends thereof, wings formed with a series of obliquely-arranged scraping-blades having one of their ends pivotally attached to the projecting portion of the before-mentioned transverse members, and means for adjusting the slope of the wings.

7. In a device of the character described, the combination of a framework, an upright member upon said framework, transversely-arranged scraping-blades secured to the framework, wings pivotally attached on each side thereof and formed with a corresponding series of scraping-blades, and members adjustably connecting the wings to the before-mentioned upright member to regulate the slope of same.

822,208. **WRITING-MACHINE.** EDWARD B. HESS, New York, N. Y., assignor to Royal Typewriter Company, Hoboken, N. J., a Corporation of New Jersey. Original application filed Aug. 27, 1901, Serial No. 73,460. Divided and this application filed Aug. 1, 1905. Serial No. 272,171.

Claim.—1. In a writing-machine, a type-bar-actuating connection capable of flexure intermediate its ends and arranged on opposite sides of the point of flexure so that, when flexed, it has the action of a reverse or accelerating toggle throughout its flexing movement, a type-bar and a fixed part to which, respectively, the ends of such connection are connected, said connection extending in a straight line from the point of toggle flexure to the point of connection to the type-bar, and means acting upon said connection intermediate its ends to flex it and pull the type-bar to the printing-point with an increasing velocity.



2. In a writing-machine, a connection capable of flexure intermediate its ends and arranged, when flexed, to act similar to a reverse or accelerating toggle, a part to be actuated connected to one end of such connection and a fixed point to which the other end is attached, combined with operating means located below such connection and connected therewith intermediate the ends of the latter.

3. In a writing-machine, a connection capable of flexure intermediate its ends and arranged, when flexed, to act similar to a reverse or accelerating toggle, a part to be actuated connected to one end of such connection and a fixed point to which the other end is attached, combined with a key-lever arranged below such connection and operatively connected to the latter intermediate its ends.

4. In a writing-machine, a flexing connection composed of two links united by a hinge-joint and arranged, when flexed at such joint, to act similar to a reverse or accelerating toggle throughout its entire flexing movement, a part to be actuated connected to one end of such connection and a fixed point to which the other end is attached, combined with a key-lever arranged below the flexing connection and operatively connected thereto intermediate the ends of the latter.

5. In a writing-machine, a flexing connection composed of two links united by a hinge-joint and arranged, when flexed at such joint, to act similar to a reverse or accelerating toggle throughout its entire flexing movement, a part to be actuated connected to one end of such connection and a fixed point to which the other end is attached, combined with operating means applied to the flexing connection intermediate its ends.

6. In a front-strike writing-machine, the combination of a platen, a type-bar support in a plane below the platen, type-bars pivoted in the support and normally lying toward the front of the machine, a flexing type-bar-actuating connection for each type-bar attached at its rear end to its type-bar and at the front to a fixed part of the frame and acting when flexed similar to a reverse or accelerating toggle, and means for flexing the connection by power applied thereto intermediate its ends and in a line intersecting a straight line extending between the front and rear ends of the flexing connection.

7. In a front-strike writing-machine, the combination of a platen, a type-bar support in a plane below the platen, type-bars pivoted in the support and normally lying toward the front of the machine, a flexing type-bar-actuating connection for each type-bar attached at its rear end to its type-bar and at the front to a fixed part of the frame and acting when flexed similar to a reverse or accelerating toggle, and means for flexing the connection by power applied thereto from below it and in a line intersecting a straight line extending between the front and rear ends of the flexing connection.

8. In a front-strike writing-machine, the combination of a platen, a type-bar support in a plane below the platen, type-bars pivoted in the support and normally lying toward the front of the machine, a flexing type-bar-actuating connection for each type-bar attached at its rear end to its type-bar and at the front to a fixed part of the frame and acting when flexed similar to a reverse or accelerating toggle, a key-lever and means which, on depression of the key-lever, acts upon said connection, to flex it, in a line intersecting a straight line extending between the ends of such connection.

9. In a front-strike type-writing machine, the combination of a pivoted type-bar arranged below the platen and normally lying toward the front of the machine; a flexing connection disposed below said type-bar, one end being connected to the type-bar, and the opposite end secured to a point arranged in front of the type-bar pivot, said opposite end being arranged to swing about said fixed point with a movement entirely pivotal when said connection is flexed; and means applied upon the flexing connection intermediate its ends for flexing it to actuate the type-bar, the distance between the point of flexure and connection with the type-bar being greater than the distance between the point of flexure and the fixed point.

10. In a front-strike type-writing machine, the combination of a pivoted type-bar arranged below the platen and normally lying toward the front of the machine; a flexing connection disposed below said type-bar, one end being connected to the type-bar, and the opposite end secured to a point arranged in front of the type-bar pivot, said opposite end being arranged to swing about said fixed point with a movement entirely pivotal when said connection is flexed; and means applied upon said flexing connection intermediate its ends for flexing it to shorten the distance between the ends of the flexing connection and to actuate the type-bar by drawing the part of the bar connected with the flexing connection toward the fixed point the distance between the point of flexure and connection with the type-bar being greater than the distance between the point of flexure and the fixed point.

11. In a front-strike type-writing machine, the combination of a pivoted type-bar, arranged below the platen, and normally lying toward the front of the machine; a flexing connection comprising two links connected at the point of flexure and disposed below the said type-bar, one end of said connection being connected to the type-bar and the opposite end secured to a fixed point arranged in front of the type-bar pivot, said opposite end being arranged to swing about said fixed point with a movement entirely pivotal when said connection is flexed; the length of the link connected with the fixed point being shorter than the link connected to the type-bar; and means acting upon said flexing connection intermediate its ends for actuating the type-bar.

12. In a front-strike type-writing machine, the combination of a pivoted type-bar, arranged below the platen, and normally lying toward the front of the machine; a flexing connection comprising two links connected at the point of flexure and disposed below the said type-bar, one end of said connection being connected to the type-bar and the opposite end secured to a fixed point arranged in front of the type-bar pivot, said opposite end being arranged to swing about said fixed point with a movement entirely pivotal when said connection is flexed; and means applied upon said flexing connection intermediate its ends for flexing it to shorten the distance between the ends of the flexing connection and to actuate the type-bar by drawing the part of the bar connecting the flexing connection toward the fixed point, the distance between the point of flexure and connection with the type-bar being greater than the distance between the point of flexure and the fixed point.

13. In a front-strike writing-machine, the combination of a platen, a type-bar segment, type-bars pivoted in the segment and normally lying toward the front of the machine, flexing connections extending fore and aft of the machine between the type-bars and fixed points, key-levers acting upon such flexing connections intermediate their ends to flex them and pull the type-bars to the printing-point with an increasing velocity, and means for changing the relation of the platen and type-bar segment.

14. In a front-stroke writing-machine, the combination of platen; a segmental type-bar support in a plane below the platen; a type-bar pivoted therein and normally lying toward the front of the machine; a flexing type-bar-actuating connection having its rear end connected with the type-bar, extending forward thereunder, and having its front end attached to a fixed point in front of the transverse plane in which the head of the type-bar normally lies; and means applied to the flexing connection between the type-bar and fixed point to flex said connection and pull the type-bar to the printing-point with an increasing velocity.

15. In a front-stroke writing-machine, the combination of the entire series of pivoted type-bars; flexing actuating connections, one for each type-bar, each acting throughout its movement similar to a reverse or accelerating toggle, and having one end operatively connected to its type-bar and the opposite end attached to a fixed point; finger-pieces, one for each type-bar, and devices which, on the depression of the finger-pieces, act upon the respective flexing connections intermediate their ends to pull the type-bars to the printing-point with an increasing velocity.

16. In a writing-machine, the combination of the entire series of pivoted type-bars; actuating connections, one for each type-bar, each comprising two links united at their adjacent ends by a hinge-joint, the rear end of one link being operatively connected with its type-bar, and the front end of the other link with a fixed point, each link being so disposed that the hinge-joint is in a plane below the horizontal plane in which the fixed point lies; finger-pieces, and devices actuated thereby to further depress the hinge-joints and thereby throw the type-bars to the printing-point with an increasing velocity.

17. In a writing-machine, the combination of a pivoted type-bar; its actuating connection comprising two links united at their adjacent ends by a hinge-joint, the rear end of one link being operatively connected with the type-bar, and the front end of the other link with a fixed point in front of and substantially horizontally opposite the point of connection with the type-bar, the links being so disposed that the hinge-joint is in a plane below a substantially horizontal line extending between the fixed point and the point of connection with the type-bar; a finger-piece, and a device actuated by the finger-piece and applied to the flexing connection intermediate its ends and in rear of the fixed point to further depress the hinge-joint and thereby throw the type-bar to the printing-point with slight initial resistance and increasing velocity.

18. In a front-stroke writing-machine, the combination of a platen, a type-bar segment in a plane below the platen, type-bars pivoted therein and normally lying toward the front of the machine, a series of flexing connections, one for each type-bar, extending from their respective type-bars forward to fixed points in front of the transverse planes in which the heads of the type-bars normally lie and having their front ends arranged in a transverse curved line, and means acting upon the flexing connection between their front ends and the transverse plane in which the heads of the type-bars normally lie to depress or flex the connection and thereby pull the type-bars to the printing-point with an increasing velocity.

19. In a front-stroke writing-machine, the combination of a platen, a type-bar segment in a plane below the platen, type-bars pivoted therein and normally lying toward the front of the machine, a series of flexing connections, one for each type-bar, extending from their respective type-bars forward to fixed points in front of the transverse plane in which the heads of the type-bars normally lie and having their front ends arranged in a transverse curved line, and key-levers, one for each flexing connection, pivoted at their rear ends, extending forward under the respective flexing connections and connected therewith at a point between the front ends of the latter and the transverse plane in which the heads of the type-bars normally lie, whereby when the key-levers are depressed, the corresponding type-bars are thrown to the printing-point with an increasing velocity.

20. In a front-stroke writing-machine, the combination of a platen, a segmental type-bar support in a plane below the platen, type-bars pivoted therein and normally lying toward the front of the machine, flexing connections, one for each type-bar, connected at their rear ends to their respective type-bars, and extending forward thereunder to fixed points in front of the transverse plane in which the heads of the type-bars normally lie, key-levers arranged under the flexing connections and respectively connected therewith intermediate their ends and at substantially uniform distances in rear of said fixed points, whereby when the key-levers are depressed their respective flexing connections are actuated to pull the type-bars to the printing-point with an increasing velocity.

21. In a front-stroke writing-machine, the combination of a platen, a segmental type-bar support in a plane below the platen, type-bars pivoted therein and normally lying toward the front of the machine, flexing connections, one for each type-bar, comprising two links united at their adjacent ends by a hinge-joint, connected at the rear with their respective type-bars and extending forward thereunder to fixed points arranged in a substantially uniform trans-

verse curved line in front of the transverse plane in which the heads of the type-bars normally lie, the distance between such fixed points and hinged joints being substantially uniform, key-levers arranged below the flexing connections, and connections between the key-levers and flexing connections applied to the latter intermediate their ends and in rear of the fixed points, thereby on the depression of a key-lever the corresponding flexing connection is flexed and the type-bar thrown to the printing-point with an increasing velocity.

22. In a front-stroke writing-machine, the combination of a platen, a segmental type-bar support in a plane below the platen, a series of type-bars pivoted therein and normally lying toward the front of the machine, a series of flexing connections, one for each type-bar, connected at their rear ends to their type-bars and extending forward to fixed points arranged in front of the transverse plane in which the heads of the type-bars normally lie and substantially horizontally opposite or in front of the type-bar segment, finger-pieces and devices, actuated by the finger-pieces, connected with the flexing connections in rear of the fixed points to flex such connections and throw the type-bars to the printing-point with an increasing velocity, the distance between the type-bars and the points of flexure being greater than that between the fixed points and points of flexure.

23. In a front-stroke writing-machine, the combination of a platen, a segmental type-bar support in a plane below the platen, a series of type-bars pivoted therein and normally lying toward the front of the machine, a series of fixed points arranged in front of the type-bar support and in a transverse curved line conforming generally to the curve of the type-bar support but of greater radius, flexing connections extending from the type-bars to such fixed points, and means acting upon the flexing connections intermediate their ends and in rear of the fixed points to flex them and pull the type-bars to the printing-point with an increasing velocity.

24. In a front-stroke writing-machine, the combination of a platen, a type-bar segment in a plane below the platen, type-bars pivoted therein and normally lying toward the front of the machine, flexing connections, one for each type-bar, each acting similar to an accelerating-toggle and composed of two links extending from front to rear of the machine below the type-bars and connected at its rear to the type-bar and at its front to a fixed part of the machine, key-levers, and a connection between each key-lever and the front link of its corresponding flexing connection intermediate the ends of the latter.

25. In a front-stroke writing-machine, the combination of a platen, a type-bar segment in a plane below the platen, type-bars pivoted therein and normally lying toward the front of the machine, flexing connections, one for each type-bar, each acting similar to an accelerating-toggle and composed of a short front link hinged at its front end to a fixed part of the frame, a longer rear link having its front end connected to the rear of the front link and its rear end attached to its type-bar, key-levers and a connection between each key-lever and the front link, of its corresponding flexing connection, intermediate the ends of the latter.

26. In a front-stroke writing-machine, the combination of a platen, a type-bar segment in a plane below the platen, type-bars pivoted therein and normally lying toward the front of the machine, flexing connections, one for each type-bar, each comprising a short front link and a longer rear link, the front link being attached to a fixed part of the frame and inclined downwardly therefrom and the rear link being attached to its type-bar, and means applied intermediate the ends of the front link for flexing such connection and thereby throwing the type-bars to the printing-point with an increasing velocity.

27. In a writing-machine, a series of pivoted type-bars normally lying in a substantially horizontal position and adapted to be thrown to a substantially vertical printing position, and a series of accelerating-toggle connections for actuating them.

28. A writing-machine comprising a series of accelerating-toggle type-bar-actuating connections arranged in different longitudinal vertical, and different horizontal, planes, a series of type-bars moving with an increasing velocity, and means for actuating the toggle connections to throw the type-bars to the printing-point.

29. In a writing-machine, a series of downwardly-flexing accelerating-toggles, a series of upwardly-moving accelerating type-bars operatively connected thereto, and means applied directly to the toggles intermediate their ends for actuating them to throw the type-bars upwardly to the printing-point.

30. In a type-bar writing-machine, the series of pivoted type-bars, combined with a corresponding series of accelerating-toggle connections for pulling the bars to the printing-point with increasing velocity.

822,209. PROCESS OF MAKING ILLUMINATED WALL-PAPERS AND THE LIKE. ALBERT C. KNIGHT, Newark, N. J., assignor to Gledhill Wall Paper Co., New York, N. Y., a Corporation of New York. Filed Sept. 22, 1905. Serial No. 279,688.

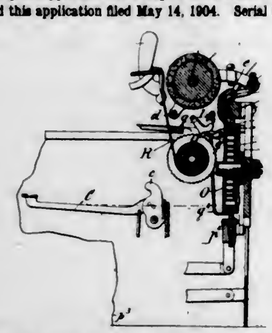
Claim.—1. The herein-described process for producing illuminated wall-paper hangings and the like, consisting in printing upon the paper the desired designs in the darkest and richest colors desired and then producing the high lights and various blends by washing out and rubbing together the colors through suitable stencils.

2. The herein-described process for producing illuminated wall-paper hangings and the like, consisting in printing upon said paper a suitable background; then printing upon this background the designs in the darkest and richest colors desired; and finally producing the high lights and various blends by washing out and rubbing together the colors through suitable stencils

3. The herein-described process for producing illuminated wall-paper hangings and the like, consisting in printing upon said paper a suitable background; then printing upon this background the designs in the darkest and richest colors desired, producing the high lights and various blends by washing out and rubbing together the colors through suitable stencils; and finally printing an outline binding the designs.

4. The herein-described process for producing illuminated wall-paper hangings and the like, consisting in coating the unprinted paper with a mixture of starch, water and linseed-oil stained with the colors desired and allowing this coating to dry forming a background; then printing upon the paper thus prepared the desired designs in the darkest and richest shades of color desired using the sized-pulp colors as for ordinary printing and to which linseed-oil has been added; producing the high lights and various blends by washing out and rubbing together the colors through suitable stencils; and finally printing an outline binding the designs.

822,210. LINE-SPACING AND CARRIAGE-RELEASING MECHANISM FOR TYPE-WRITING MACHINES. EMMIT G. LATTA, Friendship, N. Y., assignor of one-half to Harvey A. Moyer, Syracuse, N. Y. Original application filed Aug. 4, 1903, Serial No. 168,190. Divided and this application filed May 14, 1904. Serial No. 208,011.



Claim.—1. In a type-writing machine, the combination of a carriage, an escapement therefor, a rotatable platen and platen-shaft on said carriage, a toothed wheel at one end of said platen, a lever adjacent to said toothed wheel having an upright operating-arm located in front of the platen-shaft, and a pivot extension projecting rearwardly under the platen-shaft and pivoted to the carriage, a pawl on said lever acting to engage said toothed wheel and turn the platen when said operating-arm is moved, and a carriage-releasing device connected to the rear portion of the pivot extension of said lever, substantially as set forth.

2. In a type-writing machine, the combination of a rotatable platen, a laterally-movable carriage for the same, a pair of finger-levers pivoted to the carriage to swing in line with the carriage movement, a connecting-rod arranged below the platen by which the levers are caused to move together, and connections between one of the levers and the platen whereby the movement of either lever in the direction of the carriage travel acts to both rotate the platen and set the carriage back for a new line, substantially as set forth.

3. In a type-writing machine, the combination of a rotatable platen, and a platen-shaft, a supporting-carriage for the same, a pair of upright finger-levers at the ends of the platen and in front of the platen-shaft, said levers having pivotal extensions arranged under the platen-shaft and having arms in rear of the same, a rod connecting said arms, and connections between one of the levers and the platen whereby the latter is rotated by the movement of either of the levers, substantially as set forth.

4. In a type-writing machine, the combination of a rotatable platen, and a platen-shaft, a supporting-carriage for the same, a pair of levers pivoted to the carriage at the ends of the platen and having pendent arms in rear of the platen-shaft, a rod arranged beneath the platen and connecting said arms whereby the movement of either lever is transmitted to the other lever, and connections between one of said levers and the platen for turning the latter, substantially as set forth.

5. In a type-writing machine, the combination of a rotatable platen, and a carriage for the same, a step-by-step escapement for the carriage, a lever at each end of the platen for turning the latter, a connecting-rod between the levers, and a connection between the rod and the escapement acting to release the carriage when either lever is turned, substantially as set forth.

6. In a type-writing machine, the combination of a rotatable platen, a carriage for the same, a step-by-step movement for the carriage, a lever at each end of the platen for turning the latter, and a connecting-rod between the levers which acts to release the carriage-escapement upon the movement of either of the levers before the platen is turned, substantially as set forth.

7. In a type-writing machine, the combination of a rotatable platen, a carriage for the same, a step-by-step escapement for the carriage, a lever at each end of the carriage for turning the platen, and a rod connecting the levers and acting to release the carriage-escapement with a limited movement of either lever prior to the movement of the platen, a further movement of either one of the levers acting to turn the platen, substantially as set forth.

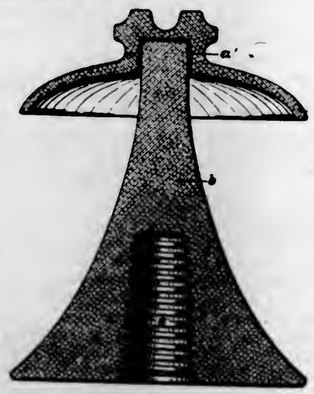
8. The combination of a rotatable platen, a supporting-carriage therefor which is shifted vertically to change the position of its printing-point, levers at opposite ends of the carriage for turning the platen, a rod connecting said levers, a carriage-escapement, and a release-lever therefor which is actuated by said connecting-rod in the different positions of the carriage, substantially as set forth.

9. The combination of a rotatable platen, a supporting-carriage therefor, levers at opposite ends of the carriage for turning the platen, a rod connecting said levers, a carriage-escapement, and a release-lever therefor which is fulcrumed in fixed relation adjacent to said connecting-bar and is actuated thereby, substantially as set forth.

10. The combination of a rotatable platen, a supporting-carriage therefor, levers at opposite ends of the carriage for turning the platen, a rod connecting said levers, a carriage-escapement, a release-lever therefor, and a ribbon-feed lever both of which levers are actuated by said connecting-rod, substantially as set forth.

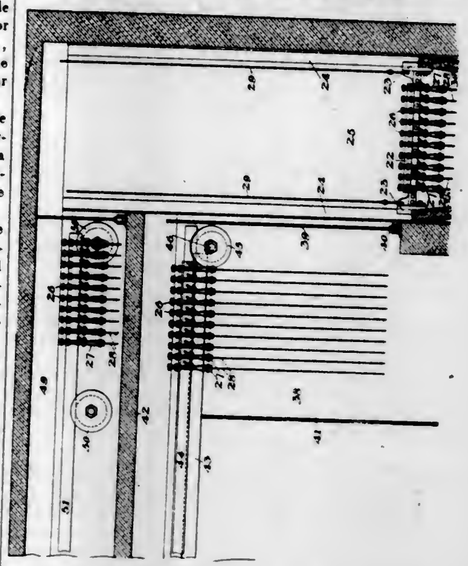
11. The combination of a rotatable platen, a supporting-carriage therefor, line-space levers at opposite ends of the carriage for turning the platen, a rod connecting said levers, a carriage-escapement, a release-lever therefor, and a ribbon-feed lever both of which levers are actuated by said connecting-rod, the parts being so arranged and adjusted that said line-space levers can be actuated to first release the carriage-escapement and thereafter actuate the ribbon-feed lever and turn the platen, substantially as set forth.

822,211. INSULATOR. FRED M. LOCKE, Victor, N. Y. Filed June 23, 1902. Serial No. 112,933.



Claim.—A bell-shape porcelain center piece gradually increasing in diameter from top to bottom and having a central threaded aperture extending upwardly from its lower face, the upper end of said center piece being substantially flat and parallel with its lower end face, and a porcelain cap resting upon the flat upper end of the center piece.

822,212. METHOD OF DRAWING SHEET-GLASS. JOHN H. LUBBERS, Allegheny, Pa., assignor to James A. Chambers, trustee, Pittsburg, Pa. Filed Jan. 12, 1903. Serial No. 138,650.



Claim.—1. The method of forming glass sheets consisting in simultaneously drawing a plurality of the sheets from a common bath of molten glass upwardly within an inclosed atmosphere common to all the sheets; substantially as described.

2. The method of drawing sheets, consisting in feeding glass into a separate pot or receptacle within a chamber, and simultaneously drawing a series of sheets upwardly within the inclosed atmosphere of the chamber; substantially as described.

3. The method of drawing glass sheets consisting in simultaneously drawing a series of sheets upwardly within a common drawing-chamber, and then passing said sheets through a gradually-decreasing temperature; substantially as described.

4. The method of forming glass sheets consisting in lowering a series of baits into a glass-bath, simultaneously raising the baits and drawing the series of sheets, simultaneously chilling each sheet at or near the point of drawing and drawing the sheets upwardly within an inclosed atmosphere common to all said sheets; substantially as described.

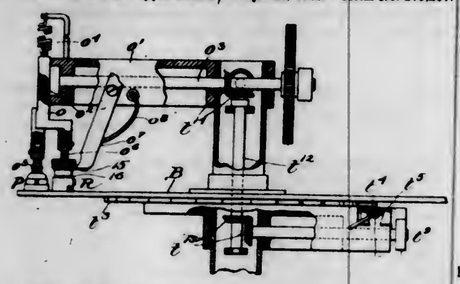
5. The method of forming glass sheets, which consists in simultaneously drawing from a pot a series of sheets into an inclosed atmosphere common to all the sheets, then discharging from the pot the impure portions of the remaining glass, recharging the pot, and then drawing another series of sheets; substantially as described.

6. The method of forming glass sheets, which consists in simultaneously drawing a series of sheets into an inclosed atmosphere common to all the sheets, suspending the sheets in adjacent parallel planes, and then carrying them flatwise through a leer; substantially as described.

7. The method of drawing glass sheets consisting in lowering a series of baits into a common molten bath and simultaneously drawing the baits upwardly within an inclosed atmosphere common to all the sheets, whereby the outer sheets protect the inner sheets from warping; substantially as described.

8. The method of forming glass sheets consisting in simultaneously drawing a series of sheets upwardly within an inclosed atmosphere common to all the sheets, whereby the outer sheets protect the inner sheets from warping; substantially as described.

822,213. **ASSEMBLING APPARATUS.** NORMAN MARSHALL, Newton, Mass. Original application filed Jan. 19, 1905, Serial No. 241,884. Divided and this application filed Sept. 20, 1905. Serial No. 279,287.



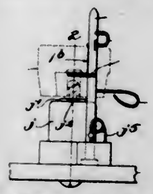
Claim.—1. An assembling apparatus comprising a rotary carrier, two series of work-carrying jigs thereon, two reciprocating plungers arranged to register with the two series of jigs, and mechanism for intermittently rotating the carrier.

2. An assembling apparatus comprising a rotary carrier, two series of jigs carried thereon, a reciprocating slide mounted above the table, two plungers on the slide, and mechanism for intermittently rotating the table.

3. A jig for an assembling apparatus provided with recesses for receiving the screw-lugs of a socket-shell cap, and with fingers for engaging the notches in the insulating-disk and holding them in register with the screw-lugs.

4. A jig for an assembling apparatus provided with recesses for receiving the screw-lugs of a socket-shell cap, radially-yielding fingers in line with said recesses for engaging the notches in the insulating-disk for the cap.

822,214. **JIG FOR ASSEMBLING APPARATUS.** NORMAN MARSHALL, Newton, Mass. Original application filed Jan. 19, 1905, Serial No. 241,884. Divided and this application filed Sept. 28, 1905. Serial No. 280,540.



Claim.—1. A work-supporting jig provided with a projection arranged to engage a recess in a socket-base, and devices for retaining the center terminal in position on the base.

2. A work-supporting jig provided with a support to fit the shell of a socket, a rod arranged to engage a groove of the socket-base and devices for retaining the center terminal in position on the base.

3. A work-supporting jig provided with a support to fit the shell of the socket, a rod arranged to engage a groove of the socket-base, and a spring-operated arm for engaging the center terminal and retaining it in the recess in the base.

4. A work-supporting jig provided with a support to fit the shell of the socket, a projection arranged to engage a recess in the socket-base and retain it in angular position, and an arm arranged to engage the center terminal and retain it in the recess in the base.

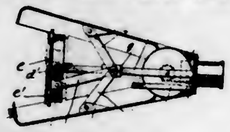
5. A work-supporting jig provided with a central support for entering the screw-shell, a pivoted rod arranged to enter a groove of the socket-base, a laterally-projecting arm carried by the rod and arranged to engage the center terminal and hold it on the socket-base.

6. A work-supporting jig provided with a central support for entering the socket-shell, an annular rib on the top of the support provided with a slot for the arm of the center terminal, a pivoted rod arranged to engage a groove of the socket-base, and a terminal-engaging arm carried by the rod.

7. A work-supporting jig provided with a central support to fit the socket-shell, a pivoted spring-operated rod arranged to enter a groove in the socket-base, and a laterally-projecting terminal-engaging arm on the rod.

8. A work-supporting jig provided with a central support to fit the socket-shell, a pivoted rod arranged to enter a groove in the socket-base, and a laterally-projecting spring-arm on the rod arranged to overlie the socket-base.

822,215. **OPERA-GLASS.** EMIL B. MEYROWITZ, New York, N. Y., assignor to The Meyrowitz Manufacturing Company, a Corporation of New Jersey. Filed Nov. 7, 1904. Serial No. 231,704.



Claim.—1. A folding opera-glass comprising a hinged casing having a support therein, a lens-frame within said casing and pivoted to said support, and link connections between said casing and frame for swinging said frame into operative position when said casing is opened.

2. A folding opera-glass comprising a hinged two-part casing, a lens-frame symmetrically pivoted between the halves thereof, and link connections between said casing and frame for moving the parts into operative relation when the casing is opened.

3. A folding opera-glass comprising a two-part casing, a support within said casing, a lens-frame pivoted to said support, and a link pivoted to said frame and slidably arranged on said support.

4. A folding opera-glass comprising a two-part casing, a support within said casing, a lens-frame pivoted to said support, a link pivoted to said frame and slidably arranged on said support, and connections to said casing for moving said link.

5. A folding opera-glass comprising a two-part casing, a support within said casing, a lens-frame pivoted to said support, a link pivoted to said frame and slidably arranged on said support, and connections for moving said link.

6. A folding opera-glass comprising a support, a lens-frame hinged thereto, a link slidably arranged on said support and operatively connected to move said lens-frame, and additional links connected to the outer casing and to said first-named link for moving the same.

7. A folding opera-glass comprising a support, a lens-frame hinged thereto and spring-pressed into a perpendicular or focusing relation, and a two-part casing having connections for moving said lens-frame to its said relation.

8. In a folding opera-glass, the combination of a support, two case members hinged to the support, a lens-carrying frame hinged to the support, and three links pivoted respectively to the frame and the case members and connected by a common pivot at their other ends.

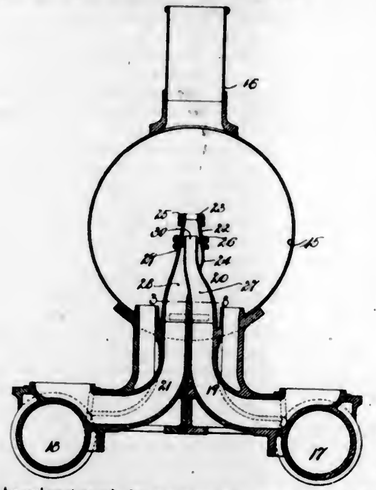
9. In a folding opera-glass, the combination with two hinged case members, of a lens-carrying plate pivoted within the same, a slide, connections between the slide and the plate and between the slide and the case members whereby motion of the case members will be communicated through the slide to the plate and motion of the plate will be communicated through the slide to the case members.

10. In a folding opera-glass, the combination of a front plate carrying eyepieces, a back plate carrying objectives, a bar connecting the two plates together and to which the back plate is hinged, a slide working on said bar, two case members hinged to the front plate, links connecting the case members with the slide and another link attached eccentrically to the back plate and to the slide, for the purpose set forth.

822,216. **EXHAUST-NOZZLE.** CHARLES S. MILLS, Norwood, Mass. Filed Aug. 12, 1905. Serial No. 273,856.

Claim.—1. An exhaust-nozzle for steam-engines, comprising in its construction three parts fastened together, viz, an intermediate pipe having a conical interior chamber, a base fast to the lower end thereof, and an outlet-tip fast to the upper end thereof, said base provided with two steam-passages therein, the outlets of said passages terminating adjacent to the lower end of said intermediate pipe and one of said outlets surrounding the other outlet, the areas of said outlets equal one to the other, the upper end of the inner outlet projecting upwardly into the interior of said intermediate pipe and having a conical periphery, said periphery parallel to the interior wall of said conical interior chamber.

2. An exhaust-nozzle for steam-engines, comprising in its construction three parts fastened together, viz, an intermediate pipe, a base fast to the lower end thereof, an outlet-tip fast to the upper end thereof, said base provided with two steam-passages therein, the outlets of said passages terminating adjacent to the lower end of said intermediate pipe one of said outlets surrounding the other outlet and means for detachably fastening said parts together.

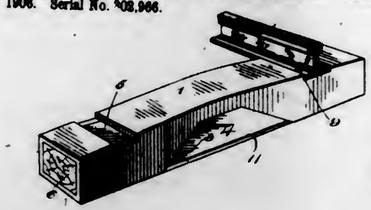


3. An exhaust-nozzle for steam-engines, comprising in its construction three parts fastened together, viz, an intermediate pipe provided with a plurality of passages therein, a base fast to the lower end of said intermediate pipe and an outlet-tip fast to the upper end thereof and provided with a plurality of outlet-passages therein, said base provided with a plurality of steam-passages therein, the outlets of said steam-passages terminating adjacent to the lower end of said intermediate pipe, said outlets arranged in pairs, one member of each of said pairs surrounding the other member of its respective pair.

4. An exhaust-nozzle for steam-engines, comprising in its construction three parts fastened together, viz, an intermediate pipe provided with a plurality of passages therein, a base fast to the lower end of said intermediate pipe and an outlet-tip fast to the upper end thereof and provided with a plurality of outlet-passages therein, said base provided with a plurality of steam-passages therein, the outlets of said steam-passages terminating adjacent to the lower end of said intermediate pipe, said outlets arranged in pairs one member of each of said pairs surrounding the other member of its respective pair, and the area of one outlet of each pair being equal to the area of the other outlet of the same pair.

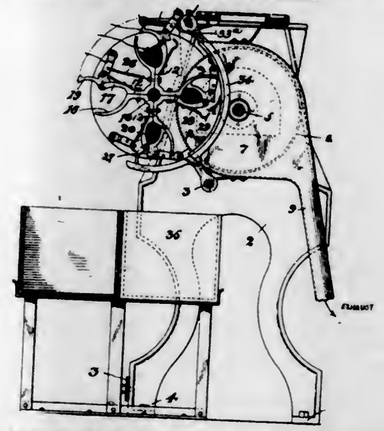
5. An exhaust-nozzle for steam-engines comprising in its construction three parts fastened together, viz, an intermediate pipe provided with a plurality of conical inner chambers, a base fast to the lower end thereof, an outlet-tip fast to the upper end thereof and provided with a plurality of outlet-passages therein, said base provided with a plurality of steam-passages therein the outlets of said steam-passages terminating adjacent to the lower end of said intermediate pipe, said outlets arranged in pairs, one member of each of said pairs surrounding the other member of its respective pair, the areas of the outlets of each of said pairs being equal one to the other, the upper end of the inner outlet of each pair projecting upwardly into one of said conical interior chambers respectively and having a conical periphery, said periphery parallel to the interior wall of its respective conical interior chamber.

822,217. **RAILROAD-TIE.** CHARLES A. MINERD, Uniontown, Pa., assignor of one-half to Wallace Miller, Uniontown, Pa. Filed Feb. 26, 1906. Serial No. 303,966.



Claim.—A railway-tie comprising a hollow metal case, of greatest depth at its center and having the top plate thereof tapering from the center thereof toward each end of the case, the said top plate having rail-seats adjacent each end thereof, and the side walls and base of the case being cut away, and wooden plugs fitted in the ends of the metal case and having inclined upper faces fitting the inclined underneath face of the top plate.

822,218. **MACARONI-SAWING MACHINE.** SAMUEL MUELLER, Jersey City, N. J., assignor to C. F. Mueller Co. of Jersey City, N. J., a Firm. Filed Jan. 16, 1905. Serial No. 241,173.



Claim.—1. In a macaroni-cutting machine, the combination of parallel shafts, saws mounted on one of said shafts, a longitudinal series of macaroni-holding arms on the other shaft, a longitudinal providing at their end a recess with curved walls to receive macaroni sticks, a gate pivoted on one side wall of the recess of each holding-arm and adapted to close into the said recess with its extremity describing the curve of the inner surface of the opposite side walls, a track adapted to engage the outer portion of said gate and close the same against the power of said spring, and a roller adapted to be engaged by the inner portion of the gate before said track is reached to throw the outer portion into position to engage said track.

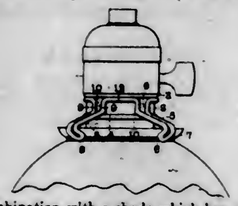
2. In a macaroni-sawing machine, the combination with a saw, of a holding-arm having an inwardly concave curved extension and a shorter similarly-curved extension opposite the first, a gate pivoted upon said shorter arm whose extremity is adapted to describe the curve of the inner surface of the opposite extension, a lever-arm pivoted on said gate, a spring normally holding said lever-arm away from the gate, a track adapted to engage the outer portion of said gate and close the same against the power of said spring, and a roller adapted to be engaged by the inner portion of the gate before said track is reached to throw the outer portion into position to engage said track, and a spring normally holding the gate open, and means for moving the holding-arms with respect to the saw.

3. In a macaroni-sawing machine, a saw, a pair of holding-arms, a shaft supporting and rotating the arms, one of the holding-arms being longer than the other, a pivoted arm on the end of the short arm, a lever-arm on the pivoted arm, a spring between the lever-arm and the pivoted arm and more yielding than the macaroni, and a track concentric of the shaft to engage the lever-arm of the pivoted arm, to close the holding-arms during part of the rotation.

822,219. **ELECTRIC-LAMP-SHADE HOLDER.** FRANK MCINTYRE, New York, N. Y., assignor to Theodore H. Joseph and James J. Ehrenreich, New York, N. Y. Filed Apr. 4, 1902. Serial No. 101,346.

Claim.—1. The combination with a lamp-shade which has an outwardly-projecting lip, and a lamp-socket having annular projections spaced apart, to form a cylindrical recess thereon, of a wire having circular portions pressing against one of said projections, loop portions pressing against the other projection, said loop portions being bent outward and downward, and then inward to form clips for passing under the lip of said shade, and a clamp for the end portions of the wire which are bent outward and downward to form another clip for passing under the lip of the shade.

2. The combination with a lamp-shade, and a socket, annular projections thereon, a spring-wire with bent portions, respectively arc-shaped and angular, and for bearing respectively upon said annular projections, clips formed from said wire for passing under the lip of the shade, and means for detachably clamping the ends of the wire together.



3. The combination with a shade which has a lip, and with a socket which has parallel annular projections, of a wire in a single piece with free ends, with bent portions for pressing against the respective shoulders of the socket, and a latch pivoted to one free end and bent detachably around the other free end of said wire, the ends being bent to form clips for extending under the lip of the shade.

4. The combination with a lamp-shade which has an outwardly-projecting lip, a lamp-socket having annular projections spaced apart, to form a cylindrical recess thereon, of a wire having circular portions for pressing against one of said projections, loop portions for pressing against the other projection, said loop portions being extended outward and downward, clamps on the loop portions which extend beyond the clamps and are bent partly upon themselves for passing under the lip of the shade, the end portion of the wire being bent outward and downward and inward to form a clip for passing under the lip of the shade, and means for clamping the ends of the wire together.

5. The combination with a lamp-shade, of a spring-wire with bent portions, respectively arc-shaped and angular, and for bearing respectively upon different portions of a lamp-socket, clips formed from said wire for passing under the lip of a shade, means for detachably clamping the ends of the wire together, and a cover for the upper edge of the shade, said cover being retained by said clips.

6. The combination with a lamp-shade, a lip thereon, and with a socket having annular projections, of a spring-wire with bent portions, respectively arc-shaped and angular, and for bearing respectively upon said annular projections, clips formed from said wire for passing under said lip, means for detachably clasping the ends of the wire together, a cover for the upper edge of the shade, said cover being retained by said clips, said cover consisting of an angular ring whose one portion is adapted to cover the upper edge of the shade, and ita other portion to hang down and around the lip of the shade.

7. The combination with a lamp-shade, a lip thereon, and a lamp-socket, of a holder having circular portions adapted to be clamped upon said socket, and having loop portions bent to form clips for extending under said lip, and clamps applied to said loop portions.

8. The combination of a lamp-shade, a lip thereon, a socket, annular projections thereon, a piece of spring-wire having arc-shaped portions for bearing upon one of said annular projections, and having angular portions for pressing upon the other annular projection, and clips formed of said wire for passing under said lip.

9. The combination of a lamp-shade, a lip thereon, a socket, annular projections thereon, a single piece of spring-wire having arc-shaped portions for bearing upon one of the annular projections of said socket, and having angular portions for pressing upon another annular projection of said socket, clips formed of said wire for passing under said lip, and an angular ring covering the edge of the lip.

10. The combination of a shade, a lip thereon, a socket, projections thereon, clips for passing under the lip, an elastic wire having free ends, and means for clamping the ends together, one portion of the wire being adapted to press against a projection on the socket, and another portion being adapted to press upon another projection of the socket.

11. The combination with a lamp-socket having an annular recess, and with a shade, of a spring-wire having clips for holding the shade, and having portions thereof bent into and for bearing upon the surface of the recess.

12. The combination of a shade, a lamp-socket having an annular recess, a spring-wire having clips for holding the shade, and having portions thereof bent into and for bearing upon the surface of the recess, and means for clamping the ends of the wire detachably together.

13. A shade-holder for a lamp-socket, consisting of a spring-wire having free ends, a succession of arc-shaped loops of the wire lying in a given cylindrical surface, radial looped portions bent at an angle to said surface, and then bent to form hooks lying in a given circle, and means for causing the arc-shaped loops to lie in a smaller cylindrical surface and said hooks in a smaller circle.

14. The combination with a lamp-shade and a socket, of a spring-wire with bent portions, one of which is arc-shaped around the axis of the socket and the other straight and parallel to said axis and both bearing upon said socket, clips formed from said wire for passing under the lip of the shade, and means for detachably clamping the ends of the wire together.

15. A shade-holder for a lamp-socket, consisting of arc-shaped portions, and arms having free ends, extending from and integral with said portions, said arms and portions forming a band, the ends of the band being turned outward to form ears, means for connecting said ears together and for disconnecting the ears from each other, the arms being provided at their ends with hooks to engage the attaching-flange of a shade, the band being for gripping the socket, and for drawing the hooks radially toward each other with pressure upon said flange, when the said ears are drawn together and connected by said means.

16. A shade-holder, consisting of a spring adapted to be clamped upon a lamp-socket, and having arms extending therefrom and free at their outer ends, where they terminate in hooks, each having only a single curvature for gripping the lip of a shade, and for pressing radially inward upon the shade, and a pivotally-hinged clamp for connecting the ends of said spring.

17. A shade-holder consisting of arc-shaped portions, a plurality of integral uniform arms extending therefrom, said portions and arms forming the attaching-band of a holder, and said portions being formed to bear upon the sides of a groove on the socket of a lamp, and the ends of the band being turned outward to form ears, and the arms being provided with hooks at their ends to engage the attaching-flange of a shade, and means engaging said ears, whereby the said band is caused to grip the said socket and the hooks are simultaneously closed radially inward upon the attaching-flange of the shade.

18. A shade-holder of the character described, comprising a spring having a plurality of uniform arms extending therefrom, and provided with surfaces for bearing upon the sides of a groove on the lamp-socket, and the ends of said spring being turned outward to form ears, and the arms being provided at their ends with hooks to press radially inward upon the attaching-flange of a shade, and a clamp engaging the ears of the spring, whereby the spring is caused to grip a socket-shell, and the hooks are simultaneously closed upon the attaching-flange of a shade.

19. The combination of a lamp-socket, a spring forming the attaching-band of a shade-holder, one of the above-named elements having a groove and the other having bearing-surfaces for bearing upon the surface of said groove, said spring having a plurality of arms integral therewith, said spring being bent outward at its ends to form ears, and said arms terminating in hooks, each hook having only a single curvature, to engage the attaching-flange of a shade, and a clamp engaging the ears of said spring which is caused to grip said socket, the hooks being simultaneously closed upon the attaching-flange of said shade by the action of said clamp.

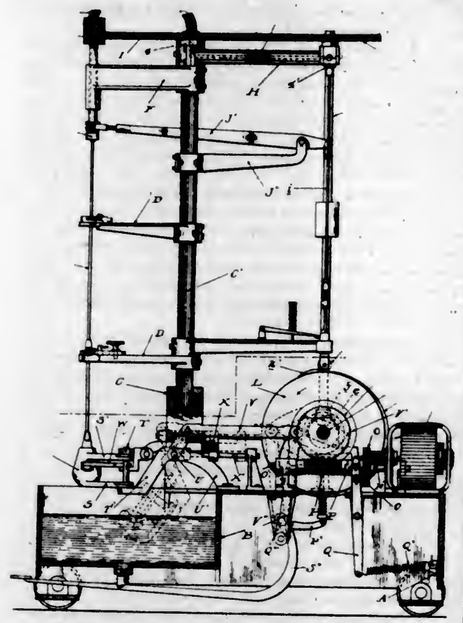
20. A holder for a lamp-shade consisting of a spring, hook-arms, and terminal ears all in a single piece for detachably supporting a shade, and means for clamping the ears detachably together, and for pressing the hooks against the shade in a radially-inward direction.

822,220. MACHINE FOR BLOWING HOLLOW GLASS ARTICLES. CORNELIUS J. NOLAN, Toledo, Ohio. Filed Oct. 29, 1904. Serial No. 230,566.

Claim.—1. In a glass-blowing machine, the combination of an air-conduit leading to the article to be blown, of an air-valve in said conduit, and means for opening and closing the same to admit a limited quantity of air, and means for subsequently opening the valve for blowing purposes, for the purpose described.

2. In a glass-blowing machine, the combination of a sectional mold, means for opening and closing the same, an air-conduit leading to the article to be blown, an air-valve in said conduit, means for opening and closing said air-valve before the molds are closed, means for subsequently closing said molds and opening the valve to blow the article.

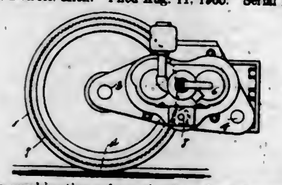
3. In a glass-blowing machine, the combination of the air-conduit into the article to be blown, of means for admitting a limited quantity of air into the article and closing said conduit before the final blowing operation.



4. In a glass-blowing machine, the combination of a sectional mold, means for opening and closing the mold, an air-conduit leading to the article to be blown, a valve in said conduit, means for opening and closing said valve before the molds are closed, means for closing the mold thereafter and means for gradually opening the valve subsequent to the closing of the molds.

5. In a glass-blowing machine, the combination of a supporting-frame, a reciprocating coupling-nozzle, a support for the blow-pipe, means for rotating the coupling-nozzle, a sectional mold, an air-supply leading to the nozzle, a valve therein, a driven shaft, a single cam-wheel thereon and cam-bearings on said wheel for reciprocating said coupling-nozzle, actuating said air-valve, and reciprocating and opening and closing said molds.

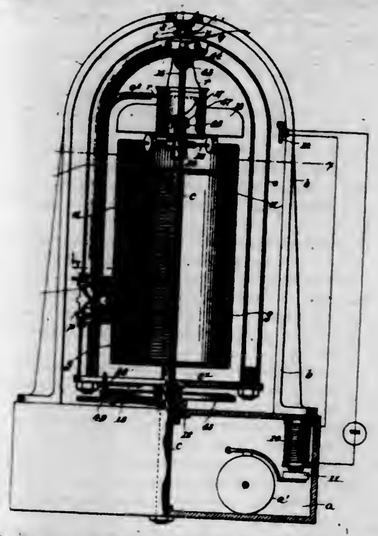
822,221. PROPELLING-WHEEL FOR TURN-TABLES. JAMES L. PILLING, Detroit, Mich. Filed Aug. 11, 1905. Serial No. 273,747.



Claim.—In combination a frame having pivoted connections for engagement with a turn-table and pivoted connections with a wheel, a motor on said frame, a wheel provided with a tread having a V-shaped groove therein whereby said wheel is adapted to engage a curved track with a three-point bearing, substantially as described.

822,222. APPARATUS FOR EFFECTING THE STORING UP OF SPEECH OR SIGNALS. VALDEMAR POULSEN, Copenhagen, Denmark, assignor, by mesne assignments, to American Telegraphone Company, a Corporation of the District of Columbia. Original application filed July 8, 1899. Serial No. 723,186. Divided and this application filed Apr. 3, 1900. Renewed Mar. 20, 1906. Serial No. 307,068.

Claim.—1. An apparatus for storing and reproducing electrical impulses which consists of the combination of an electric circuit including an electromagnet, a paramagnetic surface located within magnetizable range of said electromagnet, means for moving the surface and magnet with respect to each other so that different portions of the surface will be successively presented to the magnet, and means whereby magnetic impressions of said impulses are caused to pass to and from said body through the magnet, substantially as described.



2. An apparatus for storing and reproducing electrical impulses, which consists of an electromagnet, a paramagnetic surface within the magnetic influence of said electromagnet, means for moving the magnet and surface with respect to each other, so that different portions of the surface will be successively presented to the magnet, and means whereby magnetic impressions of said impulses are caused to pass to and from said body through the magnet, substantially as described.

3. An apparatus for storing or recording speech and other sounds, which consists of the combination of an electromagnet, means for altering its magnetic condition according to said speech or sounds, a paramagnetic surface within the influence of said magnet and means for moving the surface and magnet with respect to each other, so as to present different portions of the surface to the magnet successively, substantially as described.

4. An apparatus for storing or recording electrical impulses, which consists of an electromagnet, a circuit over which such impulses flow, in combination with a paramagnetic surface in contact with the pole or poles of said electromagnet, and means for moving said magnet and surface, the one past the other.

5. An apparatus for storing or recording electrical impulses, which consists of an electromagnet in a circuit over which such impulses flow, in combination with a strip of paramagnetic material subjected to the influence of said magnet, and means for successively presenting different parts of the strip to the magnet, substantially as described.

6. An apparatus for storing or recording electrical impulses, consisting of an electromagnet in a circuit over which such impulses flow, in combination with a strip of paramagnetic material in the form of a spiral, and means for successively presenting different parts of the strip to the magnet, substantially as described.

7. An apparatus for storing or recording electrical impulses, consisting of an electromagnet in a circuit over which such impulses flow, in combination with a strip of paramagnetic material in the form of a spiral, and means for holding the pole or poles of the magnet and the strip in contact with each other, while, at the same time, moving them with respect to each other.

8. An apparatus for storing and reproducing electrical impulses, which consists of an electromagnet in a circuit over which such impulses pass, in combination with a cylinder, a paramagnetic strip spirally wound upon such cylinder, said magnet being adjacent to the surface of the cylinder, and means whereby the pole or poles of the magnet will be dragged in contact with the spirally-wound strip from end to end thereof, substantially as described.

9. In an apparatus for storing and reproducing electrical impulses, the combination of a stationary cylinder, a magnetizable

body located upon the surface of said cylinder, a frame arranged to rotate concentrically around said cylinder, and an electromagnet carried by said frame and having its pole or poles presented to said magnetizable body, a circuit over which said impulses pass and which includes said magnet, and means for causing the magnet to traverse in a direction parallel to the axis of the cylinder, while the frame which supports it is rotated around it.

10. In an apparatus for storing and reproducing electrical impulses, the combination of a stationary cylinder, a magnetizable body attached to the surface of such cylinder, a frame arranged parallel to the axis of the cylinder, a motor adapted to rotate the frame around the cylinder, an electromagnet carried by said frame and having its pole or poles in contact with said magnetizable body, means for causing the magnet to traverse along said frame and across the face of the cylinder, while said frame is being rotated, and means for automatically stopping the motor when the magnet has made its full travel.

11. In a telephone system, the combination with a subscriber's circuit and station, of a paramagnetic body, an electromagnet whose pole or poles are presented to the said body, means for moving the body and magnet with respect to each other, so as to present successive portions of the body to the poles of the magnet, and means for throwing the magnet into and out of the subscriber's circuit, substantially as described.

12. In an apparatus for storing and reproducing electrical impulses, the combination of a paramagnetic body, an electromagnet in a circuit over which such impulses flow, means for causing said body and said electromagnet to move with respect, and in close proximity, to each other, so that the relative position of the electromagnet will be gradually shifted from one end to the other of said body, and means for withdrawing said magnet from its working position and returning it to its starting position, substantially as described.

13. In an apparatus for storing electrical impulses electromagnetically, the combination of an electromagnet in an electric circuit over which such impulses flow, a body adapted to receive and retain magnetic conditions or impressions from said electromagnet corresponding to said impulses, a constant source of electricity, such as a battery, and another electric circuit including said source and said electromagnet, for the purpose of imparting a constant or neutral condition to the said magnetizable body and eliminating therefrom any magnetic conditions which may be established by said impulses.

14. In an apparatus for storing or recording electrical impulses representing speech, sounds or signals, the combination of a paramagnetic body containing magnetic impressions of said impulses distributed in a line along the same, a source of constant magnetism and means for subjecting said impressions to said source of constant magnetism for the purpose of imparting a uniform magnetic condition to said body.

15. An apparatus for storing or recording electrical impulses, which consists of the combination of an electric circuit over which such impulses flow and which includes an electromagnet, a body or surface capable of retaining magnetic impressions or conditions and means whereby the impulses flowing in said electromagnet will cause corresponding magnetic impressions or conditions to be made at successive points in said body or surface.

16. An apparatus for reproducing electrical impulses which have been previously recorded magnetically at successive points in a magnetizable body, consisting of a circuit containing an electromagnet, in combination with means for subjecting said electromagnet successively to the influence of the magnetism stored at the successive points in said magnetizable body.

17. In an apparatus for storing and reproducing electrical impulses corresponding to speech or signals, the combination of means for making a magnetic record of such impulses in a magnetizable body, an electromagnet and receiving apparatus, a circuit including said electromagnet and receiving apparatus and means for causing said magnetic record to act upon said electromagnet to thereby reproduce the said impulses in the circuit of said electromagnet.

18. In an apparatus for magnetically recording electrical impulses, the combination of an electromagnet in an electric circuit over which such impulses flow, a magnetizable body adapted to receive magnetic impressions from said electromagnet corresponding to said impulses, a magnetic apparatus possessing or capable of possessing a constant degree of magnetism and means for subjecting said magnetizable body to said apparatus to impart a constant or neutral condition to said body.

19. In an apparatus for receiving and recording electrical impulses magnetically, the combination of a paramagnetic body in which the record is made, a magnet having a constant field of force and means whereby that portion of said body containing the record may be passed through or within the field of force of said magnet, to thereby obliterate the record.

20. An apparatus for reproducing electrical impulses which have been previously magnetically recorded at successive points in a magnetizable body, consisting of an electromagnetic coil, a circuit in which said coil is included and means for moving the coil and magnetizable body with respect to each other so that the coil is successively brought within the influence of the magnetism recorded at the successive points in said magnetizable body, whereby current impulses are successively generated in said coil and its circuit which correspond with the impulses which originally created the record.

21. In an apparatus for storing and reproducing electrical impulses, a paramagnetic body and a magnet, one of these being movable in relation to the other, the poles of said magnet being in magnetizable range of the said body, means for causing electrical impulses in the circuit of said magnet and an electrically-controlled motor adapted to effect the said relative movements of the body and magnet, substantially as described.

22. In an apparatus for storing and reproducing sounds and signals and in combination, a paramagnetic body, an electromagnet having its pole or poles presented to said body, means for supporting and for changing the relations of said body and magnet with respect to each other and transmitting and receiving mechanisms whereby electrical impulses are caused to pass to and from the said body through said magnet, substantially as described.

23. The combination of a body containing magnetic impressions of electrical impulses at succeeding points, an electromagnet adapted to be subjected successively to said impressions and a circuit containing said electromagnet.

24. The combination of a body having a smooth surface permanently charged with magnetism of varying degrees at succeeding points, an electromagnet presented to said surface and means for moving the body and magnet with respect to each other.

25. An apparatus for recording and reproducing electrical impulses, consisting of a body capable of receiving and retaining magnetic impressions, an electromagnet, a circuit including said magnet, a transmitter adapted to send electrical impulses over said circuit to energize said magnet and cause it to communicate its magnetism to to said body, and a receiver adapted to be actuated by impulses produced in said circuit by the reaction of the magnetism in said body upon said electromagnet.

26. An apparatus for storing and reproducing electrical impulses which consists of the combination of an electric circuit including an electromagnet, a homogeneous paramagnetic body located within magnetisable range of said electromagnet, means for moving the body and magnet with respect to each other so that different portions of the body will be successively presented to the magnet, and means whereby magnetic impressions of said impulses are caused to pass to and from said body through the magnet, substantially as described.

27. An apparatus for storing and reproducing electrical impulses, which consists of an electromagnet, a homogeneous paramagnetic body within the magnetic influence of said electromagnet, means for moving the magnet and body with respect to each other, so that different portions of the body will be successively presented to the magnet, and means whereby magnetic impressions of said impulses are caused to pass to and from said body through the magnet, substantially as described.

28. An apparatus for storing or recording speech and other sounds, which consists of the combination of an electromagnet, means for altering its magnetic condition according to said speech or sounds, a continuous paramagnetic surface within the influence of said magnet and means for moving the surface and magnet with respect to each other, so as to present different portions of the surface to the magnet successively, substantially as described.

29. An apparatus for storing or recording electrical impulses, which consists of an electromagnet in a circuit over which such impulses flow, in combination with a homogeneous strip of paramagnetic material subjected to the influence of said magnet, and means for successively presenting different parts of the strip to the magnet, substantially as described.

30. An apparatus for storing or recording electrical impulses, which consists of the combination of an electric circuit over which such impulses flow and which includes an electromagnet, a homogeneous body or surface capable of retaining magnetic impressions or conditions and means whereby the impulses flowing in said electromagnet will cause corresponding magnetic impressions or conditions to be made at successive points in said body or surface.

31. In an apparatus for storing and reproducing sounds and signals and in combination, a paramagnetic body, an electromagnet having its pole or poles transversely presented to said body, means for supporting and for changing the relation of said body and magnet with respect to each other and transmitting and receiving mechanisms whereby electrical impulses are caused to pass to and from the said body through said magnet, substantially as described.

32. The combination of a body having a smooth homogeneous surface permanently charged with magnetism of varying degrees at succeeding points, an electromagnet transversely presented to said surface and means for moving the body and magnet with respect to each other.

33. The combination of an electric circuit including a signal-transmitting mechanism and an electromagnet, a body or surface capable of receiving and retaining magnetic impressions or conditions and arranged so that a portion of it is traversed laterally by the lines of force of the magnetic field of said magnet, and means for moving the magnet and body relatively to each other to cause successive portions of the body to cut the lines of force in the magnetic field of the magnet.

34. The combination of an electric circuit including a signal-transmitting mechanism and an electromagnet, a body or surface capable of receiving and retaining magnetic impressions or conditions and arranged transversely to or across the lines of force of the magnetic field of said magnet and means for moving the magnet and body relatively to each other to cause successive portions of the body to cut the lines of force in the magnetic field of the magnet.

35. The combination of a body capable of receiving and retaining magnetic impressions or conditions, an electromagnet arranged so that its field of force is at an angle to the surface of said body and means for moving said body and magnet relatively to each other so that the field of force of the magnet will cut successive portions of said body.

36. The combination of a body containing a trail of magnetic conditions or impressions, an electromagnet whose axis or polar line is presented at an angle to the surface of said body and means for moving said body and magnet relatively to each other so that said magnetic conditions or impressions will be successively carried past the axial or polar line of the magnet, for the purpose set forth.

37. The combination of a body containing a trail of magnetic conditions or impressions representing electrical impulses or undulation, an electromagnet whose axis or polar line is presented at an angle to the surface of said body, an electric circuit including a receiving apparatus, and means for moving said body and magnet relatively to each other so that said magnetic conditions or impressions will be successively carried past the axial or polar line of the magnet, for the purpose set forth.

38. An apparatus for storing or recording electrical impulses, which consists of the combination of an electromagnet in a circuit over which such impulses flow, a body or surface capable of retaining magnetic impressions or conditions, means for moving the said body or surface and said electromagnet relatively to each other so as to present successive portions of said body or surface to the action of said electromagnet and means whereby the impulses flowing from said electromagnet will cause corresponding magnetic impressions or conditions to be made at successive points in said body or surface by magnetizing the same substantially transversely to the said line of movement.

39. An apparatus for storing or recording electrical impulses, which consists of the combination of means for creating by such electrical impulses corresponding magnetic impulses, a body or surface capable of retaining magnetic impressions or conditions, means for supporting the said body or surface within the field of said magnetic impulses and means for moving said body or surface and the seat of said magnetic impulses relatively to each other so as to cause successive portions of said body to cut the lines of force of said magnetic impulses.

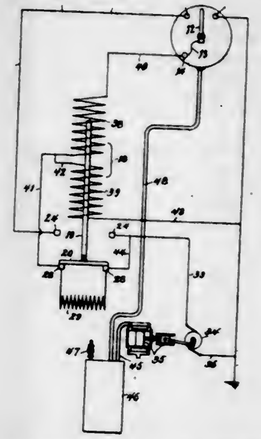
40. A phonogram or sound-record consisting of a suitable body or base having impressed therein or thereupon magnetic conditions or influences corresponding to the sounds.

41. A phonogram or sound-record consisting of a suitable body or base of steel having impressed therein or thereupon magnetic conditions or influences corresponding to the sounds or to the air-waves accompanying the sounds.

42. A phonogram or sound-record consisting of a paramagnetic body or base in the form of a wire or strip, having impressed therein or thereupon magnetic conditions or influences corresponding to the sounds or to the air-waves accompanying the sounds.

43. A body or base of magnetic material containing permanent magnetic impressions of electric signal-currents.

822,223. **AUTOMATIC CONTROLLER FOR PRESSURE SYSTEMS.** WALTER J. RICHARDS, Milwaukee, Wis. Original application filed Mar. 9, 1904, Serial No. 197,317. Divided and this application filed Apr. 6, 1905. Serial No. 254,256.



Claim.—1. In a device of the character described, a solenoid comprising a pair of coils connected together, a primary switch adapted in one position to send current through one of the coils, a switch operated by the solenoid to shunt the said coil and the connection made by the primary switch and to send an energizing-current through the other coil in shunt with the motor to hold the switch in its operated position, said primary switch adapted in another position to connect the first-mentioned coil in multiple arc with the other coil to neutralize the effect of the same and release the main switch, and a motor-circuit controlled by the main switch.

2. A controller for pressure systems, comprising a motor-switch, a motor controlled by the switch, a magnet for operating the switch, a pressure-switch sensitive to variations of pressure in the pressure system for making a contact to energize one coil of the magnet, means controlled by the operation of the motor-switch for shunting the said coil of the magnet and energizing another coil of the magnet in shunt with the motor, and a circuit controlled by another contact of the pressure-switch for neutralizing the effect of the magnet to release the motor-switch.

3. A controller for pressure systems, comprising a switch, a motor controlled thereby, a magnet for operating the switch, a pressure-switch sensitive to variations of pressure in the pressure system adapted to make a contact for energizing the magnet, means dependent upon the operation of the switch for establishing a circuit connecting the magnet in shunt with the motor to retain the switch in its operated position, and a circuit controlled by another contact of the pressure-switch for neutralizing the effect of the magnet and releasing the switch.

4. A controller for pressure systems, comprising a switch, a magnet for operating the switch, and a pressure-switch sensitive to variations of pressure in the pressure system adapted to make a contact to energize the magnet by passing an energizing-current through a part of the winding thereof and thereby cause the operation of the switch, said switch when operated serving to shunt the said contact made by the pressure-switch and the part of the magnet-winding before referred to and establishing an energizing-circuit through another part of the winding of the magnet to retain the switch in its operated position, said pressure-switch being also adapted to make another contact for again establishing a circuit through the first-mentioned part of the magnet-winding to cause said part of the winding to act in opposition to the other part thereof so that the two parts neutralize each other and the magnet becomes de-energized to release the switch.

5. A pressure-controller for pressure systems, comprising a motor-switch, a motor-compressor controlled thereby, a magnet for operating the motor-switch, a pressure-switch sensitive to variations of pressure in the pressure system for making a contact to establish an energizing-circuit through a part of the magnet-winding and thereby energize the magnet and operate the switch, and a protective resistance normally short-circuited by the motor-switch in its released position, said switch in its operated position serving to shunt

the said contact of the pressure-switch and the said part of the magnet-winding by means of the protective resistance, the operation of the motor-switch also serving to establish an energizing-circuit through another part of the magnet-winding to keep the magnet energized and retain the motor-switch in its operated position, the last-named circuit including the protective resistance in series with the said other part of the magnet-winding and both being in shunt with the motor-compressor, said pressure-switch being adapted to make another contact for establishing a circuit to connect the first-mentioned part of the magnet-winding in shunt with the other part thereof so that they neutralize each other to deënergize the magnet and release the motor-switch.

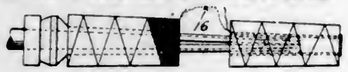
6. A controller for pressure systems comprising a base, a solenoid mounted thereon and having its winding formed in two parts, a casing inclosing the solenoid, a movable core for the solenoid, a switch-contact carried thereby, spring-contacts mounted on the solenoid-casing and insulated therefrom and adapted to be engaged by the switch-contacts when the solenoid is energized, a pair of spring-arms beneath the solenoid adapted to be engaged by the switch-contact when the solenoid is deënergized, a coil of protective resistance mounted on the base and having the ends of its winding connected to the respective spring-arms, a pressure-gage sensitive to variations of pressure in a pressure system and also mounted on the base, adjustable contact-posts in the path of the gage-hand of the pressure-gage adapted to be engaged thereby at the minimum and maximum pressures of the pressure system respectively, a wire connecting the gage-hand with one end of one part of the solenoid-winding, a wire connecting the other end of said part of the solenoid-winding to one end of the other part of the solenoid-winding and to one of the spring-arms, a wire connecting the other end of the second-mentioned part of the solenoid-winding with the ground, a wire connecting the other spring-arm with one of the spring-contacts, a motor-compressor having connection therewith and with the ground, a wire leading from a suitable source of supply connecting with the other spring-contact and the minimum contact-post of the pressure-switch, and a wire connecting the maximum contact-post of the pressure-switch with the ground.

7. A pressure-controller, comprising a vertical base, a horizontal flange thereon, a solenoid surrounded by a casing which is secured in a vertical position on the base, a movable core for the solenoid, a disk-shaped switch-contact carried by the core, an insulating-plate between the disk contact and the end of the solenoid-casing, insulating-strips mounted on the sides of the solenoid-casing, spring-contacts carried by the insulating-strips, contact-shoes on the spring-contacts in the path of the disk-shaped contact to engage the edges thereof when said contact is raised by the solenoid, adjusting-screws threaded through the spring-contacts and bearing on the insulating-strips to adjust the position of the contact-shoes, insulating-blocks on the horizontal flange, spring-contact arms mounted thereon and having contact-shoes at their upwardly-bent free ends in the path of the disk-shaped contact to be engaged thereby when the solenoid is deënergized and the core drops, a pressure-gage mounted on the flange and having connection with a pressure system, said pressure-gage having a gage-hand sensitive to variations of pressure in the pressure system, contact-posts adjustably mounted in the path of the gage-hand to be engaged thereby, a coil of resistance-wire mounted on the base, and connecting means for the several parts whereby the contact made by the gage-hand with one of the contact-posts establishes an energizing-circuit through a part of the winding of the solenoid to energize said solenoid and lift the disk-shaped contact out of engagement with the contact-arms and into engagement with the spring-contacts, thereby shunting the said contact made by the gage-hand and the part of the solenoid-winding which was energized by said contact and establishing an energizing-circuit through the resistance-coil and another part of the winding of the solenoid, and the contact made by the gage-hand with the other contact-post serves to connect the first-mentioned part of the solenoid-winding in shunt with the other part thereof to neutralize the effect produced by said other part of the solenoid-winding and deënergize the solenoid thereby permitting the core to drop and open all circuits and short-circuit the resistance-coil.

8. An automatic pressure-controller for pressure systems, comprising a motor-compressor, a magnetic switch for controlling the motor-circuit, and a pressure-switch sensitive to the variations of the pressure in the pressure system for establishing an energizing-circuit through a magnet-winding of the magnetic switch by one contact thereof, and a protective resistance, said magnetic switch being operated as the result of its magnet being energized by this circuit and serving to establish the motor-circuit and to shunt the said contact of the pressure-switch and the magnet-winding above mentioned and establish a circuit through the protective resistance in series with another magnet-winding of the magnetic switch, said magnet-winding and protective resistance being in shunt with the motor, the pressure-switch being adapted to make another contact for opposing one magnet-winding to the other and thus neutralizing the magnet and permitting the switch to open.

9. In a device of the character described, a solenoid comprising a pair of coils connected together, a motor, a primary switch, a switch adapted in one position to send an energizing-current through one of the coils and the motor in series, a switch operated by the solenoid to control the motor-circuit and to send an energizing-current through the other coil in shunt with the motor to hold the switch in its operated position, said primary switch adapted in another position to connect the first-mentioned coil in multiple arc with the other coil to neutralize the effect of the same and release the main switch.

822,224. **BOBBIN FOR WINDING-MACHINES.** CLAES RYDEN, Providence, R. I. Filed June 6, 1905. Serial No. 264,016.



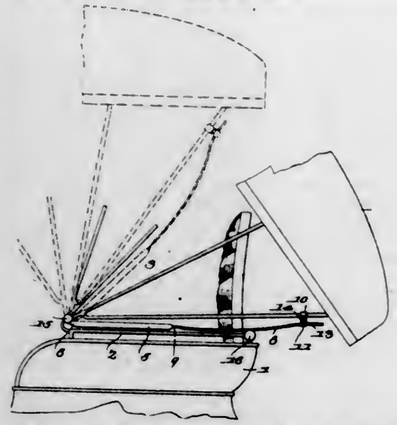
Claim.—1. The combination with a bobbin having a tapering winding-section, of a removable winding-section of tapering form.

2. The combination with a bobbin whose shank has a reduced bifurcated portion, of a removable sleeve adapted to fit and hold by frictional contact upon the bifurcated portion of said bobbin.

3. The combination with a bobbin whose shank has a reduced bifurcated portion which terminates in enlarged extremities, of a removable sleeve adapted to fit upon the bifurcated portion of the bobbin-shank, and having a flared end to abut the enlarged extremities of the same.

4. The combination with a bobbin having a tapering shank whose inner portion forms a winding-section and whose outer portion is reduced and bifurcated, of a removable sleeve adapted to be mounted on the bifurcated portion of the bobbin-shank and forming a winding-section, and a cop formed upon the inner portion of said bobbin-shank and said sleeve respectively and having free adjacent thread ends for connecting together.

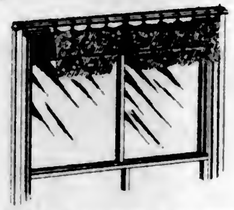
822,225. **BUGGY-TOP SUPPORT.** WILEY N. STROUD, Shreveport, La. Filed July 26, 1905. Serial No. 271,319.



Claim.—1. The combination with a rear bow of a buggy-top, of a support comprising bars of metal twisted on a quarter-turn to present forward rigid portions and rear flexible portions, the forward portions of the support being held combined with the bows by the pivot-bolts, and clips adjustably mounted upon the rear bows and through which the free ends of the supports project.

2. The combination with the seat-rail and bows of a buggy-top, of a support twisted intermediate of its length upon a quarter-turn to present a forward non-yielding portion secured to the seat-rail by the pivot-bolt, and a rear flexible portion projecting outward beyond the rear portion of the buggy-seat thus to contact with the prop-bolt when the top is lowered and a clip secured to the rear bow and having a guide through which the free end of the support projects.

822,226. **ADJUSTABLE SHADE AND LACE-CURTAIN FIXTURE.** GEORGE E. WEST, Scranton, Pa. Filed May 17, 1904. Serial No. 208,355.



Claim.—A device of the type set forth, consisting of a frame, a member slidably related thereto and having one of its ends offset and provided with fangs, and a bracket having a leg slidably received between said fangs and twisted at an intermediate portion to form a shoulder for engagement with the top edge of said offset end to limit the downward movement of the bracket-leg.

822,227. **WINDOW-SCREEN.** CREASEY J. WHELLAMS, St. Paul, Minn. Filed Feb. 13, 1905. Serial No. 245,340.



Claim.—1. A window-screen having a frame made from thin metal, the sides and corners of which have overlying sections, said sections comprising longitudinal intermeshing ribs and grooves and flanges on their inner and outer edges and said corner-sections lapping over the ends of said side sections, screen-netting between said inner flanges and ribs, and means for fastening said sections together.

2. A window-screen, consisting of a frame made from thin metal, the sides and corners of which have overlying sections comprising longitudinal intermeshing ribs and grooves and flanges on their inner and outer edges, said corner-sections engaging said side sections, material between all of said sections to be held in said frame, and means for clamping said sections to engage said material.

3. A device of the class set forth, consisting of a frame made from thin metal, the sides and corners of which have overlying sections, said sections comprising longitudinal intermeshing ribs and grooves and flanges on their inner and outer edges, said corner-sections engaging said side sections, material between said sections to be held in said frame, and means for clamping said sections to engage said material, said flanges on said outer edges being separated to form a groove, for the purposes specified.

4. A device of the class set forth, consisting of a frame made from thin metal, the sides and corners of which are formed by overlying sections, said sections comprising longitudinal ribs and grooves and flanges on their inner and outer edges, said corner-sections lapping over said side sections, material between said sections and passing between the flanges on said inner edges, means for clamping said sections together to hold said material, said flanges on the outer edges of said sections being separated to form a guiding-groove, all in combination with a window-casing having a tongue in said guiding-groove on which said frame is adapted to slide.

5. A rectangular window-screen having its sides formed by front and back sections, the ends of which overlap, said sections comprising longitudinal intermeshing ribs and grooves and flanges on their inner and outer edges, screen-netting between said front and back sections, corner-pieces having corresponding ribs lapping over the ends of said side sections, and means for clamping said sections together.

6. A window-screen having a rectangular frame, the sides and corners of which have two overlying sections, said corner-sections lapping over the ends of said side sections, and all of said sides and corners comprising longitudinal intermeshing ribs and grooves and flanges on their inner and outer edges, screen-netting between said sections, and means for clamping said sections together.

7. A device of the class set forth, consisting of a frame formed by a pair of overlying sections, having longitudinal intermeshing ribs, flanges on the inner and outer edges of said sections, said outer flanges being separated to form a groove, material passing between said inner flanges in said ribs to be held in said frame, means for clamping said sections to hold said material, a window-casing, and a tongue on said window-casing in said groove, forming a resilient connection with the flanges at the sides of said groove.

8. A window-screen having a rectangular frame, the sides and corners of which have two overlying sections, said sections having tongues formed upon their ends which lap over each other, said sections comprising longitudinal intermeshing ribs and grooves and having flanges on their inner and outer edges, screen-netting between said sections, means for clamping all of said sections and fastening said tongues to hold said screen-netting and the parts of said frame, a window-casing, and tongues on said window-casing, said outer flanges and the tongues on said window-casing forming a spring engagement for holding said frame and permitting it to slide in said casing.

9. A window-screen having a frame, the sides and corners of which have two overlying sections, said corner-sections lapping over the ends of said side sections and all of said side and corner sections comprising longitudinal intermeshing ribs and grooves and flanges on the inner and outer edges, screen-netting between said sections, resilient strips between said ribs and netting, and means for clamping said sections together.

822,228. **WIRE-CHOKER TRAP.** WALTER W. WILLIAMS, Littlefork, Minn. Filed Aug. 18, 1905. Serial No. 274,745.



Claim.—1. In a choker-trap, the combination with a frame, of oppositely-acting springs secured to said frame, looped chokers each having both ends secured to one of the springs and each constituting an endless loop and adapted to operate in opposite directions when released, and a pan or trigger for releasably locking the chokers in set or retracted position.

2. In a choker-trap, the combination with a frame, of oppositely-acting springs secured to said frame, looped chokers secured to the respective springs and adapted to operate in opposite directions when released, said chokers having notches, and a pan or trigger for releasably engaging the notches aforesaid to lock the chokers in set or retracted position.

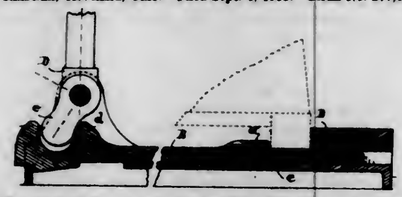
3. In a choker-trap, the combination with a frame, of oppositely-acting springs secured to said frame, looped chokers secured to the respective springs and adapted to operate in opposite directions when released, a ring loosely encircling crossed portions of said chokers, and a pan or trigger for releasably locking the chokers in set or retracted position.

4. In a choker-trap, the combination with a frame, having slots in its side, of oppositely-acting springs secured to said frame, independent looped wire chokers secured to the respective springs and passing loosely through the respective slots aforesaid and adapted to operate in opposite directions when released, and a pan or trigger for releasably locking the chokers in set retracted position.

5. In a trap, the combination with a frame having upright portions, of trapping mechanism carried by said frame, and swiveled eyes on the upright portions of said frame adapted to receive stakes for fastening the frame in upright position.

6. In a trap, the combination with a frame having a base or horizontal member, of trapping mechanism carried by said frame, and swiveled eyes extending horizontally from the base or horizontal member aforesaid whose openings extend vertically and are adapted to receive upright stakes for fastening the frame in upright position.

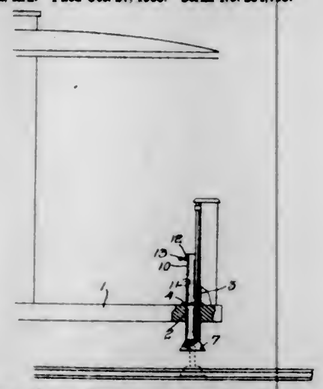
822,229. **HORSESHOE-SHARPENING DEVICE.** JOSEPH BONGARDNER, Cleveland, Ohio. Filed Sept. 6, 1905. Serial No. 277,142.



Claim.—1. A device for trimming the calks of horseshoes comprising a base, a bar, being slidingly embedded therein, said bar having a V-shaped cutting portion projecting from near its front part and jaws at or near its rear part, a fulerumed lever engaging said jaws and a resisting member for the calk undergoing trimming.

2. In a device for trimming horseshoe-calks from a flat shape into V shape or approximately so, the combination of a suitable base, a bar slidingly arranged therein, said bar having in the front end thereof a V-shaped depression and the rear end adapted for engagement of a fulcrumed member whereby said bar can be manipulated, the fulcrumed member, and an opposing member for said bar presenting a counterpart for said V-shaped depression all coöperating substantially in the manner as and for the purpose set forth.

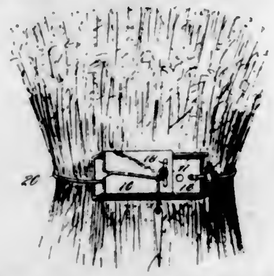
822,230. **SWITCH-THROWING DEVICE.** THOMAS J. COLBURN, Argenta, Ark. Filed Oct. 27, 1905. Serial No. 284,713.



Claim.—1. The combination with a car including a front platform, having an opening therethrough, a casing mounted in said opening and projecting above and beneath the platform and provided with a collar for engagement with the upper face of the platform, an operating-rod mounted within the casing and provided with a plate for operating the switch, said casing having a longitudinal slot arranged in its upper end and communicating with a notch in the casing, the aforesaid operating-rod having a screw-threaded recess therein, a stab having screw-threaded engagement in said recess for operation in said slot and notch, and a helical spring surrounding the operating-rod within said casing to hold the rod normally in its elevated position.

2. A switch-throwing device comprising a casing having a slot arranged longitudinally thereof and communicating with a notch of the casing, an operating-rod mounted for sliding movement within the casing and having a screw-threaded recess, a stub having screw-threaded engagement in said recess for coöperation with said slot and notch to guide the rod in its sliding movement and to hold it in its downward position, and a helical spring surrounding the rod within the casing to lift the rod and hold it normally in its upper position.

822,231. **CORN-SHOCK BINDER.** JOHN C. CROSIN, Philadelphia, Pa. Filed Dec. 30, 1905. Serial No. 294,000.



Claim.—1. In combination, a casing open at both ends, one of its faces having a portion removed and having a perforation in its opposite face, a sheave within the casing, a flexible connection engaging the casing at one end and secured at its opposite end to a pin adapted to pass through the perforation of the casing, said flexible connection passing around the sheave within the casing, and means carried by the casing for engaging and holding the connection against displacement.

2. In combination, a casing having both ends open, said casing having a notch in one end of its top, and having the opposite end portion of the top removed, said casing having an aperture or opening in the bottom, said aperture being near the end of the casing having a top portion removed, a sheave within the casing near the end having the notch in its top, a hook at the opposite end of the casing, a connection engaging the hook and passing exteriorly of the casing and entering the casing at its opposite end, passing around the sheave and extending to the exterior of the casing a pin secured to the end of said connection, said pin being adapted to pass through the aperture of the casing, and a cleat carried by the top of the casing.

3. In combination, a casing open at both ends, one of its faces having a portion removed and having a perforation in its opposite face, a sheave within the casing, a flexible connection engaging the casing at one end and secured at its opposite end to a pin adapted to pass through the perforation of the casing, said flexible connection passing around the sheave within the casing.

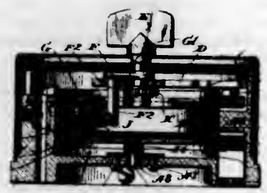
4. In combination, a casing open at both ends, one of its faces having a portion removed and having a perforation in its opposite face, a sheave within the casing, a flexible connection engaging the casing at one end and secured at its opposite end to a pin adapted to pass through the perforation of the casing, said flexible connection passing around the sheave within the casing, said casing having a notch in one of its faces to receive the connection.

REISSUES.

12,490. **CONTROLLING MEANS FOR ELECTRIC CIRCUITS.** JULIUS K. LUX, St. Louis, Mo. Original application filed June 3, 1897, Serial No. 639,230. Divided and application filed June 26, 1903. Original No. 761,003, dated May 24, 1904. Application for reissue filed Apr. 5, 1906. Serial No. 310,194.

Claim.—1. In a snap opening and closing circuit-controlling device, a suitable support, an electrical contact carried thereby, a movable electrical contact adapted to coöperate with the first-mentioned contact, and means for actuating said movable contact and for effecting a more powerful snap action in closing said contacts than in opening the same.

2. In a snap opening and closing circuit-controlling device, a suitable support, an electrical contact carried thereby, a movable electrical contact adapted to coöperate with the first-mentioned contact, yielding actuating means operatively connected with the said movable contact, energizing means with which the said yielding actuating means is also operatively connected, means for relatively moving said yieldingly-connected parts in a manner to provide a greater contact-actuating potency to close the circuit than is used to open the same.



3. In a snap opening and closing circuit-controlling device, a suitable support, an electrical contact carried thereby, a movable electrical contact adapted to coöperate with the first-mentioned contact, yielding actuating means operatively connected with the said movable contact, energizing means with which the said yielding actuating means is also operatively connected, means for relatively moving said yieldingly-connected parts to provide a greater contact-actuating energy to close the circuit than is used to open the same.

4. In a snap opening and closing circuit-controlling device, a suitable support, an electrical contact carried thereby, a movable electrical contact adapted to coöperate with the first-mentioned contact, movable operating means, connection between said movable contact and said operating means consisting of a lever in connection with the one, and a yielding actuator in connection with the other and with the said lever, means for shifting the leverage of said yielding means on said lever to cause the yielding means to exert a greater actuating potency on the movable contact in closing than in opening the contacts.

5. In a snap opening and closing circuit-controlling device, a suitable support, an electrical contact carried thereby, a rotary electrical contact adapted to coöperate with the first-mentioned contact, yielding actuating means operatively connected with the said rotary contact, a rotary energizing means with which the said yielding actuating means is also operatively connected, the axes of rotation of said rotary and said energizing means being eccentrically disposed, whereby the actuating potency of said yielding means is greater in closing than in opening said contacts.

6. In a snap opening and closing circuit-controlling device, a suitable support, an electrical contact carried thereby, a movable electrical contact adapted to coöperate with the first-mentioned contact, yielding actuating means operatively connected with the said movable contact, energizing means with which the said yielding actuating means is also operatively connected, said energizing means turning about an axis located to one side of a plane in which the axis of the said rocking contact lies, which plane bisects equally the line of movement of the point of connection of the said rocking contact with said yielding means, by means of which axial arrangement less yielding stress is developed in the opening than in the closing operation of the device.

7. In a circuit-controlling device, a suitable support, an electrical contact carried thereby, a rocking electrical contact adapted to coöperate with the first-mentioned contact, yielding actuating means operatively connected with the said rocking contact, movable energizing means with which the said yielding actuating means is also operatively connected, and means whereby said yielding connections have a movement with a dead-center toward which the said tension increases to provide a snap opening and closing thereof, and means for moving the points of connection of the yielding means with the said energizing and contacting means with relation to the axis of the rocking contact so that the line of stress of the said yielding means is nearer the line of the said axis when the device is open than when the same is closed.

8. In a circuit-controlling device, a suitable support, an electrical contact carried thereby, a movable electrical contact adapted to coöperate with the first-mentioned contact, yielding actuating means operatively connected with the said movable contact, energizing means with which the said yielding actuating means is also operatively connected, said yielding connections effecting a movement with a dead-center toward which the yielding stress increases to produce a snap opening and closing thereof, the said two yieldingly-connected points having movement such that the points are farther apart when the device is closed than when the same is open.

9. In a snap opening and closing circuit-controlling device, a suitable support, an electrical contact carried thereby, a movable electrical contact adapted to coöperate with the first-mentioned contact, yielding actuating means operatively connected with the said movable contact, a movable energizing means with which the said yielding actuating means is also operatively connected, and means for giving one of said yieldingly-connected parts a path of movement divergent from the other to provide said yielding connection with greater actuating potency in closing than in opening the contacts.

10. In a circuit-controlling device, a suitable support, an electrical contact carried thereby, a rocking electrical contact adapted to coöperate with the first-mentioned contact, yielding actuating means operatively connected with the said rocking contact, movable energizing means with which the said yielding actuating means is also operatively connected, means whereby said yielding connections have a movement with a dead-center toward which the said tension increases to provide a snap opening and closing thereof, the point of connection of the yielding means with the energizing means having such movement with relation to the axis of the movable contact that said point of connection is nearer said axis when the device is open than when the device is closed.

11. In a snap opening and closing circuit-controlling device, a suitable support, an electrical contact carried thereby, a movable electrical contact adapted to coöperate with the first-mentioned contact, yielding actuating means operatively connected with the said movable contact, energizing means with which the said yielding actuating means is also operatively connected, means for giving one of said yieldingly-connected parts a greater movement than the other to provide greater contact-actuating potency in closing than in opening the contacts.

12. In a snap opening and closing circuit-controlling device, a suitable support, an electrical contact carried thereby, a rocking electrical contact adapted to coöperate with the first-mentioned contact, yielding actuating means operatively connected with the said rocking contact, a plurality of bearings for one of said connected parts, the actuating means being disposed with relation to the movable contact to cause the actuating stress thereof to fall between the plural bearings, and means for energizing said actuating means and for moving the same in a manner to throw the stress thereof from one to the other side of the axis of the contact.

13. In a circuit-controlling device, a suitable support, an electrical contact carried thereby, a rocking electrical contact adapted to coöperate with the first-mentioned contact, a plurality of bearings for said movable contact, yielding actuating means operatively connected with the said rocking contact and adapted to urge the said coöperative contacts together and apart with quick snap actions, the actuating means being disposed with relation to the movable contact to cause the actuating stress thereof to fall between the contact-bearings, and means for energizing said actuating means and for moving the same in a manner to throw the stress thereof from one to the other side of the axis of the contact-bearings.

14. In a circuit-controlling device, a suitable support, electrical contacts carried thereby, rocking electrical contacts electrically separated one from another, a bearing for each of said rocking contacts to permit each of the same to coöperate with the first-mentioned contacts, yielding actuating means operatively connected with the said rocking contacts, energizing means with which the said yielding actuating means is also operatively connected, means for moving said connections to cause the stress of the said yielding means to increase toward a dead-center and to be shifted across the line of axis of and between the said bearings to effect a snap opening and closing of the contacts.

15. In a circuit-controlling device, a suitable support, an electrical contact carried thereby, a rocking electrical contact adapted to coöperate with the first-mentioned contact, yielding actuating means operatively connected with the said rocking contact, energizing means with which the said yielding actuating means is also operatively connected, said parts providing a movement with greater yielding stress at the dead-center than in the closed position of the device whereby snap opening and closing thereof is effected, actuating means moving independent of the movable contact but acting with said energizing means to simultaneously shift both of the said operative connections of the yielding actuating means toward the dead-center of the said movement.

16. In a circuit-controlling device, a suitable support, an electrical contact carried thereby, a movable electrical contact adapted to coöperate with the first-mentioned contact, yielding actuating

means operatively connected with the said movable contact, movable energizing means with which the said yielding actuating means is also operatively connected, means independent of said connection of said parts, for propelling said connection when opening the device, means for causing the said propelling means to operate after a prearranged initial movement of the said energizing means, and means for giving said yielding connections a relative movement to close the circuit with greater yielding power than is used to open the same.

17. In a circuit-controlling device, a suitable support, an electrical contact carried thereby, a movable electrical contact adapted to coöperate with the first-mentioned contact, yielding actuating means operatively connected with the said movable contact, energizing means with which the said yielding actuating means is also operatively connected, means independent of said connection of said part for urging the coöperative contacts apart after a prearranged initial movement of the said energizing means, means for giving said yielding connections a relative movement to close the circuit with greater yielding power than is used to open the same.

18. In a circuit-controlling device, a suitable support, an electrical contact carried thereby, a movable electrical contact adapted to coöperate with the first-mentioned contact, yielding actuating means for the said movable contact operatively connected therewith, movable energizing means with which the said yielding actuating means is also operatively connected, an operating-handle, means for giving said connections movement having a dead-center toward which the yielding stress increases to effect a snap opening and closing of the contacts, and means actuated by the handle and turning in a direction reverse thereto, said means moving independent of the movable contact and initiating the movement thereof.

19. In a circuit-controlling device, a suitable support comprising a base and a superimposed bearing-piece, an electrical contact carried thereby, a rocking electrical contact adapted to coöperate with the first-mentioned contact, yielding actuating means for the said rocking contact operatively connected therewith, energizing means with which the said yielding means is also connected for giving said connections movement having a dead center toward which the yielding stress increases to effect a snap opening and closing of the contacts, and means on the said bearing-piece acting to initiate the movement of the point of connection of the yielding actuating means with the movable contact.

20. In a circuit-controlling device, a suitable support, an electrical contact carried thereby, a movable electrical contact adapted to coöperate with the first-mentioned contact, yielding actuating means operatively connected with the said movable contact to urge the said coöperative contacts together and apart, operating means bearing another operative connection of the said yielding means said second connection having a shiftable running-bearing on the said support, providing movement of the parts with greater yielding stress at the dead-center than in the closed position of the device whereby the coöperative contacts are urged together and apart with quick snap actions.

21. In a circuit-controlling device, a suitable support, an electrical contact carried thereby, a movable electrical contact adapted to coöperate with the first-mentioned contact, yielding actuating means operatively connected with the said movable contact, pivotally-journaled energizing means with which the yielding actuating means is also operatively connected, said connection having an outbearing removed from the said pivotal bearing, and means whereby said yielding connections have a movement with a dead-center toward which the said tension increases to provide a snap opening and closing of the contacts.

22. In a circuit-controlling device, a suitable support comprising a base and a superimposed bearing-piece, an electrical contact carried thereby, a coöperative rocking electrical contact arranged between the base and the bearing-piece, yielding actuating means arranged between the said corking contact and the base and operatively connected with that contact, energizing means arranged on the said bearing-piece and operatively connected with the said yielding actuating means, said yielding connections having a movement with a dead-center toward which the said tension increases to provide a snap opening and closing of the contacts.

23. In a circuit-controlling device, a suitable support, a rocking contact movable about substantially the central portion of said support, a coöperative fixed contact having a contacting surface arranged in a plane above the said central portion of the said support, said fixed contact being fastened to the said support circumferentially forward in the direction taken by the rocking contact when the circuit is broken, of its contacting surface and in a plane below the upper surface of the said central portion of the support, and means for effecting a snap opening and closing of the circuit.

24. In a circuit-controlling device, a suitable support, a rocking electrical contact having a plurality of contacting parts, a coöperative fixed contact arranged above the central portion of the said support, a second coöperative fixed contact arranged above the central portion of the said support and in a plane below the first-mentioned fixed contact, and which lower contact is secured to the said support in a plane below the said central portion of the latter and circumferentially forward, in the direction taken by the said rocking contact when the circuit is broken, and means for effecting a snap opening and closing of the circuit.

25. In a circuit-controlling device, a suitable support, a fixed contact arranged above the central portion of the said support, another fixed contact arranged above the central portion of the said support and in a plane below the first-mentioned contact, a fixed tongue of insulating material arranged between the said contacts, a web of insulating material between the said tongue and the said support, a rocking electrical contact, and means for effecting a snap opening and closing of the circuit.

26. In a circuit-controlling device, a suitable support, an electrical contact carried thereby, a contact movable about an axis into and out of engagement with the first-mentioned contact, insulation-barriers in juxtaposition to the path of the free end of the said movable contact, but permanently spaced therefrom providing a restricted passage-way between said contacts, on a portion of the path of the movable contact as it leaves the first-mentioned contact, and means for effecting a snap opening and closing of the circuit.

27. In a circuit-controlling device, a suitable support, an electrical contact carried thereby, a contact member movable about an axis into and out of engagement with the first-mentioned contact, and a barrier of insulation above the central portion of the said support, said barrier having a segmental channel open at the inner side thereof to permit movement of said movable contact therein, and means for effecting a snap opening and closing of the circuit.

28. In a circuit-controlling device, a suitable support, an electrical contact carried thereby, a contact member movable about an axis into and out of engagement with the first-mentioned contact, and an insulation-barrier permanently spaced from the said member and arranged radially without or beyond and in juxtaposition to a segment of the radial path described by the free end of said movable contact as the latter leaves the coöperative fixed contact, and means for effecting a snap opening and closing of the circuit.

29. In a circuit-controlling device, a suitable support, a contact providing a terminal for an electric circuit, a member moving about an axis and bearing a coöperative contact part, said member having movement free from sustained rubbing connection with the first-mentioned contact and carrying the said contacting part into and out of engagement with the said first contact, yielding actuating means operatively connected with the said movable member, movable energizing means with which the said yielding actuating means is also operatively connected, means for relatively moving said yieldingly-connected parts to effect a snap opening and closing of the contacts, and a segmental arc-restricting barrier radially beyond and also at one side of the path of the free end of said movable contact as it leaves the said first contact.

30. In a circuit-controlling device, a suitable support, a stationary spring-contact, a member moving about an axis and bearing a coöperative contact part movable into and out of engagement with the said spring-contact, yielding actuating means operatively connected with the said movable member, movable energizing means with which the said yielding actuating means is also operatively connected, means for relatively moving said yieldingly-connected parts to effect a snap opening and closing of the contacts, and a segmental portion of insulation about and in juxtaposition to the path traveled by the free end of the said movable contact when it leaves the said stationary contact.

31. In a circuit-controlling device, a suitable support, an electrical contact carried thereby, a contact member movable about an axis into and out of engagement with the first-mentioned contact, and insulating material arranged below, radially beyond, above, and in juxtaposition to the path of the free end of the said movable contact member but permanently spaced therefrom and, forming an arc-restricting inclosure on a portion of the path of the movable contact as it leaves the first-mentioned contact, thereby permitting movement of said movable contact therein, and means for effecting a snap opening and closing of the circuit.

32. In a circuit-controlling device, a suitable support, coöperative contacts carried thereby said contacts having relative movement and means for effecting a "knife" closure of the circuit, yielding actuating means operatively connected with one of the said contacts, movable energizing means with which the said yielding actuating means is also operatively connected, means for relatively moving said yieldingly-connected parts to effect a snap opening and closing of the contacts, and insulating material arranged in juxtaposition to the path of the free end of the said movable contact but permanently spaced therefrom and forming an arc-restricting inclosure permitting free movement of the said movable contact therein when the circuit is being opened.

33. In a circuit-controlling device, a suitable support, a fixed contact on the support, a contact member movable about an axis into and out of engagement with the fixed contact, arc-restricting barriers radially within, radially beyond, and in juxtaposition to the path traveled by the contacting portion of the said movable contact as the latter leaves the said fixed contact, said contact member having movement free from rubbing connection with the said barriers, and means for effecting a snap opening and closing of the circuit.

34. In a circuit-controlling device, a suitable support, a fixed contact on the support, a contact movable about an axis into and out of engagement with the fixed contact, an arc-restricting barrier of insulation movable with said second contact and exposing only the extremity thereof to the coöperative fixed contact, and arc-restricting barriers of insulation radially beyond, below, and above a portion of the path traveled by the free end of the said movable contact when it leaves the said fixed contact said barriers being in juxtaposition to but permanently spaced from the said movable parts, and means for effecting a snap opening and closing of the circuit.

35. In a circuit-controlling device, a suitable support, fixed contact on the support, a contact movable about an axis into and out of engagement with the fixed contact, an inclosure of insulating material about and in juxtaposition to that segment of the path traveled by the movoble contact as the latter leaves the said fixed contact, the said inclosure having an opening on at least one side to admit the end of the movable contact, and means for effecting a snap opening and closing of the circuit.

DESIGNS.

38,032. BUTTON. MABEL LEORA EVENS and PAUL H. LINDNER, Chicago, Ill. Filed Mar. 19, 1906. Serial No. 306,934. Term of patent 14 years.



Claim.—The ornamental design for button, as shown.

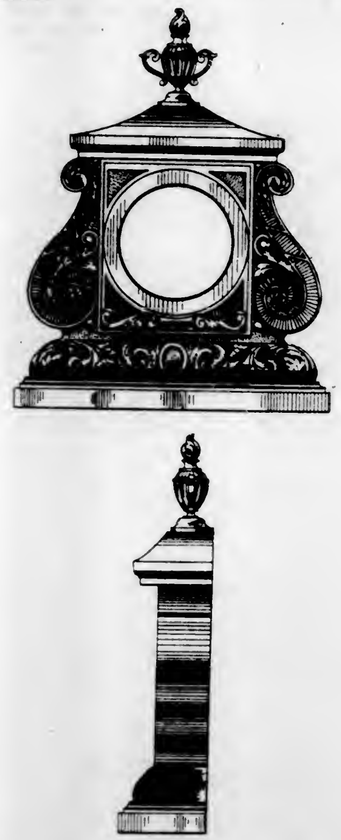
38,033. BADGE. FREDERICK BUSSE, New York, N. Y. Filed Apr. 16, 1906. Serial No. 312,037. Term of patent 7 years.



Claim.—The ornamental design for a badge, as shown.

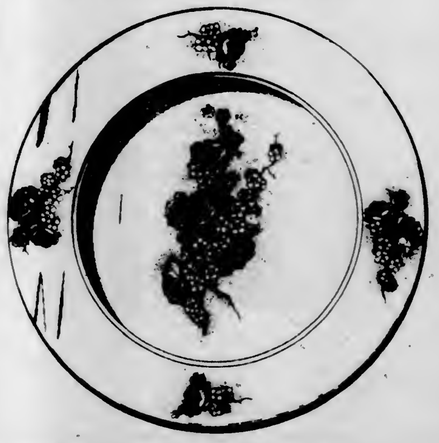
38,034. CLOCK-FRAME. STANLEY M. LAWSON, Cincinnati, Ohio. Filed Apr. 11, 1906. Serial No. 311,199. Term of patent 3½ years.

38,034.



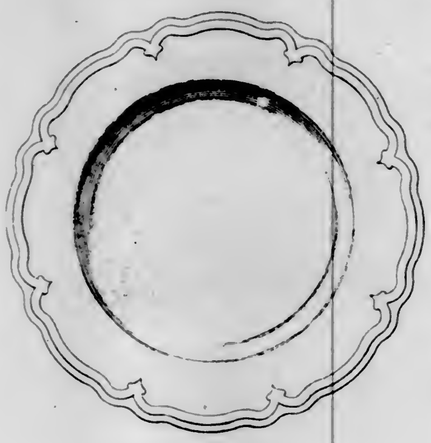
Claim.—The ornamental design for a clock-frame as shown.

38,035. PLATE. FRANZ MARKERT, Altwasser, Germany, assignor to The Ceramic Transfer Co., a Corporation of New York. Filed Apr. 12, 1906. Serial No. 311,400. Term of patent 3½ years.



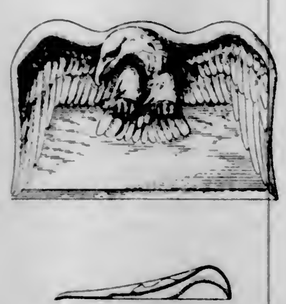
Claim.—The ornamental design for a plate, as shown.

38,036. PLATE OR SIMILAR ARTICLE. WILLIAM H. GRINDLEY, Barlaston, England, assignor to William S. Pitcairn, New York, N. Y. Filed Apr. 4, 1906. Serial No. 309,946. Term of patent 3½ years.



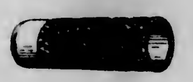
Claim.—Ornamental design for a plate or similar article as shown.

38,037. CRUMB-TRAY. MARGARET M. J. ROONEY, New York, N. Y. Filed Apr. 5, 1906. Serial No. 310,179. Term of patent 14 years.



Claim.—The ornamental design for a crumb-tray, as shown.

38,038. ERASER-TIP. FRANK MCINTYRE, New York, N. Y., assignor to Eagle Pencil Company, New York, N. Y., a Corporation. Filed Apr. 13, 1906. Serial No. 311,600. Term of patent 14 years.



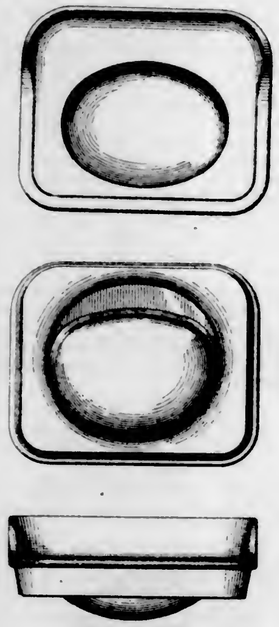
Claim.—The ornamental design for an eraser-tip, as herein shown and described.

38,039. BOX-STRAP. CHARLES W. MITCHELL, Brooklyn, N. Y. Filed Mar. 21, 1906. Serial No. 307,284. Term of patent 14 years.



Claim.—The ornamental design for a box-strap as shown herein.

38,040. LAVATORY. JOHN F. KELLY, Trenton, N. J., assignor to Thomas Maddock's Sons Company, Trenton, N. J., a Corporation of New Jersey. Filed Apr. 26, 1906. Serial No. 313,873. Term of patent 14 years.



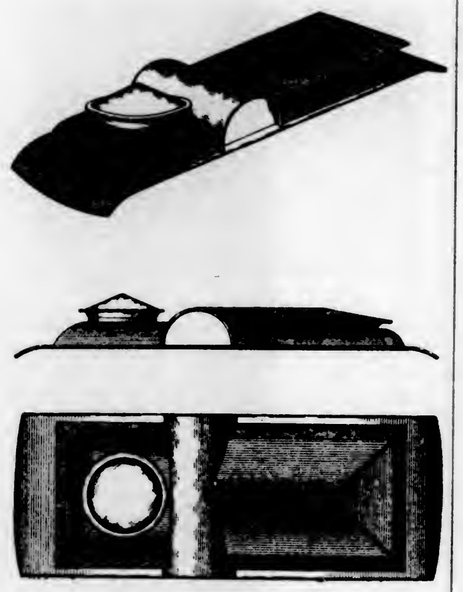
Claim.—The ornamental design for a lavatory, as shown.

38,041. STOVE. STANHOPE BOAL, Piqua, Ohio. Filed Apr. 12, 1906. Serial No. 311,370. Term of patent 7 years.



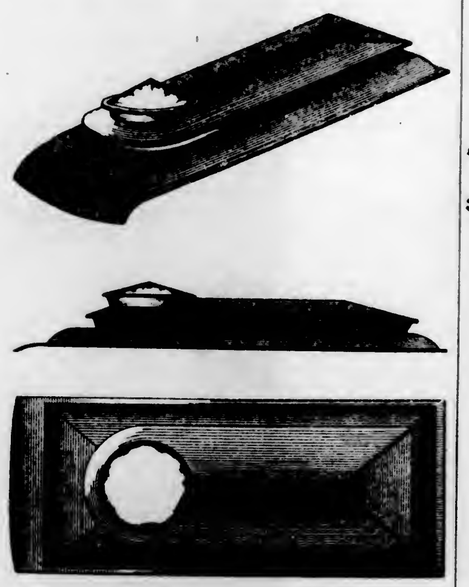
Claim.—The ornamental design for a stove, as shown.

38,042. VEHICLE-TOP. CHARLES CRETORS, Chicago, Ill. Filed Apr. 5, 1906. Serial No. 310,177. Term of patent 14 years.



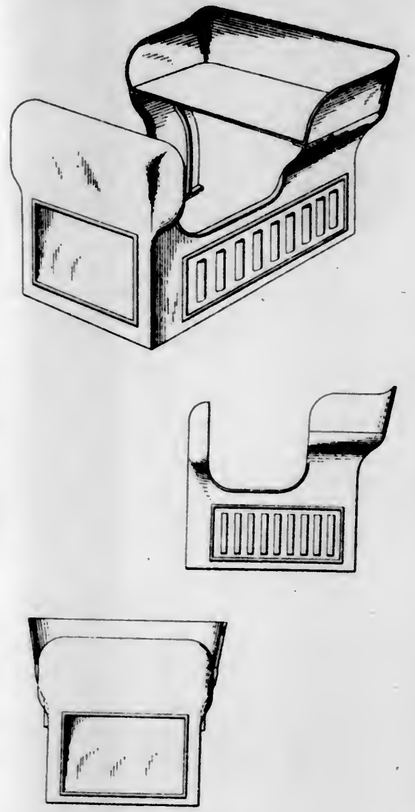
Claim.—The ornamental design for a vehicle-top, as shown.

38,043. VEHICLE-TOP. CHARLES CRETORS, Chicago, Ill. Filed Apr. 5, 1906. Serial No. 310,178. Term of patent 14 years.



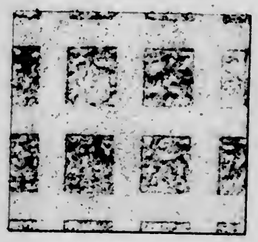
Claim.—The ornamental design for a vehicle-top, as shown.

38,044. AUTOMOBILE ENGINE-HOOD AND SEAT-SUPPORT. ALBERT B. SHULTZ, Buffalo, N. Y., assignor of one-half to Herbert H. Hewitt, Buffalo, N. Y. Filed Apr. 14, 1906. Serial No. 311,803. Term of patent 14 years.



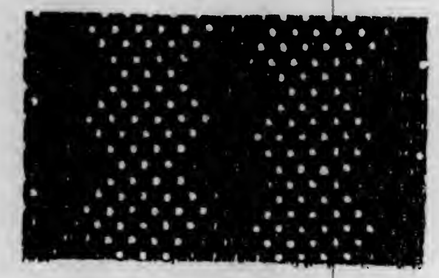
Claim.—The ornamental design for an automobile engine-hood and seat-support, as shown.

38,045. EIDER-DOWN CLOTH. CHARLES H. FRENCH, Canton, Mass., assignor to French & Ward, New York, N. Y., a Firm. Filed Mar. 7, 1906. Serial No. 304,799. Term of patent 14 years.



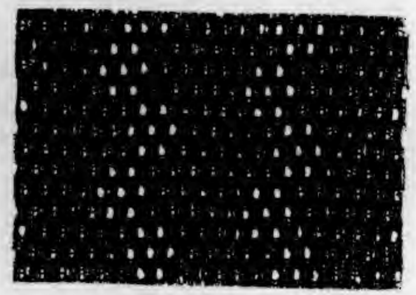
Claim.—The ornamental design for eider-down cloth as shown.

38,046. KNITTED FABRIC. FREDERIC CONDÉ, Oswego, N. Y. Filed Apr. 3, 1906. Serial No. 309,709. Term of patent 7 years.



Claim.—The ornamental design for a knitted fabric, substantially as shown.

38,047. KNITTED FABRIC. FREDERIC CONDÉ, Oswego, N. Y. Filed Apr. 3, 1906. Serial No. 309,711. Term of patent 7 years.



Claim.—The ornamental design for a knitted fabric, substantially as shown.

TRADE-MARKS

PUBLISHED MAY 29, 1906.

The following trade-marks have been adjudged entitled to registration under the act of February 20, 1905, and are published in compliance with section 6 of said act. Said section provides:

"Any person who believes he would be damaged by the registration of a mark may oppose the same by filing notice of opposition, stating the grounds therefor, in the Patent Office within thirty days after the publication of the mark sought to be registered, which said notice of opposition shall be verified by the person filing the same before one of the officers mentioned in section two of this act. If no notice of opposition is filed within said time the Commissioner shall issue a certificate of registration therefor, as hereinafter provided for."

Marks which are stated to have been "Used ten years" are registrable under the last proviso of section 5 of said act, which is as follows:

"And provided further, That nothing herein shall prevent the registration of any mark used by the applicant or his predecessors, or by those from whom title to the mark is derived, in commerce with foreign nations or among the several States, or with Indian tribes, which was in actual and exclusive use as a trade-mark of the applicant or his predecessors from whom he derived title for ten years next preceding the passage of this act."

Section 14 of said act provides for the following fee:

"On filing notice of opposition to the registration of a trade-mark, ten dollars."

SER. No. 605. REMEDIES FOR CURING DISEASES OF THE LIVER. PINEULE MEDICINE CO., Chicago, Ill. Filed Apr. 6, 1905.



The picture of an old man with a beard, in an oval frame, and a scrollwork around the frame; extending from the frame is a panel containing the words, "LITTLE LIVER PILLS" and above the panel are the words "DR. DADE'S."

SER. No. 608. TONIC. PINEULE MEDICINE CO., Chicago, Ill. Filed Apr. 6, 1905.



The representation of an old man with a beard, in an oval frame, and a scrollwork around the oval frame; above the picture are the words, "DR. DADE'S" and below the picture, "MEDICATED BLACKBERRY CORDIAL."

SER. No. 755. WHEAT-FLOUR. F. S. & F. D. LARABEE, Stafford, Kans. Filed Apr. 7, 1905.

SER. No. 755.

EMPRESS

The word "EMPRESS."

SER. No. 1,468. SAFETY-FUSE FOR EXPLODING GUNPOWDER AND OTHER EXPLOSIVES. THE CLIMAX FUSE CO., New York, N. Y. Filed Apr. 14, 1905.



The representation of a spirally-covered fuse bent into the form of a circle and having its ends intertwined. Within the circle and arranged to conform to the curvature of the inclosing fuse are the words, THE CLIMAX FUSE COMPANY, WATER TIGHT FUSE and KEEP COOL AND DRY.

SER. No. 1,656. LEATHER SHOES. HEYWOOD BOOT & SHOE COMPANY, Worcester, Mass. Filed Apr. 18, 1906.

Bunion.

The word BUNION.

SER. No. 2,322. GOLD-FILLED WATCHCASES AND WATCH-MOVEMENTS. RODE WATCH CO., New York, N. Y. Filed Apr. 20, 1905.

R.W.Co.

The letters and character R. W. Co.

SER. No. 2,640. MEDICINAL COMPOUNDS FOR THE CURE OF DYSPEPSIA AND ALL DERANGEMENTS OF THE STOMACH AND BOWELS. DR. JAMES WARE REMEDY CO., Lake Charles, La. Filed Apr. 21, 1905. Used ten years.

WARE'S
Black Powder

The words "WARE'S BLACK POWDER."

SER. No. 2,982. REMEDY FOR RHEUMATISM, GOUT, SCIATICA, LUMBAGO, AND GENERAL URIC-ACID CONDITIONS. THE ANTI-URIC CO., Peoria, Ill. Filed Apr. 25, 1905.

URIC-ANTAGON

The compound word "URIC-ANTAGON."

SER. No. 3,351. WHISKY. BLUTHENTHAL & BICKART, Atlanta, Ga. Filed Apr. 26, 1905.

MISTLETOE

The word MISTLETOE.

SER. No. 3,593. LIQUID PAINT. THE A. BURDSAL CO., Indianapolis, Ind. Filed Apr. 29, 1905.

SER. No. 3,593.

STEAMBOAT



The word "STEAMBOAT" and the representation of a steamboat.

SER. No. 4,095. ROASTED COFFEE AND ROASTED AND GROUND COFFEE. THE ENTERPRISE COFFEE COMPANY OF BALTIMORE CITY, Baltimore, Md. Filed May 3, 1905. Used ten years.

Chesapeake

The arbitrary word "CHESAPEAKE."

SER. No. 4,884. PICKLES. SQUIRE DINGEE CO., Chicago, Ill. Filed May 10, 1905.

SQUIRE
PICKLES
Squire Dingee Co.
Chicago

The arbitrarily-selected word "SQUIRE." The words "SQUIRE PICKLES SQUIRE DINGEE CO. CHICAGO" are inclosed in an ornamental shield-like border.

SER. No. 5,366. WHISKY. MELCHERS & EFFLER, Toledo, Ohio. Filed May 12, 1905.

OLD CAVERN
M & E

The words OLD CAVERN associated with the letters and character M & E inclosed in a circle.

SER. No. 5,782. LAMP GLASSES AND GLOBES. MACBETH-EVANS GLASS COMPANY, Pittsburg, Pa. Filed May 16, 1905.

SER. No. 5,782.

KEYSTONE



The representation of a keystone bearing the word "KEYSTONE" and the figure of a man blowing glass.

SER. No. 5,988. DUPLICATING-MACHINES AND PARTS THEREOF. A. B. DICK COMPANY, Chicago, Ill. Filed May 18, 1905.

Mimeograph

The word "MIMEOGRAPH."

SER. No. 6,252. GAS-GENERATORS. THE ACME GAS COMPANY, Chicago, Ill. Filed May 22, 1905.

ACME GAS

The words ACME GAS.

SER. No. 6,415. METAL-POLISH. AMERICAN METAL POLISH CO., Somerville, Mass. Filed May 23, 1905. Used ten years.

MEYERS'
PUTZ
CREAM

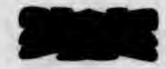
The name MEYERS' PUTZ CREAM.

SER. No. 7,111. SILVER HOLLOW WARE, FLAT WARE, AND TABLEWARE. THE AMERICAN SILVER COMPANY, Bristol, Conn. Filed May 31, 1905.



1857 appears at the top and "WORLD BRAND" at the bottom. Between these appear a crossed knife, fork and spoon supporting the world on which world appear the words STANDARD OF THE WORLD.

SER. No. 7,133. INFANTS' AND CHILDREN'S DRESSES. WILLIAM LAWRENCE LEAVY, New York, N. Y. Filed June 1, 1905.



A figure of oblong symmetrical shape the border of which at the center of the top is in the form of a cone with a relatively broad base, at either side of which there is an ear-like projection; each side is formed at the top by a bulging corner below which there are respectively two upwardly and inwardly extending curved notches, the upper being greater than the lower; and the bottom is a long inwardly and upwardly extending line on either side, which, a short distance from the center of the bottom line, curves downwardly and outwardly at either side for a relatively short distance in order to form rounded corners and turns to make a horizontal line for the center of the base in the middle of which there is a notch.

SER. No. 7,780. LEATHER BOOTS AND SHOES AND LEATHER USED IN THEIR MANUFACTURE. RICE & HUTCHINS, INCORPORATED, Boston, Mass., assignor to Rice and Hutchins, Incorporated, a Corporation of Maine. Filed June 10, 1905.



The word "SIGNET" located below the representation of the signet comprising the reversed capital letters "R H," surrounded by a circular band having thereon the words "BUILT ON THE SQUARE," the whole surmounted by the representation of a crown.

SER. No. 7,800. LEATHER BOOTS AND SHOES AND LEATHER USED IN THEIR MANUFACTURE. RICE & HUTCHINS INCORPORATED, Boston, Mass., assignor to Rice and Hutchins Incorporated, a Corporation of Maine. Filed June 10, 1905.

HARD-KNOCKS

The word HARD-KNOCKS.

SER. No. 7,816. MILK, CONDENSED MILK, CREAM, EVAPORATED CREAM, AND BUTTERMILK. BORDEN'S CONDENSED MILK CO., Jersey City, N. J., and New York, N. Y. Filed June 10, 1905. Used ten years.

BORDEN'S

The arbitrarily-selected word "BORDEN'S."

SER. No. 7,841. ALE. SPRINGFIELD BREWERIES COMPANY, Springfield, Mass. Filed June 10, 1905.



An annulus in black together with the word "HAMPDEN" in white letters arranged in the arc of a circle in the upper part of the annulus.

SER. No. 7,842. ALE. SPRINGFIELD BREWERIES COMPANY, Springfield, Mass. Filed June 10, 1905.



An annulus inclosing a circular space within which is a pictorial representation of a hooded monk's head.

SER. No. 7,885. OIL FOR EXTERNAL AND INTERNAL USE. FOSTER-MILBURN CO., Buffalo, N. Y. Filed June 10, 1905. Used ten years.



The representation of a hand holding in its palm a bottle on which appear the words "ELECTRIC OIL" and from which radiate in all directions zigzag lines indicating a magnetic field. At the right of the hand is represented a black box or carton on which appear the words "ELECTRIC OIL" toward which the index-finger of the hand is pointing. In the magnetic field above the hand appear the words DR THOMAS, in the field below the hand the words WORTH ITS WEIGHT IN GOLD. The words DR THOMAS EXCELSIOR" are arranged in two lines across the top above and the word "ELECTRIC" below the magnetic field.

SER. No. 7,924. FILES AND RASPS. G. & H. BARNETT COMPANY, Philadelphia, Pa. Filed June 12, 1905.

BLACK DIAMOND

The words BLACK DIAMOND.

SER. No. 8,239. VEGETABLE FLOUR FOR BINDING AND BLENDING SAUSAGE-MEAT. B. HELLER & CO., Chicago, Ill. Filed June 15, 1905.



The arbitrary name BULL-MEAT.

SER. No. 8,563. MASSAGE-CREAMS, ROUGES, AND DEPILATORY POWDERS. MATILDA R. AUBRY, Toledo, Ohio. Filed June 19, 1905.

SER. No. 8,563.



A medallion bearing the portrait of applicant and the words AUBRY SISTERS BEAUTIFIER.

SER. No. 8,776. PEPPER-SAUCE. E. MCILHENNY'S SON, Avery's Island, La. Filed June 22, 1905. Used ten years.

McILHENNY'S

The word "MCILHENNY'S."

SER. No. 9,014. OINTMENTS AND SALVES. BEACON OINTMENT CO, Chicago, Ill. Filed June 26, 1905.



The word "BEACON" and a marine scene showing a lighthouse in the foreground.

SER. No. 9,074. CIDER-VINEGAR AND CIDER. GUSTAV B. GEHLERT, Benton Harbor, Mich. Filed June 26, 1905.



The words "POCAHONTAS BRAND" and the representation of an Indian maiden with flowing hair and a headdress of feathers,

wearing a beaded necklace and appearing on a background comprising the skin of an animal, with crossed bow and arrows arranged beneath the figure; said figure being inclosed in an oval beaded border, spanned by a horizontal panel having arrow-heads at its ends and lower edge.

SER. No. 9,362. MALT EXTRACT. PARAGON MALT EXTRACT COMPANY, New York, N. Y. Filed June 28, 1905.



A fancy panel having downwardly and inwardly tapering sides and rounded corners and an interiorly-arranged fancy panel at the lower edge of the outer panel and extending from side to side thereof, a sprig of barley in bloom arranged in the lower opposite corners above the inner panel, associated with the words PEERLESS MALT EXTRACT appearing across the main panel.

SER. No. 9,387. CIGARS. COMPAÑIA GENERAL DE TABACOS DE FILIPINAS, Barcelona, Spain. Filed June 29, 1905.



The representation of a shield capped by a mural crown, said shield being divided into four quarters showing respectively a tobacco-plant, a ship, a factory, and shrubbery, and the center of the shield showing a tower and a mythological animal, with the words "COMPANIA GENERAL DE TABACOS" on the upper scroll and the words "DE FILIPINAS" on the lower scroll, and the words "MARCA DE FABRICA" on either side of the shield, the whole inclosed in an ornamental border.

SER. No. 9,415. MINERAL WATER. SPRUDEL WATER CO., Mount Clemens, Mich. Filed June 30, 1905.

SPRUDEL

The word SPRUDEL.

SER. No. 9,446. CREAM-SEPARATORS OF ALL KINDS. THE DE LAVAL SEPARATOR COMPANY, New York and Poughkeepsie, N. Y. Filed June 30, 1905. Used ten years.

DE LAVAL

The word "DE LAVAL."

SER. No. 9,534. INSULATED WIRE FOR ELECTRIC SERVICE. STANDARD UNDERGROUND CABLE COMPANY, Pittsburg, Pa. Filed June 30, 1905. Used ten years.

STANDARD

The word "STANDARD."

SER. No. 9,625. TIN AND TERNE PLATES. FOLLANSBEE BROTHERS COMPANY, Pittsburg, Pa. Filed July 3, 1905.

HERMITAGE

The word "HERMITAGE."

SER. No. 9,657. BLEACHED AND UNBLEACHED, PRINTED, AND DYED TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa. Filed July 3, 1905



A representation of a figure of a woman in walking costume carrying an umbrella in her hands.

SER. No. 9,659. SOLID BLACK COTTON PRINTS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa. Filed July 3, 1905.

EAGLE



A representation of an eagle verbally and pictorially expressed.

SER. No. 9,706. WHISKY. BERNHEIM DISTILLING CO., INC., Louisville, Ky. Filed July 3, 1905.

SER. No. 9,706.



The words OLD CONTINENTAL and the representation of an acorn.

SER. No. 9,796. GINGER-ALE, ROOT-BEER, LEMON-SODA, CHERRY PHOSPHATE, CHERRY PHOSPHATE, AND SARSAPARILLA. SPRAGUE, WARNER & COMPANY, Chicago, Ill. Filed July 3, 1905.



The arbitrarily-selected word RICHELIEU.

SER. No. 10,173. CORN-SALVE. KOHLER MANUFACTURING CO., Baltimore, Md. Filed July 12, 1905. Used ten years.

ONE
NIGHT
CORN
CURE.

The words "ONE NIGHT CORN CURE."

SER. No. 10,190. BOOTS, SHOES, SLIPPERS, AND TIES MADE WHOLLY OR PARTLY OF LEATHER. KAPLAN & GOLDSOLL, New York, N. Y. Filed July 12, 1905.

The Vera

The words THE VERA.

SER. No. 10,240. WHISKY. LUTTIEN BROTHERS, New York, N. Y. Filed July 13, 1905. Used ten years.

ANTEDILUVIAN

The word ANTEDILUVIAN.

SER. No. 10,243. COMPOUND OF OILS AND FATS TO BE USED AS A SUBSTITUTE FOR LARD. SAMUEL H. READ, New Haven, Conn. Filed July 13, 1905.

SER. No. 10,248.

LARDENE

The word "LARDENE" inclosed in a diamond-shaped panel.

SER. No. 10,493. METAL HORSE AND MULE SHOES. PHOENIX HORSE SHOE CO. Chicago, Ill. Filed July 17, 1905. Used ten years.

PHOENIX

The arbitrary word "PHOENIX."

SER. No. 10,534. HOSIERY. HERMANN STÄRKER, Chemlits, Germany, and New York, N. Y. Filed July 18, 1905.



The representation of a lion appearing within a triangular figure having on its apex the representation of a star from which extend conventional rays.

SER. No. 10,626. SEESAWS, ROUNDABOUTS, AND TEETERS. EDWIN D. SMITH, Pittsburg, Pa. Filed July 20, 1905.

ROUGH
RIDER

The words ROUGH RIDER printed in plain block letters in oppositely-curved lines, the word ROUGH appearing above the word RIDER and a little to the left.

SER. No. 10,689. MOTOR-VEHICLES KNOWN AS AUTOMOBILES. KNOX MOTOR TRUCK CO., Springfield, Mass. Filed July 21, 1905.

Atlas

The word "ATLAS."

SER. No. 10,656. FRUIT-JUICES. ROBERT H NEIL, Cincinnati, Ohio. Filed July 21, 1905.



A diamond or lozenge shaped figure bearing the hyphenated word FRUIT-ADE and the words THE JUICE OF THE FRUIT. M'F'D BY THE FRUIT-ADE CO. CIN. O. U. S. A.

SER. No. 10,739. COMPRESSED ROLLED OATS. THE GREAT WESTERN CEREAL CO., Chicago, Ill. Filed July 24, 1905.



The words ROYAL SEAL and the representation of a crown on a seal suspended from a ribbon bowknot.

SER. No. 10,959. CERTAIN PLASTIC COMPOSITION CONTAINING NITROCELLULOSE. THE DURANOID M'F'G. CO., Newark, N. J. Filed July 28, 1905.

DURANOID

The word DURANOID.

SER. No. 11,052. PHOTOGRAPHIC ACIDIFIERS, DEVELOPERS, INTENSIFIERS, REDUCERS, RESTRAINERS, AND SENSITIZERS. ERNEST A. TURNER, Rochester, N. Y. Filed July 31, 1905.

YUNIT

The word YUNIT.

SER. No. 11,055. MACHINE FOR FILING AND GUMMING GIN-SAWS. THE A. A. WOOD & SONS COMPANY, Atlanta, Ga. Filed July 31, 1905.

DUPLEX

The word DUPLEX.

SER. No. 11,152. MIXED PAINT. CHAS. R. LOWE JR. COMPANY, Louisville, Ky. Filed Aug. 2, 1905.

CARBON PROOF

The words CARBON PROOF.

SER. No. 11,221. COFFEE-BLEND. S. S. PIERCE CO., Boston, Mass. Filed Aug. 3, 1905.



The representation of a lion rampant on a shield partly concealing an eagle, and a lion rampant on each side of said shield and eagle, associated with the words "CAFÉ DES INVALIDES" and "OR ANTIDOTE KAUOMPHY COMPOUND" upon a rectangular background or panel of contrasting color. The shield has near its upper edge the letters "S. S. P. Co." and near its lower curved sides the words "PURITAS ET CURA."

SER. No. 11,245. BREAKFAST-FOOD MADE FROM WHEAT. CREAM OF WHEAT CO., Minneapolis, Minn. Filed Aug. 4, 1905. Used ten years.

CREAM
OF
WHEAT

The words CREAM OF WHEAT.

SER. No. 11,250. HAIR-WAVERS. S BEAUMONT & FILS, Roubaix, France. Filed Aug. 4, 1905.

"La Donna"

The arbitrary words "LA DONNA."

SER. No. 11,465. REMEDIES FOR UTERINE DISEASES, IN CAPSULE FORM. JAMES COOK FULLER, assignor to VIMEDIA CO. Kansas City, Mo. Filed Aug. 9, 1905.

VIMEDIA

The word VIMEDIA.

SER. No. 11,535. RAZORS AND POCKET, TABLE, HUNTING, AND BUTCHER KNIVES. F A CLAUSSEN & Co, New York, N. Y. Filed Aug. 11, 1905. Used ten years.



The representation of a fish.

SER. No. 11,788. COLLARS, CUFFS, AND SHIRT-FRONTS MADE OF MATERIAL HAVING A BASE OF PYROXYLIN, SUCH AS "CELLULOID" OR SIMILAR PYROXYLIN COMPOUNDS. CELLULOID COMPANY, New York, N. Y., and Newark, N. J. Filed Aug. 17, 1905. Used ten years.

CELLULOID

A monogram composed of the letters "C N C O" followed by the letters "ELLULOID."

SER. No. 11,815. OXIDS OF LEAD AND SUGAR OF LEAD. NATIONAL LEAD COMPANY, Jersey City, N. J., and New York, N. Y. Filed Aug. 19, 1905. Used ten years.

BROOKLYN WHITE LEAD CO. NEW YORK.

The words and abbreviation "BROOKLYN WHITE LEAD CO. NEW YORK."

SER. No. 11,826. MALT EXTRACT. MINNEAPOLIS BREWING CO., Minneapolis, Minn. Filed Aug. 19, 1905.

REX-NUTRIO

The compound word, REX-NUTRIO.

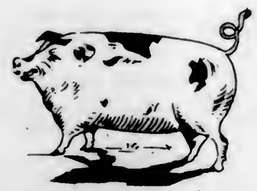
SER. No. 11,877. FOUNTAIN-PENS. S. L. KEEN & Co., Indianapolis, Ind. Filed Aug. 21, 1905.

SER. No. 11,877.

MERIDIAN

The word MERIDIAN.

SER. No. 12,245. BLEACHED, GRAY, PRINTED, AND FANCY DAMASKS. NEUSS, HESSLEIN & Co., New York, N. Y. Filed Sept. 5, 1905.



The representation of a pig.

SER. No. 12,248. WOODEN BARRELS, HALF-BARRELS, KEGS, WELL-BUCKETS, AND PAILS. UNION COOPERAGE CO, St. Louis, Mo. Filed Sept. 5, 1905. Used ten years.

UC ST LOUIS

The letters U. C. crossed by a panel bearing the name ST. LOUIS.

SER. No. 12,299. LAGER-BEER. IROQUOIS BREWING CO, Buffalo, N. Y. Filed Sept. 6, 1905.



A representation of the head of an Indian woman wearing a headdress of feathers with the word "IROQUOIS" appearing on the band thereof and a surrounding annular band bearing the words "IROQUOIS BUFFALO."

SER. No. 12,434. NURSING-BOTTLE NIPPLES. DAVIDSON RUBBER CO., Boston, Mass. Filed Sept. 9, 1905.



The words "NO COLIC NIPPLE," the letters N and C and the representation of a nipple being in the form of a monogram.

SER. No. 12,871. BLEACHED, GRAY, PRINTED, AND FANCY DAMASKS. NEUSS, HESSLEIN & Co., New York, N. Y. Filed Sept. 8, 1905.



The words "WIDE AWAKE NUNCA DORMIMOS" and the representation of a human eye.

SER. No. 12,873. WRITING-PENS. HENRY S. BREWINGTON, Baltimore, Md. Filed Sept. 21, 1905.

ONE DIP

The arbitrary words "ONE DIP."

SER. No. 12,908. LAGER-BEER. THE PETER SCHOENHOFEN BREWING COMPANY, Chicago, Ill. Filed Sept. 22, 1905.



The representation of a shield having thereon in parallel diagonal stripes the National colors, red white and blue; in its upper portion, P. SCHOENHOFEN BREWING CO., CHICAGO; near its lower edge the word, SELECT; and between said words a mercury-staff intertwined with the letter S surrounded by a wreath composed in part of a hop-vine and in part of barley-stalks.

SER. No. 12,933. CLOVER-SEED. THE TOLEDO FIELD SEED COMPANY, Toledo, Ohio. Filed Sept. 23, 1905.

STAR C BULKED.

The words STAR BULKED, associated with the arbitrary symbol of a star, having in its center the letter C.

SER. No. 12,992. WHITE LEAD AND OXIDS OF LEAD. NATIONAL LEAD & OIL CO. OF PA., Pittsburg, Pa. Filed Sept. 25, 1905.

ARMSTRONG & McKELVY PITTSBURGH, PA.

The representation of a Keystone, associated with the words and abbreviations "ARMSTRONG & MCKELVY, PITTSBURGH, PA."

SER. No. 13,067. MINERAL WATER. ARONDACK SPRING COMPANY, Saratoga Springs, N. Y. Filed Sept. 27, 1905.

ARONDACK

The word ARONDACK.

SER. No. 13,157. WHEAT-FLOUR. J. F. JOHNSON MILLING CO., Bridgeton, N. J. Filed Sept. 30, 1905.

Cream of Wheat

The words CREAM OF WHEAT.

SER. No. 13,166. WATCHES. JAMES B. ABERNETHY, Clarksdale, Miss. Filed Sept. 30, 1905.



The representation of a watch and the figure of a man standing upon the face of the same, one hand grasping the handle of a sledge or hammer, and the other being extended and supporting a watch.

SER. No. 13,196. NEEDLES FOR HAND-SEWING AND FOR THE SEWING-MACHINE. HENRY MILWARD & SONS, LIMITED, Redditch, England. Filed Oct. 2, 1905. Used ten years.



The representation of a steamship over which is placed horizontally the word NEEDLES. Appended to each the letters "N" and "S" of said word is scrollwork decoration, and over said word are the words PATENT HELIX arranged on a line curving from the center downward.

SER. No. 13,262. WHEAT-FLOUR. THE RED STAR MILL & ELEVATOR COMPANY, Wichita, Kans. Filed Oct. 3, 1905.



The words "RED STAR" and the representation of a red star on a blue field within a border composed of a band of wheat-heads between concentric circles.

SER. No. 13,417. ADHESIVE CEMENT FOR MENDING PURPOSES. U. S. CHEMICAL RUBBER CO., Washington, D. C., and Chicago, Ill. Filed Oct. 7, 1905.



The representation of an irregular oval-shaped figure, associated with the words ELASTIC CEMENT.

SER. No. 13,665. DISINFECTANTS. JOHNSON & JOHNSON, New Brunswick, N. J. Filed Oct. 17, 1905. Used ten years.



A representation of a red Greek cross.

SER. No. 13,736. SMOKING-TOBACCO. ROBT. HARRIS & BRO., Reidsville, N. C. Filed Oct. 18, 1905.

SER. No. 13,736.



The words "HIGH LIFE" associated with the representation of a man in smoking-jacket and cap seated in an easy chair and smoking a pipe.

SER. No. 13,810. SODA AND SALERATUS, EITHER ALONE OR WHEN MIXED WITH A POWDERED ACID, AS IS COMMON TO FORM A BAKING-POWDER AND SAL-SODA. CHURCH & DWIGHT COMPANY, New York, N. Y. Filed Oct. 21, 1905.



An annular red band.

SER. No. 13,861. POWDERED FORM OF DYES. HEITMANN BROS., Cologne, Germany. Filed Oct. 23, 1905.



A representation of a fox's head, inclosed in a circle from which radiating lines or spear-points extend the four cardinal points of which are much enlarged and have eleven intermediate points with the central one slightly enlarged and with the German words FABRIK GIFTFREIER FARBEN, in a semicircle above and the initial letters G. H. below the figure.

SER. No. 13,990. MEDICINAL PLASTERS. JOHNSON & JOHNSON, New Brunswick, N. J. Filed Oct. 28, 1905. Used ten years.

CAMPHOCINE

The word "CAMPHOCINE."

SER. No. 14,227. CLOAKS, DRESS-SKIRTS, DRESS-WAISTS, AND TAILOR-MADE SUITS. THE BEDELL COMPANY, New York, N. Y. Filed Nov. 3, 1905.

SER. No. 14,227.



A general rectangular, ornamental panel bearing the name BEDELL in the particular and distinctive style shown, and the representation of an elk's head, issuant from a heraldic roll and partially inclosed in a wreath.

SER. No. 14,310. MINERAL WATER. THE APOLLINARIS COMPANY, LIMITED, London, England. Filed Nov. 4, 1905. Used ten years.



The representation of a red triangle.

SER. No. 14,311. MINERAL WATER. THE APOLLINARIS COMPANY, LIMITED, London, England. Filed Nov. 4, 1905. Used ten years.



A red diamond-shaped figure.

SER. No. 14,312. MINERAL WATER. THE APOLLINARIS COMPANY LIMITED, London, England. Filed Nov. 4, 1905. Used ten years.



The representation of a diamond or lozenge shaped figure divided centrally into two triangles, one of which is red and the other white.

SER. No. 14,515. CANNED, BOTTLED, AND PRESERVED FRUITS AND VEGETABLES. LEWIS DEGROOT & SON, New York, N. Y. Filed Nov. 11, 1905. Used ten years.

HEALTH BRAND

The words "HEALTH BRAND."

SER. No. 14,547. VELVET PIECE GOODS. AITKEN, SON & CO., New York, N. Y. Filed Nov. 13, 1905.

SER. No. 14,547.



The representation of a Maltese cross with rays of light radiating therefrom and bearing upon its arms the letters and character "A S & Co."

SER. No. 14,549. SILK PIECE GOODS. AITKEN, SON & CO., New York, N. Y. Filed Nov. 13, 1905.



The representation of a Maltese cross with rays of light radiating therefrom and bearing upon its arms the letters and character "A S & Co."

SER. No. 14,550. VEILINGS AND CHIFFONS. AITKEN, SON & CO., New York, N. Y. Filed Nov. 13, 1905.



The representation of a Maltese cross with rays of light radiating therefrom and bearing upon its arms the letters and character "A S & Co."

SER. No. 14,551. DRESS-TRIMMINGS AND BRAIDS. AITKEN, SON & CO., New York, N. Y. Filed Nov. 13, 1905.



The representation of a Maltese cross with rays of light radiating therefrom and bearing upon its arms the letters and character "A S & Co."

SER. No. 14,552. RIBBONS. AITKEN, SON & CO., New York, N. Y. Filed Nov. 13, 1905.



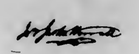
The representation of a Maltese cross with rays of light radiating therefrom and bearing upon its arms the letters and character "A S & Co."

SER. No. 14,602. BEER. REISCH BREWING CO., Springfield, Ill. Filed Nov. 14, 1905.



The words "GOLD TOP," associated with the representation of a peacock standing upon a barrel.

SER. No. 14,823. COTTON PIECE GOODS. J & J M WORRALL (LIMITED,) Salford, England. Filed Nov. 20, 1905.



The facsimile signature of the applicants predecessors in business Jas. & Jno. M. Worrall.

SER. No. 15,019. ROTARY WASHING-MACHINES. BENDOW-BRAMMER MANUFACTURING COMPANY, St. Louis, Mo. Filed Nov. 27, 1905.



The word "PEACEMAKER."

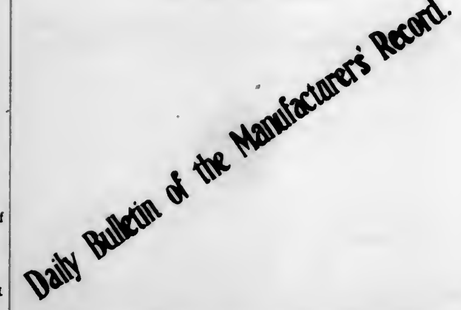
SER. No. 15,276. PORTER. JOHN LABATT, London, Canada. Filed Dec. 8, 1905.

SER. No. 15,276.



Concentric panels, an arrow-head produced upon one panel, a ribbon-like band extending in opposite directions from the arrow-head, and sheaves of grain at each end of the ribbon band, the facsimile signature JOHN LABATT, the applicant, appearing upon the said band, the word LABATT'S above the band, the word PORTER below the band, and the word LONDON below the word PORTER.

SER. No. 15,350. NEWSPAPERS. MANUFACTURERS' RECORD PUBLISHING COMPANY, Baltimore, Md. Filed Dec. 12, 1905.



The words DAILY BULLETIN OF THE MANUFACTURERS' RECORD.

SER. No. 15,462. WHEAT-FLOUR. NEW LONDON MILLING COMPANY, New London, Minn. Filed Dec. 16, 1905.



The word GOODALL arranged both horizontally and vertically in such a manner that the letter D is common, upon a white Greek cross upon a red field surrounded by a red circle.

SER. No. 15,686. FLAGS. HOFFMAN-CORR MFG CO, Philadelphia, Pa. Filed Dec. 26, 1905.



A seal, the words "LION MILLS," the representation of a lion standing with one paw on a coil of rope, and concentric circles, one of which circles is formed of rope.

SER. No. 15,707. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio. Filed Dec. 28, 1905. Used ten years.



The representation of the Goddess of Liberty in a field of stars on a conventional ace of spades.

SER. No. 15,741. TROWELS OF ALL KINDS, SUCH AS MASONS', BRICK, AND PLASTERING TROWELS. WILLIAM HUNT & SONS, THE BRADES, LIMITED, Brades Steel Works, near Birmingham, England. Filed Dec. 29, 1905. Used ten years.

BRADES C°

The name "BRADES CO."

SER. No. 15,742. TROWELS OF ALL KINDS, SUCH AS MASONS', BRICK, AND PLASTERING TROWELS. WILLIAM HUNT & SONS, THE BRADES, LIMITED, Brades Steel Works, near Birmingham, England. Filed Dec. 29, 1905. Used ten years.



The words C. WALBY LONDON., associated with the representation of a crown.

SER. No. 15,748. TROWELS OF ALL KINDS, SUCH AS MASONS', BRICK, AND PLASTERING TROWELS. WILLIAM HUNT & SONS, THE BRADES, LIMITED, Brades Steel Works, near Birmingham, England. Filed Dec. 29, 1905.



The words "BRADES CO. BEST LONDON," associated with the representation of a crown.

SER. No. 15,744. TROWELS OF ALL KINDS, SUCH AS MASONS', BRICK, AND PLASTERING TROWELS. WILLIAM HUNT & SONS, THE BRADES, LIMITED, Brades Steel Works, near Birmingham, England. Filed Dec. 29, 1905.

WHS
HUNT & SONS,
BRADES C°

The words "WHS HUNT & SONS, BRADES CO."

SER. No. 15,989. PAPER PACKAGES OR CARTONS FOR CONFECTIONERY AND POPCORN. THE DAYTON PAPER NOVELTY CO, Dayton, Ohio. Filed Jan. 8, 1906.

MOTHER GOOSE

The name MOTHER GOOSE.

SER. No. 16,048. SOAP. BURLINGTON SOAP COMPANY, Burlington, Iowa. Filed Jan. 8, 1906.

FOUR-MOST

The word FOUR-MOST.

SER. No. 16,086. WOVEN AND KNITTED UNDERWEAR. GEO WM. SCHLICHTEN, New York, N. Y. Filed Jan. 10, 1906. Used ten years.

RAMIE-FIBRE

The hyphenated word "RAMIE-FIBRE."

SER. No. 16,170. KNIT HOSIERY AND KNIT UNDERWEAR. HOSFORD & CLARK, New York, N. Y. Filed Jan. 13, 1906.

Fanchon

The word "FANCHON."

SER. No. 16,184. PREPARED CEMENTS FOR GLUING AND FASTENING. NORMAN B. MUSSELMAN, Philadelphia, Pa. Filed Jan. 13, 1906.



The representation of a heart, bearing the words THE QUALITY CEMENT CO. PHILADA. PA.

SER. No. 16,258. CHECKS OR SLIPS AND CHECKERS' SHEETS USED BY WAITERS AND OTHER EMPLOYEES IN HOTELS, RESTAURANTS, AND THE LIKE FOR ACCOUNT-CHECKING AND CASH-REGISTERING. HOTEL SECURITY CHECKING COMPANY, Medford, Mass. Filed Jan. 17, 1906.



The letters H S C Co. arranged in the external right angles of a Greek cross and showing in white on a black ground, the cross itself being white. Across the horizontal bar of the cross are the words HICKS METHOD and across the vertical bar the words FINE POINTS, so that the two phrases mentioned intersect each other at the center of the cross.

SER. No. 16,387. BEER. JACOB RUPPERT, New York, N. Y. Filed Jan. 20, 1906.

KNICKERBOCKER

The word KNICKERBOCKER.

SER. No. 16,375. PREPARED FOOD SUBSTANCE FOR USE IN MAKING TABLE SWEETS, DESSERTS, AND THE LIKE. EGLAH LIMITED, London, England. Filed Jan. 22, 1906.

EGLAH

The word EGLAH.

SER. No. 16,414. SMOKING-TOBACCO. BUTLER-BUTLER, (INCORPORATED,) New York, N. Y. Filed Jan. 23, 1906.

GREEK SLAVE

The words GREEK SLAVE.

SER. No. 16,443. SILVER AND SILVER-PLATED HOLLOW AND FLAT WARE. KOECHLIN & BOEHLHARDT, Newark, N. J. Filed Jan. 19, 1906.



The monogram composed of the letters "K" and "E."

SER. No. 16,573. BRONZE-POWDERS AND BRONZING LIQUIDS. GEORGES BENDA, New York, N. Y. Filed Jan. 27, 1906.



The word "TEKKOSBRONZE" and a conventional representation of the sun, all inclosed in an ornamental, scroll-like border.

SER. No. 16,622. RIVETS. JUDSON L. THOMSON M'F'G. CO., Waltham, Mass. Filed Jan. 30, 1906.



An octagonal-sided figure, the sides of said figure being of unequal length and the alternate sides shaded, thus making four shaded sides and four unshaded sides. The unshaded sides, which form the corners of said octagonal-sided figure, have the representation of a rivet thereon.

SER. No. 16,695. SALVES, OINTMENTS, OR UNGUENTS CONTAINING CARBOLIC ACID AS AN INGREDIENT. J W COLE & Co, Jackson, Wis. Filed Feb. 2, 1906. Used ten years.

Veterinary
Carbolisalve

The arbitrarily-selected words VETERINARY CARBOLISALVE.

SER. No. 16,713. WHEAT-FLOUR. LIBERTY MILLS, Nashville, Tenn. Filed Feb. 3, 1906. Used ten years.

DE SOTO

The word "DE SOTO."

SER. No. 16,732. WEEKLY ILLUSTRATED MAGAZINE. P. F. COLLIER & SON, New York, N. Y. Filed Feb. 3, 1906. Used ten years.

SER. No. 16,782.

Collier's

The word COLLIER'S.

SER. No. 16,749. LEATHER BOOTS AND SHOES. THE EVANS SHOE CO., East Napa, Cal. Filed Feb. 5, 1906.



The word "NAP-A-TAN" inclosed in a diamond-shaped figure.

SER. No. 16,921. SAFETY-MATCHES. JÖNKÖPINGS OCH VULCANS TÄNDSTICKSFABRIKSAKTIEBOLAG, Jönköping, Sweden. Filed Feb. 12, 1906. Used ten years.

THE LION

The words THE LION.

SER. No. 16,922. SAFETY-MATCHES. JÖNKÖPINGS OCH VULCANS TÄNDSTICKSFABRIKSAKTIEBOLAG, Jönköping, Sweden. Filed Feb. 12, 1906.

PLANET
MATCHES

The words PLANET MATCHES.

SER. No. 16,953. CAST-STEEL IN BARS, RODS, SHEETS, PLATES, AND WIRE, EXCEPT STEEL BALLS. W T BERSLEY & CO. LD., Sheffield, England. Filed Feb. 13, 1906. Used ten years.



The representation of a micrometer-gage with the word "EXACT" therein with the name of the company W. T. BERSLEY & CO., LD. round the arm of the gage.

SER. No. 16,955. RAZORS, KNIVES, AND FORKS. THOS. R. CADMAN & SONS, Sheffield, England. Filed Feb. 13, 1906. Used ten years.

BENGALL

The word "BENGALL."

SER. No. 16,956. SILVER AND PLATED KNIVES, FORKS, SPOONS, CRUET-FRAMES, TEA AND OTHER LIKE POTS, JUGS, CREAM, SUGAR, AND OTHER LIKE BASINS, WAITERS, SHIELDS, AND SILVER AND PLATED WARE OF ALL KINDS. WM. HUTTON & SONS LTD., Sheffield, England. Filed Feb. 13, 1906. Used ten years.



The representation of eight arrows crossed.

SER. No. 16,991. SAUER-KRAUT. THE CLYDE KRAUT COMPANY, Clyde, Ohio. Filed Feb. 13, 1906.

SILVER FLEECE

The words "SILVER FLEECE."

SER. No. 17,045. SILK PIECE GOODS. HOME SILK MILLS, New York, N. Y. Filed Feb. 15, 1906.

THE REWARD

The words THE REWARD.

SER. No. 17,084. MEDICINAL PLASTERS. J. ELLWOOD LEE COMPANY, Conshohocken, Pa. Filed Feb. 16, 1906. Used ten years.

G.&R.

"G. & R."

SER. No. 17,090. WHEAT-FLOUR. H. T. LAWLER MILLING & TRADING CO. LTD, New Orleans, La. Filed Feb. 16, 1906.

GOOD MONEY

The words GOOD MONEY.

SER. No. 17,091. WHEAT-FLOUR. H. T. LAWLER MILLING & TRADING CO. LTD, New Orleans, La. Filed Feb. 16, 1906.

SER. No. 17,091.



AU-TO-GO

The hyphenated syllables "AU-TO-GO," and the representation of an automobile having a man and a woman seated therein.

SER. No. 17,143. SPRING-WHEAT FLOUR. CLARENCE O. CASE, Boston, Mass. Filed Feb. 17, 1906.



A portrait bust of the late President McKinley, against a light background surrounded by a circle formed of scrolls, the upper scroll of a red color, and bearing the word "MCKINLEY" and the lower scroll of a blue color bearing the word "FLOUR," and at the overlapping of the said scrolls, at the right and left sides of the circles, are shields designed with vertical red, white, and blue stripes, one stripe of each color, and bearing across the face of the shield on the left of the observer, in bar sinister the word "FANCY," and on the shield on the right in similar manner the word "PATENT."

SER. No. 17,155. FIRE-KINDLING COMPOSITIONS AND BRICKS OR BRIQUETS, CAKES OR BLOCKS COMPOSED OF SUCH COMPOSITIONS. NASHVILLE CHEMICAL CO., Nashville, Tenn. Filed Feb. 17, 1906.

KINDLEITE

The word "KINDLEITE."

SER. No. 17,156. BLEACHED, UNBLEACHED, PRINTED, AND DYED TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa. Filed Feb. 17, 1906.



The words FOULARD RAYÉ associated with a medallion bearing a representation of a lighthouse and the words "SIMPSON EDDYSTONE" and with rays radiating toward the words "FOULARD RAYÉ."

SER. No. 17,170. COTTON PIECE GOODS. FLOYD COTTON MILLS, Rome, Ga. Filed Feb. 19, 1906. Used ten years.

CHEROKEE

The word CHEROKEE.

SER. No. 17,171. COTTON PIECE GOODS. FLOYD COTTON MILLS Rome, Ga. Filed Feb. 19, 1906. Used ten years.

KENTON

The word KENTON.

SER. No. 17,188. SILK PIECE GOODS. L. & E. STERN, New York, N. Y. Filed Feb. 19, 1906.

Helios

The word "HELIOS."

SER. No. 17,289. BABBITT AND ANTIFRICTION BEARING METALS. PALMETTO METAL COMPANY, Chicago, Ill. Filed Feb. 23, 1906.



The representation of a palmetto-leaf having written thereon the word "PALMETTO" in block letters.

SER. No. 17,295. LUBRICATING-GRAPHITE. THE UNITED STATES GRAPHITE COMPANY, Saginaw, Mich. Filed Feb. 23, 1906.

GRAFITA

The arbitrary word "GRAFITA."

SER. No. 17,303. ORNAMENTAL CHAINS AND PARTS THEREOF AND ATTACHMENTS THEREFOR. ANNIE M. HALE and EDWIN B. HALE, North Attleboro, Mass., executors of the estate of Oscar M. Draper, deceased. Filed Feb. 23, 1906.

O.M.D.

The letters O. M. D.

SER. No. 17,304. PLATED CHAINS AND BRACELETS. ANNIE M. HALE and EDWIN B. HALE, North Attleboro, Mass., executors of the estate of Oscar M. Draper, deceased. Filed Feb. 23, 1906.

PREMIER

The word PREMIER.

SER. No. 17,385. DRESSINGS FOR LADIES' AND CHILDREN'S BOOTS AND SHOES. THE FRANK MILLER CO, New York, N. Y. Filed Feb. 24, 1906.



The word CROWN together with the representation of a crown.

SER. No. 17,340. CIGARS. ELIZABETH EDMONSTON, New York, N. Y. Filed Feb. 24, 1906.



An oval-shaped panel made up of concentric ovals and superimposed upon the representation of a cigar and inclosing words, PURO ODORoso and a monogram of the letters E E with the words, EDMONSTON PROCESS, PURITYDE TOBACCO arranged between the ovals.

SER. No. 17,352. INDIA-RUBBER BINDING. KNAPP RUBBER BINDING COMPANY, New York, N. Y. Filed Feb. 26, 1906.

Bind the Ragged Edge

The words "BIND THE RAGGED EDGE."

SER. No. 17,375. HAVANA CIGARS. HAVANA COMMERCIAL COMPANY, Jersey City, N. J., and New York, N. Y. Filed Feb. 27, 1906. Used ten years.



The words "LA FLOR DE MURIAS" and "HABANA" arranged within the border of a double ellipse, and of the words and abbreviations "DE A. MURIAS Y CA." arranged within the inner ellipse.

SER. No. 17,416. CORK OR CORK WOOD. GUDEWILL & BUCKNALL, New York, N. Y. Filed Mar. 1, 1906.

G B
6 7
X X

The letters and figures "G B 6 7 X X."

SER. No. 17,417. CORK OR CORK WOOD. GUDEWILL & BUCKNALL, New York, N. Y. Filed Mar. 1, 1906.

G B
3 4 5
XX

The letters and figures "G B 3 4 5 X X."

SER. No. 17,418. CORK OR CORK WOOD. GUDEWILL & BUCKNALL, New York, N. Y. Filed Mar. 1, 1906.

G B
B

The letters "G B B."

SER. No. 17,419. CORK OR CORK WOOD. GUDEWILL & BUCKNALL, New York, N. Y. Filed Mar. 1, 1906.

SER. No. 17,419.

FW
X

The letters "F W X."

SER. No. 17,420. CORK OR CORK WOOD. GUSHWILL & BUCKHALL, New York, N. Y. Filed Mar. 1, 1906.

GB
23
XX

The letters and figures "G B 2 3 X X."

SER. No. 17,421. CORK OR CORK WOOD. GUSHWILL & BUCKHALL, New York, N. Y. Filed Mar. 1, 1906.

GB
CP

The letters "G B C P."

SER. No. 17,422. CORK OR CORK WOOD. GUSHWILL & BUCKHALL, New York, N. Y. Filed Mar. 1, 1906.

RB
GB

The letters "R B G B."

SER. No. 17,423. CORK OR CORK WOOD. GUSHWILL & BUCKHALL, New York, N. Y. Filed Mar. 1, 1906.

GB
W

The letters "G B W."

SER. No. 17,424. CORK OR CORK WOOD. GUSHWILL & BUCKHALL, New York, N. Y. Filed Mar. 1, 1906.

JA
X

The letters "J A X."

SER. No. 17,425. CORK OR CORK WOOD. GUSHWILL & BUCKHALL, New York, N. Y. Filed Mar. 1, 1906.

GB
12
XX

The letters and figures "G B 1 2 X X."

SER. No. 17,470. SOAP. COMPAGNIE RAY MIT BESCHRÄNKTER HAFTUNG, Berlin, Germany. Filed Feb. 19, 1906.

Ray

The arbitrary word RAY.

SER. No. 17,527. PLUMBAGO. FREDERIC B. STEVENS, Detroit, Mich. Filed Mar. 5, 1906.



The representation of an elephant with its trunk uplifted.

SER. No. 17,542. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 6, 1906.

FLORIDA FRUIT GROWER'S FORMULA
F. F. F.

The words FLORIDA FRUIT GROWER'S FORMULA and the letters "F. F. F."

SER. No. 17,543. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 6, 1906.

SOUTHERN STATES SPECIAL
S. S. S.

The words "SOUTHERN STATES SPECIAL" and the letters "S. S. S."

SER. No. 17,544. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 6, 1906.

TIP TOP TOMATO TRUCKER
T. T. T.

The words TIP TOP TOMATO TRUCKER and the letters "T. T. T."

SER. No. 17,549. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 6, 1906.

GOLD LEAF

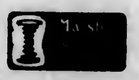
The words GOLD LEAF.

SER. No. 17,560. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 6, 1906. Used ten years.

CHATHAM

The word CHATHAM.

SER. No. 17,620. BED-SPRINGS. THE CHAS. A. MARSH CO., Cincinnati, Ohio. Filed Mar. 6, 1906.



A dark rectangular figure or background upon which is displayed the representation of a coil-spring within a light panel of substantially rectangular shape, and the representation of a mattress with the word "MARSH" printed above and the word "SPRING" printed across the same.

SER. No. 17,730. KNITTED CLOTH IN THE PIECE AND HAVING A NAPPED OR FLEECED FACE OR FACES. FRENCH & WARD, New York, N. Y. Filed Mar. 10, 1906.



The representation of a plurality of heads and necks of eider ducks, the necks appearing radiating from the peripheral edge of a circular field and the heads extending over a circular concentric of the circular field.

SER. No. 17,739. RUBBER AND HEMP PACKING. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill. Filed Mar. 12, 1906. Used ten years.

OVB
OUR VERY BEST

The letters O V B with a panel extending across the same upon which appear the words OUR VERY BEST.

SER. No. 17,740. SCYTHES, SCYTHE-BLADES, AND GRASS-HOOKS. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill. Filed Mar. 12, 1906. Used ten years.

OVB
OUR VERY BEST

The letters O V B with a panel extending across the same, upon which appear the words OUR VERY BEST.

SER. No. 17,744. RAZOR-STROPS AND HONES. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill. Filed Mar. 12, 1906. Used ten years.

OVB
OUR VERY BEST

The letters O V B with a panel extending across the same, upon which appear the words OUR VERY BEST.

SER. No. 17,785. STOVES, RANGES, FURNACES, AND HEATERS. CO-OPERATIVE FOUNDRY CO., Rochester, N. Y. Filed Mar. 13, 1906.

RED CROSS

The words RED CROSS.

SER. No. 17,842. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 15, 1906. Used ten years.

SOUTHERN PHOSPHATE WORKS

The words "SOUTHERN PHOSPHATE WORKS."

SER. No. 17,886. SEW-ON SNAP-FASTENERS FOR SKIRTS. SCOVILL MANUFACTURING COMPANY, Waterbury, Conn. Filed Mar. 15, 1906.

CLICK-LOCK

The newly-coined word "CLICK-LOCK."

SER. No. 17,909. PRINTING-MACHINES. ADDRESSOGRAPH COMPANY, Chicago, Ill. Filed Mar. 15, 1906.

DUPLIGRAPH

The word "DUPLIGRAPH."

SER. No. 17,966. SPOOL-COTTON, SEWING-COTTON, AND THREAD. THE AMERICAN THREAD COMPANY, Jersey City, N. J. Filed Mar. 17, 1906. Used ten years.

NARRAGANSETT

The word NARRAGANSETT.

SER. No. 17,969. MAGIC LANTERNS. GEO. HORSFELDT & CO., New York, N. Y. Filed Mar. 17, 1906.

The Jubilee

The words THE JUBILEE.

SER. No. 17,972. GLASS PLATES. EMANUEL SCHWAB, New York, N. Y. Filed Mar. 17, 1906.

SUAVIAN

The word "SUAVIAN."

SER. No. 18,059. MONTHLY MAGAZINE OR PERIODICAL. J. SHEPHERD CLARK COMPANY, New York, N. Y. Filed Mar. 20, 1906.

EL COMERCIO

The words EL COMERCIO.

SER. No. 18,014. SAD-IRONS. THE DOVER MFG. CO., Canal Dover, Ohio. Filed Mar. 19, 1906. Used ten years.

Asbestos Sad Irons

The words ASBESTOS SAD IRONS.

SER. No. 18,087. LAMP AND GAS BLACK. THE L. MARTIN COMPANY, New York, N. Y. Filed Mar. 21, 1906.

VULCAN

The word VULCAN.

SER. No. 18,117. MUSTARD. D. & L. SLADE CO., Boston, Mass. Filed Mar. 22, 1906. Used ten years.

OXFORD

The word OXFORD.

SER. No. 18,140. PERIODICAL. ARTEMAS WARD, New York, N. Y. Filed Mar. 23, 1906. Used ten years.

FAME

The word FAME.

SER. No. 18,175. WHISKY. SEVERN LIQUOR COMPANY, Baltimore, Md. Filed Mar. 23, 1906.

OLD TOWER

The words "OLD TOWER," associated with the representation of a battlemented castle-tower, inclosed within an oval border of ornamental harmonizing design.

SER. No. 18,248. SOUVENIR POST-CARDS. BLANCHARD, YOUNG & CO., Providence, R. I. Filed Mar. 24, 1906.

SER. No. 18,248.

PHONE

The word PHONE, the letters PHONE arranged in a line, and the letter "T" larger in size and drawn through the letter "O."

SER. No. 18,250. POLISHING-POWDER FOR METALS AND GLASS. LOUIS N. BOOTH, Dallas, Tex. Filed Mar. 24, 1906.

SAPO

The words "MEXICAN SAPO (REAR GRASS)" associated with a picture representing men in Mexican costume gathering rear-grass and loading it upon burros.

SER. No. 18,268. WRITING-PAPER. THE CINCINNATI CORDAGE & PAPER CO., Cincinnati, Ohio. Filed Mar. 26, 1906.

Ivy Mills

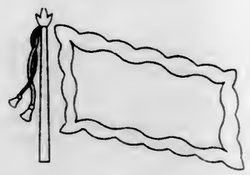
The words IVY MILLS.

SER. No. 18,275. CANE-MILLS. THE C. S. BELL CO., Hillsboro, Ohio. Filed Mar. 26, 1906.

STAR

The word "STAR."

SER. No. 18,288. LANTERN-GLOBES. THE LIBBEY GLASS COMPANY, Toledo, Ohio. Filed Mar. 27, 1906.



The representation of a flag.

SER. No. 18,289. LANTERN-GLOBES. THE LIBBEY GLASS COMPANY, Toledo, Ohio. Filed Mar. 27, 1906.

SER. No. 18,289.



The representation of a flag bearing the word "WABASH."

SER. No. 18,355. MEN'S LEATHER SHOES. T. S. RUDDOCK & SON, Haverhill, Mass. Filed Mar. 29, 1906.

ARMY AND NAVY

The words "ARMY AND NAVY" printed in the distinctive style shown.

SER. No. 18,359. SUPPORTERS FOR HOSE AND SKIRTS. THE CLARK MANUFACTURING COMPANY, Boston, Mass. Filed Mar. 29, 1906.



A panel bearing a representation of the lower portion of a corset and the upper portion of a pair of stockings connected by supporters, and the words and letters CLASPS THE CORSET C M C HOSE SUPPORTER. "THE KIND THAT CLASPS" NO PINS NO BUTTONS NO HOOKS NO BELTS NO PADS NO SEWING.

SER. No. 18,441. WHISKY. FREIBERG & WORKUM, Cincinnati, Ohio. Filed Apr. 2, 1906. Used ten years.



The word "MELROSE," and a fanciful picture of a woman in Eastern costume with a background of flowers, bushes, and trees.

At the right is a section of Eastern architecture supporting an urn containing a flower all inclosed in concentric circles within a fanciful ornamental circular border. On the lower part of the design, within the concentric circles appear the words PURE COPPER WHISKEY.

SER. No. 18,517. ROTATING SHUTTLE OR LOOPER SEWING-MACHINES, SEWING-MACHINE COVERS, TABLES, AND STANDS, AND THE ATTACHMENTS PERTAINING TO AND USED WITH SEWING-MACHINES, EMBRACING RUFFLERS, TUCKERS, CHAIN-STITCH, EMBROIDERY, AND OTHER ATTACHMENTS. WHITE SEWING MACHINE CO., Cleveland, Ohio. Filed Apr. 5, 1906. Used ten years.

White Rotary

The words "WHITE ROTARY."

SER. No. 18,518. OSCILLATING, ROTATING, AND VIBRATING SHUTTLE OR LOOPER SEWING-MACHINES, SEWING-MACHINE COVERS, TABLES, AND STANDS, AND THE ATTACHMENTS PERTAINING TO AND USED WITH SEWING-MACHINES, EMBRACING RUFFLERS, TUCKERS, CHAIN-STITCH, EMBROIDERY, AND OTHER ATTACHMENTS. WHITE SEWING MACHINE CO., Cleveland, Ohio. Filed Apr. 5, 1906. Used ten years.

White

The word "WHITE."

SER. No. 18,534. OSCILLATING, ROTATING, AND VIBRATING SHUTTLE OR LOOPER SEWING-MACHINES, SEWING-MACHINE COVERS, TABLES, AND STANDS, AND THE ATTACHMENTS PERTAINING TO AND USED WITH SEWING-MACHINES, EMBRACING RUFFLERS, TUCKERS, CHAIN-STITCH, EMBROIDERY, AND OTHER ATTACHMENTS. ALBERT G. MASON, Cleveland, Ohio. Filed Apr. 5, 1906.

NEW TREASURE

The words "NEW TREASURE."

SER. No. 18,589. WASHBOARDS. MANCHESTER FURNITURE CO. INC., Manchester, Va. Filed Apr. 7, 1906.

KING OF THE TUB

The words KING OF THE TUB.

SER. No. 18,590. WASHBOARDS. MANCHESTER FURNITURE CO. INC., Manchester, Va. Filed Apr. 7, 1906.

QUEEN OF THE TUB

The words QUEEN OF THE TUB.

SER. No. 18,995. WHISKY. JAMES J. CROWLEY, Washington, D. C. Filed Apr. 21, 1906.

Criterion

The arbitrary word CRITERION.

SER. No. 19,042. TOILET SOAP. J. G. MOUSON & Co., Frankfort-on-the-Main, Germany. Filed Feb. 14, 1906. Used ten years.

茂生

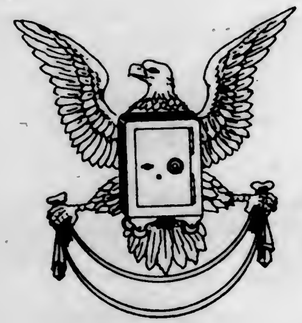
Two Chinese characters, the interpretation of which is MOUSON.

SER. No. 19,178. SPRING-WHEAT FLOUR. THE STANDARD MILLING Co., Clarksburg, W. Va. Filed Apr. 30, 1906.

CREAM OF WHEAT

The words CREAM OF WHEAT.

SER. No. 19,184. FIRE AND BURGLAR PROOF SAFES, VAULT-DOORS, AND SAFE-DEPOSIT BOXES. THE HALL'S SAFE COMPANY, Cincinnati, Ohio. Filed Apr. 30, 1906.



The representation of an eagle with outspread wings and having on its breast a safe and grasping in its claws the ends of a scroll.

SER. No. 19,210. PORTABLE CABINET FOR MEDICINES. THE HOME PHYSICIAN Co., Mercersburg, Pa. Filed May 1, 1906.

THE HOME PHYSICIAN

The words "THE HOME PHYSICIAN."

TRADE-MARKS

REGISTERED MAY 29, 1906.

53,091. OILED CLOTHING OF ALL KINDS. A. J. TOWER COMPANY, Portland, Me., and Boston, Mass.
The words "CAPE ANN STANDARD." Used ten years.
Filed May 29, 1905. Serial No. 6,890. PUBLISHED APRIL 3, 1906.

53,092. BOOT-PROTECTORS OF METAL. BLAKEY'S BOOT PROTECTORS, LIMITED, Leeds, England.
The representation of the sole and heel of a boot. On the heel, toe, and each side of the sole are representations of protectors, each bearing the name "BLAKEY." Horizontally across the sole of the boot have been displayed the name and words "BLAKEY'S PATENT BOOT PROTECTORS."
Filed June 13, 1905. Serial No. 8,014. PUBLISHED APRIL 3, 1906.

53,093. WHEAT-FLOUR. J. B. CAMORS & Co., New Orleans, La.
The words "EL GALLITO" arranged above the representation of a rooster.
Filed April 28, 1905. Serial No. 3,453. PUBLISHED APRIL 3, 1906.

53,094. KNITTED HOSIERY, UNDERSHIRTS, AND DRAWERS. CARSON PIRIE SCOTT & Co., Chicago, Ill.
The representation of the Eiffel tower in the foreground of buildings flanked by trees and the word "EIFFEL."
Filed May 16, 1905. Serial No. 5,830. PUBLISHED APRIL 3, 1906.

53,095. SPICES. E. R. DURKEE & Co., New York, N. Y.
The letters "X X."
Filed May 2, 1905. Serial No. 3,975. PUBLISHED APRIL 3, 1906.

53,096. SPICES. E. R. DURKEE & Co., New York, N. Y.
The letter "X."
Filed May 2, 1905. Serial No. 3,976. PUBLISHED APRIL 3, 1906.

53,097. SPICES AND MUSTARD. E. R. DURKEE & Co., New York, N. Y.
The representation of a swan with outstretched wings and a water-lily and leaves upon the surface of a sheet of water, all inclosed within a circle.
Filed May 2, 1905. Serial No. 3,984. PUBLISHED APRIL 3, 1906.

53,098. COTTON PIECE GOODS WITH A MOIRÉ FINISH. GILBERT MANUFACTURING COMPANY, New York, N. Y.
The hyphenated word "DUO-MOIRÉ" in script letters and having an accent over the "E."
Filed July 18, 1905. Serial No. 10,530. PUBLISHED APRIL 3, 1906.

53,099. OLIVES. CHARLES GULDEN, New York, N. Y.
The word "KING."
Filed April 13, 1905. Serial No. 1,324. PUBLISHED NOVEMBER 7, 1905.

53,100. SPICES AND MUSTARD. HULMAN & Co., Terre Haute, Ind.
The word "SPHINX" placed above a picture of a winged sphinx resting upon a base-line and partly inclosed in a black disk surrounded by an annular border touching the base-line, and a detached fan-shaped ornament to either side of the disk.
Filed June 21, 1905. Serial No. 8,647. PUBLISHED APRIL 3, 1906.

53,101. WOMEN'S COMBINATION UNDERGARMENTS. LEONA GARMENT COMPANY, Chicago, Ill.
The word "LEONA."
Filed July 3, 1905. Serial No. 9,747. PUBLISHED APRIL 3, 1906.

53,102. UNDERVESTS, JERSEYS, AND DRAWERS. LEVI STRAUSS AND COMPANY, San Francisco, Cal.
The words "EL RÉAL."
Filed May 26, 1905. Serial No. 6,726. PUBLISHED APRIL 3, 1906.

53,103. RAILWAY-CAR CASTINGS. THE NATIONAL MALLEABLE CASTINGS COMPANY, Cleveland, Ohio, and Indianapolis, Ind.
The letter "I" inclosed in the representation of a Maltese cross.
Filed April 13, 1905. Serial No. 1,334. PUBLISHED APRIL 3, 1906.

53,104. SILK THREAD. A. H. RICE & Co., Pittsfield, Mass.
The phrase "RICE'S SEWING SILK," the letter "R" in the word "RICE'S" and the letter "S" in the same word being much larger than the other letters, the letter "S" serving also as the initial letter for the word "SEWING" and the word "SILK" and also as the initial letter for the word "SMOOTHEST" and the word "STRONGEST," read in connection with the phrase "RICE'S SEWING SILK." Used ten years.
Filed June 2, 1905. Serial No. 7,260. PUBLISHED APRIL 3, 1906.

53,105. HARROWS. RODERICK LEAN MANUFACTURING CO., Mansfield, Ohio.
The representation of the sun rising from a bank of clouds and having shafts of light radiating therefrom. Located above the representation of the sun is an eagle with outstretched wings, the eagle carrying or supporting a spiked-tooth harrow-frame folded in the shape of a letter Z. The mark bears the legend "IN USE WHEREVER THE SUN SHINES," formed in an arc between the sun and the Z-shaped article.
Filed May 1, 1905. Serial No. 3,904. PUBLISHED APRIL 3, 1906.

53,106. WOOLEN AND WORSTED PIECE GOODS. SHACKAMAXON WORSTED CO., Philadelphia, Pa.
The fanciful and arbitrary word "SHACKAMAXON."
Filed May 23, 1905. Serial No. 6,416. PUBLISHED APRIL 3, 1906.

53,107. WHEAT-FLOUR. SLEEPY EYE MILLING COMPANY, Sleepy Eye, Minn.
The representation of an Indian's head.
Filed May 29, 1905. Serial No. 6,957. PUBLISHED OCTOBER 24, 1905.

53,108. KERSEYS AND CASSIMERES. W. J. DICKEY & SONS, INCORPORATED, Baltimore, Md.
The representation of two sheep, one in a standing posture and the other couchant. Used ten years.
Filed April 26, 1905. Serial No. 3,160. PUBLISHED APRIL 3, 1906.

53,109. EARTHENWARE. WARWICK CHINA CO., Wheeling, W. Va.
A representation of a helmet with two crossed swords underneath, a scroll crossing the swords at the point of intersection, associated with the word "IOGA," the word "WARWICK" being shown upon the scroll.
Filed July 12, 1905. Serial No. 10,194. PUBLISHED APRIL 3, 1906.

53,110. LEATHER AND CANVAS SHOES. WEIMER, WRIGHT & WATKIN, Philadelphia, Pa.
A rectangular panel crossed by a diagonal band with the figure and letters "3 W's" on the panel and the word "LENOX" on the band.

Filed June 15, 1905. Serial No. 8,289. PUBLISHED APRIL 3, 1906.

53,111. WHISKY. LOUIS J. ADLER, Pittsburg, Pa.

The words "PITTSBURGH CLUB" and a monogram of the letters "P C" on a dark circular background. Used ten years.

Filed May 22, 1905. Serial No. 6,208. PUBLISHED APRIL 3, 1906.

53,112. TOBACCO-PIPES, CIGAR AND CIGARETTE TUBES. ADOLPH FRANKAU & Co. LTD., London, England.

The word "GLOKAR."

Filed June 15, 1905. Serial No. 8,251. PUBLISHED APRIL 3, 1906.

53,113. GUNPOWDER. AMERICAN POWDER MILLS, Boston, Mass.

The words "RIFLE CARTRIDGE." Used ten years.

Filed June 19, 1905. Serial No. 8,512. PUBLISHED APRIL 3, 1906.

53,114. BOOT-PROTECTORS OF METAL AND OF METAL AND RUBBER TOGETHER. BLAKEY'S BOOT PROTECTORS, LIMITED, Leeds, England.

The representation of a last on which is the representation of a boot. On the left of the boot is a boy and on the right of the boot a girl, each in the act of driving protectors into the boot. On the lower portion of the last are the word "PARAGON" and the name "BLAKEY'S."

Filed June 13, 1905. Serial No. 8,013. PUBLISHED APRIL 3, 1906.

53,115. POCKET-KNIVES. CARL F. BOKER, New York, N. Y.

The representation of a standing Indian carrying a spear in his left hand and with a robe thrown over his right shoulder, the whole being arranged within a circular border.

Filed May 15, 1905. Serial No. 5,679. PUBLISHED APRIL 3, 1906.

53,116. STEEL. CANTON STEEL COMPANY, Pittsburg, Pa.

The word "CANTON." Used ten years.

Filed May 13, 1905. Serial No. 5,489. PUBLISHED APRIL 3, 1906.

53,117. ORE-SMELTING AND ORE-MILLING MACHINERY. COLORADO IRON WORKS Co., Denver, Colo.

A monogram of the letters "C I W."

Filed June 17, 1905. Serial No. 8,442. PUBLISHED APRIL 3, 1906.

53,118. STEEL. CRUCIBLE STEEL COMPANY OF AMERICA, Pittsburg, Pa.

The word "SANDERSON." Used ten years.

Filed May 13, 1905. Serial No. 5,500. PUBLISHED APRIL 3, 1906.

53,119. SAWS. J. N. EBERLE & Co., Augsburg-Pfersee, Germany.

The representation of an anchor, the vertical shaft of which is provided with two spread wings and embraced in a symmetrical arrangement by two serpents, and the top of the shaft is crowned by a fir-cone.

Filed July 3, 1905. Serial No. 9,738. PUBLISHED APRIL 3, 1906.

53,120. TIN AND TERNE PLATES. FOLLANSBEE BROTHERS COMPANY, Pittsburg, Pa.

The words "BRADDOCK OLD STYLE." Used ten years.

Filed July 3, 1905. Serial No. 9,633. PUBLISHED APRIL 3, 1906.

53,121. BITTERS. VALENTINE FRANZ Co., Philadelphia, Pa.

The word "KELLARS" and the representation of a draped helmet, below which appears a shield having thereon fleur-de-lis, the letter "K," a heraldic roll, and a red Greek cross. Used ten years.

Filed June 26, 1905. Serial No. 9,100. PUBLISHED APRIL 3, 1906.

53,122. GAS-STOVES. THE GEM CITY STOVE Co., Dayton, Ohio.

The word "SUCCESS."

Filed May 29, 1905. Serial No. 7,192. PUBLISHED APRIL 3, 1906.

53,123. RAZORS. A. GRAEF, New York, N. Y.

The arbitrarily-selected word "DOGONGOOD," associated with the representation of a dog lying on his legs.

Filed July 14, 1905. Serial No. 10,334. PUBLISHED APRIL 3, 1906.

53,124. WHISKY. ASHER GUCKENHEIMER & BROS., Pittsburg, Pa.

The name "A. GUCKENHEIMER & BROS." and the words "FREEPORT DISTILLERY." Used ten years.

Filed May 22, 1905. Serial No. 6,279. PUBLISHED APRIL 3, 1906.

53,125. WHISKY. SQUIRE T. HARVEY & SON, Chicago, Ill.

The word "INGLESIDE." Used ten years.

Filed May 12, 1905. Serial No. 5,348. PUBLISHED NOVEMBER 28, 1905.

53,126. WHISKY. THE HOFFHEIMER BROS. Co., Cincinnati, Ohio.

The word "LYNNDALE," associated with the representation of the head of a barrel having thereupon a panel bearing the word "LYNNDALE," scrolls appearing at the sides of the barrel and sprays of grain rising from the scrolls. Used ten years.

Filed May 11, 1905. Serial No. 5,141. PUBLISHED APRIL 3, 1906.

53,127. HORSESHOE-STUDS. LEONHARDT & Co., Schoeneberg, Germany.

The letter "H," above the bar of which is the letter "L" and below the bar the abbreviation "Co."

Filed May 2, 1905. Serial No. 4,044. PUBLISHED APRIL 3, 1906.

53,128. WHEAT-FLOUR. MISSOURI VALLEY MILLING COMPANY, Mandan, N. D.

The word "DACOTAH." Used ten years.

Filed May 26, 1905. Serial No. 6,710. PUBLISHED APRIL 3, 1906.

53,129. CASH-REGISTERS AND AUTOGRAPHIC REGISTERS. NATIONAL CASH REGISTER Co., Jersey City, N. J., and Dayton, Ohio.

The word "NATIONAL." Used ten years.

Filed June 21, 1905. Serial No. 8,672. PUBLISHED APRIL 3, 1906.

53,130. ROASTED AND GROUND COFFEE. NEW ORLEANS COFFEE Co. LTD., New Orleans, La.

The words "WHITE RABBIT" and the representation of a white rabbit inclosed within a border.

Filed May 2, 1905. Serial No. 4,008. PUBLISHED APRIL 3, 1906.

53,131. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.

The words "ANGEL BACKS." Used ten years.

Filed May 2, 1905. Serial No. 3,951. PUBLISHED APRIL 3, 1906.

53,132. HAND-BEATEN LEAF METALS. MATHILDE SPIEGELBERGER, Fürth, Germany.

The representation of a lion rampant, the fore paws resting upon a shield upon which appear the characters "L. S." and the representation of crossed hammers.

Filed May 11, 1905. Serial No. 5,097. PUBLISHED APRIL 3, 1906.

53,133. SOLID-FUEL BURNING HEATING AND COOKING STOVES. JOHN WHITE & SON, Memphis, Tenn.

The arbitrary word "MAGNOLIA."

Filed May 29, 1905. Serial No. 7,042. PUBLISHED APRIL 3, 1906.

53,134. WHISKY. A. A. WOLF & Co., Pittsburg, Pa.

The words "CHAUTAUQUA CLUB."

Filed April 17, 1905. Serial No. 1,923. PUBLISHED APRIL 3, 1906.

53,135. LEATHER FOR HARNESS AND SADDLERY. THE AMERICAN OAK LEATHER COMPANY, Cincinnati, Ohio.

The words "ROCK OAK."

Filed May 24, 1905. Serial No. 6,447. PUBLISHED APRIL 3, 1906.

53,136. GROUND WOOD AND WOOD-PULP. ASPEGREN & Co., New York, N. Y.

The word "AURORA."

Filed May 10, 1905. Serial No. 4,954. PUBLISHED APRIL 3, 1906.

53,137. MAGAZINE. ERNST M. BEST, New York, N. Y.

The representation of a top spinning on a base with the words "'ON TOP' IN TRADE NEWS TYPEWRITER TOPICS A 'TIP TOP' MAGAZINE FOR EVERYBODY IN THE BUSINESS WHIRL," the words "ON TOP" and "TIP TOP" being inclosed in quotation-marks.

Filed September 12, 1905. Serial No. 12,500. PUBLISHED APRIL 3, 1906.

53,138. ROLLING-BALL PUZZLES. JOHN BIGHAM, Pittsburg, Pa.

The words "THE RED RACER."

Filed September 16, 1905. Serial No. 12,697. PUBLISHED APRIL 3, 1906.

53,139. MATTRESSES. THE COLORADO BEDDING Co., Pueblo, Colo.

The word "MONOBAT" on the representation of a section of a block.

Filed August 17, 1905. Serial No. 13,011. PUBLISHED APRIL 3, 1906.

53,140. SILVER TABLE-CUTLERY. CURTIN & CLARK HARDWARE COMPANY, St. Joseph, Mo.

Four letters "C" arranged in a horizontal line, the second letter inclosing the third.

Filed May 2, 1905. Serial No. 4,030. PUBLISHED APRIL 3, 1906.

53,141. FINANCIAL-NEWS BULLETINS. ROBERT EDWARD EDMONDSON, New York, N. Y.

The outline of a steering-wheel, across the center of which appear the words "NEW YORK FINANCIAL BUREAU" and on the rim the words "HELMA FORTUNA PULSUS MERCATUS."

Filed August 16, 1905. Serial No. 11,714. PUBLISHED APRIL 3, 1906.

53,142. RUBBER PACKING. GIBBENS & STREAM, New Orleans, La.

The letters "A L L A." The first "L" is about twice the size of the others and is placed between the "A" and an "L." The second "A" is placed beneath the first "L," and the whole surrounded by two concentric circles.

Filed December 11, 1905. Serial No. 15,326. PUBLISHED APRIL 3, 1906.

53,143. LEATHER AND CLOTH BOOTS, SLIPPERS, AND SHOES. HANAN & SON, New York, N. Y.

A representation of an ideal female head of heroic type, with the hair blown about the face by the wind, within the horns of a crescent and associated with the words "HANAN & SON NEW YORK." Used ten years.

Filed May 8, 1905. Serial No. 4,752. PUBLISHED APRIL 3, 1906.

53,144. SELF-CARBURETING LAMPS. GEORGE H. HOLGATE, Philadelphia, Pa.

The word "PETROLITE."

Filed October 16, 1905. Serial No. 13,646. PUBLISHED APRIL 3, 1906.

53,145. BRUSHES OF ALL KINDS. JOHN L. WHITING & SON Co., Boston, Mass.

The word "DICTATOR." Used ten years.

Filed April 29, 1905. Serial No. 3,579. PUBLISHED APRIL 3, 1906.

53,146. MUSICAL BOXES AND TUNE-DISKS. LYON & HEALY, Chicago, Ill.

The word "EUPHONIA."

Filed August 7, 1905. Serial No. 11,355. PUBLISHED APRIL 3, 1906.

53,147. GUITARS AND MANDOLINS. LYON & HEALY, Chicago, Ill.

The word "MARQUETTE." Used ten years.

Filed August 7, 1905. Serial No. 11,360. PUBLISHED APRIL 3, 1906.

53,148. GUITARS AND MANDOLINS. LYON & HEALY, Chicago, Ill.

The word "COLUMBUS." Used ten years.

Filed August 7, 1905. Serial No. 11,364. PUBLISHED APRIL 3, 1906.

53,149. LAGER-BEER. THE PETER SCHOENHOFEN BREWING COMPANY, Chicago, Ill.

A red, white, and blue shield bearing thereon the letter "S" entwined with a Mercury staff and partially inclosed in a wreath.

Filed September 26, 1905. Serial No. 13,032. PUBLISHED APRIL 3, 1906.

53,150. CULINARY UTENSILS MADE OF TINWARE. REED MANUFACTURING Co., Newark, N. Y.

The word "REED." Used ten years.

Filed May 15, 1905. Serial No. 5,634. PUBLISHED APRIL 3, 1906.

53,151. DENTAL RUBBER. THE S. S. WHITE DENTAL MFG. Co., Philadelphia, Pa.; Chicago, Ill.; New York, Brooklyn, and Rochester, N. Y.; Boston, Mass.; Atlanta, Ga.; New Orleans, La.; Toronto, Canada; Buenos Ayres, Argentina; Berlin, Germany, and St. Petersburg, Russia.

The word "BOW-SPRING."

Filed September 21, 1905. Serial No. 12,864. PUBLISHED APRIL 3, 1906.

53,152. GUTTA-PERCHA TOOTH-FILLING. THE S. S. WHITE DENTAL MFG. Co., Philadelphia, Pa.; Chicago, Ill.; New York, Brooklyn, and Rochester, N. Y.; Boston, Mass.; Atlanta, Ga.; New Orleans, La.; Toronto, Canada; Buenos Ayres, Argentina; Berlin, Germany, and St. Petersburg, Russia.

The word "PREMIUM." Used ten years.

Filed September 21, 1905. Serial No. 12,865. PUBLISHED APRIL 3, 1906.

53,153. GUTTA-PERCHA TOOTH-FILLING. THE S. S. WHITE DENTAL MFG. Co., Philadelphia, Pa.; Chicago, Ill.; New York, Brooklyn, and Rochester, N. Y.; Boston, Mass.; Atlanta, Ga.; New Orleans, La.; Toronto, Canada; Buenos Ayres, Argentina; Berlin, Germany, and St. Petersburg, Russia.

The word "EXCELSIOR."

Filed September 21, 1905. Serial No. 12,866. PUBLISHED APRIL 3, 1906.

53,154. WINES. JOHN R. SCHNEIDER, Augusta, Ga.

The representation of an anchor upon which the letter "S" appears.

Filed August 22, 1905. Serial No. 11,903. PUBLISHED APRIL 3, 1906.

53,155. TOILET-PAPER. SCOTT PAPER Co., Philadelphia, Pa.

The arbitrary word-symbol "WILSEL" on a light background of leaves and flowers and below the word the representation of a seal having on it a roll of toilet-paper in a circle charged with the monogram "S P Co" and a wreath.

Filed December 7, 1905. Serial No. 15,246. PUBLISHED APRIL 3, 1906.

53,156. WRITING-PAPER. SIR ISAAC PITMAN & SONS LTD., Bath, England.

The word "FONO."

Filed August 25, 1905. Serial No. 11,988. PUBLISHED APRIL 3, 1906.

53,157. LEATHER BOOTS AND SHOES. SMITH-BRISCOE SHOE COMPANY, Lynchburg, Va.

The word JUANITA.

Filed November 25, 1905. Serial No. 14,988. PUBLISHED APRIL 3 1906.

53,158. SOLID COMPOSITION ERASER. FRANK A. WEEKS, New York, N. Y.

The word "RUBOFF" inclosed in quotation-marks and arranged within a diamond-shaped figure.

Filed September 21, 1905. Serial No. 12,871. PUBLISHED APRIL 3, 1906.

53,159. PLASTERS. ALLCOCK MANUFACTURING Co., New York, N. Y.

The representation of a shield with printed matter thereon. The printed matter reads: "THE BRANDRETH PLASTER MANUFACTURED AT THE BRANDRETH WORKS." Used ten years.

Filed August 12, 1905. Serial No. 11,560. PUBLISHED APRIL 3, 1906.

53,160. WHEAT-FLOUR. BAY STATE MILLING COMPANY, Winona, Minn., and Boston, Mass.

The word "BOSS."

Filed September 2, 1905. Serial No. 12,201. PUBLISHED APRIL 3, 1906.

53,161. DISPLAY-RACKS. JOHN H. BEST, Galva, Ill.

The representation of a star arranged above a rectangular frame, said star having one side of each of its points shaded and two concentric circles inscribed on its central portion, with the word "BEST" arranged within the inner circle and the words "GOODS WELL DISPLAYED ARE HALF SOLD" arranged in between the two circles.

Filed January 17, 1906. Serial No. 16,261. PUBLISHED APRIL 3, 1906.

53,162. HOSIERY. BROWN KNITTING CO., Philadelphia, Pa.
The word "SOCKER" within quotations.
Filed December 21, 1905. Serial No. 15,567. PUBLISHED APRIL 3, 1906.

53,163. HORSESHOES. BRYDEN HORSE SHOE COMPANY, Catasauqua, Pa.
The hyphenated word "FEATHER-WEIGHT." Used ten years.
Filed December 22, 1905. Serial No. 15,589. PUBLISHED APRIL 3, 1906.

53,164. DESSERT-JELLY. BUCKNAM & VANDERPOEL, New York, N. Y.
The words "TIP TOP."
Filed November 27, 1905. Serial No. 15,031. PUBLISHED APRIL 3, 1906.

53,165. VALVES. DUNHAM, CARRIGAN & HAYDEN CO., San Francisco, Cal.
The word "EMPIRE."
Filed August 7, 1905. Serial No. 11,347. PUBLISHED APRIL 3, 1906.

53,166. WHISKY. E. EISING & CO., New York, N. Y.
The arbitrarily-selected words "OLD DOMINION." Used ten years.
Filed October 31, 1905. Serial No. 14,131. PUBLISHED APRIL 3, 1906.

53,167. FABRIC HOSE. EUREKA FIRE HOSE COMPANY, Jersey City, N. J.
Parallel longitudinal lines of red, white, and blue colors in the order named and produced upon a piece of woven fabric hose.
Filed February 23, 1906. Serial No. 17,260. PUBLISHED APRIL 3, 1906.

53,168. FABRIC HOSE. EUREKA FIRE HOSE COMPANY, Jersey City, N. J.
Red, white, and blue lines running longitudinally upon the exterior of the hose, composed of two broken red lines formed by warps of that color incorporated in the fabric and one broken blue line formed in a similar way intermediate between the two red lines and separated therefrom by narrow intervals of the body fabric which form the white lines.
Filed February 23, 1906. Serial No. 17,261. PUBLISHED APRIL 3, 1906.

53,169. WHEAT-FLOUR. GEO. T. EVANS & SON, Indianapolis, Ind.
The word "ADONIS."
Filed September 2, 1905. Serial No. 12,194. PUBLISHED APRIL 3, 1906.

53,170. COTTON PIECE GOODS. F. W. POE MFG. CO., Greenville, S. C.
The representation of a tea-plant in bloom.
Filed December 7, 1905. Serial No. 15,248. PUBLISHED APRIL 3, 1906.

53,171. CERTAIN NAMED RUBBER GOODS. THE FAULTLESS RUBBER CO., Akron, Ohio.
The word "WEAREVER."
Filed January 5, 1906. Serial No. 15,933. PUBLISHED APRIL 3, 1906.

53,172. WHISKY. FREIBERG & KAHN, Cincinnati, Ohio.
The words "OLD FISHERMAN" and a shield design bearing a monogram of the letters "F & K" and surmounted by a crown inclosed in a segmented circle.
Filed June 24, 1905. Serial No. 8,949. PUBLISHED APRIL 3, 1906.

53,173. HEAT-REGULATORS FOR USE ON BOILERS, FURNACES, AND STOVES. THE FULTON COMPANY, Knoxville, Tenn.
The word "SYLPHON."
Filed October 18, 1905. Serial No. 13,722. PUBLISHED APRIL 3, 1906.

53,174. HOSE-SUPPORTERS. GEORGE FROST COMPANY, Boston, Mass.
The word "RUBBA." Used ten years.
Filed February 21, 1906. Serial No. 17,221. PUBLISHED APRIL 3, 1906.

53,175. GIN. THE GINTER GROCERY COMPANY, Boston, Mass.
The words "ROYAL WIKSTAF."
Filed October 30, 1905. Serial No. 14,050. PUBLISHED APRIL 3, 1906.

53,176. GIN. THE GINTER GROCERY COMPANY, Boston, Mass.
The word "HARLEQUIN."
Filed October 30, 1905. Serial No. 14,051. PUBLISHED APRIL 3 1906.

53,177. HAMS, SHOULDERS, AND BACON. GOLDEN AND COMPANY, Washington, D. C.
The words "GOLDEN ROD" arranged upon a black ornamental panel beneath which are two sprays of golden-rod fastened by a ribbon with scroll-like flowing ends.
Filed January 18, 1906. Serial No. 16,266. PUBLISHED APRIL 3 1906.

53,178. CERTAIN NAMED KNIVES. HIBBARD, SPENCER BARTLETT & COMPANY, Chicago, Ill.
The words "BLACK DIAMOND."
Filed December 1, 1905. Serial No. 15,133. PUBLISHED MARCH 20, 1906.

53,179. CHILDREN'S SUITS. CHARLES W. KLEMM, Bloomington, Ill.
The words "JACK AND JILL."
Filed January 18, 1906. Serial No. 16,293 PUBLISHED APRIL 3, 1906

53,180. CONCERTINAS AND ACCORDIONS. LYON & HEALY, Chicago, Ill.
The word "MAJESTIC."
Filed August 7, 1905. Serial No. 11,350. PUBLISHED APRIL 3, 1906.

53,181. WHISKY. PARDRIDGE & BLACKWELL, Detroit, Mich.
The words "RED AND BLUE."
Filed December 15, 1905 Serial No. 15,442. PUBLISHED APRIL 3, 1906

53,182. LAGER-BEER THE PETER SCHOENHOFEN BREWING COMPANY, Chicago, Ill.
The arbitrarily-selected word "AMBROSIA."
Filed September 9, 1905. Serial No. 12,415. PUBLISHED APRIL 3, 1906.

53,183. LAGER-BEER. THE PETER SCHOENHOFEN BREWING COMPANY, Chicago, Ill.
A rectangular panel bearing a representation of a red, white, and blue striped shield inclosing the letter "S" entwined with a Mercury staff partially inclosed with a wreath and associated with the name "P SCHOENHOFEN BREWING CO. CHICAGO."
Filed September 28, 1905. Serial No. 13,099. PUBLISHED APRIL 3, 1906.

53,184. LAGER-BEER. THE PETER SCHOENHOFEN BREWING COMPANY, Chicago, Ill.
A representation of a medallion bearing a representation of a shield having a yellow border and diagonally-arranged red, white, and blue stripes thereon and in the center a Mercury staff with the letter "S" coiled thereon, associated with the words "EXPORT P SCHOENHOFEN BREWING CO. CHICAGO, U. S. A."
Filed September 30, 1905. Serial No. 13,176. PUBLISHED APRIL 3, 1906.

53,185. WALL-TIES. JESSE PRESCOTT, Webster, Mass.
The word "MORSE." Used ten years.
Filed July 20, 1905. Serial No. 10,620. PUBLISHED APRIL 3, 1906.

53,186. WHEAT-FLOUR. SENECA MILL & ELEVATOR COMPANY, Seneca, Mo.
The word "USONA."
Filed November 4, 1905. Serial No. 14,304. PUBLISHED APRIL 3, 1906.

53,187. DOLLS. STRAWBRIDGE & CLOTHIER, Philadelphia, Pa.
The words "THE PRINCESS DOLL" printed on a streamer.
Filed December 19, 1905. Serial No. 15,520. PUBLISHED APRIL 3. 1906.

53,188. BOTTOM-DUMPING BUCKETS. GUSTAVUS L. STUEBNER, Long Island City, N. Y.
The word "EXCELSIOR."
Filed December 20, 1905. Serial No. 15,541. PUBLISHED APRIL 3, 1906.

53,189. COMBINATION OF PAPAYA, PINEAPPLE, AND SUGAR. TROPIC FRUIT COMPANY, LTD., Wahiawa, Hawaii.
The coined word "PAPAINA."
Filed January 22, 1906. Serial No. 16,367. PUBLISHED APRIL 3, 1906.

53,190. MIXTURE OF THE JUICE OF THE GUAVA AND SUGAR. TROPIC FRUIT COMPANY, LTD., Wahiawa, Hawaii.
The coined word "GUAVELLA."
Filed January 22, 1906. Serial No. 16,368. PUBLISHED APRIL 3, 1906.

53,191. JELLY-POWDER. S. J. VALK & BRO., New York, N. Y.
The fanciful word "FALCONJEL" and the representation of a falcon perched upon a limb within a circular border formed of a belt.
Filed October 30, 1905. Serial No. 14,087. PUBLISHED APRIL 3, 1906.

53,192. NON-EXPLOSIVE FIRE AND SMOKE EMITTING FIREWORKS. EDWARD H. WAGNER, New York, N. Y.
The words "BLIZZARD OF THE ROCKIES."
Filed November 3, 1905. Serial No. 14,238. PUBLISHED APRIL 3, 1906.

53,193. SUSPENDERS FOR TROUSERS. WELD, COLBURN & WILCKENS, New York, N. Y.
The letters and character "W C & W" inclosed by a plain elongated border. Used ten years.
Filed February 24, 1906. Serial No. 17,309. PUBLISHED APRIL 3, 1906.

53,194. SHOTGUNS AND RIFLES. WINCHESTER REPEATING ARMS CO., New Haven, Conn.
The letters "S. L."
Filed November 2, 1905. Serial No. 14,216. PUBLISHED APRIL 3, 1906.

53,195. GREEN SALVE. HARRY J. BAKER, Fulton, N. Y.
A circular panel bearing the portrait and facsimile signature of the applicant and the words "NONE GENUINE WITHOUT MY SIGNATURE, BAKER'S GREEN SALVE. HEALS ALL WOUNDS, FOR EXTERNAL USE ONLY, 25 CENTS."
Filed June 22, 1905. Serial No. 8,797. PUBLISHED APRIL 3, 1906.

53,196. ANTISEPTICS OR GERMICIDES. JAMES F. BALLARD, St. Louis, Mo.
The letter "H" mounted upon a disk printed in black surrounded by a black circular line and the letters "AVANA" in smaller type upon the cross-bar of the "H."
Filed June 19, 1905. Serial No. 8,472. PUBLISHED APRIL 3, 1906.

53,197. ANTISEPTICS OR GERMICIDES. JAMES F. BALLARD, St. Louis, Mo.
The word "BOROZONE."
Filed June 19, 1905. Serial No. 8,473. PUBLISHED APRIL 3, 1906.

53,198. SALVE OR OINTMENT. BICKMORE GALL CURE COMPANY, Old Town, Me.
The word "BICKMORIN."
Filed July 31, 1905. Serial No. 11,050. PUBLISHED APRIL 3, 1906.

53,199. PROPRIETARY MEDICINE. THE BRANDRETH CO., Ossining and New York, N. Y.
The word "HOMOCEA." Used ten years.
Filed June 27, 1905. Serial No. 9,302. PUBLISHED APRIL 3, 1906.

53,200. REMEDY FOR CONSTIPATION. JOHN J. BRENNAN, Worcester, Mass.
The word "REPOSIA."
Filed June 22, 1905. Serial No. 8,789. PUBLISHED APRIL 3, 1906.

53,201. BUTTER. THE D. E. WOOD BUTTER CO., Elgin, Ill.
The representation of a fouled anchor inclosed within a circular ornamental border and associated with the words "ANCHOR BRAND BUTTER ELGIN, ILLINOIS."
Filed December 30, 1905. Serial No. 15,769. PUBLISHED APRIL 3, 1906.

53,202. BAKING-POWDER, CREAM OF TARTAR, SALERATUS, AND BICARBONATE OF SODA. E. R. DURKEE & Co., New York, N. Y.
The representation of two ostriches and an egg, one of the ostriches being represented as standing and the other in a sitting position.
Filed December 23, 1905. Serial No. 15,616. PUBLISHED APRIL 3, 1906.

53,203. SUPPOSITORIES. WILHELM ERNST, Hanover, Germany.
The word "ANUSOL."
Filed September 1, 1905. Serial No. 12,148. PUBLISHED APRIL 3, 1906.

53,204. PREPARATION OF HYPOPHOSPHITES. THE FELLOWS MEDICAL M'F'G CO., LIMITED, New York, N. Y.
The words "COMPOUND SYRUP OF HYPOPHOSPHITES" upon a yellow background or wrapper.
Filed June 17, 1905. Serial No. 8,440. PUBLISHED APRIL 3, 1906.

53,205. BREAD. PAUL FLEISCHMANN, East Boston, Mass.
A pictorial representation of an elderly woman holding in her hands a loaf of bread, said representation associated with the words "GRANDMOTHER'S BREAD."
Filed December 30, 1905. Serial No. 15,788. PUBLISHED APRIL 3, 1906.

53,206. CHEMICAL AND VEGETABLE SUBSTITUTE FOR EGG-WHITES. FROSTLENE MANUFACTURING COMPANY, Boston, Mass.
A disk containing the representation of a frosted cake upon a tray which is supported by the figures of two cupids, surrounded by a circular black border upon which appear in white letters the words "FROSTLENE, and "PERFECT FROSTING."
Filed June 24, 1905. Serial No. 8,961. PUBLISHED APRIL 3, 3, 1906.

53,207. MEDICATED OINTMENT. WILLIAM HOLLOWAY, Philadelphia, Pa.
The words "HEISKELL'S OINTMENT." Used ten years.
Filed July 28, 1905. Serial No. 10,942. PUBLISHED APRIL 3, 1906.

53,208. WHEAT-FLOUR. MISSOURI VALLEY MILLING COMPANY, Mandan, N. D.
The words "GOLD BELT" surrounded by the pictorial representation of a belt. Used ten years.
Filed May 26, 1905. Serial No. 6,711. PUBLISHED APRIL 3, 1906.

53,209. FLAVORING EXTRACTS. ROYAL BAKING POWDER COMPANY, New York, N. Y.
The word "ROYAL." Used ten years.
Filed August 22, 1905. Serial No. 11,905. PUBLISHED APRIL 3, 1906.

53,210. COMBS. DR. HEINRICH TRAUN & SÖHNE, Hamburg, Germany.
The word "SANITAS."
Filed July 21, 1905. Serial No. 10,676. PUBLISHED APRIL 3, 1906.

53,211. COMBS. DR. HEINRICH TRAUN & SÖHNE, Hamburg, Germany.
The word "REVELATION."
Filed July 21, 1905. Serial No. 10,679. PUBLISHED APRIL 3, 1906.

53,212. REMEDY FOR INDIGESTION. VOIGT & CO., Chattanooga, Tenn.
The word "PEPTICINE." Used ten years.
Filed June 16, 1905. Serial No. 8,346. PUBLISHED FEBRUARY 13, 1906.

53,213. TONIC CORDIAL. VOIGT & CO., Chattanooga, Tenn.
The word "GADINE." Used ten years.
Filed June 16, 1905. Serial No. 8,347. PUBLISHED FEBRUARY 13, 1906.

53,214. HORSESHOES. BRYDEN HORSE SHOE COMPANY, Catasauqua, Pa.
The word "BANNER."
Filed December 22, 1905. Serial No. 15,591. PUBLISHED APRIL 3, 1906.

53,215. MONTHLY MAGAZINES. CRIST, SCOTT & PARSHALL, Cooperstown, N. Y.
The words "AMERICAN MOTHERHOOD."
Filed December 20, 1905. Serial No. 15,528. PUBLISHED APRIL 3, 1906.

53,216. STRIPS OF UNITED STAPLES, &c. THE E. H. HOTCHKISS CO., Norwalk, Conn.
Three strips of interconnected staples arranged in the manner shown, so as to constitute the letter "H."
Filed January 4, 1906. Serial No. 15,894. PUBLISHED APRIL 3, 1906.

53,217. COCOA. ENDERS AND MECHENER, Seattle, Wash.
A rectangular panel upon which are arranged two curved panels forming an elliptical space within which is disposed the monogram "E & M."
Filed May 4, 1905. Serial No. 4,268. PUBLISHED APRIL 3, 1906.

53,218. LEATHER BOOTS AND SHOES. GEO. D. WITT SHOE CO, Lynchburg, Va.
The word "CLANSMAN," the figure or representation of a Scotch Highlander fully arrayed with sword in hand shown on an oval background with a shield over each of his shoulders, one of which shields contains thereon heraldic bars and a single lion passant and the other of which contains three lions passant. Within the "C" of the word "CLANSMAN" and before the "L" of the same appears a Scotch thistle in bloom. The letter "M" of the word referred to concludes with a flourish, which forms a paraph beneath almost the entire word.
Filed January 11, 1906. Serial No. 16,128. PUBLISHED APRIL 3, 1906.

53,219. CHEWING-GUM. THE H. D. SMITH CO., Cincinnati, Ohio.
The arbitrary hyphenated words "BIG-LONG."
Filed May 11, 1905. Serial No. 5,111. PUBLISHED APRIL 3, 1906.

53,220. CURRENT-DISTRIBUTING CUT-OUT BOARDS. H. T. PAISTE CO., Philadelphia, Pa.
The word "PANELETTES."
Filed February 28, 1906. Serial No. 17,397. PUBLISHED APRIL 3, 1906.

53,221. BREWERS' PITCH. JACOB E. HIMES, Kansas City, Mo.
The symbol and word "20TH CENTURY."
Filed May 5, 1905. Serial No. 4,431. PUBLISHED APRIL 3, 1906.

53,222. WRAPPING-PAPER, PAPER BAGS, AND PAPER SACKS. HOLLINGSWORTH & WHITNEY COMPANY, Boston, Mass.
The representation of a flying eagle, associated with the word "SONGO."
Filed January 5, 1906. Serial No. 15,911. PUBLISHED APRIL 3, 1906.

53,223. WRAPPING-PAPER, PAPER BAGS, AND PAPER SACKS. HOLLINGSWORTH & WHITNEY COMPANY, Boston, Mass.
The word "TACON," associated with the representation of the figure of an Indian holding a gun in one hand and disposed in partial kneeling position upon a cliff overlooking a waterfall.
Filed January 5, 1906. Serial No. 15,918. PUBLISHED APRIL 3, 1906.

53,224. VEGETABLE COMPOUND. KLOCZEWSKI & CO., Washington, D. C.
The word "BABEK."
Filed April 3, 1905. Serial No. 267. PUBLISHED APRIL 3, 1906.

53,225. CHARCOAL. THE L. S. BROWN CHARCOAL COMPANY, INCORPORATED, Springfield, Mass.
The representation of a black disk or seal, associated with and arranged on which are the words "QUICK FIRE."
Filed April 24, 1905. Serial No. 2,848. PUBLISHED NOVEMBER 7, 1905.

53,226. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill.
The designation "PLZEŇSKÉ MÝDLO." Used ten years.
Filed April 1, 1905. Serial No. 63. PUBLISHED APRIL 3, 1906.

53,227. ANTISEPTIC GERM, INSECT, AND WORM DESTROYER. NATIONAL MEDICAL COMPANY, Sheldon, Iowa.
The words "LIQUID KOAL" imprinted upon one face of the representation of an oblong rectangular block in perspective, the whole being surrounded by a marginal line drawn to the general contour of an oblong rectangle, but bowing outwardly at each corner. Within each of the rounded corners of the rectangle is placed the head of an animal, respectively of a horse, a cow, a sheep, and a hog. The phrase "THE GERM AND INSECT KILLER" is inscribed within the marginal line above the representation of the oblong block, and the phrase "FOR ALL KINDS OF ANIMALS" is inscribed within the marginal line below such representation of the block.
Filed May 1, 1905. Serial No. 3,880. PUBLISHED APRIL 3, 1906.

53,228. LEATHER BOOTS, SHOES, AND SLIPPERS. PRESTON B. KEITH SHOE COMPANY, Brockton, Mass.
The picture of a mail-clad knight having on his breast a Maltese cross and holding aloft a shoe in his right hand, the knight being mounted upon a spirited horse wearing a breastplate upon which are a lion rampant and the words "KEITH'S KONQUEROR."
Filed January 26, 1906. Serial No. 16,541. PUBLISHED APRIL 3, 1906.

53,229. FIREPROOF STARCH. PRICE FIREPROOFING COMPANY, Poughkeepsie, N. Y.
The words "FIRE-FOE," associated with the pictorial representation of a girl holding a lighted candle in one hand under a portion of her dress elevated with the other hand and the words "LOOK! MY DRESS WON'T BURN."
Filed May 9, 1905. Serial No. 4,795. PUBLISHED APRIL 3, 1906.

53,230. PHOSPHATIC POWDERS. RUMFORD CHEMICAL WORKS, Providence, R. I.
The words "CREAM PHOSPHATE."
Filed May 16, 1905. Serial No. 5,771. PUBLISHED APRIL 3, 1906.

53,231. MIXED PAINTS. SENOUR MANUFACTURING CO., Chicago, Ill.
The words "MONARCH MIXED-PAINT." Used ten years.
Filed May 27, 1905. Serial No. 6,770. PUBLISHED APRIL 3, 1906.

53,232. REFINED ASPHALTUM. SOUTHERN REFINING COMPANY, Los Angeles, Cal.
The letters "D X."
Filed June 9, 1905. Serial No. 7,742. PUBLISHED APRIL 3, 1906.

53,233. VOTING-MACHINES. TRIUMPH VOTING MACHINE COMPANY, Pittsfield, Mass.
The word "TRIUMPH."
Filed February 2, 1906. Serial No. 16,699. PUBLISHED APRIL 3, 1906.

53,234. PAPER BAGS. THE UNION BAG & PAPER COMPANY, New York, N. Y.
A star surrounded by circles, associated with the word "STAR."
Filed March 2, 1906. Serial No. 17,458. PUBLISHED APRIL 3, 1906.

53,235. SEWING-MACHINES AND PARTS THEREOF. UNION SPECIAL MACHINE CO., Chicago, Ill.
The word "INTERLOCK."
Filed January 27, 1906. Serial No. 16,563. PUBLISHED APRIL 3, 1906.

53,236. SEWING-MACHINES AND PARTS THEREOF. UNION SPECIAL MACHINE CO., Chicago, Ill.
The words "DOUBLE LOCK." Used ten years.
Filed January 27, 1906. Serial No. 16,564. PUBLISHED APRIL 3, 1906.

53,237. LUBRICATING-OILS. VALVOLINE OIL COMPANY, Edgewater, N. J., and New York, N. Y.
The word "VALVOLINE."
Filed April 14, 1905. Serial No. 1,477. PUBLISHED APRIL 3, 1906.

53,238. WHITE, PRINTED, OR DYED TEXTILE FABRICS OF COTTON, WOOL, OR SILK. ARNOLD PRINT WORKS, North Adams, Mass.
The word "ARNOLD." Used ten years.
Filed October 26, 1905. Serial No. 13,953. PUBLISHED APRIL 3, 1906.

53,239. GERMICIDE AND AN ANTISEPTIC COMPOUND. JAMES F. BALLARD, St. Louis, Mo.
A crest and shield printed in red. The crest represents a griffin's head supported on a heraldic roll with crossed spears in front of the same, the shield showing four quarterings, alternate chevrons and roses, and below the shield is a scroll bearing the words "CAMPHO-PHÉNIQUE."
Filed June 3, 1905. Serial No. 7,318. PUBLISHED APRIL 3, 1906.

53,240. BUTTER. BLUE VALLEY CREAMERY COMPANY, St. Joseph, Mo.
The representation of a print of butter upon a plate and the letters "B V" upon the print of butter.

Filed August 10, 1905. Serial No. 11,512. PUBLISHED APRIL 3, 1906.

53,241. LINIMENT. CACO CHEMICAL CO., Baltimore, Md.
The word "CA-CO."
Filed September 18, 1905. Serial No. 12,729. PUBLISHED APRIL 3 1906.

53,242. MEDICINE FOR CERTAIN NAMED DISEASES. CEPHALGINE COMPANY, Spencer, Mass.
The word "CEPHALGINE."
Filed April 10, 1905. Serial No. 1,012. PUBLISHED APRIL 3, 1906.

53,243. HOSIERY. CHARLES CHIPMAN'S SONS, Easton, Pa.
The words "HUMPTY DUMPTY" and the representation of a grotesque figure of a man whose head and body outline have the form of an egg, the said figure being perched upon the top of a wall between the words "HUMPTY" and "DUMPTY," which are in an upright position on top of said wall, and having one arm about the last letter of the former and the other about the first letter of the latter word.
Filed September 30, 1905. Serial No. 13,175. PUBLISHED APRIL 3, 1906.

53,244. SPICES AND MUSTARD. E. R. DURKEE & CO., New York, N. Y.
The representation of a bee surrounded by a wreath of flowers and leaves.
Filed May 2, 1905. Serial No. 3,985. PUBLISHED APRIL 3, 1906.

53,245. LINIMENT. GOODRICH & JENNINGS, Anoka, Minn.
The words "HOFF'S GERMAN" and a shaded circular field upon which are shown the letters and character "G & J" and the representation of a hand holding a pair of balanced scales, said circular field being surrounded by a shaded annulus. Used ten years.
Filed June 5, 1905. Serial No. 7,513. PUBLISHED APRIL 3, 1906.

53,246. WHISKY. PH. HAMBURGER COMPANY, Pittsburg, Pa.
The words "FAYETTE COUNTY DOUBLE COPPER DISTILLED RYE THE FAYETTE DISTILLING CO. BROWNSVILLE, PA." inclosed in a circle and on either side of the word "RYE" a fancy scroll and immediately below the words "DISTILLING CO." a five-pointed star with a fancy scroll on either side. Used ten years.
Filed January 15, 1906. Serial No. 16,203. PUBLISHED APRIL 3, 1906.

53,247. MEDICINAL AND STOCK FOOD. DR. HESS & CLARK, Ashland, Ohio.
The representation of a platform-scale with a broken balance-beam and with a horse, cow, sheep, and pig standing on the platform and a chicken over the beam, the whole being inclosed in a circle and associated with the words "USE DR. HESS STOCK FOOD AND POULTRY PANACEA" and also the words "THIS WILL BE YOUR REWARD."
Filed June 15, 1905. Serial No. 8,186. PUBLISHED APRIL 3, 1906.

53,248. LAWN-MOWERS AND PARTS THEREOF. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill.
A representation of a rooster with the word "CRUSO" appearing across the body thereof.
Filed December 14, 1905. Serial No. 15,414. PUBLISHED APRIL 3, 1906.

53,249. DRESS-SHIELDS. C. F. HOVEY & Co., Boston, Mass.
The word "PEARL."
Filed July 31, 1905. Serial No. 11,053. PUBLISHED APRIL 3, 1906.

53,250. SEWING-COTTON WOUND ON SPOOLS OR REELS. J. & P. COATS, LIMITED, Paisley, Scotland.
A representation of a bear standing on a heraldic roll. Used ten years.
Filed October 17, 1905. Serial No. 13,692. PUBLISHED APRIL 3, 1906.

53,251. LINIMENTS AND OINTMENTS. K K K MEDICINE COMPANY, Keokuk, Iowa.
The letters "K K K."
Filed April 1, 1905. Serial No. 67. PUBLISHED APRIL 3, 1906.

53,252. LINEN THREAD. L. LICHTENSTEIN'S SONS, Richmond, Va.
The representation of a lion rampant inclosed within the border representing one mesh of seine.
Filed August 4, 1905. Serial No. 11,255. PUBLISHED APRIL 3, 1906.

53,253. HATS. LUSTIG BROS., New York, N. Y.
The word "KNICKERBOCKER."
Filed July 21, 1905. Serial No. 10,663. PUBLISHED APRIL 3, 1906.

53,254. TYPE-WRITER RIBBONS. FRANK O. MITTAG, Park Ridge, N. J.
The word "CLIMAX." Used ten years.
Filed March 5, 1906. Serial No. 17,515. PUBLISHED APRIL 3, 1906.

53,255. COATS, VESTS, TROUSERS, AND OVERALLS. O'BRYAN BROS., Nashville, Tenn.
The representation of a duck's head inclosed in a circular border.
Filed April 10, 1905. Serial No. 1,007. PUBLISHED APRIL 3, 1906.

53,256. CURED FISH, (SMOKED, DRIED, OR SALTED.) GEORGE H. PERKINS, Gloucester, Mass.
The word "NEPTUNE."
Filed July 28, 1905. Serial No. 10,936. PUBLISHED APRIL 3, 1906.

53,257. CURED FISH, (SMOKED, DRIED, OR SALTED.) GEORGE H. PERKINS, Gloucester, Mass.
The representation of a globe having the words "THE VERY BEST" arranged on a band across the same and surrounded by a circular rope border. Between the rope border and the globe is a black circular band on which appear the words "BLUE SEA BRAND ABSOLUTELY BONELESS."
Filed July 28, 1905. Serial No. 10,941. PUBLISHED APRIL 3, 1906.

53,258. WAX. THE S. S. WHITE DENTAL MFG. CO., Philadelphia, Pa.; Chicago, Ill.; New York, Brooklyn, and Rochester, N. Y.; Boston, Mass.; Atlanta, Ga.; New Orleans, La.; Toronto, Canada; Buenos Ayres, Argentina; Berlin, Germany, and St. Petersburg, Russia.
The word "CROWN."
Filed September 21, 1905. Serial No. 12,856. PUBLISHED APRIL 3, 1906.

53,259. COTTON SHEETINGS, SHIRTINGS, DRILLS, AND TICKINGS. SIEMSSEN & CO., Hamburg, Germany.
Four Chinese characters, the phonetic pronunciation of which is Zay Znenn, which characters are placed one below the other and which mean "Siem shen"—foreign house.
Filed August 8, 1905. Serial No. 11,430. PUBLISHED APRIL 3, 1906.

53,260. CORDIAL. SOCIÉTÉ ANONYME DE LA DISTILLERIE DE LA LIQUEUR BÉNÉDICTINE DE L'ABBAYE DE FÉCAMP, Fécamp, France.
A series of rectangular panels, the upper central panel containing the words "VÉRITABLE BÉNÉDICTINE LIQUEUR DE L'ANCIENNE ABBAYE DE FÉCAMP" in block letters, with the representation of the coat-of-arms of the Abbey of Fécamp at the right and a seal bearing the representation of the Holy St. Benoit bearing a crozier at the left, a lower series of vertical panels containing reading matter in various languages, at either side of the central body of panels a larger vertical panel containing a representation of the well-known squat bottle in which the cordial benedictine is sold, said bottle bearing the labels and seals thereon.
Filed January 4, 1906. Serial No. 15,878. PUBLISHED APRIL 3, 1906.

53,261. LINIMENT FOR RHEUMATISM AND SPRAINS. CHARLES Z. STONE, Barre, Vt.
The words "O PEPPER OIL."
Filed May 17, 1905. Serial No. 5,908. PUBLISHED APRIL 3, 1906.

53,262. BEER. UNITED STATES BREWING COMPANY OF CHICAGO, Chicago, Ill.
The arbitrary word "UR-BRÄU."
Filed January 18, 1906. Serial No. 16,281. PUBLISHED APRIL 3, 1906.

53,263. AROMATIC SYRUP FOR DISGUISING QUININ. VOIGT & CO., Chattanooga, Tenn.
The words "SYRUPUS JUVANS." Used ten years.
Filed June 16, 1905 Serial No. 8,345. PUBLISHED FEBRUARY 13, 1906.

53,264. BLEACHED AND UNBLEACHED SHIRTINGS AND SHEETINGS, CAMBRICS, AND LONG-CLOTH. GRINNELL WILLIS & CO., New York, N. Y.
The word "BRAVO."

Filed November 17, 1905. Serial No. 14,754. PUBLISHED APRIL 3, 1906.

53,265. SHEEP, KID, CALF, AND GOAT LEATHER. A. B. CLARK CO., New York, N. Y.

The words "HICKORY KID" and the representation of a barefooted boy with outstretched hands standing on the limbs of a tree.

Filed October 25, 1905. Serial No. 13,918. PUBLISHED APRIL 3, 1906.

53,266. WHISKY. SIMON BINSWANGER & BRO., St. Joseph, Mo.

The words "BLUE VALLEY" and a monogram composed of the letters, character, and abbreviation "S B & BRO" arranged on a fanciful scroll design.

Filed April 26, 1905. Serial No. 3,124. PUBLISHED JUNE 30 1905.

53,267. CANNED PINEAPPLE. THE BOOTH PACKING COMPANY, Baltimore, Md.

A hexagonal panel and parallel ribbons, said ribbons being represented as passing through the upper and lower portions of the said panel and appearing to be tied in bow-knots at points on the face of the said panel. Used ten years.

Filed October 21, 1905. Serial No. 13,797. PUBLISHED APRIL 3, 1906.

53,268. TOOTH-POWDER CONTAINING PHENOL. CRIMMINGS-MAGRATH CO., INC., Boston, Mass.

The word "DENTAPHENE."

Filed December 26, 1905. Serial No. 15,657. PUBLISHED APRIL 3, 1906.

53,269. CANNED SALMON. FIDALGO ISLAND PACKING CO., Anacortes, Wash.

A marine scene showing a steamship in the foreground and a representation of the Rock of Gibraltar and the words "GIBRALTAR BRAND" in the background.

Filed September 25, 1905. Serial No. 12,988. PUBLISHED APRIL 3, 1906.

53,270. ACETYLENE-LAMPS AND GENERATORS THEREFOR FOR MOTOR-VEHICLES. ALBERT H. FUNKE, New York, N. Y.

The word "AUTOLYTE."

Filed August 19, 1905. Serial No. 11,808. PUBLISHED JANUARY 23, 1906.

53,271. TOOTH-BRUSHES. CHARLES LOONEN, Paris, France.

The representation of a unicorn issuant on a heraldic bar.

Filed July 21, 1905. Serial No. 10,688. PUBLISHED APRIL 3, 1906.

53,272. HOSE-SUPPORTERS. PIONEER SUSPENDER COMPANY, Philadelphia, Pa.

The hyphenated word "LOCK-GRIP."

Filed October 14, 1905. Serial No. 13,595. PUBLISHED APRIL 3, 1906.

53,273. SPRING PAPER-CLIPS. RING PAPER CLIP COMPANY, Providence, R. I.

The word "RINKLIP."

Filed October 28, 1905. Serial No. 14,023. PUBLISHED MARCH 20, 1906.

53,274. ANODYNE POSSESSING ANALGESIC AND ANTIPYRETIC QUALITIES. ALICE E. STROMBERG, Denver, Colo.

The word "ANALGEDYNE" arranged on a field of clouds across which is a vertical strip vanishing at its ends therein and a square panel overlying said strip, across which the word is printed.

Filed July 3, 1905. Serial No. 9,862. PUBLISHED APRIL 3, 1906.

53,275. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn.

The word "VICTOR."

Filed March 6, 1906. Serial No. 17,545. PUBLISHED APRIL 3, 1906.

53,276. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn.

The figures and word "20TH CENTURY."

Filed March 6, 1906. Serial No. 17,546. PUBLISHED APRIL 3, 1906.

53,277. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn.

The word "SCOCO."

Filed March 6, 1906. Serial No. 17,548. PUBLISHED APRIL 3, 1906.

53,278. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala., Durham, N. C., and Memphis, Tenn.

The words and abbreviation "ASHLEY PHOSPHATE CO'S." Used ten years.

Filed March 6, 1906. Serial No. 17,557. PUBLISHED APRIL 3, 1906.

53,279. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn.

The words and character "DAVIE & WHITTLE'S." Used ten years.

Filed March 6, 1906. Serial No. 17,558. PUBLISHED APRIL 3, 1906.

53,280. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn.

The word "CHICORA." Used ten years.

Filed March 6, 1906. Serial No. 17,559. PUBLISHED APRIL 3, 1906.

53,281. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn.

The word "POMONA." Used ten years.

Filed March 6, 1906. Serial No. 17,561. PUBLISHED APRIL 3, 1906.

53,282. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn.

The word "EDISTO."

Filed March 6, 1906. Serial No. 17,562. PUBLISHED APRIL 3, 1906.

53,283. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn.

The word "CHEROKEE." Used ten years.

Filed March 6, 1906. Serial No. 17,563. PUBLISHED APRIL 3, 1906.

53,284. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn.

The words and abbreviation "GREENVILLE FERTILIZER CO.'S." Used ten years.

Filed March 6, 1906. Serial No. 17,564. PUBLISHED APRIL 3, 1906.

53,285. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn.

The words "BLUE RIDGE." Used ten years.

Filed March 6, 1906. Serial No. 17,566. PUBLISHED APRIL 3, 1906.

53,286. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn.

The word "MONTGOMERY." Used ten years.

Filed March 6, 1906. Serial No. 17,568. PUBLISHED APRIL 3, 1906.

53,287. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn.

The words and abbreviation "SOUTHERN FERTILIZER CO.'S." Used ten years.

Filed March 6, 1906. Serial No. 17,581. PUBLISHED APRIL 3, 1906.

53,288. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn.

The word "OGLETHORPE." Used ten years.

Filed March 6, 1906. Serial No. 17,582. PUBLISHED APRIL 3, 1906.

53,289. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn.

The words "PORT ROYAL." Used ten years.

Filed March 6, 1906. Serial No. 17,583. PUBLISHED APRIL 3, 1906.

53,290. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn.

The word "ROME." Used ten years.

Filed March 6, 1906. Serial No. 17,584. PUBLISHED APRIL 3, 1906.

53,291. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn.

The word "OLYMPIC." Used ten years.

Filed March 6, 1906. Serial No. 17,586. PUBLISHED APRIL 3, 1906.

53,292. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn.

The word "OCMULGEE." Used ten years.

Filed March 6, 1906. Serial No. 17,587. PUBLISHED APRIL 3, 1906.

53,293. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn.

The word "RESCUE." Used ten years.

Filed March 6, 1906. Serial No. 17,588. PUBLISHED APRIL 3, 1906.

53,294. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn.

The word "MOBILE." Used ten years.

Filed March 6, 1906. Serial No. 17,589. PUBLISHED APRIL 3, 1906.

53,295. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn.

The word "WANDO." Used ten years.

Filed March 6, 1906. Serial No. 17,596. PUBLISHED APRIL 3, 1906.

53,296. CANNED FRUITS AND VEGETABLES. WAYNE COUNTY PRESERVING CO., Newark, N. Y.

The word "NEWARK." Used ten years.

Filed September 27, 1905. Serial No. 13,057. PUBLISHED APRIL 3, 1906.

53,297. CANNED FRUITS AND VEGETABLES. WAYNE COUNTY PRESERVING CO., Newark, N. Y.

The words "WAYNE BRAND." Used ten years.

Filed September 27, 1905. Serial No. 13,058. PUBLISHED APRIL 3, 1906.

53,298. CANNED FRUITS AND VEGETABLES. WAYNE COUNTY PRESERVING CO., Newark, N. Y.

The word "BURNHAM." Used ten years.

Filed September 27, 1905. Serial No. 13,059. PUBLISHED APRIL 3, 1906.

53,299. CANNED FRUITS AND VEGETABLES. WAYNE COUNTY PRESERVING CO., Newark, N. Y.

The word "FAULTLESS." Used ten years.

Filed September 27, 1905. Serial No. 13,060. PUBLISHED APRIL 3, 1906.

53,300. LEATHER SHOES FOR LADIES, MEN, AND CHILDREN. A. J. BATES CO., Webster, Mass.

The word "WEBSTER." Used ten years.

Filed January 20, 1906. Serial No. 16,341. PUBLISHED APRIL 3, 1906.

53,301. REMEDIES FOR CANINES. LEMUEL G. ATWOOD Franklin, N. H.

The word "KANIKURA."

Filed November 23, 1905. Serial No. 14,936. PUBLISHED APRIL 3, 1906.

53,302. SPIRIT-VARNISH. THE BALL CHEMICAL CO., Allegheny, Pa.

The hyphenated word "GUM-LAC" appearing on a colored triangle having rounded corners, the heights of the letters conforming to the sides of the triangle.

Filed November 6, 1905. Serial No. 14,357. PUBLISHED APRIL 3, 1906.

53,303. CIGARS. LEAVITT P. BISSELL, Suffield, Conn.

The words "THE STUDY."

Filed January 8, 1906. Serial No. 16,019. PUBLISHED APRIL 3, 1906.

53,304. HEADACHE CURE. THE CELERO DRUG COMPANY, Boston, Mass.

The word "CELERO," associated with the words "LAXATIVE HEADACHE LOZENGE" placed upon a blue rectangular background.

Filed October 25, 1905. Serial No. 13,937. PUBLISHED APRIL 3, 1906.

53,305. SUGAR-SYRUP AND MAPLE-SYRUP. CHICAGO CONCENTRATING COMPANY, Chicago, Ill.

The bust portion of the figure of a boy in the act of pouring syrup from a pitcher in his left hand onto a plate of cakes before him, while in his right hand he is carrying a portion of a cake on a fork to his mouth, associated with the word "BELMONT."

Filed June 27, 1905. Serial No. 9,408. PUBLISHED APRIL 3, 1906.

53,306. RAZORS. F. A. CLAUBERG & CO., New York, N. Y.

The words "TONSORIAL GEM." Used ten years.

Filed August 11, 1905. Serial No. 11,536. PUBLISHED APRIL 3, 1906.

53,307. PRESERVATIVES AND FILLERS FOR BELTS. CLING-SURFACE COMPANY, Buffalo, N. Y.

The hyphenated word "CLING-SURFACE."

Filed January 2, 1906. Serial No. 15,831. PUBLISHED APRIL 3, 1906.

53,308. BLOOD REMEDIES AND TONICS. LOUIS GASTON DELAMOTHE, East Syracuse, N. Y.

The words "VITAL-ATOMS" and the representation of a bag shown as containing a quantity of material and tied below its mouth.

Filed October 7, 1905. Serial No. 13,403. PUBLISHED APRIL 3, 1906.

53,309. LEATHER SHOES. F. MAYER BOOT & SHOE CO., Milwaukee, Wis.

The words "MARTHA WASHINGTON."

Filed September 25, 1905. Serial No. 13,539. PUBLISHED APRIL 3, 1906.

53,310. LAUNDRY SOAP. ELLICK H. GOLLINGS, Chicago, Ill.

The words "YOURS TRULY."

Filed January 19, 1906. Serial No. 16,098. PUBLISHED APRIL 3, 1906.

53,311. CIGARS. HENRY TOBIAS AND COMPANY, New York, N. Y.

The arbitrary word "PRIMIDAD."

Filed January 11, 1906. Serial No. 16,126. PUBLISHED APRIL 3, 1906.

53,312. LINIMENT. HINKLEY BONE LINIMENT COMPANY, Saginaw, Mich.

The representation of a disk of red color, superimposed across which is the representation of a bone in black, the representation of the bone bearing the words "HINKLEY'S BONE LINIMENT."

Filed October 5, 1905. Serial No. 13,327. PUBLISHED APRIL 3, 1906.

53,313. CURE FOR TETTER. HOOPER MEDICINE COMPANY, Hillsboro, Tex.

The representation of a black cat sitting on its haunches reaching up and scratching the side of a plank with its fore paws.

Filed January 23, 1906. Serial No. 16,437. PUBLISHED APRIL 3, 1906.

53,314. MINERAL WATER. JAMES A. HORN, Hornsprings, Tenn.

The representation of a pair of horns gracefully mounted within a fanciful scroll with floral leaves disposed thereon and another representation of a horn above with a landscape in perspective surrounded by a circle, associated with the words "HORN MINERAL WATER," which are arranged as follows: The word "HORN" appears at the top of the circle. Below the same are the words "MINERAL WATER" printed across the scroll, and within the lines of the circle appear the words "HORN MINERAL WATER HORN SPRINGS, TENN."

Filed February 28, 1906. Serial No. 17,409. PUBLISHED APRIL 3, 1906.

53,315. SMOKING AND CHEWING TOBACCO. INDEPENDENT SNUFF COMPANY, Chicago, Ill.

A panel bearing the word "CINCH" and the representation of two men seated at a table playing cards. Upon the table is a card bearing the word "CO-OPERATION," and upon the cards held in the hand of one of the men are the words "DEALER," "GROWER," "MAN'R," and "CONSUMER."

Filed January 25, 1906. Serial No. 16,515. PUBLISHED APRIL 3, 1906.

53,316. COLOR-PASTES. JOSEPH BURNETT CO., Boston, Mass.

The word "BURNETT'S." Used ten years.

Filed November 11, 1905. Serial No. 14,500. PUBLISHED APRIL 3, 1906.

53,317. WASHING-MACHINES. HENRY S. JUDD, Chicago, Ill.

Two concentric ellipses crossed horizontally by a panel with concave upper and lower edges. In the middle of the said panel are the words "ITS CO." In the middle of the space and between the concentric circles above the panel is the word "IT," and in the corresponding space below the panel is the word "CHICAGO." In the space between the upper edge of the panel and the inner ellipse are the words "MADE BY."

Filed December 8, 1905. Serial No. 15,274. PUBLISHED APRIL 3, 1906.

53,318. DISINFECTANTS. KATHAIRO CHEMICAL CO., New York, N. Y.

The word "KATHAIRO" printed in Greek characters and inclosed within a diamond-shaped figure.

Filed October 28, 1905. Serial No. 14,021. PUBLISHED APRIL 3, 1906.

53,319. CIGARS. GEORGE W. KELLY Belmont Ohio.

The words "BIG BUCK."

Filed January 16, 1906. Serial No. 16,222. PUBLISHED MARCH 27, 1906.

53,320. CHEWING-GUM. A. MAYNARD LYON, New York, N. Y.

The word "TOOTHSOMES."

Filed January 8, 1906. Serial No. 16,046. PUBLISHED APRIL 3, 1906.

53,321. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill.

The words "SANTA CLAUS." Used ten years.

Filed July 13, 1905. Serial No. 10,207. PUBLISHED APRIL 3, 1906.

53,322. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill.

The word "ARK." Used ten years.

Filed July 13, 1905. Serial No. 10,208. PUBLISHED APRIL 3, 1906.

53,323. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill.

The word "LAKESIDE." Used ten years.

Filed July 13, 1905. Serial No. 10,220. PUBLISHED APRIL 3, 1906.

53,324. WHISKY. JULIUS NATHAN & Co., Fort Wayne, Ind.

The word "YUKON," associated with a monogram composed of the letters, character, and abbreviation "J N & Co" inclosed by an ornamental circular figure.

Filed April 17, 1905. Serial No. 1,813. PUBLISHED JUNE 13, 1905.

53,325. MIXED PAINTS. GEORGE W. PIPER New York, N. Y.

The representation of a buoy floating on water and bearing the initials "G. W. P."

Filed December 21, 1905. Serial No. 15,571. PUBLISHED APRIL 3 1906.

53,326. CANNED FRUITS AND VEGETABLES. PRATT-LOW PRESERVING CO., San Jose, Cal.

The words "RED LETTER," associated with the representation of the red letter "P."

Filed May 24, 1905. Serial No. 6,549. PUBLISHED APRIL 3, 1906.

53,327. MEDICINAL TABLETS. FREDERIC HENRY PUTNAM, Boston, Mass.

The abbreviation "℞," bearing the numeral "3" and the abbreviations "℞ ℞."

Filed November 21, 1905. Serial No. 14,880. PUBLISHED APRIL 3 1906.

53,328. NIPPLES FOR NURSING-BOTTLES. THE SEAMLESS RUBBER CO., New Haven, Conn.

The letters "A A A" arranged side by side and inclosed by an oval band, at each end of which is a horizontal band, all inclosed within a diamond, the greater axis of which is horizontal.

Filed May 22, 1905. Serial No. 6,326. PUBLISHED APRIL 3, 1906.

53,329. LEATHER BOOTS AND SHOES. SMITH-BRISCOE SHOE COMPANY, Lynchburg, Va.

The representation of two cords extending at right angles to each other and covered at their crossing-point with a red-wax seal having an irregular outline, on the face of which appear the words "THE SEAL OF PUBLIC APPROVAL" and diagonally across the face of which appears the arbitrarily-spelled word "NUSHU."

Filed November 23, 1905. Serial No. 14,932. PUBLISHED APRIL 3, 1906.

53,330. REMEDY FOR CURING DISEASES OF SWINE, AND PARTICULARLY HOG-CHOLERA. SOUTHERN HOG REMEDY CO., Fort Worth, Tex.

The representation of a sick hog shedding tears and of the words "I NEED HAMPTON'S HOG REMEDY" imprinted on the side of the hog.

Filed September 30, 1905. Serial No. 13,161. PUBLISHED APRIL 3, 1906.

53,331. MEDICINAL TABLETS AND GRANULES. THE ABBOTT ALKALOIDAL CO., Chicago, Ill.

The words "ABBOTT'S ALKALOIDAL TABLETS." Used ten years.

Filed December 30, 1905. Serial No. 15,782. PUBLISHED APRIL 3, 1906.

53,332. BOILER COMPOUNDS FOR PREVENTING OR REMOVING INCRUSTATION. AMERICAN CHEMICAL WORKS, Chicago, Ill.

The letters "S. B. C." and the words "SAFETY BOILER COMPOUND" inclosed in a trefoil.

Filed December 21, 1905. Serial No. 15,564. PUBLISHED APRIL 3, 1906.

53,333. CIDER. BARRETT & BARRETT, St. Paul, Minn.

The words "BARRETT & BARRETT," the two words being arranged one above the other with the initial letter "B" and the final "T" common to both words, the intermediate letters being arranged in oppositely-curved lines with the character "&" intermediate of the small letters of the two words.

Filed September 27, 1905. Serial No. 13,078. PUBLISHED APRIL 3, 1906.

53,334. LINIMENT FOR THE CURE OF CUTS AND FLESH WOUNDS. WILLIAM H. COX, Stuart, Iowa.

The conventional representation of the world with the lines of latitude and longitude marked thereon, also a portion of a barbed-wire fence and a horse near the fence having a cut in its breast and blood flowing from the wound. Above the figure are the words "USE OUR WORLD" and below the figure the words "WONDER WORKER." On each side of the representation is a conventional scroll. The words are printed in red ink, the representation of the world and the scroll in light blue, and the horse in black.

Filed January 29, 1906. Serial No. 16,600. PUBLISHED APRIL 3, 1906.

53,335. MINERAL WATER. DIE ACTIENGESELLSCHAFT APOLLINARIS BRUNNEN, Neuenahr, Germany.

The arbitrary word "APOLLINARIS" in black letters, associated with a triangular figure in solid red on an orange or yellow surface.

Filed November 4, 1905. Serial No. 14,306. PUBLISHED APRIL 3, 1906.

53,336. POISON FOR INSECTS. ROBERT DRUMM, Fort Worth, Tex.

The representation of a drum with sticks on the head and the signature of the registrant also on the head and the word "ANTITOXIN" on the side of the drum.

Filed December 16, 1905. Serial No. 15,578. PUBLISHED APRIL 3, 1906.

53,337. CIGARS. DUNCAN & MOORHEAD, INC., Philadelphia, Pa.

The word "DUNMOORA" and the representation of a fanciful coat-of-arms comprising a shield obliquely divided by a chevron or band into a field of black and a field of red bearing centrally thereon a deer rampant, the shield being surmounted by an armor-like crest flanked by an ornamental scroll of harmonizing design, the whole being surrounded by an ornamental scroll and medal border, which also forms a border for a minor land and water scene in the background. Upon the lower part of the shield a scroll appears bearing the motto "FACILE PRINCEPS."

Filed August 22, 1905. Serial No. 11,910. PUBLISHED APRIL 3, 1906.

53,338. LUBRICATING-OIL. E. O. HALL AND SON LTD., Honolulu, Territory of Hawaii.

The word "TROPIC."

Filed September 18, 1905. Serial No. 12,738. PUBLISHED APRIL 3, 1906.

53,339. REMEDY FOR CERTAIN NAMED DISEASES. EDWARD L. BALDWIN CO., San Francisco, Cal.

The words, abbreviation, number, and letter "BALDWIN'S No. 25 B HEALTH TABLETS" and the signature of "EDWARD L. BALDWIN," a picture representing a sick man holding a package in his hand and having his head bandaged and the words "TAKE THEM TO-NIGHT," and a picture representing a well man passing through a doorway and the words "AND BE WELL TO-MORROW."

Filed December 29, 1905. Serial No. 15,746. PUBLISHED APRIL 3, 1906.

53,340. SMOKING AND CHEWING TOBACCO IN TWIST FORM. FLUHRER TOBACCO COMPANY, Boonville, Ind.

A representation of a disk having thereon the letters "O. N. T." and the name and address "FLUHRER TOB. CO. BOONVILLE. IND."

Filed July 24, 1905. Serial No. 10,770. PUBLISHED APRIL 3, 1906.

53,341. TOILET SOAP. GEO. A. SCHMIDT CO., Chicago, Ill.

An open doorway with overhanging vines and having the words "A HAPPY HOME" above the same, an old man wearing a cap and gown standing in front of the doorway and holding in one hand a cake of soap on which appears the name "ASCAGE." The words "IT" and "ASCAGE" appear at one side of the doorway.

Filed October 30, 1905. Serial No. 14,102. PUBLISHED APRIL 3, 1906.

53,342. REMEDY FOR CERTAIN NAMED DISEASES. FRANK J. HARTMILLER, Lebanon, Mo.

The hyphenated word "PEPTO-LAX."

Filed January 22, 1906. Serial No. 16,387. PUBLISHED APRIL, 3, 1906.

53,343. WRAPPING-PAPER, PAPER BAGS, AND PAPER SACKS. HOLLINGSWORTH & WHITNEY COMPANY, Boston, Mass.

The word "MOQUIN."

Filed January 5, 1906. Serial No. 15,909. PUBLISHED APRIL 3, 1906.

53,344. CIGARS, STOGIES, AND CHEROOTS. INDEPENDENT TOBACCO MANUFACTURERS PROMOTING COMPANY, Chicago, Ill.

A representation of a tobacco-leaf bearing the letters "F. A. I. C." and a crossed pipe and cigar.

Filed February 24, 1906. Serial No. 17,310. PUBLISHED APRIL 3, 1906.

53,345. HEADACHE MEDICINE. KEF CHEMICAL CO., Washington, D. C.

The word "KEF."

Filed January 22, 1906. Serial No. 16,384. PUBLISHED APRIL 3, 1906

53,346. CANNED FRUITS AND VEGETABLES. LOUIS LANDAU & CO., St. Louis, Mo.

The word "MAJESTIC."

Filed December 22, 1905. Serial No. 15,601. PUBLISHED APRIL 3, 1906.

53,347. MEDICINES FOR CERTAIN NAMED DISEASES. EDWARD P. MERTZ, Washington, D. C.

The words "ELIXIR KOSINE."

Filed January 25, 1906. Serial No. 16,507. PUBLISHED APRIL 3, 1906.

53,348. LIQUID MEDICINAL COMPOUND. DAVID MICHAELS, Boston, Mass.

The word "SHAWMUT."

Filed January 29, 1906. Serial No. 16,598. PUBLISHED APRIL 3, 1906.

53,349. SODA-ASH AND CAUSTIC SODA. MICHIGAN ALKALI COMPANY, Ford City, Mich.

The representation of a North American Indian with drawn bow and arrow, associated with the word "WYANDOTTE." Used ten years.

Filed June 5, 1905. Serial No. 7,470. PUBLISHED APRIL 3, 1906.

53,350. TYPE-WRITER RIBBONS. FRANK O. MITTAG, Park Ridge, N. J.

The words "ROUND BOX." Used ten years.

Filed March 5, 1906. Serial No. 17,516. PUBLISHED APRIL 3, 1906.

53,351. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill.

The word "COLIBRI."

Filed July 13, 1905. Serial No. 10,202. PUBLISHED APRIL 3, 1906.

53,352. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill.

The word "MASCOT." Used ten years.

Filed July 13, 1905. Serial No. 10,206. PUBLISHED APRIL 3, 1906.

53,353. RECONSTRUCTIVE FOOD AND TONIC. THE NORWICH PHARMACAL COMPANY, Norwich, N. Y.

The word "NUTROZOME."

Filed December 14, 1905. Serial No. 15,418. PUBLISHED APRIL 3, 1906.

53,354. MEDICINES FOR THE CURE OF ALCOHOLIC AND DRUG HABITS. THE ORRINE COMPANY OF THE DISTRICT OF COLUMBIA, Washington, D. C.

The word "ORRINE."

Filed January 25, 1906. Serial No. 16,508. PUBLISHED APRIL 3, 1906.

53,355. VERMIFUGE. THE PARKER BLAKE CO. LTD., New Orleans, La.

The word "CREOLE," associated with the pictorial representation of a vase supporting ferns and flowers.

Filed December 15, 1905. Serial No. 15,432. PUBLISHED APRIL 3, 1906.

53,356. VERMIFUGE. THE PARKER BLAKE CO. LTD., New Orleans, La.

The words "LASTRAPES' FRENCH VERMIFUGE." Used ten years.

Filed December 26, 1905. Serial No. 15,642. PUBLISHED APRIL 3, 1906.

53,357. CHOCOLATES AND BONBONS. R. L. PERRY CO., Boston, Mass.

The representation of an Indian paddling a canoe in water, with a background of land, trees, and sky, there appearing upon the prow of the canoe the letter "S" inside a circle from which extend wings, and which representation is inclosed within two concentric circles forming a circular band surrounding the same.

Filed June 9, 1905. Serial No. 7,750. PUBLISHED APRIL 3, 1906.

53,358. CARPET-WARPS. JAMES E. REYNOLDS & CO., New York, N. Y.

The word "PEERLESS" arranged above a trotting-race-track scene and the whole inclosed by a rectangular border with ornamental corners. Used ten years.

Filed November 1, 1905. Serial No. 14,152. PUBLISHED APRIL 3, 1906.

53,359. TOOTH-PASTE. THE S. S. WHITE DENTAL MFG. CO., Philadelphia, Pa.; Chicago, Ill.; New York, Brooklyn, and Rochester, N. Y.; Boston, Mass.; Atlanta, Ga.; New Orleans, La.; Toronto, Canada; Buenos Ayres, Argentina; Berlin, Germany, and St. Petersburg, Russia.

The word "ORALINE."

Filed September 21, 1905. Serial No. 12,857. PUBLISHED APRIL 3, 1906.

53,360. INVESTMENT AND IMPRESSION COMPOUNDS. THE S. S. WHITE DENTAL MFG. CO., Philadelphia, Pa.; Chicago, Ill.; New York, Brooklyn, and Rochester, N. Y.; Boston, Mass.; Atlanta, Ga.; New Orleans, La.; Toronto, Canada; Buenos Ayres, Argentina; Berlin, Germany, and St. Petersburg, Russia.

The word "SUMP."

Filed September 21, 1905. Serial No. 12,860. PUBLISHED APRIL 3, 1906.

53,361. CAVITY-LININGS. THE S. S. WHITE DENTAL MFG. Co., Philadelphia, Pa.; Chicago, Ill.; New York, Brooklyn, and Rochester, N. Y.; Boston, Mass.; Atlanta, Ga.; New Orleans, La.; Toronto, Canada; Buenos Ayres, Argentina; Berlin, Germany, and St. Petersburg, Russia.

The word "CAVITINE."

Filed September 21, 1905. Serial No. 12,868. PUBLISHED APRIL 3, 1906.

53,362. INVESTMENT AND IMPRESSION COMPOUNDS. THE S. S. WHITE DENTAL MFG. CO., Philadelphia, Pa.; Chicago, Ill.; New York, Brooklyn, and Rochester, N. Y.; Boston, Mass.; Atlanta, Ga.; New Orleans, La.; Toronto, Canada; Buenos Ayres, Argentina; Berlin, Germany, and St. Petersburg, Russia.

The word "FYRITE."

Filed September 21, 1905. Serial No. 12,869. PUBLISHED APRIL 3, 1906.

53,363. OILSTONES, WATERSTONES, WHETSTONES, HONES, AND GRINDSTONES. THE SCRANTON WHETSTONE AND ABRASIVE WHEEL COMPANY, Scranton, Pa.

The words "GREEN TURTLE" and the representation of a green turtle appearing on the representation of a keystone which is superimposed upon a serrated seal.

Filed November 3, 1905. Serial No. 14,229. PUBLISHED APRIL 3, 1906.

53,364. OILSTONES, WHETSTONES, HONES, WATERSTONES, AND GRINDSTONES. THE SCRANTON WHETSTONE AND ABRASIVE WHEEL CO., Scranton, Pa.

The word "FOR-GET-ME-NOT" and the representation of a bunch of forget-me-nots appearing on the representation of a keystone, which is superimposed upon a serrated seal.

Filed November 3, 1905. Serial No. 14,230. PUBLISHED APRIL 3, 1906.

53,365. LEAD-PENCILS, DRAWING-PENCILS, AND DRAWING-CHARCOAL. EDWARD G. SOLTMANN, New York, N. Y.

The word "DRAGON" printed with quotation-marks.

Filed April 6, 1905. Serial No. 531. PUBLISHED APRIL 3, 1906.

53,366. EMULSIONS FOR USE IN ALL CONDITIONS OF MALNUTRITION. STANDARD EMULSION CO., New York, N. Y.

The representation of a swinging sign-board hung from the arm of a vertical support and displaying in white letters on a red background the words "THE RUSSELL EMULSION."

Filed January 30, 1906. Serial No. 16,633. PUBLISHED APRIL 3, 1906.

53,367. CIGARETTES. TEOFANI & Co., London, England.

A vertical panel bearing a representation of Minerva with an owl perched on one hand and holding with the other hand a shield and spear, and on each side of the vertical panel is an ornamental wreath-entwined shield, one shield bearing the words "MANUFACTURE DE CIGARETTES GROS ET EXPORTATION," and the other the words "TOUTES LES CIGARETTES SONT MARQUEES TEOFANI & Co." Above the vertical panel is a band bearing the name TEOFANI & Co." and below the panel a band bearing the words "CIGARETTES EGYPTIENNES." Beneath this band are the words "MANUFACTURED IN LONDON," the whole being inclosed in an ornamental scroll-like border.

Filed September 25, 1905. Serial No. 12,969. PUBLISHED APRIL 3, 1906.

53,368. HYDRAULIC CEMENT. UTICA HYDRAULIC CEMENT Co., Utica, Ill.

The name "J. CLARK." Used ten years.

Filed December 4, 1905. Serial No. 15,167. PUBLISHED APRIL 3, 1906.

53,369. METALLIC BRAZING COMPOUND. WELDARINE MANUFACTURING COMPANY, Topeka, Kans.

The arbitrary word "WELDARINE."

Filed September 25, 1905. Serial No. 13,017. PUBLISHED APRIL 3, 1906.

53,370. CANDY. PHILIP WUNDERLE, Philadelphia, Pa.

The representation of a bunch of vanilla-beans. Used ten years.

Filed June 21, 1905. Serial No. 8,708. PUBLISHED APRIL 3, 1906.

LABELS

REGISTERED MAY 29, 1906.

12,907.—*Title:* "PRINCESS HAIR TONIC." (For Hair-Tonic.) FREDA BREHM, New York, N. Y. Filed April 14, 1906.

12,908.—*Title:* "WHITE ELEPHANT COUGH CURE." (For a Medicine.) WM. C. STRONG, Paducah, Ky. Filed May 3, 1906.

12,909.—*Title:* "COLEMAN'S MUSTARD." (For Mustard.) ROBT. COLEMAN, New York, N. Y. Filed May 3, 1906.

12,910.—*Title:* "E-Z' WAX." (For an Ironing-Wax.) CHAS NEWBOURG, Sioux Falls, S. D. Filed April 26, 1906.

12,911.—*Title:* "BRIGHTINE." (For a Polish.) ISAAC H. LEVY, New Haven, Conn. Filed May 4, 1906.

PRINTS

REGISTERED MAY 29, 1906.

1,682.—*Title:* "IF YOU PLEASE—DON'T MERELY ASK FOR FLOUR." (For Flour.) WASHBURN-CROSBY COMPANY, Minneapolis, Minn. Filed May 2, 1906.

1,683.—*Title:* "HIGHEST PRICES PAID FOR TOBACCO GROWN WITH VIRGINIA-CAROLINA FERTILIZERS." (For Fertilizers.) VIRGINIA-CAROLINA CHEMICAL Co., Richmond, Va. Filed May 2, 1906.

1,684.—*Title:* "PARSONS." (For Manganese Bronze and White Brass.) WILLIAM CRAMP & SONS SHIP & ENGINE BLDG. Co., Philadelphia, Pa. Filed April 2, 1906.

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DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

EX PARTE ILGNER.

Decided February 27, 1906.

1. ABANDONMENT OF APPLICATION—LONG DELAY—COMPLETE SHOWING REQUIRED.

Where action on an application was delayed for nearly three years, the showing that the delay was unavoidable must be very complete and satisfactory.

2. SAME—DELAY NOT UNAVOIDABLE.

Where prior to the expiration of the time allowed for action the attorney notified the assignee that an amendment was required and neither the assignee nor the inventor took any action whatever until nearly seventeen months thereafter and no satisfactory reason is given for the delay, *Held* that the delay was not unavoidable.

3. SAME—DELAY AFTER ABANDONMENT WAS DISCOVERED.

A delay of more than one year after the discovery that the application was abandoned, for which no excuse is given, cannot be considered unavoidable.

ON PETITION.

ELECTRICALLY-DRIVEN WINDING-MACHINE.

Messrs. H. and W. Pataky and *Mr. Ellis Spear* for the applicant.

ALLEN, *Commissioner:*

This is a petition that the above-entitled application be reinstated as a pending case.

The application was filed April 7, 1902. On November 14, 1902, the Examiner wrote a letter therein stating that the invention could not be understood from the description furnished and that action on the merits could not therefore be given. He also required a new oath and made other formal objections. On January 26, 1903, a petition was taken regarding a change in filing date, which was granted on February 10, 1903. No further action was taken in this case until February 21, 1906, when the present petition and proposed amendment to the application were filed. The case is therefore abandoned, under section 4894, Revised Statutes, unless the failure to take action responsive to the Examiner's letter of November 14, 1902, prior to the filing of the present petition was unavoidable. Where the failure to take action has been delayed as long as in the present case, the showing which will be accepted that the delay was unavoidable must be very complete and satisfactory. The only showing of reasons for delay in this case is found in the affidavit of the inventor. From this it appears that on April 23, 1903, the attorney informed the assignee of the invention that an amendment was required. No reply thereto was made by the assignee. On September 12, 1904, an investigation was started by the assignee regarding a patent to the applicant granted upon an application filed at about the same time as the present application, and in course of correspondence with attorneys who succeeded the original attorneys in business the existence of the present application was discovered on January 30, 1905. In response to their inquiry the parties were informed by the associate attorney in this country, in a letter dated February 11, 1905, that this application was abandoned. The failure of the inventor or assignee to respond to the notice of April 23, 1903, is not satisfactorily explained, and the delay from that date to September 12, 1904, before instigating an investigation regarding the invention must be considered unreasonable. Furthermore, no attempt has been made to account for the delay from February 11, 1905, when finally informed of the abandonment of this application, to February 21, 1906, when the present petition was filed.

Great stress is laid by the applicant on the value and importance of the invention. These are reasons for giving the showing made the most careful consideration, but are not reasons for relaxing the usual requirements in cases of this kind. It is remarkable that an invention so important as this one is alleged to be was not more diligently attended to by the parties interested in it. I am not satisfied that the delay in prosecution of this case was unavoidable, and this being true I am, under the section of the statute referred to above, without authority to regard this case as otherwise than abandoned.

The petition is denied.

POTTER *v.* MCINTOSH.

Decided March 8, 1906.

INTERFERENCE—QUESTION OF PATENTABILITY NOT CONSIDERED ON APPEAL ON PRIORITY.

Held that the decision of the court in the case of *Podlesak and Podlesak* v. *McInnerney* (120 O. G., 2127) does not support the contention that the question of patentability should be considered upon the appeal upon priority of invention.

PETITION for rehearing.

EMERGENCY-BRAKE.

Mr. Albert G. Davis for Potter. (*Mr. Arthur A. Buck* of counsel.)

Mr. Charles H. Roberts for McIntosh.

ALLEN, *Commissioner:*

This is a petition by Potter for rehearing of his appeal from the decision of the Examiners-in-Chief awarding priority of invention in the above-entitled interference to McIntosh, which decision was affirmed in my decision of January 12, 1906, (120 O. G., 1823.)

The petition seems to be based on the single contention that my refusal to consider the question of patentability upon the appeal upon priority is shown to have been in error by the recent decision of the Court of Appeals of the District of Columbia in the case of *Podlesak and Podlesak* v. *McInnerney*. I find nothing in that decision to support this contention. The petition seems to have been filed under the mistaken impression that the principal distinction between the present case and that of *Podlesak and Podlesak* v. *McInnerney* resides in the fact that the consideration urged here is that of non-patentability, whereas the right of a party to make claims and identity of invention were the questions which were considered by the court in that case. The real distinction between this case and those cases in which a party should be permitted to present and have considered upon appeal upon priority of invention questions attacking the propriety of the existence of the interference proceeding is believed to be that recognized in my decision in view of which this rehearing is sought, wherein it was stated:

Whatever objections there may be to the policy and rule preventing appeal from decisions affirming patentability or right to make claims in those cases where affirmance may result in preventing the issue of a patent to a party who, in the event of a contrary decision, might have been entitled thereto, this policy and rule are believed to be in accordance with sound reason and unimpeachable in their application to cases like the present, where the would-be appellant upon patentability has in any event no standing before the Office as a claimant for a patent upon the matter in question.

In their decision in the *Podlesak and Podlesak* v. *McInnerney* case the court stated:

The question of the right of a party to make a claim goes to the very foundation of an interference for if the party has not such right the interference fails. If it be incorrectly held that such party has a right to make the claim priority may be awarded to him *and his adversary be deprived of a substantial right in that he is not given a claim where he necessarily is the prior inventor*, his adversary never having made the invention. Manifestly that question should not be finally determined by the Primary Examiner who originally declared the interference. We therefore take jurisdiction to determine that question in this case as an ancillary question to be considered in awarding priority of invention. (Italics mine.)

It appears from this statement that the consideration of the questions of right to make the claim in issue and of identity of invention was undertaken by the court because the appellant in that case came before them seeking to have determined his right to a patent to which he was apparently justly entitled if there was error in the decisions below holding that his opponent was entitled to make the claim in issue and that there was interference in fact. In the present case the appellant is admittedly not entitled to a patent on the matter in issue, and, as was pointed out in my decisions in this case and in the case of *Sobey* v. *Holsclaw*, (119 O. G., 1922,) no good reason appears for hearing at this time the arguments of the appellant upon the patentability of his opponent's claims or for reviewing the affirmative decision of the Primary Examiner on that question.

The petition is denied.

FELSING v. NELSON.

Decided March 10, 1906.

1. REHEARING.

Denial of a request for rehearing is no reason for surprise.

2. LIMIT OF APPEAL.

A party is not justified in delaying the filing of his appeal beyond the limit fixed therefor because a request for rehearing has been made.

ON PETITION.

PNEUMATIC STRAW-STACKER.

Messrs. Bradford & Hood for Felsing.

Mr. E. G. Siggers for Nelson.

ALLEN, *Commissioner:*

This is a petition by Felsing taken from the action of the Primary Examiner denying an extension of the limit of appeal from the supplementary decision rendered by him on January 25, 1906.

Nelson has objected to the petition because the same was not served upon him by Felsing and because he was without notice thereof other than the notice of hearing sent by the Office. I have reviewed the facts in the case and find that Felsing's position here is entirely without merit. Besides the want of service of the petition it may be stated that the appeal filed by Felsing, which is referred to in the petition as indicating desire on the part of Felsing to expedite the case, is not the appeal required by the rules and by well-established practice. It may be stated, further, that no reason is seen why Felsing's attorneys should have been surprised by the decision of the Primary Examiner upon the request for rehearing or why they should have waited for that decision before taking their appeal. It is well settled that a mere request for rehearing in this Office does not extend the limit of appeal.

The petition is denied.

BERRYE, KANE, AND STENGARD v. HILDRETH.

Decided March 21, 1906.

INTERFERENCE—MOTION TO DISSOLVE—DEFINITE.

Where a motion is brought to dissolve the interference on the ground of irregularity in the declaration, because the counts are not clear and definite, *Held* that the alleged indefiniteness must reside in certain portions of the counts or in certain words used and that the motion should point out wherein the supposed indefiniteness lies. The motion need not state the arguments, but should definitely set forth the points to be argued.

APPEAL on motion.

CANDY-PULLING MACHINE.

Mr. Joseph H. Freeman for Berrye, Kane, and Stengard.

Messrs. Macleod, Calver, Copeland & Dike for Hildreth.

ALLEN, *Commissioner:*

This is an appeal by Berrye, Kane, and Stengard from the decision of the Examiner of Interferences refusing to transmit to the Primary Examiner their motion to dissolve the above-entitled interference on the ground that there was irregularity in the declaration as to counts 4 and 5 of the issue.

The ground for refusing transmission of the motion was that it was not sufficiently specific as to the points to be argued. It was alleged in the motion that—

* * * said counts are not clear and definite, when construed in connection with the different constructions shown and described in the applications of the respective parties.

It seems clear that the counts referred to mean something and that the alleged indefiniteness must reside in certain portions of the counts or in certain words used. The moving party should point out wherein the supposed indefiniteness lies, so that the opposing party will know the character of the arguments that he will be called upon to meet. It is not meant by this that the motion should contain the arguments, but merely that it should definitely set forth the points to be argued. The Examiner was right in refusing to transmit the motion, and his decision is affirmed.

EX PARTE ROSENHEIM AND MOMBEL.

Decided March 21, 1906.

DRAWINGS.

Where a drawing was made by the Office in accordance with instructions given by an applicant and said drawing was accepted, signed, and filed as a part of his application, whereupon the Examiner objected to the drawing as not conforming to the original disclosure, *Held* that a new drawing should not be furnished by the Office without expense to the applicant.

ON PETITION.

MEANS FOR OPERATING AND SECURING CASEMENT WINDOWS.

Mr. B. Singer and *Mr. C. Leroy Parker* for the applicants.

ALLEN, *Commissioner:*

This is a petition that the Office make a new drawing without expense to applicants.

The records show that applicants were called upon by the Examiner to amplify their drawings. In response to this requirement a commercial print was filed with a request that—

If a drawing such as is shown in the large view would fulfil requirements the Examiner is requested to have an estimate forwarded covering cost of making such drawing.

On August 26, 1905, the following communication was received from applicants' attorney:

An estimate has been requested from the Office for the cost of furnishing new illustration in this case. It is believed that a sheet showing a view the same as the large perspective on the commercial print forwarded by amendment dated June 12th would meet the Examiner's approval. The formal requirements will be met when the new drawing is completed but the Examiner is requested to inform the attorney whether or not he considers the large view upon the commercial print a satisfactory showing.

On September 16, 1905, before the Office had responded to the inquiry as to the sufficiency of the proposed new drawing, applicants' attorney instructed the Office to "prepare drawing showing perspective on the commercial print forwarded in amendment dated June 12, 1905." The drawing was prepared and forwarded to applicants in care of their attorney, who signed said drawing and formally filed the same as a part of this case. This new sheet of drawing has been objected to by the Examiner in that it does not conform to the original drawing. The Office is now requested to furnish a new drawing without further expense to the applicants.

The drawing in question was made in accordance with the instructions given. The only direct instruction given the Office was to "prepare a drawing showing perspective view according to the large perspective on the commercial print." The only proper inference from this instruction is that applicants desired a drawing made from and according in details with the commercial print. Such a drawing was made and forwarded to applicants' attorney. No objection was raised to the drawing on the part of applicants on its receipt. On the contrary, it was accepted, signed, and returned to the Office as a formal drawing in their case for the purpose of meeting the requirements of the Examiner.

It does not appear that the Office in any way warranted the sufficiency of the new drawing if made in accordance with the commercial print. Not having waited for an answer from the Examiner to their inquiry as to the sufficiency of the proposed new drawing, applicants assumed the risk that the drawing when made would be found satisfactory.

The mistake in this case, if any has been made, was on applicants' part in not giving more explicit directions as to the details of the drawing they desired.

The petition is dismissed.

EX PARTE LOPPENTIEN.

Decided March 29, 1906.

1. FINAL REJECTION.

Where in response to the Office action rejecting the claims on the ground that the device is devoid of utility applicant presents an argument traversing the position taken by the Examiner, *Held* that the Examiner being of the opinion that his ground for rejection was well taken was correct in adhering to it and making it final.

2. AMENDMENT AFTER FINAL REJECTION—CHANGES IN DESCRIPTION.

Where amendments to the description which do not touch the merits of the application, but present the invention more clearly, are presented after final rejection, *Held* that they may be entered without reopening the application for further consideration.

ON PETITION.

POWER-TRANSMITTING DEVICE.

Messrs. R. S. & A. B. Lacey for the applicant.

ALLEN, *Commissioner:*

This is a petition requesting that the Examiner in charge of this application be advised that an amendment presented after final rejection be incorporated, because (a) the action of July 7, 1905, was prematurely made final and (b) if properly made final the amendment proposed does not relate directly to the claims.

It would appear that the final rejection given July 7, 1905, was in order and properly given. In response to the Office action of April 6, 1905, rejecting the claims, applicant presented an argument of considerable length traversing the position taken by the Examiner. In response to this argument the Examiner advised applicant that "the rejection of all the claims is adhered to and is hereby made final." The only ground for rejection was that the device is devoid of utility. The controversy between the Examiner and the applicant seems to be as to what constitutes lack of utility. This is a question to be passed upon by the Examiners-in-Chief in the first instance, and the Examiner being of the opinion that his ground for rejection was well taken was correct in adhering to it and making it final.

The amendment which applicant seeks to have incorporated relates to the description entirely. It contains a substitute statement of invention and brief description of certain figures of the drawing. The Examiner first refused to allow the amendment to be incorporated, as in his opinion it contained new matter. Later he based his refusal to enter the amendment entirely on the ground that the application was under final rejection, stating, however, that the amendment was still thought to contain new matter. I am of the opinion that the amendment does not contain new matter. It merely points out more in detail the character of the mechanism to which applicant's invention relates and is believed to be clearly within the original disclosure. There appears to be no reason why this amendment should not be entered. Amendments canceling claims or presenting those rejected in better form for consideration on appeal may be admitted after final rejection without reopening the application for further consideration. For a similar reason amendments to the description presenting the invention more clearly when they do not touch the merits of the application should be entered.

The petitioner further requests that the Examiner spread his reasons for rejection upon the record and clearly point out wherein he holds the device to be inoperative. The Examiner clearly stated in his action of April 6, 1905, that "inoperativeness is not the ground of rejection." The Examiner appears to have made clear his grounds of rejection, and this request is denied.

Applicant has filed an appeal to the Examiners-in-Chief, which has not been forwarded on account of this petition. The petition is granted to the extent that the amendment will be entered and the appeal will be forwarded.

EX PARTE THAYER.

Decided March 30, 1906.

ABANDONMENT—RESPONSIVE ACTIONS.

Where claims are placed under final rejection and within the year following no appeal is filed nor any amendment or argument upon the merits presented and the communications filed are directed to traversing the propriety of the final rejection, *Held* that a petition filed one day before the year expired that the final rejection be withdrawn is not such an action as will save the application from abandonment.

ON PETITION.

AUTOMATIC LIQUID-FUEL CONTROLLER.

Mr. Charles C. Bulkley for the applicant.

ALLEN, *Commissioner:*

This is a petition that the final rejection given January 11, 1905, be withdrawn and that applicant be accorded a proper action on the merits.

The records show that on December 12, 1904, applicant presented amendments to certain of the claims. The Examiner was of the opinion that these amendments to the claims were immaterial and did not change their scope. He therefore made his rejection of January 11, 1905, final. Several communications were thereafter filed by applicant, pointing out that the claims in their amended form had not been a "first time rejected and asking that the final rejection be withdrawn" and also "that applicant be accorded an action on the merits." The Examiner held to the final rejection. On January 10, 1906, one day before his year expired, applicant filed this petition that the final rejection be withdrawn and that a proper action on the merits be given. No appeal has been filed, nor has the applicant offered any amendment or argument upon the merits in response to this rejection of January 11, 1905.

Without going into the question of whether the final rejection was in order and properly given, I am of the opinion that this case as it stands is abandoned for lack of proper prosecution.

No good reason is seen why an applicant should question the propriety of a final rejection or why the Office should entertain such a question unless the applicant desires to continue the prosecution of the case by proper actions before the Primary Examiner. In such event the applicant should offer the amendment or argument constituting the desired continued prosecution along with his argument denying the propriety of the final rejection.

In this case more than a year has elapsed since the final rejection was given. If the same were set aside now, the applicant would have another year to take an action before the Examiner. The action when taken might prove to be one showing no *bona fide* attempt to advance the condition of the case. Manifestly, proceedings relative to the propriety of a final rejection should not operate to extend the statutory time for response to the action, which was presumably a proper rejection, even though it were not properly a final one, nor should the case be reopened before the Primary Examiner merely for the presentation of what when made may prove to be an improper or unsubstantial action. As more than a year has elapsed since the date of the final rejection and no appeal has been taken or other proper action upon the merits of the case offered, the same is abandoned.

The petition is denied.

S. HIRSCH & COMPANY *v.* JENSEN *v.* H. J. HELLERT & SONS *v.* SAMPLE & COMPANY.

Decided April 10, 1906.

TRADE-MARK INTERFERENCE—INTERFERENCE IN FACT.

The marks "Crystal Lake," "Crystal Run," "Crystal Glen," and "Crystal Spring" for whisky are so similar as to leave no room for doubt that they are likely to deceive purchasers, and an interference including them should not be dissolved.

ON APPEAL.

TRADE-MARK FOR WHISKY.

Messrs. Mason, Fenwick & Lawrence for S. Hirsch & Company.

Mr. Arthur E. Wallace for Jensen.

Mr. Arthur E. Wallace for H. J. Hellert & Sons.

Mr. Arthur E. Wallace for Sample & Company.

ALLEN, *Commissioner:*

This is an appeal from the decision of the Examiner of Trade-Marks refusing to dissolve the interference.

The issue consists of—

The words "Crystal Lake," or "Crystal Run," or "Crystal Glen," or "Crystal Spring," for whisky.

The marks are so similar as to be likely to cause confusion or mistake in the mind of the public or to deceive purchasers. It is urged that the interference should be dissolved in spite of the similarity of the marks in view of the consent of the parties. The case of *Ullman Einstein Company* v. *C. H. Graves & Sons* (121 O. G., 1978) is cited as a precedent for such action. In that case the existence of interference in fact was regarded as doubtful, and it was in view of the doubt that the consent of the parties was permitted to turn the decision in favor of dissolution. I have no doubt as to the existence of interference in fact in the present case. The interference must accordingly continue. As stated in *Wright & Taylor* v. *Bluthenthal & Bickart* v. *Mayer, Sons & Company* v. *Cushman & Company*, (119 O. G., 2234.)

In determining the question of identity this Office must exercise its own judgment, and it will not dissolve an interference and register to two or more parties marks which it regards as substantially identical.

The decision of the Examiner of Trade-Marks is affirmed.

EX PARTE YOUNG.

Decided April 10, 1906.

TRADE-MARK—ANTICIPATION.

Refusal of registration is proper when the applicant's mark and the mark of the reference show in common a king with elevated arm holding a glass of foaming beverage and each shows sprays of grain and hops and the marks differ principally in that the king is shown by the applicant at full length and mounted upon a keg, whereas in the registered mark there is a bust figure surrounded by certain inscriptions, and both marks are applied to beer.

ON APPEAL.

TRADE-MARK FOR BEER, ALE, AND PORTER.

Messrs. Mason, Fenwick & Lawrence for the appellant.

ALLEN, *Commissioner:*

This is an appeal from the action of the Examiner of Trade-Marks refusing to register the mark presented by the above-entitled application.

The Examiner's action is based upon the ground of similarity between the mark shown by the applicant and that shown in prior registrations No. 30,627, October 5, 1897, and No. 47,580, November 14, 1905, both by the John Gund Brewing Company. The mark shown by the applicant and that shown in the registrations cited are the same to the following extent: Each shows a king with elevated arm holding a glass of foaming beverage and each shows sprays of grain and hops. The marks differ principally in that the king is shown by the applicant at full length and mounted upon a keg, whereas in the registered mark there is a bust figure surrounded by certain inscriptions. Both marks are applied to beer.

The striking characteristics are to such an extent the same in the two marks as to be likely to cause confusion or mistake in the mind of the public or to deceive purchasers. There was therefore no error in the refusal of registration.

The action of the Examiner of Trade-Marks is affirmed.

EX PARTE AMERICAN CIRCULAR LOOM COMPANY.

Decided April 18, 1906.

1. TRADE-MARKS—CHARACTER OF ALLEGED MARK.

An alleged mark for tubes which consists of flakes of mica applied to the outside of the tube, so as to give it a mottled appearance, is not proper subject-matter for registration as a trade-mark.

2. SAME—SAME—MACHINES AND DESIGNS AS TRADE-MARKS.

The restrictions upon the general right to make, use, and sell which are imposed by patents should not be extended by the recognition of machines or designs as trade-marks.

3. SAME—SAME—DISTINCT FROM THE GOODS.

Custom and reason require that a trade-mark shall have an existence so distinct from the goods to which it is applied that it will be readily recognized by the public and by purchasers as an arbitrary symbol adopted to authenticate origin.

ON APPEAL.

TRADE-MARK FOR INSULATING-TUBES OR TUBULAR COVERINGS FOR ELECTRIC WIRES.

Mr. Charles F. Perkins and *Mr. Arthur W. Harrison* for the applicants.

ALLEN, *Commissioner:*

This is an appeal from the action of the Examiner of Trade-Marks refusing to register an alleged trade-mark.

The alleged mark, according to the application, is used upon insulating-tubes or coverings for electric wires and consists of flakes of mica impressed or otherwise applied to the external surface of the article. The drawing shows merely a portion of a tube having a mottled appearance upon its outside surface.

Registration was refused by the Examiner on the ground that—

* * * the mark claimed is not a distinctive mark, indicative of origin and ownership, but a mere representation of the goods and as such not registrable as a technical trade-mark.

I am of the opinion that the application and drawing disclose no proper subject-matter for registration as a trade-mark. The application of mica-flakes as shown and described produces a specific appearance of the article as a whole. The effect is one of design and cannot be rightfully appropriated as a trade-mark any more than can the distinctive functioning features of a machine. The latter when new, useful, and involving invention are the legitimate subjects of mechanical patents. The former when new, ornamental, and the result of invention are subjects of design patents. In neither class should the restrictions upon the general right to make, use, and sell which are imposed by patents be extended by the recognition of machines or designs as trade-marks.

Moreover, custom and reason require that a trade-mark shall have an existence so distinct from the goods to which it is applied that it will be readily recognized by the public and by purchasers as an arbitrary symbol adopted to authenticate origin. The surface effect which the applicant calls his trade-mark is not so clearly distinct from the article upon which it appears as to be readily recognized as an arbitrary symbol for this purpose, and in my opinion it would not be so recognized by those not specially informed.

The action of the Examiner of Trade-Marks is affirmed.

PHILADELPHIA WATCH CASE COMPANY *v.* THE DUEBER WATCH CASE MANUFACTURING COMPANY *v.* THE KEYSTONE WATCH CASE COMPANY *v.* BYRON L. STRASBURGER & COMPANY.

Decided April 30, 1906.

1. TRADE-MARK—INTERFERENCE IN FACT—AFFIDAVITS.

The words "Silveroid" and "Silverode" are so similar that an interference based thereon should continue, notwithstanding affidavits alleging that no confusion has resulted from the use of both marks.

2. TRADE-MARK INTERFERENCE—BAR TO REGISTRATION.

Where applications for registration are involved in an interference proceeding and a registration of the same mark by another party is found which is prior in date to the dates of use alleged in the applications, constituting a *prima facie* bar against registration upon the applications, *Held* that these applications should not be continued in the interference until the apparent bar has been overcome by such proof as may be made in the *ex parte* prosecution of the applications.

APPEAL on motion.

WATCH-MOVEMENTS.

Mr. George Cook for Philadelphia Watch Case Company.

Messrs. Mason, Fenwick & Lawrence for The Dueber Watch Case Manufacturing Company.

Mr. George Cook for The Keystone Watch Case Company.

Messrs. Munn & Company for Strasburger & Company.

ALLEN, *Commissioner:*

This is an appeal by The Keystone Watch Case Company from the action of the Examiner of Trade-Marks holding, first, that there is interference in fact between the word "Silverine" and the words "Silverode" and "Silveroid," and, second, that registrations upon the application of The Keystone Watch Case Company and upon that of The Philadelphia Watch Case Company are barred by a prior registration.

The similarity of the words "Silveroid" and "Silverode" to the word "Silverine" is as great to my mind as that between the words "Gold Dust" and "Gold Drop," which were held to conflict by the circuit court of appeals in the case of *N. K. Fairbank Company* v. *Luckel, King & Cake Soap Company*, (92 O. G., 1437.) The refusal of the Examiner to dissolve the interference on the ground that there is no interference in fact was correct, notwithstanding affidavits which have been filed alleging that no confusion has resulted from the use of the marks referred to.

The prior registration found by the Examiner to bar registration upon the application of The Keystone Watch Case Company and upon that of The Philadelphia Watch Case Company is No. 11,647 to John C. Dueber, dated November 11, 1884, of the mark "Silverine" for composition watchcases. The date of use alleged in the application of The Keystone Watch Case Company is January, 1886; that alleged by The Philadelphia Watch Case Company is May, 1891. The goods mentioned by each of these applicants are of the same descriptive properties as those of the registrant Dueber. The conclusion of the Examiner that registration upon the application of The Keystone Watch Case Company and upon that of The Philadelphia Watch Case Company is barred by the Dueber registration is correct. The Dueber registration is made by the trade-mark statutes *prima facie* evidence of adop-

tion and use of the mark shown upon the date of the registration and of continuous use since that time. Until this *prima facie* bar against registration upon the applications of The Keystone Watch Case Company and The Philadelphia Watch Case Company has been overcome by such proof as may be made in the *ex parte* prosecution of their applications they are not entitled to participate in interference proceedings. The case of *Stewart* v. *Einstein* v. *Sawhill*, (C. D., 1892, p. 209,) cited by appellant, is irrelevant. No prior registration was presented there. The question raised and decided pertained merely to the effect of an earlier application for registration, still pending, upon applications of others alleging dates of adoption and use subsequent to the filing date of the first-mentioned application.

Appellant urges that the Examiner's decision was in error because of insufficient evidence to connect the title of The Dueber Watch Case Manufacturing Company with the Dueber registration. The Dueber Watch Case Manufacturing Company has made a showing of use from a time prior to the date of the Dueber registration, which showing has been accepted by the Examiner as sufficient to sustain registration. No reason is found for disturbing the Examiner's conclusion in this regard. That the showing made by The Dueber Watch Case Manufacturing Company is merely *ex parte* in character is no reason for continuing in the interference the appellant or others who, like it, have made no showing, *ex parte* or otherwise, which might entitle them to registration notwithstanding the Dueber registration.

The decision of the Examiner of Trade-Marks is affirmed.

DECISIONS OF THE U. S. COURTS.

Court of Appeals of the District of Columbia.

FOWLER *v.* BOYCE.

Decided February 6, 1906.

1. PRIORITY—TESTIMONY IN CONTRAVENTION OF PRELIMINARY STATEMENT.

Where the junior party is limited by his preliminary statement to dates subsequent to the opposing party's record date, there is no good reason for examining the testimony of such junior party attempting to prove dates earlier than those set up in such preliminary statement where permission to amend the preliminary statement was asked and refused.

2. SAME—SAME—CONSENT OF COUNSEL TO CONSIDERATION.

Where leave to amend a preliminary statement is asked and refused by the Patent Office, testimony tending to establish dates earlier than those alleged cannot be considered on the question of priority, even with the consent of counsel, unless expressly approved by the Commissioner of Patents or his representatives.

3. SAME—SAME—APPROVAL OF PATENT OFFICE.

Cases may often arise where the interest of the parties and the public will be best subserved by permitting dates earlier than those set forth in preliminary statements to be proved. It should, however, be done under the supervision of and with the approval of the Patent Office.

Mr. C. A. Brown and *Mr. H. A. Seymour* for Fowler.

Mr. Philip Mauro, Mr. S. T. Cameron, Mr. Reeve Lewis, and *Mr. W. W. Swan* for Boyce.

DUELL, *J.*:

This interference proceeding is a companion case to one between the same parties just decided. The applications upon which this interference is based are the same as those in that case. The evidence in each record is the same. A third party was originally a party to that interference but was not at any time involved in the one now under consideration. The issue is thus defined:

1. In a telephone-exchange system, the combination with a telephone-line extending from a substation to an exchange, of a line-relay at the exchange, a source of current adapted to be closed through said line-relay through the agency of substation apparatus, cord connecting apparatus for connecting said line with another for conversation, a cut-off relay included in a high-resistance circuit controlled by the cord connecting apparatus, a line-signal in a local circuit including the armatures of said relays, the circuit through said line-signal being closed when the line-relay is energized and the cut-off relay is deenergized, a supervisory signal included in said high-resistance circuit, and means whereby the deënergization of said line-relay causes a decrease in the resistance of the circuit through said supervisory signal.

2. In a telephone-exchange system, the combination with a telephone-line extending from a substation to an exchange, of a line-relay at the exchange, a source of current adapted to be closed through said line-relay through the agency of substation apparatus, cord connecting apparatus for connecting said line with another for conversation, a cut-off relay included in a circuit controlled by the cord connecting apparatus, a resistance in said circuit, a line-signal included in a local circuit containing the armatures of said relays, the circuit through said line-signal being closed when the line-relay is energized and the cut-off relay is deenergized, a supervisory signal included in the circuit controlled by the cord connecting apparatus, and means whereby the deënergization of said line-relay causes the closure of a low-resistance shunt-circuit about said resistance.

3. In a telephone-exchange system, the combination with a telephone-line extending from a substation to an exchange, of a line-relay at the exchange, a source of current adapted to be closed through said line-relay through the agency of substation apparatus, cord connecting apparatus for connecting said line with another for conversation, a cut-off relay included in a circuit controlled by the cord connecting apparatus, a line-signal included in a local circuit containing the armatures of said relays, the circuit with said line-signal being closed when the line-relay is energized and the cut-off relay is deënergized, and a supervisory signal included in the circuit controlled by the cord connecting apparatus, the operation of said supervisory signal being controlled by said line-relay.

4. The combination in a telephone-exchange system, of a main substation-circuit controlled by a switch at the substation; a switch-socket for said main circuit and a switch-plug adapted to be inserted therein, the said socket and plug having registering main and local circuit contacts; a local supervisory circuit at said central station adapted to be completed through the local contacts of said socket and plug; a local call-circuit at the central station; a supervisory-signal device in the supervisory circuit; a call-signal device in the local call-circuit; and two relays, one a line-relay having its windings in the main substation-circuit at the central station and the other an auxiliary relay having its windings in the supervisory circuit, said relays coöperating to control the supervisory circuit and the local call-circuit and the operation of the supervisory and call signals therein.

5. The combination in a telephone-exchange system, of a main substation-circuit controlled by a switch at the substation; a switch-socket for said main circuit and a switch-plug adapted to be inserted therein, the said socket and plug having registering main and local circuit contacts; a local supervisory circuit at said central station adapted to be completed through the local contacts of said socket and plug; a local call-circuit at the central station; a supervisory-signal device in the supervisory circuit; a call-signal device in the local call-circuit; and two relays, one a line-relay having its windings in the main substation-circuit at the central station and the other an auxiliary relay having its windings in the supervisory circuit, said relays having associated armature-contacts in the local call and supervisory circuits respectively whereby said circuits are controlled to effect the operation of the supervisory and call signals therein.

No brief was filed on behalf of, nor any appearance made for appellant when the case was called. The record was opened by appellee and an affirmance prayed.

All of the Patent Office tribunals awarded priority to Boyce.

Boyce, as we have said in the companion case, being the senior party, and Fowler being limited by his preliminary statement to dates of disclosure and actual reduction to practice subsequent to Boyce's record date, and not having shown any reason why Boyce is not entitled to his record date, we see no good reason why we should review testimony that was not permissible under Fowler's preliminary statement. Fowler was refused permission to file an amended preliminary statement, and in proceedings such as these we do not think that even consent of counsel, unless expressly approved by the Commissioner of Patents, or his representatives, warrants ignoring a rule of the Office that parties are limited to the dates set out in their preliminary statements, especially when leave has been asked and refused to permit the filing of an amended preliminary statement. (*Hammond* v. *Basch*, 24 App. D. C., and cases there cited.) The Patent Office should, from the very nature of interference proceedings, not permit parties to them to ignore the rules and decisions of the Office without its express approval. Cases may often arise where the interest of the parties and the public will be best subserved by permitting dates earlier than set forth in preliminary statements to be proven. It should however be done under the supervision of and with the approval of the Office, or else all rules relating thereto should be abolished.

Boyce upon his record date is clearly entitled to an award of priority, and the decision of the Commissioner of Patents is therefore affirmed.

This opinion and the proceedings in the case in this court will be certified to the Commissioner of Patents according to law. Affirmed.

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

VOL. 122—No. 6. TUESDAY, JUNE 5, 1906. PRICE—$5 per year.

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Designs	18—No.	38,048 to No.	38,065, inclusive.
Trade-Marks	283—No.	53,371 to No.	53,653, inclusive.
Labels	18—No.	12,912 to No.	12,929, inclusive.
Prints	10—No.	1,685 to No.	1,694, inclusive.
Reissues	3—No.	12,491 to No.	12,493, inclusive.
Total issue	1004		

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama	4	.....	Nevada	.....	.....
Alaska, District of	.....	.....	New Hampshire	2	.....
Arizona Territory	.....	.....	New Jersey	25	19
Arkansas	2	1	New Mexico Ter't'y	.....	.....
California	19	8	New York	127	95
Colorado	12	1	North Carolina	1	1
Connecticut	17	2	North Dakota	.....	.....
Delaware	.....	.....	Ohio	39	19
District of Columbia	3	1	Oklahoma Territ'y	5	.....
Florida	1	.....	Oregon	3	1
Georgia	10	7	Pennsylvania	66	28
Hawaii Territory	.....	1	Philippine Islands	.....	.....
Idaho	2	.....	Rhode Island	12	6
Illinois	60	25	South Carolina	.....	3
Indian Territory	1	.....	South Dakota	2	.....
Indiana	17	3	Tennessee	6	2
Iowa	11	5	Texas	7	4
Kansas	4	.....	Utah	.....	1
Kentucky	6	9	Vermont	2	.....
Louisiana	1	3	Virginia	7	6
Maine	5	.....	Washington	7	.....
Maryland	7	5	West Virginia	3	.....
Massachusetts	56	26	Wisconsin	9	6
Michigan	16	2	Wyoming	.....	.....
Minnesota	8	3	U. S. Army	.....	.....
Mississippi	2	.....	U. S. Navy	.....	.....
Missouri	26	5	Total to citizens of the United States	616	299
Montana	2	.....			
Nebraska	1	2			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina	.....	.....	Netherlands	2	.....
Austria-Hungary	1	1	Newfoundland	.....	.....
Belgium	2	.....	New South Wales	2	.....
Brazil	.....	.....	New Zealand	.....	.....
British West Indies	.....	.....	Norway	.....	.....
Canada	9	1	Portugal	1	.....
Cape Colony	.....	.....	Queensland	.....	.....
Chile	.....	.....	Roumania	.....	.....
China	.....	.....	Russia	.....	.....
Costa Rica	.....	.....	San Salvador	.....	.....
Cuba	.....	1	Scotland	2	.....
Denmark	.....	.....	South Australia	.....	.....
Ecuador	.....	.....	Spain	.....	1
England	18	2	Sweden	1	.....
France	3	.....	Switzerland	3	2
Germany	26	3	Tasmania	.....	.....
India	.....	.....	Transvaal, South Africa	1	.....
Ireland	.....	1	Victoria	1	.....
Italy	.....	.....	Total to citizens of foreign countries	74	12
Jamaica	1	.....			
Japan	.....	.....			
Mexico	1	.....			

Disclaimer.

530,533.—*William Cumming Johnson*, Memphis, Tenn. PROCESS OF AND APPARATUS FOR TREATING COTTON SEED AND HULLS. Patent dated December 11, 1904. Disclaimer filed May 26, 1906, by the inventor and assignees.

Enter their disclaimer—

"To that part of the claim in said specification which is in the following words, to wit:

"2. In an apparatus of the class described, the combination with the vertical rotary disks, *a a*, of the horizontal separator, B, arranged beneath the same, the chute C leading from the end of separator, the chute, C', leading from the bottom of separator, the second breaker, D, the disks of which are arranged closer together than the disk *a* of the first breaker, the horizontal separator B' and the chutes for conducting the fiber and bolted material, substantially as shown and described."

Notice.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., May 10, 1906.

Notice is hereby given that no cases will be docketed or heard by the Commissioner or the Assistant Commissioner in the months of July and August, 1906, except when required to avoid irreparable injury.

F. I. ALLEN,
Commissioner.

Delivery of Patent.

The patent will be delivered or mailed on the day of its date to the attorney of record, if there be one; if not, to the patentee; or, if the attorney so request, to the patentee or assignee of an interest therein.

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business May 29, 1906.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
	In arrears—Under fifteen days.			
304	XXXIV. Railways, Railway-Brakes, Rolling-Stock.	May 17	Apr. 3	355
322	XXXVI. Curtains, Shades, and Screens, Drafting, Driers, Measuring Instruments, and Wind-Wheels.	May 16	May 2	245
303	XVII. Linotyping, Printing, Matrix-Making, Nut and Bolt Locks.	May 15	Mar. 14	313
244	XXXV. Baggage, Buckles, Buttons, and Clasps, Card, Picture, and Sign Exhibiting, Deposit and Collection Receptacles, Package and Article Carriers, Packing and Storing Vessels, Photography.	May 15	Mar. 5	675
137	VIII. Beds, Chairs, Furniture, Kitchen and Table Articles, Store Furniture.	May 15	Feb. 1	630
148	XXXII. Carbonating Beverages, Dispensing Beverages, Dispensing-Cans, Metallic Shipping and Storing Vessels, Packaging Liquids, Paper Receptacles, Refrigeration, Wooden Receptacles.	May 15	Jan. 10	689
179	XX. Artificial Limbs, Builders' Hardware, Dentistry, Locks and Latches, Safes, Undertaking.	May 15	Sept. 26	502
154	XI. Boot and Shoe Making, Boots, Shoes, and Leggings, Button, Eyelet, and Rivet Setting, Leather Manufacturing, Nailing and Stapling, Check-Controlled Apparatus, Whips and Whip Apparatus.	May 14	Feb. 13	387
332	X. Carriages and Wagons.....	May 14	Dec. 22	1043
379	XXIII. Acoustics, Coin-Handling, Horology, Recorders, Registers, Optics, Signals, Time Controlling Mechanism.	May 14	Nov. 30	726
	Under one month.			
107	XXXVII. Electricity, Conductors, Lighting, Special Apparatus.	May 12	Sept. 27	864
321	I. Tillage, etc., Fences, and Railway Draft Appliances.	May 11	Apr. 17	212
128	II. Bee Culture, Dairy, Label-Affixers, Paper Files and Binders, Presses, Store-Service, Tobacco, etc.	May 11	Feb. 26	327
308	XV. Bread, Pastry, and Confections, Making, Coating, Laminated Sheets and Fabrics, Fuel, Glass, Hydraulic Lime and Cement, Paper-Making, Paving, and Plastics.	May 9	Mar. 19	488
122	XIX. Stoves and Furnaces and Steam-Boiler Furnaces.	May 9	Nov. 20	713
330	XIII. Arms, Projectiles, and Explosive Charges, Making, Metal-Working, Needle and Pin Making.	May 9	Nov. 7	604
175	III. Annealing and Tempering, Coating with Metal, Electrochemistry, Metal-Founding, Metallurgy, Shaping Fluid Metal.	May 7	Apr. 5	329
172	XXXI. Alcohol, Charcoal and Coke, Distillation, Gas, Heating and Illuminating, Hides, Skins, and Leather, Liquid Coating Compositions, Oils, Fats, and Glue, Water Purification.	May 7	Mar. 22	267
133	XXII. Air-Guns, Ammunition and Explosive Devices, Boats and Buoys, Catapults and Targets, Firearms, Marine Propulsion, Ordnance, Ships.	May 5	Nov. 23	322
318	VI. Bleaching and Dyeing, Chemicals, Explosives, Fertilizers, Medicines, Preserving, Sugar and Salt.	May 2	Feb. 12	416

Applications Under Examination—Continued.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
164	XXXIII. Canes, Canopies, Cutlery, Domestic Cooking Vessels, Electricity, Medical and Surgical, Electric Signaling, Fireproof Buildings, Harness, Masonry, Tents, and Umbrellas.	May 2	Dec. 8	740
105	XXVI. Electricity, Generation, Electric Heaters, Electric Railways, Motive Power.	May 2	Oct. 19	757
324	XII. Elevators, Journal-Boxes, Lubricators, Machine Elements, Pulleys and Shafting.	May 1	Mar. 22	496
	Between one and two months.			
327	XVIII. Steam-Engineering, etc ...	Apr. 27	Jan. 29	410
152	XXX. Fluid-Pressure Regulators, Lamps and Gas-Fittings, Type-Writing Machines.	Apr. 26	Nov. 1	674
312	VII. Velocipedes, Clutches, Fire-Escapes, Games and Toys, Ladders, Mechanical Motors, and Paper Manufactures.	Apr. 25	Dec. 15	456
109	XVI. Telegraphy and Telephony..	Apr. 23	Mar. 5	392
147	XXIX. Coopering, Roofs, Wheelwright-Machines, Wooden Buildings, Wood-Sawing, Wood-Turning, Woodworking-Tools.	Apr. 23	Jan. 13	529
232	IV. Bridges, Conveyers, Cranes and Derricks, Excavating, Hoisting, Hydraulic Engineering, Loading and Unloading, and Towers.	Apr. 18	Apr. 25	421
144	XXIV. Apparel, Apparel Apparatus, Sewing-Machines, Surgery, Toilet.	Apr. 16	Jan. 4	602
378	XXXVIII. Artesian and Oil Wells, Bottles and Jars, Care of Live Stock, Fishing and Trapping, Stationery, Stone-Working.	Apr. 12	Mar. 25	315
167	V. Fine Arts, Bookbinding, Harvesters, Jewelry, and Music.	Apr. 10	Feb. 19	470
142	IX. Baths and Closets, Fire-Extinguishers, Hydraulic Motors, Pumps, Sewerage, and Water Distribution.	Apr. 10	Sept. 22	1198
375	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, Washing Apparatus.	Apr. 6	Nov. 4	853
307	XIV. Cutting and Punching Sheets and Bars, Farriery, Metal-Bending, Metal-Ornamenting, Metal Personal Wear, Making, Sheet-Metal Ware, Making, Tools, Wire-Working.	Apr. 5	Jan. 11	397
315	XXV. Butchering, Mills, Threshing, and Vegetable Cutters and Crushers.	Apr. 5	Jan. 2	603
382	XXVIII. Air and Gas Engines, Air and Gas Pumps, Pneumatics.	Apr. 1	Aug. 15	1265
	Between two and three months.			
112	XXI. Textiles, Carding, Knitting, Spinning, Weaving, etc.	Mar. 5	Oct. 2	723
	Total number of applications awaiting action			21,408
159	TRADE-MARKS, DESIGNS, LABELS AND PRINTS.			
	Under one month.			
	Trade-Marks.....	May 14	Mar. 1	1892
	Under fifteen days.			
	Designs.....	May 28	May 17	38
	Labels and Prints.....	.....	.....	....

Trade-Marks.

The publication of trade-marks under the act of February 20, 1905, in the OFFICIAL GAZETTE, commenced May 2, 1905, and will appear in each weekly number of the GAZETTE thereafter.

Extra copies of the trade-mark portion of the GAZETTE, which will be sold separately, may be obtained single or in quantities for five cents each. Coupons will be taken in payment therefor.

PATENTS

GRANTED JUNE 5, 1906.

822,232. HAME-FASTENER. JAMES H. ALEXANDER, Fulwood, Ark. Filed Sept. 25, 1905. Serial No. 279,955.



Claim.—In a hame-fastener, the combination of two hooks, one of said hooks being provided with a tubular shank and extending at an angle thereto, the other of said hooks being formed with a shank received in the tubular shank of the first-mentioned hook and projecting across the mouth of the first-mentioned hook to form a mousing therefor, the shank of the second hook being formed longitudinally thereof with shoulders at intervals, and a catch carried by the tubular shank aforesaid and adapted to engage the shoulders on the shank of the second hook to connect the two hooks together.

822,233. DIE. JOHN S. ALSTON, Atlantic City, N. J. Filed Aug. 20, 1904. Serial No. 221,563.



Claim.—1. In a device for forming metal caps, the combination of a lower female die, a cap forming and ejecting ring yieldingly held within said lower female die, a lower male die rigidly secured to said lower female die within said cap forming and ejecting ring, an upper cutting-die arranged to coact with said lower female die to cut the metal, and an upper male die within said cutting-die arranged to impinge said cap forming and ejecting ring and said lower male die to form the cap.

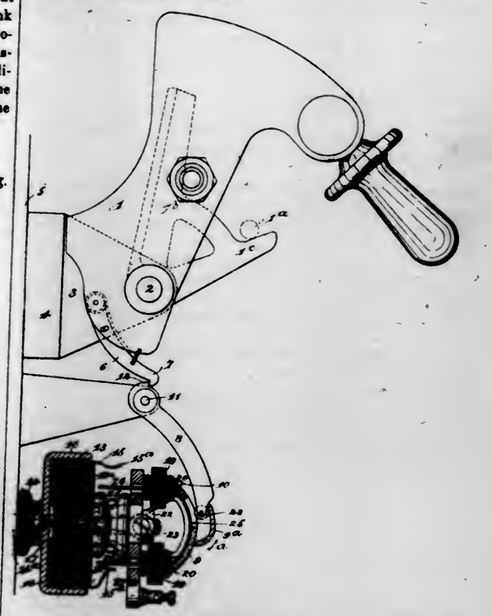
2. In a device for forming metal caps, the combination of a lower die, an upper die arranged to coact with said lower die to cut and hold the metal, a die arranged to subsequently engage the metal and draw the outer portion thereof toward the center of the dies to shape the cap, the said upper and lower dies engaging the extreme outer edge of the metal to form a slight flare to the cap, substantially as described.

822,284. MAGNETIC CUT-OUT APPARATUS. LEONARD ANDREWS, Hastings, England, assignor to Stanley Electric Manufacturing Company, a Corporation of New Jersey. Filed Mar. 13, 1901. Renewed Sept. 22, 1904. Serial No. 225,457.

Claim.—1. A cut-out apparatus comprising a stationary series winding, horseshoe-shaped cores within and excited by said winding, stationary shunt-windings mounted in proximity to said series winding, and a movable core within said shunt-coils, substantially as described.

2. A cut-out apparatus comprising a stationary series winding, horseshoe-shaped cores within and excited by said winding, two stationary shunt-windings of an elongated form, and a movable horseshoe-shaped core extending through said shunt-coils and so arranged that when the current is abnormal it tends to rotate relatively to the series winding.

3. Cut-out apparatus comprising a stationary series winding, a stationary shunt-winding, each of elongated form, and secured to insulating material, a partially-rotatable body, horseshoe-shaped cores extending in opposite directions through said windings one of said cores being fixed and the other secured to said rotatable body, a trip device, means for engaging said rotatable body to said trip device and adapted to keep said body stationary under normal conditions but to release it when the current is abnormal and allow it to rotate under the influence of the cores.



4. A cut-out apparatus comprising fixed and movable contacts, a loaded knock-out device, a trip device adapted to control the said knock-out device, a stationary series winding, horseshoe-shaped cores carried by said winding, stationary shunt-coils and a movable horseshoe-shaped core extending through said shunt-coils and extending adjacent the coils carried by the series windings, and a device operated by said movable core for releasing said trip device, substantially as described.

5. A cut-out apparatus comprising fixed and movable contacts, a loaded knock-out apparatus, a trip device adapted to control the said knock-out device, a stationary series winding, horseshoe-shaped cores carried thereby, two elongated shunt-windings, a horseshoe-shaped core passing through both of said shunt-windings and extending between the cores of the series winding, and a member carried by the movable core adapted to hold and release said trip device, substantially as described.

6. A cut-out apparatus comprising knock-out mechanism, a stationary series winding, stationary shunt-windings, horseshoe-shaped stationary cores carried by the series winding, a horseshoe-shaped partially-rotatable core passing through the shunt-windings and having its ends extending between the ends of the cores carried by the series winding, and means carried by the rotatable core for releasing the knock-out mechanism, substantially as described.

7. A cut-out apparatus comprising a stationary series winding, stationary shunt-windings, stationary cores carried by the series winding, a partially-rotatable core passing through the shunt-windings, a weighted member carried by said core, a weighted knock-out device, and means carried by said weighted member for releasing the knock-out apparatus, substantially as described.

8. A cut-out apparatus comprising a stationary series winding, stationary shunt-windings, a stationary core carried by the series winding, a partially-rotatable core passing through the shunt-windings, a pivoted weighted member carried by the rotatable core, a pivoted knock-out apparatus, and means carried by the weighted member for holding the weighted knock-out apparatus, in a vertical position, substantially as described.

9. A cut-out apparatus, comprising a stationary series winding, stationary shunt-windings, a stationary core carried by the series winding, a partially-rotatable core passing through the shunt-windings, a pivoted weighted member carried by the partially-rotatable core, a curved arm carried by the pivoted weighted member, a pivoted weighted knock-out member, a pivoted spring-pressed catch carried by the lower end of said knock-out member, and a pivoted catch having its upper end in engagement with the spring-pressed catch and its lower end under the curved arm carried by said member carried by the partially-rotatable core, substantially as described.

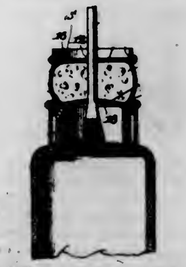
10. A cut-out apparatus comprising a stationary series winding, two stationary shunt-windings mounted in proximity thereto and a movable core having two free ends extending through said shunt-windings.

11. A cut-out apparatus comprising a stationary series winding, two stationary shunt-windings mounted in proximity thereto, a movable core having two free ends extending through said shunt-windings, and circuit-controlling means actuated by said core.

12. A cut-out apparatus biased to open when closed, a stationary series winding, stationary shunt-windings, a movable core for said shunt-windings having two free ends extending through said shunt-windings, and means actuated thereby to trip said apparatus to allow it to open.

13. A cut-out apparatus comprising a stationary series winding, stationary shunt-windings, cores for said windings one of which has its two free ends extending through said shunt-windings, said cores being relatively movable in response to directional changes of current-flow in said windings, means for restraining their movement in one direction, and circuit-controlling means actuated by their movement in the other.

822,235. **MOISTURE-SUPPLY CAP FOR MUCILAGE-BOTTLES.** SARAH L. BAILEY, Frankfort, Mich. Filed Jan. 31, 1906. Serial No. 298,864.



Claim.—1. A cap for receptacles having a chamber adapted to contain an absorbent material and provided with perforations for supplying moisture to the neck of the receptacle said chamber being pierced by alined openings to permit the passage of a brush.

2. A cap for receptacles having a chamber adapted to contain an absorbent material and provided with a perforated bottom extending transversely across the neck of the bottle at the mouth thereof for supplying moisture to said receptacle.

3. A cap for receptacles having a chamber adapted to contain an absorbent material and provided with perforations for supplying moisture to the neck of the receptacle, and a cup adapted to receive the liquid for saturating the absorbent material.

4. A cap for receptacles comprising a body portion provided with spaced diaphragms defining a chamber for the reception of an absorbent material, one of said diaphragms being adapted to engage the neck of the receptacle and provided with perforations for supplying moisture to the receptacle.

5. A cap for receptacles comprising a body portion provided with spaced perforated diaphragms defining a chamber for the reception of an absorbent material, there being alined openings formed in the diaphragms to permit the passage of a brush.

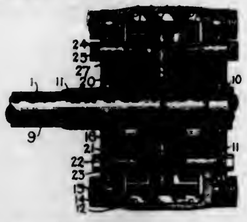
6. A cap for receptacles comprising a body portion provided with spaced diaphragms defining a chamber adapted to receive an absorbent material, one of said diaphragms being concavo-convex and provided with perforations for supplying moisture to the neck of the bottle.

7. A cap for receptacles comprising a body portion having its side walls bowed laterally and provided with spaced diaphragms defining a chamber adapted to receive an absorbent material, one of said diaphragms being curved upwardly and provided with perforations for supplying moisture to the neck of the bottle and the other diaphragm provided with means for supplying liquid to the absorbent material.

8. A cap for receptacles comprising a body portion, a perforated diaphragm spaced inwardly from one end of the body portion, a second diaphragm spaced from the first diaphragm to form a chamber and defining a depending flange adapted to engage the neck of the bottle, and an absorbent material disposed within the chamber, one of said diaphragms being adapted to engage the neck of the receptacle and provided with a plurality of perforations for supplying moisture thereto.

9. A cap for receptacles comprising a body portion having its side walls curved laterally and provided with annular grooves, and spaced perforated diaphragms seated in said grooves and defining a chamber adapted to receive an absorbent material, there being alined openings formed in the diaphragms for the reception of a brush.

822,236. **VEHICLE-BRAKE.** AUGUSTUS A. BALL, Jr., Lynn, Mass., assignor, by mesne assignments, to General Electric Company, a Corporation of New York. Filed Aug. 10, 1903. Serial No. 168,923.



Claim.—1. In a vehicle-brake, the combination of a divided driving-axle and differential gearing, a yoke for the gearing, comprising side plates separably connected by top and bottom plates, brake-drums provided on each member of a divided axle, brake-bands for the drums each mounted on a side plate of the yoke and removable therewith, and means for operating the brake-bands.

2. In a vehicle-brake, the combination of a divided driving-axle and a differential gearing, stationary sleeves for the axle which form part of the running-gear, a yoke for the gearing comprising separably-connected parts united with the sleeves, a drum on each bevel gear-wheel of the differential gearing, brake-bands carried by the separable parts of the yoke, and means also carried by said parts for operating the brake-bands.

3. In a vehicle-brake, the combination of the bevel gear-wheels of the differential gearing, brake-drums on said wheels, a stationary yoke for the gearing comprising removable parts, brake-bands, means for supporting the brake-bands on the separable parts of the yoke in coöperative relation to the drums, and actuators for the brake-bands mounted in the separable parts of the yoke and removable therewith.

4. In a vehicle-brake, the combination of a differential gearing, a stationary yoke therefor comprising separable parts, brake-drums provided on the differentially-movable members of the gearing, brake-bands therefor removably mounted on the separable parts of the yoke and removable therewith, and actuators for the brake-bands interlocking with the ends thereof for maintaining their coöperative relation.

5. In a vehicle-brake, the combination of a differential gearing, a yoke therefor comprising separable parts, brake-drums provided on the differentially-movable members of the gearing, brake-bands therefor, supporting-lugs removably securing the bands to the separable parts of the yoke, and actuators for the brake-bands mounted on the separable parts of the yoke and interlocking with the ends of the brake-band whereby the latter retain their coöperative relation to the actuator upon removal of the separable parts of the yoke.

6. The combination of a plurality of brake-drums, expanding brake-bands therefor, S-shaped expanders forming abutting engagement with the ends of the brake-bands, arms on the expanders, a shaft, arms thereon opposite the arms of the expanders, links connecting corresponding arms of the shaft and expanders, and means for actuating the shaft.

7. The combination of brake-drums, expanding brake-bands therefor, S-shaped expanders in abutting relation to the ends of the brake-bands, flanges on the expanders coöperating with the ends of the brake-bands for retaining the expanders in operative relation to the brake-bands, and means for actuating the expanders.

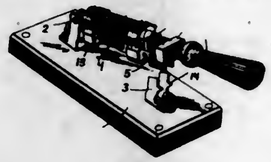
8. The combination of a plurality of brake-drums, brake-bands therefor, independent actuating means for the brake-bands, a shaft forming a common connection for the actuating means, a central pivotal mounting for the shaft having a limited lost motion for equalizing the force exerted by the shaft between the independent actuating means, and means for operating the shaft.

9. The combination of a plurality of brake-drums, brake-bands therefor, independent means for actuating the brake-bands, a shaft connected with the means for actuating the same simultaneously, and a knuckle-joint supporting the shaft, comprising a depending lug on the shaft having a bearing therein, a ball in the bearing, a pin in the ball forming trunnions therefor, and means supporting the pin.

10. The combination of brake-drums, brake-bands, actuators, arms on the latter, an equalizing-shaft, arms formed thereon, sockets provided at the ends of said arms and having diametrically opposite openings, ball-ended links engaging in the sockets of adjacent arms of the expanders and shaft, and removable pins tightly fitting in the ball ends of the links, said pins having their ends shouldered and reduced to loosely engage in the openings of the sockets and interlock with the edges of said openings.

11. In a vehicle, the combination of a running-gear frame, a rear driven axle, a differential gearing therefor, a yoke comprising separable parts and fixed to the running-gear frame, and a brake device for each differentially-movable part of the rear axle, one member of each brake being carried by the rear axle and the other member thereof being carried by and removable with the separable parts of the yoke.

822,237. **ELECTRIC SWITCH.** CHARLES S. BARKELEW, Middletown, Ohio, assignor to The Barkelew Electric Manufacturing Company, Middletown, Ohio. Filed Nov. 11, 1904. Serial No. 232,283.



Claim.—1. In a fuse-carrier for an electric switch, the combination, substantially as set forth, of a bar, a pair of contact-plates rigidly secured to the opposite faces of each end of the bar, each contact-plate having a surface adapted for rubbing engagement with a coöperating contact member and having an integrally-formed flexible resilient arm adapting the pair of contact members to grasp the metallic terminal of the fuse, a handle disposed in general prolongation of one end of said bar, a stud carried by said handle and projecting between the two contact-plates at the handle end of the bar, a heel-block disposed upon said stud between the handle and the outer extremities of said contact-blocks, and a nut-block having screwed engagement with the inner extremity of said stud, portions of said contact-plates being clamped edgewise between said heel-block and nut-block by the action of said stud.

2. In a fuse-carrier for an electric switch the combination, substantially as set forth, of a bar, a pair of contact-plates rigidly secured to the opposite faces of each end of the bar, each contact-plate having a surface adapted for rubbing engagement with a coöperating contact member and having an integrally-formed resilient arm adapting the pair of contact members to grasp the metallic terminal of the fuse, a handle disposed in general prolongation of one end of said bar, a stud carried by said handle and projecting between the two contact-plates at the handle end of the bar, a heel-block disposed upon said stud between the handle and the outer extremities of said contact-blocks, and a nut-block having screwed engagement with the inner extremity of said stud, portions of said contact-plates being clamped edgewise between said heel-block and nut-block by the action of said stud, said heel-block and nut-block having notched engagement with the edges of said contact-plates.

3. In a fuse-carrier for electric switches, the combination, substantially as set forth, of a bar, a contact-plate rigidly secured against each side of one end of said bar and having surfaces adapted for rubbing contact with a coöperating contact member, each of said plates having an integrally-formed resilient arm adapting the bar to grasp the metallic terminal of the fuse, said resilient arms being disposed a distance inwardly of the end of said bar, a nut-bar and a heel-bar clamping edgewise upon portions of said contact-plates outwardly beyond said resilient arms, a handle projecting outwardly from said heel-bar, and a stud carried by the handle and projecting through the heel-bar and between the contact-plates and screwing into the nut-bar.

4. In a fuse-carrier for electric switches, the combination, substantially as set forth, of a bar, a contact-plate rigidly secured against each side at each end of said bar, each of said plates having a surface adapted for rubbing contact with coöperating contact members and each plate having an integrally-formed, recurved resilient arm adapting the pair of plates at each end of the bar to clasp the metallic terminal of a fuse, a pivot engaging one pair of said contact-plates and having its axis at right angles to said bar, and a handle secured to the other pair of said contact-plates by means of bars slotted to engage the edges of members of said plates and extending in general prolongation of the bar.

5. In an electric switch, the combination of a movable member having a contact-plate and a grooved handle-supporting member secured thereto, and a fixed contact member having a flat blade formed with a projecting shoulder adapted to be engaged by said handle-supporting member for the purpose of limiting the throw of the switch.

6. In an electric switch, a contact-plate formed of sheet metal, having a member provided with apertures for securing said plate to a switch-bar, a widened portion adapted to engage a stationary contact member and having an upwardly-projecting part adapted to be engaged by a handle-attaching member, and a flexible clip for engaging a fuse-terminal, consisting of a strip integral with said plate, projecting from one edge thereof and bent backward and upward so that it projects above the opposite edge of said plate, thereby providing a free spring action.

7. In a fuse-carrier for electric switches, the combination of a bar of insulating material and two contact-plates, one secured to each side of one end of said bar and each having a portion adapted to engage a stationary contact, lying against the end of said bar, an upwardly-extending portion clear of said bar and adapted for the attachment of a handle, and a flexible clip projecting from said plate at a lower edge and curved back and upward and provided with a concave curve near is extremity, the clips of the two adjacent plates referred to serving by means of the said concave curved portions to engage the terminal of a fuse.

8. In a fuse-carrier for electric switches, the combination of an insulating-bar, contact members at one end thereof comprising a plate on each side of said bar, each plate having a portion adapted to engage a stationary contact member and another portion bent into the form of a recurved spring-clip to contact with the terminal portion of a fuse, a similar upwardly-projecting portion on each of said plates, standing clear of said bar, a handle provided with a screw, and two blocks each confronting the opposite edges of said upwardly-projecting portion of said plates and provided with grooves engaging the edges of said plate portions.

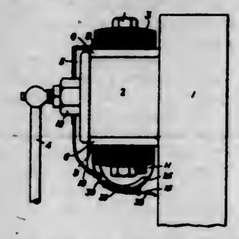
9. A movable contact member for fuse-carriers, composed of a single piece of sheet metal, having a part adapted to be secured to a switch-bar, a widened portion adapted to engage a stationary contact member and also adapted either to be pivotally secured thereto or to receive clamping members for securing a handle to said movable contact member, and a flexible part for engaging a fuse-terminal.

822,238. **ANTILUBRICANT-THROWING DEVICE.** EDWARD A. BARNES, Fort Wayne, Ind., assignor to General Electric Company, a Corporation of New York. Filed Nov. 3, 1904. Serial No. 231,200.

Claim.—1. The combination with an element moving in an orbital path and means for lubricating the same, of a device arranged in coöperative relation to said element and moving therewith which collects lubricant therefrom and throws it off in a definite direction during a predetermined portion of the revolution.

2. The combination with an element moving in an orbital path

and means for lubricating the same, of a device revolving with said element which collects lubricant therefrom and throws it off during a predetermined portion of the revolution.



3. The combination with a crank-pin, a connecting-rod, and a means for lubricating the crank-pin, of a device arranged around the crank-pin which collects lubricant therefrom at a certain portion of the revolution and discharges it at another portion.

4. The combination with a crank-pin, a connecting-rod and a lubricator for the crank-pin, of a casing extending around the pin which is provided with a discharge-opening in its bottom.

5. The combination with a crank-pin, a connecting-rod, crank-pin brasses, and a lubricating device, of means for preventing lubricant from being thrown from the said parts, said means comprising a collecting-chamber surrounding the end of the crank-pin, and a discharge-chamber communicating therewith which receives lubricant from the collecting-chamber and discharges it at a predetermined portion of the revolution.

6. The combination with a revolving crank-pin, a connecting-rod, crank-pin brasses and a lubricating device, of means for preventing lubricant from being thrown from said parts, said means comprising a collecting-chamber carried by the connecting-rod and surrounding the end of the crank-pin, and a discharge-chamber carried by the connecting-rod which receives lubricant from the collecting-chamber and delivers it at a predetermined portion of the revolution.

7. The combination with a revolving crank-pin, a connecting-rod, crank-pin brasses, and a lubricating device, of means for preventing lubricant from being thrown from said parts, said means comprising a casing secured around the other end of the crank-pin, and a discharge-casing removably secured to the connecting-rod below and communicating with the upper casing for receiving lubricant from and discharging it downwardly during a limited portion of the revolution.

8. The combination with a revolving crank-pin, a connecting-rod, crank-pin brasses, and a lubricating device, of means for preventing lubricant from being thrown from said parts, said means comprising a collecting-chamber secured to the crank-pin brasses and surrounding the outer end of the crank-pin, a downwardly-extending mouth at the bottom of said chamber, and an elongated chamber carried by the connecting-rod which communicates with said mouth to receive lubricant therefrom and discharges it downwardly as the crank moves through the lower portion of its revolution.

9. The combination with a revolving crank-pin, a connecting-rod, crank-pin brasses carried thereby, means for adjusting the brasses, and a lubricating device, of means for preventing lubricant from being thrown from the said parts, said means comprising a collecting-chamber surrounding the outer end of the crank-pin and secured in fixed relation thereto, an elongated discharge-chamber below the collecting-chamber, a connection between the chambers, and a removable slide in the discharge-chamber for permitting access to the means for adjusting said brasses.

10. The combination with a revolving crank-pin, a connecting-rod, crank-pin brasses carried thereby, means for adjusting the brasses, and a lubricating device, of means for preventing lubricant from being thrown from the said parts, said means comprising a two-part collecting-chamber surrounding the crank-pin and having its parts secured to the crank-pin brasses and relatively movable therewith, an elongated chamber communicating with the collecting-chamber and extending at one end to a greater distance on one side of the crank-pin than at the other, and means at the end more remote from the crank-pin for counteracting the effect of windage in the discharge-chamber.

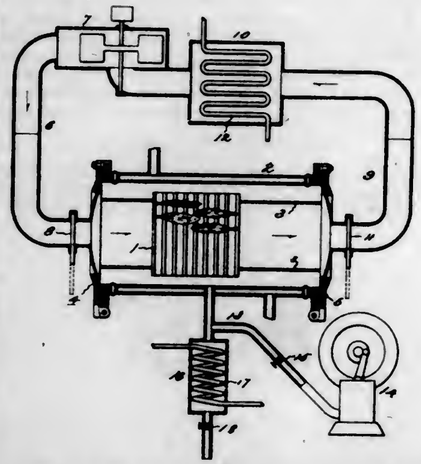
11. The combination with a revolving crank-pin, a connecting-rod, crank-pin brasses carried thereby, means for adjusting the brasses, and a lubricating device, of means for preventing lubricant from being thrown from the said parts, said means comprising a collecting-chamber surrounding the outer end of the crank-pin and secured in fixed relation thereto, an elongated discharge-chamber below the collecting-chamber which is open at one side and provided with a discharge-lip along its bottom edge, a downwardly-extending mouth connecting the two chambers, a removable slide provided in said discharge-chamber which is arranged to permit access to the means for adjusting the brasses and which is shaped at one edge to conform to the said lip.

12. A device for preventing lubricant from being thrown from crank-pins, comprising an annular collecting-chamber adapted to be placed around the crank-pin, an elongated chamber below the same which is open at one side, a discharge-lip formed at the bottom thereof adjacent to the open side, and a connection between the two chambers.

13. A device for preventing crank-pins from throwing lubricant, comprising a collecting-chamber for surrounding the crank-pin, extensions provided thereon which are adapted to be secured to the crank-pin brasses, and a separate chamber adapted to be secured in fixed relation to the collecting-chamber and is open at one side to discharge lubricant received from said latter chamber.

14. A device for preventing crank-pins from throwing lubricant, comprising a two-part collecting-chamber for surrounding the crank-pin, an extension provided on each part for securing the chamber in place, and a separate chamber adapted to be secured in fixed relation to the collecting-chamber and is open at one side to discharge lubricant received from said latter chamber.

822,239. **TREATMENT OF TOBACCO.** ALFRED C. BEDORTHA and GEORGE Q. BEDORTHA, Windsor, Conn. Filed Feb. 15, 1906. Serial No. 301,206.



Claim.—1. The treatment of tobacco which consists in subjecting the leaves to the action of hot air below atmospheric pressure, substantially as described and for the purpose specified.

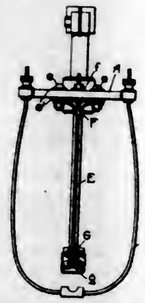
2. The treatment of tobacco which consists in drying the leaves, and then subjecting the dried leaves to the action of hot air below atmospheric pressure, substantially as described and for the purpose specified.

3. The treatment of tobacco which consists in subjecting the leaves to the action of hot air in artificial circulation above atmospheric pressure, and then subjecting the leaves to the action of hot air below atmospheric pressure, substantially as described and for the purpose specified.

4. The treatment of tobacco which consists in subjecting the leaves to the action of hot air in artificial circulation, and then exhausting air from the leaves and afterward subjecting the leaves to the action of hot air at atmospheric pressure, substantially as described and for the purpose specified.

5. The treatment of tobacco which consists in completely drying the leaves of the tobacco, subjecting the dried leaves to the action of hot air in artificial circulation, exhausting the air from the leaves, then admitting hot air to the leaves until they are subjected to hot air at substantially atmospheric pressure, substantially as described and for the purpose specified.

822,240. **ARC-LAMP.** SAMUEL H. BLAKE, Jersey City, N. J., and GEORGE R. DAVISON, Pittsfield, Mass., assignors to General Incandescent Arc Light Company, a Corporation of New York. Filed Sept. 22, 1904. Serial No. 225,407.



Claim.—1. In an arc-lamp, a member having its central portion bent to form a trough and each end split to form a pair of ears, means for securing one set of ears to a support and for insulating said ears therefrom, a carbon-holder clamped between the other set of ears and insulated therefrom, and a lead for the carbon passing through said trough and insulated therefrom and in electrical connection with said carbon-holder.

2. In an arc-lamp, a member having its central portion bent to form a trough and each end split to form a pair of ears, means for securing one set of ears to a support and for insulating said ears therefrom, a split member clamped between the other set of ears, and insulated therefrom, a conductor passing through said trough and insulated therefrom and clamped within said split member, and a carbon supported by said split member.

3. In an arc-lamp, a support, a member bent to form an inclosure for a lead secured at one end to the support but insulated therefrom, an electrode-holder secured to the other end of the member but insulated therefrom, and a lead passing through said inclosure but insulated therefrom and electrically connected to said electrode-holder.

4. In an arc-lamp, a support, a member having its central portion bent to form an inclosure for a lead, ears formed at one end of the member, means for securing the ears to said support and insulating them therefrom, an electrode-holder carried by said member at the other end thereof but insulated therefrom, and a lead for the electrode passing through said inclosure but insulated therefrom and electrically connected to said electrode-holder.

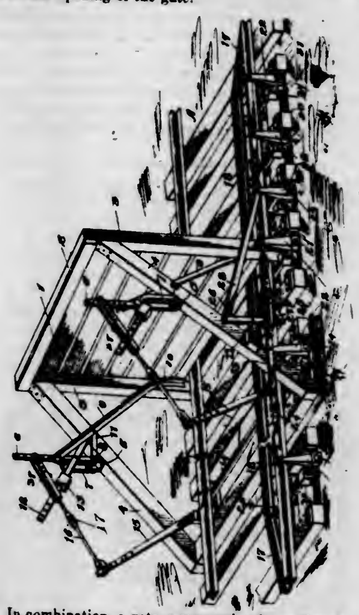
5. In an arc-lamp, a support, a member formed from a sheet-metal blank and bent to form a trough secured at one end to the support but insulated therefrom, an electrode-holder carried by the member at the other end thereof but insulated from the member, and a lead passing through said trough but insulated therefrom and electrically connected with said carbon-holder.

6. In an inclosed arc-lamp, a trough-shaped member, means for attaching one end of said member to a support and for insulating it therefrom, a carbon-holder secured to the other end of said member and insulated therefrom, a conductor disposed within said member and electrically connected to said holder, and insulating-beads on said conductor adapted to insulate said conductor from said member.

7. In an inclosed arc-lamp, a member split at both ends to form ears, means for attaching one set of ears to a support and for insulating them therefrom, a carbon-holder clamped between the other set of ears and insulated therefrom, a conductor disposed within said member and electrically connected to said carbon-holder, and insulating-beads on said conductor adapted to insulate said conductor from said member.

822,241. **MINE-GATE.** NEWTON K. BOWMAN, North Lawrence, Ohio. Filed June 30, 1905. Serial No. 267,825.

Claim.—1. In a gate structure, the combination of a gate, a frame therefor, a brace for strengthening the frame, a bar mounted upon said brace, an arm attached to said bar and movable therewith and having connection with the gate to effect movement thereof, a counterbalanced arm attached to said bar and the arm for operating the gate, and actuating means adapted to be operated by a moving car to effect opening of the gate.



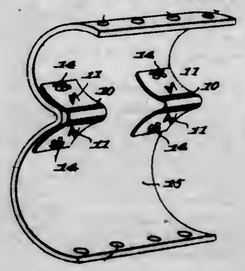
2. In combination, a gate, a supporting-frame therefor, braces for strengthening said frame, bars mounted upon the braces midway of their ends, arms connected at one end to said bars and having their opposite ends curved and connected with the gate to effect opening thereof, counterbalanced arms connected with said bars and with the arms connected to the gate, gate-actuating means adapted to be operated by a moving car, and adjustable connections between the gate-actuating means and the aforesaid bars.

3. In combination, a gate, a supporting-frame therefor, braces for strengthening said frame, a bar mounted upon each brace, arms connected at one end to the respective bars and having their opposite ends connected with said gate, a counterbalanced arm for each bar, a rocking bar extended beneath the rails of the track, arms fast to each end of said rocking bar, and adjustable connections between said arms and the aforesaid bars.

4. In combination, a gate, a series of rocking bars mounted at each side of the gate, connecting means between one of the said rocking bars and the gate, crank-arms and bars connecting the series of rocking bars, a lever, links connecting opposite ends of the lever with the bars connecting each series of the aforesaid rocking bars, and connecting means between the gate and the said series of rocking bars and their cooperating connecting means.

5. In combination, a gate, a rocking bar, connecting means between said gate and rocking bar, and a mounting for the rocking bar consisting of a bracket having rigid connection with the rocking bar and pivotally supported to permit said rocking bar to oscillate with the said bracket.

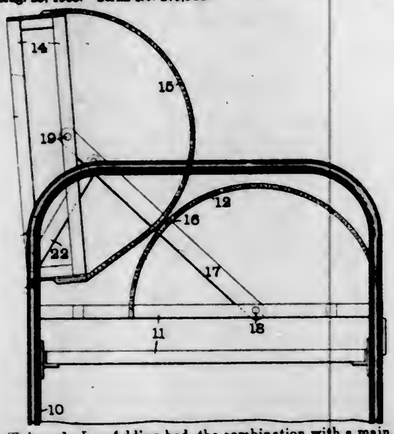
822,242. **HORSE-COLLAR ATTACHMENT.** SAMUEL BOYER, Colfax, Wash. Filed Dec. 20, 1905. Serial No. 292,603.



Claim.—1. As a new article, an attachment for horse-collars consisting of a plate having spaced tongues cleft therefrom and bent inwardly, and a flexible member connected to said plate and having means for attachment to a horse-collar with the plate and its tongues bearing thereon between the rim and body portions.

2. As a new article, an attachment for horse-collars consisting of a substantially V-shaped plate having spaced tongues projecting therefrom and with spaced transverse slots, and a binding element woven through said slots and having means for fastening around the collar

822,243. FOLDING BED. JOHN J. BRADNELL, St. Louis, Mo. Filed Aug. 23, 1905. Serial No. 275,344.



Claim.—1. In a folding bed, the combination with a main portion, of a folding portion adapted to swing from one side to the other of said main portion, a curved guide carried by said main portion, and a curved guide carried by said folding portion and coöperating with said first-named guide to turn said folding portion as it is folded.

2. In a folding bed, the combination with a main portion, of a folding portion adapted to swing from one side to the other of said main portion, a curved guide carried by said main portion, a curved guide carried by said folding portion, and flexible connections between said guides for turning said folding portion as it is folded.

3. In a folding bed, the combination with a main portion, of a folding portion adapted to swing from one side to the other of said main portion, a curved guide carried by said main portion, a curved guide carried by said folding portion, and a pair of crossed flexible connections between said guides, whereby the folding portion is turned as it is folded.

4. In a folding bed, the combination with a main portion, of a folding portion adapted to swing from one side to the other of said main portion, a link connecting said portions, a curved guide carried by said main portion, and a curved guide carried by said folding portion and coöperating with said first-named guide to turn said folding portion as it is swung on said link.

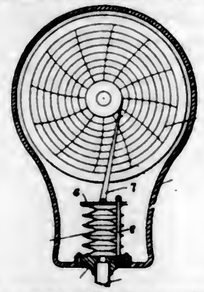
5. In a folding bed, the combination with a main portion, of a folding portion, a link connecting said portions, a curved guide carried by said main portion, a curved guide carried by said folding portion, and flexible connections between said guides for turning said folding portion as it is swung on said link.

6. In a folding bed, the combination with a main portion, of a folding portion, a link connecting said portions, a curved guide carried by said main portion, a curved guide carried by said folding portion, and a pair of crossed flexible connections between said guides, whereby the folding portion is turned as it is swung on said link.

7. In a folding bed, the combination with a main portion, of a folding portion adapted to swing from one side to the other of said main portion, a folding leg for said folding portion, a link connecting said main portion and folding portion, and connections between said link and leg for operating the latter.

8. In a folding bed, the combination with a main portion, of a folding portion adapted to swing from one side to the other of said main portion, a folding leg pivoted to said folding portion, a link connecting said main portion and folding portion, and a second link connecting said first-named link and said leg.

822,244. PRESSURE INDICATOR AND RECORDER. WILLIAM H. BRISTOL, New York, N. Y. Filed Mar. 18, 1905. Serial No. 250,745.



Claim.—1. In a pressure indicator or recorder; the combination with an expansible chamber, of hinged restraining means adapted to convert the expansion of said chamber into a deflection of the same.

2. In a pressure indicator or recorder; the combination with an expansible chamber, of hinged restraining means adapted to convert the expansion of said chamber into a deflection of the same, and an indicating-arm attached to said chamber.

3. In a pressure indicator or recorder; the combination with an expansible chamber composed of a series of perforated diaphragms, of hinged restraining means adapted to convert the expansion of said chamber into a deflection of the same.

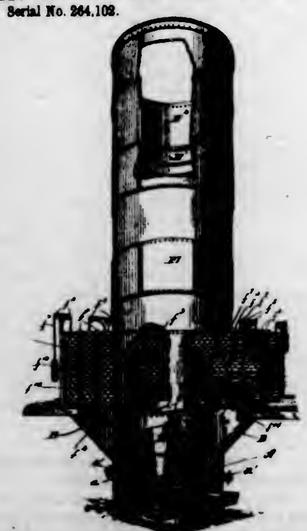
4. In a pressure indicator or recorder; the combination with an expansible chamber composed of a series of perforated diaphragms, of hinged restraining means adapted to convert the expansion of said chamber into a deflection of the same, and an indicating-arm attached to said chamber.

5. In a pressure indicator or recorder; the combination with an expansible chamber, of two hinged restraining-pieces adapted to convert the expansion of said chamber into a deflection of the same.

6. In a pressure indicator or recorder; the combination with an expansible chamber, of two restraining-pieces connected to said chamber by knife-edge bearings and adapted to convert the expansion of said chamber into a deflection of the same.

7. In a pressure indicator or recorder; the combination with an expansible chamber, of two hinged restraining-pieces adapted to convert the expansion of said chamber into a deflection, the common plane of said pieces being at right angles to the direction of deflection of the same

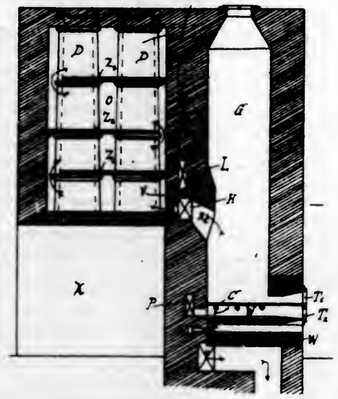
822,245. KILN. ALBERT P. BROOMELL, York, Pa. Filed June 7, 1905. Serial No. 264,102.



Claim.—1. A kiln comprising a base, a bed-plate supported on the base, and extending therebeyond, brackets secured to the base for supporting the extended ends of the bed-plate, a stack supported by the bed-plate in alinement with the base, a series of pairs of furnaces radiating therefrom, and discharging thereinto, the furnaces of each pair converging toward the stack and the diagonally opposite furnaces being arranged on lines approximately parallel with each other.

2. A kiln comprising a stack and pairs of furnaces arranged on opposite sides of the stack, the furnaces of each pair diverging toward their outer ends, and the said ends of the furnaces terminating between parallel planes tangent to the sides of the stack at approximately a right angle to those from which the furnaces project, whereby the said stacks may be arranged in rows side by side and in close proximity, and the furnaces projecting from the opposite sides of the said stacks will not interfere with such arrangement of the stacks, all substantially as and for the purposes set forth.

822,246. GAS-PRODUCING APPARATUS. JULIUS BUEB, Dessau, Germany. Filed Aug. 18, 1905. Serial No. 274,719.

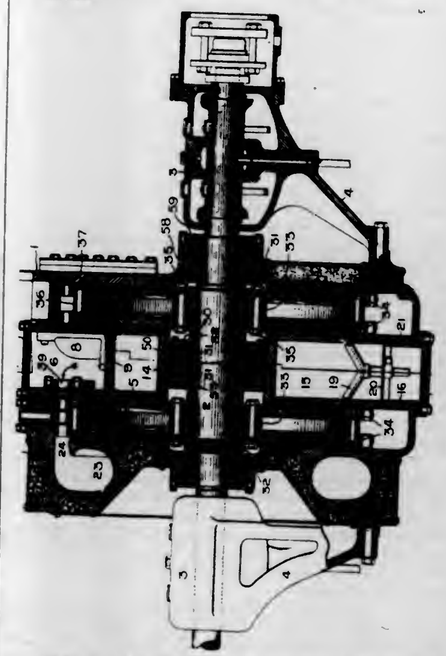


Claim.—1. In a gas-producing apparatus, the combination with an oven rectangular in horizontal cross-section, of two regenerators arranged at one side of the oven, a generator arranged between said regenerators, a plurality of approximately rectangular upwardly-tapering vertical retorts arranged in rows and extending from the bottom to the cover of the oven, a plurality of superposed horizontal partitions within the oven and each separated from one wall of the oven, said openings being alternately at opposite sides of the oven, a horizontal flue in the wall between the generator and oven on substantially the level of the oven-bottom, channels connecting said flue with the generator, means for supplying air preliminarily heated in the regenerators to gases issuing from said flue, the wall between said flue and the oven having a plurality of openings adapted to admit the mixed fire-gases and hot air in separate streams into the oven between the neighboring retorts or between retorts and walls of the oven, and flues for conducting the fire-gases from the uppermost compartment of the oven to the two regenerators, said oven being adapted to conduct the separate streams of fire-gases upward in a serpentine line.

2. In a gas-producing apparatus, the combination with an oven rectangular in horizontal cross-section, of a generator at one side of the oven, two regenerators on opposite sides of the generator, a plurality of approximately rectangular upwardly-tapering vertical retorts arranged in parallel rows extending longitudinally and transversely of the oven and each retort extending from the bottom to the cover of the oven, a plurality of superposed horizontal partition-walls within the oven and each separated at one side from the oven, said openings being alternately at opposite sides of the oven, a horizontal flue in the wall between the generator and the oven on substantially the level of the oven-bottom, channels for conducting fire-gases from the generator to said horizontal flue, means for mixing the fire-gases with air preliminarily heated in the two regenerators, the wall between said flue and the oven having a plurality of openings adapted to admit the fire-gases mixed with hot air from said flue in separate streams into the oven between the neighboring retorts or between the retorts and the oven walls, and flues for conducting the fire-gases from the uppermost compartment of the oven to the two regenerators, said oven being adapted to conduct the streams of fire-gases upward in a serpentine line.

3. In a gas-producing apparatus, the combination of an oven rectangular in horizontal cross-section, two regenerators arranged at one side of the oven, a generator arranged between said regenerators, the tops of the oven, regenerators and generator being on the same level, a plurality of substantially rectangular upwardly-tapering vertical retorts arranged in rows extending longitudinally and transversely of the oven and each retort extending from the bottom to the cover of the oven, a plurality of superposed horizontal partition-walls within the oven and each separated at one side from the oven, said openings being alternately on opposite sides of the oven, a horizontal flue in the wall between the generator and oven on substantially the level of the oven-bottom, channels for conducting fire-gases from the generator to said horizontal flue, means for mixing the fire-gases with air preliminarily heated in the two regenerators, the wall between the oven and said horizontal flue having therein a plurality of openings adapted to admit the mixed fire-gases and heated air in separate streams into the oven between the neighboring retorts or between the retorts and the walls of the oven, and flues for conducting the fire-gases from the uppermost compartment of said oven to the two regenerators, said oven being adapted to conduct the separate streams of fire-gas upward in a serpentine line.

822,247. ELASTIC-FLUID TURBINE. JOHN G. CALLAN and BRACE H. HAMILTON, Lynn, Mass., assignors to General Electric Company, a Corporation of New York. Filed Mar. 12, 1904. Serial No. 197,789.



Claim.—1. An elastic-fluid turbine comprising a casing and wheel-buckets, the latter being arranged in rows, in combination with a diaphragm which divides the casing into compartments or stages for the rows of buckets, and a chamber formed within the diaphragm through which the motive fluid flows in passing from one stage to another for decreasing the amount of moisture contained therein.

2. An elastic-fluid turbine comprising a casing which is divided into wheel-compartments, in combination with a means for reducing the amount of moisture in the motive fluid which causes the fluid exhausting from one compartment to follow a circular or substantially circular path around the shaft of the turbine in passing to the adjacent compartment.

3. An elastic-fluid turbine comprising a divided casing, wheel-buckets in the compartments, and nozzles for discharging motive

fluid against the buckets, which are substantially in alinement with each other, in combination with means for causing the motive fluid exhausting from one wheel-compartment to flow in a circular or substantially circular path before entering an adjacent compartment.

4. An elastic-fluid turbine comprising a casing which is divided into compartments, and wheel-buckets in each compartment, in combination with a chamber which surrounds the wheel-shaft, and a hood which receives motive fluid from one wheel and directs its passage into the chamber.

5. An elastic-fluid turbine of the axial-flow type comprising a casing, wheel-buckets in the casing, and a nozzle or device for discharging motive fluid against the buckets, in combination with a passage for the exhaust which is arranged in line with the nozzle and extends circumferentially around the casing and terminates in orifices arranged in multiple.

6. An elastic-fluid turbine comprising a casing, wheel-buckets in the casing, and a nozzle or device for discharging motive fluid against the buckets, in combination with an exhaust-passage, located on the same side of the axis of the turbine with the nozzle and discharge-orifices for the passage which are located at the point diametrically opposite from the passage and open in opposite directions.

7. An elastic-fluid turbine comprising a casing, wheel-buckets in the casing, and a nozzle or device for discharging motive fluid against the buckets, in combination with an exhaust-passage having discharge-orifices, and means for imparting additional velocity to the exhaust from the buckets to cause it to divide in substantially equal amounts between the said orifices.

8. An elastic-fluid turbine comprising a casing, wheel-buckets, and a nozzle or device for discharging motive fluid against the buckets, in combination with an exhaust-passage having discharge-orifices, and means adjacent to each orifice for imparting velocity to the escaping fluid.

9. An elastic-fluid turbine comprising a casing which is divided into compartments, and wheel-buckets in the compartments, in combination with a chamber which surrounds the shaft, receiving and discharge orifices for the chamber so arranged that the motive fluid follows a substantially circular path around the shaft in flowing from one to the other, and means acting on said fluid while passing through the chamber for decreasing the amount of moisture contained therein.

10. An elastic-fluid turbine, comprising a casing which is divided into compartments, and wheel-buckets in the compartments, in combination with means for causing the exhaust from one compartment to follow a circular or substantially circular path in flowing from one wheel-compartment to the next, and one or more devices for increasing the length of said passages.

11. An elastic-fluid turbine comprising a casing which is divided into compartments, wheel-buckets in each compartment, and devices for discharging motive fluid against the buckets, in combination with a chamber independent of the wheel-compartment through which the motive fluid passes in flowing from one compartment to another, and an adjustable means for removing moisture from the motive fluid and varying the resistance opposed to its passage.

12. An elastic-fluid turbine comprising a casing divided into compartments, and nozzles or devices for discharging motive fluid against the bucket in the different compartments, which are situated at one side of the axis of the wheel, in combination with a chamber between compartments which receives the exhaust motive fluid from one wheel, directs it to the opposite side of the axis of the wheel and discharges it into a nozzle of lower pressure at a point on the other side of the axis of the wheel.

13. An elastic-fluid turbine comprising a casing, wheel-buckets, and nozzles or devices for discharging motive fluid against the wheel-buckets, a chambered diaphragm which divides the casing into compartments, and a partition in the chamber, which separates it into parts, one of said parts acting as a receiving and the other as a discharging device.

14. A casing for an elastic-fluid turbine, which is separable into sections, in combination with a wall for dividing the casing into compartments, which is also made in sections and formed integral with the casing-sections and a chamber formed wholly within the wall, one section of the wall forming one part of the chamber and another section a different part, the chamber being so arranged that the motive fluid passes through it as it flows from one compartmeat to another.

15. A casing for an elastic-fluid turbine of the axial-flow type, which is separable into sections in an axial plane, in combination with a divided and chambered diaphragm for separating the casing into wheel-compartments, which diaphragm is formed integral with the sections of the casing, the lines of division coinciding or substantially coinciding with those of the casing, and orifices in the chamber which receive and discharge the motive fluid.

16. An elastic-fluid turbine comprising sets of relatively movable buckets, compartments for the sets of wheel-buckets, and nozzles having a constant ratio of expansion, in combination with a means for decreasing the moisture entrained with the motive fluid, a conduit for conveying the exhaust from one set of wheel-buckets to the said means, and a second conduit for conveying the steam after it leaves the said means to the nozzle of a lower-pressure stage.

17. An elastic-fluid turbine comprising a casing, a diaphragm which divides the casing into compartments, and a separator located within the casing and between compartments for separating the water of condensation from the steam.

18. An elastic-fluid turbine comprising a casing, and a diaphragm which divides the casing into compartments, in combination with a separator comprising one or more plates or partitions which cause the steam to follow an irregular path in flowing from one compartment to another for separating the moisture from the steam.

19. An elastic-fluid turbine comprising a casing, and wheel-buckets, in combination with a chambered diaphragm for dividing the casing into compartments, and nozzles for discharging fluid against the wheel-buckets, which are located within the chamber.

20. An elastic-fluid turbine comprising a casing, and wheel-buckets, in combination with a chambered diaphragm for dividing the casing into compartments, nozzles which are attached to one wall of the chambered diaphragm, and a cover for the diaphragm which when removed exposes the nozzles.

21. An elastic-fluid turbine comprising a casing, and a diaphragm for dividing the casing into compartments which present smooth surfaces to the buckets, in combination with bucket-wheels for the compartments, which present smooth unbroken surfaces to the diaphragm and are located in close proximity thereto, the said diaphragm and wheels acting to reduce the fan-like action of the buckets to prevent eddy-currents.

22. An elastic-fluid turbine comprising a casing having smooth walls, wheels mounted therein which are spaced apart and on their peripheral and side surfaces run in close proximity to the walls of the casing for substantially their entire circumference to reduce rotation losses, and intermediate buckets which are located between the wheel-buckets.

23. In an elastic-fluid turbine, the combination of a shaft, a support sleeved thereon which is provided with flanges, bucket-carrying disks which are secured to opposite sides of the flanges, and bolts adjacent the wheel peripheries for securing each pair of wheels together and whose ends are disposed below the surfaces of the disks to decrease rotation losses.

24. In an elastic-fluid turbine, the combination of a shaft, a support sleeved thereon which is provided with flanges, bucket-carrying disks which are secured to opposite sides of the flanges, means adjacent the wheel peripheries for securing each pair of wheels together, and rings situated between each pair of disks in corresponding annular grooves therein and which act as separators and also to prevent the motive fluid from contacting with the central part of the wheel.

25. In an elastic-fluid turbine, the combination of a shaft, flanged sleeves mounted thereon which abut and act as spacers, wheel-disks mounted on opposite sides of the flanges, and means for securing the disks in place.

26. In an elastic-fluid turbine, the combination of a shaft having a collar thereon, flanged sleeves mounted thereon which abut and form spacers, a nut for pressing the sleeves against each other and the collar, and bucket-carrying disks which are bolted to opposite sides of the flanges.

27. In an elastic-fluid turbine, the combination of one or more buckets, a support therefor, and a lining-strip situated between the buckets and the support and forming a wall of each of the bucket spaces or passages.

28. In an elastic-fluid turbine, the combination of a plurality of buckets, a base-piece which is formed integral with the buckets, a support, and a lining-strip between the ends of the buckets and the support.

29. In an elastic-fluid turbine, the combination of a plurality of buckets, a base-piece which is formed integral with the buckets, a support, a lining-strip between the ends of the buckets and the support, and attaching-means which extend through the base-piece into the support.

30. In an elastic-fluid turbine, the combination of a plurality of buckets, a lining-strip through which one or more of the bucket ends extend, and a support to which the buckets are attached, and which is provided with a groove to receive the bucket ends projecting through said strip.

31. In an elastic-fluid turbine, the combination of a plurality of buckets, some or all of which are provided with end projections, a lining-strip through which the projections extend, a support, and means for attaching the buckets and lining-strip to the support.

32. In an elastic-fluid turbine, the combination of a plurality of buckets, a base-piece to which the buckets are attached, a support, a smooth lining-strip located between the buckets and the support, and retaining devices which hold the base-piece and lining-strip in place.

33. In an elastic-fluid turbine, the combination of a casing-wall, a shaft, and a packing carried by the wall, which surrounds the shaft and comprises a sleeve, partitions located within the sleeve which form grooves or compartments around the shaft, carbon packing-rings situated within the grooves and adjacent to the partitions and shaft, and spring-pressed holders for the rings also situated in the grooves.

34. In an elastic-fluid turbine, the combination of a casing-wall, a shaft, and a packing carried by the wall, which surrounds the shaft and comprises a sleeve, partitions located within the sleeve, carbon packing-rings situated within the sleeve and adjacent to the partitions and shaft, a holder for each packing, and a spring for holding each packing in place.

35. An elastic-fluid turbine comprising a casing, and bucket-wheels therein, in combination with a separator located within the casing through which the entire volume of motive fluid passes for decreasing the amount of moisture carried from one wheel to another by the motive fluid, and a support for the means, which is detachably secured to the casing.

36. An elastic-fluid turbine comprising a casing, and bucket-wheels therein, in combination with one or more partitions permanently located within the casing, another partition or partitions adjacent to the first, and a detachable cover or plate for the casing, which supports the last-mentioned partition.

37. In an electric-fluid turbine, the combination of a casing, a wheel-carrying shaft therein, a diaphragm which divides the casing into wheel-compartments and is provided with a cylindrical wall surrounding the shaft, and a packing between the wall of the diaphragm and the shaft, said packing comprising a sleeve, partitions therein which divide it into grooves, packing-rings in the grooves, and springs for urging the rings against the shaft and the partitions.

38. In an elastic-fluid turbine, the combination of a casing, a wheel-carrying shaft therein, a cylindrical wall surrounding the shaft which is provided with a groove, a packing between the wall and the shaft, said packing comprising a sleeve arranged in the groove of the wall to prevent axial movement thereof, packing-rings in the sleeve, and springs which urge the rings against the shaft.

39. In an elastic-fluid turbine, the combination of a casing, a wheel-carrying shaft therein, a cylindrical wall surrounding the shaft which is provided with a groove, a packing comprising a sleeve arranged in the groove of the wall to prevent axial movement thereof, partitions which divide the sleeve into grooves, a packing-ring in each groove, a holder for the ring, and means between the holder and the wall of the groove for urging the rings against the shaft and adjacent partitions of the sleeve.

40. In an elastic-fluid turbine, the combination of a casing, a wheel-carrying shaft therein, a wall surrounding the shaft, a sleeve around the shaft which is divisible on an axial plane, means on the said wall for preventing axial movement of the sleeve, partitions in the sleeve, packing-rings between the partitions, and means for urging the rings against the shaft and the partitions.

41. In an elastic-fluid turbine, the combination of a casing comprising a wheel-compartment, a bucket-wheel mounted therein comprising bucket-carrying disks whose outer surfaces conform in shape to the walls of the compartment and are disposed in close proximity to the latter to reduce rotation losses but separated sufficiently therefrom to prevent a braking effect due to the presence of moisture, and a means for securing the disks adjacent to their peripheries whose outer ends are disposed below the surfaces of the disks to permit the said surfaces to be disposed in close proximity to the walls of the compartment and contributing to reduce rotation losses.

42. An elastic-fluid turbine comprising a compound bucket-wheel, and an inclosing casing therefor whose walls are located in close proximity to the buckets to reduce rotation losses, and means carried by the wheel and forming a part thereof which contributes to reduce rotation losses.

43. An elastic-fluid turbine comprising a compound bucket-wheel formed of bucket-carrying disks and a peripheral ring between the disks, and a casing for the wheel whose walls are arranged in close proximity to the buckets to contribute with the said ring to reduce rotation losses.

44. An elastic-fluid turbine comprising a casing having smooth interior walls, wheel-buckets mounted within the casing and arranged in rows, the said buckets running in close proximity to the walls of the casing to reduce their fan-like action, a support for the buckets which with the latter substantially fills the casing to reduce eddy-currents of the motive fluid, and a nozzle or device for discharging motive fluid against a portion of the wheel-buckets.

45. An elastic-fluid turbine comprising a casing and bucket-wheels, in combination with a diaphragm the walls of which are located in close proximity to the buckets to reduce rotation losses, and a chamber within the diaphragm through which the motive fluid passes in flowing from one row of wheel-buckets to another for decreasing the amount of moisture contained therein.

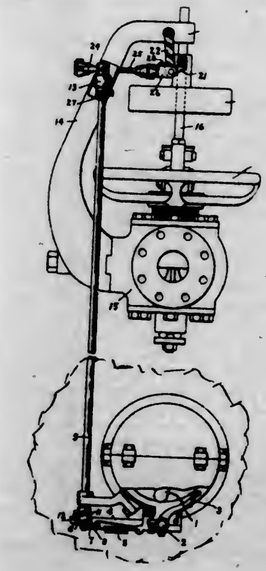
46. An elastic-fluid turbine comprising stage-compartments, a bucket-wheel for each stage-compartment, and fluid-discharging devices, in combination with a chamber located between stage-compartments which receives the exhaust from one stage, prevents it from reacting on the wheel that discharged it, and delivers it into another stage.

47. An elastic-fluid turbine comprising stage-compartments, a bucket-wheel for each stage-compartment, and fluid-discharging devices, in combination with an internal annular chamber which receives fluid from a given wheel, and after permitting the same to circulate without interfering with said wheel supplies it to the discharging devices of the adjacent stage of lower pressure.

48. An elastic-fluid turbine comprising stage-compartments, a bucket-wheel for each stage-compartment, and fluid-discharging devices, in combination with an annular chamber which receives fluid from a given wheel, and supplies it to one or more discharging devices of a lower-pressure stage, and a throat or orifice for the chamber which conforms in shape to the entering column of motive fluid.

49. An elastic-fluid turbine comprising stage-compartments, a bucket-wheel for each stage-compartment, and fluid-discharging devices, in combination with a chamber located within the casing of the machine and between the stage-compartments which receives fluid from one wheel and delivers it to another, and walls for the chamber which extend into close proximity with the idle wheel-buckets and cut down the rotation losses.

822,248. **STOP MECHANISM FOR ELASTIC-FLUID TURBINES.** JOHN G. CALLAN, Lynn, Mass., assignor to General Electric Company, a Corporation of New York. Filed Nov. 30, 1904. Serial No. 234,843.



Claim.—1. In a mechanism of the character described, the combination of a valve, a means for closing the valve, a shaft for controlling the means, a trigger, and a speed-responsive device which controls the shaft through the trigger.

2. In a mechanism of the character described, the combination of a valve, a weight for moving the valve, a rock-shaft which controls the action of the weight, and a speed-responsive device which controls the rock-shaft.

3. In a mechanism of the character described, the combination of a valve, a weight for closing the valve, a dog for sustaining the weight, a rock-shaft for withdrawing the dog and permitting the weight to drop, and a speed-responsive device which controls the action of the rock-shaft.

4. In a mechanism of the character described, the combination of a valve, a means for closing the valve, a shaft controlling the action of said means, a motor normally tending to move the shaft, a means opposing this tendency, and a device responsive to abnormal conditions for withdrawing the second-mentioned means and permitting the motor to operate.

5. In a mechanism of the character described, the combination of a valve, a suspended weight for closing it, a rock-shaft for tripping the weight, a motor normally tending to move the shaft, a weight responsive to speed changes, and a trigger moved by the second-mentioned weight for starting the motor into operation.

6. In a mechanism of the character described, the combination of a valve, a governor responsive to speed changes, means acted upon by the governor and controlling the valve, and a device for preventing the governor from delivering successive blows to said means.

7. In a mechanism of the character described, the combination of a valve, a means for moving the valve, a weight responsive to speed changes, a trigger acted upon by the weight under abnormal conditions to cause the valve to move, and a means for holding the trigger out of the path of the weight after it has been struck.

8. In a mechanism of the character described, the combination of a weight which is normally suspended, a rock-shaft for withdrawing the suspension, a speed-responsive device, a trigger actuated by said device and normally holding the shaft in a given position, and a spring for rocking the shaft when it is released by the trigger.

9. In a mechanism of the character described, the combination of a valve, a weight for moving it, a speed-responsive device for tripping the weight, a trigger interposed between the weight and device, a spring tending to move the trigger toward said device, and a stop for limiting the movement of the trigger.

10. In a mechanism of the character described, the combination of a valve, a weight loosely mounted on the valve-spindle, a means for suspending the weight, a pivoted dog included in said means, and a speed-responsive device for tripping the weight.

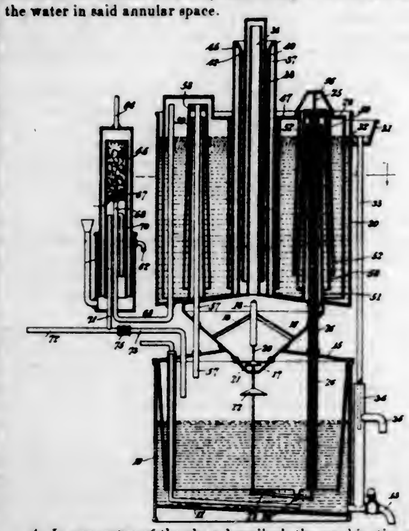
11. In a mechanism of the character described, the combination of a valve, a weight for closing it, a speed-responsive device, a trigger controlling the action of the weight, and means for permitting the weight and trigger to be reset by separate operations.

822,249. **ACETYLENE-GAS GENERATOR.** REINHOLD A. CARL, Elgin, Tex. Filed June 26, 1905. Serial No. 267,020.

Claim.—1. In apparatus of the class described, the combination with a generating-tank, of a carbid-holder, a carbid-valve, a rod carrying the same, an operating-rod connected to the carrying-rod, a gasometer including a movable bell, a tube surrounding the operating-rod and extending from a point below the water-line of the generating-tank to a point approximately in the horizontal plane of the top of the bell, a cap member carried by the bell and arranged to engage said operating-rod, and a series of nesting tubes carried one by the gasometer-tank, one by the tube, and one by the gasometer-bell and forming a seal for preventing the escape of the gas.

2. In apparatus of the class described, the combination with a generating-tank, of a carbid-holder, a carbid-valve, a valve-carrying rod, an operating-rod connected to the carrying-rod, a gasometer-tank, a movable bell arranged therein, a pendent tapered tube carried by the bell and sealed in the water of the gasometer-tank, a tube surrounding the valve-operating rod and extending from a point below the water-line of the generating-tank to a point approximately in the horizontal plane of the top of the bell when the latter is in its lowest position, a tapered sealing-tube carried by the rod-protecting tube and also immersed in the water of the gasometer-tank, a third tube extending upward from bottom of the gasometer-tank and surrounding the valve-protecting tube, and means carried by the bell for engaging the upper end of the operating-rod.

3. In apparatus of the class described, the combination with a generating-tank, of a carbid-holder, a gasometer arranged above the carbid-holder and provided with a central passage, a pair of concentric tubes leading upward from the top of the carbid-holder and extending through said central passage, the inner end of said tubes serving as a passage for supplying carbid to the holder, and the space between the two tubes forming an annular water-chamber, and a cap for covering the top of the carbid-feed tube, said cap being in the form of a tube closed at the top and having its lower end sealed by the water in said annular space.

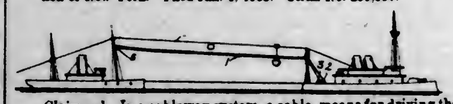


4. In apparatus of the class described, the combination with a generating-tank, of a carbid-holder, a gasometer arranged above the carbid-holder, a pair of concentric tubes leading upward from the top of the carbid-holder and forming a water-space between them, the inner of said tubes having an open top and serving as a means for introducing carbid into the holder, and the outer of said tubes being provided with a pair of parallel flanges, the upper of which has a cap member arranged to extend into the water-space, and provided with a pair of lugs arranged to enter said cap and serving when turned in the space between said notches to lock said cap in position.

5. In apparatus of the class described, the combination with a generating-tank, of a carbid-holder, a gasometer arranged above the carbid-holder, a pair of concentric tubes leading upward from the carbid-holder through the gasometer and forming an annular water-space between them, the inner of such tubes forming a passage for supplying carbid to the holder, a cap member having its lower edge sealed in the water of said annular space, a tube extending upward from the gasometer-tank and surrounding the two concentric tubes, and a third tube carried by the bell and surrounding the gasometer-tank tube.

6. In apparatus of the class described, the combination with a generating-tank, of a carbid-holder, a gasometer, a discharge-pipe leading from the generating-tank to the gasometer, a tube carried by the upper portion of said pipe and having its lower edge sealed in the water of the gasometer-tank, and a second tube arranged within the first and extending upward from the bottom of the gasometer-tank to a point above the water-level in said tank.

822,250 **ELECTRIC CABLEWAY SYSTEM.** MAXWELL W. DAY, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Jan. 6, 1905. Serial No. 239,897.



Claim.—1. In a cableway system, a cable, means for driving the cable, and means for maintaining a tension upon said cable both when moving and when at rest.

2. In a cableway system, a cable, and electrical means for driving the cable and for maintaining a tension thereon both when the cable is moving and when at rest.

3. In a cableway system, a cable, a pair of motors associated therewith and permanently connected to a source of current-supply in such a manner that the motors tend to wind up the ends of the cable, and means for varying the proportion of the whole current which each motor receives.

4. In a cableway system, a cable, a pair of motors associated with the ends of the cable for winding up the same, means for supplying said motors continuously with current tending to rotate the motors to wind the cable, and means for varying the relative strength of the currents supplied to each motor.

5. In a cableway system, a cable, a pair of motors connected in parallel to a source of current-supply and connected to the ends of the cable for winding up the same, resistances located in the connection between the motors and said source of current-supply, and means for varying the proportion of the resistance which is in series with each motor.

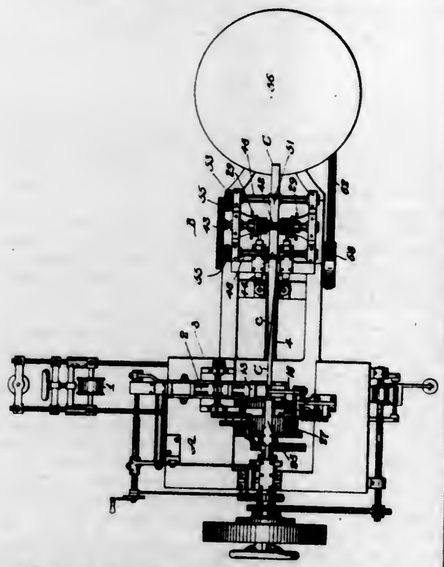
6. In a cableway system, a cable, a pair of motors one terminal of each of which is connected to a corresponding terminal of a series of resistance-sections and the other terminals of which are connected to one terminal of a source of current-supply, and a movable member coöperating with contacts associated with said resistance-sections and electrically connected to the other terminal of said source of current-supply, said motors being connected to the ends of the cable for winding up the same when the motors are operated.

7. In a cableway system, a cable, a pair of motors associated with opposite ends of the cable and arranged to pull in opposite directions upon the cable, and means for varying the pull which one of the motors exerts.

8. In a cableway system, a cable, a pair of motors associated with opposite ends of the cable and arranged to pull in opposite directions upon the cable, and means for varying the effective pull of each motor.

9. In a cableway system, a cable, a pair of motors connected with opposite ends of the cable, and a controller constructed and arranged to supply current to the motors so as to cause the motors to operate similarly at each end of the cable.

822,251. **MACHINE FOR MAKING MATCH-BOXES.** JOHN W. DENNEAD, Akron, Ohio, assignor to The Diamond Match Company, New York, N. Y., a Corporation of Illinois. Filed Sept. 23, 1904. Serial No. 225,600.



Claim.—1. The combination with a twisted mandrel upon which shucks are formed, of means for feeding the shucks along said mandrel whereby the said shucks are partially turned during their traverse.

2. The combination with shuck-forming mechanism and surface-applying mechanism, of means for feeding the shucks from the former to the latter mechanism, and means for turning said shucks to present a surface thereof to said latter mechanism.

3. The combination with a twisted mandrel upon which shucks are formed, of surface-applying mechanism adjacent said mandrel, and means for feeding the shucks along the mandrel to said mechanism.

4. The combination with shuck-forming mechanism and surface-applying mechanism, of a twisted mandrel extending from the former to the latter mechanism, and means for feeding the shucks along said mandrel.

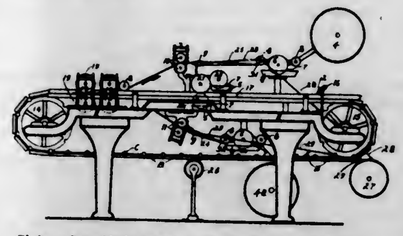
5. The combination with shuck-forming mechanism and surface-applying mechanism, including a composition-receptacle, and means for removing the composition therefrom and applying it to the vertical edge or edges of a shuck, of a twisted mandrel extending from the shuck-forming to the surface-applying mechanism, and means for feeding the shucks along said mandrel.

6. The combination with a twisted mandrel upon which shucks are supported and partially turned, of surface-applying mechanism, and means for bearing upon and advancing said shucks during the application of the surface substance thereto.

7. The combination with a twisted mandrel upon which shucks are supported and partially turned, of a surface-applying mechanism, an endless band bearing upon and advancing said shucks during the application of the surface substance thereto, and means for supporting and actuating said band.

8. The combination with a twisted mandrel upon which shucks are supported and partially turned, of a surface-applying mechanism, and means for advancing said shucks during the application of the surface substance thereto, said means including an endless band bearing against the upper side of the shuck and rollers bearing against the under side of the shuck, and devices for supporting and actuating said band and rollers.

822,252. **SELF-CLOSING PAPER-BAG MACHINE.** ODILON DESROSIERS, Louiseville, Canada, assignor to Daniel Francois Resulme, Montreal, Canada, and Eugenie Desrosiers, Louiseville, Canada. Filed July 1, 1904. Serial No. 215,034.

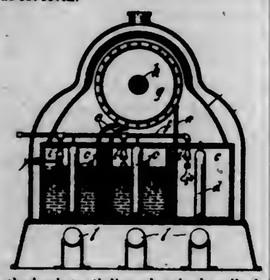


Claim.—In self-closing paper-bag machines: a frame to support the parts, an endless apron to convey the paper bags, each section thereof having lugs at the rear end to insure the progress of the bags toward the knives, a spring-finger to place the bags close against the lugs of the sections; strips of metal over the apron and close thereto to steady the paper bags on the sections; guard-rails to maintain the mouth of the bags in the track of the pasting-wheels; ribbon-pasting wheels, their trough containing paste and their gage to free the wheels from the unnecessary quantity of paste; reels to feed the wire into folders to be, therein, doubled over in the ribbons and pasted on each side of the bag; folders having therein guides to keep the ribbons in a vertical position and a tongue, transversally to their length, to double over the ribbons and having a hole horizontally traversing their end, to receive the wire to be doubled over in the ribbon; sets of press-wheels to secure the adhesion of the ribbons, inclosing the wires; two bag-pasting wheels their trough and gage, to lay stripes of paste at the mouth of the bags; two press-wheels to fasten the ribbons on the stripes of paste, at the mouth of the bags and a set of knives to cut the ribbons and wires, a little beyond the width of the bags, in the manner and for the purpose hereinabove mentioned.

822,253. **METHOD OF OPERATING TURBINES.** JAMES G. DORNBLASER, Cleveland, Ohio. Filed Nov. 10, 1904. Serial No. 232,150.

Claim.—1. The method substantially as herein explained, for driving a turbine, which consists in highly heating an impelling medium while confined in a closed chamber, supplying thereto a readily-vaporized medium, and directing the impelling medium against

the turbine, under the influence of the high pressure thus generated, substantially as set forth.



2. The method substantially as herein described, for operating a turbine, which consists in heating a suitable body of material having high specific gravity, within a closed chamber, thereafter supplying to said medium a charge of readily-vaporized liquid, and directing the said medium under the pressure thus generated against the vanes or surfaces of the turbine, substantially as set forth.

3. The herein-described method of operating a turbine, which consists in heating bodies of material rendered fluid at relatively low temperatures, and having high specific gravity, supplying thereto in turn a readily-vaporized medium and directing in turn the fluid medium against the turbine, under the influence of the pressure generated, substantially as set forth.

4. A new method for operating a motor device, consisting in highly heating a body of suitable metal, such as tin, supplying thereto in a closed chamber a readily-vaporized expansive medium, such as water, and directing the molten metal in the motor device, so as to produce power through the high pressure generated by the vaporization, substantially as set forth.

5. A new method for operating turbine-wheels, which consists in highly heating separate bodies of suitable metal, such as tin, supplying thereto a readily-vaporized expansive medium, such as water, and directing automatically in succession, the several bodies of molten metal against the vanes of the turbine, whereby continuous rotation thereof is effected, substantially as set forth.

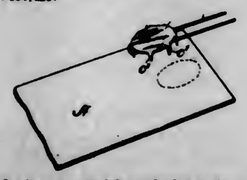
822,254. **TERRA-COTTA-TILE WELL.** JAMES ELLIOTT, Melville, N. Y. Filed Nov. 13, 1905. Serial No. 287,069.



Claim.—1. In a terra-cotta-tile well the combination with a terra-cotta tile, of the perforated metallic bottom, and the metal band for connecting the said bottom and tile, as set forth.

2. In a terra-cotta-tile well the combination with a tile-section, having exterior indentations, of the perforated cast-iron bottom, and the galvanized-iron ring fastened to the perforated bottom, and provided with ears adapted to be brought into engagement with the indentations in the tile, substantially as set forth.

822,255. **TAG.** AXEL H. ELLIS, Boston, Mass. Filed Jan. 2, 1903. Serial No. 137,439.

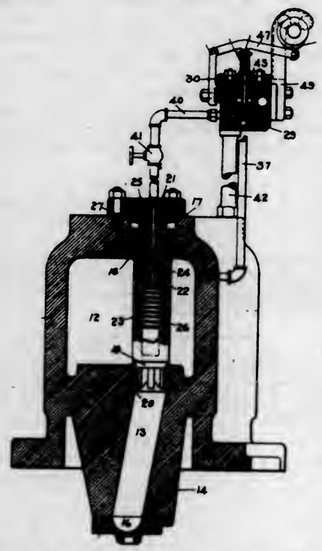


Claim.—1. A tag comprising a body portion, a string and a fastening device, said fastening device being located near one end of the tag and provided with a plurality of prongs and said string being looped about one prong and passing between two other prongs, substantially as described.

2. A tag comprising a body portion, a string and a fastening device provided with three or more prongs, said string being looped about one of said prongs and passing between two other prongs, said prongs extending through the body portion of the tag and being clenched on the reverse side, substantially as described.

3. A tag comprising a body portion, a pronged fastening device located adjacent to one end of the tag and a string looped about one of the prongs of said fastening and placed with both strands arranged between other prongs, said prongs extending through the body portion and being clenched upon the reverse side, substantially as described.

822,256. **GOVERNING MECHANISM FOR TURBINES.** WILLIAM L. R. EMMET, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Apr. 5, 1904. Serial No. 201,747.



Claim.—1. In a governing mechanism for elastic-fluid turbines, the combination of a chest, a plurality of nozzle-valves therein, relay-valves, a chest therefor separate from the nozzle-valve chest, conduits for conveying fluid from one chest to the other, and means for operating the relay-valves,

2. In a governing mechanism for elastic-fluid turbines, the combination of a chest, a plurality of nozzle-valves in the chest, pistons for moving the valves, relay-valves for controlling the pistons, levers for operating the relay-valves, and a yielding medium between the valves and the levers.

3. In a governing mechanism for elastic-fluid turbines, the combination of a support, a plurality of valves mounted therein, levers for operating the valves, a cam which moves the levers in a predetermined manner, and an elastic medium between each valve and lever.

4. In a governing mechanism for elastic-fluid turbines, the combination of a nozzle-valve chest which is shaped to conform to that of the casing, a relay-valve chest which is straight and which is separated from the nozzle-valve chest to prevent the transfer of heat, a cam which extends parallel to the relay-valve chest, a plurality of valves in each chest, levers for operating the relay-valves which are moved by the cam, and motors under the control of the relay-valve for actuating the nozzle-valves.

5. In a governing mechanism for elastic-fluid turbines, the combination of a chest containing nozzle-valves, a relay-valve chest supported in a definite position with relation to the nozzle-valve chest but separated therefrom by a space to prevent the transfer of heat, a plurality of relay-valves for controlling the nozzle-valves, and a cam for actuating the relay-valves in the proper sequence which is supported by the relay-valve chest.

6. In a governing mechanism for elastic-fluid turbines, the combination of a valve-chest, a plurality of individual valves mounted therein, levers for actuating the valves, a spring carried by each valve-stem which engages a lever, and a means for moving the levers in their proper sequence.

7. In a governing mechanism for elastic-fluid turbines, the combination of a valve-chest, a plurality of valves therein, a stem for each valve which extends through the chest, a plurality of levers which extend across the chest, a yielding medium interposed between each stem and its lever, fulcrums for the levers located at one side of the chest, and a means for actuating the levers located on the opposite side of the chest.

8. In a governing mechanism for elastic-fluid turbines, the combination of a valve-chest, a plurality of valves each mounted in a separate opening, a cover for each opening through which the valve-stem extends, a yielding medium which is attached to each stem, levers for actuating the valves that extend transversely of the chest, and a cam located at one side of the chest for actuating the levers.

9. In a governing mechanism for elastic-fluid turbines, the combination of a chest containing valves, means for actuating them, a second chest containing relay-valves, means for actuating the valves, conduits for conveying fluid between the chests, and cut-out valves for rendering the nozzle-valves inoperative.

10. In a governing mechanism for elastic-fluid turbines, the combination of a chest containing valves, means for actuating them, a second chest containing relay-valves, a support for the second chest which separates it from the first to prevent the transfer of heat, conduits for conveying fluid from one chest to the other, and cut-out valves which interrupt the passage of fluid from one chest to the other.

11. In a governing mechanism for elastic-fluid turbines, the combination of valves which are divided into groups and are arranged to open and close to admit fluid to the turbine, cams for operating the valves arranged in sets, and means for transmitting motion from one set of cams to the other.

12. In a governing mechanism for elastic-fluid turbines, the combination of valves which are divided into groups and are arranged to open and close to admit fluid to the turbine, cams for operating the valves arranged in sets, means for transmitting motion from one set of cams to the other, and a speed-responsive device for actuating one set of cams.

13. In a governing mechanism for elastic-fluid turbines, the combination of valves which are divided into groups and are arranged to open and close to admit fluid to the turbine, cam-cylinders for operating the valves, means for driving one cylinder from the other, and a speed-responsive device for imparting movement to the cams.

14. In a governing mechanism for elastic-fluid turbines, the combination of valves which are divided into groups and are arranged to open and close to admit fluid to the turbine, cams arranged in sets, the cams of the sets being staggered to actuate the valves in the groups alternately, and a means for operating the cams.

822,257. **ELASTIC-FLUID TURBINE.** WILLIAM L. R. EMMET, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Apr. 7, 1904. Renewed Sept. 28, 1905. Serial No. 280,461.

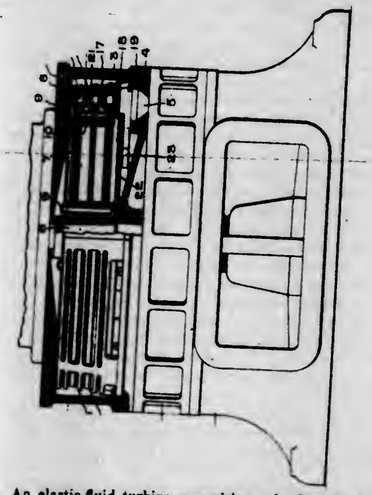
Claim.—1. An elastic-fluid turbine comprising intermediate buckets, two or more rows of wheel-buckets, and a device for discharging motive fluid against them, in combination with means presenting a smooth surface and acting on the idle buckets to reduce the rotation losses.

2. An elastic-fluid turbine comprising a bucket-wheel, and a sectionalized nozzle or device for discharging motive fluid against it, in combination with a hood which is located in proximity to the idle wheel-buckets for reducing rotation losses.

3. An elastic-fluid turbine comprising a compound bucket-wheel, and a device for discharging motive fluid against it, in combination with a hood for reducing rotation losses, which comprises a wall that is situated adjacent to the idle buckets.

4. An elastic-fluid turbine comprising a casing, a bucket-wheel, and a device for discharging motive fluid against the wheel, in combination with a hood having a smooth wall in close proximity to the buckets, and a passage for discharging the liquid given up by the motive fluid.

5. An elastic-fluid turbine comprising a casing, a bucket-wheel, and a device for discharging motive fluid against it, in combination with a hood comprising walls situated on opposite sides of the idle buckets, and passages for discharging the liquid given up by the motive fluid.



6. An elastic-fluid turbine comprising a bucket-wheel and a sectionalized nozzle or device for discharging motive fluid against it, in combination with a hood comprising walls situated on opposite sides of the idle buckets, and a wall surrounding said buckets.

7. An elastic-fluid turbine comprising a bucket-wheel and a device for discharging motive fluid against it, in combination with a hood comprising side walls situated on opposite sides of the idle buckets, an end wall surrounding said buckets, and a discharge-passage for the liquid given up by the motive fluid.

8. An elastic-fluid turbine comprising two or more rows of wheel-buckets and a device having a group of closely-associated passages for discharging motive fluid against them, in combination with a means acting on the idle buckets of each of the wheels to reduce rotation losses, and a support which is common to the said means.

9. An elastic-fluid turbine comprising two or more rows of wheel-buckets and a device for discharging motive fluid against them in an axial direction, in combination with a hood comprising walls which cover the idle end buckets, other walls which cover those between the ends, and a support which is common to all of the walls.

10. An elastic-fluid turbine comprising two or more rows of wheel-buckets and a device for discharging motive fluid against them in combination with a hood made up of segmental side walls and segmental end walls which cover the idle buckets, and a support common to the walls, which is also segmental.

11. An elastic-fluid turbine comprising separate wheel compartments or shells, buckets carried on the wheel-peripheries, nozzles for discharging the motive fluid in an axial direction, a plurality of discharging devices for directing fluid into the adjacent stage of lower pressure, and a conduit or passage for conveying motive fluid from the central part of a wheel-chamber to the said discharging devices.

12. An elastic-fluid turbine comprising a bucket-wheel and a device for discharging fluid against it, in combination with a means acting as a cover or hood for the idle buckets, and an outwardly-extending conduit or passage-way discharging motive fluid.

13. An elastic-fluid turbine comprising a bucket-wheel and a device for discharging motive fluid against it, in combination with a hood for the idle buckets, a plurality of outwardly-extending conduits or passage-ways, and a support which is common to the conduits or passage-ways.

14. An elastic-fluid turbine comprising a bucket-wheel and devices for discharging motive fluid against it, in combination with a means for preventing eddying of the motive fluid in the plane of the wheel.

15. An elastic-fluid turbine comprising separate stages, fluid-discharging devices for each stage, and a wall or plate located in one stage for preventing eddying of the motive fluid in the plane of the wheel as it passes from one stage to another.

16. An elastic-fluid turbine comprising a bucket-wheel, a device for discharging motive fluid against it, and a casing, in combination with a means for reducing eddying of the motive fluid within

the casing, and conduits or passage-ways for conveying motive fluid from the center of the compartment to the periphery.

17. An elastic-fluid turbine, comprising two or more rows of wheel-buckets, a compartment which is common to the said rows, and a nozzle for discharging motive fluid against the wheel, in combination with a means located in close proximity to the idle wheel-buckets for reducing the rotation losses.

18. An elastic-fluid turbine comprising rows of wheel-buckets, a compartment therefor, and a nozzle for discharging motive fluid against the buckets, in combination with a wall which is located between the idle buckets of adjacent rows in each compartment and acts on both of them to reduce the rotation losses.

19. An elastic-fluid turbine comprising a plurality of wheels strung on the same shaft, a casing for the wheels, a nozzle for discharging motive fluid against the wheel-buckets, in combination with a means for decreasing the rotation losses, which is carried by the wheel at a point near the periphery for cutting off the space between them, and a means which closely surrounds the idle wheel-buckets for further decreasing the rotation losses.

20. In an elastic-fluid turbine, the combination of a casing, a wall for dividing the casing into compartments, a valve which rests on the wall and controls the passage from one side of the wall to the other, a screw-threaded actuator, and a nut on the actuator, which engages the valve.

21. In an elastic-fluid turbine, the combination of a casing, a wall for dividing the casing into compartments, a valve which rests on the wall and controls the passage of fluid from one compartment to another, an actuator for the valve, which extends through the valve and is guided thereby, and a means engaging the actuator and valve for moving the latter.

22. In an elastic-fluid turbine, the combination of a casing, a bucket-wheel, a hood or inclosure for idle buckets for reducing rotation losses, and a chamber between the hood or inclosure and the casing, in which the exhaust motive fluid is given an opportunity to discharge the moisture due to expansion.

23. In an elastic-fluid turbine, the combination of a casing, relatively movable buckets and a discharging device, a means acting to reduce the rotation losses of idle buckets, a chamber receiving exhaust fluid from the buckets, and discharging devices in which the moisture due to expansion is separated from the fluid.

24. In an elastic-fluid turbine, the combination of a casing, relatively movable buckets and a discharging device, a hood for reducing the rotation losses of idle buckets comprising walls situated in close proximity thereto, and a chamber surrounding the buckets and hood which receives exhaust fluid and affords an opportunity for the moisture and vapor to separate.

25. An elastic-fluid turbine comprising two or more rows of wheel-buckets in the same compartment, a device for discharging motive fluid against one row of buckets, and a device for discharging motive fluid against a second row of buckets, in combination with walls presenting smooth surfaces to the buckets for decreasing the rotation losses.

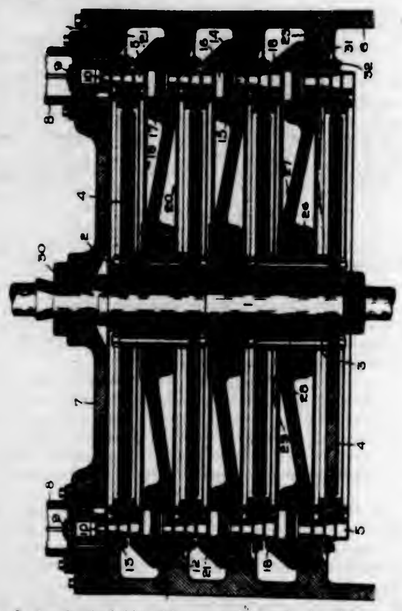
26. An elastic-fluid turbine, comprising two or more rows of wheel-buckets, intermediate buckets between the rows which extend partially around the wheel, and a means between the rows of buckets extending around the remaining portion of the wheel which presents smooth and unbroken walls to the movable buckets for preventing rotation losses.

27. An elastic-fluid turbine, comprising two or more rows of movable buckets, a device which discharges motive fluid against a limited number of the buckets, a wall or inclosure adjacent the ends of the buckets, and means projecting from the said wall into the space between the rows of buckets, the portion of the means in the path of the motive fluid having passages which receive the motive fluid from the preceding row and after changing its direction discharge it against the succeeding row of buckets, the remaining portion of said means serving to prevent rotation losses.

822,258. **ELASTIC-FLUID TURBINE.** WILLIAM L. R. EMMET, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Apr. 7, 1904. Renewed Sept. 28, 1905. Serial No. 280,468.

Claim.—1. An elastic-fluid turbine comprising wheel and intermediate buckets, and a diaphragm between the wheels, in combination with an internal projection on the casing, which forms a support that is common to the diaphragm and the intermediate buckets.

2. An elastic-fluid turbine comprising wheel and intermediate buckets, and a diaphragm between the wheels, in combination with an internal projection on the casing, which has shoulders on opposite sides, one shoulder being adapted to receive the diaphragm and the other the intermediates



3. An elastic-fluid turbine comprising wheel and intermediate buckets, and a diaphragm between the wheels, in combination with an internal projection on the casing, having a shoulder on its upper side upon which the diaphragm rests, and a shoulder on its under side with which the intermediate buckets engage, and means for securing the buckets in place.

4. An elastic-fluid turbine comprising wheel and intermediate buckets, and a diaphragm between the wheels, in combination with an internal projection on the casing, having two shoulders thereon, one of said shoulders being of greater diameter than the other, the one of larger diameter receiving the diaphragm and the other the intermediate buckets.

5. An elastic-fluid turbine comprising a casing and bucket-wheels, in combination with a diaphragm between the wheels, which is provided with a chamber on one side, and a cut-away portion on the other, and a nozzle mounted in the cut-away portion and arranged to receive motive fluid from the chamber.

6. An elastic-fluid turbine comprising a casing, bucket-wheels, and intermediate buckets, in combination with a diaphragm situated between the wheels, and a means carried by the diaphragm and located adjacent to the moving buckets for decreasing the rotation losses.

7. An elastic-fluid turbine comprising a casing, bucket-wheels, and intermediate buckets, in combination with a diaphragm situated between the wheels, and a projection formed on the diaphragm, which incloses the wheel for decreasing the rotation losses.

8. An elastic-fluid turbine comprising a casing, bucket-wheels, and intermediate buckets, in combination with a diaphragm situated between the wheels, the walls of which are in close proximity to the sides of the wheel-buckets for reducing the rotation losses, and an end wall carried by the diaphragm for further reducing the rotation losses.

9. An elastic-fluid turbine comprising a casing, bucket-wheels, and intermediate buckets, in combination with a diaphragm situated between the wheels, a projection formed on the diaphragm which incloses the wheel for decreasing the rotation losses, and a passage for discharging moisture given up by the expanding motive fluid.

10. An elastic-fluid turbine comprising a casing, bucket-wheels, intermediate buckets, and a diaphragm between the wheels, in combination with an internal projection on the casing, which forms a support common to the diaphragm and intermediates, and also serves to reduce the rotation losses of a wheel.

11. An elastic-fluid turbine comprising a casing, bucket-wheels, and intermediate buckets, in combination with an internal projection formed on the casing, which acts to reduce the rotation losses of a wheel, a diaphragm, and means carried by the diaphragm which also acts to reduce the rotation losses.

12. An elastic-fluid turbine comprising a casing, a wheel having rows of buckets, a diaphragm, a wall formed on the casing which acts to reduce the rotation losses at the end of one row of buckets, and a wall formed on the diaphragm, which acts to reduce the rotation losses at the end of a different row of buckets.

13. An elastic-fluid turbine comprising a casing, a bucket-wheel, and a diaphragm, in combination with an internal projection on the casing, which supports the diaphragm and also acts to reduce rotation losses.

14. An elastic-fluid turbine comprising a casing, a bucket-wheel, intermediate buckets, and a diaphragm, in combination with an internal projection on the casing, which supports the diaphragm and the intermediate buckets and also acts to reduce the rotation losses.

15. In an elastic-fluid turbine, the combination of a casing, wheel-disks within the casing, a shaft, a sleeve mounted thereon, which forms a support common to the disks, and a diaphragm which is situated between the wheels and rests on the casing at the periphery and closely surrounds the sleeve at its central portion.

16. An elastic-fluid turbine comprising a casing, and movable buckets, in combination with an internal projection formed on the casing, which acts to reduce the rotation losses of the buckets.

17. An elastic-fluid turbine comprising a casing, and movable buckets, in combination with an internal projection formed on the casing, which acts to reduce the rotation losses of the buckets, and passages formed in the projection for discharging moisture given up by the expanding motive fluid.

18. An elastic-fluid turbine comprising a casing, a nozzle, and wheel-buckets, in combination with a diaphragm between the wheel-buckets, a support for the diaphragm, a hood for the wheel-buckets for reducing rotation losses, a chamber inclosing the hood, and passages discharging moisture from the spaces between the hood and wheel into the chamber.

19. In an elastic-fluid turbine, the combination of a casing, and a diaphragm which divides the casing into wheel-compartments, the diaphragm presenting a smooth surface to the idle buckets to reduce rotation losses and coöperating with the casing to form a chamber for collecting moisture given up by the expanding motive fluid.

20. An elastic-fluid turbine comprising a casing, a bucket-wheel, and a diaphragm, in combination with an internal projection on the casing which presents a smooth surface to the buckets and acts to reduce rotation losses and which coöperates with the diaphragm and the casing to form a chamber for collecting the moisture given up by the expanding motive fluid.

21. An elastic-fluid turbine comprising a casing, a diaphragm dividing the casing into compartments, bucket-wheels in the compartments, and a shaft, in combination with a sleeve on the shaft which forms a support common to the wheels.

22. An elastic-fluid turbine comprising a casing, a diaphragm dividing the casing into compartments, bucket-wheels in the compartments, and a shaft, in combination with a sleeve secured to the shaft which forms a support common to the wheels, and means for securing the wheels to the sleeve to rotate therewith.

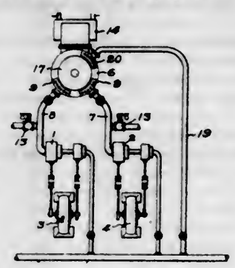
23. An elastic-fluid turbine comprising a casing, and bucket-carrying disks, in combination with a wall located in the space between the disks for dividing the casing into compartments, and which also acts to reduce rotation losses, and a sleeve on the shaft which forms a support common to the disks.

24. An elastic-fluid turbine comprising a casing, bucket-wheels therein, a shaft for the wheels, and a diaphragm located between the wheels, in combination with a sleeve on the shaft to which the wheels are secured, and a packing between the diaphragm and the sleeve.

822,259. **POWER-GENERATING APPARATUS.** WILLIAM L. R. EMMET, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Oct. 7, 1905. Serial No. 281,785.

Claim.—1. In combination, two or more high-pressure reciprocating engines, a low-pressure turbine which is common thereto, and separate nozzles or other fluid-discharging devices which receive the exhaust from the engines and discharge it into the turbine.

2. In combination, two or more high-pressure reciprocating engines, a low-pressure turbine which is common thereto, nozzles or other devices which discharge fluid to the turbine, and a conduit that extends from the low-pressure cylinder of each of the reciprocating engines to a nozzle or other fluid-discharging device.



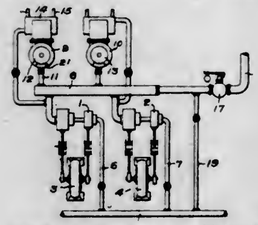
3. In combination, two or more high-pressure reciprocating engines, a low-pressure turbine that is common to and receives the exhaust from the engines, a separate device which discharges the fluid from each engine to the turbine, and shut-off valves that control the passage of exhaust-steam to the said devices.

4. In combination, two or more high-pressure reciprocating engines, a low-pressure turbine that is common to and receives the exhaust from the engines, a separate device which discharges the fluid from each engine to the turbine, and a relief-valve for each reciprocating engine which opens upon a definite increase in exhaust-pressure.

5. In combination, a high-pressure reciprocating engine, a low-pressure turbine receiving exhaust from the engine, a condenser connected to the turbine, a nozzle on the turbine through which the exhaust from the engine passes, and another nozzle also on the turbine having a greater ratio of expansion than the first, through which steam of higher pressure passes.

6. In combination, a high-pressure reciprocating engine, a low-pressure turbine receiving exhaust from the engine, a condenser connected to the turbine, a nozzle on the turbine through which the exhaust from the engine passes, another nozzle also on the turbine having a greater ratio of expansion than the first through which steam of higher pressure passes, and a high-pressure main that supplies the high-pressure reciprocating engine and the last-mentioned nozzle.

822,260. **POWER-GENERATING APPARATUS.** WILLIAM L. R. EMMET, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Oct. 7, 1905. Serial No. 281,786.



Claim.—1. In combination, one or more high-pressure reciprocating engines, a header receiving the exhaust therefrom, one or more low-pressure turbines receiving energy from the header, a relief-valve discharging from the header to a suitable exhaust, and a conduit for admitting high-pressure fluid to the turbine for overload conditions of service.

2. In combination, one or more high-pressure reciprocating engines, a header receiving the exhaust therefrom, one or more low-pressure turbines receiving energy from the header, and a condenser into which the turbines exhaust, in combination with a by-pass connection by which the reciprocating engine or engines can be started as condensing units.

3. In combination, one or more high-pressure reciprocating engines, a header receiving exhaust therefrom, one or more low-pressure turbines receiving energy from the header, and a conduit for admitting high-pressure fluid to the turbine or turbines for overload conditions.

4. In combination, one or more high-pressure reciprocating engines, a header receiving exhaust therefrom, a relief-valve therefor, one or more low-pressure turbines receiving energy from the header, one or more condensers into which the turbines exhaust, a conduit

admitting high-pressure fluid to the header for heavy-load conditions on the turbines, and a conduit for connecting one or more of the reciprocating engines to the condensing apparatus for the purpose of starting.

5. In combination, one or more reciprocating engines, a header receiving the exhaust therefrom, one or more low-pressure turbines receiving energy from the header, electric generators for the engines and turbines, which are connected in parallel to synchronize the speeds of the reciprocating engines and turbines, and an automatic valve which controls the pressure of fluid in the header.

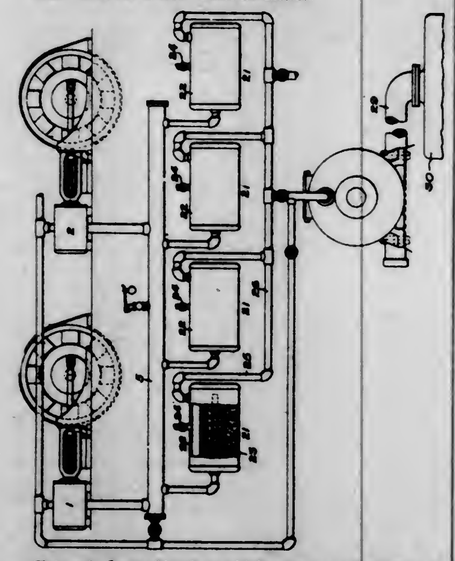
6. In combination, one or more reciprocating engines, a header receiving the exhaust therefrom, one or more low-pressure turbines receiving energy from the header, electric generators for the engines and turbines, which are connected in parallel to synchronize the speeds of the reciprocating engines and turbines, and a conduit for admitting high-pressure fluid to the turbine or turbines for heavy load conditions.

7. In combination, one or more reciprocating engines, a header receiving the exhaust therefrom, one or more low-pressure turbines receiving energy from the header, electric generators for the engines and turbines, an automatic relief-valve for controlling the pressure in the header, and a conduit for admitting high-pressure fluid directly from the source to the header when the load on the turbine or turbines exceeds a certain predetermined amount.

8. In combination, one or more high-pressure reciprocating engines, one or more low-pressure turbines receiving the exhaust therefrom, a shut-off valve for each turbine which closes the communication between it and the high-pressure reciprocating engine or engines when the speed of the turbine exceeds a certain predetermined amount, and a conduit that discharges the excess motive fluid when one or more of the shut-off valves close.

9. In combination, one or more high-pressure reciprocating engines, a header receiving the exhaust therefrom, one or more low-pressure turbines connected to and receiving motive fluid from the header, condensing apparatus connected to the turbine or turbines, and a conduit for admitting motive fluid to the turbine or turbines at a pressure above that of the header.

822,261. **POWER SYSTEM.** WILLIAM L. R. EMMET, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Oct. 7, 1905. Serial No. 281,787.



Claim.—1. In combination, a high-pressure reciprocating engine, a header which receives the exhaust from the engine, a low-pressure turbine connected to the header, and a valve mechanism for automatically governing the admission of motive fluid to the turbine in accordance with the load conditions.

2. In combination, a high-pressure reciprocating engine, a header which receives the exhaust from the engine, a low-pressure turbine connected to the header, a valve mechanism responding to changes in pressure of the exhaust for increasing the volume of fluid admitted to the turbine as the pressure rises and decreasing it as it falls.

3. In combination, a high-pressure reciprocating engine, a header which receives the exhaust from the engine, a relief-valve that opens when the pressure on the header exceeds a certain amount and closes when it falls, and a valve for governing the admission of motive fluid to the turbine.

4. A high-pressure reciprocating engine, a low-pressure turbine receiving the exhaust from the engine, in combination with a heat-storage device receiving the exhaust from the engine and discharging it into the turbine and comprising a liquid-containing tank and a means for discharging the exhaust from the engine into the liquid in the tank.

5. In combination, a high-pressure reciprocating engine, a header receiving the exhaust from the engine, a heat-storage device receiving the exhaust from the engine after it passes through the header and comprising a liquid-containing tank and a means for discharging the engine-exhaust into the liquid therein, and a low-pressure turbine arranged to receive the exhaust from the engine after it passes through the header and storage device.

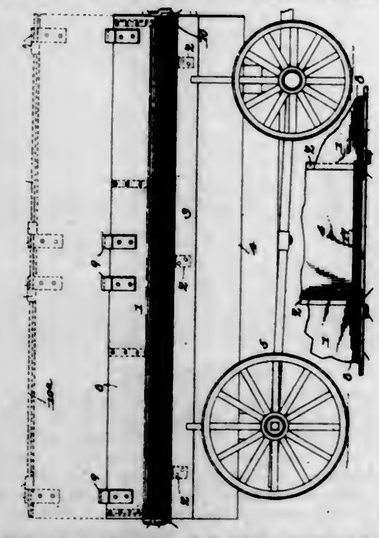
6. A high-pressure reciprocating engine and a low-pressure turbine receiving the exhaust therefrom, in combination with a heat-storage device through which the exhaust passes that comprises a liquid-containing tank and a device that discharges the exhaust in the form of small jets or streams into and through the liquid in the tank.

7. In combination, a high-pressure reciprocating engine, a header connected thereto for receiving the exhaust, a plurality of heat-storage devices connected to the header and receiving the exhaust therefrom, and one or more low-pressure turbines arranged to receive the fluid discharged by the heat-storage devices.

8. In combination, a high-pressure reciprocating engine, a header connected thereto for receiving the exhaust, a plurality of heat-storage devices connected to the header and receiving the exhaust therefrom, a conduit for equalizing the pressures of the fluid discharged by the heat-storage devices, and one or more low-pressure turbines arranged to be driven by the fluid from said devices.

9. In combination, a high-pressure reciprocating engine, a heat-storage device arranged to receive the exhaust therefrom, a low-pressure turbine arranged to receive the engine-exhaust after it passes through said device, and a conduit for conveying high-pressure fluid to the turbine for emergency conditions.

822,262. **COMBINED GRAIN-TANK AND SHELTER-TOP.** SAMUEL ENGH, Holcombe, Wis. Filed Mar. 6, 1905. Serial No. 248,688.



Claim.—1. A grain-tank and shelter-top attachment for wagons, comprising two half-boxes having permanent end members, and means for connecting the free bottom edges of said half-boxes hingedly with the upper edges of the sides of an ordinary wagon-box.

2. A device of the class described including a pair of grain-tank members hingedly connected with the upper edges of the sides of a wagon-box, said tank members being provided with permanent end pieces and constituting, when extended, side members of a grain-tank; and means for supporting said side members in extended position.

3. The combination with a wagon-box, of side members hingedly connected with the sides of said wagon-box and cooperating to form a shelter-top; said side members being provided at their free edges with hooks adapted to overlap one another; and a locking-bar adapted to engage said hooks and to cover the joint between the free edges of the side members.

4. A device of the class described including two side members hingedly connected with the upper edges of the sides of a wagon-box, each of said side members comprising end pieces and a side piece combining to form a box-like structure; and means for securing said side members when folded and for supporting them when extended to form a grain-tank.

5. A device of the class described including a pair of semibox-like members having hooks at the free edges and upon the ends thereof, and locking-bars adapted for alternate engagement with said hooks.

6. A device of the class described including a pair of hingedly-supported semibox-like members having overlapping hooks upon their free edges and oppositely-faced hooks upon their ends, in combination with a locking-bar adapted for alternate engagement with said overlapping and said oppositely-faced hooks.

7. A device of the class described including a pair of semibox-like grain-tank members having hinges connected therewith and provided at the ends thereof with doors interiorly overlapping the end pieces of the box-like members.

8. A pair of semibox-like grain-tank members having hinges connected therewith and provided at the ends thereof with doors having peep-holes and shutters for the same.

9. A pair of semibox-like grain-tank members hingedly supported upon the upper edges of the sides of a wagon-box and provided at their front ends with doors and with latching means for connecting the free ends of the doors when the grain-tank members are elevated to an upright position.

10. A pair of semibox-like grain-tank members hingedly supported upon the upper edges of the sides of a wagon-box and having door members at the ends thereof, means for supporting said members in extended position, and an end-gate adapted for engagement with the ends of the grain-tank members and with the lower edges of the doors connected therewith.

11. A pair of semibox-like grain-tank members hingedly supported upon the upper edges of the sides of a wagon-box, said tank members having permanent end pieces, means for supporting said members in extended position, and an end-gate engaging the ends of said grain-tank members.

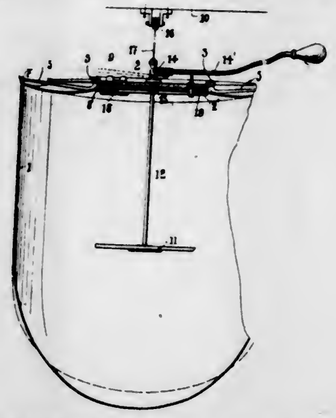
12. A pair of semibox-like grain-tank members hingedly supported upon the upper edges of the sides of a wagon-box, means for supporting said members in extended position said means including a cross-bar engaging oppositely-faced hooks upon the ends of the grain-tank members, doors hingedly connected with said ends, and means for engaging and retaining said doors in position.

13. A pair of semibox-like grain-tank members hingedly supported upon the upper edges of the sides of a wagon-box and provided at the ends thereof with doors interiorly overlapping and hingedly connected with the ends of the grain-tank members, means for supporting said grain-tank members in extended position, and an end-gate slidably engaging the ends of the grain-tank members and the doors connected therewith.

822,263. **FLASH-LIGHT APPARATUS.** JULIUS FIEDLER and FERDINAND HERDLIČKA-CZESZÁR, Vienna, Austria-Hungary. Filed Nov. 22, 1905. Serial No. 288,852.

Claim.—1. The herein-described flash-light apparatus, comprising a bag adapted to surround the light-producing devices and having a mouth or opening at its upper end, a foldable frame connected with the upper end of the bag and surrounding the mouth thereof, a plate adapted to be secured in said frame to cover the mouth of the bag, and means for suspending the bag from a suitable support.

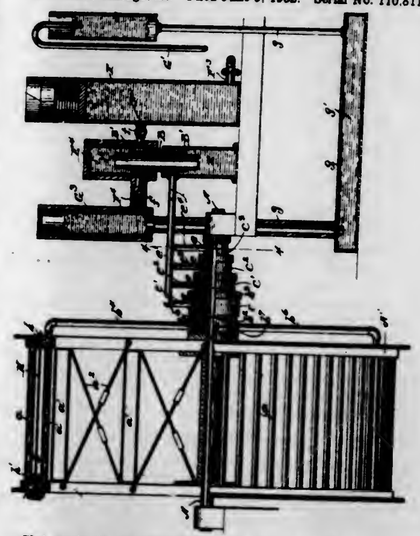
2. The herein-described flash-light apparatus, comprising a bag-like receptacle adapted to contain the light-producing devices and having a mouth or opening at its upper end, a frame having an annular member connected with the bag and surrounding the mouth thereof, a series of arms pivotally connected with said annular member and extending freely through guide devices on the bag, and a plate adapted to be connected to said frame and to close the mouth of the bag.



3. The herein-described flash-light apparatus, comprising a bag having a foldable frame secured about the mouth or opening at its upper end, means adapted to be detachably connected with said frame to close the mouth of the bag, and means for suspending the flash-producing devices within the bag.

4. The herein-described flash-light apparatus, comprising a bag adapted to contain the light-producing devices, a foldable frame having a member surrounding the mouth of the bag and provided with an inwardly-extending flange, and a cover-plate adapted to be seated on said flange and detachably connected to the frame to close the mouth of the bag.

822,264. **APPARATUS FOR GENERATING POWER.** JOHN FLINDALL, Chicago, Ill. Filed June 9, 1902. Serial No. 110,811.



Claim.—1. In an apparatus of the class described, a metallic wheel having compartments and mounted on a horizontal shaft journaled to support the wheel in rotation, means having movable relation with the rim of the wheel for expanding and contracting the compartments, a connection between said means and the wheel adapted to permit movement of said means relatively to the wheel through expansion and contraction of said connection under varying temperatures applied to the wheel above and below the shaft, and a

tank of water arranged below the shaft so as to submerge the lower part of the wheel, combined with receptacles with which said compartments communicate, whereby a liquid may be alternately drawn from and forced back into said receptacles by the expansion and contraction of said compartments, and means for utilizing the movements of the liquid.

2. In an apparatus for producing rotary motion, a wheel mounted on a rotatable shaft and provided at its rim with a plurality of fluid-tight compartments, an open tank of water, a rotatable mounting for the wheel above the tank a plurality of stationary fluid-tight compartments each provided with a piston and a tubular system severally connecting the wheel-compartments with the stationary compartments on the same side of the pistons as specified.

3. In an apparatus of the class described a wheel mounted to rotate in a vertical plane and provided at its rim with a plurality of fluid-tight compartments, a cyliuder and piston in connection with each of said compartments with a metallic rod having conuection with the wheel at one end and with the piston at the other end, an open tank of water arranged to submerge the lower portion of the wheel, a plurality of stationary compartments each provided with a piston and a tubular system severally connecting the wheel-compartments with the stationary compartments as specified.

4. In an apparatus of the class described a wheel adapted to revolve in a vertical plane and provided with a plurality of fluid-tight compartments with means for expanding and contracting the same, an open tank of water arranged to submerge the lower portion of the wheel, a plurality of working cylinders each having a piston, a tubular system severally connecting the compartments of the wheel with the working cylinders at one end, and a tubular system containing liquid under confinement and having valved connection with the working cylinder at the other end as specified.

5. In an apparatus of the class described, a working cylinder provided with a piston in combination with a motor, a tubular system comprising an expansible and contractible reservoir-chamber, an exhaust-chamber, and a return-chamber in communication and having valvular connection with the working cylinder, and a volatile liquid contained within said tubular system.

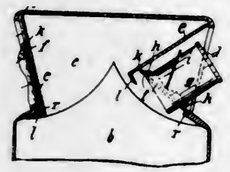
6. In an apparatus of the class described, working cylinders each provided with a piston in combination with a motor, a wheel mounted on a horizontal shaft and provided with expansible, and contractible, fluid-tight compartments, means having movable relation with the compartments and connection with the wheel for causing movement of said means by varying temperatures applied to the wheel above and below the shaft, a tubular system connecting the wheel-compartments with one end of the working cylinders, a tubular system comprising a reservoir-chamber, an exhaust-chamber, and return-chamber in communication and having valvular connection with the other end of the working cylinders, and means arranged in connection with the wheel below the shaft for varying the temperature relatively to the temperature of the wheel above the shaft as specified.

7. In an apparatus of the class described working cylinders each provided with a piston in combination with a motor, a wheel mounted on a horizontal shaft and provided with expansible and contractible, fluid-tight compartments, means having movable relation with the compartments and connection with the wheel for causing movement of said means by varying temperatures applied to the wheel above and below the shaft, a tubular system connecting the wheel-compartments with one end of the working cylinders, a tubular system comprising a reservoir-chamber, an exhaust-chamber, and a return-chamber in communication and having valvular connection with the other end of the working cylinders, a volatile liquid within said last-named tubular system, and means arranged in connection with the wheel below the shaft for varying the temperature relatively to the temperature of the wheel above the shaft as specified.

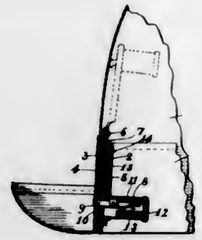
822,265. **DUST-CART.** HEINRICH FREHE, Bochum-Hamme, Germany. Filed Mar. 28, 1905. Serial No. 252,580.

Claim.—1. Means for preventing the escape of dust during the emptying of dust-bins into dust-carts, consisting of the combination of the cart-roof, vertical walls c dividing the upper interior space under the cart-roof into compartments, flaps *e* hinged to the roof and closing the open ends of said compartments and adapted to fit and swing between said walls c, and frames *f* of approximately the same width as the flaps e hinged at the lower edge of the open ends of said compartments, said frames having openings *g* and raised rims *h* surrounding said openings, said rims being adapted to receive the dust-bins during emptying, substantially as described.

2. Means for preventing the escape of dust during the emptying of dust-bins into dust-carts, consisting of the combination of the cart-roof, vertical walls c dividing the upper interior space under the cart-roof into compartments, flaps *e* hinged to the roof and closing the open ends of said compartments and adapted to fit and swing between said walls c, frames *f* of approximately the same width as the flaps e hinged at the lower edge of the open ends of said compartments, said frames having openings *g* and raised rims *h* surrounding said openings, said rims being adapted to receive the dust-bins during emptying, the dust-bins having hinged lids provided with slides and said flaps having guides in which said slides are adapted to engage when the bins are placed in the rims, whereby when the bins are emptied the bin-lids are opened and when the bins are withdrawn the flaps are closed, substantially as described.



822,266. **GUARD AND TAG-HOLDER FOR HATS.** BURTON A. GARLINGHOUSE, Jackson, Mich. Filed Oct. 10, 1905. Serial No. 282,207.



Claim.—1. In combination with a hat, an inwardly-projecting member, means for adjusting the same either in the upper part of the hat or in the lower part of the same at pleasure, and a key-operated lock to secure said member in the lower position.

2. In combination with a hat, a tag-holder pivoted at one end to a support fixed in the hat, and a lock attached to the movable end of the said holder, and projecting inward therefrom to present an obstruction when in lowered position.

3. In combination with a hat, a plate secured within the hat, a second plate movably attached to the first-named plate, and a lock carried by the second plate and adapted to hold the plates in fixed relation and also adapted to project inward and form an obstruction when so locked.

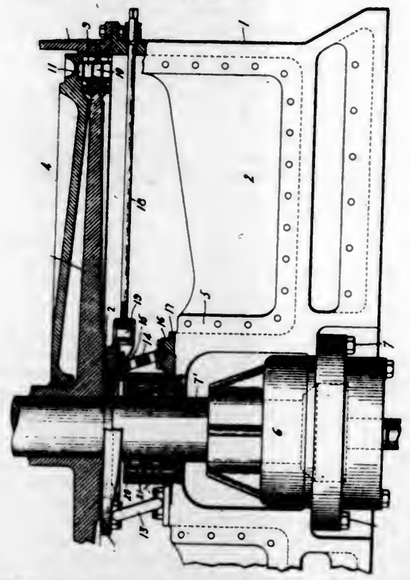
4. The combination of a plate having an opening and adapted to be secured within a hat, a second plate pivoted at one end to the first plate, and a lock attached to the pivoted plate and having a key-operated member engaging the edge of the plate surrounding said opening to hold the plates in fixed relation.

5. The combination of two plates pivotally connected at one end, one plate being adapted to be secured within a hat, and the other plate adapted to hold a tag, and a lock carried by the tag-holding plate, and adapted to connect the plates near their ends opposite the pivot.

6. The combination of two plates pivotally connected at one end, one of said plates being adapted to be secured within a hat and having an opening near the other end, the other plate having folded edges forming grooves to receive a tag, and a lock mounted on the said plate and projecting therefrom, said lock also having a key-released hook to enter said opening and engage the edge of the plate.

7. In combination with a hat, a plate having a laterally-enlarged lower end and an opening and secured between the sweat-band and body of the hat, a second plate having an offset and folded edges and also pivoted to the upper end of the first-named plate, and a lock mounted on the movable end of said second plate and having a key-released hook adapted to enter openings in the sweat-band and the first-named plate and engage the edge of the plate surrounding the opening in said first plate.

822,267. **TURBINE.** DAVID C. GARROWAY, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Oct. 7, 1905. Serial No. 281,779.



Claim.—1. A turbine comprising a casing, a revolving element and a step-bearing, in combination with a ring whose axis is normally eccentric to that of the revolving element, for supporting said element when the step-bearing is removed, and means controllable from a point outside of the casing for moving the ring toward a concentric position and into engagement with the revolving element.

2. A turbine comprising a casing, a revolving element and a step-bearing for supporting the revolving element, in combination with a ring for supporting the revolving element when the step-bearing is removed, toggle-links for supporting the ring, and a means controllable from the outside of the casing for moving the ring horizontally and vertically to engage the revolving element.

3. A turbine comprising a casing, a revolving element, and a step-bearing for supporting the revolving element, in combination with a means for supporting the revolving element when the step-bearing is removed, comprising a ring eccentrically located with respect to the shaft, toggle-links for supporting the ring, and a means for straightening the toggle-links and at the same time moving the ring toward a concentric position with respect to the shaft-axis.

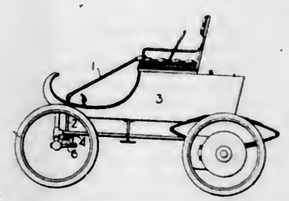
4. A turbine comprising a casing, a rotating element, a shaft therefor, and a step-bearing for supporting the shaft, in combination with a supporting-ring normally occupying a position eccentric with respect to the shaft, toggle-links for supporting the ring that are located on opposite sides of the shaft, and a rod extending through the casing by means of which the toggle-links can be straightened.

5. A turbine comprising a casing having a base with an inset formed thereon, a vertical shaft for supporting the revolving element and a step-bearing therefor which is secured to the base, in combination with a supporting device adapted to be moved into engagement with the revolving element, toggle-links for supporting the device, which in turn are supported by the inset, and a means extending to the outside of the casing for straightening the toggle-links.

6. A turbine comprising a casing, a revolving element, and a step-bearing for supporting the revolving element, in combination with a means for supporting the revolving element when the step-bearing is removed, comprising a device situated below the revolving element and toggle-links situated below said device and supported by the casing, and means for moving the said device into engagement with the revolving element by moving the toggle-links.

822,268. **STEERING-CHECK FOR AUTOMOBILES.** HENRY GEISENHÖNER and DAVID MILLER, Schenectady, N. Y., assignors to General Electric Company, a Corporation of New York. Filed Oct. 19, 1903. Serial No. 177,547.

Claim.—1. A steering-check for automobiles, comprising a rotatable arm, a stationary shell, radially-disposed dogs pivotally supported by said arm and engaging with said shell, and a shaft having a wiping engagement with the dogs for unlocking them and rotating said arm.



2. A steering-check for automobiles, comprising a rotatable arm, a stationary shell, dogs pivotally supported by said arm and engaging with said shell, and a shaft having cam-surfaces to unlock said dogs.

3. A steering-check for automobiles, comprising a rotatable arm, a stationary shell, dogs pivotally supported by said arm, and engaging with said shell, and a shaft having cam-surfaces to unlock said dogs and a lost-motion connection with said arm.

4. The combination with a cup-shaped cylindrical shell, of a shaft centrally journaled therein, and provided with flattened faces, a disk and a top plate rotatable on said shaft, posts connecting said disk and plate, and dogs pivoted on said posts and engaging with the inner surface of said shell and also with the faces on said shaft.

5. The combination with a cylindrical shell, of a plate rotatable thereon, two sets of dogs pivoted on said plate and serving respectively to prevent movement of said plate in either direction, and a cam-shaft for unlocking either set of dogs according to the direction in which it is turned.

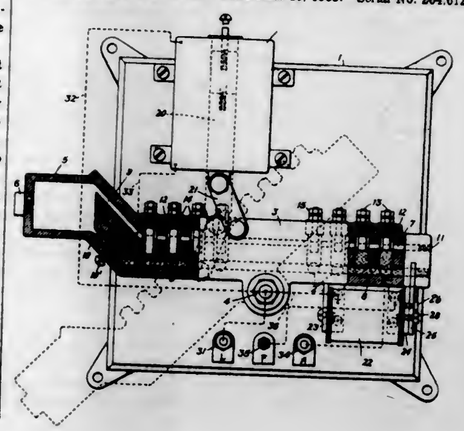
6. The combination with a cylindrical shell, of a shaft concentric therewith and having two polygonal portions, a plate rotatable concentric with said shaft, and two sets of dogs pivotally supported on said plate and engaging with the inner surface of said shell and with the polygonal portions of said shaft.

7. The combination with a cylindrical shell, of a shaft concentric therewith and having two polygonal portions, a plate rotatable concentric with the shaft, and two sets of spring-actuated dogs pivotally supported on said plate and engaging with the polygonal portions of the shaft and the inner surface of said shell, said sets respectively resisting movement of the plate in opposite directions.

8. In combination, a rotatable arm, a surrounding shell, dogs pivotally supported by the arm and engaging with said shell, and a shaft having cam-surfaces to unlock said dogs.

9. In combination, a rotatable arm, a stationary shell, dogs pivotally supported by said arm and engaging with said shell, and a shaft having cam-surfaces to unlock said dogs and a lost-motion connection with said arm.

822,269. **MOTOR-STARTING RHEOSTAT.** HENRY GEISENHÖNER, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed June 10, 1905. Serial No. 264,612.



Claim.—1. A time-switch comprising a reservoir containing a conducting fluid, a plurality of contacts, means for delivering said fluid from said reservoir and causing it to successively engage said contacts, means for returning said fluid to said reservoir, and means for causing said circuit to be broken outside of said fluid simultaneously with the return of the said fluid to said reservoir.

2. A time-switch comprising a reservoir containing a conducting fluid, a plurality of contacts, means for delivering said fluid from said reservoir and causing it to successively engage said contacts, pockets for retarding the passage to the contacts, means for returning said fluid to said reservoir, and means for causing said circuit to be broken; outside of said fluid simultaneously with the return of the said fluid to said reservoir.

3. A time-switch comprising a series of contact-studs, a movable arm containing mercury and provided with a series of contacts adapted to engage said studs, and means whereby the mercury is caused to close an electric circuit between said contacts.

4. In a starting-rheostat, the combination with a series of resistances and contact-studs therefor, of means for cutting out said resistances comprising a pivoted mercury-containing arm biased from the horizontal and provided with contacts adapted to engage said studs, and means whereby said mercury is caused to successively engage said contacts when the arm is moved to a substantially horizontal position.

5. In a motor-starting rheostat, the combination with a series of contact-studs, of a pivoted mercury-containing arm biased from the horizontal and having a series of contacts mounted thereon for engagement with said studs, said contacts having terminals within said arm, and means whereby the mercury is caused to engage said terminals to cut out resistance when the arm is moved to a substantially horizontal position.

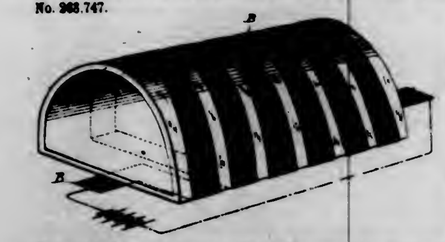
6. In a motor-starting rheostat, the combination with a series of contact-studs, of a pivoted arm biased from the horizontal, having a chambered portion containing mercury, and a passage therethrough communicating with said chamber, said arm being provided with contacts having an external portion for engaging said studs and an internal portion for engaging the mercury in said passage when the arm is moved to a substantially horizontal position.

7. An automatic starting-rheostat provided with contact-studs and comprising a pivoted controlling-arm containing mercury and having a bias from the horizontal, contacts on said arm for electrically connecting said studs and said mercury when the arm is moved to a substantially horizontal position, and electromagnetic means for moving said arm.

8. An automatic starting-rheostat provided with contact-studs comprising a pivoted controlling-arm having contacts mounted thereon for engaging said studs but biased from engagement therewith, means in connection with said arm for successively short-circuiting said contacts to cut out resistance after they have been moved into engagement with said studs, electromagnetic means for moving said arm into said engagement, means for retaining it in that position, and electromagnetic means responsive to the full running-current for short-circuiting said retaining means and allowing said arm to assume its normal position.

9. A time-switch comprising a reservoir containing a conducting fluid, a plurality of contacts, means for delivering said fluid from said reservoir and causing it to successively engage said contact, means for returning said fluid to said reservoir, and means for causing the said circuit to be broken outside of said fluid.

822,270. **ELECTRICALLY-HEATED HOLLOW BODY.** ERNST HAAGN, Hanau-on-the-Main, Germany, assignor to The Firm of W. C. Heraeus, Frankfort-on-the-Main, Germany. Filed July 7, 1905. Serial No. 268,747.



Claim.—1. The combination with a hollow body (muffle, crucible, tube and the like) of non-conducting material, of a conductor consisting of a strip of wire-netting which is applied upon said hollow body and cemented thereon, and means for passing a heating electrical current through said conductor.

2. The combination with a hollow body (muffle, crucible, tube and the like) of non-conducting material, of a conductor consisting of a strip of wire-netting which is applied upon said hollow body and cemented thereon with a coating of melting mass, and means for passing a heating electrical current through said conductor.

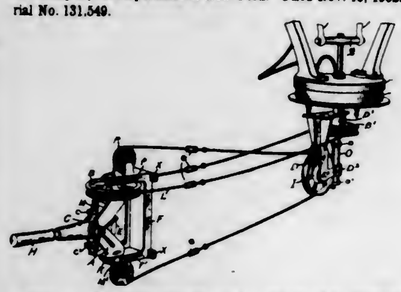
3. The combination with a hollow body (muffle, crucible, tube and the like) of non-conducting material, of a conductor consisting of a strip of wire-netting which is applied upon said hollow body and cemented thereon with a coating of sintering mass, and means for passing a heating electrical current through said conductor.

4. The combination with a hollow body (muffle, crucible, tube and the like) of non-conducting material, of a strip of wire-netting comprising conducting-wires in the longitudinal direction and regulating-wires in the transverse direction, this strip of wire-netting being spirally wound around said hollow body and cemented thereon, and means for passing a heating electrical current through the conducting-wires in said strip of wire-netting.

5. The combination with a hollow body (muffle, crucible, tube and the like) of non-conducting material, of a strip of wire-netting comprising conducting-wires in the longitudinal direction and regulating-wires in the transverse direction, this strip of wire-netting being spirally wound around said hollow body and cemented thereon with a coating of melting mass, and means for passing a heating electrical current through the conducting-wires in said strip of wire-netting.

6. The combination with a hollow body (muffle, crucible, tube and the like) of non-conducting material, of a strip of wire-netting comprising conducting-wires in the longitudinal direction and regulating-wires in the transverse direction, this strip of wire-netting being spirally wound around said hollow body and cemented thereon with a coating of sintering mass, and means for passing a heating electrical current through the conducting-wires in said strip of wire-netting.

822,271. **CONTROL SYSTEM FOR SEARCH-LIGHT PROJECTORS.** JOHN L. HALL, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Nov. 15, 1902. Serial No. 131,549.



Claim.—1. The combination with a search-light projector, of means for controlling the same comprising a main frame, a bearing-frame pivoted therein, a sheave pivoted concentrically with said frame and movable therewith, a handle pivoted to said bearing-frame at right angles to the axis of said frame, a sector mounted concentric with said handle and movable therewith, and flexible connections between said sheave and sector and the projector.

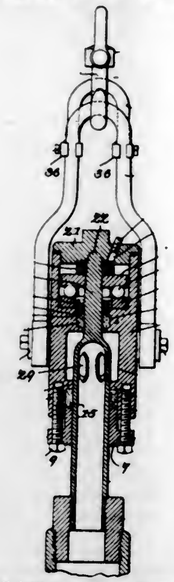
2. The combination with a search-light projector, of means for controlling the same comprising a main frame, an operating-handle pivoted therein for movement in two planes at an angle with each other, a sheave mounted concentric with each axis of said handle and movable therewith, correspondingly-arranged sheaves on said projector, and flexible connections between the pairs of sheaves.

3. Controlling-gear for search-light projectors, comprising a handle having a curved end movably mounted on a frame pivoted on hollow pivots in a stationary frame, and a flexible connection clamped to said handle and passing through said hollow pivots, the ends of said flexible connection being secured to a reciprocating rod connected to the projector at a point eccentric to its horizontal axis.

4. A controlling device for search-light projectors, comprising a handle having a curved end movably mounted on a frame pivoted on hollow pivots in a stationary frame, said movable frame being so shaped that the axis on which it turns is tangent to the curved end.

5. In combination with a search-light projector, a handle having a curved end movably mounted on a movable frame pivoted on hollow pivots and so shaped that the axis on which the frame turns is tangent to the curved head of the handle, means operated by the handle for turning a hollow shaft secured to the projector turn-table, and a belt clamped to the handle passing over a portion of the curved head and through the hollow pivots and having its ends attached to a rod vertically movable within the hollow shaft and linked to the projector at a point eccentric to its horizontal axis.

822,272. **WELL-DRILLING APPARATUS.** SAMUEL N. HALL, Houston, Tex. Filed Sept. 21, 1905. Serial No. 279,515.



Claim.—1. A well-drill swivel comprising a case having closed ends and provided with a partition dividing the case into an upper compartment and a lower compartment, the lower compartment being provided with a water-inlet, a tube rotatably piercing the bottom of the lower compartment and having that portion of the tube within the lower compartment provided with an opening for communication between said compartment and the tube, the upper portion of the tube piercing the partition and provided with a swivel-bearing within the upper compartment.

2. A well-drill swivel comprising a case having opposite closed ends and provided with a partition dividing the case into an upper compartment and a lower compartment, a tubular member rotatably piercing the bottom of the lower compartment and having that portion which is within the lower compartment provided with an opening for communication between the compartment and the tube, the partition being provided with an opening and a socket concentric with the opening, the tube having an upper portion projecting through the opening and the socket, a gland fitted in the socket, packing between the gland and the back of the socket, and a swivel-bearing for the upper portion of the tube within the upper compartment.

3. A well-drill swivel comprising a case having opposite closed ends and provided with a partition dividing the case into an upper compartment and a lower compartment, the lower compartment being provided with a water-inlet, a tubular member piercing the bottom of the lower compartment and provided with an opening communicating between the lower compartment and the tube, the upper end of the tube being provided with a stem rotatably piercing the partition, a head carried by the stem and located within the upper compartment, and antifriction devices between the head and the partition.

4. A well-drill swivel comprising a case having closed ends and provided with a partition dividing the case into an upper compartment and a lower compartment, the lower compartment being provided with a water-inlet, a tubular element rotatably piercing the bottom of the lower compartment and provided with an opening communicating between the lower compartment and the tube, the top of the tube having a stem rotatably piercing the partition, the top end of the case being provided in its inner side with a seat receiving the top of the stem, a head carried by the stem within the upper compartment, and antifriction devices interposed between the head and the partition.

5. A well-drill swivel comprising a case, a removable closure for the top of the case, a stuffing-box for the lower end of the case, a partition dividing the case into an upper compartment and a lower compartment, the lower compartment being provided with a water-inlet, a rotatable tube extending through the stuffing-box and into the lower compartment, that portion of the tube within the lower compartment having an opening for communication therewith, the partition being provided with an opening and a socket concentric therewith, the upper end of the tube having a stem passing through the opening in the partition and into the upper compartment with its upper extremity bearing against the removable closure, packing within the socket, a gland within the socket, a head carried by the stem and located in the upper compartment, and antifriction devices interposed between the head and the partition.

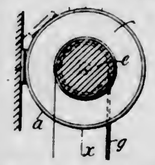
6. A well-drill swivel comprising a case having opposite closed ends and provided with a partition dividing the case into an upper compartment and a lower compartment, the lower compartment having a water-inlet, and a swiveled bearing located within and entirely housed by the upper compartment.

7. A well-drill swivel comprising a case having opposite closed ends and provided with a partition dividing the case into an upper compartment and a lower compartment, the lower compartment having a water-inlet, a rotatable tubular stem piercing the bottom of the lower compartment and the partition and in communication with the lower compartment, and a swiveled bearing for the stem within and completely housed by the upper compartment.

8. A well-drill swivel comprising a case having opposite closed ends and provided with a partition dividing the case into an upper compartment and a lower compartment, a water-inlet for the lower compartment, the upper compartment constituting a lubricant-reservoir and provided with a filling-opening, a rotatable tubular stem piercing the bottom of the lower compartment and the partition, said tubular stem being in communication with the lower compartment, and a swiveled bearing for the stem within and entirely housed by the upper compartment.

9. A well-drill swivel comprising a case having a lower closed end, a removable closure for the upper end of the case, a partition dividing the case into an upper compartment and a lower compartment, the lower compartment having a water-inlet, a swiveled bearing within and entirely housed by the upper compartment, and a tubular stem piercing the bottom of the lower compartment and the partition and hung upon the bearing.

822,273. **WINDOW-BLIND FITTING.** ERNEST C. HARRIS, Beckenham, England. Filed Mar. 21, 1905. Serial No. 251,354.

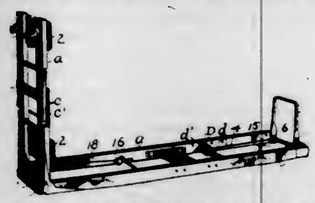


Claim.—In a device of the character described, a suitable cylindrical casing having a cord-opening in the edge thereof and extending more than half-way thereabout and one end wall; said end wall being provided with a centrally-disposed aperture; means for suspending the casing and in combination therewith, a shade-roller having an extension passing into the casing, a pin projecting from the extension and entering the aperture of the end of the casing, a flange at the junction of the roller and extension; a flange at the junction of the extension and pin, and a flexible connection wound on the extension and having its opposite end depending through the cord-opening of the casing, substantially as described.

822,274. **PIANO-TRUCK.** CHARLES F. HAWK, Cleveland, Ohio. Filed June 9, 1905. Serial No. 264,503.

Claim.—1. The truck-frame and suspended rollers thereon, and means for fixing the position of said rollers in respect to said frame comprising connecting-links therefor, rotatable heads to which the

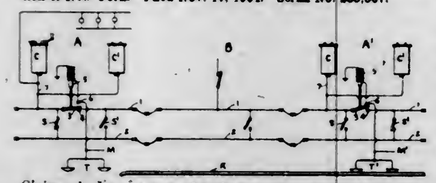
links are attached, a shaft on which said heads are mounted, and a bail to rotate said heads having slots in its ends engaged on said shaft.



2. In trucks for pianos, a main frame having a right-angled frame rigid with one end thereof and a roller in the angle of said parts exposed to both said frames, in combination with adjustable rollers between the ends of said main frame, a bail pivotally supported in said main frame, rotatable heads adapted to be engaged by said bail, and links connecting said rotatable heads with said adjustable rollers to raise and lower the same.

3. In piano-trucks, a truck-frame and rollers suspended therein, in combination with a cross-shaft at one end of said frame and a bail and rotatable heads on said shaft, a spring-pressed dog in each of said heads and notches in the truck-frame with which said dog is adapted to engage, said bail constructed to engage and operate said dogs.

822,275. SYSTEM OF MOTOR CONTROL. GEORGE H. HILL, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Nov. 17, 1904. Serial No. 233,067.



Claim.—1. In a system of train control, a motor-circuit upon each of a plurality of cars, means for supplying each of said motor-circuits with current from a local collecting device, a control-circuit, and means for supplying said control-circuit with current from any of said collecting devices and for isolating it from the remaining collecting devices.

2. In a system of train control, a motor-circuit on each of a plurality of cars, means for supplying each of said motor-circuits with current from a local collecting device, a control-circuit, and means for supplying said control-circuit with current from the collecting device carried by the car upon which the control-circuit is mounted or from the collecting device upon another car and for isolating the control-circuit from the local current-collecting device when current is taken from another car.

3. In a system of train control, a motor-circuit upon each of a plurality of cars, means for supplying each of said motor-circuits with current from a local collecting device, control-circuits upon a plurality of cars, and means for supplying any one of said control-circuits with current from the collecting device local to the car upon which the controller is mounted or from the collecting device upon another car and for isolating the control-circuit from the local collecting devices when current is being supplied from the collecting device of another car.

4. In a system of train control, a motor-circuit on each of a plurality of cars, means for supplying each of said motor-circuits with current from a local collecting device, a control-circuit, a train bus-line, and means for supplying said control-circuit with current from the collecting device local to the car upon which the control-circuit is situated or from the bus-line and for disconnecting the local collecting device from the control-circuit when current is being supplied from the bus-line.

5. In a system of train control, a motor-circuit on each of a plurality of cars, means for supplying each of said motor-circuits with current from a local collecting device, a control-circuit adapted to be connected to said collecting devices, and means for disconnecting said control-circuit from any collecting device which fails to receive current from the source of supply.

6. In a system of train control, a train bus-line, and means for automatically connecting it to the current-collecting devices of a plurality of cars of a train and for disconnecting it from any of said collecting devices which fails to receive current from the source of supply.

7. In a system of train control, a train bus-line, and means for automatically connecting it to the current-collecting devices of a plurailty of cars and automatically disconnecting it from any of said devices which fails to receive current from the source of supply.

8. In a system of train control, a train bus-line, means for automatically connecting the bus-line to the current-collecting devices of a plurality of cars and for automatically disconnecting it from any of said collecting devices which fails to receive current from the source of supply, and a controller operatively associated with said bus-line.

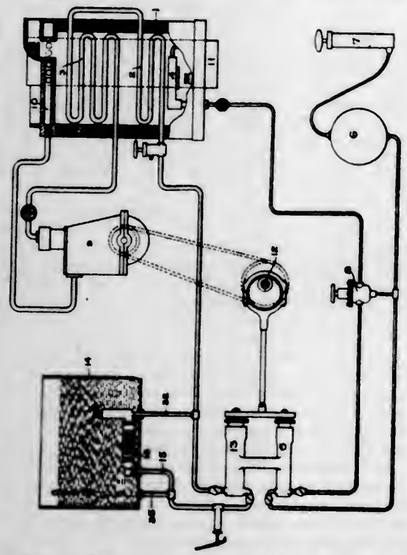
9. In a system of train control, a train bus-line, local motor connections to the current-collecting devices on a plurality of cars, and eans for connecting the bus-line to said current-collecting devices and for cutting out any of said collecting devices and the corresponding motor connections upon failure of the collecting devices to receive current from the source of supply.

10. In a system of train control, a train bus-line, local motor connections to the current-collecting devices on a plurality of cars, and means for automatically connecting said bus-line to said train-collecting device and for cutting out any of said collecting devices and the corresponding motor connections upon failure of the collecting devices to receive current from the source of supply.

11. In a system of train control, a train bus-line, local motor connections to the current-collecting devices on a plurality of cars, and means for connecting the bus-line to said current-collecting devices and for automatically cutting out any of said motor connections when the corresponding current-collecting device fails to receive current from the source of supply.

12. In a system of train control, a train bus-line, a controller operatively associated with said bus-line, local motor connections to the current-collecting devices on a plurality of cars, and means for connecting the bus-line to said current-collecting devices and for cutting out any of said motor connections upon failure of the corresponding collecting device to receive current from the source of supply.

822,276. PRESSURE-REGULATED SUPPLY-VALVE. ERNEST D. HODGDON, Lynn, Mass., assignor, by mesne assignments, to General Electric Company, a Corporation of New York. Filed Nov. 29, 1902. Serial No. 133,199.



Claim.—1. The combination with a feed-water pump having a suction-valve through which the water passes, of means responsive to the abnormal pressure of the water for closing the suction-valve and holding it closed so long as said pressure exists.

2. The combination with a feed-pump, of a valve on the suction side thereof through which all the water passes, and means for automatically closing said valve when the pressure of the water in the delivery-pipe passes a predetermined maximum.

3. The combination with a feed-pump, of a valve controlling the suction-pipe thereof, a spring holding said valve normally open, and a movable abutment exposed to the pressure on the delivery side of the pump and connected with said valve.

4. The combination with a feed-pump, of a casing connected with the suction-pipe thereof, said casing containing a chamber and ports opening thereinto, a ball-valve in said chamber, a spring acting to hold said ball-valve off its seat, and a piston connected with said valve and exposed to the pressure in the delivery-pipe of said pump.

5. In combination, a flash-boiler, a pump for supplying water thereto, a suction-valve for the pump, a regulator for holding the suction-valve closed when the boiler-pressure exceeds normal, a relief-valve, and a conduit which supplies fluid under pressure to the regulator and relief-valve.

6. The combination with a pump, of separate suction-valves through which water is drawn by the pump, one of said valves being controlled by the suction of the pump and the other by the pressure of the water delivered thereby.

7. The combination with a pump, of separate suction-valves therefor, one of which is normally held open and the other operates automatically under the action of the pump, and means for closing the normally open valve when the pressure of the water delivered by the pump reaches a certain point.

8. The combination with a pump and its suction and delivery valves, of a feed-regulating valve through which water passes to the pump, and means responsive to the pressure of the water on the delivery side of the pump which operates the regulating-valve to throttle the water supplied to the pump.

9. In a water-supply system, the combination of a supply-pipe, a pump therein, and a normally open suction-valve through which the supply of water passes to the pump and adapted to be controlled by the pump according to the pressure of the water delivered thereby.

10. In a water-supply system, the combination of a supply-pipe, a normally open suction-valve therein, and a continuously-operated pump receiving its supply through the suction-valve and adapted to close said valve at a predetermined pressure of the water which it delivers.

11. In a water-supply system, the combination of a supply-pipe, a normally open suction-valve therein, a continuously-operated pump adapted to receive water through the suction-valve, and means acted upon by the water delivered by the pump which is sensitive to pressure variation of the water for controlling the suction-valve.

12. In combination, a flash-boiler, a source of water-supply, a supply-pipe connecting both, a pump therein, a suction-valve between the pump and source of water-supply, and a pressure device acted upon by the pump at a predetermined pressure, said device comprising means acting initially relatively to the influence of the water-pressure for closing the suction-valve and means acting finally for relieving water from the supply-pipe.

13. In combination, a water-tank, a pump, a suction-pipe connecting the two, a feed-regulator in the tank at the inlet end of the pipe for regulating the water fed therethrough, and means connecting the regulator with the delivery side of the pump which permits the water-pressure to control the former.

14. In combination, a water-tank, a pump, a suction-pipe connecting the two, a feed-regulator which is located in the tank at the inlet end of the pipe, and which normally permits water to pass to the pump, and a connection which subjects the regulator to the water-pressure on the delivery side of the pump for operating the regulator.

15. In combination, a water-tank, a receptacle, means for supplying water from the tank to the receptacle, a regulator which regulates the supply of water to said means, and a connection extending from a point between the said receptacle and said means to the regulator for subjecting the latter to the water-pressure of the receptacle.

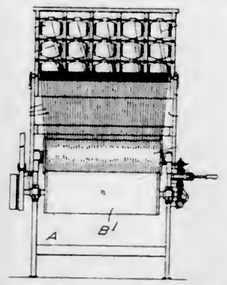
16. In combination, a water-tank, a receptacle, means for supplying water from the tank to the receptacle, a regulator for regulating the supply of water to said means, a connection extending from a point between the receptacle and the tank to the regulator for subjecting the latter to the pressure of the receptacle, and a relief device in said connection, which is located in the tank and permits water to pass through said connection when the regulator reaches the limit of its operation.

822,277. LADY'S-HAT HANGER. CORNELIA B. HOTCHKISS, Watertown, Conn. Filed June 13, 1905. Serial No. 265,028.

Claim.—A device of the kind described comprising a base formed of a wire ring, a wire standard integral with the base-ring, said standard projecting upwardly above the base-ring and diametrically to a point in a vertical plane adjacent the opposite side of the base to which the lower end of the standard is connected, and a supporting-ring carried by the upper end of the standard and concentric with respect to the base-ring.

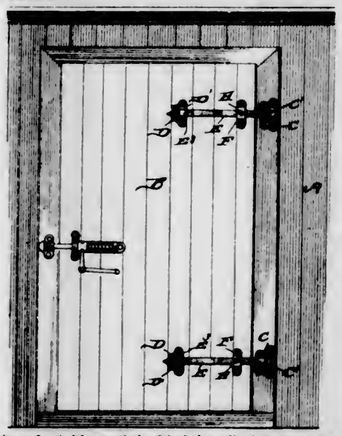


822,278. JACK OR DRESSER SPOOLING MACHINE. MARK INGHAM, North Chelmsford, Mass. Filed July 5, 1904. Serial No. 215,428.



Claim.—In a jack or dresser spooling machine, the combination of a freely-rotatable, grooved roller which supports the threads between the bobbins and the thread-delivery roll; a transverse, eyed traverse-bar; a delivery-roll, said traverse-bar being between said grooved roller and the delivery-roll; a spool and drum; the thread-supporting roller being rigid and having alternating circumferential peripheral ribs and grooves, a groove for a bobbin and for a corresponding eye of the traverse-bar, and the bottoms of the grooves being concave and wider than the diameter of the thread passing over it.

822,279. REFRIGERATOR-DOOR HINGE. RICHARD E. JONES, Glen Olden, Pa., assignor to Jones Cold Store Door Company of Washington County, a Corporation of Maryland. Filed July 2, 1904. Serial No. 215,128.



Claim.—1. A hinge of the kind described comprising castings secured respectively to a door and a door-frame, a bar pivotally connected to the castings, a guide carried by the door through which the bar loosely passes, a spring carried by the guide and adapted to bear on the inner face of the bar, and a screw working through the outer side of the guide and adapted to bear on the outer face of the bar.

2. A hinge comprising the castings adapted to be attached to the door and frame, a box-loop or guide adapted to be attached to the door, a bar passing through the guide and pivotally connected at its

opposite ends to the castings, that portion of the bar resting in the guide being thicker than the other portions, and a bow-shaped spring arranged within the guide and bearing upon the inner face of the bar, and a regulating-screw working through the outer side of the box-loop or guide and adapted to bear against the swelled face of the bar for the purpose set forth.

822,280. MUSIC-ROLL. GEORGE B. KELLY, Boston, Mass., assignor to The Aeolian Company, New York, N. Y., a Corporation of Connecticut. Filed Mar. 9, 1906. Serial No. 305,089.



Claim.—1. In a music-roll, a shaft, a middle shell portion secured on said shaft, an outer shell portion provided with a flanged end and having frictionally-controlled sliding movement longitudinally of said middle portion and said shaft, and adjustable means for limiting the movement of said outer shell portion in both directions.

2. In a music-roll, a shaft, a middle shell portion secured on said shaft, an outer shell portion provided with a flanged end and having frictionally-controlled sliding movement longitudinally of said middle portion and said shaft, and means on said shaft for limiting the movement of said outer shell portion in both directions.

3. In a music-roll, a shaft, a middle shell portion secured on said shaft, an outer shell portion having frictionally-controlled sliding movement longitudinally of said middle portion and said shaft, and a unitary means on said shaft for limiting the movement of said outer shell portion in both directions.

4. In a music-roll, a shaft, a middle shell portion secured on said shaft, an outer shell portion provided with a flanged end and having frictionally-controlled sliding movement longitudinally of said middle portion and said shaft, and a part on said shaft passing through said flanged end and having a stop on each side thereof.

5. In a music-roll, a shaft, a middle shell portion secured on said shaft, an outer shell portion provided with a flanged end and having frictionally-controlled sliding movement longitudinally of said middle portion and said shaft, and a part longitudinally adjustable on said shaft passing through said flanged end and having a stop on each side thereof.

6. In a music-roll, a shaft, a middle shell portion secured on said shaft, an outer shell portion provided with a flanged end and having frictionally-controlled sliding movement longitudinally of said middle portion and said shaft, and a part on said shaft passing through said flanged end and having a stop on each side thereof, one of said stops being longitudinally adjustable with respect to said part.

7. In a music-roll, a shaft, a middle shell portion secured on said shaft, an outer shell portion provided with a flanged end and having frictionally-controlled sliding movement longitudinally of said middle portion and said shaft, and a sleeve longitudinally adjustable on said shaft and passing through said flanged end and forming a stop at one side of said flanged end, and a set-collar forming a stop at the other side of said flanged end and also operative to secure said sleeve on said shaft.

8. A music-roll having a central portion of reduced diameter, a music-sheet-engaging hook on said reduced portion, and a part secured on said reduced portion and having a portion of its periphery curved to approximately correspond with the circumference of the roll for giving the end of the music-sheet the proper curvature.

9. A music-roll having a central portion of reduced diameter, a music-sheet-engaging hook on said reduced portion, and a metal strip secured on said reduced portion and having its free end adjacent said hook, said strip being curved to approximately correspond with the circumference of the roll for giving the end of the music-sheet the proper curvature.

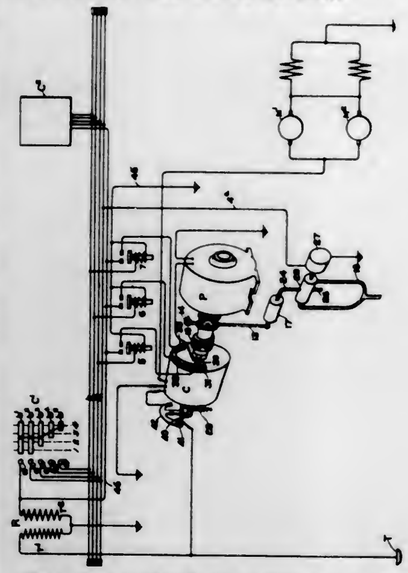
822,281. LEG FOR TABLES. GEORGE KLANER, New Bremen, Ohio. Filed Jan. 11, 1906. Serial No. 295,508.

Claim.—1. A table-leg fastener for knockdown tables, comprising a leg made of three or more vertical strips, the central one of which is provided with a transversely-arranged mortise and a vertical bolt-passage leading thereto, a threaded nut disposed in the mortise, a fastening-bolt projected into the bolt-passage and engaging the nut in the mortise in the leg, and a clamping-nut on the bolt.

2. The combination with a table, of detachable legs, each comprising three or more vertical strips, the central strip of each leg being provided with a transversely-arranged mortise and a vertical bolt-passage leading thereto, a threaded bolt in the passage and engaging the nut in the mortise, cross-pieces laid on the upper ends of the legs and having the fastening-bolts projected through their ends, and clamping-nuts on the bolts to clamp the cross-pieces to the legs.



822,282. SYSTEM OF MOTOR CONTROL. SIGVALD KROHN, Berlin, Germany, assignor to General Electric Company, a Corporation of New York. Filed Jan. 25, 1904. Serial No. 190,622.



Claim.—1. In a system of motor control, a motor or motors, a controller therefor, a pilot-motor for operating said controller, and pneumatically-operated means for connecting said pilot-motor to said controller.

2. In a system of motor control, a motor or motors, a controller therefor, a pilot-motor for operating said controller, pneumatically-operated means for connecting said pilot-motor to said controller, and electromagnetically-actuated means for controlling said pneumatically-operated connecting mechanism.

3. In a system of motor control, a motor or motors, a controller therefor, a pilot-motor for operating said controller, pneumatically-operated means for connecting said pilot-motor to said controller, electromagnetically-actuated means for controlling said pneumatically-operated connecting mechanism, and a master controlling device for said pilot-motor and connecting mechanism.

4. In combination, an induction-regulator, a switch for controlling the supply of current to said induction-regulator, a pilot-motor for operating said regulator and switch, and a master controlling device for said pilot-motor.

5. In combination, an induction-regulator, a switch for controlling the supply of current to said induction-regulator, a pilot-motor for operating said regulator and switch, a master controlling device for said pilot-motor, and means for connecting and disconnecting said pilot-motor and said induction-regulator and switch.

6. In combination, an induction-regulator, a pilot-motor therefor, coupling means operatively connecting said pilot-motor to said regulator, a master controlling device for said pilot-motor and coupling means, and means for returning said induction-regulator to its initial position as soon as the coupling means is released.

7. In a system of train control, a plurality of propelling-motors, controlling means therefor, operating means for said controlling means, fluid-pressure-actuated clutching devices, and means for producing a step-by-step movement of the propelling-motor-contolling means.

8. In a system of train control, a plurality of alternating-current propelling-motors on each car, an induction-regulator on each car adapted to vary the voltage impressed on the motor-circuit, means controllable from a distance for operating said induction-regulator, means controllable from a distance for releasing said induction-regulator from said operating means, means for returning said induction-regulator to a predetermined position when released, and a control system extending through the train and operatively connected to said operating and said releasing means.

9. In a system of train control, a plurality of alternating-current propelling-motors on each car, an induction-regulator on each car adapted to vary the voltage impressed on the motor-circuit, operat-means for said induction-regulator, a valve governing the operation of said induction-regulator, a magnet-winding controlling said valve, and a control system extending through the train and connected to said magnet-winding.

822,283. GIRDLE. GEORGE A. LACKEY, Mount Vernon, N. Y., assignor to The Warren Featherbone Company, Three Oaks, Mich. Filed Apr. 25, 1904. Serial No. 204,761.



Claim.—1. In a girdle, the combination of a narrow band or tape; vertically-arranged end pieces having eyelets therein secured to said band; vertically-arranged cross-pieces secured to said band, said end and cross pieces consisting of resilient stiffening-blades; and a loosely-woven fabric body or covering secured to said band, end and cross pieces, said fabric being cut on the bias, for the purpose specified.

2. In a girdle, the combination of a narrow band or tape; vertically-arranged end pieces secured to said band; vertically-arranged cross-pieces secured to said band, said end and cross pieces consisting of resilient stiffening-blades; and a loosely-woven fabric body or covering secured to said band, end and cross pieces, said fabric being cut on the bias, for the purpose specified.

3. In a girdle, the combination of a narrow band or tape; vertically-arranged end pieces having securing means thereon secured to said band; vertically-arranged cross-pieces secured to said band, said end and cross pieces consisting of resilient stiffening-blades; and a loosely-woven fabric body or covering, said fabric being cut on the bias, for the purpose specified.

4. In a girdle, the combination of a single narrow inelastic band or tape adapted to be arranged at the waist-line of the wearer; means for connecting the ends of said tape; vertically-arranged cross-pieces secured to said tape, said cross-pieces consisting of resilient stiffening-blades; and an elastic body or covering secured to said band and cross-pieces, for the purposes specified.

822,284. CONCRETE-MOLD. ISRAEL L. LANDIS, Chicago, Ill. Filed Dec. 22, 1905. Serial No. 292,903.



Claim.—1. In combination, a series of mold-boards and partitions arranged to form a mold-chamber, levers upon which said mold-boards are adjustable to vary the normal size of the mold, said levers being operable to expand or contract said mold-boards simultaneously and partitions adjustable in conformity with the variations in said normal size.

2. In combination, a series of mold-boards and partitions arranged to form a mold-chamber, levers for lengthening or shortening said chamber, said levers being operable to move all the mold-boards simultaneously.

3. In combination a series of mold-boards, levers and partitions adjustable relatively to each other to form either one or several mold-chambers, said levers being operable to move the sides of said chamber or chambers relatively to each other.

4. The combination of a series of mold-boards, levers and partitions adjustable to form either one or more than one mold-chamber, said levers constituting means for expanding and contracting said chamber or chambers simultaneously.

5. The combination with a series of mold-boards and partitions, of operating-levers for adjusting and simultaneously moving the mold-boards either parallel or angularly relatively to each other to form respectively, a mold-chamber of either uniform or varying width.

6. In combination, a series of mold-boards, levers arranged to support said mold-boards relatively to each other, and partitions arranged to form either one or more mold-chambers, said mold-boards, levers and partitions being adjustable relatively to each other to form a mold chamber, or chambers, with either parallel or relatively inclined sides, and said levers being operable to move said sides to expand or contract said mold chamber, or chambers.

7. In a post-molding machine, a series of mold-boards and partitions arranged to form a mold-chamber, operating-levers arranged to connect said mold-boards and to move them relatively to each other, said partitions being constructed and arranged to lengthen or

shorten when said mold-boards are moved and said levers being adjustable upon said mold-boards to vary the size of the mold-chamber.

8. In a post-molding machine, a series of mold-boards and partitions arranged to form mold-chambers, operating-levers arranged to sustain said mold-boards in their relative relations and to move them relatively to each other, said mold-boards being adjustable relatively to each other along said levers to vary the spacing apart of said mold-boards, and said partitions being expansible or contractile to conform with the variations in the widths of said chambers.

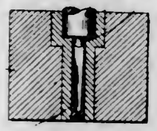
9. The combination with a series of mold-boards and partitions, arranged either as a single mold-chamber or as a plurality thereof, of levers arranged to hold said mold-boards in their normal relative relations, said levers being adjustable upon said mold-boards to vary said relations and also operable to move said mold-boards relatively to each other.

10. The combination with a series of mold-boards and partitions arranged to form a mold-chamber therebetween, of means for expanding and contracting the mold-boards and partitions to vary the size of said mold-chamber, a part of said means being operable to move said mold-boards simultaneously relatively to each other.

11. The combination, with a plurality of mold-boards, of expansible and contractile partitions, and an actuating mechanism which supports said mold-boards relatively to each other and is also adapted to expand and contract both said mold-boards and partitions

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822,285. **METHOD OF MAKING TUBULAR ARTICLES.** GEORGE W. LEE, Binghamton, N. Y., assignor of one-fourth to Fred L. Lee, one-fourth to James G. Clonney, and one-fourth to Leslie E. Hooker, Binghamton, N. Y., and one-fourth to A. M. Clonney, New York, N. Y. Filed Apr. 15, 1905. Serial No. 255,837.

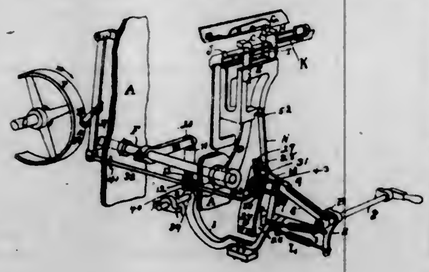


Claim.—1. The method of making a closed-end metal tube which consists in placing a circular blank in a die of equal diameter therewith and having a central cylindrical bore, depressing the central portion of the blank into said bore without perforating the same and finally compressing the annular portion of the blank in the die and obstructing the flow of metal toward the center thereof so as to cause the metal thereof to flow into the walls of the depressed portion.

2. The method of making a metal tube with walls of tapering thickness which consists in peripherally confining a circular blank in a die having a cylindrical bore, depressing the center portion of said blank into said bore by means of a tapering former projecting from a plunger adapted to fit said die and continuing the movement of said plunger so as to compress the annular portion of the blank and force the metal to flow inwardly against said tapering former and then into the walls of the depressed portion.

3. The method of making a metal tube with walls of tapering thickness which consists in forming a tapering depression in the center of a circular blank, compressing the resultant annular portion so as to force the metal thereof to flow toward the center and into the walls of the depressed portion and simultaneously progressively diminishing the thickness of the metal where the annular portion joins the said walls.

822,286. **LINOTYPE-MACHINE.** CHARLES T. LIBBY, Portland, Me. Filed Mar. 12, 1904. Serial No. 197,782.



Claim.—1. In a linotype-machine, an assembling-elevator, mechanism having inherent power adapted to raise said elevator, mechanism having inherent power adapted to return said elevator and efficient to overpower the elevator-raising mechanism and mechanism operated by a moving part of the machine to render the elevator-returning mechanism periodically inoperative.

2. In a linotype-machine, an assembling-elevator, mechanism for automatically raising said elevator, mechanism for automatically returning said elevator and mechanism for automatically and periodically suspending the operation of the elevator-returning mechanism, whereby the periodic reciprocation of the elevator is rendered automatic and continuous.

3. In a linotype-machine, in combination, the assembling-elevator, mechanism possessing potential, static or stored force the release of which serves to raise the elevator, mechanism possessing a similar force to return the elevator and reënergize the elevator-raising mechanism, mechanism actuated by a moving part of the machine to reënergize the elevator-returning mechanism and means for controlling the elevator-raising and elevator-returning mechanisms.

4. In a linotype-machine, in combination, the assembling-elevator, means tending constantly to raise said elevator, the line-delivery carriage adapted to be started automatically by each upward movement of said elevator, means for holding said elevator in its lower position and means for automatically releasing said elevator actuated by the main cam-driving shaft and operated in time therewith, whereby each raising of the elevator starts a revolution of the machine and each revolution of the machine brings into operation mechanism for releasing the elevator, thus making the assembling-elevator reciprocate periodically in proper time with the main machine until manually stopped.

5. In a linotype-machine, in combination, the assembling-elevator, mechanism for reciprocating the same, the main cam-driving shaft, means for holding said elevator-reciprocating mechanism down and means automatically actuated by the main cam-driving shaft to release said elevator-reciprocating mechanism, thus making the assembling-elevator reciprocate periodically in proper time with the main machine without ceasing its periodic movements until stopped by the operator.

6. In a linotype-machine, in combination, the assembling-elevator, mechanism for reciprocating the same, the main cam-driving shaft, means for holding said elevator-reciprocating mechanism down and means automatically actuated by the main cam-driving shaft to release it, another means for holding said elevator-reciprocating mechanism down and means for arbitrarily releasing it and a switch for fastening either of said two holding means out of action, whereby the use of said switch gives the operator the instant option to have the machine stop automatically at the end of each revolution or run constantly until manually stopped.

7. In a linotype-machine, in combination, the assembling-elevator, mechanism possessing potential, static or stored force, the release of which serves to raise the elevator, mechanism for reënergizing the last-named mechanism after each action, and means for controlling both mechanisms.

8. In a linotype-machine, in combination, an assembling-elevator adapted to have a reciprocating motion, means for raising said elevator, means for returning said elevator, means for causing said elevator raising and returning mechanisms to act alternately and means for temporarily stopping their action.

9. In a linotype-machine, in combination, an assembling-elevator, a spring for raising said elevator, means for returning said elevator against the action of said spring, means for temporarily holding the elevator down and means for operating the elevator-returning mechanism.

10. In a linotype-machine, in combination, an assembling-elevator, mechanism for raising said elevator, means for returning said elevator against the action of said elevator-raising mechanism, means for temporarily holding the elevator down and means for actuating the elevator-returning mechanism.

11. In a linotype-machine, in combination, an assembling-elevator, elevator raising and returning mechanisms, one adapted to raise and the other to return said elevator and means for automatically bringing said elevator raising and returning mechanisms into action to raise and return the elevator alternately and means for temporarily suspending the action of said elevator raising and returning mechanisms.

12. In a linotype-machine, in combination, the assembling-elevator, elevator raising and returning mechanisms, one adapted to raise and the other to return the elevator, the power of the latter, when both are operative, being the greater, and means for periodically suspending the action of the latter while the former acts and means for controlling the action of both.

13. In a linotype-machine, in combination, an assembling-elevator, means adapted to raise the elevator, means adapted to return the elevator, the power of the latter being the greater, means for bringing the elevator-returning mechanism into operative position, whereby the elevator-raising mechanism is free to act, means for holding the elevator-raising mechanism inoperative while and releasing it after the elevator-returning mechanism is brought into operative position, whereby the assembling-elevator is alternately raised and lowered.

14. In a linotype-machine, an assembling-elevator, a spring adapted to raise and a weight adapted to return the elevator, the power of the weight, when both are operative, being the greater, means for raising the weight, means for holding it temporarily suspended, whereby the spring is free to act, and means for releasing the weight, means for holding the spring compressed, while, and releasing it after, the weight is suspended, whereby the assembling-elevator is alternately raised and lowered.

15. In a linotype-machine, the reciprocating assembling-elevator, mechanically-actuated means for operating said elevator, the line-delivery-carriage shaft and mechanism actuated by said shaft to bring said mechanically-actuated means into operative position.

16. In a linotype-machine, in combination, the assembling-elevator, means for raising the same, the line-delivery-carriage shaft, a lever on said shaft and mechanism intermediate between said lever and said elevator operated by the former to return the latter.

17. In a linotype-machine, in combination, an assembling-elevator, means for raising the assembling-elevator, and mechanism actuated by the main cam-driving shaft to control said raising means.

18. In a linotype-machine, in combination, an assembling-elevator, means for automatically raising and lowering the assembling-elevator and mechanism actuated by a moving part of the machine to make the movements of the elevator reciprocal with the movements of the main machine without ceasing its periodic movements until manually stopped.

19. In a linotype-machine, in combination, an assembling-elevator, means for raising said assembling elevator, the main cam-driving shaft, a lug carried by said shaft, and mechanism actuated by said lug to make the movements of the elevator reciprocal with the movements of the main machine until manually stopped.

20. In a linotype-machine, in combination, the assembling-elevator adapted to rise and return, means for raising the same, the line-delivery-carriage shaft, a lever on said shaft and mechanism intermediate between said lever and said elevator operated by the former to return the latter.

21. In a linotype-machine, in combination, the assembling-elevator adapted to rise and return, means capable of being energized for raising the same, the line-delivery-carriage shaft, a lever on said shaft and mechanism intermediate between said lever and said raising means operated by said lever to energize said raising means.

22. In a linotype-machine, in combination, the assembling-elevator, mechanism for reciprocating the same, the main cam-driving shaft, a cam on said shaft and means actuated by said cam to control said reciprocating mechanism.

23. In a linotype-machine, in combination, an assembling-elevator, a rod passing through the machine adapted to be actuated by a moving part of the machine and mechansim for reciprocating the assembling-elevator adapted to be controlled by said rod.

24. In a linotype-machine, in combination, the assembling-elevator, mechanism for raising and lowering the same, the main cam-driving shaft, means for holding said elevator down, and means automatically actuated by the main cam-driving shaft to release said holding means, means for locking said elevator in its up position and automatic means for releasing the same, whereby the assembling-elevator reciprocates in proper time with the main machine.

25. In a linotype-machine, in combination, the assembling-elevator, mechanism for reciprocating the same, the main cam-driving shaft, means for holding said elevator down and means automatically actuated by the main cam-driving shaft to release said holding means.

26. In a linotype-machine, the combination with a motor-driven part and an assembling-elevator, mechanism possessing potential, static or stored force for actuating the elevator, and connected energizing mechanism actuated by the driven part for setting the elevator-actuating mechanism.

27. In a linotype-machine, the combination with an assembling-elevator of mechanism tending constantly and automatically to raise the elevator and means for controlling said elevator-raising mechanism.

28. In a linotype-machine, the combination with a movable assembling-elevator, of mechanism acting automatically for moving the elevator through its cycle of movement and automatically repeating its said action until manually stopped.

29. In a linotype-machine, the combination with a motor-driven part, of an assembling-elevator, mechanism acting automatically for actuating the elevator, means for holding the actuating mechanism out of action, and means actuated by the motor-driven part for releasing said holding means.

30. In a linotype-machine, the combination with a motor-driven part, of an assembling-elevator, connected mechanism controlled by the driven part for actuating the elevator, means for holding said mechanism out of action, and means for releasing said holding means actuated by the driven part.

31. In a linotype-machine, the combination with an assembling-elevator, of means normally tending to raise the same, means for holding the said means against action, and means acting automatically for releasing the raising means.

32. In a linotype-machine, the combination with an assembling-elevator, of means normally tending to raise the same, means for holding said means inactive, a trip for said holding means, and means for returning said raising means to its initial position.

33. In a linotype-machine, the combination with an assembling-elevator, of means tending constantly to raise the elevator, and means for holding the raising means inactive during the period of assembling the matrices therein.

34. In a linotype-machine, an assembling-elevator, automatically spring-actuated mechanism for raising the elevator and automatically-operating weight-actuated mechanism for resetting said spring-actuated mechanism.

35. In a linotype-machine, an assembling-elevator, automatic mechanism for raising said elevator, and automatic means for lowering said raising means, said last-mentioned means being sufficiently powerful to overcome said raising mechanism and restore the same to its initial position.

36. In a linotype-machine, the combination with a mechanically-actuated part thereof and an assembling-elevator, of mechanism acting by potential, static or stored force for actuating the elevator and connecting mechanism between said elevator-actuating mechanism and said actuated part for energizing said actuating mechanism.

37. In a linotype-machine, in combination, an assembling-elevator, mechanism having potential, static or stored force, which, when permitted to act, is adapted to raise said elevator, mechanism having a similar force, which, when permitted to act, is adapted to return said elevator and to reënergize the elevator-raising mechanism, and means for controlling the elevator-raising and elevator-returning mechanisms.

38. In a linotype-machine, an assembling-elevator and mechanism adapted to impart reciprocal movement to the same, said mechanism acting automatically and until manually stopped.

39. In a linotype-machine, the assembling-elevator, the line-delivery-carriage shaft and mechanism intermediate said elevator and said shaft adapted to reciprocate the former.

40. In a linotype-machine, the combination with the line-delivery-carriage shaft and an assembling-elevator, of actuating means for the elevator and connecting mechanism actuated by the line-delivery-carriage shaft for energizing the elevator-actuating means.

41. In a linotype-machine, the combination with a movable assembling-elevator, of mechanism acting automatically by potential, static or stored force for actuating the elevator and means for energizing and controlling said actuating mechanism.

42. In a linotype-machine, the combination with an assembling-elevator, of means acting automatically for positively raising the same and means controlled by the main cam-driving shaft for holding the raising means out of action during the period of assembling the matrices therein.

43. In a linotype-machine, in combination, the assembling-elevator, mechanism adapted to store potential or static force and by its release raise the elevator, mechanism for reënergizing the last-named mechanism after each action, and means for controlling both mechanisms.

44. In a linotype-machine, in combination, the reciprocating assembling-elevator, a rocking shaft motionless while said elevator goes up, and mechanism energized from said rocking shaft adapted to actuate said elevator.

45. In a linotype-machine, the line-delivery-carriage shaft and the assembling-elevator, in combination with mechanism energized by the former and adapted to actuate the latter.

46. In a linotype-machine, an assembling-elevator and mechanism adapted to impart reciprocal movement to the same, said mech-

anism acting automatically and until manually stopped, in combination with means for causing periodical retardations in the movement of the elevator to permit charging and unloading the same.

47. In a linotype-machine, the combination with an assembling-elevator, of spring-actuated mechanism to raise the elevator and means for controlling said elevator-raising mechanism.

822,287. MEANS FOR RENDERING BOTTLES NON-REFILLABLE. HARRY O. MARSALL, Johannesburg, Transvaal. Filed Jan. 5, 1906. Serial No. 295,854.

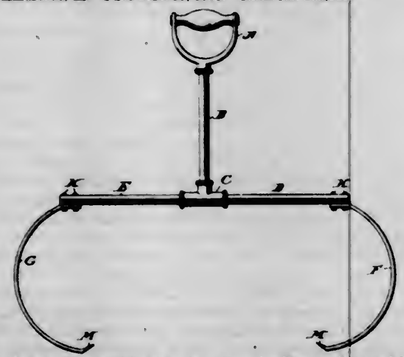


Claim.—1. In a non-refillable device for insertion into the neck of a bottle or the like, the combination of a cylindrical portion having a perforated top, a perforated false bottom, inert material contained between said top and bottom, and a valve at the lower part thereof, substantially as set forth.

2. In a non-refillable device for insertion into the neck of a bottle or the like, the combination of a cylindrical portion having a perforated top, a perforated false bottom, inert material contained between said top and bottom, a valve at the lower part thereof, a pair of spring-legs at the lower end of such device having a normal tendency to open away from each other, and a spring locking-bar to retain such legs in their open position, substantially as set forth.

3. In a non-refillable device for insertion into the neck of a bottle or the like, the combination of a cylindrical portion having a perforated top, a perforated false bottom, inert material contained between said top and bottom, a valve at the lower part thereof, a pair of spring-legs at the lower end of such device having a normal tendency to open away from each other, and a spring locking-bar to retain such legs in their open position, such locking-bar being hinged to one of the spring-legs and the other leg being formed with a recess to receive the free end of said locking-bar, substantially as set forth.

822,288. BARREL-ROLLER MACHINE. THOMAS J. MERRELL, Hindsboro, Ill. Filed June 19, 1905. Serial No. 265,915.



Claim.—The combination, in a barrel-roller machine, of haft attached to tubular-rod handle screwed into T-joint; horizontal tubular cross-bar secured to handle by T-joint; arc springs secured to opposite ends of cross-bar by two bolts and nuts and terminating in inward-projecting points, all substantially as set forth.

822,289. FUSE FOR PROJECTILES. HENRY P. MERRIAM, New York, N. Y. Filed June 23, 1905. Serial No. 266,609.

Claim.—1. In a fuse for projectiles, the combination of a fuse-casing, a firing-pin, a plunger movable with relation to the firing-pin in the casing, a primer carried by the plunger, and automatically-released means also carried by the plunger, and normally holding the plunger against action.

2. In a fuse for projectiles, the combination of a fuse-casing, a combined securing and firing pin, a plunger movable in the casing with relation to said pin, a primer carried by the plunger, and centrifugally-released means upon the plunger engaging said pin and normally holding the plunger against action.



3. In a fuse for projectiles, the combination of a fuse-casiug, a plunger-retaining pin, an inertia-operated plunger movable in the casing with relation to the pin, a primer carried by the plunger, and centrifugally-released means upon the plunger engaging said pin and normally holding the plunger against action.

4. In a fuse for projectiles, the combination of a fuse-casing, a plunger movably mounted in the casing, a primer carried by the plunger, a firing-pin loosely mounted in the casing and movable with relation to the plunger, and automatically-released means upon the plunger engaging the firing-pin and normally holding the primer and firing-pin apart.

5. In a fuse for projectiles, the combination of a fuse-casing, a plunger movably supported in the fuse-casing, a primer mounted upon the plunger, a combined securing and firing pin loosely mounted in the casing and movable with relation to the plunger, and automatically-released means mounted upon the plunger and normally engaging the pin to hold the pin away from the primer and the plunger in inactive position in the casing.

6. In a fuse for projectiles, the combination of a fuse-body, and an inertia-operated plunger movably supported in the fuse-body, a primer carried by the plunger, with a plunger-retaining pin movably mounted in the plunger and adapted to engage a suitable stop or abutment, and automatically-released controlling means mounted upon the plunger and engaging the pin.

7. In a fuse for projectiles, the combination of a fuse-body, a plunger movably supported in the fuse-body, a primer, a combined firing-pin and plunger-securing pin movable with relation to the fuse-body and plunger, and centrifugally-operated controlling means mounted upon the plunger and adapted to normally lock said firing and securing pin in its inactive plunger-securing position.

8. In a fuse for projectiles, the combination of a fuse-casing, a firing-pin, a plunger supported in the casing and movable with relation to the firing-pin, a primer carried by the plunger, and a plurality of centrifugally-released controlling parts upon the plunger engaging the firing-pin and normally holding the primer and firing-pin apart, said controlling parts being free to move simultaneously and incapable of individual movement.

9. In a fuse for projectiles, the combination of a fuse-casing, a combined plunger securing and firing-pin, a plunger supported in the fuse-body and movable therein with relation to said pin, a primer mounted upon the plunger in operative relation to the firing-pin, a plurality of centrifugally-released controlling parts mounted upon the plunger and normally engaging the pin to hold the pin and the primer apart and the plunger in inactive position in the casing, and means normally preventing the movement of the controlling parts and adapted to automatically release them when they are moved simultaneously by centrifugal force.

10. In a fuse for projectiles, the combination of a fuse-body, and an inertia-operated plunger movably supported in the fuse-body and carrying a primer, with a plunger-retaining pin movably mounted in the plunger and adapted to engage a suitable stop or abutment in the fuse-body, a plurality of centrifugally-released controlling parts upon the plunger engaging the pin, and means adapted to insure the simultaneous movement of the controlling parts, and normally prevent the individual movement of said controlling parts.

11. In a fuse for projectiles, the combination of a fuse-casing, a securing-pin, a plunger movable in the casing with relation to said pin, a primer carried by the plunger, a plurality of controlling parts engaging said pin and arranged to move in planes radial to the axis of the plunger, and means normally preventing the individual movement of the controlling parts and compelling the simultaneous movement of said parts when they are operated.

12. In a fuse for projectiles, the combination of a fuse-casing, a securing-pin, a plunger movable in the casing with relation to said pin, a primer carried by the plunger, a plurality of movable controlling parts mounted on the plunger to engage the securing-pin and arranged to move in planes radial to the axis of the plunger, and means normally preventing individual movement of the controlling parts and compelling the simultaneous movement of said parts when they are acted upon by centrifugal force.

13. In a fuse for projectiles, the combination of a fuse-body, a combined firing-pin and plunger-securing pin, an inertia-operated plunger movably supported in the fuse-body and movable with relation to said pin, a primer, a plurality of controlling parts mounted upon the plunger in position to engage said pin and arranged to move in planes radial to the axis of the plunger, and means adapted to prevent the individual movement of said parts and compel the simultaneous movement of said parts under action of centrifugal force.

14. In a fuse for projectiles, the combination of a fuse-body having a plunger-supporting cavity, an inertia-operated plunger movable in said cavity, a primer, a pin movably mounted upon the plunger, a plurality of controlling parts mounted upon the plunger in position to engage and control said pin and movable in planes radial to the axis of the plunger, said controlling parts being adapted to frictionally engage the wall of the plunger-supporting cavity when they are operated, and means engaging said controlling parts adapted to normally prevent their individual movement and, when operated, to compel their simultaneous movement.

15. In a fuse for projectiles, the combination of a fuse-casing, a plunger movably mounted in the casing and formed with a central longitudinal socket and a plurality of recesses arranged in planes radial to the axis of the plunger, a primer mounted upon the plunger, a pin projecting into said longitudinal socket, a plurality of controlling parts movably mounted in said radial recesses, and means engaging said controlling parts adapted to prevent their individual movement and compelling their simultaneous movement.

16. In a fuse for projectiles, the combination of a fuse-casing, a plunger movably mounted in the casing and formed with a central longitudinal socket and a plurality of recesses arranged in planes radial to the axis of the plunger, a primer mounted upon the plunger, a pin supported in said longitudinal socket, a plurality of controlling parts movably mounted in said radial recesses and formed with grooves or channels extending at angles of thirty degrees to the planes in which the controlling parts move, and controlling-plates engaging the grooves or channels of said controlling parts and adapted to prevent their individual movement and compelling their simultaneous movement.

17. In a fuse for projectiles, the combination of a fuse-casing, a cylindrical plunger movably mounted in the casing and formed with a central longitudinal socket, a plurality of recesses arranged in planes radial to the axis of the plunger and a plurality of radial openings in the end of the plunger, a pin movably supported in the longitudinal socket, a plurality of controlling parts movably mounted in the recesses in position to engage the pin and formed with angular grooves or channels in their ends, and a plurality of controlling-plates resting loosely in the grooves or channels of the controlling parts and formed with lugs which project into said radial openings.

18. In a fuse for projectiles, the combination of a fuse-casing, a plunger movably mounted in the casing and formed with a longitudinal socket and a plurality of recesses arranged in planes radial to the axis of the plunger, a pin movably mounted in the longitudinal socket of the plunger, a plurality of controlling parts movably mounted in the recesses in position to engage the pin, and means engaging the controlling parts arranged to prevent their individual movement and permit their simultaneous movement, said plunger being formed with ports or passages leading from its end into said radially-arranged recesses, and said controlling parts having grooves or ports cut in their inner faces.

19. In a fuse for projectiles, the combination of a fuse-casing, a plunger movably mounted in the casing and formed with a central pin-receiving socket and a plurality of recesses arranged in planes radial to the axis of the plunger, a pin movably mounted in said socket, a plurality of controlling parts movably mounted in said recesses in position to engage said pin, each of said controlling parts being formed with a groove in its outer face, springs mounted in the grooves of said controlling parts and engaging the wall of the plunger to hold the controlling parts normally in locked position, and means preventing the individual movement of the controlling parts and permitting the simultaneous movement of said parts.

20. In a fuse for projectiles, the combination of a fuse-casing, a plunger movably mounted in the casing and formed of a cylindrical shell 15, having a plurality of oblong openings 15^a in its cylindrical side and an axial opening 15^b surrounded by radial openings 15^c in its end, and a core-piece 16 having a central longitudinal socket 17 and the recesses 24 arranged in planes radial to the axis of the plunger, a pin 21 projecting into the opening 15^b and socket 17 of the plunger, a plurality of controlling parts 25 movably supported in the recesses 24 in position to engage the pin and formed with grooves or channels 25^d, and a plurality of controlling-plates 27 engaging the grooves or channels 25^d in said controlling parts and having lugs projected into said radial openings 15^c.

21. In a fuse for projectiles, the combination of a fuse-casing, a plunger movably mounted in the casing and having a central longitudinal socket 17 and the recesses 24 arranged in planes radial to the axis of the plunger, a pin 21 projecting into the socket 17 of the plunger, a plurality of controlling parts 25 movably supported in the recesses 24 in position to engage the pin and each part 25 being formed with grooves or channels extending at angles of thirty degrees to the radial plane of the plunger in which said part moves, and a plurality of controlling-plates 27 engaging the channels cut in said controlling parts.

22. In a fuse for projectiles, the combination of a fuse-casing, a plunger movably mounted in the casing, and formed of a cylindrical shell 15 having a plurality of oblong openings in its cylindrical side and a core-piece 16 having a central longitudinal socket 17 and the recesses 24 arranged in planes radial to the axis of the plunger, a pin 21 projecting into the socket 17 of the plunger, a plurality of controlling parts 25 movably supported in the recesses 24 in position to engage the pin, springs 26 secured to the controlling parts and engaging the inner wall of the shell 15 to normally hold the controlling parts in their inner engaged position, and automatically-released means preventing the individual movement and permitting the simultaneous movement of the controlling parts under the action of centrifugal force.

23. In a fuse for projectiles, the combination of a fuse-casing, a plunger movably mounted in the casing and formed with a central longitudinal socket and a plurality of recesses arranged in planes radial to the axis of the plunger, a primer, a pin movable in the central socket of the plunger and formed with a locking-shoulder, a plurality of controlling parts formed with locking-shoulders and movably supported in the recesses in position to engage the locking-shoulder of the pin, and means controlling the operation of the controlling parts.

24. In a fuse for projectiles, the combination of a fuse-body, and the plunger and pin supported in the fuse-body and axially movable relatively to place them in armed position, with automatically-released controlling means normally preventing relative movement between the plunger and pin, and centrifugally-operated means freed by said controlling means and adapted to lock the relatively movable plunger and pin in armed position.

25. In a fuse for projectiles, the combination of a fuse-body, a plunger carrying a primer and a firing-pin, the plunger and firing-pin being capable of relative axial movement in the fuse-body to place them in armed position, with centrifugally-released controlling means normally preventing relative movement between the plunger and firing-pin, and centrifugally-operated locking means freed by said controlling means and adapted to lock the relatively movable plunger and pin in armed position.

26. In a fuse for projectiles, the combination of a fuse-body, a plunger carrying a primer, and a firing-pin, the plunger and firing-pin being capable of relative movement in the fuse-body to place them in armed position, with centrifugally-released controlling means normally preventing relative movement between the plunger and firing-pin, and a part supported eccentrically upon the firing-pin and adapted to be operated by centrifugal force to lock the relatively movable plunger and pin in armed position after they are released by the controlling means.

27. In a fuse for projectiles, the combination of a fuse-body, a plunger carrying a primer and movably mounted in the fuse-body, a pin movably mounted in the plunger, a ring eccentrically supported upon the pin, and automatically-released controlling parts normally engaging the pin.

28. In a fuse for projectiles, the combination of a fuse-body, a plunger, a primer, and a firing-pin, the plunger and firing-pin being capable of relative movement in the fuse-body to place them in armed position, with automatically-released controlling means normally preventing relative movement between the plunger and pin, and a ro-

tatable radially-movable device independent of the plunger and adapted to lock the relatively movable plunger and pin in armed position after the releasing action of the controlling means.

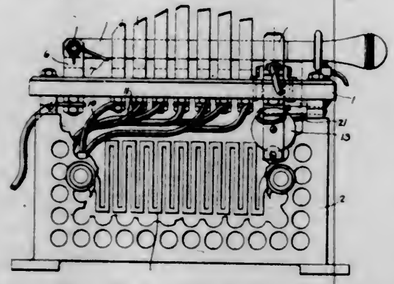
29. In a fuse for projectiles, the combination of a fuse-body, a plunger, a primer, and a firing-pin, the plunger and firing-pin being capable of relative movement in the fuse-body to place them in armed position, with centrifugally-released controlling means normally preventing relative movement between the plunger and pin, and an eccentrically-rotating device independent of the plunger and movable radially of the plunger to lock the relatively movable plunger and pin in armed position.

30. In a fuse for projectiles, the combination of a fuse-body, a plunger, a primer, and a firing-pin, the plunger and firing-pin being axially movable relatively to place them in armed position, with centrifugally-released controlling means normally preventing relative movement between the plunger and pin, and an eccentric device supported to rotate independently of the plunger around the axis of the plunger and arranged to be moved by its rotation into position to be shifted radially of the plunger by centrifugal force, said radial movement of said device placing it in position to lock the relatively movable plunger and pin in armed position.

31. In a fuse for projectiles, the combination of a fuse-body, a plunger movably mounted in the fuse-body, a primer carried by the plunger, an abutment supported in the casing, a securing-pin movably mounted in the plunger and supported thereby in position to engage said abutment, a locking-ring eccentrically supported upon the pin and adapted to be interposed between the pin and abutment and automatically-released controlling parts normally engaging the pin.

32. In a fuse for projectiles, the combination of a fuse-casing, a plunger movably supported in the casing, a primer carried by the plunger, a pin movably mounted in the plunger and formed with a beveled end, a stem or abutment supported in the casing in position to engage the projecting end of the pin, a locking-ring loosely surrounding the projecting end of the pin and adapted to be whirled upon the pin during the flight of the shell to be moved between the pin and said abutting stem, and automatically-released means upon the plunger normally holding the pin against movement.

822,290. STARTING-RHEOSTAT. DAVID MILLER, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Nov. 29, 1904. Serial No. 234,760.



Claim.—1. In a starting-rheostat, the combination with a pivoted spring-pressed controlling-lever and a contact-clip mounted to receive said lever, of electromagnetic means operating upon said clip to maintain said lever within its jaws.

2. In a starting-rheostat, the combination with a pivoted spring-pressed controlling-lever of a series of contact-clips mounted to successively receive said lever, and electromagnetic means operating upon one of said clips for holding said lever within the clips.

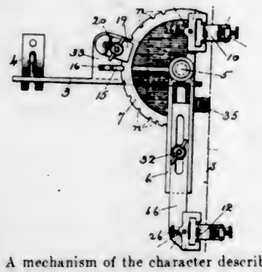
3. In a starting-rheostat, the combination of a resistance and a pivoted controlling-lever therefor, of a series of contact-clips mounted to successively receive said lever to vary the resistance, and electromagnetic means operating upon said contacts to detain said lever within the clips.

4. In a starting-rheostat, the combination with a resistance and a contact means for varying the same comprising a fixed portion, a spring-pressed controlling-lever mounted for sliding engagement therewith and a movable portion, of electromagnetic means operating upon said movable portion to retain said lever in any position of said engagement.

5. In a starting-rheostat, the combination with a resistance and folding contact means for varying the same, said means comprising a fixed contact portion, a spring-pressed controlling-lever mounted for sliding engagement therewith and a pivoted portion yieldingly mounted for engagement with said lever, of electromagnetic means for detaining the lever in any position between the contact portions.

6. In a starting-rheostat, the combination with a resistance and folding contact means for varying the same, said means comprising a fixed contact portion, a spring-pressed pivoted controlling-lever mounted for sliding engagement therewith, and a series of spring-pressed contact-strips pivotally mounted for engagement with said lever, of electromagnetic means for detaining and releasing the lever in any position between the contact portions.

822,291. ANGLE-SAWING MECHANISM. PHILLIP A. MILLET and ALBERT M. POWELL, Worcester, Mass. Filed Apr. 13, 1905. Serial No. 255,327.



Claim.—1. A mechanism of the character described, comprising the pivoted overhanging swinging supporting-bar, having laterally-offset guideway-heads with slidable saw-guiding devices thereon adjustable in relation to said bar at its front and rear ends for suspending a saw, and the single back plate disposed wholly at one side of the line of the saw, and extending underneath the supporting-bar beyond the pivot center, and terminating near the sawing-line, attaching members adapted for sustaining said back plate upright upon an improvised base, and devices for retaining the swinging bar at angular positions in relation to said back plate.

2. In an angle-sawing mechanism, a work-guiding plate, the overhanging pivoted saw-supporting bar having the upright guideway-heads laterally offset from the central line of said bar, and formed open at the side with undercut or lipped grooves, the slitted saw-guides having flanged edges movable in said guideway-heads, and means substantially as described for retaining said bar at positions of radial adjustment.

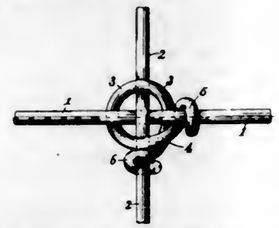
3. In an angle-sawing mechanism, the combination as described, with an attachable work-guiding-plate; of the overhanging centrally-pivoted saw-supporting bar having a segment integral thereon, and laterally-offset grooved guideway members with open side faces, the offset flanged saw-guides slidable therein, an extendible connection for one of said guideway members, means for securing the extendible connection to the main part of the bar, and means for securing said bar at the positions of its lateral adjustment.

4. An angle-sawing mechanism, comprising the rectangular upright back plate forming the work-squaring face and provided at its top edge with a seat at right angle with the face, for the bar and its segment, and having at its bottom edge the right-angled supporting-feet adapted for temporary attachment to an improvised base such as a bench, plank or timber; the upright pivot member at one end of said plate in rear of its face, the pivoted laterally-swinging saw-supporting bar having the integrally-formed segment in plane with said bar, mounted upon said top seat on the back plate, vertically-grooved guideway-heads carried on said bar, with laterally-offset saw-guides independently movable therein at its front and rear ends, and means for securing the segment, bar and guideway-heads at adjusted positions, all substantially as and for the purposes set forth.

5. In an angle-sawing mechanism, the combination as described, of the single back plate having a top rearward projection near one end forming a seat for the bar, the laterally-swinging saw-supporting bar having a notched segment integral therewith, said saw-supporting bar and segment seated upon the top of the back plate, a center pivot connecting said bar and plate, the spring-pressed latch-lever fulcrumed on the back of the plate and extending up through a slot in the top projection to engage with the notches of said segment, the clamp-piece projecting over the rim of the segment, and a thumb-screw for tightening and loosening said segment upon its seat, substantially as set forth.

6. In a mechanism of the character described, the combination with the slitted saw-guide 10, provided with the vertical groove or opening 28 in its side; of the adjusting side bearing-finger 27 arranged through said opening with its inner face adjacent to the saw-guiding slit, a hinging joint flexibly connecting said finger to the saw-guide, and a set-screw arranged in an extended portion of said finger for regulating the position of the finger in relation to the saw-slit, substantially as and for the purpose set forth.

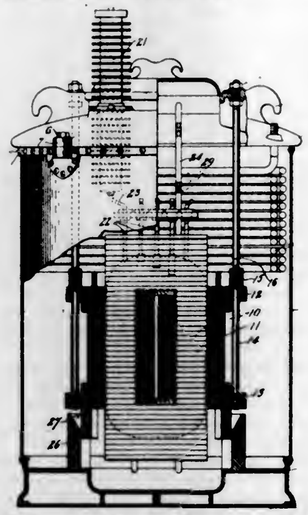
822,292. WIRE-FENCE TIE. GEORGE R. MILLS, Hudson, Mich. Filed Aug. 31, 1905. Serial No. 276,644.



Claim.—1. In a wire fence, in combination with crossed fence-wires, a tie having its middle part in circular form and having its ends crossed and secured by being wound or coiled around the respective fence-wires outside the circuit of said middle part.

2. In a wire fence, in combination with crossed fence-wires, a tie having a circular middle portion and equal end portions, said end portions being crossed between the fence-wires and secured by being wound or coiled around the respective fence-wires outside the circuit of said middle portion, and terminating within the plane of the same.

822,293. TRANSFORMER. WALTER S. MOODY, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Nov. 18, 1904. Serial No. 233,258.



Claim.—1. In combination, a transformer case or receptacle, a cover therefor, a transformer comprising a core of laminæ assembled between end members and means for securing the end members together, and means engaging one of said end members for securing said transformer to said cover.

2. In combination, a receptacle or case having an opening formed at its upper end, a cover for closing said opening, a transformer located within said receptacle comprising a core laminated in horizontal planes, end members between which said core is assembled and means for securing said end members together, and means engaging one of the end members for securing said transformer to the cover.

3. In combination, a case or receptacle having an opening at its upper end, a cover for closing said opening, a transformer within the receptacle comprising a core laminated in horizontal planes and an end member or support upon which said core rests, means for securing said end member to the cover, and terminal conductors for the transformer passing through the cover.

4. In combination, a case, a cover therefor, a transformer suspended from the cover, and a guiding device for the transformer carried by the case.

5. In combination, a transformer-case, a cover therefor, a transformer suspended from the cover, a guide carried by the lower end of the case, and a transformer portion adapted to telescope therewith.

6. In combination, a case, a cover therefor, a transformer provided with a number of leads suspended from the cover, terminal conductors secured to the cover, the inner ends of each of said terminal conductors being adapted to be secured interchangeably to one of a series of transformer-leads.

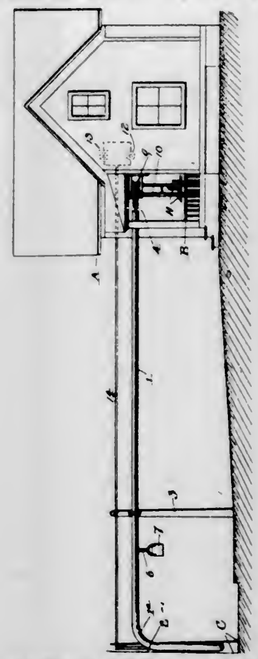
7. A lead for an oil-immersed transformer formed of alternate solid sections and stranded sections, and a non-porous insulating-cover therefor.

8. A lead for an oil-immersed transformer formed of solid conducting-sections, each of said sections being formed with a socket in opposite sides or ends, and intermediate stranded sections secured in the sockets of adjacent solid sections.

9. A non-capillary flexible conductor comprising solid sections socketed in opposite sides or ends, and stranded intermediate sections, the ends of each of which are inserted in the sockets of the adjacent solid sections.

10. A non-capillary flexible conductor comprising solid sections socketed in opposite sides or ends, stranded intermediate sections, the ends of each of which are inserted in the sockets of the adjacent solid sections, and a non-porous socket or cover of insulating material.

822,294. MAIL-BOX AND TRANSMITTER. HENRY MUELLER, Kilbourn, Wis. Filed Aug. 14, 1905. Serial No. 274,200.



Claim.—1. In a mail-box transmitter, posts, cross-bars secured to said posts, a tube secured to said cross-bars, said tube being bent downward at one of the posts and doubled back on itself, said tube being slotted, a cable mounted in said tube, a link secured to the ends of said cable, a standard secured to said link, a mail-box pivotally secured to said standard, and means to actuate said cable, substantially as shown and described.

2. In a mail-box transmitter, posts, cross-bars secured to said

posts, a tube secured to said cross-bars, said tube being bent downward at one of the posts and doubled back on itself, said tube being slotted, a cable mounted in said tube, a link secured to the ends of said cable, a standard secured to said link, a mail-box pivotally secured to said standard, a drum suitably positioned adjacent to the ends of said tube, the cable passed around said drum, and means to rotate said drum, substantially as shown and described.

3. In a mail-box transmitter, posts, cross-bars secured to said posts, a tube secured to said cross-bars, said tube being bent downward at one of the posts and doubled back on itself, said tube being slotted, the slot being on the under side of said tube between said cross-bars then given a quarter-turn where bent downward and extending along the side of the downwardly-extending portion, a cable mounted in the tube, a link secured to the ends of said cable, a standard secured to said link and extending through the slot in the tube, a mail-box pivotally secured to said standard and means to actuate said cable, said mail-box being adapted to be actuated by said cable and come to rest on the doubled-back portion of said tube, substantially as shown and described.

4. In a mail-box transmitter, posts, cross-bars secured to said posts, a tube secured to said cross-bars, said tube being bent downward at one of the posts and doubled back on itself, said tube being slotted, the slot being on the under side of said tube between said cross-bars then given a quarter-turn where bent downward and extending along the side of the downwardly-extending portion, a cable mounted in the tube, a link secured to the ends of said cable, a standard secured to said link and extending through the slot in the tube, a mail-box pivotally secured to said standard, a drum suitably positioned adjacent to the ends of said tube, the cable passed around said drum, and gearing to rotate said drum, said mail-box being adapted to be actuated by said cable and come to rest on the doubled-back portion of said tube, substantially as shown and described.

822,295. **FRAME BUILDING.** ARTHUR MÜLLER, Berlin, Germany. Filed Nov. 12, 1904. Serial No. 232,533.



Claim.—1. In a frame building the combination of a base, square-ended uprights adapted to rest on said base, means for pivoting said uprights to the base during the erection thereof so constructed that their squared ends swing free of the base or may be lowered to contact therewith and means for holding the uprights down upon said base when lowered into place.

2. In a frame building the combination of a base, square-ended uprights adapted to rest on said base when erected, apertured angle-irons secured to said base, and horizontal bolts passing through the lower ends of the uprights and engaging the apertures in the angle-irons, said apertures being so contrived that the squared ends of the uprights swing free of the base during erection and can be lowered onto the base when erected together with removable keys insertible in said apertures below or above said bolts accordingly.

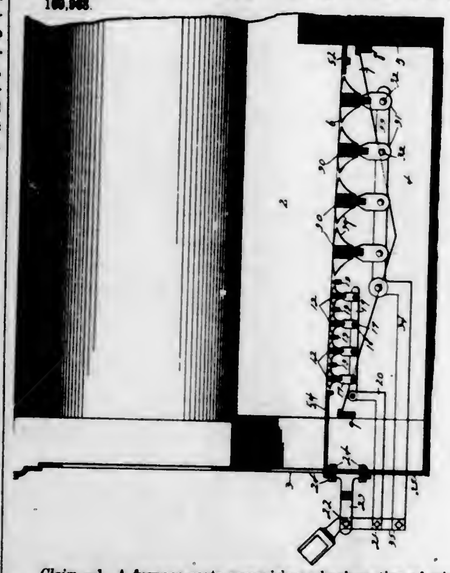
3. A frame building comprising in combination a series of bases, apertured angle-irons secured to said bases, a series of square-ended uprights, horizontal bolts passing through the lower ends of the uprights and adapted to engage the apertures in the angle-irons, temporary means of support for the uprights during their erection so that their ends swing free of the base, said means also serving for holding down said uprights when erected, a roof ridge-pole and stringers supported by the uprights, means for connecting the uprights to said ridge-pole and stringers, rafters carried by said ridge-pole and stringers, means for connecting said ridge-pole and stringers to the rafters, and a roof carried by said rafters substantially as described.

4. In a frame building the combination of a series of bases, slotted angle-irons secured to said bases, a series of supporting-uprights in groups of varying number, horizontal bolts passing through the lower ends of certain of the uprights and adapted to engage the slots in the angle-irons, keys adapted to be inserted in said slots for supporting the bolts during the erecting of the uprights and afterward removed and reinserted for holding down said bolts, and additional irons embedded in the bases to which the lower ends of other uprights of the groups are attached, substantially as described.

5. In a frame building the combination of a series of bases, angularly-slotted angle-irons secured to said bases, a series of supporting-uprights in groups of varying number, horizontal bolts passing through the lower ends of certain of the uprights and adapted to engage the angular slots in the angle-irons, and additional irons embedded in the bases to which the lower ends of other uprights of the groups are attached, substantially as described.

6. A frame building comprising in combination a series of bases, apertured angle-irons secured to said bases, a series of supporting-uprights in groups of varying number, horizontal bolts passing through the lower ends of certain uprights of the groups and adapted to engage the apertures in the angle-irons, additional irons embedded in the bases to which the lower ends of other uprights of the groups are attached, a roof ridge-pole and stringers supported by the uprights, angle-irons and transverse bolts for connecting the uprights to said ridge-pole and stringers, rafters carried by said ridge-pole and stringers, angle-irons and transverse bolts for connecting said ridge-pole and stringers to the rafters, ties connecting the uprights and rafters, and a roof carried by said rafters substantially as described.

822,296. **GRATE.** SPENCER NEEMES, Troy, N. Y., assignor to Neemes Bros., Troy, N. Y., a Firm. Filed Aug. 19, 1903. Serial No. 169,968.



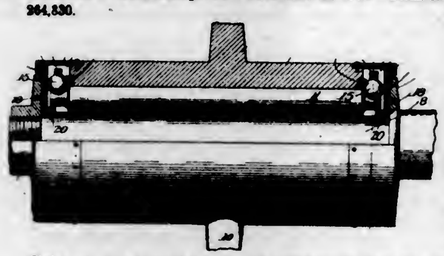
Claim.—1. A furnace-grate comprising a back section of relatively large area made up of relatively wide oscillatory grate-bars, a front section of relatively small area made up of relatively narrow oscillatory grate-bars, and means for communicating oscillatory movements to the bars of either section independently of the other, substantially as described.

2. A furnace-grate comprising a back section made up of parallel oscillatory bars; a front section made up of parallel bars which are alternately stationary and oscillatory, and means for communicating oscillatory movements to the movable bars of either section independently of the other, substantially as described.

3. A furnace-grate comprising a back section made up of grate-bars parallel with each other and oscillatory to present relatively large openings through the grate, a front section made up of grate-bars parallel with each other and oscillatory to present relatively small openings through the grate, and means for communicating oscillatory movements to the bars of either section independently of the other, substantially as described.

4. A furnace-grate comprising a back section made up of grate-bars parallel with each other and oscillatory to present relatively large grate-openings, a front section made up of movable and stationary grate-bars alternating, and parallel, with each other, the movable bars being oscillatory to present relatively small grate-openings, and means for communicating oscillatory movements to the movable bars of either section independently of the other, substantially as described.

822,297. **BEARING.** EDWIN J. NEWTON, Chicago, Ill., assignor to William R. Everett, Chicago, Ill. Filed June 12, 1905. Serial No. 264,830.



Claim.—1. In a journal-bearing, the combination with the two relatively rotative members thereof, of roller-bearing members interposed between said rotative members, spacing-balls between the ends of said rollers, and parts carried by said rotative members adapted to bear against said spacing-balls, whereby the spacing-balls serve to take the end thrust.

2. In a bearing, the combination with the two relatively rotative members thereof, of a plurality of rollers interposed between said members, spacing-balls between the ends of said rollers, and bearing-surfaces carried on said rotative members and adapted to bear against spacing-balls on opposite sides of the plane of their contact with said rollers, whereby the spacing-balls serve both to space the rollers and to take the end thrust of the rotative members.

3. In a bearing, the combination with the two relatively movable bearing members, said members having lateral and longitudinal opposed bearing-surfaces, of a plurality of rollers interposed between the longitudinal bearing-surfaces of said members, a plurality of balls interposed between the lateral bearing-surfaces of said members, said balls being interposed between the ends of said rollers to act as spacing members therefor.

4. In a bearing, the combination with the two relatively movable members thereof, said members having lateral and longitudinal opposed bearing-surfaces, of a plurality of rolling bearing members interposed between the longitudinal bearing-surfaces of said rotative members, and a plurality of spacing-balls interposed between the ends of said rolling bearing members, said balls being also interposed between the lateral bearing-surfaces of said members to take the end thrust thereof.

5. In a bearing, the combination with the two relatively rotative members thereof, said members having opposed longitudinal and lateral bearing-surfaces, of a plurality of rollers interposed between the longitudinal bearing-surfaces of said members, a plurality of balls interposed between the lateral bearing-surfaces of said members, said balls being also interposed between the ends of said rollers to act as spacing members therefor, the lateral bearing-surfaces of said members being adapted to contact with said balls at points thereon less than one hundred and eighty degrees apart, whereby, in the rotation of said members, the displacement of said balls as end-thrust bearing members is made equal to their displacement as spacing members.

6. In a bearing, the combination with the two relatively rotative members thereof, said members being provided with longitudinal and lateral opposed bearing-surfaces, the lateral bearing-surface of one of said members being in a plane at an angle to the plane of the lateral bearing-surface of the other member, a plurality of rollers interposed between the longitudinal bearing-surfaces of said members, a plurality of balls interposed between the lateral bearing-surfaces of said members, said balls being also interposed between the ends of said rollers to act as spacing members therefor.

7. In a bearing, the combination with the two relatively rotative members thereof, said members having longitudinal and lateral opposed bearing-surfaces, said lateral surfaces being separated to form annular spaces therebetween, of a plurality of rollers interposed between the longitudinal bearing-surfaces of said members, the ends of said rollers being reduced in diameter, and projecting into said annular spaces, a plurality of balls confined in said annular space and interposed between the reduced ends of said rollers, to act as spacing members therefor, said balls being also interposed between the lateral bearing-surfaces of said members.

8. In a bearing, the combination with the two relatively rotative members thereof, said members having opposed longitudinal bearing-surfaces, of bearing-rings carried by said members, the bearing-surfaces of said rings being laterally opposed, a plurality of rollers interposed between the longitudinal bearing-surfaces of said members, a plurality of balls interposed between the lateral bearing-surfaces of the rings carried by said members, said balls being also interposed between the ends of said rollers to act as spacing members therefor.

9. In a bearing, the combination with the two relatively rotative members thereof, said members having longitudinal and lateral opposed bearing-surfaces, said lateral surfaces being separated to form annular spaces therebetween, of a plurality of rollers interposed between the longitudinal bearing-surfaces of said members, the ends of said rollers being reduced in diameter and projecting into said annular spaces a plurality of balls confined in said annular spaces and interposed between the ends of said rollers to act as spacing members therefor, and a ring loosely encircling said balls to maintain the same in position, said balls being also interposed between the lateral bearing-surfaces of said rotative members to take the thrust thereof.

10. In a bearing, the combination with two relatively rotative bearing members having longitudinally and laterally opposed bearing-surfaces, the external diameter of the interior member being less than the internal diameter of the exterior member, of a plurality of rolling bearing members interposed between the longitudinal bearing-surfaces of said members, a plurality of balls interposed between the lateral bearing-surfaces of said members, said balls being also interposed between the ends of said rollers to act as spacing members therefor, the bearing-point on each of said balls of the lateral bearing-surface of said exterior member being so placed that the cosine of the angle which the point of contact forms with the plane of rotation of the bearing has a ratio to one approximately equal to the ratio of the travel of the surface of the ball relative to the lateral bearing-surface associated with the interior member, to its travel relative to the lateral bearing-surface associated with the exterior member, whereby in the rotation of the members, the displacement of the balls, as end-thrust bearing members, is made approximately equal to their displacement as spacing members.

11. In a bearing, the combination with the bearing-box, of annular cap-plates closing the ends thereof, flanges on the ends of said bearing-box holding said cap-plates in position, a plurality of rollers within said box and arranged to bear upon the inner surface thereof, said cap-plates being provided with inwardly-extending flanges adapted to engage the ends of said rollers to hold the rollers in position, a plurality of balls contained within the annular spaces between the ends of said bearing-box and said cap-plates, said balls being interposed between the ends of said rollers to serve as spacing members, and lateral bearing-surfaces on each end of said bearing-box and on the inside of each cap-plate, said bearing-surfaces at each end of said bearing-box being adapted to engage opposite sides of said spacing-balls, whereby the spacing-balls serve to take the end thrust.

12. In a bearing, the combination with a bearing-box, and a plurality of bearing-rollers contained therein, of spacing-balls interposed between adjacent ends of said rollers, and a cap-plate held to the end of said bearing-box, said cap-plate and said bearing-box being provided with opposed lateral bearing-surfaces adapted to contact with said spacing-balls.

13. In a bearing, the combination with the bearing-box or hub, of centrally-perforated cap-plates rotatably mounted one at each end of said box in position to leave an annular space between each cap-plate and the end of the box, said cap-plates having flanges projecting inwardly from the edges of their central openings, a plurality of rollers contained within said bearing-box, the ends of said rollers being reduced in diameter and extending into position to engage the inwardly-projecting flanges of said cap-plates, a series of spacing-balls contained within each annular space between said cap-plates and the ends of said bearing-box, said balls being interposed between the ends of said rollers to space the same, and being also mounted in position to engage and take the end thrust between each cap-plate and the corresponding end of said bearing-box.

14. In a bearing, the combination with a bearing-box having a longitudinal and a lateral bearing-surface, of a plurality of rollers supported in position to bear against said longitudinal bearing-surface, a plurality of balls held in position to bear against said lateral bearing-surface, said balls being also interposed between the ends of said rollers to act as spacing members therefor, and a centrally-perforated cap-plate rotatably held to the end of said bearing-box and having a lateral bearing-surface adapted to engage said balls.

15. In a bearing, the combination with a bearing-box having a longitudinal and a lateral bearing-surface, of a plurality of bearing-rollers held in position to engage the longitudinal bearing-surface of said box, a series of balls interposed between the ends of said rollers to act as spacing members therefor, a cap-plate rotatably secured to

said bearing-box and having a lateral bearing-surface adapted to engage said balls, the lateral bearing-surface on said bearing-box with which said balls are adapted to engage being angularly disposed with relation to the cooperating lateral bearing-surface of said cap-plate.

16. In a bearing, the combination with a bearing-box having a longitudinal and a lateral bearing-surface, of a cap-plate rotatably held to said bearing-box at one end thereof, said cap-plate having an interior lateral bearing-surface, a series of balls contained between said cap-plate and the end of said bearing-box, said balls being adapted to serve as a thrust-bearing between said bearing-box and rotatable cap-plate, and a plurality of rollers held within said bearing-box in position to engage the inner longitudinal bearing-surface thereof, said balls being interposed between the ends of said rollers and adapted to act as spacing members therefor.

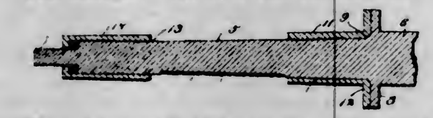
17. In a bearing, the combination with the two relatively rotative members thereof, said members having longitudinally-opposed bearing-surfaces, of a plurality of rollers interposed between the longitudinal bearing-surfaces of said members, a cap-plate secured at one end of said members and arranged to move with one of the same, opposed lateral bearing-surfaces on said cap-plate and the member to which said cap-plate is not secured, said bearing-surfaces being disposed at an angle to each other, a series of balls interposed between said bearing-surfaces, said balls being also interposed between the ends of the aforesaid rollers to serve as spacing members therefor.

18. In a bearing, the combination with the two relatively rotative bearing members thereof, said members having longitudinal and lateral bearing-surfaces, of rolling bearing members interposed between the longitudinal bearing-surfaces of said members, and rolling bearing members interposed between the lateral bearing-surfaces of said members, said last-mentioned bearing members being interposed between said first-mentioned rolling bearing members to serve as spacing members therefor.

19. In a bearing, the combination with two relatively rotative bearing members, each of said members being provided with a longitudinal and a lateral bearing-surface, of rolling bearing members interposed between the longitudinal bearing-surfaces of said members, and rolling bearing members interposed between the lateral bearing-surfaces of said members, said last-mentioned rolling bearing members being interposed between said first-mentioned rolling bearing members to serve as spacing members therefor.

20. In a bearing, the combination with two relatively rotative bearing members thereof, said members having opposed longitudinal and lateral bearing-surfaces, of one set of rolling bearing members interposed between the longitudinal bearing-surfaces of said members, and another set of rolling bearing members interposed between the lateral bearing-surfaces of said members, the rolling bearing members of one of said sets being interposed between the rolling bearing members of the other of said sets to serve as spacing members therefor.

822,298. **AXLE.** SHERMAN H. NICKERSON and ALVINZA V. NICKERSON, Canton, N. Y. Filed May 13, 1905. Serial No. 260,358.



Claim.—An axle-spindle having a shoulder at its inner end and enlarged in front of said shoulder, said spindle being threaded and the threads ending at a distance from the enlargement, and a bearing-sleeve screwed on the threaded portion of the spindle and extending over the said enlargement, and having a flange abutting against the aforesaid shoulder.

822,299. **PROCESS OF HARDENING COPPER.** CARRIE R. PLUMER, Seattle, Wash., assignor to Ranstrom Tempered Copper Company, Seattle, Wash., a Corporation. Filed Aug. 3, 1904. Serial No. 219,945.

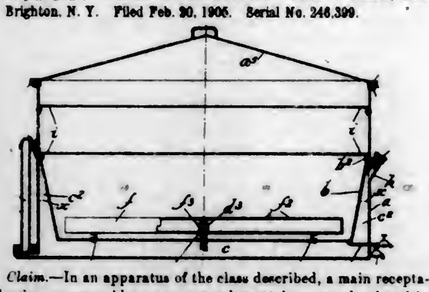
Claim.—1. The herein-described process of hardening copper, or the alloys of copper, comprising subjecting copper or the alloys of copper to heat of a sufficiently high degree to melt the same and while in a heated condition subjecting the same to the action of sulfate of copper for hardening the same, and also to the action of a chilling ingredient.

2. The herein-described process of hardening copper, or the alloys of copper, comprising subjecting the same to heat of a sufficiently high degree to melt the same, and while in a heated condition subjecting the same to the action of sulfate of copper for hardening the same, also to the action of bichromate of potash for chilling or freezing the metal.

3. The herein-described process of hardening copper or the alloys of copper, comprising subjecting the same to heat of a sufficiently high degree to melt the same, and while in a heated condition subjecting the mass to the acton of sulfate of copper for hardening the same and to the action of bichromate of potash for chilling or freezing the mass, and then reheating the mass and allowing it to cool.

4. The process of hardening copper, comprising the heating of copper until it is reduced to a molten condition and then introducing hardening ingredients and permitting them to chill the molten copper until it is too stiff to be stirred, the materials being stirred until such condition is reached.

822,300. **WASHING APPARATUS.** OSCAR C. PRASSE, West Brighton, N. Y. Filed Feb. 20, 1905. Serial No. 246,399.



Claim.—In an apparatus of the class described, a main receptacle having a removable cover, a supplemental receptacle placed in the bottom portion of the main receptacle and the top of which fits the inner walls of the main receptacle and the bottom of which is of less dimensions than the main receptacle and above the bottom of the main receptacle, a perforated steam-box placed in the bottom portion of the supplemental receptacle and a tube one end of which opens into the steam-box and the other end of which opens between the said receptacles and above the bottom of the supplemental receptacle, substantially as shown and described.

822,301. **BOX-MAKING MACHINE.** FRANK J. REINHOLD, Detroit, Mich., assignor, by direct and mesne assignments, to The Diamond Match Company, New York, N. Y., a Corporation of Illinois. Filed Dec. 21, 1899. Serial No. 741,146.

Claim.—1. In a box-making machine, the combination with slitting and cutting devices, plungers for the same, a former-plunger, a main shaft, and cams on said shaft arranged to act directly on all of the plungers, of a holder for the box, and a re-pressing device arranged to enter the holder for further acting upon the glued surfaces of the box therein.

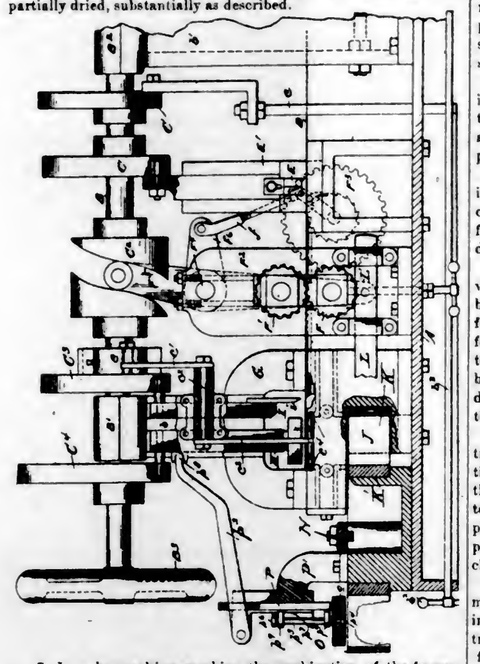
2. In a box-making machine, the combination of a holder, means for forcing a blank into the holder to form it into a box, and a re-pressing device arranged to enter the holder and act upon the box therein after the withdrawal of the box-forming means.

3. In a box-making machine the combination of the forming mechanism, a carrier provided with a series of box-holders which constitute part of the box-forming mechanism, and a re-pressing device arranged to act upon the boxes while supported by the holders, said re-pressing device being apart from the forming mechanism and situated in the path of the series of box-holders in moving from the forming mechanism.

4. In a box-making machine, the combination of the forming mechanism, a carrier provided with a series of pockets or female dies, and a re-pressing device arranged to enter the pockets successively after the former-plunger has been withdrawn, substantially as described.

5. In a box-making machine, the combination of the former-plunger, the forming-dies, traveling pockets arranged to receive the boxes, and a re-pressing device arranged to enter the pockets, and re-press the glued surfaces of the boxes in the pockets after the glue has partially dried, and means for operating the former-plunger and re-pressing device simultaneously, substantially as described.

6. In a box-making machine, the combination of the former-plunger, the forming-dies, traveling pockets arranged to receive the boxes, and a re-pressing device arranged to enter the pockets and re-press the glued surfaces of the boxes in the pockets after the glue has partially dried, substantially as described.



7. In a box-making machine, the combination of the former-plunger, the former-dies, traveling pockets arranged to receive the boxes, a re-pressing device arranged to enter the pockets, and re-press the glued surfaces of the boxes in the pockets after the glue has partially dried, and means for operating the re-pressing device from the plunger, substantially as described.

8. In a box-making machine, the combination of the former-plunger, the former-die, traveling pockets arranged to receive the boxes, a re-pressing device arranged to enter the pockets and re-press the glued surfaces of the boxes in the pockets after the glue has partially dried, and a lever for operating the re-pressing device from the former-plunger, substantially as described.

9. In a box-making machine, the combination of the former-plunger, a carrying-wheel provided with pockets arranged to receive the boxes and a re-pressing device arranged to enter the pockets after the former-plunger is withdrawn, substantially as described.

10. In a box-making machine, the combination of the former-plunger, the carrying-wheel provided with pockets arranged to receive the boxes and an expanding plunger arranged to enter the pockets after the former-plunger is withdrawn, substantially as described.

11. In a box-making machine, the combination of a holder, means for forming boxes in said holder, a re-pressing device comprising a plunger movable into and out of the holder after the formation of the boxes therein, said plunger having a movable wall or walls, and a cam for moving said wall or walls operated by the movement of the plunger.

12. In a box-making machine, the former-plunger, the pockets, a re-pressing device consisting of an expanding plunger arranged to enter the pockets after the former-plunger is withdrawn, and means for expanding the same operated by the movement of the plunger, substantially as described.

13. In a box-making machine the former-plunger, traveling pockets arranged to receive the boxes, a re-pressing device arranged to enter the pockets after the former-plunger is withdrawn, and means for expanding the re-pressing device operated simultaneously with the movement of the device into the pocket, substantially as described.

14. In a box-making machine, the combination of the traveling pockets arranged to receive the boxes, a re-pressing plunger formed of two sections, the two sections having a movement relative to one another, and the cam between the sections for expanding the same, substantially as described.

15. In a box-making machine, the combination of a carrier provided with pockets, means for forming boxes in said pockets, and a re-pressing device comprising a plunger movable into and out of said pockets after the formation of the boxes therein, said plunger consisting of opposite movable sections, and a cam for expanding the sections operated by the movement of the plunger.

16. In a box-making machine, the combination of the expanding plunger for re-pressing the boxes, the standard for supporting the plunger, the cam-rod having parallel movement with the plunger, and the fixed cam arranged to act on the cam-rod operating the expanding-cam, substantially as described.

17. In a box-making machine, the combination of the expanding plunger, the plunger-rod, the cam for expanding the plunger, the cam-rod having parallel movement with the plunger-rod, and means for turning the cam-rod as the plunger is operated, substantially as described.

18. In a box-making machine the combination of a carrier provided with a series of pockets, each of a depth to hold two or more boxes at the same time, and means to coöperate with the pockets for forming boxes therein, said carrier being movable relatively to the forming means, whereby the formed boxes are successively placed in the pockets and successive layers of the boxes built up in the pockets before discharge of any of the boxes, the boxes being automatically discharged from the pockets when the latter are filled by the entry therein of a newly-formed box.

19. In a box-making machine the combination of a series of traveling pockets, each of a depth to contain two or more boxes at a time and means to coöperate with the pockets for forming boxes in the pockets one over another, said pockets being movable relatively to the forming means, whereby the formed boxes are successively placed in the pockets and successive layers of the boxes built up in the pockets before discharge of any of the boxes, the boxes being discharged from the pockets one at a time after the glue is set.

20. In a box-making machine, the combination of a holder, means for forming boxes therein, and a re-pressing device comprising an expanding plunger, means for normally holding it in a contracted condition, and means for expanding it, together with means for moving said plunger into and out of the holder after the formation of the boxes therein.

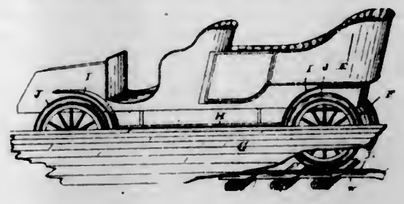
21. In a box-making machine, the combination of a holder, means for forming boxes therein, and a re-pressing device comprising an expanding plunger having movable sections, means for normally holding said sections inward, and means for forcing the sections outward, together with means for moving said plunger into and out of the holder after the formation of the boxes therein.

22. In a box-making machine, the combination of a holder, means for forming boxes therein, and a re-pressing device comprising an expanding plunger having movable sections, springs or drawing and holding said sections inward, and means for forcing the sections outward, together with means for moving said plunger into and out of the holder after the formation of the boxes therein.

23. A carrier for box-making machines, circular in form, and adapted for coöperation with former mechanism, said carrier having dies or pockets extending inward from the periphery, the two side and inner walls of the dies or pockets being integral with the carrier, and plates made separate from and attached to the periphery of the carrier to form the outer end walls of the dies or pockets, said dies or pockets supporting the boxes during the setting of the adhesive.

24. In a box-making machine a carrying-wheel adapted for coöperation with former mechanism and consisting of a rim, radial sections that project outward from the rim placed to provide pockets between the sections of uniform width, and plates attached to adjacent sections to form the outer walls of the pockets, said pockets supporting the boxes during the setting of the adhesive.

822,302. **AMUSEMENT-VEHICLE.** ROBERT F. RICE, Bridgeport, Conn. Filed Oct. 9, 1905. Serial No. 281,926.



Claim.—1. In an amusement-vehicle, the combination with a car mounted upon a wheeled truck, of an extra set of idler-wheels carried by the car, and means for engaging said idler-wheels at certain times to insure their rotation.

2. In an amusement-vehicle, the combination with a wheel-trucked car, of a set of idler-wheels carried by the car, and a short rail to be engaged by the said idler-wheels to rotate the same at certain points in the travel of the car.

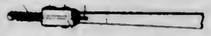
3. In an amusement-vehicle, the combination with a wheeled-truck car and a track therefor, of a set of normally idler-wheels carried by the car, and a spring-actuated short rail in the path of travel of the said idler-wheels adapted to be frictionally engaged thereby.

4. In an amusement-vehicle, the combination with a track and car mounted thereon, of an extra set of idler-wheels carried by the car and normally out of engagement, and a short rail beside the track in line with the travel of the said idler-wheels to engage and operate the same while the car is passing over said short rail.

5. In an amusement-vehicle, the combination with a car and track, of a set of idler-wheels carried by said car, a short rail in line of the travel of the said idler-wheels to be frictionally engaged thereby, and a platform adjacent the short rail.

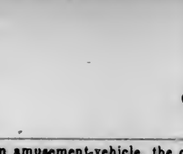
6. In an amusement-vehicle, the combination with a car and wheeled truck, of an extra set of idler-wheels secured to the said car-truck, and located exterior of the truck-wheels, and a short rail to be engaged by the said idler-wheels for operating the same.

822,303. **TYPE-BAR FOR TYPE-WRITING MACHINES.** GUSTAV RIEBE, Kattowitz, Germany, assignor to The Firm of Albert Peiser, Breslau, Germany. Filed Mar. 14, 1905. Serial No. 250,046.



Claim.—In type-writing machines, a type-bar comprising in combination, the type-bar proper, a knife-edge forming the extremity of said bar proper, a type-block having a central bore and a recess, a pin removably secured to said type-bar and passing through the bore in said type-block, an enlargement at the free end of said pin, and a helical spring interposed between said enlargement and said type-block, substantially as and for the purpose set forth.

822,304. **DYNAMO-ELECTRIC MACHINE.** ROBERT H. ROGERS, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Nov. 30, 1904. Serial No. 234,831.



Claim.—1. In combination, a direct-current generator, an internal-combustion engine for driving the generator, a sparking coil for the engine, and means for energizing the sparking coil comprising a main brush of the generator and an auxiliary brush adjustable angularly about the commutator of the generator to vary the voltage between the brushes and connections from said brushes to said sparking coil.

2. In a dynamo-electric machine, a commutator, a brush-holder stud, a main brush-holder secured to said stud, an auxiliary brush-holder, brushes in each of said brush-holders, and means for adjustably securing said auxiliary brush-holder to said stud so that said auxilary brush-holder may be moved bodily about the commutator to vary the angle of arc between the brushes.

3. In a dynamo-electric machine, a brush-holder stud, a main brush-holder secured thereto, a member clamped to the end of said stud, and an auxiliary brush-holder adjustably secured thereto.

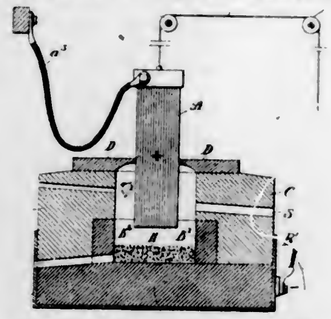
4. In a dynamo-electric machine, a main brush-holder, supporting mechanism therefor, and an auxiliary brush-holder secured to said supporting mechanism and angularly adjustable about the cooperating commutator to vary the angle of arc between the brush-holders.

5. In a dynamo-electric machine, a commutator, a brush-holder stud, a main brush secured thereto and engaging said commutator, an auxiliary brush also secured to said stud and engaging said commutator, and means for adjusting said auxiliary brush about the commutator to vary the angle of arc between the brushes.

6. In combination, a direct-current generator, an internal-combustion engine for driving the generator, and igniting means therefor comprising a main brush of the generator and an auxiliary brush adjustable angularly about the commutator to vary the voltage between the brushes.

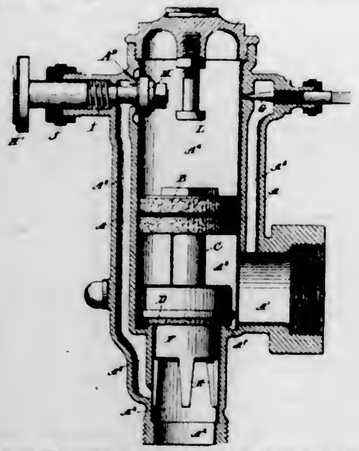
7. In a dynamo-electric machine, a brush-holder stud, a brush-holder secured thereto, a member secured to but insulated from the end of said brush-holder stud, and an auxilary brush-holder secured to said member by a bolt-and-slot connection.

822,305. **PRODUCTION OF STEEL CONTAINING TITANIUM.** AUGUSTE J. ROSSI, New York, N. Y., assignor, by direct and mesne assignments, of forty-two and one-half one-hundredths to James MacNaughton, Tahawus, N. Y., and fifteen one-hundredths to Philip C. Peck, New York, N. Y.; Janet MacNaughton executrix of said James MacNaughton, deceased. Filed May 20, 1902. Serial No. 108,277.



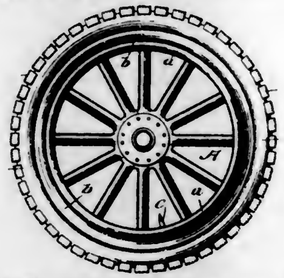
Claim.—The process of making steel containing more than one per cent. and less than five per cent. of titanium which consists in supporting in an electric furnace an ascertained quantity of molten cast-iron having an ascertained content of carbon and then, without the aid of an air-blast, introducing into said molten cast-iron so supported a predetermined quantity of oxids of titanium calculated to be sufficient to decarburize to the required extent the said iron, and then by regulation of the electric current raising and continuing the temperature sufficiently high until such decarburization is effected, and the reduced metallic titanium is incorporated into the resulting steel product.

822,306. **FLUSHING DEVICE.** JOHN N. SANGER, New York, N. Y., assignor, by mesne assignments, to Fred Adee Company, New York, N. Y., a Corporation of New York. Filed Jan. 12, 1903. Serial No. 138,642.



Claim.—The combination, with the casing having an inlet-compartment and an outlet-compartment with a valve-seat between them, of a valve arranged to close upon said seat, a piston connected with but distant from said valve and separating the inlet-compartment from a receiving-compartment, a channel connecting said receiving-compartment with the inlet-compartment, another channel connecting the receiving-compartment with the outlet-compartment, a cap for closing the end of the receiving-compartment opposite to the piston, a stop carried by the cap and arranged to normally arrest the piston and a controlling-valve for normally closing the channel which connects the receiving-compartment with the outlet-compartment, said controlling-valve projecting into the receiving-compartment to serve as a stop for the piston when the cap is removed.

822,307. **PNEUMATIC-TIRE PROTECTOR.** WILLIAM W. SCARBOROUGH and CHARLES E. SCHULTZ, Knoxville, Tenn. Filed Feb. 4, 1905. Serial No. 244,251.

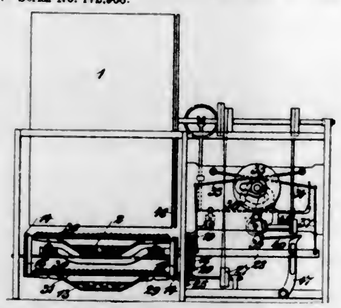


Claim.—1. The combination with the air-tube of a tire, of a shield having a rough inner surface fitted over and inclosing said tube for more than half its circumference and provided with openings in its peripheral portion, and a series of shoes independently supported on the tube and projecting through the openings in the shield, said shoes having flanges which lie between the tube and shield, and said shield being held on the tube by the inflation of the latter, substantially as described.

2. The combination with the air-tube of a wheel-tire, of a shield, having a rough inner surface fitted over and inclosing said tube for more than half its circumference, and a series of shoes secured by the shield to the tube and projecting beyond the shield to form the traction-surface of the wheel, substantially as described.

3. The combination with the air-tube of a tire, of a shield fitted over the tube and having a rough inner surface, said shield inclosing the tube for more than half of its circumference and being held on the tube by the inflation of the latter, and shoes independently supported on the tube and held thereon by the shield, said shoes projecting beyond the shield, substantially as described.

822,308. **PRINTING MECHANISM FOR WARP-PRINTING DEVICES.** FRANZ SCHMIDT, Oberschöneweide, Germany. Filed Sept. 12, 1903. Serial No. 172,908.



Claim.—1. A printing mechanism for warp-printing machines, comprising a printing-drum carrying the yarn, a number of series of traveling rollers, means for applying color to the rollers of each series, and means for pressing the rollers of each series against the yarn simultaneously and with a bodily-reciprocating movement parallel with the axis of the drum.

2. In a device of the character described, the combination with a printing-drum, of a series of rollers arranged in proximity to the periphery of the drum, means for bringing all the rollers into contact with the said periphery simultaneously, and means for moving the rollers bodily across said periphery.

3. In a device of the character described, the combination with a printing-drum, of a pair of shafts, a pair of gear-wheels on each shaft, an endless chain connecting a gear-wheel on one shaft with a gear-wheel on the other shaft, a second endless chain connecting the other said gear-wheels, parallel bars arranged transversely between said chains, rollers organized in series and carried by said parallel bars and arranged in proximity to the periphery of said printing-drum, and transverse to the axis thereof, means for rotating said endless chains, and means for moving said rollers into contact with the periphery of said drum.

4. In devices of the character described, the combination with the printing-drum, of a series of rollers in proximity to the periphery of the drum, a color-box beneath the rollers, means for moving the rollers and color-box together, so as to bring them into operative position relatively to the drum, and means for raising the said rollers and color-box to carry the former into engagement with said drum.

5. In devices of the character described, the combination with the printing-drum, of a series of rollers in proximity to the periphery of the drum, a color-box beneath the rollers, means for moving the rollers and color-box together, so as to bring them into operative position relatively to the drum, means for raising the rollers and color-box to carry the former into engagement with the drum, and means for traversing the said rollers, when brought into engagement with the drum, in a direction parallel with the axis of the drum.

6. In a device of the character described, the combination with a printing-drum, of a pair of endless belts, a series of bars carried transversely by said belts, a series of endless rollers carried by said bars, a color-box secured to each of said bars, means for moving the endless belts so as to bring each bar and color-box into a certain position in proximity to the periphery of said drum, and means for raising any of said positioned color-boxes with the bar and portions of the rollers in engagement therewith, into contact with the periphery of said drum and out of engagement with said endless belts.

7. In a device of the character described, the combination with a printing-drum, of a pair of endless belts, a series of bars carried transversely by said belts, rollers disposed in series and carried by said bars, a color-box secured to each of said bars, means for moving the endless belts so as to bring each bar and color-box into a certain position in proximity to the periphery of said drum, means for raising any of said positioned color-boxes with the bar and portions of the rollers in engagement therewith, into contact with the periphery of said drum and out of engagement with said endless belts, and means for traversing said transverse bar with the rollers and color-box transversely across the engaging periphery of the drum.

8. In a device of the character described, the combination with a printing-drum, of a pair of endless belts, a series of transverse bars connecting the belts, a color-box suspended from each transverse bar, and rollers disposed in series and carried by said transverse bars, said bars having apertures leading from the boxes to the roller-engaging face.

9. In a device of the character described, the combination with a printing-drum, of a pair of endless belts, a series of transverse bars carried by said belts, a color-box suspended from each of said bars, rollers disposed in series and carried by said transverse bar, said belts being supported so that the said bars and color-boxes may be brought successively to a certain position in proximity to the periphery of the drum, means for putting said endless belts in motion, and means for automatically arresting said belt when the next color-box comes into said certain position in proximity to the belt.

10. In a device of the character described, the combination with a printing-drum, of a pair of suitably-supported endless belts, a series of transverse bars carried by said belts, a series of rollers carried by said transverse bar, a color-box suspended from each of said bars, said endless belts being supported so as to bring said bars and color-boxes successively to a certain position opposite the periphery of said drum, a bar suspended from a pair of upright levers, a second pair of levers each having one end pivoted on a stationary fulcrum and the other end pivoted to one of said upright levers, a stem arranged to engage on said second pair of levers, and a rotatable disk having a cam-slot therein arranged to engage said stem by its walls and thereby raise and lower said levers and bar, said bar being disposed below the position of said color-boxes and connecting-bar, that the levers will raise the bar with the color-box and supported portion of the rollers into engagement with the periphery of the drum.

11. In a device of the character described, the combination with a printing-drum, of a pair of suitably-supported endless belts, a series of transverse bars carried by said belts, a series of rollers carried by said transverse bar, a color-box suspended from each of said bars, said endless belts being supported so as to bring said bars and color-boxes successively to a certain position opposite the periphery of said

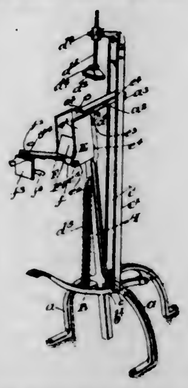
drum, a bar suspended from a pair of upright levers, a second pair of levers each having one end pivoted on a stationary fulcrum and the other end pivoted to one of said upright levers, a stem arranged to engage on said second pair of levers, a rotatable disk having a cam-slot therein arranged to engage said stem by its walls and thereby raise and lower said levers and bar, said bar being disposed below the position of said color-boxes and connecting-bar, that the levers will raise the bar with the color-box and supported portion of the rollers into engagement with the periphery of the drum, said cam-slot being arranged to retain the levers and bar with the rollers in engagement with the periphery of the drum for a period of time, a second disk having a cam-slot, a lever having a pin engaging said latter disk at its slotted portion, and levers connecting said latter lever with said color-box-raising bar, said second cam-disk being so arranged as to give said color-box-raising bar an endwise motion and thereby cause the engaging portion of the rollers to move transversely across the engaging periphery of the drum.

822,309. **PROCESS OF PRODUCING ELASTIC AND SCENTED RUBBER SHEETING.** WILLIAM F. A. SCHRADER, Brooklyn, N. Y., assignor to Traun Rubber Co., College Point, N. Y., a Corporation of New Jersey. Filed Sept. 22, 1904. Serial No. 225,468.

Claim.—1. The process of producing thin, scented rubber-dam sheeting consisting in incorporating with pure ground rubber solid perfumes of uniform chemical constitution in powdered form, calendering the product thus obtained until it has the thickness of fine rubber-dam sheeting, and vulcanizing same.

2. The process of producing scented rubber-dam sheeting consisting in incorporating with the pure ground rubber crystallized perfumes in powdered form, calendering the product thus obtained until it has the thickness of rubber-dam sheeting and vulcanizing same.

822,310. **TEA-PACKING MACHINE.** WILBER H. SCOTT, Ottawa, Canada. Filed May 5, 1905. Serial No. 259,041.



Claim.—1. In a tea-packing machine the combination with the main standard, of a suitable die-box secured thereto, a depressible plunger supported vertically above said die-box adapted to be swung out of vertical alinement with the said die-box as and for the purpose specified.

2. In a tea-packing machine the combination with the main standard, of a suitable die-box secured thereto, a vertically-adjustable plunger supported above said die-box adapted to be swung out of vertical alinement with the said die-box as and for the purpose specified.

3. In a tea-packing machine the combination with the main standard, of a die-box secured thereto, a foot-lever pivotally secured beneath the said die-box, bars pivotally secured intermediate of the length of the said lever, having a horizontally-extended upper end, a bearing carried by said end, a plunger-rod adjustably secured within the said bearing, a suitable plunger-head therefor, and means for bringing the plunger back to its normal position after the depression thereof, as and for the purpose specified.

4. In a tea-packing machine the combination with the main standard provided with suitable lugs extending from each side thereof, of a detachable die-box provided with hooks designed to hook over the said lugs forming part of the main standard as and for the purpose specified.

5. In a tea-packing machine the combination with the main standard and the depressible plunger, of a detachable die-box and means for detachably securing the same to the main standard as and for the purpose specified.

6. In a tea-packing machine the combination with the main standard and the depressible plunger, of a die-box suitably secured to the said standard comprising the back and side portions of the box formed in one piece and having the front and bottom portions suitably hinged between the sides thereof as and for the purpose specified.

7. In a tea-packing machine the combination with the main standard and the depressible plunger, of a die-box having an open front and ends and the front portion and bottom portion being formed integrally and pivotally secured between the sides of the box and the top portion of the box suitably hinged to the top of the front portion as and for the purpose specified.

8. In a tea-packing machine the combination with the main standard having a rearwardly-extending upper end, limiting-stops formed upon the sides of the said rearwardly-extending portion and a suitable die-box secured to the said standard, of a foot-lever pivotally secured to a suitable portion of the standard, bars secured to each side of said foot-lever extending upwardly to either side of the rearwardly-extending portion of the standard between the said limiting-stops and having a forwardly-extending bearing portion at their upper ends and a suitable plunger secured within the said bearing portion as and for the purpose specified.

9. In a tea-packing machine the combination with the main standard of a suitable die-box secured thereto, a depressible plunger supported vertically above the said die-box, means for removing it out of vertical alinement with the said die-box as and for the purpose specified.

822,311. **ALTERNATING-CURRENT MOTOR.** CHARLES P. STEINMETZ, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Sept. 26, 1904. Serial No. 225,905.

Claim.—1. In an alternating-current motor, an armature-winding provided with a commutator and brushes, and a field approximately uniformly distributed around the armature and having a portion, adjacent to the armature-coils which are short-circuited by the brushes, reduced in cross-section so as to be saturated through a portion of the working range of the motor.

2. In an alternating-current motor, an armature-winding provided with a commutator and brushes, a main field-winding, an auxiliary field-winding in non-inductive relation to the armature-winding, and means for energizing said auxiliary winding when the motor is operating on a light load.

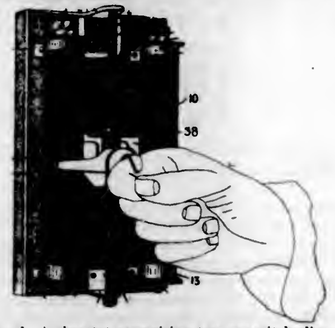
3. In an alternating-current motor, an armature-winding provided with a commutator and brushes, a main field-winding, an auxiliary field-winding in non-inductive relation to the armature-winding, and means for connecting said auxiliary winding in series with said main winding when the motor is operating on a light load.

4. In an alternating-current motor, an armature provided with a commutator and brushes, a field structure approximately uniformly distributed around the armature and having portions recessed so as to be reduced in cross-section, a main field-winding distributed on said structure, an auxiliary winding placed in said recesses, and a switch for cutting said auxiliary winding into and out of circuit.

5. In an alternating-current motor, an armature provided with a commutator and brushes, a field structure approximately uniformly distributed around the armature and having portions recessed so as to be reduced in cross-section and adapted to be saturated on heavy loads, said recesses being located adjacent to the armature-coils short-circuited by the brushes, a main field-winding distributed on said structure, an auxiliary winding placed in said recesses, and a switch arranged to cut said auxiliary winding into and out of circuit.

6. In an alternating-current motor, an armature-winding provided with a commutator and brushes, a field-winding, and means for increasing the field strength relative to the armature-current on light loads.

822,312. **RHEOSTAT.** GEORGE E. STEVENS, Lynn, Mass., assignor to General Electric Company, a Corporation of New York. Filed Oct. 12, 1904. Serial No. 228,134.



Claim.—1. A rheostat comprising two oppositely-disposed resistance units each consisting of a helical insulated conductor having its turns continuously forced together to form a rigid structure, an intermediate guide-rod, a coöperating sliding contact carried thereby, and electrically-controlled means for maintaining said contact in a predetermined position.

2. A rheostat comprising two oppositely-disposed resistance units each consisting of a helical insulated conductor having its turns continuously forced together to form a rigid structure, an intermediate guide-rod, and a coöperating sliding contact carried thereby.

3. A rheostat comprising two vertically-disposed elongated resistance units each having an exposed contact-surface extending throughout its length, an intermediate guide-rod, a coöperating sliding contact carried thereby, a retaining-magnet located at the upper end of said rod, and a coöperating armature carried by said contact.

4. A rheostat comprising two vertically-disposed resistance units each consisting of a helical insulated conductor having its turns continuously forced together to form a rigid structure, an intermediate guide-rod, a coöperating sliding contact carried thereby, a retaining-magnet located at the upper end of said rod, and a coöperating armature carried by said contact.

5. A rheostat comprising an elongated resistance unit having an exposed contact-surface extending throughout its length, a cooperating contact movable lengthwise of said unit and laterally into engagement with said surface, and means for giving said contact a lateral movement and then a longitudinal movement in response to a pull in one direction.

6. A rheostat comprising a resistance unit consisting of a helical resistance-conductor having its turns continuously forced together to form a rigid structure, a coöperating contact movable laterally toward and from said unit and longitudinally over its surface, and means for giving said contact a lateral movement and then a longitudinal movement in response to a pull in one direction.

7. In a rheostat, a movable contact member comprising a longitudinally-movable support, a contact mounted to slide laterally on said support, and means for giving said contact a lateral movement in response to a pull in a longitudinal direction.

8. In a rheotsat, a movable contact member comprising a longitudinally-movable support, a contact mounted to slide laterally on said support, and a lever pivoted to said support and connected to said contact so as to give it a lateral movement in response to a longitudinal pull.

9. In a rheostat, a movable contact member comprising a longitudinally-movable support, oppositely-extending plates mounted to slide laterally on said support, contacts carried at the outer ends of said plates, an operating-lever pivoted to said support, and pin-and-slot connections between said lever and said plates whereby the movement of said lever will produce a lateral movement of said plates and contacts.

10. A rheostat comprising two vertically-disposed resistance units each having exposed contact-surfaces extending throughout its length, an intermediate guide-rod, a contact-support movable thereon, contacts mounted to slide laterally on said support into engagement with said contact-surfaces, and a weighted lever pivoted to said support and connected to said contacts so as to move them laterally when rocked and normally holding said contacts in non-engaging position.

11. A rheostat comprising two vertically-disposed resistance units each having exposed contact-surfaces extending throughout its length, an intermediate guide-rod, a contact-support movable thereon, contacts mounted to slide laterally on said support into engagement with said contact-surfaces, a weighted lever pivoted to said support and connected to said contacts so as to move them laterally when rocked and normally holding said contacts in non-engaging position, an armature connected to the light end of said lever, and a coöperating retaining-magnet at the upper end of said guide-rod.

12. In a rheostat, a movable contact-carrying member comprising a member movable into and out of frictional engagement with a fixed surface, means for throwing said member into engagement with said surface and moving it over the same, and means for retaining the parts in frictional engagement at the end of their movement so as to lock them against return.

13. In a rheostat, a movable contact-carrying member comprising a member movable into and out of frictional engagement with a fixed surface, means for throwing said member into engagement with said surface and moving it over the same, and electromagnetic means for retaining the parts in frictional engagement at the end of their movement so as to lock them against return.

14. A rheostat comprising an elongated resistance unit having an exposed contact-surface extending throughout its length, a movable contact-carrying member, a contact thereon movable into and out of frictional engagement with said surface, means for throwing said contact into engagement with said surface and moving it over the same, and means for retaining the parts in frictional engagement so as to lock them against return.

15. A rheostat comprising an elongated resistance unit having an exposed contact-surface extending throughout its length, a movable contact-carrying member, a contact thereon movable into and out of frictional engagement with said surface, means for throwing said contact into engagement with said surface and moving it over the same, and electromagnetic means for retaining the parts in frictional engagement so as to lock them against return.

822,313. **FASTENING DEVICE.** SERIAH STEVENS, Boston, Mass. Filed Dec. 28, 1905. Serial No. 293,602.



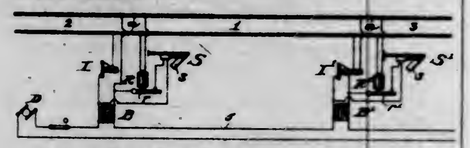
Claim.—1. In a fastening device, a socket member, shank-restraining parts combined therewith, and a pendulous locking-arm the free end of which is disposed between said restraining parts and provided with diagonally opposite shank-engaging portions.

2. In a fastening device, a socket member, shank-restraining parts combined therewith, and a spring-pressed pendulous locking-arm, the free end of which is disposed between said restraining parts and provided with diagonally opposite shank-engaging portions.

3. In a fastening device, a socket member provided with a shank-opening, shank-restraining parts associated with the socket member to engage the shank in different planes and a pendulous locking member provided at its free end with an eye for passage of a shank, the wall of which eye projects into the path of the shank to exert a binding action upon said shank.

4. In a fastening device of the character described, the combination of a socket member provided with shank receiving and restraining parts, a pendulous arm the free end of which is disposed between said shank receiving and restraining parts and provided with an eye, the wall of which normally projects into the path of the shank, and a shank member adapted to be introduced into the socket member, swing the pendulous arm, pass through the eye thereof, and enter the shank receiving and restraining parts, whereby the pendulous arm exerts a binding action on the shank automatically resisting withdrawal of the shank by a direct pull forward.

822,314. RAILWAY SIGNALING SYSTEM. JACOB B. STRUBLE, New York, N. Y., assignor to The Union Switch and Signal Company, Swissvale, Pa., a Corporation of Pennsylvania. Filed July 13, 1904. Serial No. 216,234.



Claim.—1. In a railway signaling system, the combination of a plurality of track-circuits, a railway-signal controlled from each track-circuit and each comprising in its mechanism an electrically-operated device, a plurality of storage batteries for supplying current to the track-circuits and the electrically-operated devices, and means in each track-circuit for altering a characteristic of the current supplied it from a storage battery.

2. In a railway signaling system, the combination of a plurality of track-circuits, a railway-signal controlled from each track-circuit and each comprising in its mechanism an electrically-operated device, a plurality of storage batteries for supplying current to the track-circuits and the electrically-operated devices, means in each track-circuit for altering a characteristic of the current supplied it from a storage battery, and a charging-circuit for the plurality of storage batteries.

3. The combination with a plurality of railway-signals, track-circuits for controlling the railway-signals, storage batteries for supplying current to the railway-signals and track-circuits, and means for altering a characteristic of the current from the storage batteries to the track circuits.

822,315. TURBINE. JOHANN STUMPF, Berlin, Germany, assignor to General Electric Company, a Corporation of New York. Filed Nov. 4, 1901. Serial No. 81,121.



Claim.—1. In an elastic-fluid turbine, the combination of a support, a plurality of double buckets carried by the support, each double bucket having a wedge-like partition situated between the buckets, and thin flat partitions situated between the adjacent double buckets, which assist in confining and directing the passage of motive fluid as it passes into and out of the bucket-spaces.

2. In an elastic-fluid turbine, the combination of a rotary support or wheel, a plurality of double undercut buckets formed in the rim thereof, each bucket-space occupying a plane substantially tangential to a radius, wedge-like partitions between each two buckets which divide the fluid stream, and thin flat partitions which extend substantially parallel and form the top and bottom walls of the bucket-spaces.

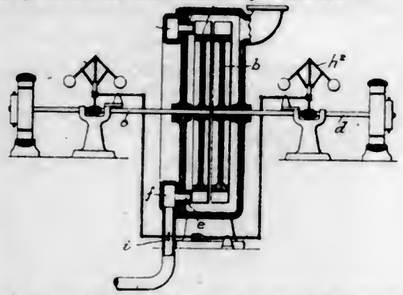
3. In an elastic-fluid turbine, the combination of a wheel having double buckets, each double bucket having a wedge-like partition for dividing the fluid stream and thin flat partitions which form the top and bottom walls of adjacent buckets, a nozzle which surrounds the wheel to a greater or less extent and comprises a plurality of closely-associated passages which discharge motive fluid against the wedge-like partitions.

4. In an elastic-fluid turbine, the combination of a wheel having buckets with spaces between them occupying planes substantially tangential to the periphery of the wheel, a nozzle which presents its discharge-orifices to the buckets, and means for deflecting the exhaust fluid away from the wheel.

5. In an elastic-fluid turbine, the combination of a wheel having double buckets on its periphery, each double bucket having a wedge-like partition for dividing the stream of motive fluid, partitions which form the top and bottom walls of the buckets, a nozzle surrounding the wheel to a greater or less extent and comprising a plurality of closely-associated discharge-passages, the axes of the passages coinciding with a plane passing through the wedge-like partitions.

822,316. STEAM-TURBINE. JOHANN STUMPF, Charlottenburg, Germany, assignor to General Electric Company, a Corporation of New York. Filed Sept. 8, 1903. Serial No. 172,234.

Claim.—1. In a steam or gas turbine, the combination of a plurality of turbine-wheels, means for admitting steam to said turbine, and governor mechanism for governing the steam admission actuated by each turbine-wheel, substantially as described.



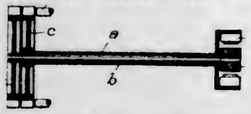
2. In a steam or gas turbine, the combination of several turbine-wheels adapted to act upon separate machines, means for admitting steam to said turbine, means for regulating the admission of said steam, and governing means actuated by each turbine-wheel for controlling the regulating means, substantially as described.

3. In a steam or gas turbine, the combination of a plurality of turbine-wheels, means for admitting steam to the primary wheel, and a governor for each wheel adapted to govern the admission of steam to said primary wheel, substantially as described.

4. In a steam or gas turbine, the combination of a plurality of turbine-wheels adapted to act on separate machines, means for admitting steam to the primary wheel, a governor for each turbine-wheel, a valve for controlling the steam admission, and connections between the governors and said valve, substantially as described.

5. In an elastic-fluid turbine, the combination of bucket-wheels mounted on separate shafts and driving independent loads, a governing mechanism controlling the admission of motive fluid to the wheels, and connections between the independent shafts and the governing mechanism for actuating the latter.

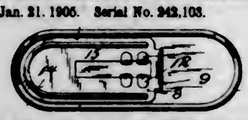
822,317. STEAM-TURBINE. JOHANN STUMPF, Charlottenburg, Germany, assignor to General Electric Company, a Corporation of New York. Filed Sept. 8, 1903. Serial No. 172,240.



Claim.—1. In a device for driving machine elements in opposite directions, the combination of two turbine-wheels adapted to rotate in opposite directions, means for rotating said wheels, a hollow shaft fixed to one turbine-wheel and having a flange at its opposite end to which a machine element may be secured, a shaft between the other turbine-wheel and another element passing through said hollow shaft and flange and being entirely inclosed by the hollow shaft, substantially as described.

2. In a device for driving machine elements, the combination of bucket-wheels adapted to rotate in opposite directions, devices for discharging motive fluid against the buckets, a hollow shaft attached to one bucket-wheel, a second shaft attached to another bucket-wheel and located within the hollow shaft, said shafts driving independent loads, and an enlargement on one of the shafts to which a machine element may be attached.

822,318. TOBACCO-PACKAGE. JOHN W. SURBRUG, New York, N. Y. Filed Jan. 21, 1905. Serial No. 242,103.



Claim.—1. A tobacco-package comprising a closed oblong receptacle having a depressed top surrounded by a flange formed by the walls of the receptacle, said top being provided with an aperture near one end thereof, integral lugs punched up from said top, a cover slidably mounted on said top and fitting between the side flanges projecting above said top, said cover having a central slot through which said lugs project, said lugs being bent down so as to hold said cover in close sliding relation to said top.

2. A tobacco-package comprising a closed oblong receptacle having a depressed top surrounded by a flange formed by the walls of the receptacle, said top being provided with an aperture near one end thereof, integral lugs punched up from said top, a cover having a stiffening-rib extending around the same near the edge, said cover being slidably mounted on said top and fitting between the side flanges projecting above said top, said cover having a central slot through which said lugs project, said lugs being bent down so as to hold said cover in close sliding relation to said top.

822,319. PORTABLE POTENTIAL-INDICATOR. JOHN B. TAYLOR, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed June 10, 1905. Serial No. 264,606.



Claim.—1. A potential-indicator comprising a vessel, movable particles of conducting material in said vessel, and an electrode extending into said vessel.

2. A potential-indicator comprising a sealed glass vessel, a liquid insulator in said vessel, metallic particles in said liquid, and an electrode extending into said vessel.

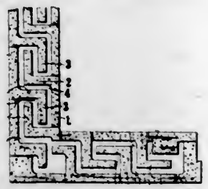
3. A potential-indicator comprising a sealed glass tube, a liquid insulator in said tube, metallic particles suspended in said liquid, and an electrode extending into said tube.

4. A potential-indicator comprising an insulating-handle, a glass tube mounted in said handle, a liquid insulator in said tube, powdered conducting material in said liquid, and an electrode extending into said tube.

5. A potential-indicator comprising an insulating-handle, a metallic sleeve mounted therein, a glass tube fitting inside said sleeve, an inner glass tube, an electrode inclosed in said inner tube, a liquid insulator in the space between said tubes, and conducting particles in said liquid.

6. A potential-indicator, comprising a glass tube, an electrode therein, a liquid insulator in said tube, conducting particles in said liquid, and a small quantity of mercury in said tube.

822,320. BUILDING-BLOCK AND WALL CONSTRUCTED THEREFROM. AUGUSTUS O. THOMAS, Kearney, Nebr. Filed Jan. 7, 1905. Serial No. 240,194.



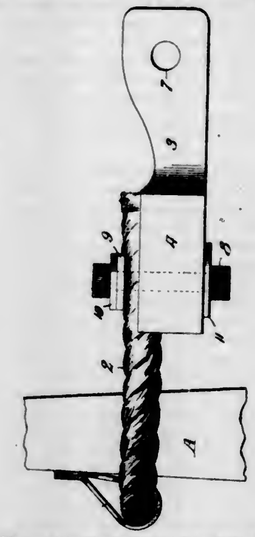
Claim.—1. A wall for building construction composed of independent blocks laid in succeeding courses and having solid front and rear parallel faces, the said blocks having portions extending transversely inwardly from the faces and binding with the block of the preceding and succeeding courses but not contacting with the block forming the opposite face and in the same course

2. A wall for building construction composed of independent blocks laid in succeeding courses, said wall having solid front and rear faces, the block of each face having portions extending inwardly first transversely and then longitudinally with the longitudinal portions each lapped by but not contacting with the longitudinal portion of the same course extending from the opposite face.

3. A wall for building construction composed of independent blocks having parallel front and rear faces and sides transverse thereto laid in succeeding courses, the blocks forming each face not contacting with the blocks in the same course forming the opposite face but each forming a binding contact with blocks in the preceding and succeeding courses which form the opposite face.

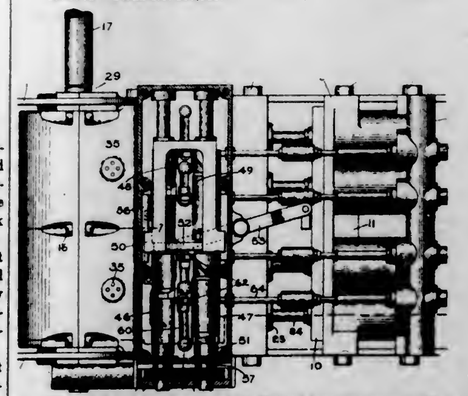
4. A wall for building construction having solid opposite faces and composed of independent blocks laid in succeeding courses, each block having an L-shaped extension secured to one end of the face portion, the said L portions contacting with L portions of preceding and succeeding courses but not contacting with the block in the same course forming the opposite face.

822,321. LUG-STRAP CONNECTION FOR LOOMS. JAMES THOMPSON, Somerville, Mass. Filed May 24, 1905. Serial No. 261,930.



Claim.—The combination with a picker-stick, of a loop secured thereto, a tarred-rope lug-strap supported in said loop and embracing the sides of the picker-stick and having its ends extended parallel with each other, a wooden block formed with a head having parallel grooves in its upper face to receive the parallel end portions of the lug-strap and adapted to pivotally connect to the rocker-arm of the loom, a clamping-bolt projected through the head of the wooden block, a clamping-plate disposed on the bolt and bearing on both of the parallel ends of the lug-strap, and a nut on the bolt to clamp the plate on said ends.

822,322. ENGINE. ELIHU THOMSON, Swampscott, and AUGUSTUS A. BALL, Jr., Lynn, Mass., assignors, by direct and mesne assignments, to General Electric Company, a Corporation of New York. Filed May 19, 1902. Serial No. 107,915.



Claim.—1. An engine which is divided into two parts, with an air-space between, the cylinders being in one part and the crank in the other, means for uniting the parts and maintaining a fixed separation, a crank-shaft, bearings for the crank-shaft mounted on the means and extensions on said means whereby the engine can be hung from a vehicle-frame.

2. In an engine, the combination of a cylinder, a crank-case which is separated from the cylinder by an air-space, separators for

holding the crank-case and cylinder at a fixed distance apart, plates which are bolted to and extend beyond both the crank-case and cylinder, and means for detachably securing the crank-case and cylinder to the plates.

3. In an engine, the combination of a cylinder, cross-head guides which are separated from the cylinder by an air-space, plates to which the cylinder and guides are detachably secured, having a greater cross-sectional area in proximity to the crank-shaft for receiving the bearings, bearings supported on the plates, and extensions on the plates by means of which the engine is supported.

4. In an engine, the combination of a crank, a casing therefor, a cylinder which is separated therefrom by an air-space, a pair of oppositely-disposed plates to which the case and cylinder are detachably secured, and bearings for the crank-shaft that are carried by the plates.

5. In combination, an engine which is divided into two parts, one part consisting of a cylinder-section and the other a cross-head and crank-shaft section that is entirely closed, a pair of oppositely-disposed plates for preserving the alinement of the parts, separators for holding the sections a fixed distance apart, and extensions formed on the plates by means of which the engine is supported.

6. In an engine, the combination of a cylinder, a piston, a rod therefor, a crank-case, a tube which surrounds the rod and acts as a separator for the cylinder and crank-case and also as a packing to prevent exhaust from the cylinder passing into the crank-case, cross-heads and guides therefor located in the crank-case, and plates to which the cylinder and case are detachably secured.

7. In an engine, the combination of a cross-head, a guide therefor, an open-ended cylinder, a piston, a rod therefor, a sleeve which surrounds the rod and acts as a separator and also as a packing, a crank-shaft and bearing, a detachable piece containing a chamber which opens into the cylinder, and a plate which carries the axle-bearing and unites the guide and cylinder and also acts as a support for the engine.

8. In an engine, the combination of a cross-head guide, a cylinder, a detachable piece containing a chamber which opens into the cylinder, the guide and detachable piece being separated by an air-space, and a pair of plates for rigidly uniting the parts.

9. In an engine, the combination of two or more integrally-formed cylinders, a chambered projection formed thereon which acts as a brace and also to receive the exhaust, a crank-case, separators between the cylinders and the case, and side plates to which the cylinders and case are detachably secured.

10. In a single-acting engine, the combination of two or more cylinders which have exhaust-ports at one end and are open at the other, a transversely-extending piece which closes in the cylinders, piston-rods extending through the piece, cross-head guides, separators which hold the guides at a fixed distance from the cylinder, and side plates which unite the cylinders and the guides.

11. In an engine, the combination of a plurality of cylinders, a steam-chest formed integral therewith which acts as a brace for one end, ports opening from the chest into the cylinders, and a chambered projection formed on the opposite end of the cylinders which acts as a brace for the said end and also to receive the exhaust.

12. In an engine, the combination of a plurality of cylinders which are rigidly united, the outer cylinder being provided with slotted projections, a closed crank-case, and a pair of side plates which pass through said slots and are bolted to the cylinders and the case, and crank-shaft bearings which are also carried by the side plates.
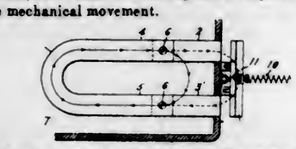
13. In an engine, the combination of a plurality of cylinders, a crank-case, a partition formed in the case which acts to strengthen the same and also to support a crank-shaft bearing, and side plates which unite the cylinder and case and also support the outer ends of the crank-shaft.

14. A single-acting engine comprising a piston, a cylinder therefor which is open at one end, a crank-casing supported in alinement with the cylinder and separated from the open end thereof by an air-space, and means covering the open end of the cylinder for preventing air from cooling the piston and walls of the cylinder.

822,323. **THERMOSTATIC CONTROL.** ELIHU THOMSON, Swampscott, Mass., assignor to General Electric Company, a Corporation of New York. Filed Oct. 1, 1904. Serial No. 226,746.

Claim.—1. In a thermostatic device, a movable armature of magnetic material, a permanent magnet for energizing said armature, and a magnetizable alloy lying in the magnetic field of said magnet and subject to variations in permeability by the action of a heating fluid.

2. In a thermostatic device, means for producing a magnetic field, means for utilizing the heat of the fluid to change the strength of said field, and means for utilizing said change of field strength to produce mechanical movement.



3. In a thermostatic device, a magnetic copper alloy sensitive to changes in temperature below that of boiling water, and an armature in inductive relation to said magnetic alloy and movable relatively thereto.

4. In a thermostatic device, an alloy, the magnetic permeability of which is subject to a violent change at a temperature below that of boiling water, and means for utilizing said changes of permeability to produce mechanical movement.

5. In a thermostatic device, an alloy, the magnetic permeability of which is subject to change upon a change of temperature, means for producing a magnetic field the strength of which changes when the permeability of said alloy changes, an armature located in said magnetic field and means for subjecting said alloy to the action of a heating fluid to produce said change in permeability.

6. In a thermostatic device, a copper alloy, the magnetic permeability of which is subject to change upon a change of temperature, a permanent magnet for producing a magnetic flux in said alloy, and an armature movable relatively to said alloy and traversed by said magnetic flux.

7. The combination of a permanent magnet having a plurality of adjacently-disposed poles for establishing a magnetic field, a sensitive alloy lying in said field, and an armature operable by the energy of said field and set in motion by changes in the permeability of said alloy.

8. In a thermostatic device, an alloy of copper, manganese, aluminium and lead combined in such proportions that the alloy is magnetic at low temperatures but loses its magnetism when heated to a temperature less than that of boiling water, means for producing a magnetic flux in said alloy the strength of which changes when the permeability of said alloy changes, and an armature for utilizing said change of permeability to produce mechanical movement.

9. The combination of a chamber containing a heating medium, an alloy within said chamber exposed to the action of said heating medium and subject to change in permeability with change in temperature, means for establishing a magnetic flux through said alloy and an armature movable relatively to said alloy and set in motion by said change in permeability.

10. The combination of a chamber containing a heating medium, a permanent magnet within said chamber exposed to the action of said heating medium, an alloy in contact with one end of said magnet and receiving a magnetic flux therefrom, said alloy having a permeability subject to change upon a change in temperature, and power-operating means set in motion by said change in permeability of said alloy.

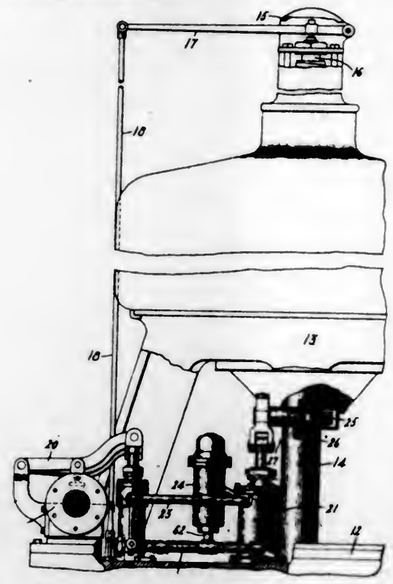
822,324. **GOVERNING MECHANISM FOR ELASTIC-FLUID TURBINES.** ELIHU THOMSON, Swampscott, Mass., assignor to General Electric Company, a Corporation of New York. Filed Sept. 30, 1905. Serial No. 280,764.

Claim.—1. In a governing mechanism for elastic-fluid turbines, the combination of a regulating-valve, a hydraulic motor for operating the valve, a constantly-running pump which supplies the fluid for actuating the motors, and an accumulator that receives the fluid discharged by the pump after the regulating-valve is moved to a given position.

2. In a governing mechanism for elastic-fluid turbines, the combination of a regulating-valve, a hydraulic motor, a lever for transmitting motion from the hydraulic motor to the valve, a constantly-running pump that supplies fluid to the motor for actuating it, and an accumulator that is permanently connected to the discharge side of the pump and receives fluid after the motor is actuated.

3. In a governing mechanism for elastic-fluid turbines, the combination of two or more regulating-valves, a hydraulic motor for actuating each of the regulating-valves, a constantly-running pump that supplies fluid under pressure for actuating the motors, an accumulator in circuit with the pump that is common to the motors, and pilot-valves controlling the action of the motors and the regulating-valves.

4. In a governing mechanism for elastic-fluid turbines, the combination of a regulating-valve, hydraulic motor for actuating the valve, a pump having a pulsating discharge which vibrates the valve in synchronism with its strokes, and a pilot-valve controlling the action of the pump on the plunger.



5. In a governing mechanism, the combination of a regulator, a hydraulic motor for actuating it, a pump having a pulsating discharge for actuating the motor, a pilot-valve which regulates the pulsating action of the pump on the motor, and a device for moving the pilot-valve.

6. In a governing mechanism, the combination of a regulator, a hydraulic motor for actuating it, a pump having a pulsating discharge for actuating the motor, a check-valve between the pump and the motor, a pilot-valve which regulates the action of the pump on the motor, and a speed-responsive device for moving the pilot-valve.

7. In a governing mechanism for elastic-fluid turbines, the combination of a plurality of regulating-valves, a hydraulic motor for actuating each of the regulating-valves, a source of hydraulic pressure which is fluctuating in its nature, for actuating the motors, and pilot-valves for controlling the action of the pulsating source of pressure on the motors.

8. In a governing mechanism for elastic-fluid turbines, the combination of a plurality of regulating-valves, a separate motor for actuating each valve, a source of fluid under pressure that is fluctuating in its nature, pilot-valves for regulating the action of said source on the motors, and a speed-responsive device for adjusting the pilot-valves so that one or more of the regulating-valves will be in the open position, one or more closed and one valve opening and closing in accordance with the pulsations of the said source.

9. In a governing mechanism for elastic-fluid turbines, the combination of a regulator, a hydraulic motor for actuating the regulator, a source of fluid under pressure which is fluctuating in its nature for actuating the motor, and a means that determines whether or not the motor shall vibrate with the fluctuation in pressure of the source of power.

10. In a governing mechanism for elastic-fluid turbines, the combination of a regulating device, a motor for actuating the device, and a source of fluid under pressure which makes a predetermined number of fluctuations in pressure per unit of time, the motor and source being so arranged that the former is caused to vibrate in accordance with fluctuations in pressure of the source.

11. In a governing mechanism for turbines, the combination of an unbalanced regulating-valve, a source of fluid for moving the valve in one direction, the pressure of which fluctuates, a spring for moving the valve in the opposite direction, and a means for controlling the effective action of the said source on the valve.

12. In a governing mechanism for turbines, the combination of an unbalanced regulating-valve, a source of fluid for moving the valve in one direction, the pressure of which fluctuates, a spring for moving the valve in the opposite direction, a means for controlling the effective action of the said source on the valve, and an accumulator in circuit between the source of supply and the valve.

13. In a governing mechanism for turbines, the combination of a regulating-valve, a hydraulically-actuated motor, a lever for transmitting motion from the motor to the valve, a pulsating source of fluid for the motor, a pilot-valve for regulating the effective action of the said source on the motor, and a speed-responsive device that adjusts the pilot-valve as the load changes.

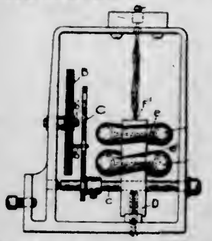
14. In a governing mechanism for turbines, the combination of a plurality of regulating-valves, a pulsating source of fluid for actuating the motors, and a means intermediate the said source and motors arranged to hold one or more valves open and to permit one or more valves to vibrate from the closed to the open position in accordance with the pulsations of the said source.

15. In a governing mechanism for turbines, the combination of a plurality of regulating-valves, a motor for actuating each of the valves, a pump having a pulsating delivery for actuating the valves one after the other, valve mechanism between the pump and the motors arranged to hold one or more valves in the open position and permit one or more valves to vibrate in synchronism with the strokes of the pump, and a speed-responsive device that controls the action of the said valve mechanism.

16. In a governing mechanism for turbines, the combination of a plurality of regulating-valves, a motor for actuating each of the valves, a pulsating source of fluid for actuating the motors, a means intermediate the said source and motors arranged to hold one or more valves open and to permit one or more valves to vibrate from the closed to the open position in accordance with the pulsations of the said source, and an accumulator in circuit with the source which receives fluid when the regulating-valves are held in a given position.

17. In a governing mechanism for turbines, the combination of a plurality of regulating-valves, a motor for actuating each of the valves, a pump having a pulsating delivery for actuating the valves one after the other, valve mechanism between the pump and the motors arranged to hold one or more valves in the open position and permit one or more valves to vibrate in synchronism with the strokes of the pump, a speed-responsive device that controls the action of the said valve mechanism, and an accumulator in circuit with the pump and the motors which receives fluid from the pump when its action does not affect the motors.

822,325. **CONTACT DEVICE.** KNUT TORNBERG, Lynn, Mass., assignor to General Electric Company, a Corporation of New York. Filed Nov. 3, 1904. Serial No. 231,201.



Claim.—1. In a contact device, an endless closed tube having opposite portions bent so that its sides cross at an angle to each other, contacts mounted within said tube, mercury contained within said tube, and means for rocking said tube.

2. In a contact device, an endless closed tube, contacts mounted within said tube, mercury contained within said tube, and mechanism for rocking said tube with a reciprocating motion, said tube being shaped to cause the mercury to circulate through the tube always in the same direction when the tube is rocked.

3. In a contact device, two endless closed tubes, mercury contained in each tube, contacts arranged in one tube to be engaged by the mercury when the tube has been rocked, contacts arranged in the other tube to be engaged momentarily by the mercury while the tube is being rocked, and means for simultaneously rocking both tubes.

4. In a contact device, two endless closed tubes each having opposite portions bent so that the sides of each tube cross at an angle to each other, the sides of one tube crossing at greater angle than those of the other, contacts mounted in each tube, mercury contained within each tube, and means for simultaneously rocking said tubes.

5. In a contact device, a closed tube, contacts mounted therein, mercury contained within said tube, driving means, connections between said means and said tube whereby said tube is gradually rocked by said driving means and then released, and means for producing a quick movement of said tube when released.

6. In a contact device, a closed tube, contacts mounted therein, mercury contained within said tube, means for rocking said tube, and connections between said rocking means and said tube whereby a gradual and then a sudden movement of said tube is produced.

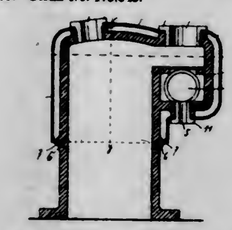
7. In a contact device, a pivotally-mounted closed tube, contacts mounted therein, mercury contained within said tube, means for rocking the center of gravity of said tube to either side of its support, and means for releasing said tube to permit its continued movement by gravity.

8. In a contact device, an endless closed tube having opposite portions bent so that its sides cross at an angle to each other, contacts mounted within said tube, mercury contained within said tube, means for rocking said tube, and connections between said rocking means and said tube whereby each side alternately is gradually brought to a substantially horizontal position and then is moved quickly through said position.

9. In a contact device, an endless closed tube, contacts mounted therein, mercury contained in said tube, a rotating member, a pin carried thereby, a member rigidly secured to said tube and adapted to be engaged and rocked by said pin, said member being arranged to be released by said pin on reaching a predetermined position, and means for producing a quick movement of said member when released.

10. In a contact device, a pivotally-mounted closed tube arranged with its center of gravity above its point of support, contacts in said tube, mercury contained in said tube, a rotating member, a pin carried thereby, and a notched cam secured to said tube and adapted to be engaged, rocked and released by said pin.

822,326. **WATER-JACKET.** FRANK H. TATON, Utica, N. Y. Filed Oct. 3, 1903. Serial No. 175,545.



Claim.—1. In an engine of the character described provided with a water-jacket and a cylinder, means for connecting the same, the said means comprising a ring cast in the cylinder and having its edges turned to secure it in the casting and to provide a surface for the attachment of the jacket thereto, substantially as shown.

2. In an engine-cylinder, a ring curved in cross-section and of thin material cast into the cylinder upon the periphery thereof and a water-jacket secured to the ring, in combination, substantially as shown.

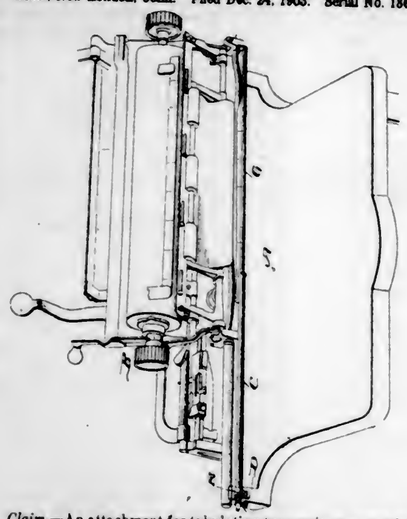
3. In an engine-cylinder provided with a water-jacket, a peripheral ring rigid with the cylinder formed of thin material curved in cross-section to provide a surface substantially parallel with the wall of the jacket for the connection of the jacket thereto, substantially as shown.

4. In an engine of the character described, a cylinder, a jacket of thin sheet metal mounted to inclose the same, a ring of thin sheet metal cast in the cylinder and providing a mounting for the said jacket, the said ring being turned at the edge to provide secure mounting and for expansion and contraction, in combination, substantially as shown.

5. In an engine, a cylinder, a water-jacket, an annular member of thin metal cast in the cylinder providing a surface substantially parallel with the wall of the jacket for the mounting of the jacket thereon and having its body formed to be securely engaged in the casting of the cylinder, in combination, substantially as described.

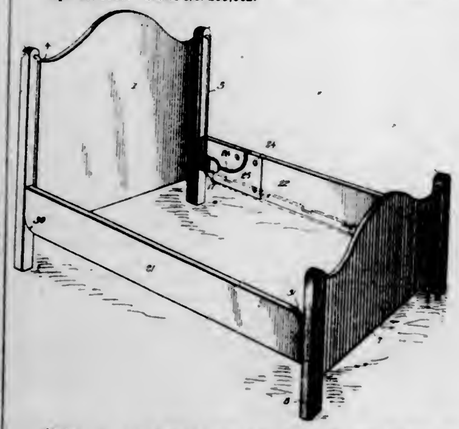
6. In an engine, the combination with the cylinder of a water-jacket of thin material mounted on the cylinder by means of a curved portion thereof extending from the body of the jacket to the body of the cylinder and secured thereto, the said curve providing for the expansion and contraction of the water-jacket, substantially as shown.

822,327. **TYPE-WRITER ATTACHMENT.** CHARLES F. WASHBURN, New London, Conn. Filed Dec. 24, 1903. Serial No. 186,486.



Claim.—An attachment for tabulating type-writers, comprising a cylinder arranged on the frame of the type-writer adjacent to and parallel with the carriage and open at its inner end, a valve-plug threaded into its outer end, an adjustable valve in said plug, and a piston attached to the carriage and adapted to slide in the cylinder and check movement of the carriage in one direction.

822,328. **FOLDING BED.** ALPHA W. WELCH, Albion, Mich. Filed Apr. 29, 1905. Serial No. 258,062.



Claim.—1. A bedstead comprising head and foot boards, the headboard having guide-rails, side rails between the head and foot boards, each side rail having a slot formed in each end, and a hinge connection between the corresponding slots of the side rails and the footboard and the corresponding slots and the aforesaid guide-rails.

2. A bedstead comprising head and foot boards, the headboard having guide-rails, side rails between the head and foot boards, each side rail having a slot at each end, and a hinge pivotally and slidably connected with each of the aforesaid guide-rails and each provided with a headed projection for engagement in the corresponding slot of the corresponding side rail, and a hinge connection between the footboard and the corresponding slot of the corresponding side rail.

3. A folding bedstead comprising a head and foot board, and side rails detachably connected to the head and foot boards, connections between the rails and said boards permitting of a vertical and lateral swinging movement of the rails with respect to the headboard.

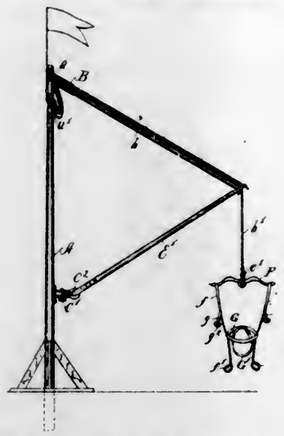
4. A bedstead comprising head and foot boards, the headboard having guide-rails, side rails between the head and foot boards, and hinge connections between the side rails and guide-rails of the headboard and the side rails and the footboard whereby the rails may have vertical and lateral swinging movement with respect to the headboard and whereby the rails may be swung vertically and moved in their vertical position with their hinge connection upon the said guide-rails

5. A bedstead comprising head and foot boards, the headboard having guide-rails connected thereto, side rails, the inner faces of the side rails at each end being provided with curved slots and connections between the side rails, the guide-rails and the footboard whereby a sliding and swinging movement of the rails and the footboard is permitted.

6. A bedstead including a headboard having guide-rails secured thereto, a footboard, side rails between the said boards, a connection between the side rails and the guide-rails of the headboard to permit of a shifting of the side rails to present the under faces of the latter to the inner face of the headboard.

7. A bedstead including a headboard having guide-rails secured thereto, a footboard, side rails between the said boards, a connection between the side rails and the guide-rails of the headboard to permit of a shifting of the side rails to present the under faces of the latter to the inner face of the headboard, and a connection between the side rails and footboard to permit swinging of the latter to present the inner face of the footboard to the top edges of the side rails.

822,329. **PHYSICAL-CULTURE APPLIANCE.** MARGARET A. WILCOX, Chicago, Ill. Filed May 1, 1905. Serial No. 258,206.

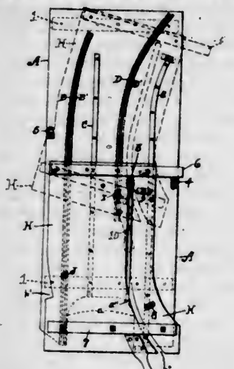


Claim.—1. In a device of the class described, the combination of a standard, an arbor, a double ginglymoid joint secured to said standard and to the arbor whereby the outer end of the arbor is allowed to swing on the arc of a circle or be moved vertically, springs secured to the standard above the arbor, ropes or the like secured to the free end of the arbor and to the springs, and a swinging frame suspended by a rope or the like from the top of the standard, said rope passing through an aperture in the end of the arbor, substantially as described.

2. In a physical-culture apparatus, a standard supporting an arbor hinged thereto, coiled springs secured to the standard above the arbor, ropes secured to said coiled springs and to the free end of the arbor, in combination with a cross-arm depending from one of the aforesaid ropes, side-supporting straps depending from said cross-arm, a belt secured to said supporting-straps, an abdominal strap secured to said belt, and hand-straps attached to said supporting-straps, substantially as described.

822,330. **SAW-TABLE FOR CURVED WORK.** BENTON WILSON, Cambridge City, Ind. Filed Aug. 11, 1905. Serial No. 273,736.

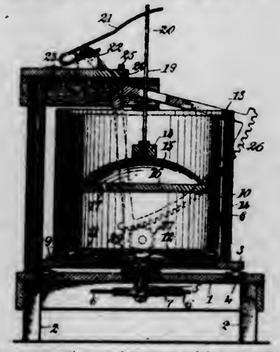
Claim.—1. In mechanism for curve-sawing the combination of a carriage having pintles I J with a relatively fixed table, having two parallel double tracks receiving the said pintles, and a saw working up through said table and carriage, the curvature of said tracks corresponding to that of the outline to be cut on the article, and the said carriage and table being further provided with a stop and lateral notched part adapted to engage each other for limiting the movement of the carriage in one direction substantially as set forth.



2. In mechanism for curve-sawing, the combination of a carriage having transverse cleats 6 and 7, curved slot h'', pintles I J in combination with a relatively fixed table having raised longitudinal cleats C D, two curved parallel double tracks receiving said pintles, stops 4 and 5 and a saw-opening and a saw working through said saw-opening and said curved slot, the curvature of said slot and said tracks corresponding to that required for the article and the stops 4 and 5 being arranged for engagement respectively with cleat 6 and notched part h' of the table substantially as set forth.

3. In combination with a relatively fixed table and a feed-table carriage movable over the top thereof and notched at one side, a saw working through slots in these two parts, means for guiding the movement of the carriage in the desired curvilinear lines and a relatively fixed stop arranged to engage the notched part of said carriage and limit its movement in one direction substantially as set forth.

822,331. **WASHING-MACHINE.** GUSTAVUS H. WISNER, Pioneer, Mont. Filed July 19, 1905. Serial No. 270,382.



Claim.—1. A washing-machine comprising an outer tub and an inner tub having perforations in its bottom, spirally-disposed flanges on the outer side of said inner tub, means for rotating the tubs and a plunger operating in the inner tub.

2. A washing-machine comprising an outer tub, an inner tub, means for imparting rotary motion to the tubs, the said inner tub having its bottom corrugated and perforated, spirally-disposed flanges on the outer side of the inner tub, and a plunger for operating in the inner tub.

3. A washing-machine comprising a platform, a turn-table mounted thereon, tubs supported on the turn-table, a gearing for moving the turn-table in one direction and a spring for moving the turn-table in the opposite direction.

4. A washing-machine comprising a turn-table, outer and inner tubs supported on the turn-table, a plunger for operating in the inner tub, a mutilated gear mechanism for rotating the turn-table in one direction, a spring for rotating the turn-table in the opposite direc-

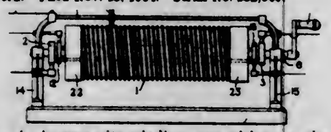
tion, and gearing operated from the turn-table for imparting up-and-down motion to the plunger.

5. In a washing-machine, a platform, a turn-table mounted thereon, inner and outer tubs supported on the turn-table, a shaft extended from the center of the turn-table through the platform, oppositely-extended arms on said shaft, spring connections between said arms and the platform, a segment-gear on the turn-table at one side, a mutilated gear-wheel for engagement with said segment gear or rack, a segment-rack on the opposite side of the turn-table, a segment-rack having gear connections with said last-named rack on the turn-table, and a plunger operated thereby.

6. In a washing-machine, a platform, a turn-table mounted thereon, inner and outer tubs supported on the turn-table, a gearing mechanism for imparting a partial rotary movement to the turn-table in one direction, a spring mechanism for moving the turn-table in the opposite direction, a plunger in the inner tub, a shaft-spring arm connections between the said shaft and the plunger, and means actuated by the turn-table for imparting motion to the shaft.

7. In a washing-machine, a platform, a turn-table thereon, a tub supported on the turn-table, a segment-rack on the turn-table, a bevel-gear engaging with said rack, a pinion on the shaft of the bevel-gear, a segment-rack engaging with the pinion, a shaft to which said last-named segment-rack is attached, a plunger having connection with said shaft, and means for imparting reciprocating rotary movement to the turn-table.

822,332. **INDUCTION-COIL.** MONTRAVILLE M. WOOD, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Nov. 15, 1904. Serial No. 233,869.



Claim.—1. A composite winding, comprising an edge-wound conductor in the form of a helix, and a circular conductor lying between successive turns of said helix.

2. A composite winding, comprising an edge-wound conductor in the form of a helix, and a winding lying between successive turns of said helix and having a return portion in the space inclosed by said helix.

3. An electrical winding having a part in the form of a helix and having a second part consisting of magnetic material and extending through the space inclosed by said helix.

4. An electrical winding having a part comprising a plurality of turns and a second part consisting of a plurality of magnetic conductors in inductive relation to said turns and electrically connecting certain of said turns.

5. A transformer having a winding consisting of a bare conductor wound in the form of a helix, and a second winding having turns which lie between the successive turns of said first-named winding, said second-named winding having a greater number of turns than said first-named winding.

6. A transformer having a winding consisting of a bare conductor wound in the form of a helix, and a second winding for said transformer, said second winding having a plurality of turns between successive turns of said helix and having a return portion threading through said helix from end to end.

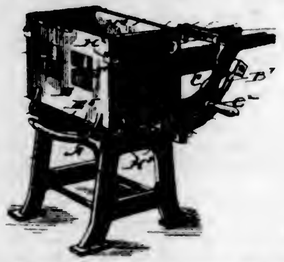
7. A transformer having a primary winding, and a secondary winding in inductive relation thereto, said secondary winding consisting in part at least of magnetic material and having a portion lying in the path of the magnetic flux which threads said winding, said portion extending substantially from end to end of said primary winding.

8. A transformer having a winding and means for establishing a magnetic flux therethrough, said winding consisting in part at least of magnetic material arranged to furnish a continuous path of high permeability for said magnetic flux.

9. In a transformer, a winding, one part of which is in the form of a helix and a second part of which has a high magnetic permeability and extends longitudinally through said helix.

10. In a transformer, a primary winding wound in the form of a helix, and a secondary winding having one part in the form of a helix and lying between the successive turns of said primary winding, and a second part threading longitudinally through said helices and consisting of a plurality of conductors of magnetic material insulated from each other.

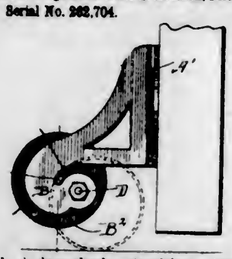
822,333. **CONCRETE-BUILDING-BLOCK MACHINE.** ITHAMER B. YARNELL, Toledo, Ohio. Filed May 13, 1905. Serial No. 260,283.



Claim.—1. The combination with a frame, a mold formed of detachable side, bed and end plates adapted to rest on the frame, means for locking the side and end pieces together and to the bed-plate, vertically-adjustable brackets carried by the frame, a shaft carried by the brackets, pinions thereon, rack-bars engaging the pinions, and cores adapted to work in the mold and connected to the rack-bars.

2. A machine of the kind described comprising a bed-plate, end plates hinged thereto, front and rear plates resting on the bed-plate and locked to the end plates, alining opening in the said front and rear plates, vertically-adjustable brackets in advance of the front plate, a shaft carried by the brackets, pinions slidably carried by the shaft, racks in engagement with the pinions, and cores carried by the racks, as and for the purpose set forth.

822,334. **DOOR-CHECK.** JOSEPH S. YOUNG and JOHN N. HARVEY, Pittsburg, Pa., assignors to John Q. Everson, Pittsburg, Pa. Filed May 27, 1905. Serial No. 262,704.

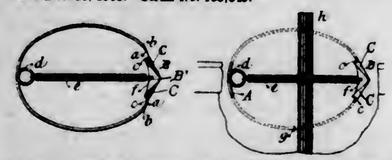


Claim.—1. A door-check comprising a two-part bracket, one part being adapted to be arranged at a right angle to the face of the door, and a disk eccentrically pivoted to said part, and a stop carried by said disk to engage the opposite sides of the end of the bracket, substantially as described.

2. A door-check comprising a bracket, a disk eccentrically pivoted to the end of said bracket, said end portion being slotted on a curve concentric with the pivot and a stop carried by the disk and adapted to enter the slot, as described.

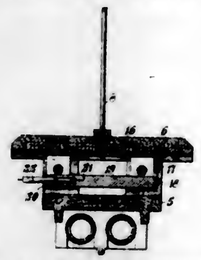
3. A door-check, comprising a two-part bracket, having a depending slotted outer end, a disk eccentrically pivoted to the end of said depending portion, a stop carried by said disk upon one side and a pin arranged upon the other side, the depending portion of the bracket having a stop-shoulder against which the stop abuts, substantially as described.

822,335. **POCKET SAFETY-PIN.** BRADFORD ALMY, Ithaca, N. Y. Filed Dec. 18, 1903. Serial No. 185,649.



Claim.—A pocket-protector comprising oppositely-disposed attaching members, each member having a pointed end, the pointed ends of the members being at the same end of the protector, a retainer comprising a web having its edges turned over to form conical receiving sockets, one for the pointed end of each member, each pointed end being removable from its socket, lugs integral with the interior wall of said sockets to engage in notches in said pointed ends, and a flexible binding member connecting the opposite ends of the protector.

822,336. **THERMAL CUT-OUT FOR ELECTRIC CIRCUITS.** JAMES C. ARMOR, Pittsburg, Pa., assignor to George Westinghouse, Pittsburg, Pa. Filed June 8, 1903. Serial No. 160,636.

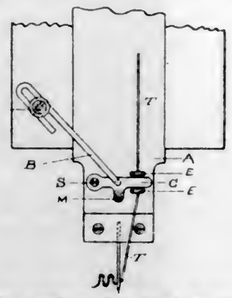


Claim.—1. In an electric lamp, the combination with a glower that is a non-conductor at ordinary temperatures, of an electric heater therefor and a thermal cut-out in the heater-circuit comprising a solid-metal body having a cavity in one end thereof, vaporizable material in said cavity and a terminal plug removably fitted into one end of said cavity.

2. In an electric lamp, the combination with a glower that is a non-conductor at ordinary temperatures, of an electric heater therefor and a thermal cut-out comprising a solid-metal rod having a cylindrical chamber in one end, a body of vaporizable material in said chamber and a terminal plug normally fitted into the outer end of said chamber.

3. The combination in an electric circuit, of a solid-metal rod having a cavity in one end and constituting one terminal, a plug fitted into the end of the cavity and constituting the other terminal and a charge of combustible or vaporizable material in said cavity that acts to blow out the plug when subjected to a rise of temperature above a predetermined limit.

822,337. **THREAD-CONTROLLING DEVICE FOR SEWING-MACHINES.** CHARLES V. BAUER, Louisville, Ky., assignor to The Bauer Machine Company, a Corporation. Filed June 17, 1903. Serial No. 161,898.



Claim.—1. The combination, with the stationary head of the sewing-machine, of the striker-arm having one end formed as an elongated loop, a clamp-screw passing through the loop and serving to support the arm in any required adjustment, the thread-clamp C, secured at one end of the reciprocating needle-bar, and guides between which its free end projects, the free end of said striker-arm pressing upon the thread-clamp and adapted to slide on or off the same, substantially as described.

2. In a sewing-machine the combination of a needle-bar, means for holding and guiding the same which leaves exposed a portion of the face of the needle-bar, a spring thread-clamp secured to the needle-bar and having its spring action away from the bar and away from the thread, means for guiding the thread between the face of the needle-bar and the free portion of the clamp, and a striker-arm attached to the frame of the machine and having its end constructed and arranged in the path of the clamp to force the same periodically against the thread as the needle-bar descends, substantially as and for the purposes described.

3. In a sewing-machine the combination of a needle-bar, means for holding and guiding the same arranged to leave exposed a portion of the face of the needle-bar, a spring thread-clamp secured to the needle-bar and having its spring action away from the bar and away from the thread, means for guiding the thread between the face of the bar and the free portion of the clamp, and a striker-arm attached to the frame of the machine and having its end constructed and arranged in the path of the clamp to force the same periodically against the thread as the needle-bar descends, the striker-arm having its operative end vertically adjustable along the path of the clamp, substantially as and for the purposes described.

4. In a sewing-machine the combination of a needle-bar, means for holding and guiding the same, a spring thread-clamp secured to the needle-bar and having its spring action away from the needle-bar and away from the thread, means for guiding the thread under the free portion of the clamp, and a striker-arm attached to the frame of the machine and having a portion which is constructed and arranged in the path of the clamp to force the same periodically against the thread to hold the latter, substantially as and for the purpose described.

822,338. **PYROMETER.** EDWARD BENNETT, Pittsburg, Pa., assignor to George Westinghouse, Pittsburg, Pa. Filed Oct. 27, 1900. Serial No. 34,677.



Claim.—1. A pyrometer comprising an elongated resistance-body composed of one or more of the stable, refractory oxids and being a non-conductor of electricity, when cold, that has a negative temperature coefficient, relatively low resistance, refractory terminal conductors cemented to the ends thereof, and a protecting device for said body.

2. A pyrometer comprising an elongated, cylindrical resistance-body composed of one or more of the stable, refractory oxids and being a non-conductor of electricity when cold and a conductor when hot, relatively low resistance, refractory terminal conductors cemented to its ends, and supporting and protecting means for said resistance-body.

3. A pyrometer comprising an elongated resistance-body that is composed of one or more of the stable, refractory oxids; that is a non-conductor of electricity when cold, relatively low resistance, refractory terminal leads cemented to its ends and a tube of refractory material inclosing and supporting said resistance-body.

4. A pyrometer comprising an elongated resistance-body that is composed of one or more of the stable, refractory oxids; that is a non-conductor of electricity when cold, relatively low resistance, refractory terminal leads cemented to its ends, a tube in which said body is located and a larger tube surrounding the first-named tube.

5. A pyrometer comprising two tubes of refractory material, the one within the other, and a resistance-body composed of one or more of the stable, refractory oxids of metals and having a negative temperature coefficient, and refractory, terminal leads which are respectively located within the inner tube and between the tubes.

6. A pyrometer comprising an elongated resistance-body of refractory material having a negative temperature coefficient and relatively low resistance, refractory terminal conductors cemented to its ends and two refractory tubes, the one within the other for protecting the refractory body and separating the terminal leads from each other.

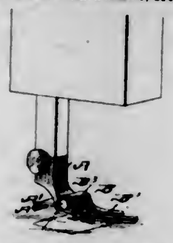
822,339. **ALKYLOXYACETYL COMPOUND OF PYROCATECHINMONOETHYL ETHER.** RUDOLPH BERENDES, Elberfeld, Germany, assignor to Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany, a Corporation of Germany. Filed Mar. 31, 1906. Serial No. 309,096.

Claim.—1. The herein-described new alkyloxy acetyl compounds of pyrocatechinmonoalkyl ethers, obtainable by the action of alkyloxy acetyl chlorid on pyrocatechinmonoalkyl ethers, being colorless liquids soluble in ether and alcohol; liberating the phenol compound when reacted upon by dilute caustic alkalies and exhibiting valuable therapeutic properties, substantially as hereinbefore described.

2. The herein-described new ethoxy acetyl guaiacol having the above-given formula, obtainable by the action of ethoxy acetyl chlorid on guaiacol, and being a limpid colorless oil boiling at 150° centigrade under a pressure of about ten millimeters; being soluble in alcohol and ether; being split up into guaiacol and ethoxy acetic acid when reacted upon by dilute caustic alkalies; and exhibiting

valuable therapeutic properties, substantially as hereinbefore described.

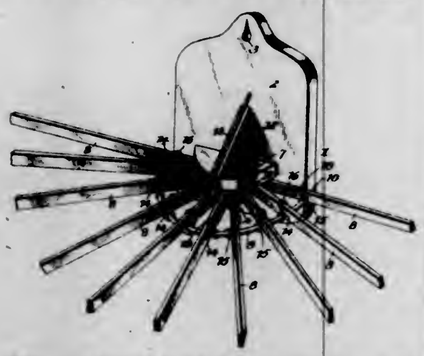
822,340. PRESSER-FOOT FOR SEWING-MACHINES. ABRAHAM BIVINS, Denver, Colo. Filed June 6, 1904. Serial No. 211,343.



Claim.—1. A device of the kind described comprising an ankle terminating in a transverse pintle, and having a flat tread to the rear of said pintle, and a foot portion having a solid heel and bifurcated toe and a transverse barrel intermediate the heel and toe, and adapted to embrace the transverse pintle, the ends of said pintle being enlarged beyond the ends of the barrel.

2. A device of the kind described, comprising an ankle terminating in a transverse pintle and having a flat tread to the rear of said pintle, and a foot portion having a solid heel and bifurcated toe, a transverse barrel formed in the foot intermediate the heel and toe adapted to be turned down and nearly surround the transverse pintle, the ends of the pintle being enlarged beyond the end of the barrel.

822,341. CLOTHES-DRIER. JOHNSON A. BLACK and GIPP M. BREWER, Sylvia, Kans. Filed Mar. 27, 1905. Serial No. 252,415.



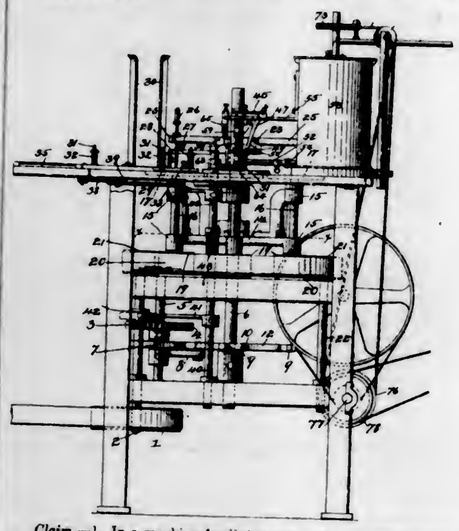
Claim.—1. A device of the class described, comprising a bracket provided with a horizontal pintle, a foldable arm supported between its ends by the pintle and having its inner end engaged with the bracket, and a link hinged to the pintle and to the arm and inclined upwardly and rearwardly when the said arm is in a horizontal position, whereby the arm is locked against direct outward movement.

2. A device of the class described, comprising a support having a projecting portion, a horizontal pintle located in advance of the projecting portion, a swinging link mounted on the pintle, and an arm pivotally connected at an intermediate point with the link and arranged to rest upon the pintle and having its inner end engaged with the projecting portion of the support and held against upward movement by the same.

3. A device of the class described, comprising a bracket provided with a pintle, a foldable arm supported between its ends by the pintle and having its inner end engaged with the bracket, and a link connected with the arm and with the pintle and forming a lock for holding the arm against direct outward movement.

4. A device of the class described, comprising a bracket having a horizontally-disposed projecting portion provided with depending projections spaced apart, a pintle-rod secured at its ends to the bracket at opposite sides thereof and located below and in advance of the projecting portion, a plurality of arms supported at an intermediate point from the pintle-rod and having their inner ends detachably fitted in the spaces between the depending projections, and substantially U-shaped links straddling the drier-arms and hinged to the same and to the pintle-rod and arranged to lock the arms against direct outward movement.

822,342. MACHINE FOR LINING CAN-COVERS. JULIUS BRENSINGER, New York, N. Y., assignor to The Max Ams Machine Company, New York, N. Y., a Corporation of New York. Filed Feb. 11, 1903. Serial No. 142,897.



Claim.—1. In a machine for lining can-covers, in combination with a traveling frame, means to carry a plurality of covers on said frame, means to clamp said covers to said frame, a vertical receptacle independent of said frame, in which the covers are held in a pile, a slideway leading from said receptacle to said frame, said receptacle being open at the bottom, and an intermittently-actuated slide moving past the bottom of said receptacle to automatically carry a cover to the frame and means to operate said slide, substantially as described.

2. In a machine for lining can-covers, in combination with a fixed vertical receptacle, a revolving frame movable past the fixed receptacle carrying a series of cover-receiving depressions, means to give said frame a step-by-step movement whereby each cover depression is brought opposite the receptacle successively, a slideway leading from the receptacle to said frame, a transferring mechanism for shifting a single cover from the receptacle to the frame, and means for operating said mechanism as each depression is brought opposite to slideway, substantially as described.

3. In a machine for lining can-covers, in combination with a fixed vertical receptacle for containing a pile of covers, a revolving cover-carrying frame, means to give an intermittent movement to said frame, a cover-slide member adapted to force a single cover from said receptacle to the frame, means to intermittently actuate said slide member, a fixed composition-applying mechanism maintained in the path of said frame, a series of cover depressions in said frame, means to successively present a depression to the receptacle and to the composition-applying mechanism and to stop the frame during the transfer of a cover and the application of the lining composition; a tank for said composition and means to open said tank to admit a supply to the applying mechanism at each stoppage of the frame, substantially as described.

4. In a machine for lining can-covers, in combination with a vertical, fixed receptacle adapted to contain a pile of can-covers, a revolving cover-carrying frame, a sliding plunger-plate for feeding a cover to the frame from said receptacle, a main driving-shaft, a shaft for said revolving frame, a Geneva stop-movement between said shafts, an eccentric connected to the main shaft and adapted to intermittently operate said plunger-plate and a composition-applying mechanism independent of said revolving frame, substantially as described.

5. In a machine for lining can-covers, in combination with a vertical fixed receptacle adapted to contain a pile of covers, a revolving frame, independently-rotatable separate cover-carriers on said frame, a plunger-plate for feeding the covers singly from said receptacle to said frame, means to stop the frame as each carrier is brought opposite the receptacle and means to operate said plunger-plate during such stoppage, a fixed composition-applying mechanism, means to carry said covers past said mechanism and to successively stop each carrier at the mechanism and means to rotate said carrier and to operate the composition-applying mechanism, during such stoppage, substantially as described.

6. A machine for lining can-covers having a feed-plunger, a guideway-plate, an apertured receptacle and means to permit a yielding movement between said receptacle and guideway-plate, substantially as described.

7. In a machine for lining can-covers, in combination with a revolving cover-carrying frame, a vertical fixed cover-receptacle, an apertured guide-plate forming the bottom of the receptacle, said plate yieldingly mounted, a guideway below said apertured plate, a sliding plunger-plate, means to intermittently revolve said frame, and means to operate said plunger to slide a cover forward during the stoppage of the frame, and a composition-applying mechanism, substantially as described.

8. A machine for lining can-covers having a composition-applying mechanism having a tank, a pipe leading from said tank, a cut-off valve in said pipe and means to operate said valve, substantially as described

9. In a machine for lining can-covers, in combination with a revolving cover-carrying frame, a composition-applying mechanism, said mechanism comprising tank adapted to hold a source of supply, a pipe leading therefrom, a valve-box to which said pipe leads, a valve in said box, said valve normally inoperative except when a cover is carried past the composition mechanism, and means to open said valve by the pressure of a cover, to permit the application of the composition, substantially as described.

10. A machine for lining can-covers having a composition-applying mechanism comprising a source of supply, a controlling-valve, a pivoted hook adapted to hold said valve closed, a cover-carrier and means carried by said cover-carrier to engage said hook, substantially as described.

11. A machine for lining can-covers having a composition-applying mechanism, comprising a source of supply, a controlling-valve box, a pivoted pipe carrying said box, a pivoted hook engaging said box, a cover-carrier, a cover-clamping member adapted to release said hook, and means to restore said box into engagement with the hook, substantially as described.

12. A machine for lining can-covers having a composition-applying mechanism provided with a controlling-valve, a cover-carrier, a pivoted member carried by said carrier and adapted to be raised into position by the interposition of the cover between the carrier and said member to operate said valve, substantially as described.

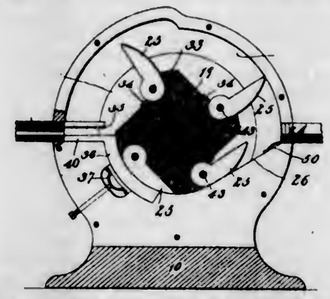
13. In a machine for lining can-covers, in combination with a traveling cover-carrying frame, a fixed composition-applying mechanism, a tank adapted to contain a source of composition-supply, a stirrer in said tank, driving means for said stirrer, a pipe leading from the lower end of said tank, a valve-box to which said pipe leads, a valve in said box and means to operate said valve to open the box as a cover is presented thereto, substantially as described.

14. In a machine for lining can-covers, in combination with a cover-carrying frame, means to revolve the same, separate cover-holding devices on said frame, means to independently rotate said devices, a fixed cover-receptacle, and a cover-feed plunger and means to intermittently operate the same, a composition-applying mechanism fixed in the path of the covers, a valve controlling said mechanism, means to operate said valve as a cover is presented to said mechanism, a stop-bar extending over the frame and a discharge-chute leading from said frame to which the cover is discharged by contact with said bar, substantially as described.

822,343. ROTARY ENGINE. CARTER M. CAGLE, Beckville, Tex., assignor of one-half to Lee C. Pruitt, Beckville, Tex. Filed Apr. 3, 1906. Serial No. 309,633.

Claim.—1. In a rotary engine, a cylinder having a pressure or working space, and an enlarged space or steam-chest, a revoluble piston-drum arranged within the cylinder and having a portion of its periphery in contact with a portion of the curved wall of the cylinder, inlet and exhaust ports for the actuating fluid, and a plurality of pivotally-mounted wings carried by the drum and arranged to move outward to approximately radial position in advance of their movement into the pressure-space.

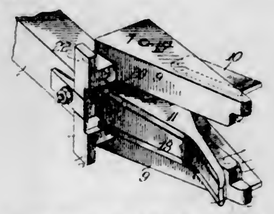
2. In a rotary engine, a cylinder having inlet and exhaust ports, and provided with a pressure-space and with an enlarged space or steam-chest, a revoluble piston-drum having a portion of its periphery engaging a portion of the circular wall of the cylinder, a plurality of piston-wings pivoted to the drum and movable outward from said drum while passing through the enlarged space or steam-chest, and means for moving the piston-wings toward and from the periphery of the drum.



3. In a rotary engine, a cylinder having inlet and exhaust ports, a piston-wing disposed within the cylinder, a curved packing-block, a spring for forcing the same into engagement with the periphery of the piston-drum, and a plate secured to said block and forming one of the walls of the inlet-port.

4. In a rotary engine, a cylinder having a circular wall divided into portions of different radial extent, there being an inclined shoulder connecting two of the curved walls of different radii, a revoluble piston-drum having a portion of its periphery in contact with that portion of the cylinder-wall nearest the axis of rotation of the piston-drum, a pivotally-mounted piston-wing carried by the drum, and yieldable members adjacent to said inclined shoulder, and with which the wings engage as they pass from operative position to be folded against the piston-drum.

822,344. CAR-COUPLING. LEWIS C. CARY, Chicago, Ill., assignor to Cary Inventions Co., a Corporation of Illinois. Filed Oct. 9, 1905. Serial No. 281,899.



Claim.—1. In a car-coupling a head comprising two jaws positioned one above the other, with inclined engaging faces, an integral rib on the back of each jaw, means for locking said head to an opposing head and a releasing-heel for unlocking the heads.

2. In a car-coupling a head comprising two jaws having inclined engaging faces, an integral rib on the back of each jaw, a jaw-bearing abutment, means for coupling said head to an opposing head, and a releasing-heel for uncoupling said heads.

3. In a car-coupling a head comprising two jaws normally positioned one above the other with inclined engaging faces, an integral rib on the back of each jaw, a jaw-bearing abutment with lateral arms extending therefrom, means for coupling said head to an opposing head, and means for uncoupling said heads.

4. In a car-coupling a head comprising two jaws triangular in cross-section and having inclined engaging faces, an integral rib on the back of each jaw, a bearing-abutment near the rear of said jaws with lateral arms extending therefrom, pushing-surfaces on the forward ends of said jaws, means for coupling said head to an opposing head and means for uncoupling said heads.

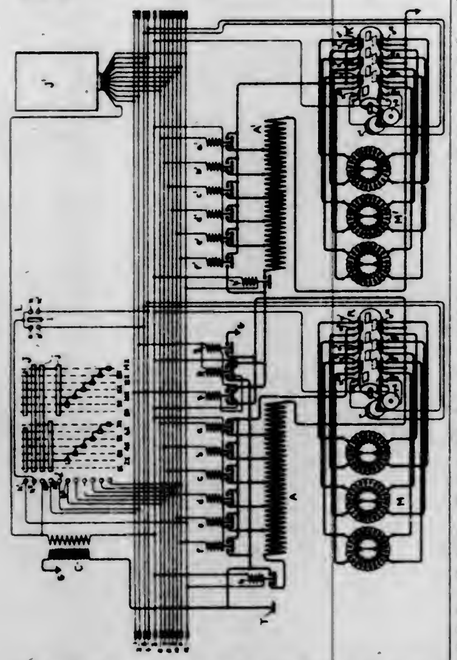
5. In a car-coupling a head comprising two jaws normally positioned one above the other with inclined engaging faces, an integral rib on the back of each jaw, a jaw-bearing abutment with arms extending laterally therefrom, a pushing-surface on the forward end of each jaw, a spring-pressed coupling-lever for coupling said head to an opposing head, and means for uncoupling said heads.

6. In a car-coupling a head comprising two jaws with inclined engaging faces, an integral rib on the back of each jaw, a bearing-abutment with arms extending laterally therefrom, forward extensions on said jaw adapted to be inserted between said inclined faces and said arms to prevent lateral movement of the jaws, a pushing-surface on the forward end of each jaw, a spring-pressed coupling-lever and a releasing-heel for uncoupling said heads.

7. In a car-coupling a head comprising two jaws normally positioned one above the other with inclined engaging faces, an integral rib on the back of each jaw, a bearing-abutment with arms extending laterally therefrom, a spring-pressed pivoted coupling-lever for coupling said head to an opposing head, and a releasing-heel for uncoupling said heads.

822,345. CONTROLLING ALTERNATING-CURRENT MOTORS.

FRANK E. CASE, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Jan. 25, 1904. Serial No. 190,425.



Claim.—1. In combination, a plurality of alternating-current motors, compensators therefor, devices adapted to vary the points of connection of said motors to said compensators and for varying the relative connections of said compensators to each other, and means for controlling said devices from a distance.

2. In combination, a plurality of alternating-current motors, compensators therefor, and a control system adapted to vary the points of connection of said motors to said compensators and to vary the relative connections of said compensators to each other.

3. In combination, a plurality of alternating-current motors, compensators therefor, and a control system adapted to connect said compensators in series and to connect the motors to receive a fraction of the compensator voltage, then to shift the connection of the motors to receive the whole compensator voltage, then to connect the compensators in parallel and to connect the motors to receive a fraction of the compensator voltage, and then to shift the connections of the motors to receive the whole compensator voltage.

4. In combination, a plurality of alternating-current motors, compensators therefor, a control system comprising devices for varying the connections of said motors and compensators, and a master-controller adapted to control said devices and arranged to connect said compensators in series and to connect the motors to part of the compensator-windings, then to connect the motors across the whole compensator-windings, then to connect the compensators in parallel and to connect the motors to a part of the compensator-windings.

5. In combination, a plurality of alternating-current motors, compensators therefor, a control system comprising devices for varying the connections of said motors and compensators, and a master-controller adapted to control said devices and arranged to connect said compensators in series and to connect the motors to part of the compensator-windings, then to connect the motors across the whole compensator-windings, then to connect the compensators in parallel and to connect the motors to a part of the compensator-windings and to open the circuit of the compensator-windings.

6. In combination, a plurality of alternating-current motors, compensators therefor, and a control system adapted to vary the points of connection of said motors to said compensators and to vary the relative connections of said compensators and to open the circuits of said compensators when said motors are connected across the terminals thereof.

7. In combination, a plurality of groups of alternating-current motors, a source of current-supply therefor, and a control system adapted to vary the series-parallel connections of said groups and to vary the voltage impressed upon each group.

8. In combination, a plurality of alternating-current motors, a source of current-supply, and a controlling system adapted to connect said motors in series and to impress upon said motors a fraction of the supply voltage then to increase to the full supply voltage the voltage impressed on said motors in series, then to connect said motors in parallel and to impress upon said motors a fraction of the supply voltage, and then to increase to the full supply voltage the voltage impressed upon said motors in parallel.

9. In combination, a plurality of alternating-current motors, compensators therefor, switches adapted to vary the points of connection of said motors to said compensators, switches adapted to vary the relative connections of said compensators to each other, and a control system comprising devices adapted to operate said switches.

10. In combination, a plurality of alternating-current motors, compensators therefor, switches adapted to vary the points of connection of said motors to said compensators, switches adapted to vary the relative connections of said compensators to each other, reversing-switches for said motors, and a control system comprising devices adapted to operate said switches.

11. In combination, a plurality of alternating-current motors, compensators therefor, switches adapted to vary the points of connection of said motors to said compensators, switches adapted to vary the relative connections of said compensators to each other, reversing-switches for said motors, a control system comprising devices adapted to operate said switches, a master control-switch, and a switch controlling the devices for said reversing-switches.

12. The method of controlling a plurality of alternating-current motors, which consists in connecting said motors to compensators, varying the points of connection of the motors to said compensators, and varying the relative connections of said compensators.

13. The method of controlling a plurality of alternating-current motors, which consists in dividing the motor into groups, connecting each group to a compensator, varying simultaneously the points of connection of each group to its compensator, and varying the relative connections of said compensators to the source of current.

14. The method of controlling a plurality of alternating-current motors, which consists in connecting said motors to compensators connected in series to the source of current, shifting the connections of said motors to said compensators to increase the voltage impressed upon said motors, then connecting said compensators in parallel to the source and then again shifting the connections of said motors to said compensators to increase the voltage impressed on said motors.

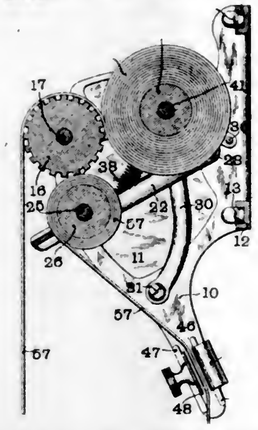
15. The method of controlling a plurality of alternating-current motors, which consists in dividing said motors into groups, connecting the groups to the compensators connected in series to the source of current, shifting the points of connection of said groups to said compentators to increase the voltage impressed on said groups, then connecting the compensators in parallel and again shifting the connections of said groups to the compensators to increase the voltage impressed on said groups.

16. The method of controlling a plurality of groups of alternating-current motors, which consists in varying the series-parallel connections of said groups and varying independently the voltage impressed on each group.

17. The method of controlling a plurality of alternating-current motors, which consists in connecting said motors in series and impressing on said motors a fraction of the supply voltage, then increasing to the full supply voltage the voltage impressed on said motors in series, then connecting said motors in parallel and impressing upon said motors a fraction of the supply voltage, and then increasing to the full supply voltage the voltage impressed on said motors in parallel.

822,346. ROLLER TOWEL-RACK.

JOSEPH C. CHRISTEN and JOSEPH ORGEICH, St. Louis, Mo., and CHARLES BORN, Charlestown, Mass.; said Orgeich and Born assignors to said Christen. Filed Oct. 26, 1905. Serial No. 284,455.



Claim.—1. In a roller towel-holder, the combination with a bracket or support, of a pair of oppositely-rotatable rolls mounted therein and to which the ends of a towel are adapted to be secured with the looped portion thereof depending, a third roll intermediate of the first two rolls and over which the towel is adapted to pass from the let-off roll of the said pair, and means for holding all three rolls in constant contact whereby the rotation of the third roll by a pull on the towel will wind the take-up roll of said pair regardless of the changing diameter.

2. In a roller towel-holder, the combination with a bracket or support, of a pair of oppositely-rotatable rolls mounted therein, and to which the ends of the towel are adapted to be secured with the looped portion thereof depending, a third roll intermediate of the first two rolls and over which the towel is adapted to pass from the let-off roll of the said pair, and spring-actuated means for holding all three rolls in constant yielding contact whereby the rotation of the third roll by a pull on the towel will wind the take-up roll of said pair regardless of the changing diameter of said pair.

3. In a roller towel-holder, the combination with a support, of two parallel rolls mounted to rotate upon said support, a strip of towel fabric having its ends attached to said rolls and adapted to be wound thereon, a third roll mounted to rotate upon said support parallel with and adjacent to said first-named rolls, and means for retaining both towel-holding rolls pressed upon said third roll in yielding contact, whereby as said third roll is rotated the fabric is unwound from one of its holding-rolls and an equal length wound upon the other holding-roll.

4. In a roller towel-holder, the combination with a support, of a pair of parallel rolls rotatably mounted upon said support and movable bodily thereon, a strip of towel fabric having its ends attached to said rolls and adapted to be wound thereon, a third roll rotatably mounted on said support adjacent to said first-named rolls, and means for moving said first-named rolls to keep them constantly in contact with said third roll, whereby as said third roll is rotated the fabric is unwound from one of its holding-rolls and a substantially equal amount wound upon the other holding-roll.

5. In a roller towel-holder, the combination with a bracket or support and a roll journaled in the forward portion thereof, guides extending rearwardly from said roll, a let-off roll mounted on said guides and from which the towel is adapted to pass over the first-named roll, means for moving the let-off roll along the guides to keep the same constantly pressed against the first-named roll, a take-up roll to which the other end of the towel is adapted to be secured and spring-pressed arms carrying said take-up roll and constantly pressing it up against the under side of the first-named roll for rotation thereby.

6. In a roller towel-holder, the combination with a support, of a pair of parallel rolls, a strip of towel fabric having its ends attached to said rolls and adapted to be wound thereon, a pair of pivoted arms in which the lower or take-up one of said rolls is rotatably mounted, means for forcing said arms upwardly, a guide thereabove for the other of said rolls, means for moving said second roll outwardly on its guide, and a third roll at the outer end of the guide and with which said first and second rolls are kept constantly in contact, whereby as said third roll is rotated the fabric is unwound from one of its holding-rolls and an equal length wound upon the other holding-roll.

7. In a roller towel-holder, the combination with a support, of a pair of parallel rolls, a strip of towel fabric having its ends attached to said rolls and adapted to be wound thereon, a pair of pivoted arms in which the lower or take-up one of said rolls is rotatably mounted, means for forcing said arms upwardly, a curved guide thereabove for the other of said rolls, means for moving said second roll outwardly on its guide, and a third roll with which said first and second rolls are kept constantly in contact, whereby as said third roll is rotated the fabric is unwound from one of its holding-rolls and a substantially equal length wound upon the other holding-roll.

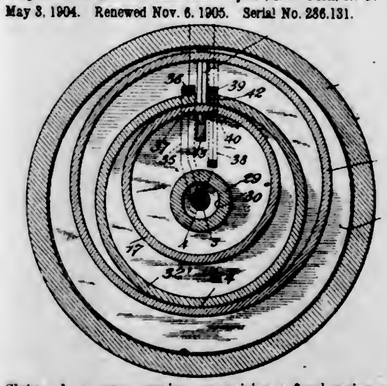
8. In a roller towel-holder, the combination with a support, of a pair of parallel rolls, a strip of towel fabric having its ends secured to said rolls and adapted to be wound thereon, a pair of spring-pressed pivoted arms in which the lower or take-up one of said rolls is mounted, means for pressing the arms upwardly, a guide thereabove for the other of said rolls, a pair of spring-pressed pivoted arms for moving said second roll outwardly on its guide, and a third roll with which said first and second rolls are kept constantly in contact, whereby as said third roll is rotated the fabric is unwound from one of its holding-rolls and a substantially equal length wound upon the other holding-roll.

9. In a roller towel-holder, the combination with a support, of a pair of parallel rolls, a strip of towel fabric having its ends secured to said rolls and adapted to be wound thereon, a pair of spring-pressed pivoted arms in which the lower or take-up one of the said rolls is mounted, means for pressing the arms upwardly, a curved guide thereabove for the other of said rolls, a pair of spring-pressed pivoted arms for moving said second roll outwardly on its guides, and a third roll with which said first and second rolls are kept constantly in contact, whereby as said third roll is rotated the fabric is unwound from one of its holding-rolls and a substantially equal length wound upon the other holding-roll.

10. In a roller towel-holder, the combination with a support, of a pair of parallel rolls, a strip of towel fabric having its ends secured to said rolls and adapted to be wound thereon, a pair of arms pivoted to said support on which one of said rolls is mounted, guides on the support on which the other of the said rolls is movably supported, a pair of arms pivoted on the support, and adapted to move said roll on its guides, a third roll mounted in fixed bearings on said support parallel with and adjacent to said towel-carrying rolls, and a spring connecting said pairs of pivoted arms and tending to move them in direction to force the towel-carrying rolls against said third roll, whereby as the said third roll is rotated the fabric is unwound from one of its holding-rolls and a substantially equal length wound upon the other holding-roll.

822,347. ROTARY ENGINE.

GEORGE P. CLARK, New York, N. Y., assignor of one-half to Emma Mann Vynne, New York, N. Y. Filed May 3, 1904. Renewed Nov. 6, 1905. Serial No. 286,131.



Claim.—1. A rotary engine, comprising a fixed casing and a chambered piston having eccentrically-mounted rotatable sections, substantially as described.

2. A rotary engine, comprising a fixed casing and a chambered piston therein having eccentrically-mounted contacting rotatable sections, one section being driven by the other section, substantially as described.

3. A rotary engine, comprising a fixed casing and a chambered piston therein having rotatable sections provided with circular flanges, the flange of one section contacting with the flanges of the other section, substantially as described.

4. A rotary engine, comprising a fixed casing, a chambered piston therein having rotatable sections provided with circular flanges and an abutment carried by one section and movable within the other section, substantially as described.

5. A rotary engine, comprising a fixed casing, a chambered piston therein having rotatable sections provided with circular contacting flanges and an abutment carried by and slidable through the flange of one section and movable around and between the flanges of the other section, substantially as described.

6. A rotary engine, comprising a fixed casing, a chambered piston therein having rotatable eccentrically-mounted sections provided with circular contacting flanges and an abutment carried by and slidable through the flange of one section and movable around and between the flanges of the other section, substantially as described.

7. A rotary engine, comprising a fixed casing, a chambered piston therein having rotatable flanged contacting sections and means for adjusting one of said sections to regulate the contact between the flanges of said sections, substantially as described.

8. A rotary engine, comprising a fixed casing, a chambered piston therein having rotatable sections provided with contacting flanges and an adjustable journal for one of said sections, substantially as described.

9. A rotary engine comprising a fixed casing, a chambered piston therein having a rotatable section provided with contacting flanges and an antifriction-journal for one of said sections, substantially as described.

10. A rotary engine, comprising a fixed casing, a chambered piston therein having rotatable sections provided with contacting flanges and an automatically-adjustable abutment carried by the flange of one of said sections, substantially as described.

11. A rotary engine, comprising a fixed casing, a chambered piston therein having eccentrically-mounted rotatable sections, one section having two concentric flanges and the other section having one flange contacting at two points with the flanges of the other section and an abutment carried by the flange of one section and movable around between the flanges of the other section, substantially as described.

12. A rotary engine, comprising a fixed casing, a chambered piston therein having eccentrically-mounted rotatable sections, one section having two concentric flanges and the other section having one flange contacting at two points with the flanges of the other section and an abutment slidably carried by the flange of one section and movable around between the flanges of the other section, substantially as described.

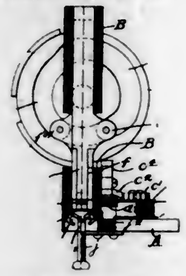
13. A rotary engine, comprising a fixed casing, a chambered piston therein having eccentrically-mounted rotatable sections, one section having two concentric flanges and the other section having one flange contacting at two points with the flanges of the other section and an automatically-adjustable abutment slidably carried by the flange of one section and movable around between the flanges of the other section, substantially as described.

14. A rotary engine, comprising a fixed casing a chambered piston therein having rotatable sections, one section provided with two circular flanges and the other section with one circular flange, the flange of one section located between and contacting with the flanges of the other section at two points and an abutment carried by the flange of one section and movable around between the flanges of the other section, said abutment comprising contacting recessed plates having a spring located in the recess of said plates, substantially as described.

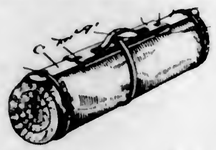
822,348. **STAPLING-MACHINE.** ELMER M. COBB, Portland, Me., assignor to William B. Hay, Portland, Me. Filed May 12, 1904. Serial No. 207,643.

Claim.—1. In a stapling-machine, the combination of a vertically-reciprocating former and driver each provided with a cam-roll and a cam having a single path in which said rolls travel, thereby imparting to said former and driver like motions, one following the other.

2. In a stapling-machine the combination of a vertically-reciprocating former and driver, a swinging geared segment, an anvil formed on said swinging geared segment, a rack engaging said segment and a cam for reciprocating said rack.



822,349. **EXTENSIBLE SHAWL-STRAP BAR.** JOHN CONNETT, Sydney, New South Wales, Australia. Filed Aug. 14, 1905. Serial No. 274,153.

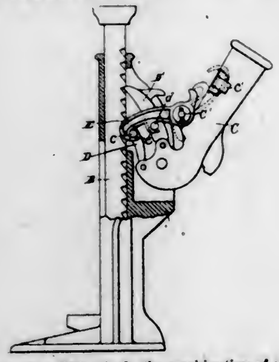


Claim.—1. A device of the kind described comprising a central section longitudinally slotted, end sections adapted to slide upon the central section, and depending means carried by the end sections engaging the slot of the central section, and limiting movement of the end sections with respect to the central section.

2. A shawl-strap bar comprising a central tubular section having a handle and a central strap-loop, solid end sections sliding in the central section and each provided with a strap-loop adjacent their outer ends, the inner end of each of the end sections having a depending hook adapted to slide in a slot produced in the bottom of the central section, as set forth.

3. A shawl-strap bar comprising a central tubular portion rectangular in cross-section and provided with a handle, said central section having a central strap-loop, the ends of said central section being slotted and the bottom of said section having a longitudinal slot, the solid end sections having shoulders adjacent their outer ends, the strap-loops carried by said end sections adjacent their outer ends and the depending hooks arranged at the inner ends of the end sections and adapted to slide in a longitudinal slot in the bottom of the central section, as set forth.

822,350. **LIFTING-JACK.** EUGENE COOK, Kalamazoo, Mich., assignor to Cook's Railway Appliance Co., Kalamazoo, Mich. Filed July 26, 1905. Serial No. 271,372.



Claim.—1. In a lifting-jack, the combination of a frame; a lifting-bar; an operating-lever pivoted to said frame; a pair of pawls pivoted on said lever at opposite sides of its pivot-point; laterally-projecting pins on said pawls; a pair of trip-hooks having a common shank, pivoted on said lever, adapted to engage said laterally-projecting pins on said pawls, arranged so as to withdraw the outer pawl from engagement with the lifting-bar before the inner pawl is acted upon, for the purpose specified.

2. In a lifting-jack, the combination of a frame; a lifting-bar; an operating-lever pivoted to said frame; a pair of pawls pivoted on said lever at opposite sides of its pivot-point; a pair of trip-hooks having a common shank, pivoted on said lever, arranged so as to withdraw the outer pawl from engagement with the lifting-bar before the inner pawl is acted upon, for the purpose specified.

3. In a lifting-jack, the combination of a frame; a lifting-bar; an operating-lever pivoted to said frame; a pair of pawls pivoted on said lever at opposite sides of its pivot-point; laterally-projecting pins on said pawls; a pair of trip-hooks pivoted on said lever, adapted to engage said laterally-projecting pins on said pawls, arranged so as to withdraw the outer pawl from engagement with the lifting-bar before the inner pawl is acted upon, for the purpose specified.

4. In a lifting-jack, the combination of a frame; a lifting-bar; an operating-lever pivoted to said frame; a pair of pawls pivoted on said lever at opposite sides of its pivot-point; a pair of trip-hooks, pivoted on said lever, arranged so as to withdraw the outer pawl from engagement with the lifting-bar before the inner pawl is acted upon, for the purpose specified.

5. In a lifting-jack, the combination of a frame; a lifting-bar; an operating-lever pivoted to said frame; a pair of pawls pivoted on said lever at opposite sides of its pivot-point; trips pivoted on said lever, arranged to engage the said pawls successively to withdraw the outer pawl from engagement with the lifting-bar before the inner pawl is acted upon, for the purpose specified.

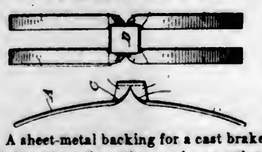
6. In a lifting-jack, the combination of a frame; a lifting-bar; an operating-lever pivoted to said frame; a pair of pawls, pivoted on said lever at opposite sides of its pivot-point; trips pivoted on said lever, arranged to engage said pawls successively whereby they are drawn successively from engagement with said lifting-bar, for the purpose specified.

822,351. **ROTARY CUTTER.** ANDREW J. CORLEY, East Point, Ga. Filed July 13, 1905. Serial No. 269,363.



Claim.—The herein-described rotary cutter comprising a body portion and a circular series of teeth on the periphery of the body portion; the said teeth being tapered transversely from their bases to their outer ends and gradually increased in thickness forwardly and having their outer ends alternately inclined or beveled right and left and also having said inclined or beveled end gradually increased in width forwardly.

822,352. **STEEL-BACK BRAKE-SHOE.** NATHAN H. DAVIS, Philadelphia, Pa. Filed Apr. 13, 1906. Serial No. 311,440.



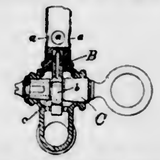
Claim.—1. A sheet-metal backing for a cast brake-shoe having the arms A, united to a loop through curved connecting-arms and all formed from a sheet of metal.

2. A sheet-metal backing for a cast brake-shoe having the arms A, united to a corrugated loop through curved connecting-arms and all formed from a sheet of metal.

3. A sheet-metal backing for a cast brake-shoe having the arms A, united to a loop through curved connecting-arms and all formed from a sheet of metal in combination with a shoe secured to said backing by casting.

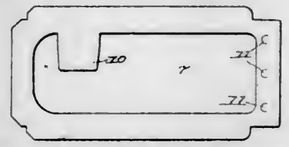
4. A sheet-metal backing for a cast brake-shoe having the arms A, united to a corrugated loop through curved connecting-arms and all formed from a sheet of metal in combination with a shoe secured to said backing by casting.

822,353. **INCANDESCENT GAS-FIXTURE.** WILLIAM T. DONNELLY, New York, N. Y., assignor to General Gas Appliance Company, New York, N. Y., a Corporation of New Jersey. Filed Dec. 20, 1904. Serial No. 237,623.



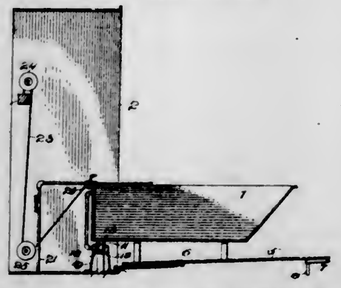
Claim.—An incandescent gas-light fixture, including among its members, a hollow body having a screw-threaded extension on one side provided with a gas-inlet aperture, a gas-outlet and opposite bearing-apertures of different diameters, a longitudinally-movable needle-valve mounted within said hollow body and engaging a seat therein to regulate and also act as a cut-off for the burner, a tapered plug fitting said bearing-apertures gas-tight, extending through the hollow body, a space being formed within said hollow body laterally of said plug, for the passage of the gas thereby, said plug having an external hand-operating device, operative connections between said plug and valve, a hollow fixture-arm of considerable length connected to the gas-outlet of said body, an incandescent burner connected with the outer end of said fixture-arm, said fixture being provided with air-inlet apertures adjacent to said needle-valve, whereby the use of an additional cut-off valve is obviated, substantially as described.

822,354. **STENCIL-FRAME.** JOSEPH S. DUNCAN, Chicago, Ill., assignor to Addressograph Company, Chicago, Ill., a Corporation of Illinois. Filed Sept. 2, 1904. Serial No. 223,096.



Claim.—A skeleton stencil-frame formed out of a single sheet of metal with side and end channels to receive the edges of the stencil, said frame having an opening between its sides and ends to permit an impression to be taken from the stencil and provided with a tab to receive an index character, said tab being formed out of a portion of the material cut out to form said opening and bent up behind and close to the upper side of the frame, one end of said frame being bent up to form a shoulder removed from the adjacent ends of the side channels, and projections stamped up from said shoulder and extending substantially parallel with the body of the frame to form one wall of the channel at that end of the frame.

822,355. **BATH-TUB CABINET.** AUGUSTUS M. ELEGAR, Denver, Colo. Filed Sept. 13, 1904. Serial No. 224,348.



Claim.—1. A cabinet bath apparatus comprising a cabinet, and door for the same having a hinged portion and a sliding portion, a bath-tub secured to the sliding portion, and means for pivotally supporting one end of the tub in the cabinet, the pivotal supporting means thus carrying the tub and the sliding section of the door

2. A folding bath apparatus comprising a cabinet, having a

hinged door, a tub mounted upon the said door, a pivotal support within the cabinet for holding the tub movably in place, and a telescoping portion interposed in the length of the door for permitting the portion of the door which is secured to the tub to accommodate itself to the movement of the tub.

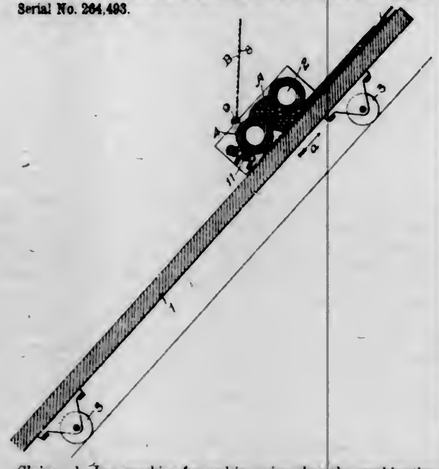
3. A folding bath apparatus, comprising a cabinet, a water-receptacle pivoted therein, a sectional door for closing the cabinet, a portion of the door being carried by the receptacle and a portion being hinged to the cabinet.

822,356. SIPHON. GEORGE D. FOSTER, Newark, N. J., assignor to John B. Foster and Brother, a copartnership composed of John B. Foster and Harry W. Foster, Newark, N. J. Filed Jan. 19, 1904. Serial No. 189,668.



Claim.—The combination with a siphon, of a branch pipe located on the discharge-arm thereof, and a bulb on the branch pipe, for starting the flow of liquid through the siphon, having an aperture communicating with the atmosphere thereby preventing the liquid from entering the said bulb.

822,357. WIRE-GLASS MACHINE. NICKLAS FRANSEN, Dunbar, Pa., assignor to William L. Munro, Pittsburg, Pa. Filed June 9, 1905. Serial No. 264,493.



Claim.—1. In a machine for making wire-glass the combination with a forming-surface and a spreader for the glass movable in relation thereto, of a wire-spacing member arranged to maintain the material to be embedded in the desired position adjacent to the forming-surface and arranged to coöperate with the spreader to form a hopper-like receptacle for the molten glass, substantially as described.

2. In a machine for making wire-glass the combination with a forming-surface and a spreader for the glass movable in relation thereto, of a roll arranged to receive the material to be embedded, and to maintain the material to be embedded in the desired position adjacent to the forming-surface, and arranged to coöperate with the spreader to form a hopper-like receptacle for the molten glass, substantially as described.

3. In a machine for making wire-glass the combination with a forming-surface and a spreader for the glass movable in relation thereto, of means for securing one end of the material to be embedded, and a member arranged to coöperate with said securing means to maintain the material to be embedded in the desired position adjacent to the forming-surface, and arranged to coöperate with the spreader to form a hopper-like receptacle for the molten glass, substantially as described.

4. In a machine for making wire-glass, the combination of a forming-table, a roll arranged above said table and movable relative thereto to spread molten glass into a sheet thereon, and a member arranged above said table nearer thereto than said roll and adjacent to said roll and movable in unison with said roll relatively to said table, such member being suitably spaced above the surface of the forming-table to maintain the fabric at the desired distance therefrom and suitably spaced from the spreading-roll to form therewith a hopper-like receptacle for receiving and sustaining a batch of molten glass and for allowing molten glass to descend by gravity therefrom through the fabric maintained in position as aforesaid to the surface of the forming-table, substantially as described.

5. In a machine for making wire-glass, the combination of a forming-table and a pair of rolls arranged above said table and in such proximity to one another as to form a hopper-like receptacle wherein molten glass may be poured and supported by gravity and from which such molten glass may descend by gravity between said rolls to the surface of said forming-table; said rolls being arranged to rotate in a common direction and to traverse in unison the surface of the forming-table, one of said rolls being spaced above the surface of the forming-table to maintain at a predetermined distance therefrom the material to be embedded, and the other roll being spaced to distribute upon said forming-table and about such material the molten glass descending between said rolls, substantially as described.

6. In a machine for making wire-glass the combination of a forming-surface, a roll arranged above said surface rotatable on its axis and movable relative to said forming-surface to spread molten glass in a sheet thereon, and a second roll arranged above said table rotatable on its axis in uniform direction with the spreading-roll and movable in unison with the spreading-roll relative to said forming-surface and coöperating with the spreading-roll to constitute a hopper-like receptacle wherein molten glass may be retained by gravity and from which the molten glass may descend by gravity to the forming-surface, substantially as described.

7. In a machine for making wire-glass the combination with a forming-surface and means for spreading the glass thereon, of a member for receving the material to be embedded and for maintaining the material to be embedded in the desired position adjacent to the forming-surface, and means for spreading the material to be embedded laterally upon said member, substantially as described.

8. In a machine for making wire-glass, the combination of a forming-surface, a member for receving the material to be embedded and for maintaining the material to be embedded in the desired position relative to the forming-surface, a pair of outwardly-movable brushes for spreading the material to be embedded laterally upon said member, and means for imparting motion to said brushes, substantially as described.

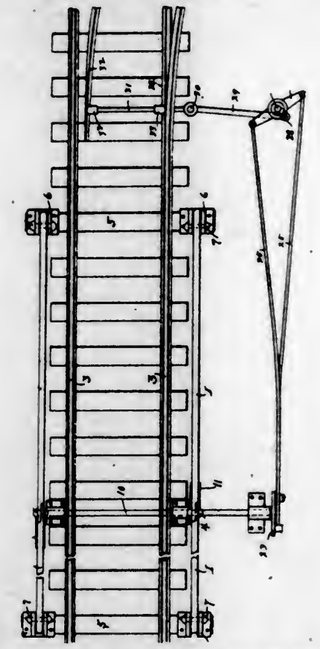
9. In a machine for making wire-glass, the combination of a forming-surface, a rotatable roll for receiving the material to be embedded and for maintaining the material to be embedded in the desired position relative to the forming-surface, and means operative upon the rotation of the roll for spreading the material to be embedded laterally thereon, substantially as described.

10. In a machine for making wire-glass the combination of a forming-surface, a spreader for the glass movable in relation thereto, and means for holding the material to be embedded as against longitudinal movement and in proper spacial relation to said forming-surface during the forming operation and for removing from said forming-surface the finished sheet when the forming operation is completed, substantially as described.

822,358. AUTOMATIC RAILWAY-SWITCH. AUGUSTUS M. FREER, Madison, Wis. Filed Oct. 23, 1905. Serial No. 284,120.

Claim.—1. An automatic railway-switch system consisting of the combination of two sets of toggle-joint levers respectively located upon the respective sides of the railway-track, means for communicating a vertical movement from one of said sets of toggle-joint levers to the other whereby as the contiguous ends of one set of said levers are forced downwardly the other set will be raised; means connected with a railway-train for forcing down either one of said sets of toggle-joint levers and simultaneously raising the other at the will of the person on the train as the train approaches the switch whereby one of said sets of levers is always in position to actuate the switch; and means connected with said toggle-joint levers for communicating motion therefrom to the switch at a distance.

2. An automatic railway-switch system consisting in the combination of two sets of toggle-joint levers respectively located upon the respective sides of a railway-track; a straight transverse shaft communicating between the said toggle-joint levers across the track provided at its respective ends with radial arms extending outwardly and at opposite directions from such shaft beneath the respective sets of toggle-joint levers whereby as one of said sets of levers is thrown downwardly against one of said arms the other arm will be thrown upwardly beneath and caused to raise the other set of levers; means connected with a railway-train for forcing down either one of said sets of toggle-joint levers and simultaneously raising the other at the will of a person on the train as the train approaches a switch; and means connected with said toggle-joint levers for communicating motion therefrom to a switch at a distance.

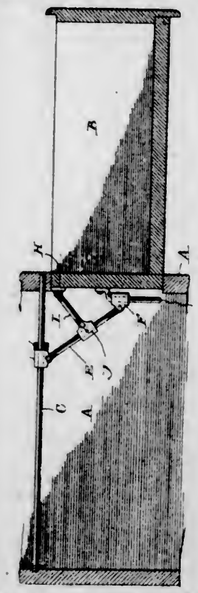


3. In an automatic railway-switch of the class described the combination with two sets of toggle-joint levers through which motion is communicated from the moving train to the switch, of a pair of covers pivotally connected with the ties of the railway-track by hinge connections and provided upon their lower sides with downwardly-projecting arms extending past and beneath said toggle-joint levers, a resilient spring interposed between said arms, said spring being adapted by its recoil to throw said arms apart, whereby said covers are brought together above said toggle-joint levers, all substantially as and for the purpose specified.

4. An automatic railway-switch system consisting of the combination of two sets of toggle-joint levers respectively located upon the respective sides of the railway-track; means for communicating a vertical movement from one of said sets of toggle-joint levers to the other whereby as the contiguous ends of one set of said levers are forced downwardly the other set will be raised; means connected with a railway-train for forcing down either one of said sets of toggle-joint levers at the will of a person on the train as the train approaches the switch; means connected with said toggle-joint levers for communicating motion therefrom to the switch at a distance; additional means connected with said switch for operating the same manually; and means connected with the switch-operating mechanism for throwing the switch-rails after being first moved a slight distance by the toggle-joint levers with a quick positive action to the limit of their movement in either direction independently of the action of said toggle-joint levers.

5. An automatic railway-switch system consisting in the combination of two sets of toggle-joint levers respectively located upon the respective sides of the railway-track; a covering for said toggle-joint levers; means for automatically closing said covers above the toggle-joint levers when at rest; means carried by the moving train for separating said covers above said toggle-joint levers as they are actuated from the moving train; means for communicating a vertical movement from one of said sets of toggle-joint levers to the other whereby as the contiguous ends of one set of said levers are forced downwardly the other set will be raised; means connected with a railway-train for forcing down either one of said sets of toggle-joint levers at the will of a person on the train as the train approaches the switch; means connected with said toggle-joint levers for communicating motion therefrom to the switch at a distance; additional means connected with said switch for operating the same manually; and means connected with the switch-operating mechanism for throwing the switch-rails after being first moved a slight distance by the toggle-joint levers with a quick positive action to the limit of their movement in either direction independently of the action of said toggle-joint levers.

822,359. GUIDING MEANS FOR DRAWERS AND THE LIKE. GEORGE C. GARDNER, Chicago, Ill. Filed Jan. 30, 1905. Serial No. 243,227.



Claim.—1. The combination with an object to be guided to move longitudinally, of a guide adjacent to the path of the object to be guided, a member movable on the guide, a guide on the object to be guided, extending in a direction at right angles to said first-named guide, a member movable on said second guide, a link between said movable members, a second link pivoted at one end to the object to be guided, and at the other end to said first link between its ends, and a stop on said first guide.

2. In a device of the class described, the combination with an object to be guided to move longitudinally, of a guide adjacent to the pathway thereof, a member supported by the guide, and movable thereon, a second guide on the object to be guided, extending at right angles to the first guide, a member movable on said second guide, a link connection between said movable members, a bracket on the object to be guided, a link connecting said bracket with said first link between its ends, and a stop on the first guide.

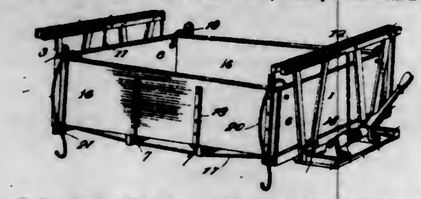
3. In a device of the class described, the combination with a cabinet and a drawer movable therein, of a horizontal guide adjacent to the path of the drawer, a member movable on said horizont guide, a vertical guide on the drawer, a member movable on the vertical guide, a link connection between said members, and a link connecting the first-mentioned link with the drawer.

4. In a device of the class described, the combination with a cabinet and a drawer movable therein, of a track adjacent to the path of the drawer, a roller running on the track, a vertical guide on the drawer, a member vertically movable on the vertical guide, a link connection between said member and the roller, and a link connection between said first-mentioned link and the drawer.

822,360. BEET-RACK. ROBERT F. GILCHRIST, Lewisville, Idaho. Filed June 23, 1905. Serial No. 266,494.

Claim.—1. The combination of a wagon-body having a side

member pivotally attached thereto and provided with openings in its upper portion, and locking members passing through the openings, one end of the locking members being loosely connected to the adjacent sides of the wagon-body while the opposite end is adapted to be secured to the wagon in order to lock the side in a closed position or to engage with the openings in the side to limit its pivotal motion.



2. In a device of the character described, the combination of a wagon-bed having an upwardly-extending framework at each end, a rack resting upon the bed and comprising a bottom, ends, and sides, said sides being pivotally connected to the bottom of the rack and being provided with openings in their upper portion through which locking members are passed, one end of the locking members being loosely attached to the ends of the rack while the opposite end is adapted to be secured to the rack in order to lock the sides in a closed position or to engage with the opening in the sides in order to limit their pivotal motion, and means for elevating one side of the rack so as to dump the contents thereof.

822,361. CONNECTING-ROD. JULIAN A. GILES, New York, N. Y. Filed Aug. 25, 1903. Serial No. 170,740.



Claim.—1. A connecting-rod having a rectangular opening in its end, the sides of said rectangular opening parallel to the axis of the rod being plane, and the sides normal to said axis being cylindrically concave and formed in an integral part of said rod, in combination with brasses adapted to be received into said rectangular opening, and having convex cylindrical surfaces adapted to fit the concave cylindrical surfaces of said rectangular opening, and plane surfaces adapted to fit the plane surfaces of said rectangular opening.

2. A connecting-rod having an opening in its end for the reception of brasses, the longitudinal sides of said opening parallel to the axis of said rod being plane, and the transverse sides thereof being cylindrically concave, one of said longitudinal sides being separate and provided with fastening means whereby said concave cylindrical sides may be accurately formed before said longitudinal side is assembled.

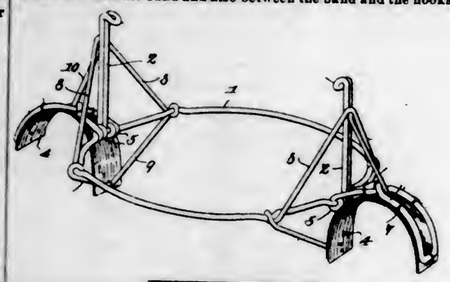
3. A connecting-rod having an opening in its end for the reception of brasses, the sides of said opening parallel to the axis of said rod being plane, and those normal to said axis being cylindrically concave, in combination with brasses adapted to be received in said opening, and means located between the cylindrical sides of said opening for adjusting the distance between said brasses.

4. A connecting-rod provided with an opening in its end for the reception of brasses, said opening having plane longitudinal and cylindrically concave transverse ends, in combination with a brass having a cylindrical end adapted to engage a cylindrical end in said opening, a brass having an inclined back, a gib adapted to engage the inclined back of said brass and provided with a cylindrical surface opposite said brass adapted to engage a cylindrical surface in said opening.

822,362. MILK-PAIL HOLDER. ALBERT M. GRAF, Carpenter, S. D. Filed Jan. 2, 1906. Serial No. 294,180.

Claim.—1. A milk-pail holder comprising a pail-embracing band, hooks rising from diametrically opposite portions of the band, diametrically opposite brackets carried by the band, arcuate seats carried by the under sides of the brackets with their inner ends projecting below the band, and braces between the inner ends of the seats and the band.

2. A milk-pail holder comprising a pail-embracing band, hooks rising from diametrically opposite portions of the band, brackets carried by the band and projecting outwardly from the bottoms of the hooks, each hook and adjacent bracket being formed by a wire having its intermediate portion wrapped around the band and its respective end portions constituting the hook and the bracket, arcuate seats carried by the under sides of the brackets with their inner ends projecting below the band, and braces extending between the inner ends of the seats and the band and also between the band and the hooks.



822,363. DEVICE FOR PREVENTING THE DECEPTIVE REFILLING OF BOTTLES. LEE F. HAMMER, Stockton, Cal. Filed Sept. 5, 1905. Serial No. 277,119.



Claim.—In a bottle the combination of a neck provided with a groove following the interior periphery thereof, a false neck inserted in said neck and provided with a groove following the periphery of said false neck and coinciding with said last-named groove, cement in said grooves, a flaring portion of said false neck projecting above the said neck proper, said false neck being also provided with a groove following the upper interior periphery of said false neck, a cork inserted in said false neck and reaching a level equal to the top of the said neck proper, a wad arranged above said cork, cement filling the space above said wad and filling into the last-named groove, and a glass cap arranged above said cement and overlapping the top of said false neck as set forth fully herein.

822,364. DEVICE FOR PREVENTING THE DECEPTIVE REFILLING OF BOTTLES. LEE F. HAMMER, Stockton, Cal. Filed Sept. 11, 1905. Serial No. 277,937.



Claim.—1. In a device as described a neck proper, an addition molded integral with the top thereof, said addition being provided with two notches disposed radially from each other leaving small connecting-points with said neck, a groove following the interior periphery of said addition, a stopple inserted in said addition, a cap on the top of said stopple overlapping the top of said addition, said stopple provided with a groove following the periphery thereof just under said cap and coinciding with said first-named groove, and cement in said grooves, as set forth.

2. In a bottle a neck proper, a removable addition molded to the top thereof, said addition being provided with a groove following the interior periphery thereof, a cork in said neck, a stopple arranged in said addition and provided with an overlapping cap fitting over the top of said addition, said stopple being also provided with a groove following the periphery thereof and coinciding with the said first-named groove, said grooves being filled with cement, as set forth fully herein.

822,365. METHOD OF APPLYING TERMINALS TO THE GLOWERS OF ELECTRIC LAMPS. MARSHALL W. HANKS, Pittsburg, Pa., assignor to George Westinghouse, Pittsburg, Pa. Filed Mar. 23, 1901. Serial No. 52,649.



Claim.—1. The method of applying a metal terminal to an electric-lamp glower which consists in producing an arc between the adjacent ends of a wire and a glower by an electric current traversing the path formed by said members until the end of the wire is fused into a molten globule and then bringing said globule and the adjacent glower end into engagement.

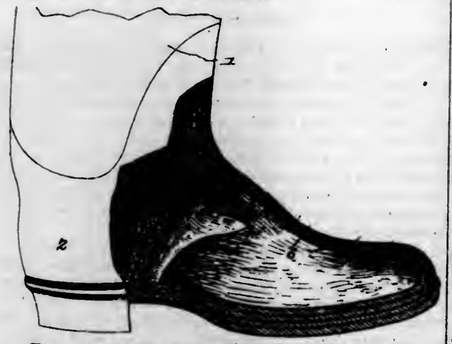
2. The method of providing an electric-lamp glower with terminals which consists in fusing metal globules and attached leading-in wires to the ends of the glower, coating such globules with material like or similar to that constituting the body of the glower and then drying and baking the coating.

3. An electric-lamp glower composed of one or more dry electrolytes and having metal terminals in the form of globules or beads fused directly and externally to the extreme ends of the glower-body.

4. An electric-lamp glower composed of one or more dry electrolytes and having metal terminals in the form of globules or beads fused directly and externally to the extreme ends of the glower-body and leading-in wires fused to said globules or beads.

5. A cylindrical glower for electric lamps composed of one or more dry electrolytes and having metal terminals in the form of globules or beads fused directly and externally to the circular, flat ends of the glower-body.

822,366. RUBBER BOOT. CHARLES M. HANNIS, Hudson, Mass. Filed Dec. 19, 1904. Serial No. 237,512.



Claim.—1. A rubber boot having combined with the lining of the vamp proper a vamp provided with frets or studs that extend inward and thus prevent the toe or inner lining from conforming closely to the foot of the wearer and forming in conjunction therewith a plurality of dead-air cells or cavities.

2. A rubber boot having combined with the lining of the vamp proper, a studded or fretted vamp extending from the toe to the rag heel-piece and forming in conjunction with the lining a plurality of dead-air cells or cavities.

822,367. PNEUMATIC DRILL. ADELBERT P. HANSCOM, Malden, Mass. Filed Aug. 27, 1903. Serial No. 170,893.



Claim.—1. In apparatus of the class described, a casing, an arbor rotatably mounted in and extended through one end thereof, a pair of oscillating cylinders each having a piston, a combined trunnion and valve structure supported within the casing and on which the cylinders are mounted side by side, at their ends, two separate crank-shafts operatively connected with the pistons and mounted in alinement, a pinion on each crank-shaft, and a gear operatively connected with the arbor and with which said pinions mesh at diametrically opposite points.

2. In apparatus of the class described, a casing, an arbor rotatably mounted in one end thereof, a pair of oscillating cylinders each having a piston, a combined trunnion and valve structure supported within the casing and on which the cylinders are mounted side by side, two crank-shafts operatively connected with the pistons and mounted in alinement, a pinion on each crank-shaft, a gear operatively connected with the arbor and with which the pinions mesh at diametrically opposite points, a central web in the casing, between the cylinders, a bearing on said web for the center of the trunnion, and a second bearing sustained by the web for the inner ends of the crank-shafts.

3. In apparatus of the class described, a casing comprising separable top and bottom portions, the former having an integral central web and the latter having a boss at its end, a combined trunnion and valve structure supported by the casing top and web, transversely to the latter, oscillating cylinders mounted at their ends on said trunnion of opposite sides of the web and each provided with a piston, a center bearing sustained by the web, a plurality of alined and independent crank-shafts operatively connected with the several pistons and supported at their adjacent ends in said center bearing, bearings for the outer ends of the shafts, mounted jointly in the top and bottom of the casing, an arbor rotatably mounted in the boss of the casing-bottom, and transmitting means intermediate the crank-shafts and arbor, to rotate the latter.

4. In apparatus of the class described, a casing comprising separable top and bottom portions, the former having an integral flat central web and the latter having a boss at its end, crank-shaft bearings mounted jointly in said parts of the casing, a center bearing on the web, a plurality of oscillating cylinders mounted within the casing-top and each provided with a piston, a plurality of independent crank-shafts operatively connected with the pistons and mounted at their inner ends in the center bearing, the outer ends of the said shafts entering the bearings in the casing, an arbor rotatably mounted in the boss of the casing-bottom at right angles to said crank-shafts, transmitting connections between the latter and the arbor, to rotate the latter, and means to govern admission of motive fluid to and exhaust thereof from the cylinders.

5. In apparatus of the class described, a two-part casing, a flat central web in one of said parts, a pair of oscillating cylinders mounted in said part on opposite sides of the web and each provided with a piston, independent crank-shafts operatively connected with the pistons and arranged in alinement, bearings for their outer ends, on the casing, a common bearing for their inner ends, carried by and transverse to the web, an arbor rotatably mounted in and extended through the other part of the casing at right angles to the crank-shafts, an end-thrust bearing for the arbor, sustained by the web,

immediately adjacent the crank-shaft bearing, and gearing intermediate the crank-shafts and arbor to rotate the latter.

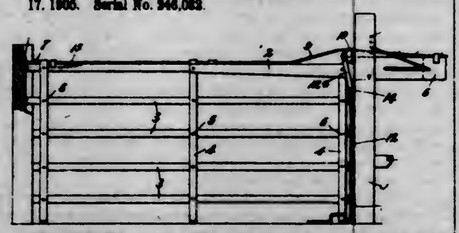
6. In apparatus of the class described, a two-part casing, a central web in one of said parts, a pair of oscillating cylinders mounted in said part on opposite sides of the web and each provided with a piston, independent crank-shafts operatively connected with the pistons and arranged in alinement, bearings for their outer ends, on the casing, an arbor rotatably mounted in and extended through one part of the casing, a gear connected with the arbor and rotating therewith, and a pinion on each crank-shaft, in mesh with the gear, said pinions engaging the latter at diametrically opposite points, the crank-shafts rotating in opposite directions.

7. In apparatus of the class described, a two-part casing, a central web in one of said parts, a pair of oscillating cylinders mounted in said part on opposite sides of the web and each provided with a piston, independent crank-shafts operatively connected with the pistons and arranged in alinement, bearings for their outer ends, on the casing, a seat on the web, roller-bearings mounted thereon for the inner ends of the crank-shafts, an arbor rotatably mounted in and extended through the bottom part of the casing at right angles to said crank-shafts, an attached gear, a ball-bearing interposed between the arbor and the seat, to take up end thrust of the arbor, and a pinion on each crank-shaft near its outer end, in mesh with and to rotate the arbor-gear at reduced speed.

8. In apparatus of the class described, a casing, an arbor rotatably mounted in the bottom thereof, a gear keyed to said arbor within the casing, an engine mounted in the top of the latter and comprising two oscillating cylinders arranged side by side, each provided with a piston, a tubular extension at one end of each cylinder, having a port into the cylinder, means to rotate said gear by or through reciprocating movement of the pistons, and a combined trunnion and valve structure for the cylinders, comprising two alined and relatively rotative tubes constituting an inlet-chamber and provided with outlet-ports, an outer tube on and fixed to each of said tubes with an annular clearance therebetween to constitute two separate exhaust-chambers, and an inlet and an outlet port for each, the outlet-ports opening into the casing, the inlet-port of each exhaust-chamber being adapted to coöperate with the cylinder-port alternately with the outlet-port of the inlet-chamber, the tubular extensions of the cylinders surrounding the outer tube of each pair of tubes.

9. In apparatus of the class described, a casing, a trunnion mounted therein, and comprising two pairs of tubes in alinement and sleeved together, the two inner tubes communicating and constituting an inlet-chamber, the outer tubes being secured to their inner tubes with annular clearances between them to constitute two exhaust-chambers, each outer tube having an inlet-port communicating with the inlet-chamber, and two exhaust-ports on opposite sides of said inlet-port, each pair of exhaust-ports communicating with an exhaust-chamber, a cylinder mounted to oscillate on the outer one of each pair of tubes and having a single port, an arbor rotatably mounted in the casing, pistons for the cylinders, crank-shafts with which they are operatively connected, gearing between the crank-shafts and arbor to rotate the latter, and means to effect opposite angular movement of the two pairs of tubes constituting the trunnion, to effect reversal of the engine, and consequently reverse the rotation of the arbor.

822,368. **GATE.** ELLERY M. HOAGLAND, San Francisco, Cal., assignor of one-half to William H. Kelly, San Francisco, Cal. Filed Feb. 17, 1905. Serial No. 246,083.



Claim.—1. The combination of a folding panel-gate having its top rail pivoted, an extension of said top rail, a weight slidable upon said extension and connections between the weight and the pivot-post whereby the weight is moved away from the post when the gate is closed, and is drawn toward the post when the gate is opened.

2. The combination of a folding panel-gate, the top bar of which is pivoted in a post and extended beyond said post, guides upon said extension, a weight slidable in the guides, arms connecting said weight with a point above the pivot of the bar, operating-levers extending to either side of the gate, and connections between said levers and the gate.

3. The combination in a folding panel-gate having a top bar pivoted to a fixed post and an extension rearwardly of said bar, of guides upon said extension, a weight slidable in said guides, a connection between said weight and a fixed point above the pivot-point of the gate, a tiltable lever pivoted upon the gate, a latch adapted to engage with the outer post, connections between said latch and the tiltable lever, operating-levers extending from the gate and connections between said levers and the latch-actuating lever.

4. In a vertically tiltable and foldable panel-gate, a latch horizontally movable upon the top rail, a catch in the outer post with which the latch is engaged when the gate is closed, a fulcrumed lever with which the latch is connected, levers and connections by which the gate is moved about its fulcrum, a loose connection between said gate-levers and the latch-lever whereby the latter is moved to disengage the latch previous to the opening movement of the gate, an extension of the top rail and a shiftable weight upon the extension actuated by the opening and closing of the gate.

5. In a vertically-tiltable panel-gate having a pivoted top rail with an extension beyond its pivotal point, a weight disposed at the rear of the pivotal point of the top rail and means connected to the weight and by which the position of said weight is varied to correspond with the variations of the weight of the gate, a horizontally-movable latch by which the gate is held in a closed position, a second latch on the extension of the top rail and by which the gate is retained in an open position, a bell-crank lever mounted upon the gate, connections between the lever and the two latches, and other connections between the lever and the gate opening and closing means whereby one of the latches is moved to engage and the other to disengage.

6. A vertically-tiltable gate having in combination a gate-post, a top rail pivoted thereto with an extension in rear of the pivotal point, a horizontally-movable latch by which the gate is held in a closed position, a second latch by which the gate is held open, a bell-crank lever between the two latches and connections between the lever and the two latches, a movable connection between the gate opening and closing means and said lever whereby the lever is moved to actuate the latches before movement is communicated to the gate, and a variable counterbalance movably mounted at the rear of the pivotal point of the top rail and means connecting this counterbalance with the post whereby the counterbalance approaches, or recedes from, the post as the gate is vertically moved.

7. The combination in a vertically-tiltable gate, of a post, a gate having the top rail pivoted to the post and extending rearwardly of the post, means connected with the gate to open and close the same, variable counterbalances for the gate, said counterbalances comprising vertically-movable flexibly-connected weights with a rope connecting said weights with the gate, and a direction-pulley for the rope, and a weight slidable on the rear extension of the top rail, and connected with the post, and acting in unison with the suspended weights when the gate is opened or closed.

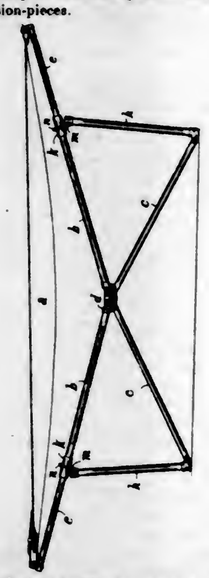
822,369. **FOLDING BEDSTEAD.** JAMES HODSON, Liverpool, England, assignor to The North British Eyelet Company Limited, Mersfield, England. Filed Oct. 26, 1904. Serial No. 230,079.

Claim.—1. In a folding bedstead, the combination of a collapsible frame on each side thereof, each frame comprising upwardly and downwardly inclined stays in substantially X form and legs connected thereto, removable extension-pieces at each end of the bed fitting into the ends of said upwardly-inclined stays and forming a rigid connection therewith, a cross-piece at each end of the bed between the respective extension-pieces and pivoted thereto, and a mattress between and supported by said cross-pieces.

2. In a folding bedstead, the combination of two upwardly-inclined stays on each side thereof, said stays having apertures therethrough near their upper ends, legs having projections passing through said apertures and for supporting said stays, removable extension-pieces fitting within the ends of said upwardly-inclined stays and abutting against said projections, said stays being tubular at their upper ends at least, cross-pieces between said extension-pieces at the respective ends of the bed, and a mattress suspended between said cross-pieces.

3 In a folding bedstead comprising on each side thereof upwardly-inclined stays and legs adapted to support said stays, sockets on said stays, a projection on each of said legs, a hole through each

of said sockets adapted to take over said projections, extension-pieces adapted to enter said sockets and be held therein, cross-pieces between the extension-pieces at the respective ends and a mattress between said extension-pieces.



4. In a folding bedstead of the character described the combination of extension-pieces *e*, sockets *k* legs *h* projections *m* stays *b* and enlargements *n* on the projections *m* substantially as and for the purpose described.

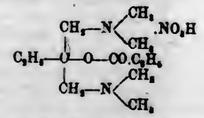
5. A folding bedstead comprising on each side two upwardly-inclined and two downwardly-inclined stays, a hinge-piece connecting said stays, legs hinged to said downwardly-inclined stays and adapted to be secured to said upwardly-inclined stays, removable extension-pieces adapted to be rigidly secured to said upwardly-inclined stays, cross-pieces between the respective extension-pieces at each end of the bed, and a mattress between said cross-pieces

6. In a folding bedstead, the combination of side frames, each side frame consisting of two upwardly-inclined stays, two downwardly-inclined stays, a junction-piece connecting said stays in X form, and legs connected to said stays, space-bars between the legs of opposite sides, removable extension-pieces rigidly secured to said upwardly-inclined stays, and cross-bars attached to the said extension-pieces.

7. In a folding bedstead, the combination of side frames, each side frame consisting of two upwardly-inclined stays, two downwardly-inclined stays, a junction-piece in which said stays are pivoted normally in X form, and legs hinged to said downwardly-inclined stays and removably secured to said upwardly-inclined stays, foldable space-bars between the legs of opposite sides, a removable extension-piece rigidly secured to each of said upwardly-inclined stays, cross-bars to which the said extension-pieces are pivoted, and a mattress supported by said cross-bars.

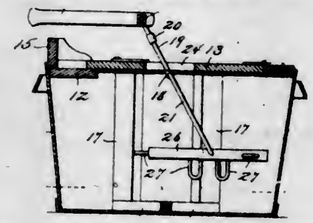
822,370. **PHARMACEUTICAL COMPOUND.** FRITZ HOFMANN, Elberfeld, Germany, assignor to Farbenfabriken of Elberfeld Co., New York, N. Y., a Corporation of New York. Filed Dec. 9, 1905. Serial No. 291,056.

Claim.—The herein-described new mononitrate of the benzoyl derivative of beta-ethyltetramethyldiaminoglycerin having the formula:



forming white crystals melting at 162° centigrade after being dried at 100° centigrade which are soluble in water and in acetone, and being a valuable local anesthetic, substantially as described.

822,371. **WASHING-MACHINE.** JOSEPH G. KINCAID, Hiawatha, Kans. Filed Nov. 18, 1904. Serial No. 233,304.

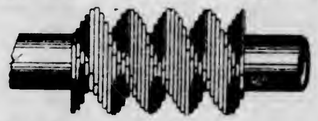


Claim.—1. In a washing-machine, a receptacle having a hinged cover, a rocking frame connected with said cover and having a shank extending through a slot therein and provided with a handle, and a wedge-shaped rubbing-frame of the shape of an isosceles triangle connected pivotally with the rocking frame.

2. In a washing-machine, a receptacle having interiorly-disposed rubbing members, a rocking frame supported in said receptacle, and a wedge-shaped rubbing-frame of the shape of an isosceles triangle connected pivotally with said rocking frame.

3. In a washing-machine, a rubbing-frame in the shape of an isosceles triangle having side members abutting upon each other and upon a base, and staples connecting said side members with each other and with the base and extending laterally from the parts connected thereby to form clothes-engaging rubbing-surfaces.

822,372. **TUBE FOR RADIATING, COOLING, AND CONDENSING APPARATUS.** JOHN G. A. KITCHEN and LUDLOW P. PERKINS, Lancaster, England. Filed Feb. 12, 1904. Serial No. 193,276.



Claim.—1. The combination with a metallic tube of a polygonal coil of metal wire forming a multiple helix conaxial with the tube and gripping the outside of the tube.

2. As an article of manufacture a tube for radiating cooling and condensing apparatus consisting of a central tube surrounded by a polygonal coil of wire having straight sides and rounded corners forming a multiple helix conaxial with the tube.

3. A heat-radiator having parallel helical grooves formed of different portions of the same wire.

4. A heat-radiator consisting of the combination of a pipe, and a wire forming parallel perforated helical grooves around and in contact with said pipe.

5. A heat-radiator consisting of the combination of a pipe, a single wire wound around and in contact with and gripping said pipe and bent to form helical grooves around said pipe, the surfaces of said grooves consisting of different portions of said wire crossing each other to form or leave openings between said portions in said surfaces.

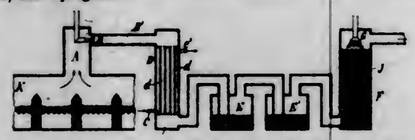
6. A heat-radiator consisting of the combination of a conduit-pipe, a wire wound helically around said pipe, each convolution of said wire being so bent to form a polygon that the angles of the consecutive convolutions lie in parallel helices around said pipe, and their sides are in contact with said pipe and with each other and form helical perforated grooves between the helices formed by said angles.

7. A heat-radiator consisting of the combination of a cylindrical body, and a wire wound helically about said body, said wire having at intervals projecting portions forming elbows.

8. A heat-radiator consisting of the combination of a cylindrical body, and a wire wound helically about said body and with the convolutions in contact with each other, said wire having at intervals projecting portions forming elbows, each of said elbows being out of alinement with the elbows next adjoining in the longitudinal direction of said body.

822,373. **PROCESS OF PURIFYING BURNER-GASES.** RUDOLPH KNIETSCH, Ludwigshafen-on-the-Rhine, Germany, assignor, by mesne assignments, to General Chemical Company, a Corporation of New York. Filed Aug. 5, 1895. Serial No. 687,770.

Claim.—1. In the manufacture of sulfuric anhydrid by the contact process, the process of purifying burner-gases which consists in agitating such gases while hot, and then cooling and washing the gases, and drying them.



2. In the manufacture of sulfuric anhydrid by the contact process, the process of purifying burner-gases which consists in blowing a jet of steam into said gases while they are hot to agitate them and reduce their concentration, and then cooling, washing and drying said gases.

3. In the manufacture of sulfuric anhydrid by the contact process, the process herein described of preparing burner-gases for purification, which process consists in first commingling them with aqueous vapor so as to reduce the concentration of condensed acid contained therein and then gradually cooling said gases, and thereupon removing impurities as described.

4. In the manufacture of sulfuric anhydrid by the contact process, the process of treating burner-gases which consists in removing substantially all arsenical impurity therefrom prior to conversion.

5. In the manufacture of sulfuric anhydrid by the contact process, the process of treating burner-gases which consists in removing substantially all arsenical and mercurial impurity therefrom prior to conversion.

6. In the manufacture of sulfuric anhydrid by the contact process, the process of treating burner-gases which consists in removing substantially all sulfur and arsenical impurity therefrom before conversion.

7. In the manufacture of sulfuric anhydrid by the contact process, the process of treating burner-gases which consists in removing substantially all sulfur, sulfuric acid and arsenical impurity therefrom prior to conversion.

8. In the manufacture of sulfuric anhydrid by the contact process, the process of purifying burner-gases which consists in agitating the gases in the presence of moisture and gradually cooling them, and washing the gases in a liquid saturated with sulfurous-acid gas.

9. In the manufacture of sulfuric anhydrid by the contact process, the process of purifying burner-gases which consists in agitating the gases and gradually cooling them, and washing them in a liquid saturated with sulfurous-acid gas.

10. In the manufacture of sulfuric anhydrid by the contact process, the process of protecting the contact substance which consists in separating out of the burner-gases, the arsenical impurity, substantially as and by the means described.

11. In the manufacture of sulfuric anhydrid by the contact process, the process of purifying burner-gases which consists in cooling them gradually and continuously removing solid impurities, then bringing them in contact with a liquid capable of removing liquid and gaseous impurities, and finally drying them.

12. In the manufacture of sulfuric anhydrid by the contact process, the process of treating burner-gases which consists in first cooling them gradually, then continuously removing a part of the impurities, and then passing the gases through a liquid capable of removing the remaining impurities.

822,374. **GAS HEATING DEVICE.** VICTOR KÖRT, Chicago, Ill. Filed May 6, 1904. Serial No. 206,668.



Claim.—1. A heating device comprising a tube having a burner, said burner being perforated through the sides thereof, a fire plate or disk resting and supported directly upon the end of said burner, and an inclosing hood supported in inverted position and in inclosing relation with respect to said fire-plate, the lower rim of said hood forming a petticoat and extending below the peripheral edge of the fire-plate.

2. In a heating device, a burner, a fire plate or disk having a central seat arranged to receive the end of the burner, whereby said plate rests and is supported directly upon the burner, and an inclosing hood supported in inverted relation to inclose said fire-plate, the lower rim of said hood forming a petticoat, said hood having a restricted central opening through the upper portion thereof and of a size smaller than the diameter of the plate.

3. In a heating device, a burner, a dish-shaped fire-plate centrally supported in inverted position directly upon said burner, and with its periphery below the openings in the burner and a hood suitably supported to inclose said fire-plate, the lower rim of said hood forming a petticoat to extend below said plate.

4. In a heating device, a burner, a dish-shaped fire-plate having a central seat formed therein and arranged to receive the burner, whereby said plate rests and is supported in inverted position directly upon said burner, and an inclosing hood for said plate, means for supporting said hood to provide a space between the inner wall thereof and the periphery of said plate, the lower edge or rim of said hood extending below said plate and forming a petticoat therefor, said hood having a restricted central opening through the upper edge thereof.

5. In a heating device, a burner, a fire-plate centrally supported upon said burner for the flame of the burner to impinge against the under surface thereof, a hood provided with a depending rim arranged to extend below said plate and arranged to inclose said plate, said hood having a central opening through the upper end thereof, and an outer hood inclosing said first-mentioned hood, and having its lower edge arranged to depend below the lower edge of said inner hood to form a petticoat therefor.

6. In a heating device, a burner, a fire-plate supported thereon, an inner and an outer hood supported in inclosing relation with respect to each other and said fire-plate, said outer hood forming a petticoat for the inner hood, and said inner hood forming a petticoat for said fire-plate, said hoods having central openings through the upper edges thereof.

7. In a heating device, a burner, a dish-shaped fire-plate supported in inverted relation upon said burner, an inverted inner and an inverted outer hood arranged the one within the other and supported to provide a space therebetween, the lower edge of said inner hood forming a petticoat for the fire-plate, and the lower edge of said outer hood forming a petticoat for the inner hood.

8. In a heating device, a burner, a dish-shaped fire-plate having a depressed seat formed centrally in the dished surface thereof to receive the end of the burner, whereby said plate is supported in invered position upon said burner, and an inner and an outer hood, the one arranged within the other, and in inclosing relation with respect to said fire-plate.

9. In a heating device, a burner, a fire-plate resting and directly supported upon the end of said burner, a hood inclosing said fire-plate, the lower edge of said hood forming a petticoat for said plate, and an open-ended funnel surrounding said burner and terminating at a point below the tip of the burner and beneath said fire-plate.

10. In a heating device, a burner, a fire-plate supported and resting directly upon the end of said burner, a hood inclosing said fire-plate, and an open-ended cone-shaped funnel inclosing said burner, the contracted open end of said funnel being presented toward said fire-plate but terminating below said plate and the tip of the burner.

11. In a heating device, a burner, a dish-shaped fire-plate supported in inverted relation directly upon said burner, an inverted hood forming a petticoat to inclose said plate, and a cone-shaped funnel, open at both ends, surrounding said burner, and having the contracted open end terminating adjacent to the under surface of said fire-plate and below the tip of said burner.

12. In a heating device, a burner, a fire-plate supported upon the end of said burner, an inner and an outer hood, said inner hood forming an inclosing petticoat for said plate, and said outer hood forming an inclosing petticoat for said inner hood, and a funnel, open at both ends, surrounding said burner and having the contracted open end thereof presented toward the under surface of said fire-plate.

13. In a heating device, a burner, a fire-plate supported upon and held from displacement by the end of said burner, an inclosing hood for said plate, and a sleeve supported below said plate and hood, and terminating short of said plate, the outer surface of said sleeve forming a reflector for reflecting the heat from said plate and hood.

14. In a heating device, a burner, a fire-plate supported upon the end thereof, a hood inclosing said fire-plate, and a cone-shaped sleeve supported below said burner and hood, terminating adjacent the plate and serving the double purpose of a reflector of the heat from said plate and hood and to create a draft of air to said burner and plate.

15. In a heating device, a burner, a gas-supply tube delivering to said burner, a fire-plate supported upon the end of said burner, an inverted hood forming an inclosing petticoat for said plate, a funnel surrounding said gas-supply tube and open at both ends, the contracted end of said funnel being presented toward the under surface of said fire-plate, and an inclosing cone-shaped sleeve for said funnel, said sleeve being arranged below said fire-plate and hood.

822,375. **PENCIL-SHARPENER.** FRITHIOF LAGERHOLM, Brooklyn, N. Y. Filed Nov. 25, 1905. Serial No. 289,010.



Claim.—1. A pencil-sharpener composed of a sheet of metal folded, and one end of which is circular in cross-section, and the other flattened and provided with a central tapered portion, said flattened portion being provided with a spiral slot or opening at one side of which is a cutting edge and with a transverse opening with which said slot or opening communicates, substantially as shown and described.

2. A pencil-sharpener composed of a sheet of metal folded and one end of which is circular in cross-section and the other flattened and provided with a central tapered portion, said flattened portion being provided with a spiral slot or opening at one side of which is a cutting edge and with a transverse opening with which said slot or opening communicates, and adjacent to said transverse opening with an eraser-holder, substantially as shown and described.

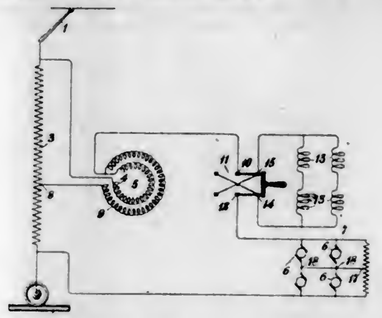
3. A pencil-sharpener composed of a sheet of metal folded, one end thereof being cylindrical or circular in cross-section, and the other end being flattened and provided with a central tapered portion at the end of which is a transverse opening having a rubber bearing at one side thereof, said flattened portion being also provided with a spiral slot or opening which communicates with said transverse opening and one side of which is provided with a cutting edge, substantially as shown and described.

4. A pencil-sharpener, composed of a sheet of metal folded, one end thereof being cylindrical or circular in cross-section, and the other end being flattened and provided with a central tapered portion at the end of which is a transverse opening having a rubber bearing at one side thereof, said flattened portion being also provided with a spiral slot or opening which communicates with said transverse opening and one side of which is provided with a cutting edge, said end of said sharpener being also provided with an eraser-holder, substantially as shown and described.

5. A pencil-sharpener composed of a sheet of metal folded, one end thereof being cylindrical or circular in cross-section, and the other end being flattened and provided with a central tapered portion at the end of which is a transverse opening having a rubber bearing at one side thereof, said flattened portion being also provided with a spiral slot or opening which communicates with said transverse opening and one side of which is provided with a cutting edge, said end of said sharpener being also provided with an eraser-holder, and the cylindrical or circular end thereof being provided with longitudinally-arranged ribs and a slidable clamp-band, substantially as shown and described.

822,376. **SYSTEM OF APPLYING ALTERNATING-CURRENT ELECTRICAL ENERGY.** BENJAMIN G. LAMME, Pittsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed Sept. 23, 1904. Serial No. 225,482.

Claim.—1. The combination with a source of alternating-current electrical energy and two or more motors having series-parallel-connected field-magnet windings and series-connected armature-windings, of means for equalizing the potential differences between the terminals of the said armature-windings.



2. The combination with a source of alternating-current electrical energy and two or more motors having series-parallel-connected field-magnet windings and series-connected armature-windings, of a transformer-winding having connections to the outer terminals of the armature-windings and an intermediate connection to the armature-winding terminals which are connected together.

822,377. **BRUSH-BRIDLE.** LUDVIG S. LESSO, New York, N. Y. Filed June 3, 1905. Serial No. 263,680.



Claim.—1. A brush-bridle comprising a plurality of sectional bands, each band having interlocking means whereby they may be adjusted in position, straps having hooks intermediate of and at one end thereof, which are adapted to engage the lower ends of the bands, and means for engaging the free ends of the straps for holding them in position.

2. A brush-bridle comprising a plurality of bands, said bands being made in sections, and capable of adjustment, straps having hooks that engage the lower ends of the bands, and a ring having slots through which the upper ends of the bands are inserted.

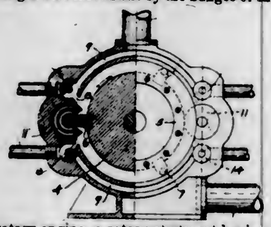
3. A brush-bridle comprising a sectional band, one section having an opening in one end, from the top and bottom of which extend a series of recesses, and also having a pocket in its opposite end, the other section having a tongue adapted to engage the recesses, and a hook at its opposite end to engage the pocket in the first-mentioned strap, and means for holding the bands in position.

4. A brush-bridle comprising a plurality of bands, each band being made in sections, and one section of each having an opening at one end, and recesses communicating with the opening, and a pocket at its opposite end, the opposite section of each band having a dovetail tongue at one end, and a hook at its opposite, all for the purpose specified.

5. A brush-bridle comprising a plurality of telescoping binding-bands, each band being adjustably held together, straps having hooks at and intermediate their ends for engagement with the bands, and means for holding the straps in position.

822,378. **ROTARY ENGINE.** ANSON S. LEVAKE, Seattle, Wash., assignor of forty-nine one-hundredths to Robert P. Thomas, Anacortes, Wash., seventeen one-hundredths to Herman F. Richter, and seventeen one-hundredths to Charles W. Richie, Seattle, Wash. Filed July 31, 1905. Serial No. 272,112.

Claim.—1. In a rotary engine, a piston having continuous edge flanges, wings secured to said piston between the flanges thereof, and rollers mounted in the outer portions of said wings and being prevented from lengthwise movement by the flanges of said piston.



2. In a rotary engine, a rotary abutment having an expansible rim, and means for holding said rim in position on the abutment.

3. In rotary engine, in combination with a casing having opposite pairs of inlet-ports, steam-channels communicating therewith, and exhaust-ports in communication with said channels, abutments arranged between the respective pairs of inlet-ports, valves for alternately opening and closing the respective ports of each of said pairs of inlet-ports, and a rotary piston mounted in said casing and having wings.

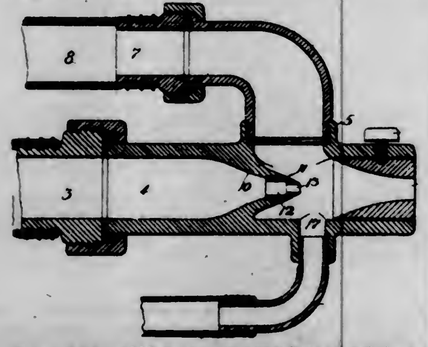
4. In a rotary engine, in combination with a casing having opposite pairs of inlet-ports, steam-channels communicating therewith, and exhaust-ports in communication with said channels, rotary abutments arranged between the respective pairs of inlet-ports, said abutments having peripheral cut-out portions, valves for alternately opening and closing the respective ports of each pair, a rotary piston mounted in said casing, and fixed wings on said piston adapted for reception in the cut-out portions of said abutments.

5. In a rotary engine, in combination with a casing having opposite pairs of inlet-ports, steam-channels communicating therewith, and exhaust-ports in communication with said channels, rotary abutments arranged between the respective pairs of inlet-ports, said abutments having peripheral cut-out portions, valves for alternately opening and closing the respective ports of each pair, levers on the ends of said valves, links connected at one end to said levers, a swingingly-mounted lever having opposite ears to which the other ends of the adjacent links are pivoted, a rotary piston mounted in said casing, and fixed wings on said piston adapted for reception in the cut-out portions of said abutments.

6. In a rotary engine, an abutment comprising a body, an expansible spring-metal rim secured thereto, and guide-lugs secured to said rim and being slidably engaged in said body.

7. In a rotary engine, in combination with a casing having opposite pairs of inlet-ports, steam-channels each communicating with one port of each pair of ports, exhaust-ports in communication with said steam-channels, abutments between the respective pairs of ports, valves for alternately opening and closing the respective ports of each of said pairs of inlet-ports, and a piston mounted for rotation in said casing.

822,379. **SAND-BLAST APPARATUS.** HARRY LUCKENBACH, San Francisco, Cal., assignor to William H. Kelly, San Francisco, Cal. Filed June 13, 1905. Serial No. 264,991.

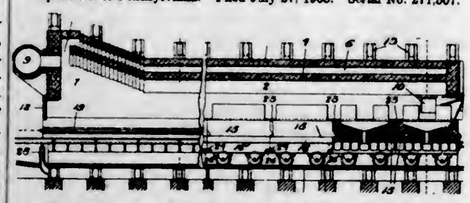


Claim.—1. A sand-blast apparatus comprising a nozzle having in its discharge end a removable wearing-ring, and a tip discharging compressed air through said wearing-ring, said tip having a discharge-hole of a length twice its diameter, the surface of the metal adjacent to the rear end of said hole being square to the axis of said hole, a device for providing compressed air, a flexible conduit connecting said device with the rear end of said nozzle, a receptacle for sand, and a flexible pipe connecting said receptacle with the nozzle between the discharge-tip and wearing-ring, substantially as described.

2. In an apparatus of the character described, the combination of a nozzle having a discharge end, the inner surface of which converges to the end thereof, and having a tip for discharging compressed air through said discharge end, the length of the discharge-aperture of said tip being substantially twice its diameter and the surface thereof immediately at the rear of said aperture being square to said aperture, means for furnishing compressed air, a flexible pipe connecting said means with the rear end of said nozzle, a recepatcle for sand, and a flexible pipe connecting said receptacle with the nozzle between the tip and the discharge end of the nozzle, substantially as described.

3. In an apparatns of the character described, the combination of a nozzle having a discharge end, and having a tip for discharging compressed air through said discharge end, means for furnishing compressed air, a flexible pipe connecting said means with the rear end of said nozzle, a receptacle for sand, a receptacle for water, and flexible pipes connecting said receptacles with the nozzle between the tip and the discharge end of the nozzle, substantially as described.

822,380. **CONTINUOUS INGOT-HEATING FURNACE.** WILLIAM R. MILLER, Pittsburg, and PAUL V. COLE, Allegheny, Pa., assignors to The Porter-Miller Engineering Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed July 27, 1905. Serial No. 271,507.



Claim.—1. A continuous furnace provided with a longitudinal water-seal trough and traveling supporting mechanism provided with a sealing-flange arranged to be lowered into and raised from said trough as the traveling mechanism enters and leaves the furnace, substantially as set forth.

2. A continuous furnace provided with a longitudinal water-seal trough along each inner side and traveling supporting mechanism provided with sealing-flanges arranged to be lowered into and raised from said trough as the traveling mechanism enters and leaves the furnace, substantially as set forth.

3. A continuous furnace provided along its bottom with horizontal tracks sloping upwardly at each end and longitudinal water-seal troughs along its inner side walls, with traveling supporting mechanism having sealing-flanges arranged to be immersed into and raised from the troughs, substantially as set forth.

4. The combination with a continuous furnace having water-seal troughs along its inner sides, and a supporting-track along its bottom: of carrying-buggies mounted on the track provided with sealing-flanges, and means for lowering the buggies as they enter the furnace and for raising them as they leave the other end thereof, substantially as set forth.

5. The combination with a continuous furnace having water-seal troughs along its inner sides, and a supporting-track along its bottom sloping upwardly at each end: of carrying-buggies mounted on the track provided with sealing-flanges arranged to enter within said troughs, substantially as set forth.

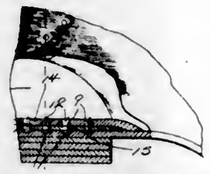
6. A continuous furnace provided with a longitudinal water-seal trough and traveling supporting mechanism provided with a sealing-flange arranged to be lowered into and raised from said trough as the traveling mechanism enters and leaves the furnace, and provided along its inner walls with longitudinally-arranged resiliently-mounted bearing devices adapted to make contact with the sides of said supporting mechanism, substantially as set forth.

7. A continuous furnace provided with a longitudinal water-seal trough and traveling supporting mechanism provided with a sealing-flange arranged to be lowered into and raised from said trough as the traveling mechanism enters and leaves the furnace, and provided along its inner walls with longitudinally-arranged bearing elements provided at intervals with supporting-steme, and bearings therefor mounted in the wall structure and provided with compression-springs arranged to press said bearing elements against the sides of said supporting mechanism, substantially as set forth.

8. The combination with a furnace having water-seal trough along its inner sides and a supporting-track along its bottom sloping upwardly at each end: of a series of buggies provided with sealing-flanges, means for coupling the buggies together, and means for uncoupling the foremost buggy as it emerges from the furnace, substantially as set forth.

9. The combination with a furnace having water-seal troughs along its inner sides and a supporting-track along its bottom sloping upwardly at each end: of a series of buggies provided with sealing-flanges and pivoted coupling-latches having disengaging cams, with a stationary interfering-abutment arranged to make contact therewith to effect the automatic uncoupling of the buggies, substantially as set forth.

822,381. **SHOE.** REINHOLD MOOS, Placerville, Cal. Filed Oct. 28, 1904. Serial No. 230,436.



Claim.—1. In a shoe, the combination with an upper split at the rear for the insertion of the foot, of heel portions detachably connected with the portions of the upper at the sides of the split and arranged to hold said portions together, said upper beam provided with a flap arranged to cover the split.

2. In a shoe, the combination with an upper split for the insertion of the foot, of heel portions arranged for detachable connection with the upper and to hold the portions of the upper at the sides of the split together.

3. In a shoe, the combination with a split upper, of heel portions detachably connected with the upper and arranged to hold the portions thereof at either side of the split together, and a resilient layer between the upper and the heel.

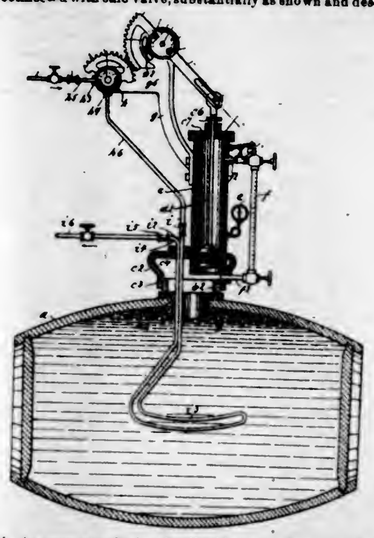
4. A shoe comprising an upper split for the reception of the foot, a split counter secured within the upper, the portions of the counter lying at opposite sides of the split of the upper, depending hooks carried by the two portions of the counter and heel portions having slots therein in which the hooks are removably engaged, said heel portions being arranged to hold the portions of the upper and counter against separation.

822,382. **APPARATUS FOR HEATING LIQUIDS IN CASKS.** OTTIE T. MURPHY, Brooklyn, N. Y. Filed Feb. 8, 1906. Serial No. 300,076.

Claim.—1. An apparatus of the class described, comprising a cylinder adapted at one end to be connected with a receptacle, a plunger mounted therein and provided with a rod which passes out through the other end of said cylinder, a steam-pipe adapted to be passed into said receptacle, a gage connected with said cylinder, and means whereby an increase of pressure in the receptacle will operate a valve in the steam-supply pipe, substantially as shown and described.

2. An apparatus for heating liquids in a receptacle, comprising a cylinder adapted to be connected with said receptacle, a gage connected with said cylinder, a steam-coil adapted to be inserted into said receptacle, a steam-supply pipe connected with said coil, and means whereby an increase of pressure in the receptacle will operate a valve in the steam-supply pipe, substantially as shown and described.

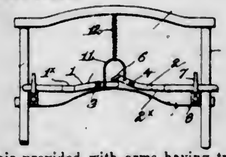
3. An apparatus for heating liquids in a receptacle, comprising a cylinder adapted to be connected with said receptacle, a gage connected with said cylinder, a steam-coil adapted to be inserted into said receptacle, a steam-supply pipe connected with said coil, and means whereby an increase of pressure in the receptacle will operate a valve in the steam-supply pipe, comprising a plunger mounted in said cylinder, an arm connected with said plunger, and a segmental gear connected with said arm, and in operative connection with a gear connected with said valve, substantially as shown and described.



4. An apparatus for heating liquids in a cask, comprising a cylinder provided at one end with an enlarged head, a tubular plug adapted to be secured in the bung-hole of the cask and with which said head is connected, a gage connected with said cylinder, a steam-coil passing through the head of the cylinder into the cask, a steam-supply pipe connected with said coil, a steam-exhaust pipe connected with said coil, and a plunger mounted in said cylinder and in operative connection with a valve in the steam-supply pipe, substantially as shown and described.

5. In an apparatus for heating liquids in a cask, comprising a cylinder adapted to be connected with and in communication with said cask, a plunger loosely mounted in said cylinder and provided with a rod which passes through the end thereof, a steam-coil also connected with said cylinder and adapted to be passed into said cask, a steam-supply pipe connected with said coil, a steam-exhaust pipe connected with said coil, and means whereby an increase in pressure in said cask will operate a valve in the steam-supply pipe at a predetermined time, substantially as shown and described.

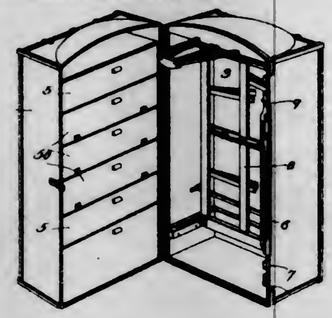
822,383. **CHILD'S CHAIR.** WALTON F. OLIVER, Baldwinsville, Mass., assignor to Elwin L. Thompson, Baldwinsville, Mass. Filed June 10, 1905. Serial No. 264,561.



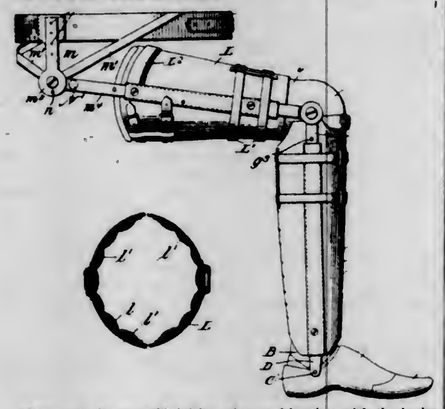
Claim.—A chair provided with arms having transverse open locking-grooves at their outer ends, a swinging table pivotally connected with the chair and adapted to rest on the arms, two separate and oppositely-extended latch members independently fulcurned on the table and adapted to automatically engage the grooves and thereby lock the table to said arms, the outer end of one of said members projecting beyond the side of the table to form a finger-piece and its inner end extending past the inner end of the other member and provided with an enlargement, and a spring operatively connected with both members to snap them into locking position, unlocking movement of the first-named member through the finger-piece acting through the said enlargement adjacent the other member and swinging it into unlocked position.

822,384. **WARDROBE-TRUNK.** FREDERIC H. PARKHURST, Bangor, Me., assignor to The J. F. Parkhurst & Son Co., Bangor, Me., a Corporation of Maine. Filed Oct. 12, 1905. Serial No. 282,371.

Claim.—A wardrobe-trunk comprising two parts hinged together, one part constituting a hanging-compartment having an open front, and the other part constituting a closet-compartment, said latter compartment being subdivided into smaller compartments, closing means for the various compartments, and a locking-strip secured to the front edge of the hanging-compartment and adapted to overlie the closing means when the trunk is closed, and thereby lock said means in closed position.



822,385. ARTIFICIAL LEG. JOHN A. PEER, Washington, D. C., assignor to Peer Artificial Leg Manufacturing Co., Washington, D. C., a Corporation of the District of Columbia. Filed Feb. 8, 1905. Renewed Nov. 6, 1905. Serial No. 286,132.



Claim.—1. In an artificial leg, the combination with the body-belt, provided with a vertically-disposed attaching-bar secured thereto and depending therefrom, of the thigh-section comprising the flexible side portions, and lateral stiffening-bars, the outer of said bars being pivotally connected to said attaching-bar, forming an artificial hip-joint, at a point directly over the hip-joint of the wearer, a calf-section pivotally connected to the thigh-section by artificial knee-joints, and provided with a foot-section and a locking device for the hip-joint, constructed to hold said attaching-bar, and the outer stiffening-bar rigidly in alinement, substantially as described.

2. In an artificial leg, the combination with the body-belt, provided with a vertically-disposed attaching-bar secured thereto and depending therefrom, of the thigh-section comprising the flexible side portions, and lateral stiffening-bars, the outer of said bars being pivotally connected to said attaching-bar, forming an artificial hip-joint, at a point directly over the hip-joint of the wearer, a calf-section pivotally connected to the thigh-section by artificial knee-joints, and provided with a foot-section, a locking device for said hip-joint, for rigidly holding said attaching-bar, and said outer stiffening-bar in alinement, and a device for disengaging said locking device and holding it out of operation, substantially as described.

3. In an artificial leg, the combination with the body-belt, provided with a vertically-disposed attaching-bar secured thereto and depending therefrom, of the thigh-section comprising the flexible side portions, and lateral stiffening-bars, the outer of said bars being pivotally connected to said attaching-bar, forming an artificial hip-joint, at a point directly over the hip-joint of the wearer, a calf-section pivotally connected to the thigh-section by artificial knee-joints, and provided with a foot-section, a spring-actuated locking device adapted to pass through registering apertures in the attaching-bar, and outer stiffening-bar, to lock them rigidly in alinement, a push-button for disengaging said locking device, and means for securing said button in its inner position to hold the locking device out of operation, substantially as described.

4. In an artificial leg, the combination with the body-belt, provided with a vertically-disposed attaching-bar secured thereto and depending therefrom, of the thigh-section comprising the flexible side portions, and lateral stiffening-bars, the outer of said bars being pivotally connected to said attaching-bar, forming an artificial hip-joint, at a point directly over the hip-joint of the wearer, a calf-section pivotally connected to the thigh-section by artificial knee-joints, and provided with a foot-section, said outer stiffening-bar being adjustable longitudinally, to regulate the distance between the centers of the artificial hip and knee joints to correspond with the natural limb of the wearer, and a locking device for locking said attaching-bar and said outer stiffening-bar in alinement, substantially as described.

5. In an artificial leg, the combination with the body-belt, provided with a downwardly-extending attaching-bar, of the thigh-section comprising the flexible side portions, and lateral stiffening-bars, the outer bar being pivotally connected to said attaching-bar by an artificial hip-joint adapted to lie directly over the hip-joint of the wearer, a calf-section connected to the thigh-section by artificial knee-joints, a foot-section connected to the calf-section by an ankle-joint, the outer lateral stiffening-bar of the thigh-section being adjustable longitudinally to regulate the distance between the artificial hip and knee joints to correspond with the natural leg of the wearer, and said calf-section being longitudinally adjustable to regulate the distance between the artificial knee and ankle joints to correspond with the natural leg of the wearer, substantially as described.

6. In an artificial leg, the combination with the lower leg-section of flexible material provided with lateral stiffening-bars, having edge portions bent over on one side to form guiding-flanges, a foot-section provided with attaching-bars adapted to fit within said guiding-flanges and means for securing said attaching-bars and stiffening-bars together, substantially as described.

7. In an artificial leg, the combination with the lower leg-section of flexible material provided with lateral stiffening-bars, having edge portions bent over on one side to form guiding-flanges, a foot-section provided with attaching-bars adapted to fit within said guiding-flanges, one set of said bars being provided with a series of adjusting-apertures, and the other set being provided with an aperture adapted to register with one of the said series, and screws for engaging said apertures and securing said attaching-bars and said stiffening-bars together and permitting the longitudinal adjustment thereof, substantially as described.

8. In an artificial leg, the combination with a lower leg portion of flexible material, a thigh-section of flexible material, said sections being each provided with lateral stiffening-bars composed of flat metal bars having edge portions bent over on one side thereof to form guiding-flanges, hinge devices forming knee-joints, each provided with two shanks for fitting within the guiding-flanges of the stiffening-bars of said thigh-section and lower leg-section, means for securing said shanks in engagement with said bars, and a foot-section secured to said lower leg-section, substantially as described.

9. In an artificial leg, the combination with the thigh-section and lower leg-section, of a hinge connection forming the knee-joint and comprising two hinge members pivotally connected, one of said hinge members being provided with a retracting-lever pivoted at a distance from said pivotal connection of the hinge members, a link connecting said lever with the other hinge member, at a point eccentric to its pivotal connection, a spring engaging said retracting-lever, and a stop on one of said members for engaging the other member and limiting the movement of the hinge members in the direction in which they are moved by the spring, substantially as described.

10. In an artificial leg, the combination with the thigh-section and the lower leg-section, of a hinge connection for said members forming a knee-joint and comprising among its members, a hinge member provided on opposite sides with integral bearing-bosses, a second hinge member comprising two connected plates having bearing-apertures engaging said bosses, a retracting-lever between said plates pivoted at a distance from said bosses, a link connecting the free end of said lever with said first-mentioned hinge member at a point eccentric to said bosses, a V-shaped spring having one of its arms engaging said lever adjacent to its point of pivoting, and a stop for limiting the movement of said hinge members under the influence of said spring, substantially as described.

11. In an artificial leg, the combination with the thigh-section and lower leg-section, of a hinge connection forming a knee-joint, and comprising among its members, a hinge member provided on opposite sides with bearing-bosses, and having a central portion provided on the front side with a stop-engaging shoulder, and on its rear side with a part to engage a retracting-lever, a second hinge member consisting of two connected plates having bearing-apertures engaging said bosses, a stop-bar located between said plates and having a part to engage said stop-engaging shoulder, a retracting-lever pivotally mounted between said plates, a link connecting said lever with the other hinge member, in advance of the lever-engaging portion thereof, a V-shaped spring located between said plates and having one of its arms engaging the retracting-lever adjacent to its point of pivoting, the construction being such that when the hinge members are moved in a direction to compress the spring, the said link will draw the retracting-lever into position to be engaged by the said lever-engaging shoulder of the first-mentioned hinge member, substantially as described.

12. An artificial leg comprising among its members, a leg-section formed of flexible material divided longitudinally and provided with lateral stiffening-bars, adjustable securing devices for drawing the said flexible portions together and an elastic spreading device interposed between said stiffening-bars, substantially as described.

13. An artificial leg comprising among its members, a leg-section formed of flexible material divided longitudinally and provided with lateral stiffening-bars, adjustable securing devices for drawing said flexible portions together and a bow-spring within said section having its ends secured to the said stiffening-bars, for spreading them apart, substantially as described.

14. An artificial leg comprising among its members, a foot-section provided with parts movable with respect to each other, and a joint connecting said parts including two plates having substantially semicylindrical end portions and securing flanges adapted to be attached to the parts of the foot-sections, bearing devices between said plates, and safety-rings engaging said semicylindrical end portions of said plates, substantially as described.

15. An artificial leg comprising among its members, a foot-section provided with parts movable with respect to each other, and a joint connecting said parts including two plates having substantially semicylindrical end portions and securing-flanges adapted to be attached to the parts of the foot-sections, rollers interposed between said plates, a bolt passing through said rollers transversely of the foot-section connections between said bolt and each of the said parts of the foot-section, and safety-rings engaging the end portions of said plates, substantially as described.

16. An artificial leg comprising among its members, an ankle-section, and a main foot-section, a joint connecting said sections and including a plate secured to each section having a substantially semicylindrical bearing portion and attaching-flanges connected therewith of less width than said bearing portion, bearing-rollers interposed between the bearing portions of said plates, a bolt extending through said rollers transversely of the foot and ankle sections, hinge members pivotally connected to said bolt, and connected to said foot and ankle sections respectively and safety-rings engaging the end portions of the substantially semicylindrical bearing portions of said plates, substantially as described.

17. In an artificial leg, the combination with the body-belt, provided with a vertically-disposed attaching-bar secured thereto and depending therefrom, of the thigh-section comprising the flexible side portions, and lateral stiffening-bars, the outer of said bars being pivotally connected to said attaching-bar, forming an artificial hip-joint, at a point directly over the hip-joint of the wearer, a calf-section pivotally connected to the thigh-section by artificial knee-joints, and provided with a foot-section, and a crutch detachably connected to said attaching-bar and extending upward therefrom, substantially as described.

18. In an artificial leg, the combination with the body-belt, provided with a vertically-disposed attaching-bar secured thereto and depending therefrom, of the thigh-section comprising the flexible side portions, and lateral stiffening-bars, the outer of said bars being pivotally connected to said attaching-bar forming an artificial hip-joint, at a point directly over the hip-joint of the wearer, a calf-section pivotally connected to the thigh-section by artificial knee-joints, and provided with a foot-section, a crutch detachably connected to said attaching-bar, and extending upward therefrom, and means for adjusting said crutch vertically with respect to said attaching-bar, substantially as described.

19. In an artificial leg, the combination with the body-belt, provided with a vertically-disposed attaching-bar secured thereto and depending therefrom, of the thigh-section comprising the flexible side portions, and lateral stiffening-bars, the outer of said bars being pivotally connected to said attaching-bar, forming an artificial hip-joint at a point directly over the hip-joint of the wearer, a calf-section pivotally connected to the thigh-section by artificial knee-joints, and provided with a foot-section, a crutch rigidly connected to said attaching-bar, and a lock for said artificial hip-joint for rigidly connecting said attaching-bar, and said outer stiffening-bar and holding them in alinement, substantially as described.

20. In an artificial leg, the combination with the thigh-section, a lower leg-section and foot-section, of a vertically-disposed attaching-bar pivotally connected at its lower end to the thigh-section at a point adapted to correspond to the hip-joint of the natural member, a detachable crutch secured to said attaching-bar, means for adjusting said crutch and bar longitudinally with respect to each other, and a belt secured to said attaching-bar, substantially as described.

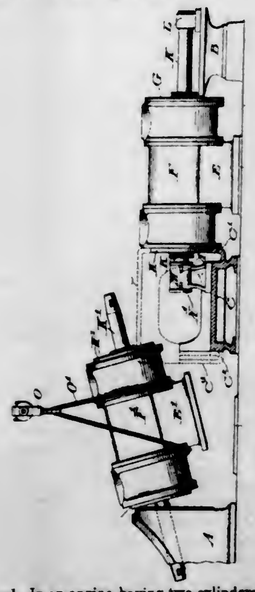
822,386. TYPE-BAR FOR TYPE-WRITING MACHINES. FRANS A. PETERSON, Syracuse, N. Y., assignor to L. C. Smith & Bros. Typewriter Company, Syracuse, N. Y., a Corporation of New York. Filed June 25, 1904. Serial No. 214,137.



Claim.—1. In a two-part type-bar for type-writing machines, the combination with a bar *a* having a head 1 and an eye 2, of a U-shaped bearing and dust-shield having wings extending along said bar both in front and in rear of said eye, and means for connecting said bearing portion with said bar.

2. In a two-part type-bar for type-writing machines, the combination with a bar proper having a suitable head 1, of a folded U-shaped bearing having its closed side uppermost to form a dust-shield and having two projecting wings embracing said bar, and means for connecting the same to the bar.

822,387. ENGINE CONSTRUCTION. GUSTAV B. PETSCHE, Philadelphia, Pa., assignor to Southwark Foundry & Machine Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Dec. 30, 1904. Renewed Mar. 12, 1906. Serial No. 305,566.



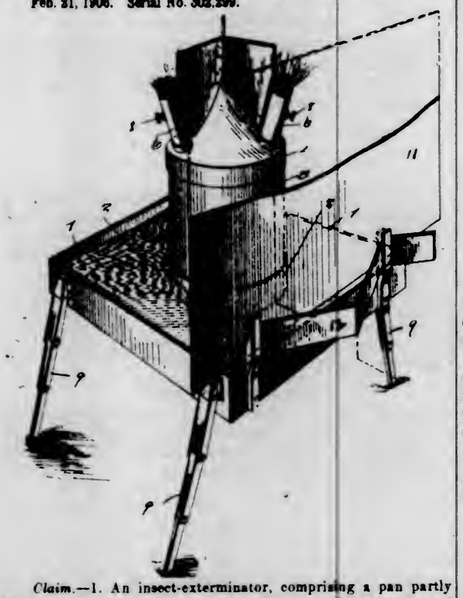
Claim.—1. In an engine having two cylinders arranged in line with each other, and an engine bed-piece against which one of said cylinders abuts, the combination therewith of a distance-piece set between said cylinders and having portions thereof which abut

against the cylinder nearest to the bed-piece removable to permit an endwise movement of the cylinder away from the bed-piece and the elevation thereof.

2. In an engine having two cylinders arranged in line with each other, and an engine bed-piece against which one of said cylinders abuts, the combination therewith of a distance-piece set between said cylinders and having a portion thereof removable so as to give the cylinder which abuts against the bed-piece freedom to move away therefrom and also to move upward.

3. In an engine having two cylinders arranged in line with each other and an engine bed-piece against which one of said cylinders abuts, the combination therewith of a distance-piece C, set between said cylinders and having a removable top C^4, and bottom segment C^3, whereby the removal of the cylinder which abuts against the bed-piece is facilitated.

822,388. INSECT-TRAP. HENRY REID, Meridian, Okla. Filed Feb. 21, 1906. Serial No. 302,299.



Claim.—1. An insect-exterminator, comprising a pan partly filled with water, an oil-can seated in the center of said water, said oil-can being provided with a plurality of burners, said burners being set at an outward inclination, whereby wingless insects will fall free from obstruction, directly into the water below, substantially as described.

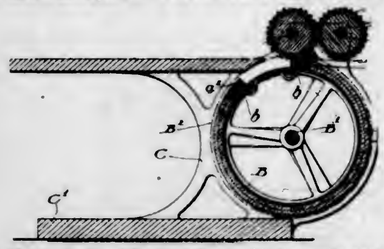
2. An insect-trap, comprising a rectangular pan, having a liquid therein, burners mounted in said pan, clips mounted on one side of said pan, and a longitudinal fender mounted in said clips and adapted to shield said burners from the wind.

822,389. FOLDING SHIPPING-CRATE. DAVID B. RODKEY, Spangler, Pa. Filed July 11, 1905. Serial No. 269,315.



Claim.—A collapsible crate comprising a bottom having sides of different height provided with bevel edges, ends hinged to the bottom adapted to fold down on the bottom, a side provided with a lower beveled edge hinged to the side with the least height, adapted to fold down on the ends, a side provided with upper and lower beveled edges hinged to the side with the greatest height, and a sectional top hinged together on its under side, and provided with a beveled edge hinged to the upper beveled edge of the side, the outer section of the top being adapted to fold down upon the side and inner section of the top, and the side and inner section of the top adapted to fold down with the outer section of the top over the side and ends forming a flat top, and a hook carried by the inner section of the top adapted to engage an eye carried by the side with the least height, for the purpose described.

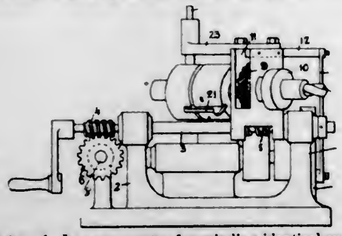
822,390. COPYING-MACHINE. BROR M. SCHAUMAN, Philadelphia, Pa., assignor of one-fourth to himself, one-fourth to Milton K. Hart, one-fourth to Joseph S. Stevens, and one-fourth to James D. Smith, Philadelphia, Pa. Filed Dec. 8, 1904. Serial No. 235,938.



Claim.—1. A pad for a copying-machine comprising a strip of wire-gauze, end pieces provided with recesses to receive and hold copying material, and a layer of copying material passing through and covering both sides of the gauze, substantially as specified.

2. A copying-machine comprising a rotatable cylinder, spring-pins secured to the cylinder, a detachable pad provided at its ends with openings to engage the spring-pins; a roller in engagement with the cylinder and a second roller in engagement with the first-mentioned roller, substantially as described.

822,391. APPARATUS FOR GRINDING DRILLS, BORERS, AND LIKE TOOLS. FRIEDRICH SCHMALTZ, Offenbach-on-the-Main, Germany. Filed Aug. 11, 1903. Serial No. 169,118.



Claim.—1. In an apparatus for grinding identical cutting-surfaces in borers, drills and similar tools, means for automatically, and simultaneously rotating a borer on its own axis, and means for swinging it on an axis crossing its own axis in such a way that both cutting edges are alternately passed over the grinding-disk and ground uninterruptedly, the axis of the drill-holder being transverse to the axis of said grinding-disk.

2. In an apparatus for grinding identical cutting-surfaces on borers, drills and similar tools, a rotating disk having a grinding-surface, means for automatically passing the tool over said grinding-surface backward and then forward in the arc of a circle with a rest at each end of the arc, in combination with devices for automatically rotating the tool through a definite fraction of a circle when its axis is stationary at the point intermediate between its stopping and again starting its travel in the arc, and mechanism for automatically causing said motions to alternate with each other and a tool-holder for the tool, with its axis transverse to the axis of said disk.

3. In an apparatus for grinding identical cutting-surfaces on borers, drills and similar tools, a constantly-rotating grinding-surface, means for automatically passing the tool over said grinding-surface backward and then forward in the arc of a circle with a rest at each end of the arc, in combination with devices for automatically rotating the tool through a definite fraction of a circle when stationary at the point intermediate between its stopping and again starting its travel in the arc, and mechanism for causing said arcuate and rotary motions to automatically alternate with each other said mechanism for the former motion consisting of a crank and connecting-rod, and the mechanism for the crank motion being a duplicate in construction of that for the rotary motions of the tool.

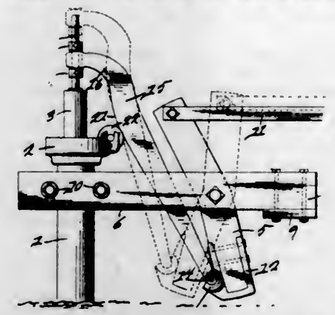
4. In an apparatus for grinding identical surfaces on borers, drills and similar tools a drill-holder, means for intermittently rotating said holder in one direction, a carrier supporting said holder, a pivot for said carrier, devices for oscillating said carrier about said pivot, whereby the tool describes an arc of a circle both backward and forward, and mechanism for causing said intermittent rotary and said oscillating motions to alternate with each other, all of said motions being performed automatically said means consisting of fixed and loose pulleys, a clutch between the pulleys, the drill-holder rotating when the loose pulley is clutched to the fixed pulley, and a device for rotating the fixed pulley continuously.

5. In an apparatus for grinding identical surfaces on borers, drills and similar tools, a drill-holder, means for intermittently rotating said holder in one direction, a carrier supporting said holder, a pivot for said carrier, the axis of said pivot lying in a different plane from the axis of said holder, devices for oscillating said carrier about said pivot, whereby the tool describes the arc of a circle both backward and forward, and mechanism for causing said intermittent rotary and said oscillating motions to alternate with each other, all of said motions being automatic and a rotating grinding-disk, the axes of said disk of said drill-holder, and of said pivot intersecting substantially the same straight line at right angles in one of the phases of the drill-holder.

6. In an apparatus for grinding identical cutting-surfaces on borers, drills and similar tools, means for intermittently rotating a borer on its own axis, devices for oscillating said borer on an axis crossing its own axis, and mechanism for causing said oscillatory and rotary motions to automatically alternate with each other, a holder for the borer, said devices consisting of a crank and connecting-rod between said crank and said holder, a rotating pulley, a loose pulley connected rigidly to the crank, a catch connecting the loose and fixed pulley, and a stop for lifting the catch from the loose pulley, and a pin for holding the loose pulley.

7. In an apparatus for grinding identical cutting-surfaces on borers, drills and similar tools, a rotating grinding-disk means for intermittently rotating a borer on its own axis, devices for oscillating said borer on an axis crossing its own axis and the axis of said disk, the two said axes lying in different planes, and mechanism for causing said oscillatory and intermittent rotary motions to automatically alternate with each other.

822,392. OIL-WELL JACK. GEORGE B. SESSIONS, Findlay, Ohio, assignor of one-third to Dayton L. Sealy and one-third to William L. David, Findlay, Ohio. Filed Oct. 4, 1905. Serial No. 281,215.



Claim.—1. In an oil-well jack, the combination with the casing, the casing-head, and the polish-rod of a well, of a pivoted lever, a support for the pivot of said lever, adjustable upon the casing, an operating-arm pivotally connected at one end to said lever and engaging the polish-rod at its other end, and means carried by the casing-head for guiding said operating-arm in its movement, substantially as described.

2. In an oil-well jack, the combination with the casing, the casing-head, and the polish-rod of a well, of a support adjustable in a vertical direction upon the casing, a lever pivotally mounted upon said support, a surface rod connected with the upper end of said lever, an operating-arm pivoted to the lower end of said lever, said arm engaging the polish-rod at its free end and having a cam-shaped bearing-surface adjacent to said free end, and a roller mounted for rotation upon the casing-head adapted to contact with said bearing-surface to guide the operating-arm in its movement, substantially as described.

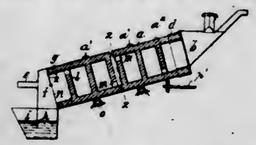
3. In an oil-well jack, the combination with the casing, the casing-head, and the polish-rod of a well, of a support comprising a pair of members secured together at one end and having their other ends disposed on opposite sides of the casing, means extending transversely of said pieces for clamping them in adjusted position upon the casing, a lever pivoted between its ends upon said support, a surface rod connecting with the upper end of said lever, a socket at the lower end of said lever, an operating-arm detachably mounted at one end upon said socket and engaging the polish-rod at its free end, said operating-arm having a cam-shaped bearing-surface adjacent to its free end, and a roller mounted for rotation upon the casing-head in movable contact with said cam-shaped bearing-surface and adapted to guide the operating-arm in its movement, substantially as described.

822,393. WATCH COVER AND HOLDER. ALEXANDER L. SHONFIELD, Muncie, Ind. Filed Mar. 7, 1905. Serial No. 248,910.



Claim.—A protector for watches comprising a soft highly-flexible bag adapted to readily conform to the shape of a watch therein having an opening at one edge for the introduction of the watch and a sight-opening in one of its sides of less diameter than said other opening through which the face of the watch may be seen, a reinforcing-frame bordering the sight-opening and secured to the interior edge of the flexible material of the bag to prevent distortion thereof and enlargement of the sight-opening, and means for closing and maintaining in closed position the opening at the edge of the bag including a two-part hinged reinforcing-frame having oppositely-disposed outwardly-bent portions to form when the parts are closed together an inclosed opening for the reception of the watch-stem whereby the latter may project without the bag and the watch be held in place independently of the reinforcing-frame of the sight-opening, and means for locking the parts of said last-mentioned reinforcing-frame in said closed position.

822,394. REVOLVING KILN FOR GENERATING GAS. SVEN E. SIEURIN, Högenäs, Sweden. Filed Aug. 14, 1905. Serial No. 274,169.



Claim.—1. In an apparatus of the character specified, the combination with a rotary kiln, of means for supplying fuel into one end of the latter, means to inject air into the opposite end of the same, a plurality of transverse partitions in said kiln having openings arranged to form a prolonged passage for said air and fuel passing through the kiln.

2. In an apparatus of the character specified, the combination with a rotary kiln, of a stationary hopper adapted to supply fuel into one end of the kiln, a blast-box mounted at the opposite end of the latter, an air-supply for said box, and a plurality of transverse partitions dividing the kiln into compartments, each of said partitions having an opening so arranged relatively to the adjacent opening as to form a spiral passage for the fuel and air.

3. In an apparatus of the character specified, the combination with an inclined rotary kiln, of a stationary feed-hopper connected therewith at one end, a valved charging-port in said hopper, a gas-

outlet port in the hopper, an air-blast connected with said kiln at the other end, a perforated plate in the last-mentioned end of said kiln, a plurality of transverse partitions dividing the kiln into compartments, each of said partitions having an opening so arranged relatively to the adjacent opening as to form a spiral passage through the kiln.

4. In an apparatus of the character specified, the combination with an inclined cylindrical kiln, means to rotate the same, a stationary feed-hopper communicating with one end of the kiln and provided with a charging-port, a valve in said port, a gas-outlet port in the hopper, an ash-pit at the opposite end of the kiln, a blast-box having an air-tight connection with the kiln and extending into the ash-pit, an air-supply communicating with the blast-box, a perforated end plate in the kiln, and a door in said plate.

822,395. **DREDGE-CHAIN.** EDWARD L. SMITH Breckenridge, Colo., and JOHN M. SHERRERD, Easton, Pa. Filed June 7, 1905. Serial No. 264,087.



Claim.—1. In a pivot-joint, an apertured member, a second member, a pivot on the second member extending into the apertured part of the other member, one of the members having a boss around the pivot and extending into contact with the other member, the boss having its periphery concavely converging toward the other member, the other member having its face engaged by such boss extending in a plane at right angles to the pivot, and a gasket surrounding said boss and having its inner boss-engaging surface concavely converging corresponding to the periphery of the boss.

2. In a pivot-joint, an apertured member, a second member, a pivot on the second member extending into the apertured part of the other member, one of the members having a boss around the pivot and extending into contact with the other member, the other member having its face engaged by the boss extending in a plane at right angles to the pivot, and a gasket surrounding said boss and having its periphery grooved, and a clamping member located in said grooved portion of the gasket.

3. In a pivot-joint, an apertured member, a second member, a pivot on the second member extending into the apertured part of the other member, one of the members having a boss around the pivot and extending into contact with the other member, the boss having its periphery converging toward the other member, the other member having its face engaged by the boss extending in a plane at right angles to the pivot, a gasket surrounding said boss and having its inner boss-engaging surface converging corresponding to the periphery of the boss, the gasket having its periphery grooved, and a clamping member located in said grooved portion of the gasket.

4. The combination with pivoted members having a converging boss on one member offsetting the other member, of a resilient gasket having its periphery grooved, and having one side face converging corresponding to the boss, the other side face being transverse to the pivot from the inner edge outward, but flared away from the grooved portion at the outer part, and a clamping member located in the groove retaining the gasket in position with the flared portion bent inward and snugly engaging the adjacent member.

5. In a pivot-joint, an apertured member, a second member, a pivot on the second member extending into the apertured part of the other member, one of the members having a boss around the pivot and extending into contact with the other member, the boss having its periphery converging toward the other member, the other member having its face engaged by such boss extending in a plane at right angles to the pivot, a resilient gasket surrounding said boss and having its inner boss-engaging surface converging corresponding to the periphery of the boss, and a clamping member engaging the periphery of the gasket at its intermediate portion only.

6. In a pivot-joint, an apertured member, a second member, a pivot on the second member extending into the apertured part of the other member, one of the members having a boss around the pivot and extending into contact with the other member, the boss having its periphery converging toward the other member, the other member having its face engaged by the boss extending in a plane at right angles to the pivot, a resilient gasket surrounding said boss and having its inner boss-engaging surface converging corresponding to the periphery of the boss, and having a substantially plane side face engaging the plane face of said member, and a clamping member engaging the periphery of the gasket at its intermediate portion only.

7. In a chain, a link having at one end a part projecting from each side, a second link extending between said parts, each of said parts being pivoted to the adjacent portion of the second link by means of a pivot on one link extending into an apertured portion of the other link, one of such links at each said joint having a boss around the pivot on one face and extending into contact with the other link, the other link at each said joint having its face engaged by the boss extending in a plane at right angles to the pivot, a gasket surrounding each such boss and having its periphery grooved, and a clamping member located in the grooved part of the gasket.

8. In a chain, a link having at one end an apertured part projecting from each side, a second link extending between said parts and having an aperture registering with said apertures, a pivot extending through said apertured parts thereby articulating the links, one of the links at each joint having a boss around the pivot and extending into contact with the other link, each boss having its periphery concavely converging toward the other link and a gasket surrounding each boss and having its inner boss-engaging surfaces concavely converging corresponding to the periphery of the boss.

9. In a chain, a link having at one end a part projecting from each side, a second link extending between said parts, each of said parts being pivoted to the adjacent portion of the second link by means of a pivot on one link extending into an apertured portion of the other link, the second link at each side joint having a boss around the pivot on one face and extending into contact with the other link, the other link at each said joint having its face engaged by the boss extending in a plane at right angles to the pivot, a gasket surrounding each such boss and having its periphery grooved, and a clamping member located in the grooved part of the gasket.

10. In a chain, a link having at one end an apertured part projecting from each side, a second link extending between said parts and having an aperture registering with said apertures, a pivot extending through said apertured parts thereby articulating the links, the second link at each joint having a boss around the pivot and extending into contact with the other link, each boss having its periphery concavely converging toward the other link, and a gasket surrounding each boss and having its inner boss-engaging surface concavely converging corresponding to the periphery of the boss.

11. In a chain, a link member having at one end an apertured part projecting from each side, a second link member extending between said parts and having an aperture registering with said apertures, a pivot extending through said apertured parts thereby articulating the links, one of the links at each joint having a boss around the pivot extending into contact with the other link, each boss having its periphery concavely converging toward the other link, the other link having its face engaged by each said boss extending in a plane at right angles to the pivot, and a gasket surrounding each said boss and having its inner boss-engaging surface concavely converging corresponding to the periphery of the boss, and having its periphery grooved, and a clamping member located in such grooved parts of the gaskets.

12. In a chain, a member having a transverse aperture, a pivot in such aperture projecting beyond each side, a second member articulated with such member by having two apertured parts, each engaging one of said pivot end portions, the said parts each having a slot on the outer face intersecting such aperture, and a plate secured in each such slot and entirely covering the aperture at that end.

13. In a chain, a member having a transverse aperture, a pivot in such aperture projecting beyond each side, a second member articulated with such member by having two apertured parts, each engaging one of said pivot end portions, a slot in the outer face of each said part intersecting said aperture, the opposite side walls of the slot being undercut, and a plate having inclined side faces and arranged to fit into each said slot and thereby entirely cover each said aperture.

14. In a chain, a member having a transverse aperture, a pivot in such aperture projecting beyond each side, a second member articulated with such member by having two apertured parts, each engaging one of said pivot end portions, a slot in the outer face of each said part intersecting said aperture, the opposite side walls of the slot being undercut, and a plate having inclined side faces and arranged to fit into said slot and thereby entirely cover each said aperture, each slot having the side walls arranged converging, and each plate having its inclined sides correspondingly converging, whereby the plate can be wedged in such slotted face of the plate.

15. A member having an aperture, a rod or bolt extending into such aperture from one side of the member, and a plate slidably attached to the other side of the member and entirely covering such aperture.

16. A member having an aperture, a rod or bolt extending into such aperture from one side of the member, the member having a slot on the opposite face intersecting such aperture, and a plate secured in such slot and entirely covering the aperture.

17. A member having an aperture, a rod or bolt extending into such aperture from one side of the member, a slot in the opposite face of the member intersecting said aperture, the opposite side walls of the slot being undercut, and a plate having inclined side faces and arranged to fit into such slot and thereby entirely cover such aperture.

18. A member having an aperture, a rod or bolt extending into such aperture from one side of the member, a slot in the opposite face of the member intersecting said aperture, the opposite side walls of the slot being undercut, and a plate having inclined side faces and arranged to fit into such slot and thereby entirely cover such aperture the slot having the side walls arranged converging, and said plate having its inclined sides correspondingly converging, whereby the plate can be wedged in such slotted face of the member.

822,396. **CROSS-LINE BUCKLE.** FURMON S. SMITH, Ramona, Mich. Filed Oct. 10, 1905. Serial No. 282,162.



Claim.—1. In a cross-line buckle, the combination of a frame, a detachable cross-bar mounted thereon, a tongue carried by said cross-bar, and spring members separate from the frame for preventing displacement of the cross-bar therefrom.

2. In a cross-line buckle, the combination of a frame, a detachable cross-bar mounted thereon, a tongue carried by said cross-bar, and spring members arranged adjacent to but separate from the frame of the buckle and adapted to engage said frame to prevent displacement of the cross-bar.

3. In a cross-line buckle, the combination of a frame, a detachable cross-bar, a tongue on said cross-bar, and members coacting with the frame but separate therefrom for locking the cross-bar from displacement.

4. In a cross-line buckle, the combination of a frame, a detachable cross-bar adapted to be displaced from the frame by movement from the upper side thereof, and members arranged beneath the frame and operably connected with the cross-bar to prevent displacement of the latter, said members being separate from the frame.

5. In a cross-line buckle, the combination of a frame, a detachable cross-bar, a tongue carried by said bar, a long line passing through the frame, a short line looped about the cross-bar, and spring members arranged adjacent the ends of the cross-bar and connected therewith, said spring members being adapted to engage the frame and prevent displacement of the cross-bar therefrom.

6. In a cross-line buckle, the combination of a frame, a detachable cross-bar, a tongue carried by said bar, a long line passing through the frame, a short line looped about the cross-bar, and spring members secured to the short line at the looped portion thereof and having the upper ends bent inwardly to enter recesses in said bar, said spring members normally projecting outward from the short line beneath the frame of the buckle to prevent displacement of the cross-bar therefrom.

822,397. **CALIPERS AND DIVIDERS.** GEORGE C. SMITH, St. Kilda, near Melbourne, Victoria, Australia, assignor to Albert Edward Langford, Melbourne, Victoria, Australia. Filed Oct. 20, 1904. Serial No. 229,277.



Claim.—1. A measuring device comprising two legs and means connecting them to be relatively adjustable toward and from each other, a screw and nut connected to said legs to move them toward each other, and a separate adjustable means for limiting said movement.

2. A measuring device comprising two legs movable toward and from each other and a spring tending to spread said legs apart, means coacting with the legs and capable of moving them toward each other, and an adjustable device to limit said movement.

822,398. **APPARATUS FOR TREATMENT OF ORES AND TAILINGS.** AUGUST SODERLING, Bodie, Cal. Filed July 13, 1905. Serial No. 269,459.



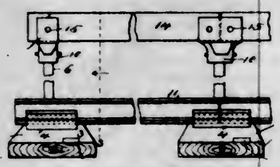
Claim.—1. Apparatus for preliminary treatment of tailings and slimes, consisting of an inclined riffled trough or conductor having at its upper end a water-supply, and pulverizing-rolls, and a tank holding a weak solution of solvent acids or acid salts, a dilution-water conductor near the lower end of said trough, and at its lower end settling-reservoirs for sands and for slimes, final reservoirs for base-metal solutions and separate terminal reservoirs for the sands and for the slimes, substantially as specified.

2. Apparatus for the treatment of tailings and slimes preliminary to cyaniding consisting of an inclined riffle-bottom trough or conductor, at the upper end thereof a water-supply, pulverizing-rolls, and a tank for a weak solution of solvent acids or acid salts, at the lower end thereof settling-reservoirs for sands and slimes, and an intermediate water-discharge near the settling-reservoirs, substantially as specified.

822,399. **RAIL-TRACK SYSTEM.** WILLIAM J. STERLING, Norfolk, Va. Filed Aug. 17, 1905. Serial No. 274,087.

Claim.—1. In a track structure, the combination of a base, a standard passed therethrough, means for securing said standard

against longitudinal movement with respect to said base, a rail-clamping flange carried by said base, a rail-clamping block carried by said standard, and a rail-support carried by the standard above said base.



2. In a track structure, the combination of a base, a standard engaging the same, means for retaining said standard against longitudinal movement with respect to said base, a clamping-flange carried by said base and designed to engage one side of the rail, a clamping-block carried by said standard and designed to engage the opposite side of said rail, and a rail-carrying arm projecting laterally from said standard.

3. In a track structure, the combination of a base, a standard engaging the same, a clamping-flange carried by said base and designed to engage one side of a rail, and a clamping-block carried by said standard, and designed to engage the other side of the rail, a cap engaging said standard, and a rail-carrying arm projecting laterally from said cap.

4. In a track structure, the combination of a base, a standard connected therewith, a clamping-flange extending from each side of said base, each of said flanges being designed to engage a rail, a clamping-block carried by said standard, and provided with oppositely-disposed clamping-faces designed to engage the opposite faces of the rails engaged by said clamping-flanges, and rail-carrying means sustained by said standard above said base.

5. In a track structure, the combination of a base, a standard engaging the same, means carried by said standard for engaging a rail on each side thereof, and an arm projecting from each side of said standard and each designed to sustain a rail.

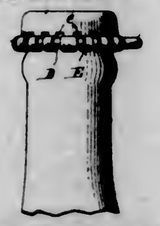
6. In a track structure, the combination of a hollow base, a threaded standard extending therethrough, a nut threaded on said standard and engaging said base, a nut threaded on said standard above the base, a clamping-block interposed between the upper nut and the base, said block being designed to engage a rail for maintaining the same in position, and rail-carrying means sustained by said standard above said base.

7. In a track structure, of a base, a standard connected therewith, means carried by said standard for securing a pair of rails on said base, and means arranged at the upper end of said standard for sustaining a pair of rails.

8. In a track structure, the combination of a base, a standard connected therewith, rail-engaging means carried by said standard for securing a rail to said base, a cap for the upper end of said standard, and bifurcated arms projecting from said cap and designed to receive rails.

9. In a track structure, the combination with a cross-tie, of a pair of clamping-plates connected therewith, a clamping-flange carried by each of said plates, a standard engaging each of said plates, a clamping-block carried by each of said standards, a rail secured between the clamping-flange and said clamping-block of each plate, and a rail carried by each of said standards above the first-mentioned rail.

822,400. **BOTTLE-STOPPER.** ROBERT STOCK, Buffalo, N. Y. Filed Sept. 7, 1905. Serial No. 277,263.



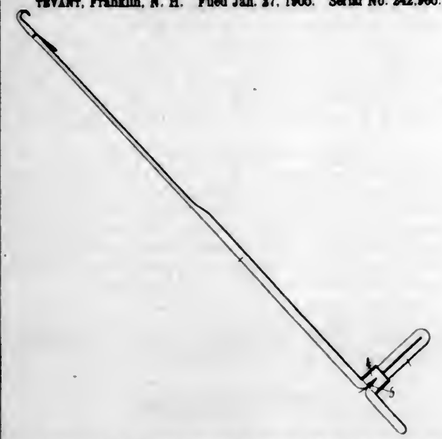
Claim.—1. A bottle-stopper comprising a cap having its rim slitted to form an annular row of depending lips and a spring-ring to which the lower ends of said lips are connected, substantially as set forth.

2. A bottle-stopper comprising a cap having its rim slitted to form an annular row of depending lips, and a split ring to which the lower ends of said lips are connected and which is provided at one end with a laterally-projecting lug, substantially as set forth.

3. A bottle-stopper comprising a cap having its rim slitted to form an annular row of depending lips, and a split spring-ring around which the lower ends of said lips are curled for connecting the ring with said lips, substantially as set forth.

4. A bottle-stopper comprising a cap having its rim slitted to form an annular row of depending lips, a split spring-ring around which the lower ends of said lips are curled for connecting said ring with said lips, and a laterally-projecting lug of loop form arranged on one end of said ring, substantially as set forth.

822,401. **KNITTING-MACHINE NEEDLE.** EDWARD H. STURTEVANT, Franklin, N. H. Filed Jan. 27, 1905. Serial No. 242,960.



Claim.—1. A knitting-machine needle, having a butt or heel, and a band applied to said butt or heel and locked thereon by punching its stock in between the limbs of the butt or heel.

2. A knitting-machine needle, having a butt or heel formed by doubling the wire of the needle upon itself, a band externally applied to said butt or heel, and a depression in said band entering the butt or heel between its limbs and locking said band in place.

3. A knitting-machine needle of the class described having an endless band extending around the heel of said needle, said band projecting into a recess formed in said heel.

4. A knitting-machine needle of the class described having an endless band extending around the heel of said needle, said band projecting into a recess between the limbs of said heel.

5. A knitting-machine needle of the class described having a band extending around the heel of said needle, said band provided with a projection upon its inner surface projecting into a recess formed in the heel of said needle.

6. A knitting-machine needle of the class described having an endless band extending around the heel of said needle, said band indented upon its outer surface and having a projection upon its inner surface formed by said indentation and projecting into a recess between the limbs of said heel.

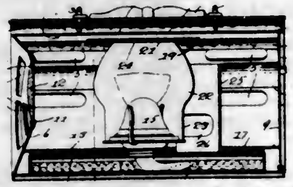
7. A knitting-machine needle of the class described having an endless band extending around the heel of said needle said band having lateral projections upon its inner face upon opposite sides thereof which project into a space between the limbs of said heel.

822,402. **LAMP-HEATER.** JOHN W. SUMMERS, Mattoon, Ill. Filed Mar. 28, 1905. Serial No. 252,570.

Claim.—1. In a lamp-heater, an approximately semicylindrical casing having external corrugations forming horizontally-disposed flues connecting with the interior of the casing, and apertures between said corrugations.

2. In a device of the class described, a casing-body having horizontal corrugations spaced apart and forming flues communicating throughout their lengths with the interior of the casing, and an end member connected with the body along the line of the interspaces between the corrugations.

3. In a lamp-heater, a casing having a horizontal flue open at both ends, said flue being composed of a corrugation in the casing and a plate supported adjacent to said corrugation, said plate being provided with an obling slot, in combination with a lamp supported within the casing and having a chimney-flue, and a slotted or apertured deflector supported between the chimney-flue and the casing-flue.

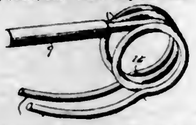


4. In a lamp-heater, a casing corrugated to form a longitudinal groove, open at both ends, in combination with a plate secured to the casing adjacent to said groove and forming a smoke-conducting flue, said plate being provided with a slot; and a lamp disposed within the casing.

5. In a lamp-heater, a casing having longitudinal corrugations spaced apart and open at both ends and apertures in the interspaces between the corrugations, in combination with a non-conductive covering supported upon the corrugations and spaced thereby from the apertured portions of the casing.

6. In a lamp-heater, a casing having longitudinal corrugations open at both ends and provided with apertures in the interspaces between the corrugations, in combination with a flexible covering supported upon the corrugations and spaced thereby from the apertured portions of the casing; said covering being provided with a slit or opening.

822,403. **BICYCLE-SEAT SPRING.** ULYSSES G. SWEENEY and MELVIN L. MAYES, Orosi, Cal. Filed July 31, 1905. Serial No. 272,001.



Claim.—A saddle-supporting spring comprising a pair of horizontally-disposed arms the ends of which are bent to form coincident coils, said coils being provided with offsets defining upwardly-curved arms for attachment to a bicycle saddle-post, and a tubular clamping-sleeve engaging said horizontal arms and adapted to support the saddle.

822,404. **PAPER-RULING MACHINE.** CHARLES F. TAYLOR, Hartford, Conn. Filed Apr. 14, 1905. Serial No. 255,585.

Claim.—1. The combination, with a plurality of web-supports, and a web-gathering roll; of a pair of web-guides coöperating with the opposite edges of a web, and means for shifting said guides simultaneously for guiding said web into alinement with another web, preparatory to the assemblage of the webs on the gathering-roll.

2. The combination, with a plurality of web-supports; of independent pairs of web-guides, coöperative with the opposite edges of the several webs, respectively, and means for shifting each coöperative pair of guides simultaneously for bringing the web controlled thereby into alinement with another web.

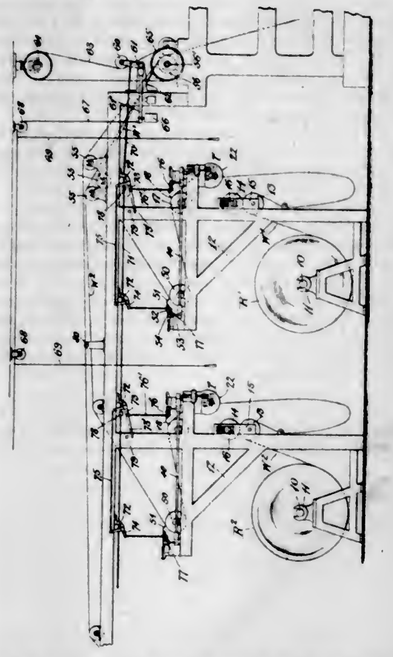
3. The combination, with a plurality of web-supports; of a pair of web-guides coöperative with the opposite edges of a web, means for varying the distance between said guides to accommodate different widths of webs, and means for shifting both of said guides simultaneously for bringing said web into alinement with another web.

4. The combination, with a plurality of web-supports; of a shaft, a pair of disks mounted thereon and for guiding one of the webs, and means for moving said shaft longitudinally to guide said web into alinement with another web.

5. The combination, with a plurality of web-supports; of shiftable means for guiding one web relatively to another web, a web-tensioning device movable with the guiding means, and means for varying the tension of the web.

6. The combination, with a plurality of web-supports; of shiftable means for guiding one of said webs relatively to another web; a plurality of tensioning-rods for each web; and a rotatable shaft carrying said rods, and for varying the position thereof.

7. The combination, with a plurality of web-supports, and line-ruling devices; of shiftable means for guiding one web relatively to another web, and means for shifting said ruling devices simultaneously with the guiding means.



8. The combination, with a plurality of web-supports, and line-ruling devices; of shiftable means for guiding one web relatively to another web, and a linkage for shifting said ruling devices simultaneously with the guiding means.

9. The combination, with a web-support; of a pair of ruling devices operative upon both sides of the web, respectively, and means for positioning both of said ruling devices relatively to the web edge, simultaneously.

10. The combination, with a plurality of web-supports, and shiftable line-ruling devices; of means for guiding one web relatively to the other, and a rock-shaft controlled by the movement of the guiding means, and for controlling the movement of the ruling devices.

11. The combination, with a plurality of web-supports; of a pen-bar having a series of pens, means for guiding one web relatively to another web, and means for shifting said pen-bar by the movement of the guiding means.

12. The combination, with a plurality of web-supports; of a pen-bar having a series of pens, means for guiding one web relatively to another web, and means controlled by the guiding means for shifting said pen-bar simultaneously and for a like amount with the movement of the guiding means.

13. The combination, with a plurality of web-supports; of a pen-bar having a series of pens; means for guiding one web relatively to another web, and a mechanism operable by the guiding means, for shifting said pen-bar simultaneously, for a like amount, and in the same direction as the shifting movement of the guiding means.

14. The combination, with a plurality of web-supports; and means for guiding one of said webs relatively to another web; of line-ruling devices operative on both sides of the web, respectively, and means controlled by the movement of said guiding means and for shifting said devices for a like amount and in the same direction, simultaneously.

15. The combination, with a plurality of web-supports; of a web-tensioning device comprising a plurality of tensioning-rods; a pair of disks mounted thereon for guiding one of said webs; and means for shifting said rods longitudinally for positioning said disks relatively to the other webs.

16. The combination, with a plurality of web-supports; of a

web-tensioning device comprising a shaft mounted for rotation; a pair of disks mounted thereon; tensioning-rods carried thereby; and means for shifting said shaft longitudinally for positioning said disks relatively to the other webs.

17. The combination, with a web-support, and a plurality of ruling devices coöperative with opposite sides of the web; of a longitudinally-shiftable rod for disengaging said devices from the web.

18. The combination, with a web-support, and ruling devices therefor; of a device for advancing a web; a starting and stopping mechanism for said device; and means controlled by said mechanism, for controlling the ruling devices.

19. The combination, with a web-support, and a ruling device therefor; of means for advancing a web, a starting and stopping mechanism therefor, and means for disengaging said ruling device simultaneously with the operation of the stopping mechanism.

20. The combination, with a plurality of web-supports; ruling devices coöperative with the several webs, and means for advancing said webs; of a device for stopping the web-advancing means, and means controlled by said device, for disengaging the ruling devices from the webs, simultaneously.

21. The combination, with a plurality of web-supports; ruling devices coöperative with the several webs and means for advancing said webs; of means for disengaging the ruling device of any one web therefrom; and means for releasing all of the ruling devices from all the webs, simultaneously.

822,405. COLUMN FOR FLAGSTAFFS. ROBERT W. THEBE, Warren, Pa. Filed Oct. 10, 1905. Serial No. 282,905.



Claim.—1. A staff comprising, a base provided with an upstanding stud, a column embodying a plurality of tapered tubular sections each provided with a coupling inserted in and extending without the smaller end and the larger end of each proportioned to embrace the smaller end and coupling of the next section below and the lower section proportioned to embrace the stud.

2. A staff comprising, a plurality of tapered tubular sections with the larger end of each embracing the smaller end of the section below, couplings disposed within the smaller ends of the sections and extending into the section next above and auxiliary reinforcing members within and extending throughout the sections between the couplings.

3. A flagstaff comprising, a base provided with an upstanding stud, a plurality of tapered tubular sections having couplings within and extending beyond the smaller end and with the larger end proportioned to embrace the smaller end and coupling of the section below, the larger end of the lower section being proportioned to embrace the stud, a head mounted upon the coupling at the smaller end of the upper section, reinforcing members within and extending throughout the length of the tube between the couplings, a pulley adjacent the top of the upper section, a halyard in the pulley and means carried by the lower section to secure the halyard.

4. A staff comprising tapered tubular sections, one of said sections projecting into and binding upon the other section, and a coupling within and frictionally engaging the adjoining portions of the sections.

5. A staff comprising tapered tubular sections, one of said sections projecting into and binding upon the other section, a coupling projecting beyond the overlapping ends of the two sections and frictionally engaging the inner surfaces thereof.

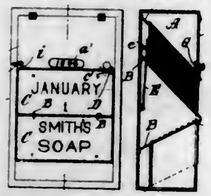
6. A staff comprising tapered tubular sections, one of said sections projecting into and binding upon the other section, a coupling projecting beyond the overlapping ends of the two sections and frictionally engaging the inner surfaces thereof, and longitudinally-disposed reinforcing means within the sections.

7. A staff comprising tapered tubular sections, one of said sections projecting into and binding upon the other section, a coupling projecting beyond the overlapping ends of the two sections and frictionally engaging the inner surfaces thereof, longitudinally-disposed reinforcing means within the sections, said means being angular in cross-section.

8. The combination with a base and an upstanding staff-engaging device thereon; of a staff comprising tapered tubular sections, one of said sections adapted to project into and bind upon the other section, and a coupling disposed within the overlapping portions of the sections and frictionally engaging both of said sections.

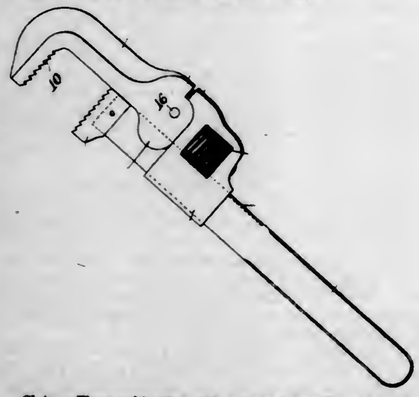
9. The combination with a base and an upstanding staff-engaging device thereon; of a staff comprising tapered tubular sections, one of said sections adapted to project into and bind upon the other section, a coupling disposed within the overlapping portions of the sections and frictionally engaging both of said sections, and longitudinally-disposed reinforcing means within the sections.

822,406. ADVERTISING-CALENDAR. WINFIELD S. THORP, New York, N. Y. Filed Aug. 30, 1905. Serial No. 276,379.



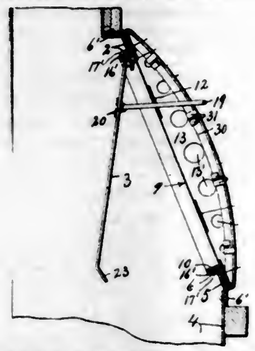
Claim.—A combined calendar and advertising device comprising a frame, a number of cards disposed vertically within said frame, an inclined guideway supporting said cards, gravity-actuated means impelling said cards forwardly, and means for retaining said cards in vertical position and releasing them singly, together with means reversing each released card to expose its rear surface and the front surface of the next card, a forward rest for a reversed card, and an inclined guideway to convey the reversed cards rearwardly.

822,407. PIPE-WRENCH. CHARLES H. THURSTON, Worcester, Mass. Filed Aug. 19, 1905. Serial No. 274,836.



Claim.—The combination with a wrench-handle and fixed jaw carried thereby, of a slide-block adjustable along said handle, a tongue rising from said slide-block and having a pivot-opening through it, a shoulder rising from said slide-block to approximately the height of said opening, a movable jaw having a shank embracing and pivoted to said tongue and formed with a shoulder opposing the first-named shoulder, and a spring-pressed plug located in a hole formed in the first-named shoulder parallel with said handle.

822,408. HOT-AIR REGISTER. WILLARD S. TUTTLE, Brooklyn, N. Y. Filed Feb. 16, 1905. Serial No. 245,905.



Claim.—1. A hot-air register comprising a sheet-metal frame having a central opening and an inturned marginal flange surrounding the opening, a damper hinged to swing in the opening, perforated side or end pieces projecting from opposite sides of the frame, a grille-plate secured to the frame and engaging said side pieces, and a damper-operating member connected to the damper and frictionally engaged with the grille-plate.

2. In a hot-air register, a curved grille-plate of bendable metal terminating at the ends of the curved portion in flat inturned flanges lying in substantially the same flat plane, and a supporting-frame having grilled side pieces projecting outwardly at the ends of said plate.

3. In a hot-air register, a frame having a central opening, grilled flanges projecting from opposite edges of the frame, and a grille-plate across the opening and having its edges lapped upon said flanges.

4. In a hot-air register, a frame having a central opening, grilled flanges of bendable metal projecting outwardly from opposite edges of the frame and having their outer edges disposed in a curved plane, and a curved grille-plate fitted upon the curved edges of said flanges and extending across the opening.

5. In a hot-air register, in combination, a frame having an opening, a grille-plate across the opening, pivots projecting from opposite sides of the opening near its top, and a damper having a hook formed on the front side of its upper edge and hooked upon the pivots, the distance between the pivots and top side of the opening being less than the depth of the hook portion of the damper, whereby the damper is removable only when brought to a substantially horizontal position.

6. In a hot-air register, the combination of a frame having a central opening, a grille-plate across the opening and having its lower and upper edges folded inwardly toward each other at the back of the open-work of said grille-plate and partially across the opening, the lower edge forming a limiting-stop for the damper, and a damper hinged in the frame at the rear of said edges.

7. A wall-register comprising a sheet-metal wall-frame having perforated end flanges, and a sheet-metal grille-front having top and bottom edges turned toward each other between the flanges and secured to the frame.

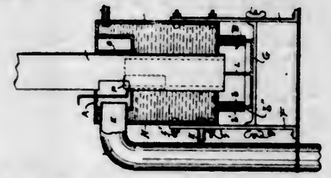
8. A wall-reigster comprising a sheet-metal wall-frame having its inner edges bent inwardly and its ends bent outwardly and perforated, and a sheet-metal grille-front bearing against the outturned edges of the wall-plate and of greater area than the opening in the wall-plate.

9. A wall-register comprising a sheet-metal wall-plate having a damper-opening and a swinging damper therein, a sheet-metal grille-front of greater area than said opening and provided with a slot, and a handpiece pivotally attached to the damper and having laterally-projecting inner and outer shoulders in sliding frictional engagement with the inner and outer sides of the slot of the grille-front.

10. In a wall-register, a frame having a damper-opening, and a damper hinged at one edge to the frame and having its free edge deflected forwardly at an angle with the main body and bendable to fit the opening in which it swings.

11. A wall-register comprising a sheet-metal wall-plate having outturned grilled flanges with convex edges, and a sheet-metal grille fitted against the convex edges of said flanges.

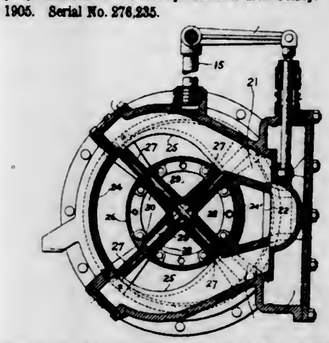
822,409. HEAT-SAVING SMOKE-ARRESTER. JOHN WAGNER, Portage, Wis. Filed Oct. 5, 1905. Serial No. 281,373.



Claim.—1. The combination of upper and lower chambers connected by suitable downdraft-flues and having an updraft-flue leading from the lower chamber through the upper chamber; a smoke-inlet pipe leading to the upper chamber; a water-jacket disposed around the sides of the upper chamber and the flues between the chambers; crank-rods extending through the upper chamber, and the respective downdraft-flues and offset in the latter into contact with the wall thereof; said rods having edges contacting with the walls of said flues, and the lower chamber being provided with a removable pan-shaped bottom extending below the water-chamber.

2. The combination of upper and lower chambers connected by suitable downdraft-flues and having an updraft-flue leading from the lower chamber through the upper chamber; a smoke-inlet pipe leading to the upper chamber; a water-jacket disposed around the sides of the upper chamber and the flues between the chambers; crank-rods extending through the upper chamber, and the respective downdraft-flues and offset in the latter into contact with the walls thereof; the offset portions of said rods being triangular in cross-section with two edges in contact with the walls of the respective flues.

822,410. COMPOUND ROTARY ENGINE. EDWARD WALDRON, Philadelphia, Pa., assignor to Waldron Flexible Rotary Engine Company, Camden, N. J., a Corporation of New Jersey. Filed Aug. 29, 1905. Serial No. 276,235.



Claim.—1. An engine comprising a pair of piston-chambers each having inlet and exhaust ports, a rotary piston having reciprocating blades in each of said piston-chambers, a flexible coupling connecting said pistons together, a valve-chamber connected with each of said piston-chambers, a conduit connecting said valve-chambers, and a valve in each of said valve-chambers for controlling the piston-chamber ports.

2. An engine comprising a pair of piston-chambers each having an inlet and an exhaust port, a rotary piston, in each of said piston-chambers, said pistons having alined blades, a coupling for connecting and disconnecting said pistons, a conduit connecting the exit-port of one piston-chamber with the inlet-port of another, a valve for controlling the ports of each piston-chamber, a rocker-arm connected with each of said valves for operating them in the same direction simultaneously, and means for oscillating said rocker-arms as a unit.

3. An engine comprising a plurality of sets of ports, a valve for controlling each set of ports, a reciprocating valve-rod for operating each valve, a journaled rod, a rocker-arm fixed to said rod and connected to each valve-stem, a rod having a screw thereon, a projecting

member fixed to said shaft, and a nut engaging said screw and having a revoluble connection with said projecting member.

4. An engine having a chamber with an inlet and an exit port, a valve for controlling said ports, a chamber within which said valve reciprocates, a detachable stuffing-box set in said chamber, and a valve-rod reciprocating through said stuffing-box, said valve having a socket and said rod having a head making a flexible engagement with said socket and detachable therefrom by disengaging said stuffing-box.

5. An engine comprising a piston-chamber and a piston thereon, said chamber having ports of dovetail cross-section communicating therewith exterior to the surface traversed by said piston.

6. An engine comprising a piston-chamber and a rotary piston therein, said chamber having capped channels exterior to the surface traversed by said piston and providing inlet and exhaust ports therefor.

7. An engine having a piston-chamber comprising concentric cylindrical surfaces joined by irregularly-curved surfaces, a rotary piston having reciprocating blades which revolve in contact with said surfaces, and inlet and exit channels exterior to the peripheral surfaces against which said blades act, said channels having open communications with said chamber through said irregularly-curved surfaces and through the termini of the larger of said concentric curves.

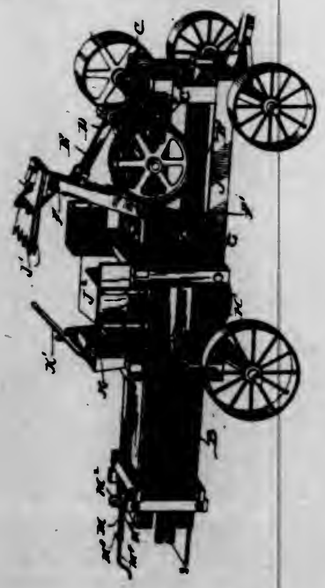
8. An engine comprising a piston-chamber with concentrically-curved surfaces joined by irregular surfaces having inlet and exit channels communicating therewith, and a rotary piston having reciprocating blades acting in said chamber, said blades having passages therethrough which register with said channels.

9. An engine comprising a piston-chamber having centrally-disposed peripheral inlet and exit channels communicating therewith, peripheral exhaust-ports in the ends thereof, and a rotary drum with races therein and blades reciprocating in said races, said blades having central passages therethrough which register with said central channels and lateral passages which communicate with said end ports.

10. An engine comprising a piston-chamber, a drum rotating therein, and blades reciprocating in said drum, said blades having their ends cored out and closed.

11. An engine comprising a piston-chamber, a rotary piston in said chamber, a shaft revolved by said piston, a second shaft, and a coupling for connecting said shafts so as to permit them to move longitudinally with respect to each other.

822,411. **BALING-PRESS.** CHARLES E. WEIDENBERG, Mound City, Ill. Filed May 9, 1905. Serial No. 259,503.



Claim.—A device of the kind described comprising a crank-shaft, a shaft parallel thereto, a lever having a bearing on its forward face pivotally connected to the last-mentioned shaft, a plunger, a pitman, pivoted at one end to the plunger and at the opposite end pivotally connected to the rear face of the lever adjacent its lower end, a pitman pivotally connected to the crank-shaft and to the lever at a point substantially midway the fulcrum-point and the upper end of the lever, and a feed-block carried by the lever adjacent its upper end, the throw of the plunger being greater than the travel of the crank portion of the crank-shaft.

822,412. **PORTABLE DISTRIBUTING-CONVEYER.** GUSTAV WENZELMANN and EDWARD H. OVERHOLT, Galesburg, Ill., assignors to The Wenzelmann Manufacturing Company, a Corporation of Illinois. Filed Feb. 4, 1905. Serial No. 244,128.



Claim.—1. In a device of the class described the combination with a trough having removable bottom sections of a sprocket-shaft journaled at each end thereof, slidable bearings for one of said shafts, a transverse bar across the end of said trough adjacent said bearings, adjusting-bolts engaged therein and in said bearings, a chain conveyer in said trough, a strip on each side of the trough adapted to overlap the edges of the conveyer and the delivery-spouts suspended on said trough and adjustable both longitudinally and transversely thereof.

2. In a device of the class described the combination with a trough having removable bottom sections of sprocket-shafts journaled thereon, sprocket-wheels on said shafts, sprocket-chains carried on said wheels, transverse lags thereon, guides having convex faces adapted to support the lower lap of the chain intermediate the ends of the trough, a delivery-spout adjustable longitudinally of the trough and supporting-hooks for said trough adjustably engaged thereto.

3. In a conveyer of the class described the combination with a trough having removable bottom sections of a conveyer movable longitudinally thereof, a delivery-spout provided at its upper end with a plurality of apertures in the side walls thereof and hangers adapted to engage in said apertures and over the sides of the trough to permit the movement of the spout both longitudinally and transversely of the trough.

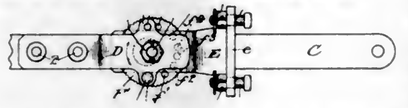
4. In a machine of the class described a distributing-conveyer comprising sides and a sectional movable bottom, sprocket-shafts at each end of and journaled below the same, conveyer-chains thereon, the upper lap movable over the bottom of the trough, cleats on each side wall extending over and in close proximity with the chains, means for tightening said chains, laterally-directed slidable chutes supported on the trough and acting to direct the grain or the like laterally, convex supports adapted to support the lower run of the chain and extensible adjusting-rods pivoted on the ends of the

sprocket-shaft at the receiving end of the conveyer and adapted for pivotal engagement at the other ends with a driving sprocket-shaft and acting to support the end of the conveyer and to adjust the tension of the driving-chain.

5. In a device of the class described the combination with a trough having removable bottom sections of adjustable hangers at the forward end of said trough comprising a head rotative thereon, a two-part head at the opposite end, means thereon adapted to adjust the hangers as to length and an adjustable spout carried on said trough and adapted to dump laterally of the same.

6. In a machine of the class described the combination with a trough having removable bottom sections therein, of a sprocket-shaft journaled at each end thereof, an endless conveyer driven by said shafts and adapted to convey material through said trough, a head journaled at each end of the forward shaft, a rod engaged in each head, a slotted head movably engaged on the outer end of each rod and a nut in each slot having threaded engagement with the rod and adapted to adjust the forward end of the conveyer as to height.

822,413. **RAILWAY SWITCH-ROD.** WILLIAM S. WESTON, Chicago, Ill., assignor to Buda Foundry & Manufacturing Company, a Corporation of Illinois. Filed Mar. 3, 1906. Serial No. 248,245.



Claim.—1. The combination with a switch-rod, of means for adjustably connecting it to a switch-rail comprising an ear extending from the rod, a clip for connection with the switch-rail, having its inner end located between the switch-rod and the ear and provided with a hole, an eccentric within the hole of the clip, a bolt for connecting said eccentric to the rod, and means for adjusting and locking said eccentric comprising a member secured to said eccentric and extending laterally therefrom between adjacent parts, and a device for securing said member to one of the adjacent parts.

2. The combination with a switch-rod, of means for adjustably connecting it to a switch-rail comprising an ear extending from the rod, a clip for connection with the switch-rail, having its inner end provided with a hole, an eccentric within the hole of the clip, a bolt for connecting said eccentric to the rod, and means for adjusting and locking said eccentric, comprising a member rigidly secured to said eccentric, extending laterally therefrom between the adjacent parts and projecting beyond the sides of said parts and an independently-movable pin for locking said member to one of the adjacent parts.

3. The combination with a switch-rod, of means for adjustably connecting it to a switch-rail comprising an ear extending from the rod, a clip for connection with the switch-rail, having its inner end provided with a hole, an eccentric within the hole of the clip, a bolt for connecting said eccentric to the rod, means for adjusting said eccentric comprising a member secured to said eccentric and projecting laterally beyond the side of one of the adjacent parts, and means for locking said member to the other of the adjacent parts in order to hold said eccentric against rotation.

4. The combination with a switch-rod, of means for adjustably connecting it to a switch-rail comprising an ear extending from the rod, a clip for connection with the switch-rail, having its inner end secured to the rod and provided with a hole, an eccentric within the hole of the clip, a bolt passing freely through and connecting said eccentric to the rod, and means for adjusting and locking said eccentric, comprising a member secured to said eccentric and projecting laterally therefrom between said ear and clip and arranged to rotate in a plane parallel with the rod, and a series of stops and are movable pin to engage with said stops for locking the eccentric against rotation.

5. A switch-rod comprising a bar, an ear on the bar, a clip having one end bolted to the switch-rail and the other end adapted to be retained by said ear, a retaining-bolt fitted in the ear and passing through a large round hole in the clip, a nut on said bolt, a plate pivotally mounted on said bolt and having an eccentric portion rotatably fitting the said large round hole in the clip, and a removable pin independent of said retaining-bolt for releasing and then holding the said plate in any desired position after it has been rotated for the purpose of adjusting the relation between said ear and said clip, said pin being provided with means independent of the bolt and nut for holding it in place.

6. The combination with a switch-rod, of means for adjustably connecting it to a switch-rail comprising an ear extending from the rod, a clip for connection with the switch-rail, having its inner end located between the switch-rod and the ear and provided with a hole, an eccentric within the hole of the clip, a bolt for connecting said eccentric to the rod, and means for adjusting and locking said eccentric, comprising a member extending laterally from said eccentric and projecting laterally therefrom beyond the side edge of said clip, and provided with a series of stops, said ear being provided with a perforated side portion and a pin for engaging with the perforated side portion of the ear and with the stops of the member projecting from the eccentric.

7. The combination with a switch-rod, of means for adjustably connecting it to a switch-rail, comprising an ear on the rod, a clip for connection with the switch-rail, having its inner end provided with a hole, an eccentric within the hole of the clip, a bolt for connecting said eccentric to the rod, said eccentric being provided with a laterally-projecting member having a series of stops, one of the parts adjacent said laterally-projecting member being provided at its opposite sides with perforations with which said stops alternately register, and a pin whereby either of said side perforations may be engaged with said stops to lock the eccentric in adjusted position.
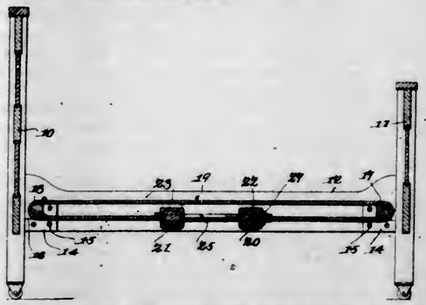
8. The combination with a switch-rod, of means for adjustably connecting it to a switch-rail, comprising an ear extending from the rod, a clip for connection to the switch-rail, having its inner end provided with a hole, an eccentric located within the hole of the clip and provided at its top with a disk projecting laterally beyond the sides of the ear and whereby the eccentric may be adjusted, said disk being provided with a series of cut-away spaces forming stops, and a connection adapted to engage said stops and one of the adjacent parts.

9. The combination with a switch-rod, of means for adjustably connecting it to a switch-rail, comprising an ear extending from the rod, a clip for connection with the switch-rail, having its inner end located between the switch-rod and the ear and provided with a hole, an eccentric within the hole of the clip, a bolt passing through said eccentric and connecting it to the rod, said eccentric having a laterally-extending disk projecting beyond the sides of the clip and provided with a series of stops concentric with said bolt and means for connecting said disk to one of the parts between which it is arranged.

10. The combination of a switch-rod having an ear, a clip arranged between said ear and rod, a retaining-bolt extending through said parts, an eccentric on said bolt arranged within a hole in said clip, said eccentric having an adjusting member extending laterally therefrom between two of said parts and projecting beyond the side of one of the parts between which it is arranged and means for locking said adjusting member to the other of such parts, substantially as described.

11. The combination of a switch-rod having an ear, a clip arranged between said rod and ear, a connecting-bolt extending through said parts, an eccentric on said bolt and arranged within an opening in said clip, said eccentric having an adjusting member laterally extending therefrom between two of said parts and projecting beyond the side of one of the parts between which it is arranged, the other of such parts having laterally-projecting side portions and a removable pin for locking said adjusting member to said projecting side portions, substantially as described.

822,414. **BEDSTEAD.** JIDY W. WHITLOW, Roscoe, Tex. Filed Jan 11, 1906. Serial No. 295,616.

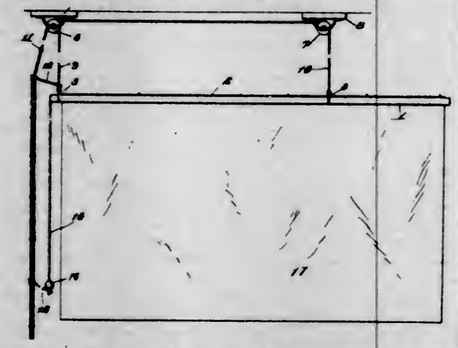


Claim.—1. In a bedstead, the combination with the side rails, of spaced rollers extending transversely of the side rails, a flexible bed-bottom extending longitudinally of the bed and of a width equal to approximately the distance between the side rails, said bed-bottom

being formed of a single strip of fabric the opposite ends of which are folded over the rollers and provided with terminal pockets, bars seated in said pockets and means connecting the bars for regulating the tension of the fabric.

2. In a bedstead, the combination with the side rails, bearing-brackets secured to the side rails at the opposite ends thereof, transverse rollers mounted in the brackets, a strip of fabric passing over the rollers and having its free ends provided with terminal pockets, bars seated in the pockets, and threaded rods connecting the bars for regulating the tension of the fabric.

822,415. DISPLAY-RACK. WALLACE D. WILBUR, Hawkeye, Iowa. Filed Sept. 8, 1905. Serial No. 277,501.



Claim.—1. In a display device of the character described, the combination with a display-bar, a depending handle rigidly connected to the bar and pulleys fixedly supported above said bar; of knotted flexible supporting devices connected to the bar and extending over the pulleys, and means adjustably connected to said knotted, flexible portions adapted to engage and support the handle.

2. The combination with a display-bar having a depending rigid handle; of pulleys above the bar, cords secured to the bar and extending over the pulleys, the ends of said cords hanging together and knotted, a shank, an eye at one end of the shank having an offset and contracted portion and adapted to engage the knotted ends, and a hook on the shank adapted to engage and support the rigid handle.

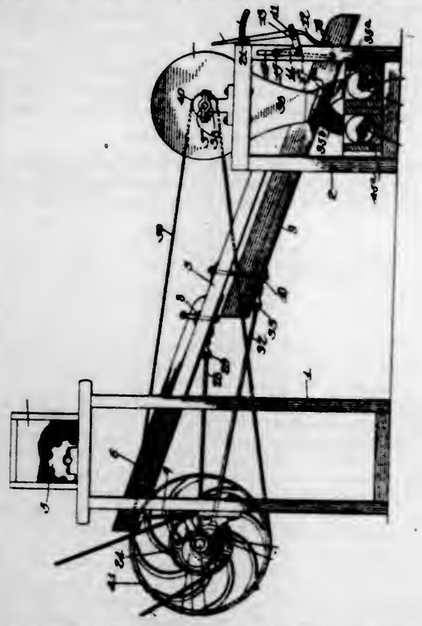
822,416. COTTON-SEED SEPARATOR. JAMES C. WINDER, East Point, Ga., assignor to Atlanta Utility Works, Inc., East Point, Ga. Filed Dec. 31, 1904. Serial No. 239,269.

Claim.—1. In a separator, the combination with a separating-chute, of fan-casings located at opposite sides of the chute, fans within the casings, a suction-spout located between and common to the two fan-casings with its open inlet end disposed transversely of the chute, discharge-spouts leading from the fan-casings, a receptacle in communication with the discharge-spouts, and conveyer mechanism for the receptacle.

2. In a separator, the combination with a separating-chute, of fan-casings located at opposite sides of the chute, fans within the casings, a suction-spout located between and common to the two fan-casings with its open inlet end disposed transversely of the chute, discharge-spouts leading from the fan-casings and divided into branches, a guard for the eye of each fan and located between the fan and the inlet of the fan-casing, a perforate partition leading from and in substantially the same plane with the guard to separate the branches of the spout, receptacles for the corresponding branches of the discharge-spouts, and individual conveyer mechanisms for the receptacles.

3. In a separator, the combination of a fan-casing having a discharge-spout divided into branches, a suction-spout leading into the fan-casing, means to support the material under treatment in connection with the suction-spout, a rotary fan located within one side of the casing opposite the inlet thereof, a guard located within the case between the inlet of the case and the fan to close the eye of the latter, a perforate partition within the case and leading from the guard to the dividing-partition between the branches of the discharge-spout, receptacles in communication with the respective branches of the discharge-spout, and conveyer mechanisms for the respective receptacles.

4. In a separator, the combination with a frame, of a drive-shaft mounted thereon, a shaking-pan member mounted upon the frame, means extending between the drive-shaft and the pan to shake the latter, fan-casings supported upon the frame at opposite sides of the pan, a suction-spout having its lower open end disposed transversely across the top of the pan, and communicating with the fan-casings, fans working in the casings, means to drive the fans from the drive-shaft, discharge-spouts leading downwardly from the fan-casings at opposite sides of the pan, an open-top receptacle disposed transversely beneath the pan in communication with the discharge-spouts, and conveyer mechanism working in the receptacle.



5. In a separator, the combination with a chute, of pneumatic mechanism including a fan-casing having a suction-spout in communication with the chute, a rotary fan within one side of the casing and opposite the inlet thereof, a guard located between the fan and the inlet of the casing to close the eye of the fan, and a perforate partition leading from and in substantially the same plane with the guard through the discharge-spout of the casing to divide the spout into branches to effect grading of the separated material.

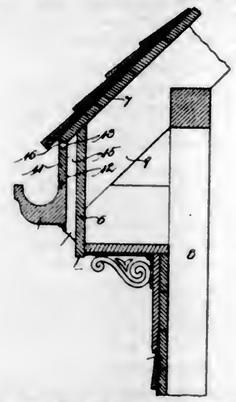
822,417. SASH-FASTENER. JAMES A. WINN, Morrisville, Vt. Filed Aug. 9, 1905. Serial No. 273,439.



Claim.—1. In a sash-fastener, the combination of a pair of dogs pivotally mounted upon the sash and engaging with the window-casing, one of said dogs being adapted to be swung out of engagement with the casing, lugs to limit the movement of said dogs, and a spring connecting corresponding ends of the dogs and holding one of them normally in engagement with the casing and the opposite one either in an operative or inoperative position according to the way in which it is turned.

2. In a sash-fastener, the combination of a plate secured to the sash, a pair of dogs pivotally mounted upon said plate and engaging with the window-casing, one of said dogs being adapted to be swung out of engagement with the casing, lugs projecting from the plate and limiting the movement of said dog, and a spring connecting corresponding ends of the dogs and holding one of them normally in engagement with the casing and the opposite one either in an operative or inoperative position according to the way in which it is turned.

822,418. GUTTER FOR BUILDINGS. THOMAS S. WOODS, Somerville, Mass., assignor, by direct and mesne assignments, of one-half to Donald H. Morrison and one-half to Margaret A. Woods, Somerville, Mass. Filed Sept. 17, 1904. Serial No. 224,775.



Claim.—A building having a vertical outer wall and a roof, the outer edge of which projects beyond said wall; in combination with a gutter having a vertical rear wall spaced from said outer wall, and continued above the front wall of said gutter and up above and behind the eaves projection of the roof-covering, forming an open continuous chamber having vertical front and rear walls extending from above the top to below the bottom of said gutter, there being a passage extending between the upper edge of said gutter rear wall and the projecting outer edge of said roof and leading from the inner side of said gutter into the upper end of said chamber.

822,419. MECHANISM FOR TRANSPORTING EARTH. WILLIAM ZIMMERMAN, Chicago, Ill. Filed July 9, 1902. Serial No. 114,889.



Claim.—1. The combination with rotary carrying-plates and supporting mechanism to stand on said plates, of tensional and separable tensional carrying mechanism to said plates and to said supporting mechanism, substantially as specified.

2. The combination with rotary carrying-plates and supporting mechanism standing on, and reciprocating to and from said plates, of tensional carrying, and tensional carrying and discharging mechanism to said plates and supporting mechanism, substantially as specified.

3. The combination with rotary carrying-plates and separable wheeled carrying mechanism under said plates and supporting mechanism over said plates, of tensional carrying and discharging mechanism to connect said plates and supporting mechanism, substantially as specified.

4. The combination with rotary carrying-plates and wheeled mechanism under them and supporting mechanism over them, of tensional carrying and discharging mechanism connecting said plates and supporting mechanism and elevated wheeled mechanism and track therefor, substantially as specified.

5. The combination with rotary carrying-plates and wheeled mechanism under them and supporting mechanism over them, of tensional carrying and discharging mechanism connecting said plates and supporting mechanism and elevated wheeled mechanism and track therefor and means to transfer the load from one to another of said wheeled elements, substantially as specified.

6. The combination with rotary carrying-plates and supporting mechanism standing on and reciprocable to and from said plates, of outer tensional carrying mechanism and separable tensional carrying mechanism, said separable tensional mechanism between said outer tensional mechanism and the meeting edges of said plates, substantially as specified.

7. The combination with rotary carrying-plates provided with fingered meeting edges, of tensional carrying mechanism to said plates intermediate their edges and tensionally-acting mechanism intermediate said tensional mechanism and said edges to contact said edges, substantially as specified.

8. The combination with carrying-plates, tensional carrying mechanism to said plates, supporting mechanism to the upper ends of said tensional mechanism, a surface railroad and an elevated railroad capable of variant grades between them, of trucks to said railroads and means to shift the load from one truck to the other, substantially as specified.

9. The combination with carrying-plates, tensional mechanism to said plates, supporting mechanism to said tensional mechanism, resting and freely movable on and to and from said plates, of an elevated railroad and truck thereto and means to connect said tensional mechanism and truck, substantially as specified.

10. The combination with rotary carrying-plates provided with fingered meeting edges, and supporting mechanism on said plates, freely movable in limited direction and range, of tensional carrying mechanism connecting said plates and supporting mechanism and means to contact said edges automatically, substantially as specified.

11. The combination with carrying-plates with fingered meeting edges, and supporting mechanism over said plates, of tensional carrying mechanism connecting said plates and supporting mechanism, and means to contact said edges automatically, and means to lock and release said plates, substantially as specified.

12. The combination with rotary carrying-plates, of tensional carrying mechanism, and separable tensional elements, said separable tensional elements, intermediate said carrying elements and the meeting edges of said plates, substantially as specified.

13. The combination with rotary carrying-plates and severable wheeled carrying mechanism under said plates, and supporting mechanism over said plates, of tensional carrying and discharging mechanism to connect said plates and supporting mechanism and means to sever said wheeled mechanism from said plates, substantially as specified.

14. The combination with carrying-plates, carrying tensional mechanism to said plates, supporting mechanism to the free ends of said tensional mechanism, and a surface railroad and an elevated railroad having relative vertical grades of any suitable angle, of trucks to said railroads and means to shift the load from one truck to the other, substantially as specified.

15. The combination with rotary carrying-plates, fingered under their meeting edges, of tensional carrying mechanism and separable tensional carrying mechanism, intermediate said carrying mechanism and edges, to said plate, substantially as specified.

16. The combination with carrying-plates, tensional carrying mechanism to said plates, supporting mechanism to the free ends of said tensional mechanism, an elevated railroad capable of any vertical grade and horizontal direction, means to convey said plates, a truck to said railroad, and means to shift the load from one conveyance to the other, substantially as specified.

17. The combination with carrying-plates, tensional carrying mechanism to said plates, supporting mechanism to the free ends of said tensional mechanism, an elevated railroad capable of any vertical grade and horizontal direction, a truck to said railroad, and means to connect said tensional mechanism to said truck, substantially as specified.

18. The combination with carrying-plates, supporting mechanism to stand on said plates, tensional carrying mechanism, and separable tensional carrying mechanism, to said plates, and to said supporting mechanism, of an elevated railroad, and truck thereto, and means to connect said tensional mechanism and truck, substantially as specified.

19. The combination with tensional elements, of rotatable load-carrying tangent elements to the lower ends of said tensional elements and separable tensional elements to said rotatable elements, intermediate said tensional elements, substantially as specified.

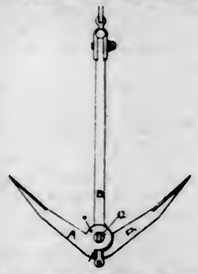
20. The combination with rotatable load-carrying and fingered tangent elements, of connected tensional elements to said rotatable elements, and separable tensional elements intermediate said tensional elements, substantially as specified.

21. The combination with tensional elements, of rotatable load-carrying elements to said tensional elements, and separable ten-

tensional elements to said rotatable elements, intermediate said tensional elements, substantially as specified.

22. The combination with tensional elements connected to rotatable load-carrying elements and separable tensional elements, intermediate said tensional elements, to said rotatable elements, of an elevated railroad, a truck thereon, and means to connect said rotary elements to said truck, substantially as specified.

822,420. ANCHOR. WILLIAM L. ADAMS, South Portland, Me., assignor to George H. Griffen, Portland, Me., and John E. Fisher, South Portland, Me. Filed Sept. 18, 1905. Serial No. 278,856.



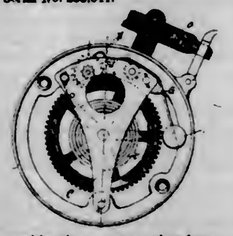
Claim.—1. In a folding anchor the shank provided with a circular plate, having a central plain aperture, arms provided with shoulders adapted, when the arms are extended, to contact with the lower end of said shank and also with ears having similar apertures one of which is threaded and a threaded pin adapted to serve as a pivot for said parts, substantially as described.

2. In a folding anchor, the combination of a shank having near the lower end a circular plate with plain central apertures, arms provided with circular ears with central openings adapted to register with the opening in said plate, one of said openings being threaded, and a shoulder upon each arm beneath said ear adapted to contact with the side of the lower end of said shank, and a threaded pin for coupling the parts together, substantially as described.

3. In a folding anchor, the combination of a shank having at the lower end a circular plate with a central circular opening, and projections on each face of said plate, arms provided with circular ears with central circular openings adapted to register with the openings in said plate, each of said arms being provided with a shoulder beneath said ear adapted to contact with the lower end of said shank, depressions upon the inner surface on each of said ears adapted to receive said projections, an opening in one of said ears and a threaded pin for coupling the parts together, substantially as described.

4. In a folding anchor, the combination of a shank provided at the upper end with a folding stock and at the lower end with a circular plate with central circular opening, projections upon each face of said plate, arms provided with circular ears with central circular openings adapted to register with the openings in said plate, each of said arms being provided with a shoulder beneath said ear adapted to contact with the lower end of said shank, depressions in the inner surface of said ears adapted to receive said projections, a thread in the opening of one of said ears and a threaded pin for coupling the parts together, substantially as described.

822,421. BURGLAR-ALARM. JOHAN BALINT, Chicago, Ill. Filed Apr. 14, 1905. Serial No. 255,511.



Claim.—1. In combination, a supporting-frame, a spring-operated bell mechanism, a spring-pressed pin slidably mounted in the frame carrying a frictional stop engaging the bell mechanism, a slide mounted in the frame provided with a depression or cavity engaged by the pin, said slide formed with diverging arms on its outer end, and a trip-lever pivoted to the frame and engaging one of the diverging arms of the slide.

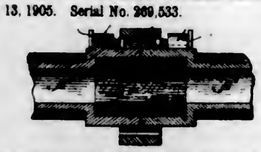
2. In an alarm-bell, the combination with a spring-operated bell mechanism and frame or support, of a slide mounted in the frame provided with diverging arms at the outer end and formed with a depression or cavity, a spring-pressed pin slidably mounted in the frame carrying a frictional stop to engage the bell mechanism, said pin adapted to engage the depression in the slide, springs for retracting the slide, and a lever pivoted to the frame to engage one of the diverging arms and hold the bell mechanism out of operation.

822,422. CONVERTIBLE SCREEN AND STORM DOOR. HIRAM BARBER, Chicago, Ill. Filed Dec. 12, 1905. Serial No. 291,419.



Claim.—The combination of a door-frame composed of a top, a bottom and sides, a cross-piece in the frame between its top and bottom making two openings in the frame, right-angle shoulders on the top and bottom of said cross-piece, strips fastened on the sides of the frame, the inner edges of said strips being beveled and one of said strips being adjustable, strips fastened on the top and bottom of the frame and having straight inner edges, and screens and blinds adapted for use convertibly over the openings in the door, the side edges of the frames of said screens and of said blinds being beveled to fit the beveled edges of the side strips.

822,423. HOSE-COUPLING. RICHARD BATES, Tamaqua, Pa. Filed July 13, 1905. Serial No. 269,533.



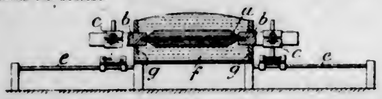
Claim.—1. A pipe-coupling comprising two duplicate coacting coupling members, the meeting ends of said members being adapted to bear against each other, and a flexible tube arranged within the said coupling members and bridging the joint between their meeting ends, each of the said coupling members having an exteriorly-threaded portion and the interior diameter of the flexible tube being equal to the interior diameter of the threaded portions of the coupling members.

2. In a pipe-coupling, the combination of duplicate sections, each having outwardly-projecting lugs, a flexible tube fitting in said sections and connecting the sections together, a binding-sleeve provided with notched flanges adapted to receive said lugs, and a spring-actuated bolt adapted to fit in said notches and lock the sections together, for the purpose described.

3. In a pipe-coupling, the combination of duplicate sections, each having outwardly-projecting lugs, a flexible tube connecting said sections, a binding-sleeve provided with inwardly-projecting notched flanges adapted to fit on said lugs, and a locking-bolt carried by said sections adapted to lock said sleeve on said sections, for the purpose described.

4. In a pipe-coupling, the combination of duplicate sections, each having outwardly-projecting lugs, a flexible tube connecting said sections, a binding-sleeve provided with inwardly-projecting notched flanges, through which the lugs are adapted to pass, and spring-actuated bolts carried by said sections, adapted to fit in the notches of the sleeve, and lock the sleeve on said sections, for the purpose described.

822,424. PROCESS FOR FUSING SILICA AND FOR SHAPING THE MASS WHILE PLASTIC. JAMES F. BOTTOMLEY, Wellsend-on-Tyne, and ARTHUR PAGET, North Cray, England. Filed June 9, 1905. Serial No. 264,429.



Claim.—1. In the working of silica, fusing same by means of an internal-resistance core, then initially separating the fused material from the core by a layer of gas and then removing the core from the plastic mass for the purposes described.

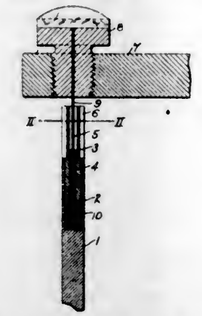
2. In the working of silica, fusing same by means of an internal-resistance core, heating the core sufficiently to effect the formation of a small quantity of gas on the surface thereof, separating the fused material from the core by means of such gas and then withdrawing the core while the mass is still plastic, substantially as and for the purposes described.

3. In the working of silica, fusing same by means of an internal-resistance core, separating the core from one of the electrodes, withdrawing the core from the plastic mass and shaping such mass while still plastic, substantially as and for the purposes described.

4. In the working of silica, fusing same by means of an internal-resistance core, separating the core from one of the electrodes, withdrawing the core from the plastic mass, removing said plastic mass from the furnace, further heating same within an electrically-heated chamber so as to glaze the exterior of the mass and shaping said mass during plasticity, substantially as and for the purposes described.

5. In the working of silica, fusing same by means of an internal-resistance core, withdrawing the core from the plastic mass, closing one end of the mass, pressing the other end around a nozzle and then introducing air under pressure therethrough, substantially as and for the purposes described.

822,425. BEARING FOR MEASURING INSTRUMENTS. WILLIAM M. BRADSHAW, Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed June 30, 1904. Serial No. 214,840.



Claim.—1. The combination with a shaft having an end recess and a tubular extension secured in said recess, of a bearing-pin that projects into said extension.

2. The combination with a shaft provided with an end recess and a tubular extension having two inner diameters, the end having the smaller inner diameter being seated in said recess, of a bearing-pin which projects into said extension and constitutes a bearing for the inner portion thereof.

3. The combination with a shaft provided with an end recess and a tubular extension having inner cylindrical bores differing in diameter, the end of the extension having the smaller diameter projecting part way into said recess, of absorbent and lubricating material in the bottom of said recess, and a bearing-pin that projects into said extension and constitutes a bearing for the end having the smaller diameter.

4. The combination with a shaft having an end recess and a tubular extension the inner surfaces of which differ in diameter, the end of the extension having the smaller inner diameter being secured in the end recess of the shaft, of a bearing-pin that projects into the tubular shaft extension and constitutes a bearing for the inner end thereof.

5. The combination with a shaft having a recess in one end, lubricant-saturated material in the bottom of said recess and a tubular extension having two inner diameters, the end having the smaller diameter being seated in the said recess, of an adjustable nut having a bearing-pin that projects into the shaft extension.

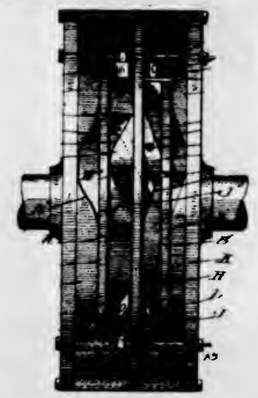
6. The combination with a shaft having an end recess, absorbent material located in the bottom of said recess, and a tubular shaft extension having one end seated in the said recess, of a bearing-pin that projects into said extension.

7. The combination with a rotatable shaft or spindle having a recess in its upper end and a body of absorbent material in the bottom thereof, of a rigidly-supported bearing-pin that projects downwardly into said recess.

8. In an electrical measuring instrument, the combination with a vertical spindle having a recess in its upper end and a body of absorbent material in the bottom thereof, of a bearing-pin that projects into said recess and into contact with said absorbent material.

9. In an electrical measuring instrument, the combination with a shaft or spindle having a recess in its upper end and a body of absorbent material and a lubricant in the bottom of said recess, of a stationary bearing-pin that projects into said recess.

822,426. ROTARY ENGINE. WILLIAM A. BROWN, Chicago, Ill. Filed Oct. 17, 1904. Serial No. 228,799.



Claim.—1. In a rotary engine the combination of a cylinder having two heads with opposing parallel surfaces, one of said heads being provided with abutments and said abutments being provided with suitable supply and exhaust ports, a piston having annular flanges and a centrally-located radial flange, said annular flanges and central flange having longitudinal grooves and valves arranged in said grooves and movable longitudinally, substantially as described.

2. In a rotary engine the combination of a cylinder, a rotary piston arranged therein, abutments on one of the cylinder-heads, said abutments having suitable supply and exhaust ports, a piston, valves carried by the piston and movable longitudinally, the cylinder being provided with ports registering with the ports of the abutment, and means for supplying the cylinder-ports with steam, substantially as described.

3. In a rotary engine the combination of a cylinder, a rotary piston arranged therein, abutments on one of the cylinder-heads, said abutments having suitable supply and exhaust ports, a piston, valves carried by the piston and movable longitudinally, the cylinder being provided with ports registering with the ports of the abutments, and an annular steam-supply chamber surrounding the cylinder, substantially as described.

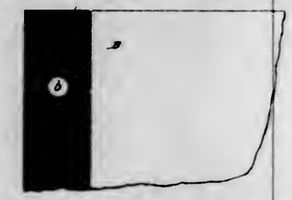
4. In a rotary engine the combination of two cylinders having a common head, abutments carried by said head, and projecting into both of said cylinders, so as to close the steam-space, the abutments of one cylinder having supply-ports opening thereinto and exhaust-ports opening into the other cylinder and the abutments of the cylinder last aforesaid having exhaust-ports for the final escape of steam, substantially as described.

5. In a rotary engine the combination of two cylinders, a piston arranged in each cylinder and having an annular flange and a radial flange, abutments carried by the cylinder-heads and projecting over the annular flanges and into contact with the radial flanges, the remaining cylinder-heads having surfaces parallel with said abutments, valves carried by the pistons and adapted to cooperate with said abutments, the abutments of one cylinder having supply-ports opening thereinto and exhaust-ports opening therefrom and discharging into the second cylinder the abutments of the second cylinder having final exhaust-ports and the abutments of the two cylinders being staggered, substantially as described.

6. In a rotary engine the combination of three disks, two concentric rings arranged between each of the outer disks and the intermediate disk and providing two cylinders and two annular spaces surrounding them, ports through which each of said cylinders communicates with the surrounding annular space, a piston in each of

said cylinders, said piston having a centrally-located radial flange, valves carried by the piston and movable longitudinally, abutments on the inner head of each cylinder, said abutments projecting in opposite directions into the cylinders and contacting with the radial flanges of the pistons, the abutments of one of said cylinders having supply-ports opening thereinto and exhaust-ports opening into the second cylinder, and the abutments of the second cylinder having final exhaust-ports, substantially as described.

822,427. **LEAF OR SHEET FOR TEMPORARY OR LOOSE-LEAF BINDERS.** HARRY F. BUSHONG, Kalamazoo, Mich. Filed Oct. 3, 1904. Serial No. 226,967.



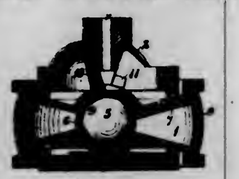
Claim.—1. A sheet or leaf for temporary or loose-sheet binders having a binding portion with a plurality of regular indentations formed in each side thereof.

2. A sheet or leaf for temporary or loose-sheet binders having a binding portion with a plurality of regular indentations formed therein.

3. A sheet or leaf for temporary or loose-sheet binders having a binding portion with a plurality of indentations therein.

4. A sheet or leaf for temporary or loose-sheet binders having a roughened binding portion.

822,428. **METER FOR MEASURING LIQUIDS.** HORACE CHRISMAN, Wilkinsburg, Pa., assignor to Pittsburg Meter Company, a Corporation of Pennsylvania. Filed Oct. 3, 1904. Serial No. 227,049.

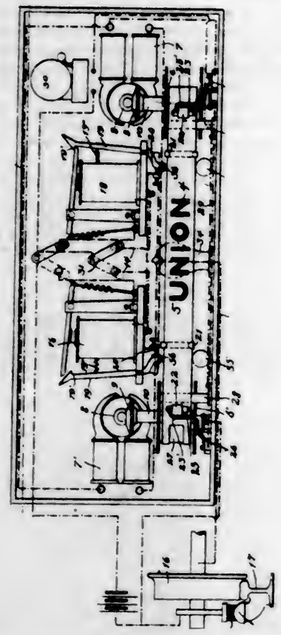


Claim.—1. In a meter, the combination with a measuring-chamber having a ball loosely supported in a spherically-curved socket therein so as to have universal rotary movement, of a piston having a central, spherically-curved portion that rests upon said ball and fits the same uniformly in all positions of the piston.

2. In a meter, the combination with a measuring-chamber having a spherically-curved, central recess in its bottom wall, and a ball loosely supported in said recess for universal rotary movement, of a piston formed of different material from that of which the walls of the measuring-chamber and the ball are composed and having a spherically-curved, central portion that fits over the ball uniformly in all positions of the piston.

822,429. **ELECTRIC-CONTROLLED STREET OR STATION INDICATOR.** ARTHUR J. CLARK, Seattle, Wash., assignor of one-half to Rhesabio H. Hamm, Seattle, Wash. Filed Oct. 27, 1903. Serial No. 178,602.

Claim.—1. In a device of the class described, the combination of a containing-case provided with a sight-aperture in its front, a screen having inscriptions thereon, a spool positioned at each end of said case, a motor for driving each of said spools, an electric circuit including a source of energy, branches thereof each including one of said motors, a manually-operable switch for throwing said motors alternately into and out of circuit with said source of energy, two relays, a track-circuit including a battery, a contact carried by the car and adapted to coact with stationary contacts located at intervals along the track, said relays being included in separate branches of said track-circuit, a manually-operable switch adapted to throw said relays alternately into said track-circuit, a lever carried by each relay and adapted to be moved by the armature thereof, a contact carried by each lever, the said contacts being each included in the circuit of one of the motors, stationary contacts also included in the motor-circuits, the said stationary contacts and the contacts carried by the levers being adapted to close the motor-circuits when the relays are energized by the closing of the track-circuit and means carried by said screen for automatically opening the motor-circuits.



2. In a device of the character described, the combination with a movable screen having inscriptions thereon and electric motors and connections for intermittently driving said screen alternately in opposite directions, a plurality of pivoted switches each arranged in the circuit of one of said motors, and means carried by the screen for operating said switches to throw the said motors out of circuit with a source of electric energy, a railway-track, a contact carried by the car on which said screen is mounted, a contact located alongside the track and electrically connected thereto, the contact on the track and the contact on the car being adapted to be brought into electrical connection by the movement of the car, a battery and relays carried by the car and adapted to be included in circuit with the track, said relays being adapted to throw said motors into circuit when the contact carried by the car meets the stationary contact connected with the track, and a manually-operable switch for throwing said relays alternately into and out of circuit with the track.

822,430. **CELLULOSE.** JAMES S. COCHRAN, Philadelphia, Pa., assignor of one-third to Frank Taylor, Wilmington, Del. Filed Sept. 24, 1904. Serial No. 225,776.

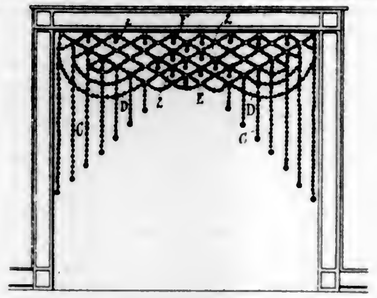
Claim.—1. As a new product of cotton-seed, fuzz of the hull of said seed mechanically reclaimed in pure and unchanged condition after all staple fiber and lint have been removed from the seed.

2. Cellulose produced from the fuzz of cotton-seed, mechanically reclaimed in pure and unchanged condition after all staple fiber and lint have been removed from the hull.

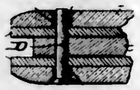
3. Cellulose produced from the fuzz of cotton-seed, mechanically reclaimed in pure and unchanged condition after all staple fiber and lint have been removed from the hull and bleached.

822,431. **BALL DRAPERY.** EDWARD M. CRAWFORD, Cleveland, Ohio. Filed Mar. 5, 1906. Serial No. 304,381.

Claim.—A drapery consisting of a series of strands of solid wooden balls and wires through said balls flexibly looped together between said balls, in combination with rings with which corresponding ends of said strands are loosely engaged, whereby four several strands can be converted in diamond, square and other figures with said rings as their terminals at each angle of the figures.

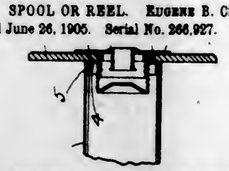


822,432. **KNIFE.** LEWELLYN U. CRAWFORD, Kansas City, Mo. Filed Nov. 13, 1903. Serial No. 181,052.



Claim.—The combination with a knife having a shell handle and check-plates, said handle and cheek-plates having alining perforations, those of the shell having the large diameter and being countersunk, of sleeves fitting in the perforations of the shell and having expanded heads, the inner ends of the sleeves bearing on the cheek-plates and a rivet fastened through said sleeves and cheek-plates and drawing the shell and plates together.

822,433. **SPOOL OR REEL.** EUGENE B. CROCKER, Pawtucket, R. I. Filed June 26, 1905. Serial No. 266,927.



Claim.—1. In a spool or reel, a body portion, two heads, a bushing inserted into each end of said body and having a flange turned back upon itself and inclosed within said body, a head-retaining bushing passing through each head, and means for securing said retaining-bushing to said first-named bushing to hold the heads firmly in place.

2. In a spool or reel, a body portion, two heads, a bushing inserted into each end of said body portion, and having a flange turned back upon itself and inclosed within said body, a head-retaining bushing having a hub to pass through the head, a flange on said retaining-bushing for supporting the outer face of said head, and means for securing said retaining-bushing to said first-mentioned bushing.

3. In a spool or reel, a body portion, two heads, a bushing inserted into each end of said body portion, and having a flange turned back upon itself and inclosed within said body, a central hub in said bushing, a head-retaining bushing also provided with a hub, and means whereby said latter hub may be passed through said head and secured to the hub of said first-mentioned bushing to secure said head in position.

4. In a spool or reel, a body portion, two heads, a bushing inserted into each end of said body portion, and having a flange turned back upon itself and inclosed within said body, an inwardly-projecting central hub in said bushing, a head-retaining bushing also provided with a hub to fit into said first-mentioned hub, and means whereby said latter hub may be passed through said head and secured to the hub of said first-mentioned bushing to secure said head in position.

5. In a spool or reel, a body portion, two heads, a bushing inserted into each end of said body portion and having a flange turned back upon itself and inclosed within said body, an inwardly-projecting screw-threaded central hub in said bushing, a head-retaining bushing having a hub also screw-threaded and arranged to be passed through said head and screwed into the hub of said first-mentioned bushing to secure said head in position.

6. In a spool or reel, a body portion, two heads, a bushing inserted into each end of said body, and having a flange turned back upon itself and inclosed within said body, a central hub in said bushing, a head-retaining bushing also provided with a hub arranged to pass through said head and fit into the head of said first-mentioned bushing to secure said head in position and a spindle bearing or sleeve projecting centrally within the hub of said retaining-bushing.

7. In a spool or reel, a body portion, two heads, a bushing inserted into each end of said body portion, and having a flange turned back upon itself and inclosed within said body, an inwardly-projecting screw-threaded central hub in said bushing, a head-retaining bushing having a hub also screw-threaded and arranged to be passed through said head and screwed into the hub of said first-mentioned bushing to secure said head in position, and a spindle-bearing hub or sleeve projecting centrally within the hub of said retaining-bushing.

8. In a spool or reel, a body portion, two heads, a bushing inserted into each end of said body and having a flange turned back upon itself and inclosed within said body, said bushing being provided with an inwardly-beveled head, a head-retaining bushing, and means for uniting said bushings.

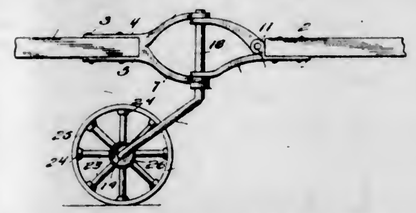
9. A spool or reel comprising a body portion, two heads, a bushing inserted into each end of said body and having a flange inclosed within and secured to said body, a head-retaining bushing provided with a hub passing through each head, means for uniting said bushings, and a plug secured within said retaining-bushing and provided with a spindle-bearing sleeve extended centrally within the hub of said retaining-bushing.

10. A spool or reel comprising a body portion, two heads, a bushing inserted into each end of said body and having a flange inclosed within and secured to said body, a head-retaining bushing provided with a hub passing through each head, means for uniting said bushings, and a plug provided with a flange turned back upon itself and secured within said retaining-bushing, said plug being also provided with a centrally-projecting spindle-bearing sleeve.

11. A spool or reel comprising a body portion, two heads, a bushing inserted into each end of said body and having a flange inclosed within and secured to said body, a head-retaining bushing, means for uniting said bushings, and a plug secured within said retaining-bushing and provided with a centrally-arranged bearing-sleeve, said plug being also provided with a raised annular shoulder surrounding said sleeve.

12. A spool or reel comprising a body portion, two heads, a bushing inserted into each end of said body and having a flange inclosed within and secured to said body, said bushing being provided with an inwardly-beveled head having a central opening, a head-retaining bushing, means for uniting said bushings, and a plug secured within said retaining-bushing and provided with a bearing-sleeve terminating adjacent said inwardly-beveled head, the bore of said sleeve coinciding with the opening in said beveled head.

822,434. **TONGUE-SUPPORT.** JAMES E. CRONKHITE, Hitchcock, Okla. Filed June 10, 1905. Serial No. 264,691.

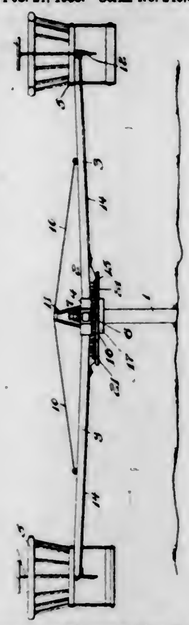


Claim.—1. A tongue of the character described comprising sections, arms extending from one end of each section and having eyes in their free ends, one of the said arms being hinged, a supporting-wheel, and a pintle supported by the supporting-wheel and adapted to receive the eyes formed in the said arms.

2. A tongue of the character described comprising sections, a supporting-wheel, a pintle carried by the supporting-wheel, and arms, having openings, some of which are rectangular in shape, extending from one end of each of the said sections and engaging the said pintle, the rectangular-shaped openings preventing the pintle from turning.

3. A tongue of the character described comprising sections, arms having eyes, extending from one of the ends of each section, a supporting-wheel, a pintle carried by the supporting-wheel and engaged by the said arms, and a connection between the said pintle and one end of one of the said sections.

822,435. **MERRY-GO-ROUND.** BIRGE W. DAVENPORT, Minneapolis, Minn. Filed Feb. 21, 1905. Serial No. 246,678.



Claim.—A merry-go-round, comprising a central supporting-post 1, a journal stud or pin 6 mounted on the upper end of said post, a stationary plate 17 supported on the upper end of the post 1 and encircling the stud 6 and provided with an upper portion formed with opposite recesses 18 containing clutching devices 19 and springs 20 designed to press the clutching devices outwardly, an annulus 16 encircling the upper portion of the stationary plate 17 which latter is provided with an outwardly-extending lower portion forming a support for the said annulus, an upper and a lower cone mounted on the upper end of stud 6 and provided with ball-races, the lowermost cone forming on the stud 6 a downwardly-facing shoulder abutting against the upper surface of the upper portion of the plate 17, the head 4 provided with radial socketed arms, the carrying-arms 3 secured in said sockets and provided at their outer ends with carrying-seats or the like, arms 15 projecting from the annulus 16, means carried by the seats or the like for moving the arms 3 around toward the arms 15, and springs 21 connected at one end with the arms 15, and at the opposite end with a carrying-arm 3 adjacent, as and for the purpose set forth.

822,436. **FISHING-REEL.** BENJAMIN K. DONALDSON, New York, N. Y. Filed Aug. 26, 1905. Serial No. 275,856.



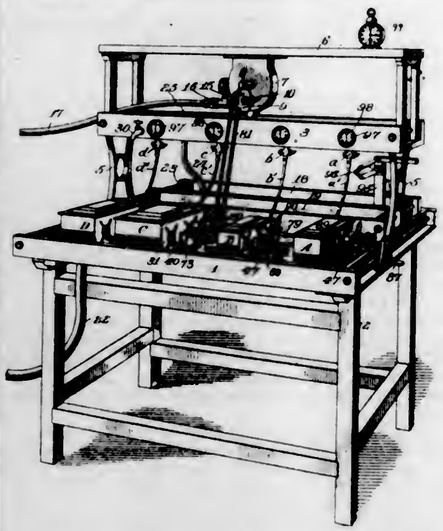
Claim.—1. In a fishing-reel, the combination of a casing, a shaft rotatable therein, a spool secured on said shaft, a pinion secured on said shaft, a rotatable hub having an eccentric hole, a shiftable yoke having a sleeve rotatable in said hole, a gear mounted in said yoke normally meshing with said pinion and having a sleeve rotatable in the sleeve of the yoke, a slidable plate for shifting said yoke, and intermediate levers operatively connecting said hub and plate, substantially as described.

2. In a fishing-reel, the combination of a casing, a shaft rotatable therein, a spool secured on said shaft, a pinion secured on said shaft, a rotatable hub having an eccentric hole, a shiftable yoke having a sleeve rotatable in said hole, a gear mounted in said yoke normally meshing with said pinion and having a sleeve rotatable in the sleeve of the yoke, a handle for turning said gear, a slidable plate for shifting said yoke and intermediate levers operatively connecting said hub and plate, substantially as described.

3. In a fishing-reel, the combination of a casing, a shaft rotatable therein, a spool secured on said shaft, a pinion secured on said shaft, a rotatable hub having an eccentric hole, a shiftable yoke having a sleeve rotatable in said hole, a gear mounted in said yoke normally meshing with said pinion and having a sleeve rotatable in the sleeve of the yoke, and means for turning said hub to shift said yoke and thereby throw the gear into and out of mesh with the pinion, substantially as described.

4. In a fishing-reel, the combination of a casing, a shaft rotatable therein, a spool secured on said shaft, a pinion secured on said shaft, a rotatable hub having an arm provided with a pin and an eccentric hole, a shiftable yoke having a sleeve rotatable in said hole, a gear mounted in said yoke, normally meshing with said pinion, and having a sleeve rotatable in the sleeve of the yoke, a handle secured to the sleeve of the gear a pivtoed lever having an open cam-slot and an elongated slot engaged by the pinion the arm of the hub, a pivoted lever one end having a nose engaging the cam-slot in the other lever and the other end having an elongated slot and a slidable plate having a pin engaging the slot in the last-mentioned lever, substantially as described.

822,437. **PHOTOGRAPHIC DEVELOPING APPARATUS.** GEO. EASTMAN, Rochester, N. Y., assignor to Eastman Kodak Company, Rochester, N. Y., a Corporation of New York. Filed Mar. 10, 1904. Serial No. 197,429.



Claim.—1. A photographic developing apparatus comprising a closed receptacle adapted to contain a sensitized film and a developing agent, a reservoir supported above the receptacle a supply-pipe leading thereto and means for controlling the passage of liquid therethrough.

2. A photographic developing apparatus comprising a closed receptacle adapted to contain a developing agent and provided with a movable support for a sensitized film, a reservoir of larger capacity than the receptacle connected thereto and a valve for controlling the supply of liquid passing to the receptacle.

3. A photographic developing apparatus comprising a closed receptacle adapted to contain a developing agent, a support for a sensitized film, means for causing a relative movement of a print or negative and the contained developing agent, a reservoir of larger capacity than the receptacle located above the latter and connected thereto and a valve controlling the supply of liquid passing from the reservoir to the receptacle.

4. A photographic developing apparatus comprising a plurality of closed receptacles each adapted to contain a sensitized film and a developing agent, a source of liquid-supply connected to each receptacle, a separate means for controlling the liquid admitted to each receptacle and means common to all the receptacles for causing a relative movement of the film and developing agent in each of them.

5. In a photographic developing apparatus, the combination with a plurality of receptacles each adapted to contain a developing agent and a support in each receptacle for a photographic film, of an operating mechanism for causing the relative movement of the support and the developing agent and independent detachable operating connections between said mechanism and the supports in the several receptacles.

6. In a photographic developing apparatus, the combination with a plurality of receptacles, each adapted to contain a developing agent and each having a support therein for a photographic film, of an operating mechanism for causing a relative movement between the supports and developing agents in the several receptacles, independent detachable operating connections between the operating mechanism and supports in said receptacles and an independent liquid-supply for each receptacle.

7. In an organized apparatus the combination with a plurality of photographic developing-machines each embodying a receptacle for the developing agent and means for causing the relative movement of the developing agent and the contained film, of an operating or motor mechanism, independent detachable connections between it and each of the developing-machines, a water-supply pipe leading to the receptacle of each of the machines and a valve for controlling the supply of water to each of the said pipes.

8. In a developing apparatus, the combination with a developing-receptacle having a support adapted to carry a strip of sensitized material and means for moving the support, of a pipe connected to the receptacle for supplying a continuous flow of liquid thereto and means for controlling the level of the liquid in the receptacle.

9. In a developing apparatus, the combination with a developing-receptacle having a support adapted to carry a strip of sensitized material and means for moving the support, of a pipe connected to the receptacle, for conducting a continuous supply of liquid thereto, a valve in the pipe and an overflow-passage arranged in the receptacle to determine the height of the liquid admitted thereto from the pipe.

10. In a developing apparatus, the combination with a developing-receptacle having an apron or support adapted to carry a strip of sensitized material and operating devices for moving the apron or support, of a reservoir, a supply-pipe connecting the reservoir and receptacle, a valve in the pipe and a fluid-motor connected to the operating devices and having its discharge leading into the reservoir.

11. In a developing apparatus, the combination with a developing-receptacle having an apron or support adapted to carry a strip of sensitized material and operating devices for moving the apron or support, a tank and a pipe connecting it with the reservoir, a supply pipe connecting the reservoir and the developing-receptacle and a valve therein, a fluid-motor connected to the operating device and discharging into the reservoir.

12. In a developing apparatus, the combination with a tray, a developing-receptacle supported thereon and a tank arranged in proximity thereto having an overflow discharging into the tray, of a reservoir located above the tray, an overflow-pipe leading from the reservoir to the tank and a supply-pipe connecting the reservoir and a developing-receptacle, a movable support in the latter, operating devices therefor and a fluid-operated motor connected to the operating device and discharging into said reservoir.

13. In a developing apparatus, the combination with a developing-receptacle, an operating-arbor thereon and a handle on the arbor, of a driving device and clutch connections between it and the arbor.

14. In a developing apparatus, the combination with a developing-receptacle, an operating-arbor thereon and a handle on the arbor, of a driving-shaft, means for operating it and detachable operating connections between the shaft and arbor.

15. In a photographic developing-machine, the combination with a support, a plurality of photographic developing-receptacles, and operating-arbors therein, of a driving-shaft, means for operating it and separate detachable connections between the shaft and each arbor.

16. In a photographic developing-machine, the combination with a support, a plurality of photographic developing-receptacles, and operating-arbors therein, of a driving-shaft, a motor for driving it, clutch connections between the motor and shaft, operating connections between the latter and the arbors and an operating-handle on the driving-shaft.

17. In a photographic developing-machine, the combination with a support, a plurality of frames thereon and a developing-box mounted on each frame, having an operating-arbor therein, of a driving-shaft, means for operating it and separate driving connections between the shaft and each of the arbors.

18. In a photographic developing-machine, the combination with a support, a plurality of frames thereon and a developing-box mounted on each frame, having an operating-arbor therein, of a driving-shaft, means for operating it, and gear-wheels arranged in sets on the shaft and arbors, a pinion connecting each set of gear-wheels and means for moving each of the pinions into and out of operative position.

19. In a photographic developing-machine, the combination with a support, a plurality of frames thereon and a developing-box removably mounted on each frame having an operating-arbor therein, of a driving-shaft, means for operating it and sets of gear-wheels arranged on the shaft and arbors, a pinion connecting the gear-wheels of each set and an arm for moving the pinion into and out of operative position.

20. In a developing apparatus, the combination with a support, a developing-box, a frame mounted on the support and engaging one side of the box and an arm adjustable into engagement with the other side thereof, of a driving-shaft, means for operating it and an operating-arbor arranged in the box having an operating-handle and detachable driving connections between the shaft and arbor.

21. In a developing-machine, the combination with a tray, a plurality of developing-boxes arranged thereon having arbors and means for operating them, of a tank arranged on the tray having an outlet, a liquid-reservoir, separate feed-pipes leading from the reservoir to each of the boxes, valves therein and a conductor leading from the reservoir to the tank.

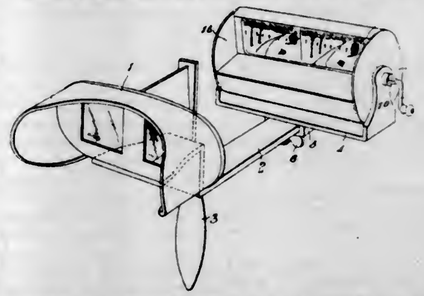
22. In a developing apparatus, the combination with a tray, a developing-box supported thereon having an outlet-passage discharging onto the tray, of a tank also supported on the tray and having an outlet discharging thereon, a drain-pipe leading from the tray and a reservoir supported above the latter, and a feed-pipe connecting the reservoir and box, a valve therein and a pipe leading from the reservoir to the tank.

23. In a developing-machine, the combination with a tray, a developing-box and a tank thereon, of a reservoir supported on the tray above the tank, a fluid-motor, a fluid-supply for the motor and a discharge-conduit leading therefrom to the reservoir, an overflow-pipe connecting the reservoir and tank and another overflow-pipe leading from the latter to the tray.

24. A developing apparatus comprising a support and a developing-receptacle thereon, a tank and a wiper arranged in proximity to the latter.

25. A developing apparatus comprising a developing-receptacle and a tank adapted to contain developing agents for treating photographic films, and a wiper for removing the surplus moisture from said films, arranged above the tank.

822,438. **MUTOSCOPE.** HARRY H. ELDREDGE and CHARLES J. DOTY, Guthrie, Okla. Filed Feb. 17, 1906. Serial No. 301,714.



Claim.—1. A mutoscope comprising a non-rotatable case having a view-opening, a yoke-shaped bracket straddling the case, there

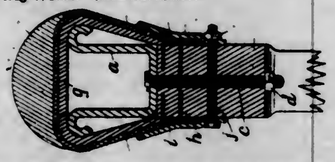
being a pin-and-socket engagement between the case and one arm of the bracket to prevent rotation of the case, a tubular rotatable core within the case, a series of radially-disposed pictures carried by the core, an endwise-movable rotatable shaft piercing the arms of the bracket and the ends of the case and passing through the core, there being an interlocking connection between the shaft and the core, and means to rotate the shaft.

2. A mutoscope comprising a cylindrical case having a view-opening and provided with an internal series of longitudinal ribs, and a series of radially-disposed pictures mounted to rotate within the case with their free ends working across the ribbed interior of the case.

3. A mutoscope comprising a cylindrical case having its inner surface ribbed longitudinally in close succession, there being a view-opening in one side of the case, the top edge of the opening being bowed inwardly, and a series of radially-disposed pictures mounted to rotate within the case with their free edges working over the ribbed interior of the case and the inturned upper edge of the view-opening.

4. A mutoscope attachment for stereoscopes comprising a yoke-shaped bracket provided upon its under side with a loop having a set-screw, an endwise-removable rotatable shaft piercing the arms of the bracket and having an intermediate non-circular portion, a non-rotatable cylindrical case pierced by the shaft and having a socket and projection engagement with one of the arms of the bracket to prevent rotation of the case, a tubular core having a non-circular bore receiving the non-circular portion of the shaft, a series of radially-disposed pictures carried by the core, the case being provided with a longitudinal view-opening and having its interior provided with longitudinal ribs in close succession, the top edge of the view-opening being inclined inwardly, the free edges of the pictures working over the ribbed interior of the case and the inturned edge of the view-opening, and means associated with one end of the shaft for rotating the same.

822,439. TIRE CONSTRUCTION. WILLIAM F. HILL, Stamford, Conn., and EDWIN C. DAVIS, New Brunswick, N. J., assignors to The Universal Tire Company, New York, N. Y., a Corporation of Maine. Filed Aug. 9, 1904. Serial No. 220,077.



Claim.—1. The combination, in tire construction, with a felly, of a channeled rim mounted on said felly, a yielding tread mounted on said rim over the peripheral opening therein and having flaps extended against the sides of the felly, nails or the like inserted in the felly after passing through said flaps, and annular guard-plates fastened to the sides of the felly and covering portions of the flaps beyond the felly.

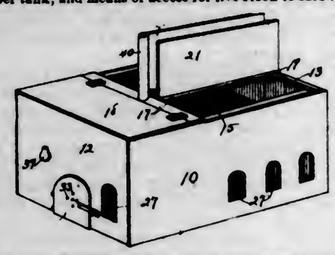
2. The combination, in tire construction, with a felly, of a channeled rim mounted on said felly, a cover extending over the peripheral opening in said rim, a yielding tread superimposed on the cover and having flaps, said flaps and the sides of said cover extending against the sides of the felly, nails or the like inserted in the felly after passing through the flaps and cover, and annular guard-plates fastened to the sides of the felly and covering the edges of the flaps and cover and portions of the sides of the flaps beyond the felly.

822,440. STOCK-FOUNTAIN. JOHN FALK, Dewitt, Iowa. Filed July 13, 1905. Serial No. 269,587.

Claim.—1. A stock-fountain, comprising tanks one above the other, a furnace centrally located in respect of the lower tank and beneath the upper tank, and smoke-flues leading from said furnace adjacent the lower tank and through the upper tank.

2. A stock-fountain, comprising upper and lower tanks, a valve-controlled supply-pipe having its terminal in the upper tank, a valve-controlled pipe leading from the upper tank to the lower tank, means of access for live stock to said tanks, and means for heating said tanks.

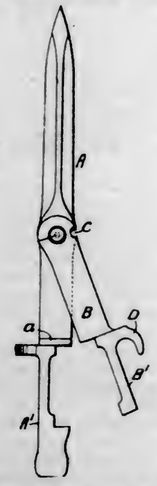
3. A stock-fountain, comprising an upper tank and means for supplying water thereto, a U-shaped lower tank beneath the upper tank, water communication between said tanks, a furnace between the arms of the lower tank, smoke-flues leading from said furnace into the space between the furnace and tanks and extending through the upper tank, and means of access for live stock to said tanks.



4. A stock-fountain, comprising an upper tank and means for supplying water thereto, a U-shaped lower tank beneath the upper tank, water communication between said tanks, a furnace between the arms of the lower tank, smoke-flues leading from said furnace into the space between the furnace and tanks and extending through the upper tank, means of access to said flues whereby they may be cleaned, and means of access for live stock to said tanks.

5. A stock-fountain, comprising an upper tank and means for supplying water thereto, a drainage-pipe leading from said upper tank, a U-shaped lower tank beneath the upper tank, water communication between said tanks, a drainage-pipe leading from said lower tank, a furnace between the arms of the lower tank and beneath the upper tank and spaced apart from both tanks, smoke-flues leading from said furnace into the space between the furnace and tanks and extending through the upper tank, means of access to said flues whereby they may be cleaned and means of access for live stock to said tanks.

822,441. BAYONET. THOMAS S. FORBES, Glasgow, Scotland. Filed Apr. 3, 1905. Serial No. 253,421.

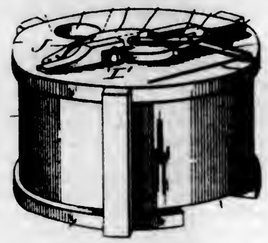


Claim.—1. A bayonet split throughout a portion of its body and handle to form two blades, said blades being pivotally united and having coöperating cutting-notches formed in their adjacent margins, said notches being so disposed with respect to each other that when the blades are opened, forming an incomplete bayonet, the notches register and occupy receiving positions for the material to be cut, said notches serving as cutting-pliers when the blades are being closed to form a complete bayonet.

2. The combination with a bayonet-blade having a notch in it of an auxiliary notched blade, pivoted thereto and a projection on the main blade to guide the pivoted blade in closing as set forth.

3. A bayonet having its handle split or divided longitudinally to form two blades pivoted together, each of said blades being provided with notches located so that when the blades are open the notches register to receive the material to be cut and when the blades are closed the notches are thrown out of register to cut the material, the handle of one blade being recessed and the handle of the companion blade fitting into said recess and forming a complete handle.

822,442. STOCK-FEEDER. HENRY B. GAMBLIN, Salem, Mo. Filed Apr. 2, 1906. Serial No. 309,516.



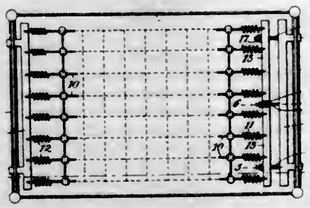
Claim.—1. A stock-feeding apparatus comprising a receptacle with an inlet and exit opening therein, a rotary winged wheel within the receptacle and dividing the latter into compartments, a ratchet-wheel rotating with said winged wheel, and means for operating said ratchet-wheel, as set forth.

2. A stock-feeding apparatus comprising a receptacle with an inlet and exit opening therein, a rotary winged wheel within the receptacle and dividing the latter into compartments, a ratchet-wheel rotating with said winged wheel, a pivotal bar, and a lever pivotally mounted upon said bar and adapted to engage the teeth of said ratchet-wheel, whereby an intermittent movement may be imparted to the winged wheel, as set forth.

3. A stock-feeding apparatus comprising a receptacle with an inlet and exit opening therein, a rotary winged wheel within the receptacle and dividing the latter into compartments, a ratchet-wheel rotating with said winged wheel, a pivotal bar, a lever pivotally mounted upon said bar and adapted to engage the teeth of said ratchet-wheel, whereby an intermittent movement may be imparted to the winged wheel, a guide for said bar, and means for preventing a backward rotary movement of said wheel, as set forth.

4. A stock-feeding apparatus comprising a cylindrical receptacle with an opening in the top for the reception of feed and an exit-opening in the bottom, a shaft mounted in the top and bottom of the receptacle, a winged wheel rotating with said shaft and dividing the receptacle into compartments, a ratchet-wheel rotating with said shaft, a pivotal bar mounted upon said shaft, a spring for normally holding said bar in its limit in one direction, a fixed pawl adapted to prevent a reverse movement to said wheel, an angle-lever pivotally mounted upon said bar and adapted to engage the teeth of said ratchet-wheel, and a rope or wire secured to said lever, as set forth.

822,443. BED-BOTTOM. IGNATZ GROSSMAN, New York, N. Y. Filed Mar. 19, 1906. Serial No. 306,741.



Claim.—1. A bed-bottom provided with a rail, a bar having hooks, and set-screws that connect the rail to the bar below the connection of the bar with the hooks, substantially as specified.

2. A bed-bottom provided with a rail composed of two members pivotally connected at their inner ends, a head-bar having a pair of hooks, and set-screws that adjustably connect the rail members to the head-bar at their jointed inner end and at their outer ends, substantially as specified.

3. A bed-bottom provided with a jointed rail, a connecting-bolt having a bearing, a bar having hooks, set-screws adjustably connecting the rail members to the bar, and an additional set-screw connecting the bolt-bearing to said bar, substantially as specified.

822,444. PROCESS OF MAKING BERYLLIUM HYDROXID. FRITZ HABER and GABRIEL VAN OORDT, Karlsruhe, and FRIEDRICH BRAN, Mannheim, Germany. Filed Mar. 8, 1904. Serial No. 197,199.

Claim.—1. The process of rendering beryllium hydroxid insoluble or soluble with difficulty not only in alkali but also in acids, which consists in heating beryllium hydroxid while in an undissolved condition.

2. The process of rendering beryllium hydroxid insoluble or soluble with difficulty not only in alkali but also in acids, which consists in heating beryllium hydroxid while in an undissolved condition and in an aqueous bath.

3. The process of rendering beryllium hydroxid insoluble or soluble with difficulty not only in alkali but also in acids, which consists in heating beryllium hydroxid while in an undissolved condition in the presence of an alkaline solution.

4. The process of rendering beryllium hydroxid insoluble or soluble with difficulty not only in alkali but also in acids, which consists in heating beryllium hydroxid while in an undissolved condition and in the presence of an alkali-carbonate solution.

5. The process of separating beryllium hydroxid from aluminium hydroxid which consists in heating a mixture containing beryllia and alumina while in an undissolved condition and then treating the mixture with an alkali-bath just sufficient to dissolve the alumina.

6. The process of separating beryllia from alumina, which consists in heating a mixture containing beryllia and alumina in an aqueous bath while in an undissolved condition and then treating the mixture with an alkali-bath just sufficient to dissolve the aluminium compound.

7. The process of separating beryllia from alumina, which consists in heating a mixture containing beryllia and alumina in the presence of an alkaline solution and while in an undissolved condition and then heating the mixture in an alkali-bath just sufficient to dissolve the aluminium compound.

8. The process of separating the hydroxids of beryllium and aluminium which consists in heating a mixture containing the two in the presence of an alkali-carbonate solution while in an undissolved condition and then heating the mixture in an alkali-bath just sufficient to dissolve the aluminium compound.

9. The process of separating the hydroxids of beryllium, aluminium and iron which consists in first heating the mixture of or containing these compounds while the beryllium hydroxid is in an undissolved condition and then heating the said mixture in dilute alkali just sufficient to dissolve the aluminium compound and then treating the undissolved residuum with acid to dissolve out the iron compound.

10. The process of separating beryllium hydroxid from iron hydroxid which consists in rendering the beryllium hydroxid insoluble or soluble with difficulty in acids by heating a mixture containing beryllium and iron hydroxid in the presence of an alkali solution and in an undissolved condition and then treating the mixture with acid for dissolving the iron compound.

11. The process of separating beryllium hydroxid from aluminium and iron hydroxids which consists in rendering the beryllium hydroxid insoluble in acids by heating the mixture of beryllium, aluminium and iron hydroxid in the presence of an alkali solution which is just sufficient to dissolve the aluminium compound and then treating the undissolved residuum with acid for dissolving the iron hydroxid.

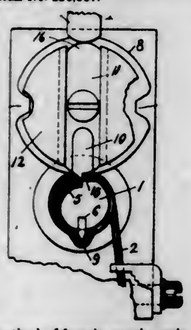
12. The process of separating beryllium hydroxid from aluminium and iron hydroxid which consists in rendering the beryllium hydroxid insoluble in acids by heating the mixture of beryllium, aluminium and iron hydroxid in an aqueous bath while the beryllium hydroxid is undissolved and then in alkali solution just sufficient to dissolve the aluminium hydroxid and then treating the undissolved residuum with acid for dissolving the iron hydroxid.

13. The process of separating beryllium, aluminium and iron hydroxids which consists in heating a mixture of or containing these compounds while the beryllium compound is undissolved, in the presence of an alkali-carbonate bath, then heating the said mixture in alkali solution just sufficient to dissolve the aluminium compound and treating the undissolved residuum with acid to dissolve the iron compound.

14. The process of obtaining purified beryllium hydroxid from material containing the hydroxids of beryllium, aluminium and iron, which consists in first heating the mixture of or containing these compounds while the beryllium hydroxid is in an undissolved condition, then heating the said mixture in dilute alkali just sufficient to dissolve the aluminium compound, then treating the undissolved residuum with acid to dissolve out the iron compound, and purifying the resultant beryllium hydroxid as an acetate.

15. The process of obtaining purified beryllium hydroxid from material containing the hydroxids of beryllium, aluminium and iron, which consists in first heating the material while the beryllium hydroxid is in an undissolved condition, then heating said mixture in dilute alkali just sufficient to dissolve the aluminium compound, then treating the undissolved residuum with acid to dissolve out the iron compound, separating the beryllium hydroxid, dissolving it in acetic acid, evaporating the solution, treating it with glacial acetic acid and finally extracting the same with chloroform.

822,445. METHOD OF FORMING SPRING-CLIPS. JOSHUA B. HALL, Providence, R. I., assignor, by mesne assignments, to Ring Paper Clip Company, Providence, R. I., a Corporation of Rhode Island. Filed Apr. 21, 1905. Serial No. 256,807.



Claim.—1. The method of forming spring wire clips which consists in winding wire into an approximately circular spring-coil and simultaneously bending each turn of the coil to form a projection extending beyond the circumferential plane of the body of the coil, and periodically severing a turn of the coil, whereby the uncoiling action of the severed portion of the coil will cause a separation of the said projections.

2. The method of forming spring wire clips which consists in winding wire upon an approximately circular rotating arbor to form a spring-coil, and simultaneously bending each turn of the coil to form an angular portion projecting beyond the circumferential plane of the body of the coil, and periodically severing a turn of the coil, whereby the uncoiling action of the severed part will cause a separation of said angular portions.

3. The method of forming spring-clips which consists in winding wire into an approximately circular spring-coil and providing each turn of said coil with an irregular portion projecting beyond the circumferential plane of the body of the coil, and severing a turn of said coil at periodical intervals, whereby the uncoiling action of the severed parts will cause a separation of the angular portions of said severed part.

4. The method of forming spring-clips which consists in winding a wire upon a rotating arbor provided with a longitudinal anvil or rib to form an approximately circular spring-coil, the turns of which are provided with an angular portion projecting beyond the circumferential plane of the body of the coil, and finally severing a turn of said coil at periodical intervals, whereby the uncoiling action of the severed part will cause a separation of the angular portions of said severed part.

5. The method of forming spring-clips which consists in winding wire into an approximately circular spring-coil and providing each turn of said coil with an ear or projection extending beyond the circumferential plane of the body of said coil, and severing a turn of said coil at periodical intervals, whereby the uncoiling action of the severed part will cause a separation of the ears or projections of said severed part.

6. The method of forming spring wire clips which consists in winding wire into a spring-coil, simultaneously bending each turn to form an angular portion offset from the body portion of the strand, and periodically severing a turn of said coil at a point opposite said angular portions, whereby the uncoiling action of the severed part will cause a separation of the angular portion of said severed part.

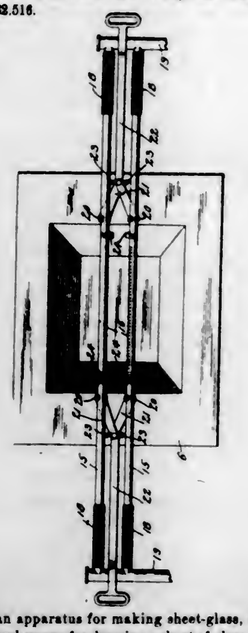
7. The method of forming spring wire clips which consists in winding wire upon a rotating arbor to form a spring-coil, bending each turn of the coil to form an angular member offset from the body of the coil, and periodically severing a turn of said coil at a point opposite said angular members, whereby the uncoiling action of the severed part will cause a separation of the angular members of said severed part.

8. The method of forming spring wire clips which consists in winding wire into a spring-coil, simultaneously bending each turn to form a plurality of alined angular members offset from the body of the coil, and finally severing every other turn of the coil at a point opposite said angular members, whereby the uncoiling action of the severed part will cause a separation of the angular members of said severed part.

9. The method of forming spring-clips which consists in winding wire into a spring-coil, simultaneously bending each turn to form a plurality of alined angular members offset from the body of said coil and pressing in or straightening a portion of each turn of the coil, and finally severing every other turn of the coil, whereby the uncoiling action of the severed part will cause a separation of the angular members of said severed part.

10. The method of forming spring-clips which consists in winding wire into a spring-coil and bending the turns thereof to form a longitudinal rib made up of a plurality of alined ears or projections offset from the body of said coil, and severing a turn of said coil at periodical intervals, whereby the uncoiling action of the severed part will cause a separation of the ears or projections of the severed part.

822,446. MACHINE FOR THE MANUFACTURE OF SHEET-GLASS. JOHN T. HAMILTON, Hartford City, Ind. Filed May 26, 1905. Serial No. 263,516.

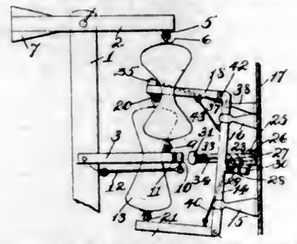


Claim.—In an apparatus for making sheet-glass, the combination with a tank and means for drawing a sheet of glass therefrom, of a pair of air-pipes between which the sheet is drawn and adapted to deliver a cooling-blast thereto, said air-pipes being connected to a flexible hose, and handles having pivoted branches connected to opposite ends of the pipe and movable in or out to move the pipes toward or from each other, the tank having projections which engage the branches when the handles are moved in or out and swing the same to or from each other.

822,447. MEANS FOR DELIVERING AND CATCHING MAIL-POUCHES. EDWARD W. HAMMERSMITH, Congress Park, Ill. Filed Mar. 31, 1905. Serial No. 253,159.

Claim.—1. The combination of a pouch-holding means on a car normally out of delivery position, an actuating member on the car for throwing said holding means into delivery position and so operatively related thereto that when it is projected from the car the delivery means will be retracted, and means at the station for engaging said actuating member.

2. The combination of means on the car and means at the station for respectively holding two pouches, one to be delivered to the station and the other to the car, said holding means on the car being adapted to be retracted toward the car; a member on the car for throwing the pouch-holder of the car outwardly, means held in position by the station-pouch for engaging and actuating said member, and means on the car actuated by the extension and retraction of said pouch-holder of the car, for clutching the pouch at the station.



3. The combination of means on the car and means at the station for respectively holding two pouches, one to be delivered to the station and the other to the car, said holding means on the car being adapted to be retracted toward the car, a member on the car for throwing the pouch-holder of the car outwardly, means held in position by the station-pouch for engaging and actuating said member, means on the car actuated by the extension and retraction of the said pouch-holder of the car for clutching the pouch at the station, and means held open by the pouch at the station for receiving and clutching the pouch delivered from the car.

4. The combination of means hinged to swing from the side of the car for holding the pouch to be delivered, an arm arranged to project from the car when said holder is retracted to the car, means operatively connecting said arm with the said holder whereby the two will alternately assume extended and retracted positions when either is moved, means at the station for engaging said arm when extended, and means at the station for receiving the pouch from the said holder.

5. The combination of means hinged to swing from the side of the car for holding the pouch to be delivered, an arm arranged to project from the car when said holder is retracted to the car, means operatively connecting said arm with the said holder whereby the two will alternately assume extended and retracted positions when either is moved, means at the station for engaging said arm when extended, means at the station for receiving the pouch from said holder, and means for holding said arm horizontally by the pouch on the car pouch-holder.

6. The combination of means hinged to swing from the side of the car for holding the pouch to be delivered, an arm arranged to project from the car when said holder is retracted to the car, means operatively connecting said arm with the said holder whereby the two will alternately assume extended and retracted positions when either is moved, means at the station for receiving the pouch from said holder, and means whereby the delivery of the pouch from the car pouch-holder also causes said arm to retract.

7. The combination of means hinged to swing from the side of the car for holding the pouch to be delivered, an arm arranged to project from the car when said holder is retracted to the car, means operatively connecting said arm with the said holder whereby the two will alternately assume extended and retracted positions when either is moved, means at the station for engaging said arm when extended, means at the station for receiving the pouch from said holder, and a forwardly-extended cushion on said arm.

8. The combination of two arms on the car having means for supporting the pouch to be delivered, both hinged on an upright axis, and the lower one also on a horizontal axis, a lever hinged on both horizontal and upright axes, an operative connection between said lever and arms whereby the arms may be turned on their upright axis, an operative connection between the lower arm and lever whereby the falling of the said arm will move the lever on its horizontal axis, and means at the station for engaging the lever when projected from the car.

9. The combination of two arms on the car hinged on an upright axis and adapted to swing toward the car, a pouch-clutching member hinged to one of said arms for clutching the pouch at the station, a rod pivoted to said member at one end and to the car at the other end whereby the oscillation of said arms will cause said member to open and close with relation to the arm to which it is pivoted, and means at the station for holding the pouch in position to be struck by the last said arm.

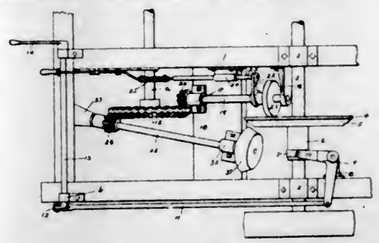
10. The combination of a post at the station, an arm hinged thereto on a horizontal axis, means whereby said arm is held horizontally by the pouch at the station, a member hinged to said arm on an upright axis, and means connecting said member to the post, whereby the falling of the arm will cause said member to close toward the arm and clutch the pouch.

822,448. SPRING-STILT. ALEXANDER HANSON, Chicago, Ill. Filed July 12, 1905. Serial No. 269,281.



Claim.—In a device of the character described, a plate adapted to be secured to the sole of the foot, and a coil-spring, having one end connected with the under side of the plate and having its opposite end adapted to rest on the ground.

822,449. GEARING. AMOS HARROLD, Mansfield, Ohio, assignor to The Aultman & Taylor Machinery Company, Mansfield, Ohio, a Corporation of Ohio. Filed Sept. 12, 1905. Serial No. 278,178.



Claim.—1. In a feed mechanism, a framework, a shaft mounted thereon, a disk slidably mounted thereon and having a groove in its hub, a bell-crank pivotally secured to the frame, a pin secured to the free end of said bell-crank extending into the groove in the disk-hub, a rock-shaft journaled in suitable bearings attached to the framework, a lever secured to said rock-shaft, a rod connected to one end of said rock-shaft, with the opposite end pivotally secured to the bell-crank, a support secured to the framework, bearings mounted on said support at an inclination with the plane of framework, a shaft journaled in said bearings, a pinion fitted on one end, a friction-wheel fitted on the opposite end, an auxiliary shaft journaled in the framework, a master gear-wheel fitted to the end of said auxiliary shaft meshing with said pinion, a shaft journaled in a suitable bearing mounted on said support, a pinion fitted to one end meshing with one side of the master gear-wheel, a friction-wheel splined to one end of the other shaft for movement in peripheral contact with the disk, an arm connected with the hub of said frictional wheel, a bracket-bearing, a rod slidable in said bearing, and a lever providing means to slidably move the friction-wheel upon the shaft to contact with the face of the disk to vary the speed of the feed.

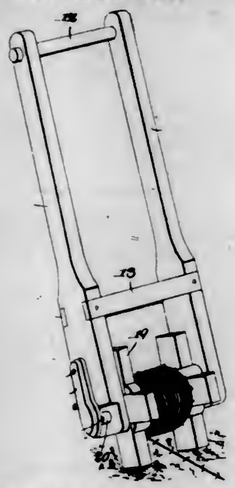
2. A feed mechanism for sawmills, comprising a frame, a drive and a driven shaft, a disk slidably mounted upon said drive-shaft, a master gear-wheel secured to the driven shaft, two shafts journaled in the frame at an inclination to each other, a friction-wheel on one end of each shaft, said friction-wheels located on opposite sides of the slidably-mounted disk on the drive-shaft and a bevel-pinion at the opposite end of each shaft from the friction-wheel, one of which pinions is intermeshed with the teeth on one face of the master gear-wheel and the other pinion with the teeth on the opposite face, and means for imparting a sliding movement to the friction-wheel on one of said shafts to cause it to engage the face of the slidable disk at different positions, whereby to vary the speed of the feed.

3. In a sawmill feed mechanism, a drive-shaft, a frictional disk slidably secured thereto, means for imparting a slidable movement to said disk, a bracket or support secured to the frame at an inclination with the plane of the frame, bearings mounted thereon and spaced apart, shafts journaled in said bearings, a master gear-wheel, pinions secured to one end of said shafts meshing with the master

gear-wheel, a friction beveled wheel secured to one end of said shafts, a slidable friction-wheel mounted on one of said shafts, means to impart a sliding movement thereto.

4. The combination with a suitable frame work, of four shafts journaled therein, two parallel with each other, one at right angles thereto and the fourth at an inclination, friction-wheels on three of the shafts, two of which are slidable, a double-faced bevel-gear on one of the shafts, bevel-gears on two of the shafts meshing with said double-faced gears, and means for shifting the slidable friction-wheel and locking them.

822,450. **REEL-CARRIER.** WILLIAM G. HATCHER, Carrington, Mo. Filed Mar. 12, 1906. Serial No. 305,676.



Claim.—In a device of the class described, a frame including spaced side members and transverse supporting and connecting members and with apertures in transverse alinement through said side members, a stationary closure to one of said apertures, a recese in the outer side of the side member having the opposite aperture, a shaft adapted to support a reel and extending through said apertures and bearing therein and projecting at one end into said recess, and a movable member bearing over said recess and engaging the projecting end of the shaft.

822,451. **AUTOMATIC WEIGHER.** JAMES S. HERROD, Hunter, Okla. Filed June 6, 1905. Serial No. 263,915.



Claim.—1. An automatic grain-weigher, comprising hangers, a scale-beam fulcrumed thereon, a receptacle suspended from the beam, a trip-frame pivoted to the receptacle and fulcrumed on the hangers, a door carried by the receptacle and closed and locked when the latter is overbalanced by the beam, and means when the beam is overbalanced by weight on the door, to be actuated by the trip-frame to unlock said door and permit the weight thereon to open it.

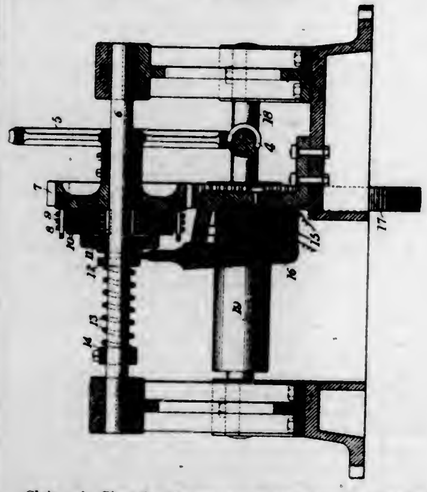
2. An automatic grain-weigher, comprising hangers, a scale-beam fulcrumed thereon, a receptacle suspended from the beam, a trip-frame pivoted to the receptacle and fulcrumed on the hangers, a door carried by the receptacle and closed and locked when the latter is overbalanced by the beam, means when the beam is overbalanced by the weight on the door, to be actuated by the trip-frame to unlock said door and permit the weight thereon to open it, and means to lock the door open.

3. An automatic weigher, comprising a scale-beam, a suitable receptacle carried thereby and having two compartments, doors controlling the lower ends of the compartments, rock-frames linked to the doors, a pin projecting from one of the rock-frames, a gravity-catch engaging said pin, a trip-dog suspended from said pin and underlying a part of said gravity-catch, means when the weight of the commodity in the receptacle effects the overbalancing of the beam, to cause the dog to trip said catch from engagement with the pin and permit the closed door to open and the open door to be closed, and a similar catch to automatically engage said pin and lock said doors in their new relation.

4. In an automatic weigher, a suitable receptacle having two compartments, doors controlling the discharge ends of said compartments, a rock-frame linked to said doors, a pair of gravity-catches carried by the receptacle, one of them engaging the rock-frame to lock one of the doors closed and the other open, a vertically-movable dog carried by the rock-frame, and means caused by downward movement of the receptacle to raise said dog and cause it to trip the catch from engagement with the rock-frame and permit the closed door to be opened and the open door to be closed and the rock-frame to engage and be locked with the doors in this new position by the other catch.

5. In an automatic weigher, a suitable receptacle provided with two compartments and a hinged door controlling each compartment, a rock-frame mounted on the receptacle and linked to said doors, a pin projecting from said rock-frame, a slotted dog pivotally suspended from said pin, and means actuated by the downward movement of the receptacle for imparting upward movement to said dog.

822,452. **SPEED-CONTROLLING DEVICE FOR GLASS-BLOWING MACHINES.** HARRY F. HITNER, Pittsburg, Pa., assignor to Window Glass Machine Company, Pittsburg, Pa., a Corporation of New Jersey. Filed Apr. 26, 1905. Serial No. 257,477.



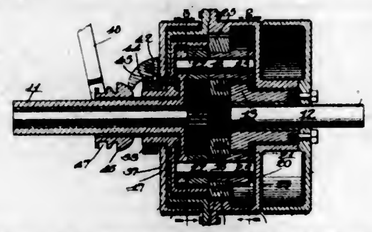
Claim.—1. Glass-drawing apparatus, comprising in combination, a motor, a winding-drum, an intermediate friction-clutch, means normally holding said clutch in driving engagement, and an electromagnet arranged to release the said clutch.

2. Glass-drawing apparatus, comprising in combination a motor, a winding-drum, an intermediate friction-clutch, an electromagnet adapted to release the clutch, and a spring to bring the clutch into frictional contact.

3. Glass-drawing apparatus, comprising in combination a motor, a winding-drum, an intermediate friction-clutch, and an electromagnet, said clutch consisting of interfitting disks placed respectively on the driving and driven parts of the apparatus.

4. Glass-drawing apparatus, comprising in combination, a motor, a winding-drum, an intermediate friction-clutch, an electromagnet adapted to release the clutch, a spring to bring the clutch into frictional contact, and means for adjusting the force of said spring.

822,453. **TRANSMISSION-GEAR.** WILLIAM H. HOLLOPETER, Fostoria, Ohio. Filed Jan. 26, 1905. Renewed Nov. 16, 1905. Serial No. 287,739.



Claim.—1. In transmission-gearing, a driving-shaft, a pinion and a gear-wheel rigidly secured thereto, a pinion mounted loosely on the shaft, a driven shaft, a plurality of sets of planet-gears carried by said driven shaft, one of said planet-gears being in mesh with the gear, another with the pinion, and a third with the loose gear, normally loose annular racks in constant mesh with two sets of planet-gears, and independent means for locking said annular racks and the loose pinion from independent movement.

2. The combination in transmission-gearing, of a driving-shaft, a driven shaft, a gear and pinion secured rigidly to the driving-shaft, a gear mounted loosely on said driving-shaft, a plurality of sets of planet-gears carried by the driven shaft, and intermeshing, respectively, with the gear, the pinion and the loose gear, a pair of annular racks forming internal gears in constant mesh with two of the sets of planet-gears, and independent means for locking said internal gears and said loose gear from rotative movement.

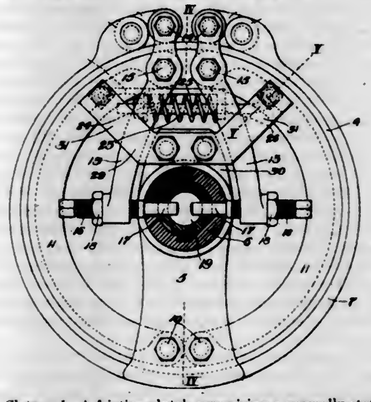
3. The combination in transmission-gearing, of a driving-shaft, a driven shaft, a gear and pinion keyed to the driving-shaft, a loose gear on said driving-shaft, a plurality of sets of planet-gears carried by the driven shaft and intermeshing, respectively, with the gear, the pinion and loose gear, a housing inclosing the gears and serving as an oil-case, said housing having one portion of its surface arranged to be engaged by a friction-band or other stopping device, an internal gear forming a part of the housing and being in constant mesh with one set of planet-gears, a second internal gear in constant mesh with another set of planet-gears, and means for stopping the rotative movement of said second internal gear, means for stopping rotative movement of the loose pinion, and means for locking the internal gears to each other.

4. The combination in a transmission-gearing, of a driving-shaft, a driven shaft, a gear and pinion keyed to the driving-shaft, a loose gear on said driving-shaft, a plurality of sets of planet-gears carried by the driven shaft and intermeshing, respectively, with the fixed gear, the pinion and the loose gear, a pair of internal gears of, respectively, different diameter engaging two of the sets of planet-gears, independent means for locking said internal gears from movement, means for locking the two internal gears to each other, and independent means for locking the loose gear from rotative movement.

5. The combination in a transmission-gearing, of a driving-shaft, a gear and a pinion keyed to said shaft, a loose gear on the driving-shaft, a driven shaft, a plurality of sets of planet-gears carried by the driven shaft and intermeshing, respectively, with the fast gear, the pinion, and the loose gear, a housing inclosing all of the gears and forming an oil-case, an internal gear carried by the housing and intermeshing with one of the sets of planet-gears, means for stopping rotative movement of the housing, a friction-disk secured to the loose gear, means for engaging said friction-disk, and locking the same from rotative movement, a second internal gear arranged within the housing and in constant mesh with one set of planet-gears, means for locking said second internal gear from rotative movement, and an independent means for locking the two internal gears to each other.

6. The combination in a transmission-gearing, of a driving-shaft, a gear-wheel and a pinion keyed thereto, a loose pinion on said shaft, a hollow driven shaft mounted loosely on the driving-shaft, a disk secured to said driven shaft, a ring revoluble with said disk, a bushing carried by the hub of the loose gear, and forming a support for the ring, a pair of shafts connecting the disk and ring for mutual rotative movement, planet-gears carried by the pair of shafts and in constant mesh with the fast gear, an internal gear meshing with said planet-gears and having its hub portion loosely mounted on the driven shaft, a locking-pin projecting from said hub portion, a friction-disk carried by the hub portion and having an opening for the reception of said pin, a spring normally tending to separate the internal gear from the friction-disk, a housing inclosing all of the gears and having a portion extending between the internal gear and the friction-disk, an internal gear forming a part of the housing, planet-gears carried by the pair of shafts and forming a gearing connection between the fixed pinion and the internal gear of the housing, pinions secured to the last-named planet-gears, and intermeshing with the loose gear, means for locking the housing from rotative movement, means for locking the loose gear from rotative movement, a collar carried by the hub of the first internal gear, pivot-ears projecting from said collar, levers arranged between said pivot-ears and having cam-shaped ends for engagement with the friction-disk, and a slidable collar carried by the driven shaft and engaging said levers.

822,454. **FRICTION-CLUTCH.** HENRY DE F. HUBBARD, Avalon, Pa. Filed July 11, 1904. Serial No. 215,968.



Claim.—1. A friction-clutch comprising a normally stationary loosely-journaled flanged member adapted to communicate motion, a normally rotating member provided with an outer clutch-band, inner clutch-shoes, and two oppositely-acting operating-levers connected with the terminals of said clutch-band and shoes respectively, with means for actuating the levers, substantially as set forth.

2. A friction-clutch comprising a normally stationary loosely-journaled flanged member adapted to communicate motion, a normally rotating member provided with an outer clutch-band, inner clutch-shoes, and two oppositely-acting operating-levers connected with the terminals of said clutch band and shoes respectively, with means for actuating the levers and for relieving the clutch elements from contact, substantially as set forth.

3. A friction-clutch comprising a normally stationary loosely-journaled flanged member adapted to communicate motion, a normally rotating member provided with an outer clutch-band and inner clutch-shoes, and oppositely-acting operating-levers connected with the terminals of said clutch band and shoes respectively, provided with inwardly-extending pins, and a tapered wedge adapted to be inserted between said pins to separate the levers, substantially as set forth.

4. A friction-clutch comprising a normally stationary loosely-journaled flanged member mounted upon a shaft having a central opening, a normally rotating member secured to said shaft provided with an outer circular clutch-band and inner clutch-shoes adapted to make contact with the outer and inner peripheral faces of said flanged member, and oppositely-acting levers connected with the terminals of said clutch band and shoes respectively, with means for actuating said levers, substantially as set forth.

5. A friction-clutch comprising a hollow shaft, a normally stationary flanged member loosely journaled upon said shaft, a normally rotating member secured to said shaft provided with an outer circular clutch-band and inner clutch-shoes adapted to make contact with the outer and inner peripheral faces of said flanged member, and oppositely-acting levers connected with the terminals of said clutch band and shoes respectively, provided with bearing-pins, and an adjustable separating-wedge mounted in the shaft-cavity with means for actuating said wedge, substantially as set forth.

6. A friction-clutch comprising a hollow shaft, a normally stationary flanged member loosely journaled upon said shaft, a normally rotating member secured to said shaft provided with an outer circular clutch-band and inner clutch-shoes adapted to make con-

tact with the outer and inner peripheral faces of said flanged member, oppositely-acting levers connected with the terminals of said clutch band and shoes respectively, means for actuating the levers, with spring devices adapted to withdraw the inner shoes from contact, substantially as set forth.

7. In combination with a rotating shaft provided with a central cavity and a separating-wedge mounted therein, a freely-journaled rotating element provided with a peripheral flange, a rotating bracket secured to the shaft having an outer circular clutch-band adapted to engage the outer surface of the flanged periphery, inner circular shoes, mounted in the bracket and adapted to engage the inner periphery of the flange, and oppositely-acting levers connected with the terminals of said band, and shoes respectively, and means for actuating said levers, substantially as set forth.

8. In combination with a rotating shaft provided with a central cavity and a separating-wedge mounted therein, a freely-journaled rotating element provided with a peripheral flange, a rotating bracket secured to the shaft having an outer circular clutch-band adapted to engage the outer surface of the flanged periphery, inner circular shoes mounted in the bracket and adapted to engage the inner periphery of the flange, and oppositely-acting levers connected with the terminals of said band and shoes respectively, and provided with adjusting-pins extending into the central cavity of the shaft and adapted to be separated by the wedge, substantially as set forth.

9. In combination with a rotating shaft provided with a central cavity and a separating-wedge mounted therein, a freely-journaled rotating element provided with a peripheral flange, a rotating bracket secured to the shaft having an outer circular clutch-band adapted to engage the outer surface of the flanged periphery, inner curved shoes extending oppositely from the bracket and adapted to engage the inner periphery of the flange, and oppositely-acting levers connected with the terminals of said band and shoe terminals respectively, means for actuating the levers, and spring-bars mounted on pins in the shoes and provided with a retracting-spring, substantially as set forth.

10. In combination with a rotating shaft provided with a central cavity and a separating-wedge mounted therein, a freely-journaled rotating element provided with a peripheral flange, a rotating bracket secured to the shaft having an outer circular clutch-band adapted to engage the outer surface of the flanged periphery, inner curved shoes extending oppositely from the bracket and adapted to engage the inner periphery of the flange, oppositely-acting levers connected with the terminals of said band and shoe terminals respectively, means for actuating the levers, spring-bars mounted on pins in the shoes and provided with a retracting-spring, and arms secured to the bracket and extending over the outer ends of the spring-bar pins, substantially as set forth.

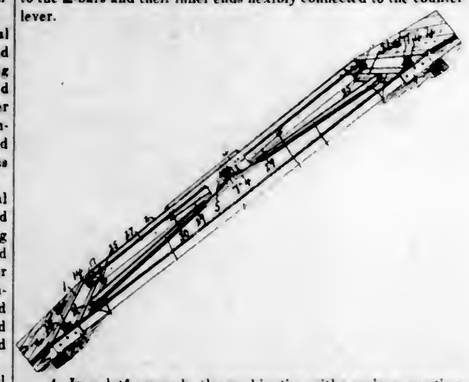
11. In a friction-clutch, the combination with a normally stationary loosely-journaled flanged member adapted to communicate motion, a normally rotating member provided with an outer clutch-band, inner clutch-shoes, and two oppositely-acting operating-levers connected with the terminals of said clutch band and shoes respectively; of means for relieving the clutch-bands from contact, substantially as set forth.

822,455. PLATFORM-SCALE. GEREY JONES, Binghamton, N. Y., assignor to Edward F. Jones, Binghamton, N. Y. Filed May 25, 1905. Serial No. 262,227.

Claim.—1. In a wagon-scale, a rigid rectangular frame adapted to be supported upon the surface of the ground, a chair secured to one side of the frame, a counter-lever fulcrumed in said chair, opposite Z-bars fulcrumed on the ends of the frame and having separate connections with the counter-lever and a platform mounted upon the Z-bars.

2. In a wagon-scale, a rigid rectangular frame adapted to be supported upon the surface of the ground, a chair secured to one side intermediate the ends of the frame, and also adapted to rest upon the ground, a counter-lever fulcrumed in said chair, opposed platform-levers fulcrumed on the ends of the frame and having separate connections with the counter-lever, and a platform mounted upon the platform-levers.

3. In a wagon-scale, a rectangular frame composed of side and end pieces rigidly secured together and resting upon the surface of the ground, a pair of swinging stirrups mounted upon each of the end pieces of the frame, Z-bars each suspended in the stirrups at one end of the frame whereby the Z-bars and their supporting-stirrups have independent oscillation, platform-supporting bars bridging the space between and resting upon the ends of the Z-bars, wooden beams or stringers secured to the platform-supporting bars, a chair secured to one of the sides of the frame substantially midway between these ends and adapted to rest upon the ground, a counter-lever fulcrumed in said chair, opposite arms having their outer ends rigidly secured to the Z-bars and their inner ends flexibly connected to the counter-lever.



4. In a platform-scale, the combination with a main supporting-frame adapted to be supported upon the surface of the ground, a counter-lever fulcrumed in said frame, a clevis pivotally saddled upon the counter-lever at one side of its fulcrum and provided with opposite depending arms, opposite similar platform-levers fulcrumed on the ends of the frame and having inwardly-projecting arms, each attached to one of the depending arms of said clevis, and a platform bearing upon said platform-levers at points at the inner side of their fulcrums.

5. In a wagon-scale, a rectangular frame composed of side and end pieces rigidly secured together and adapted to be supported upon the surface of the ground, brackets projecting inwardly from each of the end pieces of the frame, swinging stirrups pivotally mounted in said brackets, a chair secured to one of the sides, substantially midway between its ends and projecting inwardly therefrom, a counter-lever fulcrumed in said chair, opposite swinging hooks suspended from said lever, and opposite platform-supporting levers each fulcrumed in the stirrups at one end of the frame and having their inner ends each engaged with one of said hooks.

6. In a wagon-scale, a rectangular frame composed of side and end pieces rigidly secured together and having their upper faces in substantially the same horizontal plane, approaches seated in the end pieces, a chair secured to one of the side pieces substantially midway between its ends and projecting inwardly therefrom, a counter-lever fulcrumed in said chair below the top face of the frame, opposite platform-supporting levers wholly within the plane of the frame and each flexibly connected to one of the end pieces and to the counter-lever.

7. In a wagon-scale, a main supporting-frame comprising end channel-bars and side bars united to the ends of the channel-bars forming a rectangular open frame, the flanges of the channel-bars facing outwardly, suitable approaches having adjacent ends resting in said channels, in combination with platform-levers having inwardly-projecting arms rigid therewith, a counter-lever fulcrumed upon the main frame and attached to the inner ends of said arms and a platform resting upon the platform-levers.

8. In a wagon-scale, a substantially rectangular frame composed of side and end pieces having their upper faces disposed in substantially the same horizontal plane, end approaches each seated in one of the end pieces of the frame, said frame having bearing-faces adapted to rest upon the surface of the ground, a chair rigidly secured to one of the side pieces substantially midway between its ends and below its upper surface, a counter-lever fulcrumed in said chair, platform-supporting levers each flexibly connected to one end of the frame in a plane wholly below the top face of said frame and separate connections between the inner ends of said levers and the counter-lever.

9. In a wagon-scale, a substantially rectangular horizontal frame adapted to be supported upon the surface of the ground, a chair secured to one side of said frame substantially midway between its ends and projecting inwardly therefrom, a counter-lever fulcrumed in said chair below the top face of said frame, end approaches each secured to one end of the frame, swinging stirrups at the inner sides of and supported by the ends of the frame in a plane below the top faces of said ends, Z-bars each pivotally suspended in the stirrups at each end of the frame and arms each having its outer end rigidly secured to one of the Z-bars and its inner end flexibly connected to the counter-lever.

10. In a wagon-scale adapted to be supported upon the surface of the ground, the combination of a rectangular supporting-frame, brackets projecting inwardly from the ends of the frame, hangers suspended from said brackets, Z-bars fulcrumed in said hangers, knife-bearings supported upon said Z-bars at the inner side of their fulcrums, a chair secured to one side of the frame, a counter-lever fulcrumed on said chair, a span or clevis pivotally mounted upon the counter-lever, and provided with depending arms, and connections between the Z-bars and said depending arms of the clevis.

11. In a wagon-scale, a substantially horizontal frame composed of side and end pieces rigidly secured together, opposite end approaches each seated in one of the end pieces, a counter-lever flexibly connected to one of the side pieces substantially midway between its ends, platform-supporting levers each flexibly connected to one of the end pieces and having its inner end flexibly connected to the counter-lever, platform-supporting bars bridging the space between and resting upon said platform-supporting levers wholly below the top faces of the frame and a platform supported upon the last-named bars wholly above said levers and in a plane substantially coincident with the top face of the frame.

12. In a wagon-scale, the combination with a substantially horizontal frame composed of side and end pieces rigidly secured together, a chair secured to one of the side pieces substantially midway between its ends and projecting inwardly therefrom, a counter-lever fulcrumed in said chair, pendent members pivotally connected to said counter-lever, brackets projecting inwardly from each of the ends of the frame, stirrups pivotally hung in said brackets, Z-bars each pivotally suspended by the stirrups at the corresponding end of the frame, arms each having one end rigidly secured to said bars and its inner end attached to one of said pendent members on the counter-lever, additional bars bridging the space between and resting upon the Z-bars and a platform resting upon said additional bars.

822,456. SCISSORS. WILLIAM E. JONES, Macon, Mo. Filed July 3, 1905. Serial No. 268,174.



Claim.—1. Shears or scissors comprising blades having heavy back portions and elastic cutting edges.

2. Shears or scissors comprising cutting-blades each having concaved inner surfaces adapted to form an elastic cutting edge, said blades having heavy back portions adapted to give rigidity to the blade.

3. Shears or scissors comprising cutting-blades having concaved inner and outer surfaces, substantially as described.

4. Shears or scissors comprising cutting-blades having elastic cutting edges and rigid back portions.

822,457. LAMP-EXTINGUISHER. GEORGE KERR, Dallas, Oreg. Filed Oct. 5, 1905. Serial No. 281,433.



Claim.—1. A lamp-extinguisher comprising a pair of oppositely-disposed plates, and means for mounting said plates on the slotted dome of an ordinary lamp-burner whereby either one of said plates will move over the slot in the dome when the lamp is tipped, said plate being adapted to automatically interlock with the slotted dome when moved over the slot therein.

2. A lamp-extinguisher comprising a plate shaped to swing over the flame-slot in the dome of an ordinary lamp-burner and means for pivotally mounting said plate on the slotted dome, said plate having a portion adapted to automatically interlock with the slotted dome when closed thereover, as set forth.

3. As an improvement in lamp-extinguishers, the combination with a lamp-burner having a slotted dome, of a pair of oppositely-disposed plates, each of said plates being independently hinged on the outside of the dome whereby either of said plates is adapted to automatically swing over the dome when the lamp is tipped in either direction, each plate having a gravity-drop member adapted to move into the slot in the dome when either of the said plates is swung over the said slot.

4. As an improvement in lamp-extinguishers, the combination with a lamp-burner having a slotted dome; of a pair of oppositely-disposed plates pivotally mounted on the outside of the slotted dome one of which is arranged to swing over the slot in the dome when the lamp is tipped in one direction and the other plate arranged to swing over the dome when the lamp is tipped in the other direction and means on the dome for normally sustaining the plates at a point adjacent the slot, a means on the plates for automatically interlocking with the slotted dome when the plates close thereover.

5. A lamp-burner of the character described; a pair of oppositely-disposed plates pivotally mounted on the slotted dome portion whereby either of said plates is adapted to close the slot when the lamp is tipped over, and to become automatically interlocked with the said slot.

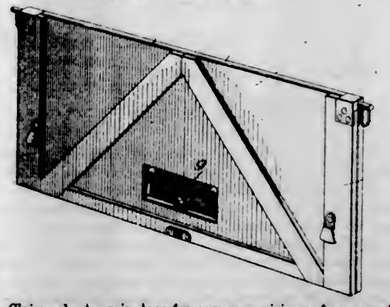
6. In combination with the slotted dome of the burner; two plates, each of which is independently and pivotally mounted on the top of the dome and held to swing over the dome-slot when the lamp is tipped, and means on the plates that automatically lock the plates to their closure position when swung over the dome-slot, as set forth.

7. The combination with the burner having a slotted dome; of the curved plates adapted to fit on the inside of the dome under the ends of the slot therein, said plates each having a pair of threaded apertures, the two oppositely-disposed slot-cut-off plates having their ends apertured, and the screw-pintles for engaging the apertured ends of the cut-off plates, and the threaded apertures in the curved plates as set forth.

8. The combination with the burner having the slotted dome, of the oppositely-disposed plates each plate being pivotally mounted on the top of the said slotted dome to swing over the slot when tipped and a drop-pin mounted in each of the plates adapted to lower into the dome-slot when the plates are swung thereover for the purposes described.

9. As an improvement in lamp-burners, of the character described; in combination with the slotted dome of the burner-body; the two oppositely-disposed plates shaped so that either plate will swing over the top of the burner-body independently, means for pivotally sustaining such plates normally adjacent the slot in the burner-dome, and a means mounted on each of the plates for automatically locking the plates to their slot-closing position as set forth.

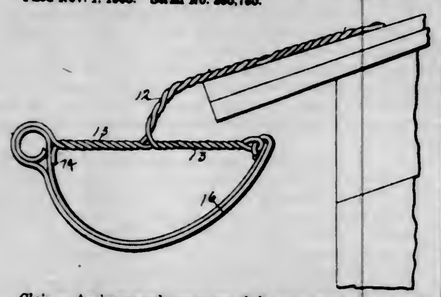
822,458. GRAIN-DOOR FOR CARS. TALBOT LENNOX, Chicago, Ill. Filed Sept. 26, 1904. Serial No. 226,871.



Claim.—1. A grain-door for cars comprising a frame-work of wood, a protective covering upon the outside of said wooden frame-work, said protective covering being bent over to shield the upper edge of the wooden frame and strengthening braces secured over the protective covering, substantially as described.

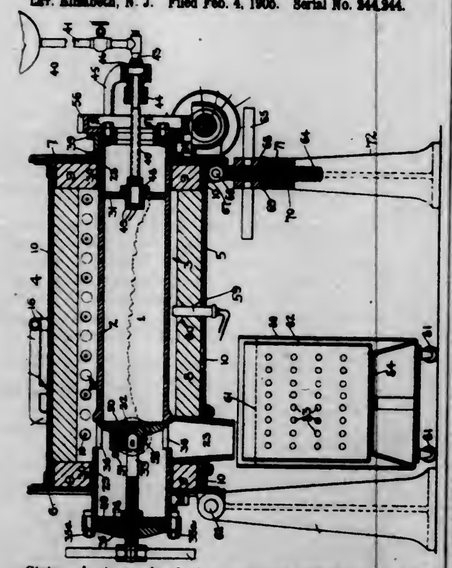
2. A grain-door for cars comprising an inside continuous framework an outside skeleton framework and an interposed protective sheathing.

822,459. **EAVES-TROUGH HANGER.** ALMANZO B. LEONARD, Boone, Iowa, assignor of one-half to John L. Stevens, Boone, Iowa. Filed Nov. 1, 1905. Serial No. 285,785.



Claim.—An improved eaves-trough hanger consisting of a single piece of wire doubled and twisted at its central portion to produce a straight length and cross-head at one end of said length, one end of the wire terminating in a clamp to engage the inside of an eaves-trough and the other end portion bent into a loop projected upward and outward to form a loop and then extended to engage the under side of an eave-trough and provided with a hook turned inward and terminating in a right-angled extension to engage the inside top edge of an eave-trough, substantially as shown and described.

822,460. **CASE-HARDENING APPARATUS.** ADOLPH W. MACHLET, Elizabeth, N. J. Filed Feb. 4, 1905. Serial No. 244,944.



Claim.—1. A case-hardening apparatus comprising a furnace having a single chamber in which the flames originate, a metallic retort wholly within said chamber, and a holder for carburizing fluid connected with said retort; said furnace being provided with supports upon which the retort is so mounted that the flames may envelop the retort throughout its length; the retort being provided with a constricted regulatable vent, and also having a normally closed opening distinct from said vent and through which the case-hardened articles may be removed; and means for effecting agitation of the articles in the retort during the heating thereof.

2. A case-hardening apparatus comprising a furnace having a body and ends, and having a refractory lining for said body and ends, said lining forming a single chamber in which the flames originate, a revoluble metallic retort wholly within said chamber, a holder for carburizing fluid connected with said retort; said furnace being provided with supports upon which the retort is so mounted that the flames may envelop the retort throughout its length, and said retort being removably connected to said supports, and also having a relatively constricted vent, and an opening to permit removal of the articles, said opening having a removable cover and means for rotating said retort.

3. A case-hardening apparatus comprising a furnace having a body and ends, and having a refractory lining for said body and ends, said lining forming a chamber in which the flames originate, a metallic retort wholly within said chamber and having supporting extensions which protrude through said ends, said furnace having exterior supports upon which said extensions are mounted in such a manner that the retort is removable from the furnace, and a holder for carburizing fluid connected to one end of said retort; a cover and a constricted vent being provided at the other end of said retort.

4. A case-hardening apparatus comprising a furnace provided with a refractory lining, a metallic retort mounted wholly within said lining, numerous burners for mixed air and fuel, said burners forming a set extending the entire length of the retort in such a manner as to cause the retort to be heated throughout with evenness independent of the heat of said refractory lining; means being provided for subjecting the articles in the retort to a constant current of carburizing-gas during the heating of the retort and means for effecting rotation of said retort.

5. A case-hardening apparatus comprising a furnace having a body and ends and provided with a refractory lining for said body and ends, a metallic retort within said lining and having extensions which protrude through said ends, a holder for carburizing fluid connected to said retort at one end, a cover for the other end of said retort, and a manually-operable device extending without said furnace for clamping said cover, said clamping device being connected to a head which is mounted exteriorly of said furnace, and which is detachable so that the cover, clamping device and head may be removed from the furnace while the retort remains therein; said retort provided with a constricted vent.

6. A case-hardening apparatus comprising a furnace having a single fire-chamber provided with a refractory lining, a metallic retort within said fire-chamber, a holder for carburizing fluid connected with said retort, and numerous burners for mixed air and fuel; said burners being directed alternately in opposite directions and forming a series extending along said retort and placed at such intervals as to effect substantially uniform heating of the retort throughout its length, and the retort being so sustained in said fire-chamber that the flames may play freely around the top, sides and bottom of the retort, and the latter being provided with a constricted vent.

7. A case-hardening apparatus comprising a furnace having a refractory lining which forms a single fire-chamber, a metallic retort wholly within said fire-chamber, supporting means provided upon the exterior of said furnace for said retort, the latter being removable from said supporting means, numerous burners for mixed air and fuel within said fire-chamber, said retort being supported in such a manner that the flames from said burners may play freely around and beneath said retort between the same and said refractory lining, said retort having an extension protruding through said refractory lining and engaging said supporting means, the retort being removable from the furnace, and having outside of the furnace a removable cover, and also having a constricted vent.

8. A case-hardening apparatus comprising a furnace having a single flame-chamber, a metallic retort wholly within said chamber and having supporting means extending to and revolubly upon supports which are provided upon the exterior of the furnace, said retort being removably mounted at its ends upon said supports, a set of burners for mixed air and fuel within said flame-chamber, the walls of the latter coöperating with said burners to direct the flames with substantial uniformity beneath and around said retort, and a holder for carburizing fluid connected to said retort; constricted means being provided for venting vitiated gas from the retort.

9. A case-hardening apparatus comprising a furnace having a flame-chamber, a retort mounted wholly within said flame-chamber, a holder for carburizing fluid connected to said retort, and power-driven means for effecting agitation of the articles within the retort during the heating thereof; means being provided for securing circulation of the carburizing fluid within the retort during the heating thereof.

10. A case-hardening apparatus comprising a furnace having a flame-chamber, a retort wholly within said flame-chamber, supports exterior to said furnace upon which said retort is mounted for movement, a holder for carburizing fluid connected to said retort so as to supply fluid thereto during the movement of the retort, and means for effecting movement of the retort throughout the carburizing operation; said retort provided with a constricted vent.

11. A case-hardening apparatus comprising a furnace having a flame-chamber, a metallic retort wholly within said chamber, said furnace provided with exterior supports engaged by means extending from said retort, and permitting rotation of the retort, and a holder for carburizing-gas connected to the retort so as to supply the same with carburizing fluid during the rotation of the retort; means being provided for permitting gradual venting of vitiated gas from the retort during the carburizing operation.

12. A case-hardening apparatus comprising a furnace having a single flame-chamber, a set of numerous burners for mixed air and fuel within said flame-chamber, a retort in the form of a barrel within said flame-chamber, said retort provided with extensions and said furnace having exterior means to engage said extensions so as to permit rotation of the retort, and a space being left within said flame-chamber all around the top, sides and bottom of said retort for the circulation of flames, and a holder for carburizing fluid connected to said retort so as to supply the same with carburizing fluid during the rotation of the retort; the latter provided with a constricted vent.

13. A case-hardening apparatus comprising a furnace, a closed metallic retort in the form of a barrel and wholly within the flame-chamber of the furnace and revolubly supported by its ends, the supports for said retort being outside of the flame-chamber, a holder for carburizing-gas connected with said retort, numerous burners for mixed air and fuel in said flame-chamber, and a common exhaust for the flames from said burners; said retort being disposed between said burners and said exhaust, and so mounted that it is surrounded by a flame-space on its top, sides and bottom; said retort being provided with a constricted vent.

14. A case-hardening apparatus comprising a furnace having a flame-chamber, a metallic retort in said chamber, means being provided for revolubly supporting said retort during the heating thereof, and a holder for carburizing fluid connected to said retort so as to supply carburizing fluid to the retort during the rotation thereof; said retort provided with a constricted vent.

15. A case-hardening apparatus comprising a furnace having a body and ends, and having a refractory lining for said body and ends, said lining forming a chamber in which the flames originate, a metallic retort wholly within said chamber and having supporting extensions which protrude through said ends, said furnace having exterior supports upon which said extensions are revolubly mounted, and a holder for carburizing fluid connected to said retort so as to supply carburizing fluid thereto during the rotation and heating of the retort; the latter provided with a constricted vent.

16. In combination, a closed retort formed of metal, means for causing the retort to heat quickly and uniformly throughout, and for maintaining an even temperature of the heated retort, and means connected to the retort at one end thereof for furnishing a constant supply of carburizing-gas under pressure, and a constricted vent being provided at the other end of the retort.

17. In combination, a closed retort formed of metal, means for causing the retort to heat quickly and uniformly throughout, and for maintaining an even temperature of the heated retort, and means connected to the retort at one end thereof for furnishing a constant supply of carburizing-gas under pressure, and a constricted vent being provided at the other end of the retort, and power-driven mechanism for repeatedly agitating the articles in the retort during the carburizing operation.

18. In combination, a furnace having a flame-chamber, a metallic retort mounted wholly within the flame-chamber and having an extension which protrudes from the furnace, a cover for said retort, said cover applied to the retort within the flame-chamber, releasable means exterior to the furnace and supported upon said extension, for retaining said cover, a holder for carburizing fluid connected to said retort and means for moving said retort so as to effect agitation of the articles therein constantly during the heating thereof.

19. In combination, a furnace having a flame-chamber, a metallic retort mounted wholly within the flame-chamber and having at its ends extensions which protrude from the furnace, a cover for one end of said retort, said cover and the other end of said retort being both within said flame-chamber, releasable means exterior to the furnace and supported upon one of said extensions, for retaining said cover, a constricted vent being provided at the covered end of the retort, means upon said furnace revolubly supporting said extensions, power-driven means for effecting slow revolution of the retort, and a holder for compressed carburizing-gas connected to the end of said retort opposite from said cover.

20. In combination, a furnace having a flame-chamber, a retort in the form of a barrel having ends, hollow supports extending from said ends and projecting from the furnace and revolubly mounted exteriorly of the furnace, one of said ends being in the form of a removable cover, and a removable cap closing the end of the extension which is adjacent to said removable cover.

21. In combination, a furnace having a flame-chamber, a retort in the form of a barrel having ends, hollow supports extending from said ends and projecting from the furnace and revolubly mounted exteriorly of the furnace, one of said ends being in the form of a removable cover, and a removable cap closing the end of the extension which is adjacent to said removable cover; said removable cap being attached to said removable cover so that they may be removed together, and said cap being provided with a packing.

22. A case-hardening apparatus comprising a furnace having a single fire-chamber, a closed metallic retort within said fire-chamber, a holder for carburizing-gas connected with said retort, a series of burners for mixed air and gas, said burners being all within said fire-chamber and being constructed to direct flames in alternate directions around the body of said retort throughout its length, the burners being so disposed as to effect substantially uniform heating of the retort throughout its length; the retort being provided with a relatively minute vent, and also with a large normally closed opening distinct from said vent, through which the articles may be removed and means for effecting rotation of said retort.

23. A case-hardening apparatus comprising a furnace, a closed metallic retort in the form of a barrel and wholly within the flame-chamber of the furnace and supported by its ends, a holder for carburizing-gas connected with said retort, a row of oppositely-directed burners for air and fuel all in said flame-chamber and disposed over said retort for the entire length of the latter and so disposed as to heat the retort with substantial evenness throughout its length, and a common exhaust in the bottom of said furnace for the flames from said burners; the retort being provided with a relatively minute vent.

24. A case-hardening apparatus comprising a furnace having a refractory lining forming a single flame-chamber and provided with burners all within said chamber, a metallic retort wholly within said refractory lining, supporting means arranged exteriorly of said refractory lining, said retort being provided with means extending through said refractory lining to rest upon said supporting means, the retort being supported in such a manner as to permit of gradual permanent expansion of the retort independently of the furnace, a cover within said refractory lining for said retort, means extending to the exterior of the furnace for clamping said cover, and a holder for iron-carburizing gas connected with said retort; the later provided with a relatively minute vent.

25. A case-hardening apparatus comprising a furnace having a body and ends and a refractory lining for said body and ends and also provided with burners, a metallic retort wholly within said refractory lining, supporting means arranged at the ends of said furnace exteriorly of said refractory lining, said retort being provided with hollow extensions beyond its ends which extend through said refractory lining, means being provided for engaging one end of the retort to prevent the latter from endwise displacement, and provision being made for accommodating endwise movement of the opposite end of the retort due to the gradual permanent expansion of the metal, a holder for carburizing-gas, a connection extending from said gas-holder through one of the said extensions and communicating with the interior of said retort, a cover at the other end of the retort, and cover-clamping means extending through the other extension to the exterior of the apparatus; the retort being provided with a relatively minute vent.

26. A case-hardening apparatus comprising a furnace, a metallic retort mounted therein, a holder for iron-carburizing gas outside of said furnace but connected with said retort, and means for effecting movement of said retort to agitate its contents during the heating of the retort; the latter being provided with a minute vent.

27. A case-hardening apparatus comprising a furnace provided with rolls, a retort in the form of a barrel and confined wholly within the flame-chamber of said furnace and having hollow cylindrical extensions projecting to the exterior of the furnace and mounted for rotation upon said rolls, and a holder for iron-carburizing gas connected with said retort; the latter provided with a relatively minute vent.

28. A case-hardening apparatus comprising a furnace, a metallic retort mounted therein and having a large opening, a removable cover normally closing said opening, means for effecting mechanical discharge of the incandescent articles from the retort through said

opening, and a holder for iron-carburizing gas connected to said retort; the latter being provided with a relatively minute vent.

29. A case-hardening apparatus comprising a furnace provided with a flame-chamber and a retort, a cover for said retort, means for supplying iron-carburizing gas to and venting it from said retort, and means for tilting said furnace together with said retort to discharge the article from said retort.

30. A case-hardening apparatus comprising a furnace provided with a flame-chamber and a retort, a cover for said retort, means for supplying gas to and venting it from said retort, and means for tilting said furnace together with said retort to discharge the articles from said retort, said furnace having a refractory lining and being provided with a chute through which said articles may discharge; said chute extending through said refractory lining.

31. A case-hardening apparatus comprising a furnace having a flame-chamber and a movable metallic retort; said furnace being provided with supports for said retort, upon which supports the retort is so mounted in the flame-chamber that the flames may envelop the retort; and the latter being provided with a gas-supply and a vent; means for effecting gentle movement of the retort; and means for effecting such a movement of the retort as will discharge the heated articles therefrom.

32. A case-hardening apparatus comprising a furnace provided with a refractory lining and also with a supporting means; a revoluble metallic retort mounted upon said supporting means and thereby wholly supported within said refractory lining so that a flame-space surrounds the retort; said retort being provided with a gas-supply and a vent; means for effecting slow rotation of said retort; and means for tilting the retort.

33. A case-hardening apparatus comprising a furnace, a metallic retort, and means supporting said retort for rotation within said furnace; said furnace being provided with a refractory lining and an outlet for products of combustion, and said retort lying horizontally and being in such relation to said refractory lining and said outlet that the flames of the furnace are caused to circulate around said retort in seeking the outlet; said retort having a gas-supply and a vent, and a discharge from one end of said retort being provided through said refractory lining; means being also provided for tilting said furnace together with said rerort.

34. A case-hardening apparatus comprising a furnace; a metallic retort lying therein; said furnace being provided with supports upon which the opposite ends of the retort are mounted for rotation, and the retort being surrounded by a flame-space and having a cover, a gas-supply, and a vent; supports upon which one end of said furnace is pivoted, and a screw for lifting the other end of said furnace.

35. A case-hardening apparatus comprising a furnace pivotally mounted at one end, means at the other end for tilting the same, a retort within said furnace, a cover for said retort, a discharge-passage from said retort through the wall of the furnace, and means for supplying gas to and venting it from said retort.

36. A case-hardening apparatus comprising a furnace, an inclined retort mounted therein, a discharge-passage being provided from the lower end of said retort and extending through the wall of the said furnace, and means for supplying iron-carburizing gas to and venting it slowly from said retort.

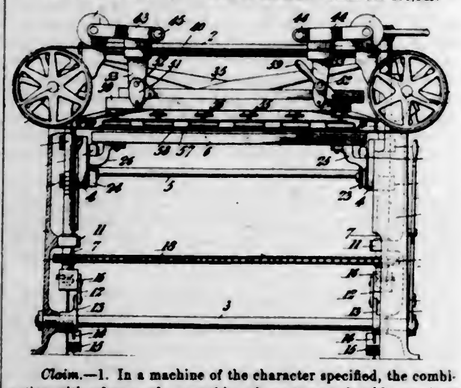
37. A case-hardening apparatus comprising a furnace pivoted at one end, a screw for elevating the other end of the furnace, a retort within said furnace and means for supplying gas to said retort.

38. A case-hardening apparatus comprising a furnace having a refractory lining, a revoluble closed metallic retort mounted within said furnace and surrounded by a flame-space, burners mounted over said retort, an exhaust-opening below the retort for the flames from the burners, means for supplying gas to and venting it from said retort during the revolution; power-driven means for turning said retort; and means for effecting discharge of the hot articles from said retort through said exhaust-opening.

39. A case-hardening apparatus comprising a furnace having a refractory lining and provided with burners, a metallic retort wholly within said refractory lining, bearing-rolls arranged exteriorly of said refractory lining, said retort being provided with cylindrical ends extending through said refractory lining to rest upon said rolls, a cover within said refractory lining for said retort, means extending to the exterior of the furnace for clamping said cover, means for supplying gas to and venting it from said retort, and means for tilting said furnace and retort; the lower cylindrical end of the latter being provided with an aperture for the discharge of articles from the retort, and the furnace having a discharge-opening beneath said aperture.

40. A case-hardening apparatus comprising a furnace having a refractory lining for its body and ends and also provided with burners for burning mixed air and gas, means for regulating the supply of air and gas, a closed horizontal cylindrical metallic retort wholly within said refractory lining, bearing-rolls arranged at the ends of said furnace exteriorly of said refractory lining, said retort being provided with hollow cylindrical extensions at its ends which extend through said refractory lining and whereby the retort is revolubly supported upon said rolls in such a manner that one end of the retort is prevented from moving endwise while the other end thereof may move endwise to accommodate the gradual permanent expansion of the metal, a gas-supply extending through one of said extensions and communicating with the interior of the retort, a cover at the other end of the retort, a discharge through the bottom of the furnace at the cover end of the retort, cover-clamping means extending through the other extension to the exterior of the apparatus, and means for tilting said furnace and retort; said furnace being provided with a pyrometer and with a sight-hole opposite the body of said retort.

822,461. RUBBING AND POLISHING MACHINE. JOHN W. MADDOX, Jamestown, N. Y. Filed Feb. 16, 1904. Serial No. 193,849.



Claim.—1. In a machine of the character specified, the combination with a frame, of a smoothing element, a work-table, a pair of vertically-slidable table-supporting members mounted upon said supporting structure, toggle-links supporting each slidable member, means for controlling the toggle-links to raise and lower the table-supporting members quickly through comparatively long paths and other means for raising and lowering said members independently of the toggle-links more slowly and through shorter paths to attain a finer adjustment of the table.

2. In a machine of the character specified, a suitable supporting structure, a smoothing element, a work-table disposed beneath said smoothing element, vertical sliding members upon which said work-table is adjustably mounted, a pair of toggle-links upon which each of said sliding members is supported, and a counterweight connected with each pair of links.

3. In a machine of the character specified, a suitable supporting structure, a smoothing element, a work-table, supporting devices for said work-table including a pair of threaded shafts arranged for vertical sliding movement in said supporting structure, a screw-threaded adjustable connection between the shafts and the table, and means for raising and lowering said sliding members without rotation thereof.

4. In a machine of the character specified, a suitable supporting structure, a smoothing element, a work-table, a pair of vertical sliding members upon which said work-table is adjustably mounted, a pair of toggle-links for each of said sliding members, and a rock-shaft upon which both pairs of toggle-links are supported, one member of each pair of links being rigidly attached to the shaft.

5. In a machine of the character specified, a supporting-frame, a smoothing element, a work-table, a pair of vertical rotatable threaded shafts, step-bearings for the lower ends of the shafts, means connected to the step-bearings for elevating the same, threaded bearings carried by the table and receiving the threaded portions of the shafts, and means to rotate the shafts in the step-bearings to raise and lower the table upon the shafts.

6. In a machine of the character specified, a supporting-frame, a smoothing element, a rock-bar, a controlling-lever for the rock-bar, toggle-links connected to the bar, a step-bearing carried by the links, a vertical shaft rotatably supported in the step-bearing and having a threaded portion, a work-table having a threaded bearing adjustably receiving the threaded part of the shaft, and means for rotating the shaft in its bearing to raise and lower the work-table.

7. In a machine of the character specified, a supporting-frame, a smoothing element, a vertically-adjustable work-table, a vertically-movable supporting device upon which the work-table is supported, means connected to the supporting device for quickly moving it through a relatively long path, and other means for raising and lowering the work-table more slowly and through a shorter path to obtain a finer adjustment of the work-table.

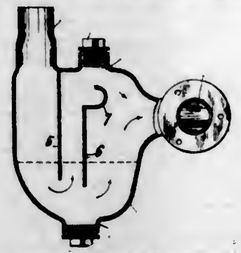
8. In a machine of the character specified, a suitable supporting structure, a work-table, a smoothing-belt having the lower ply thereof arranged for contact with the work mounted on said table, and pressure devices above said belt, said pressure devices including a supporting member extending longitudinally between the plies of the belt, a rock-shaft near each end of the supporting member, an arm rigidly mounted on each shaft and pivotally connected with said supporting member and a pressure-shoe made up of a series of independent shoe-sections yieldably mounted on the under surface of said supporting member in coöperative relation with the lower ply of the belt.

9. In a machine of the character specified, a suitable supporting structure, a work-table, a smoothing-belt having the lower ply thereof adapted for engagement with the work mounted on said table, and a pressure device disposed between the plies of said belt, said pressure device including a longitudinally-disposed supporting member, a pair of rock-shafts disposed transversely of said supporting member, an arm on each shaft pivotally connected with said supporting member and a series of shoe-sections disposed beneath said supporting member in coöperative relation with the lower ply of the belt and each having an independent yieldable connection with said supporting member.

10. In a machine of the character specified, a suitable supporting structure, a work-table, a smoothing-belt having the lower ply thereof adapted to engage the work carried by said table, and pressure devices disposed between the lower and upper plies of said belt and including a longitudinally-arranged supporting member, a series of independent elliptical springs arranged beneath said supporting member and carried thereby and independent shoe-sections carried by said elliptical springs in coöperative relation with the lower ply of the belt, one shoe-section being mounted upon each spring.

11. In a machine of the character specified, the combination with a work-table, of abrading-belts traveling in opposite directions across the table, individual means for pressing the belts into operative relation with respect to the work-table, and means connecting the individual pressing means to maintain one of them active and the other inactive.

822,462. WATER-TRAP. CHARLES MARTINEAU and CAMILLE PRÉVOST, Montreal, Canada. Filed Nov. 29, 1905. Serial No. 289,563.

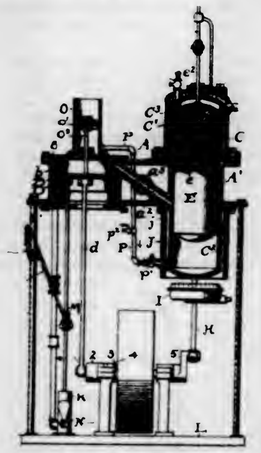


Claim.—1. A water-trap comprising a casing having a depending partition and provided with a baffle-plate having a curved upper end, and provided with an outlet-pipe.

2. In a water-trap, the combination comprising a casing having a depending partition and a baffle-plate provided with a curved upper end and having an outlet-pipe provided with a plurality of flanges, a packing disposed around one of said flanges, a waste-pipe provided with a flange, a washer on the waste-pipe, and bolts adapted to connect the washer with one of the flanges of the outlet-pipe.

822,463. HOT-AIR ENGINE. FRANK W. MORSE and FRANK B. HUBBARD, Warren, Ohio. Filed Sept. 9, 1904. Serial No. 223,840.

Claim.—1. In a hot-air engine, the combination of a working cylinder with an air-heating cylinder, an open passage connecting said cylinders, a plunger in said air-heating cylinder and a piston in said working cylinder and crank connections for the same, a heater for said air-heating cylinder and an auxiliary air-pump connected with said piston, air connections between said pump and air-heating cylinder, a check-valve in said connections, and an air-pressure relief-valve for said air-heating cylinder.



2. In a hot-air engine, a casting with a working cylinder and a portion of an air-heating cylinder embodied therein, separate upper and lower extensions to complete said air-heating cylinder, a water-jacket for the upper extension and a heater-casing for the lower extension, a heater beneath said air-heating cylinder, a piston for said working cylinder and a plunger for said air-heating cylinder, a crank-shaft and balance-wheel thereon and crank connections between said crank-shaft and said piston and said plunger, an auxiliary air-pump for said engine and air connections between said auxiliary air-pump and the lower end of said air-heating cylinder, and means to control the flow of air to said heating-cylinder from said auxiliary pump, and an automatic air-relief valve for the upper end of said air-heating cylinder.

822,464. INCLOSING CASE FOR TELEPHONE SETS. FRANK R. MCBERTY, Evanston, Ill., assignor to Western Electric Company, Chicago, Ill., a Corporation of Illinois. Filed Dec. 10, 1904. Serial No. 236,400.



Claim.—1. The combination with a telephone set, of a containing-case therefor, a hinged door for said case, a trough mounted upon the inner surface of said door and carrying the telephone of the set, a lip for said trough, and a spring adapted when the door is closed to engage said lip to hold the door in such position.

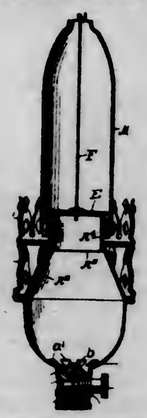
2. The combination with a telephone set, of a containing-case therefor, a door hinged to the base of the case and adapted to be swung outwardly, a trough mounted upon the inner surface of the door and carrying the telephone of the set, a lip for said trough, a spring adapted when the door is closed to engage said lip to hold the

door in such position, and a stop carried by the case adapted to engage said lip when the door is opened to limit the outward movement of said door.

3. The combination with a telephone set, of a containing-case therefor, a door hinged to the base of the case and adapted to be swung outwardly, a cradle mounted upon the inner surface of the door and adapted to eject the telephone of the set, a lip for said cradle, a spring adapted when the door is closed to engage said lip to hold the door in such position, a handle for said door whereby the lip may be disengaged from said spring and the door opened, and a stop carried by the case adapted to limit the outward movement of said door.

4. The cradle adapted to hold the telephone and transmitter and consisting of the door combined with the sheet-metal trough mounted on the inner surface of the door, said trough having a curved lip combined with a spring-catch adapted to engage the same when the door is closed, and a stop adapted to engage said trough when the door is swung open to limit the movement thereof, the engagement of the catch being overcome when power is applied to open the door.

822,465. GAS-BURNER. WILLIAM S. MCLEWEE, Yardley, Pa., assignor to General Manufacturing and Supply Company, Trenton, N. J., a Corporation of New Jersey. Filed July 6, 1905. Serial No. 268,330.



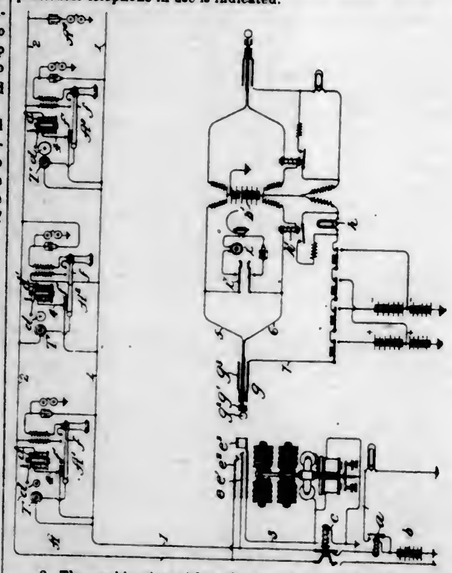
Claim.—1. In a burner, the combination of a body portion, a globe-holder attached to the central part of said body portion, a cylindrical neck on said body portion, a shoulder formed at the junction of the said neck and said body portion, a globe-holder adapted to be supported on the said shoulder, a mantle, and means for supplying gas to the body portion, substantially as described.

2. In a burner having a cylindrical gas-outlet neck, the combination of a mantle, a cap adapted to fit over said cylindrical gas-outlet neck, said cap having a fluted cylindrical body portion, an end portion, and said cap having perforations formed in the said fluted cylindrical body portion and in the said end portion for the free passage of gas to said mantle, substantially as described.

3. In a burner, the combination of a body portion, a mantle, a supply-nozzle attached to said body portion, said nozzle having a central passage-way formed therein, a regulating-screw having a smooth end portion with an aperture formed transversely through the same, a central screw-threaded portion of larger diameter than the said end portion and a portion of still larger diameter forming a shoulder to bear against said nozzle, and said nozzle having an aperture formed therein to receive said regulating-screw, substantially as described.

822,466. SIGNALING SYSTEM FOR PARTY TELEPHONE-LINES. JAMES L. MCQUARRIE, South Orange, N. J., assignor to Western Electric Company, Chicago, Ill., a Corporation of Illinois. Original application filed Jan. 29, 1903, Serial No. 140,969. Divided and this application filed Dec. 10, 1904. Serial No. 236,506.

Claim.—1. The combination with a telephone-line extending from a plurality of substations to a central office, of a distinctive electrically-actuated signal-producing device at each substation, a telephone-switch at each station and means controlled thereby for operatively associating the signal-producing device at that station with the line in the use of the telephone, a source of current, means at the central office for controlling the application of current to the line to operate the signal device of any substation the telephone of which is in use, and a signal-receiving device connected with the line at the central office responsive to said signal-producing device, whereby the particular telephone in use is indicated.



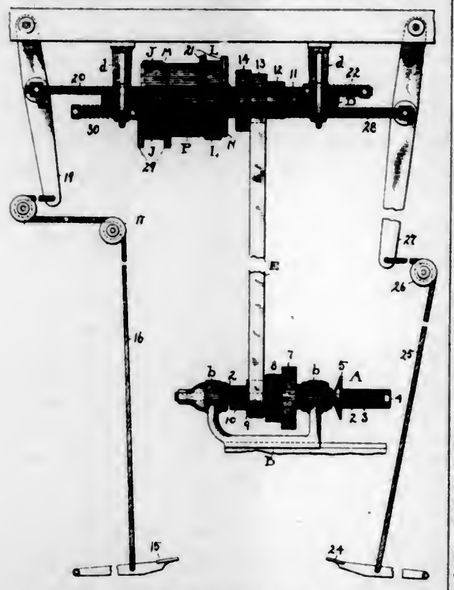
2. The combination with a telephone-line extending from a plurality of substations to a central office, of distinctive audible signal-producing devices, one at each substation, means at each station for transmitting an audible signal over the line; an operator's signal-receiving device associated with the line at the central office responsive to such signals, a source of current at the central office and means at the central office for applying current from said source to the line, to operate the signal device at any busy station, whereby the particular telephone in use is indicated to the central-office operator.

3. The combination with a telephone-line extending from a plurality of substations to a central office, of a number of signal-bells of distinctive tone, one at each substation, a telephone-switch at each station controlling the connection of the signal-bell at that station with the line, a source of current; means at the central office for controlling the application of current to the line to operate the signal-bell at any station the telephone of which is in use, means at each substation for transmitting the signal produced over the line, and a signal-receiving device connected with the line at the central office responsive to said signal, whereby the particular telephone in use is indicated to the central-office operator.

4. The combination with a telephone-line extending from a plurality of substations to a central office, of a number of signal-bells of distinctive tone, one at each substation, a normally open bridge of the line at each substation including the signal-bell thereof, a telephone-switch at each substation controlling said bridge, link conductors at the central office, a connection-switch for uniting said link conductors with the line, a source of current connected with said link conductors adapted upon the closure of said connection-switch to operate the signal-bell of the station whose telephone is in use, a transmitter at the substation for transmitting the signal over the line, and a telephone associated with the link conductors adapted to receive said signal; whereby the particular telephone in use is indicated to the central-office operator.

5. The combination with a telephone-line extending from a plurality of substations to a central office, of distinctive signal-producing devices, one at each substation, an operator's signal-receiving device associated with the line at the central office and responsive to said signal-producing devices, a source of current at the central office, and an operator's plug and plug-circuit at the central office for connecting said source of current and signal-receiving device with the line, the current from said source operating the signal-producing device at a busy station.

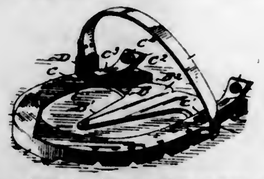
822,467. FRICTION-ARBOR. PHILIP P. NUNGESSER, Cleveland, Ohio, assignor to The Nungesser Electric Battery Co., Cleveland, Ohio, a Corporation of Ohio. Filed Sept. 25, 1905. Serial No. 280,023.



Claim.—1. In means for placing linings in battery-cells, a tubular arbor having a rubber surface and a wall at right angles to said surface at the base of the arbor.

2. In means for lining dry batteries, an arbor comprising a shaft having an exposed end and a rubber-surfaced tube sleeved over said exposed end and a disk-shaped wall at the inner end of said tube fixed on said shaft, in combination with means to rotate said shaft in opposite directions alternately, and means to shift the said mechanism.

822,468. HORSESHOE. RICHARD O'CONNELL, Joliet, Ill. Filed Apr. 2, 1904. Serial No. 201,298.



Claim.—1. A horseshoe having a frog-support with a tongue portion projecting forwardly between the side members of the shoe, the heel portions of said side members being recessed, and adjustable heel-clamps adapted to fit in the said recesses.

2. A horseshoe comprising the shoe proper having the heel portions recessed, detachable heel-clamps adapted to fit in said recesses, means for adjustably locking the heel-clamps in position, and a frog-support connecting the side members adjacent the heel portions and having a forwardly-projecting tongue, the said frog-support having on its upper face a slight depression in alinement with the tongue.

3. A horseshoe having recessed heel portions, the bottom of each recess being serrated and perforated, heel-clamps each having an upwardly-extending rear portion and a forwardly-extending portion serrated on its under face and slotted, said portion being adapted to rest in one of the recesses, means for locking said clamps in an adjusted position, and a frog-support having a forwardly-projecting tongue, said frog-support being carried between the side members of the shoe and below the plane of the upper face of the said shoe.

4. A horseshoe having a frog-support formed between the heel portions and lying below the plane of the upper surface of the said shoe, and a forwardly-projecting tongue carried by the intermediate portion of the frog-support.

822,469. TERMINAL CONNECTOR. JOSEPH OPITZ, New York, N. Y., assignor to Western Electric Company, Chicago, Ill., a Corporation of Illinois. Filed Feb. 23, 1904. Serial No. 194,836.



Claim.—1. In a terminal connector for a wire-spool, the combination with the insulating-head of the spool, of a metal punching passing through a hole in said head, the terminal wire of said spool passing through said hole and being secured to said punching, and an ear formed by the rear end of said punching and secured to the rear face of the insulating-head.

2. In a terminal connector, the combination with the insulating supporting-plate, of a flat metal punching passing through a hole therein, a recess in the rear face of said plate, and an ear formed by the rear end of said punching and forced into said recess.

3. In a terminal connector, the combination with the insulating supporting-plate, of a flat metal punching passing through a hole therein, said hole being of such size as to permit the passage of a conducting-wire therethrough, the shank of the punching being widened where it passes through said hole, to wedge into the same, and an ear formed by the turned-over rear end of said punching, said ear being forced into a recess in the rear face of the supporting-plate.

4. The combination with a wire coil, of an insulating-plate forming one of the heads of the coil-spool, flat metal punchings or terminal pieces passing through round holes in said plate, the terminal wires of said coil also passing through said holes and being secured to said metal punchings, and ears formed by the rear ends of said punchings and secured to the inner face of said plate, the pressure of the coil-winding assisting in holding said ears in place.

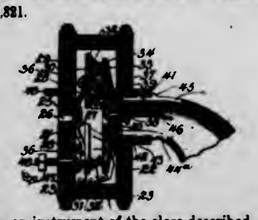
5. The combination with an insulating head-plate for coils, said plate having a round hole transversely through the same, and a circular recess in the rear face of said plate, opening from said transverse hole, of a terminal piece formed of a flat metal punching wedged in said hole from the rear, the rear end of said punching being rounded and bent angularly to form an ear fitting tightly in said circular recess.

6. In a terminal connector, the combination with an insulating supporting-plate, of a flat metal punching passing through a hole therein and extending away from said plate, said hole being of a size to permit the passage of a conducting-wire therethrough, and an ear formed by the rear end of said punching and secured to said supporting-plate.

7. A terminal connector for a wire-spool comprising an insulating-head and a metal punching having an ear secured to the rear of said head, the shank of the punching projecting through a hole in said head.

8. The combination with a wire-spool, of an insulating-head therefor, and a pair of line-terminals for said spool comprising metal punchings passing through holes in said insulating-head and secured at their rear ends to the rear face of said head, the terminal wires of said spool passing through said holes and being secured to said punchings.

822,470. TELEPHONE-TRANSMITTER OR AUDIPHONE-RECEIVER. HERMANN G. PAPE, New York, N. Y. Filed June 16, 1904. Serial No. 212,821.



Claim.—1. In an instrument of the class described, the combination with a casing, of a diaphragm located therein, a supporting-stem mounted in the casing in rear of the diaphragm, a spider secured to the stem and having a plurality of radiating inflexible arms extending continuously outward from the stem and having their free ends in rear of the diaphragm, a plurality of spaced buttons located in advance of the spider, coacting with the diaphragm and each having a rear wall abutted against and secured directly to the free outer extremity of one of the arms, said buttons being thus inflexibly held in rear of the diaphragm.

2. In an instrument of the class described, the combination with separate receivers having electrodes therein, of electric conducting means for securing the receivers together, and connections between the electrodes and the securing means, said means thereby constituting an electrical connection between the electrodes of the receivers.

3. In an instrument of the class described, the combination with separate receivers, each having front and rear walls, of means securing the rear walls together, sound-receiving funnels projecting from the front walls, and contact devices carried respectively by the rear walls and having electrical connections with both receivers.

4. In an instrument of the class described, the combination with separate receivers, each comprising a casing having front and rear walls, a diaphragm located within each casing, and an electrode coacting with each diaphragm, of a funnel projecting from the front wall of each casing, and a bolt connecting the rear walls and constituting an electrical connection between the electrodes.

5. In an instrument of the class described, the combination with a receiver having a cylindrical casing provided with end walls, the peripheries of which project beyond the cylindrical side walls and are provided with spaced annular grooves, of cushioning-rings seated in the grooves and surrounding the same directly at the corners thereof, said cushions projecting beyond the side walls.

6. In an instrument of the class described, the combination with a receiver including sections having overlapped side walls and end walls carried by said side walls, said end walls having annular grooves in their edges, of cushioning-rings seated in the grooves and being located at the corners of the casing.

7. In an instrument of the class described, the combination with a receiver including a casing having a boss projecting from one end and provided with an opening, the walls of said opening having an annular seat, of a funnel having longitudinal slitted walls forming a compressible end that detachably engages in said seat, said end being provided with spaced annular ribs, one of which engages in the seat of the boss, the other constituting a stop that abuts against the end of the boss.

8. In an instrument of the class described, an electrode-button comprising a backing-wall of conducting material having an annular inturned flange, convergently-disposed side walls engaged within the flange of the backing-wall, and granular conducting material located within the button.

9. In an instrument of the class described, an electrode-button comprising a backing-wall of conducting material having an annular inturned flange, convergently-disposed side walls constructed of mica and engaged within the flange of the backing-wall, a ring of felt arranged within the convergently-disposed walls, and granular carbon partially filling the button.

10. In an instrument of the class described, an electrode-button comprising an end wall, said wall including conducting material, convergently-disposed side walls constructed of slitted mica, and means for securing the side walls to the end wall.

11. In an instrument of the class described, an electrode-button comprising an end wall, convergently-disposed side walls connected to the end wall, an annular wall of non-conducting material located within the button and substantially filling the angle formed between the rear and side walls, and conducting material arranged within the non-conducting wall.

12. In an instrument of the class described, an electrode-button comprising an end wall, convergently-disposed side walls of slitted mica secured to the end wall, and conducting and non-conducting material located within the walls.

13. In an instrument of the class described, an electrode-button comprising an end wall, annular convergent side walls connected to the end wall, a ring of felted material located within the annular walls and substantially filling the angle formed by the same and the end wall, and conducting material arranged within the ring.

14. In an instrument of the class described, the combination with a diaphragm, of a plurality of electrodes coacting therewith, and a yielding washer interposed between the diaphragm and electrode and borne against by the same.

15. In an instrument of the class described, the combination with a diaphragm, of a plurality of electrodes, a bridge-piece coacting with the electrodes and secured to the diaphragm, and a yielding washer interposed between the diaphragm and the bridge-piece and borne against by the same.

16. In an instrument of the class described, the combination with a casing having front and rear walls, of a diaphragm and a button-electrode located within said casing, a gudgeon interposed between the button-electrode and the diaphragm, and a funnel having one end fitted within the front wall of the casing, said funnel being provided with a series of radial sound-dissipating openings communicating with the chamber of said funnel at points contiguous to the front of the casing.

17. In an instrument of the class described, a funnel having a sound-passage therethrough, and radially-disposed sound-dissipating openings communicating with the sound-passage.

18. In an instrument of the class described, the combination with a casing, of electrically-operated sound-transmitting means located therein, and a funnel having a sound passage-way communicating within the interior of the casing, said funnel having radially-disposed sound-dissipating openings communicating with the sound passage-way contiguous to the casing.

19. In an instrument of the class described, the combination with a diaphragm, of a plurality of electrodes, a bridge-piece coacting with the electrodes, a yielding washer interposed between the bridge-piece and diaphragm, and a bolt connecting the bridge-piece and diaphragm and passing through the washer, said bolt drawing the diaphragm and bridge-piece toward each other and against the opposite sides of the washer.

20. In an instrument of the class described, the combination with a casing having a front wall provided with an opening, of a diaphragm located within the casing, and a funnel member having a contracted end portion that fits within the opening in the casing and is longitudinally slitted from its inner end, forming a plurality of yielding tongues, said tongues and the wall of the opening being provided, one with an annular groove, and the other with an outstanding rib that fits in said groove, the said slits extending beyond the exterior of the casing and entirely through the funnel, forming a plurality of sound-dissipating openings.

21. In an instrument of the class described, the combination with a casing, of a diaphragm located therein, a plurality of electrode-buttons supported in the casing and having open front ends in spaced relation to the diaphragm, and a bridge-piece secured to the diaphragm and having its rear side closing the open front ends of the electrode-buttons.

822,471. CAP FOR MILK-JARS AND THE LIKE. ROBERT E. PEARCE, Erie, Pa. Filed Sept. 21, 1903. Serial No. 174,047.



Claim.—1. A circular cap for milk-jars having a slot arranged wholly within the periphery and a removable tag formed of the same material as the cap for lifting the cap, said tag being of a width to fit into the slot and having the tag-shoulder *b* abutting against the ends of the slot.

2. A cap for milk-jars having a serpentine-shaped slot, and a tag drawn through said slot.

3. A cap for milk-jars having a serpentine-shaped slot, and a corrugated tag.

4. A cap for milk-jars having a serpentine-shaped slot; and a removable tag having the shoulder *b* abutting against the edges of the slot.

5. A circular cap for milk-jars having a serpentine-shaped slot and a removable corrugated tag for lifting the cap of a width to fit into the slot having the shoulder *b* for abutting the edge of the slot.

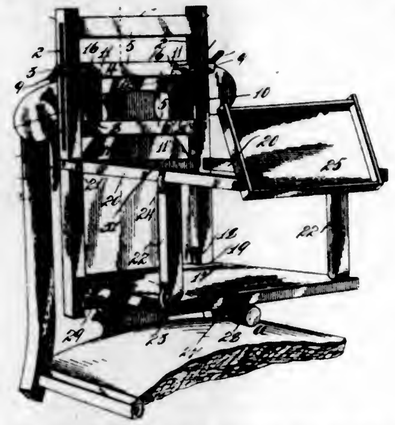
822,472. BABY-CHAIR. ALFRED P. PERKINS, New York, N. Y. Filed Jan. 4, 1905. Serial No. 239,615.

Claim.—1. The combination in a chair of the character described, of vertically-slotted uprights, with a frame movable in and vertically adjustable along said slots and means upon said frame for detachably securing the same upon a support.

2. The combination in a chair of the character described, of a back-frame provided with slotted uprights, of a frame adjustable therein, and hangers pivotally supported upon said frame.

3. The combination, in a chair of the character described, of a frame provided with means for detachably securing it to a support, said means comprising spindles pivotally mounted at each end thereof in said frame, hooks carried by said spindles, a chair adjustably mounted upon said frame, and means for retaining the chair in an adjusted position.

4. In combination with a chair comprising back-uprights provided with vertically-disposed slots, a horizontally-disposed member slidably mounted within said slots, means upon said member for detachably securing the same to a support, said means comprising pivoted spindles provided with hangers, and means upon the seat of the chair for adjusting the position thereof with relation to the back-uprights.



5. In combination with a chair comprising back-uprights provided with vertically-disposed slots, a back-frame provided with spindles entering and traveling along said slots, and means for securely holding said back-uprights and said back-frame in adjusted positions, together with means upon the back-frame for detachably securing it to a support.

6. In combination with a chair comprising back-uprights having vertically-disposed slots, a back-frame having spindles entering said slots, means for securely holding said back-uprights and said back-frame in adjusted positions with relation to each other, means upon the back-frame for detachably securing it to a support, and auxiliary means adapted to hold said back-frame against displacement, substantially as described.

7. A chair of the character described, comprising a frame having means thereon for detachably securing it to a support, a chair back and seat pivotally connected thereto and vertically adjustable with relation to said frame, and eccentric catches or the like carried by said frame, and adapted to impinge upon said chair-back to secure said frame and back against displacement.

8. The combination in a chair of the character described, of a frame having means thereon for detachably securing it to a support, a chair-back frame provided with vertical slots to receive said frame, said slots being provided with inclined recesses, substantially as and for the purpose described.

9. A chair of the character described, comprising a pair of members spaced apart and having between them pivoted hangers, a back-frame having uprights provided with vertical slots in which said members are adapted to travel, a pivoted seat connected to said uprights, arms connected to said uprights, rods pivotally connecting the arms and seat, a screw-spindle secured to the seat, at the bottom thereof, adapted to impinge against the back-frame to adjust the angle of the seat with relation thereto, and means for securing the members against relative displacement in said uprights, substantially as described.

10. In a chair of the character described, the combination with a horizontally-disposed member provided with spindles or the like at its ends, and means thereon for detachably securing it upon a support, of a chair-back vertically adjustable relatively to said member, said back having uprights provided with vertical slots and with recesses at an angle to said slots and opening thereinto for receiving said spindles, substantially as described.

11. The combination in a chair of the character described, of a frame provided with means for detachably securing it to a support, said means comprising spindles pivotally mounted at each end thereof in said frame, hooks carried by said spindles, a chair adjustably mounted upon said frame, and slidable thereon, and means for retaining the chair in an adjusted position.

12. A chair of the character described, provided with an open frame to be detachably secured to a support, said frame having spindles movable therein and carrying hangers, and a chair slidable upon said frame for vertical adjustment thereof, means for retaining the chair in adjusted positions, and independent means for adjusting the angle of the seat of said chair.

13. In a chair of the character described, the combination of a frame provided with horizontally-disposed end members, means for detachably securing the frame to a support, a chair slidably connected to said frame and adapted for vertical adjustment thereon, and a guideway carried by the chair for guiding said end members.

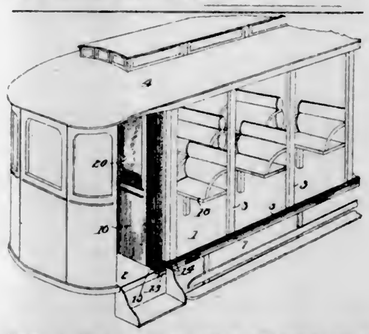
14. In a chair of the character described, the combination of a frame provided with pins or the like at its ends, and pivoted hangers for detachably securing it to a support, a chair slidably connected to said frame and adapted for vertical adjustment thereon, a guideway carried by the chair for receiving said pins, and means for retaining the chair in adjusted position.

822,473. PINLESS CLOTHES-LINE. ROBERT K. PETERS, Rockwood, Tenn. Filed May 29, 1905. Serial No. 262,864.



Claim.—A link for a pinless clothes-line formed from a single length of wire which is bent intermediate of its ends to form a shank made up of spaced spring sides, one end of the shank terminating in a loop having an inturned projection, and the other end of the shank terminating in a loop capable of receiving the projection of another link.

822,474. CAR CONSTRUCTION. ALAMANZA PORTER, Scranton, Pa. Filed July 3, 1905. Serial No. 268,126.



Claim.—1. Upper and lower longitudinal tracks, and door-sections supported for slidable and pivotal movement between said tracks and provided near their free edges with track-engaging rotary members.

2. Longitudinal upper and lower tracks having T-grooves, supporting-blocks slidably engaging said grooves, and door-sections pivotally connected with said supporting-blocks.

3. Longitudinal, grooved upper and lower tracks, grooved side tracks diverging therefrom and communicating with the main tracks through notches in the sides of the latter, supporting members engaging the grooves of the tracks, and door-sections having pintles engaging said supporting members.

4. Upper and lower longitudinal tracks having T-grooves, supporting members engaging said grooves and comprising inner and outer members having connecting-shanks and provided with recesses or bearings, door-sections movable between the surfaces of the tracks and having platles engaging the bearings in the supporting members, and track-engaging rollers near the free edges of the door-sections.

5. In a street-car, longitudinally-disposed upper and lower tracks having grooves therein, divergent track members upon the platforms of the car, and a plurality of door-sections mounted slidably and pivotally between the main track-sections and supported for storage upon the divergent track-sections.

6. The combination with a street-car having upper and lower track-sections, of door-sections, and supporting sections or frames hingedly connected therewith, said sections or frames being slidably supported between the upper and lower track-sections.

7. In a street-car, a movably-supported frame, and a door-section hingedly supported in said frame to swing upon an approximately vertical axis.

8. Upper and lower track-rails, a frame supported for slidable and swinging movement between said rails, and a door-section hingedly supported in said frame.

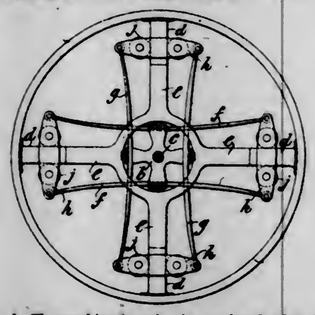
822,475. FLUE-FERRULE. JAMES H. PRICE, Shenandoah, Va. Filed Nov. 25, 1905. Serial No. 289,118.



Claim.—1. The combination with a flue-ferrule having an exterior collar, of the boiler-head having a recess in the inner face thereof surrounding the flue-opening, and adapted to receive the exterior collar of the flue-ferrule and the flue fitting in the ferrule as set forth.

2. The combination with the boiler-head having the flue-opening surrounded by an annular countersink or recess, of a flue-ferrule having an annular exterior collar adapted to fit in the annular recess, the flue fitting in the ferrule, and a clamping-ring arranged upon the inner end of the ferrule, for the purpose set forth.

822,476. SPRING-WHEEL. ALEXANDER G. RAMAGE, Edinburgh, Scotland, assignor of one-half to George Macmillan, Edinburgh, Scotland. Filed Aug. 28, 1905. Serial No. 276,037.

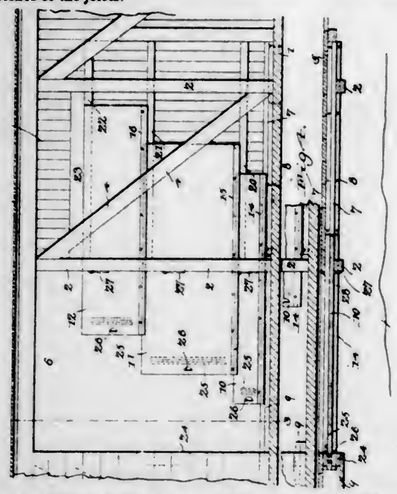


Claim.—1. The combination of a rim, spokes fixed to the rim, a hub, carriages running on the spokes and springs fixed to the hub and to the carriages.

2. The combination of a rim, spokes fixed to the rim, carriages, rollers mounted on the carriages and running on the spokes and springs having their middles fixed to the hub and their ends to the carriages.

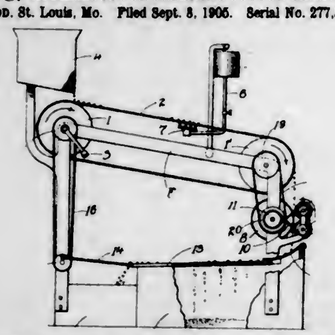
822,477. GRAIN-DOOR FOR FREIGHT-CARS. JOHN ROHRBERG, Sioux City, Iowa, assignor of one-half to Rohrberg Bros., Osmond, Nebr. Filed July 6, 1905. Serial No. 268,441.

Claim.—1. The combination with a freight-car having a doorway and upright joists spaced from the siding of the car and provided with upper and lower series of guide-notches, of a grain-door formed of superposed slidable sections, each section being provided with a longitudinal guide-bar lapping the next below door-section throughout the length of the door and working in corresponding guide-notches of the joists.



2. The combination with a freight-car having a doorway, of a horizontally-slidable grain-door, a fixed track-section at one side of the doorway for the support of the door when open, a guideway at the opposite side of the doorway and in alinement with the track-section and an endwise-shiftable track-section disposed across the doorway to support the door when closed and capable of being slid into the guideway to prevent obstructing the floor of the car when the grain-door is open.

822,478. APPARATUS FOR CLEANING COTTON-SEED. PHILO T. ROOD, St. Louis, Mo. Filed Sept. 8, 1905. Serial No. 277,535.

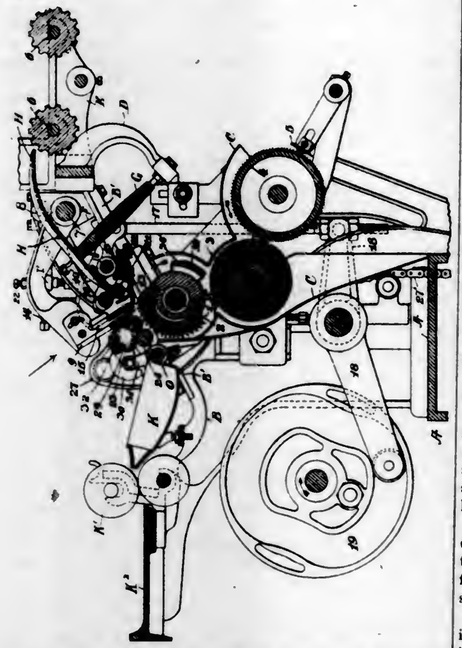


Claim.—1. In a cotton-seed-cleaning apparatus, a suitable hopper, brush-cylinders for the seed, a belt conveyer having an upper inclined lap interposed between the hopper and cylinders, means for singeing the seed in its passage over the conveyer and means for sifting the same after treatment by the brushes, substantially as set forth.

2. A cotton-seed-cleaning apparatus comprising a hopper, brush-cylinders for the seed, a belt conveyer having an upper inclined lap interposed between the hopper and cylinders, means for singeing the lint in the passage of the seed over the conveyer, a sieve for sifting the seed upon its discharge from the brush-cylinders, and suitable receptacles for the cleaned seed and the dust and lint, respectively, substantially as set forth.

822,479. COMBING-MACHINE. ELWIN H. ROONEY, New Bedford, Mass., assignor to The Whitin Machine Works, Whitinsville, Mass., a Corporation of Massachusetts. Filed July 7, 1906. Serial No. 268,682.

Claim.—1. In a cotton-combing machine, the combination with means for nipping the lap and combing the forward ends of the staple, of a segment revolving about a fixed axis and a detaching means supported in a substantially fixed position wherein it is engaged by said segment and coöperates therewith to detach the staple from the lap.



2. In a cotton-combing machine, the combination with means for nipping the lap and combing the forward ends of the staple, of a cylindrical segment revolving about a fixed axis and adapted to encounter said forward ends, a roller normally supported in position to be engaged by said ends and by said cylindrical segment and adapted to coöperate with the latter to detach the staple from the lap, and means for pressing said roller and revolving cylindrical segment relatively toward each other.

3. In a cotton-combing machine, the combination with means for nipping the lap and combing the forward ends of the staple, of a cylindrical detaching half-lap adapted to encounter the free ends of the staple, a roller-support normally fixed with respect to the frame of the machine, a roller resting thereon in position to be engaged by said free ends and by said detaching half-lap, and yielding means acting on said roller and pressing it against its fixed support.

4. In a cotton-combing machine, the combination of means for nipping the lap and combing the projecting ends of the staple, with a detaching-segment adapted to encounter said ends, a detaching-roller having its staple-engaging surface located in fixed position in the path of said segment and adapted to yield under the engagement thereby.

5. A cotton-combing machine, comprising means for nipping the lap and combing the free ends of the staple, a drawing-off roller suitably actuated to effect the piecing of the staple, normally fixed roller-supports and a detaching-roller resting thereon and against said drawing-off roller, in combination with a detaching-segment revolving about a fixed axis and adapted to encounter the said free ends and nip the same against the detaching-roller.

6. In a cotton-combing machine, a drawing-off roller suitably atuated to effect the piecing of the staple, inclined roller-supports rigidly mounted on the frame of the machine and forming a fixed crotch with said drawing-off roller, in combination with a detaching-roller seated in said crotch, and a combing-cylinder comprising a detaching half-lap concentrically mounted thereon adapted to engage the detaching-roller and nip the staple thereagainst.

7. In a cotton-combing machine, a nipper mechanism comprising a stationary cushion-plate, means for combing the staple projecting therefrom, and detaching mechanism comprising a revolving member adapted to encounter the staple and nip it against a detaching-roller, in combination with said detaching-roller having its staple-engaging surface located in a substantially fixed position wherein it is engaged by said revolving member, and means for establishing a nipping pressure between said member and roller.

8. In a cotton-combing machine, a nipper mechanism having a stationary cushion-plate, and a combing-shaft revolving in fixed bearings and having a half-lap and detaching-segment thereon, in combination with a detaching-roller having its staple-engaging surface located in a substantially fixed position free of said half-lap but adapted to be engaged by said segment and by the staple and means acting upon said roller to press it against the said segment.

9. In a cotton-combing machine, stationary means for holding the lap, and means for combing the projecting staple comprising a revolving needle half-lap and a stationary top comb located respectively on opposite sides of said staple.

10. In a cotton-combing machine, mechanism for holding the lap and means for combing the staple projecting therefrom comprising a revolving needle half-lap and a stationary top comb in combination with piecing means located at a fixed distance from said top comb, and means for closing the space between said piecing means and said top comb.

11. In a cotton-combing machine, mechanism for holding the lap and means for combing the staple projecting therefrom comprising a stationary top comb and revolving needle half-lap, located respectively on opposite sides of said staple, in combination with detaching and piecing means, and a clearing-cover mounted on said piecing means in contact with said top comb.

12. In a cotton-combing machine, a nipper mechanism comprising a stationary cushion-plate and means for combing the staple projecting therefrom comprising a revolving needle half-lap and a stationary top comb located respectively on opposite sides of said staple, in combination with means for detaching the staple from the lap and piecing the same with previously-detached staple.

13. In a cotton-combing machine, a revolving combing-cylinder bearing a needle half-lap and a detaching half-lap, in combination with means for holding the end of the lap comprising a nipper-frame adjustably mounted on the frame of the machine and normally secured in a fixed position with respect to said cylinder.

14. In a cotton-combing machine, a combing-cylinder revolving on a fixed axis and bearing a needle half-lap and a detaching half-lap, in combination with means for holding the end of the lap, comprising a nipper-frame mounted in a fixed position with respect to said cylinder, and detaching and piecing means for the combed staple, located at a fixed distance from said nipper-frame.

15. In a cotton-combing machine, a nipper mechanism, and combing means comprising a revolving needle half-lap and a stationary top comb respectively located on opposite sides of the staple projecting therefrom, in combination with a detaching mechanism comprising a revolving segment and a detaching-roller normally mounted in a substantially fixed position wherein it is encountered by said segment.

16. In a combing-machine of the Heilmann type, a nipper mechanism having a stationary cushion-plate and a combing means comprising a revolving needle half-lap and stationary top comb located respectively on opposite sides of the staple projecting from said nipper mechanism, in combination with detaching and piecing mechanism for said staple located in a substantially fixed position and at a fixed distance from said cushion-plate.

17. In a cotton-combing machine, a combing-cylinder comprising a needle half-lap and a detaching half-lap carried thereon, and respectively located at different radial distances from the axis of said cylinder.

18. In a cotton-combing machine, a combing-cylinder comprising a needle half-lap and a detaching-segment carried thereon, the said segment being disposed at a greater radial distance from the axis of said cylinder than said half-lap.

19. In a cotton-combing machine, a combing-shaft, a needle half-lap borne thereon and a detaching segment also borne thereon but at a greater radial distance from the axis thereof than said half-lap and having its forward margin beveled in combination with a detaching-roller mounted on a fixed support in the path of said beveled segment.

20. In a cotton-combing machine, a combing-cylinder comprising a half-lap and a detaching-segment carried thereon at a greater radial distance from the axis of the cylinder than said half-lap and beveled on its forward margin in combination with a detaching-roller mounted on a fixed support free of said half-lap, but in the path of the beveled segment and yielding means holding said roller upon its support.

21. In a cotton-combing machine, a combing-shaft, a needle half-lap borne thereby, a detaching-segment also borne by said shaft at a greater radial distance from the axis thereof than said half-lap, in combination with nipper mechanism comprising a stationary jaw mounted close to the path of said segment, and a movable jaw coöperating with said stationary jaw to hold the lap in the path of said segment.

22. In a cotton-combing machine, a combing-shaft and a needle half-lap borne thereby, a segment also borne by said shaft at a slightly greater radial distance therefrom than said half-lap, in combination with nipper mechanism comprising a stationary jaw adjacent to the path of said segment and a detaching-roller having its staple-engaging surface located in a substantially fixed position wherein it escapes said half-lap but is engaged by the segment and coöperates therewith to draw the staple from the nipper mechanism.

23. In a combing-machine of the Heilmann type, a combing-shaft mounted to rotate in fixed bearings, a needle half-lap borne thereon and a detaching half-lap also borne thereon but at a slightly greater radial distance from the axis thereof than said needle half-lap, in combination with a roller mounted on fixed supports and having its staple-engaging surface normally clear of said needle half-lap but adapted to be encountered by said detaching half-lap.

24. In a cotton-combing machine, a combing-shaft, a needle half-lap borne thereon and a detaching-segment also borne thereon but at a greater radial distance therefrom than said half-lap, in combination with a drawing-off roller, a detaching-roller mounted in constant contact with said drawing-off roller and in position to be clear of said half-lap but to be engaged by said segment and adapted to yield under such engagement.

25. In a cotton-combing machine, means for combing and detaching the staple, in combination with a nipper mechanism for holding the lap comprising a stationary nipper-frame, pivoted means by which said frame is supported, and means for adjusting the same on its pivotal axis toward and from the said detaching means.

26. In a cotton-combing machine, means for combing the staple and detaching the same, in combination with a nipper mechanism having a normally stationary frame, pivotally mounted on the machine-frame, arms on said nipper-frame on opposite sides of an abutment of said machine-frame and oppositely-acting adjusting means carried by said arms and adapted to engage the abutment for adjusting and securing the nipper-frame.

27. In a combing-machine of the Heilmann type, roller-supports for the top detaching-roller consisting of brackets rigidly mounted on the frame of the machine at the opposite ends of said roller and having supporting-surfaces inclined toward the drawing-off roller.

28. In a combing-machine of the Heilmann type, the combination of the frame-supports at the ends of a head, with bracket-blocks rigidly mounted on said supports, laterally-extended bracket-arms on said blocks provided with surfaces adapted to receive the ends of the top detaching-roller.

29. In a cotton-combing machine, roller-supports for the detaching-roller comprising bracket-blocks rigidly secured to the machine-frame, laterally-extending bracket-arms on said blocks at the opposite ends of said roller, and adjustable bearings carried by said arms.

30. In a cotton-combing machine having intermediate frame-supports between the heads thereof, supporting mechanism for the detaching-rollers comprising blocks saddled over said intermediate supports and two lateral bracket-arms on each of said blocks disposed respectively on each side of the frame-supports and providing seats for the gudgeons of said rollers.

31. In a cotton-combing machine, a detaching-roller and supporting-arms holding the gudgeons thereof, in combination with downwardly-impelled stirrupa bearing against said gudgeons in the vertical planes of said arms.

32. In a combing-machine, a vertical frame-support at each end of a combing-head, pedestals on said supports, a stationary nipper-frame secured by its ends to said pedestals and a top comb supported by said pedestals in fixed position with respect to said nipper-frame, wherein it is engaged by the staple while the latter is being detached.

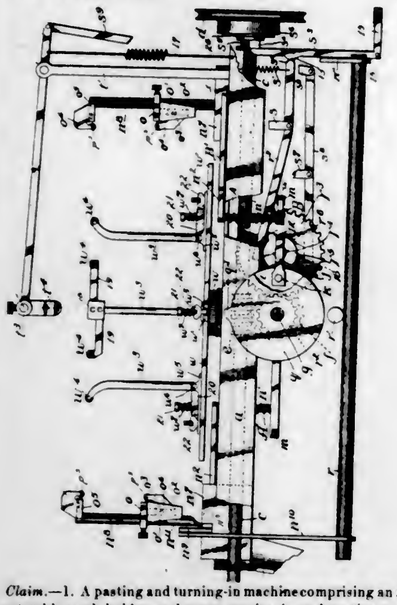
33. In a combing-machine, a nipper mechanism having a stationary cushion-plate, and a stationary top comb adjacent thereto, in combination with a revolving combing-cylinder having a combing half-lap adapted to comb the staple projecting from the nipper mechanism below said stationary top comb and a detaching half-lap radially higher on said cylinder than the combing half-lap adapted to encounter said staple and lift the same into the teeth of said top comb.

34. In a combing-machine of the Heilmann type, a drawing-off roller, fixed roller-supports at the ends thereof and a detaching-roller mounted on said supports in contact with said drawing-off roller, in combination with downwardly-impelled stirrups bearing against the end gudgeons of said detaching-roller in the vertical planes of said roller-supports, a clearing-roller also in contact with said drawing-off roller and means for holding the same, located close to said stirrups.

35. In a combing-machine, a combing-shaft bearing a needle half-lap, a drawing-off roller, and a detaching-roller mounted with its staple-engaging surface in a substantially fixed location and in constant contact with said drawing-off roller, in combination with a detaching member borne by said combing-shaft at a greater relative height thereon than the needle half-lap and driven by said shaft at a surface speed equal to that of the said detaching-roller.

822,480. PAPER PASTING AND TURNING-IN MACHINE.

CHARLES F. ROOT and BYRON O. CONN, Mansfield, Ohio. Filed Nov. 14, 1903. Serial No. 181,210.



Claim.—1. A pasting and turning-in machine comprising an axially-rotatable work-holder, and paper turning-in and pasting mechanism, the turning-in and pasting mechanism comprising a carriage, a plurality of series of turning-in and pasting fingers mounted on the carriage, certain of the series of fingers being stationarily secured to the carriage, the remaining series of fingers being movably supported on the carriage and means for actuating the movably-supported fingers in a direction transversely to the direction of movement of the carriage and during the engagement of the stationary fingers with the work, for turning in and pasting the paper interiorly of the work, and means for bodily moving the turning-in and pasting mechanism toward and from the work.

2. A turning-in and pasting machine comprising a work-holder, a carriage movable toward and from the holder, a frame mounted on the carriage, a plurality of series of turning-in and pasting fingers supported by the frame, one series of fingers movable with respect to the frame, and means secured to the movable series of fingers for raising and lowering the same.

3. A turning-in and pasting machine, comprising a work-holder, and a carriage movable toward and from the holder, a frame mounted on the carriage, a stationary series of turning-in and pasting fingers adjustably secured on the frame, a finger-bar support adjustably mounted on the frame, guides carried by the support, a finger-bar received in the guides, fingers carried by the bar and means engaging the bar for raising and lowering the latter in the guides.

4. A turning-in and pasting machine comprising a work-holder, a carriage movable toward and from the holder, a movable finger-bar supported on the carriage, rods to which the finger-bar is secured, levers secured to the rods, means for actuating the levers at predetermined intervals and fingers carried by the finger-bar and adapted to engage the work and paste it when the bar is operated.

5. A turning-in and pasting machine comprising a work-holder, a carriage movable toward and from the holder, a frame supported on the carriage, bearings in the frame, sliding rods received in the bearings, a finger-bar adjustably secured to the rods, fingers carried by the bar, levers pivotally secured to the frame and to the rods, and means engaging the levers for automatically raising and lowering the finger-bar at predetermined intervals.

6. A turning-in and pasting machine comprising a work-holder, and a carriage movable toward and from the holder, a plurality of finger-bars supported on the carriage, one finger-bar movable relative to the other, means for actuating the movable finger-bar to engage and paste the work while the stationary finger-bar is in engagement with the work.

7. A turning-in and pasting machine comprising a bed having a way formed therein, a work-holder located intermediate the ends of the way, means for oscillating the work-holder, and turning-in and pasting mechanisms simultaneously moving toward and from the work-holder.

8. A turning-in and pasting machine comprising a work-holder, a carriage movable toward and from the holder, turning-in and pasting mechanism mounted on the carriage, levers connected with the mechanism, an arm to which the levers are connected, a bar carried by the arms, a pivotally-supported cross-bar resting upon the bar and means engaging the cross-bar for depressing the bar and the arms in which it is supported.

9. A turning-in and pasting machine comprising a work-holder, a carriage movable toward and from the holder, a frame mounted on the carriage, rods loosely received in the frame, a finger-bar secured to the rods, a depending arm with which the rods are connected, a pivotally-supported cross-rod bearing upon the bar, a driving-shaft, and a cam-wheel on the shaft adapted to engage the cross-rod to operate the finger-bar.

10. A turning-in and pasting machine comprising a work-holder, a carriage movable toward and from the holder, a frame mounted on the carriage, rods slidingly mounted in the frame, a finger-bar carried by the rods, levers pivotally secured intermediate their ends to the frame, one end of each lever pivotally secured to the rods, an arm having an enlarged head, the opposite ends of the levers connected with the head of the arm and means for operating the arm.

11. A turning-in and pasting machine comprising a work-holding mechanism, a carriage, turning-in and pasting mechanism mounted on the carriage, a driving-shaft, a crank-wheel secured thereto, a suitably-journaled arm, a link secured to the arm, a connecting-rod extending between the link and crank-wheel and means connecting the arm and carriage.

12. A turning-in and pasting machine comprising a work-holding mechanism, a carriage movable toward and from the work-holding mechanism, a rod slidingly mounted in the carriage, a bar pivotally secured thereto, a suitably-journaled rod to which the bar is secured, a drive-shaft and means connecting the shaft and journaled rod for oscillating the latter.

13. A turning-in and pasting machine comprising a work-holding mechanism, a carriage movable toward and from the work-holding mechanism, a T-shaped rod slidingly mounted in the carriage, a drive-shaft, a suitably-journaled rod, means connecting the journaled rod and the drive-shaft for imparting an oscillating movement thereto, a connecting-bar secured to the journaled rod and to one arm of the T-shaped rod, and a steadying-bar extending parallel with the connecting-bar, the steadying-bar pivotally secured to the opposite arm of the T-shaped lever and to a suitable support.

14. A turning-in and pasting machine comprising a work-holding mechanism, a carriage movable toward and from the work-holding mechanism, a drive-shaft, a suitably-journaled rod, means connecting the drive-shaft and rod to impart a rotary movement to the latter, means connecting the rod and carriage to transmit a reciprocating movement to the latter and means carried by the rod and engaging the connecting means between the rod and the drive-shaft for giving a resilience to the rod.

15. A turning-in and pasting mechine comprising a work-holding mechanism, a carriage movable toward and from the work-holding mechanism, a drive-shaft, a suitably-journaled rod, means connecting the drive-shaft and rod to impart a rotary movement to the latter, means connecting the rod and carriage to transmit a reciprocating movement to the latter and a spring coiled about the rod, one end of the spring secured to the rod and the opposite end of the spring bearing against the connecting means between the rod and drive-shaft.

16. In a turning-in and pasting machine, the combination with a work-holder, of a longitudinally-recessed finger-bar and a folding and pasting finger mounted thereon, the base of the finger conforming to the shape of and loosely fitting in the recess in the bar, to admit of the adjustment of the finger relatively of the bar and means for securing the finger in its adjusted position longitudinally of the bar.

17. In a turning-in and pasting machine, the combination with a work-holder, of a finger-support, provided with a slot, a collar-bolt received in the slot, a finger mounted upon the support and provided with an aperture, the bolt received in the aperture, and means on the bolt for securing the finger to its support.

18. In a turning-in and pasting machine, the combination with a work-holder, of a finger-support, provided with a slot, a collar-bolt received in the slot, a finger mounted upon the support and provided with an aperture, the bolt received in the aperture, a nut on the end of the bolt and a spring located between the nut and the base of the finger within the aperture.

19. In a turning-in and pasting machine, the combination with a work-holder, of a finger-bar provided with a T-slot, a collar-bolt received in the slot, an apertured finger mounted on the bar, the bolt projecting into the aperture, a shoulder formed in the aperture, a nut receivable on the bolt and a resilient member bearing against the shoulder and the nut to retain the finger yieldingly in position.

20. In a turning-in and pasting machine, the combination with a work-holder, of a finger-bar, a finger mounted on the bar, an extension on the finger lying parallel with one face of the finger-bar, the work received between the finger-bar and finger extension.

21. In a turning-in and pasting machine, the combination with a work-holder and turning-in and pasting mechanism, of means for moving one relatively to the other in order that they may be brought adjacent each other, the turning-in and pasting mechanism provided with a plurality of finger-bars, fingers mounted on each bar, the fingers on one of the bars adapted to engage and operate upon the exterior, and means for actuating the remaining finger-bar to cause the engagement of its fingers with the interior surface of the work.

22. A turning-in and pasting mechanism comprising a work-holder, a turning-in and pasting mechanism, a pivotally-supported work-removing member, independent of the work-holder and actuated subsequently thereto to remove the completed work from the work-holder, a suitably-supported rod connected at one end with the work-removing member, a drive-shaft and means actuated by the drive-shaft for operating the rod.

23. In a turning-in and pasting machine, the combination with a work-holder, of a work-removing member, means carried by the member for grasping and removing the work from the work-holder, a drive-shaft, a cam-wheel actuated by the drive-shaft, a suitably-supported lever connected with the work-removing member and engaged by the cam-wheel to operate the member.

24. In a turning-in and pasting machine, the combination with a work-holder, of a work-removing member independent of the holder, a drive-shaft, a counter-shaft, gearing for transmitting motion from the drive-shaft to the counter-shaft, a cam-carrying wheel on the counter-shaft, a suitably-supported lever, one end of which engages the periphery of the cam-wheel, and means connecting the lever and the work-removing member.

25. In a turning-in and pasting machine, the combination with a work-holder, and means for operating on work supported by the holder, of a work-removing member located apart from the work-holder, resilient means carried by the member, and adapted to grasp and support the work and means for operating the work-removing member toward and from the holder.

26. The combination in a turning-in and pasting machine, of a work-removing member, means carried by the member for releasably grasping the work, a rotating cam-wheel, a pivotally-supported lever, a spring engaging the lever to retain one end thereof in engagement with the wheel, and means connecting the lever and work-removing member.

27. The combination in a turning-in and pasting machine with a work-holder, of a work-removing member comprising a suitably-journaled shaft, a crank secured thereto, operating means secured to the crank for rotating the shaft in opposite directions, and a work-engaging member connected with the shaft for grasping and removing the work from the work-holder.

28. The combination in a turning-in and pasting machine, of a work-removing member comprising standards, a shaft journaled in the standards, a crank secured to the shaft, means connected with

the crank for rocking the shaft and work-engaging fingers connected with the shaft.

29. The combination in a turning-in and pasting machine, of a work-removing member comprising a suitably-journaled shaft, means for rocking the shaft, rods secured to the shaft, a transverse member carried by the rods, and work-engaging fingers mounted on the transverse member.

30. The combination in a turning-in and pasting machine, of a work-removing member comprising a suitably-journaled shaft, means for rocking the shaft alternately in either direction, a transverse member connected and moving with the shaft and work-engaging fingers adjustably mounted on the transverse member.

31. The combination in a turning-in and pasting machine, of a work-removing member comprising a shaft, means for alternately rocking the shaft in opposite directions and resilient flexed fingers adjustably carried by the member.

32. A turning-in and pasting machine, comprising an oscillating work-holder, reciprocating turning-in and pasting mechanisms, a drive-shaft, means connecting the drive-shaft and the holder and turning-in and pasting mechanisms for operating the latter, a power-shaft for actuating the drive-shaft and means operated by the drive-shaft for causing a cessation of movement thereof.

33. A turning-in and pasting machine comprising a work-holder, turning-in and pasting mechanisms, a drive-shaft for actuating the holder and the turning-in and pasting mechanisms, a power-shaft for transmitting motion to the drive-shaft, a clutch on the power-shaft, a counter-shaft, a cam-wheel on the counter-shaft, a suitably-supported lever, one end of which engages the cam-wheel, a pivotally-supported standard engaged by the lever and means controlled by the standard for controlling the drive-shaft.

34. A turning-in and pasting machine comprising a power-shaft, turning-in and pasting mechanism operated by the shaft, a clutch on the shaft, a standard connected with the clutch and normally tending to break the latter, means normally engaging the standard to retain the clutch in locked position and means driven by the power-shaft and engaging the standard-engaging means to temporarily separate the standard-engaging means and the standard to permit the movement of the standard to break the clutch.

35. A turning-in and pasting machine comprising a power-shaft, turning-in and pasting mechanism driven by the shaft, a clutch on the shaft, an automatic member connected with the clutch and normally tending to break the latter, means normally and automatically retained in contact with the clutch-breaking member to retain it in one position, and means driven by the power-shaft for temporarily releasing the last-named means to permit the breaking of the clutch.

36. A turning-in and pasting machine comprising a drive-shaft, turning-in and pasting mechanism actuated by the drive-shaft, a counter-shaft extending parallel with the drive-shaft, a gear on the drive-shaft, a gear on the counter-shaft meshing with that on the drive-shaft and being a multiple thereof, a clutch controlling the transmission of power to the drive-shaft, a work-removing member for grasping and removing the work, and means on the counter-shaft for successively effecting the operation of the work-removing member and of the clutch, respectively.

37. A turning-in and pasting machine comprising a work-holder, turning-in and pasting mechanism movable toward and from the holder, a drive-shaft, a work-removing member, a clutch for causing a cessation of movement of the drive-shaft and means actuated by the drive-shaft for operating the turning-in and pasting mechanisms two or more times prior to the successive operations of the work-removing member and of the clutch.

38. In a turning-in and pasting machine, the combination with a work-holder, and a plurality of laterally-projecting arms carried thereby, of bases adjustably secured longitudinally of the arms, and standards pivotally secured to the bases and projecting therefrom.

39. In a turning-in and pasting machine, the combination with a work-holder provided with a plurality of arms, of bases adjustably secured to the arms, standards pivotally secured to the bases, apertured feet on the standards, studs carried by the bases and projecting through the apertures in the feet and means carried by the studs and engaging the feet to yieldingly retain the feet in engagement with the bases.

40. In a turning-in and pasting machine, the combination with a work-holder, of upright standards carried by the work-holder, a box adjustable longitudinally of the standard and work-engaging arms adjustably secured to the box and projecting at approximate right angles to the standard.

41. In a turning-in and pasting machine, the combination with a work-holder and standards carried thereby, of a retaining means adjustable longitudinally of one of the standards and work-engaging means carried by the retaining means and projecting at an angle to the standard.

42. In a machine of the character set forth, a work-holder, bases adjustably received on the holder and standards yieldingly supported upon the bases.

43. In a machine of the character indicated, a work-holder, pivotally-supported standards mounted upon the holder, feet carried by the standards, and means bearing upon the feet for yieldingly retaining the standards in upright position.

44. In a machine of the character set forth, a work-holder, mechanical means for rotating the holder in one direction, automatic operating tension means for rotating the holder in the opposite direction to its original position, locking means for positively engaging and retaining the holder in each of the positions to which it is rotated, and means for engaging and releasing the locking means to permit the reverse movement of the work-holder.

45. The combination with a pivotally-supported work-holder, of turning-in and pasting mechanism movable toward and from the work-holder, means for partially rotating the holder in one direction, separate means for returning the holder to its original position, and means carried by the first-named holder, rotating means for engaging the work-holder to retard its return means.

46. In a machine of the character indicated, a work-holder, a drive-shaft, means carried by the holder and engaged by the shaft for moving the holder in one direction, a resilient member placed under tension by the primary movement of the holder for moving the holder in the opposite direction and releasable means for temporarily retaining the holder in the position to which it is first moved.

47. In a machine of the character set forth, a work-holder, a shaft upon which the holder is mounted, a coil-spring encircling the shaft, an arm projecting from the shaft, a drive-shaft, means on the drive-shaft for engaging the arm to move the work-holder in one direction and place the coil-spring under tension, releasable means for locking the work-holder in the position to which it has been moved, and means for releasing the locking means to permit the return movement of the holder.

48. In a machine of the character indicated, a work-holder, a washer connected therewith, an arm loosely mounted relative to the washer, means for temporarily connecting the arm to the washer, and means for moving the work-holder.

49. In a machine of the character indicated, a work-holder, a washer connected therewith, an arm loosely mounted with respect to the washer, an arc-shaped inclined plane stationarily located beneath the washer, a pin loosely passing through the washer and engaging the inclined plane, means engaging the arm for rotating the work-holder in one direction, and means for rotating the holder in the opposite direction.

50. The combination with a pivotally-supported work-holder, of a washer connected therewith, a stationary inclined rib located beneath the washer, a pin passing loosely through the washer, the pin adapted to ride upon the inclined rib and project more or less above the washer in accordance with the inclination of the rib, an arm loosely connected with the holder, the arm adapted to engage the pin when the latter is raised above the plane of the washer, means engaging the arm when so engaged for imparting a partial rotation to the work-holder and means for returning the work-holder to normal position.

51. The combination with a pivotally-supported work-holder, of a washer connected therewith, an arm loosely mounted upon the washer, means engaging the arm temporarily for locking the arm to the washer, means engaging the arm for rotating the holder in one direction and means for returning the holder to its normal position.

52. The combination in a work-holder, of a washer connected therewith, an arm loosely mounted on the washer, a stop against which the arm normally rests, a pin against which the arm temporarily rests, means engaging the arm, when the latter is engaged by the pin for rotating the holder in one direction and means for returning the holder to normal position.

53. The combination in a work-holder, of an arm loosely secured thereto, a stop, a resilient member engaging the arm and normally retaining it against the stop, an adjustable pin automatically actuated to temporarily assume a position in advance of the arm, means engaging the arm to force it against the pin for imparting a partial rotation to the holder and means for returning the holder to normal position.

54. The combination with a work-holder, of an arm loosely connected therewith, a movable stop engaged by the arm, a drive-shaft, a pin carried by the shaft and engaging the arm to partially rotate the holder and means for returning the holder to normal position.

55. The combination with a work-holder, of a pair of oppositely-projecting arms loosely connected with the holder, stops against which the arms normally bear, the arms normally moving freely away from the stops, a means automatically and temporarily extending into the path of movement of one of the arms to lock the arm to the holder, means for partially rotating the arm and holder while so locked and means for returning the arm and holder to normal position.

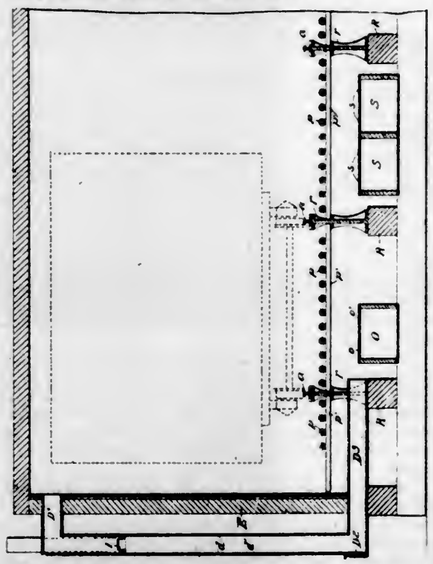
56. The combination in a turning-in and pasting machine, with a recessed rotary work-holder, of a drive-shaft, means on the drive-shaft directly engaging and oscillating the work-holder, a suitably-supported pawl receivable in the recesses in the work-holder and a cam mounted on the drive-shaft and engaging the pawl prior to the oscillation of the work-holder.

57. The combination with a work-holder, of a pair of arms connected therewith, a drive-shaft, a pair of radially-extending pins carried on the shaft, one of the pins adapted to engage and wipe past one of the arms to partially rotate the holder, automatic means for returning the holder to normal position, the remaining pin engaging with the opposite arm to retard the return movement of the holder.

58. In a machine of the character set forth, the combination with a pivotally-supported work-holder, of a driving-shaft, projecting members carried by the work-holding member, means carried by the shaft and engaging one of the projecting members to partially rotate the work-holder in one direction, means for returning the work-holder to its original position and means carried by the drive-shaft and engaged by a projecting member on the work-holder to retard the return movement of the holder.

59. The combination with a work-holder, of a pair of arms loosely connected therewith, means for temporarily locking one of the arms to the holder, a drive-shaft, radially-extending pins carried by the shaft, one of which pins engages and wipes past the locked arm to partially rotate the holder, means for returning the holder to normal position upon the succeeding rotation of the drive-shaft, the remaining pin adapted to engage the remaining arm to retard the return movement of the holder.

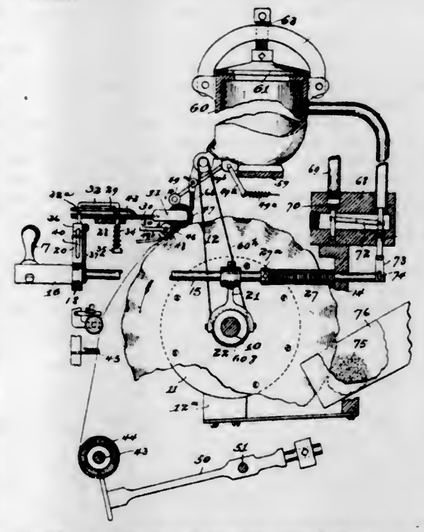
822,481. LUMBER-DRYING KILN. CHARLES D. ROSS, Portland, Oreg. Filed Dec. 29, 1905. Serial No. 293,723.



Claim.—1. In a kiln of the character described, in combination with a drying-chamber, of air-offtakes that communicate with the kiln-chamber at the upper end thereof and which are located externally of the kiln and extend down to a point substantially in line with the bottom of the kiln and project in lateral extensions that discharge in the kiln, said offtakes having supplemental or vent portions near their upper ends for the purposes described.

2. In a kiln of the character described, the combination with the kiln having fresh-air feeds at the bottom, heating devices within the kiln located above the fresh-air inlets and said kiln having outlets in the top of the kiln near the crown thereof; of a casing or chamber located outside of the kiln, each having an entrant portion at the top that connects with the several outlets from the kiln-chamber and having discharge-laterals at the lower end provided with valved outlets for the residuum that may collect therein, said laterals being extended into the kiln under the heating devices therein and to discharge at points near the fresh-air inlets, each of the casings or chambers having a valved offtake near the upper end that discharges to atmosphere, substantially as shown and for the purposes described.

822,482. BALL-WINDING MACHINE. ADDISON T. SAUNDERS and GEORGE H. SAUNDERS, Akron, Ohio. Filed Feb. 11, 1905. Serial No. 245,272.



Claim.—1. A ball-winding machine, comprising a pair of oppositely-disposed ball-tumbling disks rotatably mounted, having their peripheries formed upon alternating convex and concave lines, the concavities of one disk alternating in position with respect to the position of the concavities of the other disk, and means for retaining a ball on said peripheries during the winding operation.

2. A ball-winding machine, comprising a pair of oppositely-disposed ball-tumbling disks rotatably mounted, with their peripheries so formed that adjacent portions thereof have different radii, the portions of one disk with the greatest radii alternating in position with respect to similar portions of the other disk, and means for retaining a ball on said peripheries during the winding operation.

3. In a ball-winding machine, the combination of a pair of ball-tumbling disks rotatably mounted side by side and having radially-undulating peripheries, and means for loosely confining a ball on the peripheries of said disks during the winding operation.

4. In a ball-winding machine, the combination of a pair of oppositely-disposed ball-tumbling disks rotatably mounted, having radially and laterally undulating peripheries, the lateral undulations of said peripheries being parallel, and means for confining a ball on the peripheries of said disks all of said parts being arranged to simultaneously coact whereby the axis of rotation of said ball is constantly changing.

5. In a ball-winding machine, the combination of a pair of ball-tumbling disks rotatably mounted side by side and having radially and laterally undulating peripheries, and means for loosely confining a ball on the peripheries of said disks during the winding operation.

6. In a ball-winding machine, the combination with a pair of ball-tumbling disks rotatably mounted side by side and having radially-undulating peripheries, the convex peripheral portions of one disk being opposite the concave peripheral portions of the other, and means for loosely confining a ball on the peripheries of said disks during the winding operation.

7. In a ball-winding machine, the combination of a pair of ball-tumbling disks rotatably mounted side by side and having laterally-undulating peripheries, the outwardly-bent peripheral portions of one disk being located opposite the inwardly-bent peripheral portions of the other, and means for loosely confining a ball on the peripheries of said disks during the winding operation.

8. In a ball-winding machine, the combination of a pair of ball-tumbling disks rotatably mounted side by side and having radially and laterally undulating peripheries, the convex peripheral portions of one disk being opposite the concave peripheral portions of the other and the outwardly-bent peripheral portions of one disk being located opposite the inwardly-bent peripheral portions of the other, and means for loosely confining a ball on the peripheries of said disks during the winding operation.

9. In a ball-winding machine, the combination of a pair of oppositely-disposed ball-tumbling disks rotatably mounted, having their peripheries formed upon radially-undulating lines, the concavities in the periphery of one disk being alternately arranged in position with respect to the positions of the concavities of the other disk, means for confining a ball on said peripheries during the winding operation, and means automatically set in operation by the ball when it has reached its maximum diameter for stopping the rotation of said disks.

10. In a ball-winding machine, the combination of a pair of ball-winding disks rotatably mounted side by side, means for loosely confining a ball on the peripheries thereof during the winding operation, gage mechanism engaged by the ball as it approaches its maximum diameter, and means for stopping the rotation of said disks normally restrained but released by said gage mechanism when the ball reaches its maximum diameter.

11. In a ball-winding machine, the combination of a pair of clutch-controlled ball-winding disks rotatably mounted side by side, means for loosely confining a ball on the peripheries thereof during the winding operation, caliper-gage mechanism engaged by the ball as it approaches its maximum diameter, a clutch to control the rotation of said disks and means for separating the members of said clutch normally restrained but released by said caliper-gage mechanism when the ball reaches its maximum diameter.

12. In a ball-winding machine, the combination with a driving-shaft, of a pair of clutch-controlled ball-winding disks loosely mounted thereon side by side, means for loosely confining a ball on the peripheries of said disks during the winding operation, a clutch to control the rotation of said disks, a clutch-shifting mechanism including a spring normally tending to separate the members of the clutch, catch mechanism adapted to maintain such clutch members in engagement in opposition to said spring, and gage mechanism engaged by the ball during the winding operation and serving to release said catch mechanism when the ball has reached its maximum diameter.

13. In a ball-winding machine, the combination with a driving-shaft, of a pair of clutch-controlled ball-winding disks loosely mounted thereon side by side, means for loosely confining a ball on the peripheries of said disks during the winding operation, a clutch to control the rotation of said disks a clutch-shifting mechanism including a spring normally tending to separate the members of the clutch, catch mechanism adapted to maintain said clutch members in engagement in opposition to said spring, a pair of pivoted caliper-arms engaging the ball as it approaches its maximum diameter, and a spring-actuated catch-tripping device restrained by said caliper-arms during the winding of the ball but permitted to act when the ball has reached its maximum diameter.

14. In a ball-winding machine, the combination with a driving-shaft, of a pair of clutch-controlled ball-winding disks mounted thereon side by side, the peripheries of said disks being formed upon undulating lines, the concavities in the periphery of one disk alternating in position with respect to the position of the concavities of the other disk, a clutch to operate said disks, means for confining a ball on the peripheries of said disks during the winding operation, and means for engaging and disengaging the members of the clutch to start and stop the rotation of said disks respectively.

15. In a ball-winding machine, the combination with a driving-shaft, of a pair of clutch-controlled ball-winding disks loosely mounted thereon side by side, means for loosely confining a ball on the peripheries of said disks during the winding operation, a clutch to control said disks a rock-shaft disposed transversely of said driving-shaft, a clutch-shifting device carried by said rock-shaft, and a handle on said rock-shaft whereby said clutch may be shifted.

16. In a ball-winding machine, the combination with a pair of ball-tumbling disks rotatably mounted side by side, and means for loosely confining a ball on the peripheries thereof during the winding operation, of means for applying an adhesive substance to said ball as it is wound.

17. In a ball-winding machine, the combination with a pair of ball-tumbling disks rotatably mounted side by side, and means for loosely confining a ball on the peripheries thereof during the winding operation, of a superposed tank having a discharge-nozzle overhanging said ball and adapted to supply an adhesive substance thereto as the ball is wound.

18. In a ball-winding machine, the combination with a pair of ball-tumbling disks rotatably mounted side by side, and means for loosely confining a ball on the peripheries thereof during the winding operation, of a superposed tank having a discharge-nozzle overhanging said ball and adapted to supply an adhesive substance thereto, and means for introducing fluid-pressure to the interior of said tank to promote the flow of said adhesive substance.

19. In a ball-winding machine, the combination with a pair of ball-tumbling disks rotatably mounted side by side, and means for loosely confining a ball on the peripheries thereof during the winding operation, of a superposed tank having a discharge-nozzle overhanging said ball and adapted to supply an adhesive substance thereto, means for introducing fluid-pressure to the interior of said tank to promote the flow of said adhesive substance, and mechanism for stopping the rotation of said disks and simultaneously cutting off the supply of fluid-pressure to said tank.

20. In a ball-winding machine, the combination with a pair of ball-tumbling disks rotatably mounted side by side, and means for loosely confining a ball on the peripheries thereof during the winding operation, of a superposed tank having a discharge-nozzle overhanging said ball and adapted to supply an adhesive substance thereto, means for introducing fluid-pressure to the interior of said tank to promote the flow of said adhesive substance, and mechanism serving to automatically stop the rotation of said disks when the ball has been wound to predetermined size and to simultaneously cut off the supply of fluid-pressure to said tank.

21. In a ball-winding machine, the combination with a pair of ball-tumbling disks rotatably mounted side by side, and means for loosely confining a ball on the peripheries thereof during the winding operation, of a superposed tank having a discharge-nozzle overhanging said ball and adapted to supply an adhesive substance thereto, means for introducing fluid-pressure to the interior of said tank to promote the flow of said adhesive substance, and mechanism serving to automatically stop the rotation of said disks when the ball has been wound to predetermined size and to simultaneously cut off the supply of fluid-pressure to said tank and vent the latter to the atmosphere.

22. In a ball-winding machine, the combination with a pair of ball-tumbling disks rotatably mounted side by side, of means for loosely confining a ball on the peripheries of said disks during the winding operation, means for supplying an adhesive substance to the ball as it is tumbled on said disks, and means for stripping and cleaning the peripheries of said disks during the operation of the machine of surplus adhesive substance collecting thereon.

23. In a ball-winding machine, the combination with a pair of ball-tumbling disks rotatably mounted side by side and having toothed peripheries, of means for loosely confining a ball on the peripheries of said disks during the winding operation, means for supplying an adhesive substance to the ball as it is tumbled on said disks, and means for stripping and cleaning the peripheries of said disks during the operation of the machine of surplus adhesive substance collecting thereon.

24. In a ball-winding machine, the combination with a pair of ball-tumbling disks rotatably mounted side by side, of means for loosely confining a ball on the peripheries thereof during the winding operation comprising one or more rollers so disposed as to lightly contact the surface of the ball during the winding and mounted to have endwise play to accommodate lateral play of the ball as it is wound.

25. In a ball-winding machine, the combination with a pair of ball-tumbling disks rotatably mounted side by side, of means for loosely confining a ball on the peripheries thereof during the winding operation comprising a roller suitably mounted to yieldingly contact the surface of the ball under spring-pressure during the winding thereof and to accommodate lateral play of the ball as it is wound.

26. In a ball-winding machine, the combination with a pair of ball-tumbling disks rotatably mounted side by side and having laterally-undulating peripheries, of means for loosely confining a ball on the peripheries of said disks during the winding operation comprising a roller suitably mounted to yieldingly contact the surface of the ball during the winding thereof and to accommodate lateral play of the ball as it is wound.

27. In a ball-winding machine, the combination with a pair of ball-tumbling disks rotatably mounted side by side, and having radially and laterally undulating peripheries, of means for loosely confining a ball on the peripheries of said disks during the winding operation comprising a roller suitably mounted to yieldingly contact the surface of the ball during the winding thereof and to accommodate lateral play of the ball as it is wound.

28. In a ball-winding machine, the combination with a pair of ball-tumbling disks rotatably mounted side by side, and means for loosely confining a ball on the peripheries thereof during the winding operation, of a superposed tank having a discharge-duct leading to a position above the ball and adapted to supply an adhesive substance thereto, and a mechanical feed device interposed in said discharge-duct.

29. In a ball-winding machine, the combination with a pair of ball-tumbling disks rotatably mounted side by side, and means for loosely confining a ball on the peripheries thereof during the winding operation, of a superposed tank having a discharge-duct leading to a position above the ball and adapted to supply an adhesive substance thereto, means for introducing fluid-pressure to the interior of said tank above the adhesive substance, and a mechanical feed device interposed in said discharge-duct.

30. In a ball-winding machine, the combination with a pair of ball-tumbling disks rotatably mounted side by side, and means for loosely confining a ball on the peripheries thereof during the winding operation, of a superposed tank having a discharge-nozzle overhanging said ball and adapted to supply an adhesive substance thereto, and a worm feed mechanism interposed in and constituting a part of said discharge-nozzle.

31. In a ball-winding machine, the combination with a pair of ball-tumbling disks rotatably mounted side by side, and means for loosely confining a ball on the peripheries thereof during the winding operation, of a superposed tank having a discharge-nozzle overhanging said ball and adapted to supply an adhesive substance thereto, means for introducing fluid-pressure to the interior of said tank above said adhesive substance, and a worm feed mechanism interposed in and constituting a part of said discharge-nozzle.

32. A ball-winding machine, comprising a pair of oppositely-disposed ball-tumbling disks rotatably mounted, with their peripheries formed upon laterally-parallel curvilinear lines, and means for retaining a ball on said peripheries during the winding operation.

33. A ball-winding machine, comprising a pair of oppositely-disposed ball-tumbling disks rotatably mounted side by side, undulating peripheries on said disks to alternately tumble a ball confined thereon, whereby its axis of rotation will constantly alter, and means for confining a ball on said disks.

34. In a ball-winding machine, the combination of a pair of oppositely-disposed ball-tumbling disks rotatably mounted, having their peripheries formed upon radially-undulating lines, means for confining a ball on said peripheries during the winding operation, and means automatically set in operation by the ball when it has reached its maximum diameter for stopping the rotation of said disks.

822,483. **CAR-COUPLING.** CHARLES SCHLARED, Columbus, Ohio, assignor of one-half to Moses H. Nell and one-fourth to Joseph Webb, Columbus, Ohio. Filed Jan. 27, 1906. Serial No. 298,168.



Claim.—1. In a car-coupling, the combination of a draw-head having a locking-pin hole provided with a seat in its side, a knuckle pivoted in said draw-head and having an inner arm, and a locking-pin adapted to be raised and coöperate with the knuckle while in locked position to be moved laterally to rest on said seat, said pin also constructed to permit the inner arm of the knuckle to swing against it to unseat it from said seat, and also provided with a shoulder to rest on said inner arm to sustain the pin in elevated position while the knuckle is in its open or uncoupled position.

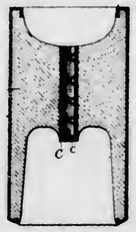
2. In a car-coupling, the combination of a draw-head having a locking-pin hole provided with a shoulder or seat, a knuckle pivoted in said draw-head and having an inner arm, a locking-pin having a laterally-projecting foot adapted to coöperate with the inner arm of the knuckle in coupled position when the pin is raised to be drawn toward said seat, said pin having a recessed shank forming a seat to rest on the inner arm of the knuckle when the latter is turned to uncoupled position, said pin being adapted to be moved laterally off the said seat by the knuckle when the latter is turned toward uncoupling position.

822,484. **GAS-COCK.** JACOB SCHMITT, Newark, N. J. Filed Feb. 16, 1906. Serial No. 301,340.



Claim.—A lock for gas-cocks comprising a cup-shaped member to surround the cock, having a central perforation in the bottom, and cut-away portions at opposed points in its walls, said member also having opposed slots in the edges of the central perforation to lock the gas-cock, and a spring within the cup-shaped member to force the bottom of the member in contact with the finger-piece of the gas-cock.

822,485. **RECORD-ROLL FOR PHONOGRAPHS.** CYRUS C. SHIGLEY, Hart, and SHERMAN H. PAXTON, Grand Rapids, Mich. Filed Oct. 26, 1904. Serial No. 230,140.



Claim.—1. In a phonograph-record, the combination of an outer shell of celluloid or other suitable material, having inturned flanges at its ends; a corrugated mandrel or shaft sleeve having slits therein, said slitted portions being deflected inwardly, a suitable plastic material molded or cast within said shell about said sleeve; and a mandrel-shaft D, all coacting for the purpose specified.

2. In a phonographic record, the combination of an outer shell of celluloid or other suitable material; a corrugated mandrel or shaft sleeve having slits therein, said slitted portions being deflected inwardly; a suitable plastic material molded or cast within said shell about said sleeve; and a mandrel-shaft D, all coacting for the purpose specified.

3. In a phonograph-record, the combination of an outer shell of celluloid or other suitable material, having inturned flanges at its ends; a mandrel or shaft sleeve having slits therein, said slitted portions being deflected inwardly; a suitable plastic material molded or cast within said shell about said sleeve; and a mandrel-shaft D, all coacting for the purpose specified.

4. In a phonograph-record, the combination of an outer shell of celluloid or other suitable material; a mandrel or shaft sleeve having slits therein, said slitted portions being deflected inwardly; a suitable plastic material molded or cast within said shell about said sleeve; and a mandrel-shaft D, all coacting for the purpose specified.

5. In a phonograph-record, the combination of an outer shell of celluloid or other suitable material, having inturned flanges at its ends; a corrugated mandrel or shaft sleeve; a suitable plastic material molded or cast within said shell about said sleeve; and a mandrel-shaft D, all coacting for the purpose specified.

6. In a phonograph-record, the combination of an outer shell of celluloid or other suitable material; a corrugated mandrel or shaft sleeve; a suitable plastic material molded or cast within said shell about said sleeve; and a mandrel-shaft D, all coacting for the purpose specified.

7. In a phonograph-record, the combination of an outer shell of celluloid or other suitable material, having inturned flanges at its

ends; a mandrel or shaft sleeve; a suitable plastic material molded or cast within said shell about said sleeve; and a mandrel-shaft D, all coacting for the purpose specified.

8. In a phonograph-record, the combination of an outer shell of celluloid or other suitable material; a mandrel or shaft sleeve; a suitable plastic material molded or cast within said shell about said sleeve; and a mandrel-shaft, all coacting for the purpose specified.

9. In a phonographic record, the combination of an outer shell of celluloid or other suitable material, having inturned flanges at its ends; a corrugated mandrel or shaft sleeve having slits therein, said slitted portions being deflected inwardly; and a suitable plastic material molded or cast within said shell about said sleeve, for the purpose specified.

10. In a phonographic record, the combination of an outer shell of celluloid or other suitable material; a corrugated mandrel or shaft sleeve having slits therein, said slitted portions being deflected inwardly; and a suitable plastic material molded or cast within said shell about said sleeve, for the purpose specified.

11. In a phonographic record, the combination of an outer shell of celluloid or other suitable material, having inturned flanges at its ends; a mandrel or shaft sleeve having slits therein, said slitted portions being deflected inwardly; and a suitable plastic material molded or cast within said shell about said sleeve, for the purpose specified.

12. In a phonographic record, the combination of an outer shell of celluloid or other suitable material; a mandrel or shaft sleeve having slits therein, said slitted portions being deflected inwardly; and a suitable plastic material molded or cast within said shell about said sleeve, for the purpose specified.

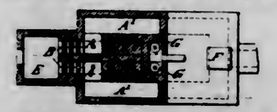
13. In a phonographic record, the combination of an outer shell of celluloid or other suitable material, having inturned flanges at its ends; a corrugated mandrel or shaft sleeve; and a suitable plastic material molded or cast within said shell about said sleeve, for the purpose specified.

14. In a phonographic record, the combination of an outer shell of celluloid or other suitable material; a corrugated mandrel or shaft sleeve; and a suitable plastic material molded or cast within said shell about said sleeve, for the purpose specified.

15. In a phonographic record, the combination of an outer shell of celluloid or other suitable material, having inturned flanges at its ends; a mandrel or shaft sleeve; and a suitable plastic material molded or cast within said shell about said sleeve, for the purpose specified.

16. In a phonographic record, the combination of an outer shell of celluloid or other suitable material; a mandrel or shaft sleeve; and a suitable plastic material molded or cast within said shell about said sleeve, for the purpose specified.

822,486. **REGENERATIVE GAS-FURNACE.** FREDERICK SIEMENS, Dresden, Germany. Filed Jan. 18, 1904. Serial No. 189,694.



Claim.—1. In regenerative gas-furnaces, gas-regenerative flues having no direct communication with the chimney and no communication with the air-flues except near their furnace end, the said gas-flues being flared outwardly toward the furnace and constructed with a brickwork recuperator heated by direct radiation from the furnace, substantially as described.

2. In regenerative gas-furnaces, the combination of gas-regenerative flues which are flared or coned outwardly toward the furnace and have no direct communication with the chimney, and an air passage or passages connecting the furnace and the air-regenerators and contiguous with the said gas-regenerative flues, the said air-passage and gas-flues communicating with each other only toward the furnace end, substantially as described.

3. In regenerative gas-furnaces, the combination of outwardly-flaring gas-regenerative flues having no direct communication with the chimney, an air passage or passages contiguous with said gas-flues and communicating with them near their furnace ends, and a mixing-chamber interposed between the gas and air flues and the furnace-chamber, and narrowing toward the latter, substantially as described.

4. In regenerative gas-furnaces, in combination with gas-regenerative flues such as herein described, pipes or flues placed in the chimney-flue and leading to a chamber communicating by a valve with the gas-regenerative flue, substantially as described.

5. In regenerative gas-furnaces, in combination with gas-regenerative flues such as herein described, pipes or flues in the cooler parts of the air-regenerators and leading to the gas-regenerative flues, substantially as described.

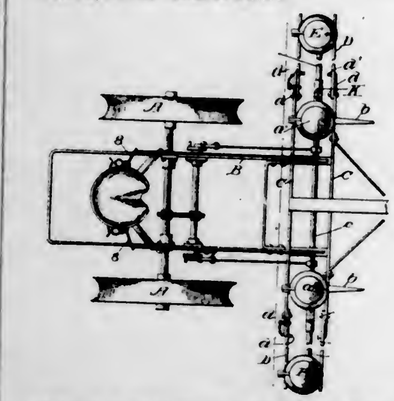
822,487. **REINFORCING-TUBE.** WILLIAM H. SMITH, Buffalo, N. Y., assignor to John R. Keim, New York, N. Y. Filed June 5, 1905. Serial No. 263,717.



Claim.—1. A new article of manufacture comprising a main tube and a reinforcement arranged within part of said main tube, the latter being reduced on opposite sides of the reinforcement, substantially as set forth.

2. A new article of manufacture comprising a main tube and a reinforcing-tube arranged within part of said main tube, the latter being tapered or drawn to a smaller diameter on opposite sides of said reinforcing-tube forming shoulders in the same between which the reinforcing-tube is held against endwise movement in the main tube, substantially as set forth.

822,488. **INDICATOR FOR CHECK-ROWERS.** EDWARD STEINMANN, Bettendorf, Iowa, and HERMAN SCHIELKE, Cleveland, Ohio. Filed July 14, 1905. Serial No. 269,684.

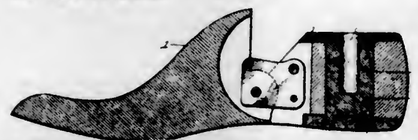


Claim.—1. A check-rower comprising a hopper-frame; hoppers supported thereby; a longitudinal rock-shaft journaled therein; an alining extension-frame at each end of said hopper-frame; magazines secured thereto; an independent extension rock-shaft journaled in each of said extension-frames and alining with said first-mentioned rock-shaft; devices for detachably connecting said extension-shafts to each end of said first-mentioned rock-shaft in the transverse plane of the hinge of said extensions, said connecting devices consisting of suitable squared sleeves on the ends of said main and extension rock-shafts, and a rectangular sliding block mounted in one of said sleeves and normally pressed toward the other of said sleeves; and means for intermittently imparting the motion of the extension-shafts to said magazines independent of each other.

2. A check-rower comprising a hopper-frame; hoppers supported thereby; a longitudinal rock-shaft journaled therein; an alining extension-frame hinged at each end of said hopper-frame; a magazine carried by each extension-frame having a downwardly-extending discharge-pipe; two valves therein one open when the other is closed; independent rock-shafts parallel to said discharge-pipes each having arms projecting therefrom, and links connecting said arms to said valves; and means actuated by the rock-shaft journaled in the hopper-frame for operating the shafts paralleling said discharge-pipes independent of each other.

3. A check-rower comprising a hopper-frame; hoppers supported thereby; a rock-shaft actuating said hoppers; an alining extension-frame hinged at each end of said hopper-frame; a magazine carried by each extension-frame having a downwardly-extending discharge-pipe; two valves therein one open when the other is closed; independent rock-shafts journaled in said extension-frames alining and detachably connected to the opposite ends of said first-mentioned rock-shaft; a rock-shaft parallel to each discharge-pipe having arms projecting therefrom and links connecting said arms to said valves; and means actuated by the rock-shafts journaled in the hopper-frame for operating the shafts paralleling said discharge-pipes independent of each other.

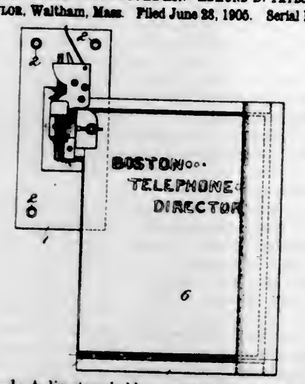
822,489. **NAIL-CLENCHING DEVICE FOR THE HEELS OF WOODEN LASTS.** JOHN O. STIVERS, Denver, Colo. Filed Sept. 23, 1905. Serial No. 279,788.



Claim.—1. In a nail-clenching device for the heels of wooden lasts, the combination of a last having a heel provided with a vertical aperture through it, with a base-plate fitting the ankle end of said heel and containing a centering-aperture, adapted to center the heel in a heel-nailing machine, a metal column cast integrally with said base-plate and arranged to fit snugly in and to extend through the aperture in said heel, projecting pins on the opposite sides of said metal column arranged to project above the surface of said heel, a stepped rabbeted surface in the heel of said last, a nail-clenching plate fitted to said stepped rabbeted surface, and to rest on said plate and containing apertures through which said pins project, and arranged and adapted and rigidly riveted to the top of said metal column by said pins, and to clamp said wooden heel between it and said base-plate, as set forth.

2. In a nail-clenching device for the heels of wooden lasts, the combination of last having a heel provided with a central aperture extending through it, the metal centering base-plate fitted to the top of the heel of said last, provided with a central column of metal projecting from the inside of said base-plate into and through said aperture in the heel of said last, and a centering or gaging aperture extending into the plate and its column, and adapted to gage the position of said heel in a heel-nailing machine, and having pin portions projecting above the top of said column and the nail-clenching heel-plate fitted to the heel portion of said last and riveted to the top of said column by the projecting pin portions of said column, whereby said nail-clenching heel-plate is rigidly supported by said column and base-plate, and said heel and base plates are clamped to said wooden heel, as set forth.

822,490. **DIRECTORY-HOLDER.** EDMUND B. TAYLOR and FRED A. TAYLOR, Waltham, Mass. Filed June 26, 1905. Serial No. 267,371.



Claim.—1. A directory-holder, comprising means for engaging the back of the book, a vertical pivotal support therefor, intervening means permitting the book to be swung angularly to said vertical pivot, and an automatic catch detachably locking the directory and said back-engaging means when turned to said angular position.

2. A directory-holder, comprising means for engaging the back of the book, a vertical pivotal support therefor, intervening means permitting the book to be swung angularly to said vertical pivot, an automatic catch detachably locking the directory and said back-engaging means when turned to said angular position, and means for varying said angular position.

3. A directory-holder, comprising means for engaging the back of the book, a vertical pivotal support therefor, intervening means permitting the book to be swung angularly to said vertical pivot, an automatic catch detachably locking the directory and said back-engaging means when turned to said angular position, and a leaf-spreading device for holding the book open.

4. A directory-holder, comprising means for engaging the back of the book, a vertical pivotal support therefor, intervening means permitting the book to be swung angularly to said vertical pivot, an automatic catch detachably locking the directory and said back-engaging means when turned to said angular position, and a spring-actuated leaf-spreading device, arranged to snap into engagement with the open book upon being moved in one direction and to become inoperative when moved in the opposite direction.

5. A directory-holder, comprising means for clamping the back of the book, and pivoted supporting means therefor, the latter swinging in a horizontal direction and the former swinging therein in a vertical direction, and a yielding catch for automatically holding said back-holder in a raised position when swung forward at an angle to said supporting means, said catch projecting beyond said supporting means in position to be engaged readily by the operator for tripping the back-holder and permitting the same to fall downwardly.

6. A directory-holder, comprising a base, a bracket supported thereon having a socket member extending in a vertical plane and pivoted horizontally thereon, means permitting said socket member to have a limited swinging movement, a supporting device pivotally mounted on said socket member for swinging horizontally coaxially thereof, and a back-support horizontally pivoted in said supporting device to swing toward and from said bracket, said back-support having a clamp for rigidly clamping the back of a directory or the like.

7. A directory-holder, comprising a bracket having an upwardly-extending post, a supporting device slidingly removable from and pivotally mounted on said post, and clamping means for engaging the back of the directory, pivotally mounted in said supporting device for swinging toward and from said post.

8. A directory-holder comprising means for clamping the back of the book, a vertical pivotal support therefor, intervening means permitting the book to be swung angularly to said vertical pivot, and a lateral receptacle to hold the book when not in use, said receptacle being open at its side, and provided at its edge remote from said clamping means with a movable flap for embracing the front edges of the book.

822,491. **ELASTIC-FLUID GENERATOR.** JOHN C. TONKIN, Glassboro, N. J., assignor, by direct and mesne assignments, of one-half to Thomas J. Ferrell, Glassboro, N. J. Filed Mar. 3, 1905. Serial No. 248,215.

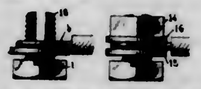


Claim.—1. In a device of the class described, the combination with a combustion-chamber, having a constantly-increasing cross-section, of burners therein adapted to direct their heat toward the larger end and of means for spraying water radially toward the heat, said means disposed circumferentially within the combustion-chamber and in close proximity to the walls thereof, all substantially as shown and described.

2. In a device of the class described, the combination with an inclosing combustion-chamber adapted to contain heat, of a coiled tube secured therein, an inlet thereto and perforated outlets therefrom; of a burner or burners, detachably connected to the said combustion-chamber at one end thereof and entering therein registering with the interior of the said coiled tube, and an outlet from the said chamber, all substantially as shown and described.

3. In a device of the class described, the combination with a combustion-chamber provided with a non-conducting covering, of tubes secured therein, an inlet leading to and connecting with the said tubes, perforated outlets leading from the said tubes, a burner detachably connected to the said combustion-chamber and adapted to deliver its heat on the water issuing from the perforations in the said tubes, suitable feed-pipes leading to the said burner and means of control thereof, all substantially as shown and described.

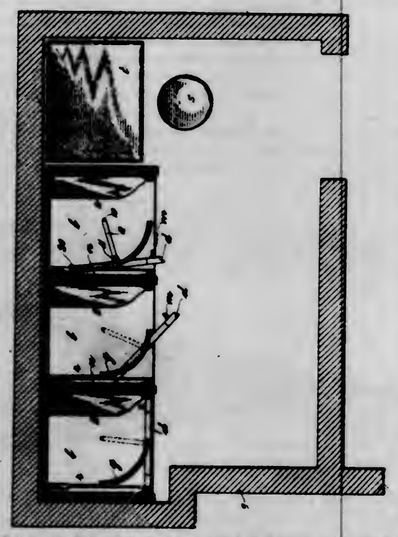
822,492. BRIDGING-CONNECTOR FOR TELEPHONE-LINES. MAURICE C. TURNER, New York, N. Y., assignor to New York Telephone Company, New York, N. Y., a Corporation of New York. Filed Dec. 22, 1904. Serial No. 237,940.



Claim.—1. In a connecting device, the combination with an axially-slotted bolt having a nut-like head, of a nut working upon the bolt, the proportions of the parts being such that the outer angles or points of the head and nut lie approximately in the surface of the same sphere, substantially as set forth.

2. In a connecting device, the combination with a bolt having at one end a head approximately equal in diameter to the length of the bolt and also having an axial slot extending from the threaded end nearly to the headed end, of two washers encircling the bolt for holding an interposed conductor, and a nut, of approximately the same size as the head, working upon the free end of the bolt.

822,493. TELEPHONE-BOOTH. MAURICE C. TURNER, New York, N. Y., assignor to New York Telephone Company, New York, N. Y., a Corporation of New York. Filed Aug. 10, 1905. Serial No. 273,512.



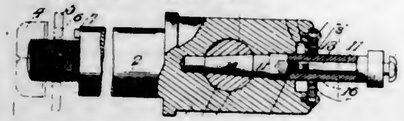
Claim.—1. A booth or inclosure combined with a door therefor, said door swinging in a horizontal plane, means attached to the floor for guiding the inner edge of said door to move in a line parallel with the side wall and means attached to the ceiling for guiding a point intermediate the vertical edges of said door to move in the arc of a circle.

2. A booth having a door swinging in a horizontal plane, combined with a fixed right-line guide or track parallel with a side wall, a suitable device fixed to said door engaging said guide, a fixed, arc-shaped guide or track and a suitable device rigidly connecting a point in said door intermediate the vertical edges thereof with said guide.

3. A booth having a door swinging in a horizontal plane, combined with means for causing the inner edge of the door to move in a right line, consisting of a guide or track and a device fixed to the door near its inner vertical edge engaging said guide; means for causing a point intermediate the vertical edges to move in the arc of a circle consisting of an arc-shaped groove or track and a device fixed to the door intermediate its vertical edges engaging said arc-shaped guide.

4. A booth having a door swinging in a horizontal plane, combined with a fixed groove or track located in a line parallel with a side wall, a pin fixed to the door near its inner vertical edge traveling in said groove or track, an arc-shaped guide or track and a device fixed to the door at its edge intermediate the vertical edges traveling in said groove or track.

822,494. MEANS FOR REMOVABLY CONNECTING MOVING PARTS OF MACHINERY. HENRY H. URMSTON, Jackson, Tenn. Filed Sept. 28, 1905. Serial No. 280,510.



Claim.—1. In a connecting device, the combination, with a member having an interior bore and a transverse intersecting opening, and a perforated plate closing one end of the bore, of a second member lying in the intersecting opening and perforated transversely at a point corresponding with the bore, a key adapted to enter the bore in the first-mentioned member through the perforated plate and to engage in the transverse perforation of the second member, a plunger movable within the key, and means carried by the plunger for engaging the plate.

2. In a connecting device, the combination, with a member having an interior bore and a transverse intersecting opening, and a perforated plate closing one end of the bore, of a second member lying in the intersecting opening and provided with a transverse tapering perforation at a point corresponding with the bore, a tapering key adapted to enter the bore in the first-mentioned member through the perforated plate and to engage in the transverse perforation of the second member, a plunger movable within the key, and means carried by the plunger for engaging the plate.

3. In a connecting device, the combination, with a member having an interior bore and a transverse intersecting opening, and a perforated plate closing one end of the bore, of a second member lying in the intersecting opening and provided with a transverse tapering perforation at a point corresponding with the bore, a tapering key adapted to enter the bore in the first-mentioned member through the perforated plate and to engage in the transverse perforation of the second member, a plunger movable within the key, and means carried by the plunger for engaging the plate.

4. In a connecting device, the combination, with a member having an interior bore and a transverse intersecting opening, and a perforated slotted plate closing one end of the bore, of a second member lying in the intersecting opening and provided with a transverse tapering perforation at a point corresponding with the bore, a tapering key adapted to enter the bore in the first-mentioned member through the slotted plate and to engage in the transverse perforation of the second member, a plunger movable within the key, a pin extending transversely of the plunger beyond the key, and a spring bearing upon the plunger.

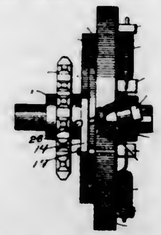
5. In a connecting device, the combination, with a member having an interior bore and a transverse intersecting opening, and a perforated slotted plate closing one end of the bore, of a second member lying in the intersecting opening and provided with a transverse tapering perforation at a point corresponding with the bore, a slotted tapering key adapted to enter the bore in the first-mentioned member through the slotted plate and to engage in the transverse perforation of the second member, a plunger movable within the key, a pin extending transversely of the plunger beyond the key through the slot, and a spring bearing upon the plunger.

6. In a device of the character described, the combination, with the wrist-plate, a wrist-pin secured thereto and provided with an interior chamber, a perforated slotted blade closing one end of the chamber, and a reach-rod intersecting the chamber and provided with a transverse tapering perforation at a point corresponding thereto, of a tapering key adapted to enter the chamber through the perforated plate and to engage with its end in the perforation of the reach-rod, a plunger arranged within the key, a pin extending transversely of the plunger beyond the key, and a spring within the key bearing upon the plunger.

7. In a device of the character described, the combination, with the wrist-plate, a wrist-pin secured thereto and provided with an interior chamber and a transverse opening, a perforated radially-slotted plate closing one end of the chamber, and a reach-rod lying in the opening and intersecting the chamber and provided with a transverse tapering perforation at a point corresponding thereto, of a slotted tapering key adapted to enter the chamber through the perforated plate and to engage with its end in the perforation of the reach-rod, a plunger arranged within the key, a pin extending transversely of the plunger beyond the key through the slot, and a spring within the key bearing upon the plunger.

8. In a device of the character described, the combination, with the wrist-plate, a wrist-pin secured thereto and provided with an interior chamber and a transverse intersecting opening, a centrally-perforated and radially-slotted plate closing one end of the chamber with lugs arranged on the inner side of the plate at the side of the slot, and a reach-rod slidable in the transverse opening of the wrist-pin and provided at a point corresponding to the longitudinal chamber with a taper perforation, of a transversely-slotted tapering key longitudinally bored and adapted to enter the chamber through the perforated plate and to engage with its end in the perforation in the reach-rod, a plunger slidably arranged within the key, a pin fixed in the plunger and extending transversely beyond the walls of the key through the slot therein, said pin being capable of passing through the slot in the plate but engaging the plate when turned on the axis of the key, and a coiled spring in the key-bore bearing against the plunger.

822,495. GOVERNOR. ARTHUR C. VAN HOUWELING, Pella, Iowa. Filed Apr. 13, 1905. Serial No. 255,455.



Claim.—1. In a governor, the combination of two clamping members spaced apart and capable of rotation relative to each other, a member to be clamped arranged between them, a spring tending to rotate one of the clamping members relative to the other and means actuated by a rotary movement of one of the clamping members in one direction, relative to the other for forcing them toward each other, said means also permitting the clamping members to release from the member to be clamped when one of the clamping members is rotated relative to the other in opposition to the pull of the spring.

2. A central disk, two outer disks, a spring attached to the outer disks tending to rotate them relative to each other, and a clamping device connected to the outer disks, in one position forcing them toward each other and when one outer disk is moved in opposition to the pull of the spring permitting the outer disks to release from the central one.

3. The combination of a shaft, two clamping members loosely mounted on the shaft, means for rotating one of said clamping members, rocking clamping-rods connecting the said members, in one position holding them toward each other, a member to be clamped fixed to the shaft between said clamping members, and springs normally holding the clamping members in position in engagement with the member to be clamped.

4. A central disk, two outer disks, a spring attached to the two outer disks tending to rotate them in opposite directions and rocking clamping-rods connecting the outer disks, said rods operated by the springs to force the outer disks toward each other.

5. A central disk, two outer disks, a spring attached to the two outer disks tending to rotate them in opposite directions, and adjustable rocking clamping-rods connecting the outer disks, said rods operated by the springs to force the outer disks toward each other.

6. The combination of a shaft, two disks loosely mounted on the shaft, means for rotating one of said disks, springs connecting said disks, a disk between the aforesaid ones and fixed to the shaft and two clamping-rods connecting the outer disks, said rods normally inclined by the springs to position where they will force the outer disks into engagement with the central one.

7. The combination with a shaft, a disk loosely mounted on the shaft, means by which the disk may be rotated, a second disk loosely mounted on the shaft, contractible coil-springs disposed circumferentially and connected with both disks, a central disk fixed to the shaft and clamping-rods connecting the two outer disks and capable of rocking movement relative to each, said rods normally moved by the springs to position at an acute angle relative to a line parallel with the shaft and in that position holding the two outer disks into engagement with the central one and when moved to position parallel with the shaft permitting the outer disks to free themselves from the central one.

8. The combination of a shaft, a hub loosely mounted on the shaft and formed with a disk and a sprocket-wheel thereon, said disk formed with extensions having slots near its outer ends, a central disk fixed to the shaft and formed with a hub, an outer disk loosely mounted on said hub to engage the central one and formed with a brake-rim and also formed with lugs to project away from the central disk, arms fixed to the first-mentioned disk, contractible coil-springs fixed to the said arms and to the said lugs, two rocking clamping-bars each having a cross-head, said cross-heads capable of passing through the slots in the extensions of the first disk and of forming a rocking connection with said first disk, a rocker attached to each rod and having a rocking connection with the last-mentioned disk and a nut on each rod adjustably holding the rocker in position.

822,496. FRICTION-CLUTCH. EDWARD H. WAUGH, Chicago, Ill., assignor, by mesne assignments, to The Double-Friction Coil Clutch Company, a Corporation of Illinois. Filed July 5, 1904. Serial No. 215,245.



Claim.—1. In a friction-clutch the combination of driving and driven parts, a coil-spring connected at one end to one of said parts and having a free end, a loosely-mounted friction member, means whereby the free end of said coil-spring and said friction member engage with each other, a coöperating friction member connected to rotate with one of said driving and driven parts, but capable of movement longitudinally thereof, and means for effecting frictional engagement between said members.

2. In a friction-clutch, a driving and a driven part, a coil-spring connected at one end to one of said parts and carrying a pin at its free end, a loosely-mounted friction-disk, means carried thereby, against which said pin detachably bears, a coöperating friction-plate connected to rotate with one of said parts but capable of movement longitudinally thereof, and a toggle mechanism for effecting frictional engagement between said disks.

3. In a friction-clutch, a driving member and a driven member, a coil-spring connected at one end to one of said members and carrying a pin at the free end thereof, a freely-mounted friction-disk, a latch-dog carried thereby and against which said pin detachably bears, whereby said disk is rotated with said coil, and means for retarding the rotative movement of said disk, comprising a coöperating friction-disk connected to rotate with but capable of movement along the other of said members, and a toggle mechanism for effecting frictional engagement between said disks.

4. In a friction-clutch, a driving and a driven member, a coil-spring connected at one end to one of said members and carrying a pin at its free end, a friction-disk connected to rotate with the other of said members, a toggle-yoke, toggle-levers connected thereto and having the free ends thereof arranged to engage said disk, means for rocking said levers, and a coöperating friction-disk freely rotatable and carrying a yielding latch-dog for detachable engagement with said pin.

5. In a friction-clutch, a driving member and a driven member, a coil connected at one end to one of said members and carrying a pin at its free end, a loosely-mounted friction disk or plate, a yieldingly-mounted latch-dog carried by said friction-plate and arranged for detachable engagement with said pin, whereby said coil and plate normally revolve in unison, means for retarding the rotation of said plate, including a coöperating friction plate or disk, means for normally maintaining said disks or plates yieldingly out of contacting relation, a toggle mechanism for effecting frictional engagement be-

tween said plates or disks, and means for actuating said toggle mechanism.

6. In a friction-clutch, a drive-shaft and a driven shaft, a drum mounted upon one of said shafts to rotate therewith, a spring coiled upon said drum and connected at one end to the other of said shafts, the free end of said spring carrying a pin, a loosely-sleeved friction disk or plate having means against which said pin freely bears, a cooperating friction disk or plate mounted to rotate with said drum, a toggle mechanism for effecting frictional engagement between said disks or plates, and means for operating said toggle mechanism.

7. In a friction-clutch, a driving member and a driven member, a drum mounted to rotate with one of said members, a spring coiled upon said drum and connected at one end with the other of said members, a toggle-yoke, friction devices interposed between said yoke and drum, toggle-levers carried by said yoke for effecting frictional engagement between said friction devices, detachable pin-and-bolt connections between said friction devices and the free end of said spring, and means for actuating said toggle-levers.

8. In a friction-clutch, a driving member and a driven member, a drum mounted to rotate with one of said members, a spring coiled upon said drum and connected at one end to the other of said members, a toggle-yoke, frictional engaging devices interposed between said yoke and drum, detachable pin-and-bolt connections between said friction devices and the free end of said spring, toggle-levers carried by said yoke, means for operating said levers to effect frictional engagement between said devices, and means for relatively adjusting said yoke and drum.

9. In a friction-clutch, a driving-shaft, a hub mounted thereon to rotate therewith, a driven shaft, a drum mounted thereon to rotate therewith, a spring coiled upon said drum and connected at one end to said hub, a pin in the free end of said spring, a friction disk or plate mounted to freely rotate, a detachable latch-dog yieldingly carried thereby against which said pin bears, a cooperating friction disk or plate mounted upon said driven shaft to rotate therewith but capable of movement longitudinally thereof, a yoke sleeved upon said driven shaft to rotate therewith, toggle-levers carried by said yoke, a collar also mounted upon to rotate with said driven shaft, links pivotally connecting said collar and levers, and means for sliding said collar upon said shaft to operate said levers.

10. In a friction-clutch, a driving part and a part to be driven, a coil-spring connected at one end to one of said parts and having its other end free, a loosely-mounted friction member, means for detachably engaging said friction member and the free end of said coil-spring, a cooperating friction member mounted to rotate with one or the other of said driving or driven parts, and means for effecting the frictional engagement of said friction members.

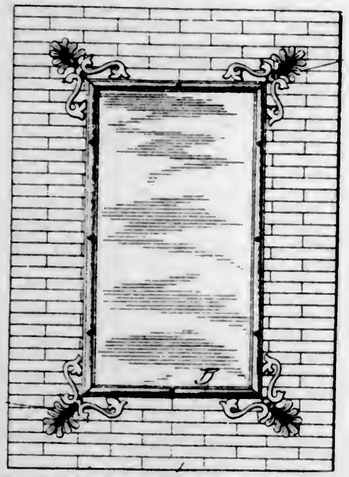
11. In a friction-clutch, a driving part and a part to be driven, one of said parts provided with a drum, a spring coiled upon said drum and having one end connected to one of said parts and the other end free, a friction member mounted to rotate with the other of said parts, a loosely-mounted cooperating friction member, means for detachably engaging said last-mentioned friction member and the free end of said coil, and means for effecting the frictional engagement of said friction members.

12. In a friction-clutch, a driving and a driven member, a coil-spring connected at one end to one of said members and having its other end free, a drum mounted to rotate with the other of said members and upon which said spring is coiled, a friction member mounted to rotate with said drum, a cooperating friction member loosely mounted, means for detachably engaging said loosely-mounted friction member and the free end of said coil, a toggle-yoke, toggle-levers pivotally mounted thereon and having their free ends arranged when said levers are rocked to engage the rotating friction member to move the same into frictional engagement with the cooperating loosely-mounted friction member, and means for shifting said toggle-yoke.

13. In a friction-clutch, a driving and a driven member, a coil-spring connected at one end to rotate with one of said members and having its other end free, a friction-disk mounted to rotate with the other of said members, but capable of longitudinal movement thereon, a cooperating loosely-mounted friction-disk, means for detachably engaging said loosely-mounted friction-disk with the free end of said spring, and a toggle mechanism for shifting said first-mentioned friction-disk into frictional surface contact with the loosely-mounted friction-disk.

14. In a friction-clutch, a driving member and a driven member, one of said members having a drum mounted to rotate therewith, a spring coiled upon said drum and connected at one end to the other of said members, and having its other end free, means for detachably engaging the free end of said coiled spring whereby said spring is coiled upon said drum to exert a gripping action thereon, and a friction mechanism for controlling said detachable engaging means.

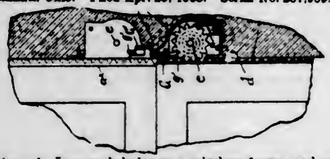
822,497. FIREBOARD. SAMUEL F. WILLIAMSON, Philadelphia, Pa. Filed Dec. 2, 1905. Serial No. 290,029.



Claim.—1. A fireboard composed of slate or like material, having its exposed face ornamented to represent different materials and a border or frame secured to the board at the line of juncture, substantially as described.

2. A fireboard composed of a single piece of slate or like material, having an ornamental center to represent one material, a tiling effect surrounding the ornamental center and a metal frame secured to the face of the board at the line of juncture, substantially as described.

822,498. SASH LOCK AND BALANCE. WILLIAM A. WINTER, Cincinnati, Ohio. Filed Apr. 29, 1905. Serial No. 257,989.

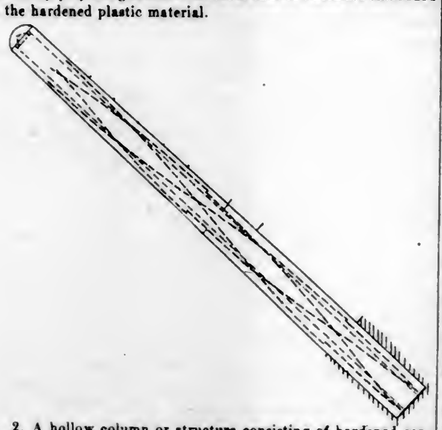


Claim.—1. In a sash-balance a window frame and sashes, the window-frame having recesses adjacent to the ways for the sashes, vertical racks secured to the sashes, housings secured in the recesses having slotted front flat faces flush with the ways in the frame and having flat sides, pinions journaled upon the shafts between the sides of the housing and projecting through the slot in the front face of the housing to engage the racks, levers journaled at one end upon the interior of the front flat face and having pawls projecting inward to engage the teeth of the pinions, one of said levers projecting in front of the frame-molding and the other and longer lever projecting through the parting-strip and said molding for locking or freeing the pinions and coiled springs secured to the housings and engaging the shafts of the pinions.

2. In a sash-balance the combination of a housing adapted to be secured to a window-frame, a pinion journaled in the housing and having an axle centrally slotted at one end, a coiled spring one of whose ends is seated in the said slot and the other end of which is secured to the housing, a lever journaled in the housing and adapted to be brought into engagement with the pinion, and a rack to engage the teeth of the pinion and adapted to be secured to the sash of a window.

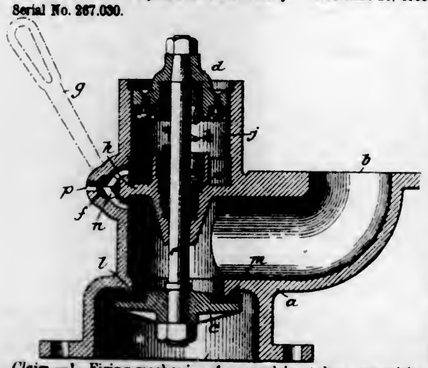
822,499. CONCRETE STRUCTURE. JOHN F. ANCONA, Proctor, Vt. Filed Nov. 28, 1905. Serial No. 289,454.

Claim.—1. A hollow column or structure consisting of hardened concrete or other suitable plastic material having embedded therein right and left hand spirally-disposed reinforcing rods or wires intersecting or crossing each other at intervals, combined with outwardly-projecting brackets the inner ends of which are embedded in the hardened plastic material.



2. A hollow column or structure consisting of hardened concrete or other suitable plastic material having embedded therein right and left hand spirally-disposed reinforcing rods or wires intersecting or crossing each other at intervals, combined with outwardly-projecting brackets the inner ends of which are embedded in the hardened plastic material and tied to the reinforcing rods or wires.

822,500. TORPEDO-EXPULSION VALVE. JOSEPH BARRAJA-FRAUENFELDER, Quincy, Mass., assignor to Electric Boat Company, Bayonne, N. J., a Corporation of New Jersey. Filed June 26, 1905. Serial No. 267,030.



Claim.—1. Firing mechanism for expulsion-tubes, comprising a combined stop and check valve between the source of compression and the tube adapted to be opened by compressed air, and means controlled by the air-pressure to close said valve.

2. Firing mechanism for expulsion-tubes, comprising a combined stop and check valve between the source of compression and the tube adapted to be opened by compressed air, opening toward said tube, and means controlled by the air-pressure to close said valve.

3. Firing mechanism for expulsion-tubes, comprising a combined stop and check valve between the source of compression and the tube, a cylinder, a valve adapted to connect said cylinder alternately with the air-pressure and with the atmosphere, and a piston in said cylinder connected to said stop and check valve.

4. Firing mechanism for expulsion-tubes, comprising a valve-casing located between the source of compressed air and the tube, a valve in said casing opening toward said tube, a cylinder on said casing, a piston in said cylinder connected to the stem of said valve, and a valve adapted to connect said cylinder alternately with the air pressure and with the atmosphere.

5. Firing mechanism for expulsion-tubes, comprising a valve-casing located between the source of compressed air and the tube, a valve in said casing opening toward said tube, a cylinder on said casing, a piston in said cylinder connected to the stem of said valve on one side and open to the atmosphere on the other side, a spring normally tending to seat the valve, and a valve adapted to connect said cylinder alternately with the air-pressure and with the atmosphere.

822,501. MAGAZINE FILM-HOLDER. OSCAR BECKER, Berlin, Germany. Filed June 15, 1905. Serial No. 265,409.



Claim.—1. A magazine film-holder comprising in combination a magazine, a sliding cover thereto, a movable frame adapted to hold a sensitized surface against the said cover and means for preventing the said sensitized surface from lateral displacement, substantially as described.

2. A magazine film-holder comprising in combination a magazine, a sliding cover thereto, a movable frame, springs adapted to keep the said frame against the said cover, a beveled side to the said frame adapted to rest on the edge of the withdrawn cover, and means for preventing from lateral displacement a sensitized surface placed in the film-holder, substantially as described.

3. A magazine film-holder comprising in combination a frame, a magazine adapted to fit against the said frame, a smaller frame within the said frame, a sliding cover to the said magazine, springs adapted to urge the said smaller frame against the said cover, a beveled side to the said smaller frame adapted to rest on the edge of the said cover when the latter is withdrawn, and means for preventing from lateral displacement a sensitized surface placed in the film-holder, substantially as described.

4. A magazine film-holder comprising in combination a magazine, a sliding cover thereto, a movable frame adapted to hold a sensitized surface against the said cover and pins carried by the said frame and adapted to prevent lateral displacement of the said sensitized surface, substantially as described.

5. A magazine film-holder for carrying a sensitized surface comprising in combination a magazine, a sliding cover thereto, a movable frame, springs adapted to keep the said frame against the said cover, a beveled side to the said frame adapted to rest on the edge of the withdrawn cover, and pins carried by the said frame and adapted to prevent lateral displacement of the said sensitized surface, substantially as described.

6. A magazine film-holder for carrying a sensitized surface, comprising in combination a frame, a magazine adapted to fit against the said frame, a smaller frame within the said frame, a sliding cover to the said magazine, springs adapted to urge the said smaller frame against the said cover, a beveled side to the said smaller frame adapted to rest on the edge of the said cover when the latter is withdrawn, and pins carried by the said smaller frame and adapted to prevent lateral displacement of the said sensitized surface, substantially as described.

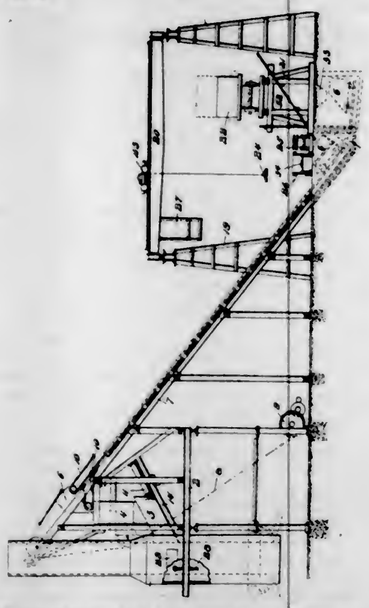
7. In combination, a sensitized surface, means for inclosing the said surface, a magazine film-holder comprising two parts adapted to be separated to receive the said inclosing means, means adapted to insure the correct placing and retention of the said sensitized surface in the said film-holder when the said inclosing means are being and have been withdrawn, and a sliding cover to the said magazine adapted to support the said sensitized surface and when withdrawn to admit it into the said magazine, substantially as described.

8. In combination, a sensitized surface provided with perforations, an envelop inclosing the said surface save the perforated part thereof, an outer envelop inclosing the first-named envelop, a magazine, a frame fitting thereagainst, the said frame and magazine being adapted to be moved apart to receive the said envelops, a sliding cover to the magazine, pins adapted to enter the said perforations when the said outer envelop is withdrawn, and means adapted to hold the said sensitized surface against the said cover, substantially as described.

9. In combination, a sensitized surface, provided with perforations, an inner inclosing means for said surface, save the perforated part thereof, an outer inclosing means for said inner inclosing means, a magazine, a frame fitting thereagainst, the said frame and magazine being adapted to be moved apart to receive the two said inclosing means, a sliding cover to the said magazine, a smaller frame within the said frame, springs adapted to urge the said smaller frame toward the said cover, a beveled surface to the said smaller frame adapted to rest on the edge of the said cover when it is withdrawn.

and pins carried by the said smaller frame and adapted to enter the said perforations when the said outer inclosing means has been withdrawn, substantially as described.

822,502. CHARGING MECHANISM FOR CUPOLA-FURNACES. CHARLES R. BOWRON, Birmingham, Ala. Filed Jan. 26, 1906. Serial No. 298,081.



Claim.—1. In a charging mechanism for cupola-furnaces, the combination with a furnace having a lateral feeding door or opening, of an inclined way extending above said opening, a car traveling upon said way, means for dumping said car when it reaches a point above said opening, a chute for receiving material from said car, and a chute below the said chute adapted to receive material therefrom and direct it into the furnace through said opening, substantially as described.

2. In a charging mechanism for cupola-furnaces, the combination with a furnace having a lateral feeding door or opening, of an inclined way extending above said opening, a car traveling upon said way, means for dumping said car when it reaches a point above said opening, a fixed chute arranged to receive material from said car, a pivotally-supported chute below the said fixed chute communicating with the furnace through said opening, and means for adjusting said chute to different angles, substantially as described.

3. In a charging mechanism for cupola-furnaces, the combination with a furnace having a lateral feeding door or opening, of an inclined way extending above said opening, a car traveling upon said way, means for dumping said car when its reaches a point above said opening, a chute arranged to receive material from said car, a second chute below the same and communicating with the furnace through said opening or door, and a pusher operating in said chute to force the material therefrom into the furnace through said opening, substantially as described.

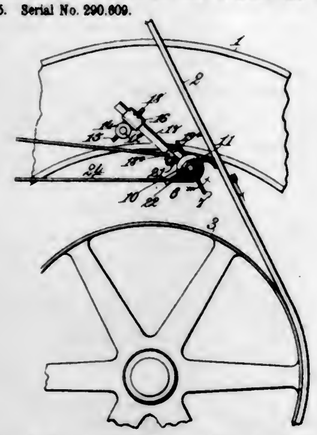
4. In a charging mechanism for cupola-furnaces, the combination with a furnace having a lateral feeding door or opening, of an inclined way extending above said opening, a car traveling upon said way, means for dumping said car when it reaches a point above said opening, a chute arranged to receive material from said car, a second chute below the same and communicating with the furnace through said opening, a pivotally-supported platform or base upon which said chute is mounted, a pusher slidably mounted in said chute, and means for actuating said pusher to force the material from said chute through the opening into the furnace, substantially as described.

5. In a charging mechanism for cupola-furnaces, the combination with a plurality of cupolas arranged in pairs each provided with lateral doors or openings, a track between said pairs above the doors, an incline hoist leading to said track, a skip-car traveling thereon, chutes leading to each cupola below said track arranged to receive material from the car, means for dumping the car, and a gate between the chutes of each pair for directing material to the desired cupola, substantially as described.

6. In a charging mechanism for cupola-furnaces, the combination with a plurality of such furnaces arranged in pairs each provided with a lateral door or opening, of an inclined hoist extending upwardly to a point between the pairs of cupolas and above said doors, a skip-car traveling thereon, means for dumping said car above the doors, chutes communicating with each cupola into which the car discharges, a gate or valve between the chutes of a pair adapted to close one chute and divert material through the other, and gate-valves for closing the ends of the chutes at or near the doors of the cupolas, substantially as described.

7. In a charging mechanism for cupola-furnaces, the combination with a plurality of such furnaces arranged in pairs each provided with a lateral door or opening, of an inclined hoist extending upwardly to a point between the pairs of cupolas and above said doors, a skip-car traveling thereon, means for dumping said car above the doors, chutes communicating with each cupola into which the car discharges, a gate or valve between the chutes of each pair adapted to close one chute and divert material through the other, gate-valves for closing the ends of the chutes at or near the doors of the cupolas, and means for opening and closing said valves, substantially as described.

822,503. MEANS FOR CLEANING THE DRIVING-BELTS OF MACHINERY. GEORGE H. BOYNTON, Pittsfield, Mass. Filed Dec. 6, 1905. Serial No. 290,609.



Claim.—1. In a means for cleaning driving-belts of machinery, the combination of a rotary cleaning element comprising a series of separated wiper-blades, means for supporting the same in coöperative relation to belt, and means for rotating the cleaning element in a direction opposite to the direction of travel of the belt.

2. In a means for cleaning driving-belts of machinery, the combination of a rotary cleaning element comprising a sectional body, a series of wiper-blades disposed between the members of said body, and means for holding the members and said wipers in assembled relation.

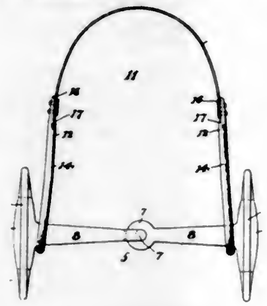
3. In a means for cleaning driving-belts of machinery, the combination of a rotary cleaning element consisting of segmental sections, flexible wipers held in place by said segmental sections, means for holding the segmental sections in assembled relation, and means for supporting said implement in coöperative relation to the belt.

4. In a means for cleaning driving-belts of machinery, the combination of a rotary cleaning element consisting of segmental sections, flexible wipers held in place by said segmental sections, and thimbles for holding said segments in assembled relation.

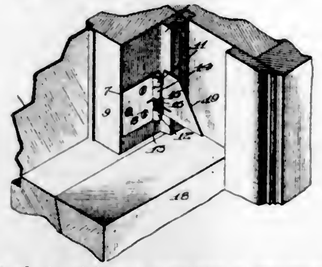
822,504. CURBER OR CONTROLLER FOR BRIDLE-BITS. AUGUST BUERMANN, Newark, N. J. Filed Nov. 14, 1905. Serial No. 287,238.

Claim.—An improved curber for bridle-bits comprising two

castings, each casting comprising an elongated loop portion integral with a plate arranged at an angle to the axis of the loop, a shoulder on the plate, and a spring secured to the plate, and having its ends abutting on the shoulders of the plate.



822,505. SASH AND DOOR LOCK. FEDOR E. BUSCH, Chicago, Ill. Filed Aug. 11, 1905. Serial No. 273,705.



Claim.—1. A sash-fastener comprising in combination a fixed member, a swinging member and a pivot connecting said members, a locking device opposing parts of which are upon adjacent portions of said members and a spring coiled about said pivot and provided with arms bearing against both of said members and constantly tending to move the swinging member toward and lift it into a locked position with the fixed member substantially as described.

2. A sash-fastener comprising in combination a fixed member provided toward its upper end with a locking part, a swinging member hinged thereto and provided with a locking part below but adapted to engage with said upper member, said swinging member being provided with a lower end bearing, whereby the swinging member is automatically secured in its locked position and against accidental detachment by upward thrust or force substantially as described.

3. A sash-fastener comprising in combination a fixed member, a swinging member hinged to the fixed member, said members having opposing bearing-surfaces and stops on adjacent portions thereof, and a spring located on the hinged pin and adapted to raise one of said members so as to lock them in fixed position substantially as described.

822,506. BACK-SUPPORT FOR SEATS. ARCHIBALD C. CLARK, Lillington, N. C. Filed Aug. 23, 1905. Serial No. 275,453.

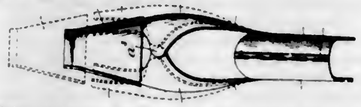


Claim.—1. A back-support comprising side frames, means adjustably securing said frames together, clamps at the lower portion of the frames for attaching the frames to the seat, and braces extending forwardly from each frame.

2. A back-support comprising side frames, means adjustably securing said frames together, clamps at the lower portion of the frames for attaching the frame to the seat, and adjustable braces extending forwardly from the outer end portion of each frame and having attaching means for securing same to the seat.

3. A back-support for seats comprising side frames, each frame embodying horizontal and vertical bars, braces adjustably connecting the horizontal bars to each frame, clamps at the lower ends of the vertical bars of each frame, adjustable braces extending forwardly from the upper end portion of each frame, clamps at the outer ends of said braces, back-rests for the frames, and rings and spring engaging members carried by each back-rest to engage the vertical bars of the frames.

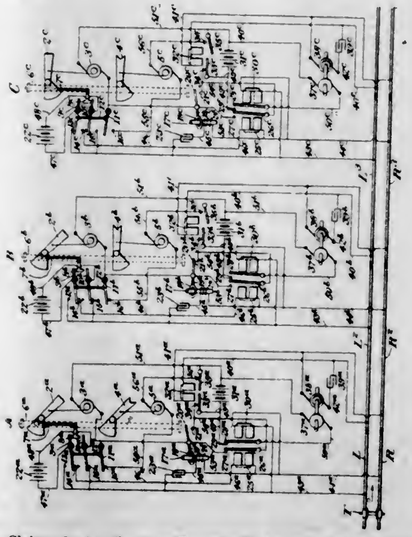
822,507. BROOM-SHIELD. HORACE E. CLARK, Atlanta, Ga. Filed Jan. 9, 1906. Serial No. 295,265.



Claim.—1. A broom-shield comprising a pair of plates rigidly secured together at their lower portions and adapted to normally embrace a broom-head, an upper portion on each plate normally out of contact with the upper part of the broom, guards formed on the upper portions adapted to take over the top of the broom-head, an extension on each of said portions between the guards, and a tapering ferrule adapted to embrace said extensions and hold them in contact with the handle of the broom, thereby causing the guards to overlap.

2. A sheet-metal broom-shield comprising two plates rigidly connected at their sides at the lower portions thereof and shield-shaped spring upper portions having bent upper corners and a central projection, said bent corners adapted to overlap the broom-head, and a ferrule coöperating with the extensions to hold them together and hold the corners overlapped.

822,508. RAILWAY TRAFFIC-CONTROLLING APPARATUS. CLYDE J. COLEMAN, New York, N. Y. Filed Dec. 4, 1905. Serial No. 290,085.



Claim.—1. A railway traffic-controlling system comprising a traffic-controlling electric circuit, means for supplying the controlling-circuit with a composite electric current including a current component having a given periodic variation, an electrically-controllable railway traffic-controlling apparatus located at a given point on the railway-line and controllable by the controlling-circuit and by its current component having the given periodic variation, and another electrically-controllable railway traffic-controlling apparatus located at a point on the railway-line distant from the first-

mentioned traffic-controlling apparatus and likewise arranged in controllable relation to the controlling-circuit but controllable by another component of its composite current.

2. A railway block signaling system comprising a signaling-circuit including the traffic-rails of a block or section of the railway-line, means for supplying the signaling-circuit with a composite electric current including a current component having a given periodic variation, an electrically-controllable signaling apparatus located at one end of the railway-block and controllable by the signaling-circuit and by its current component having the given periodic variation, and a second electrically-controllable signaling apparatus located at the other end of the block also in controllable relation to the signaling-circuit but controllable by another component of its composite electric current.

3. A railway traffic-controlling system comprising an electric traffic-controlling circuit extending along the line of traffic of a railway, a source of electric current characterized by a given periodic variation located at a given point on the railway-line and arranged to supply such current to the controlling-circuit, a second source of electric current having a characteristic different from the given periodic variation and arranged to supply such different current to the traffic-controlling circuit but located at a point on the railway-line distant from the first-mentioned source of current, a traffic-controlling apparatus located at a point on the railway-line distant from the first-mentioned source of current and controllable by the controlling-circuit and by the current of given periodic variation transmitted through the controlling-circuit in a given direction along the railway-line from such first-mentioned source, and a second traffic-controlling apparatus located on the railway-line at a point distant from the second source of current and controllable by the controlling-circuit and by the current transmitted from such second source to such second traffic-controlling apparatus through the controlling-circuit and along the railway-line in a direction opposite to the said given direction of transmission of the current of given perodic variation.

4. A railway signaling system comprising a signal-controlling electric rail-circuit including the traffic-rails of a section of the railway-line, a source of electric current characterized by a given periodic variation located substantially at one end of the section and arranged to supply such current to the rail-circuit, a signaling apparatus located substantially at the other end of the section and controllable by the rail-circuit and by the current of given periodic variation, a second source of electric current different from the current of given periodic variation and located substantially at the opposite end of the section and arranged to supply such different current to the rail-circuit, and a second signaling apparatus located substantially at the end of the section opposite the second source of current and controllable by the rail-circuit and by the current from such second source.

5. A railway traffic-controlling system comprising an electrically-controllable traffic-controlling apparatus located at a given point on a railway-line and normally in condition to prevent trains from proceeding along such railway-line in advance of such given point and controllable by a controlling electric current characterized by a periodic variation, a traffic-controlling rail-circuit including traffic-rails of the railway extending in rear of the traffic-controlling apparatus and arranged in control of such apparatus, means for supplying to the rail-circuit an electric current characterized by a periodic variation, and means for controlling such current of periodic variation from a controlling-point in rear of the traffic-controlling apparatus to change such apparatus from its aforementioned normal condition.

6. A railway traffic-controlling system comprising an electrically-controllable traffic-controlling apparatus located at a given point on a railway-line and normally in condition to prevent trains from proceeding along such railway-line in advance of such given point and controllable by a controlling electric current characterized by a periodic variation, a traffic-controlling rail-circuit including traffic-rails of the railway extending in rear of the traffic-controlling apparatus and arranged in control of such apparatus, means for supplying to the rail-circuit an electric current characterized by a periodic variation, and means for controlling such current of periodic variation automatically by approach of a train toward the traffic-controlling apparatus from a point in rear thereof to change such apparatus from its aforementioned normal condition.

7. A railway traffic-controlling system comprising an electrically-controllable traffic-controlling apparatus located at a given point on a railway-line and normally in condition to prevent trains from proceeding along such railway-line in advance of such given point and controllable by a controlling electric current characterized by a periodic variation, a traffic-controlling rail-circuit including traffic-rails of the railway extending in rear of the traffic-controlling apparatus and arranged in control of such apparatus, a source of electric current characterized by a periodic variation located at the rear end of the rail-circuit and arranged to supply such current to such circuit, and means for controlling such current of periodic variation from a controlling-point in rear of the traffic-controlling apparatus to change such apparatus from its aforementioned normal condition.

8. A railway traffic-controlling system comprising an electrically-controllable traffic-controlling apparatus located at a given point on a railway-line and normally in condition to prevent trains from proceeding along such railway-line in advance of such given point and controllable by a controlling electric current characterized by a periodic variation, a traffic-controlling rail-circuit including traffic-rails of the railway extending in rear of the traffic-controlling apparatus and arranged in control of such apparatus, a source of electric current characterized by a periodic variation located at the rear end of the rail-circuit and arranged to supply such current to such circuit, and means for controlling such current of periodic variation automatically by approach of a train toward the traffic-controlling apparatus from a point in rear thereof to change such apparatus from its aforementioned normal condition.

9. A railway signaling system comprising a normal danger-signaling apparatus located at a given point on the railway-line and controllable by an electric current characterized by a periodic variation, a controlling rail-circuit in control of the signaling apparatus and including traffic-rails of the railway extending in rear of the signaling apparatus, means for supplying to the rail-circuit a current characterized by a periodic variation, and means for controlling such current from a point in rear of the signaling apparatus in order to produce a clear indication of such apparatus.

10. A railway signaling system comprising a normal danger-signaling apparatus located at a given point on the railway-line and controllable by an electric current characterized by a periodic variation, a controlling rail-circuit in control of the signaling apparatus and including traffic-rails of the railway extending in rear of the signaling apparatus, means for supplying to the rail-circuit a current characterized by a periodic variation, and means for controlling such current automatically by approach of a train toward the signaling apparatus from in rear to produce a clear indication in the apparatus.

11. A railway signaling system comprising a normal danger-signaling apparatus located at a given point on the railway-line and controllable by an electric current characterized by a periodic variation, a controlling rail-circuit in control of the signaling apparatus and including traffic-rails of the railway extending in rear of the signaling apparatus, a source of electric current characterized by a periodic variation located substantially at the rear end of the rail-circuit and arranged to supply such current to such circuit, and means for controlling such current from a point in rear of the signaling apparatus in order to produce a clear indication of such apparatus.

12. A railway traffic-controlling system comprising an electrically-controllable traffic-controlling apparatus located on a railway-line, and normally in condition to prevent continuance of trains along such railway-line and controllable by an electric-current component having a distinguishing characteristic, means for supplying an electric-current component having the distinguishing characteristic, a traffic-controlling electric circuit in control of the traffic-controlling apparatus and extending therefrom rearward along the railway-line and arranged to conduct the current component having the distinguishing characteristic but also subjected to another current component different in character, and means for controlling the current component having the distinguishing characteristic whereby to effect a given clearing operation of the traffic-controlling apparatus, such traffic-controlling apparatus being selectively controllable by such current component to perform such given clearing operation and being not responsive to the other different current component to perform such given operation.

13. A railway traffic-controlling system comprising an electrically-controllable railway traffic-controlling apparatus located on a railway-line and normally blocking traffic on such railway-line, means for supplying an electric-current component characterized by a given periodic variation, a traffic-controlling electric circuit in control of the traffic-controlling apparatus and extending therefrom rearward along the line of railway traffic and arranged to conduct the current component having the given periodic variation but also subjected to the flow of another different current component, and means for controlling the current having the given periodic variation from a point in rear of the traffic-controlling apparatus to control such traffic-controlling apparatus, such traffic-controlling apparatus being selectively responsive to such current having the given periodic variation to perform a given clearing traffic-controlling operation but being not thus responsive to the other different current component.

14. A railway traffic-controlling system comprising an electrically-controllable railway traffic-controlling apparatus located on a railway-line and normally blocking traffic on such railway-line, means for supplying an electric-current component characterized by a given periodic variation, a traffic-controlling electric circuit in control of the traffic-controlling apparatus and extending therefrom rearward along the line of railway traffic and arranged to conduct the current component having the given periodic variation but also subjected to the flow of a uniform current component, and means for controlling the current having the given periodic variation from a point in rear of the traffic-controlling apparatus to control such traffic-controlling apparatus, such traffic-controlling apparatus being selectively controllable by said current having the given periodic variation to perfom a given clearing traffic-controlling operation but being not thus responsive to the uniform current component.

15. A railway traffic-controlling system comprising an electrically-controllable traffic-controlling apparatus located on a railway-line and normally blocking traffic on such railway-line, means for supplying an electric-current component characterized by a periodic variation, a rail-circuit in control of the traffic-controlling apparatus and including the traffic-rails of the railway extending in rear thereof and arranged to conduct the current component having the periodic variation but also subjected to flow of a non-periodic current, and means for controlling the current component having the periodic variation by approach of a train toward the traffic-controlling apparatus from in rear thereof whereby to control such traffic-controlling apparatus, such apparatus being selectively responsive to the current component characterized by the periodic variation and controllable thereby to perform a given clearing operation and being not controllable by the non-periodic current to perform such operation.

16. A railway traffic-controlling system comprising an electrically-controllable traffic-controlling apparatus located on a railway-line and normally blocking traffic on such railway-line, means for supplying an alternating electric current, a traffic-controlling rail-circuit arranged in control of the traffic-controlling apparatus and including the traffic-rails of the railway-line extending in rear thereof and communicating with the source of alternating current but subjected also to a non-fluctuating electric current, and means for controlling the alternating-current component in the rail-circuit from a point in rear of the traffic-controlling apparatus to control such apparatus, such apparatus being controllable by such alternating-current component to perform a given clearing operation and not being controllable to perform such operation by the non-fluctuating current component in the rail-circuit.

17. A railway signaling system comprising a signal-controlling rail-circuit including the traffic-rails of a section of the railway-track, a source of electric current characterized by a given periodic variation located substantially at the rear end of the section and arranged to supply such current to the rail-circuit, a second source of electric current having a characteristic different from the given periodic variation and located substantially at the advance end of the section and arranged to supply such different current to the rail-circuit, a signaling apparatus located substantially at the advance end of the section and controllable by the rail-circuit and by its current having the given periodic variation, and a second signaling apparatus located substantially at the rear end of the section and controllable by the rail-circuit and by the different current delivered by the second source of current.

18. A railway traffic-controlling system comprising a traffic-controlling electric circuit extending between two points on the line of traffic of a railway, means for supplying the traffic-controlling circuit with a composite electric current including a component having a perodic variation and a substantially uniform component, a railway traffic-controlling apparatus located at one of the two points on the line of traffic and controllable by the traffic-controlling circuit and by its current component having the perodic variation, a second traffic-controlling apparatus located at the other point on the line of traffic and also controllable by the traffic-controlling circuit but by its substantially uniform current component, and means for controlling the components of the composite current to control the traffic-controlling apparatuses.

19. A railway traffic-controlling system comprising a traffic-controlling electric circuit extending from a given point on a railway-line to a second point distant from the given point, a source of electric current having a periodic variation located at the given point on the railway-line and arranged to supply such current to the controlling-circuit, a traffic-controlling apparatus located at the second point and controllable by the controlling-circuit and by the current of periodic variation, a source of substantially uniform electric current located at such second point on the railway-line and arranged to supply such substantially uniform current to the controlling-circuit, another traffic-controlling apparatus located at the given point on the railway-line and controllable by the controlling-circuit and by its substantially uniform current component, and means for controlling the component having a periodic variation and the substantially uniform component, to control the traffic-controlling apparatuses.

20. A railway signaling system comprising a signal-controlling rail-circuit including traffic-rails of a section of the railway, a source of signal-controlling electric current characterized by a periodic variation located substantially at one end of the railway-section and arranged to deliver its current to the rail-circuit, a signaling apparatus located substantially at the opposite end of the section and controllable by the rail-circuit and by the current of periodic variation, a source of substantially uniform signal-controlling current located substantially at such opposite end of the section and arranged to deliver its current to the rail-circuit, a second railway signaling apparatus located substantially at the first-mentioned end of the section and controllable by the rail-circuit and by its substantially uniform current component, and means for controlling the current component characterized by a periodic variation and the substantially uniform current component, to control the signaling apparatuses.

21. A railway signaling system comprising a signal-controlling rail-circuit including traffic-rails of a section of the railway, a source of substantially uniform signaling current communicating with the rail-circuit substantially at the advance end of the section, a signaling apparatus at the rear end of the section controllable by the rail-circuit and by its substantially uniform signaling-current component, a source of signaling-current having a periodic variation communicating with the rail-circuit at the rear end of the section, a signaling apparatus at the advance end of the section controllable by the rail-circuit and by its signaling-current having a periodic variation, and means for controlling such current component of periodic variation from a point in rear of the section.

22. A railway signaling system comprising a signal-controlling rail-circuit including traffic-rails of a section of the railway, a source of substantially uniform signaling-current communicating with the rail-circuit substantially at the advance end of the section, a signaling apparatus at the rear end of the section controllable by the rail-circuit and by its substantially uniform signaling-current component, a source of signaling-current having a periodic variation communicating with the rail-circuit at the rear end of the section, a signaling apparatus at the advance end of the section controllable by the rail-circuit and by its signaling-current component having a periodic variation, means for controlling such current component of periodic variation from a point in rear of the section, and means for controlling the substantially uniform signaling-current component from a point in advance of the section.

23. A normal danger railway block-signaling system comprising a signaling rail-circuit including the traffic-rails of a signaling-block of the railway, a source of substantially uniform electric current arranged to supply a substantially uniform current component to the rail-circuit at the advance end of the block, a signaling apparatus at the rear end of the block controllable by the rail-circuit and by its uniform current component, a source of electric current characterized by a periodic variation arranged to supply such a current component to the rail-circuit at the rear end of the block, a signaling apparatus at the advance end of the block controllable by the rail-circuit and by its current component of periodic variation, and a second signaling-circuit including traffic-rails of the railway extending in rear of the block and controlling the current component of periodic variation in the first-mentioned rail-circuit to control the signaling apparatus at the advance end of the block.

24. A normal danger railway block-signaling system comprising a signaling rail-circuit including traffic-rails of a signaling-block of the railway-track, a source of a signal-controlling substantially uniform current component arranged to supply such current component to the rail-circuit at the advance end of the block, a source of another signal-controlling current component characterized by a periodic variation arranged to supply such current component to the rail-circuit at the rear end of the block, a signaling apparatus at the end of the block controllable by the rail-circuit and controllable by selective responsiveness to its current component of periodic varia-

tion to perform one operation and controllable to perform another operation by responsiveness to the substantially uniform current component, a second signaling apparatus at the rear end of the block controllable by the rail-circuit and by its uniform current component, a second signal-controlling circuit including traffic-rails of the railway extending in rear of the block and arranged to control the current component of periodic variation in the first-mentioned rail-circuit to effect the first-mentioned operation of the first-mentioned signaling apparatus at the advance end of the block, the substantially uniform current component being controllable by presence of a train in the block to effect the second-mentioned operation of such first-mentioned signaling apparatus.

25. A normal danger home and distant railway block-signaling system comprising signal-controlling rail-circuits extending through the various signaling-blocks and including the traffic-rails thereof, means for supplying to the rail-circuits a signal-controlling current characterized by a periodic variation, signaling apparatuses located at the termini of adjacent blocks and each including a home-signal controllable by the signal-controlling rail-circuit of the block next in advance and each signaling apparatus including also a distant signal, for each distant signal a controlling-circuit controllable by the rail-circuit of the block second in advance when placed in controllable relation to such second advance rail-circuit, each signaling apparatus being responsive to the current component of periodic variation in the signal-controlling circuit extending through the block next in rear to place the controlling-circuit of the next rear distant signal in controllable relation to the next advance rail-circuit, and each signaling apparatus being also controllable by presence of a train in the next rear block to control the current of periodic variation in the next advance block and thus operate the next advance signaling apparatus to place its first advance rail-circuit in control of the distant signal next in rear of such last-mentioned signaling apparatus.

26. A normal danger home and distant railway block-signaling system comprising signal-controlling rail-circuits including the traffic-rails of the various signaling-blocks of the railway, and home and distant railway-signaling apparatuses at the termini of successive blocks each including a source of signal-controlling current having a periodic variation arranged to supply the rail-circuit in advance, a source of non-periodic signal-controlling current arranged to supply the rail-circuit in rear, home-signal clearing means controllable jointly by the non-periodic current component of the rail-circuit in advance and by signal-controlling current in the next rear rail-circuit, means jointly controllable by such non-periodic current component of the next advance rail-circuit and by the current component of periodic variation in the next rear rail-circuit to effect a distant-signal-clearing variation in the non-periodic current component of such next rear distant signal, and means for clearing the local distant signal controllable by the non-periodic current component of the next rear rail-circuit to control the current component of periodic variation in the next advance rail-circuit and thus operate the next advance signaling apparatus to effect the distant-signal-clearing change in the non-periodic current component of such next advance rail-circuit to clear the local distant signal at the rear end thereof.

27. A normal danger home and distant railway block-signaling system comprising signaling rail-circuits including the traffic-rails of the various signaling-blocks, and home and distant railway signaling apparatuses located substantially at the termini of successive signaling-blocks and each including a source of signal-controlling alternating current arranged to supply the rail-circuit of the block next in advance, a battery arranged to supply signal-controlling current to the rail-circuit of the next rear block, home-signal-clearing means controllable jointly by the battery-current in the next advance rail-circuit and by one component of the signaling-current in the next rear rail-circuit, current-reversing means controllable jointly by such a battery-current of the next advance rail-circuit and by the alternating current component of the next rear rail-circuit and arranged to reverse the battery-current in such next rear rail-circuit, local distant-signal-clearing means responsive to reversal of battery-current in the next advance rail-circuit, and current-controlling means controllable by the battery-current in the rail-circuit of the next rear block and responsive to presence of a train therein to establish flow of alternating current from the source thereof through the next advance rail-circuit to operate the next advance signaling apparatus to reverse the battery-current in such next advance rail-circuit and clear the local distant signal at the rear end thereof.

28. A railway traffic-controlling system comprising a traffic-controlling electric circuit extending from a given point on a railway-line to a second point on the railway-line distant from the given point, means for supplying the traffic-controlling electric circuit with a composite electric current including differently-characterized current components, a traffic-controlling apparatus at the first-mentioned point controllable by the traffic-controlling electric circuit and by one component of its composite current, a second traffic-controlling apparatus located at the distant point and also controllable by the traffic-controlling circuit but controllable by another component of its composite current, and means for controlling the components of the composite traffic-controlling current to control the traffic-controlling apparatuses.

29. A railway traffic-controlling system comprising a traffic-controlling electric circuit extending from one point on a railway-line to a second point on the railway-line distant from the first point, a source of one electric current component located at the first point and arranged to supply such current component to the traffic-controlling circuit, a source of a current component of different character located at the second point and arranged to supply such different current component to the traffic-controlling circuit, a traffic-controlling apparatus located at the second point and controllable by the traffic-controlling electric circuit and by the current component delivered by the source of current at the first point, another traffic-controlling apparatus located at such first point and controllable by the traffic-controlling circuit and by the current component delivered by the source of current at the second point, and means for controlling the components of the composite current to control the traffic-controlling apparatuses.

30. A railway traffic-controlling system comprising an electric traffic-controlling rail-circuit including the traffic-rails of a section of the railway, means for supplying to the rail-circuit a composite electric traffic-controlling current including the components of different character, a traffic-controlling apparatus located at one end of the section and controllable by the rail-circuit and by one component of its composite current, a second traffic-controlling apparatus located at the opposite end of the section and also controllable by the traffic-controlling circuit but by a different component of its composite current, and means for controlling the components of the composite current to control the traffic-controlling apparatuses.

31. A railway traffic-controlling system comprising a source of electric current located at one point on a railway-line and arranged to supply its current to the traffic-rails thereof, a second source of electric current of different character located at a second point on the railway distant from the first point but likewise arranged to supply its current to the traffic-rails, an electrically-controllable traffic-controlling apparatus located on the railway-line at a point distant in one direction from the first-mentioned source of current and electrically controllable by the traffic-rails and by the current component from such first source transmitted through such rails in such direction, a second electrically-controllable traffic-controlling apparatus located at a point on the railway distant in the opposite direction from the second source of current and electrically controllable by the traffic-rails and by the current component of different character transmitted from such second source in such opposite direction through the traffic-rails and to the second traffic-controlling apparatus, and means for controlling the current components to control the traffic-controlling apparatuses.

32. A railway traffic-controlling system comprising a traffic-controlling rail-circuit including the traffic-rails of a section of the railway, a source of traffic-controlling electric current arranged to supply such current to the rail-circuit at the advance end of the section, a traffic-controlling apparatus located at the rear end of the section and controllable by the rail-circuit and by its current component transmitted from the source of current at the advance end of the section, a second source of electric current different in character from the current of the first-mentioned source and arranged to supply such different current to the rail-circuit at the rear end of the section, a second traffic-controlling apparatus located at the advance end of the block and controllable by the rail-circuit and by the second different current component transmitted from the second source of current at the rear end of the section, and means for controlling the second current component from a point on the railway-line in rear of the section.

33. A normal danger home and distant railway block-signaling system comprising signaling rail-circuits including the traffic-rails of the various signal-blocks of the system, and electrically-controllable home and distant railway signaling apparatuses located at the termini of successive signaling-blocks and each including a source of signaling-current of definite character arranged to supply the rail-circuit of the next block in rear, a second source of signaling-current of second or different character arranged to supply the rail-circuit of the block next in advance, home-signal-clearing means

controllable jointly by the signaling-current component of first or definite character transmitted through the next advance rail-circuit and by one signaling-current component of the next rear rail-circuit, means jointly controllable by such current component of first character in the next advance rail-circuit and by the second or different current component in the next rear rail-circuit and arranged to effect a distant-signal-clearing change in the current component of first character in the next rear rail-circuit, and local distant-signal-clearing means controllable by the current component of first character in the next rear rail-circuit to control the current component of second character in the next advance rail-circuit and thus operate the next advance signaling apparatus to effect the distant-signal-clearing change in the current of first character in such next advance rail-circuit and thereby clear the distant signal at the rear end thereof.

34. A railway traffic-controlling system comprising a traffic-controlling electric circuit, means for supplying the controlling-circuit with a composite electric current including a current component having a given periodic alternation, an electrically-controllable railway traffic-controlling apparatus located at a given point on the railway-line and controllable by the controlling-circuit and by its current component having the given periodic alternation, and another electrically-controllable railway traffic-controlling apparatus located at a point on the railway-line distant from the first-mentioned traffic-controlling apparatus and likewise arranged in controllable relation to the controlling-circuit but controllable by another component of its composite current.

35. A railway block-signaling system comprising a signaling-circuit including the traffic-rails of a block or section of the railway-line, means for supplying the signaling-circuit with a composite electric current including a current component having a given periodic alternation, an electrically-controllable signaling apparatus located at one end of the railway-block and controllable by the signaling-circuit and by its current component having the given periodic alternation, and a second electrically-controllable signaling apparatus located at the other end of the block also in controllable relation to the signaling-circuit but controllable by another component of its composite electric current.

36. A railway signaling system comprising a signal-controlling electric rail-circuit including the traffic-rails of a section of the railway-line, a source of electric current characterized by a given periodic alternation located substantially at one end of the section and arranged to supply such current to the rail-circuit, a signaling apparatus located substantially at the other end of the section and controllable by the rail-circuit and by the current of given periodic alternation, a second source of electric current different from the current of given periodic alternation and located substantially at the opposite end of the section and arranged to supply such different current to the rail-circuit, and a second signaling apparatus located substantially at the end of the section opposite the second source of current and controllable by the rail-circuit and by the current from such second source.

37. A railway traffic-controlling system comprising an electrically-controllable traffic-controlling apparatus located at a given point on a railway-line and normally in condition to prevent continuance of railway-trains along a given track beyond such given point and controllable by a controlling alternating current of electricity, a traffic-controlling rail-circuit including traffic-rails of the railway extending in rear of the traffic-controlling apparatus and arranged in control of such apparatus, means for supplying to the rail-circuit an alternating electric current, and means for controlling such alternating current from a controlling-point in rear of the traffic-controlling apparatus to reverse the aforementioned normal condition of such apparatus.

38. A railway traffic-controlling system comprising an electrically-controllable traffic-controlling apparatus located at a given point on a railway-line and normally in condition to prevent continuance of railway-trains along a given track beyond such given point and controllable by a controlling alternating current of electricity, a traffic-controlling rail-circuit including traffic-rails of the railway extending in rear of the traffic-controlling apparatus and arranged in control of such apparatus, means for supplying to the rail-circuit an alternating electric current, and means for controlling such current automatically by approach of a train toward the traffic-controlling apparatus from a point in rear thereof to reverse the aforementioned normal condition of such apparatus.

39. A railway traffic-controlling system comprising an electrically-controllable traffic-controlling apparatus located at a given point on a railway-line and normally in condition to prevent continuance of railway-trains along a given track beyond such given point and controllable by a controlling electric alternating current, a traffic-controlling rail-circuit including traffic-rails of the railway extending in rear of the traffic-controlling apparatus and arranged in control of such apparatus, a source of electric alternating current located at the rear end of the rail-circuit and arranged to supply such current to such circuit, and means for controlling such alternating current from a controlling-point in rear of the traffic-controlling apparatus to reverse the aforementioned normal condition of such apparatus.

40. A railway signaling system comprising a normal danger-signaling apparatus located at a given point on the railway-line and controllable by an electric alternating current, a controlling rail-circuit in control of the signaling apparatus and including traffic-rails of the railway extending in rear of the signaling apparatus, means for supplying to the rail-circuit an alternating current, and means for controlling such current from a point in rear of the signaling apparatus to clear the signal.

41. A railway signaling system comprising a normal danger-signaling apparatus located at a given point on the railway-line and controllable by an alternating electric current, a controlling rail-circuit in control of the signaling apparatus and including traffic-rails of the railway extending in rear of the signaling apparatus, means for supplying an alternating current to the rail-circuit, and means for controlling such current automatically by approach of a train toward the signaling apparatus from in rear to clear the signal.

42. A railway signaling system comprising a normal danger-signaling apparatus located at a given point on the railway-line and controllable by an electric alternating current, a controlling rail-circuit in control of the signaling apparatus and including traffic-rails of the railway extending in rear of the signaling apparatus, a source of alternating electric current located substantially at the rear end of the rail-circuit and arranged to supply such current to such circuit, and means for controlling such current from a point in rear of the signaling apparatus in order to clear the signal.

43. A railway traffic-controlling system comprising an electrically-controllable traffic-controlling apparatus located on a railway-line, means for supplying an electric current component having a distinguishing characteristic, a traffic-controlling electric circuit in control of the traffic-controlling apparatus and extending therefrom rearward along the railway-line and arranged to conduct the current component having the distinguishing characteristic but also subjected to another current component different in character, and means for controlling the current component having the distinguishing character whereby to control a given operation of the traffic-controlling apparatus, such traffic-controlling apparatus being selectively responsive to such current component to perform such given operation and being responsive to the other different current component to perform another operation.

44. A railway traffic-controlling system comprising an electrically-controllable railway traffic-controlling apparatus located on a railway-line and normally in condition to prevent continuance of trains along a given track of the railway-line, means for supplying an electric current component characterized by a given periodic alternation, a traffic-controlling electric circuit in control of the traffic-controlling apparatus and extending therefrom rearward along the line of railway-traffic and arranged to conduct the current component having the given periodic alternation but also subjected to the flow of another different current component, and means for controlling the current component having the given periodic alternation from a point in rear of the traffic-controlling apparatus to control such traffic-controlling apparatus, such traffic-controlling apparatus being selectively responsive to such current component having the given periodic alternation to reverse the aforementioned normal condition but being not thus responsive to the other different current component.

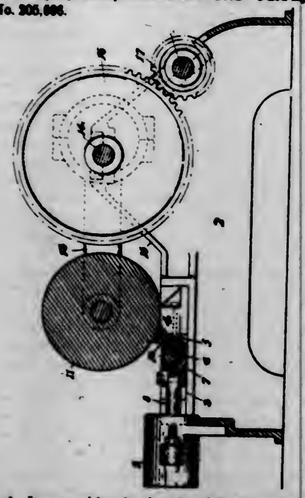
45. A railway traffic-controlling system comprising an electrically-controllable railway traffic-controlling apparatus located on a railway-line, means for supplying an electric current component characterized by a given periodic variation, a traffic-controlling electric circuit in control of the traffic-controlling apparatus and extending therefrom rearward along the line of railway traffic and arranged to conduct the current component having the given periodic variation, but also subjected to the flow of another different current component, and means for controlling the current having the given periodic variation from a point in rear of the traffic-controlling apparatus to control such traffic-controlling apparatus, such traffic-controlling apparatus being selectively responsive to such current having a given periodic variation to perform a given traffic-controlling operation and being also responsive to the other different current component to perform another operation.

46. A railway traffic-controlling system comprising an electrically-controllable railway traffic-controlling apparatus located on a railway-line and normally in condition to prevent continuance of trains along a given track of the railway-line, means for supplying an electric current component characterized by a given periodic alternation, a traffic-controlling electric circuit in control of the traffic-controlling apparatus and extending therefrom rearward along the line of railway traffic and arranged to conduct the current component having the given periodic alternation but also subjected to the flow of a uniform current component, and means for controlling the current having the given periodic alternation from a point in rear of the traffic-controlling apparatus to control such traffic-controlling apparatus, such traffic-controlling apparatus being selectively controllable by such current having the given periodic alternation to permit continuance of trains along the given railway-track but being not thus responsive to the uniform current component.

47. A railway traffic-controlling system comprising an electrically-controllable railway traffic-controlling apparatus located on a railway-line, means for supplying an electric current component characterized by a given periodic variation, a traffic-controlling electric circuit in control of the traffic-controlling apparatus and extending therefrom rearward along the line of railway traffic and arranged to conduct the current component having the given periodic variation but also subjected to the flow of a uniform current component, and means for controlling the current having the given periodic variation from a point in rear of the traffic-controlling apparatus to control such traffic-controlling apparatus, such traffic-controlling apparatus being selectively responsive to such current having the given periodic variation to perform a given traffic-controlling operation and being also responsive to the uniform current component to perform another operation.

48. A railway traffic-controlling system comprising an electrically-controllable traffic-controlling apparatus located on a railway-line, means for supplying an electric current component characterized by a periodic variation, a rail-circuit in control of the traffic-controlling apparatus and including the traffic-rails of the railway extending in rear thereof and arranged to conduct the current component having the periodic variation but also subjected to flow of a non-periodic current, and means for controlling the current component having the periodic variation by approach of a train toward the traffic-controlling apparatus from in rear thereof whereby to control such traffic-controlling apparatus, such apparatus being selectively responsive to the current component characterized by the periodic variation and controllable thereby to perform a given operation and being controllable by the non-periodic current to perform another operation.

822,509. **APPARATUS FOR MANUFACTURING FISH-PLATES.** PHILIP J. DALTON, Joliet, Ill., assignor, by mesne assignments, to The Rail Joint Company, a Corporation of New York. Filed Apr. 30, 1904. Serial No. 205,606.



Claim.—1. In a machine for forming fish-plates, the combination with dies adapted to engage opposite sides of the vertical portion of a fish-plate in vertical position, one of said dies being movable with respect to the other and one of them having a tongue adapted to enter the doubled portion of the fish-plate, of a roll adapted to travel across the upper surfaces of said dies and tongue, a driving-shaft, and arms eccentrically connected at one end to said shaft and pivotally connected at the other end to said roll.

2. In a machine for forming fish-plates, the combination with die members adapted to grasp the upright portion of a fish-plate and hold the same in inverted position with its base member exposed, of a gravity-roller arranged parallel to said die members and adapted to travel across said base member, a shaft carrying eccentrics at opposite ends, and eccentric-straps with arms extending to the opposite ends of said roller to reciprocate said roller.

3. In a machine for forming fish-plates, the combination with means for clamping a fish-plate in inverted position with its base member exposed, of a roller adapted to travel across said base member of a shaft 14 having eccentrics at opposite ends, eccentric-straps extending to the opposite ends of the roller to operate the same and pulleys for rotating said shaft 14, substantially as set forth.

4. In a machine for forming fish-plates, a bed or face providing a horizontal slideway at one end and raised journal-bearings at the other, opposite die members, one adjustable in said slideway, adapted to clamp a fish-plate in inverted position with its base member exposed, a rotary shaft in said raised bearings, eccentrics on said shaft, arms extending from said eccentrics, and a roller mounted between said arms in position to travel upon said die member in the slideway.

822,510. **WALL CONSTRUCTION.** JOHN C. DAVIDSON, Columbus, Ohio. Filed Jan. 6, 1906. Serial No. 294,842.

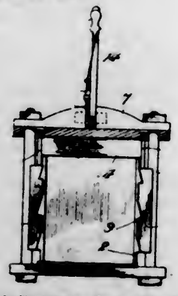


Claim.—1. A wall constructed of a plurality of blocks provided with recesses shaped to receive vertical cores, said cores being disposed with their exposed portions lying beneath the surface of the blocks.

2. A wall constructed of a plurality of blocks provided with recesses shaped to receive vertical cores and hold the same against horizontal displacement, said cores being disposed with their exposed portions lying beneath the surface of the blocks.

3. A wall constructed of a plurality of blocks provided with recesses shaped to receive vertical cores and hold the same against horizontal displacement, one of said blocks having a recess in its end and adapted to receive a core and expose a portion of the surface of the same, the exposed portion of the core lying beneath the surface of the end of the block.

822,511. **HAY-PRESS.** CHARLEY E. DAVIS, Aurora, Mo. Filed May 8, 1905. Serial No. 259,409.



Claim.—1. In a baling-press, the combination of a baling-chamber embodying a movable side, cams upon said side, cam-blocks arranged for coöperation with the cams, and means embodying a cam for actuating the cam-blocks.

2. In a baling-press, the combination of a baling-box embodying movable sides, a bar, cams upon the sides of the baling-box, sliding cam-blocks carried by the bar aforesaid for coöperation with the cams of the sides of the baling-box, and means for actuating the bar to simultaneously actuate the cam-blocks.

3. In a baling-press, the combination of a baling-box embodying movable sides, a bar, cams upon the sides of the baling-box, cam-blocks carried by the bar aforesaid for coöperation with the cams of the sides of the baling-box, and a cam arranged for engagement with the bar to actuate the same.

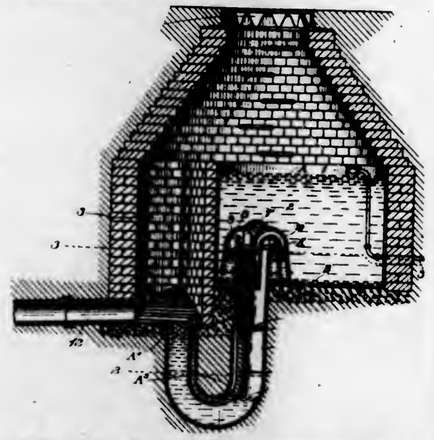
4. In a baling-press, the combination of a baling-box embodying a bottom and sides, a frame arranged to receive said baling-box and including side members, cams upon the sides of the box, and cam-blocks slidably mounted between the sides of the box and the side members of the frame aforesaid.

5. In a baling-press, the combination of a baling-box embodying a bottom and sides, a frame arranged to receive said baling-box and including side members, cams upon the sides of the box, cam-blocks slidably mounted between the sides of the box and the side members of the frame aforesaid, and a bar connecting the cam-blocks for simultaneous operation.

6. In a baling-press, the combination of a baling-box embodying a bottom and sides, a frame arranged to receive said baling-box and including side members, cams upon the sides of the box, cam-blocks slidably mounted between the sides of the box and the side members of the frame aforesaid, a bar connecting the cam-blocks for simultaneous operation, and a cam-lever for actuating the connecting-bar aforesaid.

7. In a baling-press, the combination of a baling-box comprising movable sides, a frame arranged to receive the baling-box and embodying side members and a head connecting said members, cams upon the sides of the baling-box, cam-blocks slidably mounted between the side members of the frame aforesaid and the sides of the baling-box, a bar arranged beneath the head of the frame and connecting the cam-blocks for simultaneous operation, a cam-lever pivoted to the head of the frame and engaging the connecting-bar of the block for actuation thereof, and a lock device for coöperation with the cam-lever.

822,512. **FLUSH-TANK SIPHON.** REVERDY C. DE LA HUNT, Cedar Rapids, Iowa. Filed Sept. 19, 1904. Serial No. 225,054.



Claim.—1. In a flush-tank siphon, the combination with a main siphon provided with a flaring intaking end, an auxiliary siphon associated therewith, an intaking-limb at the intaking ends of said siphons, said auxiliary siphon extending up into said intaking-limb for discharging the confined air in the initial act of siphonage, a small siphon associated with said intaking-limb and having its long leg within the said flared intaking end of said main siphon, said long leg of said small siphon being tapered and disposed centrally within the intaking end of said main siphon in such manner that the water rushing into the intaking end of said main siphon surrounds the long leg of said small siphon to bring said small siphon into siphonic action, substantially as described.

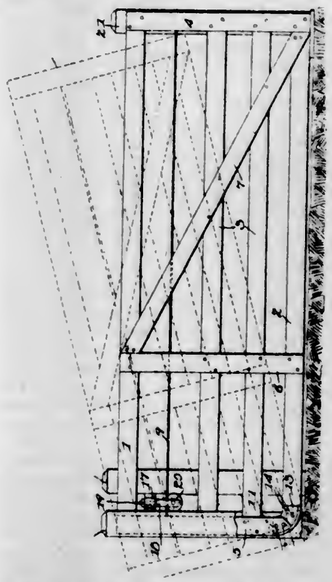
2. In a flush-tank siphon, the combination with a main siphon provided with a flaring intaking end, an intaking-limb at the intaking end of said main siphon, a small siphon associated with said intaking-limb and having its short leg extending below the bottom edge of said intaking-limb and its long leg tapered and disposed centrally with the said flared intaking-end of said main siphon in such manner that the water rushing into said main siphon at the initial act of siphonage surrounds the said long leg of said small siphon to bring said small siphon into siphonic action, substantially as described.

3. In a flush-tank siphon, the combination with a main siphon provided with a flared intaking end, an intaking-limb at the intaking end of said main siphon, a small siphon associated with said intaking-limb and having its short leg extending below the bottom edge of said intaking-limb and its long leg disposed centrally within the intaking end of said main siphon in such manner that the water rushing into said main siphon surrounds said long leg of said small siphon to bring said small siphon into siphonic action, substantially as described.

4. In a flush-tank siphon, the combination with a main siphon, of an intaking-limb at the intaking end of said main siphon, a small siphon associated with said intaking-limb and having its short leg extending below the bottom edge of said intaking-limb and its long leg disposed centrally within the intaking end of said main siphon in such manner that the water rushing into said main siphon surrounds the long leg of said small siphon to bring said small siphon into siphonic action, substantially as described.

5. In a flush-tank siphon, the combination with a main siphon, having intaking end flared, of an intaking-limb at the intaking end of said main siphon, a small siphon associated with said intaking-limb and having its short leg extending below the bottom edge of said intaking-limb and its long leg disposed within the flared end of said main siphon, substantially as described.

822,513. **GATE.** CASPAR C. DU BOIS, Noblesville, Ind. Filed Dec. 29, 1905. Serial No. 293,861.



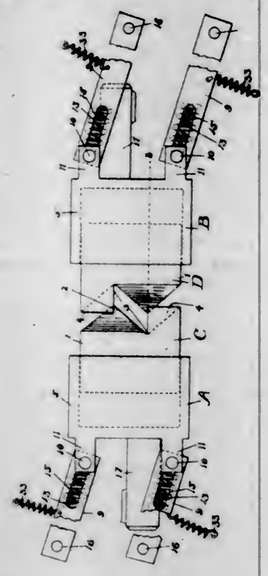
Claim.—1. A vertically-tiltable gate having an inner end bar, a lower rail, and a rounded shoe having a longitudinal rib upon its concaved face with the lower end of the inner end bar and the lower rail connected thereto, the lower inner corner of the gate being free to permit tilting of the gate, and the shoe being disposed to engage the ground as a support when the gate is being tilted.

2. A vertically-tiltable gate including a lower longitudinal rail, a pair of spaced inner end bars, and a bowed shoe provided at one end with a socket receiving the adjacent end of the lower rail and having its other end provided with an intermediate longitudinal flange embraced by the end bars, the inner lower corner of the gate being free to permit tilting thereof, and the shoe being disposed to bear upon the ground as a support when the gate is being tilted.

3. As a new article of manufacture, a gate-shoe including a bowed body provided upon its concaved face with an intermediate longitudinal rib leading inwardly from one end thereof and forked at the other end of the body to form a socket.

4. A vertical tiltable gate having an inner end bar, a lower rail, and a rounded shoe connecting these members, the shoe being provided upon its concaved face with a longitudinal rib terminating at one end in a socket, one of the gate members being received within and secured to the socket, the other gate member embracing and secured to the other end of the rib, the lower inner corner of the gate being free to permit tilting of the gate, and the shoe being disposed to engage the ground as a support when the gate is being tilted.

822,514. **GUIDE FOR COUPLING MEMBERS.** CHARLES B. FELT and DANIEL A. KIMBARK, Chicago, Ill., assignors to Electric Specialty Co., Chicago, Ill., a Corporation of Illinois. Filed Dec. 10, 1903. Serial No. 134,659.



Claim.—1. In a guide for coupling members the combination of one guide member having a depression at one point and a pointed protuberance at another point complementary in form to said depression, the center of the depression being located a distance from the apex of the protuberance equal to half the diameter of the latter, and another guide member of facsimile formation but with its depression and protuberance arranged opposite the protuberance and depression respectively of the first said guide member, substantially as set forth.

2. In a guide for coupling members the combination of one guide member having a depression at one point and a pointed protuberance at another point, the center of the depression being located at the edge of the base of said protuberance, and another guide member of facsimile formation but with its depression and protuberance arranged opposite the protuberance and depression respectively of the first said guide member, substantially as set forth.

3. In a guide for coupling members the combination of one guide member having a pyramidal protuberance at one point and a depression at another point complementary in form to said protuberance, and another guide member of facsimile formation but with its depression and protuberance arranged opposite the protuberance and depression respectively of the first said guide member, substantially as set forth.

4. In a guide for coupling members the combination of one guide member having a pointed protuberance at one point and a depression at another point such as would result from the imprint of one-half of said pointed protuberance divided through the apex thereof, and another guide member of facsimile formation but with its depression and protuberance arranged opposite the protuberance and depression respectively of the first said guide member, substantially as set forth.

5. In a guide for coupling members the combination of one guide member comprising a rectangular block, a portion of two sides and one end of which constitutes three sides of the base of a pyramid projecting from the end of said block, said block in the same end having a depression one side of which is constituted by one side of said pyramid, and which depression is complementary in form to said pyramid, and another guide member of facsimile formation but with its depression and pyramid arranged opposite the pyramid and depression respectively of the first said guide member, substantially as set forth.

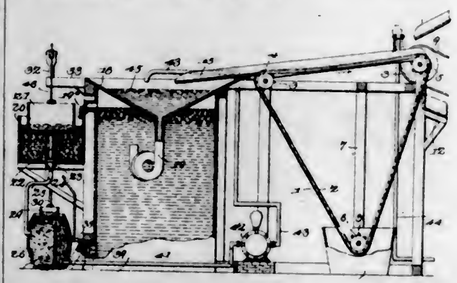
6. In a guide for coupling members the combination of one guide member having a depression at one point and a protuberance at another point complementary in form to said depression, another guide member of facsimile formation but with its depression and protuberance arranged opposite the protuberance and depression respectively of the first said guide member, and two sockets individual to said guide members in which they are respectively cushioned, substantially as set forth.

7. In a guide for coupling members, the combination of one guide member having a depression at one point and a protuberance at another point complementary in form to said depression, another guide member of facsimile formation, but with its depression and protuberance arranged opposite the protuberance and depression respectively of the first said guide member, and two sockets individual to said guide members and in which they are respectively housed, and cushions contained in said sockets for cushioning said guide members therein.

8. In a device of the class described, the combination of two pipe-union members, having apertured matched faces adapted to fit together in a direction lengthwise of the planes of said faces, means for guiding said faces into register in a direction parallel with their planes, and a cam mounted in fixed relation to one of said members and standing within the path of the movement of the other member and adapted to be engaged and operated by said other member for forcing the faces of the two members together a tan angle to their planes.

9. In a device of the class described, the combination of two pipe-union members, having apertured matched faces adapted to fit together in a direction lengthwise of the planes of said faces, means for guiding said faces into register in a direction parallel with their planes, and a cam mounted in a fixed relation to one of said members, said cam being provided with an operating portion standing within the path of movement of the other member and adapted to be engaged by the said other member for causing the cam to force the face of the two members together at an angle to their planes.

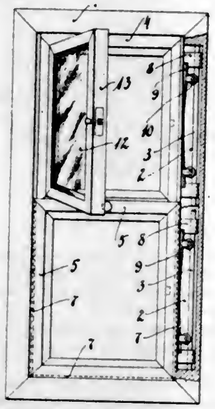
822,515. **ORE-SEPARATOR.** FRED B. FINLEY, Los Angeles, Cal. Filed June 26, 1905. Serial No. 267,023.



Claim.—1. In an ore-separator, the combination of a tank provided with an outlet-valve, a combined hopper and coil mixer arranged within the tank, a second tank into which the first tank discharges, a third tank into which the second tank discharges, a float-operated valve in the second tank for controlling passage of oil to the third tank, a valve in the first tank, a rock-beam, and a connection between the rock-beam and the float of the second tank and the valve of the first tank.

2. An ore-separator comprising a tank provided with an outlet-valve, a combined hopper and coil mixer arranged within the tank, a second tank into which the first tank discharges, a third tank into which the second tank discharges, a float-operated valve in the second tank for controlling passage of oil to the third tank, a valve in the second tank, a rock-beam, a connection between the rock-beam and the float of the second tank and the valve of the first tank, means for supplying classified gangue and oil to the hopper, and means for withdrawing the surplus oil from the second tank and returning it to the hopper.

822,516. **WINDOW.** FERDINAND FLASCHBERGER, Hoboken, and MEINRAD GEBHART, Jersey City, N. J. Filed Jan. 16, 1906. Serial No. 296,419.



Claim.—1. The combination with a window-frame, of longitudinal guideways in the sides of the latter, vertical guide-rods in each guideway, vertically-sliding frames guided on said rods, springs between the said sliding frames and guide-rods to effect a frictional contact with the latter and horizontally-swinging sashes in said sliding frames, substantially and for the purpose as specified.

2. The combination with a window-frame, of longitudinal guideways in the sides of the latter, two vertical guide-rods in each guideway arranged parallel and behind each other, double-bent bars guided on said rods, frames mounted on said bars and adapted to be raised and lowered with the latter, springs between the said sliding frames and guide-rods to effect a frictional contact with the latter and horizontally-swinging sashes in said sliding frames, substantially and for the purpose as specified.

3. The combination with a window-frame, of longitudinal guideways in the sides of the frame, two guide-rods in each guideway arranged parallel and behind each other, double-bent bars, ears projecting laterally from the latter and adapted to be in engagement with the said guide-rods to permit said bars of sliding vertically on the latter, frames removably mounted on said double-bent bars, means for connecting the latter with said frames, springs between the said sliding frames and guide-rods to effect a frictional contact with the latter and horizontally-swinging sashes in said sliding frames, substantially and for the purpose as specified.

4. The combination with a window-frame, of a guideway in each side of the frame, two vertical rods in each guideway arranged parallel and behind each other, two double-bent bars slidably mounted on the said guide-rods, frames removably mounted on said bars, means connecting the latter with the said frames, springs located between the sides of the frames and the vertical bars, rollers or wheels borne upon the ends of said springs, the rollers or wheels being adapted to roll upon the vertical rods and to press against the sides of the frames, and horizontally-swinging sashes in said frames, substantially and for the purpose as specified.

5. The combination with a window-frame, of a guideway in each side of the frame, two vertical rods in each guideway, vertically-sliding frames guided on said bars, springs effecting a frictional contact of the said sliding frames with the guide-rods, swinging sashes to swing horizontally in said frames, means permitting a swinging action of the sashes and a removal of the latter from the frames, substantially and for the purpose as specified.

822,517. **ROLL FOR THE ACCURATE WINDING OF A SHEET OF PAPER FROM ONE ROLL TO ANOTHER.** WILLIAM B. FLEMING, South Pasadena, Cal. Filed May 3, 1905. Serial No. 259,441.



Claim.—1. A roll for winding paper comprising paper-securing means at the central portion thereof; end portions having the same diameter, the diameter of the end portions being uniform throughout and intermediate portions having a gradual decrease in the diameter from the end portions to the paper-securing means.

2. A take-up roll for musical instruments having a central groove and end sections of a uniform diameter for a short distance and intermediate portions of slightly and gradually decreasing diameter from the uniform diameter of the ends to the center groove thereof.

822,518. **WHEEL.** ALFRED FRESCHL, Chicago, Ill. Filed Apr. 21, 1905. Serial No. 256,759.



Claim.—1. The combination with a wheel provided with a rim having transverse recesses, of a band encircling the rim and having corresponding recesses and comprising sections having slip-joint interlocking connections, spring coiled-wire sections of less diameter than the band and rim and interposed between the rim and band and having their coils seated in the recesses, means for securing each section against circumferential movement, and an outer casing covering the band and secured to the rim.

2. The combination with a wheel having a rim provided with transverse recesses, of an outer band formed of a series of loosely-connected sections and provided with transverse recesses corresponding with those of the rim, a series of coiled-wire sections having their coils engaged by the recesses of the band and rim, and an outer casing or covering secured to the rim.

3. The combination with a wheel having a rim provided with transverse recesses, of a band consisting of a series of sections connected by interlocking slip-joints and having transverse recesses corresponding with those of the rim, a series of coiled-wire sections having their coils seated in the said recesses of the rim and band, and an outer casing or covering connected to the rim.

4. The combination with a wheel having a rim provided with transverse recesses and an outer concaved face, of a band segmental in cross-section and provided with transverse recesses agreeing with those of the rim, a coiled-wire support of less diameter than the band and rim and seated in the transverse recesses, whereby it contacts with the band and rim at diametrically opposite points only, and an outer casing or covering secured to the rim.

5. The combination with a wheel having a concaved rim, an outer band segmental in cross-section, interposed sections of coiled wire and of less diameter than the band and rim, means for securing said coiled-wire sections between the band and rim, and an outer casing or covering connected to the rim.

6. The combination with a wheel having a rim, of an outer band comprising sections each having a plurality of kinks 8 and terminating in slip-joint members 9 producing transverse recesses 11, coiled-wire sections 12 engaging the recesses 11, an outer covering or casing connected to the rim, and means carried by the rim for maintaining the coiled-wire sections in position.

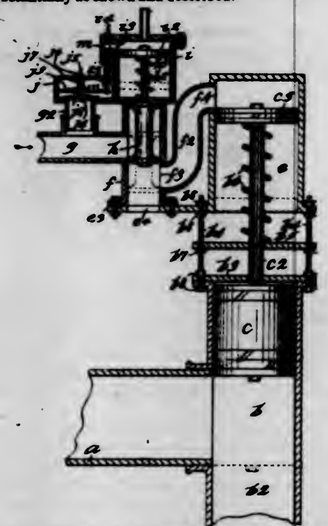
7. The combination with a wheel having a segmental rim, a segmental outer flexible band, intermediate coils of diameters less than the band and rim, an outer casing secured to the rim, and means carried by the rim and band for retaining the coils in proper relative position and yet permitting of free circumferential contraction and expansion thereof.

822,519. **PUMP-GOVERNOR.** HENRY W. GRABE, Brooklyn, N. Y. Filed Oct. 11, 1905. Serial No. 283,223.

Claim.—1. A governor for steam-pumps, comprising two pairs of cylinders, the cylinders of each pair being provided with pistons which are connected, springs for holding the separate pairs of pistons in a predetermined position, and means whereby an increase of pressure in the water-pipe leading from the pump will operate said pistons and cut off the flow of steam to the pump, substantially as shown and described.

2. A governor for steam-pumps, comprising two pairs of cylinders, the cylinders of each pair being provided with pistons which

are connected, springs for holding the separate pairs of pistons in a predetermined position, and means whereby an increase of pressure in the water-pipe leading from the pump will operate said pistons and cut off the flow of steam to the pump, comprising a pipe by which a cylinder of each pair is placed in communication, a water-pipe communicating with one of said cylinders, and means whereby an increase of pressure in the last-named pipe will operate the piston in said cylinder and the corresponding piston with which it is connected, substantially as shown and described.



3. An apparatus of the class described, comprising two pairs of cylinders, the piston-cylinders of each pair being arranged in line, pistons mounted in the cylinders of each pair, the pistons in each pair being connected and provided with springs by which said pistons are held in their normal position, one cylinder of each pair being in communication, a water-pipe connected with one of the last-named cylinders, and means whereby an increase of pressure in the last-named pipe will operate the piston in said cylinder and the piston connected therewith, substantially as shown and described

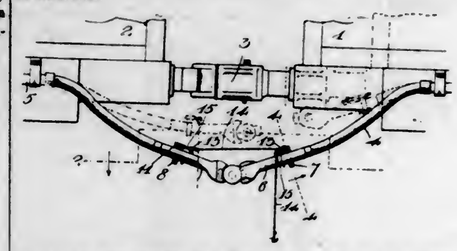
4. In an apparatus of the class described, a pair of cylinders arranged in line, pistons mounted in each cylinder and in operative connection, a spring for holding said pistons in their normal position, a water-pipe communicating with one of said cylinders, a fluid-pressure pipe communicating with the other cylinder, said last-named cylinder being also provided with an exhaust or passage, and means whereby an increase or decrease of pressure in the water-pipes will close and open, said exhaust port or passage, substantially as shown and described.

5. In an apparatus of the class described, a pair of cylinders arranged in line, pistons mounted in each cylinder and in operative connection, a spring for holding said pistons in their normal position, a water-pipe communicating with one of said cylinders, a fluid-pressure pipe communicating with the other cylinder, said last-named cylinder being also provided with an exhaust port or passage, and means whereby an increase or decrease of pressure in the water-pipe will close and open said exhaust port or passage, said apparatus also comprising another pair of cylinders one of which is in communication with the cylinder of the first pair with which the water-pipe is connected, and the other of which is provided with a steam-supply pipe, and pistons mounted in the cylinders of the last-named pair and provided with a spring by which they are held in their normal position, substantially as shown and described.

822,520. AIR-BRAKE. Ed A. Graves, Randolph, N. Y. Filed Feb. 8, 1906. Serial No. 300,198.

Claim.—1. The combination with train pipes or hose having coacting couplings upon their adjacent ends, of stop-cocks or valves arranged in said pipes, operating elements upon said valves, and a connection between one of said pipes and the operating element of the valve in the other, substantially as described.

2. The combination with train pipes or hose having coacting couplings upon their adjacent ends, of stop-cocks or valves arranged in said pipes, operating elements for said valves, means for adjustably connecting said elements to said valve to regulate the operation of the latter, and a connection between one of said pipes and the operating element of the valve in the other of said pipes, substantially as described.



3. The combination with train pipes or hose having coacting couplings upon their adjacent ends, of stop-cocks or valves arranged in said pipes, and an adjustable connection between one of said pipes and the valve in the other of said pipes.

4. The combination with train pipes or hose having coacting couplings upon their adjacent ends, of stop-cocks or valves arranged in said pipes, operating-levers adjustably mounted upon the stems of said valves, and a flexible connection between one of said pipes and the lever of the valve in the other of said pipes, substantially as shown and described.

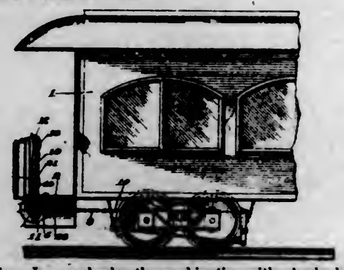
5. The combination with train pipes or hose having coacting couplings upon their adjacent ends, of stop-cocks or valves arranged in said pipes adjacent to said couplings, levers upon the cylindrical stems of said valves, set-screws for adjustably securing said levers to said stems, and a chain connecting one of said pipes to the lever of the valve in the other of said pipes, substantially as shown and described.

822,521. STORM-WINDOW AND WINDOW-SCREEN FASTENER. Frank O. Hermance, Aberdeen, S. D. Filed Jan. 29, 1906. Serial No. 298,570.



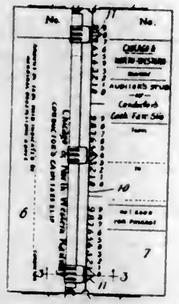
Claim.—In a storm-window and window-screen fastener, the combination of the screw with upper larger diameter and finer thread than the lower part, with the thumb-nut with a screw-threaded opening to correspond with the upper thread of the screw and with the button with unthreaded opening and convex upper and concave lower surface, all as and for the purpose set forth.

822,522. CAR-BRAKE. Owen M. Jones, Chicago, Ill. Filed Oct. 19, 1903. Serial No. 177,632.



Claim.—In a car-brake, the combination with a brake-beam, of a roller journaled beneath the car-platform and suitably connected with said beam, a ratchet-wheel mounted upon said roller and having one side of the tooth thereof formed radially, an oscillating lever fulcrumed upon said roller, a dog slidably mounted upon said lever and having a substantially straight side adapted to engage the radially-formed side of the teeth of the ratchet-wheel, and a foot-operated dog normally out of engagement with said ratchet-wheel to hold the same when the wheel is released by said lever.

822,523. CONDUCTOR'S CHECK HOLDING AND CUTTING DEVICE. Alexander D. Joslin, Chicago, Ill. Filed Aug. 25, 1905. Serial No. 275,773.



Claim.—1. In a check holding and cutting device, the combination of a severing-blade having sliding cutters, and a contractible device attached at both ends to the said blade and arranged to pass longitudinally along the back of a series of checks when the latter are interposed between the blade and the said contractible device, substantially as set forth.

2. In a check holding and cutting device, the combination of a severing-blade having sliding cutters, and a contractible device attached at both ends to the said blade and arranged to pass therefrom backward and through the recesses of a series of recessed checks, and along the back of the checks from one series of recesses to the other series of recesses, when such checks are interposed between the blade and the said contractible device, substantially as set forth.

3. The check holding and severing device consisting of a base corresponding in size to the tickets, a severing-blade carrying sliding cutters, said blade having projections adapted to enter and move in slots in the edges of the tickets and a contractible attaching device for securing the blade to the base.

4. The check holding and severing device consisting of a base for the pile of tickets, a severing-blade provided with sliding cutters adapted to be placed across the top of the pile and means for attaching the blade to the base in such manner as to produce pressure upon the tickets, said attaching means being adapted to enter notches formed in the edges of the tickets.

5. The check holding and severing device consisting of a base corresponding in size to the tickets, a severing-blade carrying sliding cutters, said blade having projections adapted to enter and move in recesses formed in the tickets and a contractible attaching device for securing the blade to the base.

6. The check holding and severing device consisting of a base for the pile of tickets, a severing-blade provided with sliding cutters adapted to be placed across the top of the pile and means for attaching the blade to the base in such manner as to produce pressure upon the tickets, said attaching means being adapted to enter recesses formed in the tickets.

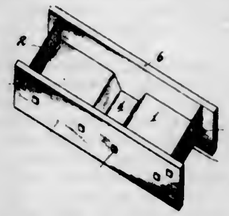
7. The check-holding device, the severing-blade whereof is provided with downward projections adapted to engage the tickets or checks and thus be held against change of position along the face of and relative to the tickets while the tickets are being withdrawn.

8. The check-holding device, the severing-blade whereof is provided with downward projections adapted to engage the tickets or checks and thus be held against change of position relative to the tickets, in combination with a contractible device causing constant pressure by the blade upon the tickets and downward movement by it as the tickets are withdrawn.

9. The check holding and cutting device consisting of a severing-blade having sliding cutters mounted thereon, the said blade having backward and downward projections arranged to enter in recesses formed in a series of checks, and to be gradually moved backward in said recesses as the front checks are cut and issued, substantially as set forth.

822,524. MEANS FOR MAKING ARTIFICIAL BUILDING-STONE. Oliver B. Kanier, Norwood, Ohio. Filed Jan. 24, 1906. Serial No. 297,617.

Claim.—1. In a mold for making artificial stone, a base formed of a sheet of metal, provided with upwardly-projecting ends, side plates detachably connected to said base, one edge of said side plates being in alinement with the edges of the base ends, and means for detachably connecting said base and side plates, substantially as described.

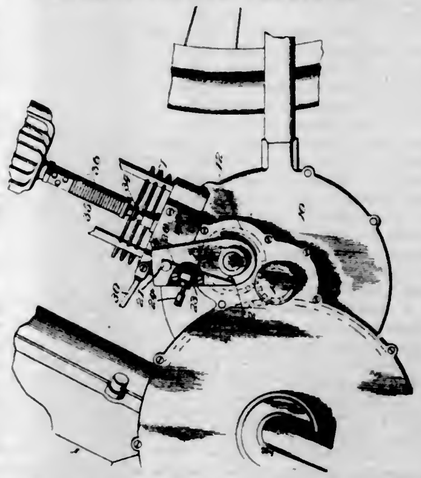


2. A mold for making artificial stone having a base formed of a sheet of metal provided with a central depression and upward extensions at each end, side plates detachably connected to said base, one edge of each of said side plates alined with the edges of the base extensions, and means for detachably connecting said base and side plates, substantially as described.

3. A mold for making artificial stone having a base formed of a sheet of metal provided with a central depression and upward extensions at each end, side plates detachably connected to said base, one edge of each of said side plates alined with the edges of the base extensions, the opposite edges of the side plates forming a support, and means for detachably connecting said base and side plates, substantially as described.

4. A mold for making artificial stone comprising a sheet of metal formed with upward extension at each end and a central depression, side plates detachably connected to said base, one edge of each of said side plates alined with the edges of the base extensions, the opposite edges of the plates projecting beyond the base depression forming a support, and bolts passing through said side plates upon which said base is supported and detachably connected, substantially as described.

822,525. SPARK AND VALVE CONTROLLING DEVICE FOR EXPLOSION-ENGINES. Robert M. Keating, Middletown, Conn., assignor to The R. M. Keating Motor Company, Middletown, Conn., a Corporation. Filed Dec. 23, 1901. Serial No. 87,005.



Claim.—1. In a gasolene-engine, an interrupter-lever and mechanism connected thereto by which the sparking period is determined according to the position of said lever, the exhaust-valve having a stem, and means carried by the interrupter-lever to engage said exhaust-valve stem whereby the same may be opened by the interrupter-lever, all combined.

2. In an explosive-engine, the combination with a cylinder, a piston and sparking mechanism including an actuating device hav-

ing substantially uniform movement in reference to the piston, a movable contact-arm actuated periodically by said device for causing a spark at the electrodes, a shiftable member carrying said arm and adjustable to occupy any one of a plurality of points between two extreme positions for causing the occurrence of the spark at the electrode at two extreme points in the stroke of the piston or at any point intermediate of said two extreme points, and means actuated by said member for opening the exhaust-valve and maintaining the same in open position

3. In an explosive-engine and in combination, a cylinder, a piston, a crank-casing, a main shaft journaled in the latter and operatively connected to the piston, a stud on the casing, a gear mounted on said stud driven from the main shaft and carrying a make-and-break-operating cam, an exhaust-valve-operating cam, and an interrupter-lever journaled concentric of the axis of the gear, and having means associated therewith for varying the time of the effective operation of the make-and-break-operating cam in reference to the piston and for opening and closing the exhaust-valve and cam 44 mounted on the lever 7 for opening the exhaust-valve when said lever is in one position.

4. In an explosive-engine, the combination with the exhaust-valve, valve-stem and means for actuating the latter periodically including a rotating gear, of sparking mechanism including a lever, relatively movable and stationary contact members carried by the lever, a cam moving in synchronism with the gear for actuating the movable contact member, means for shifting the lever to change the time of the formation of the igniting-spark relative to the engine-piston, and a cam actuated by said lever to open the exhaust-valve.

5. In an explosive-engine, the combination with the exhaust-valve, valve-stem and means for actuating the latter periodically including a rotating gear, of sparking mechanism including a lever, relatively movable and stationary contact members carried by the lever, a cam moving in synchronism with the gear for actuating the movable contact member, means for shifting the lever to change the time of the formation of the igniting-spark relative to the engine-piston, and a cam carried by the lever and movable therewith for opening the exhaust-valve when the lever reaches substantially the limit of its movement in one direction.

6. In a gasolene-engine, the combination with an exhaust-valve and sparking mechanism including stationary and relatively movable contact members an actuating-shaft, and means interposed between said shaft and the exhaust-valve and movable contact member, respectively, for operating said valve and member from the shaft, of a shiftable lever with means for operating the same for altering the time of formation of the spark and for opening the exhaust-valve.

7. The combination of the engine-casing the exhaust-valve, its divided stem, and a shoe-carrying part of the valve-stem and detachable from the casing, of the interrupter-lever pivoted to the casing and having a cam in position to engage said removable part of the valve-stem, substantially as described.

8. In an explosive-engine, the combination with the crank-shaft, gear operated therefrom, and an inclosing casing, of a stud projecting from the casing, a second gear journaled on the stud intermeshing with the first gear and provided with a shouldered spindle, a collar inclosing a part of the spindle and having a flange embracing the shoulder thereof, a lever mounted on the collar, relatively fixed and movable make-and-break members carried by the lever, a cam mounted on the outer end of the spindle and coacting with the movable make-and-break members, an exhaust-valve, and means comprising a cam 44 mounted on the lever for operating the same.

9. In an explosive-engine, the combination with the cylinder, an exhaust-valve and a casing, of a stud projecting from the casing, a member mounted thereupon having a peripherally-toothed portion at its rear end, a cam-surface in advance of the toothed portion for periodically opening the exhaust-valve, a bearing part in advance of the cam-surface, and a reduced spindle in advance of the bearing-surface with a shoulder interposed between the spindle and bearing-surface, a collar secured to the casing and coacting with the shoulder and bearing-surface, a cam mounted on the reduced spindle, a lever mounted on the collar, relatively movable and stationary contact members associated with the lever with one of which the second cam coöperates, and means for shifting the lever.

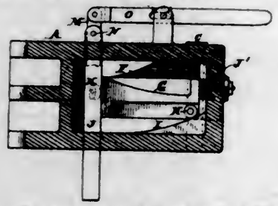
10. In an explosive-engine, the combination with the cylinder, an exhaust-valve and a casing, of a stud projecting from the casing, a member mounted thereupon having a peripherally-toothed portion at its rear end, a cam-surface in advance of the toothed portion for periodically opening the exhaust-valve, a bearing part in advance of the cam-surface, and a reduced spindle in advance of the bearing-surface with a shoulder interposed between the spindle and bearing-surface, a collar secured to the casing and coacting with the shoulder and bearing-surface, a cam mounted on the reduced spindle, a lever mounted on the collar having a cam also coacting with the exhaust-valve to open the same, a stationary contact member associated with the lever, a movable contact member also associated with the lever and designed to be operated by the cam on the spindle, and means for shifting the lever.

11. In controlling mechanism for explosive-engines, the combination with an exhaust-valve, of a rotary cam for intermittently opening said valve at the proper intervals, an independently-rotatable starting-cam arranged to open and hold open said valve independently of the first-mentioned cam, and means for manually turning said starting-cam, substantially as described.

12. In a gasolene-engine, an interrupter-lever, a mechanism connected thereto by which the sparking period is determined according to the position of said lever, an exhaust-valve, means for opening the same, and means connected to the interrupter-lever for engaging and actuating said opening means, when the lever is in an extreme position.

13. The combination with an exhaust-valve and means for opening the same, of a rotary cam for normally actuating said opening means, an auxiliary device for actuating the opening means, an adjustable commutator-plate, and means for simultaneously operating said plate and auxiliary device, whereby, when the period of ignition is changed for starting, the exhaust-valve is simultaneously opened.

822,526. CAR-COUPLING. MIRIAN R. KNEEDLER, Philadelphia, Pa. Filed Mar. 20, 1905. Serial No. 250,946.



Claim.—1. In a car-coupler, the combination of the draw-head, with a gravity-actuated pivoted jaw adapted to swing to the open position when released, a locking-bolt to lock the jaw normally resting upon the rear end of the jaw and controlled by it, and hand-operated means arranged above the draw-head to hold the locking-bolt out of locking position consisting of a pivoted part carried by the bolt and a hand-lever to move said pivoted part.

2. In a car-coupler, the combination of the draw-head having a pivot-pin bearing to one side of the front of the head, a cam adjacent to the pivot-pin bearing and a cam upon the rear and lower part of the head, with a pivot-pin, a jaw hinged upon and snugly fitting the pivot-pin and also provided with a cam-surface adjacent to the pivot-pin to coöperate with one of the cams of the draw-head and further provided with a rear extension having a part resting upon the other cam of the draw-head, and a lock for locking the jaw in its closed position.

3. In a car-coupler the combination of the draw-head, with a gravity-actuated pivoted jaw adapted to swing to the open position when released, and a lock to lock the jaw in its closed position, consisting of a vertical bolt J, a pivoted and longitudinally-adjustable lever O, and a latch M hinged to the bolt and also to the lever whereby the lever may operate both the bolt and latch.

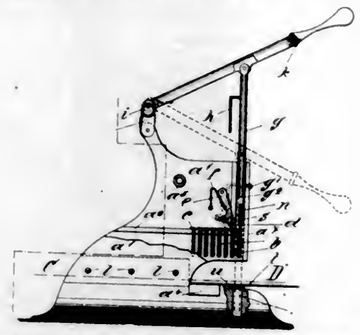
4. In a car-coupler, the combination of the draw-head having a pivot-pin bearing to one side of the front of the head, a cam adjacent to the pivot-pin bearing and a cam upon the rear and lower part of the head, with a pivot-pin, a jaw hinged upon and snugly fitting the pivot-pin and also provided with a cam-surface adjacent to the pivot-pin to coöperate with one of the cams of the draw-head and further provided with a rear extension having a roller resting upon the other end of the draw-head, and a lock for locking the jaw in its closed position.

5. In a car-coupler, the combination of the draw-head having cam-guides D and I, with a jaw pivoted to the head with capacity for movement and having a cam-face E' and roller H respectively supported upon the cam-guides whereby it is caused to rotate to open position when unrestrained, a locking-bolt adapted to lock the jaw in closed position, and means to hold the bolt out of locking position.

6. A car-coupler draw-head having a cam-guide I greatly to the rear of the pivot of the jaw, combined with a pivoted jaw B having a rear part F having a roller running upon said cam-guide, whereby the jaw is caused to rotate to open position under the action of gravity.

7. A car-coupler draw-head having cam-guide I, combined with a pivoted jaw B having a rear part F, and a roller H journaled to the rear of the part F and resting upon said cam-guide, whereby the jaw is caused to rotate to open position under the action of gravity.

822,527. STAPLING-MACHINE. LEO KOPPEL, Cologne, Germany. Filed Dec. 7, 1905. Serial No. 290,800.



Claim.—1. In a stapling-machine for staples, the annular heads of which are detachably connected and the legs of which converge downward and are inwardly concave, the combination with a standard provided with an anvil, of a horizontal guide for the staple-heads in said standard, a plunger vertically guided in said standard, a needle at the lower end of said plunger and provided with two opposite inclined cut faces to form two shoulders above the point, also with two grooves in the two cut faces and in the two shoulders, a vertical hole in said anvil in the center line of said needle, two benders on the top face of said anvil and adapted to engage with their upwardly-bent points in the two grooves of said needle, a table of sheet metal above said two benders at a distance approximately equal to the thickness of a staple-leg and having a slot, which reaches from the center line of said vertical hole to an edge, means controlled from said plunger for feeding the staples, and means for depressing said plunger, said needle being adapted to engage through the head-hole and between the legs of the respective staple and to pierce the materials to be bound, while the legs of the staple are supported by the needle-shoulders, and said plunger being adapted to detach the staple-head from the remaining staple-heads and to force same downward.

2. In a stapling-machine for staples, the annular heads of which are detachably connected and the legs of which converge downward and are inwardly concave, the combination with a standard provided with an anvil, of a plunger vertically guided in said standard, a spring normally pressing said plunger upward, a needle at the lower end of said plunger and provided with two opposite inclined cut faces to form two shoulders above the point, also with two grooves in the two cut faces and in the two shoulders, a vertical hole in said anvil in the center line of said needle, two benders on the top face of said anvil and adapted to engage with their upwardly-bent points in the two grooves of said needle, a table of sheet metal above said two benders at a distance approximately equal to the thickness of a staple-leg and having a slot, which reaches from the center line of said needle to an edge, a horizontal guide for the staple-heads in said standard and extending to near the point of said needle in its normal position, an arm on said plunger, a lever mounted to turn in said standard and adapted to be acted upon by said arm, a pawl on said lever and adapted to engage in the central hole of either staple-head, a spring pressing said pawl with said lever toward the center line of said plunger, and means for depressing said plunger, said needle being adapted to engage through the head-hole and between the legs of the respective staple and to pierce the materials to be bound, while the legs of the staple are supported by the needle-shoulders, and said plunger being adapted to detach the staple-head from the remaining staple-heads and to force same downward.

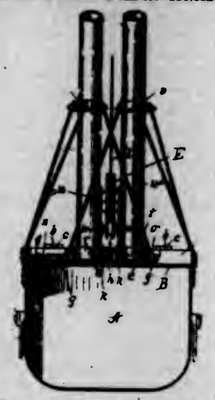
3. In a stapling-machine for staples, the annular heads of which are detachably connected and the legs of which converge downward and are inwardly concave, the combination with a base-plate provided with an anvil, of two parallel vertical plates fastened on said base-plate and each provided with a horizontal ledge and a vertical groove, the two horizontal ledges forming a guide for the staple-heads and the two vertical grooves forming a guide, a plunger longitudinally movable in said vertical guide and provided at its lower end with a longitudinal bore and a fastening-screw, a pin connecting the upper ends of said two parallel vertical plates, a link mounted to rock on said pin, a hand-lever pivotally connected with the upper end of said plunger and with said link, a spring for normally pressing said hand-lever and said plunger upward, a pointed cylindrical needle engaging in the bore of said plunger and provided with two opposite inclined cut faces to form two shoulders above the point, also with two grooves in the two cut faces and in the two shoulders, a vertical hole in said anvil in the center line of said pointed cylindrical needle, two benders on the top face of said anvil and adapted to engage with their upwardly-bent points in the two grooves of said pointed cylindrical needle, a table of sheet metal above said two benders at a distance approximately equal to the thickness of a staple-leg and having a slot, which reaches from the center line of said vertical hole to an edge, an arm on said plunger, a lever mounted to turn between said two parallel vertical plates and adapted to be acted upon by said arm, a pawl on said lever and adapted to engage in the central hole of either staple-head, and a spring pressing said pawl with said lever toward the center line of said plunger, said pointed cylindrical needle being adapted to engage through the head-hole and between the legs of the respective staple and to pierce the materials to be bound, while the legs of the staple are supported by the needle-shoulders, and said plunger being adapted to detach the staple-head from the remaining staple-heads and to force same downward.

822,528. POT-STIRRER. FLORENCE M. LEAF, Perry, Iowa. Filed Feb. 4, 1905. Serial No. 244,108.

Claim.—1. The combination of a pot lid or cover, a stirring member passed through the lid or cover and slidingly and detachably connected therewith, a handle member slidingly, detachably and rotatably mounted in the stirring member, a hub mounted on the handle member, and two gear-wheels supported by the hub in mesh with each other, one of them slidingly and non-rotatably connected with the stirring member.

2. The combination of a pot lid or cover, a sleeve passed through it, a tube passed through the sleeve and provided with a longitudinal slot at its upper end, stirring-arms fixed to the lower end of the tube, a handle inserted in the tube and slidingly connected therewith, a hub mounted on the handle, a beveled pinion rotatably supported by the hub, a crank connected therewith, a second beveled pinion rotatably supported by the hub in mesh with the first pinion, said hub provided with a pin inserted in the slot of the said tube to slidingly detachably and non-rotatably connect it with the tube.

822,529. EXCAVATING-DIPPER. JOHN H. W. LUBER, Toledo, Ohio. Filed Dec. 9, 1905. Serial No. 291,023.

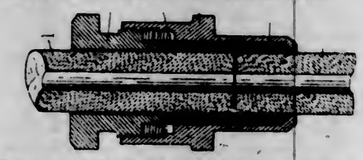


Claim.—1. In combination, a dipper comprising a body portion and a relatively fixed part to which the body portion is hinged and which forms one side of the dipper, a plurality of spring-bolts contiguously mounted on said part, ledges or shoulders on the sides of the body portion with which said bolts normally engage, reversely-positioned bell-crank levers mounted on the part adjacent the bolts, and movable to impart a releasing movement to the bolts and a trip having direct connection with the levers for effecting a movement thereof.

2. In combination, a dipper comprising a body portion and a relatively fixed part to which the body portion is hinged, a plurality of spring-bolt members disposed side by side on the fixed part and having their opposite or outer ends projecting beyond the side edges of said part, ledges or shoulders on the body portion with which the bolt members normally engage to retain the body portion closed against the fixed part, independent levers for imparting a releasing movement to each bolt member, said levers having a common pivot, and common means for operating the levers.

3. In combination, a dipper comprising a body portion and a relatively fixed head to which the body portion is hinged, two independently-movable bolts carried by the head, ledges or shoulders on the sides of the body portion with which the bolts normally engage, two levers mounted on the head and movable to effect opposite releasing movements of the bolts, and trip means having direct connection with the levers for imparting simultaneous releasing movements thereto.

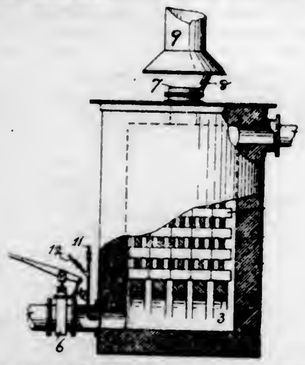
822,530. COUPLING FOR GLASS TUBES. LEON P. LOWE, San Francisco, Cal. Filed Aug. 8, 1905. Serial No. 273,312.



Claim.—A coupling for the end of tubes, comprising a rubber sleeve around the ends of the tubes, a ring of metal around one of the tubes having an undercut beveled end abutting against one end of the sleeve, a coupling member having a reduced smooth bore closely fitting around said rubber sleeve and metal ring and having a contracted end to confine the other end of the rubber sleeve, and having also an internally-enlarged threaded portion, and a second coupling member screwed into said enlarged portion, its inner end abutting against said metal ring, substantially as described.

822,531. PROCESS OF MANUFACTURING GAS. LEON P. LOWE, San Francisco, Cal. Filed Aug. 24, 1905. Serial No. 275,534.

Claim.—1. The process of manufacturing gas which consists in heating refractory material, then spraying oil by means of a compressed combustible gas and passing it through the refractory material to make gas so long as the temperature of said material remains sufficiently high, then admitting air to burn the oil and gas so admitted, and passing the products of combustion through refractory material to reheat the same, then shutting off the air and passing the oil, still sprayed by the compressed combustible gas, through the refractory material to make gas, and then repeating the above steps, substantially as described.

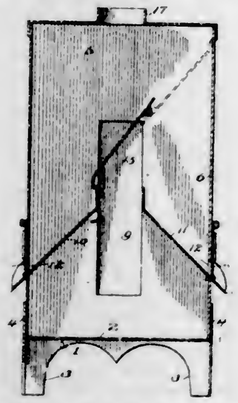


2. The process of manufacturing gas which consists in highly heating refractory material, compressing a portion of the gas previously manufactured, admitting a jet of said compressed gas to a stream of oil to spray the oil, then passing the sprayed oil and the gas mixed therewith through the refractory material to make gas therefrom, and repeating the operation indefinitely, substantially as described.

822,532. PHOTOGRAPHIC PLATE FOR COLOR PHOTOGRAPHY. AUGUSTE LUMIÈRE and LOUIS LUMIÈRE, Lyon-Monplaisir, France. Filed Nov. 22, 1904. Serial No. 233,851.

Claim.—A sensitive photographic plate for color photography comprising a transparent backing plate or support, a layer of colored particles suitably held on said plate and composed of larger particles with smaller particles lying in the interstices between the larger particles, a layer of varnish covering the particles and a sensitive layer supported over said layer of varnish, substantially as described.

822,533. HOOD FOR FORGES. FREDERRICK W. MEIER and WILLIAM A. GIPSON, Upper Sandusky, Ohio. Filed Jan. 13, 1906. Serial No. 295,947.



Claim.—1. In a forge-hood, a base, a rectangular casing mounted upon said base, oppositely-disposed dust-pans arranged in said casing, a door in front of the casing, an oppositely-disposed door in the back of the casing, means for dumping said dust-pans, a damper for regulating the current of the draft and a top upon said casing, substantially as specified.

2. In a forge-hood, a base, a rectangular casing mounted upon said base, dust-pans arranged within the casing, means for dumping the dust-pans, a damper within the casing for regulating the current of the draft, a door in the front of the casing, an oppositely-disposed door in the back of the casing, a top upon said casing, substantially as specified.

3. In a hood for forges, a base having a flange thereupon, legs supporting the base, a rectangular casing mounted upon said base and supported by said flanges, oppositely-disposed dust-pans arranged within the casing, means for dumping the dust-pans, a damper pivoted above one of the dust-pans, said damper adapted to regulate the current of the draft, a door in the front of the casing, an oppositely-disposed door in the back of the casing, a top upon said casing, and means upon said top for attaching a smoke-stack, substantially as shown and for the purpose specified.

822,534. FLY-SCREEN. RALPH J. MEYER, Grand Junction, Colo. Filed Sept. 23, 1905. Serial No. 279,536.



Claim.—1. An attachment for fly-screens formed from a single sheet of metal having a plurality of longitudinally-disposed spaced orifices and spaced tongues cleft from the sheet intermediate the ends and at one side of said orifices and with spaced apertures in said sheet at the opposite side of said orifices and in transverse alinement with said tongues, said sheet adapted to be folded along the line of the orifices with the sides spaced apart and bent intermediately thereof in opposite directions and the ends compressed to close the same and said tongues clenched at their free ends in said apertures.

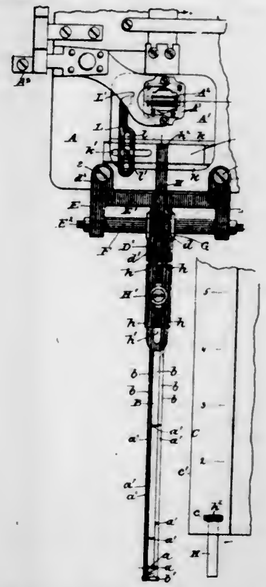
2. As a new article of manufacture, an attachment for fly-screens formed from a single sheet of metal having a plurality of longitudinally-disposed spaced orifices and folded along the line of the orifices with the sides spaced apart and bent intermediately thereof in opposite directions, and with spaced tongues cleft from one of said alined side portions and bent into hooks at the terminals and spaced slots in the other alined side portion adapted to receive the hooked terminals of the tongues.

822,535. LOCATING-GAGE FOR SEWING-MACHINES. HENRY C. MILLER, Waterford, N. Y. Filed Aug. 11, 1903. Serial No. 169,078.

Claim.—1. In combination, a sewing-machine, a support projected horizontally outward from the sewing-machine, a series of notches formed in said support, a carrier mounted on the support and adapted to be moved thereon in either direction, an adjustable locating-bar provided at its free end with a locator for engagement with a piece of fabric which is to receive buttonholes or buttons, and a finger carried by the carrier which coöperates with the notches, said finger holding the locator at a predetermined point relative to the sewing-machine.

2. In combination, a sewing-machine provided with a work-table and a needle, a support provided with one or more series of notches and projected horizontally from the sewing-machine, a carrier loosely mounted on said support for movement in either direction, a finger carried by the carrier to coöperate with the notches in the support, a locating-bar mounted on the carrier, means for adjusting the locating-bar, the free end of the locating-bar extending over the table of the sewing-machine, and toward the needle of the same, and a locator on the locator-bar for engaging a piece of fabric while it is being moved, said locator being held at a predetermined point relative to the sewing-machine by the means for adjusting the locating-bar.

3. In combination, a sewing-machine, a support projected horizontally from the sewing-machine and having formed in it one or more series of notches, a movable carrier mounted on the support, a device carried by said carrier which coacts with the notches to hold the carrier fast on the support, a locating-bar adjustably mounted on the carrier and having its end toward the sewing-machine provided with a locator for engagement with a piece of fabric which is to receive buttonholes or buttons.



4. In combination, a sewing-machine, a support projected horizontally from the sewing-machine, a movable carrier on the support, an adjustably-mounted locating-bar carried by said carrier, a locator connected with the inner end of the locating-bar for engaging a piece of fabric which is to receive buttonholes or buttons, and mechanism carried by the movable carrier for holding the latter secured on the support at a predetermined point with relation to the sewing-machine.

5. In combination, a sewing-machine, a support on the sewing-machine, a series of equally-spaced notches formed on the support, a carrier which is movable on the support, a locator between the needle of the sewing-machine and the carrier, means connecting the locator with the carrier, and mechanism connected with the carrier for engagement with any one of the notches of the support to set and hold the locator at a predetermined point relative to the sewing-machine.

6. In combination, a sewing-machine, a support having its inner end secured to the sewing-machine, a movable carrier on the support, a finger pivoted on said carrier, a spring for forcing the finger into holding engagement with said support, an extension on the finger for releasing it from the support and for moving the carrier away from the needle of the sewing-machine, and a locator mounted on the carrier, the finger holding the locator at a fixed point relative to the needle.

7. In combination, a sewing-machine, a pair of brackets yoked together, means securing the brackets to the sewing-machine, a bar mounted on the brackets, a bracket adjustably mounted on the bar, means for locking the adjustable bracket to the bar, a socket formed in the adjustable bracket, a horizontally-extended support fitting in the socket, a carrier movable on the horizontal support, and means carried by the carrier for locating a piece of fabric at a predetermined point relative to the sewing-machine.

8. In combination, a sewing-machine, brackets suitably secured thereto, a transverse bar pivoted in the brackets, a middle bracket mounted on said pivoted transverse bar and adjustable thereon, a set-screw for holding said bracket in place from accidental movement, a stop projected rearward from said adjustable middle bracket and having bearing against a stationary part, a socket formed in the bracket, a set-screw coöperating with the socket, a horizontal support projecting from said socket, whereby said support may be moved laterally from a line in alinement with the needle of the sew-

ing-machine and be folded up and down over the table of the machine when not in operation, and means mounted on the horizontal support for locating a piece of fabric at a predetermined point relative to the sewing-machine.

9. In combination, a sewing-machine, a support projecting from the machine, a plurality of differently-spaced series of marks on the support, said support being removable to operatively present one or the other of said series of marks, a locator having means for engaging the article being operated upon, means coöperating with the marks to indicate the position of the locator relative to the sewing-machine, and means for holding the support to the machine.

10. A device of the character described, comprising a bracket, a rocking bar mounted in the bracket, a support adjustably mounted on the rocking bar, a series of indicating-points on the support, and a locator, the indicating-points indicating the position of the locator.

11. A device of the character described, a supporting-bar, means on which the supporting-bar is mounted, a scale on the supporting-bar, a support mounted on the supporting-bar and adjustable with relation to said scale, a scale on the support, an adjustable locator-bar carried on the said support and adjustable with relation to the scale on said support, and a locator on the locator-bar.

12. A gage for a sewing-machine, comprising a support formed with predetermined indicating-points thereon, a carrier movably mounted on the support, a locator on the carrier, and means for adjusting the locator independently of its movement on said support.

13. In combination, a sewing-machine, a support projecting outwardly from the machine, and an adjustable locator mounted on the support, means for moving the locator and fixing it at intervals to move and hold while moving a piece of fabric to receive buttonholes or buttons at predetermined points, and means for guiding the fabric while the locator is being moved.

14. In combination, a sewing-machine, a support projecting outwardly from the machine, sets of notches formed on the support, each set of notches being differently spaced and arranged in different alinement, a locator having means for engaging an article being operated upon, means attached to the locator for engaging one of a selected series of notches, and means for removably holding the support to the machine, to permit the setting of the support to operatively present either of said sets of notches.

15. In a device of the character described, comprising a support formed with a plurality of series of differently-spaced marks, a locator slidably mounted or the support and adjustable with relation to said marks, and means for adjusting the support to operatively present any one series of said marks to serve as a gage in the adjustment of the locator.

16. A gage for a sewing-machine, comprising a support formed with indicating-points thereon, a carrier movable on the support, a locator carried by the carrier, and means for adjusting the locator independent of its movement on the support and in alinement with said support.

17. A locator for a sewing-machine, comprising a support adapted to extend from a sewing-machine, indicating-points formed on the support, a carrier slidably mounted on the support, a locator carried by the carrier, and means for adjusting the locator in line with the support independent of its movement on said support.

18. A gage for a sewing-machine, comprising a support formed with a series of indicating-points, a carrier adapted to move on the support and in alinement therewith, a locator carried by the carrier, and means for adjusting the locator in alinement with the support and independent of the movement of the carrier on said support.

19. A gage for sewing-machines comprising locating means, a carrier therefor upon which said locating means is adjustably mounted, a support for the carrier upon which said carrier is adjustably mounted, the two said adjustments being in the same direction, the gage having an indicating-scale for indicating the position of the locating means with respect to its support, and means mounted on the carrier for holding the same and the locating means in a determinate position, said latter means serving as a finger-grip in the movement of the carrier.

20. In a gage for sewing-machines, the combination with locating means, of a suitable support therefor, said locating means and support provided the one with a graduated scale and the other with a portion arranged to register therewith, and having two adjustments, one an adjustment of said locating means with respect to its support to various positions along the said graduated scale, and the other an independent compensating adjustment for adjusting the relationship of said locating means with respect to the said scale-graduations.

21. In a gage for sewing-machines, the combination with locating means, of a suitable support therefor, said locating means and support provided the one with a graduated scale and the other with a portion arranged to register therewith, and having two adjustments, one an adjustment of said locating means with respect to its support to various positions along the said graduated scale, and the other an independent compensating adjustment for adjusting the relationship of said locating means with respect to the said scale-graduations; and means for adjustably securing the said support to the bed of a sewing-machine, the direction of said adjustment being at right angles to the direction of the other said adjustments.

22. In a gage for sewing-machines, the combination with a support provided with a graduated scale, of a carrier thereon having a finger arranged to register with the graduations of said support, and a locator adjustably mounted upon said carrier, whereby the same may be adjusted with respect to the position of said finger.

23. In a sewing-machine, the combination with a work-clamp, and a support secured to and extending outwardly from said machine and provided with a graduated scale, and a locating means adjustably mounted upon said support and capable of adjustment thereon toward and away from the said work-clamp, and provided with an indicator for registering with the graduations of said scale.

24. A gage for a sewing-machine comprising a locator to engage a buttonhole or a button, a support on which said locator is mounted, the gage having an indicating-scale representing predetermined sizes of articles to be operated upon, and means for adjusting the locator, said latter adjustment being a compensating adjustment to compensate for minor distances between the indicating-scale.

25. In a gage for sewing-machines, the combination with a support provided with a plurality of indicating-notches, means for securing said support to a sewing-machine, locating means carried by said support provided with a finger arranged to register with said notches, yielding means for holding said finger in engagement with any one of the said notches, and means by which the locating means may be manually operated and adjusted, the manual movement of the locating means on the support causing disengagement of the finger from the notch.

26. In a sewing-machine, the combination with a work-clamp and a support secured to a portion of the machine stationary with respect to said work-clamp, of a locating means carried by said support and capable of adjustment thereon toward and away from said work-clamp, and a side gage carried by said sewing-machine.

27. In a device of the character set forth, the combination of locating means, a carrier therefor, an axially-adjustable support for the carrier, and a series of indicating-scales on the support, said scales being in different alinement.

28. In a device of the character set forth, the combination of locating means, a carrier therefor, an axially-adjustable support for the carrier, a series of indicating-scales on the support, said scales being in different alinement and means for adjustably securing the carrier to the support at regular intervals which vary according to the relative axial adjustment of the support.

29. In combination, locating means, a carrier therefor, a transversely-adjustable support upon which the said carrier is longitudinally adjustable, and a plurality of scales on the support, and means for locating any one of the plurality of scales to determine the movement of the locator.

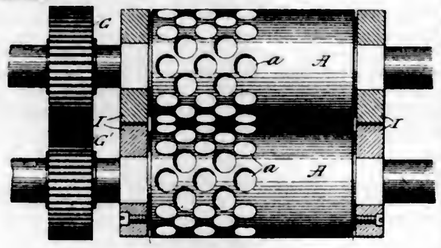
30. In combination, a locator, means for adjusting the locator on a carrier, a support bearing a scale, a carrier adjustably mounted on the support, means for adjusting the support relative to a needle of a sewing-machine, and means for retaining the carrier on its support after it has been adjusted.

31. In a device of the character described, the combination of locating means, a carrier therefor, a support for the carrier, a plurality of scale-graduations in different alinements to determine the location of the locator, and means for positioning the support to present a selected scale.

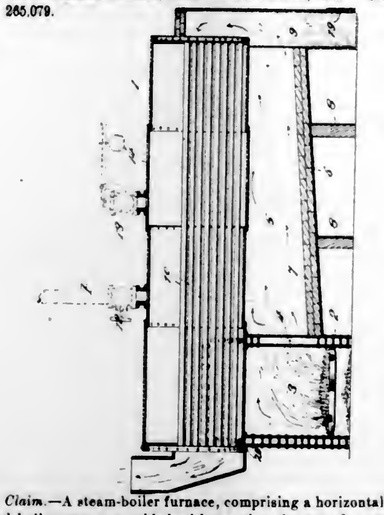
32. In a gage attachment for a sewing-machine, the combination with a locator adjustably mounted on a carrier, means for adjusting the locator on the carrier toward and from the sewing-machine, a carrier, a support, means for securing the support to a sewing-machine, means for adjusting the carrier toward and from the sewing-machine, and a scale to determine the position of the locator.

822,536. **MOLDING DEVICE.** GEORGE M. MILLS, Jersey City, N. J. Filed June 23, 1904. Renewed Dec. 7, 1905. Serial No. 290,756.

Claim.—The combination with a pair of molding-cylinders mounted on rotatable shafts and adapted to turn in substantial peripheral contact, of relatively more durable disks also mounted on said shaft beyond the ends of said cylinders, and adapted to receive the contact-pressure between the cylinders, said cylinders having a recess or peripheral opening between the molding parts and said disks and a pair of intermeshing disks connecting said shafts, substantially as described.



822,537. **STEAM-BOILER FURNACE.** JOSEPH MONVILLE and MARK ROBERTS, Hubbell, Mich. Filed June 13, 1905. Serial No. 265,079.



Claim.—A steam-boiler furnace, comprising a horizontally-disposed boiler proper provided with a series of return-flues opening into it at one end and out of it at the other and provided at its front end with a chimney and fire-box 3 underneath the front end of the boiler proper and provided with a water-leg extending up on each side of the boiler at the front end thereof and provided with a vertically and horizontally extending series of openings establishing communication between the water-leg and the indicator of the boiler, a tapered flue composed by a slanting shell 6 having a brick lining 7 and extending underneath the boiler, and a vertical smoke-box in communication with the rear contracted end of the said flue, the upper end of said smoke-box being in communication with the rear end of the boiler, as and for the purpose set forth.

822,538. **ELEVATOR-CATCH.** JAMES MORGAN, New Bedford, Mass. Filed Apr. 29, 1905. Serial No. 258,108.



Claim.—In an elevator, the combination with a car of a guide-rope, a casing on said car through which said guide-rope passes, a safety device with an eccentrically-mounted binding member with a lever-arm fastened thereto by the shaft 9, said shaft being operated by the spring 12, said spring having a U-shaped extension, the curved portion of which passes through said lever-arm and the main portion of which is coiled about said shaft and secured thereto at one end, said safety device being normally held out of operation by connection with the hoisting-cable.

822,539. **BUTTON-FASTENER.** JOHN C. MORRISON, New York, N. Y. Filed Aug. 11, 1905. Serial No. 273,783.



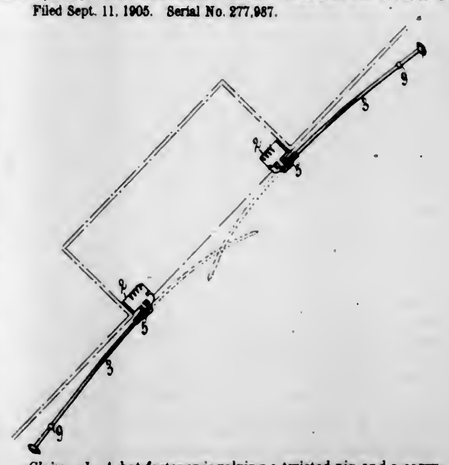
Claim.—1. A button-fastener comprising two members, one of which has a button-shank-receiving slot, and the other of which has a tongue to extend through the button-shank in said slot, the two members being connected for sliding movement along a straight line and in the direction of the length of the tongue to permit the latter to be moved forward and backward across said slot.

2. A button-fastener comprising a member provided with a tongue, and also having elongated slots in parallelism with each other and with said tongue, a second member provided with lugs extending through and movable along said slots, said second member having a slot across which the tongue extends when in its operative position, and one member being capable of movement with respect to the other to carry the tongue from across said slot.

3. A button-fastener comprising a member provided with a tongue, and also having elongated slots in parallelism with each other and with said tongue, a second member provided with lugs extending through and movable along said slots, said second member having a slot across which the tongue extends when in its operative position, one member being capable of movement with respect to the other to carry the tongue from across said slot, the said slotted member having a spring-finger, and the tongue having a seat to receive said spring-finger when the fastener is in its operative relation, thereby to prevent accidental separation of the members thereof.

4. A button-fastener having a member provided with a tongue, slots in parallelism with each other and with the tongue, and a peripheral notch, and a second member having a slot to be crossed by the tongue when the latter is in its operative position, lugs to enter and slide in said parallel slots, and a spring-finger, the tongue having a seat to receive the spring-finger to lock the members in their operative relation, said first member having diametrically opposite notches constituting finger-holds.

822,540. **HAT-FASTENER.** JOHN C. MORRISON, New York, N. Y. Filed Sept. 11, 1905. Serial No. 277,987.



Claim.—1. A hat-fastener involving a twisted pin and a carrying member therefor said pin and carrying member being permanently associated, and means for positively turning the twisted pin as it is moved in and out.

2. A hat-fastener involving an endwise-movable twisted pin, a carrying member for the pin, a yieldable guide connected with the carrying member, for the pin, and means for turning the pin as it is moved endwise, associated with said guide.

3. A hat-fastener involving an endwise-movable twisted pin, a carrying member for the pin, a coiled spring, through which the pin

extends and constituting a guide for it, and means cooperative with the pin, for turning it as it is moved longitudinally.

4. A hat-fastener involving an endwise-movable twisted pin, a carrying member, and a coiled spring connected with the carrying member and through which the pin moves endwise, said spring being provided with a spring extension through which the pin extends and which is adapted to turn it as it is moved endwise.

5. A hat-fastener involving an endwise-movable twisted pin, a carrying member, and a coiled spring connected with the carrying member and constituting a guide for the pin, the spring having a spring extension, square in cross-section internally, and the pin being of corresponding shape in cross-section, such extension serving to turn the pin as it is moved endwise.

6. A hat-fastener involving a twisted pin, square in cross-section, and means for positively turning the pin as it is moved endwise.

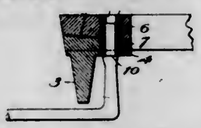
7. A hat-fastener involving a curved plate having slots, pins, square in cross-section, and twisted to move through the slots, and springs extending outward from the plate, with their openings coincident with the respective slots and through which openings, the respective pins are endwise movable, the springs constituting guides for the pins and having spring extensions, square in cross-section interiorly, to surround the pins and to turn them as they are moved endwise.

8. A hat-fastener involving a longitudinally-curved plate provided with pendent lugs having slots, coiled springs connected with and extending outward from the plate, the openings of the springs being coincident with the respective slots, and pins extending through the springs and slots, respectively.

9. A hat-fastener involving a longitudinally-curved plate provided with pendent lugs having slots, coiled springs connected with and extending outward from the plate, the openings of the springs being coincident with the respective slots, and pins extending through the springs and slots, respectively, said pins having stops to limit their opposite movements.

10. A hat-fastener involving a twisted pin, a carrying member having an opening through which the pin can be moved back and forth, and means independent of the wall of the opening for positively turning the pin on its endwise movement.

822,541. **REMOVABLE CALK FOR HORSESHOES.** MARGUERITE DE W. MUDGE and HENRY H. MUDGE, Bristol, R. I. Filed Jan. 6, 1906. Serial No. 294,896.



Claim.—1. A horseshoe having on its under side a recess the walls of which are undercut, the bottom of said recess inclining upward from the inner to the outer edge of the shoe and having a screw-threaded opening, in combination with a calk having a base-plate adapted to fit said recess and provided with an opening registering with the opening in the shoe, and a screw passing through said openings and having a central angular opening.

2. A horseshoe having on its under side a recess, its side walls undercut, and having a screw-threaded opening in its bottom, in combination with a calk having a base-plate adapted to fit said recess and provided with a non-threaded opening registering with the screw-opening in the shoe, and a headless screw having an angular central opening, and passing through both said openings in engagement with the shoe-opening and having its ends flush with the face of the calk base-plate and with the inner face of the shoe.

3. A horseshoe having on its under side a recess, its side walls undercut, and having a screw-threaded opening in its bottom in combination with a calk having a base-plate tapering from the outer, to the inner edge of the shoe and formed with an opening registering with the opening in the shoe, and a headless screw having a central angular opening from end to end, and passing through both said openings in engagement with the shoe and having its ends flush with the face of the calk base-plate and with the inner face of the shoe.

4. A horseshoe having a recess on its under side formed with undercut walls and having a screw-threaded opening in the bottom of said recess, in combination with a calk having a base-plate adapted to fit said recess and provided with a non-threaded opening and a slit splitting said opening, and a screw passing through both said openings in engagement with the shoe-opening and having a non-threaded part of conical form for engaging and laterally expanding by the driving of the screw the split parts of the calk-base whereby it is caused to be bound or clamped against and between the undercut walls of said recess.

5. A horseshoe having a recess on its under side formed with undercut walls and having a screw-threaded opening in the bottom of said recess, in combination with a calk having a base-plate adapted to fit said recess and provided with an opening and a slit splitting said opening, and a screw passing through both said openings in engagement with the shoe-opening, and means whereby the split base parts of the calk may be expanded to bind or clamp them against and between the undercut walls of said recess.

822,542. **NON-REFILLABLE BOTTLE.** JOHN F. MULLARKEY, West Toledo, Ohio, assignor of one-half to Henry Herzog, Toledo, Ohio. Filed Apr. 17, 1905. Serial No. 255,977.



Claim.—1. A bottle having its neck formed with a valve-seat, a hollow elongated valve member mounted in the neck and having an enlarged bulbous portion for seating on the valve-seat formed intermediate of its ends whereby to permit the lower portion of the valve member to extend through the valve-seat, and means in the neck for limiting the movement of the valve member.

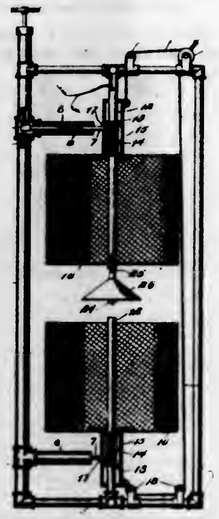
2. A bottle having a portion of its neck contracted to form a valve-seat, a hollow elongated valve member mounted in the neck and having a bulbous portion for normally seating on the contracted portion of the neck formed intermediate of its ends whereby to permit the lower portion of the valve member to extend through the valve-seat, means for normally retaining the valve member, on its seat, and means comprising an apertured plug for limiting the movement of the valve member.

3. A bottle having its neck formed with a valve-seat, a hollow elongated air-tight valve member of glass having a bulbous portion formed intermediate of its ends for seating on the valve-seat whereby the lower portion of said member projects through the valve-seat and having a seat formed at its upper end, a movable weight member mounted in said seat, and means for limiting the movement of the valve and weight members.

822,543. **TRAP.** COLONEL A. MURPHY, Chatfield, Minn. Filed Sept. 27, 1905. Serial No. 280,369.

Claim.—1. In a trap of the character described the combination with a frame having guides therein; of oppositely-disposed baskets slidably mounted upon the guides and adapted to normally contact, and means for simultaneously moving the baskets from each other.

2. In a trap of the character described the combination with a frame; of oppositely-movable baskets mounted within the frame and constituting a trap, means for locking the baskets against movement, and automatic devices for moving the baskets together when unlocked.



3. In a trap the combination with a frame having guides therein; of oppositely-disposed baskets movably mounted on the guides, locks for holding the baskets against movement, means for automatically moving the baskets together when unlocked, and mechanism for moving the baskets apart.

4. In a trap the combination with a frame having guides therein; of oppositely-disposed spring-pressed baskets mounted on the guides and normally contacting at their open ends, means for separating the baskets, and simultaneously-movable locks for holding the baskets apart.

5. In a trap the combination with a frame having guides therein; of oppositely-disposed spring-pressed baskets mounted on the guides and normally contacting at their open ends, means for separating the baskets, locks for engaging and holding the baskets, and means for simultaneously actuating the locks.

6. In a trap the combination with a frame having guides therein; of a lamp, oppositely-disposed baskets movable upon the guides and normally inclosing the lamp, and means for simultaneously moving the baskets in opposite directions.

7. In a trap the combination with a frame having guides therein and a lamp; of oppositely-disposed baskets mounted upon the guides and normally inclosing the lamp, sleeves secured to the baskets and slidably mounted on the guides, springs within the sleeves normally holding the baskets in contact, means for compressing the springs and separating the baskets, and locks for holding said baskets separated.

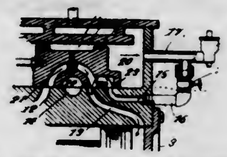
8. In a trap the combination with a frame having guides therein and a lamp; of oppositely-disposed baskets mounted upon the guides and normally inclosing the lamp, sleeves secured to the baskets and slidably mounted on the guides, springs within the sleeves normally holding the baskets in contact, means for compressing the springs and separating the baskets, locks for holding said baskets separated, and means for simultaneously actuating the locks to release or lock the baskets.

9. The combination with a trap having oppositely-disposed baskets spaced apart and means for simultaneously bringing the baskets together; of an electric lamp within the baskets and adapted to be submerged therewith.

10. In a trap of the character described, the combination with oppositely-disposed slidable baskets and means for holding the baskets normally spaced apart; of means for simultaneously moving said baskets toward each other.

11. In a trap of the character described, the combination with guides; of oppositely-disposed baskets slidably mounted on the guides, means for holding the baskets spaced apart, and means for simultaneously moving said baskets toward each other.

822,544. **STEAM-ENGINE.** JOSEPH F. MURPHY, Ennis, Tex. Filed July 10, 1905. Serial No. 269,090.



Claim.—1. In a steam-engine, the combination of a cylinder provided with an exhaust and high and low pressure ports, a piston working therein and having opposite faces of different area, a steam-chest, a passage leading from said steam-chest, a relief-valve in communication with said passage, and a slide-valve controlling the said exhaust, the high and low pressure ports and the said passage leading to the relief-valve.

2. In a steam-engine, the combination of a cylinder provided with an exhaust and high and low pressure ports, a piston working therein and having opposite faces of different area, a steam-chest, a passage 15 leading from said steam-chest, a pipe 17 leading from the steam-chest and having a relief-valve, a valved pipe connecting pipe 17 with the passage 15, and a slide-valve controlling the said exhaust, the high and low-pressure ports and the passage 15.

3. A steam-engine comprising a cylinder having high-pressure, low-pressure and exhaust-ports, a piston working in the cylinder, a steam-chest, a slide-valve having a passage to register with said high and low pressure ports during the stroke of the piston in one direction, and having a depression for establishing communication between the exhaust and low pressure ports at each stroke of the piston in the opposite direction, and having a second passage to establish communication between the low-pressure port of the cylinder and an inlet in communication with the space of the steam-chest for supplying steam at boiler-pressure to the low-pressure end of the cylinder when required.

4. In a steam-engine, the combination of a cylinder provided with an exhaust, a high-pressure and a low-pressure port, a steam-chest, a valved connection between the steam-chest and its base or seat, and a slide-valve having a depression and a passage, the latter adapted to establish communication between the high and low pressure ports of the cylinder and said valve provided with a second passage to register with the aforesaid valved connection, whereby high-pressure steam may be admitted into the low-pressure end of the cylinder when required.

5. An engine comprising a cylinder having a hollow extension and provided with an exhaust, a high-pressure and a low-pressure port, a piston arranged to work in said cylinder and provided with an extension working in the cylinder extension, a slide-valve having a depression, a passage 21 to register with the high and low pressure ports of the cylinder and with a passage 23, a pipe leading from the steam-chest and provided with a relief-valve, and a valved connection between said pipe and the seat of the slide-valve to register with said passage 23, whereby high-pressure steam may be admitted into the low-pressure end of the cylinder when required.

822,545. **WATER-HEATER.** JOHN K. MCLAUGHLIN, Philadelphia, Pa. Filed Jan. 31, 1906. Serial No. 298,847.



Claim.—1. In a heater unit, an upper and a lower casing, a diaphragm having an aperture therethrough intermediate said casings, and forming chambers therebetween, a coupling member secured on each side of said diaphragm and extending through the casing contiguous thereto, each of said members having an opening communicating with the chamber contiguous thereto and means for deflecting the water through said openings.

2. In a heater unit, an upper and a lower casing, a diaphragm having an aperture therethrough intermediate said casings and forming chambers therebetween, a coupling member secured on each side of said diaphragm and extending through the casing contiguous

thereto, each of said members having an opening communicating with the chamber contiguous thereto, and a baffle-plate extending from each of said members for deflecting the water through said openings.

3. In a heater unit, an upper and a lower casing, a diaphragm having an aperture therethrough intermediate said casings and forming chambers therebetween, a hollow member secured on each side of said diaphragm and extending through the casing contiguous thereto, each of said members having an opening therethrough communicating with the chamber contiguous thereto, a baffle-plate extending from one of said members on one side of said aperture and a baffle-plate extending from the other of said members on the other side of said aperture.

4. In a heater unit, an upper and a lower casing, a diaphragm having an aperture therethrough intermediate said casings and forming chambers therebetween, a hollow member secured on each side of said diaphragm and extending through the casing contiguous thereto, each of said members having an opening therethrough communicating with the chamber contiguous thereto, a baffle-plate extending from one of said members on one side of said aperture and a baffle-plate extending from the other of said members on the other side of said aperture, said members having their outer ends internally threaded.

5. In a heater unit, an upper and a lower casing, a diaphragm having an aperture therethrough intermediate said casings and forming chambers therebetween, a hollow coupling member secured on each side of said diaphragm and extending through the casing contiguous thereto, each of said members having an opening communicating with the chamber contiguous thereto, a baffle-plate extending from one of said members on one side of said aperture, and a baffle-plate extending from the other of said members on the other side of said aperture and each of said members having a shoulder against which the casing contiguous thereto abuts.

6. In a heater unit, an upper and a lower casing, a diaphragm having an aperture therethrough intermediate said casings and forming chambers therebetween, a coupling member secured on each side of said diaphragm and extending through the casing contiguous thereto, each of said members having an opening communicating with the chamber contiguous thereto, means for deflecting the water through said openings and means for permitting the products of combustion to pass through said casings and said diaphragm.

7. In a heater unit an upper and a lower casing, a diaphragm having an aperture therethrough intermediate said casings, and forming chambers therebetween, a coupling member secured on each side of said diaphragm and extending through the casing contiguous thereto, each of said members having an opening communicating with the chamber contiguous thereto, means for deflecting the water through said openings, said casings and said diaphragm having a plurality of openings therethrough and tubes secured in said openings for the passage of the products of combustion.

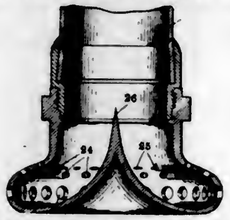
8. In a heater unit, an upper casing having a laterally-extending flange, a lower casing having a laterally-extending flange from which latter a flange extends angularly, a diaphragm having an aperture therethrough intermediate said casings and forming chambers therebetween and having its perimeter seated between said lateral flanges and engaging said angular extending flange, a hollow coupling member secured on each side of said diaphragm and extending through the casing contiguous thereto, each of said members having an opening communicating with the chamber contiguous thereto, means for deflecting the water through said openings and aperture, and means for permitting the products of combustion to pass through the unit.

9. In a water-heater, a heating medium, a series of heating units in proximity thereto, a casing having an opening at its upper end, each of said units comprising an upper and a lower casing, a diaphragm having an aperture therethrough intermediate said casings and forming chambers therebetween, a coupling member on each side of said diaphragm and extending through the casing contiguous thereto, each of said members having an opening communicating with the chamber contiguous thereto, means for deflecting the water through said openings and means for permitting the products of combustion to pass through each unit.

10. In a heater unit, a casing having two communicating chambers therein, a coupling member extending through said casing, said member having a plurality of separate passages therethrough, one of said passages communicating with one of said chambers, and the other of said passages communicating with the other of said chambers.

11. In a heater unit, a casing, an apertured member therein forming two communicating chambers and a coupling member extending through said casing, said coupling member having a plurality of separate passages therethrough, one of said passages communicating with one of said chambers and the other of said passages communicating with the other of said chambers.

822,546. DISTRIBUTING-NOZZLE. HERMAN F. NEWMAN, Indianapolis, Ind. Filed Apr. 24, 1905. Serial No. 257,250.



Claim.—1. The combination, with a flexible hose, of a distributing-nozzle, having a multiplicity of perforations in its periphery some of which extend at a backward angle, and having its sides beyond said perforations formed on a reverse curve and terminating in a central apex, whereby the water entering the nozzle is divided and guided substantially directly toward said perforations, substantially as and for the purpose set forth.

2. A distributing-nozzle having an enlarged end with a multiplicity of orifices in its outer wall, certain of said orifices discharging at substantial right angles with the axis of said nozzle and others at an angle thereto, said nozzle being provided interiorly with an apex by which the water entering said nozzle is divided and guided substantially directly toward said discharging-orifices.

3. A distributing-nozzle having an enlarged end formed by a gradual non-abrupt curvature of the outer wall outwardly from the cylindrical portion to the desired diameter and thence by a continuing curve inwardly and backwardly until the structure terminates in an apex by means of which the flow of water from the tube to which the nozzle is connected is divided and directed outwardly in all directions, said nozzle being provided with a multiplicity of orifices in its outer wall arranged to accommodate the discharge of water in the direction of its flow as governed by the curvature of the walls, whereby water is distributed in numerous directions under full pressure.

4. The combination, with a flexible hose, of a distributing-nozzle having a multiplicity of perforations in its peripheral portion, some of which are arranged to discharge at substantially right angles with the line of the hose to which the nozzle is attached and others of which are arranged to discharge backwardly and thus exert a pulling force on the flexible hose to which the nozzle is attached, whereby the nozzle is held forward with a pull on the hose and is thereby rendered effective when introduced in situations where the fireman would be unable to hold it, substantially as set forth.

822,547. EXCAVATOR. GEORGE W. NICOLSON, Mojave, Cal. Filed May 27, 1905. Serial No. 262,653.

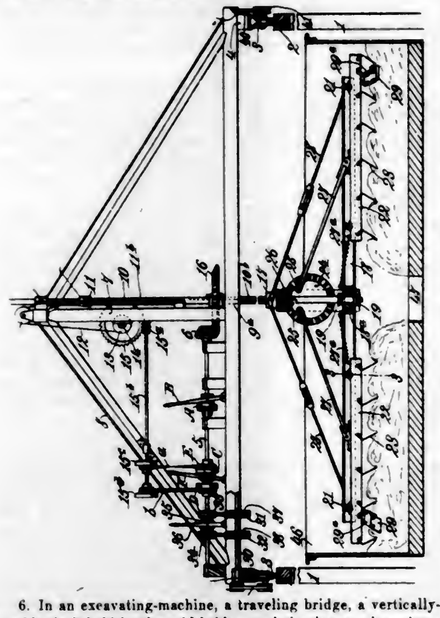
Claim.—1. In an excavating-machine, simultaneously-reciprocating frames rectilinearly operating inwardly toward and outwardly from each other and having a plurality of scrapers depending from the lower portions thereof and movably attached thereto, and means for operating said frames.

2. In an excavating-machine, movable supporting means, simultaneously-reciprocating frames held by the said means and rectilinearly operating inwardly toward and outwardly from each other, scrapers depending from the said frames and freely movable when the latter reciprocate in one direction and held against movement when said frames move in the opposite direction, and mechanism for operating the frames and the supporting means.

3. In an excavator, a rotary supporting means, frames longitudinally reciprocating on the said means to and from each other, scrapers movably depending from the said frames, and mechanism for simultaneously operating the frames.

4. An excavating-machine having simultaneously-reciprocating frames rectilinearly movable inwardly toward and outwardly from each other and carrying scrapers which are loose in the outward movement of the frame and held rigid when the latter operate inwardly to draw material engaged toward the center of the machine, and mechanism for operating the said frames.

5. An excavator having rectilinearly-slidable automatically-rotating frames carrying depending scrapers, and means for elevating and depressing the said frames.



6. In an excavating-machine, a traveling bridge, a vertically-movable shaft held by the said bridge, and simultaneously-reciprocating frames supported by the lower extremity of the shaft and rectilinearly slidable inwardly toward and outwardly from each other and provided with depending movably-connected scrapers.

7. In an excavator, the combination of a vertically-slidable shaft, a beam connected to said shaft, frames longitudinally slidable on the beam and having depending movably-connected scrapers, and mechanism for rotating the shaft and operating the frames.

8. In an excavator, the combination of a shaft, a beam capable of rotation on the shaft, frames longitudinally slidable on the beam and having depending scrapers movably connected thereto, and deflectors disposed at an oblique angle at the outer extremities of the frames to automatically shift the latter and the beam in arcuate paths.

9. In an excavator, a support mounted to swing in a circle, a plurality of scrapers longitudinally slidable on the support, and means for intermittently imparting an arcuate movement to the support and scrapers.

10. In an excavator, the combination of a beam mounted to swing in a circle, frames longitudinally slidable on the beam and carrying depending movably-connected scrapers, and obliquely-disposed deflectors at the outer extremities of the frames to cause the beam and frames carrying the scrapers to move in an arcuate path on the outward or back strokes of the frames, the deflectors being in positions reverse to the scrapers.

11. In an excavator, the combination of a movable bridge, a shaft vertically adjustable through the bridge, a drum having a cord or cable engaging the same and connected to the shaft, a support capable of rotation on the lower extremity of the shaft, frames longitudinally slidable on the support and having depending movably-connected scrapers, and mechanism operated by the said shaft for actuating the frames.

12. In an excavator, the combination of a movable bridge, a shaft depending therefrom and vertically slidable therein, a beam rotatably supported on the lower extremity of the shaft and having a yoke extending upwardly therefrom, crank-gears held by the yoke, a pinion on the shaft engaging the crank-gears, frames longitudinally slidable on the beam and provided with depending movably-connected scrapers, and connecting means between the frames and the crank-gears.

13. In an excavator, the combination of traveling and vertically-movable supporting means, frames having antifrictional devices slidably engaging the supporting means, the said frames having longitudinal reciprocation inwardly and outwardly in reverse directions on the supporting means, scrapers movably depending from the frames and operating to draw the material engaged inwardly toward the center of the machine, and mechanism for actuating the said means and frames.

14. In an excavating-machine, the combination of a traveling bridge, a vertically-slidable shaft depending from said bridge and extending upwardly through the latter, a horizontally-disposed driving-shaft for operating the vertically-slidable shaft, means between the driving-shaft and vertically-slidable shaft for controlling the vertical adjustment of the latter shaft, mechanism for disconnecting the vertically-slidable shaft from the driving-shaft, and simultaneously reciprocating reversely-moving frames supported on the lower extremity of the slidable shaft below the bridge and having scrapers movably depending therefrom.

15. In an excavating-machine, the combination of a traveling bridge having wheels connected thereto, track devices with which the said wheels engage, a motion-transmitting shaft carried by the bridge, a driving-shaft on the bridge, devices carried by the driving-shaft, motion-transmitting shaft and a part of the wheels of the bridge for shifting the entire apparatus on the track devices in opposite directions, a vertically-adjustable shaft held by and depending below the bridge and in separable coöperation with respect to the driving-shaft, and simultaneously-reciprocating reversely-operating frames held on the lower extremity of the vertically-adjustable shaft and provided with depending movable scrapers.

822,548. METHOD OF PRESERVING MEAT. PATRICK H. O'KEEFFE, Ramornie, South Grafton, New South Wales, Australia. Filed July 11, 1905. Serial No. 269,259.

Claim.—1. The method of preserving meat consisting in soaking meat in cold water for a predetermined period, removing the meat from said water, adding saltpeter to the latter, boiling the meat after removal, soaking the boiled meat in the water-and-saltpeter solution, removing the soaked meat, boiling said solution, cooling the latter, adding solid pickling ingredients to the cooled solution and soaking meat to be preserved in the resultant solution.

2. The method of preserving meat consisting in soaking meat in cold water for a predetermined period, removing the meat from said water, adding saltpeter to the latter, boiling the meat after removal in fresh water, soaking the boiled meat in the water-and-saltpeter solution, removing the soaked meat from the solution, boiling said solution, cooling the latter, adding salt, sugar and spices to the cooled solution, and soaking cooked meat to be preserved in the resultant solution.

3. The method of preserving meat consisting in soaking meat in cold water for a predetermined period, removing the meat from said water, adding saltpeter to the latter, boiling the meat after removal in fresh water, soaking the boiled meat in the water-and-saltpeter solution, removing the meat after being soaked a predetermined period, boiling the solution, cooling and straining the latter, adding solid pickling ingredients to the strained solution, diluting the latter with water, and boiling meat to be preserved in the diluted solution.

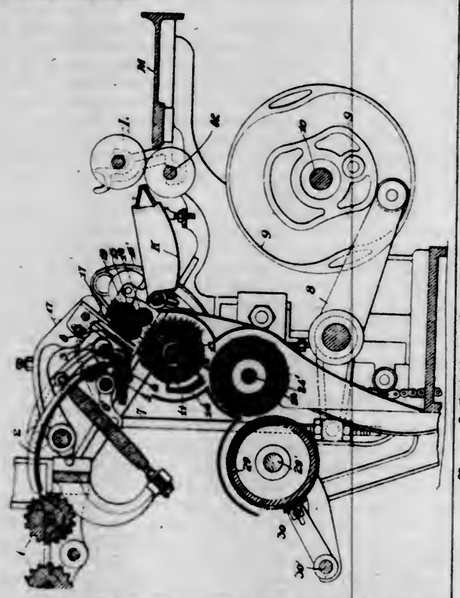
822,549. COTTON-COMBING MACHINE. OSCAR L. OWEN, Whitinsville, and ELWIN H. ROONEY, New Bedford, Mass., assignors to The Whitin Machine Works, Whitinsville, Mass., a Corporation of Massachusetts. Filed Aug. 10, 1905. Serial No. 273,533.

Claim.—1. In a combing-machine, the combination with a single-nip combing-cylinder, and an intermittently-actuated drawing-off and piecing mechanism adapted for a complete operation for each complete revolution of said cylinder, of a plurality of independent actuating means for said mechanism, adapted to have successive driving connection therewith.

2. In a combing-machine, the combination with a single-nip combing-shaft, and an intermittently-actuated drawing-off and piecing mechanism adapted for a complete operation for each complete revolution of said combing-shaft, of a plurality of independent actuating means for said mechanism adapted to having successive driving engagement therewith, a shaft for driving said actuating means and gearing for driving said shaft at a less rate of speed than said combing-shaft.

3. In a combing-machine, a single-nip combing-cylinder provided with means for detaching the staple, drawing-off and piecing mechanism for said staple adapted for a complete operation once for each revolution of said combing-cylinder and actuating means for said drawing-off and piecing mechanism comprising normally disconnected driving clutch members and a shaft rotating at a less

speed than said combing-shaft and geared to drive the said drawing-off and piecing mechanism through first one and then the other of said clutch members.



4. In a combing-machine, means for combing and detaching the staple comprising a single-nip combing-shaft, a drawing-off roller adapted to be suitably actuated to effect the piecing of the staple, in combination with a pair of driven clutch members permanently geared with said roller, independent driving clutch members therefor adapted to clutch alternately therewith and an actuating-shaft for said driving clutch members controlling the operation thereof, the said controlling-shaft being geared to rotate at a less speed than the combing-shaft.

5. In a combing-machine, a combing-shaft, having thereon a single detaching half-lap, a drawing-off roller adapted to piece the detachments of the staple and actuating means for said roller comprising a shaft geared to rotate at a less speed than said combing-shaft, a pair of independent levers alternately actuated by said shaft and a pair of driven clutch members both geared with said roller and respectively actuated by said levers.

6. In a combing-machine, a single-nip combing-cylinder, a drawing-off and piecing mechanism adapted for movement alternately in opposite directions and means for suitably actuating the same comprising two driven clutch members permanently geared with said mechanism, a spring-pressed driving clutch member for each of said driven members and means for permitting said spring-pressed driving members to engage with their respective driven members in alternation with each other.

7. In a combing-machine, drawing-off and piecing mechanism adapted for movement alternately in opposite directions and a plurality of independent actuating means therefor respectively comprising a driven clutch-wheel and a driving-pawl spring-pressed into engagement therewith, in combination with a single cam-shaft for causing said pawls to engage with and drive their respective clutch-wheels in succession and a single-nip combing-cylinder geared to rotate a complete revolution for each complete operation of said drawing-off mechanism.

8. In a combing-machine, a drawing-off and piecing mechanism and double actuating means therefor comprising two notched wheels in permanent driving connection with said mechanism, a lever for each of said wheels mounted concentrically therewith, driving-pawls carried respectively by said levers spring-pressed into engagement with said wheels, in combination with a single cam-shaft for actuating said levers and pawls alternately and a single-nip combing-cylinder rotating at twice the speed of said cam-shaft.

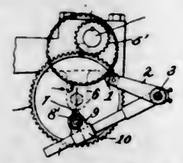
9. In a combing-machine, means for combing the lap comprising a single-nip combing-cylinder and nipper mechanism for holding the same while it is combed, a drawing-off roller adapted to be actuated alternately in opposite directions for each action of the nipper mechanism, a plurality of driven clutch members geared with said roller and a plurality of clutch-engaging means respectively adapted to drive the same, in combination with a driving-shaft for said means geared to rotate a half-revolution for each action of the nipper mechanism and causing said means to engage successively or alternately with their respective clutch members.

10. In a cotton-combing machine, a nipper mechanism, a single-nip combing-shaft and piecing mechanism adapted for intermittent alternate motion, a plurality of means for transmitting said motion to said mechanism, a driving-shaft therefor rotated at a less speed than said combing-shaft and suitably connected for driving said means alternately, in combination with a multiple-acting cam on said driving-shaft for actuating said nipper mechanism.

11. In a combing-machine, drawing-off and piecing mechanism, a plurality of means for actuating the same and a cam-shaft common to said means for alternately driving them, in combination with a nipper mechanism having a stationary jaw and a movable jaw, and a multiple-acting cam on said cam-shaft for operating said movable jaw.

12. In a combing-machine, means for nipping the lap comprising a stationary cushion-plate and movable nipper-knife, and a combing-cylinder and drawing-off roller, in combination with a cam-shaft rotated at half the speed of said combing-cylinder and geared to actuate the said drawing-off roller, and a double-throw cam on said cam-shaft for operating the nipper-knife.

822,550. **DOFFER-COMB MOTION.** OSCAR L. OWEN, Whitinsville, Mass., assignor to The Whitin Machine Works, Whitinsville, Mass., a Corporation of Massachusetts. Filed Aug. 19, 1905. Serial No. 274,833.



Claim.—1. As a means for operating doffer-combs, the combination of a doffer-comb rock-shaft, a crank-arm thereon, a crank-wheel, and a wrist-pin member on said wheel having sliding connection with said crank-arm.

2. As a means for operating doffer-combs, the combination of a doffer-comb rock-shaft, a rotary power-shaft, a gear-wheel removably mounted in driving engagement therewith, and a sliding crank connection between said wheel and rock-shaft adapted to oscillate the latter.

3. As a means for operating doffer-combs, the combination of a doffer-comb rock-shaft, a rotary power-shaft, a gear-wheel removably secured in mesh therewith and an adjustable wrist-pin member carried by said wheel and having sliding crank connection with said rock-shaft to oscillate the same.

4. The combination with a doffer-comb rock-shaft and its crank-arm, of a crank-wheel and a sliding sleeve on said arm pivotally secured to the face of said crank-wheel, whereby rotation of the latter oscillates said rock-shaft.

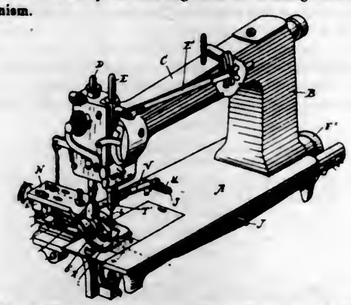
5. The combination with a doffer-comb rock-shaft and its crank-arm, of a crank-wheel provided with a slot, a stud adjustably secured in said slot, and a wrist-pin member pivotally carried by said stud and provided below the stud with a sliding sleeve embracing said crank-arm.

822,551. **BUTTON-SEWING MACHINE.** CHARLES A. POWELL, Whitesboro, N. Y. Filed May 18, 1904. Serial No. 208,513.

Claim.—1. In a button-sewing machine provided with mechanism for sewing on buttons, and mechanism for starting the sewing mechanism, fingers for opening a buttonhole and means connected with and operated by the mechanism for starting the machine whereby simultaneously to spread the fingers at the starting of the mechanism.

2. In a button-sewing machine, fingers for opening a buttonhole, the said fingers being mounted to provide for their opening to a greater or less degree, sewing mechanism, means for starting the same and means operative synchronously with the sewing mechanism simultaneously to spread the fingers at the starting of such mechanism.

3. In a button-sewing machine, the combination with mechanism for sewing on buttons, of fingers having mountings adapted to permit adjustment to different-size buttonholes for the opening of said buttonhole to an extent determined by said adjustment, mechanism for starting the sewing mechanism and means operatively connected therewith to spread the fingers at the starting of the sewing mechanism.



4. In a button-sewing machine, the combination with mechanism for sewing on buttons and means for starting and stopping the same, of fingers for the opening of the buttonhole, adjustable mountings for said fingers, and means to open and close the said fingers synchronously with the starting and stopping of the sewing mechanism and to an extent determined by the adjustment of their mountings.

5. In a button-sewing machine provided with mechanism for sewing on buttons, the combination of fingers for opening a buttonhole, mechanism by which the operation of sewing on buttons is started and stopped and means connected with said mechanism whereby to open and shut said fingers.

6. In a button-sewing machine, the combination with sewing mechanism and button-supporting means, of fingers mounted to be raised and lowered with the button-supporting means and operative, independent of the position of said means, to open a buttonhole starting and stopping mechanism and means operative therefrom to open and shut the fingers.

7. In a button-sewing machine, the combination with mechanism for sewing on buttons and means for starting and stopping the same, of fingers for opening a buttonhole, and operative means adapted to open and close the fingers when lowered upon the fabric simultaneously with the starting and stopping of the sewing mechanism.

8. In a button-sewing machine, the combination with button-stitching mechanism and a button-clamp, of fingers mounted to be simultaneously operated by the starting mechanism of the machine to open a buttonhole and said starting mechanism.

9. In a button-sewing machine, in combination with a button-stitching mechanism and a button-clamp, means for starting and stopping the stitching mechanism, fingers mounted to be simultaneously operated by the starting and stopping mechanism and operative to spread each edge of the buttonhole equally from the middle line thereof and to permit closing the buttonhole.

10. In a button-sewing machine, the combination with button-stitching mechanism, a button-clamp and a presser-bar, of fingers movable to spread each edge of the buttonhole equally to the side of the button-attaching point and means, independent of the presser-bar, to spread the fingers.

11. In a button-sewing machine comprising button-supporting means, work-supporting means and stitching mechanism, fingers mounted to engage the edges of the buttonhole, starting mechanism, means operatively connected with the starting mechanism to spread the buttonhole at the beginning of the operation of sewing the button.

12. In a button-sewing machine comprising a button-support, a work-support and a stitching mechanism, operative means to spread the sides of the buttonhole whereby the button-stitches may pass therethrough, the said means being connected with the mechanism which starts the operation of sewing, said starting mechanism.

13. In a device of the character described, comprising button-stitching mechanism, means of starting and stopping the same, and a button-clamp, a buttonhole-expander operating between the button and the fabric to which it is to be attached, and operative connections of the same with the starting and the stopping means to open the buttonhole at the starting of the stitching operation and to permit its closing at the end thereof.

14. In a device of the character described comprising a work-support, a button-support, a presser-bar, and a stitching mechanism, means mounted on the presser-bar to open a buttonhole and means to operate the same irrespective of the raised or lowered position of the presser-bar.

15. In a device of the character described, fingers connected with the starting and stopping mechanism and operative therewith to spread each edge of a buttonhole at the starting of the mechanism and to release it at the stopping thereof, the said fingers being mounted on supports adapted to adjust the fingers to buttonholes of different size, said starting and stopping mechanism.

16. In a button-sewing machine comprising button-supporting means, work-supporting means and stitching mechanism, fingers mounted to engage the edges of the buttonhole and means for operating each finger to spread its edge of the buttonhole equally from the central line of said buttonhole.

17. In a device of the character described having means severally, to support a button and a fabric and for stitching the former to the latter, and means to start and to stop the stitching means, means connected with the latter means to spread the buttonhole by engaging each edge at opposite points in the middle thereof, whereby a button may be sewed on its fabric by stitches passing through the buttonhole.

18. In a button-sewing machine comprising a stitching mechanism and means for positioning a button relative thereto, fingers pivotally mounted engaging at one end the edges of the buttonhole and at the other end connected with the starting and stopping mechanism of the machine whereby the edges of the buttonhole may be opened and permitted to close coincident with the beginning and the ending of the sewing operation, and said starting and stopping mechanism.

19. In a button-sewing machine comprising a presser-foot and coöperating parts for locating a button and sewing the same, fingers, operated independent of the presser-foot-operating means, to open a buttonhole and each movable therefor when the presser-foot is upon the fabric, and means for operating said fingers.

20. In a button-sewing machine, a work-support, stitching mechanism, a presser-foot comprising button-supporting means, means supported on the presser-foot for opening a buttonhole and operative at any position of the presser-foot, and means connected with the starting and stopping mechanism for reciprocating the said opening means, said starting and stopping mechanism.

21. In a button-sewing machine comprising parts for positioning the buttons and sewing the same, fingers pivotally mounted and adapted at one end to engaged the edges of a buttonhole, and supported on the mountings adjustable to adapt the device to buttonholes of different size, together with means for operating said fingers.

22. In a button-sewing machine comprising a work-support, stitching mechanism and a button-supporting means adjustable to different-size buttons, the combination of fingers adjustably mounted adjacent to the button-supporting means, and means to open and close the fingers synchronously with the starting and stopping of the stitching mechanism.

23. In a button-sewing machine comprising a work-support, stitching mechanism and button-positioning means, fingers pivotally mounted to separate the edges of a buttonhole, means to start and stop the stitching mechanism, and lever connection between the said fingers and the said mechanism whereby the fingers are operated simultaneously with the said mechanism.

24. In a button-sewing machine, fingers for opening a buttonhole, means to raise and lower said fingers and separate means for spreading them in a raised or lowered position.

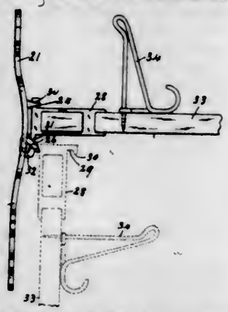
25. In a button-sewing machine, buttonhole-opening fingers, means to raise and lower the same, means to swing each of the fingers when lowered upon the fabric to spread each edge of the buttonhole.

822,552. **FOLDING CLOTHES-DRIER AND HAT AND COAT HOLDER COMBINED.** WILLIAM S. PUGSLEY, London, Canada, assignor to John G. Noyes, London, Canada. Filed Apr. 8, 1905. Serial No. 254,537.

Claim.—1. In a device of the class described, a body provided with one or more cross-bars, and with one or more downwardly and forwardly inclined lugs in each of which an opening is formed, in combination with one or more arm-holders each provided with a downwardly-extending shank on the outer end of which a hook is formed, for engagement with said cross-bars and said lugs, substantially as shown and described and for the purposes specified.

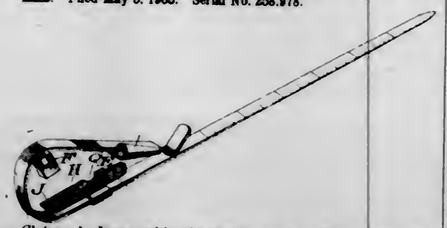
2. In a device of the character described, a body provided with one or more downwardly and forwardly inclined lugs in each of which an opening is formed, and with one or more forwardly-extending

loops spaced apart from and above said lugs, in combination with one or more arm-holders each provided with a downwardly-extending shank for engagement with the openings in said inclined lugs, and with an upwardly-extending shank formed with a shouldered end for engagement with the upper face of said loops, and a clothes-supporting arm secured to each of said clothes-supporting-arm holders, substantially as shown and described and for the purposes specified.



3. In a device of the class described, a body provided with one or more cross-bars, one or more downwardly and forwardly inclined lugs, in each of which an opening is formed, and one or more forwardly-extending loops spaced apart from and above said lugs, in combination with one or more arm-holders each provided with a downwardly-extending shank on the outer end of each of which a hook is formed for engagement with said lugs and one of said cross-bars, and with an upwardly-extending shank on the outer end of which a shoulder is formed for engagement with the upper face of of said loops, and a clothes-supporting arm secured in each of said arm-holders, substantially as shown and described and for the purposes specified.

822,553. **COMBINATION-TOOL.** EMILE REIKENSTEIN, Waltham, Mass. Filed May 5, 1905. Serial No. 258,978.



Claim.—1. In a combination-tool, a blade, a slotted crook continuous of an end thereof, an elbow on said crook adapted to exert pressure on said blade, and a cutting device mounted intermediate of said elbow and the bend of said crook and movable through the slot of the latter.

2. In a combination-tool, a blade having a crook at one end, and a device movably mounted on said blade and comprising a knife and a screw-driver confined within and limited in its movements in both directions by the bend of said crook and its terminal.

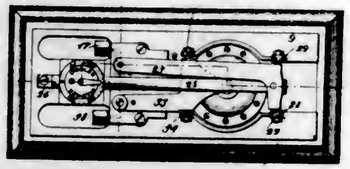
3. In a combination-tool, a blade having a slotted crook at one end, a knife and a screw-driver for coöperation with said crook and a slide reversibly mounted on said blade and fixedly carrying said knife and screw-driver.

4. A blade, and a device, comprising a knife and a screw-driver, and a carrier for said device, said carrier being mounted on said blade and a crook at one end of said blade, said crook having therein a slit through which either of said members may be projected.

5. A blade having a crook, and a device comprising a knife and a screw-driver and a carrier for said device confined within said crook, said carrier being mounted on said blade at one end thereof and longitudinally movable thereon.

822,554. **REGULATOR.** ALFRED ROESCH, Bridgeport, Conn., assignor to Davis & Roesch Temperature Controlling Company, New York, N. Y., a Corporation of New Jersey. Filed Apr. 28, 1902. Serial No. 104,910.

Claim.—1. In a temperature-regulator, the combination of a base having therein a primary chamber and a secondary chamber, said secondary chamber having an unobstructed outlet-passage for connection to the actuating means of a heat-controller, and said primary chamber having an unobstructed inlet-passage for connection with a source of fluid-pressure supply, and having also two outlet-passages one of which leads to the secondary chamber and the other adapted for connection to the actuating means of a heat-controller, a valve for controlling the passage from the primary to the secondary chamber, a thermostatic device for operating said valve, a valve for controlling the other outlet-passage from the primary chamber, a diaphragm in communication with the secondary chamber, and means for transmitting movement from the diaphragm to the last-named valve.



2. In a temperature-regulator, the combination of a base having therein a primary chamber and a secondary chamber, said secondary chamber having an unobstructed outlet-passage for connection to the actuating means of a heat-controller, and said primary chamber having an unobstructed inlet-passage for connection with a source of fluid-pressure supply, and having also two outlet-passages one of which leads to the secondary chamber and the other adapted for connection to the actuating means of a heat-controller and each of said two outlet-passages having an exhaust-duct leading therefrom, a primary lever supported upon said base, a thermostatic device for controlling the movements of said lever, valves operated by said lever for controlling the passage leading from the primary to the secondary chamber and the exhaust-duct therefrom, a secondary lever supported upon the base, a diaphragm in communication with said secondary chamber, for controlling the movements of the secondary lever, and valves operated by said secondary lever for controlling the other outlet-passage from the primary chamber and the exhaust-duct therefrom.

3. In a temperature-regulator, the combination with a base having a primary and a secondary chamber therein, the former having means for connecting in with a source of fluid-pressure supply, and the latter provided with a diaphragm, said base having two ducts both leading from said primary chamber to exhaust, one of said ducts having a branch to which a pressure-operated device may be connected, the other of said ducts having a branch leading to the secondary chamber, and having also means to which a second pressure-operated device may be connected, of a primary lever supported upon said base, a thermostatic device for controlling the movements of the said lever, a secondary lever supported upon said base and controlled in its movements by the said diaphragm, and inlet and exhaust valves arranged at opposite ends of both of the ducts, the valves of that duct having the branch to the second chamber, controlled by the primary lever, and the valves for the other duct, controlled by the secondary lever.

4. In a temperature-regulator the combination of a main conduit leading from a source of fluid under pressure to a fluid-pressure motor, a primary valve governing said conduit, a branch conduit leading from said main conduit to a second pressure-motor, a secondary valve governing said branch conduit, and thermostatically-operated means for operating said primary valve and holding same in its operated position without regard to the pressure of the fluid governed by said valve, said secondary valve being arranged to be opened by said fluid after it has passed said primary valve.

822,555. **SPRING BOX-HINGE.** EDWARD L. ROGERS, Boston, Mass. Filed Oct. 24, 1904. Serial No. 229,735.



Claim.—In a box, a body, a lid, a hinge member secured to the body, a complemental hinge part secured to the lid, and a wire pintle pivotally connecting said parts, said pintle having its two ends bent parallel with each other to present offset portions to engage the inner wall of the lid and having intermediate of its ends a portion bent laterally in the opposite direction to engage the inner wall of the body of the box whereby when the lid is closed the pin is put under torsional strain.

822,556. **COMPOUND FOR PROTECTING COMMERCIAL PAPERS.** SOLOMON SCHWARZSCHILD, Rochester, N. Y. Filed Feb. 13, 1905. Serial No. 245,439.

Claim.—1. A protective compound for paper-writings and the like, formed by mixing a hydroxid of an alkaline metal, a bromid, a nitrite, and a weak acid.

2. A protective compound for paper-writings and the like, formed by mixing a hydroxid of an alkaline metal, an iodid, a nitrite, and a weak acid.

3. A protective compound for paper-writings and the like, formed by mixing sodium hydroxid, sodium carbonate, sodium iodid, sodium bromid, sodium nitrite, ammonium bromid, ammonium nitrite, lactic acid, and water.

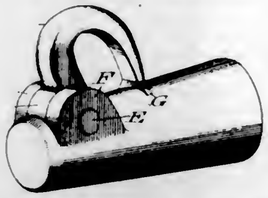
4. A protective compound for paper-writings and the like, formed by mixing potassium hydroxid, potassium carbonate, potassium bromid, potassium nitrite, potassium iodid, ammonium bromid, ammonium nitrite, lactic acid, and water.

5. A protective compound for paper-writings and the like, formed by mixing potassium hydroxid, potassium carbonate, potassium iodid, potassium bromid, sodium nitrite, ammonium nitrite, lactic acid, and water.

6. A protective compound for paper-writings and the like, formed by mixing potassium hydroxid, potassium carbonate, sodium iodid, ammonium bromid, potassium nitrite, lactic acid, and water.

7. A protective compound for paper-writings and the like, formed by mixing sodium hydroxid, potassium hydroxid, sodium carbonate, potassium carbonate, sodium iodid, potassium iodid, ammonium iodid, potassium bromid, sodium bromid, ammonium bromid, ammonium nitrite, sodium nitrite, potassium nitrite, lactic acid, and water.

822,557. **WHIFFLETREE-HOOK.** HAMILTON C. SCOTT, Philadelphia, Pa. Filed Sept. 12, 1905. Serial No. 278,072.



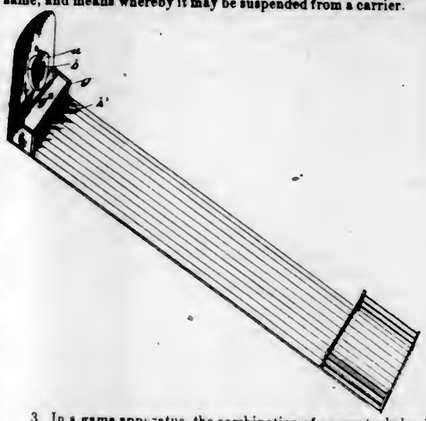
Claim.—1. In a whiffletree-hook, an attaching member, side and end walls forward of the same forming a chamber, ears on said side walls projecting beyond the same, a head mounted on said ears and embraced on the side by said ears and on the outer end by the exterior wall of said chamber and a spring resting on the base of said chamber, said head having a cam against which said spring is in contact, said chamber being comparatively closed by the outer terminal of said attaching member, the side ears, the head of said hook and the exterior wall of said chamber.

2. In a whiffletree-hook, an attaching member, a hook pivotally mounted thereon, means for automatically closing said hook and holding it closed and noses extending in opposite directions laterally from the free end of said hook, the same being adapted to rest on said member and interlockingly embrace the same.

822,558. **GAME APPARATUS.** ABRAHAM L. SMITH, New York, N. Y. Filed Aug. 28, 1902. Serial No. 121,289.

Claim.—1. In a game apparatus, the combination of a receptacle having a backing of pliable material and having an opening therein, a frame for supporting and shaping same, and means whereby it may be suspended from a carrier.

2. In a game apparatus, the combination of a receptacle having a backing of pliable material having an opening therein and a flap in the lower part thereof whereby missiles may be retained therein or permitted to pass therefrom, a frame for supporting and shaping same, and means whereby it may be suspended from a carrier.

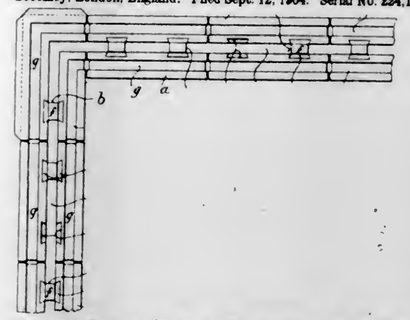


3. In a game apparatus, the combination of a receptacle having a backing of pliable material having an opening on one side thereof and an opening in the bottom thereof, a chute disposed beneath said last-mentioned opening, and a basin connected therewith.

4. In a game apparatus, the combination of a receptacle having a backing of pliable material having an opening on one side thereof and an opening in the bottom thereof, a chute disposed beneath said last-mentioned opening, a basin connected therewith, and a receiving-table above said chute and in front of said receptacle.

5. In a game apparatus, the combination of a receptacle having an opening on one side thereof and an opening in the bottom thereof, a chute disposed beneath said last-mentioned opening, a basin connected therewith, a receiver mounted on ways above said chute whereby it may be moved so as to be either beneath or in front of said last-mentioned opening.

822,559. **METHOD OF AND MEANS FOR CONSTRUCTING WALLS, PARTITIONS, AND THE LIKE.** JAMES G. STIDDER, Brockley, London, England. Filed Sept. 12, 1904. Serial No. 224,170.



Claim.—1. For constructing walls, partitions or the like, a block composed of two slabs, and a plug connecting such slabs, and having a portion extending above the latter, and adapted to engage an adjacent block such portion having less width than the space between such slabs, whereby it may enter between the slabs of an adjacent block.

2. For constructing walls, partitions or the like, a block composed of two slabs, and a plug connecting such slabs, and having a portion extending above the latter, and adapted to engage an adjacent block, said plug having its lower end above the lower face of the block, whereby there is left between such slabs a space extending longitudinally thereof, adapted to receive the projecting end of the plug of an adjoining block.

3. For constructing walls, partitions or the like, a block composed of two slabs, and a plug connecting said slabs and extending above the latter, and adapted to engage an adjacent block, said slabs being formed with oppositely-arranged grooves, and said plug being adapted to fit within said grooves, the lower end of said plug extending above the lower face of said block a greater distance than the

upper end of said plug extends above the upper face thereof, whereby when the blocks are laid up there exists between the adjoining courses a direct horizontal ventilating-passage.

4. For constructing walls, partitions or the like blocks molded with keyed grooves in combination with plugs having keyed edges, said edges being of a length not greater than the length of said recesses so as not to project above the faces of the blocks thereof when assembled while the plug is further provided with apertures extending laterally therethrough, which form connections between the spaces on either side of said plug.

5. For constructing walls, partitions or the like, a block composed of two slabs, and a plug connecting said slabs, said plug being formed with dovetailed edges, and said slabs having faces formed with opposite recesses adapted to receive said edges, said recesses extending from the tops of said slabs to a point materially above the bottoms thereof, and said plug extending from the lower part of said groove to a point above the top of the block, the portion of said plug extending above said block being reduced in width to less than the distance between said slabs.

6. A wall formed of a series of blocks, each composed of two independently-formed side members, and means for connecting said members having a part extending vertically beyond an edge of said block, said part having less width than the space between such members, whereby it may enter between the members of an adjacent block.

822,560. **LUBRICATING CAR-WHEEL.** WILLIAM H. THOMPSON and CLAYTON J. SWANK, Norton, Va. Filed June 14, 1905. Serial No. 265,170.



Claim.—1. In a car-wheel, the combination with a wheel having a bore, of a hub fitted in said bore and adapted itself to receive the axle, said hub having a flange separated from and out of contact with the wheel, and straining-bolts passing through the flange and through the wheel and provided with jam-nuts on their opposite ends.

2. In a car-wheel, the combination with a wheel having a bore, of a hub fitted in said bore and adapted itself to receive the axle, and bolts passing through the hub and screw-threaded into the wheel and provided with jam-nuts on their opposite ends.

3. The combination with a wheel having a tapered bore, of a hub fitted in said bore and adapted itself to receive the axle, said hub having a flange separated from and out of contact with the wheel, and straining-bolts connecting the flange to the wheel.

4. The combination of a wheel having a tapering bore, of a hub having a tapered portion received in the tapered bore, and bolts passing through the hub and screw-threaded into the wheel and provided with jam-nuts on their opposite ends.

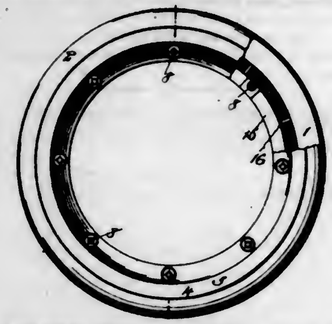
5. The combination with a wheel having a tapered bore, of a hub fitted in said bore and adapted itself to receive the axle, said hub having a flange separated from and out of contact with the wheel, and straining-bolts passing through the flange and screw-threaded into the wheel and provided with jam-nuts on their opposite ends.

822,561. **APPARATUS FOR MANUFACTURING WHEEL-TIRES.** PETER D. TROPP, Trenton, N. J. Filed Nov. 1, 1905. Serial No. 285,366.

Claim.—1. Tire-forming apparatus comprising an annular core or mandrel, annular pressure-rings arranged to engage the clencher edges of the tire leaving the outer body portion of the tire exposed and means for forcing the pressure-rings into a predetermined position with respect to the core or mandrel.

2. Tire-forming apparatus comprising an annular core or mandrel provided with an inwardly-extending rib, pressure-rings arranged to engage the clencher edges of the tire on opposite sides of the said rib leaving the outer body portion of the tire exposed and means for forcing the pressure-rings against the opposite sides of the rib.

3. A tire-forming apparatus comprising an annular core or mandrel, pressure-rings arranged to engage the clencher edges of the tire leaving the body of the tire exposed, the said pressure-rings being provided with blunt outer edges, filling-rings wedge shape in cross-section for engaging the tire in proximity to the said blunt edges and means for forcing the pressure-rings toward each other.



4. Tire-forming apparatus comprising an annular hollow core provided with an inwardly-extending rib having perforations therethrough, annular pressure-rings arranged to engage the clencher edges of the tire leaving the outer body portion of the tire exposed, the said rings having their adjacent edges spaced apart at intervals, and means for forcing the pressure-rings toward each other.

822,562. **FASTENER FOR MANHOLE-COVERS.** FRANCIS J. TUCKER, Philadelphia, Pa. Filed Feb. 2, 1905. Serial No. 243,796.



Claim.—1. In a device of the character described, a cover having radial slots, a bolt passed through said cover, a carrier secured to said bolt, a plurality of locking-arms confined between said cover and carrier, and connections between said arms and carrier guided in said slots whereby the turning of said bolt actuates said arms.

2. In a device of the character described, a cover having radial slots, a bolt having a flange thereon and passing through said cover, a carrier secured to said bolt, a plurality of locking-arms confined between said cover and carrier, and connections between said arms and carrier guided in said slots whereby the turning of said bolt actuates said arms.

3. In a device of the character described, a cover having radial slots, a bolt passed through said cover, a body or frame having a bevel on the under side thereof, a carrier secured to said bolt, a plurality of locking-arms having beveled ends and confined between said cover and carrier, and connections between said arms and carrier guided in said slots, whereby the turning of said bolt actuates said arms.

4. In a device of the character named, a closure having slots in its under side, a slotted carrier supported therefrom with its slots located angularly with respect to said first-mentioned slots, locking-arms located intermediate said closure and carrier, and connections common to said arms and slots with their heads guided in the slots in the under side of the closure.

5. In a device of the character described, a cover, a frame having opposite bevels thereon, and locking and unseating devices independent of the locking devices for said cover coacting with said bevels.

6. In a device of the character described, a cover, a frame having opposite bevels thereon, locking-arms coacting with one of said bevels, and unseating-arms independent of the locking-arms coacting with the other of said bevels.

7. In a device of the character described, a cover, a frame having opposite bevels thereon, locking-arms coacting with one of said bevels, and unseating-arms independent of the locking-arms coacting with the other of said bevels in combination with a single device for simultaneously operating said arms.

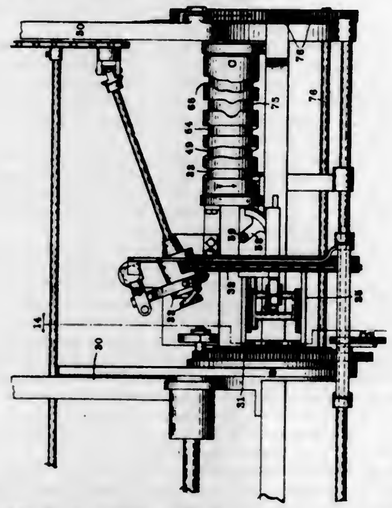
8. In a device of the character described, a cover, a bolt, passing therethrough, a carrier secured to said bolt, a plurality of locking-arms, a plurality of unseating-arms, and means connecting said arms and carrier, whereby the turning of said bolt actuates said arms.

9. In a device of the character named, a closure having radial slots in its under face, a slotted carrier, supported therefrom with its slots located angularly with respect to said first-mentioned slots, locking-arms located intermediate said closure and carrier, and connections common to said arms and slots with one end guided in said radial slots, in combination with guides in said closure for said locking-arms, and an outer frame, adapted to coact with said arms.

10. In a device of the character described, a cover, an annular groove therein, packing in said groove, a body, a lip projecting therefrom, there being an annular recess extending outwardly from said lip, there being a bevel on the under side of said body, a bolt having a flange thereon extending through said cover, a carrier secured to said bolt, there being cam-slots in said carrier, there being radial slots in said cover, guides on said cover, locking-arms disposed between said cover and carrier passing through said guides, there being beveled ends on said arms adapted to contact with the bevel of said body, bolts secured to said arms, heads and shanks on said bolts, said heads adapted to move in said radial slots, and said shanks being adapted to move in said cam-slots.

11. In a device of the character described, a cover, an annular groove therein, packing in said groove, a body having a bevel on its under side, a lip projecting therefrom, there being an annular recess extending outwardly from said lip, there being a bolt having a flange thereon extending through said cover, a carrier secured to said bolt, there being cam-slots in said carrier, there being radial slots in said cover, guides on said cover, locking-arms disposed between the cover and carrier and passing through said guides, said arms having beveled ends adapted to contact with the bevel of said body, bolts secured to said arms, heads and shanks on said bolts, said heads adapted to move in said radial slots, and said shanks being adapted to move in said cam-slots, and a carrier-bolt cover flush with said first-mentioned cover.

822,563. **TUCKER FOR STRAW-BINDERS.** CHARLES B. WANAMAKER and CLARENCE B. MILES, Indianapolis, Ind., assignors to The Brown Straw Binder Company, Indianapolis, Ind., a Corporation of Indiana. Filed Sept. 14, 1903. Serial No. 173,217.



Claim.—1. In a bundle-binder, the combination, with means for supporting the bundle and a binding-rope about the same, of means for carrying one end of said rope over the other, so as to hold said other end between it and the bundle and for carrying a bight of said first-mentioned end between the other end and the bundle.

2. In a bundle-binder, the combination, with means for supporting the bundle and a binding-rope about the same, of means for carrying one end of said rope over the other, so as to hold said other end between it and the bundle and for carrying a bight of said first-mentioned end between the other end and the bundle, and means for carrying a portion of the material of the bundle through said bight upon the bight side of the other end of the rope.

3. In a bundle-binder, the combination, with means for supporting the bundle and a binding-rope about the same, of means for carrying one end of said rope over the other, so as to hold said other end between it and the bundle and for carrying a bight of said first-mentioned end between the other end and the bundle, and means for drawing a bight of material from the bundle through the first-mentioned bight between it and the other end of the rope.

4. In a bundle-binder, a tucking mechanism therefor consisting of the finger, means for projecting said finger into engagement with one end of a tying-rope, means for carrying said finger with said end of the tying-rope over the other end of the tying-rope, for projecting the other side of said finger into engagement with the other end of the tying-rope and for carrying the first-mentioned end of the rope toward the bundle and the last-mentioned end away from the bundle, and means for engaging said first-mentioned end and drawing a bight of the same between the last-mentioned end and the bundle.

5. In a bundle-binder, a tucking mechanism therefor consisting of the finger, means for projecting said finger into engagement with one end of a tying-rope, means for carrying said finger with said end of the tying-rope over the other end of the tying-rope, for projecting the other side of said finger into engagement with the other end of the tying-rope and for carrying the first-mentioned end of the rope toward the bundle and the last-mentioned end away from the bundle, means for engaging said first-mentioned end and drawing a bight of the same between the last-mentioned end and the bundle, and means for drawing a bight of bundle material through said first-mentioned bight between it and the last-mentioned rope-end.

6. In a bundle-binder, a tucking mechanism consisting of an elevator, a swinging finger journaled therein, and means for swinging and rotating said finger into successive engagement with the two ends of the tying-rope whereby one is led over the other, a tucker-hook also mounted on the elevator, and means for projecting said tucker-hook into engagement with one end of the rope and withdrawing said finger so as to draw a bight of said rope-end between the other end of the rope and the bundle.

7. In a bundle-binder, a tucking mechanism consisting of an elevator, a swinging finger journaled therein, means for swinging and rotating said finger into successive engagement with the two ends of the tying-rope whereby one is led over the other, a tucker-hook also mounted on the elevator, and means for projecting said tucker-hook into engagement with one end of the rope and for withdrawing said finger so as to draw a bight of said rope-end between the other end of the rope and the bundle, a fastener-hock also mounted on said elevator, and means for projecting said fastener-hook into the bundle at a point between the sides of said bight and for retracting said hook so as to draw a bight of bundle material between the arms of the first-mentioned bight and the other end of the rope.

8. In a bundle-binder, a tucking mechanism consisting of a swinging frame having a swinging finger journaled thereon, a pinion carried by said finger, a gear meshing with said pinion, means for swinging said frame and for driving said gear independently, and means for moving said frame and finger toward and from the bundle.

9. In a bundle-binder, a tucking mechanism therefor consisting of elevator 35, frame 41 journaled thereon, finger F and gear 44 journaled on said frame, segment 40 meshing with said gear 44 and journaled on the elevator, means for raising and lowering the elevator, means for swinging frame 41, means for moving segment 40, tucker-finger 56, and means for projecting and retracting said tucker-finger, all substantially as and for the purposes set forth.

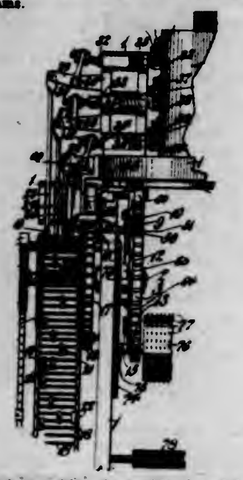
10. In a bundle-binder, a tucking mechanism therefor consisting of elevator 35, frame 41 journaled thereon, finger F and gear 44 journaled on said frame, segment 40 meshing with said gear 44 and journaled on the elevator, means for raising and lowering the elevator, means for swinging frame 41, means for moving segment 40, tucker 56, means for projecting and retracting said tucker-finger, fastener-hook 67, and means for projecting and retracting said hook, all substantially as and for the purposes set forth.

822,564. **CIRCULAR INDEPENDENT-NEEDLE KNITTING-MACHINE.** JOSEPH WHEELER, Philadelphia, Pa., assignor of one-half to Henry Brown, Philadelphia, Pa. Filed Mar. 6, 1905. Serial No. 248,463.

Claim.—1. In a knitting-machine, the combination of three sets of needles, a similar number of cam-grooves, each containing a tucking-cam, coöperating with said needles, means for operating each of said tucking-cams, and pattern means controlling the order of operation of the said cams.

2. In a knitting-machine, the combination of three sets of needles, a similar number of cam-grooves, each containing a tucking-cam coöperating with said needles, an adjustable draw-cam in each set of cam-grooves, means for simultaneously adjusting said draw-

cams, independent means for operating each of said tucking-cams and pattern means for controlling the order of operation of each of said tucking-cams.



3. In a knitting-machine, the combination of three sets of needles, a similar number of cam-grooves, each containing a tucking-cam and an adjustable draw-cam cooperating with said needles, means for operating each of said tucking-cams and pattern means controlling the order of operation of said tucking-cams.

4. In a knitting-machine, a cam-cylinder, three or more sets of tucking-cams arranged in different planes, a plurality of star-wheels adapted to coact with said cams, a plurality of spring-pressed plungers adapted to coact with said star-wheels, a plurality of bell-crank levers adapted to coact with said plungers, and means for actuating said levers.

5. In a knitting-machine, a cam-cylinder, three or more numbers of tucking-cams arranged in different planes, a similar number of star-wheels adapted to coact with said cams, a similar number of spring-pressed plungers adapted to coact with said star-wheels, a similar number of bell-crank levers adapted to coact with said plungers, a plurality of bars adapted to coact with said bell-crank levers, and means for actuating said bars.

6. In a knitting-machine, a cam-cylinder, three or more sets of tucking-cams arranged in different planes, a similar number of star-wheels adapted to coact with said cams, a similar number of spring-pressed plungers adapted to coact with said star-wheels, a similar number of bell-crank levers adapted to coact with said plungers, a similar number of bars adapted to coact with said bell-crank levers, a pattern-chain, a similar number of lugs thereon adapted to actuate said bars, and means for actuating said chain.

7. In a knitting-machine, a cam-cylinder, three or more sets of tucking-cams arranged in different planes, a similar number of star-wheels adapted to coact with said cams, a similar number of spring-pressed plungers adapted to coact with said star-wheels, a similar number of bell-crank levers adapted to coact with said plungers, a similar number of bars adapted to coact with said bell-crank levers, a pattern-chain, lugs thereon adapted to actuate said bars, a sprocket-wheel about which said chain passes, a ratchet-wheel secured to said sprocket-wheel, and means for actuating said ratchet-wheel.

8. In a knitting-machine, a cam-cylinder, three or more sets of tucking-cams arranged in different planes, a similar number of star-wheels adapted to coact with said cams, a similar number of spring-pressed plungers adapted to coact with said star-wheels, a similar number of bell-crank levers adapted to coact with said plungers, a similar number of bars adapted to coact with said bell-crank levers, a pattern-chain, lugs thereon adapted to actuate said bars, a sprocket-wheel about which said chain passes, a ratchet-wheel secured to said sprocket-wheel, a pawl adapted to coact with said ratchet-wheel, a slide to which said pawl is secured, devices for engaging and disengaging said pawl with said ratchet-wheel, and means for actuating said slide.

9. In a knitting-machine, a cam-cylinder, three or more sets of tucking-cams arranged in different planes, a similar number of star-wheels adapted to coact with said cams, a similar number of spring-pressed plungers adapted to coact with said star-wheels, a similar number of bell-crank levers adapted to coact with said plungers, a similar number of bars adapted to coact with said bell-crank levers, a pattern-chain, a plurality of lugs thereon adapted to actuate said bars, a sprocket-wheel secured to said sprocket-wheel, a pawl adapted to coact with said ratchet-wheel, a slide to which said pawl is secured, devices for engaging and disengaging said pawl with said ratchet-wheel, a lever to which said slide is secured, and means for actuating said lever.

10. In a knitting-machine, a cam-cylinder having a recess therein, a plurality of blocks located one above the other in said recess, a screw adjustably carried by each lower block and on which the next upper block is supported, a jam-nut for each screw, a spring interposed between the lowermost block and the bottom of said recess, a draw-cam carried by each block, and a lever engaging the uppermost block for simultaneously actuating said draw-cams.

11. In a knitting-machine, a cam-cylinder, three draw and tucking cams thereon arranged in series and in different planes, means for independently adjusting said draw-cams relatively to each other and means for simultaneously actuating said draw-cams.

12. In a knitting-machine, a cam-cylinder, a plurality of draw and tucking cams arranged one above the other, a plurality of star-wheels adapted to coact with said tucking-cams, a plurality of spring-pressed plungers adapted to coact with said star-wheels, a plurality of bell-crank levers adapted to coact with said plungers, a plurality of bars adapted to coact with said bell-crank levers, a pattern-chain, a plurality of lugs thereon adapted to actuate said bars, a sprocket-wheel around which said chain passes, a ratchet-wheel to which said sprocket is secured, a pawl adapted to coact with said ratchet-wheel, a shaft on which said wheels are mounted, a second ratchet-wheel loosely mounted thereon, a sprocket-wheel fixedly mounted thereon, a stop mechanism operated by said sprocket-wheel, a slide adapted to coact with said pawl, and means for actuating said slide.

13. In a knitting-machine, a cam-cylinder, three or more sets of draw and tucking cams arranged one above the other, a similar number of star-wheels adapted to coact with said tucking-cams, a similar number of plungers adapted to coact with said star-wheels, a similar number of bell-crank levers adapted to coact with said plungers, means for adjusting said levers relatively to said plungers and means for actuating said bell-crank levers.

14. In a knitting-machine, a needle-cylinder, needles of different lengths carried thereby, a cam-cylinder, three or more series of draw and tucking cams secured thereto in different planes and actuating said needles on the rotation of said cam-cylinder, means for actuating said tucking-cams, and means for simultaneously actuating said draw-cams.

15. In a knitting-machine, a needle-cylinder, needles carried thereby, a cam-cylinder, three or more series of draw and tucking cams secured thereon in different planes for actuating said needles and means for independently adjusting said series of draw-cams, and means for simultaneously actuating said draw-cams.

16. In a knitting-machine, a cam-cylinder, a plurality of draw and tucking cams arranged thereon in different planes, a driving-shaft for rotating said cam-cylinder, an eccentric actuated by the rotation of the latter, a pawl actuated by said eccentric, a ratchet-wheel adapted to coact with said pawl, a sprocket-wheel secured to said ratchet-wheel, a chain adapted to coact with said sprocket-wheel, a stop-rod adapted to coact with said ratchet-wheel, a stud on the latter, a lever adapted to coact with said stud and normally held out of contact therewith, and a lug on said chain adapted to coact with said lever, and thus permit said pawl to actuate said ratchet-wheel.

17. In a knitting-machine, a cam-cylinder, a plurality of draw and tucking cams arranged thereon in different planes, a driving-shaft for rotating said cam-cylinder, an eccentric actuated by the rotation of the latter, a plurality of pawls adapted to be actuated by said eccentric, ratchet-wheels adapted to coact with said pawls, a stud on one of said ratchet-wheels, a lever adapted to coact therewith to begin the rotation of said ratchet-wheel, a stop-rod adapted to hold said pawl out of engagement with said ratchet-wheel and means on the latter for regulating the duration of said engagement.

18. In a knitting-machine, a cam-cylinder, three or more series of draw and tucking cams arranged thereon in different planes, a driving-shaft for rotating said cam-cylinder, an eccentric adapted to be actuated by the latter, a plurality of pawls adapted to be actuated by said eccentric, ratchet-wheels adapted to coact with said pawls, studs adjustably located on said ratchet-wheels, a plurality of levers adapted to coact with said pawls and said studs, a pattern-surface, lugs thereon, and means coacting with said lugs to actuate said tucking-cams.

19. In a knitting-machine, a cam-cylinder, a plurality of draw and tucking cams arranged thereon in different planes, a driving-shaft for rotating said cam-cylinder, an eccentric actuated by the rotation of the latter, a plurality of pawls adapted to be actuated by said eccentric, ratchet-wheels adapted to coact with said pawls, levers adapted to cause said pawls to engage with and be disengaged from said ratchet-wheels and adjustable means carried by the latter to regulate the duration of such engagement, a pattern-surface, lugs thereon, and means coacting with said lugs to actuate said tucking-cams.

20. In a knitting-machine, a needle-cylinder, needles carried thereby, a cam-cylinder for actuating said needles, a passage in said cam-cylinder through which the needles may be inserted in said needle-cylinder and removed therefrom, said passage having its inner end beveled, a spring-pressed plug having a beveled end which engages said recess bevel and a thumb-piece for actuating said plug.

21. In a measuring device for knitting-machines, the combination of three or more tucking-cams, arranged in different planes, pattern means for controlling the tucking-cams, a drum rotated by its engagement with the fabric, a length-chain actuated by said drum, a lug on said chain, a lever actuated thereby and means coacting with said lever for controlling said pattern means.

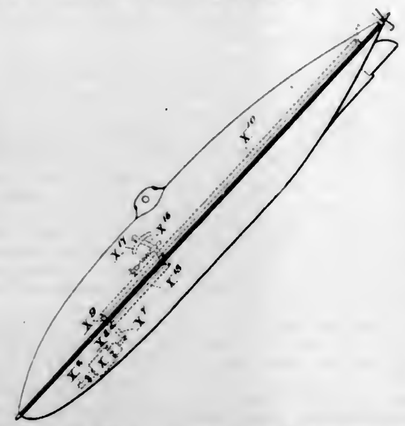
22. In a knitting-machine, three or more tucking-cams arranged in different planes, a pattern-chain suitably actuated and adapted to operate the tucking-cams, a drum rotated by its contact with the fabric, gear-wheels to which the motion of said drum is imparted, a length-chain actuated thereby, a lug on said length-chain, a lever actuated thereby, a shaft rocked by said lever, a lever-arm actuated by said shaft, and a stop mechanism for controlling the movement of said pattern-chain, actuated by said arm.

23. The combination, in a knitting-machine, of tucking-needles movable either to the tucking or clearing position, pattern mechanism governing such movement of said tucking-needles, a pattern-wheel having a ratchet formation, a pawl for actuating said ratchet, means on the pattern-wheel for moving said pawl out of active position at successive points in the movement of the wheel, and means under control of the needle-governing pattern mechanism for starting movement of the pattern-wheel after it has been stopped by the action of such controlling devices.

24. A knitting-machine having three sets of tucking-needles with butts in different horizontal planes, and a corresponding set of lift-cams likewise disposed in different horizontal planes.

25. A knitting-machine having three sets of tucking-needles with butts in different horizontal planes, and a corresponding set of lift-cams likewise disposed in different horizontal planes and means for moving said lift-cams independently of each other.

822,565. SUBMARINE BOAT. THOMAS H. WHELESS, New York, N. Y. Filed Apr. 12, 1904. Serial No. 202,312.



Claim.—1. A diving apparatus for submarine boats comprising a hand-operable pivoted arm, one or more diving-rudders controlled thereby, a spring acting on said arm under tension and the pressure of the water of flotation acting on said arm in opposition to said spring, substantially as described.

2. A diving apparatus for submarine boats comprising one or more diving-rudders, a hand-operable pivoted arm for controlling said rudders, a spring acting on said arm under tension, means for adjusting the tension of said spring, and means for transmitting the pressure of the water of flotation against said arm in opposition to said spring, substantially as described.

3. Diving apparatus for use in submarine boats comprising one or more diving-rudders, a hand-operable pivoted arm, mechanism for transmitting the motion of said arm to said rudder or rudders, a spring under tension tending to move said arm in one direction, means for varying the tension of said spring, and means for transmitting the pressure of the water of flotation against said arm in opposition to the said spring, substantially as described.

4. Diving apparatus for use in submarine boats comprising one or more diving-rudders, a pivoted arm, mechanism for transmitting the motion of said arm to said rudder or rudders, a spring under tension tending to move said arm in one direction, means for varying the point of application of said spring to said arm, and means for transmitting the pressure of the water of flotation against said arm in opposition to said spring, substantially as described.

5. A diving apparatus for submarine boats comprising one or more diving-rudders controlled by an arm, a spring acting on said arm under tension and the pressure of the water of flotation acting on said arm in opposition to said spring, with means for locking said arm in any desired position, substantially as described.

6. In a diving apparatus for submarine boats comprising one or more diving-rudders, an arm for controlling said rudders, a spring acting on said arm under tension, means for adjusting the tension of said spring, and means for transmitting the pressure of the water of flotation against said arm in opposition to said spring, with means for locking said arm in any desired position, substantially as described.

7. Diving apparatus for use in submarine boats comprising one or more diving-rudders, a pivoted arm, mechanism for transmitting the motion of said arm to said rudder or rudders, a spring under tension tending to move said arm in one direction, means for varying the tension of said spring, and means for transmitting the pressure of the water of flotation against said arm in opposition to the said spring, with means for locking said arm in any desired position, substantially as described.

8. Diving apparatus for use in submarine boats comprising one or more diving-rudders, a pivoted arm, mechanism for transmitting the motion of said arm to said rudder or rudders, a spring under tension tending to move said arm in one direction, means for varying the point of application of said spring to said arm, means for transmitting the pressure of the water of flotation against said arm in opposition to said spring, with means for locking said arm in any desired position, substantially as described.

9. A diving apparatus for submarine boats comprising one or more diving-rudders controlled by an arm, a spring acting on said arm under tension and the pressure of the water of flotation acting on said arm in opposition to said spring, with means for locking said arm in any desired position, and independent means for holding said arm in the initial position, and for releasing same when desired, substantially as described.

10. A diving apparatus, for submarine boats comprising one or more diving-rudders, an arm for controlling said rudders, a spring acting on said arm under tension, means for adjusting the tension of said spring, and means for transmitting the pressure of the water of flotation against said arm in opposition to said spring, with means for locking said arm n any desired position, and independent means for holding said arm in the initial position, and for releasing same when desired, substantially as described.

11. Diving apparatus for use in submarine boats comprising one or more steering-rudders, a pivoted arm, mechanism for transmitting the motion of said arm to said steering rudder or rudders, a spring under tension tending to move said arm in one direction, means for varying the tension of said spring, and means for transmitting the pressure of the water of flotation against said arm in opposition to the said spring, with means for locking said arm in any desired position, and independent means for holding said arm in the initial position, and for releasing same when desired, substantially as described.

12. Diving apparatus for use in submarine boats comprising one or more steering-rudders, a pivoted arm, mechanism for transmitting the motion of said arm to said steering-rudder, or rudders, a spring under tension tending to move said arm in one direction, means for varying the point of application of said spring to said arm, means for transmitting the pressure of the water of flotation against said arm in opposition to said spring, with means for locking said arm in any desired position, and independent means for holding said arm in the

initial position, and for releasing same when desired, substantially as described.

13. A diving apparatus for submarine boats comprising one or more diving-rudders, an arm for controlling said rudders, a spring acting on said arm under tension, means for adjusting the point of application of said spring to said arm, and means for transmitting the pressure of the water of flotation against said arm in opposition to said spring, substantially as described.

14. Diving apparatus for use in submarine boats comprising one or more diving-rudders, a pivoted arm, mechanism for transmitting the motion of said arm to said rudder or rudders, a spring under tension tending to move said arm in one direction, means for moving the point of application of said spring to said arm, toward and away from the pivot of said arm, and means for transmitting the pressure of the water of flotation against said arm in opposition to the said spring, substantially as described.

15. Diving apparatus for use in submarine boats comprising one or more diving-rudders, a pivoted arm, mechanism for transmitting the motion of said arm to said rudder or rudders, a spring under tension tending to move said arm in one direction, means for varying the point of application of said spring to said arm, and mechanism for transmitting the pressure of the water of flotation against said arm in opposition to said spring, substantially as described.

16. A diving apparatus for submarine boats comprising a hand-operable pivoted arm, one or more diving-rudders controlled thereby, a spring acting on said arm under tension and automatic mechanism for causing the pressure of the water of flotation to act on said arm in opposition to said spring, substantially as described.

17. A diving apparatus for submarine boats comprising one or more diving-rudders, a hand-operable pivoted arm for controlling said rudders, a spring acting on said arm under tension, means for adjusting the tension of said spring, and automatic mechanism for transmitting the pressure of the water of flotation against said arm in opposition to said spring, substantially as described.

18. Diving apparatus for use in submarine boats comprising one or more diving-rudders, a hand-operable pivoted arm, mechanism for transmitting the motion of said arm to said rudder or rudders, a spring under tension tending to move said arm in one direction, means for varying the tension of said spring, and automatic mechanism for transmitting the pressure of the water of flotation against said arm in opposition to said spring, substantially as described.

19. Diving apparatus for use in submarine boats comprising one or more diving-rudders, a pivoted arm, mechanism for transmitting the motion of said arm to said rudder or rudders, a spring under tension tending to move said arm in one direction, means for varying the point of application of said spring to said arm, and automatic mechanism for transmitting the pressure of the water of flotation against said arm in opposition to said spring, substantially as described.

20. A diving apparatus for submarine boats comprising one or more diving-rudders controlled by an arm, a spring acting on said arm under tension, automatic mechanism for causing the pressure of the water of flotation to act on said arm in opposition to said spring, with means for locking said arm in any desired position, and for releasing same when desired, substantially as described.

21. In a diving apparatus for submarine boats comprising one or more diving-rudders, an arm for controlling said rudders, a spring acting on said arm under tension, means for adjusting the tension of said spring, automatic mechanism for transmitting the pressure of the water of flotation against said arm in opposition to said spring, with means for locking said arm in any desired position, and for releasing same when desired, substantially as described.

22. Diving apparatus for use in submarine boats comprising one or more diving-rudders, a pivoted arm, mechanism for transmitting the motion of said arm to said rudder or rudders, a spring under tension tending to move said arm in one direction, means for varying the tension of said spring, and automatic mechanism for transmitting the pressure of the water of flotation against said arm in opposition to the said spring, with means for locking said arm in any desired position, and for releasing same when desired, substantially as described.

23. Diving apparatus for use in submarine boats comprising one or more diving-rudders, a pivoted arm, mechanism for transmitting the motion of said arm to said rudder or rudders, a spring under tension tending to move said arm in one direction, means for varying the point of application of said spring to said arm, automatic mechanism for transmitting the pressure of the water of flotation against said arm in opposition to said spring, and means for locking said arm in any desired position, and for releasing same when desired, substantially as described.

24. A diving apparatus for submarine boats comprising diving-rudders controlled by an arm, a spring acting on said arm under tension, automatic mechanism for causing the pressure of the water of flotation to act on said arm in opposition to said spring, means for locking said arm in any desired position, with independent means for holding said arm in the initial position, and means for releasing said arm when desired, substantially as described.

25. A diving apparatus for submarine boats comprising diving-rudders, a pivoted arm for controlling said rudders, a spring acting on said arm under tension, means for adjusting the tension of said spring, means for causing said spring to act at a longer or shorter leverage on said arm, and means for transmitting the pressure of the water of flotation against said arm in opposition to said spring, substantially as described.

26. Diving apparatus for use in submarine boats comprising diving-rudders, a pivoted arm, mechanism for transmitting the motion of said arm to said rudders, a spring under tension tending to move said arm in one direction, means for varying the tension of said spring, means for causing said spring to act at a longer or shorter leverage on said arm, and automatic mechanism for transmitting the pressure of the water of flotation against said arm in opposition to said spring, substantially as described.

27. Diving apparatus for use in submarine boats comprising diving-rudders, a pivoted arm, mechanism for transmitting the motion of said arm to said rudders, a spring under tension tending to move said arm in one direction, means for varying the tension of said spring, means for varying the point of application of said spring to said arm, and automatic mechanism for transmitting the pressure of the water of flotation against said arm in opposition to said spring, substantially as described.

28. A diving apparatus for submarine boats, comprising one or more diving-rudders, a hand-operable pivoted arm for controlling said rudders, a spring acting on said arm under tension, and automatic means for transmitting the pressure of the water of flotation against said arm in opposition to said spring, substantially as described.

29. Diving apparatus for use in submarine boats comprising one or more diving-rudders, a pivoted arm, mechanism for transmitting the motion of said arm to said rudder or rudders, a spring under tension tending to move said arm in one direction, means for moving the point of application of said spring to said arm, toward and away from the pivot of said arm, a fluid-pressure cylinder connected to the water of flotation, a piston in said cylinder, and mechanism automatically operated by the motion of said piston for rocking said arm against the action of said spring, substantially as described.

30. Diving apparatus for use in submarine boats comprising one or more diving-rudders, a hand-operable pivoted arm, mechanism for transmitting the motion of said arm to said rudder or rudders, a spring under tension tending to move said arm in one direction, a fluid-pressure cylinder connected to the water of flotation, a piston in said cylinder, and mechanism automatically operated by the motion of said piston for rocking said arm against the action of said spring, substantially as described.

31. A diving apparatus for submarine boats comprising a hand-operable pivoted arm, one or more diving-rudders controlled thereby, a spring acting on said arm under tension, a fluid-pressure cylinder connected to the water of flotation, a piston in said cylinder, and mechanism automatically operated by the motion of said piston for rocking said arm against the action of said spring, substantially as described.

32. A diving apparatus for submarine boats comprising one or more diving-rudders, a hand-operable pivoted arm for controlling said rudders, a spring acting on said arm under tension, means for adjusting the tension of said spring, a fluid-pressure cylinder connected to the water of flotation, a piston in said cylinder, and mechanism automatically operated by the motion of said piston for rocking said arm against the action of said spring, substantially as described.

33. Diving apparatus for use in submarine boats comprising one or more diving-rudders, a hand-operable pivoted arm, mechanism for transmitting the motion of said arm to said rudder or rudders, a spring under tension tending to move said arm in one direction, means for varying the tension of said spring, and automatic means for transmitting the pressure of the water of flotation against said arm in opposition to the said spring, comprising a cylinder and piston, and mechanism operated by said piston for rocking said arm against the action of said spring, substantially as described.

34. Diving apparatus for use in submarine boats comprising one or more diving-rudders, a pivoted arm, mechanism for transmitting the motion of said arm to said rudder or rudders, a spring under tension tending to move said arm in one direction, means for varying the point of application of said spring to said arm, and automatic means for transmitting the pressure of the water of flotation against said arm in opposition to said spring, comprising a cylinder and piston, and mechanism operated by said piston for rocking said arm against the action of said spring, substantially as described.

35. A diving apparatus for submarine boats comprising one or more diving-rudders controlled by an arm, a spring acting on said arm under tension, automatic means for causing the pressure of the water of flotation to act on said arm in opposition to said spring, comprising a cylinder and piston, and mechanism operated by said piston for rocking said arm against the action of said spring, with means for locking said arm in any desired position, and for releasing same when desired, substantially as described.

36. In a diving apparatus for submarine boats comprising one or more diving-rudders, an arm for controlling said rudders, a spring acting on said arm under tension, means for adjusting the tension of said spring, automatic means for transmitting the pressure of the water of flotation against said arm in opposition to said spring, comprising a cylinder and piston, and mechanism operated by said piston for rocking said arm against the action of said spring, with means for locking said arm in any desired position, and for releasing same when desired, substantially as described.

37. Diving apparatus for use in submarine boats comprising one or more diving-rudders, a pivoted arm, mechanism for transmitting the motion of said arm to said rudder or rudders, a spring under tension tending to move said arm in one direction, means for varying the tension of said spring, and automatic means for transmitting the pressure of the water of flotation against said arm in opposition to the said spring, comprising a cylinder and piston, and mechanism operated by said piston for rocking said arm against the action of said spring, with means for locking said arm in any desired position, and for releasing same when desired, substantially as described.

38. Diving apparatus for use in submarine boats comprising one or more diving-rudders, a pivoted arm, mechanism for transmitting the motion of said arm to said rudder or rudders, a spring under tension tending to move said arm in one direction, means for varying the point of application of said spring to said arm, automatic means for transmitting the pressure of the water of flotation against said arm in opposition to said spring, comprising a cylinder and piston, and mechanism operated by said piston for rocking said arm against the action of said spring, with means for locking said arm in any desired position, independent means for holding said arm in the initial position, and means for releasing said arm when desired, substantially as described.

39 A diving apparatus for submarine boats comprising diving-rudders, a pivoted arm for controlling said rudders, a spring acting on said arm under tension, means for adjusting the tension of said spring, means for causing said spring to act at a longer or shorter leverage on said arm, and automatic means for transmitting the pressure of the water of flotation against said arm in opposition to said spring, comprising a cylinder and piston, and mechanism operated by said piston for rocking said arm against the action of said spring, substantially as described.

40. A diving apparatus for submarine boats comprising diving-rudders controlled by an arm, a spring acting on said arm under tension, automatic means for causing the pressure of the water of flotation to act on said arm in opposition to said spring, comprising a cylinder and piston, and mechanism operated by said piston for rocking said arm against the action of said spring, and means for locking said arm in any desired position and for releasing same when desired, substantially as described.

41. Diving apparatus for use in submarine boats comprising diving-rudders, a pivoted arm, mechanism for transmitting the motion of said arm to said rudders, a spring under tension tending to move said arm in one direction, means for varying the tension of said spring, means for causing said spring to act at a longer or shorter leverage on said arm, and automatic means for transmitting the pressure of the water of flotation against said arm in opposition to said spring, comprising a cylinder and piston, and mechanism operated by said piston for rocking said arm against the action of said spring, substantially as described.

42. Diving apparatus for use in submarine boats comprising diving-rudders, a pivoted arm, mechanism for transmitting the motion of said arm to said rudders, a spring under tension tending to move said arm in one direction, means for varying the tension of said spring, means for varying the point of application of said spring to said arm, and automatic means for transmitting the pressure of the water of flotation against said arm in opposition to said spring, comprising a cylinder and piston, and mechanism operated by said piston for rocking said arm against the action of said spring, substantially as described.

43. Diving apparatus for use in submarine boats comprising one or more diving-rudders, a pivoted arm, mechanism for transmitting the motion of said arm to said rudder or rudders, a spring under tension tending to move said arm in one direction, means for moving the point of application of said spring to said arm, toward and away from the pivot of said arm, a fluid-pressure cylinder connected to the water of flotation, a valve controlling the admission of water to said cylinder, automatic mechanism for opening and closing said valve, a piston in said cylinder, and mechanism operated by the motion of said piston for rocking said arm against the action of said spring, substantially as described.

44. Diving apparatus for use in submarine boats comprising one or more diving-rudders, a pivoted arm, mechanism for transmitting the motion of said arm to said rudder or rudders, a spring under tension tending to move said arm in one direction, a fluid-pressure cylinder connected to the water of flotation, a valve controlling the admission of water to said cylinder, automatic mechanism for opening and closing said valve, a piston in said cylinder, and mechanism operated by the motion of said piston for rocking said arm against the action of said spring, substantially as described.

45. A diving apparatus for submarine boats comprising one or more diving-rudders controlled by an arm, a spring acting on said arm under tension, a fluid-pressure cylinder connected to the water of flotation, a valve controlling the admission of water to said cylinder, automatic mechanism for opening and closing said valve, a piston in said cylinder, and mechanism operated by the motion of said piston for rocking said arm against the action of said spring, substantially as described.

46. A diving apparatus for submarine boats comprising one or more diving-rudders, an arm for controlling said rudders, a spring acting on said arm under tension, means for adjusting the tension of said spring, a fluid-pressure cylinder connected to the water of flotation, a valve controlling the admission of water to said cylinder, automatic mechanism for opening and closing said valve, a piston in said cylinder, and mechanism operated by the motion of said piston for rocking said arm against the action of said spring, substantially as described.

47. Diving apparatus for use in submarine boats comprising one or more diving-rudders, a pivoted arm, mechanism for transmitting the motion of said arm to said rudder or rudders, a spring under tension tending to move said arm in one direction, means for varying the tension of said spring, and automatic means for transmitting the pressure of the water of flotation against said arm in opposition to the said spring, comprising a cylinder and piston, a valve admitting the admission of water to said cylinder, automatic mechanism for opening and closing said valve, and mechanism operated by said piston for rocking said arm against the action of said spring, substantially as described.

48. Diving apparatus for use in submarine boats comprising one or more diving-rudders, a pivoted arm, mechanism for transmitting the motion of said arm to said rudder or rudders, a spring under tension tending to move said arm in one direction, means for varying the point of application of said spring to said arm, and automatic means for transmitting the pressure of the water of flotation against said arm in opposition to said spring, comprising a cylinder and piston, a valve controlling the admission of water to said cylinder, automatic mechanism for opening and closing said valve, and mechanism operated by said piston for rocking said arm against the action of said spring, substantially as described.

49. A diving apparatus for submarine boats comprising one or more diving-rudders controlled by an arm, a spring acting on said arm under tension, automatic means for causing the pressure of the water of flotation to act on said arm in opposition to said spring, comprising a cylinder and piston, a valve controlling the admission of water to said cylinder, automatic mechanism for opening and closing said valve, and mechanism operated by said piston for rocking said arm against the action of said spring, with means for locking said arm in any desired position, and for releasing same when desired, substantially as described.

50. In a diving apparatus for submarine boats comprising one or more diving-rudders, an arm for controlling said rudders, a spring acting on said arm under tension, means for adjusting the tension of said spring, automatic means for transmitting the pressure of the water of flotation against said arm in opposition to said spring, comprising a cylinder and piston, a valve controlling the admission of water to said cylinder, automatic mechanism for opening and closing said valve, and mechanism operated by said piston for rocking said arm against the action of said spring, with means for locking said

arm in any desired position, and for releasing same when desired, substantially as described.

51. Diving apparatus for use in submarine boats comprising one or more diving-rudders, a pivoted arm, mechanism for transmitting the motion of said arm to said rudder or rudders, a spring under tension tending to move said arm in one direction, means for varying the point of application of said spring to said arm, automatic means for transmitting the pressure of the water of flotation against said arm in opposition to said spring, comprising a cylinder and piston, a valve controlling the admission of water to said cylinder, automatic mechanism for opening and closing said valve, and mechanism operated by said piston for rocking said arm against the action of said spring, with means for locking said arm in any desired position, independent means for holding said arm in the initial position, and means for releasing said arm when desired, substantially as described.

52. A diving apparatus for submarine boats comprising diving-rudders, a pivoted arm for controlling said rudders, a spring acting on said arm under tension; means for adjusting the tension of said spring, means for causing said spring to act at a longer or shorter leverage on said arm, and automatic means for transmitting the pressure of the water of flotation against said arm in opposition to said spring, comprising a cylinder and piston, a valve controlling the admission of water to said cylinder, automatic mechanism for opening and closing said valve, and mechanism operated by said piston for rocking said arm against the action of said spring, substantially as described.

53. A diving apparatus for submarine boats comprising diving-rudders controlled by an arm, a spring acting on said arm under tension, automatic means for causing the pressure of the water of flotation to act on said arm in opposition to said spring, comprising a cylinder and piston, and mechanism operated by said piston for rocking said arm against the action of said spring, a valve controlling the admission of water to said cylinder, automatic mechanism for opening and closing said valve, and means for locking said arm in any desired position and for releasing same when desired, substantially as described.

54. Diving apparatus for use in submarine boats comprising one or more diving-rudders, a pivoted arm, mechanism for transmitting the motion of said arm to said rudder or rudders, a spring under tension tending to move said arm in one direction, means for moving the point of application of said spring to said arm, toward and away from the pivot of said arm, a fluid-pressure cylinder connected to the water of flotation, a piston in said cylinder, and mechanism operated by the motion of said piston for rocking said arm against the action of said spring, a valve controlling the admission of water to said cylinder, a spring-constrained arm for opening and closing said valve, and automatic means, operated by the mechanism for shifting the diving-rudders, for actuating said valve-arm, substantially as described.

55. Diving apparatus for use in submarine boats comprising one or more diving-rudders, a pivoted arm, mechanism for transmitting the motion of said arm to said rudder or rudders, a spring under tension tending to move said arm in one direction, a fluid-pressure cylinder connected to the water of flotation, a piston in said cylinder, and mechanism operated by the motion of said piston for rocking said arm against the action of said spring, a valve controlling the admission of water to said cylinder, a spring-constrained arm for opening and closing said valve, and automatic means, operated by the mechanism for shifting the diving-rudders, for actuating said valve-arm, substantially as described.

56. A diving apparatus for submarine boats comprising one or more diving-rudders controlled by an arm, a spring acting on said arm under tension, a fluid-pressure cylinder connected to the water of flotation, a piston in said cylinder, and mechanism operated by the motion of said piston for rocking said arm against the action of said spring, a valve controlling the admission of water to said cylinder, a spring-constrained arm for opening and closing said valve, and automatic means, operated by the mechanism for shifting the diving-rudders, for actuating said valve-arm, substantially as described.

57. A diving apparatus for submarine boats comprising one or more diving-rudders, an arm for controlling said rudders, a spring acting on said arm under tension, means for adjusting the tension of said spring, a fluid-pressure cylinder connected to the water of flotation, a piston in said cylinder, and mechanism operated by the motion of said piston for rocking said arm against the action of said spring, a valve controlling the admission of water to said cylinder, a spring-constrained arm for opening and closing said valve, and automatic means, operated by the mechanism for shifting the diving-rudders, for actuating said valve-arm, substantially as described.

58. Diving apparatus for use in submarine boats comprising one or more diving-rudders, a pivoted arm, mechanism for transmitting the motion of said arm to said rudder or rudders, a spring under tension tending to move said arm in one direction, means for varying the tension of said spring, and automatic means for transmitting the pressure of the water of flotation against said arm in opposition to the said spring, comprising a cylinder and piston, and mechanism operated by said piston for rocking said arm against the action of said spring, a valve controlling the admission of water to said cylinder, a spring-constrained arm for opening and closing said valve, and automatic means, operated by the mechanism for shifting the diving-rudders, for actuating said valve-arm, substantially as described.

59. Diving apparatus for use in submarine boats comprising one or more diving-rudders, a pivoted arm, mechanism for transmitting the motion of said arm to said rudder or rudders, a spring under tension tending to move said arm in one direction, means for varying the point of application of said spring to said arm, and automatic means for transmitting the pressure of the water of flotation against said arm in opposition to said spring, comprising a cylinder and piston, and mechanism operated by said piston for rocking said arm against the action of said spring, a valve controlling the admission of water to said cylinder, a spring-constrained arm for opening and closing said valve, and automatic means, operated by the mechanism for shifting the diving-rudders, for actuating said valve-arm, substantially as described.

60. A diving apparatus for submarine boats comprising one or more diving-rudders controlled by an arm, a spring acting on said arm under tension, automatic means for causing the pressure of the water of flotation to act on said arm in opposition to said spring, comprising a cylinder and piston, and mechanism operated by said piston for rocking said arm against the action of said spring, with means for locking said arm in any desired position, and for releasing same when desired, a valve controlling the admission of water to said cylinder, a spring-constrained arm for opening and closing said valve, and automatic means, operated by the mechanism for shifting the diving-rudders, for actuating said valve-arm, substantially as described.

61. In a diving apparatus for submarine boats comprising one or more diving-rudders, an arm for controlling said rudders, a spring acting on said arm under tension, means for adjusting the tension of said spring, automatic means for transmitting the pressure of the water of flotation against said arm in opposition to said spring, comprising a cylinder and piston, and mechanism operated by said piston for rocking said arm against the action of said spring, with means for locking said arm in any desired position and for releasing same when desired, a valve controlling the admission of water to said cylinder, a spring-constrained arm for opening and closing said valve, and automatic means operated by the mechanism for shifting the diving-rudders for actuating said valve-arm, substantially as described.

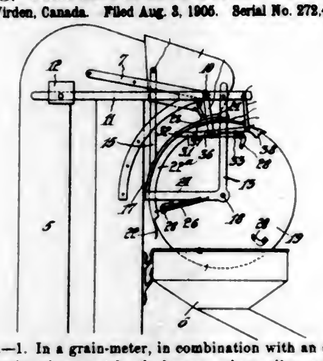
62. Diving apparatus for use in submarine boats comprising one or more diving-rudders, a pivoted arm, mechanism for transmitting the motion of said arm to said rudder or rudders, a spring under tension tending to move said arm in one direction, means for varying the point of application of said spring to said arm automatic means for transmitting the pressure of the water of flotation against said arm in opposition to said spring, comprising a cylinder and piston, and mechanism operated by said piston for rocking said arm against the action of said spring, with means for locking said arm in any desired position, and means for releasing said arm when desired, a valve controlling the admission of water to said cylinder, a spring-constrained arm for opening and closing said valve, and automatic means, operated by the mechanism for shifting the diving-rudders, for actuating said valve-arm, substantially as described.

63. A diving apparatus for submarine boats comprising diving-rudders, a pivoted arm for controlling said rudders, a spring acting on said arm under tension, means for adjusting the tension of said spring, means for causing said spring to act at a longer or shorter leverage on said arm, and automatic means for transmitting the pressure of the water of flotation against said arm in opposition to said spring, comprising a cylinder and piston, and mechanism operated by said piston for rocking said arm against the action of said spring, a valve controlling the admission of water to said cylinder, a spring-constrained arm for opening and closing said valve, and automatic means, operated by the mechanism for shifting the diving-rudders, for actuating said valve-arm, substantially as described.

64. A diving apparatus for submarine boats comprising diving-rudders controlled by an arm, a spring acting on said arm under ten-

sion, automatic means for causing the pressure of the water of flotation to act on said arm in opposition to said spring, comprising a cylinder and piston, and mechanism operated by said piston for rocking said arm against the action of said spring, and means for locking said arm in any desired position and for releasing same when desired, a valve controlling the admission of water to said cylinder, a spring-constrained arm for opening and closing said valve, and automatic means, operated by the mechanism for shifting the diving-rudders, for actuating said valve-arm, substantially as described.

822,566. GRAIN-MEASURING APPARATUS. WILLIAM WHITEFORD, Virden, Canada. Filed Aug. 3, 1905. Serial No. 272,455.



Claim.—1. In a grain-meter, in combination with an elevator, a hopper, a pivotal support for the hopper, a beam disposed on said pivotal support, a weight on one end of the beam, a rotary multicompartment member pivotally supported from the beam, means for limiting the rotation of the rotary member, a roller secured to the bottom of the hopper adjacent the rotary member and means for moving said hopper on its pivot.

2. In a grain-meter, in combination with an elevator, a bracket secured to the elevator and provided with a pivot, a hopper disposed on the pivot and formed with a spout, a bracket on the spout, a roller disposed on the bracket, a rotary multicompartment measuring member disposed adjacent the spout, a beam and a weight counterbalancing said measuring member, means coacting therewith to limit the movement of the measuring member and means for moving said hopper on its pivot.

3. In a grain-meter, a supporting-bracket, a beam pivoted thereto, a hopper pivoted to the bracket, a weight on one end of the beam, a vertical standard pivoted adjacent the opposite end of the beam, a rotary measuring member pivoted to the standard, means pivotally secured to the beam for limiting the movement of the measuring member and means for moving said hopper on its pivot.

4. In a grain-meter, a supporting-bracket, a beam pivoted thereto, a hopper pivoted to the bracket, a weight disposed on one end of the beam, a vertical standard pivoted adjacent the opposite end of the beam and provided with a horizontal extension and a vertical member on said extension, which vertical member is pivoted to the hopper, a curved frame connecting the vertical member and the vertical standard, a shield disposed under the curved frame, a rotary measuring member pivoted to the standard and means pivotally secured to the beam for limiting the movement of the measuring member.

5. In a grain-meter, a supporting-bracket, a hopper pivoted thereto, a beam pivoted to the bracket, a frame pivoted to the beam and the hopper, a shield provided with a hook on one end, a link having one end in engagement with the hook, and its opposite end engaged with the frame, a spring having one end connected to one end of the shield and its opposite end connected with the frame, a shield secured to the frame, a rotary measuring member below said shields, and means for limiting the movement of said measuring member.

6. In a grain-meter, a pivotally-supported hopper, a beam pivotally supported adjacent thereto, a weight on the beam, a rotary multicompartment measuring member pivotally connected to the beam, stops on the measuring member, a plurality of links pivoted to the beam, a lever on one of said links, a roller on the end of said lever, a second lever pivoted to the first lever and provided with an offset end projecting beyond said first lever, and a roller supported by the hopper adjacent the measuring member.

7. In a grain-meter, a pivotally-supported hopper, a rotary multicompartment measuring member supported below the hopper, means for limiting the movement of the measuring member, and a member adapted to strike the grain from the top of each of said compartments in the measuring member.

8. In a grain-meter, a pivotally-supported hopper, a rotary multicompartment member supported below the hopper, means for limiting the movement of the measuring member, and a rotatable member adapted to strike the grain from the top of each of said compartments in the measuring member.

9. In a grain-meter, a pivotally-supported hopper, a rotary multicompartment member supported below the hopper, means for limiting the movement of the measuring member, and a rotatable member carried by the hopper and adapted to strike the grain from the top of each of said compartments in the measuring-chamber.

822,567. BOTTLE-CAP FASTENER. GEORGE A. WILLIAMS, Port Clinton, Ohio. Filed Sept. 1, 1905. Serial No. 276,702.



Claim.—1. A bottle or jar closure, comprising a cap having yielding sides, a split ring encircling the sides, and a lever having a cylindrical head to which the ends of the ring are connected.

2. A bottle or jar closure, comprising a cap capable of being clamped upon the mouth of the bottle, a split ring carried by the cap and having its ends terminating in hooks, and a lever having a cylindrical head provided with slots in which the hook ends of the ring operate.

3. A bottle or jar closure comprising a cap capable of being clamped upon a mouth of a bottle, a split ring carried by the cap and having its ends terminating in hooks, and a lever having a cylindrical head which is provided with converging slots in which the hook ends of the ring operate.

4. A bottle or jar closure comprising a cap having yielding sides, a split ring encircling the sides, the ends of the ring being bent outwardly to provide hooks and a lever having converging slots in which the hook ends of the ring operate.

5. A bottle or jar closure comprising a cap having yielding sides, a split ring carried at the lower ends of the sides of the cap and a lever provided with slots which converge for a portion of their length and in which the hooks of the ring operate.

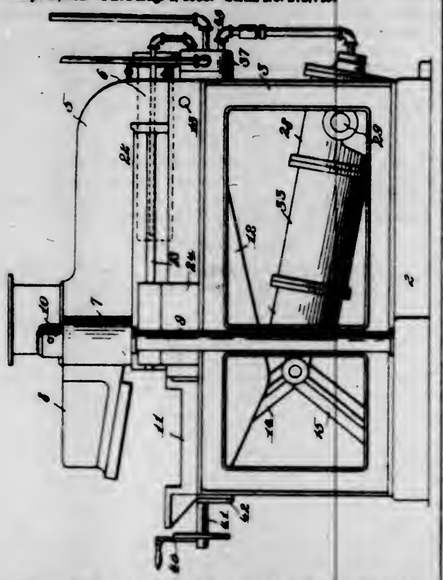
6. A bottle or jar closure comprising a cap having yielding sides, a split ring carried by the sides and having its ends terminating in hooks, and a lever provided with a cylindrical head having slots which converge for a portion of their length toward the body of the lever and which terminate in parallel continuations, the said slots being designed to receive the hook ends of the ring substantially for the purpose set forth.

7. A bottle or jar closure, comprising a cap having yielding side portions, a split ring carried by the side portions, and a lever having a cylindrical head which is provided with converging contacting surfaces against which the hook ends of the ring engage.

8. A bottle or jar closure, comprising a cap having slits in its sides to provide a series of segments and the lower ends of which are bent back in tubular form, a split ring carried by the said tubular portions, the ends of the ring being bent to form hooks, the extreme ends of which terminate in spheres, and a lever having a cylindrical head provided with converging slots in which the hook ends of the ring operate, the said spheres of the hooks engaging the inner surfaces of the head substantially as set forth.

9. A bottle or jar closure comprising a cap having yielding side portions, a packing-disk arranged within the cap, a split ring carried by the cap and at the lower ends of its side portions, the said ring having its ends terminating in hooks, the extreme ends of which terminate in spherical heads, and a lever having one end terminating in a cylindrical head portion in which is arranged slots that converge for a portion of their length and which terminate in parallel continuations, the said hooks operating in the slots to reduce the diameter of the ring, substantially for the purpose set forth.

822,568. **CAKE-FORMING MACHINE.** ELLIS B. ANDERSON, Demopolis, Ala. Filed Aug. 4, 1905. Serial No. 272,749.



Claim.—1. In a machine of the class described, cake-forming mechanism involving a movable member, an oscillatory carrier for said movable member, and means for actuating the latter said carrier being supported independently of said actuating means.

2. In a machine of the class described, cake-forming mechanism involving a movably-mounted member, a pivotally-mounted swinging device for carrying said movable member, and means for actuating the latter said carrier being supported independently of said actuating means.

3. In a machine of the class described, cake-forming mechanism involving a movably-mounted member, a pair of levers supported by the framework of the machine, for carrying said movably-mounted member and connected by it, and means for actuating said movably-mounted member.

4. In a machine of the class described, cake-forming mechanism involving a movably-mounted member, a carrier for said movably-mounted member supported for oscillation by the framework of the machine, and a toggle for actuating said movably-mounted member to form a cake.

5. In a machine of the class described, cake-forming mechanism involving a movably-mounted member, an oscillatory carrier for the said movably-mounted member, and an actuating-toggle for said movably-mounted member, comprising two elements, each laterally separated and operatively connected, one of the toggle elements being connected with the under face of the movably-mounted member near the opposite sides thereof.

6. In a machine of the class described, cake-forming mechanism involving a platen and a tray, adapted to move toward and from the platen, an upper toggle member of substantially H shape, the branches of which are jointed to the under side of the tray near the opposite ends thereof, and a lower substantially H-shaped toggle member connected with the upper one, a shaft constituting a connection between the toggle members, the transverse portion of the lower toggle member having an upwardly-extending arm through which said shaft passes, and means for operating the toggle.

7. In a machine of the class described, cake-forming mechanism involving a movably-mounted member, a carrier for the movably-mounted member supported for oscillation by the framework of the machine, a toggle, one member of which is connected with the movably-mounted member, a cylinder supported for oscillation by the framework of the machine, and a piston in the cylinder adapted to actuate the toggle and thereby the movably-mounted member to form a cake.

8. In a machine of the class described, cake-forming mechanism comprising a stationary platen and a movably-mounted tray, the working face of the platen being upon a slant, a carrier for the tray mounted to present the tray angularly to the platen, a toggle connected with the tray and for actuating the tray to form a cake, a swinging cylinder, and a piston in the cylinder to operate the toggle to cause the latter to actuate the tray in a direction to form a cake.

9. In a machine of the class described, cake-forming mechanism, charging mechanism therefor, fluid-actuated means for operating the cake forming and charging mechanisms in sequence, means for supplying a fluid to said fluid-actuated means, and a single valve for controlling the supply of fluid to and the exhaust of such fluid from the said fluid-actuated means.

10. In a machine of the class described, cake-forming mechanism involving a tray, a toggle coöperative with the tray, mechanism for actuating the toggle to straighten it, a hopper, a charging device located normally under the hopper and capable of advancing movement from said normal position to supply the tray with material, a cut-off device for the hopper, connected with the charging device, and mechanism for actuating the charging device.

11. In a machine of the class described, cake-forming mechanism involving a relatively stationary platen, and a movably-mounted tray, the working face of the platen being upon a slant, an oscillatory carrier for the tray, adapted to present the tray angularly to the platen, and mechanism for moving the tray toward and from the platen.

12. In a machine of the class described, cake-forming mechanism involving a relatively stationary platen and a movably-mounted tray, the working face of the platen being upon a slant, an oscillatory carrier for the tray, adapted to present the tray angularly to the platen, a toggle connected with the tray, and mechanism for actuating the toggle to move the tray toward and from the platen.

13. In a machine of the class described, cake-forming mechanism involving a platen, the working surface of which is upon a slant, and a tray, a pair of parallel levers connected by the tray and constituting a carrier therefor, a toggle connected with the tray, and mechanism for actuating the toggle to move the tray toward and from the platen.

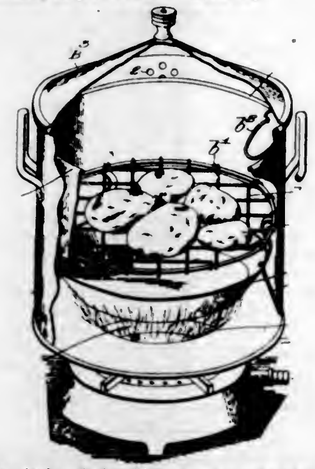
14. In a machine of the class described, cake-forming mechanism involving a relatively stationary platen and a tray or box, means for charging the box with material, a toggle connected with the box, a swinging cylinder, a piston in the cylinder, a rod connected to the piston and to the toggle at the joint of the members thereof, means for admitting a fluid agent into the cylinder to advance the piston and cause the straightening of a toggle, a collar on the rod, and a spring acting against the collar, said spring being adapted to be placed under compression on the working movement of the piston, whereby when the latter is freed of steam, the piston will be returned to its retracted position by the power of the spring.

15. In a machine of the class described, cake-forming mechanism involving a platen and a tray, the latter normally resting upon the framework, a hopper to contain material, a table under the platen, an open charging device adapted to be moved back and forth upon the table, and when in its backward position, to be supplied with material from the hopper, and when moved forward to carry the material within it over the table into the tray, means for actuating the charging device, a cut-off for the hopper, movable into its operative position as the charging device is advanced, a toggle for operating the tray, a swinging cylinder, a piston in the cylinder, coöperative with and adapted, on its advancing movement, to straighten the toggle and move the tray from its normal position, and means for admitting a fluid agent into the cylinder to cause the advance of said piston.

16. In a machine of the class described, cake-forming mechanism involving two members, one movable relatively to the other, a charging device for the said movably-mounted member, mechanism for actuating the movably-mounted member and charging device, involving separate cylinders, pistons in the cylinders, a casing having four ports, pipes leading from two of the ports to the opposite ends of one of the cylinders, pipes leading from the third port to one end of the other cylinder, a pipe leading from the fourth port to the atmosphere, a disk valve adapted to move against that face of the casing in which said ports are formed and having two ports through it, adapted to register with the other ports, and also having on one of its faces two concentric exhaust-channels adapted to coöperate with said first-mentioned ports, one of the channels being composed of two portions of different radii and a neck connecting the same, and manually-controlled means for actuating the valve.

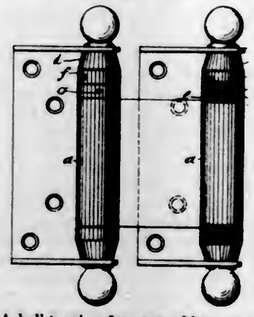
822,569. **COOKING APPARATUS.** DAVID APPLETON, West Kensington, England. Filed Aug. 24, 1904. Serial No. 221,934.

Claim.—1. The herein-described cooking apparatus comprising a cylindrical body having an opening in its lower end, a pan for containing water sustained within said cylindrical body directly above the said opening, a basket sustained above said pan, said basket having a perforated bottom and imperforate side walls and struts attached to the side walls of the cylindrical body for sustaining both the pan and the basket, said struts each having two shoulders, one each for sustaining the pan and basket respectively.



2. The herein-described cooking apparatus comprising a cylindrical body having an opening in its lower end, a pan for containing water sustained within said cylindrical body directly above said opening, a basket also sustained within said cylindrical body and above said pan, the aforesaid cylindrical body having perforations in its side walls at a point between its top and the top edge of the aforesaid basket whereby steam and the odors of articles being cooked may be allowed to escape from the vessel.

822,570. **BALL-BEARING FOR SPRING-HINGES.** EMIL BOHMER, New York, N. Y. Filed Jan. 14, 1905. Serial No. 241,140.



Claim.—1. A ball-bearing for spring-hinges, comprising two race-plates provided with circumferential grooves in their adjacent faces, antifriction-balls in said grooves, each of said race-plates being provided with a circumferential recess near its outer face, and a flanged sheet-metal covering engaging said recesses for holding together said race-plates and balls.

2. A ball-bearing for spring-hinges, comprising two race-plates provided with circumferential grooves in their adjacent faces, antifriction-balls in said grooves, each of said race-plates being provided with a circumferential recess near its outer face, one of said recesses being of small depth and the other of larger depth, and a flanged sheet-metal covering engaging said recesses for maintaining said race-plates and balls in operative position.

822,571. **FLAT BRUSH.** JOHN F. BOWDITCH, Boston, Mass. Filed July 26, 1905. Serial No. 271,600.

Claim.—1. A brush comprising a ferrule or socket, a mass of bristles inserted in the ferrule, a spreading device which spreads the base of the mass of bristles, and jaws which are forced inwardly against the bristles by the spreading device.



2. A brush comprising a ferrule or socket, a mass of bristles inserted in the ferrule, a spreading device which spreads the base of the mass of bristles, jaws which are forced inwardly against the bristles by the spreading device, and means operated by the spreading device for locking the jaws to the socket.

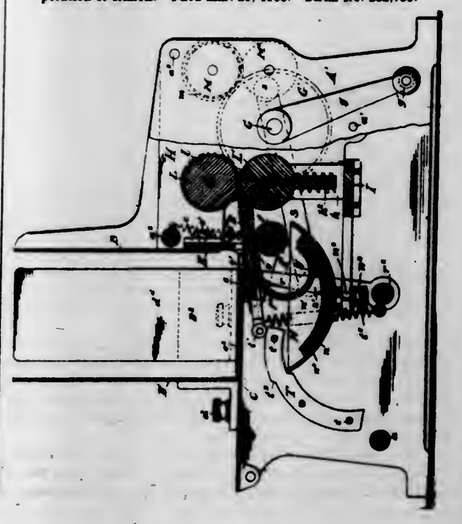
3. A brush comprising a ferrule or socket having clutch members at opposite sides, jaws fulcrumed on the sides of the socket and provided with arms projecting into the socket, said arms having complemental clutch members adapted to engage the clutch members of the socket, a mass of bristles inserted in the socket between the jaws, and a spreading device inserted in the base of the mass between the jaws, whereby the arms are forced outwardly to engage their clutch members with the clutch members of the socket, and the jaws are forced inwardly against the mass of bristles.

4. A brush comprising a ferrule or socket having longitudinal grooves in its inner sides, outwardly-projecting jaws fulcrumed on the sides of the socket, and provided with arms projecting into the socket, said arms having projections formed to enter said grooves, a mass of bristles inserted in the socket between the jaws, and a spreading device inserted in the base of the mass between the jaws, whereby the arms are forced outwardly to engage their projections with the socket-grooves, and the jaws are forced inwardly against the mass of bristles.

5. A brush comprising a ferrule or socket having longitudinal grooves in its inner sides, a mass of bristles inserted in the ferrule, a spreading device inserted in the base of the mass of bristles to spread the same, said device having longitudinal grooves in its sides, and jaws which are forced inwardly against the mass of bristles by the spreading device, said jaws being opposite the grooves in the spreading device.

6. A brush comprising a ferrule or socket having longitudinal grooves in its inner sides, outwardly-projecting jaws fulcrumed on the sides of the socket, and provided with end lugs seated and adapted to rock on the ends of the socket, and with arms projecting into the socket, and a spreading device inserted in the base of the mass of bristles between the jaws, said device forcing the bristles outwardly against the arms, whereby the jaws are forced inwardly against the mass of bristles.

822,572. **ENVELOP-SEALING APPARATUS.** ERNEST J. BRASSEUR, Chicago, Ill., assignor to A. B. Dick Company, Chicago, Ill., a Corporation of Illinois. Filed Mar. 29, 1905. Serial No. 252,780.



Claim.—1. The combination with means for supporting an envelop, of a picker coacting with such envelop between the flap and body thereof and means for reciprocating said picker over a curved path, substantially as set forth.

2. The combination with means for supporting an envelop, of a vibrating picker coacting with such envelop between the flap and body thereof, and means for guiding the advancing edge of said picker to move the same in a broken line, substantially as set forth.

3. The combination with means for supporting an envelop, of a vibrating picker coacting with such envelop between the flap and body thereof, and means for transmitting movement to the forward edge of said picker in a broken line, substantially as set forth.

4. The combination with means for supporting an envelop, of a stop and a vibrating picker and means for actuating said picker to cause it to engage such envelop between the flap and body thereof and advance said envelop past said stop in a broken line, substantially as set forth.

5. The combination with means for supporting an envelop, of a stop, a vibrating picker coacting with such envelop between the flap and body thereof to advance said envelop past said stop, and means for transmitting movement in a broken line to the forward edge of said picker, substantially as set forth.

6. The combination with means for supporting an envelop, of a picker coacting with such envelop between the flap and body thereof, means for reciprocating said picker over a curved path, and a flap-moistener coacting with said picker and said flap, substantially as set forth.

7. The combination with means for supporting an envelop, of a vibrating picker coacting with such envelop between the flap and body thereof, a flap-moistener coacting with said picker and said flap, and means for transmitting motion to the forward edge of said picker in a broken line, substantially as set forth.

8. The combination with means for supporting an envelop, of a vibrating picker coacting with said envelop between the flap and body thereof, a movable moistening device for said flap carried into coöperative relation to said flap by said picker, a stationary supply-reservoir with which said device coacts, and means for pressing said flap against said moistening device, substantially as set forth.

9. The combination with means for supporting an envelop, of a stop having recesses, sectional pressure-rolls operating in proximity to said stop, and a vibrating picker coacting with said envelop between the flap and body thereof to pass said envelop between said stop and pressure-rolls, substantially as set forth.

10. The combination with means for supporting an envelop, of a stop having recesses, sectional pressure-rolls operating in proximity to said stop, and a vibrating picker coacting with said envelop between the flap and body thereof to pass said envelop between said stop and pressure-rolls, the forward edge of said picker having movement in a broken line, substantially as set forth.

11. The combination with means for supporting an envelop, of a stop, an underlying, yieldingly-supported pressure device, a picker and means for actuating the same to cause it to engage said envelop, between the flap and body thereof, and pass the same between said stop and said device in a broken line, substantially as set forth.

12. The combination with means for supporting an envelop, of a stop provided with recesses, an underlying yieldingly-supported pressure device including sectional rolls coacting with the recesses in said stop, a picker, and means for vibrating the same to pass between the flap and body of an envelop and to move said envelop between said stop and pressure device, substantially as set forth.

13. The combination with means for supporting an envelop, of a picker coacting with said envelop between the flap and body thereof, and means for moving the forward edge of said picker in a broken line, substantially as set forth.

14. The combination with means for supporting an envelop, of a pivotally-mounted picker coacting with said envelop between the flap and body thereof, and a guide cam or rib governing the direction of movement of the forward edge of said picker, substantially as set forth.

15. The combination with means for supporting an envelop, of a pivotally-mounted picker coacting with said envelop between the flap and body thereof, a guide cam or rib governing the direction of movement of the forward edge of said picker, and means for assuring coaction between said picker and said guide cam or rib, substantially as set forth.

16. The combination with means for supporting an envelop, of a vibrating picker coacting with said envelop between the flap and body thereof, an underlying stationary reservoir, and a moistener secured to said picker and coacting with said reservoir, substantially as set forth.

17. The combination with means for supporting an envelop, of a vibrating picker coacting with said envelop between the flap and body thereof, an underlying stationary reservoir, a moistener secured to said picker and coacting with said reservoir, and a pressure device for assuring contact between said envelop-flap and said moistener, substantially as set forth.

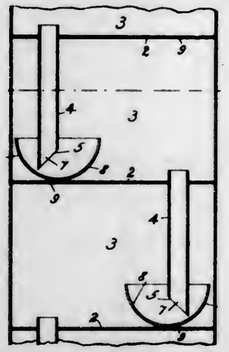
18. The combination with means for supporting an envelop, of a vibrating picker coacting with said envelop between the flap and body thereof, a guide cam or rib for governing the movement of said picker, and a spring for maintaining said picker in contact with said guide cam or rib, substantially as set forth.

19. The combination with means for supporting an envelop, of a picker coacting with said envelop between the flap and body thereof to move said envelop forward, means for reciprocating said picker and causing its forward edge to move in a broken line and means for simultaneously applying moisture to the inner surface of said flap, substantially as set forth.

20. The combination with means for supporting an envelop, of a vibrating picker coacting with said envelop between the flap and body thereof to move said envelop forward, and means, including a stationary reservoir and continuously-connected absorbent moistener moving with said picker, for simultaneously applying moisture to the inner surface of said flap, substantially as set forth.

21. The combination with means for supporting an envelop, of a vibrating picker pivotally mounted intermediate of its forward and rearward ends, means for transmitting vibratory movement thereto, a guide cam or rib, and a sheave carried by said picker and coacting with said guide cam or rib, substantially as set forth.

822,573. STILL. JOHN J. BRENNAN, Louisville, Ky., assignor of one-half to Thomas J. Hines, Louisville, Ky. Filed July 24, 1905. Serial No. 271,007



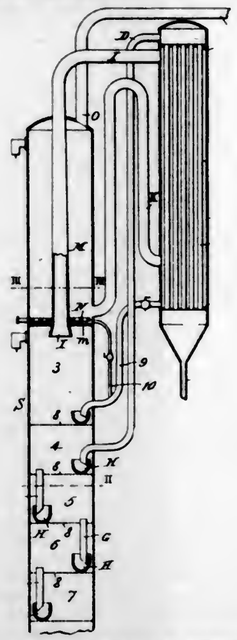
Claim.—1. In a still, the combination with the casing, of perforated diaphragms forming successive chambers, discharge-pipes leading from one chamber to another, and receiving-cups inclosing the lower ends of the discharge-pipes, the discharge-pipes having lateral openings at their lower ends to cause the washing out of solid material from the cups, and the cups having outwardly and upwardly inclined sides facing such lateral openings of the pipes, substantially as set forth.

2. In a still, the combination of a casing, perforated diaphragms forming successive chambers for the treatment of liquid, discharge-pipes leading from one chamber to another, and receiving-cups inclosing the lower ends of the pipes, each cup having an inclined side, 8, along which solid matter is adapted to be forced by the stream of discharged liquid, to and over the edge of the cup, and the pipes having lateral discharge-openings facing the said inclined sides 8, substantially as set forth.

3. In a still wherein the product of distillation is delivered from one chamber to another, a liquid-seal consisting of the combination with a discharge-pipe, of a substantially hemispherical cup arranged to cover the discharge-opening of the pipes and situated eccentrically of the pipe, substantially as and for the purposes described.

4. In a still, the combination of a casing, diaphragms separating the space within the casing into successive chambers and having means for the passage of steam or equivalent fluid for the treatment of the liquid, discharge-pipes leading from one chamber to another, said discharge-pipes having lateral discharge-openings, and hemispherical receiving-cups inclosing the lower ends of the said pipes, the cups being arranged eccentrically of the pipes with the lateral discharge-openings of the pipes directed toward those sides of the cups which are farthest away from the pipes, substantially as set forth.

822,574. APPARATUS FOR DISTILLATION. JOHN J. BRENNAN, Louisville, Ky., assignor of one-half to Thomas J. Hines, Louisville, Ky. Filed July 24, 1905. Serial No. 271,008.

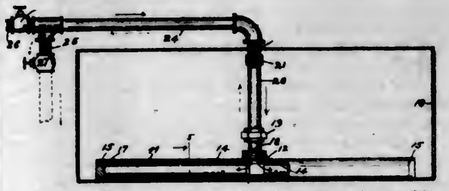


Claim.—1. In a distilling apparatus the combination of a still, a doubler in immediate contact therewith, a heater for the incoming beer or liquid to be treated, said heater having a vapor-chamber in which the product of the still is divided into a liquid and a vapor and having also a separate space for the incoming beer, means for conducting the heated beer from the said heater to the still for distillation, a vapor-conduit leading from the still through the doubler to the vapor-chamber of the heater, a pipe for liquid leading from the lower part of the vapor-chamber of the heater to the still, and a vapor-pipe leading from the vapor-chamber of the heater to the doubler, substantially as set forth.

2. In a distilling apparatus, the combination of a still, a doubler in immediate contact therewith, a heater for the incoming beer, said hearter having a vapor-chamber in which the product of the still is divided into a liquid and a vapor, and having also a separate space for the incoming beer, means for conducting the heated beer from the said heater to the still for distillation, a vapor-conduit leading from the still through the doubler to the vapor-chamber of the heater, a pipe for liquid leading from the lower part of the vapor-chamber of the heater to the still, the pipe K leading from the vapor-chamber of the heater near the lower part of the latter and thence passing upward and then downward and communicating with the lower part of the doubler, and means for conducting the vapor of high proof from the doubler for condensation into finished spirit, substantially as set forth.

822,575. BOILER-CLEANER. JOHN G. BROMAN, Chicago, Ill. Filed Dec. 7, 1905. Serial No. 290,685.

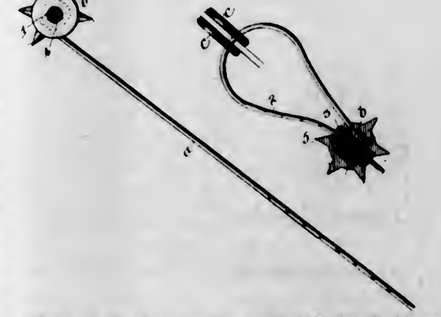
Claim.—1. In a boiler-cleaner, the combination with an elongated housing having its entire lower portion open and adapted at its ends to rest on the inner lower portion of the boiler, of a pipe located longitudinally therein and having perforations in its lower portion, a supply-pipe and a discharge-pipe located externally of the boiler and having communication with the perforated pipe at about its middle and through the boiler and housing to hold the latter in contact with the boiler.



2. In a boiler-cleaner, the combination with an elongated housing having its entire lower portion open, of a pipe located longitudinally therein and having perforations in its lower portion, a cap-piece having legs or projections and secured on each end of the pipe to close the ends thereof as well at the ends of the housing, the legs or projections of said cap-pieces adapted to rest on the lower inner portion of the boiler to hold the side edges of the housing at a distance therefrom, and means communicating with the pipe and extending through the boiler and said housing.

3. In a boiler-cleaner, the combination with an elongated housing having its entire lower portion open, of a perforated pipe located longitudinally therein, a cap-piece having legs or projections and secured on each end of the pipe to close the ends thereof as well as the ends of the housing, the legs of said cap-pieces adapted to rest on the inner lower portion of the boiler to hold the side edges of the housing at a distance therefrom, a supply-pipe and a discharge-pipe located externally of the boiler, means extending through the boiler and said housing and communicating at one of its ends with the perforated pipe and at its other end with the supply and discharge pipes.

822,576. COIL-WIRE SEAL. EDWARD J. BROOKS, East Orange, N. J. Filed Aug. 4, 1905. Serial No. 272,672.



Claim.—1. A coil-wire seal composed of a flexible shackle-wire having a helical coil at one end, and a seal part of lead inclosing said coil and provided with a threading-hole extending axially through said coil and a sight-hole perpendicular thereto for exposing the coil to view.

2. The combination, in a seal adapted to be press-fastened, of a flexible shackle-wire, having as a characteristic feature a locking-coil located at one end of the shackle, and a seal part of lead inclosing said coil and provided with a threading-hole extending through said coil and a sight-hole perpendicular thereto adapted to be kept open in the press-fastened seal for exposing to view said coil.

3. The combination, in a seal adapted to be press-fastened, of a flexible shackle-wire having a helical coil and a zigzag anchoring portion at its respective ends, and a seal part of lead inclosing said coil and provided with a threading-hole extending through said coil and adapted to admit said zigzag portion and a sight-hole perpendicular thereto adapted to be kept open in the press-fastened seal for exposing to view said coil.

822,577. SEAL FOR BOXES. EDWARD J. BROOKS, East Orange, N. J. Filed Oct. 18, 1905. Serial No. 283,375.

Claim.—1. A seal, for wooden boxes, composed of a sheet-metal box-strap provided with a pair of stops near one end, a hollow sheet-metal seal part having diametrically opposite holes in its edges through which said strap extends and held in place on said strap by

said steps, the other end of said strap being adapted to be threaded through the same holes, and a nail adapted to be driven through the sheet metal of said seal part and both strap ends and into the wood of the box to complete and fasten the seal.

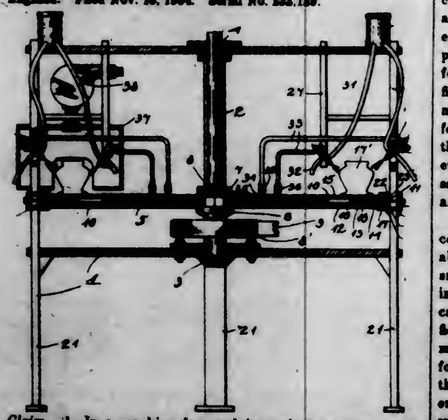
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2. A seal, for wooden boxes, composed of a sheet-metal box-strap provided with a pair of steps near one end, a hollow sheet-metal seal part having a central indentation in its face and diametrically opposite holes in its edges through which said strap extends and held in place on said strap by said steps, the other end of said strap being adapted to be threaded through the same holes, and a nail adapted to be centered by said indentation and to be driven through the sheet metal of said seal part and both strap ends and into the wood of the box to complete and fasten the seal.

3. A seal, for wooden boxes, composed of a sheet-metal box-strap provided with a pair of steps near one end, a hollow sheet-metal seal part having diametrically opposite holes in its edges through which said strap extends and held in place on said strap by said steps, the other end of said strap being adapted to be threaded through the same holes, and a spear-nail having ratchet projections to interlock with the wood of the box and adapted to be driven through the sheet metal of said seal part and both strap ends and into the wood of the box to complete and fasten the seal.

4. A seal, for wooden boxes, composed of a sheet-metal box-strap provided with a pair of steps near one end, a hollow sheet-metal seal part having diametrically opposite holes in its edges through which said strap extends and held in place on said strap by said steps, the other end of said strap being adapted to be threaded through the same holes, and a spear-nail having a flat twisted shank provided with ratchet projections at its edges to interlock with the wood of the box and adapted to be driven through the sheet metal of said seal part and both strap ends and into the wood of the box to complete and fasten the seal, substantially as hereinbefore specified.

822,578. COLORING-MACHINE. CHARLES L. BURDICK, London, England. Filed Nov. 10, 1904. Serial No. 232,139.



Claim.—1. In a machine for applying coloring-matter to objects, the combination with a rotating table for carrying objects to be treated, of sprayers disposed about the table to direct coloring-matter to the objects as they are carried through the sprayer-fields by said rotating table, automatic means for allowing application of coloring-matter only when the objects are in the fields of the sprayers, and means for rapidly rotating the objects when in the sprayer-fields.

2. In a machine for applying coloring-matter to objects, the combination with a main supporting-table, of smaller tables pivoted thereon for holding objects to be colored, sprayers disposed about said main supporting-table, said main supporting-table being movable to carry the objects on the smaller tables into the fields of the sprayers, means for causing rotation of the smaller tables when the objects thereon are in the sprayer-field, and means for causing actuation of said sprayers only when the objects are in the fields thereof.

3. In a machine for applying coloring-matter to objects, the combination with a rotating main supporting-table, of sprayers disposed about said main table, smaller tables mounted on said main table for holding objects to be colored and normally adapted to travel with said main supporting-table, whereby the objects thereon are carried into the fields of the sprayers, and means for preventing said smaller tables from traveling with the main supporting-table when the objects are in the fields of the sprayers.

4. In a machine for applying coloring-matter to objects, the combination with a rotating main supporting-table, of sprayers disposed about said main table, smaller tables mounted on said main table for holding objects to be colored and normally adapted to travel with said main supporting-table whereby the objects thereon are carried into the fields of the sprayers, means for preventing said smaller tables from traveling with the main supporting-table when the objects are in the fields of the sprayers, and means for causing said sprayers to be actuated only when the objects are in their fields.

5. In a machine for applying coloring-matter to objects, the combination with a main supporting-table, of sprayers for directing coloring-matter disposed about said table, smaller tables mounted on said main table for holding the objects to be colored, means for causing rotation of said main supporting-table to carry the objects into the fields of the sprayers, said smaller tables being normally adapted to travel with said main table, means for preventing said smaller tables from traveling with said main table when said objects are in the fields of said sprayers, and means associated with said smaller tables and said main supporting-table for causing said smaller tables to rotate when they are prevented from traveling with said main table.

6. In a machine for applying coloring-matter to objects, the combination with a main supporting rotatable table, of sprayers for directing coloring-matter disposed about said main table, smaller tables mounted on said main table for holding the objects to be colored, means for causing rotation of said main table to carry the objects into the fields of said sprayers, said smaller tables being normally adapted to travel with said main supporting-table, means for preventing said mutual travel when the objects are in the fields of the sprayers, and driving means interposed between said main supporting-table and said smaller tables for causing rotation of said smaller tables upon actuation of said preventive means.

7. In a machine for applying coloring-matter to objects, the combination with a main supporting-table, of sprayers disposed about said table for directing coloring-matter to objects to be treated, smaller supporting members carried by said main support, supporting-tables pivoted to said smaller supporting members, means for causing rotation of said main support to carry the objects into the fields of said sprayers, said smaller supporting members being normally adapted to travel with said main support, detent mechanism for engaging said smaller supporting members to prevent motion thereof when the objects are in the fields of the corresponding sprayers, and means upon rotative motion between said main support and said smaller supports for causing rotation of said supporting-tables and the objects thereon.

8. In a machine for applying coloring-matter to objects, the combination with a main supporting-table, of sprayers disposed about said table for directing coloring-matter to objects to be treated, smaller supporting members carried by said main support, supporting-tables pivoted to said smaller supporting members, means for causing rotation of said main support to carry the objects into the fields of said sprayers, said smaller supporting members being normally adapted to travel with said main support, detent mechanism for engaging said smaller supporting members to prevent motion thereof when the objects are in the fields of the corresponding sprayers, means upon rotative motion between said main support and said smaller supports for causing rotation of said supporting-tables and the objects thereon, and means for releasing said smaller supports after an interval to allow continued travel thereof with said main support.

9. In a machine for applying coloring-matter to objects, the combination with a circular main support provided with an annular groove and a peripheral flange, of smaller supports adapted to move in said groove, supporting-tables pivoted to said smaller supports for holding the objects to be colored, sprayers disposed about said main support for applying coloring-matter to the objects, means for causing rotation of said main support to carry the objects into the fields of the sprayers, said smaller supporting members being normally adapted to travel with said main support, means for preventing movement of said smaller supports when the object on the corresponding supporting-table is in the field of the corresponding sprayer, and friction-wheels interposed between said peripheral flange and said supporting-tables whereby relative motion between said flange and said smaller supporting members causes rotation of the supporting-tables.

10. In a machine for applying coloring-matter to objects, the combination with a circular main support provided with an annular groove and a peripheral flange, of smaller supports adapted to move in said groove, supporting-tables pivoted to said smaller supports for holding the objects to be colored, sprayers disposed about said main support for applying coloring-matter to the objects, means for causing rotation of said main support to carry the objects into the fields of the sprayers, said smaller supporting members being normally adapted to travel with said main support, means for preventing movement of said smaller supports when the object on the corresponding supporting-table is in the field of the corresponding sprayers, and friction-wheels interposed between said peripheral flange and said supporting-tables whereby relative motion between said flange and said smaller supporting members causes rotation of the supporting-tables, whereby said rotation ceases and said objects are carried from the fields of the sprayers.

11. In a machine for applying coloring-matter to objects, the combination with a circular main support provided with an annular groove and a peripheral flange, of smaller supports adapted to move in said groove, supporting-tables pivoted to said smaller supports for holding the objects to be colored, sprayers disposed about said main support for applying coloring-matter to the objects, means for causing rotation of said main support to carry the objects into the fields of the sprayers, said smaller supporting members being normally adapted to travel with said main support, means for preventing movement of said smaller supports when the object on the corresponding supporting-table is in the field of the corresponding sprayer, friction-wheels interposed between said peripheral flange and said supporting-tables whereby relative motion between said flange and said smaller supporting members causes rotation of the supporting-tables, and cam mechanism associated with said main support for causing actuation of said sprayers only when an object is in the field thereof.

12. In a machine for applying coloring-matter to objects, the combination with a rotatable supporting-table for carrying objects to be colored into the field of sprayers mounted about said supporting-table, of means for causing actuation of said sprayers only when an object is in the field thereof, and means for automatically removing the finished objects from said supporting-table.

13. In a machine for applying coloring-matter to objects, the combination with a rotatable supporting-table for carrying objects to be colored into the field of color-applying mechanisms disposed about said supporting-table, of means for causing actuation of said color-applying mechanism only upon the presence of an object in their fields, and a guideway for receiving the colored objects and for guiding them to conveying mechanism.

14. In a machine for applying coloring-matter to objects, the combination with a rotatable supporting-table for carrying objects to be colored into the field of sprayers disposed about said table, of projections from said table for holding the objects in position thereon, means for causing actuation of said sprayers only upon the presence of an object in their fields, and a guideway for receiving the finished objects from said table and for leading the objects to a conveying mechanism, each projection serving to carry the accompanying object into and along said guideway.

15. In a machine for applying coloring-matter to objects, the combination with a rotatable supporting-table for carrying objects to be colored into and through the fields of sprayers disposed about said table, cam mechanism for causing actuation of said sprayers only upon the presence of an object in their fields, projections from said table for holding the object in position thereon, a guideway disposed in the path of the finished object to receive said objects and to lead them to a conveying mechanism, a slot through said guideway through which said projections may pass, these projections serving to carry the accompanying object into said guideway and upon its passage through said slot serving to move the corresponding object along said guideway.

16. In a machine for applying coloring-matter to objects, the combination with a rotatable supporting-table for carrying objects to be colored into the field of sprayers mounted about said supporting-table, of means for causing actuation of said sprayers to apply coloring-matter to the objects as they travel with the supporting-table, and means for automatically removing the finished objects from said supporting-table

17. In a machine for applying coloring-matter to objects, the combination with a continuously-traveling supporting-table, of smaller tables carried by said main table for holding objects to be colored, sprayers disposed about said main supporting-table, detent means for preventing movement of the smaller tables with the main supporting-table within the field of the sprayers, and means after application of coloring-matter to the objects for releasing the smaller tables.

18. In a machine for applying coloring-matter to objects, the combination with a main supporting-table, of smaller tables mounted thereon for holding objects to be colored, sprayers disposed about said main supporting-table, said main supporting-table being continuously movable to carry objects on the smaller tables thereon into the fields of the sprayers, means when an object arrives in the field of the sprayer for stopping its travel with the main table, means for automatically causing actuation of the corresponding sprayer to apply coloring-matter to the detained object, and automatic means for releasing the smaller table carrying the colored object.

19. In a machine for applying coloring-matter to objects, the combination with a main supporting-table, of smaller tables for holding objects to be colored, means for causing continuous travel of the main table, said smaller tables being movable with relation to the main table but normally traveling therewith, sprayers disposed about the main supporting-table for directing coloring-matter, means for preventing further movement of a smaller table when the object thereon is carried into the field of a sprayer, means automatically actuated by the moving main table for causing actuation of the sprayers only when objects are in the field thereof, and means automatically actuated by the traveling main table for causing release of the detained smaller table after the object thereon has received sufficient coloring-matter.

20. In a machine for applying coloring-matter to objects, the combination with a main supporting-table, of smaller tables thereon for holding objects to be colored, means for causing continuous travel of the main table, sprayers disposed with the traveling main table, the objects being normally carried on the smaller tables with the main table, a detent-frame disposed in the path of the smaller tables to prevent further travel of the object thereon when the object thereon arrives in the field of a sprayer, means for causing actuation of a sprayer when an object arrives in its field, and means controlled by the traveling main table for automatically releasing the detent-frame from the smaller table to allow further travel thereof with the main table.

21. In a machine for applying coloring-matter to objects, the combination with a main supporting-table, of smaller tables thereon for holding objects to be colored, means for causing continued travel of said main table, sprayers disposed near the main table for directing coloring-matter toward objects carried on the smaller tables, a detent-lever disposed to prevent travel of successive smaller tables as they arrive in the field of the sprayers, means for causing actuation of the sprayers to apply coloring-matter to the object on the detained table, and cam mechanism associated with the traveling table for causing actuation of the detent-lever to release the smaller table with the colored object thereon whereby said smaller table may again travel with the main supporting-table.

22. In a machine for applying coloring-matter to objects, the combination with a main supporting-table, of smaller tables thereon for holding objects to be colored, sprayers disposed near said main table, means for causing continued travel of the main table, said smaller tables being normally caused to travel with the main table by virtue of only their frictional engagement therewith, a detent-lever normally disposed in the path of the smaller tables to prevent movement thereof when the object thereon arrives in the field of a sprayer, and means automatically controlled by the traveling table for moving the detent-lever from the path of the smaller tables whereby said smaller tables may again travel with the main table.

23. In a machine for applying coloring-matter to objects, the combination with a main supporting-table, of smaller tables carried thereon for supporting objects to be colored, sprayers disposed about the supporting-table, means for causing continued travel of the main table, detent means for preventing travel of a smaller table with the main table when the object of said smaller table arrives in the field of a sprayer, means upon stopping of the smaller table for causing rapid rotation of the object thereon, and means for automatically releasing the smaller table after sufficient coloring-matter has been applied to the object.

24. In a machine for applying coloring-matter to objects, the combination with a main supporting-table having a groove, of smaller rectangular tables disposed in said groove for carrying objects to be colored, sprayers disposed near the main table, means for causing continued travel of the main table, said smaller tables being carried with the main table by virtue of their frictional engagement only to carry the objects into the fields of the sprayers, cam mechanism automatically actuated by the traveling main table for causing actuation of the sprayers only when an object is in the field thereof, detent means for preventing movement of the smaller table with the

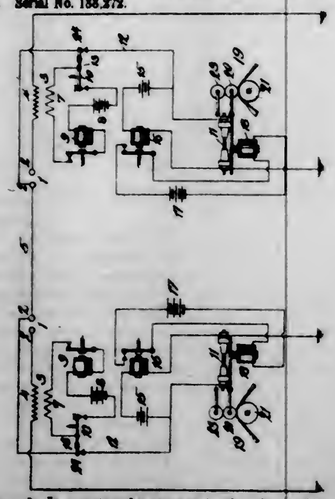
main table when coloring-matter is being applied, and means automatically controlled by the main table for releasing the detent means after the application of coloring-matter to the object.

25. In a machine for applying coloring-matter to objects, the combination with a main supporting-table, of a groove therein, smaller rectangular tables disposed within said grooves, a circular disk pivoted on each smaller table for supporting an object to be colored, sprayers disposed near the main table, means for causing continuous travel of the main table to normally carry the smaller tables by virtue of frictional engagement only, detent means for engaging the rectangular tables when the object thereon arrives in the field of a sprayer, cam mechanism controlled by the traveling table for causing actuation of the sprayers when the object arrives in the field thereof, means for causing rapid rotation of the object when the detent mechanism becomes effective, and means automatically controlled by the traveling table for releasing the detent means whereby rotation of the object ceases and whereby the rectangular table is again carried with the main table.

26. In a machine for applying coloring-matter to objects, the combination with a main supporting-table for supporting the objects to be colored, sprayers disposed about said table, means for causing movement of said main table to carry the objects into the field of the sprayers, means for preventing travel of the objects while coloring-matter is being applied, a casing surrounding the object upon application of coloring-matter thereto, and fan means for withdrawing surplus coloring-matter from about the object within said casing.

27. In a machine for applying coloring-matter to objects, the combination with a main supporting-table for carrying the objects, a casing disposed above the table, sprayers within said casing for directing coloring-matter, said main table serving to carry the objects into said casing, means for preventing further travel of the objects when in said casing, means controlled by the traveling table for causing actuation of the sprayers when the object arrives within said casing, and fan mechanism for removing surplus coloring-matter from about the object within the casing.

822,579. **ELECTRIC SYSTEM OF TRANSMISSION.** CHARLES O. BURKE and EDWARD J. BURKE, Brooklyn, N. Y., assignors of twenty-one thirtieths to John Q. A. Whittemore, Boston, Mass. Filed Jan. 9, 1904. Serial No. 188,272.



Claim.—1. In a system for communication the combination of a main line having spark-gaps, induction-coils coöperating with the said spark-gaps for producing disruptions of the electrical conditions in the said main line, means connected between the said spark-gaps for sending impulses of electricity over the said main line and separate and independent means for indicating the said disruptions and for indicating the said impulses.

2. In a system for communication the combination of a main line having spark-gaps and induction-coils connected to the said main line for producing disruptions in the electrical conditions in the said main line, coherers connected to the said main line, and means connected to the said main line and between the said spark-gaps for sending impulses of electricity, coherers connected to the said main line for detecting the said disruptions and means connected to the said main line between the said spark-gaps, for receiving the said impulses.

3. In a system for communication the combination of a main line having spark-gaps, induction-coils associated with the said spark-gaps, coherers connected to the said main line, means for causing the said induction-coils to affect a coherer and for opening the said connections of the said coherers, an indicator associated with each coherer for decohering the said coherer, a transmitter and a receiver for sending and receiving impulses of electricity connected to the line at points between the said spark-gaps.

4. In an electric system, the combination of a main line, a coherer, terminals of a spark-gap adapted to connect the said coherer with the said main line, means for opening the said terminals for sending signals and means for receiving the said signals.

5. In an electric system, the combination of a main line, a coherer, terminals of a spark-gap adapted to normally connect the said coherer with the said main line, a key for opening the said terminals to send signals and means for receiving the said signals.

6. In an electric system for communication the combination of a main line, terminals of a spark-gap normally closed, means for separating and closing the said terminals and thereby sending signals, coherers for receiving the said signals adapted to be connected through the said terminals to the said main line by the said means for separating and closing the said terminals.

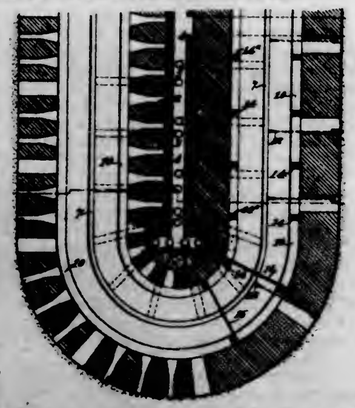
7. In an electric system for communication the combination of a main line, a key, terminals forming a spark-gap, one of the said terminals being mounted on the said key whereby the said spark-gap will be opened and closed and means for receiving the said signals connected and disconnected to the said main line through the said spark-gap.

8. In an electric system for communication the combination of a main line, means for charging the said main line, a transmitter for opening and closing the said main line and thereby sending impulses during the periods that the said main line is opened and completing the signals during the periods that the main line is closed, and means for receiving the said impulses.

9. In an electric system for communication the combination of a main line, means for charging the said main line, a coherer, a transmitter for opening and closing the said main line at one point and thereby sending signals, and opening and closing the connection of the coherer to the main line.

10. In a system for communication the combination of a main line having spark-gaps, an induction-coil operatively connected with each spark-gap, coherers connected to the main line, a switch for closing the circuit through each of the said induction-coils to cause the same to effectively operate a coherer and at the same time for opening the connection of each of the said coherers to the main line.

822,580. **CONTINUOUS KILN.** WILLIAM A. BUTLER, San Francisco, Cal. Filed Jan. 10, 1906. Serial No. 295,892.



Claim.—1. A regenerative kiln having burning-chambers and a series of passages directed inwardly from the sides and connecting with the lower part of the burning-chambers, said chambers having depressed channels at each side of the floor and with which channels the said passages connect, and burners disposed to discharge through said passages into the burning-chambers.

2. In a regenerative kiln, a successive series of burning-chambers having depressed channels at each side of the floor, fuel-passages opening inwardly and downwardly from the outer sides and connecting with the lower portions of the channels, said channels having deflecting-walls against which the products of combustion strike, and by which they are diverted upwardly into the chambers, and means for controlling the air-supply thereto.

3. In a regenerative kiln, a successive series of burning-chambers having passages opening inwardly and downwardly through the outer walls, fuel-burners discharging in line with said passages, deflecting-walls by which the products of combustion are delivered upwardly and circulated within the burning-chambers, means for controlling the air-supply around the burners, and means for controlling an independent air-supply to the interior of the burning-chambers.

4. In a regenerative kiln, a series of burning-chambers, passages extending through the walls on both sides of the lower part of the chambers, fuel-burners discharging through said passages and into the burning-chambers, a continuous subterranean air-conduit, gates operable across said conduit and corresponding with each of the burning-chambers, means by which said gates may be opened and closed.

5. In a regenerative kiln, a successive series of burning-chambers having depressed channels along each side of the floor with fuel-burners discharging into the chambers from opposite sides, means including a subterranean air-conduit for controlling an air-supply to the chambers independent of that admitted around the burners, a discharge-flue and connections between it and each of the chambers, and gates or dampers by which said connections are controlled.

6. In a regenerative kiln, successive series of burning-chambers, intermediate piers on the sides, openings through said piers, destructible partitions covering said openings and separating the chambers, transverse passages through the exterior walls and burners through which products of combustion are delivered through said passages into the kiln-chambers, a passage or conduit beneath the center of said chambers, gates by which said passage may be closed behind the chamber in which the burning has been completed and air admitted to the succeeding chambers, a subterranean passage and escape flue or chimney with which it connects, passages connecting each of the kiln-chambers with said main escape-flue, and gates or dampers by which the discharge is controlled.

7. In a continuous regenerative kiln, successive burning-chambers, with depressed channels at each side of the floor, piers across the channels, corresponding with the divisions between the chambers, said piers having openings and destructible closures therefor, successive furnaces communicating with the channels through the outer walls, a continuous central draft-passage and gates by which said passage may be closed.

8. A continuous kiln comprising laterally-disposed regenerative combustion-chambers having channels at each side of the floor, perforated piers between said chambers and extending across said channels, and means for regulating the supply of air to said combustion-chambers.

9. A continuous kiln having combustion-chambers extending to the interior at an angle downward from a horizontal plane, said kiln having regenerative flue-openings along the sides, a damper-controlled open-topped central floor-flue, and damper-controlled draft-flues.

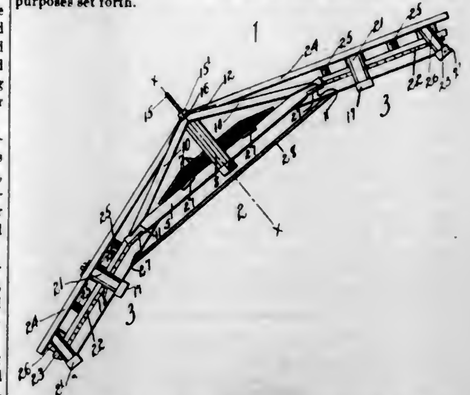
10. A continuous kiln having a series of laterally-disposed regenerative furnaces extending into the kiln at an incline downwardly, open-topped deflecting-flues contiguous to the inner sides of the kiln, perforated piers extending across and dividing said flues, a central floor-flue, means for controlling a supply of air to and from the said floor-flue, and means for controlling the supply of air to the said furnaces.

11. In a continuous kiln, laterally-disposed regenerative furnace, deflecting-flues disposed at each side of the floor of the kiln, perforated division-piers extending across said flues, a centrally-located flue extending through the kiln, dampers by which said flue is controlled, and pipes for the introduction of fuel.

12. In a continuous kiln, inclined laterally-disposed regenerative furnaces, floor-flues contiguous to the inner walls of the kiln and having the inner sides inclined toward the interior of the kiln, a central damper-controlled floor-flue, and damper-controlled draft-openings connecting with said flue.

822,581. **BRIDGE.** AARON F. CAMPBELL, Redfield, Ark. Filed Dec. 27, 1905. Serial No. 293,470.

Claim.—1. A bridge 1, made with a central horizontal part 2 and outer slanting parts 3; central transverse beam 4; longitudinal beams 5, secured at right angles with and to the upper face of said beam 4, one located at the central part of said beam, and two near each end; beams 6, secured parallel with and to the tops of said beams 5; floor 7, secured to the tops of said beams 6; longitudinal beams 6′ secured to the under face, perpendicular with and near the center of said flooring 7; brace-beams 8, secured at their lower ends to the upper face of said beam 4 and slanting inwardly; slanting brace-beams 10, secured at their lower ends in recesses 11, cut in the tops of the outermost of said longitudinal beams 5, and secured together at their inner ends by plates 12; vertical rods 15, threaded at both ends, provided near each end with a nut and washer and passing through perforations in said beam 4, between the outer beams of said longitudinal beams 5 and parallel beams 6, through perforations in said flooring 7, half-circular recesses in the straight portions 9 of said brace-beams 10, and perforations in said plates 12; transverse beams 17; stringers 18, six in number, secured at their lower ends to the upper faces of said supporting-beams 2′, two secured near the centers of said transverse beams and two near each of the ends of said beams; slanting brace-beams 21, secured at their lower ends to the upper faces and near the ends of said transverse beams 17, and perpendicular to said stringers 18; floorings 22, secured to the upper faces of said slanting brace-beams; oblique bars 23, secured to the upper faces of said floorings 22; railings 24; secured at their inner ends to the upper faces of said slanting brace-beams 10, and braced at their lower ends above and parallel with said bars 23 by cylindrical blocks 25 and rectangular oblong blocks 26; transverse holding-rods 26′, securing said longitudinal beams 5 and slanting beams 18 together at their outer and inner ends, respectively; rectangular oblong steel bars 27, two secured in the central part 2 of my bridge and one at each extremity of the longitudinal beams 5 and longitudinal rods 28, said bridge being of such construction that it may be lengthened or shortened as occasion necessitates with practically no difficulty or expense, substantially as shown and described and for the purposes set forth.



2. A bridge, having a middle part 2 and outer parts 3, said middle part having a central transverse beam 4 and said outer parts transverse beams 17; longitudinal beams 5, secured to the upper face of said beam 4; beams 6, secured to the tops of said beams 5; floor 7, secured to the tops of said beams 6; longitudinal beams 6′ secured to the under face of said floor; brace-beams 8, secured at their lower ends to said beams 4; slanting brace-beams 10, secured at their lower ends to the tops of the outermost of said longitudinal beams 5 and secured together at their inner ends by plates 12; transverse supporting-beams 2′, one located at each extremity of said bridge; stringers 18, secured to said beams 2′ at their lower ends; slanting brace-beams 21, secured at their lower ends to said transverse beams 17; floorings 22 secured at right angles with and to the tops of said slanting brace-beams 18; oblique bars 23, secured to the tops of said floorings 22; railings 24, secured at their inner ends to said slanting brace-beams 10 and braced at their lower ends above said bars 23; transverse holding-rods 26′, securing said longitudinal beams 5 and stringers 18 together at their outer and inner ends, respectively, and steel bars 27, secured in the central part 2 of my bridge, said bridge being of such construction as to enable its being used where small streams are to be crossed or chasms spanned, substantially as shown and described and for the purposes set forth.

822,582. **ATTACHMENT FOR NATURAL TEETH AND METHOD OF FORMING THE SAME.** JOHN P. CARMICHAEL, Milwaukee, Wis. Filed Nov. 6, 1902. Serial No. 130,286.



Claim.—1. A tapering dental post having a plurality of integral concentric walls increasing in number toward the smaller end.

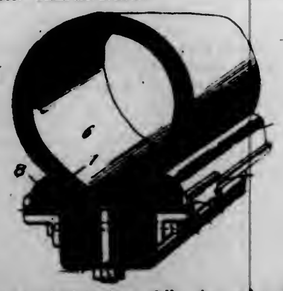
2. A tapering dental post having spirally-rolled concentric walls increasing in number toward the smaller end stiffened by interposed material.

3. The method of forming dental posts which consists first, in forming a hollow trial post having concentric walls; second, in inserting the trial post in the cavity to which it is to be applied and shaping it in conformity therewith; and third, stiffening the post by union of the concentric walls.

4. The method of forming dentures which consists first, in preparing a post having concentric walls of malleable sheet metal; second, in inserting the post in the cavity to which it is to be applied and shaping it in conformity with the contour thereof; third, stiffening the post by a partial union of the overlapping portions while leaving the upper portion malleable; fourth, reinserting the post and adjusting an artificial-tooth portion thereto; fifth, removing the post and additionally stiffening the walls; and sixth, permanently securing the post in position.

5. The method of forming dentures, which consists first, in rolling sheet metal angularly to form a hollow post with a spiral inner edge; second, in inserting the post in the cavity to which it is to be applied and shaping it in conformity to the contour thereof; third, securing the post to an artificial-tooth portion, such as a crown or cap; fourth, flowing molten metal between the folds of the post; and fifth, securing the post and its attachment in position.

822,583. **VEHICLE-TIRE.** JAMES CHRISTY, Akron, Ohio. Filed Aug. 11, 1905. Serial No. 273,736.

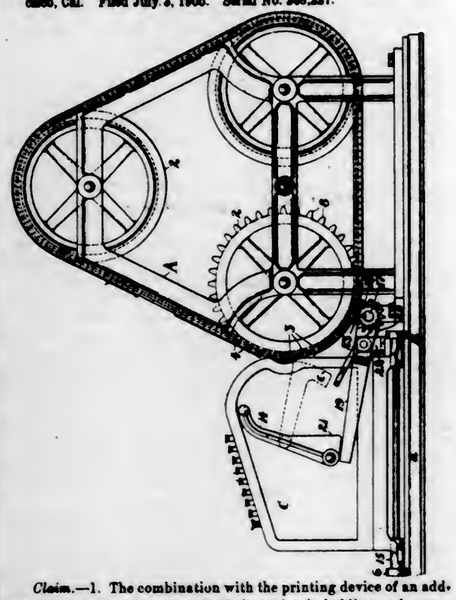


Claim.—1. A wheel having a felly, rim, and a yielding tire which rests on the rim, the base of the tire being narrower than the rim, in combination with rings which fit over and rest upon the rim and overhang the base of the tire at each side thereof, and clips which are secured to the felly and extend out beside and beyond the edge of the rim and engage the rings thereon.

2. The combination with a wheel-felly having an extended rim thereon, and a yielding tire resting on the rim having side flanges at its base, the rim being wider than the felly and tire-base, of rings which fit upon the rim and overhang the flanges of the tire, and clips which are secured to the felly and extend out beyond the edges of the rim and against the outer sides of the rings, to hold the latter in place.

3. The combination with a wheel-felly having an extended rim thereon notched at the edges, and a yielding tire on the rim having side flanges at the base, the rim being wider than the tire-base, of rings which fit upon the rim and overhang the flanges of the tire, and clips secured to the felly and having necks which fit in said notches and heads which bear against the outer sides of the rings and confine the same on the rim.

822,584. **BOOKKEEPING-MACHINE.** MAX M. COHN, San Francisco, Cal. Filed July 3, 1905. Serial No. 268,227.



Claim.—1. The combination with the printing device of an adding-machine, of carrier means for independently holding and exposing a plurality of detached sheets in operative relation to said printing device, one of said parts movable in relation to the other, and said parts arranged and operatable to permit the imprinting of the sheets while on the carrier means.

2. In apparatus of the character described, the combination with the printing device of an adding-machine, of a holder for holding a series of detached sheets in operative relation to the printing device on the adding-machine to permit the imprinting on said sheets without removing the sheets from the holder, and means for presenting said sheets successively to the printing device.

3. In apparatus of the character described, the combination with the printing device of an adding-machine, of a movable holder for holding a series of detached sheets in operative relation to said printing device, said holder arranged to present the sheets to the printing device to permit their imprinting without removal from the holder, and connections between the holder and adding-machine to operate the holder coördinately with the printing device.

4. The combination with a suitable printing device of an adding-machine of an endless carrier having means for supporting a plurality of sheets, and for giving motion to the carrier to bring said sheets successively into operative relation with said type-writing mechanism, said carrier arranged to present the sheets directly to the type-writing mechanism to permit their imprinting without disturbing their position on the carrier.

5. The combination with a printing device of an adding-machine, of a slotted carrier having suitable clamp means to hold a plurality of sheets, and connections between the type-writing mechanism and the carrier to operate the carrier coördinately with the type-writing mechanism, said carrier arranged to present the sheets directly to the type-writing mechanism to permit their imprinting without disturbing their position on the carrier.

6. In apparatus of the character described, a slotted endless carrier having means for holding a folded sheet of paper with the ends of the sheet projecting within the carrier, and means for printing on the folded part of a sheet while the latter remains on the carrier.

7. In apparatus of the character described, a slotted endless carrier having means for holding a folded sheet of paper with the ends of the sheet projecting within the carrier, and with the fold of the sheet exposed, means for giving the carrier a step-by-step movement, and means for printing on the exposed part of the sheet while it is still on the carrier.

8. In apparatus of the character described, the combination of a slatted endless carrier, said carrier provided with means for holding a folded sheet of paper with its ends between the slats and projecting into the carrier, said slats forming supports for the folds of the sheets.

9. In apparatus of the character described, an endless carrier having a series of movable slats between which the folded sheets of paper are adapted to be clamped, and means coöperating with said slats to hold the sheets in position.

10. In apparatus of the character described, an endless carrier having a series of movable slats between which the folded sheets of paper are adapted to be clamped, means coöperating with said slats to hold the sheets in position, and printing mechanism associated with said carrier.

11. In apparatus of the character described, a paper-carrier including a plurality of bars over which sheets are adapted to be bent, means for holding the sheets between the bars, means for giving the holder a step-by-step movement, and printing mechanism associated with the holder.

12. In apparatus of the character described, the combination of an endless carrier having a fixed bar and a series of other bars movable in relation to said fixed bar, said several movable bars adapted to hold each a separate sheet of paper, a printing attachment, and means for operating said carrier synchronously with the operation of the printing attachment to present the sheets carried by said bars successively to said printing attachment.

13. The combination with the printing attachment of an adding-machine of an endless carrier having means for holding a plurality of detached sheets, means for operating said carrier to bring the sheets successively into operative relation with the printing attachment on the adding-machine, a movable carriage for the latter, said carrier arranged to present the sheets to the printing attachment to permit their imprinting without disturbing their position on the carrier.

14. In apparatus of the character described, the combination with the printing device and the operating-crank of an adding-machine, of a carrier having means for holding a plurality of sheets, connections between said crank and said carrier to operate the latter, said carrier arranged to present the sheets to the printing attachment to permit their imprinting without disturbing their position on the carrier.

15. In apparatus of the character described, the combination with the printing device and the operating-crank of an adding-machine, of a carrier having means for holding a plurality of sheets, and connections between said crank and said carrier to operate the latter, said last-named means including a pawl-and-ratchet mechanism, a lever to operate the ratchet and a cam on said crank to engage said lever.

16. In apparatus of the character described, an endless carrier having a plurality of transversely-movable slat members, means permitting the emplacement of sheets of paper over and between said slat members, and means for holding said sheets in position.

17. In apparatus of the character described, an endless carrier having a plurality of transversely-movable slat members, means permitting the emplacement of sheets of paper over and between said slat members, means for holding said sheets in position, and a printing device associated with said carrier.

18. In apparatus of the character described, an endless carrier having a plurality of transversely-movable slat members, means permitting the emplacement of sheets of paper over and between said slat members, means for holding said sheets in position, a printing device associated with said carrier, a crank to operate the printing device, and connections between the crank and carrier to operate the latter.

19. In a bookkeeping-machine, the combination of a carrier having a series of movable slats over and between which sheets of paper are adapted to be bent and held, means for holding the bended sheets on the slats, and means for moving the carrier.

20. In a bookkeeping-machine, the combination of an endless carrier having a series of movable slats over and between which the sheets of paper are adapted to be bent and held, means for holding the bended sheets on the slats, means for moving the carrier and mechanism for printing upon said bended sheets while on the carrier.

21. In a bookkeeping-machine, the combination of a frame, sprockets journaled therein, a carrier comprising a series of flexibly-conjoined independently-adjustable slats passing around said sprockets, each slat adapted to have a sheet of paper or the like bent over it and to clamp the sheet between it and the two contiguous slats.

22. In a bookkeeping-machine, the combination of a frame, sprockets journaled therein, a carrier comprising a series of flexibly-conjoined independently-adjustable slats passing around said sprockets, each slat adapted to have a sheet of paper or the like bent over it and to clamp the sheet between it and the two contiguous slats, and means for printing on the sheets carried by the slats.

23. In a bookkeeping-machine the combination of a frame, sprockets journaled therein, a carrier comprising a series of flexibly-conjoined independently-adjustable slats passing around said sprockets, each slat adapted to have a sheet of paper or the like bent over it and to clamp the sheet between it and the two contiguous slats, means for printing on the sheets carried by the slats, and means for moving the carrier coördinately with the operation of the printing mechanism.

24. In a bookkeeping-machine the combination of a frame, sprockets journaled therein, a carrier comprising a series of flexibly-conjoined independently-adjustable slats passing around said sprockets, each slat adapted to have a sheet of paper or the like bent over it and to clamp the sheet between it and the two contiguous slats, guide-strips extending nearly around the carrier and outside of and contiguous to the slats and operating to prevent the sheets falling out from between the slats.

25. In a bookkeeping-machine the combination of a frame, sprockets journaled therein, a carrier comprising a series of flexibly-conjoined independently-adjustable slats passing around said sprockets, each slat adapted to have a sheet of paper or the like bent over it and to clamp the sheet between it and the two contiguous slats, guide-strips extending nearly around the carrier and outside of and contiguous to the slats and operating to prevent the sheets falling out from between the slats, and a printing attachment in conjunction with said bookkeeping-machine.

26. In a bookkeeping-machine the combination of a frame, sprockets journaled therein, a carrier comprising a series of flexibly-conjoined independently-adjustable slats passing around said sprockets, each slat adapted to have a sheet of paper or the like bent over it and to clamp the sheet between it and the two contiguous slats, guide-strips extending nearly around the carrier and outside of and contiguous to the slats and operating to prevent the sheet falling out from between the slats, a printing attachment in conjunction with said bookkeeping-machine, and indicator means on the slats representing the particular slat which may be opposite in the printing attachment.

27. A bookkeeping-machine, the combination of a frame, sprockets carried thereby, an endless carrier passing over said sprockets and comprising a series of flexibly-conjoined, independently-adjustable, alternately-arranged, long and short slats, said long slats fitting between the teeth of the sprockets and said teeth forming end abutments for the short slats.

28. In a bookkeeping system, an endless carrier having a series of flexibly-conjoined, independently-adjustable slats over and between which sheets of paper are adapted to be bent and held, guides extending around the carrier and partly over it, and coöperating with the slats to hold the sheets in position.

29. In a bookkeeping system, an endless carrier having a series of flexibly-conjoined, independently-adjustable slats over and between which sheets of paper are adapted to be bent and held, guides extending around the carrier and partly over it, and coöperating with the slats to hold the sheets in position, and a printing device associated with the carrier.

30. In a bookkeeping system, an endless carrier having a series of flexibly-conjoined, independently-adjustable slats over and between which sheets of paper are adapted to be bent and held, guides extending around the carrier and partly over it and coöperating with the slats to hold the sheets in position, and a printing device associated with the carrier, said slats having indicating means coöperating with means provided by one of said guides to indicate to the operator the particular slat opposed to said printing device.

31. In a bookkeeping system, an endless carrier having a series of flexibly-conjoined, independently-adjustable slats over and between which sheets of paper are adapted to be bent and held, guides extending around the carrier and partly over it and coöperating with the slats to hold the sheets in position, a printing device asso-

ciated with the carrier, said slats having indicating means coöperating with means provided by one of said guides to indicate to the operator the particular slat opposed to said printing device, and a flexible strip or tape carried by the carrier and having notation corresponding to said indicating means on the slats.

32. In a bookkeeping system, an endless carrier having a series of flexibly-conjoined, independently-adjustable slats over and between which sheets of paper are adapted to be bent and held, guides extending around the carrier and partly over it and coöperating with the slats to hold the sheets in position, and a printing device associated with the carrier, said slats having indicating means coöperating with means provided by one of said guides to indicate to the operator the particular slat opposed to said printing device, said indicating means including consecutive numbering on each end of said slats, and a flexible strip or tape carried by the carrier and having consecutive numbering corresponding to the numbering on the slats.

33. In a bookkeeping-machine, the combination of an endless carrier having a series of flexibly-conjoined movable slats over certain of which slats sheets of paper are adapted to be bent and the ends to be received between adjacent slats, and means coöperating with said slats to hold the sheets in position.

34. In a bookkeeping-machine, the combination of an endless carrier having a series of flexibly-conjoined movable slats over certain of which slats sheets of paper are adapted to be bent and the ends to be received between adjacent slats, means coöperating with said slats to hold the sheets in position, and printing means associated with said carrier means.

35. In a bookkeeping-machine, the combination of an endless carrier having a series of flexibly-conjoined movable slats over certain of which sheets of paper are adapted to be bent and the ends to be received between adjacent slats, means coöperating with said slats to hold the sheets in position, said last-named means including guide-strips partly surrounding the carrier.

36. In a bookkeeping-machine, the combination of an endless carrier having a series of flexibly-conjoined movable slats over certain of which sheets of paper are adapted to be bent and the ends to be received between adjacent slats, means coöperating with said slats to hold the sheets in position, said last-named means including guide-strips partly surrounding the carrier, operating means associated with the carrier and indicator means on the slats to indicate to the operator the particular slat which may be in operative position with the printing means.

37. In a bookkeeping-machine, the combination of an endless carrier having a series of flexibly-conjoined movable slats over certain of which sheets of paper are adapted to be bent and the ends to be received between adjacent slats, means coöperating with said slats to hold the sheets in position, said last-named means including guide-strips partly surrounding the carrier, operating means associated with the carrier and indicator means on the slats to indicate to the operator the particular slat which may be in operative position with the printing means, said indicator means including related notation on opposite ends of the slats, and guide means on one of said guide-strips relative to the notation on one end of said slats.

38. In a bookkeeping system, the combination of an endless carrier having a series of flexibly-conjoined movable slats over certain of which sheets of paper are adapted to be bent and the ends to be received between adjacent slats, means coöperating with said slats to hold the sheets in position, said last-named means including guide-strips partly surrounding the carrier, operating means associated with the carrier and indicator means on the slats to indicate to the operator the particular slat which may be in operative position with the printing means, said indicator means including related notation on opposite ends of the slats, guide means on one of said guide-strips relative to the notation on one end of said slats, and a flexible strip or tape carried by the carrier and having notation corresponding to the last-mentioned notation on the slats.

39. In a bookkeeping system, a machine having means for holding a series of sheets of paper and for exposing a limited portion only of each sheet, a type-writing machine juxtaposed to the sheet-holding means and suitably arranged to print on said sheets, means for operating the sheet-holding means coördinately with operation of the type-writing machine to bring the sheets successively into operative relation with the type-writing means.

40. In a bookkeeping system, a machine having means for holding a series of sheets of paper and for exposing a limited portion only of each sheet, a type-writing machine juxtaposed to the sheet-holding means and suitably arranged to print on said sheets, means for operating the sheet-holding means coördinately with operation of the type-writing machine to bring the sheets successively into operative relation with the type-writing means, and means to indicate to the operator the particular sheet which may happen to be in such operative position.

41. In a bookkeeping-machine, the combination of an endless carrier having a series of flexibly-conjoined, independently-adjustable slats, guide-strips embracing the carrier and out of contact with or in very light contact with the slats, said slats having a double series of related notation, and one of said guide-strips having a slot through which one series of said notation is viewable.

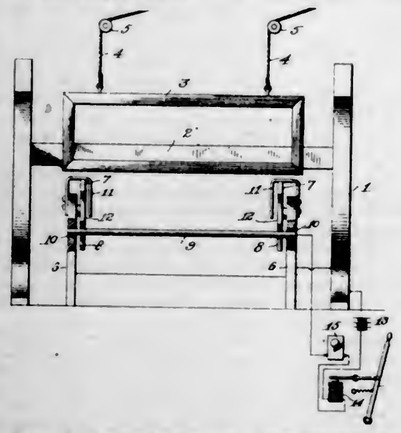
42. In a bookkeeping system, the combination of a frame, an endless carrier thereon having a series of flexibly-conjoined, independently-adjustable slats, a printing device mounted for reciprocation on said frame and transverse to the direction of movement of the carrier, and connections between the printing device and the carrier to move the latter coördinately with the operation of the printing device.

43. In a bookkeeping system, the combination of a frame, an endless carrier comprising flexibly-conjoined, independently-adjustable slats, an adding-machine or equivalent printing device mounted for reciprocation on said frame transverse to the direction of movement of the carrier, an operating-crank on the adding or printing machine, and means connected with the carrier and operated by the crank to move the carrier step by step.

44. In a bookkeeping system, the combination of a frame, an endless carrier comprising flexibly-conjoined, independently-adjustable slats, an adding-machine or equivalent printing device mounted for reciprocation on said frame transverse to the direction of movement of the carrier, an operating-crank on the adding or printing machine, and means connected with the carrier and operated by the crank to move the carrier step by step, said last-named means including a feather-shaft, a ratchet slidable on and turnable with the shaft, a lever fulcrumed on the shaft and slidable with the ratchet, a pawl carried by the lever, and a support on the adding-machine for the lever.

45. In a bookkeeping system, the combination of a frame, an endless carrier comprising flexibly-conjoined, independently-adjustable slats, an adding-machine or equivalent printing device mounted for reciprocation on said frame transverse to the direction of movement of the carrier, an operating-crank on the adding or printing machine, means connected with the carrier and operated by the crank to move the carrier step by step, and indicator means to indicate to the operator which slat is opposite the imprinting mechanism, said indicator means including a flexible consecutively-numbered strip D.

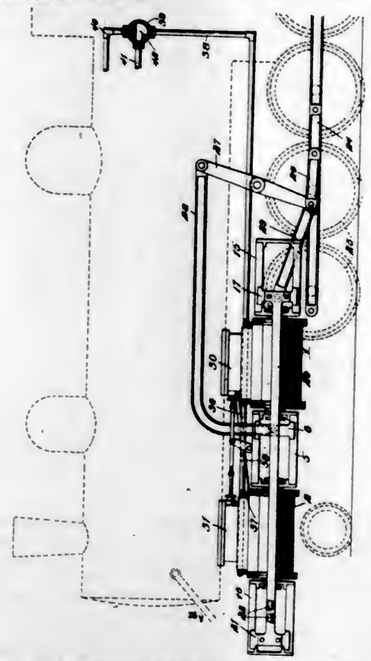
822,585. **STOP-MOTION FOR LOOMS.** JOHN CORBISHLEY, JOSEPH H. WOOD, and TIMOTHY F. COLLINS, Fall River, Mass. Filed Apr. 18, 1905. Serial No. 256,304.



Claim.—1. The combination with a loom equipped with an electric stop-motion, of a stand beneath each end of the heddles, a lever pivoted to each stand, counterweights for holding said levers normally in a raised position, a rod below said levers supported at each end by but insulated from the stands, and circuit connections between said stands and rod and the stop-motion.

2. In a loom equipped with an electric stop-motion, the combination with the stands having wide heads, of the levers pivoted to said stands and having counterweights, stops for the free ends of said levers, a finger on each lever, a rod beneath said fingers insulated from said stands, and circuit connections from said stands and rod to the stop-motion.

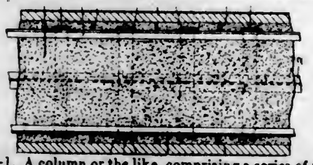
822,586. **ENGINE.** JAMES N. CUMMINGS, Summerville, Ga., assignor of one-sixth to H. N. Horton and one-sixth to F. M. Schlapbach, Georgia, and one-sixth to X. N. David, Cedartown, Ga. Filed Apr. 17, 1905. Serial No. 256,071.



Claim.—1. In an engine the combination with a cylinder having a centrally-disposed inlet; of oppositely-movable pistons at opposite sides of the inlet, a power-transmitting lever, pivoted connections between the ends of said lever and the respective pistons, connected tubular vents at the ends of the cylinder, and means for directing motive fluid through the inlet and through the vents.

2. In an engine the combination with a cylinder having tubular vents at the ends thereof and an inlet, and a valve controlling said vents; of oppositely-movable pistons within the cylinder at opposite sides of the inlet, means for directing motive fluid through the inlet and for exhausting it therefrom, a centrally-fulcrumed power-transmitting lever, and pivoted connections between the ends of the lever and the respective pistons.

822,587. **METAL-REINFORCED CONCRETE COLUMN.** ROBERT A. CUMMINGS, Beaver, Pa. Filed Jan. 6, 1905. Serial No. 239,882.



Claim.—1. A column or the like, comprising a series of metallic members extending vertically of the column, a series of metallic bands running transversely thereof and enveloping the main body of concrete, projections on said vertical members for holding the bands fixedly in place transversely to the axis of the column, and concrete or the like enveloping and embedding said bands and vertical members.

2. A column or the like, comprising a series of metallic members extending vertically of the column, a series of metallic bands running transversely thereof and enveloping the main body of concrete, said vertical members having projecting portions engaging the bands and holding the same fixedly in place transversely to the axis of the column, and concrete or the like enveloping and embedding said bands.

3. A column or the like, comprising a series of metallic members extending vertically of the column, a series of bands running transversely thereof and enveloping the main body of concrete, said vertical members having openings punched in their bodies, means projecting through said openings engaging said bands and holding the same fixedly in place transversely to the axis of the column, and concrete or the like enveloping and embedding said bands.

4. A column or the like, comprising a series of metallic members extending vertically of the column, a series of metallic bands running transversely thereof and enveloping the main body of concrete, staples having their ends projecting through openings in said vertical members, said staples engaging said bands and holding the same fixedly in place transversely to the axis of the column, and concrete or the like enveloping and embedding said bands and vertical members.

5. A column or the like, comprising a series of metallic members extending vertically of the column, a series of metallic bands running transversely thereof and enveloping the main body of concrete, staples having their ends projecting through openings in said vertical members and bent over the front face of said bands and holding the same fixedly in place transversely to the axis of the column, and concrete or the like enveloping and embedding said bands and vertical members.

6. A column or the like comprising a series of metallic members extending longitudinally of the column, said members being provided with broad thin webs and arranged with said webs toward the outer face of the column, a series of bands connected to said vertical members and extending transversely of the column and enveloping the main body of concrete, and concrete or the like enveloping and embedding said metallic members.

7. A column or the like, comprising a series of metallic members extending longitudinally of the column, said members being provided with broad webs arranged toward the outer face of the column and with an inwardly-projecting flange or flanges, a series of metallic bands extending transversely of the column and connected to said vertical members and enveloping the main body of concrete, and concrete or the like enveloping and embedding said metallic members.

8. A column or the like, comprising a series of metallic members extending longitudinally of the column, said members having the major portion of the metal on the sides facing the outer surface of the column and being provided with projecting portions for contacting with the casing, and concrete or the like enveloping and embedding said metallic members.

9. A column or the like, comprising a series of vertical metallic members provided with projecting portions for contacting with the casing, a series of bands extending transversely of the column and engaging said vertical members, and concrete or the like enveloping and embedding said metallic members.

10. A column or the like, comprising a series of metallic members extending longitudinally of the column and having portions thereof punched out and bent at an angle to contact with the casing, and concrete or the like enveloping and embedding said metallic members.

11. A column or the like, comprising a series of metallic members extending longitudinally of the column and having portions of their bodies punched out and bent at an angle to contact with the casing, a series of bands extending transversely of the columns and engaging said longitudinal members, and concrete or the like enveloping and embedding said metallic members.

822,588. **METHOD OF SINKING AND BUILDING CONCRETE PILES.** ROBERT A. CUMMINGS, Beaver, Pa. Filed July 7, 1905. Serial No. 268,670.

Claim.—1. The method of forming concrete and similar piles and the like which consists in sinking an open-ended tube into the ground, removing the earth from the interior of said tube, placing an inelastic envelop or casing in and close to the walls of said tube, then filling concrete into said envelop but not between the same and the tube, and finally withdrawing the tube.

2. The method of forming concrete and similar piles and the like which consists in sinking an open-ended tube into the ground, removing the earth from the interior of said tube, placing an inelas-

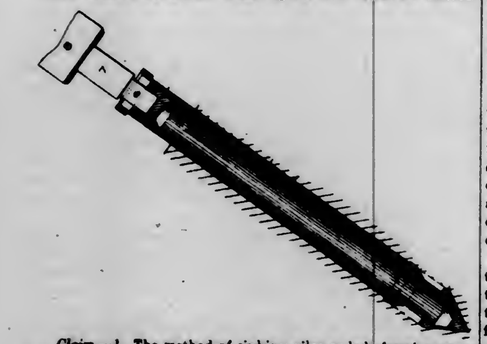
tic flexible envelop or casing in and close to the walls of the tube, filling concrete into said envelop but not between the same and the tube, and withdrawing the tube.



3. The method of forming concrete and similar piles and the like, consisting in sinking an open-ended tube into the ground, removing the earth from the interior of said tube, placing an inelastic porous envelop or casing in and close to the walls of the tube, filling concrete into said envelop but not between the same and the tube, and then withdrawing the tube.

4. The method of forming concrete and similar piles and the like, consisting in sinking an open-ended tube into the ground, removing the earth from the interior of said tube, placing a flexible porous envelop in and close to the walls of said tube, filling concrete into said envelop but not between the same and the tube, and then withdrawing the tube.

822,589. **METHOD OF SINKING CONCRETE PILES.** ROBERT A. CUMMINGS, Beaver, Pa. Filed Aug. 18, 1905. Serial No. 274,764.



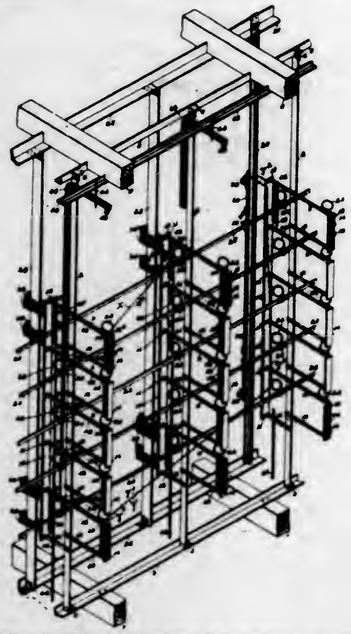
Claim.—1. The method of sinking piles or hole-forming members, which consists in forcing said member into the earth and independently thereof and progressively therewith sinking a tube which incloses said member and relieves the same of earth friction.

2. The method of sinking piles or hole-forming members, which consists in driving said member into the earth and independently thereof and progressively therewith sinking a casing or tube which at its lower end has a close fit on said member.

3. The method of sinking piles or the like, which consists in driving the same into the earth and independently thereof and progressively therewith sinking an inclosing tube which at its lower end has a close fit with said member, and then withdrawing said tube.

4. The method of sinking and constructing concrete piles, which consists in forcing into the earth a pointed member independently thereof and progressively therewith sinking a tube which incloses said member and relieves the same of earth friction, withdrawing said member, and then filling the hole with concrete and withdrawing said tube.

822,590. **DISTRIBUTING-BOARD.** FRANK J. DONNERGOUR, Chicago, Ill., assignor to Kellogg Switchboard and Supply Company, Chicago, Ill., a Corporation of Illinois. Filed Oct. 11, 1902. Serial No. 126,877.



Claim.—1. A distributing-board for telephone central-office installations comprising an open framework having ways and channels for the passage of the jumper-wires and permanent fastenings and connections for the street and switchboard cables, and interchangeable parts for said board provided with different types of connective devices adapted to be connected with the circuits of said cables, whereby some of the circuits of said cables may be supplied with connective devices of one type and some with another, substantially as described.

2. A distributing-board for telephone central-office installations comprising an open framework having ways and channels for the passage of jumper-wires and permanent fasteners and connections for the street and switchboard cables and interchangeable parts for said board some of which are provided with protective devices and others with simple connectors, said protectors and connectors being adapted to be connected in the circuits of said cables, whereby some of the circuits of said cables are supplied with protective devices and others with simple connectors, substantially as described.

3. A distributing-board for telephone central-office installations comprising an open framework having ways and channels for the passage of jumper-wires and permanent fastenings and connections for the street and switchboard cables and interchangeable parts for said board some of which are provided with protective devices and others with test-connectors, said protectors and connectors being adapted to be connected in the circuits of said cables, whereby some of the circuits of said cables are supplied with protective devices and others with test-connectors, substantially as described.

4. A distributing-board for telephone central-office installations comprising a main frame and an auxiliary frame, said main frame consisting of a light open framework on which the incoming ends of the street-cables and the outgoing ends of the switch board-cables are permanently mounted and having ways and channels to accommodate the jumper-wires, the said auxiliary frame having interchangeable parts carrying different types of connective devices adapted to be included in the circuits of said cables, whereby some of the circuits of said cables are supplied with connective devices of one type and some with another, substantially as described.

5. A distributing-board for telephone central-office installations comprising a main frame and an auxiliary frame, said main frame consisting of a light open framework on which the incoming ends of the street-cables and the outgoing ends of the switch board-

cables are permanently mounted, and having ways and channels to accommodate the jumper-wires, said auxiliary frame having interchangeable parts some of which are provided with arresters and others with terminal connectors, the said arresters and terminal connectors being adapted to be connected in said circuits, whereby some of the circuits of said cables are provided with arresters and others with terminal connectors, substantially as described.

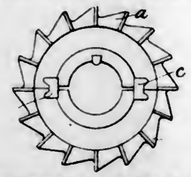
6. A distributing-board for switchboard-cables consisting of upright supports, horizontal rods attached thereto and projecting on each side of said upright supports, vertical jumper or fanning strips attached to the ends of said projecting rods on one side of said upright supports and terminal blocks attached to the other ends of said rods, a second frame having a like number of upright supports, said second frame being placed near said first frame on the side next to the said jumper or fanning strips, and means whereby any upright of said second frame may be removed without in any way disturbing the position or condition of said first frame, substantially as described.

7. A distributing-frame having ways and supports for switchboard-cable, ways and supports for outside cable, terminal block for the switchboard-cable, ways and supports for jumper-wires, and jumper or fanning strips for said jumper-wires and for the wires of the outside cable, and a second frame near said first frame carrying either protectors or connectors with which the wires from said jumper or fanning strips are adapted to connect, substantially as described.

8. A complete distributing-frame consisting of the combination of two frames, means whereby the frames may be electrically separated and at the same time be placed in proximity so that wires may extend between them without intermediate supports, and means whereby the upright supports of one frame may be of either of two characters, one adapted to carry protectors only and the other adapted to carry connectors only, substantially as described.

9. In a distributing-frame consisting of two distinct parts, of means whereby the uprights of one part may be removed and replaced by uprights of a different form without disturbing the rigidity of the frame as a whole, substantially as described.

822,591. **MILLING-CUTTER.** JAMES F. DOWDING, Manchester, England. Filed Feb. 27, 1905. Serial No. 247,568.



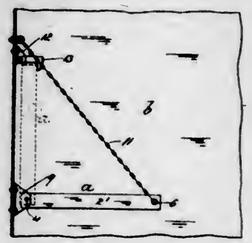
Claim.—1. A milling-cutter consisting of segmental parts having cutting-teeth thereon and means for movably securing one part to the other part so that one part may be adjusted transversely of the plane of the other part, substantially as described.

2. A milling-cutter comprising two segmental parts, placed together to form a complete circular cutter, each of said parts having a pair of recesses, the recesses of one part being in line with the recesses of the other part, said recesses having enlarged portions, nuts seated in said enlarged portions and having transverse movement therein, and bolts having both ends threaded and engaging said nuts and directly clamping the parts together, substantially as described.

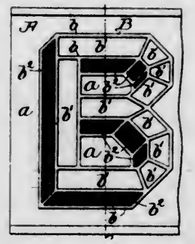
3. A milling-cutter comprising two segmental parts, placed together to form a complete circular cutter, each of said parts having a pair of recesses, the recesses of one part being in line with the recesses of the other part, said recesses having enlarged portions of cylindrical shape extending transversely through the parts, cylindrical nuts seated in said enlarged portions, and bolts having both ends threaded and engaging said nuts and directly clamping the parts together, substantially as described.

822,592. **JAIL-BUNK.** WILLIAM DOWLING, St. Louis, Mo., assignor to Meeker & Brother, St. Louis, Mo. Filed Mar. 16, 1906. Serial No. 306,405.

Claim.—A jail-bunk, consisting of a metallic plate having at each side and end a depending flange integral therewith, the end portions of each side flange overlapping the corresponding end flanges for forming a double thickness of metal at each corner of the bunk, means for fixing the said portions to the end flanges, pins projecting outwardly through the said portions and the end flanges respectively, and means for fixing the pins to the side flanges, substantially as described.



822,593. **ILLUMINATED SIGN.** MARIO L. FELKIN, Winthrop, Mass. Filed Sept. 30, 1904. Serial No. 226,629.



Claim.—1. An illuminated sign having letters consisting each of two sets of glass pieces all joined together by lead strips or the like, one set being of one color or shade and forming the face of the letter or character, and the other set being of a contrasting color or shade and forming the sides of the letter or character and the effect of the whole being to produce the appearance of a raised letter or character wherein the face and sides are distinguishable one from the other.

2. An illuminated sign comprising a light-inclosing box having a front wall made with letter or character openings, and letters or characters closing said openings each consisting of two sets of glass pieces all joined together by lead strips or the like, one set being of one color or shade and forming the face of the letter or character, the other set being of a contrasting color or shade and forming the sides of the letter or character, and the effect of the whole being to produce a raised letter or character wherein the face and sides are distinguishable one from the other.

3. An illuminated sign comprising a light-inclosing box having a front wall of sheet metal made with letter or character openings and letters or characters closing said openings, each consisting of two sets of glass pieces all joined together by lead strips or the like whereof the bordering strip is secured to the sheet-metal front wall around the opening, one of said sets being of one color or shade and forming the face of the letter or character, the other set being of a contrasting color and forming the sides of the letter or character, and the effect of the whole being to produce a raised letter or character wherein the face and sides are distinguishable one from the other.

4. An illuminated sign comprising a light-inclosing box having a front wall of sheet metal made with letter or character openings, and flat letters or characters closing said openings, each consisting of two sets of stained glass pieces all joined together edge to edge in the same plane by lead strips whereof the bordering strip is soldered to the sheet-metal front wall around the opening, one set being of one color and forming the face of the letter or character the other set being of a contrasting color and forming the sides of the letter or character and the effect of the whole being to produce a raised letter or character wherein the face and sides are distinguishable, one from the other.

822,594. **WALL.** JOHN A. FERGUSON, Denver, Colo. Filed Feb. 8, 1905. Serial No. 244,783.

Claim.—1. A wall made up of blocks each having lateral terminal projections, and three or more lateral intermediate projections, all equally spaced apart and made alternately long and short, and laid in rows with the long and short projections opposing each other and in superimposed courses with the long projections of the upper

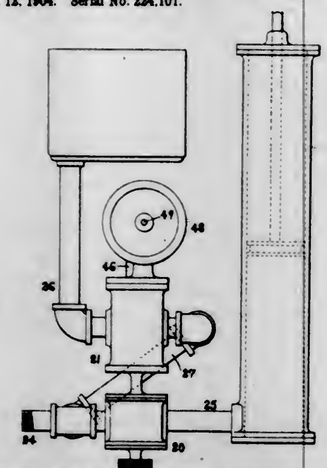
course overlapping the opposed short and long projections of the course next below.



2. A wall made up of blocks each having lateral terminal projections, and three or more lateral intermediate projections, all equally spaced apart and made alternately long and short, said intermediate projections being of an uneven number, the terminal projections having the same length as the central projections, and laid in rows with the long and short projections opposing each other and in superimposed courses with the long projections of the upper course overlapping the opposed short and long projections of the course next below.

3. A wall made up of blocks each having lateral terminal projections, and three or more lateral intermediate projections, all equally spaced apart and made alternately long and short, said intermediate projections being of an uneven number, the terminal projections having the same length but half the thickness as the central projections, and laid in rows with the long and short projections opposing each other and in superimposed courses with the long projections of the upper course overlapping the opposed short and long projections of the course next below.

822,595. HYDRAULIC ELEVATOR AND OTHER HYDRAULIC APPARATUS. ETHELBERT M. FRASER, Yonkers, N. Y., assignor, by mesne assignments, to Fraser Hydraulic Compensator Company. Filed Sept. 12, 1904. Serial No. 224,101.



Claim.—1. In hydraulic apparatus, an actuating-motor for converting hydraulic into mechanical power, a pump or motor connected with a source of liquid supply under pressure and with said actuating-motor, a storage-tank for liquid, a variable pump or motor connected with said tank and with said liquid-supply, and means for regulating said variable pump or motor, said pumps or motors having coöperative action; substantially as set forth.

2. In hydraulic apparatus, an actuating-motor for converting hydraulic into mechanical power, a rotary pump or motor of the impeller type connected with a source of liquid-supply under pressure and with said actuating-motor, a storage-tank for liquid, a variable rotary motor or pump of the impeller type connected with said tank and with said liquid-supply, and means for regulating said variable pump or motor, said pumps or motors having coöperative action; substantially as set forth.

3. In hydraulic apparatus, an actuating-motor for converting hydraulic into mechanical power, a pump connected with a source of liquid-supply under pressure and with said motor, a storage-tank for liquid, a variable motor connected with said tank and with said liquid-supply, and means for regulating said variable motor, said pump and variable motor having coöperative action; substantially as set forth.

4. In hydraulic apparatus, an actuating-motor for converting hydraulic into mechanical power, a motor connected with a source of liquid-supply under pressure and with said actuating-motor, a storage-tank for liquid, a variable pump connected with said tank and with said liquid-supply, and means for regulating said pump, said pump and motor having coöperative action; substantially as set forth.

5. In hydraulic apparatus, an actuating-motor for converting hydraulic into mechanical power, a pump or motor connected with a source of liquid-supply and with said actuating-motor, a storage-tank for liquid, and a variable pump or motor coacting with said pump or motor and connected with said liquid-supply and said tank, said variable pump or motor comprising impellers and means for controlling the extent of area of said impellers which shall be permitted to act; substantially as set forth.

6. In hydraulic apparatus, an actuating-motor for converting hydraulic into mechanical power, a pump or motor connected with a source of liquid-supply and with said actuating-motor, a storage-tank for liquid, and a variable pump or motor coacting with said pump or motor and connected with said liquid-supply and said tank, said variable pump or motor comprising impellers one of which is movable with respect to the other impeller, and means for controlling the extent of area of said impellers which shall be permitted to act and placing the adjacent ends of said impellers into coöperative relation to each other; substantially as set forth.

7. In hydraulic apparatus, an actuating-motor for converting hydraulic into mechanical power, a pump or motor connected with a source of liquid-supply and with said actuating-motor, a storage-tank for liquid, and a variable pump or motor coacting with said pump or motor and connected with said liquid-supply and said tank, said variable pump or motor comprising the impellers, a rotary envelop having an opening to receive more or less of one of said impellers, a rotary envelop to receive more or less of the other impeller, and means for effecting the exposure to a greater or less extent of the adjoining ends of said impellers and placing said ends into coöperative relation to each other; substantially as set forth.

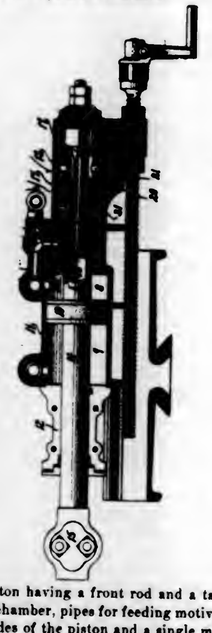
8. In hydraulic apparatus, an actuating-motor for converting hydraulic into mechanical power, a pump or motor connected with a source of liquid-supply and with said actuating-motor, a storage-tank for liquid, and a variable pump or motor coacting with said pump or motor and connected with said liquid-supply and said tank, said variable pump or motor comprising the impellers one of which is movable longitudinally with respect to the other impeller, means for moving said movable impeller to bring more or less of its area into coöperative relation with the other impeller, and means for concealing so much of the area of said impellers as it may be desired to keep out of action; substantially as set forth.

9. In hydraulic apparatus, an actuating-motor for converting hydraulic into mechanical power, a pump or motor connected with a source of liquid-supply and with said actuating-motor, a storage-tank for liquid, and a variable pump or motor coacting with said pump or motor and connected with said liquid-supply and said tank, said variable pump or motor comprising the impellers, a frame having an opening therein, a rotary envelop fitting said opening in said frame and containing an opening to receive more or less of one of said impellers, a movable frame containing an opening, a rotary envelop fitting the opening in said movable frame and having an opening in it to receive more or less of the other one of said impellers, means connecting said movable frame to the impellers of the first-mentioned frame, and means for moving said movable frame toward and from the other frame, whereby one of said impeller may be more or less forced into or withdrawn from its rotary envelop and the envelop carried by said movable frame is caused to more or less conceal or expose its impeller and the adjacent ends of said impellers are brought into coöperative relation to each other; substantially as set forth.

10. In hydraulic apparatus, an actuating-motor, a rotary pump or motor of fixed capacity and a rotary pump or motor of variable capacity connected with the source of liquid-supply to said actuating-motor, an additional source of liquid-supply connected with the pump or motor of variable capacity, and means for adjusting the impellers of said pump or motor of variable capacity in accordance with the load, said rotary pumps or motors having their corresponding impellers connected for coöperative action; substantially as set forth.

822,596. ROCK-DRILL. ARTHUR H. GIBSON, Easton, Pa., assignor to Ingersoll-Rand Company, New York, N. Y., a Corporation of New Jersey. Filed Dec. 21, 1905. Serial No. 293,756.

Claim.—1. A tool-piston having a front rod and a tail-rod, a cylinder having a tail-rod chamber, pipes for feeding motive fluid alternately to the opposite sides of the piston and a single means for bringing the tail-rod chamber into open communication with one of said pipes or the atmosphere at pleasure.



2. A tool-piston having a front rod and a tail-rod, a cylinder having a tail-rod chamber, pipes for feeding motive fluid alternately to the opposite sides of the piston and a single means for bringing the tail-rod chamber into open communication with the pipe which effects the forward stroke of the tool or to the atmosphere at pleasure.

3. A tool-piston having a front rod and a tail-rod, a cylinder having a tail-rod chamber, pipes for feeding motive fluid alternately to the opposite sides of the piston and a manually-operated valve for bringing the tail-rod chamber into communication with one of the pipes or the atmosphere, at pleasure.

4. A tool-piston having a front rod and a tail-rod, a cylinder having a tail-rod chamber, pipes for feeding motive fluid alternately to the opposite sides of the piston and a manually-operated valve for bringing the tail-rod chamber into communication with the pipe which effects the forward stroke of the tool or to the atmosphere, at pleasure.

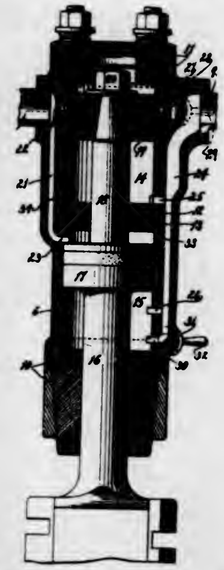
822,597. CHANNELING-MACHINE. ARTHUR H. GIBSON, Easton, Pa., assignor to Ingersoll-Rand Company, New York, N. Y., a Corporation of New Jersey. Filed Feb. 14, 1906. Serial No. 301,013.

Claim.—1. A tool-cylinder having piston-chambers therein, a piston having heads in said chambers, air-feeding tubes, said cylinder having front and back ports for the two chambers communicating with their respective tubes, and an auxiliary back port for one chamber communicating with the tube other than the one with which the other back port communicates and a valve for opening and closing said auxiliary back port.

2. A tool-cylinder having piston-chambers therein, a piston having heads in said chambers, air-feeding tubes, said cylinder having front ports for the chambers communicating with one air-tube, back ports for the chambers communicating with the other tube, and an auxiliary back port for one of said chambers communicating with the first-named air-tube and a valve for opening and closing the said auxiliary back port.

3. A tool-cylinder having piston-chambers therein, a piston having heads in said chambers, air-feeding tubes, said cylinder having front ports for the chambers communicating with one air-tube, back ports for the chambers communicating with the other air-tube, and an auxiliary back port for one of said chambers communicating with the first-named air-tube and a manually-operated valve for opening and closing the auxiliary back port.

4. A tool-cylinder having front and back piston-chambers therein, a piston having heads in said chambers, air-feeding tubes, said cylinder having front and back ports for the two chambers communicating with their respective tubes, and an auxiliary back port for the back piston-chamber communicating with the tube other than the one which the other back port in said chamber communicates and a valve for opening and closing the auxiliary back port.



5. A tool-cylinder having front and back piston-chambers therein, a piston having heads in said chambers, air-feeding tubes, said cylinder having front ports for the chambers communicating with one air-tube, back ports for the chambers communicating with the other air-tube, and an auxiliary back port for the back chamber communicating with the first-named air-tube and a valve for opening and closing the auxiliary back port.

6. A tool-cylinder having piston-chambers therein, a piston having heads in said chambers, air-feeding tubes, said cylinder having front ports for the chambers communicating with one air-tube, an intermediate front port for one chamber communicating with said air-tube, an auxiliary back port for said other chamber communicating with said air-tube, and back ports for both chambers communicating with the other air-tube, a valve for opening and closing the front port for one chamber and a valve for opening and closing the auxiliary back port for the other chamber.

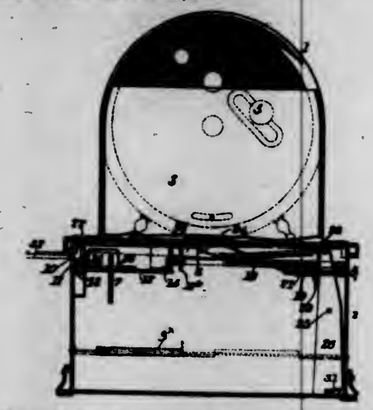
7. A tool-cylinder having piston-chambers therein, a piston having heads in said chambers, air-feeding tubes, said cylinder having front ports for the chambers communicating with one air-tube, an intermediate front port for one chamber communicating with said air-tube, an auxiliary back port for said other chamber communicating with said air-tube, and back ports for both chambers communicating with the other air-tube, a manually-operated valve for opening and closing the front port for one chamber and a manually-operated valve for opening and closing the auxiliary back port for the other chamber.

3. A tool-cylinder having front and back piston-chambers therein, a piston having heads in said chambers, air-feeding tubes, said cylinder having front ports leading from the said chambers to one air-tube, an intermediate front port for the front chamber communicating with said air-tube, an auxiliary back port for the back piston-chamber communicating with said air-tube, and back ports for the front and back chambers communicating with the other air-tube, a valve for opening and closing the front port for the front piston-chamber and a valve for opening and closing the auxiliary back port for the back piston-chamber.

9. A tool-cylinder having front and back piston-chambers therein, a piston having heads in said chambers, air-feeding tubes, said cylinder having front ports leading from the said chambers to one air-tube, an intermediate front port for the front chamber communicating with said air-tube, an auxiliary back port for the back piston-chamber communicating with said air-tube, and back ports

for the front and back chambers communicating with the other air-tube, a manually-operated valve for opening and closing the front port for the front piston-chamber and a manually-operated valve for opening and closing the auxiliary back port for the back piston-chamber.

822,598. CLOCK. EDWIN M. GOLDSMITH, Philadelphia, Pa. Filed July 21, 1903. Serial No. 166,432.



Claim.—1. A clock, a coin-receiver permanently secured to said clock and having a closured coin-exit aperture closure therefor, a guard movably secured to said coin-receiver and normally obstructing access to the winding mechanism of said clock and to the locking means of said closure of said exit-aperture locking means for said closure, and coin-controlled means in said receiver for releasing said guard.

2. A clock, a coin-receiver permanently secured to said clock and having a closured coin-exit aperture closure therefor, a guard movably secured to said coin-receiver and normally obstructing access to the winding mechanism of said clock and to the locking means of said closure of said exit-aperture, locking means for said closure, coin-controlled means in said receiver for releasing said guard and automatic means for returning said guard to its normal position.

3. A clock, a coin-receiver permanently secured to said clock and having a closured coin-exit aperture closure therefor, means for releasing such closure, a guard movably secured to said coin-receiver and normally obstructing access to the winding mechanism of said clock and to the releasing means of said closure of said exit-aperture and coin-controlled means in said receiver for releasing said guard.

4. A clock, a coin-receiver permanently secured to said clock and having a coin-exit aperture, a key-controlled closure for said aperture, a guard movably secured to said coin-receiver and normally obstructing access to the winding mechanism of said clock and preventing the insertion of the key and coin-controlled means in said receiver for releasing said guard.

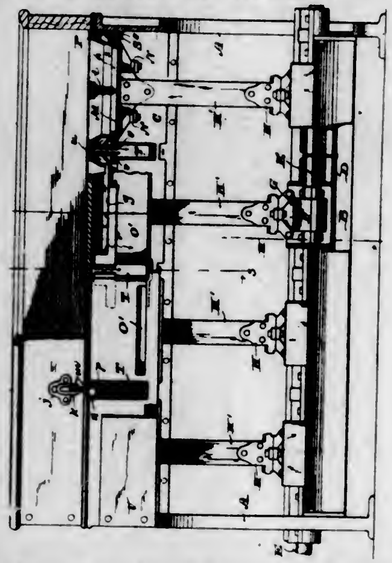
5. In a coin-controlled clock, a stand, a guard on said stand, a coin-receiving tray in said stand mounted to be tilted when a coin is placed thereon, means connected with said tray for engaging said guard and means connected with said guard for discharging a coin from said tray.

6. In a coin-controlled clock, a stand, a guard-door on said stand, a coin-receiving tray in said stand mounted to be tilted when a coin is placed thereon, means connected with said tray for engaging said door and means connected with said door for discharging a coin from said tray.

7. A coin-controlled device comprising a case, a coin-receiver secured to said case, a tilting coin-receiving tray in said receiver, a guard, a detent on said guard and projecting into said case beneath said tray to support the tray and coin-controlled means for releasing said guard whereby said tray is moved to remove the coin therefrom.

8. A coin-controlled device comprising a clock, a case, a coin-receiver secured to said case and having a closured coin-exit aperture, a closure therefor a movable coin-receiving tray in said receiver, a coin-controlled guard normally obstructing access to said case and to the locking means of said closure of such exit-aperture and supporting said tray and coin-controlled means for releasing said guard.

822,599. PULP-SCREENING MACHINE. EDWARD W. GOODRICK, Appleton, Wis., assignor of one-half to Appleton Machine Company, Appleton, Wis. Filed Feb. 19, 1906. Serial No. 301,841.



Claim.—1. In a pulp-screening machine, a vertical vibratory pan provided with one or more outlets, a screen-frame having an endless flange depending into the pan, and flow-troughs arranged to catch material splashed or sprayed from the pan.

2. In a pulp-screening machine, a vertically-vibratory pan having an inner endless bottom flange and provided with one or more outlets, a screen-frame having an endless flange depending into the pan adjacent to said bottom flange of same, and flow-troughs arranged to catch material splashed or sprayed from the pan.

3. In a pulp-screening machine, a vertically-vibratory pan provided with one or more outlets at a suitable elevation above its bottom, a screen-frame having an endless flange depending into the pan below the outlet or outlets of same, and flow-troughs arranged to catch material splashed or sprayed from the pan.

4. In a pulp-screening machine, a vertically-vibratory pan having an inner endless flange on its bottom, and provided with one or more outlets at a suitable elevation above its bottom, a screen-frame having an endless flange depending into the pan below the outlet or outlets of the same adjacent to the bottom flange thereof, and flow-troughs arranged to catch material splashed or sprayed from the pan.

5. In a pulp-screening machine, a plurality of vertically-vibratory pans each provided with one or more outlets above its bottom, a screen-frame having a plurality of endless flanges each of which depends into a pan below the outlet or outlets of same, and flow-troughs arranged to catch material splashed or sprayed from the pans.

6. In a pulp-screening machine, a plurality of vibratory pans each provided with one or more outlets above its bottom and having an endless inner flange on said bottom, a screen-frame having a plurality of endless flanges each of which depends into a pan below the outlet or outlets of same adjacent to the bottom flange thereof, and flow-troughs arranged to catch material splashed or sprayed from the pans.

7. In a pulp-screening machine, a vertically-vibratory pan provided with one or more outlets, a flow-chamber arranged to receive material from each outlet of the pan and of itself provided with a lower outlet into a flow-box, and a screen-frame having an endless flange depending into the pan.

8. In a pulp-screening machine, a vertically-vibratory pan provided with one or more outlets and an inner endless bottom flange, a flow-chamber arranged to receive the material from each outlet of the pan and of itself provided with a lower outlet into a flow-box, a screen-frame having an endless flange depending into the pan adjacent to said bottom flange of same, and flow-troughs arranged to catch material splashed or sprayed from the pan.

9. In a pulp-screening machine, a vertically-vibratory pan provided with one or more outlets, a flow-chamber arranged to receive

material from each outlet of the pan and of itself provided with a lower outlet into a flow-box, a screen-frame having an endless flange depending into the pan, and flow-troughs arranged to catch material splashed or sprayed from the pan.

10. In a pulp-screening machine, a vertically-vibratory pan provided with one or more outlets and an inner endless bottom flange, a flow-chamber arranged to receive the material from each outlet of the pan and of itself provided with a lower outlet into a flow-box, a screen-frame having an endless flange depending into the pan adjacent to said bottom flange of same, and flow-troughs arranged to catch material splashed or sprayed from the pan.

11. In a pulp-screening machine, a vertically-vibratory pan having elevated outlet ends and depending side flanges, flow-chambers having upper edges thereof straddled by said outlet ends of the pans, flow-troughs in which said side flanges of the pans have play, and a screen-frame having an endless flange depending into the pan.

12. In a pulp-screening machine, a plurality of vertically-vibratory pans each having elevated outlet ends and depending side flanges, flow-chambers having upper edges thereof straddled by the outlet ends of the pans, flow-troughs in which said side flanges have play, and a screen-frame having a plurality of endless flanges each of which depends into a pan below the outlets of same.

13. In a pulp-screening machine, a vertically-vibratory pan having elevated outlet ends, depending side flanges and an endless inner flange on its bottom; flow-chambers having upper edges thereof straddled by the outlet ends of the pan, flow-troughs in which said side flanges of the pan have play, and a screen-frame having endless flanges depending into the pan adjacent to said bottom flange thereof and below the outlets of same.

14. In a pulp-screening machine, a plurality of vertical vibratory pans each having elevated outlet ends, depending side flanges and an endless inner flange on its bottom; flow-chambers having upper edges thereof straddled by the outlet ends of the pans, flow-troughs in which said side flanges of the pans have play, screen-frames having endless flanges depending into the pans adjacent to said bottom flanges thereof and below the outlets of same.

15. In a pulp-screening machine a plurality of vertically-vibratory pans each having end outlets, flow-chambers arranged to receive material from the pan-outlets, opposite flow-boxes longitudinally of the machine at different levels and with which the flow-chambers communicate, transverse flow-troughs connecting the flow-boxes, other transverse flow-troughs communicating with flow-chambers, the arrangement of all the flow-troughs being such as to catch material splashed or sprayed from the pans, and a screen-frame having an endless flange depending into the pans below the outlets of same.

16. In a pulp-screening machine a plurality of vertically-vibratory pans, each having an end outlet, and an inner endless bottom flange; flow-chambers arranged to receive material from the pan-outlets, opposite flow-boxes longitudinally of the machine at different levels and with which the flow-chambers communicate, transverse flow-troughs connecting the flow-boxes, other transverse flow-troughs communicating with the flow-chambers, the arrangement of all the flow-troughs being such as to catch material splashed or sprayed from the pans, and a screen-frame having endless flanges depending into the pans below their outlets and adjacent to their inner endless bottom flanges.

822,600. FIRE-BRICK COMPOUND. THOMAS P. GOURLEY, New York, N. Y. Filed Feb. 28, 1906. Serial No. 303,352.

Claim.—1. A fire-brick compound comprising carbid of silicon, water, silicate of soda and an acid.

2. A fire-brick compound comprising carbid of silicon, mixed with water, silicate of soda, and sulfuric acid.

3. A fire-brick compound comprising carborundum, water, silicate of soda and an acid.

4. A fire-brick compound comprising carborundum, silicate of soda for bonding the particles of the carborundum together an acid which serves as a flux for said silicate of soda, and water for making the compound plastic.

5. A fire-brick compound comprising carborundum, silicate of soda, water and a flux.

6. A fire-brick compound comprising carborundum, silicate of soda, water and sulfuric acid which serves as a flux for said silicate of soda.

7. A fire-brick compound comprising carborundum mixed with silicate of soda about the proportions of eighty per cent. of carborundum, sixteen and one-half per cent. of silicate of soda, a flux and sufficient water to render the compound plastic.

8. A fire-brick compound comprising carbid of silicon and silicate of soda mixed with sufficient water to render the mixture plastic, and with sufficient sulfuric acid to serve as a flux for said silicate of soda.

9. A fire-brick compound comprising carborundum, sulfuric acid, water and a bond.

10. A fire-brick compound comprising carborundum, silicate of soda, water and sulfuric acid in the following proportions by weight, namely: about eighty pounds of carborundum, about sixteen and one-half pounds of silicate of soda, about three and one-half pounds of water and one-quarter pound of sulfuric acid.

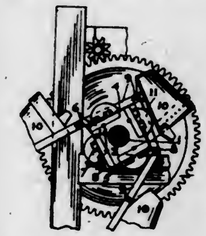
11. A fire-brick compound comprising carbid of silicon, mixed with water, sulfuric acid and a bond.

12. A fire-brick compound comprising carborundum, a fluxing acid, sufficient water to render the compound plastic, and a bond.

13. A fire-brick compound comprising carbid of silicon mixed with silicate of soda, a fluxing acid which serves to flux said silicate of soda, and sufficient water to render the mixture plastic, said compound being bonded in a solid mass when subjected to the action of heat.

14. A fire-brick compound comprising carborundum, silicate of soda which serves as a bond, sulfuric acid or its equivalent, which serves as a flux for said silicate of soda, and water which renders the mixture plastic.

822,601. TUMBLER FOR BUCKET ELEVATORS. JAMES H. GRAY, San Francisco, Cal. Filed Aug. 10, 1906. Serial No. 273,515.



Claim.—1. In a bucket-elevator tumbler, the combination, with the main body of the tumbler, of wearing-plates provided with guides for the bucket-links and connections between said plates and tumbler, said tumbler being provided with means for removing the strains thereon from the connections, substantially as described.

2. In a bucket-elevator tumbler, the combination of the main body of the tumbler having the forward portions of its sides raised to form abutments or shoulders, plates engaging said shoulders, and means for securing said plates to said tumbler, substantially as described.

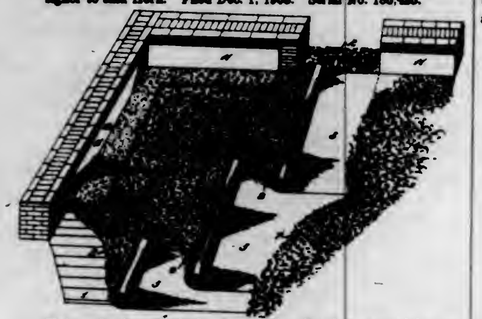
3. In a bucket-elevator tumbler, the combination with the main body of the tumbler having the forward portions of its sides raised to form shoulders or abutments, plates resting against said abutments and having guides raised from said plates, and extending transversely to the axis of the tumbler, and means for securing the plates to the body of the tumbler, substantially as described.

4. In a bucket-elevator tumbler, the combination of the body of the tumbler, wearing-plates on the sides of the tumbler, one of the faces of each plate and the tumbler in contact with each other having a longitudinal groove, and a feather or key in said groove preventing forward or rearward movement of the plate upon the tumbler-body, and means for securing the plates to the tumbler, substantially as described.

5. In a bucket-elevator tumbler, the combination of the body of the tumbler having the forward portions of its sides raised to form shoulders or abutments, plates resting upon said sides behind said abutments, one of the faces in contact with each plate and the tumbler being formed with a longitudinal groove, a key or feather in said groove preventing forward or rearward movement of the plate upon the face, and means for holding the plates to the tumbler, substantially as described.

6. In a bucket-elevator tumbler, the combination of a tumbler-body having polygonal faces and trunnions or bearings at the sides or ends of the body, said trunnions or bearings being formed all in one piece with the body, and removable wearing-plates upon the faces of the body, said plates being provided with suitable guides for the bucket-links, substantially as described.

822,602. METHOD OF WATERPROOFING BUILDINGS, &c. AUGUST GROSS and AARON C. HORN, New York, N. Y.; said Gross assignor to said Horn. Filed Dec. 1, 1903. Serial No. 183,493.



Claim.—1. A method of waterproofing flooring, comprising applying a compound of asphalt and oil to the border of the floor and to the lower portion of the contiguous wall, applying upon said compound a strip or flashing so as to cover the joint between the floor and the wall, applying said compound to said strip or flashing and to the main portion of the floor, applying a sheeting to cover the floor and the portion of said strip which lies upon the floor, and then applying a coating of said compound.

2. A method of waterproofing flooring, comprising applying a compound of asphalt, oil and cement to the border of the floor and to the lower portion of the contiguous wall, applying upon said compound a strip or flashing so as to cover the joint between the floor and the wall, applying said compound upon said strip or flashing and also upon the main portion of the floor, applying a sheeting to cover the floor and the portion of said strip which lies upon the floor, and then applying a coating of said compound; said strip and said sheeting comprising plies of fabric united by a compound of asphalt and oil.

822,603. TABLET-HOLDER. WALTER N. GUNDERSON, Chicago, Ill. Filed Aug. 23, 1906. Serial No. 275,275.



Claim.—1. A tablet-holder comprising a backing of pasteboard or the like folded at the top to form a box, and having metal strengthening-strips bent around the ends of the box parallel to the edges of the backing and secured to the backing, and a clip to hold a tablet on the backing.

2. A device of the kind stated comprising a backing having a clip at the top and a tab at one edge, and a tablet on the backing gummed at its edge to the tab.

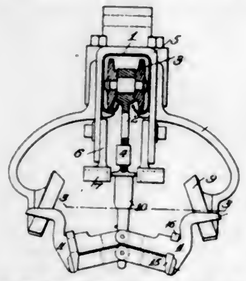
3. A device of the kind stated comprising a backing of pasteboard or the like provided with a box at the top, metal strengthening-strips extending around the ends of the box, and a blade secured to one of the strips.

4. A device of the kind stated, comprising a backing having a box at the top end, and a spring-clip to hold a tablet on the backing comprising a wire the ends of which project through the front wall of the box and are bent down to contact with the bottom.

5. A device of the kind stated, comprising a backing having a box at the top end, with metal strips bent around the ends of the box, and a spring-clip comprising a piece of wire the ends of which extend through the strips and the front wall of the box and bear against the bottom thereof, the clip being slidable in and out, substantially as described.

822,604. CLOTHES-DRIER. ARTHUR T. HAGEN, Rochester, N. Y., assignor to A. T. Hagen Co., Rochester, N. Y., a Corporation of New York. Filed Feb. 23, 1903. Serial No. 246,842.

Claim.—1. In a clamp for suspending garments, the combination with a support, of parallel arms pivoted thereon on different centers and having coöperating holding-jaws movable in intersecting arcs.



2. In a clamp for suspending garments, &c., the combination with a support, of two parallel arms pivoted on the support on different centers and having coöperating gripping-surfaces movable in intersecting arcs, said jaws being connected for simultaneous operation.

3. In a clamp for suspending garments, &c., the combination with a support, of the two parallel arms pivoted to the support one above the other, having opposing clamping-surfaces at points removed from their pivots and connections between said jaws for causing their simultaneous operation on their pivots.

4. In a clamp for suspending garments, &c., the combination with a support, of the two holding-jaws pivoted to the support one above the other having opposing clamping-surfaces at points removed from their pivots and connections for maintaining said jaws in substantial parallelism as they are moved on their pivots.

5. The combination with the support, of parallel arms pivoted at one end to said support on different centers and having opposing clamping-faces at their other ends, means for causing the simultaneous operation of the jaws on their pivots to approach or separate the opposing surfaces.

6. The combination with the support, of the clamping-jaws pivoted thereon at one end on different centers and having opposing clamping-faces at their other ends remote from their pivotal points, connections for causing the simultaneous operation of the jaws, one of the latter having an operating extension thereon.

7. The combination with the support, of the clamping-jaws pivoted thereon on different centers and having opposing clamping-faces, a projection on one jaw engaging the other to cause their simultaneous operation and an operating portion on one of the jaws for causing their separation.

8. The combination with a traveling conveyer, of a pair of gravitating clamping-jaws thereon having opposing faces and relatively stationary means for causing the separation of said jaws.

9. The combination with a traveling conveyer, of a pair of gravitating clamping-jaws pivoted thereon and on different centers and having opposing engaging faces, connections for causing their simultaneous operation and relatively stationary means for separating them.

10. The combination with the traveling conveyer, of clamping devices projecting from opposite sides thereof, each embodying two opposing jaws pivoted on different centers, connections between the jaws for causing their simultaneous operation and relatively stationary means for separating said jaws.

11. The combination with the track, a traveling conveyer supported thereon and the downward extensions, of the clamping devices extending on opposite sides of said extensions and perpendicular to the plane of movement of the conveyer, said clamping devices embodying pivoted jaws connected for simultaneous operation and relatively stationary means for engaging and separating the clamping-jaws during the movement of the conveyer.

12. The combination with the track, a traveling conveyer supported thereon having the downward extensions, of clamping devices extending from opposite sides thereof each embodying a pair of opposing jaws pivoted on different centers and connected for simultaneous operation and relatively stationary means for engaging one of the jaws of each pair and causing their separation during the movement of the conveyer.

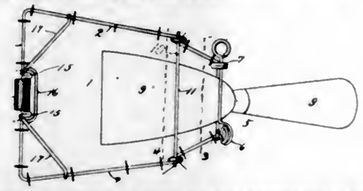
13. The combination with the track, a traveling conveyer supported thereon, having the downward extension, of a clamping device embodying a pair of jaws pivoted on different centers, connections between the jaws for causing their simultaneous operation and a stationary cam for engaging one of the jaws to separate them during the movement of the conveyer.

14. The combination with the track, a traveling conveyer supported on the track and extending below the same and guides at the sides of said conveyer, and a cam-track arranged below and laterally of said guides, of clamping devices supported on the conveyer and embodying relatively movable jaws one of which is adapted to engage the cam-track to separate the jaws.

15. The combination with a traveling conveyer, of a holding-clamp thereon embodying two jaws pivoted on different centers, and having opposing faces extending parallel with the line of travel of the conveyer, one of said jaws having lugs engaging and sliding upon the other and one provided with an outwardly-extending operating portion.

16. The combination with a traveling conveyer and a support depending therefrom, of two clamping devices arranged one at each side of the support projecting laterally therefrom in opposite directions and relatively stationary means located at each side of the conveyer and coöperating with each clamping device.

822,605. SCRAPER. BERNHARD HENNINGER, New York, N. Y. Filed Apr. 20, 1905. Serial No. 256,687.

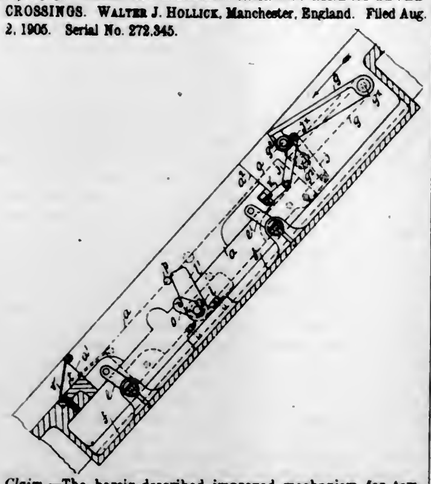


Claim.—1. A scraping device in which is comprised a frame; a bag carried by said frame; two fixed, parallel cross-wires extending between the sides of the frame near the end thereof; two cross-wires at the end of the frame, one of which is movable, and held in place by a hook projecting from the frame, and a scraper removably held between the said two sets of cross-wires, substantially as shown and described.

2. In a scraping device, the combination of a short roller 14, with the front portion of the frame, said roller being located between two projections 15, forming guides, and stays 17 substantially as shown and for the purposes specified.

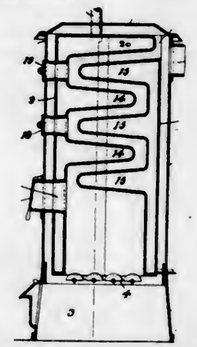
3. In a scraping device, the combination with the carrying-frame for the bag, of a vertical brace at the inner front of the bag extending downward therein preventing the swinging motion of the bag when in operation.

822,606. TRAMWAY-LINE AND RAILWAY-LINE AT LEVEL-CROSSINGS. WALTER J. HOLLICK, Manchester, England. Filed Aug. 2, 1905. Serial No. 272,345.



Claim.—The herein-described improved mechanism for temporarily filling the space between the adjacent ends of intersected tramway or other rails at level-crossings and the like consisting of the intersecting rails and a filling-piece, in combination with the lever mechanism connected to the filling-piece and adapted to be operated in a longitudinal and vertical direction by a car-wheel of the train passing over the railroad-line, whereby the said piece is moved away when the car-wheel passes thereover.

822,607. HEATER. AMOS P. HOPLER, Bartley, N. J. Filed Oct. 27, 1905. Serial No. 284,593.



Claim.—1. In a heater, the combination of opposite boiler-sections each having a back and side portions projecting therefrom, said sections being placed with their side portions abutting at the front edges and in communication, hollow interior tongues upon the said oppositely-arranged sections projecting alternately past the plane of joining of the sections and forming a tortuous flue, the uppermost tongue being on the front section and the back of the other or rear section being apertured or cut away opposite the passage between said uppermost tongue and the next lower tongue on the rear section, and a casing inclosing said sections and having a draft-outlet opposite the said aperture in the rear section.

2. In a heater, the combination of opposite hollow boiler-sections each having a back and side portions projecting therefrom, said sections being secured together with the front edges of their side portions abutting, means establishing communication between said sections, hollow interior tongues projecting from the facing sections, those of one section alternating in height with those of the other and being adapted to lie therebetween, the uppermost of said tongues being upon the front section, and the back of the rear section being cut away from its upper end down to the top of its first tongue, and a casing inclosing the boiler and providing a lateral draft-outlet opposite the said cut-away portion of the rear section.

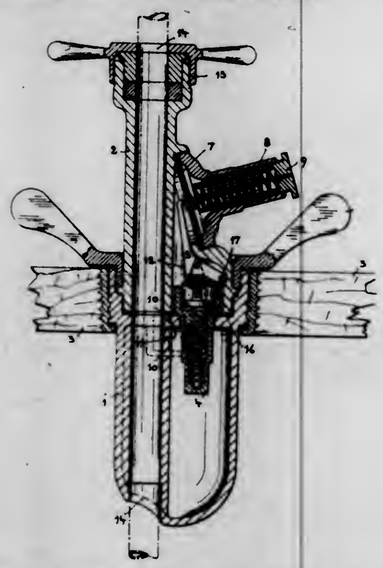
3. In a heater, the combination of opposite hollow boiler-sections each having a back and side portions projecting therefrom, said sections being secured together with the front edges of their side portions abutting, means establishing communication between said sections, hollow interior tongues projecting from the facing sections, those of one section alternating in height with those of the other and being adapted to lie therebetween, the uppermost of said tongues being upon the front section and the rear section having its back apertured or cut away opposite the passage between said uppermost tongue and the next adjacent tongue on the rear section and its sides extending upward past said passage to overlap the said uppermost tongue, and a casing providing a lateral draft-outlet adjacent to the extremity of said uppermost tongue.

4. In a heater, the combination of opposite hollow boiler-sections each having a back and side portions projecting therefrom, said sections being placed with their side portions abutting at the front edges and in communication, hollow interior tongues upon the said oppositely-arranged sections projecting alternately past the plane of joining of the sections and forming a tortuous flue, the uppermost tongue being on the front section and the back of the other or rear section being apertured or cut away opposite the passage between said uppermost tongue and next adjacent tongue on the rear section, said uppermost tongue being longer than any of the others and adapted to overlie the entire length of the said next lower tongue, and a casing inclosing said sections and having a draft-outlet opposite the said aperture in the rear section.

5. In a heater, the combination of opposite hollow boiler-sections each having a back and side portions projecting therefrom, said

sections being secured together with the front edges of their side portions abutting, means establishing communication between said sections, hollow interior tongues projecting from the facing sections, those of one section alternating in height with those of the other and being adapted to lie therebetween, the uppermost of said tongues being upon the front section and the back of the rear section being cut away from its upper end down, to the top of its first tongue, said uppermost tongue being longer than any of the others and projecting into the upper part of said cut-away space, and a casing inclosing the boiler and providing a lateral draft-outlet opposite the said cut-away portion of the rear section.

822,608. **TAPPING DEVICE.** HEINRICH HOTTINGER, Zurich, Switzerland. Filed July 3, 1905. Serial No. 268,240.



Claim.—A tapping device comprising, in combination, a cylinder containing carbonic-acid or like gas under pressure adapted to be screwed into the bunghole of the barrel, a valve in the top plate of the cylinder, a pressure-regulating device on the top plate of said cylinder forming in combination with the same a pressure-regulating chamber, a ring screwed into the upper end of the cylinder connecting the two parts, a stuffing between the regulating device and the cylinder, an angular lever pivoted at one end inside the regulating-chamber, a plate linked to the lever arranged to press on the valve, a diaphragm fixed in the upper end of the regulating-chamber arranged to press on the free end of the angular lever, a spiral spring arranged to press against the outer surface of the diaphragm, a regulating-screw for said spiral spring, said cylinder being formed to provide a channel communicating, on the one hand, with the regulating-chamber and, on the other hand, with the interior of the barrel, and a non-return valve in said channel, substantially as described and shown and for the purpose set forth.

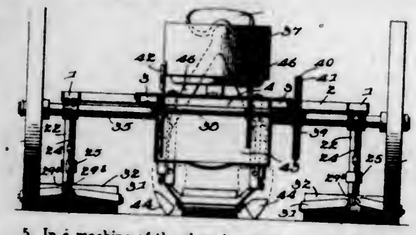
822,609. **COMBINED CULTIVATOR, HARROW, AND PLANTER.** ALFRED B. JOHNSON, Greenville, Tex. Filed Nov. 23, 1905. Serial No. 288,756.

Claim.—1. In a machine of the class described, a frame having downwardly-extending tubular legs or standards, and earth-engaging members having resilient standard-engaging devices.

2. A frame having tubular standards adjustably and detachably connected therewith, in combination with earth-engaging implements having resilient standard-engaging means.

3. A frame having a pair of downward-extending tubular standards, in combination with a bar having earth-engaging teeth of blades, and resilient standard-engaging members connected with said bar.

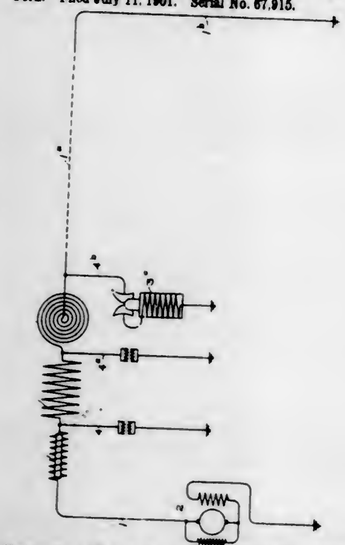
4. In a machine of the class described, the combination with a tubular standard, of a resilient engaging member including a spring-eye, and arms extending from the eye.



5. In a machine of the class described, a frame having downward-extending collars or sockets, tubular standards detachably secured in said collars or sockets, earth-engaging implements having resilient standard-engaging means, and extension-braces connecting the standards.

6. In a machine of the class described, a frame having tubular standards detachably connected therewith, and a seat having supporting-bars provided with terminal sleeves adjustably engaging the standards.

822,610. **LIGHTNING-ARRESTER.** THOMAS J. JOHNSTON, Brooklyn, N. Y., assignor to General Electric Company, a Corporation of New York. Filed July 11, 1901. Serial No. 67,915.



Claim.—1. A lightning-arrester comprising a plurality of obstructive devices of differing impedance connected in circuit with the protected device for guarding against waves of different frequencies, and earth branches connected at points between the devices.

2. A lightning-arrester comprising a group of coils, spiral and helical in shape of differing impedance, in series with the line, and earth branches on the line side of said coils.

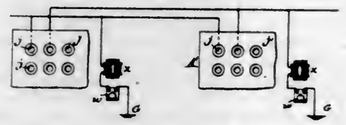
3. A lightning-arrester comprising a plurality of coils having air-cores and iron cores of differing impedance, and earth branches on the line side of the several coils.

4. In a lightning-arrester, the combination of an air-core coil and an iron-core coil having different impedance arranged in series in the line, each with a spark-gap in an earth connection on its line side.

5. In a lightning-arrester, the combination of a spiral, an air-core helix and a helix with a core of magnetic material arranged in series in the line and differing in impedance, with spark-gaps in an earth connection on the line side of each coil.

6. A lightning-arrester comprising a plurality of earth branches and a plurality of obstructive coils of differing impedance connected in series with the protected device and between the protected sides of said branches.

822,611. **MULTIPLE SWITCHBOARD FOR TELEPHONE-EXCHANGES.** MILO G. KELLOGG, Chicago, Ill., assignor to Kellogg Switchboard and Supply Company, Chicago, Ill., a Corporation of Illinois. Filed Apr. 24, 1903. Serial No. 471,713.



Claim.—1. In a telephone-exchange system, a pair of switch-plugs, each adapted to be connected to the switch-terminal of each line at its board and the two plugs connected together by a conducting-circuit, in combination with battery grounded on one side, an operator's telephone and a clearing-out annunciator special to said pair of plugs, each connected on one side to the other side of said battery, and switch apparatus for said pair of plugs to connect at will its conducting-circuit with the other side of either the telephone or clearing-out annunciator, substantially as set forth.

2. In a telephone-exchange system, a pair of switch-plugs, each adapted to be connected to the switch-terminal of each line at its board and the two plugs connected together by a conducting-circuit, in combination with battery grounded on one side, an operator's telephone, a circuit connection special to said pair of plugs, a clearing-out annunciator circuit of high retardation in said circuit connection, said telephone and said circuit connection being connected on one side to the other side of said battery, and switch apparatus for said pair of plugs to connect at will its conducting-circuit with the other side of either said telephone or said circuit connection, substantially as set forth.

3. In a telephone-exchange system, pairs of switch-plugs, each plug being adapted to be connected to the switch-terminal of each line at its boards, the two plugs of each pair being connected together by its conducting-circuit, in combination with battery grounded on one side, an operator's telephone connected on one side to the other side of said test-battery, a circuit connection for each pair of plugs, connected on one side to the other side of said battery, a clearing-out annunciator for each pair of plugs in its said circuit connection, and switch apparatus for each pair of plugs to connect at will its conducting-circuit with either the other side of said telephone or the other side of its said circuit connection, substantially as set forth.

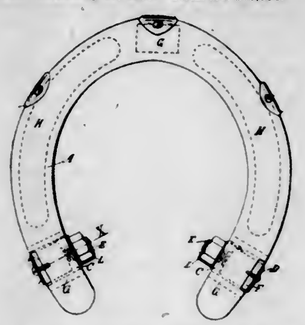
4. In a telephone-exchange system, two telephone-lines connected together for conversation, in combination with a battery grounded on one side, an operator's telephone and a circuit connection containing a clearing-out annunciator, each connected on one side to the other side of said battery, and switch apparatus to connect at will either said telephone or said circuit connection on its other side to the circuit of said lines, substantially as set forth.

5. In a telephone-exchange system, two telephone-lines connected together for conversation, in combination with battery grounded on one side, an operator's telephone and a circuit connection of high retardation of which a clearing-out annunciator is a part, each connected on one side to the other side of said test-battery, and switch apparatus to connect at will either said telephone or said circuit connection in said circuit of said lines, substantially as set forth.

6. In a telephone-exchange system, two telephone-lines connected together for conversation, in combination with battery grounded on one side, an operator's telephone and a circuit connection of high retardation of which clearing-out annunciator is a part, each connected on one side to the other side of said battery, a switch to connect at will either said telephone or said circuit connection on its other side to the circuit of said lines, and a test-receiving instrument grounded on one side and connected on its other side to a test-plug or device adapted to be brought into connection with either line, substantially as set forth.

7. In a telephone-exchange system, two telephone-lines connected together for conversation, in combination with battery grounded on one side, an operator's telephone and a circuit connection containing a clearing-out annunciator, (not one of the line annunciators) each connected on one side to the other side of said battery, a calling-generator, grounded on one side, switch apparatus, to connect at will either said telephone, said circuit connection or said generator on its other side to the circuit of said lines, and a test-receiving instrument grounded on one side and connected on its other side to a test-plug or device adapted to be brought for testing into connection with either line, substantially as set forth.

822,612. **NAILLESS HORSESHOE.** ALPHONSE KING, San Antonio, Tex. Filed July 19, 1905. Serial No. 270,354.

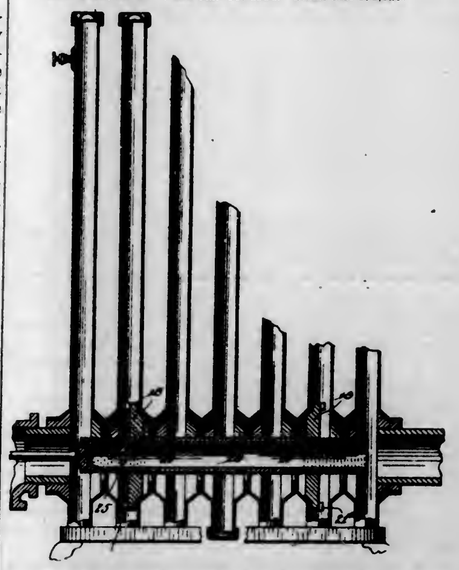


Claim.—1. The combination with a horseshoe having at its front part upwardly and inwardly extended lugs and having calks at the heels and a hole at each of said calks extending horizontally through the shoe, of clamping-lugs having shanks fitted for longitudinal adjustment in said holes, and means on said shanks for tightening the clamping-lugs upon a hoof.

2. The combination with a horseshoe having at its front part upwardly and inwardly extended lugs and at the heels holes extending horizontally through the shoe, of clamping-lugs having shanks fitted for longitudinal adjustment in said holes, means on said shanks for tightening the clamping-lugs upon a hoof, a name-plate conformed to a hoof and fitted to the shoe for location thereon between said lugs and the hoof, and screws passing through said lugs and name-plate and of sufficient length to enter the hoof.

3. The combination with a horseshoe having at its front part upwardly and inwardly extended lugs and, at the heels, holes extending horizontally through the shoe, of a clamping-lug for each heel having a shank fitted for longitudinal adjustment in the hole in its respective heel and terminated by a screw-thread portion and a right-and-left nut joining said lugs for tightening them upon a hoof.

822,613. **SHEET-METAL RADIATOR.** WILLIAM R. KINNEAR, New York, N. Y. Filed Jan. 30, 1904. Serial No. 191,329.



Claim.—1. In combination with radiator units having circulating-passages connecting them at one of their ends, valves seating against two of said passages, an adjusting-rod upon which said valves are threaded, means for securing said valves against turning,

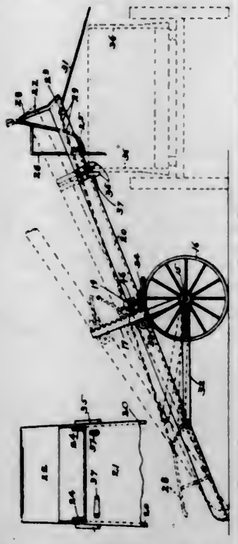
and means extending to the outside of the radiator for turning said adjusting-rod.

2. In combination with radiator units having circulating-passages connecting them at one of their ends, valves seating against two of said passages, an adjusting-rod upon which said valves are threaded, means for securing said valves against turning and means extending to the outside of the radiator for turning said adjusting-rod, said adjusting-rod having a circulating-passage through it, communicating with the units beyond said valves and maintaining circulation independently of the units that are cut off.

3. In a radiator, the combination with a plurality of units provided with alined connecting-passages between adjacent units, of a pair of valves for cutting out a portion of the radiator, and a hollow member extending through the alined passages and forming a connection for the portions of the radiator on both sides of the cut-out portion.

4. In a radiator, the combination with a plurality of units provided with connecting-passages, of a pair of valves for cutting out a portion of the radiator, and an adjusting or controlling rod for the valves provided with a passage-way connecting portions on both sides of the cut-out portion.

822,614. **LOADING APPARATUS FOR WAGONS, &c.** LE GRAND KNUPPEN, Chicago, Ill. Filed Nov. 27, 1905. Serial No. 289,191.



Claim.—1. The combination with a wheeled axle, of two upwardly-extending bars mounted thereon and spaced apart, a chute located between the upwardly-extending bars, and means on the upwardly-extending bars and chute to elevate the latter.

2. The combination with a wheeled axle, of the chute adapted to be elevated therefrom to an inclined position and having in its upper end an opening, of stops or bearings on the upper portion of the chute, and a carrier adapted to travel thereon and having bearings or stops to engage those of the chute, whereby the carrier will be partially rotated or tilted to discharge its load through said opening and its further progress prevented.

3. The combination with a wheeled axle, of a chute mounted thereon between the wheels and having near one of its ends an opening between its sides, stops or bearings on the upper portion of the chute, means to elevate the same from the axle, a carrier adapted to travel thereon and having stops or bearings to engage those on the chute, whereby the carrier will be partially rotated or tilted to discharge its load through said opening and its further progress prevented.

4. The combination with a wheeled axle, of a chute mounted thereon between the wheels and having near one of its ends an opening between its sides, stops or bearings on the upper portion of the chute, means to elevate the same from the axle, a carrier having stops or bearings to engage those on the chute, and means to cause the carrier to travel on the chute and to be tilted when the bearings of the carrier engage those of the chute, substantially as described.

5. The combination with a wheeled axle, of a chute mounted thereon between the wheels and having near one of its ends an opening between its sides, stops or bearings on the upper portion of the chute, means to elevate the same from the axle, a cross-piece at the upper end of said opening, a carrier adapted to travel thereon and having stops or bearings to engage those on the chute, whereby the carrier in its movement will be partially rotated or tilted to discharge its load through said opening and its further progress prevented, substantially as described.

6. The combination with a wheeled axle, of two upwardly-extending bars mounted thereon and spaced apart, a chute located between the upwardly-extending bars, brace-bars pivotally secured at one of their ends to one portion of the chute and at their other ends to the axle, and means on said bars and chute to elevate the latter.

7. The combination with a chute adapted to be elevated to an inclined position and having in its upper portion an opening, of curved stops or bearings on the upper portion of the chute, and a carrier adapted to travel thereon and having laterally-projecting bearings or stops to engage those of the chute, whereby the carrier will be partially rotated or tilted to discharge its load through said opening and its further progress prevented.

8. The combination with a wheeled chute having in its upper end an opening, of means to elevate the same, curved stops or bearings on the upper portion of the chute, the openings of said stops being presented toward the lower portion of the chute, an upwardly-extending cross-piece at the upper end of the chute, and a carrier adapted to travel on the chute and having laterally-projecting bearings or stops to engage those of the chute, whereby the carrier will be partially rotated or tilted to discharge its load through said opening and its further progress and rotation will be prevented.

9. The combination with a wheeled axle, of a chute mounted thereon, means to elevate the latter from the axle, and a pair of downwardly-extending and spaced-apart projections secured to each side of the upper portion of the chute to engage one side of the wagon-body, substantially as described.

10. The combination with a wheeled axle, of a chute mounted thereon, means to elevate the latter from the axle, a pair of downwardly-extending and spaced-apart projections located at each side of the chute, and a block swiveled on the lower surface of the bottom of the chute near each pair of said projections, substantially as described.

11. The combination with a wheeled axle, of two upwardly-extending bars mounted thereon and spaced apart, a cross-bar uniting said upwardly-extending bars, a chute located between the upwardly-extending bars and normally resting on the said cross-bar and loosely connected to the axle, and means on the upwardly-extending bars and chute to elevate the latter, substantially as described.

12. The combination with a wheeled axle, of two upwardly-extending bars mounted thereon and spaced apart, one of said bars being provided with a rack, a cross-bar uniting said upwardly-extending bars, a chute located between the upwardly-extending bars and normally resting on the said cross-bar and loosely connected to the axle, a pinion journaled on the chute to engage the rack on one of the upwardly-extending bars, and means to turn said pinion, substantially as described.

13. The combination with a wheeled axle, of two upwardly-extending rack-bars mounted thereon and spaced apart, a cross-bar uniting said rack-bars, a chute located between the rack-bars and normally resting on the cross-bar and loosely connected to the axle, pinions journaled on the sides of the chute to engage the rack-bars, means to rotate said pinions, and an antifriction-roller journaled on each side of the chute near the rack-bars, substantially as described.

14. The combination with a wheeled axle, of two upwardly-extending rack-bars mounted thereon and spaced apart, a cross-bar uniting the rack-bars, a chute located between the rack-bars, brace-bars pivotally secured at one of their ends to the rear portion of the chute and at their other ends to the axle, pinions journaled on each side of the chute to engage the rack-bars, means to rotate the pinions, and an antifriction-roller journaled on each side of the chute near the rack-bars, substantially as described.

15. The combination with a wheeled axle, of two upwardly-extending bars mounted thereon and spaced apart, a chute located between said bars and having near one of its ends an opening between its sides, curved stops or bearings on the upper portion of the chute at each of its sides, means on the upwardly-extending bars and chute to elevate the latter, brace-bars pivotally secured at one of their ends to one portion of the chute and at their other ends to the axle, a carrier adapted to travel on the chute and having laterally-projecting bearings or stops on its sides to engage those of the chute, whereby the carrier will be partially rotated or tilted to discharge its load through said opening and its further progress prevented.

16. The combination with a wheeled axle, of two upwardly-extending bars mounted thereon and spaced apart, one of said bars being provided with a rack, a chute located between the upwardly-extending bars, a stop or bearing on the upper portion at each side of the chute, brace-bars pivotally secured at one of their ends to the rear portion of the chute and at their other ends to the axle, a pinion journaled on the chute to engage the rack on one of the upwardly-extending bars, and a carrier adapted to travel on the chute and having stops or bearings to engage those of the chute, whereby the carrier will be partially rotated or tilted to discharge its load and its further progress prevented.

822,615. **VEHICLE-WHEEL.** LEWIS G. LANGSTAFF, New York, N. Y. Filed June 29, 1905. Serial No. 267,493.



Claim.—1. A vehicle-wheel comprising a hub, a tire and laterally-spreading spring means connecting the hub with the side edges of the tire.

2. A vehicle-wheel comprising a hub, a tire and laterally-spreading spring-disks connecting the hub with the side edges of the tire.

3. A vehicle-wheel comprising a hub, a tire, laterally-spreading spring means connecting the hub with the side edges of the tire and auxiliary means for yieldingly supporting the tire after it has been depressed to a predetermined point.

4. A vehicle-wheel comprising a hub, a tire, laterally-spreading spring-disks connecting the hub with the side edges of the tire and means for yieldingly supporting the tire after it has been depressed to a predetermined point.

5. A vehicle-wheel comprising a hub, a tire, laterally-spreading spring means connecting the hub with the side edges of the tire and a stop for preventing the undue depression of the tread of the tire.

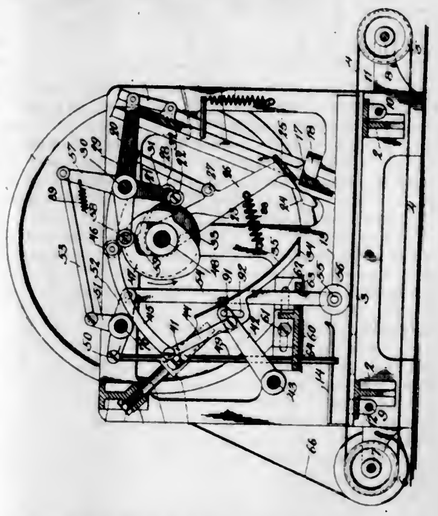
6. A vehicle-wheel comprising a hub, a tire, laterally-spreading spring-disks connecting the hub with the side edges of the tire and a stop for preventing the undue depression of the tire.

7. A vehicle-wheel comprising a hub, laterally-spreading disks secured thereto, a tire of convex form in cross-section and annular recesses formed in the inner faces of the disks at their periphery for receiving the side edges of the tire.

822,616. **ENVELOP-CLOSING MACHINE.** CARL O. LILJEROS, New York, N. Y., assignor of two-thirds to George A. Kerr, Bloomfield, N. J., and Laurence Shanno, Englewood, N. J. Filed Mar. 19, 1904. Serial No. 198,890.

Claim.—1. In envelop-closing machines, a runway comprising laterally-adjustable guides, feed-tapes extending along said runway, stop-pins and discharge-rolls mounted adjacent said runway and longitudinally adjustable with respect thereto, a clamp to engage the upper edge of an envelop, a lifter mounted on a lifter-arm, one end of said arm being pivoted to a cross-head and said arm being actuated by a loose slotted connection and a tucker to tuck the envelop-flap into the opening made by said lifter.

2. In envelop-closing machines, a laterally-adjustable runway, stop-pins cooperating with said runway and longitudinally adjustable with respect thereto, means to feed envelops along said runway, a clamp to engage said envelops adjacent the upper edge of the same, a lifter, means to operate said lifter to move under the envelop-flap and to engage the envelop-back and lift the same and a tucker to tuck said flap into the opening made by the lifter.



3. In envelop-closing machines, a clamp to engage an envelop, a lifter, a lifter-arm upon which said lifter is mounted, a sliding cross-head pivoted to said arm, an oscillating lifter-yoke, said yoke and lifter-arm having a loose slotted connection, means to oscillate said yoke to move said lifter forward under an envelop-flap and rearward and upward to engage and lift the envelop-back away from the front of said envelop and a tucker to tuck the envelop-flap into the opening thus made.

4. In envelop-closing machines, a support, a clamp to hold an envelop upon said support, a lifter having a loose operating connection, a tucker, a cam-shaft and connections to operate said clamp, said lifter and said tucker in unison from said cam-shaft.

5. In envelop-closing machines, a support, means to feed envelops along said support, means to secure the alinement of an envelop upon said support, discharging means to discharge said envelops from said support, a clamp to clamp said envelop in position, a lifter and a tucker, a cam-shaft and connections to operate said alining means, said discharging means, said clamp, said lifter, and said tucker from said cam-shaft.

6. In envelop-closing machines, a runway, stop-pins cooperating with said runway, means to feed envelops along said runway, a clamp to engage the upper edge of an envelop, means to raise the back of said envelop and to tuck the envelop-flap into the opening thus formed.

7. In envelop-closing machines, a clamp to engage an envelop adjacent the upper edge of the same, a lifter to move under the flap of said envelop and to raise the envelop-back and a tucker to tuck the envelop-flap into the opening thus made.

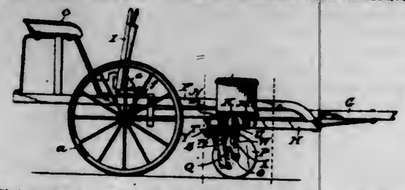
8. In envelop-closing machines, means to hold an envelop in position, a lifter to raise the back of said envelop away from the face of the same and a tucker to tuck the envelop-flap into the opening thus made.

9. In envelop-closing machines, means to hold an envelop in position, means to move the back of the envelop away from the face of the envelop and means to tuck the envelop-flap into the opening thus made.

10. In envelop-closing machines, a support, means to move the back of an envelop away from its face while said envelop engages said support and means to tuck the flap of the envelop into the opening thus made.

11. In envelop-closing machines, means to move the back of an envelop away from the face of the envelop and means to tuck the envelop-flap into the opening thus made.

822,617. CORN-PLANTER. SOLOMON G. LOUR, Washington township, Hamilton county, Ind. Filed Oct. 28, 1905. Serial No. 284,767.



Claim.—1. A corn-planter including a seedbox, a seed-guide connected with the seedbox, a rock-shaft provided with an operating-arm, a rotative measuring-wheel provided with means for intermittently moving the operating-arm, a dished disk mounted rotatively adjacent to the measuring-wheel and having its axis inclined to the axis of the measuring-wheel, a seed-dropper, and mechanism connected with the rock-shaft and also with the seed-dropper for the operation of the seed-dropper.

2. A corn-planter including a seedbox, a seed-guide connected with the seedbox and having a wheel and also a dished disk mounted thereon, a rock-shaft provided with an operating-arm, means carried by the wheel for intermittently moving the operating-arm, and seed-dropping mechanism provided with a spring-retracted operating-arm connected operatively with the rock-shaft.

3. A corn-planter including a seedbox, a seed-guide connected with the seedbox and having a wheel and also a dished disk mounted thereon with different axes, a rock-shaft provided with an operating-arm, means carried by the wheel for intermittently moving the operating-arm, a seed-measuring device connected with the seedbox, a seed-dropper mounted on the seed-guide, operating mechanism connected with the seed-measuring device and also with the rock-shaft, and operating mechanism connected with the seed-dropper and also with the rock-shaft.

4. A corn-planter including a frame, a plurality of seedboxes mounted on the frame, seed-measuring apparatus connected with the seedboxes, seed-guides connected with the seedboxes and having each a wheel and a dished disk mounted thereon at opposite sides thereof, a rock-shaft mounted on the frame and provided with an operating-arm, means carried by one of the wheels for intermittently engaging and moving the operating-arm, seed-gates mounted on the seed-guides between the wheels and the dished disks and having spring-retracted operating-arms connected operatively with the rock-shaft, connections between the rock-shaft and the seed-measuring apparatus, and carrying-wheels supporting the frame.

5. A corn-planter including a plurality of seedboxes, seed-plates in the seedboxes, gear-wheels attached to the seed-plates, seed-guides attached to the seedboxes and having each a wheel and a dished disk mounted thereon, a rock-shaft provided with an operating-arm, means carried by one of the wheels for intermittently engaging and moving the operating-arm, gear-wheels having ratchet-wheels attached thereto mounted rotatively on the rock-shaft and meshing with the gear-wheels of the seed-plates, pawls carried by the rock-shaft in engagement with the ratchet-wheels, and seed-gates mounted on the seed-guides and having spring-retracted operating-arms connected operatively with the rock-shaft.

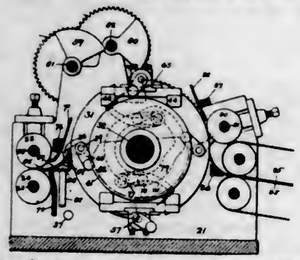
6. The combination, with a plurality of seedboxes and seed-plates therein for measuring and delivering the seeds, seed-guides to receive the seeds, and gates to temporarily hold the seeds in the seed-guides, of dished disks mounted on the seed-guides, wheels mounted on the seed-guides and coöperating with the disks to open furrows, one of the wheels carrying a trip-arm, a rock-shaft having an arm extending into the path of the trip-arm, and connections between the rock-shaft and the seed-plates and also the gates.

822,618. PAPER-BAG MACHINE. WILLIAM A. LORENZ and JOSEPH MURPHY, Hartford, Conn., assignors to Union Paper Bag Machine Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed June 10, 1903. Serial No. 160,812.

Claim.—1. A spreader for opening the tucks of bellows-sided bag-blanks, comprising a member mounted for rotation, having blank-engaging edges disposed at an angle with each other on opposite sides of the axis of rotation, and inclined to that axis.

2. A spreader for opening the tucks of bellows-sided bag-blanks, comprising a member mounted for rotation, and provided with wings extending in planes which intersect substantially along the line of the axis of rotation.

3. A spreader for opening the tucks of bellows-sided bag-blanks, comprising a member mounted for rotation and provided with blade-like wings disposed at an angle with each other, in planes which intersect substantially along the line of the axis of rotation.



4. A spreader for opening the tucks of bellows-sided bag-blanks, comprising a spear-shaped member mounted for rotation and having folding wings disposed at an angle with each other on opposite sides of the axis of rotation, and meeting substantially along the line of that axis.

5. A spreader for opening the tucks of bellows-sided bag-blanks, comprising a member mounted for rotation, and having wings disposed at an angle with each other, with their outer edges inclined to the said axis.

6. A spreader for opening the tucks of bellows-sided bag-blanks, comprising a member mounted for rotation, provided with blade-like wings disposed at an angle with each other in planes which intersect substantially along the line of the axis of rotation, the outer edges of the said wings being inclined to each other, and to the said axis in lines which intersect substantially in the line of said axis.

7. A spreader for opening the tucks of bellows-sided bag-blanks, comprising a member mounted for rotation, provided with wings disposed in planes which are inclined to each other, and which meet substantially along the line of said axis, the outer edges of the said blades being inclined at substantially equal angles with the axis, in lines which intersect substantially in the line of said axis.

8. The combination, in devices for opening the tucks of bag-blanks, of a blank-support having a defining edge, a spreader mounted for rotation on an axis substantially in alinement with said defining edge, and provided with wings, the outer edges of which are inclined at substantially equal angles with the axis, in lines which intersect substantially in the line of said axis.

9. The combination, in devices for forming the described triangular folds in the tucked sides of paper-bag blanks, of a blank-support having a defining edge, a spreader mounted for rotation on an axis substantially in alinement with said defining edge, and provided with wings having blank-engaging edges substantially defining the lines of the two inner sides of the said triangular folds.

10. The combination, in devices for forming the described triangular folds in the tucked sides of paper-bag blanks, of a blank-support having a defining edge, a spreader mounted for rotation on an axis substantially in alinement with said defining edge, and provided with wings having blank-engaging edges substantially defining the lines of the two inner sides of the said triangular folds, means for moving the wings into the tucked side of a blank, and means for rotating the spreader to open the tucked side, and to define the said lines therein by means of the said edges.

11. The combination, in devices for forming the described funnel folds in the tucked sides of paper-bag blanks, of a blank-support having a defining edge, a spreader mounted for rotation on an axis substantially in alinement with said defining edge, and provided with wings having blank-engaging edges for substantially defining the lines of the two inner sides of the preliminary triangular fold, and means for doubling the said triangular fold to form said funnel fold.

12. The combination, in devices for opening the plies of a bellows-sided bag-blank, of a blank-support, suction devices for holding down one side of the bag-blank, and means for directing an air-blast into the end of the blank.

13. The combination, in devices for opening the side tucks of a bellows-sided bag-blank, of a blank-support, a suction-box adjacent thereto, and having a perforated wall over which the blank passes to the support, and means for directing an air-blast against the end of the blank, while the lower ply thereof is drawn down by the suction from the suction-box.

14. The combination, in devices for opening the tucks of bag-blanks, of a blank-support, suction devices for holding down one side of the bag-blank, means for directing a blast of air at the end of the blank to expand it, and means for limiting the opening movement of the other side of the blank.

15. The combination, in devices for opening the side tucks of a bellows-sided bag-blank, of a blank-support, suction devices for holding down one side of the bag-blank, means for directing a blast of air at the end of the blank, to expand it, and a plate for limiting the opening movement of the other side of the blank.

16. The combination, in devices for forming the described funnel folds in paper-bag blanks, of a rotatable blank-support, means for entering and spreading the side tucks of the mouth portion of the blank as it is carried by the carrier, and means for engaging with the middle longitudinal zone of the blank near the mouth portion while permitting the entire mouth portion to be distended.

17. The combination, in devices for forming the described funnel folds in paper-bag blanks, of a rotatable blank-support, means for entering and spreading the side tucks of the mouth portion of the blank as it is carried by the support, and a sector-shaped holding-roll for engaging with the middle longitudinal zone of the blank beyond the mouth portion, while permitting the mouth portion to be distended.

18. The combination in devices for forming the described funnel folds in paper-bag blanks, of a rotatable support, means for spreading the mouth ends of the side tucks of the blank as it is carried by the support, and a plurality of sector-shaped holding-rolls revolving in overlapping circles, to permit the mouth end of the blank to open while holding down the middle zone of the blank beyond the mouth portion.

822,619. COOL BROODER. NILS A. LYBECK, Corning, Cal. Filed Feb. 14, 1906. Serial No. 301,090.



Claim.—1. A brooder, comprising a coop, and a guard arranged within the coop and provided with a curved passage or space for the chicks, said guard being also provided with means for preventing the chicks from crowding upon one another in the passage or space.

2. A brooder provided with a guard consisting of inner and outer concentric rings, and slats extending across and forming a top for the guard, said slats being arranged at a height to prevent one chick from standing upon another, and being also spaced apart to provide intervening openings through which chicks are adapted to fall to prevent them from crowding upon the top of the guard.

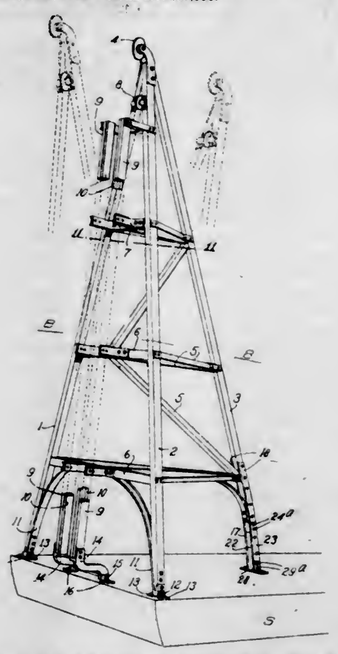
3. A brooder provided with a removable guard comprising a rectangular frame adapted to fit the interior of the brooder, and inner and outer concentric rings located within the frame and forming an intervening circular passage, said frame being also provided with an opening forming an entrance to the passage.

4. A brooder provided with a guard comprising a frame, inner and outer rings forming an intervening circular passage and arranged within the frame, the latter being provided with an entrance-opening communicating with the passage, and slats secured to the frame at the top thereof and extending across the circular passage and spaced apart to provide openings through which chicks are adapted to fall to prevent them crowding one another upon the top of the guard.

5. A brooder comprising a coop, a frame fitting within the coop, curved walls located within the frame and spaced apart to provide an intervening passage, slats mounted upon the frame and extending across the said passage and spaced apart to provide openings through which chicks are adapted to fall, and roost-bars or perches mounted within the coop above the said slats.

6. A brooder comprising a casing open at the bottom and provided with an entrance, a guard removably fitted within the coop and having a circular passage, said guard being also provided with an entrance communicating with the entrance to the coop, and a bottom fitted within the coop and removably receiving the guard.

822,620. PILE-DRIVER. FREDERICK P. MAYO, Boston, Mass. Filed Apr. 18, 1904. Serial No. 203,586.



Claim.—1. In a pile-driver, the combination of a base for a pile-driver; a tiltable pile-driver frame hinged on the base; and a removable foot for holding the frame in working position.

2. In a pile-driver, the combination of a base for a pile-driver; a tiltable pile-driver frame hinged on the base; means for locking it in working position; endwise-stationary, upright gins on the front of the frame; an endwise-slidable hammer-guide on the gins; an endwise-slidable pile-head frame on the endwise-slidable hammer-guide; a hammer; means for operating the hammer; and means for raising and lowering the pile-head frame on the hammer-guide.

3. In a pile-driver, the combination of stationary, upright gins; a slidable hammer-guide on the gins; a hammer; and hammer-actuating mechanism; the upper portion of the hammer-guide being movable into a position above, and the lower portion being movable into a position below, the gins.

4. In a pile-driver, the combination of stationary, upright gins; a hammer-guide slidable on the gins and having a pile-guide at its lower end; and a hammer.

5. In a pile-driver, the combination of upright gins; a hammer guide slidable on the gins; a hammer; a pile-guide at the lower end of said hammer-guide; a pile-head frame slidable on the hammer-guide and carried thereby; a pile-arrester plate having a hole through it for passage of the hammer; a disk below the pile-arrester plate; and an apertured, pile-holding plate below the disk.

6. In a pile-driver, the combination of stationary gins; a hammer-guide movable thereon; a hammer; means for operating the hammer; a pile-head frame slidable on the hammer-guide; a pile-guide at the lower end of the hammer-guide; means for holding the pile within the pile-head frame, for impact of the hammer; the pile-head frame resting on the pile when the pile is in place; means for raising the pile-head frame on the hammer-guide; and means for arresting the upward movement of the pile-head frame on the hammer-guide.

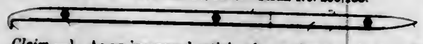
7. In a pile-driver, the combination of stationary gins; a hammer-guide slidable on the gins; a hammer; the hammer-guide having means for holding the pile below its head; and, thereabove, other means for holding the pile at or near its head.

8. In a pile-driver, the combination of stationary gins; a hammer-guide slidable on the gins; a hammer; a pile-head frame slidable on the hammer-guide, and removable shims which hold the hammer-guide and pile-head frame in fixed relation, when required.

9. In a pile-driver, the combination of stationary gins; a hammer-guide slidable on the gins; a pile-head frame slidable on the hammer-guide; a hammer-rope; a winding-drum therefor; a pile-head-frame rope; a winding-drum therefor; and means for connecting and disconnecting said drums.

10. The combination of gins; a hammer-guide slidable endwise on the gins; a hammer; means for raising it; a pile-head frame slidable on the hammer-guide and comprising a dog; and a pile-guide near the lower end of the hammer-guide.

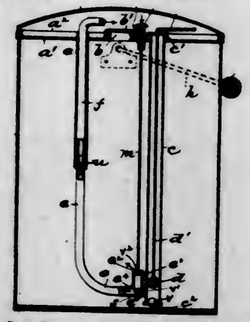
822,621. SKID. THOMAS H. MONAHAN and JOSEPH W. MONAHAN, Providence, R. I. Filed Jan. 27, 1906. Serial No. 298,133.



Claim.—1. As an improved article of manufacture, the metallic skid A herein described, the same consisting of the two laterally-separated parallel channel-bar frame members *a*, each having upper and lower longitudinally-extending flanges projecting outwardly at an angle from one side of the web, a fixed hook or attaching member located at one end of the frame, and suitably-disposed cross-ties interposed between and rigidly uniting said frame members.

2. A skid of the character described, having a pair of connected laterally-separated channel-iron frame members *a*, the upper and lower edges of each frame member having a longitudinal rib or flange extending outwardly from the web at an upwardly-inclined angle, substantially as hereinbefore described and for the purpose set forth.

822,622. DISPENSING-CAN. RODOLPH F. MORSE, Providence, R. I. Filed Oct. 24, 1905. Serial No. 284,143.

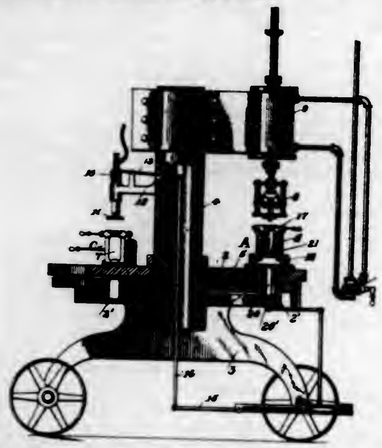


Claim.—1. In a dispensing-can, the combination with the body *a* and a top secured thereto, of a pump-barrel secured to said top, a ball-valve normally closing the lower or inlet passage to the pump, a manually-actuated piston mounted in the pump-barrel, a discharge-pipe communicating with the pump above said valve and extending therefrom through the top of the can, a ball-valve normally closing the outlet-passage between the pump and discharge-pipe, a branch pipe or nozzle in continuous open communication with the said discharge-pipe and having an opening into the can-chamber, and a manually-controlled valve for automatically and normally closing the said opening when the downward pressure upon the valve is removed, substantially as hereinbefore described.

2. In a can of the character described, the combination of a single-acting pump, self-closing inlet and discharge valves communicating with the pump-barrel, an upwardly-extending discharge-pipe secured to the lower portion of the pump-barrel having said discharge-valve movably mounted therein, and a manually-controlled self-closing siphon-valve mounted in and normally closing an opening formed in said discharge-pipe, substantially as set forth.

822,623. APPARATUS FOR MANUFACTURING GLASSWARE. THOMAS J. MCELHINNON, Alton, Ill., assignor to Salem Glass Works, Salem, N. J., a Corporation of New Jersey. Filed Apr. 24, 1905. Serial No. 257,023.

Claim.—1. The combination of a carrier, a mold mounted thereon and adapted to be moved thereby toward and from a forming position, a lifting device movable with the carrier and mold, and means coöperating with said device for raising the article in the mold as the latter passes from the forming position.



2. The combination of a horizontally-movable carrier, a mold mounted thereon, vertically-movable forming mechanism above the path of movement of the mold, a lifting device mounted on the carrier and positioned adjacent the mold, and means coöperating with said device for raising the article in the mold after the latter passes from beneath the forming mechanism.

3. The combination of a carrier, a mold mounted thereon, a removable neck-mold, and a lifting device mounted on the carrier and adapted to removably engage the neck-mold.

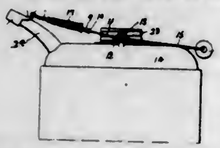
4. The combination of a support, a mold, a detachable neck-mold, and a lifting device operated from below for removably engaging and elevating the neck-mold.

5. The combination of a mold-carrier, a press-mold mounted thereon, a neck-mold adapted to form an upward continuation of the press-mold, vertically-movable mechanism mounted on the carrier for elevating the neck-mold, and a fixed incline over which said mechanism is moved and which operates to raise the same.

6. The combination of a carrier, a press-mold mounted thereon, a neck-mold adapted to form an upward continuation of the press-mold, vertically-movable mechanism mounted on the carrier for elevating the neck-mold, said mechanism having a stem depending through the carrier, and a trackway beneath the carrier provided with an incline over which said stem is moved for raising the elevating mechanism.

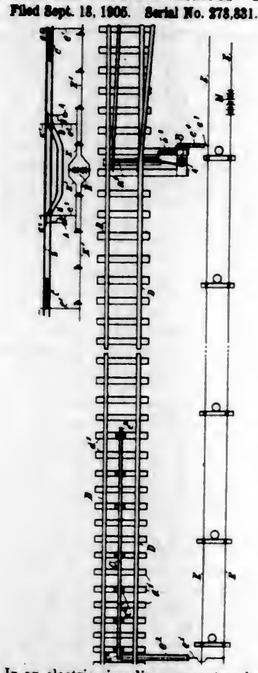
7. The combination of a carrier, a support secured to the carrier with a space between the support and carrier, a press-mold mounted on the support, a neck-mold adapted to form an upward continuation of the press-mold, a head movable vertically in the space beneath said support, rests projecting upward from the head and adapted to engage the neck-mold, a stem depending from said head through the carrier, and a fixed incline beneath the carrier over which the stem is moved for raising said head and thereby elevating the neck-mold.

822,624. SPOUT-CAP FOR OIL-CANS. NELS NELSON, New Haven, Conn. Filed Sept. 27, 1905. Serial No. 280,251.



Claim.—The combination with a spout-cap for an oil-can, of an outer and an inner link interlocked with each other, the former being connected with the cap and the latter being adapted to be connected with an oil-can, of a spring encircling the said outer and inner links, connected at one end with the outer link and at the other end with the inner link, and being thus limited in its extension by the links.

822,625. RAILWAY SIGNAL APPARATUS. EMIL L. NOLTING, Elgin, Ill. Filed Sept. 18, 1905. Serial No. 278,831.



Claim.—1. In an electric signaling apparatus the combination of a railway-track and switch, an electric switch, mechanical and electrical connections between said switches, a sectional third rail located adjacent to said track-switch and between the rails of the track, electric connection between said rail and a line-telegraph wire and electric connections between said electric switch and one of the line-telegraph wires.

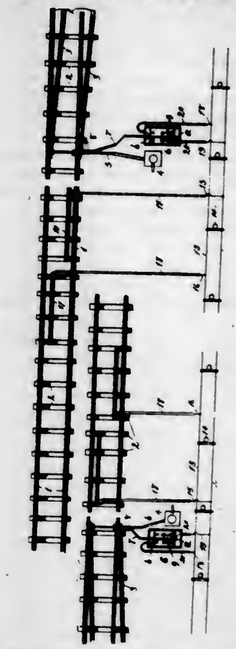
2. In an electric signaling apparatus the combination of a railway-track and a track-switch, an electric switch, mechanical and electrical connections between said switches, a sectional third rail, arranged near the track-switch, electric connection between said electric switch and one of the line-telegraph wires, an electromagnetic sounder, electric connection between said sounder and the third rail and means for making electric connection between the third rail and said railway-switch.

3. In apparatus for the purpose specified the combination of a railway-track, a railway-switch, an electric switch mechanically and electrically connected with the rails of said railway and electrically connected with a line-telegraph wire, a sectional third rail arranged adjacent to said railway-switch, electric connection between said third rail and a line-telegraph wire, an electric signal apparatus, means for electrically connecting said signal apparatus with an electric conductor and means for electrically connecting said third rail with the electric switch.

4. In apparatus for the purpose specified, the combination of a railway, a mechanical switch therefor, an electric switch both mechanically and electrically connected therewith, a battery, a third rail having electric connection with said battery, electric connection between said battery and the electric switch, a motor, an electromagnetic bell arranged on said motor and means for making connection between said bell and the third rail, said means comprising a convex rockably and yieldingly mounted shoe, and means for making electric connection between the bell and said electric switch.

5. In an electric signaling apparatus for railways, a railway-track, a rail-switch, a sectional electric conductor paralleling the rails of said railway and located near said switch, a motor-vehicle adapted to travel on said railway-track, and provided with an electromagnetic signal, a battery, an electric switch, electric connections between the battery and the signal and between the battery and the rails of said railway-track, a rocking flexibly-held contact attached to said motor-vehicle and adapted to engage said electric conductor and electric connection between the signal and said flexible contact.

822,626. RAILWAY SIGNAL APPARATUS. EMIL L. NOLTING, Elgin, Ill. Filed Feb. 16, 1906. Serial No. 301,366.



Claim.—1. An apparatus for the purpose specified including the track-rails of a railway, a track-switch therefor, a plurality of electric conductors paralleling said track-rails, an electric switch mechanically connected with the track-switch, a plurality of line-wires each having a separate electric connection with the electric switch and the said electric conductors, a motor-vehicle adapted to travel on the said track-rails, a signal apparatus carried upon said motor-vehicle, an electric battery, electric connections for said battery, and means for making electric connection between the signal apparatus and the said electric conductors.

2. An apparatus for the purpose specified including the track-rails of a railway, a track-switch therefor, a plurality of electric conductors parallel to said track-rails, a double-pole electric switch mechanically connected with the track-switch, a plurality of line-wires each having a separate electric connection with the electric switch and the said electric conductors, a motor-vehicle adapted to travel on the said track-rails, a signal apparatus and an electric battery carried upon said motor-vehicle, electric connection for said battery, and means for making electric connection between the signal apparatus and the said electric conductors.

3. An apparatus for the purpose specified, including the track-rails of a double-track railway system, a track-switch therefor, a plurality of electric conductors paralleling said track-rails, an electric switch mechanically connected with the track-switch, a plurality of line-wires each having a distinct electric connection with the electric switch and the said electric conductors, a motor-vehicle adapted to travel on the said track-rails, a signal apparatus carried upon said motor-vehicle, an electric battery, electric connections for said battery, and means for making electric connection between the signal apparatus and the said electric conductors.

4. An apparatus for the purpose specified including the track-rails of a railway, a track-switch therefor, a plurality of electric conductors parallel to said track-rails, a double-pole electric switch mechanically connected to the track-switch, a plurality of line-wires each having a distinct electric connection with the electric switch and the said electric conductors, a motor-vehicle adapted to travel on the said track-rails, a duplex signal apparatus carried upon said motor-vehicle, an electric battery carried upon said vehicle, electric connections for said battery, and means for making electric connection between the signal apparatus and the said electric conductors.

5. An apparatus for the purpose specified including the track-rails of a double-track system, a plurality of track-switches therefor,

a plurality of electric conductors parallel with said track-rails, a double-pole electric switch mechanically connected with the track-switch, a plurality of line-wires each having a distinct electric connection with the electric switch and the said electric conductors, a motor-vehicle adapted to travel on the said track-rails, a duplex signal apparatus carried upon said motor-vehicle, an electric battery carried upon said vehicle, electric connection between the battery and the signal apparatus and between the battery and the track-rails and means for making electric connection between the signal apparatus and the said electric conductors.

6. An apparatus for the purpose specified including the track-rails of a double-track system, a track-switch therefor, a plurality of electric conductors parallel with the track-rails, a double-pole electric switch mechanically connected with the track-switch, a plurality of line-wires each having a separate electric connection with the electric switch and the said electric conductors, a motor-vehicle adapted to travel on the said track-rails, a duplex signal apparatus carried upon said vehicle, an electric battery carried upon said motor-vehicle, electric connection between the battery and the track-rails and a plurality of contact-shoes carried by said motor-vehicle and adapted to engage the said parallel conductors and electric connection between said contact-shoes and said signal apparatus.

7. An apparatus for the purpose specified including the track-rails of a railway, a plurality of track-switches therefor, a plurality of electric conductors parallel with the track-rails, a plurality of double-throw double-pole electric switches each mechanically connected with a track-switch and electrically connected with the rails of the main track and with the said electric conductors, a plurality of line-wires each having a separate electric connection with the said electric switch and the said electric conductors, a motor-vehicle adapted to travel on said track-rails, a duplex magneto-electric signal apparatus and an electric battery carried upon said motor-vehicle, electric connection between the battery and the signal apparatus and between the battery and the track-rails, a plurality of contact-shoes carried by said motor-vehicle, each adapted to engage one of the said electric conductors and electric connection between said contact-shoes and said signal apparatus.

8. An apparatus for the purpose specified including the track-rails of a railway, a track-switch therefor, a plurality of electrical conductors placed parallel with the track-rails, a double-pole double-throw electric switch mechanically connected with the rails of the main track and with the said electric conductors, a motor-vehicle adapted to travel on the said track-rails, a duplex signal apparatus carried upon said vehicle, an electric battery carried upon the motor-vehicle, an electric pole-changer connected to said battery, electric connection between the battery and the signal apparatus and between the battery and the track-rails and a plurality of rockable yielding contact-shoes carried by said motor-vehicle and adapted to engage the said parallel conductors separately, a protective housing for each of said shoes, and electric connection between said contact-shoes and said pole-changer, and between the pole-changer and the battery.

9. An apparatus for the purpose specified including track-rails of a railway, a plurality of track-switches therefor, a plurality of double-throw double-pole electric switches each mechanically connected with one of said track-switches, a motor-vehicle adapted to travel on said rails and carrying a magneto-electric apparatus, a battery and a pole-changer, and means for producing differentiated audible signals when the said motor-vehicle is approaching one of the said track-switches.

10. An apparatus for the purpose specified including the track-rails of a double-track railway system, a plurality of track-switches therefor, a plurality of sectional electric conductors paralleling said track-rails and adjacent said track-switches, a plurality of electric switches each mechanically connected with one of the track-switches, a plurality of line-wires placed adjacent to each electric switch one of said line-wires being in electric connection with one pole of the said electric switch and also with one of the said sectional conductors and the other of said line-wires being in electric connection with the other pole of the electric switch and also with the other of said sectional conductors, a motor-vehicle adapted to travel on said track-rails, a duplex signal apparatus carried upon said motor-vehicle, an electric battery therefor carried on said vehicle, electric connection between the battery and the signal apparatus and between the battery and the track-rails and a plurality of rockable yielding contact-shoes attached to said vehicle each contact-shoe having a protective housing adapted to engage its respective conductor, and electric connection between said contact-shoes and said signal apparatus.

822,627. CRACKER-CASE. JOSEPH N. PHENIS, Richmond, Ind. Filed Mar. 31, 1906. Serial No. 309,041.



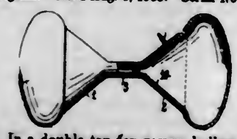
Claim.—1. A cracker-case comprising a box-like case having a removable top, a partition dividing the interior of the case into two parts, said partition being disposed at an angle, a door located at the central lower edge of the partition, an auxiliary door operative with the first-named door, means for directing the contents of the upper portion of the case to said door, a hood disposed centrally through said partition, a caliduct extending upward and to the right and left from said hood in irregular lines to their outlets in the upper portions of the ends of the case, heating means located in the lower portion of the case and adapted to heat said partition and the caliduct, all substantially as shown and described and for the purposes set forth.

2. A cracker-case consisting of a front, back and ends, a removable top and a permanent bottom, in combination with an inclined partition dividing the interior of the case into upper and lower spaces, means whereby the crackers will be conducted by gravity to a converging point in the upper space, a door adapted to close said converging point, an auxiliary door controlled by the first-named door, a system of pipes forming a caliduct from the lower space of the case up into and out at the ends of the upper space, heating means located in the lower space, means for directing the heat into said caliduct, means for controlling the exits of the caliduct, and means whereby the interior of the case may be viewed without opening the case, all substantially as shown and described and for the purposes set forth.

3. A cracker-case comprising a receptacle having means for viewing the interior without opening the case, a partition dividing the interior into upper and lower spaces, said partition being disposed at an angle, means for conducting the contents of the upper space by gravity to a door-aperture, a door opening outward for closing said aperture, an auxiliary door operative in conjunction with the first-named door, heating means located in the lower space of the case, a caliduct extending from the lower space in two irregular routes through the upper space and having exits outside the case, means for obtaining access to the lower space, and means for obtaining access to the upper space, all substantially as set forth.

4. In a cracker-case, a partition through the central portion of the case forming an upper storage-chamber and a lower heating-chamber, a removable top for obtaining access to the storage-chamber, heating means contained in the lower chamber, means for viewing the interior of the case when it is closed, means for providing a vortex in the storage-chamber, a door adapted to open at said vortex, an auxiliary door guarding the first door and providing a shoveling-board whereby the contents of the storage-chamber may be removed by a scoop, a caliduct extending up from the heating-chamber into the storage-chamber dividing and forming corresponding irregular routes and passing out at the ends of the case, and means for controlling the exits of the caliduct, all substantially as shown and described.

822,628. DOUBLE TOP FOR GAMES. GUSTAVE PHILIPPART, Brussels, Belgium. Filed Aug. 1, 1905. Serial No. 272,150.



Claim.—1. In a double top for games, hollow end bodies connected by a cylindrical portion of lesser diameter, each end body being provided with a yielding outer or extreme edge.

2. In a double top for games, hollow end bodies connected by a cylindrical portion of lesser diameter, and each end body being provided with a yielding outer end and with a yielding outer or extreme edge.

3. In a double top for games, hollow end bodies of yielding material connected by a cylindrical portion of lesser diameter.

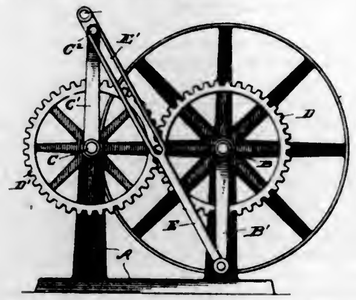
4. In a double top for games, hollow end bodies of yielding material secured together, and an applied cylindrical portion of less diameter than the end bodies and between the same.

5. In a double top for games, hollow end bodies of yielding material, both bodies being integral with a connecting-piece located between and of lesser diameter than the same, and a cylindrical portion of non-yielding material surrounding the connecting-piece aforesaid.

6. In a double top for games, hollow inflatable end bodies of yielding material connected by a tubular piece located between and opening into both end bodies and of less diameter than said bodies.

7. In a double top for games, hollow end bodies of yielding material, a connecting-piece located between said bodies, and a cylindrical portion of non-yielding material surrounding said connecting-piece and provided with outwardly-flaring ends wherein the end bodies are fitted.

822,629. POWER TRANSMISSION. CHESTER PHILLIPS, Rochester, N. Y. Filed Sept. 22, 1904. Serial No. 225,485.



Claim.—1. A device of the kind described comprising parallel shafts, intermeshing gear-wheels carried by the shafts, crank-arms carried by the shafts, and a slotted lever pivoted to one of the crank-arms and having its slotted portion in engagement with the other crank-arm.

2. In a power-transmission device, intermeshing gears, parallel shafts upon which said gears are mounted, oppositely-arranged crank-arms connected to said shafts, a longitudinally-slotted lever pivotally connected at one end to the free end of one of said crank-arms, the crank portion of the other crank-arm working freely in the slot of the lever.

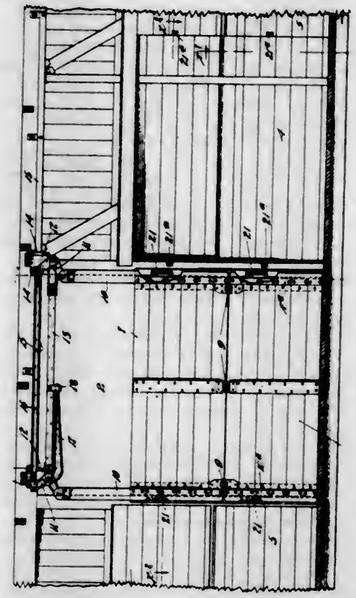
3. In a device of the kind described, parallel shafts, oppositely-arranged crank-arms carried by the shafts, intermeshing gear-wheels carried by the shaft, a lever having one end pivotally connected to one of said crank-arms, said end describing a circular path, the said lever being longitudinally slotted adjacent its opposite end, the other crank-arm having its crank portion in engagement with said slot, and the free end of the lever describing a path upon an irregular line and of greater length than the path described by the pivot end of the lever.

822,630. GRAIN-DOOR FOR CARS. EDWARD POSSON, Chicago, Ill. Filed June 1, 1905. Serial No. 263,290.

Claim.—1. The combination with a car-body and a grain-door, of a pair of bell-cranks pivotally supported above said grain-door, a link connecting the upper arms of said bell-cranks for common movements, connections between the lower arms of said bell-cranks and said grain-door for raising and lowering the said grain-door, and an operative lever connected to one of said bell-cranks, substantially as described.

2. The combination with a car-body having a rail secured over a doorway, of a pair of brackets mounted to slide on said rail, and means for connecting said brackets for common sliding movements, a pair of bell-crank levers pivoted on said brackets, a link connecting the upper arms of said bell-crank levers for common movements, a grain-door connected to the lower arms of said bell-crank levers and adapted to be raised and lowered thereby, and an operating-lever connected to one of said bell-crank levers, substantially as described.

3. The combination with a car-body having a rail extending over its doorway and to one side thereof, of hanger-brackets mounted to travel on said rail, a pair of bell-crank levers, pivoted to said hanger-brackets, one thereof, having an operative lever, a link connecting said bell-cranks for common movements, a bar connecting said hanger-brackets for common sliding movements, means for locking said lever to said bar and a grain-door connected to and adapted to be raised and lowered by said bell-cranks, substantially as described.



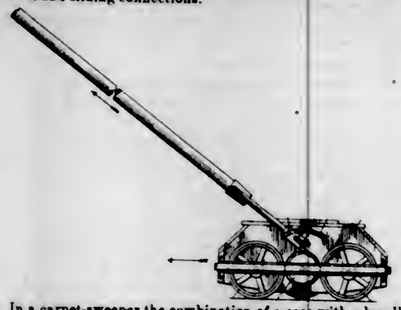
4. The combination with a car-body having a rail extending above its doorway and to one side thereof, of a pair of hanger-brackets mounted to slide on and to move pivotally with respect to said rail, a bar rigidly connecting said hanger-brackets, a pair of bell-cranks having an operating-lever, a link connecting said bell-cranks, a grain-door connected to and adapted to be raised and lowered by said bell-cranks, and interlocking devices on said grain-door and on the door-frame, arranged to be engaged by lateral and downward movement and to be disengaged by an upward and lateral movement, substantially as described.

5. The combination with a car-body having a countersunk grain-door seat at one side of its door-opening and having a rail extending over said doorway and said door-seat, of hanger-brackets mounted to travel upon and to move pivotally with respect to said rail, said hanger-brackets being connected for common sliding movements, a grain-door, a raising and lowering device connecting said grain-door to said hanger-brackets, and interlocking devices on said grain-door and on the door-frame and at the ends of said grain-door seat, substantially as described.

6. The combination with a car-body having a doorway 2 and a grain-door seat 6, said seat 6 being countersunk into the side of the car at one side of said doorway, of a rail 15 secured to the car-body above said doorway and grain-door seat, blocks 14 interlocked with and mounted to slide on said rail, hanger-brackets 12 pivotally supported by said blocks 14, a tie-bar 13 rigidly connecting said hanger-brackets, bell-cranks 11 pivoted to said hanger-brackets, one thereof, having an operating-lever 17, a lock 18 for securing said lever to said bar 13, a link 16 connecting said bell-cranks for common movements, a two-part grain-door 7 8 and bars 10 and 10ª secured respectively to the sections 7 8 of said door, said bars 10 being extended upward and pivotally connected to said bell-cranks, and which grain-door, when moved from operative position, is adapted to enter said door-seat 6, substantially as described.

822,631. CARPET-SWEEPER. HIRAM W. RUTON, Goshen, Ind., assignor to Philip Matter and Benjamin F. Burk, copartners under the firm-name of National Sweeper Co., Marion, Ind. Filed July 20, 1903. Serial No. 166,280.

Claim.—1. In a carpet-sweeper the combination of a case with a handle and bail, the bail and case being connected at each end by two pivotal and sliding connections.



2. In a carpet-sweeper the combination of a case with a handle and bail, the bail and case being slotted and being connected at each end by two connections, one of which consists of a pin on the case extending into the slot in the bail, the other a pin on the bail extending into the slot in the case.

3. In a carpet-sweeper the combination of a case with a handle and bail, the case being provided with a slot at each end and the bail with a pin to project into said slot at each end, and a pivotal and sliding connection between the bail and case at each end, said slot being not concentric with the pivot-point of the pivotal and sliding connection.

4. In a carpet-sweeper the combination of a case having a projection on each end, a handle, a bail provided with slots in its ends to receive such projections, thus forming a sliding and pivotal connection between the bail and case, and a second connection between the bail and case to limit the sliding movement of the bail.

5. In a carpet-sweeper the combination of a case having a projection on each end, a handle, a bail provided with slots in its ends to receive such projections, thus forming a sliding and pivotal connection between the bail and case, and means for limiting the sliding movement of the bail, said means comprising a pin on the bail and a bearing for said pin not concentric with the projection from the case.

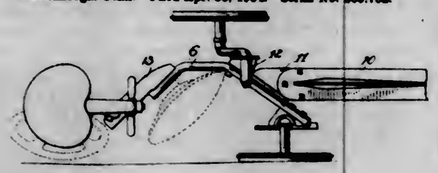
6. In a carpet-sweeper the combination of a case having a pin at each end, with a handle, a bail provided with slots in its ends to receive said pins thus forming a sliding and pivotal connection between the bail and case, and a pin on each end of the bail above the slot in the bail, the case being provided with a slot at each end to receive such pin, said slot being struck from a center below the pin on the case.

7. In a carpet-sweeper the combination of a case with a handle and a bail, the bail being connected at each end with the case by two connections, one of which comprises a pin and a bearing for such pin, and the other an engaging part and a bearing therefor, such bearing being formed by a slot in one of the parts connected, which slot is not concentric with the pivot of the first connection.

8. In a carpet-sweeper, the combination of a case with a handle and bail, the bail being connected at each end with the case by two connections, one of which comprises a pin and a bearing for such pin, and the other an engaging part and a bearing for such part, such bearing being formed by a slot in one of the parts connected, which slot is above and not concentric with the pin.

9. A carpet-sweeper comprising a case, a handle device associated therewith, a pivot on said case engaging said handle device and about which it swings when passing from one side of the case to the other, said handle device being capable of sliding along said pivot, and means for limiting the sliding movement between the handle device and the pivot to prevent them from being disengaged during the normal operation of the sweeper.

822,632. EXPANDING WHEELED PLOW. NEWELL SANDERS, Chattanooga, Tenn. Filed Apr. 30, 1904. Serial No. 206,703.



Claim.—1. In an expanding plow, one or more beams carrying furrow-opening devices and having inclined forward ends, a frame member constructed and adapted for adjustable connection with said beam or beams, and a tongue-carrying member having an inclined face constructed and adapted to be connected either directly to one of said beams or to said frame member, substantially as described.

2. In an expanding plow, a plurality of beams carrying furrow-opening devices, a frame member constructed and adapted for adjustable and detachable connection to said beams, and a tongue-carrying member adapted to be adjustably connected to either the frame member or one of the beams, substantially as described.

3. In an expanding plow, a plurality of beams carrying furrow-opening devices, a frame member constructed and adapted to be adjustably and detachably connected to the front side of said beam, a tongue-carrying member constructed and adapted to be adjustably and detachably connected either to the front side of said member or detachably connected to the front side of one of the beams, a land-wheel constructed and adapted to be adjustably and detachably connected either to the frame member or to one of the beams, a front furrow-wheel carried by the forward beam and a rear furrow-wheel-carrying member constructed and adapted to be connected to the rear end of any one beam, substantially as described.

4. In an expanding plow, a diagonally-arranged frame member having a plurality of equally-spaced holes, a plurality of beams carrying furrow-opening devices adjustably and detachably bolted to said frame through said equally-spaced holes, a bracket carrying a front furrow-wheel bolted to the forward beam, and suitably-connected landside and furrow wheels, substantially as described.

5. In an expanding plow, a diagonally-arranged frame member having a plurality of equally-spaced holes, a plurality of beams carrying furrow-opening devices adjustably and detachably bolted to said frame member through said equally-spaced holes, a bracket carrying a front furrow-wheel bolted to the forward beam, a bracket carrying a landside-wheel and adjustably and detachably bolted to said frame through certain of said equally-spaced holes, and a bracket carrying a trailing wheel and constructed and adapted to be bolted to the rear end of any of the beams, substantially as described.

6. In an expanding plow, a plurality of beams carrying furrow-openers and having inclined forward portions, a diagonally-arranged frame member adjustably and detachably bolted to said inclined front portions, a tongue-carrying member constructed and adapted to be adjustably and detachably bolted either to the front side of the frame member or to one of the inclined forward portions of the beams, a furrow-wheel bracket adjustably bolted to the forward end of the forward beam and a rear furrow-wheel-carrying member constructed and adapted to be detachably connected to the rear end of any beam, substantially as described.

7. In an expanding plow, a diagonally-arranged frame member having a plurality of equally-spaced holes, a tongue-carrying member constructed and adapted to be detachably bolted to the front side of said frame, a plurality of beams carrying furrow-opening devices having inclined forward ends constructed and arranged to be detachably and adjustably bolted to the rear side of said frame, a front furrow-wheel bracket adjustably bolted to the forward beam, and suitably-connected rear furrow and landside wheels, substantially as described.

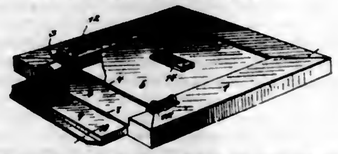
8. A frame for a gang-plow comprising a plurality of beams having portions arranged longitudinally of a line oblique to the line of draft and having angular extensions or portions for attachment of furrow-openers, and a single main beam to which all said oblique portions are connected so as to be longitudinally adjustable, substantially as described.

9. A frame for a gang-plow comprising a plurality of elongated beams having portions arranged longitudinally in line with each other and oblique to the line of draft, and having angular extensions or portions for attachment of furrow-openers, and means whereby said oblique portions are rigidly but adjustably connected together, substantially as described.

10. A frame for gang-plows comprising a plurality of beams having portions arranged longitudinally of a line oblique to the line of draft and angular extensions or portions for attachment of furrow-openers, a single main beam having a plurality of equally-spaced holes, and bolts adjustably connecting said oblique portions to the main beam through said equally-spaced holes, substantially as described.

11. A frame for a gang-plow comprising a plurality of elongated beams having portions arranged longitudinally of a line oblique to the line of draft and in line with each other, and having angular extensions or portions for attachment of furrow-openers, and a single main beam to which all of said oblique portions are rigidly connected, substantially as described.

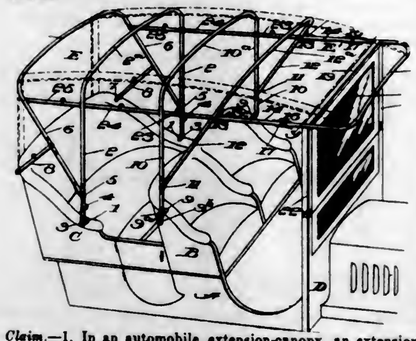
822,633. PICTURE-FRAME. AUGUST G. SCHRICK, Hennessey, Okla. Filed Dec. 2, 1905. Serial No. 290,090.



Claim.—1. A picture-frame formed of end and side rails, one of said end rails and both of said side rails being formed with grooves extending throughout their inner sides, the opposite end rail having its rear face cut away, the cut-away portion being bounded by lines alining with the bottoms of said grooves of the side rails and the longitudinal side edges of the last-named end rail, the top face of said cut-away portion lying in the same plane as the outermost sides of said grooves of the side rails, a hinged member occupying said cut-away portion and formed with a tongue and a shoulder, and means for engagement with said hinged member to retain the same against movement.

2. A picture-frame formed of end and side rails, one of said end rails and both of said side rails being formed with grooves extending throughout their inner sides, the opposite end rail having its rear face cut away to constitute an extension of the passage-way formed by said grooves of the side rails, means for closing said passage-way consisting of a member hinged at its outer end to said last-named end rail, and provided on its opposite end with a shoulder which terminates at points below the inner longitudinal side edge of said last-named rail, and a tongue which extends beyond said shoulder, and means for retaining said member against movement.

822,634. AUTOMOBILE EXTENSION CANOPY-FRAME. LEWIS C. SHIPLEY, New York, N. Y. Filed Feb. 6, 1905. Serial No. 244,301.



Claim.—1. In an automobile extension-canopy, an extension-frame, a main frame, a hinge, said hinge being attached to said main frame and to the end of said extension-frame, a plate attached at the end and on top of said extension-frame, said plate being bent at an angle to conform to the angle of one leaf of said hinge and adapted to bear against said leaf, a catch adapted to engage said bent portion of said plate and to hold the same, as and for the purpose set forth.

2. In an automobile extension canopy-frame, an extension made in two parts, a hinge near the center thereof, said hinge consisting of four leaves, two of said leaves being attached to the ends of said frame where the two parts are joined, the other two leaves covering the ends of the frame, said leaves adapted to bear one against the other when the frame is extended as and for the purpose set forth.

3. In an automobile extension-canopy, a frame made in two parts, a joint, said joint being provided with a locking means, said locking means being provided with an unlocking means, said unlocking means comprising a lug adapted to engage the spring-plate of the locking means, said lug being mounted upon a shaft, said shaft having a knob thereon, as and for the purpose set forth.

4. In an automobile-canopy, a main frame, an extension-frame, said extension-frame being hinged to said main frame, said extension-frame having a bar extending transversely thereof, guides between which a frame of glass slides, said extension-frame adapted to lie over said guides and said frame of glass, and a fastening means to hold these parts together when the frame is set up in position substantially as described.

5. In an automobile canopy-frame, a main frame, an extension-frame hinged to said main frame, said extension-frame extending forwardly substantially horizontally from said main frame, said extension-frame being composed of three members, the forward member being hinged to the rearward member, said forward member adapted to swing upwardly, said rearward members adapted to swing downwardly and lie against said main frame, and said forward member adapted to lie against said rearward members, when the frame is collapsed.

822,635. CANOPY-SUPPORT. WILLIAM J. SLYDER, Troy, Ohio, assignor to George S. Long, Troy, Ohio. Filed Feb. 19, 1904. Serial No. 194,339.



Claim.—1. In a canopy-support, a suitable standard, plates secured to the lower end of the standard, having recessed lugs, a base-plate having its central portion arched and reduced in width, said reduced portion being clamped by the plates on the standard.

2. In a canopy-support, a suitable standard, two plates secured to the lower end of the standard having recessed lugs, a base-plate secured to the bottom of a vehicle, said plate having a reduced portion clamped by the plates on the standard, substantially as described.

3. In a canopy-support, a suitable base-socket, a standard in the socket, means for attaching the standard to a portion of a seat of a vehicle, an arm on the standard, said arm comprising two sections suitably secured together, a hub pivotally mounted in the arm, a segmental rack carried by the hub, a detent in the arm for engaging the rack, and a canopy-supporting member carried by the hub.

4. In a canopy-support, a suitable standard and means for securing it to a vehicle-body, an arm on the upper end of the standard, said arm comprising two sections suitably secured to the standard, bearings formed in the meeting faces of the sections of the arm, a hub pivotally mounted in the bearings, a segmental rack depending from the hub, a spring-pressed detent slidable in the arm for engaging the rack, a web rising from the hub, a collar carried by the web, a rod secured in the collar and means for clamping the rod in place.

5. In a canopy-support, a suitable standard and means for securing it to a vehicle-body, an arm on the upper end of the staff, said arm comprising two sections suitably secured to the staff, bearings formed in the meeting faces of the sections of the arm, a hub pivotally mounted in the bearings, a segmental rack depending from the hub, a spring-pressed detent slidable in the arm for engaging the rack, a

web rising from the hub, a collar carried by the web, a rod in the collar, a ring on said member having a lug engaging the web and means on the web for supporting said member.

6. In a device of the character described, a suitable standard for a canopy-top, a collar slidable on the standard, means for securing the collar to a vehicle-seat, a second collar immovably secured to the standard engaging the sliding collar in such a manner as to prevent rotation of the standard.

7. In a device of the character described, a suitable standard for supporting a canopy-top, a collar slidable on the standard, means for securing the collar to a vehicle-seat, a second collar immovably secured to the standard, and a clamp carried by the second collar engaging the sliding collar, to hold the standard against rotation.

8. In a device of the character described, a suitable standard for supporting a canopy-top, a collar slidable on the standard, said collar being provided with an aperture, means for securing the collar to a vehicle-seat, a second collar immovable on the standard, and a lug on said second collar engaging the aperture of the sliding collar.

9. In a device of the character described, a suitable standard for supporting a canopy-top, a collar slidable on the standard, said collar having an aperture, a second collar immovably carried by the standard and a clamping means carried by the second collar engaging the aperture of the sliding collar.

10. In a device of the character described, a suitable standard for supporting a canopy-top, a collar slidable on the standard, said collar having an aperture, means for securing the collar to a vehicle-seat, a second collar immovably secured to the standard, and a clamping-hook loosely held by the second collar engaging the aperture of the sliding collar.

11. In a device of the character described, a suitable standard for supporting a canopy-top, a collar slidable on the standard, said collar having an aperture, means for attaching the collar to a vehicle-seat, a second collar immovably secured to the standard, a lug on the second collar engaging the aperture of the sliding collar and a clamping means carried by the second collar also engaging the aperture of the sliding collar.

12. In a device of the character described, a suitable standard for supporting a canopy-top, a collar slidable on the standard, said collar having an aperture and a recess in an edge, a second collar immovably secured to the standard provided with an aperture and a clamping-hook loosely passing through the aperture of the second collar, engaging the recess of the sliding collar, and engaging the aperture of the sliding collar.

13. In a device of the character described, a suitable standard for supporting a canopy-top, a collar thereon, means for attaching the collar to a vehicle-seat, and means carried by the collar to contact both with the collar and standard.

14. In a device of the character described, a suitable standard, means for securing the standard to a vehicle-body, an arm on the standard provided with sockets, a canopy-supporting means carried by the arm; and a cross-pin carried by the standard and engaging the sockets of the arm to hold the arm against rotation.

15. In a device of the character described, a suitable standard, means for securing the standard to a vehicle-body, an arm carried by the standard, said arm being provided with sockets, means carried by the standard for engaging the sockets to hold the arm against rotation, and a canopy-supporting means carried by the arm.

16. In a device of the character described, a suitable standard, means for securing the standard to a vehicle-body, a hollow arm on the standard, a hub mounted in the arm, a segmental rack depending from the hub within the arm, a detent in the arm for engaging the rack, a spring depending from the detent and bearing against the walls of the arm, and a canopy-supporting means carried by the hub.

17. In a device of the character described, a suitable standard, means for securing the standard to a vehicle-body, an arm carried by the standard, a hub mounted on the arm, means for holding the arm against movement, suitably-spaced collars carried by the hub and a rod fitting within the collars.

18. In a device of the character described, a suitable standard, means for securing the standard to a vehicle-body, an arm carried by the standard, a hub mounted on the arm, means for holding the arm against movement, suitably-spaced collars carried by the hub, a rod fitting within the collars, and means for holding the rod against rotation.

19. In a device of the character described, a suitable standard, means for securing the standard to a vehicle-body, an arm carried by the standard, a hub mounted on the arm, means for holding the arm against movement, suitably-spaced collars carried by the hub, a rod fitting within the collars and means carried by the rod contacting with a collar for holding the rod against rotation.

20. In a device of the character described, a suitable standard, means for securing the standard to a vehicle-body, an arm carried by the standard, a hub mounted on the arm, means for holding the arm against movement, suitably-spaced collars carried by the hub, a rod fitting within the collars, a collar on the rod, and a recessed lug on the collar of the rod to engage the hub at a point adjacent one of the collars.

21. In a device of the character described, a suitable standard, means for securing the standard to a vehicle-body, an arm carried by the standard, a hub mounted on the arm, means for holding the arm against movement, suitably-spaced collars carried by the hub, a rod fitting within the collars, and means carried by the hub engaging the rod to hold the rod against longitudinal movement.

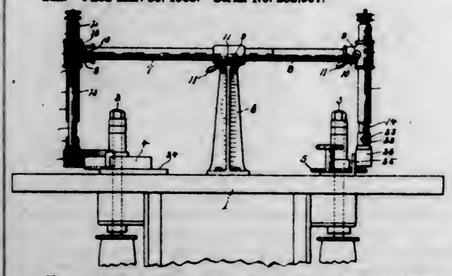
22. In a device of the character described, a suitable standard, means for securing the standard to a vehicle-body, an arm carried by the standard, a hub mounted on the arm, means for holding the arm against movement, suitably-spaced collars carried by the hub, a rod fitting within the collars, and clamping-plates carried by the hub contacting with the rod to hold the rod against longitudinal movement.

23. In a device of the character described, a suitable standard, means for securing the standard to a vehicle-body, an arm carried by the standard, a hub mounted on the arm, means for holding the arm against movement, suitably-spaced collars carried by the hub, a rod fitting within the collars, and clamping-plates carried by the hub provided with lugs contacting with the rod to hold the rod against longitudinal movement.

24. In a device of the character described, a suitable standard, means for securing the standard to a vehicle-body, an arm carried by the standard, a hub mounted on the arm, means for holding the arm against movement, suitably-spaced collars carried by the hub, a rod fitting within the collars, connections between the collars of the hub and clamping-plates carried by the hub engaging the connections and bearing against the rod to hold the rod against longitudinal movement.

25. In a device of the character described, a suitable standard, means for securing the standard to a vehicle-body, an arm carried by the standard, a hub mounted on the arm, means for holding the arm against movement, suitably-spaced collars carried by the hub, a rod fitting within the collars, and clamping-plates carried by the hub engaging the rod between the collars to hold the rod against longitudinal movement.

822,636. **COMBINED PRESSER-FOOT AND GUARD FOR WOODWORKING-MACHINES.** HERBERT H. STEER, Windsor, Canada. Filed Mar. 30, 1905. Serial No. 253,967.



Claim.—1. The combination with a cylindrically-shaped member and a foot carried by said member, of a supporting member provided with a bearing for said cylindrical member and formed with a hole extending at right angles to the bearing and cutting into the bore of said bearing at one side, clamping-blocks in said hole having their adjacent ends cut away at one side to conform to the curve of and to engage the side of the cylindrically-shaped member, and means extended through said blocks and out of engagement with said cylindrical member for forcing said blocks toward each other to engage and clamp the cylindrical member in its bearing.

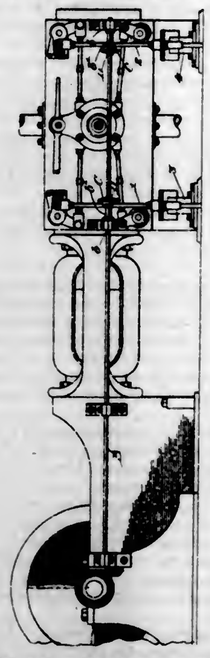
2. The combination with a supporting member adapted to be secured to a wood working-machine, a supporting-shaft and a foot carried by said shaft, of a supporting member provided with a bearing for said shaft and formed with a hole extending at right angles to the bearing and cutting into one side of the bore of the bearing, clamping-blocks in said hole cut away at their adjacent ends at one side to conform to the curve of said shaft and each provided with a longitudinal hole, a bolt extending through the holes in the blocks, and a nut on the outer screw-threaded end of said bolt.

3. The combination with a horizontally-extending supporting member adapted to be attached to a woodworking-machine and having a bearing on its outer end, a vertically-extending shaft in said bearing adjustable vertically and rotatable therein and having a horizontal bearing at its lower end, a tubular post adapted to extend horizontally toward the cutter of the machine and adjustably secured in the bearing on the vertical shaft, a plunger in said post, a foot secured to the plunger, and a spring inclosed in said post to yieldingly hold the plunger extended from the post and a gage mounted to coöperate with said presser-foot.

4. The combination with a supporting member adapted to be secured to a woodworking-machine and provided with a bearing at one end, of a tubular post longitudinally and rotatably adjustable in said bearing and having a closed end, means for holding the post in its adjusted position in said bearing, a plunger longitudinally movable in the open end of said post, a presser-foot secured to the lower end of said plunger, a rod attached to the inner end of the plunger and provided with a screw-threaded end, extending through an opening in the closed end of the post and the plunger, and a nut on the screw-threaded outer end of the rod in engagement with the post.

5. The combination of supporting members adapted to be attached to a woodworking-machine at one side of the cutter thereof to extend horizontally over the same and each provided with a vertical bearing at its outer end, a vertical tubular post adjustably secured in the bearing on one of said members, a plunger in said post, a stop to limit the movement of the plunger, a spring to hold the plunger extended from the post, a presser-foot on the lower end of the plunger, a shaft adjustably secured in the bearing on the end of the other supporting member and extending downward at a distance from the said post, a horizontal bearing on the lower end of said shaft, a tubular post adjustably secured in said bearing, a plunger in said post, a presser-foot on the end of the plunger, and a spring to yieldingly hold the foot pressed toward the cutter of the machine.

822,637. **METERING DEVICE FOR ENGINES.** EMETT L. TUCKER, Chicago, Ill. Filed July 31, 1903. Serial No. 167,692.



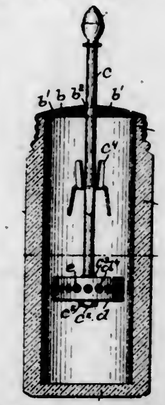
Claim.—1. The combination of an engine, a metering device, a power-transmitting connection between the engine and the metering device, said power-transmitting connection including a clutch adapted to be closed by the engine as soon as the piston starts to travel under direct or boiler pressure, and adapted to be opened by the engine as soon as the said direct or boiler pressure is cut off.

2. The combination of a fluid-pressure engine having cut-off devices, whereby the engine may operate part of the time under direct or boiler pressure and the balance of the time under expansion, a metering device connected with and adapted to be operated by the engine, and means operated by the cut-off devices of the engine for controlling the operation of said metering device.

3. The combination of an engine having cut-off devices, whereby the engine may operate part of the time under direct or boiler pressure and the balance of the time under expansion, and a metering device adapted and connected for registering the number of feet traveled by the engine-piston under direct or boiler pressure.

4. The combination of an engine having cut-off devices, whereby the engine may operate part of the time under direct or boiler pressure and the balance of the time under expansion, and a metering device adapted and connected to register the number of feet traveled by the engine-piston under one of said conditions.

822,638. **SALT-SHAKER.** GUSTAVE J. VESTER, Providence, R. I. Filed Sept. 11, 1905. Serial No. 277,920.



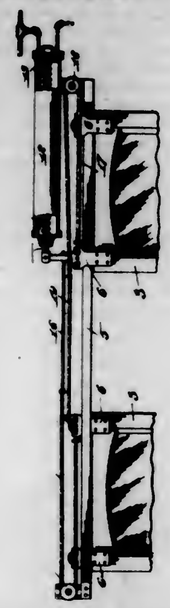
Claim.—1. In a salt-shaker, a receptacle, a rod projecting within said receptacle and formed with a threaded lower end, a collar on said rod spaced from said lower end, a box having an opening in its bottom to receive said rod, said box having perforations in its sides, compressible absorbent material in said box, a cover formed with an opening receiving said rod and abutting said collar, and extending within said box to engage said compressible material, and a nut on said threaded end of the rod to engage and support said box and to enable adjustment of the degree of compressibility of said absorbent material.

2. In a salt-shaker, a receptacle, a rod projecting within said receptacle and formed with a threaded lower end, a collar on said rod spaced from said end, a box having an opening in its bottom to receive said rod, said box having perforations formed in its side, a section of blotting-paper seating in the box-bottom, corn-starch packed on top of said blotting-paper, a second section of blotting-paper seating on top of said corn-starch, a cover formed with an opening to receive said rod and abutting said collar and extending within said box to engage said second section of blotting-paper, and a nut on said threaded end of the rod to engage and support said box and enabling the compactness of said corn-starch to be regulated.

822,639. **RAILWAY-CAR.** HENRY F. VOGEL, St. Louis, Mo., assignor to St. Louis Car Company, St. Louis, Mo., a Corporation. Filed Feb. 8, 1905. Serial No. 244,742.

Claim.—The combination with a railway-car having side passage-ways located at intervals, of a pair of sliding doors controlling adjacent passage-ways, a pair of parallel track-rails above said passage-ways, hangers connected to each of said doors and traveling on said track-rails, a support at the end of each track-rail, a sheave journaled in each support, a fluid-pressure-receiving cylinder, a piston in said cylinder, a piston-rod extending from said piston and con-

nected to one of the hangers of one of said doors, a pull-rod connected to one of the hangers of each door, and a pair of pull-chains connecting one hanger with the pull-rod of the other hanger and passing over said sheaves, substantially as set forth.



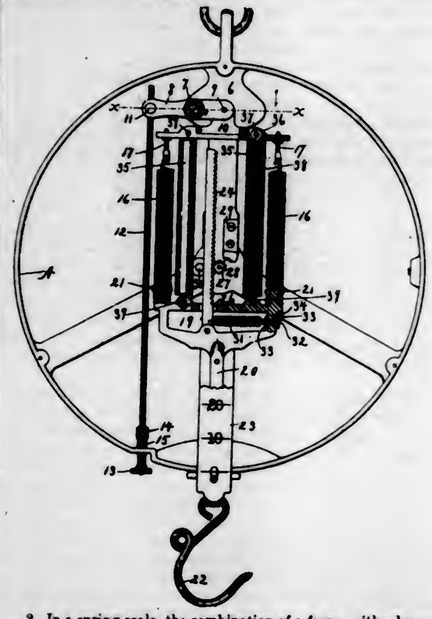
822,640. MILKING-MACHINE. THADDEUS M. WADE, Lithopolis, Ohio. Filed Sept. 22, 1905. Serial No. 279,675.



Claim.—A milking-machine comprising a milk-receptacle with a removable top having fastening devices for clamping it to the milk-receptacle, an exhaust-pump supported by said top, a radially-extending pipe rigidly secured to and supported by said top and extending therefrom in an approximately horizontal direction, a header connected to the outer end of said rigid pipe and consisting of a plurality of radial tubes connected to a common head, each of said tubes being provided near its outer end with an upwardly-projecting nipple, a plug in the end of each tube beyond the said nipple, a valve secured to each tube near the inner end thereof, a transparent plate in each tube between the plug and the valve and teat-cups provided with tubes connected to said nipples.

822,641. SPRING-SCALE. GEORGE WALKER, New Britain, Conn., assignor to Landers, Frary and Clark, New Britain, Conn., a Corporation. Filed Jan. 4, 1906. Serial No. 294,541.

Claim.—1. In a spring-scale, the combination of a main frame with a hanger-lever pivotally mounted thereon, a hanger-frame pivotally mounted on the said hanger-lever and in substantially the same plane therewith, a pair of counterbalancing-springs hung on the said hanger-frame in an adjustable manner and in the plane of the said hanger-frame and hanger-lever, and means for adjusting the said hanger-lever to vary the height of the said hanger-frame and its adjustably-connected springs.



2. In a spring-scale, the combination of a frame with a hanger-lever pivotally mounted thereon, a hanger-frame mounted on the said lever for suspending the counterbalancing-springs, a tumbler-nut in the said hanger-lever, and an adjusting-screw mounted in the said case and nut for changing the position of the said hanger-frame.

3. In a spring-scale, the combination of a frame or case with a substantially horizontal resilient arm made fast on the said frame by one end, a trunnion-block mounted to slide on the said arm, an equalizing device secured by one end to the said trunnion-block, means for securing the opposite end of the said equalizing device to the said resilient arm, and a hanger-frame suspended from the said trunnion-block from which to suspend the scale-springs.

4. In a spring-scale, the combination of a frame or case with a substantially horizontal and resilient arm made fast on the said frame, a hanger-frame suspended from the said resilient arm for the attachment of the counterbalancing-springs, and means connected with the said hanger-frame and arm for moving the hanger-frame on the said arm under temperature changes, to vary the effective length of the said resilient arm.

5. In a spring-scale, the combination of a frame or case with a hanger-lever adjustably mounted and held thereon, a resilient arm mounted on the said hanger-lever and extended substantially in a horizontal direction therefrom, a hanger-frame suspended from the said resilient arm, counterbalancing-springs suspended from the said hanger-frame, and means connected with the said hanger-frame and arm for increasing the effective length of the said resilient arm when the temperature falls, and decreasing it when the temperature rises.

6. In a spring-scale, the combination of a frame or case with counterbalancing-springs hung therefrom, a draw-bar having a cross-head by which it is suspended from the said springs, a pinion mounted to rotate on the said frame, a rack extending vertically for engagement with the said pinion, the said rack being pivoted by its lower end to the said cross-head, a spring secured by one end to the lower end of the said rack and by its other end to the said cross-head for forcing the rack toward its pinion, and means mounted on the said cross-head for adjusting the connection of the said spring with the said cross-head to vary the pressure of the rack against the said pinion.

7. In a spring-scale, the combination of a frame or case with counterbalancing-springs hung therefrom, a draw-bar having a cross-head suspended from the lower ends of the said springs, and a checking device consisting of a pair of hollow cylinders closed at one end and open at the other, said cylinders being fitted one within the other, with their closed ends outwardly to form one common checking-chamber inside of the said two cylinders, one of which cylinders is flexibly connected with the case by its upper end and the other of which is flexibly connected with the draw-bar by its lower end.

8. In a spring-scale, the combination of a frame or case with counterbalancing-springs hung therefrom, a draw-bar suspended from the lower ends of the said springs, a checking device consisting of a cylinder and a cylindrical piston, the said piston fitting the said cylinder for substantially the whole length of the said cylinder, and having an open pocket in its inner end which forms a part of the checking-chamber, and flexible connections with the frame and draw-bar for the opposite ends of the said cylinder and piston.

9. In a spring-scale, the combination of a frame or case with counterbalancing-springs suspended therefrom, a draw-bar suspended from the lower ends of the said springs, and a checking device for said draw-bar consisting of a hollow cylinder, and a hollow cylindrical piston within the said cylinder fitting the same for substantially its whole length, and with its interior forming a part of the checking-chamber, which chamber, when the piston is at the end of its inward stroke, is several times longer than the distance between the inner end of the said piston and the confronting end wall of the said cylinders, one of the said parts being flexibly connected with the case by its upper end and the other being flexibly connected by its lower end with the draw-bar.

10. In a spring-scale, the combination of a frame or case with a hanger-frame flexibly mounted thereon, counterbalancing-springs connected by their upper ends with the said hanger-frame, a draw-bar suspended from the lower ends of the said springs, a pinion mounted on the said frame or case, a rack for engaging the said pinion, the said rack being connected with the said draw-bar, and two checking-cylinders and their pistons, the said cylinders and pistons being flexibly connected with the said hanger-frame and draw-bar.

11. In a spring-scale, the combination of a frame or case, with a hanger-frame flexibly mounted thereon, counterbalancing-springs connected by their upper ends with the said hanger-frame, a draw-bar having a cross-head suspended from the lower ends of the said springs, a pinion mounted on the said frame or case, a rack for engaging the said pinion, the said rack being connected with the said cross-head, checking-cylinders and pistons connected with the said hanger-frame and cross-head, and a spring on the said cross-head below the lower ends of the said cylinders and pistons, one end of the said spring being secured to the said rack and the other to the said cross-head.

822,642. WOOD STRAIN-INSULATOR. THOMAS C. WHITE, St. Louis, Mo. Filed Aug. 7, 1905. Serial No. 273,188.



Claim.—1. In a wood strain-insulator, the combination of a wood body having conical portions at its ends and clipsconsisting of pairs of sections secured to said conical portions, substantially as set forth

2. In a wood strain-insulator, the combination of a wood body having conical portions at its ends, the bases of which are disposed outwardly from the central portion of said body, and pairs of clip-sections having sleeve portions secured to said conical portions, substantially as set forth.

3. In a wood strain-insulator, the combination of a wood body having conical portions at its ends, the bases of which are disposed outwardly from the central portion of said body, and pairs of clip-sections having sleeve portions secured to said conical portions and having eye-loops, substantially as set forth.

4. In a wood strain-insulator, the combination of a wood body having conical portions at its ends, the bases of which are disposed outwardly from the central portion of said body, and pairs of clip-sections having sleeve-sections secured to said conical portions; said sleeve portions being provided upon their inner faces with spurs, substantially as set forth.

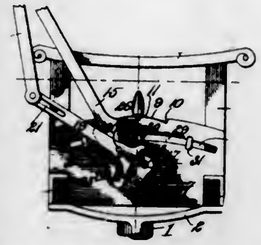
5. In a wood strain-insulator, the combination of a wood body having conical portions at its ends, the bases of which are disposed outwardly from the central portion of said body, and pairs of clip-sections having sleeve portions corresponding in contour to segments of said conical portions and adapted to embrace said conical portions, substantially as set forth.

6. In a wood strain-insulator, the combination of a wood body having conical portions at its ends, pairs of clip-sections having sleeve portions fitted to said conical portions and having contours corresponding to segments of said portions; and means for uniting said clip-sections in mating pairs, substantially as set forth.

7. In a wood strain-insulator, the combination of a wood body having conical portions at its ends, pairs of clip-sections having sleeve portions fitted to said conical portions and having contours corresponding to segments of said conical portions; said sections being provided with tongues and slots for securing the mating pairs of clip-sections to each other, substantially as set forth.

8. In a wood strain-insulator, the combination of a wood body having conical portions at its ends, pairs of clip-sections having sleeve portions fitted to said conical portions and having contours corresponding to segments of said conical portions; said clip-sections being provided with tongues and slots for securing the mating pairs of clip-sections to each other, and spurs projecting from the inner faces of said sleeve portions and adapted to enter into said conical portions, substantially as set forth.

822,643. CAR-SEAT. HUBERT WITTE, St. Louis, Mo., assignor to St. Louis Car Company, St. Louis, Mo., a Corporation. Filed July 7, 1905. Serial No. 268,651.



Claim.—1. In a car-seat, the combination of seat ends and a back, swinging back-supporting arms supported by said seat ends, restraining-links connected to said back and pivoted to said arms, a rocking lever, restraining means carried by said lever arranged for engagement with one of said seat ends; said restraining means including stops carried by said rocking lever adapted to receive the engagement of said restraining-links, substantially as set forth.

2. In a car-seat, the combination of seat ends and a back, swinging back-supporting arms supported by said seat ends, restraining-links pivoted to said arms and having connection with said back, a hand-lever, restraining means carried by said lever arranged for engagement with one of said seat ends; said restraining means including arms provided with stops and connected to said hand-lever; said stops being arranged to be engaged by said restraining-links, substantially as set forth.

3. In a car-seat, the combination of seat ends, and a back, a rock-shaft loosely mounted in said seat ends, swinging back-supporting arms fixed to said rock-shaft and having connection with said seat-back, a second rock-shaft, a hand-lever fixed to said second rock-shaft and arranged for engagement with one of said seat ends, stops carried by said lever adapted to restrict the movement of said back-supporting arms and restraining-links pivoted to said back-supporting arms and having loose connection with said seat-back, substantially as set forth.

4. In a car-seat, the combination of notched seat ends and a back, swinging back-supporting arms supported by said seat ends, restraining-links pivoted to said arms and having loose connection with said back, hand-levers rockingly supported by said seat ends, catches carried by said hand-levers and arranged to enter the notches in said seat ends, and arms connected to said hand-levers and provided with stops arranged to be engaged by said restraining-links, substantially as set forth.

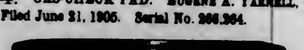
5. In a car-seat, the combination of slotted seat ends and a back, back-supporting arms swingingly supported by said seat ends, restraining-links pivoted to said arms and connected to said back, hand-levers arranged to engage said seat ends, arms pivoted to said hand-levers and provided with stop-knobs operating through the slots in said seat ends and projecting into the path of movement of said restraining-links, substantially as set forth.

6. In a car-seat, the combination of seat ends provided with studs and a seat-back, back-supporting arms swingingly supported by said seat ends and provided with slots to receive said studs, back-

restraining links pivoted to said arms and connecting the back thereto, the said restraining-links being provided with catch-teeth adapted to engage said studs, and means for limiting the movement of said restraining-links, substantially as set forth.

7. In a car-seat, the combination of seat ends provided with studs and a seat-back, back-supporting arms swingingly supported by said seat ends and provided with slots to receive said studs, back-restraining links pivoted to said arms and connecting the back thereto, the said restraining-links being provided with catch-teeth and a notch intermediate of said teeth adapted to receive said studs, substantially as set forth.

822,644. GAS-CHECK PAD. EUGENE A. YARNELL, Washington, D. C. Filed June 21, 1905. Serial No. 266,264.



Claim.—1. A gas-check pad comprising a suitable cover and a body formed of a plurality of layers of asbestos millboard.

2. A gas-check pad comprising a plurality of layers of asbestos, and a cover composed of two pieces, one of which is asbestos.

3. A gas-check pad formed of a plurality of layers of fibrous non-metallic material and an asbestos cover inclosing the same.

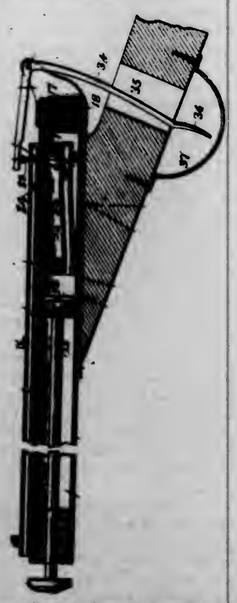
4. A gas-check pad having a suitable body portion made up from a plurality of layers and a cover concealing and protecting the body portion, the said cover being formed from two annular pieces of asbestos.

5. A gas-check pad having a suitable body portion formed substantially from layers of non-metallic fibrous mineral material and having a cover provided with an annular piece fitting the central aperture and a second annular piece fitting the outer circumference.

6. A gas-check pad with a suitable body portion formed substantially from independent yet permanent layers and reinforced by a cover of asbestos material.

7. A gas-check pad having a suitable cover and a body made up of a plurality of layers of non-metallic fibrous material.

822,645. AIR-GUN. WALTER R. BENJAMIN, Granite City, Ill. Filed Aug. 24, 1905. Serial No. 275,582.



Claim.—1. In an air-gun, the combination with a projectile-holder, of a reservoir for fluid under pressure, said reservoir having an inlet and an outlet that communicates with the projectile-holder, a valve for controlling the inlet and outlet, and means for actuating the valve.

2. In an air-gun, the combination with a projectile-barrel, of a reservoir for fluid under pressure, said reservoir having an inlet and a separate outlet, the latter communicating with the barrel, a single valve device controlling both the inlet and outlet, and means for operating the valve device.

3. In an air-gun, the combination with a projectile-barrel, of a reservoir for fluid under pressure, said reservoir having an inlet and a separate outlet, the latter communicating with the barrel, a single valve device controlling both the inlet and outlet, and means for operating the valve device to open the outlet and at the same time hold said valve closed upon the inlet.

4. In an air-gun, the combination with a projectile-barrel, of a reservoir for fluid under pressure, a pump communicating with the reservoir, said reservoir also having communication with the barrel, a valve device for closing both of said communications, and means for operating the valve device.

5. In an air-gun, the combination with a projectile-holder, of a reservoir for fluid under pressure, said reservoir having an inlet and an outlet that communicates with the projectile-holder, a ball-valve for controlling both the inlet and the outlet, and means for actuating the ball-valve.

6. In an air-gun, the combination with a projectile-barrel, of a reservoir for fluid under pressure, said reservoir having an inlet and a separate outlet, the latter communicating with the barrel, a ball-valve having its opposite portions closing the inlet and outlet, and means for operating the valve.

7. In an air-gun, the combination with a reservoir for fluid under pressure, said reservoir having an open rear end, of a detachable closure for the open end, a projectile-barrel having communication with the reservoir, a yielding support located in the reservoir contiguous to the open end thereof, a valve detachably mounted on the support and controlling the communication with the barrel, said valve being accessible and removable through the open end when the closure is detached, and means for actuating the valve.

8. In an air-gun, the combination with a reservoir for fluid under pressure, said reservoir having an open rear end, of a detachable closure for said open end, a projectile-barrel having communication with the reservoir, a valve detachably mounted within the reservoir and controlling the communication with the barrel, said valve being accessible and removable through the open end when the closure is detached, and means for actuating the valve.

9. In an air-gun, the combination with a stock, of a reservoir mounted on the stock and having an open rear end located above the same, a detachable closure for said rear end, a projectile-barrel having communication with the reservoir, a valve detachably located in the reservoir and controlling said communication, said valve being accessible and removable through the open end of the reservoir when the closure is removed, and means for operating the valve.

10. In an air-gun, the combination with a projectile-barrel, of a reservoir for fluid under pressure having communication with the barrel, a yielding stem supported at one end and having a valve-seat at its other end that is located contiguous to the communication, a ball-valve loosely and detachably located in the seat and normally closing said communication, a valve-stem engaging the valve on the side opposite the portion located in the seat, and means for moving the stem longitudinally to actuate the valve.

11. In an air-gun, the combination with a reservoir for fluid under pressure and a projectile-barrel coöperating therewith, of means for permitting the introduction of fluid into the reservoir, said means comprising a yielding conduit having communication with the reservoir, and a valve controlling such conduit.

12. In an air-gun, the combination with a reservoir for fluid under pressure and a projectile-barrel coöperating therewith, of means for permitting the introduction of fluid into the reservoir, said means comprising a yielding conduit having an opening communicating with the reservoir, and a valve carried by the yielding conduit and normally closing said opening.

13. In an air-gun, the combination with a reservoir for fluid under pressure and a projectile-barrel coöperating therewith, of means for permitting the introduction of fluid into the reservoir, said means comprising a yielding conduit having an opening communicating with the reservoir, a valve-seat surrounding the opening, and a valve located in the seat and movable therefrom to allow the passage of fluid through the conduit into the reservoir.

14. In an air-gun, the combination with a reservoir for fluid under pressure and a projectile-barrel coöperating therewith, of a tubular stem located in the reservoir, said stem being supported at one end and having at its other end an opening surrounded by a valve-seat, and a valve located in the seat.

15. In an air-gun, the combination with a projectile-barrel, of a cylinder extending longitudinally along the same, a partition located in the cylinder and subdividing the same into an air-reservoir and a pump-barrel, a yielding conduit having one end secured in the partition and communicating with the pump-barrel, the other end being yielding and having an opening communicating with the reservoir, a valve closing said opening, and a plunger operating in the pump-barrel.

16. In an air-gun, the combination with a barrel, of a reservoir coacting therewith, a yielding conduit located in the reservoir and having communication with said reservoir, a valve carried by the conduit, and means for actuating the valve.

17. In an air-gun, the combination with a barrel, of a reservoir coacting therewith, a yielding conduit located in the reservoir and having communication with said reservoir, a valve carried by the conduit, and a pump connected to the conduit.

18. In an air-gun, the combination with a reservoir having opposed inlet and outlet openings, of a projectile-barrel having communication with the reservoir through the outlet-opening, a valve device interposed between the inlet and outlet and closing both, and means for actuating the valve device.

19. In an air-gun, the combination with a reservoir having opposed inlet and outlet openings, of a yielding conduit located in the reservoir and having one of said openings, a valve device interposed between the inlet and outlet openings and closing both, and means for actuating the valve device.

20. In an air-gun, the combination with a reservoir, of a projectile-barrel, said reservoir having an outlet opening into the barrel, a yielding inlet-couduit stem located in the reservoir and having an opeuing opposed to said outlet, a valve interposed between the opening and outlet and closing both, and means for actuating the valve.

21. In an air-gun, the combination with a projectile-barrel, of a cylinder located beneath the same, a partition dividing said cylinder into a pump-barrel and a reservoir, an outlet-nipple located in the reservoir and communicating with the projectile-barrel, a conduit-stem yieldingly supported in the reservoir, said stem communicating with the pump-barrel and having an opening opposed to the nipple, a valve-seat surrounding said opening, a ball-valve located in the seat and closing the opening and the nipple, a plunger operatively mounted in the pump-barrel, a valve-stem coacting with the valve, and means for actuating the valve-stem.

22. In an air-gun, the combination with a projectile-barrel, of an air-reservoir located beneath the same and having communication therewith, a valve for closing the communication, an upstanding valve-stem projecting above the barrel, and a trigger extending in rear of the barrel and having a forwardly-offset portion located over the barrel and stem and engaging said stem to depress the same when the trigger is operated.

23. In an air-gun, the combination with a reservoir having opposed inlet and outlet openings, of a projectile-barrel having communication with the reservoir through the outlet-opening, a valve device interposed between the inlet and outlet openings and closing both, means for actuating said valve device, and a detachable end closure for said reservoir permitting access to the valve.

24. In an air-gun, the combination with a projectile-barrel, of a cylinder located alongside the same, a partition dividing said cylinder into a pump-barrel and a reservoir, said reservoir having an inlet communicating with the pump-barrel and an outlet communicating with the projectile-barrel and opposed to the inlet, a valve located between and controlling both the outlet and inlet, a pump-plunger movably located in the pump-barrel, a yielding plug located in the end of the cylinder and constituting a closure for the reservoir, and a cap covering the said plug.

25. In an air-gun, the combination with a projectile-barrel, of a reservoir communicating therewith and having an opening, a closure for said opening detachably mounted in the reservoir, and means for controlling the passage of motive fluid from the reservoir to the barrel, said means including a trigger mounted on the said closure.

26. In an air-gun, the combination with a projectile-barrel, of a reservoir, a cylinder having communication therewith and having an open end, a cap threaded upon and closing said end, and means for controlling the passage of motive fluid from the reservoir to the barrel, said means including a trigger pivoted on said closure.

27. In an air-gun, the combination with a barrel, of a cylinder located alongside the same and having an open rear end, a partition in the cylinder dividing the same into a rear reservoir and a front pump-chamber, a plunger operating in the chamber, a valve controlling the introduction of a motive fluid to the reservoir and from the reservoir to the barrel, a cap threaded upon the rear end of the cylinder and having rearwardly-extending ears, a trigger pivoted to and between the ears, and a stem interposed between the valve and the trigger.

822,646. PISTOL-GRIP. GEORGE C. BOURNE, Worcester, Mass. Filed Apr. 10, 1905. Serial No. 254,876.



Claim.—1. A pistol-grip, comprising a body portion, a forwardly-extended enlarged finger-engaging portion located on the front part of the lower end of the body portion, a rearwardly-extended enlarged hand-engaged portion located on the rear part of the lower end of the body portion, and an extension projecting below the body portion and below the said front finger-engaging portion, said extension having a finger-receiving seat.

2. A pistol-grip, comprising a body portion, a forwardly-extended finger-engaging enlargement located on the front lower corner of the body portion, a rearwardly-extended hand-engaged enlargement located on the lower rear corner of the body portion, and a downwardly-extending hook projecting from the front lower corner of the body portion and below the same, said hook also extending below the front finger-engaging enlargement and having a forwardly-extending lower end.

3. A pistol-grip comprising a grip-body and an attachment having upstanding ears that embrace the body, front and rear grip extensions carried by said ears and respectively constituting finger-engagiug and thumb-engaging projections, and means for securing the ears to the body.

4. A pistol-grip comprising a grip-body and an attachment comprising a base arranged to fit against the bottom of said grip-body, upstanding ears carried by the base and arranged to engage said grip-body, a forwardly and downwardly projecting finger-engaging extension disposed at substantially the juncture of the base and front ear, a rearwardly-extending projection located at substantially the juncture of the base and rear ear and constituting an abutment arranged to engage the ball of the thumb, and means for securing the attachment to the grip-body.

5. A pistol-grip comprising a grip-body and an attachment comprising a base and upstanding ears, said ears embracing the body and being secured thereto, and a rearward extension projecting from the rear ear and arranged to engage and abut against the ball of the thumb.

6. As an article of manufacture, a detachable extension-grip for revolvers, comprising an extension-piece adapted for application and securement to the back and lower end of an ordinary pistol-grip, said piece being provided with a rearwardly-extending lug at the rear lower corner thereof.

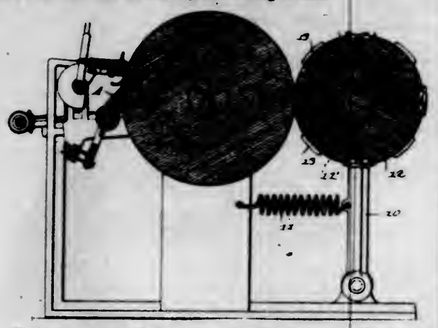
7. As an article of manufacture, an extension-grip for revolvers, comprising upstanding grip-embracing ears arranged to be connected to a revolver-grip, and a connection between the ears having depending hand-engaging means.

8. As an article of manufacture, a detachable extension-grip for revolvers, comprising spaced upstanding grip-embracing ears, and a connection between the ears having hand-engaging portions that are disposed at the front and rear junctures of the ears with the connection.

822,647. VENEER-CUTTING MACHINE. WILLIAM R. BRIGHT, Norfolk, Va. Filed May 16, 1905. Serial No. 260,806.

Claim.—1. In a veneer-cutting machine, a roller having cutting-knives projecting from its periphery and arranged to engage and cut into the surface of the log or block in advance of the veneer-cutting knife, the surface of the roll engaging said log or block and limiting

the depth of cut, and spring-pressed blocks arranged in recesses between the knives and serving by pressure against the surface of said log or block to prevent the removal of any of the wood as the knives are withdrawn, said blocks being pressed inward to the peripheral line of the roll when bearing against the log or block.



2. In a veneer-cutting machine, a roller having cutting-knives arranged to engage and cut into the surface of the log or block in advance of the veneer-cutting knives, the periphery of said roller being provided with recesses at points between the knives, blocks arranged in said recesses and serving to engage against the face of the log or block and prevent removal of any portions of the log or block as the knives are withdrawn, stems extending from said blocks, and springs engaging the stems and tending to force the latter outward until the blocks are beyond the periphery of said roller.

822,648. **HINGE.** JOHN R. CARTER, Augusta, Ky., assignor to Ernst H. Huenefeld, Cincinnati, Ohio. Filed Mar. 24, 1905. Serial No. 251,861.



Claim.—1. A hinge comprising two overlapping members, one of said members having an angular continuous guide-wall, said guide-wall comprising two straight portions contiguous at their inner ends, and means projecting from the other member to ride simultaneously on both portions of said angular guide-wall and cause the rear edge of the part to which the upper hinge member is secured to move forwardly over and substantially parallel to the part to which the lower member is secured when the upper hinge member is swung relatively to the lower hinge member.

2. A hinge comprising two overlapping members, one of said members having an angular continuous wall, said guide having two straight portions, one of said straight portions of the guide-wall disposed to lie substantially parallel with the edge of the part to which said member is secured, and means projecting from the other hinge member and disposed to ride simultaneously on both portions of the angular guide-wall when one hinge member is being raised, and cause the rear edge of the part to which one hinge member is secured to move forwardly in a line substantially parallel with the edge of the part to which the other hinge member is secured.

3. In a hinge, the combination with two members having overlapping portions, and one of said overlapping portions having an angular slot therein with straight guide-walls, two studs on the overlapping portion of the other member located in said angular slot to ride on the straight guide-walls thereof, said lugs being so spread apart that with either extreme position of the hinge one of said lugs or studs will be located in the angle of the slot whereby the upper member will have two bearings upon the lower member and the rear edge of the upper member will be caused to move forwardly in a line parallel with the edge of the body to which the lower member is secured when the upper member is raised.

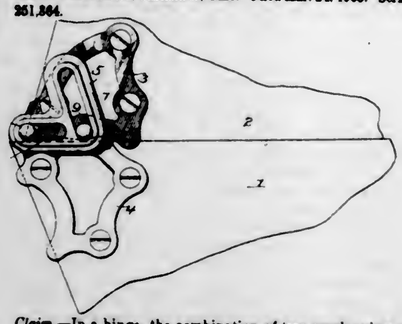
4. In a hinge, the combination of two members, one of said members having a slot or opening made with an entrance or exit at one end, and lugs or studs on the other member located in said slot throughout the entire hinge movement and adapted to be entered or removed through said entrance or exit.

5. In a hinge, the combination of two members, one of said members having an angular slot, one portion of said slot being approximately vertical and open at its upper end and studs or lugs on the other member located in said angular slot throughout the entire hinge movement and adapted to be entered or removed through the open end of said slot.

6. In a hinge, the combination of two members having overlapping portions, and one of said overlapping portions having an angular slot, a portion of said slot being approximately horizontal to lie parallel with the edge of the body to which the hinge member is secured and the other portion of said slot approximately vertical, and lugs or studs on the overlapping portion of the other member, both located in said slot throughout the entire hinge movement.

7. The combination with a body and a cover, of a hinge member secured to the body and having an angular slot, one portion of said slot being approximately horizontal and located at the upper edge of the body, another portion of said slot being approximately vertical and open at its upper end, a hinge member on the cover, and lugs or studs on said last-mentioned hinge member adapted to enter the angular slot through the open end thereof, whereby the cover can be removed or replaced without detaching either member of the hinge from the part to which it is secured.

822,649. **HINGE.** JOHN R. CARTER, Augusta, Ky., assignor to Ernst H. Huenefeld, Cincinnati, Ohio. Filed Mar. 24, 1905. Serial No. 251,864.



Claim.—In a hinge, the combination of two overlapping members one having a straight horizontal slot, and also a straight inclined slot, the lower end of the latter being in substantially the same horizontal plane as the lower side of the horizontal slot, and two studs on the other member adapted to engage said slots, substantially as set forth.

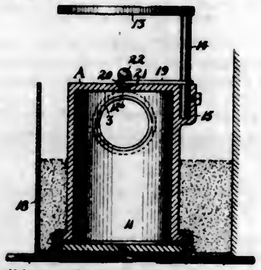
822,650. **OIL-BURNER.** CHARLES C. CLEVELAND, Kern, Cal. Filed May 10, 1905. Serial No. 259,749.

Claim.—1. In an oil-burner, the combination of a retort having a plurality of generator-tubes, extending radially therefrom and having closed outer ends, said retort having an oil-inlet at its bottom and a vapor-outlet at its top, a deflector disposed over said vapor-outlet, and a closure for the outlet said closure comprising a pivotally-mounted arm and a plug adapted to fit the vapor-outlet.

2. In an oil-burner, the combination of a retort having an oil-inlet at the bottom and a vapor-outlet at the top, a deflector-plate pivotally supported on the retort above the outlet, and a closure for said outlet said closure comprising a pivoted arm and a plug adapted to fit the outlet.

3. In an oil-burner, the combination of a retort having an oil-inlet at the bottom and a vapor-outlet at the top, a deflector supported over the outlet, and a closure for the outlet said closure comprising a pivoted and vertically-movable arm and a plug carried thereby and adapted to enter the outlet.

4. In an oil-burner, the combination of a retort having an oil-inlet and a vapor-outlet, and a closure for the outlet said closure comprising a pivoted horizontally-movable, vertically-slidable arm having a weighted plug adapted to close said outlet.



5. In an oil-burner the combination of a retort inclosing an oil-well, an oil-feed pipe delivering into the well, said retort having radiating generating chambers above the well and provided with closed outer ends, and said retort having, also, a plurality of vapor-outlets of different sizes, and closures for said outlets said closures comprising pivoted arms and plugs.

6. In an oil-burner, the combination of a retort having an oil-well, an oil-feed pipe delivering into the well, said retort having a plurality of outlets of variable diameters and radiating generator-chambers above the well and a pivoted closure controlling each of said outlets, and a hinged deflector carried by the retort and disposed over said vapor-outlet.

7. In an oil-burner, the combination of a retort having an oil-well, an oil-supply pipe entering the bottom of the well, a valved drain-pipe entering said oil-supply pipe, said retort having a plurality of vapor-outlets of different sizes, a pivoted closure movable over said outlets and separately controlling the same, radiating generator-chambers above the well, and a deflector arranged above said outlets.

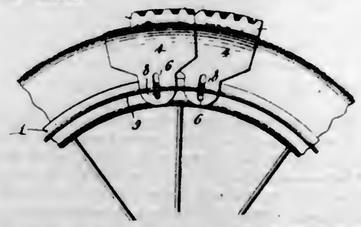
8. The combination of a generator having an oil-well and radiating-chambers above the well, an oil-supply pipe delivering into the well, a plurality of vapor-outlets of different sizes for the generator, pivoted closures controlling said outlets, a deflector over said outlets, and a protective plate spaced from and extending substantially the height of the generator and adapted to direct the draft away from the generator and prevent the latter being unduly cooled.

9. In an oil-burner, the combination of a generator having an oil-inlet and a plurality of vapor-outlets of different sizes with suitable vertically and horizontally movable closures for one or more of said outlets.

10. In an oil-burner, the combination of a generator having an oil-inlet and a plurality of vapor-outlets of different sizes with suitable vertically and horizontally movable closures for one or more of said outlets, and a deflector-plate arranged over said orifices.

11. In an oil-burner, the combination of a generator, having an oil-inlet and a plurality of vapor-outlets, a stem pivotally supported on the generator, a deflector-plate carried by said stem and movable over said orifices, and closures for the orifices carried by the stem, said closures comprising pivoted arms and a plug carried thereby adapted to fit the orifices.

822,651. **TIRE-ARMOR.** JOHN COAN, Kansas City, Mo., assignor of one-fifth to Roy W. Coan, Gravity, Iowa. Filed July 31, 1905. Serial No. 272,003.

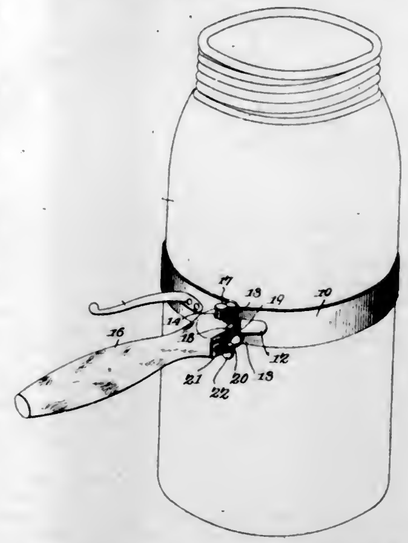


Claim.—1. An armor for tires of wheels, consisting of a series of independent overlapping sections, a tread-surface comprising obliquely-arranged corrugations arranged on each of said sections, and means whereby said sections are connected to the rim of the wheel to slide inwardly thereon, substantially as described.

2. An armor for the tires of wheels consisting of a series of independent overlapping segmental plates, slotted extensions formed on the ends of said plates, eyes or loops arranged on the rim of the wheels to engage the slots in said extensions, means to retain said slotted extensions of the armor-plates in engagement with said eyes or loops, and tread-surfaces arranged on the outer curved portion of said plates, substantially as described

3. An armor for the tires of wheels consisting of a series of independent overlapping segmental plates, slotted extensions formed on the ends of said plates, eyes or loops arranged on the rim of the wheels to engage the slots in said extensions, a locking rod or wire adapted to be passed through said eyes or loops to retain said slotted extensions of the plates in place and thickened serrated tread-surfaces formed on said plates, substantially as described.

822,652. **JAR-HOLDER.** GEORGE M. CORSET, Woodbury, N. J. Filed Nov. 7, 1905. Serial No. 286,260.



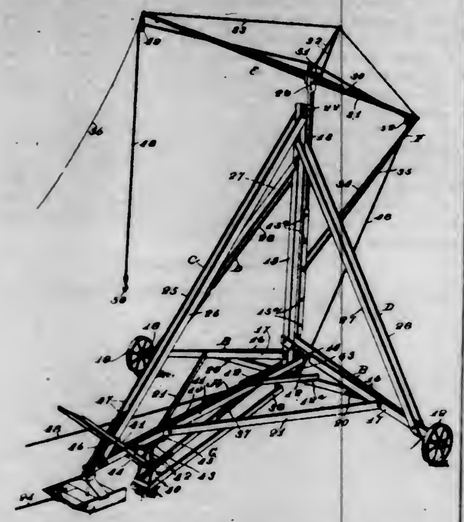
Claim.—1. A jar-holder comprising a flat imperforate flexible band having a large slotted end and a reduced slotted end, a lever fulcrumed upon the large end of the band and mounted to move within the slot therein, said lever having a cam-surface extending through said slot, a clamping device extending from the lever and through the slot in the small end of the band to adjustably secure the band upon the cam-surface of the lever, said small end of the band extending through the slot in the large end thereof.

2. A jar-holder comprising a flat imperforate flexible band having a large slotted end and a reduced slotted end, a lever fulcrumed upon the large end of the band and mounted to move within the slot therein, said lever having a cam-surface extending through said slot, a clamping device extending from the lever and through the slot in the small end of the band to adjustably secure the band upon the cam-surface of the lever, said small end of the band extending through the slot in the large end thereof, and an arm rigidly secured to the band adjacent its small end, the lever and arm adapted to be drawn together to contract the band.

822,653. **MACHINE FOR LOADING SHOCKS.** WILLIAM O. CRAWFORD, Beaver Creek, Minn. Filed Sept. 21, 1905. Serial No. 279,458.

Claim.—1. In a machine for loading shocks, a base structure, axles extending therefrom, supporting-wheels at the ends of the axles, and a supporting-shoe at the forward portion of the frame, an upright secured to the rear portion of the base, a mast mounted to revolve on the base, being guided by the upright, and a derrick-arm

mounted for rocking movement on the mast, the derrick-arm being provided with means to support a hoist-rope.



2. A machine for loading shocks, consisting of a base-frame, wheel-supported at its rear and having a forward central supporting-shoe, a mast mounted to turn on the said frame, a guide-support for the mast, a derrick-arm pivoted on the said mast, means for verally adjusting the said derrick-arm, and an anchoring device supported below the frame.

3. A machine for loading shocks, consisting of a base-frame, wheel-supported at its rear and having a forward central supporting-shoe, a mast mounted to turn on the said frame, a guide-support for the mast, a derrick-arm pivoted on the said mast, adjusting-bars pivoted to the rear of the derrick-arm, being adjustably connected with the said mast, pulleys located at the ends of the derrick-arm, a guide-pulley located at the upper portion of the mast, a pulley located on the base, and a hoist-rope passed over said pulleys, for the purpose described

4. In a machine for loading shocks, a base structure, wheel-supported at its rear, a forward supporting-shoe connected to the base structure and located centrally with respect to the supporting-wheels, a mast mounted to turn on said base structure, a guide for the mast, a derrick-arm pivoted to the mast, an anchoring device located below the base structure of the machine and connected therewith, and means for raising and lowering the said anchoring device.

5. In a machine for loading shocks, a base structure, a mast mounted on the said structure, supporting-wheels located at each side of the base structure at the rear, a supporting-shoe located at the central front portion of the base structure, supports for the said mast, a derrick-arm pivotally mounted on the mast, adjusting devices for the said derrick-arm, an anchoring device located below the base structure, comprising side members hinged to the base structure, a blade extending down from the lower portion of the side members, a handle pivoted to the blade-carrying portion of the said device, adapted to raise and lower the blade of the device, links extending up from the pivotal portion of the handle, links extending from the handle above its lower portion, a pin connecting the said links, and a slotted yoke carried by the frame, in which the said pin has movement.

6. In a machine for loading shocks, a base structure, a mast mounted on said structure, supporting-wheels located at each side of the base structure at the rear, a supporting-shoe located at the front central portion of the base structure, supports for said mast, a derrick-arm pivotally mounted on the mast, adjusting devices for said derrick-arm, comprising side members hinged to the base structure, a blade extending down from the forward portion of the side members, a handle pivoted to the blade-carrying portion of said device, adapted to raise and lower the blade of the device, links extending up from the pivotal portion of the handle, links extending from the handle above its lower portion, a pin connecting said links, a slotted yoke carried by the frame, in which said pin has movement, a locking device for the handle of the anchoring device, pulleys carried by the derrick-arm and the frame, a hoist-rope carried over said pulleys to the forward portion of the frame, and a truss-brace for said derrick-arm, all combined for operation in the manner described.

822,654. **LOOSE-LEAF BINDER.** JAMES C. DAWSON, Webster Groves, Mo., assignor to Sieber & Trussell Manufacturing Company, a Corporation of Missouri. Filed May 24, 1905. Serial No. 261,966.



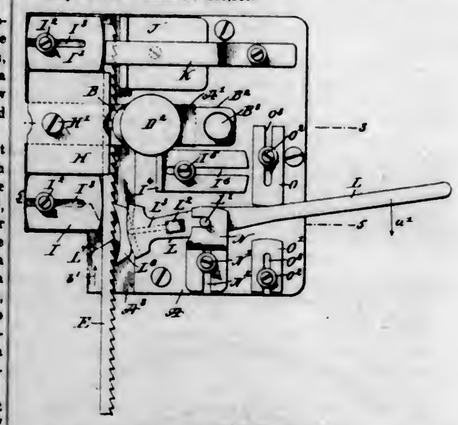
Claim.—1. In a loose-leaf binder, in combination, a back member; a pair of laterally-movable side members; a pair of levers independently pivoted to the back member and each slidingly engaging one of the side members; and a movable cross-head slidingly engaging the levers.

2. In a loose-leaf binder, in combination, a back member; a pair of laterally-movable side members; a pair of obliquely-slotted levers independently pivoted to the back member and each slidingly engaging one of the side members; and a movable cross-head in engagement with the lever-slots.

3. In a loose-leaf binder, in combination, a back member; a pair of laterally-movable side members; a pair of levers independently pivoted to the back member and each slidingly engaging one of the side members; a cross-head slidingly engaging the levers; and a rod journaled in the back member and in threaded engagement with the cross-head.

4. In a loose-leaf binder, in combination, a back member; a pair of laterally-movable side members; a pair of obliquely-slotted levers independently pivoted to the back member and each slidingly engaging one of the side members; a cross-head in engagement with the lever-slots; and a rod journaled in the back member and in threaded engagement with the cross-head.

822,655. **SAW-SET.** JAMES F. DORMAN, East Tallassee, Ala. Filed July 14, 1904. Serial No. 216,519.



Claim.—1. The combination in a saw-set, of a stationary bed-plate formed with a slot having opposite recessed bearings at the edges thereof, a stock having opposite trunnions loosely seated in said bearings, and provided with a rearwardly-extending offset, an anvil supported by the stock beneath the bed-plate, a spring-controlled plunger supported by the stock above the bed-plate, in alinement with the anvil, and means supported by said offset of the stock for adjusting the latter relatively to the bed-plate.

2. The combination in a saw-set, of a stationary bed-plate formed with a slot, a stock pivoted in the slot of the bed-plate, and provided with a rearwardly-extending offset, an anvil supported by the stock beneath the bed-plate, a spring-controlled plunger supported by the stock above the bed-plate, in alinement with the anvil, and a screw carried by said offset of the stock and engaging the bed-plate for adjusting the stock relatively to the bed-plate, said means also forming an abutment for the stock to the resistance offered by the teeth of the saw in the working operations of the plunger.

3. The combination in a saw-set, of a bed-plate, formed with a groove, a feed for the saw, comprising an operating-lever fulcrumed on the bed-plate, a rocking pawl for engaging the teeth of the saw, having its bearing against one side of the groove, and a yieldable rod connecting the lever with said pawl.

4. The combination in a saw-set, of a bed-plate provided with a groove, a feed for the saw, comprising an operating-lever fulcrumed on the bed-plate, and formed with an opening through the shorter arm thereof, a rocking pawl for engaging the teeth of the saw, having its bearing against one side of the groove, a slidable rod working on the under side of said arm, and a inverted-U-shaped spring extending upwardly from the lever with a member thereof working through said opening and in engagement with an end of said rod.

5. The combination in a saw-set, of a bed-plate formed with a groove, a feed for the saw, comprising an operating-lever fulcrumed on the bed-plate, provided with an opening through the shorter arm thereof, and having a longitudinal groove in the under side of said arm, a double pawl for engaging the teeth of the saw, provided with an offset having a rocking bearing against one side of said first-named groove, a movable rod working in the said longitudinal groove, and an inverted-U-shaped spring standing upwardly from the lever, with a member thereof working through said opening and in engagement with an end of the rod.

6. The combination in a saw-set, of a bed-plate having bearings, a stock loosely supported in said bearings, an anvil and a cooperating plunger supported by the stock, and adjusting means for the stock, forming an abutment therefor to the resistance offered by the teeth of the saw in the working operations of the plunger.

7. In a saw-set, a bed-plate, a lever fulcrumed on the bed-plate, a pawl mounted to rock and slide laterally on the bed-plate, and means carried by the lever for yieldingly engaging the pawl intermediate of its ends to slide and rock the same.

8. In a saw-set, a bed-plate, a lever fulcrumed on the bed-plate, a double pawl mounted to rock and slide laterally on the bed-plate, and means carried by the lever for yieldingly engaging the pawl intermediate of its ends to slide and rock the same.

9. In a saw-set, a grooved bed-plate, a pawl mounted to rock and slide laterally in the groove of the bed-plate, a lever fulcrumed on the bed-plate and having its inner end projecting partly over the pawl, and a spring-pressed member carried by the lever and engaging the pawl to slide and rock the same.

10. In a saw-set, a grooved bed-plate, a double pawl in the groove of the bed-plate and having a central offset on its front face and a notch in its rear face, a lever pivoted to the bed-plate and having its inner end projecting partly over the pawl, and a spring-pressed rod carried by the lever and having its forward end engaging the notch of the pawl.

822,656. **GRINDING OR POLISHING MACHINE.** JOHN T. DUFF, Pittsburg, Pa., assignor of one-half to Joseph McNaugher, Allegheny, Pa. Filed June 24, 1905. Serial No. 266,699.

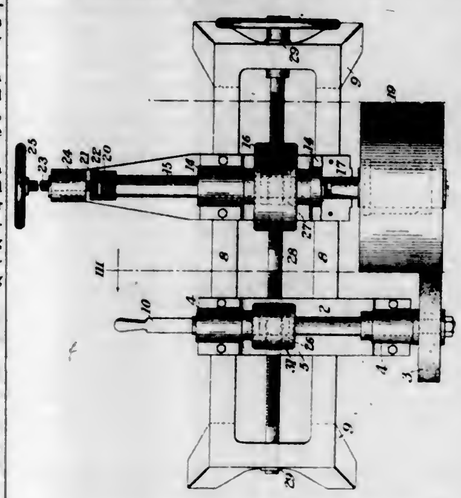
Claim.—1. In a rim grinding or polishing machine, a rotary rim-carrying shaft, a rotary grinding or polishing wheel, and means for moving one of said parts endwise and angularly relative to the other to bring the grinding-wheel into contact with the different parts of the rim-face; substantially as described.

2. In a rim grinding or polishing machine, a shaft having a grinding-wheel, a shaft arranged to carry the rim or pulley, and means for adjusting both shafts toward or from each other to provide for pulleys of different sizes; substantially as described.

3. In a rim grinding or polishing machine, a shaft carrying a grinding-wheel. a shaft arranged to support the pulley or rim, and means for turning the support for the grinding-shaft bearings to different angular positions; substantially as described.

4. In a rim grinding or polishing machine, a shaft having a grinding-wheel, a shaft substantially parallel thereto to carry the pulley to be drawn, means for adjusting one shaft endwise and angularly relative to the other, and means for adjusting at least one of said shafts toward and from each other; substantially as described.

5. In a rim grinding or polishing machine, a grinding-wheel, a shaft arranged to carry the pulley to be ground, means for rotating both the wheel and the shaft, and means for effecting a simultaneous adjustment of said wheel and shaft toward and away from each other; substantially as described.



6. In a rim grinding or polishing machine, a shaft carrying a grinding-wheel, a turret-carrier for said shaft, and a slide supporting the turret-carrier; substantially as described.

7. In a rim grinding or polishing machine, an endwise-movable shaft arranged to carry the pulley to be ground, a friction-plate at the end of said shaft and an adjusting device bearing against said friction-plate; substantially as described.

8. In a rim grinding or polishing machine, a bed-frame, a pair of slides movable along said frame, means for simultaneously adjusting said slides toward and from each other, a grinding or polishing disk having a shaft mounted on one of the slides, a pulley-supporting shaft mounted on the other slide, and means for adjusting one of said shafts endwise to bring the different parts of the pulley-face in contact with the grinding or polishing disk; substantially as described.

9. In a rim grinding or polishing machine, a grinding-wheel shaft, a shaft arranged to carry the pulley to be ground, movable bearings for both shafts, and a double-threaded adjusting-screw for actuating said movable bearings whereby the two shafts may be simultaneously moved toward and away from each other; substantially as described.

10. In a rim grinding or polishing machine, the combination with an endwise-movable shaft arranged to carry the pulley to be ground; of a grinding-wheel carrying-shaft and a rotary support for said shaft; substantially as described.

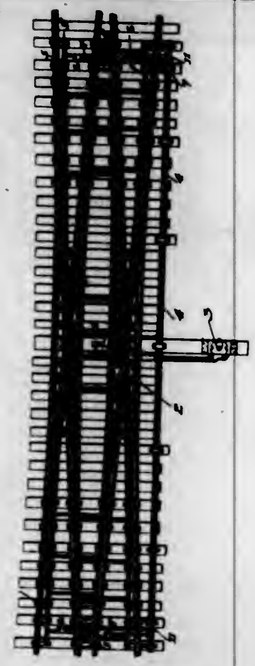
822,657. **OPERATING DEVICE FOR SLIP-SWITCHES.** LOUIS DUNN, St. Paul, Minn., assignor of one-half to Joseph Strawborn, St. Paul, Minn. Filed Dec. 4, 1905. Serial No. 290,064.

Claim.—1. The combination with a slip-switch, of a rocker-shaft, a bolt vertically adjustable in said shaft, and operative connections provided between said bolt and the switch-points, the wear and lost motion in the joints of said operative connections being taken up by the vertical adjustment of said bolt without lessening the travel of the switch-points, substantially as described.

2. The combination with a slip-switch, of a rocker-shaft having operative connections with a switch-stand, a rod connected with said switch-points, and means connecting said rod with said rocker-shaft and whereby the wear or lost motion in the joints of said rod may be taken up without lessening the throw or travel of the switch-points.

3. The combination with a slip-switch, of a rocker-shaft having a hole therein, an eye-bolt having a threaded shank loosely fitting in said hole, and lock-nuts on said shank above and below said shaft, whereby said bolt can be adjusted vertically, and operative connections provided between said eyebolt and the switch-points, substantially as described.

822,657.

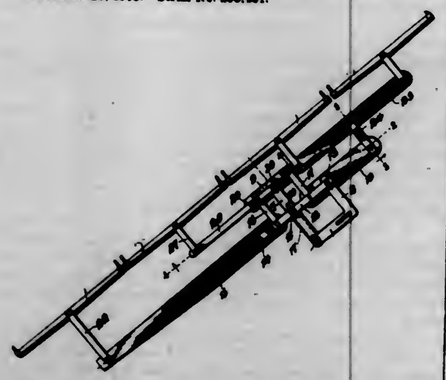


822,658. SCAFFOLDING. JOHN EMBERSON, White Plains, N. Y. Filed Feb. 21, 1905. Serial No. 246,697.



Claim.—In a scaffolding, a supporting-bar having notches, the upper and lower walls of which are undercut, a hook, a loop attached to the hook for engaging the upper undercut wall of a notch, a bracket comprising horizontal and upright members, and loops on said members for engaging with lower undercut walls or notches.

822,659. DRAFT-EQUALIZER. WILLIAM S. EMERY, Peoria, Ill. Filed Dec. 27, 1905. Serial No. 293,461.



Claim.—1. In a draft-equalizer, the combination with a support, of levers projecting on opposite sides of the support, an evener-bar pivoted between its ends on the support in advance of the levers, connections between the levers and the end portions of the evener-bar and whiffletrees connected to the levers.

2. In a draft-equalizer, the combination with a support, of levers fulcrumed between their ends and projecting on opposite sides of the support, an evener-bar pivoted between its ends on the support in advance of the levers, link connections between the inner ends of the levers and the end portions of the evener-bar, and whiffletrees connected to the levers.

3. In a draft-equalizer, the combination with a supporting-frame including a forwardly-projecting arm, of an evener-bar pivoted between its ends to the front end of the arm, levers fulcrumed on the opposite sides of the arm and independently thereof, whiffletrees connected to the outer ends of the levers, and links connecting the inner ends of the levers and the end portions of the evener-bar.

4. In a draft-equalizer, the combination with a support, of an evener-bar mounted thereon, levers connected to the ends of the evener-bar, and a connection between the levers.

5. In a draft-equalizer, the combination with a support, of an evener-bar pivoted between its ends on the support, levers projecting on opposite sides of the support, connections between the levers and the evener-bar, and a connection between the levers extending across the support.

6. In a draft-equalizer, the combination with a supporting-frame including a forwardly-projecting bar, of an evener-bar pivoted upon said projecting bar, a fulcrum-bar extending across the forwardly-projecting bar at one side of the evener-bar, levers fulcrumed on said latter bar and located on opposite sides of the forwardly-projecting bar, and links connecting the inner ends of the levers and the ends of the evener-bar.

7. In a draft-equalizer, the combination with a support, of an evener mounted thereon, levers projecting on opposite sides of the support, connections between the levers and the evener, a connection between the levers extending across the support, and a device secured to said connection and to the support.

8. In a draft-equalizer, the combination with a support, of an evener mounted thereon, a fulcrum-bar extending across the support, levers connected to said bar and extending on opposite sides of the support, connections between the levers and the evener, and a link connecting the fulcrum-bar between its ends to the support.

9. In a draft-equalizer, the combination with a supporting-frame including a forwardly-projecting arm comprising spaced sections, of an evener-bar pivoted to and between the front ends of said sections, a fulcrum-bar comprising sections extending across the arm in rear of the evener-bar, links connecting the fulcrum-bar and supporting-frame, levers connected to said fulcrum-bar, and links connecting the inner ends of the levers and the evener-bar.

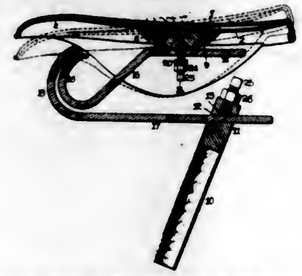
10. In a draft-equalizer, the combination with a supporting-frame having spaced forwardly-extending arms, of an evener pivoted between its ends to one of the arms, a lever pivoted between its ends on the other arm, another lever located on the opposite side of the arm carrying the evener, links connecting the inner ends of the levers and the ends of the evener, a fulcrum-bar connecting the latter lever and the arm on which the first-mentioned lever is pivoted, and links connecting the said bar and the supporting-frame.

11. In a draft-equalizer, the combination with a supporting-frame including forwardly-projecting arms, one of which is longer than the other, of an evener-bar pivoted between its ends on the front end of the longer arm, a lever pivoted between its ends on the front end of the shorter arm, a link connecting the inner end of said lever and the adjacent end of the evener-bar, a fulcrum-bar pivoted upon the shorter arm and having a link connection with the frame, said fulcrum-bar extending across the longer arm, a lever pivoted upon the free end of the fulcrum-bar, and a link connecting the inner end of said lever and the adjacent end of the evener-bar.

12. In a draft-equalizer, the combination with a supporting-frame including a forwardly-projecting arm, of an evener-bar pivoted between its ends upon the arm, levers fulcrumed in rear of the evener-bar, links connecting said levers and the evener-bar, whiffletrees connected to the levers, another lever connected to the evener-bar, and a whiffletree having a connection with the latter lever.

822,660. BICYCLE-SADDLE AND SPRING THEREFOR. CHARLES W. BERICK, North Tonawanda, N. Y. Filed June 24, 1905. Serial No. 266,713.

Claim.—1. In combination, a saddle, a seat-post, and a one-piece spring comprising an upper member which is fastened to the saddle and is in part straight and in part curved and a lower member which is fastened to the seat-post and is in part straight and in part curved, said upper and lower members normally extending in proximity and being joined by an abrupt bend, and being adapted to contact for an appreciable extent upon abnormal pressure.

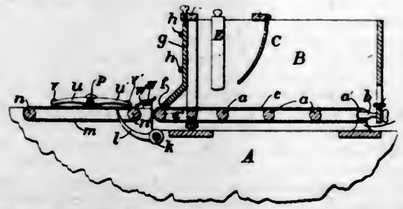


2. A spring formed from a single piece of spring metal and comprising an upper member having a straight rear part, a diagonally-extending intermediate part and a curved forward part, and a lower member having a straight rear part and the curved forward part normally extending beneath and in proximity to the curved part of the upper member to which it is joined by an abrupt bend.

3. The combination with a saddle having a rigid member provided with two parallel slots terminating in enlarged openings and seats on the side of the slots, of a support for said saddle and a bracket for securing said support to said saddle having vertical bars provided with inwardly-extending parts adapted to be fitted up through the enlarged openings, then moved in the slots to engage the inwardly-extending parts in the seats, substantially as set forth.

4. The combination with a saddle having a rigid member provided with two parallel slots terminating in enlarged openings and seats on the side of the slots and a metal block secured to the rigid member and having a rounded and serrated lower surface, of a support for said saddle having a portion provided with a serrated top surface and adapted to engage with the serrated surface of the block, and a bracket for securing said support to said saddle having vertical bars provided with inwardly-extending parts adapted to be fitted up through the enlarged openings, then moved in the slots to engage the inwardly-extending parts in the seats, substantially as set forth.

822,661. FEEDING MECHANISM FOR PRESSES AND THE LIKE. ANTHONY ESCHENBACH, Dayton, Ky. Filed Sept. 15, 1904 Serial No. 224,614.



Claim.—1. The feeding mechanism for presses and the like, comprising a receptacle with an opening in its forward lower end, said forward end being adjustable and inclined at its bottom, means for securing it in its adjusted position, rollers arranged in the plane of the receptacle-bottom, belts or tapes adapted to take about said rollers and pass along the bottom of said receptacle, and mechanism whereby the tension of said belts or tapes is regulated, in combination with mechanism normally held in the path of the paper fed from the receptacle and in advance thereof, and means for holding the paper in its horizontal path, substantially as shown and for the purpose described.

2. The feeding mechanism for presses and the like, comprising a receptacle with an opening in its forward lower end, said forward end being adjustable and inclining outward at its lower end, means for securing it in its adjusted position, rollers arranged in the bottom of said receptacle, belts or tapes adapted to take about said rollers, one of said rollers being adjustable, whereby the belts or tapes are kept under proper tension, mechanism against which the rear ends of the papers to be fed rest and whereby they are forced forward against the inclined lower part of said forward end, means normally held in the path of the papers fed, whereby they are alined, and mechanism for retaining the papers in their proper path, substantially as shown and described.

3. Feeding mechanism for presses and the like, comprising a receptacle with an opening in its forward lower end, said forward end being adjustable, means for securing it in its adjusted position, rollers arranged along the bottom of the receptacle, one of said rollers being adjustably mounted, belts or tapes taking about said rollers, gages slidably mounted on the receptacle whereby the papers are held in the desired path and against the forward end of the receptacle, mechanism normally held in the path of the papers fed from the receptacle whereby they are alined, and means for holding the papers down to their proper horizontal path, substantially as shown and described.

4. The feeding mechanism for presses and the like comprising a receptacle, mechanism arranged along its bottom, and adapted to receive motion from the power-shaft, the front end of the receptacle being adjustable to provide an opening at the lower forward end, means for securing said end in its adjusted position, mechanism adjustably secured to said feed-box whereby the papers to be fed are held against the lower front end of the receptacle, mechanism forward of the receptacle, to receive the papers fed therefrom, means arranged forward of said receptacle and normally in the path of the mechanism for receiving the papers fed, whereby the latter are temporarily retarded in their forward movement, and mechanism for removing the means from the path of the papers to permit their further movement, substantially as shown and in the manner described.

822,662. ICE-CREEPER. CHARLES FRISTER, Ardsley, N. Y. Filed Nov. 14, 1905. Serial No. 287,233.



Claim.—1. In an ice-creeper the combination with a base-plate having bearings, of a spring-blade secured thereto and toothed at one end, and a rotary cam mounted in said bearings in said plate and arranged to actuate said blade.

2. In an ice-creeper the combination with a base-plate having bearings, of a spring-blade secured thereto at one end, the other end of said blade being turned at an angle and toothed, and a rotary cam mounted in said bearings in said plate and arranged to actuate said blade.

3. In an ice-creeper the combination with a base-plate adapted to be secured to the under side of the shoe-sole in front of the heel and having a right-angled portion arranged to rest against the heel and downwardly-turned ears in front of such right-angled portion and having bearings, of a spring-blade secured at one end to said base-plate and having a toothed portion working between said ears, and a rotary cam mounted in the bearings in said ears and arranged to actuate said blade.

4. In an ice-creeper the combination with a base-plate having bearings of a spring-blade secured thereto and toothed at one end and a rotary cam mounted in the bearings in said plate and having an operating finger-piece projecting beyond the plate and turned at substantially right angles to the main portion of the cam, whereby such operating portion lies closely against the shoe in all positions when the device is in use.

822,663. SEAMLESS HOSIERY. GEORGE H. GILBERT, Germantown, Pa., assignor to The Kilbourn Knitting Machine Company, New Brunswick, N. J. Filed June 7, 1901. Serial No. 63,623.

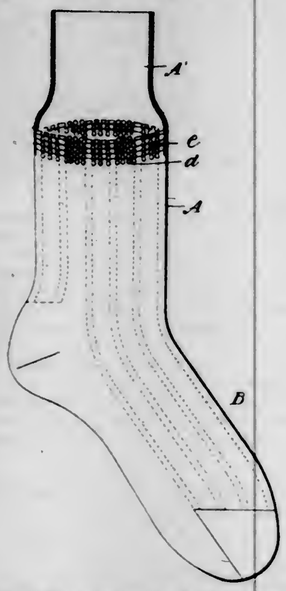
Claim.—1. A machine-knit seamless stocking knit in one continuous operation having the back and front of the leg of the stocking provided with open-work having drop-stitches therein, substantially as described.

2. A machine-knit seamless stocking having the back and front of the leg of the stocking provided with open-work, the heel, bottom of the foot and toe of the stocking being composed of solid plain knitting and the thread or threads of the foot portion of the stocking being continuous with the thread or threads of the leg, substantially as described.

3. A machine-knit seamless stocking knit in one continuous operation, having the back and front of the leg of the stocking provided with open-work forming part of the web of the stocking, substantially as described.

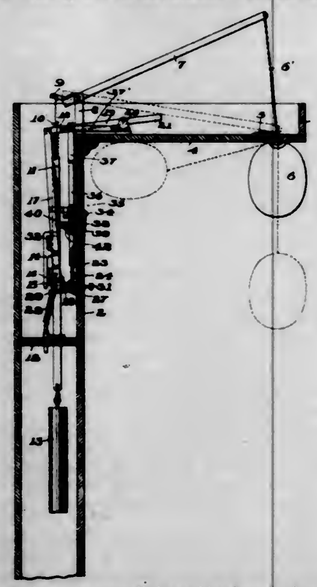
4. A machine-knit seamless stocking having the back as well as the front of the leg of the stocking ornamented with open-work forming a part of the web of the stocking, the open-work on the front of

the stocking extending down upon the top of the ankle and foot of the stocking, substantially as described.



5. A machine-knit seamless stocking knit in one continuous operation, having the back and front of the leg of the stocking ornamented with open-work forming a part of the web of the stocking, the open-work on the front extending down upon the top of the ankle and the foot of the stocking, substantially as described.

822,664. COIN-CONTROLLED PUNCHING-BAG. ROBERT H. HARTLEY, Pittsburg, Pa. Filed Feb. 3, 1906. Serial No. 300,964.



Claim.—1. In a coin-controlled punching-bag, a release device controlled by a coin and arranged to automatically lower the bag; substantially as described.

2. A coin-controlled punching-bag having a supporting connection therefor, an automatic return mechanism for the bag, connections for said return mechanism arranged to be actuated by a strain upon the supporting connection, and a bag-release device controlled by a coin; substantially as described.

3. In a coin-controlled punching-bag apparatus, a punching-bag adapted to descend into striking position by gravity, means for holding said bag normally in raised position, coin-controlled means for permitting said bag to descend to striking position, and means controlled by the movement of the bag when struck for raising the bag to inoperative position; substantially as described.

4. In coin-controlled punching-bag apparatus, mechanism controlled by a coin for permitting automatic lowering of the bag, and mechanism actuated by the movement of the bag when struck for raising the bag to inoperative position; substantially as described.

5. A coin-controlled punching-bag having a device arranged to normally hold the bag in raised position, and a coin-controlled release device arranged to automatically lower the bag; substantially as described.

822,665. AUTOMOBILE-WHEEL. JOHN C. HIGDON, St. Louis, Mo. Filed Sept. 23, 1905. Serial No. 279,839.



Claim.—1. In an automobile, a hub-clamp in the form of a flaring socket clamped upon the inner end of a vehicle-hub independently of the wheel-spokes, and a toothed wheel carried by said socket; substantially as specified.

2. In an automobile, a toothed wheel having an outwardly-flaring socket on one of its sides for engaging the hub of a vehicle-wheel, and means for clamping the same upon said hub; substantially as specified.

3. In an automobile, a toothed wheel having an outwardly-flaring socket on one of its sides for engaging the hub of a vehicle-wheel, and radial screws, or bolts, for clamping the same upon said hub independently of the wheel-spokes; substantially as specified.

4. In an automobile, the combination with a vehicle-wheel having a metallic hub, in the periphery of which are formed restricted holes, or openings, of a toothed wheel having at one side an outwardly-flaring clamping-socket, and screws threaded through said socket and engaging the said restricted openings in the said hub; substantially as specified.

5. In an automobile, the combination with a vehicle-wheel having a metallic hub, in the periphery of which are formed restricted holes, or openings, of a toothed wheel having at one side an outwardly-flaring clamping-socket, screws threaded through said socket and engaging the said restricted openings in the said hub, a detachable ring carrying the teeth of said gear-wheel detachably rabbeted to the body, and bolts, or rivets, passing through the overlapping rabbeted parts; substantially as specified.

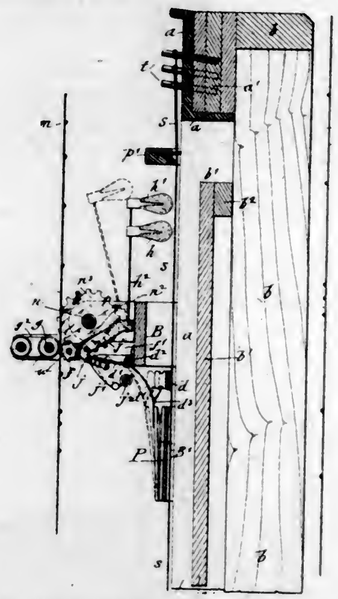
822,666. MECHANICAL MUSICAL INSTRUMENT. WILLIAM H. HOSCHKE, New York, N. Y., assignor of one-half to The Pianova Company, New York, N. Y., a Corporation of New Jersey. Filed May 1, 1905. Serial No. 258,283.

Claim.—1. In a mechanical musical instrument, the combination, with the string elements, of a group of hammers for each element, the hammers in each group having a common axis of movement and being alined with the string element actuated by said hammers.

2. In a mechanical musical instrument, the combination, with the string elements, of hammers for actuating said elements, said hammers being arranged in groups, one group for each element, and having a common axis of movement, and means for simultaneously actuating the hammers of each group.

3. In a mechanical musical instrument, in combination with strings, hammers for actuating the same arranged in groups, one group for each string, the hammers in each group having a common pivot but being independently operable.

4. In an instrument of the class described, a plurality of strings, a group of hammers for each string, all of the hammers having a common pivot, and means for simultaneously or independently actuating the hammers in each group.



5. In a musical instrument, in combination, a plurality of strings, and a group of hammers for each string, the hammers in each group having a common axis of movement.

6. In a musical instrument such as described, the combination of the strings, the hammers arranged in transverse rows and in groups made up of hammers in alinement longitudinally with respect to the strings, all of said hammers having a common pivot, and the means for actuating hammers in each row simultaneously with or independently of the hammers in the other row.

7. The combination, with the strings, of hammers arranged in transversely-disposed rows and in groups made up from hammers in both rows, the hammers in each group having a common axis of movement, and hammer-actuating means.

8. In a musical instrument, the combination, with the dampers, of suction-operated means for retarding the return movement thereof.

9. In a musical instrument, the combination with the dampers, of suction-operated retarding means in operative connection with each of the same.

10. The combination, with the dampers and damper-shanks, of suction-operated retarding means attached to said damper-shanks.

11. In a musical instrument, the combination, with the dampers and damper-shanks, of pneumatics attached to said damper-shanks.

12. In a musical instrument, the combination, with the strings, of a row of dampers extending transversely across the same, a bridge also extending transversely of said strings, and pneumatics mounted on said bridge and having their movable members attached to said dampers.

13. In a musical instrument, the combination of the strings, a bridge extending across the same, elbow-shaped hammer-butts pivoted upon said bridge, means for actuating said hammer-butts, a second bridge below the first, dampers mounted on said second bridge, and damper-levers pivoted on the first bridge and attached at one end to the damper-shanks, the opposite end of said levers engaging the lower legs of said hammer-butts.

14. In a mechanical musical instrument, the combination of a plurality of strings, a group of dampers having a common axis of movement, a damper-lever for each damper, rotary actuating devices, pivoted hammer-butts engaged by said actuating devices and in operative connection with said dampers, and a pneumatic connected with each damper-lever for retarding the return movement of the dampers.

822,667. BROOM. CHARLES E. HUXLEY, Chicago, Ill., assignor to Henry J. Solon, Chicago, Ill. Filed Feb. 29, 1904. Renewed Apr. 6, 1906. Serial No. 310,265.



Claim.—1. A broom comprising a polygonal-shaped broom-body having a plurality of straight margins constituting the active or sweeping faces of the broom, and a handle connected with the broom-body in a manner permitting said body to rotate freely on the handle.

2. A broom comprising a polygonal-shaped body having a plurality of straight margins comprising the active or sweeping faces of the broom, and a handle provided at its lower end with a fork, the arms of which extend on opposite sides of the broom, and a shaft extending loosely through the broom-body and connected with the fork-arms.

3. A broom comprising a polygonal-shaped, continuous web-body made of fibrous material and having a plurality of straight margins constituting the sweeping-faces of the broom, and a handle provided at its lower end with a shaft upon which said body is freely rotatable.

4. A broom comprising a polygonal-shaped, continuous web-body made of fibrous material and having a plurality of straight sides constituting the sweeping-faces of the broom, and a handle provided with fork-arms which extend on opposite sides of the web and are provided with a shaft extending transversely through the web, and metal bearing-plates attached to the sides of the broom through which said shafts extend and provided with bearing-surfaces for said shafts.

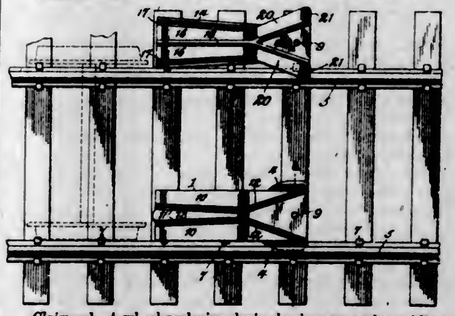
5. A broom comprising a flat triangular-shaped body and a handle, the latter comprising a shank and fork-arms, said fork-arms extending on opposite sides of the body and provided at their lower ends with a shaft which extends transversely through the body and upon which the body is freely rotative.

822,668. RIFLE WITH HINGED OR TILTING BARREL. FRANZ JÄGER, Suhl, Germany. Filed Sept. 16, 1905. Serial No. 278,762.



Claim.—In a firearm, the combination with the breech-frame having integral laterally-projecting trunnions, of a barrel having two spaced hinge-lugs adapted to be engaged with said trunnions.

822,669. CAR-REPLACER. SIMON C. JOHNSON and GEORGE H. MILLER, De Kalb, Ill. Filed Nov. 23, 1905. Serial No. 288,756.



Claim.—1. A wheel-replacing device having means for guiding a wheel and provided at its lower face with a spike-receiving recess consisting of an inner enlarged portion and a narrow entrance portion, said spike-receiving recess having a top wall and adapted to

enable the device to be interlocked with a spike of a rail, and means carried by the device for engaging the head of a rail.

2. A wheel-replacing device having means for guiding a wheel and provided with an L-shaped spike-receiving recess consisting of a narrow laterally-extending branch, and an enlarged inner portion extending rearward from the branch.

3. A wheel-replacing device having guiding means and provided at its lower face with a spike-receiving recess consisting of an inner narrow entrance portion or branch extending laterally of the said device, and an enlarged inner portion of a size to receive the head of the spike and to permit the device to be moved along the rail to carry the narrow entrance branch away from the head of the spike, and a flange projecting laterally from the wheel-replacing device and engaging the head of the rail, whereby the wheel-replacing device is maintained in engagement with the spike.

4. A wheel-replacing device having guiding means and provided in its lower face with a spike-receiving recess having a top wall, and a flange projecting from the side of the device in position to extend between the head and bottom flange of a rail and engaging the said head to hold the device against upward movement, whereby the said device is retained in engagement with a spike and is prevented from tipping.

5. A reversible wheel-replacing device provided at opposite sides with laterally-projecting longitudinally-disposed rail-engaging flanges having tapered inner or rear portions, said flanges being also tapered in thickness.

6. A wheel-replacing device having its upper face inclined at the rear portion and provided with a central substantially Y-shaped guide and having grooves at opposite sides thereof.

7. A wheel-replacing device having its upper face inclined at the rear portion and provided with opposite wheel-receiving grooves, said wheel-receiving grooves having substantially parallel rear portions and forwardly-diverging front portions and forming an intervening substantially Y-shaped guide.

8. A wheel-replacing device provided with spaced coöperating guiding means arranged to engage a car-wheel at both the flange and body portion of the wheel, the intervening space between the guiding means forming a tread and receiving the tread or face of the wheel.

9. A wheel-replacing device having a wheel-receiving groove terminating at its inner end at an intermediate point on the wheel-replacing device, the latter being also provided with a lateral extension arranged to rest upon and extending substantially across the tread of a rail, and provided with an angularly-disposed guiding edge extending from the said groove to a point beyond the adjacent side of the rail.

10. A wheel-replacing device having a central raised substantially Y-shaped guide for engaging the body of a car-wheel and provided at the outer side of the raised guide with threads to receive the face of a car-wheel, said wheel-replacing device being enlarged at the front portion to form laterally-extending tapering wings having angularly-disposed guiding edges for engaging the flange of a wheel.

11. A wheel-replacing device having a central raised substantially Y-shaped guide for engaging the body of a car-wheel and provided at the outer sides of the raised guide with treads to receive the face of a car-wheel, said wheel-replacing device being provided at its rear portion with opposite flange-receiving grooves and having its front portion enlarged to form laterally-extending tapering wings which have angularly-disposed guiding edges extending from the front or inner ends of the grooves.

12. A wheel-replacing device provided with a central substantially Y-shaped guide consisting of a projecting rib having forwardly-diverging front portions, said guide being also provided at its rear portion with flange-receiving grooves and having its front portion enlarged to provide tapering wings.

13. A wheel-replacing device provided with projections on its under face and having an L-shaped spike-receiving recess which interlocks with the head of the spike.

14. A wheel-replacing device having a substantially Y-shaped guide provided in its upper face, and a wing arranged to rest upon the tread of a rail, and forming a guide and a tread.

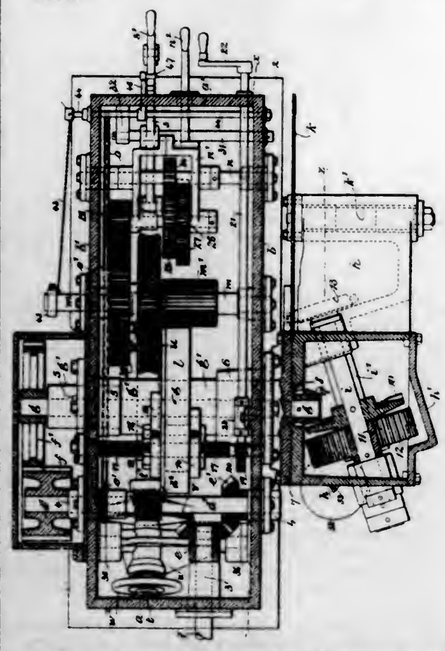
15. A wheel-replacing device having a raised longitudinally-disposed substantially Y-shaped guide, and a guide-groove at one side of the guide.

16. A wheel-replacing device provided in its upper face with a longitudinally-disposed substantially Y-shaped guide consisting of a raised rib having diverging arms or portions, a tapered wing at that end of the device which has the diverging arms or portions, and a longitudinal guide-groove arranged along a portion of the device and terminating at its front end at the point where the wing projects from the device.

17. A wheel-replacing device provided in its upper face with a longitudinally-disposed substantially Y-shaped guide consisting of a raised rib having diverging arms or portions, a tapered wing extended from the device at that end thereof which is provided with the diverging arms or portions, a groove arranged along one side of the device and terminating at its front end at the point where the wing commences to project from the device, the said wing being constructed so as to overlap the head of a rail, and a flange provided on the device below the wing to engage the rail beneath the head thereof.

18. A wheel-replacing device having a projecting tapered wing to rest upon the tread of a rail, and a laterally-projecting flange located below the wing and fitting in the space between the head of the rail and the bottom flange thereof, the wing and flange coöperating in the manner substantially described, and the space between the flange and the wing being open at the outer side to permit the device to be moved laterally into engagement with the rail.

822,670. **METAL-SAWING MACHINE.** CHARLES A. JUENGST, Croton Falls, N. Y., assignor to Higley Machine Company, Croton Falls, N. Y., a Corporation of New York. Filed Feb. 23, 1904. Serial No. 194,753.



Claim.—1. In a metal-sawing machine, the combination with the rotary saw, of devices for imparting cutting movement thereto, devices for supporting the saw and to which a swinging movement may be given, and means for imparting an axial longitudinal movement to said devices, means for moving the saw to and from the work, and devices for progressively feeding the saw during the period of work.

2. In a metal-sawing machine, the combination with the rotary saw, of devices for imparting cutting movement thereto, devices for supporting the saw and to which a swinging movement may be given, means for moving the latter devices to bring the saw to and from the work of such character as when released will permit the saw and frame to return to their initial position, devices for progressively feeding the saw during the work, and devices for holding the saw in a semi-elevated position between the action of the devices for raising the same and the devices for feeding the saw during the period of work.

3. In a metal-sawing machine and in combination, a saw and saw-carriage, feed-gearing for moving the carriage upward during the work, and a trip arranged to be controlled by an element of the feed-gearing to disconnect the gearing and permit the gravity return of the carriage and saw when the cut is finished.

4. In a metal-sawing machine, the combination with a saw and a carrier upon which the saw is mounted, of a sleeve movably mounted in bearings in the frame of the machine and to which the carrier is secured, a shaft passing through the sleeve, devices associated with the shaft and by which motion and power are communicated to the shaft, and devices interposed between the said shaft and the saw by which motion and power are transmitted from the shaft to the saw.

5. In a metal-sawing machine, the combination with a saw and a carrier upon which the saw is mounted, of a sleeve in bearings in the frame of the machine and to which the carrier is secured, a shaft passing through the sleeve, devices associated with the shaft and by which motion and power are communicated to the shaft, devices interposed between the said shaft and the saw by which motion and power are transmitted from the shaft to the saw, and devices for moving the sleeve and the shaft longitudinally so as to bring the saw in the right position relatively to the work.

6. In a metal-sawing machine, the combination with a saw and a carrier upon which the saw is mounted, of a sleeve in bearings in the frame of the machine and to which the carrier is secured with the saw at one side of the carrier-pivot, a shaft passing through the sleeve, devices associated with the shaft and by which motion and power are communicated to the shaft, devices interposed between the said shaft and the saw by which motion and power are transmitted from the shaft to the saw, devices for moving the sleeve and the shaft longitudinally, so as to bring the saw in the right position relatively to the work, and devices associated with the aforesaid devices for turning the sleeve and raising the saw and its carrier to the work or lowering the same to an initial position.

7. In a metal-sawing machine, the combination with a saw and a carrier upon which the saw is mounted, of a sleeve in bearings in the frame of the machine and to which the carrier is secured with the saw at one side of the carrier-pivot, a shaft passing through the sleeve, devices associated with the shaft and by which motion and power are communicated to the shaft, devices interposed between the said shaft and the saw by which motion and power are transmitted from the shaft to the saw, devices for moving the sleeve and the shaft longitudinally so as to bring the saw in the right position relatively to the work, and a group of devices coacting with the aforesaid devices during the running of the saw for progressively feeding the saw during the work.

8. In a metal-sawing machine, the combination with the rotary saw, devices for supporting the saw and to which a swinging movement may be given, of a swinging shaft, a gear on said shaft and other gears meshing therewith and extending to the swinging devices supporting the saw, and together forming separable devices for progressively feeding the saw during the period of work, means connected to and associated with part of the latter devices and regulatable in proportion to the predetermined length of the cut to be performed by the saw, and which means act at the end of the cut upon the other part of the latter devices to effect their separation and permit the saw to return to an initial position.

9. In a metal-sawing machine, the combination with the case or frame and the bearings 5, 6 having apertures of a different diameter, of an offset sleeve g' passing through the bearings and at its offset portion abutting against the bearing having the narrower aperture, a flange formed with the sleeve at one end, a carrier h secured to the sleeve at said flange, a saw and an arbor therefor mounted in the end of said carrier distant from said flange whereby the saw and its carrier are pivotally mounted, means for swinging said devices and other means for imparting a longitudinal movement thereto which coact with the aforesaid means.

10. In a metal-sawing machine, the combination with the case or frame and the bearings 5, 6 having apertures of a different diameter, of an offset sleeve g' passing through the bearings and at its offset portion abutting against the bearing having the narrower aperture, a flange formed with the sleeve at one end, a carrier h secured to the sleeve at said flange, a saw and an arbor therefor mounted in the end of said carrier distant from said flange whereby the saw and its carrier are pivotally mounted, a shaft passing through said longitudinally-movable sleeve, a gear on one end of the shaft and a bevel-pinion on the other end of said shaft, a long-faced gear with which the aforesaid gear is in mesh providing for the longitudinal movement of the sleeve, devices for imparting power and rotation to the long-faced gear, and devices located between the bevel-pinion and the saw for transmitting said rotation and power to the saw.

11. In a metal-sawing machine, the combination with the case or frame and the bearings 5, 6 having apertures of a different diameter, of an offset sleeve g' passing through the bearings and at its offset portion abutting against the bearing having the narrower aperture, a flange formed with the sleeve at one end, a carrier h secured to the sleeve at said flange, a saw and an arbor therefor mounted in the end of said carrier distant from said flange whereby the saw and its carrier are pivotally mounted, shafts i, i' in bearings in the saw-carrier, gears connecting said shafts, a sprocket on one of said shafts, the teeth of which engage driving-apertures in the saw, a bevel-gear on the other of said shafts, a shaft g running lengthwise through the longitudinally-movable sleeve, a bevel-pinion on one end of said shaft meshing with said bevel-gear, and means connecting with the opposite end of said shaft g for communicating rotation and power thereto.

12. In a metal-sawing machine, the combination with the case or frame and the bearings 5, 6 having apertures of a different diameter, of an offset sleeve g' passing through the bearings and at its offset portion abutting against the bearing having the narrower aperture, a flange formed with the sleeve at one end, a carrier h secured to the sleeve at said flange, a saw and an arbor therefor mounted in the end of said carrier distant from its flange whereby the saw and its carrier are pivotally mounted, shafts i, i' in bearings in the saw-carrier, gears connecting said shafts, a sprocket on one of said shafts, the teeth of which engage driving-apertures in the saw, a bevel-gear on the other of said shafts, a shaft g running lengthwise through the longitudinally-movable sleeve, a bevel-pinion on one end of said shaft meshing with said bevel-gear, shafts d, d' at right angles to one another in suitable bearings in the case of the machine, bevel-pinions connecting said shafts, a long-faced gear on the end of the shaft d' and a short-faced gear on the adjacent end of the shaft g for communicating power and rotation to the shaft g and the devices intermediate thereof and the saw and for providing for the relation of the said gears during a longitudinal movement of the said shaft g and sleeve g'.

13. In a metal-sawing machine, the combination with the saw, a carrier upon which the saw is revolubly mounted, a sleeve to which the carrier is connected and by which it is supported, and bearings for the sleeve in the case of the machine, of an oscillatory member l mounted upon the said sleeve and provided with a segment-slot, and means associated with the said member and operating through the segment-slot thereof for moving the sleeve longitudinally and the carrier and saw laterally.

14. In a metal-sawing machine, the combination with the saw, a carrier upon which the saw is revolubly mounted, a sleeve to which the carrier is connected and by which it is supported and bearings for the sleeve in the case of the machine, of a half-gear or wheel l mounted upon the said sleeve and provided with a segment-slot for about half of the circumference of the gear, means associated with the said gear and operating through the segment-slot thereof for moving the gear, the sleeve, the carrier and saw longitudinally, and other devices meshing and coacting with the said half-gear for turning the gear and the sleeve and raising and lowering the saw and its carrier.

15. In a metal-sawing machine, the combination with the saw, a carrier upon which the saw is revolubly mounted, a sleeve to which the carrier is connected and by which it is supported, and bearings for the sleeve in the case of the machine, of an oscillatory member l mounted upon the said sleeve and provided with a segment-slot, a nut in the segment-slot of said member, face-plates upon opposite sides of said member, and means for securing the same and said nut in a unitary relation, a threaded arbor in bearings in the case of the machine and passing operatively through the said nut and freely through the face-plates, a worm-wheel near one end of said arbor, a worm meshing therewith and a shaft upon which said worm is mounted, and a handle for turning the shaft and worm and operating the worm-wheel and the arbor for moving the member l and its sleeve longitudinally in the bearings of the case.

16. In a metal-sawing machine, the combination with the saw, a carrier upon which the saw is revolubly mounted, a sleeve to which the carrier is connected and by which it is supported, and bearings for the sleeve in the case of the machine, of a half-gear or wheel l mounted upon the said sleeve, a shaft n extending across in the bearings in the case of the machine, a broad-faced pinion m' on said shaft meshing with the teeth of the half-gear l, a gear-wheel 30 also on said shaft, a swinging frame n', a shaft therefor in bearings in the case of the machine, means for swinging said frame, a train of gears and shafts and arbors therefor carried by said frame, gears 28 and 29 on said arbors adapted respectively to be brought into mesh with the gear 30 as it may be desired to raise or lower the saw and its carrier, and means for imparting power and rotation to the shaft n.

17. In a metal-sawing machine, the combination with the saw, a carrier upon which the saw is revolubly mounted, a sleeve to which the carrier is connected and by which it is supported and bearings for the sleeve in the case of the machine, of a half-gear or wheel l mount-

ed upon said sleeve, a shaft *m* extending across in bearings in the case of the machine, a broad-faced pinion *m'* on said shaft meshing with the teeth of the half-gear *l*, a gear-wheel 30 also on said shaft, a swinging frame *n'*, a shaft therefor in bearings in the case of the machine, means for swinging said frame, a train of gears and shafts and arbors therefor carried by said frame, gears 28 and 29 on said arbors adapted respectively to be brought into mesh with the gear 30 as it may be desired to raise or lower the saw and its carrier, a sprocket on the shaft *n*, connected shafts *d*, and *d'* and a sprocket on the shaft *d'* and a chain extending over and between the respective sockets for imparting rotation and power to the shaft *n*.

18. In a metal-sawing machine, the combination with the saw, a carrier upon which the saw is revolubly mounted, a sleeve to which the carrier is connected and by which it is supported and bearings for the sleeve in the case of the machine, of a gear *l* mounted upon said sleeve, a shaft *m* in bearings in the case of the machine and means for rotating the shaft, a gear *m'* mounted on said shaft and meshing with the teeth of the gear *l*, the end of said shaft being prolonged beyond one side of the casing, a collar loosely mounted upon the end of the shaft *m* but adapted to be fixed in relation thereto, a chain, one end of which is connected to said collar, a shaft 44 passing through the casing of the machine, a crank-arm on an end of said shaft outside of the casing and to which the other end of said chain is connected, a crank-arm also on said shaft and projecting through one end of the casing, and a pin on the end of said crank-arm, means for holding the saw and its carrier when in a semi-elevated position, and which means are acted upon by the operation of said crank-arm for the release of the saw and its carrier whereby the same are permitted to return to an initial position.

19. In a metal-sawing machine, the combination with the saw, a carrier upon which the saw is revolubly mounted, a sleeve to which the carrier is connected and by which it is supported and bearings for the sleeve in the case of the machine, of a half-gear or wheel *l* mounted upon the said sleeve, a shaft *m* in bearings in the casing of the machine, a gear *m'* upon said shaft meshing with the teeth of the half-gear *l*, a worm-wheel *u* also mounted upon the shaft *m*, a worm *u'* meshing with the worm-wheel *u*, a sleeve on which said worm is mounted, a shaft on which the said sleeve is mounted, a worm-wheel loose on said shaft, a disk on said sleeve adapted to frictionally engage the face of said worm-wheel, a shaft *d'*, a worm d^2 thereon meshing with the aforesaid worm-wheel, and means for applying power and rotation to said parts to turn the sleeve and the carrier and feed the saw progressively to its work.

20. In a metal-sawing machine, the combination with the half-gear *l*, the saw and intermediate devices connected to and actuated by the half-gear, of a shaft *m*, a pinion *m'*, a worm-wheel *u*, a worm *u'*, a sleeve upon which the said worm is mounted, a shaft *t* passing through the sleeve, bearings for the shaft, a friction-disk t^3 on the opposite end of the sleeve to which the worm *u'* is connected, a worm-wheel *v* loose on the shaft and having a recess adapted to receive the friction-disk t^3, means for imparting rotation and power to the worm-wheel *v*, a collar 41 on the shaft, a helical spring between the collar and the end of the sleeve adapted to yield under excessive load to separate the surface of the friction-disk from the juxtaposed surface of the worm-wheel *v*, substantially as set forth.

21. In a metal-sawing machine, the combination with the half-gear *l*, the saw and intermediate devices connected to and actuated by the half-gear, of a shaft *m*, a pinion *m'*, a worm-wheel *u*, a worm *u'*, a sleeve upon which the said worm is mounted, a shaft *t* passing through the sleeve, bearings for the shaft at its respective ends, and means for pivotally mounting one of said bearings to the case of the machine, the other bearing being longitudinally movable on the shaft, a rocker-arm *s* and a pivot-shaft therefor, the lower end of said rocker-arm being pivotally mounted to the said movable bearing, a pin on said movable bearing, and means for engaging the pin, and other means connected to the opposite end of said rocker-arm for maintaining the same temporarily in a fixed position.

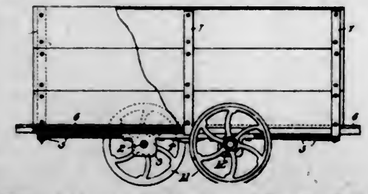
22. In a metal-sawing machine, the combination with the half-gear *l*, the saw and intermediate devices connected to and actuated by the half-gear, of a shaft *m*, a pinion *m'*, a worm-wheel *u*, a worm *u'*, a sleeve upon which the said worm is mounted, a shaft *t* passing through the sleeve, bearings for the shaft at its respective ends, and means for pivotally mounting one of said bearings to the case of the machine, the other bearing being longitudinally movable of the shaft, a rocker-arm *s* and a pivot-shaft therefor, the lower end of said rocker-arm being pivotally mounted to the said movable bearing, a pin on said movable bearing, means having an aperture adapted to receive the pin 33 and so to fix the position of the aforesaid shaft *t*, a bell-crank handle pivotally connected to the upper end of the rocker-arm so that a portion thereof is adaped to bear against the outer surface of the case of the machine, there being an aperture in the end of the case for the rocker-arm and also an aperture to receive a part of the bell-crank handle.

23. In a metal-sawing machine, the combination with the half-gear *l*, the saw and intermediate devices connected to and actuated by the half-gear, of a shaft *m*, a pinion *m'*, a worm-wheel *u*, a worm *u'*, a sleeve upon which the said worm is mounted, a shaft *t* passing through the sleeve, bearings for the shaft at its respective ends and means for pivotally mounting one of said bearings to the case of the machine, the other bearing being longitudinally movable of the shaft, a rocker-arm *s* and a pivot-shaft therefor, the lower end of said rocker-arm being pivotally mounted to the said movable bearing, a pin on said movable bearing, means having an aperture adapted to receive the pin 33, and so to fix the position of the aforesaid shaft *t*, a bell-crank handle pivotally connected to the upper end of the rocker-arm so that a portion thereof is adapted to bear against the outer surface of the case of the machine, there being an aperture in the end of the case for the rocker-arm and also an aperture to receive a part of the bell-crank handle, and means acting automatically at the end of the work and against the said bell-crank handle for disengaging its bearing against the case of the machine for the release of the rocker-arm, substantially as set forth.

24. In a metal-sawing machine, the combination with the saw, a carrier upon which the saw is revolubly mounted, a sleeve to which the carrier is connected and by which it is supported and bearings for the sleeve in the case of the machine, of a half-gear or wheel *l* mounted upon the said sleeve, a shaft *m*, a pinion *m'* thereon meshing with the teeth of the half-gear *l*, a gear-wheel 30 also upon the shaft *m*, a shaft *n*, a swinging U-shaped frame *n'* connected thereto, a handle for moving said frame, arbors *r*, *r'* mounted in said frame, a pinion on the shaft *n*, a gear and a pinion on the arbor *r*, a gear on the arbor *r'* meshing with the pinion of the arbor *r*, and said parts forming a train of gearing, gears 28, 29 on the arbors *r*, *r'* adapted respectively to be brought into mesh with the gear 30 on the shaft *m*, and means for communicating rotation and power to the shaft *n* and the several gears, substantially as set forth,

25. In a metal-sawing machine, the combination with the rotary saw, devices for supporting the saw and to which a swinging movement may be given, of a swinging shaft, a pivoted lever for moving the same, a gear on said shaft and other gears meshing therewith and extending to the swinging device supporting the saw, and together forming separable devices for progressively feeding the saw during the period of work.

822,671. **MINE-CAR.** WILLIAM W. KERVEN, Pittsburg, and CHARLES E. WARD, Banksville, Pa. Filed Nov. 23, 1905. Serial No. 288,676.



Claim.—1. A car part or member consisting of a sill adapted to extend longitudinally of a car-body and formed with a plurality of transverse journal-bearings and with oil-chambers beneath the bearings.

2. A car part or member consisting of a sill formed with depending oil-chambers, each chamber being open to admit a journal, and a bearing-surface in the upper portion of each chamber.

3. A car part or member consisting of a sill formed with depending oil-chambers, each chamber being open laterally for the admission of a journal, and a bearing in the upper portion of each chamber, said bearing being disposed transversely of the sill.

4. A car part or member consisting of a sill formed with depending oil-chambers, each chamber having journal-openings at opposite sides and a bearing-surface between and in line with the openings.

5. A car part or member consisting of a sill formed with a depending oil-chamber open laterally for the admission of a journal, a bearing-surface in the upper portion of the chamber and disposed transversely of the sill, the sill having a ring-admitting slot opening downwardly through the bearing and into the chamber.

6. The combination of a car-body, a pair of sills extending longitudinally of the car at opposite sides, oil-chambers depending from the sills, axle-bearings in the upper portions of the chambers, and axles journaled in the bearings.

7. The combination of a car-body, a pair of sills extending longitudinally of the car at opposite sides, oil-chambers depending from the sills and having axle-openings in their side walls, bearing-surfaces in the upper portions of the chambers, and axles extending through the openings and upon which the bearing-surfaces rest.

8. The combination of a car-body, sills shorter than the body and extending longitudinally thereof and secured thereto, braces extending from the sills to the car ends, alining bearings carried by the opposite sills, axles journaled in the bearings, and wheels.

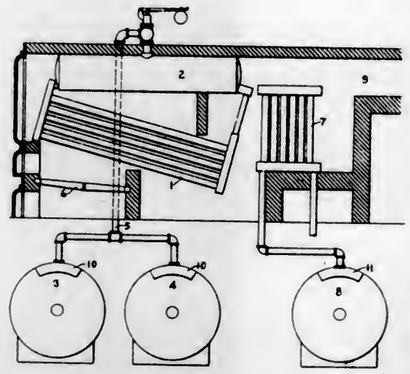
9. The combination of a car-body, a draw-bar extending longitudinally thereof, axle-mountings, and braces extending from said mountings to the draw-bar.

10. The combination of a car-body, sills extending longitudinally of the car at opposite sides thereof, axles mounted in the sills, a draw-bar extending longitudinally of the car, and braces extending from the sills to the draw-bar.

822,672. **PROCESS OF MAKING DIALKYLMALONYL UREAS.** GUSTAV KEIL, Höchst-on-the-Main, Germany, assignor to Farbwerke, vorm. Meister, Lucius & Brüning, Höchst-on-the-Main, Germany, a Corporation of Germany. Filed Dec. 22, 1905. Serial No. 292,915.

Claim.—The process herein described for the manufacture of dialkylmalonyl ureas, which consists in heating dialkylmalonylthio ureas with solutions of salts of heavy metals.

822,673. **GOVERNING MECHANISM FOR PRIME MOVERS.** HULDREICH KELLER, Berlin, Germany, assignor to General Electric Company, a Corporation of New York. Filed Feb. 1, 1905. Serial No. 243,692.



Claim.—1. In combination, a source of vapor energy, a prime mover receiving vapor therefrom, a second prime mover the supply of vapor to which is responsive to load changes on the first prime mover, and a governing mechanism for the prime mover, which increases the amount of vapor admitted thereto as the pressure of the source rises and decreases it as the pressure of the source falls.

2. In combination, a source of vapor-supply which is heated by a fluctuating source, a prime mover receiving energy therefrom, a governing mechanism which admits more vapor to the prime mover as the pressure of the source rises and cuts it off as it falls, and a separate means for controlling the speed thereof.

3. In combination, a source of vapor-supply which is heated by a fluctuating source, a prime mover receiving energy therefrom, one or more other prime movers, two or more of said prime movers being connected to a common load, and a governing mechanism for the first-mentioned prime mover which is responsive to pressure changes in the source of supply.

4. In combination, a source of vapor-supply the pressure of which tends to fluctuate, a prime mover receiving energy therefrom, a governing mechanism which holds the pressure of said source substantially constant by admitting more or less vapor to the prime mover, and a second prime mover which acts as a speed-governor for the first.

5. In combination, a source of vapor energy which tends to fluctuate, a turbine receiving energy therefrom, and a plurality of separately-actuated valves which open in a predetermined sequence as the pressure of the vapor source rises, and close as the pressure decreases.

6. In combination, a high-pressure source of vapor-supply, a turbine connected to said source, a secondary or low-pressure turbine the vapor-supply for which varies with the load on the high-pressure turbine, and a governing mechanism for the low-pressure turbine which governs the efficient admission of vapor thereto but does not govern its speed.

7. In combination, a prime mover, a source of vapor-supply, the pressure of which tends to fluctuate with changes in load of the prime mover, a turbine receiving vapor therefrom, a valve which governs the efficient admission of vapor to the turbine without regard to the speed, and a motor which is responsive to pressure changes in the source of vapor-supply for operating the valve.

8. In combination, a source of vapor-supply, the pressure of which tends to fluctuate, a turbine receiving vapor therefrom, valves which admit more or less vapor to the turbine but do not govern its speed, and means responsive to changes in the amount of heat supplied to the source for operating the valves in a predetermined sequence.

9. In combination, a source of vapor-supply, the pressure of which tends to fluctuate, a turbine receiving vapor therefrom, one or more turbines, generators driven by the turbines, which are connected together, and a governing mechanism for the first-mentioned turbine which governs the efficient admission of vapor thereto without governing its speed.

10. In combination, a primary vaporizer, a secondary vaporizer heated by the flue-gases from the first, a generator which carries the main load, a second generator connected in circuit with the first, a turbine for driving the second generator, which receives vapor from the secondary vaporizer, and a governing mechanism which responds to changes in pressure in the secondary vaporizer and admits more vapor to the turbine when the pressure increases and decreases it when the pressure falls.

11. In combination, a source of vapor-supply, a high-pressure prime mover, a secondary or low-pressure turbine, and a governing mechanism for admitting fluid to the low-pressure turbine which increases and decreases the ported area thereof as the pressure of the fluid delivered thereto varies.

12. In combination, a prime mover, a vaporizer in which the pressure tends to fluctuate as the load of the prime mover fluctuates, a prime mover receiving energy therefrom, and successively-operating valves which are sensitive to pressure changes in the vaporizer for increasing or decreasing the admission of vapor to the prime mover.

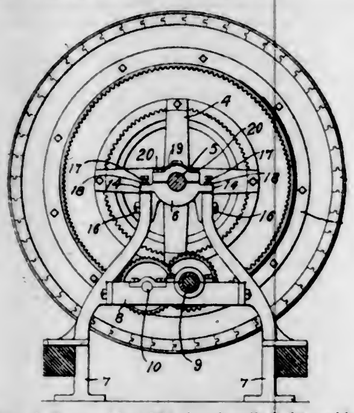
13. In combination, a prime mover having a suitable governing mechanism, a second prime mover adapted to receive energy from a source fluctuating with the load on the first, electric generators driven by the prime movers, and electrical connections extending between the generators for causing them to operate at predetermined speeds.

14. In combination, a prime mover having a suitable governing mechanism for regulating its speed, a second prime mover adapted to receive energy from a fluctuating source of supply, a governing mechanism for the second prime mover which governs the efficient admission of vapor thereto without governing the speed, electric generators driven by the prime movers, and a means connecting the generators in a manner to preserve predetermined speed relation of the prime movers and generators.

15. In combination, a secondary or low-pressure prime mover adapted to receive vapor energy from a fluctuating source of supply, independent fluid-admitting devices for the prime mover, with a governing mechanism which increases the amount of vapor energy admitted to the prime mover by opening said devices one after the other when the pressure of the source of supply rises and decreases the amount of energy admitted when the pressure of the source falls, by closing the devices one after the other.

16. In combination, a prime mover adapted to receive vapor energy from a fluctuating source of supply, with a governing mechanism comprising a plurality of independent and successively-operated valves which open one after the other and admit fluid to the prime mover as the pressure of the source rises, and close one after the other to decrease the amount of fluid admitted to the prime mover as the pressure of the source falls.

822,674. COMBINED CHURN AND BUTTER-WORKER. FRANK LA BARE and THOMAS J. HOWE, Owatonna, Minn., assignors to Owatonna Manufacturing Co., Owatonna, Minn., a Corporation of Minnesota. Filed Aug. 12, 1905. Serial No. 273,895.



Claim.—1. In a machine of the class described, the combination, with a drum and a ring-gear arranged thereon, of suitable supporting-legs, a bridge-tree secured to said legs, a driving-shaft supported upon said bridge-tree and provided with a pinion engaging the ring-gear on the drum, an adjustable bearing-block supported upon said legs, and a shaft or gudgeon secured to the end of the drum and supported in said bearing-block, for the purpose set forth.

2. The combination, in a machine of the class described, with the churn-drum provided with a central gudgeon, and a ring-gear on the end of said drum, of suitable supporting-legs, a bridge-tree secured to said legs, a driving-shaft supported upon said bridge-tree and provided with a pinion engaging said ring-gear, a bearing-block arranged upon said legs and provided with webs projecting between the same, means for adjustably securing said block to said legs and means for raising or lowering said block, substantially as described.

3. The combination, in a machine of the class described, with the drum provided with a central gudgeon and a ring-gear on the end of said drum, of the supporting-legs 7, the bearing-block 6, in which the drum-gudgeon is mounted, provided with the webs 13 and flanges 14, engaging said legs 7, suitable adjusting and locking screws for said bearing-block, a bridge-tree secured to said legs, and a driving-shaft supported on said bridge-tree and provided with a pinion engaging said ring-gear, substantially as described.

4. In a machine, of the class described, the combination, with the drum provided with a central gudgeon and a ring-gear on the end of said drum, of the supporting-legs 7 and bridge-tree 8 secured to said legs, a driving-shaft supported upon said bridge-tree provided with a pinion engaging said ring-gear and bearing-block 6, supporting the central gudgeon of the drum and provided with the webs 13 extending downwardly between the legs 7, and the bolts 15 extending through slots in said webs and locking said webs to said legs, substantially as described.

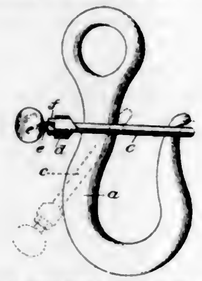
5. The combination, in a machine of the class described, with the churn-drum provided with the central gudgeon, and a ring-gear on the end of said drum, of the legs 7, a bridge-tree secured to said legs, a driving-shaft supported on said bridge-tree and provided with a pinion engaging said ring-gear, the bearing-block 6 in which the central gudgeon of the drum is mounted, provided with the webs 13 extending downward between said legs, and the flanges 14 extending over the tops of said legs, the locking-bolts engaging said webs, and adjusting-screws arranged in said flanges, substantially as described.

822,675. HOOK-LOCK. FRANK LILIGER, St. Joseph, Mo. Filed July 13, 1905. Serial No. 269,490.

Claim.—1. A hook-lock comprising a link adapted to inclose the shank and bill of the hook, and a screw operating in a nut in one end of the link, said screw being adapted to engage the hook and bind the link firmly against the same.

2. A hook-lock comprising a link adapted to embrace the shank and bill of the hook, a nut integral with one end of the link, and a screw operating in the nut and adapted to engage the hook.

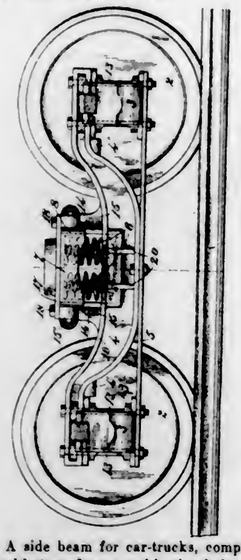
3. A hook-lock comprising a link adapted to inclose the shank and bill of the hook, and a screw operating in a nut in one end of the link, said screw being adapted to engage the hook and bind the link firmly against the same, said link having a perforate lug projecting therefrom and adapted to receive a lanyard.



4. A hook-lock comprising a link adapted to embrace the shank and bill of the hook, a nut integral with one end of the link, and a screw operating in the nut and adapted to engage the hook, said link having a perforate lug projecting therefrom and adapted to receive a lanyard.

5. A hook-lock comprising a link adapted to inclose the shank and bill of the hook, and a means adapted to act between the link and hook to bind the former against the latter.

822,676. CAST-STEEL CAR-TRUCK. ARTHUR LIPSCHUTZ, Chicago, Ill., assignor of one-half to Herbert W. Wolff, St. Louis, Mo. Filed Feb. 12, 1906. Serial No. 300,704.



Claim.—1. A side beam for car-trucks, comprising suitably-connected top and bottom flanges and having bolster guides or columns on its top and a spring pocket or recess between said guides, the bottom of said pocket being between said top and bottom flanges, substantially as described.

2. A side beam for trucks, comprising suitably-connected top and bottom flanges and having its middle portion depressed, said beam containing a spring seat or pocket the bottom of which is intermediate of the said top and bottom flanges and also having bolster-guides on its top, in combination with a bolster stop-bar connecting the upper ends of said guides, substantially as described.

3. The herein-described flanged side beam, containing a pocket the bottom whereof is between the flanges of the beam and which opens through the top flange of the beam, the top flange of said beam extending around the walls of said pocket, substantially as described.

4. A side beam for car-trucks, comprising a flanged beam having ends adapted to rest upon the tops of journal-boxes, and having a middle portion depressed containing a spring-pocket, the top flange of the beam being interrupted by and surrounding said pocket and the bottom of said pocket lying between the upper and lower flanges of the beam, substantially as described.

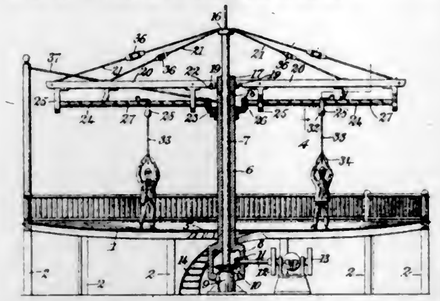
5. The herein-described depressed center side beam for trucks, provided with top and bottom flanges, having ends to rest upon the tops of journal-boxes, provided with a deep spring-recess, the bottom of which is below the top flange of the beam and provided with bolster-guides, which rise from said top flanges, substantially as described.

6. The herein-described depressed center side beam, containing in its depressed center portion a recess or pocket whose bottom is below the depressed top of the beam, having ends to rest upon the tops of journal-boxes and provided with bolster-guides, which rise from the top of said beam, adjacent to ends of said recess, substantially as described.

7. The herein-described beam, comprising suitably-connected top and bottom flanges and containing a spring-pocket in its upper middle portion, said pocket opening through the top flange of the beam, the bottom of said pocket being between said top and bottom flanges, said top flange being extended around the walls of said pocket, and bolster-guides rising from said top flange, substantially as described.

8. The herein-described beam, comprising suitably-connected top and bottom flanges and containing a spring-pocket in its upper middle portion, said pocket opening through the top flange of the beam, the bottom of said pocket being between said top and bottom flanges, said top flange being extended around the walls of said pocket, and bolster-guides integral with the said beam and rising from the top flange, substantially as described.

822,677. MERRY-SKATING-RINK. HENRI LOISELEUR, New York, N. Y. Filed Feb. 20, 1906. Serial No. 302,103.



Claim.—1. In an amusement device of the class described, in combination, a vertical shaft adapted to be continuously rotated, a plurality of substantially radial arms attached thereto, screw-rods supported by said arms, means for rotating said screw-rods, saddles carried by said screw-rods and adapted to be advanced thereby, and pendants carried by said saddles.

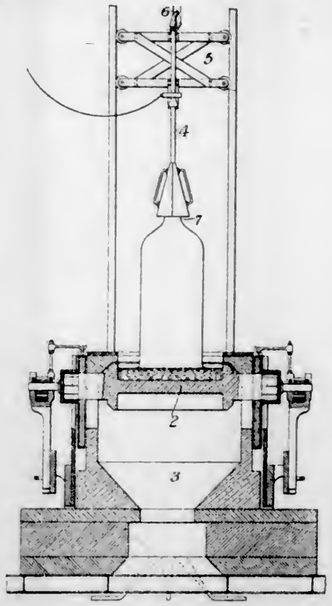
2. In an amusement device of the class described, in combination, a rotatable member presenting a plurality of arms, saddles adapted to be supported from said arms and having pendants adapted to be grasped, a rail adjacent to the extremities of said arms, and means carried by said saddles for engaging said rail whereby said saddles may be disengaged.

3. In an amusement device of the class described, in combination, a platform, a wheel presenting a plurality of arms, screw-rods supported on said arms, a plurality of saddles supported, respectively, on said screw-rods, said saddles having hooks and pendants adapted to be seized by a person on said platform, and a rail disposed adjacent to the extremity of said arms and adapted to be engaged by said hooks, said hooks affording means for disengaging said saddles from said screw-rods.

4. In an amusement device of the class described, in combination, a curved platform, a wheel presenting a plurality of arms disposed above said platform, and saddles supported from said arms and having pendants adapted to be seized by persons on said platform.

5. In an amusement device of the class described, in combination, a platform, a wheel disposed thereabove and having a plurality of screw-rods supported radially thereupon, a plurality of saddles having yokes formed at the upper portions thereof hanging upon said screw-rods, said saddles having hooks projecting longitudinally of said rods and having pendants hanging downwardly therefrom, and a rail disposed adjacent to the path of the extremities of said screw-rods and adapted to engage said hooks to remove the same from said screw-rods.

822,678. METHOD OF DRAWING GLASS CYLINDERS. JOHN H. LUBBERS, Allegheny, Pa., assignor to Window Glass Machine Company, Pittsburg, Pa., a Corporation of New Jersey. Filed Apr. 12, 1906. Serial No. 255,144.



Claim.—1. The method of drawing hollow glass articles, consisting in starting the draw at comparatively low speed continuing at such speed for a portion of the draw, and then increasing to higher speed, and continuing the drawing operation; substantially as described.

2. The method of drawing hollow glass articles, consisting in starting the draw at comparatively low speed continuing at such speed for a portion of the draw, and then increasing to higher speed, and continuing at a higher speed until the hollow article is drawn to the desired length; substantially as described.

3. The method of drawing hollow glass articles, consisting in starting the draw at comparatively low speed continuing at such speed for a portion of the draw, and then gradually increasing to higher speed, and continuing the drawing operation; substantially as described.

4. The method of forming hollow glass articles, consisting in drawing the same from a bath of molten glass, then materially increasing the speed to thin the walls of the article, and then severing the thinned portion: substantially as described.

5. The method of drawing hollow glass articles, consisting in starting the draw at comparatively low speed, and then increasing to higher speed, continuing at such higher speed until the hollow article is drawn to the desired length, then increasing the speed of the draw to thin the glass, and severing the thin lower portion from the glass of the bath; substantially as described.

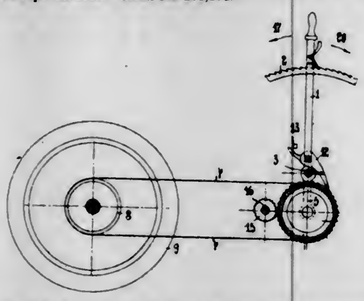
6. The method of drawing hollow glass cylinders, consisting in forming a neck and cap portion, drawing said parts and a part of the cylinder proper at comparatively low speed, then materially increasing the speed, and continuing the drawing operation; substantially as described.

7. The method of drawing hollow glass cylinders, consisting in forming a neck and cap portion, drawing said parts and a part of the cylinder proper at comparatively low speed, then materially increas-

ing the speed, continuing the drawing operation at higher speed until the article is drawn of the desired length, then further increasing the speed of the draw to thin the glass, and then severing the thin lower portion from the glass of the bath; substantially as described.

8. The method of drawing hollow glass cylinders which consists in starting the draw and continuing while a portion of the cylinder is formed, at a slow speed, then increasing the speed while drawing the major portion of the cylinder, and finally again increasing the speed to draw a thin bottom portion, the three rates of speed being of materially increasing character; substantially as described.

822,679. **COMBINED VEHICLE BRAKING AND STARTING DEVICE.** JOSEPH DE MAZARAKI, Etterbeek, near Brussels, Belgium. Filed Sept. 12, 1905. Serial No. 278,174.



Claim.—1. In a device of the class described, the combination with a wheel of the car, a belt-pulley fast on the axle of said wheel and a brake-lever, pivoted near its lower end; of a fork made one with the lower end of said lever, a non-rotatable shaft, secured to the branches of said fork, a rotatable case or drum on said shaft, an endless brake-band or belt passing around said belt-pulley and case or drum; a spiral spring within the latter, one end of said spring being attached to the non-rotatable shaft, while the other end is attached to the case, so that said spring is wound up when the case is rotated by the action of the brake-band; means for holding the spring in operative position, and means for transmitting the power of said spring to the motor-shaft after moving the brake-lever to its starting position, substantially as set forth.

2. In a device of the class described, the combination with a wheel of the car, a belt-pulley fast on the axle of said wheel and a brake-lever, pivoted near its lower end; of a fork made one with the lower end of said lever, a non-rotatable shaft, secured to the branches of said fork, a rotatable case or drum on said shaft, an endless brake-band or belt passing around said belt-pulley and case or drum; a spiral spring within the latter, one end of said spring being attached to the non-rotatable shaft, while the other end is attached to the case, so that said spring is wound up when the case is rotated by the action of the brake-band; a ratchet-wheel, made one with said case, a pawl pivoted on the fork of the brake-lever and engaging said ratchet-wheel; means for automatically disengaging said pawl when the brake-lever is moved to its starting position, and means for transmitting the rotation of said case produced by the expansion of the spring to the motor-shaft of the car, substantially as set forth.

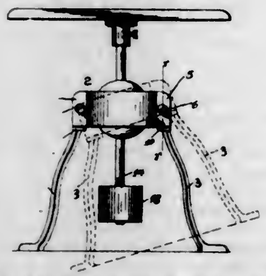
3. In a device of the class described, the combination with a wheel of the car, a belt-pulley fast on the axle of said wheel and a brake-lever, pivoted near its lower end; of a fork made one with the lower end of said lever, a non-rotatable shaft, secured to the branches of said fork, a rotatable case or drum on said shaft, an endless brake-band or belt passing around said belt-pulley and case or drum; a spiral spring within the latter, one end of said spring being attached to the non-rotatable shaft, while the other end is attached to the case, so that said spring is wound up when the case is rotated by the action of the brake-band; a ratchet-wheel, made one with said case, a pawl pivoted on the fork of the brake-lever and engaging said ratchet-wheel; means for automatically disengaging said pawl when the brake-lever is moved to its starting position; a gear-wheel arranged on said case, a toothed pinion arranged on an intermediate shaft in close proximity to said gear-wheel, and suitable connections between said pinion and the motor-shaft of the car, substantially as set forth.

4. In a device of the class described, the combination with a wheel of the car, a belt-pulley fast on the axle of said wheel, and the usual brake-lever, pivoted near its lower end; a fork extending downwardly from said lower end of the lever, a non-rotatable shaft secured to the branches of said fork; a rotatable spring-case on said shaft, and a spiral spring within said case; a brake-band or belt passing around said spring-case and belt-pulley, so as to rotate the spring-case and wind up the spring when the lever is moved to its braking position; a ratchet-wheel made one with the spring-case, and a pawl pivoted on the fork and engaging said ratchet-wheel; a gear-wheel on said spring-case and a toothed pinion, with which said gear-wheel may be brought into engagement when the brake-lever is moved to its starting position; means for disengaging said pawl when the gear-wheel and pinion are completely engaged, suitable connections between said pinion and the motor-shaft of the car, and means for stopping the rotation of the spring-case when the spring is completely wound up, substantially as set forth.

5. In a device of the class described, the combination with a wheel of the car, a belt-pulley fast on the axle of said wheel, and the usual brake-lever, pivoted near its lower end; a fork extending downwardly from said lower end of the lever, a non-rotatable shaft secured to the branches of said fork; suitable screw-threads provided on said shaft, a rotatable spring-case arranged on the latter and engaging the screw-threads thereof, a spiral spring within said case, and a brake-band passing around said spring-case and belt-pulley, so as to rotate and simultaneously move laterally said spring-case when the brake-lever is moved to its braking position; a ratchet-wheel made one with the spring-case, and a pawl pivoted on the fork of the brake-lever and engaging said ratchet-wheel; a gear-wheel on said spring-case and a toothed pinion, with which said gear-wheel may be brought into engagement when the brake-lever is moved to its starting position; means for disengaging said pawl when the gear-wheel and pinion are completely engaged, an adjustable stop on said screw-threaded shaft, adapted to arrest the movement of the spring-case when the spring is completely wound up, and suitable connections between said pinion and the motor-shaft of the car, substantially as set forth.

6. In a device of the class described, the combination with a wheel of the car, a belt-pulley fast on the axle of said wheel, and the usual brake-lever, pivoted near its lower end; a fork extending downwardly from said lower end of the lever, a non-rotatable shaft secured to the branches of said fork; suitable screw-threads provided on said shaft, a rotatable spring-case arranged on the latter and engaging the screw-threads thereof, a spiral spring within said case, and a brake-band passing around said spring-case and belt-pulley, so as to rotate and simultaneously move laterally said spring-case when the brake-lever is moved to its braking position; a ratchet-wheel made one with the spring-case, and a pawl pivoted on the fork of the brake-lever and engaging said ratchet-wheel; a gear-wheel on said spring-case and a toothed pinion, with which said gear-wheel may be brought into engagement when the brake-lever is moved to its starting position, said gear-wheel being connected with the spring-case when the latter is actuated by the expansion of the inner spring, while it is loose on the spring-case when it is actuated by said toothed pinion; a stationary stop, adapted to disengage said pawl from the ratchet-wheel when the brake-lever is moved to its starting position and after said gear-wheel meshes with said pinion; an adjustable stop on said screw-threaded shaft adapted to arrest the movement of the spring-case when the spring is completely wound up, and suitable connections between said pinion and the motor-shaft of the vehicle, substantially as set forth.

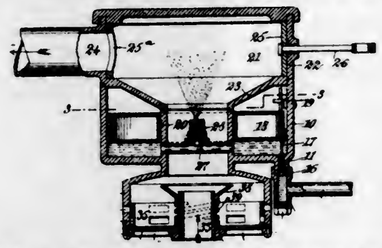
822,680. **SELF-LEVELING TABLE.** FREDERICK F. MEYER, Pittsburg, Pa. Filed Dec. 30, 1905. Serial No. 293,997.



Claim.—1. A table of the character described embodying two semicylindrical pieces having concavities formed therein, lugs carried by said pieces, said lugs having recesses formed therein, legs mounted in said recesses, a spherical body mounted in the concavities of said pieces, a standard extending through said body, a table-top detachably connected to said standard, a weight carried by the lower end of said standard, and means to simultaneously hold said legs and said pieces together, substantially as described.

2. A table of the character described embodying two semicylindrical pieces, legs mounted in said pieces, a spherical body mounted between said pieces, a standard carried by said body, a table-top detachably connected to the upper end of said standard, a weight carried by the lower end of said standard, means to secure said pieces together, and means to secure said legs to said pieces, substantially as described.

822,681. **CARBURETER FOR GASOLENE-ENGINES.** ROBERT A. MIDDLETON, Rexburg, Idaho. Filed May 2, 1905. Serial No. 258,447.



Claim.—1. A carbureter having a liquid-fuel chamber with an air-passage extending through it, a carbureter-chamber above and communicating with the air-passage, a valve-chamber below and communicating with the air-passage, a main air-supply tube extending into the valve-chamber, an auxiliary air-supply valve sliding in the valve-chamber around the main air-supply tube, a spring encircling the main air-supply tube, and a frusto-conical member mounted on the air-supply tube and engaged by the spring, for the purpose specified.

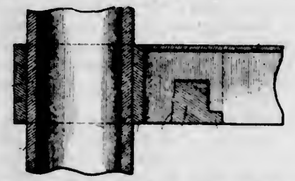
2. A carbureter having a liquid-fuel chamber with an air-passage extending through it, means for conducting the liquid fuel from said chamber into the air-passage, said passage communicating at one end with the mixture-outlet from the carbureter, a valve-chamber communicating with the other end of the passage and having a main air-supply opening therein, and an auxiliary air-supply opening, and a valve commanding the auxiliary air-supply opening and controlled by the suction exerted in the carbureter.

3. A carbureter having a liquid-fuel chamber with an air-passage through it, means for conducting liquid fuel from said chamber into said passage, one end of the passage being adapted to communicate with the mixture-outlet from the carbureter, a valve-chamber at the other or receiving end of the passage, said chamber having a centrally-located main air-supply opening and an auxiliary air-supply opening in its side, and a valve controlled by the suction exerted through the carbureter, said valve commanding said auxiliary air-opening and surrounding the centrally-located main air-supply opening.

4. A carbureter having a liquid-fuel chamber with an air-passage extending through it, means for conveying the liquid fuel from said chamber into said passage, one end of the passage leading to the mixture-outlet from the carbureter, a valve-chamber communicating with the other or receiving end of the passage, said chamber having a centrally-located open tube forming a main air-supply, and an auxiliary air-supply port in the walls of the chamber outward from said tube, and an auxiliary air-supply valve commanding said port, the valves surrounding said tube of the valve-chamber and being actuated by the suction exerted through the carbureter.

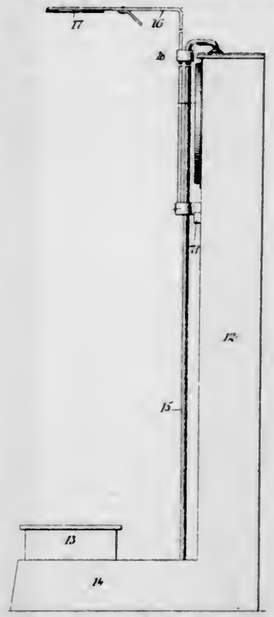
5. A carbureter having a liquid-fuel chamber with an air-passage extending through it, means for introducing the liquid fuel from said chamber into said passage, the passage communicating at one end with the mixture-outlet from the carbureter, a valve-chamber communicating with the other or receiving end of the carbureter, said valve-chamber having a centrally-located open tube forming the main air-supply, and a valve-chamber having an opening in its bottom, and an auxiliary air-supply port in its side, and an annular valve commanding said port, the valve surrounding the tube of the valve-chamber and covering the opening in the bottom of said chamber whereby one side of the valve is exposed to atmospheric pressure and the other side to the suction exerted through the carbureter.

822,682. **BED-RAIL JOINT.** JAMES MURPHY, Kenosha, Wis. Filed Dec. 26, 1905. Serial No. 293,363.



Claim.—In a metal bedstead, a rail-joint consisting of metal and having portions arranged at right angles to each other, said portions being vertically slotted, bridge-pieces in the lower portions of said slots, the said bridge-pieces being tapered, offsets at the lower portions of the bridge-pieces, rails having in their side portions, openings for receiving said bridge-pieces and offsets, and a device on the joints for embracing the bed-posts.

822,683. **MEASURING-MACHINE.** STEPHEN O. MYERS, Mount Vernon, N. Y. Filed Apr. 27, 1905. Serial No. 257,607.



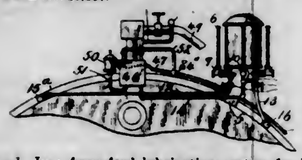
Claim.—1. The combination of a drum, a head movable in relation thereto, a strap connected with said head and partially wound upon said drum for the purpose of lowering and raising said head as said drum is rocked, mechanism controllable by the weight of a person for actuating said drum, a member connected with said head for descending into engagement with said person, and mechanism connected with said member for indicating the height of said person.

2. The combination of a movable member for determining measurements, a head connected with said movable member and adapted to move therewith, a rack disposed adjacent to said head, a pawl mounted upon said head and adapted to engage said rack, so as to prevent further movement of said head relatively thereto, and mechanism connected with said head and controllable by the movement of a person for causing said pawl to engage said rack.

3. The combination of a movable member for engaging the head of a person whose height is to be measured, a head connected with said movable member and adapted to move in accordance with movements of the same, a rack disposed adjacent to said head, a pawl connected with said head and normally disengaged from said rack, mechanism controllable by the weight of a person for moving said head in a predetermined direction relatively to said rack, and means for forcing said pawl into engagement with said rack so as to prevent fur-

ther movement of said head in the same direction relatively to said rack.

822,684. **LUBRICATING-PUMP FOR LOCOMOTIVE-ENGINES.** JOHN F. MCCANNA, Chicago, Ill., assignor to The John F. McCanna Company, Chicago, Ill., a Corporation of Illinois. Original application filed Jan. 6, 1900. Serial No. 545. Divided and this application filed July 28, 1900. Serial No. 25,107.



Claim.—1. In a force-feed lubricating system for locomotive-engines, the combination with a reservoir located in the cab of the engine, of a pump adjacent to the mechanism to be lubricated, connections between said pump and a moving member related to the mechanism to be lubricated to actuate the pump positively in both directions at intervals varying directly with the speed of the mechanism to be lubricated, and piping connecting said reservoir and pump and said pump and mechanism to be lubricated.

2. In a force-feed lubricating system for locomotive-engines, the combination with a reservoir located in the cab of the engine, feed-test apparatus in connection therewith by which the rate of feed can be observed, of a pump adjacent to the mechanism to be lubricated, connections between said pump and a moving member related to the mechanism to be lubricated to reciprocate the pump-plunger positively in both directions and at intervals varying directly with the speed of the mechanism to be lubricated, and piping connecting said reservoir and pump and said pump and the mechanism to be lubricated.

3. In a force-feed lubricating system for locomotive-engines, the combination with a reservoir located in the cab of the engine, of a pump adjacent to the mechanism to be lubricated, connections between said pump and a moving member related to the mechanism to be lubricated to reciprocate the pump-plunger positively in both directions and at intervals varying directly with the speed of the mechanism to be lubricated, piping connecting said reservoir and pump and said pump and mechanism to be lubricated, and a vacuum-valve interposed in said piping between the pump and the mechanism to be lubricated.

4. In a force-feed lubricating system for locomotive-engines, the combination with a reservoir located in the cab of the engine, feed-test apparatus in connection therewith by which the rate of feed can be observed, of a pump adjacent to the mechanism to be lubricated, connections between said pump and a moving member related to the mechanism to be lubricated to actuate the pump at intervals varying directly with the speed of the mechanism to be lubricated, piping connecting said reservoir and pump and said pump and the mechanism to be lubricated, means for connecting the test apparatus with and disconnecting the reservoir from the piping leading to the pump without stopping the lubricating action, and a vacuum-valve interposed in the piping between the pump and the mechanism to be lubricated.

5. In a force-feed lubricating system for locomotive-engines, the combination with a reservoir located in the cab of the engine, a sight-tube connected at its lower end to said reservoir, and a valve whereby communication with the reservoir may be cut off and the supply of oil drawn from the sight-tube only, of a pump adjacent to the mechanism to be lubricated, connections between said pump and a moving member related to the mechanism to be lubricated to actuate the pump at intervals varying directly with the speed of the mechanism to be lubricated, means for adjusting such connections to vary the rate of delivery of the pump independently of the speed of said mechanism, piping connecting said reservoir and pump and said pump and the mechanism to be lubricated, and a vacuum-valve interposed in said piping between the pump and the mechanism to be lubricated.

6. In a force-feed lubricating system, the combination with a reservoir, a feed-test apparatus in connection therewith by which the rate of speed can be observed, of a pump adjacent to the mechanism to be lubricated, connections between said pump and a moving member related to the mechanism to be lubricated to actuate the pump at intervals varying directly with the speed of the mechanism to be lubricated, said connections being adjustable to regulate the amount of movement that shall be given to the pump at each interval, piping connecting said reservoir and pump and said pump and the mechanism to be lubricated, and a valve for simultaneously connecting the test apparatus with and disconnecting the reservoir from the pipe leading to the pump without interfering with the lubricating action.

7. In a force-feed lubricating system for locomotive-engines, the combination with a reservoir located in the cab of the engine, a sight-tube connected at its lower end to said reservoir, a valve whereby communication with the reservoir may be cut off and the supply of oil drawn from the sight-tube only, of a pump adjacent to the mechanism to be lubricated, connections between said pump and a moving member related to the mechanism to be lubricated to actuate the pump at intervals varying directly with the speed of the mechanism to be lubricated, said connections being adjustable to regulate the amount of movement that shall be given to the pump at each interval, means located in the cab for controlling said adjustment, piping connecting said reservoir and pump and said pump and the mechanism to be lubricated, and a vacuum-valve interposed in said piping between the pump and the mechanism to be lubricated.

8. In a force-feed lubricating system for locomotive-engines, the combination with a reservoir, of a pump adjacent to the mechanism to be lubricated, connections between said pump and a moving member related to the mechanism to be lubricated to actuate the pump at intervals varying directly with the speed of the mechanism to be lubricated, said connections being adjustable to regulate the amount of movement that shall be given to the pump at each interval, means to control said adjustment extending to the cab, and piping connecting said reservoir and pump and said pump and the mechanism to be lubricated.

9. In a force-feed lubricating system for locomotive-engines, the combination with a reservoir located in the cab of the engine and having feed-test apparatus in connection therewith by which the rate of feed can be observed, of a pump adjacent to the mechanism to be lubricated, connections between said pump and a moving member related to the mechanism to be lubricated to actuate the pump at intervals varying directly with the speed of the mechanism to be lubricated, said connections being adjustable to regulate the amount of movement that shall be given to the pump at each interval, means to control said adjustment extending to the cab, and piping connecting said reservoir and pump and said pump and the mechanism to be lubricated.

10. In a force-feed lubricating system for locomotive-engines, the combination with a reservoir, of a pump adjacent the mechanism to be lubricated, connections between said pump and a moving member related to the mechanism to be lubricated to actuate the pump at intervals varying directly with the speed of the mechanism to be lubricated, said connections being adjustable to regulate the amount of movement that shall be given to the pump at each interval, means to control said adjustment extending to the cab, piping connecting said reservoir and pump and said pump and the mechanism to be lubricated, and a vacuum-valve interposed between the pump and the mechanism to be lubricated.

11. In a force-feed lubricating system for locomotive-engines, the combination with a reservoir located in the cab of the engine and having a feed-test apparatus in connection therewith by which the rate of feed can be observed, of a pump adjacent to the mechanism to be lubricated, connections between said pump and a moving member related to the mechanism to be lubricated to actuate the pump at intervals varying directly with the speed of the mechanism to be lubricated, said connections being adjustable to regulate the amount of movement that shall be given to the pump at each interval, means to control said adjustment extending to the cab, piping connecting said reservoir and pump and said pump and the mechanism to be lubricated, and a vacuum-valve interposed in said piping between the pump and the mechanism to be lubricated.

12. In a force-feed lubricating system for locomotive-engines, the combination with a reservoir, of a plurality of pumps, each located adjacent to the mechanism it is to lubricate, connections between each of said pumps and a moving member related to the mechanism to be lubricated thereby to actuate the pump at intervals varying directly with the speed of its mechanism to be lubricated, said connections being simultaneously adjustable to regulate the amount of movement that shall be given to the pump at each interval, means to control said adjustment extending to the cab, and piping connecting said reservoir and each of said pumps and each of said pumps and its mechanism to be lubricated.

13. In a force-feed lubricating system for locomotive-engines, the combination with a reservoir located in the cab of the engine, of a plurality of pumps, each located adjacent to the mechanism it is to lubricate, a plurality of feed-test apparatus corresponding in numbers to the pumps and each associated with a certain pump by which the rate of feed of each pump can be observed, connections between each of said pumps and a moving member related to the mechanism to be lubricated by said pump to actuate it at intervals varying directly with the speed of the mechanism it is to lubricate, said connections being simultaneously adjustable to regulate the amount of movement that shall be given to the pump at each interval, means to control said adjustment extending to the cab, and piping connecting said reservoir and each of the pumps and each of said pumps and its mechanism to be lubricated.

14. In a force-feed lubricating system for locomotive-engines, the combination with a reservoir, of a plurality of pumps, each adjacent to the mechanism it is to lubricate, connections between each of said pumps and a moving member related to the mechanism it is to lubricate to actuate the pump at intervals varying directly with the speed of the mechanism it is to lubricate, said connections being simultaneously adjustable to regulate the amount of movement that shall be given to a pump at each interval, means extending to the cab of the locomotive to control said adjustment piping connecting said reservoir and each of said pumps and each of said pumps and its mechanism to be lubricated, and a plurality of vacuum-valves interposed in said piping, one between each pump and its mechanism to be lubricated

15. In a force-feed lubricating system for locomotive-engines, the combination with a reservoir located in the cab of an engine, of a plurality of pumps, each adjacent to the mechanism it is to lubricate, a plurality of feed-test apparatus corresponding in number to the pumps and each associated with a certain pump by which the rate of feed of each pump can be observed, connections between each of said pumps and a moving member related to the mechanism it is to lubricate to actuate the pump at intervals varying directly with the speed of the mechanism it is to lubricate, said connections being simultaneously adjustable to regulate the amount of movement that shall be given to the pump at each interval, means to control said adjustment extending to the cab, piping connecting said reservoir and each of said pumps and each of said pumps and its mechanism to be lubricated, and a plurality of vacuum-valves interposed in said piping, one between each pump and its mechanism to be lubricated.

16. In a force-feed lubricator, the combination with a reservoir, a feed-test apparatus therefor, a pump adjustable to vary the amount of oil delivered thereby adjacent the mechanism to be lubricated, a pipe leading to the pump, a valve for placing the reservoir and feed-test apparatus simultaneously in communication with the said pipe and also for establishing communication between the feed-test apparatus and the pipe independently of the reservoir, connection between the pump and a moving member related to the mechanism to be lubricated to actuate the pump at intervals varying directly with the speed of the mechanism to be lubricated, said connection being adjustable to regulate the amount of movement that shall be given to the pump at each interval, and piping connecting the pump and the mechanism to be lubricated.

17. In a force-feed lubricating system, the combination with a pump, of a reservoir connected therewith and located above the mechanism to be lubricated, a supply-pipe leading from said reservoir to the pump, a discharge-pipe leading from said pump to the mechanism to be lubricated, an auxiliary discharge-pipe leading from the supply-pipe to the mechanism to be lubricated, and connections between the auxiliary discharge-pipe and the supply-pipe to pass the oil through or around the pump, as may be desired.

18. In a force-feed lubricating system, the combination with a pump, of a reservoir connected therewith and located above the mechanism to be lubricated, a supply-pipe leading from said reservoir to the pump, a discharge-pipe leading from the pump to the mechanism to be lubricated, a vacuum-valve in said discharge-pipe, an auxiliary discharge-pipe leading from the supply-pipe to the mechanism to be lubricated, a stop-cock in said supply-pipe between the reservoir and the auxiliary discharge-pipe, and connections between the auxiliary discharge-pipe and the supply-pipe to pass the oil through or around the pump, as may be desired.

19. In a force-feed lubricating system for locomotive-engines, the combination with the pump adjacent to the steam-chest, of the steam-pocket in immediate proximity to said pump, and a pipe leading from the steam-cylinder exhaust-port to said pocket.

20. In a force-feed lubricating system for locomotive-engines, the combination with the pump adjacent to the steam-chest, of the steam-pocket in immediate proximity to said pump, a pipe leading from the steam-cylinder exhaust-port to said pocket, and another pipe leading from the pocket into the smoke-box, substantially as and for the purpose described.

21. In a force-feed lubricating system for locomotive-engines, the combination with the pump and adjacent to the steam-chest, of the rectangular steam-pocket immediately between the steam-chest and the pump, a pipe leading from the steam-cylinder exhaust-port to said pocket, and another pipe leading from the pocket into the smoke-box, substantially as and for the purpose described.

22. In a force-feed lubricating system for locomotive-engines, the combination with the reservoir, of a lubricating-pump located in the cab, a supply-pipe leading from said reservoir to the pump, an air-cylinder having a piston therein, an oscillating member actuated by the piston and for operating said pump, and an air-pipe connecting the air-brake pump with said air-cylinder.

23. In a force-feed lubricating system for locomotive-engines, the combination with a reservoir, of a lubricating-pump located in the cab, a supply-pipe leading from said reservoir to the pump, an air-cylinder having a piston therein for operating said pump, an air-pipe connecting the air-brake pump with said air-cylinder, and a discharge-pipe leading from the lubricating-pump into the air-pipe.

24. In a force-feed lubricating system for locomotive-engines, the combination with a reservoir, of a lubricating-pump located in the cab, a supply-pipe leading from said reservoir to the pump, an air-cylinder having a piston therein for operating said pump, an air-pipe connecting the air-brake pump with said air-cylinder, a discharge-pipe leading from the lubricating-pump into the air-pipe, and a vacuum-valve in said discharge-pipe between the lubricating-pump and the air-pipe.

25. In a force-feed lubricating system for locomotive-engines, the combination with the reservoir, of a fluid-pressure-operated lubricating-pump located in the cab, connections between said reservoir and pump, connections from the air-cylinder of the air-pump for operating the lubricating-pump at intervals corresponding with the movements of the air-pump, a steam-pipe leading to the air-pump, and a discharge-pipe leading from the lubricating-pump to the steam-pipe.

26. In a force-feed lubricating system for locomotive-engines, the combination with the reservoir, of a lubricating-pump located in the cab, connections between said reservoir and pump, connections from the air-cylinder of the air-pump for operating the lubricating-pump at intervals corresponding with the movements of the air-pump, a steam-pipe leading to the air-pump, a discharge-pipe leading from the lubricating-pump to the steam-pipe, and a vacuum-valve in said discharge-pipe between the lubricating-pump and the steam-pipe.

27. In a force-feed lubricating system for locomotive-engines, the combination with the reservoirs, of a pair of lubricating-pumps located in the cab, connections between said reservoirs and their respective pumps, connections from the air-pump for operating said lubricating-pumps at intervals corresponding with the movements of the air-pump, a discharge-pipe leading ultimately from one of said lubricating-pumps to the air-pump steam-cylinder, and another discharge-pipe leading from the other lubricating-pump ultimately to the air-pump.

28. In a force-feed lubricating system for locomotive-engines, the combination with the two reservoirs, of a pair of lubricating-pumps located in the cab, a supply-pipe leading from each of said reservoirs to its connected lubricating-pump, an air-cylinder having a piston therein for operating said lubricating-pumps, an air-pipe connecting the air-brake pump with said air-cylinder, a discharge-pipe leading from one of said lubricating-pumps into the air-pipe, and a discharge-pipe leading from the other of said pumps to a steam-pipe leading to the air-pump steam-cylinder.

29. In a force-feed lubricating system for locomotive-engines, the combination with the two reservoirs, of a pair of lubricating-pumps located in the cab, a supply-pipe leading from each of said reservoirs to its connected lubricating-pump, an air-cylinder having a piston therein for operating said lubricating-pumps, an air-pipe connecting the air-brake pump with said air-cylinder, a discharge-pipe leading from one of said lubricating-pumps into the air-pipe, a steam-pipe leading to the air-pump steam-cylinder, a discharge-pipe leading from the other of said pumps to the steam-pipe, and a vacuum-valve interposed in each discharge-pipe beyond the connected lubricating-pump.

30. In a force-feed lubricating system for locomotive-engines, the combination with a reservoir, of a pump adjacent the driving-cylinder and connected to said reservoir, connections between said pump and a moving member associated with the driving-cylinder for operating said pump at intervals corresponding to the movements of the driving-piston, said connections being adjustable to regulate the amount of movement that shall be given to the pump at each interval, and means to control said adjustment extending to the cab.

31. In a force-feed lubricating system for locomotive-engines, the combination with a reservoir, of a pump adjacent the driving-cylinder and connected to said reservoir, and connections for operating said pump at intervals corresponding to the movement of the driving-piston, said connections being adjustable to regulate the amount of movement that shall be given to the pump at each interval and comprising a link connected to the pump-actuating arm, a rod substantially parallel to and supported by the slide-valve rocker-arm, a block slidably mounted on the rod and connected to the link, and means for shifting the position of the block on the rod.

32. In a force-feed lubricating system for locomotive-engines, the combination with a reservoir, of a pump adjacent the driving-cylinder and connected to said reservoir, a pump-actuating arm, and connections between said pump and the slide-valve rocker-arm for operating said pump at intervals corresponding to the movement of the driving-piston, said connections being adjustable from the cab to regulate the amount of movement that shall be given to the pump at each interval and comprising a link connected to the pump-actuating arm, a rod substantially parallel to and supported by the slide-valve rocker-arm, a block slidably mounted on the rod and connected to the link, and means for shifting the position of the block on the rod.

33. In a force-feed lubricating system for locomotive-engines, the combination with two pumps, one adjacent each of the driving-cylinders, of means for supplying said pumps with oil, connections between each of said pumps and a moving member associated with the corresponding steam-cylinder for operating its connected pump at intervals corresponding to the movement of the driving-piston, and means for adjusting said connections extending to the cab to simultaneously regulate the amount of movement that shall be given to each pump at each interval.

34. In a force-feed lubricating system for locomotive-engines, the combination with two pumps, one adjacent each of the driving-cylinders, an actuating-arm for each pump, of means for supplying said pumps with oil, and connections between each of said pumps and the slide-valve rocker-arm associated with the corresponding steam-cylinder for operating its connected pump at intervals corresponding to the movement of the driving-piston, said connections being adjustable from the cab to simultaneously regulate the amount of movement that shall be given to each pump at each interval, said connections comprising links connected to the pump-actuating arms, rods substantially parallel to and supported by the slide-valve rocker-arms, blocks slidably mounted on the rods and connected to the links, and means extending to the cab of the locomotive for shifting the positions of the blocks on the rods.

35. In a force-feed lubricating system for locomotive-engines, the combination with two pumps, one adjacent each of the driving-cylinders, of means for supplying said pumps with oil, and connections between each of said pumps and the slide-valve rocker-arm associated with the corresponding steam-cylinder for operating its connected pump at intervals corresponding to the movement of the driving-piston, said connections being adjustable from the cab to simultaneously regulate the amount of movement that shall be given to each pump at each interval and comprising the adjustable hand-lever, an arm 27, a rock-shaft to which said arm is secured, a connection between the hand-lever and the arm 27, arms 30 fixed to the rock-shaft, links 31 connected to the arms 30, sliding blocks pivotally secured to the links 31, rods secured to the slide-valve rocker-arms and on which the blocks are slidably mounted, pump-actuating arms, and connections between the blocks and the pump-actuating arms.

36. In a force-feed lubricating system, the combination with a force-feed pump, of a moving member the amount of whose movement controls the amount of power applied to the mechanism to be lubricated, and operating connections between said member and said pump.

37. In a force-feed lubricating system, the combination with a force-feed pump, of the slide-valve rocker-arm of a steam-cylinder to be lubricated, and connections between said rocker-arm and said pump.

38. In a force-feed lubricating system, the combination with a force-feed pump, of a moving member the amount of whose movement controls the amount of power applied to the mechanism to be lubricated, operating connections between said member and said pump whereby the pump is operated at a rate varying automatically with the power applied to said mechanism to be lubricated, and means under the control of the operator for shifting said connections at will to still further increase or diminish the rate of operation of the pump.

39. In a force-feed lubricating system, the combination with a force-feed pump, of the slide-valve rocker-arm of a steam-engine cylinder to be lubricated, operating connections between said rocker-arm and the pump, and means for shifting the position of the connections on the rocker-arm to still further increase or diminish the rate of operation of the pump.

40. In a force-feed lubricating system, the combination with a force-feed pump, of connections between the slide-valve rocker-arm of a steam-engine cylinder, and the pump whereby the pump is operated at a rate varying automatically with the power applied to said mechanism, said connections consisting of a rod between said pump and rocker-arm so connected to said rocker-arm as to be moved a distance varying directly with the swing of said arm, and means for shifting the position of the connection on the rocker-arm, substantially as and for the purpose described.

41. In a force-feed lubricating system for locomotive-engines, the combination with the pump adjacent to the steam-chest, of the steam-pocket in immediate proximity to said pump, and a pipe connected with a source of steam-supply leading to said pocket.

42. In a lubricating system for locomotive-engines, the combination with a pump adjacent to the steam-chest, of a steam-pocket in immediate proximity to said pump, an oil-supply pipe leading to the pump, and a steam-pipe immediately adjacent said oil-supply pipe and opening into said steam-pocket.

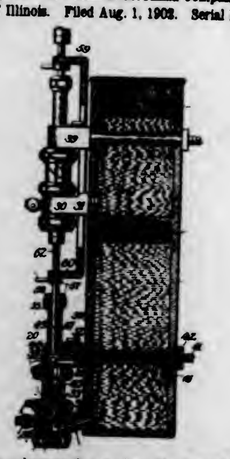
43. In a lubricating system for locomotive-engines, the combination with a pump adjacent to the steam-chest, of a steam-pocket in immediate proximity to said pump, an oil-supply pipe connected to the oil-reservoir and leading through the boiler-jacket to the pump, and a steam-pipe adjacent said oil-supply pipe leading from said pocket to the smoke-box.

44. In a lubricating system for locomotive-engines, the combination with a pump adjacent to the steam-chest, of a steam-pocket in immediate proximity to said pump, an oil-supply pipe leading through the boiler-jacket to the pump, a steam-supply pipe leading from the exhaust-port to said pocket, and a steam-discharge pipe immediately adjacent said oil-supply pipe and leading from said steam-pocket into the smoke-box.

45. In a force-feed lubricating system, the combination with the reservoir for the oil-supply, of a force-feed pump for drawing oil from the reservoir, and a vacuum-valve located beyond the pump and through which the oil must be forced to reach the object to be lubricated.

46. In a force-feed lubricating system for locomotive-engines, the combination of the air-cylinder, a piston in said air-cylinder, a pipe connecting said air-cylinder to the air-brake air-pump, so that the piston in said air-cylinder is operated as the air-pump is operated, the two oil-pumps connected with the air-pump and the air-pump steam-cylinder, respectively, and operated by the reciprocation of said piston, and the two oil-reservoirs connected with said oil-pumps.

822,685. LUBRICATING APPARATUS. JOHN F. MCCANNA, Chicago, Ill., assignor to The John F. McCanna Company, Chicago, Ill., a Corporation of Illinois. Filed Aug. 1, 1903. Serial No. 117,966.



Claim.—1. In a locomotive-engine, the combination with the oil-reservoir, of the pump connected therewith, fluid-pressure mechanism for operating said pump, controlling means for said mechanism actuated by the movement of the engine, pipe connections between said controlling means and the steam-dome and the air-reservoir, and means in combination with the said pipes for connecting either source of fluid-pressure to said controlling means to actuate the pump.

2. In a locomotive-engine, the combination with the oil-reservoir, of the pumps connected therewith, fluid-pressure mechanism for operating said pumps, controlling means for said mechanism actuated by the movement of the engine, pipe connections between said controlling means and the steam-dome and the air-reservoir, and a three-way cock in said connections whereby the pumps may be actuated by steam or air pressure.

3. In a locomotive-lubricating apparatus, the combination with the oil-reservoir, of the pump connected therewith, a fluid-pressure cylinder provided with a reciprocating piston operatively connected with said pump, a pipe connected with said cylinder at each end thereof, a fluid-pressure supply-pipe, valve mechanism connected with the three pipes and adapted to supply fluid under pressure to the opposite sides of the piston in alternation, and means controlled by the movement of the apparatus to be lubricated for actuating said valve mechanism.

4. In a locomotive-lubricating apparatus, the combination with the oil-reservoir located in the cab, of the pump connected therewith, a fluid-pressure cylinder provided with a reciprocating piston operatively connected with said pump, a pipe connected with said cylinder at each end thereof, a fluid-pressure supply-pipe, valve mechanism connected with the three pipes and adapted to supply fluid under pressure to the opposite sides of the piston in alternation, and means controlled by the movement of the apparatus to be lubricated for actuating said valve mechanism and consisting of a slide-valve having an aperture, an eccentric extending through the aperture the rotation of which reciprocates the slide-valve, a ratchet-disk, on said eccentric, a rock-shaft having an operating-dog engaging the ratchet-disk, and connections with a reciprocating part of the apparatus to be lubricated for rocking said shaft.

5. In a device of the class described, the combination with a force-feed lubricating-pump, of an oil-reservoir therefor, and a gravity sight-feed apparatus located between said pump and reservoir and consisting of a gage-glass extending downward from the pump and having an outlet at its upper end, a check-valve in such outlet, a union connecting the gage-glass and the reservoir and having a channel therein, check-valves at both ends of the gage-glass, and a nozzle terminating the upper end of said channel within the gage-glass.

6. In a device of the class described, the combination with a force-feed lubricating-pump, of an oil-reservoir therefor, an up-drop sight-feed apparatus located between said pump and reservoir and having an outlet at its upper end, a check-valve in such outlet, and check-valves between the reservoir and the sight-feed apparatus and between the sight-feed apparatus and the pump.

7. In a device of the class described, the combination with a force-feed lubricating-pump, of an oil-reservoir therefor, a gage-glass opening into said pump at its top and extending downward therefrom, a check-valve between the sight-feed and the pump, a union connecting the bottom of said gage-glass and the interior of the reservoir, there being a channel extending through said union, a nozzle terminating the end of said channel in the gage-glass, and a check-valve located in said channel beneath the nozzle; substantially as and for the purpose described.

8. In a device of the class described, the combination with a force-feed lubricating-pump, of an oil-reservoir therefor, an up-drop sight-feed apparatus located between said pump and reservoir, a check-valve between the reservoir and the sight-feed apparatus, and means for replenishing the liquid in the gage-glass of the sight-feed apparatus through which the oil rises.

9. In a device of the class described, the combination with a force-feed lubricating-pump, of an oil-reservoir therefor, an up-drop sight-feed apparatus located between said pump and reservoir, a check-valve between the reservoir and the sight-feed apparatus, and means for replenishing the liquid in the gage-glass of the sight-feed apparatus through which the oil rises consisting of a channel leading from the exterior of the gage-glass chamber and provided with a cock and adapted to be connected with a supply of liquid under pressure.

10. In a device of the class described, the combination with a force-feed lubricating-pump, of an oil-reservoir therefor, an up-drop sight-feed apparatus located between said pump and reservoir, a check-valve between the reservoir and the sight-feed apparatus, and means for replenishing the liquid in the gage-glass of the sight-feed apparatus through which the oil rises consisting of a nozzle provided with a channel leading to the gage-glass chamber and having a stop-cock therein, and having its outer end screw-threaded so as to be adapted to be connected with a force-pump for forcing a supply of the liquid under pressure into the gage-glass.

11. In a device of the class described, the combination with an oil-reservoir, of a force-feed lubricating-pump having the valve-casing 39 thereof secured to the face of the reservoir, the block 30 secured to the reservoir beneath the valve-casing 39 and having the channel therein opening into the reservoir, a gage-glass secured between said valve-casing and block, a nozzle terminating said channel and opening into the gage-glass, and a check-valve in said channel beneath the nozzle.

12. In a device of the class described, the combination with an oil-reservoir having a pipe 41, passing through the body thereof, of a pump connected therewith and having the discharge-pipe 40 passing through the pipe 41 in the reservoir, and the nut 42 coöperating with the pipe 40 to secure the pump in place.

13. In a device of the class described, the combination with the reservoir consisting of the U-shaped main reservoir and the auxiliary reservoir located in the central portion thereof; of the lower line of pumps connected at their bases to the main reservoir, and the central upper line of pumps connected at their bases to the auxiliary reservoir; the yoke mounted to reciprocate on the face of the reservoir behind the pumps and having the two notched flanges for actuating the two sets of pumps; and means for reciprocating said yoke.

14. In a device of the class described, the combination with the reservoir consisting of the U-shaped main portion and the auxiliary reservoir located in the central upper portion thereof; of the lower row of pumps connected at their bases to the main reservoir, and the central upper row of pumps connected at their bases to the auxiliary reservoir and having their discharge-pipes passing therethrough; the yoke mounted to reciprocate on the face of the reservoir and having the open central portion about the upper row of pumps and provided with the two notched flanges for actuating the two rows of pumps; and means for reciprocating said yoke.

15. In a device of the class described, the combination with the reservoir consisting of the U-shaped main portion and the auxiliary reservoir located in the central upper portion thereof; of the lower row of the pumps connected at their bases to the main reservoir, and the central upper row of pumps connected at their bases to the auxiliary reservoir and having their discharge-pipes passing therethrough; the yoke mounted to reciprocate on the face of the reservoir and having the hollow central portion about the upper row of pumps and provided with the two notched flanges for actuating the two rows of pumps; and means for reciprocating said yoke consisting of the operating-piston, the cylinder connected to the front of the reservoir and in which the piston reciprocates, inlet and outlet pipes passing through the reservoir and opening into the cylinder on either side of the piston, and means for supplying fluid-pressure alternately to opposite sides of said piston; all combined and coöperating as and for the purpose described.

16. An automatic lubricating system for locomotives or the like, having a lubricating-pump, means for supplying oil to said pump, an air-cylinder connecting by piping to said pump, and a valve controlling the piping to supply air to reciprocate the pump in both directions and automatically operated from the motive power of the locomotive.

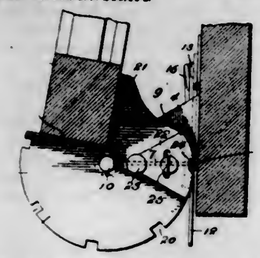
17. An automatic lubricating system for locomotives or the like having a lubricating-pump, compressed-air mechanism for operating said pump in both directions, and a valve controlling the air-supply.

18. In an automatic lubricating system for locomotives or the like, the combination with an air-cylinder of a lubricating-pump reciprocated in both directions by the air under pressure, pipes connecting the air-cylinder to the lubricating-pump, and a valve controlling the air-supply automatically operated from the motive power of the locomotive.

19. In a lubricating system for locomotives, a lubricating-pump, pneumatic mechanism for reciprocating said lubricating-pump in both directions, a valve device controlling said pneumatic mechanism, and means actuated from the motive power of the locomotive for operating the valve device.

20. An automatic lubricating system having a lubricating-pump, means for supplying oil to said pump, a cylinder having a piston connected to the pump-plunger, conduits leading to the opposite ends of the cylinder, and a valve connecting the pressure-supply with the conduits in alternation and automatically operated from the mechanism to be lubricated.

822,686. **HINGE.** PATRICK H. MCGRATH, Wollaston, Mass. Filed Feb. 4, 1905. Serial No. 244,194.



Claim.—1. In a hinge, a pair of leaves, a latch movably mounted on one of the leaves, and adjustable means mounted on the other leaf to be engaged by the latch to maintain the leaves in full open relation.

2. In a hinge, a pair of leaves, a latch movably mounted on one of the leaves, the other leaf having a notched sector the notches of which are engageable by said latch, and adjustable means mounted on that leaf having the sector, to be engaged by the latch to maintain the leaves in full open relation.

3. In a hinge a pair of leaves, a latch movably mounted on one of the leaves the other leaf having a notched sector the periphery of which is cut away, and a notched segment supported by said sector and having a notch in its curved edge, complemental to the notches in said sector, the latch serving to engage the several notches.

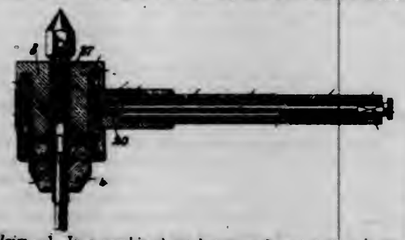
4. A hinge-leaf having a notched sector and a segment coöperative with and adjustable with respect to the sector, said segment having a notch complemental to the notches of the sector.

5. In a hinge, a leaf comprising a face-plate, and flanges extending outward therefrom in transverse directions to each other, one flange resting on the other and having a perforation, said other flange having a sleeve, the opening in which registers with said perforation, and a pin extending through the perforation and opening and headed to retain it in place and the different parts of the leaf in proper relation.

6. In a hinge, a leaf comprising in its construction a sector notched in its curved edge and also cut away in said edge, and an adjustable notched segment supported on the sector the notch in the segment being complemental to the notches in the sector.

7. In a hinge, a leaf comprising a face-plate and flanges extended outward therefrom and having registering openings, and a pin to enter the openings to hold the flanges assembled, said pin also having a pivot portion.

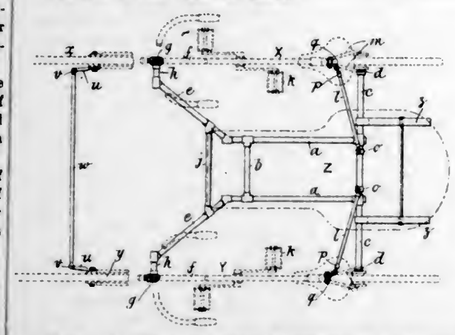
822,687. **COMBINED RATCHET WRENCH AND DRILL.** JAMES R. NELSON, Union City, Tenn. Filed July 13, 1904. Serial No. 216,221.



Claim.—1. In a combined ratchet wrench and drill, a hollow jaw-carrier having an annular groove at its upper end and provided at its lower end with an enlargement having a transverse channel therein, said carrier being formed with annularly-disposed recesses in the outer face of its body, a jaw-actuator within the carrier, said actuator having a spiral thread on its lower end and provided at its upper end with an enlargement having in its under face an annular groove receiving the upper end of the carrier, the enlargements of the carrier and actuator forming an annular depression, a screw in the enlargement of the actuator and engaging the groove of the carrier, a ring rotatable in said depression and having a handle, a spring-actuated pawl in the handle and having an end thereof normally received in one of said recesses, and movable jaws in the channel of the carrier and provided on their upper faces with segmental ribs engaging the thread of the actuator.

2. In a combined ratchet wrench and drill, a hollow jaw-carrier provided with an enlargement at its lower end and an annular groove at its other end, the enlargement having a transverse channel therein, movable jaws in the channel, a jaw-actuator within the carrier having at its upper end an enlargement formed in its under side with an annular groove, the upper end of said carrier being received by said groove, a binding-screw entering the side of the enlargement of the actuator and engaging the groove of the carrier, means for operating the jaws from the actuator, and means for rotating the carrier, including a rotatable ring between the enlargements of the carrier and the actuator and provided with a handle.

822,688. **MEANS FOR UNITING A PAIR OF BICYCLES TO FORM A QUADRICYCLE.** CHARLES H. NICHOLAS, London, England. Filed Sept. 20, 1904. Serial No. 225,223.



Claim.—1. A device for connecting together a pair of bicycles or the like to form a quadricycle, comprising a structure disposed between the bicycles in a plane below the axes of the wheels thereof, members leading from the forward part of said structure and having means for connecting the ends thereof with parts of the frames of the bicycles, a transverse member to which the rearward part of said structure is rearwardly connected, provided with means for connecting the ends thereof to the inner ends of the hubs of the rear wheels of the bicycles, and upwardly-divergent struts extending from said transverse member, adjustable thereon and having means connecting the upper ends of the same with parts of the seat-supporting elements of the bicycles.

2. A device for connecting together a pair of bicycles or the like to form a quadricycle, comprising a structure disposed between the bicycles in a plane below the axes of the wheels thereof, upwardly and forwardly divergent members leading from the forward part of said structure and having clips for connecting the ends thereof with parts of the frames of the bicycles, a transverse member to which the rearward part of said structure is rearwardly connected, provided with means for connecting the ends thereof to the inner ends of the hubs of the rear wheels of the bicycles, and upwardly-divergent struts extending from said transverse member, adjustable thereon and having means connecting the upper ends of the same with parts of the seat-supporting elements of the bicycles.

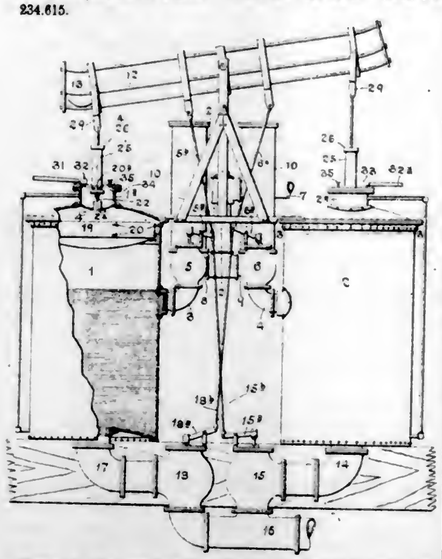
3. A device for connecting together a pair of bicycles or the like to form a quadricycle, comprising a structure disposed between the bicycles in a plane below the axes of the wheels thereof, upwardly and forwardly divergent members leading from the forward part of said structure and having means for connecting the ends thereof with parts of the frames of the bicycles, a transverse member to which the rearward part of said structure is rearwardly connected, provided with means for connecting the ends thereof to the inner ends of the hubs of the rear wheels of the bicycles, and upwardly-divergent struts extending from said transverse member, adjustable thereon and having hinge-couplings connecting the upper ends of the same with parts of the seat-supporting elements of the bicycles.

4. A device for connecting together a pair of bicycles or the like to form a quadricycle, comprising a structure disposed between the bicycles in a plane below the axes of the wheels thereof, upwardly and forwardly divergent members leading from the forward part of said structure and having means for connecting the ends thereof with parts of the frames of the bicycles, a transverse member to which the rearward part of said structure is rearwardly connected, provided with cranks for connecting the ends thereof to the inner ends of the hubs of the rear wheels of the bicycles, and upwardly-divergent

struts extending from said transverse member, adjustable thereon and having means connecting the upper ends of the same with parts of the seat-supporting elements of the bicycles.

5. A rigid frame for rigidly bracing together a pair of bicycles abreast to form a self-supporting quadricycle adapted to carry a load additional to the cycle-riders, consisting in the combination of an intermediate longitudinal member, a transverse member at the rear end of and integral with said longitudinal member; means for rigidly and detachably fastening the ends of said transverse member to the rear hub-spindles of the respective cycles; divergent limbs forming forward continuations of the longitudinal member; clamps for rigidly and detachably fastening the ends of said divergent limbs to the respective cycle-frames at or near the bottom head-lugs; upwardly-divergent braces adjustably attached to the transverse member between the ends thereof; and means for adjustably and detachably fastening the upper ends of said braces to the seat-lug bolts of the respective cycles, substantially as specified.

822,689. **AIR-COMPRESSOR.** BRYAN OBEAR, St. Louis, Mo., assignor to Montague Compressed Air Company of Missouri, St. Louis, Mo., a Corporation of Missouri. Filed Nov. 28, 1904. Serial No. 234,615.



Claim.—1. The combination with a compression-tank and valve controlling the admission to and exhaust therefrom of the motive fluid, of a float in the tank, a piston connected to the controlling-valves, and a weighted valve in the path of movement of the float and arranged to first engage and initially lift the piston and afterward admit beneath the same compressed air from the tank; substantially as described.

2. In an apparatus of the class described, the combination with a compression-tank and valves controlling the admission to and exhaust therefrom of the motive fluid, of a float in said tank, a piston connected to the controlling-valves, and the valve 23 having a stem in the path of movement of the float, and arranged to first engage and initially lift the piston and afterward admit beneath the same compressed air from the tank; substantially as described.

3. In an apparatus of the class described, the combination with a compression-tank and valves controlling the admission to and exhaust therefrom of the motive fluid, of a float arranged in said tank, a cylinder above the tank and in communication therewith, a piston 28 arranged in said cylinder, a valve 23 in the cylinder adapted to be actuated by the movement of the float in one direction to permit air to enter the cylinder for actuating the piston, and check-valves 30 in the bottom of the cylinder to permit the air to exhaust from the cylinder when the piston moves in the opposite direction; substantially as described.

4. In an apparatus of the class described, the combination with two tanks each having a dome, valves controlling the admission and exhaust therefrom of the motive fluid, and a cylinder above each dome, of a float in each tank, pistons connected to the controlling-valves and movable in the cylinders, and weighted valves in the path of movement of the floats and arranged to first engage and initially lift the pistons and afterward admit beneath the same compressed air from the tank; substantially as described.

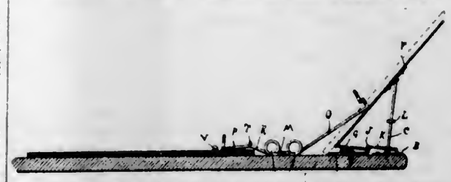
5. An apparatus of the class described, comprising two tanks, a fluid-supply pipe for each tank, each tank being provided with a valve for admitting liquid into the tank and a valve for permitting the liquid to exhaust from said tank, a walking-beam, connections between said walking-beam and the valves of each tank, and a cylinder in communication with each supply-pipe for absorbing the shock resulting from the closure of the admission-valves; substantially as described.

822,690. **CALENDAR.** JOSEPH N. PARKER, Bedford City, Va. Filed Nov. 24, 1905. Serial No. 288,870.



Claim.—A calendar comprising a series of leaflets, a suspension board, and triangular links connecting the ends of the leaflets and the ends of the board, the apex of the links being connected to the board and the base thereof passing through alined openings in the leaflets whereby to permit said leaflets to hang parallel.

822,691. **COMBINED PAPER AND BOOK HOLDER.** EDWIN PASELEY, Pittsburg, Pa. Filed Jan. 13, 1905. Serial No. 240,975.



Claim.—1. In combined paper and book holders, the combination with a base-board, of a book-support connected to said base-board, and a combined paper and book clamp secured to the base-board in front of said support, the book-holding portion, only, of said clamp being constructed and arranged to engage said book-support.

2. In combined paper and book holders, the combination with a base-board, of a book-support connected to said base-board, and a combined paper and book clamp constructed of a single piece of material and secured to the base-board in front of said support, the book-holding portion, only, of said clamp being constructed and arranged to engage said book-support.

3. In combined paper and book holders, the combination with a base-board, of a book-support connected to said base-board, and a combined paper and book clamp removably secured to the base-board in front of said support, the book-holding portion, only, of said clamp being constructed and arranged to engage said book-support.

4. In combined paper and book holders, the combination with a base-board, of a book-support pivotally connected to said base-board, and a combined paper and book clamp secured to the base-board in front of said support, the book-holding portion, only, of said clamp being constructed and arranged to engage said book-support.

5. In combined paper and book holders, the combination with a base-board, of a book-support connected to said base-board, a combined paper and book clamp secured to the base-board in front of said

support, the book-holding portion, only, of said clamp being constructed and arranged to engage said book-support, and means for limiting backward movement of said support when engaged by the book-holding portion of said combined paper and book clamp.

6. In combined paper and book holders, the combination with a base-board, of a book-support connected to said base-board, a combined paper and book clamp secured to the base-board in front of said support, the book-holding portion, only, of said clamp being constructed and arranged to engage said book-support, and means engaging the lower edge of said support for limiting backward movement thereof when engaged by the book-holding portion of said combined paper and book clamp.

7. In combined paper and book holders, the combination with a base-board, of a book-support connected to the base and provided with a projecting arm or finger toward its lower end, a combined paper and book clamp secured to the base-board in front of said support, the book-holding portion, only, of said clamp being constructed and arranged to engage said book-support, and means engaging the arm or finger of the book-support for limiting backward movement thereof when engaged by the book-holding portion of said combined paper and book clamp.

8. In combined paper and book holders, the combintion with a base-board, of a book-support connected to said base-board, a combined paper and book clamp secured to the base-board in front of said support, the book-holding portion, only, of said clamp being constructed and arranged to engage said book-support, and a spring-catch constructed and arranged to engage the lower edge of said support to limit backward movement of the latter when engaged by the book-holding portion of said combined paper and book clamp.

9. In combined paper and book holders, the combination with a base-board, of a book-support connected to said base-board, a combined paper and book clamp secured to the base-board in front of said support, the book-holding portion, only, of said clamp being constructed and arranged to engage said book-support, and a pivoted catch constructed and arranged to engage the lower edge of said support to limit backward movement thereof when engaged by the book-holding portion of said combined paper and book clamp.

10. In combined paper and book holders, the combination with a base-board, of a book-support connected to said base-board, a combined paper and book clamp secured to the base-board in front of said support, the book-holding portion, only, of said clamp being constructed and arranged to engage said book-support, and a pivoted spring-catch constructed and arranged to engage the lower edge of said support to limit backward movement thereof when engaged by the book-holding portion of said combined paper and book clamp.

11. In combined paper and book holders, the combination with a base-board, of a book-support connected to said base-board, and a spring-actuated combined paper and book clamp secured to the base-board in front of said support, the book-holding portion, only, of said clamp being constructed and arranged to engage said book-support.

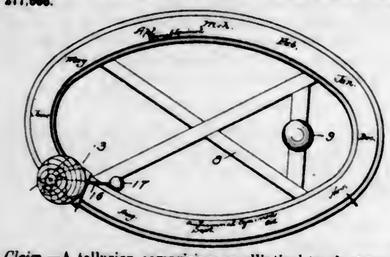
12. In combined paper and book holders, the combination with a base-board, of a book-support connected to said base-board, and a combined paper and book clamp secured to the base-board in front of said support, the book-holding portion of said clamp being constructed and arranged to engage said book-support and the paper-holding portion of said clamp being constructed and arranged to engage paper, &c., disposed on the base-board.

13. In combined paper and book holders, the combination with a base-board, of a book-support pivotally connected to said base-board, a spring-actuated combined paper and book clamp secured to the base-board in front of said support, the book-holding portion of said clamp being constructed and arranged to engage said book-support and the paper-holding portion of said clamp being constructed and arranged to engage paper, &c., disposed on the base-board, and a pivoted spring-catch constructed and arranged to engage the lower edge of said support to limit backward movement thereof when engaged by the book-holding portion of said combined paper and book clamp.

822,692.

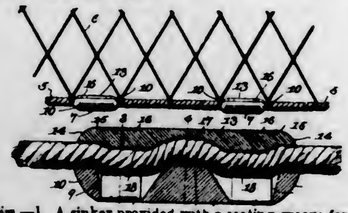


822,693. **TELLURIAN.** ELMER J. SEEVER, Rose, N. Y., assignor of one-half to E. G. Klinck, Rose, N. Y. Filed Sept. 9, 1905. Serial No. 277,666.



Claim.—A tellurian comprising an elliptical track stepped on its inner and outer edges and having inscriptions on the top, and supporting-legs connected at the bottom by a base-piece, a carriage mounted on the track and comprising a top piece, and removable side pieces which are connected thereto and rest on the steps, and have inturned flanges extending under the track, a standard on the carriage carrying a rotatable earth-globe, and an arm rotatably mounted on the standard and carrying a moon-globe, and a standard on the base near one end of the ellipse and having a sun-globe thereon.

822,694. **SINKER.** JOHN H. SHEPHERD, Huron, Ohio. Filed Feb. 27, 1906. Serial No. 303,349.



Claim.—1. A sinker provided with a seating-groove for the reception of a cable, and a locking-key seated in the groove and provided with a depending projection adapted to engage the cable.

2. A sinker provided with a seating-groove for the reception of a cable, a locking-key seated in the groove and provided with a depending portion adapted to engage the cable, and means for retaining the locking-key in operative position.

3. A sinker provided with a seating-groove for the reception of a cable and having openings communicating with the groove, a locking-key seated in the groove and engaging the cable, and locking members engaging the walls of said openings for retaining the locking-key in operative position.

4. A sinker provided with a longitudinal seating-groove for the reception of a cable and having openings communicating with the groove and defining spaced connecting-webs, a locking-key seated in the groove and engaging the cable, and clips passing through said openings and engaging the locking-key.

5. A sinker provided with a seating-groove for the reception of a cable and having openings communicating with the groove and defining spaced connecting-webs of different heights, a locking-key seated in the groove and engaging the cable, and means for retaining the locking-key in operative position.

6. A sinker comprising a body portion having a longitudinal groove for the reception of a cable and provided with spaced wedge-shaped openings communicating with said groove, a locking-key seated in the groove and engaging the cable, and clips engaging the locking-key and having their ends passing through the openings and extended laterally in contact with the adjacent walls of the body portion.

822,692. **RUBBER BOOT.** FREDERICK F. SCRAFFORD, Naugatuck, Conn., assignor to Rubberhide Company, a Corporation of Massachusetts. Filed Jan. 11, 1906. Serial No. 295,589.

Claim.—A rubber boot comprising a welt-sole, an upper secured thereto and a rubber reinforce-strip located in the angle formed on the exterior of the boot by the adjacent surfaces of the vult and upper beyond their point of juncture and secured to said faces, and extending around the sole.

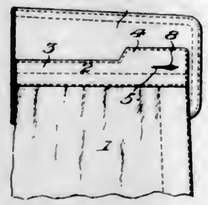
7. A sinker comprising a body portion having a longitudinal groove for the reception of a cable and provided with spaced openings communicating with the groove and defining intermediate and terminal connecting-webs of different heights, a locking-key seated in the groove and having a recess formed therein opposite the intermediate web and adapted to receive the adjacent portion of the cable, and means for retaining the locking-key in engagement with the cable.

8. A sinker comprising a body portion having depressions formed in its side walls and provided with a longitudinal seating-groove for the reception of a cable, there being openings formed in the body portion and communicating with the seating-groove, a locking-key seated in said groove and engaging the cable, and clips engaging the locking-key and having their ends extended through said openings and bent laterally into engagement with the depressions in the body portion.

9. A sinker comprising a body portion having a longitudinal seating-groove formed therein for the reception of a cable and provided with openings defining connecting-webs of different heights, a locking-key seated in the groove and provided with an intermediate recess and spaced depending lugs, and means engaging the locking-key and seated within said openings for locking said key in engagement with the cable.

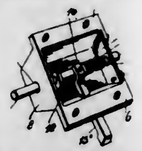
10. A sinker comprising a body portion having a longitudinal wedge-shaped seating-groove formed therein for the reception of a cable, and having its side walls provided with depressions, there being openings formed in the body portion and communicating with the groove, a correspondingly-shaped locking-key seated in the groove and provided with seating-recesses, and clips engaging the seating-recesses in the key and having their ends passing through said openings and bent laterally into engagement with the depression for locking said key in contact with the cable.

822,695. **CUFF AND WRISTBAND.** WILLIAM M. SHEWRY, Chicago, Ill. Filed Apr. 15, 1905. Serial No. 255,752.



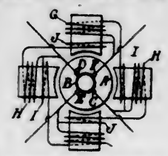
Claim.—In a device of the character described, a wristband reduced in width intermediate its ends to conceal the band and having the ends of its inner face folded against each other, and a cuff of a single layer enlarged intermediate its ends to prevent tilting and having the ends of its inner face folded against the ends of the outer face of the wristband.

822,696. **SASH-FASTENER.** FREDERICK SIEDER, Swissvale, Pa. Filed July 21, 1905. Serial No. 270,650.



Claim.—The combination with a window-frame, a perforated strip carried by said frame and a sliding sash, of a lock consisting of a casing of substantially rectangular form and having laterally-extending flanges provided with holes for the passage of attaching-screws, said casing having holes in its ends and the top of the casing being provided with a lug formed with a hole in alinement with the holes in the end of the casing, a plunger passing through the holes in the end of the casing and through the hole in said lug, a lever having an angularly-bent inner end, said lever being pivotally secured to the plunger and extending through an opening in one side of a casing and being pivotally attached to one of the said flanges and a spring surrounding the plunger, said spring being attached at one end to one end of the casing and at the other end to the said plunger.

822,697. **DYNAMO-ELECTRIC MACHINE.** WILLIAM STANLEY, Great Barrington, Mass. Filed May 26, 1905. Serial No. 262,183.



Claim.—1. In a dynamo-electric machine, the combination of a rotor and a stator, one of said members having windings thereon, a commutator connected thereto, brushes bearing on said commutator, and the other of said members having polar projections, multiphase windings thereon connected to said brushes and producing a field dissymmetrical relatively to the field produced by the other of said windings.

2. In a dynamo-electric machine the combination of a rotor, windings thereon, a commutator connected thereto, brushes bearing thereon, a stator having polar projections, multiphase windings on said stator, connected to said brushes and producing a field dissymmetrical relatively to the field produced by the windings on the rotor.

3. In a dynamo-electric machine, the combination of a stator-winding, a rotor-winding electrically connected thereto, said stator-winding being dissymmetrical in form so that the center of flux produced by each phase of current does not coincide with the center of figure of the stator-coils producing it.

4. In a dynamo-electric machine, the combination of a stator-winding, a rotor-winding electrically connected thereto, polar projections for said stator-windings, said rotor-windings being symmetrical in form and said stator-winding being dissymmetrical in form so that the center of flux produced by said stator-winding does not coincide with the center of flux produced by said rotor-winding

5. In a dynamo-electric machine, the combination of the stator-winding and rotor-winding, a commutator connected to said rotor-winding, brushes bearing upon said commutator and connected to said stator-winding, said stator-winding of such dissymmetrical form as to have its electromotive force displaced in phase from the electromotive force of the rotor-winding to which it is connected.

6. In a dynamo-electric machine, the combination of the stator-winding and the rotor-winding, a commutator connected to said rotor-winding, brushes bearing upon said commutator and connected to said stator-winding, said stator-winding being dissymmetrical in form so that the center of its magnetic field does not coincide with the center of its figure.

7. In a dynamo-electric machine, the combination of a rotor, windings thereon, a commutator connected thereto, brushes bearing thereon, a stator having polar projections, multiphase windings on said stator connected to said brushes and producing a field dissymmetrical relatively to the field produced by the windings on the rotor, and compounding coils traversed by work-circuit currents and so disposed relatively to the energizing-coils as to superimpose a rotating magnetic field varying with the load.

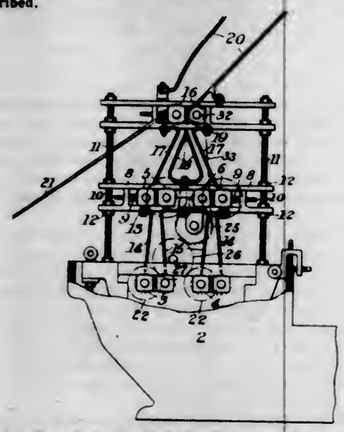
8. In a dynamo-electric machine, the combination of a rotor, windings thereon, a commutator connected thereto, brushes bearing thereon, a stator having polar projections, multiphase windings on said stator connected to said brushes and producing a field dissymmetrical relatively to the field produced by the windings on the rotor, and compounding coils traversed by the work-circuit currents and so disposed relatively to the energizing-coils as to superimpose a rotating magnetic field varying with the load, the compounding coils being in series with said work-circuit and displaced from said energizing-coils by approximately the complement of lag of the currents in said work-circuits.

822,698. **TIN-PLATE CATCHER.** LAWRENCE C. STEELE, Wheeling, W. Va., assignor to American Sheet and Tin Plate Company, Pittsburg, Pa., a Corporation of New Jersey. Filed June 23, 1905. Serial No. 267,383.

Claim.—1. A feed-out device for duplex coating apparatus, comprising two pairs of feed-out rollers arranged side by side, a single pair of feed-out rollers above them, and guides arranged to feed the sheets from each lower pair to the single upper pair; substantially as described.

2. A feed-out device for coating apparatus, comprising a plurality of lower pairs of feed-out rollers, arranged side by side, an upper pair of feed-out rollers, and guides arranged to feed the sheets from lower pairs to the single upper pair; substantially as described.

3. In a feed-out device for duplex coating apparatus, comprising two pairs of feed-out rollers arranged side by side, driving connections therefor, a single upper pair of feed-out rollers above and between the lower pairs, and inclined guides arranged to guide the sheets from both lower pairs into the single upper pair; substantially as described.



4. A feed-out device for duplex coating apparatus, comprising two lower pairs of feed-out rollers arranged side by side, a single pair above and between the lower pairs, and means for guiding the sheets from both lower pairs into the upper pair, the upper pair having a higher peripheral speed than the lower pair; substantially as described.

5. A feed-out device for coating apparatus, comprising two lower pairs of feed-out rolls, driving mechanism therefor having connections arranged to allow the rolls to rotate at higher speed than their normal speed, and an upper pair of feed-out rollers having higher peripheral speed than the driving speed of the lower rollers; substantially as described.

6. A feed-out device for duplex coating apparatus, comprising two lower pairs of feed-out rollers, driving connections arranged to turn them at a certain rate of speed, said rollers being arranged to be free to rotate at a higher speed, a single upper pair of feed-out rollers, curved guides arranged to direct the sheets from both lower pairs into the single upper pair, and driving connections arranged to rotate the upper pair at a higher rate of speed than the lower pairs; substantially as described.

7. A feed-out device for coating apparatus, comprising a plurality of lower pairs of feed-out rolls, arranged side by side, an upper pair of feed-out rolls, guides arranged to feed the sheets from the lower pairs to the upper pair, and a pair of inclined guides above the upper pair of rolls and arranged to permit the sheets to slide backwardly over the said rolls; substantially as described.

8. A feed-out device for coating apparatus, comprising a plurality of lower pairs of feed-out rolls, arranged side by side, an upper pair of feed-out rolls, means for guiding the sheet from the lower to the upper rolls, a pair of inclined guides above the upper pair of rolls, and a chute down which the sheets slide; substantially as described.

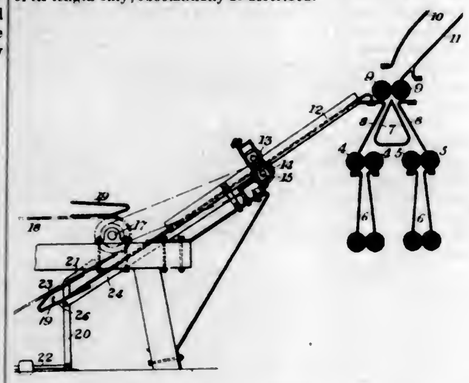
822,699. **BRANNER FEEDING DEVICE.** LAWRENCE C. STEELE, Wheeling, W. Va., assignor to American Sheet & Tin Plate Company, Pittsburg, Pa., a Corporation of New Jersey. Filed Sept. 6, 1905. Serial No. 276,948.

Claim.—1. In a branner feeding device, an inclined chute, a pair of rollers intermediate of its length, and means for intermittently rotating the rollers; substantially as described.

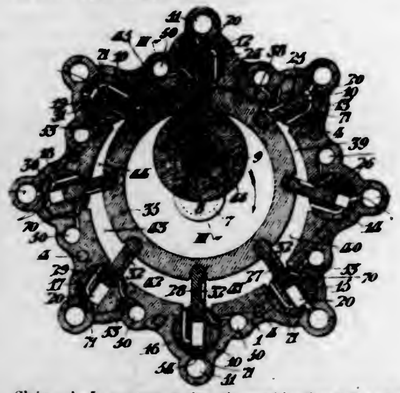
2. In a branner feeding device, an inclined chute, a pair of rollers intermediate of its length, a branner-chain, and connections controlled by the branner-chain for intermittently rotating the rollers; substantially as described.

3. In a branner feeding device, an inclined chute having stationary hooks at its lower end, rollers located at an intermediate part of the chute, a branner-feed having hooks moving between the stationary hooks, and a clutch-drive for the intermediate rollers controlled by the movement of the branner-hooks; substantially as described.

4. In a branner feeding device, an inclined chute, a pair of feed-rolls therein, and means for rotating said rolls to feed a sheet a part of its length only; substantially as described.



822,700. **ROTARY ENGINE.** WILLIAM O. STEELE, Grenloch, N. J., assignor to Watson Birdsall Rulon, Philadelphia, Pa. Filed June 21, 1905. Serial No. 266,209.



Claim.—1. In a rotary engine, the combination with a stationary casing; of a piston in said casing; variable connections between fixed points on said piston and casing separating a series of independent motor-compartments; ports local to and controlled by said connections, whereby motor fluid is admitted to said compartments in definite sequence to operate said connections and said piston; a shaft; and, a transmission device between said shaft and said piston, substantially as set forth.

2. In a rotary engine, the combination with a stationary casing; of a piston in said casing; expansible and contractible connections between fixed points on said piston and casing, separating a series of independent motor-compartments; ports controlled by said connections, whereby pressure fluid is admitted to said compartments in definite sequence to operate said connections and said piston; a shaft; and, a transmission device between said shaft and said piston, substantially as set forth.

3. In a rotary engine, the combination with a casing; of a piston in said casing; oscillatory valves arranged to separate independent compartments between said piston and said casing and to control the supply of motor fluid to said compartments; a shaft; and, a transmission device, whereby said shaft is rotated by said piston, substantially as set forth.

4. In a rotary engine, the combination with a casing; of a piston in said casing; slide-valves arranged to separate independent compartments between said piston and said casing, and to control the supply of motor fluid to said compartments; a shaft; and, a transmission device, whereby said shaft is rotated by said piston, substantially as set forth.

5. In a rotary engine, the combination with a casing; of a piston in said casing; rotary valves mounted to oscillate in said casing; a socket in each of said rotary valves; slide-valves arranged to reciprocate in the respective sockets and to separate compartments between said piston and said casing; means whereby the reciprocatory movement of said slide-valves controls the supply of motor fluid to said compartments; a shaft; and, a transmission device, whereby said shaft is rotated by said piston, substantially as set forth.

6. In a rotary engine, the combination with a stationary casing; of a shaft provided with a crank arranged to rotate in said casing; an annular piston in said casing encircling said crank in operative relation thereto; expansible and contractible connections between fixed points on said piston and said casing, separating a series of independent motor-compartments; and, ports controlled by said connections, whereby motor fluid is admitted in definite sequence with respect to said compartments, substantially as set forth.

7. In a rotary engine, the combination with a stationary casing; of a shaft provided with a crank arranged to rotate in said casing; an annular piston in said casing encircling said crank in operative relation thereto; expansible and contractible connections between fixed points on said piston and said casing, separating a series of independent motor-compartments and comprising a series of rotary valves whose axes are parallel with the axis of said shaft; each of said valves having a socket; slide-valves connected with said piston and arranged to reciprocate in said sockets; and, ports local to said connections, controlled by said valves, substantially as set forth.

8. In a rotary engine, the combination with a stationary casing; of a shaft provided with a crank arranged to rotate in said casing; an annular piston in said casing encircling said crank in operative relation thereto; variable connections between fixed points on said piston and said casing, separating a series of independent motor-compartments and comprising a series of rotary valves whose axes are parallel with the axis of said shaft, each of said valves having a socket arranged to communicate with an exhaust-outlet and the compartment local to said connection; slide-valves connected with said piston and arranged to reciprocate in said sockets; and, ports local to said connections respectively controlled by the oscillatory movement of said rotary valves and the reciprocatory movement of said slide-valves, substantially as set forth.

9. In a rotary engine, the combination with a stationary casing; of a piston in said casing; variable connections between fixed points on said piston and casing, separating a series of independent motor-compartments; and, an air-cushioning device preventing frictional engagement between said piston and casing, substantially as set forth.

10. In a rotary engine, the combination with a casing inclosing an annular piston surrounding a crank-shaft in operative relation with the latter; of expansible and contractible connections between said piston and said casing, separating a series of independent motor-compartments between said casing and piston; and, an air-cushioning device preventing frictional engagement between said piston and casing, substantially as set forth.

11. In a rotary engine, the combination with a casing; of an annular piston in said casing; variable connections between said piston and said casing separating a series of independent motor-compartments; valves arranged to be actuated by said connections; ports arranged to be alternately opened and closed by said valves whereby fluid-pressure is introduced to gyrate said piston; a shaft cranks on said shaft; a crank-pin; and, a wheel mounted to rotate; on said pin in tangential relation to said piston to rotate said shaft, substantially as set forth.

12. In a rotary engine, the combination with a casing; of an annular piston in said casing; variable connections between said piston and said casing separating a series of independent motor-compartments; valves arranged to be oscillated by said connections; ports in said casing; channels in said valves arranged to register with said ports; a shaft; and, a device whereby the movement of said piston rotates said shaft, substantially as set forth.

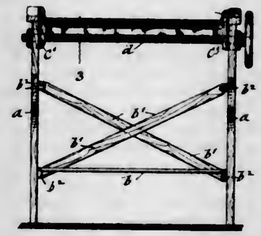
13. In a rotary engine, the combination with a casing; of an annular piston in said casing; variable connections between said piston and said casing separating a series of independent motor-compartments; valves arranged to be oscillated by said connections; ports in said casing; channels in said valves arranged to connect said ports with said compartments; a shaft; and, a device whereby the movement of said piston rotates said shaft, substantially as set forth.

14. In a rotary engine, the combination with a casing; of an annular piston in said casing; variable connections between said piston and said casing separating a series of independent motor-compartments; valves arranged to be oscillated by said connections; inlet-ports in said casing; a channel in each of said valves arranged to connect one of said ports with a compartment; exhaust-ports in said casing; a channel in each of said valves arranged to connect one of said exhaust-ports with a compartment; a shaft; and, a device whereby said shaft is rotated by said piston, substantially as set forth.

15. In a rotary engine, the combination with a casing; of an annular piston in said casing; variable connections between said piston and said casing separating a series of independent motor-compartments; valves arranged to be actuated by said connections; a socket in each of said valves arranged to receive one of said connections; inlet-ports in said casing; a channel in each of said valves arranged to connect one of said ports with a compartment; exhaust-ports in said casing; a channel in each of said valves arranged to connect its socket with one of said exhaust-ports and with a compartment; a shaft; and, a device whereby said shaft is rotated by the movement of said piston, substantially as set forth.

16. In a rotary engine, the combination with a casing; of a gyratory piston in said casing; rotary valves mounted to oscillate in said casing; a socket in each of said rotary valves; slide-valves respectively arranged to reciprocate in said sockets and to separate compartments between said piston and said casing; ports in said casing; channels in said rotary valves respectively arranged to register with said ports; a recess in each of said slide-valves arranged to connect the local channel and compartment; exhaust-ports in said casing; a channel in each of said rotary valves arranged to include its socket and to connect one of said exhaust-ports with a compartment; a shaft; and, a device whereby the gyration of said cylinder rotates said shaft, substantially as set forth.

822,701. **BENCH FOR USE IN PLAYING MUSICAL INSTRUMENTS.** JOHN W. SUTTON, New York, N. Y. Filed Nov. 15, 1905. Serial No. 287,476.



Claim.—1. A bench for use in playing musical instruments, comprising upright side walls, detachable braces extending between said side walls, a seat, and means to clamp together said seat and said side walls and to thereby maintain said braces firmly in position.

2. A bench for use in playing musical instruments, comprising upright side walls provided with vertical slots, means detachably connecting said side walls, a seat provided at its end with lateral openings, journal-bearings having squared portions guided in said slots of the side walls, and a clamping-spindle passing through said openings in the seat and through said journal-bearings, said spindle having threaded engagement with one of the latter.

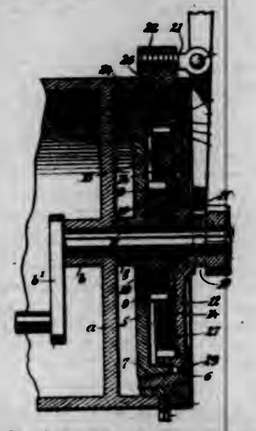
3. In a bench for use in playing musical instruments, the combination, with upright side walls, and means detachably connecting said side walls at their lower portions, of a seat extending between said walls and provided with enlarged end portions, there being lateral openings in said end portions below the main part of the seat, journal-bearings guided vertically in said side walls, and a clamping-spindle engaging said bearings and extending through said openings in the enlarged ends of the seat.

4. A bench for use in playing musical instruments, consisting of upright side walls having serrated plates at their front and rear edges, means for connecting them at their lower ends, a seat provided with enlarged ends and toothed corner-plates, a screw-spindle passing through the enlarged ends of the seat, journal-bearings in said side walls for said screw-spindle, means for vertically adjusting the same, and means for locking the side walls and seat together.

5. A bench for use in playing musical instruments, consisting of upright side walls, means for transversely connecting the side walls at their lower ends, said side walls being provided with vertical center slots in their upper parts, journal-bearings guided in the slots of the side walls, a transverse screw-spindle passing through said journal-bearings, a seat provided with enlarged ends that are pivoted to said screw-spindle, toothed plates applied to the corners of the

seat, serrated plates attached to the side walls, and means for clamping the screw-spindle, toothed corner-plates and serrated plates firmly together.

822,702. CLUTCH AND TRANSMISSION-GEAR. JULIUS W. WALTERS, New York, N. Y. Filed June 9, 1905. Renewed Sept. 28, 1905. Serial No. 280,460.



Claim.—1. In a device of the class described, the combination with a shaft, of a driving member having a gear, a driven member, a shiftable member coöperating with said driving member and having an internal gear, and intermediate gears carried by the driven member and having meshing relation to the gear on the driving member and the internal gear of the intermediate member.

2. A device of the class described, having a driving member provided with a gear, a loosely-mounted driven member carrying a series of gears, an intermediate member disposed in coöperative relation to the driving member and provided with an internal gear which meshes with the series of gears on the driven member, and means for shifting the intermediate member relatively to the driving member.

3. A device of the class described, having a driving member provided with a gear, a loose driven member carrying a series of gears which mesh with said first-named gear, a loose intermediate member provided with a conical flange and with an internal gear, a stationary clutch member in coöperative relation to the conical flange of the intermediate member, and means for shifting said intermediate member laterally with respect to the clutch-surface and the driving member.

4. A device of the class described, having a driving member forming a male clutch member and provided with a gear, an intermediate female clutch member in coöperative relation to the male clutch member formed by the driving member and provided with an internal gear, a driven member carrying a series of gears which mesh with the gears of the driving and intermediate members, and means for shifting the intermediate member relatively to the driving member.

5. In a device of the class described, a driving member having a male clutch and provided with a gear, a female clutch intermediate member having an internal gear and disposed in coöperative relation to said driving member, a stationary clutch member coöperating with the intermediate member, and a driven member having a series of gears which mesh with the gears of the driving and intermediate members.

6. A device of the class described, having a driving member provided with a gear and with a male cone, a shiftable driven member carrying a series of gears, an intermediate member having a female cone and an internal gear disposed in coöperative relation to the male cone and to the series of gears on the driving and driven members respectively, means for insuring movement of the intermediate member laterally with the driven member, a clutch member coöperating with the conical surface of the intermediate member, and means for adjusting the driven member laterally with relation to the driving member.

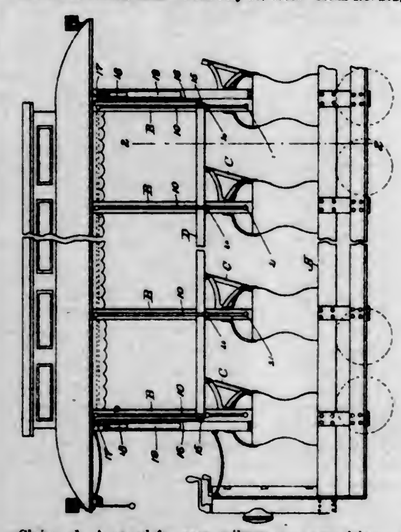
7. In a device of the class described, the combination with a gear-case, of a cup fixed thereto, a shaft, a driving member having a conical flange and a concentric spur-gear, a driven member mounted loosely on the shaft, a series of gears carried by said driven member, an intermediate member having a conical flange and an internally-toothed flange, said conical flange of the intermediate member being disposed in coöperative relation to the cup and the conical flange of the driving member, whereas the internally-toothed flange of said intermediate member has meshing engagement with the spur-gears on the driven member, a ring secured to the intermediate member and lapping the driven member, and means for shifting the driven and intermediate members with respect to the cup and the driving member.

8. The combination of a male clutch member, a conical brake member an intermediate member having two clutch-surfaces which are in coöperative relation to the male clutch member and to the conical brake member respectively, a driven member and driving connections upon the driven member between the male clutch member and the intermediate member.

9. The combination of a male clutch member, a driven member, a brake member having an internal conical surface, a clutch member having two clutch-surfaces, male and female, disposed in coöperative relation to the male clutch member and the conical brake-surface respectively, and driving connections between the male and female clutch members and upon the driven member, said male and female clutch member being shiftable relatively to the conical brake-surface and the male clutch member.

10. The combination of a male clutch member, an annular brake member having a conical clutch-surface, an annular male and female clutch member having two clutch-surfaces disposed in coöperative relation to the male clutch member and the clutch-surface of the brake member respectively, driving connections between the male and female clutch members, and a driven member, said brake member and the female clutch member being disposed one within the other and compactly with relation to the male clutch member.

822,703. GUARD FOR OPEN RAILWAY-CARS. ETTA W. WHERLOCK, East Milton, Mass. Filed July 31, 1905. Serial No. 272,100.

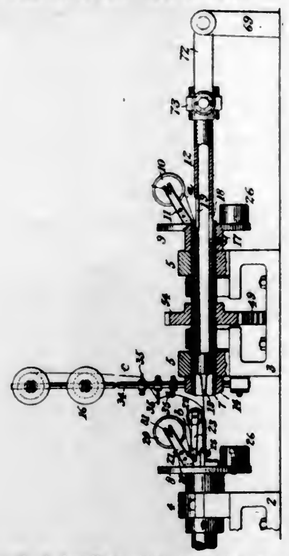


Claim.—1. A guard for open railway-cars comprising a vertically-movable guard-rail extending longitudinally along the side of the car, adjacent to the posts thereof, guides for said rail, suspending-cords secured to said guard-rail and provided with counterpoise-weights for balancing said rail, said cords passing over pulleys at the top of the car, and guides for said counterpoise-weights, said weight-guides located at opposite ends, respectively of said guard-rail and constituting stops to prevent longitudinal movement of said guard-rail.

2. In an open railway-car, the combination with the side posts thereof, of guide-rods secured thereto at the top and bottom and offset at the ends to leave spaces between said rods and the posts to which they are secured, vertically-movable guide-rails extending longitudinally along the sides of the car between the said guide-rods and posts, suspending-cords secured to said guard-rails and provided with counterpoise-weights for balancing said rails, said cords passing over pulleys at the top of the car, and guides for said counterpoise-weights, said weight-guides located at opposite ends, respectively, of said guard-rail and constituting stops to prevent longitudinal movement of said guard-rail.

3. In an open railway-car the combination with the side posts thereof of guide-rods secured thereto at the top and bottom and offset at the ends to leave spaces between said rods and the posts to which they are secured, stops fastened to said guide-rods and posts, intermediate the ends of said guide-rods, vertically-movable guide-rails extending longitudinally along the sides of the car between said guide-rods and posts, and suspending-cords secured to said guard-rails and provided with counterpoise-weights for balancing said rails, said cords passing over pulleys at the top of the car and guides for said counterpoise-weights.

822,704. CHENILLE-MACHINE. CHARLES WIEBKE, New York, N. Y. Filed July 13, 1905. Serial No. 269,336.



Claim.—1. A chenille-machine comprising two rotating binder-thread-carrying parts and means for rotating these two parts in the same direction, a loop-former coöperative therewith, and means for supplying surface thread to the loop-former.

2. A chenille-machine comprising a binder-thread-carrying rotating part, a loop-former carried thereby, means for supplying surface thread to the loop-former, another binder-thread-carrying rotating part, and means for rotating the two binder-thread-carrying parts in the same direction.

3. A chenille-machine comprising two rotating binder-thread-carrying parts fitted to rotate on a common axis, one in advance of the other, means for rotating these two parts in the same direction, a loop-former at the front end of the rear rotating part, and means for supplying surface thread to the loop-former.

4. A chenille-machine comprising two rotating parts and binder-thread bobbins carried thereby, the rotating parts being arranged one in advance of the other, means for rotating these two parts in the same direction, a loop-former at the front end of the rear rotating part, means for supplying surface thread to the loop-former, and drawing means for the chenille.

5. A chenille-machine comprising two rotating binder-thread-carrying parts, means for rotating these parts in the same direction, a loop-former a loop-cutter coöperative therewith, and means for supplying the surface thread to the loop-former.

6. A chenille-machine comprising a binder-thread-carrying rotating part, a loop-former carried thereby, means for supplying surface thread to the loop-former, another binder-thread-carrying rotating part, a loop-cutter carried thereby, and means for rotating the two binder-thread-carrying parts in the same direction.

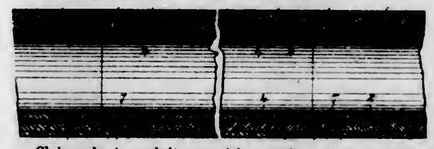
7. A chenille-machine comprising two rotating binder-thread-carrying parts fitted to rotate on a common axis one in advance of the other, means for rotating these two parts in the same direction, a loop-former at the front end of the rear rotating part, means for supplying surface thread to the loop-former, and a loop-cutter at the rear end of the front rotating part.

8. A chenille-machine comprising two rotating parts and binder-thread bobbins carried thereby, the rotating parts being arranged one in advance of the other, means for rotating these two parts in the same direction, a loop-former at the front end of the rear rotating part, means for supplying surface thread to the loop-former, a loop-cutter at the rear end of the front rotating part, and drawing means for the chenille.

9. A chenille-machine comprising two rotating parts and binder-thread bobbins carried thereby, the rotating parts being arranged one in advance of the other, means for rotating these two parts in the same direction, a loop-former coöperative therewith, means for supplying surface thread to the loop-former, and continuously-operative drawing means for the chenille, substantially as shown and described.

10. A chenille-machine comprising two rotating parts and binder-thread bobbins carried thereby, the rotating parts being arranged one in advance of the other, means for rotating these two parts in the same direction, a loop-former coöperative therewith, means for supplying surface thread to the loop-former, a loop-cutter also coöperative therewith, and continuously operative drawing means for the chenille, substantially as shown and described.

822,705. PIPE OR CONDUIT. CHARLES H. WILSON, Red Oak, Iowa. Filed Sept. 29, 1905. Serial No. 280,618.

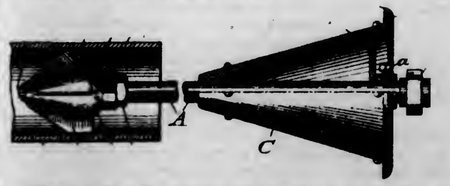


Claim.—1. A conduit comprising sections of composition material, having metallic frames embedded therein, embodying longitudinal members constructed at one of their ends with slots and provided at their other ends with jaws having opposite slots therein, registering with said first-named slots, and wedges driven into each set of registering slots for securing said sections together.

2. A conduit comprising sections of composition material, having metallic structures embedded therein, said structures comprising spaced circumferentially-disposed members, and longitudinally-disposed members connected to the circumferentially-disposed members, said longitudinally-disposed members having at one end a longitudinal slot, and at the other jaws spaced radially from each other for receiving the opposite end of the corresponding member of the preceding section, each of said jaws having a longitudinal slot, and a wedge traversing the alined slots, whereby to secure the structures together.

3. A conduit comprising sections of composition material, having metallic frames embedded therein, said frames comprising longitudinal members having at one end a slot and at the other end radially-spaced jaws each provided with a slot and adapted to receive therebetween the opposite end of the corresponding longitudinal member of the preceding section, and wedges traversing the slots for retaining the parts in position.

822,706. FLUE-CLEANER. WILLIAM P. WILSON, Trenton, N. J. Filed Dec. 30, 1905. Serial No. 293,898.



Claim.—1. In a flue-cleaner, a conduit for vapor, compressed air, or the like, having one or more apertures at or near one end thereof, said apertures being so placed and formed as to deflect the course of the current of vapor, compressed air, or the like passing through said conduit back along said conduit and through a flue into which

it is inserted, in combination with a deflector so formed and located as to receive said current and any solid matter carried with it and so deflect the same as not to retard the exit of said current from said flue.

2. In a flue-cleaner, a conduit for vapor, compressed air, or the like, having an end or head of greater diameter than said conduit, said head having one or more apertures at its rear end whereby the vapor, compressed air, or the like, passing through said conduit may be projected rearwardly along said conduit and within a flue within which said flue-cleaner is inserted, in combination with a deflector so formed and located as to receive said vapor, compressed air, or the like, and any solid matter carried with it and so deflect the same as not to retard the exit thereof from said flue.

3. In a flue-cleaner, the combination of a conduit having a head of greater diameter than the body of said conduit, said head having apertures opening rearwardly, and a conical deflector sustained on said conduit, substantially as described.

4. In a flue-cleaner, a conduit having a head of greater diameter than said conduit, said head having apertures opening rearwardly and an aperture opening forwardly, in combination with a conical deflector having a flanged edge, substantially as described.

822,707. **AUTOMATIC DANCING FIGURE.** HERMAN WOLKE San Francisco, Cal. Filed Oct. 10, 1901. Serial No. 78,239.



Claim.—1. An automatic figure adapted to move upon an inclined surface and having two rolling-wheels, and means for locking said rolling-wheels alternately whereby they become, successively, pivots for each other.

2. An automatic figure adapted to move upon an inclined surface and having two wheels for supporting it, and a catch adapted to lock each wheel, so that said wheels are free to rotate in opposite directions only.

3. In combination with a figure, two supporting-wheels arranged in parallel vertical planes, and means for locking each wheel against rotation in one direction; all constructed and arranged so that when traveling upon an inclined surface, one wheel is locked while the other describes a partial revolution around it, causing a progressive turning motion of the figure with said wheels as alternate pivots.

4. An automatic figure adapted to move upon an inclined surface, and having two wheels with finely-corrugated peripheries for supporting it, and a catch adapted to lock each wheel so that said wheels are free to rotate in opposite directions only.

5. A figure mounted upon two supporting-wheels, each adapted to act as a pivot around which the other turns, so that it can travel in progressive half-turns upon an inclined surface, in combination with such a surface, and with means for inclining it.

6. A figure mounted upon two supporting-wheels, adapted to act alternately as pivots for each other, in combination with an inclined surface upon which said figure is adapted to travel in progressive half-turns, and with means for inclining said surface and means for changing its direction of inclination.

7. In an automatic dancing toy, a balanced platform, driving mechanism connected to said platform for tilting it in opposite directions, and means for stopping said mechanism when either end of the platform is raised by said driving mechanism, in combination with a figure mounted upon two wheels each adapted to serve as a pivot for the other for causing it to travel on said platform in progressive rotations, said figure being adapted, in the course of said travel, to cause said platform to release said stopping means and permit said driving mechanism to escape.

8. An automatic dancing toy, comprising an oscillating platform, a driving-shaft having a cam for causing said oscillating movement, stops on the platform for arresting said cam and driving-shaft at each half-revolution, and a dancing figure adapted to travel upon the platform in the direction of its downward inclination and to release the cam by increasing the inclination of the platform after passing the center of oscillation in either direction.

9. In an automatic dancing toy, a balanced platform, driving mechanism connected to said platform for tilting it in opposite directions, and means for stopping said mechanism when either end of the platform is raised by said driving mechanism, in combination with a figure having self-contained means for causing it to travel on said platform in progressive rotations, said figure being adapted, in the course of said travel, to cause said platform to release said stopping means and permit said driving mechanism to escape, and springs for resisting the gravity of said figure, but gradually overcome thereby.

10. In combination with motor mechanism, a vertical shaft, a horizontally-arranged cam on said shaft having a high and a low face and a projection, a platform balanced horizontally above the clock, and having upon its bottom two friction-rollers and two fixed stops, all arranged in line, adjustable pressure-springs bearing beneath the platform on each side on its center of oscillation, and a dancing figure supported by and adapted to travel upon said platform.

11. In a dancing figure, two carrying-wheels, operable automatically by the inclination of a supporting-surface, so that each in turn forms a pivot about which the other partially revolves, and a pair of steadying-wheels mounted upon inclined axles, so as to be capable of rolling in orbits concentric with those of the carrying-wheels.

822,708. **BRUSH.** MARSHALL W. WRIGHT, Chicago, Ill. Filed Feb. 13, 1905. Serial No. 245,463.



Claim.—1. A brush having a socket, said socket having a top wall with an opening therethrough, a handle having a head adapted to be inserted and removed through said opening and having also a neck occupying said opening and revoluble therein, and a block occupying the socket and revoluble therein, said head having non-rotative engagement with the block, whereby they may be rotated together for the purpose of bringing the head into and out of register with said opening, substantially as described.

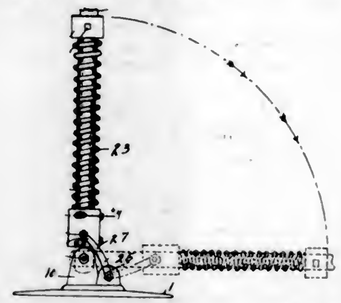
2. A brush having a socket, said socket having a top provided with a slot, a block occupying said socket and revoluble therein and a handle having a cross-head engaging the block and a neck passing through the slot, the block and handle being revoluble for the purpose of engaging and disengaging the cross-head and the top wall of the socket, substantially as described.

3. A brush having a socket, said socket having a top wall provided with a longitudinal slot opening thereinto and extending in both directions therefrom, a block occupying said socket and revoluble therein, said block having a diametrical groove, and a handle having a T-head adapted to be inserted through said slot and into said groove, whereby when the handle is held in vertical position and given a partial rotation the T-head will engage the top wall of the socket and whereby when the handle is inclined from vertical position the side walls of the slot will engage it and prevent the revolution of the block, substantially as described.

4. A brush having a socket, said socket having a top wall provided with a longitudinal slot opening thereinto, a revoluble block occupying the socket and having diametrical grooves at right angles to each other, and a handle having a cross-head adapted to occupy one of said grooves and to be engaged by the top wall of the socket, substantially as described.

5. A brush having a socket, and a slot opening thereinto, a revoluble block in said socket, a handle engaging the block and adapted to be engaged with and disengaged from the brush by rotating the block, and a key for preventing the accidental rotation of the block, substantially as described.

822,709. **TROLLEY-STAND.** JOHN ZIELINSKI, Detroit, Mich. Filed Oct. 22, 1903. Serial No. 178,010.



Claim.—1. In a trolley-stand, the combination with the supporting-plate adapted to be mounted upon a car, of the base-tube pivoted to said plate, a sleeve mounted to slide upon said tube, roller-bearings interposed between the tube and sleeve a collar fixed to the tube, a coiled spring upon the tube between the sleeve and collar, and an arm pivoted to the plate and to said sleeve.

2. In a trolley-stand, the combination of the base-tube pivoted at its lower end, a collar fixed upon said tube, a sleeve at the lower end of said tube mounted to slide thereon, said sleeve carrying anti-friction-rollers which bear upon the periphery of the tube, a spring interposed between the sleeve and collar upon said tube, and a pivoted arm standing at an incline to the axes of said tube and pivoted to said sleeve.

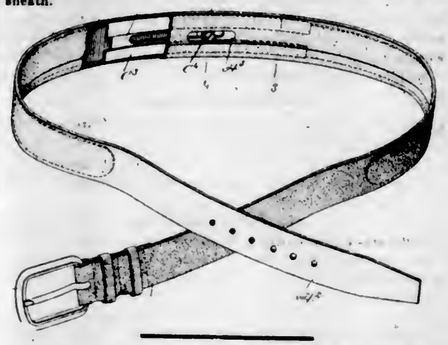
3. In a trolley-stand, the combination of a base-plate, a rotary plate mounted to rotate thereon, a base-tube pivotally mounted upon said rotary plate, a slidable sleeve upon said tube above the point of pivot, a collar upon the tube above said sleeve, a compressible spring surrounding the tube between the sleeve and collar, a bifurcated arm pivoted to the rotary plate at its lower end and to said sleeve at its upper end, the pivot-point of the lower end of said arm being eccentric to and below the plane of the pivotal point of said tube.

4. In a trolley-stand, the combination of a rotary plate adapted to be mounted upon a car, the base-tube of the trolley-pole pivoted to said plate, a sliding sleeve upon said tube, antifriction-rollers between the tube and sleeve a fixed collar upon the tube above said sleeve, a spring upon the tube between the sleeve and collar, a bifurcated arm pivoted to opposite sides of the sleeve at its upper end, the lower end of said arm being pivoted out of alinement with the axes of the tube and below the plane of the pivotal point thereof.

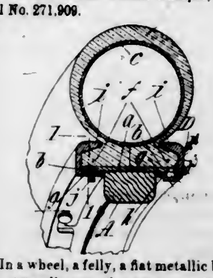
822,710. **BELT.** JOHN ASHEW, West Point, Miss. Filed Sept. 20, 1905. Serial No. 279,245.

Claim.—1. A belt comprising a flexible sheath provided at its ends with fastening devices for fastening the ends together, and a spring contained in the said sheath having its ends terminating a distance from the corresponding ends of the sheath, the said spring being made in sections adjustably connected with each other and being curved to follow the contour of the back and sides of the wearer's body, to hold the belt by its resiliency in position.

2. A belt comprising a flexible sheath provided at its ends with fastening devices for fastening the ends together, a spring contained in the said sheath having its ends terminating a distance from the corresponding ends of the sheath, the said spring being curved to follow the contour of the back and sides of the wearer's body, to hold the belt by its resiliency in position and the said spring being made in sections, a slide in which the adjacent rear ends of the spring-sections are fitted to slide, and a fastening device on the slide for fastening the spring-sections in position on the slide, access to the said fastening device being had by way of a slot in the inner wall of the sheath.



822,711. **RIM AND TIRE FASTENING FOR WHEELS.** ROBERT H. ATCHESON and JOSEPH H. WALSH, Chicopee, Mass. Filed July 31, 1905. Serial No. 271,909.



Claim.—1. In a wheel, a felly, a flat metallic band secured thereto, and having outstanding portions on opposite sides thereof extending in the plane of the periphery of the felly, a plurality of radially inwardly projecting headed studs secured to said outstanding portions of the metallic band, and separate, annular substantially U-shaped tire-shoe-engaging rings located upon opposite sides of the felly and each ring having one of its parallel walls provided with a plurality of angular slots opening to the outer edge of the wall, the said walls of the rings being in overlapping engagement with the outstanding portions of the metallic band and the headed studs in interlocking engagement with the angular slots.

2. A wheel having a felly provided at its outer circumferential portion with a metallic annular section extending to constitute flanges, horizontally and outwardly beyond the opposite sides of the felly, proper, and said flange-like extensions being provided with a series of radially inwardly projecting studs, a pair of detachable tire-shoe-engaging rings each provided at its inner portion with a transversely inwardly extending flange constructed with a series of substantially circumferentially extending slots opening to the inner edge of said flange, and means for confining the detachably-engaged shoe-engaging rings against rotative movement relatively to the wheel-rim.

822,712. **METHOD OF MELTING PRIMARY BATHS FOR DISSOLVING ORES.** RALPH BAGGALEY, Pittsburg, Pa., and CHARLES M. ALLEN, Lo Lo, Mont.; said Allen assignor to said Baggaley. Filed Dec. 19, 1904. Serial No. 237,467.

Claim.—1. The method of providing a primary bath for dissolving ores which consists in passing through an ore of high fuel value a large volume of blast, and melting the ore with only such concentration as results from a simple melting; substantially as described.

2. The method of providing a primary bath for dissolving ores which consists in passing through an ore of high fuel value in large lumps a large volume of blast, and melting the ore with only such concentration as results from a simple melting; substantially as described.

3. The method of providing a primary bath for dissolving ores which consists in passing through an ore of high fuel value a large volume of blast, and melting the ore and producing a matte which approximates as closely as possible to the original combinations of sulfur, iron, copper, silver, gold and the like in the original ore as is consistent with the removal of the gangue from the ore; substantially as described.

4. The method of dissolving ores, which consists in melting ore, separating the gangue therefrom without materially removing the sulfur, iron, copper, silver, gold and the like contained in the ore, whereby a primary bath is produced, and then dissolving ore in the primary bath, substantially as described.

822,713. METHOD OF UTILIZING AS FUEL THE VOLATILE PORTIONS OF SULFID ORES. RALPH BAGGALEY, Pittsburg, Pa., CHARLES M. ALLEN, Lo Lo, Mont., and EDWARD W. LINDQUIST, Chicago, Ill.; said Allen and Lindquist assignors to said Baggaley. Filed Apr. 3, 1905. Serial No. 253,549.

Claim.—1. The method of utilizing the volatile-fuel constituent of sulfid ores which consists in feeding the ore into a body of molten matte, blowing air into the matte, and while the ore is floating in the matte introducing a supplementary blast of air into the converter above the molten matte; substantially as described.

2. The method of utilizing the volatile-fuel constituent of sulfid ores which consists in feeding the ore into a body of molten matte, blowing air into the matte, and while the ore is floating in the matte introducing a supplementary blast of air into the converter above the molten matte, and regulating the volume of air to an amount sufficient to oxidize all the escaping sulfur and insufficient to cool injuriously the resulting gases; substantially as described.

3. The method of utilizing the volatile-fuel constituent of sulfid ores which consists in feeding the ore into a body of molten matte, blowing air into the matte, and while the ore is floating in the matte introducing a supplementary blast of air into the converter above the molten matte, and at the place of contact of the floating ore therewith; substantially as described.

822,714. RATCHET MECHANISM FOR TOOLS. JOSEPH P. BARTHOLOMEW, Bristol, Conn., assignor to Stanley Rule & Level Company, New Britain, Conn., a Corporation of Connecticut. Filed Feb. 24, 1905. Serial No. 247,206.



Claim.—1. In a ratchet mechanism for tools, a driving part, a driven part, a central spindle carried by the driven part and rotatively connected to the driving part, pawls carried by the driving part and rotatable relatively to the driven part, said spindle supporting said pawls at their inner sides, oppositely-faced teeth on the ends of said pawls arranged to alternately or simultaneously engage the driven part, means for holding said pawls in yielding engagement therewith, and means surrounding the driving part and arranged to move said pawls and to free either of the same from a driven part, whereby power may be applied to rotate said driven part in one direction or the other or to interlock the driving and the driven parts against independent rotation.

2. In a ratchet mechanism for tools, a driving part, a driven part, an annular hub on the driving part, the end of said hub being slotted through transversely, a spindle on the driven part passing through said hub, a ratchet on said driven part, ratchet mechanism including two pawls, mounted in said slotted portion and bearing against said spindle, oppositely-faced teeth respectively carried by said pawls and arranged to engage with said ratchet, a controller comprising an external sleeve, a cam carried thereby, means of engagement between the outer sides of said pawls and said cam whereby either pawl may be held out of operative position or be permitted to assume said operative position, the end of said hub bearing upon the end of said crown-ratchet.

3. In a ratchet mechanism for tools, a driving part, a driven part, an annular hub on the driving part, the end of said hub being slotted through transversely, a spindle on the driven part passing through said hub, a ratchet on said driven part, ratchet mechanism including two pawls, mounted in the slotted end of the hub, and bearing against said spindle, oppositely-faced teeth respectively carried by said pawls and arranged to engage with said ratchet, a controller comprising an external sleeve, a cam carried thereby, means of engagement between the outer sides of said pawls and said cam whereby either pawl may be held out of operative position or be permitted to assume said operative position, the end of said hub bearing upon the end of said crown-ratchet.

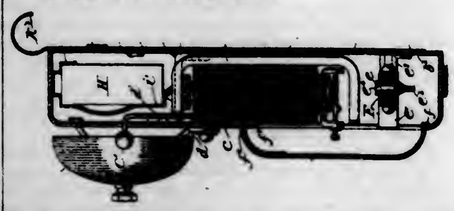
4. In a ratchet mechanism for tools, a driving part, a driven part, an annular hub on the driving part, the end of said hub being slotted through transversely, a spindle on the driven part passing through said hub, a ratchet on said driven part, ratchet mechanism including two pawls bearing against said spindle, oppositely-faced teeth respectively carried by said pawls and arranged to engage with said ratchet, a controller comprising an external sleeve, a cam carried thereby, means of engagement between the outer sides of said pawls and said cam whereby either pawl may be held out of operative position or be permitted to assume said operative position, and a spring mechanism to normally project said pawls toward said ratchet.

5. In a ratchet mechanism for tools, a driving part, a driven part, a hub on the driving part, a spindle rotatably mounted in said hub, a crown-ratchet rigidly carried by and surrounding the spindle at its base and facing the end of the hub, a longitudinal recess in the end of said hub, extending through the wall thereof from the outer to the inner surface, a spring-pressed pawl longitudinally movable in said recess, said pawl being supported along its inner edge by the relatively movable spindle and along its side edges by the walls of said recess, and a pawl-controlling device or sleeve surrounding said hub and overstanding the space occupied by the pawl so as to house the latter therein.

6. In a ratchet mechanism for tools, a driving part, a driven part, a hub on the driving part, a spindle on the driven part passing through said hub and being rotatively connected thereto, recesses in the end of said hub intersecting the outer and the inner wall thereof, longitudinally-movable spring-pressed pawls in the said recesses, one of said pawls having a tooth facing in one direction, another of said pawls having a tooth facing in an opposite direction, said pawls being supported along their inner edges by said relatively-movable spindle, a pawl-operating device or sleeve housing the recessed end of said hub and making connection with the outer edges of said pawls, and a crown-ratchet rigid with the driven part surrounding the spindle and in the path of movement of said pawls.

7. In a ratchet mechanism for tools, a driving part, a driven part, a hub on the driving part, a spindle on the driven part passing through said hub and being rotatably connected thereto, a ratchet rigid with the driven part facing the end of the hub, a pawl-receiving space in the end of the hub, said space intersecting the spindle-passage, a pawl in said space supported at its inner side by the relatively rotatable spindle, means for yieldingly pressing said pawl toward said ratchet, and a controlling device engaging said pawl and arranged to hold the same out of engagement with said ratchet when desired.

822,715. BELL-BOX. SIDNEY A. BEYLAND, Elyria, Ohio, assignor to The Dean Electric Company, Elyria, Ohio, a Corporation of Ohio. Filed May 17, 1904. Serial No. 208,334.



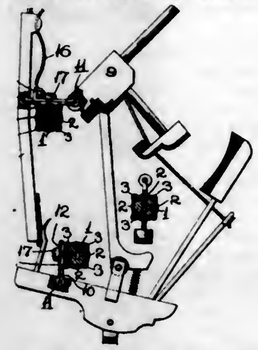
Claim.—1. In a bell-box, a body portion, a ringer mounted therein, a terminal rack mounted adjacent said ringer, and a closure-plate, said body portion being provided with an opening in addition to the closure-plate opening to permit access to said ringer and terminal rack, and a removable cover for said opening.

2. In a bell-box, a body portion open on one face, a closure-plate for said opening, a bracket attached within said body portion extending to constitute a brace for attachment of said closure-plate, and a ringer mounted upon said bracket.

3. In a bell-box, a body portion open on one face, a closure-plate for said opening, bracket connection between said body portion and closure-plate, a ringer mounted upon said bracket connection, another bracket connection between said body portion and closure-plate adjacent said ringer, and a terminal rack mounted upon said second bracket connection.

4. In a bell-box, a body portion open on one face, a closure-plate for said open face, brackets connecting said body portion and closure-plate, a ringer and a terminal rack mounted upon said brackets, said body portion being provided with an opening in addition to the closure-plate opening to permit access to said ringer and terminal rack, and a removable cover for said opening.

822,716. FLANGE FOR PIANO-ACTIONS. FREDERICK C. BILLINGS, Rockford, Ill. Filed Aug. 26, 1905. Serial No. 276,101.



Claim.—1. A flange for piano-actions, constructed with a plate, ribs formed on the under side thereof, narrow plates extending outwardly from the ends of said plate, bearings formed integral with the ends of the narrow plates, and spring-plates extending inwardly from the bearings on top of the first-mentioned plate; substantially as specified.

2. In a flange for piano-actions, a plate, alternate grooves and ribs on the under side thereof, the ends of said plate being extended and bent backwardly over the body of said plate, apertures being formed in said plate, and in the ends of the doubled-back portions to receive a fastening device; substantially as specified.

3. In a flange for piano-actions, a plate, alternate ribs and grooves on the under side thereof, the ends of which plates are extended and bent backwardly onto the top of said plate, means whereby the flange is secured to the rail, and bearings formed at the points where the ends are doubled back, substantially as specified.

4. In a flange for piano-actions, a plate, ribs and grooves formed on the under side thereof the ends of which plate are extended and then bent backwardly onto the central portion of the plate, bearings formed at the points where the ends are doubled back, and downwardly-projecting lips integral with the plate at the sides of the extended ends; substantially as specified.

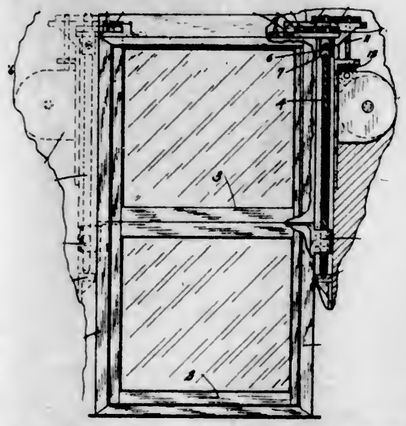
5. In a flange for piano-actions, a plate, alternate ribs and grooves on the under side thereof, the ends of said plate being extended, bearings formed at the ends of the extended portions, and lips integral with the ends of the plate at the sides of the extensions thereof, which lips project downwardly; substantially as specified.

6. In a flange for piano-actions, a plate, ribs and grooves on the under side thereof, a finger integral with and projecting outwardly from the center of said plate at one end thereof, a bearing formed at the outer end of said finger, and lips integral with and projecting at right angles from the ends of the plate; substantially as specified.

7. In a flange for piano-actions, a plate the ends of which plate are extended and bent double backwardly onto the body of the plate, bearings formed at the points where the ends are doubled back, and a pair of alined bearings formed integral with one of the doubled-back ends; substantially as specified.

822,717. SASH-BALANCE. FRANK A. BLICKLEY, Philadelphia, Pa. Filed Feb. 20, 1905. Serial No. 246,457.

Claim.—1. In a sash-balance, the combination with a sash, of a coiled spring, a helically-threaded shaft operatively connected therewith, means for adjusting the tension of the said spring, a bracket attached to the said sash having a ball-raceway therein, a nut adapted to transverse the said shaft, loosely contained in the said bracket and a plurality of balls within the said bracket-raceway, above and below the said nut, all substantially as shown and described.



2. A sash-balance, comprising a rotatable socket-piece, a coiled spring connected thereto, a ratchet-wheel on the said socket-piece, a pawl adapted to engage the said ratchet having an extended shank, means for securing the shank either in or out of engagement with the ratchet-wheel, a rotatable screw-threaded rod adjustably engaging the said socket-piece, a foot-bearing for the end of the said threaded rod and means for connecting or disconnecting the pawl from the ratchet, all substantially as shown and described.

3. In a sash-balance, the combination with a window-sash, a nut affixed thereto and a revoluble helical shaft, of a socket-piece, a ratchet-wheel thereon, a pawl engaging the ratchet-wheel, a spur-gear centered on the socket-piece, a second spur-gear meshing with the first, a bevel-gear, a shaft connecting the second spur-gear and the bevel-gear, a spring-case, a spring therein, a stud affixed to the spring, a large spur-gear attached to the said stud, a spur-gear meshing with the large spur-gear integral with the second bevel-gear, a bearing for the said helical shaft attached to the window-casing, all as and for the purposes as set forth.

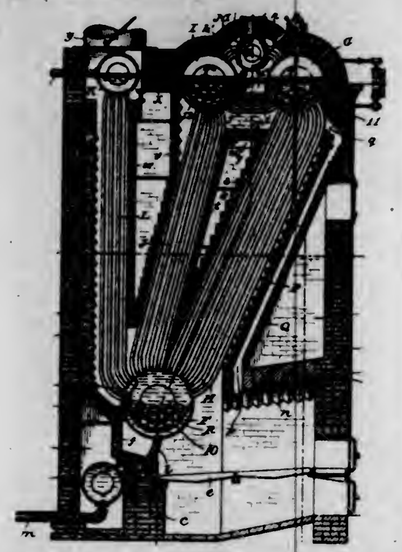
4. In a sash-balance, the combination with a window-sash, a nut movably affixed thereto and a revoluble helical shaft, of a socket-piece, a ratchet-wheel thereon, a pawl engaging the ratchet-wheel, means for operating the said pawl, a spur-gear centered on the socket-piece, having a ball-bearing in its side and the part adjacent, a second spur-gear meshing with the first, a bevel-gear, a shaft connecting the second spur-gear and the bevel-gear, a spring-case, a stud revolubly within the case, a spring contained therein having its inner end attached to the said stud, a large spur-gear centered on and secured to the said stud, a spur-gear meshing with the large spur-gear and integral with the second bevel-gear and a bearing for the said helical shaft attached to the window-casing, all as and for the purposes as set forth.

822,718. STEAM-PRODUCER. ISAAC H. BOYER, Muncie, Ind. Filed Feb. 10, 1906. Serial No. 300,473.

Claim.—1. A steam-producer including inclosing walls forming a furnace, a water-drum in the furnace, an evaporator in the upper portions of the walls, a main heat-passage extending from the furnace to the evaporator, a series of water-tubes in the main heat-passage connected to the water-drum and also to the evaporator, and an auxiliary heat-passage extending from the furnace to the upper end of the main heat-passage and connected therewith.

2. A steam-producer including inclosing walls forming a furnace, a water-drum in the furnace, an evaporator in the upper portions of the walls, a main heat-passage extending from the furnace to the evaporator, a series of water-tubes in the main heat-passage connected to the water-drum and also to the evaporator, an arch in the furnace and having a heat-passage in the top thereof, and an auxiliary heat-passage extending from the heat-passage of the arch to

the upper end of the main heat-passage and connected therewith adjacently to the evaporator.



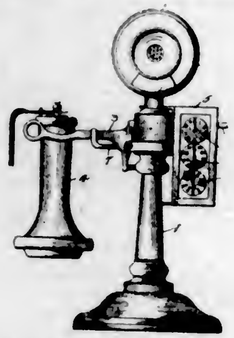
3. A steam-producer including inclosing walls forming a furnace, a main heat-passage and an auxiliary heat-passage extending from the furnace and joined together near the tops of the walls, a water-drum in the furnace, an evaporator above the top of the main heat-passage, a series of water-tubes connected to the water-drum and also to the evaporator, a mud-drum in planes below and rearward of the water-drum, and a series of ducts connected to the water-drum and also to the mud-drum, the mud-drum having a blow-off pipe.

4. A steam-producer including inclosing walls forming a furnace with a furnace-wall therein, a water-drum mounted above the furnace-wall and having a plurality of stirrups supported therein near the bottom thereof, a plurality of tubes supported on the stirrups and forming a water-divider above the bottom of the water-drum, inlet-tubes connected to the water-drum, a deflector extending from the wall of the water-drum to one side of the plurality of water-divider tubes, an evaporator, water-tubes connected to the water-drum and to the evaporator, a water-head connected to the tops of the inlet-tubes, a mud-drum arranged behind the furnace-wall, and ducts extending through the furnace-wall and connected to the water-drum and to the mud-drum.

5. A steam-producer including inclosing walls forming a furnace, a water-drum in the furnace, two heat-passages extending upwardly and divergently from the water-drum and connected together at their upper ends, one of the heat-passages communicating with the furnace, there being a draft-passage connected at the water-drum with the other heat-passage, a dead space being formed between the two heat-passages, a pair of evaporator-drums above the heat-passages connected together with connections between the evaporator-drums and the water-drum, a hot-air chamber formed between the evaporator-drums and having passages connected therewith and with the dead space, and a steam-drum mounted in the hot-air chamber and connected with the pair of evaporator-drums.

6. A steam-producer including inclosing walls forming a furnace, a water-drum in the furnace, a pair of connected evaporator-drums having each a water-divider therein, a steam-drum connected with the evaporator-drums and having deflectors therein, a heat-passage extending from the furnace to the evaporator-drums, a heat-passage extending from the evaporator-drums to the water-drum with a draft-passage connected therewith, a dead space between the heat-passages, a hot-air chamber beneath the steam-drum, ducts between the dead space and the hot-air chamber, water-tubes in the heat-passages connecting the water-drum with the evaporator-drums, a water-head connected with the water-drum, a mud-drum connected with the water-drum, and an auxiliary heat-passage extending from the furnace to the evaporator-drums and there connecting with the heat-passages.

822,719. TELEPHONE-CALL METER. CHARLES T. BRADSHAW, Philadelphia, Pa. Filed Oct. 3, 1903. Serial No. 175,566.



Claim.—1. In a registering device for telephones, the combination with a subscriber's set, of a visible register attached to one part of said set, an audible signal operated by said register, said audible signal being in phonetic connection with said subscriber's set, hand-operated means for operating said register, a receiver-holder and a locking-lever actuated by said receiver-holder for said hand-operated means.

2 As an article of manufacture, a registering device for telephones, comprising a casing, a registering mechanism within said casing, a part projecting from said casing and operatively connected with said registering mechanism, a lever pivoted in relation to said casing, the inner end of which forms a stop for locking said registering mechanism, said lever being adapted to be operatively connected with the receiver-arm of a telephone instrument so as to lock said registering mechanism when the telephone is not in use.

3. In a registering device for telephones, a combination with a subscriber's set, of a register attached to one part of said set, hand-operated means for actuating said register, and means connected with a movable operating part of said set for locking said hand-operated means to prevent a movement of the same, and to prevent the register from being actuated, respectively, when the telephone is not in use.

4. In a registering device for telephones, the combination with a subscriber's set, of a register attached to one part of said set, hand-operated means for actuating said register and a locking device connected to the receiver-holder of the telephone for locking said hand-actuated means.

5. In a registering device for telephones, the combination with a subscriber's set and the receiver-support therefor, of a register attached to one part of said set hand-actuated means for operating said register and a stop connected to said receiver-support for locking said hand-actuated means when the telephone is not in use.

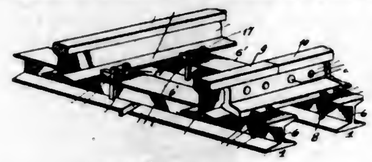
6. In a registering device for telephones, the combination with a subscriber's set and the switch-arm therefor, a register, hand-operated means for actuating said register, and a locking-lever connected to said switch-arm and forming a stop to prevent the movement of said hand-actuated means.

7. In a registering device for telephones, the combination with a subscriber's set and the switch-arm thereof, of a register attached to one part of said set, hand-actuated means for operating said register and an adjustable locking-lever connected to said switch-arm and forming a stop to prevent the operation of said hand-actuated means.

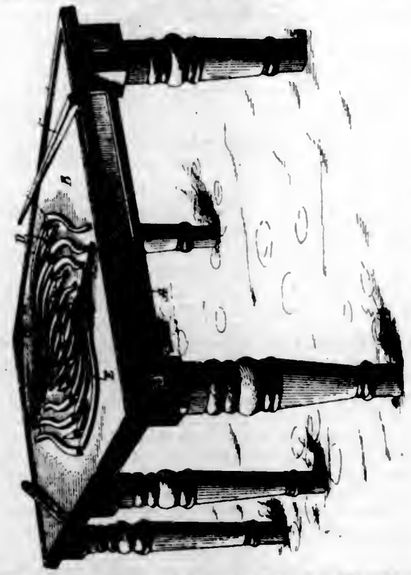
8. In a registering device for telephones, the combination with a subscriber's desk set, a register attached to the standard thereof, hand-operated means for actuating said register, a locking-lever connected to the receiver-supporting arm and adapted to lock said hand-operated means when the telephone is not in use, and an audible signal mounted upon said register and cooperating therewith to indicate to both the subscriber and the operator the record of a call.

822,720. METALLIC TIE AND RAIL-FASTENER. HENRY B. BURER, Windber, Pa. Filed Aug. 25, 1905. Serial No. 275,706.

Claim.—The combination with a metallic tie of I-beam form having its base-flange sheared transversely from the edge of the beam to the web of the same, and the sheared portion bent down to lie at right angles to the longitudinal line of the tie, of rails mounted on the tie, clamps engaging the rail-bases and the tie, and headed spikes passing through the flanges of the tie to secure the clamps in position, and having their lower ends bent over to clench the same with the tie.



822,721. PARLOR GAME. JOSEPH A. S. CHEVOLLEAU, Kingston, Jamaica. Filed June 14, 1905. Serial No. 265,163.



Claim.—1. A table adapted to have a game played thereupon and presenting a transverse row of pockets and a plurality of banks disposed in pairs and adapted to direct balls toward said pockets, said banks converging at their extremities remote from said pockets, the extremities of said banks remote from said pockets being disposed apart whereby a central alley is formed leading toward the central members of said pockets.

2. A table adapted to have a game played thereupon and presenting a transverse row of pockets and plurality of banks disposed in pairs, and having their inner extremities disposed at points between said pockets, the outer extremities of said banks converging and lying apart whereby a central alley is formed therebetween, said banks being disposed apart whereby side alleys are formed adapted to guide balls toward said pockets, and spurs disposed within said alleys and adjacent to said pockets.

3. A table of the class described, having a plurality of pockets and a member below said pockets and having upwardly-disposed projections and means for actuating said member to eject balls from said pockets.

4. A table of the class described, having a plurality of pockets comprising depending bags in which balls may lodge, a batten disposed below said pockets and presenting a plurality of studs projecting upwardly, and a lever for actuating said batten.

5. A table of the class described, having a plurality of pockets comprising depending bags in which balls may lodge, a batten disposed below said pockets and presenting a plurality of studs projecting upwardly, a lever for actuating said batten, and springs constraining said batten downwardly.

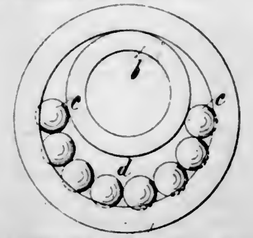
822,722. SHADE AND CURTAIN BRACKET. WILLIAM J. CONNELL and LLOYD C. LOWE, Huntington, W. Va. Filed Jan. 6, 1906. Serial No. 294,886.

Claim.—1. A shade and curtain bracket consisting of a single piece of wire bent to form a flat heel-brace, a lower loop for receiving and holding a shade-roller, upper loops in advance of said lower loop for supporting an auxiliary shade or lambrequin pole and a lace-curtain pole, said heel-brace lying in a plane at right angles to that of the aforesaid loops and means for securing said bracket to a window-casing.



2. A shade and curtain bracket consisting of a single piece of wire bent to form a flat heel-brace, a shade-roller journal-bearing arm extending downwardly from said heel-brace, a coiled loop to receive an auxiliary shade-pole, projecting upwardly and forwardly from said arm, an open spring-loop projecting forwardly and above said auxiliary loop, and an upper rearwardly-extending bar secured to the upper portion of said heel-brace, means for securing said bracket to a window-casing, and means for preventing lateral displacement of said heel-brace.

822,723. BALL-BEARING. ROBERT CONRAD, Berlin, Germany. Filed Feb. 23, 1904. Serial No. 194,894.



Claim.—1. A ball-bearing including two concentric rings having opposing grooves on their adjacent faces, the sides of said grooves being uninterrupted throughout their circumference and adapted to admit balls to the grooved space between them by displacement of the rings eccentrically to each other.

2. A ball-bearing including two concentric rings having opposing grooves on their adjacent faces, the sides of said grooves engaging the balls to prevent substantial lateral movement, said sides being uninterrrupted throughout their circumference and adapted to admit balls to the grooved space between them by displacement of the rings eccentrically to each other.

3. A ball-bearing including two concentric rings having opposing grooves on their adjacent faces, the sides of said grooves engaging the balls to prevent substantial lateral movement, and said rings being adapted to admit a limited number of balls to the grooved space between them by displacement of the rings, and means for distributing the balls around the entire length of the grooves.

4. A ball-bearing including two concentric rings having opposing grooves on their adjacent faces, the sides of said grooves engaging the balls to prevent substantial lateral movement, and said rings being adapted to admit a limited number of balls to the grooved space between them by displacement of the rings, and separating devices one between each pair of balls, said separating devices being connected to each other.

5. A ball-bearing including two concentric rings having opposing grooves on their adjacent faces, the sides of said grooves engaging the balls to prevent substantial lateral movement, and said rings being adapted to admit a limited number of balls to the grooved space between them by displacement of the rings, and yielding means for separating the balls.

6. A ball-bearing including two concentric rings having opposing grooves on their adjacent faces, the sides of said grooves engag-

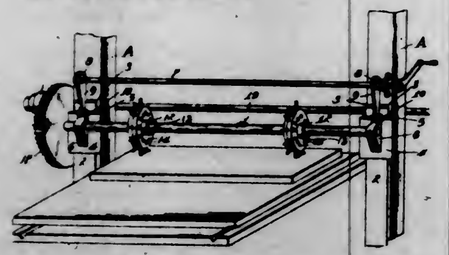
ing the balls to prevent substantial lateral movement, and said rings being adapted to admit a limited number of balls to the grooved space between them by displacement of the rings, and separators adapted to be inserted between the balls when the rings are in their normal concentric position.

7. A ball-bearing including two concentric rings having opposing grooves on their adjacent faces, the sides of said grooves engaging the balls to prevent substantial lateral movement, and said rings being adapted to admit a limited number of balls to the grooved space between them by displacement of the rings, and separators adapted to be deformed to permit their insertion between the balls when the rings are in concentric position.

8. A bearing comprising two concentric rings, balls between said rings, each ring having a groove both sides of which overhang said balls and are continuous and practically integral throughout their circumference, the number of balls being such that they can be inserted in the space between the rings when the latter are displaced from their normal position, and means for distributing the balls throughout the length of the groove, whereby the two rings are held together against axial displacement by the engagement of the balls with the overhanging walls of the grooves and the parts are held together so as to form a unitary device.

9. A bearing comprising two concentric rings, *a* and *b*, balls *c* between said rings, each ring having a groove both sides of which overhang said balls and are continuous and practically integral throughout their circumference, the edges of said sides being separated so far from each other that by displacing the rings eccentrically a limited number of balls may be inserted between them, and distributing devices adapted to be introduced between said edges and into the spaces between said balls when the rings are restored to concentric position, whereby the two rings are held together against axial displacement by the engagement of the balls with the overhanging walls of the grooves and the parts are held together so as to form a unitary device.

822,724. MACHINE FOR SIZING AND CUTTING STONE AND OTHER MATERIALS. WALKER F. CURRIER, Variety Mills, Va., assignor of one-eighth to The National Soap Stone Co., New York, N. Y. Filed Aug. 7, 1905. Serial No. 273,207.



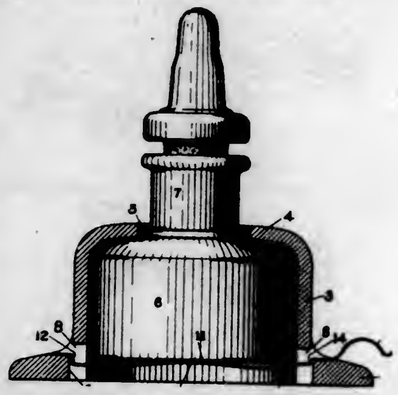
Claim.—The combination with a suitable work-support and posts on opposite sides thereof, of a shaft extending across from post to post over the work-support, cutters secured on the shaft and adapted to be adjusted in different positions along the shaft, sliding blocks in which the shaft is journaled, the said blocks being engaged with the posts, a second shaft journaled in suitable supports on the post and provided with eccentrics, and links embracing the eccentrics and attached to the sliding blocks whereby the cutter-shaft and cutters thereon may be raised and lowered at pleasure to vary the depth of cut.

822,725. INK-BOTTLE HOLDER. EDGAR L. DRINKWATER, Chicago, Ill. Filed July 14, 1905. Serial No. 269,668.

Claim.—1. A bottle-holder comprising a base formed with a central opening, a body projecting from said base and having a reduced opening at its upper end, and a single means passed transversely of the base-opening and bearing at its ends upon the edges thereof whereby to support a bottle within the holder.

2. A bottle-holder comprising a casing open at bottom to permit the introduction of the bottle, and a single spring-strip extending completely across said opening to bear beneath and engage the bottle.

3. A bottle-holder comprising a casing open at bottom to permit the introduction of a bottle, and a single spring-strip extending wholly across said opening to bear beneath and engage the bottle, said strip being formed near its ends with shoulders to engage diametrically opposite portions of the wall of the opening.

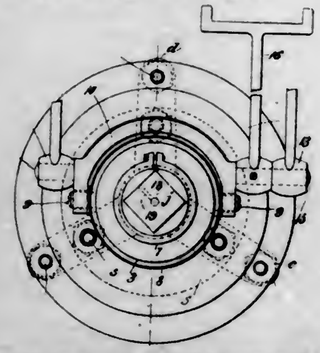


4. A bottle-holder comprising a base formed with a central opening, a cylindrical wall projecting upwardly from the base coincidentally with the opening therein, the upper end of said wall being turned inward to provide an annular flange overlying the base-opening, the cylindrical wall being formed with transverse opening immediately above the base, and a spring-strip adapted to be passed through said openings and engage the wall of the base-opening.

5. A bottle-holder comprising a base formed with a central opening, a hollow body rising from the base, openings formed transversely in the body immediately above the base, and a spring-strip arranged to be passed through said openings, said strip being formed with offsets to engage the edge of the base-opening.

6. A bottle-holder comprising a base formed with a central opening, a hollow body rising from the base, openings formed transversely in the body immediately above the base, and a spring-strip arranged to be passed through said openings, said strip being formed with offsets to engage the edge of the base-opening, said strip being formed with a central arched portion and with a finger-grip projecting beyond the holder.

822,726. FRICTION-CLUTCH. JAMES F. DURYEA, Springfield, Mass. Filed Dec. 12, 1904. Serial No. 236,501.

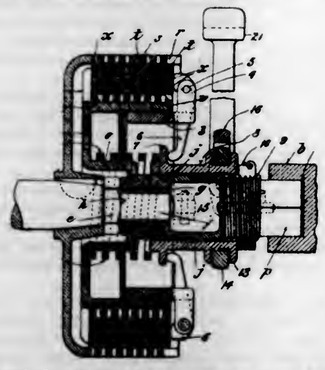


Claim.—1. The combination with a driving and a driven shaft, of a friction-clutch mechanism consisting of a frame secured on the driving-shaft, and a second frame comprising a long hub having a bearing on the driving-shaft and a driving connection with the driven shaft; pins on said frames parallel with the axis of the shaft and extending in the same direction, said second frame being nested within the area circumscribed by the pins of the other; friction-rings supported loosely on the pins of each frame those on the one alternating with and overlapping those on the other; a sliding hub mounted on the hub of said second frame, a flange on said sliding hub through which the pins on said second frame extend, a spring to actuate the sliding hub to move the flange thereon against the friction-rings, there being an abutment on said second hub for said rings; an adjusting device on the hub of the second frame constituting an adjustable abutment for said spring, and a lever connected with said sliding hub to move the latter away from said rings.

2. The combination with a driving and a driven shaft, of a driven clutch-head comprising a long hub having a bearing at one end thereof on the driving-shaft, and having a connection at the opposite end thereof with the driven shaft, a flange or arms on said hub at right angles thereto, pins supported in said flange or arms in parallelism with the axis of the hub, friction-rings fitted loosely on said pins, said flange or arms constituting an abutment for the rings; a sliding hub provided with a flange or arms through which said pins pass loosely, a spring to move said sliding hub to effect the compression of the rings between the flange or arms thereon and the flange or arms on said hub; a driving clutch-head secured on the driving-shaft and comprising a flange or arms, and pins fixed therein in parallelism with the axis of said hub and extending in the same direction as the pins on the latter, friction-rings loosely mounted on the pins of the driving clutch-head and alternately arranged in overlapping relation relative to the rings on the driven clutch-head; an adjusting device on the hub of the driven clutch-head constituting an abutment for said spring, and a lever operatively connected with the sliding hub to move the latter to compress said spring.

3. In a device of the class described, the combination of a driving-shaft and a driven shaft, a sleeve on said driven shaft and having arms integral therewith, a frame rigidly secured to the driving-shaft and carrying supporting-pins at the outer ends of the arms thereof, a second frame having a long hub loosely mounted on said sleeve carried by the driven shaft, said second frame having pins secured in the outer ends of the arms thereof, a hub 3 loosely mounted on the second frame and carrying an outwardly-extending flange having perforations therein, a series of friction-disks loosely mounted on the pins of the two sets of frames, a spring loosely mounted between the said hub 3 and said second frame, said spring normally exerting a tension so as to compress the said friction-disks to transmit motion from the driving to the driven shaft, and means including a pinch-nut for adjusting the tension of said spring, said pinch-nut being mounted on the said second frame, said second frame being formed with a hollow or cut-out portion adjacent the threaded end thereof on which the pinch-nut is located, and means comprising a foot-lever loosely mounted in stationary bearings for releasing the tension of said spring and allowing the disks to revolve freely one on the other.

822,727. FRICTION-CLUTCH. JAMES F. DURYEA, Springfield, Mass. Filed Dec. 12, 1904. Serial No. 236,503.



Claim.—1. In a friction-clutch mechanism, a cup-shaped driving clutch-head connected to the driving-shaft, and a similarly-shaped driven clutch-head of smaller diameter nested within it, the closed ends of said head being adjacent one to the other and endwise immovable, there being a flange on one of said heads, a hub on the driven head to be connected to a driven shaft, friction-rings located in the annular space between the heads and alternatively and loosely engaging the latter, a spring contained in said driving-head, and clutch-levers actuated by said spring to press said rings toward said flange; an adjusting device on the hub to limit the expansive movement of said spring, and a device on said hub to effect the compression of said spring.

2. A friction-clutch mechanism comprising a driving-shaft, a cup-shaped driving clutch-head secured on said shaft, the end of the latter extending into said head; a cup-shaped driven clutch-head provided with a long hub, the latter having a bearing on the extended end of the driving-shaft, the driven head having a smaller diameter than the driving-head and being nested within it, said heads being endwise immovable and having their open ends facing in the same direction; friction-rings placed side by side in the annular space between the heads and being alternatively and loosely connected to the walls of the driven and driving heads respectively, the driven head being provided with a flanged abutment for the rings; a hub slidably mounted on the hub of the driven head, clutch-levers pivotally supported to bear by one end against the rings, their opposite ends being located in position to be actuated by the movement of the sliding hub, and a spring located within the driven head, encircling the hub thereof and bearing against said head and against the said sliding hub, adjusting means to limit the movement of the latter in one direction, together with mechanism to move said sliding hub against the tension of the spring.

3. A friction-clutch mechanism comprising cup-shaped driving and driven clutch-heads, connected respectively with the driving and driven shafts, the driven head being of smaller diameter than the driving-head and nested within it and provided with a hub to connect it with the driven shaft; friction-rings alternatively and loosely engaging the interior wall of the driving-head and the exterior wall of the driven head, and disposed in overlapping relation in the annular space between the heads, the driven head being provided with a flange-abutment for the rings; a hub slidably mounted on the hub of the driven head, clutch-levers pivotally supported to bear by one end against the rings, their opposite ends being located in position to be actuated by the movement of said sliding hub; a spring encircling the hub of the driven head to bear against the latter and against said sliding hub, adjusting means to limit the movement of said sliding hub, together with mechanism to move the latter against the tension of said spring.

4. In a friction-clutch mechanism, a cup-shaped driving clutch-head connected to the driving-shaft, and a similarly-shaped driven clutch-head of smaller diameter nested within it, the closed ends of said heads being adjacent one to the other and endwise immovable, there being a flange on one of said heads; a hub on the driven head to be connected to a driven shaft, friction-rings located in the annular space between the heads and alternatively and loosely engaging the latter, a spring contained in said driven head, and clutch-levers actuated by said spring to press said rings toward said flange; an adjusting device on the hub to limit the expansive movement of said spring, and a device on said hub to effect the compression of said spring together with a casing to inclose said clutch mechanism.

5. In a friction-clutch mechanism, a cup-shaped driving clutch-head connected to the driven shaft, and a similarly-shaped driven clutch-head of smaller diameter nested within it, the closed ends of said heads being adjacent one to the other and endwise immovable, there being a flange on one of said heads, a hub on the driven head to be connected to a driven shaft, friction-rings located in the annular space between the heads and alternatively and loosely engaging the latter, a spring contained in said driving-head, and clutch-levers actuated by said spring to press said rings toward said flange; an adjusting device on the hub to limit the expansive movement of said spring, a tight casing within which said clutch mechanism is inclosed, a device on the hub of the driven head to effect the compression of said spring, and means extending through the wall of the casing to actuate said device.

6. In a friction-clutch mechanism, a cup-shaped driving clutch-head connected to the driving-shaft, and a similarly-shaped driven clutch-head of smaller diameter nested within it, the closed ends of said heads being adjacent one to the other and endwise immovable, there being a flange on one of said heads, a hub on the driven head to be connected to a driven shaft, friction-rings located in the annular space between the heads and alternatively and loosely engaging the latter, a ring screwed into the open end of the driven head, and clutch-levers pivotally supported on said ring to bear by one end against said friction-rings, their opposite ends extending radially toward said hub; a spring located within the cup-shaped driven head and encircling the hub of the latter, operatively disposed to bear by one end against said driven head and by the opposite end thereof against said clutch-levers to effect the compression of the friction-rings, together with means on said hub to limit the expansive movement of said spring, and a sliding member on said hub to compress said spring.

7. In a friction-clutch mechanism, a cup-shaped driving clutch-head connected to the driving-shaft, and a similarly-shaped driven clutch-head of smaller diameter nested within it, the closed ends of

said heads being adjacent one to the other and endwise immovable, there being a flange on said driven head, a hub on the driven head to be connected by one end to a driven shaft, a bearing for the opposite end of said hub on the driving-shaft, said hub having an oil-chamber therein to lubricate said bearing, there being an opening from said chamber through the wall of the hub; friction-rings located in the annular space between the heads and alternatively and loosely engaging the latter, a second hub slidably mounted on the hub of the driven head, a spring between the driven head and said sliding head, and a nut on the hub of the driven head to limit the expansive movement of said spring; clutch-levers pivotally supported on the driven head and arranged to be actuated by said spring to press the friction-rings together and against the flange on the driven head, and a sliding hub on the hub of the driven head to compress said spring.

822,728. BODKIN. LEWIS F. EARL, Philadelphia, Pa. Filed Nov. 3, 1905. Serial No. 285,709.



Claim.—1. In a device of the character described, a flat body, a flexible tongue movable transversely thereof, said tongue being normally in the same plane as the body, serrations on the free end of said tongue, a stationary bar forming part of said body and opposing said free end, serrations on the said bar adapted to coöperate with the serrations on the said tongue.

2. In a device of the character described, a flat body, a flexible tongue on said body normally in the same plane as said body, serrations on said tongue, side pieces on said body extending adjacent said tongue, a bar connecting said side pieces, teeth on said bar interfitting said first-mentioned teeth, said tongue and said side pieces being so related that slots or openings are formed between the same.

822,729. COMBINED BUTTON AND PIN FASTENER. ROBERT ELLIS, Niagara Falls, N. Y. Filed Nov. 20, 1905. Serial No. 288,051.



Claim.—A combined button and pin fastener, consisting of a bar having a centrally-located lateral extension, a button on said extension, a lateral extension at each end of the bar, one of said extensions formed hooked transversely of the bar, a post on the extension at the other end of the bar, the post having an opening formed transversely therethrough located above the bar, and a spring-wire having one end introduced into said opening and coiled around the post, the free end of the wire being pointed and extended adapted to engage the hooked end of the bar, substantially as described.

822,730. APPARATUS FOR PRODUCING MOVING PICTURES. HIRAM A. FARRAND, New York, N. Y. Filed Sept. 20, 1904. Serial No. 224,530.

Claim.—1. A moving-picture apparatus comprising a plurality of flat surfaces and means for moving the flat surfaces into and out of a common picture plane, the said surfaces having representations thereon arranged to coact with one another during the movement of the flat surfaces into and out of the picture plane to produce a moving-picture effect.

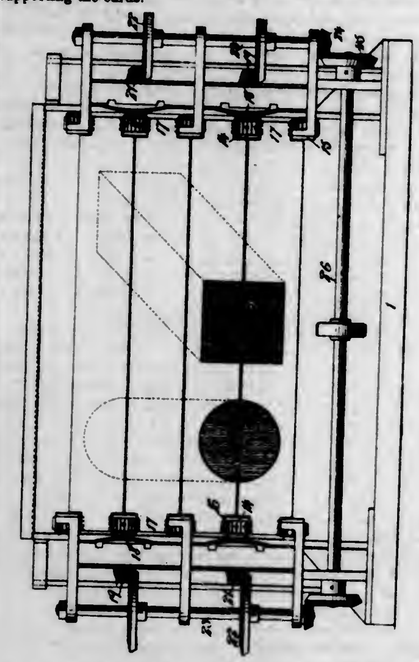
2. A moving-picture apparatus comprising an endless band, a plurality of cards permanently secured thereto and a separate belt having teeth engaging the cards for mounting them successively into and out of a common picture plane.

3. A moving-picture apparatus comprising a plurality of endless bands, each having a series of cards permanently secured thereto and separate belts having teeth engaging common cards for moving them successively into and out of the picture plane.

4. A moving-picture apparatus comprising a plurality of series of cards and means for simultaneously moving corresponding cards of the several series into a common picture plane, independent means for reversing them and means for moving them out of the said plane.

5. A moving-picture apparatus comprising a plurality of series of cards, means for simultaneously moving corresponding cards of the different series into and out of a common picture plane and independent means for supporting the said cards during their forward and backward movements.

6. A moving-picture apparatus comprising a plurality of series of cards, means for simultaneously moving corresponding cards of the several series into a common picture plane, reversing the cards and moving them out of the said plane and independent means for supporting the cards.



7. A moving-picture apparatus comprising a series of cards, means for moving the cards into and out of a common picture plane and a guide-bar extending to the picture plane for supporting the cards during their forward movement.

8. A moving-picture apparatus comprising a plurality of series of cards, means for simultaneously moving corresponding cards of the several series into and out of a common picture plane and guide-bars extending to the picture plane for supporting the cards during their forward movement.

9. A moving-picture apparatus comprising a plurality of series of cards, means for simultaneously moving corresponding cards of the several series into a common picture plane, reversing the cards and moving them out of the picture plane and means for accelerating the reversing movement of the cards.

10. A moving-picture apparatus comprising a plurality of series of cards, means for simultaneously moving corresponding cards of the several series into a common picture plane, reversing the cards and moving them out of the said plane, means for accelerating the reversing movement of the cards and independent means for supporting the cards.

11. A moving-picture apparatus comprising a series of cards, means for successively moving the cards into a common picture plane, reversing the cards and moving them out of the said plane, an accelerator-wheel mounted diagonally with respect to the cards and arranged to engage a card during a portion of its rotary movement for accelerating the reversing movement of the card and means for rotating the wheel at a greater speed than the movement of the cards.

12. A moving-picture apparatus comprising a plurality of series of cards, means for simultaneously moving corresponding cards of the several series into a common picture plane, reversing the cards and moving them out of the said plane, accelerator-wheels mounted diagonally with respect to the cards and arranged to engage the cards during a portion of their rotary movements for accelerating the reversing movements of the cards and means for rotating the wheels at a greater speed than the movements of the cards.

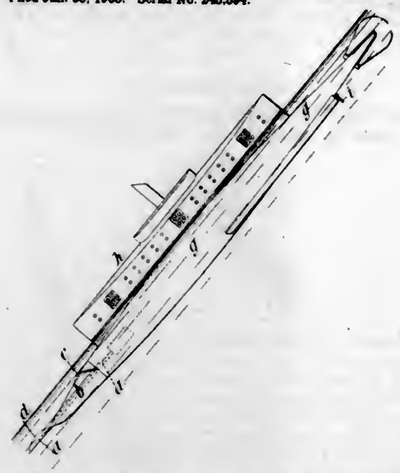
822,731. STIRRUP AND HAMMOCK SPRING. SAMUEL P. FOSTER, Dalton, Ga. Filed Dec. 7, 1905. Serial No. 290,843.

Claim.—1. The combination of the upper link having the depending guide-arms, the lower link having the upper bar between and slidably and pivotally related to the guide-arms, and the spring forming a yielding connection between said links.



2. In a device of the class described, the combination of a pair of links disposed at right angles to each other, and slidably and pivotally connected to each other, and a yielding spring connection between the said links, for the purpose set forth.

822,732. PROPELLING SHIPS. ANDRÉ GAMBIN, Paris, France. Filed Jan. 30, 1905. Serial No. 243,394.



Claim.—1. A propeller for nautical and aerial locomotion comprising a shaft, a cone on the said shaft, a helicoid surface mounted on the said cone and continued on the said shaft.

2. A propeller for nautical and aerial locomotion, comprising a shaft *a*, a cone *b* on said shaft, and a helicoid *d* passing around the cone *b* and around the shaft *a* beyond the apex of the cone.

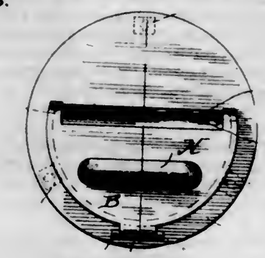
3. A propeller for nautical and aerial locomotion comprising a shaft, a cone on the said shaft, a helicoid surface on the said cone, a continuation of the said helical surface on the said shaft, the said continuation being of such form that its outline touches the outline of an imaginary cone having the same base as the first-named cone

4. A propeller for nautical and aerial locomotion comprising a cone of height equal to the perimeter of its base, a shaft extending horizontally from the bow of the ship and carrying the said cone, a helicoid surface on the said cone at an angle of forty-five degrees to the axis thereof, a second helicoid surface extending as a continuation of the first and carried by the said shaft, the outline of said second helicoid surface being contained within the outline on a second cone having the same base as and double the height of the first-named cone, the said second cone being cut away except to the rear of the first-named helicoid surface, and both the said helicoid surfaces being concave on the side turned toward the apex of the said second cone and convex on the opposite side.

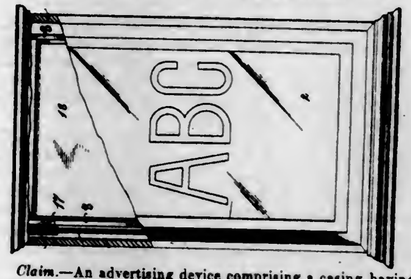
822,733. DEVICE FOR WRINGING HOT TOWELS. JOHN GIRARD, Thomaston, Conn. Filed July 17, 1905. Serial No. 270,114.

Claim.—A device for wringing hot towels comprising a plate having an opening therein, resilient clips fastened to one face of said plate, a lid having an ear hinged to said plate, a handle upon said lid, the free swinging edge of said lid being recessed forming arms at the ends thereof, a roller journaled in suitable bearings extending from said arms, said roller extending into the recess between said arms, and a second roller journaled to said plate adjacent to the marginal edge of the opening therein, as set forth.

822,733.



822,734. ADVERTISING DEVICE. LEON GREENBERG, New York, N. Y. Filed Nov. 15, 1905. Serial No. 287,538.



Claim.—An advertising device comprising a casing having an opening therein, a pair of side plates in said casing, each of said side plates having an elbow-section in one corner thereof, a plurality of idle rolls journaled on the elbow-section of the two plates, a plurality of similar idle rolls journaled upon the lower edges of the two plates, a plurality of friction-rolls journaled between the upper edges of the two plates, gearing for causing said friction-rolls to rotate simultaneously, an endless belt extending around every one of the idle rolls and around every other one of the friction-rolls, a plurality of guide-rolls for guiding said endless belt, a motor mounted in the chamber formed by the elbow-sections, and a belt connecting said motor with said friction-rolls substantially as described.

822,735. FLY-CATCHER. JAMES GRIBBIN, Frankford, Pa. Filed Jan. 11, 1906. Serial No. 295,645.



Claim.—In a fly-catcher, the combination with a receptacle or casing provided with a scored tray adapted to be folded up against

the casing or extended out to form a tray, of fabric-covered wires, a coating of viscous material on said fabric-covered wires, said wires being arranged one inside the other and coiled in opposite directions, the convolution of one coil being located between those of the other, and a hook formed on the outer end of one of said wires for supporting the device, substantially as described.

822,736. GRATING FOR FACILITATING THE FLOW OF FLUIDS. JULES GROUVELLE and HENRI ARQUEMBOURG, Paris, France. Filed Aug. 26, 1903. Serial No. 171,106.



Claim.—1. Means for the purpose specified, having a fluid-passage the sides of which, adjacent to that end where the fluid enters, are disposed at an angle of about thirty degrees to one another and converging, and the sides thereof adjacent to the end where the fluid emerges from the passage are disposed at an angle of about seven degrees to one another and diverging.

2. Means for the purpose specified, having a fluid-passage the inlet portion of which gradually contracts in the direction of the flow of the fluid and the outlet portion of which gradually expands in the same direction, the sides of the contracted inlet portion being disposed at about an angle of thirty degrees to one another and those of the expanded outlet portion at about an angle of seven degrees to one another, and the outlet portion being longer than the inlet portion.

822,737. HORSESHOE. WILLIAM J. HARRIS, Philadelphia, Pa. Filed Oct. 26, 1904. Serial No. 229,262.



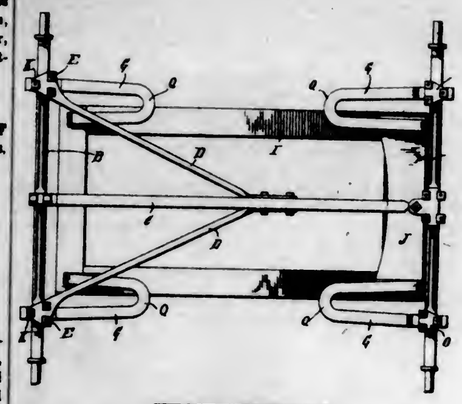
Claim.—1. The combination with a horseshoe having a dovetailed groove in the lower face thereof, of a calk removably secured in the said groove, the calk having an equilateral cross-section, with depressions symmetrically disposed upon each of its faces, spaced at different points along its length, into which depressions the metal of the shoe may be forced, substantially as described.

2. The combination with a horseshoe having a dovetailed groove in the lower face thereof, of a calk removably secured in the said groove, the calk having depressions symmetrically disposed upon each of its faces, spaced at different points along its length, into which depressions the metal of the shoe may be forced, substantially as described.

822,738. BUGGY-SPRING. WILLIAM M. HERTER, Callensburg, Pa. Filed Nov. 20, 1905. Serial No. 288,788.

Claim.—A spring-gear for buggies comprising, in combination with the forward and rear axles, leaf-springs, each being bent substantially V-shaped and having an end bent upon itself and adapted to be fastened to the body of the box, blocks recessed on their under edges and fitting over the upper edges of the axles, a staple passing over said spring-and block, a plate upon the under edge of the axle through which the ends of said staple pass, nuts mounted upon the threaded end of said staple, a bolt passing through said spring, block and plate, and a nut engaging said bolt, as set forth.

822,788.



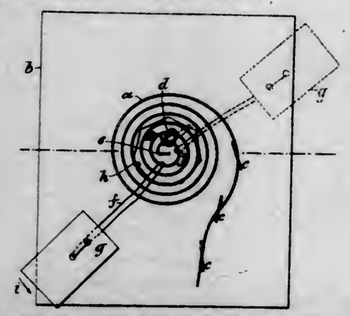
822,739. PROTECTIVE BOTTLE. JAMES C. HENDERSON, Los Angeles, Cal. Filed Oct. 30, 1905. Serial No. 285,004.



Claim.—1. A bottle having its neck provided with two vertical grooves extending from the mouth thereof toward the body of the bottle, and provided with a groove connecting said vertical grooves at their bottom ends, a tang or shoulder arranged within the neck of the bottle and on the portion thereof bordered by said grooves, the whole being arranged whereby the cork may be removed from the bottle when the neck is broken along the grooves therein, substantially as described.

2. A bottle having its neck provided with two vertical grooves extending from the mouth thereof down the neck of the bottle, a cork-engaging tang or shoulder arranged within the neck of the bottle and on the portion thereof bordered by said grooves, the whole arranged whereby the cork may be removed from the bottle when the neck is broken along the grooves therein, substantially as described.

822,740. PUZZLE. FREDERICK W. JACOB, Amsterdam, Netherlands. Filed Feb. 2, 1906. Serial No. 299,156.



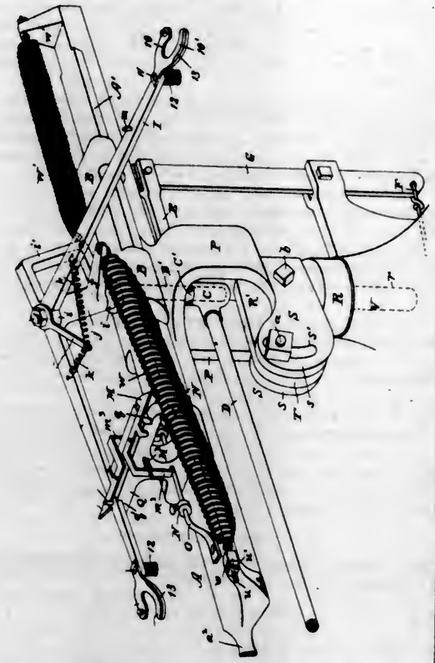
Claim.—1. A puzzle consisting of a volute of wire, a base of substantially rigid material on which said volute is fixed flatwise by its outer end, an embracing member freely embracing a number of the convolutions of said volute and means at the inner end of said volute to prevent removal therefrom of said embracing member and the other of the said elements consisting essentially of a ring of flexible cord adapted to embrace the convolutions of said volute substantially as herein set forth and shown.

2. A puzzle consisting of a base of substantially rigid material, a volute of wire fixed flatwise by its outer end on said base over an aperture therein the inner end of said volute being bent inward and a ring of metal freely embracing two of the convolutions of said volute and incapable of passing over the said bent inner end of said volute and the other of the said elements consisting of a ring of flexible cord embracing the convolutions of said volute and threaded through an otherwise loose part for the purposes herein set forth substantially as herein set forth and shown.

3. In a device of the character described, the combination with a base portion having an aperture therein, of a volute of wire attached to said base, a member freely embracing a number of the convolutions of said volute, means at the inner and outer ends of said volute to prevent the removal of said embracing member from the volute, and a removable member, substantially as described.

4. In a device of the character described, the combination with a base portion having a polygonal aperture therein, of a volute of wire attached to said base, a member freely embracing a number of the convolutions of said volute, means at the inner and outer ends of the volute to prevent the removal of said embracing member from said volute, and a removable member consisting of a flexible loop and a tag, substantially as described.

822,741. TARGET-TRAP. CASSIUS M. KETCHAM, Carthage, Mo. Filed May 5, 1904. Serial No. 206,509.



Claim.—1. In a target-trap, a pair of firing or throwing arms both mounted on the same axis and arranged to turn thereon one in one direction and the other in the opposite when moving to deliver their targets, whereby the targets from both arms are thrown in the same general direction (as away from the marksman) but at different angles, and means for operating the arms, substantially as set forth

2. In a target-trap, a pair of firing or throwing arms both mounted in the same axis, and means for operating the said arms alternately, that is, for causing one to assume the inactive position when the other is being set for firing and vice versa, substantially as set forth.

3. In a target-trap, the combination of two firing or throwing arms, means for operating the said arms, and means for simultaneously putting one arm in condition for operation and rendering the other inactive and vice versa, substantially as set forth.

4. In a target-trap, the combination of two firing or throwing arms arranged to operate alternately, a trigger mechanism for releasing the arms, and means operated by the arm that is moving to throw the target to simultaneously bring the other arm into engagement with the trigger mechanism, substantially as set forth.

5. In a target-trap, the combination of a pair of firing or throwing arms mounted upon a common axis, means for causing one arm to turn in one direction about its axis to throw its target and the other arm to turn in the opposite direction to throw its target, and trigger mechanism controlling the arms, substantially as set forth.

6. In target-trap, the combination of a pair of firing or throwing arms, springs connected therewith for operating the arms, and means for simultaneously putting the spring of one arm under tension and relaxing that of the other arm and vice versa, substantially as set forth.

7. In a target-trap, the combination of a pair of throwing-arms, springs for giving motion to the arms to throw the targets, each spring being connected at one end with a longitudinally-movable support and at the other end with a fixed support, and means for moving the longitudinally-movable supports of the springs in opposite directions relative to their fixed supports, whereby as one spring is put under tension the other is relaxed, and a trigger mechanism for folding the throwing-arm while its spring is being put under tension, substantially as set forth.

8. In a target-trap, the combination of a pair of throwing-arms, a longitudinally-movable support upon which the arms are mounted, springs for moving the arms each connected at one end with one arm and at its opposite end with a stationary support, and means for moving longitudinally the support that carries the arms, whereby when it is moved in one direction one spring is put under tension and the other relaxed and when moved in the opposite direction the latter spring is put under tension and the former relaxed, substantially a set forth.

9. In a target-trap, the combination of a bed, a supporting-frame movable longitudinally upon the said bed, a pair of throwing-arms mounted upon the movable frame, a pair of springs each connected at one end with a stationary support carried by the bed, such supports being on opposite sides of the support for the arms, and the springs extending toward each other and being connected with the arms, means for longitudinally moving the supporting-frame between the stationary supports for the springs, and a trigger mechanism, substantially as set forth.

10. In a target-trap, the combination of a bed provided with a longitudinal track or way, a movable frame mounted upon said track, a pair of throwing-arms pivotally mounted upon said movable frame, springs for operating the throwing-arms, the springs being connected to fixed supports between which the frame moves, whereby one of them is put under tension when the frame is moved in one direction and the other under tension when moved in the opposite direction, means for moving the frame upon the bed, and a trigger mechanism carried by the said frame and arranged to hold the arms as their springs are being put under tension, substantially as set forth.

11. In a target-trap, the combination of a bed having supports for springs near its opposite ends, a frame movable longitudinally upon the bed between the said spring-supports, a pair of throwing-arms mounted upon a common axis on the said frame and arranged to turn about the same in opposite directions when moving to deliver their targets, springs for moving the throwing-arms each connected respectively with one of the stationary supports on the bed and at its other end with one of the throwing-arms, means for moving the frame longitudinally of the bed, whereby one of the springs is put under tension as the frame is moved in one direction and the other spring is put under tension as it is moved in the opposite direction, and a trigger mechanism for the arms, substantially as set forth.

12. In a target-trap, the combination of a pair of throwing-arms mounted upon a common axis and arranged to move about the same in opposite directions when moving to deliver the targets, springs for operating the arms, a standard provided with seats in which the throwing-arms are adapted to rest, and a trigger mechanism provided with catch devices for retaining the arms when in their aforesaid seats, substantially as set forth.

13. In a target-trap, the combination of a movable frame, a pair of throwing-arms mounted thereupon, springs for operating the throwing-arms, means for moving the frame to put one spring under tension as it is moved in one direction and the opposite spring as it is moved in the opposite direction, a trigger mechanism for the arms comprising an independent catch for each arm, carried by the frame, and stationary tripping devices by which the catch members of the trigger mechanism are operated as the frame reaches the respective limits of its movements, substantially as set forth.

14. In a target-trap, the combination of a pair of throwing-arms

mounted upon a common axis and arranged to move about the same in opposite directions to throw the targets, means for operating the arms, a trigger mechanism, and a connection between the two arms, whereby when one arm is moved to throw its target it moves, through such connection, the opposite arm into engagement with the trigger mechanism, substantially as set forth.

15. In a target-trap, the combination of a pair of throwing-arms mounted upon a common axis and arranged to move about the same in opposite directions to throw the targets, means for operating the arms, a trigger mechanism for the arms, and a connection between the two arms comprising a spring, whereby when one arm is moved to throw its target it moves, through such connection, the opposite arm into engagement with the trigger mechanism, substantially as set forth.

16. In a target-trap, the combination of a bed provided with a longitudinal track, a frame movable thereupon, a throwing-arm supported upon the frame, a spring for operating the arm, a hand-lever, and connections between the hand-lever and the frame for reciprocating the same in order, by movement of the frame, to put the spring that operates the throwing-arm under tension, substantially as set forth.

17. In a target-trap, the combination of a base, a bed supported upon the base, the bed being adjustable about both vertical and horizontal axes and formed with a longitudinal slot through it, a frame longitudinally movable upon the bed and provided with a pin extending through the longitudinal slot in the bed, a throwing-arm mounted on the said frame, a spring for operating the arm, and means for moving the frame connected with the said pin that extends through the slot in the bed, such connection being approximately in axial line with the vertical pivot of the bed when the frame is in its mid-position, substantially as set forth.

18. In a target-trap, the combination with a movable arm, of a carrier for the target pivotally supported at the end of the arm, comprising a yielding bearing arranged to be held against the edge of the target, and a single spring having a portion connecting the arm and the target-carrier and arranged to hold the latter yieldingly in a definite position with reference to the arm, and another portion connected with the bearing and operating to hold it yieldingly against the edge of the target, substantially as set forth.

19. In a target-trap, the combination with a movable arm, of a carrier for the target connected with the arm by a pivot-pin, a yielding bearing adapted to be held against the target when placed in the carrier, and a spring connected at one end with the arm and having a coiled portion surrounding the pivot uniting the arm with the carrier and having its other end extended and connected with the carrier and also with the bearing and arranged to hold the latter in position to engage the edge of the target, substantially as set forth.

20. A carrier for flying targets having a pair of target-supporting fingers, one provided with a stationary rest for the target and the other with a yielding bearing, a spring extending substantially parallel with one of the arms of the carrier and connected at its outer end with the said yielding bearing, a bearing-block adjustable lengthwise of the spring, and means for securing the bearing-block to the arm in different positions, whereby the effective length of the spring may be varied, substantially as set forth.

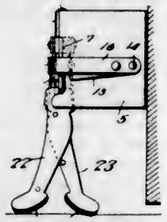
21. In a target-trap, the combination with a throwing-arm, of a carrier for the target pivotally connected with the arm and a spring for yieldingly holding the carrier in a definite relation to the throwing-arm, the carrier comprising a flat arm provided with a seat for the edge of the target, a bearing-roller for engaging with the edge of the target opposite the seat in the flat arm, and an elastic arm for holding the bearing-roller against the edge of the target disposed at an acute angle to the said flat arm, substantially as set forth.

22. A holder for flying targets comprising a pair of arms or fingers between which the target is held, one being yielding, a pivotal support for the holder, and means for positively adjusting, and for holding after adjustment, the said arms or fingers relative to each other, whereby the normal positions of the target-engaging parts of the arms or fingers may be varied with reference to each other, substantially as set forth.

23. In a target-trap, the combination of a throwing-arm, a post about which the arm turns, a pivotal supporting member for the said post, and screws for adjusting the post-supporting member, substantially as set forth.

24. In a target-trap, the combination of a throwing-arm, a post about which the arm turns, and a supporting-frame for carrying the post consisting of a longitudinally-movable member and an adjustable member directly carrying the post, and means for varying the inclination of the adjusting member relative to the longitudinally-movable member, substantially as set forth.

822,742. DOOR-CHECK. HERBERT W. LA MUNYON and FRANK P. GEE, Dumont, Colo. Filed Nov. 9, 1905. Serial No. 286,630.



Claim.—1. The combination with a door, of a bracket secured thereto, a member hingedly secured to the bracket, a latch member carried by the bracket and adapted to engage said hinged member to secure the same in normal position, means for locking the latch member in engagement with the hinged member, and a foot carried by the hinged member.

2. The combination with a door, of a bracket secured thereto, a member hingedly secured to the bracket, a latch member carried by the bracket and adapted to engage the hinged member to secure the same in normal position, a spring member carried by the latch member, a pin carried by the spring member and adapted to lock the latch member in engagement with the hinged member, and a foot mounted upon the hinged member.

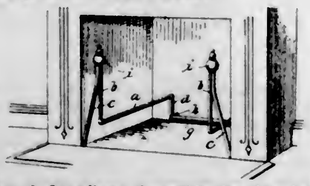
3. The combination with a door, of a bracket secured thereto, a member hingedly secured to the bracket, a latch member secured to the bracket and adapted to engage the hinged member to secure the same in normal position, and feet mounted upon the hinged member and adapted to project in opposite directions from each other.

4. The combination with a door, of a bracket secured thereto, a member hingedly secured to the bracket, a latch member carried by the bracket and adapted to engage the hinged member to secure the same in normal position, a foot mounted upon the hinged member, and a spring secured to the hinged member and engaging the foot, said spring serving to retain the foot in operative or inoperative position.

5. The combination with a door, of a member secured thereto, feet movably mounted upon said member and adapted to project in opposite directions from each other, and springs carried by said member and adapted to engage the feet to retain either or both of said feet in operative or inoperative position.

6. The combination with a door, of a bracket secured thereto, a member hingedly secured to the bracket and provided with a lug, a lever having a latch adapted to engage said lug, means for locking the lever in engagement with said lug, feet independently and movably secured to said member, and springs for retaining the feet in operative and inoperative positions.

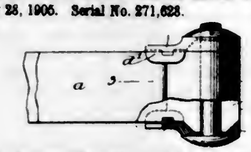
822,743. ANDIRON. PAUL E. LEVERITT, Stone Mountain, Ga. Filed Aug. 5, 1905. Serial No. 273,842.



Claim.—1. In andirons, the combination of a pair of wood-supporting-bars each having at its forward end an upward extension and at its rear end a depending extension, this latter extension serving as a rear standard, an extensible connection extending directly across between the lower ends of said rear standards, whereby said rear standards may come close to the back wall of the fireplace and the connection may lie on the hearth closely adjacent the back wall, and a front supporting-standard for each wood-supporting bar, for the purpose set forth.

2. In combination with a pair of horizontal fuel-supporting rods having depending supports at their rear or inner ends, a rigid connection between the lower ends of said supports, uprights connected to the forward ends of said supporting-rods, and supporting-legs connected to the upper ends of these uprights and bent laterally in opposite directions therefrom, the whole constituting an elastic frame.

822,744. COUPLING. GEORGE LLOYD, Gananoque, Canada. Filed July 28, 1905. Serial No. 271,628.



Claim.—1. In a coupling, the combination with the parts to be coupled, said parts having conical projections, of coupling-heads having tapered walls receiving said tapered projections, and means for forcing said heads snugly in engagement with said projections.

2. In a coupling, the combination with the parts to be coupled, said parts having conical projections, of coupling-heads having tapered walls receiving said tapered projections and projecting flanges having ribs on their inner faces for limiting the motion of the parts to be coupled, and means for forcing said heads into engagement with the parts to be coupled.

822,745. RAILWAY. MATTHIAS R. LONGACRE, Millerstown, Pa. Filed Oct. 30, 1905. Serial No. 284,955.



Claim.—1. A railway having sectional sills for supporting the rails formed of cement or concrete said sectional sills resting in a substantially continuous base portion formed of concrete or cement said sectional sills being suitably tied together.

2. A railway having sectional sills for supporting the rails formed of cement or concrete said sectional sills being tied together by plates embedded in the sills having suitable bolts coupling said plates together.

3. A railway having sectional sills for supporting the rails formed of cement or concrete said sectional sills being tied together by plates embedded in the sills having suitable bolts coupling said plates together, said sectional sills resting in a substantially continuous base portion formed of concrete or cement.

4. A railway having sectional sills formed of concrete or cement said sectional sills being suitably tied together and having embedded therein suitable chairs for supporting the rails.

5. A railway having sectional sills formed of concrete or cement, said sectional sills being suitably tied together and having embedded therein suitable chairs for supporting the rails, said chairs having lateral adjustable tie-rods, connecting with chairs opposite.

6. A railway having sectional sills formed of cement said sectional sills being suitably tied together and having embedded therein suitable chairs for supporting the rails said sectional sills resting in a substantially continuous base portion formed of concrete.

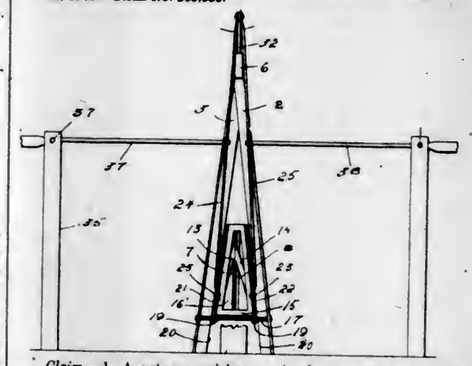
7. A railway having sectional sills formed of cement said sectional sills being suitably tied together and having embedded therein suitable chairs for supporting the rails, said sectional sills resting in a substantially continuous base portion formed of concrete, and a cushioning-strip between the sills and the base portion.

8. A railway having sectional sills formed of concrete or cement said sectional sills being suitably tied together and having embedded therein suitable chairs for supporting the rails said chairs having lateral adjustable tie-rods connecting with chairs opposite and said sectional sills resting in substantially continuous base portions formed of concrete or cement.

9. A railway having sectional cement sills suitably tied together, and having embedded therein suitable chairs for supporting the rails said chairs having lateral adjustable tie-rods connecting with chairs opposite and said sectional sills resting in substantially continuous concrete base portions.

10. A railway having sectional cement or concrete sills suitably tied together and having embedded therein chairs for supporting the rails having rods passing through them and extending the length of the sills, forming dowel-pins at one end of said sills.

822,746. TILTING GATE. CHARLES H. LOVERING, Sidney, Mont., assignor of one-half to Frank H. Lovering, Newton, Mont. Filed June 16, 1905. Serial No. 265,560.

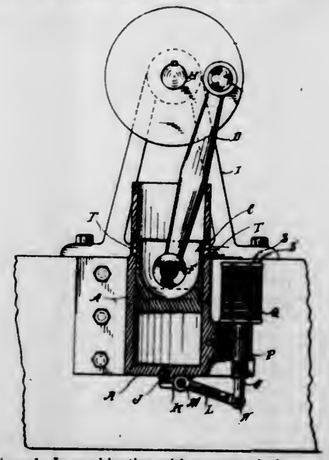


Claim.—1. A gate comprising a pair of converging upper elements, a pair of lower converging elements, a pair of converging braces, an outer end connecting the braces and the upper and lower elements, rear ends formed integral with the upper lower intermediate bracing and end elements, ears formed integral with the rear ends of the said gate, and a block disposed between the said rear ends of the gate and made to converge upwardly.

2. The combination with oppositely-disposed posts having a cross-piece connecting their upper ends, of a gate hinged to the lower rear end of each post, levers pivotally mounted upon the said cross-piece and having their inner ends pivoted together, rods connecting the outer end of each lever and the rear of the gate, and other means connected with one pair of said rods, whereby they may be moved vertically.

3. The combination with two posts, each consisting of upwardly-convergent members, of a cross-piece connecting the upper ends of the posts, a gate pivoted at its rear ends between the converging members of each post at the lower ends of said members, a support arranged adjacent to each post, pivotally-connected levers mounted upon said cross-piece, rearwardly-extending spaced projections carried by each gate, rods connected with the projections and converging upwardly for pivotal connection with the outer ends of the levers thereabove, and means for operating said levers.

822,747. AIR-BRAKE. GEORGE E. MARCH, Muskegon Heights, Mich., assignor of one-half to Lawrence G. Swenington, Muskegon, Mich. Filed Apr. 20, 1905. Serial No. 256,573.



Claim.—1. In combination with a rotary shaft, a piston, a cylinder, and means for causing the piston to reciprocate within the cylinder, a port in the cylinder near its end and normally open, a valve and operating means for the valve, whereby the port can be

opened to permit escape of the compressing-air and closed to prevent the ingress of the external air, and a port located at some distance from the end of the cylinder, whereby the external air can be admitted after the piston has passed the same on its reverse stroke.

2. In a device for braking electrically-driven apparatus, the combination of the driven shaft, a cylinder and a piston, means carried by the shaft for reciprocating the piston within the cylinder, means for creating atmospheric resistance to the motion of the piston, means whereby the driving-current of electricity will lessen or prevent such atmospheric resistance, and means whereby the lessening or stoppage of the electric current will cause an increase in such atmospheric resistance.

3. In a device for braking power-driven apparatus, the combination of the driven shaft, a cylinder and a piston, means carried by the shaft for reciprocating the piston within the cylinder, means for creating atmospheric resistance to the motion of the piston, means whereby the normal operation of the driving power will prevent or lessen such atmospheric resistance, and means whereby the entire or partial discontinuance of the driving power will increase such atmospheric resistance.

822,748. RADIATOR. JARED MARIS, Sharonville, Ohio. Filed Apr. 26, 1905. Serial No. 257,441.



Claim.—1. In a radiator, a drum, an interior flue in said drum, a damper to said interior flue, a baffle extending from said interior flue whereby a contracted flue-space is formed adjacent to the wall of the drum, a scraper composed of a series of hoops adapted to bear against the inner wall of said drum, and means for operating said scraper.

2. In a radiator, a drum, a scraper adapted to engage the interior wall of said drum, an agitator projecting inwardly from said scraper, and means for shifting said scraper.

3. In a radiator, a drum having a tapered end, a collar upon said end, an interior flue for said drum, a damper to said flue, a rod for said damper forming a support for said interior flue, and stays on said interior flue adapted to hold said interior flue in position.

4. In a radiator, a drum, a tapered end on said drum, a collar on said tapered end, an interior flue within said drum, a damper to said interior flue, a rod for said damper forming a support for said interior flue, stays on said interior flue adapted to hold it in alinement with said collar, a baffle extending from said interior flue whereby a contracted flue-space is formed adjacent the wall of said drum, a scraper engaging the wall of said drum adapted to be shifted to remove obstruction from said contracted flue-space, and means for operating said scraper.

5. In a radiator, a drum, a tapered end on said drum, a collar on said tapered end, an interior flue within said drum, a damper to said interior flue, a rod for said damper forming a support for said interior flue, stays on said interior flue adapted to hold it in alinement with said collar, a baffle extending from said interior flue whereby a contracted flue-space is formed adjacent the wall of said drum, a scraper having flanges engaging the wall of said drum adapted to be shifted to remove obstruction from said contracted flue-space, and means for operating said scraper.

6. In a radiator, a drum, a tapered end on said drum, a collar on said tapered end, an interior flue within said drum, a damper to said interior flue, a rod for said damper forming a support for said interior flue, stays on said interior flue adapted to hold it in alinement with said collar, a baffle extending from said interior flue whereby a contracted flue-space is formed adjacent the wall of said drum, a scraper engaging the wall of said drum adapted to be shifted to remove obstruction from said contracted flue-space, an agitator on said scraper, and means for operating said scraper.

7. In a radiator, a drum, a tapered end on said drum, a collar on said tapered end, an interior flue within said drum, a damper to said interior flue, a rod for said damper forming a support for said interior flue, stays on said interior flue adapted to hold it in alinement with said collar, a baffle extending from said interior flue whereby a contracted flue-space is formed adjacent the wall of said drum, a scraper having flanges engaging the wall of said drum adapted to be shifted to remove obstruction from said contracted flue-space, an agitator on said scraper, and means for operating said scraper.

8. In a radiator, a drum, a tapered end on said drum, a collar on said tapered end, an interior flue within said drum, a damper to said interior flue, a rod for said damper forming a support for said interior flue, stays on said interior flue adapted to hold it in alinement with said collar, baffles extending from said interior flue whereby a lodging place is formed for deposits of the products of combustion and a contracted flue-space is formed adjacent the wall of said drum, a scraper engaging the wall of said drum adapted to be shifted to remove obstruction from said contracted flue-space, and means for operating said scraper.

9. In a radiator, a drum, a tapered end on said drum, a collar on said tapered end, an interior flue within said drum, a damper to said interior flue, a rod for said damper forming a support for said interior flue, stays on said interior flue adapted to hold it in alinement with said collar, baffles extending from said interior flue whereby a lodging place is formed for deposits of the products of combustion and a contracted flue-space is formed adjacent the wall of said drum, a scraper having flanges engaging the wall of said drum adapted to be shifted to remove obstruction from said contracted flue-space and means for operating said scraper.

10. In a radiator, a drum, a tapered end on said drum, a collar on said tapered end, an interior flue within said drum, a damper to said interior flue, a rod for said damper forming a support for said interior flue, stays on said interior flue adapted to hold it in alinement with said collar, baffles extending from said interior flue whereby a lodging place is formed for deposits of the products of combustion and a contracted flue-space is formed adjacent the wall of said drum, a scraper engaging the wall of said drum adapted to be shifted to remove obstruction from said contracted flue-space, an agitator on said scraper, and means for operating said scraper.

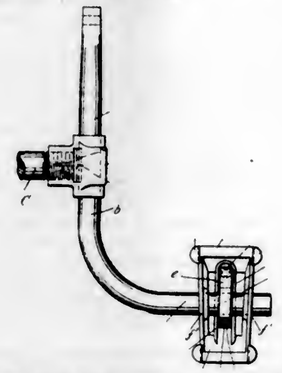
11. In a radiator, a drum, a tapered end on said drum, a collar on said tapered end, an interior flue within said drum, a damper to said interior flue, a rod for said damper forming a support for said interior flue, stays on said interior flue adapted to hold it in alinement with said collar, baffles extending from said interior flue whereby a lodging place is formed for deposits of the products of combustion and a contracted flue-space is formed adjacent the wall of said drum, a scraper having flanges engaging the wall of said drum adapted to be shifted to remove obstruction from said contracted flue-space, an agitator on said scraper and means for operating said scraper.

822,749. SUPPLY-VALVE. ELON A. MARSH, Detroit, Mich., assignor to Frank O. O'Hara, Detroit, Mich. Filed Sept. 26, 1904. Serial No. 226,933.



Claim.—In a supply-valve for tanks, the combination of an upwardly-opening spud provided with a valve-seat, a valve-casing in the form of a cap adapted to engage closely thereover, the engaging surfaces of said spud and of said casing being so formed as to provide a plurality of fluid-exit passages arranged to induce a downward flow along the wall of said spud, a valve-lever fulcrum engaging said casing whereby the same may be lifted from its seat, and a refill-pipe leading from the interior of said casing, whereby that portion of the water not released through said exit-passages may be discharged, substantially as described.

822,750. VEHICLE-BRAKE. HORACE E. MARTIN, Athens, Ga. Filed Apr. 25, 1905. Serial No. 257,328.



Claim.—1. The combination, with a brake-lever having a laterally-projecting end portion, and a brake-block carried by the said end portion; of a pivot for the said lever, and a socket adjustable longitudinally upon the middle part of the said brake-lever and connecting it to its said pivot.

2. The combination, with a brake-lever provided with a brake-block, of a pivot-socket slidable on the said lever, and a pivot for the said lever screwed into the said socket and operating to clamp the said socket to the said lever.

3. The combination, with a brake-lever provided with a brake-block, of a pivot-socket slidable on the said lever, a pivot for the said lever screwed into the said socket, and a shoe interposed between the end of the said pivot and the lever and provided with a projection which engages with the said lever when the pivot is screwed up tightly.

4. The combination, with a brake-operating lever, and a pivot therefor; of a T-shaped socket for adjustably connecting the two said parts, one of the said parts being normally slidable in the main portion of the said socket, and the other said part being screwed into the branch portion of the said socket and operating to clamp the first said part in the said main portion.

822,751. COMBINED SCOPE AND DISTANCE FINDER. THOMAS H. MITCHELL, New York, N. Y. Filed Feb. 1, 1904. Serial No. 191,631.

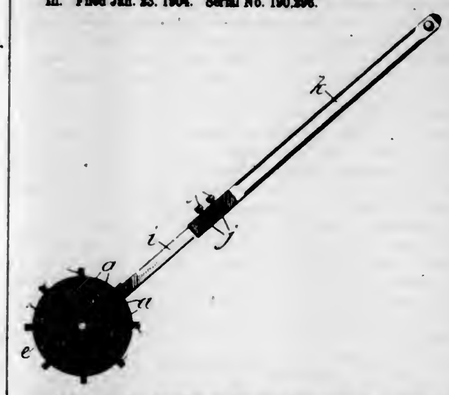


Claim.—1. A distance-finder comprising a tubular body, a tubular slide mounted to slide in the inner end of the said body, an objective mounted in the outer end of the said tubular body, an eyepiece mounted in the outer end of said tubular slide, and a ground glass mounted in the said tubular slide between the eyepiece and the said objective.

2. A distance-finder, comprising a tubular body, a tubular slide mounted to slide in the inner end of said body, and having a distance-scale lengthwise on the outer surface thereof, the marks of the scale being read on the inner edge of said tubular body, an objective mounted in the outer end of said tubular body, an eyepiece in the outer end of said tubular slide, and a ground glass mounted on the said tubular slide between the eyepiece and the said objective.

3. A distance-finder, comprising a tubular body, a tubular slide mounted to slide in the inner end of said body, a single plano-convex objective lens mounted on the outer end of said body, a double convex lens on the outer end of said tubular slide, and a ground glass in the said tubular slide and spaced apart from said double convex lens, the tubular slide having a distance-scale arranged lengthwise on the outside thereof.

822,752. GROUND-ROLLER. FRANCIS B. MOORE, Metamora, Ill. Filed Jan. 23, 1904. Serial No. 190,296.



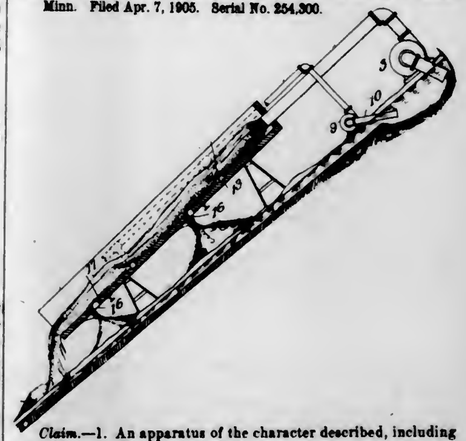
Claim.—1. In a machine of the class described, the combination of a roller having a substantially cylindrical portion formed of concrete, and a plurality of strips embedded in such concrete portion and projecting outward beyond the surface thereof forming flanges, substantially as described.

2. A composite roller comprising a cylindrical concrete body portion, and a series of flanges having angular lugs embedded therein said flanges projecting beyond the body portion.

3. A composite roller comprising a cylindrical concrete portion, and a series of flanges having lugs embedded therein the lugs being bent alternately in opposite directions and the flanges projecting beyond the body portion.

4. In a machine of the class described, the combination of a roller having a substantially cylindrical portion formed of concrete, a plurality of metallic strips embedded in and extending longitudinally of such concrete portion projecting outward beyond the peripheral surface thereof forming flanges, and a frame in which such roller is rotatably mounted.

822,753. ORE-CLEANER. ALEXANDER MCDOUGALL, Duluth, Minn. Filed Apr. 7, 1905. Serial No. 254,300.



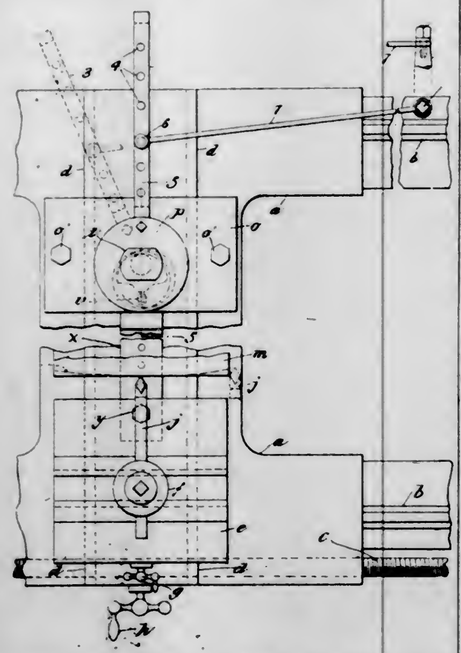
Claim.—1. An apparatus of the character described, including an inclined trough, an ore-sump, a supply of water therefor, a return passage-way extending longitudinal the trough and connected with the sump and having an inclination reverse the inclination of the trough, the trough having a plurality of outlet-openings each delivering to a dump, means for taking the water and ore from the sump and delivering it to the upper end of the inclined trough, and means for taking water from the sump and delivering it to the trough to clean the ore as it passes downward therethrough, and laterally-extending passage-ways connecting the return-passage with the dumps, substantially as described.

2. An apparatus of the character described, including a trough, an inclined trough having outlet-openings in its bottom, a mining-

machine adapted to take the ore and water from the sump and deliver it to the upper end of the trough, a return passage-way having an inclination reverse to the inclination of the trough, means for taking water from the sump and delivering it to the bottom of the trough to subject the ore to the cleaning operation of the water, the cleaned ore passing through the outlet-openings and the refuse passing out of the lower end of the trough, and laterally-extending passage-ways connecting the several dumps with the return passage-way, whereby the water is used over and over again for ore conveying and cleaning purposes, substantially as described.

3. An apparatus of the character described, comprising an inclined trough having openings in the bottom and extending transversely thereof, a water and ore supply for the upper end of the trough and of a size to maintain several inches of water in the trough, water-supply pipes resting upon the bottom of the trough a distance above the openings and below the maintained water-level, means for regulating the supply to said transverse pipes, independent of each other, and said pipes having openings discharging the water in an upward and downward direction, whereby the lighter materials are raised in the maintained water-level and carried downward over the openings by the same.

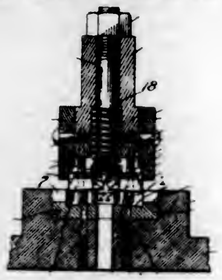
822,754. **PULLEY-CROWNING ATTACHMENT FOR LATHES.** HUGH MCLEOD, Hatfield, Mass. Filed Sept. 3, 1904. Serial No. 223,211.



Claim.—1. The combination with the tool-carriage, of a cross-slide carrying a tool-holder, a block slidable on the tool-carriage, and means comprising an eccentric device attached to the said block by means of which the tool-holder may be moved in an arc when the tool-carriage is operated, said eccentric device comprising a rotatable disk having an eccentric socket therein, a rotatable member located in the socket, a pin eccentrically located on the rotatable member, an adjustable connecting-bar connected to the pin at one end and pivotally to the cross-slide at the other end, as described.

2. The combination with the tool-carriage of a lathe, of a cross-slide thereon, a disk rotatably mounted on the carriage, a rotatable member located in a socket in said disk eccentrically thereto, a pin located in said rotatable member eccentrically of the latter, a connection extending from said pin to the cross-slide and pivotally connected with the latter, an arm rigidly connected to the disk, and a brace-rod adjustably secured to said arm by one end, its opposite end being fixed.

822,755. **DIE FOR FINISHING BOTTLE-CAPS.** CHARLES E. MCMANUS, New York, N. Y. Filed July 23, 1905. Serial No. 271,604.



Claim.—1. A die comprising a body provided with stationary forming members, a spring-controlled head yieldingly mounted upon the body, pivoted spring-controlled forming members carried by the head, said members being adapted to tilt and automatically release the cap when the die is retracted, and means automatically operating when said forming members tilt for forcing the cap out of engagement therewith.

2. A cap-finishing die comprising a body provided with stationary forming members, a spring-projected head yieldingly mounted upon the body, coöperating dies or forming members pivotally mounted upon the head, and means for normally holding said dies or forming members in operative relation and permitting them to move out of engagement with the cap upon the retraction of the die.

3. A cap-finishing die comprising a body provided with stationary forming members, a spring-controlled head yieldingly mounted upon the body, pivoted forming members carried by the head, means for normally holding said pivoted forming members in operative relation and permitting the same to tilt out of engagement with the cap upon the retraction of the die, and spring-actuated cap-extracting devices carried by the die.

4. The combination with a support provided with a cap-holder and spring-actuated cap-ejecting means, of a die provided with a body carrying stationary forming members, a yielding head carried by the body and provided with coöperating tilting, spring-controlled forming members, and spring-actuated cap-extracting means movably mounted upon the body and head, substantially as described.

5. The combination with a cap-receptacle provided in its side wall with slots, of a die provided with a body carrying stationary forming members adapted to enter said slots, and a yielding head carried by the body to enter the support and provided with coöperating tilting spring-controlled forming members, said forming members being adapted to enter the cap and to tilt and release the same when the die is withdrawn from the support, the said stationary and tilting forming members having forming-faces to engage opposite sides of the flange of the cap.

6. The combination with a support provided with a cap-holder and spring-actuated cap-ejecting means, said holder being provided in its side wall with slots, of a die provided with a body carrying stationary forming members adapted to enter said slots, a yielding head carried by the body and provided with coöperating tilting, spring-controlled forming members adapted to bear against the flange of the cap, and spring-actuated means carried by the die-body and controlled by and movable with relation to the head to release the cap from said tilting forming members.

7. A cap-finishing die comprising a body provided with a stationary forming member, a spring-projected head yieldingly mounted upon the body, a coöperating die or forming member pivotally mounted upon the head, and means for normally holding said pivoted die or forming member in a horizontal position to move into the cap and to permit it to assume a tilting position to move out of engagement with the cap upon the retraction of the die.

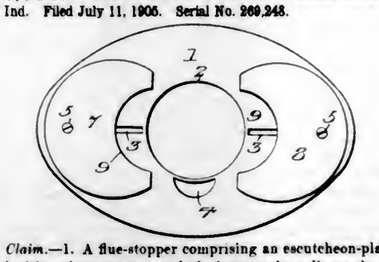
8. A cap-finishing die comprising a body carrying stationary forming members, a stem slidably mounted in the body, a head carried by said stem, coöperating forming members pivotally mounted upon the head, means for normally holding said pivoted forming members in operative relation and permitting them to move out of engagement with the cap upon the retraction of the die, and a spring yieldingly connecting the stem and head with the die-body.

9. A cap-finishing die comprising a body provided with stationary forming members, a stem slidably mounted therein, a head carried by the stem, a spring acting on the head to normally force the same outward and permit it to have retractive movement, pivoted forming members carried by the head, means for normally holding said pivoted forming members in operative relation and permitting them to move out of engagement with the cap upon the retraction of the die, and spring-actuated members movable through the head for releasing the cap from said pivoted forming members.

10. A cap-finishing die comprising a body provided with one or more stationary forming members, a stem slidably mounted in the body, a head carried by the stem and carrying one or more pivotally-mounted forming members, means for normally retaining said pivoted forming members in a horizontal position and permitting them to tilt therefrom to move out of engagement with the cap upon the retraction of the die, and means associated with the head for retracting the cap from said pivoted forming members.

11. A cap-finishing die comprising a body provided with stationary forming members, a spring-controlled head yieldingly mounted upon the body, pivoted forming members carried by the head, and a spring-actuated plunger acting upon said forming members to normally hold them in operative position and permit them to tilt to release the cap when the die is retracted.

822,756. **FLUE-STOPPER.** FRANCIES M. NEEDHAM, Anderson, Ind. Filed July 11, 1905. Serial No. 269,248.



Claim.—1. A flue-stopper comprising an escutcheon-plate provided with a pipe-aperture, and closing members disposed on opposite sides of the aperture and slidably adjustable toward and from the same, said plates being approximately of segmental form and adapted to be adjusted to close the joint between the wall of the aperture and a pipe or completely close the aperture when the pipe is removed.

2. A flue-stopper comprising an escutcheon-plate provided with a pipe-aperture and slots at diametrically opposite sides of said aperture, supporting members slidably adjustable in said slots, and closing-plates carried by said supporting members, said plates being approximately of segmental form and adapted to be adjusted to close the joint between the wall of the aperture and a pipe or completely close the aperture when the pipe is removed.

3. A flue-stopper comprising a thimble provided with a vent-channel, an escutcheon-plate provided with a pipe-aperture and a vent-opening communicating with said channel, and closing members disposed on opposite sides of the aperture and slidably adjustable toward and from the same and from said vent-opening, said plates being approximately of segmental form and adapted to be adjusted to close the joint between the walls of the pipe-aperture and a pipe or completely close the pipe-aperture and vent-opening when the pipe is removed.

822,757. **ROTARY BRUSH.** HENRY NIELSON, Cleveland, Ohio, assignor to The Osborn Manufacturing Company, Cleveland, Ohio, a Corporation of Ohio. Filed June 17, 1904. Serial No. 212,970.



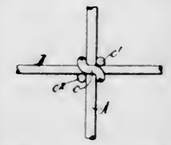
Claim.—1. In a rotary brush, the combination of a plurality of bristle-sections, each comprising a circular base and bristles attached thereto; separating-rings, one between each two contiguous bristle-sections, provided with grooves adapted to receive the bases of said bristle-sections and with outer flat portions adapted to bear against and support the bristles of said sections; and a hub adapted to receive said bristle-sections and separating-rings, such hub comprising two members registering one within the other and provided with flanges adapted to bear against and secure the outer bristle-sections respectively and means adapted to secure said two members together.

2. A rotary brush comprising the combination of a plurality of bristle-sections; a separating-ring between each two contiguous sections, said rings adapted to receive and support the bristle-sections and each provided with an inner bead; and means for binding said sections and rings into a unitary structure comprising two telescoping barrels, upon the outer one of which said beads are mounted, each having a flange adapted to bear against and support the outer bristle-sections respectively, and an end web; and a locking member comprising two coöperating parts provided with flanges adapted to bear upon said end webs, respectively.

3. A rotary brush comprising the combination of a plurality of bristle-sections, each section consisting of a bristle-base and bristles attached thereto; a separating-ring between each two contiguous sections having an inner bead, each two contiguous rings forming an annular space comprising contracted outer and inner portions and an intermediate enlarged groove, said rings adapted to receive and support the bristle-bases in said grooves and the bristles in said contracted outer portions; and means for binding said sections and rings into a unitary structure comprising two telescoping barrels, upon the outer one of which said beads are mounted, said barrels being provided with flanges adapted to bear against and support the outer bristle-sections, respectively; and a locking member for telescoping the barrels.

4. A rotary brush comprising the combination of a plurality of bristle-sections each composed of a circular base formed of twisted strands and doubled bristles secured at their bases between said strands; separating-rings, one between each two contiguous bristle-sections, adapted to secure the bases and to support the bristles of said bristle-sections; and a hub comprising means for binding said sections and rings together, such means consisting of two barrels one adapted to register within the other, upon the outer of which said sections are mounted, each such barrel having a flange adapted to bear against and secure the outer bristle-sections and means adapted to secure said two barrels together.

822,758. **WIRE-FENCE LOCK.** ELLIOTT G. OVERHOLT, Hamilton, Canada, assignor to Selkirk Fence Company, Hamilton, Canada. Filed Dec. 1, 1905. Serial No. 289,715.



Claim.—1. The combination of a pair of intersecting fence-wires, and a tie or lock consisting of a piece of wire of approximately U form embracing one of the wires with its central bight or bend and having its end portions bent in reverse directions around the other wire on opposite sides of the first-named wire, said central bend being arranged at right angles to the said first-named wire, substantially as set forth.

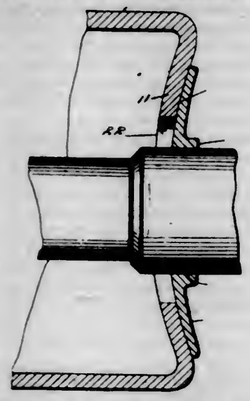
2. The combination of intersecting upright and horizontal fence-wires, and a tie or lock consisting of a piece of wire of approximately U form embracing the upright wire with its central bight or bend and having its ends bent in reverse directions around the horizontal wire on opposite sides of the upright wire, said central bend being arranged at right angles to the upright wire, substantially as set forth.

822,759. **CONCAVED JOURNAL-BOX AND DUST-GUARD.** JAMES S. PATTEN, Baltimore, Md., assignor, by direct and mesne assignments, to Baltimore Journal Box Company, Baltimore, Md., a Corporation of Maryland. Filed Aug. 17, 1904. Serial No. 221,040.

Claim.—1. The combination with a journal-box having a concaved inner end face provided with an opening to receive a journal, of a dust-guard plate curved to correspond to said face and disposed thereagainst, said plate having an opening registering with that of the box and means for automatically shifting the plate in the direction of the box to compensate for wear of the contacting faces of the plate and box.

2. The combination with a journal-box having a reëntrant inner end wall and a corresponding concaved inner end face through which is formed an opening to receive a journal, of a dust-guard plate having a portion thereof fitted to said concaved face and in contact therewith continuously about said opening, said plate having an

opening registering with that of the box to receive the journal, and means for automatically shifting the plate in the direction of the box to compensate for wear of the contacting faces of the plate and box.

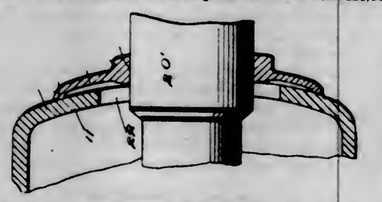


3. The combination with a journal-box having an end opening to receive a journal, of guides carried by the box, a dust-guard plate disposed against the end of the box and having an opening registering with that of the box, wedges engaged in the guides and against portions of the plate in position to hold the plate against movement from the box longitudinally of the axis of its opening and means cooperating with the wedges for automatically shifting the plate in the direction of the box to compensate for wear of the contacting faces of the plate and box.

4. The combination with a journal-box having an end opening to receive a journal, of a dust-guard plate disposed against the end of the box, and having an opening registering with that of the box, and means for holding the plate against the box and with which means the plate is in rocking contact.

5. The combination with a journal-box having an end opening to receive a journal, of a dust-guard plate disposed against the end of a box and having an opening registering with that of the box and having a forwardly-directed lug projecting at each side of said opening and means bearing against the rear ends of said lugs for holding the plate against the box and with which means said lugs are in rocking contact.

822,760. CONVEX JOURNAL-BOX AND DUST-GUARD. JAMES S. PATTEN, Baltimore, Md., assignor, by direct and mesne assignments, to Baltimore Journal Box Company, Baltimore, Md., a Corporation of Maryland. Filed Aug. 17, 1904. Serial No. 221,041.



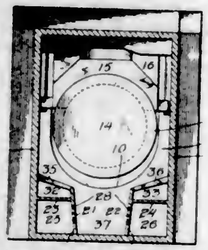
Claim.—1. The combination with a journal-box having a convex inner end face provided with an opening to receive a journal, of a dust-guard plate curved to correspond to said face and disposed thereagainst, said plate having an opening registering with that of the box and means for automatically shifting the plate in the direction of the box to compensate for wear of the contacting faces of the plate and box.

2. The combination with a journal-box having a curved inner end face with an opening therethrough to receive a journal, of a dust-guard plate fitted movably against and supported upon a portion of said face, said plate having an opening registering with that of the box and means for automatically shifting the plate in the direction of the box to compensate for wear of the contacting faces of the plate and box.

3. The combination with a journal-box having a convex inner end face curved in a vertical plane and having an opening through its inner end to receive a journal, of a dust-guard plate fitted movably against and supported upon a portion of said face, said plate having an opening registering with that of the box and means for automatically shifting the plate in the direction of the box to compensate for wear of the contacting faces of the plate and box.

4. The combination with a journal-box, of guides carried by the box, an exterior dust-guard plate for the box, wedges disposed in said guards against said plate and arranged to hold the latter against the box, each of said wedges having a longitudinal groove in its face opposite to the contacting portion of the plate, which said groove decreases in depth from its upper to its lower end and a ball engaged in each of said grooves and impinging against the bottom of the groove and against the guide.

822,761. JOURNAL-BOX FOR CARS. JAMES S. PATTEN, Baltimore, Md., assignor to The Baltimore Journal Box Company, Baltimore, Md., a Corporation of Maryland. Filed Apr. 12, 1905. Serial No. 255,236.



Claim.—1. A journal-box for cars having a waste-pit, oil-chambers at the sides of the waste-pit and communicating therewith and separate waste-supporting portions above the chambers.

2. A journal-box for cars having a waste-pit in the lower portion thereof, oil-chambers at the sides of the waste-pit and communicating therewith and separate waste-supporting portions above the chambers and above the pit.

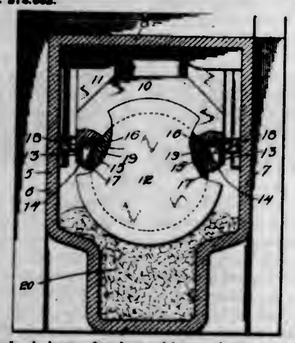
3. A journal-box for cars having a waste-pit in its lower portion, oil-chambers at the sides of the waste-pit, supplemental oil-reservoirs above the chambers and waste-supports above the supplemental reservoirs arranged to permit portions of the waste to dip into the supplemental reservoirs.

4. A journal-box for cars having a waste-pit in its lower portion, the side faces of the pit being adapted at intervals of their lengths to retard the downward movement of the waste thereover.

5. A journal-box for cars having a waste-pit in its lower portion, the side faces of the waste-pit being perforated at intervals of their lengths to retard the downward movement of the waste thereover.

6. A journal-box for cars having a waste-pit in its lower portion, the side faces of the pit having projections and perforations at intervals of their lengths to retard the downward movement of the waste thereover.

822,762. BRASS FOR JOURNAL-BOXES. JAMES S. PATTEN, Baltimore, Md., assignor to The Baltimore Journal Box Company, Baltimore, Md., a Corporation of Maryland. Filed Aug. 4, 1905. Serial No. 272,663.



Claim.—1. A brass for journal-boxes having an oil-holding pocket opening through its face that contacts with the journal, the opening of the pocket extending longitudinally of the journal with the brass directly adjacent said opening in position to lie close against the journal, to direct oil in the pocket from the face of the journal.

2. A brass for journal-boxes having an oil-pocket in its face that contacts with the journal, the face of the brass at one side of the pocket in the direction of curvature of the face being spaced farther from the center of the curvature than the contacting face of the brass.

3. A brass for journal-boxes having an oil-pocket extending inwardly through the contacting face of the brass and then downwardly, the face of the brass below the opening of the oil-pocket being positioned to lie out of contact with but in close proximity to a journal in contact with the brass above the oil-pocket.

4. A brass for journal-boxes having an oil-holding pocket extending inwardly through the contact-face of the brass and then downwardly, said inwardly-extending portion being at such an angle as to permit of the flow of oil from the journal therethrough to the downwardly-extending portion.

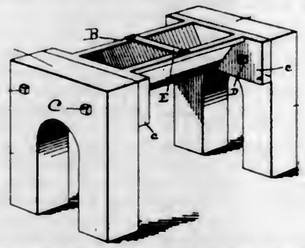
5. A brass for journal-boxes having an oil-holding pocket opening only through the face that contacts with the journal, said opening extending longitudinally of the journal and leading from the journal in a direction to permit the flow of oil thereinto from the face of the journal.

6. A brass for journal-boxes having an oil-holding pocket opening through the face of the brass that contacts with the journal, the face of the brass at one side of the pocket in the direction of curvature of the contacting face gradually receding from the center of curvature of said contacting face.

7. A brass for journal-boxes having an oil-holding pocket opening through the face of the brass that contacts with the journal, the face of the brass at one side of the pocket in the direction of curvature of the contacting face gradually receding from the center of curvature of said contacting face, and terminating in the drip-flange.

8. A brass for journal-boxes having an oil-pocket formed in its face that contacts with the journal, said oil-pocket being divided into sections longitudinally of the brass.

822,763. TROUGH FOR FEEDING AND WATERING STOCK. JOHN PAULUS, Afton, Iowa. Filed July 19, 1905. Serial No. 270,438.



Claim.—A stock feeding and watering trough comprising thick and heavy end supports of wood, a receptacle formed of one piece of metal interposed between the supports and resting throughout its length flush with the upper edges thereof; said receptacle being of the shape in cross-section and having an unbroken or smooth interior even surface to permit of its being easily cleaned and being provided with integral end walls extending throughout its height and also extending laterally in opposite directions from its ends and disposed against the inner sides of the supports, and bolts extending through and connecting the extended portions of the end walls of the receptacle and the supports.

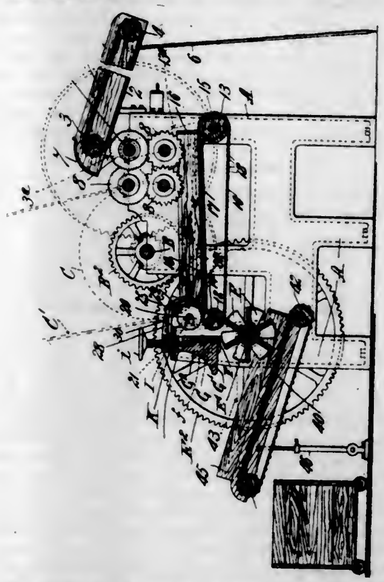
822,764. PRUNING IMPLEMENT. JOHN W. PAYNE, Elba, Va. Filed Apr. 19, 1905. Serial No. 256,445.



Claim.—1. A pruning implement comprising blades pivoted together intermediate their ends, a stop upon one of the blades to limit the outward movement of the lower ends of the blades with respect to each other, a yoke embracing the pivotal connection of the blades, a spring associated with said stop, a yoke on one of the blades, and hand-grips provided at one end of the implement.

2. A pruning implement comprising blades pivoted together intermediate their ends and provided with grasping elements at one end, the opposite ends of the blades being provided with bends, a stop disposed upon one of the blades to limit the movement of separation of the bent ends thereof, a yoke embracing the blades at their pivotal connection, and a spring connected to the said stop and passed between the yoke and engaged at its opposite end to one of the blades.

822,765. MACHINE FOR REDUCING RAGS FOR PAPER-STOCK. JOHN L. PERKINS, Holyoke, Mass. Filed Mar. 6, 1905. Serial No. 248,581.



Claim.—1. In a rag-reducing machine, the combination with series of coacting slitting-rolls; and a normally stationary cutter-bar, and a rotary cutter coacting therewith, having locations endwise of the machine beyond, and below, the slitting-rolls; of an endless-belt conveyer having a portion thereof located below the slitting-rolls, and extending to a position adjacent and above the rotary cutter, and having a supporting-roll 12 therefor; a series of separated rolls or wheels above the roll-supported delivery end of the belt conveyer; a shaft supporting said separated rolls, journal-supports for said shafts constrained for free rising-and-falling movements; and members yielding in an upward direction and having positions between said separated rolls, and normally adjacent the conveyer.

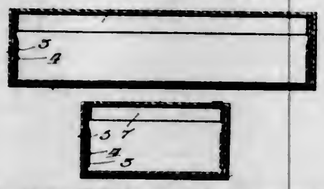
2. In a rag-reducing machine, the combination with a series of coacting slitting-rolls; and a normally stationary cutter-bar, and a rotary cutter coacting therewith, having locations endwise of the machine beyond, and below, the slitting-rolls; and an endless-belt conveyer having a portion thereof located below the slitting-rolls, extending to a position adjacent and above the rotary cutter, and having a supporting-roll 12 therefor, a series of separated rolls or wheels 25 above the roll-supported delivery end of the belt conveyer, the stationary vertical studs 22, the journal-supports 21 engaged about and vertically freely movable on said studs, and the shaft, carrying said rolls 25; members yielding in an upward direction and having positions between said separated rolls, and normally adjacent the conveyer.

3. In a rag-cutting machine, in combination, a horizontally-extending belt conveyer 10, shredding or strip-cutting wheels above the receiving end of the conveyer, and a rotary cutter and cutter-bar, below the delivery end of such conveyer, a series of separated corrugated-faced pressure-wheels, and a shaft on which they are mounted, above the discharge-end portion of said belt conveyer, vertically-slidable bearings for said shaft, and a series of intermediately-pivoted levers having members 32 thereof located between the pressure-wheels and adjacent the conveyer, and coacting with said wheels to preserve an evenly-distributed discharge of the shredded rags con-

veyed thereto, and the springs 30 connected with arms of said levers as described.

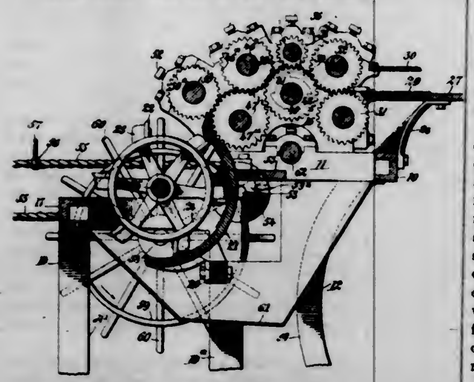
4. In a rag-reducing machine, in combination, the main frame including opposite side members, and supporting an intermediately-located transverse driving-shaft B, provided with a gear-wheel B^2 thereon, a rotary cutter having the shaft thereof provided with a gear-wheel E^2 in mesh with said gear-wheel B^2, a normally stationary transverse cutter-bar coacting with the rotary cutter, sets of separated and coacting slitting-rolls, one thereof being gear-connected with the main shaft B, a belt conveyer and supporting-rolls 3 and 4 therefor, and the driving connection 3^a between one of the slitting-roll shafts and the roll 3, the belt conveyer 10 having supporting-rolls 12 and 13 therefor, located below the slitting-rolls, and above the rotary cutter, and driving connections 13^a between the roll 13 and said slitting-roll shaft, the separated pressure-rolls 25 located above the roll 12, the yielding members 32 located between the rolls 25 and adjacent the delivery end of the conveyer 10, and the belt conveyer 40 located below and extended endwise of the machine beyond the rotary cutter, and having supporting-rolls 41 and 42 therefor, and driving connections 43 between the rotary cutter-shaft and one of said rolls 41 42.

822,766. **NON-REFILLABLE BOX.** FRANK E. PHILLIPS, Hyde Park, Mass. Filed Nov. 12, 1904. Serial No. 232,445.



Claim.—A non-refillable box comprising side and end walls having one portion of a layer of paper secured to the upper surrounding portion of the inner part of the walls of the box, the other portion of said layer of paper being detached from the box, a bottom having separate flaps serving to be interposed between the walls of the box and between the detached portion of the layer of paper, and secured thereto and also to the walls of the box, a single sheet of tearable paper having its marginal edges secured to the upper surrounding portions of the layer of paper and having its solid body portion extending wholly across the top of the box, and a cover mounted on the walls of the box and over the tearable sheet of paper, substantially as specified.

822,767. **FIBER-CLEANING MACHINE.** ANGEL G. PONS, Mexico, Mexico. Filed Mar. 10, 1903. Serial No. 147,094.



Claim.—1. In a machine for cleaning fiber, crushing-rollers adapted to initially receive a leaf and to turn in opposite directions, a scraping or cleaning shaft at the rear of the crushing-rollers, receiving a leaf therefrom and turning in the same direction as one of the said crushing-rollers, a shed having a concaved upper surface, held above the scraping-shaft, a final cleaning device adapted to receive the butts of the leaves, and a releasing device for the leaves, operating in conjunction with the final cleaning device, as described.

2. In a fiber-cleaning machine, crushing-rollers having longitudinal grooves throughout their length, the said crushing-rollers being arranged to mesh, means for turning the said rollers in opposite directions, a scraping or cleaning shaft mounted to revolve at the rear of the crushing-rollers, opposite their point of contact, the said scraping-shaft being provided with spirally-formed scraping-blades, a shed held above the scraping-shaft, means for turning the scraping-shaft in the opposite direction from the direction of rotation of one of the crushing-rollers, a feed-table adapted to direct the leaves to the crushing-rollers, the said feed-table having apertures for the escape of juice, a guard located above the apertured portion of the feed-table, an auxiliary scraping-wheel at the rear of the machine, a curved table adjacent to said scraping-wheel, a releasing-wheel having peripheral spokes, which wheel is adapted to revolve in an opposite direction to the scraping-wheel, and a conveyer which receives material from the auxiliary scraping device, as described.

3. In a fiber-cleaning machine, initial crushing-rollers, a scraping or cleaning shaft located at the rear of the said crushing-rollers opposite their point of contact, a shed over the scraping-shaft, feed-shafts located at the rear of the said scraping or cleaning shaft, the said feed-shafts being covered with an elastic material such as canvas for a portion of their length, a conveyer at the rear of the feed-shafts, adapted to receive the cleaned leaves, and an auxiliary cleaning device adapted to finally act upon the butt portions of the leaves when leaving the feed-shafts, as described.

4. In a fiber-cleaning machine, initial crushing-rollers, a scraping and cleaning shaft located at the rear of the said crushing-rollers opposite their point of contact, a shed over the scraping-shaft, feed-shafts located at the rear of the said scraping and cleaning shaft, the said feed-shafts being covered with an elastic squeezing material such as canvas for a portion of their length, a conveyer at the rear of the feed-shafts, adapted to receive the body portions of the cleaned leaves, an auxiliary cleaning device adapted to finally act upon the butt portions of the leaves when leaving the feed-shafts, and a releasing-wheel provided with peripheral spokes, the spokes of the said wheel being adapted to engage with the cleaned or partially-cleaned leaves and withdraw their butt portions from engagement with the auxiliary cleaning device, as set forth.

5. In a machine for cleaning fiber, a cleaning device consisting of a curved table, a wheel adapted to revolve concentrically with reference to the said table, scraper-blades carried by the said wheel, adapted to move in near relation to the concaved surface of the said table, and a releasing-wheel mounted to revolve adjacent to the scraper-wheel, the releasing-wheel being provided with peripheral offsets adapted for engagement with the leaf being treated and to withdraw the said leaf at proper time from the said cleaning device, as described.

6. In a fiber-cleaning machine, the combination with initial crushing-rollers, said rollers having longitudinal grooves throughout their length and arranged to mesh, a scraping and cleaning shaft at the rear of the said crushing-rollers, provided with spirally-arranged cutters, a shed above the said shaft, feed-shafts located at the rear of the said scraping and cleaning shaft, and corrugated or toothed surfaces located at corresponding ends of the said scraping and cleaning shaft and the said feed-shafts, adapted to receive the butts of the leaves, as and for the purpose described.

7. In a fiber-cleaning machine, the combination with initial crushing-rollers, the said rollers having longitudinal grooves throughout their length and arranged to mesh, a scraping and cleaning shaft at the rear of the said crushing-rollers, provided with spirally-arranged cutters, a shed above said shaft, feed-shafts located at the rear of the said scraping and cleaning shaft, corrugated or toothed surfaces located at corresponding ends of the said cleaning and scraping shaft and the said feed-shafts, adapted to receive the butts of the leaves, an auxiliary cleaning device for the butts of the leaves, comprising a curved table, a scraping-wheel the scraper-blades of which are mounted to move in close proximity to the concaved surface of the said table, a releasing-wheel for the fiber, operating in conjunction with the said auxiliary scraping device, and a conveying mechanism for the cleaned or partially-cleaned leaves, as set forth.

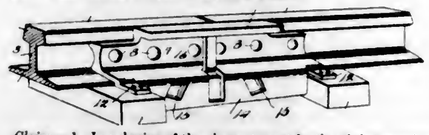
8. In a fiber-cleaning machine, an initial scraper or cleaning shaft provided with spirally-arranged cutters, and a shed located above the said cutters, having its under face or surface opposite to the said scraping and cleaning shaft concaved, means for adjusting the said shed to and from the said scraping and cleaning shaft, and crushing-rollers mounted to revolve in front of the said scraping and cleaning shaft, corrugated longitudinally throughout their length, the said crushing-rollers being adapted to mesh, and a driving mechanism substantially as described, for turning the crushing-rollers in

a rearward direction and simultaneously turning the scraping and feed shafts in a forward direction, for the purposes described.

9. In a machine for cleaning fiber, longitudinally-grooved pulleys, supports for the pulleys, and a conveyer consisting of endless belts passed over the said pulleys in determined parallel relation to each other, bridge-bars connecting the said belts, and fingers extending outwardly from the bridge-bars, for the purpose described.

10. In a machine for cleaning fiber, the combination with a series of crushing-rollers, an initial scraping-shaft having longitudinal cutters thereon, and feed-rollers at the rear of the scraping-shaft, of peripherally-grooved pulleys, supports for the said pulleys at the rear and below the said feed-rollers, a conveyer consisting of endless belts passed over the said pulleys in determined parallel relations to each other, bridge-bars connecting the said belts, fingers extending outwardly from the said bridge-bars, a rearwardly-curved table extending down below the lower rear feed-roller, an auxiliary scraping-wheel having peripheral scrapers adapted to travel in near proximity to the concaved surface of the said table, and a releasing-wheel mounted to revolve between the scraping-wheel and the conveyer, the two wheels being adapted to revolve in opposite directions and the scraping-wheel being provided with peripheral spokes which are opposite the spaces between the scrapers on the scraping-wheels, as and for the purpose described.

822,768. **RAILWAY-RAIL JOINT.** FRANK L. PRIEST, St. Louis, Mo. Filed October 7, 1905. Serial No. 281,801.



Claim.—1. In a device of the character set forth, a joint member provided with a tread-piece or flange and with a web, said web being provided with a tread-piece and rail-engaging means.

2. In a device of the character set forth, the combination with two railway-rails, of a joint having one of its members provided with an integrally-formed tread-piece or flange, and with an integrally-formed and downwardly-extended web.

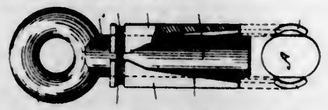
3. In a device of the character set forth, the combination with two railway-rails, of a joint having one of its members provided with an integrally-formed tread-piece or flange, and with an integrally-formed web, said web being stamped up to provide members for engaging the under sides of the rails.

4. In a device of the character set forth, the combination with two railway-rails, of a joint having one of its members provided with an integrally-formed tread-piece or flange, and with an integrally-formed web, said web being struck up to provide members adapted to engage the under sides of the bases of the rails and to engage under said tread-piece or flange.

5. In a device of the character set forth, the combination with two railway-rails, of a joint having one of its members provided with an integrally-formed tread-piece or flange, an integrally-formed web, and with integrally-formed securing members, said web being struck up to provide members for engaging the under sides of the bases of the rails and to engage under the tread-piece or flange.

6. In a device of the character set forth, a joint member provided with a tread-piece and web, said web being stamped up to provide rail and tread-piece engaging means.

822,769. **LEWIS.** ANDREAS G. QUIST, West Chelmsford, Mass. Filed Jan. 13, 1905. Serial No. 240,888.

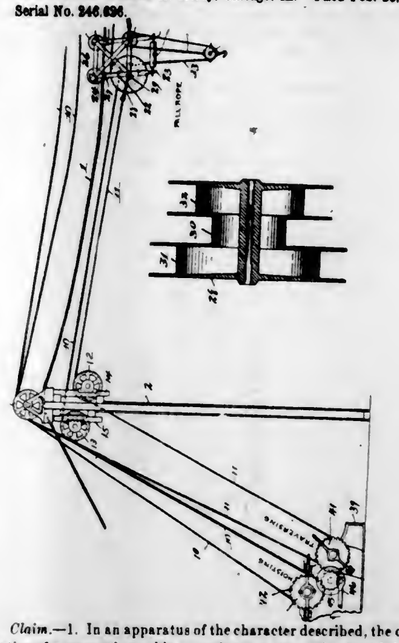


Claim.—1. A lewis comprising a bolt having a cylindrical portion and an elliptical portion, semicylindrical sleeves arranged upon opposite sides of the bolt said sleeves embracing the cylindrical portion of the bolt and being cut away longitudinally adjacent the elliptical portion of the bolt, and means for holding the sleeves in place.

2. A lewis comprising an eyebolt having an elliptical portion tapering to a cylindrical portion adjacent the eye, sectional sleeves adapted to embrace opposite sides of the bolt, said sleeves being grooved, and a wire encircling the sleeves and bolt and resting in the grooves.

3. A lewis comprising a bolt having an eye at one end, an elliptical portion at the opposite end, and tapering to a cylindrical portion adjacent the eye, longitudinally-curved sleeves adapted at their upper ends to embrace the cylindrical portion of the bolt and longitudinally cut away adjacent their lower ends, said sleeves having alining grooves adjacent their upper ends, and a wire arranged in the grooves and adapted to secure the sleeves in position on the bolt.

822,770. **CABLEWAY.** OLIVER C. REDDING, Chicago, Ill., assignor of one-half to William K. Kenly, Chicago, Ill. Filed Feb. 20, 1905. Serial No. 246,636.



Claim.—1. In an apparatus of the character described, the combination of a supporting-cable, a carriage constructed to travel thereon and carrying a fall-rope drum, a fall-rope operatively connected with said drum, a hoisting-rope operatively connected with said fall-rope drum, a weighted tension-pulley operating upon the fall-rope drum supplemental to the weight of the fall-rope and connected parts and tending to unwind and lower said fall-rope and means for traversing said carriage to and fro.

2. In an apparatus of the character described, the combination of a supporting-cable, a carriage constructed to travel thereon, a fall-rope drum upon said carriage, a fall-rope operatively connected therewith, a differential pulley operatively connected with the fall-rope drum, a hoisting-cable operatively connected with said differential pulley, a tension device operatively connected with the hoisting-rope, and means for traversing the carriage to and fro.

3. In an apparatus of the character described, the combination of a supporting-cable, a carriage constructed to travel thereon and carrying a fall-rope drum, a fall-rope connected with said drum, a pair of differential pulleys, both operatively connected with the fall-rope drum, a hoisting-cable operatively engaging both of said differential pulleys, the engaging parts of said rope being oppositely wound upon said differential pulleys, a tension device connected with said hoisting-cable and means for traversing the carriage to and fro.

4. In an apparatus of the character described, the combination of a supporting-cable, a carriage constructed to travel thereon and carrying a fall-rope drum, a fall-rope connected with said drum, a pair of differential pulleys operatively connected with said drum and of different diameter from each other, a hoisting-cable having parts which extend oppositely from the carriage operatively connected with the respective differential pulleys, a tension-pulley operatively connected with said hoisting-cable, a traversing rope operatively connected with the carriage and means for independently and simultaneously operating the hoisting-rope and traversing rope.

5. In an apparatus of the character described, the combination of a supporting-cable, a carriage constructed to travel thereon, a fall-rope drum mounted in said carriage and comprising three concentrically-disposed sections one of which constitutes the fall-rope drum proper, another a small differential pulley and the other a larger differential pulley, a fall-rope operatively engaged with the fall-rope drum proper, a hoisting-rope having one end coiled upon the smaller differential pulley, extending thence around a guide-support at one side of the carriage, back around a guide-support at the other side of the carriage, and thence to, and coiled upon the other differential pulley in a direction the opposite of its winding upon the first differential pulley, a tension-pulley operatively connected with that part of the hoisting-rope which extends directly from the larger differential pulley, a traversing cable operatively connected with the carriage and means for actuating the hoisting-rope and the traversing rope simultaneously at the same rate of travel or independently of each other.

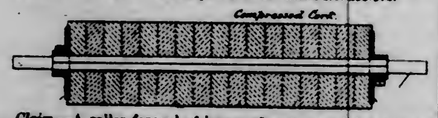
6. In an apparatus of the character described, the combination of a supporting-cable, a carriage constructed to travel thereon, a drum upon said carriage, a fall-rope operatively connected with said drum, means for rotating said drum to hoist or lower the fall-rope comprising a cable and a weighted tension-pulley acting on said latter cable, substantially as described.

822,771. GAS-MIXER. OSCAR ROEBEL, Kenosha, Wis. Filed Aug. 5, 1905. Serial No. 272,849.



Claim.—A device of the class described comprising a hollow drum having side and end walls and presenting a mixing-chamber, said drum being perforated at spaced intervals over the entire surface area of its side and end walls and being provided on one of the latter walls with a tubular neck situated wholly outside of and constituting an outlet-port for the chamber and the latter being wholly closed against communication with the exterior atmosphere except through the medium of said port and the perforations, a gas-nozzle extended centrally through the drum and having one of its ends threaded through the end wall of the latter opposite the outlet-port, said nozzle being terminated at its discharge end immediately in rear of the port and having its threaded inlet end projected in the adjacent end wall of the drum to form a nipple, and a pipe-coupling threaded onto the projecting end of the nozzle and a supply-duct terminally engaged with the coupling for communication with the nozzle.

822,772. ROLLER FOR WASHING, WRINGING, MANGLING, AND OTHER SIMILAR MACHINES. GEORGE W. ROBINSON, Portalegre, Portugal. Filed Apr. 14, 1905. Serial No. 255,670.



Claim.—A roller formed of layers of cork consolidated into a homogeneous body by pressure and having the small cavities in its surface filled with a waterproof cement formed of animal glue and bichromate of potash hardened by exposure to light.

822,773. ENVELOP-MOISTENER. BYRON M. ROGERS, Watertown, N. Y. Filed Aug. 22, 1905. Serial No. 275,205.

Claim.—1. A moistener comprising a tank, a wick-plate slidably connected with the tank, and a wick removably secured to said plate and depending within the tank, said wick-plate forming the rear wall of the tank.



2. A moistener comprising a well, a wick-plate slidably connected therewith and forming the rear wall of the well, a wick removably connected with said wick-plate and depending within the well, and a spring-tongue projecting above the well and bearing against said wick.

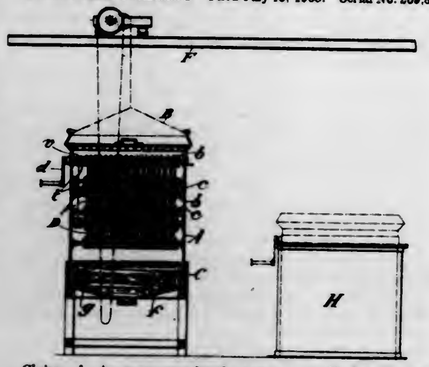
3. A moistener comprising a well, a wick-plate slidably connected therewith and forming the rear wall of the well, a wick removably connected with said wick-plate and depending within the well, and a spring-tongue projecting above the well and bearing against said wick, said spring-tongue being formed integral with the front wall of the well.

4. A moistener comprising a well, a wick-plate slidably connected with the well and forming the rear wall thereof, said wick-plate being formed with a projecting rib, a wick removably secured to said wick-plate and overlying said rib, and a spring-tongue formed integral with the well and contacting with the wick.

5. A moistener comprising a well open at its rear side, the side walls of the well being inwardly turned to provide flanges, a wick-plate slidably engaging said flanges and closing the rear side of the well, said wick-plate being formed with inturned lips, a wick secured by said lips, and a spring-tongue formed integral with the well and contacting with said wick, the free corners of said tongue being outwardly turned.

6. A moistener comprising a well open at its rear side, the side walls of the well being inwardly turned to provide flanges, a wick-plate slidably engaging said flanges and closing the rear side of the well, said wick-plate being formed with inturned lips, a wick secured by said lips, a spring-tongue formed integral with the well and contacting with said wick, the free corners of said tongue being outwardly turned, said well being formed with a filling-opening, and a mass of absorbent material within the well.

822,774. APPARATUS FOR UNGUMMING SILK. PETER SCHMID, Basel, Switzerland. Filed July 15, 1905. Serial No. 269,877.

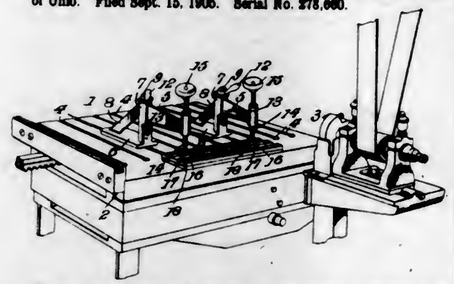


Claim.—1. An apparatus for the purpose specified, comprising a sectional receptacle for treating the silk with soap-lather, consisting of a vessel provided with means for heating soapy water, an inlet for air under pressure, and an annular chamber for sealing liquid, and an upright metal casing, open at both ends and having a loosely-fitting cover at its upper end, the lower end of said casing engaging the said annular chamber in the lower section, for sealing, rotative supports within said casing for hanks of silk to be treated, a washing vessel, and means for lifting said casing from its supporting vessel and transferring it to the washing vessel.

2. An apparatus for the purpose specified, comprising a sectional receptacle for treating the silk with soap-lather, consisting of a vessel provided with means for heating soapy water, an inlet for air under pressure, and an annular chamber for a sealing liquid, and an upright metal casing, open at both ends and having a loosely-fitting cover at its upper end, the lower end of said casing engaging the said annular chamber in the lower section, for sealing, means within said casing for supporting the silk to be treated, a washing vessel, and means for lifting said casing from its supporting vessel and transferring it to the washing vessel.

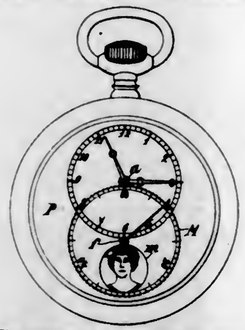
3. An apparatus for the purpose specified, comprising a sectional receptacle for treating the silk with soap-lather, consisting of a vessel provided with means for heating soapy water, and an annular chamber for a sealing liquid, and an upright metal casing open at both ends and having a loosely-fitting cover at its upper end, the lower end of said casing engaging the said annular chamber in the lower section, for sealing, means within said casing for supporting the silk to be treated, a washing vessel, and means for lifting said casing from its supporting vessel and transferring it to the washing vessel.

822,775. CLAMP. WILLIAM SCHNURR, New York, N. Y., assignor to United States Printing Company, Cincinnati, Ohio, a Corporation of Ohio. Filed Sept. 15, 1905. Serial No. 278,660.



Claim.—In a clamp, a frame or casting having a vertical post formed with a central bore, a rod freely movable in said bore extending above the top of said post and threaded at its upper end, said rod having an adjusting-nut on such upper end and having a rectangular head at its lower extremity for the purpose stated, a base extending from one side of said post, and an arm projecting laterally from the opposite side of said post, a vertically-adjustable rod in the free end of said arm, a presser-foot carried by the lower extremity of said rod, and a swivel-joint connecting said presser-foot and said rod.

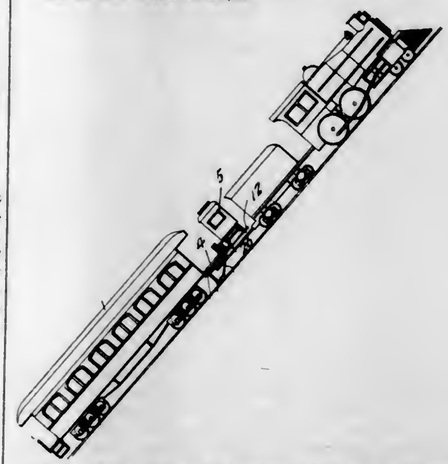
822,776. WATCH. ARNOLD SCHWEIKER-SCHATZMANN, Chaux-de-Fonds, Switzerland. Filed July 28, 1905. Serial No. 271,595.



Claim.—1. The combination in a watch having a pendant, of a dial provided with an hour graduation, arranged eccentrically with regard to the watch, a going-train, the seconds-wheel whereof has its axle eccentric to the watch, and outward of the said hour graduation, said dial having an aperture at a point diametrically opposed to that occupied by the pendant, and entirely lodged inward of the second graduation, the latter being arranged in a very large circle, a correspondingly long seconds-hand fixed to the axle of the seconds-wheel, a case having a central window at the back, and two internal disks of large diameter, each of said disks provided with a series of views on its outer face and each fixed to the axle of the seconds-hand wheel, the one beneath the watch-dial and the other beneath the back of the watchcase, the views of the said disks becoming successively visible, in a continuous manner, respectively through the said dial-aperture and the said case-window, when the watch is going, substantially as set forth.

2. The combination in a watch having a pendant and an hour-hand, of a dial provided with an hour graduation, arranged eccentrically with regard to the watch on the side of the pendant, a going-train, the seconds-wheel whereof has its axle eccentric to the watch and in line with the pendant and hour-hand axle, and outward of the said hour graduation, said dial having an aperture at a point diametrically opposed to that occupied by the pendant, and entirely lodged inward of the second graduation, the latter being arranged in a very large circle intersecting the hour graduation, a correspondingly long seconds-hand fixed to the axle of the seconds-wheel, a case having a central window at the back, and two internal disks of large diameter, each of said disks provided with a series of views on its outer face and fixed to the axle of the seconds-hand wheel, the one beneath the watch-dial and the other beneath the back of the watchcase, the views of the said disks becoming successively visible, in a continuous manner, respectively through the said dial-aperture and the said case-window, when the watch is going, substantially as set forth.

822,777. DEVICE FOR TRANSPORTING PASSENGERS TO AND FROM MOVING TRAINS. FILER S. SEE, Gem, Kans. Filed Jan. 27, 1906. Serial No. 298,147.



Claim.—1. In a device of the class described, a main car, a turn-table carried thereby, an auxiliary car adapted to be sustained by the latter, and means for automatically swinging the turn-table to and from position in line with the main car.

2. In a device of the class described, a main car, a turn-table carried thereby and adapted to normally stand in axial alinement with the car, an auxiliary car to be carried by the turn-table, means for automatically moving the latter to and from normal position, and means for locking the table in the latter position.

3. In a device of the class described, a main car, a turn-table carried thereby and adapted to swing to and from a position in axial alinement with the car, tracks provided on the turn-table for the reception of an auxiliary car, means for locking the turn-table in normal position, and means for automatically releasing and moving the turn-table to position to receive or discharge the auxiliary car.

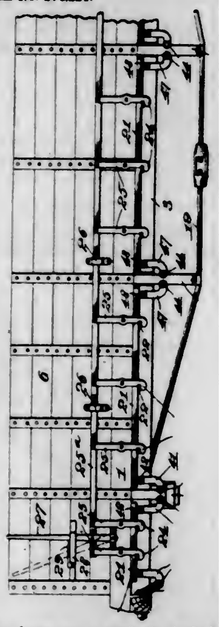
4. In a device of the class described, a main car, a turn-table carried thereby and adapted to stand normally in axial alinement with the car, means for locking the turn-table in normal position, track devices for automatically releasing the turn-table and swinging the same to a position transversely of the car and to return the same to normal position, and an auxiliary car adapted to be received upon, carried by and discharged from the turn-table.

5. In a device of the class described, a main track, an auxiliary track extended at one side thereof, main and auxiliary cars designed for travel respectively on said tracks, a turn-table carried by the main car and adapted for movement to position to receive the auxiliary car, means for automatically moving the turn-table, and means for locking the same against movement.

6. In a device of the class described, main and auxiliary tracks arranged in parallel relation, main and auxiliary cars adapted for travel respectively on said tracks, a turn-table carried by the main car and having rails to receive the auxiliary car, said turn-table being

movable to position to bring its rails into line with the auxiliary track, means for locking the turn-table against movement, and means for automatically releasing and swinging the turn-table.

822,778. DUMP-CAR. JOHN SHELTON, Denver, Colo. Filed Aug. 14, 1905. Serial No. 274,231.



Claim.—1. In a dump-car, a car-body, body-bolsters and needle-beams secured to the under side thereof, bearings formed integral with the side faces of said body-bolsters and needle-beams, rock-shafts journaled in said bearings, fingers fixed to the outer ends of all of the rock-shafts, dumping-doors hinged to the under side of the car-body against which the fingers engage, means whereby said dumping-doors are held in a locked position, and means whereby all of the rock-shafts are simultaneously rotated; substantially as specified.

2. In a dump-car, a series of dumping-doors hinged to the under side of the car-body, rock-shafts lying parallel with and journaled to the body-bolsters and needle-beams of the car-body, fingers carried by the outer ends of the rock-shafts, balls carried by the fingers for engaging against the doors, and means whereby all of the rock-shafts are simultaneously rocked; substantially as specified.
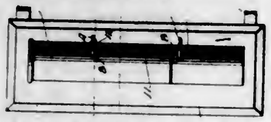
3. In a dump-car, a car-body, body-bolsters and needle-beams secured to said body, journal-bearings formed integral with the side faces of said bolsters and needle-beams, shafts arranged for rotation in said journal-bearings, fingers fixed to the outer ends of said shafts, balls integral with the upper ends of said fingers, and dumping-doors hinged to the under side of the car-frames against which the balls engage; substantially as specified.

4. In a dump-car, a car-body, body-bolsters and needle-beams secured to the under side of the car-body, journal-bearings formed integral with the sides of the bolsters and needle-beams, rock-shafts arranged in said journal-bearings, door-engaging fingers fixed upon said rock-shafts, a shaft extending longitudinally throughout the car, winding-drums thereon, chains winding upon said drums and arranged to actuate the rock-shafts, and doors hinged to the under side of the car-body which are engaged by the door-engaging fingers; substantially as specified.

5. In a dump-car, a car-body, body-bolsters and needle-beams secured to said body, journal-bearings formed integral with the side faces of said bolsters and needle-beams, shafts arranged for rotation in said journal-bearings, fingers fixed to the outer ends of said shafts, and dumping-doors hinged to the under side of the car-frame against which the ends of the fingers engage; substantially as specified.

6. In a dump-car, a car-body, body-bolsters and needle-beams secured to said body, journal-bearings formed integral with and wholly on the side faces of said bolsters and needle-beams, shafts arranged for rotation in said journal-bearings, fingers fixed to the outer ends of said shafts, dumping-doors hinged to the under side of the car-frame against which the fingers engage, and means whereby all of the rock-shafts are simultaneously operated; substantially as specified.

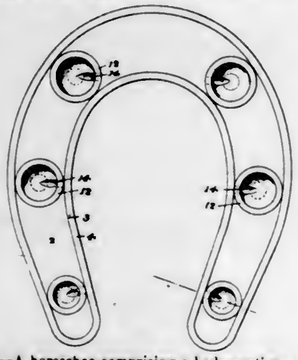
822,779. WHIP-SOCKET. JOSEPH D. SHIMER, Martins Creek, Pa. Filed Nov. 7, 1905. Serial No. 286,246.



Claim.—1. In a device of the class described, a base, a supporting member carried by the latter, a tubular member pivoted to the support and provided with an opening, a projection on the support adapted to extend through the opening, and a spring tending to move the tubular member toward the base.

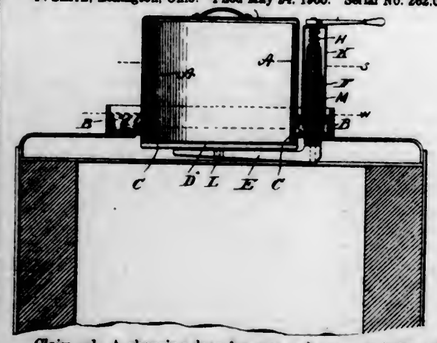
2. In a device of the class described, a base, a pair of supporting-arms carried thereby, one of said arms being provided with a projection, a tubular member pivotally connected with the supporting-arms for swinging movement toward and from the base, said member having an opening to receive the projection and a spring tending to move the tubular member toward the base.

822,780. HORSESHOE. CHARLES E. SILVIUS, Roselle Park, N. J. Filed Sept. 7, 1905. Serial No. 277,309.



Claim.—A horseshoe comprising a body portion, a continuous depending rib arranged around the inner and outer edge of the body portion, and calks secured at intervals to the body portion and projecting beyond the rib, the projecting part of the calk being cylindrical and having a transverse outlet near the top.

822,781. CHARGING-DOOR FOR GAS-PRODUCERS. HARRY F. SMITH, Lexington, Ohio. Filed May 24, 1905. Serial No. 262,025.



Claim.—1. A charging-door for gas-producers consisting of a door-mouth casing of cylindrical form open at both ends and surrounded at its lower end, outside, by an annular water-containing trough, the end below the water-trough being greatly thickened and trued off on its bottom surface, a cylindrical cover for the door-mouth casing, closed at one end and fitting over the cylindrical door-mouth with its lower edge resting in the water in the trough, combined with a removable cover for the lower extended, thickened and trued-off end of the circular closure for the door-mouth, having its upper surface meeting the lower extended, thickened and trued end of the door itself trued or milled off to make a tight connection, a lever connected with the cylindrical door for opening and closing the same, a water-sealed vertical rod connected with the outer end of the lever to move it, and a lever connected with the rod for operating it.

2. A charging-door-mouth casing for gas-producers consisting of a door of cylindrical form open at both ends and surrounded at its lower end, outside, by an annular water-containing trough, the end below the water-trough being greatly thickened and trued off on its bottom surface, a cylindrical cover for the door-mouth casing, closed at one end and fitting over the cylindrical door-mouth with its lower edge resting in the water in the trough, combined with a removable circular cover for the lower extended, thickened and trued-off end of the cylindrical door having its upper surface meeting the lower extended, thickened and trued end of the closure disk or door itself trued or milled off to make a tight connection and a lever extended beyond the center of the door upon which the said door or closure-disk is pivoted at its center to shift or move the latter to open and close the door and a rod through the medium of which the said lever may be actuated and means, water sealed from the retort or gas-producer proper and the door-mouth, connected with the outer end of the closure disk or door to operate it as described.

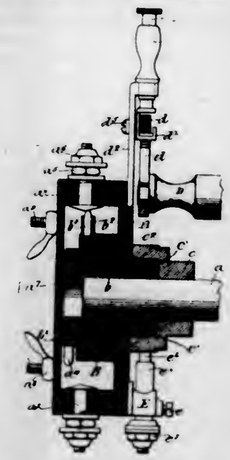
3. A charging-door for gas-producers consisting of a door-mouth casing of cylindrical form open at both ends and surrounded at its lower end, outside, by an annular water-containing trough, the end below the water-trough being greatly thickened and trued off on its bottom surface, a cylindrical cover for the door-mouth, closed at one end and fitting over the cylindrical door-mouth casing with its lower edge resting in the water in the trough, combined with a removable cover for the lower extended, thickened and trued-off end of the cylindrical closure disk or door having its upper surface meeting the lower extended, thickened and trued end of the closure disk or door, itself trued or milled off to make a tight connection, a lever upon which the said closure disk is pivoted to shift or move the latter to open and close the door, and a water-sealed vertical rod at the outer end of said lever to actuate the same.

4. A charging-door for gas-producers, consisting of a cylinder, an annular trough surrounding the said cylinder, adapted to contain water and forming an integral part of said cylinder, and a hollow sleeve or standard forming an integral part of said trough and rising from the bottom of the said trough, combined with a removable disk, adapted to fit tightly on the bottom of said cylinder which is formed as an extended thickened ledge and to form a bottom thereto, a lever upon which said bottom is pivoted for moving the same, a rod in said hollow sleeve or standard, and a lever connected with the top of said rod, said rod and hollow standard being water sealed from said lever.

5. A charging-door for gas-producers, consisting of a cylinder, an annular trough surrounding the said cylindrical door-mouth, adapted to contain water, and forming an integral part of said cylinder, and a hollow sleeve or standard forming an integral part of said trough and rising from the bottom of the said trough, combined with a removable disk adapted to fit tightly on the bottom of said cylinder which is formed as an extended thickened ledge, and to form a bottom thereto, a lever upon which the said bottom is pivoted for moving the same, a rod in said hollow sleeve or standard, a lever connected with the top of said rod, a spring bearing on the top of said hollow sleeve or standard the lower edge of the latter resting in the water in the annular trough

822,782. CURRENT-DISTRIBUTER FOR SPARKING DEVICES. JAMES M. SMITH, Philadelphia, Pa., assignor, by direct and mesne assignments, of two-thirds to Clarence L. Altemus, and Herbert B. Bowles, Philadelphia, Pa. Filed May 23, 1904. Serial No. 209,330.

Claim.—1. A current-distributer for a sparking system including a relatively fixed and closed casing, terminals thereon having contacts extending within the casing, a shaft entering the casing substantially concentric with said contacts, a ring carried by but insulated from the shaft having a brush placed to engage the contact when the shaft is rotated, a second brush carried within the casing so as to be maintained in engagement with the ring, a series of contacts carried by the shaft outside of the casing, and a third brush engaging said contacts, substantially as described.

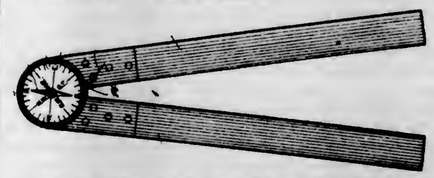


2. The combination of a rotatable shaft, a brush, and a series of electrically-connected contacts carried by said shaft, a relatively fixed brush placed to engage said contacts and a second series of contacts placed to be engaged by said rotatably-supported brush, with means for varying the positions of the second series of contacts and the fixed brush relatively to the rotatably-supported parts of the device, said means including a casing inclosing the second series of contacts, an arm attached thereto, a notched quadrant, and a longitudinally-movable piece carried by said arm having a portion constructed to engage said quadrant, substantially as described.

3. The combination of a shaft carrying a piece of insulating material, a ring on said piece, a contact-brush connected to said ring, an inclosing structure having a series of terminals placed to be engaged by said brush as the shaft revolves, a second contact-brush carried within said inclosing structure in engagement with said ring on the insulating material, with a contact on the shaft outside the inclosing structure, and a brush placed on said structure to engage said contact, substantially as described.

4. The combination of a shaft having on it a piece of insulating material, a ring of metal on said piece, a tubular guide and a spring-pressed plunger therein forming a brush, also carried on said insulating-piece and in electrical connection with said ring, an inclosed structure having a terminal or series of terminals placed to be engaged by said plunger and a contact-brush carried by and projecting into the inclosed structure, said brush contacting with said ring, substantially as described.

822,783. COURSE-FINDER. JOSEPH F. SMITH, Everett, Wash. Filed Oct. 9, 1905. Serial No. 281,915.



Claim.—In a course-finder for indicating on a chart the course of a vessel or ship, the combination of a stationary arm having thereon a hinge-section comprising two plates, a movable rubber-arm having a hinge-section thereon comprising one plate, said plate being pivoted between the said two plates on said stationary arm, a compass-card secured on each of the outer faces of said two plates on the said stationary arm, said compass-card on each of the two plates being so arranged that the north and south points are in line with or parallel with the inside edge of the said stationary arm, in such manner that when the stationary arm is placed north and south on a chart the movable arm will indicate courses to the east, and by reversing the finder, will indicate courses to the west.

822,784. AUTOMOBILE. JACOBUS SYTHOF, Trompenburg, Netherlands. Filed Oct. 16, 1905. Serial No. 283,026.



Claim.—1. In an automobile in combination, a chassis formed as a cradle by a semicircular sheet, with hollow sheet beams provided with cradle-securing flanges arranged longitudinally along the said cradle and removably connected to the same.

2. In an automobile in combination a chassis formed as a cradle in a semicircular sheet with the longitudinal beams supporting the cradle by means of the bent-over sides of the latter, the said cradle being removably secured to said beams.

3. In an automobile in combination a chassis formed by hollow longitudinal sheet-beams with longitudinal flanges, a semicircular sheet-cradle fixed thereon having sides bent over so as to be attached to the said hollow sheet-beams.

4. In an automobile in combination a chassis of a semicircular form underneath the motor, and cross tube-bars with means for adjustment of their length and position serving as supports for the motor and the motor-transmitting mechanism.

5. In an automobile, in combination a chassis of a semicircular form with cross-bars adjustable as to length and position connected thereto, claws upon their extremities in the form of hooks engaging with the flanges of the main beams.

6. In an automobile in combination a chassis of a semicircular form with tube cross-bars adjustable as to length and position, threads upon the said tube cross-bars, sockets fitting thereon and lock-nuts carried by the said sockets so that the said tubes are adjustable to the said chassis.

822,785. WINDOW FRAME AND SASH. HENRY STAIB, Ozone Park, N. Y. Filed Apr. 15, 1905. Serial No. 255,639.



Claim.—1. The combination with window-sashes having grooves in their edges, a window-frame, and vertical sash-stops comprising each different sections, a part of which are stationary and a part movable, fastened on said frame, having longitudinal beads, and arranged so that said grooves are in slidable engagement with the said beams, of guides having extensions on contiguous sides, fastened on the ends of said movable stop-sections, and plates having notches slidably engaging the said extensions of said guides, fastened on the ends of said stationary stop-sections, and arranged to afford facility for moving said movable stop-sections, and pivoted pulley connections on the edges of said sashes.

2. The combination with window-sashes having grooves in their edges, a window-frame, and vertical sash-stops therein, comprising each different sections, part of which are stationary and part movable, arranged so said parts are end to end in triplets, and having their adjacent ends so inclined as to be parallel to each other, of guides having side extensions on adjacent sides fastened on the said inclined ends of said movable stop-sections and parallel to each other, plates having notches engaged by said side extensions, fastened parallel to said guides on the ends of said stationary stop-sections, and together with said guides affording facility for moving said movable stop-sections, and pivoted pulley connections on the edges of said sashes.

3. The combination with window-sashes having grooves in their edges, a window-frame and vertical stops fastened therein, comprising each different sections, a part of which are stationary and a part movable, arranged so that such stop-sections are end to end in triplets, and have their adjacent ends inclined so as to be parallel to each other, and having longitudinal beads slidably engaged by said grooves in said sash edges, plates pivoted on said sash edges and flexible pulley connections attached thereto for moving said sashes upon said beads, of guides having side extensions on contiguous sides parallel to each other and fastened on the inclined ends of said movable stop-sections, plates having notches parallel to said guides, engaged by the side extensions thereof, fastened on the ends of said stationary stop-sections, and together with said guides affording facility for moving said movable stop-sections.

4. The combination with window-sashes having grooves in their edges, a window-frame, vertical stops fastened therein and comprising each different sections, part of which are stationary and a part movable, arranged so that such stop-sections are end to end in triplets, and having their adjacent ends inclined and arranged so as to be parallel to each other, and having longitudinal beads slidably engaged by said grooves in said sash edges, and elongated plates, each having an end enlargement in which flexible pulley connections are fastened, pivoted on said sashes and affording facility, together with said connections, for moving said sashes on said beads, of guides having side extensions on contiguous sides, fastened on the inclined ends of said movable stop-sections parallel to each other, plates having notches parallel to said guides, engaged by the side extensions thereof, fastened on the inclined ends of said stationary stop-sections, and together with said guides affording facility for moving said stop-sections out of alinement with said stationary stop-sections and for allowing such movable sections by reason of their own weight to return to such alinement with said stationary stop-sections.

5. The combination with window-sashes having grooves in their edges, a window-frame, vertical stops comprising different sections fastened therein, a part of which sections are stationary and a part movable, arranged so that such stop-sections are end to end in triplets, the end sections being stationary, the middle sections movable and having their end surfaces inclined and parallel to each other, having longitudinal beads slidably engaged by said grooves in said sash edges, and elongated plates having end enlargements pierced with openings at right angles to each other and to the said plate, and cleft in said enlargement with slots, pivoted on said sashes and affording a pivotal connection between said sashes and flexible pulley connections, of guides having side extensions on contiguous sides fastened on the inclined ends of said movable stop-sections, parallel to each other, plates having notches parallel to said guides engaged by the side extensions thereof and fastened on the inclined ends of said stationary stop-sections and together with said guides affording facility for moving said movable stop-section, substantially as set forth.

822,786. ELASTIC WHEEL-TIRE. WILHELM STRUCK, Berlin, Germany. Filed Aug. 23, 1905. Serial No. 275,250.



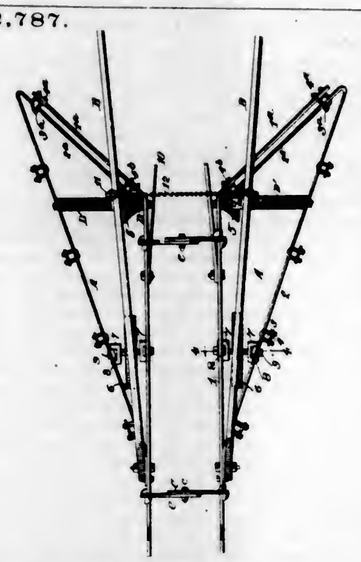
Claim.—1. An elastic solid tire having a metal hoop surrounded by a layer of hard rubber embedded in its base, the metal hoop being formed concave on the tread or outer circumferential side.

2. The combination with a solid elastic tire, of a metallic hoop formed concave on its outer circumferential side, and with projections on said concave side, said hoop being surrounded by a layer of hard rubber embedded in the base of the tire, substantially as described.

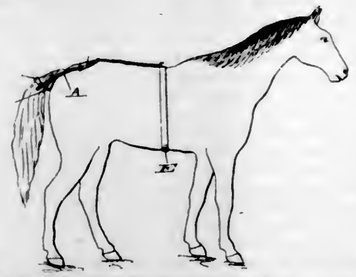
822,787. COMBINED HARROW AND CULTIVATOR. MESHACK TRUE, Watervalley, Miss. Filed May 23, 1905. Serial No. 261,808.

Claim.—In a cultivating implement of the class indicated, the combination, with two like triangular frames provided with teeth and spaced apart and flexibly connected and provided with pendent bars 8, of wheels having axles provided with sockets 7 adapted to receive and slide upon the said bars 8, and clamp-screws 9 applied for securing the sockets in any required adjustment, the wheels being arranged parallel to the inner sides 1 of said frames in the manner shown and described.

822,787.



822,788. PROTECTOR FOR HORSES' TAILS. GEORGE TUTHILL and WILLIAM H. BOYD, Portland, Oreg. Filed May 6, 1905. Serial No. 259,197.



Claim.—1. A device of the character described consisting of bars adapted to rest on each side of a horse's tail, a cross-bar secured to said bars and adapted to seat under the tail, and a bar pivotally secured to one bar and adapted to be secured to the other bar, the last-named bar adapted to rest on top of the animal's tail, substantially as shown and described.

2. A device of the character described consisting of two straight bars one of which is adapted to rest on each side of a horse's tail, and curved bars connecting said straight bars and adapted to pass under and over the tail, one of said curved bars being pivotally secured to the straight bar on one side of the tail and removably secured to the other straight bar, substantially as shown and described.

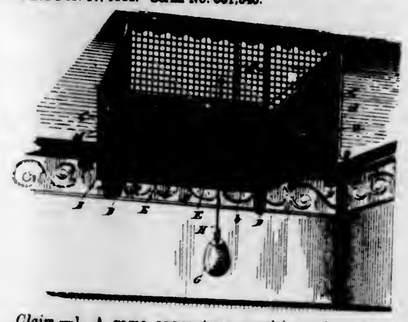
3. A device of the character described consisting of two straight bars, one of which is adapted to rest on each side of a horse's tail, a curved bar connecting the straight bars and adapted to seat under the horse's tail, and a curved bar pivotally secured to one straight bar adapted to be secured to the other straight bar and to rest on top of the horse's tail, substantially as shown and described.

4. A device of the character described consisting of two straight bars one of which is adapted to rest on each side of a horse's tail, cross-bars connecting said straight bars and adapted to pass over and under the tail, one of said cross-bars being pivotally secured to the straight bar on one side of the tail and removably secured to the other straight bar, a girth secured around the animal, and a strap secured to said girth and to each of said straight bars, substantially as shown and described.

5. A device of the character described consisting of two straight bars, one of which is adapted to rest on each side of a horse's tail, curved bars connecting said straight bars adapted to pass under and over the tail. the curved bar adapted to pass over the tail being pivotally secured to one of said straight bars and removably secured to the other straight bar, a girth to be secured around the animal, and a strap secured to said girth and having its ends forked to be secured to the ends of said straight bars, substantially as shown and described.

6. A device of the character described consisting of two straight bars, one of which is adapted to rest on each side of a horse's tail, a curved bar connecting the straight bars and adapted to seat under the horse's tail, a curved bar pivotally secured to one straight bar and adapted to be secured to the other straight bar and rest on top of the horse's tail, a girth secured around the animal, and a strap secured at one end to the girth and having its other end forked and secured to the ends of said straight bars, substantially as shown and described.

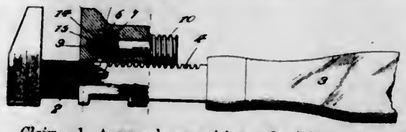
822,789. GAME APPARATUS. JAMES G. TWISS, New York, N. Y. Filed Feb. 17, 1906. Serial No. 301,640.



Claim.—1. A game apparatus comprising a box or compartment of netting formed with pockets or receptacles, balls contained within the box, and a suspended bag or sphere exterior of the box, substantially as described.

2. A game apparatus comprising a box formed of network having pockets or receptacles located at the lower corners thereof, balls contained within the box, and a ball exterior to the box and so suspended as to be capable of striking any portion of the bottom net of the box, substantially as described.

822,790. WRENCH. JOHN T. URBACH, Baltimore, Md., assignor of one-eighth to Mareen M. Duvall, Baltimore, Md. Filed Sept. 28, 1905. Serial No. 280,494.



Claim.—1. A wrench comprising a fixed jaw and a toothed shank, a movable jaw mounted to slide on said shank and provided with an interior housing, an adjusting-block mounted in said housing and having longitudinal play therein, a spindle threaded in said block and provided with an adjusting-nut meshing with said teeth, and a spring in said housing interposed between one end of the block and the adjacent portion of the movable jaw and designed to press the movable jaw toward the fixed jaw.

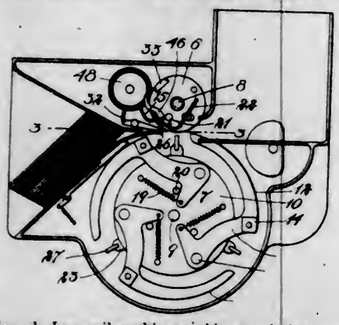
2. A wrench comprising a fixed jaw and a toothed shank, and a movable jaw mounted to slide on said shank and provided with an interior housing opening on the teeth of the shank, an adjusting-block having play in said housing and provided with a lower surface designed to ride over the toothed edge of the shank, a threaded spindle mounted in said block and provided with an adjusting-nut meshing with said toothed edge, and a spring in said housing interposed between the end of the block and adjacent portion of the movable jaw and designed to press the movable jaw toward the fixed jaw.

3. A wrench comprising a fixed jaw and a shank having a toothed edge, a movable jaw mounted to slide upon said shank and provided with an interior housing, a rectangular adjusting-block mounted to move longitudinally in said housing and provided with a threaded bore, a spindle working in said bore and provided with an adjusting-nut meshing with said toothed edge, the said spindle being mounted in an end of the movable jaw and having a limited longitudinal movement therein said nut being provided with a smooth

surface whereby the movable jaw and its parts may be slid bodily along the shank, and a spring in said housing interposed between that end of the block which is adjacent the fixed jaw and the adjacent portion of the movable jaw.

4. A wrench comprising a fixed jaw and a shank having a toothed edge, and a movable jaw mounted to slide on said shank and provided with an interior housing, an adjusting-block mounted to move longitudinally in said housing and provided with a recess in one end and also provided with a threaded bore, a spindle working in said bore and provided with an adjusting-nut meshing with said toothed edge, and a spring in said housing between the end of the adjusting-block and the adjacent portion of the movable jaw, said spring being designed for accommodation in the said recess when the block is forced up against the adjacent portion of the movable jaw.

822,791. **SELF-FEEDING MAIL-MARKING MACHINE.** HENRY E. WAITE, Newton, Mass. Filed Feb. 27, 1905. Serial No. 247,482.



Claim.—1. In a mail-marking machine, a printing-couple comprising a printing member, and an impression member carrying a frictional letter-feeder to feed the letters from the pack to a predetermined point out of contact with the printing-couple, a feeding-gripper to feed the letters from said predetermined point into and through the printing-couple, and an impression-surface to coöperate with the printing member.

2. In a mail-marking machine, a printing-couple comprising a printing member, and an impression member carrying a frictional letter-feeder to feed the letters from the pack to a predetermined point out of contact with the printing-couple, a feeding-gripper to feed the letters from said predetermined point into and through the printing-couple, and an impression-surface to coöperate with the printing member, the said impression-surface yielding for thick letters.

3. In a mail-marking machine, a printing-couple comprising a printing member carrying a feeding-gripper, and an impression member carrying a frictional letter-feeder to feed the letters from the pack to a predetermined point out of contact with the printing-couple, a feeding-gripper to feed the letters from said predetermined point into and through the printing-couple, and an impression-surface to coöperate with the printing member, the feeding-gripper on the printing member coöperating with the feeding-gripper on the impression member.

4. In a mail-marking machine, a printing-couple comprising a printing member carrying a feeding-gripper, and an impression member carrying a letter-feeder to feed the letters from the pack to a predetermined point, a feeding-gripper to feed the letters from said predetermined point into and through the printing-couple, and an impression-surface to coöperate with the printing member, the feeding-gripper on the printing member coöperating with the feeding-gripper on the impression member, and a trip and locking lever on the printing member.

5. In a mail-marking machine, a timing-stop, and a printing-couple consisting of a printing member, and an impression member having a letter-feeder to feed the letters from the pack to the timing-stop, a feeding-gripper to feed the letters from the timing-stop into the printing-couple, and an impression-surface coöperating with the printing member.

6. In a mail-marking machine, a timing-stop, and a printing-couple consisting of a printing member, and an impression member having a letter-feeder to feed the letters from the pack to the timing-stop, a feeding-gripper to feed the letters from the timing-stop into the printing-couple, and an impression-surface coöperating with the printing member, the timing-stop operated by the impression member.

7. In a mail-marking machine, a printing member and an impression member having a letter-feeder adapted to feed a letter from a pack to, and leave the same at, a predetermned point out of contact with the printing and impression members, a gripper adapted to engage the letter at said predetermined point and feed the same past the printing member, and an impression-surface in the same horizontal zone with the letter-feeder coöperating with the printing member.

8. In a mail-markidg machine, a printing member, and an impression member having a letter-feeder adapted to feed a letter from a pack, a timing-stop located in the path of motion of the letter so fed adapted to arrest the same, a rotary gripper arranged to engage the letter and move it past the stop and the printing member, and an impression-surface coöperating with the printing member.

9. In a mail-marking machine, a printing member and an impression member connected to rotate in synchronism and to cooperate in marking a letter constituting a printing-couple, grippers adapted to engage a letter and feed the same to and through said printing-couple, a stop arranged to hold a letter in position to be engaged by said grippers in properly-timed relation with the printing-couple, and a prelliminary feeder on the impression member arranged to feed a letter from a pack to said stop and to withdraw and leave the same in engagement therewith.

10. In a mail-marking machine, printing mechanism including an impression member, grippers adapted to grasp and feed a letter to said printing mechanism and timed therewith to present the letter in proper marking relation thereto, a single feeding member on the impression member of the printing mechanism for engaging and feeding a letter from a pack into position to be engaged by said grippers and withdrawing from contact with the letter, and a timing-stop arranged to arrest the letter engaged by said feeding means and hold the same until taken by the grippers.

11. In a mail-marking machine, a printing member, an impression member, grippers adapted to engage the opposite sides of a letter simultaneously, and a single feeding member on the impression member for advancing to engage and carry a letter from a pack into position to be grasped by said grippers, and then withdrawing from engagement with the letter, leaving the letter out of contact with the printing member.

12. In a mail-marking machine, a printing member, an impression member, grippers adapted to engage the opposite sides of a letter simultaneously, a single feeding member on the impression member for advancing a letter from a pack into position to be grasped by said grippers, and a stop located in the path of motion of the letter and adapted to arrest the same in such position.

3. In a mail-marking machine having a printing member and a rotatable impression member, a timing-stop, a letter-feeder adapted to separate a letter from a pack and feed the same forward leaving it out of contact with the printing and impression members, comprising an arm carried by said impression member having an engaging surface, and means for alternately projecting and retracting said arm to engage and release the letter.

14. In a mail-marking machine having a printing member and a rotatable impression member, a timing-stop, a letter-feeder adapted to separate a letter from a pack and feed the same forward leaving it out of contact with the printing and impression members, comprising an arm carried by said impression member having a frictional letter-engaging surface, and means for alternately projecting and retracting said arm to engage and release the letter.

15. In a mail-marking machine, a printing member, a member having an impression-surface coöperating therewith to constitute a printing-couple, a feeder on said impression member adapted to feed a letter from the face of a pack, a stop for arresting the letter, means for withdrawing the feeder from the letter as soon as the same is engaged by the stop, and a secondary feeder adapted to release the letter from the stop and feed it to the printing-couple.

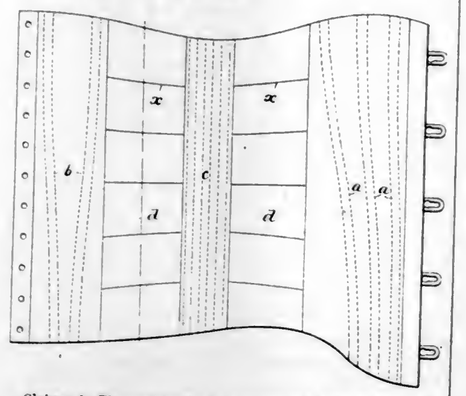
16. In a mail-marking machine, a printing member, an impression member coöperating therewith, a die eccentrically pivoted on said printing member, positive means for advancing the die toward the letter-engaging portion of the printing member, and means for retracting the die when no letter is present to avoid a deposit of ink on the impression member.

17. In a mail-marking machine, a printing member, an impression member coöperating therewith, a die eccentrically and pivotally mounted on the printing member, positive means for advancing the die toward the letter-engaging portion of the printing member, yielding means tending to retract the die, and a letter-operated lock for holding the die in its advanced operative position.

18. In a mail-marking machine, a printing member, an impression member coöperating therewith, a die eccentrically and pivotally mounted on the printing member, positive means for advancing the die toward the letter-engaging portion of the printing member, yielding means tending to retract the die, a locking-dog adapted to engage and lock the die in its advanced position when a letter is presented, and letter-actuated means for operating said dog.

19. In a mail-marking machine, a printing-couple comprising a pair of members, one bearing and operating in succession a letter-feeder, a gripper and an impression-bed, and the other member bearing and operating in succession a coöperating gripper, a locking-arm and a marking-die.

822,792. **CORSET.** DE VER H. WARNER, Bridgeport, Conn. Filed Aug. 14, 1905. Serial No. 274,220.



Claim.—1. The combination in a corset, of a front stiffened section shaped to conform to the contour of the body and provided with hooks, or fasteners, and a rear shaped and stiffened section provided with lacing means, a hip stiffened section, and intermediate transverse strips of inelastic material connected at the ends to the said sections, subetantially as desoribed.

2. The combination in a corset, of a front stiffened section shaped to conform to the contour of the body and provided with hooks, or fasteners, and a rear shaped and stiffened section provided with lacing means, a hip stiffened section, and intermediate overlapping transverse strips of inelastic material connected at the ends to the said sections, substantially as described.

3. The combination in a corset, of a front stiffened section shaped to conform to the contour of the body and provided with hooks, or fasteners, and a rear shaped and stiffened section provided with lacing means, a hip stiffened section, and intermediate transverse diverging strips of inelastic material connected at the ends to the said sections, substantially as described.

822,793. **ARTIST'S BOTTLE.** ROSA WEBER, Fort Wayne, Ind. Filed Sept. 28, 1905. Serial No. 280,490.



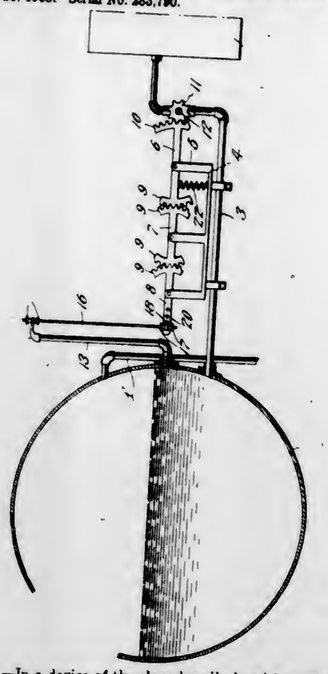
Claim.—1. In a device of the class described, a suitable receptacle for liquid; having a detachable cover, a plate in fixed relation with the receptacle externally of its side at the lower portion thereof; a folding support pivotally attached at the lower end of the plate; and means for securing the sections of said support in rigid relation with the bottle and with each other.

2. In a device of the class described, a suitable receptacle for liquid, having a detachable cover; a support composed of folding sections, each having pivotal connection at the end of the adjacent section, and the support having also pivotal connection with the receptacle; and means for securing said sections in rigid relation with the receptacle and with each other.

3. In a device of the class described, a suitable receptacle for liquid having a removable cover; a chain connecting said cover loosely with the receptacle; a support composed of folding sections and having folding relation with the receptacle; and means for securing said sections in rigid relation with the receptacle and with each other.

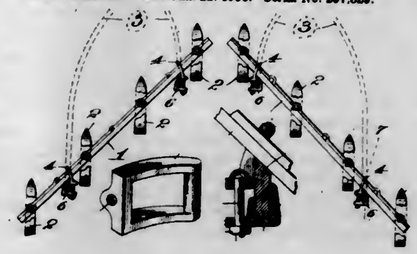
4. In a device of the class described a suitable receptacle for liquid, having pivoted at its lower end a support comprising a number of connected sections, each having adjustable relation with the adjacent section; and means for securing the sections of said support in relation with the bottle and with each other.

822,794. **BOILER-FEED REGULATOR.** ORRIS O. WHITE, Garland, Pa., assignor of one-half to Verne H. Spencer, Garland, Pa. Filed Oct. 21, 1905. Serial No. 283,790.



Claim.—In a device of the class described and in combination with a boiler and tank, of a duct connecting said parts for communication, a frame mounted on the duct and provided with projecting bearing portions, a plurality of levers pivoted to said portions and having intermeshing gear connection, a valve arranged in the duct and having a stem, a pinion fixed on the stem in gear with one of the levers, an element connected with the boiler and adapted for expansion under the action of heat from the latter, and a connecting-rod adjustably engaged with said element and with one of the operating-levers.

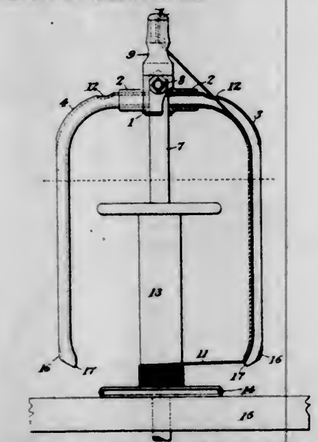
822,795. **CULTIVATOR.** AMOS C. WICKHAM, Carthage, Mo., assignor to The Anchor Implement Company, St. Louis, Mo., a Corporation of Missouri. Filed Jan. 22, 1906. Serial No. 297,329.



Claim.—1. In a cultivator, the combination with the frames and drag-bars thereof, of rectangular loops passing around the cultivator-frames, the rear vertical member of each loop being horizontally perforated, U-shaped clamping members engaging upon the drag-bars at the points where they engage against the cultivator-frames, a perforated ear integral with each clamping member, and a draw-bolt passing through the apertures in the rectangular loops and through the perforated ears of the clamping members; substantially as specified.

2. In a cultivator, a clamp, comprising a rectangular loop, the forward vertical bar of which is circular in cross-section, and there being a horizontally-arranged aperture formed in the center of the rear vertical bar, a clamping member U-shaped in cross-section, a perforated ear integral with the face of the clamping member, a single draw-bolt passing through the perforations in the rear vertical member of the loop and through the ear, and a nut located on the screw-threaded end of the draw-bolt on the rear side of the perforated ear; substantially as specified.

822,796. SPINNING-FLIER. CHARLES WIEBKE, New York, N. Y. Filed June 8, 1905. Serial No. 264,211.



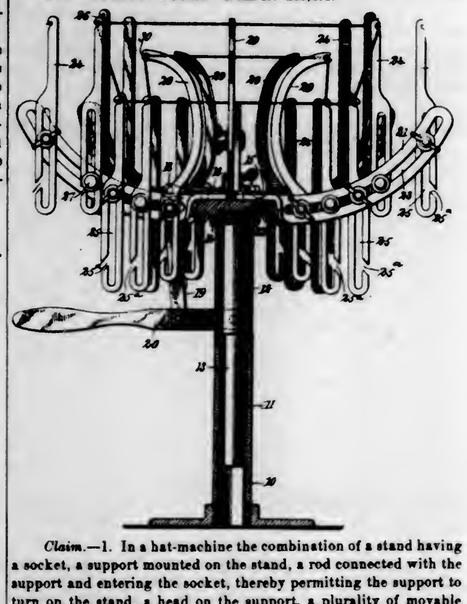
Claim.—1. A flier comprising a head-piece and arms, one of the arms being an integral tubular part rigidly secured at one end to the head-piece and projecting laterally outward therefrom and curved to extend longitudinally thereof and being externally slotted from a point beyond its connection with the head to a point in proximity to its delivery end and having an inwardly-curved delivery end with the delivery-point at the inner end thereof and having a gripping-bridge bridging the groove and outwardly crossing the path of the fiber at the delivery end.

2. A flier comprising a head-piece and two tubular arms, each tubular arm being an integral part rigidly secured at one end to the head-piece and projecting laterally outward therefrom and curved to extend longitudinally thereof and being externally slotted from a point beyond its connection with the head to a point in proximity to its delivery end and having an inwardly-curved delivery end with the delivery-point at the inner end thereof and having a gripping-bridge bridging the groove and outwardly crossing the path of the fiber at the delivery end.

3. A flier comprising a head-piece and arms, one of the arms being an integral tubular part rigidly secured at one end to the head-piece and projecting laterally outward therefrom and curved to extend longitudinally thereof and having an inwardly-curved delivery end with the delivery-point at the inner end thereof and having an outer slot substantially coextensive with the longitudinally-extending portion thereof and having a gripping-bridge bridging the groove and outwardly crossing the path of the fiber at the delivery end, substantially as shown and described.

4. A flier comprising a head-piece and two tubular arms, each tubular arm being an integral part and being rigidly secured at one end to the head-piece and projecting laterally outward therefrom and curved to extend longitudinally thereof, and having an inwardly-curved delivery end with the delivery-point at the inner end thereof and having an outer slot substantially coextensive with the longitudinally-extending portion thereof and having a gripping-bridge bridging the groove and outwardly crossing the path of the fiber at the delivery end, substantially as shown and described.

822,797. HAT-MACHINE. CHARLES P. WILDENBERG, New York, N. Y. Filed Nov. 28, 1905. Serial No. 289,471.



Claim.—1. In a hat-machine the combination of a stand having a socket, a support mounted on the stand, a rod connected with the support and entering the socket, thereby permitting the support to turn on the stand, a head on the support, a plurality of movable plates on the head, a series of hooks supported by the plates and means for simultaneously moving said plates upwardly toward each other.

2. In a hat-machine the combination of a stand having a socket, a support mounted on the stand, a rod connected with the support, and entering the socket, thereby permitting the support to turn on the stand, a head on the support, a plurality of movable plates on the head, a series of hooks supported by the plates and means for simultaneously moving said plates, said means comprising a lever pivoted on the support, a link connected with said lever, and means on said plates for connecting them with the lever.

3. In a hat-machine the combination of a stand, a head rotatably mounted thereon, a plate mounted on the head, a plurality of plates movably mounted on the head, a series of hooks supported by the plates and means for simultaneously moving said plates toward each other.

4. In a hat-machine the combination of a support, a head on the support, a plurality of movable plates on the head, a series of hooks supported by the plates, and means for simultaneously moving said plates, said means comprising a lever pivoted on the support, a link connected with said lever, and means on each of said movable plates for connecting them with the lever.

5. In a hat-machine the combination of a head, a plurality of plates mounted on said head and divided from each other along radial lines at an angle to each other, one of said plates being fixed to the head and others pivotally mounted, and means connected with said movable plates for simultaneously moving them upwardly on their pivots toward each other.

6. In a hat-machine the combination of a head, three plates mounted thereon, said plates meeting at the center of the head and each one occupying substantially one-third of the area of the head, one of said plates being fixed to the head and the other two hinged to the fixed plate on the opposite sides thereof, means on all the plates for supportig a series of hooks, and means for simultaneously swinging the movable plates on their hinges toward each other.

7. In a hat-machine the combination of a rotatable head, a plurality of plates mounted on said head and divided from each other along radial lines, one of said plates being fixed to the head and others pivotally connected with the fixed plate, and means connected with said movable plates for simultaneously swinging them about their pivots toward each other, each plate having an arm extending outwardly therefrom, and wire-supporting hooks adjustably mounted on said arms.

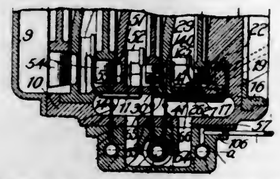
8. In a hat-machine the combination of a stand, a head rotatably mounted thereon, a plate mounted on the head, a plurality of plates movably mounted on the head, and means for simultaneously moving said plates toward each other, said plates having a plurality of upwardly-trending arms extending outwardly therefrom, each arm having a longitudinally-curved slot and a series of hooks mounted on each arm in one plane, and secured to the arm along the slot therein.

9. In a hat-machine, the combination of a plurality of curved arms having longitudinally-curved slots, a series of hooks supported along one side of each arm, each hook having a slot open near one end, a series of bolts, each passing through a slot in one hook and a slot in the arm, and a thumb-nut for each bolt, said thumb-nuts being arranged alternately on opposite sides of said arms.

10. In a hat-machine, the combination of a curved supporting-arm, a plurality of straight hooks adjustably mounted upon said arm, and a hook mounted upon each arm and projecting above one of said hooks, said hook being curved inwardly with respect to said arm and receiving the straight hook in its curved portion, all of said hooks being mounted in the same plane along one side of said arm, and thumb-nuts for controlling said hooks, some of said thumb-nuts being disposed upon one side of said arm and others of said thumb-nuts being disposed upon the opposite side thereof.

11. In a hat-machine, the combination of an arm having a slot, a series of hooks supported along one side of said arm, each hook having a slot, a series of bolts, each passing through the slot on one hook and the slot on the arm, and a thumb-nut for each bolt, all of said hooks being located in the same plane, some of said thumb-nuts being arranged upon one side of said arm, and others of said thumb-nuts being disposed upon the opposite side of the same.

822,798. TURBINE AND CONTROLLER MECHANISM THEREFOR. JAMES WILKINSON, Birmingham, Ala., assignor to Wilkinson Turbine Company, a Corporation of Alabama. Filed Sept. 26, 1904. Serial No. 226,017.



Claim.—1. In an elastic-fluid turbine operating by stage expansion, the combination with two sets of supply-nozzle passages for the turbine and independent sets of movable buckets coöperating respectively with said sets of nozzle-passages, of a single set of stage-nozzle passages and movable buckets coöperating therewith.

2. In an elastic-fluid turbine, the combination of movable buckets and coöperating nozzle-passages operating by stage expansion, said nozzle-passages and buckets for one or more of the high-pressure stages being arranged in independent coöperating sets designed to produce different speeds of shaft rotation, while the nozzle-passages and buckets for a low-pressure stage or stages are arranged in a single set which coöperates with either or both of the sets of nozzle-passages and buckets in the high-pressure stage or stages.

3. In an elastic-fluid turbine operating by stage expansion, nozzle-passages and movable buckets forming independent working passages, across the high-pressure stage or stages, which merge into a common working passage across the low-pressure stage or stages.

4. In a multicellular turbine, the combination of movable buckets and coöperating nozzle-passages operating by stage expansion, the buckets being arranged in independent sets at different distances from the shaft-center in one or more of the high-pressure stages only.

5. In an elastic-fluid turbine operating by stage expansion, a set of movable buckets and one or more coöperating nozzles for each stage, and a second set of movable buckets and one or more coöperating nozzles for a high-pressure stage.

6. In an elastic-fluid turbine operating by stage expansion, a bucket-bearing element for each stage, a double set of buckets for a high-pressure stage or stages and a single set for the other stage or stages carried by said elements, one or more nozzles coöperating with each set of buckets, and stationary intermediates between the rows of buckets comprised in one of the sets of buckets for a high-pressure stage or stages.

7. In an elastic-fluid turbine operating by stage expansion, the combination with two sets of nozzles for the high-pressure stage or stages which are disposed at different distances from the shaft, independent valve means to control each set of nozzles, two sets of buckets in said stages which coöperate with said nozzles to drive the turbine with equal efficiency at different speeds, and means to control the flow of motor fluid through said nozzles, of movable buckets and coöperating nozzles for the low-pressure stage or stages, and independent means to control the flow of motor fluid through said latter nozzles.

8. In a controller mechanism for an elastic-fluid turbine operating by stage expansion, the combination with fluid-actuated valve means to control the flow of motor fluid through the turbine, of a controller-chamber for the valves supplying motor fluid to the high-pressure stage or stages, a separate controller-chamber for the valves supplying motor fluid to the low-pressure stage or stages, independent controller-valve means within said chambers, and means to transmit pressure from said chambers to said valve means, for the purposes described.

9. In an elastic-fluid turbine operating by stage expansion, the combination of two independent sets of coöperating nozzles and buckets for the first stages, of single sets of coöperating nozzles and buckets for the other stages, a fluid-pressure-controller means adapted to control the admission of motor fluid to one or the other, or both of said sets of nozzles in the first stages, and an independent controller means for regulating the flow of motor fluid through the other or low-pressure stages.

10. In an elastic-fluid turbine, the combination with coöperating nozzles and movable buckets operating by stage expansion, of fluid-pressure-actuated valve means for controlling the supply of motor fluid to the several stages, and fluid-pressure controller mechanism for one or more of the high-pressure stages, and an independent fluid-pressure-controller mechanism for the low-pressure stage or stages.

11. In a multicellular turbine, one or more nozzles and a coöperating set of buckets for one or more of the high-pressure compartments, a second nozzle or nozzles and set of coöperating buckets for said compartments, said nozzles and buckets being adapted to operate by stage expansion to produce forward motion at different speeds, a fluid-pressure-controller mechanism adapted, under normal load conditions, to regulate the admission of motor fluid against one of said sets of buckets, while cutting off the supply from the other set, and also adapted, under overload conditions, to simultaneously admit motor fluid against both sets of buckets, in combination with a set of nozzles and coöperating buckets for each of the other compartments, and an independent controller mechanism adapted to vary the volume of motor fluid discharged against the buckets in said latter compartments.

12. In an elastic-fluid turbine operating by stage expansion and adapted to drive a shaft in one direction at different speeds, the combination of buckets and nozzles forming full-speed working passages through one or more of the high-pressure stages, independent nozzles and buckets forming low-speed working passages through the same stage or stages, and nozzles and buckets forming a single set of working passages leading through the low-pressure stages and adapted to coöperate with either the full or low speed working passages or both, independent valves to control the said nozzles, a controller mechanism for the full and low speed nozzles, and means to open and close the nozzle-passages for the low-pressure stages independently of said controller mechanism.

13. In a controller mechanism for a turbine provided with two independent sets of working passages comprising each a set of movable buckets and one or more coöperating nozzles, fluid-pressure-actuated valves for said nozzles, conduits to conduct fluid-pressure to actuate said valves, and a controller-valve provided with two sets of ports adapted to admit high pressure to said conduits in one of the valve's operating positions, and ports in said valve communicating with exhaust-pressure and adapted to expose the conduits leading to the valves of one of said sets of working passages to said exhaust-pressure when the controller-valve is in either of its other operating positions.

14. In a controller mechanism, a controller-chamber formed in a movable casing, two sets of ports in said casing, means to admit high and low pressures to opposite ends of said chamber, a valve movable therein to control the admission of said pressures to said ports, two longitudinal passages formed in said casing and commu-

nicating with an exhaust-pressure, openings leading through the shell to said passages, and a plurality of conduits for communicating high or low pressure to fluid-actuated means within the turbine for controlling the flow of motor fluid, said conduits being so arranged that they may be all in communication with the ports in said casing or part in communication with said exhaust-openings, while the rest communicate with said ports.

15. In a controller mechanism for an elastic-fluid turbine operating by stage expansion, the combination of a pressure-supply chamber for the turbine, a controller-chamber communicating at two points with said pressure-chamber, a passage in said casing connecting with two ports and leading over a shoulder in said casing, a valve-seat formed in said shoulder and provided with a plurality of ports which communicate with conduits leading to the fluid-actuated means within the turbine, a valve movably mounted on said seat, and means to operate said valve.

16. In an elastic-fluid turbine operating by stage expansion, a fluid-pressure controller mechanism for the supply-valves in one or more of the high-pressure stages, and independent fluid-pressure controller mechanism for the supply-valves of the other or low-pressure stages, said mechanism comprising two controller-chambers formed in a common casing and communicating with a source of high pressure, and controller-valve means disposed within said chambers and adapted to be independently operated.

17. In an elastic-fluid turbine operating by stage expansion, two fluid-pressure controller mechanisms for the stage-supply valves, said mechanism comprising two controller-chambers disposed within a suitable casing, ports admitting high pressure to said chambers, ports admitting low pressure to said chambers, a piston-valve movable in each chamber, and ports leading therefrom which are exposed to one or the other of said pressures by said pistons, and conduits adapted to communicate with said ports and with means for operating the turbine-valves.

18. In a compound turbine, the combination of a high-pressure forward-driving turbine, and a reversing turbine, with a motor-fluid-supply passage for the high-pressure turbine, a chamber communicating therewith, a plurality of conduits leading from said chamber and communicating with supply-nozzles for the reversing turbines, and valve means to control the admission of motor fluid to said conduits.

19. In a compound turbine comprising a forward-driving turbine and a reversing turbine, a controller-chamber for said forward-driving turbine, means to admit high pressure thereto, valve means therein to control the admission of said high pressure to valve-actuating means, a chamber communicating with said high pressure, ports therein, conduits connecting said ports with supply-nozzles for the reversing turbine, and a valve in said latter chamber for controlling the admission of high pressure to said ports for the purpose of regulating said reversing turbine.

20. In a compound turbine comprising a forward-driving and a reversing turbine, a controlling-casing comprising a controller-chamber for the forward-driving turbine and a supply-chamber for the reversing chamber, means to admit high pressure to said chambers, means to conduct said pressure from the supply-chamber for said reversing turbine to the supply-nozzles thereof, and means to control the volume of the motor-fluid supply to said reversing turbine.

21. In an elastic-fluid turbine, a nozzle-passage leading through a stationary part thereof, and means inserted into said nozzle-bearing part transversely to said nozzle-passage and adapted to form a stationary part of the rounded entrance to the discharge end of the nozzle-passage.

22. In an elastic-fluid turbine, a supply-head for a wheel-compartment, a nozzle-passage formed therein and comprising an admission end from which the nozzle proper leads obliquely through said head, and a plug fixed in said head transversely to said nozzle-passage and adapted to form the rounded entrance to the nozzle proper.

23. In an elastic-fluid turbine, a nozzle-passage formed in a stationary part, said passage comprising an admission end and a discharge end leading at an angle through said stationary part, and a valve controlling the flow of fluid through said passage the combination with an apertured plug inserted substantially radially into said stationary part, the aperture in said plug being adapted to form an intermediate part of said nozzle-passage.

24. In an elastic-fluid turbine, a supply-head for a wheel-compartment, a nozzle-passage leading in a curved direction through said head, an opening in said head intersecting said nozzle-passage, and a split plug inserted therein and adapted to form an intermediate part of the nozzle-passage.

25. In an elastic-fluid turbine, a plurality of nozzle-passages disposed at different distances from the shaft-center, a stationary element through which said passages lead, an opening in said element which intersect a plurality of said passages at an intermediate point, and means inserted in said opening to form an intermediate part of said nozzle-passages.

26. In an elastic-fluid turbine, a stationary element provided with two nozzle-passages at different distances from the shaft-center, an opening leading inwardly into said element and intersecting said two nozzle-passages at an intermediate point, and a plug provided with cut-away portions which is adapted to be inserted into said opening, the cut-away portions of said plug, forming intermediate parts of both nozzle-passages.

27. In an elastic-fluid turbine, a supply and an exhaust head for a wheel-compartment, a bucket-wheel disposed within said compartment and provided with a plurality of rows of buckets, a set of intermediate buckets and means to support said intermediates comprising a supporting portion or portions, and intersecting flanges carried by said heads between which said supporting portion or portions are held in place.

28. In an elastic-fluid turbine subdivided into stages by diaphragm-partitions, a supply-head, said supply-head and diaphragms being provided with peripheral flanges which are adapted to abut and which form the casing of the turbine, said flanges being cut away at their abutting portions to form recesses, and stationary buckets having a supporting portion disposed within said recesses and held in place between said flanges, in combination with movable buckets within the stages.

29. In a sectional elastic-fluid turbine having an inner casing, a shell surrounding said casing and carrying inwardly-disposed projections between which the sections of the casing are held together, and a dead-air chamber formed between said shell and casing to prevent the radiation of heat from the turbine.

30. In an elastic-fluid turbine, a diaphragm-partition therein, and a detachable element comprising a valve-bearing portion and motor-cylinder connected to said diaphragm.

31. In an elastic-fluid turbine having a diaphragm-partition, a nozzle leading therethrough, a valve-casing mounted on said diaphragm and communicating with said nozzle-passage, and a valve therein for cutting said nozzle out of service.

32. In an elastic-fluid turbine having one or more diaphragm-partitions, a plurality of nozzle-passages leading through each diaphragm, valves for controlling said nozzle-passages mounted in casings seated upon and detachably connected to said diaphragm or diaphragms.

33. In an elastic-fluid turbine having one or more diaphragm-partitions, a plurality of nozzle-passages leading through each diaphragm, valves for controlling said nozzle-passages mounted in casings seated upon and detachably connected to said diaphragms and means to control the independent operation of said valves.

34. In an elastic-fluid turbine having one or more diaphragm-partitions, a plurality of nozzle-passages leading through each diaphragm, valves for controlling said nozzle-passages mounted in casings seated upon and detachably connected to said diaphragms, and fluid-pressure means to open and close said valves independently.

35. In an elastic-fluid turbine operating by stage expansion, the combination with diaphragms and nozzle-passages leading therethrough, of means to control the flow of motor fluid through the stages comprising a plurality of valve and motor casings detachably connected to said diaphragms and disposed within the stages, fluid-pressure-actuated valves in said casings, and conduits to conduct controller-fluid pressure to said motors.

36. In an elastic-fluid turbine divided into stages by a diaphragm, a nozzle-passage leading through said diaphragm, a detachable valve-casing mounted on said diaphragm and provided with ports through which the stage-pressure enters said nozzle-passage, a valve in said casing to cut said nozzle out of service, and a fluid-motor, to operate in said valve, which is removable with said valve-casing.

37. In an elastic-fluid turbine operating by stage expansion, a diaphragm therein, nozzle-passages in said diaphragm, a plurality of compound valve and motor casings mounted on said diaphragm, valves in said casings to control the admission of motor fluid to said nozzles, and conduits to supply an actuating-fluid pressure to the motor-pistons.

38. In an elastic-fluid turbine, a diaphragm-partition therein provided with a nozzle-passage, a valve-casing mounted on said diaphragm and through which the motor-fluid pressure enters said nozzle-passage, a rotary valve in said casing, a stem for operating said valve, a piston connected to said stem and disposed within a cylinder formed integral with said casing, and means utilizing fluid-pressure to control the operation of said piston.

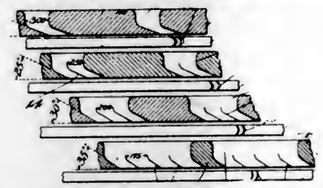
39. In an elastic-fluid turbine divided into stages by a dished diaphragm having a peripheral flange and provided with a nozzle-passage between stages, the combination therewith of a valve-casing, a valve therein, and a motor for actuating said valve detachably connected to said diaphragm at a point adjacent to said flange, a bucket-wheel for each stage between which and said diaphragm said valve and motor are disposed, and means to connect said motor with a controller mechanism.

40. In a set of turbines, the combination with a forward-driving turbine operating by stage expansion and having independent full and cruising speed working passages leading through the high-pressure stages, and a single set of working passages leading through the low-pressure stages and coöperating with either or both of said first-mentioned working passages, of a reversing turbine connected to the shaft of said forward-driving turbine.

41. An elastic-fluid turbine provided at its high-pressure end with two independent working passages comprising differently-arranged sets of buckets, and means to supply motor fluid thereto, in combination with a single working passage at the low-pressure end of the turbine comprising buckets and stationary guide devices which are supplied with the motor fluid after flowing through one or the other of said high-pressure working passages.

42. An elastic-fluid turbine provided with independent sets of buckets and means to supply fluid thereto, in combination with a working passage adapted to be supplied with the motor fluid after it has acted upon either or both of said sets of buckets, said sets of buckets being adapted to produce different driving effects.

822,799. **ELASTIC-FLUID TURBINE.** JAMES WILKINSON, Providence, R. I., assignor to Wilkinson Turbine Company, a Corporation of Alabama. Filed June 23, 1905. Serial No. 266,650.



Claim.—1. An elastic-fluid turbine operating by stage expansion and having a working passage which enlarges across stages, the provision therein of successive nozzles formed in stationary elements and disposed at increasing angles across stages to the plane of bucket rotation, and buckets of decreasing concavity coöperating with said nozzles.

2. In a multiple-stage turbine, buckets rotatable within the several stages, and nozzle-passages discharging fluid-pressure against said buckets, the nozzle-passages for supplying motor fluid to the low-pressure stage or stages having a greater angle of inclination than the nozzles for the other stage or stages, substantially as and for the purposes described.

3. In a multiple-stage turbine, buckets rotatable within the several stages, nozzle-passages discharging fluid-pressure against said buckets, the nozzle-passages for the low-pressure stage or stages having a greater angle of inclination than the nozzles for the other stages, and the buckets coöperating with said nozzle-passages having different angles of inclination, substantially as described.

4. In a multiple-stage turbine, stationary elements between the stage-compartments, nozzle-passages leading through said elements and forming conduits for the fluid between stages, said nozzles having relatively smaller induction ends, as proportioned to the cross-sectional area of the nozzles, and relatively larger angles of inclination, for the low-pressure stages than for the high-pressure stages.

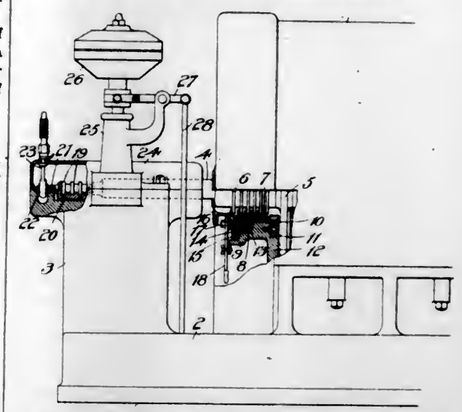
5. In a multiple-stage turbine, partitions between stages and nozzle-passages leading through said partitions and having enlarged admission-openings and angularly-disposed discharge-passages leading therefrom and constituting the nozzles proper, the cross-sectional area of the nozzles proper for the last stages being increased relatively to the cross-sectional area of their admission-openings.

6. In a turbine operating by stage expansion, nozzle-passages formed in stationary elements through which the motor fluid flows in succession to act against rotatable buckets, and supply-openings for the nozzles, the cross-sectional area of said openings representing a decreasing percentage of the cross-sectional area of their respective nozzles for the last stage as compared with the preceding stages.

7. In a multiple-stage turbine, fluid-supply nozzle-passages comprising enlarged admission ends and nozzles proper leading therefrom, the cross-sectional area of the nozzles proper for the last stage or stages being increased relatively to the cross-sectional area of their admission ends by increasing their angle of inclination to the rotating buckets against which they discharge fluid.

8. In an elastic-fluid turbine subdivided into stages by diaphragms, nozzle-supply openings formed in said diaphragms and nozzles leading therefrom at a determined angle, the angle of the nozzles in the last diaphragm being greater than that of the nozzles in preceding diaphragms, and buckets in the several compartments which coöperate with said nozzles, the buckets for the nozzles having the greater inclination being less concave than the other buckets but having their admission edges disposed at a relatively greater angle to their plane of rotation than said other buckets.

822,800. **TURBINE-SHAFT PACKING.** JAMES WILKINSON, Providence, R. I., assignor to Wilkinson Turbine Company, a Corporation of Alabama. Filed July 3, 1905. Serial No. 268,206.



Claim.—1. In a rotary motor, shaft-packing comprising rotatable and normally stationary parts, and means to automatically adjust said parts away from each other when heated by their friction.

2. In a rotary motor, a shaft, and packing therefor comprising moving and normally stationary parts, supports for said parts which when heated by the latter's friction, act automatically as they expand and contract to regulate the clearances between the parts of the packing.

3. A turbine-shaft packing comprising alternate rotatable and normally stationary rings, a support for the latter rings adapted to expand away from the turbine when heated and move said stationary rings to lessen their frictional contact with rotatable rings.

4. The combination with a turbine, a revoluble shaft therefor and an axially-adjustable thrust-bearing at the high-pressure end of said shaft, of a stuffing-box comprising rings revoluble with the shaft, rings connected to the turbine and in lateral engagement with said revoluble rings, the engaging faces of said rings being adapted to be separated by the expansion of their supports.

5. In a rotary motor, a shaft, a packing therefor comprising a plurality of rings rotatable with said shaft, a plurality of rings interposed between said rotatable rings and carried by a support fixed at its inner end to the motor, the inner faces of the fixed rings being arranged to coact with the outer faces of the rotatable rings, and a thrust-bearing for the shaft which causes expansion thereof to coöperate with the expansion of said ring-support to separate the coacting faces of the packing-rings.

6. In a rotary motor, a shaft-packing comprising rotatable and non-rotatable sets of rings, a supporting element for one set of rings provided with threads by means of which it is adjustably connected to the motor.

7. In a turbine, a shaft, a stuffing-box, rotatable rings carried by said shaft and disposed within said box, normally stationary rings in said box adapted to engage the outward faces of the rotatable rings, a support for said stationary rings which is provided with

threads and adapted to be screwed into said stuffing-box, and packing interposed between said support and box.

8. In a turbine, a shaft, a supply-head through which said shaft passes, a stuffing-box carried by said head and formed with a shoulder, and packing devices therein comprising a gland adjustably secured in position in said box by screw-threads, and a shoulder on said gland adapted to engage said shoulder in said box and limit the adjustment of said gland in one direction.

9. A stuffing-box for revoluble shafts comprising alternating stationary and revoluble rings in lateral engagement, a fixed and a revoluble support for said rings adapted to automatically separate said rings when heated by their friction, and means to positively adjust said supports to regulate the normal clearances between said rings.

822,801. **TURBINE BUCKET-WHEEL.** JAMES WILKINSON, Providence, R. I., assignor to Wilkinson Turbine Company, a Corporation of Alabama. Filed Sept. 2, 1905. Serial No. 276,806.



Claim.—1. The combination with a bucket-supporting element, of an individual bucket having a plurality of projections at one end, and recesses in said element to receive said projections, said bucket being permanently connected to said element by soldering, brazing, or welding the joint.

2. The combination with a bucket-support, of a bucket having a plurality of roots, portions of said support between which said roots are disposed and permanently connected by the cohesion of metals effected by the application of heat.

3. The combination with a bucket-support having a plurality of shallow recesses therein, of a bucket, having a plurality of short roots, which is connected to said support by having its roots disposed within said recesses and united to the sides thereof by the cohesion of metals effected by the application of heat.

4. The combination with a bucket-support having a plurality of shallow recesses therein, of a bucket, having a plurality of short roots, which is connected to said support by a brazed joint.

5. The combination with a bucket-support having a plurality of shallow recesses therein, of buckets, each having a plurality of short roots disposed within said recesses and united to the walls thereof by solder or spelter.

6. A bucket-wheel having a rim provided with a plurality of ribs, buckets having bases formed with short projections which interlock with the ribs of said rim when mounted thereon, and means to unite the abutting portions of rim and buckets by a process which involves the heating of said abutting portions.

7. A bucket wheel or drum having circumferential grooves, and buckets having roots which enter said grooves and are secured therein by the agency of solder.

8. A bucket wheel or drum having circumferential grooves, and buckets having roots which enter said grooves, said buckets being permanently connected to said rim at desired intervals by brazing their joints.

9. A turbine bucket wheel or drum having circumferential grooves, buckets having roots which enter said grooves, and means to unite the buckets to said element which consists of a body of brazing-spelter introduced into the grooves and between the bucket-joints in molten condition and allowed to harden.

10. A bucket wheel or drum constructed by providing the bucket-supporting portion with shallow recesses, and one or more expansion-joints, providing individual buckets with short roots and uniting them to the supporting portion by the application of heat and solder.

11. As an article of manufacture, a bucket-wheel having a rim portion provided with deep transverse and shallow circumferential slots or grooves.

12. As an article of manufacture, a bucket, cut from a strip of metal of the desired cross-sectional shape, so as to leave a plurality of short integral projections or roots disposed at intervals across one of its ends.

13. As an article of manufacture, a bucket cut from a strip of metal so as to have a plurality of short roots at one end and an opening at or near the other end for the reception of a spacer device.

14. As an article of manufacture, a bucket formed of a piece of concavo-convex metal with a plurality of short straight integral roots at one end the thickness of which corresponds with that of the body of the bucket opposite the point at which they join it.

15. As an article of manufacture, a bucket cut from a piece of metal having the desired cross-sectional shape and provided, at one end, with a plurality of short straight roots which are narrow in width, spaced substantially equidistantly and of different thicknesses.

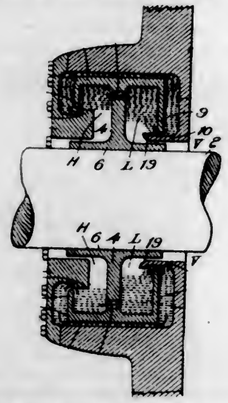
16. As an article of manufacture, a bucket for a turbine having a spacer device united to one end thereof by solder.

17. As an article of manufacture, a turbine-bucket provided with a socket near one end into which a spacer device projects and is united by brazing.

18. A bucket wheel or drum constructed by providing the bucket-supporting portion with shallow recesses, providing buckets having roots adapted to enter said recesses and an opening to receive a spacer device, and brazing said buckets to said portions and spacer devices to said buckets, substantially as described.

19. A bucket-wheel, buckets, metal introduced in a molten condition around the inner ends of said buckets to joint them to said wheel, and transverse expansion-slits in said wheel to provide for its peripheral expansion during the jointing of said buckets.

822,802. **SHAFT-PACKING.** JAMES WILKINSON, Providence, R. I., assignor to Wilkinson Turbine Company, a Corporation of Alabama. Filed Nov. 24, 1905. Serial No. 288,963.



Claim.—1. A liquid packing for rotating shafts comprising in combination, a chamber around the shaft, a rotatable element within said chamber, and a circulating body of liquid acted upon by said element to produce a continuous axial circulation thereof in said chamber under a head of pressure exceeding the differential in the pressures between which the packing is disposed.

2. In a liquid packing means for rotating shafts, a centrifugal pump driven by the shaft, a pump-chamber surrounding the shaft, and a body of liquid in said chamber which is acted upon by said pump and by the pressures to which it is exposed to induce an axial circulation thereof between said pump and chamber which seals all openings or clearances in or around said pump for the purposes specified.

3. The combination with a rotating shaft and a stationary element surrounding it, of an annular chamber in said element also surrounding said shaft, an annular element rotatable with said shaft and having a rim which rotates in close proximity to the circumferential wall of said chamber, one or more passages leading through said element from its low to its high pressure side, and an axially-circulating body of liquid in said chamber which enters said passages at their low-pressure ends and is forced through them by centrifugal action against the higher pressure to which the liquid is exposed to maintain the circulation of said liquid, for the purposes described.

4. In a liquid packing means for a rotating shaft, a chambered element rotatable with the shaft, liquid in the chambers exposed to different pressures and subjected to centrifugal action by rotation with said element, a port in said element connecting said chambers, and a stationary chamber in which said element rotates and induces

an axially-flowing belt of circulating liquid to seal the clearance between the element and chamber, substantially as described.

5. In a liquid packing means for a rotating shaft, an element rotatable with said shaft and exposed to different pressures, a conduit rotatable with said element and exposed to said pressures, a chamber in which said element rotates, and a body of sealing liquid therein which circulates in said chamber around said element and through said conduit in the manner and for the purposes described.

6. In a liquid packing means for a rotating shaft, a chamber around said shaft, an element rotatable with said shaft and disposed in said chamber, a body of sealing liquid in said chamber acted upon by the pressures to which it is exposed and by said element to produce an axial circulation thereof for the purposes described, and means to throttle the stream of circulating liquid.

7. In a liquid packing means for a rotating shaft, a chamber around said shaft, an annular element rotatable with the shaft and disposed in said chamber, a liquid exposed to different pressures and continuously acted upon by said element to produce a constantly-flowing belt of liquid which circulates axially around the periphery of said element between said element and chamber, and means to retard the flow of said body of liquid, as and for the purposes described.

8. In liquid packing means for a rotating shaft, a chamber around said shaft, an element rotatable with the shaft and disposed in said chamber, projections on said chamber and element which form a tortuous passage, and a sealing liquid upon which said element acts continuously to produce an annular axially-circulating body or belt of liquid flowing through said tortuous passage, for the purposes described.

9. In a liquid packing means for a rotating shaft, a stationary chamber around said shaft, an element rotatable with the shaft and provided with two annular rotating chambers opening toward said shaft and disposed within said stationary chamber, means to establish communication between said rotating chambers near their outer peripheries, a liquid in said chambers subjected to centrifugal effect by their rotation, means to discharge the liquid in a substantially annular stream from the rotating chamber exposed to the higher pressure, said annular body of fluid being acted upon by said higher pressure and caused to flow back to the low-pressure rotating chamber and in its passage to seal the joint between said rotating element and stationary chamber.

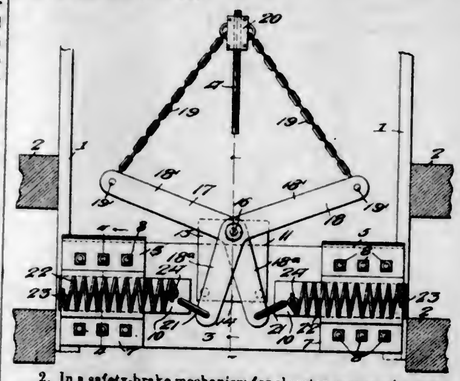
10. In a liquid packing means for a rotating shaft, a rotating element provided on each side with annular chambers, means to establish communication between said chambers through said element, bodies of liquid in said chambers exposed to different pressures, an annular jet-orifice in the outer side wall of the chamber exposed to the higher pressure, the centrifugal effect on said bodies of liquid being such as to cause the discharge of an annular jet through said orifice, and a stationary chamber in which said element rotates, the joint between said latter chamber and element being sealed by the flow of said annular jet of liquid induced by the difference in pressures to which the liquid is exposed.

11. In a liquid packing means for a rotating shaft, an annular chamber surrounding said shaft, an element rotatable with said shaft, a body of liquid in said chamber, and a circulating-passage for said liquid formed by the clearance between said element and stationary chamber and by one or more ports in said element, said element being adapted to act as a centrifugal pump to maintain the circulation of the liquid through said passage to seal it.

12. In a liquid packing means for a rotating shaft, an annular chamber surrounding said shaft, an element rotatable with said shaft, a body of liquid in said chamber, a circulating-passage for said liquid formed by the clearance between said element and stationary chamber and by one or more ports in said element, said element being adapted to act as a centrifugal pump to maintain the circulation of the liquid through said passage to seal it, valves for said ports which are opened by the circulating liquid toward a pressure which closes them when the element ceases to rotate, means to produce a tortuous passage in the clearance between said element and chamber, and means to introduce liquid into said tortuous passage to flush and seal it, for the purposes described.

822,803. **SAFETY BRAKE OR LOCK FOR ELEVATORS.** FREDERICK WILLIAMS, Minersville, Pa. Filed Dec. 5, 1905. Serial No. 290,456.

Claim.—1. In a safety-brake mechanism for elevator-cars or mine-cages, the combination with a shaft structure provided with stationary brake members, of a car having sliding catches to engage said brake members, sets of bell-crank levers having long and short arms divergently arranged and pivoted at their angle of intersection upon the car, links connecting the short arms of the levers with the sliding catches, connections between the long arms of the levers and the hoisting-rope to hold the levers from movement, and normally expanded springs held expanded by the levers and adapted when the levers are released upon the breakage of the hoisting-rope, to contract and project the catches.



2. In a safety-brake mechanism for elevator-cars or mine-cages, the combination with a shaft structure provided with stationary brake-members, of a head-beam forming part of the car structure brackets upon the ends of the head-beam and provided with guides, sliding catches operating in said guides and adapted when projected to engage the adjacent stationary members, a central bracket upon the beam, sets of bell-crank levers pivoted to said central bracket, said levers having divergently-arranged upper long and lower short arms, the latter being pivotally connected with the catches, restraining connections between the long arms of the levers and the hoisting-rope, and contractile springs connected with the end brackets and catches to project said catches when the levers are freed for movement by the breakage of the hoisting-rope

3. In a safety-brake mechanism for elevator-cars or mine-cages, the combination with a shaft structure provided with stationary brake members, of a head-beam forming part of the car structure, sliding catches mounted upon said beam to engage said stationary brake members, contractile springs associated with said catches to project the same, bell-crank levers connected with the catches to normally hold the same retracted and the springs expanded, and connections between said levers and the hoisting-rope for normally holding the levers in restraining position.

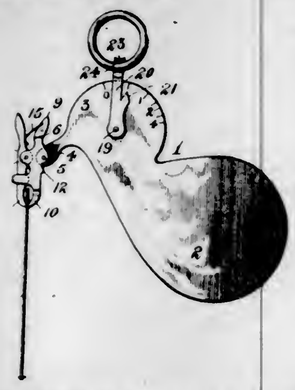
4. In a safety-brake mechanism for elevator-cars or mine-cages, the combination with a shaft structure provided with stationary brake members, of a head-beam forming part of the car structure, brackets upon the ends of the head-beam and provided with guides, sliding catches operating in said guides and adapted when projected to engage the adjacent stationary members, sets of bell-crank levers pivotally mounted upon the beam between the brackets, said levers having divergently-arranged upper long and lower short arms, the latter being pivotally connected with the catches, restraining connections between the long arms of the levers and the hoisting-rope, and contractile springs connected with the end brackets and catches to project said catches when the levers are free for movement by the bracket of the hoisting-rope.

822,804. **WEIGHING INSTRUMENT.** HENRY M. WILLIS, East Williston, N. Y. Filed Aug. 25, 1904. Serial No. 222,051.

Claim.—1. A weighing instrument comprising a balance having calibrations disposed thereon, and a laterally-extending arm; in combination with means for pivotally supporting said balance; a pointer coöperating with said calibrations; a spring-clamp pivoted to said arm; said clamp and arm having means between them for limiting the movement of the former relatively to the balance in two directions in the plane of the surface of the latter.

2. A weighing instrument comprising a balance having calibrations disposed thereon, and a laterally-extending arm; in combination with means for pivotally supporting said balance; a pointer coöperating with said calibrations; and a spring-clamp, pivoted to said arm, having means coöperating with said arm for limiting the

movement of said clamp relatively to said balance in two directions in the plane of the surface of the latter.



3. A weighing instrument comprising a balance having calibrations disposed thereon, and a laterally-extending arm; in combination with means for supporting said balance pivotally connected thereto and having a pointer coöperating with said calibrations; and a pivotally-supported spring-clamp, having means coöperating with said arm, for limiting the movement of said clamp relatively to said balance in two directions in the plane of the surface of the latter.

4. A weighing instrument comprising a balance having a head portion of semicircular form provided with calibrations, said head also having a laterally-extending arm; in combination with means for pivotally supporting said balance having a pointer coöperating with said calibrations; and a spring-clamp, pivoted to said arm, having means coöperating with the latter for limiting its movement relatively to the balance in two directions in the plane of the surface of the latter.

5. A weighing instrument comprising a balance having a weighted body portion; a head portion of semicircular form provided with calibrations and having a laterally-extending arm; in combination with means for pivotally supporting the balance having a pointer coöperating with said calibrations; and a clamp, pivoted to said arm, having means coöperating with the latter for limiting its movement relatively to the balance in two directions in the plane of the surface of the latter.

6. A weighing instrument comprising a balance having a laterally-extending arm and means affording a pivotal support; in combination with a clamp comprising a pair of pivotally-connected levers, one of the levers being in two sections and each of which latter has an offset portion embracing the said arm and pivotally connected thereto; and means for causing the levers to clamp a given article.

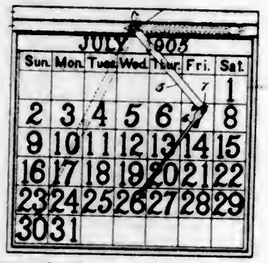
7. A weighing instrument comprising a balance having a laterally-extending arm and means affording a pivotal support; in combination with a clamp composed of two principal parts and one of which parts is made in two sections each having an offset portion embracing the said arm and pivotally connected thereto; means for connecting the two clamp parts; and means for holding the clamp parts yieldingly together.

8. A weighing instrument comprising a balance having a laterally-extending arm and means affording a pivotal support; in combination with a clamping device pivotally supported on said arm and comprising a pair of pivotally-connected spring-controlled clamping-jaws; the two jaws having means between their pivot and clamping ends for preventing lateral or twisting action of the same relatively at the pivot.

822,805. **UNIVERSAL INDICATOR.** HENRY M. WILLIS, East Williston, N. Y. Filed July 26, 1905. Serial No. 271,283.

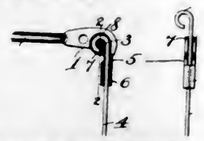
Claim.—1. In combination, a calendar having on one of its edges a binder, an indicator pivoted to said binder and having a body portion extending over said calendar, a pointer pivoted to said body portion, and a spring friction-producing means coöperating with said pointer and body portion substantially at the pivotal connection between the two.

2. An indicator, for the purposes described, composed of a body portion and a pointer, a pivotal connection between the said pointer and body portion, and a spring friction-producing means coöperating with said pointer and body portion substantially at the pivotal connection between the two.



3. An indicator, for the purposes described, composed of a body portion having a pointer pivotally connected thereto, and a friction-producing means coöperating with said pointer and body portion substantially at the pivotal connection between the two, said means consisting of a spring-tongue struck up from the body of one of said parts and frictionally bearing upon the other of said parts.

822,806. **SPECTACLES.** THOMAS A. WILLSON, Reading, Pa. Filed Mar. 6, 1905. Serial No. 248,415.



Claim.—1. A spectacle-temple comprising a temple wire or shaft, and a separately-formed pivot-piece having a pin-engaging ear and a shank portion inclosing said shaft, the extremity of said shaft being projected through said shank portion and shaped to form a stop to turning movement of the pivot-piece thereon.

2. In spectacles having temple-joint ends, a temple pivoted thereto comprising a separately-formed pivot-piece having a pin-engaging ear and a hollow shank, and a shaft passed through said shank and having its projected end headed to contact laterally with said pivot-ear and prevent rotary movement of the inserted shaft.

3. In spectacles having temple-joint ends, a temple pivoted thereto comprising a separately-formed pivot-piece having a pin-engaging ear and a hollow shank and a shaft passed through said shank and having an eye-head formed on its projected end, said eye-head lying parallel to said pivot-ear and engaging the pivot-pin passed therethrough.

4. In spectacles having temple-joint ends, a temple pivoted thereto comprising a separately-formed pivot-piece having a pin-engaging ear and a hollow shank and a shaft passed through said shank and having an open-loop head formed on its projecting end, said open-loop head lying parallel to said pivot-ear and forming a friction-ring upon the pivot-pin passed therethrough.

5. In spectacles having temple-joint ends, a temple pivoted thereto comprising a separately-formed pivot-piece having a hollow shank and spaced-apart pivot-ears, and a shaft passed through said shank and having its projected end headed and lying between said pivot-ears.

822,807. **CONDENSER.** ROBERT C. WINDER, Newark, N. J. Filed May 16, 1902. Serial No. 107,596.

Claim.—1. In a condensing apparatus, the combination with a condensing-chamber, of a cooling-chamber surrounding the condensing-chamber, a coil of piping interposed between the condensing and cooling chambers for the circulation of a cooling medium, a series of deflecting-plates secured within the condensing-chamber, and means in communication with said condensing-chamber for spraying condensing liquid into said condensing-chamber, substantially as described.

2. In a condensing apparatus, the combination with a condensing-chamber, of a cooling-chamber surrounding the condensing-chamber, a coil of piping interposed between the condensing and cooling chambers for the circulation of a cooling medium, a series of deflecting-plates secured within the condensing-chamber, one of said deflecting-plates having a central aperture and a series of holes near its periphery to direct the steam against the cooled surface of the condensing-chamber and means in communication with said condensing-chamber for spraying condensing liquid into said condensing-chamber, substantially as described.

3. In a condensing apparatus, the combination with a condensing-chamber, of a cooling-chamber surrounding the condensing-chamber, a coil of piping interposed between the condensing and cooling chambers for the circulation of a cooling medium, a series of deflecting-plates secured within the condensing-chamber, one of said deflecting-plates forming an annular opening when secured to the chamber thereby directing the steam against the cooled surface of the condensing-chamber and means in communication with said condensing-chamber for spraying condensing liquid into said condensing-chamber, substantially as described.

4. In a condensing apparatus, the combination with a condensing-chamber, of a cooling-chamber surrounding the condensing-chamber, a coil of piping interposed between the condensing and cooling chambers for the circulation of a cooling medium, a series of deflecting-plates secured within the condensing-chamber, one of said deflecting-plates carried by the valve-stem so as to regulate the flow of water distributed against the cooled surface of the condensing-chamber, and means in communication with said condensing-chamber for spraying condensing liquid into said condensing-chamber, substantially as described.

5. In a condensing apparatus, the combination with a condensing-chamber, of a cooling-chamber surrounding the condensing-chamber, a series of deflecting-plates secured within the condensing-chamber, one of said deflecting-plates having a central aperture and a series of holes near its periphery to direct the steam against the cooled surface of the condensing-chamber and means in communication with said condensing-chamber for spraying condensing liquid into said condensing-chamber, substantially as described.

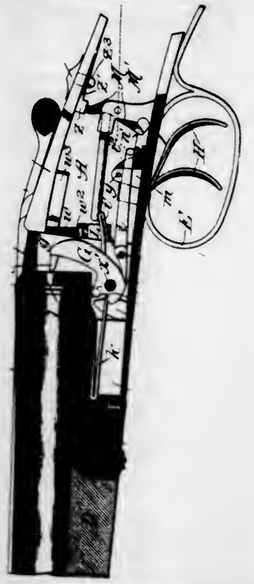
6. In a condensing apparatus, the combination with a condensing-chamber, of a cooling-chamber surrounding the condensing-chamber, a series of deflecting-plates secured within the condensing-chamber, one of said deflecting-plates forming an annular opening when secured to the chamber thereby directing the steam against the cooled surface of the condensing-chamber, and the other deflecting-plate having a central aperture and a series of holes near its periphery to direct the steam against the cooling-surface of the condensing-chamber, and means in communication with said condensing-chamber for spraying condensing liquid into said condensing-chamber, substantially as described.

7. In a condensing apparatus, the combination with a condensing-chamber, of a cooling-chamber surrounding the condensing-chamber, a coil of piping interposed between the condensing and cooling chambers for the circulation of a cooling medium, a series of deflecting-plates secured within the condensing-chamber, one of said deflecting-plates carried by the valve-stem so as to regulate the flow of water distributed against the cooled surface of the condensing-chamber and means in communication with said condensing-chamber for spraying condensing liquid into said condensing-chamber, substantially as described.



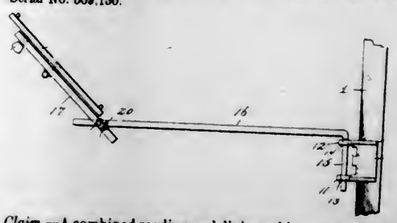
822,808. **GUN.** HENRY L. WOELTJEN, Chicago, Ill. Filed Sept. 29, 1905. Serial No. 280,663.

Claim.—1. In a gun of the character described, the combination of a trigger-equipped frame having a hinge-pin on its forward end and containing a longitudinal slot provided with a bridging-piece, spring-containing chambers at opposite sides of said slot, hammers pivotally supported in said chambers and engaged by the springs therein, sears engaging said hammers, a pair of barrels provided with a lug having a cam-face on its rear side and a recess in its forward side at which it hingedly engages with said pin, and a spring-pressed block provided on one end with a roller and on its opposite end with ears and reciprocably confined in said slot to extend across said bridging-piece, with said roller engaging said cam-face and said ears engaging the hammers, said block being adapted to be actuated by the cam-face in turning the barrels on their hinge to fully cock the hammers by the sole act of turning the barrels.



2. In a gun of the character described, the combination of a trigger-equipped frame, a sear-locked spring-pressed hammer supported on said frame, a barrel hingedly connected with the frame and carrying near its rear end a cam-lug and a latch-lug, a block reciprocably confined in the frame and actuated by said cam-lug in turning the barrel on its hinge-support to engage and cock the hammer, a spring-pressed bolt reciprocably supported in the frame to engage said latch-lug and provided with a notch, a spring-pressed block movably supported below the bolt and provided with a tooth in the path of said notch for locking the bolt in retracted position and carrying a spring-pressed plunger extending in the path of said reciprocably-confined block, said toothed block extending in the path of said latch-lug to be depressed by closing the barrel, and a safety device on the frame actuated to lock the trigger by retracting the bolt.

822,809. **COMBINED READING AND INVALID TABLE.** WILLIAM B. YOUNG, Albion, N. Y., assignor of one-fourth to George T. S. Foote, Albion, N. Y. Filed Sept. 27, 1902. Renewed Mar. 31, 1906. Serial No. 309,130.



Claim.—A combined reading and dining table comprising a horizontal bar having a pivotally-mounted vertical arm, a supplementary bar pivotally mounted on the outer end of the horizontal bar, a support or table pivotally mounted on the supplementary bar, means

movably secured on the outer end of the supplementary bar and coacting with the under surface of the table to prevent rotation of the same, means for securing the supplemental bar in a straight line with the horizontal bar, said means also serving in connection with the under side of the horizontal bar to raise the table to an inclined position, substantially as specified.

822,810. REFLECTOR. EDMUND L. ZALINSKI, New York, N. Y. Filed June 27, 1905. Serial No. 267,283.

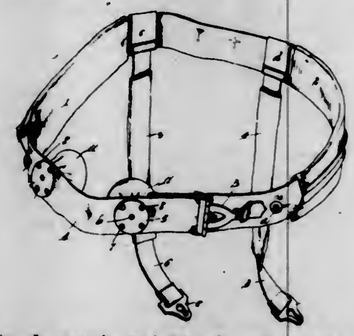


Claim.—1. In a reflector, the combination with a reflecting-body, a rigid backing, and a yielding backing interposed between said body and said rigid backing, of a case inclosing said rigid backing and a spring interposed between said rigid backing and said case, whereby shocks and strains transmitted to the back of the reflecting-body are cushioned by the spring and the yielding backing in succession.

2. In a reflector, the combination with a reflecting-body, a rigid backing, a yielding backing and a layer of heat-insulating material interposed between said body and said rigid backing, of a case inclosing said rigid backing, and a spring interposed between said rigid backing and said case, whereby shocks and strains transmitted to the back of said reflecting-body are cushioned by the spring, the heat-insulating material and the yielding backing in succession.

3. In a reflector the combination with a reflecting-body, of a plate behind said body provided with a flange extending over the edge of the face thereof, a casing behind said plate provided with a detachable flange engaging with said body and plate, and springs interposed between said casing and plate whereby said body is constantly maintained in engagement with the flange of the casing by spring-pressure.

822,811. TRUSS. GUSTAV C. ABRAHAM, Flint, Mich. Filed July 16, 1904. Serial No. 216,789.



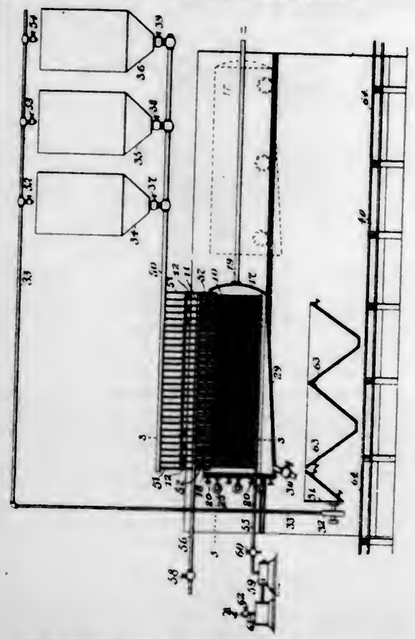
Claim.—In a truss for surgical use, the combination of a belt, a conical spiral of wire secured to said belt by a ball-and-socket joint at its smaller end and having its largest spire farthest from the belt, and a pad resting toward its periphery upon said outer spire, and a hood passing over said pad and spiral and secured to the smaller end of said spiral.

822,812. SUCTION-FILTER. PHILIP ARGALL, Denver, Colo. Filed Mar. 3, 1906. Serial No. 303,837.

Claim.—1. In suction-filters, a stationary filter-frame, with fixed inlet and outlet pipe connections thereto, and a movable tank inclosing said filter-frame but removable therefrom at will, substantially as specified.

2. In suction-filters, fixed filter-frames, with outlet-pipe connections at bottom, giving gravity flow from the interior of said filter-frames, and inlet-pipe connections at top, in combination with a movable tank adapted to inclose said filter-frames or be moved away therefrom at will, substantially as specified.

3. In suction-filters, a series of stationary filter-frames suspended from suitable supports, outlet-pipe connections to each filter-frame at bottom, inlet-pipe connections to each filter-frame at top, fluid-supply-pipe connections to the spaces between the filter-frames, and a tank inclosing said filter-frames when in working position, but removable therefrom at will, substantially as specified.



4. In suction-filters, a fixed filter-frame with porous sides, an inlet-pipe at top and an outlet-pipe at bottom of said filter-frame, a suction apparatus connected with said outlet-pipe, a removable tank inclosing said filter-frame, means for filling said tank, and means for emptying said tank, substantially as specified.

5. In suction-filters, a fixed filter-frame with porous sides, an inlet-pipe at top and an outlet-pipe at bottom of said filter-frame, a suction apparatus connected with said outlet-pipe, a removable tank inclosing said filter-frame, a discharge-pipe from said tank, a receptacle for the fluid contents of said tank, fixed tanks for containing slimes, solution and water respectively, circulatory apparatus between said receptacle and said fixed tanks respectively, with means for connecting with either tank at will, pipe connections leading from said fixed tanks respectively to said movable tank, and a receiver for waste contents from the movable tank, substantially as specified.

6. In suction-filters, a movable tank with an open end, a fixed head for closing said open end, with locking means for securing the closure, filter-frames fixed in position to be inclosed by said movable tank and fixed head, fixed tanks for containing fluids, with controllable outlets discharging respectively therefrom into said movable tank, a discharge-pipe from said movable tank, a circulatory apparatus between said movable tank and said fixed tanks, means for filling and emptying said filter-frames, and a suction apparatus connected respectively with said filter-frames, substantially as specified.

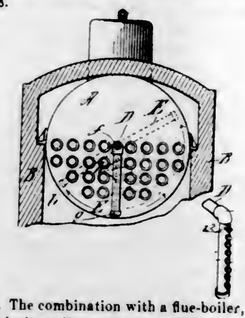
7. In suction-filters, a gang of fixed filter-frames having porous sides, inlet-pipes at top of said filter-frames respectively, outlet-pipes at bottom of said filter-frames respectively, a suction apparatus connected with said outlet-pipes, fixed tanks for containing slimes, solution and water respectively, pipe connections leading from said fixed tanks respectively to the interspaces between said filter-frames, a movable tank inclosing said filter-frames, but removable therefrom, a discharge pipe and valve for said movable tank, a receptacle for the contents discharged through said discharge-pipe, a hydraulic apparatus between said receptacle and said fixed tanks respectively, a hopper for the reception of waste-dumps from the filter-frame surfaces, and means for carrying away said dumps, substantially as specified.

8. In suction-filters, a series of stationary filter-frames, with inlet and outlet pipe connections, a removable tank inclosing said filter-frames, means for filling and emptying said tank, a receptacle for the fluid contents of the movable tank, a series of fixed elevated tanks, mechanism for circulating the fluids treated between said movable tank and said fixed tanks, a receiver for the depleted slime-cakes, and means for conveying away the dumped contents of said receiver, substantially as specified.

9. In suction-filters, fixed filter-frames, with fixed pipe connections, a fixed head, a movable open-ended tank inclosing said filter-frames and abutting by its open end against said fixed head, means for securing the tank end to the fixed head, means for filling said tank, and a discharge-pipe for said tank, substantially as specified.

10. In suction-filters, a series of fixed filter-frames, with fixed inlet-pipe connections at top and fixed outlet-pipe connections at the bottom, a suction-pump connected to said outlet-pipe connections, a movable tank inclosing said filter-frames, means for filling said tank, a receptacle for the contents of said tank, and mechanism for circulating the contents of said tank between said receptacle and said tank, substantially as specified.

822,813. APPARATUS FOR CLEANING BOILER-FLUES. ENOCH A. BAKER, Willimansett, Mass. Filed Nov. 11, 1905. Serial No. 286,958.



Claim.—1. The combination with a flue-boiler, of a pipe, and a support for said pipe adjacent the end of the boiler, relatively to which the pipe is rotative on an axis parallel with the length of the boiler, a supply-pipe receiving steam from the boiler and connected to said rotative pipe, and said latter carrying an angularly-extended, endwise-closed, pipe-section revoluble in a plane parallel with, and adjacent, the end of the boiler, and having a series of steam-delivery perforations through its side toward the mouths of the boiler-flues.

2. The combination with a horizontal flue-boiler and its setting, of a pipe extended horizontally through, and rotative in, the setting on an axis parallel with the length of the boiler, a supply-pipe receiving steam from the boiler and connected with said rotative pipe, and said latter carrying an angular endwise-closed pipe revoluble in a vertical plane parallel with the end of the boiler and located within the setting and between it and the end of the boiler, and having a series of steam-delivery perforations through its side toward the mouths of the flues, a valve for controlling the admission of steam through the said supply-pipe, and means externally of the setting for turning said rotative pipe.

3. The combination with a horizontal flue-boiler, of a pipe horizontally and rotatably mounted behind the end of the boiler and having its length parallel with the axis of the boiler; a supply-pipe receiving steam from the boiler and having a vertical section, an intermediate part of which is in communication with said rotative pipe, and said latter carrying an angular endwise-closed pipe-section revoluble in a vertical plane parallel with the end of the boiler and located within the setting and between it and the end of the boiler, and having a series of steam-delivery perforations through its side toward the mouths of the flues, means for turning the horizontal pipe, a valve in said vertical pipe-section above the horizontal rotatable pipe, and a drip-cock in said vertical pipe-section below the rotatable pipe.

4. The combination with a flue-boiler and its setting provided with a tubular metallic bushing, of a pipe extended horizontally through, and rotative in said bushing of the setting, a supply-pipe receiving steam from the boiler and a union-coupling connecting said supply-pipe and said rotative pipe, and said latter pipe carrying an angular endwise-closed pipe-section revoluble in a vertical plane and located within the setting and between it and the end of the boiler, and having a series of steam-delivery perforations through its side toward the mouths of the flues, a valve for controlling the admission of steam through the supply-pipe, and a handle externally of the setting provided to the rotative pipe and for turning the latter.

5. The combination with a flue-boiler and its setting, of a pipe extended horizontally through, and rotative in, the setting, a supply-pipe receiving steam from the boiler and having a union-coupling connecting it with said rotative pipe, whereby the latter may turn independently of the supply-pipe, and said rotative pipe carrying an angular endwise-closed pipe-section revoluble in a vertical plane and located within the setting and between it and the end of the boiler, and having a series of steam-delivery perforations through its side toward the mouths of the flues and of greater number than the number of flues in any line radially of the axis of the boiler.

822,814. METAL POST. JOHN W. BAKER, Adrian, Mich., assignor of one-half to Arthur Morris, Adrian, Mich. Filed Oct. 19, 1905. Serial No. 283,422.



Claim.—1. A post comprising two metal sections, one of said sections being hinged, and a cap formed on one of said sections for covering both sections, substantially as described.

2. In a fence-post, two hollow sections clamped together with the line-wires passing between the two sections and frictional strips for holding the line-wires frictionally to the post and permitting them to independently slide therein when extraordinary stress is brought upon any of said line-wires, substantially as described.

3. A fence-post comprising metal sections, the lower ends of which are bent outwardly to form anchors for said posts, a hinged section, a concrete filling at the base portion of the post, a cap formed upon one section for covering both sections at the top of the post, one of said sections being hinged to the other, flanges bent outwardly from the sections, bolts passing through the flanges for clamping the line-wires frictionally and strips of fabric or other frictional material for holding the wires in position, substantially as described.

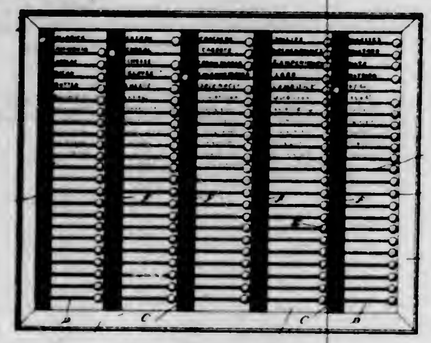
4. A fence-post comprising metal sections provided with flanges, one of said sections being hinged near the base, a cap formed on one of the sections and covering both sections, line-wires passing through centrally between the sections and bolts passing through the flanges for holding the line-wires in position, substantially as described.

822,815. INDICATOR FOR HOUSEHOLD USE. HARRY E. BAKER and HARRY E. NEAVLING, Portland, Me. Filed July 1, 1905. Serial No. 267,986.

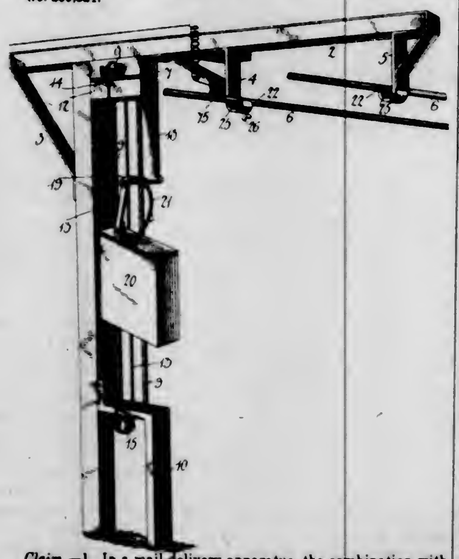
Claim.—1. An indicating device for domestic or other use comprising a plate having the names of articles of household use arranged in horizontal lines thereacross, tracks or ways extending from side to side of said plate, stops dividing each of said tracks or ways into sections, and indicators located one in each section and free to gravitate between the stops.

2. A device for domestic or other use comprising a back plate bearing the names of household articles in horizontal lines across the same and having right-angled flanges at all its edges, wires arranged parallel to said lines of names and secured to said flanges, stops arranged at intervals transverse to said horizontal wires, and indicators loosely arranged on said horizontal wires between each pair of stops, whereby the reversing of the frame of the device will permit the indicators to slide from stop to stop.

3. A device for domestic or other use comprising a plate having the names of articles of household use arranged in horizontal lines across said plate, tracks or ways extending from side to side of said plate parallel to said lines of names, a series of stops for each of said tracks or ways arranged to intersect the same at intervals, and indicators arranged on said tracks or ways and located one between each pair of stops.



822,816. RURAL-MAIL-DELIVERY APPARATUS. RALPH M. BARTHOLOMEW, Reading Center, N. Y. Filed Nov. 27, 1905. Serial No. 289,331.



Claim.—1. In a mail-delivery apparatus, the combination with supporting-posts, of track-wires supported thereby, a mail-box-holding mechanism arranged on certain of said posts, means whereby said holding apparatus is raised and lowered, an electrically-driven mail-car adapted to run on said track-wires, mail-boxes carried by said car, means whereby said boxes are successively discharged from said car at their proper places of delivery, and means whereby empty boxes are taken by said car, substantially as described.

2. In a mail-delivery apparatus, the combination with supporting-posts, of track-wires supported thereby, a mail-box-supporting mechanism, arranged on certain of said posts, said mechanism consisting of vertically-disposed guide-bars, a supporting-block slidably mounted on said bars, a depending box-holding arm or bracket secured to said block, means whereby said block is raised and lowered, a catch adapted to hold the block in its raised position, a mail-car adapted to be run on the tracks, means whereby an empty mail-box is taken from said arm or bracket, means whereby a full box is discharged from said car, and means whereby the same is engaged with and supported by said arm or bracket, substantially as described.

3. In a mail-delivery apparatus, the combination with supporting-posts, having laterally-projecting cross-arms, of depending hangers secured to said arms, track-wire-clamping devices arranged on said hangers, track-wires clamped to and supported by said hangers, means whereby an electric current is applied to said wires, a mail-car adapted to run on the latter, mail-boxes carried by said car, means whereby the same are successively projected therefrom, and means whereby empty boxes are taken up by said car, substantially as described.

4. In a mail-delivery apparatus, the combination with supporting-posts, of track-wires supported thereby, a mail-box-holding mechanism arranged on certain of said posts, a car adapted to run on said track-wires, an electric motor carried by said car whereby the same is driven, mail-boxes arranged in said car, a holding mechanism to retain said boxes in place, a releasing mechanism to disengage said holding mechanism, a projecting mechanism to discharge said boxes, and means whereby the same are prevented from being entirely ejected out of said car, substantially as described.

5. In a mail-delivery apparatus, the combination with supporting-posts, of track-wires supported thereby, a mail-box-holding mechanism arranged on certain of said ports, a car adapted to run on said track-wires, a mail-box compartment formed in said car, mail-boxes arranged in said compartment, hooks for separately holding said boxes in place, means whereby said hooks are separately and successively released from said boxes, means whereby they are projected from said compartment, and means whereby the same are caught and held in position to be taken from the car, substantially as described.

6. In a mail-delivery apparatus, the combination with supporting-posts, of track-wires supported thereby, a mail-box holding mechanism arranged on certain of said posts, a car adapted to run on said track-wires, a mail-box compartment formed in said car mail-boxes arranged in said compartment, hooks for separately holding said boxes in place, a hook-releasing mechanism adapted to separately and successively disengage said hooks from said boxes, means whereby said releasing mechanism is actuated, springs adapted to successively project said boxes from said compartment when released from said hooks and means whereby said projected boxes are caught and held in position to be taken from the car, substantially as described.

7. In a mail-delivery apparatus, the combination with supporting-posts, of track-wires supported thereby, a mail-box-holding mechanism arranged on certain of said posts, a car adapted to run on said track-wires, a mail-box compartment formed in said car, mail-boxes arranged in said compartment, hooks for separately holding said boxes in place, slidably-mounted blocks arranged in said compartment, hook-releasing pins carried by said blocks, coupling hooks and pins arranged thereon whereby said blocks are coupled together, means whereby said blocks are actuated to cause the same to be automatically and successively coupled and shifted to bring said releasing-pins into engagement with said hooks, and springs adapted to project the boxes from said compartment when released from said hooks, substantially as described.

8. In a mail-delivery apparatus, the combination with supporting-posts, of track-wires supported thereby, a mail-box-holding mechanism arranged on certain of said posts, a car adapted to run on said track-wires, a mail-box compartment formed in said car, mail-boxes arranged in said compartment, hooks for separately holding said boxes in place, slidably-mounted blocks arranged in said compartment, hook-releasing pins carried by said blocks, coupling hooks and pins arranged thereon whereby said blocks are coupled together, a spring-projected contact arm or bar pivotally mounted in said car, a connecting-rod connecting the inner end of said contact-arm with the forward end block, whereby when said contact-arm is rocked, the blocks will be successively coupled and shifted to bring the pins thereon into engagement with the box-holding hooks to successively release said boxes, springs whereby said boxes are projected and a yieldingly-mounted stop to catch and hold said boxes in position to be taken from the car, substantially as described.

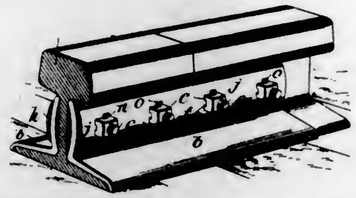
9. In a mail-delivery apparatus, the combination with supporting-posts, of track-wires supported on said posts, a mail-car adapted to travel on said track-wires, fenders carried by said car to clear the wires of obstructions, an electric motor arranged in said car, means whereby an electric current is applied to the track-wires, a pivotally-mounted contact-wheel carried by said car to run on said tracks and conduct the electricity therefrom to said motor, mail-boxes carried by said car, means whereby said boxes are automatically projected from the car at the proper places, means whereby the electric current is automatically cut off from said wire when the car nears the main

station, and a pivotally-mounted hook at said station to engage and stop said car, substantially as described.

10. In a mail-delivery apparatus, the combination with supporting-posts, of track-wires supported thereby, a mail-box-holding mechanism arranged on certain of said posts, a mail-car adapted to run on said track-wires, mail-boxes carried by said car, snap-hook bails arranged on said boxes whereby the same are engaged with and taken from said supporting mechanism, a spear secured to the forward end of said car to engage the bails on said boxes and remove the latter from said supporting mechanism, and means whereby the boxes are held on said spear, substantially as described.

11. In a mail-delivery apparatus, the combination with supporting-posts, of track-wires supported thereby, a mail-box-holding mechanism arranged on certain of said posts, a mail-car having supporting-wheels adapted to engage and run on said track-wires, an electric motor carried by said car, means whereby electricity is taken from one of said track-wires and conducted to said motor, means whereby the latter is geared to the axles of said wheels, and a governor adapted to engage one of said axles to regulate the speed of said car, substantially as described.

822,817. RAILWAY-JOINT. MILTON W. BELL, New Orleans, La. Filed Oct. 13, 1905. Serial No. 282,633.



Claim.—1. In a railway-joint, the combination of railroad-rails, fish-plates, spring-plates applied to said fish-plates, one spring-plate outside of each fish-plate, bolts passing through said fish-plates and spring-plates, and nuts engaging the ends of said bolts, substantially as described.

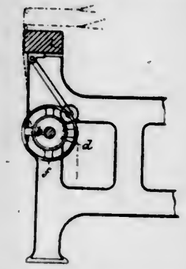
2. In a railway-joint, the combination of rails, fish-plates, spring-plates applied to said fish-plates, one spring-plate outside of each fish-plate, bolts passing through said spring-plates and fish-plates, nuts engaging the ends of said bolts, and a locking device for each of said nuts, substantially as described.

3. In a railway-joint, the combination of rails, fish-plates, spring-plates outside of said fish-plates, bolts passing through said spring-plates and fish-plates, nuts engaging the ends of said bolts, said nuts being provided with cut-away portions, and one of said spring-plates being provided with depressions, and spring-clips adapted to fit in said depressions and cut-away portions, substantially as described.

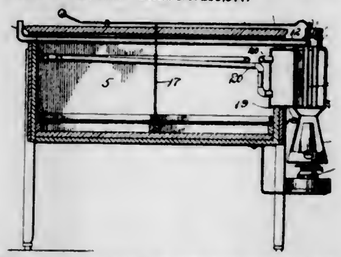
4. In a railway-joint, the combination of rails, fish-plates applied threto, spring-plates resting against said fish-plates, one of said spring-plates being provided with squared holes and the other being provided with round holes and depressions cut therein, bolts passing through said spring-plates, fish-plates, and rails, each of said bolts being provided with a squared portion near its head, and a screw-threaded portion at its other end, nuts engaging said bolts, each of said nuts having portions thereof cut away, and spring-clips adapted to fit in the cut-away portions of said nuts and the depressions in one of said spring-plates, substantially as described.

822,818. TAKE-UP MECHANISM FOR LOOMS. FREDERICK BENS, Sr., Haledon, N. J., assignor to Frank & Dugan, Paterson, N. J., a Firm. Filed Mar. 27, 1903. Serial No. 149,785.

Claim.—The combination of a rotary shaft, take-up rollers having internally-toothed gears journaled on said shaft, hand-wheels alternating with and abutting against the adjacent ends of said rollers and each having an eccentric opening, devices, each comprising an integral disk, gear and boss relatively arranged in the order named, secured by their bosses on the shaft with their boss sides toward the same end of the shaft, each disk forming a concentric journal for a hand-wheel and having its outer face flush with the corresponding face thereof, and internally and externally toothed gears each journaled in the opening of a hand-wheel and having its internal teeth in mesh with the teeth of the corresponding disk-gear and its exterior teeth meshing with the gear-teeth of the corresponding roller, substantially as described.

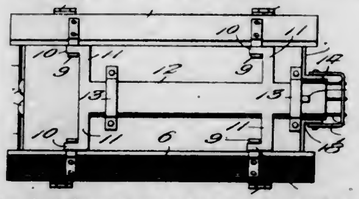


822,819. HEATING SYSTEM. CHARLES E. BOWERS, Westminster, Md. Filed Dec. 28, 1904. Serial No. 238,577.



Claim.—In an incubator, the combination with a hollow body portion, of a boiler located exteriorly thereof and having a lateral projection extending into the body portion, pipe-coils lying within the body portion and communicating with the projection at the upper and at the lower portions thereof, a flue in the boiler, a pipe passed through the body portion and communicating with the flue, means for heating the boiler, an overflow-tank disposed above the boiler, a pipe communicating with the lower portion of the tank and with the lower portion of the boiler, and a second pipe communicating with the upper portion of the tank and with the upper portion of the boiler.

822,820. DUMPING CAR OR WAGON. EDWIN S. BOYD, Norris City, Ill. Filed Dec. 16, 1905. Serial No. 292,041.



Claim.—1. A dumping car or wagon provided with gravity-opening doors, door-closing mechanism set for operation by the opening movement of said doors, a sliding locking-bar having rigid hooked arms to engage coacting locking members on the doors, and a pivoted lever for actuating said locking-bar.

2. A dumping car or wagon provided with gravity-opening doors having locking members, door-closing devices including an operating-lever set for operation by the opening movement of the doors, a sliding locking member having portions to engage the locking members on the doors, a lever for actuating said sliding locking member, and common supporting means for the two levers.

3. A dumping car or wagon provided with gravity-opening doors carrying locking members, a pivotally-mounted door-closing lever, connections between the doors and said lever, the latter being set for operation by the opening movement of the doors, a sliding locking-bar carrying engaging devices to interlock with the locking members on the doors, and a lever for operating said sliding locking-bar arranged coaxially mounted with the first-named lever, whereby both levers may be controlled by an operator from a common point.

4. A dumping car or wagon provided with gravity-opening doors carrying locking members, a sliding locking-bar having coacting locking members, a support, levers coaxially mounted upon said support, one of said levers being operatively connected with the locking-bar, and door-closing connections between the other lever and the doors.

5. A dumping car or wagon provided with gravity-opening doors carrying hooked locking members, a sliding bar mounted upon the bottom of the car and having laterally-projecting rigid arms provided with coacting locking members, and means for sliding the bar.

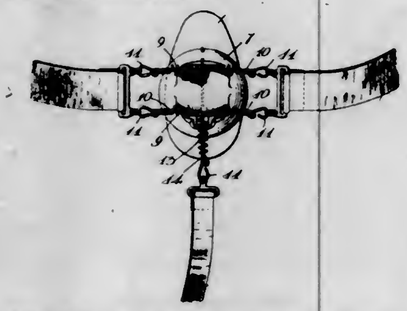
822,821. THREAD-CUTTER FOR SPOOLS. HERMAN H. BUTLER, Roscoe, N. Y. Filed June 23, 1905. Serial No. 266,664.



Claim.—1. A thread-cutter for spools comprising a member having longitudinal ribs integral therewith, a disk integral with the said member, and a rectangular post integral with the disk and having sharpened edges.

2. A thread-cutter for spools comprising a member having longitudinal ribs, a disk secured to the said member, a rectangular post secured to the disk, and a pin secured to the said disk adjacent to the said post.

822,822. TRUSS. JAMES H. CAMPBELL, Lakeport, N. H. Filed Jan. 18, 1906. Serial No. 296,700.



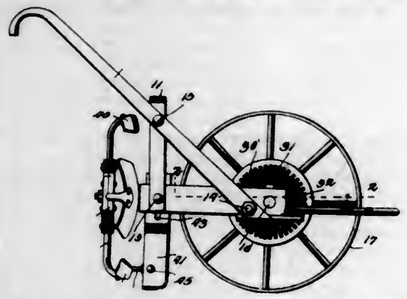
Claim.—1. In a truss, the combination with a pad having a concave bearing-surface and a threaded shank, of a bell-shaped holder, an attaching-bolt adapted to be screwed into engagement with said shank, yielding connections between said bolt and said holder, and means to yieldingly attach said holder to the body, substantially as described.

2. In a truss, the combination with a pad having a concave bearing-surface and a threaded shank, of a bell-shaped holder, an attaching-bolt adapted to be screwed into engagement with said shank, a flanged head formed on said bolt, springs to connect said holder with said flanged head of the bolt, attaching-straps and yielding connections arranged between the ends of said straps and said holder, substantially as described.

3. In a truss, the combination with a pad having a concave bearing-surface and a threaded shank, of a bell-shaped holder, an attaching-bolt adapted to be screwed into engagement with said shank, springs to connect said holder with said bolt, side attaching-springs, and a centrally-disposed lower attaching-spring arranged on the outside of said holder, and body and thigh attaching-straps adapted to be connected to said spring, substantially as described.

4. In a truss, the combination with a pad having a concave bearing-surface and a hollow interiorly-threaded shank, of a bell-shaped holder, an attaching-bolt adapted to be screwed into engagement with said shank, a flanged head formed on said bolt, radially-disposed spiral springs to connect said holder with the flanged head of said bolt, parallel, coiled, side attaching-springs connected to the outer side of said holder and having spring-metal bracing-rods arranged therein, body-attaching straps adapted to be connected to said springs, a lower, centrally-disposed coiled attaching-spring connected to the holder, said coiled spring having a spring-metal bracing-rod arranged therein and a thigh-strap adapted to be connected to said lower spring, substantially as described.

822,823. COTTON-CHOPPING MACHINE. OLIVER L. CARMICAL, Hapeville, Ga. Filed Dec. 27, 1904. Serial No. 238,357.



Claim.—1. In a cotton-chopping machine, a frame, a driving-wheel journaled in the frame and provided with gear elements, a brace secured to the frame, a shaft journaled on the frame and having engagement with said gear elements, said shaft being provided with an enlargement positioned between the brace and the frame to prevent the shaft from moving longitudinally, and a chopping-wheel secured to the shaft.

2. In a cotton-chopping machine, a frame, a driving-wheel journaled in the frame and provided with gear elements, a brace secured on the frame, a shaft journaled on the frame and having engagement with said gear elements, said shaft being provided with an enlargement located between the brace and the frame to prevent the shaft from having longitudinal movement, a chopping-wheel secured to the shaft, blades provided with stop devices and having elongated openings, and means carried by the frame for engagement with said openings to adjustably secure the blades on the frame.

3. In combination with a cotton-chopping machine, of blades adjustably secured to the machine and provided with stop devices, one of said blades being bent intermediate its ends to dispose its lower portion out of alinement with the driving-wheel on the machine.

4. In a cotton-chopping machine, a frame, a driving-wheel journaled on the frame and provided with gear elements, a brace mounted on the frame, a shaft journaled on the frame and having engagement with said gear elements, said shaft being provided with an enlargement located between the brace and the frame to prevent the shaft from having longitudinal movement, a chopping-wheel secured to the shaft, blades provided with stop devices, and means for securing the blades adjustably to the frame, said means also securing the brace to the frame.

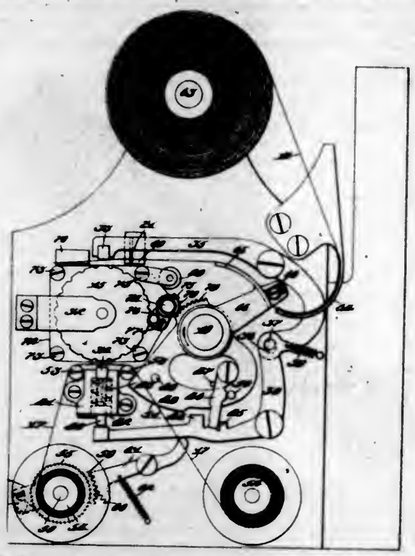
822,824. CASH-REGISTER. JOSEPH P. CLEAL, Dayton, Ohio, assignor, by mesne assignments, to The National Cash Register Company, Dayton, Ohio, a Corporation of Ohio. Filed Nov. 8, 1901. Serial No. 81,557.

Claim.—1. In a cash-register, the combination with a type-carrier, and a spring for moving same, of keys for limiting the setting movement of said carrier, a normally advanced platen for taking impressions from said type-carrier, means for retracting said platen against spring tension and for latching it in retracted position, and means for tripping the latch after the type-carrier has been moved.

2. In a cash-register, the combination with a type-carrier and a spring urging it to set position, of keys for limiting the movement of the carrier, an oscillating lever for restoring the carrier to normal position, a platen for taking impressions from said carrier normally spring-held in advanced position, means operated by the lever for retracting said platen against the spring tension, means for latching the platen in retracted position, and means for releasing the latch after the type-carrier has been set.

3. In a cash-register, the combination with an oscillating type-carrier arranged to remain in set position between operations of the machine, a series of keys for limiting the movements of said carrier, means normally locking said keys, an oscillating lever and connections for restoring said carrier to normal and unlocking said keys, a spring-actuated platen normally in advanced position, but retracted by said restoring and unlocking movement of said lever, means latching said platen when retracted, and means for tripping said latch after the keys have been operated and the type-carrier limited thereby.

4. In a cash-register, the combination with an oscillating operating-handle, a plurality of spring-operated printing devices arranged to be restored by the handle, a plurality of keys normally locked, means operated by the movement of the handle from normal position for unlocking said keys, and means requiring the return of the handle to normal to permit the operation of the printing devices.



5. In a cash-register, the combination with an oscillating operating-handle, of a paper-feed device operated on the initial stroke of the handle, a type-carrier, a spring for moving said carrier differentially, a series of keys, means normally locking said keys, means operated by the handle for releasing the lock for the keys, and means for taking impressions from said type-carrier, and for returning said carrier to normal position.

6. In a cash-register, the combination with an oscillating operating-lever, of a series of keys, a type-carrier having its setting motion limted by said keys, means for locking said keys, means operated by the lever for restoring said type-carrier and unlocking said keys, a spring-actuated platen, means operated by said lever for retracting the platen, a latch for holding said platen in retracted position, and means for tripping the latch.

7. In a cash-register, the combination with a series of type-carriers and springs for moving them differentially, of keys for limiting the movements of the type-carriers, means normally locking said keys, a handle for restoring the type-carriers to normal and unlocking the keys, a spring-operated platen normally in advanced position, but retracted by the movement of said handle, a latch for holding said platen retracted and means for releasing said latch after the type-carriers have been moved.

8. In a cash-register, the combination with printing and indicating devices connected for movement together in both directions, springs for adjusting said printing and indicating devices and leaving them so adjusted between operations, keys for limiting the movement of said printing and indicating devices, a manipulative means for restoring said devices to normal, a platen for taking impressions from said printing devices, a spring normally holding said platen in advanced position, means for retracting said platen by the movement of said manipulative means, means for latching said platen in retracted position and means for tripping said latch after the printing devices have been adjusted.

9. In a cash-register, the combination with a series of keys and means normally preventing operation of the same, a differentially-movable type-carrier, a spring for moving same, means connected to said type-carrier for limiting its movement as determined by the keys, a spring-operated platen normally in advanced position, a handle and connections for releasing said keys and retracting said platen, a latch holding said platen in retracted position, and means for tripping said latch after the type-carrier has been moved.

10. In a cash-register, the combination with a type-carrier, and a spring for adjusting the same, of keys for limiting the movement of said carrier, a normally advanced platen for taking impressions from said type-carrier, means for retracting said platen and latching it in retracted position, means for tripping the latch after the type-carrier has been adjusted, and a paper-feeding device operated by the handle.

11. In a cash-register, the combination with a series of type-carriers and springs for adjusting them differentially, of keys limiting the movements of the type-carriers, means normally locking said keys, a handle for restoring the type-carriers to normal and unlocking the keys, a spring-operated platen normally in advanced position, but retracted by the movement of said handle, latch for holding said platen retracted, and a paper-feeding device operated by the handle.

12. In a cash-register, the combination with a series of keys, of a series of type-carriers, a series of setting elements arranged when released to be arrested by the keys, a platen, and an operating device arranged to put the platen under tension before the keys are operated and to release said platen after the keys are operated.

13. In a cash-register, the combination with an operating mechanism, a differentially-movable device and a type-carrier controlled thereby; of manipulative means for determining the extent of movement of said differential device; a locking mechanism for said manipulative means; means operated upon the initial movement of said operating mechanism for unlocking said manipulative means; and means operated during the completion of the movement of said operating mechanism for taking an impression from said type-carrier after the same has been set to a position controlled by the manipulative means.

14. In a cash-register, the combination with an oscillating operating-lever, a series of keys, a differentially-movable device controlled by said keys, and a type-carrier connected with said differential device; of a locking mechanism for said keys; means operated upon the movement of the lever in one direction for unlocking said keys; and means operated by the return movement of said lever for taking an impression from said type-carrier.

15. In a cash-register, the combination with an operating mechanism including an operating-handle having initial and final movements, a series of keys, a lock for said keys actuated by the initial movement of the operating-handle, a series of graduated frames arranged to be released and subsequently arrested by the keys, rack-segments carried by said frames, a series of type-wheels, gearing connecting said segments and type-wheels, means for moving the graduated frames by the operating-handle and impression devices also actuated by the operating-handle to take an impression from the types after they have been set.

16. In a cash-register, the combination with a series of keys, of a series of type-carriers, a series of setting elements arranged when released, to be arrested by the keys, an operating device, arranged to have an initial and a final operation, a lock for the keys arranged to be released upon the initial movement of the operating device, a platen, arranged to be set for operation by the initial movement of the operating device and to be released and allowed to operate upon the final movement of said operating device.

17. In a cash-register, the combination with an operating mechanism comprising a series of spring-drawn frames, of an operating-handle for returning said frames to normal position, a series of keys for limiting the movements of said frames, type-carriers connected to said frames, a platen, means for setting the platen for operation upon the down-stroke of the operating-handle and releasing the same upon the upstroke of the same.

18. In a cash-register, the combination with an operating mechanism, including a handle having an initial and a final movement, of a series of graduated frames, a series of keys arranged to arrest the frames in different positions, means for locking the keys until after said handle has made its initial movement, type-carriers connected to the frames, and impression devices actuated by the final movement of the operating-handle.

19. In a cash-register, the combination with a series of keys, of an operating-handle and connections, a series of graduated elements arranged to be first returned to normal position by said handle and then set to positions determined by the keys, type-carriers connected to said elements, spring impression devices, means for putting said devices under tension by the initial movement of the handle and means for releasing said impression devices by the final movement of the handle.

20. In a cash-register, the combination with a series of registering elements arranged to be first returned to normal position and then to be reset to a new position, a handle controlling said elements, to return the same to normal position, keys cooperating with the ele-

ments, a type-carrier, an impression-platen arranged to be set by the handle when returning the registering elements to normal position, a latch for holding the platen in set position and means connected to the handle for tripping the latch after the handle has permitted the registering elements to take up their new positions.

21. In a printing attachment for cash-registers, the combination with a type-carrier and setting means therefor, of a platen, an operating mechanism, and means controlled by the operating mechanism for positively effecting the latching of the platen in operative position and subsequently releasing said latch to permit the platen to operate.

22. In a cash-register, the combination with a type-carrier and setting means therefor, of a platen, an operating-handle, a latch-pawl for engaging said platen, and devices connected with said operating-handle for first engaging said latch-pawl to positively carry the same into position to latch the platen, and then subsequently releasing the latch.

23. In a cash-register, the combination with a type-carrier and setting means therefor, of a platen, an operating-handle, a latch-pawl for engaging said platen, and means connected with said handle for first operating the platen to put the same under tension and then positively forcing said latch-pawl into engagement therewith to retain the same in operative position, and then subsequently operating the latch to release the platen to cause an impression to be taken.

24. In a cash-register, the combination with a series of keys, of a series of detents for the same, a movable frame engaging said detents, an operating-handle and connections and locking devices engaging the opposite ends of the movable frame and coöperating with the handle, connections to lock said frame and prevent operation of the keys except when the handle is in a predetermined position.

25. In a cash-register, the combination with an operating mechanism, of a series of type-carriers arranged to be set thereby, a platen-lever carrying a platen, a platen-operating lever coupled to the first lever and a platen mounted independently of the second lever and disconnected therefrom but arranged to be struck thereby to force the same against the type-carriers.

26. In a cash-register the combination with an operating mechanism, of a series of type-carriers connected thereto, check-strip-supply devices, a movable arm carrying a segmental plate, a pawl on said arm arranged to engage a check-strip passed over the plate, and means connecting the movable arm to the operating mechanism.

27. In a cash-register, the combination with an operating mechanism, of a series of type-carriers connected thereto, a platen, an arm carrying a segmental plate and a pawl which engages said plate and means for guiding a check-strip over said plate.

28. In a cash-register, the combination with an operating mechanism, of a series of type-carriers connected thereto, a platen, an ink-ribbon, feeding devices for said ribbon, means for operating said feeding devices and a feeding-arm carrying a curved plate and a pawl engaging said plate to hold a check-strip thereon.

29. In a cash-register, the combination with an operating mechanism, a printing mechanism including a platen-lever, a strip-feeding pawl having a ratchet, a pawl-carrier, and pawl engaging said ratchet, and a lever geared to said pawl-carrier to give a reverse movement and spring-pressed into engagement with said platen-lever.

30. In a cash-register, the combination with a series of type-carriers, bearing duplicate sets of type and springs for adjusting them differentially, of keys for limiting the movements of the carriers, means normally locking said keys, a handle for restoring the carriers to normal and unlocking the keys, duplicate spring-operated platens, means for camming the platens to retracted position, a detail-strip-feeding device operated by one platen, and a check-feed positively operated by the handle.

822,825. SHOE-POLISHING DEVICE. LORIO L. CLIFFINGER, Pleasant, Wash. Filed Dec. 31, 1904. Renewed May 2, 1906. Serial No. 314,813.

Claim.—1. A shoe-polishing device having a swab, a stem for said swab, a bearing member on said stem, a sleeve element having a tubular extension surrounding the swab, a spacing-washer mounted on said stem and located in said sleeve element, a partition in said sleeve element having a valve-seat, a valve coöperating with said seat and connected with said stem, a coil-spring surrounding said valve-seat and bearing against said spacing-washer, and a liquid-receptacle connected with said sleeve element.

2. A shoe-polishing device having a swab, a stem for said swab, a bearing-plate mounted on said stem and serving to hold said swab thereon, a sleeve element having a conical portion and a tubular contracted extension surrounding one end of said swab, a spacing-washer of such form as to permit the passage of liquid thereby, said spacing-washer being located in said sleeve element and attached to said stem, a cup-shaped partition connected with said sleeve element and having a conical valve-seat, a coil-spring surrounding said conical valve-seat and bearing against said spacing-washer, and a conical valve coöperating with said valve-seat and being connected with said stem.



3. A shoe-polishing device having a sleeve element formed of thin metal and bent at one end to form interior and exterior screw-threads, a liquid-receptacle engaged with the exterior screw-threads of said sleeve member, a partition engaged with the interior screw-threads of said sleeve element and having a valve-seat, a valve coöperating with said seat, a stem connected with said valve, a swab connected with said stem, and means for normally maintaining said valve in closed position.

822,826. SAFETY-RESERVOIR FOR EXPLOSIVE FLUIDS. CLYDE J. COLEMAN, Rockaway, N. J., assignor to Conrad Hubert, New York, N. Y. Filed Apr. 28, 1905. Serial No. 257,853.



Claim.—1. Means for safely storing explosive fluids comprising, in combination, a reservoir, and a mass of solid material inclosed in the reservoir and forming fluid-containing interstitial spaces of non-explosive magnitudes and also having inherent absorptive influence on the explosive fluid.

2. Means for safely storing explosive gases comprising, in combination, a reservoir and a dry mass of solid material possessing concentrative influence on the explosive gas, and such mass being of interstitial structure and forming gas-containing interstices of non-explosive magnitudes.

3. In a safe source of detonating-gas, the combination of a reservoir, an interstitial mass of solid material inclosed in the reservoir and having concentrative influence over the detonating-gas and also forming gas-containing interstitial spaces of non-detonating magnitude, and a gas explosive by detonation and concentrated by influence of the solid interstitial walls of the interstitial mass and also contained in the non-detonating interstitial spaces thereof.

4. In a safe source of explosive acetylene, the combination of a storage-reservoir proper, a solid material inclosed within the reservoir proper and forming minute fluid-containing interstices of non-explosive magnitude and also adapted to concentrate the explosive acetylene by inherent concentrative influence, and a charge of explosive acetylene contained in non-explosive quantities in the fluid-containing interstices and also concentrated by inherent concentrative influence of the solid material.

5. A non-explodable conserver for explosive fluid comprising, in combination, a fluid-reservoir proper and, contained therein, a mass of minutely-disintegrated solid material forcibly compacted to maintain its interstitial spaces at non-explosive magnitudes.

6. Conserving means for explosive fluids comprising, in combination, a fluid-reservoir proper and, contained therein, a mass of forcibly-compacted minute porous particles of solid-fluid-concentrative material adapted to receive the explosive fluid and to condense the same by inherent concentrative influence and also forming interstitial spaces of non-explosive magnitude adapted to receive and retain the explosive fluid between adjacent particles.

7. Means for the safe storage of explosive fluid comprising, in combination, a fluid-reservoir proper and a mass of minute particles of solid-fluid-concentrative material contained within the reservoir and forcibly compressed together to maintain their fluid-containing interstitial spaces at non-explosive magnitudes.

8. Means for storing fluids under pressure comprising, in combination, a fluid-tank, a fluid-conduit leading into the tank, a valve in control of the fluid-conduit and provided with a valve-stem, a pressure-gage mounted on the valve-stem, and a fluid-duct communicating with the fluid-conduit on the reservoir side of the valve and leading through the valve-stem to the pressure-gage.

9. Means for storing fluid under pressure comprising, in combination, a fluid-reservoir, a fluid-conduit communicating therewith, a controlling-valve in control of the conduit and provided with a threaded valve-stem, a worm-wheel through which the valve-stem passes in angularly-fixed but longitudinally-slidable relation, a worm meshing with the worm-wheel, and means for turning the worm.

10. Means for storing fluid under pressure comprising, in combination, a fluid-reservoir, a fluid-conduit communicating therewith, a controlling-valve in control of the conduit and provided with a threaded valve-stem, a worm-wheel through which the valve-stem passes in angularly-fixed but longitudinally-slidable relation, a worm meshing with the worm-wheel, means for turning the worm, a pressure-gage mounted on the valve-stem, and a fluid-duct leading from the pressure-gage through the valve-stem to a point of communication with the fluid-conduit.

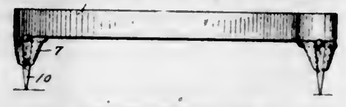
11. Safe means for conserving explosive acetylene comprising, in combination, a reservoir proper and, contained therein, a number of minute particles of charcoal of cocoanut-shell forcibly impacted to maintain their interstitial spaces at non-explosive magnitudes.

12. A source of explosive acetylene comprising, in combination, an acetylene-reservoir and a number of minute particles of charcoal of cocoanut-shell completely filling the reservoir and forcibly impacted to maintain their interstitial spaces at non-explosive magnitudes, and a quantity of explosive acetylene contained in the interstitial spaces and also concentrated by inherent concentrative influence of the cocoanut charcoal.

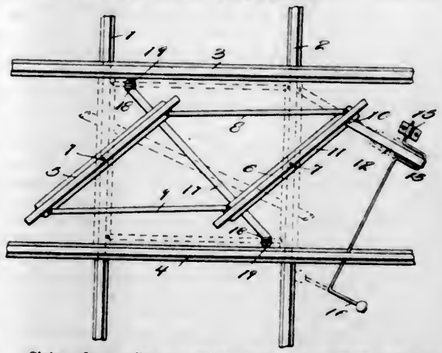
13. A safe conserver for explosive fluids comprising, in combination, a reservoir proper provided with a safety-vent, a fusible sealing material normally sealing the vent, and an interstitial mass of relatively non-heat-conductive solid material contained within the reservoir and adapted to confine externally-applied heat to the surface of the reservoir until the fusible sealing material is fused.

822,827. HORSESHOE-CALK. JOSEPH C. H. CRANMER, Greenville, Mich. Filed Feb. 28, 1906. Serial No. 303,473.

Claim.—A horseshoe having pairs of depending spaced holding members at its toe and heel portions, each pair of holding members being converged downwardly and having end flanges, the flanges of each holding member extending toward and in the same plane with the corresponding flanges of the other holding member and having their mutually-adjacent edges converged, a tapered calk engaged between each pair of depending holding members and within the embrace of the flanges thereof, and a wedge disposed between the base of each calk and the corresponding face of the shoe, the dimensions of each calk and the spacing of the end flanges of the corresponding holding members being such that, when the wedge is in place, the calk will lie in close contact with the corresponding depending members and within the embrace of the flanges, and when the wedge is removed and the calk is shifted into contact with the face of the shoe, it may be drawn between either end flanges of the depending members.

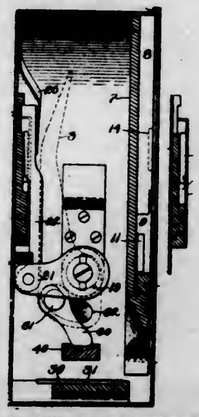


822,828. RAILWAY-CROSSING. REUBEN W. CRESS, Jessup, Ind. Filed Aug. 25, 1905. Serial No. 276,809.



Claim.—In a railway-crossing, main and crossing rails, sections pivotally mounted and arranged for movement into and out of alinement with the main rails, the said sections being adapted to overlap the crossing-rails when in alinement with the main rails, a brace connecting the pivoted sections to limit their movement out of alinement with the main rails, and a crank-shaft constructed and arranged for throwing the pivoted sections into and out of engagement with the main rails.

822,829. TICKET-DELIVERING MACHINE. HENRY H. CUMMINGS, Malden, Mass., assignor to Adams D. Claflin, Newton, Mass. Filed Feb. 19, 1904. Serial No. 194,334.



Claim.—1. In a ticket-delivering mechanism, the combination with the operating member thereof, of a latch connected with and

controlling said member; an abutment coöperating with the latch; a casing containing a coin-passage into which the latch projects near the entrance thereof so as to be reached and positively actuated by the operator to free it from the abutment through a coin placed in the entrance of said passage, said latch being constructed and adapted to engage the coin, and means to positively shift the coin away from the entrance of the passage when the latch is moved with the operating member.

2. In a ticket-delivering mechanism, the combination of a casing, an external operating member and internal hollow strip-holder, of a latch connected with and controlling said member; an abutment coöperating with the latch, the casing containing a coin-passage into which the latch projects near the entrance thereof so as to be reached and positively actuated by the operator to free it from the abutment through a coin placed in the entrance of said passage; said latch being constructed and adapted to engage the coin, and means to positively shift the coin away from the entrance of the passage and into the interior of the hollow strip-holder when the latch is moved with the operating member.

3. In a ticket-delivering mechanism, the combination with the operating member thereof, of a latch connected with and controlling said member; an abutment coöperating with the latch, a casing containing a coin-passage into which the latch projects near the entrance thereof so as to be reached and positively actuated by the operator to free it from the abutment through a coin placed in the entrance of said passage, said latch being constructed and adapted to engage the coin, means to positively shift the coin away from the entrance of the passage, when the latch is moved with the operating member, and means to engage the coin after being shifted by the latch and hold it against movement toward the entrance of the coin-passage.

4. In a ticket-delivering mechanism, the combination of a casing, an external operating member, an internal hollow strip-holder, a latch connected with and controlling said member, an abutment coöperating with the latch, the casing containing a coin-passage into which the latch projects near the entrance thereof so as to be reached and positively actuated by the operator to free it from the abutment through a coin placed in the entrance of said passage, said latch being constructed and adapted to engage the coin, means to positively shift the coin away from the entrance of the passage and into the interior of the hollow strip-holder when the latch is moved with the operating member, and means to engage the coin after being shifted by the latch and hold it against movement toward the entrance of the coin-passage.

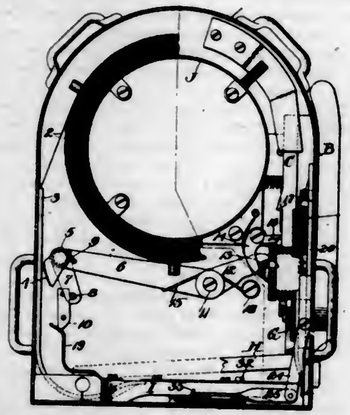
5. In a ticket-delivering mechanism, the combination with the operating member thereof, of a latch connected with and controlling said member, said latch provided with a shoulder, an abutment coöperating with the latch, a casing containing a coin-passage into which the latch projects near the entrance thereof so as to be reached and positively actuated by the operator to free it from the abutment through a coin placed in the entrance of said passage, the said passage being made with an inclined side for cooperating with the shoulder on the latch by wedge action on the coin, to positively shift the coin along the passage-way from the entrance thereof when the latch is moved with the operating member.

822,830. TICKET STAMPING AND DELIVERY MACHINE. HENRY H. CUMMINGS, Newton, Mass., assignor to Adams D. Claflin, Newton, Mass. Filed Mar. 14, 1905. Serial No. 250,019.

Claim.—1. A ticket stamping and delivering machine having in combination an operating member; a strip-holder, means controlled by the operating member for effecting a partial feed of the strip; a strip-cutter; a spring for actuating the cutter; a latch for controlling the cutter; and means operated by further movement of the strip for operating the latch to free the cutter and sever a predetermined length from the strip.

2. A ticket stamping and delivering machine having in combination an operating member; a strip-holder, means controlled by the operating member for effecting a partial feed of the strip; a strip-cutter; a spring for shifting the cutter in one direction, said cutter being shifted in the opposite direction by means of the operating member; a latch for holding the cutter against movement by the spring, and means operated by further movement of the strip for operating the latch to free the cutter and sever a predetermined length from the strip.

3. A ticket stamping and delivering machine having in combination an operating member; a strip-holder, means controlled by the operating member for effecting a partial feed of the strip; a strip-cutter; a movable dog projecting into the path of the strip to engage perforations in the latter, and means through which movement of the dog actuates the cutter to sever a predetermined length from the strip when movement is imparted to the strip and one of the perforations of the latter engages the dog.



4. A ticket stamping and delivering machine having in combination an operating member; a strip-holder, means controlled by the operating member for effecting a partial feed of the strip; a strip-cutter; a dog projecting into the path of the strip to engage perforations in the latter; means through which movement of the dog with the strip actuates the cutter to sever a predetermined length from the strip when movement is imparted to the strip and one of the perforations of the latter engages the dog, and means to disengage the dog from the strip and return said dog to normal position, when the cutter has been actuated.

5. A ticket stamping and delivering machine having in combination a strip-holder, a strip-cutter; a movable dog projecting into the path of the strip to engage perforations in the latter, and means through which movement of the dog actuates the cutter to sever a predetermined length from the strip when movement is imparted to the strip and one of the perforations of the latter engages the dog.

6. A ticket stamping and delivering machine having in combination a strip-holder, a strip-cutter; a dog projecting into the path of the strip to engage perforations in the latter; means through which movement of the dog with the strip actuates the cutter to sever a predetermined length from the strip when movement is imparted to the strip and one of the perforations of the latter engages the dog and means to disengage the dog from the strip and return said dog to normal position when the cutter has been actuated.

7. A ticket stamping and delivering machine having in combination an operating member; a strip-holder, means controlled by the operating member for effecting a partial feed of the strip; a strip-cutter; a spring for actuating the cutter; a latch for controlling the cutter; a movable dog projecting into the path of the strip to engage perforations in the latter, and means connecting the dog with the latch through which movement of the dog operates the latch to free the cutter and sever a predetermined length from the strip when a further movement is imparted to the strip and one of the perforations of the latter engages the dog.

8. A ticket stamping and delivering machine having in combination a closed casing whose interior is normally inaccessible, said casing adapted to hold a ticket-strip and having a strip-exit; an operating member upon the exterior of the casing; means within the casing and controlled by the operating member for effecting a partial feed of the strip to project the end thereof through the exit, and means within the casing and operated by further movement of the strip for automatically severing the ticket at the projecting end of the strip.

9. A ticket stamping and delivering machine having in combination an operating member; a strip-holder, means to effect a partial feed of the strip; and means controlled by the operating member to prevent the partial feed being effected until after said member has been operated to stamp the strip.

10. A ticket stamping and delivering machine having in combination a strip-holder, a strip-feeder; and means controlled by the operating member for preventing the operation of the strip-feeder until the operating member is moved first in one direction and then in another direction.

11. A ticket stamping and delivering machine having in combination an operating member; a strip-holder, a strip-feeder; and a latch for controlling the operation of the strip-feeder, said latch being operated to free the strip-feeder by movement of operating member.

12. A ticket stamping and delivering machine having in combination a strip-holder, a pusher for engaging the strip; a carrier on which the pusher is mounted to move toward and from the strip, said carrier being movable back and forth lengthwise of the strip; means to hold the pusher in engagement with the strip while the carrier is moved in one direction, and means to hold the pusher out of engagement with the strip, while the carrier is moved in the opposite direction.

13. A ticket stamping and delivering machine having in combination a strip-holder, a pusher for engaging the strip; a carrier on which the pusher is mounted to move toward and from the strip, said carrier being movable back and forth lengthwise of the strip; means to hold the pusher in engagement with the strip while the carrier is moved in one direction, and a stationarily-supported cam to hold the pusher out of engagement with the strip while the carrier is moved in the opposite direction.

14. A ticket stamping and delivering machine having in combination a strip-holder, a pusher for engaging the strip; a carrier on which the pusher is mounted to move toward and from the strip, said carrier being movable back and forth lengthwise of the strip; a spring to hold the pusher in engagement with the strip while the carrier is moved in one direction, and a stationarily-supported cam to hold the pusher out of engagement with the strip while the carrier is moved in the opposite direction.

15. A ticket stamping and delivering machine having in combination a strip-holder, a pusher for engaging the strip; a carrier on which the pusher is mounted to move toward and from the strip, said carrier being movable back and forth lengthwise of the strip; means to hold the pusher in engagement with the strip while the carrier is moved in one direction; a stationarily-supported cam to hold the pusher out of engagement with the strip while the carrier is moved in the opposite direction, and means to shift the pusher into coöperative relation with the cam at the completion of the feeding movement of the pusher.

16. A ticket stamping and delivering machine having in combination a strip-holder, a pusher for engaging the strip; a carrier on which the pusher is pivotally mounted to swing toward and from the strip, said carrier being movable back and forth lengthwise of the strip; a spring to hold the pusher in engagement with the strip while the carrier is moved in one direction, and a stationarily-supported cam to hold the pusher out of engagement with the strip while the carrier is moved in the opposite direction.

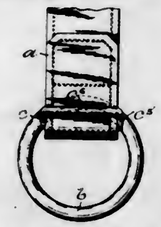
17. A ticket stamping and delivering machine having in combination a strip-holder, a pusher for engaging the strip; a carrier on which the pusher is pivotally mounted to swing toward and from the strip, said carrier being movable back and forth lengthwise of the strip; a spring to hold the pusher in engagement with the strip while the carrier is moved in one direction; a stationarily-supported cam to hold the pusher out of engagement with the strip while the carrier is moved in the opposite direction, and a resilient deflector to swing the pusher into coöperative relation with the cam at the completion of the feeding movement of the pusher.

18. A ticket stamping and delivering machine having in combination an operating member; a strip-holder, a strip-pusher for engaging the strip; a carrier on which the pusher is pivotally mounted to swing toward and from the strip, said carrier being moved back and forth lengthwise of the strip by the operating member; a spring to hold the pusher in engagement with the strip while the carrier is moved in one direction, and means to swing and hold the pusher out of engagement with the strip while the carrier is moved in the opposite direction.

19. A ticket stamping and delivering machine having in combination an operating member; a strip-holder, a pusher for engaging the strip; a pivoted carrier on which the pusher is pivotally mounted to swing toward and from the strip, said carrier being swung back and forth lengthwise of the strip by the operating member; means to hold the pusher in engagement with the strip while the carrier is moved in one direction, and means to swing and hold the pusher out of engagement with the strip while the carrier is moved in the opposite direction.

822,831. HARNESS. REBA S. DODGE, Providence, R. I. Filed May 28, 1903. Serial No. 159,094.

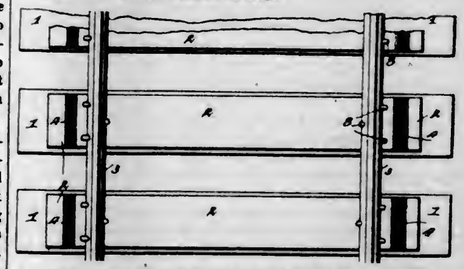
Claim.—1. A device of the character described, comprising a center block provided with a lower, longitudinal, straight edge, said edge beveled or curved transversely throughout its entire length, said block provided with an upper, longitudinally-extending semi-circular edge provided with a groove, arms extending laterally from the ends of said block, straight, cross-bars positioned upon the sides of said block, each bar integral with each two of said arms, said block provided with flat, parallel sides, each bar provided with an inner, flat vertical face, the inner faces of said bars parallel with the flat, parallel sides of said block, and said cross-bars, arms, and block constituting guides or keepers for snugly retaining the looped portion of a strap against said block when the same is positioned thereon.



2. A device of the character described, comprising a center block, provided with a lower longitudinally-straight edge, said edge curved transversely, said block provided with parallel, straight sides, a longitudinally-extending groove formed in the upper edge of said block, outwardly-extending arms secured at each end of said block, said arms of less length than the greatest width of said block, parallel cross-bars positioned upon opposite sides of said block and integral with said arms, each bar positioned contiguous to the side of and below the highest point of said block, each bar provided with a straight, vertical, inner surface or face, said face parallel with the contiguous side of said block, and said cross-bars, arms, and block, constituting guides or keepers for snugly retaining the looped portion of a strap against the block when the strap is positioned upon said block.

3. A device of the character described, comprising a block provided with parallel, flat sides, arms extending from said blocks, bars positioned upon opposite sides of said block and supported upon said arms, each bar provided with an inner, flat face, the faces of said bars parallel with the flat sides of said block, and said block, arms and bars, constituting guides or keepers for snugly securing a strap against said block.

822,832. RAILWAY-TIE PLATE. GEORGE W. DUKE, Powder Springs, Ga., assignor of one-half to Junie F. Dunton, Atlanta, Ga. Filed Oct. 24, 1905. Serial No. 284,210.

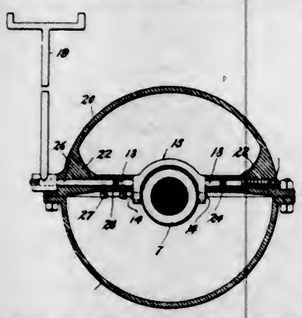


Claim.—A tie-plate provided at each end with a thickened portion having an undercut shoulder to engage the outer edge of the base of the rail, an opening located inwardly from said shoulder for the passage of a spike to engage the inner edge of the base of the rail, spike-openings beneath the shoulder, recesses in the shoulder communicating with said spike-openings, and spurs projecting from the bottom of the plate at each end outwardly beyond said thickened portions, substantially as described.

822,833. FRICTION-CLUTCH. JAMES F. DURYEA, Springfield, Mass. Filed Dec. 12, 1904. Serial No. 236,502.

Claim.—1. In a friction-clutch mechanism, a frame mounted on the driving-shaft, pins on the frame parallel with the axis of the

shaft; a second frame having a driving connection with the driven shaft, pins on the frame parallel with the first-named pins, said second frame being nested within the first and the pins on both extending in the same direction; a plurality of friction-rings supported loosely on the pins of each frame and arranged in alternative overlapping relation one with the other, nuts on the ends of the pins of the second frame constituting abutments for the rings, and radially-disposed levers pivotally supported on said second frame, the outer ends of which are arranged to bear against said rings to move the latter in the direction of said nuts, a member movable against the inner end of said levers to actuate the latter simultaneously, a spring to move said member, an adjusting device for the spring, and mechanism connected with said movable member to effect the compression of the spring.



2. The combination with a driving and a driven shaft, of a friction-clutch mechanism consisting of a frame secured on the driving-shaft, and a second frame comprising a long hub and radial arms thereon and having a bearing on the driving-shaft and a driving connection with the driven shaft; pins on said frames parallel with the axis of the shaft and extending in the same direction, said second frame being nested within the area circumscribed by the pins of the other; friction-rings supported loosely on the pins of each frame, those on the one alternating with and overlapping those on the other; radially-disposed levers pivotally supported on the arms of the second frame, a sliding hub mounted on the hub of the second frame, a spring to actuate the sliding hub to move it against the inner ends of said levers, a lever connected with said sliding hub to move it in the opposite direction, an adjusting device on the hub of the second frame to limit the movement of said sliding hub in one direction, and a suitable abutment against which said rings may be forced by said radial levers.

3. A friction-clutch mechanism comprising a driving-shaft, a frame consisting of a hub and radially-disposed arms extending therefrom, said hub being secured to the driving-shaft the end of the latter extending beyond said frame; a second frame consisting of a hub and radially-disposed arms, said hub having a bearing on the extended end of the driving-shaft and having a driving connection with the driven shaft; pins on the arms of each frame extending in the same direction and parallel with the axis of the driving-shaft, friction-rings supported loosely on the pins of each frame, those on the one alternating with and overlapping those on the other; radially-disposed levers supported on the arms of the second frame, a sliding hub on the hub of the second frame, a spring to actuate the sliding hub to move it against the inner end of said levers, a lever connected with said sliding hub to move it in the opposite direction, an adjusting device on the hub of the second frame to limit the movement of the sliding hub in one direction, and a suitable abutment carried on the ends of the pins of one of said frames against which said rings may be forced by said radial levers.

4. In a friction-clutch mechanism, a driving clutch-head consisting of a hub and radially-disposed arms thereon, pins in the ends of said arms parallel with the axis of said hub, and friction-rings supported loosely on said pins, said head being connected to the driving-shaft; a driven clutch-head consisting of a long hub bearing at one end on the driving-shaft rotatably, and having a driving connection at its opposite end with the driven shaft, radial arms on the hub, pins in the ends of the arms parallel with the axis of the hub, the arms of said driven head being shorter than the arms of the driving-head, friction-rings supported on said pins and arranged in alternative overlapping relation with those on the driving-head, radially-disposed levers pivotally supported on the driven head, the inner ends of said levers lying in proximity to said hub; a second hub slidably mounted on the hub of the driven head to bear against the inner ends of said levers, a spring located within said sliding hub to move the latter toward said levers, and an adjusting-nut for said spring screwed onto the hub of the driven head, said nut constituting a bearing for one end of said sliding hub and constituting an abutment for said spring; a lever to move said sliding hub to effect the compression of the spring; and a suitable abutment for said friction-rings supported on the ends of the pins of one of said frames.

5. In a friction-clutch, a driving-shaft and a driven shaft, a long hub having a bearing on the driving-shaft, and a driving connection with the driven shaft, radial arms on the hub, and pins in the ends of the arms parallel with the axis of the hub, together with friction-rings carried on the pins loosely; radially-disposed levers to bear against the friction-rings to move them toward the ends of the pins, a sliding member on said hub to actuate said levers, and a spring encircling the hub to actuate said sliding member; a second hub connected with the driving-shaft, radial arms on said hub, and pins in the ends of the arms located outside of said first-named pins and extending in the same direction, friction-rings carried loosely on these pins and arranged in alternative overlapping relation to the other friction-rings; an adjusting-nut on said hub constituting an abutment for said spring; a tight casing to inclose the mechanism, together with means extending through the wall of the casing to move said sliding member to compress the spring.

822,834. **POCKET-FASTENER.** EDWIN S. EARHART, Chickasha, Ind. Ter. Filed July 15, 1905. Serial No. 269,868.



Claim.—1. In a fastener of the character described, the combination, with a socket member, of a plunger member having a drum comprising sides and a retaining-flange at the outer end, a disk arranged to move in said drum, a plunger mounted on said disk and adapted to stand within said drum or to project therefrom for engagement with the socket member, and a spring arranged in said drum and bearing against said disk, adapted to automatically withdraw said plunger into said drum when said plunger is released from the socket member, the end of the plunger when retracted being substantially flush with the inner surface of the drum.

2. In a fastener of the character described, the combination, with a socket member, of a plunger member comprised of a drum composed of sides and a retaining-flange at one end and a laterally-extending securing-plate on the other end of said drum, a disk arranged to move in said drum, a plunger mounted on said disk and adapted to stand within said drum or to project therefrom through an aperture in the securing-plate for engagement with the socket member, and a spring, arranged in said drum and bearing against said disk, adapted to automatically withdraw said plunger into said drum when said plunger is released from the socket member, the end of the plunger when retracted being substantially flush with the inner surface of the drum.

3. In a fastener of the character described, the combination with a socket member comprising a plate curved at one end, of a plunger member with its end curved away from the socket member and in the opposite direction from the curved end of the plate of said socket member for the purpose specified.

4. In a fastener of the character described, the combination with a socket member comprising a plate curved at one end, of a plunger member having its plunger adapted to stand with its end substantially flush with one face of said member or to be thrust forward to engage the socket member, said plunger member having a plate with its end curved away from the socket member and in the opposite direction from the curved end of the plate of the socket member.

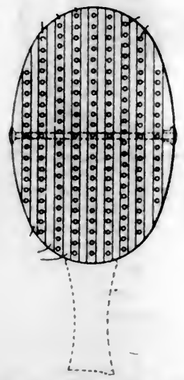
822,835. **ANIMAL-TRAP.** SAMUEL G. EWEN, Jr., Woonsocket, R. I. Filed Mar. 15, 1906. Serial No. 306,153.



Claim.—1. An animal-trap comprising a base-plate having upwardly-extending ends formed with pivot-openings, a pair of jaws having their tapered ends terminating in pivots mounted in said openings, a spring secured upon said base-plate and apertured to receive said jaws, a transverse bar projecting from said base-plate and formed with a pivot-opening, and a trigger bent to form a pivot-loop mounted in the pivot-opening in said bar and also to provide a finger or hook adapted to engage one of said jaws to hold the latter in their open position, substantially as described.

2. An animal-trap comprising an arched base-plate having its ends bent up and formed with pivot-openings, a pair of curved jaws having their tapered ends terminating in oppositely-projecting pivots mounted in said openings, a flat spring secured at one of its ends upon the top of said base-plate and having its opposite, free end apertured to receive the tapered ends of said jaws, a transverse bar secured centrally upon the bottom of said base-plate and having in one of its ends an opening to receive an attaching connection and in its opposite end a pivot-opening, and a trigger consisting of a rod having a trip pan or plate secured at one of its ends and its opposite end bent upon itself to provide an angularly-disposed pivot-loop mounted in the pivot-opening in said transverse bar and to provide an upwardly and outwardly curved hook or finger, substantially as shown and described.

822,836. **SECTIONAL BRUSH WITH GROOVED BLOCK.** CHARLES A. FETTERS, New York, N. Y., assignor to Sanitary Sectional Brush Company, a Corporation of New York. Filed Mar. 8, 1905. Serial No. 249,067.



Claim.—1. A brush comprising a brush-block having a series of longitudinal grooves formed directly in the body of the block and extending from end to end through the same, a series of stripe fitted directly in said grooves and provided each with a row of bristle-tufts, each of said strips being a continuous piece and extending through the grooves from end to end, and means for securing the tufted strips removably in the grooves, whereby all of the bristle-tufts are supported upon stripe and such strips readily removable from the brush-block for cleansing.

2. A brush comprising an oval brush-block having a series of longitudinal grooves extending from end to end through the same, a series of stripe fitted tightly to said grooves and provided each with a row of bristle-tufts, said strips extending through the grooves from end to end and having their ends beveled upon the outer side to match the oval sides of the block, and means for securing the tufted strips removably in the grooves.

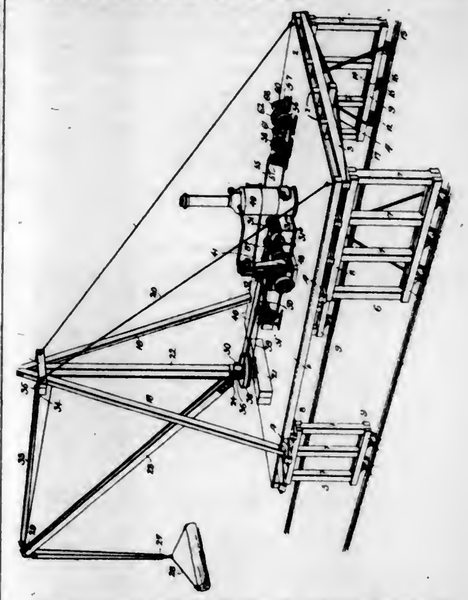
3. A brush comprising a back having a series of longitudinal grooves and a series of stripe fitted detachably to such grooves and provided each with a row of bristle-tufts, and a common means for securing all of the tufted strips in the grooves.

4. A brush comprising a back having a series of longitudinal grooves and a series of strips fitted detachably to such grooves and provided each with a row of bristle-tufts, and a locking-bolt inserted transversely across the grooves and strips to secure them detachably in place.

5. A brush comprising a back having a series of longitudinal grooves and a series of strips fitted detachably to such grooves and provided each with a row of bristle-tufts, and a locking-bolt inserted transversely across the grooves and strips near the bottoms of the grooves.

6. A brush comprising a back having a series of longitudinal undercut grooves and a series of strips fitted detachably to such undercut grooves, and a locking-bolt inserted transversely across the grooves and strips to prevent longitudinal displacement of the strips.

822,837. **DERRICK.** PATRICK F. FITZGIBBONS, Chattanooga, Tenn. Filed May 4, 1905. Serial No. 258,842.



Claim.—1. In a traveling derrick, the combination of an elevated deck or platform, front and rear end frames supporting said platform, track-wheels carried by said end frames, each rear end frame being provided with a pair of spaced track-wheels and an intermediate track-wheel, the former having sprocket-pinions connected therewith, a drive-shaft upon the platform, a counter-shaft below the platform, gearing between said shaft including a member extending through an opening in the platform, sprocket-gears upon the respective ends of the counter-shaft disposed above the intermediate wheels on the rear end frame, and looped triangular chains connecting said pinions on the counter-shaft with the pinions on the pair of spaced track-wheels of each rear end frame.

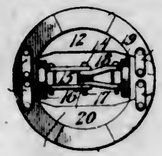
2. In a derrick, the combination of a deck or platform, front and rear end supports at the opposite sides of said platform, each of said supports comprising uprights and horizontal beams connecting said uprights at their upper and lower ends, cross-beams supporting the platform and resting upon the upper horizontal beams of the end supporting frame, a central longitudinal beam bearing against said cross-beams, tie-bolts intermediately connected to said central longitudinal beam and fastened at their ends to the transverse beams, wheels carried by the end supporting uprights, gears connected with certain of the wheels, and driving mechanism for imparting motion to said wheels, in either direction.

3. In a traveling derrick, the combination of track-rails, a derrick-frame provided with traction-wheels to travel on the track-rails, said rails and frame being relatively arranged to form a wide and deep stacking-space between the rails, derrick mechanism carried by said frame, a drive-shaft for operating said mechanism, derrick-controlling mechanism actuated by said shaft, counter-shafts arranged above and below the supporting-frame, a driving connection between the driving-shaft and upper counter-shaft, drive-gearing between said upper and lower counter-shafts, said gearing including connecting elements operating in an opening in the platform, a reversible friction-gearing, and propelling mechanism actuated by the lower counter-shaft and operatively connected with certain of said traction-wheels.

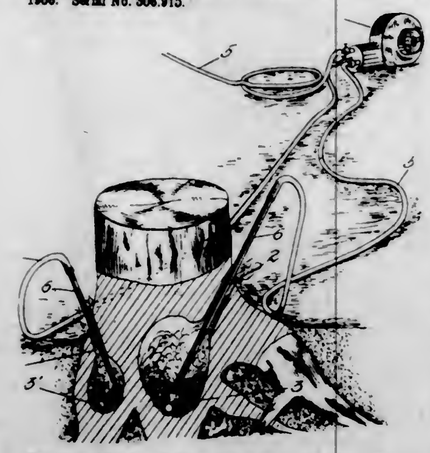
822,838. **CULVERT-MACHINE.** JAMES M. FLUKE, Nankin, Ohio. Filed Sept. 13, 1905. Serial No. 278,336.

Claim.—1. A mold comprising a box-section composed of a plurality of staves, adjustable means for securing said staves together, and a core-section composed of a plurality of staves and wedge-blocks to coöperate with said staves, said wedge-blocks being pivotally connected with the adjacent staves, and means for operating said blocks.

2. A mold comprising a box-section and a core-section, the core-section being made in two parts each comprising a plurality of connected staves, wedge-blocks arranged in diametric alinement and adapted to cooperate with the adjacent ends of each of said core parts, and means connecting the cores with the adjacent core-staves.



822,839. PROCESS FOR FACILITATING THE REMOVAL OF ROOTS OF STUMPS. MASON A. FRY, Seattle, Wash. Filed Mar. 19, 1906. Serial No. 306,915.



Claim.—1. The herein-described process which consists in arranging a hot body formed of refractory material in an opening in a stump, said body being free to move by gravity, and directing a blast of air into the fire about said body.

2. The herein-described process for severing a root from a stump by burning, which consists in placing a heated body of refractory material in the stump, said body being free to move by gravity, and maintaining said body heated so that it will burn its way down into the root and set fire to the same.

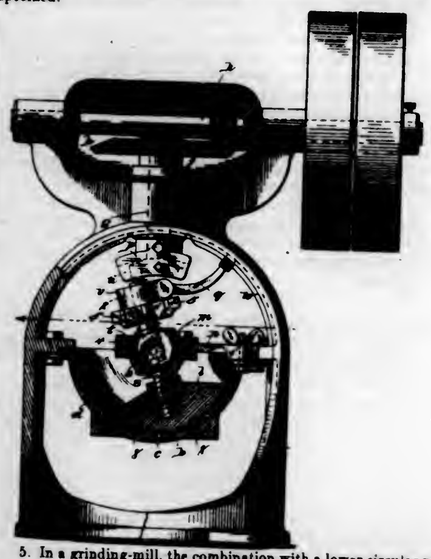
822,840. GRINDING-MILL. HARRIET A. HIGBEE, Worcester, Mass., assignor to Henry D. Perky, Glencoe, Md. Filed July 13, 1903. Renewed Feb. 13, 1906. Serial No. 300,671.

Claim.—1. A grinding-mill, having a concave center-discharge spherical grinding-plate dressed with a series of concentric lines of teeth gradually diminishing in size from the periphery to the center-discharge opening, a convex spherical grinding-plate of similar dress on a slightly-shorter radius, means for revolving said convex plate, substantially without rotation and means for adjusting the distance between the toothed grinding-faces of said convex plate and said concave plate, substantially as specified.

2. The combination with a concave spherically-dressed center-discharge grinding-plate, and a convex spherically-dressed grinding-plate, of the adjusting-stem of the latter, its ball-nut and bearing, the operating-shaft and its crank-foot, the link-bearing, the quadrant guide, the adjustment-collar, and the clamp-ring and arm, substantially as specified.

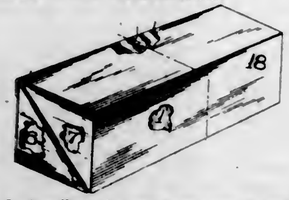
3. The combination with a concave spherically-dressed grinding-plate, and a convex spherically-dressed grinding-plate, of the adjustable stem of said convex grinding-plate, the ball-nut and its bearing, the operating-shaft and the crank-foot thereof, and means for adjusting the radius of revolution of said stem, substantially as specified.

4. The combination with a concave spherically-dressed grinding-plate, of a convex spherically-dressed grinding-plate, means of revolution of the latter, means for limiting its rotation, means of adjusting the distance between the convex and concave grinding-plates, and means of adjusting the radius of revolution, substantially as specified.



5. In a grinding-mill, the combination with a lower circular receiving grinding-plate, and an upper circular grinding-plate, of means for producing motion of revolution of the latter, means for adjusting the radius of revolution, and means for effecting slight movements of approach and recession of the upper grinding-plate with reference to the lower grinding-plate, substantially as specified.

822,841. ADVERTISING-CARTON. WILLIAM F. HILL, St. Louis, Mo. Filed Apr. 10, 1905. Serial No. 254,796.



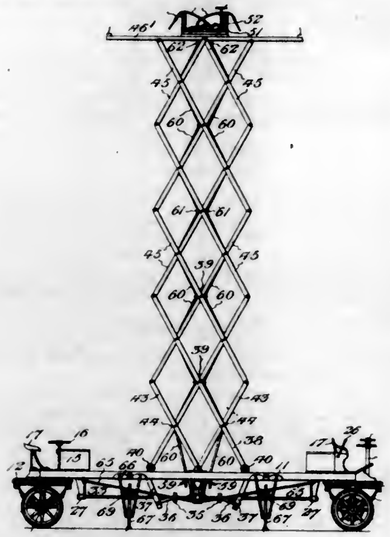
Claim.—1. A collapsible carton constructed with the usual sides and ends, which ends are detached on two sides, and being scored diagonally from the corner between the unattached sides to the corner between the detached sides, and adapted to fold inwardly when the carton is collapsed, and an elastic band diagonally arranged within the carton to correspond with the scoring in the ends of the carton, and being secured at its ends to the diagonally opposite corners of said carton, substantially as specified.

2. An advertising-carton, constructed with the usual sides and ends, which ends are detached on two sides, and being scored diagonally from the corner between the unattached sides to the corner between the detached sides, and adapted to fold inwardly on said scored lines when the carton is collapsed, there being lips formed in diagonally opposite corners of the carton by forming a pair of vertical slits in the sides of said carton, and an elastic band diagonally arranged within the carton to correspond with the scoring on the ends thereof and being secured at its ends to the lips; substantially as specified.

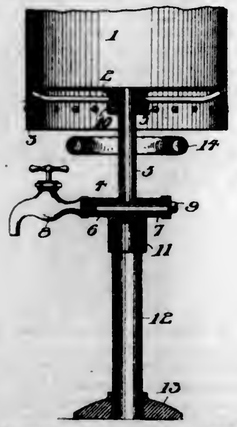
822,842. FIRE-EXTINGUISHING APPARATUS. JOHN HOLM, New York, N. Y. Filed Aug. 22, 1903. Serial No. 170,479.

Claim.—In an apparatus of the character described, the combination with a truck; of a fixed bracket secured thereon, hangers depending from the truck, oppositely-extending screw-threaded rods journaled within the hangers and connected to be rotated in unison,

collars mounted upon the screw-threaded rods and adapted to be simultaneously moved from or toward each other thereby, brackets pivoted to the collars, oppositely-disposed pairs of primary beams, the beams of each pair being centrally pivoted to each other, downwardly-extending arms provided on the beams and connected with the brackets, rollers journaled upon the beams and bearing on the truck, oppositely-disposed pairs of secondary beams above the truck, the pairs of secondary beams being centrally pivoted to each other and pivoted at their lower ends to the fixed bracket, said secondary beams being also centrally pivoted to the primary beams at a point midway between the rollers and the common pivot thereof, similarly-disposed crossed beams pivoted to one another and to the hereinbefore-mentioned beams to produce two sets of lazy-tongs arranged respectively at opposite sides of the truck and adapted to be extended and contracted uniformly and simultaneously, a platform adjustably mounted upon one end of the lazy-tongs, and crossed brace-rods connecting the pivots of the two lazy-tongs.



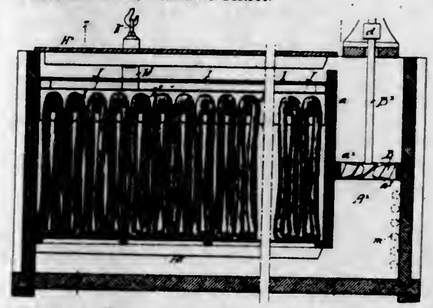
822,843. COMBINED BOILER STAND AND COUPLING. SAMUEL E. HOPPER, Crafton, Pa. Filed Mar. 14, 1905. Serial No. 250,018.



Claim.—1. In combination, a boiler, a burner beneath the boiler, an outflow-pipe secured in the bottom of the boiler, a collar sleeved on said pipe and seated against the said bottom, spider-arms on said sleeve extending outwardly and into engagement with the bottom, whereby the boiler is supported and the heat from the burner given access to the bottom, and a removable connection secured to the pipe and arranged to support the boiler.

2. In combination, a boiler, a burner beneath the boiler, an outflow-pipe secured in the bottom of the boiler, a collar sleeved on said pipe and seated against the said bottom, spider-arms on said sleeve extending outwardly and into engagement with the bottom, whereby the boiler is supported and the heat from the burner given access to the bottom, a nut on said pipe and screwed against said collar, and a removable connection secured to the pipe and arranged to support the boiler.

822,844. DYEING-MACHINE. JOSEPH HUSSONG, Camden, N. J. Filed Mar. 6, 1905. Serial No. 248,566.



Claim.—1. The combination in a dyeing-machine, of a vat, a frame, sticks carried by the frame from which the yarn to be dyed is suspended, mechanism for circulating liquor in the dye-vat, and means for reversing the said mechanism so that the flow of liquor in the vat can be reversed, substantially as described.

2. The combination in a dye-vat, of a vertical partition separating the vat into two compartments, a frame in one compartment having sticks by which the hanks of yarn to be dyed are carried, circulating mechanism in the other compartment by which the liquor in the vat is circulated, and means for reversing the said mechanism so as to reverse the flow of liquor in the dye-vat, substantially as described.

3. The combination in a dye-vat, of a frame, sticks carried by the frame from which the hanks of yarn to be dyed are suspended, a perforated partition above the sticks, and a screen-frame mounted between said perforated frame and the sticks so that when the direction of the flow of liquor is from the bottom of the vat toward the top the screen-partition will prevent the yarn closing the openings in the perforated partition, substantially as described.

4. The combination in a dye-vat, having a perforated false bottom mounted some distance above the bottom of the vat, a frame, sticks carried by the frame from which the hanks of yarn to be dyed are suspended, a perforated partition mounted on the frame above the sticks for insuring the proper circulation of the liquor in the vat, and a screen-frame between the said perforated frame and the sticks, with mechanism for circulating the liquor in the dye-vat, and means for reversing the said mechanism, the parts being so proportioned that when the liquor is circulated in one direction the partition in the lower portion of the vat will support the lower ends of the hanks of yarn and when the direction of flow of liquor is reversed the yarn of the hanks will float against the screen-partition, substantially as described.

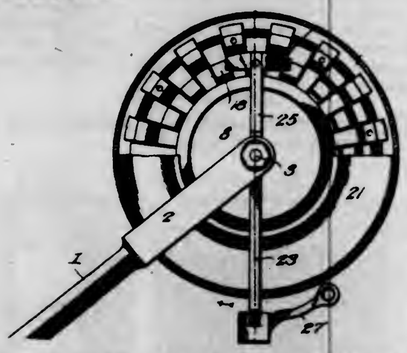
5. The combination in a dyeing-machine, of a vat, a frame, sticks carried by the frame from which the yarn to be dyed is suspended, two screens above the dye-sticks, and a cover mounted above the screens and extending over the sides of the dye-vat so that when the yarn to be dyed is in the liquor the cover will close the vat, substantially as described.

822,845. TROLLEY-WHEEL. GEORGE W. JOBE, Indianapolis, Ind. Filed June 23, 1905. Serial No. 266,601.

Claim.—1. In a device of the class described, a wheel comprising in its organization cooperating wire-engaging members movable to and from engaging position, and means for automatically actuating the members.

2. In a device of the class described, a wheel comprising in its organization engaging members disposed in pairs for engagement with a wire, means for automatically moving the members to engaging position, and means for moving them to non-engaging position.

3. In a device of the class described, a wheel comprising in its organization movable engaging members arranged in pairs for engagement with a wire, means for automatically moving the members to engaging position, and means for automatically moving them to non-engaging position.



4. In a device of the class described, a wheel provided with a plurality of pairs of engaging members adapted for successive engagement with a wire, and means for automatically and successively moving the members to engaging position.

5. In a device of the class described, a wheel having a series of pairs of members adapted for successive engagement with a wire, said members being maintained normally in non-engaging position, and means for automatically moving the members to engaging position.

6. In a device of the class described, a pair of cams, pairs of engaging members adapted to pass between said cams and to be acted upon the latter for movement to engaging position, and springs for moving the members to non-engaging position.

7. In a device of the class described, opposite series of engaging members coöperating in pairs for engagement with a wire, said members being disposed normally in non-engaging position, and actuating members designed to act successively upon the engaging members for moving the latter to engaging position.

8. In a device of the class described, a wheel comprising a body portion and a plurality of movable wire-engaging members carried thereby and designed for coöperation in engaging the wire, and means for automatically moving the members to engaging and non-engaging positions.

9. In a device of the class described, a wheel comprising a body, a plurality of pairs of movable engaging members connected with the body and adapted for engagement with a wire, means for maintaining the members normally in non-engaging position, and means for moving the wires automatically to engaging position.

10. In a device of the class described, a wheel comprising a body, coöperating wire-engaging members pivotally connected therewith, means for maintaining the members normally in non-engaging position, and actuating members between which the members pass for automatic movement to engaging position.

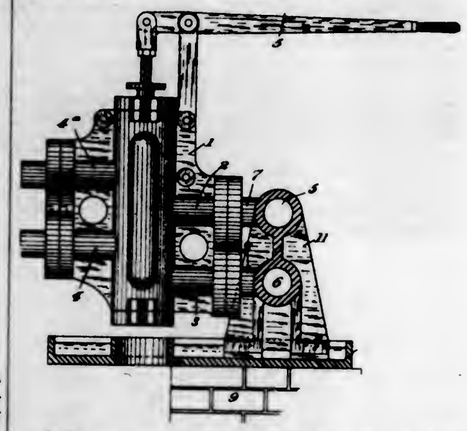
11. In a device of the class described, an axle, a wheel journaled thereon, coöperating wire-engaging members movably connected with the wheel, means for maintaining the members in non-engaging position, and actuating members sustained by the axle and adapted to act upon and move the engaging members to engaging position.

12. In a device of the class described, an axle, a wheel journaled thereon, coöperating wire-engaging members pivotally connected with the wheel, springs for moving the members automatically to non-engaging position, and cam members sustained on the axle to act upon and move the engaging members to engaging position.

822,846. **VALVE.** CARL W. A. KOHLHEBECK, Cleveland, Ohio. Filed Mar. 13, 1905. Serial No. 249,749.

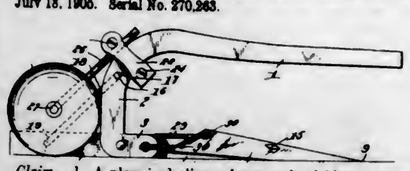
Claim.—1. A valve-pulpit comprising a supply-manifold, an exhaust-manifold, a support for said manifolds, each manifold provided with means adapted to be respectively connected with the supply and exhaust passages of a valve and arranged to support the valve to permit access to the lower end of the valve, substantially as set forth.

2. A valve-pulpit comprising a supply-manifold, an exhaust-manifold, said manifolds in different horizontal planes but in the same vertical plane, said manifolds each provided with passages adapted to respectively connect with the supply and exhaust passages of a valve and arranged to support the valve to permit access to the lower end of the valve, substantially as set forth.



3. The combination with a valve having its supply and exhaust passages located on the same side of the valve, of a valve-pulpit comprising a supply-manifold, an exhaust-manifold, said manifolds each provided with passages adapted to respectively connect with the supply and exhaust passages of the valve and arranged to support the valve to permit access to the lower end of the valve, substantially as set forth.

822,847. **SUBSOIL-PLOW.** EVERT KRAAI, Holly, Colo. Filed July 18, 1905. Serial No. 270,263.



Claim.—1. A plow including a beam, a landside connected to the beam and having a flange on its forward end, a plowshare consisting of two blade parts having longitudinal edges bent downwardly and connected to the forward end of the landside, one of the said blade parts being secured to and resting upon the flange of the said landside, a brace between the landside and the beam, and a disk marker adjustably connected to the beam.

2. A plow including a beam, a landside associated with the beam, a plowshare having a depending lug secured to the landside, fingers secured to the plowshare, a brace between the landside and the beam, and a disk marker adjustably connected to the beam.

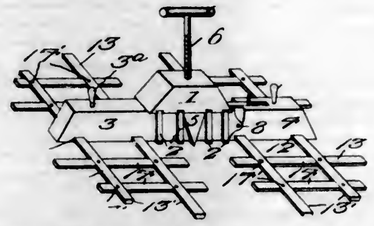
822,848. **HEAT-INSULATOR.** EMIL KUHN, Chicago, Ill. Filed Sept. 16, 1904. Serial No. 224,737.



Claim.—1. An insulating-wall comprising in combination, outer walls of relatively non-conducting material having small isolated air-cells therein, a filling comprising a plurality of layers of carded fibrous material, and intermediate walls of relatively non-conducting material interposed at intervals between said outer walls to support said filling.

2. As a new article of manufacture, an insulating-pad comprising in combination, parallel outer walls of a relatively non-conducting material provided with isolated air-cells, a filling of carded fiber interposed between said outer walls, a plurality of intermediate supporting-walls interposed in said filling, and a binding of relatively non-conducting material around the edges of said pad, said carded fiber and said outer and intermediate walls being cemented together and said binding being also cemented to the edges.

822,849. **FOLLOWER.** BARTHOLOMEW J. LYNCH, Olyphant, Pa. Filed Oct. 5, 1905. Serial No. 281,550.

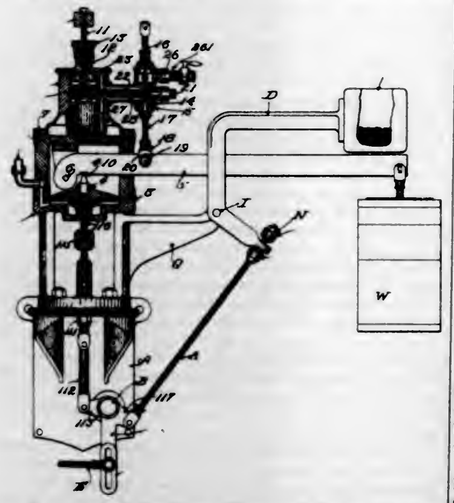


Claim.—1. A follower of the character described, a head-block, members movably carried by the head-block, one of said members having a hinged portion, a pressure-frame secured to said hinged portion, another pressure-frame secured to the other member, and means for moving the pressure-frames laterally.

2. A follower of the character described, a head-block, members movably carried by the head-block, said members having their opposing ends inclined to provide an intervening U-shaped space, a wedge interposed between the opposing ends of the members, a screw carried by the head-block and engaging the wedge, and pressure-frames secured to the members.

3. A follower of the character described, a head-block, members carried by the head-block, one of said members being provided with a hinged portion, means adapted to retain the hinged portion rigid, a pressure-frame secured to said hinged portion, another pressure-frame secured to the other member, and means for moving the members laterally.

822,850. **PRESSURE-VARIATING DEVICE.** WILLIAM B. MASON, Boston, Mass., assignor to The Mason Regulator Company, Saco, Me., a Corporation of Maine. Filed Mar. 30, 1904. Renewed Sept. 27, 1905. Serial No. 280,345.



Claim.—1. In an automatic pressure-variating device for the purposes mentioned, a pressure-weighing arm movable in response to changes in pressure, a weight therefor, a motor device, a valve therefor, operative connections between the pressure-weighing arm and the said valve, an auxiliary weight for the said pressure-weighing arm and connections between the said auxiliary weight and the movable part of the said motor device whereby the auxiliary weight is lifted from the said pressure-weighing arm after one stroke of said arm and is replaced upon the arm after the reverse stroke thereof.

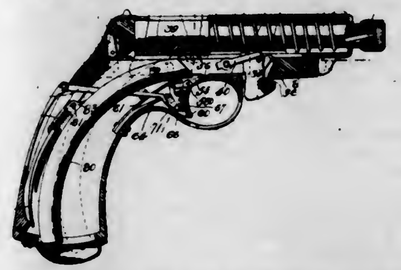
2. In an automatic pressure-variating device for the purposes mentioned, a pressure-weighing arm movable in response to changes in pressure, a weight therefor, a hydraulic-motor device comprising a cylinder with a piston movable therein, a valve for the said motor device, operative connections between the pressure-weighing arm and the said valve, an auxiliary weight for the said pressure-weighing arm and connections between the said auxiliary weight and the piston of the motor device, whereby the said auxiliary weight is lifted from the said pressure-weighing arm after one movement of the said arm and is replaced upon the said arm after the reverse movement thereof.

3. In an automatic pressure-variating device for the purposes mentioned, a pressure-weighing arm movable in response to changes in pressure, a weight therefor, a hydraulic-motor device comprising a cylinder with a piston movable therein, a valve for the said motor device, operative connections between the pressure-weighing arm and the said valve, an auxiliary weight for the said pressure-weighing arm, a pivoted supporting-arm for the said auxiliary weight, and a sliding connection operated by the piston-rod and engaging the pivoted supporting-arm at the end of the stroke of the piston.

4. In an automatic pressure-variating device for the purposes mentioned, a pressure-weighing arm movable upwardly in response to changes in pressure, a weight therefor, a hydraulic-motor device comprising a cylinder with a piston movable therein, a valve for the said motor device, operative connections between the pressure-weighing arm and the said valve, an auxiliary weight for the said pressure-weighing arm and a pivoted supporting-arm for the said auxiliary weight, a connecting-rod attached thereto and having a stop fast thereto, and a sliding connection between the said piston-rod and the auxiliary-weight-supporting arm whereby the pivoted lever is caused to lift said auxiliary weight from the pressure-weighing arm at the end of its upward stroke and thereafter to replace the same upon the said pressure-weighing arm.

5. In an automatic pressure-variating device a pressure-weighing arm movable in response to changes in pressure, a motor device controlled by the movement of said pressure-weighing arm, connections intermediate said motor device and said arm whereby the former is controlled by the movement of the latter, an auxiliary weight for the said pressure-weighing arm, and connections between the said auxiliary weight and the movable part of the said motor device whereby the auxiliary weight is lifted from the said pressure-weighing arm after one stroke of said arm and is replaced upon the arm after the reverse stroke thereof.

822,851. **AUTOMATIC GUN.** ANDREW BURGESS, Owego, N. Y. Filed Nov. 3, 1904. Serial No. 231,279.



Claim.—1. In an automatic gun, the combination of a frame, a barrel-casing removable therefrom and having a rear extension entering a recess in the frame, a catch for retaining said casing, and a barrel, and barrel-moving spring, substantially inclosed and reciprocating in said casing, all combined.

2. In an automatic gun, the frame, a barrel-casing having a limited longitudinal movement thereon, a barrel and its spring, substantially inclosed in said casing, a recoil-piece carried by the front of the casing, and a recoil-abutment on the frame to stop the rear of said casing.

3. The combination in an automatic gun, of a longitudinally-reciprocating barrel moved forward by the friction of the charge and having a reduced caliber or choke-bore at the muzzle, a barrel-casing having a breech-piece in rear of the barrel, and a spring adapted to close the barrel against the breech-piece.

4. The combination, in an automatic gun, of a frame and barrel casing, a longitudinally-reciprocating barrel, means for closing the

barrel rearwardly in the casing, and means for adjusting the muzzle-caliber of the bore of the barrel, so as to cause more or less friction on the bullet.

5. The combination of a barrel guided to longitudinal movement on the frame and sliding forward under the impulse of the charge, a spring to return the barrel rearward, and a compression-sleeve applied to the muzzle of the barrel to reduce the caliber thereof.

6. In an automatic gun, mechanism arranged to open the breech under the impulse of firing, and an inertia-piece arranged to retard the first closing movement of the breech-closing element.

7. In an automatic gun, the combination with a longitudinally-reciprocating breech-opening element, of an inertia-piece engaged by the said element at the close of its opening and beginning of its return movement, and acting as a brake and retarder.

8. In an automatic gun, the frame having a pivoted inertia-piece therein, and provided with a plurality of arms in different planes, a breech having a projection in position to engage with each arm, and a spring to close the breech, whereby the longitudinal movement of the breech brings its projections into successive engagement with the arms of the inertia-piece, thus retarding the breech.

9. In an automatic gun, the combination of a longitudinally-sliding barrel, having a notch therein, of a pawl on the frame adapted to swing into the notch and hold the barrel slightly forward, and means actuated by the cocking of hammer to release said pawl.

10. In an automatic gun, the combination of a longitudinally-sliding barrel, a pawl engaging said barrel to hold it open, and a hammer which engages said pawl during its movement and releases the barrel.

11. In a gun, the combination of a hammer which is cocked by sliding longitudinally forward, said hammer being pressed back by a spring, a firing-pin in rear of the cartridge, and a lever interposed between the hammer and firing-pin and free from both, whereby the hammer-blow drives the firing-pin forward.

12. In an automatic gun, the frame having a groove in its side, a hammer sliding forward in said groove and having a thumb-piece which may be pressed by the thumb of the hand while grasping the stock, a trigger and sear for holding the hammer cocked, and means for converting the backward blow of the hammer into a forward blow against the cartridge.

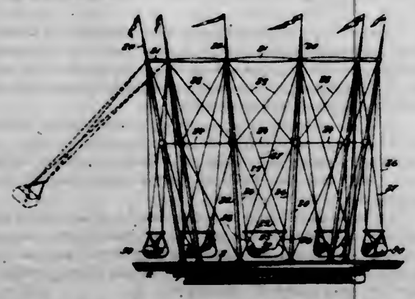
13. In a firearm, the combination of a hammer, a trigger, a sear pivoted on the trigger, and a spring-actuated coupling-piece pivoted to the trigger, and acting to bring the sear and trigger into rigid relation, and a moving part released by the pull of the trigger and acting to uncouple said parts.

14. In a magazine-gun, a magazine composed in part of a rigid tube, and in part of a flexible tube, and means for flexing the flexible portion of the tube to the desired curvature.

15. In a magazine-gun, a magazine-tube movably pivoted in the stock and having a hole therein, a spring pressing said tube forward, and a movable catch in the frame in position to enter the hole in the magazine-tube and hold the tube against the pressure of the said spring.

16. In a magazine-gun, a movable magazine-tube having a hole therein, and a spring-catch in the frame in position to enter said hole and serve as a cartridge-stop when the magazine is in one of its positions.

822,852. **CENTRIFUGAL SWING.** RICHARD H. CASWELL, Vancouver, Canada, assignor to George G. Bushby. Filed Apr. 26, 1905. Serial No. 257,891.



Claim.—1. In a centrifugal swing, a rotatable platform, an upwardly-projecting annular frame near the periphery thereof, swing elements suspended from the upper portion of said frame, an annular rolling support for the platform approximately under the base of the upwardly-projecting annular frame, substantially as shown and described.

2. In a centrifugal swing, a rotatable platform, an upwardly-projecting annular frame near the outer edge thereof, swing elements suspended from the upper portion of said frame, a central support for the platform to maintain it in its axis of rotation and an annular rolling support for the platform approximately under the upwardly-projecting annular frame, substantially as shown and described.

3. In a centrifugal swing, a rotatable base-platform, an upwardly-projecting annular frame toward the outer edge thereof, said frame composed of a series of uprights, suitably braced and stayed together, swing elements suspended between the upper ends of the said uprights, a central ball-bearing to support the central portion of the platform and maintain it in its axis of rotation and a series of rolling supports approximately under the upwardly-projecting annular frame substantially as shown and described.

4. In a centrifugal swing; a rotatable platform supported toward its center on a ball-bearing which will support a portion of its weight and maintain it in its axis of rotation, an annular rolling support toward its outer edge and an upwardly-projecting frame approximately over the annular rolling support, such frame consisting of uprights inclined outward at their upper ends and suitably braced and stayed together, swing elements suspended between the upper ends of the uprights, such swing elements consisting of ropes from each upright to the opposite ends of a bar suspended between them, a car suspended from the ends of said bar.

5. In a centrifugal swing; the combination with a rotatable base-platform having a central ball-bearing designed to sustain the weight of the center portion of the platform and maintain it in its axis of rotation, of means for sustaining the weight of the platform toward its circumference, of an open framework approximately over this outer circumferential support, such framework consisting of a series of masts stepped into the platform the upper ends of which masts are maintained in position by a series of strut members between the upper ends of the masts and cross-tied by wire-rope stays extending from each mast to two masts on the opposite side of the circle, of a series of wire-rope stays extending diagonally from toward the upper end of each mast to bands encircling the adjacent mast on each side and back to the base of each mast, of a series of stays between the masts at the point of attachment of the aforementioned diagonal stays, of swing elements designed to suspend cars between each pair of masts, such swing elements comprising a cross-bar each end of which is connected by a wire rope to each of the masts between which it is hung, and means for freely suspending a car to the ends of the suspended cross-bar.

6. In a centrifugal swing; the combination with a rotatable base-platform, of a central support designed to sustain the weight of the center portion of the platform and maintain it in its axis of rotation, means for sustaining the weight of the outer portion of the platform, an upwardly-extending open framework, such open framework consisting of a series of masts stepped into the platform approximately over the outer circumferential support of such, means for affording mutual support to the upper ends of the masts, such means comprising compression members between the upper ends of each pair of masts, and two wire-rope stays extending from the upper end of each mast to a similar position on masts on the opposite side of the circle, of means for staying the masts against bending at the middle comprising wire-rope stays extending diagonally from the upper end of the mast to the middle of the adjacent mast on each side and thereafter back to the base of the mast, stays between the masts at or about the midconnection of the diagonal stays thereof, and means for suspending a car between each pair of masts in a manner to allow it to fly freely outward as the platform is rotated.

7. In a centrifugal swing, a rotatable platform, an upwardly-projecting annular frame secured to said platform near the periphery thereof to rotate therewith, swing elements suspended from said frame, and a support for said platform arranged to permit the rotation thereof, substantially as shown and described.

8. In a centrifugal swing, a rotatable platform, an upwardly-extending annular frame secured to the platform near the periphery thereof, swing elements suspended from the upper portion of the frame, and a rolling support for the platform, substantially as shown and described.

9. In a centrifugal swing, a rotatable platform, an upwardly-extending annular frame secured to the platform near the periphery thereof, swing elements suspended from the upper portion of the frame, and an annular rolling support for the platform arranged approximately under the base of the upwardly-projecting annular frame substantially as shown and described.

10. In a centrifugal swing, a rotatable platform, an upwardly-extending annular frame secured to the platform near the periphery thereof, swing elements suspended from the upper portion of the frame, and an annular rolling support for the platform arranged approximately under the base of the upwardly-projecting annular frame, and a central antifriction-support for the platform, substantially as shown and described.

822,853. **UNIVERSAL COUPLING.** HERBERT C. CHASE, Oakmont, Pa., assignor to Crescent Forgings Company, Oakmont, Pa., a Corporation of Pennsylvania. Filed Nov. 13, 1905. Serial No. 287,101.



Claim.—1. In a universal coupling, the combination with a pair of shaft-heads, of trunnions thereon, segmental blocks containing bearings for said trunnions, and a casing and nut inclosing said blocks, substantially as described.

2. In a universal coupling, the combination with a pair of shaft-heads, of trunnions thereon, segmental blocks containing bearings for said trunnions, an annular casing inclosing said blocks, there being an inwardly-extending flange on one side of said casing and a nut engaging the other side, for the purpose described.

3. In a universal coupling, the combination with a pair of shaft-heads, of trunnions thereon, segmental blocks apertured for bearings for said trunnions, an annular casing and a nut therefor inclosing said blocks, portions of the blocks adjacent to the ends of the trunnions being cut away to form lubricant-space, substantially as described.

4. In a universal coupling, the combination with a pair of shafts, of trunnions on the ends thereof, the apertured segment-pieces S, and a housing therefor, substantially as and for the purpose described.

5. In a universal coupling, the combination with a pair of shaft-heads, of trunnions thereon, segmental blocks each containing the bearings for one of said trunnions, said blocks having abutting ends and together forming a complete circle, and retaining means for said blocks.

6. In a universal coupling, the combination with a pair of shaft-heads, of trunnions thereon, spacing-blocks for said trunnions, and an integral annular casing retaining said blocks, portions of said blocks being spaced from said casing, for the purpose described.

7. In a universal coupling, the combination with a pair of shaft-heads, of a pair of oppositely-disposed trunnions on each head, a separate block for each trunnion containing bearings therefor, said blocks having abutting ends and retaining means inclosing said blocks, substantially as described.

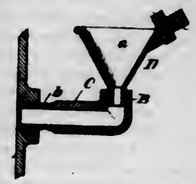
8. In a universal joint the combination with a pair of shaft-heads and oppositely-extending trunnions on said heads, of quadrant-blocks, each block containing the bearing for one of said trunnions, and an integral annular casing for holding said blocks end to end.

9. In a universal joint the combination with an annular casing, of a plurality of interchangeable blocks abutting end to end in said casing, and trunnions each having bearings in a single one of said blocks, for the purpose described.

10. In a universal joint the combination with a pair of shafts having ends and oppositely-extending trunnions on each of said ends, of a plurality of abutting blocks each having the entire bearing for one of said trunnions, and retaining means for said blocks, substantially as described.

822,854. **HOT-WATER HEATER.** PATRICK H. COSGRAVE, Colorado City, Colo. Filed Dec. 12, 1905. Serial No. 282,257.

Claim.—1. The combination with a heater having a threaded filling-opening; of a device comprising a funnel-shaped body, a threaded nipple, of a diameter to occupy the filling-opening, extending from the contracted end of the funnel-shaped body, and a threaded plug extending laterally from the funnel-shaped body and removably arranged in and closing the filling-opening of the heater.

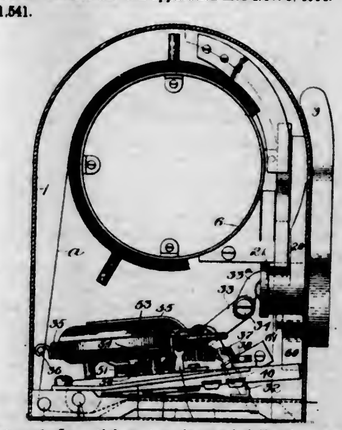


2. The combination with a heater having a threaded filling-opening; of a device comprising a funnel-shaped body, a threaded nipple, of a diameter to occupy the filling-opening, extending from the contracted end of the funnel-shaped body, and a threaded plug extending from the edge of the mouth of the funnel-shaped body and having a base of angular form in cross-section; the said plug being removably arranged in the filling-opening of the heater to normally close said opening.

3. As a new article of manufacture, a device for the purpose described, formed in one piece, and comprising a funnel-shaped body, a threaded nipple extending from the contracted end of said body, and a threaded plug, of the same diameter as the threaded nipple, extending laterally from the funnel-shaped body.

4. As a new article of manufacture, a device for the purpose described, formed in one piece, and comprising a funnel-shaped body having a reduced portion adapted to rest in the threaded filling-opening of a heater, and a threaded plug, of a diameter to engage the thread of the filling-opening, extending laterally from said funnel-shaped body.

822,855. **TICKET STAMPING AND DELIVERING MACHINE.** HENRY H. CUMMINGS, Malden, Mass., assignor to Adams D. Claflin, Newton, Mass. Original application filed Feb. 19, 1904, Serial No. 194,334. Divided and this application filed Nov. 5, 1904. Serial No. 231,541.



Claim.—1. In a ticket stamping and delivering machine, in combination a strip-holder; a platen over which the strip passes from said holder; a stamping device; a pawl engaging the strip for feeding the strip over the platen and means connecting the stamping device and pawl with the operating member through which movement of said member in one direction operates the stamping device and movement of said member in another direction operates the pawl.

2. In a ticket stamping and delivering machine, in combination, a strip-holder: a platen over which the strip passes from said holder; a stamping device; a strip-feeding pawl; an operating member; a toggle connecting the stamping device and operating member; and a lever connecting the operating member and pawl.

3. In a ticket stamping and delivering machine; in combination a strip-holder; a platen over which the strip passes from said holder; a stamping device; a strip-feeding pawl; an operating member; a toggle connecting the stamping device and operating member; and a lever connecting the operating member and pawl, said toggle and lever being arranged so that movement of said member in one direction from its normal position acts through the toggle to operate

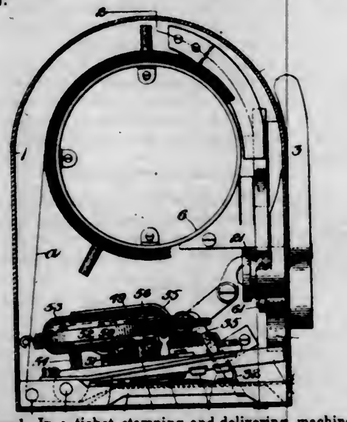
the stamping device and movement of said member in another direction from its normal position acts through the lever to operate the strip-feeding pawl.

4. A strip-holder, a platen over which the strip passes from said holder; means to stamp the strip; a feed-pawl for engaging one side of the strip; a finger at the opposite side of the strip for engaging perforations in the latter; and means to operate the pawl and finger.

5. A strip-holder; a platen over which the strip passes from said holder; means to stamp the strip; a strip-feeding pawl carrying a resistant finger opposite its foot for engaging perforations in the strip, means to operate the pawl, and a resilient finger to engage the strip and prevent return movement of the strip with the pawl.

6. A strip-holder; a platen over which the strip passes from said holder; an operating member, a type-carrier; a toggle connecting the operating member and type-carrier with provision for removal of the latter at will, and strip-feeding means controlled by said operating member.

822,856. TICKET STAMPING AND DELIVERING MACHINE. HENRY H. CUMMINGS, Newton, Mass., assignor to Adams D. Claflin, Newton, Mass. Original application filed Feb. 10, 1904, Serial No. 194,234. Divided and this application filed Apr. 15, 1905. Serial No. 255,607.



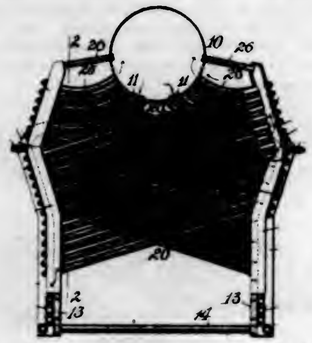
Claim.—1. In a ticket stamping and delivering machine, the combination of a stamping device provided with rotatable type; a watch-holder on the stamping device and means thereon to detachably secure a watch, and means, connected with the rotatable type, to engage the hand of the watch, whereby the driving-train between the watch mechanism and type is established.

2. In a ticket stamping and delivering machine, the combination of a stamping device provided with rotatable type, a watch-holder on the stamping device, and a spring-slip to detachably secure the watch upon the stamping device, and a crank-arm, yieldingly connected with the rotatable type, adapted to engage the hand of the watch, whereby the driving-train between the watch mechanism and type is established.

3. In a ticket stamping and delivering machine, the combination of the manually-operable lever, a platen and type-carriers pivotally connected, and operated by the said lever, a strip-holder, strip-feeder, connections between the strip-feeder and manually-operable lever, the strip-feeder and type-stamping connections being alternately operable by said lever, type-wheels, rotatably mounted on the type-carrier, a watch-holder on said carrier and means detachably to engage a watch-hand with the type-wheels.

822,857. WATER-TUBE BOILER. HARRY DEL MAR, New York, N. Y., assignor to Babcock and Engineering Company, Jersey City, N. J., a Corporation of New Jersey. Filed Oct. 17, 1905. Serial No. 283,094.

Claim.—1 A boiler of the kind described comprising alternating headers forming the boiler sides, each header having a relatively wide section and a relatively narrow section with said wide and narrow sections alternately arranged, cross-tubes arranged in rows and extending from the narrow part of one header to the narrow part of the opposite header the same row also connecting with the wider part of the header opposite and also between the wide parts of the opposite headers, whereby there are three rows of tubes connecting opposite headers, a steam-drum connected with the headers, vertical mud-drums forming the boiler corners and connected to the headers, and downflow-pipes extending from the steam-drum to the mud-drums.



2. A steam-boiler comprising a series of headers forming its side walls, the headers on each side being alternately arranged and constructed so that one is wider at the bottom and narrower at the top, the next narrower at the bottom and wider at the top and so on, inclined cross-tubes extending from header to header, there being at least three rows of tubes entering the wider parts and a single row entering the narrow parts and suitable steam and mud drums connected with the upper and lower parts of the headers.

3. A boiler comprising a series of headers forming its side walls, the headers on each side being alternately arranged and interlocked and being alternately wide at the bottom and narrow at the top, a double row of cross-tubes connecting the wider part of one header with the wider part of the header opposite, a second row of tubes between the said double row of cross-tubes connecting the narrow part of one header with the narrow part of the header opposite and also extending into the wider part of the header opposite, couplings connecting the several headers on a side, and suitable steam and mud drums having connections with the upper and lower parts of the headers.

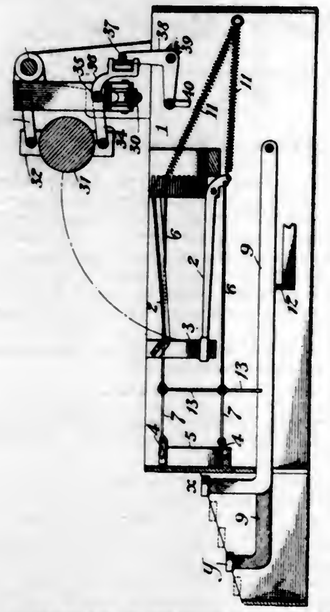
4. A steam-boiler comprising a series of headers forming the boiler sides, the headers being constructed so as to be wide at one end and narrow at the other and being alternately arranged on each side, three rows of tubes connecting opposite headers, the middle row connecting the narrow part of one header with the wide part of the opposite header and extending also into the wider part of the header and the outer rows connecting the wider parts of the opposite headers, a steam-drum, and a series of tubes arranged above the said middle row of cross-tubes and extending from the upper portions of the headers to the steam-drum.

5. A steam-boiler comprising a series of headers forming its sides, the headers on each side being each constructed with one wide portion and one narrow portion and the said headers on the side being alternated and placed side by side, vertical mud-drums at the ends of each side of the boiler, said mud-drums connecting with the lower parts of the headers, rows of cross-tubes extending from the upper part of one header to the lower part of the header opposite, a steam-drum, rows of tubes connecting the steam-drum with the headers of each side, the said steam-drum pipes being located above certain rows of the cross-tubes, and downtake-pipes extending from the steam-drum to the mud-drums.

6. In a steam-boiler, the combination of the alternating headers forming the boiler sides, the headers of each side being interlocked and having alternately wide and narrow top and bottom portions, groups of at least three inclined rows of cross-tubes connecting opposite headers, the middle row of each group connecting the narrow part of one header with the narrow and wide parts of the header opposite, a steam-drum, and rows of tubes arranged above the aforesaid middle rows and connecting the upper part of the headers with the steam-drum.

822,858. WRITING-MACHINE. EDWARD B. HESS, New York, N. Y., assignor to Royal Typewriter Company, Hoboken, N. J., a Corporation of New Jersey. Original application filed Aug. 27, 1901, Serial No. 73,469. Divided and this application filed Aug. 1, 1905. Serial No. 273,170.

Claim.—1. In a writing-machine, the combination of a platen, a pivoted type-bar, a key-lever, a type-bar-actuating connection capable of flexure intermediate its ends, a type-bar connected to the rear end thereof and a fixed point to which the front end is connected, and means applied to the point of flexure from below it to flex the connection and pull the type-bar to the printing-point with an increasing velocity.



2. In a writing-machine, the combination of a platen, a pivoted type-bar, a key-lever, a type-bar-actuating connection capable of flexure intermediate its ends, a type-bar connected to the rear end thereof and a fixed point to which the front end is connected, means applied to the point of flexure from below it to flex the connection and pull the type-bar to the printing-point with an increasing velocity, and means for changing the relation of the type-bar and platen.

3. In a writing-machine, the combination of a platen, a pivoted type-bar, a key-lever, a type-bar-actuating connection capable of flexure intermediate its ends, a type-bar connected to the rear end thereof and a fixed point to which the front end is connected, a key-lever arranged below the flexing connection and operatively connected with the point of flexure thereof.

4. In a writing-machine, the combination of a platen, a pivoted type-bar, a key-lever, a type-bar-actuating connection capable of flexure intermediate its ends, a type-bar connected to the rear end thereof and a fixed point to which the front end is connected, a horizontally-disposed key-lever located under the flexing connection and a link connecting the key-lever with the point of flexure thereof.

5. In a writing-machine the combination of a platen, a pivoted type-bar, a key-lever, a flexing connection composed of links united at their adjacent ends by a hinge-joint and having its rear end connected with the type-bar and its front end with a fixed piece, and a connection between the key-lever and the hinge-joint uniting the two parts of the flexing connection.

6. In a writing-machine, the combination of a platen, a pivoted type-bar, a key-lever, a flexing connection composed of links united at their adjacent ends by a hinge-joint and having its rear end connected with the type-bar and its front end with a fixed piece, a connection between the key-lever and the hinge-joint uniting the two parts of the flexing connection, and means for changing the relation of the type-bar and platen.

7. In a writing-machine, the combination of a pivoted type-bar, a flexing type-bar-actuating connection connected at its rear end to the type-bar and at its front end to a fixed piece, and composed of links whose adjacent ends are united by a hinge connection, a third link applied at such hinge connection and arranged transversely to the other two links, a pivoted key-lever and a hinge connection between the key-lever and said third link whereby on the depression of the key-lever the type-bar-actuating connection is flexed and the type-bar thrown to the printing-point with an increasing velocity.

8. In a writing-machine, a flexing actuating connection comprising two links united at their adjacent ends by a hinge-joint, the rear end of the connection being operatively connected to the type-bar to be actuated, and the front end thereof connected to a fixed point, and means applied to the hinge-joint for flexing the connection at such joint, thereby subjecting both links to tensile strain and throwing the type-bar to the printing-point with an increasing velocity.

9. In a writing-machine, the combination of a platen; a type-bar support; a type-bar pivoted therein, and normally lying toward the front of the machine; a flexing connection comprising two links united at their adjacent ends by a hinge-joint, the rear end of the connection being operatively connected to the type-bar and the front end to a fixed point; a finger-piece, and a device actuated by the finger-piece and applied to said hinge-joint to flex the joint, subject both links to tensile strain, and throw the type-bar to the printing-point with an increasing velocity.

10. In a writing-machine, the combination of a platen; a type-bar support; a type-bar pivoted therein, and normally lying toward the front of the machine; a flexing connection comprising two links united at their adjacent ends by a hinge-joint, the rear end of the connection being operatively connected to the type-bar and the front end to a fixed point; a key-lever and an operative connection between it and said hinge-joint, whereby on depression of the key-lever the hinge-joint is drawn down, both links subjected to tensile strain, and the type-bar pulled to the printing-point.

11. In a writing-machine, the combination of a platen, a type-bar segment, type-bars pivoted therein and normally lying toward the front of the machine, flexing connections, one for each type-bar, disposed under the type-bars, connected at their rear ends to the type-bars and at their front ends to fixed points and capable of flexing intermediate their ends, key-levers disposed under the flexing connections and links connecting the key-levers and points of flexure of the respective flexing connections, whereby on depression of a key-lever the corresponding flexing connection is flexed and subjected to tensile strain on both sides the point of flexure and the type-bar pulled to the printing-point.

12. In a writing-machine, a flexing actuating connection consisting of two links united at their adjacent ends by a hinge-joint, the rear end of one link to be operatively connected to the part to be actuated and the front end of the other link connected to the fixed part of the frame and means for flexing the connection at the hinge-joint and subjecting both links to tensile strain only.

13. In a writing-machine, a flexing actuating connection consisting of two links united at their adjacent ends by a hinge-joint, the rear end of one link to be operatively connected to the part to be actuated and the front end of the other link connected to the fixed part of the frame and a key-lever for flexing the connection at the hinge-joint and subjecting both links to tensile strain only.

14. In a writing-machine, a flexing actuating connection having its front end operatively connected to a fixed part on the frame and its rear end connected to the part to be actuated, and means for flexing such connection to change its angular disposition between its ends and exert tensile strain only thereon from the point of flexure to its opposite ends respectively.

15. In a writing-machine, a flexing actuating connection having its front end operatively connected to a fixed part on the frame and its rear end connected to the part to be actuated, and a key-lever for flexing such connection to change its angular disposition between its ends and exert tensile strain only thereon from the point of flexure to its opposite ends respectively.

16. In a writing-machine, the combination with a series of pivoted type-bars of a corresponding series of accelerating toggle type-bar-actuating devices, and means applied at the points of flexure of said devices to operate them and pull the type-bars to the printing-point with increasing velocity.

17. In a writing-machine, the combination with a series of pivoted type-bars of a corresponding series of accelerating toggle type-bar-actuating devices, pivoted key-levers and connection between the key-levers and the points of flexure of said devices, whereby, on depression of a key-lever the corresponding type-bar is pulled to the printing-point with increasing velocity.

822,859. COMBINED ALCOHOL LAMP AND BOILER. GEORGE W. HUBER, Philadelphia, Pa. Filed Mar. 7, 1905. Renewed May 14, 1906. Serial No. 316,694.

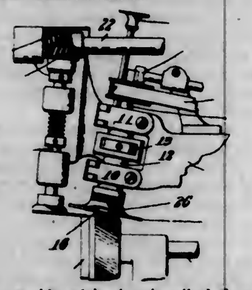
Claim.—1. In a device of the class described, the combination

with an open-topped vessel, a handle therefor and a combustion-chamber attached thereto, of asbestos wicking within the said combustion-chamber, a protective covering for the wicking, a concave annular flange around the said chamber and a plate within the said chamber adapted to break the continuity of the passage therein, all substantially as shown and described.



2. In a culinary utensil or the like, the combination with a conical vessel adapted to contain fluids, of an annular flanged chamber surrounding the base thereof and forming a support thereto, an absorbent non-destructible material interposed between the walls of the said vessel and the interior of the flanged chamber, a metallic gauze covering the said material and a separator cutting off the continuity of the annular recess between the walls of the said vessel and the flanged chamber, all substantially as shown and described.

822,860. CUTTER-GUARD FOR SHOE MACHINERY. LIONEL B. LASSEN, Worcester, Mass., assignor to himself and Heywood Boot & Shoe Company, Worcester, Mass., a Corporation of Massachusetts. Filed Mar. 24, 1905. Serial No. 251,735.



Claim.—1. In a machine of the class described, the combination of a rotary cutting-disk, a guard therefor having a circular flange covering the edge of said disk, said flange having two notches exposing the edge of the disk, and a removable cover-piece located above and normally covering one of said notches.

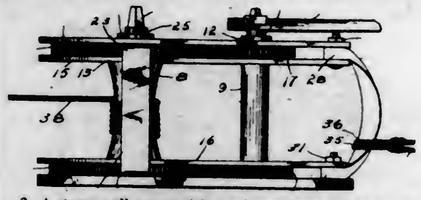
2. In a machine of the class described, the combination of a rotary cutting-disk, a shaft on which said disk is mounted, a bell-shaped guard for said cutter, the guard being provided with two notches for exposing the edge of the cutter, a retaining-collar fastened to a neck projecting from said guard, a collar mounted on the neck of said guard and rotatable thereon, and a cover-piece for one of the notches of said guard mounted on the last-named collar and rotatable therewith.

3. In a machine of the class described, the combination of a cutting-disk, a two-part bell-shaped guard inclosing the cutting-disk, one part of said guard having a notch in its periphery to permit work to be presented to the cutting-disk, and the other part of the guard being movable, whereby the guard can be opened to permit the disk to be sharpened.

4. In a machine of the class described, the combination of the frame, a bushing adjustably clamped in the frame, a cutter-shaft journaled in the bushing, a cutting-disk on the cutter-shaft, guiding devices for presenting work to the cutting-disk, comprising a feed-disk and wheel, and a two-part bell-shaped guard inclosing the cutting-disk, one part of said bell-shaped guard being fastened to the bushing, and having a notch permitting work to be presented to the cutting-disk, and the other part of said guard being rotatably mounted to permit the guard being opened so that the cutting-disk may be sharpened.

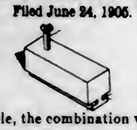
822,861. STUMP-PULLER. WILLIAM A. HUMMATT, Bushnell, Minn. Filed Aug. 9, 1905. Serial No. 273,473.

Claim.—1. A stump-puller comprising pairs of upper and lower plates, a drum journaled in said plates, a shaft journaled in said plates in spaced relation to the drum, stays connecting each pair of plates, a beam connected to one end of said shaft whereby the latter may be rotated, and means arranged between the shaft and the drum for rotating the latter upon rotation of the former.



2. A stump-puller comprising pairs of upper and lower plates, a drum journaled for rotation through said plates, upper and lower gear-wheels fixedly mounted upon said drum between the corresponding upper and lower plates, a vertical shaft journaled through said upper and lower pairs of plates, upper and lower pinions mounted upon said shaft between the corresponding pairs of plates for mesh with the aforesaid gear-wheels, stays arranged between the upper and lower pairs of plates, a beam connected to one end of the said shaft whereby the latter may be rotated to cause a rotation of the drum simultaneously therewith through the instrumentality of the aforesaid pinions and gear-wheels.

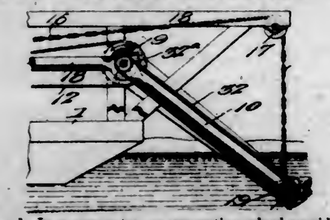
822,862. PUZZLE. WILLIAM R. MCGRAW and AUGUSTUS M. GOODALE, Denver, Colo. Filed June 24, 1905. Serial No. 266,725.



Claim.—1. In a puzzle, the combination with blocks representing a locomotive and a number of cars, of a base having a main track and two branch tracks diverging therefrom in reverse directions on the same side of the main track and uniting in a spur forming a Y, the main track extending beyond the point of intersection of the branches a distance just equal to the length of the said spur, the distance in each case being sufficient to hold the locomotive and one car only.

2. In a device of the class described, the combination with blocks representing a locomotive and a number of cars, of a base having a main track and two branch tracks diverging therefrom in reverse directions on the same side of the track, the base adjacent the branch tracks being provided with a number of differently-colored areas equal to the number of the blocks representing the cars, the cars being colored to correspond with the coloring of the said areas, the branch tracks uniting in a spur forming a Y, the main track extending beyond the intersection of the branch tracks in both directions a distance equal to the length of the spur of the Y, the length of the spur and the said extension being only sufficient to hold the locomotive and one car.

822,863. SUCTION-DREDGE. CHARLES N. NEWCOMB, West Palmbeach, Fla. Filed Nov. 23, 1905. Serial No. 289,497.



Claim.—1. In an excavator, an excavating-wheel provided with a suction-box, and a spirally-arranged series of rotary buckets adapted to communicate at prescribed points in their period of revolution therewith.

2. In an excavator, an excavating-wheel provided with a suction-box having ports therein, and a series of spirally-arranged buckets revoluble thereon, said buckets being adapted to register with said ports at prescribed points in their path of revolution.

3. In an excavator, an excavating-wheel comprising a hollow axle forming a suction-box and provided with ports, a hollow shaft revoluble on said axle and provided with ports to register with the aforementioned ports, the said ports in the shaft being disposed spirally around the shaft, and buckets carried by the hollow shafts and communicating with said ports.

4. In an excavator, an excavating-wheel comprising a hollow axle forming a suction-box and provided with ports, a hollow shaft revoluble on said axle and provided with coöperating ports, and buckets carried by said shafts and communicating with the ports therein.

5. In an excavator, an excavating-wheel comprising a hollow axle forming a suction-box and provided with ports, said ports being arranged in a series at different points in the circumference thereof, a hollow shaft revoluble on said axle and provided with correspondingly-arranged ports, and buckets carried by the axle and communicating with the ports therein.

6. In an excavating apparatus, an excavating-wheel comprising a hollow axle provided with ports, a hollow shaft revoluble thereon and provided with coöperating ports, and buckets removably secured to said hollow shaft and communicating with the ports therein.

7. In an excavating apparatus, an excavating-wheel comprising a hollow axle provided with ports, a hollow shaft revoluble thereon, said shaft comprising a series of connected sleeves and provided with coöperating ports, and buckets carried by said sleeves communicating with the ports therein.

8. In an excavator, an excavating-wheel comprising a hollow axle having ports, a hollow shaft revoluble thereon and comprising a series of flanged sleeves provided with coöperating ports, fastening means engaging said flanges and holding the sleeves assembled, and buckets carried by the sleeves and communicating with the ports therein.

9. In an excavator, an excavating-wheel comprising a hollow axle provided with ports, a hollow shaft revoluble thereon and comprising a series of sections having coupling-flanges, said flanges being recessed to form raceways, fastenings coupling said flanges, anti-friction-bearings arranged in said raceways, and buckets carried by the sleeves communicating with the ports therein.

10. In an excavator, an excavating-wheel comprising a hollow axle provided with a series of ports spirally arranged around the circumference thereof, a hollow shaft revoluble on said axle and provided with correspondingly-arranged ports, and buckets removably mounted upon the shaft and communicating with the ports therein, the unported portions of the shaft forming valves to contral the ports in the axle.

11. In an excavating apparatus, an excavating-wheel comprising a hollow axle provided with ports, a hollow shaft revoluble thereon and provided with coöperating ports, and buckets carried by the shaft and communicating with the ports therein, said buckets being secured at their rear edges to the shaft and provided with curved arms fastened thereto.

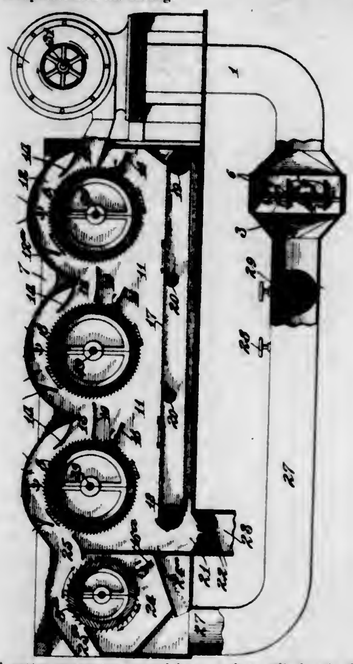
822,864. COTTON-SEPARATOR. WARREN A. PATTERSON, St. Louis, Mo., assignor to American Cotton Separator Company, St. Louis, Mo., a Corporation of Oklahoma. Filed May 22, 1905. Serial No. 261,726.

Claim.—1. A cotton-separator comprising a casing, toothed cylinders in said casing and spaced apart, partitions between the cylinders and providing upper and lower chambers, means for introducing an air-blast into the upper chamber of the casing, a conveyer beneath the cylinders, and separating devices above the cylinders and in the upper chamber of the casing; substantially as described.

2. A cotton-separator comprising a casing, cylinders in said casing, teeth on said cylinders, the teeth on all of the cylinders being inclined in the same direction, combs above the cylinders, and agitators above the cylinders and in vertical alinement with their axes; substantially as described.

3. A cotton-separator comprising a casing having an air-chamber therein, a chamber beneath the air-chamber and having a conveyer, cylinders working in the said chambers and receiving cotton from one of them and delivering it into the other, and means for receiving the cotton from one end of one of the chambers and introducing it into the other end of said chamber; substantially as described.

4. In a cotton-separator, the combination with a casing having a plurality of cylinders therein for separating cotton from leaf trash, of a conveyer within the casing, a hopper at one end of the casing, a cylinder at one end of the casing and separate from the other cylinders, a receptacle in which said last-named cylinder operates, a valved bottom for the receptacle, and a pipe in communication with the valved receptacle and the casing.



5. A cotton-separator comprising a casing, cylinders in the casing, a cover for the casing parallel with portions of the peripheries of the cylinders, teeth carried by the cylinders, horizontal partitions between the cylinders, combs adjacent said cylinders, a fan in communication with the casing and directing an air-blast between the peripheries of the cylinders and the cover of the casing, and a conveyer beneath the cylinders; substantially as described.

6. In a cotton-separator, the combination with a casing having a plurality of cylinders therein for separating cotton from leaf trash, of a conveyer within the casing and immediately below all of the cylinders, means for removing cotton from the cylinders and permitting it to gravitate onto the conveyer, and a hopper in communication with the casing and at the delivery end of the conveyer; substantially as described.

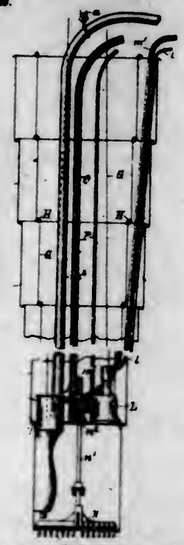
7. In a cotton-separator, the combination with a casing having a plurality of parallel cylinders therein for separating cotton from leaf trash, a cylinder at one end of the casing and separate from the remaining cylinders, a receptacle in which the cylinder operates, a valved bottom for the receptacle, and a pipe in communication with the valved receptacle for removing cotton therefrom; substantially as described.

8. In a cotton-separator, the combination with a casing having an entrance-opening, of a plurality of cylinders in said casing for separating cotton from leaf trash, a cylinder separate from the remaining cylinders, a receptacle in which said cylinder operates, said receptacle being in communication with the portion of the casing containing the first-named cylinders, a valved bottom for the receptacle, and a tubular connection between the valved receptacle and the entrance-opening to the casing; substantially as described.

9. In a cotton-separator, the combination with a casing having an entrance-opening and a plurality of cylinders in said casing for separating cotton from leaf trash, a receptacle at one end of the casing for receiving cotton which has not been thoroughly acted upon by the cylinders, and a pipe in communication with said receptacle and the entrance-opening to the casing; substantially as described.

10. A cotton-separator comprising a casing, cotton-lint-accumulating cylinders in said casing and spaced apart, partitions between the cylinders and providing upper and lower chambers, means for introducing an air-blast into the upper chamber of the casing, a conveyer beneath the cylinders, and means above the cylinders for contact with the pods to loosen the lint therein as the pods are passed through the casing; substantially as described.

822,865. **EXCAVATOR** THOMAS P. PAYNE, New York, N. Y., assignor to Marvin H. Payne, New York, N. Y. Filed Mar. 26, 1903. Serial No. 149,949.



Claim.—1. In an excavating apparatus, the combination of an excavating-chamber to receive the spoil, an agitator in the chamber, and a pump so arranged with reference to the agitator that the spoil will flow into it without suction.

2. In an excavating apparatus, the combination of an excavating-chamber, an agitator therein, and a pump near the agitator, substantially as described.

3. In an excavating apparatus, the combination of an excavating-chamber, a brush therein, and a centrifugal pump nearly upon a level with the brush, substantially as described.

4. In an excavating apparatus, the combination of an excavating-chamber, a brush in the bottom thereof but not closing the bottom, and a pump near the brush having its inlet just above the brush, substantially as described.

5. In an excavating apparatus, the combination of an excavating-chamber, an agitator therein, a pump near the agitator, and means supported by the chamber to drive the agitator and pump, substantially as described.

6. In an excavating apparatus, the combination of an excavating-chamber, an agitator therein, a pump near the agitator, and an engine supported by the chamber to supply motive power to the agitator, substantially as described.

7. In an apparatus for handling granular material, a pump therefor mounted upon a frame, and a motor upon the frame forming a self-contained excavating device, substantially as described.

8. An apparatus for handling granular material comprising an excavating-pump and an actuating-motor within a pit supported by means outside of the pit, substantially as described.

9. An apparatus for handling granular material, comprising an excavating-pump and an actuating-motor within a pit supported by means of a rope or chain, substantially as described.

10. An apparatus for handling granular material, comprising an excavating-pump within a pit supported by means outside of the pit, and means for moving the pump about within the pit, substantially as described.

11. An apparatus for handling granular material, comprising an excavating-pump within a pit supported by means of a rope or chain, and means for moving the pump about within the pit, substantially as described.

12. An apparatus for handling granular material, a pump therefor mounted upon a frame, and a motor upon the frame, forming a self-contained excavating device, and means for supporting the frame within a pit, said means being outside of the pit, substantially as described.

13. An apparatus for handling granular material, comprising an excavating-pump within a pit supported from the outside of the pit, means for moving the pump about within the pit, and a flexible pipe connecting the pump to the point of discharge.

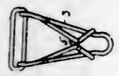
14. An apparatus for handling granular material, comprising an excavating-pump and an actuating-motor within a pit supported from the outside of the pit, means for moving the pump about within the pit, and a flexible pipe connecting the pump to the point of discharge.

15. An apparatus for handling granular material, comprising an excavating-pump and a supporting-frame therefor within a pit supported from the outside of the pit, means for moving the pump about within the pit, and a flexible pipe connecting the pump to the point of discharge.

16. An apparatus for handling granular material, comprising an excavating-pump, an actuating-motor and a supporting-frame for the pump and motor within a pit supported from the outside of the pit, means for moving the pump about within the pit, and a flexible pipe connecting the pump to the point of discharge.

17. In an excavating apparatus, the combination of an agitator, a pump, a motor, means upon which the agitator pump and motor are mounted to form a self-contained structure, and means to suspend said structure whereby it may be raised and lowered and moved about from one position to another.

822,866. **GARMENT-SUPPORTER.** GEORGE H. PERRINE, New York, N. Y. Filed Sept. 29, 1905. Serial No. 280,636.



Claim.—1. A garment-supporter comprising a siugle piece of wire bent to form an eye, and a loop of wire below said eye, and having its ends bent back upon the loop and converging to form a neck and its extremities extending over and bent around the opposite sides of the said loop forming elongated eyes above the lower end of the loop, whereby the said extremities will be permitted to move upwardly and outwardly a limited distance.

2. A garment-supporter comprising a single piece of wire bent to form a loop and having the ends bent back upon the loop and converging to form a neck above the lower end of the loop and its extremities extending over the opposite sides of the loop and then bent back to form an elongated eye at each extremity above the lower end of the loop, said elongated eyes permitting the extremities to yield upwardly and outwardly.

3. A garment-supporter comprising an eye, and a single piece of wire bent over the lower bar of the eye and forming a loop below the eye and the extremities of the wire bent down and converging to form a contracted yielding neck and then bent outwardly and having the extremities formed into elongated eyes surrounding the opposite sides of the loop above the lower end of the latter, said eyes permitting the extremities to yield upwardly and outwardly.

4. A garment-supporter comprising a single piece of wire bent to form an eye, and a loop of wire below said eye and a yielding neck above the lower end of the said loop, the part forming the yielding neck being formed with an elongated eye at its end which takes around the side of the loop above the lower end thereof and permits the yielding neck to move upwardly and outwardly a limited distance.

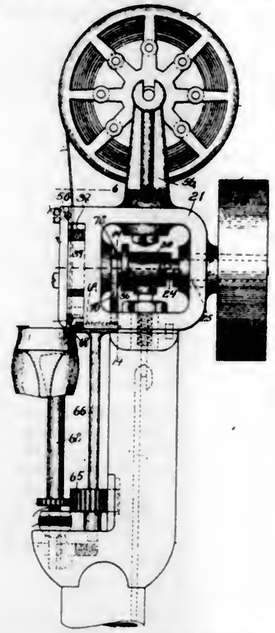
822,867. **NAILING-MACHINE.** ALBERT F. PRESTON, East Boston, Mass. Filed Oct. 13, 1900. Serial No. 33,043.

Claim.—1. A machine of the character described comprising a combined driving and severing mechanism for driving the end of a wire into the work and severing the same, said mechanism consisting of jaws held together by yielding pressure and being arranged so as to bite into the wire by the resistance to the movement of the wire, and provisions whereby the work may be introduced into the path of the said wire end.

2. A machine of the character described comprising a combined wire feeding, driving and severing mechanism for feeding, driving and severing a nail from a wire, said mechanism consisting of a driver having two coacting members movable relatively to said driver, and which are adapted to engage the wire and to be so moved by reason of resistance of the wire, and which when so moved bite into the wire, and a work-support in operative relation to said mechanism.

3. A machine of the character described comprising a movable carrier and spring-pressed jaws thereon for automatically gripping, engaging and driving a smooth wire into the work, and severing the driven end, means in consequence of which said jaws are operated, and a work-support in operative relation to said jaws.

4. A machine of the character described comprising a movable carrier and a pair of coacting members thereon for driving the end of a wire into the work, one of said members being movable toward and from the other member and having a cutting edge adapted to engage the wire and press it against said other member and to sever it, and being so operated to some extent by the resistance to the penetration of the end of the wire.



5. A machine of the character described comprising a movable carrier, means for actuating said carrier, complemental wire driving and severing jaws movably mounted on said carrier and adapted to engage and drive a wire into the work and to be moved to sever the driven end without the direct actuation of said jaws by said actuating means but in consequence of the actuation of the carrier, and a work-support in operative relation to said jaws.

6. A machine of the character described comprising a movable carrier, and yielding wire driving and severing jaws thereon, adapted to drive a wire into the work and to sever the driven end, said jaws being operated to some extent by the resistance to the movement of the wire.

7. A machine of the character described comprising a movable carrier, an actuator for said carrier, complemental cutting-jaws on said carrier through which the wire may pass, said jaws being adapted to force the wire into the work, means independent of said actuator and coacting with the same for causing said jaws to sever the wire, and a work-support in operative relation to said jaws.

8. A machine of the character described comprising a movable carrier, complemental cutting-jaws supported on said carrier and movable relatively thereto and adapted to engage and drive a wire into the work, and a work-support having a stop adapted to cause said cutting-jaws to move relatively to said carrier to cause them to sever the wire.

9. A machine having a throat for the passage of a wire, a device movable relatively to the wall of said throat and adapted to cooperate therewith to hold the wire against retrograde movement, a reciprocatory carrier movable toward and from the work, means for actuating said carrier, and coacting members on said carrier having cutting edges movable toward and from each other and which during the movement of the carrier toward the work are caused to engage and drive a wire into the work and which are so moved by contact with the work to sever the driven end and to point the wire from which the end was severed.

10. A machine having a throat for the passage of a wire, a device to hold the wire against retrograde movement, grippers movable toward the work to drive the end of a wire into the work and away from the work to take a fresh grip on the wire, said grippers having cutting edges to sever the driven wire and operating by reason of resistance to the movement of said wire, and a work-support in operative relation to said grippers.

11. A machine of the character described, comprising a support for the work, a movable member movable toward and from the support, means for actuating said member, and jaws movably supported on said member and which are adapted to grip a wire so that said member causes them to drive the end of the wire into the work, and which are adapted to engage the work and be caused by engagement with the work to cease driving the wire and to move relatively to said movable member to sever the driven end.

12. A machine of the character described comprising a support for the work, a member movable toward and from the support, and means carried by said member and being movable relatively thereto, to engage and grip wire and drive it into the work, said gripping means also operating to engage said work and to be moved thereby upon the carrying member to sever the wire flush with the work.

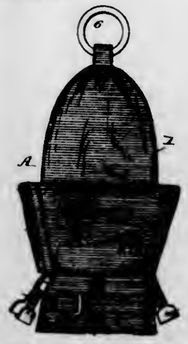
13. A machine of the character specified comprising a support for the work, a carrier movable toward and from the work, and two jaws supported on said carrier and having cutting edges which extend toward each other, said jaws being operated to sever the wire in part by the resistance of the work to the movement of said jaws, and a stop for completing the severing operation of the jaws.

14. A machine of the character specified comprising a support for the work, a carrier movable toward and from the work, and two jaws curved in the direction of their length and having cutting edges on their ends, said carrier having curved slots to receive said jaws.

15. In a machine of the character described, means for driving and severing the wire, said means comprising jaws cooperating with the wire to effect a driving grip thereon and operable by contact with the work to bite through the wire, means for imparting a driving motion to the jaws, and a work-rest for holding the work in position to arrest the said jaws.

16. A machine of the character described comprising a combined driving and severing mechanism having two spring-pressed jaws adapted to drive the end of a wire into the work and sever the wire between them, and devices in consequence of which said jaws are operated.

822,868. **UNDERTAKER'S MITTEN.** FRANK J. PRIBIL, Jr., Appleton City, and JOHN N. UTTERSON, Montrose, Mo. Filed Feb. 28, 1906. Serial No. 303,568.



Claim.—1. An undertaker's mitten comprising a body portion having a finger-ring at its closed outer end, a wrist portion having a securing-strap, a cuff secured to the body and adapted to fold over the wrist portion, and sleeve or cuff clamps attached to the mitten underneath the cuff, substantially as described.

2. The undertaker's mitten comprising a body having an extended wrist portion provided with means for securing it around the wrist of a corpse, means for temporarily attaching the mitten to the sleeves or cuffs of the shirt applied to the corpse, and a cuff adapted to cover or overlie such securing means, substantially as described.

3. The improved undertaker's mitten, comprising a body portion having at its inner end means for securing it to the wrist of a corpse, and means for temporarily attaching it to the cuffs or sleeves of the shirt applied to a corpse, substantially as described.

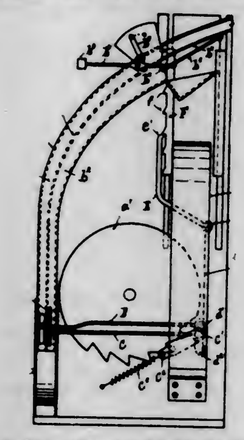
4. The improved undertaker's mitten, comprising a body portion having a pull-piece at its closed outer end, its inner end being

slitted longitudinally and provided with a strap and buckle for securing it to the wrist of a corpse, means for attaching the mitten to cuffs or sleeves, and a cuff secured to the body of the mitten and adapted to fold inward so as to cover the ends of said cuffs or sleeves, substantially as described.

5. The improved undertaker's mitten, comprising a body adapted to receive the hand of a corpse, means for securing it to the wrist, and a cuff secured to the body and adapted to be folded inward over the wrist portion and the securing means, substantially as described.

6. The improved undertaker's mitten, comprising a body portion adapted to receive the hand of a corpse, means for securing it around the wrist of the latter, and means attached to the body for temporarily securing the mitten to a cuff or sleeve, substantially as described.

822,869. COIN-OPERATED VENDING-MACHINE. JOHN A. RULE, Cincinnati, Ohio. Filed Dec. 21, 1904. Serial No. 238,067.



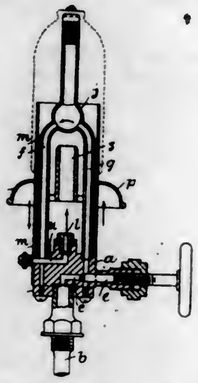
Claim.—1. In a coin-operated vending-machine the combination of a delivery mechanism, a locking mechanism for the delivery mechanism, a movable change-receptacle, means for locking the change-receptacle, a passage for large coins, a second passage for small coins, a releasing mechanism for the delivery mechanism adapted to be actuated by a coin in either passage and a releasing mechanism for the change-receptacle to be actuated by a coin in the first passage.

2. In a coin-operated vending-machine the combination of a coin-chute having a passage for large and a passage for small coins, means of directing large coins into the first passage and small coins into the second passage, a delivery mechanism, a lever for locking said mechanism one of whose ends extends into the second passage, a movable change-receptacle, and a second lever for actuating the change-receptacle and the first lever and whose end extends into the first passage.

3. In a coin-operated vending-machine the combination of a main shaft, a means of exerting a rotating pressure upon the shaft, a ratchet-wheel upon the shaft, a sliding change-receptacle, a lever for engaging the change-receptacle, a coin-chute having a passage for large and a second passage for small coins, a bell-crank lever one of whose arms engages the ratchet-wheel and the other arm of which extends into the second passage, a second lever one end of which engages the lever which holds the change-receptacle and the other arm of which extends around the second passage and into the first passage above the bell-crank lever so that a small coin actuates the delivery mechanism and a large coin actuates both the delivery mechanism and the change-receptacle.

822,870. VAPORIZER AND WICKLESS BURNER FOR OIL-LAMPS, &c. JOHN F. SCHNELL, Ardwick, England. Filed Oct. 31, 1904. Serial No. 230,737.

Claim.—A vaporizer and wickless burner for oil-lamps and for other purposes, consisting of a base, an oil-reservoir, a tubular stem connecting said base and reservoir, vertical tubes fitted in the upper surface and respectively near each side of said base, a bulb vaporizer fitted to and uniting the upper ends of said tubes, an oil-passage in the base leading from the aforesaid stem to the bottom of one of said vertical tubes, a valve for regulating the supply of oil thereto, a passage in the base leading from the bottom to the other one of said vertical tubes, a jet connected therewith and fitted centrally in said base between the aforesaid vertical tubes, an open-ended cylinder or case inclosing the vertical tubes and bulb vaporizer, and a concave shield thereon.



822,871. BURNER FOR INCANDESCENT GAS-LIGHT OR FOR HEATING PURPOSES. ISAAC SHOOB, London, England. Original application filed Apr. 13, 1904, Serial No. 203,042. Divided and this application filed Apr. 20, 1905. Serial No. 256,674.

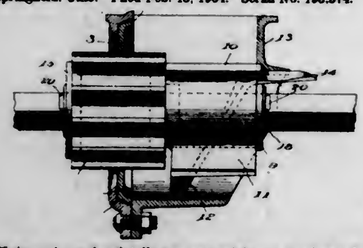


Claim.—1. A gas-burner comprising a perforated mixing-cone open at its larger end, a tube extending from one end thereof, a gas-supply nozzle projecting into its other end, and a perforated casing surrounding the cone substantially as described.

2. A gas-burner comprising a perforating mixing-cone open at its larger end, a tube extending from one end thereof, a gas-supply nozzle projecting into its other end, a perforated casing surrounding the cone, and a baffle-plate interposed between the perforations in the mixing-cone and those in the outer surrounding casing, substantially as described.

3. A gas-burner comprising a perforated mixing-cone *a* open at its larger end, a tube *g*, extending from one end thereof, a gas-supply nozzle *f* projecting into its other end, a conical hood or baffle-plate *r* surrounding and supporting the mixing-cone, and a perforated spherical outer casing, *j*, substantially as described.

822,872. GRAIN-DISTRIBUTER. JOHN W. SMITH and NOAH L. HECKMAN, Liberty, Ind.; said Smith assignor of his right and said Heckman assignor of one-third of his right to Justice W. Sharick, Springfield, Ohio. Filed Feb. 13, 1904. Serial No. 193,374.



Claim.—A grain-distributer comprising a seed-cup having a rosette-wheel mounted in one of its side walls, said wheel being provided with a feeding-flange extending into the cup and having feed-

ing-ribs on its internal surface, a longitudinally-movable rotating shaft provided with a fluted seed-wheel rotating and moving longitudinally therewith through the rosette-wheel, and a non-rotating sleeve mounted on and moving longitudinally with said feed-shaft, said sleeve being provided with cut-offs, the lower portion of the opposite side wall of the cup being inclined downward and inward toward the inner end of the feed-wheel and being carried by and movable along with the sleeve, substantially as described.

822,873. PROCESS OF COATING ONE METAL WITH ANOTHER AND THE RESULTING PRODUCT. SAMUEL H. THURSTON, Newark, N. J. Filed Apr. 1, 1905. Serial No. 253,260.

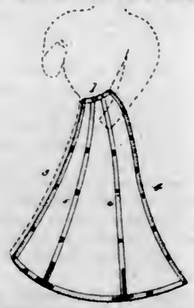
Claim.—1. The process substantially as herein described of coating one metal with another, which consists in first forcibly beating one metal into and upon the other systematically and continuously until the particles, or molecules, of the coating metal are driven into the metal being coated and incorporated with the particles at and beneath the surface of the same, thereby forming an adherent and coherent permanent coating irremovably united with the metal being coated, and then forming an electrodeposit of metal upon said coating.

2. The process substantially as herein described of coating one metal with another, which consists in first producing an anchorage coating upon the surface of the metal to be coated, by beating and rubbing the plate, and then forming an electrodeposit of metal upon said anchorage coating.

3. The process substantially as herein described, of coating one metal with another, which consists in first forming upon the plate to be coated, a surface which is receptive to an electrodeposit of metal, and then forming an electrodeposit of the desired metal upon said receptive surface, whereby the electrodeposited coating is incorporated with the surface of the plate treated.

4. The herein-described product consisting of a sheet, or plate, of one metal whose surface particles are commingled with particles of another coating metal, the coating metal being driven into the body metal, and the two metals being incorporated together at on and beneath the surface of the body metal, and forming a union the one with the other, of a permanent nature, the one forming an inherent, adherent, and coherent coating for the other, and said product being provided with an outer electrodeposited coating of metal which is incorporated with the said inherent adherent, and coherent coating.

822,874. SKIRT MEASURER AND PATTERN. JENNIE C. TIGHT, St. Anthony, Iowa. Filed Oct. 16, 1905. Serial No. 283,068.



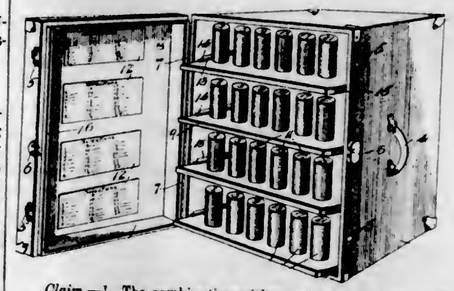
Claim.—1. A device of the character described capable of adaptation as to form and size on a person, and provided with means for temporarily securing the material from which the garment is to be cut.

2. A device of the character described consisting of a waist-section and a bottom section, extensible sections connecting the same, and means for temporarily securing the material from which the skirt is to be fashioned.

3. A device of the character described consisting of a waist-section, a bottom section, and front, side and rear sections connecting the same, all of said sections being extensible, and means on the device for securing the material from which the skirt is to be cut.

4. A device of the character described consisting of a waist-section, a bottom section, and front, side and rear sections connecting the same, all of said sections being extensible, and pins on some of the sections for securing the material from which the skirt is to be fashioned.

822,875. PORTABLE CABINET-CARRYING CASE FOR PHONOGRAPH AND GRAPHOPHONE RECORDS. HOWARD W. TOPHAM, Washington, D. C., assignor to James S. Topham, Washington, D. C. Filed Mar. 24, 1905. Serial No. 251,843.



Claim.—1. The combination with a casing having an open side and a removable transverse partition having a portion thereof projected beyond the open side of the casing, of a lid or cover constructed to exert a wedging action upon the projecting portion of the partition to urge said portion in an endwise direction.

2. The combination with an open-sided casing, of a removable partition therein and a movable lid or cover constructed to engage the partition and urge the same toward one end of the casing.

3. A portable case of the class described, comprising a box-body, a flanged lid therefor having a wedge-face at the inner side of its front outer flange, a series of guiding and holding strips arranged at the inner side of the box-body, and a plurality of removable record-carrying partitions, each of said partitions slidably engaging a pair of said strips and being provided with a plurality of record-holders, said partitions also being each provided at one corner with an inclined shoulder engaged by the wedge-face of the lid.

4. A portable case of the class described, comprising a box-body having a plurality of guides provided at their outer ends with notched seats, record-carriers engaging said guides, and a flanged lid having at the edge of its flange a continuous guard-rib engaging within the open side of the box-body and also fitting in said notched seats.

5. A portable record-holder comprising an open-sided casing having its walls provided with guides, a plurality of removable record-carrying partitions slidable in the guides and having inclined faces, and a cover hinged to the casing to close the open side thereof and having an inclined face arranged to engage the inclined faces of the partitions to urge said partitions toward the back and also toward one end of the casing and to retain the partition against rattling and vibration during transportation of the holder.

822,876. ROUNDABOUT. CHARLES H. WARE and CHARLES M. HOLMES, Barry, Ill. Filed Dec. 28, 1905. Serial No. 293,637.



Claim.—1. In a roundabout, the combination of a body or base, a center post, fixed to said body or base, a circular track fixed on the body or base and surrounding the center post, a frame revoluble about said post, a crank-shaft carried by the frame, a combined supporting and driving wheel fixed directly on the crank-shaft and arranged to bear and travel on the circular track, whereby when the crank-shaft is rotated, said wheel moves the frame about the center post, an upright lever fulcrumed at an intermediate point of its length on a support carried by the frame, and a link connecting the lower arm of said lever and the crank-shaft.

2. In a roundabout, the combination of a body or base, a center post fixed to and rising from said body or base, a circular track fixed

on the body or base and surrounding the center post, a frame disposed above the circular track and mounted on and revoluble about the center post; the said frame comprising arms disposed at an angle to each other, a rocking device mounted on one of the arms of the revoluble frame and arranged to bear a child, a wheel mounted below said arm and arranged to bear on the circular track, a bracket fixedly connected to the other arm of the frame and having a depending arm and a forwardly-extending arm, a bearing depending from such other arm of the frame, a crank-shaft journaled in the bearing and the depending arm of the bracket, a combined supporting and driving wheel fixed on said crank-shaft and bearing on the circular track, an upright lever fulcrumed at an intermediate point of its length on the forwardly-extending arm of the bracket and having a lower pedal portion and an upper handle portion, and a link connecting the crank-shaft and the lower arm of the lever.

822,877. LUBRICATING DEVICE. RUSSEL G. WOODWARD, Waukegan, Ill., assignor to Union Special Machine Company, Chicago, Ill., a Corporation of Illinois. Filed Dec. 19, 1904. Serial No. 237,535.



Claim.—1. The herein-described device for connecting a driving member to the part to be driven, including a hollow connecting-rod, forming a reservoir for the reception of the lubricant, with means to allow the outflow of the lubricant to the part to be lubricated, there being an opening in said reservoir to allow the lubricant to be inserted, and means independent of said reservoir for closing said inlet-opening after the lubricant has been inserted; substantially as described..

2. The herein-described device for connecting a driving member to a part to be driven, including a hollow connecting-rod forming a reservoir for the reception of a lubricant, with means to allow the outflow of the lubricant to the part to be lubricated, there being openings into said reservoir to allow lubricant to be inserted, a cup surrounding the reservoir adjacent said openings, and a cap fitting said cup and surrounding the reservoir for closing the inlet-openings; substantially as described.

3. The herein-described device for connecting a driving member to a part to be driven, including a hollow connecting-rod forming a reservoir for the reception of a lubricant, with means to allow the outflow of the lubricant to the part to be lubricated, there being openings into said reservoir to allow lubricant to be inserted, a cup surrounding the reservoir adjacent said openings, there being a shoulder above the cup, and a cap-screw threaded on said cup, and seated on the shoulder when in closed position; substantially as described.

4. In a lubricating device, a hollow connecting-rod forming a receptacle for the lubricant and having an outflow for the lubricant to the part to be lubricated, there being openings into said receptacle to allow lubricant to be inserted, a reservoir surrounding said receptacle and having a screw-cap for closing said reservoir; substantially as described.

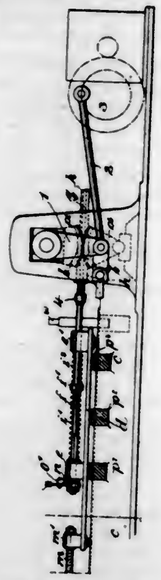
5. In a lubricating device, a receptacle for the lubricant having an outflow for the lubricant to the part to be lubricated, there being openings into said receptacle to allow lubricant to be inserted, a reservoir surrounding said receptacle, said inlet-openings extending above the top of the reservoir to allow the escape of air from the receptacle when inserting oil therein; substantially as described.

6. In a lubricating device, a hollow connecting-rod forming a cylindrical receptacle for the lubricant and having an outflow for the lubricant to the part to be lubricated, there being an opening into said cylindrical receptacle to allow lubricant to be inserted, a reservoir surrounding said cylindrical receptacle and covering the opening into said cylindrical receptacle, and a cover for said reservoir to prevent escape of lubricant; substantially as described.

822,878. FORGING-MACHINE. OTTO BRIEDS, Benrath, near Duesseldorf, Germany. Filed Feb. 3, 1906. Serial No. 301,736.

Claim.—1. In a forging-machine, the combination of oscillatory dies or swages, an ingot or billet holder movable back and forth substantially synchronous with the dies or swages, and means for feeding the holder toward the dies or swages when released from the dies or swages, substantially as described.

2. In a forging-machine, the combination of oscillatory dies or swages, an ingot-holder movable back and forth substantially synchronous with and by the dies or swages, and means for feeding the holder toward the dies or swages when released from the dies or swages, substantially as described.



3. In a forging-machine, the combination of oscillatory dies or swages, an ingot-holder movable back and forth substantially synchronous with the dies or swages, and resilient means for feeding the holder toward the dies or swages when released from the dies or swages, substantially as described.

4. In a forging-machine the combination of oscillatory swages or dies, an ingot or billet holder spring-held in each direction and movable back and forth by the dies and means for feeding the holder toward the dies or swages, substantially as described.

5. In a forging-machine the combination of oscillatory dies or swages, an ingot or billet holder movable back and forth substantially synchronous with and by the dies or swages and a resilient means for feeding the holder toward the dies or swages, substantially as described.

6. In a forging-machine the combination of oscillatory dies or swages, a movable carriage or slide, a feed-bar movably mounted in bearings on said slide or carriage and adapted to be reciprocated by the swages, springs interposed between said bearings and an abutment or shoulder on the feed-bar, and means for shifting the carriage or slide, substantially as described.

7. In a forging-machine the combination of oscillatory dies or swages, a movable carriage or slide, a feed-bar movably mounted in bearings on said slide or carriage, springs interposed between said bearings and an abutment or shoulder on the feed-bar and a continuously-operating means for shifting the bearings or carriage, substantially as described.

8. In a forging-machine the combination with swaging-tools and means for actuating them, a rotatable ingot-holder, a spring for exerting pressure to turn the ingot-holder, and means for applying tension to the spring during the swaging action, substantially as described.

9. In a forging-machine the combination of two sector-formed pieces provided with grooves, the diameter of which increases from one end to the other, with means for oscillating these pieces, an ingot-holder, a sliding carriage in which said holder is journaled, means for resiliently connecting one of said sector-formed pieces to said ingot-holder for exerting pressure to turn said ingot-holder and means for shifting the ingot-holder independent of the carriage, substantially as described.

10. In a forging-machine the combination with swaging-tools, and means for actuating them, of a rotatable holder, resilient means for applying turning pressure to the holder during the action of the swaging-tools and means for advancing the ingot, substantially as described.

11. In a forging-machine the combination of the swaging devices, an ingot-holder, with a slide, *d*, carrying the ingot-holder and springs i' i^3, provided between this slide and the ingot-holder, means for moving the slide, *d*, and a lever *o*, for rotating the ingot-holder, the lever, *p*, and bar, *s*, passing freely through and connecting the same to the lever *o*, and spiral springs, t' t^3, arranged on opposite sides of the lever *p* and adapted to exert a yielding pressure on the lever *o*, and means operated by the swages for shifting the lever *p*, substantially as described.

12. In a rolling-mill the combination of oscillatory swaging devices, an ingot-holder and a mechanical connection interposed between the ingot-holder and the swages and comprising a shaft reciprocated by the swages during their oscillation and means adapted to be operated by the shaft for rotating the ingot-holder, substantially as described.

13. In a forging-machine the combination of oscillatory dies or swages, means for supporting the billet or other article and adapted to permit the billet to reciprocate synchronously with the dies or swages and means for constantly exerting resilient feeding pressure on the billet or other article, substantially as described.

14. In a forging-machine the combination of oscillating dies or swages, a resilient or spring member, and a billet-holder free to move longitudinally at all times except as controlled by said dies and by resilient spring action.

15. In a forging-machine the combination of oscillatory dies or swages, an ingot-holder movable back and forth, substantially synchronous with the dies or swages, and means permitting the reciprocation of the ingot-holder and adapted to effect a forward or feed movement of the holder on the release of the ingot by the swages, substantially as described.

16. In a forging-machine the combination of oscillatory dies or swages, an ingot-holder movable back and forth substantially synchronous with the dies or swages, mechanism for effecting a forward or feed movement of the ingot-holder, and means permitting a reciprocation of the ingot-holder independent of the feed or forward movement and adapted to render the feed effective on the release of the ingot from the bite of the swages.

17. In a forging-machine the combination of oscillatory swages means for rotating the billet or other article comprising a rotary member and mechanism for rotating the same, said mechanism including a yielding element adapted to exert a yielding force on the rotary member while the billet is gripped by the swages and to become effective to rotate said member when the billet is released.

18. In a forging-machine, the combination of swaging-tools, means for actuating them, a rotatable holder, means for turning the holder operative during the action of the swaging-tools, and having a yielding connection to the holder whereby the turning means becomes operative to turn the holder when the latter is released from the dies or swages, and means for advancing the ingot, substantially as described.

19. In a machine for forging tubes, the combination of oscillatory dies or swages, a mandrel movable back and forth substantially synchronous with the dies or swages, and means for feeding the mandrel toward the dies or swages, when released from the dies or swages, substantially as described.

20. In a machine for forging tubes, the combination of oscillatory dies or swages, a mandrel movable back and forth substantially synchronous with and by the dies or swages, and means having a yielding connection with the mandrel for feeding the latter toward the dies or swages when released therefrom, substantially as described.

21. In a forging-machine the combination of oscillatory dies or swages, a billet-carrier adapted to permit the billet to reciprocate with respect thereto synchronously with the dies or swages and means for exerting a constant pressure on the carrier to feed the billet.

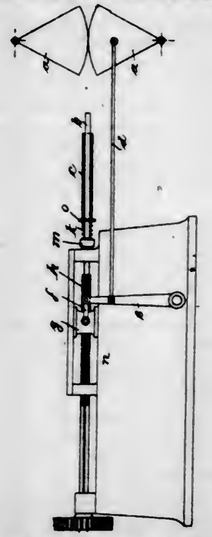
22. In a forging-machine the combination of a carrier adapted to permit the billet to move back and forth with respect thereto, oscillatory dies or swages adapted to engage the billet and impart to it a back-and-forth movement, means for imparting a feed movement to the carrier and a yielding resistance device adapted to operate against the billet while being reduced.

23. In a forging-machine the combination of oscillatory dies or swages, a billet-carrier and means for exerting constantly a feeding pressure on the carrier during the reduction of the billet.

24. In a forging-machine the combination of a carrier provided with means whereby the billet may move back and forth with respect thereto, oscillatory dies or swages adapted to engage the billet and impart to it a motion in both directions forward and back, means for imparting a feed movement to the carrier and a yielding resistance device arranged to operate against the billet on its reverse motion.

25. In a forging-machine the combination of oscillatory dies or swages, a carrier provided with yielding means for supporting the billet and means for exerting a constant feeding pressure on the carrier.

822,879. ROLLING-MILL. OTTO BRIEDS, Benrath, near Duesseldorf, Germany. Filed May 4, 1906. Serial No. 315,599.



Claim.—1. In a swaging apparatus the combination of oscillatory reducing-dies, feed mechanism having a longitudinally-movable member, and means for imparting a reciprocation to the longitudinally-movable member of the feed mechanism equal to and synchronous with the peripheral movement of the swages, substantially as set forth.

2. In a swaging apparatus the combination of oscillatory reducing-dies, a holder for the billet or other article, means for imparting a reciprocatory movement to the holder equal to and synchronous with the peripheral movement of the dies, and means for feeding the holder forward step by step, substantially as set forth.

3. In a swaging apparatus the combination of oscillatory reducing-dies, a holder for the billet or other article, means for causing the holder to have a movement equal to and synchronous with the peripheral movement of the dies, means for feeding the holder forward step by step, and means for rotating the article, substantially as set forth.

4. In a swaging apparatus the combination of oscillatory reducing-dies, a reciprocatory cross-head operated by said dies, a feed-rod carried by the cross-head, and means for adjusting the feed-rod relative to the cross-head, substantially as set forth.

5. In a swaging apparatus the combination of oscillatory reducing-dies, a reciprocatory cross-head operated by and synchronously with said dies, a feed-rod carried by the cross-head, and provided with means for engaging the article, and means for rotating the feed-rod, substantially as set forth.

6. In a swaging apparatus the combination of oscillatory reducing or swaging dies, a reciprocatory cross-head connected to said dies, a feed-rod carried by the cross-head, and a head having a longitudinally-yielding connection to the feed-rod, substantially as set forth.

7. In a swaging apparatus the combination of oscillatory swaging or reducing dies, a feed-rod movable synchronously with the dies, means for rotating the feed-rod, a head adapted to engage the article operated on, and a rotary yielding connection between said head and feed-rod, substantially as set forth.

8. In a swaging apparatus the combination of oscillatory reducing dies or swages, a longitudinally-movable mandrel carrying the

ingot, means for causing the mandrel to move synchronously with the oscillatory dies or swages, and means for feeding forward the mandrel on each swing of the swages, substantially as set forth.

9. In a rolling-mill for rolling seamless metal tubes the combination of oscillatory swages and a longitudinally-movable mandrel carrying the ingot, means for positively connecting the mandrel to the oscillatory swages so as to compel the mandrel to positively follow the movement of the swages, and means for feeding the mandrel.

10. In a rolling-mill for rolling seamless metal tubes, the combination of oscillating swages and a longitudinally-movable mandrel carrying the ingot, means for causing the mandrel to move synchronously with the oscillatory swages and means for feeding the mandrel.

11. In a forging-machine the combination of oscillatory dies or swages, an ingot or billet holder movable by the dies or swages, means for returning the holder to feed position when released from the dies or swages, means for feeding the holder toward the dies or swages, and resilient means for rotating the holder, substantially as set forth.

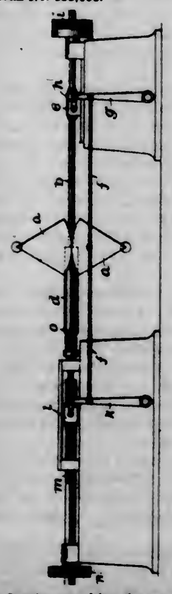
12. In a forging-machine the combination of oscillatory dies or swages, means for causing the billet or other article to reciprocate synchronously with the dies or swages and means for exerting a constant feeding pressure on the billet or other article, substantially as set forth.

13. In a swaging apparatus, the combination of oscillating rolls carrying swaging-dies, a cross-head operated by and synchronous with said rolls, a feed-rod carried by the cross-head and provided with means for engaging the article, and means for rotating the feed-rod, substantially as set forth.

14. In a swaging apparatus, the combination of oscillating rolls carrying swaging-dies, a cross-head operated by said rolls, a feed-rod carried by the cross-head, and a head yieldingly connected to the feed-rod, substantially as set forth.

15. In a swaging apparatus, the combination of oscillating swages or reducing-dies, a feed-rod movable synchronously with the dies, means for rotating the feed-rod, a head adapted to engage the article operated on, and a yielding connection between said head and feed-rod, substantially as set forth.

822,880. **ROLLING-MILL FOR ROLLING SEAMLESS METAL TUBES.** OTTO REINEB, Benrath, near Duesseldorf, Germany. Filed May 4, 1903. Serial No. 155,600.

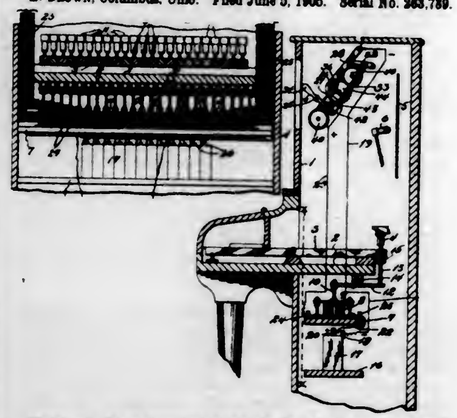


Claim.—1. In a forging-machine the combination of oscillatory dies or swages an abutment arranged between the dies or swages in line with the axis of the bars and means for imparting a reciprocatory movement to the abutment equal to the peripheral movement of the dies or swages and synchronous therewith.

2. In a forging-machine the combination of oscillatory dies or swages, mechanism for feeding the billet step by step between the dies and swages, an abutment arranged between the dies or swages in line with the axis of the bars, and means for imparting a reciprocatory movement to the abutment equal to the peripheral movement of the dies or swages and synchronous therewith.

3. In a forging-machine, the combination of oscillatory dies or swages, a feed mechanism, means for reciprocating the feed mechanism, a holding-bar arranged on the delivery side of the dies or swages and provided with a shaping-head arranged between the dies or swages, and means for reciprocating the holding-bar synchronously with the dies or swages, substantially as set forth.

822,881. **ELECTRICAL PIANO-PLAYING MECHANISM.** CARL E. BROWN, Columbus, Ohio. Filed June 5, 1905. Serial No. 263,789.

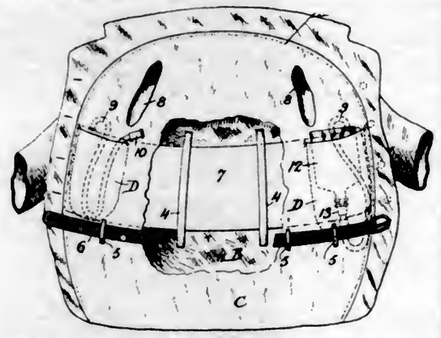


Claim.—1. In an electrical piano-playing mechanism, a plurality of electromagnets, a tracker-board having electrical contact-points, a perforated music-sheet arranged to travel across the tracker-board, a plurality of circuit-closing devices arranged so as to rest at one end on the music-sheet in the path of the perforations and to close the circuit by engagement with the contact-points, rollers for supporting and traversing the music-sheet, reversing-gearing connected to one of the rollers, a motor, and a shaft extending from the motor carrying a pinion on its free end, said pinion normally having connection with the other roller, in combination with means for swinging the fingers upward out of contact with the music-sheet comprising a rod extending under the fingers and a pivoted support for said rod at each end thereof, and means for simultaneously springing the shaft to throw the pinion into mesh with the reversing-gearing comprising a lever having connection with the shaft and connected with the finger-raising means by a link.

2. In an electrical piano-playing mechanism, a plurality of electromagnets, means having connection with the armatures of the magnets and the keys of the piano for operating said keys, a tracker-board, a battery arranged beneath the magnets having electrical connection therewith, a plurality of pivoted contact-fingers having downwardly-curved ends adapted to contact with the tracker-board, a perforated music-sheet arranged to pass between the curved ends of the fingers and the tracker-board, a rod extending beneath the fingers, pivoted arms supporting the rod at each end, rollers for supporting and traversing the music-sheet, reversing-gearing connected to one of the rollers, a motor, a shaft extending from the motor some distance and unsupported at its outer end so as to be sprung out of line, a pinion carried on the unsupported end of the shaft and normally having connection with one of the rollers, a lever engaging with the shaft for springing the same to throw the pinion into mesh with the reversing-gear, and a link connecting the pivoted arms with the lever adapted to simultaneously swing the rod upward to swing the fingers out of contact with the music-sheet when the shaft is sprung.

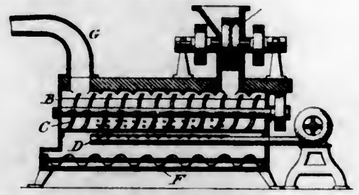
822,882. **LIFE-PRESERVER.** SAUL CYPRON, New York, N. Y., assignor of one-third to Saturn B. Bateman, New York, N. Y. Filed July 28, 1904. Serial No. 218,472.

Claim.—1. In an article of the class described, a garment adapted for ordinary wear such as a coat or vest, a lining for the back thereof, an inflatable member detachably supported in the back of the garment, and extending continuously around the garment, above the waist-line thereof and confined between the outer cloth of the lining, loops for detachably supporting said inflatable member, a chamber concealed within the garment and containing a normally gaseous agent under pressure, and means for introducing such gaseous agent into the inflatable member.



2. In an article of the class described, a garment adapted for ordinary wear such as a coat or vest, an inflatable member detachably secured in the back of the garment, loops secured to the garment for detachably supporting said inflatable member, means for inflating the member, and means for controlling the inlet and exit of the inflating agent to the said member.

822,883. **CELLULOSE.** JAMES S. COCHRAN, Philadelphia, Pa., assignor of one-third to Frank Taylor, Wilmington, Del. Original application filed Sept. 24, 1904, Serial No. 225,776. Divided and this application filed Mar. 13, 1906. Serial No. 305,781.



Claim.—1. The method of making cellulose from the fuzz of cotton-seed hull consisting in first removing all of the staple fiber and lint from the seed and then mechanically reclaiming the fuzz from the hull in pure and unchanged condition.

2. The method of making cellulose from the fuzz of cotton-seed hull consisting in first removing all of the staple fiber and lint from the seed, then mechanically reclaiming the fuzz from the hull in pure and unchanged condition and next bleaching said fuzz.

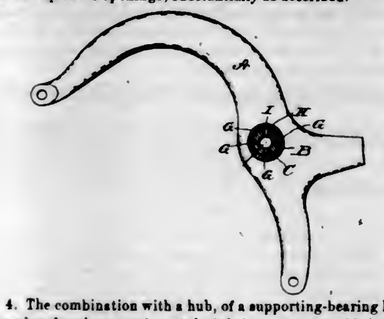
3. The method of removing fuzz from cotton-seed hulls consisting in removing said fuzz first by grinding and attrition and next by an air-blast whereby the fuzz is preserved intact as such and without admixture.

822,884. **NEEDLE-LEVER BEARING.** DANIEL W. CORBY, St. Louis, Mo., assignor to Union Special Sewing Machine Company, Chicago, Ill., a Corporation of Illinois. Filed Apr. 7, 1904. Renewed Nov. 21, 1905. Serial No. 288,457.

Claim.—1. The combination with the needle-lever hub, of the needle-lever stud having a chamber for the reception of the lubricant and a series of openings leading from the chamber to the inner wall of the hub, said needle-lever hub having a groove constantly registering with the top oil-holes in the stud; substantially as described.

2. The combination with the needle-lever hub, of the needle-lever stud having a chamber for the reception of the lubricant and a series of openings leading from the chamber to the inner wall of the hub, said stud having an end opening, with a plug for closing the same, and having independent oil-inlet and air-outlet openings; substantially as described.

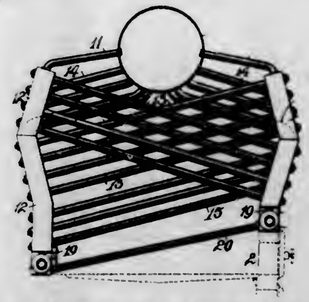
3. A pivot-bearing stud, having a central hollow chamber, and openings leading therefrom, and a part to be lubricated surrounding the same, having an inner longitudinal groove to constantly register with the top set of openings; substantially as described.



4. The combination with a hub, of a supporting-bearing having a chamber for the reception of the lubricant, and provided with an oil-inlet and a series of openings leading from the chamber to the inner wall of the hub and means independent of the oil-inlet to permit the escape of air from the lubricant-chamber when the oil is forced into it.

5. The combination with a hub, of a supporting-bearing having a chamber for the reception of the lubricant, and provided with an oil-inlet and a series of openings leading from the chamber to the inner wall of the hub and an independent air-escape opening connected with the openings in the stud.

822,885. **WATER-TUBE BOILER.** HARRY DEL MAR, New York, N. Y., assignor to Boilers and Engineering Company, Jersey City, N. J., a Corporation of New Jersey. Filed Nov. 29, 1905. Serial No. 289,548.



Claim.—1. A boiler consisting of a steam-drum, tiers of headers connected with the steam-drum and arranged diagonally opposite and side by side, rows of diagonally-arranged tubes connecting each header with the diagonally-opposed header, and rows of tubes arranged to connect the lower front headers with the lower rear headers between the first-mentioned rows of tubes.

2. A boiler comprising a steam-drum, tiers of oppositely-arranged headers, two sets of tubes extending from each upper header to the diagonally-opposed lower header, a row of tubes arranged to connect each upper header with the steam-drum and arranged between the first-mentioned sets of tubes, and a row of tubes connecting each lower header on one side with the lower header on the other side and also placed between the diagonally-arranged sets of tubes.

3. A water-tube steam-boiler comprising a steam-drum, tiers of headers arranged diagonally opposite and side by side, rows of diagonally-arranged tubes connecting each header with the diagonally-opposed header, mud-drums, connections between the lower headers and the mud-drums, and rows of tubes connecting the headers on opposite sides of the steam-drum with the said steam-drum, the said rows of tubes being arranged between the rows connecting the headers.

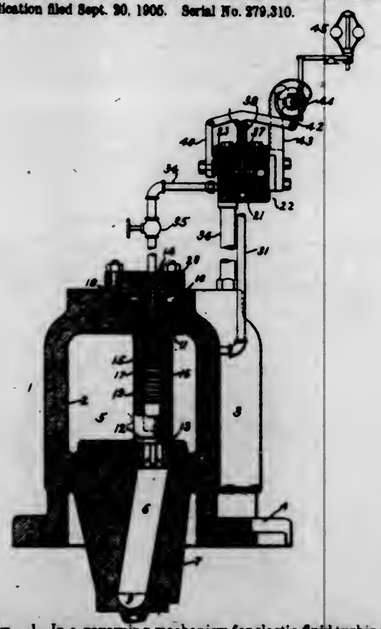
822,886. **LOCK FOR FORE-END OF GUN-STOCKS.** EDWARD H. ELDER, Chicopee Falls, Mass., assignor to J. Stevens Arms & Tool Company, Chicopee Falls, Mass., a Corporation. Filed June 19, 1905. Serial No. 265,960.

Claim.—The combination with the frame and barrel of a gun, of a detachable fore-end, a lever pivotally supported therein, a stud

fixed to the barrel, and means on the lever to engage the stud between the latter and the frame to secure the fore-end to the barrel, said lever having a spring-arm, the flexure of which will exert a yielding pressure on the fore-end toward the barrel and endwise toward the frame, an endwise-movable button on the fore-end for holding the spring-arm in an elevated position.



822,887. GOVERNING MECHANISM FOR ELASTIC-FLUID TURBINES. WILLIAM L. R. EMMET, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Original application filed Apr. 5, 1904, Serial No. 201,747. Divided and this application filed Sept. 20, 1905. Serial No. 279,310.



Claim.—1. In a governing mechanism for elastic-fluid turbines, the combination of a valve, a motor for operating it, a barrel for connecting the valve and motor, a spring inclosed by the barrel which urges the valve in one direction, and means responsive to load changes for controlling the operation of the motor.

2. In a governing mechanism for elastic-fluid turbines, the combination of a valve, a motor for operating it, comprising a piston and cylinder, a barrel connecting the valve and piston, a projection on the cylinder-head that enters the barrel, and a fluid-carrying passage in the projection that admits fluid to the cylinder-space back of the piston to form a cushion for the latter.

3. In a governing mechanism for elastic-fluid turbines, the combination of a valve, a motor for operating it, comprising a piston and cylinder, a barrel connecting the valve and piston, a projection on the cylinder-head that enters the barrel, a passage in the projection that admits fluid to the space within the barrel, and a second passage communicating with the first which admits fluid back of the piston to form a cushion for the latter.

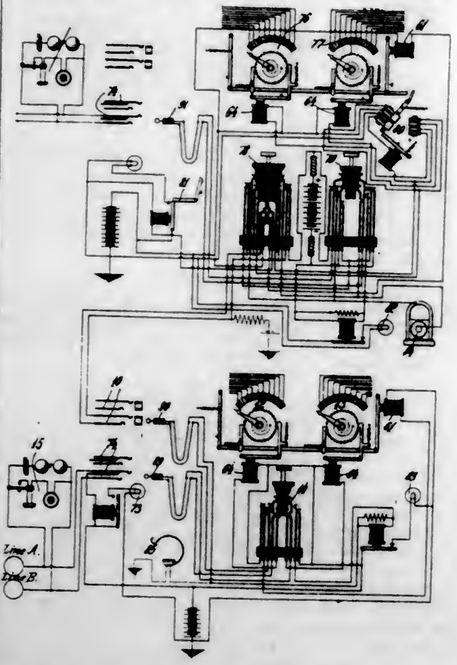
4. In a governing mechanism for elastic-fluid turbines, the combination of a valve, a motor for operating it, comprising a piston and cylinder, a barrel connecting the piston and valve, a projection on the cylinder-head which enters the barrel and is provided with a fluid-carrying passage, and a spring which surrounds the projection and is located within the barrel for urging the piston and valve in one direction.

5. In a governing mechanism for elastic-fluid turbines, the combination of a valve, a motor for operating it, comprising a piston and cylinder, a barrel connecting the piston and valve, a passage for admitting fluid back of the piston to cushion it, and a spring-plate located in the cylinder-space that also acts as a cushion.

6. In a governing mechanism for elastic-fluid turbines, the combination of a valve, a seat therefor, means for guiding the movement of the valve, a barrel connecting the valve and the said means, a spring in the barrel which urges the valve toward its seat, a stationary abutment for the spring at the open end on the barrel, and means for opening the valve.

7. In a governing mechanism for elastic-fluid turbines, the combination of a valve-chest, a valve therein, a piston subjected to the pressure of the fluid in the chest, a barrel connecting the valve and piston, a spring inclosed in the barrel which tends to seat the valve, and means controlling the fluid-pressure acting on the piston to open and close the valve.

822,888. VISUAL-SIGNAL-RECEIVING SYSTEM. ERNEST A. FALLER, New York, N. Y. Filed July 28, 1903. Serial No. 167,311.



Claim.—1. In combination with signal sending and receiving means, line-terminals, means for electrically connecting any two of said line-terminals, and separate means for and adjacent to each line-terminal and operated by the signal-receiving means for directly indicating the location of a terminal to which connection is desired.

2. In combination with signal sending and receiving means, line-terminals, means for electrically connecting any two of said line-terminals, and separate automatic means for and adjacent to each line-terminal and operated by the signal-receiving means for directly indicating the location of a terminal to which connection is desired.

3. In combination with signal sending and receiving means, line-terminals, means for electrically connecting any two of said line-terminals, and separate visual means for and adjacent to each line-terminal and operated by the signal-receiving means for directly indicating the location of a terminal to which connection is desired.

4. In combination with signal sending and receiving means, line-terminals, hand-operated means for electrically connecting any two of said line-terminals, and separate means for and adjacent to each line-terminal and operated by the signal-receiving means adapted to indicate the location of a terminal to which connection is desired.

5. In combination with signal sending and receiving means, line-terminals, hand-operated means for electrically connecting any two of said line-terminals, and separate automatic means for and adjacent to each line-terminal and operated by the signal-receiving means adapted to indicate the location of a terminal to which connection is desired.

6. In a visual-signal-receiving system, the combination with a plurality of impulse-receivers, of a plurality of circuits each one controlled by the joint action of the impulse-receivers, and translating devices in each circuit, each of the same adapted to operate at a specific condition of the impulse-receivers only.

7. In a visual-signal-receiving system, the combination with a plurality of impulse-receivers having a rotary contact-brush and stationary contact-segments, a plurality of circuits controlled by the relative position of the contact-brushes on the segments, and translating devices in the circuits, each operated only by one of the relative positions of the contact-brushes on the segments.

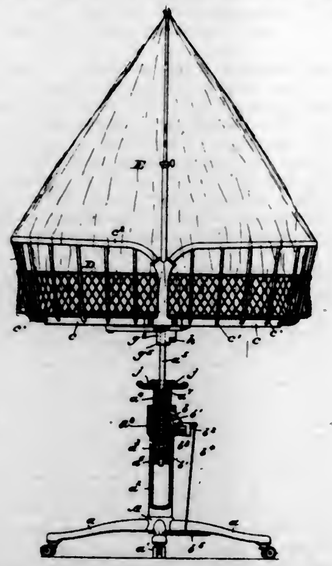
8. In a telephonic system, the combination with subscribers' terminals at an exchange, a signal device for each subscriber at said exchange, hand-operated connecting means for the subscribers' terminals, and automatic means initially controlled by one subscriber to operate the signal of a second subscriber.

9. In a telephonic system, the combination with subscribers' stations and an exchange, of individual signals for each subscriber at the exchange, signal-sending apparatus at the subscribers' station, and impulse-receivers at the exchange initially controlled by one subscriber and adapted to operate the individual signal of another subscriber.

10. In a telephone-exchange, a plurality of visual signals in proximity to line-terminals and means for actuating a visual signal of one of the line-terminals by an initiating act of a signal-sending apparatus belonging to another line-terminal.

11. The combination of a series of independent line-terminals, one or more branch or loop circuits, means for connecting any two of said line-terminals with each other through one of said loop-circuits, a plurality of signal-receivers, a plurality of local circuits, each one controlled by the joint action of the signal-receivers, and translating devices in each local circuit and adjacent to each line-terminal, adapted to operate at a specific condition of the signal-receivers only, and directly indicating the line-terminal to which connection is desired.

822,889. DEVICE FOR CARING FOR INFANTS. KARL I. FAUST, Cleveland, Ohio. Filed Nov. 25, 1904. Serial No. 234,166.



Claim.—1. In a device for caring for infants, the combination of an upright support, a bed-body, and means connecting such body and support, said means being arranged to allow said body to be shifted and fixed in different positions in horizontal planes and relatively to said support.

2. In a device for caring for infants, the combination of a support comprising a base portion and an upright portion; a bed-body, and means for securing the bottom of said body to the top of said upright portion, said means being arranged so as to allow the point of support of such bottom to be moved laterally.

3. In a device for caring for infants, the combination of an upright rod; a bed-body; and means connecting such rod with the bottom of said body, said means including a member secured relatively to said rod, and a second member secured to the bottom of the bed-body and pivotally mounted in said first member.

4. In a device for caring for infants, the combination of a support; a member secured thereto and provided with a guiding-surface; a second member pivotally secured to said first member and provided with a projecting portion adapted to engage said guiding-surface; and a bed-body secured to said pivotal member.

5. In a device for caring for infants, the combination of a support; a member rotatably mounted upon the upper end thereof; means for securing said member relatively to said support; a second member pivotally mounted in said first member; and a bed-body secured to said pivotal member.

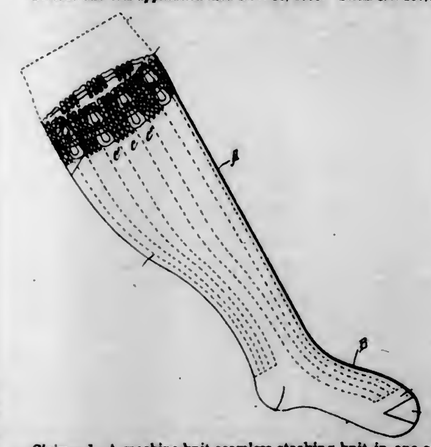
6. In a device for caring for infants, the combination of a support; a member rotatably mounted upon the upper end thereof; means for securing said member relatively to said support; a second member pivotally mounted in said first member; means for securing said members relatively to each other; and a bed-body secured to said pivotal member.

7. In a device for caring for infants, the combination of a support; a member provided with a guiding-surface at one end and secured to said support adjacent to said end; a second member provided with a downwardly-projecting tongue at one end adapted to engage and be supported by said guiding-surface, said two members being pivotally secured together at their other ends; and a bed-body secured to said pivotal member.

8. In a device for caring for infants, the combination of a support; a bed-body; a member secured to said support and including two radial arms each provided with a guiding-surface; a second member secured to the bed-body, pivotally secured at one end to said first member and provided at its free end with a downwardly-projecting tongue adapted to engage and be supported by said guiding-surfaces; means for fixing said two members in different positions relatively to each other; and means for limiting the amount of movement of the free end of said pivotal member.

9. In a device for caring for infants, the combination with a support comprising a base having an upright tubular portion, a member adjustably secured in said portion, and a second member yieldingly supported by said first member; of a bed-body, and means for securing the bottom of said bed-body to said second member, such means being arranged to allow the point of support of such bottom to be moved laterally.

822,890. SEAMLESS HOSIERY. GEORGE H. GILBERT, Germantown, Pa. Original application filed June 7, 1901, Serial No. 63,622. Divided and this application filed Nov. 16, 1905. Serial No. 287,699.



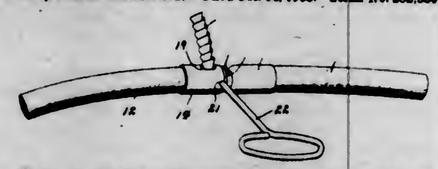
Claim.—1. A machine-knit seamless stocking knit in one continuous operation having both the back and front of the leg of the stocking ornamented with open-work forming a part of the web of the stocking, substantially as described.

2. A machine-knit seamless stocking having both the back and front of the leg ornamented with open or lace work forming a part of the web of the stocking, the thread forming the leg of the stocking being continuous with that forming the main body of the foot of the stocking, substantially as described.

3. A machine-knit seamless stocking, knit in one continuous operation having the back and front of the leg of the stocking ornamented with open or lace work forming a part of the web of the stocking, the lacework on the front of the leg extending down upon the top of the foot of the stocking, substantially as described.

4. A machine-knit seamless stocking having the back and front of the leg of the stocking ornamented with open or lace work forming a part of the web of the stocking, the lacework on the front of the stocking extending down upon the top of the ankle and foot of the stocking, substantially as described.

822,891. **BELT-COUPLING.** JOHN M. GREIST, New Haven, Conn.; Mary F. W. Greist and P. Raymond Greist administrators of said John M. Greist, deceased, assignors to The Greist Manufacturing Company, a Corporation of Connecticut. Filed Oct. 14, 1905. Serial No. 282,839.



Claim.—1. A belt-coupling consisting of two sleeves and an intermediate connecting member rigidly attached to one of said sleeves and within which latter said intermediate member is provided at one end with an inclined or diagonally-disposed blade or cutter, said intermediate member being swiveled at its other end to the other of said sleeves.

2. A belt-coupling consisting of two internally-threaded tubes or sleeves and an intermediate connecting member rigidly attached to one of said sleeves and within which latter said intermediate member is provided at one end with an inclined or diagonally-disposed blade or cutter, said intermediate member being swiveled at its other end to the other of said sleeves.

3. A belt-coupling consisting of two sleeves and an intermediate connecting member rigidly attached to one of said sleeves and within which latter said intermediate member is provided at one end with an inclined or diagonally-disposed blade or cutter, said intermediate member being swiveled at its other end to the other of said sleeves and being provided with a diametric hole into which sufficient of the metal of the attached sleeve is forced to rigidly connect the two parts together.

822,892. **SEWING-MACHINE RUFFLER.** JOHN M. GREIST, New Haven, Conn.; Mary F. W. Greist and P. Raymond Greist administrators of said John M. Greist, deceased, assignors to The Greist Manufacturing Company, a Corporation of Connecticut. Filed Oct. 31, 1905. Serial No. 285,205.



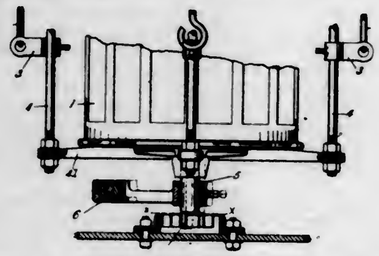
Claim.—1. In a sewing-machine ruffler, the combination with a ruffling-blade, an actuating-lever with which said blade is connected, a needle-bar-operated lever, an intermediate lever loosely connected with said actuating-lever, and a link connecting said intermediate lever with said needle-bar-operated lever.

2. In a sewing-machine ruffler, the combination with a ruffling-blade, an actuating-lever with which said blade is connected, a needle-bar-operated lever, an intermediate lever, a link connecting said intermediate lever with said needle-bar-operated lever, and adjusting means between said intermediate lever and said actuating-lever.

3. In a sewing-machine ruffler, the combination with the operating-lever 16 having the arm 17 and the open slot or notch 18, of the ruffling-blade lever 21, the ruffling-blade connected therewith, the intermediate lever 23 and the link 24 connecting said levers 16 and 23.

4. In a sewing-machine ruffler, the combination with the operating-lever 16 having the arm 17 and the slot or notch 18, of the ruffling-blade lever 21, the ruffling-blade connected therewith, the intermediate lever 23, the link 24 connecting said levers 16 and 23, said intermediate lever 23 being provided with a recess, a pivoted regulating-dog 29 in said recess, and means for adjusting said dog in said recess and for retaining it in its different positions of adjustment.

822,893. **CUSHIONING DEVICE FOR FREELY-GYRATING MECHANISMS.** JOHN F. HARRISON, Milwaukee, Wis., assignor to Allis-Chalmers Company, Milwaukee, Wis., a Corporation of New Jersey. Filed Jan. 14, 1904. Serial No. 188,977.



Claim.—1. A gyrating bolter comprising a sieve-box, means for freely supporting the sieve-box, and an independent elastic means normally spaced from the bolter for restricting the abnormal outward throw of the bolter during gyration.

2. In combination with a gyrating sieve-box, means for freely supporting the sieve-box for gyration, an eccentrically-weighted rotatable shaft mounted in the sieve-box, a pin on the shaft, an independent fixed cushioning means for the pin, said pin and cushioning means coacting to cushion the abnormal outward movement of the sieve-box in a radial direction.

3. In combination with a gyrating sieve-box, means for freely supporting the sieve-box for gyration, an eccentrically-weighted rotatable shaft mounted in the sieve-box, a pin on the shaft, and a fixed elastic cushioning device provided with a central opening, the pin contacting with the inner wall of the opening during abnormal outward movement of the sieve-box.

4. The combination of a gyrating sieve-box, means for freely supporting the sieve-box for gyration, an eccentrically-weighted rotatable shaft mounted in the sieve-box, an eccentric pin on the shaft, and a fixed elastic cushioning device coacting with the pin.

5. The combination of a gyrating sieve-box, means for freely supporting the sieve-box for gyration, an eccentrically-weighted rotatable shaft mounted in the sieve-box, an eccentric pin on the shaft located in the plane of the axis of the shaft and the center of gravity of the weight, and a fixed spring means provided with a central opening in line with the axis of rotation and coacting with the pin.

6. The combination of a gyrating sieve-box, means for freely supporting the sieve-box for gyration, an eccentrically-weighted rotatable shaft mounted in the sieve-box, an eccentric pin on the shaft, and a fixed coil-spring, the pin coacting with the spring.

7. The combination of a gyrating bolter, rods for freely supporting the bolter for gyration, an eccentrically-weighted rotatable shaft mounted in the bolter, a flexible driving connection for the shaft, an eccentric pin on the shaft, and a fixed cushioning-spring device provided with a central opening, the pin contacting with the wall of the central opening in the spring when the bolter is at rest and rotating around its axis when the bolter is gyrating in equilibrium.

8. In a bolter, a sieve-carrying frame suspended to move freely laterally, an eccentrically-weighted vertical revoluble shaft mounted in the frame, independent fixed means for limiting the extent of the gyratory movement of the frame comprising a spring-stop secured to a fixed support and having a circular opening, and a pin on the shaft projecting into the opening.

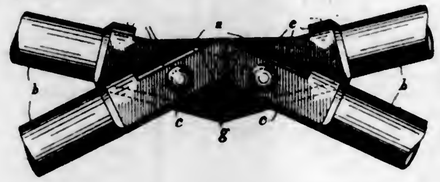
9. The combination of a gyrating bolter, supporting means for the bolter preventing rotation, and independent elastic means for restricting the abnormal outward throw of the bolter during gyration.

10. The combination of a gyratiag bolter, means for preventing rotation of the bolter, and independent elastic means for restricting the abnormal outward throw of the bolter during gyration.

11. In a bolter, a sieve-box freely supported for gyration, an eccentrically-weighted rotatable means mounted in the sieve-box, an eccentric means on the rotatable means, and means coacting with the eccentric means for restricting the abnormal outward throw of the bolter during gyration.

12. A gyrating bolter comprising a sieve-box, means for freely supporting the sieve-box, and a normally inoperative elastic means for restricting the abnormal outward throw of the bolter during gyration.

822,894. **HINGE FOR FOLDING FURNITURE.** JAMES HODSON, Liverpool, England, assignor to The North British Eyelet Company, Limited, Merefield, England. Filed Oct. 26, 1904. Serial No. 230,078.



Claim.—1. A hinge or junction-piece, members adapted to be joined and to hinge in said piece, said hinge or junction-piece comprising a channel-piece with cheek-pieces adapted to prevent lateral play of the members, stops to restrict the swing of said members, pivotal means for said members and means for permitting the inner ends of said members, to turn in and if need be project through the roof of said channel-piece.

2. A hinge or junction-piece, members adapted to be joined and to hinge in said piece, said hinge or junction-piece comprising channel-pieces side by side in approximately X form, cheek-pieces on said channel-pieces, pivotal means for said members in said cheek-pieces, means for permitting the inner ends of said members to turn in and if need be project through the channel-piece.

3. A hinge or junction-piece, members adapted to be joined and to hinge in said piece, said hinge or junction-piece comprising channel-pieces side by side, with means for holding said members when unfolded in approximately X form, means for permitting the inner ends of said members to turn in and if need be project through said channel-pieces, means for preventing lateral play of said members, and pivotal means for said members.

4. A hinge or junction-piece members adapted to be joined and to hinge in said piece said hinge or junction-piece comprising channel-pieces secured the one to the other side by side, the ends of each channel-piece being inclined the one to the other pivotal means for said members in said channel-pieces.

5. A hinge or junction-piece, members adapted to be joined and to hinge in said piece said hinge or junction-piece comprising channel-pieces secured the one to the other side by side in approximately X form, means for pivoting said members in pairs one member at an angle to the other substantially as and for the purpose set forth.

6. A hinge or junction-piece, members adapted to be joined and to hinge in said piece, said hinge or junction-piece comprising channel-pieces side by side in different planes and arranged approximately in X form, means for bringing the outer ends of said members into the same plane substantially as described.

7. A hinge or junction-piece, members adapted to be joined and to hinge in said piece, said hinge or junction-piece comprising channel-pieces arranged in approximately X form, bolts somewhat bent in the middle passing through said channel and each pair of members substantially as and for the purpose described.

8. In a hinge for furniture, the combination of two channel-pieces joined together side by side in approximately parallel planes and each channel-piece having its ends inclined to each other in the said planes, bars pivoted two in each channel-piece, the backs of the said channel-pieces forming stops for said bars, and two bolts located at different points longitudinally of said channel-pieces and each passing through both of said channels and a pair of said bars and forming pivots for said bars.

9. In a hinge for furniture, the combination of two channel-pieces joined together side by side in approximately parallel planes nd each channel-piece having its ends inclined to each other in the said planes, four bars, two being pivoted in each channel-piece, the backs of the said channel-pieces forming stops for said bars, and two bolts located at different points longitudinally of said channel-pieces and each bolt passing through both of said channels and through a pair of said bars and forming pivots for said bars, the middle portion of the back of each said channel-piece being open, to allow the ends of said bars to project through when the said bars turn upon the said bolts.

10. In a hinge for furniture, the combination of two channel-pieces joined together side by side in approximately parallel planes and each channel-piece having its ends inclined to each other in the said planes, four bars, two pivoted in each channel-piece, the backs of the said channel-pieces forming stops for said bars, and two bolts located at different points longitudinally of said channel-pieces and each passing through both of said channels and a pair of said bars and forming pivots for said bars, each of the said bolts being bent at the middle, whereby the outer ends of the said bars are brought into the same plane.

11. In a hinge for furniture, the combination of two channel-pieces joined together side by side in approximately parallel planes and each channel-piece having its ends inclined to each other in the said planes, four bars, two pivoted in each channel-piece, the backs of the said channel-pieces forming stops for the said bars, and two bolts located at different points longitudinally of said channel-pieces and each passing through both of said channels and a pair of said bars and forming pivots for said bars, the middle portion of the back of each channel-piece being open, to allow the ends of said bars to project through when the said bars turn upon the said bolts, each of the said bolts being bent at the middle, whereby the outer ends of the said bars are brought into the same plane.

822,895. **CLOSURE FOR BOTTLES, JARS, &c.** SAMUEL C. KINDIG, Baltimore, Md., assignor of one-half to Frederick Henkelman, Baltimore, Md. Filed Feb. 14, 1906. Serial No. 300,954.



Claim.—1. The combination with a bottle having a plurality of lugs arranged around the periphery of its neck, and having their outer faces inclined outwardly from the top of the bottle-neck forming locking-shoulders at their lower ends; of a cap having a plurality of projections extending downwardly at right angles thereto and each having an aperture therein and adapted to take over the lugs on the bottle-neck and lock the cap on the bottle the lower end of each of said projections being bent outwardly.

2. The combination with a bottle having a plurality of lugs arranged around the periphery of its neck and having their outer faces inclined outwardly from the top of the bottle-neck forming locking-shoulders at their lower ends; of a cap having a plurality of projections extending downwardly at right angles thereto and each having an aperture therein and adapted to take over the lugs on the bottle-neck and lock the cap on the bottle, the lower end of each of said projections being bent outwardly and a sealing-disk between the bottle and cap.

3. The combination with a bottle having a plurality of lugs arranged around the periphery of its neck and provided with inclined outer surfaces, of a cap having a plurality of projections extending downwardly at right angles thereto and each having an aperture therein and adapted to take over the lugs on the bottle-neck and lock the cap on the bottle, the lower end of each of said projections being bent outwardly and a sealing-disk between the bottle and cap.

4. The combination with a bottle having a plurality of lugs arranged equidistant around the outer edge of the neck, the outer surfaces of said lugs being inclined outwardly from the upper edge of the neck, forming a locking-shoulder at their lower ends, of a cap having a plurality of projections extending downwardly at right angles thereto and each having an aperture therein and adapted to take over the said lugs on the bottle-neck and lock the cap to the bottle, the lower end of each of said projections being bent outwardly from the body of the bottle.

822,896. **RAIL-JOINT.** ALBERT H. KNOPF, Oak Hall, Pa., assignor of one-half to Charles M. McCurdy, Bellefonte, Pa. Filed Mar. 27, 1906. Serial No. 308,230.



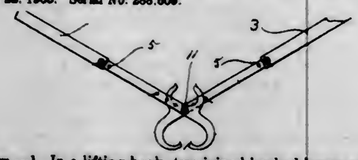
Claim.—1. In a rail-joint, a rail having at its end a downwardly-projecting hook portion with a V-shaped projection thereon, said rail being undercut back of said hook portion and the undercut portion having a recess therein; in combination with a second rail having at its end an upwardly-extending portion with a projection thereon adapted to interfit with said undercut portion and its recess of the other rail, and having also a cut-away portion with a V-shaped recess forming a seat for the hook portion and the projection thereon of the other rail; substantially as described.

2. In a rail-joint, a rail having at its end a downwardly-projecting hook portion and a cut-away portion back of said hook portion and having its base-flange cut away at one side; in combination with a second rail having at its end an upwardly-projecting hook portion and a cut-away portion adapted to interfit, respectively, with the cut-away portion and hook portion of the first rail, said second rail having its base-flange cut away at one side similarly to the first rail; substantially as described.

3. In a rail-joint, a rail having at its end a downwardly-projecting hook portion and a cut-away portion back of said hook portion and having its base-flange cut away at one side; in combination with a second rail having at its end an upwardly-projecting hook portion and a cut-away portion adapted to interfit, respectively, with the cut-away portion and hook portion of the first rail, said second rail having its base-flange cut away at one side similarly to the first rail; the hook portions and the cut-away portions of the two rails being provided with interfitting projections and recesses; substantially as described.

4. In a rail-joint, a rail having at its ends a downwardly-projecting hook portion and a cut-away portion back of said hook portion and having its base-flange cut away at one side; in combination with a second rail having at its end an upwardly-projecting hook portion and a cut-away portion adapted to interfit, respectively, with the cut-away portion and hook portion of the first rail, said second rail having its base-flange cut away at one side similarly to the first rail; the hook portion of the first rail being less in length than the cut-away portion of the second rail so as to provide space for expansion and contraction of the two rails relatively to each other; substantially as described.

822,897. **LIFTING-HOOK.** JESSE A. LEASE, Toledo, Ohio. Filed Nov. 22, 1905. Serial No. 288,609.

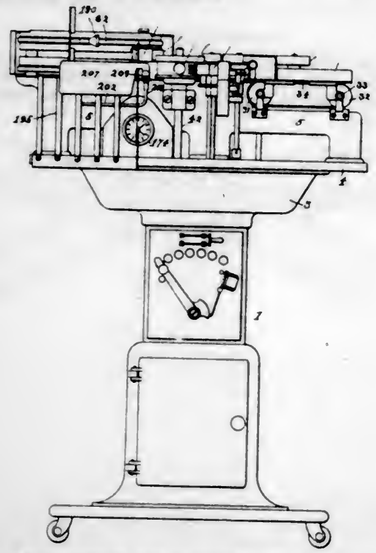


Claim.—1. In a lifting-hook, two joined hooked levers or bars having each a grappling-hook formation at one end thereof, and another similar hooked formation emanating from said bar just above the former hook at the end but on the opposite side of the bar, penetrating lugs or calks at the termination of each hook substantially as described.

2. In a lifting-hook, two joined hooked levers or bars having each a grappling-hook formation at one end thereof, and another similar hooked formation emanating from said bar just above the former hook at the end but on the opposite side of the bar, penetrating lugs or calks at the termination of each hook, holes in said bar interposed for adjustable joining of said hooked levers, further holes in said bar interposed for adjustable lengthening of handle for convenience or leverage power, tubular handle attached to said hooked levers substantially as set forth and described.

822,898. **AUTOMATIC MARKING AND CANCELING MACHINE.** ERNST R. MALMBORG, Chicago, Ill.; assignor, by mesne assignments, to Time Marking Machine Company, a Corporation of the District of Columbia. Filed Sept. 3, 1903. Serial No. 171,589.

Claim.—1. In a machine of the class described, the combination with feeding-rolls and a revoluble printing-die, of a revoluble serrated synchronizing wheel located in the path of movement of the feed-rolls, and means timed to conform to the rotation of the printing-wheel for actuating said synchronizing wheel whereby the article to be marked may be timed to contact with the feed-rolls at a predetermined period of their rotation.



2. The combination with a revoluble printing-die and feed mechanism, of a toothed synchronizing wheel the teeth of which are located in the path of movement of the article to be marked, said wheel being rotated step by step in harmony with the rotation of the printing-die and means for deflecting the article to be marked against one of the teeth of said synchronizing wheel.

3. The combination with a revoluble printing-die and feed mechanism, of a synchronizing wheel located in the path of movement of the article to be marked, means for actuating said wheel step by step in harmony with the movement of the printing-die, said wheel being provided with a series of teeth, one face of each of which is tangential to a circle drawn from the center of said wheel, while the other coincides with a line radiating from said center, whereby said wheel may serve alternately to retard the article to be marked and then to move it into alinement with the feeding mechanism.

4. The combination with a primary or initial feeding mechanism adapted to permit the passage of but one article at a time to be marked, of a revoluble printing-die, a secondary pair of feed-rolls arranged to rotate in a fixed relation thereto, a synchronizing wheel located between said primary and secondary feed-rolls, said wheel having teeth arranged to extend successively into the plane of the meeting faces of said feed-rolls to engage and control the movement of the articles to be marked, and means for actuating said synchronizing wheel step by step in harmony with the rotation of said printing-die.

5. The combination with primary and secondary feed mechanism, of a revoluble printing-die arranged to rotate in harmony with said secondary feed mechanism, a synchronizing wheel located between said primary and secondary feed mechanism, said wheel having teeth arranged to extend successively into the direct path of movement of the articles to be marked, to engage and control the movement of said articles respectively and means for actuating said synchronizing wheel one step with each rotation of said printing-die.

6. The combination with primary and secondary feed mechanism, of a revoluble printing-die arranged to rotate in harmony with said secondary feed mechanism, a synchronizing wheel located between said primary and secondary feed mechanism, said wheel having teeth arranged to extend successively into the direct path of the articles to be marked to engage and control the movement of said articles respectively, means for actuating said synchronizing wheel one step with each rotation of said printing-die, and a spring-controlled deflecting-plate for deflecting said articles into contact with said synchronizing wheel.

7. The combination with a continuously-revoluble printing-die of two sets of coacting feed mechanism, one to initiate the movement of the articles to be marked, while the other is placed between it and the printing-die, the latter being timed to bear a fixed relation in its movement to the rotation of the printing-die, and an intervening synchronizing mechanism, also timed to conform to the rotation of said printing-die, for positively controlling and timing the introduction of the articles to be marked to the secondary feed mechanism.

8. The combination with a revoluble printing-die and two sets of feed-rolls, of a positively-actuated synchronizing device immediately preceding the second set of feed-rolls with a slight space between it and the meeting faces of said rolls, and means for causing the movement of said synchronizing device and said second set of feed-rolls to be timed to act in harmony with the rotation of said printing-die.

9. The combination with a revoluble printing-die and two sets of feed-rolls, of a toothed synchronizing wheel interposed between he first and second sets of feed-rolls, means for actuating said wheel one step with each rotation of the printing-die and means for automatically locking said wheel in a normal position.

10. The combination with a revoluble printing-die, of revoluble feed-rolls bearing a fixed relation thereto, a star-wheel in operative connection with a registering mechanism, a cam arranged to rotate at the same speed with said printing-die, said cam being in proximity to, but normally out of engagement with said star-wheel and means actuated by the passage of an article to be marked, for moving said cam into engagement with said star-wheel.

11. The combination with a revoluble printing-die, of a registering mechanism, a star-wheel normally at rest for actuating the same, a juxtaposed cam normally out of contact with said star-wheel, said cam being arranged to rotate at like speed with said printing-die, feed mechanism, and means operated by the passage of an article to be marked for bringing said cam into operative engagement with said star-wheel.

12. The combination with a revoluble printing-die, of a spring-actuated compression-roll in juxtaposition thereto, a revoluble cam timed with said printing-die, for actuating upon said compression-roll, a spring-controlled catch for normally locking said compression-roll away from said printing-die, a star-wheel for withdrawing said catch and means operated by the passage of an article to be marked for moving said star-wheel one step with the passage of each article.

13. The combination with a revoluble printing-die, of a compression-roll, means for pressing the same against said die, means for consecutively withdrawing and permitting the release of said compression-roll with each revolution of said printing-die, supplemental means for normally locking said compression-roll away from said printing-die, mechanism actuated by the passage of an article to be marked for releasing said locking means, primary and auxiliary feed-rolls, means for rotating the latter in harmony with the rotation of the printing-die, and a synchronizing mechanism timed to act in harmony with the revolution of said printing-die for synchronously and positively controlling the introduction of the article to be marked to the auxiliary feed-rolls.

14. The combination with a revoluble printing-die, of a juxtaposed compression-roll, means for normally locking the same away from said die, feed-rolls, releasing mechanism controlled by the passage of an article to be marked, and a synchronizing mechanism for timing the introduction of the articles of varying length to said feed-rolls, said synchronizing mechanism being positively timed to act synchronously with the rotation of said printing-die to release the mail-piece by its own independent action.

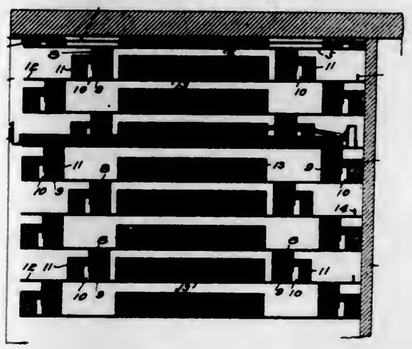
15. In a machine of the class described, the combination with a revoluble cylindrical case of a sliding case fitted to move therein to and from the periphery thereof, time-printing wheels mounted in said sliding case, a pivoted eccentrically-slotted lever upon said cylindrical case, means for connecting said eccentric slot with said sliding case and a spring-controlled locking mechanism for locking said lever in one or another extreme position.

16. In a stacking mechanism, the combination with follower-supporting rods of a follower, a carriage therefor mounted upon said rods, means for producing friction to control the movement of said carriage, said follower being mounted upon said carriage by means of an arm hinged at one end, whereby said follower may be folded laterally and downwardly out of the way when not in use.

17. The combination in a stacking mechanism of follower-supporting rods, a follower, a carriage therefor, said carriage having grooved wheels for engaging opposite sides of two parallel rods, and means for adjusting said wheels to press against said rods from opposite directions, whereby a yielding pressure and a corresponding frictional action may be imparted to said wheels to resist the movement of the carriage to conform to the requirements of the stacking mechanism.

18. In a stacking mechanism, the combination of laterally-extended rods for receiving and supporting the articles marked, said rods being made in sections hinged to each other, one section of which is adapted to fold beneath the other when not in use.

822,899. **CASE FOR DUPLICATE SALE-SLIPS.** CHARLES C. MUMM, EDWARD C. QUIMBY, and CHARLES ANDERSON, Minneapolis, Minn.; said Quimby and Anderson assignors to said Mumm. Filed Feb. 21, 1905. Serial No. 246,664.



Claim.—1. A case for duplicate-sale-slip files comprising a series of pockets each composed of a sheet-metal plate having depending and upwardly-extending ears, some of said ears having vertical slots to receive horizontal tongues provided on the contiguous ears, and said tongues having a limited vertical movement in said slots to allow the said pockets to be increased or decreased in depth, for the purpose specified.

2. A case for duplicate-sale-slip files, comprising a series of sheet-metal plates having upwardly and downwardly turned ears, the ears of one plate having a sliding connection with the oppositely-extending ears of the contiguous plate to allow the expansion and contraction of the case, substantially as described.

3. A case for duplicate-sale-slip files, comprising a series of sheet-metal sections, having upwardly-extending flanges forming guides for the files, and a series of upwardly and downwardly turned ears, the ears of one section having a sliding connection with the oppositely-arranged ears of the contiguous section, for the purpose set forth.

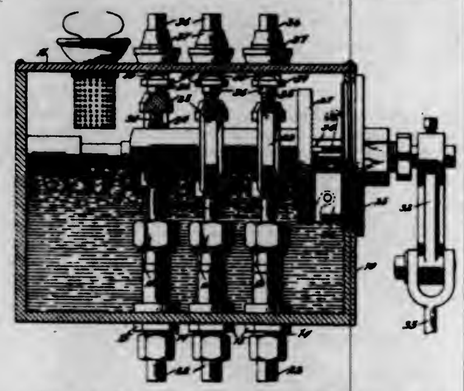
4. A case for duplicate-sale-slip files, comprising a series of sheet-metal sections or pockets having guiding means for files placed therein, each section having a sliding connection with the contiguous section to allow the expansion or contraction of the case and the ends of said sections remaining in vertical alinement with one another during such expansion and contraction, substantially as described.

5. The combination, with a receptacle 2 having a top provided with a plate 3 with downwardly-bent edges 4, of a file-case composed of a series of sections or pockets fitting within said receptacle, each section having a sliding connection with the contiguous section whereby either the contraction or expansion of the case is permitted, and the upper section of the series having means to engage the said edges 4 and support said case within said receptacle, substantially as described.

6. A case for duplicate-sale-slip files comprising a series of pockets arranged one above another and having guides and stops for the files placed therein, each section having a sliding connection with the contiguous one to allow the expansion and contraction of the case, the ends of said pockets remaining in vertical alinement with each other during such movement, substantially as described.

7. A case for duplicate-sale-slip files comprising a series of pockets having guiding means for files placed therein, each pocket having a sliding connection with the contiguous one in a direction substantially at right angles to the plane of the same to allow the expansion or contraction of the case, substantially as described.

822,900. **LUBRICATOR.** JOHN F. McCANNA, Chicago, Ill., assignor to The John F. McCanna Company, Chicago, Ill., a Corporation of Illinois. Original application filed June 15, 1903, Serial No. 161,456. Divided and this application filed Dec. 1, 1905. Serial No. 289,861.



Claim.—1. In combination in a force-feed lubricator, a reservoir, a pump arranged therein, means within the reservoir for driving the pump, and means extending from the outside into the reservoir for adjusting the throw of the pump, substantially as described.

2. In combination in a force-feed lubricator, a reservoir, a pump within the reservoir, means for operating the pump arranged within the reservoir, and means for adjusting the throw of the pump extending outside of the reservoir, and movable therethrough to indicate the amount of the movement of the pump, substantially as described.

3. In combination in a force-feed lubricator, a reservoir, a pump therein, means for actuating the pump therein, means for actuating the pump located within the reservoir, and mechanism arranged externally of the reservoir and connected to the said actuator means, said mechanism being adjustable to vary the movement of the actuator, substantially as described.

4. In a lubricator, the combination with a closed reservoir, a pump within the reservoir, a member within the reservoir and connected to the movable part of the pump to reciprocate the same, an adjustable abutment located in the reservoir and coöperating with the said member to regulate the amount of movement of the pump, and a stem extending from the abutment through the wall and outside of the reservoir to regulate the adjustment of the abutment.

5. In a lubricator, the combination with a reservoir, a pump within the reservoir, a member within the reservoir and connected to the movable part of the pump to reciprocate the same, and an adjustable stem extending through the wall of the reservoir to regulate the amount of movement of the said member and indicate the throw of the pump.

6. In combination in a force-feed lubricator, a reservoir, a plurality of pumps therein, a single shaft within the reservoir, means thereon for operating the pumps, each pump having its own adjusting means for altering its stroke independent of the other pumps and each adjusting means comprising a stem extending from the operating means to a point outside the reservoir, substantially as described.

7. In a lubricator, the combination with a reservoir, and a plurality of pumps therein, and means within the reservoir common to all the pumps for operating the same, each pump having its own adjusting means for altering its stroke independent of the other pumps and each adjusting means comprising a stem coöperating with the operating means and exteading to a point outside the reservoir.

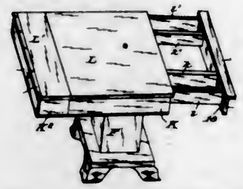
8. In a device of the class described, the combination with a closed reservoir, of a pump located therein, a yoke within the reservoir and fixed to the pump-piston, an eccentric turning within the yoke, an adjustable abutment extending into the yoke and provided with a stem which is in threaded engagement with the yoke and projects through the top of the reservoir for adjusting the abutment.

9. In a device of the class described, the combination with a reservoir, of a pump located therein, a yoke connected to the piston of the pump, an eccentric coöperating with the yoke, an adjustable abutment carried by the yoke and comprising a rotatable stem extending in the path of the eccentric, and means for holding the stem against rotation.

10. In a device of the class described, the combination with a reservoir, of a pump located therein, a yoke fixed to the piston of the pump, an eccentric coöperating with the yoke, a stem having a threaded extension passing through one of the arms of the yoke and normally extending in the path of the eccentric, a sleeve rotatably mounted in the wall of the reservoir and through which the stem passes, a resilient washer carried by the sleeve and engaging the wall of the reservoir, and a nut on the stem in threaded engagement with the sleeve.

11. In a device of the class described, the combination with a closed reservoir, of a pump therein, a yoke fixed to the pump-piston, an eccentric turning within the yoke, a stem polygonal in cross-section extending through the top of the reservoir and having a threaded extension passing through the top of the yoke and normally extending in the path of the eccentric, a nut on the stem and having an aperture conforming to the shape of the latter and engaging the top of the reservoir, a sleeve in threaded engagement with the nut and having a shoulder within the reservoir, and a spring-washer interposed between the shoulder and the under face of the top of the reservoir.

822,901. **EXTENSION-TABLE.** THOMAS M. McKEE, Greenfield, Ind., assignor of one-half to John W. Comstock, Greenfield, Ind. Filed May 4, 1905. Serial No. 258,743.



Claim.—1. An extension-table including a stationary main section having a filling-board receptacle therein under the top thereof, an end section slidingly supported by the main section and adapted to drop at its outer end when extended, and separate filling-boards adapted to be placed upon the end section or to be placed in the receptacle over the end of the end section.

2. An extension-table including a stationary main section having a receptacle therein and also an end support, an end section adapted to close an end of the receptacle of the main section and having supporting guide-bars operating on the end support of the main section and provided with recesses permitting the outer end of the end section to drop when the recesses are at the end support of the main section.

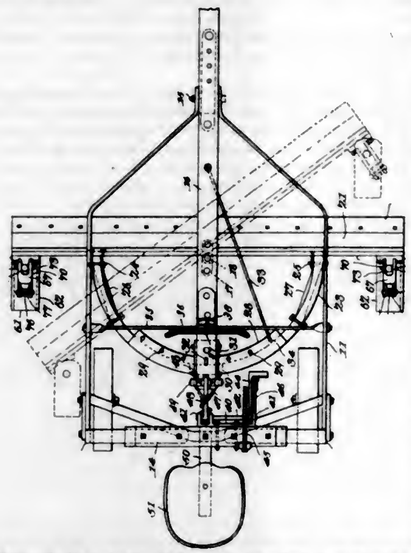
3. An extension-table including a stationary main-section frame comprising a pair of longitudinal center rails and a pair of longitudinal side rails, a pair of transverse center rails each attached to a longitudinal side rail and central rail, and a pair of end rails each attached to the longitudinal center rails and side rails and having openings therein, the openings of one end rail being adjacent to the longitudinal center rails and the openings of the other end rail being adjacent to the longitudinal side rails, a top secured to the main-section frame, and movable extension-frames comprising each an end rail and a pair of guide-bars and drawer structures secured together and guided in the openings of an end rail of the main-section frame, the guide-bars extending through the transverse center rails.

4. An extension-table including a stationary main section having a receptacle therein and also an end support having openings therein, an end section adapted to close an end of the receptacle of the main section and having supporting guide-bars operating in the end support of the main section and provided with recesses permitting the outer end of the end section to drop when the recesses are at the end support of the main section, and drawer structures attached to said guide-bars and operating in said openings of the end support of the main section.

5. An extension-table comprising a support, a main-section frame detachably secured to the support and having a filling-board receptacle therein, end sections movable in the main section and closing the ends of the receptacle therein, separate filling-boards, means for dropping the end sections when withdrawn to permit the insertion of the filling-boards into their receptacles across the tops of the end sections, and drawers carried by the end sections.

6. A knockdown table including a cap having bearings and guides, a support for the cap, a main table-section having center rails removably mounted on the bearings of the cap against the guides thereof and provided with a fixed and a movable securing device engaging the cap.

822,902. **ROAD SCRAPER AND GRADER.** JAMES H. OSTEN, White City, Kans., assignor of one-third to Robert Guy Osten and one-third to John Walker, White City, Kans. Filed Aug. 29, 1905. Serial No. 276,258.



Claim.—1. In a device of the class described, a supporting-frame having carrying-wheels and with forwardly-converging side members, a draft-tongue pivoted to swing between the converging side members, means operative from said frame for adjusting said tongue vertically, a scraper supported from said tongue, an arched frame connecting said side members, a slotted standard extending from said tongue and curved concentrically with the pivot of the same, a plate connected to said arched frame with its forward face curved to correspond to the curve of said slotted member, and a guide-pin extending from said plate and operating in said slot.

2. In a device of the class described, a supporting-frame having carrying-wheels, a draft-tongue swinging from said frame, means operative from said frame for adjusting said tongue vertically, a scraper supported from said tongue, a seat-supporting standard extending from said frame, a brace between said seat-standard frame with the free end of the brace extended into a hook, and a spring connecting said hook and tongue.

3. In a device of the class described, a draft-tongue, a scraper, means for movably coupling said scraper to said tongue, a segmental member connected at the ends to said scraper and provided with a central enlargement, a keeper attached to said tongue and embracing said segmental member and corresponding in interior area with the enlarged portion of the same, whereby the scraper is rigidly supported when in central position and flexibly supported when in its lateral positions.

4. In a device of the class described, a draft-tongue, a scraper, means for movably coupling said scraper to said tongue, a segmental member connected at the ends to said scraper and provided with a central enlargement, a flange-plate upon said segmental member and extending in advance of the same and provided with spaced apertures, a keeper attached to said tongue and embracing said segmental member and corresponding in interior area with the enlarged portion of the same, and a lock-pin extending through the tongue for engaging any one of the perforations in the flange-plate.

5. In a device of the class described, a draft-tongue, a scraper, means for movably coupling said scraper to said tongue, a segmental member connected by the ends to said scraper, a flange-plate upon said segmental member and extending in advance of the same and provided with spaced apertures, a keeper attached to said tongue and embracing said segmental member, a lock-pin extending through the tongue for engaging any one of the perforations in the flange-plate, and a stay-rod swinging beneath said tongue and terminating in a hook for detachable engagement with any one of the perforations in the flange-plate.

6. In a device of the class described, a draft-tongue, a scraper, means for suspending said scraper for rotation from said tongue, means for adjusting said scraper relative to said draft-tongue, brackets connected to said scraper and provided with spaced teeth, a standard rotatively and slidably disposed in said bracket and terminating in a shoe for bearing on the ground, a bar coupled to said standard and provided with spaced teeth for engagement with the teeth of said bracket, and means for locking said bar to said bracket.

7. In a device of the class described, a draft-tongue, a scraper, means for suspending said scraper for rotation from said tongue, means for adjusting said scraper relative to said draft-tongue, brackets connected to said scraper and provided with spaced ears and with teeth thereon between said ears, a standard rotatively and slidably disposed in said bracket and provided with a shoe for bearing on the ground, a bar flexibly coupled to said standard and extending between said ears and provided with teeth for engaging the teeth of said bracket, and a cam pivoted between said ears and operating to compress said bar into engagement with said bracket.

8. In a device of the class described, a draft-tongue, a scraper, means for suspending said scraper for rotation from said tongue, means for adjusting said scraper relative to said draft-tongue, brackets connected to said scraper and provided with spaced ears and with teeth between said ears, a standard rotatively and slidably disposed in said bracket and provided with a shoe for bearing on the ground, a bar extending between said ears and provided with spaced teeth for engagement with the teeth of said bracket, a cam pivoted between said ears and operating to compress said bar into engagement with said bracket, spaced arms extending from said toothed bar and embracing said standard and provided with transverse slots, and a pin extending through said standard and said slots.

822,903. **METHOD OF SEPARATING COTTON.** WARREN A. PATTERSON, St. Louis, Mo., assignor to American Cotton Separator Company, St. Louis, Mo., a Corporation of Oklahoma. Filed Oct. 15, 1904. Serial No. 228,577.



Claim.—1. The herein-described method of separating cotton from the bolls in which the cotton is incased, which consists in exerting pressure upon the boll-covering in one direction, and simultaneously subjecting the cotton fiber to pressure in the opposite direction and also to air-suction for withdrawing it from the boll; substantially as described.

2. The herein-described method of separating cotton from the bolls in which the cotton is incased, which consists in subjecting the bolls to pressure which forces them in one direction, simultaneously subjecting the cotton to pressure and also air-suction which forces it in an opposite direction and tends to remove it from the bolls, and thereafter repeating said operations until the cotton is completely removed; substantially as described.

REISSUES.

12,491. **DRIER.** JOHN W. BILES, Louisville, Ky., assignor to himself, committee of Charles H. Mantle, Louisville, Ky. Filed Mar. 5, 1906. Serial No. 304,414. Original No. 807,997, dated Dec. 19, 1905.

Claim.—1. The combination of a drying-chamber, a heating-conduit within the chamber and provided with an outlet, and means spaced from and operatively related to the outlet for discharging the fluid from the conduit into the chamber in opposite directions.

2. The combination of a drying-chamber, a heating-conduit therein provided with a discharge-opening, and means spaced from and operatively related to the opening for deflecting the fluid in opposite directions within the chamber.

3. In a device of the class described, the combination of a chamber through which the material to be treated passes, and a heat-

conduit within the chamber, said conduit being provided with a discharge-opening, means coöperating with the opening and disposed to direct the fluid from the conduit into the chamber in opposite directions to engage the material on both sides during its passage through the chamber.



4. In a device of the class described, the combination of a chamber through which the material to be treated passes, a conduit within the chamber adapted to receive a fluid, said conduit being provided with a discharge-opening, and means operatively related to the opening for deflecting the fluid discharged from the conduit in opposite directions within the chamber, to engage the material on both sides during its progress through the chamber.

5. In a device of the class described the combination of a chamber through which the material to be treated passes longitudinally, a fluid-conduit within the chamber, said conduit being provided with a discharge-opening, means coöperating with the opening and disposed to direct the fluid against the material in a direction in line with the path of its longitudinal movement through the cylinder and also in a direction opposed to its path of movement therethrough.

6. The combination of a chamber through which the material to be treated passes longitudinally, a fluid-conduit within the chamber, adapted to receive the fluid in a direction opposed to the path of movement of the material, said conduit being provided with a discharge-opeaing within the chamber, and means operatively related to the opening for deflecting the fluid against the material in line with its path of movement and also in a line opposed to its path of movement as the material advances through the chamber.

7. In a device of the class described, the combination of a drying-chamber; a heating-conduit within the chamber, and provided with a discharge-opening, and a spaced deflector surrounding the discharge-opening for deflecting the fluid in opposite directions.

8. In a device of the class described, the combination of a drying-chamber a heating-conduit within the chamber and provided with discharge-openings, deflectors surrounding the discharge-openings, and means for spacing the deflectors from the conduit and supporting the same over the discharge-openings.

9. The combination with a drying-chamber, of a heating-conduit extending into the chamber and comprising sections between which are spaces, and deflectors extending outside the sections and opening at each side of the spaces.

10. The combination with a drying-chamber, of a heating-conduit extending into the chamber and comprising spaced sections, deflector-rings spaced from the conduit, surrounding and extending across the openings formed between the adjacent ends of the sections.

11. The combination of a drying-chamber, a heating-conduit extending into the chamber and comprising a plurality of sections, means disposed between the adjacent ends of the sections for separating the same to form spaces therebetween, deflectors surrounding the spaces and extending across the same, and means for supporting said deflectors out of contact with the conduit.

12. The combination of a drying-chamber, a heating-conduit extending into the chamber and comprising spaced sections, the diameter of each successive section being smaller than its adjacent section, and encircling deflecting-rings spaced from the conduit and standing across the spaces formed between the adjacent ends of the sections.

13. The combination of a drying-chamber, a heating-conduit extending into the chamber and comprising a plurality of sections, each successive section being of a smaller diameter than the adjacent section, means disposed between the adjacent ends of the sections for separating the same to form spaces therebetween, deflectors surrounding the spaces and extending across the same, and means for supporting the deflectors out of contact with the conduit.

14. The combination of a drying-chamber, a heating-conduit extending into the chamber and comprising spaced sections, the diameter of each successive section being smaller than its adjacent section, and means disposed adjacent the space between the adjacent sections for deflecting the fluid into the chamber in opposite directions.

15. The combination with a drying-chamber, of a heating-conduit extending into the chamber and comprising separated sections having at their adjacent ends outward projections, and deflectors carried by the projections.

16. The combination of a drying-chamber, a heating-conduit extending into the chamber and comprising a plurality of separated sections, the diameter of each successive section being less than the diameter of the adjacent section, each of the sections having at their adjacent ends outward projections, and deflectors carried by the projections.

17. The combination with a drying-chamber, of a heating-conduit extending into the chamber and comprising sections having a their adjacent ends outward projections, and spacing members interposed between the projections.

18. The combination with a drying-chamber, of a heating-conduit extending into the chamber and comprising a plurality of sections, the diameter of each successive section being less than the diameter of the adjacent section, each of the sections having at their adjacent ends outward projections, and spacing members interposed between the projections.

19. The combination with a drying-chamber, of a heating-conduit extending into the chamber and comprising sections having at their adjacent ends outward projections, spacing members introduced between the projections, and deflecting-rings supported upon the projections.

20. The combination of a drying-chamber, a heating-conduit extending into the chamber and comprising a plurality of sections, the diameter of each successive section being less than the adjacent section, each of the sections having at their adjacent ends outward projections, spacing members introduced between the projections, and deflecting-rings supported upon the projections.

21. The combination of a drying-chamber, a heating-conduit extending into the chamber and provided with radial discharge-openings, and an independent concentric deflector-ring, spaced from and surrounding each of the openings, said rings being of a width greater than the openings.

22. The combination of a drying-chamber, a heating-conduit extending into the chamber and provided with discharge-openings, deflectors covering the openings and supported by the conduit, and rods, one end of which are attached to the chamber and the other end secured to the deflectors for supporting the conduit.

23. The combination of a drying-chamber, a heating-conduit extending into the chamber and comprising spaced sections, deflector-rings supported by the conduit and surrounding the spaces between the sections, and tie-rods, one end of which are secured to the chamber and the other end to the deflector-rings for preventing displacement of the conduit.

24. The combination of a drying-chamber, a heating-conduit extending into the chamber and comprising spaced sections, the openings between said sections being disposed in different vertical planes and means operatively related to the spaces for directing the fluid discharged into the chamber through the openings, in opposite directions therein and in different planes.

25. The combination of a drying-chamber, a heating-conduit extending into the chamber and comprising a plurality of spaced sections, the openings between the sections being disposed in different vertical planes and a deflector coöperating with each of the spaces for deflecting the fluid discharged into the chamber in opposite directions therein, each of said deflectors being located in a different plane to each other.

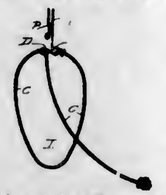
26. The combination of a drying-chamber, a heating-conduit extending into the chamber and provided with a plurality of discharge-openings arranged in different vertical planes and means operatively related to the openings for deflecting the fluid discharged into the chamber longitudinally in opposite directions therein and in different vertical planes.

27. The combination of a drying-chamber, a heating-conduit extending into the chamber and provided with radial discharge-openings, and independent concentric deflector-rings spaced from and surrounding each of the openings, each of said rings being of a different diameter and of a width greater than the openings.

28. The combination of a drying-chamber, a heating-conduit extending into the chamber and comprising spaced sections, and a deflector-ring spaced from the conduit, surrounding and extending across each of the openings formed between the adjacent ends of the sections, said rings being of a different diameter.

29. The combination of a drying-chamber, a heating-conduit extending into the chamber and comprising spaced sections, the diameter of each successive section being smaller than its adjacent section, and an encircling deflector-ring spaced from the conduit, and standing across the spaces formed between the adjacent ends of the sections, the diameter of each successive ring being smaller than the diameter of its adjacent ring.

12,492. **METALLIC CORD-FASTENER.** CHARLES F. METHFESSEL and WILLIAM J. HARTSON, Milwaukee, Wis., assignors of one-third to Francis H. Whitney, Milwaukee, Wis. Filed Dec. 12, 1905. Serial No. 291,657. Original No. 785,749, dated Mar. 28, 1905.



Claim.—1. In a package-holder, the combination of a fastening-cord and a metallic cord-fastener having fixed connection with one end of the cord and loose engagement with the intermediate portion thereof, said cord-fastener being also provided with a primary hook adapted to loosely receive the cord and a device coöperative with the primary hook for locking the cord in position therein.

2. In a package-holder, the combination of a fastening-cord and a metallic cord-fastener having fixed connection with one end of the cord and loose engagement with the intermediate portion thereof, said cord-fastener being also provided with a primary hook adapted to loosely receive the cord, and a fastening-hook arranged to coöperate with the primary hook in securing the cord thereto.

3. In a package-holder, a metallic cord-fastener comprising a loop for the permanent attachment of one end of the fastening-cord; a separate loop for the reception of a slip-noose formed by the intermediate portion of the cord; a primary hook through which the cord is drawn preparatory to being tied and a fastening-hook for the reception of the end of the cord when tied, in combination with a fastening-cord permanently attached at one end to said cord-retaining loop, having its intermediate portion slidably connected with said noose-retaining loop, and means for preventing the free end of said cord from being withdrawn from said noose-retaining loop, all substantially as and for the purpose specified.

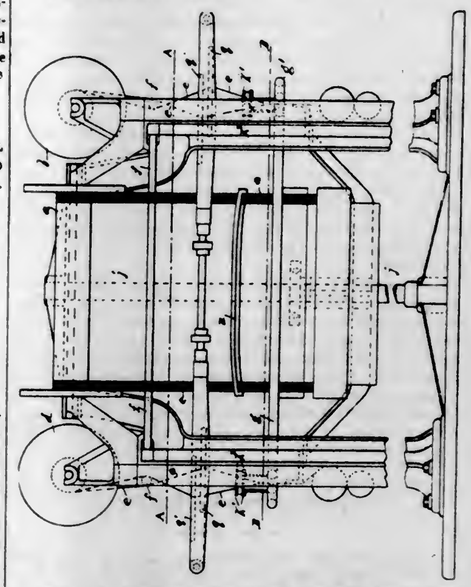
4. In a package-holder, the combination of a fastening-cord, a primary hook adapted to loosely engage the cord and provided with a shank having fixed connection with one end of the cord and a loop in loose engagement with the intermediate portion thereof; a fastening-hook having its free end extended along the shank of the primary hook and provided with an outwardly-curving extremity, said fastening-hook being arranged to permit an initial independent engagement of the cord in the primary hook.

5. In a package-holder, the combination of a fastening-cord and a metallic cord-fastener comprising a primary hook having a shank provided with a loop in a plane substantially at right angles to the plane of the primary hook; said cord having one end permanently connected with the shank and an intermediate portion extending from said fixed end loosely through said loop from beneath and forming a slip-noose; said primary hook being adapted to loosely receive the cord and provided with means for locking the cord in position therein.

6. The combination of a fastening-cord and a cord-fastener comprising a wire bent upon itself to form spaced members and a connecting-bight, one of said spaced members being longer than the other and having said fastening-cord attached thereto, said spaced members being bent at points adjacent to said bight to form the bill of the hook.

7. A cord-fastening hook comprising a stem, a bight, and a bill, the hook being composed of two slightly-separated strands extending from the free end of the stem to the end of the bill, and the resultant sides of the stem and bill being in spaced relation to permit the passage of a cord therebetween, the free end portion on one side of the stem being longer than the other and having a cord attached at its extremity.

12,493. **LOOM FOR WEAVING.** ABRAHAM TCHERNIACK, New York, N. Y. Filed Mar. 7, 1906. Serial No. 304,798. Original No. 807,791, dated Dec. 19, 1905.



Claim.—1. A loom for weaving having means for forming a number of separate vertical sheds, each on the arc of a circle, and grouped around a common vertical center, and a reciprocating operating mechanism for inserting separate weft-threads in the separate sheds.

2. A loom for weaving, having means for forming a number of separate sheds about a common center, separate shuttle for each shed, and means for reciprocating each shuttle backward and forward through its shed.

3. A loom for weaving, having means for forming a number of separate sheds, each on the arc of a circle, and grouped around a common center, a separate shuttle for each shed, and means for reciprocating each shuttle backward and forward through each shed.

4. A loom for weaving, having means for forming a number of separate sheds each on the arc of a circle and grouped around a common center and a separate shuttle for each shed, and means for carrying each shuttle through its shed at a substantially constant speed and then reversing the direction of its carriages.

5. A loom for weaving a number of fabrics, comprising a circular shuttle-carrier, and means for forming sheds perpendicular thereto, shuttles resting on said carrier, and means for passing said shuttles through the sheds by the movement of the carrier without displacing the shuttles horizontally upon the carrier.

6. A loom having means for carrying vertical warps, and provided with a shuttle-box formed of two parts, between which the vertical warp-threads pass, means to form a shed, a shuttle held against horizontal motion upon said shuttle-box, and means to operate said box, whereby, upon such operation, the shuttle will be carried

through the shed, one side of which will pass between one side of the shuttle and one part of the box, while the other side of the shed will pass between the other side of the shuttle and the other part of the box.

7. A loom having a shuttle-carrier composed of a number of circular rings, means thereon for holding a shuttle against horizontal motion in the carrier, means for producing a shed passing between two of such rings, a shaft and arms therefrom carrying said rings and means for operating said rings to move them through the shed.

8. A loom, having a shuttle-carrier, composed of a number of circular rings, means for holding a shuttle against horizontal motion in the carrier, means for producing a shed between two of such rings, a shaft and arms therefrom carrying said rings and means for reciprocating said carrier through the shed.

9. A loom having means for carrying vertical warps and shed-forming means therefor, a shuttle, and a shuttle-box, the latter being composed of two parts and being so formed as to prevent horizontal displacement of the shuttle and having its ends adapted to permit the shuttle and box to be traversed with the warps of the shed between the inner surfaces of the shuttle-box and the outer surfaces of the shuttle.

10. A loom for weaving, having means for carrying vertical warps and shed-forming means therefor, and a shuttle-box in two parts forming a contracted opening at each end of the box and a shuttle held by gravity therein, the box and shuttle being adapted to be traversed with the warps of the shed between the inner surfaces of the shuttle-box and the outer surfaces of the shuttle.

11. In combination with the shed-forming mechanism of a loom with vertical warps, a shuttle-box composed of plates with a free passage between them, each plate having enlarged ends and a boat-shaped shuttle running in the mid-portion of the shuttle-box.

12. A loom, having a plurality of separate sheds, and a slay for each shed, said slays being hinged to a common center at one end and operating-arms adapted to move them on their hinges to beat up the weft-threads.

13. A loom for weaving a number of pieces of fabric at once, comprising a common central axis, a shuttle-carrier composed of a number of rings and means to reciprocate said shuttle-carrier on said common axis, gravity-held shuttles carried by said shuttle-carrier, means to prevent their horizontal motion on said shuttle-carrier, frames carrying the healds arranged about said common center and means for operating them to form the shed, and slays for beating up the weft, likewise arranged about said common center and hinged thereto on their inner ends, and means for moving said slays on their hinged ends.

DESIGNS.

38,048. BADGE. SUSIE DERBY PARKER, Macon, Ga. Filed Mar. 5, 1906. Serial No. 304,413. Term of patent 14 years.



Claim.—The ornamental design for a badge, as shown.

38,049. FOUNTAIN-PEN-HOLDING RECEPTACLE. FRANK A. WEBER, Plainfield, N. J. Filed Mar. 10, 1906. Serial No. 305,415. Term of patent 7 years.



38,049.



Claim.—The ornamental design for a fountain-pen-holding receptacle, as shown.

38,050. CHRISTMAS CRIB. FRITZ WILLENBRINK, Augusta, Mo. Filed Apr. 25, 1906. Serial No. 313,722. Term of patent 14 years.



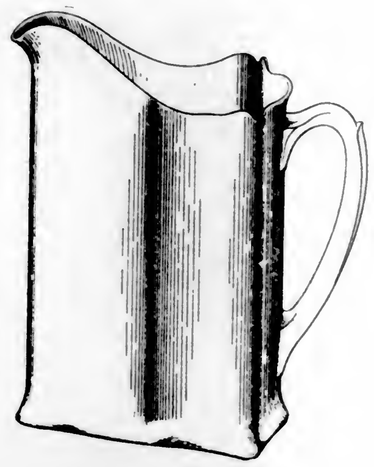
Claim.—The ornamental design for a Christmas crib, as shown.

38,051. JUG OR SIMILAR ARTICLE. CHARLES JOHN NOKE, Stoke-upon-Trent, England, assignor to William S. Pitcairn, New York, N. Y. Filed Apr. 16, 1906. Serial No. 312,033. Term of patent 3½ years.



Claim.—The ornamental design for a jug or similar article substantially as shown.

38,052. JUG OR SIMILAR ARTICLE. CHARLES JOHN NOKE, Stoke-upon-Trent, England, assignor to William S. Pitcairn, New York, N. Y. Filed Apr. 16, 1906. Serial No. 312,033. Term of patent 3½ years.



Claim.—The ornamental design for a jug or similar article substantially as shown.

38,053. JUG OR SIMILAR ARTICLE. CHARLES JOHN NOKE, Stoke-upon-Trent, England, assignor to William S. Pitcairn, New York, N. Y. Filed Apr. 16, 1906. Serial No. 312,034. Term of patent 3½ years.



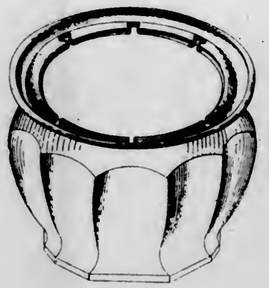
Claim.—The ornamental design for a jug or similar article substantially as shown.

38,054. JUG OR SIMILAR ARTICLE. JOHN SLATER, Brown Edge, Stoke-upon-Trent, England, assignor to William S. Pitcairn, New York, N. Y. Filed Apr. 16, 1906. Serial No. 312,036. Term of patent 3½ years.



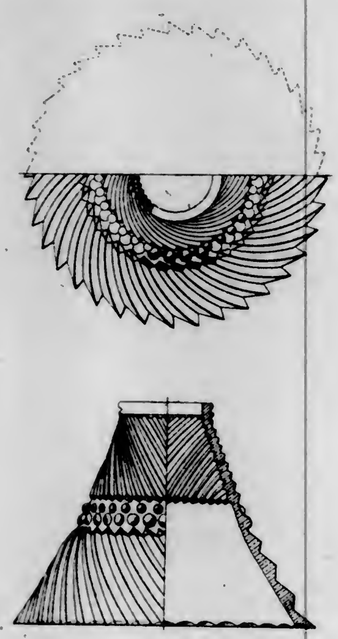
Claim.—The ornamental design for a jug or similar article substantially as shown.

38,055. FRUIT-BOWL. BENJAMIN W. JACOBS, Lancaster, Ohio Filed Apr. 25, 1906. Serial No. 313,721. Term of patent 14 years.



Claim.—The ornamental design for a fruit-bowl, as shown.

38,056. SHADE FOR LAMPS. WILLIAM A. HOGAN, New York, N. Y. Filed Jan. 28, 1905. Serial No. 243,147. Term of patent 7 years.



Claim.—The ornamental design for a shade for lamps as shown.

38,057. SUSPENDER-BOX. AARON COLEMAN, New York, N. Y. Filed Mar. 14, 1906. Serial No. 306,083. Term of patent 7 years.



Claim.—The ornamental design for a suspender-box as shown.

38,058. SHOW-CASE. JOSEPH T. ROBIN, New York, N. Y. Filed Apr. 3, 1906. Serial No. 309,708. Term of patent 7 years.



Claim.—The ornamental design for a show-case, as shown.

38,059. CASKET, COFFIN, OR SIMILAR ARTICLE. CLAYTON F. WETMORE, Jersey City, N. J., assignor to National Casket Co., New York, N. Y., a Corporation of New York. Filed Mar. 27, 1906. Serial No. 306,373. Term of patent 14 years.



Claim.—The ornamental design for a casket, coffin or similar article as shown.

38,060. EMBOSSED FABRIC. LOUIS M. MUSLINER, New York, N. Y., assignor to Geisman & Musliner, New York, N. Y., a Copartnership. Filed Mar. 12, 1906. Serial No. 305,723. Term of patent 7 years.



Claim.—The ornamental design for embossed fabric, as shown.

38,061. TEXTILE FABRIC. SOPHIA L. CROWNFIELD, New York, N. Y., assignor to Cheney Brothers, South Manchester, Conn., a Corporation of Connecticut. Filed Apr. 20, 1906. Serial No. 312,922. Term of patent 3½ years.



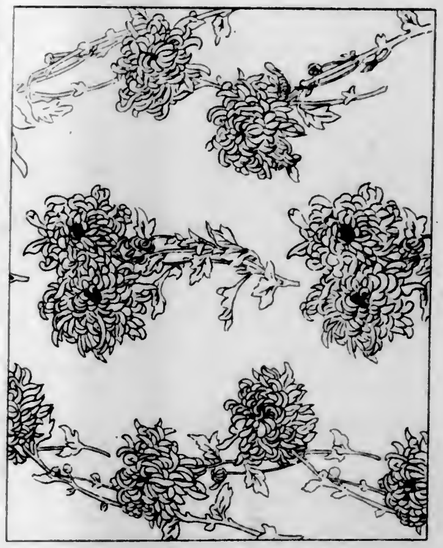
Claim.—The ornamental design for a textile fabric, as shown.

38,062. TEXTILE FABRIC. SOPHIA L. CROWNFIELD, New York, N. Y., assignor to Cheney Brothers, South Manchester, Conn., a Corporation of Connecticut. Filed Apr. 20, 1906. Serial No. 312,924. Term of patent 3½ years.



Claim.—The ornamental design for a textile fabric, as shown.

38,063. TEXTILE FABRIC. SOPHIA L. CROWNFIELD, New York, N. Y., assignor to Cheney Brothers, South Manchester, Conn., a Corporation of Connecticut. Filed Apr. 20, 1906. Serial No. 312,925. Term of patent 3½ years.



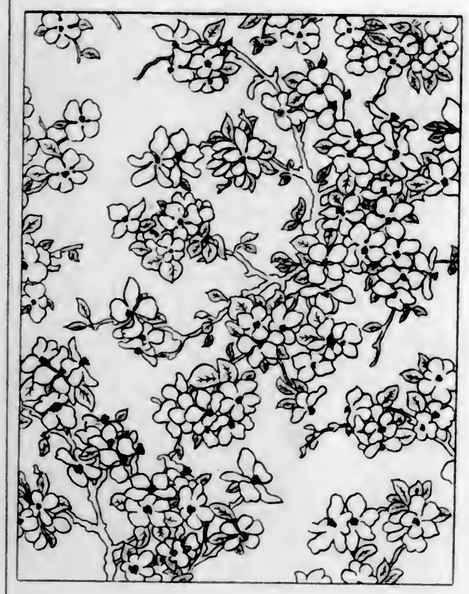
Claim.—The ornamental design for a textile fabric, as shown.

38,064. TEXTILE FABRIC. SOPHIA L. CROWNFIELD, New York, N. Y., assignor to Cheney Brothers, South Manchester, Conn., a Corporation of Connecticut. Filed Apr. 20, 1906. Serial No. 312,926. Term of patent 3½ years.



Claim.—The ornamental design for a textile fabric, as shown.

38,065. TEXTILE FABRIC. SOPHIA L. CROWNFIELD, New York, N. Y., assignor to Cheney Brothers, South Manchester, Conn., a Corporation of Connecticut. Filed Apr. 20, 1906. Serial No. 312,928. Term of patent 3½ years.



Claim.—The ornamental design for a textile fabric, as shown.

TRADE-MARKS

PUBLISHED JUNE 5, 1906.

The following trade-marks have been adjudged entitled to registration under the act of February 20, 1905, and are published in compliance with section 6 of said act. Said section provides:

"Any person who believes he would be damaged by the registration of a mark may oppose the same by filing notice of opposition, stating the grounds therefor, in the Patent Office within thirty days after the publication of the mark sought to be registered, which said notice of opposition shall be verified by the person filing the same before one of the officers mentioned in section two of this act. If no notice of opposition is filed within said time the Commissioner shall issue a certificate of registration therefor, as hereinafter provided for."

Marks which are stated to have been "Used ten years" are registrable under the last proviso of section 5 of said act, which is as follows:

"And provided further, That nothing herein shall prevent the registration of any mark used by the applicant or his predecessors, or by those from whom title to the mark is derived, in commerce with foreign nations or among the several States, or with Indian tribes, which was in actual and exclusive use as a trade-mark of the applicant or his predecessors from whom he derived title for ten years next preceding the passage of this act."

Section 14 of said act provides for the following fee:

"On filing notice of opposition to the registration of a trade-mark, ten dollars."

SER. No. 11. HOOKS AND EYES. THE DE LONG HOOK & EYE COMPANY, Philadelphia, Pa. Filed Apr. 1, 1905.

HUMP

The word "HUMP."

SER. No. 258. WHISKY. THE UNION DISTILLING CO., Cincinnati, Ohio. Filed Apr. 3, 1905.

OLD GLORY

The words "OLD GLORY."

SER. No. 548. REVOLVER-PISTOLS. SMITH & WESSON, Springfield, Mass. Filed Apr. 6, 1905. Used ten years.

S. & W.

The letters "S." "W." together with the ampersand, or character "&."

SER. No. 549. REVOLVERS. SMITH & WESSON, Springfield, Mass. Filed Apr. 6, 1905. Used ten years.



A monogram "S & W," which is composed by entwining the two letters "S" and "W" and the character "&" together.

SER. No. 550. REVOLVERS. SMITH & WESSON, Springfield, Mass. Filed Apr. 6, 1905. Used ten years.

SMITH & WESSON

The words and character "SMITH & WESSON."

SER. No. 614. PENS OTHER THAN FOUNTAIN-PENS. C. HOWARD HUNT PEN CO., Camden, N. J. Filed Apr. 6, 1905.

25 WORLD

The arbitrary word "WORLD" and the numeral "25."

SER. No. 615. PENS OTHER THAN FOUNTAIN-PENS. C. HOWARD HUNT PEN COMPANY, Camden, N. J. Filed Apr. 6, 1906.

12 COMPANION

The arbitrary word "COMPANION" and the numeral "21."

SER. No. 616. PENS OTHER THAN FOUNTAIN-PENS. C. HOWARD HUNT PEN COMPANY, Camden, N. J. Filed Apr. 6, 1906.

27 JOURNAL

The arbitrary word "JOURNAL" and the numeral "27."

SER. No. 617. PENS OTHER THAN FOUNTAIN-PENS. C. HOWARD HUNT PEN CO., Camden, N. J. Filed Apr. 6, 1906.

97 FALCON

The arbitrary word "FALCON" and the numeral "97."

SER. No. 618. PENS OTHER THAN FOUNTAIN-PENS. C. HOWARD HUNT PEN CO, Camden, N. J. Filed Apr. 6, 1906.

7 TRIBUNE

The arbitrary word "TRIBUNE" and the numeral "7."

SER. No. 621. PENS OTHER THAN FOUNTAIN-PENS. C. HOWARD HUNT PEN CO. Camden, N. J. Filed Apr. 6, 1906.

70 TRIBUNE STUB

The arbitrary words "TRIBUNE STUB" and the numeral "70."

SER. No. 818. SLABS OR PLATES OF VITREOUS MATERIAL. PRESSED PERRY PLATE GLASS COMPANY, Morgan District, W. Va. Filed Apr. 8, 1906.



The representation of a triangle.

SER. No. 819. SLABS OR PLATES OF VITREOUS MATERIAL. PRESSED PERRY PLATE GLASS COMPANY, Morgan District, W. Va. Filed Apr. 8, 1906.

P P

P

The letters P P P.

SER. No. 958. LAUNDRY SOAP. J. G. HAAS SOAP CO, St. Louis, Mo Filed Apr. 10, 1906. Used ten years.

Splendid

The word "SPLENDID" printed in script letters.

SER. No. 1,657. LEATHER BOOTS AND SHOES. HEYWOOD BOOT & SHOE COMPANY, Worcester, Mass. Filed Apr. 15, 1906.



The conventional representation of a heart or heart-shaped body with the words, "THE FOOT DOCTOR" therein.

SER. No. 1,658. LEATHER BOOTS AND SHOES. HEYWOOD BOOT & SHOE COMPANY. Worcester, Mass. Filed Apr. 15, 1906.



A representation of a heart bearing the words "HEYWOOD SHOE" and the numeral 1864.

SER. No. 1,872. RAZORS AND RAZOR-BLADES. KAMPFE BROS., New York, N. Y. Filed Apr. 17, 1906.



STAR

The representation of a star or the word "STAR," or both.

SER. No. 2,292. CARBON OR TRANSFER PAPER. THE OLIVER TYPEWRITER COMPANY, Chicago, Ill. Filed Apr. 19, 1905.

REVILO

The word REVILO.

SER. No. 2,870. CREAM-CHEESE. A. F. MACLAREN IMPERIAL CHEESE CO. LIMITED, Toronto, Canada. Filed Apr. 24, 1905. Used ten years.



A scroll bearing the words "MACLAREN'S IMPERIAL CHEESE," and depending from the scroll is a medallion or disk, upon which are two crossed cheese-triers between two cows' heads.

SER. No. 2,876. MEDICINAL COMPOUNDS FOR THE CURE OF CATARRHAL DISEASES AND COLDS. ELY BROTHERS, New York, N. Y. Filed Apr. 24, 1905. Used ten years.

CREAM

The arbitrarily-selected word CREAM.

SER. No. 3,210. WHISKY. J H FRIEDENWALD & Co Baltimore, Md. Filed Apr. 27, 1905.

TRIPLE RYE

The words TRIPLE RYE.

SER. No. 3,361. WHISKY. D. HOLEMAN & Co., Spokane, Wash. Filed Apr. 28, 1905.

RED STORK



The words "RED STORK" and the representation of a red stork standing upon one leg in the water, surrounded by water-lilies and cat-tails.

SER. No. 3,799. WHISKY. FRIEDMAN, KEILER & Co., Paducah, Ky. Filed May 1, 1905. Used ten years.



The words "BROOK HILL" associated with the words 'GARRARD COUNTY KENTUCKY ALL RYE WHISKEY FRIEDMAN KEILER & CO. DISTILLERS PADUCAH, KENTUCKY.' On one of the lower corners is a wreath inclosing the words 'NONE SUPERIOR' and on the other lower corner is a wreath inclosing the words 'PURITY GUARANTEED.' Ornamental dashes are shown above the words "ALL RYE" above and below the word 'WHISKEY' and below the word 'DISTILLERS.'

SER. No. 3,812. WHISKY. MARTIN J. BLIGH, Logansport, Ind. Filed May 1, 1905. Used ten years.



The words "LONE VALLEY," associated with the words PENNSYLVANIA PURE RYE, arranged in circular form about the words LONE VALLEY.

SER. No. 4,328. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y. Filed May 5, 1905.

№ HART'S 68

The abbreviation, word and numeral No HART'S 68.

SER. No. 4,325. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y. Filed May 5, 1905.

№ HART'S 96

The abbreviation, word and numeral No. HART'S 96.

SER. No. 5,172. WHISKY. BREEN & KENNEDY, Chicago, Ill. Filed May 11, 1905. Used ten years.



The words "MARYLAND RESERVE" beneath which is the monogram B & K inclosed in a double circle.

SER. No. 5,486. WEIGHING-SCALES. THE COMPUTING SCALE CO., Dayton, Ohio. Filed May 13, 1905. Used ten years.

DAYTON

The word DAYTON.

SER. No. 5,487. WEIGHING-SCALES. THE COMPUTING SCALE CO. Dayton, Ohio. Filed May 13, 1905.

MONEYWEIGHT

The word MONEYWEIGHT.

SER. No. 5,520. POCKET-KNIVES, RAZORS, AND MANICURE CUTTING IMPLEMENTS OF THE CHARACTER OF KNIVES. JOHN S. HOLLER & Co., New York, N. Y. Filed May 13, 1905.

TOWER

The word "TOWER."

SER. No. 5,758. SPECTACLE AND EYEGLASS FRAMES AND MOUNTINGS. MERRY OPTICAL COMPANY, Kansas City, Mo. Filed May 15, 1905.

Irinium

The fanciful word IRINIUM.

SER. No. 5,888. BICARBONATE OF SODA. PENNSYLVANIA SALT MANUF'G CO., Philadelphia, Pa. Filed May 17, 1905. Used ten years.

CHESHIRE

The word "CHESHIRE."

SER. No. 5,985. WHISKY. S. ALTHAUS, Macon, Ga. Filed May 18, 1905. Used ten years.

Pointer Club

The words POINTER CLUB.

SER. No. 6,064. POTASH AND LYE. A. MENDLESON'S SONS, Albany, N. Y. Filed May 19, 1905.

GIANT

The word GIANT.

SER. No. 6,065. POTASH AND LYE. A. MENDLESON'S SONS, Albany, N. Y. Filed May 19, 1905. Used ten years.

HUDSON

The word HUDSON.

SER. No. 6,570. WHISKY. THE WM. BERGENTHAL CO., Milwaukee, Wis. Filed May 25, 1905.



The words "WHITE HOUSE BOUQUET," under which is a drawing representing the White House and a spray of flowers on each side of it, with fountain and shrubs in front.

SER. No. 6,839. TOILET POWDER. CLARENCE H. HENTON, Chicago, Ill. Filed May 27, 1905.



The word "ODORGONE."

SER. No. 7,143. INCUBATORS AND BROODERS. MANANDER M. JOHNSON, Clay Centre, Nebr. Filed June 1, 1905.



The words "THE OLD TRUSTY INCUBATOR" associated with the pictorial representation of the head of a dog inclosed within a central circular panel.

SER. No. 7,187. WHISKY. MUHLLER, WATHEN & KOBERT, Lebanon, Ky. Filed June 1, 1905. Used ten years.

SER. No. 7,187.

OAK-POINT

The word OAK-POINT.

SER. No. 7,350. VARNISHES, JAPANS, LIQUID FILLERS, AND WATERPROOF FINISH. KEYSTONE VARNISH CO., Brooklyn, N. Y. Filed June 3, 1905.



KEYSTONE

The word KEYSTONE and a representation of a keystone.

SER. No. 7,446. HEAVE CURE. MARION W. SAVAGE, Minneapolis, Minn. Filed June 5, 1905. Used ten years.



The words "INTERNATIONAL HEAVE CURE" and the representation of a horse in the act of coughing, the walls of his chest being broken away to show the position of the lungs.

SER. No. 7,448. WORM-POWDER. MARION W. SAVAGE, Minneapolis, Minn. Filed June 5, 1905. Used ten years.



The words "INTERNATIONAL WORM POWDER" and a representation of a landscape with a horse in the foreground bearing on his side the words INTERNATIONAL WORM POWDER.

SER. No. 7,585. PRISMATIC GLASS, SHEET-GLASS, ROLLED GLASS, PLATE-GLASS, CATHEDRAL-GLASS, AND ORNAMENTAL GLASS. PILKINGTON BROS. LIMITED, St. Helens, England. Filed June 6, 1905.



A Greek cross having trefoil ends inclosed within concentric circles, between which appear the words BRITISH GLASS P. B.

SER. No. 7,546. HOSIERY AND KNITTED UNDERWEAR. I. & R. MORLEY, London, England. Filed June 6, 1905.



A winged wheel.

SER. No. 8,024. DYES FOR TREATING FABRICS. WILLIAM EDGE & SONS, LIMITED, Bolton, England. Filed June 13, 1905.

DOLLY

The word DOLLY.

SER. No. 8,067. TRACING-CLOTH. L & C HARDTMUTH, Vienna and Budweis, Austro-Hungary, and London, England. Filed June 14, 1905.

Mephisto

The word MEPHISTO.

SER. No. 8,187. POULTRY MEDICINE. DR. HESS & CLARK, Ashland, Ohio. Filed June 15, 1905. Used ten years.

PAN-A-CE-A

The hyphenated word PAN-A-CE-A.

SER. No. 8,277. REMEDY FOR BOWEL COMPLAINTS. THOMAS P. MARSHALL, Macon, Ga. Filed June 15, 1905.



The words "BABY EASE" associated with the picture of a baby shown holding a box in its outstretched hand.

SER. No. 8,390. RAISINS AND DRIED CURRANTS. WILKINSON, GADDIS & Co., Newark, N. J. Filed June 17, 1905.

IDEAL

The word "IDEAL."

SER. No. 8,830. CIGARETTES. BUTLER-BUTLER (INCORPORATED), New York, N. Y. Filed June 23, 1905.



An Egyptian scene showing an ibis in the foreground perched on a boulder, a number of pyramids and palm-trees in the background, and an obelisk on each side of the boulder in the foreground. Above the representation of the ibis appears the word IBIS and above the latter a streamer bearing the word EGYPTIAN, thereabove the representation of a bird with outstretched wings, and below one of the latter an ornamental figure below which is the word, SUPREME, and below the other wing a similar ornamental figure, below which is the word, QUALITY, adjacent to each obelisk is a human figure with an animal head, and above each obelisk is a panel bearing hieroglyphics. Across the picture is the word VERITABLE in script, and below the picture, the words, A LA CAIRO, EGYPT.

SER. No. 9,192. CANNED VEGETABLES. PORTLAND PACKING COMPANY, Portland, Me. Filed June 27, 1905.

BANQUET

The word or word-symbol BANQUET.

SER. No. 9,193. CANNED VEGETABLES. PORTLAND PACKING COMPANY, Portland, Me. Filed June 27, 1905. Used ten years.

PRIVATE STOCK

The words or word-symbol PRIVATE STOCK.

SER. No. 9,448. CREAM-SEPARATORS OF ALL KINDS. THE DE LAVAL SEPARATOR COMPANY, New York and Poughkeepsie, N. Y. Filed June 30, 1905.

ALPHA

The word "ALPHA."

SER. No. 9,551. WATERPROOF COLLARS AND CUFFS. THE CELLULOID COMPANY, New York, N. Y., and Newark, N. J. Filed July 1, 1905. Used ten years.

Solid Fibre

The words "SOLID FIBRE."

SER. No. 9,925. MEDICATED SOAP. LLOYD BROTHERS, Cincinnati, Ohio. Filed July 8, 1905. Used ten years.



The words ASEPSIN SOAP arranged on a circular band and surrounding a representation of a still.

SER. No. 10,016. ALL KINDS OF WRITING-PAPERS. WORONOCO PAPER COMPANY, Woronoco, Mass. Filed July 11, 1905. Used ten years.



A representation of the head of an Indian wearing a head-dress of feathers and inclosed in concentric circles.

SER. No. 10,024. WHISKY. THE STANDARD DISTILLING CO., Cincinnati, Ohio. Filed July 11, 1905.

DELICACY



The word "DELICACY" and a bust picture of a woman in décolleté costume.

SER. No. 10,198. PHOSPHATES, PHOSPHITES, AND HYPOPHOSPHITES IN POWDERED FORM, INCLUDING THE VARIOUS COMPOUNDS MADE BY THE CHEMICAL COMBINATIONS OF PHOSPHORUS. L. JENNER PERCY, New York, N. Y. Filed July 12, 1905. Used ten years.

SER. No. 10,198.

VITALIZED

The word VITALIZED.

SER. No. 10,275. SHAVING-SOAP. J. T. ROBERTSON COMPANY, Manchester, Conn. Filed July 13, 1905.

Shavola

The word "SHAVOLA".

SER. No. 10,394. TONIC FOR CHILLS AND FEVERS. N. JULIAN PASCHALL, Fulton, Ky. Filed July 15, 1905.

Uncampogary

The word UNCAMPOGARY.

SER. No. 10,558. COFFEE. CHASE & SANBORN, Boston, Mass. Filed July 19, 1905. Used ten years.



The representation of a red seal with serrated edges having thereon a coat of arms comprising a shield with four crosses the cross in the upper left-hand corner having thereon a lion rampant, a helmet on top of the shield, and above the shield the representation of a lion rampant issuing from a heraldic roll and holding a cross in his paws, and the words "NE CEDE MALIS" in quotation-marks.

SER. No. 10,560. COFFEE. CHASE & SANBORN, Boston, Mass. Filed July 19, 1905.



The representation of a wax seal, and the words "SEAL BRAND" thereon.

SER. No. 10,585. PAPER AND CLOTH COATED WITH ABRASIVE MATERIAL, SUCH AS FLINT, SAND, AND EMERY. HERMAN BEER & Co., New York, N. Y. Filed July 20, 1905. Used ten years.

SER. No. 10,585.

BROOKLYN

The word "BROOKLYN."

SER. No. 10,750. REMEDY AGAINST GALLSTONE. KARL WEINREBEN, Frankfort-on-the-Main, Germany. Filed July 24, 1905.

PROBILIN.

The word PROBILIN.

SER. No. 10,780. LATHE-CHUCKS. THE E. HORTON & SON COMPANY, Windsor Locks, Conn. Filed July 25, 1905. Used ten years.

HORTON

The name HORTON.

SER. No. 10,843. TONIC AND STRENGTHENING COMPOUNDS. CHARLES LOUIS MARIE OMNÈS, Paris, France. Filed July 26, 1905.

ZIDAL

The arbitrarily-selected word-symbol ZIDAL.

SER. No. 10,854. BRONZE COLORS, BROCADES, LEAF METALS, AND BRONZE COLORS IN TUBES. L. AUERBACH & Co., Fuerth, Bavaria. Filed July 26, 1905.



The representation of a dove seated on a branch and holding a twig in its beak and appearing on a panel having scrolls at its ends.

SER. No. 11,226. SENSITIZED PHOTOGRAPHIC FILM. EASTMAN KODAK CO., Rochester, N. Y. Filed Aug. 3, 1905.



A Greek cross of a color other than red.

SER. No. 11,800. MOTOR-TRUCKS FOR CARRYING A MOTOR OR CABLE GRIP. J. G. BRILL COMPANY, Philadelphia, Pa. Filed Aug. 3, 1905.

EUREKA

The word EUREKA.

SER. No. 11,751. CANNED VEGETABLES AND FRUIT. ABBOTT GROCERY CO., Keene, N. H. Filed Aug. 18, 1905.



A four-leaf clover inclosed in a horseshoe in combination with the words "GOOD LUCK."

SER. No. 12,093. MEDICATED UTERINE WAFERS. JOHN H. MILLER, Warren, Pa. Filed Aug. 30, 1905.

Napheys & Co

The words "NAPHEY & CO" in the handwriting of the applicant.

SER. No. 12,228. SYRUP FOR TREATING COUGHS, COLDS, CROUP, CATARRH, WHOOPING-COUGH, BRONCHITIS, AND SORE THROAT. HAWAIIAN SPECIALTY CO., Los Angeles, Cal. Filed Sept. 8, 1905.

SYRPINA

The word "SYRPINA."

SER. No. 12,483. EXTRACTS AND COLORS USED IN THE MANUFACTURE OF CARBONATED TONIC BEVERAGES. BLUE SEAL SUPPLY CO., Boston, Mass. Filed Sept. 11, 1905. Used ten years.



The representation of a blue seal bearing the words BLUE SEAL SUPPLY CO. BOSTON, MASS. BOTTLERS' SUPPLIES.

SER. No. 12,711. ANESTHETICS. FARBWERKE VORM. MEISTER LUCIUS & BRÜNING, Höchst-on-the-Main, Germany. Filed Sept. 16, 1905.

ANÄSTHESIN

The word ANÄSTHESIN.

SER. No. 12,844. HOSE-SUPPORTERS. PIONEER SUSPENDER COMPANY, Philadelphia, Pa. Filed Sept. 21, 1905. Used ten years.

Brighton

The word BRIGHTON.

SER. No. 12,949. LINIMENT. THOMAS ECCLES, Philadelphia, Pa. Filed Sept. 25, 1905.



A miniature vignette of Thomas Eccles (deceased) inclosed within a circle and surmounted by the head of a lionwith sprays of leaves upon opposite sides thereof, associated with the name and words ECCLES' SOUTH-AFRICAN LINIMENT, the name ECCLES appearing upon a scroll above the miniature vignette and the signature of THOMAS ECCLES appearing upon the vignette.

SER. No. 13,111. BEER. SUFFOLK BREWING COMPANY, Boston, Mass. Filed Sept. 28, 1905. Used ten years.



The words SUFFOLK BREWING CO'S. EXCELSIOR LAGER and the representation of a youth bearing a banner on which the word "EXCELSIOR" is written, all being upon a background of foliage.

SER. No. 13,259. LEATHER BOOTS AND SHOES. UTZ & DUNN, Rochester, N. Y. Filed Oct. 3, 1905.



The fanciful representation of a man's head and shoulders, said man being represented as wearing spectacles and having a mustache.

SER. No. 13,313. WHISKY. W W JOHNSON & Co. Cincinnati, Ohio. Filed Oct. 5, 1905.

Magnolia

The word "MAGNOLIA."

SER. No. 13,369. NERVE AND BRAIN FOOD. NATIONAL REMEDY COMPANY, New York, N. Y. Filed Oct. 6, 1905.



A representation of a lion rampant, standing on a heraldic roll and holding a plummet, associated with the words COMMUNE BONUM QUOD PETIS HIC EST, all inclosed within an ornamental circular border.

SER. No. 13,371. SPECIFIC FOR MALARIA. NATIONAL REMEDY COMPANY, New York, N. Y. Filed Oct. 6, 1905.



A representation of a lion rampant, standing on a heraldic roll and holding a plummet, associated with the words "COMMUNE BONUM QUOD PETIS HIC EST," all inclosed within an ornamental circular border.

SER. No. 13,372. MEDICINAL OIL OR LINIMENT FOR RHEUMATISM, NEURALGIA, &c. NATIONAL REMEDY COMPANY, New York, N. Y. Filed Oct. 6, 1905.

SER. No. 13,372.



A representation of a lion rampant, standing on a heraldic roll and holding a plummet, associated with the words "COMMUNE BONUM QUOD PETIS HIC EST," all inclosed within an ornamental circular borher.

SER. No. 13,373. COMPOUND OR CONCENTRATED FLUID-EXTRACT OF SARSAPARILLA. NATIONAL REMEDY COMPANY, New York, N. Y. Filed Oct. 6, 1905.



The representation of a lion rampant, standing on a heraldic roll and holding a plummet, associated with the words COMMUNE BONUM QUOD PETIS HIC EST, all inclosed within an ornamental circular border.

SER. No. 13,374. REMEDY FOR DISEASES OF THE LIVER, KIDNEYS, STOMACH, AND BOWELS. NATIONAL REMEDY COMPANY, New York, N. Y. Filed Oct. 6, 1905.



A representation of a lion rampant, standing on a heraldic roll and holding a plummet, associated with the words "COMMUNE BONUM QUOD PETIS HIC EST," all inclosed within an ornamental circular border.

SER. No. 13,388. SPECIFIC FOR WORMS. NATIONAL REMEDY COMPANY, New York, N. Y. Filed Oct. 6, 1905.



A representation of a lion rampant, standing on a heraldic roll and holding a plummet, associated with the words COMMUNE BONUM QUOD PETIS HIC EST, all inclosed within an ornamental circular border.

SER. No. 13,602. PLATFORM SPRING ANIMAL-TRAPS. ONEIDA COMMUNITY LIMITED, Oneida, N. Y. Filed Oct. 14, 1905.

SER. No. 13,602.



The representation of the side view of a head and neck of a woman, having an Indian's headgear, the same consisting of a band in which are mounted radially-extending feathers, the representation having the general appearance of an Indian head.

SER. No. 13,693. COTTON THREAD. JONAS BROOK & BROS., LIMITED, Meltham, England. Filed Oct. 17, 1905. Used ten years.



A representation of the head of a heraldic goat inclosed in concentric circles between which are arranged the words BROOK'S PATENT GLACE THREAD, with a shield below the representation of the goat, upon which is displayed the number of the thread.

SER. No. 13,705. HOSIERY. PARAMOUNT KNITTING CO., Chicago, Ill. Filed Oct. 17, 1905.

BEAR SKIN

The words BEAR SKIN.

SER. No. 13,749. WHEAT-FLOUR. THE TOPEKA MILLING COMPANY, Topeka, Kans. Filed Oct. 19, 1905.



A Maltese cross bearing the letters "H. H." surrounded by an annular border containing the words "TOPEKA MILLING CO. HACKNEY'S HIGHEST PATENT," on either side of the cross the words "TOPEKA KANSAS," and below the said cross the words "BLUE CROSS BRAND."

SER. No. 14,067. WHISKY. THE OLD MCBRAYER DISTILLERY CO, Cincinnati, Ohio. Filed Oct. 30, 1905. Used ten years.

Old McBrayer

The words "OLD MCBRAYER."

SER. No. 14,369. BACON, RIBS, LOINS, SHOULDERS, AND HAMS. JOHN P. SQUIRE & COMPANY, Boston, Mass. Filed Nov. 6, 1905. Used ten years.

SQUIRE'S

The word SQUIRE'S.

SER. No. 14,709. BLEACHED AND UNBLEACHED SHIRTINGS AND SHEETINGS, CAMBRICS, AND LONG-CLOTH. GRINNELL WILLIS & CO., New York, N. Y. Filed Nov. 16, 1905.

YANKEE

The word YANKEE.

SER. No. 14,787. SHOTGUNS AND REVOLVERS. MARY ELIZABETH JOHNSON, trustee, Fitchburg, Mass. Filed Nov. 13, 1905. Used ten years.

IVER JOHNSON

The words IVER JOHNSON.

SER. No. 14,864. RAILWAY-CAR SEATS. J. G. BRILL COMPANY, Philadelphia, Pa. Filed Nov. 21, 1905.

WINNER

The word WINNER.

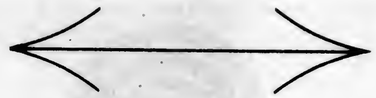
SER. No. 14,906. CHEWING-GUM. HILO GUM CO., Chicago, Ill. Filed Nov. 22, 1905.

HILO

The word "HILO."

SER. No. 14,962. CUTTERS' EXTENSION-BLADES. JEREMIAH B. BOWMAN, Lititz, Pa. Filed Nov. 24, 1905.

SER. No. 14,962.



The representation of a double-pointed arrow.

SER. No. 15,062. COAL AND COKE. BLACK BAND COAL AND COKE COMPANY, Charleston, W. Va. Filed Nov. 29, 1905.

BLACK BAND

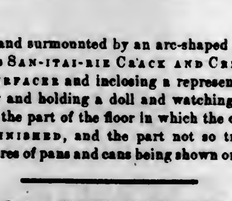
The words "BLACK BAND."

SER. No. 15,095. ROPE, CORD, LINES, AND TWINE MANUFACTURED FROM VEGETABLE FIBER. THE AMERICAN MANUFACTURING COMPANY, New York, N. Y. Filed Dec. 1, 1905.

HUB

The word HUB.

SER. No. 15,121. FLOOR FILLER AND SURFACER. FRANK A. CRANDALL, Chicago, Ill. Filed Dec. 1, 1905.



A circular band surmounted by an arc-shaped panel on which appears the words SAN-ITAI-RIE CRACK AND CREVICE FILLER AND WOOD SURFACER and inclosing a representation of a girl seated on a chair and holding a doll and watching a cupid filling cracks in a floor, the part of the floor in which the cracks are filled being marked FINISHED, and the part not so treated, UNFINISHED, and pictures of pans and cans being shown on the floor.

SER. No. 15,271. CLOCKS, CLOCK-CASES, CLOCK-MOVEMENTS, AND PARTS THEREOF, WITH THE EXCLUSION OF WATCHES AND PARTS THEREOF. HAMBURG AMERIKANISCHE UHRENFABRIK, Schramberg, Germany. Filed Dec. 8, 1905.



The representation of two feathered arrows, angularly crossing one another and pointing upwardly.

SER. No. 15,302. LIQUID PREPARATION FOR THE CURE OF ASTHMA, COUGHS, TICKLING IN THROAT, COLIC, FLATULENCY, SEASICKNESS, SICK HEADACHE, AND HICCOUGH. THE YUCCA CO, Wichita, Kans. Filed Dec. 9, 1905.

MENTHOCURA

The arbitrary word "MENTHOCURA."

SER. No. 15,332. GAME OF UNITED STATES HISTORY. THE C W WILSON CO., Toledo, Ohio. Filed Dec. 11, 1905.



The words PRESIDENTIAL SUCCESSION between which appears a representation of the dome of the United States Capitol.

SER. No. 15,486. CANS. JOHN HARTFORD CHIDESTER, New York, N. Y. Filed Dec. 18, 1905.



The representation of a can pierced by an arrow.

SER. No. 15,497. HOSE FOR CONDUCTING FLUIDS COMPOSED IN WHOLE OR IN PART OF RUBBER. THE TOLEDO RUBBER CO, Toledo, Ohio. Filed Dec. 18, 1905.

BULL-FROG

The compound word "BULL-FROG."

SER. No. 15,577. COTTON PIECE GOODS. EVERETT MILLS, Lawrence, Mass. Filed Dec. 16, 1905. Used ten years.

EVERETT

The arbitrarily-selected word EVERETT.

SER. No. 15,688. HAMMOCKS AND HAMMOCK-MAKING NETS AND NETTING. HOFFMAN-CORR MFG CO, Philadelphia, Pa. Filed Dec. 26, 1905.



A seal, the words "LION MILLS" and the representation of a lion standing with one paw on a coil of rope and concentric circles, one of which circles is formed of rope.

SER. No. 15,688. VETERINARY REMEDY FOR POLL-EVIL AND FISTULA. REBOT MEDICINE CO., Carrollton, Mo. Filed Dec. 26, 1905.

FISTEVIL

The word "FISTEVIL."

SER. No. 15,704. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio. Filed Dec. 23, 1905.



The representation of a sprocket-wheel.

SER. No. 15,705. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio. Filed Dec. 26, 1905. Used ten years



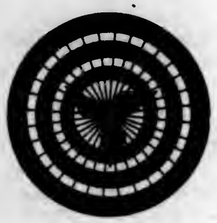
The representation of a winged wheel within which is arranged the representation of a lantern.

SER. No. 15,781. SLEDS. S. L. ALLEN & CO., Philadelphia, Pa. Filed Dec. 28, 1905. Used ten years.

FLEXIBLE FLYER

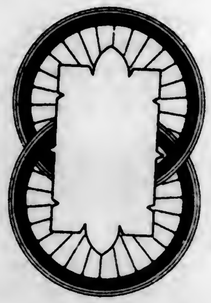
The words FLEXIBLE FLYER.

SER. No. 15,708. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio. Filed Dec. 26, 1905.



The representation of three motor-vehicle wheels arranged within each other, together with the representation of three wings.

SER. No. 15,709. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio. Filed Dec. 26, 1905. Used ten years.



The representation of two entwined bicycle-wheels upon which is arranged a fancy panel.

SER. No. 15,807. WHEAT-FLOUR. THE CENTRAL KANSAS MILLING COMPANY, Lyons, Kans. Filed Jan. 2, 1906.



The representation of a red seal bearing the words "GOLD BOND" and arranged on a blue ribbon.

SER. No. 15,948. STARCH FOR FOOD PURPOSES. AUGUSTUS E STALEY, Baltimore, Md. Filed Jan. 6, 1906.

Cream

The word CREAM.

SER. No. 15,944. CORN-STARCH. AUGUSTUS E. STALEY, Baltimore, Md. Filed Jan. 6, 1906.



The word CREAM in an inclined position and composed of ornamental letters, a sunburst which is shown as behind the said word, and also the words CORN STARCH, which are in ornamental letters and arranged in two parallel lines, the letter S being provided with scrolls extending in a vertical line from the top and bottom of the said letter. Beneath the words CORN STARCH is an oval space for lettering, bounded by scrollwork.

SER. No. 15,945. CORN-STARCH. AUGUSTUS E. STALEY, Baltimore, Md. Filed Jan. 6, 1906.



The word CREAM arranged in a downwardly-curved line, under which are represented three pendant ears of corn, and below the said ears are the words CORN STARCH arranged in an upwardly-curved line. Extending in a downward direction from ears of corn are two separate scrolls which produce between them an oval space for lettering.

SER. No. 15,967. HOSIERY. WAYNE KNITTING MILLS, Fort Wayne, Ind. Filed Jan. 6, 1906. Used ten years.

Matchless Hosiery

The words MATCHLESS HOSIERY.

SER. No. 15,968. HOSIERY. WAYNE KNITTING MILLS, Fort Wayne, Ind. Filed Jan. 6, 1906. Used ten years.

Wayne Knit

INDESTRUCTIBLE HOSIERY

The words WAYNE KNIT INDESTRUCTIBLE HOSIERY.

SER. No. 16,079. OPERA-GLASSES AND FIELD-GLASSES. SUSSFELD, LORSCH & CO., New York, N. Y. Filed Sept. 21, 1905. Used ten years.

Jena Glass

The words JENA GLASS.

SER. No. 16,080. OPERA-GLASSES AND FIELD-GLASSES. SUSSFELD, LORSCH & CO., New York, N. Y. Filed Sept. 21, 1905. Used ten years.

Jena Special Glass

The words JENA SPECIAL GLASS.

SER. No. 16,122. SOLID CHOCOLATE CONFECTIONS. H. O. WILBUR & SONS, Philadelphia, Pa. Filed Jan. 11, 1906. Used ten years.

BUDS

The word "BUDS."

SER. No. 16,154. WASHING COMPOUNDS. CHARLES A. WINTER, New York, N. Y. Filed Jan. 13, 1906.

PENNYWASH

The word PENNYWASH.

SER. No. 16,182. DICTIONARIES, ATLASES, AND CYCLOPEDIAS. FUNK & WAGNALLS COMPANY, New York, N. Y. Filed Jan. 13, 1906. Used ten years.

STANDARD

The word STANDARD.

SER. No. 16,312. MINERAL WATER. THE MARIBEL MINERAL SPRINGS COMPANY, Cooperstown, Wis. Filed Jan. 19, 1906.



A circular panel bearing the representation of a bell surrounded by rocks, the bell bearing the word "MARIBEL" in the form of a cross, the letter "I" being replaced by the representation of a human eye.

SER. No. 16,346. PREPARATION FOR THE HAIR AND SCALP PUT UP IN PASTE OR SOAP FORM. FOAMACINA HAIR PREPARATION CO., Alameda, Cal. Filed Jan. 20, 1906.

FOAMACINA

The coined word FOAMACINA.

SER. No. 16,400. WHEAT-FLOUR. THE SEMLER MILLING COMPANY, Hamilton, Ohio. Filed Jan. 22, 1906.



A representation of a circular border of lace surrounding the words POINT LACE.

SER. No. 16,521. CIGARS. THE TRAUT & AVERY COMPANY, Mansfield, Ohio. Filed Jan. 25, 1906.

SER. No. 16,521.

THE SWEEPERS

The words THE SWEEPERS.

SER. No. 16,524. HYDRATES, CARBONATES, AND CHLORIDS OF AMMONIUM, SODIUM, POTASSIUM, AND LITHIUM. BRUNNER, MOND & CO. LIMITED, Winnington, Northwich, England. Filed Jan. 26, 1906.



The representation of a crescent with its horns pointing downward, in combination with the letters "B M & Co."

SER. No. 16,535. MEDICINE FOR THE CURE OF CONSUMPTION, TUBERCULOSIS, COUGHS, COLDS, AND OTHER DISEASES OF THE LUNGS AND BRONCHIAL TUBES. LUNG GERMINE CO, Jackson, Mich. Filed Jan. 26, 1906.

LUNG-GERMINE

The words LUNG-GERMINE.

SER. No. 16,618. MEDICINE FOR THE CURE OF CONSUMPTION, TUBERCULOSIS, COUGHS, COLDS, AND OTHER DISEASES OF THE LUNGS AND BRONCHIAL TUBES. LUNG GERMINE CO, Jackson, Mich. Filed Jan. 30, 1906.

LG

The letters L G.

SER. No. 16,672. BAKING-POWDER. LINDSEY K. ADAMS, Chase, Kans. Filed Feb. 1, 1906.



The word "ACOP" in a curved panel appearing above the representation of a bunch of grapes, across which the word "GRAPE" appears inclosed within a horizontal decorative panel, and shown above the words "BAKING POWDER," inclosed within a curved panel.

SER. No. 16,830. READY-MIXED PAINTS. ATLANTIC PAINT WORKS OF BALTIMORE CITY, Baltimore, Md. Filed Feb. 8, 1906.

CALENDAR

The word "CALENDAR."

SER. No. 16,836. COLD-CREAM. THE CLAWSON COMPANY, Philadelphia, Pa. Filed Feb. 8, 1906.

MED-ASEPTIC

The fanciful word MED-ASEPTIC.

SER. No. 17,044. CANDY KISSES. THE GUNTER GROCERY CO., Boston, Mass. Filed Feb. 15, 1906.



A circular band in blue across which is shown in scroll design a ribbon band in blue, the ends of which project beyond the outer circle. On the lower part of the circular band is placed the word KREME and on the blue ribbon band passing across the circular band is the word KISSES.

SER. No. 17,054. SOAPS. J. G. MOUSON & CO., Frankfort-on-the-Main, Germany. Filed Feb. 14, 1906. Used ten years.



A rose branch with several roses, associated with the words "SAVON A LA ROSE" inclosed in a border having at each end a representation of a Chinese person and having at its upper and lower edges a series of Chinese characters. Also inclosed within the border are the words "INCARNATE DE CHINE FORTUNE'S DOUBLE YELLOW MOUSON & CIE FRANCFORT/M. PARFUMEURS SAVONNIERS."

SER. No. 17,062. ADHESIVE PLASTERS. J. ELLWOOD LEE COMPANY, Conshohocken, Pa. Filed Feb. 16, 1906. Used ten years.

DE LA COUR'S

The word DE LA COUR'S.

SER. No. 17,099. PATENT-LEATHER, CALFSKINS, AND WAXED CALFSKINS. CORNELIUS HEYL, Worms, Germany. Filed Feb. 16, 1906.



A heraldic shield and the representation of two dragons holding the same, a monogram composed of the letters C and H being placed on the shield, and the shield and dragons being supported on a heraldic pedestal on which the fac-simile signature of CON. HEYL, the founder of the firm of Cornelius Heyl, is placed. Above the pictorial mark are placed the words CORNELIUS HEYL, at both sides of the same the letters U. S., and below the same the words WORMS O/R GERMANY.

SER. No. 17,105. WHITE AND COLORED STIFF-BOSOM SHIRTS, WHITE AND COLORED NEGLIGEE SHIRTS, OUTING-SHIRTS, AND WHITE FULL-DRESS SHIRTS. CUTTER & CROSSETTE, Chicago, Ill. Filed Feb. 16, 1906. Used ten years.

ELGIN

The words "THE ELGIN SHIRT."

SER. No. 17,107. ARTIFICIAL MARBLE. THE MARBLEOID COMPANY, New Durham, N. J. Filed Feb. 16, 1906.



A representation of a marble column veined and shaded and Doric in style, upon which is printed vertically the word "MARBLEOID."

SER. No. 17,146. SPICES. ALBERT G. GROBLEWSKI, Plymouth, Pa. Filed Feb. 17, 1906.

TROJANKA

The word "TROJANKA."

SER. No. 17,210. FERMENTED-MILK BEVERAGES. WILLIAM B BEALL, New York, N. Y. Filed Feb. 20, 1906.

CLABBERADE

The word "CLABBERADE."

SER. No. 17,353. INDIA-RUBBER STAIR-NOSINGS. KNAPP RUBBER BINDING COMPANY, New York, N. Y. Filed Feb. 26, 1906.

Antislippin.

The arbitrary, fanciful and non-descriptive word ANTISLIPPIN.

SER. No. 17,459. LONG-CUT TOBACCO FOR BOTH SMOKING AND CHEWING. HANSEN-SCHMITT CO., Milwaukee, Wis. Filed Mar. 2, 1906.



The word "POSTMASTER," an ornamental shield-like border below said word having elliptical panels at the sides respectively inclosing the words "HIGH" and "GRADE," the representation of the head and neck of a dog within the border, an open pouch hung from the dog, mail-matter protruding from the pouch and the letters and periods "U. S. M." on said pouch, the foregoing being associated with the words "LONG CUT" crossing the aforesaid pouch and the word "TOBACCO" below the same.

SER. No. 17,604. HAVANA CIGARS. HAVANA COMMERCIAL COMPANY, Jersey City, N. J., and New York, N. Y. Filed Mar. 6, 1906. Used ten years.



The representation of a streamer with the words "LA VENCEDORA" thereon, and with the words and abbreviations "DE MANUEL LOPES Y CA" and "HABANA" below said streamer.

SER. No. 17,647. MEDICINAL OINTMENT OR LOTION. CHARLES JAMES SINDELAR, New York, N. Y. Filed Mar. 8, 1906.

ROZALIA

The word "ROZALIA."

SER. No. 17,606. WHEAT-FLOUR. FREDERICK J. COYLE, Pawtucket, R. I. Filed Mar. 6, 1906.



The representation of a cavalry general mounted on a horse, associated with the words, GENERAL SHERIDAN. The horse is represented as running at fast speed, while the left hand of the soldier holds the bridle-reins and having his right hand grasping the hilt of a sword, which extends above the rider.

SER. No. 17,690. WHEAT-FLOUR. TENNANT & HOYT, Lake City, Minn. Filed Mar. 9, 1906.

Golden Loaf

The words GOLDEN LOAF.

SER. No. 17,698. FANCY KETTLE-RENDERED LARD. THOMAS STOKES & SON, New York, N. Y. Filed Mar. 9, 1906.

DUTCHESS

The word-symbol "DUTCHESS."

SER. No. 17,708. CARBONATED WATER. AMERICAN SPECIALTY CO., Allegheny, Pa. Filed Mar. 9, 1906.

SER. No. 17,703.



The words "DRINK A SPARKLER." The words are arranged upon the representation of a bell and in conjunction with said words are used the words "AND BE HAPPY AMERICAN SPECIALTY COMPANY, ALLEGHENY, PA. BOX 24."

SER. No. 17,737. BAKING-POWDER. CLOSSET & DEVERS, Portland, Oreg. Filed Mar. 10, 1906.

GOLDEN WEST

The words "GOLDEN WEST" in conspicuous type associated with the representation of a rolling-pin on which is imprinted the word "DEVERS."

SER. No. 17,772. OVERCOATS, READY-MADE SUITS, CUSTOM-MADE SUITS, AND TROUSERS. W AND B STROUSE, Harrisburg, Pa. Filed Mar. 12, 1906.

Tru-Arte

The hyphenated word "TRU-ARTE."

SER. No. 17,774. CANDY. THE LIPPS-MURBACH CO. OF BALTIMORE CITY, Baltimore, Md. Filed Mar. 12, 1906.

CHOCOLATE
MALLOW
LOVE KISSES

The arbitrarily-selected words "CHOCOLATE MALLOW LOVE KISSES."

SER. No. 17,784. STOVES, RANGES, FURNACES, AND STEAM AND HOT-WATER HEATERS. CO-OPERATIVE FOUNDRY CO., Rochester, N. Y. Filed Mar. 13, 1906.



A Maltese cross, having the words RED CROSS thereon.

SER. No. 17,794. COFFEE. THE WOOLSON SPICE CO., Toledo, Ohio. Filed Mar. 13, 1906.

APEX

The word APEX.

SER. No. 17,811. MAGAZINES. THE GOLDEN RULE COMPANY, Boston, Mass. Filed Mar. 14, 1906.

The Christian Endeavor World
Continuing The Golden Rule.

The words THE CHRISTIAN ENDEAVOR WORLD CONTINUING THE GOLDEN RULE.

SER. No. 17,826. STRINGS FOR MUSICAL INSTRUMENTS. LYON & HEALY, Chicago, Ill. Filed Mar. 8, 1906.



A series of ornamental circles having between inner and outer circles a series of ornamentation resembling overlapping Z's inclosing the word CONSERVATORY, a shield-shaped figure below said word, said shield-shaped figure having within its outlines the outline of a rectangle and an ornamental band and scrolls below said shield, all contained within the circles above noted.

SER. No. 17,833. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 15, 1906. Used ten years.



The words "NORTH CAROLINA FARMERS ALLIANCE" surrounding the representation of a mowing-machine hitched to a team of horses and having a rider upon its seat. The word "OFFICIAL" appears below the words NORTH CAROLINA.

SER. No. 17,846. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 15, 1906. Used ten years.

BALDWIN'S

The word BALDWIN'S.

SER. No. 17,875. FERTILIZERS. GEORGIA CHEMICAL WORKS, Augusta, Ga. Filed Mar. 15, 1906. Used ten years.

THREE OAKS

The words THREE OAKS.

SER. No. 17,911. TEA. CHASE & SANBORN, Boston, Mass. Filed Mar. 15, 1906.

KOHINOOR

The word KOHINOOR in block Roman capital letters.

SER. No. 17,922. FERTILIZERS. RASIN-MONUMENTAL COMPANY OF ANNE ARUNDEL COUNTY, Baltimore, Md. Filed Mar. 15, 1906. Used ten years.

SEA WALL

The words SEA WALL.

SER. No. 17,937. HOSIERY. PARAMOUNT KNITTING CO., Chicago Ill. Filed Mar. 16, 1906.

TUFF-E-NUFF

The word TUFF-E-NUFF

SER. No. 17,940. HOSIERY. PARAMOUNT KNITTING CO., Chicago Ill. Filed Mar. 16, 1906.

STONE WALL

The words "STONE WALL."

SER. No. 17,967. SPOOL-COTTON AND THREAD. THE AMERICAN THREAD COMPANY, Jersey City, N. J. Filed Mar. 17, 1906.

The monogram or arbitrary letters A T Co.

SER. No. 18,007. WASHING-POWDER. DAVID S BROWN, New York, N. Y. Filed Mar. 19, 1906.

SATINE

The word SATINE.

SER. No. 18,037. WOMEN'S AND CHILDREN'S UNDERWAISTS. ROYAL WORCESTER CORSET COMPANY, Worcester, Mass. Filed Mar. 19, 1906. Used ten years.

Royal Worcester

The words ROYAL WORCESTER.

SER. No. 18,038. EARTHENWARE COOKING VESSELS. THE J W MCCOY POTTERY CO, Roseville, Ohio. Filed Mar. 17, 1906.



The representation of a sacrificial urn with flames rising from it, together with the inner and outer annular figures broken at intervals, the words "DUTCH COOKING WARE" appearing between the inner and outer figures and a scroll being produced between the words "WARE" and "DUTCH."

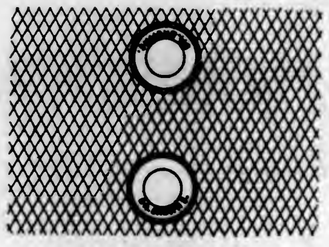
SER. No. 18,086. CATCHUP PACKAGED IN BOTTLES. CURTICE BROTHERS COMPANY, Rochester, N. Y. Filed Mar. 21, 1906. Used ten years.

BLUE LABEL

The words "BLUE LABEL."

SER. No. 18,191. CELERY TONIC. SCHÖNBERGER AND NOBLE, New York, N. Y. Filed Mar. 23, 1906.

SER. No. 18,191.



On a background of lattice-work the name "DR. BROWN'S" arranged between concentric circles.

SER. No. 18,239. CANOPIES FOR BEDS. SOUTHERN CANOPY COMPANY, Knoxville, Tenn. Filed Mar. 24, 1906.

CLIMAX

The word CLIMAX.

SER. No. 18,240. CANOPIES FOR BEDS. SOUTHERN CANOPY COMPANY, Knoxville, Tenn. Filed Mar. 24, 1906.

DIXIE

The word DIXIE.

SER. No. 18,306. WRITING AND DRAWING PAPERS. RICHARD JAMES BALSTON, Springfield Mill, Maidstone, England. Filed Mar. 28, 1906. Used ten years.

J WHATMAN

The name J. WHATMAN.

SER. No. 18,321. SUSPENDERS. GORDON MANUFACTURING COMPANY, New Rochelle, N. Y. Filed Mar. 28, 1906.

Gordon

The word GORDON printed, written or impressed in the particular and distinctive style shown in the drawing.

SER. No. 18,360. SPOOL-COTTON, SEWING-COTTON, AND THREAD. THE AMERICAN THREAD COMPANY, Jersey City, N. J. Filed Mar. 29, 1906. Used ten years.

AMORY

The word "AMORY."

SER. No. 18,361. SPOOL-COTTON, SEWING-COTTON, AND THREAD. THE AMERICAN THREAD COMPANY, Jersey City, N. J. Filed Mar. 29, 1906. Used ten years.

LUSTRE TWIST

The words "LUSTRE TWIST."

SER. No. 18,373. BAG-BLUING. CHARLES H. ADAMS, New Orleans, La. Filed Mar. 30, 1906.



The representation of a horseshoe inclosing a bag together with the words GOOD LUCK.

SER. No. 18,389. MATERIAL FOR CLEANING AND POLISHING METAL, GLASS, MARBLE, AND THE LIKE. THE MATCHLESS METAL POLISH CO., New York, N. Y., and Chicago, Ill. Filed Mar. 31, 1906. Used ten years.



The representation of a red seal bearing the word "MEXOLINE."

SER. No. 18,391. MATERIAL FOR CLEANING AND POLISHING METAL, GLASS, MARBLE, AND THE LIKE. THE MATCHLESS METAL POLISH CO., New York, N. Y., and Chicago, Ill. Filed Mar. 31, 1906. Used ten years.

MATCHLESS

The word MATCHLESS appearing on a diamond-shaped figure.

SER. No. 18,495. YEAST IN SOLID FORM. VIENNA PRESSED YEAST COMPANY, New York, N. Y. Filed Apr. 4, 1906. Used ten years.

VIENNA

The word "VIENNA."

SER. No. 18,500. CARD-GAME-SCORING DEVICES. BRENTANOS, New York, N. Y. Filed Apr. 4, 1906.



The conventional representation of a king, queen, and jack grouped upon a field comprised by the superimposed symbols heart, club, diamond, and spade.

SER. No. 18,502. PRINTING-INK. J. SIGMUND ULLMAN CO., New York, N. Y. Filed Apr. 4, 1906.

Octagon

The word OCTAGON.

SER. No. 18,546. SPICES AND MUSTARD. SPRAGUE, WARNER & COMPANY, Chicago, Ill. Filed Apr. 5, 1906.

MONSOON

The arbitrarily-selected word "MONSOON."

SER. No. 18,547. BAKING-POWDER. SPRAGUE, WARNER & COMPANY, Chicago, Ill. Filed Apr. 5, 1906.

MONSOON

The arbitrarily-selected word "MONSOON."

SER. No. 18,548. COFFEE. SPRAGUE, WARNER & COMPANY, Chicago, Ill. Filed Apr. 5, 1906.

MONSOON

The arbitrarily-selected word "MONSOON."

SER. No. 18,549. TEA. SPRAGUE, WARNER & COMPANY, Chicago, Ill. Filed Apr. 5, 1906.

MONSOON

The arbitrarily-selected word "MONSOON."

SER. No. 18,574. CHEWING-GUM. CURTIS & SON COMPANY, Portland, Me. Filed Apr. 6, 1906. Used ten years.

CURTIS'

The word CURTIS'.

SER. No. 18,605. WALL-TIES. IMPERIAL SPECIALTY MFG. CO., Pittsburg, Pa. Filed Apr. 7, 1906.

SNAKE

The word "SNAKE."

SER. No. 18,623. LARD. ARMOUR & COMPANY, Chicago, Ill. Filed Apr. 9, 1906. Used ten years.

SIMON PURE

The arbitrarily-selected word-symbols "SIMON PURE."

SER. No. 18,698. CANDY KISSES. THE GINTER GROCERY CO., Boston, Mass. Filed Apr. 11, 1906.



An outline at the upper left-hand and lower right-hand corners of which are shown the representations of two honeysuckles, said configurations being crossed by the word HONEYSUCKLE, with the word KISS below the representation in the upper left-hand corner and above the representation in the lower right-hand corner.

SER. No. 18,862. COTTON PIECE GOODS. MASSACHUSETTS COTTON MILLS, Lowell, Mass. Filed Apr. 17, 1906. Used ten years.

SER. No. 18,862.

LA PALOMA

The words LA PALOMA.

SER. No. 18,863. COTTON PIECE GOODS. MASSACHUSETTS COTTON MILLS, Lowell, Mass. Filed Apr. 17, 1906. Used ten years.

MAPLEWOOD

The word MAPLEWOOD.

SER. No. 18,865. HIGH-SPEED CUTTING-STEEL. FIRTH-STERLING STEEL COMPANY, Pittsburg, Pa. Filed Apr. 17, 1906.

BLUE CHIP

The words "BLUE CHIP," between which appears a lozenge-shaped figure inclosing the picture of a long chip of steel.

SER. No. 19,058. PAPER BAGS. THE UNION BAG & PAPER COMPANY, New York, N. Y. Filed Apr. 25, 1906.

NEBAGO

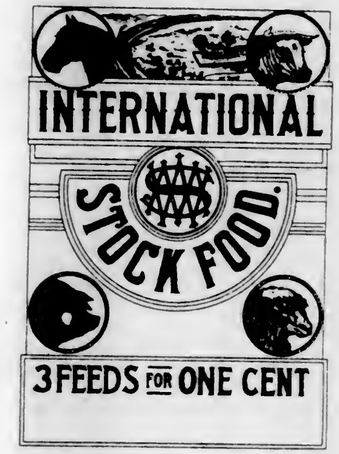
The arbitrary word NEBAGO.

SER. No. 19,073. SALAD-DRESSING. SPRAGUE, WARNER & COMPANY, Chicago, Ill. Filed Apr. 25, 1906.

RICHELIEU

The arbitrarily-selected word "RICHELIEU."

SER. No. 19,078. MEDICATED STOCK-FOOD MADE FROM FINELY-POWDERED MEDICINAL ROOTS, BARKS, HERBS, AND SEEDS MIXED IN A PROPER DILUENT. MARION W. SAVAGE, Minneapolis, Minn. Filed Apr. 26, 1906. Used ten years.



The words "INTERNATIONAL STOCK FOOD" and "3 FEEDS FOR ONE CENT." A monogram of the letters M W S appears on the mark, with the pictorial representation of the head of a horse, a pig, a sheep, and a steer, and a farm scene and stock-train.

SER. No. 19,085. COAT AND HAT HOOKS. THE COLUMBIAN HDW. CO., Cleveland, Ohio. Filed Apr. 26, 1906.

GEM

The word GEM.

SER. No. 19,093. FLAVORING EXTRACTS. SPRAGUE, WARNER & COMPANY, Chicago, Ill. Filed May 1, 1906.

MONSOON

The arbitrarily-selected word "MONSOON."

SER. No. 19,095. SYRUP. SPRAGUE, WARNER & COMPANY, Chicago, Ill. Filed May 1, 1906.

MONSOON

The arbitrarily-selected word "MONSOON."

SER. No. 19,096. SYRUP. SPRAGUE, WARNER & COMPANY, Chicago, Ill. Filed May 1, 1906.



The arbitrarily-selected word "RICHELIEU."

SER. No. 19,808. FLOUR MADE FROM WHEAT, RYE, CORN, AND BUCKWHEAT, AND MEAL MADE FROM WHEAT, RYE, AND CORN. QUAKER MILL COMPANY, Manchester, Iowa. Filed May 5, 1906. Used ten years.

QUAKER

The word QUAKER.

PRINTED-LITHOGRAPHED BY
SACKETT & WILHELMS
LITHOGRAPHING & PRINTING CO.
NEW YORK

TRADE-MARKS

REGISTERED JUNE 5, 1906.

53,371. LEATHER SHOES FOR LADIES, MEN, AND CHILDREN. A. J. BATES Co., Webster, Mass.

The words "THE BATES SHOE." Used ten years.

Filed January 20, 1906. Serial No. 16,340. PUBLISHED APRIL 10, 1906.

53,372. PACKING MATERIALS FOR STEAM AND WATER JOINTS. EDWIN COOPER, Vienna, Austria-Hungary.

The arbitrary word "COOPERIT."

Filed September 11, 1905. Serial No. 12,466. PUBLISHED APRIL 10, 1906.

53,373. TOOTH-BRUSHES. FLORENCE MANUFACTURING COMPANY, Northampton, Mass.

The numeral "3" with horizontal lines above and below the numeral.

Filed March 6, 1906. Serial No. 17,602. PUBLISHED APRIL 10, 1906.

53,374. TOOTH-BRUSHES. FLORENCE MANUFACTURING COMPANY, Northampton, Mass.

The numeral "1," associated with two lines of equal length, which converge above the said numeral.

Filed March 6, 1906. Serial No. 17,603. PUBLISHED APRIL 10, 1906.

53,375. BROOMS. LEE BROOM & DUSTER COMPANY, Lincoln, Nebr.

The representation of a group of factories and the figure "8" inclosed within a border flanked by stalks of broom-corn. Above this design is the representation of a seal inclosed within a circle flanked by ornamental scrolls bearing the words "USE THE LEE BROOM." Above the design also appear the words "USE THE LEE." Below said design appears the word "BROOM" and beneath this a panel having scroll ends and bearing the word "WEARWELL."

Filed February 9, 1906. Serial No. 16,857. PUBLISHED APRIL 10, 1906.

53,376. LEATHER AND CLOTH SHOES. JOSEPH A. MANNING, Boston, Mass.

The word "GLENDALE" arranged on a ribbon across the face of a shield having vertical bars. The ends of the ribbon hang down on each side, and the shield is surmounted by a conventional ornamentation somewhat resembling branches with leaves.

Filed May 24, 1905. Serial No. 6,519. PUBLISHED APRIL 10, 1906.

53,377. TOILET-PAPER. SCOTT PAPER CO., Philadelphia, Pa.

The word "VICHY" in a medallion on a checkered background with an ornamental border, with the word "SEVERED" in the medallion below, and a ribbon extending across the whole containing the words "TOILET PAPER." Used ten years.

Filed February 17, 1906. Serial No. 17,142. PUBLISHED APRIL 10, 1906.

53,378. METALLIC PENS. THE SPENCERIAN PEN CO., New York, N. Y.

The arbitrarily-coined word "SPENCERIAN" written in script.

Filed April 15, 1905. Serial No. 1,616. PUBLISHED APRIL 10, 1906.

53,379. ALARM-CLOCKS. THE WESTERN CLOCK MFG. CO., La Salle, Ill.

The word "STRENUOUS."

Filed November 9, 1905. Serial No. 14,445. PUBLISHED APRIL 10, 1906.

53,380. POPCORN. A. A. BERRY SEED COMPANY, Clarinda, Iowa.

The word "MISTLETOE" and the representation of a wreath of mistletoe, within which is shown a pair of andirons holding a blazing log, in the blaze from which appear the heads of a man and woman. Upon the wreath is tied a ribbon on which appear the words "CHRISTMAS TIME ALL THE TIME."

Filed January 6, 1906. Serial No. 15,948. PUBLISHED APRIL 10, 1906.

53,381. POPCORN. A. A. BERRY SEED COMPANY, Clarinda, Iowa.

The letters "A A B S Co" arranged as a monogram within a circle.

Filed January 6, 1906. Serial No. 15,949. PUBLISHED APRIL 10, 1906.

53,382. AMERICAN TURQUOISES. AZURE MINING CO., New York, N. Y.

A geometrical ring in intaglio. Used ten years.

Filed December 23, 1905. Serial No. 15,611. PUBLISHED APRIL 10, 1906.

53,383. PIANOS. EMERSON PIANO COMPANY, Boston, Mass.

The word "EMERSON" in Old English letters surrounded by a scroll, except at the bottom, where is the word "BOSTON," and beneath the word "BOSTON" are the letters "U. S. A." Used ten years.

Filed January 8, 1906. Serial No. 16,058. PUBLISHED APRIL 10, 1906.

53,384. WRAPPING-PAPER, PAPER BAGS, AND PAPER SACKS. HOLLINGSWORTH & WHITNEY COMPANY, Boston, Mass.

The word "ATTEAN."

Filed January 5, 1906. Serial No. 15,914. PUBLISHED APRIL 10, 1906.

53,385. WRAPPING-PAPER, PAPER BAGS, AND PAPER SACKS. HOLLINGSWORTH & WHITNEY COMPANY, Boston, Mass.

The word "KINEO."

Filed January 5, 1906. Serial No. 15,919. PUBLISHED APRIL 10, 1906.

53,386. BROOCHES, SCARF-PINS, AND CUFF-PINS. KREMENTZ & Co., Newark, N. J.

A figure having substantially the parts of an anchor—a shank, stock, and two arms curled oppositely to each other.

Filed August 26, 1905. Serial No. 12,023. PUBLISHED APRIL 10, 1906.

53,387. UPRIGHT AND GRAND PIANOS. LESTER PIANO COMPANY, Philadelphia, Pa.

The representation of a shield with the word "LESTER" arranged diagonally thereon. Used ten years.

Filed November 20, 1905. Serial No. 14,835. PUBLISHED APRIL 10, 1906.

53,388. HOUSEHOLD ARTICLES MADE OF ENAMELED STEELWARE. THE LISK MANUFACTURING CO., LIMITED, Canandaigua, N. Y.

The word "LISK."

Filed December 15, 1905. Serial No. 15,429. PUBLISHED APRIL 10, 1906.

53,389. LEATHER BOOTS AND SHOES. LYNCHBURG SHOE Co., Lynchburg, Va.

The words "DRESS PARADE" and the representation of six men on parade fashionably dressed.

Filed November 13, 1905. Serial No. 14,544. PUBLISHED APRIL 10, 1906.

53,390. CERTAIN NAMED MUSICAL INSTRUMENTS. LYON & HEALY, Chicago, Ill.

The word "WASHBURN." Used ten years.

Filed August 7, 1905. Serial No. 11,357. PUBLISHED APRIL 10, 1906.

53,391. LOOSE-LEAF LEDGERS, BINDERS, FILES, AND LEAVES THEREFOR. THE TENGWALL COMPANY, Chicago, Ill.

The word "TENGWALL." Used ten years.

Filed October 31, 1905. Serial No. 14,143. PUBLISHED APRIL 10, 1906.

53,392. PASTED LEATHER SHEETS. WESTERN LEATHER COMPANY, Milwaukee, Wis.

The words "PATE SPRING." Used ten years.

Filed April 21, 1905. Serial No. 2,574. PUBLISHED APRIL 10, 1906.

53,393. PASTED LEATHER SHEETS. WESTERN LEATHER COMPANY, Milwaukee, Wis.

The arbitrary symbol "No. 3." Used ten years.

Filed April 21, 1905. Serial No. 2,575. PUBLISHED APRIL 10, 1906.

53,394. PASTED LEATHER SHEETS. WESTERN LEATHER COMPANY, Milwaukee, Wis.

The arbitrary words "No. 4 COUNTER STOCK." Used ten years.

Filed April 21, 1905. Serial No. 2,576. PUBLISHED APRIL 10, 1906.

53,395. PASTED LEATHER SHEETS. WESTERN LEATHER COMPANY, Milwaukee, Wis.

The arbitrary word "EXTRA." Used ten years.

Filed April 21, 1905. Serial No. 2,577. PUBLISHED APRIL 10, 1906.

53,396. REFRIGERATORS. O. M. WHITMAN & Co., Boston, Mass.

The words "WHITMAN REFRIGERATOR." Used ten years.

Filed January 8, 1906. Serial No. 16,037. PUBLISHED APRIL 10, 1906.

53,397. WHISKY. LOUIS J. ADLER, Pittsburg, Pa.

The word "CAMEO" above the representation of a cameo showing a woman's head in a fanciful oval figure displayed on a fanciful shield design.

Filed May 22, 1905. Serial No. 6,297. PUBLISHED APRIL 10, 1906.

53,398. WHISKY. SALLIE ALTMAYER, Macon, Ga.

A monogram of the letters and abbreviation "A F L Co." and a representation of an ear of corn, associated with the words "OLD KENTUCKY CORN."

Filed May 18, 1905. Serial No. 5,966. PUBLISHED APRIL 10, 1906.

53,399. WHISKY. BEN J. GOLDMAN Co., San Francisco, Cal.

The words "MAGGIE MOORE." Used ten years.

Filed May 11, 1905. Serial No. 5,137. PUBLISHED APRIL 10, 1906.

53,400. WHISKY. C. H. GRAVES & SONS, Boston, Mass.

The representation of the head of a domestic cat and the words "WALNUT HILL." Used ten years.

Filed May 20, 1905. Serial No. 6,871. PUBLISHED APRIL 10, 1906.

53,401. COTTON-SEED MEAL AND NUT-CAKE. HUMPHREYS, GODWIN & Co., Memphis, Tenn.

The representation of the head of a cow in the act of eating from a pail which is held in the hands of a negro boy. On the pail appear the words "DIXIE BRAND" in quotation-marks and below it the words "THE FEED YOU NEED," the whole being surrounded by two concentric circles, in the space between which are the words "DIXIE BRAND" in quotation-marks.

Filed May 4, 1905. Serial No. 4,284. PUBLISHED APRIL 10, 1906.

53,402. WHISKY. W. P. IVES & Co., Norfolk, Va.

The letters "T. P. A." arranged in a semicircle over a monogram formed by intertwining the letters and character "W P I & Co" inclosed in a circle.

Filed May 8, 1905. Serial No. 4,692. PUBLISHED APRIL 10, 1906.

53,403. GIN. THE J. J. DOUGLAS Co., Louisville, Ky.

The name "DOUGLAS" and the bust portrait of James Douglas inclosed in concentric circles.

Filed January 8, 1906. Serial No. 16,032. PUBLISHED APRIL 10, 1906.

53,404. COOKING UTENSILS MADE OF TINWARE. THE LISK MANUFACTURING Co., LIMITED, Canandaigua, N. Y.

The representation of a Maltese cross and the word "LISK." Used ten years.

Filed April 27, 1905. Serial No. 3,218. PUBLISHED APRIL 10, 1906.

53,405. MALT EXTRACTS. M. K. GOETZ BREWING Co., St. Joseph, Mo.

The capital letter "G" in red color, behind the central portion of which appears the representation of a hand holding a cluster of barley-sprigs, the stems of which extend radially to points below the letter "G," while the heads are exposed above the letter and spread radially. The background is circular and appears in gilt, with a narrow white inner circular line surrounded by a circular yellow band substantially midway between the white line and the outer margin.

Filed January 10, 1906. Serial No. 16,104. PUBLISHED APRIL 10, 1906.

53,406. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.

The representation of an ace of spades having a dark center with light scrolls at the top and bottom and the number "69" in the middle between the scrolls. Surrounding the center and inclosed by two dark lines is a light band ornamented by scrolls at the top and bottom and displaying the words "CONSOLIDATED CARD COMPANY." On each side of the ace of spades is a scroll with conventional leaves springing from conventional stalk designs which intertwine in the middle beneath the ace of spades. In each lower corner is a ribbon-like device hanging from the scroll above, which also supports a leaf-like loop which is continued toward the middle into a chain-like loop, also hanging from the scroll above. On the ribbon-like device appear the words "N. Y. CONSOLIDATED CARD Co." At the top is a curved frame inclosing the word "MASCOTTE," and beneath said frame appear the words "THE NEW-YORK." Used ten years.

Filed May 11, 1905. Serial No. 5,010. PUBLISHED APRIL 10, 1906.

53,407. STOUT. THE ROBERT SMITH ALE BREWING COMPANY, Philadelphia, Pa.

The words and figures "ROBERT SMITH'S PHILA. ESTABLISHED 1774." and the representation of the head of a tiger. Used ten years.

Filed December 30, 1905. Serial No. 15,776. PUBLISHED APRIL 10, 1906.

53,408. STOUT. THE ROBERT SMITH ALE BREWING COMPANY, Philadelphia, Pa.

The words "TIGER HEAD" and the representation of a tiger's head, a circle inclosing the latter, and a crescent-shaped figure on which said head, circle, and figure are imposed.

Filed December 30, 1905. Serial No. 15,777. PUBLISHED APRIL 10, 1906.

53,409. WHISKY. S. GRABFELDER & Co., Louisville, Ky.

The words "ECHO SPRING" and a circular design inclosing the picture of a woman dipping water from a spring. Used ten years.

Filed May 22, 1905. Serial No. 6,327. PUBLISHED APRIL 10, 1906.

53,410. CORDIAL. SIDNEY FAIRCHILD COMPANY, New York, N. Y.

The word "NARCISSUS."

Filed February 10, 1906. Serial No. 16,910. PUBLISHED APRIL 10, 1906.

53,411. WHISKY. ROBERT STEEL, Philadelphia, Pa.

The words "GREEN SEAL."

Filed February 7, 1906. Serial No. 16,805. PUBLISHED APRIL 10, 1906.

53,412. FRUITS AND VEGETABLES IN TINS OR GLASS. WM. NUMSEN & SONS, INC., Baltimore, Md.

The words "LITTLE JAP," associated with the design comprising a dark background or panel which appears upon branches of leaves and flowers. Upon the background is centrally produced within a circular field the representation of a Japanese lady holding over her head a parasol in the foreground of a landscape comprising water, mountains, flowers, foliage, and a diminutive boat in the distance.

Filed April 15, 1905. Serial No. 1,688. PUBLISHED APRIL 3, 1906.

53,413. CARPET-SWEEPERS. THE AMERICAN WRINGER COMPANY, New York, N. Y.

The word "ECLIPSE."

Filed October 14, 1905. Serial No. 13,618. PUBLISHED APRIL 10, 1906.

53,414. RYE WHISKY. BATJER & Co., New York, N, Y,

The words "BELLE OF MARYLAND."

Filed April 25, 1905. Serial No. 3,029. PUBLISHED APRIL 10, 1906.

53,415. CANNED OYSTERS. THE BOOTH PACKING COMPANY, Baltimore, Md.

The words "OLD HONESTY."

Filed October 21, 1905. Serial No. 13,800. PUBLISHED MARCH 27, 1906.

53,416. WHISKY. BRAND BROTHERS COMPANY, Chicago, Ill.

The arbitrary word "OZARKO" and the fanciful picture of the head and bust of a man wearing a slouch hat, said picture being inclosed in a fancy border.

Filed February 24, 1906. Serial No. 17,327. PUBLISHED APRIL 10, 1906.

53,417. WHEAT BREAD. E. A. WILLIAMS, INCORPORATED, Newark, N. J.

The representation of a red panel on which appears a white ellipse, across which and the panel is shown the word "PO-TA-TOR" separated by hyphens into syllables.

Filed January 11, 1906. Serial No. 16,132. PUBLISHED APRIL 10, 1906.

53,418. WHISKY. MAX FRUHAUF & Co., Cincinnati, Ohio.

The word "HELMET" and the representation of a shield with the design of a helmet placed thereon and a sword and battle-ax crossed behind the shield.

Filed May 12, 1905. Serial No. 5,377. PUBLISHED APRIL 10, 1906.

53,419. LEATHER BOOTS AND SHOES. GEO. D. WITT SHOE Co, Lynchburg, Va.

The words "GIRL GRADUATE" and the picture or representation of a young lady seated on a lounge or divan in the midst of sofa-pillows and attired in her graduation-gown and holding before her a bunch of roses.

Filed October 9, 1905. Serial No. 13,462. PUBLISHED APRIL 10, 1906.

53,420. PACKING. GREENE TWEED & Co., New York, N. Y.

The word "PALMETTO." Used ten years.

Filed December 8, 1905. Serial No. 15,266. PUBLISHED APRIL 10, 1906.

53,421. LAGER-BEER. HARTMANN BREWING COMPANY, Bridgeport, Conn.

A circular-shaped figure bounded by concentric lines intersected by a triangular-shaped figure and the representation of a link chain contained between the boundaries of the circular-shaped figure and extending concentrically therewith.

Filed April 1, 1905. Serial No. 109. PUBLISHED MAY 9, 1905.

53,422. CHECKING-CRAYONS, SCHOOL-CRAYONS, AND MARKING-CRAYONS. JOSEPH M. HOYT, Danvers, Mass.

The word "STANDARD." Used ten years.

Filed March 6, 1906. Serial No. 17,609. PUBLISHED APRIL 10, 1906.

53,423. COCKTAILS AND PUNCH. W. H. JONES AND Co., Boston, Mass.

The words "BON TON."

Filed April 3, 1905. Serial No. 252. PUBLISHED APRIL 10, 1906.

53,424. PATENT KID AND PATENT COLT-SKINS. DENNIS T. KENNEDY, Haverhill, Mass.

The word "PURITAN."

Filed November 2, 1905. Serial No. 14,211. PUBLISHED APRIL 10, 1906.

53,425. WHISKY. BENJAMIN W. LE COMPTE, Galveston, Tex.

The word "ORTAGO."

Filed March 3, 1906. Serial No. 17,476. PUBLISHED APRIL 10, 1906.

53,426. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.

The abbreviation and numerals "No. 31." Used ten years.

Filed May 2, 1905. Serial No. 3,958. PUBLISHED APRIL 10, 1906.

53,427. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.

The abbreviation and numerals "No. 94." Used ten years.

Filed May 5, 1905. Serial No. 4,301. PUBLISHED APRIL 10, 1906.

53,428. LAGER-BEER. THE PETER SCHOENHOFEN BREWING COMPANY, Chicago, Ill.

The arbitrarily-selected word "EDELWEISS" written in script letters and having a scroll thereunder.

Filed September 8, 1905. Serial No. 12,368. PUBLISHED APRIL 10, 1906.

53,429. LAGER-BEER. THE PETER SCHOENHOFEN BREWING COMPANY, Chicago, Ill.

The representation of a cork on which appears the word "SCHOENHOFENBRÄU," the letters "HOFBRÄU" being in large script, the letters "SCHOEN" being in small script within the loop of the letter "H," and the letters "EN" being in small script and located between the letters "F" and "B."

Filed September 11, 1905. Serial No. 12,462. PUBLISHED APRIL 10, 1906.

53,430. LAGER-BEER. THE PETER SCHOENHOFEN BREWING COMPANY, Chicago, Ill.

The representation of a girl's head having entwined in her hair a number of edelweiss flowers.

Filed September 14, 1905. Serial No. 12,596. PUBLISHED APRIL 10, 1906.

53,431. LAGER-BEER. THE PETER SCHOENHOFEN BREWING COMPANY, Chicago, Ill.

An oval-shaped panel having an ornamental border and inclosing the words "P. SCHOENHOFEN BREWING Co.'s SELECT, CHICAGO" and ornamental scrollwork. Used ten years.

Filed September 16, 1905. Serial No. 12,699. PUBLISHED APRIL 10, 1906.

53,432. LAGER-BEER. THE PETER SCHOENHOFEN BREWING COMPANY, Chicago, Ill.

A rectangular panel bearing a representation of a shield having a yellow border and diagonally-arranged stripes of red, white, and blue and the letter "S" entwined with a Mercury staff, below which is a wreath, and associated with the name "P. SCHOENHOFEN BREWING Co.'s SCHOENHOFENBRÄU, CHICAGO, U. S. A.," barley-stalks appearing through said word.

Filed October 2, 1905. Serial No. 13,216. PUBLISHED APRIL 10, 1906.

53,433. LAGER-BEER. THE PETER SCHOENHOFEN BREWING COMPANY, Chicago, Ill.

The representation on a yellow background of a gold-bordered shield having the national colors, red, white, and blue, in diagonal stripes and having in the center of the shield a Mercury staff with the letter "S" intertwined therewith and below the staff a wreath. To the left of the shield appear the words and character "RESTORING HEALTH & STRENGTH," and to the right of the shield appear the words and character "DELICIOUS IN TASTE & FLAVOR." The whole is surrounded by a rectangular gold border.

Filed October 3, 1905. Serial No. 13,252. PUBLISHED APRIL 10, 1906.

53,434. MIXTURE OF PULP OF THE GUAVA AND SUGAR. TROPIC FRUIT COMPANY, LTD., Wahiawa, Territory of Hawaii.

The coined word "GUAVITA."

Filed January 22, 1906. Serial No. 16,369. PUBLISHED APRIL 10, 1906.

53,435. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio.

A network of lines, some of which form closed curves and others of which form undulating lines, simulating the effect seen in watered silk.

Filed September 27, 1905. Serial No. 13,075. PUBLISHED APRIL 10, 1906.

53,436. WHISKY. WOODFORD DISTILLING Co., Chicago, Ill.

The words "OLD FAITHFUL," used in connection with the word "WHISKEY."

Filed March 5, 1906. Serial No. 17,536. PUBLISHED APRIL 10, 1906.

53,437. PLAYING-CARDS. ALEJO GABARRÓ Y CASTELLÓ, Igualada, Spain.

A representation of a crow sitting on the branch of a tree.

Filed June 7, 1905. Serial No. 7,602. PUBLISHED APRIL 10, 1906.

53,438. MACARONI, SPAGHETTI, VERMICELLI, AND NOODLES. CRESCENT MACARONI & CRACKER Co., Davenport, Iowa.

A star and crescent, the star being placed partly within the crescent.

Filed August 16, 1905. Serial No. 11,700. PUBLISHED APRIL 10, 1906.

53,439. WHEAT-FLOUR. LAWRENCEBURG ROLLER MILLS COMPANY, Lawrenceburg, Ind., and Boston, Mass.

A circular panel bearing the word "ULTIMA" on scattered

spears of wheat and the words "LAWRENCEBURG ROLLER MILLS CO. PATENT FLOUR, LAWRENCEBURG, IND."
Filed September 16, 1905. Serial No. 12,726. PUBLISHED APRIL 10, 1906.

53,440. WHEAT-FLOUR. MARSH & RILEY, Pine Bluff, Ark.
The word "NARRITA."
Filed August 2, 1905. Serial No. 11,150. PUBLISHED APRIL 10, 1906.

53,441. EGGS. G. W. MARTIN & BRO., New York, N. Y.
The representation or symbol of a hen, a rooster, and an egg-box, all inclosed within a rectangular line-drawn figure and the egg-box showing partitions and an egg lying in the forward corner section of the same, the word "COLUMBO" appearing on the left side and the name and address "G. W. MARTIN & BRO. 3 & 5 HARRISON ST. NEW YORK." on the right side of the egg-box.
Filed September 22, 1905. Serial No. 12,925. PUBLISHED APRIL 10, 1906.

53,442. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.
A rectangular panel having an inner frame inclosing a dark ground covered by small light dots. Within said frame two ornamental fleur-de-lis extend from a central rosette toward the ends. Surrounding the inner frame is an elaborate scroll border having fleur-de-lis at the corner.
Filed July 12, 1905. Serial No. 10,150. PUBLISHED APRIL 10, 1906.

53,443. CANNED PINEAPPLES. PAUL TAYLOR BROWN CO., New York, N. Y.
The words "SOUTHERN CROSS."
Filed September 19, 1905. Serial No. 12,795. PUBLISHED MARCH 20, 1906.

53,444. CURED FISH, (SMOKED, DRIED, OR SALTED.) GEORGE H. PERKINS, Gloucester, Mass.
The letters and word "X X X WALRUS" upon the representation of a fish.
Filed July 28, 1905. Serial No. 10,935. PUBLISHED APRIL 10, 1906.

53,445. ILLUMINATING-OILS MANUFACTURED FROM PETROLEUM. STANDARD OIL CO. OF NEW YORK, New York, N. Y.
The representation of a monkey standing on a table holding a lamp in its hand and the words "MONKEY BRAND."
Filed February 1, 1906. Serial No. 16,772. PUBLISHED APRIL 10, 1906.

53,446. WINES. W. A. TAYLOR & CO., New York, N. Y.
A representation of a lion rampant upon a heraldic roll and holding a crown between its paws, together with a scroll upon which is displayed the motto "LABORE ET HONORE," and a monogram consisting of the letters, character, and abbreviation "W A T & Co."
Filed July 22, 1905. Serial No. 10,698. PUBLISHED APRIL 10, 1906.

53,447. OLIVE-OIL. THE W. A. CASTLE CO., Springfield, Mass.
The representation of a castle surrounded by a circular belt bearing the motto "PURISSIMUM ET OPTIMUM." Below the castle and within the belt also appears a monogram consisting of the letters "W A C."
Filed June 24, 1905. Serial No. 9,003. PUBLISHED APRIL 10, 1906.

53,448. WRINGING-MACHINES. THE AMERICAN WRINGER COMPANY, New York, N. Y.
The words "NEW HOME."
Filed October 14, 1905. Serial No. 13,619. PUBLISHED APRIL 10, 1906.

53,449. CLOTHES-WRINGERS AND THE PARTS COMPOSING THE SAME. THE AMERICAN WRINGER COMPANY, New York, N. Y.
The word "VICTOR."
Filed October 14, 1905. Serial No. 13,625. PUBLISHED APRIL 10, 1906.

53,450. CLOTHES-WRINGERS AND THE PARTS COMPOSING THE SAME. THE AMERICAN WRINGER COMPANY, New York, N. Y.
The word "FALCON."
Filed October 14, 1905. Serial No. 13,626. PUBLISHED APRIL 10, 1906.

53,451. CLOTHES-WRINGERS AND THE PARTS COMPOSING THE SAME. THE AMERICAN WRINGER COMPANY, New York, N. Y.
The word "CONQUEROR."
Filed October 14, 1905. Serial No. 13,629. PUBLISHED APRIL 10, 1906.

53,452. CLOTHES-WRINGERS. THE AMERICAN WRINGER COMPANY, New York, N. Y.
The word "RELIEF."
Filed October 14, 1905. Serial No. 13,631. PUBLISHED APRIL 10, 1906.

53,453. CLOTHES-WRINGERS. THE AMERICAN WRINGER COMPANY, New York, N. Y.
The word "BANNER."
Filed October 14, 1905. Serial No. 13,632. PUBLISHED APRIL 10, 1906.

53,454. CLOTHES-WRINGERS. THE AMERICAN WRINGER COMPANY, New York, N. Y.
The word "RIVAL."
Filed October 14, 1905. Serial No. 13,634. PUBLISHED APRIL 10, 1906.

53,455. CLOTHES-WRINGERS. THE AMERICAN WRINGER COMPANY, New York, N. Y.
The word "IMPERIAL."
Filed October 14, 1905. Serial No. 13,635. PUBLISHED APRIL 10, 1906.

53,456. CLOTHES-WRINGERS. THE AMERICAN WRINGER COMPANY, New York, N. Y.
The word "LEADER."
Filed October 14, 1905. Serial No. 13,636. PUBLISHED APRIL 10, 1906.

53,457. CLOTHES-WRINGERS. THE AMERICAN WRINGER COMPANY, New York, N. Y.
The word "GARLAND."
Filed October 14, 1905. Serial No. 13,637. PUBLISHED APRIL 10, 1906.

53,458. EGGS. BEYER BROTHERS COMMISSION COMPANY, Providence, R. I.; Boston, Mass., and New York, N. Y.
An ovate border composed of spaced segmental sections and the representation of a rock within the border bearing the inscription "1620."
Filed November 7, 1905. Serial No. 14,386. PUBLISHED APRIL 10, 1906.

53,459. CEREAL SUBSTITUTE FOR COFFEE. DECATUR CEREAL COFFEE WORKS, Decatur, Ill.
A capital letter "D" in which is shown a portrait of Commodore Decatur wearing a naval coat and epaulets, the right side being shown, the words "COMMODORE DECATUR" being inscribed thereunder.
Filed December 1, 1905. Serial No. 15,136. PUBLISHED APRIL 10, 1906.

53,460. PREPARED COCOANUT. DUNHAM MANUFACTURING COMPANY, New York, N. Y.
The word "DUNHAM'S." Used ten years.
Filed January 24, 1906. Serial No. 16,462. PUBLISHED APRIL 10, 1906.

53,461. AXLE-GREASE. HILL TOP OIL CO. LTD., New Orleans, La.
The words "HILL TOP."
Filed December 2, 1905. Serial No 15,143. PUBLISHED APRIL 10, 1906.

53,462. NOODLES AND VERMICELLI. THE JOHN BOEHM CO., Pittsburg, Pa.
The representation of a swan, above which are arranged the words "WHITE SWAN," and arranged on the background bearing said representations and said words are groups of initials "J. B. Co.," while in the upper left-hand corner of the background are the letters "E.S.T.B." and in the upper right-hand corner of the background the figures "1882."
Filed October 26, 1905. Serial No. 13,950. PUBLISHED APRIL 10, 1906.

53,463. ROCK-CANDY AND ROCK-CANDY SYRUPS. KNICKERBOCKER CHOCOLATE COMPANY, New York, N. Y.
The letters and character "D. & P."
Filed November 11, 1905. Serial No. 14,509. PUBLISHED APRIL 10, 1906.

53,464. LARD. THE N. K. FAIRBANK COMPANY, Chicago, Ill.
A representation of a tiger. Used ten years.
Filed January 10, 1906. Serial No. 16,081. PUBLISHED APRIL 10, 1906.

53,465. LARD. THE N. K. FAIRBANK COMPANY, Chicago, Ill.
A representation of a buffalo. Used ten years.
Filed January 10, 1906. Serial No. 16,083. PUBLISHED APRIL 10, 1906.

53,466. BAKING-POWDER. E. OTTENHEIMER & SONS, Louisville, Ky.
The representation of a layer cake with a piece cut out of it.
Filed December 14, 1905. Serial No. 15,427. PUBLISHED APRIL 10, 1906.

53,467. BLUING. ADAM PFROMM, Philadelphia, Pa.
A disk having a conventionalized vine border and having thereon the words "BARLOW'S INDIGO BLUE." Used ten years.
Filed August 16, 1905. Serial No. 11,697. PUBLISHED APRIL 10, 1906.

53,468. BLUING. ADAM PFROMM, Philadelphia, Pa.
The representation of the interior of a room, showing a woman washing clothes in a tub, and the words "BARLOW'S INDIGO BLUE." Used ten years.
Filed August 16, 1905. Serial No. 11,698. PUBLISHED APRIL 10, 1906.

53,469. FRESH MINCE-MEAT. FREDERICK SAUNDERS, San Francisco, Cal.
The word "PURITAN," associated with a bust picture of a girl in Puritan costume surrounded by a wreath of grape vines and leaves and with two bunches of grapes. At the lower right-hand corner is a circle inclosing an ox-head design and at the lower left-hand corner a circle inclosing an apple branch with leaves and two apples.
Filed October 30, 1905. Serial No. 14,089. PUBLISHED APRIL 10, 1906.

53,470. CERTAIN NAMED FRUITS. SOUTHERN CROSS FRUIT CO., Johnstown and New York, N. Y., and San Juan, Porto Rico.
The words "SOUTHERN CROSS," associated with the representation of a fruit-tree in the form of a cross, stars appearing at the terminals of the stem and branches.
Filed November 3, 1905. Serial No. 14,224. PUBLISHED FEBRUARY 27, 1906.

53,471. CERTAIN NAMED FRUITS. SOUTHERN CROSS FRUIT CO., Johnstown and New York, N. Y., and San Juan, Porto Rico.
The representation of the constellation Southern Cross, the stars of which appear on the terminals of a Latin cross, a branch of an orange-tree appearing on the cross.
Filed November 3, 1905. Serial No. 14,225. PUBLISHED FEBRUARY 27, 1906.

53,472. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn.
The words "OLD HICKORY." Used ten years.
Filed March 6, 1906. Serial No. 17,552. PUBLISHED APRIL 10, 1906.

53,473. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn.
The words "MOUNT CLARE." Used ten years.
Filed March 6, 1906. Serial No. 17,565. PUBLISHED APRIL 10, 1906.

53,474. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn.
The word "CHAMPION." Used ten years.
Filed March 6, 1906. Serial No. 17,593. PUBLISHED APRIL 10, 1906.

53,475. ALBUMEN PREPARATIONS FOR USE AS FOOD. ALTHEN & MENDE, Halle-on-the-Saale, Germany.
The arbitrarily-selected word "TUTULIN."
Filed July 14, 1905. Serial No. 10,338. PUBLISHED APRIL 10, 1906.

53,476. CLOTHES-WRINGERS AND PARTS THEREOF. THE AMERICAN WRINGER COMPANY, New York, N. Y.
The word "CRESCENT."
Filed October 14, 1905. Serial No. 13,628. PUBLISHED APRIL 10, 1906.

53,477. CLOTHES-WRINGERS. THE AMERICAN WRINGER COMPANY, New York, N. Y.
The word "MAGIC."
Filed October 14, 1905. Serial No. 13,630. PUBLISHED APRIL 10, 1906.

53,478. SOAP. THE ANDREW JERGENS CO., New York, N. Y., and Cincinnati, Ohio.
The words "JERGENS' PUMISS" and the word "FOMO" appearing across the face of the word "PUMISS."
Filed July 10, 1905. Serial No. 9,994. PUBLISHED APRIL 10, 1906.

53,479. SOAP. THE ARTESIA CREAM COMPANY, Waco, Tex.
The arbitrary and fanciful word "ARTESIA."
Filed January 24, 1906. Serial No. 16,453. PUBLISHED APRIL 10, 1906.

53,480. CIGARS. CIFUENTES, FERNANDEZ Y CA., Havana, Cuba.
Two parallel ellipses, inclosed by the outer ellipse in the upper part thereof being the words "FLOR DE TABACOS" and in the lower part thereof the word "HABANA." In the inner ellipse are the words and letters "DE PARTAGAS Y CA.," all being in block-faced capital letters. Used ten years.
Filed June 24, 1905. Serial No. 8,944. PUBLISHED APRIL 10, 1906.

53,481. COAL. EQUITABLE COAL & COKE COMPANY, Chicago and Duquoin, Ill.
The word "MAJESTIC."
Filed March 14, 1906. Serial No. 17,806. PUBLISHED APRIL 10, 1906.

53,482. TEA. F. P. GARRETTSON & Co., Newport, R. I., and New York, N. Y.
The words "EXPOSITION TEA."
Filed May 6, 1905. Serial No. 4,572. PUBLISHED APRIL 10, 1906.

53,483. LAUNDRY SOAP. F. P. GARRETTSON & Co., Newport, R. I., and New York, N. Y.
The words "AQUIDNECK SOAP."
Filed May 6, 1905. Serial No. 4,576. PUBLISHED APRIL 10, 1906.

53,484. AROMATIC FOOD PREPARATIONS FOR ANIMALS. HORATIO M. GRIFFIN, Galt, Canada.
The word "HERBAGEUM."
Filed May 31, 1905. Serial No. 7,076. PUBLISHED APRIL 10, 1906.

53,485. HAVANA CIGARS. HAVANA COMMERCIAL COMPANY New York, N. Y.
The representation of two interlooped bands with the words "LA ANTIGUEDAD" thereon and of the words and abbreviations "DE SANTIAGO REFORMADA POR C. A." and "HABANA" below said representation of interlooped bands and above the representation of two outwardly-disposed tobacco branches. Used ten years.
Filed February 27, 1906. Serial No. 17,376. PUBLISHED APRIL 10, 1906.

53,486. HAVANA CIGARS. HAVANA COMMERCIAL COMPANY, New York, N. Y.
The words "LA FLOR DE CUBA" and "HABANA" arranged within the border of a double ellipse and a monogram of the letters "D E" and word and abbreviations "M. VALLE Y CA." arranged within the inner ellipse. Used ten years.
Filed February 27, 1906. Serial No. 17,377. PUBLISHED APRIL 10, 1906.

53,487. COOKING AND BAKING OILS. THE INDEPENDENT COTTON OIL CO., Chicago, Ill.
A swan represented either pictorially or by word.
Filed May 12, 1905. Serial No. 5,354. PUBLISHED FEBRUARY 20, 1906.

53,488. CERTAIN NAMED COLORS AND INKS. THE JAENECKE PRINTING INK CO., Newark, N. J.
The representation of an anchor with the letters "J P I Co" and the whole inclosed within a circle.

Filed October 12, 1905. Serial No. 13,522. PUBLISHED APRIL 10, 1906.

53,489. SOAP. LEVER BROTHERS COMPANY, Cambridge, Mass.
The words "WHITE RAVEN."
Filed February 9, 1906. Serial No. 16,860. PUBLISHED APRIL 10, 1906.

53,490. MIXED PAINT. MARINE PAINT CORPORATION, Norfolk, Va.
A disk divided into three equal sectors, one red, one blue, and the other white, each bearing one of the letters "M" "P" "C," and an endless center-bar link chain surrounding the disk.
Filed December 29, 1905. Serial No. 15,749. PUBLISHED APRIL 10, 1906.

53,491. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill.
The conventional symbol of Time, being a figure of an old man with scythe and hour-glass. Used ten years.
Filed August 2, 1905. Serial No. 11,158. PUBLISHED APRIL 10, 1906.

53,492. MIXED TEAS. NEW ORLEANS IMPORT CO., LIMITED, New Orleans, La.
The arbitrary word "MONOGRAM."
Filed August 9, 1905. Serial No. 11,458. PUBLISHED APRIL 10, 1906.

53,493. MIXED TEAS. NEW ORLEANS IMPORT CO., LIMITED, New Orleans, La.
The words "STANDARD HY-NOON."
Filed August 9, 1905. Serial No. 11,459. PUBLISHED APRIL 10, 1906.

53,494. WHISKY. OLD KENTUCKY DISTILLERY, Louisville, Ky.
The word "NORMANDY." Used ten years.
Filed June 15, 1905. Serial No. 8,242. PUBLISHED APRIL 10, 1906.

53,495. WHISKY. OLD KENTUCKY DISTILLERY Louisville, Ky.
The words "DEW DROPS."
Filed June 15, 1905. Serial No. 8,243. PUBLISHED APRIL 10, 1906.

53,496. MAGAZINES. THE OUTING PUBLISHING COMPANY, Deposit, N. Y.
The word "OUTING."
Filed October 4, 1905. Serial No. 13,279. PUBLISHED APRIL 10, 1906.

53,497. SOAP. EDDY PALMER, New York, N. Y.
The word "PALMER." Used ten years.
Filed June 27, 1905. Serial No. 9,143. PUBLISHED APRIL 10, 1906.

53,498. CIGARS AND STOGIES. SIDNEY S. SMITH, Allegheny, Pa.
The words "PAN AMERICAN," associated with the abbreviation "No." and the numeral "2," arranged, as shown, between parallel top and bottom lines.
Filed January 30, 1906. Serial No. 16,631. PUBLISHED APRIL 10, 1906..

53,499. BEER. SPRINGFIELD BREWERIES COMPANY, Springfield, Mass.
Representations of a medal of the Duke of Baden, Germany, showing the obverse and reverse sides of the medal side by side, but in separated relation, with a scroll-bordered shield between them bearing the words "GOLD MEDAL AWARDED AT THE INTERNATIONAL EXPOSITION AT BADEN-BADEN 1896." surmounted by the words "GOLD MEDAL TIVOLI" and also having associated therewith representations of hop-vines and barley-heads.
Filed June 10, 1905. Serial No. 7,843. PUBLISHED APRIL 10, 1906.

53,500. PICKLES. SQUIRE DINGEE CO., Chicago, Ill.
The arbitrarily-selected words "GOLD MEDAL." Used ten years.
Filed May 10, 1905. Serial No. 4,885. PUBLISHED APRIL 10, 1906.

53,501. ARTISTS' BLUE COLORS. TOCH BROTHERS, New York, N. Y.
The representation of a palette on which appear the words "YALE BLUE" inclosed in a geometrical figure, the palette appearing against a background formed by the word "TOCH." Used ten years.
Filed August 12, 1905. Serial No. 11,577. PUBLISHED APRIL 10, 1906.

53,502. ARTISTS' WHITE COLORS. TOCH BROTHERS, New York, N. Y.
The representation of a palette upon which appear the words "OLEUM WHITE" inclosed in a geometrical figure, the palette appearing against a background consisting of the word "TOCH." Used ten years.
Filed August 12, 1905. Serial No. 11,582. PUBLISHED APRIL 10, 1906.

53,503. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn.
The word and figures "FORMULA 44" inclosed within a diamond-shaped figure.
Filed March 6, 1906. Serial No. 17,539. PUBLISHED APRIL 10, 1906.

53,504. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn.
The letters and figure "V 3 C."
Filed March 6, 1906. Serial No. 17,547. PUBLISHED APRIL 10, 1906.

53,505. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn.
The letters "I X L." Used ten years.
Filed March 6, 1906. Serial No. 17,553. PUBLISHED APRIL 10, 1906.

53,506. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn.
The words "CAPITAL CITY" and the representation of the State Capitol Building of Alabama. Used ten years.
Filed March 6, 1906. Serial No. 17,569. PUBLISHED APRIL 10, 1906.

53,507. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn.
A monogram consisting of the letters "O" and "D" inclosed within a diamond-shaped figure. Used ten years.
Filed March 6, 1906. Serial No. 17,573. PUBLISHED APRIL 10, 1906.

53,508. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn.
The word "PILOT" and the representation of a rock on which appear the words "AMMONIATED GUANO."
Filed March 6, 1906. Serial No. 17,577. PUBLISHED APRIL 10, 1906.

53,509. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn.
The word "ELECTRIC" and the representation of electric darts.
Filed March 6, 1906. Serial No. 17,579. PUBLISHED APRIL 10, 1906.

53,510. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn.
The word "COMET" and the representation of a comet.
Filed March 6, 1906. Serial No 17,580. PUBLISHED APRIL 10, 1906.

53,511. MILK AND CREAM. HARRY YATES, Buffalo and Orchard Park, N. Y.
The representation of the head of a cow surrounded by an annular band in which appear the words "HILLHURST FARM ORCHARD PARK, N. Y."
Filed May 18, 1905. Serial No. 6,046. PUBLISHED APRIL 10, 1906.

53,512. VERMIFUGE. JAMES F. BALLARD, St. Louis, Mo.
A monogram composed of the letters "W" and "G" surmounted by a panel with a central black ground upon which is the word "WHITE" in white lettering and ornamental scrollwork underlying the whole. Used ten years.
Filed December 18, 1905. Serial No. 15,489. PUBLISHED APRIL 10, 1906.

53,513. POMADE. JESSE D. BELL, Dawson, Ga.
The words "ANTI CURLINE."
Filed October 25, 1905. Serial No. 13,934. PUBLISHED APRIL 10, 1906.

53,514. MILLS FOR GRINDING. THE C. S. BELL CO., Hillsboro, Ohio.
The word "MOCTEZUMA."
Filed January 19, 1906. Serial No. 16,318. PUBLISHED APRIL 10, 1906.

53,515. PULVERIZING MACHINERY. GEORGE HOLT FRASER, New York, N. Y.
A circle having disposed therein three smaller circles tangential to the former and an arrow leading outward from the center of each of said tangential circles to a point beyond the periphery of the outer circle and in line with the center of the latter.
Filed January 31, 1906. Serial No. 16,635. PUBLISHED APRIL 10, 1906.

53,516. PULVERIZING MACHINERY. GEORGE HOLT FRASER, New York, N. Y.
The word "KENT." Used ten years.
Filed January 31, 1906. Serial No. 16,636. PUBLISHED APRIL 10, 1906.

53,517. ELECTRIC AND GAS LIGHT REFLECTORS. I. P. FRINK, New York, N. Y.
The word "FRINK'S." Used ten years.
Filed September 19, 1905. Serial No. 12,784. PUBLISHED APRIL 10, 1906.

53,518. CARTONS FOR LAMP-CHIMNEYS AND GLOBES. MACBETH-EVANS GLASS COMPANY, Pittsburg, Pa.
The fanciful word "GEM."
Filed February 26, 1906. Serial No. 17,368. PUBLISHED APRIL 10, 1906.

53,519. ANTIFRICTION METALS OR ALLOYS. MAGNOLIA METAL COMPANY, New York, N. Y.
Two oblong rectangular panels connected end to end and each surrounded by a border within which are the words "MAGNOLIA ANTIFRICTION METAL" in curved lines. Used ten years.
Filed February 28, 1906. Serial No. 17,390. PUBLISHED APRIL 10, 1906.

53,520. ANTIFRICTION METALS OR ALLOYS. MAGNOLIA METAL COMPANY, New York, N. Y.
The representation of a magnolia-blossom with two leaves and a short stem attached. Used ten years.
Filed February 28, 1906. Serial No. 17,391. PUBLISHED APRIL 10, 1906.

53,521. ELECTRICAL EXPLODERS. MASURITE EXPLOSIVE COMPANY, Masury, Ohio.
The word "BLASTGO."
Filed October 13, 1905. Serial No. 13,546. PUBLISHED APRIL 10, 1906.

53,522. COTTON DUCK. MOUNT VERNON-WOODBERRY COTTON DUCK COMPANY, Baltimore, Md.
The words "DRUID MILLS," in connection with an arbitrary device arranged below the same and intended to represent the rays of the sun.
Filed September 15, 1905. Serial No. 12,636. PUBLISHED APRIL 10, 1906.

53,523. ADHESIVE TAPE. THE OKONITE COMPANY, LIMITED, New York, N. Y.
The words "MANSON TAPE." Used ten years.
Filed October 28, 1905. Serial No. 14,017. PUBLISHED APRIL 10, 1906.

53,524. WHISKY. OLD KENTUCKY DISTILLERY, Louisville, Ky.
The words "KENTUCKY DEW," beneath which is a shield design with the monogram composed of the letters "O K D" on it and at either side stems, leaves, and heads of grain.
Filed June 15, 1905. Serial No. 8,246. PUBLISHED APRIL 10, 1906.

53,525. TOILET AND MEDICINAL LOTIONS. EDWARD A. OLDS, New York, N. Y.
The words "PACKER'S CUTANEOUS CHARM." The initial letters "P" and "C" of the words "PACKER'S" and "CHARM" are provided with surrounding ornamentation, principally of scrollwork, part of the ornamentation of the letter "P" extending over the rest of the word "PACKER'S" and part of said ornamentation also partly inclosing the word "CUTANEOUS." The word "CHARM" appears to be resting upon a scroll, and said word and scroll, with the exception of one end, are inclosed in a beaded border. An oblong or somewhat elliptical figure extends below the letter "C" of the word "CHARM," said figure being provided with a central design. Used ten years.
Filed October 27, 1905. Serial No. 13,974. PUBLISHED APRIL 10, 1906.

53,526. RINGS. ADOLPH TANZER, New York, N. Y.
A representation of two bells between which is arranged a rectangular figure containing the letter "T."
Filed December 28, 1905. Serial No. 15,726. PUBLISHED APRIL 10, 1906.

53,527. MEDICINE FOR GRAVES' DISEASE. VEREINIGTE CHEMISCHE WERKE AKTIENGESELLSCHAFT, Charlottenburg, Germany.
The word "RODAGEN."
Filed October 24, 1905. Serial No. 13,888. PUBLISHED APRIL 10 1906.

53,528. WATER-HARDENING COMPOUNDS. MAX WALLERSTEIN, New York, N. Y.
A circular field bearing a triangular-shaped figure bearing the letters "A B C," all inclosed in an annular band, said band having the words "AMERICAN BURTONIZING COMPANY" thereon.
Filed January 2, 1906. Serial No. 15,809. PUBLISHED APRIL 10, 1906.

53,529. SEWING-MACHINES. WILLCOX & GIBBS SEWING MACHINE CO., New York, N. Y.
A representation of a head of a sewing-machine resembling the letter "G," combined with needles arranged to form the letter "W" in monogram style, all inclosed in a circular border, within which appear the words "WILLCOX & GIBBS SEWING MACH. CO. NEW YORK," together with representations of two stars, and the word "DEPOSÉE" above the monogram. Used ten years.
Filed February 24, 1906. Serial No. 17,317. PUBLISHED APRIL 10, 1906.

53,530. TYPE-WRITING MACHINES. WYCKOFF, SEAMANS & BENEDICT, Ilion, N. Y.
The word "REMTICO."
Filed January 13, 1906. Serial No. 16,174. PUBLISHED APRIL 10, 1906.

53,531. CHEWING-GUM. AMERICAN CHICLE CO., New York, N. Y.
A medallion bearing a crescent with a human face between the horns thereof, with stars in front of the face, and with a scroll beneath having the words "KIS-ME" inclosed in quotation-marks and a background of flowers above the scroll and on each side of the medallion.
Filed June 15, 1905. Serial No. 8,145. PUBLISHED APRIL 10, 1906.

53,532. CHEWING-GUM. AMERICAN CHICLE CO., New York, N. Y.
The words "YELLOW BAND" printed upon a band of yellow paper. Used ten years.
Filed June 15, 1905. Serial No. 8,147. PUBLISHED APRIL 10, 1906.

53,533. CHEWING-GUM. AMERICAN CHICLE CO., New York, N. Y.
The representation of two hands each holding playing-cards, In one hand appear the jack of clubs, the nine of clubs, the ace of clubs, the ace of hearts, and the ten of hearts. In the other hand appear the jack of spades, the king of clubs, the queen of clubs, the ten of clubs, and the ace of diamonds. Between the hands and at the top appear the words "EUCHRE CLUBS TRUMP." At the bottom appear the words "WHICH WINS?" All of these appear upon a dark rectangular background. Used ten years.
Filed June 15, 1905. Serial No. 8,155. PUBLISHED APRIL 10, 1906.

53,534. CHEWING-GUM. AMERICAN CHICLE CO., New York, N. Y.
The facsimile firm-signature "ADAMS & SONS CO.," the name of the corporation's predecessors in business. Used ten years.

Filed June 15, 1905. Serial No. 8,160. PUBLISHED APRIL 10, 1906.

53,535. HORSE AND MULE SHOES. AMERICAN HORSE SHOE COMPANY, Phillipsburg, N. J.

The letter "A" inclosed in a circle.

Filed September 18, 1905. Serial No. 12,759. PUBLISHED APRIL 10, 1906.

53,536. COUNTER-SCALES. ANDERSON COMPUTING SCALE COMPANY, Anderson, Ind.

The word "CLIMAX."

Filed January 6, 1906. Serial No. 15,956. PUBLISHED APRIL 10, 1906.

53,537. COMPUTING CHEESE-CUTTERS. ANDERSON COMPUTING SCALE COMPANY, Anderson, Ind.

The word "CLIMAX."

Filed March 6, 1906. Serial No. 17,623. PUBLISHED APRIL 10, 1906.

53,538. COTTON PIECE GOODS. ANDERSON COTTON MILLS, Anderson, S. C.

The representation of a Chinaman playing with a ball.

Filed December 7, 1905. Serial No. 15,259. PUBLISHED APRIL 10, 1906.

53,539. NAIL-SETS. THE CLEVELAND TWIST DRILL COMPANY, Cleveland, Ohio.

The letter "C" inclosed in a lozenge-shaped figure having concaved sides.

Filed March 12, 1906. Serial No. 17,751. PUBLISHED APRIL 10, 1906.

53,540. CERTAIN NAMED MILLS. THE CLEVELAND TWIST DRILL COMPANY, Cleveland, Ohio.

The letter "C" inclosed in a lozenge-shaped figure having concaved sides.

Filed March 12, 1906. Serial No. 17,752. PUBLISHED APRIL 10, 1906.

53,541. HOSIERY. COLUMBIA KNITTING COMPANY, Milwaukee, Wis.

The representation of a horse's head and the words "HORSE HIDE."

Filed October 13, 1905. Serial No. 13,548. PUBLISHED APRIL 10, 1906.

53,542. MERCERIZED COTTON BRAID. D. GOFF & SONS, Pawtucket, R. I.

The letters "D. G. & S." in capitals and printed in red.

Filed January 3, 1906. Serial No. 15,849. PUBLISHED APRIL 10, 1906.

53,543. STEEL IN VARIOUS FORMS. EDGAR ALLEN & CO. LIMITED, Sheffield, England.

The representation of a club spiked with the words "AIR-HARDENING" therein. Used ten years.

Filed September 14, 1905. Serial No. 12,587. PUBLISHED APRIL 10, 1906.

53,544. NEEDLES. EXCELSIOR NEEDLE COMPANY, Torrington, Conn.

The letter "L" between V-shaped lines.

Filed February 28, 1906. Serial No. 17,402. PUBLISHED APRIL 10, 1906.

53,545. COTTON PIECE GOODS. F. W. POE MFG. CO., Greenville, S. C.

The word "BUNCOMBE."

Filed December 7, 1905. Serial No. 15,249. PUBLISHED APRIL 10, 1906.

53,546. TOOTH-BRUSHES. FLORENCE MANUFACTURING COMPANY, Northampton, Mass.

The numeral "5" inclosed in a heart-shaped figure.

Filed March 6, 1906. Serial No. 17,599. PUBLISHED APRIL 10, 1906.

53,547. REMEDY FOR CERTAIN NAMED DISEASES. GERSTLE MEDICINE CO., Chattanooga, Tenn.

A representation of a woman gathering herbs and associated with the words "ST. JOSEPH'S LIVER REGULATOR."

Filed September 28, 1905. Serial No. 13,093. PUBLISHED APRIL 10, 1906.

53,548. SCOTCH WHISKY. RUDOLPH M. HAAN, New York, N. Y.

The words "PRINCE OF WALES," together with a fanciful representation of a shield, in the center of which shield is a monogram, "R M H," and above which shield is the representation of a crown and feathers, the whole inclosed in a square border.

Filed February 6, 1906. Serial No. 16,785. PUBLISHED APRIL 10, 1906.

53,549. FISH-HOOKS, ARTIFICIAL FLIES, AND ARTIFICIAL BAITS. HENRY MILWARD & SONS, LIMITED, Redditch, England.

The vignette or representation of a unicorn rampant, around which are two lines constituting an oval.

Filed October 2, 1905. Serial No. 13,193. PUBLISHED APRIL 10, 1906.

53,550. SHOVELS, SPADES, SCOOPS, AND SPADING-FORKS. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill.

The representation of a rooster with the word "CRUSO" appearing across the body thereof.

Filed December 14, 1905. Serial No. 15,416. PUBLISHED APRIL 10, 1906.

53,551. BITTERS. SIGMUND HOCHSTADTER, New York, N. Y.

The representation of a star surrounded by the words "THE HOCHSTADTER CO. NEW YORK" arranged in a circle and associated with the words "HOCHSTADTERS STAR NUT TONIC BITTERS" and the whole inclosed by a border of irregular outline.

Filed November 4, 1905. Serial No. 14,333. PUBLISHED APRIL 10, 1906.

53,552. UNDERWAISTS. EDWARD H. HORWOOD, New York, N. Y.

The arbitrarily-selected letters "L. B." inclosed in quotation-marks.

Filed September 19, 1905. Serial No. 12,779. PUBLISHED APRIL 10, 1906.

53,553. WIRE ROPE. MACOMBER & WHYTE ROPE COMPANY, Chicago, Ill.

The word "KILINDO."

Filed January 10, 1906. Serial No. 16,091. PUBLISHED APRIL 10, 1906.

53,554. MEDICINE FOR FEVER. MALARINE MEDICAL COMPANY, Providence, R. I.

The word "MAL-A-RINE" divided into syllables by means of hyphens between the parts of the word, in connection with the word "WALLING'S." Used ten years.

Filed December 19, 1905. Serial No. 15,507. PUBLISHED APRIL 10, 1906.

53,555. CANDY. MANUFACTURING COMPANY OF AMERICA, Philadelphia, Pa.

The words "U ALL NO."

Filed January 5, 1906. Serial No. 15,930. PUBLISHED APRIL 10, 1906.

53,556. TAFFETA SILK, CRÊPE DE CHINE, MOUSSELINE SILK, AND PEAU DE SOIE. MARCUS BROS., New York, N. Y.

The word "MARQUISE."

Filed October 4, 1905. Serial No. 13,284. PUBLISHED APRIL 10, 1906.

53,557. PRIMERS OR CAPS FOR BLASTING PURPOSES. THE METALLIC CAP MANUFACTURING COY., New York, N. Y.

The arbitrarily-selected word "CHAMPION."

Filed April 13, 1905. Serial No. 1,352. PUBLISHED APRIL 10, 1906.

53,558. RAILWAY-CAR CASTINGS. THE NATIONAL MALLEABLE CASTINGS COMPANY, Cleveland and Toledo, Ohio.

The letter "T" inclosed in a triangular-shaped figure.

Filed April 12, 1905. Serial No. 1,227. PUBLISHED APRIL 10, 1906.

53,559. RAILWAY-CAR CASTINGS. THE NATIONAL MALLEABLE CASTINGS COMPANY, Cleveland, Ohio, and Sharon, Pa.

The letter "N" inclosed in a circle.

Filed April 13, 1905. Serial No. 1,338. PUBLISHED APRIL 10, 1906.

53,560. COTTON PIECE GOODS. NINETY SIX COTTON MILL, Ninety Six, S. C.

The numeral "96" inclosed within ornamental scrollwork.

Filed December 7, 1905. Serial No. 15,252. PUBLISHED APRIL 10, 1906.

53,561. CORSETS. ALFRED OTTENHEIMER, New York, N. Y.

The arbitrary words "LA BONITO."

Filed December 4, 1905. Serial No. 15,196. PUBLISHED APRIL 10, 1906.

53,562. DECORATED VASE-LAMPS MADE OF GLASS. THE PHOENIX GLASS CO., Pittsburg, Pa.

The word "PHOENIX" on a panel appearing across the representation of a phenix.

Filed November 28, 1905. Serial No. 15,032. PUBLISHED APRIL 10, 1906.

53,563. WINDOWS AND SKYLIGHTS. ARTHUR E. RENDLE, New York, N. Y.

The word "PARAGON" underscored and inclosed within concentric figures having outwardly-curved top and bottom and inwardly-curved sides from which extend rays.

Filed January 12, 1906. Serial No. 16,149. PUBLISHED APRIL 10, 1906.

53,564. CANDY. REYMER & BROTHERS, INCORPORATED, Pittsburg, Pa.

The word "REYMERS'." Used ten years.

Filed January 2, 1906. Serial No. 15,822. PUBLISHED APRIL 10, 1906.

53,565. POLISHING AND ABRADING STRIPS. THE S. S. WHITE DENTAL MFG. CO., Philadelphia, Pa.; Chicago, Ill.; New York, Brooklyn, and Rochester, N. Y.; Boston, Mass.; Atlanta, Ga.; New Orleans, La.; Toronto, Canada; Buenos Ayres, Argentina; Berlin, Germany, and St. Petersburg, Russia.

The word "PERFECTION." Used ten years.

Filed September 21, 1905. Serial No. 12,854. PUBLISHED APRIL 10, 1906.

53,566. ABRADING DISKS, WHEELS, AND POINTS. THE S. S. WHITE DENTAL MFG. CO., Philadelphia, Pa.; Chicago, Ill.; New York, Brooklyn, and Rochester, N. Y.; Boston, Mass.; Atlanta, Ga.; New Orleans, La.; Toronto, Canada; Buenos Ayres, Argentina; Berlin, Germany, and St. Petersburg, Russia.

The word "VULCARBO."

Filed September 21, 1905. Serial No. 12,855. PUBLISHED APRIL 10, 1906.

53,567. MEDICINE FOR STOMACH DISEASES. THE L. J. SCHABINGER CO., Cleveland, Ohio.

The words "MAGEN HEIL" in one line and the same words in another line crossing the former at a right angle and a star at the center between the words. Used ten years.

Filed September 30, 1905. Serial No. 13,170. PUBLISHED APRIL 10, 1906.

53,568. WHISKY. SCHENLEY DISTILLING COMPANY, Schenley, Pa.

The words "SCHENLEY PURE RYE." Back of the letter "S" appear ornamental leaves and heads of grain, and in the lower curve of the letter "S" is the representation of a barrel-head bearing the words "SCHENLEY DISTILLING CO. PURE RYE WHISKEY, SCHENLEY, PA." Used ten years.

Filed March 3, 1906. Serial No. 17,484. PUBLISHED APRIL 10, 1906.

53,569. SHEARS. SHEER CUT SHEAR CO., Chicago, Ill.

A representation of two right hands, each hand grasping a pair of shears and in the act of cutting strips of fabric, one of the cuts representing a failure to cut the fabric and the other representing a clean cut, associated with the words "YOUR'S" and "OUR'S" below the representation.

Filed July 27, 1905. Serial No. 10,926. PUBLISHED APRIL 10, 1906.

53,570. RAZORS. SMITH & HEMENWAY COMPANY, New York, N. Y.

The words "RED DEVIL."

Filed August 15, 1905. Serial No. 11,657. PUBLISHED APRIL 10, 1906.

53,571. NAIL-CLIPPERS. SMITH & HEMENWAY COMPANY, New York, N. Y.

The words "RED DEVIL."

Filed March 8, 1906. Serial No. 17,644. PUBLISHED APRIL 10, 1906.

53,572. RAZORS. SMITH & HEMENWAY COMPANY, New York, N. Y.

The words "LIANA BO-RAS-IC."

Filed March 8, 1906. Serial No. 17,645. PUBLISHED APRIL 10, 1906.

53,573. MATTRESSES. SOUTHERN SPRING BED COMPANY, Atlanta, Ga.

The words "RED CROSS" and the representation of a red Greek cross.

Filed June 3, 1905. Serial No. 7,386. PUBLISHED APRIL 10, 1906.

53,574. WHISKY. SWOPE & MANGOLD INCORPORATED, Dallas, Tex.

The words "OLD PORT HALEY." Used ten years.

Filed February 23, 1906. Serial No. 17,249. PUBLISHED APRIL 10, 1906.

53,575. STOCKINGS. TEFFT WELLER COMPANY, New York, N. Y.

The words "OUR GIRLS' STOCKING," associated with a group of girls, one of whom is unpacking stockings from a box, the other trying one on, the third one buttoning her glove, the fourth holding a pair of stockings in her hands and talking with the fifth girl, in connection with the words "QUEEN'S OWN HOSIERY MILLS" below the group of girls.

Filed January 4, 1906. Serial No. 15,884. PUBLISHED APRIL 10, 1906.

53,576. SHEET TRANSLUCENT FABRIC. TRANSLUCENT FABRIC CO., Quincy, Ill.

The word "FABOLEUM," which is printed in block type, having the "F" capitalized and formed with its upper horizontal stroke extended above and throughout the length of the word.

Filed May 11, 1905. Serial No. 5,115. PUBLISHED APRIL 10, 1906.

53,577. PAPER BAGS. THE UNION BAG & PAPER COMPANY, New York, N. Y.

The word "STAR" or a picture of a star, used either singly or together.

Filed March 2, 1906. Serial No. 17,457. PUBLISHED APRIL 10, 1906.

53,578. HOES. UNION HOE CO., Atlanta, Ga.

The representation of a reversible hoe-blade and ferrule, on the former of which appears a folded belt arranged in the form of a hoe with a tobacco-plant and a cotton-plant projecting from one edge of the same, the words "TOBACCOTTON HOE" appearing on the portion of the belt representing the handle, while the words "UNION HOE CO." are arranged on the blade portion thereof, the word and abbreviation "ATLANTA, GA." being located in one corner of the hoe-blade.

Filed November 28, 1905. Serial No. 15,046. PUBLISHED APRIL 10, 1906.

53,579. WRENCHES. WALWORTH MANUFACTURING COMPANY, Boston, Mass.

The word "STILLSON" inclosed in a diamond.

Filed March 13, 1906. Serial No. 17,791. PUBLISHED APRIL 10, 1906.

53,580. WHISKY. MICHAEL WEINER, Milwaukee, Wis.

The word "POLICY," above which is the monogram "P R."

Filed March 3, 1906. Serial No. 17,487. PUBLISHED APRIL 10, 1906.

53,581. MEDICAL COMPOUND. THE BRANDRETH CO., Ossining, N. Y.

The word-symbol "SALVA-CEA." Used ten years.

Filed June 27, 1905. Serial No. 9,301. PUBLISHED APRIL 10, 1906.

53,582. LIQUID MEDICINE. GOODRICH DRUG CO., Omaha, Nebr.

The word "NUVITA."

Filed August 12, 1905. Serial No. 11,568. PUBLISHED APRIL 10, 1906.

53,583. TOILET POWDERS AND TOILET CREAMS. EDWARD N. LANIGAN, St. Louis, Mo.

A rectangular panel having thereon bust portraits and facsimile signatures of "JANET" and "MYRTLE SHARP," the names "MYRTLE" and "JANET" being arranged below the respective pictures and the words "SHARPS ENAMEL TINT COMPLEXION" appearing on a scroll at one side of the panel.

Filed July 17, 1905. Serial No. 10,494. PUBLISHED APRIL 10, 1906.

53,584. BABBITT METAL. PEERLESS SMELTING & REFINING CO., Philadelphia, Pa.

The word "RAINBOW" and the letters, character, and abbrevia-

tion "S. & R. Co." located within a field surrounded by a circle and the word and abbreviations "PEERLESS PHILADA. PA. U. S. A." surrounding the circle.

Filed July 1, 1905. Serial No. 9,600. PUBLISHED APRIL 10, 1906.

53,585. HAIR-RESTORATIVES. S. R. VAN DUZER, New York, N. Y.

The word "WORLD'S." Used ten years.

Filed June 29, 1905. Serial No 9,378. PUBLISHED APRIL 10, 1906.

53,586. CORK. JOHN ALBERTI, New York, N. Y.

The representation of a cork tree with men removing the bark therefrom, with the words "REMOVING THE CORK BARK," and ornamental scrollwork having thereon a panel inclosing the letter "A" beneath the tree.

Filed September 12, 1905. Serial No. 12,504. PUBLISHED APRIL 10, 1906.

53,587. CARBONATED WATER. FERDINAND W. BECKER, Philadelphia, Pa.

The compound word "KOSMOS-SPRINGS."

Filed January 29, 1906. Serial No. 16,580. PUBLISHED APRIL 10, 1906.

53,588. WHISKY. ARMIN BERKOWITZ, Hamilton, Ohio.

The word "PENNVILLE."

Filed June 30, 1905. Serial No. 9,508. PUBLISHED OCTOBER 24, 1905.

53,589. WHISKY. HENRY CAMPE & CO., San Francisco, Cal.

The words "OLD CAMPE," above which is the portrait of Henry Campe surrounded by an oval.

Filed May 24, 1905. Serial No. 6,475. PUBLISHED APRIL 10, 1906.

53,590. ROOFING FELT AND PAPER. CHARLES T. CARUTH, Boston, Mass.

The word "ASTRALIT" arranged above a sunburst and associated with a tropical landscape, with the sun above at the right, the whole inclosed in two concentric circles.

Filed January 12, 1906. Serial No. 16,151. PUBLISHED APRIL 10, 1906.

53,591. PILLS. CARTER MEDICINE COMPANY, New York, N. Y.

The words "CARTER'S LITTLE LIVER PILLS," having a large capital "L" forming the common initial letter of the words "LITTLE" and "LIVER," the whole surrounded by a rectangular border.

Filed May 17, 1905. Serial No. 5,871. PUBLISHED APRIL 10, 1906.

53,592. CARBONATED TONIC BEVERAGE. CHARLES C. COPELAND, Milton, Mass.

A rectangular field within which, at the left, is a shield with involuted top and at the right the words "VITONA, A NERVE TONIC BEVERAGE," below which appear the words and abbreviations "BOTTLED AT THE MILTON SPRING BOTTLING WORKS, CHAS. C. COPELAND, MILTON, MASS.," and upon the shield the following inscription is shown: "COMPOUNDED WITH THE GREATEST CARE FROM VITAL PROPERTIES OF ROOTS, HERBS AND BARKS. IT HAS GREAT CURATIVE AND RESTORATIVE PROPERTIES. IS PARTICULARLY BENEFICIAL IN ALL LANGUID OR DEBILITATED CONDITIONS, IMPROVES THE APPETITE, AIDS DIGESTION AND GIVES A TONE TO THE WHOLE SYSTEM."

Filed July 18, 1905. Serial No. 10,523. PUBLISHED APRIL 10, 1906.

53,593. RHEUMATISM CURE. JAMES B. CROMLEY, New York, N. Y.

The word "SALAS" disposed in a horizontal and vertical position upon the outline figure of a four-leaf clover and surrounded by a circular border.

Filed August 14, 1905. Serial No. 11,629. PUBLISHED APRIL 10, 1906.

53,594. REMEDY FOR CROUP, COUGHS, AND BRONCHIAL AFFECTIONS. CARRIE V. DORMAN, Washington, D. C.

The words "SPONGIA TOSTA SYRUP." Used ten years.

Filed November 11, 1905. Serial No. 14,497. PUBLISHED APRIL 10, 1906.

53,595. LAGER-BEER. A. FINCK & SON, New York, N. Y.

The representation of a fouled anchor. Used ten years.

Filed April 29, 1905. Serial No. 3,607. PUBLISHED APRIL 10, 1906.

53,596. MEDICATED WINE. FREDERICK STEARNS & CO., Detroit, Mich.

The words "STEARNS' WINE." Used ten years.

Filed January 30, 1906. Serial No. 16,630. PUBLISHED APRIL 10, 1906.

53,597. BLASTING-FUSES. GOODALL, PERKINS & CO., San Francisco, Cal.

The words "GOLD BRAND SAFETY BLASTING FUSE," "WHITE COUNTERED GUTTA PERCHA," and a representation of a crossed pick and shovel on which rests a miner's pan bearing the words "GOLD BRAND," all inclosed in a rectangular border having ornamental scroll-like corners.

Filed February 28, 1906. Serial No. 17,414. PUBLISHED APRIL 10, 1906.

53,598. GINGER-ALE. HAGAN & DODD CO., Atlanta, Ga.

The representation of an oval seal on which appears a woman in the act of catching water from a cascade, the seal being partly inclosed in a diamond-shaped figure with vine ornamentation for a border, and across the center the words "RED ROCK GINGER ALE," and therebelow the words "HAGAN & DODD CO., ATLANTA, GA." Printed peripherally above the oval figure above referred to are the words "MADE FROM THE CELEBRATED RED ROCK BROMO LITHIA WATER."

Filed July 18, 1905. Serial No. 10,519. PUBLISHED APRIL 10, 1906.

53,599. OILS USED IN THE MANUFACTURE OF PERFUME. HEINE & CO., New York, N. Y.

Two overlapping circular figures consisting of concentric circles separated by radial lines, the outer circle surrounded by another circle in red, the whole superposed upon a branch bearing leaves and fruit. A crown is placed above the figures between the leaves on the branches. The figure at the left bears a red band on which is a monogram consisting of the letters and character "H" and "Co." The figure at the right bears in its center on a red ground the word "HEIKO."

Filed August 2, 1905. Serial No. 11,123. PUBLISHED APRIL 10, 1906.

53,600. WHISKY. THE HOFFHEIMER BRO'S. CO., Cincinnati, Ohio.

The word "BRUNSWICK," associated with a monogram composed of the letters "H B" inclosed in a circle all within a diamond-shaped figure having concave sides. Used ten years.

Filed May 11, 1905. Serial No. 5,143. PUBLISHED APRIL 10, 1906.

53,601. REMEDY FOR CERTAIN NAMED DISEASES. FRANCIS U. KAHLE, Buffalo, N. Y.

The arbitrary word "PONSO."

Filed May 16, 1905. Serial No. 5,814. PUBLISHED APRIL 10, 1906.

53,602. HATS AND CAPS FOR MEN AND BOYS. KEITH BROTHERS & CO., Chicago, Ill.

The words "THE CHAMPION HAT," with a wreath partially surrounding the word "THE," a plumed helmet resting upon crossed swords and spears, and a shield bearing a monogram of the letters and character "K B & Co," with ornamental scroll work on each side of the shield. Used ten years.

Filed August 10, 1905. Serial No. 11,523. PUBLISHED APRIL 10, 1906.

53,603. PUMPS. F. E. MYERS & BRO., Ashland, Ohio.

The word "MYERS." Used ten years.

Filed April 17, 1905. Serial No. 2,009. PUBLISHED APRIL 10, 1906.

53,604. WHISKY. OLD KENTUCKY DISTILLERY, Louisville, Ky.

The word "WOODBURY" surrounded by an oval design composed of the letters "X." Used ten years.

Filed June 15, 1905. Serial No. 8,245. PUBLISHED APRIL 10, 1906.

53,605. WHISKY. OLD KENTUCKY DISTILLERY, Louisville, Ky.

The words "OLD WATERMILL." Used ten years.

Filed June 15, 1905. Serial No. 8,247. PUBLISHED APRIL 10, 1906.

53,606. WHISKY. RHOMBERG BROS. & CO., Dubuque, Iowa.

The word "SAPHO."

Filed June 19, 1905. Serial No. 8,560. PUBLISHED APRIL 10, 1906.

53,607. CANDIES. THE ROCHESTER CANDY WORKS, Rochester, N. Y.

The words "THE ROCHESTER CANDY WORKS." inclosed in a circle which is superimposed upon a ribbon, the ends of which show on either side of such circle, and the words "THE DELICIOUS ROCHESTER, N. Y."

Filed February 5, 1906. Serial No. 16,769. PUBLISHED APRIL 10, 1906.

53,608. WHISKY. SAMPLE & CO., New York, N. Y.

The word "PYRAMID," associated with the representation of a desert scene, pyramids appearing in the background and palm-trees in the foreground, with a group of camels approaching the same, together with the sun partly obscured by clouds.

Filed May 6, 1905. Serial No. 4,513. PUBLISHED APRIL 10, 1906.

53,609. DUMB-WAITERS. JOHN GEORGE SPEIDEL, Reading, Pa.

The word "JUMPER."

Filed April 22, 1905. Serial No. 2,703. PUBLISHED APRIL 10, 1906.

53,610. SUITS AND OVERCOATS FOR YOUNG MEN. SYKES & AB. KIRSCHBAUM & CO., New York, N. Y.

The words "STUDENT STYLES."

Filed November 1, 1905. Serial No. 14,158. PUBLISHED APRIL 10, 1906.

53,611. WHISKY. W. A. TAYLOR & CO., New York, N. Y.

The word "PIBROCH" and the representation of a lion rampant upon a heraldic roll and holding a crown between its paws, together with a scroll upon which is the motto "LABORE ET HONORE," and a monogram consisting of the letters, character, and abbreviation "W A T & Co" upon the representation of a circular seal.

Filed July 22, 1905. Serial No. 10,695. PUBLISHED APRIL 10, 1906.

53,612. JAMAICA RUM. W. A. TAYLOR & CO., New York, N. Y.

The words "RED LION" and the representation of a lion rampant upon a heraldic roll and holding a crown between its paws, together with a scroll, upon which is the motto "LABORE ET HONORE," and a monogram consisting of the letters, character, and abbreviation "W A T & Co."

Filed July 22, 1905. Serial No. 10,697. PUBLISHED APRIL 10, 1906.

53,613. WHISKY. THE ULLMAN EINSTEIN CO., Columbus, Ohio.

The words "WALNUT CREEK" above a monogram composed of the letters, character, and abbreviation "U E & Co." Below this is a wreath of grain.

Filed July 3, 1905. Serial No. 9,692. PUBLISHED APRIL 10, 1906.

53,614. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn.

The words and character "BEEF BLOOD & BONE," associated with the letters "B. B. B." Used ten years.

Filed March 6, 1906. Serial No. 17,595. PUBLISHED APRIL 10, 1906.

53,615. RIBBONS. VISCHER & CO., Basel, Switzerland, and New York, N. Y.

The arbitrary words "SEMPER IDEM."

Filed June 13, 1905. Serial No. 8,034. PUBLISHED APRIL 10, 1906.

53,616. HAIR-INVIGORATORS AND COLOR-RESTORERS. JAMES W. WALKER, San Francisco, Cal.

The representation of a star. Below the star are the words "THE STAR REMEDY CO." Back of the representation of the star and converging to the center thereof are lines indicating rays, and on each side are banks of clouds. The whole is inclosed in an oblong border.

Filed May 31, 1905. Serial No. 7,078. PUBLISHED APRIL 10, 1906.

53,617. OVEN-TURNBUCKLES AND WROUGHT-IRON PIPE-STRAP. BERGER BROS. CO., Philadelphia, Pa.

The letters "B. B."

Filed May 4, 1905. Serial No. 4,264. PUBLISHED APRIL 10, 1906.

53,618. CHEWING-GUM. BEST GUM CO., Louisville, Ky.

The word "BEST" and the representation of a head of a woman in a rectangular frame and scrollwork, the whole inclosed in a square. Used ten years.

Filed June 24, 1905. Serial No. 8,988. PUBLISHED APRIL 10, 1906.

53,619. WHISKY. BLUTHENTHAL & BICKART, Atlanta, Ga.

The name "SILAS DEANE." Used ten years.

Filed April 28, 1905. Serial No. 3,347. PUBLISHED NOVEMBER 21, 1905.

53,620. SODA-WATER. CANTRELL & COCHRANE, LIMITED, Dublin, Ireland, and New York, N. Y.

A rectangular figure with a band running diagonally across the figure containing thereon the words "'CLUB SODA' (SPECIALLY PREPARED.)" In the upper left-hand corner are printed the words "CANTRELL & COCHRANE'S SUPER CARBONATED," and in the lower right-hand corner are printed the words "WORKS—DUBLIN & BELFAST." Used ten years.

Filed September 1, 1905. Serial No. 12,135. PUBLISHED APRIL 10, 1906.

53,621. ANILIN DYES. CASSELLA COLOR COMPANY, New York, N. Y.

A monogram consisting of three letters "C" overlapping and disposed one above another.

Filed January 10, 1906. Serial No. 16,085. PUBLISHED APRIL 10, 1906.

53,622. BLOOD AND NERVE TONICS. JAMES M. COLLINS, Salt Lake City, Utah.

The coined word "CARBO."

Filed September 21, 1905. Serial No. 12,883. PUBLISHED APRIL 10, 1906.

53,623. LINIMENTS. CRACKER JACK LINIMENT COMPANY, Burkes Garden, Va.

The arbitrarily-selected word "CRACKER-JACK."

Filed August 5, 1905. Serial No. 11,292 PUBLISHED APRIL 10, 1906.

53,624. STEEL. CRUCIBLE STEEL COMPANY OF AMERICA, Pittsburg, Pa.

The word "ALIQUIPPA." Used ten years.

Filed May 13, 1905. Serial No. 5,514. PUBLISHED APRIL 10, 1906.

53,625. PRINTED AND DYED TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa.

The arbitrary words "JASPER EFFECTS."

Filed July 14, 1905. Serial No. 10,310. PUBLISHED APRIL 10, 1906.

53,626. WHISKY. ANDREW FORBES, Philadelphia, Pa.

The words "JACK ROSE" and the representation of a rose.

Filed April 3, 1905. Serial No. 276. PUBLISHED MAY 9, 1905.

53,627. WHISKY. FREIBERG & WORKUM, Cincinnati, Ohio.

The word "HIGHLAND" with shaded lines below the letters thereof and a mountainous scene having a distillery in the foreground and a representation of the sun in the background, with a shield thereon bearing a monogram of the letters "F & W."

Filed May 10, 1905. Serial No. 4,951. PUBLISHED APRIL 10, 1906.

53,628. WHISKY. THE FRITZ THIES MERCANTILE CO., Denver, Colo.

The words "WILLOW BROOK" and a monogram composed of the letters "F T."

Filed April 26, 1905. Serial No. 3,121. PUBLISHED JUNE 20, 1905.

53,629. COTTON SHEETINGS. EDWIN M. GREEN, St. Louis, Mo., executor of Albert W. Green, deceased.

The representation of a yardstick and the words "HONEST WIDTH."

Filed July 27, 1905. Serial No. 10,914. PUBLISHED APRIL 10, 1906.

53,630. WHEAT-FLOUR. JOSEPH H. HEISEL, Leetonia, Ohio.

A plan view of a pie with a scroll extending across the same and the words "PIE CRUST" appearing on said scroll.

Filed February 2, 1906. Serial No. 16,692. PUBLISHED APRIL 10, 1906.

53,631. BALL-BEARINGS. THE HESS-BRIGHT MANUFACTURING CO., Philadelphia, Pa.

A monogram of the letters "HB."

Filed May 29, 1905. Serial No. 7,064. PUBLISHED APRIL 10, 1906.

53 632. WHISKY. THE HOFFHEIMER BROS. CO., Cincinnati, Ohio.

The words "ARKANSAS TRAVELER" and a scene representing a log cabin, before which are a man on horseback and a man seated on a log playing a fiddle. Near him appears his family, a woman and five children. At the left is an old-fashioned still with a fire under it and an ax and firewood in front of it, and trees and mountains are shown in the background, and a coon-skin is stretched on the wall of the cabin. The entire picture is surrounded by a double circle within which is the name of the brand.

Filed May 11, 1906. Serial No. 5,144. PUBLISHED APRIL 10, 1906.

53,633. SPUN SILK. INDUSTRIE-GESELLSCHAFT FÜR SCHAPPE, Basel, Switzerland.

A monogram of the letters "S I P L S" upon an ornamental square figure, each side of which has a semicircle.

Filed July 25, 1905. Serial No. 10,774. PUBLISHED APRIL 10, 1906.

53,634. HATS AND CAPS FOR MEN AND BOYS. KEITH BROTHERS & CO., Chicago, Ill.

The arbitrary words "TIGER HAT," a monogram composed of the letters "K B" and abbreviations "& Co," and the figure of a tiger. Used ten years.

Filed August 10, 1905. Serial No. 11,524. PUBLISHED APRIL 10, 1906.

53,635. CHEMICAL SOLUTION. PATRICK KERRIN, New York, N. Y.

A monogram of the letter "P" and the representation of a key inclosed in concentric circles, between which appear the words "EXCELSIOR SOLUTION" and double-headed arrows.

Filed September 9, 1905. Serial No. 12,408. PUBLISHED APRIL 10, 1906.

53,636. MAGNET-WIRE FOR TROLLEY USE. THE MAGNET WIRE COMPANY, New York, N. Y.

The representation of a horseshoe-magnet and an armature held against its poles, with the words "THE MAGNET WIRE CO." appearing on the magnet and the words "NEW YORK" on the armature.

Filed May 18, 1906. Serial No. 6,047. PUBLISHED APRIL 10, 1906.

53,637. COTTON PIECE GOODS. MASSACHUSETTS COTTON MILLS, Lowell, Mass.

The arbitrarily-selected word "LINDALE." Used ten years.

Filed May 11, 1905. Serial No. 5,232. PUBLISHED APRIL 10, 1906.

53,638. COTTON DUCK. MOUNT VERNON-WOODBERRY COTTON DUCK COMPANY, Baltimore, Md.

The word and abbreviation "MT. VERNON." Used ten years.

Filed July 18, 1905. Serial No. 10,501. PUBLISHED APRIL 10, 1906.

53,639. GRINDING-MILLS. NEW WINONA MFG. CO., Winona, Minn.

The word "DIAMOND."

Filed April 11, 1905. Serial No. 1,089. PUBLISHED APRIL 10, 1906.

53,640. FIRE AND ACID PROOF COMPOSITION. THE RANSOM & RANDOLPH CO., Toledo, Ohio.

The arbitrary word "RESISTO."

Filed August 31, 1905. Serial No. 12,122. PUBLISHED APRIL 10, 1906.

53,641. ANIMAL-TRAPS. WILLIAM A. REDDICK, Niles, Mich.

The pictorial representation of a mole

Filed May 3, 1905. Serial No. 4,164. PUBLISHED APRIL 10, 1906.

53,642. WHISKY. RHOMBERG BROS. & CO., Dubuque, Iowa.

The words "WINNESHEIK CLUB."

Filed May 29, 1905. Serial No. 7,013. PUBLISHED APRIL 10, 1906.

53,643. PERFUMING EXTRACTS. FRIEDRICH ADOLF RICHTER, and Rudolstadt, Germany, New York, N. Y.

The word "PINON."

Filed April 15, 1905. Serial No. 1,626. PUBLISHED APRIL 10, 1906.

53,644. CARBONATED TONIC BEVERAGE. JACOB RIES, Shakopee, Minn.

A rectangular field on which appears, near the top, the word "KRABINA," and in the center of the field is a circle containing the monogram of the letters "J" and "R."

Filed July 18, 1905. Serial No. 10,508. PUBLISHED APRIL 10, 1906.

53,645. CARBONATED TONIC BEVERAGE. JACOB RIES, Shakopee, Minn.

A monogram of the letters "J" and "R" appearing in white on a red disk which is inclosed within concentric circles.

Filed July 18, 1905. Serial No. 10,509. PUBLISHED APRIL 10, 1906.

53,646. COUGH-DROPS. THE ROBERT F. MACKENZIE CO., Cleveland, Ohio.

The words "WEE MACGREGOR" and the picture of a small boy, all on a background of the Macgregor plaid.

Filed January 8, 1906. Serial No. 16,025. PUBLISHED MARCH 20, 1906.

53,647. SILK DRESS GOODS IN THE PIECE. ROGERS & THOMPSON, New York, N. Y., assignor to Rogers & Thompson, of New York, N. Y., a corporation of New Jersey.

The words "LE JUNGLE."

Filed June 27, 1905. Serial No. 9,211. PUBLISHED APRIL 10, 1906.

53,648. LATHER-BRUSHES. THE RUBBER & CELLULOID HARNESS TRIMMING CO., Newark, N. J.

The pictorial representation of a ribbon rosette.

Filed July 6, 1905. Serial No. 9,843. PUBLISHED APRIL 10, 1906.

53,649. GLOVES. FRITZ SCHMIDT, New York, N. Y.

The arbitrary word "VALLIER" in fancy letters and printed in black in a horizontal line below the representation of a scroll bearing the words "WASHABLE GLOVE."

Filed April 8, 1905. Serial No. 773. PUBLISHED APRIL 10, 1906.

53,650. BOILERS. UTICA HEATER CO., Utica, N. Y.

The arbitrarily-selected word "IMPERIAL."

Filed August 31, 1906. Serial No. 12,115. PUBLISHED APRIL 10, 1906.

53,651. RIBBONS. VISCHER & CO, Basel, Switzerland, and New York, N. Y.

The representation of a coat-of-arms comprising a shield bearing a mermaid and surmounted by a helmet and crest of two spread wings. The mermaid is represented as crowned, emerging from the water, and having three tails, two of which extend upward on either side of her and which she grasps with her two hands. The crest of the two spread wings issues out of a crown on the top of the helmet, and on each of said wings is displayed a fish. On either side of the helmet is ornamental scrollwork or an arabesque ornamentation.

Filed June 13, 1905. Serial No. 8,033. PUBLISHED APRIL 10, 1906.

53,652. ASPHALT. WARREN CHEMICAL & MANUFACTURING COMPANY, New York, N. Y.

The word "EBANO."

Filed September 13, 1905. Serial No. 12,539. PUBLISHED APRIL 10, 1906.

53,653. CANDY. PHILIP WUNDERLE, Philadelphia, Pa.

The word "SUN" and a representation of the sun.

Filed June 7, 1905. Serial No. 7,582. PUBLISHED APRIL 10, 1906.

LABELS

REGISTERED JUNE 5, 1906.

12,912.—*Title:* "HALF CENTURY COFFEE." (For Package-Coffee.) J. HOWARD RONAN & Co., Trenton, N. J. Filed May 1, 1906.

12,913.—*Title:* "ONDAWA." (For Flour.) KIMBALL FLOUR Co., Troy, N. Y. Filed May 14, 1906.

12,914.—*Title:* "BASTOW'S COCOANUT BISCUITS." (For Cocoanut Biscuits.) THE STUART BASTOW CO., INC., Pawtucket, R. I. Filed May 15, 1906.

12,915.—*Title:* "OTTER ISLAND BRAND." (For Canned Clams.) BARCLAY BROWN & TAYLOR, INC., Boston, Mass. Filed April 2, 1906.

12,916.—*Title:* "EAGLE ISLAND BRAND." (For Canned Clams.) BARCLAY BROWN & TAYLOR, INC., Boston, Mass. Filed April 2, 1906.

12,917.—*Title:* "RED DRAGON BRAND." (For Spices.) WOOLSON SPICE COMPANY, Toledo, Ohio. Filed April 20, 1906.

12,918.—*Title:* "DIAMOND LINIMENT." (For a Liniment.) H. A. R. HORTON, Dallas, Tex. Filed May 1, 1906.

12,919.—*Title:* "MCALLISTER'S SPECIFIC." (For Specific Liniment.) J. J. MCALLISTER, Milton, Oreg. Filed May 10, 1906.

12,920.—*Title:* "ZYNOXALL." (For Medicine.) ALBERT L. MCVAY. Chicago, Ill. Filed May 14, 1906.

12,921.—*Title:* "GOLDEN SUCCESS." (For Medicine.) HERBERT G. WILSON, Baltimore, Md. Filed April 12, 1906.

12,922.—*Title:* "GATLING GUN REMEDY." (For Medicine.) MACK VINCENT, Norfolk, Va. Filed July 7, 1905.

12,923.—*Title:* "ELLIOTT'S INHALANT." (For an Inhalant for Pulmonary Diseases.) S. K. ELLIOTT, Los Angeles, Cal. Filed April 2, 1906.

12,924.—*Title:* "EDSTROM'S BLOOD PURIFIER." (For a Blood-Purifier for Blood and Skin Diseases.) O. E. EDSTROM, Los Angeles, Cal. Filed April 20, 1906.

12,925.—*Title:* "THE ELIZABETH SALVE." (For a Medicinal Preparation for the Cure of Skin Diseases.) MICHAEL HERSCHMAN, Brooklyn, N. Y. Filed May 12, 1906.

12,926.—*Title:* "GORDON SUSPENDERS." (For Suspenders.) GORDON MANUFACTURING COMPANY, New Rochelle, N. Y. Filed May 7, 1906.

12,927.—*Title:* "SUPREME." (For German Knitting-Worsted. HERMAN MISHKOWSKY, Chicago, Ill. Filed May 14, 1906.

12,928.—*Title:* "A STUDY IN COTTON." (For a School Study-Box for Children.) ADELL GILL HELMER, Helmer, Ga. Filed March 28, 1906.

12,929.—*Title:* "LABEL FOR RUSSELL'S PLAYING CARDS." (For Playing-Cards.) WILLIS W. RUSSELL CARD Co., Milltown, N. J. Filed May 10, 1906.

PRINTS

REGISTERED JUNE 5, 1906.

1,685.—*Title:* "SCRIVEN'S ELASTIC SEAM KNIT SHIRTS." (For Shirts.) J. A. SCRIVEN COMPANY, New York, N. Y. Filed May 10, 1906.

1,686.—*Title:* "SCRIVEN'S ELASTIC SEAM SHIRT, COAT STYLE SLEEVELESS." (For Shirts.) J. A. SCRIVEN COMPANY, New York, N. Y. Filed May 10, 1906.

1,687.—*Title:* "THE SCRIVEN IMPROVED ELASTIC SEAM SHIRT, SHORT SLEEVES." (For Shirts.) J. A. SCRIVEN COMPANY, New York, N. Y. Filed May 10, 1906.

1,688.—*Title:* "CAROLINA BRIGHTS CIGARETTES, THEY SATISFY THE WORLD." (For Cigarettes.) WELLS-WHITEHEAD TOBACCO Co., Wilson, N. C. Filed May 12, 1906.

1,689.—*Title:* "SEEK NO FURTHER." (For Proprietary Medical Remedies.) I. A. MCKENNEY, Philadelphia, Pa. Filed April 5, 1906.

1,690.—*Title:* "BODY BUILDERS." (For Medicinal Remedies. BODY BUILDERS MEDICINE CO., Binghamton, N. Y. Filed May 15, 1906.

1,691.—*Title:* "CORN FED." (For Provisions.) JOHN P. SQUIRE & COMPANY, Cambridge, Mass. Filed May 8, 1906.

1,692.—*Title:* "COULSON EGG FOOD." (For Poultry-Food.) COULSON POULTRY & STOCK FOOD CO., Petaluma, Cal. Filed March 22, 1906.

1,693.—*Title:* "TIMELY TIPS RIGHT OFF THE REEL." (For Wire Rope.) A. LESCHEN & SONS ROPE CO., St. Louis, Mo. Filed May 14, 1906.

1,694.—*Title:* "UNIT STREET CAR." (For Street-Cars.) JOHN POST, Philadelphia, Pa. Filed May 8, 1906.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

BARR *v.* BUGG.

Decided March 23, 1906.

1. INTERFERENCE—MOTION TO DISSOLVE—TRANSMISSION.

A motion to dissolve on the ground of non-interference in fact, which is founded upon the alleged character of a machine which the moving party believes the opposing party will rely upon in producing his evidence, should not be transmitted, even though the opposing party admits the substantial truth of the allegations respecting such machine.

2. SAME—MOTION TO REQUIRE AMENDED PRELIMINARY STATEMENT.

A motion by one party that the opposing party be required to file an amended preliminary statement based upon the alleged character of a machine which the moving party assumes will be relied upon by the opposing party in producing his evidence sholud not be granted. The sufficiency of the machine to establish a date of invention will be determined by the Office when it is introduced in evidence and in connection with the testimony which may be taken concerning it.

APPEAL on motion.

KNEADING-MACHINE.

Messrs. Knight Bros. for Barr.

Mr. Charles J. Kintner for Bugg.

ALLEN, *Commissioner:*

This case is before me upon appeals by Barr from the decisions of the Examiner of Interferences refusing to transmit to the Primary Examiner Barr's motion to dissolve the interference so far as that motion relates to non-interference in fact and denying Barr's motion that Bugg be required to file an amended preliminary statement.

It appears that the portion of the motion for dissolution as to which transmission was refused and that the motion regarding a new preliminary statement are founded upon the alleged character of a machine which Barr assumes will be relied upon by Bugg in producing his evidence. Photographs of this machine were produced at the hearing, and it was stated there by Barr that Bugg admitted before the Examiner of Interferences the correctness of these photographs as representations of a machine referred to in Bugg's preliminary statement. Barr's contention seems to be, in effect, that this machine does not include the invention in issue, and he evidently desires to try out this question by means of the before-mentioned motions. The sufficiency of a machine upon which a party would rely to establish his dates of invention as disclosures of the invention in issue should be determined by the Office when the machine is introduced in evidence and in connection with the testimony which may be taken concerning it. The Examiner of Interferences correctly concluded that the sufficiency of Bugg's machine as a disclosure of the invention in issue should not be determined or considered upon the motions which he has brought. The correctness of this conclusion is not affected by the apparent admissions of Bugg regarding the machine.

The decisions of the Examiner of Interferences are affirmed.

WARNER *v.* MEAD.

Decided March 23, 1906.

1. INTERFERENCE—MOTION TO DISSOLVE—INTERFERENCE IN FACT.

The term "interference in fact" as used in the Patent Office must be restricted in meaning to exclude questions of right to make claims in order to avoid confusion through the different courses of appeal permitted in the two cases. The question of interference in fact does not properly arise until it has been found or assumed that the parties have the right to make the claims under consideration, and when raised the question is one merely of identity or diversity in the meaning of those claims as they rightfully appear in the applications of the respective parties.

2. SAME—SAME—SAME—MOOT QUESTION.

Where the Primary Examiner denied the motion to dissolve the interference as to the ground of non-interference in fact, but granted it as to M.'s lack of right to make the claims, *Held* that since M. has acquiesced in the holding and the decision has become final the question of interference in fact is a moot one and entitled to no consideration on appeal.

3. SAME—SAME—SAME—RELATES TO SUBJECT-MATTER OF CLAIMS

The decision of the Primary Examiner upon the question of interference in fact relates to the specific subjects covered by the claims instead of to the devices disclosed by the parties and has no force beyond the claims before him when the decision is rendered.

APPEAL on motion.

FASTENER.

Mr. William H. Finckel for Warner.

Mr. Donald Campbell for Mead.

ALLEN, *Commissioner:*

This is an appeal by Warner from the decision of the Primary Examiner denying Warner's motion for dissolution of the interference upon the ground of non-interference in fact.

The motion as brought by Warner included, with the allegation of non-interference in fact, the allegation that Mead had no right to make the claims in issue. The Examiner, though denying the motion as to non-interference in fact, granted it as to Mead's lack of right to make the claims. Mead has acquiesced in the holding that he has no right to make the claims, and the decision holding that

the interference should be dissolved on that ground has become final. Under such circumstances the question of interference in fact is a moot one and entitled to no consideration here.

This appeal was apparently argued under the impression that a decision would be rendered upon the question of interference in fact between the devices disclosed by the parties, as distinguished from the specific subjects covered by the claims, and it seems to have been assumed that by such a decision the question of interference in fact could be settled now for such claims as the parties may hereafter present. This impression and assumption, if existing, rest upon a misunderstanding of the nature and extent of the question of interference in fact as raised by the motion in this case. The term "interference in fact" as used in the Patent Office must be restricted in meaning to exclude questions of right to make claims in order to avoid confusion through the different courses of appeal permitted by the practice in the two cases. When used in this restricted sense, the question of interference in fact does not properly arise until it has been found or assumed that the parties have the right to make the claims under consideration, and when raised the question is one merely of identity or diversity in the meaning of those claims as they rightfully appear in the applications of the respective parties.

It is evident from these considerations that the decision of the Primary Examiner in this case upon the question of interference in fact has no force beyond the claims before him when the decision was rendered. He properly considered and decided that question in view of the possibility of reversal upon appeal of his conclusion that Mead has no right to the claims. That conclusion having become final, the question of interference in fact as raised by the motion of Warner falls and leaves nothing to be considered in connection therewith.

The appeal is dismissed.

WERT *v.* BORST AND GROSCOP.

Decided March 28, 1906.

1. INTERFERENCE—PRACTICE UNDER RULE 126—APPEAL FROM REFUSAL TO ACT.

The action of the Examiner of Interferences in refusing to call attention under Rule 126 to an alleged bar to the grant of a patent to the opposing party will not be reviewed on appeal to the Commissioner. The discretion of the Examiner of Interferences should not be controlled in this regard.

2. SAME—ALLEGED BAR—SUSPENSION OF PROCEEDINGS.

Interference proceedings will not be suspended after final hearing before the Examiner of Interferences on priority for the purpose of investigating the existence of intervening rights alleged to be shown by the testimony taken on priority as constituting a bar to the grant of the opposing party's reissue application.

3. SAME—SAME—PRIORITY SETTLED FIRST.

Where the evidence relating to priority of invention is before the Office and the question of a statutory bar is raised which applies to but one of two applications involved in the interference and which requires for its determination consideration of evidence, and possibly further taking of testimony, such determination should be postponed until priority of invention has been settled, at least so far as the same can be settled in this Office.

APPEAL, on motion.

CEMENT-BLOCK MACHINE.

Messrs. C. A. Snow & Co. for Wert.

Mr. E. N. Pagelsen for Borst and Groscop.

ALLEN, *Commissioner:*

This is an appeal by Wert from the decision of the Examiner of Interferences denying his motion, brought after final hearing on the question of priority of invention, that proceedings be suspended and the attention of the Commissioner directed, under the provisions of Rule 126, to an alleged bar to the grant of a patent to Borst and Groscop. I see no reason why I should act to control the discretion of the Examiner of Interferences calling attention to matters under Rule 126 or refusing to call attention under that rule. The decision of the Examiner is therefore affirmed.

Treating the appeal as a petition for suspension of proceedings and investigation of the question of a bar, it may be stated that no error is apparent in the conclusion of the Examiner of Interferences that such action should not be taken at this time. Borst and Groscop are involved in the interference upon their reissue application. It is contended by Wert that the testimony taken by him in the interference shows the existence of intervening rights such as to bar reissue to Borst and Groscop. The Examiner of Interferences in his decision upon the motion held:

> First, that the same was presumably made for the purpose of removing Borst and Groscop from the field of legitimate claimants, and permitting the patent to issue to Wert, irrespective of whether he is the original and first inventor;
>
> Second, that Wert is entitled to a patent upon the invention in controversy only upon the ground that he is the original and first inventor;
>
> Third, that the question of priority of invention in this interference is paramount to the question whether or not the issue is patentable to Borst and Groscop; and
>
> Fourth, that the grant of a patent to Borst and Groscop should not be considered before final decision on the question of priority of invention.

Wert alleges that the Examiner of Interferences is in error in each of the above conclusions. I am unable to find, however, any good reason in support of this allegation, and it is believed that said conclusions are sound in their application to the present case.

It is contended by the applicant that where the question of a statutory bar has arisen the question of priority cannot properly be determined without taking some action in reference thereto. I know of no such practice nor of any good reason why such a practice should be adopted. On the other hand, where the evidence relating to priority of invention is before the Office and the question of a statutory bar is raised which applies to but one of two applications involved in the interference and which requires for its determination consideration of evidence, and possibly further taking of testimony, such determination should be postponed until priority of invention has been settled, at least so far as the same can be settled in this Office.

Accepting the appeal, therefore, as a petition for suspension of proceedings and investigation of the alleged bar, such petition must be denied.

MUNRO *v.* WALKER.

Decided March 30, 1906.

REFERENCES UNDER RULE 126—DECISION OF EXAMINERS-IN-CHIEF NOT REVIEWABLE ON PETITION.

Where the Examiner of Interferences called attention, according to the provisions of Rule 126, that in his openion the issue is not patentable and upon reference the Primary Examiner disagreed with the Examiner of Interferences, whereupon the question was referred to and decided by the Examiners-in-Chief, who affirmed the decision of the Primary Examiner, *Held* that no sufficient reason appears why the decision of the Examiners-in-Chief should be reviewed on petition.

ON PETITION.

TEMPERATURE-ALARM.

Mr. B. Singer and *Mr. C. Le Roy Parker* for Munro.

Messrs. Baldwin, Davidson & Wight for Walker.

ALLEN, *Commissioner:*

This is a petition by Munro that I exercise my supervisory authority to review a favorable decision of the Examiners-in-Chief on the question of patentability.

It appears that the petitioner, who is the junior party to this interference, failed to take any testimony, and judgment was rendered against him on the record. In this decision the Examiner of Interferences called attention to the fact, according to the provisions of Rule 126, that in his opinion the issue was not patentable in view of certain anticipating patents which were recited and discussed. The case was therefore referred to the Primary Examiner, who disagreed with the Examiner of Interferences and held the issue to be patentable. In view of this disagreement the case was then referred to the Examiners-in-Chief, who agreed with the Primary Examiner.

In denying a request for rehearing the Examiners-in-Chief again discussed the references and adhered to their former opinion.

The supervisory authority of the Commissioner will be exercised only in a clear case, in order to correct a manifest error and prevent a miscarriage of justice. Both the Primary Examiner and the Examiners-in-Chief have given this case very careful consideration. No sufficient reason appears why the decision of the latter tribunal should be reviewed, and the petition is therefore denied.

COREY *v.* EISEMAN AND MISAR.

Decided March 31, 1906.

1. INTERFERENCE—MOTION FOR DISSOLUTION—IRREGULARITY IN DECLARATION.

Where on a motion for dissolution on the ground of irregularity in declaration the irregularity is stated to consist in declaring a second interference on claims which one of the parties should have copied under Rule 109 in a prior interference if they wanted to contest the same, *Held* that the subject-matter for consideration is not properly presented under the head of irregularity in declaration.

2. SAME—SAME—NON-PATENTABILITY AND LACK OF RIGHT TO MAKE CLAIMS.

Objection that a second interference should not have been declared upon claims which one of the parties could have made under Rule 109 in a prior interference may be raised by a motion for dissolution based on the grounds designated in Rule 122 as non-patentability and lack of right to make claims.

3. SAME—SAME—TRANSMISSION.

Where matter is set forth in a motion for dissolution as a basis for one ground thereof which should only be considered in connection with another and different ground, *Held* that the motion is not in proper form and should not be transmitted.

4. SAME—DISSOLUTION—SUBSEQUENT REJECTION OR MODIFICATION OF CLAIMS.

Where both parties to an interference have the same claims in their applications, *Held* that the interference should not be permanently dissolved except upon some ground which will form a basis for rejection or for requiring modification of the claims in the application of one of the parties.

APPEAL on motion.

AIR-BRAKE CONTROLLER.

Mr. Albert G. Davis for Corey. (*Mr. Arthur A. Buck* of counsel.)

Mr. Charles E. Smith for Eiseman and Misar.

ALLEN, *Commissioner:*

This is an appeal from the action of the Examiner of Interferences refusing to transmit to the Primary Examiner as to the ground of irregularity in declaration the motion of Corey for dissolution of the interference.

In the motion the irregularity is stated to consist in the action of the Primary Examiner in declaring a second interference on claims which Eiseman and Misar should have copied under Rule 109 in a prior interference if they wanted to contest the same. This is clearly not proper subject-matter for consideration under the head of irregularity in declaration. It has been the practice in connection with the grounds for dissolution provided by Rule 122 to regard irregularity in declaration and interference in fact as confined to matters which may be reviewed by the Commissioner on direct appeal and to confine consideration of matters involving the merits of a party's case, which when appealable go to the Examiners-in-Chief in the first instance, to motions based on the grounds of patentability or the right of a party to make claims. No reason is seen for departing from that practice here, and to do so would lead to confusion in regard to appeals.

Since both parties have the claims in their applications and since this interference should not be permanently dissolved except upon some ground which will form a basis for rejection or for requiring modification of the claims in the application of one of the parties, it is clear that the determination sought by Corey upon his motion is entirely one upon the merits of his opponent's application. The grounds of dissolution designated in Rule 122 as nonpatentability and lack of right to make claims afford ample opportunity to raise and have considered all the matters which he has set forth under the head of irregularity in declaration.

The decision of the Examiner of Interferences was not, as is alleged by Corey, one upon the merits of the motion. Where matter is set forth in a motion for dissolution as a basis for one ground thereof which should only be considered in connection with another and different ground, the motion is not in proper form and should not be transmitted.

The decision of the Examiner of Interferences is affirmed.

EX PARTE REEVE AND NOYES.

Decided March 31, 1906.

DRAWINGS—TRANSFER FROM ONE APPLICATION TO ANOTHER.

A request that Rule 173 be changed to permit transfer generally of drawings from one application to another cannot be granted, as it is necessary to preserve the various parts of complete applications as records of the case in which they are originally filed.

ON PETITION.

POWER-GENERATING APPARATUS.

Messrs. Bentley & Pierson for applicants.

ALLEN, *Commissioner:*

This is a petition that the drawings of a forfeited application be transferred to and made part of application papers which have been filed by the same parties since the forfeiture of the prior case.

The proposed application is stated by the applicants to set forth the same invention as the prior application, together with certain improvements thereon. It is therefore not a renewal application, and Rule 176, authorizing the use of original drawings in renewal cases, does not apply. On the other hand, Rule 173 provides that when a

new application is filed in place of an abandoned or rejected application a new drawing will be required. This rule is based upon good reasons, and those reasons extend to the present case.

The petitioner requests that the rules be changed to permit transfer generally of drawings from one application to another. He bases this request principally on the convenience to applicants which would result from the change and upon an alleged absence of reasons why such transfers should not be permitted. In *ex parte Farnham* (114 O. G., 2090) it was pointed out that the preservation of the various parts of complete applications as records of the cases in which they are originally filed is the settled policy of the Office. It is not easy to foresee all the difficulties, which it is often safe to assume will follow, in a system as complex as that in this Office necessarily is upon relaxing a practice presumably founded upon experience and tested by years thereof. The following reasons are seen, however, for the practice of keeping drawings as parts of the applications with which they are filed, and these reasons are believed to be sufficient to justify the Office in adhering to that practice. The original drawings of applications, abandoned and otherwise, are needed from time to time to prepare copies ordered for use outside of the Office. If these drawings were transferred from their original cases, the present search for the original case would be extended and the added labor imposed upon the Office of tracing the desired drawings on a journey to other cases, and perhaps through many other cases. In reproducing or furnishing copies of transferred drawings which had become parts of patents the Office would be embarrassed by the data of the patent which would appear upon the drawing. In transfers from pending cases, also suggested by this petition, controversies regarding the necessity of retaining a drawing in an application from which an applicant wished to remove the same would be added to the already sufficient labors of this Office. In transfers from forfeited cases the situation would be complicated by requests for renewal and return of transferred drawings to the forfeited applications for that purpose. In any case of transferred drawings copies would be required for the original file and the labors of comparison and of insisting upon sufficiently clear and permanent copies would also be imposed upon the Office. It is not considered necessary to point out further what difficulties might attend such a change in the Rules of Practice in order to show that it is not advisable.

The petition is denied.

GRIFFITH *v.* DODGSON.

Decided April 10, 1906.

MOTION FOR DISSOLUTION—TRANSMISSION.

Where a motion for dissolution is based on the grounds that the issue is not patentable to one of the parties because it has already been patented to him and that the issue is not patentable over the prior art and it is contended that the motion should not be transmitted because a decision might cast a cloud on the party's prior patent, *Held* that the reason is not sufficient and the motion should be transmitted.

APPEAL on motion.

ELECTRIC SIGNAL APPARATUS.

Mr. Harry V. N. Philip and *Mr. D. P. Wolhaupter* for Griffith.

Messrs. Osgood & Davis for Dodgson.

ALLEN, *Commissioner:*

This case is before me upon appeals by Griffith from decisions of the Examiner of Interferences transmitting to the Primary Examiner Dodgson's motion for dissolution of the interference.

Griffith points out that the motion is based on the grounds (1) that the issue is not patentable to Griffith here because it has already been patented by him and (2) that the issue is not patentable over the prior art, as shown by the patents of others. He contends that it should not be transmitted, because a decision on both grounds might cast a cloud on Griffith's prior patent. The reason is not sufficient. Dodgson has a right to contest the patentability of the issue to Griffith by motion for dissolution, either on the ground of indivisibility of invention between the issue and the claims of Griffith's patent or on the ground of anticipation of the issue by the patents to others. It is not apparent how he can lose the right to urge either of these grounds by presenting both. The fact that a cloud may be cast upon a patent is inconsequential in this case. Action should not be taken by the Office without sufficient reason where an adverse determination upon the merits of a patent may result; but where reasons for action exist the Office is not to be deterred therefrom because, as an incident thereto, a cloud may be cast upon a patent. The usual reasons for entertaining motions to dissolve justify transmission and consideration of the present motion upon each of the grounds in question.

The decisions of the Examiner of Interferences are affirmed.

EX PARTE SASSIN.

Decided April 10, 1906.

1. APPLICATION—DATE OF COMPLETING.

Where the preparation, execution, and filing of an application by an attorney were authorized by a power filed with the original papers and subsequently to the filing of the original papers new papers were filed duplicating the original papers, except that they were executed by the inventor, and the case was thereupon given number and date as a complete application, *Held* that a request that the earlier date be given as the filing date of the application in order to avoid the bar of a foreign patent cannot be granted.

2. APPLICATIONS—DELAY IN FILING AFTER APPLICATION FOR PATENT IN OTHER COUNTRIES.

The period of one year after filing applications in other countries which is allowed by statute for filing applications in this country would seem to be sufficient for the preparation and deposit of an application here in the form required by the rules. *Held* that where parties fail to meet the plain requirements of the rules in the ample time allowed that the Office, had it the power to do so, should not relax the requirements of established practice in order to save the parties from the consequences of their delay.

ON PETITION.

CANE-MILL.

Messrs. Goepel & Goepel and *Mr. F. C. Somes* for the applicant.

ALLEN, *Commissioner:*

This is a petition that the application be given filing date as a complete application upon the day when the various parts thereof were filed by the attorney unsigned by the applicant.

It appears that the applicant resides abroad. The preparation, execution, and filing of the application by the attorney were authorized by a power filed with the original papers. Subsequently to the filing of the original papers

new papers were filed duplicating the original papers, except that they were executed by the inventor. The case was thereupon given number and date as a complete application. The earlier date is now requested as the filing date of the application in order to avoid the bar of a foreign patent, which has issued upon an application filed by the inventor more than a year prior to the filing of the later set of papers.

Rule 30 provides that applications for Letters Patent must be signed by the inventor, if alive, and, further, that a complete application comprises, among other things, a petition, specification, and oath. Rule 33 provides that the petition must be signed by the applicant and Rule 40 that the specification must be signed by the inventor, if living. Rule 46 provides that the oath must be made by the inventor. I am of the opinion that no application can be regarded as complete, in view of these rules, until proper papers are filed, signed, and executed by the inventor or by his representative if he is dead. A fuller discussion of the question is given in the case of *in re Tropenas* (C. D., 1900, p. 14) and the same conclusion deduced.

The period of one year after filing applications in other countries which is allowed by statute for filing applications in this country would seem to be sufficient for the preparation and deposit of an application here in the form required by the rules. Where parties fail to meet the plain requirements of the rules in the ample time allowed, it does not seem that the Office, had it the power to do so, should relax the sound requirements of established practice in order to save the parties from the consequences of their delay

The petition is denied.

DECISIONS OF THE U. S. COURTS.

Court of Appeals of the District of Columbia.

O'CONNELL *v.* SCHMIDT.

Decided February 14, 1906.

1. INTERFERENCE—PATENT OFFICE DECISIONS UNIFORM—CONCLUSIONS NOT BINDING ON COURT.

Where the three Patent Office tribunals have been in accord, and consequently the case falls within the decisions of this court that, except in extraordinary cases, it will not disturb the findings of fact of the Patent Office, *Held* that this does not mean that the court is bound by the conclusions drawn from such facts unless convinced that such conclusions are correct.

2. SAME—REDUCTION TO PRACTICE.

Where a model was constructed that clearly disclosed the invention and would enable those skilled in the art to thoroughly understand it, in brief sufficient to enable the utilization of the invention so that had death removed the inventor before an application for patent had been filed the invention would have survived, *Held* that in the absence of any test it does not constitute an actual reduction to practice unless the invention belongs to that class of simple inventions which require no other proof of their practicability than the construction of a model.

3. SAME—DUE DILIGENCE—NO GENERAL RULE.

There is no hard and fast rule by which to determine the question of due diligence. In other words, there is no general rule of what constitutes due diligence, that being a question to be determined by all the facts and surrounding circumstances in the particular case.

4. SAME—SAME—DEPENDS ON CIRCUMSTANCES.

Where O'Connell conceived and embodied the invention in a model which was almost a reduction to practice, and had it been connected up and tested would have been a reduction to practice, prior to the date when his rival conceived and constructively reduced to practice by filing his application, and where at the time his rival entered the field O'Connell was urging that the invention be accepted and patented, and although his application was not filed until a few days over five months after that of his rival the application was prepared and executed a month before filing, and where although O'Connell might have had his working model tested in the intervening time it would not, according to his witnesses, expert in the art, have given them any more knowledge of the invention, *Held* that there is no rule which under these circumstances requires an inventor to rush to the Patent Office in order to preserve his rights as the first inventor.

Mr. G. P. Barton and *Mr. Durett C. Tanner* for the appellant.

Messrs. Offield, Towle & Linthicum and *Mr. L. S. Bacon* for the appellee.

DUELL, *J.:*

In this case, which is an appeal from the decision of the Commissioner of Patents awarding priority of invention to the senior party, Louis A. Schmidt, it appears that the three Patent Office tribunals have been in accord, and consequently the case falls within the decisions of this court that, except in extraordinary cases, we will not disturb the findings of fact of the Patent Office. This however does not mean that we are bound by the conclusions drawn from such facts unless we are convinced that such conclusions are correct. The lower tribunals may agree that certain facts do not prove a reduction to practice or due diligence. This tribunal, while accepting the facts, may be convinced that the conclusion is erroneous and therefore for that reason, be compelled to reverse the judgment appealed from. The nature of the invention in controversy is sufficiently disclosed by the counts of the issue which read:

1. The combination with a traveling transmitter mechanism, of a counting-train comprising rotatable cylinders having teeth adapted to be introduced successively into the path of said transmitting mechanism and coöperating therewith, and a circuit including a responsive device controlled by said transmitter mechanism, whereby the number registered upon the train of counting-cylinders is transmitted to said responsive device.

3. The combination in a connection-register, of a movable part, and means for effecting a progressive displacement of said part in the act of registration, a transmitting-arm adapted to coöperate with the movable part to measure its displacement without changing the same, and a circuit including a responsive device controlled by said transmitting-arm, whereby the register may be read from a distance without destroying its record.

4. The combination with a subscriber's telephone-line, of a connection-register at the substation thereof, a responsive device in the circuit of the line at the central office, a transmitting mechanism at the substation, a movable part for the aforesaid connection-register, adapted to coöperate with the transmitting mechanism in controlling the circuit of the line, means for effecting a progressive displacement of said part in the act of registering a connection, and means for producing a relative movement of said movable part and the transmitting mechanism to measure said displacement without altering the same, whereby the connection-register may be read from the central office without destroying its record.

5. In combination, a series of tally-wheels each provided with a circumferential series of contact-surfaces representing characters, a traverser relatively movable across said wheels, an electric circuit including said traverser, means operating to make and break said circuit each time said traverser passes over one of said contact-surfaces, means for stepping the tally-wheels forward, and means for actuating the traverser.

6. In combination, a series of tally-wheels each provided with a circumferentially-disposed series of contact-surfaces corresponding to the digits and arranged in groups each group extending longitudinally of the series of wheels, transfer mechanism for properly actuating each tally-wheel except the first from the next of lower order, a ratchet mechanism for stepping forward the units tally-wheel, an electrical signaling device operatively connected with said ratchet mechanism and whereby a signal is given each time the ratchet mechanism is operated, a traversing contact device guided to reciprocate across the face of said series of tally-wheels to take a tactual reading from the contact-surfaces thereof, and an electric circuit operatively connected with said traversing device and alternately opened and closed during the traverse of the latter a number of times equal to the number of units in the several groups in longitudinal alinement at the time of reading.

7. In combination, a plurality of interconnected carrying-counters, means for actuating the same to tally thereon, each counter provided with groups of contact-surfaces representing numerals, means for taking a tactual reading from said counters, and means to transmit said reading electrically to a distance.

The facts as found by the three tribunals of the Patent Office, which we accept when taken in connection with other facts not inconsistent with them, show: First, that Schmidt, the senior party, does not show any earlier date of conception than February 10, 1902, the date of the filing of his application. Second: That O'Connell, the junior party, caused to be constructed two models, known respectively as the "Messinger" and "Tuerk" models; that the former was made early in November, 1901, and the latter completed November 27, 1901; that these models were not operative devices; that by means of these models the invention in controversy was explained during the same month to others skilled in the art, who, by such disclosure thoroughly understood the invention; that the invention was offered that month to the Western Electric Company; that whenever O'Connell came to Mr. McBerty's office he urged that the invention be accepted, and that in April or May, 1902, he became so insistent that McBerty some time prior to June, 1902, ordered the application prepared; that it was prepared by means of the Tuerk model, and executed and sworn to June 19, 1902, and on the same day assigned to the Western Electric Company; and that the application was filed and the assignment recorded July 19, 1902.

From these facts the Patent Office tribunals found Schmidt to be entitled to a date of conception and constructive reduction to practice as of his filing date, February 10, 1902. This finding is correct and is based upon repeated decisions of the Patent Office and of this court.

It was further found by them that O'Connell was entitled to a date of conception and disclosure as of the latter part of November, 1901, but that he was not entitled to any earlier date of reduction to practice than that of the filing date of his application, which was July 19, 1902. While the models were clearly sufficient to disclose the invention, and enabled those skilled in the art to thoroughly understand it, and to prepare an application for patent, and though indicating no circuits of operation, their intended use in such circuits were understood—in brief sufficient to enable the utilization of the invention so that had death removed the inventor before an application for patent had been filed the invention would have survived—we do not think, under all the circumstances, and in the absence of any test, that they can be treated as a reduction to practice. The invention does not belong to that class of simple inventions which require no other proof of their practicability than the construction of a model. We agree therefore with the Patent Office tribunals in their conclusion that they did not constitute an actual reduction to practice and therefore there is no proof of any earlier reduction to practice than July 19, 1902, the date when O'Connell filed his application for patent.

This brings us to the serious question in the case. O'Connell being the first to conceive and disclose, is entitled to the patent over Schmidt, provided he used reasonable diligence in adapting and perfecting his invention. It is unnecessary to cite authorities in support of this proposition so often has it been approved. This is so even though Schmidt had actually or constructively reduced it to practice before him. O'Connell having first conceived and disclosed the invention was under no obligation of diligence until just prior to the date when his rival entered the field. The time to be considered is five months and ten days. There is no hard and fast rule by which to determine the question of due diligence. In other words "there is no general rule of what constitutes due diligence, that being a question to be determined by all the facts and surrounding circumstances in the particular case." Let us examine the facts and circumstances in the case before us. O'Connell had conceived the idea, and had embodied it in models which almost amounted to a reduction to practice and which, had the second one been connected up and tested, would have amounted to a reduction to practice. He had placed the invention before those who under certain conditions were entitled to patent it. At the time when his rival entered the field he was urging that the invention be accepted and patented. That was in February, 1902. In April or May of the same year O'Connell becoming more persistent the application was at some time prior to June 19, 1902, prepared, and on that day the oath to the application was executed by him and the application assigned to the Western Electric Company. There is nothing to show that the date of the oath is not correctly and truthfully given. The burden is upon the party questioning the correctness of the date to show it. (*Barry* v. *Hoffman*, 6 Md., 78; *Pringle* v. *Dunn*, 37 Wis., 449; *Barnett* v. *Proskauer*, 62 Ala., 486; *Baldwin* v. *Bornheimer*, 48 Cal., 433.) The application however was not filed until a month later. At the most O'Connell's delay after Schmidt entered the field was only a few days over five months; and a month less in having an application for patent prepared and executed, and that application was directed to be prepared a considerable time before. During the intervening time O'Connell might, it is true, have had his working model tested, but that would not, according to his witnesses, experts in the art, given them any more knowledge of the invention. We know no rule which, under the circumstances of this case, requires an inventor to rush to the Patent Office in order to preserve his rights as the first inventor. While giving to Schmidt the full benefit of the first reduction to practice we must remember that such reduction was constructive and not actual. In cases where the facts are as here shown the courts should be slow to deprive the one, who first conceives the idea and so fully discloses it as did this appellant, of a patent because one later to conceive and disclose files his application for patent a short time before him, and while he shows so conclusively that he is not concealing his invention nor intending to abandon it.

The facts in the cases cited by the lower tribunals and relied upon in support of their contention that appellant was not duly diligent are quite different from those in the case at bar. In *Kasson* v. *Hetherington* (C. D., 1899, p. 143) Kasson, who conceived in May, 1894, did nothing from October, 1894, to the time when he filed his application, March 30, 1896. A delay of about eighteen months. His adversary entered the field in September, 1894, and had issued to him a patent in June, 1895, more than nine months before Kasson's application was filed.

In *Watson* v. *Thomas* (23 App. D. C., 65) it appears that Thomas, the senior party, relied upon his record date which was December 17, 1896. Watson, the junior party, conceived the invention eleven months before Thomas filed his application, but his reduction to practice was thirteen months after his conception. Furthermore Kasson and Thomas, at the time when their rivals entered the field had only made sketches and drawings, while in the case at bar O'Connell had made devices which had they been placed in circuits and operated would have constituted a reduction to practice. They were further shown to those skilled in the art, and by means thereof the invention and its practicability fully disclosed. These facts should have considerable weight in determining the question of diligence. (*Hammond* v. *Basch*, 24 App. D. C., 469.)

Under all the circumstances of the case we think it would be unjust, and not warranted by law, to deprive O'Connell of his invention and to award a patent to one who is not the first inventor. We consider that appellant is entitled to an award of priority of invention.

It follows that the decision of the Commissioner of Patents was erroneous, and we therefore reverse his decision.

The clerk of the court will certify this opinion, and the proceedings in this court in the premises, to the Commissioner of Patents according to law. Reversed.

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

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TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama	3	.....	Nevada	.....	.....
Alaska, District of	1	.....	New Hampshire	.....	.....
Arizona Territory	.....	.....	New Jersey	26	11
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California	31	9	New York	76	78
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Delaware	.....	.....	Ohio	43	25
District of Columbia	4	4	Oklahoma Territ'y	.....	.....
Florida	3	.....	Oregon	4	1
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Idaho	.....	.....	Rhode Island	2	2
Illinois	72	18	South Carolina	3	.....
Indian Territory	.....	.....	South Dakota	1	.....
Indiana	20	6	Tennessee	9	.....
Iowa	8	2	Texas	6	2
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Kentucky	7	4	Vermont	.....	3
Louisiana	2	2	Virginia	3	.....
Maine	4	7	Washington	3	1
Maryland	11	9	West Virginia	5	.....
Massachusetts	30	28	Wisconsin	12	12
Michigan	18	1	Wyoming	2	.....
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TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Algeria	.....	.....	Netherlands	1	.....
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Belgium	.....	.....	New South Wales	.....	.....
Brazil	.....	.....	New Zealand	1	.....
British West Indies	.....	.....	Norway	.....	.....
Canada	12	.....	Portugal	1	.....
Cape Colony	.....	.....	Queensland	.....	.....
Chile	.....	.....	Roumania	.....	.....
China	.....	.....	Russia	1	.....
Costa Rica	.....	.....	San Salvador	.....	.....
Cuba	.....	.....	Scotland	.....	.....
Denmark	.....	.....	South Australia	.....	.....
Ecuador	.....	.....	Spain	1	.....
England	8	10	Sweden	1	.....
France	7	.....	Switzerland	1	.....
Germany	18	5	Transvaal, South Africa	.....	.....
Guatemala	1	.....	Victoria	1	.....
Ireland	.....	.....	Western Australia	.....	.....
Italy	.....	.....			
Japan	.....	.....	Total to citizens of foreign countries	54	15
Java	.....	.....			
Mexico	.....	.....			

Notice.

When ordering copies of foreign patent drawings, either the serial number of the applications in which they were cited as references or the class and subclass where they may be found must be given. The title of the invention or the number of the division will not be sufficient.

Interference Notice.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., June 8, 1906.

Straus, Glaser & Company, their assigns or legal representatives, take notice:

An interference having been declared by this Office between the application of I. L. Pearl & Company, of Johnson, Vt., for registration of a trade-mark and a trade-mark registered to Straus, Glaser & Company, of 248 and 250 Monroe street, Chicago, Ill., and the notice of said declaration mailed by the Patent Office in the usual manner to the said Straus, Glaser & Company having been returned undelivered, notice is hereby given to the said Straus, Glaser & Company, their assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents, in order that the notices of declaration heretofore sent by and returned to the Office may be forwarded to them.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN,
Commissioner.

The facts as found by the three tribunals of the Patent Office, which we accept when taken in connection with other facts not inconsistent with them, show: First, that Schmidt, the senior party, does not show any earlier date of conception than February 10, 1902, the date of the filing of his application. Second: That O'Connell, the junior party, caused to be constructed two models, known respectively as the "Messinger" and "Tuerk" models; that the former was made early in November, 1901, and the latter completed November 27, 1901; that these models were not operative devices; that by means of these models the invention in controversy was explained during the same month to others skilled in the art, who, by such disclosure thoroughly understood the invention; that the invention was offered that month to the Western Electric Company; that whenever O'Connell came to Mr. McBerty's office he urged that the invention be accepted, and that in April or May, 1902, he became so insistent that McBerty some time prior to June, 1902, ordered the application prepared; that it was prepared by means of the Tuerk model, and executed and sworn to June 19, 1902, and on the same day assigned to the Western Electric Company; and that the application was filed and the assignment recorded July 19, 1902.

From these facts the Patent Office tribunals found Schmidt to be entitled to a date of conception and constructive reduction to practice as of his filing date, February 10, 1902. This finding is correct and is based upon repeated decisions of the Patent Office and of this court.

It was further found by them that O'Connell was entitled to a date of conception and disclosure as of the latter part of November, 1901, but that he was not entitled to any earlier date of reduction to practice than that of the filing date of his application, which was July 19, 1902. While the models were clearly sufficient to disclose the invention, and enabled those skilled in the art to thoroughly understand it, and to prepare an application for patent, and though indicating no circuits of operation, their intended use in such circuits were understood—in brief sufficient to enable the utilisation of the invention so that had death removed the inventor before an application for patent had been filed the invention would have survived—we do not think, under all the circumstances, and in the absence of any test, that they can be treated as a reduction to practice. The invention does not belong to that class of simple inventions which require no other proof of their practicability than the construction of a model. We agree therefore with the Patent Office tribunals in their conclusion that they did not constitute an actual reduction to practice and therefore there is no proof of any earlier reduction to practice than July 19, 1902, the date when O'Connell filed his application for patent.

This brings us to the serious question in the case. O'Connell being the first to conceive and disclose, is entitled to the patent over Schmidt, provided he used reasonable diligence in adapting and perfecting his invention. It is unnecessary to cite authorities in support of this proposition so often has it been approved. This is so even though Schmidt had actually or constructively reduced it to practice before him. O'Connell having first conceived and disclosed the invention was under no obligation of diligence until just prior to the date when his rival entered the field. The time to be considered is five months and ten days. There is no hard and fast rule by which to determine the question of due diligence. In other words "there is no general rule of what constitutes due diligence, that being a question to be determined by all the facts and surrounding circumstances in the particular case." Let us examine the facts and circumstances in the case before us. O'Connell had conceived the idea, and had embodied it in models which almost amounted to a reduction to practice and which, had the second one been connected up and tested, would have amounted to a reduction to practice. He had placed the invention before those who under certain conditions were entitled to patent it. At the time when his rival entered the field he was urging that the invention be accepted and patented. That was in February, 1902. In April or May of the same year O'Connell becoming more persistent the application was at some time prior to June 19, 1902, prepared, and on that day the oath to the application was executed by him and the application assigned to the Western Electric Company. There is nothing to show that the date of the oath is not correctly and truthfully given. The burden is upon the party questioning the correctness of the date to show it. (*Barry* v. *Hoffman*, 6 Md., 78; *Pringle* v. *Dunn*, 37 Wis., 449; *Barnett* v. *Proskauer*, 62 Ala., 486; *Baldwin* v. *Bornheimer*, 48 Cal., 433.) The application however was not filed until a month later. At the most O'Connell's delay after Schmidt entered the field was only a few days over five months; and a month less in having an application for patent prepared and executed, and that application was directed to be prepared a considerable time before. During the intervening time O'Connell might, it is true, have had his working model tested, but that would not, according to his witnesses, experts in the art, given them any more knowledge of the invention. We know no rule which, under the circumstances of this case, requires an inventor to rush to the Patent Office in order to preserve his rights as the first inventor. While giving to Schmidt the full benefit of the first reduction to practice we must remember that such reduction was constructive and not actual. In cases where the facts are as here shown the courts should be slow to deprive the one, who first conceives the idea and so fully discloses it as did this appellant, of a patent because one later to conceive and disclose files his application for patent a short time before him, and while he shows so conclusively that he is not concealing his invention nor intending to abandon it.

The facts in the cases cited by the lower tribunals and relied upon in support of their contention that appellant was not duly diligent are quite different from those in the case at bar. In *Kasson* v. *Hetherington* (C. D., 1899, p. 143) Kasson, who conceived in May, 1894, did nothing from October, 1894, to the time when he filed his application, March 30, 1896. A delay of about eighteen months. His adversary entered the field in September, 1894, and had issued to him a patent in June, 1895, more than nine months before Kasson's application was filed.

In *Watson* v. *Thomas* (23 App. D. C., 65) it appears that Thomas, the senior party, relied upon his record date which was December 17, 1896. Watson, the junior party, conceived the invention eleven months before Thomas filed his application, but his reduction to practice was thirteen months after his conception. Furthermore Kasson and Thomas, at the time when their rivals entered the field had only made sketches and drawings, while in the case at bar O'Connell had made devices which had they been placed in circuits and operated would have constituted a reduction to practice. They were further shown to those skilled in the art, and by means thereof the invention and its practicability fully disclosed. These facts should have considerable weight in determining the question of diligence. (*Hammond* v. *Basch*, 24 App. D. C., 469.)

Under all the circumstances of the case we think it would be unjust, and not warranted by law, to deprive O'Connell of his invention and to award a patent to one who is not the first inventor. We consider that appellant is entitled to an award of priority of invention.

It follows that the decision of the Commissioner of Patents was erroneous, and we therefore reverse his decision.

The clerk of the court will certify this opinion, and the proceedings in this court in the premises, to the Commissioner of Patents according to law. Reversed.

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

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TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama	3	.....	Nevada	.....	.....
Alaska, District of	1	.....	New Hampshire	.....	.....
Arizona Territory	.....	.....	New Jersey	26	11
Arkansas	4	.....	New Mexico Ter't'y	.....	.....
California	31	9	New York	76	78
Colorado	10	3	North Carolina	5	5
Connecticut	20	5	North Dakota	3	.....
Delaware	.....	.....	Ohio	43	25
District of Columbia	4	4	Oklahoma Territ'y	.....	.....
Florida	3	.....	Oregon	4	1
Georgia	4	4	Pennsylvania	58	22
Hawaii Territory	.....	.....	Philippine Islands	.....	.....
Idaho	.....	.....	Rhode Island	2	2
Illinois	72	18	South Carolina	3	.....
Indian Territory	.....	.....	South Dakota	1	.....
Indiana	20	6	Tennessee	9	.....
Iowa	8	2	Texas	6	2
Kansas	6	.....	Utah	3	.....
Kentucky	7	4	Vermont	.....	3
Louisiana	2	2	Virginia	3	.....
Maine	4	7	Washington	3	1
Maryland	11	9	West Virginia	5	.....
Massachusetts	30	28	Wisconsin	12	12
Michigan	18	1	Wyoming	2	.....
Minnesota	11	5	U. S. Army	.....	.....
Mississippi	3	.....	U. S. Navy	.....	.....
Missouri	16	19	Total to citizens of the United States	560	288
Montana	.....	.....			
Nebraska	8	.....			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Algeria	.....	.....	Netherlands	1	.....
Austria-Hungary	.....	.....	Newfoundland	.....	.....
Belgium	.....	.....	New South Wales	.....	.....
Brazil	.....	.....	New Zealand	1	.....
British West Indies	.....	.....	Norway	.....	.....
Canada	12	.....	Portugal	1	.....
Cape Colony	.....	.....	Queensland	.....	.....
Chile	.....	.....	Roumania	.....	.....
China	.....	.....	Russia	1	.....
Costa Rica	.....	.....	San Salvador	.....	.....
Cuba	.....	.....	Scotland	.....	.....
Denmark	.....	.....	South Australia	.....	.....
Ecuador	.....	.....	Spain	1	.....
England	8	10	Sweden	1	.....
France	7	.....	Switzerland	1	.....
Germany	18	5	Transvaal, South Africa	.....	.....
Guatemala	1	.....	Victoria	1	.....
Ireland	.....	.....	Western Australia	.....	.....
Italy	.....	.....	Total to citizens of foreign countries	54	15
Japan	.....	.....			
Java	.....	.....			
Mexico	.....	.....			

Notice.

When ordering copies of foreign patent drawings, either the serial number of the applications in which they were cited as references or the class and subclass where they may be found must be given. The title of the invention or the number of the division will not be sufficient.

Interference Notice.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., June 8, 1906.

Straus, Glaser & Company, their assigns or legal representatives, take notice:

An interference having been declared by this Office between the application of I. L. Pearl & Company, of Johnson, Vt., for registration of a trade-mark and a trade-mark registered to Straus, Glaser & Company, of 248 and 250 Monroe street, Chicago, Ill., and the notice of said declaration mailed by the Patent Office in the usual manner to the said Straus, Glaser & Company having been returned undelivered, notice is hereby given to the said Straus, Glaser & Company, their assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents, in order that the notices of declaration heretofore sent by and returned to the Office may be forwarded to them.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN,
Commissioner.

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business June 5, 1906.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
	In arrears—Under fifteen days.			
332	X. Carriages and Wagons.....	May 25	Dec. 26	1040
322	XXXVI. Curtains, Shades, and Screens, Drafting, Driers, Measuring Instruments, and Wind-Wheels.	May 23	May 7	248
304	XXXIV. Railways, Railway-Brakes, Rolling-Stock.	May 22	Apr. 7	374
303	XVII. Linotyping, Printing, Matrix-Making, Nut and Bolt Locks.	May 22	Mar. 23	307
137	VIII. Beds, Chairs, Furniture, Kitchen and Table Articles, Store Furniture.	May 22	Feb. 8	628
179	XX. Artificial Limbs, Builders' Hardware, Dentistry, Locks and Latches, Safes, Undertaking.	May 22	Sept. 26	521
321	I. Tillage, etc., Fences, and Railway Draft Appliances.	May 21	Apr. 23	222
244	XXXV. Baggage, Buckles, Buttons, and Clasps, Card, Picture, and Sign Exhibiting, Deposit and Collection Receptacles, Package and Article Carriers, Packing and Storing Vessels, Photography.	May 21	Mar. 7	733
154	XI. Boot and Shoe Making, Boots, Shoes, and Leggings, Button, Eyelet, and Rivet Setting, Leather Manufacturing, Nailing and Stapling, Check-Controlled Apparatus, Whips and Whip Apparatus.	May 21	Feb. 21	378
148	XXXII. Carbonating Beverages, Dispensing Beverages, Dispensing-Cans, Metallic Shipping and Storing Vessels, Packaging Liquids, Paper Receptacles, Refrigeration, Wooden Receptacles.	May 21	Jan. 20	680
	Under one month.			
128	II. Bee Culture, Dairy, Label-Affixers, Paper Files and Binders, Presses, Store-Service, Tobacco, etc.	May 19	Mar. 6	331
378	XXXVIII. Artesian and Oil Wells, Bottles and Jars, Care of Live Stock, Fishing and Trapping, Stationery, Stone-Working.	May 18	Apr. 16	345
308	XV. Bread, Pastry, and Confections, Making, Coating, Laminated Sheets and Fabrics, Fuel, Glass, Hydraulic Lime and Cement, Paper-Making, Paving, and Plastics.	May 18	Mar. 21	479
379	XXIII. Acoustics, Coin-Handling, Horology, Recorders, Registers, Optics, Signals, Time Controlling Mechanism.	May 18	Dec. 1	745
107	XXXVII. Electricity, Conductors, Lighting, Special Apparatus.	May 17	Sept. 27	864
330	XIII. Arms, Projectiles, and Explosive Charges, Making, Metal-Working, Needle and Pin Making.	May 16	Nov. 18	595
122	XIX. Stoves and Furnaces and Steam-Boiler Furnaces.	May 15	Nov. 2	726
172	XXXI. Alcohol, Charcoal and Coke, Distillation, Gas, Heating and Illuminating, Hides, Skins, and Leather, Liquid Coating Compositions, Oils, Fats, and Glue, Water Purification.	May 14	Apr. 5	268
105	XXVI. Electricity, Generation, Electric Heaters, Electric Railways, Motive Power.	May 12	Oct. 19	723
139	XXII. Air-Guns, Ammunition and Explosive Devices, Boats and Buoys, Catapults and Targets, Firearms, Marine Propulsion, Ordnance, Ships.	May 11	Nov. 23	347
318	VI. Bleaching and Dyeing, Chemicals, Explosives, Fertilizers, Medicines, Preserving, Sugar and Salt.	May 9	Feb. 16	439
312	VII. Velocipedes, Clutches, Fire-Escapes, Games and Toys, Ladders, Mechanical Motors, and Paper Manufactures.	May 9	Dec. 15	476
175	III. Annealing and Tempering, Coating with Metal, Electrochemistry, Metal-Founding, Metallurgy, Shaping Fluid Metal.	May 7	Apr. 14	349
	Between one and two months.			
324	XII. Elevators, Journal-Boxes, Lubricators, Machine Elements, Pulleys and Shafting.	May 4	Mar. 28	488
147	XXIX. Coopering, Roofs, Wheelwright-Machines, Wooden Buildings, Wood-Sawing, Wood-Turning, Woodworking-Tools.	May 3	Jan. 13	531
327	XVIII. Steam-Engineering, etc...	May 2	Feb. 6	435
164	XXXIII. Canes, Canopies, Cutlery, Domestic Cooking Vessels, Electricity, Medical and Surgical, Electric Signaling, Fireproof Buildings, Harness, Masonry, Tents, and Umbrellas.	May 2	Jan. 2	729
152	XXX. Fluid-Pressure Regulators, Lamps and Gas-Fittings, Type-Writing Machines.	May 1	Nov. 1	685
109	XVI. Telegraphy and Telephony..	Apr. 30	Mar. 8	414
307	XIV. Cutting and Punching Sheets and Bars, Farriery, Metal-Bending, Metal-Ornamenting, Metal Personal Wear, Making, Sheet-Metal Ware, Making, Tools, Wire-Working.	Apr. 26	Jan. 15	377
232	IV. Bridges, Conveyers, Cranes and Derricks, Excavating, Hoisting, Hydraulic Engineering, Loading and Unloading, and Towers.	Apr. 24	Apr. 27	427
142	IX. Baths and Closets, Fire-Extinguishers, Hydraulic Motors, Pumps, Sewerage, and Water Distribution.	Apr. 24	Oct. 2	1167
144	XXIV. Apparel, Apparel Apparatus, Sewing-Machines, Surgery, Toilet.	Apr. 18	Jan. 11	594
375	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, Washing Apparatus.	Apr. 12	Nov. 3	840
167	V. Fine Arts, Bookbinding, Harvesters, Jewelry, and Music.	Apr. 10	Feb. 19	507
315	XXV. Butchering, Mills, Threshing, and Vegetable Cutters and Crushers.	Apr. 10	Jan. 4	612
	Between two and three months.			
382	XXVIII. Air and Gas Engines, Air and Gas Pumps, Pneumatics.	Apr. 1	Aug. 15	1273
112	XXI. Textiles, Carding, Knitting, Spinning, Weaving, etc.	Mar. 14	Oct. 2	715
	Total number of applications awaiting action			21,612
159	TRADE-MARKS, DESIGNS, LABELS AND PRINTS.			
	Under fifteen days.			
	Trade-Marks.....	May 24	Mar. 10	1746
	Designs.....	May 28	May 17	57
	Labels and Prints.....	May 31	May 28	18

Notice.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., May 10, 1906.

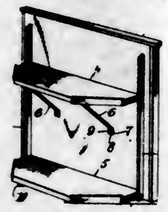
Notice is hereby given that no cases will be docketed or heard by the Commissioner or the Assistant Commissioner in the months of July and August, 1906, except when required to avoid irreparable injury.

F. I. ALLEN,
Commissioner.

PATENTS

GRANTED JUNE 12, 1906.

822,904. **FURNITURE.** GEORGE H. ABERCROMBIE, Poughkeepsie, N. Y. Filed June 16, 1905. Serial No. 265,535.



Claim.—In a household screen, a single panel, bars pivoted between their ends to the panel beneath the bottom edge of the same to swing horizontally and adapted to support the panel in a vertical position or to fold beneath the edge of the same, a shelf pivoted to one face of the panel near its lower edge to fold from a vertical position to a horizontal position resting on said bars when extended, and interlocking means between said shelf and bars.

822,905. **INK-WELL.** FRANK M. ASHLEY, New York, N. Y. Filed Mar. 29, 1899. Serial No. 710,876.



Claim.—1. In an ink-well, the combination of a body containing a cistern, a cover having a portion depending within said cistern and a surrounding flange resting on the top of said body, a flexible diaphragm on said cover and having a central perforation, a dip-tube extending downward through said flexible diaphragm and engaged thereby, said dip-tube having an enlarged funnel-shaped portion, the under side of said latter portion overhanging the said flange of the cover.

2. In an ink-well, the combination of a body containing a cistern, a cover having a portion depending within said cistern and a surrounding flange resting loosely on the top of said body, a flexible diaphragm carried by said cover and having a central perforation, a dip-tube extending downward through said flexible diaphragm and having parallel external shoulders between which the diaphragm is retained, said dip-tube having an enlarged funnel-shaped portion, the under side of which latter fits and incloses the flange of the cover.

3. In a body, the combination of an ink-well having a cylindrical cistern, an annular cover having a surrounding flange resting on the top of said cistern and extending down therein, a flexible diaphragm on said annular cover having a central perforation, a dip-tube extending downward through said flexible diaphragm and engaged thereby, said dip-tube having an enlarged funnel-shaped portion, the under side of said funnel-shaped portion fitting over and inclosing the said flange of the cover, substantially as described.

4. In an ink-well, the combination of a reservoir having a cylindrical cistern, an annular cover having a flange resting loosely on the top of said reservoir and extending therein, a flexible diaphragm carried by said annular cover having a central perforation, a dip-tube extending downward through said flexible diaphragm and having parallel external shoulders between which the diaphragm is retained, said dip-tube having an enlarged funnel-shaped portion, the under side of said funnel-shaped portion fitting and inclosing the said flange of the cover, substantially as described.

5. In an ink-well of the character described, the combination with a body and the well thereof, of a diaphragm, a more rigid portion depending loosely within said well clear of the surface thereof, and supporting said diaphragm, said more rigid portion having a flange resting loosely on the body-top, and a dip-tube and funnel therefor carried by said diaphragm, whereby the dip-tube and funnel are adapted to be freely removed from said well, together with the said diaphragm.

6. In an ink-well, the combination of a cistern, a cover therefor having a rigid depending portion, a flange thereon adapted to support said cover upon the cistern, an upwardly-extending flexible diaphragm carried by said depending portion, and a dip-funnel carried by said diaphragm said dip-funnel having an annular guide said guide also serving as a cover for said upwardly-extending diaphragm, substantially as described.

7. In an ink-well, the combination of a cistern, a cover therefor, having a rigid depending portion, a flange thereon adapted to support said cover upon the cistern, an upwardly-extending flexible diaphragm carried by said depending portion, and a dip-funnel carried by said diaphragm, said dip-funnel having an outwardly-extending shoulder, said shoulder serving as a guide for said dip-funnel and also as a cover for said diaphragm, substantially as described.

8. In an ink-well, the combination of a cistern, a cover therefor having a supporting-flange which rests loosely upon the cistern and is entirely disconnected therefrom except by its own weight, a rigid depending portion carried by said cover, an upwardly-extending flexible diaphragm carried by said depending portion, and a dip-funnel carried by said diaphragm having an outwardly-extending flange which covers said diaphragm, substantially as described.

9. In an ink-well, the combination of a cistern, a cover therefor comprising a rigid depending portion having a surrounding flange at its top which rests loosely on the top of the stand and is adapted to form a joint thereon and to be freely removable therefrom, a diaphragm carried by said portion, and a dip-funnel carried by said diaphragm.

10. In an ink-well, the combination of a cistern, a cover therefor having a supporting-flange which rests loosely upon the cistern and is entirely disconnected therefrom except by its own weight, a rigid depending portion carried by said flange, an upwardly-extending flexible diaphragm carried by said depending portion, and a dip-tube and funnel carried by said diaphragm.

11. In an ink-well, the combination of a cistern and a diaphragm, a flange having a depending portion from which the diaphragm is supported, said diaphragm resting loosely and being freely removable from the ink-well, and a dip-tube and funnel carried by said diaphragm.

822,906. **DRILL-SHARPENER.** CLARENCE W. ATKINSON, Jamestown, Colo. Filed Aug. 29, 1905. Serial No. 276,274.



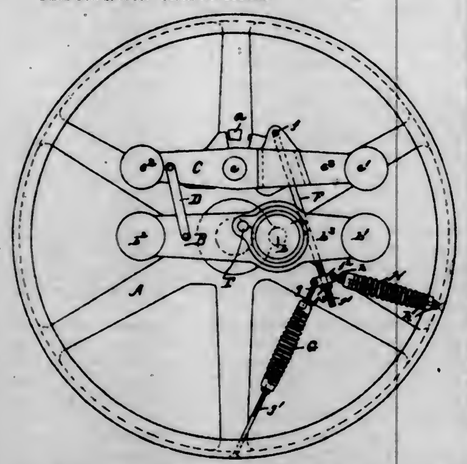
Claim.—1. In a drill-sharpener, the combination of a casing, a die member fixed with respect to the casing and comprising an end abutment the inner side of which is concave in cross-section and is inclined upwardly and inwardly and a portion extending inwardly from the said abutment and having a channel, of V shape in cross-section, in its upper side, a die member movable in the casing toward and from the abutment of the first-mentioned member and having an upwardly and inwardly inclined inner end, of concave form in cross-section, and also having a lower forward portion, of V shape in cross-section, arranged to move in the channel of the first-mentioned mem-

ber, and suitable means applied to the last-mentioned member for moving the same inwardly.

2. In a drill-sharpener, a movable die member having a lower forward portion of V shape in cross-section, and means for moving said die member; in combination with a fixed die member having an end abutment and also having an inwardly-extending portion in which is a channel, of V shape in cross-section adapted to serve the twofold function of guiding the movable die member and giving an edge to a drill end seated therein and subjected to blows.

3. In a drill-sharpener, the combination with a casing having an opening in its top and also having lower and upper, longitudinal guideways in its side walls, a die member fixed in the casing and comprising an end abutment the inner side of which is concave in cross-section and is inclined upwardly and inwardly and a portion extending inwardly from said abutment and having a channel, of V shape in cross-section, in its upper side, and a die member movable in the casing toward and from the abutment of the first-mentioned member and having an upwardly and inwardly inclined inner end, of concave form in cross-section, and also having a lower forward portion, of V shape in cross-section arranged to move in the channel of the first-mentioned member, and also having cross-heads movable in the lower and upper, longitudinal guideways of the casing; of an eccentric cam mounted between the side walls of the casing and arranged when rotated to move the second-mentioned die member inwardly, and a lever fixed with respect to the said eccentric cam.

822,907. GOVERNOR. FREDERICK O. BALL, Plainfield, N. J. Filed Oct. 2, 1905. Serial No. 281,036.



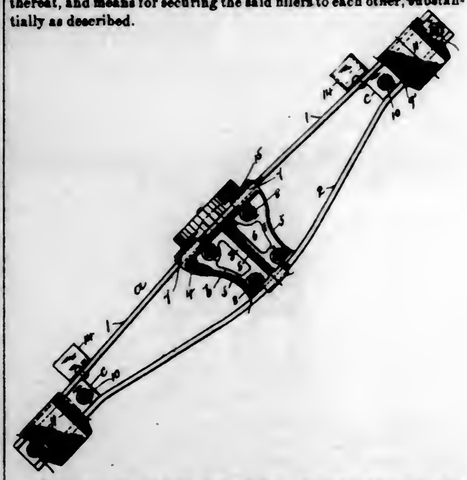
Claim.—1. In a governor, the combination of a rotative carrier; a governor-weight mounted thereon; a spring-rod connected to the weight; and two springs arranged to exert force in directions at an angle to each other and connected to the rod and the carrier.

2. In a governor the combination of a rotative carrier; a governor-weight mounted thereon; a spring-rod connected to the weight and two springs arranged to exert force in directions at an angle to each other and connected to the rod and the carrier, said springs varying in resistance with a given stretch.

3. In a governor, the combination of a rotative carrier; a governor-weight pivotally mounted thereon; a spring-rod connected with the weight, and two springs arranged to exert force in directions at an angle to each other and connected with the rod and the carrier, said springs varying in resistance with a given stretch, and arranged to swing the rod as the springs are extended in a direction tending to vary a relation between the rod and the weight to shorten the effective arm of the weight as the springs are extended.

822,908. CAR-BOLSTER. JOSHUA S. BARNES, Springfield, Ill. Filed Mar. 12, 1906. Serial No. 305,613.

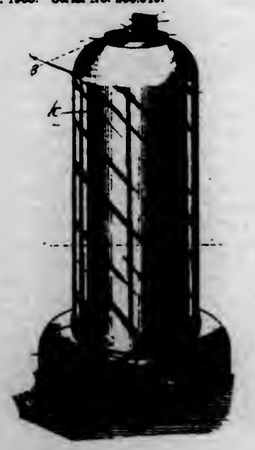
Claim.—1. A car-truck bolster, comprising a top compression member and a bottom tension member, consisting respectively of a metallic plate, the said top member having the center plate and side bearings fixed thereto, two opposite metallic fillers interposed between and adapted to bear against the inner faces of the said plates at the middle portion of the bolster, the said fillers having hooks adapted to embrace the longitudinal edge portions of the said plates thereat, and means for securing the said fillers to each other, substantially as described.



2. A car-truck bolster, comprising a top compression member and a bottom tension member, consisting respectively of a metallic plate, the said top member having the center plate and side bearings fixed thereto, two opposite side pieces interposed between and adapted to engage in notches formed therefor in the longitudinal edges of the said plate at each end portion of the bolster, the said pieces having slots in their inner sides adapted to embrace the longitudinal edge portions of the said notches, and means for securing the said pieces to each other, substantially as described.

3. A car-truck bolster, comprising a top compression member and a bottom tension member, consisting respectively of a metallic plate, the said top member having the center plate and side bearings fixed thereto, two opposite metallic fillers interposed between and adapted to bear against the inner faces of the said plates at the middle portion of the bolster, the said fillers having hooks adapted to embrace the longitudinal edge portions of the said plates thereat, means for securing the said fillers to each other, two opposite side pieces interposed between and adapted to engage in notches formed therefor in the longitudinal edges of the said plates at each end portion of the bolster, the said pieces having slots in their inner sides adapted to embrace the longitudinal edge portions of the said notches, and means for securing the said pieces to each other, substantially as described.

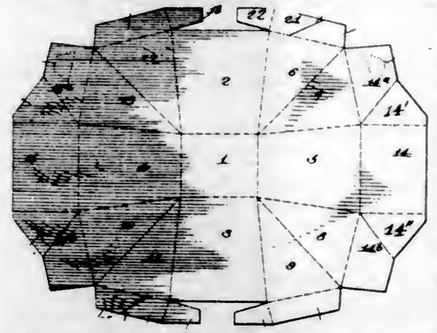
822,909. VENDING-MACHINE. PAUL R. BERGER, Chicago, Ill. Filed June 26, 1905. Serial No. 266,919.



Claim.—1. A vending-machine comprising a base-plate, a package-holding receptacle secured thereto at its lower end and open at its upper end, an exterior casing on the base-plate also open at its upper end, a slotted cap for covering the casing, a coin-chute secured to the package-holding receptacle and passing through the slotted cap, and means for securing the cap to the coin-chute.

2. A vending-machine comprising a base-plate, a package-holding receptacle secured thereto at its lower end and open at its upper end, an exterior casing on the base-plate also open at its upper end, a slotted cap for closing the open end of the casing, a coin-chute secured to the package-holding receptacle and passing through the slotted cap, a screw-threaded lug on the cap adjacent to the slot, and a thumb-screw therein.

822,910. PAPER VESSEL. CHARLES T. BLOOMER, Newark, N. Y. Filed Feb. 25, 1905. Serial No. 247,363.



Claim.—1. In a paper vessel, the combination with corner folds adapted to fold against the ends of the vessel, of a flap projecting from each of the corner folds at each end of the vessel and adapted to fold inward and downward over the ends, and tongues carried by the flaps and adapted to interlock with the adjacent folded portions of the vessel to hold the flaps properly positioned.

2. In a paper vessel, the combination with corner folds adapted to fold over against the ends of the vessel, of a flap projecting from each corner fold at each end of the vessel and adapted to fold inward and downward over the ends to hold the flaps in position, one flap at each end being obliquely incised to permit it to interlock with the other flap.

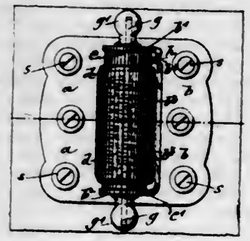
3. In a paper vessel, the combination with corner folds adapted to fold over against the ends of the vessel, of a flap projecting from each corner fold at each end of the vessel and adapted to fold inward and downward over the ends to hold the flap in position, one flap at each end being obliquely incised to permit it to interlock with the other flap, a tongue carried by each of the flaps and adapted to interlock with the other flap, and a tongue carried by each of the flaps and adapted to interlock with the adjacent folded portions of the vessel to hold the flaps properly positioned.

4. In a paper vessel, the combination with corner folds adapted to fold over against the ends of the vessel, of a flap projecting from each of the corner folds at each end of the vessel and adapted to fold inward and downward over the ends, tongues carried by the flaps and adapted to interlock with the adjacent folded portions of the vessel to hold the flaps properly positioned, and sealing-tongues provided with locking means for holding the vessel positively closed.

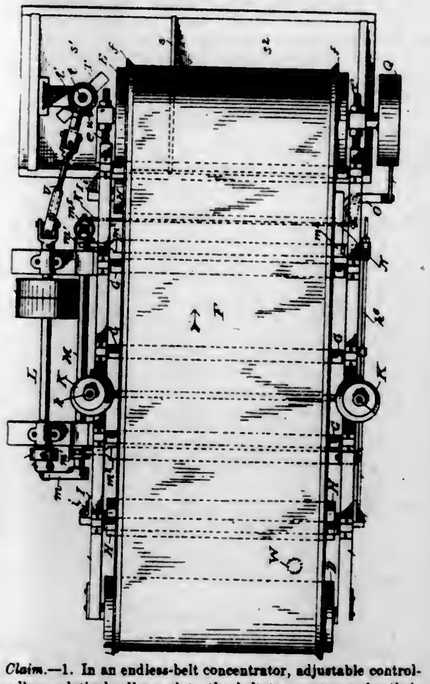
5. In a paper vessel, the combination with a sealing extension provided with an eye, and a metallic reinforce disposed at one end of the eye, of a locking member combined with the other sealing extension and comprising a hook to engage the eye, an intermediate upwardly-bulged portion, and terminals adapted to be secured to the appropriate extension.

822,911. SPRING-HINGE. EMIL BOMMER, New York, N. Y. Filed Mar. 2, 1905. Serial No. 248,127.

Claim.—In a screen-door spring-hinge, the combination of a leaf provided with a semicircular spring-barrel having inwardly-bent upper and lower ears or seats, one of said seats being provided with a circular opening and the other with a square opening, a second leaf provided with bent-up perforated ears extending over said first-named ears, tension-collars interposed between the corresponding ears of said spring-barrel and said last-named ears, one of said collars being rotatable in said circular opening and the other provided with an intermediate square boss engaging said square opening, and a pintle passing through the ears of said leaves and through said tension-collars.



822,912. CONCENTRATOR. MARTIN P. BOSS, San Francisco, Cal. Filed Jan. 12, 1905. Serial No. 240,718.



Claim.—1. In an endless-belt concentrator, adjustable controlling-rollers relatively disposed to the belt to counteract by their change of inclination, the lateral crawl of the belt, in combination with mechanism actuated by the traveling belt, itself, in crawling, to effect the adjustment of said controlling-rollers.

2. In an endless-belt concentrator, adjustable controlling-rollers relatively disposed to the belt to counteract by their change of inclination, the lateral crawl of the belt, in combination with mechanism actuated by the traveling belt, itself, in crawling, to effect the adjustment of said controlling-rollers consisting of revoluble contacts with which the sides of the belt engage, and suitable connections from said contacts to the controlling-rollers.

3. In an endless-belt concentrator, adjustable controlling-rollers relatively disposed to the belt to counteract by their change of inclination the lateral crawl of the belt, in combination with mechanism actuated by the traveling belt, itself, in crawling, to effect the adjustment of said controlling-rollers consisting of receding contacts with which the sides of the belt engage, and suitable connections from said contacts to the controlling-rollers.

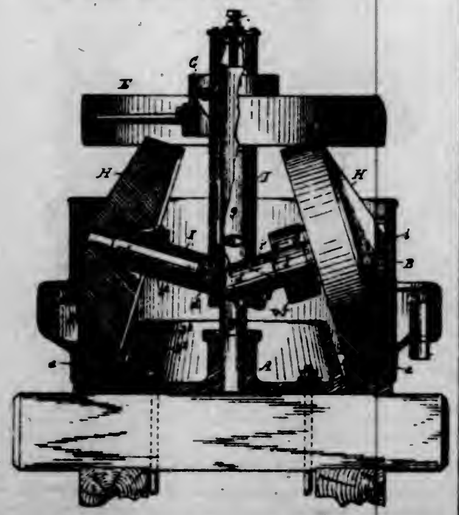
4. In an endless-belt concentrator, adjustable controlling-rollers relatively disposed to the belt to counteract by their change of in-

elination, the lateral crawl of the belt, in combination with mechanism actuated by the traveling belt, itself, in crawling, to effect the adjustment of said controlling-rollers, consisting of revoluble cam-contacts upon the receding faces of which the sides of the belt impinge to momentarily turn them, and suitable connections from said contacts to the controlling-rollers.

5. In an endless-belt concentrator, adjustable controlling-rollers relatively disposed to the belt to counteract by their change of inclination, the lateral crawl of the belt, in combination with mechanism actuated by the traveling belt, itself, in crawling, to effect the adjustment of said controlling-rollers, consisting of a pair of relatively oppositely-arranged revoluble cam-contacts upon the receding faces of which the sides of the belt impinge to momentarily turn them, one of said cam-contacts being on each side of the belt, connections for operating said cam-contacts in unison, and suitable connections from said contacts to the controlling-rollers.

6. In an endless-belt concentrator, adjustable controlling-rollers relatively disposed to the belt to counteract, by their change of inclination, the lateral crawl of the belt, in combination with mechanism actuated by the traveling belt, itself, in crawling, to effect the adjustment of said controlling-rollers, consisting of a pair of relatively oppositely-arranged revoluble cam-contacts upon the receding faces of which the sides of the belt impinge to momentarily turn them, one of said cam-contacts being on each side of the belt, connections for operating said cam-contacts in unison, a connection between the controlling-rollers to effect their adjustment in unison, and an adjustable connection between the cam-contacts and the interconnection of the controlling-rollers, to operate them.

822,913. **CRUSHING-MILL.** MARTIN P. BOSS, San Francisco, Cal. Filed Feb. 23, 1905. Serial No. 246,842.



Claim.—1. In a crushing-mill, a pan having a close rim with a channel on its exterior, said channel having an entrance communication at one end, with the interior of the pan, an overflow to the exterior of the pan at the other end, and return communications intermediate its ends from its lower portion into the interior of the pan.

2. In a crushing-mill, a pan having a close rim with a channel on its exterior, said channel having an entrance communication at one end, with the interior of the pan, an adjustable overflow to the exterior of the pan at the other end, and return communications intermediate its ends, from its lower portion into the interior of the pan.

3. In a crushing-mill, a pan having a rim with an exterior channel, said channel having at one end an entrance communication with the pan, and return communications into the pan beyond the entrance communication, fender-plates disposed to guard against an outward flow from the pan through said return communications, while permitting an inward flow therethrough, and an overflow from the other end of said channel.

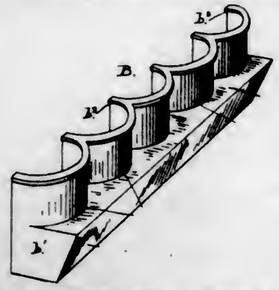
4. In a crushing-mill, a pan having a rim with an exterior channel, said channel having at one end an entrance communication with the pan, and return communications into the pan beyond the entrance communication, fender-plates disposed to guard against an outward flow from the pan through said return communications, while permitting an inward flow therethrough, and an adjustable overflow from the other end of said channel.

5. In a roller crushing-mill, a swinging crank for journaling the roller and pivotally connecting it with the driver, said crank having a weight disposed to counterbalance the driver.

6. In a crushing-mill, and in combination with a driver having a top bearing by which it is suspended, and a crushing-roller, a crank for journaling the roller and pivotally connecting it with the driver, said crank having a weight disposed to counterbalance the driver.

7. In a crushing-mill, and in combination with a pan, a fixed center post, a rotating driver journaled upon the post, a top bearing mounting the driver on the post, and a roller operating in the pan, a crank for journaling the roller and pivotally connecting it with the driver, said crank having a weight disposed to counterbalance the driver.

822,914. **MORTAR FOR STAMP-MILLS.** MARTIN P. BOSS, San Francisco, Cal. Filed June 5, 1905. Serial No. 263,842.



Claim.—1. In a stamp-mill mortar, a mortar-body having an opening in its top provided with an inwardly-inclined wall, in combination with a housing composed of separate similar halves, each half comprising a semicylinder to receive the stamp-head and a base with a flat inclined outer face to fit the inclined side wall of the top opening of the mortar-body, whereby the two halves are wedged together in seating.

2. In a stamp-mill mortar, a mortar-body having an opening in its top provided with an inwardly-inclined wall, in combination with a housing composed of separate similar halves, each half comprising a semicylinder to receive the stamp-head and a base with a flat inclined outer face to fit the inclined side wall of the top opening of the mortar-body, whereby the two halves are wedged together in seating, and packing between the said wall and base, whereby the housing is tightened in its seat.

3. In a stamp-mill mortar, a mortar-body having in its top an extended continuous opening provided with inclined downwardly-converging side walls, in combination with a housing composed of separate similar halves, each half comprising a series of connected semicylinders, to receive the stamp-heads, and a continuous base common to all the semicylinders, and formed with a flat inclined outer face, adapted to be seated in the side wall of the top opening of the mortar-body, whereby the halves are wedged together in seating.

4. In a stamp-mill mortar, a mortar-body having in its top an extended continuous opening provided with inclined downwardly-converging side walls, in combination with a housing composed of separate similar halves, each half comprising a series of connected semicylinders, to receive the stamp-heads, and a continuous base common to all the semicylinders, and formed with a flat inclined outer face, adapted to be seated in the side wall of the top opening of the mortar-body, whereby the halves are wedged together in seating, and packing between said walls and faces, whereby the housing is tightened in its seat.

5. In a stamp-mill mortar, a mortar-body having an opening in its top, in combination with a housing adapted to fit said opening, said housing consisting of a cylindrical sleeve adapted to receive the stamp-head, the interior of the sleeve having its lower portion wider than its upper portion, whereby a horizontal shoulder is formed between the two portions.

6. In a stamp-mill mortar, a mortar-body having an opening in its top provided with an inwardly-inclined wall, in combination with a housing composed of separate similar halves, each half comprising a semicylinder to receive the stamp-head and a base with a flat inclined outer face to fit the inclined side wall of the top opening of the mortar-body, whereby the two halves are wedged together in seating, the interior of said semicylinder having its lower portion wider than its upper portion, whereby a horizontal shoulder is formed between the two portions.

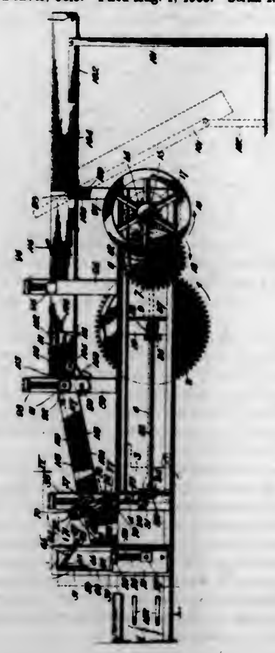
7. In a stamp-mill mortar, a mortar-body having an opening in its top provided with an inwardly-inclined wall, in combination with a housing composed of separate similar halves, each half comprising a semicylinder to receive the stamp-head and a base with a flat inclined outer face to fit the inclined side wall of the top opening of the mortar-body, whereby the two halves are wedged together in seating, the interior of said semicylinder having its lower portion wider than its upper portion whereby a horizontal shoulder is formed between the two portions, and packing between said walls and faces whereby the housing is tightened in its seat.

8. In a stamp-mill mortar, a mortar-body provided with an extended continuous opening in its top, formed with inclined downwardly-converging side walls, in combination with a housing formed in separate similar halves, each half comprising a connected series of semicylinders to receive the stamp-heads, and a continuous base, common to all said semicylinders, and formed with a flat outer inclined face adapted to be seated in the inclined side wall of the top opening of the mortar-body, the interior of each semicylinder being provided with a horizontal shoulder formed by a lower portion of relatively larger width.

9. In a stamp-mill mortar, a mortar-body having in its top an extended continuous opening provided with inclined downwardly-converging side walls, in combination with a housing composed of separate similar halves, each half comprising a series of connected semicylinders, to receive the stamp-heads, and a continuous base common to all the semicylinders, and formed with a flat inclined outer face, adapted to be seated in the side wall of the top opening of the mortar-body, whereby the halves are wedged together in seating, and suitable packing between said walls and faces.

10. In a stamp-mill mortar, a stamp-head housing fitted in the top of the mortar, and consisting of a sleeve the interior of which is divided into an upper portion and a lower wider portion separated by a shoulder, said interior having inwardly-projecting narrow ribs, in a plane at right angles to its axis.

822,915. **SELF-FEEDER FOR BALING-PRESSES.** CLARENCE E. BOWER, Denver, Colo. Filed Aug. 1, 1905. Serial No. 272,141.



Claim.—1. In a self-feeder for baling-presses, a set of feed-rolls, and means to move the same within the baling-case at an angle to its length.

2. In a self-feeder for baling-presses, a set of feed-rolls, means to move the same within the baling-case at an angle to its length, and means for holding one of said feed-rolls pressed yieldingly toward the other.

3. In a self-feeder for baling-presses, a set of feed-rolls, means to move the same within the baling-case at an angle to its length, and means to sever the baling material at the delivery side of the feed-rolls.

4. In a self-feeder for baling-presses, a set of feed-rolls, means to move the same within the baling-case at an angle to its length, and a reciprocatory cutting mechanism to sever the baling material at the delivery side of said rolls.

5. In a self-feeder for baling-presses, a set of feed-rolls, means to move the same within the baling-case at an angle to its length, a cutting mechanism, means to cause the cutting mechanism to move toward said rolls and cut the baling material at the delivery side of the latter, and means to instantly reëlevate said cutting mechanism, after the cutting operation takes place.

6. In a self-feeder for baling-presses, a set of feed-rolls, means to move the same within the baling-case at an angle to its length, a pointed knife, needles projecting from and beyond the points of the knife, and means to cause the knife to move toward said rolls and sever the baling material at the delivery side of said rolls after the needles have impaled such material.

7. In a self-feeder for baling-presses, a set of feed-rolls, means to move the same within the baling-case at an angle to its length, a pointed knife, needles projecting from and beyond the points of the knife, means to cause the knife to move toward said rolls and sever the baling material at the delivery side of said rolls after the needles have impaled such material, and means to instantly withdraw the knife after the cutting action has occurred.

8. In a self-feeder for baling-presses, a set of feed-rolls, means to move the same within the baling-case at an angle to its length, and a plunger to reciprocate longitudinally in the baling-case and compress the baling material fed therein by the feed-rolls.

9. In a self-feeder for baling-presses, a set of feed-rolls, means to move the same within the baling-case at an angle to its length, a plunger to reciprocate longitudinally in the baling-case and compress the baling material fed therein by the feed-rolls, and means for severing the baling material at the delivery side of the feed-rolls before such material is compressed by the plunger.

10. In a self-feeder for baling-presses, a set of feed-rolls, means to move the same within the baling-case at an angle to its length, a plunger to reciprocate longitudinally in the baling-case and compress the baling material fed therein by the feed-rolls, means for severing the baling material at the delivery side of the feed-rolls before such material is compressed, and means for withdrawing the cutting mechanism from the baling-case before the plunger engages the baling material.

11. In a self-feeder for baling-presses, a set of feed-rolls for feeding a web of material into the case and yieldingly depressed therein, a reciprocatory plunger in the press, and means whereby the compression-stroke of the plunger shall effect the elevation of the feed-rolls and material fed thereby.

12. In a self-feeder for baling-presses, a set of feed-rolls for feeding a web of material into the case and held yieldingly depressed therein a reciprocatory plunger in the press, means whereby the compression-stroke of the plunger shall effect the elevation of the feed-rolls and material fed thereby, and means to sever the web of baling material at the delivery side of the feed-rolls as they attain their elevated positions.

13. In a self-feeder for baling-presses, a set of feed-rolls for feeding a web of material into the case and held yieldingly depressed therein, a reciprocatory plunger in the press, means whereby the compression-stroke of the plunger shall effect the elevation of the feed-rolls and material fed thereby, means to sever the web of baling material at the delivery side of the feed-rolls as they attain their elevated positions, and means to withdraw the cutting mechanism immediately after the cutting action has occurred, out of the path of the plunger.

14. In a self-feeder for baling-presses, a set of feed-rolls for feeding a web of material into the case and held yieldingly depressed therein, a reciprocatory plunger in the press, means whereby the compression-stroke of the plunger shall effect the elevation of the feed-rolls and material fed thereby, means to sever the web of baling material at the delivery side of the feed-rolls as they attain their ele-

vated positions, means to withdraw the cutting mechanism immediately after the cutting action has occurred, out of the path of the plunger, and means to press the baling material down toward the bottom of the press after the plunger has completed its power-stroke and is making its return stroke.

15. In a self-feeder for baling-presses, a set of feed-rolls, means to move the same within the baling-case at an angle to its length, means to sever the baling material at the delivery side of the feed-rolls, and means to press the front end of the web of baling material toward the bottom of the baling-case.

16. In a self-feeder for baling-presses, a set of driven feed-rolls to feed the baling material into the baling-case in the form of a web and held yieldingly therein, means to elevate said feed-rolls and the web of material being fed thereby, means to sever the web of baling material at the delivery side of the feed-rolls when the latter are elevated, and a plate movable with the feed-rolls and adapted as it descends therewith to press the severed material at its end contiguous to said rolls, toward the bottom of the baling-case.

17. In a self-feeder for baling-presses, a guideway extending downward and rearward into the baling-case through the feed-opening thereof and provided at its lower end with a set of driven feed-rolls, a reciprocatory plunger in the baling-case, means whereby the guideway is swung upward as the compression-stroke of the plunger occurs, means to sever the web of baling material passing through the guideway and between its rolls as said guideway attains its elevated position, and means to withdraw said cutting mechanism out of the path of the plunger on its compression-stroke.

18. In a self-feeder for baling-presses, a guideway extending downward and rearward into the baling-case through the feed-opening thereof and provided at its lower end with a set of driven feed-rolls, a reciprocatory plunger in the baling-case, means whereby the guideway is swung upward as the compression-stroke of the plunger occurs, means to sever the web of baling material passing through the guideway and between its rolls as said guideway attains its elevated position, means to withdraw said cutting mechanism out of the path of the plunger on its compression-stroke, and means movable with the guideway to depress the severed baling material at its end contiguous to said rolls, during the withdrawal-stroke of the plunger.

19. In a self-feeder for baling-presses, a set of feed-rolls movable in the baling-case at an angle to its length and adapted to feed baling material in the form of a web into said case, slotted bars at the delivery side of the rolls and between which the baling material also passes, and a reciprocatory knife to move successively through the slotted bars and sever the web of baling material upon the lower one.

20. In a self-feeder for baling-presses, a set of feed-rolls movable in the baling-case at an angle to its length and adapted to feed baling material in the form of a web into said case, slotted bars at the delivery side of the rolls and between which the baling material also passes, a reciprocatory plunger adapted as it makes its power-stroke to move the feed-rolls and slotted bars out of its path, and a reciprocatory knife to move successively through said slotted bars and sever the web of baling material between them as they attain their elevated positions.

21. In a self-feeder for baling-presses, a series of sets of feed-rolls of which the delivery-end set are normally depressed into the baling-case through the feed-opening thereof to deliver the material into said baling-case.

22. In a self-feeder for baling-presses, a series of sets of feed-rolls of which the delivery-end set are normally depressed into the baling-case through the feed-opening thereof to deliver the baling material into said baling-case, means to elevate said delivery-end set of rolls, and means to sever the web of baling material at the delivery side of said set of rolls when elevated.

23. In a self-feeder for baling-presses, a series of sets of feed-rolls of which the delivery-end set are normally depressed into the baling-case through the feed-opening thereof to deliver the baling material into said baling-case, means to elevate said delivery-end set of rolls, means to sever the web of baling material at the delivery side of said set of rolls when elevated, and a reciprocatory plunger to compress the severed portion of the baling material in the case beyond the feed-opening, while said set of feed-rolls are elevated.

24. In a self-feeder for baling-presses, a series of sets of feed-rolls of which the delivery-end set are normally depressed into the baling-case through the feed-opening thereof to deliver the baling material into said baling-case, means to elevate said delivery-end set of rolls, means to sever the web of baling material at the delivery side of said set of rolls when elevated, a reciprocatory plunger to compress the severed portion of the baling material in the case beyond the feed-opening while said set of feed-rolls are elevated, and means movable with said movable set of rolls to depress the severed baling material at its end contiguous to said last-named rolls as the withdrawal-stroke of the plunger occurs.

25. In a self-feeder for baling-presses, a series of sets of feed-rolls of which the delivery-end set are normally depressed into the baling-case through the feed-opening thereof to deliver the material into said baling-case, means to deliver the baling material in the form of a web to the sides of the feed-rolls, and means to retard said web of baling material if passing in excessive volume to the feed-rolls.

26. In a self-feeder for baling-presses, a series of sets of feed-rolls of which the delivery-end set are normally depressed into the baling-case through the feed-opening thereof to deliver the material into said baling-case, means to deliver the material in the form of a web to the sides of the feed-rolls, and retarding mechanism for the material being fed to the rolls if in excessive volume, said mechanism comprising, a series of depending pins, and a vertically-movable guard normally covering said pins and pressing yieldingly down upon the baling material.

27. In a self-feeder for baling-presses, a series of sets of feed-rolls of which the delivery-end set are normally depressed into the baling-case through the feed-opening thereof to deliver the material into said baling-case, means to deliver the material in the form of a web to the sides of the feed-rolls, means to retard the web of baling material if passing in excessive volume to the feed-rolls, and means for holding the upper roll of each set yieldingly depressed.

28. In a self-feeder for baling-presses, a series of sets of feed-rolls of which the delivery-end set are normally depressed into the baling-case through the feed-opening thereof to deliver the material into said baling-case, a conveyer to convey baling material to the first or receiving set of rolls, and means resting yieldingly upon said material to cause it to pass in the form of a web between said receiving sets of rolls.

29. In a self-feeder for baling-presses, a series of sets of feed-rolls of which the delivery-end set are normally depressed into the baling-case through the feed-opening thereof to deliver the material into said baling-case, a conveyer to convey baling material to the first or receiving set of rolls, means resting yieldingly upon said material to cause it to pass in the form of a web between said receiving sets of rolls, and means for retarding the baling material passing to said receiving-rolls if in excessive volume.

30. In a self-feeder for baling-presses, a series of sets of feed-rolls of which the delivery-end set are normally depressed into the baling-case through the feed-opening thereof to deliver the material into said baling-case, guideways connecting said sets of rolls, one of the guideways sloping downward and rearward and having its sides converging rearwardly to condense the baling material passing therethrough, laterally.

31. In a self-feeder for baling-presses, a series of sets of feed-rolls of which the delivery-end set are normally depressed into the baling-case through the feed-opening thereof to deliver the material into said baling-case, guideways connecting said sets of rolls, one of the guideways sloping downward and rearward and having its sides converging rearwardly to condense laterally the baling material passing therethrough, upright antifriction-rollers projecting inwardly of the side walls of the guideways, and horizontal antifriction-rollers protruding below the top of the guideway.

32. In a self-feeder for baling-presses, a series of sets of feed-rolls of which the delivery-end set are normally depressed into the baling-case through the feed-opening thereof to deliver the material to be baled into said baling-case, and means for revolving the feed-rolls.

33. In a self-feeder for baling-presses, a series of sets of feed-rolls, of which the delivery-end set are normally depressed into the baling-case through the feed-opening thereof to deliver the material to be baled into said baling-case, means for driving the lower feed-rolls of each set, shafts driven from said feed-rolls, and telescopic shafts having universal-joint connections at their ends with the last-named shafts and the upper feed-rolls.

34. In a self-feeder for baling-presses, a set of feed-rolls for feeding a web of material into the case and held yieldingly depressed therein, a reciprocatory plunger in the press, means whereby the compression-stroke of the plunger shall effect the elevation of the feed-rolls and material fed thereby, means to sever the web of baling material at the delivery side of the feed-rolls as they attain their elevated positions, means to withdraw the cutting mechanism immediately after the cutting action has occurred, out of the path of the plunger, and means to press the front portion of the web of baling material toward the bottom of the baling-case.

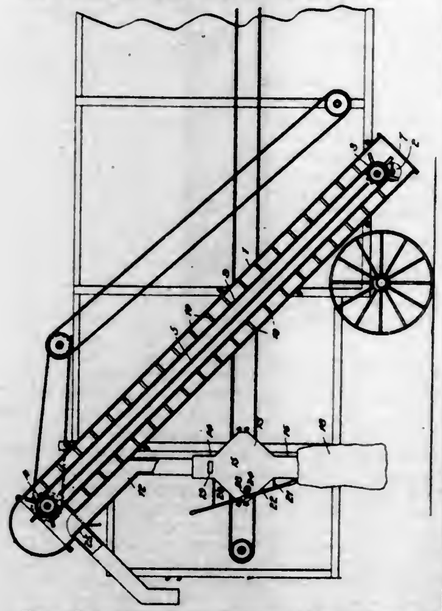
822,916. **SCRIBER.** FREDERICK BRAIS and STEPHEN NADEAU, Cleveland, Ohio. Filed Feb. 20, 1906. Serial No. 302,040.



Claim.—1. In a device of the character described, the combination with a leg adapted to receive a pencil, of a point-carrying leg pivoted to said first-named leg, a keeper carried by the point-carrying leg, a point slidably disposed beneath said keeper and having an upstanding flange at its upper end and a set-screw which passes through a slot formed in the side wall of said leg and is threaded into said upstanding flange.

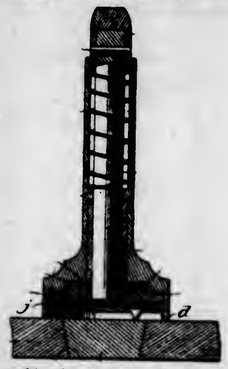
2. A scriber or compass comprising a pencil-carrying leg and a point-carrying leg, means for binding said legs together, an integral web struck from the point-carrying leg and forming a keeper, a point slidably disposed beneath said keeper, an upstanding flange carried by the upper end of said point and lying against the side wall of the point-carrying leg and a set-screw which passes through a slot formed in said side wall and is threaded into said upstanding flange.

822,917. **GRAIN-MEASURING DEVICE.** FREDERICH A. BRINKMANN, Plumhill, Ill. Filed Oct. 8, 1904. Serial No. 227,602.



Claim.—In combination, a conveyer embodying an inclined casing, chutes extending downwardly from the upper end of the casing and arranged at approximately a right angle to each other being joined at their upper ends, one of the chutes extending longitudinally of and at the under side of the conveyer and having measuring means in its length, the adjacent side of the conveyer-casing forming a side of the last-mentioned chute, a valve pivoted at its lower end at the point of jointure of the chutes and adapted to be turned into a position to close either one of the chutes and open the other or vice versa, and a cap pivoted to the upper wall of the casing of the conveyer at its upper end and normally closing such end, said cap when opened admitting of access to the upper end portions of the chutes, the valve arranged at this point, and the upper portion of the conveyer mechanism.

822,918. **BUNG-TIN DRIVER.** EDWARD J. BROOKS, East Orange, N. J. Filed Apr. 18, 1905. Serial No. 256,264.



Claim.—The combination, in a bung-tin driver, of an outer part having a recess in its lower end adapted to receive a bung-tin within it, a lower edge adapted to rest upon a barrel or the like around its bung-hole, and an upwardly-projecting sleeve portion containing an inwardly-projecting flange at mid-height, a normally elevated plunger within said recess beneath which the bung-tin is inserted, a central stem, means for rigidly connecting said plunger and stem including a shoulder-forming sleeve within said sleeve portion beneath said flange, an upwardly-pressing spring surrounding said stem within said sleeve portion above said flange, and an impact-cap attached to the upper end of said stem and forming a shoulder around the same against which said spring reacts.

822,919. **EAR-CARRIAGE DEVICE FOR HORSES.** FRANCIS J. BROWN, Meadowvale, Canada. Filed Feb. 17, 1906. Serial No. 301,699.



Claim.—1. An ear carriage device for horses comprising two spring-arms designed to extend behind the horse's ears, and means for fastening them in position on the horse's head as and for the purpose specified.

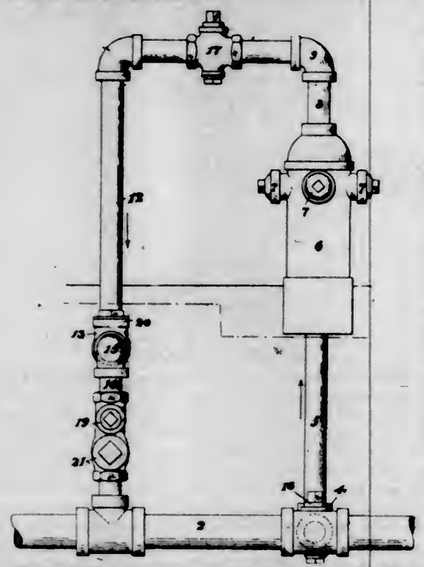
2. An ear-carriage device for horse's comprising two spring-arms designed to extend behind the horse's ears, and a clip device connecting them together and designed to be fastened on the top of the horse's head as and for the purpose specified.

3. An ear-carriage device for horses comprising two spring-arms designed to extend behind the horse's ears, and a clip device connecting the spring-arms together and made in the form of a folded loop designed to straddle the strap of the bridle extending over the horse's head as and for the purpose specified.

4. An ear-carriage device for horses comprising spring-arms having laterally-curved extensions at the free ends designed to fit behind the horse's ears and a device connecting the arms and designed to be fastened to the strap of the bridle at the top of the horse's head as and for the purpose specified.

5. An ear-carriage device for horses comprising spring-arms having laterally-curved extensions at the free ends designed to fit behind the horse's ears, a device connecting the arms and designed to be fastened to the strap of the bridle at the top of the horse's head, the said arms having a curl intermediate of their length and a curl in proximity to the laterally-extending portion and hooks fastened at the rear end of the arms and designed to extend into the curls in proximity to the lateral extension to hold the arms folded back as and for the purpose specified.

822,920. **HYDRANT.** JAMES W. CALLAGHAN, Newark, N. J. Filed June 7, 1905. Serial No. 264,085.

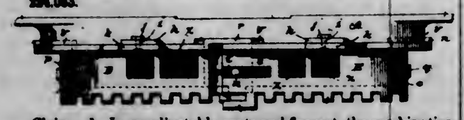


Claim.—1. In a hydrant, the combination with a main, of a pipe branching from the side of said main, a hydrant proper connected to said pipe, a second pipe leading from the top of said hydrant proper to the top of the main and having its end at said main closed, and swing-valves in opposite sides of said second pipe which open into said main and are disposed in the line of the main.

2. In a hydrant, the combination with a main, of a pipe branching from the side of said main, a hydrant proper connected to said pipe, a second pipe leading from the top of said hydrant proper to the top of the main and having its end at said main closed, swing-valves in opposite sides of said second pipe which open into said main and are disposed in the line of the main, and a check-valve in said second pipe adapted to prevent flow toward the hydrant proper.

3. An improved hydrant connection comprising a main, a hydrant, a pipe connecting the main and the hydrant, a second pipe connecting the hydrant and the main, and a valve in the juncture of the second pipe and the main, arranged to be opened by the current in the main.

822,921. **DETACHABLE ADJUSTABLE STOVE-GRATE.** IRVING G. CRAFFIELD, Waterbury, Conn. Filed Sept. 12, 1904. Serial No. 224,063.



Claim.—1. In an adjustable grate and fire-pot, the combination with a frame adapted to fit upon the top of a stove and having lid-openings, and lugs on each side, of four grate and fire-pot sections adjustably attached to said lugs of the frame.

2. In an adjustable grate and fire-pot, the combination with a frame adapted to fit on top of a stove and having extended lugs, of grate and fire-pot sections adjustably attached to said lugs and having overlapping end and side portions and means for adjustably connecting said overlapping portions.

3. In an adjustable grate and fire-pot, of the class described, the combination with a frame having a lid-opening and side lugs, of grate and fire-pot sections adjustably attached to the lugs of the frame and also adjustably connected together.

4. In an adjustable grate and fire-pot, of the class described, the combination with a frame adapted to fit on a stove and having lugs on its sides and suitable lid-openings, of grate and fire-pot sections comprising end and side portions adjustably connected to the lugs of said frame, and means for adjustably securing said side and end portions of said sections together.

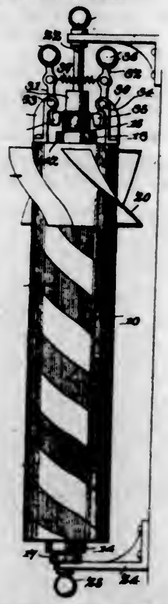
5. In an adjustable grate and fire-pot of the class described, the combination with a frame adapted to fit on the top of a stove and having extended side lugs, of grate and fire-pot sections secured together and adjustable longitudinally and transversely, and means for attaching said sections to the lugs of the frame.

822,922. **WATCH-HOLDER.** HARRY CLARK, St. Paul, Minn. Filed June 7, 1904. Serial No. 211,478.



Claim.—A holder of the class set forth, consisting of two telescopic inclosing sections, the end of one section being closed and arranged obliquely to its upper and lower sides to support the holder in inclined position, and an opening passing through the upper sides of said sections, for the purposes specified.

822,923. **BARBER'S POLE.** WILLIAM T. COBB, Lamonte, Mo. Filed Jan. 31, 1906. Serial No. 298,886.



Claim.—1. In a device of the class described, a stationary shaft, conical collars spaced apart upon said shaft with one of said collars adjustable thereon, a shell having circumferentially-disposed exterior wings and inclosing said shaft between said collars and provided with bearings adjacent to the same, bearing-balls between said collars and bearings, a brake-block bearing upon said adjustable collar, a sleeve adjustable upon said shaft and bearing upon said block, arms swinging from said shell and having shoes at one end for bearing upon said block and weighted at their other ends, and a spring connecting the arms and operating to maintain them normally in inoperative position.

2. In a device of the class described, a stationary shaft, bearing-collars spaced apart upon said shaft, with one of said collars adjustable on the shaft, a shell rotatively mounted upon said bearings and provided with means whereby the same is rotated by the influence of the wind, a brake-block carried by said shaft and bearing upon said adjustable collar, a sleeve adjustable upon said shaft and bearing upon said block, arms swinging from said shell and having shoes at one end adjacent to said block and weighted at the other ends, and yieldable means for holding said shoes out of contact with said brake-block.

3. In a device of the class described, a stationary shaft, bearing-collars spaced apart upon said shaft, a shell rotative upon said bearings, means whereby said shell is rotated by the influence of the wind, a brake-block bearing upon one of said shaft-bearings, a sleeve adjustable upon said shaft and bearing upon said block and levers swinging upon said shell and having shoes at one end for bearing upon said block and weighted at their other ends, and yieldable means for holding said shoes out of contact with said brake-block.

822,924. **BRAKE-SHOE.** FRANK P. COLLIER, Wilmette, Ill. Filed Feb. 20, 1905. Serial No. 246,379.



Claim.—1. A brake-shoe comprising a back plate, lips cut and stamped down from said plate, inserts locked on said lips and closing the openings in said plate, and a body cast around said inserts.

2. A brake-shoe comprising a back plate, a plurality of dovetailed inserts carried by said plate, a pair of yokes cut and stamped up from said plate, and a body cast around said inserts.

3. A brake-shoe comprising a back plate, lips cut and stamped down from said plate, inserts locked on said lips and closing the openings in said plate, a body cast around said inserts, and a pair of yokes cut and stamped up from said plate.

822,925. **BRAKE-SHOE.** FRANK P. COLLIER, Wilmette, Ill. Filed Apr. 1, 1905. Serial No. 253,217.



Claim.—1. A brake-shoe having a transversely-corrugated plate at or adjacent to the back of the shoe.

2. A brake-shoe having a plate at or adjacent to its back, said plate being slitted and the parts between said slits remaining connected integrally at the ends with the plate and being bent outward.

3. A brake-shoe having a plate at or adjacent to its back, said plate being provided with a plurality of slits arranged in pairs and the part located between each pair of slits remaining connected integrally at its ends with the plate and being bent outward.

4. A brake-shoe having a plate provided with alternate and staggered raised and depressed parts at or adjacent to its back.

5. A brake-shoe comprising a plate at or adjacent to its back, said plate being provided with a plurality of slits and the parts between said slits being bent to provide corrugations in the plate.

6. A brake-shoe comprising a plate at or adjacent to its back, said plate being slitted and provided with alternate and staggered raised and depressed parts.

7. A brake-shoe comprising a transversely-corrugated plate, and a body cast on said plate, the body metal being permitted to flow into the depressed parts on the outer face of the plate to lock the plate and body together.

8. A brake-shoe comprising a corrugated plate, a plurality of inserts carried by said plate, and a body cast on said inserts and plate.

9. A brake-shoe comprising a slitted plate having parts thereof depressed, inserts on said depressed parts, and a body cast on said inserts and plate.

10. A brake-shoe comprising a plate having alternate raised and depressed parts, inserts cast on said depressed parts and extending thereover to form a locking connection with the plate, and a body cast on said inserts and plate.

11. A brake-shoe comprising a slitted plate having alternate and staggered raised and depressed parts, dovetailed inserts cast on some of said depressed parts and extending thereover to form a locking connection with the plate, and a body cast on said inserts and plate and extending over the other depressed parts.

12. A brake-shoe consisting of a steel back having a series of U-shaped straps struck down therefrom and a cast-metal body joined to the back by the metal passing over and around the straps.

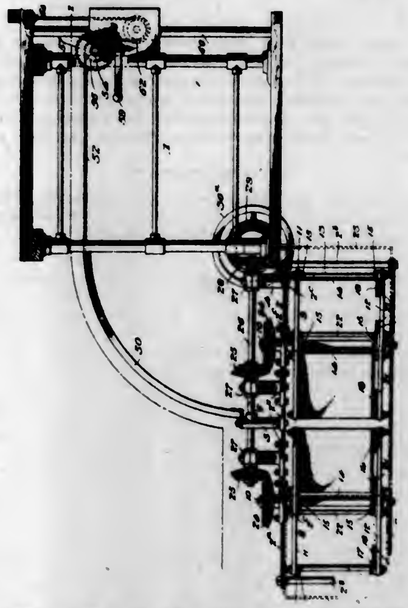
822,926. **KETTLE-CLEANER.** MARY A. DAVIES, Amsterdam, N. Y. Filed Sept. 16, 1905. Serial No. 278,206.

Claim.—1. A dish and kettle cleaner consisting of a single strip of sheet metal bent to form from one end portion a ring, and from the other end portion a V-shaped handle, one end extremity of the strip being firmly secured to the body of the strip to give rigidity to the ring, and the other end extremity of the strip being secured to the ring portion to give rigidity to the handle.



2. A dish and kettle cleaner comprising a solid ring, and a V-shaped handle firmly secured to, and projecting from, one side of the ring, the end edges of the ring and handle being in the same plane with each other.

822,927. **WATER-WHEEL.** CYRUS S. DEAN, Fort Erie, Canada, assignor to Albert D. Jamieson, Buffalo, N. Y. Filed Apr. 11, 1905. Serial No. 255,016.



Claim.—1. In a water-wheel raising and lowering mechanism, the combination with a water-wheel frame and means for hinging or pivoting said frame so that it may be bodily lowered into the water or raised therefrom, of an arc-shaped bar secured to the water-wheel frame and movable therewith, and a flexible connection connected to the water-wheel frame and lying on the arc-shaped bar aforesaid and adapted to be pulled or drawn upon to raise or lower the water-wheel frame.

2. In a water-wheel raising and lowering mechanism, the combination with a water-wheel frame and means for hinging or pivoting said frame so that it may be bodily lowered into the water or raised therefrom, of an arc-shaped bar secured to the water-wheel frame and movable therewith and lying in the arc of a circle whose center is the pivotal point of the frame, a flexible connection secured to the water-wheel frame and lying loosely on the arc-shaped bar, and means for drawing up or letting out said flexible connection to raise or lower the water-wheel frame.

3. In a water-wheel raising and lowering mechanism, the combination with a water-wheel frame and means for hinging or pivoting said frame so that it may be bodily lowered into the water ro raised therefrom, of an arc-shaped bar secured to the water-wheel frame and movable therewith, a flexible connection secured to the water-wheel frame and lying loosely on the arc-shaped bar, and a counterbalance coöperating with a free portion of said flexible connection.

4. In a water-wheel raising and lowering mechanism, the combination with a water-wheel frame and means for hinging or pivoting said frame so that it may be bodily lowered into the water or

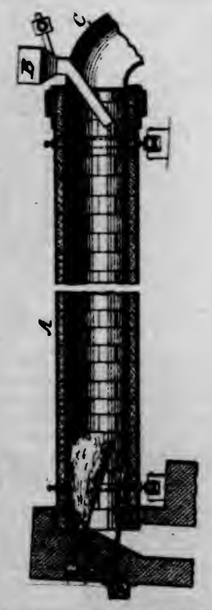
raised therefrom, of an arc-shaped bar secured to the water-wheel frame and movable therewith, a flexible connection secured to the water-wheel frame and lying loosely on the arc-shaped bar, a counterbalance coöperating with a free portion of said flexible connection, and mechanism for drawing up or letting out said flexible connection to raise or lower the water-wheel frame, said mechanism coöperating with the flexible connection between the counterweight and the arc-shaped bar.

822,928. SCRAPER. JOHN F. DELANO, New Bedford, Mass. Filed Jan. 5, 1905. Serial No. 239,808.



Claim.—A scraper including a blade and handle member arranged at an obtuse angle with relation to each other, the blade having on its inner face a boss provided with a curved recess, there being a threaded opening extending through the boss and blade, and the handle member having a rounded shoulder fitting within the recess and a threaded shank fitting within said threaded opening in the blade.

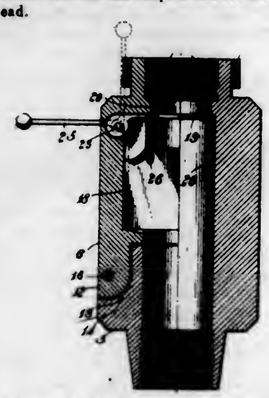
822,929. NODULIZING ORES, &c. CARL DELLWIK, London England, assignor to J. Edward Goldschmid, Frankfort-on-the-Main, Germany. Filed Mar. 22, 1906. Serial No. 307,367.



Claim.—The method of heating kilns for the nodulizing of ores, metalliferous residues, and the like, which consists in limiting the nodulizing or sinterizing zone to a relatively short distance from the discharge end by the employment of a flame of intense calorific power at said discharge end, and supplying the additional heat necessary for the preliminary stages of the operation by a flame of lower-grade fuel and of relatively inferior temperature of combustion; substantially as described.

822,930. CASING-HEAD FOR OIL-WELLS. JOSHUA R. EDDY and RICHARD F. HARLEY, Sistersville, W. Va., assignors of one-third to said Eddy, one-half to Perley S. Smith, and one-sixth to Harriet E. Smith, Sistersville, W. Va. Filed Feb. 16, 1906. Serial No. 301,419.

Claim.—1. A tubular-casing head comprising stationary and movable sections provided with discharge-apertures, and a valve carried by one of said sections and adapted to close the adjacent end of the casing-head.



2. A tubular-casing head comprising stationary and movable sections having discharge-apertures formed in the side walls thereof, and a valve carried by the movable section for closing the adjacent end of the casing-head.

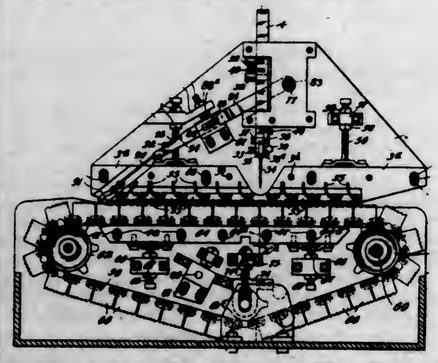
3. A tubular-casing head comprising stationary and movable sections provided with lateral discharge-apertures, a rock-shaft carried by the movable section and provided with an operating-handle, and a valve secured to the rock-shaft and adapted to close the adjacent end of the casing-head.

4. A tubular-casing head comprising stationary and movable sections provided with lateral discharge-apertures, a seating-recess formed in the movable section, a valve seated in said recess and adapted to close the adjacent end of the casing-head, and a weighted lever secured to the valve for operating the same.

5. A tubular casing comprising stationary and movable sections provided with lateral discharge-apertures, one of said sections being provided with a seating-recess having an opening communicating therewith, a valve seated in the recess and provided with a reduced shank movable between the walls of said opening, a rock-shaft secured to the valve and provided with a handle for actuating the valve to close one end of the casing-head, and means for clamping the sections together.

6. A tubular-casing head comprising a stationary section having a socket formed therein, a movable section provided with a reduced extension pivotally mounted within the socket, a valve pivoted to the movable section and adapted to close the adjacent end of the casing-head, there being a plurality of discharge-apertures formed in the walls of said sections and means for clamping the sections together.

822,931. FILLED-SACK-SEWING MACHINE. MILTON C. ELLISON, St. Paul, Minn. Filed Sept. 23, 1904. Serial No. 225,504.



Claim.—1. In a machine of the character described, the combination with a guide-channel for the work, said channel having at one side a yielding flexible bearing-surface, of an endless feed connection having serrated feed clips or parts that press the work against said yielding bearing-surface and feed the same through said guide-channel an unyielding guide-bar operating on said chain to hold the clips against the work in said guide-channels, and stitch-forming mechanism for action on the work while in said guide-channel, substantially as described.

2. In a machine of the character described, the combination with stitch-forming mechanism, of a guide-channel leading thereto, said channel having at one side a yielding sectional bearing-surface, a supporting-bar to which the sections of said yielding bearing-surfaces are yieldingly connected, said supporting-bar being adjustable transversely of said guide-channel, an endless chain having serrated clips projecting into said guide-channel for engagement with the work, sprocket-wheels for guiding and driving said chain, and a relatively fixed guide-bar extending parallel to said yielding bearing-surface, and hold the operative clips to their work, substantially as described.

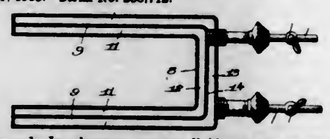
3. In a machine of the character described, the combination with stitch-forming mechanism, and a guide-channel leading thereto, of an endless chain having serrated feed-clips projecting into said guide-channel, and a yielding flexible presser-bar coöperating with the serrated edges of said feed-clips, to press the work, the said bar comprising a plurality of sections 53 placed end to end and having limited movements into said guide-channel, and the spring-sections 55 yieldingly connecting said sections 53 to a fixed support, and overlapping the joints between the same, substantially as described.

4. In a machine of the character described, the combination with stitching mechanism and feeding mechanism, involving an endless chain having serrated clips, of a gathering device comprising a pair of pawls, adjustably and slidably fulcrumed at their intermediate portions and provided with longitudinally-adjustable spring free end sections, and a pair of simultaneously-driven eccentrics operating on said pawls to simultaneously vibrate the same, substantially as described.

5. In a machine of the character described the combination with stitching mechanism and feeding mechanism a gathering device, comprising a pair of pawls adjustably and slidably fulcrumed at their intermediate portions, and a pair of simultaneously-driven eccentrics operating on the ends of said pawls to vibrate the same, substantially as described.

6. In a machine of the character described the combination with an endless chain having serrated feed-clips, of a presser-bar coöperating with the serrated edges of said clips to press the work as it is fed forward, which presser-bar is formed by a plurality of spring-mounted sections, placed end to end, an unyielding guide-bar extended parallel with said presser-bar, against which the said chain runs, a stitch-forming mechanism acting on the work while subject to said clips and presser-bar, substantially as described.

822,932. BURNER FOR GAS-RANGES. CHARLES ENNIS, Boston, Mass., assignor of one-half to Frank L. Golding, Boston, Mass. Filed May 3, 1905. Serial No. 258,712.



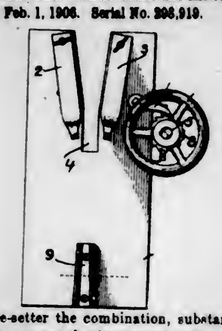
Claim.—1. In a burner, two parallel burner-tubes, each divided longitudinally into two separate compartments, one compartment of each burner-tube being connected to the corresponding compartment of the other burner-tube, each burner-tube having two parallel rows of burner-openings, the openings of one row communicating with one compartment and those of the other row communicating with the other compartment, the burner-openings which communicate with one pair of connected compartments being larger than those communicating with the other pair of connected compartments, and two independent valves to supply gas to the two compartments of each tube respectively.

2. In a burner, two parallel burner-tubes, each divided longitudinally into two compartments, a head or cross piece connecting the burner-tubes and also divided into two compartments which connect with the two compartments of each of the tubes, each burner-tube having two parallel rows of burner-openings, the openings of one row leading into one compartment and those of the other to the other compartment, and the openings of one row of each burner-tube being larger than those of the other, and a valve-supply connection leading to each compartment of the cross-piece.

3. In a burner, a burner-tube divided by a longitudinal partition into two separate compartments, said tube having burner-openings leading to each compartment, the burner-openings leading to one compartment being larger than those leading to the other, and two independent valves to supply gas independently to each compartment.

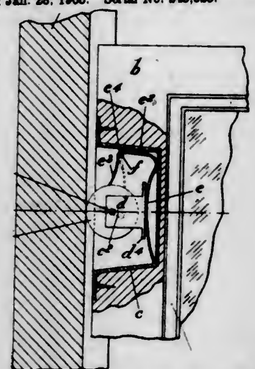
4. In a burner, two burner-tubes each divided by a longitudinal partition into two separate compartments, said tubes having burner-openings leading to each compartment, the burner-openings leading to one compartment being larger than those leading to the other, and two independent valves to supply gas independently to each compartment.

822,933. TIRE-SETTER. JESSE EVANS and MINOR EVANS, Hamilton, Ohio. Filed Feb. 1, 1906. Serial No. 299,919.



Claim.—In a tire-setter the combination, substantially as set forth, of an upright flat support having a notch in its upper end and an upwardly-narrowing groove opening outwardly below the notch, a pair of separated clamps fixedly secured to the support at the sides of the notch and presenting gripping-jaws downwardly above the level of the base of the notch at each side thereof, a perforated spindle journaled on the support at one side of the pair of clamps, a ratchet on the spindle, and a pawl pivoted on the support and engaging the ratchet.

822,934. WINDOW-SASH HOLDER. WILLIAM F. EVANS, Evergreen, N. Y., assignor of one-half to Joseph H. Debragga, Evergreen, N. Y. Filed Jan. 28, 1905. Serial No. 243,023.

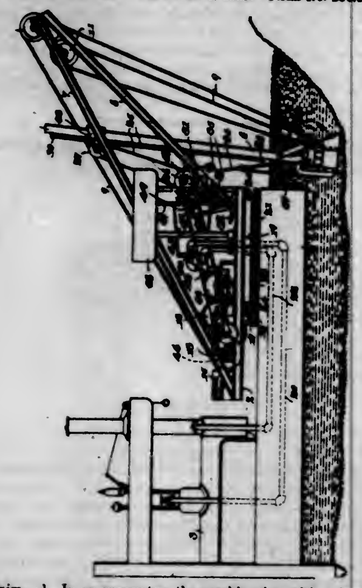


Claim.—1. A window frame and sash, one of said parts being provided with a metal casing which is set thereinto, a yoke-shaped wheel-holder mounted in said casing and movable toward and from the other part, a wheel mounted in said yoke-shaped wheel-holder and adapted to bear on said other part, and a curved plate-spring placed vertically in the back of said casing and adapted to force the wheel-holder outwardly, one end of said spring being extended outwardly and formed into an inwardly-directed pawl or finger adapted to bear on the perimeter of said wheel, substantially as shown and described.

2. In a device of the class described, a casing adapted to be set into a window sash or frame, a yoke-shaped wheel-holder mounted in said casing and movable outwardly, a wheel mounted in said yoke-shaped wheel-holder, and a curved plate-spring placed vertically in the back of said casing and adapted to force the wheel-holder outwardly, one end of said spring being directed outwardly and formed

into an inwardly-directed spring-pawl adapted to bear on said wheel, substantially as shown and described.

822,935. EXCAVATOR. JAMES G. FAIRBANKS and GEORGE L. SAUER, Marion, Ohio. Filed Nov. 6, 1905. Serial No. 286,061.



Claim.—1. In an excavator, the combination with a derrick, of a hoisting-drum, a backing-drum, a thrusting-drum, a swinging and endwise-movable dipper-arm, a hoisting-cable between the dipper-arm and the hoisting-drum, a backing-cable between the backing-drum and the dipper-arm, and thrusting-cables wound in opposite directions around the thrusting-drum and connected to opposite end portions of the dipper-arm.

2. In an excavator, the combination with a derrick, of a swinging and endwise-movable dipper-arm, a hoisting-drum, a cable between the drum and the dipper-arm, a thrusting-drum, cables extending in opposite directions from the thrusting-drum and connected to opposite end portions of the dipper-arm, an engine coupled to the hoisting-drum, a drive connection between the hoisting-drum and the thrusting-drum, and a clutch for controlling the drive connection of the thrusting-drum.

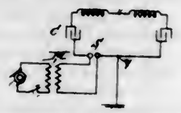
3. In an excavator, the combination with a derrick, of a dipper having a dipper-arm, hoisting means for the dipper, a drum independent of the dipper-arm, pulleys carried by the derrick, a cable wound around the drum with its end portions extending therefrom and passing in opposite directions around the respective pulleys, one end of the cable being connected to the lower end portion of the dipper-arm and the other end of the cable being connected to the upper end portion of the dipper-arm, and a brake for the drum.

4. In an excavator, the combination with a derrick, of a pair of pulleys mounted in transverse alinement thereon, a guide journaled in alinement with the axes of the pulleys, a dipper-arm working endwise through the guide and capable of swinging therewith, a drum, a cable wound upon the drum with its end portions extending therefrom and passing in opposite directions around the respective pulleys with the ends of the cable connected to opposite end portions of the dipper-arm, and a brake for the drum.

5. In an excavator, the combination with a derrick, of a dipper and its arm, dipper-hoisting means including an engine, pulleys upon the derrick, a drum, cables extending from opposite sides of the drum and running in opposite directions around the respective pulleys, one cable being connected to one end of the dipper-arm and the other cable connected to the other end of said arm, a brake for the drum, and driving mechanism between the engine and the drum and including a reversing-clutch.

6. In an excavator, the combination with a derrick, of a dipper and its arm, pulleys upon the derrick, a drum, cables extending from opposite sides of the drum and running in opposite directions around the respective pulleys, one cable being connected to one end of the dipper-arm and the other cable connected to the other end of the arm, an engine, and a drive connection between the engine and the drum including a reversing-clutch.

822,936. WIRELESS-TELEGRAPH SYSTEM. LEE DE FOREST, New York, N. Y. Filed Feb. 2, 1906. Serial No. 299,091.



Claim.—1. A monoperiodic wireless-telegraph system comprising an antenna system, and a closed oscillating circuit connected thereto and so constructed and arranged that the two paths from the top of the antenna to earth are equal in natural period.

2. A monoperiodic wireless-telegraph system comprising an antenna system, and a closed oscillating circuit connected thereto and so constructed and arranged that the two paths from the top of the antenna to earth are identical.

3. A monoperiodic wireless-telegraph system comprising an antenna system, and a closed oscillating circuit connected thereto and so constructed and arranged that the two paths from the top of the antenna to earth have equivalent effective capacity and effective inductance.

4. In a wireless-telegraph system, a closed oscillating circuit having a definite natural period and consisting of two parts, each of which has the same natural period as said closed oscillating circuit, and an antenna system connected to said closed oscillating system between the two parts thereof, the antenna system having the same natural period as said closed oscillating circuit and the two paths to earth from the top of said antenna system each being equal in period to said closed oscillating circuit.

5. In a wireless-telegraph system, a closed oscillating circuit having a definite natural period and consisting of two parts, a capacity and an inductance included in each of said parts and so proportioned that the product of the capacity of one part by the inductance of the same part is equal to the product of the capacity of the other part by the inductance of said other part, and an antenna system connected to said closed oscillating circuit between the two parts thereof and having a natural period equal to that of said closed oscillating circuit.

6. In a wireless-telegraph transmitting system, an antenna system, a closed oscillating circuit connected thereto and so constructed and arranged that the two paths from the top of the antenna to earth are equal in natural period, and means associated with said oscillating circuit for causing the same to execute electrical oscillations.

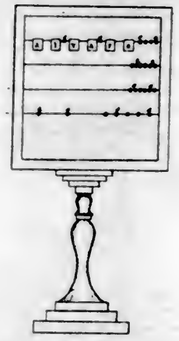
7. In a system for developing and radiating monoperiodic electromagnetic waves, an antenna, a circuit including a capacity, an inductance and a spark-ball connected thereto at a point, another circuit including a capacity, an inductance and a spark-ball connected to the antenna system at the same point, the capacities and inductances of said circuits being so proportioned that the said circuits are equal in natural period, a third spark-ball located between said spark-balls and an earthed conductor connected to said third spark-ball.

8. In a wireless-telegraph transmitting system, an antenna system, a closed oscillating circuit connected thereto and so constructed and arranged that the two paths from the top of the antenna to earth are identical, and means associated with said oscillating circuit for causing the same to execute electrical oscillations.

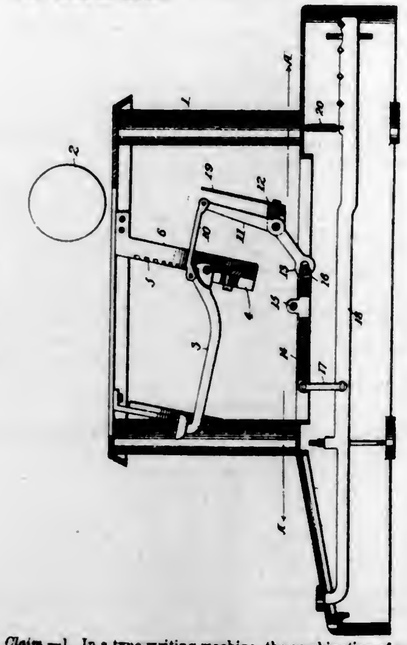
9. In a wireless-telegraph transmitting system, an antenna system, a closed oscillating circuit connected thereto and so constructed and arranged that the two paths from the top of the antenna to earth have equivalent effective capacity and effective inductance, and means associated with said oscillating circuit for causing the same to execute electrical oscillations.

822,937. TABLE OF MOVABLE CHARACTERS FOR THE TEACHING AND PRACTICING OF READING. ALVARO J. DE FREITAS, Lisbon, Portugal. Filed Nov. 1, 1905. Serial No. 285,493.

Claim.—An open frame having wires stretched across the same, balls slidably arranged on said wires and squares of metal having characters on the surfaces thereof, one end of each of said squares being turned over to form a hook so that said squares may be hung on the wires.



822,938. TYPE-WRITING MACHINE. CARL GABRIELSON, Worcester, Mass., assignor to L. C. Smith and Bros. Typewriter Company, Syracuse, N. Y., a Corporation of New York. Filed Feb. 18, 1903. Serial No. 143,897.



Claim.—1. In a type-writing machine, the combination of a series of parallel key-levers, a series of sublevers arranged closer together than the key-levers and a second series of sublevers connected respectively to the sublevers of the first-named series and to the key-levers, the sublevers of said second series having intermediate bearings arranged in line with their said connections whereby a rocking tendency is prevented.

2. In a type-writing machine, the combination of a series of key-levers, a series of upright sublevers arranged closer together than the key-levers, and a series of horizontal sublevers arranged in fan form each horizontal sublever being connected at one end with a key-lever and at the other end with an upright sublever and having its operative points in a straight line.

3. In a type-writing machine, the combination of a series of key-levers, a series of upright sublevers arranged closer together than the key-levers, a series of horizontal sublevers connecting the key-levers with the upright sublevers, and intermediate bearings for said horizontal sublevers, the bearing or connecting portions of each horizontal sublever being in parallel planes and being arranged in substantially a straight line, whereby rocking tendency is prevented.

4. In a type-writing machine, the combination of a series of front-strike type-bars, a series of upright sublevers, a series of key-levers, said sublevers being arranged closer than the key-levers, a series of horizontal sublevers, connections between the upright sublevers and the type-bars, and connections between the horizontal sublevers and the key-levers, the said horizontal sublevers being arranged in fan form and each of said levers having its operative points in a straight line.

5. In a type-writing machine, a type-bar joint comprising a hanger, a hardened-steel ring having a working fit in said hanger, a type-bar having a U-section embracing said hanger and ring and a rivet passing through the type-bar and ring and rigidly connecting the same.

822,939. GARMENT CLASP OR SUPPORTER. MARSHALL B. GARDNER, Aurora, Ill., assignor to S. Florsheim & Son, Chicago, Ill., a Firm. Filed Apr. 28, 1905. Serial No. 257,928.



Claim.—1. In a garment-clasp, the combination with a rigidly-supported button member, of a clamping member, comprising a base-plate, jaws pivoted thereon and an operating member adapted to engage the jaws at either side of their pivot whereby to positively open or close them upon the button.

2. In a garment-clasp, the combination with a rigidly-supported button, the support being hinged, of a pair of clamping-jaws, a base-plate upon which said jaws are pivoted between their ends, and means for operating said jaws to bring them into lateral clamping relation to the button.

3. In a garment-clasp, the combination with a rigid button-support, a base-plate having a button-aperture, a pair of clamping-jaws pivotally mounted on the base-plate, and a slide coöperating with said jaws for bringing them into and out of locking relation to the button, substantially as described.

4. In a garment-clasp, the combination with a button-support hinged at one end and carrying a button on its opposite end, a base-plate having a button-aperture adapted to receive the button, clamping-jaws pivoted between their ends on the base-plate and having their forward ends constructed to provide clamps, and means for opening and closing said jaws, said means serving to hold the jaws in the closed position, substantially as described.

5. In a garment-clasp, the combination with the button member, the base-plate and the pivoted clamping-jaws, of a slide embracing the base-plate and jaws and movable along the latter across the pivot whereby to partially open and close the jaws, substantially as described.

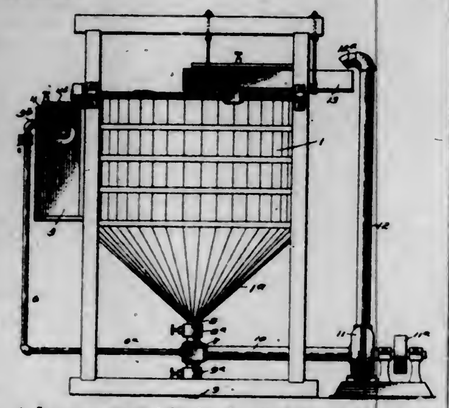
822,940. APPARATUS FOR RECOVERING PRECIOUS METALS. EDWARD J. GARVIN, Portland, Oreg., assignor to The Garvin Cyanide Extraction Company, Portland, Oreg., a Corporation. Filed Jan. 15, 1906. Serial No. 296,149.

Claim.—1. In an apparatus of the class described, the combination with a main tank for receiving the pulverized ore and solvent, of a precipitating-tank, including means for separating the material, attached to the main tank near its top, and an amalgamating-tank including means for amalgamating the material suspended above the main tank, a hopper or funnel suspended within the main tank, and a spreading-cone on the bottom of the main tank, and means for causing a continuous circulation of the materials and solution through said tanks.

2. In an apparatus of the class described, the combination with a main tank and a precipitating-tank into which the main tank discharges and an amalgamating-tank which discharges into the main tank, and means for causing a continuous circulation of fluids through said tanks, of a funnel-shaped hopper suspended within the main tank and discharging at a point below the outlet to the main tank, substantially as shown and described.

3. In an apparatus of the class described, the combination with a main tank and a precipitating-tank into which the main tank discharges and an amalgamating-tank which discharges into the main

tank, and means for causing a continuous circulation of fluids through said tanks, of a funnel-shaped hopper suspended within the main tank and discharging at a point below the outlet to the main tank, and a cone-shaped spreader supportable in the bottom of the main tank directly under the suspended funnel, substantially as shown and described.



4. In an apparatus of the class described, the combination with a main tank and a precipitating-tank into which the main tank discharges, and an amalgamating-tank which discharges into the main tank and means for causing a continuous circulation of fluids through said tanks, of a cone-shaped spreader supportable on the bottom of the tank, substantially as shown and described.

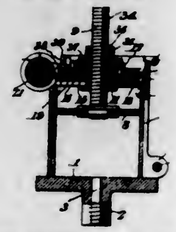
5. In an apparatus of the class described, the combination with a main tank and an amalgamating-tank discharging into the main tank, of a precipitating-tank into which the main tank discharges, said precipitating-tank comprising a rectangular casing, a pair of shafts spaced apart and rotatably mounted in the casing, sprocket-wheels carried by said shafts, endless chains taking over said sprocket-wheels, a plurality of metallic strips connecting said endless chains, means for turning said shafts on their axes, a pair of anode-plates projected downwardly into said casing with their lower edges above the bottom thereof, a supplemental plate projected upward from the bottom of said casing with its upper edges below the upper edge of the casing, a mercury-pocket at the bottom of said casing into which the endless chains and the metallic strips are adapted to dip, an outlet for said casing, and means for causing a continuous circulation of fluids through all of said tanks, substantially as shown and described.

6. In an apparatus of the class described, a tank or receptacle, said tank or receptacle having a concaved bottom, a rotatable shaft mounted within said receptacle near the bottom, a similar shaft mounted in said receptacle near the top, sprocket-wheels carried by said shafts, endless chains passing over said sprocket-wheels, and a plurality of metallic strips carried by said endless chains, said concaved bottom adapted to hold an amalgamating substance, said strips adapted to be passed through said amalgamating substance, and means for rotating said shafts to carry said strips through said amalgamating substance, substantially as shown and described.

7. In an apparatus of the class described, a tank or receptacle, said tank or receptacle having a concaved bottom, a rotatable shaft mounted within said receptacle near the bottom, a similar shaft mounted in said receptacle near the top, sprocket-wheels carried by said shafts, endless chains passing over said sprocket-wheels, and a plurality of metallic strips carried by said endless chains, said concaved bottom adapted to hold an amalgamating substance, said strips adapted to be passed through said amalgamating substance, means for rotating said shafts to carry said strips through said amalgamating substance, a pair of anode-plates held within said receptacle and spaced from the bottom thereof, a supplemental plate held within said receptacle with its upper edge below the upper edge of the first-mentioned anode-plates and its lower edge engaging the bottom of the receptacle, substantially as shown and described.

822,941. MECHANICAL MOVEMENT. CHRISTIAN G. CLAUSEN, Shayenne, N. D. Filed Mar. 31, 1905. Serial No. 253,270.

Claim.—1. A hub supported for rotation and having a threaded aperture, a piston-carrying feed-screw extending through the latter, a pair of gear-disks engaging the hub and having different numbers of teeth, one of said gear-disks being connected for rotation with the hub and the other with the feed-screw, a worm meshing with said gears, and means for operating said worm.



2. A piston having a swiveled feed-screw, a hub engaging said feed-screw and having a flange at its upper edge and an annular groove near its lower edge, a slotted supporting-plate engaging the groove in the hub and supporting the latter for rotation, a pair of gear-disks having different numbers of teeth mounted upon the hub between the supporting-plate and the flange at the upper edge of the hub, one of said disks being connected for rotation with the hub, a collar having slidable connection with the feed-screw, and means whereby said collar is connected for rotation with the other gear-disk.

3. A supporting-plate, a hub having rotary engagement with said plate, a piston-carrying feed-screw having threaded engagement with the hub, gear-disks mounted upon the hub and having unequal numbers of teeth, one of said gear-disks being connected for rotation with the hub and the other with the feed-screw, a shaft supported for rotation and having a worm engaging the gear-disks, a ratchet-wheel upon the worm-carrying shaft, and a pendulum carrying a pawl engaging said ratchet-wheel.

4. A piston, a screw-threaded stem swiveled in said piston, a hub engaging said screw-threaded stem and having an annular flange at its upper edge and an annular groove near its lower edge, a notched supporting-plate engaging said groove, a collar loosely engaging the feed-screw and having a tooth engaging a longitudinal groove in the latter, said collar resting loosely upon the hub, a pair of gear-disks engaging said hub between the flange and the supporting-plate, said disks having unequal numbers of teeth, means connecting said gear-disks for rotation, respectively, with the hub and with the feed-screw, a torsion-spring engaging the collar upon the feed-screw to retain said collar in position for operation, and a suitably supported and operated worm engaging the gear-disks.

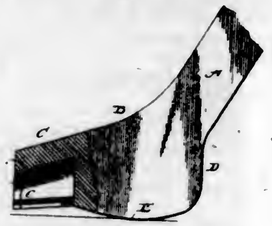
822,942. IGNITING DEVICE. WILLIAM B. GOODWIN, Columbus, Ohio. Filed Mar. 10, 1905. Serial No. 249,337.



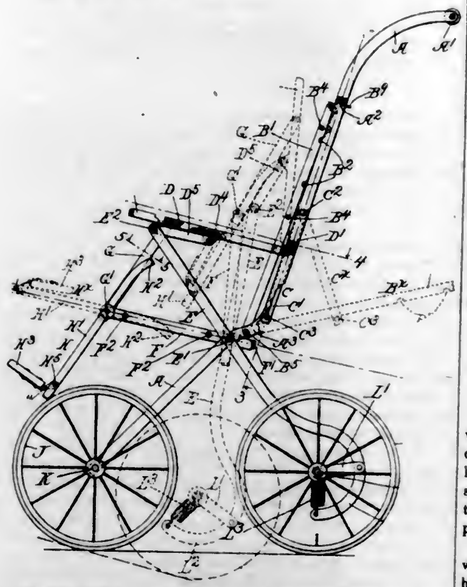
Claim.—In a device of the character set forth, the combination with an outer casing having a hinged cover, of a receptacle adapted to contain a plurality of combustible pellets, a hollow cap mounted on the receptacle adapted to receive and retain one of said combustible pellets, said cap having an open upper side, a slide having an opening therethrough slidably mounted between the receptacle and the cap, a spring which normally holds the opening in said slide out of alinement with the opening in the cap, said slide being adapted to be manually operated to bring the opening in the slide into alinement with the opening of the cap, and said slide being free to return to its normal position when released, the slide and the pellet-containing receptacle being entirely inclosed by the outer box or casing when the cover of the latter is closed.

822,948. SPIKE-EXTRACTOR. JOHN W. GORSUCH, La Junta, Colo. Filed Aug. 7, 1905. Serial No. 273,194.

Claim.—The spike-extractor described comprising a handle-bar, and a body formed integral with the handle-bar at the lower end thereof and disposed at an obtuse angle to said bar; the said body having a claw at its forward end, the top of which is closed and the depending sides of which are flat and inclined upwardly and rearwardly at their under sides and are provided with rearwardly converged, beveled edges, and also having a heel at its rear end arranged parallel to said forward end, and a convex portion intermediate the rear end of the claw and the heel and reaching below the same.



822,944. GO-CART. LEWIS P. HALLADAY, Streator, Ill. Filed July 27, 1905. Serial No. 271,429.



Claim.—1. In a collapsible go-cart, the combination of a supporting-framework comprising two substantially centrally pivoted hollow frames adapted to be drawn together when the device is collapsed, with a seat, a back, said back pivoted to the framework at its lower end, and a clip to secure the upper end of the back to the framework.

2. In a collapsible go-cart, the combination of a supporting-framework comprising two substantially centrally pivoted hollow frames adapted to be drawn together when the device is collapsed, with a seat and a back, said back pivoted to the framework at its lower end so as to be swung backwardly, a rod against which the back lies in its various inclined positions, and links connecting the rod with one of said frames.

3. In a collapsible go-cart, the combination of a supporting-framework comprising two substantially centrally pivoted hollow frames adapted to be drawn together when the device is collapsed, with a seat, a back, a foot-rest having a substantially upright and a horizontal position, and a spring-latch to hold the same in either position.

4. In a collapsible go-cart, the combination of a supporting-framework comprising two substantially centrally pivoted hollow frames adapted to be drawn together when the device is collapsed, with a seat, arm-rests, a foot-rest, and links connecting the seat and arm-rests pivoted to the seat having an extension with a spring-latch to engage the said links on the seat.

5. In a collapsible go-cart, the combination of a collapsible framework, with a seat and a pivoted foot-rest comprising an extension having a spring-latch adapted to engage part of the go-cart so as to hold the foot-rest in substantially vertical or horizontal position.

6. In a collapsible go-cart, the combination of a framework comprising two centrally-pivoted frames, and means for locking such frames in their open positions, such means comprising pivoted connecting parts lying substantially parallel when the device is in its open position.

7. In a collapsible go-cart, the combination of a framework comprising two centrally-pivoted frames with arms pivoted to one of such frames, and a link pivoted to the other and to such arm, and lying substantially parallel with such arm.

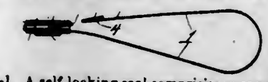
8. In a collapsible go-cart, the combination of two pivoted frames with arms pivoted to one of such frames, links connecting the other frame with said arms, said links lying under and along the arms.

9. In a collapsible go-cart, the combination of two pivoted frames with arms pivoted to one of such frames, links connecting the other frame with said arms, said links lying under and along the arms, a seat pivoted to the frames, and links from the arms to the seat.

10. In a collapsible go-cart, the combination of a framework comprising two centrally-pivoted frames, a seat pivoted to such frames at the back, pivoted arm-rests, a link connecting the forward part of the seat with such arms, a foot-rest pivoted to the forward part of such seat, and having an upwardly-extending member lying along and engaging with such link when the foot-rest is in its substantially vertical position.

11. In a collapsible go-cart, the combination of a framework comprising two centrally-pivoted frames, a seat pivoted to such frames at the back, pivoted arm-rests, a link connecting the forward part of the seat with such arms, a foot-rest pivoted to the forward part of such seat, and having an upwardly-extending member to engage with such link, such member of elastic material and adapted to engage with the seat when the foot-rest is in its horizontal position.

822,945. SELF-LOCKING SEAL. WILLIAM F. HARRIS, South Bend, Ind. Filed Mar. 27, 1905. Serial No. 252,166.



Claim.—1. A self-locking seal comprising a securing-strap provided at its opposite ends with interlocking catches; a sheath secured to one end encompassing the catch at that end and having a longitudinal passage through which the strap is reflexed, one wall of said passage having an aperture, and a fusible substance by which the sheath is secured to the strap at the part extending through said passage, said fusible substance extending into said aperture.

2. A self-locking seal comprising a securing-strap provided with an interlocking catch at the opposite end portions; a sheath or body secured to one of the end portions encompassing the catch thereat and having a longitudinal passage, the strap being reflexed at one end of the sheath and extended through said longitudinal passage, the outer wall of said passage being apertured, and a fusible substance by which the strap is secured to the sheath in said passage, said fusible substance extending into said aperture and being exteriorly exposed thereat.

3. A self-locking seal comprising a securing-strap sharply folded upon itself at both end portions to form spring-catches, one of said end portions being folded at a second point back upon the main body of the strap at the side on which the catch stands, to cause the catch to be embraced between the two parts trending from said second fold, and a sheath or body having extended from end to end through it two passages or paths separated by a diaphragm, the strap having the end which carries the reflexed catch inserted through one of said passages, while the main body of the strap extends through the other, the second fold of the strap being stopped at the end of the diaphragm, and means securing the strap to the sheath in the last-mentioned passage.

4. A self-locking seal comprising a sheath having a longitudinal passage; a strap having a spring-catch at one end, said end being inserted in the longitudinal passage of said sheath, and the strap

being reflexed outside said passage, and means securing the sheath and strap together, the opposite end of the strap having a coöperating spring-catch adapted to be inserted in the sheath.

5. A self-locking seal comprising a strap having its ends reflexed to form coöperating spring-catches; a sheath secured to one end portion of the strap encompassing the spring-catch and adapted to receive the other end, said sheath consisting of a piece of sheet metal folded upon itself at both ends, the ends being lapped by each other, the strap being secured between the two lapped ends.

6. A self-locking seal comprising a securing-strap provided at its opposite ends with interlocking catches; a sheath having two longitudinal passages in one of which the catch at one end of the strap is lodged, the strap being reflexed upon itself and extended through the other passage; a frangible substance adapted to be applied in plastic condition and to harden for securing the sheath to the strap, said substance being applied in said last-mentioned passage, one wall of said passage being apertured and said substance being extended into the aperture.

7. A self-locking seal comprising a securing-strap provided with interlocking catches at its opposite end portions; a sheath or body secured to one of said end portions encompassing the catch thereat, and having in addition to said encompassing portion a longitudinal passage, the strap being reflexed at one end of the sheath and extended through said longitudinal passage, the outer wall of said passage having an aperture, and a fusible substance by which the sheath is secured to the strap at said aperture, said substance entering the aperture and having an exposed imprint.

8. A self-locking seal comprising a securing-strap provided with interlocking catches at its opposite end portions; a sheath or body secured to one of said end portions encompassing the catch thereat, and having in addition to said encompassing portion a longitudinal passage, the strap being reflexed at one end of the sheath and extended through said longitudinal passage, the outer wall of said passage having an aperture, and a frangible substance by which the sheath is secured to the strap at said aperture, said substance entering the aperture and having an exposed imprint.

9. A self-locking seal comprising a strap having its ends reflexed to form coöperating spring-catches; a sheath secured to one end portion of the strap encompassing the spring-catch at that end, the strap being reflexed at one end of the sheath so as to embrace a wall of the latter and extending along the opposite side of said wall from the spring-catch, the catch at the opposite end of the strap being adapted to enter the sheath at the same side of said wall as the first-mentioned catch to engage the latter.

10. A self-locking seal comprising a sheath having a longitudinal passage; a strap having a spring-catch at one end, said end being inserted in the longitudinal passage of the sheath, and the strap being reflexed about one end of one side wall of said passage and extended therealong at the opposite side thereof from the passage, and means securing the sheath and strap together, the opposite end of the strap having a coöperating spring-catch adapted to be inserted in the same longitudinal passage in which the first spring-catch is to lodge to engage the latter.

11. In a self-locking seal comprising a strap having at its ends interlocking catches, a housing mounted on one end of the strap inclosing one of the catches; a fusible substance by which the housing is secured to the strap so as to be exposed on the outer surface of the device and having an exposed imprint, the opposite end of the strap being adapted to have its catch engaged with the housed catch by folding the strap back toward the housing upon itself at the side opposite that at which said imprint is exposed, the strap having adjacent to the housing at the secured end individual identifying characters exposed for reading at the same side as said imprint.

822,946. COMPOSITION OF MATTER TO BE USED AS PAINT. PAUL R. HERSCHMAN, Freeport, Ill., assignor to Chas. L. Ekwert Company, Milwaukee, Wis. Filed Nov. 3, 1905. Serial No. 285,683.

Claim.—1. A composition for paint, consisting of shale-oil, sulfur, and peroxid of manganese, as herein described.

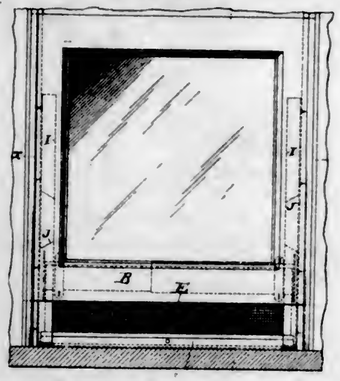
2. A composition for paint, consisting of substantially one hundred pounds of shale-oil, five pounds of sulfur, and three pounds of peroxid of manganese, treated and combined as set forth.

822,947. PAINT. PAUL R. HERSCHMAN, Freeport, Ill., assignor to Chas. L. Ekwert Company, Milwaukee, Wis. Filed Nov. 3, 1905. Serial No. 285,684.

Claim.—1. A composition for paint, consisting of coal-tar, peroxid of manganese, cement, and carbonaceous alkaline residuum of the dry distillation of shale-oil, substantially as set forth.

2. A composition for paint, consisting of one hundred pounds of coal-tar, three pounds of peroxid of manganese, twenty pounds of cement and twenty pounds of carbonaceous alkaline residuum of the dry distillation of shale-oil, combined and treated as set forth.

822,948. WINDOW-SCREEN. GEORGE HOLDEN, Merchantville, N. J., assignor to Merritt and Company, a Corporation of New Jersey. Filed Sept. 14, 1905. Serial No. 278,406.



Claim.—1. In a window-screen, the combination of a frame adapted for attachment to the window-sash, a spring-roller secured thereto, a screen secured at one end to the spring-roller, and an end frame for the lower end of the screen having a bottom bar pivotally secured so as to adapt itself to the window-sill.

2. In a window-screen, the combination of a frame adapted for attachment to the window-sash, a spring-roller secured thereto, a screen secured at one end to the spring-roller, and an end frame for the lower end of the screen having an end bar secured to the screen and a bottom bar pivotally secured to the end bar so as to adapt itself to the window-sill.

3. In a window-screen, the combination of a frame adapted for attachment to the window-sash, a spring-roller secured thereto, a screen secured at one end to the spring-roller, an end frame for the lower end of the screen having a bottom bar having lugs F^3 and pivotally secured so as to adapt itself to the window-sill, and side sockets I′ adapted to be secured to the window-frame for receiving the lugs of the bottom bar.

4. In a window-screen, the combination of a frame adapted for attachment to the window-sash, a spring-roller secured thereto, a screen secured at one end to the spring-roller, an end frame for the lower end of the screen having a bottom bar pivotally secured so as to adapt itself to the window-sill, and side bars for guiding the screen having their lower ends provided with sockets I′ adapted to be secured to the window-frame for receiving the lugs of the bottom bar.

5. In a window-screen, the combination of the window-frame, a casing attachment to the window-sash and having cams on its ends, a spring-roller secured within the casing, a screen having one end secured to the spring-roller, a bottom bar for the screen for securing the lower end of the screen close to the window-sill, and L-shaped sheet-metal side bars attached to the parting-beads between the window-sashes and having flanged edges against which the lateral edges of the screen rest and provided with spring-actuated pivoted clamps carried wholly by the side bars and automatically operated by the cams on the casing for clamping the said lateral edges of the screen against the flanged edges of the said side bars intermediate of their ends, and also provided at their lower ends with means for locking the bottom bar of the screen adjacent to the window-sill.

6. In a window-screen, the combination of a frame adapted for attachment to the window-sash, a spring-roller secured thereto, a screen secured at one end to the spring-roller, and an end frame having an adjustable bottom bar for connecting the lower end of the screen close to the window-sill, and L-shaped sheet-metal side bars having flanged edges against which the screen is clamped, spring-actuated clamps wholly supported by and arranged at or near their middle portions, and cams arranged beyond the end of the rollers adapted to be moved by the window-sash for operating upon said clamps beyond the screen to permit the insertion and removal of the screen in raising and lowering of the sash.

7. In a window-screen, the combination of a frame adapted for attachment to the window-sash, a spring-roller secured thereto, a screen secured at one end to the spring-roller, an end frame for the lower end of the screen having an adjustable bottom bar for connecting the lower end of the screen close to the window-sill, sheet-metal side bars against which the lateral edges of the screen rest provided with flanges for attachment to the parting-beads of the window-frame and having pivoted spring-actuated clamps at or near their middle portions, and cams on the frame carrying the spring-roller adapted to be moved by the window-sash for operating upon said clamps beyond the sides of the screen to permit the insertion and removal of the screen in raising and lowering of the sash.

8. In a window-screen, the combination of a frame adapted for attachment to the window-sash, a spring-roller secured thereto, a screen secured at one end to the spring-roller, an end frame for the lower end of the screen having a bottom bar pivotally secured so as to adapt itself to the window-sill, and means connecting with the ends of the bottom bar for securing it to the sides of the window-frame close to the sill.

9. The side bar for a window-screen consisting of a bar L-shaped in cross-section for attachment to the parting-bead of the window-frame combined with a spring-actuated clamp pivoted directly to the said side bar intermediate of its ends.

10. The side bar for a window-screen consisting of a bar L-shaped in cross-section for attachment to the parting-bead of the window-frame and having a hook-shaped socket I′ at the bottom extending transversely to the length of the bar combined with a spring-actuated clamp pivoted directly to the said side bar intermediate of its ends.

11. The bottom bar F^3 made U-shaped in cross-section combined with the end bar F′ secured to the screen and extending into the bottom bar, and pivot *f* connecting the bars together so that the end bar may automatically adjust itself upon the bottom bar.

12. The screen-roller combined with the window-screen frame C formed of the two parts C′ C^3 telescoping and forming the open throat C^3, and provided with the end plates C^4 having the cams H entirely beyond the ends of the roller and lugs C^3.

13. In a window-screen, the combination with the window-frame, a movable sash and spring-controlled screen connected with said sash and moved by it, of automatic clamping devices for clamping the side edges of the screen to the sides of the window-frame when the screen is drawn closed consisting of L-shaped sheet-metal side bars having flanged edges against which the screen is clamped, spring-actuated clamps hinged directly to the side bars and resting upon the flanged edges thereof so as to leave a space between them and the body of the side bars, and cams movable with the window-sash and traveling along the side bars and having pointed ends to engage the pivoted clamps beyond the side edges of the screen.

822,949. HORSESHOE. HIRAM W. HUBBARD, Milwaukee, Wis., assignor to Ogden Cushion Horse Shoe Co. Filed Nov. 18, 1905. Serial No. 288,034.

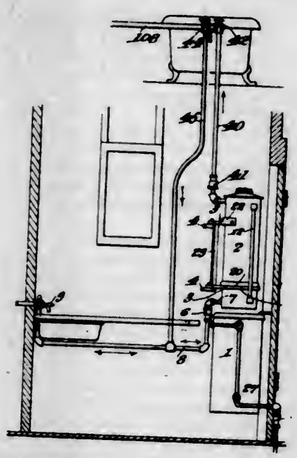


Claim.—1. A horseshoe comprising a member for attachment to the hoof and provided with marginal ribs upon the lower face, a wear member having marginal ribs upon its upper face and a pad of flexible material disposed between said members and maintained in position by said ribs and means for connecting said members through said pad.

2. A horseshoe comprising a member for attachment to the hoof and provided with marginal ribs upon the lower face, and with spaced studs extending therefrom between said ribs, a wear member having marginal ribs upon its upper face and with apertures corresponding to said studs and fitting over the same, said apertures enlarged at the outer ends to form internal shoulders over which the studs are caused to bear when riveted, and a pad of flexible material disposed between said members and maintained in position by said ribs.

822,950. WATER-SERVICE. WILLARD C. JAMES, Los Angeles, Cal. Filed July 3, 1906. Serial No. 324,662.

Claim.—1. In a water-service means, a source of heat, a support, a bracket pivotally secured thereto, a vertically-arranged tank mounted in said bracket, an alarm-tube on the interior, the lower end of the alarm-tube extending nearly to the bottom of the tank and the upper end projecting through the side of the tank near the top and provided with a whistle, said tank being movable over and from the source of heat, and means for passing water into and out of the tank.



2. In a water-service means, a source of heat, a support, a two-armed bracket pivotally secured to the support, the lower arm being provided with a ring and the upper one with laterally-extending arms, a tank secured vertically in said bracket, the lower portion of which is beaded and rests in said ring, and the upper end is rigidly secured to said laterally-extending arms, and pipes communicating with said tank, one above the other, each pipe being provided with a swivel-coupling in line with the pivotal points of said bracket, said tank being adapted to be moved over and from the source of heat.

3. In a water-service means, a source of heat, a support, a bracket pivotally secured thereto, a vertically-arranged tank mounted in said bracket, a gage-tube on the exterior of the tank, and an alarm-tube on the interior, the lower end of the alarm-tube extending nearly to the bottom of the tank and the upper end projecting through the side of the tank near the top and provided with a whistle, said tank being movable over and from the source of heat, and means for passing water into and out of the tank.

4. In a water-service means, a wall, a bracket and a door pivotally secured thereto adjacent to each other, a tank on the bracket and a source of heat on the door, the tank being movable over and from the source of heat, and the source of heat being movable under and from the tank, means for passing water to and from the tank, said means being provided with swivel-joints in line with the pivot of said bracket, and means for supplying liquid fuel to the source of heat.

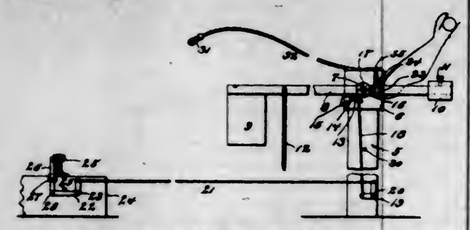
5. In a water-service means, a wall, a bracket and a door pivotally secured thereto adjacent to each other, a tank on the bracket and a source of heat on the door, the tank being movable over and from the source of heat, and the source of heat being movable under and from the tank, means for passing water to and from the tank, said means being provided with swivel-joints in line with the pivot of said bracket, and means for supplying liquid fuel to the source of heat, said last-mentioned means being provided with a swivel in line with the pivot of the door.

6. A water-heater, a water-supply pipe connected therewith and having two cocks connected thereto, to draw off, respectively hot and cold water therefrom, a valve in said pipe between the points of connection of the said cocks.

7. A water-heater, a water-supply pipe connected therewith and having two cocks connected thereto, to draw off, respectively hot and cold water therefrom, a valve in said pipe between the points of connection of the said cocks, and means for indicating the amount of water supplied to the heater by said pipe.

822,951. RAILWAY-SIGNAL. JOHN S. JEFFREY, Columbus, Ohio. Filed Nov. 18, 1905. Serial No. 287,694.

Claim.—1. A railway-signal comprising a manually-operated swinging arm carrying a signal device, and car-operated means to withdraw the signal.



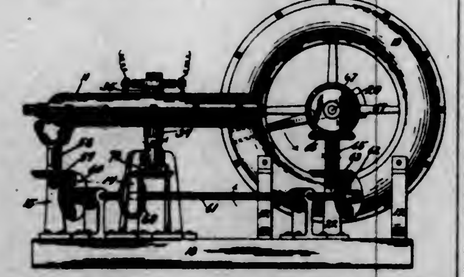
2. A railway-signal comprising a manually-operated swinging arm carrying a signal device, a latch for holding the arm when the signal is set, and means operated by a car for releasing the latch to withdraw the signal.

3. A signal comprising a manually-operated vertically-swinging arm displaying a signal device when lowered, means for elevating the arm to withdraw the signal, a latch for holding the arm in lowered position, and car-operated means for releasing the latch.

4. In a railway-signal, the combination with a support carrying an electric signal-light and circuit-contacts therefor, of a vertically-swinging arm pivoted to the post and carrying a switch engaging the contacts to close the circuit when the arm is down, a latch for holding the arm in lowered position, means for elevating the arm, and car-operated means for withdrawing the latch.

5. In a railway-signal, the combination with a swinging arm carrying a signal device, of an electric signal-light, and means for closing the circuit of said light when the signal device is set, and opening the circuit when the signal device is withdrawn.

822,952. **ROTARY EXPLOSIVE-ENGINE.** WILLIAM M. JEWELL, Chicago, Ill. Filed Apr. 20, 1901. Serial No. 56,676.



Claim.—1. A gas-engine, consisting of an annular valve-chamber, an annular piston-chamber intersecting said valve-chamber, a piston in said piston-chamber, means for supplying gas under pressure to said valve-chamber, and means for admitting gas from said valve-chamber to said piston-chamber to drive said piston, substantially as described.

2. A gas-engine, consisting of an annular valve-chamber, an annular piston-chamber intersecting said valve-chamber, a piston in said piston-chamber, means for supplying gas under pressure to said valve-chamber, and traveling means in said valve-chamber for admitting gas intermittently to said piston-chamber to drive said piston, substantially as described.

3. A gas-engine, consisting of a ring-shaped valve-chamber, an annular piston-chamber intersecting said valve-chamber, a piston in said piston-chamber, means for supplying gas under pressure to said valve-chamber, and means in said valve-chamber for admitting gas from said valve-chamber to said piston-chamber, substantially as described.

4. A gas-engine, consisting of a ring-shaped valve-chamber, an annular piston-chamber arranged to intersect said valve-chamber, said valve and piston chambers being arranged at an angle to each other, a piston in said piston-chamber, means for supplying gas under pressure to said valve-chamber, and traveling means in said valve-chamber for admitting gas from said valve-chamber to said piston-chamber, substantially as described.

5. A gas-engine consisting of a ring-shaped valve-chamber, a piston-chamber intersecting said valve-chamber and lying in a plane intersecting the plane of said valve-chamber at an angle, a piston in said piston-chamber, means for supplying gas under pressure to said valve-chamber, and traveling means for admitting gas from said valve-chamber to said piston-chamber.

6. A gas-engine, consisting of an annular valve-chamber, an annular piston-chamber intersecting said valve-chamber at right angles, a piston in said piston-chamber, means for supplying gas under pressure to said valve-chamber, and traveling means for admitting gas from said valve-chamber to said piston-chamber, substantially as described.

7. A gas-engine, consisting of an annular valve-chamber, an annular piston-chamber intersecting said valve-chamber, traveling valve mechanism in said valve-chamber, a traveling piston in said piston-chamber, means for supplying gas to said valve-chamber, and means for operating said valve mechanism to admit gas from said valve-chamber to said piston-chamber, substantially as described.

8. A gas-engine, consisting of an annular valve-chamber, an annular piston-chamber intersecting said valve-chamber, traveling valve mechanism in said valve-chamber, a traveling piston in said piston-chamber, means for admitting gas to said valve-chamber, means for exploding the gas in said valve-chamber, and means for admitting exploded gas from said valve-chamber to said piston-chamber, substantially as described.

9. A gas-engine, consisting of an annular valve-chamber, an annular piston-chamber, a traveling piston in said piston-chamber, and traveling means in said valve-chamber for supplying gas under pressure from said valve-chamber to said piston-chamber, substantially as described.

10. A gas-engine, consisting of an annular valve-chamber, an annular piston-chamber, a revolving piston in said piston-chamber, revolving valve mechanism in said valve-chamber for admitting gas therefrom to said piston-chamber, and means for supplying gas under pressure to said valve-chamber, substantially as described.

11. A gas-engine, consisting of a ring-shaped valve-chamber, a piston-chamber, means for generating gas under pressure in said valve-chamber, a piston in said piston-chamber, and means for admitting the gas so generated in said valve-chamber to said piston-chamber before expansion, substantially as described.

12. A gas-engine, consisting of a ring-shaped valve-chamber, a ring-shaped piston-chamber intersecting said valve-chamber, means for generating gas under pressure in said valve-chamber, a revolving piston in said piston-chamber, and means for admitting the gas so generated in said valve-chamber to said piston-chamber before expansion, substantially as described.

13. A gas-engine, consisting of an annular valve-chamber, an annular piston-chamber, means for generating gas under pressure in said valve-chamber, a revolving piston in said piston-chamber, and revolving valve mechanism in said valve-chamber for admitting gas therefrom to said piston-chamber, substantially as described.

14. A gas-engine, consisting of an annular valve-chamber, an annular piston-chamber, means for generating gas under pressure in said valve-chamber, a revolving piston in said piston-chamber, valve mechanism in said valve-chamber for admitting gas therefrom to said piston-chamber, and means operated by the rotation of said piston for operating said valve mechanism to supply gas under pressure to said piston-chamber, substantially as described.

15. A gas-engine, consisting of an annular valve-chamber, an annular piston-chamber intersecting said valve-chamber, means for generating gas under pressure in said valve-chamber, a revolving piston in said piston-chamber, valve mechanism in said valve-chamber for admitting gas therefrom to said piston-chamber, and means operated by the rotation of said piston for operating said valve mechanism to supply gas under pressure to said piston-chamber, substantially as described.

16. A gas-engine, consisting of an annular valve-chamber, a piston-chamber, gas-transporting valve mechanism in said valve-chamber for moving a body of gas therein, a piston in said piston-chamber, and means for operating said valve mechanism to admit gas under pressure to said piston-chamber at intervals, substantially as described.

17. A gas-engine, consisting of an annular piston-chamber, a valve-chamber intersecting said piston-chamber, a piston in said piston-chamber, gas-transporting valve mechanism in said valve-chamber, and means for operating said valve mechanism to admit gas under pressure to said piston-chamber at intervals, substantially as described.

18. A gas-engine, consisting of an annular piston-chamber, a valve-chamber intersecting said piston-chamber, a piston in said piston-chamber, means for supplying unexploded gas to said valve-chamber, means for exploding said gas in said valve-chamber, and gas-transporting means for supplying the exploded gas from said valve-chamber to said piston-chamber, substantially as described.

19. A gas-engine, consisting of intersecting annular cylinders, one of said cylinders forming a piston-chamber, a piston therein, the other forming a valve-chamber, valve mechanism therein consisting of valve-sections 26 27 28, means for supplying gases to said valve-chamber 27, means for igniting the gases therein, and means for rotating said valve mechanism, substantially as described.

20. A gas-engine, consisting of intersecting valve and piston chambers, an exhaust-passage communicating with said valve-chamber adjacent to said point of intersection, valve mechanism in said valve-chamber consisting of valve-sections 26 27 28, means for rotating said valve-sections, means for admitting gases to said valve-section 27, means for igniting said gases, and a piston in said piston-chamber, substantially as described.

21. A gas-engine, consisting of intersecting valve and piston chambers, an exhaust-passage communicating with said valve-chamber adjacent to said point of intersection, valve mechanism in said valve-chamber consisting of valve-sections 26 27 28, means for rotating said valve-sections, means for admitting gases to said valve-section 27, means for igniting said gases, a piston in said piston-chamber, and an exhaust-passage 47, substantially as described.

22. A gas-engine, consisting of an annular piston-chamber, a piston therein, a shaft mounted outside of said piston-chamber and connected with said piston, a valve-chamber, and traveling gas-transporting means in said valve-chamber for admitting gas under pressure to said piston-chamber at intervals, substantially as described.

23. A gas-engine, consisting of an annular piston-chamber, a shaft mounted centrally thereof, an arm carried by said shaft, a piston in said piston-chamber connected with said arm, a valve-chamber, and traveling gas-transporting means in said valve-chamber for admitting gas under pressure to said piston-chamber at intervals, substantially as described.

24. A gas-engine, consisting of an annular piston-chamber, a shaft mounted centrally thereof, an arm carried by said shaft, a piston in said piston-chamber connected with said arm, a rotary band secured to said arm and rotating with the piston, and traveling gas-transporting means in said valve-chamber for admitting gas under pressure to said piston-chamber at intervals, substantially as described.

25. A gas-engine, consisting of a piston-chamber, a piston therein, an annular valve-chamber, traveling gas-transporting valve mechanism mounted in said valve-chamber, an external shaft connected with said valve mechanism for rotating the same, means operated by said piston for rotating said shaft, and means for supplying gas to said valve-chamber, substantially as described.

26. A gas-engine, consisting of a piston-chamber, a piston therein, an annular valve-chamber communicating with said piston-chamber, a valve-section in said valve-chamber adapted to receive gases and conduct them to the piston-chamber, means for exploding the gases in said valve-section, a passage for admitting gases to said valve-section, a passage for cleansing said valve-section, and means for rotating said valve-section, substantially as described.

27. A gas-engine, consisting of a piston-chamber, a piston therein, an annular valve-chamber, traveling gas-transporting valve mechanism in said valve-chamber, an external shaft connected with said valve mechanism for rotating the same, means operated by said piston for rotating said shaft, means for supplying unexploded gas to said valve-chamber, means for exploding the gas in said valve-chamber, and means for operating said valve mechanism to supply exploded gas from said valve-chamber to said piston-chamber, substantially as described.

28. A gas-engine, consisting of a piston-chamber, a piston therein, an annular valve-chamber intersecting said piston-chamber, traveling gas-transporting valve mechanism in said valve-chamber, an external shaft connected with said valve mechanism, means connected with said piston for rotating said shaft, and means for supplying gas under pressure to said valve-chamber, substantially as described.

29. A gas-engine, consisting of a piston-chamber, a piston therein, an annular valve-chamber, a traveling valve-section in said valve-chamber, forming a compartment adapted to contain gas to be exploded, means for moving said valve-section in said valve-chamber, means for supplying an explosive to said valve-section, means for exploding the gas therein, and means for discharging the exploded gas from said valve-section to said piston-chamber, substantially as described.

30. A gas-engine, consisting of annular valve and piston chambers intersecting each other, revolving valve mechanism in said valve-chamber, a revolving piston in said piston-chamber, means for operating said valve mechanism to admit gas to said piston-chamber, and electric mechanism for exploding said gas, substantially as described.

31. A gas-engine, consisting of a piston-chamber, a piston therein, an annular valve chamber, revolving valve mechanism in said valve-chamber, said valve-mechanism having means for receiving and transporting an explosive gas to said piston-chamber, and means carried by said valve mechanism for exploding said gas, substantially as described.

32. A gas-engine, consisting of a piston-chamber, a piston therein, an annular valve-chamber, valve mechanism in said valve-chamber, said valve mechanism having means for receiving and transporting an explosive gas to said piston-chamber, and electric mechanism carried by said valve mechanism for exploding said gas, substantially as described.

33. A gas-engine, consisting of a piston-chamber, a piston therein, an annular valve-chamber, valve mechanism in said valve-chamber, said valve mechanism having means for receiving and transporting an explosive gas to said piston-chamber, and electric mechanism carried by said valve mechanism and operated by the rotation thereof for exploding said gas, substantially as described.

34. A gas-engine, consisting of a piston-chamber, a piston therein, an annular valve-chamber intersecting said piston-chamber, revolving valve mechanism in said valve-chamber, said valve mechanism having means for receiving and conducting gas to said piston-chamber, and means for exploding the gas, said valve mechanism being arranged to close the piston-chamber behind the piston after the admission of the gases thereto, substantially as described.

35. A gas-engine, consisting of a piston-chamber, a piston therein, an annular valve-chamber communicating with said piston-chamber, a valve-section in said valve-chamber adapted to receive and conduct gases to be exploded to said piston-chamber, and means for passing a current of air through said valve-section, substantially as described.

36. A gas-engine, consisting of a piston-chamber, a piston therein, a ring-shaped valve-chamber communicating with said piston-chamber, a revolving valve-section in said valve-chamber adapted to contain gas to be exploded, means for supplying gas to said valve-section, means for exploding the gas in said valve-section, and means for moving said valve-section in said valve-chamber to conduct the exploded gas to said piston-chamber, substantially as described.

37. A gas-engine, consisting of a piston-chamber, a piston therein, a ring-shaped valve-chamber communicating with said piston-chamber, a traveling valve-section in said valve-chamber, forming a compartment adapted to convey gas under pressure to said piston-chamber, means for supplying gas under pressure to said valve-section, and means for moving said valve-section in said valve-chamber to convey the gas therein to said piston-chamber, substantially as described.

38. A gas-engine, consisting of a piston-chamber, a piston therein, an annular valve-chamber communicating with said piston-chamber, a traveling valve-section in said valve-chamber, said valve-section being adapted to discharge gas under pressure into said piston-chamber, and a valve-section movable in said valve-chamber and adapted to cut off communication between said valve and piston chambers, substantially as described.

39. A gas-engine, consisting of a piston-chamber, a piston therein, an annular valve-chamber communicating with said piston-chamber, a traveling valve-section in said valve-chamber adapted to discharge gas under pressure into said piston-chamber, means for supplying unexploded gas to said valve-section, means for exploding the gas in said valve-section, means for moving said valve-section to discharge the exploded gas into said piston-chamber, and a valve-section in said valve-chamber adapted to confine the exploded gas in said piston-chamber back of the piston immediately after the exploded gas has been supplied to said piston-chamber, substantially as described.

40. A gas-engine, consisting of an annular piston-chamber, a piston therein, an annular valve-chamber intersecting said piston-chamber, a revolving valve-section in said valve-chamber adapted to discharge gas under pressure into said piston-chamber, and a valve-section in said valve-chamber adapted to close the passage through which the gas was admitted to said piston-chamber immediately af-

ter the admission of the gas and connect the piston-chamber in advance of the piston with an exhaust-passage, substantially as described.

41. A gas-engine, consisting of a ring-shaped piston-chamber, a valve-chamber intersecting said piston-chamber, a piston in said piston-chamber, means for supplying an explosive gas to said valve-chamber, means for exploding said gas therein, and means for admitting the exploded gas from said valve-chamber to said piston-chamber, substantially as described.

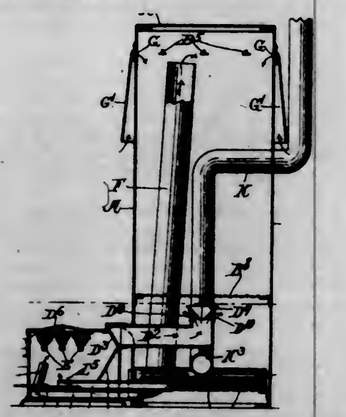
42. A gas-engine, consisting of an annular piston-chamber, an annular valve-chamber intersecting said piston-chamber, a piston in said piston-chamber, means for supplying an explosive gas to said valve-chamber, means for exploding the gas in said valve-chamber, and means for admitting the exploded gas from said valve-chamber to said piston-chamber, substantially as described.

43. A gas-engine, consisting of an annular piston-chamber, an annular valve-chamber, a piston in said piston-chamber, means for supplying an explosive gas to said valve-chamber, and means in said valve-chamber for receiving and transporting the exploded gas to said piston-chamber and discharging it thereinto, substantially as described.

44. A gas-engine, consisting of an annular piston-chamber, an annular valve-chamber intersecting said piston-chamber, a piston in said piston-chamber, means for supplying an explosive gas to said valve-chamber, and means in said valve-chamber for receiving and transporting the exploded gas to said piston-chamber and discharging it thereinto, substantially as described.

45. A gas-engine, consisting of a piston-chamber, a piston therein, a ring-shaped valve-chamber, traveling valve mechanism in said valve-chamber, said valve mechanism having means for receiving and transporting an explosive gas to said piston-chamber, and means for exploding the gas, substantially as described.

822,953. **DRIER.** FRANCIS T. JOHNSON, Chicago, Ill. Filed Aug. 26, 1905. Serial No. 275,906.



Claim.—1. In a drier, the combination of a drying-chamber with a heater connected so as to supply heat thereto, and a duct leading from the chamber into the heater, said duct movable so as to discharge at different places in the heater.

2. In a drier, the combination of a drying-chamber, with a heater connected so as to supply heat thereto, and a sliding duct leading from the chamber into the heater.

3. In a clothes-drier, the combination of a drying-chamber with a plurality of clothes-racks in said chamber, a gas-stove, a flue leading from the gas-stove and discharging below the racks, means for admitting a ventilating-draft into the chamber above the racks, and means for discharging the air out of said chamber from below the hot-air flue.

4. In a clothes-drier, the combination of a drying-chamber with a plurality of clothes-racks in said drying-chamber, an air-intake at the upper part of said chamber, means for admitting heat to the chamber below the racks and means for causing a ventilating-draft of fresh air to pass downwardly through the racks.

5. In a drying apparatus, the combination of a casing forming a drying-chamber, with means for supporting the articles to be dried in said chamber, means for introducing heat below said supporting means, means for introducing a volume of cold air directly to the upper part of the chamber, and means for discharging air from the lower part of said chamber.

6. In a drying apparatus, the combination of a casing forming a drying-chamber, means for supporting the articles to be dried in said chamber, means for introducing heat below said supporting means, means for introducing a volume of cold air into said chamber, said means comprising air passage-ways leading from outside the drier directly into the upper part of said chamber, and means for discharging air from the lower part of said chamber.

7. In a drying apparatus, the combination of a casing forming a drying-chamber, means for supporting the articles to be dried in said chamber, means for introducing heat below said supporting means, means for introducing a volume of cold air into said chamber, said means comprising air passage-ways leading from outside the drier directly into the upper part of said chamber, means for discharging air from the lower part of said chamber, and means associated with said air passage-ways for preventing the escape of hot air through the same.

8. In a drying apparatus, the combination of a casing forming a drying-chamber and having apertures in the upper part to admit a volume of cold air directly into the upper part of the drying-chamber, with means for supporting the articles to be dried, means for introducing heat below said supporting means, hood devices on the outside of the casing extending over said apertures, and means for discharging air from the lower part of said chamber.

9. In a drying apparatus, the combination of a casing forming a drying-chamber, the lower part of said casing being closed and the upper part provided with air passage-ways to admit a volume of cold air directly to the upper part of said chamber, means for supporting the articles to be dried within the drying-chamber, a heater outside of said casing and connected with the same so as to introduce heat into the drying-chamber below the supporting means, and a flue leading from the bottom of the casing into the heater.

10. In a drying apparatus, the combination of a casing forming a drying-chamber, the lower part of said casing being closed and the upper part provided with air passage-ways to admit a volume of cold air directly to the upper part of said chamber, means for supporting articles to be dried within the drying-chamber, a heater outside of said casing, a flue leading from the heater and opening into the drying-chamber below said supporting means, and a flue leading from the bottom of the casing into the heater.

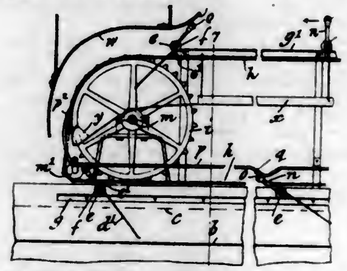
11. In a drying apparatus, the combination of a casing forming a drying-chamber, the lower part of said casing being closed and the upper part provided with air passage-ways to admit a volume of cold air directly to the upper part of said chamber, means for supporting the articles to be dried within the drying-chamber, a heater outside of said casing and connected with the same so as to introduce heat into the drying-chamber below the supporting means, a flue leading from the bottom of the casing into the heater, and an outlet-pipe extending upward from the lower part of the casing.

12. In a drying apparatus, the combination of a casing forming a drying-chamber, the lower part of said casing being closed and the upper part provided with air passage-ways to admit a volume of cold air directly to the upper part of said chamber, means for supporting the articles to be dried within the drying-chamber, a heater outside of said casing and connected with the same so as to introduce heat into the drying-chamber below the supporting means, a flue leading from the bottom of the casing into the heater, and an outlet-pipe extending from the lower part of the casing upward through the drying-chamber.

13. In a drying apparatus, the combination of a casing closed at the bottom and having apertures at the top, said casing forming a drying-chamber, hood devices on the outside of the casing flaring at the bottom and extending closely over the apertures, means for supporting the articles to be dried in said drying-chamber, means for introducing heat into the chamber below said supporting means, and a discharge-pipe leading upward from below the heat-introducing means.

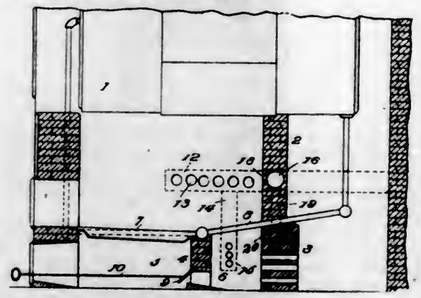
822,954. **WOOL-SCOURING MACHINE.** THOMAS A. JOHNS, Essendon, near Melbourne, Victoria, Australia. Filed Aug. 28, 1905. Serial No. 276,159.

Claim.—1. In a tank-machine for cleaning wool, longitudinally-movable and partially-rotatable forks provided with projections, antifriction-rollers journaled in said projections, upper and lower longitudinal tracks, a longitudinal guide-rail having projections thereon for changing the working angle of said forks, and a guide-rail disposed above said tank and at one end thereof and adapted to move said fork to an angle in order that all obstructions may be avoided, substantially as described.



2. In a tank-machine for clearing wool, a driven shaft at one end of said tank, a sprocket-wheel mounted on said shaft, a pair of sprocket-wheels mounted in the other end of said tank, an endless chain engaging upon said wheels, a plurality of forks mounted on said chain and comprising a pivotally-mounted transverse bar and a series of depending prongs attached to said bar, upper and lower longitudinal tracks, rollers mounted on said transverse bar and engaging said tracks, an upwardly-extending shank mounted intermediate the ends of said transverse bar, a lower guide-rail centrally disposed in said tank, and engaging the free end of said shank, said rail being provided with a plurality of spaced depressions adapted to tilt said prongs to agitate the contents of said tank, a drip-trough disposed in said tank having one end extending downwardly over said driven shaft and provided with a pocket, and an upper guide-rail disposed above said sprocket-wheel adapted to depress said shank and move said prongs to an angle whereby they may freely pass said driven shaft and said pocket on said drip-trough in rounding said sprocket-wheel, substantially as described.

822,955. **FURNACE.** JAMES A. KAVANAGH, New York, N. Y. Filed Aug. 9, 1905. Serial No. 273,397.



Claim.—1. In a furnace having an initial fire-bed and a grate designed to support a bed of incandescent fuel, the draft being upward through said fire-bed and downward through said grate, passages within the side walls of said furnace extending longitudinally thereof and having outlets for the introduction of air to the gases at points in the travel of the latter intermediate the fire-bed and said grate, and channels supplying additional air to the gases after the passage thereof through said grate.

2. In a furnace having an initial fire-bed and a grate designed to support a bed of incandescent fuel, the draft being upward through said fire-bed and downward through said grate, air-passages in the side walls of said furnace having outlets designed to introduce air to the gases at points in the travel of the latter intermediate the initial fire-bed and said grate, and channels leading from said passages and having outlets below said grate.

3. In a boiler-furnace having an initial fire-bed and a grate designed to support a bed of incandescent fuel, a bridge-wall at the rear of said grate extending from the bottom of the furnace to the boiler-shell, air-passages in the side walls of said furnace extending longitudinally thereof and open at the rear end of said furnace, and an air-duct in said bridge-wall, each having outlets designed to introduce air to the gases at points in the travel of the latter intermediate the initial fire-bed and said grate.

4. In a boiler-furnace having an initial fire-bed and a grate designed to support a bed of incandescent fuel, a bridge-wall at the rear of said grate extending from the bottom of the furnace to the boiler-shell, air-passages in the side walls of said furnace and an air-duct in said bridge-wall, each having outlets designed to introduce air to the gases at points in the travel of the latter intermediate the initial fire-bed and said grate, and channels leading from said passages and having outlets below said grate.

5. In a boiler-furnace having an initial fire-bed and a grate designed to support a bed of incandescent fuel, a bridge-wall at the rear of said grate extending from the bottom of the furnace to the boiler-shell, air-passages in the side walls of said furnace and an air-duct in said bridge-wall, each having outlets designed to introduce air to the gases at points in the travel of the latter intermediate the initial fire-bed and said grate, and flues leading from said duct having outlets below said grate.

6. In a boiler-furnace having an initial fire-bed and a grate designed to support a bed of incandescent fuel, a bridge-wall at the rear of said grate extending from the bottom of the furnace to the boiler-shell, air-passages in the side walls of said furnace, an air-duct in said bridge-wall, conduits establishing communication between said passages and said duct, said passages and duct having outlets designed to introduce air to the gases at points in the travel of the latter intermediate said fire-bed and said grate, channels leading from said passages having outlets below said grate and flues in said bridge-wall leading from said duct and also having outlets below said grate.

7. In a boiler-furnace having an initial fire-bed and a grate designed to support a bed of incandescent fuel, a bridge-wall at the rear of said grate extending from the bottom of the furnace to the boiler-shell, said bridge-wall having transverse orifices near its base, the draft being upward through said fire-bed, downward through said grate and through said orifices in the bridge-wall, air-passages in the side walls of said furnace having outlets designed to introduce air to the gases at points in the travel of the latter intermediate the initial fire-bed and said grate, and channels leading from said passages and having outlet-ports below said grate and intermediate the latter and said orifices of the bridge-wall.

8. In a boiler-furnace, a bridge-wall extending from the bottom thereof to the boiler-shell and having transverse orifices near its base, a partition in advance of said bridge-wall forming an ash-pit and a combustion-chamber, a grate between said partition and the front wall of the furnace, a second grate between said partition and said bridge-wall, an air-passage within a side wall of said furnace extending longitudinally thereof and having outlets opening above said second grate, and channels extending into said combustion-chamber and below said second grate.

9. In a boiler-furnace, a bridge-wall extending from the bottom thereof to the boiler-shell and having transverse orifices near its base, a partition in advance of said bridge-wall forming an ash-pit and a combustion-chamber, an opening near the base of said partition, a door for controlling the same, a grate between said partition and the front wall of the furnace, a second grate between said partition and said bridge-wall, air-passages in the walls of said furnace having outlets above said second grate, and channels extending into said combustion-chamber and below said second grate.

822,956. **MEAT-SACKING MACHINE.** CHARLES T. KELLY, Harriman, Tenn., assignor to D. M. Smallmon and Thomas L. Cates, Harriman, Tenn. Filed Oct. 27, 1904. Serial No. 230,211.

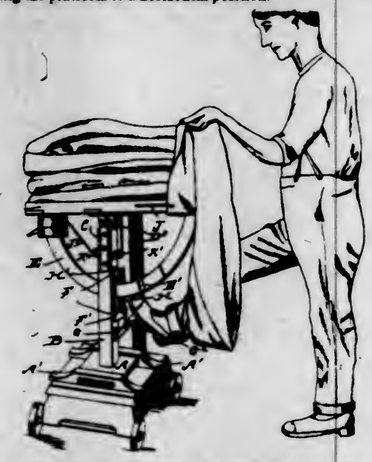
Claim.—1. A device of the kind described comprising a tilting platform, outwardly-projecting hooks carried by the said platform, means for locking the platform against tilting movement, and means for automatically drawing the hooks inwardly when the platform is tilted.

2. A device of the kind described comprising a slotted standard, a platform pivotally connected to the standard, a segment carried by the platform and working in the slot of the standard, means for locking the said segment against movement, and means for automatically returning the segment to its normal position after each movement of the platform.

3. A device of the kind described comprising the platform adapted to be tilted into an inclined position, pivoted hook members carried by the platform, means for automatically actuating said hook members upon movement of the platform and means for automatically returning the platform to a horizontal position.

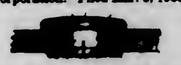
4. A device of the kind described comprising a standard, a platform pivotally connected to the upper end of the standard, the said

standard being slotted, a segment carried by the platform and working through the slot, stop-legs carried by the segment on opposite sides of the standard, the said segment being notched intermediate the legs, a spring-actuated movable plate adapted to engage said notch, means for withdrawing the plate from engagement with the notch, hooks carried by the platform and means for automatically returning the platform to a horizontal position.



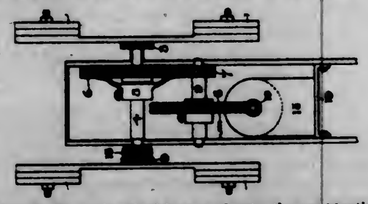
5. A device of the kind described comprising a standard, the platform pivotally connected thereto, slots being formed in opposite side members of the said platform, pivot-hook members arranged in said slots and adapted to normally project therefrom, a plurality of pulleys and cables connected to the hook members passing from said pulleys and adapted to retract the hook members upon swinging movement of the platform.

822,957. **DETACHABLE BUTTON FOR GLOVES, &c.** HERMAN KENWOOD, Baltimore, Md., assignor to The Alma Button Company of Baltimore City, a Corporation. Filed Mar. 8, 1905. Serial No. 248,983.



Claim.—As an article of manufacture, the combination of a button comprising a cap having an orifice in its lower side, and a knurled socket-section, the shank of which is thickened at its extreme end and inserted into the orifice in the cap and upset therein, the lower open end of said socket-section being split to give it resiliency, the interior being enlarged to a greater diameter than the outer end to form an enlarged socket, the lower end of the socket portion being split and bent outwardly forming a circumferential flange, the outer edge being offset forming two planes one higher than the other, a ring fitted around the outer edge of the flange beneath the offset portion and spun around and over the upper surface of the offset portion, the internal diameter of the ring being of slightly greater diameter than the flange to permit of the expansion of the flange within the ring, substantially as described and for the purpose as set forth.

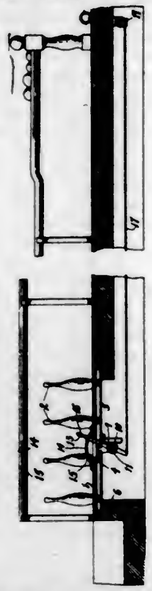
822,958. **ELECTRIC RAILROAD-GATE.** ABRAHAM KNOBEL, Louisville, Ky., assignor to Rogers, Ridgway and Faith, Louisville, Ky., a Copartnership. Filed Dec. 30, 1905. Serial No. 293,917.



Claim.—1. In an electric-driven road-gate, the combination of a casing, a pivot-shaft, a driving-gear loosely mounted on said pivot-shaft, a friction member mounted on said pivot-shaft to be operated by said driving-gear, a counter-shaft, a pinion on said counter-shaft meshing with said driving-gear, a worm-gear on said counter-shaft, and a worm meshing with said worm-gear direct-connected with a motor-shaft, substantially as specified.

2. In a road-gate, the combination of a pivoted gate, a pivot-shaft on which said gate is mounted, driving-gear loosely mounted on said pivot-shaft and a friction member rigidly mounted on said pivot-shaft in frictional contact with said driving-gear.

822,959. **BOWLING-ALLEY.** HENRY B. LAHR, New York, N. Y., assignor of one-half to Bowling Ball Company, New York, N. Y., a Corporation of New York. Filed Feb. 18, 1904. Serial No. 194,164.



Claim.—1. In a bowling-alley, a pin-bed and means for insuring the correct placing of the tenpins thereon comprising a plurality of guide-pins arranged in groups on the pin-bed to slide diagonally toward and away from each other and means for raising the guide-pins above the surface of the pin-bed.

2. In a bowling-alley, a pin-bed, a group of diagonally-sliding guide-pins in the pin-bed for each tenpin, means for raising the guide-pins above the surface of the pin-bed, and springs engaging all of the guide-pins for returning them to their normal position approximate to the surface of the pin-bed.

822,960. **BOTTLE-CLOSURE.** LEONARD LAWTON, Carrollton, N. Y., assignor of one-fourth to Frank A. Cables, Carrollton, N. Y. Filed May 27, 1905. Serial No. 262,560.

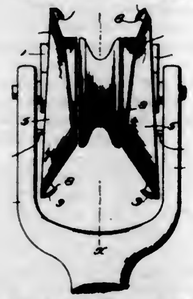


Claim.—1. The combination with the neck of a bottle having a coniform inner surface, of a coniform closing-plug fitting liquid-tight in the neck, and having an axial bore therein formed with an annular shoulder at the lower end, said plug also having an essentially V-shaped lateral passage in its body, the ends thereof intersecting the bore at two points, means for securing the plug in the neck, a piston-valve adapted for seating upon the annular shoulder, a rod extended from the valve, said rod passing through the lower end of the plug, and means carried by the lower end of the rod for limiting the sliding movement of the valve.

2. The combination with the neck of a bottle having a coniform plug fitted liquid-tight in the neck and having a cupped recess in its upper end, a sealing-block secured liquid-tight in said recess, the plug and block having alined bores therein, the bore in the plug having an annular shoulder near its lower end, the bore in the block being divided by a transverse partition-wall, the plug and block each having a plurality of V-shaped lateral passages therein which are spaced apart, the ends of each passage in the plug intersecting the bore therein at two points and those in the block intersecting the bore therein above and below the partition-wall therein, a piston-valve seating upon the annular shoulder, a rod on the piston-block, extended through the lower end of the plug, and means carried by the rod at its lower end, for limiting the sliding movement of the piston-valve.

3. The combination with a bottle-neck having a true coniform inner surface, and also a plurality of downwardly-converging recesses formed therein, of a coniform plug fitted liquid-tight in the neck, said plug being adapted for discharging liquid from the bottle, the plug having longitudinal recesses, respectively registering with those in the neck, wedge-shaped keys loosely held in the registering recesses in the plug and neck, an elastic wedge in the bottom of each recess in the plug, adapted for pressing the upper end of a respective wedge into engagement with the neck after it has been inserted into the neck, and means, constructed substantially as described, for preventing the introduction of liquid into the bottle through the bore of the plug.

822,961. **TROLLEY PLACER AND GUIDE.** EDGAR A. LEAKE, Lawrence, Mass. Filed Oct. 16, 1905. Serial No. 283,293.



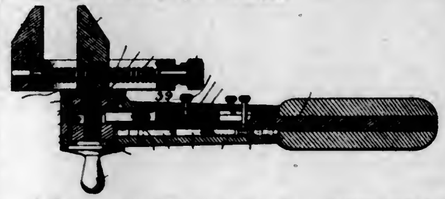
Claim.—1. In a device of the character described, the combination with a trolley-wheel of guiding devices mounted to turn eccentrically on each each side of the wheel and each provided with a tapered flange adjacent the wheel, the widest portion of said flange being normally uppermost and each guiding device being further provided at its upper and lower sides with an inwardly-projecting overhanging lug as and for the purpose set forth.

2. In a device of the character described the combination with a trolley-wheel and its fork, of circular guides mounted eccentrically on each side of the wheel, each guide being provided on its inner face with a tapered flange and on its outer face with an abutment and each guide being also provided at its top and bottom with an inwardly-projecting lug, and stay-pins projecting inwardly from the fork and designed to contact with said abutments to limit the revolution of said guides.

822,962. **WRENCH.** COSMO LIACI, New Haven, Conn., assignor of one-fourth to Raffaele Gaghaldi, one-fourth to Liagi Colavecchio, and one-fourth to Egidio Ferraiuolo, New Haven, Conn. Filed Feb. 3, 1906. Serial No. 299,350.

Claim.—1. In a wrench, a recessed handle, a pair of ratchet-wheels provided with non-circular openings, the teeth of said ratchet-wheels facing, respectively, in opposite directions, a stem extending through the openings, clamping-jaws supported by the stem, pawls engaging the ratchet-wheels, springs tending to force said pawls to operative position, rack-bars arranged within the recesses of the handle and having cam-shaped ends for engagement with the tails of the pawls, pinions engaging said rack-bars, and nuts or disks arranged outside the handle for turning said pinions.

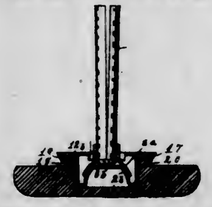
2. In a wrench, the combination with a recessed handle member, of a pair of ratchet-wheels having non-circular openings, the teeth of said ratchet-wheels facing, respectively, in opposite directions, a stem extending through said openings, jaws supported by the stem, pawls arranged to engage said ratchet-wheels, means for controlling the movement of the pawls to operative and inoperative positions, and an adjustable means within the handle for engaging the stem and locking the same rigidly to said handle.



3. In a wrench, the combination with a recessed handle, of ratchet-wheels supported therein and provided with non-circular openings, the teeth of said ratchet-wheels facing, respectively, in opposite directions, a stem extending through the openings, jaws supported by the stem, pawls for engaging the ratchet-wheels, means for adjusting the pawls to operative and inoperative positions, a rack-bar provided within the recessed handle, and having at one end a non-circular recess to engage and interlock with the stem, a pinion engaging said rack-bar, and means for operating said pinion.

4. In a wrench, the combination with a sectional handle having recesses, and provided with a plurality of parallel ribs within the recesses, there being an opening extending through all of the sections of the handle, a pair of ratchet-wheels arranged within said opening and having their teeth facing, respectively, in opposite directions, said ratchet-wheels being provided with non-circular openings, a stem extending through the openings of the ratchet-wheels, clamping-jaws carried by said stem, pawls for engagement with the ratchet-wheels, a locking-bar for engagement with the stem, a rack carried by the locking-bar, rack-bars having cam-shaped ends for engagement with the tails of the pawls, all of said racks being guided by the ribs within the recessed portions of the handle, pinions for engagement with said racks and provided with spindles that extend to the outside of the handle, and operating knobs or disks secured to said spindles.

822,963. **SLIDING SHOE FOR FURNITURE.** ORTON C. LITTLE, Menasha, Wis. Filed June 9, 1905. Serial No. 264,700.



Claim.—1. A sliding shoe for furniture, or other articles, having a flat lower surface and upwardly-curved outer edge, a support arranged concentrically within the shoe having a portion of its upper surface between its vertical sides and top and provided with an outwardly-curved surface, a socket fitted to oscillate upon said curved surface within prescribed limits, and a pin arranged to pass through said socket and being adapted to be engaged by a bore in a suitable piece having a diameter corresponding with the diameter of said pin, and a depth equal to the length of the pin required to be used in said bore, and means for preventing the separation of said concentrically-arranged support and socket, substantially as described.

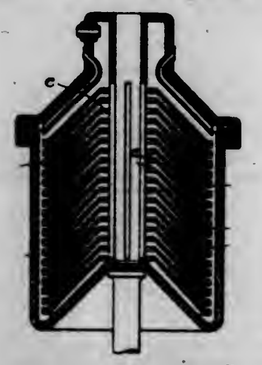
2. A sliding shoe for furniture, or other articles, having a flat lower surface and upwardly-curved outer edge, a support arranged concentrically within the shoe having a portion of its upper surface between its vertical sides and top provided with an outwardly-curved surface, a socket fitted to oscillate upon said curved surface within prescribed limits, and a split pin arranged to pass through said socket and being adapted to be engaged by a bore in a suitable piece having a diameter corresponding with the diameter of said pin when compressed to its smallest dimensions, and a depth equal to the length of the pin required to be used in said bore, and a housing connecting

said concentrically-arranged support and socket and preventing their separation, substantially as described.

3. A sliding shoe for furniture, or other articles, formed of earthenware material, having a flat lower surface and upwardly-curved outer edge, means for securing a housing concentrically around and over a portion of its upper surface, a socket formed centrally within the upper surface of the shoe, a supporting-piece mounted concentrically within said socket having a central aperture and a portion of its upper surface between its vertical sides and said aperture curved outwardly, in combination with a pin having a head or enlargement upon its closed end and a socket secured to said pin and being adapted to oscillate within prescribed limits upon the aforesaid supporting-piece, and means for preventing the separation of said last-named socket and the shoe by the application of a housing substantially as shown.

4. A sliding shoe for furniture, or other articles, formed of earthenware material, having a flat lower surface and upwardly-curved outer edge, means for securing a housing concentrically around and over a portion of its upper surface, a socket formed centrally within the upper surface of the shoe, a supporting-piece mounted concentrically within said socket having a central aperture and a portion of its upper surface between its vertical sides and said aperture curved outwardly, in combination with a split pin having a head or enlargement upon its closed end and a socket secured to said pin, it being adapted to oscillate within prescribed limits upon the aforesaid supporting-piece, said pin being adapted to enter a bore in a suitable piece having a diameter corresponding with the diameter of said pin when compressed to its smallest dimensions, and a depth equal to the length of pin required to be used in said bore, and means of preventing the separation of said last-named socket and the shoe by the application of a housing, substantially as shown.

822,864. **LINER FOR CENTRIFUGAL LIQUID-SEPARATORS.** BIRGER LJUNGSTRÖM, Stockholm, Sweden, assignor to Aktiebolaget Separator Stockholm, Sweden. Filed May 3, 1905. Serial No. 258,598.



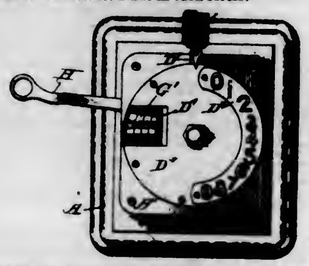
Claim.—1. The combination of a centrifugal separator-bowl with division-plates intersecting both radial horizontal and radial vertical planes of the bowl, said plates continually decreasing in thickness from the outer to the inner ends and having their outer edges bent outwardly and their inner edges bent inwardly, the inner edge being thicker than the plate itself nearest said edge.

2. The combination of a centrifugal separator-bowl with division-plates intersecting both radial horizontal and radial vertical planes of the bowl, said plates continually decreasing in thickness from the outer to the inner ends and having their outer edges bent outwardly and their inner edges bent inwardly, the outer edge being thicker than the plate itself nearest said edge.

3. The combination of a centrifugal separator-bowl with division-plates intersecting both radial horizontal and radial vertical planes of the bowl, said plates continually decreasing in thickness from the outer to the inner ends and having their outer edges bent outwardly and their inner edges bent inwardly, both the inner and the outer edges being thicker than the plate itself nearest said edges.

822,965. **CALLING DEVICE FOR TELEPHONE-EXCHANGES.** FRANK A. LUNDQUIST, Chicago, Ill. Filed July 11, 1904. Serial No. 215,921.

Claim.—1. In a calling device, a contact-maker, means by which it may be moved a plurality of times to make a plurality of series of electrical contacts, an indicator associated with said device, and means by which upon making such plurality of series of contacts with said contact-maker said indicator will automatically register the number of contacts made in each series.



2. In combination, a contact-maker arranged to be moved to make a series of contacts, an indicator for determining the number of contacts to be made thereby, and a register for recording the number of contacts made by said contact-maker in each series of a plurality of movements.

3. In a calling device, the combination with a contact-closing device, and means for operating it so as to make a plurality of series of electrical contacts, of a registering device associated with said contact-closing device and so arranged that it will automatically register the number of contacts in each series of contacts made by said closing device.

4. In a calling device, the combination with a contact-closing device, a hand-lever by which it may be moved, and an indicator for determining the amount of movement required for any given number of contacts, of a register associated with said contact-closing device and arranged to automatically register the number of contacts made.

5. The combination with a contact-closing device arranged to be operated successively and to make a series of contacts upon each operation, of a registering device associated with said contact-closing device and arranged to automatically register the number of contacts made upon each operation.

6. A numbered dial, a pointer adapted to be moved by hand any desired distance over said dial, a contact-maker arranged to automatically make as many electrical contacts as indicated by a movement of said pointer on said dial, and a registering device arranged to automatically register the number of contacts so made.

7. A contact-maker, means for operating it so as to make any desired number of contacts therewith, an indicator by means of which the desired number of contacts may be determined, and an automatically-operating register for registering the number of contacts made.

8. A lever adapted to be moved by hand from its normal position, an indicator by which any desired length of movement may be determined, a spring for returning said lever to its normal position, a contact-maker operated by such return movement so as to make as many contacts as indicated on said indicator by the movement of said lever, and automatically-operating means for registering the number of contacts so made.

9. In combination, a contact-maker adapted to be operated a number of times in succession, an indicator for determining the number of contacts made upon each operation, and a register for recording the number of contacts made by each operation of a series of successive operations.

10. In combination, a numbered indicator, two contact-making devices, means by which upon operating said indicator one of said contact-making devices will make a series of contacts which series will be automatically followed by one contact made by the second contact-making device, and a register for recording the number of contacts made by the first contact-making device.

11. A calling device arranged to make a series of electrical contacts, a register for recording the number of contacts so made, and a receiver-hook arranged to cause said register to return to its normal position.

12. A contact-maker arranged to make successive series of contacts, a series of wheels or disks provided with numbers, and means by which upon each successive operation of said contact-maker a different wheel will be moved so as to register the number of contacts made by said contact-maker during a corresponding operation.

13. A contact-maker arranged to be operated successive times and to make a series of contacts upon each operation, a series of wheels or disks provided with numbers and means by which upon each successive operation a different wheel will be moved so as to display the number which indicates the number of contacts made by said contact-maker during a corresponding operation.

14. A contact-maker arranged to be operated successive times and to make a series of contacts upon each operation, a series of wheels each of which is adapted to display a number indicating the number of contacts made by said contact-maker, and a shifting connection between said contact-maker and said wheels whereby successive operations of the contact-maker operate successive wheels.

15. A contact-maker arranged to be operated successive times and to make a series of contacts upon each operation, a series of wheels provided with numbers, means by which upon each successive operation a different wheel will be moved so as to display the number which indicates the number of contacts made by said contact-maker during a corresponding operation, and automatically-operating means for causing the moved wheels to return to their normal positions.

16. A contact-maker and means for operating it, an indicator for determining the number of contacts to be made by each operation, and a series of independently-movable wheels arranged to record the number of contacts made by successive operations.

17. A series of registering-wheels, a receiver-hook, means by which an elevation of said hook will cause frictional resistance to be placed upon said wheels and a depression of said hook will release such friction, means by which individual wheels may be moved desired distances from their normal positions when said hook is elevated, and means by which said wheels will be automatically returned to their normal positions when said hook is depressed.

18. A series of wheels, a lever movable about a pivot and provided with connections to one of said wheels, and means by which upon making a series of movements with said lever said connection will be automatically shifted from wheel to wheel.

19. A contact-maker wheel and means by which it may be moved by hand any required distance from its normal position, a spring for returning it to its normal position when moved, means by which the return movement will make a series of electrical contacts at one point and one extra contact at another point, and a governor for regulating the speed of the return movement.

20. A contact-making wheel and means for moving it by hand any required distance, an indicator by which the required distance is determined, a spring for returning the wheel to normal position when moved, means by which the return movement will make a series of electrical contacts at one point and one extra contact at another point, a governor for regulating the speed at which said contacts are made, and means for recording the number of contacts made in each series of contacts.

21. The combination with a movable receiver-hook, a pivoted slide, and a contact-closing device, of means by which a rising movement of said hook will cause said slide to turn on its pivot, and means by which a descending movement of said hook will cause said slide to move in its guide and operate said contact-closing device.

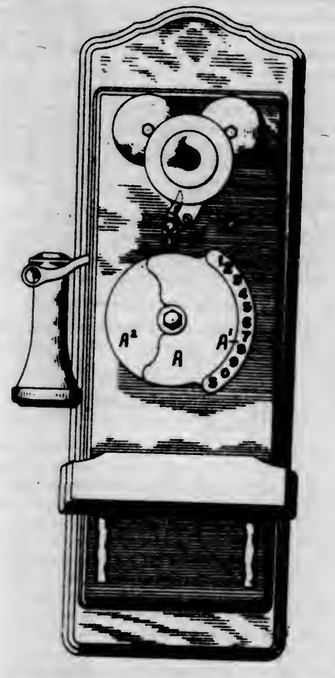
822,966. **CALLING DEVICE FOR TELEPHONE-EXCHANGES.** FRANK A. LUNDQUIST, Chicago, Ill. Filed Feb. 6, 1905. Serial No. 244,344.

Claim.—1. In a calling device, an indicator, a hand-operated device for moving said indicator to any desired point, means by which said indicator is locked in its advanced position during the return movement of said device, and means by which said device upon reaching its normal position will release said indicator so that it may also return to its normal position.

2. In a calling device, two levers arranged to be moved simultaneously from their normal position by the hand applied to one of them, and automatically-operating means by which upon releasing said levers they will be returned independently and successively to their normal position.

3. In a calling device, the combination with an indicator, and a hand-operated device for moving it from its normal position, of means by which said device and said indicator are returned independently to their normal position, and means by which each is held in a locked position while the other is making its return movement.

4. In a calling device, two levers arranged to be moved from their normal position by hand, automatically-operating means for returning them independently and successively to their normal position, and means by which each is held in a locked position while the other is making its return movement.



5. In a calling device, a hand-operated lever, an indicator moved thereby, a spring for returning said lever to its normal position, means for holding said indicator in a locked position during such return, means by which said lever upon reaching its normal position releases said indicator so that it may also return to normal position, a contact-making device, and means by which said contact-making device is operated a predetermined number of times during the return of said indicator.

6. A numbered dial, a pointer adapted to be moved by hand to any number on said dial, automatically-operating means by which upon the operator removing his hand said pointer will remain for a short interval of time at the indicated number and then will return to its normal position, and means controlled by the return movement of said pointer for making a series of electrical contacts.

7. An indicator adapted to be set for any desired selection, automatically-operating means for holding said indicator for a brief period of time at its set position and for releasing it, a spring for returning it to a normal position when so released, and a contact-closing device operated a successive number of times by the return movement.

8. In a calling device arranged to send a desired number of impulses over one line and one additional impulse over a second line, an indicator adapted to be set for the desired number of impulses, means for temporarily locking the indicator at its set position, automatically-operating means for releasing said indicator and causing it to return to its normal position, and means by which the required impulses are sent over said lines during such return movement.

9. The combination with a numbered dial, a pointer, and a hand-operated device for moving said pointer to any number on said dial, of springs for returning said device and said pointer to their normal positions, a lock for holding said pointer in its set position while said device is returning to its normal position, means for releasing said pointer by the final part of the return movement of said device, so that the pointer may also return to normal position, and a second lock for holding said device at its normal position while said pointer is making its return movement.

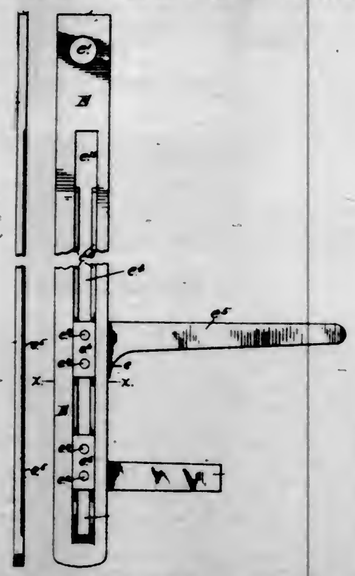
10. The combination with a disk, two contact-springs normally disconnected from said disk, a contact-maker adapted to send electrical impulses to and through said disk, and a pointer connected to said disk, of a numbered dial to any number on which said pointer

may be moved by hand, a spring for returning said pointer to its normal position, said disk being in connection with one or the other of said contact-springs during such return movement, means by which said contact-maker is operated during the return movement of said pointer so as to send as many impulses through one of said springs as was indicated on said dial and also one extra impulse through the other spring.

11. The combination with a contact-maker provided with a handle by means of which an operator may set said contact-maker for the making of any desired number of contacts, and means for starting said contact-maker into operation after being so set, of means for preventing the operator from manipulating the handle so as to interfere with the operation of the contact-maker during the time while it is making its contacts.

12. The combination with a contact-maker provided with a handle by which it is set, and a power device for operating said contact after being set, of a locking device for preventing the handle from interfering with the operation of said contact-maker.

822,967. **GRIPPER FOR PRINTING-PRESSES.** FRANK I. MACAULEY, Alameda, Cal. Filed Nov. 11, 1905. Serial No. 286,735.



Claim.—1. A gripper for printing-presses consisting of a strip formed with a longitudinal slot, said strip having its under surface, forward of the slot, recessed; and an extension provided with a head slidably fitting the slot of the strip and comprising the extension end passing under the recessed under surface of the strip, a cap-plate fitted to the slot and secured above said end, and an intervening spring for clamping said head to said strip.

2. A gripper for printing-presses consisting of a strip formed with a longitudinal slot provided with ribs on its side walls, and an extension provided with a head slidably fitted to the ribs of the slot, and comprising the extension end, a cap-plate secured above said end and an intervening spring for clamping the head to the ribs of the slot.

3. A gripper for printing-presses consisting of a strip formed with a longitudinal slot, and an extension provided with a head slidably fitting the slot of the strip and comprising the extension end, a cap-plate secured above said end, an intervening spring for clamping the head to said strip, and a block between said end and cap-plate, for seating the spring and guiding the head in the slot.

4. A gripper for printing-presses consisting of a strip formed with a longitudinal slot provided with ribs on its side walls, and an extension provided with a head slidably fitted to the ribs of the slot, and comprising the extension end, a cap-plate secured above said end, an intervening spring for clamping the head to said strip, and a block between said end and cap-plate, for seating the spring and guiding the head in the slot.

5. A gripper for printing-presses consisting of a strip formed with a longitudinal slot having an entrance-aperture, and an extension provided with a head adapted to be entered in and removed from said aperture and slidably fitting the slot of the strip, said head comprising the extension end, a cap-plate secured above said end and an intervening spring for clamping said head to said strip.

6. A gripper for printing-presses consisting of a strip formed with a longitudinal slot having an entrance-aperture and provided with ribs on its side walls, and an extension provided with a head adapted to be entered into and removed from said aperture, and slidably fitted to the ribs of the slot, said head comprising the extension end, a cap-plate secured above said end and an intervening spring for clamping said head to the ribs of the slot.

7. A gripper for printing-presses consisting of a strip formed with a longitudinal slot having an entrance-aperture, and an extension provided with a head adapted to be entered in and removed from said aperture and slidably fitting the slot of the strip, said head comprising the extension end, a cap-plate secured above said end, an intervening spring for clamping said head to said strip, and a block between said end and cap-plate, for seating the spring and guiding the head in the slot.

8. A gripper for printing-presses consisting of a strip formed with a longitudinal slot having an entrance-aperture and provided with ribs on its side walls, and an extension provided with a head adapted to be entered into and removed from said aperture, and slidably fitted to the ribs of the slot, said head comprising the extension end, a cap-plate secured above said end, an intervening spring for clamping said head to the ribs of the slot and a block between said end and cap-plate for seating the spring and guiding the head in the slot.

822,968. **RELAY.** RAY H. MANSON, Elyria, Ohio, assignor to The Dean Electric Company, Elyria, Ohio, a Corporation of Ohio. Filed May 25, 1904. Serial No. 209,615.



Claim.—1. A relay comprising an electromagnet, an armature pivoted thereto, contact members secured thereto, one of which is provided with a depending portion forming an open foot extending in the path of said armature, and contact-points visible through the opening in said foot.

2. A relay comprising an electromagnet, an armature pivoted thereto, contact members secured thereto, one of which is provided with a depending extension forming an open foot extending in the path of movement of said armature, contact-points visible through said open foot, and a stop-post removably mounted on the magnet and adapted to support two of said springs.

3. A relay comprising an electromagnet, an angular armature pivoted thereon, and contact-springs extending longitudinally of said magnet and having visible and accessible contact-points near the front end of the magnet, the intermediate contact-spring having an open depending portion at its forward end extending in the path of movement of said armature, substantially as described.

4. A relay comprising an electromagnet, an angular armature pivoted thereon, and contact-springs extending longitudinally of said magnet and having visible and accessible contact-points near the front end of the magnet, the intermediate contact-springs having a depending member extending in the path of movement of said armature.

822,969. **COMBINED BADGE AND WATCH-GUARD.** JOHN S. MARTIN and HARRY N. STOCKTON, Snohomish, Wash. Filed Apr. 24, 1905. Serial No. 257,190.



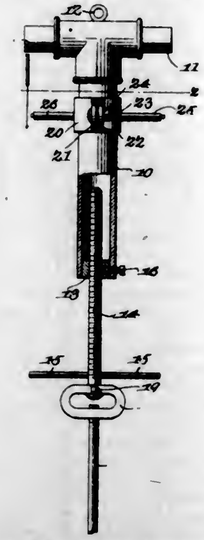
Claim.—A device of the class described comprising a body having a rearwardly-extending marginal flange provided with a transverse recess at one point therein, a bar extending through said recess and secured to said body and with an eye at one end extending beyond the body, a threaded pin extending rearwardly of said bar at its inner end, and a clamp-nut engaging said pin.

822,970. **HANDLE.** CHARLES H. MASCHMEYER, Portland, Me. Filed Nov. 18, 1905. Serial No. 287,951.



Claim.—A handle for receptacles consisting of attachment-sections, a hand-section, insulating-inserts between the adjacent ends of the sections and a metallic bond having an attenuated body portion and enlarged ends, the body portion passing through the insert and the enlarged ends embedded in the metal of the section.

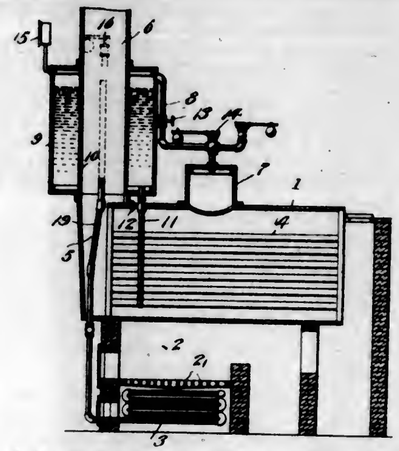
822,971. **VALVE-ADJUSTER FOR OIL-WELLS.** ELMER R. MATTHEWS, Hohman, Ohio. Filed Jan. 11, 1906. Serial No. 295,633.



Claim.—A device of the character described, comprising an arm-engaging cross-head, a tube extending from the cross-head, an internally-screw-threaded block secured within one end of the tube, a clamp adjustably mounted on the tube, arms radiating therefrom, a threaded stem engaging the block and extending into the tube, means extending through the block and tube for binding the stem to hold it against rotation, a polish-rod, a link adjustably connected thereto and swiveled on the stem, arms radiating from the stem, and means extending through the link for binding upon the stem to hold the link and stem against rotation.

822,972. **FEED-WATER HEATER.** WALTER A. MOFFAT, Denver, Colo. Filed June 16, 1905. Serial No. 265,576.

Claim.—1. In a device of the class described a boiler having a steam-space and a combustion-chamber, a feed-water receptacle having a steam-space operatively connected with the steam-space of the boiler, connections between the receptacle and boiler for supplying water to the latter, and a circulating-pipe communicating at its ends with the receptacle and extended between its ends through the combustion-chamber.



2. In a device of the class described a boiler provided with a combustion and smoke chamber and having a steam-space, a feed-water receptacle communicating with the boiler for supplying water thereto and also having a steam-space, a duct communicating with the steam-spaces of the boiler and receptacle, and a circulating-pipe communicating at its ends with the receptacle and having intermediate coils disposed in the combustion-chamber, said pipe being extended between its ends through the smoke-chamber.

3. In a device of the class described, a boiler provided with a combustion-chamber and a smoke-chamber and having a steam-space, a feed-water receptacle having a steam-space, and provided with an inner flue communicating with said smoke-chamber, a duct connecting the steam-spaces of the boiler and receptacle, connections between the latter and the boiler for supplying water thereto, and a circulating-pipe communicating at its ends with the receptacle and extended between its ends through the combustion and smoke chambers.

4. In a device of the class described a boiler provided with a fire-box and smoke-chamber, and having a steam-space, a feed-water receptacle having a steam-space, and provided with an inner flue communicating with said smoke-chamber, a duct connecting the steam-spaces of the boiler and receptacle, connections between the latter and the boiler for supplying water to the boiler, and a pipe connected at both ends with the receptacle and extended through the smoke-chamber, and provided between its ends with coils disposed in the fire-box, for heating the water in the receptacle, said pipe having the usual valves for operating and cleaning the same.

5. In a device of the class described a boiler provided with a fire-box, smoke-chamber and ash-pit, and having a steam-space, a feed-water receptacle having a steam-space, and provided with an inner flue communicating with said smoke-chamber, a duct connecting the steam-spaces of the boiler and receptacle, connections between the latter and the boiler for supplying water to boiler, and a circulating-pipe connecting at both ends with the receptacle and extended through the smoke-chamber, and provided between its ends with coils disposed in the fire-box and ash-pit, for heating the water in the receptacle, said pipe having the usual valves for operating and cleaning the same.

6. In a device of the character described, a boiler with a fire-box and smoke-chamber, a feed-water receptacle having a steam-space and provided with an inner flue communicating with said smoke-chamber, a duct connecting the steam-space of the boiler with the steam-space of said receptacle, a valve for controlling said duct under the control of the steam-pressure, connections between said receptacle and boiler for supplying water to the boiler, and a circulating-pipe for said receptacle having a heating coil or coils disposed in said fire-box.

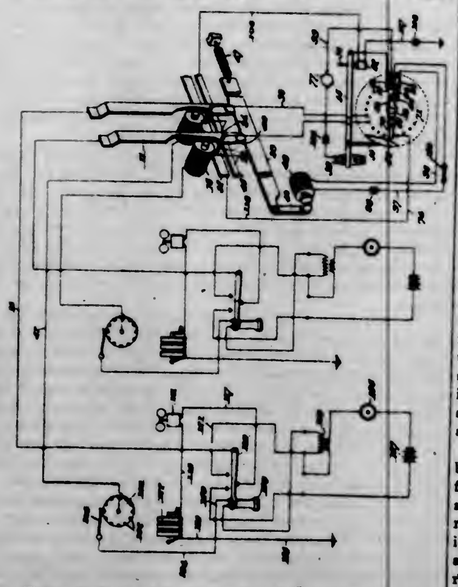
7. In a device of the character described, a boiler with a fire-box and smoke-chamber, a feed-water receptacle having a steam-space and provided with an inner flue communicating with said smoke-chamber, a duct connecting the steam-space of the boiler with the steam-space of said receptacle, a valve for controlling said duct under the control of the steam-pressure, a valve for the feed-water

receptacle adapted to be controlled by the pressure of steam therein, connections between said receptacle and the boiler for supplying water to the boiler, and a circulating-pipe for said receptacle having heating coil or coils disposed in said fire-box.

8. In a device of the character described, a boiler with a fire-box and smoke-chamber, a feed-water receptacle having a steam-space and provided with an inner flue communicating with said smoke-chamber, a duct connecting the steam-space of the boiler with the steam-space of said receptacle, a valve for controlling said duct under the control of the steam-pressure, connections between said receptacle and boiler for supplying water to the boiler, and a circulating-pipe having heating-coils disposed in said fire-box below the grate thereof.

9. In a device of the character described, a boiler with a fire-box and smoke-chamber, a feed-water receptacle having a steam-space and provided with an inner flue communicating with said smoke-chamber, a duct connecting the steam-space of the boiler with the steam of said receptacle, a valve for controlling said duct under the control of the steam-pressure, connections between said receptacle and boiler for supplying water to the boiler, and a circulating-pipe for said receptacle, the same extending from the smoke-chamber and having heating-coils disposed within said fire-box.

822,973. AUTOMATIC TELEPHONE SYSTEM. AUGUST A. MORSON, Grey Eagle, Minn. Filed Jan. 24, 1905. Serial No. 242,549.



Claim.—1. In telephony, a central station, an automatic switchboard and a selecting device arranged at the central station, an electromagnet for moving the selecting device, independent selecting and talking circuits extending from each substation to the central station, each of such selecting-circuits being normally broken at the substation and connected to the electromagnet of the selecting device at the central station and thence to a return, an independent electromagnet for each selecting-circuit, said magnets forming part of the switchboard and controlling the closing of the talking-circuits, means at each substation for making and breaking the selecting-circuit, thereby controlling at the central station the energizing of said independent electromagnets and the connection of the talking-circuits to the selecting mechanism, the operation of the electromagnet of the selecting mechanism for a predetermined number of times serving to connect the talking-circuit of the called station to the talking-circuit of the calling-station through said selecting mechanism.

2. In telephony, a central station including an automatic switchboard and a selecting mechanism, an electromagnet for operating the selecting mechanism, independent selecting and talking circuits leading from each substation to the central station, the selecting-circuit being normally broken at the substation and extending through an electromagnet at the switchboard to the electromagnet of the selecting mechanism and thence to ground at the central station, means at each substation for making and breaking the selecting-circuit and effecting on the first movement through the energizing of the switchboard-magnet, a connection between the talking-circuit of the calling-station and the selecting mechanism, and by continued making and breaking of the selecting-circuit serving to connect the talking-circuit of the calling-station to the talking-circuit of a called station through said selected mechanism.

3. The combination with a central station, of a switchboard, a plurality of contacts carried thereby, electromagnets for operating said contacts, a selecting device also arranged at the central station and having a plurality of contacts electrically connected to those of the switchboard, an electromagnet for operating the selecting device, a plurality of substations, and line-wires extending from the substations to the switchboard, the circuit of one of said line-wires for each substation being extended through the operating-magnet of the selecting device.

4. In telephony, a central station, a switchboard arranged at the central station, contact-strips carried by the switchboard, electromagnets for moving said strip, a selecting device having contacts normally in circuit with those of the switchboard, an operating-magnet for the selecting device, a plurality of substations, line-wires extending therefrom to the central station, the circuit of one of said line-wires for each substation being continued through the operating-magnet of the selecting device and one of the contact-operating magnets of the board, a contact-locking strip, an electromagnet for operating the same, and a local circuit in which said strip-operating magnet is connected, said strip being under the control of the selecting device.

5. In telephony, a central station, a switchboard arranged at the central station, spring-contacts carried by the switchboard, an electromagnet for each contact, a pair of opposed stationary contacts with either of which the switch-contacts may be engaged, a selecting device at the central station, and including a plurality of spaced contacts, each connected separately to one set of stationary contacts of the board, an operating-magnet for the selecting device, a revoluble contact-arm forming a part of the selecting device and movable over the stationary contacts thereof, said movable contact being connected to the second series of stationary contacts of the board, a plurality of substations, a line-wire extending from ground at the substations to the spring-contact of the switchboard, and thence by way of the first set of stationary contacts of said board to the stationary contacts of the selecting device, a second line-wire extending from each substation to the central station, and grounded at the latter point, the circuit to the second line-wire being broken at the substation, and circuit-closing means arranged at the substation for closing the circuit of the second line-wire, and means connecting said second line-wire in circuit with one of the strip-operating magnets, and the operating-magnet of the selecting device.

6. In telephony, a central station having an automatic switchboard including a plurality of circuit-closing strips, electromagnets for operating said strips, a locking-slide for engaging all of the strips after the movement of one of them, and preventing movement of said remaining strips, an electromagnet for operating the slide, a circuit in which the electromagnet is arranged, an automatic circuit-closer, and a switch also arranged in the circuit whereby the system may be rendered strictly private or optionally public.

7. In telephony, an automatic switchboard arranged at a central station, spring circuit-closing strips on the switchboard, an armature carried by each strip, an independent operating-magnet carried by the board and arranged adjacent to each armature, a pair of sets of contacts for each of the strips, and with one of which the strip normally engages, said strip engaging the second contact when its armature is attracted, a locking-slide engaging the end portions of the several strips, and an electromagnetically-operated means for imparting movement to said locking-slide.

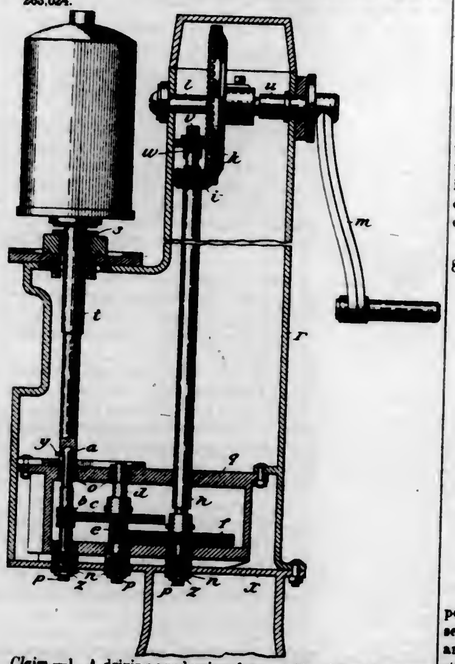
8. In an automatic switchboard, a base, a plurality of spring-pressed strips secured at one end to the base, an adjustable screw forming a fulcrum and tension member for the spring, a pair of stationary contacts with either of which said spring may engage, an electromagnet for each of the springs, an armature carried by each spring and disposed within the field of force of the electromagnet, a longitudinally-movable slide having ears or lugs for engaging said springs, a slide-operating magnet, and an armature disposed adjacent to said slide-operating magnet and connected to the slide.

9. In selecting mechanism, a spindle, a step-by-step ratchet-disk secured thereto, an operating-pawl, and a locking-pawl engaging the disk, an electric motor, means operated thereby for disengaging both pawls from the disk, a circuit in which said motor is connected, and means under the control of the selecting mechanism for opening and closing said circuit.

10. In selecting mechanism, a spindle, a step-by-step ratchet-disk secured thereto, a spring tending to restore the ratchet-disk to initial position, a stop carried by the disk for determining such initial position, a pair of pawls engaging the ratchet-disk, an armature-lever carrying one of said pawls, an armature secured to the lever, an electromagnet for attracting the armature, an electric motor, a circuit within which said motor is arranged, circuit-controlling devices controlled in part by the electromagnet, and in part by the spindle, and means operated by the motor for effecting release of the pawls from the disk.

11. In selecting devices, a spindle, a ratchet-disk secured thereto, a spring tending to restore the disk to initial position, a stop carried by the disk for determining such initial position, a plurality of stationary contacts, a contact-arm secured to the spindle and adapted to successively engage said contacts, an electromagnet, an armature disposed within the field of force of the electromagnet, a lever carrying said armature, an operating-pawl carried by the lever, a locking-pawl for holding the ratchet-disk in adjusted position, a circuit-closing means at the free end of the lever, an electric motor, a worm carried by the armature-shaft of the motor, a worm-wheel with which the worm intermeshes, a tappet-disk revoluble with said worm-wheel, a pawl-disengaging rod having an ear or lug to be engaged by said tappets, a spring for restoring the rod to its initial position, a pair of contacts carried by the spindle, and a circuit connecting the motor, the contacts and the circuit-controlling devices at the end of the armature-lever with a source of electrical energy.

822,974. DRIVING MECHANISM FOR CENTRIFUGAL LIQUID-SEPARATORS. THOMAS W. MORGAN, Waterloo, Iowa, assignor to Wilbur W. Marsh, Waterloo, Iowa. Filed May 31, 1905. Serial No. 263,024.



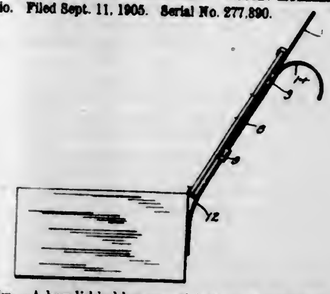
Claim.—1. A driving mechanism for centrifugal liquid-separators, comprising a removable boxing, bearings in said boxing, a rotatable shaft, a spiral gear-wheel mounted thereon, a rotatable shaft, a spiral pinion thereon intermeshing with said spiral gear-wheel, a spiral gear-wheel on said spiral-pinion shaft, a rotatable shaft, a spiral pinion thereon intermeshing with the last-mentioned spiral gear-wheel, and a driven spindle actuated by said last-mentioned shaft.

2. A driving mechanism for centrifugal liquid-separators, comprising an external casing, a removable hollow boxing therein, anti-friction-bearings in said boxing, shafts mounted in said bearings, a crank, intermeshing spiral gearing on said shafts arranged to drive a spindle, and a driven spindle.

3. A driving mechanism for centrifugal liquid-separators, comprising a rotatable shaft, a bevel-gear mounted thereon, a boxing in said casing provided with bearings, a rotatable shaft in said boxing having a bevel gear-wheel intermeshing with said first-mentioned bevel gear-wheel, a spiral gear-wheel mounted on said bevel-gear shaft, a rotatable shaft, a spiral pinion thereon intermeshing with said spiral gear-wheel, a spiral gear-wheel on said spiral-pinion shaft, a rotatable shaft, a spiral pinion thereon intermeshing with the last-mentioned spiral gear-wheel, and a driven spindle actuated by said last-mentioned shaft.

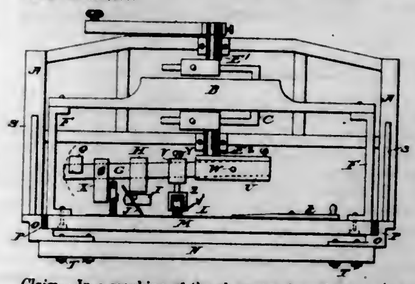
4. A driving mechanism for centrifugal liquid-separators, comprising a suitable boxing, a driven spindle, rotatable shafts in said boxing, intermeshing spiral gear-wheels and spiral pinions on said shafts so arranged that the directions of revolution of both the gear-wheels and the pinions are respectively reversed in relation to each other producing a lifting stress by reason of their coöperation upon the driven spindle, substantially as described.

822,975. BOX-LID HOLDER. GUSTAV MUELLER, Cleveland, Ohio. Filed Sept. 11, 1905. Serial No. 277,890.



Claim.—A box-lid holder comprising upper and lower members slidably secured together and extensible lengthwise, the upper member having a part extending above the edge of the lid and arranged to receive a sign, and having a downwardly-directed tongue arranged to engage over the upper edge of the lid, and the lower member having a handle at its upper end, an angularly-projecting part at its lower end, and an upwardly-directed tongue arranged to engage the lower edge of the lid.

822,976. OVAL AND ROUND CARDBOARD CUTTING MACHINE. DONALD T. MCCALL, Jackson, Mich. Filed Dec. 10, 1903. Serial No. 184,677.



Claim.—In a machine of the character described, a fixed supporting-frame, a truss-frame having outwardly-projecting brackets secured above said fixed frame, bearings in said brackets in which are journaled perpendicular shafts coupled together by an adjustable staple-crank which operates in conjunction with parallel bars secured to brackets fixed to a table slidable on the fixed supporting-frame, and means for rotating the staple-crank whereby a positive reciprocating motion is imparted to the table, substantially as described.

822,977. CHUCK. EDWARD A. HOLL, Cleveland, Ohio, assignor to The National Tool Company, Cleveland, Ohio, a Corporation of Ohio. Filed Aug. 31, 1904. Serial No. 222,847.

Claim.—1. The combination of a chuck-body, two sets of jaws sliding in the body, one to the inside of the other, means for separately actuating each set of jaws, and the actuating means for one set of jaws having slight play to allow the jaws to adapt themselves to eccentricities in the tool clamped by the jaws.



2. The combination of a chuck-body formed with a transverse slot and with two transverse bores intersected by the slot, two pairs of jaws sliding in the slot and having clamping-faces shaped to engage different portions of the tool-shank and formed with right and left hand screw-threaded grooves in their sides registering with the open sides of the transverse bores, two right and left hand screws in the transverse bores and engaging the grooves in the jaws and formed with circumferential grooves at their middles, and a retaining-pin in the chuck-body and engaging the circumferential grooves of the screws and of such size as to snugly fit into the groove of one screw and to loosely fit into the groove of the other screw.

3. The combination of a chuck-body formed with a transverse slot and with two transverse bores intersected by the slot, two pairs of jaws sliding in the slot and formed with right and left hand screw-threaded grooves in their sides registering with the open sides of the transverse bores, two right and left hand screws in the transverse bores and engaging in the grooves in the jaws and formed with circumferential grooves at their middles, and a retaining-pin in the chuck-body and having a screw-thread for adjustably securing it in the same and engaging the circumferential groove of the screws and having that portion which engages the groove of the inner screw slightly smaller than said groove and having that portion which engages the groove of the outer screw tapering.

4. In a chuck, the combination with a jaw-adjusting screw formed with a circumferential groove, of a longitudinally-adjustable retaining-pin engaging the circumferential groove and having its engaging portion oblique to take up wear of the engaging surfaces by longitudinal adjustment of the pin.

822,978. **MOLD.** JAMES OLIVER, South Bend, Ind., assignor to Oliver Chilled Plow Works, South Bend, Ind. Filed Sept. 15, 1905. Serial No. 278,661.



Claim.—1. A mold for metal castings comprising a hollow metal chill, means for supporting the same in a position slightly inclined to the horizontal, means for introducing liquid into the chill, a flask mounted on top of said chill, and means permitting the introduction of molten metal into the lower portion of the mold, whereby said metal is caused to flow upwardly over the face of the chill and prevent the deposition of sand particles between the face of the chill and the casting.

2. A mold comprising a chill having a chamber permitting an approximately uniform depth of chilling medium under the top face of the chill, a flask mounted on top of the chill, means for supporting the mold in a position slightly inclined to the horizontal, and means permitting the introduction of metal at a low portion of the mold.

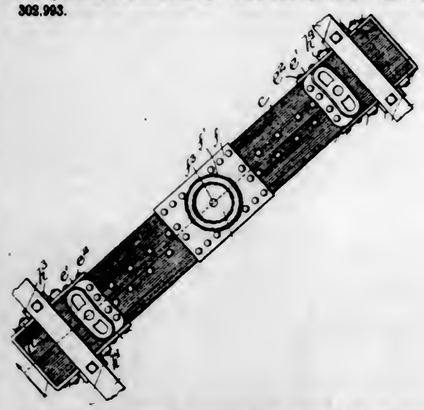
3. A mold comprising a metal plate having a compartment in its bottom, a plate tightly closing said bottom, means for introducing a fluid chilling medium into said compartment, a flask mounted upon said plate, means for supporting the mold in a position slightly inclined to the horizontal, and means permitting the introduction of molten metal into the lower portion of the mold.

4. A mold for metal castings, comprising a lower chill supported in a position slightly inclined to the horizontal, means permitting the introduction of metal into the lower end of the mold and an upper sand-flask mounted on top of the inclined chill and hinged thereto.

5. A mold for plow-moldboards, comprising a lower chill supported in a position slightly inclined to the horizontal and comprising a water-chamber, a pipe admitting water to the upper end of the chamber, a flask on top of the chill and conforming in outline to the moldboard to be cast yet larger to admit sand all around the pattern, and said flask constructed to receive the gate and sprue-pin at the lower end of the inclined chill.

6. A mold for plow-moldboards, comprising a lower chill supported in a position slightly inclined to the horizontal and consisting of a water-chamber having a water-inlet L-joint pipe at its highest end, an open flask having hinge connection at one side with the chill and provided with a handle at its opposite side, and said chill and flask constructed to receive the gate and sprue-pin at the lowest point of the inclined pattern.

822,979. **RAILWAY-CAR BOLSTER.** SPENCER OTIS, Chicago, Ill., assignor to National Patent Holding Company, Rapid City, S. D., a Corporation of South Dakota. Filed Feb. 26, 1906. Serial No. 303,993.



Claim.—1. A bolster for railway-cars, comprising an upper channel-bar member, a lower member secured thereto, and a ⊏-shaped brace member secured to the end of the channel-bar member.

2. A bolster for railway-cars, comprising an upper channel-bar member, a vertical I-beam member secured thereto, and a ⊏-shaped brace member secured to the end of the channel-bar member, said brace member also forming an inclosing box for the spring bearing-block.

3. A railway-car bolster, comprising a slotted upper horizontal member and a correspondingly-slotted lower vertical member secured thereto, said lower member having inwardly-inclined ends, and a brace-strap passing around the inclined ends and through the slots on the upper and lower members.

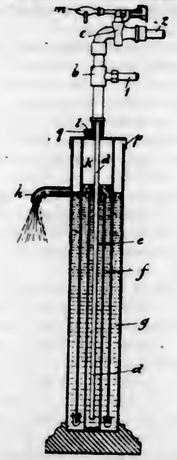
4. A bolster for railway-cars, comprising an upper channel-bar member, a lower I-beam member secured to the web of the upper channel-bar member, said lower member having inwardly-inclined ends, said upper member and lower member being provided with slots in the web and flanges thereof respectively, and a metallic brace-strap embracing the inclined end portion of the lower member and having its ends passed through the slots in the bolster members and secured thereto.

5. A railway-car bolster having a horizontal upper member, comprising upper and lower plates, the upper plate having a central opening, a center bearing having a flange surrounding and overhanging the opening, and a headed king-bolt having its head loosely held in the opening between the lower plate and the flange on the center bearing.

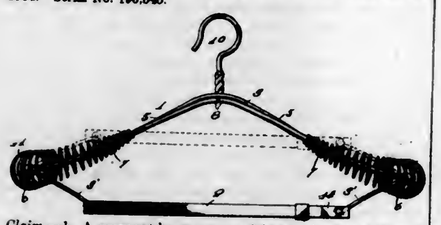
822,980. **WATER-OZONIZING APPARATUS.** MARIUS OTTO, Paris, France, assignor to American Ozone Company, Niagara Falls, N. Y., a Corporation of New York. Filed July 14, 1905. Serial No. 269,691.

Claim.—1. A mixing and separating device for sterilizing water by ozone, comprising a series of concentrically-arranged cylindrical compartments opening in opposite directions one into the other, the outermost of said cylindrical compartments being provided with a discharge-outlet and one of the inner compartments having a separation-chamber, and a safety-valve.

2. An arrangement forming tank and separator for the excess of ozone in the receptacle for the sterilized water consisting in a series of concentric cylinders *e*, *f*, *g*, alternately closed at the bottom and top arranged around an axial tube *d*, through which the ozonized air enters in such way that the mixture of water and ozone is forced to follow an alternating descending and ascending course through the annular spaces between said cylinders, the outer cylinder *g*, forming the cover to which the tube for taking the water *h*, and the upper part *k*, of one of the cylinders closed at the top forming the separating-chamber for the escapement of the excess of ozone.



822,981. **GARMENT-HANGER.** CHARLES L. PATTERSON, Detroit, Mich., assignor to John B. Timberlake, Jackson, Mich. Filed Jan. 25, 1904. Serial No. 190,545.



Claim.—1. A garment-hanger comprising a wire frame formed with outwardly-disposed shoulder-loops extending in opposite directions from a central support of the hanger, each shoulder-loop carrying a supplemental bearing or supporting surface for the garment that is enlarged in both horizontal and vertical directions and is formed with relatively broad curved garment-engaging surfaces, substantially as set forth.

2. A garment-hanger comprising a wire frame formed with outwardly-disposed shoulder-loops that extend in opposite directions from the central support of the hanger, each shoulder-loop carrying a supplemental bearing or support for the garment, formed of coiled wire surrounding the strand of wire that forms the shoulder-loop whereby there is formed for the shoulder portion of each sleeve of the garment a relatively broad curved supporting-surface, extending outward beyond, and both above and below, the strand of the wire that forms the shoulder-loop of the frame, substantially as set forth.

3. A garment-hanger comprising a wire frame formed with outwardly-disposed shoulder-loops each formed of a continuous strand of wire bent into loop shape, each leg of the loop being surrounded by a wire coil, and the outer end, or looped, portion of the strand of wire being surrounded by a wire coil the diameter of which is greater than that of the wire coils surrounding the leg portions of the strands of wire, substantially as and for the purposes set forth.

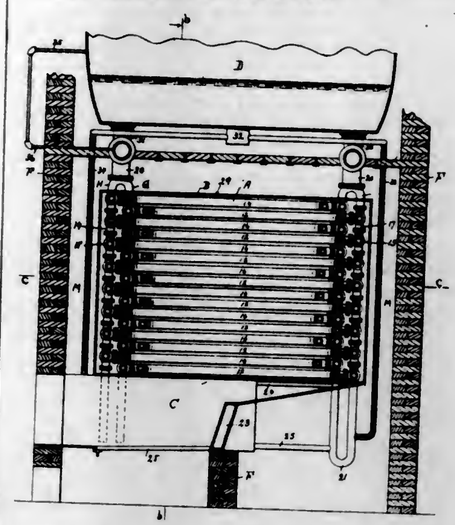
4. A garment-hanger having a main frame formed of wire and supplemental shoulder portions formed of helically-twisted wire mounted on the main frame near the opposite looped ends and adapted to be adjusted longitudinally relative to the said frame, substantially as set forth.

5. A garment-hanger comprising the frame having the loops 6 6, the helically-wound shoulder-supports formed of wire and having oppositely-tapering sections inclosing the said loops, each of said supports having one of its ends secured to said frame and the other of its ends mounted loosely thereon whereby the said supports may be adjusted to increase or decrease the width of the garment-hanger as desired, substantially as set forth.

6. A garment-hanger comprising a frame and supplemental shoulder-supports of coiled wire carried by said frame at either end thereof and adjustable relatively to the frame to vary the width of the hanger.

7. In a garment-hanger, in combination, two supporting members extended in opposite directions and provided at their outer ends with looped portions, and helical springs encircling said looped portions with the outer circumferential portion of the convolutions of said springs out of contact with the looped portion of said members, substantially as described.

822,982. **WATER-TUBE BOILER.** ALFRED J. RAYNOR, Toronto, Canada. Filed May 11, 1903. Serial No. 156,601.



Claim.—1. A water-tube boiler comprising a battery composed of a plurality of riser-pipes each formed of a plurality of T-couplings superposed one upon the other, the couplings in the same plane being connected in pairs to one another by end pipes which end pipes are connected together by cross-pipes; substantially as and for the purposes set forth.

2. A water-tube boiler comprising a battery composed of a plurality of riser-pipes each formed of a plurality of T-couplings superposed one upon the other, the couplings in the same plane being connected in pairs to one another by end pipes which end pipes are connected together by curved cross-pipes, substantially as set forth.

3. A water-tube boiler comprising a battery composed of a plurality of riser-pipes each formed of a plurality of T-couplings superposed one upon the other, the couplings in the same plane being connected in pairs to one another by end pipes which end pipes are connected together by S-shaped cross-pipes, substantially as set forth.

4. In a water-tube boiler, the combination with a battery composed of horizontal tubes connected together by way of riser-tubes, of a fire-box water-chamber formed in the bridge, end and side walls of the fire-box in free communication with each other, and in communication with the riser pipes or tubes.

5. A water-tube boiler comprising a batterry composed of a plurality of riser-pipes each formed of a plurality of T-couplings superposed one upon the other, the couplings in the same plane being connected in pairs to one another by end pipes which end pipes are connected together by cross-pipes, a second battery-section of similar construction the component sections of which formed of the riser-couplings end and cross pipes have their cross-pipes alternately arranged between the cross-pipes of the first-named sections, and

pipes connecting the adjacent risers of the two sections together at the top and bottom, substantially as set forth.

6. A water-tube boiler comprising a battery composed of a plurality of riser-pipes each formed of a plurality of T-couplings superposed one upon the other, the couplings in the same plane being connected in pairs to one another by end pipes which end pipes are connected together by curved cross-pipes, a second battery-section of similar construction the component sections of which formed of the riser-couplings end and cross pipes have their cross-pipes alternately arranged between the cross-pipes of the first-named section, and pipes connecting the adjacent risers of the two sections together at the top and bottom, substantially as set forth.

7. A water-tube boiler comprising a battery composed of a plurality of riser-pipes each formed of a plurality of T-couplings superposed one upon the other, the couplings in the same plane being connected in pairs to one another by end pipes which end pipes are connected together by S-shaped cross-pipes, a second battery-section of similar construction the component sections of which formed of the riser-couplings end and cross pipes have their cross-pipes alternately arranged between the cross-pipes of the first-named section, and pipes connecting the adjacent risers of the two sections together at the top and bottom, substantially as set forth.

8. A water-tube boiler comprising a battery composed of a plurality of riser-pipes each formed of a plurality of T-couplings superposed one upon the other, the couplings in the same plane being connected in pairs to one another by end pipes which end pipes are connected together by cross-pipes, a second battery-section of similar construction to the first section the component sections of which formed of the riser-couplings end and cross pipes have their cross-pipes alternately arranged between the cross-pipes of the first-named sections, and pipes connecting the adjacent risers of the two sections together at the top and bottom, and a steam drum or dome in communication with the riser at the top, substantially as set forth.

9. A water-tube boiler comprising a battery composed of a plurality of riser-pipes each formed of a plurality of T-couplings superposed one upon the other, the couplings in the same plane being connected in pairs to one another by end pipes which end pipes are connected together by curved cross-pipes, a second battery-section of similar construction the component sections of which formed of the riser-couplings end and cross pipes have their cross-pipes alternately arranged between the cross-pipes of the first-named section, and pipes connecting the adjacent risers of the two sections together at the top and bottom, and a steam drum or dome in communication with the risers at the top, substantially as set forth.

10. A water-tube boiler comprising a battery composed of a plurality of riser-pipes each formed of a plurality of T-couplings superposed one upon the other, the couplings in the same plane being connected in pairs to one another by end pipes which end pipes are connected together by S-shaped cross-pipes, a second battery-section of similar construction to the first section the component sections of which formed of the riser-couplings end and cross pipes have their cross-pipes alternately arranged between the cross-pipes of the first-named section, pipes connecting the adjacent risers of the two sections together at the top and bottom, and a steam drum or dome in communication with the risers at the top, substantially as set forth.

11. A water-tube boiler comprising a battery composed of a plurality of riser-pipes each formed of a plurality of T-couplings superposed one upon the other, the couplings in the same plane being connected in pairs to one another by end pipes which end pipes are connected together by cross-pipes, a second battery-section of similar construction the component sections of which formed of the riser-couplings end and cross pipes have their cross-pipes alternately arranged between the cross-pipes of the first-named section, pipes connecting the adjacent risers of the two sections together at the top and bottom, and a fire-box having the side and bridge walls in the form of a water-chamber in communication with the battery, substantially as set forth.

12. A water-tube boiler comprising a battery composed of a plurality of riser-pipes each formed of a plurality of T-couplings superposed one upon the other, the couplings in the same plane being connected in pairs to one another by end pipes which end pipes are connected together by curved pipes, a second battery-section of similar construction the component sections of which formed of the riser-couplings end and cross pipes have their cross-pipes alternately arranged between the cross-pipes of the first-named section, pipes connecting the adjacent risers of the two sections together at the top and bottom, and a fire-box having the side and bridge walls in the form of a water-chamber in communication with the battery, substantially as set forth.

13. A water-tube boiler comprising a battery composed of a plurality of riser-pipes each formed of a plurality of T-couplings superposed one upon the other, the couplings in the same plane being connected in pairs to one another by end pipes which end pipes are connected together by S-shaped cross-pipes, a second battery-section of similar construction the component sections of which formed of the riser-couplings end and cross pipes have their cross-pipes alternately arranged between the cross-pipes of the first-named section, pipes connecting the adjacent risers of the two sections together at the top and bottom, and a fire-box having the side and bridge walls in the form of a water-chamber in communication with the battery, substantially as set forth.

14. A water-tube boiler comprising a battery composed of a plurality of riser-pipes each formed of a plurality of T-couplings superposed one upon the other, the couplings in the same plane being connected in pairs to one another by end pipes which end pipes are connected together by cross-pipes, a second battery-section of similar construction the component sections of which formed of the riser-couplings end and cross pipes have their cross-pipes alternately arranged between the cross-pipes of the first-named section, pipes connecting the adjacent risers of the two sections together at the top and bottom, a steam drum or dome in communication with the risers at the top, and a fire-box having the side and bridge walls in the form of a water-chamber in communication with the battery, substantially as and for the purposes set forth.

15. A water-tube boiler comprising a battery composed of a plurality of riser-pipes each formed of a plurality of T-couplings superposed one upon the other, the couplings in the same plane being connected in pairs to one another by end pipes which end pipes are connected together by curved cross-pipes, a second battery-section of similar construction the component sections of which formed of the riser-couplings end and cross pipes have their cross-pipes alternately arranged between the cross-pipes of the first-named section, pipes connecting the adjacent risers of the two sections together at the top and bottom, a steam drum or dome in communication with the risers at the top, and a fire-box having the side and bridge walls in the form of a water-chamber in communication with the battery, substantially as set forth.

16. A water-tube boiler comprising a battery composed of a plurality of riser-pipes each formed of a plurality of T-couplings superposed one upon the other, the couplings in the same plane being connected in pairs to one another by end pipes which end pipes are connected together by S-shaped cross-pipes, a second battery-section of similar construction the component sections of which formed of the riser-couplings end and cross pipes have their cross-pipes alternately arranged between the cross-pipes of the first-named section, pipes connecting the adjacent risers of the two sections together at the top and bottom, a steam drum or dome in communication with the risers at the top, and a fire-box having the side and bridge walls in the form of a water-chamber in communication with the battery, substantially as set forth.

17. A water-tube boiler comprising a battery composed of a plurality of riser-pipes each formed of a plurality of T-couplings superposed one upon the other, the couplings in the same plane being connected in pairs to one another by end pipes which end pipes are connected together by cross-pipes, a second battery-section of similar construction the component sections of which formed of the riser-couplings end and cross pipes have their cross-pipes alternately arranged between the cross-pipes of the first-named section, and pipes connecting the adjacent risers of the two sections together at the top and bottom, the pipe-piles at the ends of the battery formed by the risers, end pipes and connecting the top and bottom pipes being each in the form of a rhomboidal prism, substantially as set forth.

18. A water-tube boiler comprising a battery composed of a plurality of riser-pipes each formed of a plurality of T-couplings superposed one upon the other, the couplings in the same plane being connected in pairs to one another by end pipes which end pipes are connected together by curved cross-pipes, a second battery-section of similar construction the component sections of which formed of the riser-couplings end and cross pipes have their cross-pipes alternately arranged between the cross-pipes of the first-named section, and pipes connecting the adjacent risers of the two sections together at the top and bottom, the pipe-pile at the end of the battery formed by the risers end pipes and connecting top and bottom pipes being each in the form of a rhomboidal prism, substantially as set forth.

19. A water-tube boiler comprising a battery composed of a plurality of riser-pipes each formed of a plurality of T-couplings superposed one upon the other, the couplings in the same plane being connected in pairs to one another by end pipes which end pipes are connected together by S-shaped cross-pipes, a second battery-section of similar construction the component sections of which formed of the riser-couplings end and cross pipes have their cross-pipes alternately arranged between the cross-pipes of the first-named section, and pipes connecting the adjacent risers of the two sections together at the top and bottom, the pipe-piles at the end of the battery formed by the risers, end pipes and connecting top and bottom pipes being each in the form of a rhomboidal prism, substantially as set forth.

20. A water-tube boiler comprising a battery composed of a plurality of riser-pipes each formed of a plurality of T-couplings superposed one upon the other, the couplings in the same plane being connected in pairs to one another by end pipes which end pipes are connected together by cross-pipes, a second battery-section of similar construction the component sections of which formed of the riser-couplings end and cross pipes have their cross-pipes alternately arranged between the cross-pipes of the first-named section, pipes connecting the adjacent risers of the two sections together at the top and bottom, and a return circulating pipe or pipes forming a communication between the top and bottom portions of the boiler, substantially as set forth.

21. A water-tube boiler comprising a battery composed of a plurality of riser-pipes each formed of a plurality of T-couplings superposed one upon the other, the couplings in the same plane being connected in pairs to one another by end pipes which end pipes are connected together by curved cross-pipes, a second battery-section of similar construction the component sections of which formed of the riser-couplings end and cross pipes have their cross-pipes alternately arranged between the cross-pipes of the first-named section, pipes connecting the adjacent risers of the two sections together at the top and bottom, and a return circulating pipe or pipes forming a communication between the top and bottom portions of the boiler, substantially as set forth.

22. A water-tube boiler comprising a battery composed of a plurality of riser-pipes each formed of a plurality of T-couplings superposed one upon the other, the couplings in the same plane being connected in pairs to one another by end pipes which end pipes are connected together by S-shaped cross-pipes, a second battery-section of similar construction the component sections of which formed of the riser-couplings end and cross pipes have their cross-pipes alternately arranged between the cross-pipes of the first-named section, pipes connecting the adjacent risers of the two sections together at the top and bottom, and a return circulating pipe or pipes forming a communication between the top and bottom portions of the boiler, substantially as and for the purposes set forth.

23. A water-tube boiler comprising a battery composed of a plurality of riser-pipes each formed of a plurality of T-couplings superposed one upon the other, the couplings in the same plane being connected in pairs to one another by end pipes which end pipes are connected together by cross-pipes, a second battery-section of similar construction the component sections of which formed of the riser-couplings end and cross pipes have their cross-pipes alternately arranged between the cross-pipes of the first-named section, pipes connecting the adjacent risers of the two sections together at the top and bottom, a steam drum or dome in communication with the riser at the top, and a return circulating pipe or pipes forming a communication between the top and bottom portions of the boiler, substantially as set forth.

24. A water-tube boiler comprising a battery composed of a plurality of riser-pipes each formed of a plurality of T-couplings superposed one upon the other, the couplings in the same plane being connected in pairs to one another by end pipes which end pipes are connected together by curved cross-pipes, a second battery-section of similar construction the component sections of which formed of the riser-couplings end and cross pipes have their cross-pipes alternately arranged between the cross-pipes of the first-named section, pipes connecting the adjacent risers of the two sections together at the top and bottom, a steam drum or dome in communication with the risers at the top, and a return circulating pipe or pipes forming a communication between the top and bottom portions of the boiler.

25. A water-tube boiler comprising a battery composed of a plurality of riser-pipes each formed of a plurality of T-couplings superposed one upon the other, the couplings in the same plane being connected in pairs to one another by end pipes which end pipes are connected together by cross-pipes, a second battery-section of similar construction the component sections of which formed of the riser-couplings end and cross pipes of the first-named section, pipes connecting the adjacent risers of the two sections together at the top and bottom, a fire-box having the side and bridge walls in the form of a water-chamber in communication with the battery, and a return circulating pipe or pipes forming a communication between the top and bottom portions of the boiler.

26. A water-tube boiler comprising a battery composed of a plurality of riser-pipes each formed of a plurality of T-couplings superposed one upon the other, the couplings in the same plane being connected in pairs to one another by end pipes which end pipes are connected together by curved cross-pipes, a second battery-section of similar construction the component sections of which formed of the riser-couplings end and cross pipes have their cross-pipes alternately arranged between the cross-pipes of the first-named section, pipes connecting the adjacent risers of the two sections together at the top and bottom, a fire-box having the side and bridge walls in the form of a water-chamber in communication with the battery, and a return circulating pipe or pipes forming a communication between the top and bottom portions of the boiler.

27. A water-tube boiler comprising a battery composed of a plurality of riser-pipes each formed of a plurality of T-couplings superposed one upon the other, the couplings in the same plane being connected in pairs to one another by end pipes which end pipes are connected together by S-shaped cross-pipes, a second battery-section of similar construction the component sections of which formed of the riser-couplings end and cross pipes have their cross-pipes alternately arranged between the cross-pipes of the first-named section, pipes connecting the adjacent risers of the two sections together at the top and bottom, a fire-box having the side and bridge walls in the form of a water-chamber in communication with the battery, and a return circulating pipe or pipes forming a communication between the top and bottom portions of the boiler.

28. A water-tube boiler comprising a battery composed of a plurality of riser-pipes each formed of a plurality of T-couplings superposed one upon the other, the couplings in the same plane being connected in pairs to one another by end pipes which end pipes are connected together by cross-pipes, a second battery-section of similar construction the component sections of which formed of the riser-couplings end and cross pipes have their cross-pipes alternately arranged between the cross-pipes of the first-named sections, and pipes connecting the adjacent risers of the two sections together at the top and bottom, the riser-couplings of one set of sections being staggered to the riser-couplings of the other set of sections.

29. A water-tube boiler comprising a battery composed of a plurality of riser-pipes each formed of a plurality of T-couplings superposed one upon the other, the couplings in the same plane being connected in pairs to one another by end pipes which end pipes are connected together by curved cross-pipes, a second battery-section of similar construction the component sections of which formed of the riser-couplings end and cross pipes have their cross-pipes alternately arranged between the cross-pipes of the first-named section, and pipes connecting the adjacent risers of the two sections together at top and bottom, the riser-couplings of one set of sections being staggered to the riser-couplings of the other set of sections.

30. A water-tube boiler comprising a battery composed of a plurality of riser-pipes each formed of a plurality of T-couplings superposed one upon the other, the couplings in the same plane being connected in pairs to one another by end pipes which end pipes are connected together by S-shaped cross-pipes, a second battery-section of similar construction the component sections of which formed of the riser-couplings end and cross pipes have their cross-pipes alternately arranged between the cross-pipes of the first-named sections, and pipes connecting the adjacent risers of the two sections together at the top and bottom, the riser-couplings of one set of sections being staggered to the riser-coupling of the other set of sections.

31. A water-tube boiler comprising a battery composed of a plurality of riser-pipes each formed of a plurality of T-couplings superposed one upon the other, the couplings in the same plane being connected in pairs to one another by end pipes which end pipes are connected together by cross-pipes, a second battery-section of similar construction to the first section the component sections of which formed of the riser-couplings end and cross pipes have their cross-pipes alternately arranged between the cross-pipes of the first-named section, and pipes connecting the adjacent risers of the two sections together at the top and bottom, and a steam drum or dome in communication with the riser at the top, the riser-couplings of one set of sections being staggered to the riser-couplings of the other set of sections.

32. A water-tube boiler comprising a battery composed of a plurality of riser-pipes each formed of a plurality of T-couplings superposed one upon the other, the couplings in the same plane being connected in pairs to one another by end pipes which end pipes are connected together by curved cross-pipes, a second battery-section of

similar construction the component sections of which are formed of the riser-couplings end and cross pipes have their cross-pipes alternately arranged between the cross-pipes of the first-named section, and pipes connecting the adjacent risers of the two sections together at the top and bottom, and a steam drum or dome in communication with the risers at the top, the riser-couplings of one set of sections being staggered to the riser-couplings of the other set of sections.

33. A water-tube boiler comprising a battery composed of a plurality of riser-pipes each formed of a plurality of T-couplings superposed one upon the other, the couplings in the same plane being connected in pairs to one another by end pipes which end pipes are connected together by S-shaped cross-pipes, a second-battery section of similar construction to the first section the component sections of which formed of the riser-couplings end and cross pipes have their cross-pipes alternately arranged between the cross-pipes of the first-named section, pipes connecting the adjacent risers of the two sections together at the top and bottom, and a steam drum or dome in communication with the risers at the top, the riser-couplings of one set of sections being staggered to the riser-couplings of the other set of sections.

34. A water-tube boiler comprising a battery composed of a plurality of riser-pipes each formed of a plurality of T-couplings superposed one upon the other, the couplings in the same plane being connected in pairs to one another by end pipes which end pipes are connected together by cross-pipes, a second battery-section of similar construction the component sections of which formed of the riser-couplings end and cross pipes have their cross-pipes alternately arranged between the cross-pipes of the first-named section, pipes connecting the adjacent risers of the two sections together at the top and bottom, and a fire-box having the side and bridge walls in the form of a water-chamber in communication with the battery, the riser-couplings of one set of sections being staggered to the riser-couplings of the other sections.

35. A water-tube boiler comprising a battery composed of a plurality of riser-pipes each formed of a plurality of T-couplings superposed one upon the other, the couplings in the same plane being connected in pairs to one another by end pipes which end pipes are connected together by curved pipes, a second battery-section of similar construction the component sections of which formed of the riser-couplings end and cross pipes have their cross-pipes alternately arranged between the cross-pipes of the first-named section, pipes connecting the adjacent risers of the two sections together at the top and bottom, and a fire-box having the side and bridge walls in the form of a water-chamber in communication with the battery, the riser-couplings of one set of sections being staggered to the riser-couplings of the other set of sections.

36. A water-tube boiler comprising a battery composed of a plurality of riser-pipes each formed of a plurality of T-couplings superposed one upon the other, the couplings in the same plane being connected in pairs to one another by end pipes which end pipes are connected together by S-shaped cross-pipes, a second battery-section of similar construction the component sections of which formed of the riser-couplings end and cross pipes have their cross-pipes alternately arranged between the cross-pipes of the first-named section, pipes connecting the adjacent risers of the two sections together at the top and bottom, a fire-box having the side and bridge walls in the form of a water-chamber in communication with the battery, the riser-couplings of one set of sections being staggered to the riser-couplings of the other set of sections.

37. A water-tube boiler comprising a battery composed of a plurality of riser-pipes each formed of a plurality of T-couplings superposed one upon the other, the couplings in the same plane being connected in pairs to one another by end pipes which end pipes are connected together by cross-pipes, a second battery of similar construction the component sections of which formed of the riser-couplings end and cross pipes have their cross-pipes alternately arranged between the cross-pipes of the first-named section, pipes connecting the adjacent risers of the two sections together at the top and bottom, a steam drum or dome in communication with the risers at the top, and a fire-box having the side and bridge walls in the form of a water-chamber in communication with the battery, the riser-couplings of one set of sections being staggered to the riser-couplings of the other set of sections.

38. A water-tube boiler comprising a battery composed of a plurality of riser-pipes each formed of a plurality of T-couplings superposed one upon the other, the couplings in the same plane being connected in pairs to one another by end pipes which end pipes are connected together by curved cross-pipes, a second battery-section of similar construction the component sections of which formed of the riser-couplings end and cross pipes have their cross-pipes alternately arranged between the cross-pipes of the first-named section, pipes connecting the adjacent risers of the two sections together at the top and bottom, a steam drum or dome in communication with the risers at the top, and a fire-box having the side and bridge walls in the form of a water-chamber in communication with the battery, the riser-couplings of one set of sections being staggered to the riser-couplings of the other set of sections.

39. A water-tube boiler comprising a battery composed of a plurality of riser-pipes each formed of a plurality of T-couplings superposed one upon the other, the couplings in the same plane being connected in pairs to one another by end pipes which end pipes are connected together by S-shaped cross-pipes, a second battery-section of similar construction the component sections of which formed of the riser-couplings end and cross pipes have their cross-pipes alternately arranged between the cross-pipes of the first-named section, pipes connecting the adjacent risers of the two sections together at the top and bottom, a steam drum or dome in communication with the risers at the top, and a fire-box having the side and bridge walls in the form of a water-chamber in communication with the battery, the riser-couplings of one set of sections being staggered to the riser-couplings of the other set of sections.

40. A water-tube boiler comprising a battery composed of a plurality of riser-pipes each formed of a plurality of T-couplings superposed one upon the other, the couplings in the same plane being connected in pairs to one another by end pipes which end pipes are connected together by cross-pipes, a second battery-section of similar construction the component sections of which formed of the riser-couplings end and cross pipes have their cross-pipes alternately arranged between the cross-pipes of the first-named section, and pipes connecting the adjacent risers of the two sections together at the top and bottom, the pipe-piles at the ends of the battery formed by the risers, end pipes and connecting the top and bottom pipes being each in the form of a rhomboidal prism, the riser-couplings of one set of sections being staggered to the riser-couplings of the other set of sections.

41. A water-tube boiler comprising a battery composed of a plurality of riser-pipes each formed of a plurality of T-couplings superposed one upon the other, the couplings in the same plane being connected in pairs to one another by end pipes which end pipes are connected together by curved cross-pipes, a second battery-section of similar construction the component sections of which formed of the riser-couplings end and cross pipes have their cross-pipes alternately arranged between the cross-pipes of the first-named section, pipes connecting the adjacent risers of the two sections together at the top and bottom, and pipes connecting the adjacent risers of the two sections together at the top and bottom, the pipe-pile at the end of the battery formed by the risers end pipes and connecting top and bottom pipes being each in the form of rhomboidal prism, the riser-couplings of one set of sections being staggered to the riser-couplings of the other set of sections.

42. A water-tube boiler comprising a battery composed of a plurality of riser-pipes each formed of a plurality of T-couplings superposed one upon the other, the couplings in the same plane being connected in pairs to one another by end pipes which end pipes are connected together by S-shaped cross-pipes, a second battery-section of similar construction the component sections of which formed of the riser-couplings end and cross pipes have their cross-pipes alternately arranged between the cross-pipes of the first-named section, and pipes connecting the adjacent risers of the two sections together at top and bottom, the pipe-piles at the end of the battery formed by the risers, end pipes and connecting top and bottom pipes being each in the form of a rhomboidal prism, the riser-couplings of one set of sections being staggered to the riser-couplings of the other set of sections.

43. A water-tube boiler comprising a battery composed of a plurality of riser-pipes each formed of a plurality of T-couplings superposed one upon the other, the couplings in the same plane being connected in pairs to one another by end pipes which end pipes are connected together by cross-pipes, a second battery-section of similar construction the component sections of which formed of the riser-couplings end and cross pipes have their cross-pipes alternately arranged between the cross-pipes of the first-named section, pipes connecting the adjacent risers of the two sections together at the top and bottom, and a return circulating pipe or pipes forming a communication between the top and bottom portions of the boiler, the riser-couplings of one set of sections being staggered to the riser-couplings of the other set of sections.

44. A water-tube boiler comprising a battery composed of a plurality of riser-pipes each formed of a plurality of T-couplings superposed one upon the other, the couplings in the same plane being connected in pairs to one another by end pipes which end pipes are connected together by curved cross-pipes, a second battery-section of similar construction the component sections of which formed of the riser-couplings end and cross pipes have their cross-pipes alternately arranged between the cross-pipes of the first-named section, pipes connecting the adjacent risers of the two sections together at the top and bottom, and a return circulating pipe or pipes forming a communication between the top and bottom portions of the boiler, the riser-couplings of one set of sections being staggered to the riser-couplings of the other set of sections.

45. A water-tube boiler comprising a battery composed of a plurality of riser-pipes each formed of a plurality of T-couplings superposed one upon the other, the couplings in the same plane being connected in pairs to one another by end pipes which end pipes are connected together by S-shaped cross-pipes, a second battery-section of similar construction the component sections of which formed of the riser-couplings end and cross pipes have their cross-pipes alternately arranged between the cross-pipes of the first-named section, pipes connecting the adjacent risers of the two sections together at the top and bottom, and a return circulating pipe or pipes forming a communication between the top and bottom portions of the boiler, the riser-couplings of one set of sections being staggered to the riser-couplings of the other set of sections.

46. A water-tube boiler comprising a battery composed of a plurality of riser-pipes each formed of a plurality of T-couplings superposed one upon the other, the couplings in the same plane being connected in pairs to one another by end pipes which end pipes are connected together by cross-pipes, a second battery-section of similar construction the component sections of which formed of the riser-couplings end and cross pipes have their cross-pipes alternately arranged between the cross-pipes of the first-named section, pipes connecting the adjacent risers of the two sections together at the top and bottom, a steam drum or dome in communication with the risers at the top, and a return circulating pipe or pipes forming a communication between the top and bottom portions of the boiler, the riser-couplings of one set of sections being staggered to the riser-couplings of the other set of sections.

47. A water-tube boiler comprising a battery composed of a plurality of riser-pipes each formed of a plurality of T-couplings superposed one upon the other, the couplings in the same plane being connected in pairs to one another by end pipes which end pipes are connected together by curved cross-pipes, a second battery-section of similar construction the component sections of which formed of the riser-couplings end and cross pipes have their cross-pipes alternately arranged between the cross-pipes of the first-named section, pipes connecting the adjacent risers of the two sections together at the top and bottom, a steam drum or dome in communication with the risers at the top, and a return circulating pipe or pipes forming a communication between the top and bottom portions of the boiler, the riser-couplings of one set of sections being staggered to the riser-couplings of the other set of sections.

48. A water-tube boiler comprising a battery composed of a plurality of riser-pipes each formed of a plurality of T-couplings superposed one upon the other, the couplings in the same plane being connected in pairs to one another by end pipes which end pipes are connected together by cross-pipes, a second battery-section of similar construction the component sections of which formed of the riser-couplings end and cross pipes have their cross-pipes alternately arranged between the cross-pipes of the first-named section, pipes connecting the adjacent risers of the two sections together at the top and bottom, a fire-box having the side and bridge walls in the form of a water-chamber in communication with the battery, and a return circulating pipe or pipes forming a communication between the top and bottom portions of the boiler, the riser-couplings of one set of sections being staggered to the riser-couplings of the other set of sections.

49. A water-tube boiler comprising a battery composed of a plurality of riser-pipes each formed of a plurality of T-couplings superposed one upon the other, the couplings in the same plane being connected in pairs to one another by end pipes which end pipes are connected together by curved cross-pipes, a second battery-section of similar construction the component sections of which formed of the riser-couplings end and cross pipes have their cross-pipes alternately arranged between the cross-pipes of the first-named section, pipes connecting the adjacent risers of the two sections together at the top and bottom, a fire-box having the side and bridge walls in the form of a water-chamber in communication with the battery, and a return circulating pipe or pipes forming a communication between the top and bottom portions of the boiler, the riser-couplings of one set of sections being staggered to the riser-couplings of the other set of sections.

50. A water-tube boiler comprising a battery composed of a plurality of riser-pipes each formed of a plurality of T-couplings superposed one upon the other, the couplings in the same plane being connected in pairs to one another by end pipes, which end pipes are connected together by S-shaped cross-pipes, a second battery-section of similar construction the component sections of which formed of the riser-couplings end and cross pipes have their cross-pipes alternately arranged between the cross-pipes of the first-named section, pipes connecting the adjacent risers of the two sections together at the top and bottom, a fire-box having the side and bridge walls in the form of a water-chamber in communication with the battery, and a return circulating pipe or pipes forming a communication between the top and bottom portions of the boiler, the riser-couplings of one set of sections being staggered to the riser-couplings of the other set of sections.

51. In a water-tube boiler the combination with a fire-box water-chamber and a steam-drum having ingress and egress openings in the bottom thereof and passages from said ingress-openings communicating with the extreme upper passages between tubes in the water-tube battery, of a plurality of return-tubes leading from the said egress-opening in the bottom of the steam-drum and extending beyond and without the heat zone of said fire-box and emptying adjacent to the bottom of said fire-box water-chamber through a lower circulating-pipe, substantially as described.

52. In a device of the class described, in combination, a water-tube battery of a plurality of sections, having one section formed of T-couplings, superimposed one on the other and connected in pairs by end pipes, and cross-pipes connecting said end pipes, and a section similarly arranged having its cross-pipes alternate with the cross-pipes of the first section, and pipes connecting the adjacent risers respectively of the two sections at the top and bottom thereof, a steam-drum surmounting said water-tube battery having ingress and egress openings in the bottom thereof, a plurality of pipes secured to and communicating with the uppermost portion of said battery and leading to said ingress-openings and lending support to said drum, a fire-box having a hollow wall forming a water-chamber, and return-tubes leading from said egress-openings in the steam-drum and extending beyond and without the heat zone of the fire-box and emptying to the bottom of the said fire-box water-chamber, substantially as described.

53. In a water-tube boiler, the combination with a hot-air chamber entirely inclosing the battery of water and steam tubes, of a fire-box the side and bridge walls of which form a continuous connected water-chamber which is in communication with the riser-pipes of the battery and is connected by a perpendicular return-pipe with the bottom of the steam-drum.

54. In a water-tube boiler, the combination with a hot-air chamber entirely inclosing the battery of water and steam tubes, of a fire-box the side and bridge walls of which form a continuous connected water-chamber which is in communication with the riser-pipes of the battery and is connected by a perpendicular return-pipe located outside of the battery-casing forming the heating-chamber with the bottom of the steam-drum.

55. In a water-tube boiler, the combination with a plurality of riser-pipes, of a plurality of curved substantially S-shaped horizontal circulating-pipes forming communication between the riser-pipes, the curves of the pipes being horizontal and all in the same plane and the ends of such S-shaped pipes extending beyond the loops of the S, and communicating with straight pipes.

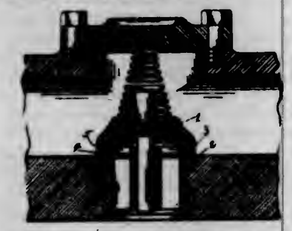
56. In a water-tube boiler, the combination with a plurality of riser-pipes, of a plurality of curved substantially S-shaped horizontal circulating-pipes forming communications between the riser-pipes, and a casing inclosing the battery so formed in such manner as to constitute a heating-chamber, the curves of the pipes being horizontal and all in the same plane and the ends of such S-shaped pipes extending beyond the loops of the S, and communicating with straight pipes.

57. In a water-tube boiler, the combination with a plurality of riser-pipes, of a plurality of curved horizontal circulating-pipes superposed in series one upon the other and in free communication at one end with the riser or risers on one side of the battery so formed, and at the other end with the riser or risers on the opposite side.

58. A circulating-tube for water-tube boilers of the shape of a cross elongated S the ends of which extend outward beyond the loops of the S, and all the curves of which are in the same plane.

822,983. VALVE. RICHARD RHODA, Coatesville, Pa. Filed Nov. 14, 1904. Serial No. 233,633.

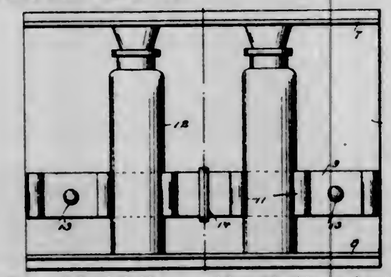
Claim.—1. In a valve, a packing-ring having on one side a plane face and on the other side a rib, the rib having a groove extending longitudinally thereof and to a depth materially less than the height of the rib, in combination with a valve-head provided with a recess arranged to receive the rib, said recess having inwardly-diverging walls and a substantially flat roof, the vertical depth of the recess being slightly less than the height of the rib and the mouth of the recess of substantially the same width as the rib.



2. In a valve, a packing-ring having on one side a plane face and on the other side a rib disposed at a distance from either edge, the rib having a groove extending longitudinally thereof and to a depth materially less than the height of the rib, in combination with a valve-head provided with a recess arranged to receive the rib, said recess having inwardly-diverging walls and a substantially flat roof, the depth of the recess measured on its inclined walls being substantially equal to the height of the rib, and the mouth of the recess of substantially the same width as the rib.

3. In a valve, a packing-ring of malleable metal having on one side a plane face and on the other side an annular rib with vertical walls disposed at a distance from either edge of the ring, the rib having an annular V-shaped groove in its upper face of a depth materially less than the height of the rib, in combination with a valve-head of harder metal provided with a recess arranged to receive the rib, said recess having inwardly-diverging walls and a substantially flat roof, the vertical depth of the recess being slightly less than the height of the rib, the depth of the recess measured on its inclined walls substantially equal to the height of the rib, and the mouth of the recess of substantially the same width as the rib.

822,984. **BOTTLE-HOLDER.** CARL RICHTER, Chicago, Ill. Filed Nov. 6, 1905. Serial No. 286,150.

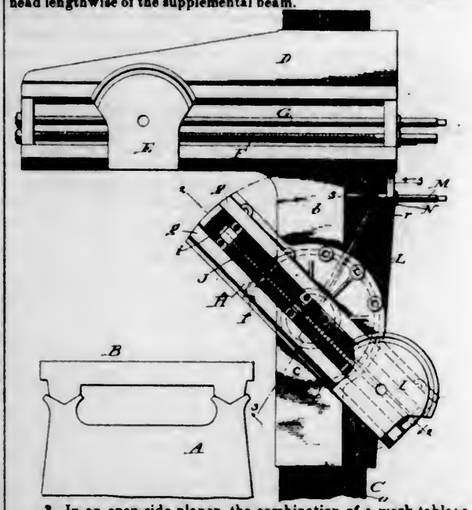


Claim.—A bottle-holder comprising a backing and a folded spring-metal strip secured thereto, the folds being spaced to receive bottles therebetween and the branches of each fold being spaced from each other, and a fastening-strap extending over the strip between the folds and secured at its ends to the backing and permitting slight lengthwise shift or slide of the strip.

822,985. **METAL-PLANING MACHINE.** HANSON ROBINSON, Hanover, Pa., assignor to American Foundry & Machine Company, Hanover, Pa., a Corporation of Pennsylvania. Filed Aug. 19, 1903. Serial No. 170,094.

Claim.—1. In an open-side planer, the combination of a work-table; a column or standard at one side thereof; a beam overhanging the work-table, having a depending guiding portion, and supported wholly by the column at one side of the work-table; a supplemental beam mounted upon the depending portion of the main beam and adjustable about a pivot-axis; and a tool-head carried by and adjustable longitudinally of said supplemental beam.

2. In combination with the work-support, column, and overhanging beam of an open-side planer, the latter having a depending guiding portion; a supplemental beam carried by said depending portion of the main beam and arranged to swing in a substantially vertical plane; a tool-head mounted upon said supplemental beam; and mechanism, substantially as described, for traversing said tool-head lengthwise of the supplemental beam.



3. In an open-side planer, the combination of a work-table; a column or standard at one side thereof; a beam carried by said column or standard, overhanging the table, and provided with a depending guiding portion; a supplemental beam mounted upon the depending portion of the main beam and adapted to be swung to a vertical or a horizontal position or to any intermediate angle; a tool-head carried by the main beam; a tool-head carried by the supplemental beam; a traverse-screw for moving the tool-head lengthwise of the supplemental beam; a shaft mounted in bearings upon the main beam; and intermediate gearing connecting said shaft with the traverse-screw of the supplemental beam, substantially as described, whereby said tool-head may be moved lengthwise of said beam.

4. In an open-side planer, the combination of a work table or support; a column or standard at one side thereof; a beam D overhanging the work-table, supported wholly from said column, and provided with upright portion *b*; a turn-table bed formed in said upright portion; a supplemental beam H provided with a complementary turn-table section and mounted upon the upright portion *b*; and a tool-head mounted upon said beam H and movable lengthwise thereof.

5. In an open-side planer, the combination with a work-support, column C, and overhanging beam D provided with upright portion *b*; of a supplemental beam H mounted upon said upright portion *b* and provided with traverse-screw J; tool-head I mounted upon said beam; and gear for rotating said screw J, comprising pinions *i*, *j*, shaft K, pinions *k*, *l*, shaft *m*, pinions *n*, *o*, shaft L, pinions *r*, *s*, and shaft M.

6. In an open-side planer, the combination of a work table or support; a column or standard at one side thereof; a beam mounted and guided upon the column, overhanging the table, and provided with an upright guiding portion; a supplemental beam mounted and adjustable upon the upright guiding portion of the main beam; a tool-head mounted upon the supplemental beam; a traverse-screw mounted in the beam and serving to move the tool-head lengthwise thereof; a shaft carried in bearings in the main beam; and intermediate connections, substantially such as shown and described, between said shaft and the traverse-screw of the supplemental beam, whereby said screw may be rotated to move the tool-head lengthwise of the beam.

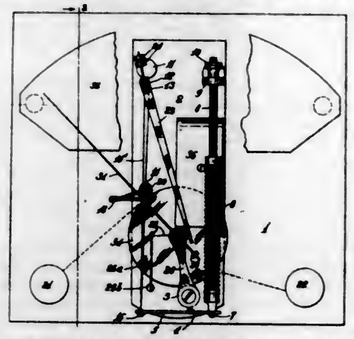
7. In an open-side planer, the combination of a work table or support; a column or standard at one side of the same; a beam mounted and guided upon said standard, overhanging the work-table, and provided with a guiding portion *b*, having a turn-table *e* provided with an annular groove *e*; a supplemental beam H swiveled or pivoted upon said turn-table and provided with an annular rib or tongue *f* to enter the groove *e*, said rib or tongue being provided with a removable section, as and for the purpose set forth.

822,986. **HEAD AND NAPE COVERING.** JEAN ROCHET, Lons-le-Saulnier, France. Filed Sept. 7, 1904. Serial No. 223,634.



Claim.—A head-covering composed of two parts, *a* and *b*, suitably fitted the one into the other, so that the ordinary outer appearance is not altered, one of the parts *a* being provided with a lining of waterproof material, and of a distinct color, adapted to be folded inside or outside of said part, the other part *b* being provided with a nape-covering *d* adapted to be folded on the top of said part *b*, or of being lowered and clasped under the chin, substantially as described and for the purpose set forth.

822,987. **ELECTRICAL MEASURING INSTRUMENT.** FRANK W. ROLLER, Plainfield, N. J. Filed July 18, 1904. Serial No. 216,946.



Claim.—1. In an electrical measuring instrument, the combination of a current-carrying wire, a compensating wire, a movable element to the opposite sides of which two ends of said wires are connected, yieldable means to which the opposite ends of said wires are connected, and means for multiplying and transmitting the movement of said movable element to an indicating-needle, substantially as described.

2. In an electrical measuring instrument, the combination of a current-carrying wire, a compensating wire, a movable element to which said wires are connected, yieldable means for placing tension on said wires, a vane carried by said movable element, a pivoted indicating-needle, and a fiber engaging the shaft of said needle and attached to one end of said vane.

3. In an electrical measuring instrument, the combination of a current-carrying wire, a compensating wire, a movable element to the opposite sides of which two ends of said wires are connected, yieldable means to which the opposite ends of said wires are connected, a vane carried by said movable element, a pivoted indicating-needle, and a fiber engaging the shaft of said needle and attached to one end of said vane, substantially as described.

4. In an electrical measuring instrument, the combination of a current-carrying wire, a compensating wire, a movable element to the opposite sides of which two ends of said wires are connected, yieldable means to which the opposite ends of said wires are connected, a dampening device, and means for indicating the movement of said movable element, substantially as described.

5. In an electrical measuring instrument, the combination of a current-carrying wire and a compensating wire, a movable element to the opposite sides of which two ends of said wires are connected, a pivoted member to which the other two ends of said wires are connected, a spring connected to said pivoted member, and means for indicating the movement of said movable element, substantially as described.

6. In an electrical measuring instrument, the combination of a current-carrying wire, a compensating wire, a movable element to the opposite sides of which two ends of said wires are connected, yieldable means for placing tension on said wires, a pivoted shaft carrying an indicating-needle, a vane carried by said movable element, and a fiber connecting said vane and said shaft, substantially as described.

7. In an electrical measuring instrument, the combination of a current-carrying wire and a compensating wire, a movable element to the opposite sides of which two ends of said wires are connected, yieldable means for placing tension on said wires, a dampening device, a pivoted shaft carrying an indicating-needle, a vane carried by said movable element, and a fiber connecting said vane and shaft, substantially as described.

8. In an electrical measuring instrument, the combination of a current-carrying wire and a compensating wire, a movable element to the opposite sides of which two ends of said wires are connected, a pivoted member to which the other two ends of said wires are connected, a spring connected to said pivoted member, a pivoted shaft carrying an indicating-needle, a fiber for turning said pivoted shaft, and a vane carried by said movable element to which vane the said fiber is connected, substantially as described.

9. In an electrical measuring instrument, the combination of a current-carrying wire and a compensating wire, a movable pin on the opposite sides of which two ends of said wires are connected, a pivoted member to which the other two ends of said wires are connected, a spring connected to said pivoted member, and means for multiplying and transmitting the movement of said movable pin to an indicating-needle, substantially as described.

10. In an electrical measuring instrument, the combination of a current-carrying wire a compensating wire, a movable element to the opposite sides of which two ends of said wires are connected, yieldable means for placing tension on said wires, a pivoted shaft carrying an indicating-needle, a conductor carried by said shaft, means for producing a magnetic field in the presence of said conductor, and means for transmitting the movement of said movable element to said shaft.

11. In an electrical measuring instrument, the combination with the current-carrying part, of means in the path of the indicating-needle for short-circuiting said part.

12. In an electrical measuring instrument, the combination with the current-carrying part, of means in the path of the movable indicating part for automatically short-circuiting said current-carrying part upon the occurrence of excessive current through the instrument.

13. In an electrical measuring instrument, the combination with the current-carrying part, of means for automatically short-circuiting said part upon the occurrence of excessive current through the instrument, and means for maintaining the short circuit.

14. In an electrical measuring instrument, the combination with the current-carrying part, of means for short-circuiting said part upon the occurrence of excessive current through the instrument and for maintaining said short circuit, substantially as described.

15. In an electrical measuring instrument, the combination with the current-carrying part, a relay device for short-circuiting said part, and means in the path of a movable part of said instrument for operating said relay upon the occurrence of excessive current through the instrument.

16. In an electrical measuring instrument, the combination with the current-carrying part, of means for short-circuiting said part upon the occurrence of excessive current through the instrument, and means for removing the short circuit when the indicating part returns to its initial position.

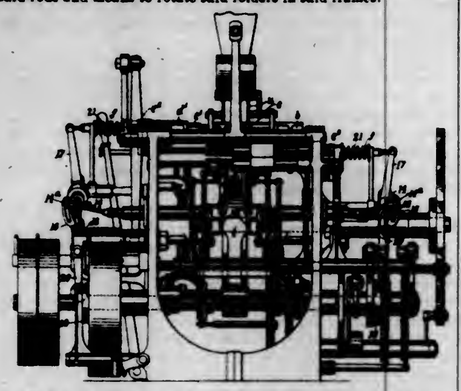
822,988. **PACKING-MACHINE.** WILLIAM ROSE, Gainsborough, England, assignor to Wright's Automatic Tobacco Packing Machine Company, Lynchburg, Va. Filed July 19, 1903. Serial No. 116,171.

Claim.—1. In a packing-machine, an intermittently-operated mold-wheel, means to press a wrapper and material into the molds in said wheel, a lifter pivoted in the frame of the machine comprising two inwardly-projecting arms to engage the upstanding end of the wrapper, an oscillating sleeve, a layer on said sleeve to engage the raised edge of said wrapper and to lay the same upon the material in the mold and a lever on said sleeve linked to said lifter to cause said lifter and said layer to operate together.

2. In a packing-machine, an intermittently-operated mold-wheel, means to press a wrapper and material into the molds in said wheel, an oscillating lifter and a rotary layer and connections between said lifter and said layer to operate the same successively to raise the upstanding end of said wrapper and to lay the same upon the material in the mold.

3. In a packing-machine, an intermittently-operated mold-wheel, means to press a wrapper and material into the molds in said mold-wheel, a lifter and a layer connected to operate successively to raise the upstanding end of said wrapper and to lay the same upon the material in the mold, means to form the folds in said wrapper

comprising two folder-shafts, frames mounted upon said shafts, rods revolubly mounted in said frames, folders having stems which fit in said rods and means to rotate said folders in said frames.



4. In a packing-machine, an intermittently-operated mold-wheel, plungers to enter the molds in said wheel from either side of the same, means to press a wrapper and material into said molds, means to form the folds in said wrapper to inclose said material and punches to enter said molds to indent said folded wrapper and secure the folds of the same.

5. In a packing-machine, an intermittently-operated mold-wheel, means to press a wrapper and material into the molds of said mold-wheel, a lifter and a layer connected to operate successively to raise the upstanding end of said wrapper and lay the same upon the material in said mold and means to fold said wrapper about said material.

822,989. **NUT-LOCK.** CLAYTON M. SCHOOLEY, and ODEN N. CASEY, Leesburg, Va., assignors of thirty-five one-hundredths to said Schooley, fifteen one-hundredths to said Casey, and one-half to Julian H. Grubb, Leesburg, Va. Filed June 20, 1903. Serial No. 162,363.



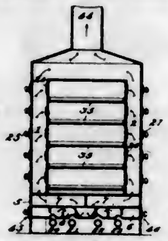
Claim.—1. The combination with a bolt and its nut of a disk-shaped washer, provided with a plurality of radial tongues, each tongue being defined by a pair of parallel kerfs, radial channels upon the nut adapted to receive into close-fitting engagement any one of said tongues when deflected into it and means for operatively securing the washer and bolt together.

2. The combination with a bolt and its nut of a disk-shaped washer, provided with a plurality of radial tongues, each tongue being defined by a pair of parallel kerfs, radial channels upon the nut adapted to receive into close-fitting engagement any one of said tongues when deflected into it, each of said channels being formed in the bottom of the nut and each having its bottom defined by a face upwardly inclined from the bore of the nut outwardly, and means for operatively securing the washer and bolt together.

3. The combination with a bolt, nut and channels in the nut, said channels being so formed as to leave the face of the nut unobstructed, of a flat washer provided with radial tongues, each defined by a pair of parallel kerfs and capable of deflection whereby the nut may ride smoothly over the face of the washer until it is set in place and then be secured by the deflection of a tongue of the washer and means for operatively securing the washer and bolt together.

822,990. **DRYING-CHAMBER.** ADOLPH SCHRÖDER, Berlin, Germany, assignor to Alfred Krause, Berlin, Germany. Filed Aug. 30, 1905. Serial No. 277,273.

Claim.—1. A drying apparatus, comprising a chamber having hollow walls, the inner walls presenting hot-air inlets and the outer walls cold-air inlets at parts coincident with the hot-air inlets, perforated slides controlling such air-inlets, means at the bottom of the apparatus for heating the air which passes between the chamber-walls, and a spent-air and waste-gas outlet, substantially as described.



2. A drying apparatus, comprising a chamber having a hollow-walled body and door, the inner walls of which body and door present hot-air inlets and the outer walls cold-air inlets at parts coincident with the hot-air inlets, perforated slides controlling such inlets, means at the bottom of the apparatus for heating the air, which passes between the chamber-walls, and a spent-air and waste-gas outlet, substantially as described.

3. A drying apparatus, comprising a chamber having a hollow-walled body and door, the inner walls of which body and door present hot-air inlets and the outer walls cold-air inlets at parts coincident with the hot-air inlets, perforated slides controlling such inlets, a horizontal perforated partition dividing the space between the door-walls and two vertical partitions extending downward from the horizontal partition, means at the bottom of the apparatus for heating the air which passes between the chamber-walls, and a spent-air and waste-gas outlet, substantially as described.

4. A drying apparatus, comprising a chamber having a hollow-walled body and door, the inner walls of which body and door present hot-air inlets and the outer walls cold-air inlets at parts coincident with the hot-air inlets, perforated slides controlling such inlets, superposed horizontal U-shaped frames secured to the inner side walls of the chamber, the base of the U standing free of the back wall, and trays adapted to lie on the frames, means at the bottom of the apparatus for heating the air which passes between the chamber-walls, and a spent-air and waste-gas outlet, substantially as described.

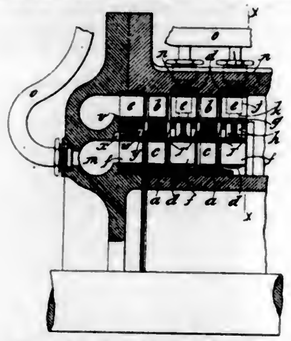
5. A drying apparatus, comprising a chamber having a hollow-walled body and door, the inner walls of which body and door present hot-air inlets and the outer walls cold-air inlets at parts coincident with the hot-air inlets; perforated slides controlling such inlets, a heating-box at the bottom of the apparatus communicating with the spaces between the said body and door walls and presenting an upper distributing-compartment and a lower air-heating compartment communicating therewith and having cold-air inlets and an inclined ridged base; and gas-pipes presenting laterally-directed jet-holes, located below the ridges in such a manner, that a space is left above the jets; and a spent-air and waste-gas outlet, substantially as described.

6. A drying apparatus, comprising a chamber having hollow walls, the inner walls presenting hot-air inlets and the outer walls cold-air inlets at parts coincident with the hot-air inlets, perforated slides controlling such air-inlets, means at the bottom of the apparatus for heating the air which passes between the chamber-walls, metallic shavings packed in the space between the walls and a spent-air and waste-gas outlet, substantially as described.

822,991. **TURBINE.** HENRY S. SCOTT and HENRY F. TYLACK, Gateshead, England. Filed Feb. 16, 1906. Serial No. 301,428.

Claim.—1. In turbines of the kind wherein the rotating disks and the separating fixed partitions are provided with two sets of oppositely-inclined vanes and guide-vanes for backward and forward running, means for preventing leakage of the motive fluid from the inner sets of vanes and guide-vanes to the outer sets, when the inner sets are in operation, said means consisting in leading a supply of motive fluid to suitably shaped and disposed nozzles opening toward and about the points where the leakage occurs, whence it issues and meets and mingles with the actuating fluid, said supply of motive fluid issuing from said nozzles at a greater velocity than that of the actuating fluid, substantially as set forth.

2. In turbines of the kind wherein the rotating disks and the separating fixed partitions are provided with two sets of oppositely-inclined vanes and guide-vanes for backward and forward running, means for preventing leakage of the motive fluid from the inner sets of vanes and guide-vanes to the outer sets, when the inner sets are in operation, said means comprising an annular chamber formed in the fixed partition and adapted to be supplied with motive fluid, when the inner sets of vanes and guide-vanes are in operation, and communicating with laterally-disposed nozzles through which the motive fluid issues at a greater velocity than that of the actuating fluid, said nozzles or orifices opening toward and about the points where the leakage takes place so that the motive fluid issuing therefrom meets and mingles with the actuating fluid, substantially as set forth.

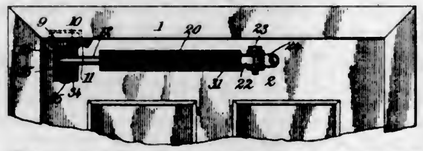


3. In turbines of the kind wherein the rotating disks and the separating fixed partitions are provided with two sets of oppositely-inclined vanes and guide-vanes for backward and forward running, means for preventing leakage of the motive fluid from the inner sets of vanes and guide-vanes to the outer sets, when the inner sets are in operation, said means comprising annular chambers formed in the fixed partitions and adapted to be supplied with motive fluid, when the inner sets of vanes and guide-vanes are in operation, and communicating with laterally-disposed nozzles through which the motive fluid issues at a greater velocity than that of the actuating fluid, said nozzles or orifices opening toward and about the points where the leakage takes place so that the motive fluid issuing therefrom meets and mingles with the actuating fluid, substantially as set forth.

4. In a turbine having two sets of vanes, means for leading a fluid to a point between the two, and delivering it in such direction as to oppose the leakage of motive fluid past such point.

5. In a turbine having two sets of vanes, means for leading a fluid to a point between the two, and delivering it in such direction as to oppose the leakage of motive fluid past such point and to enhance the effect of such motive fluid.

822,992. **DOOR CHECK AND CLOSER.** GEORGE T. SHEETS, Salt Lake City, Utah, assignor of one-third to George Gunn Gray, Salt Lake City, Utah. Filed Aug. 2, 1904. Serial No. 219,182.



Claim.—1. In a door-check, a dash-pot comprising a cylinder having a head, in combination with a plunger slidably mounted within said cylinder, a packing member attached to said plunger, a fastening device for the same, and means whereby said head may engage said fastening device.

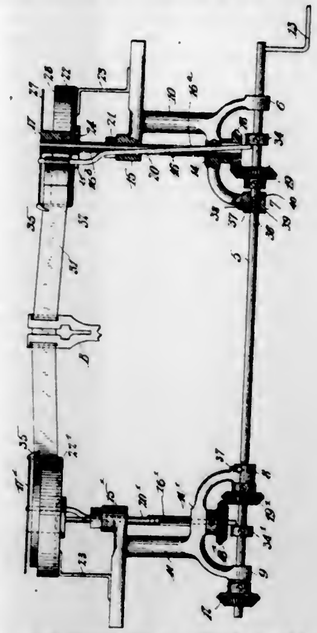
2. In a door-check, in combination, a cylinder, a plunger slidably mounted therein, a packing-leather attached to the inner face of said plunger, a disk beyond the same, and a screw passing through said disk and seated in said plunger, said cylinder having a head with a projecting edge which may engage said screw.

3. In a door-closer in combination, a spring adapted to be attached to a door-frame, means actuated thereby for closing the door, a plate engaging said spring and adapted to adjust the tension thereof, said plate having a plurality of circumferentially-disposed teeth, said teeth being disposed in sets inclining in opposite directions, and a pawl adapted to engage said teeth.

4. In a door-closer in combination, a plate adapted to be attached to the door-frame, a spring attached to said plate, a ratchet-wheel rotatably mounted upon said plate engaging said spring and adapted to adjust the tension thereof, said ratchet-wheel having circumferentially-disposed teeth arranged in sets projecting in opposite directions, a pawl adapted to coöperate with said ratchet-wheel, said plate having oppositely-disposed openings, a member engaged by said spring for closing the door, and means adapted to mount said pawl to coöperate with either of said sets of teeth.

5. In a device of the class described, in combination, a dash-pot adapted to be mounted on the face of the door, a plunger coöperating with said dash-pot, means for removably attaching said plunger to the door-frame, a spring normally engaging said plunger and adapted to constrain said door in a closing direction, and a bracket attached to the face of said door adjacent to said spring and having a shank disposed parallel with said plunger and which may be engaged by said spring when said dash-pot and plunger are removed.

822,993. **RIBBON-FEED FOR TYPE-WRITERS.** WILLIAM H. SHERWOOD, New York, N. Y. Filed Feb. 23, 1905. Serial No. 246,876.



Claim.—1. The combination of a spindle carrying a ribbon-spool, a shaft shiftable to have a driving engagement with the spindle, and a member movably supported on the spindle and having one end extending into engagement with the ribbon on the spool whereby when the ribbon is unwound the member is moved on the spindle, said member having its other end arranged to engage and shift the shaft into driving engagement with the spindle upon said movement of the member by the ribbon.

2. The combination of a spindle carrying a ribbon-spool, a shaft shiftable to have a driving engagement with the spindle, and a member movably supported on the spindle, and having one end extending into the spool and engaging the end of the ribbon whereby when the ribbon is unwound, the member is moved on the spindle by the ribbon, said member having its other end arranged to engage and shift the shaft into engagement with the spindle upon said movement of the member by the ribbon.

3. The combination of a spindle carrying a ribbon-spool, a gear on the spindle, a driving-shaft having a gear fixed thereon, the shaft being shiftable to move the gear into and out of mesh with the spindle-gear, a detent fixed on the shaft, a lever pivoted on the spindle and having one end arranged to engage said detent, and having its other end projecting into the spool and arranged to be engaged by the ribbon when unwound and thereby rocked, causing its other end to engage the detent and shift the shaft to engage said gears.

4. The combination of a spindle carrying a ribbon-spool, a gear on the spindle, a driving-shaft having a gear fixed thereon, the shaft being shiftable to move the gear into and out of mesh with the spindle-gear, a detent fixed on the shaft, a lever pivoted on the spindle and having one end arranged to engage said detent, and having its other end projecting into the spool and connected to the end of the ribbon whereby when the ribbon is unwound, the lever is thereby rocked, causing its other end to engage the detent and shift the shaft to engage said gears.

5. The combination of a spindle, a driving-shaft, a shifting member movable on the spindle to shift the shaft into position to drive the spindle, the member having one end disposed in proximity to the end of the spindle, a ribbon secured to said end of the shifting member, and a spool having a slot in one head whereby when inserted on the spindle the ribbon end portion will pass through the slot into the spool and the ribbon-engaging end of the shifting member will project through the slot.

6. The combination of a tubular spindle carrying a ribbon-spool, a driving-shaft arranged to operate the spindle, a lever pivoted inside the spindle, the spindle having a slot in its lower end portion through which the lower end of the lever swings and has a shifting engagement with the shaft, the spindle also having a slot in its upper part through which the lever projects, the spool having an opening into which said lever projects and is engaged by the ribbon, when unwound, and thereby swung to shift said shaft into position to operate the spindle.

7. In a type-writer, the combination of a spindle carrying a ribbon-spool, a shaft shiftable to engage and drive the spindle, and a single member movable on the spindle and having one end portion arranged to engage and shift the shaft, and having its other end secured to the end of a ribbon and holding the same on the ribbon-spool, said member being also arranged to be moved by the ribbon, when unwound, and thereby shift said shaft to engage and drive the spindle.

8. A type-writer ribbon-spool comprising a hub having a disk portion at each end thereof, the hub having a segment portion cut away at one side, and one of the disk portions having a slot extending from its periphery to the hub at said cut-away portion, substantially as set forth.

9. In a ribbon mechanism, a spindle, a lever connected thereto, ribbon-reversing means and connections from said lever to said means, and a spool adapted to removably engage said spindle and lever, said spool having a slot extending through the periphery in a side wall thereof.

10. A ribbon mechanism comprising a reversing device and a spindle having an axially-arranged transversely-movable member therein adapted to engage the end of the ribbon.

822,994. **WIRE-FENCE FASTENER.** FRANK H. SHUFLIN and JOSEPH C. WHITE, Columbus, Ohio. Filed Nov. 23, 1905. Serial No. 288,525.



Claim.—1. A wire-fence fastening comprising a fastener bent so as to engage a wire in its bent portion, and tongues extending from the opposite ends of the fastener adapted to be coiled in a spiral about another wire and spread apart so as to draw the wires and the fastener together.

2. Means for fastening the intersecting wires of a fence comprising a fastener having a bent body portion snugly engaging one of the wires and provided with tongues spread apart, and coiled about the other wire with their edges in engagement therewith.

822,995. **COLUMN-SUPPORT.** FRANK M. SIECHO, Cadillac, Mich., assignor of one-half to Martin Ricketts, Cadillac, Mich. Filed Apr. 3, 1905. Serial No. 253,576.

Claim.—1. A column-support comprising a concaved base portion provided with radial grooves having a central aperture and an upwardly-projecting flange surrounding said base portion and the supporting-legs arranged as described.

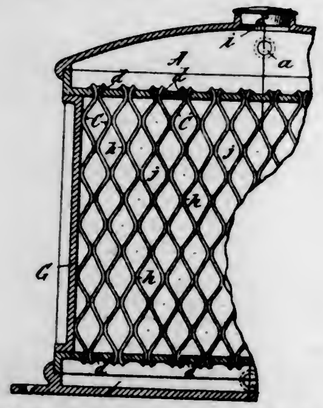


2. A column-support comprising a base portion having a central aperture, the upper face of said base portion adjacent the aperture, being concaved, the upwardly-projecting flange surrounding the base portion and the depending legs flaring outwardly at their lower ends, as described.

3. A column-support comprising a base portion having a central aperture, the upper face of said base portion adjacent the central aperture being concaved, the surrounding flat portion and the upwardly-extending flange, the depending legs flaring at their lower ends and provided with apertures adjacent said lower ends, as set forth.

4. The column-support comprising a base portion, having a central aperture, the upper face of said portion adjacent the central aperture being concaved, the concaved face being crossed by radial grooves leading to the central opening, the surrounding flat portion and upwardly-extending flange, the depending legs flaring at their lower ends and provided with apertures adjacent said end, as set forth.

822,996. **WATER-COOLING APPARATUS.** ARTHUR P. SMITH, Springfield, Mass. Filed Feb. 24, 1903. Serial No. 144,670.

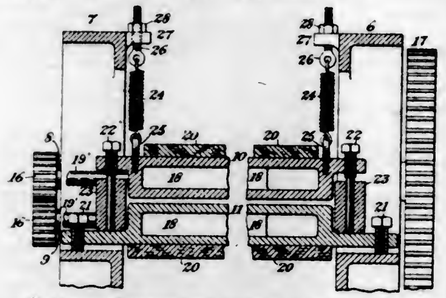


Claim.—A cooling apparatus, embodying a pair of spaced receptacles, the inner wall of each receptacle having a plurality of rectangular transversely-disposed slots extending the width thereof, a plurality of crimped tubes rectangular in cross-section and disposed opposite to one another to form diamond-shaped openings therebetween, said tubes being arranged in pairs, the ends of each pair of said tubes projecting through said slots and beyond the outer face of said inner walls of the receptacles, and solder engaging about said projecting ends of said pairs of tubes and seating on the outer faces of said inner walls of the receptacles.

822,997. **VENEER-DRIER.** EDWIN F. SMITH, Philadelphia, Pa., assignor to Edwin F. Smith Company, Philadelphia, Pa., a Corporation of New Jersey. Filed Feb. 9, 1905. Serial No. 244,895.

Claim.—1. A veneer-drier comprising heating and inclosing means provided with opposite heat-applying surfaces arranged substantially horizontally and in such close proximity to each other as to allow only sufficient clearance for the veneer to pass freely between the surfaces, such surfaces being clear of obstructive projections or corners, the heating and inclosing means being provided with openings for the expansive escape of vapor, and non-heat-applying feeding and pressure means arranged to come in contact with the veneer at intervals in its passage between the heat-applying surfaces.

2. A veneer-drier comprising heating and inclosing means provided with opposite heat-applying surfaces arranged substantially horizontally and in such close proximity to each other as to allow only sufficient clearance for the veneer to pass freely between the surfaces, such surfaces being clear of obstructive projections or corners, the heating and inclosing means being provided with openings for the expansive escape of vapor, and non-heat-applying feeding and pressure means arranged to come in contact with the veneer at intervals in its passage between the heat-applying surfaces, the heating and inclosing means being of such length as to maintain the veneer in a moist atmosphere and in a heated condition until a substantially complete evaporation of the moisture is attained.



3. A veneer-drier comprising heating-plates having oppositely-arranged heat-applying surfaces for applying the heat intimately to the veneer simultaneously on both sides thereof, such opposite heat-applying surfaces being arranged in close proximity to each other and spaced apart only sufficiently to permit the veneer to pass between them and having chamfered corners and no obstructive projections, and non-heat-applying feed-rollers for the veneer, the heating-plates and feed-rollers being arranged successively with the heating-plates spaced apart longitudinally and the feed-rollers arranged in the longitudinal spaces between the heating-plates and at substantial distances therefrom.

4. A veneer-drier comprising heating-plates having oppositely-arranged heat-applying surfaces for applying the heat intimately to the veneer simultaneously on both sides thereof, such opposite heat-applying surfaces being arranged in close proximity to each other and spaced apart only sufficiently to permit the veneer to pass between them and having chamfered corners and no obstructive projections, substantially horizontal non-heat-applying feed-rollers for the veneer, the heating-plates and feed-rollers being arranged successively with the heating-plates spaced apart longitudinally and the feed-rollers arranged in the longitudinal spaces between the heating-plates and at substantial distances therefrom, and inclosing means covering the longitudinal spaces between the heating-plates at top and bottom, the heating-plates and inclosing means having openings for the lateral expansive escape of vapor from the veneer.

5. A veneer-drier comprising upper and lower heating-plates having oppositely-arranged surfaces in close proximity to each other but spaced apart so as to permit the veneer to pass through the space intervening between such surfaces, yielding supporting means constructed to diminish the weight whereby the two plates are held together and thereby to diminish the force necessary to further separate the plates, and means for causing relative movement of the veneer and the plates.

6. In a veneer-drier, in combination, heating-plates arranged in pairs, the plates of each pair having their adjacent surfaces in close proximity to each other but spaced apart so as to permit the veneer to pass through the intervening space, yielding supporting means for one of the plates of each pair, and feeding means for causing relative movement of the veneer and the heating-plates with the veneer between the heating-plates, the feeding means and pairs of heating-plates being arranged successively with the pairs of heating-plates between the feeding means.

7. A veneer-drier comprising heating-plates arranged in pairs, the plates of each pair having their adjacent surfaces in close proximity to each other but spaced apart so as to permit the veneer to pass through the intervening space, yielding supporting means for one of the plates of each pair, feed-rollers in pairs, and yielding means controlling the feed-rollers, the pairs of feed-rollers and the pairs of heating-plates being arranged successively with the pairs of heating-plates between the pairs of feed-rollers.

8. A veneer-drier comprising heating-plates arranged in pairs, the plates of each pair being arranged one above the other with adjacent oppositely-arranged surfaces, retractive supporting means for the upper plate of each pair, constructed to support a part only of the weight of the upper plate and thereby to diminish the force necessary to lift the upper plate and feeding means for feeding veneer between the adjacent surfaces of the plates, the feeding means and pairs of heating-plates being successively arranged with the feeding means at the proper distances to control the veneer and with the pairs of heating-plates between the feeding means.

9. In a veneer-drier, in combination, heating-plates having oppositely-arranged surfaces in proximity to each other, side guide-rollers in proximity to the lateral margins thereof, and feed-rollers arranged in pairs successively at proper distances to control the veneer, the heating-plates being arranged between the feed-rollers.

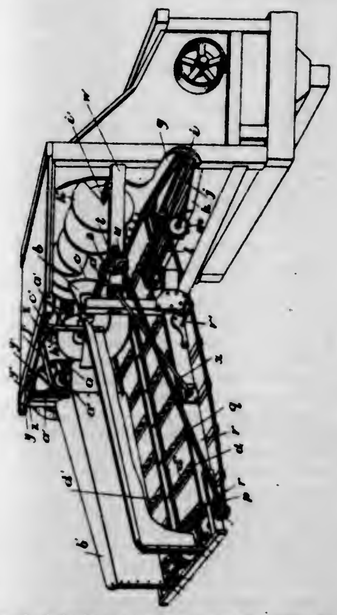
10. In a veneer-drier, in combination, a pair of heating-plates arranged one above the other with adjacent oppositely-arranged surfaces, a suitable frame, adjustable supporting means for the lower plate and resting upon the frame, adjustable supporting means for the upper plate and resting upon the lower plate, and means for feeding the veneer between the plates.

11. In a veneer-drier, in combination, a pair of heating-plates arranged one above the other with adjacent oppositely-arranged surfaces, adjustable supporting means for the upper plate and resting upon the lower plate, and side guide-rollers rotatively mounted upon such supporting means.

12. In a veneer-drier, in combination, heating-plates arranged in pairs, the plates of each pair being arranged one above the other with adjacent oppositely-arranged surfaces, feed-rollers arranged in pairs successively, the pairs of heating-plates being arranged between the pairs of feed-rollers, adjustable supporting means for the upper plate of each pair of plates and resting upon the lower plate of the pair, and side guide-rollers rotatively mounted upon such supporting means.

13. In a veneer-drier, in combination, a pair of heating-plates arranged one above the other with adjacent oppositely-arranged surfaces, rigid supports for the upper plate and additional spring-supports for the upper plate, and means for feeding veneer between the plates.

822,998. **BAND-CUTTER AND FEEDER.** HARRY W. SMITH, Renforth, Canada. Filed Apr. 4, 1905. Serial No. 253,872.



Claim.—1. A feeder mechanism for threshing-machines comprising two or more carrier-sections of equal length moving in parallel planes, means for operatively causing one of said sections to move at a higher rate of speed than the other section or sections, a band-cutter opposed to the carrier-sections and located between the ends thereof so that it will cause the sheaf-sections to fall respectively

on the slower and faster moving carrier-sections coincident with the cutting of the band.

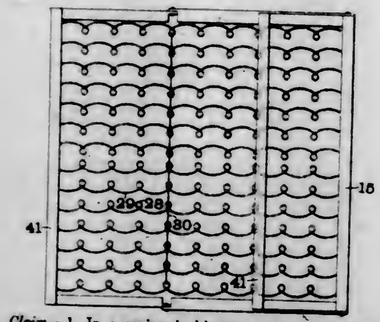
2. A feeder mechanism for threshing-machines comprising two or more carrier-sections of equal length moving in parallel planes, means for operatively causing one of said sections to move at a higher rate of speed than the other section or sections, a band-cutter opposed to the carrier-sections, and located between the ends thereof so that it will cause the sheaf-sections to fall respectively on the slower and faster moving carrier-sections coincident with the cutting of the band and a straw-spreader to spread the sheaf-sections on the carrier-sections after passing the band-cutter.

3. A feeder mechanism for a threshing-machine comprising a feeder-platform, laterally-adjustable side boards therefor, hangers connected to the inner ends of the side boards, hubs for the hangers, a supporting-bar extending through said hubs, fingers for said hubs a feeder-frame and notches in the feeder-frame to receive said fingers and lock the hubs in their adjusted position upon the supporting-bar.

4. A feeder mechanism for a threshing-machine comprising a feeder-platform, laterally-adjustable side boards therefor, hangers connected to the inner ends of the side boards, hubs for the hangers, a supporting-bar extending through said hubs, fingers for said hubs a feeder-frame notches in the feeder-frame to receive said fingers and lock the hubs in their adjusted position upon the supporting-bar, and means at the outer ends of the side boards to detachably fasten them to the outer end of the feeder-platform.

5. In a feeder mechanism for a threshing-machine the combination of the band-cutter shaft, a bearing revolubly suspended from the band-cutter shaft, a carrier drive-shaft, a bearing revolubly suspended therefrom, a connecting-shaft mounted in said bearings and longitudinally movable through the bearing suspended from the band-cutter shaft and intermeshing gear for transmitting motion from the band-cutter shaft to the connecting-shaft and other connecting-gear for transmitting motion from the connecting-shaft to the carrier drive-shaft.

822,999. SPRING BED-BOTTOM. JOHN G. SMITH, Chicago Heights, Ill., assignor of one-half to American Bed Company, St. Louis, Mo., a Corporation of Missouri. Filed June 15, 1904. Serial No. 212,608.



Claim.—1. In a spring bed-bottom, the combination with a frame, of a plurality of substantially parallel longitudinal spring-wires provided with loops, and one or more cross-wires passing through the loops of said first-named wires, said cross-wires being provided with means for spacing said first-named wires.

2. In a spring bed-bottom, the combination with a frame, of a plurality of substantially parallel spring-wires provided with loops and extending longitudinally of said frame, and one or more corrugated wires extending substantially at right angles to said first-named wires and passing through the loops thereof.

3. In a spring bed-bottom, a combination with a frame, of a plurality of substantially parallel spring-wires provided with loops and extending longitudinally of said frame, a pair of cross-wires extending substantially at right angles to said first-named wires and passing through the loops thereof, and connections between said second-named wires for holding them in position.

4. In a spring bed-bottom, the combination with a frame, of a plurality of substantially parallel spring-wires provided with loops and extending longitudinally of said frame, a pair of corrugated cross-wires extending substantially at right angles to said first-named wires and passing through the loops thereof, and connections between said second-named wires for holding them in position.

5. In a spring bed-bottom, the combination with a hinged frame, of a plurality of substantially parallel spring-wires provided with loops, one or more corrugated wires extending substantially at right angles to said first-named wires and passing through the loops thereof, and hinges in the wires corresponding to the hinges in said frame.

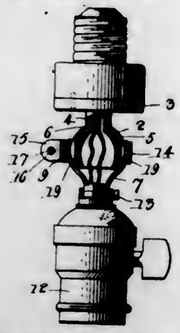
6. In a spring bed-bottom, the combination with a frame hinged at its ends, of spring-wires extending longitudinally thereof and provided with loops, one or more wires extending transversely of said frame and passing through said loops, and hinges in said latter wire or wires.

7. A spring bed-bottom composed of longitudinal-extending spring-wires provided with loops, supports for the ends of said wires, one or more cross-supports formed of corrugated wires extending through the loops of said longitudinal wires and connecting the same, said longitudinal wires having unconnected loops between said supports.

8. A spring bed-bottom composed of longitudinal spring-wires each provided with a plurality of loops, supports for the ends of said wires, and one or more cross-supports connecting said wires, each of said cross-supports being composed of two connected wires passing through the loops of said first-named wires, said first-named wires having unconnected loops between said supports.

9. A spring bed-bottom composed of longitudinal spring-wires each provided with a plurality of loops, supports for the ends of said wires, and one or more cross-supports connecting said wires, said cross-supports each consisting of two connected corrugated wires passing through the loops of said first-named wires, said first-named wires having unconnected loops between said supports.

823,000. LAMP-BRACKET. WILLIAM W. SNOWHILL, Spotswood, N. J., assignor of one-half to Louis Wolfson, New Brunswick, N. J. Filed Mar. 22, 1906. Serial No. 307,519.

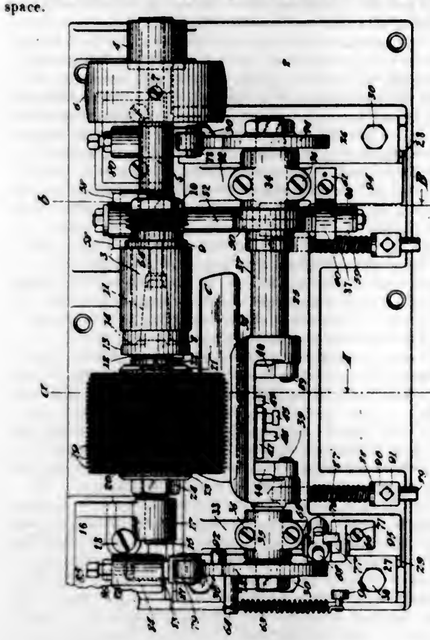


Claim.—A lamp-bracket of the character described comprising a ball member, having a flanged attaching-base, a grooved ball, an integrally-formed neck connecting said ball and base, a socket member having spring ball-engaging sections, a clamping-band arranged around said sections, apertured, parallel, laterally-projecting lugs formed on the ends of said clamping-band, a clamping bolt and nut arranged in said apertured lugs to draw said band and the spring-sections of the socket into close frictional engagement with the ball and the grooves therein, and an exteriorly-threaded tubular extension formed on the outer end of the socket-section, whereby the latter is connected with a lamp-socket, said ball-section having a central longitudinally-disposed passage communicating with said tubular extension of the socket to permit the passage of circuit-wires, substantially as described.

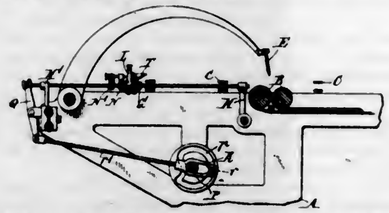
823,001. PROCESS OF MAKING COMBS. WILBUR M. STONE, New York, N. Y., assignor to Arlington Company, a Corporation of New Jersey. Filed Dec. 29, 1904. Serial No. 238,894.

Claim.—1. The process of sawing the teeth-spaces in a comb-blank and in grailing both sides of the roots of said spaces, comprised in presenting the face of the blank first to the saws thus grailing one side simultaneously with the sawing of the teeth-spaces, then simultaneously withdrawing and turning the blank to complete the sawing and then advancing the blank for grailing the opposite sides of the teeth-spaces.

2. The process of sawing a tooth-space in a comb-blank and in grailing both sides of the root of said space, comprised in presenting the face of the blank first to the saw thus grailing one side simultaneously with the sawing of the tooth-space, then simultaneously withdrawing and turning the blank to complete the sawing and then advancing the blank for grailing the opposite side of the tooth-space.



823,002. SIDE REGISTER FOR SHEET-FOLDING AND OTHER MACHINES. CHARLES A. STURTEVANT, Plainfield, N. J., assignor to E. C. Fuller Company, New York, N. Y., a Corporation of New York. Filed Feb. 17, 1905. Serial No. 246,049.



Claim.—1. A side register comprising an inelastic gripper-jaw and an elastic gripper-jaw arranged on opposite sides of the path of the sheets, means for moving one of said jaws toward and from the other, and a positive stop constructed to arrest the closing movement of said actuating means after said jaws are engaged, substantially as set forth.

2. A side register comprising an inelastic gripper-jaw, an elastic gripper-jaw, actuating means for moving one of said jaws toward and from the other, and a positive stop connected to arrest the closing movement of said actuating means after said jaws are engaged, substantially as set forth.

3. A side register comprising a lower inelastic gripper-jaw, an upper elastic gripper-jaw, a rock-lever carrying said upper jaw, and a rigid stop constructed to arrest the closing movement of said lever after said jaws have been engaged, substantially as set forth.

4. A side register comprising a lower inelastic gripper-jaw, an elastic upper gripper-jaw, a rock-lever pivoted on said lower jaw and supporting the upper jaw on its upper arm, and a stop-bar for positively arresting the closing movement of said rock-lever arranged at the rear of said lower jaw underneath the upper arm of said lever and having a recess which receives said upper jaw, substantially as set forth.

5. A side register comprising a lower gripper-jaw, a lever provided on its upper arm with an upper gripper-jaw, and a reciprocating slide having a forwardly-projecting lug which is pivoted to the lower arm of said lever, substantially as set forth.

6. A side register comprising two gripper-jaws one of which is movable toward and from the other, a reciprocating slide composed of two sections one of which is operatively connected with the movable gripper member, an adjusting-screw having a thread at one end which engages with a correspondingly-threaded opening in one of said sections while its opposite end is arranged in an upwardly-opening recess in the other section and is held against axial movement therein, substantially as set forth.

7. A side register comprising two gripper-jaws one of which is movable toward and from the other, a reciprocating slide composed of two sections one of which is operatively connected with the movable gripper member, an adjusting-screw having a thread at one end which engages with a correspondingly-threaded opening in one of said sections while its opposite end is arranged in upwardly-opening recesses formed in lugs on the other slide-section and has a collar which fits between said lugs, a guide-rod and an actuating-rod upon which said grippers and slide-sections are mounted, and means for clamping said slide-sections on said actuating-rod, substantially as set forth.

8. A side register comprising a lower gripper-jaw having an upright wall on its rear side, an upper gripper, a vertically-adjustable guide sliding on said wall, and an adjusting device for said guide connecting the same with said wall, substantially as set forth.

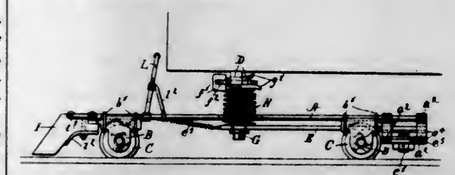
9. A side register comprising a lower gripper-jaw having an upright wall on its rear side, an upper gripper-jaw, a vertically-adjustable guide sliding on said wall, and an adjusting-screw mounted on said wall and engaging with said guide, substantially as set forth.

10. A side register comprising a lower gripper-jaw having an upright wall on its rear side the upper part of which is provided with a laterally-opening recess, an upper gripper-jaw, a guide sliding vertically on said wall, and an adjusting-screw engaging its lower threaded end with a threaded opening in said guide and having its upper end arranged in said recess and provided with shoulders or collars bearing against said wall on opposite sides of said recess, substantially as set forth.

11. A side register comprising a lower gripper-jaw having an upright wall on its rear side which contains a vertical slot, an upper gripper-jaw, a guide sliding vertically on the front side of said wall and having a lug fitting said slot, and a clamping-plate secured to said lug and bearing against the rear side of said wall, substantially as set forth.

12. A side register comprising a lower gripper-jaw having an upright wall on its rear side which contains a vertical slot, an upper gripper-jaw, a vertically-adjustable guide sliding on the front side of said wall and having a lug fitting into said slot, a clamping-plate bearing against the rear side of said wall, a clamping-screw connecting said plate and lug, and an adjusting-screw journaled on the wall and engaging with said lug, substantially as set forth.

823,003. CAR-FENDER. EINAR TALLAKSEN, Chicago, Ill. Filed Dec. 20, 1905. Serial No. 292,544.



Claim.—1. In a car-fender, a truck composed of a frame, axles and track-wheels, a fender-shoe and fender-guards connected with said truck, a coupling member pivotally connected at its rear end with the rear portion of the truck, and means for pivotally connecting the front end of said member with the under side of a car-platform.

2. In a car-fender, a truck composed of a frame, axles and track-wheels, a fender-shoe and fender-guards connected with said truck, a coupling member pivotally connected at its rear end with the rear portion of the truck and means for pivotally and detachably connecting the front end of said member with the under side of a car-platform.

3. In a car-fender, a truck composed of a frame, axles and track-

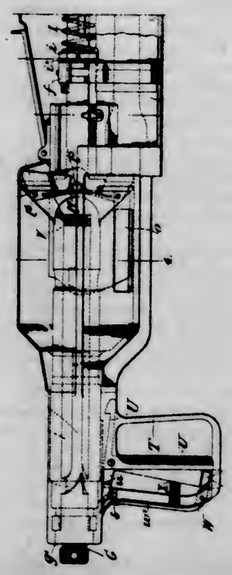
wheels, a fender-shoe and fender-guards connected with said truck, a coupling member pivotally connected at its rear end with the rear portion of the truck, springs connecting the forward end of said member with the front portion of said truck, and means for pivotally and detachably connecting the front portion of the coupling member with the under side of a car-platform.

4. In a car-fender, a truck composed of a frame, axles and track-wheels, a fender-shoe and fender-guards connected with said truck, a coupling member pivotally connected at its rear end with the rear portion of the truck-frame, a hanger secured to the under side of a car-platform, means for pivotally and detachably connecting said coupling member with said hanger, and a spring arranged between said hanger and said coupling member.

5. In a car-fender, a truck composed of a frame, axles and track-wheels, a fender-shoe and fender-guards supported by said truck, a coupling member pivotally connected at its rear end with the rear portion of the truck-frame, a hanger secured to the under side of a car-platform, a locking-bar slidably mounted on said hanger, means for pivotally connecting said coupling member with said hanger, said means adapted to be released by said locking-bar, and a spring arranged between said hanger and coupling member.

6. In a car-fender, a frame, means for operatively supporting said frame under the floor of a car, a coupling member connected at its rear end with said frame, and at its front end pivotally and detachably connected with the under side of the car-floor, and flexible means for maintaining the frame in alinement with the car, for the purpose set forth.

823,004. **AUTOMATIC GUN.** CECIL H. TAYLOR, Philadelphia, Pa., assignor, by mesne assignments, to KNOX TAYLOR, High Bridge, N. J. Filed Aug. 23, 1901. Serial No. 73,989.



Claim.—1. In a gun, a movable breech-block having a plurality of breech-faces, means for reciprocating the same, and means for rotating the same in one direction to bring said breech-faces successively into line with the barrel, said last-named means comprising a cam-groove and a stud engaging therein.

2. In a gun, a movable breech-block having a plurality of breech-faces, means for rotating the same in one direction to bring said breech-faces successively into line with the barrel, and means for reciprocating the same, said last-named means comprising a helical spring.

3. In a gun, a movable breech-block having a plurality of breech-faces, means for reciprocating said block and for rotating it in one direction to bring said breech-faces successively into line with the barrel, and cartridge-feeding devices operated by the rotation of said block.

4. In a gun, the combination with a breech-block carrying cartridge-feeding spindle, of means for rotating and reciprocating said breech-block and spindle.

5. In a gun, the combination with a breech-block carrying a cartridge-feeding spindle, of means engaging the breech-block to rotate said breech-block and spindle, and means engaging the spindle to reciprocate said breech-block and spindle.

6. In a gun, a barrel, a breech-block, the one having movement relative to the other, a rotatable cartridge-feeding spindle operatively connected with the block, and means stationary with respect to the barrel and operatively connected with said block whereby the spindle is rotated through the relative movement of the barrel and block.

7. In a gun, a cartridge-guide, a rotating cartridge-feeder to feed the cartridges through the guide, one of the parts having longitudinal movement with respect to the other part, and devices stationary with respect to said guide and engaging the cartridge-feeder to effect rotation of said feeder through the relative longitudinal movement of said feeder.

8. In a gun, a cartridge-guide, a rotating cartridge-feeder to feed the cartridges through the guide, one of said parts having longitudinal movement with respect to the other part, and an extractor having a definite longitudinal relation to the cartridge-feeder and brought into operative relation with said guide through the relative longitudinal movement of the guide and cartridge-feeder.

9. In a gun having a guideway for the cartridges, a cartridge-feeding spindle rotating and reciprocating with respect to said guideway and an extractor carried with said spindle to engage the cartridge.

10. In a gun, a reciprocating and rotating breech-block, a helical spring resisting the longitudinal movement of the breech-block and means whereby the torsional tension of said spring due to longitudinal compression is utilized for rotating the block.

11. In a gun, a movable breech-block having a spindle formed integral therewith, means for reciprocating and rotating said breech-block, and means on said spindle engaging with a cartridge-belt to feed the same when the breech-block is rotated.

12. In a gun, a movable breech-block having a spindle formed integral therewith, means for rotating and reciprocating said breech-block, means on said spindle engaging a cartridge-belt to feed same forward and a belt-guide formed in the frame of the gun and provided with a spirally-arranged groove to receive the rims of the cartridges.

13. In a gun having a rotating breech-block, a cartridge-extractor carried with said breech-block to engage the cartridge and formed to permit lateral movement of the cartridge while held by the extractor, and means to feed the cartridge laterally said extractor also being movable toward and from said breech-block.

14. In a gun having a rotating breech-block with an eccentric breech-face, and a cartridge-extractor secured to the face of said breech-block to engage with the cartridges and feed the same laterally to the cartridge-chamber.

15. In a gun, a breech-block provided with an elongated cartridge-extractor pivoted to swing with relation to the block said extractor being constructed to engage the rim of the cartridge and permit movement of said cartridge lengthwise of the extractor across the face of the breech-block.

16. In a gun, a cartridge-extractor formed to engage and retain the cartridge and pivoted to the breech-block to swing perpendicularly toward and from the face of the breech-block and means for normally holding one end of said cartridge-extractor away from the face of the breech-block.

17. In a gun having a breech-face, a firing-pin stationary in the face of the breech-block and a cartridge-extractor formed to engage and retain the cartridge and having movement substantially perpendicular to the face of the breech-block.

18. In a gun, a breech-block provided with a stationary firing-pin, a cartridge-extractor formed to engage and retain the cartridge and pivoted to the breech-block, means normally holding the extractor away from said firing-pin, and means for limiting the movement of said extractor.

19. In a gun, the combination with a rotating breech-block having an elongated cartridge-extractor secured thereto to engage the cartridge and permit movement of said cartridge lengthwise thereof and radially with respect to the breech-block, of a guide secured to the frame of the gun and arranged to engage the cartridge and cause the same to move lengthwise of the extractor when the breech-block is rotated.

20. In a gun, the combination with a breech-block carrying a spindle provided with a groove to receive the cartridge, a cartridge-extractor secured to the breech-block to engage the cartridge and hold the same in said groove and formed to permit lengthwise movement of the cartridge with respect to itself, and a guide secured to the frame of the gun provided with means to engage with the cartridge and move the same lengthwise of the extractor when the breech-block is rotated.

21. In a gun, the combination of a breech-block carrying a spindle provided with a recessed groove to receive the cartridge, a cartridge-extractor secured to said breech-block to engage with a cartridge and hold the same in the groove and formed to permit lengthwise movement of the cartridge with respect to itself, and a guide provided with an outwardly-projecting lip to engage in said recess and cause the cartridge to move lengthwise of the extractor and away from said groove when the breech-block is rotated.

22. In a gun, the combination with a rotatable breech-block, a stationary firing-pin in said breech-block, a cartridge-extractor pivoted to the breech-block so that the cartridge is normally held out of contact with the firing-pin, a cartridge-guide arranged adjacent to the breech-block to receive the cartridge held by the extractor when the breech-block is rotated and to guide said cartridge opposite the firing-pin, means for reciprocating the breech-block to engage the cartridges and to force the same into the cartridge-chamber and simultaneously oscillate the cartridge-extractor to bring the firing-pin into engagement with the cartridge.

23. In a gun, the combination with a breech-block having a cartridge-extractor secured thereto and movable therewith in a direction transverse to the axis of the breech-block and having substantially parallel fixed guides to engage the rim of a cartridge and permit the same to move in a direction transverse to the axis of the breech-block, of an ejector-finger arranged to project within the path of the extracted case held by said extractor and disengage the same from said extractor as the extractor is moved transversely.

24. In a gun, a part moved by the operation of the gun, firing mechanism, a trigger, a source of fluid-pressure coöperating with said part to control and cushion the movement thereof, and devices in operative relation with the trigger for regulating the action of the source of fluid-pressure and the speed of the moving part.

25. In a gun, a part moved by the operation of the gun, firing mechanism, a trigger, a source of power coöperating with the moving part and in which energy is stored by the movement of said part, and devices in operative relation with the trigger for regulating the action of said source of power and the speed of the moving part.

26. In a gun, the combination with the casing of a reciprocating breech-block engaging with the casing to form an air-chamber between same and the end of the breech-block, a passage communicating with said air-chamber and having an outlet in the grip of the gun, a trigger, and means on said trigger for regulating said outlet.

27. In a gun, the combination with a casing, a stationary guide-bolt secured to the casing, a reciprocating breech-block engaging with the casing to form an air-chamber between the same and the end of the breech-block, an outlet for the air-chamber, and a buffer-spring arranged between the guide-bolt and the breech-block to reverse the movement of the breech-block when said outlet is opened.

28. In a gun, the combination of a breech-block movable longitudinally and rotatable, an extractor carried by the breech-block and movable therewith, said extractor being formed to engage a cartridge and to permit lengthwise movement of the cartridge with respect to itself, and a relatively fixed cartridge-guide to engage the cartridge and move the same lengthwise of the extractor when the breech-block is rotated.

29. In a gun, a cartridge-extractor having guides to engage the rim of a cartridge and between which the cartridge is movable, said guides being relatively yielding in one part of their length to snap over the rim of a cartridge and relatively unyielding in another part to hold the cartridge rigidly.

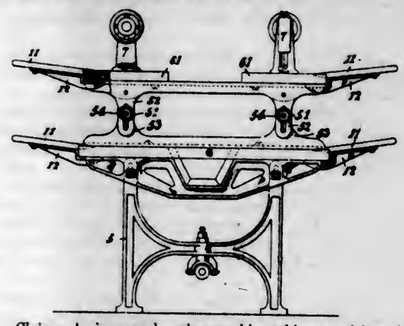
30. In a breech-loading gun, a breech-bolt having a transversely-projecting cross-head, provided with a firing-pin in each of the arms thereof.

31. In a breech-loading gun, a breech-bolt having a transversely-projecting cross-head, and provided on the face thereof with opposite sections of a flangeway adapted to grasp the heads of cartridges.

32. In a breech-loading gun, a breech-bolt having a transversely-projecting cross-head carrying a firing-pin in each of the arms thereof and provided on its face with opposite sections of a flangeway adapted to grasp and to hold cartridges.

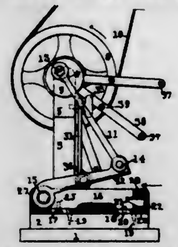
33. In a machine-gun, the combination of the reciprocating breech mechanism, firing mechanism operated solely by the breech mechanism, and a manually-operable controller to determine the operation of the said breech mechanism, substantially as specified.

823,005. **SEWING-MACHINE TABLE.** JOSEPH H. THOMPSON, Passaic, N. J., assignor of one-half to John Murphy, Passaic, N. J. Filed Aug. 23, 1905. Serial No. 275,209.



Claim.—An improved sewing-machine table comprising a lower table, a trough transversely arranged in the center of the lower table, an upper table adjustably supported on the lower table and having a centrally-arranged transverse opening, a machine on each side of each table, the machines on one side being diagonally arranged to the machines on the other side, and a tablet on each side of each table opposite the machine on the other side, the product of all the machines being fed into the trough of the lower table.

823,006. **STRIP-CUTTING MACHINE.** ARTHUR C. TOWNLEY, Elizabeth, N. J. Filed Sept. 27, 1900. Serial No. 31,287.



Claim.—1. In a machine for reducing cloth to strips, the combination of shear-blades 12 and 16, pitman 11, horizontal shaft 7 to which said pitman is connected, and fly-wheel 8; said shears opening toward the front of the machine, and said pitman moving said blade 12 in a vertical position.

2. In a machine for reducing cloth to strips, the combination of coöperative shearing-blades; power-driven mechanism for operating at least one of said blades; a table along which the cloth may move in a direction longitudinally of said shears, said table extending in proximity to the opening between said shearing-blades; and a feeding device arranged just over the table, so that the cloth may be pinched between said feeding device and the table; said feeding device advancing the cloth in the direction of the cut.

3. In a machine for reducing cloth to strips, the combination of coöperative hinged shearing-blades; a power-driven shaft; a pitman connected at one end to one of said blades and at the other end to a wrist carried upon said shaft; and a feed-roller intermittently actuated by a device carried upon said shaft, said feed-roller being arranged alongside of said blades and close thereto.

4. In a machine for reducing cloth to strips, the combination of shear-blades 12 and 16; pitman 11 connected to vertically movable blade 12; horizontal shaft 7 to which said pitman is connected; fly-wheel 8 attached to said shaft; horizontal overhanging arm 5 whereon said shaft is mounted; standard 3 carrying said arm; and a base or table below said overhanging arm.

5. A machine for reducing irregular fragments of cloth to strips, comprising power-driven means for cutting cloth, and means for advancing the cloth in the direction of the cut; said advancing means contacting with only a small portion of the cloth, so that the operator may turn the latter edgewise as it is fed along, so as to change the direction of the cut and thereby cut a substantially parallel-sided strip from an irregularly-shaped fragment.

6. A machine for reducing cloth to strips, consisting of scissor-

ing mechanism and feeding mechanism; the feeding mechanism being operative alternatively with the scissoring mechanism, and advancing the cloth intermittently in the direction of the cut; said feeding mechanism contacting with only a small portion of the cloth, so that the latter may be swung edgewise to control the direction of the cut.

7. In a machine for cutting stripe from cloth, the combination of a fly-wheel, a pivoted shearing-blade operatively connected thereto, and a cloth-feeder intermittently rotated by said fly-wheel.

8. In a machine for cutting stripe from cloth, the combination of a fly-wheel, a cutting device operatively connected thereto, and a feed-wheel also operatively connected to said fly-wheel and advancing the cloth intermittently in the direction of the cut.

9. In a machine for cutting stripe from cloth, the combination of a table; a fly-wheel; a shearing-blade operatively connected to the fly-wheel; a feeding-wheel arranged just over said table, so that the cloth may be pinched between the wheel and the table; and intermittently operating mechanism connecting said feeding-wheel to said fly-wheel.

10. In a machine for cutting stripe from cloth, the combination of a scissoring-blade, a cloth-feeding wheel which contacts directly with the cloth and advances the same in the direction of the cut, and power-driven mechanism for reciprocating said blade and effecting intermittent rotative movements of said feeding-wheel.

11. In a machine for cutting stripe from cloth, the combination of a power-driven scissoring-blade; a coöperative blade; a table arranged close thereto; and a power-driven feeding-wheel arranged close to said blade and constructed to press the cloth against the table and advance the same into the bite of the scissoring-blades; the direction of the feed being longitudinal of said blades.

12. In a machine for cutting stripe from cloth, the combination of a main shaft; a counter-shaft; connections between said shafts for operating the counter-shaft intermittently; a feeding-wheel operated by the counter-shaft; and a shearing-blade operated by the main shaft; said feeding-wheel advancing the cloth in the direction of the cut.

13. In a machine for cutting stripe from cloth, the combination of a work-table; a feed-wheel arranged thereover; a pair of scissors arranged close to said work-table and close to said feeding-wheel; and mechanism for operating said feeding-wheel and scissors so as to alternately cut and draw the cloth along in the direction of the cut.

14. In a machine for cutting stripe from cloth, the combination of shearing-blades 12 and 16; shaft 7 operatively connected to one of said blades; counter-shaft 30 placed crosswise of the direction of the cut; intermittently-operating connections between said shafts; and feeding-wheel 29 upon said counter-shaft for drawing the cloth into the bite of said shearing-blades.

15. In a machine for cutting stripe from cloth, the combination of fixed shearing-blade 16; vibratory shearing-blade 12 hinged thereto; shaft 7; pitman 11 connecting said shaft to said vibratory blade; fly-wheel 8 for said shaft; counter-shaft 30; connections extending from shaft 7 to said counter-shaft for operating the latter intermittently; feeding-wheel 29 actuated by said counter-shaft; and work-table 27 beneath said counter-shaft; said wheel 29 feeding the cloth in the direction of the cut.

16. In a machine for cutting stripe from cloth, the combination of a main shaft; a cutting device operated thereby; a counter-shaft carrying a star-wheel; devices carried by said main shaft for engaging said star-wheel so as to rotate the latter intermittently; and a feeding-wheel intermittently actuated by said star-wheel and advancing the cloth in the direction of the cut to be made.

17. In a machine for cutting stripe from cloth, the combination of a main shaft; a cutting device operated thereby; a counter-shaft carrying a star-wheel; arms carried upon the main shaft; pins fixed upon said arms in position for engaging said star-wheel so as to revolve the latter intermittently; and a feeding-wheel intermittently actuated by said star-wheel and advancing the cloth in the direction of the cut.

18. In a machine for cutting stripe for rag carpets, the combination of a main shaft; a fly-wheel; a shearing-blade connected to said main shaft and fly-wheel; a counter-shaft carrying a star-wheel; and a group of pins arranged upon one side of said main shaft in position to engage said star-wheel during one portion only of the revolution of said main shaft; and a feeding-wheel upon said counter-shaft, for advancing the cloth in the direction of the cut; said feeding-wheel being stationary during the cutting operation.

19. In a machine for reducing cloth to stripe, the combination of a base or table; standard 3 thereon; an overhanging arm 5 mounted upon said standard; a horizontal shaft 7 mounted in said overhanging arm; a fly-wheel 8 upon said shaft; a shear-blade 12 connected to said shaft; a shear-blade 16 rigid with said base or table; feeding-wheel 29; counter-shaft 30 whereon said feeding-wheel is mounted; star-wheel 36 upon said counter-shaft; pins 37 for engaging said star-wheel; and arms 38 carrying said pins and attached to said fly-wheel.

20. In a machine for cutting stripe from cloth, the combination with a power-driven scissoring device of a work-table; a power-driven feeding-wheel which is intermittently actuated and advances the cloth in the direction of the cut; and means for adjusting said feeding-wheel to accommodate different thicknesses of cloth.

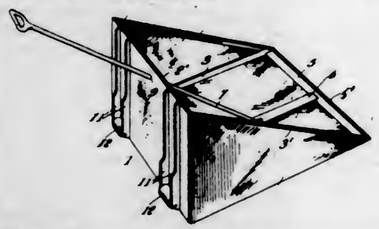
21. In a machine for cutting stripe from cloth, the combination with a power-driven shearing-blade of a power-driven feeding-wheel which advances the cloth intermittently in the direction of the cut, and an adjustable support whereon said feeding-wheel is mounted.

22. In a machine for cutting stripe from cloth, the combination with a power-driven shearing-blade, and a coöperating stationary blade, of a work-table, a shaft arranged thereover, a feeding-wheel upon said shaft, an adjustable hanger 31 carrying one end of said shaft, means for supporting the other end of said shaft, and means for rotating said shaft intermittently; said feeding-wheel advancing the cloth in the direction of the cut.

23. In a machine for cutting stripe from cloth, the combination of a base or table; plate 18 rigid therewith; studs 20 in said plate; hook 22 upon said plate; shearing-blade 16 having notch 21 adapted to said hook; slotted plate 17 attached to said shearing-blade; and screws 19 for plate 17.

24. The combination with means for cutting the cloth, of a feeding-wheel above the cloth, and means for turning said wheel.

823,007. HOP-SCOOP. CHARLES TRUE, Sherwood, Oreg. Filed Nov. 10, 1905. Serial No. 286,760.



Claim.—1. A scoop, comprising lower and upper frames rigidly secured together, a textile covering for said frames, brackets at the rear of said frames and connecting the same whereby to brace them, and rollers mounted in said brackets, as and for the purpose set forth.

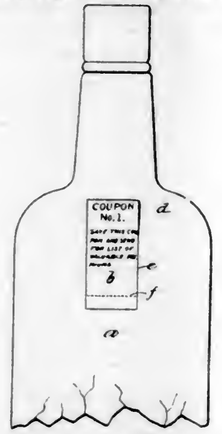
2. A hop-scoop, comprising a lower frame, a diagonal frame secured to the lower frame at its forward end, a textile covering secured to said frames whereby to constitute the body of the scoop, vertically-extending brackets connecting the rear ends of said frames and bracing the same, a roller mounted in each of said brackets, and a handle secured at its forward end to the lower frame and extending upwardly and rearwardly and connected to the diagonal frame.

3. A device of the character described comprising a lower frame embodying a rear cross-bar, two side bars connected and braced thereto, a front scraper-bar connected to the front ends of the side bars, and a longitudinal brace connecting the scraper-bar with the rear cross-bar, a second frame embodying an upper rear cross-bar, two diagonally-extending side bars connected and braced thereto, and attached at their forward ends to the front ends of the lower frame, diagonal braces connecting said two frames, a textile covering for said frames, a handle secured to the longitudinal brace of the lower frame and also to the rear cross-bar of the other frame, brackets embodying two spaced-apart vertical members secured at their ends to the rear cross-bars of the frames and bracing the latter, and rollers journaled in the lower ends of said brackets, as and for the purpose set forth.

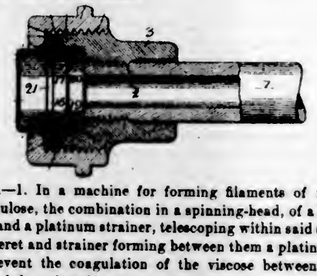
823,008. COUPON-BOTTLE. ISAAC H. VENDIG, Philadelphia, Pa. Filed Jan. 4, 1906. Serial No. 294,582.

Claim.—1. A bottle for dispensing liquors, provided with a series of coupons, superposed upon each other to form a pad made of separately-detachable units, said bottle having a recess within which the pad of coupons is secured; substantially as described.

2. A bottle for dispensing liquors, provided with a series of coupons, superposed upon each other to form a pad made up of separately-detachable units, said bottle having a recess within which the pad of coupons is secured, said recess being located at the upper rounded edge of the bottle, so that the pad of coupons may project above said rounded edge; substantially as described.



823,009. SPINNING-HEAD FOR FORMING FILAMENTS OF VISCOSE OR SIMILAR MATERIAL. MONTGOMERY WADDELL, New York, N. Y., assignor to Silas W. Pettit, Philadelphia, Pa. Filed Jan. 27, 1906. Serial No. 298,115.



Claim.—1. In a machine for forming filaments of metamorphosed cellulose, the combination in a spinning-head, of a platinum spinneret and a platinum strainer, telescoping within said spinneret, said spinneret and strainer forming between them a platinum chamber to prevent the coagulation of the viscose between the said strainer and the point of its ejection from the said spinneret.

2. In a machine for forming filaments of metamorphosed cellulose, a spinneret having a cylindrical body portion, and having a flange at one end thereof, a strainer also having a cylindrical body portion and also having a flange at one end, the strainer telescoping within said spinneret with the said flanges adjacent each other.

3. In a machine for forming filaments of metamorphosed cellulose, the combination of a spinneret having a cylindrical body portion, and a platinum strainer, also having a cylindrical body portion, said spinneret and strainer having flanges at one end thereof, and a gasket interposed between said flanges.

4. In a machine for forming filaments of metamorphosed cellulose, the combination of a head, a coupling fitting over said head and a strainer and a spinneret both clamped between said head and said coupling.

5. In a machine for forming filaments of metamorphosed cellulose, the combination of a head, a coupling fitting over said head, a cup-shaped strainer and a cup-shaped spinneret both clamped between said head and said coupling.

6. In a machine for forming filaments of metamorphosed cellulose, the combination of a head, a coupling fitting over said head and a strainer and a spinneret clamped between said head and said coupling, said strainer and spinneret being both cup-shaped and extending in a direction away from said head.

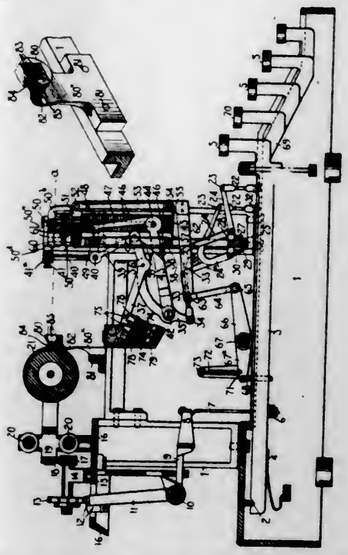
7. In a device for forming filaments of metamorphosed cellulose, the combination of a head, a coupling adapted to be secured to said head, and seats on both said coupling and said head, with a flanged spinneret and a flanged strainer secured by their flanges between said seats.

8. In a machine for forming filaments of metamorphosed cellulose, the combination of a head, and coupling threaded over said head, with a perforated cup-shaped spinneret provided with flanges and projecting through said coupling, and a strainer also cup-shaped and provided with flanges, both the spinneret and the strainer being retained by their flanges between said head and said coupling.

9. In a device for forming filaments of metamorphosed cellulose, a head provided on its front side with a seat, a gasket in contact with said seat, a flanged strainer having its flanges resting against said gasket, a flanged spinneret, a gasket between the flanges of said strainer and of said spinneret, and a coupling secured to said head, engaging the flanges of said spinneret to hold said parts tightly together.

10. In a device for forming filaments of metamorphosed cellulose, a head provided, upon its front side, with a seat, a gasket on said seat, a flanged strainer contacting with said gasket, a bushing engaging the flanges of said strainer, a flanged spinneret, a gasket between the flanges of said spinneret and said bushing, a coupling adjustably secured to said head engaging the flanges of said spinneret.

823,010. TYPE-WRITING MACHINE. CHARLES W. WALKER, Bridgeport, Conn., assignor to Yost Writing Machine Company, Ilion, N. Y., a Corporation of New York. Filed Jan. 16, 1902. Serial No. 90,030.



Claim.—1. In a front-strike type-writing machine, the combination of a platen, a system of radially-arranged type-bars that swing upwardly and rearwardly and impact against the front face of the platen, each of said type-bars having a plurality of types and all of the types on each bar being arranged in the radial plane of its bar and having their printing-faces at right angles to said plane, each type bearing essentially the same relation to its bar in the printing position that it does in the normal position.

2. In a type-writing machine, the combination of a system of radially-arranged type-bars, each type-bar of the system having a plurality of types arranged one behind the other in the plane of the bar, means for supporting said type-bars, and means for shifting said supporting means radially and maintaining the same fixed in either the normal or shifted position.

3. In a type-writing machine, the combination of a platen, a system of radially-arranged type-bars, each type-bar of the system having a plurality of types arranged one behind the other in the plane of the bar, a set of independent radially-arranged supports for said type-bars, and means for shifting said supports radially.

4. The combination of a platen, a set of type-bars each having a plurality of types, a set of independent radially-arranged supports to each of which a single type-bar is pivotally connected, and means for shifting said pivotal supports radially.

5. In a type-writing machine, the combination of a platen, a system of radially-arranged type-bars each having a plurality of radially-arranged types, supports for said type-bars that remain fixed during the various printing movements of the type-bars, and means for changing the fixed positions of said supports to change the paths of the types without changing the radial plane in which any type-bar of the system works.

6. In a type-writing machine, the combination of a platen, a system of radially-arranged type-bars, each type-bar of the system having a plurality of types arranged one behind the other in the plane of movement of the bar which carries the types, and radially-operating shifting means that remain fixed in any position to which they are shifted for changing the paths of said types so as to shift from one case to another.

7. In a type-writing machine, the combination of a platen, a system of radially-arranged type-bars, each type-bar of the system having a plurality of types, the types on each bar being arranged in the plane of movement of the bar which carries them, and means for simultaneously changing the paths of all of said types in said planes, said moving means remaining fixed during the printing strokes of said bars.

8. In a type-writing machine, the combination of a platen, a set of radially-arranged type-bars each having a plurality of types, and means for effecting a simultaneous radial shift of all of said type-bars, each type-bar shifting in the same radial plane that it moves in during its printing operation.

9. In a type-writing machine, the combination of a platen, a system of radially-arranged type-bars, each type-bar of the system having a plurality of types arranged one behind the other and in the plane of the bar, a series of radially-arranged pivoted supports for said type-bars, said supports remaining fixed during all of the printing movements of said bars, and means for changing from one case to another by shifting simultaneously all of said radially-arranged supports.

10. In a type-writing machine, the combination of a platen, a series of radially-arranged type-bars each having a plurality of radially-arranged types, a set of pivoted supports, one for each of said type-bars and which remain fixed during all of the printing movements of said bars, and means for simultaneously shifting all of said supports radially.

11. In a type-writing machine, the combination of a platen, a system of radially-arranged type-bars, each type-bar of the system having a plurality of types arranged in the same radial plane as its bar, a set of radially-arranged pivoted supports to which said type-bars are pivotally connected and which remain fixed during all of the printing movements of said bars, a shifting device common to all of said radially-arranged supports, and means for moving said shifting device and causing simultaneous radial movements of all of said supports.

12. In a type-writing machine, the combination of a platen, type-carriers, each type-carrier having a plurality of types thereon, and shifting means for changing the paths of the type-carriers, the shifting movements for the different carriers being effected simultaneously while the carriers are in the normal or non-printing positions and without moving the type-carriers.

13. In a type-writing machine, the combination of a type-bar having a plurality of types, the type-bar swinging on a plurality of centers, a guide-link pivoted to said type-bar and to a fixed portion of the machine, a key-actuated driver, and shifting means associated with said driver for changing the path of movement of the bar in the same plane in which the bar operates to print, so as to bring any one of the various types to the printing-point.

14. In a type-writing machine, the combination of a type-bar having a plurality of types arranged in the plane of the body of the bar, a driver for said type-bar, a guide-link pivoted to said type-bar and to a fixed portion of the machine, and means for changing the path of movement of said driver without changing the radial plane of its movement to bring any desired type to the printing-point.

15. In a type-writing machine, the combination of radially-arranged type-bars, each having a plurality of types thereon, a plurality of radially-arranged drivers for said type-bars, and means for shifting the case position of the said type-bars in different radial planes by changing the positions of the supports for the drivers.

16. In a type-writing machine, the combination of radially-arranged type-bars, each having a plurality of types thereon, a plurality of radially-arranged pivoted drivers for said type-bars, and means connected directly to the drivers for shifting the pivots thereof in different radial planes.

17. In a type-writing machine, the combination of radially-arranged type-bars, each having a plurality of types thereon, a plurality of radially-arranged pivoted key-actuated drivers for said type-bars, and means connected to the drivers for shifting the pivots thereof in different radial planes corresponding to the planes in which the type-bars move in the printing operations.

18. In a type-writing machine, the combination of radially-arranged type-bars, each of which has a plurality of types thereon, radially-arranged guide-links, one of which is pivoted to each type-bar, radially-arranged pivoted key-actuated drivers, one of which is pivotally connected to each type-bar, and means for shifting the pivots of said drivers in different radial planes.

19. In a type-writing machine, the combination of radially-arranged type-bars, each of which has a plurality of types thereon, radially-arranged guide-links one of which is pivoted to each type-bar, radially-arranged pivoted drivers, one of which is pivotally connected to each type-bar, and means for shifting the pivots of said drivers in different radial planes corresponding to the radial planes in which the type-bars and drivers move in the printing operations and for maintaining said pivots or pivotal centers fixed during all of the printing operations.

20. In a type-writing machine, the combination of radially-arranged jointed type-bars, each of which has a plurality of types thereon, an inking-pad with which said types are normally in contact, and shifting means for changing the relative positions of members of said jointed bars while they are in the normal positions in order to change the paths of said type-bars without changing the radial planes in which they work.

21. In a type-writing machine, the combination of radially-arranged type-bars, each of which has a plurality of types thereon, an inking-pad with which said types are normally in contact, and means for simultaneously shifting all of the type-bars in different radial planes corresponding to the planes in which said type-bars move in the printing operations.

22. In a type-writing machine, the combination with radially-arranged "Yost" type-bars and key-actuated drivers therefor, of a plurality of types on each of said bars, and means for simultaneously shifting the parts of all of said type-bars in different radial planes so as to change the case or printing positions of the type-bars.

23. In a type-writing machine, the combination with radially-arranged "Yost" type-bars and key-actuated drivers therefor, of a plurality of types on each of said bars, and means for shifting the fulcrums of the drivers in different radial planes which correspond to the planes of movement of the type-bars and drivers in the printing operations so as to change the case or printing positions of the type-bars.

24. In a type-writing machine, the combination of radially-arranged jointed type-bars, each having a plurality of types thereon, an inking-pad on which said types normally rest, and means for shifting said type-bars independently of the inking-pad and in different radial planes when the parts are in the normal positions.

25. In a type-writing machine, the combination of radially-arranged jointed type-bars, each having a plurality of types thereon, a fixed inking-pad on which said types normally rest, and means for simultaneously shifting all of said type-bars independently of the inking-pad and in different radial planes which correspond to the planes in which said type-bars move in the printing operations.

26. In a type-writing machine, the combination of radially-arranged jointed type-bars, each having a plurality of types thereon, radially-arranged key-actuated drivers, one for each of said bars, radially-arranged pivoted supports, one for each driver, and means for simultaneously shifting said supports in different radial planes.

27. In a type-writing machine, the combination of radially-arranged jointed type-bars, each having a plurality of types thereon, radially-arranged drivers, one for each of said bars, radially-arranged pivoted supports, one for each driver, and means for shifting said supports in different radial planes that correspond to the planes in which the type-bars move during the printing operations.

28. In a type-writing machine, the combination of radially-arranged jointed type-bars, each having a plurality of types thereon, radially-arranged pivoted drivers, one for each of said bars, finger-keys for actuating said drivers, radially-arranged pivoted supports, each of which has a driver pivoted thereto, and hand-operated means for shifting said supports around their pivots in different radial planes that correspond to the planes in which the type-bars move during the printing operations to effect a change in the case or printing position of the type-bars.

29. In a type-writing machine, the combination of radially-arranged bell-crank levers, radially-arranged jointed type-bars, each having a plurality of types thereon, radially-arranged drivers, one of which is connected to each of said bell-crank levers and to a type-bar, and means for simultaneously shifting all of said bell-crank levers in different radial planes to change the case or printing positions of the type-bars.

30. In a type-writing machine, the combination of a type-bar having a plurality of types, the type-bar swinging on a plurality of centers, a guide-link pivoted to said type-bar and to a fixed portion of the machine, and means for changing the path of movement of the bar to bring any one of the various types to the printing-point.

31. In a type-writing machine, the combination of a type-bar having a plurality of types thereon, a driver for said type-bar, a guide-link pivoted to said type-bar and to a fixed portion of the machine, and means for changing the path of movement of said driver to bring any desired type to the printing-point.

32. In a type-writing machine, the combination of a type-bar having a plurality of types thereon, a driver for said type-bar, and means connected directly to the driver for shifting the pivotal center thereof to bring any desired type to the printing-point.

33. In a type-writing machine, the combination of type-bars, each having a plurality of types, a driver for each bar, and means connected directly to the drivers for simultaneously shifting the pivotal centers of all of said drivers to change the printing positions of the bars.

34. In a type-writing machine, the combination of a type-bar having a plurality of types thereon, a link pivoted to said type-bar and to a fixed portion of the machine, a pivoted key-actuated driver pivotally connected to the type-bar, and means for shifting the pivotal center of said driver to change the printing position of the type-bar.

35. In a type-writing machine, the combination with a Yost type-bar and its driver, of two types on said bar, and pivoted means directly connected to the driver for shifting it to change the printing position of the type-bar.

36. In a type-writing machine, the combination of a jointed type-bar having a plurality of types on a bar, a fixed center on which a portion of said bar turns when printing either upper or lower case characters, a fixed inking-pad with which said types are normally in contact, and means for shifting said fixed center so as to change the printing or case position of the bar without displacing the types from the inking-pad.

37. In a type-writing machine, the combination of a type-bar having a plurality of types on a bar, a driver therefor, a fixed inking-pad with which said types are normally in contact, and means directly connected to the driver for shifting it so as to change the printing or case position of the type-bar without displacing it from the inking-pad.

38. In a front-strike type-writing machine, the combination of a jointed type-bar with a plurality of types thereon, an inking-pad on which said types normally rest, and means for shifting said bar independently of the inking-pad while the parts are in the normal positions so as to change the relation of the parts and change the path of movement of the bar, to bring any type on the bar to the printing position.

39. In a type-writing machine, the combination of a jointed type-bar having a plurality of types thereon, a driver therefor, a pivoted support pivoted directly to said driver, and hand-operated means for moving said support around its pivot to shift the printing position of the bar.

40. In a type-writing machine, the combination of jointed type-bars each having a plurality of types thereon, key-actuated pivoted drivers therefor, a pivoted support for each of said drivers and a shift-key for moving said supports around their pivots to shift the printing position of the bars.

41. In a front-strike type-writing machine, the combination of jointed segmentally-arranged type-bars, each having a plurality of types thereon, segmentally-arranged drivers, one for each type-bar, segmentally-arranged pivoted supporting-arms to each of which a driver is pivoted, and means for simultaneously shifting all of said supporting-arms to change the printing position of the bars.

42. In a front-strike type-writing machine, the combination of segmentally-arranged bell-crank levers pivoted to a fixed portion of the machine, jointed type-bars, each having a plurality of types thereon, a key-actuated driver connected to each of said segmentally-arranged bell-crank levers and to a type-bar, and means for simultaneously shifting all of said bell-crank levers on their pivots to change the printing position of the type-bars.

43. In a type-writing machine, the combination of a series of radially-arranged type-carriers having each a plurality of types, a series of radially-arranged levers pivotally connected at one set of their ends to said type-carriers, and a shifter plate or bar connected to the other set of ends of said levers for simultaneously vibrating all of said levers and maintaining said levers fixed during the printing movements of the bars whether for upper or lower case writing.

44. In a type-writing machine, the combination of a series of radially-arranged type-bars each having a plurality of types, a series of radially-arranged case-shifting levers, one for each type-bar and to each of which a type-bar is operatively connected, said shifting-levers remaining fixed in either shifted position thereof during the printing movements of the type-bars, and means for shifting said levers so as to move the pivotal points of connection of said type-bars and enable the type-bars to print in a different case.

45. In a type-writing machine, the combination of a series of radially-arranged type-bars each having a plurality of types, a series of radially-arranged case-shifting bell-cranks, one for each of said type-bars to which said series of type-bars are pivotally connected, a shifter-plate also connected to said series of bell-cranks for moving them on their pivots, and means for moving said shifter-plate, so as to change the pivotal positions of said type-bars.

46. In a type-writing machine, the combination of a platen, segmentally-arranged type-bars, segmentally-arranged drivers, key-actuated means for operating said drivers, supports for said drivers, said supports being pivoted to a fixed portion of the machine, a shifting segment which coöperates with all of said supports and key-actuated means for shifting said shifting segment.

47. In a type-writing machine, the combination of a platen, segmentally-arranged type-bars that are pivoted to a fixed portion of the machine, key-actuated means for operating said type-bars, a shifting segment which coöperates with said type-bars to shift the printing position thereof, and key-actuated means for shifting said segment.

48. In a type-writing machine, the combination of a platen, type-bars pivoted to a fixed portion of the machine, key-actuated means for operating said type-bars, a shifting segment which coöperates with the type-bars to shift the printing position thereof, parallel links upon which said shifting segment is mounted and key-actuated means for moving said segment on said links.

49. In a front-strike type-writing machine, the combination of a platen, segmentally-arranged type-bars pivoted to a fixed portion of the machine, key-actuated means for operating said type-bars, a shifting segment which coöperates with the type-bars to shift the printing position thereof, parallel links upon which said shifting segment is mounted and adapted to move in substantially a horizontal plane and key-actuated means for moving said segment on said links.

50. In a front-strike type-writing machine, the combination of a platen, segmentally-arranged jointed type-bars pivoted to a fixed portion of the machine, key-actuated drivers for said type-bars, separate supports for each of said drivers, a shifting segment which is grooved in its edge to receive said driver-supports and means for shifting said segment to change the printing positions of the type-bars.

51. In a front-strike type-writing machine, the combination of a platen, segmentally-arranged jointed type-bars pivoted to a fixed portion of the machine, key-actuated drivers for said type-bars, which drivers are pivoted to a fixed portion of the machine, a separate support for each driver, which supports are pivoted to a fixed portion of the machine, a shifting segment which engages said supports, parallel links upon which said segment is adapted to move, and key-acutated means for shifting said segment to change the printing position of the type-bars.

52. In a type-writing machine, the combination of a platen, segmentally-arranged type-bars, segmentally-aranged guide-links pivoted to said type-bars and to a fixed portion of the machine, segmentally-arranged drivers pivoted to a fixed portion of the machine, segmentally-arranged key-actuated bell-cranks operatively connected to said drivers, segmentally-arranged supports for said drivers which supports are pivoted to a fixed portion of the machine, and a key-actuated segment which coöperates with said pivoted supports to shift the printing position of the type-bars.

53. In a type-writing machine, the combination of a platen, segmentally-arranged type-bars, segmentally-arranged guide-links pivoted to said type-bars and to a fixed portion of the machine, segmentally-arranged drivers pivoted to a fixed portion of the machine, segmentally-arranged bell-cranks and draw-links connected to said drivers, key-levers, draw-links between said bell-cranks and key-levers, segmentally-arranged supports for said drivers, which supports are in the nature of bell-cranks that are pivoted to a fixed portion of the machine, a shifting segment which is connected to one arm of each of the bell-crank levers that affords a support for a driver

to shift the printing position of the type-bars, parallel links upon which said segment is mounted, and key-actuated means for moving said segment.

54. In a type-writing machine, the combination of segmentally-arranged type-bars with a plurality of types on each bar, drivers for the type-bars, said drivers being carried by arms that are pivoted to a fixed portion of the machine, means for moving said arms on their pivotal centers to change the printing positions of the type-bars, key-levers and actuating-levers carried by and pivoted to a fixed portion of the machine and operatively connected to the key-levers and drivers.

55. In a type-writing machine, the combination of segmentally-arranged type-bars with a plurality of types on each bar, segmentally-arranged drivers for the type-bars, said drivers being carried by arms that are pivoted to a fixed portion of the machine, means for simultaneously moving all of said arms on their pivotal centers to change the printing positions of the type-bars, key-levers, and vertically-disposed and segmentally-arranged actuating-levers carried by and pivoted to a fixed portion of the machine and operatively connected to the key-levers and drivers.

56. In a type-writing machine, the combination of a vertically-disposed segmental hanger-support, hangers mounted upon opposite sides of said support fore and aft of the machine, and type-bar-actuating levers supported by said hangers.

57. In a type-writing machine, the combination of a vertically-disposed segmental hanger-support, hangers mounted upon opposite sides of said support fore and aft of the machine, means for adjusting said hangers, and type-bar-actuating bell-cranks supported by said hangers.

58. In a type-writing machine, the combination of a vertically-disposed segmental hanger-support, hangers, means for mounting said hangers upon opposite sides of said support fore and aft of the machine, the construction of the parts being such as to allow each of said hangers to turn on a horizontal axis, and each hanger to be retained in its adjusted position, and type-bar-actuating levers supported by said hangers.

59. In a type-writing machine, the combination of a vertically-disposed segmental hanger-support, hangers mounted upon opposite sides of said support fore and aft of the machine, the hangers upon opposite sides of the support being staggered in their arrangement, and type-bar-actuating levers supported by said hangers.

60. In a type-writing machine, the combination of segmentally-arranged jointed upwardly and rearwardly striking type-bars, pivoted drivers which are pivoted directly to said type-bars, key-levers and vertically-disposed and segmentally-arranged actuating-levers carried by and pivoted to a fixed portion of the machine and operatively connected to the key-levers and drivers.

61. In a type-writing machine, the combination of segmentally-arranged type-bars, key-levers, a vertically-disposed segmental support, actuating-levers mounted upon said support at opposite sides thereof, and means for operatively connecting said actuating-levers to the type-bars and key-levers.

62. In a type-writing machine, the combination of segmentally-arranged type-bars, pivoted guide-links therefor, drivers for said type-bars, key-levers, a vertically-disposed segmental support, actuating bell-crank levers mounted upon opposite sides of said support and means for operatively connecting said bell-crank levers to the drivers and key-levers.

63. In a type-writing machine, the combination of segmentally-arranged type-bars, pivoted guide-links therefor, drivers for said type-bars, key-levers, a vertically-disposed segmental support, vertically-disposed actuating bell-crank levers mounted upon opposite sides of said support, means for operatively connecting said bell-crank levers to the key-levers forward of the segmental support, and means for operatively connecting said bell-crank levers to the drivers.

64. In a type-writing machine, the combination of key-levers, segmentally-arranged jointed type-bars, drivers that are pivoted to said type-bars, actuating draw-links connected to said drivers, each of said draw-links being straight throughout its length, vertically-disposed bell-crank levers pivoted to a fixed portion of the machine, and straight draw-links interposed and forming the connections between the key-levers and bell-crank levers.

65. In a type-writing machine, the combination of jointed type-bars, drivers pivoted to said type-bars, actuating-levers connected to said drivers, each driver having an elongated pivotal bearing of greater width than the arms of said levers, the arms of different levers being connected at different points in the width of the bearings thereof, and means for actuating said levers.

66. In a type-writing machine, the combination of jointed type-bars, drivers therefor, links connected to the drivers, actuating-levers connected to said links, each lever having an elongated pivotal bearing of greater width than the arms of said levers, the arms of different levers being connected at different points in the width of the bearings thereof, means for supporting said levers at regular distances apart, and means for actuating said levers.

67. In a type-writing machine, the combination of a platen, type-carriers, each of which has a plurality of types thereon, and a type-guide at the printing-point, the parts being constructed and arranged so that when one type on a carrier is at the printing-point and is within the guide the other type on said carrier will be outside thereof.

68. In a type-writing machine, the combination of a platen, type-carriers, each of which has a plurality of types thereon, and a type-guide at the printing-point, the walls of said type-guide being adapted to extend into the space between the types on each carrier.

69. In a type-writing machine, the combination of a platen, type-carriers, each of which has a plurality of types thereon, a type-guide at the printing-point, the walls of which guide are adapted to extend into the space between the types on each carrier and a curved support for said guide which support is out of the path of the type outside the guide when another type on the bar is within the guide.

70. In a type-writing machine, the combination of a platen, type-carriers, each of which has a plurality of types thereon, and a type-guide at the printing-point which is adapted to be straddled by the type on each carrier, and means for supporting said guide from the rear portion thereof so that the support for the guide will not interfere with a type on a carrier when another type thereon is at the printing-point.

71. In a type-writing machine, the combination of a platen, type-carriers, each of which has a plurality of types thereon, and a substantially circular type-guide at the printing-point, the walls of which are adapted to be straddled by the types on each carrier.

72. In a type-writing machine, the combination of upwardly and rearwardly swinging type-carriers, and an upright type-guide having internal guiding-faces which coöperate with each type-body on all sides thereof, and a cut-away portion at the upper left-hand corner thereof for exposing the last-written character.

73. In a type-writing machine, the combination of type-carriers, each having a plurality of types thereon, an upright type-guide which has an internal guiding-opening therein adapted to receive one type on a type-bar while the other type or other types remain outside the guide, said guide being rectangular in cross-section, and a cut-away portion at one corner of the guide for exposing the last-written character.

74. In a type-writing machine, the combination of a series of upwardly and rearwardly swinging type-carriers, and an upright type-guide having four internal inclined guiding-faces which coöperate with corresponding faces on each type-body and a cut-away portion at the upper left-hand corner of said guide for exposing the last-written character.

75. In a type-writing machine, the combination of a platen, a type-carrier having a plurality of type-holders thereon, said type-holders being freely movable independently of the type-carrier, an inking-pad on which the types on said holders normally rest and means for shifting the printing position of said type-carrier to bring any of the types to the printing-point.

76. In a type-writing machine, the combination of a platen, a series of type-bars each having a plurality of types thereon, means for shifting said type-bars to change the case position thereof, and a type-guide adjacent to the printing-point and which coöperates with any type on a bar and guides it on all sides.

823,011. **BRICK FOR CHIMNEYS.** RUDOLF P. WEBER, Brooklyn, N. Y. Filed Nov. 14, 1905. Serial No. 287,223.

Claim.—1. A brick for chimneys consisting of a wider outer portion or head and a narrower inner portion or nose, said nose extending under a lateral inclination to the head portion and having inwardly-converging edges, substantially and for the purpose as specified.

2. A brick for chimneys, consisting of a wider outer portion or head and a narrower inner portion or nose, the head having a longitudinally-curved outer edge and the nose extending under a lateral inclination to the said edge of the head, the side edges of the nose being substantially straight and converging inward, the outer ends of said edges being rounded and directed perpendicularly to the outer edge of the head, substantially and for the purpose as specified.

3. A brick for chimneys, consisting of a wider outer head portion and a narrower inner nose portion, the outer edge of the head being longitudinally curved and the side edges of the nose portion being substantially straight and extending under an inclination to the said edge of the head and converging inward, and furrows in the side edges of the nose portion, substantially and for the purpose as specified.



4. A brick for chimneys, consisting of a wider outer head portion and a narrower inner nose portion, hollows or apertures in the head portion, the edges of the nose being directed under a lateral straight inclination to the outer edge of the head and converging inward, and furrows in the said side edges of the nose, substantially and for the purpose as specified.

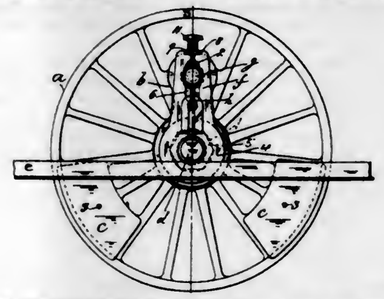
5. A brick for chimneys, consisting of a wider outer head portion and a gradually-reduced nose portion, the outer edge of the head being longitudinally curved and the side edges of the nose portion extending under a straight inclination to the said edge of the head and converging inward and forming one longer and one shorter edge, the inner edge of the nose being cut under an inclination directed outward from the said longer edge toward the shorter one, and furrows in both said sides edge of the nose, substantially and for the purpose as specified.

6. A chimney comprising an inner wall formed of ordinary bricks and an outer wall formed of bricks having a wider outer portion or head and a gradually-reduced and laterally-inclined inner portion or nose, the nose of each brick being adapted to overlie a portion of its neighbor brick in each horizontal layer and the bricks in the different layers being alternatively displaced and their noses extending in opposite directions, the space between the inner wall and the outer wall being filled with concrete and the stuff-joints between the bricks being formed by mortar, substantially and for the purpose as specified.

7. A chimney comprising an inner wall formed of ordinary bricks, an outer wall formed of bricks having a wider outer head portion and a gradually-reduced and laterally-inclined inner nose portion, the outer edge of the head portion being curved, furrows in the side edges of the nose portion, hollows or apertures in the head portion, the space between the inner wall and outer wall being filled with concrete and the stuff-joints between the bricks being formed by mortar, the furrows in the side edges of the noses being adapted to engage the filling, the bricks of the outer wall being in the different layers alternatively displaced and their noses extending in opposite directions, the hollows in each brick being adapted to form with those of the bricks in the upper and lower layers, hollow shafts extending throughout the entire height of the chimney and to be filled with mortar or the like, said fillings forming locking-bars connecting the bricks of the outer wall with each other, substantially and for the purpose as specified.

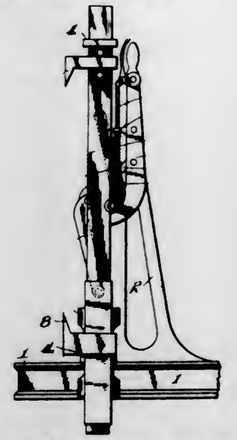
823,012. **MEANS FOR BALANCING CRANK-WHEELS.** CHARLES T. WESTLAKE, St. Louis, Mo., and ALBERT R. THOMAS, Granite City, Ill., assignors to Davis Locomotive Wheel Company, St. Louis, Mo., a Corporation of Delaware. Filed Apr. 2, 1906. Serial No. 309,480.

Claim.—1. The means for balancing a crank-wheel, consisting of a spindle adapted to pass through the axle-hole of the wheel and revoluble on suitable bearings, an arm fixed to the spindle and radially adjustable about the center of the wheel, a pin projecting at right angles from, and adjustable along the said arm, and adapted to carry a weight, and an index-bar adjustably fixed across the said arm at right angles to the wheel-face, substantially as described.



2. The means for centering and balancing a crank-wheel, consisting of a spindle adapted to pass freely through the axle-hole of the wheel and revoluble on suitable bearings, an arm fixed to the spindle, the said arm having a conical hub concentric with the spindle and adapted to be engaged by the edge of the said hole on one side of the wheel, a conical block adapted to slide along the spindle and to engage the edge of the said hole on the other side of the wheel, means for moving the block along the spindle, and a pin projecting at right angles from, and adjustable along the said arm and adapted to carry a weight, substantially as described.

823,013. **SAWMILL-DOG.** CHARLES W. WHITE, Evansville, Ind. Filed Jan. 14, 1905. Serial No. 241,067.



Claim.—In a sawmill-dog, the combination with a frame having laterally-extending legs, of a bar slidable through said legs, a dog secured to said bar, a dog-bracket having arms located on opposite sides of one of the legs of the frame and through which arms the bar is slidable, a dog carried by said bracket, a lever pivoted to the frame, and operative connections between the lever and the bar and between the lever and the dog-bracket.

823,014. **PROTECTOR FOR CIGARS.** FRANCIS H. WHOMES, Los Angeles, Cal. Filed Dec. 31, 1903. Serial No. 137,308.



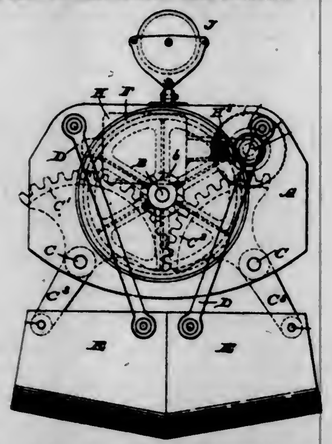
Claim.—1. The combination with a cigar of a removable cap covering the end thereof, said cap being cup-shaped and composed of a light, thin, elastic, impervious material.

2. The combination with a cigar of a cup-shaped cap covering the end thereof composed of thin rubber, said cap hugging the end of the cigar like a skin but being easily removable when it is desired to light the end of the cigar.

3. The combination with a cigar of a removable cap covering the end thereof, said cap being cup-shaped and composed of a light, thin, elastic, impervious material, the rim of the cap having an external selvage to strengthen the edge and prevent splitting of the material and also affording means which may readily be caught by the fingers in removing the cap.

4. A protector for cigars provided with a cap and a thin, elastic rubber band to fit the cigar, the same being very elastic to accommodate itself to the increased size of the burned end and to all irregularities in shape.

828,015. **CLAM-SHELL BUCKET.** GORDON H. WILLIAMS, Cleveland, Ohio. Filed Mar. 31, 1905. Serial No. 253,096.



Claim.—1. In a clam-shell bucket, the combination of a frame; a motor mounted thereon; scoop members; and means supporting and moving the latter to open and close and including oscillatory members mounted upon said frame and adapted to be actuated by said motor.

2. In a clam-shell bucket, the combination of a frame; a motor mounted thereon; scoop members; oscillatory members mounted upon said frame, adapted to be actuated by said motor, and connected to one end of said scoop members; and links connected to said frame and to the other end of said scoop members.

3. In a clam-shell bucket, the combination of a frame; a motor mounted thereon; two scoop members; operating mechanism for the latter adapted to be actuated by said motor and connected to the outer ends of said scoop members; and links pivoted to said frame and to the inner ends of said scoop members, respectively.

4. In a clam-shell bucket, the combination of a frame; a motor mounted thereon; two scoop members; operating mechanism for the latter adapted to be actuated by said motor and comprising a pair of opposed sectors having gear connections with the latter and arms connecting said sectors and the outer ends of said scoop members, respectively; and links pivoted to said frame and to the inner ends of said scoop members, respectively.

5. In a clam-shell bucket, the combination of a frame; a motor mounted thereon; two scoop members; a pair of opposed sectors oscillatorily mounted upon said frame; connections between said sectors and said motor; links pivoted to said frame and to the inner ends of said scoop members, respectively; and arms connecting said sectors with the outer ends of said scoop members, respectively.

6. In a clam-shell bucket, the combination of a frame; a motor mounted thereon; two scoop members; a pair of opposed sectors; connections between the latter and said motor; links pivoted to said frame and to the inner ends of said scoop members, respectively; and arms connecting said sectors with the outer ends of said scoop members, respectively, said arms being connected to said sectors at points a less distance removed from the center line of the frame than the points at which said links are pivoted to the frame.

7. In a clam-shell bucket, the combination of a frame, a motor mounted thereon; two scoop members upon opposite sides of the center plane of the frame; a pair of opposed sectors mounted upon said frame upon opposite sides thereof; connections between said sectors and said motor; links pivoted to said frame and to the inner ends of said scoop members, respectively, upon the same side; and arms connecting said sectors with the outer ends of said scoop members, respectively, upon the same side.

8. In a clam-shell bucket, the combination of a frame; a motor mounted thereon; two scoop members upon opposite sides of the center plane of the frame; a pair of opposed sectors mounted upon said frame upon opposite sides thereof; connections between said sectors and said motor; links pivoted to said frame and to the inner ends of said scoop members, respectively, upon the same side; and arms connecting said sectors with the outer ends of said scoop members, respectively, upon the same side; said arms being connected to said sectors at points a less distance removed from the center line of the frame than the points at which said links are pivoted to the frame.

9. In a clam-shell bucket, the combination of a frame; two sectors mounted upon said frame upon opposite sides of the center plane of the latter; operating mechanism connected to said sectors; a pair of scoop members upon opposite sides of said plane; links pivoted to said frame and to the inner ends of said scoop members, respectively, upon the same side; and arms connecting said sectors and the outer ends of said scoop members, respectively, upon the same side, said arms being connected to said sectors at points a less distance removed from the center line of the frame than the points at which said links are pivoted to the frame.

10. In a clam-shell bucket, the combination of a frame; a pair of scoop members upon opposite sides of the center line of said frame; links pivoted to said frame and to the inner ends of said scoop members, respectively, upon the same side; a pair of oscillatory members pivoted to said frame and connected to the outer ends of said scoop members, respectively, upon the same side, the pivotal points of said oscillatory members upon said frame being at a distance less removed from the center line of the frame than the pivotal points of said links upon the frame; and a motor mounted upon the frame and adapted to operate said oscillatory members.

828,016. **COOLER.** ADOLPH P. S. WOELPART and PHILIP WOELPART, New York, N. Y. Filed Aug. 11, 1905. Serial No. 273,757.



Claim.—1. The combination, in a cooler, of an inlet-tube and an outlet-tube, a cooling-compartment intermediate the same consisting of a plurality of parallel open-ended air-tubes, a framework composed of a plurality of intersecting strips and portions of some of the strips removed to receive other strips.

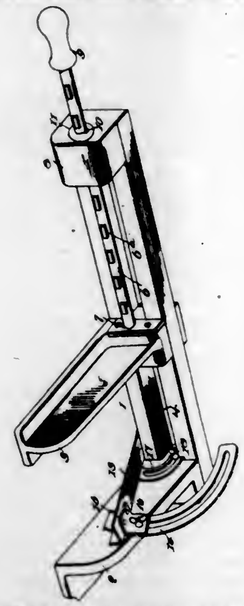
2. The combination, in a cooler, of an inlet-tube and an outlet-tube, a cooling-compartment intermediate the same consisting of a plurality of parallel open-ended air-tubes, a framework composed of a plurality of strips disposed at angles to each other, the strips disposed in one line having portions removed to receive the strips disposed at an angle thereto.

3. The combination in a cooler of an inlet-tube and an outlet-tube, a cooling-compartment intermediate the same consisting of a plurality of parallel open-ended air-tubes, a framework composed of a plurality of strips arranged in parallel rows, the strips of one row being disposed at an angle to the strips of the other row and each strip having notched portions at its intersections with the strips of the other row.

828,017. **MITER-JACK.** EDWARD O. WOLFE, Williamsport, Pa. Filed Dec. 28, 1904. Serial No. 238,663.

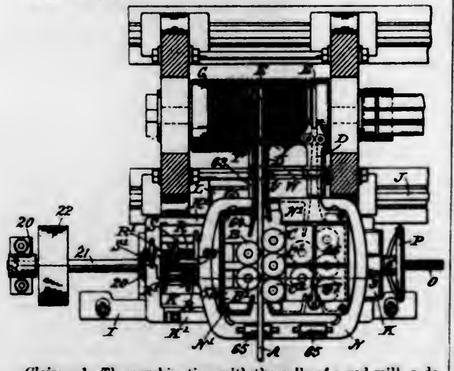
Claim.—1. A device of the character described comprising a frame, a fixed jaw mounted at one end of said frame, a movable jaw mounted on said frame, means for actuating the movable jaw toward and from the fixed jaw, a guide-plate secured to the inner face of the fixed jaw and provided with a curved slot, a supporting-plate provided with a set-screw working in said slot and provided with a second guide-plate having a curved slot, and a set-screw working through the last-named slot and designed to hold said last-named plate in different adjusted positions.

2. A device of the character described comprising a longitudinally-slotted frame provided at one end with a fixed jaw and at the other end with a bearing-head, a movable jaw mounted to slide on said frame, an actuating-rod secured to said movable jaw and working through said bearing-head, a slotted guide-plate secured to one face of the fixed jaw, an angular supporting-plate provided with a set-screw working in the slot of said guide-plate and provided with a second curved and slotted guide-plate the end of which extends into the slot in the frame, and a second set-screw working in said last-named guide-plate and designed to clamp the latter in different adjusted positions, in connection with the other set-screw.



3. A device of the character described comprising a longitudinally-slotted frame provided at one end with a fixed jaw and at the other end with a bearing-head, a movable jaw provided with an extension fitted in said slot and with a plate bearing on the lower surface of the frame whereby said jaw is mounted to slide longitudinally on the frame, an actuating-rod for said movable jaw mounted in said bearing-head, a guide-plate 14 secured at one end to the inner face of the fixed jaw and provided with a curved slot, an angular supporting-plate provided at one end with an angular extension resting upon said guide-plate and provided also near its other end with a guide-plate having a curved slot, and two set-screws working respectively through said angular extension into the slot of one guide-plate and into the slot of the other guide-plate, as and for the purpose set forth.

828,018. **AUTOMATIC GUIDING AND FEEDING MACHINE.** WILLIAM A. WOOD, Ansonia, Conn., assignor to The Coe Brass Manufacturing Company, a Corporation of Connecticut. Filed Nov. 8, 1905. Serial No. 286,384.



Claim.—1. The combination with the rolls of a rod-mill, a device for seizing the rod to be acted upon, straightening it, guiding it and positively feeding it in a straight line between the rolls of the rod-mill.

2. The combination with the rolls of a rod-mill having two series of circumferential grooves therein forming two sets of parallel passes, a device for seizing the rods to be acted upon, straightening them, guiding them and respectively positively feeding them in straight lines to the selected passes between the rolls of the rod-mill.

3. The combination with the rolls of a rod-mill having a series of parallel passes formed therein, a device for seizing the rod to be acted upon, straightening it, guiding it and feeding it into some one of the passes between the rolls, said device embodying in its construction two sets of positively-driven rolls, and a guiding device arranged in the axis of the opening through which the rod acted upon moves between said last-named rolls.

4. The combination with the rolls of a rod-mill having a series of parallel passes formed therein, a device for seizing the rod to be acted upon, straightening it, guiding it and feeding it into some one of the passes between the rolls of the rod-mill, said device embodying in its construction two sets of positively-driven rolls, a guiding device, together with means for adjusting said sets of rolls and the guiding device longitudinally along the axis of said rod-rolls.

5. The combination with the rolls of a rod-mill, a device for seizing the rod to be acted upon, straightening it, guiding it and feeding it between the rolls of the rod-mill, said device embodying in its construction two sets of coacting rolls, means for positively driving said rolls, means for adjusting one set of said rolls relatively to the other set, and an adjustable guiding device located in the axis of the opening through which the rod acted upon moves between said last-named rolls.

6. The combination with the rolls of a rod-mill, a device for seizing the rod to be acted upon, straightening it, guiding it and feeding it between the rolls of the rod-mill, said device embodying in its construction two sets of rolls, means for positively driving said rolls, means for independently adjusting the position of each roll of one set relatively to the other set, and an adjustable guiding device arranged in the axis of the opening through which the rod acted upon moves between the last-named rolls.

7. The combination with the rolls of a rod-mill, a device for seizing the rod to be acted upon, straightening it, guiding it and feeding it between the rolls of the rod-mill, said device embodying in its construction two sets of horizontally-rotating rolls, one set composed of two rolls and the other set of three rolls, means for positively driving all of said rolls, means for effecting independent adjustment of two of said rolls, and a guiding device located in the line of movement of the rod through such coacting rolls.

8. The combination with the rolls of a rod-mill, a device for seizing the rod to be acted upon, straightening it, guiding it and feeding it between the rolls of the rod-mill, said device embodying in its construction a frame located in front of the rolls, a casing mounted upon said frame, two sets of rolls mounted in and carried by said casing, means for effecting longitudinal movement of said casing and carried rolls in the axis of the rolls of the rod-mill, means for positively driving the rolls situated in the casing and irrespective of their position relative to the rolls of the rod-mill, and an adjustable guide for the rod fed between the rolls carried by the casing situated between said rolls and the rolls of the rod-mill.

9. The combination with the rolls of a rod-mill, mechanism for seizing, straightening, guiding and feeding the rod to be acted upon, said mechanism comprising two sets of rolls, one set formed of two rolls and the other set of three rolls, said rolls of the first set having their axes in a plane parallel with those of the second series but intermediate thereof, together with means for positively driving said rolls.

10. The combination with the rolls of a rod-mill, mechanism for seizing, straightening, guiding and feeding the rod to be acted upon, said mechanism comprising two sets of rolls, one set formed of two rolls and the other set of three rolls, means for independently adjusting the position of each of the rolls forming the set having two rolls relatively to the set having three rolls, together with means for positively driving all of said rolls.

11. In a feeding attachment for rod-mills, the combination of two series of rolls, one series having each roll independently adjustable relative to the rolls of the other series, means for effecting such adjustment, together with means for driving both series positively from the same source of power.

12. In a feeding attachment for rod-mills, the combination of a frame, a casing mounted on said frame, a power-shaft mounted in said frame, seizing, straightening, guiding and feeding rolls mounted in said casing, power-transmission means interposed between said power-shaft and rolls, together with means for shifting the casing and power-transmission means along the frame and power-shaft.

13. In a feeding and straightening attachment for rod-mills, the combination of a frame, a casing mounted on said frame, a power-shaft mounted in the frame, seizing, straightening, guiding and feeding rolls mounted in said casing, and power-transmission means interposed between said power-shaft and rolls.

14. In a feeding attachment for rod-mills, the combination of a frame, a casing on said frame, a power-shaft mounted on said frame, seizing, straightening, guiding and feeding rolls mounted in said casing, and comprising two sets of rolls, means for adjusting said rolls relative to each other, and power-transmission means interposed between said power-shaft and said rolls.

15. In a feeding attachment for rod-mills, the combination of a frame, a casing on said frame, two sets of coacting rolls in duplicate mounted in said casing, mechanism for driving all of said rolls positively, and mechanism situated on one side of said casing for effecting independent adjustment of certain of said rolls.

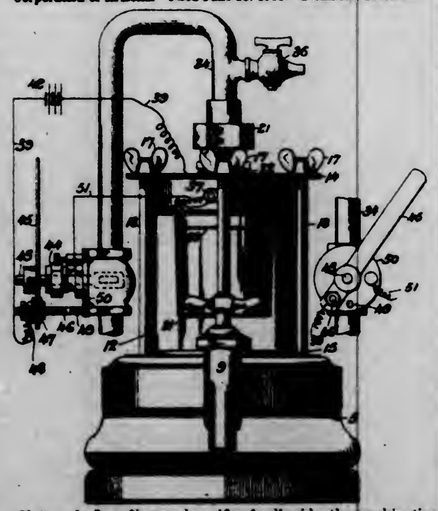
16. In a feeding attachment for rod-mills, the combination of a casing, two sets of rolls mounted in said casing, one set occupying a fixed position and the other set adjustable relative to the fixed rolls, a driving-shaft, a shaft driven from the driving-shaft and having on its end a gear, and gears interposed between said first-named gear and said rolls for driving said fixed and adjustable rolls, and irrespective of their position relative to each other.

17. In a feeding attachment for rod-mills, the combination of a casing, an inlet-guide and an outlet-guide formed in the bottom of the casing, two sets of rolls interposed between said guides, one set fixed and the other set adjustable, means for adjusting said last-named rolls, together with means for driving said rolls.

18. In combination with the rolls of a rod-mill having a series of circumferential grooves therein differing in diameter, a device for seizing the rod to be acted upon, straightening it, guiding it, and positively feeding it toward the rolls, and means for adjusting said device longitudinally relative to the rolls.

19. In combination with the rolls of a rod-mill, a device for seizing the rod to be acted upon, straightening it, guiding it, and positively feeding it in a straight line between said rolls, means for adjusting said device longitudinally relative to said rolls, and means for positively driving the respective parts of said device, and irrespective of the position of the device considered as a whole relative to the rolls.

823,019. **LIQUID FILTER AND PURIFIER.** MILTON F. ADAMS, New York, N. Y., assignor to The Electric Water Purifier Company, a Corporation of Arizona. Filed June 10, 1905. Serial No. 264,654.



Claim.—1. In a filter and purifier for liquids, the combination with perforated electrodes, one adapted to fit within the other, of filtering means in the space between the electrodes, inlet means for entering one of the electrodes and outlet means leading from the other electrode, an electric current, and means for simultaneously permitting the flow of liquid through the inlet means and closing the electric circuit.

2. In a filter and purifier for liquids, the combination with cup-shaped perforated electrodes one adapted to fit within the other, of filtering means within and between the electrodes, inlet means controlled by a valve for supplying liquid to one of the electrodes, outlet means for the other electrode, and means for simultaneously opening the inlet-valve and closing the electric circuit.

3. In a filter and purifier for liquids, the combination with the cup-shaped perforated electrodes one adapted to fit within the other, of filtering means within and between the electrodes, an electric circuit normally open, and means for simultaneously opening the supply-pipe to the filter and closing the electric circuit.

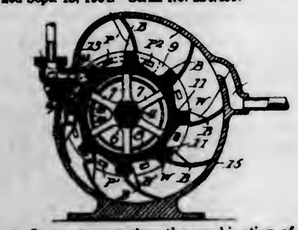
4. In a filter and purifier for liquids, the combination with a casing containing the filtering-chamber, heads for the casing, water-tight means for the heads, a non-conductive block on one of the heads, perforated cup-shaped electrodes secured to the block, filtering means within and between the electrodes, a liquid-supply pipe entering one of the electrodes, an electric circuit connected with the electrodes, and means for simultaneously opening and closing the liquid-supply pipe and the electric circuit.

5. In a filter and purifier for liquids, the combination with a casing, of a non-conductive block at one end, heads at each end of the casing, water-tight means, a liquid-supply pipe entering one of the heads and the block, perforated cup-shaped electrodes secured to the block and containing the filtering means, an electric circuit having each of its terminals connected with one of the cups, a valve for the supply-pipe, and a lever on the valve-stem adapted to close the electric circuit when the valve is opened.

6. In a filter and purifier for liquids, the combination with a cylindrical casing, of heads with water-tight packing, inlet and outlet means in the heads, a non-conductive block in one of the heads and having depressions with radial pins, perforated metallic cups with angular slots at their upper edges adapted to engage the radial pins and secure them within one or the other depression, electric contacts in the walls of the depressions each to engage a cup, an electric circuit embracing the contacts, a circuit-closer operated by then ilet means and filtering means carried by the cups.

7. In a filter and purifier for liquids, the combination with a transparent casing having heads and packing means, tie-bolts with thumb-nuts uniting the heads, a non-conductive block in the upper head having electric connections with the outside, perforated metallic cups adapted to be contained one within the other, be suspended from the non-conductive block and each make contact with one of the electric connections on the inside of the casing, filtering means within the perforated cups, an electric circuit embracing the cups and their connections, a switch in the circuit, inlet and outlet means and means connected with the switch for opening the liquid-inlet when the circuit is closed.

823,020. **ROTARY ENGINE.** WILLIAM A. ALLAN, Morris, Canada. Filed Sept. 15, 1904. Serial No. 224,489.



Claim.—1. In a rotary engine, the combination of a casing, a wheel rotatably mounted therein, a series of buckets pivotally supported on said wheel, and a stop carried by said wheel between each pair of adjacent buckets and constructed to limit the movement of the two buckets comprising such pair, substantially as described.

2. In a rotary engine, the combination of a casing, a wheel rotatably mounted therein, a series of buckets pivotally supported on said wheel, and a stop carried by said wheel between each pair of adjacent buckets and constructed to limit the inward swing of the front bucket of such pair and the outward swing of the rear bucket thereof, substantially as described.

3. In a rotary engine, the combination of a casing, a wheel rotatably mounted therein and provided with a series of peripheral recesses, a series of buckets pivotally supported on said wheel and arranged in their inner position to close the peripheral recesses therein, an abutment constructed to swing said buckets into their inner position, means for admitting steam behind each bucket during its engagement with said abutment, and means for admitting steam to the recess beneath each bucket upon its further travel from engagement with said abutment, substantially as described.

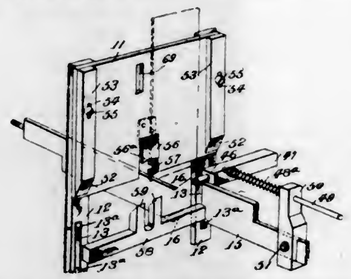
4. In a rotary engine, the combination of a casing, a wheel rotatably mounted therein and provided with a series of peripheral recesses, a series of buckets pivotally supported on said wheel and arranged in their inner position to close the peripheral recesses therein, an abutment constructed to swing said buckets into their inner position, means for admitting steam behind each bucket during its engagement with said abutment, means for admitting steam to the recess beneath each bucket upon its further travel from engagement with said abutment, and means for subsequently admitting a reinforcing supply of steam behind each bucket, substantially as described.

5. In a rotary engine, the combination of a casing, a wheel rotatably mounted therein, a series of buckets pivotally supported on said wheel, means for admitting steam behind each bucket of said series at a predetermined portion of its travel, means for exhausting the steam behind each bucket at a later portion of its travel, and means for progressively compressing the steam behind each bucket at a point in its travel subsequent to said exhaust, substantially as described.

6. In a rotary engine, the combination of a casing, admission and exhaust ports communicating therewith, a wheel eccentrically journaled in said casing and carrying peripheral flanges provided with ports, steam-conduits arranged to register with said ports during the rotation of said wheel, and a series of buckets carried by said wheel intermediate of said ports, substantially as described.

7. In a rotary engine, the combination of a casing, admission and exhaust ports communicating therewith, a wheel eccentrically journaled in said casing and carrying peripheral flanges, provided with ports, steam-conduits arranged to register with said ports during the rotation of said wheel, a series of buckets pivotally supported on said wheel, and a stop carried by said wheel between each pair of adjacent buckets, substantially as described.

823,021. **MACHINE FOR EYELETING ENVELOPS, TAGS, OR THE LIKE.** CHARLES H. ANDREWS, West Chester, Pa. Filed Dec. 7, 1904. Serial No. 236,085.



Claim.—1. In a machine of the type set forth, the combination of a magazine, eyeleting mechanism including a movable set, eyelet-feeding mechanism including an eyelet-chute, a feeding-plate for feeding material from the magazine to the eyeleting mechanism, an actuator comprising a sliding head, and direct operative connections between the sliding head and the feeding-plate, the eyeleting-chute, and movable set, for imparting reciprocal movement to these parts.

2. In a machine of the type set forth, the combination of a magazine, eyeleting mechanism including a movable set, eyelet-feeding mechanism including an eyelet-chute, a feeding-plate for feeding material from the magazine to the eyeleting mechanism, an actuator comprising a sliding head, and direct operative connections between the sliding head and the feeding-plate, the eyeleting-chute, and movable set, for imparting reciprocal movement to these parts, the set being movable in a plane at an angle to the plane of movement of the feeding-plate and chute.

3. In a machine of the type set forth, the combination of a magazine, a feeding-plate for feeding material from the magazine, an actuator comprising a sliding head, a set carried by said head and movable therewith, a second stationary set coöperating with the first-mentioned set, an eyelet-feeding chute for feeding eyelets to the sets aforesaid, and arms carried by the sliding head and having cams coacting with the eyelet-chute and the feeding-plate for actuation of the latter.

4. In a machine of the type set forth, the combination of a magazine, eyeleting mechanism including a movable set, a sliding actuator carrying said movable set, a feeding-plate for feeding material from the magazine to the eyeleting mechanism, a stationary set, an eyelet-chute for supplying eyelets to the eyeleting mechanism, an eyelet-carrying bar mounted in the movable set and having an end normally projected therefrom and adapted to be forced into the movable set when the same engages with the stationary set, a projection extending from the eyelet-carrying bar, and a stop arranged to engage said projection to actuate the eyelet-carrying bar after the same has been forced into the movable set as above mentioned.

5. In a machine of the type set forth, the combination of a magazine, eyeleting mechanism including movable and stationary sets to operate upon material fed from the magazine, means for feeding material from the magazine to the sets, and means for ejecting such material from the sets including main ejecting-rollers and auxiliary ejecting-rollers, the auxiliary ejecting-rollers being movable to positively disengage the material from the sets.

6. In a machine of the type set forth, the combination of a magazine, eyeleting mechanism including movable and stationary sets to operate upon material fed from the magazine, means for feeding material from the magazine to the sets, means for ejecting the material from the sets including main ejecting-rollers, auxiliary ejecting-rollers, and means for forcing the auxiliary rollers toward the main rollers to positively disengage material from the set and coact with the main rollers to eject such material, as specified.

7. In a machine of the type described, the combination of a magazine, a set, means for feeding material from the magazine to said set, and ejecting means movably mounted upon the aforesaid set for positively forcing material therefrom.

8. In a machine of the type set forth, the combination of a magazine, a set, means for feeding material from the magazine to said set, a support movably mounted upon said set, and ejecting-rollers carried by said support for positively disengaging material from the set and ejecting said material.

9. In a machine of the type set forth, the combination of a magazine, a set, means for feeding material from the magazine to said set, main ejecting-rollers, means for actuating said rollers, and auxiliary ejecting-rollers coacting with the main rollers to eject material from the set.

10. In a machine of the type set forth, the combination of a magazine, a set, means for feeding material from the magazine to said set, main ejecting-rollers, means for actuating said rollers, auxiliary ejecting-rollers movable to positively force material from the set aforementioned, and means for forcing said auxiliary ejecting-rollers toward the main ejecting-rollers in the ejecting operation.

11. In a machine of the type set forth, the combination of a magazine, a set, means for feeding material from the magazine to said set, main ejecting-rollers, means for actuating said rollers, a support movably mounted upon the set aforementioned, auxiliary ejecting-rollers carried by said support, and means for moving the auxiliary rollers toward the main ejecting-rollers to effect coöperation of said main and auxiliary ejecting-rollers in ejecting the material.

12. In a machine of the type set forth, the combination of a magazine to receive material, eyeleting mechanism including movable and stationary sets, a feeding-plate for feeding material from the magazine to the sets, eyelet-feeding means for the eyeleting mechanism, main ejecting-rollers for the eyeleting mechanism, means for driving said rollers, and auxiliary ejecting-rollers movably mounted upon the stationary set and adapted to coact with the main ejecting-rollers, as specified.

13. In a machine of the type set forth, the combination of a feed-plate, eyeleting mechanism including a set, and a clearer operable by the feed-plate and arranged to clear the set.

14. In a machine of the type set forth, the combination of a magazine, eyeleting mechanism, means for feeding material from the magazine to the eyeleting mechanism said eyeleting mechanism including a set, and rotating means for ejecting the material operated upon by the eyeleting mechanism from the machine, said ejecting means being adapted to positively remove said material from the set.

15. In a machine of the type set forth, the combination of a magazine, eyeleting mechanism, a feeding-plate for feeding material from the magazine to the eyeleting mechanism, means for ejecting material from the eyeleting mechanism moving in a plane at an angle to the plane of movement of the feeding-plate, and means whereby movement is imparted to the ejecting means as the feeding-plate operates.

16. In a machine of the type set forth, the combination of a magazine, eyeleting mechanism, a feeding-plate for feeding material from the magazine to the eyeleting mechanism, means for ejecting material from the eyeleting mechanism moving in a plane at an angle to the plane of movement of the feeding-plate, and means carried by the feeding-plate for moving the ejecting means as said feeding-plate is actuated.

17. In a machine of the type set forth, the combination of a magazine, eyeleting mechanism embodying a movable set, a feeding-plate for feeding material to the eyeleting mechanism, a chute for supplying eyelets to the eyeleting mechanism, operating means for reciprocating the movable set, the feeding-plate, and the chute aforesaid, and ejecting mechanism for the eyeleting mechanism moving at an angle to the line of movement of the feeding-plate and operated thereby.

18. In a machine of the type set forth, the combination of a magazine for envelops, eyeleting mechanism including a stationary set and a movable set coöperating therewith, means for feeding an envelop from the magazine to the stationary set means for actuating the movable set, means for positively forcing the envelop away from the stationary set after the punching operation, and a clearer coöperating with the stationary set.

19. In a machine of the type set forth, the combination of a magazine, eyeleting mechanism including a stationary set and a movable set coöperating therewith, means for feeding material from the magazine to the eyeleting mechanism, means for positively delivering the material from the parts of the punching mechanism after the eyeleting operation, and a clearer carried by the feeding means and coöperating with the eyeleting mechanism.

20. In a machine of the type set forth, the combination of a magazine, eyeleting mechanism including a stationary set, a movable set, a feeding-plate for feeding material from the magazine to the eyeleting mechanism, a support movably mounted upon the stationary set, auxiliary ejecting-rollers journaled upon said movable support, main ejecting-rollers coacting with the auxiliary rollers, means for driving the main rollers, the feeding-plate aforesaid being movable in a plane at an angle to the line of movement of the support for the auxiliary rollers, and cams carried by the feeding-plate and arranged to move the auxiliary rollers at a predetermined point in the movement of said plate.

21. In a machine of the type set forth, the combination of a magazine, a feeding-plate for said magazine, punching mechanism, means mounted independently of the feeding-plate for positively ejecting material from the punching mechanism, and means carried by the feeding-plate for governing the actuation of the ejecting means aforesaid.

22. In a machine of the type set forth, the combination of a magazine, punching mechanism, means for feeding material from the magazine to the punching mechanism, and means mounted independently of the feeding-plate for positively ejecting material from the punching mechanism governed in operation by the material-feeding means of the magazine.

23. In a machine of the type set forth, the combination of a magazine, a feed-plate therefor, punching mechanism including a stationary set, means for ejecting material from the stationary set, means for actuating the feed-plate and cams carried by the feed-plate for coöperation with the ejecting means aforesaid to govern the operation of the latter.

24. In a machine of the type set forth, the combination of a magazine for envelops, punching mechanism, a feeding-plate arranged adjacent the magazine to deliver the envelops to the punching mechanism, and ejecting-rollers for feeding the envelop from the punching mechanism and for positively disengaging said envelop from the said punching mechanism.

25. In a machine of the type set forth, the combination of a magazine for envelops, punching mechanism, a feed-plate arranged adjacent the magazine to deliver an envelop to the punching mechanism, ejecting-rollers for feeding the envelop from the punching mechanism after the same has been operated upon, and cams carried by the feeding-plate and coöperating with said ejecting-rollers.

26. In a machine of the type set forth, the combination of a magazine, eyeleting mechanism including a set, means for feeding material from the magazine to the set, an actuator operably connected with the above mechanisms for actuation thereof, and a clearer movable to traverse the set.

27. In a machine of the type set forth, the combination of a magazine, a feeding-plate for said magazine, eyeleting mechanism including a stationary set, a movable punch and a clearer mounted beneath the feed-plate for coöperation with the stationary set aforesaid.

28. In a machine of the type set forth, the combination of a magazine, a feed-plate, a movably-mounted eyelet-chute, eyeleting mechanism, an actuator operably connected with the eyeleting mechanism, and cams carried by said actuator for coöperation with the eyelet-feeding chute and the feed-plate of the magazine.

29. In a machine of the type set forth, the combination of a support, a magazine thereon, a feed-plate for said magazine, a supporting-plate movably mounted in the support, an eyelet-feeding chute mounted upon the supporting-plate, eyeleting mechanism including an eyelet-supporting member, an actuator, and cam devices projected from said actuator and coöperating with the supporting-plate of the chute aforesaid and with the feed-plate of the magazine.

30. In a machine of the type set forth, the combination of a magazine, eyeleting mechanism including a set, means for feeding material from the magazine to the set, an actuator operably connected with the above mechanisms for actuation thereof, and clearer operated by the actuator aforesaid and adapted to traverse the set as specified.

31. In a machine of the type set forth, the combination of a support, a magazine thereon, a reciprocating feed-plate mounted adjacent said magazine, an engaging member projecting from said feed-plate, punching mechanism including a stationary set and a movable set, means for actuating the movable set, ejecting-rollers upon one side of the feed-plate, auxiliary ejecting-rollers upon the opposite side of the feed-plate, and means for actuating the auxiliary ejecting-rollers to disengage material from the punching mechanism.

32. In a machine of the type set forth, the combination of a magazine, a feed-plate for said magazine, main ejecting-rollers upon one side of the feed-plate, auxiliary ejecting-rollers upon the opposite side of the feed-plate, eyeleting mechanism, means for supplying eyelets to the eyeleting mechanism, and means carried by the feed-plate for forcing the auxiliary ejecting-rollers away from the main ejecting-rollers.

33. In a machine of the type set forth, the combination of a magazine, a feed-plate for said magazine, means for reciprocating said feed-plate, eyeleting mechanism, an eyelet-supply chute leading to the eyeleting mechanism, means for elevating the eyelet-supply chute, main ejecting-rollers upon one side of the feed-plate, auxiliary ejecting-rollers upon the opposite side of the feed-plate, and means carried by the feed-plate for actuating the auxiliary ejecting-rollers.

34. In a machine of the type set forth, the combination of a feed-plate, eyeleting mechanism embodying relatively stationary and movable sets, and a clearer carried by the feed-plate and arranged to traverse the stationary set to clear the same.

35. In a machine of the type set forth, the combination of a magazine, punching mechanism, means for feeding material from the magazine to the punching mechanism, means for actuating the punching mechanism and the feeding means aforesaid, and means for shutting off the feed of material from the magazine to the punching mechanism without affecting the main actuating means aforesaid.

36. In a machine of the type set forth, the combination of a magazine, punching mechanism, means for feeding material from the magazine to the punching mechanism, main actuating means for the punching mechanism and the feeding means aforesaid, and means for shutting off feed of material in the magazine without affecting the actuation of the punching mechanism or of the feeding devices.

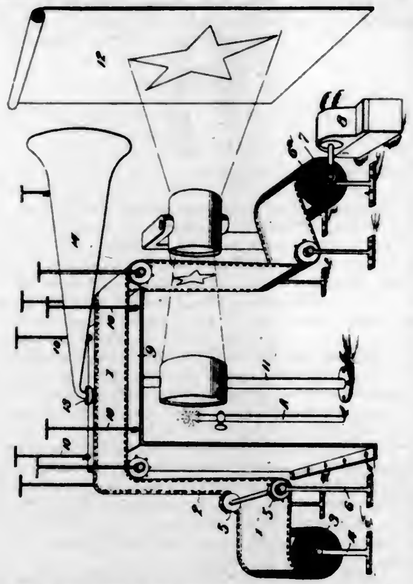
37. In a machine of the type set forth, the combination of a magazine, eyeleting mechanism, means for supplying eyelets to the eyeleting mechanism, means for feeding material from the magazine to said eyeleting mechanism, main actuating means for the eyeleting mechanism and the feeding mechanism of the magazine, and means for shutting off the feed of material from the magazine and eyelets to the eyeleting mechanism without affecting the operation of the main actuating means aforesaid.

823,022. **COMBINED PHONOGRAPH AND STEREOPTICON.** JOHN BALLANCE, New York, N. Y. Filed Sept. 11, 1905. Serial No. 278,005.

Claim.—1. In an apparatus of the character described, a transparent tape or ribbon having thereon a series of pictures and also a series of sound-grooves for use with a phonographic reproducer.

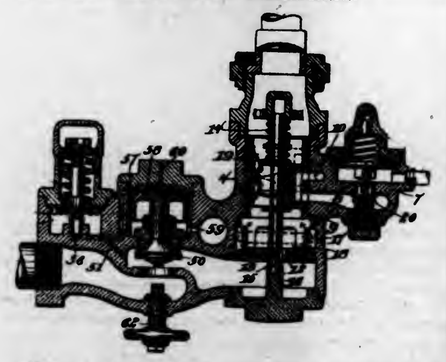
2. In an apparatus of the character described, a transparent tape or ribbon provided with a series of pictures thereon, and a series of phonographic sound-grooves therein, means for reproducing a musical composition, and means for simultaneously projecting the pictures upon a screen, substantially as described.

3. In an apparatus of the character described, a transparent tape or ribbon having a series of pictures thereon and a phonographic composition thereon, means for feeding said ribbon under a reproducer into position to have its pictures projected upon a screen, in combination with such producer and picture-projector, substantially as described.



4. In an apparatus of the character described, a transparent celluloid tape or ribbon provided with a series of pictures thereon and containing the record of a musical composition, said tape having a series of perforations at each edge thereof, in combination with a reel, a drum, an intermediate table over which the tape is adapted to pass, a sound box and horn, a picture-projector, and means for rotating the drum and moving the tape over the table and in front of the projector, substantially as described.

823,023. **AIR-BRAKE APPARATUS.** HENRY F. BICKEL, Plainfield, N. J., assignor to New York Air Brake Company, a Corporation of New Jersey. Filed Nov. 6, 1905. Serial No. 286,098.



Claim.—1. The combination with an automatic air-brake apparatus: of means responsive to flow of air into the train-pipe in the release operation for delaying the discharge of air from the brake-cylinder of one of the brake equipments, substantially as described.

2. The combination with the brake-cylinder of an automatic air-brake apparatus; of a valve controlling the exhaust from said brake-cylinder; and means responsive to flow of air through the train-pipe for operating said valve to close said exhaust while air is flowing through the train-pipe in the operation of releasing the brakes, substantially as described.

3. The combination with a brake-cylinder of an automatic air-brake apparatus; of a valve controlling a communication from said brake-cylinder to the train-pipe and to the atmosphere; and means responsive to flow of air through the train-pipe in the operation of releasing the brakes for moving said valve to cut off communication from the brake-cylinder to the exhaust, and establish communication with the train-pipe, substantially as described.

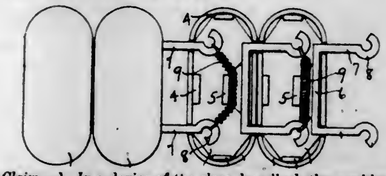
4. The combination with a brake-cylinder; of a valve controlling the exhaust from said brake-cylinder; a piston controlling said valve subjected to the flow of air for charging the train-pipe, and provided with passages for accommodating a relatively small flow of air; and a spring acting in opposition to the pressure of air upon said piston, as described, whereby the piston is moved in opposition to the spring only in response to a relatively large flow of air through the train-pipe such as takes place in the operation of releasing the brakes.

5. The combination with a brake-cylinder of an automatic air-brake apparatus; of a valve controlling a communication from said brake-cylinder to the train-pipe and to the atmosphere; means responsive to flow of air through the train-pipe in the operation of releasing the brakes for moving said valve to cut off communication from the brake-cylinder to the exhaust, and establish communication with the train-pipe; and a pressure-regulating valve in said communication from the train-pipe to the brake-cylinder adapted to be closed when the pressure in the brake-cylinder exceeds a predetermined amount.

6. The combination of a brake-cylinder, and a valve controlling the release of braking pressure therefrom, with an actuating-piston for said valve subjected to pressure of air flowing into the train-pipe, and a spring acting in opposition to said pressure; a relatively small passage for train-pipe air past said piston when in normal position, and a relatively large passage past said piston when moved by train-pipe pressure in opposition to said spring, release of braking pressure from said brake-cylinder being prevented by said piston when moved by the rapid flow of air into the train-pipe for releasing the brakes.

7. In an automatic air-brake apparatus, means responsive to the release operation for preventing the release of the brakes of one or more equipments at the head of the train; and means responsive to the release of the remainder of the brakes throughout the train for causing the release of the brakes at the head of the train, for the purpose of preventing the pulling apart of the train during the release operation.

823,024. **BRACELET.** ANTHONY H. BLISS, North Attleboro, Mass. Filed Feb. 23, 1906. Serial No. 302,412.



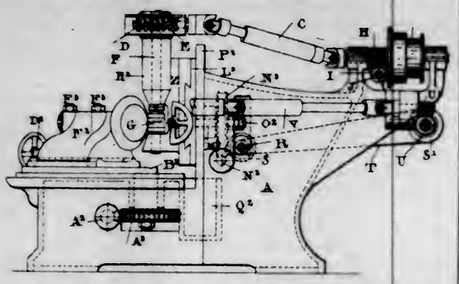
Claim.—1. In a device of the class described, the combination of adjacent hollow link members, a pair of openings in the sides of each link member, a bar in each link member having its ends bent to form coupling-rods which extend through the adjacent openings into the next link member, a spiral spring connecting the ends of said bar and means for supporting said spring centrally therebetween.

2. In a device of the class described, the combination of adjacent link members, openings in the sides of each link member, a pair of coupling-rods extending from each link member and entering the adjacent openings in the next link member, and a spiral spring connecting the ends of said rods and supported centrally therebetween.

3. In a device of the class described, the combination of adjacent hollow link members, a pair of openings on opposite sides of each member, a bar in each member having its ends bent to form coupling-rods which extend through the openings into the next link member, a spiral spring engaging the ends of said bars and a plate in the link member having a projection thereon to support said spiral spring centrally between the ends of the rod.

4. In a device of the class described, the combination of adjacent hollow link members, a pair of openings on opposite sides of each member, a bar in each member having its ends bent to form coupling-rods which extend through said openings, links on the ends of said rods, a spiral spring connecting said hooks and a projection in the link member for supporting said spiral spring centrally between the ends of the bar.

823,025. CUTTING BEVELED TEETH. LOUIS BOMARD, Lyon, France. Filed Aug. 25, 1904. Serial No. 222,156.



Claim.—1. The combination of a helical cutter having a pitch equal to that of the teeth to be cut at the small diameter of the cone and having a development equal to a fraction of a convolution of the helix, means for displacing the cutter parallelly to the generator of the cone, and means for giving relative simultaneous rotation to cutter and cone according to the equation $V=\frac{v}{n}$.

2. The combination of a helical cutter having a pitch equal to that of the teeth to be cut at the small diameter of the cone and having a development equal to a fraction of a convolution of the helix, means for giving relative simultaneous rotary movements to the cutter and cone according to the equation $V=\frac{v}{n}$, means for displacing the cutter parallelly to the generator of the cone, and means for displacing the cutter in such relation to the teeth as to bring the latter to the desired profile for rolling contact by a plurality of passes.

3. The combination of a cone-blank holder of a helical cutter having a pitch equal to that of the teeth to be cut at the small diameter of the cone and having a development equal to a fraction $C\frac{E-e}{P-p}$ of a convolution of the helix, the axis of said cutter lying in a plane perpendicular to that of the cone, means of relative displacement of said cone-holder and cutter whereby the cutter follows a generator of the cone and means for giving relative simultaneous rotation to the cutter and cone-holder according to the equation $V=\frac{v}{n}$.

823,026. BOTTLE-CLOSURE. HENRY S. BREWINGTON, Baltimore, Md. Filed Aug. 1, 1905. Serial No. 273,944.



Claim.—1. As an article of manufacture, a bottle-closure having a depending flange adapted to be pressed outwardly whereby to form a sealing contact, the body portion provided with a suitable packing.

2. In a bottle-neck having a shoulder and groove formed therein, a cap or closure to fit the bottle-neck having a depending flange, a packing between the bottle and the body portion of the closure, said flange adapted to be pressed against the shoulder and groove to form a sealing contact.

3. In a bottle-neck having a shoulder formed therein, a cap or closure to fit the bottle-neck, and downwardly-extending flange on the closure, a packing between the bottle and the body of the closure, said flange adapted to be pressed against the shoulder to form a sealing contact.

823,027. BOTTLE-CLOSURE. HENRY S. BREWINGTON, Baltimore, Md. Filed Sept. 6, 1905. Serial No. 277,195.

Claim.—1. A bottle cap or closure in the form of a hollow cup-shape disk, made of a non-resilient sheet metal, having a flat bottom, the walls of which are perpendicular thereto, a partially-closed flange at the top and adapted to be spun or forced into and made to conform to the irregularities of the inner wall or bore of a bottle-neck.

2. A bottle-closure in combination with a bottle, in the form of a hollow cup-shape disk, made of a non-resilient sheet metal, comprising a flat bottom the walls of which are perpendicular thereto, and adapted to be forced into and made to conform to the irregularities of the inner wall or bore of the bottle-neck substantially as herein described.



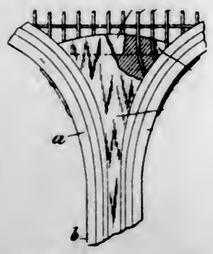
3. A bottle-closure in combination with a bottle in the form of a cup-shape disk provided with a flat bottom the walls of which are perpendicular thereto, having an outwardly-turned portion formed on the top portion thereof, and adapted to be forced into the bore of the bottle-neck, made from non-resilient sheet metal that will conform to the irregularities of the inner wall or bore of the bottle-neck and form a sealing contact substantially as herein described.

4. A bottle-closure in combination with a bottle in the form of a cup-shape disk having an outwardly-turned portion formed on the top and a packing resting under the outwardly-turned portion and adapted to be forced into the bore of a bottle-neck, the packing resting on top of the mouth of the bottle beneath the outwardly-turned portion, made from non-resilient sheet metal that will conform to the irregularities of the inner wall or bore of the bottle-neck and form a sealing and holding contact.

5. A bottle-closure in combination with a bottle, in the form of a cup-shape disk, having a flat bottom, the walls of which are perpendicular to said bottom, an outer turned flange formed on the top part thereof, made of non-resilient sheet metal, which when forced within the bottle-mouth will conform to the irregularities of the inner wall or bore of the bottle-neck and form a frictional and sealing contact substantially as herein described.

6. A bottle-closure in combination with a bottle, in the form of a cup-shape disk, having formed an outwardly-turned flange on the top part thereof, made of non-resilient sheet metal, a suitable packing beneath the outwardly-turned top flange which, when forced within the bottle-mouth will conform to the irregularities of the inner wall or bore of a bottle-neck and form a frictional and sealing contact substantially as herein described.

823,028. TENNIS-RACKET. HORACE BROWN, Springfield, Mass. Filed Dec. 26, 1905. Serial No. 293,236.



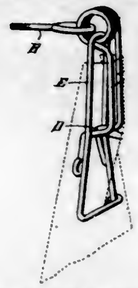
Claim.—1. In a tennis-racket, the combination with a frame, wedge and guts, of a separate string-piece of wood with the grain running lengthwise of the piece adapted to resist the splitting tendencies of the guts and set into the edge of the wedge and provided with holes for the passage of the guts, substantially as described.

2. In a tennis-racket, the combination with a frame, a wedge having its grain parallel with the axis of the racket, and guts, of a string-piece of close-grained wood with the grain running lengthwise of the piece, set into the wedge between the frames and provided with holes for the passage of the guts, substantially as described.

3. In a tennis-racket, the combination with a frame, a wedge having its grain parallel with the axis of the racket and guts, of an independent string-piece of wood with the grain running lengthwise of the piece set into the wedge and reinforcing-pieces set into the wedge on opposite sides of the string-piece and into the frame, substantially as described.

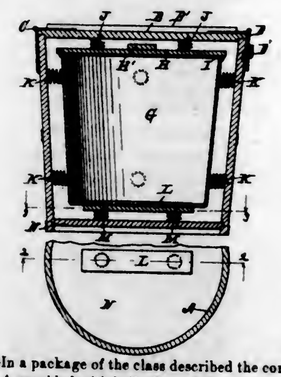
4. In a tennis-racket, the combination with a frame, a wedge-piece having its grain parallel with the axis of the racket and guts, of a string-piece of close-grained wood set into the wedge with the grain lengthwise of the piece and provided with holes for the passage of the guts, and reinforcing-pieces set into the wedge on opposite sides of the string-piece and into the frame, substantially as described.

823,029. TOWEL OR DISH-CLOTH HOLDER. JOHN W. BROWN, Hammond, Ill. Filed Dec. 18, 1905. Serial No. 292,334.



Claim.—A towel or dish-cloth holder comprising two members made of wire, one of which is bent to form a coil from which extend two resilient parallel arms each bent twice at right angles, forming offset portions and with the extreme ends flaring away from each other, the other member of the holder being approximately triangular-shaped and connected to said coil and adapted to receive the parallel portions of said arms, portions intermediate the angles in said arms adapted to bear yieldingly against the insides of the vertical legs of the triangular-outlined member and the extreme ends of said arms bearing against the rear sides of said legs, as set forth.

823,030. PACKAGE FOR BUTTER. SAMUEL M. BROWN, Richland, Mich. Filed Mar. 18, 1901. Renewed Jan. 25, 1906. Serial No. 297,776.

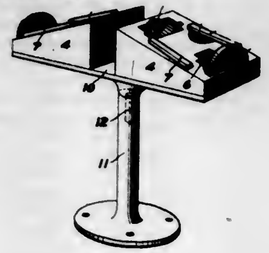


Claim.—In a package of the class described the combination of the outer tub A provided with helically-coiled springs secured on all sides thereof and to the bottom projecting inwardly, an interior jar or receptacle G resting on the bottom springs and contacting with the side springs, a cover H for the interior receptacle, a gasket I, for the said cover; a cover B for the outer tub secured thereto by suitable means, helically-coiled springs J on the outer cover B, to rest against the cover H on the jar within, whereby the inner jar or receptacle is supported by the said springs in such manner that it can freely move in any direction by the mere compression or expansion of the springs.

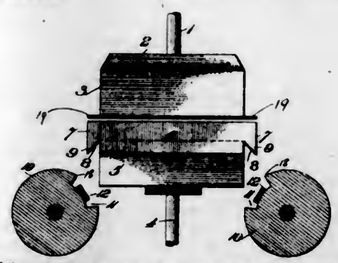
823,031. CHUCK. JEREMIAH F. BUCKLEY, DAVID C. KLINE, and HERBERT SINGLETON, Rochester, N. Y., assignors to The Pritchard-Strong Company, Rochester, N. Y., a Corporation of New York. Filed Jan. 20, 1906. Serial No. 296,979.

Claim.—1. In a chuck device for the manufacture of lantern-frames, a chuck-frame having a socket for a lantern-font, a socket for a lantern-head, and retainers for holding side tubes in position with reference to said head and said font.

2. In a chuck device for the manufacture of lantern-frames, a support, a rotary table thereon having plural chucks each consisting of a chuck-frame having a socket for a lantern-font, a socket for a lantern-head, and retainers for holding side tubes in position with reference to said head and said font.



823,032. BOX-COVERING MACHINE. WILLIAM A. CARDY, Chelsea, Mass., assignor to The Stokes and Smith Company, Philadelphia, Pa., a Corporation of New Jersey. Filed Feb. 18, 1905. Serial No. 246,302.



Claim.—1. In a machine for covering flanged boxes, a box-receiving means and a plurality of rotatably-mounted covering-pressing rollers arranged to operate simultaneously on various sides of the box and each provided with a recess extending longitudinally of its axis to form portions engaging the wall of the box and the flange.

2. In a machine for covering flanged boxes, a rotatably-mounted covering-pressing member, having a portion adapted to press the paper on the side wall of the box, and a recess extending longitudinally of the axis of the member to receive the flange of the box.

3. In a machine for covering boxes, a rotatably-mounted cover-pressing member adapted to roll in contact with the side wall of the box to press the paper thereto and having a recess extending longitudinally of the axis of the member to receive a flange on the box; said recess forming an offset which presses the paper into the angle caused by the flange.

4. In a machine for covering boxes, a rotatably-mounted cover-pressing member adapted to roll in contact with the side wall of the box to press the paper thereto and having a recess extending longitudinally of the axis of the member to receive a flange on the box; said recess forming an offset which presses the paper into the angle caused by the flange, and forming with the periphery of said member, a part which projects into the angle between the flange and side.

5. In a box-covering machine, a cover-pressing means, and a box-receiving means, movable relatively to one another and constructed to cause the pressing means to traverse the wall of the box; said cover-pressing means being engaged by the box-receiving means in the relative movement of the parts and having an offset conforming to an angular portion of the box, said offset entering the angular portion of the box when the parts are engaged.

6. In a box-covering machine the combination of the moving box-receiving member, and the rotary cover-pressing member having a recess providing an offset conforming to an angular portion of the box, and also providing an offset constructed to be engaged by the box-receiving member to cause the cover-pressing member to enter such angular portion of the box.

7. The combination with a form-block of a box-covering machine, of a pressing-roller provided with portions constructed to engage a flange on a box, means moved with the said block to impart movement to the roller in one direction, and means automatically moving the roller in the other direction when the direction of movement of the form-block is changed.

8. The combination with a form-block of a box-covering ma-

chine, of a pressing-roller provided with portions constructed to engage a flange on a box, means moved with the said block to impart movement to the roller in one direction, and a spring moving it in the other direction.

9. The combination with a box-receiving means, of a covering-pressing roller having portions extending longitudinally of its axis and adapted to receive a flange on a box and to enter the angle between the flange and a side wall of the box.

10. The combination with a box-receiving means, of a covering-pressing roller having a recess extending longitudinally of its axis and constructed to receive a flange on the box, an edge adapted to enter the angle formed between the flange and the side wall, and a rounded portion for movement on a side wall of the box.

11. The combination of a box-covering roller having a recess positioned to receive a flange on a box, a form-block and means moved with the form-block and adapted to enter the recess and cause the movement of the roller.

12. The combination with a base on which the box is supported, of pressing-rollers constructed to receive a flange on a box and means carried by said base to impart movement to the rollers.

13. The combination with the form-block, of a base-block extending beyond the edges of the form-block, a roller provided with a recess one wall of which provides an edge adapted to enter the angle formed between a flange on a box and a side wall, means on the base engaging the roller to cause its movement in one direction and means automatically moving the roller in the other direction.

14. In a machine for covering flanged boxes, a box-receiving means and covering-pressing means, independently mounted and movable relatively to one another, the parts being provided with portions constructed to engage during the relative movement and cause the cover-pressing means to operate on the box; and the covering-pressing means being provided with portions constructed to operate upon a side wall and a flange on the box to press the covering thereon.

15. The combination with a form-block adapted to fit within the box, of a base coextensive with the bottom of the box and the flange thereof and upon which the box rests, and rollers recessed to receive the flange of the box and adapted to press a covering on the flange and the side walls of the box.

16. The combination with a form-block adapted to fit within the box, of a base coextensive with the bottom of the box and the flange thereof, and upon which the box rests, covering-pressing means provided with portions adapted to contact with a wall of the box and with the flange and coöperating means on the covering-pressing means and the base, whereby when the parts are moved relatively to one another, the covering-pressing means is caused to act on the box and its flange.

17. The combination with a form-block adapted to fit within the box, of a base coextensive with the bottom of the box and the flange thereof and upon which the box rests, rollers recessed to receive the flange of the box and adapted to press a covering on the flange and the side walls of the box, and projections on the base adapted to engage the rollers and cause them to act on the box during a relative movement of the parts.

18. The combination with a form-block adapted to fit within the box, of a base coextensive with the bottom of the box and the flange thereof and upon which the box rests, rollers recessed to receive the flange of the box and adapted to press a covering on the flange and the side walls of the box, projections on the base adapted to engage the rollers and cause them to act on the box during a relative movement of the parts, and means for automatically returning the roller to its original position.

19. The combination with a form-block constructed to fit within a box, of a base coextensive with the flange on the box, and pressing means supported independently of the base and constructed to enter the angle of the box between the flange and a side wall.

20. The combination with a form-block adapted to fit within a box, of a base coextensive with the bottom of the box and the flange thereof, and upon which the box rests, and covering-pressing means supported independently of the base and provided with portions adapted to contact with a wall of the box and with the flange.

21. In a box-covering machine, removable means for applying a covering to side walls of a box having extension edges, comprising a roller provided with a longitudinal recess throughout its length to receive the extended edge.

22. In a box-covering machine, means for applying a covering to the side wall of a box having an extension edge, comprising a roller provided with a recess, means to move said roller in one direction and yielding means to return said roller to its original position.

23. In a box-covering machine, means for applying a covering to the side wall of a box having an extension edge, comprising a roller provided with a recess, means to rotate said roller in one direction, and means to return said roller to its original position.

24. In a machine for covering extension-edge boxes, a movable box-support, means for applying a covering-blank to the walls of the box, means moving in advance of said first-named means to turn the covering-blank over and down upon the extension edges, and means whereby the movement of the box-support may actuate said first and last named means.

25. In a machine for covering extension-edge boxes, means for covering a wall of the box, comprising a rotatable element having a longitudinal recess to receive an extended edge of the box, a wall of said recess being arranged to engage and turn the covering material over and down upon the said extended box edge, and a convex face on said element for applying the covering material to the box-wall proper.

26. In a machine of the class described, a roller for applying a covering-blank to the side and end walls of an extension-edge box, and provided with a concave surface for turning the covering-blank over and down upon the extension edge and a convex face for applying the covering-blank to the box-wall proper.

27. In a machine for covering extension-edge boxes, means for applying the covering-blank to the side and end walls of the box, comprising a roller having a concave and a convex surface, and means intermittently engaging said concave surface to partially rotate said roller.

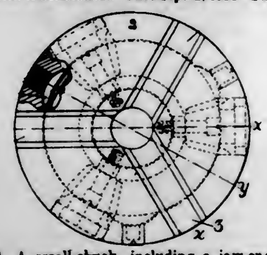
28. In a machine for covering extension-edge boxes, means to support the box, means for applying the covering-blank to the walls of the box, comprising a roller having a longitudinal recess, and means on the box-support to engage a wall of the recess to partially rotate said roller.

29. In a machine for covering extension-edge boxes, means to support the box, means for applying the covering-blank to the walls of the box, comprising a roller having a concave and a convex surface, and means on the box-support to engage the concave surface.

30. In a box-covering machine of the class described, an element having a convex face for applying the covering material to a vertical wall of a box, and means associated with said element for turning the covering material over an extension edge of the box.

31. In a box-covering machine of the character described, opposed rollers for applying the covering material to the opposite vertical walls of a box, and means associated with said rollers for turning the covering material over the extension edges of the box.

823,033. **SCROLL-CHUCK.** ALBERT E. CHURCH, New Britain, Conn., assignor to Union Manufacturing Company, New Britain, Conn., a Corporation of Connecticut. Filed Sept. 2, 1904. Serial No. 223,110.



Claim.—1. A scroll-chuck, including a jaw-engaging scroll, and screw-actuated mechanism, engaging the rim of the scroll in three places.

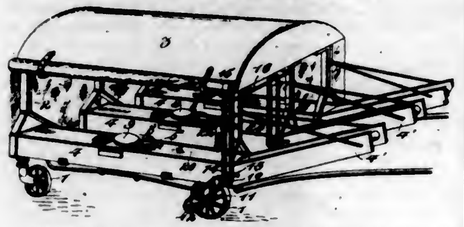
2. A chuck-frame, and a scroll, which has a peripheral bearing-surface, in combination with a number of adjustable bearings, which engage such peripheral bearing-surface.

3. A chuck-frame, and a scroll therein, in combination with a number of bearings, engaging the rim of the scroll, and provided each with a shank, which is seated adjustably in said frame.

4. A chuck-frame, an adjustable scroll therein, having a rack, in combination with adjustable bearings, which engage the rim of the scroll, and adjustable pinions, which engage the rack of the adjustable scroll.

5. A chuck-frame, an adjustable scroll therein, having a rack, radially-adjustable bearings, engaging said scroll, and mechanism for adjusting said bearings, in combination with adjustable pinions, which are adapted to engage the rack on said adjustable scroll, in every position of adjustment of said scroll, and mechanism for adjusting said pinions to such engagement with said scroll.

823,034. **COTTON-HARVESTER.** AUGUSTUS G. M. COMBER, Rome, Ga. Filed July 20, 1905. Serial No. 270,514.



Claim.—1. A cotton-harvester comprising a wheel-supported frame, a series of troughs or frames spaced apart and adapted to receive the picked cotton, revolving seats mounted on slidable frames supported upon the troughs, an endless conveyer passing around rollers journaled in the ends of the troughs, and inclined conveyers extending from the ends of the frames at one end of the machine, substantially as described.

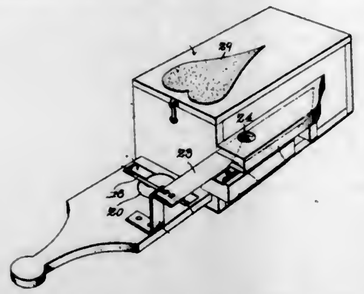
2. In a cotton-harvester, the combination with a wheeled supporting-frame, of a series of troughs or frames adapted to receive the picked cotton, seats slidably mounted on said frames, and a protecting-apron having its opposite ends attached to the opposite sides of said seat-frames and passing over guide-rollers at the opposite ends of said troughs or frames, said apron having openings formed therein adjacent to said seat-frame, substantially as described.

823,035. **BURIAL-CASKET.** RICHARD R. CRAMER, Marion, Ind., assignor of one-half to Jacob F. Knepper, Marion, Ind. Filed June 30, 1905. Serial No. 267,712.



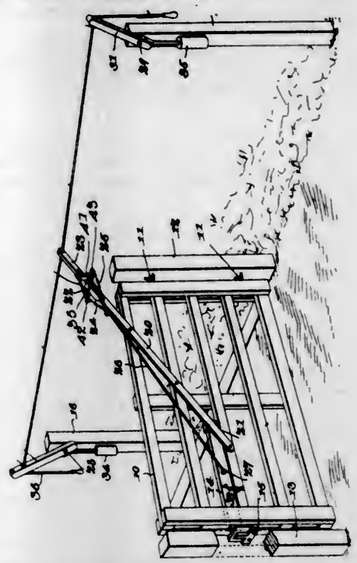
Claim.—A cement or plastic burial-casket having strips of soft material embedded in its inner and outer surfaces, the exposed portions of the said strips lying substantially flush with the said surfaces.

823,036. **SELF-FEEDING MATCH-BOX AND CIGAR-CUTTER.** JOSEPH W. CRITES and JOHN J. WINE, Independence, Kans., assignors of one-fourth to Charles L. Wood and one-fourth to John W. Glass, Independence, Kans. Filed Sept. 14, 1905. Serial No. 278,471.



Claim.—A device of the class described comprising a match-receptacle having a transverse opening in the front thereof adjacent the bottom of the receptacle, an inclined partition extending downwardly and forwardly from the rear end of the receptacle with its lower end terminating short of the front of the receptacle and of the bottom thereof, a single delivery-slide working through the opening in the front of the receptacle beneath the bottom of the partition, said slide having a transverse match-receiving seat formed in its upper face and normally located between the bottom of the partition and the front of the receptacle, a stop carried by the rear portion of the slide for engagement with the partition to limit outward movement of the slide, a ledge carried by one side of the receptacle and provided with a slot intersecting its front end and an opening piercing the slot between its ends, a bracket upon the slide, and a knife-blade working in the slot of the ledge and carried by the bracket, the free end of the blade being beveled and working across the opening.

823,037. **GATE.** AARON E. CULLEN, Pleasant Plains, Ark. Filed Feb. 23, 1906. Serial No. 302,653.



Claim.—1. In a gate, posts spaced apart and disposed at opposite sides of the gateway-opening, a gate swinging from one of said posts, a keeper on the other of said posts, a latch movably connected to said gate and detachably engaging said keeper, a supporting-arm connected to said gate and projecting beyond the hinge member of the gate, a bar pivoted centrally thereof to the projected end of said arm and extending laterally and converging in advance of the bar and united rigidly to a trip-arm, eyes disposed at the bends of said bar, flexible elements connected to said eyes, connecting means between said flexible elements and said latch, and means operative by the person approaching the gate for actuating said trip-arm and releasing the latch and swinging the gate.

2. In a gate, a hinged post and a latch-post spaced apart and disposed at opposite sides of a gateway-opening, a gate swinging from said hinge-post, a latch movably connected to said gate and detachably engaging said latch-post, a supporting-arm connected to said gate and projecting beyond the hinge-post, a trip-arm pivoted to the projected end of said supporting-arm and extended laterally at the pivoted end, a rod connected at one end to said latch, flexible members between the other end of said rod and the laterally-extended portion of said trip-arm, posts spaced from said hinge-post, levers pivoted intermediately thereof to said posts, weights connected to said levers at one end, cables between the other ends of said levers and the free end of said trip-arm, and pull-handles carried by said levers.

3. In a gate, posts spaced apart and disposed at opposite sides of a gateway-opening, a gate swinging from one of said posts, a keeper on the other of said posts, a supporting-arm connected to said gate and extending beyond the hinge-post, a latch-spring supported upon said gate and extended for engagement with said keeper, a trip-arm pivoted to the projected end of said supporting-arm and extending laterally at the pivoted end, a rod connected at one end to said latch, flexible members between the other end of said rod and the extended portion of said trip-arm, and means operative by a person approaching and leaving the gate for actuating said trip-arm.

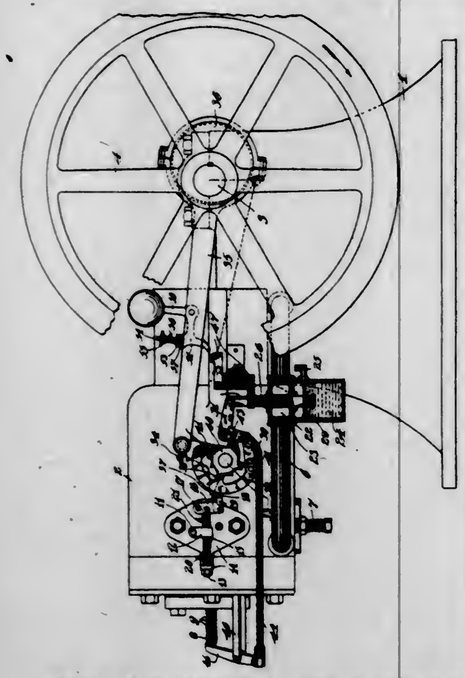
823,088. COMPOSITE BLOCK AND PROCESS OF MAKING SAME. FREDERICK W. DUNNELL, Springfield, Mass., assignor, by direct and mesne assignments, of one-seventh to P. A. Donoghue, one-seventh to James J. Murphy, one-seventh to James H. Emonds, one-seventh to Henry M. Freyer, one-seventh to Donald B. Rice, and one-seventh to Clifford B. Potter, Springfield, Mass. Filed Sept. 24, 1903. Renewed Feb. 17, 1906. Serial No. 301,631.

Claim.—1. The herein-described process of forming a composite block which consists in mixing into a homogeneous pulp, leather shreddings, water, coal-tar, pitch resin and oil, and thereafter subjecting said pulp to pressure to expel superfluous water and to harden it into a solid mass, substantially as described.

2. A composite block consisting of pulp made of shredded leather saturated with water and thoroughly mixed with coal-tar pitch, resin and oil, substantially as indicated.

3. The above-described substance comprising a homogeneous mass of shredded leather intimately mixed throughout with water, coal-tar pitch and oil, solidified and hardened under pressure, substantially as described.

823,039. VALVE-GEAR FOR EXPLOSIVE-ENGINES. FRANK B. ELLS, Hutchinson, Minn. Filed July 25, 1904. Serial No. 217,917.

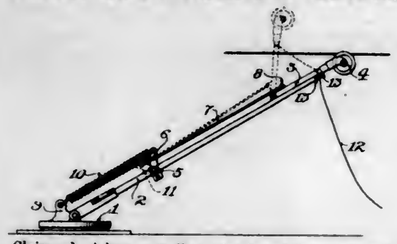


Claim.—1. In an explosive-engine, having an exhaust-valve, fuel-oil-supply device, an engine-driven lever operatively connected to said exhaust-valve and to said fuel-oil-supply device, and a shifting fulcrum for said lever normally disconnected therefrom, operated by the engine and arranged to be thrown into action on said lever once for each two rotations of the engine crank-shaft, substantially as described.

2. In a valve-gear for explosive-engines, means for operating the exhaust-valve thereof, comprising a lever operatively connected to the exhaust-valve and to an engine-driven part, and a shifting fulcrum for said lever, normally disconnected therefrom, operated by the engine and arranged to be thrown into action on said lever once for each two rotations of the engine crank-shaft, substantially as described.

3. In a four-cycle explosive-engine, the combination with an oscillating arm, driven from the engine crank-shaft, a ratchet-wheel mounted to rotate at the pivot of said arm and carrying a plurality of projecting fulcrum-lugs, a pawl carried by said arm for action on said ratchet-wheel, and an oscillating lever pivoted at one end to said oscillating arm, operatively connected at its other end to the exhaust-valve of the engine, and subject, at its intermediate portion, to said fulcrum-lugs, which lugs are brought into action in succession, once for each two rotations of the engine-crank.

823,040. AUTOMATIC SAFETY TROLLEY-POLE. JOHN R. FRENCH, Los Angeles, Cal. Filed Mar. 3, 1905. Serial No. 248,194.



Claim.—1. A base, a trolley-pole pivoted thereto, a trolley-carrier on the trolley-pole, a lever pivoted on said trolley-pole at a point between said base and trolley-carrier; a spring connected with the base and with the trolley-carrier by means of said lever and a connecting-link whereby the pole is supported by the spring when the trolley-carrier is in one position and is allowed to drop when the tension of the spring is lessened by the movement of the trolley-carrier relatively to the pole.

2. A base, a trolley-pole pivoted thereto, a trolley-carrier comprising a lever pivoted to the trolley-pole, a spring connected with the base, a rod connected with the trolley-carrier, and an intermediate device connected loosely with the pole and connected with the spring and rod.

3. A base, a trolley-pole pivoted thereto, a trolley-carrier on the trolley-pole, a spring connected with the base a rod connected with the trolley-carrier an intermediate lever pivotally mounted on the trolley-pole and connected with the said spring and rod, whereby the pole is supported by the spring when the trolley-carrier is in one position and is allowed to drop when the tension of the spring is lessened by the movement of the trolley-carrier relatively to the pole, an abutment for said lever, whereby when the pole has dropped a definite distance the tension of the spring is increased to cushion the pole through the remainder of its movement.

823,041. MAGAZINE TACK-HAMMER. WILLIAM F. GANT, Reidsville, N. C. Filed May 23, 1905. Serial No. 261,889.



Claim.—1. A device of the class described comprising a handle, a magazine-hammer pivoted thereon, hammer-operating means carried by the handle, a tack-magazine leading to the top of the hammer, and means located between the hammer and the magazine and in the rearward path of a tack on the hammer to engage and arrest the rearward movement of the tack until the latter drops over upon the forward end of the hammer when the latter is being retracted preparatory to striking a blow.

2. In a device of the class described, the combination of a bifurcated head having a partition in the bifurcation with the partition slotted in its rear end and provided with an opening at its front end, a hammer working through the bifurcation at one side of the partition, a tack-magazine located at the opposite side of the partition and leading through the opening therein, tack-feeding mechanism located between the partition and the discharge end of the magazine, and a trip projection carried by the hammer and working in the slot of the partition in operative relation with respect to the tack-feeding mechanism.

3. In a device of the class described, the combination of a bifurcated head having a transverse partition provided in its forward end with an opening and in its rear end with a slot, a hammer working through the bifurcation at one side of the partition, a tack-magazine located at the opposite side of the partition and leading to the opening therein, a spring-arm secured to the partition with its free end adjacent the opening therein and its intermediate portion extending across the slot, spaced overlapped feed-fingers carried by the free end of the arm and working across the partition between the opening therein and the discharge end of the magazine, and a trip projection carried by the hammer and working in the slot in frictional engagement with the spring-arm to work the feed-fingers across the discharge end of the magazine.

4. In a device of the class described, the combination of a bifurcated handle, a hammer working in the bifurcation and having a stem pivotally and removably mounted within said bifurcation, a guide in the bifurcation in front of the hammer, a hook upon the stem adjacent the guide, a spring in front of the hammer with one end connected to the handle, a cord having one end connected to the free end of the spring and its opposite end provided with a loop detachably engaging the hook, the intermediate portion of the cord working through the guide, an arm carried by the hammer and extending in rear thereof, a guide upon the arm, and an actuating-cord having one end secured to the handle and its intermediate portion engaging the guide of the arm for retracting the hammer against the tension of the spring.

5. In a device of the class described, the combination of a handle, a hammer having a stem which is provided in its rear end with a bifurcation, a pivot supported upon the handle and detachably straddled by the bifurcated portion of the stem, a spring carried by the handle and detachably connected to the hammer to yieldably maintain the latter at one limit and to hold the stem upon its pivotal support.

6. In a device of the class described, the combination of a hammer, a magazine leading to the hammer, and work-engaging members adjustable toward and away from one another and provided with work-engaging means.

7. In a device of the class described, the combination of a hammer, a magazine leading thereto, and adjustably-telescoped work-holding members having work-engaging means.

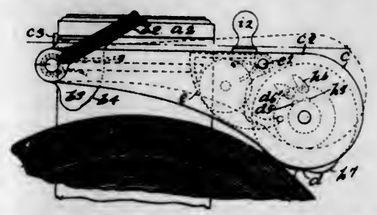
8. In a device of the class described, the combination of a hammer, a magazine leading thereto, a cross-head, and adjustably-telescoped work-holding members having work-engaging means.

9. In a device of the class described, the combination of a handle, a hammer, a magazine leading to the hammer, a cross-head carried by the handle, a support upon the cross-head, a work-holder loosely mounted upon the support, and a keeper carried by the cross-head and capable of adjustment into and out of engagement with the work-holder, the handle capable of adjustment upon the work-holder in the longitudinal direction thereof.

10. In a device of the class described, the combination of a handle, a hammer, a magazine, a work-holder, a support for the slidable reception of the work-holder, and a pivotal hook-shaped keeper capable of being turned into and out of engagement with the work-holder.

823,042. PRINTING DEVICE. PAUL T. HAHN, Woodcliff, Weehawken, N. J. Filed Nov. 13, 1905. Serial No. 287,013.

Claim.—1. In a device for printing upon a roll of paper, a printing-cylinder normally held out of contact with said roll of paper and adapted to be depressed thereon, an inking-roller normally held out of contact with the printing-cylinder and adapted to be depressed thereon, said printing-cylinder being adapted to be turned by pulling a strip of paper from said roll, and means whereby the inking of the type on the printing-cylinder and the locking of the printing-cylinder at predetermined intervals as well as the releasing of the said cylinder are accomplished by the rotation of the printing-cylinder, substantially as shown and described.



2. In a device for printing on a roll of paper, a main frame adapted to support a roll of paper, a printing-frame pivoted in the top portion of the main frame and tensionally supported above and out of contact with the roll of paper, a printing-cylinder mounted in the printing-frame, an inking-roller also mounted in the printing-frame and tensionally supported out of contact with the printing-roller and adapted to be depressed thereon, said printing-cylinder being adapted to be rotated by pulling a strip of paper from the paper-roll, and means whereby the inking of the type on the printing-cylinder and the locking of said cylinder at predetermined intervals as well as the releasing of the said cylinder are accomplished, substantially as shown and described.

3. In a device for printing on a roll of paper, a main frame adapted to support a roll of paper, a printing-frame pivoted in the top portion of the main frame and tensionally supported above and out of contact with the roll of paper, a printing-cylinder mounted in the printing-frame, an inking-roller also mounted in the printing-frame and tensionally supported out of contact with the printing-roller and adapted to be depressed thereon, said printing-cylinder being adapted to be rotated by pulling a strip of paper from the paper-roll, and means whereby the inking of the type on the printing-cylinder and the locking of said cylinder at predetermined intervals as well as the releasing of the said cylinder are accomplished by the upward movement of the inking-roller, substantially as shown and described.

4. In a device for printing on a roll of paper, a main frame in which said roll of paper is adapted to be placed, a printing-frame pivoted in the top portion of the main frame and tensionally held above the roll of paper when the latter is in position, a printing-cylinder mounted in the printing-frame, a supplemental frame mounted in the printing-frame, an inking-roller mounted in the supplemental frame, means for tensionally supporting the supplemental frame and inking-roller out of contact with the printing-cylinder, means whereby the supplemental frame may be depressed so as to throw the inking-roller into contact with the printing-cylinder, said printing-cylinder being adapted to be rotated by pulling a strip of the roll of paper when the printing-frame is depressed, and means whereby the operation of the printing-cylinder and the inking-roller will be interrupted at intervals, substantially as shown and described.

5. In a device for printing on a roll of paper, a main frame in which a roll of paper may be mounted, a shaft supported in the top back portion of the main frame, a printing-frame pivoted on said shaft and tensionally supported above the roll of paper when the latter is in position, an arm connected with one end of said shaft, a printing-cylinder mounted in said printing-frame and adapted to be depressed onto the roll of paper, a supplemental frame pivoted in the printing-frame, an inking-roller mounted in the supplemental frame, means for tensionally supporting the supplemental frame so that the inking-roller will be out of contact with the printing-cylinder, an arm connected with said shaft and adapted to depress the supplemental frame, said printing-cylinder being adapted to be turned by pulling a strip of paper from the roll of paper, and means for interrupting the operation of the printing-cylinder and the inking-roller at intervals, substantially as shown and described.

6. In a device for printing on a roll of paper, a main frame, a printing-frame pivotally mounted therein, a printing-cylinder mounted in said printing-frame and rotatable therein, an inking-frame mounted in the printing-frame, an inking-roller in said inking-frame, and devices connected with said inking-frame for locking the

rotation of said printing-cylinder against rotation at predetermined intervals, substantially as shown and described.

7. In a device for printing on a roll of paper, a main frame in which a roll of paper is mounted, a printing-frame mounted in the main frame and normally supported above the roll of paper, a printing-cylinder mounted in the printing-frame and adapted to be depressed onto the roll of paper, a supplemental printing-frame mounted in the main printing-frame, an inking-roller mounted in the supplemental printing-frame, said supplemental printing-frame being normally supported so that the inking-roller will be out of contact with the printing-cylinder, said printing-cylinder being adapted to be turned by pulling a strip from the roll of paper when the main printing-frame is depressed, and means for interrupting the operation of the printing-cylinder and the inking-roller at intervals, substantially as shown and described.

8. A device for printing upon a roll of paper mounted in a suitable frame, a printing-frame pivotally mounted in said main frame, an inking-frame pivotally mounted in said printing-frame, a printing-cylinder rotatably mounted in said printing-frame, an inking-roller rotatably mounted in said inking-frame, type arranged on said printing-cylinder, and devices on said inking-frame and printing-cylinder for permitting the contact with said paper and for inking the same at predetermined intervals, substantially as shown and described.

9. In a device for printing on wrapping-paper, a main frame adapted to receive a roll of paper, a printing-frame, a printing-cylinder mounted in the printing-frame, type connected with the printing-cylinder, devices for inking said type, and devices for permitting the contact of said type with said paper at predetermined intervals, said printing-cylinder being adapted to bear on said roll of paper and to be turned by pulling a strip of said paper from said roll, and the devices for inking the type and for permitting the contact of said type with said paper at predetermined intervals being also operated by pulling a strip of paper from the roll, substantially as shown and described.

10. In a device of the class described, a paper-roll frame, a printing-frame, a printing-cylinder rotatable therein, an inking-frame pivotally mounted in said printing-frame and provided with a segment-gear adjacent to the pivotal point thereof, a supplemental inking-frame in said printing-frame also provided with a segment-gear in operative connection with said first-named segment-gear, inking-rollers in said inking-frames, type arranged on said printing-cylinder and devices for permitting the contact of said inking-rollers with said type intermittently, substantially as shown and described.

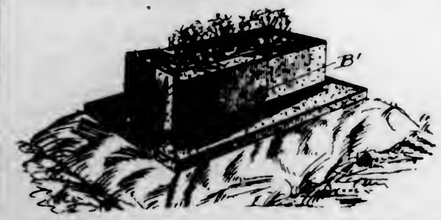
11. In a device of the class described, a paper-roll frame, a printing-frame, a printing-cylinder rotatable therein, an inking-frame pivotally mounted in said printing-frame and provided with a segment-gear adjacent to the pivotal point thereof, a supplemental inking-frame in said printing-frame also provided with a segment-gear in operative connection with said first-named segment-gear, inking-rollers in said inking-frame, type arranged on said printing-cylinder and devices for permitting the contact of said inking-rollers with said type intermittently, comprising wheels on each of said inking-rollers, corresponding wheels provided with recesses on said printing-cylinder, and means for forcing the wheels on said inking-rollers into the corresponding recesses of the wheels on said printing-cylinder, substantially as shown and described.

12. In an apparatus of the class described, a main frame adapted to receive a roll of paper, a printing-frame pivoted in the main frame and normally held out of contact with said roll of paper and adapted to be depressed thereon, printing devices mounted in the main frame and adapted to be depressed onto the roll of paper when the printing-frame is depressed, and two inking-rollers mounted in the printing-frame and normally supported above the printing devices and adapted to be depressed thereon, substantially as shown and described.

13. In an apparatus for printing on wrapping-paper, a main frame adapted to receive a roll of paper, a printing-frame pivoted in said main frame and normally supported above the paper and adapted to be depressed thereon, a printing-cylinder mounted in the printing-frame and adapted to bear on the roll of paper when said frame is depressed, an inking-roller mounted in the printing-frame and adapted to be depressed onto the printing-cylinder, and inking devices mounted in said printing-frame and operating in connection with said inking-roller, and devices mounted in said printing-frame and operating in connection with said printing-cylinder and inking-roller for printing on said paper in different colors, said printing-cylinder, inking-roller and devices being adapted to be operated by pulling a strip of paper from said roll, substantially as shown and described.

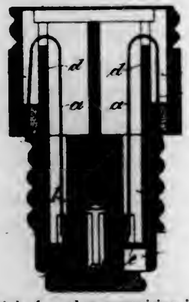
14. In an apparatus of the class described, a main frame adapted to receive a roll of paper, a printing-frame pivoted therein and tensionally supported above the roll of paper and provided with a printing-cylinder adapted to be depressed thereon, inking-rollers mounted in the printing-frame and adapted to be depressed onto the printing-cylinder, inking devices mounted in the printing-frame and operating in connection with the inking-rollers, and other devices mounted in the printing-frame and operating in connection with the printing-cylinder and inking-rollers for printing on the paper in different colors, said cylinder, inking-rollers and devices being adapted to be operated by pulling a strip of paper from said roll, substantially as shown and described.

823,043. **COVER FOR GRAVES.** WILLIAM J. HALPIN, Dunkirk, Ind., assignor of one-half to Solan C. St. John, Dunkirk, Ind. Filed Feb. 17, 1906. Serial No. 301,693.



Claim.—A cover for graves comprising a cement block having a box open at its top rising therefrom, with downwardly-inclining water-tables about the periphery of said box, the opposite walls of the box being apertured with their lower marginal edges continuous with the incline of said water-tables, one edge of the box being projected above the upper edges thereof and terminating in inclined ends which connect the outer and inner corners of the box, as shown and described.

823,044. **MULTIPLE FUSE-PLUG.** ALEXANDER HEPKE and KURT DIENER, Berlin, Germany. Filed Feb. 16, 1905. Serial No. 245,900.



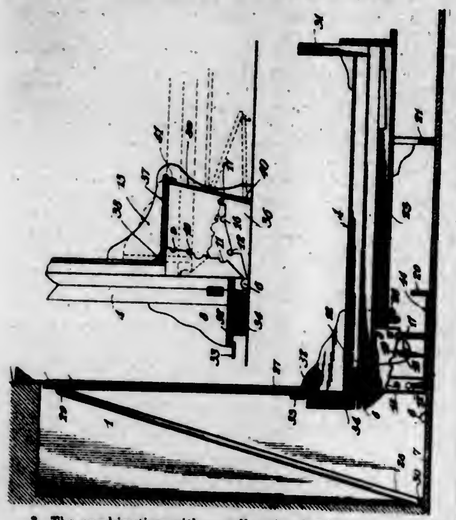
Claim.—A multiple fuse-plug comprising in combination the fuse-plug proper, a thread-ring fixed to said plug-body, fuse-wires each having one end connected to said thread-ring, contact-pieces connected to the other ends of the fuse-wires and insulated from each other, a current-taking-up contact-piece, movable in relation to the fuse-wires, a projection on said current-taking-up piece and bearing against the temporarily-used fuse-wire, a fork-shaped spring secured to said movable contact-piece and engaging with a hole in the plug-body, for the purpose set forth.

823,045. **FOLDING BED.** WILLARD C. JAMES, Los Angeles, Cal. Filed Mar. 28, 1904. Serial No. 199,068.

Claim.—1. The combination with a wall-casing having a recess, and a floor in said recess, a bed pivotally movable into and out of said recess, rounded pivots on the floor of the recess forming initial pivots for the outward movement of the bed, supports located outwardly from the aforesaid initial pivots, a means on the bed engaging with the outwardly-located pivots to raise the bed in its turning movement off of the initial pivots.

2. The combination with a wall-casing having a recess and a floor, of a folding bed movable into and out of said recess, rounded

pivots at the bottom of the recess, forming initial pivots in the outward movement of the bed, a hinged support resting and turning on the floor and provided with fulcrum means and fulcrum means on the bed engaging the fulcrum means on said hinged support.



3. The combination with a wall-casing having a recess and a floor, a folding bed folding into said recess, rounded pivots on the floor forming initial pivots for the downward movement of the bed, a hinged support resting and turning on the floor from the raised to the lowered position on the floor, fulcrum means on said hinged support and fulcrum means on the bed engaging the fulcrum means on the hinged support.

4. The combination with a wall-casing having a recess and a floor, of a folding bed folding into said recess, pivots on the floor forming initial pivots for the outward movement of the bed, fulcrums on the floor located outwardly from said pivots, means on the said bed engaging with said fulcrums to support the bed thereon and to raise the bed from the initial pivots on the further outward movement of the bed, and a hinged support resting on and hinged to the floor, fulcrum means on said hinged support, a fulcrum means on the bed, engaging the fulcrum means on the hinged support, to raise the bed from the aforesaid fixed fulcrum means.

5. The combination with a casing, pivot members at the bottom of said casing, and a folding bed adapted to be received by said casing and having pivot members resting on the aforesaid pivot members when the bed is in closed position within the casing, supplementary pivot members on the bed, respectively connected to the bed and to the casing located forwardly of the aforesaid pivot members, the casing having an extension at each side of said supplementary pivot members, and a folding closure device hinged at the bottom of the casing to swing upward and over the said casing extensions and pivot members.

6. The combination with a casing, of a folding bed provided with fulcrum means at different longitudinal portions thereof, fixed fulcrum means at the bottom of the casing for engaging a fulcrum means on the bed when the bed is in vertical position, and a support provided with fulcrum means and hinged at the bottom of the casing to fold upwardly toward the casing or to move outwardly and downwardly to carry its fulcrum means outwardly into position to successively receive the fulcrum portions on the bed as the bed is turned downwardly.

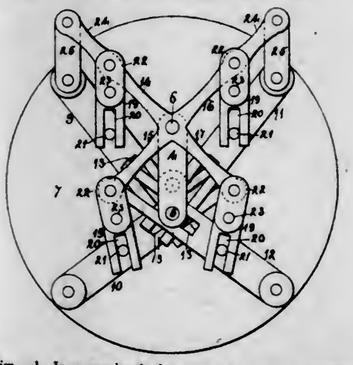
7. The combination with a casing, of a folding bed provided with fulcrum means at different longitudinal portions thereof, fixed fulcrum means at the bottom of the casing for engaging a fulcrum means on the bed when the bed is in vertical position, a support provided with fulcrum means and hinged at the bottom of the casing to fold upwardly toward the casing or to move outwardly and downwardly to carry its fulcrum means outwardly into position to successively receive the fulcrum portions on the bed as the bed is turned downwardly, and a flexible connection between said hinged support and the bed-frame.

8. The combination with a casing, of a folding bed provided with fulcrum means at different longitudinal portions thereof, fixed fulcrum means at the bottom of the casing for engaging a fulcrum means on the bed when the bed is in vertical position, a support provided with fulcrum means and hinged at the bottom of the casing to fold upwardly toward the casing or to move outwardly and downwardly to carry its fulcrum means outwardly into position to successively receive the fulcrum portions on the bed as the bed is turned downwardly, and a detached connection between said hinged support and the bed-frame.

9. A casing having a recess, a headboard movable rearwardly away from and forwardly against said casing, a folding bed mounted to swing in said recess, and a support for said headboard, one end of said support being pivoted to the upper portion of said headboard, the other end of said support being pivoted to the rear portion of the recess at a point adjacent the floor thereof.

10. A casing, a folding bed mounted to swing in said casing, and a cover and fulcrum device hinged at the bottom of the casing adapted to form a fulcrum-support for the bed in lowering the same and engaging a portion of the bed when raised to hold the bed in upright position and extending in front of the lower part of the bed.

823,046. **MECHANICAL MOVEMENT.** EMIL G. JOHANSON, Rockford, Ill. Filed Oct. 4, 1904. Serial No. 227,142.



Claim.—1. In a mechanical movement, a rotatable support, a fixed support located off the center of the rotatable support, a series of bars pivotally connected to the rotatable support and having a slidable engagement with the fixed support, a spider rotatable on a center differing from the centers of the rotatable support and the fixed support, links connecting each of the bars with the spider, and a link connecting the spider with the rotatable support at the pivotal center of one of the bars.

2. In a mechanical movement, a rotatable support, a fixed support located off the center of the rotatable support, a series of bars pivotally connected to the rotatable support and having a slidable engagement with the fixed support, a spider rotatable on a center differing from the centers of the rotatable support and the fixed support, links having a pivotal connection with the spider and movable engagement with the bars, and a link connecting the spider with the rotatable support at the pivotal center of one of the bars.

3. In a mechanical movement, a rotatable support, a fixed support located off the center of the rotatable support, a series of bars pivotally connected to the rotatable support and having a slidable engagement with the fixed support, a spider rotatable on a center differing from the centers of the rotatable support and the fixed support, links having a pivotal connection with the spider and movable engagements with the bars, and links connecting the spider with the rotatable support at the pivotal center of the bars.

823,047. **SAFETY GUIDE-BRACKET FOR CAR-DOORS.** EDMOND J. KATES, Lincoln, Nebr. Filed Oct. 20, 1905. Serial No. 284,947.

Claim.—1. A guide-bracket comprising in its construction a grooved portion having front and rear vertical walls and a horizontal inwardly-projecting lip on the front vertical wall, said wall and lip being curved inward, substantially as described.

2. A guide-bracket comprising in its construction a grooved portion having a laterally-inclined rear wall and a flange extending

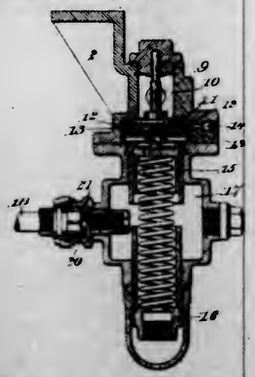
from the rear wall in a direction opposite the grooved portion and parallel therewith, substantially as described.



3. In combination, a door, a guide-rail thereon, provided with an outwardly-turned lip or flange, a guide-bracket having a grooved portion, one wall of which is provided with an inwardly-turned lip overhanging the lip on the track, substantially as described.

4. A guide-bracket comprising in its construction a vertically-disposed attaching-flange, an offset portion, an outer vertical flange at right angles to the offset portion, a laterally-inclined flange forming with the outer vertical flange and offset portion a guide-groove, and a horizontally-disposed flange extending from the inclined flange, said outer vertical flange being formed with an inwardly-extending lip, the outer vertical flange and its lip being curved inwardly, substantially as described.

823,048. AIR-BRAKE. JOHN P. KELLY, Watertown, N. Y., assignor to New York Air Brake Company, a Corporation of New York. Filed Feb. 13, 1904. Serial No. 193,279.



Claim.—1. The combination of the train-pipe, auxiliary reservoir, brake-cylinder and triple valve of an automatic air-brake apparatus, said triple valve having an escape-passage from the train-pipe, and means for opening the same in an emergency application of the brakes with a brake-cylinder relief-valve and a movable abutment or actuator therefor, and fluid-pressure chambers on opposite sides of said abutment, one of which communicates with the brake-cylinder, and the other of which pressure-chamber communicates with the escape-passage from the train-pipe of the triple valve, substantially as and for the purpose described.

2. A relief-valve for the brake-cylinder of a fluid-pressure-brake system, comprising a discharge-passage, and valve controlling the same, a movable abutment controlling said discharge-valve, and exposed at one side to the fluid-pressure in the brake-cylinder to be relieved, and at the other side to a determinate opposing force, a fluid-pressure chamber, the pressure in which acts in opposition to brake-cylinder pressure on the movable abutment, and means responsive to an emergency application of the brakes for admitting fluid-pressure to the latter chamber, and for permitting said pressure to escape at a predetermined rate, substantially as and for the purpose described.

3. The combination of a brake-cylinder discharge-valve, a movable abutment controlling the operation of the same, pressure-chambers at opposite sides of said movable abutment, one communicating with the brake-cylinder, a spring acting on said movable abutment in opposition to brake-cylinder pressure, and a supply-passage to the pressure-chamber on the side of the movable abutment opposite that communicating with the brake-cylinder, said supply-passage being provided with an inwardly-opening check-valve and a relatively small open passage past said check-valve, substantially as and for the purpose described.

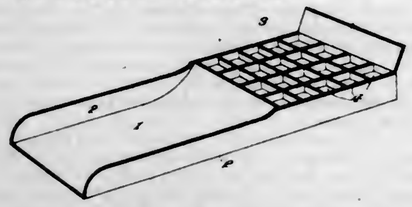
4. In a fluid-pressure brake, the combination with a movable abutment operated by brake-cylinder pressure for controlling a brake-cylinder outlet, of means operated by a sudden reduction in train-pipe pressure in emergency applications for supplying fluid-pressure to oppose the action of the brake-cylinder pressure on said abutment.

5. In a fluid-pressure brake, the combination with a movable abutment or valve subject to the opposing pressures of the brake-cylinder and a spring for controlling a brake-cylinder discharge-port, of a valve device operated by a sudden reduction in train-pipe pressure in emergency applications for supplying fluid-pressure to assist the spring in holding the discharge-port closed.

6. In a fluid-pressure brake, the combination with a movable abutment or valve for controlling a brake-cylinder discharge-port and adapted to be opened by the brake-cylinder pressure, of an air-chamber, a valve device operated by a sudden reduction in train-pipe pressure in emergency applications for supplying air under pressure to said chamber for holding the brake-cylinder discharge-port closed, and means for permitting a slow and gradual reduction of pressure in said air-chamber.

7. In a fluid-pressure brake, the combination with a movable abutment subject on one side to brake-cylinder pressure for controlling a brake-cylinder discharge-port, of a valve device operated by a sudden reduction in train-pipe pressure in emergency applications for supplying air to a chamber for opposing the action of the brake cylinder pressure on said abutment, and an outlet from said chamber.

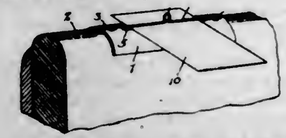
823,049. GAME APPARATUS. WILLIAM H. KELLY, Cheyenne, Wyo. Filed May 8, 1905. Serial No. 259,410.



Claim.—1. A game apparatus of the surface-projectile type comprising an alley provided with two longitudinal sides, a board held between said sides at one end of the alley in an elevated position, longitudinal and transverse intersecting vertical partitions on said board and dividing the same into a plurality of boxes, and said alley being provided adjacent said boxes with an upwardly-deflected portion, as and for the purpose set forth.

2. A game apparatus of the surface-projectile type comprising an alley provided with two longitudinal sides, an elevated board held between said sides at one end of the alley, longitudinal and transverse intersecting partitions on the upper surface of said board and dividing the same into a plurality of boxes, and said alley being provided at the rear end of said board with an upwardly and rearwardly curved portion, and projectiles designed to travel over said alley and be returned by the curved end thereof into the said boxes, as and for the purpose set forth.

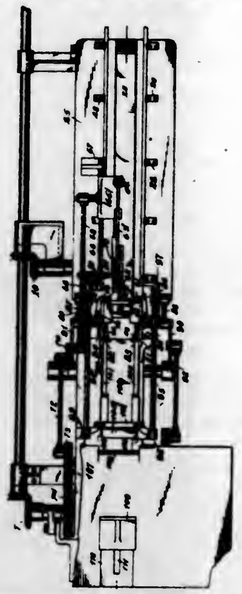
823,050. TICKET-HOLDER. GEORGE D. KENNEDY, Wilkes-Barre, and WHEELER B. ARMSTRONG, Plymouth, Pa. Filed Nov. 21, 1905. Serial No. 288,408.



Claim.—1. A ticket-holder comprising a plate-metal body provided with a longitudinal depression which is concaved in cross-section with its side walls rounding upwardly and outwardly merging into the top of the body, and a spring-wire having a substantially circular cross-sectional shape lying longitudinally within the open top of the depression with its ends connected to the body and its intermediate portion free from the body and out of contact therewith, the bottom and side walls of the depression being free from projections.

2. A ticket-holder comprising a plate-metal body which is convexed in cross-section and provided with a longitudinal depression in its convexed upper face, the bottom of the depression being concaved and its sides rounding upwardly and outwardly merging into the top of the body, there being perforations in the body at the ends of the depression and other perforations beyond the depression, a spring-wire having a substantially circular cross-sectional shape lying within the open top of the depression with its ends passed through the first-mentioned perforations and provided with terminal eyes located beneath the body in alinement with the other perforations, and fastenings passing through said other perforations and the eyes and serving to hold the body and the wire in place, the bottom and side walls of the depression being free from projections.

828,051. PACKING-MACHINE. JAMES A. KEYES, New York, N. Y. Filed Aug. 18, 1905. Serial No. 274,703.



Claim.—1. In packing-machines, a supply-belt to feed forward a series of articles, a stop adjacent said belt to aline the foremost article of said series, lifter operating adjacent said stop to act upon an article and lift it transversely into a runway, a retainer coöperating with said lifter to hold the lifted articles in position to form pairs of articles arranged edgewise in said runway, tripping projections coöperating with each pair of articles including yieldingly-mounted trippers, yielding holding-plates to engage said articles, a pusher provided with a lug, and yieldingly-mounted shelf and means to operate said pusher to engage each pair of articles adjacent the center of the same and buckle them together to lie flatwise on said runway, means to support a box at the end of said runway and insert mechanism to insert the articles in said runway into said box.

2. In packing-machines, means to feed a series of articles, a lifter, and coöperating retainer to form pairs of said articles arranged edgewise, tripping projections to engage said articles, holding-plates to engage said articles, a pusher provided with a lug and movable shelf and means to operate said pusher to engage each pair of said articles adjacent the center line of the same to buckle said articles together and feed them forward arranged flatwise and insert mechanism to feed said articles into a box.

3. In packing-machines, means to feed forward a row of articles, means to feed articles transversely from said row to form pairs of articles arranged edgewise, tripping projections to coöperate with each of said pairs of articles, a pusher provided with a lug and a movable shelf and means to operate said pusher to engage each pair of articles adjacent the center line of the same to buckle said articles together and arrange them flatwise.

4. In packing-machines, means to feed forward a row of articles, means to feed articles from said row to form pairs of articles arranged edgewise, tripping projections adjacent said pairs of articles and a pusher to engage said pairs of articles adjacent the center line of the same to buckle each pair of articles together and arrange them flatwise.

5. In packing-machines, means to feed articles in pairs arranged edgewise, tripping projections adjacent said pairs of articles and a pusher to engage each pair of said articles adjacent the center line of the same to buckle each pair of said articles together and arrange them flatwise.

6. In packing-machines, means to feed pairs of articles arranged edgewise and a pusher to engage each pair of said articles to buckle the same together and arrange said articles flatwise.

7. In packing-machines, means to feed forward a row of articles, a lifter and coöperating retainer to feed said articles from said row and arrange said articles in pairs edgewise, tripping projections coöperating with each pair of said articles and a pusher to engage each pair of articles and buckle the same together to arrange said articles flatwise.

8. In packing-machines, means to feed articles in pairs arranged edgewise, a runway, tripping projections in said runway coöperating with each pair of said articles and a pusher to engage each pair of articles adjacent the center line of the same to buckle said articles together and arrange them flatwise in said runway.

9. In packing-machines, a runway, means to feed pairs of articles arranged edgewise into said runway, yieldingly-mounted tripping projections coöperating with each pair of said articles, holding-plates in said runway, means to receive a box at the end of said runway, a pusher to engage each pair of said articles, buckle the same together and arrange them flatwise in said runway and insert means coöperating with said runway to engage a series of said articles and insert the same into said box.

10. In packing-machines, a runway, means to feed pairs of articles arranged edgewise into said runway, means to engage each pair of said articles, buckle the same together and feed them forward flatwise along said runway, and means to discharge a plurality of said pairs of articles simultaneously from said runway.

11. In packing-machines, a runway, means to feed articles in pairs arranged edgewise into said runway, means to engage each pair of said articles to buckle the same together and feed them along said runway arranged flatwise, box-receiving means at the end of said runway, including movable guiding members to receive a box and insert means to feed a plurality of said pairs of articles simultaneously into said box.

12. In packing-machines, a runway, a holding member adjacent said runway to coöperate with articles in the same, means to feed pairs of articles arranged edgewise into said runway, tripping projections coöperating with each pair of said articles in said runway and means to engage each pair of said articles adjacent the center line of the same to buckle the same together and feed them along said runway arranged flatwise.

13. In packing-machines, a supply-belt to feed forward a row of articles, an alining stop coöperating with said belt, a pair of lifters operating on either side of said belt to engage each article and move the same transversely from said belt, and a centrally-located movable retainer coöperating with said lifter to engage the articles fed by said lifter.

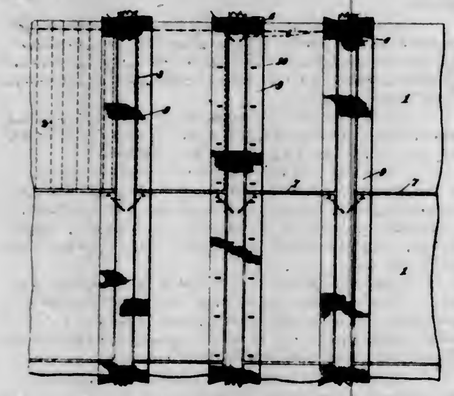
14. In packing-machines, a pusher to engage a pair of articles to buckle the same together and arrange said articles flatwise and means for actuating the pusher.

823,052. FIREPROOF PARTITION. ADOLPH B. KLOTZ, New York, N. Y. Filed May 4, 1905. Serial No. 258,751.

Claim.—1. The combination, in a partition or wall, of a series of vertical studs, plaster blocks set between said studs, cement keys inserted between the edges of the blocks and the studs and between the contiguous edges of adjacent blocks for permanently securing the blocks and studs together, and woven-wire laths permanently secured to the surface of the blocks on opposite sides of the studs and extending lengthwise of the latter, whereby a permanent and fireproof juncture between the said studs and blocks is produced and relative movement between the parts of the said joint is prevented.

2. The combination, in a partition or wall, of a series of vertical studs, plaster blocks set between the said studs, said blocks being secured to the studs by means of temporary fasteners to preliminarily

hold them in place, cement keys applied between the blocks and studs and between the contiguous edges of adjacent blocks for permanently securing the studs and blocks together, and means applied to the surface of the blocks and studs at the points between the same to prevent relative displacement thereof and completely cover the said joint, thus producing a solid, fire and vermin proof connection.



823,053. PROCESS OF RECOVERING RUBBER FROM RUBBER WASTE. WILLIAM A. KOHEMAN, Chicago, Ill. Filed Mar. 6, 1905. Renewed Oct. 9, 1905. Serial No. 282,019.

Claim.—1. The process of recovering rubber from rubber waste, which consists in boiling the finely-divided material in a mineral-acid solution with the addition of a halogen salt of the alkaline group, such as sodium or calcium chlorid, without setting free in a gaseous state the chlorin, bromin, or iodin, and removing the dissolved and decomposed fiber.

2. The process of recovering rubber from rubber waste, which consists in boiling the finely-divided material in a mineral-acid solution with the addition of a halogen salt of the alkaline group, such as sodium or calcium chlorid without setting free in a gaseous state the chlorin, bromin or iodin, and removing the dissolved and decomposed fiber and mineral substances.

3. The process of recovering rubber from rubber waste, which consists in boiling the finely-divided material in a mineral-acid solution with the addition of a halogen salt of the alkaline group, without setting free in a gaseous state the chlorin, bromin or iodin, removing the acid and dissolved matter from the rubber, then boiling the rubber in a solution of alkaline salt, and washing and drying the product.

4. The process of recovering rubber from rubber waste, which consists in first decomposing and then removing the fiber, and treating the resultant rubber product with a solution of an alkaline salt, such as soda or potash, with the addition of a chemical substance having a preservative effect on vegetable matter, such as boracic acid or sodium borate, and washing and drying the product.

5. The process of recovering rubber from rubber waste, which consists in first decomposing and then removing the fiber, and treating the resultant rubber product with a solution of an alkaline salt, such as soda or potash, with the addition of a soluble gum, and washing and drying the product.

6. The process of recovering rubber from rubber waste, which consists in first decomposing and then removing the fiber, and treating the resultant rubber product with a solution of an alkaline salt, such as soda or potash, with the addition of a chemical substance having a preservative effect on vegetable matter, such as boracic acid or sodium borate, and of a soluble gum, such as rosin or shellac, and washing and drying the product.

7. As a step in the recovery of rubber from rubber waste by decomposing and separating the fiber from the rubber by subjecting the material to the action of a suitable chemical solution, that of removing from the rubber product soluble compounds remaining from the solution employed in previous treatment, which consists in rendering said soluble compounds insoluble and removing them from the rubber product by precipitation.

8. As a step in the recovery of rubber from rubber waste by decomposing and separating the fiber from the rubber by subjecting the material to the action of a suitable chemical solution, that of removing from the rubber product soluble compounds remaining from the solution employed in previous treatment, which consists in rendering insoluble and precipitating said compounds by treating said product with a weak astringent solution of aluminium salt.

9. The process of recovering rubber from rubber waste which consists in boiling the material in a finely-divided state in a mineral-acid solution with the addition of a halogen salt, removing the dissolved fiber, boiling the rubber product in a solution of an alkaline salt, with the addition of a chemical substance having a preservative effect on vegetable matter and with a soluble gum, then treating the product with a weak astringent solution of an aluminium salt having the effect of rendering insoluble any remaining soluble compounds in the rubber and precipitating the same, and finally washing and drying the product.

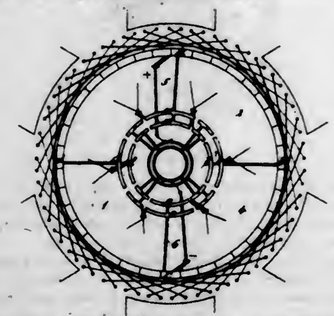
823,054. PROCESS OF TREATING VULCANIZED-RUBBER WASTE. WILLIAM A. KOHEMAN, Chicago, Ill. Filed May 22, 1905. Renewed Mar. 3, 1906. Serial No. 304,056.

Claim.—1. In the chemical treatment, for the purpose set forth, of vulcanized rubber or rubber compounds, the process of devulcanizing the same, which consists in boiling the material in a finely-divided condition, in an aqueous compound acid solution, practically free from oxidizing ingredients, of sulfuric acid, as the base, and an acid of the halogen elements of chlorin, bromin or iodin.

2. The process of treating vulcanized rubber or rubber compounds, for the purpose set forth, which consists in boiling the material, in a finely-divided condition, in an aqueous solution, practically free from oxidizing ingredients, of sulfuric acid and hydrochloric acid, and washing and drying the product.

3. The process of treating vulcanized rubber or rubber compounds, for the purpose set forth, which consists in boiling the material, in a finely-divided condition, in an aqueous compound acid solution, practically free from oxidizing ingredients, of sulfuric acid, as the base, and an acid of the halogen elements of chlorin, bromin or iodin, boiling the product in an alkaline solution, and washing and drying said product.

823,055. TRANSMISSION AND DISTRIBUTION OF ELECTRIC POWER. JACOB KRUISWIJK, Ryswijk, near The Hague, Netherlands. Filed Aug. 3, 1904. Serial No. 219,310.



Claim.—1. In a system for transmitting electric power, the combination of a continuous-current dynamo having an armature, a commutator with brushes for deriving current from said commutator, collecting-rings and means for leading current from certain points of the armature-winding to the collecting-rings, with means for connecting said points of the armature-winding with the brushes by the intermediacy of separate circuits, so that the currents of these circuits complement each other to the total current generated in the armature, substantially as described and for the purpose set forth.

2. In a system for transmitting electric power, the combination with a continuous-current dynamo, having a commutator and brushes for deriving current from said commutator, of collecting-rings, means for leading current from certain points of the armature-winding to the collecting-rings, a dividing-commutator for dividing the current into complementary phases, a reversing-commutator for reversing the phases of said complementary branch currents, means for connecting the dividing and reversing commutators with the direct-current dynamo, and means for transmitting the current from the dividing and reversing commutators to a distance, substantially as described and for the purpose set forth.

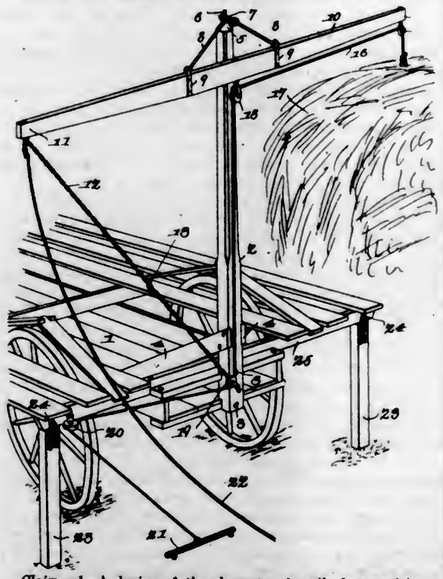
3. In a system for transmitting electric power, the combination in the generating-dynamo of the direct-current commutator with the distributing and the reversing commutator, substantially as described and for the purpose set forth.

4. In a system for transmitting electric power, the combination with a continuous-current dynamo, having a commutator, and brushes for deriving current from said commutator, of collecting-rings, means for leading current from certain points of the armature-winding to the collecting-rings, a dividing and reversing commutator for dividing the current of said dynamo into a number of branch currents of complementary phases, and for reversing the phases of the complementary branch currents, means for connecting the dividing and reversing commutator with the brushes and collecting-rings of the direct-current dynamo, and means for transmitting the current from the dividing and reversing commutator to a distance, substantially as described and for the purpose set forth.

5. In a system for transmitting electric power, the combination of a continuous-current dynamo, having collecting-rings and a commutator with brushes, of dividing and reversing commutators for dividing the current of said dynamo into complementary branch currents and for reversing the phases of these branch currents, means for connecting the dividing and reversing commutators to said collecting-rings and brushes, an electric transformer connected to the dividing and reversing commutators, and means for transmitting the current from the transformer to a distance, substantially as described and for the purpose set forth.

6. In a system for transmitting electric power, the combination of a continuous-current dynamo, having collecting-rings and a commutator with brushes of dividing and reversing commutators for dividing the current of said dynamo into complementary branch currents, and for reversing the phases of these branch currents, means for connecting the dividing and reversing commutators to said collecting-rings and brushes, an electric transformer connected to the dividing and reversing commutators, a current-transmitting line, one end of which being connected to said transformer, a transformer connected to the other end of said line, and a rereversing-commutator connected to the latter transformer for rereversing the complementary currents transmitted by the line, substantially as described and for the purpose set forth.

823,056. HAY-RACK. CHARLES J. LARSON, Argyle, Minn. Filed Nov. 11, 1905. Serial No. 286,833.



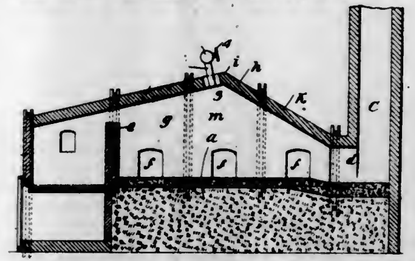
Claim.—1. A device of the character described comprising a vehicle-body, a mast rigidly upstanding from the body and having a tapered end, a stud upon said end, a ring rotatably mounted on the stud, a boom, brace-rods connecting the ring and boom and supporting said boom, load-raising means connected to one end of the boom, and adjustable means secured to the other end of the boom and to the mast for holding the boom at a desired angle to the mast.

2. A device of the class described comprising, a vehicle-body, a mast rigidly upstanding from the body and having a conical upper extremity with a stud rigidly extending from its axis, a ring embracing the stud and bearing upon the conical surface, reversely-inclined brace-rods carried by the ring, a boom carried by the brace-rods and rotatable about the mast, and means to raise a load from the end of the boom.

3. A device of the class described comprising, a vehicle-body, a mast rigidly upstanding from the body and having a conical upper extremity with a stud rigidly extending from its axis, a ring loosely embracing the stud and bearing upon the conical surface, reversely-inclined brace-rods carried by the ring, a boom carried by the brace-rods, means connecting one end of the boom and the bottom of the mast, means to vary the length of the connection and raise and lower the end of the boom, means carried at the other end of the boom to raise and suspend a load and means to swing the boom about the mast.

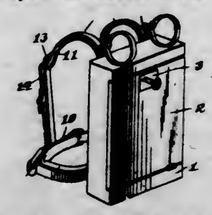
4. A device of the class described comprising, a vehicle-body, a mast rigidly upstanding from the body and having a conical upper extremity with a stud rigidly extending from its axis, a ring loosely embracing the stud and bearing upon the conical surface, reversely-inclined brace-rods carried by the ring, a boom carried by the brace-rods and disposed with its middle point adjacent the mast, a cable connecting one end of the boom and the foot of the mast and embodying means for varying the length, a cable suspended from the other end of the boom and carrying means for engaging a load and passing through properly-disposed pulleys and provided with means for attaching power, a cable attached to one end of the boom and adapted as means to rotate the boom about the mast, and standards hinged to the under side of and to support the body.

823,057. METALLURGICAL FURNACE. BERNARD C. LAUTH, Pittsburg, Pa. Filed June 23, 1905. Serial No. 266,436.



Claim.—A metallurgical furnace of the class described having a roof provided with an apex and openings near the apex thereof, establishing communication between the outer air and the interior of the furnace at the point where the height of the furnace above the bottom thereof is greatest, combined with a blast-pipe having contracted nozzles discharging jets of air under pressure through said openings downwardly into the furnace, the diameter of such openings exceeding that of such nozzles so that atmospheric air from the exterior of the furnace is also drawn by such jets through said opening downwardly into the furnace to promote combustion therein, substantially as described.

823,058. LUGGAGE-CARRIER. DAVID D. LEAVY, Wabbaseka, Ark. Filed July 31, 1905. Serial No. 272,092.



Claim.—1. In a device of the character described, the combination of a box or case, metal straps secured to the back of said box, the upper ends of said straps being bent so as to form suspension-

hooks adapted to fit upon the shoulders of the wearer, strips connected to the upper portion of the metal straps, one end of the strips extending into the interior of the box and both ends of the strips being provided with means for securing a bundle thereto, and a waistband secured to the lower portion of the box.

2. In a device of the character described the combination of a box or case, metal straps secured to the back of said box, the lower ends of said straps being bent so as to embrace the bottom of the box while the upper ends of the straps are bent so as to form suspension-hooks adapted to fit upon the shoulders of the wearer, strips secured to the upper portion of the metal straps and provided at both ends with means for securing a bundle thereto, one of the ends of said strips passing into the interior of the box, and a waistband connected to the metal straps at the lower portion of the box by means of spring members.

3. In a device of the character described, the combination of a box or case, straps secured to the back of the box the lower ends of said straps being bent so as to embrace the lower side of the box while the upper ends are bent to form suspension-hooks which are adapted to fit upon the shoulders of the wearer, a ring secured at each end of the portion of the strap embracing the lower side of the box by means of which a package can be secured to the bottom of the box.

823,059. **ROCK-DRILL.** EDWARD LEICHTER, Nevada City, Cal., assignor of one-fourth to John Bender, Hamilton, Ohio, and one-fourth to J. C. Campbell, Nevada City, Cal. Filed May 20, 1905. Serial No. 261,294.



Claim.—1. In a rock-drill, the combination, substantially as set forth, of a shell, means for turning and advancing said shell, a cylinder within the shell, a fluid-actuated piston reciprocating within the cylinder, a chuck-body separably disposed within the forward end of the shell and having a chambered portion within the shell, and a bushing secured in the forward end of the shell and serving to retain the chuck-body therein.

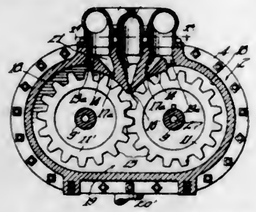
2. In a rock-drill, the combination, substantially as set forth, of a shell, means for turning and advancing said shell, a separate cylinder within the shell, a fluid-actuated piston reciprocating within the cylinder, a chuck-body separably disposed within the forward end of the shell, and a bushing secured in the forward end of the shell and serving to retain the chuck-body therein.

3. In a rock-drill, the combination, substantially as set forth, of a shell, means for turning and advancing said shell, a cylinder within the shell, a fluid-actuated piston reciprocating within the cylinder, an exteriorly-shouldered chuck-body separably disposed within the forward end of the shell, having a chambered portion within the shell, and abutting against the forward end of the cylinder, a bushing secured in the forward end of the shell, and a cushion-ring disposed between said bushing and the shoulder of the chuck-body.

4. In a rock-drill, the combination, substantially as set forth, of a shell, means for turning and advancing said shell, a cylinder within the shell, a fluid-actuated piston reciprocating within the cylinder, an exteriorly-shouldered chuck-body separably disposed within the forward end of the shell and abutting against the forward end of the cylinder, a bushing secured in the forward end of the shell, a cushion-ring disposed between said bushing and the shoulder of the chuck-body, and keys engaging the bushing and chuck-body and adapted to permit reciprocation and prevent rotation of the chuck-body and bushing relative to each other.

5. The combination of an outer shell having an exterior screw-thread and a uniform cylindrical bore; a separate cylinder fitting within the shell and having its rear end flush with the rear end of said shell; a cylinder-head serving to close the rear end of said cylinder and having a flange resting against the rear end of the cylinder and shell; a cap bearing against the flange of the cylinder-head; and an interiorly-threaded ring engaging screw-threads on said cap and said shell and serving to secure the parts described in position.

823,060. **COMPOUND FLUID-PRESSURE MOTOR.** JOSEPH P. MAGNEY and WILLIAM H. MASTERMAN, Los Angeles, Cal., Frederick R. Kellogg administrator of said Masterman, deceased, assignors to National Engine Company, Los Angeles, Cal., a Corporation of Arizona. Filed Aug. 1, 1905. Serial No. 272,163.



Claim.—1. A compound engine comprising a high-pressure cylinder having a high-pressure inlet and intermediate pressure and low-pressure outlets and a cylinder having an inlet connection to the intermediate pressure-outlet of the high-pressure cylinder.

2. A compound engine comprising a high-pressure cylinder having an inlet-port and having a plurality of outlet-ports and a piston member movable in the cylinder and provided with fluid-receiving means communicating, in the movement of said piston member, successively with the inlet-port and with the outlet-ports for delivering to said outlet-ports fluid at successively lower pressures and cylinders having supply connections respectively to said outlet-ports

3. A compound engine comprising a high-pressure cylinder and a lower-pressure cylinder connected to the high-pressure cylinder at a point of intermediate pressure therein.

4. A compound engine comprising a plurality of cylinders, rotary piston members therein having intermeshing teeth, the wall of each cylinder having a portion extending between the piston members to fit the peripheral faces of the teeth, and provided with a central inlet-port, said wall portion of one of the cylinders being provided with an outlet-port at one side of the inlet and a connection between said outlet and the inlet of another cylinder.

5. A compound engine comprising a plurality of cylinders, rotary piston members therein having intermeshing teeth, the wall of each cylinder having a portion extending between the piston members to fit the peripheral faces of the teeth, and provided with a central inlet-port, said wall portion of one of the cylinders being provided with an outlet-port at each side of the inlet and a connection between said outlet and the inlet of another cylinder.

6. A compound engine comprising a high-pressure cylinder having a high-pressure inlet and intermediate and low pressure outlets, piston members in said cylinder movable to open communication with said ports successively, an intermediate-pressure cylinder having an inlet connected to the aforesaid intermediate outlet-port of the high-pressure cylinder and having an outlet connected to the aforesaid low-pressure outlet-port of the high-pressure cylinder.

7. A compound engine comprising a high-pressure cylinder having a high-pressure inlet and intermediate and low pressure outlets, piston members in said cylinder movable to open communication with said ports successively, an intermediate-pressure cylinder having an inlet connected to the aforesaid intermediate outlet-port of the high-pressure cylinder and having an outlet connected to the aforesaid low-pressure outlet-port of the high-pressure cylinder, and a low-pressure cylinder provided with an outlet and having an inlet-port connected to the low-pressure outlet of the high-pressure cylinder and to the outlet of the intermediate-pressure cylinder.

8. An engine comprising two rotary piston members provided with intermeshing teeth and a cylinder inclosing said members and having a wall portion extending between the members and fitting the peripheral faces of the teeth of said members, said wall portion formed with inlet and outlet ports, and the inner wall of the cylinder being clear of the piston members at other points.

9. An engine comprising two rotary piston members formed as intermeshing gears and a cylinder inclosing said gears and formed on one wall with a face portion extending between said gears and fitting the peripheral faces of the teeth thereof, said face portion being provided with inlet and outlet ports and the remaining portion of said wall of the cylinder being separated from the gears to form a low-pressure chamber in the cylinder, the cylinder being provided with an exhaust-port communicating with said low-pressure chamber.

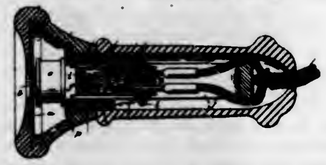
10. An expansive fluid-pressure engine comprising a cylinder, piston means movable therein and dividing the cylinder into high-pressure, intermediate-pressure and low-pressure portions, said cylinder being provided with ports communicating respectively with said high-pressure, intermediate-pressure and low-pressure portions, a supply connection to the high-pressure port and an engine-cylinder having a supply connection from the intermediate-pressure port.

11. An expansive fluid-pressure engine comprising a cylinder having high-pressure and low-pressure ports, and provided with an outlet connection from a point of intermediate pressure.

12. An expansive fluid-pressure engine comprising a cylinder having high-pressure and low-pressure ports, and provided with an outlet connection from a point of intermediate pressure, and means for conducting away and utilizing the fluid from said intermediate-pressure outlet.

13. An expansive fluid-pressure engine comprising a cylinder having high-pressure and low-pressure ports, and provided with an outlet connection from a point of intermediate pressure, and piston means connected to and utilizing the fluid from said intermediate-pressure outlet.

823,061. **TELEPHONE-RECEIVER.** CHARLES T. MASON, Sumter, S. C., assignor to Sumter Telephone Manufacturing Company, Sumter, S. C. Filed Mar. 17, 1905. Serial No. 250,524.



Claim.—In a telephone-receiver, the combination with a magnet structure, of a threaded block molded around the front end of the magnet and the rear ends of the pole-pieces, and having a shoulder around its front end, a cup-section forming the middle part of the casing and in which the block is screwed, leaving a space between said shoulder and the bottom of the cup, in which space cement is placed to permanently fix the block in the cup, coils on the pole-pieces, having terminals which extend through holes in the block, and a handle which incloses the rear end of the magnet structure and is screwed on the rear end of the block.

823,062. **FORM FOR CYLINDER-PRESSES.** JAMES H. MATTHEWS, Pittsburg, Pa. Filed Sept. 1, 1905. Serial No. 276,718.



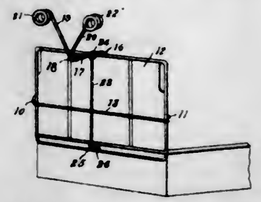
Claim.—1. In a form for cylinder printing-presses, the combination of a curved base-plate of spring metal, type having flanges on their bases, fixed edges on said base-plate adapted to engage said flanges, adjustable spacing-strips adapted to engage said flanges and to aline and lock said type when said base-plate is bent out of its normal shape and means when said base-plate springs back into its normal shape for securing the ends of said spacing-strips.

2. In a form for cylinder printing-presses, the combination with a curved base-plate of spring metal and flanged type, of movable locking-strips adapted to secure said type in place when said base-plate is bent out of its normal shape and means for securing the ends of said strips.

3. In a device of the class described, the combination with flanged type, of a curved resilient plate having fixed edge strips adapted to engage one flange of said type, locking-strips to aline and lock said type in place when tension is applied by the resiliency of said plate, means for retaining the ends of said locking-strips and auxiliary means for locking said strips before said tension is applied.

4. In a form for cylinder printing-presses, a curved base-plate, an adjustable spacing-strip, a flanged strip fixed to said base-plate and adapted to engage one end of said spacing-strip, a second fixed strip adapted to hold the end of said spacing-strip in said engagement, a pair of complementary beveled strips fixed to the opposite end of said base-plate, a strip fixed to said base-plate parallel with said complementary strips and means carried by said complementary strips for clamping the other end of said adjustable strip against said last-mentioned fixed strip, substantially as described.

823,063. **REIN-HOLDER.** ELIHU MAY, Magee, Miss. Filed Oct. 27, 1905. Serial No. 284,723.



Claim.—1. A dash-supported rein-holder comprising a bar having an intermediate portion thereof extended transversely across the face of the dash and its opposite ends bent upwardly at the rear of the dash and thence extended laterally over the top of the same to form a horizontally-disposed arm terminating in spaced rein-supporting members.

2. A dash-supported rein-holder comprising a bar having an intermediate portion thereof extended transversely across the face of the dash and its opposite ends bent upwardly at the rear of the dash and thence extended laterally over the top of the same to form a horizontally-disposed arm, the ends of the bar forming the arm being intercoiled and provided with rein-supporting whorls.

3. A dash-supported rein-holder comprising a bar having an intermediate portion thereof extended transversely across the face of the dash and its opposite ends bent upwardly at the rear of the dash and intertwisted to form a laterally-extended arm, the ends of the wire forming the arm being bent upwardly and the terminals thereof spaced apart and provided with rein-supporting members.

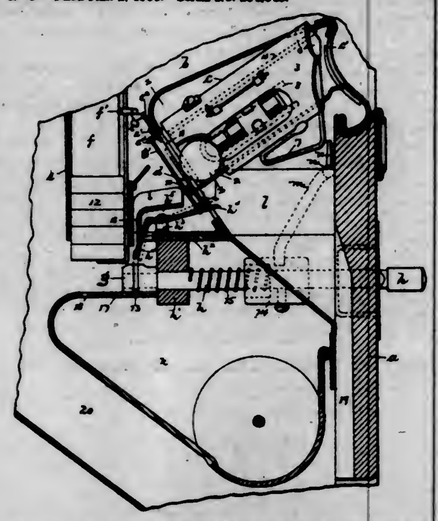
4. A dash-supported rein-holder formed of a single piece of wire, an intermediate portion of which is extended transversely across the face of the dash and its opposite ends bent over the sides of the dash and extended upwardly at the rear of the latter and thence intertwisted and extended laterally over the top of the dash to form a horizontally-disposed arm, the free ends of the wire being spaced apart and coiled to form horizontally-disposed rein-supporting whorls.

5. The combination with a vehicle having a dash secured thereto, of a rein-holder comprising a bar having an intermediate portion thereof extended transversely across the face of the dash and its opposite ends bent upwardly at the rear of the dash and thence extended laterally over the top of the same to form an overhanging arm terminating in spaced upwardly-extending rein-supporting members, and an attaching member carried by the overhanging arm and having its opposite end secured to the vehicle.

6. The combination with a vehicle having a dash secured thereto, of a rein-holder comprising a bar having an intermediate portion thereof extended transversely across the face of the dash and its opposite ends bent upwardly at the rear of the dash and thence ex-

tended laterally over the top of the same to form an overhanging arm provided with spaced rein-supporting whorls, and an attaching-rod one end of which is provided with a loop for the reception of the overhanging arm and the opposite end thereof provided with a hook adapted to detachably engage the vehicle.

828,064. VENDING-MACHINE. AUGUST MERCKENS, Brooklyn, N. Y. Filed Jan. 2, 1906. Serial No. 294,868.



Claim.—1. In an automatic vending-machine, the combination with a casing, a coin-chute and a receptacle for the packages to be vended, of a device for closing the end of the coin-chute, and means actuated by the coin after the same has passed through the coin-chute for operating said device to close the coin-chute.

2. In an automatic vending-machine, the combination with a casing, a coin-chute and a receptacle for the packages to be vended, of a device for closing the end of the coin-chute, means actuated by the coin after the same has passed through the coin-chute for operating said device to close the coin-chute, a push-rod by the actuation of which, through the intervention of the coin, the packages may be ejected from the said receptacle, means actuated upon operating the push-rod for releasing articles retained in the coin-chute and means for returning the said articles to the operator.

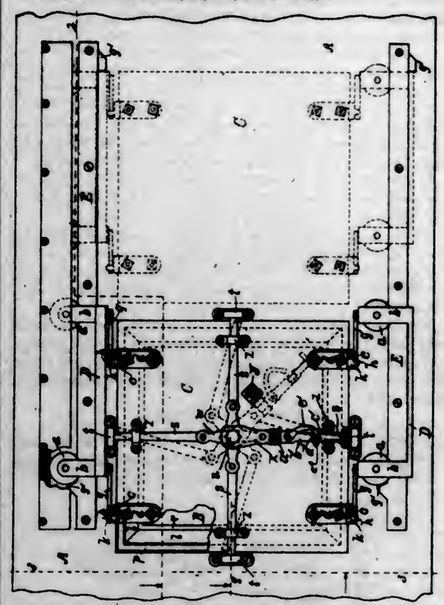
3. In an automatic vending-machine, the combination with a casing, a package-receptacle, a frame and a coin-chute within the said frame, of a plate pivotally mounted on the said frame and adapted when raised to close the inner end of the coin-chute, and a lever adapted to be actuated by the coin after the same has passed through the coin-chute to raise the said plate to close the coin-chute.

4. In an automatic vending-machine, the combination with a casing, a package-receptacle, a frame and a coin-chute within the said frame, of a plate pivotally mounted on the said frame and adapted when raised to close the inner end of the coin-chute, a lever adapted to be actuated by the coin after the same has passed through the coin-chute to raise the said plate to close the coin-chute, a push-rod, means actuated upon operating the push-rod for releasing articles retained in the coin-chute and means for returning the said articles to the operator.

5. In an automatic vending-machine, the combination with a casing, a package-receptacle, a frame and a coin-chute within the said frame, of a plate pivotally mounted on the said frame and adapted when raised to close the inner end of the coin-chute, a lever adapted to be actuated by the coin after the same has passed through the coin-chute to raise the said plate to close the coin-chute, a rocker-arm also pivotally connected to the inner member of said frame, a connection between the said rocker-arm and said plate, means operative when the package-receptacle is empty for actuating the rocker-arm to cause the said plate through the said connection to be raised to close the end of the coin-chute, a push-rod and means operative upon actuating the push-rod for releasing and returning articles retained in the coin-chute.

6. In an automatic vending-machine, the combination with a casing, a package-receptacle, a frame and a coin-chute within the said frame, of a plate pivotally mounted on the said frame and adapted when raised to close the inner end of the coin-chute, a lever adapted to be actuated by the coin after the same has passed through the coin-chute to raise the said plate to close the coin-chute, a rocker-arm, a rod connecting the corresponding ends of the said rocker-arm and plate, a weight within the said package-receptacle, a projection secured to the said weight and adapted when the package-receptacle is empty to engage the said rocker-arm to raise the said plate through the intervention of the said rod to close the coin-chute, a push-rod and means operative upon actuating the push-rod for releasing and returning articles retained within the coin-chute.

828,065. DOOR. JOSEPH A. MEYER and JOSEPH S. SATTER, Rochester, N. Y. Filed Nov. 8, 1905. Serial No. 286,407.

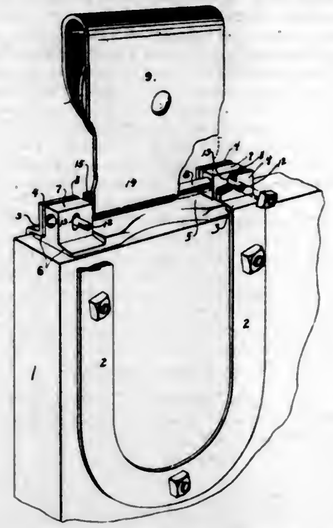


Claim.—1. The combination of a door, upper and lower tracks, upper and lower trucks having wheels running on said tracks, carrying-arms pivotally connected at one end to the standards of said trucks, the other ends of said arms being formed with circular heads having peripheral recesses and shoulders, vertically-disposed brackets on the door at top and bottom and projecting beyond the top and bottom edges of the door, each bracket having a laterally-expanded part at its projecting end with a vertically-projecting stud and an integral vertically-disposed center pin, said pins being engaged in openings in the ends of the carrying-arms and said studs disposed in said peripheral recesses and engaging said shoulders,

2. The combination of a door, upper and lower tracks, upper and lower trucks having wheels running on said tracks, carrying-arms pivotally connected at one end to the standards of said trucks, the other ends of said arms being formed with circular heads having peripheral recesses and shoulders, vertically-disposed brackets on the door at top and bottom and projecting beyond the top and bottom edges of the door, each bracket having a laterally-expanded part at its projecting end with a vertically-projecting stud and an integral vertically-disposed center pin, said pins being engaged in openings in the ends of the carrying-arms and said studs disposed in said peripheral recesses and engaging said shoulders, and oppositely-disposed stops on opposite ends of the tracks, one for engagement with a wheel of the truck and the other for engagement with a standard of the truck for limiting the movement of the door.

828,066. DOOR-HANGER. D. D. MILLER, Wooster, Ohio. Filed Jan. 27, 1906. Serial No. 298,891.

Claim.—1. In a door-hanger, a door, and a head provided with upwardly-extended flanges and inclined-faced flanges, suspending-straps provided with inclined portions adapted to rest upon the inclined faces of the flanges of the head, a hinge-bar carried by the upward-extended flanges and means for clamping the suspending-straps to the upward-extended flanges, and a housing hinged to the hinge-bar, said housing provided with a roller adapted to travel upon a track or way, substantially as and for the purpose specified.



2. In a door-hanger, a door, door-suspending straps, a head or block provided with strap-connecting flanges, the straps adapted to be connected to the flanges, filling-blocks located between the strap-connecting flanges and the upper ends of the suspending-straps, substantially as and for the purpose specified.

3. In a door-hanger, a door, suspending-straps provided with angled portions at their upper ends, a head provided with upwardly-extended flanges, said head provided with elongated apertures, a hinge-bar connected to the upward-extended flanges, bolts adapted to clamp the suspending-straps and adapted to secure the hinge-bar in position, substantially as and for the purpose specified.

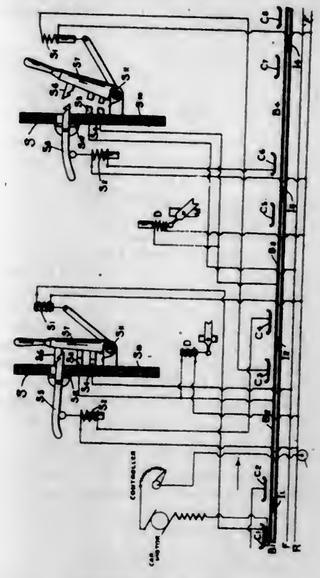
4. In a door-hanger, the combination of a door, door-straps adjustable to and from each other and provided with inclined portions and portions formed parallel with the main portions of the suspending-straps, a head or block provided with upwardly-extended flanges and inclined-faced flanges upon opposite sides of the upwardly-extended flanges and filling-blocks adapted to be clamped between the upwardly-extended flanges and the upper end angled portions of the suspending-straps, and clamping-bolts adapted to clamp the suspending-straps, and a hinge-bar held in position by the clamping-bolts, substantially as and for the purpose specified.

828,067. ELECTRIC-RAILWAY SYSTEM. JOHN L. MOORE, New York, N. Y. Filed Nov. 16, 1904. Serial No. 232,995.

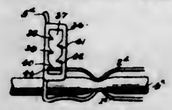
Claim.—1. In an electric-railway system having a working conductor divided into insulated sections, a switch for each section controlling the flow of power-current thereto, a magnet for closing said switch and a magnet for opening the switch, in combination with spring-pressed contact-plates severally connected to said magnets and mounted directly above the sections of said working conductor and adapted to electrically engage the upper surface of the current-collector of the trains traversing the system, whereby the collector completes successively through itself a path of current between said sections and said plates.

2. In an electric-railway system, the combination with a working conductor, of a current-collector for traveling thereon, a contact-plate mounted directly above said conductor and spring-pressed toward the contact-surface thereof whereby to electrically engage the upper surface of the said current-collector to receive current therethrough from said conductor.

3. In an electric-railway system having a working conductor divided into insulated sections, a switch for each section controlling the flow of power-current thereto consisting in the combination of a lever S^1 mounted upon a suitable foundation and bearing a pair of contacts and normally held in retracted position by a spring, a pair of coacting contacts, a latch for holding the switch closed and said contacts electrically engaged, a solenoid-magnet on the side of the foundation with said lever for closing the switch and a solenoid-magnet on the opposite side of the foundation for tripping said latch to allow the switch to open, said magnets being energized successively through the agency of a passing train whose power-current is controlled by said switch.



828,068. CLAMP FOR FLEXIBLE TUBES. JAMES W. MOSLEY, Bridgeport, Conn. Filed June 16, 1905. Serial No. 265,558.



Claim.—1. A clamp or shut-off for flexible tubes having arms adapted to have a flexible tube passed between them, with means on said arms to engage the tube, an escapement mechanism connected with said arms comprising pallets and oppositely-located stops whereby said clamp is adapted to be operated by a step-by-step movement, for the purpose set forth.

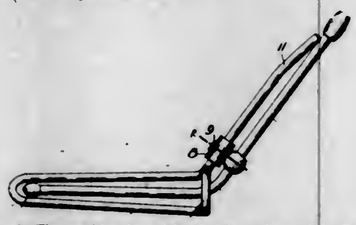
2. A clamp or shut-off for flexible tubes having arms adapted to have a flexible tube passed between them, with means on said arms to engage the tube, one of said arms carrying an upright with oppositely-located stops, the other arm carrying pallets adapted to forcibly engage with said stops whereby the clamp is adapted to be operated by a step-by-step movement, for the purpose set forth.

3. A clamp or shut-off for flexible tubes having arms adapted to have a flexible tube passed between them, with means on said arms to engage the tube, one of said arms carrying a movable upright with oppositely-located stops thereon, the other arm carrying pallets adapted to be alternately and automatically brought into forcible contact with said stops so that, said clamp is adapted to be operated by a step-by-step movement, for the purpose set forth.

4. A clamp or shut-off having arms to embrace a flexible tube, a movable upright on one of said arms, a series of stops on said upright, oppositely-located pallets on the other arm to engage said stops so that, when the upright is moved to release one of said pallets, the opposite pallet will automatically engage the next stop of the series and thereby effect a gradual release of pressure on the tube, for the purpose set forth.

5. A clamp or shut-off for flexible tubes having arms adapted to have a flexible tube passed between them, said arms carrying escapement mechanism comprising oppositely-located pallets carried by one arm, and the other arm carrying a series of stops adapted to be automatically and alternately engaged by said pallets, means to bring about such engagement so as to effect a gradual release of pressure on the tube and, at the same time, prevent a full opening of the clamp when shifting from one stop to another, for the purpose set forth.

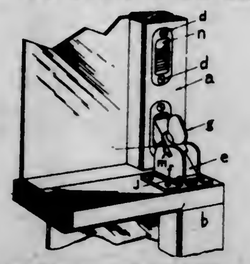
823,069. VAGINAL SYRINGE. JOHN T. MCCARTHY, Baltimore Md., assignor of one-half to John J. Riordon, Jr., Baltimore, Md. Filed Aug. 28, 1905. Serial No. 276,019.



Claim.—1. The combination with a nozzle, a sleeve thereon and a pin projecting from the sleeve, of a pair of dilators pivoted on the pin and forming a housing about the spray end of the nozzle when together, and handles on their outer ends.

2. The combination with a nozzle, a sleeve thereon and a pin projecting from the sleeve, of a pair of dilators pivoted on the pin and forming a housing about the spray end of the nozzle when together, and handles on their outer ends, said pin screw-threaded at its free end, a nut removably secured thereon, and bearings on the dilators embracing each other and pivotally mounted on the pin.

823,070. LOCK FOR WINDOW-SASH. THOMAS T. MCENTEE, Steelton, Pa. Filed Jan. 12, 1906. Serial No. 295,663.



Claim.—A lock device for window-sash consisting of metal base *f* having two uprights attached thereto, said uprights having holes drilled therein to admit of the pin *j* which secures the lock-bar *e* and having also therein notches *l*; the metal lock-bar *e* having the pin *g* engaged therein with the lug *m* rigidly attached; the operation of said metal lock-bar *e* being controlled by the steel spring *h* fastened to the said metal base *f* by means of the set-screw *i*; said lock-bar *e*, engaging in the side or middle rails of the upper sash of a window by means of notches *n* protected by the metal keeper-plate *o* as secured by screws *d* substantially as described.

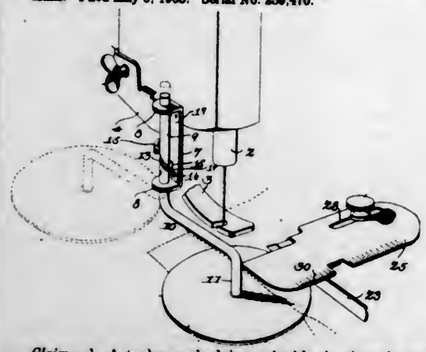
823,071. KETTLE-COVER FASTENING. ANDREW W. NELSON, Terre Haute, Ind., assignor to Columbian Enameling & Stamping Company, Terre Haute, Ind., a Corporation of Indiana. Filed Oct. 9, 1905. Serial No. 282,695.



Claim.—1. In mechanism of the class described, in combination with the receptacle to be covered and a cover for the same; gripping means on one side of the cover adapted to engage the edge of the receptacle to be covered, a normally stationary handle rising from approximately the center of the receptacle-cover, and an independent member comprising; a handle for the center of the cover, means for engaging the edge of the receptacle and connecting means between the same and said handle; said independent member passing under and bearing against said stationary handle in such a way that as the second handle is lifted the gripping means connected with it is forced into engagement with the edge of the receptacle opposite to said first gripping means whereby said cover is held upon the receptacle.

2. In combination with a kettle and cover for the same; a stationary handle at the center of the cover and gripping means at one edge of the cover, said stationary handle and gripping means being formed from one piece of wire permanently secured to the cover by any suitable means; and an independent member also made of one piece of wire composed of gripping means adapted to engage the kettle on the opposite side from said first gripping means, wires extending from said last gripping means toward and under said permanent first handle and a movable second handle adapted to bear against said first handle on the opposite side of said first handle from said second gripping means; the whole being arranged as shown and described; so that lifting upon the movable second handle clamps the cover upon the kettle or receptacle and releasing the hold upon the said movable handle and tilting said independent member about the first handle releases the gripping mechanism as described so that the cover may be removed from the kettle.

823,072. SEWING-MACHINE TUCKER. CARRICK P. OLDHAM, Newton, Kans., assignor of one-third to Gideon D. Mitchell, Newton, Kans. Filed May 8, 1905. Serial No. 259,470.



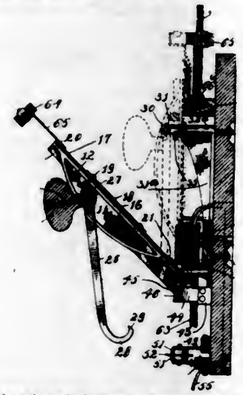
Claim.—1. A tucker embodying a double-L-shaped support adapted for swinging movements and provided with a spiral groove, a revoluble tucking element carried by one member of the support, and a locking device engaging the groove and operating to convert the swinging movements into spiral movements when the support is moved to operative and inoperative positions.

2. A tucker embodying a double-L-shaped supporting-arm one member of which is provided with a locking-dog and with a spiral groove terminating in an orifice, a rotary tucking element combined with the other member, a bracket in which the first-named member is journaled, a locking-spring carried by the bracket to engage the locking-dog to hold the tucking element in operative position, and a stop carried by the bracket and engaging the groove and orifice to raise the tucking member and to hold it in inoperative position.

3. A tucker embodying a double-L-shaped support adapted for swinging movements and provided with a spiral groove, a revoluble tucking element carried by one member of the support, a locking device engaging the groove and operating to convert the swinging movements into spiral movements when the support is moved to operative and inoperative positions, a base carrying a work-guide, and a combined tuck-width gage and fold-plate adjustable longitudinal of the base and having one end disposed over the tucking member when the latter is in operative position.

823,078. ELECTRIC SWITCH. WILLIAM J. O'LEARY and WILLIAM COGHAN, Montreal, Canada, assignors to W. J. O'Leary & Company, Montreal, Canada. Filed Aug. 4, 1904. Serial No. 219,435.

Claim.—1. In an electric switch, the combination of a bed-plate, a gravity-actuated frame pivotally mounted thereon, a pivotally-supported locking member, and locking means carried by said bed-plate in position to engage the respective ends of said pivoted locking member, substantially as described.



2. In an electric switch, the combination of a bed-plate, a gravity-actuated frame pivotally mounted thereon, a locking member pivotally connected to said frame and provided with catches at its respective ends, and locking means carried by the bed-plate in position to engage said catches, substantially as described.

3. In an electric switch, the combination of a bed-plate, a gravity-actuated frame pivotally mounted thereon, a locking member pivotally secured to said frame and provided with catches at its respective ends, a fixed member carried by the frame in position to engage one of said catches, and a movable member carried by said frame in position to engage the other of said catches, substantially as described.

4. In an electric switch, the combination of a bed-plate, a gravity-actuated frame pivotally mounted thereon, a locking member pivotally secured to said frame and provided with catches at its respective ends, a fixed member adjustably carried by the frame in position to engage one of said catches, and a movable member carried by said frame in position to engage the other of said catches, substantially as described.

5. In an electric switch, the combination of a bed-plate, a gravity-actuated frame pivotally mounted thereon, a locking member pivotally connected to said frame and provided with catches at its respective ends, an adjustable means carried by said frame in position to engage one of said catches, an armature-plate carried by said bed-plate for engagement with the other of said catches, and a magnet for actuating said armature-plate, substantially as described.

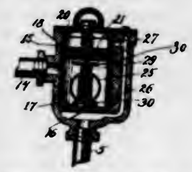
6. In an electric switch, the combination of a bed-plate, a gravity-actuated frame pivotally mounted thereon, a locking member pivotally connected to said frame, a gravity-actuated armature-plate arranged to lockingly engage said pivoted locking member, a magnet for actuating said armature-plate, a stop arranged to limit the movement of said armature-plate and provided with means for limiting the swing of said pivoted locking member, substantially as described.

7. In an electric switch, the combination of a bed-plate, circuit-terminals electrically insulated on said bed-plate, a gravity-actuated frame pivotally mounted on the bed-plate, electric conducting members carried by said pivoted frame and adapted to complete the circuit between said circuit-terminals, a locking member pivotally connected to said frame, and locking means carried by the bed-plate in position to engage the respective ends of said pivoted locking member, substantially as described.

8. In an electric switch, the combination of a bed-plate, circuit-terminals electrically insulated on said bed-plate, a gravity-actuated frame pivotally mounted on the bed-plate, electric conducting members resiliently supported on said pivoted frame and adapted to complete the circuit between said circuit-terminals, a locking member pivotally connected to said frame, and locking means carried by the bed-plate in position to engage the respective ends of said pivoted locking member, substantially as described.

9. In an electric switch, the combination of a bed-plate, circuit-terminals electrically insulated on said bed-plate, a gravity-actuated frame pivotally mounted on the bed-plate, flexible contacts carried by said pivoted frame, and adapted to complete the circuit between said circuit-terminals, a locking member pivotally connected to said frame, and locking means carried by the bed-plate in position to engage the respective ends of said pivoted locking member, substantially as described.

823,074. HEATING SYSTEM. ANDREW G. PAUL, Boston, Mass., assignor to Pakin Company, a Corporation of New York. Filed Apr. 16, 1901. Serial No. 56,056.



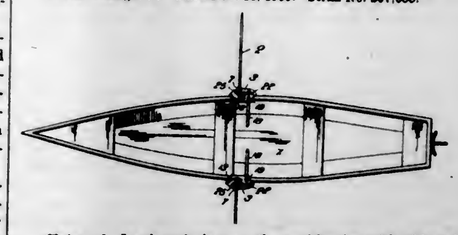
Claim.—1. A radiator attachment for use in heating systems consisting of a discharge-valve device comprising a suitable valve-casing provided with a port for the discharge of the water, a fluid-pressure motor controlling said port, the casing being provided with a fluid-pressure chamber on one side of the motor, an air-passage extending through the fluid-pressure motor, a valve-piece adapted to close the air-passage, a float adapted to slide on the valve-piece and to operate the same, substantially as set forth.

2. A radiator attachment for use in heating systems consisting of a discharge-valve device comprising a suitable valve-casing provided with a port for the discharge of the water, a piston controlling said port, the casing being provided with a fluid-pressure chamber on one side of the piston, an air-passage extending through the piston, a valve-piece adapted to close the air-passage, a float adapted to slide on the valve-piece and to operate the same, substantially as set forth.

3. A radiator attachment for use in heating systems consisting of a discharge-valve device comprising a suitable valve-casing provided with a port for the discharge of the water, a piston controlling said port, the casing being provided with a fluid-pressure chamber on one side of the piston, an air-passage serving as a communication between the fluid-pressure chamber and the system on the inlet side of the valve device, a valve-piece, and a float adapted to slide on the same and operated by the water of condensation and controlling the air-passage, and a communication between the fluid-pressure chamber and the discharge-pipe, and a thermostatic device adapted to be operated by the heat of the room and to control the said communication, substantially as set forth.

4. A radiator attachment for use in heating systems consisting of a suitable valve-casing provided with a port for the discharge of the water, the discharge-valve 17, the piston 18 connected with the valve-stem and provided with the air-passage 21, the fluid-pressure chamber 20, the float 25, the sleeve 29 having the collars 30, the passage 26 connecting the fluid-pressure chamber with the discharge-pipe beyond the discharge-valve, substantially as set forth.

823,075. BOW-FACING OAR. JOHAN PETRICH and LOUIS DULOVES, Chicago, Ill. Filed Nov. 16, 1905. Serial No. 287,633.



Claim.—1. In a bow-facing oar, the combination with a hinged, spring-balanced, supporting-plate, of an oar pivotally mounted on said plate, a segmental guide-bracket to receive and support the inner end of said oar, an operating-lever pivotally mounted on said plate, a link pivotally connected to the outer end of said lever, anti-friction-rollers mounted on said lever, a strap loosely connecting the inner end of the oar with the opposite end of said link, means to feather said oar at the end of the stroke, and means to restore the same

to an operative position when brought back for a new stroke, substantially as described.

2. In a bow-facing oar, the combination with a hinged, spring-balanced, supporting-plate, of an oar pivotally mounted on said plate, a segmental guide-bracket, an antifriction-roller journaled on the inner end of said oar and adapted to engage said guide-bracket, an operating-lever pivotally mounted on said plate, antifriction-rollers mounted on said lever to engage said plate and support the outer end of the lever, a link connected to the lever, a strap loosely connecting the inner end of the oar with the opposite end of said link, stop-rollers arranged on the lower side of and at each end of a segmental slot formed in said plate, and a rocker-arm secured to and projecting downwardly from said oar and through said slot, said arm being adapted to engage the stop-rollers at the end of said slot, thereby feathering said oar at the end of a stroke and restoring the same to a working position when returned for a new stroke, substantially as described.

3. In a bow-facing oar, the combination with a hinged, spring-balanced, supporting-plate, of an oar pivotally mounted on said plate, a segmental guide-bracket, an antifriction-roller journaled on the inner end of said oar and adapted to engage said guide-bracket, an operating-lever pivotally mounted on said plate, antifriction-rollers mounted on said lever to engage said plate and support the outer end of the lever, a link connected to the lever, a strap loosely connecting the inner end of the oar with the opposite end of said link, stop-rollers arranged on the lower side of and at each end of a segmental slot formed in said plate, a rocker-arm secured to and projecting downwardly from the oar and through said slot, said arm being adapted to engage the stop-rollers at each end of said slot, thereby rocking and feathering the oar at the end of each stroke and restoring the same to a working position before the beginning of a new stroke, a locking mechanism to hold the oar in working position during a stroke, and means to automatically release said locking mechanism at the end of a stroke, substantially as described.

4. In a bow-facing oar, the combination with a hinged, spring-balanced, supporting-plate, of an oar pivotally mounted on said plate, a segmental guide-bracket, an antifriction-roller journaled on the inner end of said oar and adapted to engage said guide-bracket, an operating-lever pivotally mounted on said plate, antifriction-rollers mounted on said lever to engage said plate and support the outer end of the lever, a link connected to the lever, a strap loosely connecting the inner end of the oar with the opposite end of said link, stop-rollers arranged on the lower side of and at each end of a segmental slot formed in said plate, a rocker-arm secured to and projecting downwardly from the oar and through said slot, said arm being adapted to engage the stop-rollers at each end of said slot, thereby rocking and feathering the oar at the end of each stroke and restoring the same to a working position before the beginning of a new stroke, a spring-projected pin slidably mounted in said oar and extending through and below the lower side of the same, a lateral downwardly-projecting lug formed on the upper end of said pin to normally engage a recess in the connecting-strap on said oar, and a cam arm or plate arranged in the path of movement of the lower end of said pin to raise the same and disengage said lug from said recess at the end of each stroke of the oar, substantially as described.

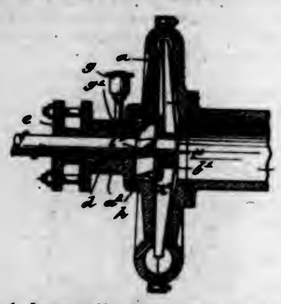
823,076. **INFANT-SOOTHER.** ROSINA PINSENT, Torquay, England. Filed Dec. 7, 1905. Serial No. 290,707.



Claim.—1. An infant-soother, comprising a head portion and a neck or shank portion, said device being composed of soluble material and being provided with a thread which is passed longitudinally and centrally therethrough and a pin passed through the shank portion and with which said thread is connected, substantially as shown and described.

2. An infant-soother, comprising a head portion and a neck or shank portion, said device being composed of soluble material, and being provided with a longitudinally-arranged thread, and the neck or shank portion thereof being provided with a transverse aperture and a removable pin passed therethrough, the neck or shank portion being also provided with a guard disk or plate, substantially as shown and described.

828,077. **CENTRIFUGAL PUMP.** ROBERT PITMAN, Philadelphia, Pa. Filed Aug. 9, 1905. Serial No. 273,236.



Claim.—1. In a centrifugal pump, a housing having chambers of varying diameters communicating with each other, a shaft, a piston and vanes carried by said shaft and arranged respectively in the large and small chambers thereof, said piston adapted when rotated to force water into and from the larger of said chambers, and said vanes adapted to remove water emptying the small chamber from the larger chamber and to force the water continually back into the same so as to hold the smaller chamber substantially free from fluid.

2. In a centrifugal pump, a housing having chambers of varying diameters communicating with each other, a shaft, a piston having a hub portion and vanes carried by said shaft and arranged respectively in the large and small chambers thereof, said piston adapted when rotated to force water into and from the larger of said chambers, and its hub portion adapted to prevent the direct inflow of water into the smaller chamber, and said vanes adapted to continually remove the water entering the smaller chamber from the large chamber by forcing the same back into said chamber so as to hold the smaller chamber substantially free from fluid.

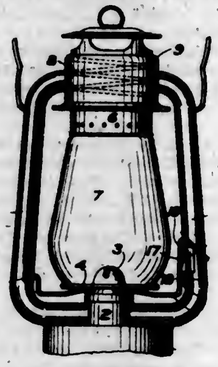
3. In a centrifugal pump, a housing having chambers of varying diameters communicating with each other, a shaft carried by and terminating within said housing, a packing arranged in said housing and surrounding said shaft, a piston having a hub portion and vanes separated from the same carried by said shaft and arranged respectively in the large and small chambers thereof, said piston adapted when rotated to force water into and from the larger of said chambers, and its hub portion adapted to prevent the direct inflow of the water into the smaller chamber and said vanes adapted to continually remove water entering the smaller chamber by forcing the same back into said larger chamber so as to prevent the water from reaching and escaping through said packing by holding the smaller chamber substantially free from fluid.

4. In a centrifugal pump, a housing having chambers of varying diameters communicating with each other, a shaft carried by and terminating within said housing, a packing arranged in said housing and surrounding said shaft, a piston having a hub portion and vanes separated from the same carried by said shaft and arranged respectively in the large and small chambers thereof and said hub portion in conjunction with said housing adapted to form an annular opening connecting the large chamber with the smaller chamber, said piston adapted when rotated to force water into and from the larger of said chambers, and its hub portion adapted to prevent the direct inflow of the water into the smaller chamber and said vanes adapted to continually remove water entering the smaller chamber through said opening by forcing the same back into said larger chamber so as to prevent the water from reaching and escaping through said packing by holding the smaller chamber substantially free from fluid.

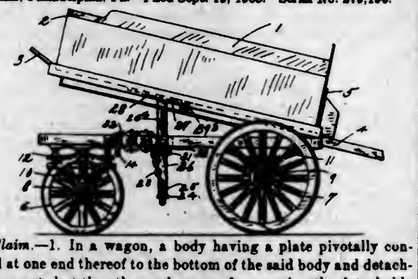
823,078. **GLOBE-LIFTING DEVICE FOR LANTERNS.** ALBERT R. PRITCHARD, Rochester, N. Y. Filed July 21, 1905. Serial No. 270,656.

Claim.—1. In a lantern, a lantern-frame comprising side tubes, a globe-plate, a globe, means for holding the globe on the globe-plate, and a globe-lifting device consisting of a bent elastic lever connected to the globe-plate and having ends pivoted in the inner sides of the side tubes out of line with its connection with the globe plate and also bent between said ends to form an arm adjacent to one of the pivots, and a catch-plate projecting inward from one of the said tubes with which said arm engages.

2. In a lantern, a lantern-frame comprising side tubes, a globe-plate, a globe, means for holding the globe on the globe-plate and a globe-lifting device consisting of a bent elastic lever connected to the globe-plate and having ends pivoted in the inner sides of the side tubes out of line with its connection with the globe-plate and having an arm adjacent to one of the pivots, a catch-plate with which said arm engages, and a thumb-piece on said arm extending outwardly therefrom and at an acute angle thereto, whereby the tendency of pressure on said thumb-piece is to compress said bent lever for releasing the arm from the catch-plate or for making easier movement over the same.



823,079. **REVOLUBLE-BODY CHUTE-WAGON.** THOMAS RAIS, Philadelphia, Pa. Filed Sept. 19, 1905. Serial No. 279,196.



Claim.—1. In a wagon, a body having a plate pivotally connected at one end thereof to the bottom of the said body and detachably connected at the other end, means for securing the detachable end of said plate to body, a post rigidly united, at an angle, to the said plate, a guide-bracket for said post affixed to the running-gear of wagon, a plate suspended therefrom, on which the said post is pivotally supported, and means for suspending, raising or lowering the said plate, all substantially as shown and described.

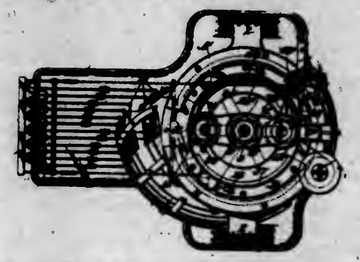
2. In a wagon, a body having a plate pivotally connected at one end thereof to the bottom of the said body and detachably connected at the other end, means for securing the detachable end of said plate to body, a post rigidly united, at an angle, to the said plate, a guide-bracket for said post affixed to the running-gear of wagon, a plate suspended therefrom, on which the said post is pivotally supported, chains carrying said plates, a shaft on which said chains may be wound and means for rotating said shaft, all substantially as shown and described.

3. In a wagon of the class described, the combination with a truck, and a box-body normally resting thereon, of a plate pivotally attached at a point in advance of the center of said body, a post rigid with the said plate, at an angle thereto and perpendicular to the said truck, said post having oppositely-disposed sinuous grooves formed in its body, guide-finger adapted to enter said grooves from either side, means for operating said guide-fingers, a supporting-bracket for said post, a foot-plate therefor and means for sustaining, elevating or lowering the same, all substantially as shown and described.

4. A wagon of the class described, having a suitable body portion, the plate 27, pivot 28, post 26 having the grooves 26', the guide-fingers 33 adapted to operate therein and means for elevating said post, substantially as described.

5. In a wagon of the class described, having a suitable body portion and a truck therefor, a post pivotally attached to the said body, means for securing the post rigidly to the said body, means for guiding the said post, means for supporting the said post and its superimposed load, combined with elevating means therefor, and means for revolving the post simultaneously with the act of elevation and in either direction, all substantially as shown and described.

823,080. **KEY-OPERATED MECHANISM.** FRANCIS H RICHARDS, Hartford, Conn., assignor, by mesne assignments, to American Typographic Corporation, a Corporation of New Jersey. Filed Apr. 7, 1899. Renewed July 6, 1903. Serial No. 164,479.



Claim.—1. The combination with a detent and a settable starter-actuating latch in yielding sliding engagement with each other, of an orbitally-movable starter normally out of engagement with said latch but coöperative therewith when the latch is set.

2. The combination with a detent, of a settable starter-actuating latch in yielding sliding engagement with the detent and operating to release itself from the latter during the setting of the latch; latch-setting means for shifting the latch in opposition to the frictional hold of the detent; and an orbitally-movable starter normally out of engagement with said latch but coöperative therewith when the latch is set.

3. The combination with a settable starter-actuating latch, of a detent in frictional engagement with one face of the latch; latch-setting means for shifting and setting the latch in opposition to the frictional hold of the detent; and an orbitally-movable starter normally out of engagement with said latch but coöperative therewith when the latch is set.

4. The combination with a settable starter-actuating latch, of a resilient detent in frictional engagement with one face of the latch; latch-setting means for shifting and setting the latch in opposition to the frictional hold of the detent; and an orbitally-settable starter normally out of engagement with said latch but coöperative therewith when the latch is set.

5. The combination with a settable latch having a detent-face, of a resilient detent in frictional engagement with one face of the latch and normally in contact with said detent-face when the latch is in its idle position; latch-setting means for shifting and setting said latch in opposition to the frictional hold of the detent; and a movable starter normally out of engagement with said latch but coöperative therewith when the latch is set.

6. In combination with a resistant starter, a movable starter normally out of engagement with the resistant starter but coöperative therewith when the resistant starter is set, one of said starters having a yielding stop.

7. In combination with a resistant starter, a movable starter normally out of engagement with the resistant starter but coöperative therewith when the resistant starter is set, one of said starters having spring-stops.

8. In combination with a resistant starter, a movable starter normally out of engagement with the resistant starter but coöperative therewith when the resistant starter is set, one of said starters having spring-stops at different points in its length.

9. In combination with a resistant sheet-metal starting member having an integral spring-stop struck up from the body thereof, a movable starter normally out of engagement with the resistant starter but coöperative therewith when the resistant starter is set.

10. In combination with a resistant sheet-metal starting member having a pair of integral spring-stops struck up from and projecting from opposite sides of the body thereof, a movable starter normally out of engagement with the resistant starter but coöperative therewith when the resistant starter is set.

11. A machine of the class specified embodying a resistant sheet-metal starting member having a beaded working end forming a rounded journal-surface, and a movable actuated starter coöperative with said resistant starting member.

12. A machine of the class specified embodying a resistant sheet-metal starting member having a beaded working end forming

a rounded journal-surface, and also having an integral spring struck up from the body thereof, and a movable actuated starter coöperative with said resistant starting member.

13. A machine of the class specified embodying a resistant sheet-metal starting member having a beaded working end forming a rounded journal-surface, and also having an integral spring-stop struck up from the body thereof, and a movable actuated starter coöperative with said resistant starting member.

14. The combination with a settable resistant starter and side guiding means therefor in sliding engagement with the resistant starter, of an orbitally-movable starter normally out of engagement with the resistant starter but coöperative therewith when the resistant starter is set.

15. The combination with a support having guide-walls, of a laterally-resilient settable resistant starter located between said walls, and an orbitally-movable starter normally out of engagement with the resistant starter but coöperative therewith when the resistant starter is set.

16. The combination with a support having guide-walls, of a spring; a settable resistant starter side-guided between one of said walls and the spring, and an orbitally-movable starter normally out of engagement with the resistant starter but coöperative therewith when the resistant starter is set.

17. The combination with a support having guide-walls, of a spring; a laterally-resilient settable resistant starter side-guided between one of said walls and the spring; and a movable starter normally out of engagement with the resistant starter but coöperative therewith when the resistant starter is set.

18. In combination with a resistant starter, a movable starter normally out of engagement with the resistant starter but coöperative therewith when the resistant starter is set, one of said members being laterally resilient and having a spring-stop.

19. In a machine of the class specified, the combination of a settable resistant starter and side guiding means therefor in yielding engagement with each other; starter-setting means; and a two-movement-starter-operated starter-resetting member one of the movements of which is controlled by the resistant starter.

20. In a machine of the class specified, the combination, with a settable resistant starter and side guiding means therefor in yielding engagement with each other, of starter-setting means, and a rotary revoluble starter-operated starter-resetting member the rotary movement of which is controlled by the resistant starter.

21. The combination with a support having guide-walls, of a settable resistant starter; a spring for frictionally holding said settable resistant starter in its different positions; and an orbitally-movable starter coöperative with the resistant starter.

22. A machine of the class specified embodying a sheet-metal resistant starting member having a beaded working end forming a rounded journal-surface, and also having a pair of integral stops at different points in the length thereof, and a movable actuated starter coöperative with said resistant starting member.

23. A machine of the class specified embodying a curved sheet-metal resistant starting member having a beaded working end forming a rounded journal-surface, and also having a pair of integral spring-stops at different points in the length thereof, and a movable actuated starter coöperative with said resistant starting member.

24. A machine of the class specified embodying a curved sheet-metal resistant starting member having a beaded working end forming a rounded journal-surface, and also having a pair of integral stops one adjacent to, and on the same side of the starting member as, the beaded portion, and the other adjacent to the other end of and on the opposite side of the starting member, and a movable actuated starter coöperative with said resistant starting member.

25. A machine of the class specified embodying a bowed starting-latch having at one end thereof a rounded journal-surface, and a movable actuated starter coöperative with said latch.

26. A machine of the class specified embodying a bowed sheet-metal starting-latch having at one end thereof a rounded journal-surface, and also having stops at different points in the length thereof, and a movable actuated starter coöperative with said latch.

27. A machine of the class specified embodying a bowed sheet-metal starting-latch having a beaded working end projecting from the concave face thereof and forming a rounded journal-surface, and also having a pair of stops one projecting from the concave and the other from the convex face thereof, and a movable actuated starter coöperative with said latch.

28. A machine of the class specified embodying a sheet-metal starting-latch bent transversely at one point in the length thereof to form a transverse detent-face, and a movable actuated starter coöperative with said latch.

29. A machine of the class specified embodying a sheet-metal starting-latch having a beaded working end forming a rounded journal-surface, and also bent transversely at one point in the length thereof to form a transverse detent-face, and a movable actuated starter coöperative with said latch.

30. A machine of the class specified embodying a bowed sheet-metal starting-latch having a beaded working end forming a rounded journal-surface, and also having a pair of stops at different points in the length thereof, said latch also being bent at one point in its length to form a transverse detent-face, and a movable actuated starter coöperative with said latch.

31. In a machine of the class specified, the combination, with a support, of a resistant starter and a movable actuated starter coöperative with each other, one of said starters being yieldingly secured to its support, and an impression member controlled by said movable starter.

32. In a machine of the class specified, the combination of a resistant starter and a two-movement-actuated starter coöperative with each other, one of said starters being yieldingly secured to its support, and an impression member controlled by said movable starter.

33. In a machine of the class specified, the combination, with a resistant starter, of a movable support; a movable actuated starter yieldingly secured to its support and coöperative with said resistant starter; and an impression member controlled by said movable starter.

34. In a machine of the class specified, the combination, with a resistant starter, of a movable support; a movable actuated starter yieldingly pivoted to said support and coöperative with said resistant starter; and an impression member controlled by said movable starter.

35. In a machine of the class specified, the combination, with a settable resistant starter, of a movable support; a movable actuated starter yieldingly secured to said support and coöperative with said resistant starter; starter-setting means for shifting the resistant starter; and an impression member controlled by said movable starter.

36. In a machine of the class specified, the combination, with a resistant starter, of a movable support; a movable actuated starter carried by the support and coöperative with said resistant starter; a yielding medium between the support and said movable starter; and an impression member controlled by said movable starter.

37. In a machine of the class specified, the combination, with a resistant starter, of a movable support; a movable actuated starter carried by the support and coöperative with said resistant starter; a spring between the support and said movable starter; and an impression member controlled by said movable starter.

38. In a machine of the class specified, the combination, with a resistant starter, of a movable support; a rigid movable actuated starter carried by the support and coöperative with said resistant starter; a yielding medium between the support and said movable starter; and an impression member controlled by said movable starter.

39. In a machine of the class specified, the combination of a driving-gear; an orbitally-movable driven gear normally out of mesh therewith and movable in the orbit of the driving-gear; a resistant starter and a coöperative rotary actuated starter orbitally movable in unison with the driven gear, one of said starters being yieldingly secured to a support and adapted to oppose a gradually increasing or cumulative resistance to the other as the two come into contact and thereby rotate the driven gear in true timing as it meshes with the driving-gear; gear-coupling means controlled by the rotation of the driven gear; and an impression member controlled by said rotary starter.

40. In a machine of the class specified, the combination of a driving-gear; an orbitally-movable driven gear normally out of mesh therewith and movable in the orbit of the driving-gear; a resistant starter; an orbitally-movable support; a rotary actuated starter coöperative with the resistant starter and yieldingly secured to said support, and orbitally movable in unison with the driven gear and adapted to oppose a gradually increasing or cumulative resistance to the resistant starter as the two come into contact and a gradually decreasing or vanishing resistance as they separate and thereby rotate the driven gear in true timing as it moves into mesh with the driving-gear; gear-coupling means controlled by the rotation of the driven gear and operative for shifting the latter into mesh with the driving-gear; and an impression member controlled by said rotary starter.

41. In a machine of the class specified, the combination, with a resistant starter, of a movable support; a movable actuated starter yieldingly secured to said support and coöperative with said resistant starter; a resetting member coöperative with the movable starter for resetting the resistant starter; and an impression member controlled by said movable starter.

42. In a machine of the class specified, the combination, with a resistant starter, of an orbitally-movable support; an orbitally-movable rotary actuated starter yieldingly secured to said support and coöperative with said resistant starter; an orbitally-movable resetting member coöperative with the movable starter for resetting the resistant starter; and an impression member controlled by said rotary starter.

43. In a machine of the class specified, the combination, with a resistant starter, of a movable support; a movable actuated combined starter and resetter yieldingly secured to said support and coöperative with said resistant starter; and an impression member controlled by said rotary starter.

44. In a machine of the class specified, the combination of a resistant actuating member and a movable actuated member coöperative therewith, one of said members being yieldingly secured to its support; and an impression member controlled by said actuated member.

45. In a machine of the class specified, the combination of a resistant actuating member and an orbitally-movable rotary actuated member coöperative therewith, one of said members being yieldingly secured to its support; and an impression member controlled by said actuated member.

46. In a machine of the class specified, the combination of a resistant actuating member and a three-movement-actuated member coöperative therewith, one of said members being yieldingly secured to its support; and an impression member controlled by said actuated member.

47. In a machine of the class specified, the combination of a resistant actuating member yieldingly secured to its support; an orbitally-movable axially-reciprocatory rotary actuated member coöperative therewith; and an impression member controlled by said actuated member.

48. In a machine of the class specified, the combination of a resistant actuating member yieldingly secured to its support; an orbitally-movable axially-reciprocatory rotary actuated member coöperative therewith, one of said members having a cam-shaped working face; and an impression member controlled by said actuated member.

49. In a machine of the class specified, the combination, with a resistant actuating member having a yieldingly-mounted section, of a rotary actuated member coöperative therewith and orbitally movable in the path of said resistant member and its yielding section; and an impression member controlled by said actuated member.

50. In a machine of the class specified, the combination of a resistant actuating member shiftably secured to a support; an orbitally-movable actuated member coöperative therewith; and an impression member controlled by said actuated member.

51. In a machine of the class specified, the combination, with a resistant actuating member having a pivoted section, of a two-movement-actuated member coöperative therewith, and an impression member controlled by said actuated member.

52. In a machine of the class specified, the combination, with a resistant actuating member having a pivoted section limited in its movements by the main portion of the resistant member, of a two-movement-actuated member coöperative therewith, and an impression member controlled by said actuated member.

53. In a machine of the class specified, the combination, with a resistant actuating member having a yieldingly-mounted pivoted section, of a two-movement-actuated member coöperative therewith, and an impression member controlled by said actuated member.

54. The combination, with a resistant actuating member shiftable in a path of predetermined length, of an orbitally-movable rotary actuated member coöperating therewith for exerting force thereupon in one direction for shifting the actuating member, and also for exerting force upon the actuating member in another direction and for being shifted by the resistance of the latter.

55. The combination, with a driving-gear, of a rotary driven gear; means for carrying the driven gear in a path corresponding with that of the driving-gear; a resistant actuating member for inaugurating the rotation thereof; and a rotary actuated member controlled by the rotation of the driven gear and orbitally movable in the path of said resistant member and shiftable relatively to said resistant actuating member at a predetermined point for continuing said rotation.

56. The combination, with a driving-gear, of a rotary driven gear; means for carrying the driven gear in a path corresponding with that of the driving-gear; a resistant actuating member for inaugurating the rotation thereof; and a rotary actuated member controlled by the rotation of the driven gear and orbitally movable in the path of said resistant member, and operative for bodily shifting said driven gear into and out of mesh with the driving-gear at a predetermined point in the path thereof.

57. The combination with a resistant actuating member, of a rotary actuated member orbitally movable in a path of said resistant member and shiftable relatively to the resistant actuating member at a predetermined point for operative engagement therewith, and means for inaugurating the rotation of said actuated member at different points in its orbit and prior to said shifting.

58. The combination, with a resistant actuating member, of a rotary actuated member orbitally movable in a path of said resistant member, and operative for shifting said actuating member when started rotating at one point, and axially shiftable by the resistant actuating member when started rotating at another point; and means for starting the rotation of said actuated member at different predetermined orbital points in its orbit.

59. The combination, with a resistant actuating member, of a rotary actuated member orbitally movable in the path of said resistant member, and operative for exerting a force on said actuating member and shifting said member when the rotation of the driven gear starts at one point, and axially shiftable by the resistant actuating member, and operative for exerting force thereon, in a different direction when the rotation of said driven gear starts at another point; and means for starting the rotation of said actuated member at different predetermined orbital points in its orbit.

60. The combination, with a resistant actuating member, of a rotary actuated member orbitally movable in the path of said resistant member, and operative for exerting force on said actuating member and shifting said member when the rotation of the driven gear starts at one point, and axially shiftable by said member, and operative for exerting force thereon, in a different direction when the rotation of said driven gear starts at another point, and means for starting the rotation of said actuated member at different predetermined orbital points in its orbit.

61. The combination, with a driving-gear, of a rotary driven gear; means for carrying the driven gear in a path corresponding with that of the driving-gear; a resistant actuating member having a shiftable section; a rotary actuated member controlled by the rotation of the driven gear and orbitally movable in the path of said resistant member and its shiftable section and shiftable relatively to the resistant actuating member at a predetermined point, and means for starting the rotation of said actuated member at different points in its orbit.

62. The combination, with a driving internal gear, of a rotatable driven gear normally out of mesh with said internal gear and shiftable into and out of mesh therewith; means for carrying the driven gear in a path corresponding with that of the driving-gear; a resistant actuating member coacting with the driving-gear and having a shiftable section; means for starting the rotation of the driven gear at different points in its orbit; and an actuated member movable in unison with the driven gear and operative for exerting force on said shiftable section and shifting such section when the rotation of the driven gear starts at one point, and shiftable by the resistant actuating member, and operative for exerting force thereon, in a different direction when the rotation of said driven gear starts at another point.

63. The combination, with a driving internal gear, of a rotatable driven gear normally out of mesh with said internal gear and shiftable into and out of mesh therewith; means for carrying the driven gear in a path corresponding with that of the driving-gear; means for starting the rotation of the driven gear at different points in its orbit; and gear-shifting uncoupling means embodying a resistant actuating member coacting with the driving-gear and having a shiftable section, said uncoupling means also embodying an actuated member movable in unison with the driven gear and operative for shifting such section when the rotation of the driven gear starts at one point, and shiftable by such section to uncouple the driven gear when the rotation of the latter starts at another point.

64. The combination, with a driving internal gear, of a rotatable driven gear normally out of mesh with said internal gear and shiftable into and out of mesh therewith; a pair of impression members supported for rotation in unison with the driven gear and disposed in different circumferential positions; means for carrying the driven gear in a path corresponding with that of the driving-gear; means for starting the rotation of the driven gear at different points in its orbit; and gear-shifting uncoupling means embodying a resistant actuating member coacting with the driving-gear and having

a shiftable section, said uncoupling means also embodying an actuated member movable in unison with the driven gear and operative for shifting such section when the rotation of the driven gear starts at a point corresponding to the position of one of the impression members, and shiftable by such section to uncouple the driven gear when the rotation of the latter starts at a point corresponding to the position of the other impression member.

65. The combination, with an orbitally-movable rotary impression member, and with means for revolving and rotating the same, of a yielding stop supported for movement in unison with the impression member, and a resistant stop-face coacting with said movable stop.

66. The combination, with an orbitally-movable rotary impression member, and with means for revolving and rotating the same, of a yielding stop supported for movement in unison with the impression member and constructed to oppose a gradually-increasing or cumulative resistance to the resistant stop-face, and a resistant stop-face coacting with said movable stop.

67. The combination, with an orbitally-movable rotary impression member, and with means for revolving and rotating the same, of a yielding stop supported for movement in unison with the impression member and having successively-effective resilient members, and a resistant stop-face coacting with said movable stop.

68. The combination, with a driving internal gear, and with a rotatable driven gear orbitally movable in a path corresponding with that of the driving-gear, of means for carrying the driven gear in its orbit; means for starting the rotation of the driven gear; and gear-coupling means embodying a resistant actuating member and also embodying a yielding actuated member movable in unison with the driven gear and coöperative with said actuating member.

69. The combination, with a driving internal gear, and with a rotatable driven gear orbitally movable in a path corresponding with that of the driving-gear, of means for carrying the driven gear in its orbit; means for starting the rotation of the driven gear; and gear-coupling means embodying a resistant actuating member and also embodying an actuated spring-arm movable in unison with the driven gear and coöperative with said actuating member.

70. The combination, with a driving internal gear, and with a rotatable driven gear orbitally movable in a path corresponding with that of the driving-gear, of means for carrying the driven gear in its orbit; means for starting the rotation of the driven gear; and gear-coupling means embodying a resistant actuating member and also embodying an actuated spring-cam movable in unison with the driven gear and coöperative with said actuating member.

71. In a machine of the class specified, the combination, with a rotary member, of an impression member carried thereby; means for intermittently rotating said member; and a detent movable longitudinally of the axis of said member and operative for stopping the rotation thereof.

72. In a machine of the class specified, the combination, with an orbitally-movable rotary member, of an impression member carried thereby; means for carrying said member in its orbit; means for intermittently rotating said member; and a detent movable longitudinally of the axis of said member and operative for stopping the rotation thereof.

73. In a machine of the class specified, the combination, with a rotary member having a circumferential cam-face, of means for intermittently rotating said member, and a detent movable longitudinally of the axis of said member for stopping the rotation thereof and also shiftable by said cam-face.

74. In a machine of the class specified, the combination, with a rotary member having circumferential and lateral cam-faces, of means for intermittently rotating said member, and a detent shiftable longitudinally and transversely of the axis of said member by said cam-faces and operative for stopping the rotation of said member.

75. In a machine of the class specified, the combination, a rotary member, and with means for intermittently rotating the same, of a detent reciprocatory longitudinally of the axis of said member and also in a path transverse thereto and operative for stopping the rotation of said member.

76. In a machine of the class specified, the combination, with a rotary member having circumferential and lateral cam-faces, of means for intermittently rotating said member, and an oscillatory detent having an independent reciprocatory movement longitudinally of the axis of said member and controlled in its movements by said cam-faces and operative for stopping the rotation of said member.

77. In a machine of the class specified, the combination, with a rotary member having circumferential and lateral cam-faces, of means for intermittently rotating said member; an oscillatory frame controlled in its movements by one of said cam-faces; and a reciprocatory spring-pressed detent carried by said frame and controlled in its movements by the other of said cam-faces and operative for stopping the rotation of said rotary member.

78. The combination, with a resistant driving-gear, and with a rotary driven gear orbitally movable in a path corresponding with that of the driving-gear, of means for carrying the driven gear in its orbit; means for starting the rotation of the driven gear; gear-coupling means for carrying the driven gear into mesh with the driving-gear; gear-uncoupling means; a rotary member supported for movement in unison with the driven gear and having circumferential and lateral cam-faces; and a detent shiftable longitudinally and transversely of the axis of said driven gear by said cam-faces and operative for stopping the rotation of said gear on the uncoupling of the latter from the driving-gear.

79. The combination, with a resistant driving-gear, of a rotary gear orbitally movable in a path corresponding with that of the driving-gear and shiftable longitudinally of its axis of rotation; means for carrying the driven gear in its orbit; means for starting the rotation of the driven gear; gear-coupling means for carrying the driven gear into mesh with the driving-gear; gear-uncoupling means; and a rotary carrier supporting the driven gear and on which the latter is shiftable, said carrier and the driven gear having complementary male and female members forming a dash-pot.

80. The combination, with a resistant driving-gear, of a pair of rotary members orbitally movable in a path corresponding with that of the driving-gear and one mounted eccentrically to the other; a rotary driven gear carried by one of said members; connecting means between said rotary members; means for carrying said rotary members in their orbit; and means for starting the rotation of the driven gear.

81. The combination, with a resistant driving-gear, of a pair of rotary members orbitally movable in a path corresponding with that of the driving-gear and one mounted eccentrically to the other; a rotary driven gear carried by one of said members; a universal connection between said rotary members for rotating them in unison; means for carrying said rotary members in their orbit; and means for starting the rotation of the driven gear.

82. The combination, with a resistant driving-gear, of a pair of rotary members orbitally movable in a path corresponding with that of the driven gear and one mounted eccentrically to the other; a rotary driven gear carried by one of said members and shiftable longitudinally thereof; connecting means between said rotary members; means for carrying said rotary members in their orbit; means for starting the rotation of the driven gear; and gear-coupling means for shifting said driven gear into mesh with the driving-gear.

83. The combination, with a resistant driving-gear, of an orbitally-movable rotary carrier; a driven gear mounted eccentrically on said carrier and orbitally movable in a path corresponding with that of the driving-gear and shiftable longitudinally of said carrier; means for carrying the driven gear in its orbit; means for starting the rotation of the driven gear; a universal connection between the carrier and the driven gear; and gear-coupling means for shifting said driven gear longitudinally of the carrier and into mesh with the driving-gear.

84. The combination, with a resistant driving-gear, of an orbitally-movable rotary carrier; a driven gear mounted eccentrically on said carrier and orbitally movable in a path corresponding with that of the driving-gear and shiftable longitudinally of said carrier; means for carrying the driven gear in its orbit; means for starting the rotation of the driven gear; a universal connection between the carrier and the driven gear; and gear-coupling means for shifting said driven gear longitudinally of the carrier and into mesh with the driving-gear and embodying a coupling member movable in unison with the driven gear.

85. The combination, with a resistant driving-gear, of an orbitally-movable rotary carrier; a driven gear mounted eccentrically on said carrier and orbitally movable in a path corresponding with that of the driving-gear and shiftable longitudinally of said carrier; means for carrying the driven gear in its orbit; means for starting the rotation of the driven gear; a universal connection between the carrier and the driven gear; gear-coupling means for shifting said driven gear longitudinally of the carrier and into mesh with the driving-gear and embodying a coupling member movable in unison with the driven gear; and gear-uncoupling means for shifting said driven gear longitudinally of the carrier and out of mesh with the driving-gear and embodying an uncoupling member also movable in unison with the driven gear.

86. The combination with a fixed cam, of a shiftable member, and a movable cam coöperative with the said fixed cam for shifting said shiftable member, one of said cams having a yieldably-hinged contact-face.

87. The combination with a fixed cam, of a rotatable axially-shiftable member, and a movable cam coöperative with the said fixed cam for shifting said shiftable member axially, one of said cams having a yieldably-hinged contact-face.

88. The combination with a fixed cam, of a rotatable axially-shiftable member, a rotatable cam having an orbital movement to cause it to coöperate with said fixed cam and thereby shift said shiftable member axially, and means brought into action upon the shifting of said shiftable member axially in one direction for causing the continued rotation of said shiftable member, one of said cams having a yieldably-hinged contact-face.

89. The combination with a fixed cam, of a rotatable axially-shiftable member, a rotatable cam having an orbital movement to cause it to coöperate with said fixed cam and thereby shift said shiftable member axially, means brought into action upon the shifting of said shiftable member axially in one direction for causing the continued rotation of said shiftable member, an impression-device carrier moving in unison with the rotary movement of said shiftable member and selective mechanism for initiating the rotation of said member at predetermined points, one of said cams having a yieldably-hinged contact-face.

90. The combination with a fixed cam, of a rotatable axially-shiftable member, a rotary cam provided with a yieldably-hinged contact-face and having an orbital movement to cause it to coöperate with the said fixed cam and thereby shift said shiftable member axially, means for continuing the rotary movement of said shiftable member when shifted axially in one direction, an impression-device carrier moving in unison with the rotary movement of said shiftable member and selective mechanism for initiating the rotation of said shiftable member at predetermined points.

91. The combination with a fixed cam, of a rotatable axially-shiftable member, a rotary cam provided with a yieldably-hinged contact-face and having an orbital movement to cause it to coöperate with the said fixed cam and thereby shift said shiftable member axially, means for continuing the rotary movement of said shiftable member when shifted axially in one direction, an impression-device carrier moving in unison with the rotary movement of said shiftable member, and selective mechanism for initiating the rotary movement of said shiftable member and said impression-device carrier, said cam having a yielding contact-face.

92. The combination of a rotary carrier, impression-device carriers mounted thereon and rotatable about respective axes situated at different distances from the axis of rotation of the carrier, and selective mechanism.

93. The combination of a rotary carrier, impression-device carriers mounted thereon and rotatable about respective axes situated at different distances from the axis of rotation of the carrier, selective mechanism, a driving-gear, a driven gear for rotating each impression-device carrier and which is shiftable upon the selection of the impression-device carrier in unison with which it moves into engagement with the driving-gear, and means for automatically disengaging such driving and driven gears at predetermined points in the rotary movement of the said rotary carrier.

94. The combination of a detent and a settable latch in sliding engagement with each other, said latch having a recess portion in which said detent by its resilience may enter.

95. The combination of a settable latch, a resilient detent adapted to engage with a recess in the latch, and means for shifting the latch in opposition to the friction of the detent.

96. The combination of a settable latch, a resilient detent, and a stop for holding the latch in its set position.

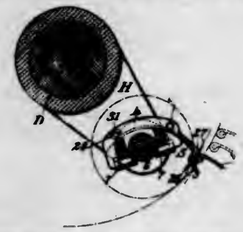
97. The combination with a resistant starter of a movable actuatable starter having a yieldable starter.

98. The combination with a settable resistant starter and laterally-resilient side guides therefor, of a revoluble-actuated starter coöperative therewith.

99. The combination with a pivotally-supported resistant actuating member having a predetermined arc of movement, of an actuated starter operative therewith.

823,081. MOVEMENT-STARTING MECHANISM. FRANCIS H. RICHARDS, Hartford, Conn., assignor, by mesne assignments, to American Typographic Corporation, a Corporation of New Jersey. Filed Apr. 15, 1899. Renewed June 27, 1904. Serial No. 214,349.

Claim.—1. The combination with a resistant starter, of a coöperative starter, one of said starters having a working portion some of the points of which are disposed in advance of others and the successive points of which working portion are adapted to come in succession into contact with a working face on the other starter.



2. The combination with a resistant starter, of a coöperative starter adapted to be conveyed periodically past the resistant starter and to have a second movement imparted to it by coöperation therewith, one of the starters being resilient in the plane of the imparted movement and one of the starters having a working portion some of he points of which are disposed in advance of others.

3. The combination with a resistant starter, of a coöperative starter adapted to be conveyed periodically past the resistant starter and to have a second movement imparted to it by coöperation therewith, one of the starters being resilient in the plane of the imparted movement and one of the starters having a working face disposed obliquely to the coacting starter.

4. The combination with a resistant starter, of a coöperative starter adapted to be conveyed periodically past the resistant starter and to have a second movement imparted to it by coöperation therewith, one of the starters having successively effective resilient starting members.

5. The combination of a resistant starter and an orbitally-movable rotary starter coöperative therewith, one of said starters having a resilience analogous to a torsional resilience and having a working portion some of the points of which are disposed in advance of others.

6. The combination of a resistant starter and an orbitally-movable rotary starter coöperative therewith and having a starting member resilient in the plane of its rotary movement and the working portion of which is oblique to its plane of rotation.

7. The combination of a resistant starter and an orbitally-movable rotary starter coöperative therewith and having a working portion resilient in the plane of its rotary movement and some of the points of which are disposed in advance of others circumferentially of such starter.

8. The combination of a resistant starter and an orbitally-movable rotary starter coöperative therewith and having a working portion resilient in the plane of its rotary movement and some of the points of which are disposed in advance of others both radially and circumferentially of such starter.

9. The combination of a resistant starter and an orbitally-movable rotary starter coöperative therewith and having a working portion resilient in the plane of its rotary movement and disposed obliquely to its plane of rotation both radially and circumferentially of such starter.

10. The combination of a resistant starter and an orbitally-movable rotary starter coöperative therewith and having a multi-element starting member resilient in the plane of its rotary movement and the working portions of which are disposed in series both radially and circumferentially of such starter.

11. The combination of a resistant starter and an orbitally-movable rotary starter coöperative therewith and having a multi-element starting member resilient in the plane of its rotary movement and the working portion of which is oblique to its plane of rotation.

12. The combination of a settable resistant starter; an orbitally-movable rotary starter coöperative therewith and having a starting member resilient in the plane of its rotary movement and the working portion of which is oblique to its plane of rotation; and an orbitally-movable rotary resetting member for resetting the resistant starter.

13. The combination of a resistant starter; an orbitally-movable rotary starter coöperative therewith and having a starting member resilient in the plane of its rotary movement and the working portion of which is oblique to its plane of rotation; and an orbitally-movable rotary resetting member the working portion of which is also oblique to such plane of rotation.

14. The combination of a resistant starter; an orbitally-movable rotary starter coöperative therewith and having a member resilient in the plane of its rotary movement the working portion of which is oblique to its plane of rotation; and a similarly resilient orbitally-movable rotary resetting member the working portion of which is also oblique to such plane of rotation.

15. The combination of a resistant starter and a resilient orbitally-movable rotary combined starter and resetter coöperative therewith and having its starting and resetting portions oblique to its plane of rotation.

16. The combination of a resistant starter and a resilient orbitally-movable rotary combined starter and resetter coöperative therewith and having substantially parallel starting and resetting portions disposed obliquely to its plane of rotation.

17. The combination of a resistant starter and an orbitally-movable rotary combined starter and resetter coöperative therewith and having a starting and resetting member resilient in the plane of the rotary movement.

18. The combination of a resistant starter and an orbitally-movable rotary combined starter and resetter coöperative therewith and having a multi-element starting and resetting member resilient in the plane of the rotary movement.

19. The combination of a resistant starter and an orbitally-movable rotary combined starter and resetter coöperative therewith and having a starting and resetting member resilient in the plane of the rotary movement disposed obliquely to its plane of rotation.

20. The combination of a resistant starter having a convex end, and an orbitally-movable rotary combined starter and resetter cooperative therewith and embodying a resilient socket disposed obliquely to the plane of the rotary movement having starting and resetting walls.

21. The combination of a resistant starter having a convex end, and an orbitally-movable rotary combined starter and resetter cooperative therewith and embodying a resilient multi-element socket disposed obliquely to the plane of the rotary movement having starting and resetting walls.

22. The combination of a resistant starter and a movable starter coöperative therewith, one of said starters embodying a plurality of starter elements separately resilient in the path of the movable starter.

23. The combination of a resistant starter and an orbitally-movable rotary starter coöperative therewith and embodying a plurality of starter elements separately resilient in such path of rotation.

24. The combination of a resistant starter and a revoluble rotary starter coöperative therewith and embodying a plurality of starter elements separately resilient in such path of rotation.

25. The combination of a resistant starter and an orbitally-movable rotary starter coöperative therewith and embodying a plurality of resilient starter elements separately movable from end to end thereof in such path of rotation.

26. The combination of a resistant starter and an orbitally-movable rotary starter coöperative therewith and embodying a plurality of resilient starter elements disposed side by side and separately movable in such path of rotation.

27. The combination of a resistant starter and an orbitally-movable rotary starter coöperative therewith and embodying a plurality of resilient starter elements disposed side by side and separately movable from end to end thereof in such path of rotation.

28. The combination of a driving-gear; an orbitally-movable driven gear normally out of mesh therewith and movable in the orbit of the driving-gear; a resistant starter and a coöperative rotary starter orbitally movable in unison with the driven gear, one of said starters having a working portion constructed to oppose a gradually-increasing or cumulative resistance to the other as the two come into contact, and thereby rotate the driven gear in true timing as it meshes with the driving-gear; and gear-coupling means controlled by the rotation of the driven gear.

29. The combination of a driving-gear; an orbitally-movable driven gear normally out of mesh therewith and movable in the orbit of the driving-gear; a resistant starter; a coöperative rotary starter orbitally movable in unison with the driven gear and having a working portion constructed to oppose a gradually-increasing or cumulative resistance to the resistant starter as the two come into contact, and a gradually decreasing or vanishing resistance as they separate, and thereby rotate the driven gear in true timing as it moves into mesh with the driving-gear; and gear-coupling means controlled by the rotation of the driven gear and operative for shifting the latter into mesh with the driving-gear.

30. The combination, with a rotary carrier having a pair of separated stop-faces, of a holder mounted on said carrier, and a pair of adjustable stops carried by said holder and adjustable in opposite directions transversely to the axis of the carrier and into engagement with said stop-faces, to thereby adjust the holder circumferentially of said carrier.

31. The combination, with a rotary carrier having a pair of separated stop-faces, of a holder mounted on said carrier, and a pair of adjusting-screws carried by said holder and adjustable in opposite directions transversely to the axis of the carrier and into engagement with said stop-faces, to thereby adjust the holder circumferentially of said carrier.

32. The combination, with a rotary carrier having a pair of separated stop-faces, of a holder mounted on said carrier, and a pair of adjusting-screws carried by said holder and adapted to engage the under sides of the heads of said stop-faces, and adjustable in opposite directions transversely to the axis of the carrier to thereby adjust the holder circumferentially of said carrier.

33. The combination, with a rotary carrier having a pair of separated stop-faces converging toward the axis thereof, of a holder mounted on said carrier, and a pair of adjustable stops carried by said holder and adjustable in opposite directions transversely to the axis of the carrier and into engagement with said stop-faces, to thereby adjust the holder circumferentially of said carrier.

34. The combination, with a rotary carrier, of a holder on said carrier and having guide-walls, and a removable starting-arm carried by said holder and guided by said guide-walls.

35. The combination, with a rotary carrier, of a channeled holder on said carrier, and a removable starting-arm seated in said channel.

36. The combination, with a rotary carrier, of a channeled holder on said carrier; a removable starting-arm seated in said channel and embodying a plurality of separately-resilient similar elements lying side by side; and a taper pin intersecting the side walls of said channel in the holder, to thereby locate the elements of the starting-arm normally in successive working positions.

37. The combination with a resistant starter, of a movable combined starter and resetter coöperative therewith, the combined starter and resetter having a working portion some of the points of which are disposed in advance of others and the successive points of which working portion are adapted to come in succession into contact with a working face on the other starter.

38. The combination with a resistant starter, of a combined starter and resetter coöperative therewith and adapted to be conveyed periodically past the resistant starter and to have a rotary movement imparted to it by coöperation therewith, the combined starter and resetter having its working face, as measured transversely to the plane of rotation, oblique to such plane.

39. The combination with a resistant starter, of a movable combined starter and resetter coöperative therewith and adapted to be conveyed periodically past the resistant starter and to have a second movement imparted to it by coöperation therewith, the combined starter and resetter having a working portion some of the points of which are disposed in advance of others and the successive points of which working portion are adapted to come in succession into contact with a working face on the other starter.

40. A shaft-starting arm for initiating the rotary movement, of an orbitally-moving shaft, said arm having a working face some of the points of which are disposed in advance of the others and the successive points of which working portion are adapted to come in succession into contact with a working face on the other starter.

41. A shaft-starting arm for initiating the angular movement of a shaft, said arm having starting-faces adapted to engage one after another.

42. A shaft-starting arm for initiating the rotary movement of an orbitally-moving shaft, said arm having its working face, as measured transversely to the plane of rotation, oblique to such plane.

43. A shaft-starting arm for initiating the rotary movement of an orbitally-moving shaft, said arm having a working portion resilient in the plane of the rotary movement.

44. A shaft-starting arm for initiating the rotary movement of an orbitally-moving shaft, said arm having a working portion resilient in the plane of the rotary movement, and an oblique starting-face.

45. A shaft-starting arm for initiating the rotary movement of an orbitally-moving shaft, said arm having a multi-element working portion, and an irregular starting-face.

46. A shaft-starting arm for initiating the rotary movement of an orbitally-moving shaft, said arm having a multi-element working portion resilient in the plane of the rotary movement, and an irregular starting-face.

47. The combination with settable resistant starters, of a member adapted to be conveyed periodically past the resistant starters, and a movable starter for coöperating with a set resistant starter and initiating a second movement of the said member, said movable starter embodying an element brought into contact with the working face of the resistant starter progressively along the length thereof during the action of the starters.

48. The combination with a starter, of a coöperative starter, one of said starters having a working portion some of the points of which are disposed in advance of others and the points of which working portion are adapted to come in succession into contact with a working face on the other starter.

49. The combination of a resistant starter having a number of working points some of which are disposed in advance of others of said points, and the points adapted to come in succession into contact with the other starter.

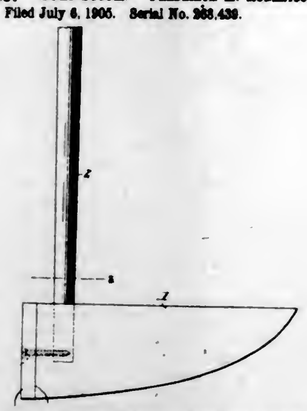
50. A shaft-starting arm for initiating the angular movement of a shaft, said arm having a plurality of starting-faces located and arranged to become active after the other.

51. A shaft-starter for initiating the rotary movement of a shaft, said arm having its working face, as measured transversely to its rotation, oblique to such transverse plane.

52. A shaft-starting arm for initiating the angular movement of a shaft, said arm being effective successively in a plurality of angular positions.

53. A shaft-starting arm for initiating the rotary movement of an orbitally-movable shaft, said arm having a working portion resilient in the plane of its working movement.

823,082. GOLF-STICK. FREDERICK H. ROBERTSON, Wichita, Kans. Filed July 6, 1905. Serial No. 268,439.

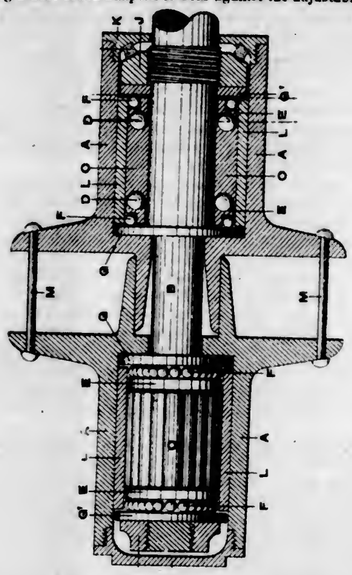


Claim.—1. A golf-stick including a head and a handle, the head being segmental in cross-section with its under side convexed, the bottom of the head being tapered rearwardly and upwardly and its opposite sides tapered rearwardly, and the handle being connected to the head between its middle and the striking-face thereof and disposed vertically with respect to the longitudinal axis of the head and in substantial parallelism with the striking-face thereof.

2. A golf-stick including a head and a handle, the forward striking-face of the head being disposed vertically and the head being segmental in cross-section with its under side convexed, the bottom of the head being convexed upwardly and rearwardly from its front striking-face and its sides being convexed and tapered rearwardly from its striking-face, and the handle being located adjacent the striking-face of the head and disposed in substantially parallelism with said striking-face.

823,083. ROLLER-BEARING. WILLIAM H. RUSSELL, Dongiastown, Canada. Filed Apr. 27, 1905. Serial No. 257,565.

Claim.—In a bearing, a plurality of rollers having concave pockets in their ends, rings adjacent to the ends of the rollers, said rings being L-shaped in cross-section and having concave pockets in their inner faces oppositely disposed to the pockets in the rollers and annular channels in their outer faces, a series of balls bearing in said pockets, a second series of balls disposed in said annular channels, said second series of balls having a larger diameter than the depth of the channels in either direction, collars adapted to contact with the second series of balls, an adjusting-collar located at the end of the bearing and a dust-cap covering said adjusting-collar, said dust-cap carrying a dust-brush adapted to bear against the adjustable collar.



823,084. GAS-REGULATOR FOR INCANDESCENT LIGHTS. HERMANN SCHUPPISSER, Zurich, Switzerland. Filed Apr. 7, 1905. Serial No. 254,296.



Claim.—1. A regulator for gas-burners comprising a casing having a gas-chamber and a supply-aperture, a hollow valve having an aperture in its top and normally seated over said supply-aperture, and a pin extending from the supply-aperture through the valve-aperture, said valve automatically movable along the pin by the gas-pressure to regulate the quantity of gas passing between the pin and the wall of the surrounding valve-aperture.

2. A regulator for gas-burners, comprising a casing having a gas-chamber and a supply-aperture, a regulating-pin leading from the aperture through said chamber, a hollow valve surrounding the pin normally seated over the supply-aperture and a cover on the casing to guide the valve when it is moved from its seat by the pressure of gas therein.

3. A regulator for gas-burners comprising a casing having a gas-chamber therein, a regulating-pin, a mixing-tube, and means operable by the gas-pressure in the chamber to regulate the gas and air supply.

4. A regulator for gas-burners comprising a casing having a gas-chamber therein, a regulating-pin, a mixing-tube, and a valve

operable by the gas-pressure in the chamber to regulate simultaneously the gas and air supply.

5. A regulator for gas-burners comprising a casing having a gas-chamber therein, a pin mounted in the latter and having a plurality of gas-channels formed therein, a perforated mixing-tube in communication with the gas-chamber, and means for automatically decreasing the quantity of air with the decreased supply of gas.

6. A regulator for gas-burners comprising a casing having a gas-chamber therein, a pin mounted in the latter having a plurality of converging grooves formed in its periphery, a hollow valve seated in the chamber surrounding the pin and adapted to be raised and lowered by the pressure of gas in the chamber and valve to vary the quantity of gas passing along the grooves.

7. A regulator for gas-burners comprising a casing having a gas-chamber therein, a pin mounted in the latter, having a plurality of converging grooves formed in its periphery, a perforated mixing-tube communicating with the chamber, a valve seated in the chamber and provided with an aperture through which the pin projects, said valve being raised and lowered by the pressure of gas in the chamber to automatically diminish and increase the size of the openings formed by the wall of the aperture and the walls of the grooves.

8. In a regulator for gas-burners, a casing having a stepped chamber formed therein, a cover for said chamber, a pin projecting through said cover having a plurality of gas-passages formed therein, a valve surrounding said pin and passages, and a weight on each of said steps adapted to be carried by said valve, for the purpose set forth.

9. In a regulator for gas-burners, a casing having a stepped gas-chamber formed therein, a cover for said chamber, a pin mounted in the chamber having a plurality of downwardly-increasing peripheral gas-passages formed therein near its top, a bell-valve extending through the cover and surrounding the pin, a weight seated on each step and surrounding the valve, and means on the valve for displacing the weights, for the purpose specified.

10. In a regulator for gas-burners, a casing having a stepped gas-chamber, a cover therefor having a central opening, a stationary pin concentrically mounted in the chamber and having a plurality of downwardly-increasing peripheral gas-passages formed therein near its top, a bell-valve of unequal cross-sectional area automatically movable through said opening, and a mixing-tube of unequal cross-sectional area in communication with said chamber.

11. In a regulator for gas-burners, a casing having a stepped gas-chamber, a cover therefor having a central opening, a stationary pin concentrically mounted in the chamber and extending through the cover and provided with a plurality of downwardly-increasing peripheral gas-passages near its top, a bell-valve of unequal cross-sectional area automatically movable through said opening, an independent weight on each step of the chamber, a flange on the lower edge of the valve adapted to engage the lower weight, and a perforated mixing-tube of unequal cross-sectional area seated on said cover, substantially as and for the purpose specified.

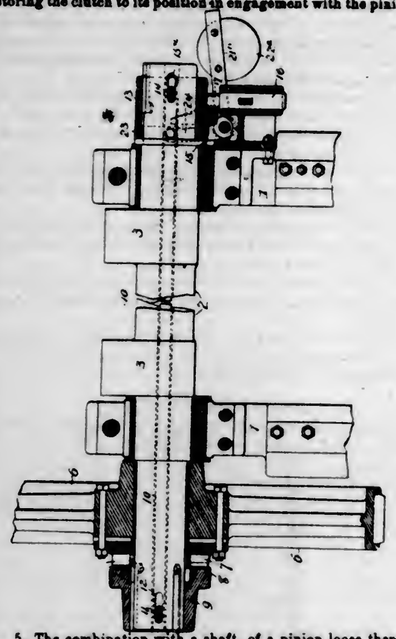
823,085. CLUTCH-OPERATING MECHANISM. CLARENCE L. TAYLOR, Alliance, Ohio, assignor to The Morgan Engineering Company, Alliance, Ohio. Filed Apr. 18, 1903. Serial No. 153,300.

Claim.—1. The combination with a shaft, of a pinion loose thereon, a sliding clutch also mounted on said shaft and adapted to lock the pinion to the shaft, a rod extending lengthwise through the shaft and connected at one end with the clutch, and means connected near the opposite end of the rod for automatically shifting the latter, once during each revolution of the shaft, in a direction to disengage the clutch and pinion thus automatically stopping the shaft after a complete revolution, substantially as set forth.

2. The combination with a shaft, of a pinion loose thereon, a sliding clutch adapted to engage said pinion, a movable rod passing through said shaft and connected near one end with the clutch, means engaging the rod near its opposite end for automatically shifting it, once during each revolution of the shaft, in a direction to disengage the clutch and pinion thus automatically stopping the shaft after a complete revolution and means for moving rod in the opposite direction.

3. The combination with a shaft, of a pinion loose thereon, a clutch for locking the pinion to the shaft, a sliding rod centrally within the shaft, a connection between the rod near one end of the latter and the clutch, automatic means located adjacent the opposite end of the rod and actuated by the rotation of the shaft for unclutching the pinion at the end of each revolution of the shaft thereby stopping the revolution of the shaft after each complete revolution and means for moving the clutch in a direction to engage the pinion.

4. The combination with a shaft, of a pinion loose thereon, a clutch for locking the pinion to the shaft, a sliding rod centrally within the shaft and connected near one end to the clutch, automatic devices actuated by the rotation of the shaft and engaging the rod for moving the rod in a direction to disconnect the clutch from the pinion thereby stopping the shaft after one complete revolution and manually-actuated means for releasing the clutch and automatic means for restoring the clutch to its position in engagement with the pinion.



5. The combination with a shaft, of a pinion loose thereon, a clutch for locking the pinion to the shaft, a rod located within the shaft and connected to the clutch, a sleeve on the shaft, the sleeve being provided with a cam-flange, means connecting the sleeve and sliding rod, a stud normally resting in the path of the flange for moving the sleeve and disconnecting the pinion and clutch once in each revolution of the shaft and means for disengaging the stud and flange.

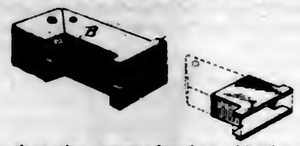
6. The combination with a shaft, pinion, and clutch, of a sliding sleeve mounted on the shaft and having a cam-flange, means connecting the sliding sleeve and clutch, a stud normally in the path of the cam-flange for moving the sleeve and disconnecting the clutch and pinion once in each revolution of the shaft, means for disengaging the the stud from the flange, and means for moving the sleeve longitudinally when the parts are thus disengaged.

7. The combination with a shaft, pinion and clutch, of a sliding sleeve mounted on the shaft and provided with a cam-flange, means connecting the sliding sleeve and clutch, a stud normally in the path of the cam-flange for moving the sleeve longitudinally in a direction to disengage the clutch and pinion once in each revolution of the shaft and a weighted lever for moving said sleeve in the opposite direction.

8. The combination with a shaft, pinion and clutch, of a sliding sleeve mounted on the shaft and provided with a cam-flange, means connecting the sleeve and clutch, a stud normally in the path of the cam-flange for moving the sleeve longitudinally in a direction to disengage the clutch and pinion once in each revolution of the shaft, means for disengaging the stud from the flange, and a weighted lever connected with the sleeve for moving the latter longitudinally in the opposite direction.

823,086. ALTERNATING-CURRENT-TRANSLATING DEVICE. LOUIS H. THULLEN, Edgewood, Pa., assignor to The Union Switch and Signal Company, Swissvale, Pa., a Corporation of Pennsylvania. Filed Oct. 13, 1903. Serial No. 176,826.

Claim.—1. In a translating device, the combination of electromagnetic means, a movable member provided with radial slots for lengthening or paralleling the path of eddy-currents produced on said movable member by the electromagnetic means, and contact-points made and broken by the movement of said movable member.



2. In an alternating-current relay, the combination of a movable member operated in one direction by electromagnetic means when affected by an alternating current, and contacts made and broken by the movement of said member, said contacts comprising coiled springs.

3. In an alternating-current relay, the combination with a movable member operated in one direction by electromagnetic means when affected by an alternating current, a crank-shaft upon which said member is supported, and contact-points located near the center of rotation of said shaft.

4. In an alternating-current relay, the combination with a movable member operated in one direction by electromagnetic means when affected by an alternating current, a crank-shaft upon which said member is mounted, contact-points located near the center of rotation of said shaft and spring-plates comprised in said contact-points and carried by said shaft.

823,087. WIRE-STRETCHER. JOHN A. TYGART, Belleville, Ark., assignor of one-half to Malander F. Sadler, Belleville, Ark. Filed Feb. 8, 1906. Serial No. 300,133.

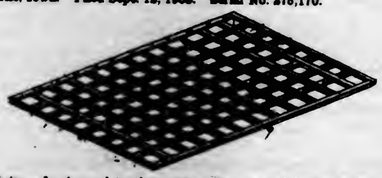


Claim.—1. A wire-stretcher including a drum, a handle-bar secured to the middle of the drum, terminal bearings for the drum, a flexible element connected to the bearings and capable of being fastened around a post, hooks, and flexible elements carrying the hooks and connected to the drum at opposite sides of the handle-bar.

2. A wire-stretcher including a drum having an intermediate enlargement, plates secured to opposite sides of the enlargement and projecting beyond the drum, handle-bars secured between the projecting ends of the plates, terminal bearings for the drum, a flexible element connected to the bearings and capable of being fastened around the post, hooks, and flexible elements carrying the hooks and connected to the drum at opposite sides of the enlargement.

3. In a wire-stretcher, the combination of a clamp having a chain, a drum, handle-bars projecting radially from opposite sides of the drum and intermediate of its ends, hooks, flexible connections between the hooks and the drum, and a chain having a ring to embrace either handle-bar, and a hook for engagement with the chain of the clamp.

823,088. SEED-TESTING APPARATUS. WILLIAM ULBRICH, Atlantic, Iowa. Filed Sept. 12, 1905. Serial No. 278,170.



Claim.—1. A seed-testing apparatus, comprising a main soil-receptacle designed to receive the seeds to be tested, an auxiliary soil-receptacle provided with a foraminous bottom and designed to rest on the main receptacle while the seeds are germinating and to be removed therefrom to ascertain the condition of the seeds, and a removable indicating-frame divided into a plurality of spaces designed to be placed on the main soil-receptacle while the seeds are being deposited therein and also subsequent to the removal of the auxiliary receptacle.

2. A seed-testing apparatus, comprising a main soil-receptacle designed to receive the seeds to be tested, an auxiliary soil-receptacle provided with a foraminous bottom and designed to rest on the main receptacle while the seeds are germinating and to be removed therefrom to ascertain the condition of the seeds, a removable indicating-frame divided into a plurality of indicated spaces designed to be placed on the main soil-receptacle both while the seeds are being deposited therein and also subsequent to the removal of the auxiliary receptacle, and registering devices on the main soil-receptacle and said frame respectively, whereby the proper end-for-end positioning of said parts will be indicated.

823,089. REPAIR DEVICE FOR TIRES. JOHN R. VOSBURGH, Johnstown, N. Y. Filed Dec. 7, 1905. Serial No. 290,845.



Claim.—1. In a tire repair device, the combination with a shank having a portion angularly disposed to other portions, of an inner clamping-plate provided with an orifice adapted to loosely embrace said shank to permit free movement of said plate longitudinally of said shank, a retaining device on one end of said shank, an exterior clamping-plate provided with an orifice and adapted to fit onto said shank and means for clamping the tire between said plates, substantially as described.

2. In a tire repair device, the combination with a shank having a portion angularly disposed to other portions, a retaining device on one end of the shank, a portion of said shank adjacent said retaining device being screw-threaded, an inner clamping-plate provided with an orifice adapted to loosely embrace said shank to permit the free movement of said plate longitudinally of said shank, and an exterior clamping-plate provided with an internally-threaded orifice corresponding with said threaded portion of the shank, substantially as described.

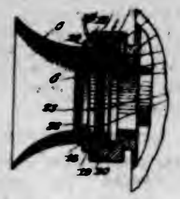
3. In a tire repair device, the combination with a shank having a portion angularly disposed to other portions, a retaining device on one end of the shank, a portion of said shank adjacent to said retaining device being screw-threaded, an inner clamping-plate provided with an orifice adapted to loosely embrace said shank to permit the free movement of said plate longitudinally of said shank, an exterior clamping-plate provided with an orifice internally threaded correspondingly with said threaded portion of the shank and means whereby said shank can be turned to draw said plates together, substantially as described.

4. In a tire repair device, the combination with a shank having a portion angularly disposed to other portions, a retaining device on one end of the shank, a portion of said shank adjacent to said retaining device being screw-threaded, an inner clamping-plate provided with an orifice adapted to loosely embrace said shank to permit the free movement of said plate longitudinally of said shank, an exterior clamping-plate provided with an orifice internally threaded correspondingly with said threaded portion of the shank and an arm on said shank whereby the same can be turned to draw said clamping-plates together, substantially as described.

5. In a tire repair device, the combination with a shank having a portion angularly disposed to other portions, a retaining device on one end of the shank, a portion of said shank adjacent to said retaining device being screw-threaded, an inner clamping-plate provided with an orifice adapted to loosely embrace said shank to permit the free movement of said plate longitudinally of said shank, an exterior clamping-plate provided with an orifice internally threaded correspondingly with said threaded portion of the shank and an arm on said shank extending in a plane perpendicular to said angular portion of said shank, substantially as described.

6. In a tire repair device, the combination with a shank having its intermediate portion bent at an angle to its ends, an arm on said shank angularly disposed to said intermediate portion, a retaining device on one end of said shank, a portion of said shank adjacent to said retaining device being screw-threaded, an inner clamping-plate provided with an orifice adapted to loosely embrace said shank to permit free movement of said plate longitudinally of said shank and an outer clamping-plate provided with an orifice internally threaded correspondingly with said threaded portion of the shank, substantially as described.

823,090. **TELEPHONE-TRANSMITTER ATTACHMENT.** ROBERT A. WALTON, Los Angeles, Cal. Filed July 25, 1905. Serial No. 271,230.



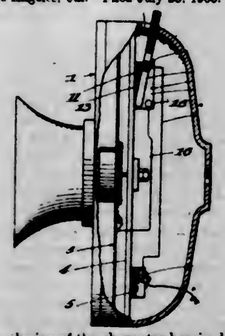
Claim.—1. In a device of the character herein described, a transmitter-seal composed of an outer and inner member, said outer member secured in movable engagement with the inner member and means secured to both members to seal the transmitter against sound-vibrations.

2. In a device of the character herein described, a transmitter-seal comprising an extension-sleeve mounted between the face of the transmitter and the mouthpiece, said extension-sleeve having means mounted therein to seal the transmitter against sound-vibrations; said means comprising a perforated disk secured to said extension-sleeve and adapted to register with like perforations in a disk mounted in the mouthpiece; said mouthpiece in movable engagement with said extension-sleeve and adapted to rotate and close the perforations in the disk mounted in said extension-sleeve and seal the transmitter against sound-vibrations.

3. In a device of the character herein described, a transmitter-seal, comprising an extension-sleeve composed of an outer and inner member, said inner member secured to the face of the transmitter and having a perforated fabric-covered disk secured to its outer end; said outer member adapted to receive the mouthpiece and having a perforated fabric-covered disk, the perforations in said disk registering with like perforations in the disk secured to the inner member; means to hold the outer member in movable engagement with the inner member.

4. In a device of the character herein described, a transmitter-seal, comprising an extension-sleeve, said sleeve mounted between the face of the transmitter and the mouthpiece; a fabric-covered disk having an aperture therein, movable closure means attached to said extension-sleeve adapted to close the aperture in said disk and seal the transmitter against sound-vibrations.

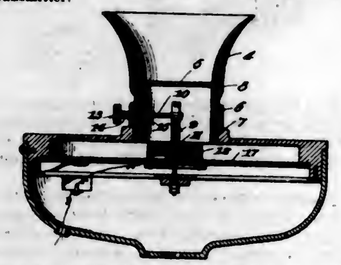
823,091. **TELEPHONE SWITCHING APPARATUS.** ROBERT A. WALTON, Los Angeles, Cal. Filed July 25, 1905. Serial No. 271,231.



Claim.—In a device of the character herein described means to render the transmitter temporarily inoperative; said means comprising a manually-operated make-and-break switch interposed in the transmitter-circuit and secured inside the transmitter-casing, said switch comprising an insulating-base; a contact-plate mounted in said base; a switching-arm having an insulated handle pivotally secured to said base and projecting through said casing, and adapted to be moved in or out of engagement with said contact-plate whereby said circuit is controlled.

823,092. **TELEPHONE-TRANSMITTER ATTACHMENT.** ROBERT A. WALTON, Los Angeles, Cal. Filed July 25, 1905. Serial No. 271,232.

Claim.—1. In a device of the character herein described, means mounted in a transmitter-mouthpiece to dampen the vibrations of the transmitter-diaphragm, said means comprising a revoluble contact adapted to be forced into engagement with the vibratory diaphragm of the transmitter.



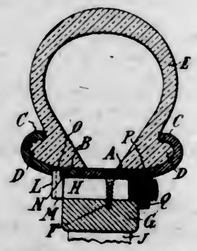
2. In a device of the character herein described, an extension-sleeve mounted between the face of the transmitter and the mouthpiece and having means mounted therein to dampen the vibrations of the transmitter-diaphragm.

3. In a device of the character herein described, a detachable extension-sleeve mounted between the face of the transmitter and the mouthpiece, having means mounted therein to dampen the vibrations of the transmitter-diaphragm comprising a disk secured eccentrically on a shaft mounted in said extension-sleeve, said shaft projecting outside of said extension-sleeve and means secured to the outer end of said shaft whereby it may be rotated.

4. In a device of the character herein described, a detachable extension-sleeve threaded at opposite ends, said extension-sleeve mounted between the face of the transmitter and the mouthpiece, and means mounted therein to dampen the vibrations of the transmitter-microphone comprising a disk secured eccentrically on a shaft mounted in said extension-sleeve, said shaft projecting outside of said sleeve and means secured to the outer end of said shaft whereby it may be rotated.

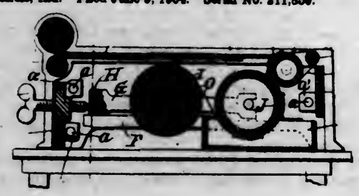
5. A telephone-transmitter attachment adapted to retard the vibrations of a transmitter-diaphragm; comprising a disk secured eccentrically on a rotatable shaft and adapted to be rotated to bear against the microphone to render said microphone inoperative.

823,093. **WHEEL-RIM.** HARRY B. WILLIAMS, New York, N. Y. Filed Feb. 3, 1905. Serial No. 244,039.



Claim.—A bolt for holding a member upon a wheel-rim, having a head cut away at one edge to form a recess M, and rabbeted on its inner face to form a locking-shoulder N, in combination with a removable member having a shoulder adapted to engage the locking-shoulder N on the head of the bolt under normal conditions to lock the bolt.

823,094. **ROTARY COPYING-PRESS.** CHARLES E. ADAMSON, Muncie, Ind. Filed June 9, 1904. Serial No. 211,859.



Claim.—1. In a copy-press, the combination with a water-receptacle, of a delivery-roll, a paper-supply roll, a dampening-roll beneath which the paper passes mounted over the water-receptacle, and means for holding said dampening-roll in yielding engagement with said delivery-roll.

2. In a copy-press, the combination with a water-receptacle, of a delivery-roll, a paper-supply roll, a dampening-roll mounted in movable bearings over said water-receptacle, and a spring for holding said dampening-roll in frictional engagement with said delivery-roll.

3. In a copy-press, the combination with a main frame, of a delivery-roll journaled in one end thereof, a water-receptacle within said frame, a roll-carrying frame slidably secured in said main frame, a dampening-roll journaled in said frame and overlying said water-receptacle, a paper-supply roll and means for adjusting said frame to bring said dampening-roll into frictional engagement with said delivery-roll.

4. In a copy-press, the combination with a main frame, a delivery-roll journaled in one end thereof, a roll-carrying frame slidably mounted in said main frame, a dampening-roll mounted in the end of said roll-carrying frame adjacent the delivery-roll, a paper-supply roll mounted in said frame in front of said dampening-roll, a water-receptacle partially surrounding said dampening-roll, and means for adjusting said roll-carrying frame in said main frame.

5. In a copy-press, the combination with a main frame, of a delivery-roll journaled in one end thereof, a roll-carrying frame slidably mounted in said main frame, a dampening-roll mounted in the end of said roll-carrying frame adjacent the delivery-roll, a paper-supply roll mounted in said roll-carrying frame in front of said dampening-roll, a water-receptacle partially surrounding said dampening-roll, a spring interposed between the front portion of said roll-carrying frame and said main frame whereby said dampening-roll will be held in yielding engagement with said delivery-roll.

6. In a copy-press, a water-receptacle, a dampening-roll partially submerged therein, a paper-supply roll, a delivery-roll adapted to receive the paper from the dampening-roll in yieldable engagement therewith, and means for preventing the adhesion of the paper to the delivery-roll.

7. In a copy-press, a water-receptacle, a dampening-roll partially submerged therein, a paper-supply roll, a delivery-roll adapted to receive the paper from the dampening-roll in yieldable engagement therewith, and separating devices carried by the delivery-roll for preventing the adhesion of the paper thereto.

8. In a copy-press, a water-receptacle, a dampening-roll partially submerged therein, a paper-feed roll, a delivery-roll in yieldable engagement with the unsubmerged portion of said dampening-roll, a guide-roll and a plurality of flexible belts connecting said feed and guide rolls.

823,095. **SLACK-ADJUSTER.** CHARLES O. ANDERSON, Omaha, Nebr., assignor of one-half to A. T. Austin, Omaha, Nebr. Filed Aug. 26, 1905. Serial No. 275,884.

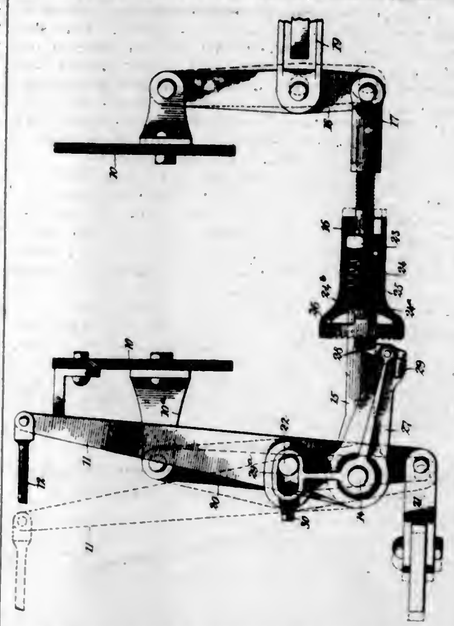
Claim.—1. In a slack-adjuster, the combination of two internally-threaded brake-rigging members, a right and left hand threaded screw engaged in the same, a sleeve slidably mounted on the screw and engaged therewith, a ratchet in connection with the sleeve, a pawl coacting with the ratchet, and means actuated by a part of the brake-rigging for driving the pawl.

2. In a slack-adjuster the combination with parts of a brake-rigging, of an adjustable connection between the same, means for operating said connection including a ratchet, a pawl coacting with the ratchet, and an elbow-lever carrying the pawl, the elbow-lever having a yoke loosely receiving a part on the swinging member of the brake-rigging, for the purpose specified.

3. In a slack-adjuster, the combination with parts of a brake-rigging, of an adjustable connection between the same, means for operating said connection including a ratchet, a pawl coacting with the ratchet, an elbow-lever carrying the pawl, the elbow-lever having a yoke loosely receiving a part on the swinging member of the brake-rigging, for the purpose specified, and an adjustment-screw arranged in said yoke.

4. In a brake-rigging the combination of a means in connection with a brake-beam, a lever, an adjustable connection joined to said means and said lever, a second lever, a means connecting the second lever with a second brake-beam, a pivot between the two levers, and devices for adjusting the said adjustable connection which devices include a lever, the fulcrum of which is coincident to the joint between the first lever and said adjustable connection.

5. In a brake-rigging the combination of a means in connection with a brake-beam, a lever, an adjustable connection joined to said means and to said lever, a second lever, a means connecting the second lever with a second brake-beam, a pivot between the two levers, and devices for adjusting the said adjustable connection, which devices include an elbow-lever, the fulcrum of which is coincident to the joint between the first lever and said adjustable connection.



6. In a brake-rigging the combination of a means in connection with a brake-beam, a lever, an adjustable connection joined to said means and to said lever, a second lever, a means connecting the second lever with a second brake-beam, a pivot between the two levers, and devices for adjusting the said adjustable connection, which devices include a lever, the fulcrum of which is coincident to the joint between the first lever and said adjustable connection, and a pin coincident to the pivot connecting the two levers the pin being connected with one end of the last-named lever to have limited movement independently thereof.

7. In a brake-rigging the combination of a lever, a means in connection with a brake-beam, an adjustable connection pivoted to the lever and said means, a second lever, a second means in connection with a brake-beam to which the second lever is connected, a pivot joining the two levers and means for adjusting said adjustable connection which means include a lever having its fulcrum coincident to the pivot between the first lever and said adjustable connection.

8. In a brake-rigging the combination of a lever, a means in connection with a brake-beam, an adjustable connection pivoted to the lever and said means, a second lever, a second means in connection with a brake-beam to which the second lever is connected, a pivot joining the two levers and means for adjusting said adjustable connection which means include a lever having its fulcrum coincident to the pivot between the first lever and said adjustable connection, and devices actuated by excessive movement of the first-named lever for operating the last-named lever.

9. In a brake-rigging the combination of a lever, a means in connection with a brake-beam, an adjustable connection pivoted to the lever and said means, a second lever, a second means in connection with a brake-beam to which the second lever is connected, a pivot joining the two levers means for adjusting said adjustable connection which means include a lever having its fulcrum coincident to the pivot between the first lever and said adjustable connection, and a pin coincident to the pivot between the two first-named levers, said pin having connection with one end of the third lever and such connection allowing the pin limited independent movement for the purpose specified.

10. In a brake-rigging the combination of a lever, a second le-

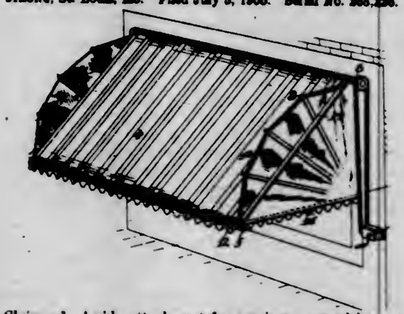
ver, a pivot connecting the two, a means in connection with a brake-beam, an adjustable connection between the first-named lever and said means, a means in connection with a second brake-beam and connected to the second lever, devices for adjusting said adjustable connection, a lever for actuating said devices, and means for operating the third lever by the movement of the first two levers.

11. In a brake-rigging the combination of a lever, a second lever, a pivot connecting the two, a means in connection with a brake-beam, an adjustable connection between the first-named lever and said means, a means in connection with a second brake-beam and connected to the second lever, devices for adjusting said adjustable connection, a lever for actuating said devices, and means for operating the third lever by the movement of the first two levers, the third lever having its fulcrum coincident to the point of connection between the first lever and the said adjustable connection.

12. In a brake-rigging the combination of a lever, a means connected to a brake-beam, an adjustable connection between said means and said lever, a second lever pivoted to the first lever, a second means connected to a brake-beam and to the second lever, a means for adjusting the said adjustable connection, and an elbow-lever for operating the last-named means, the elbow-lever being fulcrumed coincident to the connection between the first-named lever and the said adjustable connection and engaged with limited independent movement by the pivot between the two first-named levers.

13. In a brake-rigging the combination with two members thereof, of a screw adjustably connecting them, a sleeve arranged to slide on the screw, the screw turning with the sleeve, a spring bearing between the sleeve and a part of the screw for the purpose specified, and a means for turning the sleeve.

823,096. SIDE ATTACHMENT FOR AWNINGS. WILLIAM ARMSTRONG, St. Louis, Mo. Filed July 3, 1905. Serial No. 268,236.



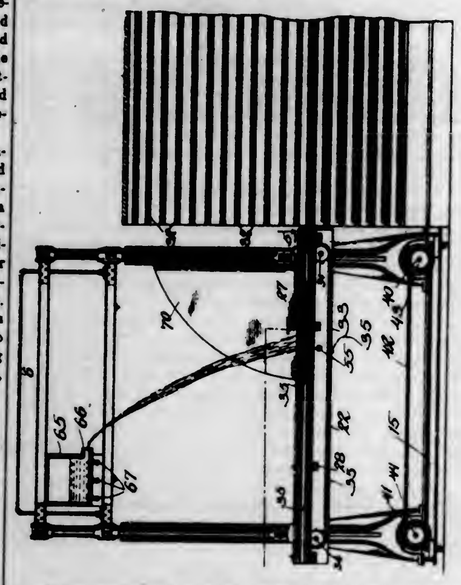
Claim.—1. A side attachment for awnings, comprising a plurality of arms pivotally connected to a casting, a canvas attached to said arms, a cord passing through the ends of said arms, a roller-bar, a supporting-pole, the ends of said cord being attached to the supporting-pole and the roller-bar for the purpose of folding and unfolding simultaneously with the operation of the awning and a suitable guide formed on the roller-bar to guide the cord, substantially as specified.

2. A device of the class described comprising an awning, a roller-bar for winding up the awning, a supporting-pole for supporting the outer end of the awning, a frame comprising a plurality of arms, a casting pivotally connected to the window-casing, said casting pivotally securing the arms of the frame, a canvas mounted upon the frame and supported to each arm by a pocket, said frame operating in slots formed in the awning, a cord connected to the roller-bar and to the supporting-pole and passing through the ends of the arms of the frame, a guide formed on the roller-bar for guiding the cord when the same is wound upon the bar to simultaneously fold the frame with the winding up of the awning, substantially as specified.

828,097. APPARATUS FOR MAKING WHITE LEAD. JOHN W. BARRY, New York, N. Y., assignor, by mesne assignments, to United Lead Company, a Corporation of New Jersey. Filed Sept. 12, 1902. Serial No. 123,205.

Claim.—1. In an apparatus for making white lead or similar product, the combination with a corroding-chamber of means adapted to form a support for the comminuted lead in the corroding-chamber, and means mounted independently of the corroding-chamber for advancing said supporting means into the corroding-chamber.

2. In an apparatus for making white lead or similar product, the combination with a corroding-chamber of means adapted to form a support for the comminuted lead in the corroding-chamber, mechanism mounted independently of the corroding-chamber for advancing said supporting means into the corroding-chamber, and means for feeding comminuted lead onto said supporting means as it is being advanced into the corroding-chamber.



3. In an apparatus for making white lead or similar product, the combination with a corroding-chamber of a plurality of trays adapted to form a substantially continuous support for the comminuted lead in the corroding-chamber, and mechanism for advancing said trays into the corroding-chamber, said mechanism being adjustable to advance the supports into different parts of the corroding-chamber.

4. In an apparatus for making white lead or similar product, the combination with a corroding-chamber of a plurality of trays adapted to form a substantially continuous support for the comminuted lead in the corroding-chamber, mechanism for advancing said trays into the corroding-chamber, and means for feeding comminuted lead onto the trays as they are being advanced into the corroding-chamber.

5. In an apparatus for making white lead or similar product, the combination with a corroding-chamber of means adapted to form a support for the comminuted lead in the corroding-chamber, means mounted independently of the corroding-chamber for advancing said supporting means into the corroding-chamber, and means for comminuting the lead, said comminuting means being arranged to feed the comminuted lead onto said supporting means as it is being advanced into the corroding-chamber.

6. In an apparatus for making white lead or similar product, the combination with a corroding-chamber of a plurality of trays adapted to form a substantially continuous support for the comminuted lead in the corroding-chamber, mechanism for advancing said trays into the corroding-chamber, and means for comminuting the lead, said comminuting means being arranged to feed the comminuted lead onto the trays as they are being advanced into the corroding-chamber.

7. In an apparatus for making white lead or similar product, the combination with a corroding-chamber adapted to receive a plurality of supports for the comminuted lead one above another, mechanism for advancing said supports into the corroding-chamber, said mechanism being adjustable to advance the supports into the corroding-chamber one above another.

8. In an apparatus for making white lead or a similar product, the combination with a corroding-chamber adapted to receive a plurality of supports for the comminuted lead one above another, mechanism for advancing said supports into the corroding-chamber, said mechanism being vertically adjustable independent of the corroding-chamber to advance the supports into the corroding-chamber one above another.

9. In an apparatus for making white lead or similar product, the combination with a corroding-chamber adapted to receive a plurality of supports for the comminuted lead one above another, mechanism for advancing said supports into the corroding-chamber, said mechanism being adjustable to deliver the supports into the corroding-chamber one above another, and means for feeding comminuted lead onto said supports as they are being advanced into the corroding-chamber.

10. In an apparatus for making white lead or similar products the combination with a corroding-chamber adapted to receive a plurality of supports for the comminuted lead, one above another, mechanism for advancing said supports into the corroding-chamber, said mechanism being vertically adjustable independent of the corroding-chamber to deliver the supports into the corroding-chamber one above another, and means for feeding comminuted lead onto said supports as they are being advanced into the corroding-chamber, said feeding means being vertically adjustable with the mechanism for advancing the supports into the corroding-chamber.

11. In an apparatus for making white lead or similar products, the combination with a corroding-chamber adapted to receive a plurality of supports for the comminuted lead one above another, mechanism for advancing said supports into the corroding-chamber, said mechanism being adjustable to deliver the supports into the corroding-chamber one above another, means for comminuting the lead, said comminuting means being arranged to feed the comminuted lead onto said supports as they are being advanced into the corroding-chamber.

12. In an apparatus for making white lead or similar product, the combination with a corroding-chamber adapted to receive a plurality of supports for the comminuted lead one above another, mechanism for advancing said supports into the corroding-chamber, said mechanism being vertically adjustable independent of the corroding-chamber to deliver the supports into the corroding-chamber one above another, and means for comminuting the lead, said comminuting means being vertically adjustable with the mechanism for advancing the supports and arranged to feed the lead onto said supports as they are being advanced into the corroding-chamber.

13. In an apparatus for making white lead or similar product, the combination with a corroding-chamber having a plurality of ways adapted to support a plurality of tiers of trays one above another, mechanism for advancing a series of trays in succession onto each of said ways, said mechanism including a vertically-adjustable frame having guides for the trays, and having means for pushing the trays from said guides onto the ways in the corroding-chamber.

14. In an apparatus for making white lead or similar product, the combination with a corroding-chamber having a plurality of ways adapted to support a plurality of tiers of trays one above another, mechanism for advancing a series of trays in succession onto each of said ways, said mechanism consisting of a vertically-adjustable frame having guides for the trays, and endless chains mounted on said frame and having pushers adapted to engage the trays.

15. In an apparatus for making white lead or similar product, the combination with a corroding-chamber having a plurality of ways adapted to support a plurality of tiers of trays one above another, mechanism for advancing a series of trays in succession onto each of said ways, said mechanism consisting of a vertically-adjustable frame having guides for the trays, means for pushing the trays from said guides onto the ways in the corroding-chamber, and means for feeding comminuted lead onto said trays as they are being advanced into the corroding-chamber.

16. In an apparatus for making white lead or similar product, the combination with a corroding-chamber having a plurality of ways adapted to support a plurality of tiers of trays one above another, mechanism for advancing a series of trays in succession onto each of said ways, said mechanism consisting of a vertically-adjustable frame having guides for the trays, means for pushing the trays from said guides onto the ways in the corroding-chamber, and means for comminuting the lead, said comminuting means being arranged to feed the comminuted lead onto the trays as they are being advanced into the corroding-chamber.

17. In an apparatus for making white lead or similar product, the combination with a corroding-chamber having a plurality of ways adapted to support a plurality of tiers of trays one above another, mechanism for advancing a series of trays in succession onto each of said ways, said mechanism consisting of a vertically-adjustable frame having guides for the trays, means for pushing the trays from said guides onto the ways in the corroding-chamber, and means for comminuting the lead, said comminuting means consisting of a melting-pot having a plurality of fine openings through which the molten lead is discharged, said melting-pot being arranged to deliver the lead onto the trays as they are being advanced into the corroding-chamber.

18. In an apparatus for making white lead or similar product, the combination with a corroding-chamber open at both ends, means for supporting a line of trays in said chamber and mechanism for advancing the trays one by one into one end of the chamber, whereby when a new line of trays is advanced into one end of the corroding-chamber, the trays in the chamber are by means of the advancing trays delivered at the opposite end thereof.

19. In an apparatus for making white lead or similar product, the combination with a corroding-chamber open at both ends, means for supporting a line of trays in said chamber and mechanism for advancing the trays one by one into one end of the chamber, whereby when a new line of trays is advanced into one end of the corroding-chamber, the trays in the chamber are delivered at the opposite end thereof, and means for feeding comminuted lead onto the trays as they are advanced into the corroding-chamber.

20. In an apparatus for making white lead or similar product, the combination with a corroding-chamber open at both ends, of means for supporting a line of trays in said chamber, and mechanism for advancing the trays one by one into one end of the chamber, whereby when a new line of trays is advanced into one end of the corroding-chamber, the trays in the chamber are delivered at the opposite end thereof, and means for comminuting the lead, said comminuting means being arranged to feed the comminuted lead onto the trays as they are advanced into the corroding-chamber.

21. In an apparatus for making white lead or similar product, the combination with a corroding-chamber open at both ends and provided with means for supporting a plurality of tiers of trays one above another, of mechanism for advancing the trays one by one into one end of the chamber, said mechanism being vertically adjustable to advance the trays onto the various supports in the corroding-chamber whereby the tiers of trays in the corroding-chamber will be delivered at one end thereof as the new tiers are advanced into the other end.

22. In an apparatus for making white lead, or similar product, the combination of a plurality of corroding-chambers arranged side by side, each adapted to receive a support for the comminuted lead, mechanism for advancing the supports into the corroding-chambers, and a carriage on which said mechanism is mounted whereby said mechanism may be brought into coöperative relation with each of the corroding-chambers.

23. In an apparatus for making white lead or similar product, the combination with a plurality of corroding-chambers arranged side by side, each adapted to receive a support for the comminuted lead, mechanism for advancing the support into the corroding-chamber, means for feeding the comminuted lead onto the support as it is advanced into the corroding-chamber, and a carriage on which the support-advancing mechanism and the feeding means are mounted, whereby said parts may be brought into coöperative relation with each of the corroding-chambers.

24. In an apparatus for making white lead or similar product, the combination of a plurality of corroding-chambers arranged side by side, each having a plurality of ways adapted to receive supports for the comminuted lead, mechanism for advancing the supports into the corroding-chamber, and a carriage on which said mechanism is mounted so as to be vertically adjustable whereby said mechanism may be brought into coöperative relation with the various ways in each corroding-chamber.

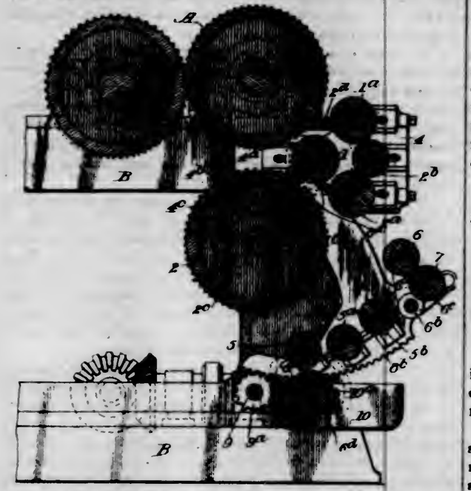
25. In an apparatus for making white lead or similar product, the combination with a plurality of corroding-chambers arranged side by side, each having a plurality of ways to receive supports for the comminuted lead, mechanism for advancing said supports into the corroding-chambers, means for feeding comminuted lead onto the supports as they are being advanced into the corroding-chambers, and a carriage on which said support-advancing mechanism and said feeding means are adjustably mounted whereby said parts may be brought into coöperative relation with the various ways in each corroding-chamber.

26. In an apparatus for making white lead or similar product, the combination with two series of corroding-chambers, each series consisting of a plurality of corroding-chambers arranged side by side and adapted to receive supports for the comminuted lead, the two series of corroding-chambers being oppositely arranged with relation to each other and suitably separated, mechanism for advancing the

supports into each set of corroding-chambers, said mechanism being so arranged with relation to the sets of corroding-chambers that the supports are delivered from the corroding-chambers into the space between them, and a washing device located between the corroding-chambers for receiving the supports delivered therefrom.

823,098. INKING APPARATUS FOR PRINTING-PRESSES.

HENRY F. BECHMAN, Battle Creek, Mich., assignor to Duplex Printing Press Company, Battle Creek, Mich. Filed June 17, 1905. Serial No. 265,720.



Claim.—1. In combination with a rotary printing-cylinder, and a set of form-inking rollers mounted in movable supports; a distributing-surface, a set of distributing-rollers coacting therewith mounted in movable supports, and connections between the supports of said sets of rollers, whereby both sets of supports may be simultaneously moved to shift the rollers thereon into or out of operative position.

2. In combination with a rotary printing-cylinder, a rotary ink-drum, slides beside the cylinder, and form-inking and supply rollers mounted in said slides, and movable thereby simultaneously into and out of operative position of contact with the drum and cylinder, substantially as described.

3. In combination with an ink-distributing drum, a set of distributing-rollers, and a ductor-roller; with movable supports carrying all said rolls and adapted to move them to and from the drum, for the purpose and substantially as described.

4. In combination with an ink-drum, movable supports beside the drum, a set of distributing-rollers mounted in said supports, a ductor-roller mounted in said supports, means for moving said supports to move the rollers to and from the drum, and means for actuating the ductor when the rollers are in operative position.

5. In combination with an ink-drum, swinging hangers beside the drum, a set of distributing-rollers, a vibrating ductor-roller, and a supply-roller mounted on said hangers, means for moving said hangers to move the rollers to and from the drum, and means for actuating the vibrator when the rollers are in their operative position.

6. In combination, a set of form-inking rollers, slides upon which said rollers are journaled; a set of ink-distributing rollers, swinging hangers supporting said distributing-rollers, and gearing between said hangers and sides whereby both sets of rollers may be simultaneously moved.

7. In combination, a rotary distributing-drum, a set of distributing-rollers coacting therewith, a ductor-roller and movable supports for all said rollers; with a set of form-rollers receiving ink from said drum, slides upon which said form-rollers are journaled, and gearing between the movable supports and said slides whereby both sets of rollers are simultaneously moved into or out of operative position, substantially as described.

8. In combination, a rotary distributing-drum, a set of distributing-rollers coacting therewith, a ductor-roller, and a supply-roller; and swinging-hangers carrying all said rollers; with a set of form-rollers receiving ink from said drum, slides carrying said form-rollers, and gearing between the hangers and said slides whereby both sets of rollers are simultaneously moved, substantially as described.

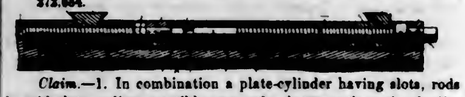
9. The combination of an ink-fountain, an ink-supply roller, a rotary ink-distributing drum and a ductor for transferring ink from the supply-roller to the drum; with swinging hangers beside the drum, and distributing-rollers mounted in said hangers, and movable thereby to and from said drum, for the purpose and substantially as described.

10. In combination, an ink-distributing drum, with a set of distributing-rollers, a supply-roll, a ductor-roller, and a single set of swinging hangers carrying all said rollers, for the purpose and substantially as described.

11. In combination, a set of form-inking rollers, slides supporting said rollers; an ink-drum, a set of ink-distributing rollers, movable supports for said distributing-rollers, a supply-roller mounted on said supports, a ductor-roller for conveying ink from the supply-roller to the drum; and connections between said slides and supports whereby said slides and said supports may be simultaneously moved to throw the form-inking rollers and distributing-rollers into or out of operative position, substantially as described.

823,099. MEANS FOR FASTENING PLATES TO CYLINDERS.

HENRY F. BECHMAN, Battle Creek, Mich., assignor to Duplex Printing Press Company, Battle Creek, Mich. Filed Aug. 4, 1905. Serial No. 272,684.



Claim.—1. In combination a plate-cylinder having slots, rods in said slots, a disconnectible connection between the ends of adjacent rods, and plate-clamps in said slots respectively actuated by the rods.

2. In combination with a plate-cylinder having longitudinal slots, of alined threaded rod-sections in said slots, an operative connection between the ends of adjacent sections, and plate-clamps in said slots respectively transfixed by the rod-sections, whereby the several clamps may be adjusted.

3. In combination a plate-cylinder having a longitudinal slot, a set of plate-clamps in said slot movable longitudinally thereof, a threaded rod-section transfixing each clamp, said sections being in alinement, and rotatable but longitudinally immovable in the slot, and a longitudinally-movable member on the end of one section adapted to be slipped endwise to engage the end of the adjacent section and lock the sections together.

4. The combination of a plate-cylinder having longitudinal slots, and a set of plate-clamps in said slot movable longitudinally thereof; with a rotatable but longitudinally-immovable threaded rod transfixing each clamp, said rods being in alinement and the adjacent ends of said rods being squared, and a longitudinally-movable sleeve on the squared end of one rod adapted to be slipped endwise thereon to engage or disengage the squared end of the adjacent rod.

823,100. AERIAL BICYCLE.

FREDERICK G. BONFILS, Denver, Colo. Filed Apr. 29, 1904. Serial No. 206,638.

Claim.—1. The combination with a bicycle-frame, of bars located on opposite sides of said bicycle-frame, and wings or air planes carried by said bars, substantially as described.

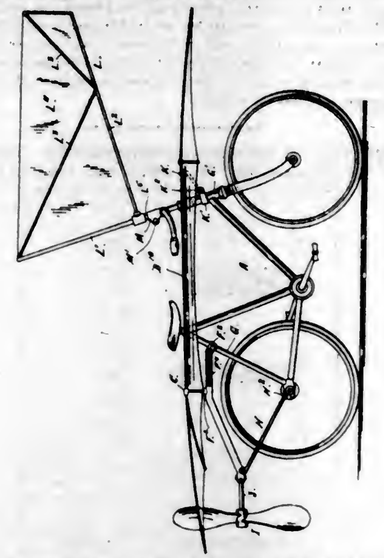
2. The combination with a bicycle-frame, of adjustable bars located on opposite sides of said bicycle-frame and wings or air planes carried by said bars, substantially as described.

3. The combination with a bicycle-frame, of bars located on opposite sides thereof, said bars being pivoted at one end to said frame, and wings or air planes carried by said bars, substantially as described.

4. The combination with a bicycle-frame of parallel bars located on opposite sides thereof, a transverse bar journaled to said frame and connected at its ends to said parallel bars and wings or air planes carried by said parallel bars, substantially as described.

5. The combination with a bicycle-frame, of two transverse bars projecting on opposite sides of the frame, the rear bar being journaled in a suitable support, and an adjustable supporting device for the forward transverse bar whereby the forward bar may be raised and lowered at will, and wings or air planes connected with the extremities of the bars and located on opposite sides of the machine.

6. The combination with a bicycle, of wings or air planes attached to the opposite sides of the framework of the machine, and a rudder or steering device detachably connected with the handle-bar above the plane of said wings and consisting of a frame provided with a suitable covering, substantially as described.



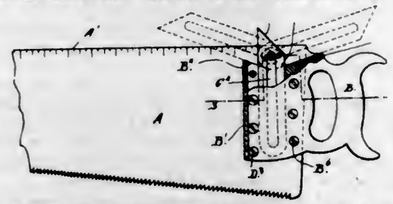
7. The combination with a bicycle-frame and wings or air planes secured to the opposite sides of said frame, of a post secured to the steering-head of said frame and a vertically-extending wing or rudder carried by said post, substantially as described.

8. The combination with a bicycle and wings or air planes secured thereto, of a rudder consisting of a post in alinement with the steering-head of said bicycle, a vertically-extending wing carried by said post and a clamp for securing said post to the handle-bars of said bicycle, substantially as described.

9. The combination with a bicycle-frame, of a rectangular frame mounted thereon, wings or air planes carried by said rectangular frame, a supporting-frame mounted on the rear of said bicycle-frame, bearings carried by said supporting-frame and adapted to receive one end of said rectangular frame, and a wind-wheel rotatably mounted in said supporting-frame, substantially as described.

823,101. COMBINED SAW, SQUARE, AND BEVEL.

ALPIN M. BOWEN, Denver, Colo. Filed Dec. 26, 1903. Serial No. 186,709.



Claim.—1. A combined saw and bevel consisting of a saw having a handle in which is formed a pocket on one side of the blade, a bevel slidable in said pocket, the latter being closed except at one end where the bevel protrudes, and suitable means for locking the bevel in any desired position of adjustment.

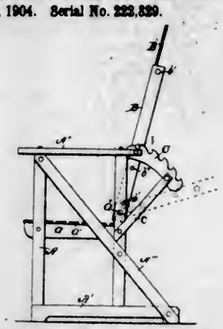
2. The combination with a saw, of a bevel, the handle of the saw being provided on one side with a pocket in which the bevel is slidable, the pocket being closed except at one end where the bevel protrudes, and suitable means for locking the bevel in any desired position of adjustment, the handle of the saw on one side of the blade being provided with a shoulder forming a straight edge lying in the same plane with the edge of the bevel, when pocketed or extended therefrom in a straight line.

3. The combination of a saw provided with a blade having a straight edge and a handle provided on one side with a straight edge extending at right angles to the straight edge of the saw-blade, the handle being provided with a pocket closed except at the end adjacent to the straight edge of the blade, and a bevel located in said pocket and having one of its edges in the same plane with a shoulder formed on the opposite side of the blade from the bevel-pocket.

4. The combination of a saw provided with a blade having one straight edge and a handle provided with a pocket closed except at one end, the open end of the pocket being adjacent the straight edge of the blade, a bevel located in said pocket and adjustable longitudinally therein, the mouth of the pocket adjacent the straight edge of the blade being cut away on opposite sides to allow the bevel to swing in either direction to form angles with the straight edge of the blade.

823,102. SETTEE OR CHAIR.

ALLEN P. BOYER, Goshen, Ind. Filed Aug. 31, 1904. Serial No. 222,839.



Claim.—1. The combination of the legs; base-pieces therefor extending rearwardly beyond the rear legs; braces extending from the rear ends of said base-pieces upwardly across said legs; arm-rests on the upper ends of said legs; a seat carried by said legs; a back having side pieces with longitudinal notches in their lower ends; curved rack-bars having forwardly-curved teeth on the rear ends of said arm-rests; outwardly-projecting pins on said side pieces of said back adapted to engage said rack-bars; inwardly-projecting pins on the rear legs adapted to engage said notches in said side pieces of said back; and stops on said side pieces of said back projecting beneath said rack-bars, for the purpose specified.

2. The combination of the legs; base-pieces therefor extending rearwardly beyond the rear legs; braces extending from the rear ends of said base-pieces upwardly across said legs; arm-rests on the upper ends of said legs; a seat carried by said legs; a back having side pieces with longitudinal notches in their lower ends; curved rack-bars on the rear ends of said arm-rests; outwardly-projecting pins on said side pieces of said back, adapted to engage said rack-bars; inwardly-projecting pins on the rear legs adapted to engage said notches in said side pieces of said back; and stops on said side pieces of said back projecting beneath said rack-bars, for the purpose specified.

3. The combination of the legs; base-pieces therefor extending rearwardly beyond the rear legs; braces extending from the rear ends of said base-pieces upwardly across said legs; arm-rests on the upper ends of said legs; a seat carried by said legs; a back having side pieces with longitudinal notches in their lower ends; curved rack-bars having forwardly-curved teeth on the rear ends of said arm-rests; outwardly-projecting pins on said side pieces of said back adapted to engage said rack-bars; and inwardly-projecting pins on the rear legs adapted to engage said notches in said side pieces of said back, for the purpose specified.

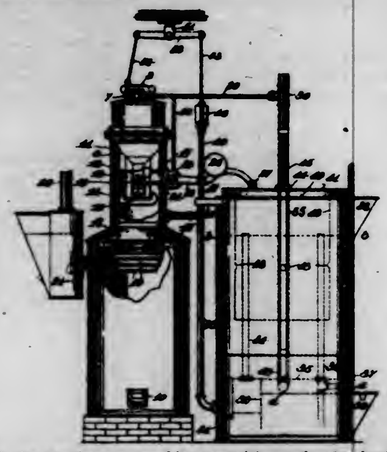
4. The combination of the legs; base-pieces therefor extending rearwardly beyond the rear legs; braces extending from the rear ends of said brace-pieces upwardly across said legs; arm-rests on the upper ends of said legs; a seat carried by said legs; a back having side pieces with longitudinal notches in their lower ends; curved rack-bars on the rear ends of said arm-rests; outwardly-projecting pins on said side pieces of said back adapted to engage said rack-bars; and inwardly-projecting pins on the rear legs adapted to engage said notches in said side pieces of said back, for the purpose specified.

823,103. ACETYLENE-GAS GENERATOR.

GEORGE E. CHANDLER, Taunton, Mass. Filed Aug. 15, 1902. Serial No. 119,733.

Claim.—1. An acetylene-gas generator comprising a chamber having a feed-hopper provided with a charging-opening, a feeding device contained within the chamber beneath said feed-hopper, an

actuator for said feeding device, a counterbalance for such actuator for drawing the same out of the operative position, a closure for the feed-hopper charging-opening, and means for connecting said closure and the counterbalance.



2. An acetylene-gas machine comprising a chamber having a feed-hopper provided with a charging-opening, a feeding device located within the chamber beneath said feed-hopper and furnished with a vertical gate, a lever for actuating the gate, a counterbalance for such lever, and a closure for the feed-hopper connecting with such counterbalance.

3. An acetylene-gas machine comprising a chamber having a feed-hopper provided with a charging-opening, a feeding device contained therein and having a vertically-movable gate located beneath the feed-hopper and a lever working through a suitable fitting on said chamber, the exterior portion of the lever being adapted to engage with and to be actuated by a gasometer, a counterbalance for the exterior portion of the lever, and means for connecting said counterbalance with the closure for the feed-hopper.

4. An acetylene-gas generator comprising a carbid-chamber having a feed-opening and a discharge-opening, a closure for the feed-opening, a conical distributer located beneath the discharge-opening, a circular guard embracing the distributer, means for moving the guard, and connections between such means and the closure for the feed-opening, whereby the movement of the guard is controlled by said closure.

5. An acetylene-gas generator comprising a carbid-chamber having a feed-opening and a discharge-tube, a water-tank into which the discharge-tube extends, a closure for the feed-opening, a distributer located beneath the discharge-tube, a cylindrical gate working on the discharge-tube, actuating means for the gate working through the wall of the water-tank, and exterior connections between said actuating means and the closure for the feed-opening.

6. An acetylene-gas machine comprising a chamber having a feed-opening, a screw-cap for closing the opening, a feeding device within the chamber, an actuator for the feeding device, and a counterbalance positively connected with the actuator and with the screw-cap whereby the actuator is withdrawn from operative position by the removal of the cap and is returned to position by the replacing of the cap, without the actuation of additional mechanism.

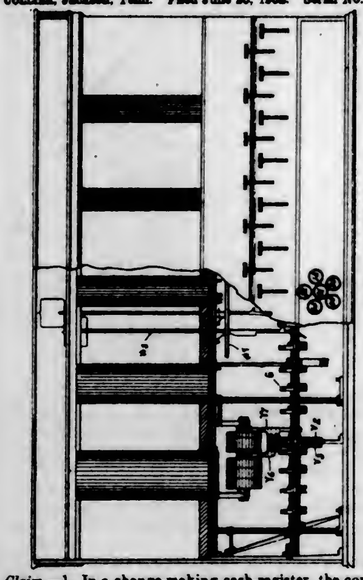
7. An acetylene-gas machine comprising a chamber having a feed-opening, the hopper 11 within said chamber and having the pipe 12, the tubular gate 16 movable on said pipe, the lever 24 mounted on the shaft 24', and having a fork for engaging the pins 17 of the gate, the lever 25 fixed on the outer end of the shaft 24', the counterweighted arm 48 pivotally mounted and connected with the lever 25, the lever 52 pivotally mounted and connected with the arm 48, and the cap 8 connected with the lever 52, as and for the purpose described.

8. The combination with the feed-chamber having the fitting 7 furnished with the channel 7' and the escape-pipe 29, of the cap 8 adapted to close said fitting and having the compartment 8', as and for the purpose described.

9. The combination with the chamber 6 and the fitting 23 secured thereto and having the compartment 23', of the waste-pipe 26 connected with said compartment, as and for the purpose described.

10. An acetylene-gas generator composed of a chamber having a feed-hopper provided with a charging-opening, a feeding device located within the chamber beneath said feed-hopper, an actuator for said feeding device, a closure for said feed-hopper, a counterbalance connected to said closure and said actuator to render the feeding device operative, but allowing the feeding device to assume an inoperative position when the closure is removed by the action of the counterbalance on the actuator.

823,104. CHANGE-MAKING CASH-REGISTER. WILLIAM H. COLLIER, Jackson, Tenn. Filed June 20, 1902. Serial No. 112,441.



Claim.—1. In a change-making cash-register, the combination of coin-receptacles, separating-slides for operating and controlling said receptacles, and discharging-slides carried by said separating-slides, substantially as described.

2. The combination of separating-slides, discharging-slides carried by said separating-slides, push-rods, fulcrumed levers, and controlling-arcs operated by said push-rods.

3. The combination of finger-levers, separating and discharging slides, push-rods operating said slides, arcs governing said slides and coin-receptacles controlled by said slides.

4. The combination of coin-receptacles, separating and discharging slides, push-rods operating said slides and a cash-drawer to which the push-rods are attached.

5. The combination of finger-levers, controlling-cams operated by said levers, a cash-drawer, push-rods connected to the cash-drawer coin-receptacles and operating-slides under the coin-receptacles.

6. In a change-making cash-register, a combination of receptacles, a series of operating-slides, delivering-slides carried by said operating-slides, substantially as shown and described.

7. In a change-making cash-register, a combination of coin-receptacles, coin-operating slides having openings corresponding to diameter of coin, delivering-slides controlling said operating-slides, substantially as shown and for the purpose specified.

8. In a change-making cash-register, a combination of coin-receptacles, coin-separating slides, delivering-slides carried by said coin operating slides, controlling-cams, and push-rods operating said slides and cams, substantially as shown and for the purpose specified.

9. The combination of cams, levers for operating said cams, lever-arms controlled by said cams, a coin-receptacle and four slides operating under said receptacle, said slides being operated and controlled by said lever-arms.

10. The combination of movable and stationary disks, lever-arms controlled by said disks, coin-receptacles, and slides controlled by said lever-arms and operating beneath said receptacles.

11. The combination of movable and stationary disks, controlling-arms governed by said disks, delivering-slides operated by said arms and cams and push-rods governing said controlling-arms.

12. In a change-making cash-register, the combination of finger-levers fulcrumed as shown, pins in lever-arms, shaft carrying and controlling arcs, pins in finger-levers for operating said cams, substantially as shown and for the purpose specified.

13. In a change-making cash-register, a shaft, key-levers fulcrumed on said shaft, pins on said levers, a second shaft, cams and controlling-arcs having projections fixed on said shaft, and coin separating and delivering slides, said slides being governed by said arcs, substantially as shown and described.

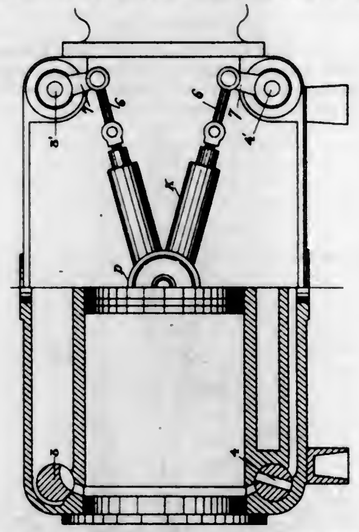
14. The combination of finger-levers, fulcrumed as shown, a shaft, cams fixed on said shaft and engaged by said finger-levers, operating and delivering slides, controlling-arcs fixed to said shaft and controlling said slides, a cash-drawer and push-rods connected to said drawer, said push-rods operating said slides.

15. The combination of finger-levers fulcrumed as shown, pins in said levers, a shaft, controlling-cams and governing-arcs fixedly adjusted on said shaft, said arcs having slots or recesses.

16. The combination of finger-levers fulcrumed as shown, pins P in said levers, shaft S^1, cams G fixedly adjusted on shaft S^2 and engaged by pins P, arcs H fixed to said shaft and having slots or recesses, tubes for containing coins, slides E having openings to receive coins and move them from beneath the tubes, said slides being controlled by said arcs.

17. The combination of a cash-drawer, push-rods bearing numbers representing the denomination of coin offered in payment, said rods being carried by said cash-drawer.

823,105. PRESSURE-ACTUATED VALVE-GEAR. WILLIAM H. COLLIER, Jackson, Tenn. Filed Mar. 31, 1904. Serial No. 201,023.



Claim.—1. In an engine, the combination with an engine-cylinder, and separate valves for the two ends thereof, of separate fluid-pressure-actuated valve-operating means for each of said valves, and a common rotary controlling-valve for said fluid-pressure-actuated valve-operating means, controlling the operation thereof, and automatic means for rotating the same.

2. In an engine, the combination with an engine-cylinder, and separate valves for the two ends thereof, of a common rotary controlling-valve, separate fluid-pressure-actuated valve-operating means for said cylinder-valves, arranged about said controlling-valve and controlled thereby, and automatic means for rotating said controlling-valve.

3. In a fluid-pressure-actuated valve-gear, the combination with fluid-pressure-actuated valve-operating means, of a rotary controlling-valve controlling the action of said valve-operating means and movable axially for governing, and an automatic governor connected to said valve and arranged to move the same axially.

4. In a fluid-pressure-actuated valve-gear, the combination with fluid-pressure-actuated valve-operating means, of a rotary controlling-valve controlling the action of said valve-operating means, and movable axially for governing, and having ports coacting with corresponding ports of said valve-actuating means, said ports comprising oblique cut-off ports whereby axial motion of the valve varies the point of cut-off, and an automatic governor connected to said valve and arranged to move same axially.

5. In a pressure-actuated valve-gear, a controlling-valve having spiral cut-off and oblong admission-openings, a governor attached to said valve and actuating cylinders and pistons controlled by said valve, said pistons being connected to and operating engine-valves.

6. In a pressure-actuated valve-gear the combination of a controlling-valve, a governor attached thereto, said valve being arranged to be connected to and to rotate with shaft of engine, and actuating cylinders and pistons, the latter connected to main valves of engine and operated by said controlling-valve.

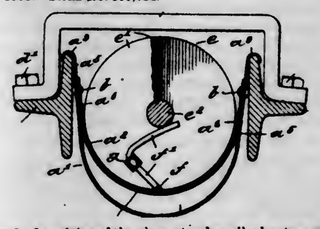
7. In a pressure-actuated valve-gear, the combination of a valve-shaft, a gear connected thereto, a governor on said shaft, a rotary controlling-valve driven by said governor, and fluid-pressure-actuated valve-operating means controlled by said controlling-valve and connected to main valve means of the engine.

8. In an engine, the combination with an engine-cylinder and valves therefor, of valve-gear therefor comprising a cylinder-casing having in it a chamber for a rotary controlling-valve and cylinders for valve-actuating pistons arranged about said chamber and connected thereto by suitable ports, pistons in said cylinders connected to said valves, a rotatably and longitudinally movable controlling-valve in said chamber having ports coacting with the ports of said chamber, means for rotating said valve automatically, and means for shifting said controlling-valve longitudinally.

9. In an engine, the combination with an engine-cylinder, and valves therefor, of valve-gear therefor comprising a cylinder-casing having within it a chamber for a rotary controlling-valve and cylinders for valve-actuating pistons arranged about said chamber and approximately radially with respect thereto and connected thereto by suitable ports, pistons in said cylinders connected to said valves, a controlling-valve rotatably mounted in said chamber, and having ports coacting with the ports of said chamber, and automatic means for rotating said controlling-valve.

10. In an engine, the combination with an engine-cylinder, and valves therefor, of valve-gear therefor comprising a controlling-valve chamber, fluid-pressure-actuated valve-operating means connected to said engine-valves and having ports communicating with said valve-chamber, a controlling-valve rotatably mounted in said chamber and consisting of a round plug having supply and exhaust passages extending longitudinally therethrough, one of said passages communicating with supply and the other with exhaust, and automatic means for rotating said controlling-valve.

823,106. DRIER. ARTHUR T. COLLINS, Swarthmore, Pa. Filed Mar. 3, 1906. Serial No. 303,784.



Claim.—1. In a drier of the character described, a trough adapted to receive material to be dried, a spiral conveyer arranged therein and adapted to move the material along said trough and a series of scrapers carried by said conveyer and arranged to engage and move the material not affected by the conveyer.

2. In a drier of the character described, a trough, consisting of two strips of metal forming united a chamber for a heating medium and a chamber for material to be dried, a support engaging said trough at its upper end and arranged to prevent distortion of the same in a longitudinal direction, a spiral conveyer arranged in the drying-chamber and adapted to move material longitudinally therein and scrapers carried by said conveyer adapted to be held in engagement with said trough and to move material not affected by the conveyer.

3. In a drier of the character described, a trough adapted to receive material to be dried, a spiral conveyer arranged therein and adapted to move the material longitudinally in said trough and a se-

ries of yielding scrapers carried by said conveyer adapted to be held by said conveyer in frictional engagement with said trough to follow irregularities of the inner wall thereof so as to move material not affected by said conveyer in a substantially spiral path in said trough.

4. In a drier of the character described, a trough adapted to receive and dry material placed therein, a conveyer, comprising a shaft and a spiral blade arranged thereon and adapted to move material longitudinally in said trough, and a series of scrapers held in frictional engagement with said trough and arranged to follow irregularities of the inner wall to remove adhering portions of the material passing beneath the blade of said conveyer.

5. In a drier of the character described, a trough adapted to receive and dry material placed therein, a conveyer, comprising a shaft and a spiral blade arranged in said trough and adapted to move material forward therein, and a series of scrapers pivotally connected with said blade, said scrapers, consisting of strips, engaging at one end the blade and at the opposite end the shaft, whereby the respective scrapers of said blade are held by said shaft in frictional contact with said trough.

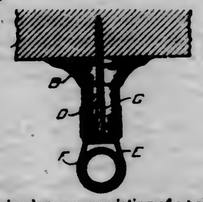
6. In a drier of the character described, a trough adapted to receive and dry material placed therein, a conveyer comprising a shaft and a blade spirally mounted thereon and adapted to move the material forward in said trough, and a series of U-shaped scrapers pivotally connected with said blade and held by the same with their horizontal portions in engagement with said trough and with their vertical portions in engagement with said shaft.

823,107. **LOCK FOR VEHICLES.** ROBERT CONGREVE, Christchurch, New Zealand. Filed Nov. 5, 1904. Serial No. 231,472.



Claim.—A vehicle-locking device comprising a casing, an arm pivoted to the casing and projecting beyond the same, a hook member fast on the arm, an aperture in the casing-wall, a spring connected with the arm and arranged to yieldably retain the arm with the hook member projecting into the casing through such aperture, a pivotal pin in the casing, a plurality of superposed tumblers pivoted on said pin and provided with hook extremities arranged to engage the hook member of said arm to retain the arm in engaging position against the force of said spring, a spring member in the casing arranged to normally retain the tumblers in engaging position, the tumblers having their other ends unevenly arranged when in the locking position, an aperture in the casing opposite the said uneven extremities of the tumblers, and a key arranged to be inserted in the latter aperture in the casing and having an uneven portion arranged to engage the said uneven portion of the tumblers upon the key being advanced endwise to thereby rock the tumblers to disengage the hook member of the swinging arm, whereby the arm will be moved by its spring to any non-engaging position.

823,108. **PIPE-HANGER.** JAMES CRAWFORD, Boston, Mass., assignor to George B. Nichols, Somerville, Mass. Filed Nov. 3, 1904. Serial No. 231,266.



Claim.—1. A pipe-hanger, consisting of a hollow post having a groove in its lower end combined with an expansive bail or loop, having projections adapted to fit in the groove means extending through the post for securing the same in position, and a band surrounding and longitudinally movable on said post and loop extremities, and adapted to be shifted over said extremities to secure the projections on the loop in said groove.

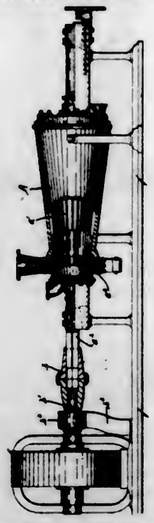
2. A pipe-hanger consisting of a grooved hollow post, and means extending through the post for securing the same in position, in combination with a continuous locking-band slidably adjustable thereon, and an expansive loop or bail having inward projections adapted to be interlocked with the groove of the post by the adjustment of the said locking-band thereover.

3. A pipe-hanger consisting of a tubular post having a groove therein, a securing-screw inserted in said post, a continuous expansive bail or loop having projections to engage the groove, the projections being located at a distance from the ends of the bail, and a band surrounding and longitudinally movable on the post and over the projections of the bail.

4. A hanger including a cylindrical hollow post having an annular groove at a point removed from one end thereof, a loop member having legs conforming to the shape of the post, the legs of said loop at a distance removed from their ends being provided with ridges adapted to engage said groove means extending through the post for securing the same in position, and means slidable on the post for overriding the legs of the loop to cause the ridges to interlock in the groove.

5. A pipe-hanger comprising a hollow post provided with an integral flanged head and an outer end having a perforation to receive an attaching-screw, the flanged head being open for the passage of the screw, and the post having exteriorly thereof near one end an annular groove, a bail, the legs of which are adapted to engage the outer portion of the post, the engaging surfaces being similarly curved and the legs of the bail having interior ridges to enter said groove, and a ring interiorly plain to surround the legs of the bail to hold their ridges in the groove, and movable from off said legs in the direction of the length of the post to permit the separation of the bail from said post.

823,109. **DRIVING MECHANISM FOR PAPER-REFINING ENGINES.** EBEN C. CROCKER, Bridgeport, Conn., assignor, by mesne assignments, to Horace A. Moses, Mittineague, Mass. Filed Dec. 9, 1901. Renewed Feb. 21, 1905. Serial No. 246,776.



Claim.—1. In a refining-engine, the combination with a stationary shell of a cutting core or plug rotatably mounted within the shell, an endwise-adjustable shaft on which the plug is supported, mechanism for adjusting the plug and its shaft endwise relatively to the shell and retaining them in such position of adjustment while rotating, an electric motor, and connections between it and said plug-shaft whereby the latter is rotated by the motor, substantially as described.

2. In a refining-engine, the combination with a stationary shell, of a cutting core or plug rotatably mounted within the shell, an endwise-adjustable shaft on which the plug is supported, mechanism for adjusting the plug and its shaft endwise relatively to the shell and retaining them in such position of adjustment while rotating, an electric motor arranged in substantially axial alinement with the plug-shaft, and connections between it and said plug-shaft whereby the latter is rotated by the motor, substantially as described.

3. In a refining-engine, the combination with a stationary shell, of a cutting core or plug rotatably mounted within the shell, an endwise-adjustable shaft on which the plug is supported, mechanism for adjusting the plug and its shaft endwise relatively to the shell and retaining them in such position of adjustment while rotating, an electric motor having a shaft arranged in substantial axial alinement with the plug-shaft, and a coupling connecting the contiguous ends of said shafts and permitting endwise movement of the plug-shaft relatively to the motor-shaft by the adjusting mechanism, substantially as described.

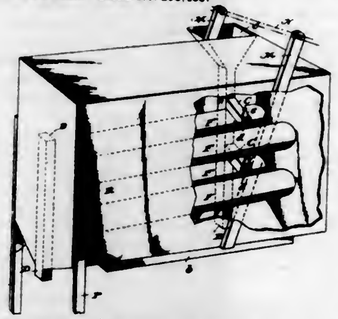
823,110. **MANUFACTURE OF HOG-CHOLERA ANTITOXIN.** MARION DORSET, Washington, D. C. Filed Feb. 7, 1906. Serial No. 300,023.

Claim.—1. The process of producing hog-cholera antitoxin, which consists in inoculating pigs immune from hog-cholera, from any cause, with defibrinated blood obtained from pigs sick of hog-cholera, so as to hyperimmunize the treated test pig, and to form in the blood protective substances for preventing the disease known as hog-cholera, drawing off the blood from the said treated test pigs and separating the serum from the blood corpuscles and preparing the former for use by adding a preservative substantially as described.

2. The process of producing hog-cholera antitoxin which consists in inoculating pigs immune to hog-cholera from any cause, with defibrinated blood obtained from pigs sick of hog-cholera so as to hyperimmunize the treated test pig, and repeating the injection with larger injections of blood obtained from pigs sick of hog-cholera, then drawing off the blood from the said treated test pigs, separating the serum from the blood corpuscles and adding a preservative, substantially as described.

3. As a new substance hog-cholera antitoxin, consisting of the blood of pigs, rendered immune from hog-cholera from any cause, treated with blood obtained from pigs sick of hog-cholera, and having the characteristics of immunizing pigs against infection from hog-cholera and curing those artificially infected with hog-cholera, and adapted to be used either alone, or in connection with injections of the blood of pigs sick of hog-cholera to prevent the disease known as hog-cholera in healthy pigs, and to cure pigs sick of hog-cholera.

823,111. **SEED-SEPARATOR.** EDWIN C. FOLTZ, Louisville, Ky. Filed Dec. 26, 1905. Serial No. 293,408.

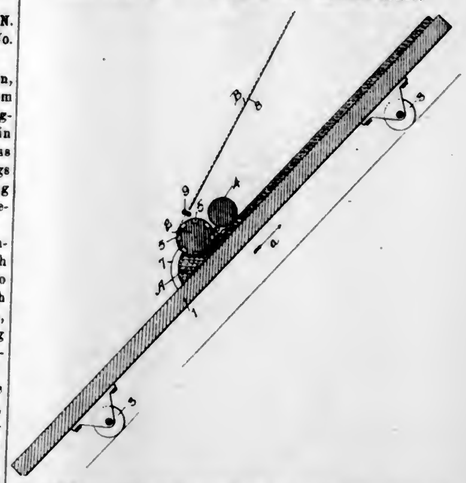


Claim.—1. In a seed-separator, the combination of a casing mounted to swing vertically, means for adjustably fixing said casing at various angles of inclination, a pair of rolls arranged in the casing with their peripheries in contact, whereby a gutter is formed by and between said rolls, and means for supplying seed to the upper portion of the gutter between the rolls.

2. In a seed-separator, the combination of a casing, pairs of longitudinally-inclined rolls arranged one above the other in the casing; the peripheries of the rolls of each pair being in contact, and each roll comprising a body, a cloth covering, and a cushion surrounding the body and interposed between the same and the cloth covering, an upright conduit, spouts extending laterally from said conduit and having discharges arranged above the upper portions of the gutters between the rolls, and a discharge-conduit having troughs arranged to receive from the lower ends of the said gutters.

3. In a seed-separator, the combination of a rod adapted to be supported in a horizontal position, a casing having arms fixed to and extending upwardly from it adjacent to one of its ends and pivoted on the said rod, supporting means adjustably connected to the opposite end of the casing, pairs of rolls arranged one above the other in the casing; the peripheries of the rolls of each pair being in contact, whereby gutters are formed by and between said rolls, and means for supporting seed to the upper portions of the gutters between the rolls.

823,112. **METHOD OF AND MACHINE FOR FORMING WIRE-GLASS.** NICKLAS FRANSEN, Dunbar, Pa., assignor to William L. Munro, Pittsburg, Pa. Filed June 7, 1905. Serial No. 264,130.



Claim.—1. The herein-described method of making wire-glass which consists in, first, teeming a batch of molten glass upon a forming-surface; second, simultaneously spreading said batch of molten glass to layer form, applying to the surface thereof a fabric, and causing separated or segregated portions of said batch of molten glass to rise through said fabric in protuberances of molten or unchilled glass; and, finally, spreading said protuberances into a layer upon said fabric-faced layer, substantially as described.

2. The herein-described method of making wire-glass which consists in, first, introducing a sheet of fabric between a body of molten glass and a pitted spreading-roll; second, simultaneously spreading the body of molten glass to layer form with the fabric covering the surface thereof, and causing separated or segregated portions of the molten glass to exude or pass through the fabric into the pit-like pockets of the spreading-roll, but without solidifying contact with the walls thereof; and, finally, spreading said protuberances of unhardened glass into a layer over said fabric-covered surface, substantially as described.

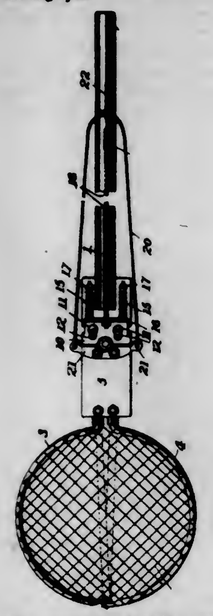
3. In a machine for making wire-glass the combination of a forming-surface, means for simultaneously spreading molten glass into a layer thereon, applying fabric to the surface thereof and causing separated or segregated portions of the molten glass to exude through the fabric in teat-like projections unchilled by contact with a matrix, and means for spreading said teat-like projections upon said fabric-faced layer, substantially as described.

4. In a machine for making wire-glass the combination of a forming-surface, means for spreading upon said forming-surface a sheet of glass, the surface of said spreading means being provided with air-including cavities in which air is retained by the molten glass insulating the glass from cooling contact with the spreading means, and means for finishing the sheet of glass so spread, substantially as described.

5. A distributing-roll for a wire-glass machine having a plurality of air-including cavities in its surface in which air is retained by the molten glass insulating the glass from cooling contact with said roll, substantially as described.

823,113. **LANDING-NET.** LUKE FRENCH and BARNEY T. REILLY, Wilkes-Barre, Pa. Filed Oct. 12, 1905. Serial No. 282,481.

Claim.—1. A landing-net comprising a handle, a sectional frame connected with the handle, a bag supported by said frame, means acting to move the members of the frame to close the mouth of the bag, means for moving the members of the frame to open the mouth of the bag, and independent means for engaging said frame to hold the mouth of the bag open.



2. A landing-net comprising a handle, a sectional frame connected with the handle, a bag supported by said frame, means acting to move the members of the frame to close the mouth of the bag, a locking device for engaging the frame to hold the mouth of the bag open, and means for releasing said lock.

3. A landing-net comprising a handle, a sectional frame connected with the handle, a bag supported by said frame, means acting to hold said frame in position to close the mouth of the bag, a spring-pressed lock for engaging the frame to hold the mouth of the bag open, and means for releasing said lock.

4. A landing-net comprising a handle, a bag supported from said handle, means acting to normally close the mouth of the bag, means for holding the mouth of the bag open, and devices on the handle for actuating both said means.

5. A landing-net comprising a handle, a bag supported beyond one end of the handle, means supported by the handle and acting to close the mouth of the bag, a device extending longitudinally of the handle and adapted to open the mouth of the bag, a locking device for holding the mouth of the bag open, and means for moving said locking device to and from operative position.

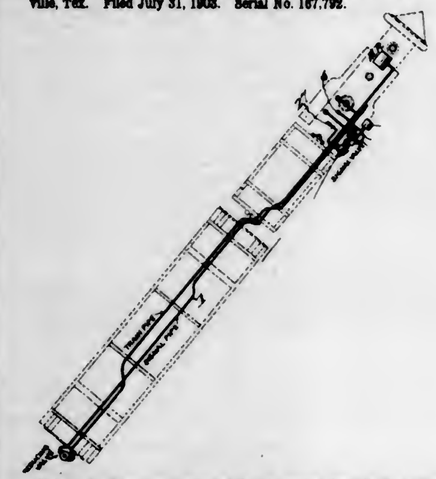
6. A landing-net comprising a handle, a frame having two members pivotally connected at one end, and each having at its other end a section mounted to rock in bearings on the handle, a bag supported by said frame, springs engaging said members of the bag-frame and acting to rock them in their bearings on the handle to close the mouth of the bag, and a catch or locking device movably mounted on the handle and adapted to engage said frame members to hold the mouth of the bag open against the force of said springs.

7. A landing-net comprising a handle, a frame having two members pivotally connected at one end, and each having at its other end a section mounted to rock in bearings on the handle, a bag supported by said frame, springs engaging said members of the bag-frame and acting to rock them in their bearings on the handle to close the mouth of the bag, a spring-pressed catch mounted on the handle and adapted to engage said bag-frame when the mouth of the bag is open, and means for disengaging said catch from the bag-frame at will.

8. A landing-net comprising a handle, a frame having two members pivotally connected at one end, and each having at its other end a section mounted to rock in bearings on the handle, a bag supported by said frame, springs engaging said members of the bag-frame and acting to rock them in their bearings on the handle to close the mouth of the bag, a spring-pressed plate mounted on the handle to move longitudinally thereof and adapted to engage both members of the bag-frame when the bag is open, and means adjacent the opposite end of the handle from the bag, for disengaging said catch from the arms of the bag-frame.

9. A landing-net comprising a handle, a bag supported beyond one end of the handle by a frame adapted to open or close the mouth of the bag, means acting to normally hold said frame in position to close the mouth of the bag, means connected with the bag-frame and extending toward the opposite end of the handle from the bag to move said frame to open the month of the bag, means for engaging the bag-frame when the mouth of the bag is open, and means adjacent the opposite end of the handle from the bag for releasing said engaging means.

828,114. TRAIN SIGNALING SYSTEM. JOSEPH GERARD, Gainesville, Tex. Filed July 31, 1903. Serial No. 167,792.



Claim.—1. In an apparatus of the character described, a train-pipe extending from the engine to the rear end of the train, a signal-pipe extending from the rear end of the train to the engine, and a reducing-valve disposed at the rear end of the train and connecting the two pipes, the connection through the reducing-valve serving to permit constant communication between the train and signal-pipe and the automatic restoration of air-pressure in the latter after each signaling operation.

2. In apparatus of the class described, train and signal pipes extending throughout the length of the train, and a detachable reducing-valve forming a part of the equipment of the train crew, said valve having an air-hose coupling connection for connection with the air-hose couplings of both train and signal pipes at the end of the train, the connection through the reducing-valve serving to permit constant communication between the train and signal pipes, and the automatic restoration of air-pressure in the latter after each signaling operation.

3. In a train signaling mechanism, the separate train and signal pipes, and a reducing-valve arranged remote from the engineer's position and forming a connection between the two pipes, said reducing-valve comprising means for permitting constant communication between said pipes and the automatic restoration of air-pressure in the signal-pipe after each signaling operation.

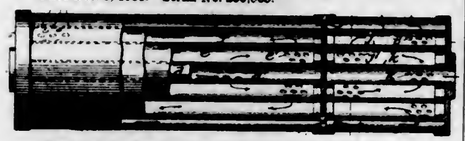
4. In a signaling mechanism, the combination with the train signal-pipe of an air-brake system, a pressure-operated signal including a valved casing connected with the signal-pipe, and an auxiliary governing and signaling device having a pressure-supply connection with the signal-pipe through the casing of the pressure-operated signal device.

5. In a train signaling mechanism, the combination with the train signal-pipe of an air-brake system, of a pressure-operated signal device including a valve-casing connected with the train signal-pipe, and an auxiliary governing and signaling device having a pressure-controlled valve, said auxiliary device having direct connection with the train signal-pipe, and also a separate pressure-supply connection with said pipe through the casing of said pressure-operated signal device.

6. In a signaling mechanism, the combination with the train signal-pipe of an air-brake system, a signal-valve casing having a diaphragm therein exposed directly to the signal-pipe pressure, a signal-whistle, an auxiliary reservoir supplied by the signal-pipe and communicating with the signal-whistle, a valve carried by said diaphragm and controlling the connection between the auxiliary reservoir and the signal-whistle, and an auxiliary governing and signaling device including an auxiliary alarm, a valve-casing having an indirect connection with the signal-pipe through said signal-valve casing, and a piston-controlled valve operating to place the auxiliary alarm in and out of communication with its source of pressure-supply.

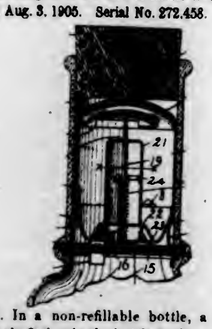
7. In a signaling mechanism, the combination with a train signal-pipe of an air-brake system, of a signal-valve casing provided with a valve-seat, a diaphragm working in the casing and carrying a valve coöperating with said seat, an auxiliary reservoir in communication with said casing at one side of the valve-seat, a signal-whistle having a pipe communicating with the casing at the other side of said valve-seat, a pipe connection between the train signal-pipe and the casing at one side of the piston member therein, a similar connection between the casing at the same side of the piston member therein and the auxiliary reservoir, and an auxiliary governing and signaling device having an indirect pressure-supply connection with the train signal-pipe through said signal-valve casing.

823,115. MUFFLER. BENJAMIN A. GRAMM, Chillicothe, Ohio. Filed Dec. 8, 1905. Serial No. 290,863.



Claim.—A muffler made up of two compartments of unequal volume, the inlet-compartment being of substantially twice the volume of the outlet-compartment; each of said compartments comprising an end piece and a series of concentric cylindrical shells one end of each of which is mounted in one of said end pieces and the other end of each of which is mounted in a partition which separates said compartments from each other; the outer shell of each compartment being imperforate and the other shells thereof being perforated; and said partition being formed with apertures extending entirely around its outer edge between the walls of the outer and the next to outer shells.

823,116. NON-REFILLABLE BOTTLE. GERALD DE GREY, Philadelphia, Pa., assignor of one-half to Abner W. Renninger, Philadelphia, Pa. Filed Aug. 3, 1905. Serial No. 272,458.



Claim.—1. In a non-refillable bottle, a valve-case insertible within and snugly fitting in the bottle-neck, a chambered valve having double seats on the case, the bottle having a groove in its neck and holders from the case which enter said groove and prevent the removal of the valve-case.

2. In a non-refillable bottle having a groove in its neck, a valve-case within the bottle-neck, holders from the case which enter the groove, and resilient means to secure the holders in the groove.

3. In a non-refillable bottle, the combination with a bottle having a groove in its neck, of a case inserted in the neck having means therefrom which enter the groove for the retention of the case, visible through the glass neck of the bottle.

4. In a non-refillable bottle, a case inserted in the neck of the bottle, an apertured top for the case, a shield within the case and covering the aperture, a bottom for the case, a chambered valve within the case and having multiple seats upon said case-bottom, means to guide the valve, resilient means to hold said valve to its seats when the bottle is in an upright position, and to yield when the bottle is so placed that liquid flows into the valve-chamber, and permit the valve to unseat and discharge the bottle's contents, and means to retain the case irremovably in the bottle.

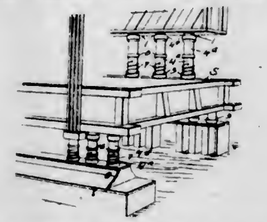
5. In a non-refillable bottle, having a groove in its neck, a valve-case inserted in the neck of the bottle and having means to engage the groove, a multiple seated and chambered valve within the case, and yielding means to retain the valve on its seats when its chamber is free of liquid.

6. In a non-refillable bottle having a groove in its neck, a valve-case in the bottle's neck with retaining means which enter the groove aforesaid, a double-seated chambered valve in the case and resilient means for the valve's closure.

7. In a non-refillable bottle having a retaining-groove in its neck, a valve-case, a top for the case having an aperture and a shield under the aperture, a cone-shaped bottom for the case having an opening with upturned sides, a spindle secured to the bottom and having its upper end coned or tapered, pendent holders for the case which enter the groove in the bottle and means for their retention therein, a chambered valve within the case and having multiple seats around its bottom opening, and having a vent at the top of the valve, means to guide the valve upon the spindle aforesaid, and resilient means to force the valve to its seats when its chamber is empty and to yield for the valve's movement by the weight of liquid in the valve's chamber.

8. The combination with a free open-necked bottle having a groove therein, of an independent case having therein a double seated and chambered valve, the case being constructed separate from the bottle and inserted after the bottle has been filled and having means to prevent its removal and the refilling of the bottle.

823,117. SPOUT FOR SIFTING-MACHINES. OSCAR GRIENORE, McCook, Nebr. Filed Aug. 4, 1905. Serial No. 272,695.



Claim.—1. A device of the class described, comprising a tubular section adapted to be secured over a discharge-opening, said tubular section having a pair of annular beads, a packing held between said beads on said tubular section, a second tubular section adapted to be secured over a receiving-aperture, a tubular spout-section having its end telescopically held over said first-mentioned tubular section and in engagement with the packing thereof, a second tubular spout-section adapted to telescopically receive the first spout-section, said second spout-section having a pair of beads near one end thereof, and a packing held between said last-named beads and said second spout-section and said last-named packing adapted to be received by said second tubular section and means carried by one spout-section for securing the sections from telescopic movement substantially as shown and described.

2. A device of the class described, comprising a tubular section adapted to be secured over a discharge-opening, said tubular section having a pair of annular beads, a packing held between said beads on said tubular section, a second tubular section adapted to be secured over a receiving-aperture, a tubular spout-section having its ends telescopically held over said first-mentioned tubular section and in engagement with the packing thereof, a second tubular spout-section adapted to telescopically receive the first spout-section, said second spout-section having a pair of beads near one end thereof, and a packing held between said last-named beads and said second spout-section and said last-named packing adapted to be received by said second tubular section, means for clamping said spout-sections together, and means for holding said spout-sections in proper position with respect to the first and second mentioned tubular members.

3. A spout for sifting-machines, comprising a plurality of telescopic sections, the end sections of each adapted to be secured over feed and discharge openings, means for holding the intermediate sections in position with respect to the end sections and preventing the intermediate sections from turning on their longitudinal axis, said means comprising a coil-spring secured to one end section and to the intermediate section, and means for locking said intermediate sections together substantially as shown and described.

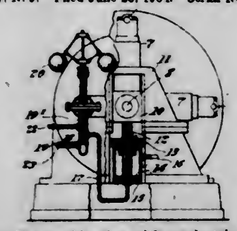
4. A spout of the class described, comprising a tubular section, having a peripheral roll or bead 1^b at one end and an intermediate bead 1^b, a tubular spout-section 4^b spaced telescopically over said tubular section, and adapted to receive a packing 2 between it and the section 1 to form a snug joint therewith, a second tubular section 3, a second tubular spout-section 4^a adapted to receive the first spout-section 4^d and provided at one end with a peripheral bead 4^b and an intermediate bead 4^c, a packing 5 held on said second spout-section between said last-named beads, said tubular section 3 adapted to receive said second spout-section 4^a with the packing 5 between the tubular member 3 and the section 4^a to form a snug joint therewith, a clamping device for securing said spout-sections 4^a 2^d together, and a supporting-spring 7 secured to one spout-section and to one of the end sections 3, substantially as shown and described.

5. A spout of the class described, comprising four telescopic sections, means for securing the end sections respectively to the feed and discharge openings of a sifting-machine, means for securing the two intermediate sections together to prevent telescopic movement between the same and means secured to one of the intermediate sections and one of the end sections for holding the intermediate sections in position with respect to the end sections and holding the intermediate sections from turning on their longitudinal axis substantially as shown and described.

6. A device of the class described, comprising a tubular section adapted to be secured over a discharge-opening, a packing held near the end of the said tubular section, a tubular spout-section having its end telescopically held over said first-named tubular section, and in engagement with the packing thereof, a second tubular spout-section adapted to telescopically receive the first spout-section, a packing held on said second spout-section near the end thereof, said second spout-section adapted to discharge into a receiving-aperture, and means for clamping said spout-sections together as shown and described.

7. A device of the class described, comprising a tubular section adapted to be secured over a discharge-opening, a packing held near the end of the said tubular section, a tubular spout-section having its end telescopically held over said first-named tubular section, and in engagement with the packing thereof, a second tubular spout-section adapted to telescopically receive the first spout-section, a packing held on said second spout-section near the end thereof, said second spout-section adapted to discharge into a receiving-aperture, means for clamping said spout-sections together, and means for holding said spout-sections in position and from turning on their longitudinal axis substantially as shown and described.

823,118. ELECTRICALLY-DRIVEN PUMP. HOWARD F. GURNEY, Jersey City, N. J. Filed June 20, 1904. Serial No. 213,271.



Claim.—1. The combination with an electric motor, of a pump having a variable working capacity, a power-applying device for regulating the working capacity of the pump, and a pump-controlling shiftable device whose shifting movement is a function of the motor speed and which device causes the movement of the power-applying device, thereby increasing the capacity of said pump with increase of motor speed.

2. The combination with an electric motor, of a shiftable device whose shifting movement is a function of the motor speed, a pump having a variable working stroke, a pressure-engine for regulating the length of such working stroke, and a valve mechanism operative from said shiftable device for controlling the admission of pressure fluid to and its exhaust from the pressure-engine.

3. The combination with an electric motor, of a pump having a variable working stroke, a pressure-engine for regulating the length of said working stroke, a valve mechanism for controlling the admission of pressure fluid to and its exhaust from the pressure-engine, and a shiftable device whose shifting movement is a function of the motor speed and which is operatively connected with said valve mechanism, said shiftable device opening said valve mechanism to admit fluid-pressure to said pressure-engine and thereby increase the working stroke of the pump with increase of motor speed.

4. The combination with an electric motor, of a pump having a variable working capacity, a power-applying device for regulating the working capacity of the pump, and a centrifugal regulator whose shifting movement is a function of the motor speed and which regulator causes the movement of the power-applying device, thereby increasing the capacity of said pump with increase of motor speed.

5. The combination with an electric motor and an automatically-operative motor-circuit switch, of a pump having a variable working capacity, a power-applying device for regulating the working capacity of the pump, and a pump-controlling shiftable device whose shifting movement is a function of the motor speed and which device causes the movement of the power-applying device, thereby increasing the capacity of said pump with increase of motor speed.

6. The combination with an electric motor, an automatically-operative motor-circuit switch, and a motor-starter, of a pump having a variable working capacity, a power-applying device for regulating the working capacity of the pump, and an independent pump-controlling shiftable device whose shifting movement is a function of the motor speed and which device causes the movement of the power-applying device, thereby increasing the capacity of said pump with increase of motor speed.

7. The combination of an electric motor, a revoluble pump-piston and cylinder adapted to revolve about independent axes having a variable eccentric relation, a pressure-engine for regulating the eccentricity between the axes of revolution specified and which engine is adapted to maintain a minimum eccentricity therebetween during the period required to bring the motor to a predetermined speed, and a pump-controlling shiftable device whose shifting movement is a function of the motor speed and which device causes the movement of said pressure-engine, thereby increasing the eccentricity between the axes specified with increase of motor speed.

8. The combination of a motor, a pump having a variable working stroke, and means for throwing the load of the pump onto the motor when the latter has approximated to a predetermined speed.

9. The combination of a motor, a pump having a variable working stroke, and means for increasing the stroke of the pump and throwing the resultant load onto the motor when the latter has approximated to a predetermined speed.

10. The combination of a motor, a pump having a variable working stroke, and means for automatically increasing the stroke of the pump and throwing the resultant load onto the motor when the latter has approximated to a predetermined speed.

11. The combination of a motor, a pump having a variable working stroke and which is connected to the motor, and means for maintaining the pump at a minimum stroke while the motor is speeding up and for increasing the stroke of the pump when the motor has approximated to a predetermined speed.

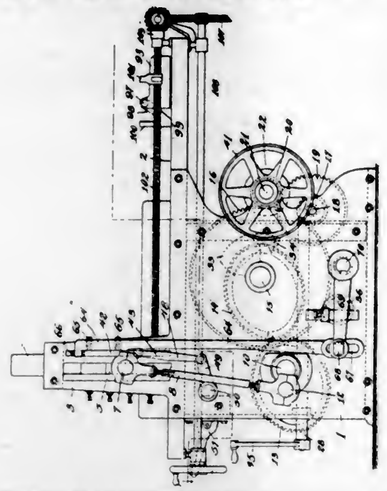
12. The combination of a motor, a piston and a cylinder adapted to revolve about independent axes having a variable eccentric relation, said motor being directly connected to one of the revoluble parts, and means for maintaining a minimum eccentricity between the said axes during the period required to speed up the motor and for increasing such eccentricity when the motor has approximated to a predetermined speed.

13. The combination of an electric motor, an automatically-operative motor-circuit switch, a pump having a variable working stroke, and means for throwing the load of the pump onto the motor when the motor has approximated to a predetermined speed.

14. The combination of an electric motor, a pump comprising a piston and a cylinder revoluble about independent axes having a variable eccentric relation, and means for increasing the eccentric relation between said axes and throwing the resultant load of the pump onto the motor when the latter has approximated to a predetermined speed and for decreasing this eccentric relation upon reduction of motor speed.

15. The combination of an electric motor, a pump having a variable working capacity, and means for increasing the capacity of the pump and throwing the resultant load onto the motor when the latter has approximated to a predetermined speed and for decreasing the working capacity of the pump upon reduction of motor speed.

823,119. PAPER-CUTTING MACHINE. JAMES G. HARDIE, Canton, N. Y. Filed Mar. 28, 1905. Serial No. 252,595.



Claim.—1. In a paper-cutting machine the combination with a clamp-bar of a plurality of friction devices for actuating said clamp-bar and means for separately throwing said friction devices into and out of action.

2. In a paper-cutting machine the combination with a clamp-bar, of a friction mechanism adapted to actuate said clamp-bar provided with means for automatically increasing the power of said clamp-bar after its motion has been arrested.

3. In a paper-cutting machine the combination with a clamp-bar of a frictional clamp-bar-actuating mechanism provided with means for varying the power which said clamp exerts upon the paper in a predetermined manner.

4. In a paper-cutting machine the combination with a clamp-bar of a plurality of clamp-bar-actuating devices each capable of producing a clamping action of certain power and means for bringing a plurality of said clamp-bar-actuating devices successively into action.

5. In a paper-cutting machine the combination with a clamp-bar, of a power-actuated member, a plurality of friction devices adapted to connect said power-actuated member to said clamp-bar and means for independently throwing said friction devices into and out of action to regulate the power of the clamping action of said clamp-bar.

6. In a paper-cutting machine the combination with a clamp-bar a power-actuated member, a plurality of friction devices adapted to connect said power-actuated member to said clamp-bar and means for independently throwing said friction devices into action; of means for increasing the power of said clamp-bar after its motion has been arrested by contact with the paper.

7. In a paper-cutting machine the combination with a clamp-bar of a power-actuated member, a plurality of friction devices adapted to connect said power-actuated member with said clamp-bar and means for severally throwing said friction devices into action, and causing them to act successively upon said clamp-bar.

8. In a paper-cutting machine the combination with a clamp-bar of a rock-shaft, connections between said rock-shaft and said clamp-bar and plurality of friction devices each adapted to move said rock-shaft with a predetermined power and means for putting said friction devices into action independently.

9. In a paper-cutting machine the combination with a power-actuated clamp-bar, of a rock-shaft, connections between said rock-shaft and said clamp-bar, a plurality of friction devices each adapted to move said rock-shaft with a predetermined power, means for putting said friction devices into and out of action independently and causing said friction devices to exert power upon said clamp-bar successively.

10. In a paper-cutting machine the combination with a clamp-bar, a rock-shaft and connections between the rock-shaft and clamp-bar, of a power-actuated reciprocating member a plurality of frictional connections between the reciprocating member and rock-shaft, and means for throwing said frictional connections into and out of action severally.

11. In a paper-cutting machine the combination with a clamp-bar, a rock-shaft and connections between the rock-shaft and clamp-bar, of a power-driven reciprocating member pivotally attached to the said shaft, devices in frictional engagement with said rock-shaft and means to engage and disengage said power-driven member and said devices.

12. In a paper-cutting machine the combination with a clamp-bar, a rock-shaft and connections between said clamp-bar and said rock-shaft, of a friction-cylinder secured to said rock-shaft, a friction member mounted on said friction-cylinder in frictional engagement therewith, a power-driven reciprocating member and means for operatively engaging and disengaging said reciprocating member with said friction member.

13. In a paper-cutting machine the combination with a clamp-bar, a rock-shaft and connections between said clamp-bar and said rock-shaft, of a friction-cylinder secured to said rock-shaft, a plurality of friction members mounted on said cylinder in frictional engagement therewith, a power-driven shaft having a cam mounted thereon, a reciprocating member actuated by said cam and means for severally engaging and disengaging said friction members from said reciprocating member.

14. In a paper-cutting machine the combination with a clamp-bar, a rock-shaft and connections between said clamp-bar and said rock-shaft, of a friction-cylinder secured to said rock-shaft, a plurality of friction members mounted on said cylinder in a frictional engagement therewith, a power-driven shaft having a cam mounted thereon, a reciprocating member actuated by said cam, a means for causing said friction members to engage said reciprocating member consecutively after the descent of the clamp-bar has been arrested by coming into contact with the paper.

15. In a paper-cutting machine the combination with the knife-bar, of a crank-shaft, a crank thereon, connections between said crank and said knife-bar, a power-driven shaft geared to said crank-shaft, a clamp bar, a rock-shaft, connections between said clamp-bar and said rock-shaft, a cam upon said power-driven shaft, a reciprocating member actuated by said cam, a frictional connection between said reciprocating member and said rock-shaft and means for operatively engaging and disengaging said frictional connection.

16. In a paper-cutting machine the combination with a knife-bar, a crank-shaft, a crank thereon, connections between said crank and said knife-bar, of a power-driven shaft geared to said crank-shaft, a clamp-bar, a rock-shaft, a plurality of friction devices connecting said reciprocating member and rock-shaft, connections between clamp-bar and said rock-shaft.

17. In a paper-cutting machine the combination with a power-actuated cutter-bar and a power-actuated clamp-bar, of a subclamp located beneath said clamp-bar, a rock-shaft located beneath said subclamp, levers fixed to said rock-shaft, links connecting the ends of said levers with the ends of said subclamp, a hand-lever pivoted in front of said rock-shaft and connections between said hand-lever and said rock-shaft whereby said hand-lever and said subclamp move in the same direction.

18. In a paper-cutting machine the combination with a flat table supported by a suitable framework, of a cutter-bar and clamp-bar operatively mounted across the forward end of said table, a back gage mounted on said table to the rear of said clamp-bar, screws mounted at and parallel to the longitudinal sides of said table, a yoke secured to said back gage in threaded engagement with said screws, a transverse shaft mounted on the rear end of said table in geared connection with said screws, a shaft in geared connection with said transverse shaft extending beneath said table to the front of said machine and a hand-wheel on said last-named shaft.

19. In a paper-cutting machine the combination with a shaft adapted to be continuously driven, of a cutter-bar, actuating mechanism for said cutter-bar, a clutch adapted to connect said continuously-driven shaft with said actuating mechanism, a weight pivotally mounted on a member driven by said clutch and means actuated by said weight to throw said clutch out of engagement at a predetermined point in the revolution of said member.

20. In a paper-cutting machine the combination with the cutter-bar, a crank-shaft, cranks on said shaft, and connecting-rods between said cranks and said cutter-bar, of a continuously-driven shaft, geared connections between said continuously-driven shaft

and said crank-shaft, a clutch between said continuously-driven shaft and said geared connections, a weighted arm mounted concentrically with an element of said geared connections, means on said element adapted to lift said weight during half a revolution of said element and permitting said weight to drop away from said means after it has passed the highest point in its revolution and means engaged by said weight during its descent, to throw said clutch out of engagement.

21. In a paper-cutting machine the combination with a cutter-bar and a crank-shaft for operating said cutter-bar, of a continuously-driven shaft, an intermediate shaft geared to said crank-shaft and to a clutch-member on said continuously-driven shaft, of a weighted arm on said intermediate shaft, a lug secured to said intermediate shaft adapted to engage said weighted arm during the ascending half of its revolution and permitting it to drop during the descending half of its revolution by gravity, and means engaged by said arm to throw said clutch out of engagement.

22. In a paper-cuttting machine the combination with the cutter-bar and crank-shaft adapted to operate said cutter-bar, of a power-driven shaft, a clutch member mounted on said power-driven shaft, geared connections between said clutch member and said crank-shaft, a friction-brake and means for automatically uncluteching said power-driven shaft from said geared connections, and throwing said friction-brake into action to arrest the motion of said crank-shaft at a predetermined point in a revolution.

23. In a paper-cutting machine the combination with the cutter-bar-actuating mechanism, of a friction-clutch composed of two members one of which is held against rotation, the other being secured to a rotating element of the cutter-bar-actuating mechanism, and means for automatically engaging said clutch members to stop the machine.

24. In a paper-cutting machine the combination with a cutter-bar-actuating mechanism, of a friction-clutch composed of two members, one of which is in geared connection with said operating mechanism, the other being held against rotation, and means for automatically engaging said members to stop the machine.

25. In a paper-cutting machine the combination with a cutter-bar-actuating mechanism, of a driving-shaft and a stationary shaft each carrying friction-clutch members in geared connection with said actuating mechanism, coacting clutch members rotatably fixed upon said driving-shaft and said stationary shaft respectively, and means connecting said coacting clutch members whereby the engagement of one is accompanied by the disengagement of the other.

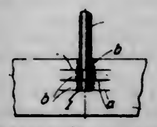
26. In a paper-cutting machine, the combination with a power-actuated cutter-bar and a clamp, of engaging means between said cutter-bar and said clamp, whereby said clamp is raised by said cutter-bar, and lowered by gravity in contact therewith, and a friction mechanism adapted to act upon said clamp-bar before and during the cutting operation.

27. In a paper-cutting machine the combination with a clamp-bar of a downwardly-projecting rib extending along the front edge of its lower surface and an elastic shoe behind said rib.

28. In a paper-cutting machine the combination with a table, of a back gage extending transversely across said table made in a plurality of sections adjustable relative to each other, a transverse yoke secured to one of said sections, and means for operating said yoke forward and backward.

29. In a paper-cutting machine, the combination with a power-actuated knife and clamp, of means for automatically causing the clamp to descend in advance of the knife, a friction mechanism adapted to cause the clamp to exert pressure upon a stack of paper after its descent has been arrested, means for releasing the pressure upon the clamp after the cut has been completed, and means permitting said clamp to remain in contact with the paper until after the cutting edge of the knife has risen above the stack on its return stroke.

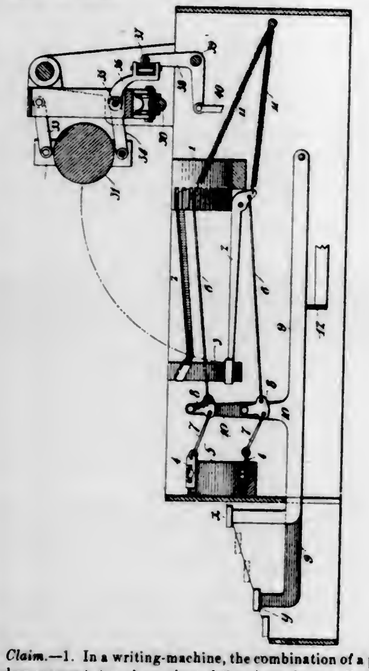
823,120. ROLL-PAPER CUTTER. HERMAN HELMERS, St. Louis, Mo., assignor to William Conway, St. Louis, Mo. Filed Apr. 13, 1906. Serial No. 311,296.



Claim.—1. In a roll-paper cutter, a suitable blade having a series of odd numbered slits formed therein in parallelism with its longitudinal edge, an arm inserted between the solid sections formed between the respective slits, and a transverse groove formed in the arm for the reception and engagement of an intermediate solid section, the end of the arm abutting against the edge of the blade-body at the innermost slit, substantially as set forth.

2. In a roll-paper cutter, a suitable blade having a series of three slits formed therein in parallelism with its longitudinal edge, an arm inserted between the solid sections formed between the slits, and a transverse groove formed in the arm for the reception and engagement of the middle solid section, the end of the arm abutting against the edge of the blade-body at the innermost slit, substantially as set forth.

823,121. WRITING-MACHINE. EDWARD B. HESS, Brooklyn, N. Y., assignor, by mesne assignments, to Royal Typewriter Company, Hoboken, N. J., a Corporation of New Jersey. Filed Aug. 27, 1901. Serial No. 73,460.



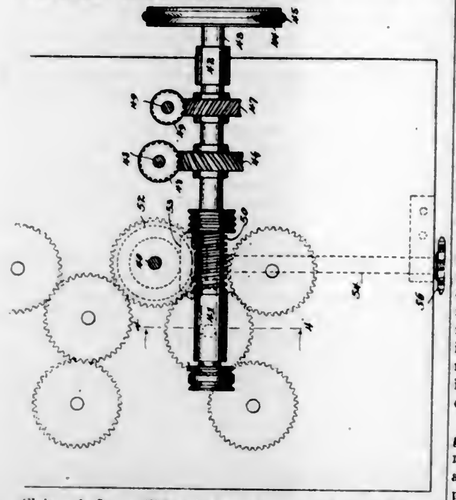
Claim.—1. In a writing-machine, the combination of a platen, a type-bar segment, type-bars pivoted therein and normally lying toward the front of the machine, flexing connections one for each type-bar arranged under the type-bars and each connected at its rear end to its type-bar and at its front end to a fixed piece and composed of two links, a third link connected to the adjacent ends of such two links and extending upwardly therefrom, key-levers disposed beneath the flexing connections and formed with upwardly-extending projections pivotally connected with the upper end of said third link of the corresponding connection.

2. In a writing-machine, the combination of a type-bar-actuating flexing connection having when flexed the action of a reverse or accelerating toggle and connected at its rear end to its type-bar and a detachable adjustable piece mounted on the frame and to which the front end of the flexing connection is hinged.

3. In a writing-machine, a series of adjustable detachable pieces mounted upon a fixed part of the frame, rearwardly-extending links hinged thereto and each having its rear end connected by a flexing joint to rearwardly-extending link whose rear end is connected to its type-bar and means for depressing the flexing joint between the two links to pull the type-bar to the printing-point with an increasing velocity.

4. In a writing-machine, the combination of a series of detachable pieces secured to a fixed part of the frame, type-bar-actuating connections connected with said pieces extending rearwardly to their respective type-bars and capable of flexure intermediate their ends and means for flexing such connections to subject them to tensile strain on both sides of the point of flexure and pull the type-bars to the printing-point with increasing velocity.

823,122. QUILL-TREATING MACHINE. FRANK HOLDRED, Three Oaks, Mich., assignor to Edward K. Warren, Three Oaks, Mich. Filed Oct. 13, 1905. Serial No. 282,648.

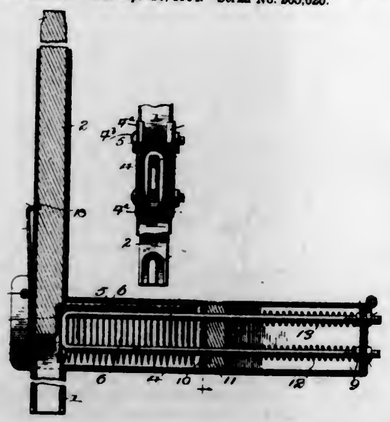


Claim.—1. In a quill-treating machine, the combination with a suitable frame, and a main driving-shaft journaled therein, of a pith-cutter, a rotatable shaft on which said pith-cutter is mounted, and spiral driving-gears between said main shaft and cutter-shaft, substantially as described.

2. In a quill-treating machine, the combination with a suitable frame, and a main driving-shaft horizontally journaled therein, of a pith-cutter, a vertical rotatable shaft on which said pith-cutter is mounted, and spiral driving-gears between said main shaft and cutter-shaft, substantially as described.

3. In a quill-treating machine, the combination with a suitable frame, and a main driving-shaft horizontally journaled therein, of means for splitting a quill longitudinally, a pair of pith-cutters serving to clean the split sections of the quill, vertical rotatable shafts on which said pith-cutters are mounted, spiral gears on said shafts, and spiral gears on said driving-shaft engaging said first-named spiral gears whereby to transmit rotary motion to said pith-cutters, substantially as described.

823,123. STAPLE-DRIVING APPLIANCE. ORION D. W. INMAN, Beloit, Wis. Filed Apr. 26, 1904. Serial No. 205,020.



Claim.—1. A staple-driving appliance comprising a plain tubular plunger-casing having a magazine-opening located at one side thereof near the outer end of the casing, a plunger having a staple receiving and carrying side pocket located at its inner end, a magazine-casing providing a side handle and connected with the magazine-opening, rods for carrying the staples, adjustably supported within the magazine-casing from the outer end thereof, a pressure-block traveling upon the rods, and springs threaded upon the rods between the outer end of the magazine-casing and the pressure-block.

2. A staple-driving appliance comprising a plain tubular plunger-casing having a magazine-opening located at one side thereof near the outer end of the casing, a plunger having a staple receiving and carrying side pocket located at its inner end, a magazine-casing providing a side handle, flanged plates and bolts whereby the magazine-casing is connected with the plunger-casing and with the magazine-opening thereof, rods for carrying the staples, adjustably supported within the magazine-casing from the outer end thereof, a pressure-block traveling upon the rods, and springs threaded upon the rods, between the outer end of the magazine-casing and the pressure-block.

3. A staple-driving appliance comprising a plain tubular plunger-casing having a magazine-opening located at one side thereof near the outer end of the casing, a plunger having a staple receiving and carrying side pocket located at its inner end, a flanged magazine-casing providing a side handle and connected with the magazine-opening, a flanged lid receiving the flanges of the magazine-casing, rods for carrying the staples, adjustably supported within the magazine-casing from the outer end thereof, a pressure-block traveling upon the rods, and springs threaded upon the rods, between the outer end of the magazine-casing and the pressure-block.

4. A staple-driving appliance comprising a plain tubular plunger-casing having a magazine-opening located at one side thereof near the outer end of the casing, a plunger having a staple receiving and carrying side pocket located at its inner end, a magazine-casing providing a side handle and connected with the magazine-opening, rods for carrying the staples having screw-threaded ends extending through the outer end of the magazine-casing, inner and outer nuts whereby the rods are adjustably supported within the magazine-casing from the outer end thereof, a pressure-block traveling upon the rods, and springs threaded upon the rods, between the outer end of the magazine-casing and the pressure-block.

5. A staple-driving appliance comprising a plain tubular plunger-casing having a magazine-opening located at one side thereof near the outer end of the casing, a plunger having a staple receiving and carrying side pocket located at its inner end, and an angular recess in the opposite end thereof, a magazine-casing providing a side handle, flanged plates and bolts whereby the magazine-casing is connected with the plunger-casing and with the magazine-opening thereof, rods for carrying the staples, adjustably supported within the magazine-casing from the outer end thereof, a pressure-block traveling upon the rods, springs threaded upon the rods, between the outer end of the magazine-casing and the pressure-block, and an arresting-spring, secured between the bolts and the plunger-casing, and having an inwardly-directed terminal penetrating the plunger-casing and adapted to engage the angular recess of the plunger for restricting the outward movement of the latter and registering the side pocket of the plunger with the magazine-opening.

823,124. CLOSURE FOR BOTTLES, JARS, AND SIMILAR VESSELS. SAMUEL C. KINDIG, Baltimore, Md., assignor of one-half to Frederick Henkelman, Baltimore, Md. Filed Oct. 10, 1905. Serial No. 282,189.



Claim.—1. A closure for bottles, jars, and similar vessels, comprising a wire 5 secured to the bottle, a cam-lever pivoted to said

wire and having a flat lower surface and a cam-surface on each side of said flat surface, a disk secured to the said cam-lever and having a depending shank provided with a pointed head on its lower end, and a conical cork secured to said shank between the said disk and head.

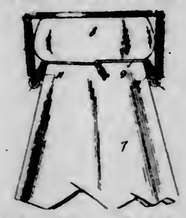
2. The combination with a bottle, jar, or similar vessel, of a closure comprising a wire secured to said bottle, a cam-lever pivoted to said wire and having cam-faces on opposite sides of its lower surface, a disk secured to the said lever and having a depending shank provided with a pointed head on its lower end, and a sealing-cork surrounding said shank between the disk and head.

3. The combination with a bottle, jar, or similar vessel, of a closure comprising a wire secured to said bottle, a cam-lever pivoted to said wire and having an elongated slot near its lower surface, a disk secured to said cam-lever and having a depending shank provided with a pointed head on its lower end, and a conical sealing-cork surrounding said shank between the disk and head.

4. The combination with a bottle, jar, or similar vessel, of a closure comprising a wire secured to the said bottle, a cam-lever pivoted to said wire and having an elongated slot near its lower surface and a flat lower surface, a disk secured to said cam-lever and having a depending shank provided with a pointed head on its lower end, and a conical sealing-cork surrounding said shank between the disk and head.

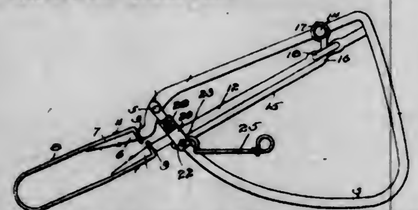
5. The combination with a bottle, jar, or similar vessel, of a closure comprising a wire pivotally secured to said bottle, a cam-lever pivoted to the said wire and having an elongated slot near the lower end and a flat lower surface and adapted to be operated from opposite sides of the bottle, a disk having an eye on its upper surface which passes through the elongated slot in the said lever, a depending shank having a pointed head on its lower end, and a conical sealing-cork surrounding the said shank between the disk and head.

823,125. BOTTLE-CLOSURE. GEORG KIERKGAARD, New York, N. Y. Filed Mar. 25, 1905. Serial No. 251,967.



Claim.—In a bottle or like receptacle for containing fluids, a neck portion having a circumferential groove therein and a wire extending around such groove, and having at diametrically opposite points a pair of ears or projections formed by twisting the wire into a plurality of twists or coils, so as to produce eyes at the outer ends of said ears or projections, a pair of tension-springs secured to said eyes, a cap formed of sheet metal and having a packing-disk inset therein, and having ears or lugs upon diametrically opposite points of its periphery, the outer ends of said springs being connected to said lugs.

823,126. ANIMAL-TRAP. MARSHALL KROFFT, Meredith, N. Y. Filed Oct. 5, 1905. Serial No. 281,451.



Claim.—1. An animal-trap, comprising a substantially U-shaped spring provided with apertured ends, a looped member positioned within one of the apertured ends of said spring, a single fastening means fixedly securing said spring and looped member together, a jaw positioned within the other apertured end of said spring, a single fastening means securing said jaw and spring in a fixed position, and means for sustaining said jaw at one side of said looped member and permitting said jaw to move to the opposite side of said looped member.

2. An animal-trap, comprising a looped member provided with a tapering end, a jaw provided with a tapering end, a flat, substantially U-shaped spring provided with apertured ends extending at an angle therefrom, the tapering ends of said looped member and jaw positioned within the apertured ends of said spring, means fixedly securing said spring upon the tapering ends of said looped member and jaw, a substantially U-shaped member carried by said jaw, a latch carried by said looped member and positioned within said substantially U-shaped member, a stationary catch carried by said looped member, said latch adapted to be positioned upon said catch for securing said jaw in a set position, and means for displacing said latch off of said catch for permitting said jaw to move from a set position.

3. An animal-trap, comprising a looped member, a jaw, a bowed spring fixedly secured to one end of said looped member and jaw, a stationary catch carried by said looped member, a latch carried by said looped member, a projection formed upon said jaw and engaging said latch, said jaw adapted to be held in a set position when said latch is positioned upon said catch, and means for removing said latch from off of said catch.

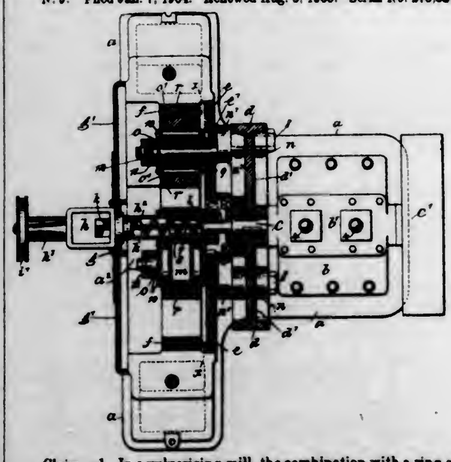
4. An animal-trap, comprising a looped member, a jaw, a spring connecting and surrounding one of the ends of said looped member and jaw, a removable, stationary catch provided with a right-angled extension formed upon its outer end, carried by said looped member, and means engaging said jaw and adapted to be positioned upon said catch for securing said jaw in a set position.

5. An animal-trap, comprising a looped member, a jaw, a spring fixedly secured to one of the ends of said looped member and jaw, a removable catch provided with an aperture, carried by said looped member, a projection formed upon said jaw, a latch carried by said looped member and engaging said projection, said latch adapted to engage said catch when said jaw is set, and means engaging the apertured portion of said catch and capable of being moved for displacing said latch and springing said jaw.

6. An animal-trap, comprising a looped member, a jaw, resilient means connecting said looped member and jaw, a latch carried by said looped member and coacting with said jaw for securing said jaw in a set position, and a trigger coacting with said latch for springing said jaw, said trigger comprising a body portion provided with a looped end, a substantially right-angled extension formed upon the opposite end of said trigger, said right-angled extension provided with a portion bent back upon itself and terminating in a substantially right-angled projection.

7. An animal-trap, comprising a flat, bowed spring, said spring provided with apertured, angular ends, a looped member, one end of said looped member positioned within one end of said spring, a jaw positioned within the other end of said spring, and means for securing said jaw in a set position and permitting said jaw to move from said position.

823,127. PULVERIZING-MILL. STEPHEN R. KROM, Plainfield, N. J. Filed Jan. 7, 1904. Renewed Aug. 8, 1905. Serial No. 273,321.



Claim.—1. In a pulverizing-mill, the combination with a ring or annulus against the inner surface of which material is pulverized, of a series of pivotally-mounted crushing-rollers running on said surface, hollow centrifugal feeding devices in the same plane as the crushing-rollers for delivering the material in front of and into the path of the rollers, and means for feeding the material to be pulverized axially and centrally to and in the same plane as the centrifugal feeding devices.

2. In a pulverizing-mill, the combination with a ring or annulus against the inner surface of which material is pulverized, of a series of pivotally-mounted crushing-rollers running on the said surface, a hopper and a screw conveyer centrally placed and adapted for feeding the material to be pulverized to the axial center of the machine, and centrifugal feeding devices receiving the material from the said conveyer and for delivering the same in front of and into the path of the roller.

3. In a pulverizing-mill, the combination with a ring or annulus against the inner surface of which material is pulverized, of a series of pivotally-mounted crushing-rollers running on the said surface, means for centrally feeding the material to be pulverized, a tubular portion in the axial center of the machine and surrounding a portion of the central feeding devices, and centrifugal feeders connected to the said tubular structure and revolving therewith and receiving the material from said feeding devices and delivering the same in front of and into the path of the rollers to be pulverized.

4. In a pulverizing-mill, the combination with a ring or annulus against the inner surface of which material is forced, of a main central shaft, a series of pivotally-mounted crushing-rollers running on the surface of said ring or annulus, a device connected to the shaft and forming the support for the rollers, a hopper and means axially in line with said shaft for feeding the material to be pulverized, and centrifugal feeding devices also supported upon said shaft and actuated thereby, receiving the material and for delivering the same in front of and into the path of the rollers.

5. In a pulverizing-mill, the combination with a ring or annulus against the inner surface of which material is pulverized, of a main central shaft, a series of pivotally-mounted crushing-rollers running on the surface of said ring or annulus, a device connected to the shaft and forming the support for the rollers, a hopper, a tubular prolongation of said hopper axially in line with said shaft, a screw conveyer within said tubular prolongation for feeding the material from the hopper, said prolongation having a discharge-aperture, means for rotating the said conveyer and centrifugal feeding devices receiving the material from said discharge-aperture and delivering the same in front of and into the path of the rollers.

6. In a pulverizing-mill, the combination with a ring or annulus against the inner surface of which material is pulverized, of a main central shaft, a series of pivotally-mounted crushing-rollers running on the surface of said ring or annulus, a device connected to the shaft and forming the support for the rollers, a tubular hub structure connected to and rotating with the said shaft and the series of crushing-rollers, and centrifugal feeders mounted upon said tubular hub and having delivery ends running closely adjacent to the inner surface of the aforesaid ring or annulus and each centrifugal feeder comprising a curved and tapering structure where the curve is in the direction of rotation and means for centrally feeding the material to be pulverized and for delivering the same to the centrifugal feeders.

7. In a pulverizing-mill, and in combination, a main central shaft, a tubular hub structure connected to and rotating with the said shaft, centrifugal feeding devices mounted upon said tubular hub and having narrow delivery ends, each centrifugal feeder comprising a curved and tapering structure where the curve is in the direction of rotation, a tubular part placed axially with said shaft and entering the tubular hub structure and having a discharge-aperture at its inner end, means for holding the material to be fed, and means for feeding the same to the said centrifugal feeders through said tubular part.

8. In a pulverizing-mill and in combination, a main central shaft, a tubular hub structure connected to and rotating with the said shaft, centrifugal feeding devices mounted upon said tubular hub and having narrow delivery ends, each centrifugal feeder comprising a curved and tapering structure where the curve is in the direction of rotation, a hopper, a tubular inner prolongation of said hopper having a discharge-aperture at its inner end, the said tubular prolongation being axially in line with the said shaft and passing into the said tubular hub, a screw conveyer in said tubular prolongation, a shaft upon which the same is mounted, and means for rotating said shaft and screw conveyer, whereby the contents of the hopper are pulverized and are continuously and progressively fed and delivered at the discharge-aperture to the centrifugal feeders.

9. In a pulverizing-mill, the combination with a ring or annulus against the inner surface of which material is pulverized, of a main central shaft and a series of pivotally-mounted crushing-rollers running on the surface of said ring or annulus, a revoluble device mounted upon said shaft and simultaneously forming a fly-wheel and a support for the said rollers, and provided with spaced-apart perforations, crank-shafts passing freely through said perforations and secured to the said revoluble device, cranks formed with said crank-shafts and crank-pins formed with the cranks and upon which the crushing-rollers are mounted.

10. In a pulverizing-mill, the combination with a ring or annulus against the inner surface of which material is pulverized and a main central shaft and supports therefor, of a revoluble device connected to said shaft and performing the office of a fly-wheel and provided with spaced-apart perforations, a series of connected crank-shafts, cranks and crank-pins, the crank-shafts passing through said perforations adapted to swing therein and secured to the revoluble device, a series of crushing-rollers mounted upon the crank-pins, a disk forming the back of the pulverizing-mill housing and provided with spaced-apart elongated perforations receiving the crank-pins and adjacent portions of the crushing-rollers and serving to limit the swinging movement of said crushing-rollers.

11. In a crushing-mill, and in combination, a base and housing forming a substantially vertical casing, a circular device having a crushing-surface within the same, a substantially horizontal shaft projecting into said casing, a revoluble device fixed to and movable with said shaft, a plurality of cranks and crank-shafts carried thereby, and crank-pins formed therewith and projecting into the casing, a roller on each crank-pin located within the casing and by centrifugal force running against the crushing-surface, a fixed structure at one side of said casing, and a revoluble structure at the other side of said casing and mounted on said shaft and together closing the same, at opposite sides centrifugal feeding devices, with their discharge-openings near the crushing-surface and in front of the rollers, a hollow structure forming a support for the centrifugal feeders and mounted on said shaft, and means connected to and passing through the fixed structure at one side of the casing for conveying the material to be crushed to the centrifugal feeders.

12. In a pulverizing-mill, the combination with a shaft, a revoluble device, a series of roller devices mounted thereon and a fixed ring having a crushing-surface against which the rollers bear, of a tubular hub structure mounted on said shaft and having triangularly-arranged faces and perforations, a series of curved tapering hollow centrifugal feeders secured upon the triangularly-arranged faces of the tubular hub and curved rearwardly or in the direction of rotation, the discharge-apertures thereof coming adjacent to the crushing-surface and in front of the path of the rollers, and means for delivering the material to be pulverized within the said tubular hub to the centrifugal feeders.

13. In a pulverizing-mill, the combination with a shaft and a revoluble part, of a crank-shaft, a crank and crank-pin connected together and pivotally mounted on the revoluble part, a nut and washer on the free end of the crank-pin, an auxiliary sleeve surrounding the major portion of the crank-pin and coming against the washer and nut at one end, a flanged sleeve surrounding said auxiliary sleeve and the crank-pin at one end and extending forward of the crank-pin, a screw-cap closing the end of the same and serving to keep dust away from the contacting surfaces adjacent to the crank-pin, the flange of the flanged sleeve having an inclined surface, a collar surrounding the flanged sleeve and having an inclined surface in the opposite direction, a ring or annulus surrounding the flanged sleeve and the collar and having inner surfaces agreeing with the inclined surface thereof, and bolts passing through the flange of the sleeve and the collar for holding the parts together and for securely clamping the ring or annulus thereto.

14. In a pulverizing-mill, the combination with a shaft and a revoluble part, of a crank-shaft, a crank and crank-pin connected together and pivotally mounted on the revoluble part, a nut and washer on the free end of the crank-pin, an auxiliary sleeve surrounding the major portion of the crank-pin and coming against the washer and nut at one end, a flanged sleeve surrounding said auxiliary sleeve and the crank-pin at one end, and a ring or annulus having a hardened surface mounted upon said flanged sleeve, the parts together forming a roller structure and a device closing the end of the auxiliary sleeve and by which access is had to the nut.

15. In a crushing-mill and in combination, a base and housing forming a substantially vertical casing, a circular device within the same having a crushing-surface, a substantially horizontal shaft projecting into said casing, and a bearing therefor, a central plate and doors hinged thereto and at either side thereof for closing off the

housing at one side, and a disk fitting the housing at the opposite side, and means for connecting the same to the said shaft whereby the housing is completely inclosed.

16. In a crushing-mill and in combination, a main central shaft, a series of pivotally-mounted crushing-rollers, a common support for the said crushing-rollers mounted upon said shaft, a disk supported by the said central shaft forming a closure at one side of the pulverizing-mill and having apertures receiving and within which parts of the crushing-rollers move and are limited.

17. In a pulverizing-mill, the combination with a ring or annulus against the inner surface of which material is pulverized and a main central shaft and supports therefor, of a revoluble device connected to said shaft and performing the office of a fly-wheel and provided with spaced-apart perforations, a series of connected crank-shafts, cranks and crank-pins, the crank-shafts passing through said perforations adapted to swing therein and secured to the revoluble device, and a series of crushing-rollers mounted upon the crank-pins and adapted to run upon the surface of the ring or annulus.

18. In a pulverizing-mill, the combination with a shaft, a revoluble device, a series of roller devices mounted thereon, and a fixed ring having a crushing-surface against which the rollers bear, of a tubular hub structure mounted on said shaft and having triangularly-arranged faces and perforations, a series of curved tapering hollow centrifugal feeders secured upon the triangularly-arranged faces of the tubular hub and curved rearwardly or in the direction of rotation, the discharge-apertures thereof coming adjacent to the crushing-surface and in front of the path of the rollers, a hopper, means for supporting the same, the forward extension of the hopper forming a bearing, a tubular inner prolongation of the hopper communicating therewith, the free end of which passes into the aforesaid tubular hub and is provided with an aperture, a screw conveyer and a shaft therefor within the tubular prolongation of the hopper, and means for rotating the same, for progressing the material to be pulverized and delivering the same through the aperture to the hollow centrifugal feeders.

19. In a pulverizing-mill, the combination with a shaft, a revoluble part, a crank-shaft and crank-pin connected together and pivotally mounted on the revoluble part, of a flanged sleeve in part surrounding the crank-pin and having an internal shoulder, an auxiliary sleeve surrounding the major portion of the crank-pin from the free end to the shoulder of the flanged sleeve, and a nut device on the free end of the crank-pin for retaining the auxiliary sleeve and flanged sleeve in position.

20. In a pulverizing-mill, the combination with a shaft, a revoluble part, a crank-shaft and crank-pin connected together and pivotally mounted on the revoluble part, of a flanged sleeve in part surrounding the crank-pin and having an internal shoulder, an auxiliary sleeve surrounding the major portion of the crank-pin from the free end to the shoulder of the flanged sleeve, and a nut device on the free end of the crank-pin for retaining the auxiliary sleeve and flanged sleeve in position, the flanged sleeve extending beyond the crank-pin, a screw-cap closing the end of said flanged sleeve, a collar surrounding the said flanged sleeve, a ring or annulus surrounding the flanged sleeve and collar, and means, substantially as specified for connecting and holding said parts together.

823,128. COMB-CLEANER. ELLEN LAYTON, Savannah, Mo. Filed Nov. 1, 1905. Serial No. 285,403.



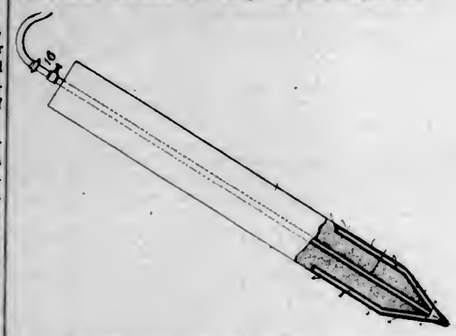
Claim.—A comb-cleaning device comprising strands of material arranged to form oppositely-disposed eyes and an intermediate interwoven portion.

823,129. PILING SYSTEM. GEORGE A. LE FEVER, Orangeburg, N. Y. Filed Aug. 21, 1905. Serial No. 274,996.

Claim.—1. The combination with a structure intended to be sunk below the surface of the earth, of means for discharging water-jets around the sides of the said structure.

2. The combination with a structure intended to be sunk below the surface of the earth, of means for discharging water-jets beneath and at the sides of the said structure.

3. The combination with a subservice structure such as a pile, of a head at the lower end of the said structure, said head being in the form of a water-jacket and having jet-openings at the lower end and on the sides, and means for forcing water into the said head.

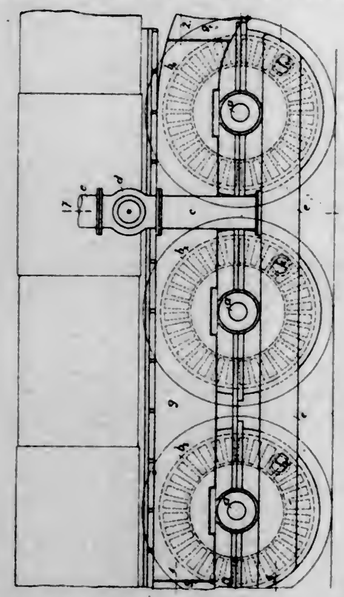


4. The combination with a pile or similar structure, of a casing inclosing the said structure and provided with jet-openings on the outer side.

5. The combination with a pile or similar structure, of a casing inclosing the said structure and formed into a series of superposed water-compartments having jet-openings through the outer wall, and means for forcing water into the said compartments.

6. In an apparatus of the kind described, the combination of a walled casing forming a water-jacket and provided with jet-openings in its sides, of means for forcing water into the jacket, a detachable head extending downward from the casing or jacket, and means for forcing water downward through the head.

823,130. TURBINE-DRIVEN LOCOMOTIVE. HUGO LENTZ, Berlin, Germany. Filed Aug. 10, 1905. Serial No. 273,508.



Claim.—1. In a turbine-driven locomotive, a locomotive-truck, a plurality of driving-wheels carried thereby, turbine-wheels, one for each driving-wheel, supply-nozzles, one for each of said turbine-wheels, a main pipe for supplying pressure medium to all of said nozzles, and a single valve located in said pipe and controlling the supply of pressure medium therethrough to all of the said nozzles simultaneously.

2. In a turbine-driven locomotive, a locomotive-truck, a plurality of driving-wheels carried thereby, turbine-wheels, one for each driving-wheel, supply-nozzles, one for each of said turbine-wheels, a chamber from which all of said nozzles lead, a main pipe for supplying pressure medium to said chamber, and a single valve located in said main pipe and controlling the supply of pressure medium therefrom to the chamber aforesaid.

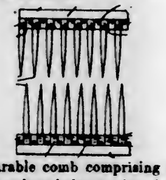
3. In a turbine-driven locomotive, a locomotive-truck, a plurality of driving-wheels carried thereby, turbine-wheels, one for each driving-wheel, supply-nozzles, one for each said turbine-wheels, valve connections for supplying pressure to the several nozzles, and a single exhaust-chamber for receiving the exhaust from the several turbine-wheels.

4. In a turbine-driven locomotive, a locomotive-truck, a plurality of driving-wheels carried thereby, turbine-wheels, one for each driving-wheel, and supply-nozzles, one for each of said wheels, the whole arranged to drive the turbine-wheels in multiple, in combination with pressure-supply connections, and with a single exhaust-chamber for receiving the exhaust from the several driving-wheels.

5. In a turbine-driven locomotive, a locomotive-truck, a plurality of driving-wheels carried thereby, turbine-wheels, one for each driving-wheel, the whole arranged to drive the turbine-wheels in multiple, in combination with pressure-supply connections, and with a single exhaust-chamber for receiving the exhaust from the several turbine-wheels.

6. In a turbine-driven locomotive, a locomotive-truck, a driving-axle carried thereby, a turbine-wheel operatively connected with said axle, an exhaust-chamber for said turbine-wheel and means, combined with said chamber, for causing a condensation of steam therein.

823,131. COMB. EDMUND C. MACARTNEY, Philadelphia, Pa., assignor of one-half to Harmon B. Amerling, Philadelphia, Pa. Filed Dec. 2, 1905. Serial No. 289,972.



Claim.—1. A separable comb comprising a pair of members forming a back, said members being equipped with alternately-arranged teeth having beveled tops said teeth interdigitating with each other throughout their entire cross-section, beveled portions upon said members between the teeth, and means for holding said members together, substantially as described.

2. A separable comb comprising a pair of parallel members having faces that abut, alternately-arranged teeth having beveled tops depending from said members said teeth interdigitating with each other throughout their entire cross-section, beveled portions upon said members between the teeth and means for securing the members together to form a back, substantially as described.

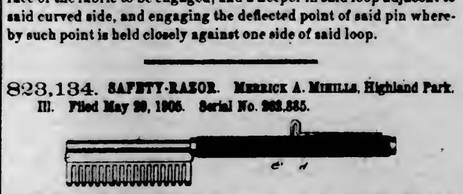
3. A comb comprising two members equipped with teeth having beveled tops, beveled portions upon said members between the teeth, and means for holding said members together, substantially as described.

4. A comb comprising two members equipped with teeth having beveled tops, beveled portions upon said members between the teeth, shoulders formed upon the upper extremity of each tooth, and means for holding said members together, substantially as described.

5. A separable comb comprising a pair of parallel members whose outer faces are grooved and whose inner faces abut, alternately-arranged teeth having beveled tops depending from the said members said teeth interdigitating with each other throughout their entire cross-section, beveled portions upon said members between the teeth and a tubular holder fitted to said grooved faces to form a back, substantially as described.

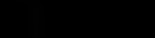
823,132. COTTON-CHOPPER. ADELA R. MARET, Lavonia, Ga. Filed June 20, 1905. Serial No. 266,091.

Claim.—1. In an implement of the class described, the combination with a frame including parallel sills having their end portions inwardly offset, of connecting members secured to the ends of the sills, vertical shafts journaled in the connecting members, inwardly-extending members carried by one of the sills between its offset portions and lying in spaced relation, transverse members secured to the sills and extending between their offset portions inwardly of the connecting members, longitudinal shafts journaled in the inwardly-extending members and in the transverse members, said shafts lying in spaced relation at their inner ends, gear connections between the outer ends of the horizontal shafts and the vertical shafts, devices carried by the lower ends of the vertical shafts, a transverse shaft journaled in the sills between the horizontal shafts, gear connections between the transverse shaft and the horizontal shafts, and a ground-wheel fixed upon the horizontal shaft and lying between the sills.



2. In an implement of the class described, the combination with a frame including parallel sills, of connecting members secured to the ends of the sills, transverse members secured to the sills adjacent to their ends and inwardly of the connecting members, inwardly-extending members carried by one of the sills between the transverse members and lying in spaced relation, horizontal longitudinal shafts journaled in the transverse members and in the inwardly-extending members and lying in spaced relation at their inner ends, vertical shafts journaled in the connecting members, plant and ground treating devices carried by the lower ends of the vertical shafts respectively, gear connections between the vertical and horizontal shafts, a transverse shaft journaled in the sills and extending between the horizontal shafts, gear connections between the transverse and horizontal shafts, and a ground-wheel fixed upon the transverse shaft and lying between the sills.

823,133. EYEGLASS-HOLDER. EMIL B. MEYROWITZ, New York, N. Y., assignor to The Meyrowitz Manufacturing Company, a Corporation of New Jersey. Filed Dec. 23, 1904. Serial No. 238,039.



Claim.—1. An eyeglass-holder comprising, a body portion extending downwardly and outwardly and then downwardly and inwardly, an arm shaped the reverse of the body portion, rigid with and bent over said body portion, the bend constituting a loop for receiving the spring of a pair of eyeglasses, a pin carried by said body portion, and a keeper for said pin within said loop and constituting an abutment restricting the exit thereof for retaining said spring in place, said loop also constituting a housing for the point of said pin.

2. An eyeglass-holder embodying two limbs bent together, a pin carried by the end of one limb and having a curved point deflected toward the surface of the fabric to be engaged, and a keeper for said pin in said bend and forming an abutment therein, and arranged to hold the pin-point against the side of said limb.

3. An eyeglass-holder embodying two limbs bent together, the bend constituting a loop with a restricted open side the width of which open part is less than the diameter of the loop whereby said loop has a curved side, a pin carried by the free end of one of the limbs formed straight throughout the greater portion of its length and having a curved portion corresponding with and for lying upon and within said curved side of said loop and deflected toward the surface of the fabric to be engaged, and a keeper in said loop adjacent to said curved side, and engaging the deflected point of said pin whereby such point is held closely against one side of said loop.

823,134. SAFETY-RAZOR. MERRICK A. MIHILLS, Highland Park, Ill. Filed May 20, 1905. Serial No. 261,385.

Claim.—1. In a razor of the class described, a tubular handle provided with a longitudinal slot having a widened portion midway of the handle, and a cutting-blade having an enlarged back slidably mounted in the handle and adapted to be removed through the said widened portion of the slot.

2. In a razor of the class described, a tubular handle provided with a longitudinal slot having a widened portion midway of the handle, a cutting-blade having an enlarged back slidably arranged in

the handle and adapted to be removed through the said widened portion of the slot, and a guard removably mounted on the blade.

3. In a razor of the class described, a tubular handle provided in one side with a groove, a blade slidably mounted in said handle, and a sleeve slidably mounted on said handle and provided with a perforation, and a resilient member connected with the sleeve and having one of its ends extending through the said perforation and adapted, when the sleeve moves endwise, to travel in the groove in the handle.

4. In a razor of the class described, a tubular stem provided with a longitudinal opening midway of its length, and having at each end a slot communicating with the ends of said opening; a cutting-blade having one edge slidably mounted in the stem, and adapted to be removed therefrom through the said longitudinal opening; and a sleeve slidably mounted on the stem.

5. In a razor of the class described, a tubular stem provided with a longitudinal slot, and having a groove in its opposite side; a cutting-blade slidably mounted in the stem; a guard for said blade; a slotted sleeve slidably mounted on the stem, and provided with a perforation; and adjustable means mounted in the perforation in the sleeve, and adapted to engage the groove in the stem.

6. In a razor of the class described, a tubular stem having plugs in its opposite ends, and provided in one side with a longitudinal opening, and having in the same side slots extending from the ends of the said opening to the ends of the stem, and provided on its opposite side with a longitudinal groove, and having a perforation at each end of the stem; a blade having a back mounted in the stem, and adapted to be removed through the longitudinal opening in the stem; a guard removably secured to said blade; a slotted sleeve slidably mounted on said stem, and provided with a perforation; and means mounted on the sleeve, and extending through the latter perforation, and adapted to engage the groove and the perforations in the stem.

823,135. COLLAR-BUTTON. HAROLD T. MURPHY, Springfield, Mass. Filed Sept. 5, 1905. Serial No. 276,934.



Claim.—1. In a collar-button, a back having an aperture, a post having a head, a pair of T-shaped levers being capable of being disposed along and at opposite sides of the post having their portions adjacent the junctions of the levers proper and their cross members extended through said aperture, and having their cross members located behind the back, and a spring reacting behind the back and said cross members, and against which said cross members press on the swinging of the levers.

2. In a collar-button, a back having an aperture, a post having a head, a T-shaped lever having the cross members thereof constructed as cams, the lever proper being capable of being disposed alongside the post, having the portion thereof near the junction of the lever with the cross members extended through said aperture, and a spring behind the back against which the cam members of the lever press.

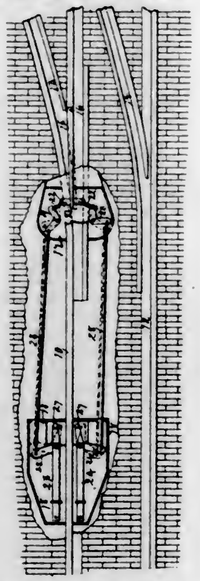
3. In a collar-button, a post provided with a head and a back to which the post is rigidly affixed, and said back having an aperture adjacent the post, and also having therein and at opposite sides of the margins of the aperture, depressions, a T-shaped lever having the portion adjacent the junction of the lever proper and its cross-head extended through said aperture, and having its cross-head seated in said depressions, and a spring behind the back against which the cross-head of the lever reacts.

4. In a collar-button, a back having an aperture, a post having a head, a pair of T-shaped levers capable of being disposed along and at opposite sides of the post having their portions adjacent the junctions of the levers proper and their cross members extended through said aperture, and having their cross members located behind the back, and a flat spring behind the back and having the extremities thereof immovably restrained relatively to the back and said cross members, and against an intermediate portion of which said members impinge on the swinging of the levers

5. In a collar-button, a thin metal back having an aperture, and tongues near its margin, the post having a head, a T-shaped lever having the cross members thereof constructed as cams, the lever proper being capable of being disposed alongside the post, having the portion thereof, near the junction of the lever with the cross members, extended through said aperture, and a flat spring behind the back, having its extremities engaged with said tongue, and against the middle portion of which the cam members of the lever press.

6. In a collar-button, a thin metal back having an aperture, and "struck-up" tongues near its margin, the post having a head, a T-shaped lever having the cross members thereof constructed as cams, the lever proper being capable of being disposed alongside the post, having the portion thereof, near the junction of the lever with the cross members, extended through said aperture, a flat spring behind the back, having its extremities engaged with said tongues, and against the middle portion of which the cam members of the lever press, and a supplemental back of thin material marginally forwardly overlapping the back proper.

823,136. APPARATUS FOR OPERATING RAILWAY-SWITCHES. MARTIN M. MCNELEY, Des Moines, Iowa, assignor of one-third to A. L. Allen and two-thirds to M. J. Schermerhorn, Des Moines, Iowa. Filed Sept. 29, 1905. Serial No. 280,645.



Claim.—1. In an apparatus for operating a railway-switch, a bell-crank lever having a fixed upright at one end pivoted at the side, of a main railway-track a second bell-crank lever on the opposite side of the same track, levers on a car having cams to engage the uprights and thereby vibrate the bell-crank levers alternately in reverse ways and treadles on the car for alternately operating said levers.

2. In an apparatus for operating a railway-switch, a pivoted rail-section, a bell-crank lever connected with the free end of said rail-section and means to actuate the bell-crank lever, a second bell-crank lever at some distance from the first one, a rod connecting the two bell-crank levers and means to simultaneously actuate the two bell-crank levers and the pivoted rail-section, as set forth.

3. In an apparatus for operating a railway-switch, a leaf-spring fixed to a base-plate, a bell-crank lever pivoted to the end of the spring and provided with a fixed upright at one end and means for vibrating the bell-crank when a car passes over the upright.

4. In an apparatus for operating a railway-switch, a leaf-spring fixed to a base-plate, a bell-crank lever pivoted to the end of the spring and provided with a fixed upright at one end and means for vibrating the bell-crank lever when a car passes over the upright and an opening in the base-plate to allow the upright on the end of the bell-crank lever to be depressed as set forth.

5. In an apparatus for operating a railway-switch, two parallel

main-track rails, two side-track rails, a pivoted rail-section, a fixed guard-rail, two pivoted bell-crank levers connected with the free end of the pivoted rail-section, two leaf-springs fixed to a base at some distance from the pivoted rail-section, bell-crank levers pivoted to the free ends of the springs and uprights at the front ends of the bell-crank levers, to operate as set forth.

6. In an apparatus for operating a railway-switch, two parallel main-track rails, two side-track rails, a pivoted rail-section, a fixed guard-rail, two pivoted bell-crank levers connected with the free end of the pivoted rail-section, two leaf-springs fixed to a base at some distance from the pivoted rail-section, bell-crank levers pivoted to the free ends of the springs and uprights at the front ends of the bell-crank levers and means carried on a car to engage said uprights, to operate as set forth.

7. In an apparatus for operating a railway-switch, a lever fulcrumed to the under side and end portion of a car, a cam on the lower free end of the lever and means for lifting the front end of the lever for lowering the cam to engage an upright on the end of a bell-crank lever located at the side of a track-rail and operate as set forth.

8. In an apparatus for operating a railway-switch, two levers fulcrumed to the under side and end portion of a car, a cam on the lower free end of each lever and means on the car for lifting the front ends of the lever and lowering the cams and bell-crank levers at the opposite sides of a track-rail provided with uprights at one end to be engaged by said cams when the car passes over the track as set forth.

9. In an apparatus for operating a railway-switch, a lever fulcrumed to the under side and end portion of a car, a cam on the lower free end of the lever, a spring fixed to the lever and to the car to normally retain the cam on the end of the lever elevated and means for lifting the front end of the lever for lowering the cam to engage an upright on the end of a bell-crank lever located at the side of a track-rail and operate as set forth.

10. In an apparatus for operating a railway-switch, a lever fulcrumed to the under side and end portion of a car, a cam on the lower free end of the lever, a spring fixed to the lever and to the car to normally retain the cam on the end of the lever elevated, a treadle pivotally connected with the car and upper end of the lever end means for lifting the front end of the lever for lowering the cam to engage an upright on the end of a bell-crank lever located at the side of a track-rail and operate as set forth.

11. In an apparatus for operating a railway-switch, a lever fulcrumed to the under side and end portion of a car, a cam on the lower free end of the lever, a spring fixed to the lever and to the car to normally retain the cam on the end of the lever elevated, a treadle pivotally connected with the car and upper end of the lever, a spring between the end of the treadle and the end of the lever and means for lifting the front end of the lever for lowering the cam to engage an upright on the end of a bell-crank lever located at the side of a track-rail and operate as set forth.

12. In an apparatus for operating a railway-switch, two levers fulcrumed to the bottom and side portions of the end of a car and rigidly connected at their upper ends by a cross-bar, a treadle pivoted to the car and fixed to the center of the cross-bar that is flexibly connected wth the upper end of the levers, cams on the lower ends of the levers and means to normally retain the cams elevated relative to an upright projecting upward from a bell-crank lever aside of a track-rail as set forth.

13. In an apparatus for operating a railway-switch, two pairs of levers and each pair connected at their ends by a cross-bar and each lever pivoted to the under side of a car and provided with a cam on its lower free end, treadles pivoted to the cam and connected with the cross-bars and means to normally retain the cams on the ends of the levers elevated relative to the uprights on the bell-crank levers at the sides of the track-rails as set forth.

823,137. PIVOT CONNECTION. FRANCIS H. RICHARDS, Hartford, Conn., assignor, by mesne assignments, to American Typographic Corporation, a Corporation of New Jersey. Filed May 16, 1899. Serial No. 717,002.



Claim.—1. The combination with a key-lever provided with a cylindrical pivot-opening, of a key-stem having a pair of arms straddling the key-lever, one of said arms being resilient and one of said arms having a journal portion the extreme edges of which journal engaging with opposite sides of the said pivot-opening in the key-lever.

2. The combination with a key-lever provided with a cylindrical pivot-opening, of a key-stem having a pair of resilient arms straddling the key-lever, each of said arms having an inturned journal member whose extreme outer edge engages with opposite sides of the pivot-opening in the key-lever, said journal members being swaged up substantially parallel with the body portions of the arms.

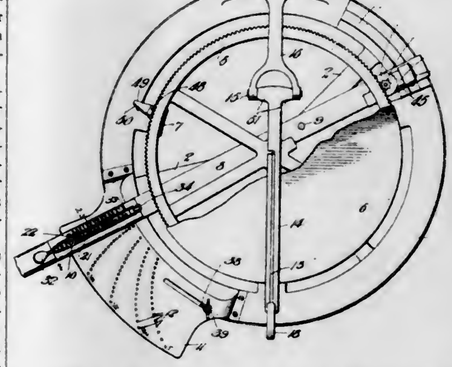
3. The combination with a key-lever having a cylindrically-walled opening and a beveled portion above said opening, of a key-stem having a pair of arms straddling such beveled portion, said arms having disk-like journal portions the extreme edges of which are in engagement with the walls of the said pivot-opening in the key-lever and one of the arms being resilient.

4. The combination with a key-lever having a beveled portion, of a key-stem having a pair of arms straddling such beveled portion, said arms having disk-like journal portions the extreme edges of which are in engagement with the walls of the said pivot-opening in the key-lever.

5. The combination with a key-lever having a beveled portion and a journal-bearing below said portion, of a key-stem having a pair of arms straddling such key-lever, said arms having journals at their extreme ends which enter said bearings and one of said arms being resilient, whereby the journals may be readily seated and the parts assembled.

6. The combination with a key-lever, of a key-stem embodying a pair of sheet-metal arms, each fashioned at its lower end to form a rounded bearing member, for coöperation with a corresponding journal-bearing in the key-lever, said key-lever being provided with said journal-bearings.

823,138. CHEESE-CUTTER. ARLAND B. ROACH, Los Angeles, Cal., assignor of two-thirds to Charles E. Doffiemyer and one-third to David F. McKinney, Los Angeles, Cal. Filed Aug. 12, 1904. Serial No. 220,509.



Claim.—1. In a cheese-cutter, a rotatable cheese-support, an operating-lever therefor provided with a spring-pressed stop radially adjustable to move in different paths, a plate having a plurality of perforations disposed at variant angular distances in such different paths, and a stop adjustable on said plate to limit the maximum movement of said lever.

2. In a cheese-cutter, a rotatable cheese-support, an operating-lever therefor having a guide way, a slide adjustable on said guide-way and having a clamp for fastening it in adjusted position, a spring-pressed stop-pin on said slide, a finger-piece on said lever, a slidable connection between said lever and stop-pin, and fixed stop means to engage said stop-pin.

3. In a cheese-cutter, a rotatable cheese-support, an operating-lever therefor having a guideway, a slide adjustable on said guide-way and having a clamp for fastening it in adjusted position, a spring-pressed stop-pin on said slide, a finger-piece on said lever, a parallel-motion device connecting said finger-piece and stop-pin, and fixed stop means to engage said stop-pin.

4. In a cheese-cutter, the combination with the rotatable cheese-carrier, a gear thereon, and means for rotating said gear, a brake for said gear comprising a wedge-shaped brake-block, and a support therefor formed with a tapering way.

5. In a cheese-cutter, the combination with the rotatable

cheese-carrier, a gear thereon, and means for rotating said gear, a brake for said gear comprising a wedge-shaped brake-block, a support therefor formed with a tapering way, and a spring pressing the block inwardly on said way.

823,139. FENCE-POST MOLD. PETER L. SCHAAF, Botkins, Ohio. Filed Apr. 4, 1905. Serial No. 253,574.



Claim.—1. In a mold, the combination with a mold-body, of a clamping and carrying frame capable of embracing the sides and ends of the mold and provided with carrying-handles, means carried by the frame for detachable engagement with the bottom of the mold to support the same upon the frame and wedges to be driven in between the body of the mold and the frame to clamp the former within the latter.

2. In a mold, the combination with a mold-body, of a combined clamping and carrying frame to embrace the body and provided with depending hangers for engagement with the bottom of the mold.

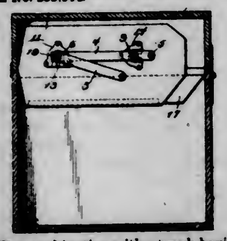
3. In a mold, the combination with a mold-body, of a combined carrying and clamping frame capable of embracing opposite sides and ends of the body, handles for the frame, and hangers depending from the frame for engagement with the bottom of the mold.

4. In a mold, the combination with a mold-body, of a combined clamping and carrying frame comprising spaced longitudinal bars embracing opposite sides of the body, cross-bars connecting the side bars and extending across the respective ends of the body, one set of bars having their ends formed into handles, hangers depending from the frame for engagement with the bottom of the mold, and one or more wedges to be driven in between the frame and the mold.

5. A combined clamping and carrying frame for molds comprising spaced longitudinal bars, terminal cross-bars connecting the same, one set of bars having its ends formed into handles, and hangers depending from the frame for engagement with the bottom of a mold.

6. A combined clamping and carrying frame for molds comprising spaced longitudinal bars, terminal cross-bars connecting the longitudinal bars, one set of bars having their ends formed into handles, hangers depending from the frame for engagement with the bottom of a mold, and one or more wedges to be driven in between the frame and the mold.

823,140. TRUNK. GEORGE A. SCHOBERT, Racine, Wis. Filed Nov. 4, 1905. Serial No. 285,914.



Claim.—1. The combination with a trunk having a movable lid, of a tray, means interposed between the trunk and lid for movably supporting the tray, said tray being pivotally mounted upon said means, and a drawer connected to the tray and adapted to lock the same in raised position.

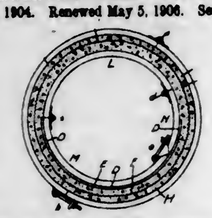
2. The combination with a trunk having a movable lid, of supporting devices pivotally connected to the trunk and lid respectively, a tray detachably and pivotally mounted upon the supporting devices, and a drawer connected to the tray adapted to engage the trunk and support the tray in raised position.

3. The combination with a trunk having a movable lid, of a tray within the trunk, means operated by the lid for raising the tray, and a drawer supported by the tray and adapted to contact with opposite walls of the trunk when the tray is raised or lowered and to be shifted backward and forward thereby.

4. The combination with a trunk having a movable lid, of a tray within the trunk, means operated by the lid for raising or lowering the tray, said tray being pivotally mounted upon said means, and a drawer mounted within the tray and adapted to engage the trunk to hold the tray in raised position.

5. The combination with a trunk having a movable lid, of supporting-strips pivoted to the lid, links pivoted to the trunk and strips, the ends of said strips having lateral extensions adapted to overlap the links and limit the movement of the lid, a tray, sockets secured upon the tray and socket-engaging devices extending from the supporting-strips.

823,141. SEWER-PIPE. FREDERICK E. SHAW, Providence, R. I. Filed Mar. 23, 1904. Renewed May 5, 1906. Serial No. 315,306.



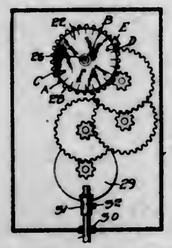
Claim.—1. The improved portable armored invert for sewers herein described, consisting of a semitubular molded body of concrete faced on its inner or concave side by a layer of a different and more durable material, substantially as specified.

2. The improved portable armored invert for sewers herein described, consisting of a semitubular molded body of concrete, a wire-netting embedded in said concrete, and a facing or lining on the inner or concave side of said invert composed of pieces of stone held by said concrete and having their exposed surface approximately smooth and continuous, substantially as specified.

3. The improved portable sewer-pipe herein described, consisting of a tubular body of concrete having two diametrically opposite longitudinal shoulders, and a semitubular armor on the lower portion or bottom of said sewer-pipe composed of pieces of stone held by said concrete and having their exposed surface approximately smooth, said armor abutting said shoulders and having its said surface continuous with the inner concave surface of the unarmored upper portion of said sewer-pipe, substantially as specified.

4. The improved portable sewer-pipe herein described, consisting of a tubular body of concrete having two diametrically opposite longitudinal shoulders, a tubular piece of wire-netting embedded in said concrete, and a semitubular armor on the lower portion or bottom of said sewer-pipe composed of pieces of stone held by said concrete and having their exposed surface approximately smooth, said armor abutting said shoulders and having its said surface continuous with the inner curved surface of the unarmored upper portion of said sewer-pipe, substantially as specified.

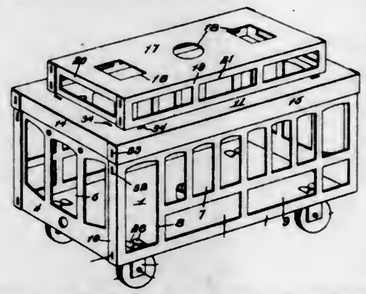
823,142. STATION-INDICATOR. JOSEPH T. SHOFNER, Haley, Tenn. Filed Apr. 15, 1904. Serial No. 203,305.



Claim.—In an indicator for cars, the combination with a casing, of a disk revolubly mounted upon the casing, a dial-plate removably secured upon the disk, an indicator arranged to indicate different points of a route upon the dial-plate as the latter is revolved, a friction-disk revolubly mounted in the casing, operative connections between the friction-disk and the first-named disk for simultaneous rotation thereof, a shaft journaled within the casing and extending outwardly thereof, a friction-pinion slidably mounted upon the shaft and engaging the friction-disk and movable upon the shaft

radially of the disk, means for holding the pinion at different points of its movement upon the shaft, a worm-gear carried by the shaft, a worm-shaft adapted to intermesh with the gear, attaching brackets in which the worm-shaft is engaged, a worm-gear carried by the worm-shaft, a second worm-shaft adapted to mesh with the second worm-gear, attaching brackets in which the second worm-shaft is engaged, a sprocket carried by the second worm-shaft, a sprocket including separable sections adapted for detachable connection with a car-axle, and an endless chain engaged with the sprockets.

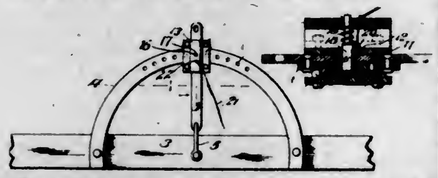
823,143. TOY. WILLIAM F. STELLNER, Danville, Ill., assignor to The Collapsible Toy Company, a Corporation of Illinois. Filed Sept. 14, 1905. Serial No. 278,404.



Claim.—1. A collapsible toy simulating a car comprising a body portion having end and side walls integral therewith and at right angles thereto, flaps integral with the side walls and overlapping and secured to the end walls, a covering having side and end sections integral therewith and at right angles thereto, the side sections overlapping and secured to the end sections, said covering having a part cut away to form an elongated opening therein, a raised portion having side and end extensions bent at right angles to the body portion thereof, said side and end sections having flaps at their lower edges, said flaps being passed through the elongated slot in the cover and bent upwardly and secured to said cover on its under side.

2. A collapsible toy simulating a car and comprising a bottom portion having end walls extending from and integral with the ends of the bottom portion and side walls extending from and integral with the sides of the bottom portion, said walls being folded at right angles to the bottom portion, flaps integral with the side walls and overlapping and secured to the end walls, a top overlapping, and removably mounted on and supported by the side and end walls, said top having a longitudinally-disposed opening therein, and a raised portion disposed within and extending from the opening, said raised portion having flaps underlapping the top and secured thereto.

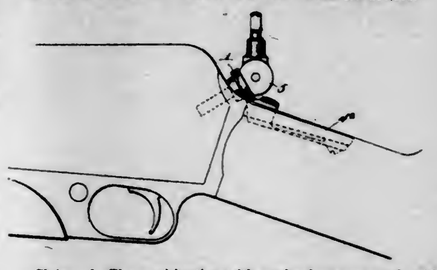
823,144. ATTACHMENT FOR HARROWS. WARREN R. SUMMERS, Georgetown, Ind. Filed Jan. 25, 1906. Serial No. 297,824.



Claim.—1. An attachment for harrows comprising a pivoted draft-bar, a bracket secured thereunder, a top and a bottom plate secured above the draft-bar and below the bracket respectively, a cap secured upon the top plate, an apertured supporting-bar extending under the draft-bar and within the bracket, said supporting-bar having a series of apertures therein, and a spring-pressed locking device mounted within the cap and draft-bar and adapted to be seated in any aperture in the supporting-bar.

2. An attachment for harrows comprising a pivoted draft-bar, a bracket secured thereunder, a top and a bottom plate secured above the draft-bar and below the bracket respectively, a cap secured upon the top plate, an apertured supporting-bar extending under the draft-bar and within the bracket, said supporting-bar having a series of apertures therein, a spring-pressed locking-pin slidably mounted within the cap and draft-bar and adapted to be seated in any of the apertures in the supporting-bar, and a flexible actuating-cord connected to the pin and extending from the cap.

823,145. RIFLE-SIGHT. ARTHUR C. VAN HORN and ARNDEL A. MILLER, Groton, N. Y. Filed Dec. 5, 1905. Serial No. 290,398.



Claim.—1. The combination with a take-down screw of a rifle; of an ear extending from said screw, and a sight pivotally connected to the ear.

2. The combination with a rifle having a take-down screw and means for locking the same against movement; of a sight extending from the screw.

3. The combination with a rifle having a take-down screw; of a lock for preventing the rotation of the screw in either direction and a sight extending from the screw.

4. In a rifle, the combination with a take-down screw having a tapered notch therein; of a spring connected to the rifle, a tapered lug upon the spring normally seated within the notch, and a sight extending from the screw.

5. In a rifle, the combination with a take-down screw having a notch therein; of a spring-supported lug normally seated within the notch and adapted to prevent rotation of the screw in either direction, and a sight extending from the screw.

823,146. CHAIR. ALBERT WANNER, Jr., Hoboken, N. J. Filed Oct. 14, 1905. Serial No. 282,753.



Claim.—1. The combination, with a row of chairs having independent floor-bases, of adjustable means for locking or securing said chairs together comprising corresponding but reverse-curved studs projecting from the chairs, and securing means penetrating said studs horizontally, substantially as described.

2. The combination, with a row of chairs having independent floor-bases, of adjustable means for locking or securing said chairs together comprising corresponding but reverse-curved studs projecting from the chairs and pivotally connected therewith, and securing means penetrating said studs horizontally, substantially as described.

3. The combination, with a row of chairs having independent floor-bases, of adjustable means for locking or securing said chairs together comprising corresponding but reverse-curved studs projecting from the chairs, a fixed part interposed between complementary studs and securing means penetrating said studs and the fixed part horizontally, substantially as described.

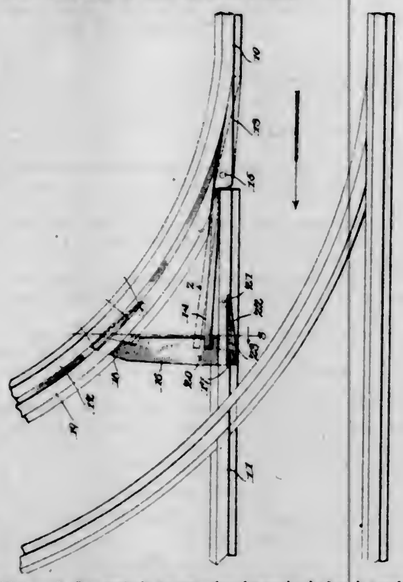
4. The combination, with a row of chairs having independent floor-bases, of adjustable means for locking or securing said chairs together comprising corresponding but reverse-curved studs projecting from the chairs and pivotally connected therewith, a fixed part interposed between complementary studs, and securing means penetrating said studs and the fixed part horizontally, substantially as described.

5. In a row of seating appliances, the combination, with two parts to be connected, of an adjustable connection between said parts comprising a curved stud pivotally arranged on one of said parts to turn on a vertical axis and having a slot in its curved portion and

securing means penetrating said slot and clamping said stud to the other part, substantially as described.

6. In a row of seating appliances, a plurality of supporting parts having independent floor-bases, in combination with adjustable means for locking or securing said parts together in various relative dispositions comprising a curved stud pivotally arranged on one of said parts to turn on a vertical axis and having a slot in its curved portion, and securing means penetrating said slot and clamping said stud to the other part, substantially as described.

823,147. RAILWAY-SWITCH. EDWARD WARTMAN, South Bend, Wash. Filed Sept. 18, 1905. Serial No. 278,995.



Claim.—1. In a switch, means whereby a wheel of each passing car throws the switch to register with the opposite track.

2. In a switch, means whereby wheels of successive cars automatically reverse the switch after passing.

3. In a switch, a switch-point, and means whereby a wheel of each passing car throws the switch-point to register with the opposite track.

4. In a switch, a pivoted switch-point, and means whereby wheels of alternate cars swing the switch-point in the same direction.

5. A switch having a pivoted switch-point, a lever associated with the point, and means connected to the lever and located in the path of car-wheels after passing the point upon either track to throw the point to the opposite track.

6. In a switch, a pivoted switch-point carrying a rigid lever, and means disposed in the path of car-wheels whereby each passing car actuates the lever to swing the switch-point to the opposite track.

7. In a switch, a pivoted switch-point carrying a rigid lever, and a trigger disposed in the path of car-wheels whereby each passing car actuates the lever to swing the switch-point to the opposite track.

8. A switch having a lever pivoted adjacent the divergence of two tracks, triggers secured one to each track and connected with the lever and so arranged that each passing car swings the lever in the opposite direction, and means whereby the switch is thrown by the lever.

9. A switch having a lever pivoted between diverging tracks, a reciprocating bar extending between the tracks and connected with and capable of swinging the lever, a trigger for each track in the path of passing car-wheels and operatively engaging the bar, and means whereby the swinging of the lever throws the switch.

10. A switch having a pivoted switch-point arranged to register with diverging tracks, a lever rigid with the switch-point and extending between the tracks, a reciprocating bar extending between the tracks and connected with the lever, and pivotal triggers for the respective tracks and arranged in the path of passing car-wheels in cooperative relation with the bar for moving the same.

11. A switch having means in the path of car-wheels after passing the switch upon either track to set the switch to the opposite track.

12. A switch having means in the path of car-wheels after passing the switch upon either track to set the switch to the opposite track, said switch capable of being reset to permit successive cars passing upon the same track.

13. A switch which is always set to the opposite track by means upon each car after passing the switch upon either track.

14. A switch which is always set to the opposite track by means upon each car after passing the switch upon either track, said switch capable of being reset to permit successive cars passing upon the same track

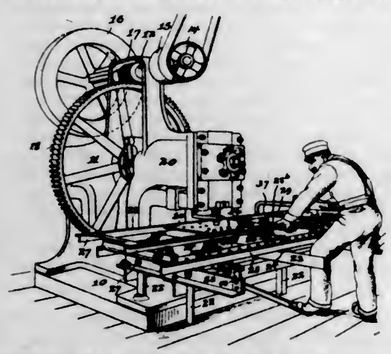
15. The combination with diverging tracks, of a switch-point therefor, car-actuated trips for the respective tracks, and means connecting the trips with the switch-points for throwing the latter to the other track when either trip is actuated.

16. The combination with diverging tracks, of a pivotal switch-point, an endwise-slidable cross-bar extending between the tracks with portions in the paths of car-wheels passing upon the respective tracks, and means connecting the bar and the switch-point whereby the latter is thrown to the opposite track when the bar is actuated by a car upon either track.

17. A switch having means disposed in the path of means upon each car after passing the switch upon either track for setting the switch to the opposite track, the car-carried means being normally in its operative position.

18. A switch having means disposed in the path of means upon each car after passing the switch upon either track for setting the switch to the opposite track, the car-carried means being normally in its operative position, and said switch capable of being reset to permit successive cars passing upon the same track.

823,148. PUNCHING-MACHINE. CHRISTOPHER WEATHERSON, Chicago, Ill., assignor to American Bridge Company, Chicago, Ill., a Corporation of New Jersey. Filed Oct. 6, 1904. Serial No. 227,398.



Claim.—1. In a punching-machine, the combination with a punch and means for actuating the same, of a support for the plate to be punched universally movable in a single plane, a templet carried by said support and located to one side of said plate, and centering means coöperating with said templet to effect the positioning of said support and the plate relatively to the punch, substantially as described.

2. In a punching-machine, the combination with a punch and means for actuating the same, of a support for the plate to be punched universally movable in a plane parallel with the plane of the latter, a templet carried by said support and rigid relatively to said plate and located to one side of the latter, and a reciprocable centering device for the plate coöperating with said templet, said centering device and templet being provided the one with a pin and the other with a hole adapted to be entered by said pin in the centering operation, substantially as described.

3. In a punching-machine, the combination with a punch and means for actuating the same, of a support for the plate to be punched universally movable in a plane parallel with the plane of the latter, a perforated templet also carried by said support and located to one side of said plate, and a reciprocable centering-pin coöperating with the perforations of said templet to effect the positioning of said support and the plate relatively to the punch, substantially as described.

4. In a punching-machine, the combination with a punch and means for actuating the same, of a pair of frames mounted one upon the other and movable relatively and in directions at right angles to each other, means for rigidly supporting the plate to be punched upon the upper of said frames, a templet and means for rigidly supporting the same also upon the upper of said frames, and centering means coöperating with said templet to effect the positioning of said frames and the plate relatively to the punch, substantially as described.

5. In a punching-machine, the combination with a punch and means for actuating the same, of a pair of frames mounted one upon the other and movable relatively and in directions at right angles to each other, means for rigidly supporting the plate to be punched upon the upper of said frames, a perforated templet and means for rigidly supporting the same upon the upper of said frames to one side of said plate, and a reciprocable centering-pin coöperating with the perforations of said templet to effect the positioning of said frames and the plate relatively to the punch, substantially as described.

6. In a punching-machine, the combination with the machine-frame, a punch reciprocably mounted therein, and means for actuating said punch, of a horizontally-disposed lower frame supported by roller and track connections above the bed-plate of the machine-frame, and movable in one direction over the latter, an upper horizontally-disposed frame supported upon said lower frame by roller and track connections and movable over said lower frame in a direction at right angles to the direction of movement of said lower frame, means for rigidly supporting the plate to be punched upon said upper frame, a perforated templet and means for rigidly supporting the same upon said upper frame to one side of said plate, and a reciprocable centering-pin coöperating with the perforations of said templet to effect the positioning of said frames and the plate relatively to the punch, substantially as described.

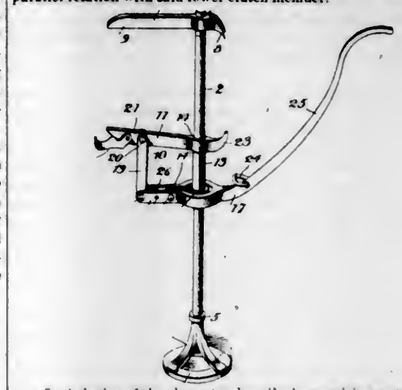
7. In a punching-machine, the combination with the machine-frame, a punch reciprocably mounted therein, and means for actuating said punch, of a track disposed above the bed-plate of the machine-frame, a horizontally-disposed lower frame having rollers reciprocable over said track and having other rollers mounted thereon in planes at right angles to said first-named rollers, an upper horizontally-disposed frame having a track resting upon said other rollers, means for rigidly supporting the plate to be punched upon said upper frame, a perforated templet and means for rigidly supporting the same upon said upper frame to one side of said plate, and a reciprocable centering-pin coöperating with the perforations of said templet to effect the positioning of said frames and the plate relatively to the punch, substantially as described.

8. In a punching-machine, the combination with a punch and means for actuating the same, of a stationary bed-frame, a pair of frames mounted one upon the other upon said bed-frame and movable relatively and in directions at right angles to each other, means for rigidly supporting the plate to be punched upon the upper of said frames, a templet and means for rigidly supporting the same also upon the upper of said frames, centering means coöperating with said templet to effect the positioning of said frames and the plate relatively to the punch, and stop devices secured on said bed-frame and limiting the outward movement of the lower moveable frame, substantially as described.

823,149. LIFTING-JACK, CLAMP, AND WIRE-STRETCHER. ANDREW J. WHITE, Mertens, Tex. Filed Sept. 18, 1905. Serial No. 279,038.

Claim.—1. A device of the character described comprising a standard, a frame adjustable upon said standard and consisting of two clutch members formed with apertures of greater size than said standard, to permit said members to have a tilting movement, a spacing-sleeve upon said standard, between said members, a lever having a bifurcated end pivoted upon the lower clutch member, a link connecting said lever to the upper clutch member, and a spring upon the bifurcated end of said lever having one end engaged with said lower clutch member and its other end with said link, substantially as described.

2. A device of the character described comprising a standard, a frame adjustable upon said standard and consisting of two clutch members formed with apertures of greater size than said standard, to permit said members to tilt slightly, a spacing-sleeve upon said standard between said members, a lever having a bifurcated end pivoted upon the lower clutch member, a link connecting said lever to the upper clutch member, a spring for forcing said clutch members to their angular position, and means upon said lever for locking the same to said upper clutch member to hold the latter in substantially parallel relation with said lower clutch member.



3. A device of the character described comprising a standard, a frame adjustable upon said standard and consisting of two clutch members formed with apertures of greater size than said standard, to permit said members to slightly tilt thereon, a spacing-sleeve upon said standard, between said members, a lever having a bifurcated end pivoted upon the lower clutch member, a link connecting said lever to the upper clutch member, a spring for forcing said clutch members to their angular position, means upon said lever for locking the same to said upper clutch member, to hold the latter in substantially parallel relation with said lower clutch member, a fixed head upon the upper end of said standard, and a base upon the lower end of said standard, substantially as described.

4. A device of the character described comprising a standard, an adjustable frame slidable thereon and consisting of upper and lower friction clutch members formed with apertures to receive said standard, said apertures being of slightly greater size than said standard, to permit said members to tilt thereon, a lever pivoted to the lower clutch member, a link connecting said lever to the upper clutch member, means for forcing said clutch members to their angular position, and a link upon said lever adapted to engage said upper clutch member, to hold said clutch members in substantially parallel relation, substantially as described.

5. A device of the character described comprising a standard having at one end a transversely-projecting head, and a sliding frame adjustable upon said standard, said frame being adapted to serve as a lifting-jack and as the movable member of a clamp, the stationary member of which latter being formed by said head.

6. A combination lifting-jack, clamp and wire-stretcher, comprising a standard having a base at one end and a stationary head at its opposite end, and a sliding frame adjustable upon said standard and having a portion adapted to serve as the movable member of a lifting-jack, a clamp and a wire-stretcher, substantially as described.

823,150. DENTAL HANDPIECE. CHARLES L. ALEXANDER, Charlotte, N. C. Filed Feb. 11, 1905. Serial No. 245,289.



Claim.—1. In a dental handpiece, a hollow barrel member carrying interiorly and transversely of the bore thereof a shaft-pin; a gear-wheel supported by the shaft-pin and provided with a stub-shaft having thereon an eccentric cam; an eccentric-rod within the barrel member and having formed on its end an eccentric-strap surrounding the eccentric cam; a reciprocatory rod pivotally connected to the eccentric-rod; and a removable ring member connected to the barrel member at one end thereof, said ring member carrying a rotatable shaft having at one end a pinion in mesh with the gear-wheel.

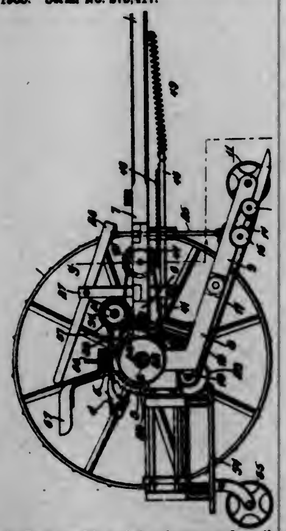
2. In a dental handpiece, a hollow barrel member carrying interiorly and transversely of the bore thereof a shaft-pin; a gear-wheel supported by the shaft-pin and provided with a stub-shaft having thereon an eccentric cam; an eccentric-rod within the barrel member and having formed on its end an eccentric-strap surrounding the

eccentric cam; a reciprocatory rod pivotally connected to the eccentric-rod; a supplemental holder removably carried by the reciprocatory rod and constructed to hold a brush or the like; and a ring member carried by the barrel member at one end thereof and carrying a rotatable shaft having at one end a pinion in mesh with the gear-wheel.

3. In a dental handpiece, a hollow barrel member carrying interiorly and transversely of the bore thereof a shaft-pin; a gear-wheel, supported by the shaft-pin, and provided with a stub-shaft having thereon an eccentric cam; an eccentric-rod within the barrel member and having formed on its end an eccentric-strap surrounding the eccentric cam; a reciprocatory rod pivotally connected to the eccentric-rod; a supplemental holder removably carried by the reciprocatory rod and constructed to hold a brush or the like, and comprising a bifurcated portion having a head at the extreme end, such head being provided with perforations; and a ring member connected to the barrel member at one end thereof and carrying a rotatable shaft having at one end a pinion in mesh with the gear-wheel.

4. In a dental handpiece, a hollow barrel member carrying interiorly and transversely of the bore thereof a shaft-pin; a gear-wheel supported by the shaft-pin, and provided with a stub-shaft having thereon an eccentric cam; an eccentric-rod within the barrel member and having formed on its end an eccentric-strap surrounding the eccentric cam; a reciprocatory rod pivotally connected to the eccentric-rod; a supplemental holder removably carried by the reciprocatory rod and constructed to hold a brush or the like; a ring member connected to the barrel member at one end thereof and carrying a rotatable shaft having at one end a pinion in mesh with the gear-wheel; and a hollow, open-ended, tubular housing member for said shaft, removably connected to one end of the ring member.

823,151. BALING-PRESS. JOHN B. ARMONS, Hazen, Ark. Filed Aug. 23, 1905. Serial No. 275,417.



Claim.—1. In a machine of the character described, the combination with a frame and traction-wheels supporting the same; of a longitudinally-extending compressing-compartment secured to the frame, a plunger adapted to reciprocate therein, means operated by the traction-wheels for actuating the plunger in one direction, means for automatically returning the plunger to its initial position at predetermined periods, an endless conveyer supported by the frame, means for gathering material and for directing it upon the conveyer, and rotary means upon opposite sides of the conveyer for centering material thereon and directing it into the compressing-compartment.

2. In a machine of the character described, the combination with a frame and traction-wheels supporting the same; of a compressing-compartment arranged longitudinally upon the frame, an endless conveyer adjustably mounted upon the frame, means for gathering material and for directing it upon the conveyer, and rotary means at the sides of the conveyer for centering the material upon the conveyer and for directing it into the compressing-compartment.

3. In a machine of the character described, the combination with a frame and traction-wheels for supporting the same; of a conveyer, rotatable devices adjacent the receiving portion of the conveyer for engaging material and directing it upon the conveyer, and rotatable blades adjacent the sides of said conveyer for centering the material thereon.

4. In a machine of the character described the combination with a frame and traction-wheels for supporting the same; of a conveyer supported by the frame, a roller adjacent the receiving portion of the conveyer for engaging material and directing it upon said conveyer, fingers extending beyond the roller, and extensions thereon partly surrounding the roller.

5. In a machine of the character described the combination with a frame and traction-wheels for supporting the same; of a conveyer supported by the frame, a roller adjacent the receiving portion of the conveyer for engaging material and directing it upon said conveyer, fingers extending beyond the roller, extensions thereon partly surrounding the roller, and means for adjusting the front portion of the conveyer and the parts adjacent thereto from or toward the ground.

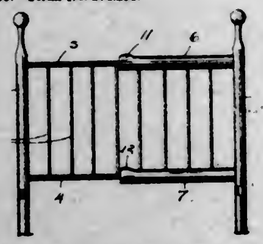
6. In a machine of the character described the combination with a frame and traction-wheels for supporting the same; of an endless conveyer supported by the frame, means for transmitting motion thereto from the traction-wheels, rotary series of prongs for directing the material upon the conveyer, gathering-fingers extending forward beyond the prongs, extensions thereon disposed between the series of prongs and adjacent the conveyer, and mechanism for transmitting motion from the conveyer to the series of prongs.

7. In a machine of the character described the combination with a frame and traction-wheels for supporting the same; of an endless conveyer supported by the frame, means for transmitting motion thereto from the traction-wheels, rotary series of prongs for directing the material upon the conveyer, gathering-fingers extending forward beyond the prongs, extensions thereon disposed between the series of prongs adjacent the conveyer, mechanism for transmitting motion from the conveyer to the series of prongs, and means for vertically adjusting the front portion of the conveyer and the prongs and fingers.

8. In a machine of the character described the combination with a frame and traction-wheels supporting the same; of an endless conveyer carried by the frame, means for transmitting motion thereto from one of the wheels, means at opposite sides of the conveyer for centering the material thereon, and mechanism for transmitting motion to said means from one of the wheels.

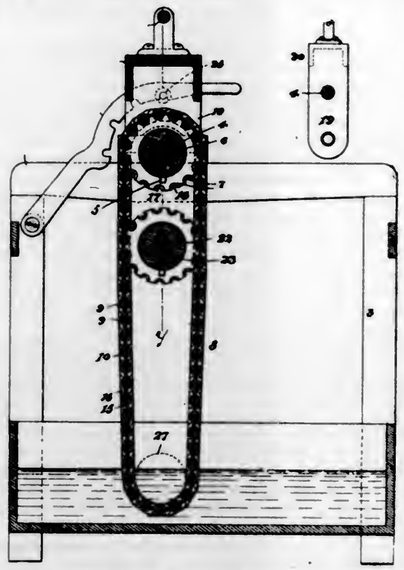
9. In a machine of the character described the combination with a frame and traction-wheels supporting the same; of an endless conveyer carried by the frame, means operated by one of the wheels for actuating the conveyer, means for gathering material and directing it upon the conveyer, means at opposite sides of the conveyer for centering material thereon, and mechanism operated by one of the wheels for actuating the directing and centering means simultaneously with the conveyer.

823,152. BEDSTEAD. HERBERT F. BABCOCK, Rifle, Colo. Filed Aug. 15, 1905. Serial No. 274,291.



Claim.—A bedstead comprising head and foot portions including posts, one post of the head and foot portions each having upper and lower solid arms connected by vertical bars, each upper and lower arm of said foot portions having a roller at its inner end, the opposite post of the head and foot portions each having upper and lower hollow arms for the reception of the corresponding upper and lower solid arms of the respective posts of the head and foot portions, the inner end of each of the hollow arms being provided with a roller for cooperation with the roller at the inner end of each of the solid arms to reduce friction when the solid arms are moved into and out of the hollow arms, the upper and lower hollow arms of the respective head and foot posts being connected by vertical bars, each upper hollow arm of the respective head and foot posts having a longitudinal slot in its under face and each lower hollow arm having a longitudinal slot in its upper face for alinement with the aforesaid slot whereby the aforesaid vertical bars connecting the solid arms may pass through the hollow arms and telescoping side rails connecting the head and foot posts.

823,153. HAT SIZING, HARDENING, AND STARTING MACHINE. WILLIAM H. BEHRENS, Newark, N. J. Filed Mar. 14, 1905. Serial No. 249,976.



Claim.—1. In a hat-sizing machine, the combination with a tank adapted to contain liquid, a drum mounted horizontally above said tank, and a flexible endless pressure-belt suspended from said drum, and having a free lower part located near the bottom of said tank and a swinging frame carrying a second drum, the latter being arranged within said pressure-belt.

2. In a hat-sizing machine, the combination with a tank adapted to contain liquid, of a drum mounted horizontally above said tank and a flexible endless belt hung over said drum and comprising parallel rods disposed transversely of the belt and connected at their opposite ends, and a swinging drum arranged below the first said drum within said belt and adapted to separate the folds of said endless belt and raise the lower part thereof out of the sizing fluid of the tank, and means for supporting the drum and swinging it between the folds of the belt.

3. In a hat-sizing machine, the combination with the tank, of a shaft arranged horizontally above said tank, a bracket or frame adapted to swing on said shaft and carrying at one side thereof a second shaft parallel to the first, drums upon the said shafts, and an endless flexible pressure-belt extending around both said drums and adapted to dip into the tank.

4. In a hat-sizing machine, the combination with a tank adapted to contain liquid, of a frame extending above said tank and adapted to support the working parts, a drum mounted on said frame above said tank, a flexible, endless pressure-belt hung over said drum and having its opposite folds extend directly down from the opposite sides of said drum into said tank, and means also arranged above said tank and between the folds of said belt adapted to further separate the folds and raise the lower part of the belt out from the liquid of the tank, substantially as set forth.

5. In a hat-sizing machine, a horizontally-disposed drum, an endless pressure-belt hung over said drum, a second drum normally lying beneath the first-mentioned drum in the same vertical plane therewith, and means for swinging one of said drums with respect to the other out of said vertical plane.

6. In a hat-sizing machine, the combination of a horizontal drum having annular recesses at its ends and longitudinal grooves between said recesses, a pressure-belt with lateral chains adapted to lie in said recesses and transverse rods lying in said grooves, the reduced ends of said rods projecting through and beyond said chains, end plates upon the drum peripherally notched to receive said extremities of the transverse rods, and means for rotating said drum.

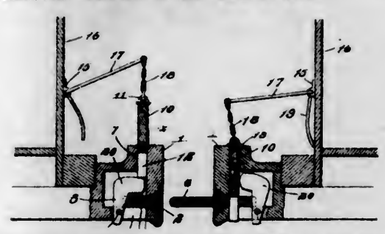
7. In a hat-sizing machine, the combination with a tank adapted to contain liquid for submerging a bundle of hats, of a rotatable member disposed subetantially horizontally above said tank, and a flexible endless pressure-belt hung over said member and adapted, at a substantially vertical portion of its free lower end, to gravitate against a bundle of hats, and means inserted between the folds of said belt to spread or separate said folds and raise the lower part out of the liquid of the tank.

8. In a hat-sizing machine, the combination with a tank adapted to contain liquid for submerging a bundle of hats, of a rotatable member disposed substantially horizontally above said tank and a flexible endless pressure-belt hung over said member and having its lower part free and adapted to gravitate inwardly against a bundle of hats, and a drum arranged beneath the first said member and above said tank, and a pivoted frame for supporting said drum.

9. In a hat-sizing machine, the combination with a tank, of a frame extending above said tank, a rotary member horizontally disposed above said tank on said frame, a flexible endless pressure-belt hung over said rotary member and dropping therefrom into the tank by gravity, a second member parallel to the first and also extending through the belt and lying normally immediately beneath the first said member, and means for shifting the location of the second member to vary the angular position of the plane in which said members lie and thus spread or separate one fold of the belt farther from the other and raise the lower part of the belt out of the sizing liquid.

10. In a hat-sizing machine, the combination with a tank, of a rotary member horizontally disposed above said tank, a flexible endless pressure-belt hung over said rotary member, a second rotary member parallel to the first and also extending through the belt and normally lying immediately beneath said first member, and means for shifting said members to vary the angular position of the plane in which they lie.

823,154. AUTOMATIC CAR-COUPLING. HENRY L. BLUE, St. Elmo, Colo. Filed Nov. 18, 1905. Serial No. 288,014.

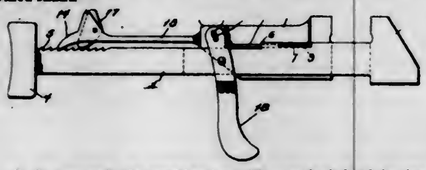


Claim.—1. In a coupler, the combination with a draw-head having a compartment therein provided with a slot in the bottom thereof and a mouth in the front of said compartment; of a locking-pin slidably mounted in the top of the draw-head and projecting into the compartment, said pin having an integral tongue at its lower end beads on opposite sides of said pin adapted to engage grooves in the draw-head, and an angular tumbler pivoted at one end within the slot and projecting across the mouth and normally resting by gravity below the raised locking-pin.

2. The combination with a draw-head having a compartment therein provided with a mouth in its front wall and a slot in its bottom; of a locking-pin slidably mounted within the top of the draw-head and having an integral tongue upon the bottom thereof longitudinal beads on opposite sides of said pin adapted to enter grooves in the draw-head, means for raising the pin, and an angular tumbler within the compartment and adapted to be inserted through the slot, said tumbler being pivoted at one end within one end of the slot and normally resting, by gravity, under the locking-pin.

823,155. WRENCH. DANIEL L. BOOKER, Girard, Ala. Filed Oct 30, 1905. Serial No. 285,128.

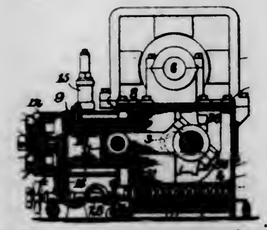
Claim.—1. In a wrench, the combination with a toothed shank having a fixed jaw; of a slidable jaw mounted on the shank, a spring-arm integral with and extending from the slidable jaw, a dog integral with the free end of said arm and adapted to normally engage the toothed shank



2. In a wrench, the combination with a toothed shank having a fixed jaw; of a slidable jaw mounted upon the shank, a spring-arm integral with and extending from the slidable jaw, a dog integral with the free end of said arm and adapted to normally engage the toothed shank, and means movably mounted within the spring-arm for holding the dog out of engagement with the shank.

3. In a wrench, the combination with a toothed shank having a fixed jaw at one end; of a slidable jaw mounted upon the shank, a spring-arm integral with and extending from the slidable jaw and projecting longitudinally of the toothed shank, a dog formed by the free end of said arm and adapted to engage the toothed shank, said arm having a slot therein, ears extending from the sides of the slot, and a releasing device pivotally mounted between the ears and adapted to contact with the shank and hold the dog from engagement therewith.

823,156. FLUID-COMPRESSOR. NIELS A. CHRISTENSEN, Milwaukee, Wis. Original application filed Sept. 9, 1899, Serial No. 729,957. Divided and this application filed Dec. 11, 1899. Serial No. 739,900.



Claim.—1. A compressor comprising a casing, a plurality of cylinders therein having pistons, such casing having a false bottom forming a cooling-chamber integral with said casing and each of said cylinders having independent and valve-governed suction and discharge passages, a series of independently-removable covers for said chambers provided with passages for the inlet and exit of the fluid under pressure, and independent cooling-coils located in said cooling-chamber and connected at their ends with said passages in the removable covers.

2. A compressor comprising a casing, a plurality of cylinders therein having pistons, such casing having a false bottom forming a cooling-chamber integral with said casing, each of said cylinders having independent and valve-governed suction and discharge passages, a series of independently-removable covers for said chamber, independent cooling-coils located in said cooling-chamber and connected at their ends with the covers respectively, a discharge-pipe common to all of said discharge-passages and coils, and independently-operable cut-out valves located between the coils and discharge-pipes.

3. A compressor comprising a casing, a plurality of cylinders therein having pistons, such casing having a false bottom forming a cooling-chamber integral with said casing, means for operating the pistons, each cylinder having independent and valve-governed suction and discharge passages, independent cooling-coils one for each discharge-passage and located in said chamber, independent covers for said chamber, to which covers the coils are secured at their free ends and with which they are bodily removed, a common discharge-pipe having communication with said discharge-passages and coils and independent cut-off valves located between the coils and common discharge-pipe.

4. In a compressor, the combination with a compressor-casing having a false bottom forming a cooling-chamber, a plurality of cylinders located in the casing and having pistons for compressing and discharging fluid therefrom, a series of independent cooling-coils located in the cooling-chamber, a series of gooseneck connections between the coils and the discharge from the cylinders, and a series of independently-valve-governed delivery-pipes communicating with said coils for delivering the fluid under pressure after the same has passed through such coils.

5. In a compressor, the combination with a compressor-casing having a false bottom forming a cooling-chamber, a plurality of cylinders located in the casing and having pistons for compressing and discharging fluid therefrom, a series of independent cooling-coils located in the cooling-chamber, a series of gooseneck connections between the coils and the discharge from the cylinder, a series of independently-valve-governed delivery-pipes communicating with said coils for delivering the fluid under pressure after the same has passed through such coils, said gooseneck connections being detachable from said cylinders, and a delivery-pipe common to all of said series of delivery-pipes leading from the coils.

6. In a compressor, the combination with a compressor-casing having a false bottom forming a cooling-chamber, a plurality of cylinders located in the casing and having pistons for compressing and discharging fluid therefrom, a series of independent cooling-coils located in the cooling-chamber, a series of gooseneck connections between the coils and the discharge from the cylinders, a series of independently-valve-governed delivery-pipes communicating with said coils for delivering the fluid under pressure after the same has passed through such coils, a series of removable covers for the cooling-chamber and provided with inlet and outlet passages for the fluid under pressure, a series of goosenecks communicating between the discharge of the cylinders and the inlet-passages in the removable covers, said cooling-coils being arranged to communicate at their ends with said inlet and outlet passages in their removable covers, and a series of independently-valve-governed delivery-pipes communicating with the outlet-passages in said removable covers.

7. In a compressor, the combination with a compressor-casing having a false bottom forming a cooling-chamber, a plurality of cylinders located in the casing and having pistons for compressing and discharging fluid therefrom, a series of independent cooling-coils located in the cooling-chamber, a series of gooseneck connections between the coils and the discharge from the cylinders, a series of independently-valve-governed delivery-pipes communicating with said coils for delivering the fluid under pressure after the same has passed through such coils, said cylinders having delivery-pipes terminating in nozzles, a series of removable closures for closing the front of said cooling-chamber and provided with inlet and outlet passages, said cooling-coils being located in such chamber and secured at their ends in and communicating with said passages in the closures and being bodily removable with their respective closures, a series of goosenecks forming expansible connections between said nozzles and said inlet-passages in the closure, and a series of independently-valve-governed delivery-pipes communicating with the outlet-passages in said closures.

823,157. HOT-WATER REGULATOR. SAMUEL J. G. CORNELL, New York, N. Y. Filed Mar. 29, 1905. Serial No. 252,759.

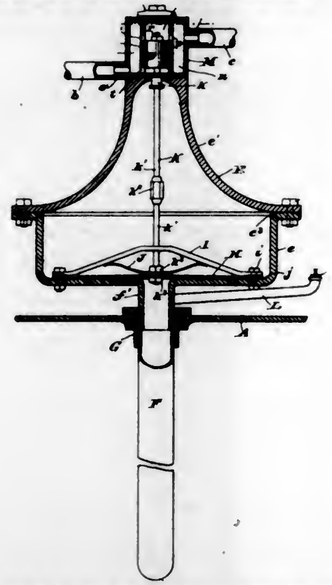
Claim.—1. In a device of the class described, a boiler-shell, a thermostatic tube attached to said shell and adapted to be exposed to the heating action of the boiler, a diaphragm-casing communicating with said tube and connected removably to the boiler-shell, whereby the casing may be disconnected without disturbing the thermostatic tube, a diaphragm carried within the casing, a fluid-controlling valve mounted in the casing, and connections between the diaphragm and said valve.

2. In a device of the class described, a diaphragm-casing provided with a diaphragm-chamber and with a steam-chest, a diaphragm in said diaphragm-chamber of the casing, a thermostatic tube communicating with the diaphragm-chamber, fluid inlet and outlet connections for the steam-chest, a valve in said steam-chest, and a direct connection between the diaphragm and the valve.

3. In a device of the class described, a casing provided with a diaphragm-chamber and with a steam-chest, a diaphragm in said chamber, a valve in the steam-chest, and a direct connection between the diaphragm and the valve, said connection being adjustable and extending from the chest to the diaphragm-chamber.

4. In a device of the class described, a casing provided with a diaphragm-chamber and a fluid-chest, a diaphragm in the chamber, a valve in the fluid-chest, a thermostatic tube, and a direct hollow connection between the diaphragm and the valve, said connection affording means for refilling the thermostatic tube without removing said parts.

5. In a device of the class described, a diaphragm-casing, a thermostatic tube communicating with said casing, a fluid-chest having a removable closure, a diaphragm in said casing, a valve in the chest, and a tube extending through the valve and the diaphragm and affording means for refilling the tube, said tube operating to transmit the motion of the diaphragm directly to the valve.

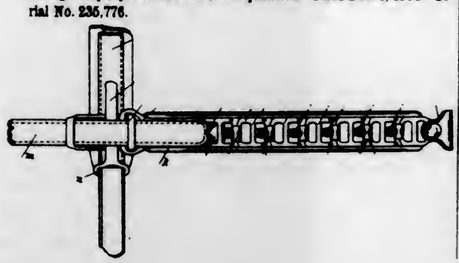


6. In a device of the class described, a diaphragm-casing, a thermostatic tube communicating with said casing, a fluid-chest, a diaphragm held in said casing, a valve movable in the fluid-chest, and a tube directly connected to said valve and the diaphragm for communicating the motion of the diaphragm to the valve, said tube being constructed in sections which are united by a coupling located intermediate of the diaphragm and the valve.

7. In a device of the class described, a diaphragm-casing, a diaphragm located in a chamber thereof, a steam-chest at one end of the diaphragm-casing, a valve movable in said steam-chest, a bridge located in the diaphragm-casing and clamping the diaphragm to said casing, a spring seated on the bridge and acting on the diaphragm, and a direct connection between the diaphragm and the valve, said connection being fitted slidably to the bridge.

8. In a device of the class described, a diaphragm-casing, a thermostatic tube communicating with a chamber of said casing, a diaphragm held in said casing, a steam-chest at one end of the diaphragm-casing, inlet and outlet connections for said steam-chest, a valve slidable in the steam-chest, and a tubular connection extending through the diaphragm-casing, said connection being attached to the diaphragm and the valve, and affording means for refilling the thermostatic tube without disconnecting the aforesaid parts.

823,158. FLEXIBLE-METAL HAME-TUG. ALEXANDER M. CRAIG, Rome, N. Y., assignor to Rome Saddlery Hardware Manufacturing Company, Rome, N. Y., a Corporation. Filed Dec. 6, 1904. Serial No. 235,776.



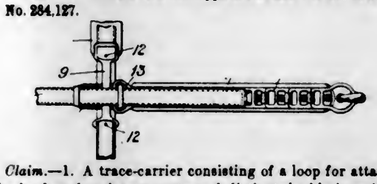
Claim.—1. A metallic hame-tug consisting of a series of links, each having a cross-bar provided with means for attachment to a strip of wear-leather.

2. A metallic hame-tug consisting of a series of separable metal links each having a cross-bar provided with a perforated lug for the insertion of the rivet by which to attach the link to a strip of wear-leather.

3. The combination with a metallic hame-tug consisting of a series of links, each having a cross-bar provided with means for attachment to a strip of wear-leather, of a trace having a bifurcated hook at its ends for engagement with the under side of said cross-bar.

4. In a flexible metallic hame-tug a link forming a removable section of said tug and having at one end a knuckle and at the other a bar forming a hinge-pintle and intermediate of the ends a cross-bar provided with means for attaching the link to a strip of wear-leather.

823,159. TRACE-CARRIER. ALEXANDER M. CRAIG, Rome, N. Y., assignor to Rome Saddlery Hardware Manufacturing Company, Rome, N. Y., a Corporation. Original application filed Dec. 2, 1904, Serial No. 235,776. Divided and this application filed Oct. 23, 1905. Serial No. 284,127.



Claim.—1. A trace-carrier consisting of a loop for attachment to the back-pad and a separate and distinct double loop inserted through the former loop and having outwardly-turned ends for the passage of a trace through both of said ends.

2. A trace-carrier consisting of a billet-loop provided with eyes at its ends for attaching it to the billet of the back-pad and another and separate loop having passages at both ends, through which to run a trace, and constructed intermediate of said ends for location in and free movement in said billet-loop.

3. A trace-carrier consisting in the combination with a loop provided with securing means at its ends of a separate and distinct curved double loop resting transversely in the former loop and projecting forward thereof and constructed to receive a trace through its projecting ends.

4. A trace-carrier consisting of two separate and distinct curved loops interlocking transversely with one another and freely movable one upon the other and each constructed at its ends for attachment to a strap.

5. The combination with the billet-loop of a separate and distinct curved, double loop provided with notches below the curve at the forward end thereof for the reception of an eye on the rear end of a hame-tug.

6. The combination with a hame-tug provided with an eye on its rear end, of a trace-carrier consisting of a billet-loop attached to the billet and of a curved, double loop passing through said billet-loop and said eye and having a trace passed through both of its ends outside of both the billet-loop and said eye.

7. The combination with a hame-tug provided with an eye on its rear end, and provided at intervals along the length thereof with means for adjustably connecting a trace thereto, of a trace-carrier consisting of a vertical loop at the back-pad and a separate and distinct double loop located transversely in and freely movable in the vertical loop and having outwardly-curved ends, one of which passes through the eye of the hame-tug and through both of which ends the trace passes forward to its connection with the hame-tug.

823,160. ATTACHMENT FOR LAMPS. JOHN M. CROPPER, Blanchester, Ohio. Filed Nov. 10, 1905. Serial No. 286,683.

Claim.—1. A lamp attachment comprising a hood, spring-arms connected to the interior thereof, the upper ends of said arms being bent downwardly for engagement with the top of the chimney and the bottom of the arms bent inwardly for engagement with the bottom of the burner, and a bail hinged to the exterior of the hood.

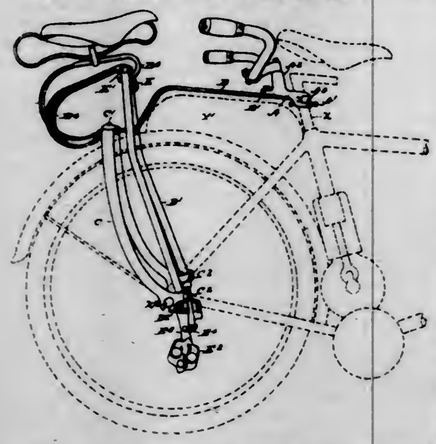
2. A lamp attachment comprising a hood, spring-arms connected to the interior of the hood, ears connected to the hood, the ends of each ear passing through the hood having inwardly-projecting upper portions and securing the spring-arms thereto, and the bail or handle pivotally connected to the ears as set forth.

3. A lamp attachment comprising a hood, the upper portion of which is perforated, said perforated portion being surrounded by an exterior upwardly-projecting flange, spring-arms connected to the interior of the hood and the bail connected to the exterior of the hood, as set forth.



4. A lamp attachment comprising a hood, the bail pivotally connected with the hood, wire ears provided with eyes having their ends extending through said hood, and connected to the hood and the spring-arms connected to the interior of the hood, each arm being formed of a single piece of wire, and comprising a central portion bent dowawardly within the hood, the parallel depending portions, the intermediate twisted portions of the hooked ends, all arranged substantially as described.

823,161. BICYCLE ATTACHMENT. LOUIS DE ROSA, Alameda county, Cal. Filed Nov. 16, 1905. Serial No. 287,616.



Claim.—1. A bicycle attachment consisting of a clamp-block attachable to the saddle-post; handle-bars adjustably secured to said clamp-block; a brace-rod extending rearward and secured to the crown of a fork straddling the rear wheel and secured at, or near the axis thereof; a saddle-spring curved upward from the crown of said fork, and supporting a saddle, the free end of said spring engaging a stirrup supporting pedal-rods extending through guides on said fork; pedals adjustably secured to said pedal-rods; stops adjustably fixed on said pedal-rods under said guides; and auxiliary springs clamped to the crown of said fork, and curved upwardly and secured to said pedal-rods at the said stirrup.

2. A bicycle attachment consisting of a clamp-block attachable to the saddle-post and having handle-bars secured thereto; a brace-rod extending from said clamp-block to a fork straddling the rear wheel and secured to the bicycle-frame; a saddle-spring supported by said fork; pedal-rods suspended from said saddle-spring, and extending through guides on said fork, and pedals adjustably secured thereto.

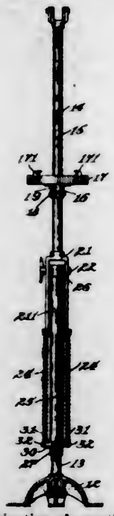
3. A bicycle attachment consisting of a clamp-block attachable to the bicycle-frame; a brace-rod extending from said clamp-block to a fork straddling the rear wheel and attachable to the bicycle-frame; a saddle supported from said fork; and pedal-rods suspended from said seat; and pedals mounted upon said pedal-rods.

4. A bicycle attachment consisting of a tandem-saddle attachable in the rear of the bicycle-seat; and having pedal-rods resiliently suspended therefrom.

5. A bicycle attachment consisting of a tandem-saddle attached in the rear of the bicycle-seat and having pedal-rods suspended therefrom, and guiding means for said rods.

6. A bicycle attachment consisting of a tandem-saddle attached in rear of the bicycle-seat and having pedal-rods resiliently suspended therefrom, and guiding means for said rods.

823,162 BRACKET. JACOB S. DETRICK, Baltimore, Md. Filed Aug. 5, 1905. Serial No. 272,800.



Claim.—1. The combination of a vertical support, an arm pivotally connected at the upper end of the support, means for normally retaining the arm elevated substantially in alinement with the support, and a bracket comprising an upright pivoted at its upper end to the upper end of said arm and provided with a transverse shelf at its lower part.

2. The combination of a vertical support, an arm pivotally connected with the upper end of the support, a spring arranged to normally retain the arm elevated substantially in alinement with the support, and a bracket comprising an upright pivoted at its upper end to the upper end of said arm and provided with a transverse shelf at its lower part.

3. The combination of a vertical support, an arm pivotally connected with the upper arm of the support, a spring arranged to normally retain the arm elevated substantially in alinement with the support, means for adjusting the tension of the spring, a bracket comprising an upright pivoted at its upper end to the upper end of said arm and provided with a transverse shelf at its lower part.

4. The combination of a vertical supporting member, an arm having a forked extension at its lower end whereby it is pivotally connected with the upper part of the supporting member, springs connecting the extremities of the forked portion with the lower part of the supporting member, and a bracket comprising an upright pivoted at its upper end to the upper part of said arm and provided with a transverse shelf at its lower part.

5. The combination of a vertical supporting member, an arm having a forked extension at its lower end whereby it is pivotally connected with the upper part of the supporting member, a collar adjustable on the supporting member, springs connecting the extremities of the forked portion with the adjustable collar, and a bracket comprising an upright pivoted at its upper end to the upper part of said arm and provided with a transverse shelf at its lower part.

6. The combination of a vertical support, an arm pivotally connected with the upper end of the support, means for normally retaining the arm elevated substantially in alinement with the support, means for vertically adjusting the pivotal connection of the arm and support, and a bracket comprising an upright pivoted at its upper end to the upper end of said arm and provided with a transverse shelf at its lower part.

7. The combination of a vertical support, a member vertically adjustable on said support, an arm pivotally connected with the upper portion of said member, means for normally retaining the arm elevated in substantial alinement with the vertical support, and a bracket comprising an upright pivoted at its upper end to the upper end of said arm and provided with a transverse shelf at its lower part.

8. The combination of a base, a vertical post secured to said base, a tube slidable on such post, a clamp arranged to support the tube on the post in adjusted positions, an arm having a forked extension that is pivotally connected with the upper end of said tube, springs connected between said forked extension and the lower portion of said tube, whereby the arm is normally retained elevated in substantial alinement with the post, and a bracket comprising an upright pivoted at its upper end to the upper end of said arm and provided with a transverse shelf at its lower part.

9. The combination of a base, a vertical post secured to said base, a tube slidable on such post, a clamp arranged to support the tube on the post in adjusted positions, an arm having a forked extension that is pivotally connected with the upper end of said tube, a collar adjustable on the tube, springs connected between said forked extension and the said collar, whereby the arm is normally retained elevated in substantial alinement with the post, and a bracket comprising an upright pivoted at its upper end to the upper end of said arm, and provided with a transverse shelf.

10. The combination of a vertical support, an arm pivotally connected with the support, means for normally retaining the arm in a vertical position, an upright pivoted at its upper end to the upper end of the arm, a piece extending transversely from the lower end of the upright, and a plate pivoted on the latter piece.

11. The combination of a vertical support, an arm pivotally connected with the support, means for normally retaining the arm in a vertical position, an upright pivoted at its upper end to the upper end of the arm, a piece extending transversely from the lower end of the upright, a plate pivoted on the latter piece, and a spring connected between the transverse piece and plate and arranged to normally retain the plate at a right angle with the upright.

12. The combination of a vertical support, an arm pivotally connected with the upper arm of the support, means for normally retaining the arm elevated substantially in alinement with the support, and a bracket comprising an upright pivoted at its upper end to the upper end of said arm, and provided with a pair of transverse shelves at its lower part.

13. The combination of a vertical support, an arm pivotally connected with the support, means for normally retaining the arm in a vertical position, an upright pivoted at its upper end to the upper end of the arm, a piece extending transversely from the lower end of the upright, and a pair of plates separately pivoted on the latter piece.

14. The combination of a vertical support, an arm pivotally connected with the support, means for normally retaining the arm in a vertical position, an upright pivoted at its upper end to the upper end of the arm, a cross-piece secured to the lower end of the upright, a plate pivoted on each end of the latter piece, and a spring connected between the transverse piece and each plate and arranged to normally retain the plates at right angles with the upright.

15. The combination of a vertical support, an arm pivotally connected with the support, means for normally retaining the arm elevated in substantial alinement with the support, and a bracket comprising an upright pivoted at its upper end to the upper end of said arm, a cross-piece pivoted to the lower end of the upright, a plate pivoted on each end of the cross-piece, lugs at each end of the cross-piece for limiting the swinging of the plates, and a spring for each plate normally retaining it in engagement with one of said lugs.

16. The combination of a vertical support, a member vertically adjustable on said support, an arm pivotally connected with the upper portion of said member, and means connecting the arm and support arranged to normally retain the arm elevated in substantial alinement with the vertical support.

17. The combination of a base, a vertical post secured to said base, a tube slidable on such post, a clamp arranged to support the tube on the post in adjusted positions, an arm having a forked extension that is pivotally connected with the upper end of said tube, and springs connected between said forked extension and the lower portion of said tube, whereby the arm is normally retained elevated in substantial alinement with the post.

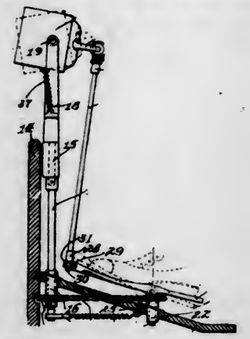
18. The combination of a vertical support, an arm pivotally connected with the upper end of the support, an upright pivoted at its upper end to the upper end of said arm and provided with a transverse shelf at its lower part, and means connected between the arm and support and arranged to normally retain the arm elevated substantially in alinement with the support.

19. The combination of a vertical support, an arm pivotally connected with the upper part of the supporting member, a bracket comprising an upright pivoted at its upper end to the upper part of said arm and provided with a transverse shelf at its lower part, and springs connecting the arm and support for normally retaining the arm elevated substantially in alinement with the support.

20. In a movable bracket for supporting a telephone or other device in a normal elevated position, the combination of a support or standard, an arm hinged adjacent to the upper end of the standard, means for vertically adjusting the hinge connection of the arm and support, means for maintaining the arm in an upright position, and supporting means hinged adjacent to the upper end of the arm.

21. The combination of a vertical support, an arm pivotally connected with the support and provided with forked ends, and springs connecting the forked ends with the support to normally retain the arm in a vertical position.

823,163. HEADLIGHT CONTROL FOR AUTOMOBILES. JACOB S. DETRICK, Baltimore, Md. Filed Sept. 9, 1905. Serial No. 277,652.



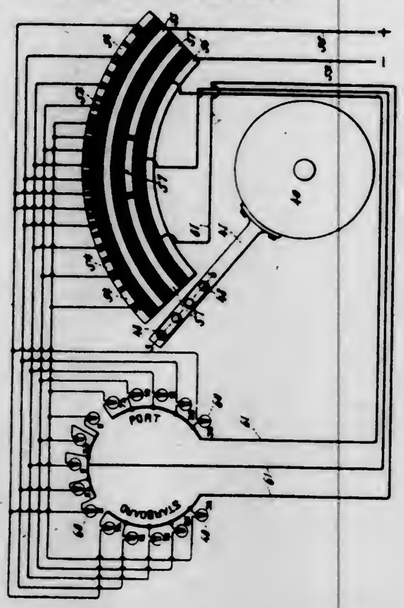
Claim.—1. The combination, in a vehicle, of a rocking upright member, a lamp supported by said rocking member for horizontal movement, a rocking pivotal member located in parallelism with said first rocking member, means connecting the two rocking members, a foot-lever pivoted to said rocking pivotal member for horizontal movement, a connection between said foot-lever and said lamp and comprising a rod having a universal connection with said foot-lever and with said lamp, the organization being such that on the movement of the foot-lever in a vertical plane the lamp will likewise be swung in a similar plane and on the operation of the foot-lever in a horizontal plane in either direction both of said rocking members will be rocked simultaneously and the lamp swung in a horizontal plane.

2. The combination, in a car, of an upright member arranged to swing on a vertical axis, a supporting member in the floor of the car mounted to swing on a vertical axis, a foot-lever pivoted on the supporting member to swing on a horizontal axis transverse to the car, a connection between the supporting member and the upright member causing the rocking of the supporting member by the foot-lever to rock the upright member, a lamp carried by the upright member to swing on a substantially horizontal axis, and a rod having a universally-movable connection with said lever and also having a universally-movable connection with a portion of the lamp and arranged to cause the rocking of the foot-lever on its support in the several positions of the upright member to swing the lamp on its horizontal axis in the several positions of the lamp to which moved by the upright member.

3. The combination in a car, of a post supported adjacent the front of the car to swing on a vertical axis, a lamp supported by the

post to swing on a substantially horizontal axis, a spindle mounted in the floor of the car to swing on a substantially vertical axis, a gear fast on said spindle, a gear fast on said post, a chain engaging said gears, whereby the swinging of the spindle on its vertical axis by the lever will swing the lamp on its vertical axis, a foot-lever pivoted on said spindle to swing on a substantially horizontal axis, a rod having a universally-movable connection with said lever, and also having a universally-movable connection with said lamp, whereby the swinging of the lever on the spindle will swing the lamp on its horizontal axis.

823,164. ELECTRIC INDICATOR. GROVER S. BELL, New York, N. Y. Filed Aug. 7, 1905. Serial No. 273,967.



Claim.—1. An electric apparatus for indicating the position of a movable part at a distance, comprising a transmitter and a receiver; said transmitter including the movable part, a plurality of contact-making means arranged to move in unison with said part, a set of contact-plates adapted to be engaged by one of said contact-making means and divided into groups, another set of contact-plates adapted to be engaged by the other contact-making means and corresponding in number and position to the groups of the first-named contact-plates; the said receiver comprising a set of signals corresponding in number to the contact-plates of the first set and divided into corresponding groups; return-wires extending from the transmitter to the receiver and each connecting one of the contact-plates of the second set with one terminal of each signal of the same group; section-wires each connecting the other terminal of one signal in each group with as many contact-plates of the first set, and means for supplying an electric current to the circuit.

2. An electric apparatus for indicating the position of a movable part at a distance, comprising a transmitter and a receiver; the said transmitter including the movable part and two sets of circuit making and breaking devices, each of said devices comprising a stationary member and a movable member controlled by said movable part, one member of one of said sets of contact making and breaking devices consisting of a plurality of contact-plates arranged for engagement with the other member of said set and divided into groups, while one member of the other set of contact making and breaking devices consists of contact-plates adapted for engagement with the other member of said set and corresponding in number and extent to the groups of the first-named contact-plates; the said receiver comprising a set of signals corresponding in number to the contact-plates of the first set, and divided into corresponding groups; return-wires extending from the transmitter to the receiver, one for each group and each adapted to connect one of the contact-plates of the second set with one terminal of each signal of the same groups; section-wires each connected with the other terminal of one signal in each group, and also connected with as many contact-plates of the first set, and means for supplying an electric current to the circuit.

3. An electric signaling apparatus comprising a transmitter and a receiver; the said transmitter including two sets of contact making and breaking devices, one of said sets having a number of contact members divided into groups, the other set having a number of contact members equal to the number of groups; the said receiver including as many signals as there are contact members in the first set of the transmitter, the said signals being divided into groups corresponding to those of the transmitter; section-wires each connected with one signal of each group and with the corresponding contact members of the first kind of the transmitter; return-wires extending from the transmitter to the receiver and each connected with all the signals of its own group and with one of the contact members of the second kind on the transmitter.

4. An electric signaling apparatus comprising a transmitter and a receiver; the said transmitter including two sets of contact making and breaking devices, one of such sets having a number of contact members divided into groups, the other set having a number of contact members equal to the number of groups; means for automatically throwing in the proper contact member of the second set whenever one of the contact members of the first set belonging to the corresponding group is thrown in; the said receiver including as many signals as there are contact members in the first set of the transmitter, the said signals being divided into groups corresponding to those of the transmitter; section-wires each connected with one signal of each group and with the corresponding contact members of the first kind of the transmitter; return-wires each connected with all the signals of its own group and with one of the contact members of the second kind on the transmitter.

5. An electric signaling apparatus comprising a receiver, a transmitter and connections between them; the said receiver including a number of signals arranged in groups, the said connections including a separate return-wire for each group and a number of section-wires equal to the number of signals in one group, each section-wire being connected with signals of different groups, and the signals of one group being all connected with different section-wires; the said transmitter including a set of contact members, one for each signal, arranged in groups corresponding to the signal-groups, each section-wire being also connected with contact members of different groups, and the contact members of one group being all connected with different section-wires, the transmitter further including a second set of contact members, one for each return-wire and connected therewith; means for supplying current to the circuit, and means for completing the circuit at the said contact members.

6. An electric signaling apparatus comprising a receiver, a transmitter and connections between them; the said receiver including a number of signals arranged in groups; the said connections including a separate return-wire for each group, and a number of section-wires equal to the number of signals in one group, each of the section-wires being connected with signals of different groups, the signals of one group being all connected with different section-wires; the said transmitter including a set of contact members, one for each signal, arranged in groups corresponding to the signal-groups, each section-wire being also connected with contact members of different groups, and the contact members of one group being all connected with different section-wires; the transmitter further including a second set of contact members, one for each return-wire and connected therewith; means for automatically throwing in the proper contact member of the second kind whenever a contact member of the first kind belonging to the group which corresponds to said contact member of the second kind is thrown in; means for supplying current to the circuit, and means for completing the circuit at the said contact members.

7. An electric signaling apparatus comprising a receiver, a transmitter and connections between them; the said receiver including a number of signals arranged in groups; the said connections including a separate return-wire for each group and a number of section-wires, said section-wires being connected with signals of different groups, and the signals of one group being all connected with different section-wires; the said transmitter including a set of contact members, one for each signal, arranged in groups corresponding to the signal-groups, each section-wire being also connected with contact members of different groups, and the contact members of one group being all connected with different section-wires; the transmitter further including a second set of contact members, one for each return-wire and connected therewith; means for supplying current to the circuit, and means for completing the circuit at said contact members.

8. An electric signaling apparatus comprising a receiver, a transmitter and connections between them; the said receiver including a number of signals arranged in groups; the said connections including a separate return-wire for each group and a number of section-wires, said section-wires being connected with signals of different groups, and the signals of one group being all connected with different section-wires; the said transmitter including a set of contact members, one for each signal, arranged in groups corresponding to the signal-groups, each section-wire being also connected with contact members of different groups, and the contact members of one group being all connected with different section-wires; the transmitter further including a second set of contact members, one for each return-wire and connected therewith; means for supplying current to the circuit, means for completing the circuit at said contact members, and means whereby the proper contact member of the second kind is thrown in automatically whenever a contact member of the first kind belonging to the corresponding group is thrown in.

9. An electric signaling apparatus comprising a receiver including a number of signals arranged in groups, a separate return-wire for each group, a set of section-wires connected with said signals, and a transmitter having one set of devices for causing the current to flow through the several section-wires and another set of circuit-controlling devices for governing the connection of the individual return-wires.

10. An electric signaling apparatus comprising a receiver including a number of signals arranged in groups, the number of said groups being determined by the square root of the number of signals, a separate return-wire for each group each of said wires having a break in it, section-wires connected with said signals, and a transmitter having means for controlling the flow of current through the individual section-wires, and also through the return-wires by closing the break therein.

11. An electric signaling apparatus comprising a receiver, a transmitter and connections between them; the said receiver including a number of signals arranged in groups; the said connections including a separate return-wire for each group and a number of section-wires, the signals of one group being all connected with different section-wires; the said transmitter including a set of contact members, one for each signal, arranged in groups, corresponding to the signal-groups, the contact members of one group being all connected with different section-wires; the transmitter further including a second set of contact members, one for each return-wire and connected therewith, means for supplying current to the circuit, and means for completing the circuit at said contact members.

12. An electric signaling apparatus comprising a receiver, a transmitter, and connections between them; the said receiver including a number of signals arranged in groups; the said connections including a separate return-wire for each group and a number of section-wires, the signals of one group being all connected with different section-wires; the said transmitter including a set of contact members, one for each signal, arranged in groups corresponding to the signal-groups, the contact members of one group being all connected with different section-wires; the transmitter further including a second set of contact members, one for each return-wire and connected therewith; means for supplying current to the circuit, means for completing the circuit at the contact members of the first-named set, and means for automatically throwing in the proper return-wire through the contact member of the second-named set whenever a contact member of the first kind belonging to the corresponding group is thrown in.

13. An electric signaling apparatus comprising a receiver including a number of signals arranged in groups, a separate return-wire for each group, a set of section wires connected with said signals, and a transmitter having one set of devices for causing the current to flow through the several section-wires, and another set of circuit-controlling devices, operatively connected with the first, for automatically throwing in the particular return-wire corresponding to the group which contains the signal to be actuated.

14. An electric signaling apparatus for ships comprising a receiver including a number of signals arranged in groups, a transmitter having two sets of contact members both controlled by the position of the ship's rudder, one set including a contact member for each signal, and the other a contact member for each group, a separate return-wire for each group of rignals, connected with the respective contact members of the second kind, and section-wires connecting the contact members of the first kind with the signals, the signals of one group being all connected with different section-wires.

15. An electric helm-indicator for ships, comprising a transmitter having two sets of contact members controlled by the position of the rudder, a receiver having a number of signals corresponding to the number of contact members in one set, said signals being arranged in groups the number of which corresponds to the number of contact members in the other set, a separate return-wire for each group of signals, connected with the respective contact members of the second set, and section-wires connecting the signals with the contact members of the first set.

16. An electric signaling apparatus comprising two receiver-transmitters each having a number of signals arranged in groups and also having two sets of contact members, one equal in number to the number of signals, and the other to the number of groups, a separate return-wire for each group of the same apparatus, and section-wires connected with the larger sets of contact members.

17. An electric signaling apparatus comprising two receiver-transmitters each having a number of signals arranged in groups, two sets of contact members, one corresponding in number to the number of signals, and the other to the number of groups, and a single device for controlling both sets of contact members; a separate return-wire for each group of the same apparatus; and section-wires each connecting a signal of one apparatus with the corresponding contact member of the other apparatus, and also connecting a signal of the second-named apparatus with the corresponding contact member of the first-named apparatus.

823,165. GAS-BURNER. FREDERICK EGGE, Bridgeport, Conn. Filed Jan. 30, 1906. Serial No. 298,647.



Claim.—1. In a device of the character described, the combination of the lower section having a tubular passage, a diaphragm which by gravity normally closes the upper end of said passage, a valve supported by said diaphragm and capable of displacement, the upper section secured to the lower section and having a gas-duct immediately above said valve whereby the upward movement of the diaphragm will cause the valve to close said duct, and means for displacing said valve thereby opening the duct and establishing a free passage-way for the gas.

2. In a device of the character described, the combination of the lower section having a tubular passage, a diaphragm which by gravity normally closes the upper end of said passage, a valve supported by said diaphragm and capable of displacement, the upper section secured to the lower section and having a horizontal partition through which extends a duct and whose lower central portion forms a depending valve-seat surrounding said duct and immediately above said valve, and means for thrusting said valve from its seated position.

3. In a device of the character described, the combination of the two sections one having a tubular passage while the other has a horizontal partition provided with a duct immediately above the upper end of said passage, a gravity-diaphragm which normally closes said end, a valve supported by said diaphragm whereby the gas-pressure will elevate the diaphragm and cause the valve to close said duct, and means for thrusting the valve away from the duct into a position between the diaphragm and the partition whereby said diaphragm will be prevented from closing the duct and a free passage-way for the gas will thereby be afforded.

4. A gas-burner comprising complementary sections containing lower and upper gas-passages separated from each other by an intervening space, a diaphragm which normally closes the lower passage, a mechanically-displaceable valve supported by said diaphragm immediately below the upper passage whereby when the diaphragm is elevated by gas-pressure said passage will be closed by said valve, and means for thrusting said valve away from said passage and into a position where it will prevent the diaphragm from closing said upper passage.

5. A gas-burner comprising complementary sections containing lower and upper gas-passages separated from each other by an intervening space, a diaphragm which normally closes the lower passage and has a concave upper surface, a ball-valve which normally rests

freely upon the center of said surface immediately below the upper passage, a partition which horizontally divides the upper section and through which the upper gas-passage is pierced said partition being recessed near said passage, and means for forcing said ball into the recessed portion of said partition.

6. In a device of the character described, the combination of the lower section having a tube extending upwardly therethrough and an air-space around said tube the latter being open at top and bottom and constituting the inlet-passage for the gas, a cap-shaped gravity-diaphragm which normally rests upon the top of said tube and whose sides extend loosely within said air-space, a valve supported by said diaphragm and capable of displacement, the upper section secured to the lower section and having a gas-duct immediately above said valve whereby the upward movement of the diaphragm will cause the valve to close said duct, and means for displacing said valve thereby opening the duct and establishing a free passage-way for the gas.

7. In a device of the character described, the combination of the lower section having a tube extending upwardly therethrough and an air-space around said tube the latter being open at top and bottom and constituting the inlet-passage for the gas, a cap-shaped gravity-diaphragm which normally rests upon the top of said tube and whose sides extend loosely within said air-space, a valve supported by said diaphragm and capable of displacement, the upper section secured to the lower section and having a horizontal partition through which extends a duct and whose lower central portion forms a depending valve-seat surrounding said duct and immediately above said valve, and means for thrusting said valve from its seated position.

8. In a device of the character described, the combination of the two sections one having a tubular passage and a surrounding air-space while the other has a horizontal partition provided with a duct immediately above the upper end of said passage, a cap-shaped gravity-diaphragm whose upper face is concave and which normally closes the top of said passage and whose sides extend loosely within said air-space, and a ball-valve loosely supported by said diaphragm.

823,166. **WRENCH.** WILLIAM H. GLOVER, St. Louis, Mo. Filed Nov. 20, 1905. Serial No. 288,135.



Claim.—1. In a wrench, the combination of a body having a jaw, a movable jaw fitted to said body and having a screw-rod associated therewith, a gripping-arm having inherent elasticity and adapted to be moved into engagement with said screw-rod; and means for moving said arm into engagement with said rod, substantially as set forth.

2. In a wrench, the combination of a body haviug a jaw, a movable jaw fitted to said body and having a screw-rod associated therewith, a gripping-arm having inherent elasticity and adapted to be moved into engagement with said screw-rod, and means for moving said arm into engagement with said rod, substantially as set forth.

3. In a wrench, the combination of a body having a jaw, a movable jaw fitted to said body and having a screw-rod associated therewith, a gripping-arm for engagement with said screw-rod, and a slide-ring for moving said arm into engagement with said rod, substantially as set forth.

4. In a wrench, the combination of a body having a jaw, a movable jaw fitted to said body and having a screw-rod associated therewith, a pair of gripping-arms each having inherent elasticity and adapted to be moved into engagement with said rod, substantially as set forth.

5. In a wrench, the combination of a body having a jaw, a movable jaw fitted to said body and having a screw-rod associated therewith, a pair of gripping-arms each having inherent elasticity and provided with interiorly-threaded jaws for engagement with said screw-rod, and means for moving said jaws into engagement with said rod, substantially as set forth.

6. In a wrench, the combination of a body having a jaw, a movable jaw fitted to said body and having a screw-rod associated therewith, a pair of gripping-arms for engagement with said screw-rod, and a slide-ring for moving said arms into engagement with said rod, substantially as set forth.

7. In a wrench, the combination of a body having a jaw, a movable jaw fitted to said body and having a screw-rod associated therewith, a pair of gripping-arms for engagement with said screw-rod, and a spring-actuated ring for moving said arms into engagement with said rod, substantially as set forth.

8. In a wrench, the combination of a body having a jaw, a movable jaw fitted to said body and having a screw-rod associated therewith, a pair of spring gripping-arms for engagement with said screw-rod, and a spring-actuated ring for moving said arms into engagement with said rod, substantially as set forth.

9. In a wrench, the combination of a body having a jaw, a movable jaw fitted to said body and having a screw-rod associated therewith, a pair of gripping-arms for engagement with said screw-rod, a slide-ring adapted to slide upon said arms, and a spring for moving said slide-ring, substantially as set forth.

10. In a wrench, the combination of a body having a jaw, a movable jaw fitted to said body and having a screw-rod associated therewith, a sleeve in which said screw-rod is loosely fitted, a pair of gripping-arms attached to said sleeve and arranged for engagement with said screw-rod, a slide-ring adapted to ride on said arms, and a spring for actuating said slide-ring to move said gripping-arms into engagement with said screw-rod, substantially as set forth.

11. In a wrench, the combination of a body having a jaw, a movable jaw fitted to said body and having a screw-rod associated therewith, a rotatable sleeve loosely fitted to said rod, means carried by said sleeve arranged to grip said rod, and a slidable member loosely mounted on said gripping means and arranged to move them into engagement with said rod substantially as set forth.

12. In a wrench, the combination of a body having a jaw, a movable jaw fitted to said body and having a screw-rod associated therewith, a rotatable sleeve loosely fitted to said rod, means carried by said sleeve arranged to grip said rod, and a knob fixed to said sleeve, substantially as set forth.

13. In a wrench, the combination of a body having a jaw at one end and a handle at the opposite end, a movable jaw fitted to said body and having a screw-rod associated therewith, a rotatable sleeve loosely fitted in said handle and surrounding said screw-rod, a pair of gripping-arms carried by said sleeve and arranged for engagement with said screw-rod, a spring-actuated slide-ring adapted to ride upon said gripping-arms to move them into engagement with said screw-rod, and a knob fixed to said sleeve, substantially as set forth.

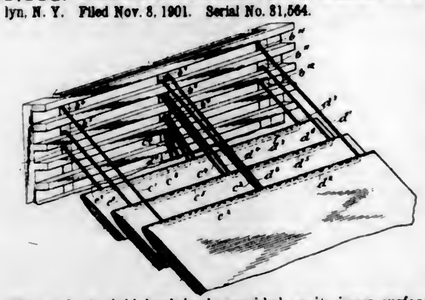
823,167. **DENTAL-DISH SHIELD.** WILLIAM F. GREEN, Modesto, Cal. Filed May 31, 1905. Serial No. 263,069.

Claim.—1. A disk-shield comprising spaced plates adapted to receive a disk between them with the disk partly exposed, said plates being bodily movable toward and away from each other, and means for attaching the shield to a part of a dental engine.

2. A disk-shield comprising spaced plates and means for holding the plates in different spaced relations, said means comprising a stem carried by one of the plates, a socket-piece carried by the other plate in which the stem is slidably received and means for holding the stem at different points of the sliding movement in the socket-piece.



823,168. **SOLID BACK FOR BOOKS.** ALFRED C. HAPELY, Brooklyn, N. Y. Filed Nov. 8, 1901. Serial No. 81,564.



Claim.—1. A rigid book-back provided on its inner surface with a series of longitudinal grooves and on its outer surface with a series of cross-grooves.

2. A rigid book-back provided on one side with a series of longitudinal grooves and on the opposite side with a series of cross-grooves sufficiently deep to meet the longitudinal grooves.

3. The combination of a rigid book-back having a series of longitudinal grooves and a series of cross-grooves and signatures fastened in said longitudinal grooves by a strand passing through the said cross-grooves.

4. The combination with a rigid book-back having a series of longitudinal grooves on its inner surface and cross-grooves on its outer surface of sufficient depth to meet the grooves of the inner surface, a strand for fastening the signatures into the said grooves and strips inserted into the said cross-grooves for strengthening the back

5. The combination of a pair of book-covers, a solid back fastened thereto and having a series of longitudinal grooves on the inner surface thereof and on the outer surface cross-grooves, and having a series of holes in said grooves, signatures fastened in the grooves by threads passing through the said holes, and strips in said cross-grooves for securing the said threads.

6. In a book the combination of a solid back having longitudinal grooves and a series of holes in each of said grooves, signatures fastened in said grooves by a continuous cord passing through one of the holes and through a signature in each of said grooves, and back through the signature and another of said holes in the groove and through a hole and signature in the next groove.

7. In a book the combination of a solid back having longitudinal grooves and a series of holes in each of said grooves, signatures fastened in said grooves by a continuous cord passing through one of the holes and signature in each of said grooves and back through the signature and another of said holes in the groove and through a hole and the signature and back through the signature and a hole and then through a hole and signature in the next groove whereby both ends of the signature are secured.

8. In a book the combination of a solid back having a number of longitudinal grooves on one side and cross-grooves on the opposite side, and a strip fastened to the back of the said solid back for increasing its strength.

9. In a book the combination of a solid back having a number of longitudinal grooves on one side and cross-grooves on the opposite side and a strip fastened to the back of the said solid back and extending throughout its length for increasing its strength.

10. In a book the combination of a solid back having a number of longitudinal grooves on one side and cross-grooves on the opposite side, and cross-pieces inserted in said grooves and a strip fastened to the back of the said solid back for increasing its strength.

11. In a book the combination of a solid back having a number of longitudinal grooves on one side and cross-grooves on the opposite side and of sufficient depth to meet the longitudinal grooves, and signatures located in the longitudinal grooves and held by stitches passing through the cross-grooves, cross-pieces located in said cross-grooves and a strip fastened on the back of the solid back for increasing its strength.

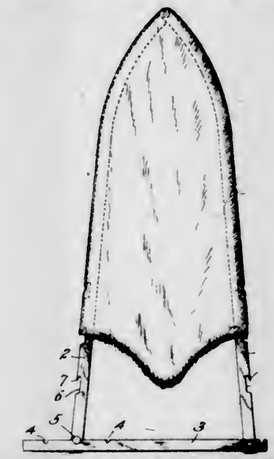
12. In a book the combination of a pair of covers, a solid back having a series of parallel grooves, and holes in said grooves and signatures held in said grooves by stitches passing through said holes and a strip fastened to the back of the solid back for securing the said stitches.

823,169. **COVER FOR IRONING-BOARDS.** WILLIAM E. HAZARD, St. Louis, Mo. Filed Aug. 23, 1905. Serial No. 275,436.



Claim.—An ironing-board cover, having its edges and adjacent portions underlapping the said board at its sides and ends respectively, and having a series of eyelet-holes through the said portions, a hook adapted to be removably engaged in each of the said holes and connected to an outer hook, and a cord adapted to engage the outer hooks in their assembled position, for drawing the said portions toward each other and tightening the cover to the said board, substantially as described.

823,170. **UNIVERSAL PELT-STRETCHER.** ABRAHAM HIRSCH, Albert Lea, Minn. Filed Feb. 27, 1906. Serial No. 303,286.



Claim.—1. A pelt-stretcher of the class described comprising stretching-arms pivotally secured together at their upper ends, a spacing-bar pivoted to one of said arms, said bar having notches upon one of its edges, a locking-bolt carried by the opposite arm adapted to engage said notches, said arms having a plurality of notches in their outer edges, and a contact-point at the upper end of each notch longitudinally disposed with said arms and adapted to engage a pelt stretched over said arms.

2. The herein-described pelt-stretcher comprising arms pivotally secured together at one end, each of said arms having a series of notches in their outer edges, a contact-point at the upper end of each of said notches and parallel with said arms, and means at the lower end of said arms adapted to space said arms apart when desired.

3. A pelt-stretcher comprising a pair of arms pivotally secured together at one end, means at the other ends of said arms to space and lock them apart when desired, each of said arms having notches in their outer edges and downwardly-projecting contact-points at the upper end of each of said notches adapted to engage a pelt and hold the same upon said arms, said points extending in a direction longitudinal with said arms.

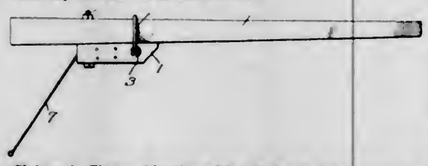
823,171. **SASH-LOCK.** SAMUEL R. HOLDEMAN, Rokridge, Kans. Filed Aug. 17, 1905. Serial No. 274,546.

Claim.—1. A window-fastener comprising oppositely-disposed castings, one of the castings having a projection provided with a depending lug, the other casting having a bracket, a turn-button mounted for rotation in said bracket, an arm secured to the lower end of said turn-button, a helical spring encircling the lower end of said turn-button and engaged at its opposite ends to the said bracket and the said arm, a flanged locking-plate secured to the turn-button, means for holding the turn-button in one position against the action of said spring, the said spring being adapted to throw the said locking-plate into engagement with the aforesaid lug of the first-named casting when the castings are brought into alinement.



2. In a sash-fastener, upper and lower sashes, a casting secured to the upper sash and provided with a depending lug at its upper end, another casting secured to the lower sash and provided with a shoulder at its upper end, a bracket secured to the second casting, a turn-button having its shank rotatably mounted in said bracket, an arm rigidly connected to the lower end of the shank of the button, a helical spring encircling the lower end of said shank and connected at its opposite end to said bracket and said arm, the upper end of said shank of the turn-button having a projection for engagement with the shoulder of the second casting to hold the turn-button in one position against the action of said spring, and a flanged locking-plate adapted for rotation with the shank of said turn-button whereby the flange of the plate may engage behind the aforesaid lug of the first casting automatically when the projection of the turn-button is lifted from engagement with the shoulder of the second casting.

823,172. DRAFT-EQUALIZER. FRED HUMPHREYS, Stuart, Nebr. Filed July 25, 1905. Serial No. 271,194.



Claim.—1. The combination with a draft-pole, of an evener-bar support, consisting of a body applied to one of the upright sides of the pole, a yoke pivotally embracing the body and frictionally embracing the pole, a fastening piercing the body and the pole, and an evener-bar fulcrumed upon the body at one side of the pole.

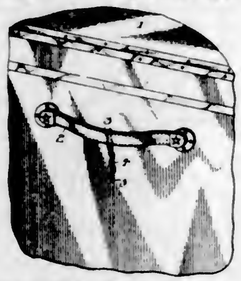
2. An evener-bar support for draft-poles comprising a body, a yoke-shaped link pivotally embracing one end of the body, a fastening piercing the other end of the body for engagement with the draft-pole, and a fulcrum-support for an evener-bar carried by the body.

3. An evener-bar support for draft-poles comprising a body, a yoke-shaped link pivotally embracing one end of the body for frictionally embracing a pole, a fastening carried by the other end of the body for engagement with the pole, and a substantially U-shaped clip carried by the under side of the body and constituting a fulcrum-support for the evener-bar.

4. An evener-bar support for draft-poles comprising a body, means carried by opposite ends of the body for connection with the draft-pole, a fulcrum-support for an evener-bar carried by the body between the fastening means, and a brace member carried by the fulcrum-support.

5. An evener-bar support for draft-poles comprising a body, a yoke-shaped link pivotally embracing the front end of the body for frictionally embracing a pole, a fastening piercing the rear end of the body for engagement with the pole, a substantially U-shaped clip secured to the under side of the body for the support of the evener-bar, and a sickle-bar brace carried by and extending rearwardly from the clip.

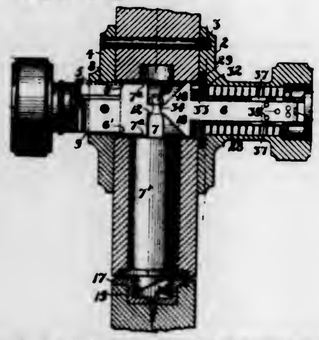
823,173. ATTACHMENT FOR TRUNK-HANDLES. WALTER J. HUNTER, Pittsburg, Pa. Filed Aug. 2, 1905. Serial No. 272,391.



Claim.—1. In a trunk-handle attachment or support, a hook adapted to engage over the handle of the trunk and a flexible cord or chain attached to the lower end of said hook and to the end of the trunk, substantially as described.

2. In a trunk-handle, the combination of a flexible handle attached to the end of a trunk and a flexible attachment removably secured thereto and to the end of the trunk, substantially as described.

823,174. LOCK. JOHN JORGENSON, San Francisco, Cal. Filed June 7, 1905. Serial No. 264,096.



Claim.—1. In a lock, the combination of a support, a locking-bolt, a member reciprocal to and from the bolt and having a part to engage therewith to move the bolt in one direction, said member capable of a rotative movement to enable it to be placed in position relative to the bolt to prevent the actuation of the latter.

2. In a lock, the combination of a suitable support, a slotted locking-bolt, an actuator for the bolt said actuator having a combined rotative and reciprocal movement and operating in the slot of the bolt and at right angles to said bolt to retract the latter, and means carried by the actuator and adapted to be positioned thereby relative to the bolt to prevent the actuation of the latter.

3. In a lock, the combination of a suitable support, a slotted locking-bolt, an actuator operable in said slot and having a combined rotative and reciprocal movement, said actuator having, also, a cam-surface to engage the bolt to retract the latter, and means carried by the actuator and adapted to be positioned thereby relative to the bolt to prevent the actuation of the latter.

4. In a lock, the combination of a suitable support, a locking-bolt, an actuator mounted to oscillate and also to reciprocate transversely to the movement of said bolt, means in the path of the actuator and engageable thereby to effect the reciprocation of the bolt, and means to lock the actuator against rotative movement to enable it to prevent the actuation of said bolt.

5. In a lock, the combination of a suitable support, a locking-bolt, an actuator mounted to reciprocate transversely to the movement of the bolt, means in the path of the actuator and engageable thereby to effect the reciprocation of the bolt, said actuator capable of a rotative movement to enable it to be placed in position relative to the bolt to prevent the actuation of the latter.

6. In a lock, the combination of a suitable support, a locking-bolt and actuating means therefor, said means including a wedge member operating at right angles to the locking-bolt and engageable with the latter to retract the same, said member also capable of a rotative movement in a plane parallel with the bolt, and means shiftable in unison with the axial movement of the bolt to enable it to be positioned to lock the member against rotative movement and the bolt against reciprocal movement.

7. In a lock, the combination of a suitable support, a locking-bolt having a slotted part, means to actuate said bolt, said means including a wedge-shaped actuator reciprocal in the slot in said bolt, means to maintain the bolt in the path of the actuator, and means to permit said actuator to be turned to prevent the operation of the bolt.

8. In a lock, the combination of a bolt, an actuator reciprocal transversely to the bolt and capable of a rotative movement, means to reciprocate said actuator to retract the bolt, means pressing the latter constantly into the path of said actuator, and means to prevent the operation of the bolt when the actuator is turned in certain positions.

9. In a lock, the combination of a locking-bolt, an actuator therefor and reciprocal transversely thereto, said actuator capable of rotation as well as reciprocation and having an inclined surface to engage a part of the bolt to retract the latter, means tending to carry the bolt always outward into the path of said inclined surface, key means to operate the actuator, and means to permit the actuator to be operated with or without a key.

10. In a lock, the combination of a locking-bolt, an actuator therefor and reciprocal transversely thereto, said actuator capable of rotation as well as reciprocation and having an inclined surface to engage a part of the bolt to retract the latter, means tending to carry the bolt always outward into the path of said inclined surface, key-operating means for the actuator, means to permit the actuator to be operated without a key, and means to lock the actuator and bolt against movement.

11. In a lock, the combination of a locking-bolt, an actuator reciprocal transversely of the bolt to operate the latter, said actuator also adapted to have a rotative movement, a carrier for the actuator capable of a limited reciprocating movement, said carrier and actuator capable of being reciprocated in unison, and means to prevent the reciprocation of the carrier, for the purpose described.

12. In a lock, the combination of a locking-bolt, a hollow knob-shank or equivalent support, a carrier in said knob-shank mounted for reciprocatory movement, an actuator supported by said carrier and having a reciprocating movement independent thereof and engageable with the bolt to retract the same, means to permit the carrier to be operated by hand to retract the bolt and means also to prevent the actuation of the carrier, and means to operate the actuator independently of the carrier.

13. In a lock, the combination of a locking-bolt, an actuator therefor reciprocal transverse thereto and having a cam-surface to engage the bolt to operate the latter, means for holding the bolt in contact with said cam-surface, a housing for the actuator, said actuator having a keyway and also having perforations intersecting said keyway, a tumbler-plate movable in suitable cam-slots or guideways in the housing and movable in unison with the actuator and having a series of pins fitting the perforations in the actuator and adapted to be projected across the keyway on the proper reciprocation of the actuator, and means to reciprocate the actuator.

14. In a lock, the combination of a locking-bolt, an actuator reciprocal transverse to the bolt and having a cam-surface engageable with the bolt to operate the latter, a housing in which the actuator is slidable, said actuator having an outer bifurcated end to provide a keyway, said bifurcated portions fitting above and below respective ledges in the end of the housing to prevent the insertion of any instrument behind the actuator, and means to reciprocate the actuator.

15. In a lock, the combination of a locking-bolt, an actuator reciprocal transverse to the bolt and having a cam-surface engageable with the bolt to operate the latter, a housing in which the actuator is slidable, said actuator having an outer bifurcated end to provide a keyway, said bifurcated portions fitting above and below respective ledges in the end of the housing to prevent the insertion of any instrument behind the actuator, means to reciprocate the actuator, and means to permit the housing and actuator to be reciprocated in unison.

16. In a lock, the combination of a lockng-bolt, an actuator reciprocal transverse to the bolt and having a cam-surface engageable with the bolt to operate the latter, a housing in which the actuator is slidable, said actuator having an outer bifurcated end to provide a keyway, said bifurcated portions fitting above and below respective ledges in the end of the housing to prevent the insertion of any instrument behind the actuator, and means to reciprocate the actuator, said actuator having perforations intersecting said keyway, and a tumbler-block supported in suitable guides in the housing and having pins fitting said perforations and adapted to be projected across the keyway.

17. In a lock, the combination of a locking-bolt, an actuator reciprocal transverse to the bolt and having a cam-surface engageable with the bolt to operate the latter, a housing in which the actuator is slidable, said actuator having an outer bifurcated end to provide a keyway, said bifurcated portions fitting above and below respective ledges in the end of the housing to prevent the insertion of any instrument behind the actuator, means to reciprocate the actuator, and means to set the actuator to prevent the operation of the bolt.

18. In a lock, the combination of a locking-bolt, an actuator reciprocal transverse to the bolt and having a cam-surface engageable with the bolt to operate the latter, a housing mounted for reciprocation in which the actuator is slidable, said actuator having an outer bifurcated end to provide a keyway, said bifurcated portions fitting above and below respective ledges in the end of the housing to prevent the insertion of any instrument behind the actuator, means to reciprocate the actuator, and means to set the actuator to prevent the operation of the bolt.

19. In a lock, the combination of a latch-bolt, inner and outer knobs, an actuator reciprocal transverse to the bolt and engageable therewith to operate the bolt, a sliding support in the outer knob for one end of the actuator, the other end of the actuator connected with the inner knob, and said inner knob capable of reciprocation to allow the operation of the actuator.

20. In a lock, the combination of a slotted locking-bolt, an actuator extending through the slot therein and having cam-surfaces to engage therewith, means to hold the bolt in operative position relative to the cam-surfaces, means to support the actuator to permit of its reciprocation to operate the bolt, and means to permit the actuator to be turned to prevent the operation of the bolt.

21. In a lock, the combination of a slotted locking-bolt, inner and outer knobs, said outer knob being hollow and stationary, said inner knob having a reciprocating and rotative movement, an actuator connected with the inner knob passing through the slot in the bolt and having cam-surfaces to engage therewith and being supported at its outer end in the outer knob.

22. In a lock, the combination of a slotted locking-bolt, inner and outer knobs, said outer knob being hollow and stationary, said inner knob having a reciprocating and rotative movement, an actuator connected with the inner knob passing through the slot in the bolt and having cam-surfaces to engage therewith and being supported at its outer end in the outer knob, and means to regulate the operation of the actuator in the outer knob.

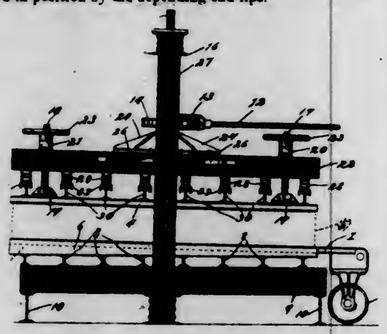
23. In a lock, the combination of a slotted locking-bolt, inner and outer knobs, said outer knob being hollow and stationary, said inner knob having a reciprocating and rotative movement, an actuator connected with the inner knob passing through the slot in the bolt and having cam-surfaces to engage therewith and being supported at its outer end in the outer knob, and connected with the inner knob.

24. In a lock, the combination of a slotted locking-bolt, a reciprocating actuator passing therethrough and having cam-surfaces to engage therewith and operate the bolt on the reciprocation of the actuator, said actuator mounted for rotative movement, a hollow stationary outer knob in which one end of the actuator is supported, an inner knob connected with the other end of the actuator, means by which the actuator may be operated with or without a key from the outside, and means associated with the inner knob to set the actuator so as to permit its operation by a key alone from the outside, or without a key from the outside, or to prevent wholly its operation from the outside.

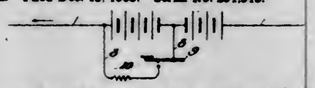
823,175. VENEER-PRESS. MICHAEL JUNGEL, Chicago, Ill. Filed Nov. 28, 1904. Serial No. 234,510.

Claim.—1. A press for the purpose described comprising side standards overhead cross-bars secured to the standards, a nut fixed to the cross-bars, a central main screw working in the nut, a support in which the lower end of the main screw is swiveled, longitudinal beams suspended from the support, a top plate, cross-beams secured upon the top plate, series of leaf-springs secured in pairs to the cross-beams and suspended from the longitudinal beams, cross-bars mounted upon the ends of the longitudinal beams, supplemental screws working in the cross-bars, and swivel connections whereby the ends of the top plate are suspended from the supplemental screws.

2. A press for the purpose described comprising a support, longitudinal beams suspended from the support, a top plate, cross-beams secured upon the top plate, series of leaf-springs each having depending end lips embracing the cross-beams, and suspended from the longitudinal beams, and removable strips having enlargements at their ends and inserted between the springs and cross-beams and retained in position by the depending end lips.



823,176. **ELECTRIC TELEGRAPHY.** ISIDOR KITSEE, Philadelphia, Pa. Filed Dec. 15, 1905. Serial No. 291,913.



Claim.—1. In a telegraphic alphabet, one symbol consisting of two curves opposite as to each other, and the second symbol consisting of two curves opposite as to each other, a zero-line between said curves.

2. A telegraphic alphabet comprising two symbols, one symbol consisting of two marks opposite as to each other, the second symbol consisting of two marks opposite as to each other, and a third mark between said two marks.

3. A telegraphic code comprising a different grouping of two symbols, one symbol consisting of one mark at one side of an imaginary zero-line followed by a second mark at the other side of said zero-line, and the second symbol consisting of one mark on one side of the zero-line, one mark at the zero-line, and one mark at the other side of the zero-line.

4. A telegraphic Morse alphabet in which the dash is symbolized by two curves opposite as to each other and connected with each other by a straight line, and in which the dot is symbolized by two connected curves opposite as to each other.

5. A telegraphic alphabet comprising two characters, one character consisting of two elements, one above and one below an imaginary zero-line and the second character consisting of three elements, one above, one at, and one below an imaginary zero-line.

823,177. **WRENCH.** BERT B. KLINE, Sheldon, Ind. Filed Oct. 5, 1905. Serial No. 281,463.

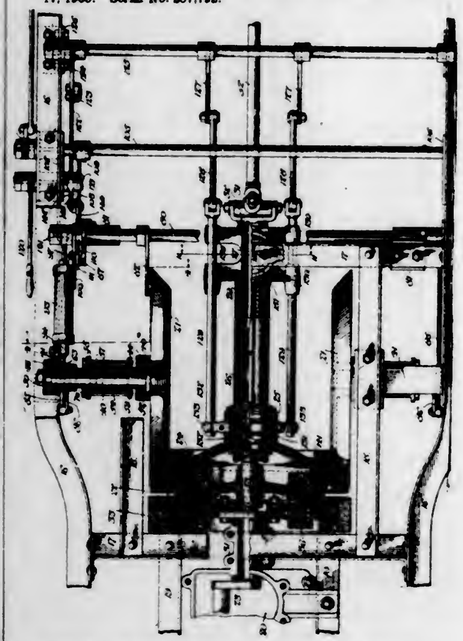


Claim.—1. In a wrench, the combination of a fixed jaw rigidly secured to a hollow stock, the opening through the stock being enlarged at the outer end to form a cylindrical chamber, a relatively movable jaw connected to a shank which is slidably mounted within the hollow stock, the outer end of the shank being threaded, a cylindrical adjusting-nut located within the before-mentioned chamber and coöperating with the threaded portion of the shank, said adjusting-nut having a thumb-piece projecting from the end of the stock, and means for locking the adjusting-nut to the shank upon which the movable jaw is mounted to hold the jaws in a fixed position.

2. In a wrench, the combination of a fixed jaw rigidly secured to a hollow stock, the opening through which is enlarged at the outer end to form a cylindrical chamber, a relatively movable jaw connected to a shank which is slidably mounted within the hollow stock, the outer end of the shank being threaded and provided with a longitudinally-disposed threaded opening, a cylindrical adjusting-nut located in the before-mentioned cylindrical chamber and coöperating with the threaded shank on the movable jaw, said adjusting-nut having a head which projects from the end of the stock, and a screw passing through the cylindrical nut and coöperating with the threaded opening in the shank to lock the jaws in a fixed position.

3. In a wrench, the combination of a fixed jaw rigidly secured to a hollow stock, the opening through which is enlarged at the outer end to form a cylindrical chamber, a relatively movable jaw secured to a shank which is slidably mounted within the hollow stock and has its outer end threaded and provided with a longitudinal opening formed with broken or segmental threads which run in an opposite direction to those on the outer face of the shank, a cylindrical adjusting-nut located within the before-mentioned chamber and coöperating with the threaded shank secured to the movable jaw, said adjusting-nut having a head which projects from the end of the stock, and a screw passing through the adjusting-nut and provided with a thumb-piece and with segmental or broken threads which coöperate with the before-mentioned segmental threads to lock the jaws of the wrench in a fixed position.

823,178. **FRICTIONAL POWER-TRANSMISSION MECHANISM.** IVERT LARSEN and ROBERT HARDIE, Chicago, Ill. Filed Nov. 17, 1905. Serial No. 287,792.



Claim.—1. In a frictional power-transmission mechanism, a rotative driving-shaft, two opposing, rotative, indirect-drive friction-disks, a wheel on said shaft for driving said disks, a friction transmission-wheel having peripheral engagement with adjacent faces of said disks and movable toward and from the centers thereof, means for transmitting pressure to force the disks into operative frictional contact with said transmission-wheel and springs through which such pressure is transmitted.

2. In a frictional power-transmission mechanism, a rotative driving-shaft, two opposing, rotative, indirect-drive friction-disks, a wheel on said shaft for driving said disks, a friction transmission-wheel having peripheral engagement with adjacent faces of said disks and movable toward and from the centers thereof, means for transmitting pressure to force said disks into operative frictional contact with said transmission-wheel, springs through which such pressure is transmitted and means for placing said springs under compression for the purpose set forth.

3. In a frictional power-transmission mechanism, the combination with two opposing, rotative, indirect-drive friction-disks, means for rotating them, and the interposed transmission-wheel movable toward and from the centers of the disks, of cams for pressing said disks against the interposed transmission-wheel, springs through which the pressure of the cam is transmitted, and means for placing the springs under compression for the purpose set forth.

4. In a frictional power-transmission mechanism, the combination with two opposing, rotative, indirect-drive friction-disks, means for rotating them, and the interposed transmission-wheel movable toward and from the centers of the disks, of cams for pressing said disks against the interposed transmission-wheel, springs through which the pressure of the cam is transmitted, means for placing the springs under compression for the purpose set forth, means for operating the movable members of the cams, and means for locking the cams in various positions of adjustment.

5. In a frictional power-transmission mechanism, the combination with a frame, two opposing, rotative, indirect-drive friction-disks, shafts fixed to and extending outwardly from the disks and having rotary and endwise movement in said frame, means for rotating said disks, and a friction transmission-wheel located between and having peripheral engagement with said disks, and movable toward and from the centers thereof, of spiral springs surrounding said shafts, and cams at the outer ends of said shafts and acting through said springs to yieldingly force the disks against said friction-wheel.

6. In a frictional power-transmission mechanism, the combination with a frame, two opposing, rotative, indirect-drive friction-disks, shafts fixed to and extending outwardly from the disks and having rotary and endwise movement in said frame, means for rotating said disks, a friction transmission-wheel located between and having peripheral engagement with said disks and movable toward and from the centers thereof, of spiral springs surrounding said shafts, cams at the outer ends of said shafts and acting through said springs to yieldingly force the disks against said friction-wheel, and means for compressing said springs in such manner that the action of the cams is applied through the springs to operate the mechanism against the least resistance without further compression of the springs.

7. In a frictional power-transmission mechanism, the combination with the frame, two opposing, rotary, indirect-drive friction-disks provided with outwardly-extending bearing-shafts which are mounted in said frame to rotate and also move endwise therein, means for driving said disks and a friction transmission-wheel having peripheral engagement with, and movable toward and from the centers of, said disks, of cams at the outer ends of said shafts and acting on said shafts to move the friction-disks into operative frictional engagement with the transmission-wheel, springs surrounding said shafts between said cams and disks through which the pressures of the cams is transmitted to force the disks into operative engagement with said frictional wheel, and means for operating said cams comprising a rock-shaft extending across the machine-frame in rear of the disks, a lever fixed to the shaft for rocking the same, and arms fixed to the opposite ends of said shaft and operatively connected with the movable members of the cams.

8. In a frictional power-transmission mechanism, the combination with the frame, the friction-disks and the driving and transmission wheels, of shafts fixed to and extending outwardly from said disks, bearing-brackets supported on the frame in which said shafts are mounted to rotate and move endwise, spiral springs surrounding said shaft and normally exerting no pressure on the disks, and cams at the outer ends of said shafts acting through said springs for yieldingly transmitting pressure to the disks to bring the latter into operative engagement with the driving and transmission wheels.

9. In a frictional power-transmission mechanism, the combination with the frame, the friction-disks and the driving and transmission wheels, of shafts fixed to and extending outwardly from said disks, bearing-brackets supported on the frame in which said shafts are mounted to rotate and move endwise, spiral springs surrounding said shaft and normally exerting no pressure on the disks, and cams at the outer ends of said shafts acting through said springs for yieldingly transmitting pressure to the disks to bring the latter into operative engagement with the driving and transmission wheels, and means for maintaining the said springs under compression for the purpose set forth.

10. In a frictional power-transmission mechanism, the combination with the frame, the friction-disks and the driving and transmission wheels, of shafts fixed to and extending outwardly from said disks, bearing-brackets supported on the frame in which said shafts are mounted to rotate and move endwise, spiral springs surrounding said shaft and normally exerting no pressure on the disks, cams at the outer ends of said shafts acting through said springs for yieldingly transmitting pressure to the disks to bring the latter into operative engagement with the driving and transmission wheels, means for locking said cams in operative positions, and means for simultaneously releasing said cams.

11. In a frictional power-transmission mechanism, the combination with the frame, the opposing, rotary, indirect-drive friction-disks, and the driving and transmission wheels coöperating therewith, of shafts extending outwardly from said friction-disks, brackets supported on the frame in which said shafts are rotatively and endwise-movably mounted, two sliding collars on each shaft, a spring interposed between each pair of collars, and cams interposed between the outermost collars and brackets, and acting through said collars and spring to yieldingly force the friction-disks into operative engagement with said driving and transmission wheels.

12. In a frictional power-transmission mechanism, the combination with the frame, the opposing, rotary, indirect-drive friction-disks, and the driving and transmission wheels coöperating therewith, of shafts extending outwardly from said friction-disks, brackets supported on the frame in which said shafts are rotatively and endwise-movably mounted, two sliding collars on each shaft, a spring interposed between each pair of collars, cams interposed between the outermost collars and brackets, and acting through said collars and spring to yieldingly force the friction-disks into operative engagement with said driving and transmission wheels, and means for compressing said spring between said collars.

13. In a frictional power-transmission mechanism, the combination with the frame, the opposing, rotative, indirect-drive friction-disks, and the driving and transmission wheels coöperating therewith, of shafts extending outwardly from said friction-disks, brackets supported on the frame in which said shafts are mounted to rotate and slide endwise, each shaft being provided with two sliding collars, the inner one of which abuts against a solid portion of the shaft, a spring interposed between said collars, cams interposed between the outermost collars and brackets and acting through said collars and spring to transmit the force of the cams to the shafts to move the disks into operative position, and clamping-bolts extending through apertures in one of said collars and having screw-threaded engagement with apertures in the other collar for compressing said spring.

14. In a frictional power-transmission mechanism, the combination with the frame, the opposing, rotary, indirect-drive friction-disks, and the driving and transmission wheels coöperating therewith, of shafts extending outwardly from said friction-disks, brackets supported on the frame in which said shafts are rotatively and endwise-movably mounted, two sliding collars on each shaft, a spring interposed between each pair of collars, and cams interposed between the outermost collars and brackets, and acting through said collars and spring to yielding force the friction-disks into operative engagement with said driving and transmission wheels, and means constructed to transmit the force of the cams, during their innermost movement thereof, to the disk through a solid connection.

15. In a frictional power-transmission mechanism, the combination with the frame, the opposing, rotative, indirect-drive friction-disks, and the driving and transmission wheels coöperating therewith, of shafts extending outwardly from said friction-disks, brackets supported on the frame in which said shafts are mounted to rotate and slide endwise, each shaft being provided with two sliding collars, the inner one of which abuts against a solid portion of the shaft, a spring interposed between said collars, cams interposed between the outermost collars and brackets and acting through said collars and spring to transmit the force of the cams to the shafts to move the disks into operative position, and an outwardly-facing shoulder on each shaft against which the outer collar is brought by the action of the cam, thereby affording a solid connection through which the force of the cam is transmitted to its friction-disk.

16. In a frictional power-transmission mechanism, the combination with the frame, the opposing, rotary, indirect-drive friction-disks, and the driving and transmission disks coöperating therewith, of shafts extending outwardly from said friction-disks which are mounted to rotate and move endwise in said frame, each shaft being provided with two sliding collars the inner one of which bears against a shoulder on the shaft, a spring interposed between said collars, cams interposed between the outermost collars and the shaft-bearings and operating through said collars and springs to yieldingly force the disks into operative engagement with the driving and transmission wheels and antifriction thrust-bearings interposed between said cams and the outermost collars.

17. In a frictional power-transmission mechanism, the combination with the frame, the opposing, rotary, indirect-drive friction-

disks, and the driving and transmission disks coöperating therewith, of shafts extending outwardly from said friction-disks which are mounted to rotate and move endwise in said frame, each shaft being provided with two sliding collars the inner end of which bears against a shoulder on the shaft, a spring interposed between said collars, cams interposed between the outermost collars and the shaft-bearings and operating through said collars and springs to yieldingly force the disks into operative engagement with the driving and transmission wheels, antifriction-bearings between the inner and outer ends of each shaft and said frame.

18. In a power-transmission mechanism, a transmission-wheel through which power is transmitted to the part to be driven, frictional indirect-drive elements for driving the transmission-wheel at varying speeds, a brake mechanism and means controlled by the brake mechanism for separating the indirect-drive elements from the transmission-wheel.

19. In a frictional power-transmission mechanism, the combination with the frame, two opposing, rotative, indirect-drive friction-disks and the driving and friction transmission wheels coöperating therewith, of means for forcing said friction-disks into operative engagement with said transmission-wheel, braking mechanism and means for automatically releasing said disks when the braking mechanism is set in operation.

20. In a frictional power-transmission mechanism, the combination with the frame, two opposing, rotative, indirect-drive friction-disks and the driving and friction transmission wheels coöperating therewith, of cams for forcing said friction-disks into operative engagement with said transmission-wheel, means for locking the cams, a braking mechanism, and means operated by the braking mechanism for releasing the cam-locking means.

21. In a frictional power-transmission mechanism, the combination with the frame, two opposing, rotative, indirect-drive friction-disks, and the driving and friction transmission wheels coöperating therewith, of cams for forcing said disks into operative contact with said transmission-wheel, a ratchet-and-pawl mechanism for locking said cams, and a braking mechanism embracing a part which moves the pawl out of engagement with the rack to release said cams when the braking mechanism is brought into action.

22. In a frictional power-transmission mechanism, the combination with the frame, two opposing, rotative, indirect-drive friction-disks, and driving and friction transmission wheels coöperating therewith, of cams operating to force said disks inwardly against the interposed transmission-wheel, means for operating said cams comprising a rock-shaft extending across and having bearing in the machine-frame, an operating-lever fixed to said rock-shaft, operative connections between said rock-shaft and the movable members of the cams, means for locking said rock-shaft in varying angular positions, a braking mechanism, and means for automatically operating to release said rock-shaft-locking mechanism when the braking mechanism is brought into operation.

23. In a frictional power-transmission mechanism, the combination with the frame, two opposing, rotative, indirect-drive friction-disks, and driving and transmission wheels coöperating therewith, of cams to force said disks inwardly toward said driving and transmission wheels, means for operating said cams comprising a rock-shaft extending across and having bearing in the machine-frame, an operating-lever fixed to said rock-shaft, operative connections between the ends of said rock-shaft and the movable members of the cams, a ratchet carried by said rock-shaft, a pawl carried by the frame engaging said ratchet, a brake-lever mounted on said rock-shaft and adapted for operative connection with the braking mechanism, and a part on said brake-lever adapted to release the pawl from said ratchet when the brake-lever is thrown into action.

24. In a frictional power-transmission mechanism, the combination with the frame, two opposing, rotative, indirect-drive friction-disks, and driving and transmission wheels coöperating therewith, of shafts extending outwardly from said disks and rotatively mounted in said frame and sliding endwise in their bearings, cams at the outer ends of said shafts for moving the shafts inwardly and acting therethrough to force the disks toward said driving and transmission wheels, and means for operating said cams comprising a rock-shaft extending across and mounted in the frame, rigid arms at the ends of said shafts operatively connected with the movable members of the said cams, an operating-lever fixed to said rock-shaft, means for locking the rock-shaft, and a spring for restoring the rock-shaft and cams to their inoperative positions when said locking means are released.

25. In a frictional power-transmission mechanism, the combination with the frame, two opposing, rotative, indirect-drive friction-disks, and driving and transmission wheels coöperating therewith, of shafts extending outwardly from said disks and rotatively mounted in said frame and sliding endwise in their bearings, cams at the outer ends of said shafts for moving the shafts inwardly and acting therethrough to force the disks toward said driving and transmission wheels, and means for operating said cams comprising a rock-shaft extending across and mounted in the frame, rigid arms at the ends of said shafts operatively connected with the movable members of the said cams, an operating-lever fixed to said rock-shaft, means for locking the rock-shaft, and a combined restoring-spring and air-check device for returning the rock-shaft and the cams to their inoperative position when the locking device is released.

26. In a power-transmission mechanism, a transmission-wheel through which power is transmitted to the part to be driven, direct and indirect drive friction elements, means for engaging the transmission-wheel with either of said friction elements, a brake mechanism and means controlled by the brake mechanism for disengaging the transmission-wheel from the direct-drive mechanism.

27. In a frictional power-transmission mechanism, the combination with two rotative, indirect-drive friction-disks, a driving-wheel, a spring for holding the driving-wheel against said disks for rotating the same, and a friction transmission-wheel interposed between and driven by said disks and movable toward and from the centers thereof, of means whereby said transmission-wheel is engaged with the driving-wheel for direct drive and operating to force the driving-wheel out of engagement with the disks against the action of said spring.

28. In a frictional power-transmission mechanism, the combination with two rotative, indirect-drive friction-disks, a driving-wheel spring-pressed against the disks for rotating the same, and a friction transmission-wheel interposed between and driven by said disks and movable toward and from the centers thereof, of a friction device movable with the transmission-wheel adapted to engage a friction-surface on the driving-wheel for direct drive.

29. In a frictional power-transmission mechanism, the combination with two opposing, rotative, indirect-drive friction-disks, and the driving and transmission wheels coöperating therewith, the latter movable toward and from the centers of the friction-disk, of means for pressing said disks toward said driving and transmission wheels, means for locking said disks engaged with said driving and transmission wheels, means whereby the transmission-wheel is engaged with the driving-wheel for direct drive, and means operating to automatically release the friction-disks from said driving and transmission wheels when said direct-drive connection is effected.

30. In a frictional power-transmission mechanism, the combination with two opposing, rotative, indirect-drive friction-disks, and the driving and transmission wheels coöperating therewith, the latter being movable toward and from the centers of said disks, of a shaft on which said transmission-wheel is mounted, the hub of said wheel being splined to the shaft, means for moving said wheel toward and from the center of the disk, comprising a rock-shaft, a hand-lever operatively connected with said rock-shaft, operative connections between said rock-shaft and the hub of said transmission-wheel, constructed to force the transmission-wheel into frictional engagement with the driving-wheel for direct-drive connections, means for pressing said friction-disks into operative engagement with the driving and transmission wheels, means for locking said disks in their operative positions, and means controlled by said hand-lever for releasing the said locking means when said transmission-wheel is brought into direct driving engagement with the driving-wheel.

31. In a frictional power-transmission mechanism, the combination with two opposing, rotative, indirect-drive friction-disks, and the driving and transmission wheels coöperating therewith, the latter being movable toward and from the centers of the friction-disks, and adapted to be moved into driving engagement with the driving-wheel, means for forcing said friction-disks into operative engagement with said driving and transmission wheels, means for locking said friction-disks in their operative positions, embracing a pawl-and-ratchet mechanism, mechanism for moving said transmission-wheel toward and from the centers of the disks, and constructed to finally bring the same into direct driving engagement with the driving-wheel, said mechanism embodying means for releasing the pawl from said ratchet at the time the transmission-wheel is brought into operative engagement with the driving-wheel.

32. In a frictional power-transmission mechanism, the combination with two opposing, rotative, indirect-drive friction-disks, and the driving and transmission wheels coöperating therewith, said transmission-wheel being movable toward and from the centers of the friction-disks, and being adapted to be moved into driving engagement with the driving-wheel, means for locking said friction-disks pressed against said driving and transmission wheels, embracing a pawl-and-ratchet mechanism, mechanism for moving the transmission-wheel toward and from the centers of the disks comprising a rock-shaft located in rear of the disks and operatively connected with the hub of said transmission-wheel, a hand-lever for rocking said shaft, an arm swinging in unison with the hand-lever, and a lever mounted in the machine-frame and connected at one end with the said arm, and adapted to engage at its other end the pawl to swing it out of engagement with its ratchet.

33. In a frictional power-transmission mechanism, the combination with two opposing, rotative, indirect-drive friction-disks, and the driving and transmission wheels coöperating therewith, said transmission-wheel being movable toward and from the centers of the friction-disks, and being adapted to be moved into driving engagement with the driving-wheel, of means for forcing said friction-disks into operative engagement with said driving and transmission wheels, means for locking said friction-disks in their operative positions, embracing a pawl-and-ratchet mechanism, mechanism for moving said friction-wheel toward and from the centers of the disks, and for finally moving the same into direct driving engagement with the driving-wheel, comprising a short rock-shaft, a hand-lever fixed thereto, a second rock-shaft mounted in the frame in rear of the disks, operative connections between the hand-lever rock-shaft and the second rock-shaft, operative connections between said latter rock-shaft and the transmission-wheel, an arm extending forwardly from said hand-lever rock-shaft, and a vertically-swinging lever connected at its rear end with said latter arm and extending at its forward end in position to engage the pawl to release it from said ratchet.

34. In a frictional power-transmission mechanism the combination with two opposing, rotative, indirect-drive friction-disks, and the driving and transmission wheels, the latter being movable toward and from the centers of the driving-disks, a driving-shaft, a part carried by said driving-shaft, between which and said driving-wheel is interposed springs which hold the driving-wheels in engagement with the friction-disks, means for forcing the friction-disks into operative engagement with said driving and transmission wheels, said transmission-wheel being movable into frictional engagement with the driving-wheel for direct drive and said springs permitting the driving-wheel to yield from the said friction-disks when the transmission-wheel is thus engaged with the same.

35. In a frictional power-transmission mechanism, the combination with two opposing, rotative, indirect-drive friction-disks, and the driving and transmission wheels, the latter being movable toward and from the centers of the driving-disks, a driving-shaft, a part carried by said driving-shaft between which and said driving-wheel is interposed springs which hold the driving-wheel in engagement with the friction-disks, means for forcing the friction-disks into operative engagement with said driving and transmission wheels, and means for locking said friction-disks in their operative positions, said transmission-wheel being movable into frictional engagement with the driving-wheel for direct drive, and said springs permitting the driving-wheel to yield from the said friction-disks when the transmission-wheel is thus engaged with the same.

36. In a frictional power-transmission mechanism, the combination with two opposing, rotative, indirect-drive friction-disks, and the driving and transmission wheels, the latter being movable toward and from the centers of the driving-disks, a driving-shaft, a part carried by said driving-shaft, between which and said driving-wheel is interposed springs which hold the driving-wheel in engagement with the friction-disks, means for forcing the friction-disks into operative engagement with said driving and transmission wheels, and means for locking said friction-disks in their operative positions, said transmission-wheel being movable into frictional engagement with the driving-wheel for direct drive, and said springs permitting the driving-wheel to yield from the said friction-disks when the transmission-wheel is thus engaged with the same, and means acting when the direct drive is effected, for automatically releasing the friction-disks from said transmission-wheel.

37. In a frictional power-transmission mechanism, the combination with a driving-shaft, two rotative friction-disks, one on each side of the said shaft, a wheel rotating with the driving-shaft and movable endwise thereof for driving said disks, a shaft in alinement with the driving-shaft, a transmission-wheel splined to the said latter shaft and movable toward and from the center of the disks, means for forcing said friction-disks in operative engagement with the driving and transmission wheels, springs for pressing the driving-wheel toward the friction-disks, and an adjustable stop for limiting the movement of said driving-wheel toward said disks.

38. In a frictional power-transmission mechanism, the combination with the driving-shaft, two opposing, rotative, indirect-drive friction-disks, a driving-wheel mounted on the driving-shaft and movable endwise thereof for driving said disks, a second wheel fixed to said shaft, studs extending rearwardly from the second wheel and having sliding engagement with apertures in said driving-wheel, springs interposed between said driving-wheel and fixed wheel of the driving-shaft for pressing the driving-wheel toward the friction-disks, one of said studs being provided with an adjustable stop to limit the movement of said driving-wheel toward said friction-disks, a friction transmission-wheel interposed between and driven by said indirect-drive disks, and means for forcing said transmission-wheel toward and from the centers of said disks.

39. In a frictional power-transmission mechanism, the combination with two opposing, rotative, indirect-drive friction-disks, a driving-wheel for rotating the same and a friction transmission-wheel interposed between and driven by said disks, of means whereby said transmission-wheel is engaged with the driving-wheel for direct drive, a brake mechanism and means operated by the brake mechanism, when the latter is brought into action, for disengaging the transmission-wheel from the driving-wheel.

40. In a frictional power-transmission mechanism, the combination with two opposing, rotative, indirect-drive friction-disks, a driving-wheel for rotating the same and a friction transmission-wheel interposed between and driven by said disks, of means whereby said transmission-wheel is engaged with the driving-wheel for direct drive, means operating when the direct-drive connection is effected for releasing the indirect-drive disks from the transmission-wheel, a brake mechanism and means operated by the brake mechanism, when the latter is brought into action for disengaging the transmission-wheel from the driving-wheel.

41. In a frictional power-transmission mechanism, the combination with the frame, a driving-shaft, two opposing, rotative, indirect-drive friction-disks, a driving-wheel rotated by said driving-shaft for rotating said disks, a shaft extending in alinement with said driving-shaft, a friction transmission-wheel splined to said shaft whereby it is movable toward and from the centers of the disks, a bearing for the rear end of said latter shaft, a combined rotative and swinging hanger for supporting said bearing from said frame.

42. In a frictional power-transmission mechanism, the combination with the frame, a driving-shaft, two opposing, rotative, indirect-drive friction-disks, a driving-wheel rotated by said driving-shaft for rotating said disks, a shaft extending in alinement with said driving-shaft, a friction transmission-wheel splined to said shaft whereby it is movable toward and from the centers of the disks, a bearing for the rear end of said latter shaft, and a hanger for supporting said bearing from the frame comprising a part rotative on a vertical axis provided with downwardly-extending arms, a horizontal pin extending between and fixed in said arms, and a sleeve fixed to said bearing and mounted on said pin.

43. In a frictional power-transmission mechanism, the combination with the frame, a driving-shaft, two opposing, rotative, indirect-drive friction-disks, a driving-wheel rotated by said driving-shaft for rotating said disks, a shaft extending in alinement with said driving-shaft, a friction transmission-wheel splined to said shaft whereby it is movable toward and from the centers of the disks, a bearing for the rear end of said latter shaft, and a hanger for supporting said bearing from the frame comprising a part rotative on a vertical axis provided with downwardly-extending arms, a horizontal pin extending between and fixed in said arms, and a sleeve fixed to said bearing and mounted on said pin, said sleeve being shorter than the distance between said hanger-arms, whereby it is capable of lateral movement on said pin.

44. In a frictional power-transmission mechanism, the combination with the frame, the driving-shaft, of two opposing, rotative, indirect-drive friction-disks, a driving-wheel rotated by said shaft for driving said disks, a shaft between said disks extending in alinement with said driving-shaft, a friction transmission-wheel driven by said disks, and splined to said shaft, whereby it is movable toward and from the centers of the disks, a bearing for the rear end of said latter shaft, a hanger for supporting said bearing from the frame comprising a part rotative about a vertical axis and provided with downwardly-extending arms, a horizontal pin extending between said arms, and a sleeve fixed to said bearing and mounted on said sleeve, parallel rods connected at their forward ends to the hub of said wheel, oppositely-directed guide-arms carried by said shaft-

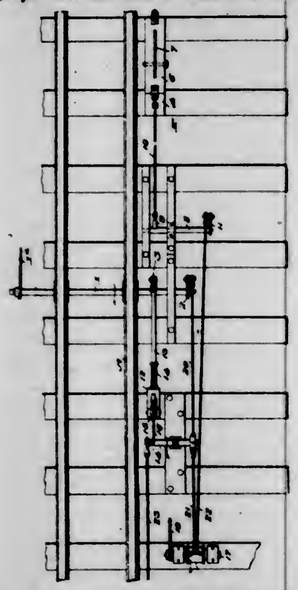
bearing and provided with guide-apertures through which said rods extend, and means operatively connected with the rear ends of said rods for moving the same endwise and thereby move the transmission-wheel toward and from the centers of the friction-disks.

45. In a frictional power-transmission mechanism, the combination with the indirect-drive friction-disk, and the friction-wheel bearing against the same, of means for thrusting said disk toward said friction-wheel, a spring through which said thrust is transmitted, and means for placing said spring under compression for the purpose set forth.

46. In a frictional power-transmission mechanism, the combination with the indirect-drive friction-disk, and the friction-wheel bearing against the same, of means for thrusting said disk toward said friction-wheel, a spring through which said thrust is transmitted, and means whereby the final thrust is transmitted through a solid connection.

47. In a frictional power-transmission mechanism, the combination with the motor-shaft, a main shaft in alinement therewith, an indirect-drive friction-disk having its axis disposed at right angles to the axes of the motor and main shafts, a driving-wheel on the motor-shaft, springs pressing said driving-wheel against said disk, a transmission-wheel on the main shaft having peripheral engagement with said disk, means for pressing said disk against the transmission-wheel, a part carried by said main shaft having a friction-surface adapted to be forced into engagement with a complemental surface of the driving-wheel for direct drive, and acting to force said driving-wheel, against the action of its spring, out of engagement with said disk.

823,179. **RAILWAY SIGNAL APPARATUS.** JOSHUA W. LATTA, Buford, Wyo. Filed Mar. 14, 1906. Serial No. 306,055.



Claim.—1. In a railway signal apparatus, the combination of a track, a vehicle, track devices arranged at intervals along the track and connected together; said devices respectively comprising a rock-shaft bearing an operating-arm, a guide-block, a rod movable in the guide-block and connected to the rock-shaft, a spring for moving the rod in one direction, a gravitating catch for holding said rod against movement in said direction, and a tappet connected with the rock-shaft, a device on the vehicle for engaging the operating-arms of the track devices, another device on the vehicle arranged to be engaged by the tappets of the track devices, and a signal arranged to be actuated by the latter device on the vehicle.

2. In a railway signal apparatus, the combination of a track, a vehicle, track devices arranged at intervals along the track and connected together; said track devices respectively comprising a rock-shaft bearing an operating-arm, a guide-block, a rod movable in the guide-block and connected to the rock-shaft, a spring for moving the rod in one direction, a gravitating catch for holding said rod against movement in said direction, a tappet connected with the rock-shaft, and a lever having one arm connected with the tappet and its other arm connected with the gravitating catch, a device on the vehicle for engaging the operating-arms of the track devices, another device on the vehicle arranged to be engaged by the tappets of the track devices, and a signal arranged to be actuated by the latter device on the vehicle.

3. In a railway signal apparatus, the combination of a track, a vehicle, track devices arranged at intervals along the track and connected together; said devices respectively comprising a rock-shaft bearing an operating-arm, a guide-block, a rod movable in the guide-block and connected to the rock-shaft, a spring for moving the rod in one direction, a gravitating catch for holding said rod against movement in said direction, tappets connected with the rock-shaft, a lever having one arm connected with one tappet and its other arm connected with the gravitating catch, and a slide movable with the other tappet, a device on the vehicle for engaging the operating-arms of the track devices, other devices on the vehicle arranged to be engaged by the tappets of the track devices.

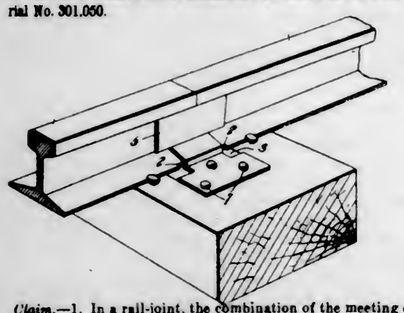
4. In a railway signal apparatus, the combination of a track, and a track device comprising a rock-shaft, bearing an operating-arm, a guide-block, a rod movable in the guide-block and connected to the rock-shaft, a spring for moving the rod in one direction, a gravitating catch for holding said rod against movement in said direction, and one or more tappets connected with the rock-shaft.

5. In a railway signal apparatus, the combination of a track, and a track device comprising a rock-shaft, bearing an operating-arm, a guide-block, a rod movable in the guide-block and connected to the rock-shaft, a spring for moving the rod in one direction, a gravitating catch for holding said rod against movement in said direction, one or more tappets connected with the rock-shaft, and a lever having one arm connected with the tappet and its other arm connected with the gravitating catch and adapted to be connected with the next track device.

6. In a railway signal apparatus, the combination of a track, and a track device comprising a rock-shaft, bearing an operating-arm, a guide-block, a rod movable in the guide-block and connected to the rock-shaft, a spring for moving the rod in one direction, a gravitating catch for holding said rod against movement in said direction, tappets connected with the rock-shaft, a lever having one arm connected with one tappet and its other arm connected with the gravitating catch and adapted to be connected with the next track device, and a slide movable with the other tappet and adapted to be connected with the opposite track device.

7. The combination in a railway signal apparatus, of a vehicle, and a signal device carried by the vehicle and comprising a rock-shaft bearing a lateral arm fixed thereto and also bearing a lug, a spring for retaining said shaft in and returning it to its normal position, a signal, an arm loose on the rock-shaft and having a lug arranged to be engaged by the lug on the rock-shaft, and a connection intermediate said arm and the signal.

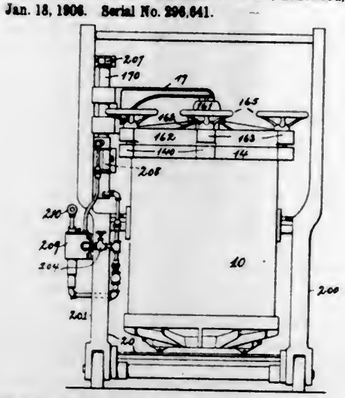
823,180. **RAIL-JOINT.** LUCIAN B. LESCH, Smithfield, Pa., assignor of one-half to Ernest Malone, Smithfield, Pa. Filed Feb. 14, 1906. Serial No. 301,050.



Claim.—1. In a rail-joint, the combination of the meeting ends of rails, the basal portions of which are cut away a short distance from the extremities, a bed-plate beneath the rail ends, chair-plates at opposite sides of the rails and comprising vertical wings adapted to abut with said rails upon opposite sides, and fastenings passing through the chair-plates and the bed-plate to hold the same in position.

2. In a rail-joint, the combination of the meeting ends of rails, the basal portions of which are cut away a short distance from the extremities, a bed-plate beneath the rail ends, chair-plates at opposite sides of the rails and comprising vertical wings adapted to abut with said rails upon opposite sides, the vertical wings of the chair-plates being connected with the body portions thereof by means of angular flanges arranged in the spaces formed by the cut-away basal portions of the rails, said flanges being shorter than the space in which they are disposed to permit of contraction and expansion of the rails, and fastenings passing through the chair-plates and the bed-plate to secure the same together and in position upon a supporting-tie.

823,181. **FILTER.** CHARLES H. LOEW, Lakewood, Ohio. Filed Jan. 18, 1906. Serial No. 296,641.



Claim.—1. In an apparatus of the kind described, the combination with the casing having a rim having external lugs provided with threaded eyeholes; of a cover provided with reinforcing-ribs and peripheral lugs provided with tightening-screws adapted to register and engage with the eyeholes of the casing-rim and an external support for the cover including means permitting its tilting adjustment, comprising a ball-and-socket joint intermediate the support and the cover.

2. In an apparatus of the kind described, the combination with the casing and the filter elements contained therein, of the rim of the casing, the cover therefor, and means for securing the cover to said rim, of an intermediate or false cover comprising a peripheral flange adapted to fit closely over the rim and depending annular flanges and their intermediate groove adapted to form a seal with the filter-mass.

3. In an apparatus of the kind described, the combination with the casing and the filter elements contained therein, of the rim of the casing, the cover therefor and means for securing the cover to said rim; of an intermediate or false cover comprising a central recess and a groove on its lower edge for the reception of the filter-mass to form a seal.

4. In an apparatus of the kind described, the combination with the casing and the filter elements contained therein, of the rim of the casing, the cover therefor and means for securing the cover to said rim; of an intermediate or false cover comprising a central recess, a groove on its lower edge for the reception of the filter-mass to form a seal, and an annular flange on its upper edge to contact with and support the cover.

5. In an apparatus of the kind described, the combination with the casing and the filter elements contained therein, of the rim of the casing, the cover therefor and means for securing the cover to said rim; of an intermediate or false cover comprising a central recess, a groove on its lower edge for the reception of the filter-mass to form a seal, an annular flange on its upper edge to contact with and support the cover and a peripheral flange adapted to fit closely over the rim.

6. In an apparatus of the kind described, the combination with the main frame, and the casing adapted to contain the filter elements, of a cover adapted to be firmly secured to the casing, means for swinging it in and out of registry with the casing comprising a hinge mounted on the main frame and means for raising and lowering the hinge member.

7. In an apparatus of the kind described, the combination with the main frame, and the casing adapted to contain the filter elements, of a cover adapted to be firmly secured to the casing, means for swinging it in and out of registry with the casing comprising a hinge member mounted on the main frame, means for raising and lowering the hinge member, comprising a fluid-cylinder of which the lower end of the hinge member constitutes the piston and means for introducing fluid under pressure beneath said hinge member.

8. In an apparatus of the kind described, the combination with the main frame, and the casing adapted to contain the filter elements, of a cover adapted to be firmly secured to the casing, means for swinging it in and out of registry with the casing comprising a hinge member mounted on the main frame, means for raising and lowering the hinge member, comprising a fluid-cylinder of which the lower end of the hinge member constitutes the piston and means for introducing fluid under pressure beneath said hinge member and removing it therefrom.

9. In an apparatus of the kind described, the combination with the main frame and the casing adapted to contain the filter elements, of a cover adapted to be firmly secured to the casing and means for swinging it in and out of registry with the casing, comprising a hinge member mounted on the main frame, a crane or bracket secured thereto and a flexible joint between the bracket and the cover, and means for raising and lowering the hinge member.

10. In an apparatus of the kind described, the combination with the main frame and the casing adapted to contain the filter elements, of a cover adapted to be firmly secured to the casing and means for swinging it in and out of registry with the casing, comprising a hinge member mounted on the main frame, a crane or bracket secured thereto and a flexible joint between the bracket and the cover, means for raising and lowering the hinge member, comprising a fluid-cylinder of which the lower end of the hinge member constitutes the piston and means for introducing fluid under pressure beneath said hinge member.

11. In an apparatus of the kind described, the combination with the main frame and the casing adapted to contain the filter elements, of a cover adapted to be firmly secured to the casing and means for swinging it in and out of registry with the casing, comprising a hinge member mounted on the main frame, a crane or bracket secured thereto and a flexible joint between the bracket and the cover, and means for raising and lowering the hinge member and removing it therefrom.

12. In an apparatus of the kind described, the combination with the main frame, and the casing adapted to contain the filter elements, of a cover adapted to be firmly secured to the casing, means for swinging it in and out of registry with the casing, comprising a hinge member mounted on the main frame, means for raising and lowering the hinge member and guides for the hinge member to prevent its displacement laterally.

13. In an apparatus of the kind described, the combination with the main frame, and the casing adapted to contain the filter elements, of a cover adapted to be firmly secured to the casing, means for swinging it in and out of registry with the casing, comprising a hinge member mounted on the main frame, means for raising and lowering the hinge member and guides for the hinge member to prevent its displacement laterally, consisting of brackets secured to the main frame and suitably apertured to permit of the passage of the hinge member.

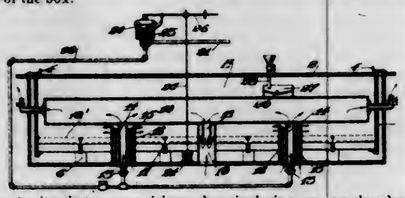
14. In an apparatus of the kind described, the combination with the main frame, and the casing adapted to contain the filter elements, of a cover adapted to be firmly secured to the casing, means for swinging it in and out of registry with the casing, comprising a hinge member mounted on the main frame, means for raising and lowering the hinge member, comprising a fluid-cylinder of which the lower end of the hinge member constitutes the piston and means for introducing fluid under pressure beneath said hinge member, and guides for the hinge member to permit its displacement laterally.

15. In an apparatus of the kind described, the combination with the main frame, and the casing adapted to contain the filter elements, of a cover adapted to be firmly secured to the casing, means for swinging it in and out of registry with the casing, comprising a hinge member mounted on the main frame, means for raising and lowering the hinge member, comprising a fluid-cylinder of which the lower end of the hinge member constitutes the piston and means for introducing fluid under pressure beneath said hinge member, and guides for the hinge member to permit its displacement laterally, consisting of brackets secured to the main frame and suitably apertured to permit of the passage of the hinge member.

823,182. **INCUBATOR.** OTTO W. LUTZ, Petaluma, Cal. Filed Jan. 2, 1906. Serial No. 294,165.

Claim.—1. An incubator comprising a box having a side open-

ing, a door for said side opening, removable slideways insertible through the opening, said slideways having suitable rear end supports, a hinged bar opening outwardly to support the front end of said slideways, trays on said slideways, and means for heating the interior of the box.



2. An incubator comprising a box inclosing an egg-chamber, an air-tank within said box, means for delivering hot air into the tank, and means for delivering the heated air in the tank into the egg-chamber and for mixing the same with cold air from outside the incubator.

3. In an incubator, a box inclosing an egg-chamber, a source of heat-supply, and means for circulating hot air directly through the egg-chamber.

4. In an incubator, a box inclosing an egg-chamber, an air-tank in the chamber, a source of heat-supply, means for delivering heat directly into the air-tank, means for discharging the heat from the tank into the egg-chamber and for admitting fresh air into the egg-chamber and mixing it with the heated air from the tank.

5. In an incubator, a box inclosing an egg-chamber, a tank in the box, a source of heat-supply, communications between said source of supply and the interior of the tank, said tank having a downwardly-extending outlet, said box having an air-inlet into which said hot-air outlet discharges and wherein the hot and cold air is mixed, said heated mixture having a discharge into the egg-chamber.

6. In an incubator, a box inclosing an egg-chamber, an air-tank in the chamber, pipes extending from the ends of the tank exterior to the box, a heating-pipe entering the tank, means for heating the air admitted through said pipe, air-tubes surrounding said pipe and open to the atmosphere and also to the interior of the chamber, and admitting hot air to the chamber, and means for passing the hot air in the tank into the egg-chamber.

7. In an incubator, a box inclosing an egg-chamber, an air-tank in the chamber, pipes extending from the ends of the tank exterior to the box, a heating-pipe entering the tank, means for heating the air admitted through said pipe, air-tubes surrounding said pipe and open to the atmosphere and also to the interior of the chamber and admitting hot air to the chamber, means for passing the hot air in the tank to the egg-chamber, and means for mixing cold air with said hot air from the tank before its admission to the egg-chamber.

8. An incubator comprising a box inclosing an egg-chamber, a hot-air tank therein, a pipe entering said tank, means for heating the air admitted through said pipe into the tank, an air-pipe surrounding said heating-pipe and inclosing a separate air-passage, said air-pipe open to the atmosphere and to the egg-chamber and adapted to deliver fresh air to the egg-chamber, said tank having an outlet and hot-air connections with the egg-chamber.

9. An incubator comprising a box inclosing an egg-chamber, a hot-air tank therein, a pipe entering said tank, means for admitting a heating medium through said pipe into the tank, an air-pipe surrounding said heating-pipe and inclosing a separate air-passage, said air-pipe open to the atmosphere and to the egg-chamber and adapted to deliver fresh air to the egg-chamber, said tank having an outlet to the egg-chamber, means for controlling the amount of heat according to the temperature of the egg-chamber, and the ends of the box having vertical flues communicating with the outer atmosphere and with the bottom of the egg-chamber.

10. An incubator comprising a box inclosing an egg-chamber, an air-tank in the box, removable slideways in the egg-chamber and removable trays supported on said slideways, removable partitions between the trays, means for admitting hot air to the air-tank, and means for mixing cold air with the hot air from the tank and for discharging the heated mixture into the egg-chamber, a moisture-pan, and means permitting the filling and emptying of the pan from the outside of the box and without opening the latter.

823,183. SWITCHBOARD. WILLIAM C. MARCHANT, Chicago, Ill. Filed Aug. 7, 1905. Serial No. 273,019.

Claim.—1. The combination with a base-plate and a switch-block having registering perforations, of a member located in front of the base-plate equipped with a wire socket housed within and withdrawable from the perforation of the base-plate, and connections between said member and the switch-block, for the purpose set forth.

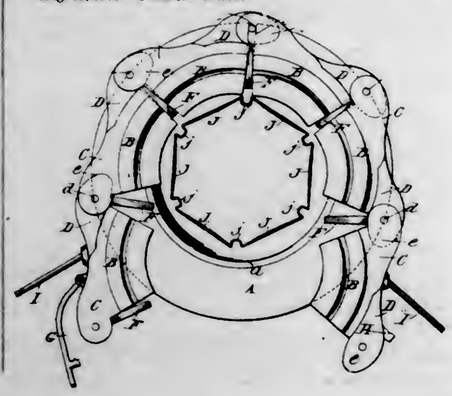


2. The combination with a base-plate and a switch-block having bolt-receiving perforations and socket-receiving perforations, the bolt-receiving perforations being countersunk in the base-plate, a member having a socket extending through the switch-block and terminating within the base-plate, bolts joining said member with the switch-block and base-plate, and a conductor entered in said socket, for the purpose set forth.

3. The combination of a base-plate, a pair of switch-blocks, one of which is equipped with a pivotal lug, and the other of which is equipped with a spring-clip, a switch pivoted on said pivotal lug and connected with said spring-clip, a base-plate supporting the switch-blocks, each switch-block and the adjacent portion of the base-plate being provided with a socket-receiving perforation and a pair of bolt-receiving perforations, a pair of connecting members having sockets extending through the switch-block and into the base-plate, and bolts connecting said members with the switch-block and the base-plate, substantially as and for the purpose set forth.

4. The combination of a switch-block provided with a socket-receiving perforation and a member bolted thereto having a rearwardly-extending socket extending into said perforation and provided with a bore for receiving a conductor, for the purpose set forth.

823,184. TILE-MOLD. WILLIAM P. MERKER, Newark, N. J. Filed Aug. 15, 1905. Serial No. 274,256.



Claim.—1. In a tile-mold, the combination, with a base, of a plurality of face-forming side sections and a plurality of flange-forming side sections, all said side sections being hinged together to form a jacket.

2. In a tile-mold, the combination, with a base, of two series of side sections, the members of one series projecting interiorly between the members of the other series, and all being hinged together to form a jacket.

3. In a tile-mold, the combination, with a base, of a plurality of face-forming side sections alternating with flange-forming side sections, all said side sections being hinged together to form a complete jacket.

4. In a tile-mold, the combination, with a base, of a plurality of face-forming side sections, provided with recessed tops and bottoms, alternating with flange-forming side sections, all said side sections being hinged together and forming a complete jacket.

5. In a tile-mold, the combination, with a base, of a plurality of face-forming side sections, provided with marginal rims or beads, alternating with flange-forming side sections, all said side sections being hinged together consecutively to form a complete jacket.

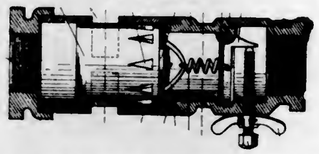
6. In a tile-mold, the combination, with a base, of a plurality of face-forming side sections hinged to each other, and flange-forming side sections pivoted to and between said face-forming side sections and forming therewith a complete jacket.

7. In a tile-mold, the combination, with a base, of a plurality of face-forming side sections pivoted to each other and provided with swing-stops, and flange-forming side sections pivoted to and having free, lateral swing between said face-forming sections, and forming therewith a complete jacket.

8. In a tile-mold, the combination, with a base, of a plurality of face-forming side sections, provided with recessed tops and bottoms, alternating with flange-forming side sections of the same length as the faces of said face-forming side sections, all said side sections being hinged together and forming a complete jacket.

9. In a tile-mold, the combination, with a base, of a plurality of face-forming side sections, provided with recessed tops and bottoms, alternating with flange-forming side sections of the same length as the faces of said face-forming side sections and forming a complete jacket.

823,185. AIR-VALVE FOR GAS-ENGINES. REUBEN MILLER, Jr., Pittsburg, Pa., assignor of one-half to D. W. Dunlevy, Pittsburg, Pa. Filed Jan. 27, 1905. Serial No. 242,945.



Claim.—1. In an automatic valve, the combination with a radially-apertured casing, of a radially and axially apertured piston therein, the radial apertures of said casing and piston being adapted to register on movement of said piston, a yielding member having its respective ends secured to said piston and to one arm of a bell-crank lever pivoted in said casing, and adjusting means operably connected to the other arm of said lever, for the purpose described.

2. In an automatic air-valve, the combination with a casing, of a reciprocatory piston therein, a yielding member secured to said piston and tending to prevent movement thereof, a bell-crank lever pivoted in said casing and having one arm secured to the free end of said yielding member, and adjusting means acting upon the other arm, for the purpose described.

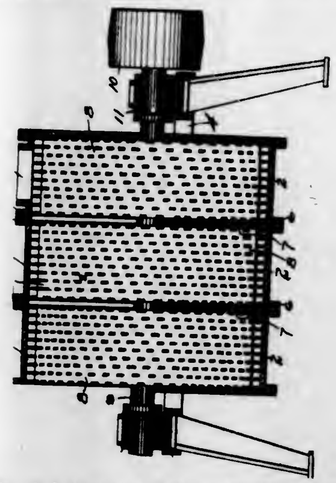
3. In an automatic valve, the combination with a casing having the apertures *a*, the lever F, adjusting means K, spring G, and piston D having tapering apertures *d'*, for the purpose described.

4. In an automatic air-valve the combination with a radially-apertured tubular member arranged in the gas-conduit of an engine, of a piston therein having radial apertures, said piston having a restricted axial aperture and being arranged to be moved by differential pressures of gas upon its ends to cause a registration of its radial apertures with those of said tubular member, for the purpose described.

5. In an automatic air-valve, the combination with a casing having its sides apertured, of a piston therein arranged to be moved by differential pressures of gas acting upon its opposite ends, and a yielding member tending to prevent said movement, said piston having apertures in its sides adapted to register with the apertures in said casing, the area of said registration being in substantially constant ratio with the difference in pressure acting upon said piston.

6. In an automatic air-valve, the combination with a casing having its sides apertured, of a piston therein arranged to be moved by differential pressures of gas acting upon its opposite ends, and a yielding member tending to prevent said movement, said piston having apertures in its sides adapted to register with the apertures in said casing, the area of said registration being in substantially constant ratio with the difference in pressure acting upon said piston, whereby the inconstant tension of said yielding member is substantially neutralized.

823,186. MACHINE FOR HULLING, DEGERMINATING, AND HOMINYING CORN. MARTIN L. MOWRER, Dayton, Ohio. Filed Nov. 23, 1905. Serial No. 288,659.



Claim.—1. In a machine of the type specified, a series of sectional cylindrical casings arranged side by side with partitions obstructing communication between said casings below the axes thereof, in combination with a series of hulling-cylinders revoluble within said casings and discharging the grain from one casing to the other above the axes of said casings, and from one end to the other end of said series of casings, substantially as set forth.

2. In a machine of the type specified, a plurality of cylindrical casings of uniform diameters arranged side by side and united, the lower portions of said casings being separated by division-walls, and the upper portions communicating, in combination with a plurality of toothed cylinders, one of which revolves in each casing, and whereby the grain is fed to the machine at one end thereof, is subjected to uniform action by the cylinders and is discharged at the other end of the machine, substantially as set forth.

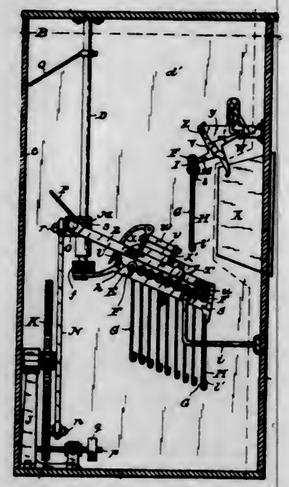
3. In a machine of the type specified, a plurality of uniform toothed cylinders subjected to a common rotary movement, a plurality of casings, one of which incloses a single cylinder, said casings being separated below the axes of the cylinders by partitions, and communicating one with the other above the axes of the cylinders, substantially as set forth.

823,187. MECHANICAL ADVERTISER. BENJAMIN F. MCFARLAND and CHARLES E. CROSBY, Indianapolis, Ind. Filed Aug. 28, 1905. Serial No. 276,092.

Claim.—1. A mechanical advertiser including hanging apparatus, a plurality of display-cards, a card-rack, and a vertically-movable tilting carrier provided with swinging hooks at the outer end thereof for lifting the display-cards from the card-rack to the hanging apparatus.

2. A mechanical advertiser including hanging apparatus, a plurality of display-cards, and a vertically-movable tilting carrier provided with swinging hooks at the inner portions thereof for depositing the display-cards onto the card-rack, and means for transferring the display-cards from the hanging apparatus to the carrier.

3. A mechanical advertiser including hanging apparatus comprising a pair of escapement-wheels having arms provided with curved ends for supporting a display-card, and pawls for limiting the backward movements of the escapement-wheels; a card-rack for supporting reserve display-cards, and a carrier for moving a display-card from the arms of the escapement-wheels to the card-rack and transferring a reserve display-card from the card-rack to other arms of the escapement-wheels.



4. A mechanical advertiser including a plurality of display-cards, a card-rack, handing apparatus comprising a plurality of movable arms for supporting a display-card, stops for the movable arms, and a tilting vertically-movable carrier provided with means for lifting a display-card from the movable arms and also provided with means for lifting a display-card from the card-rack onto the movable arms.

5. A mechanical advertiser including hanging apparatus, a display-card supported by the hanging apparatus, a card-rack, reserve display-card supported by the card-rack, and a display-card carrier comprising a guided cross-head having a pair of arms pivoted thereto provided at the ends thereof with grappling-hooks for lifting a reserve display-card from the card-rack to the hanging apparatus, and means mounted on the carrier for moving the display-card from the hanging apparatus to the card-rack.

6. A mechanical advertiser including hanging apparatus, a display-card supported by the hanging apparatus, a card-rack, reserve display-cards supported by the card-rack, and a display-card carrier comprising a guided cross-head having a pair of arms pivoted thereto provided on the tops thereof with rails having upturned pivoted tumblers at ends thereof and catch-hooks at opposite ends thereof for moving the display-card from the hanging apparatus to the card-rack, and means mounted on the carrier for transferring a reserve display-card from the card-rack to the hanging apparatus.

7. A mechanical advertiser including rollers having guide-flanges, display-cards connected to the rollers by means of hangers loosely embracing the rollers, hanging apparatus for supporting the rollers one at a time, a card-rack having inclined rails for supporting a plurality of the rollers, and a carrier having hooks for lifting a roller to the hanging apparatus and also having hooks for carrying a roller when removed from the hanging apparatus to the card-rack.

8. A mechanical advertiser comprising hanging apparatus, a display-card supported by the hanging apparatus, a card-rack, a plurality of reserve display-cards supported by the card-rack, a pair of upright guide-bars, a cross-head guided by the guide-bars, a gear-wheel mounted rotatively and having a crank-pin connected with and controlling the cross head, means for driving the gear-wheel, a pair of arms pivoted to the cross-head and provided with grappling-hooks for transferring the reserve display-cards to the hanging apparatus, rails having upturned pivoted tumblers mounted on the arms for removing the display-cards from the hanging apparatus, and catch-hooks mounted on the arms for receiving the display-cards from the rails and conveying them to the card-rack.

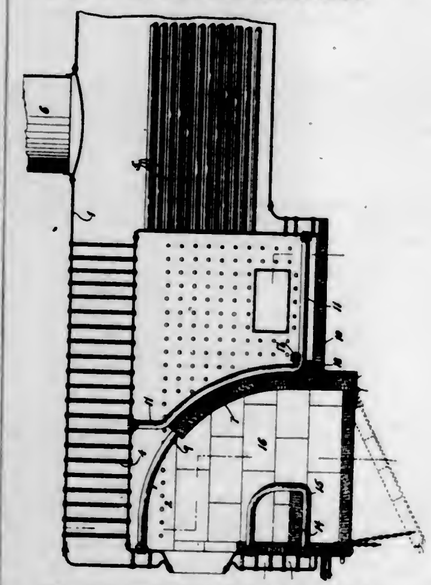
9. In exhibiting mechanism, hanging apparatus comprising a pair of brackets rigidly supported, a pair of escapement-wheels journaled on the brackets and having each a plurality of arms provided with curved ends for supporting a horizontal rod of a display-card, and means for limiting the movements of the escapement-wheels in one direction, in combination with a carrier for removing the rod from the arms and placing another rod of a display-card thereon.

10. In exhibiting mechanism, a card-rack comprising a pair of stationary inclined rails each provided with a transverse striker-bar at its uppermost end, and stops at the lowermost ends of the rails, in combination with a tilting carrier movable vertically, catch-hooks mounted movably on the carrier, and a guide for the carrier to guide the catch-hooks into engagement with the striker-bars.

11. In exhibiting mechanism, a pair of upright guide-bars, and a carrier comprising a cross-head having a rock-shaft provided with a pairs of arms fixed thereto, a pair of grappling-hooks pivoted to the ends of the arms, a pair of rails mounted on the arms and provided with upturned pivoted tumblers at ends thereof, and catch-hooks at opposite ends of the rails, in combination with means for controlling the carrier, a card-rack, and hanging apparatus.

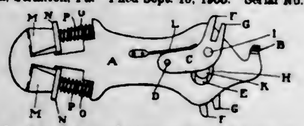
12. In exhibiting mechanism, a tilting card-carrier comprising a pair of pivoted arms having track-rails, a pair of grappling-hooks pivoted to the ends of the arms, stops for the hooks, a pair of guard-rails mounted above the track-rails of the arms, and a pair of catch-hooks mounted on the arms, in combination with means for moving the arms vertically and also pivotally, a card-rack, and hanging apparatus.

823,188. LOCOMOTIVE-BOILER. JOSÉ F. DE NAVARRO, New York, N. Y. Filed Mar. 3, 1905. Serial No. 248,279.



Claim.—The combination with the fire-chamber of a locomotive provided with a partition or baffle-wall intermediate of its ends and means for directing pulverized fuel into the chamber, of a hinged bottom section to the rear of the said partition-wall for removing the ash and sediment.

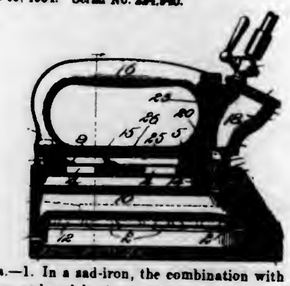
823,189. AIR-BRAKE GASKET-REPLACING TOOL. GEORGE J. PILGER, Scranton, Pa. Filed Sept. 18, 1905. Serial No. 278,886.



Claim.—1. A tool for replacing worn-out gaskets in air-brake hose-couplings, consisting of a body-piece, a pair of coöperating, oppositely-placed jaws pivoted thereto at the front end and adapted to enter the gasket-groove, and at the back end a pair of rollers adapted to force the gasket into place.

2. A tool for replacing worn-out gaskets in air-brake hose-couplings, consisting of a flat body-piece A, the elbow-shaped coöperating jaws C, E pivoted on opposite faces thereof at its front end, said jaws being provided at their free ends with the teeth G, adapted to enter the gasket-groove, and the teeth F, adapted to scrape the face of the coupling, and at the back end of said body-piece A the coöperating rollers M, M mounted on the pivots O and seated against the springs P, said rollers being shaped with the flange N at their front end, adapted to press the gasket home, substantially as shown and described.

823,190. SAD-IRON. LOUIS ROSENBAUM, St. Louis, Mo. Filed Sept. 19, 1904. Serial No. 224,940.



Claim.—1. In a sad-iron, the combination with a hollow base open at one end and having air inlet and exhaust openings, of a burner fitting therein and extending substantially the length of said base, a handle-plate, a mixing-chamber on said handle-plate, and means connecting said handle-plate to said base and providing a communicating passage between said burner and mixing-chamber; substantially as described.

2. In a sad-iron, the combination with a hollow base open at one end and having air inlet and exhaust openings, of a burner fitting therein and extending substantially the length thereof, a handle-plate, a mixing-chamber on said handle plate, a gas-supply pipe leading into said mixing-chamber, and a pipe connecting said handle-plate to said base and providing a communicating passage for the mixed air and gas between said burner and mixing-chamber; substantially as described.

3. In a sad-iron, the combination with a hollow base-casting open at one end and also having air inlet and exhaust openings, of a hollow burner fitting therein and extending substantially the length thereof, a handle-plate for said base, a mixing-chamber on said handle-plate, a gas-supply pipe leading into said mixing-chamber, and means for holding said handle-plate, base and burner together and providing a communicating passage between said mixing-chamber and burner; substantially as described.

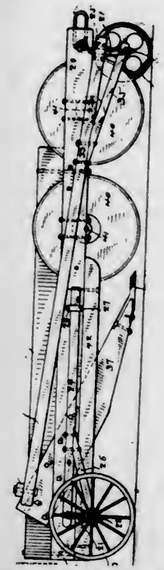
4. In a sad-iron, the combination with a hollow base open at one end and having air-inlet openings in its sides and openings for the escape of products of combustion at its top, of a burner fitting in said base and having a fuel-inlet opening in its top and jet-perforations in its bottom, a handle-plate for said base, a mixing-chamber formed integral with said handle-plate and open to atmosphere at its upper end, and a pipe connecting said mixing-chamber and burner together and providing a communicating passage for the mixed air and gas therebetween; substantially as described.

5. In a sad-iron, the combination with a hollow base, of a burner fitting therein, said burner being provided with a hollow threaded boss, a handle-plate also provided with a hollow threaded boss, a mixing-chamber on said handle-plate and leading into said boss thereon, and a pipe connection engaging the threaded bosses on said burner and handle-plate for providing a communicating passage between the burner and mixing-chamber; substantially as described.

823,191. DITCHING-MACHINE. FRANK R. SAMMIS, Stratford, Conn. Filed Jan. 15, 1906. Serial No. 296,996.

Claim.—1. A ditching-machine consisting essentially of side pieces one of which is provided with a delivery-opening, shafts having cranks from which said side pieces are suspended, a plow rigidly secured to the side pieces for removing a continuous strip which is delivered through the opening, and cutting-disks in advance of the plow for cutting out the continuous strip.

2. A ditching-machine consisting essentially of side pieces one of which is provided with a delivery-opening, shafts having cranks from which said side pieces are suspended, a plow rigidly secured to the side pieces for removing a continuous strip which is delivered through the opening, cutting-disks in advance of the plow for cutting out the continuous strip and means for oscillating the shafts to raise and lower the side pieces, plow and cutting-disks out of and into operative position.



3. A ditching-machine consisting essentially of side pieces one of which is provided with a delivery-opening, shafts having cranks from which said side pieces are suspended, a plow rigidly secured to the side pieces for removing a continuous strip which is delivered through the opening, cutting-disks in advance of the plow for cutting out the continuous strip and levers rigidly secured to the cranks for raising and lowering the side pieces and parts carried thereby, substantially as described, for the purpose specified.

4. A ditching-machine consisting essentially of side pieces one of which is provided with a delivery-opening, shafts having cranks from which said side pieces are suspended, a plow rigidly secured to the side pieces for removing a continuous strip which is delivered through the opening, cutting-disks in advance of the plow for cutting out the continuous strip and means for removing the strip thrown out by the plow from the edge of the ditch.

5. A ditching-machine consisting essentially of side pieces one of which is provided with a delivery-opening, shafts having cranks from which said side pieces are suspended, supporting-strips on which the shafts are mounted to oscillate, a plow rigidly secured to the side pieces for removing a continuous strip which is delivered through the opening and cutting-disks in advance of the plow for cutting out the continuous strip

6. A ditching-machine consisting essentially of side pieces one of which is provided with a delivery-opening, shafts having cranks from which said side pieces are suspended, a plow rigidly secured to the side pieces for removing a strip of material which is delivered through the opening, cutting-disks and guide-plates rigidly secured to the side pieces.

7. A ditching-machine consisting essentially of side pieces one of which is provided with a delivery-opening, shafts having cranks from which said side pieces are suspended, a plow rigidly secured to the side pieces for removing a strip of material which is delivered through the opening, guide-plates rigidly secured to the side pieces, a central frame and cutting-disks carried by shafts journaled in said frame for cutting out the continuous strip.

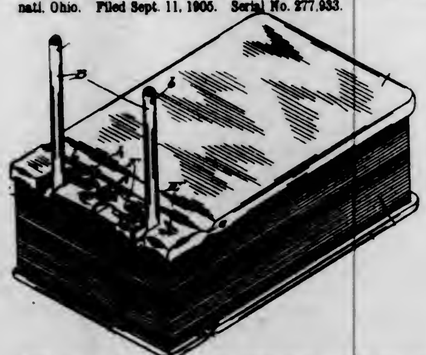
8. The method of making ditches, which consists in cutting two strips of earth, one below the other, the lower one being of less width than the upper one, removing said cut strips, and then replacing the upper strip.

9. The herein-described method of making ditches, which consists in making side cuts, removing the material from between said side cuts without disintegration, making a second pair of side cuts within said first side cuts and below the same, removing the material from between said second cuts and returning the material removed from between said first cuts, whereby a covered ditch is formed between said second cuts.

10. The herein-described method of making ditches which consists in making side cuts approximately the depth of a first ditch, removing the material from between said cuts in the form of a continuous strip, making two cuts closer together below the first ditch and between the sides thereof, removing the material from between said second cuts and returning the strip removed from the first ditch, thereby forming a subsoil ditch.

11. The herein-described method of making ditches, which consists in making parallel side cuts approximately the depth of a first ditch, removing the material from between said cuts in the form of a continuous strip, making two parallel cuts closer together below the first ditch and midway between the sides thereof, removing the material from between said second cuts and returning the strip removed from the first ditch to the place from which it was removed, thereby covering the second ditch and forming a covered subsoil ditch.

823,192. **LOOSE-LEAF BINDER.** WILLIAM J. SCHULTZ, Cincinnati, Ohio. Filed Sept. 11, 1905. Serial No. 277,933.



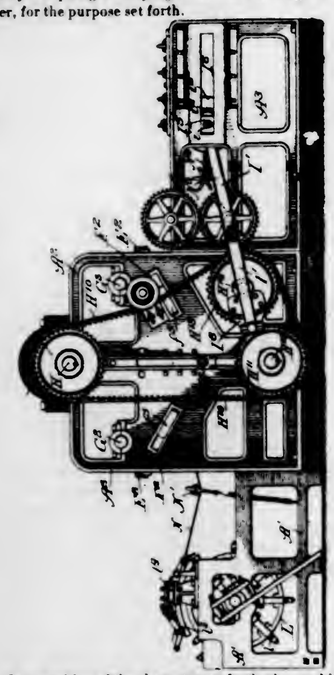
Claim.—1. A loose-leaf binder comprising a cover provided with leaf-receiving posts, a second cover having a metallic casing at its one end, said casing provided with openings for the passage of the leaf-receiving posts, a spring-plate within said casing and intermediate of the openings, a lever secured within said casing and extending to the outside thereof, whereby the spring-plate may be depressed and its ends pressed against the posts, and pins within said casing whereby the spring-plate is retained in place when the lever is in an operative position.

2. A loose-leaf binder comprising a cover having a metallic plate at its one end provided with leaf-receiving posts, a second cover provided with a casing at its one end, said cacing provided with openings registering with said posts, a spring-plate within said casing and provided with notches in its ends, means having operative relation with the spring-plate whereby the latter may be depressed and its notched ends brought into contact with the leaf-receiving posts, and pins within said casing for retaining the spring-plate in proper position when it is released.

3. A loose-leaf binder comprising a cover provided with leaf-receiving posts, a second cover provided with a casing in its one end, said casing having openings registering with said posts, an arched spring-plate within said casing, studs in said casing for loosely holding the spring-plate intermediate of the openings in the casing, a lever whose one end bears against the arch of said spring-plate whereby, upon the operation of said lever, the plate is depressed and its ends brought into frictional contact with the leaf-receiving posts.

823,193. **WIRE-FABRIC MACHINE.** JAMES W. SWEDEKER, Adrian, Mich., assignor to Page Woven Wire Fence Company, Adrian, Mich., a Corporation of Michigan. Filed Aug. 16, 1905. Serial No. 274,333.

Claim.—1. In a wire-fabric machine, the combination with means for intermittently feeding strand-wires through the machine, of a plunger-carrying cross-head, staple-feeding means for delivering staples to the plungers of the cross-head, suitable dies for bending staples about the intermediate wires, and knotting mechanism comprising a wrapper provided with actuating means, and means carried by the plunger-carrying cross-head serving to actuate said wrapper, for the purpose set forth.



2. In a machine of the character set forth, the combination with means for intermittently movin, strand-wires through the machine, of a reciprocating die-carrying cross-head, wrapping devices corresponding with the marginal wires carried by said cross-head, and reciprocating actuating devices operating upon said wrapping devices as the dies move to the closed position, for the purpose set forth.

3. In a machine of the character set forth, the combination with means for intermittently feeding strand-wires through the machine, of a reciprocating cross-head equipped with dies corresponding with the intermediate strand-wires and with wrapping devices corresponding with the marginal strand-wires, the wrapping devices having actuating-pinions, staple-feeding mechanism, and a reciprocating plunger-carrying cross-head equipped with racks serving to engage said pinions and through the medium thereof rotate the wrappers, for the purpose set forth.

4. In a machine of the character set forth, the combination of a frame having a stationary beam equipped with dies and and equipped also with cams provided with yielding controlling members, a reciprocating cross-head equipped with dies and equipped also with wrappers provided with actuating-pinions and with rotary members engaging said cams and said controlling members during the movement of the cross-head, and a reciprocating plunger-carrying cross-head equipped with racks which are brought into engagement with said pinions, as and for the purpose set forth.

5. In a machine of the character set forth, the combination with means for moving strand-wires through the machine, of a beam equipped with stationary dies and equipped also with cams provided with yielding controlling members, a reciprocating cross-head equipped with dies and with wrapping devices, each wrapping device comprising a longitudinally-slotted rotary member equipped with a beveled pinion, a gear engaging said pinion and having a flat surface engaging a cam, an actuating-pinion, and a reciprocating plunger-carrying cross-head equipped with racks serving to engage and actuate said last-named pinions, for the purpose set forth.

6. In a machine of the character set forth, a reciprocating cross-head equipped with wrapping devices comprising longitudinal rotary members equipped with beveled pinions, gears engaging said pinions, and shields serving to guide the stays over said pinions as the fence moves through the machine, for the purpose set forth.

7. In a machine of the character set forth, the combination with means for moving substantially horizontally-disposed strand-wires intermittently through the machine, of a plurality of reciprocating cross-heads moving in inclined planes and equipped with staple-driving plungers, means for feeding a plurality of stays transversely of the strand-wires, staple-feeding means operating to supply staples to the several stays, and dies arranged in transverse alinement corresponding with the several stays, for the purpose set forth.

8. In a machine of the character set forth, the combination of a frame having a transverse beam equipped with two series of dies, a reciprocating cross-head equipped with two series of dies, means for moving strand-wires intermittently through the machine, means for simultaneously feeding two stays transversely of the strand-wires, and a pair of plunger-equipped reciprocating cross-heads moving in convergent planes forming acute angles with the plane of the strand-wires, the plungers of said last-named cross-heads corresponding with said first-named two series of dies, for the purpose set forth.

9. In a machine of the character set forth, the combination of a rame equipped with two series of stationary dies arranged in different transverse planes, a reciprocating cross-head equipped with two series of dies arranged in the same transverse planes as the stationary dies and equipped also with wrapping devices, a pair of reciprocating cross-heads moving in convergent planes and equipped with suitable driving-plungers and equipped also with wrapper-actuating means, means for feeding two stays in alinement with the dies transversely of the strand-wires, and means for intermittently moving the strand-wires through the machine, for the purpose set forth.

10. In a machine of the character set forth, the combination of a frame carrying two series of stationary dies arranged in different transverse planes, two series of reciprocating dies corresponding therewith, two reciprocating cross-heads moving in inclined planes and equipped with staple-driving plungers, and a shaft equipped with common actuating means for said last-named cross-heads, for the purpose set forth.

11. In a machine of the character set forth, the combination with suitable dies, of a shaft arranged above said dies, a pair of reciprocating plunger-equipped cross-heads moving in convergent planes, the plungers whereof correspond with said dies, and bell-crank levers connected with said cross-heads and actuated by said shaft, for the purpose set forth.

12. In a machine of the character set forth, the combination with suitable dies, of a shaft arranged above said dies, a pair of reciprocating plunger-equipped cross-heads moving in convergent planes, the plungers whereof correspond with said dies, a pair of vertically-moving cross-heads joined to eccentrics on said shaft, and a pair of bell-crank levers joining each of said vertically-moving cross-heads to said plunger-carrying cross-heads, for the purpose set forth.

13. In a machine of the character set forth, the combination with means for applying stays to strand-wires, of take-up mechanism operating to draw the fence through the machine, comprising a drum having a bodily movement longitudinally of the machine, and means for rotating the drum during its return movement, for the purpose set forth.

14. In a machine of the character set forth, the combination with means for applying stays to strand-wires, of take-up mechanism comprising reciprocating blocks, a drum carried thereby, a stationary rack, and a gear working in said rack and serving to rotate the drum during the return movement thereof, for the purpose set forth.

15. In a machine of the character set forth, the combination with means for applying stays to strand-wires, of take-up mechanism comprising reciprocating bearings, shafts journaled therein, gears journaled thereon, stationary racks engaging said gears, ratchet-wheels journaled on said shafts, pawls carried by said gears engaging said ratchet-wheels, ratchet-wheels frictionally connected with said first-named ratchet-wheels and positively connected with the drum, and means for positively locking said last-named ratchet-wheels during the rearward movement of the drum, for the purpose set forth.

16. In a machine of the character set forth, the combination with a suitable frame, of two series of dies arranged in different transverse planes, means for feeding two stays into the machine, means for supporting strand-wires, means for simultaneously applying the stays to the strand-wires, and take-up mechanism comprising a drum having bodily movement longitudinally of the machine and rotary movement during the return movement of reciprocation of the drum, for the purpose set forth.

17. In a machine of the character set forth, the combination with a frame carrying two series of transversely-alined stationary dies, two series of reciprocating dies, a pair of plunger-equipped cross-heads moving in inclined planes, means for supporting strand-wires, means for simultaneously feeding two stay-wires into the machine transversely of the strand-wires, and take-up mechanism comprising a drum having bodily movement longitudinally of the machine and rotary movement during the return movement of the reciprocation of the drum, for the purpose set forth.

18. In a machine of the character set forth, the combination of a frame having two series of transversely-alined stationary dies, a reciprocating cross-head equipped with two series of dies, means for feeding two stays transversely into the machine, means for supporting strand-wires, a pair of reciprocating plunger-equipped cross-heads equipped with racks, wrapping devices carried by the reciprocating die-carrying cross-head provided with pinions actuated by said racks, and take-up mechanism comprising a drum having bodily movement longitudinally of the machine and rotary movement during its return movement of reciprocation, for the purpose set forth.

19. In a machine of the character set forth, the combination with means for supporting strand-wires and applying stay-wires thereto, of a crank-shaft equipped with a pair of cranks, a pair of connecting-rods connected with said cranks, a pair of slides actuated by said rods, a take-up drum carried by said slides equipped with a gear, and a stationary rack engaging said gear, for the purpose set forth.

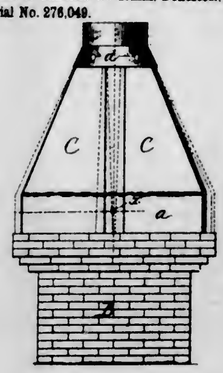
20. In a machine of the character set forth, the combination with means for intermittently moving strand-wires through the machine, of means for applying stays to the strand-wires, intermittently-actuated mechanism serving to feed the stays into the machine, and intermittently-actuated rotary straightening devices through which the stays pass, said straightening devices being positively actuated during the intervals of operation of said feeding mechanism, for the purpose set forth.

21. In a machine of the character set forth, the combination with means for feeding strand-wires through the machine, of a rotating shaft, a segmental gear actuated by said shaft, a pinion intermittently actuated by said segmental gear, feed-rolls actuated by said pinion, a rotary straightening device equipped with a fast and loose pulley, a continuously-moving belt, a belt-shifter serving to shift said belt from the loose to the fast pulley, and a cam on said first-named shaft serving to actuate said belt-shifter, for the purpose set forth.

22. In a machine of the character set forth, the combination of a frame, a pinion-equipped driving-shaft, a shaft extending across the top of the machine and equipped with a gear meshing with the pinion of the driving-shaft, a counter-shaft extending across the lower portion of the machine and connected by a chain with the upper shaft, cams on said counter-shaft, a vertically-moving die-carrying cross-head actuated by said cams, stationary dies located above said cross-head, stay-feeding mechanism actuated by said counter-shaft, a crank-shaft actuated by said chain, and a shiftable and rotatable take-up drum operated by said crank-shaft, for the purpose set forth.

23. In a wire-fabric machine, the combination with strand-wire-feeding means, and means for applying stays to the strand-wires, of an electric circuit equipped with an alarm device, and circuit-controlling means equipped with arms adapted for actuation by knots in the strand-wires, for the purpose set forth.

823,194. **CHIMNEY-TOP.** JOHN F. SPATZ, Bonesteel, S. D., assignor of one-half to Clarence W. Griffin, Bonesteel, S. D. Filed Aug. 28, 1905. Serial No. 276,049.



Claim.—A chimney-top comprising, in combination, a collar having a flaring rim, and a body portion having flaring sides and composed of sections having overlapping edges pivotally connected with said rim, each section having one of its lateral edges bent and rebent to form an edge substantially S-shaped in cross-section provided with a groove to receive the overlapping edge of the adjacent section, whereby the sections may be moved independently of each other upon said sections to expand and contract the body portion at its lower end, for the purpose set forth.

823,195. **MECHANISM FOR OPERATING AND SECURING WINDOWS.** EVELYN P. SPERRY, Oak Park, Ill. Filed Aug. 12, 1905. Serial No. 273,880.



Claim.—1. In an apparatus of the class described, the combination of an operating-lever provided with means for pivotally securing it to the window-frame and having a curved toothed edge portion, a securing-pawl movably mounted adjacent to such toothed portion of the main operating-lever, means for operatively securing the main operating-lever to the window, and means for locking and unlocking the securing-pawl and thereby the operating-lever and window.

2. In an apparatus of the class described, the combination of an operating-lever provided with means for pivotally securing it to the window-frame and having outwardly and inwardly swinging end portions, connecting mechanism secured to the window-frame and pivotally connected to the outer swinging end of such operating-lever, and a hook pivotally mounted and movable into and out of engagement with such window-operating mechanism when in closed position.

3. In an apparatus of the class described, the combination of an operating-lever provided with means for pivotally securing it to the window-frame and having outwardly and inwardly swinging end portions, connecting mechanism secured to the window-sash and pivotally connected to the outer swinging end of such operating-lever, a securing-pawl movably mounted adjacent to the main operating-lever and means for locking such securing-pawl in locking engagement with the main operating-lever.

4. In an apparatus of the class described, the combination of a main operating-lever provided with means for pivotally securing it to a suitable support and having a toothed locking-segment portion, means for flexibly securing one end of such lever to the window to be operated, securing-pawl mechanism movable into and out of engagement with such toothed segment, and means for locking and unlocking such securing-pawl and thereby the main operating-lever and window.

5. In an apparatus of the class described, the combination of a main operating-lever provided with means for pivotally securing it to a suitable support and having a toothed locking-segment portion, means for flexibly securing one end of such lever to the window to be operated, securing-pawl mechanism movable into and out of engagement with such toothed segment and provided with a hook mounted thereon, means for connecting such hook with the window when in closed position, and means for operating such securing-pawl and hook and thereby releasing and locking the window.

6. In an apparatus of the class described, the combination of a main operating-lever provided with means for pivotally securing it to a suitable support and having a toothed locking-segment portion, means for flexibly securing one end of such lever to the window to be operated, securing-pawl mechanism movable into and out of engagement with such toothed segment, and interlocking mechanism for securing the window in closed position independently of the operating-lever.

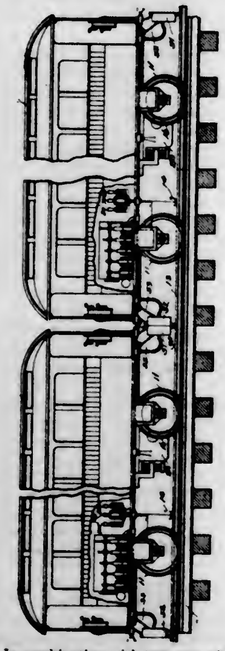
7. In an apparatus of the class described, the combination of an operating-lever, means for pivotally securing such operating-lever to a window-sash, a connecting-lever pivotally secured to such operating-lever, bracket mechanism, means for securing such bracket mechanism to the window-sash, a rod slidably mounted in such bracket mechanism pivotally connected with the connecting-lever and covering the means for securing such bracket mechanism to the window-sash, and means for locking and unlocking the operating-lever.

8. In an apparatus of the class described, the combination of a pivotal main operating-lever having outer and inner swinging end portions, a base-plate upon which such lever is pivotally mounted, a lever pivotally secured to the outer end of such main operating-lever and flexibly secured to the window, a link pivotally connected to the end of such connecting-lever opposite that which is connnected with the window and pivotally connected with the base-plate, and means for locking and unlocking such main operating-lever and thereby the window.

9. In an apparatus of the class described, the combination of a pivotal main operating-lever having outer and inner swinging end portions and provided with a toothed locking-segment, a base-plate upon which such lever is pivotally mounted, a lever pivotally secured to the outer end of such main operating-lever and flexibly secured to the window, a link pivotally connected to the end of such connecting-lever opposite that which is connected with the window and pivotally connected with the base-plate, a securing-pawl pivotally mounted adjacent to the toothed portion of such locking-segment, and means for locking and unlocking such securing-pawl and toothed segment mechanism and thereby the main operating-lever and window.

10. In an apparatus of the class described, the combination of a pivotal main operating-lever having outer and inner swinging end portions and provided with a toothed locking-segment, a base-plate upon which such lever is pivotally mounted, a lever pivotally secured to the outer end of such main operating-lever and flexibly secured to the window, a link pivotally connected to the end of such connecting-lever opposite that which is connected with the window and pivotally connected with the base-plate, a securing-pawl pivotally mounted adjacent to the toothed portion of such locking-segment, a locking-lever for locking and unlocking said securing-pawl, a bar slidably mounted upon the window-sash and pivotally connected with the lever mechanism, and means for connecting such slidable bar mechanism with the securing-pawl and disengaging it therefrom.

823,196. **SYSTEM OF TRAIN CONTROL.** AUGUST SUNDE, Yonkers, N. Y. Filed Mar. 16, 1905. Renewed Dec. 4, 1905. Serial No. 290,175.



Claim.—1. In combination with two cars, electrical circuits on the cars, and a relay associating the circuits on the two cars.

2. In combination with two cars, a plurality of electrical circuits on each of the cars, and a plurality of electromagnetic devices associating the circuits.

3. In combination with two cars, electrical circuits on the cars, a relay associating the circuits, and means for flexibly connecting the relay to the cars.

4. In combination with two connected cars adapted to carry goods or passengers, a two-part relay between the cars.

5. In combination with two cars, a two-part relay between the cars, one part of which is supported by one of the cars and the other part of which is supported by the other of the cars.

6. In combination with two cars, a two-part relay between the cars, one part of which is flexibly supported by one of the cars and the other part of which is flexibly supported by the other of the cars.

7. In combination with two cars, a two-part relay, one part of which is on one of the cars and the other part of which is on the other car, and means for uniting the two parts.

8. In combination with two cars, a two-part relay, one part of which is on one of the cars and the other part of which is on the other car, and means for yieldingly uniting the two parts.

9. The combination with a plurality of connected cars adapted to carry goods or passengers, electrical circuits on the cars, and relays between the cars adapted to operatively associate the circuits.

10. In combination with a plurality of cars, electrical circuits on the cars, relays between the cars adapted to operatively associate the electrical circuits and a switch arranged to control said circuits.

11. In combination with a plurality of cars, electrical circuits on the cars, relays between the cars adapted to operatively associate the electrical circuits, and switches on each car for controlling the electrical circuits.

12. In combination with a plurality of cars, electrical circuits on the cars, relays between the cars adapted to operatively associate the electrical circuits, and switches on each car any one of which may be used for controlling the electrical circuits.

13. In combination with a plurality of connected cars, electrical circuits on the cars, and relays between the cars adapted to operatively associate the electrical circuits and arranged to render such circuits inoperative should the cars become separated.

14. The combination with a plurality of cars of a motor and a controlling-circuit therefor on each car and relays for operatively associating the controlling-circuits.

15. The combination with a plurality of cars of a motor and a controlling-circuit therefor on some of the cars, and relays for operatively associating the controlling-circuits.

16. The combination with a plurality of cars, of motors and controlling-circuits therefor, relays for operatively associating the circuits between the cars and a switch in the controlling-circuit.

17. The combination with a plurality of cars, of a motor and a controlling-circuit therefor on each car, relays for operatively associating the controlling-circuits and a switch on each car in the controlling-circuit.

18. The combination with a plurality of cars, of a motor and a controlling-circuit therefor on each car, relays for operatively associating the controlling-circuits, and means for controlling the motors from any selected car.

19. The combination with a plurality of cars, of a motor and a controlling-circuit therefor on each car, relays for operatively associating the controlling-circuits, and means for controlling the motor from any selected car whereby the motor may be started in either direction.

20. The combination with a plurality of cars, of motors and controlling-circuits on the cars, relays for associating the controlling-circuits between the cars, master-switches at both ends of each car, and means for operatively connecting the master-switches with the controlling-circuits.

21. The combination with a plurality of cars, of motors and controlling-circuits on the cars, relays for associating the circuits between the cars, master-switches on the cars connected in the controlling-circuits, and means for rendering any desired master switch or switches inoperative.

22. The combination with a plurality of cars of a motor and a controlling-circuit therefor on each car, and relays for associating the circuits so that they will be mutually operative when the cars are together.

23. The combination with a plurality of cars, of a motor and a controlling-circuit therefor on each car, and a relay on the end of each car for associating the circuits so that they will be mutually operative only when the cars are together.

24. In an electric train, the combination of two or more motor-cars, one or more cars without motors, controlling-circuits for the motors, and relays between all of the cars for operatively associating the controlling-circuits.

25. In an electric train, the combination of two or more motor-cars, one or more cars without motors, controlling-circuits for the motors and relays between all of the cars for operatively associating the controlling-circuits, and means for controlling the motors from a selected platform of any of the motor-cars.

26. In combination with two cars, electrical circuits on the cars, and a relay connecting the circuits on the two cars, said relay being inclosed by a water-tight housing.

27. In combination with two cars, a two-part relay between the cars, each part being inclosed in a water-tight housing.

28. In combination with two cars, a plurality of electrical circuits on the cars, and a relay, comprising a plurality of electromagnets, controlling the circuits on the two cars.

29. In combination with two cars, a plurality of electrical circuits on the cars, and a two-part relay between the cars, each part comprising a plurality of electromagnets and a plurality of magnetic responsive devices.

30. In combination with two cars, a plurality of electrical circuits on the cars, and a two-part relay between the cars, each part comprising a plurality of electromagneta and a plurality of magnetic responsive devices arranged to control the circuits on the two cars.

31. In combination with two cars, a plurality of electrical circuits on the cars, a two-part relay between the cars, each part comprising a plurality of electromagnets and a plurality of magnetic responsive devices and inclosed in a water-tight housing, said relay being arranged to control the circuits on the two cars.

32. A plurality of cars, controlling-circuits on the cars, and electromagnetic relays between the cars arranged to cause the controlling-circuits on the several cars to act together.

33. A plurality of cars, independent controlling-circuits on the cars, master-switches for said circuits, and electromagnetic relays between the cars arranged to cause the controlling-circuits to act together.

34. A plurality of cars, independent controlling-circuits on the cars, master-switches for said circuits, and electromagnetic devices between the cars arranged to cause the controlling-circuits to be controlled together from any one of the master-switches.

35. A plurality of cars, independent controlling-circuits on the cars, master-switches on the platforms of the cars and relays between the cars arranged to be actuated by any selected master-switch and by each other to control the controlling-circuits.

36. The combination of two cars, a master-switch on each car, a relay between the cars, said switches and said relay each comprising a plurality of circuit-closers, and a plurality of independent controlling-circuits on each car connected to the master-switch on the car on which said circuits are situated and to the relay.

37. The combination of two cars, a master-switch on each car, a two-part relay between the cars, one part of which is on one of the cars, and the other part of which is on the other of the cars, said master-switches and each part of said relay comprising a plurality of circuit-closers, and a plurality of independent circuits on each car connected to the master-switch and to the part of the relay which is on the car on which said circuits are situated.

38. A plurality of cars, independent controlling-circuits on the cars, master-switches for said circuits, means for rendering each of said master-switches operative or inoperative, and electromagnetic devices between the cars arranged to cause the controlling-circuits to act together.

39. A plurality of cars, independent controlling-circuits on the cars, master-switches for said circuits, means for rendering each of said master-switches operative or inoperative, and electromagnetic devices between the cars arranged to cause the controlling-circuits to be controlled together from any of the master-switches.

40. A plurality of cars, a direct-current-control system for said cars and wireless communication between the cars for the control system.

41. The combination with a plurality of cars, of motors, controllers therefor, suitable electrical circuits, and relays for operatively associating the circuits on the several cars.

42. The combination with a plurality of cars of electric motors, controllers therefor, suitable electrical circuits, master-switches, and relays for operatively associating the circuits on the several cars.

43. The combination with a plurality of cars of electric motors, controllers therefor, suitable electrical circuits, master-switches, means for connecting or disconnecting the master-switches with or from the circuits, and relays for operatively associating the circuits on the several cars.

44. The combination with a plurality of cars, each car having a motor, a controller therefor, suitable electrical circuits, and a master-switch, and relays between the cars for operatively associating the electrical circuits.

45. The combination with a plurality of cars each of which has a motor, a controller therefor, a master-switch and suitable electrical connections, and means comprising a relay between the cars for operatively associating the several circuits so that all the motors may be operated from any selected master-switch.

46. The combination with a plurality of cars each of which has a motor, a controller therefor, a master-switch and suitable electrical connections, and means comprising a relay between the cars for operatively associating the circuits so that the controllers may be actuated to start, stop or control the speed of all the motors from a master-switch on any selected car.

47. The combination with a plurality of cars, of electric motors, controllers therefor, electromagnetic actuators for the controllers, suitable electrical circuits, and relays for operatively associating the circuits on the several cars.

48. The combination with a plurality of cars, of electric motors, controllers therefor, electromagnetic actuators for the controllers, suitable electrical circuits, master-switches, and relays for operatively associating the circuits on the several cars.

49. The combination with a plurality of cars, of electric motors, controllers therefor, electromagnetic actuators for the controllers, suitable electrical circuits, master-switches, means for connecting or disconnecting the master-switches with or from the circuits, and relays for operatively associating the circuits on the several cars.

50. The combination with a plurality of cars, each car having a motor, a controller therefor, an electromagnetic actuator for the controller, suitable electrical circuits and a master-switch, and relays between the cars for operatively associating the electrical circuits.

51. The combination with a plurality of cars each of which has a motor, a controller therefor, an electromagnetic actuator for the controller, a master-switch and suitable electrical connections, and means compriaing a relay between the cars for operatively associating the several circuits so that all the motors may be operated from any selected master-switch.

52. The combination with a plurality of cars, each of which has a motor, a controller therefor, an electromagnetic actuator for the controller, a master-switch and suitable electrical connections, and means comprising a relay between the cars for operatively associating the circuits so that the controllers may be actuated to start, stop or control the speed of all the motors from the master-switch on any selected car.

53. The combination with a plurality of cars, each car having a plurality of motors, a controller for the motors, an electromagnetic actuator for the controller, suitable electrical circuits, and relays between the cars for operatively associating the electrical circuits.

54. The combination with a plurality of cars, each car having a plurality of motors, a controller for the motors, suitable electrical circuits, one or more master-switches, means for connecting or disconnecting the master-switches with or from the circuits, and relays between the cars for operatively associating the electrical circuits.

55. The combination with a plurality of cars, of electric motors, electrical circuits therefor, means for reversing the motors, and relays for operatively associating the circuits on the several cars.

56. The combination with a plurality of cars, of electric motors, electrical circuits therefor, electromagnetic means for reversing the motors, and relays for operatively associating the circuits on the several cars.

57. The combination with a plurality of cars, of electric motors, magnetically-actuated reversing-switches therefor, suitable electrical circuits, a manually-operated switch for controlling the circuits, and relays between the magnetically-operated reversing-switches arranged to cause them to act simultaneously.

58. The combination with a plurality of cars, of electric motors, controllers therefor, electromagnetic actuators for the controllers, a master-switch, an independent reversing-switch and magnets for reversing the motors, suitable electrical circuits, and relays for operatively associating the circuits on the several cars.

59. The combination with a plurality of cars, of electric motors, controllers therefor, electromagnetic actuators for the controllers, a master-switch, an independent reversing-switch and magnets for reversing the motors, means for locking the reversing-switch except when the controllers are in their off position, suitable electrical circuits, and relays for operatively associating the circuits on the several cars.

60. In a train-control system, motors and controllers on some of the cars, magnetic actuators for the controllers, a master-switch or master-switches on one or more of the cars, electrical circuits and relays between the cars arranged to cause the actuators to be moved together.

61. In a train-control system, motors and controllers on some of the cars, magnetic actuators for the controllers, a master-switch or master-switches on one or more of the cars, means in said switches for automatically controlling the movement of the actuators, electrical circuits and relays carried by the cars arranged to cause the actuators to be moved together.

62. In a train-control system, motors and controllers on some of the cars, magnetic actuators for the controllers, a master-switch or master-switches on one or more of the cars, means in said switches for automatically controlling the movement of the actuators, electrical circuits, and relays carried by the cars for associating the circuits and causing the actuators to move together.

63. In a train-control system, a plurality of motors and controllers, electromagnetic actuators for the controllers, electrical circuits, master-switches for controlling the actuators step by step, means in the actuators for returning the controllers to off position step by step, and relays for positively associating the circuits on the several cars.

823,197. CHIMNEY. CARL WEBER, Chicago, Ill. Filed June 22, 1905. Serial No. 266,463.



Claim.—1. A smoke-stack, having its lower section composed of an inner and an outer wall, constructed and arranged so as to form a circumferential air-space open to the atmosphere and its upper section composed of a single wall which is a continuation of said outer wall, the latter constructed with a ledge arranged to support laterally the top of said inner wall in such a manner that said top is free to move relatively to the outer wall.

2. A chimney, of the character described, having its lower section composed of an outer wall and an inner wall free at its upper end from said outer wall and forming with the latter an interposed air-space, an expansion-space, above the top of the inner wall, into which the upper end of said inner wall extends, and the upper chimney-section composed of a single wall joined at its base to the upper end of said outer wall.

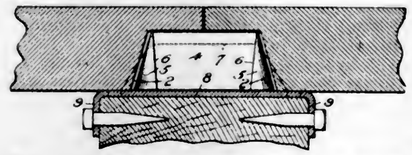
3. A chimney of the character described, having its lower section composed of an outer wall and an inner wall free at its upper end from said outer wall and forming with the latter an interposed air-space, and its upper section composed of a single wall, a ledge extending obliquely from the upper end of said outer wall and forming the junction therewith of said upper section, said ledge constructed and arranged to support, peripherally, the top of the inner wall.

4. A chimney of the character described, having its lower section composed of an outer wall and an inner wall free at its upper end from said outer wall and forming with the latter an interposed air-space, an expansion-chamber formed in the inner surface of said outer wall, into which the upper end of said inner walls extends, and the upper chimney-section composed of a single wall joined at its base to the upper end of said outer wall.

5. A chimney of the character described, having its lower section composed of an outer wall and an inner wall free at its upper end from said outer wall and forming with the latter an interposed air-space, and its upper section composed of a single wall, a ledge extending obliquely from the upper end of said outer wall and forming the junction therewith of said upper section, and an expansion-chamber formed in the inner surface of said outer wall below the plane of said ledge and into which the upper end of said inner wall extends.

6. A chimney of the character described, having its lower section composed of an outer wall and an inner wall free at its upper end from said outer wall and forming with the latter an interposed air-space and its upper section composed of a single wall, a ledge extending obliquely from the upper end of said outer wall and forming the junction therewith of said upper section, and an annular offset of rectangular cross-section on the inner surface of said outer wall adjacent to said ledge and forming an expansion-chamber into which the upper end of said inner wall extends.

823,198. RAIL-JOINT-BASE BOND. MILES W. WILLIAMS, Sharon, Pa. Filed Jan. 29, 1906. Serial No. 298,417.



Claim.—1. In a rail-joint, the meeting ends having each a vertical base-groove open at the end of the rail, and terminating in an enlarged vertical socket within the web, tapering upward from the base of the rail and forming a vertical shoulder on each side of the groove inclining upward from the base and from the end of the rail, and a bonding device formed of a web fitting the rail-grooves and having at each end a vertical abutment fitting the tapering sockets of the grooves, each abutment having a shoulder on each side of the web abutting the inclined shoulders of the rail-grooves, whereby the bonding device is caused to have a wedge action on each rail to draw and hold them together at the joint.

2. In a rail-joint the meeting ends having each a vertical base-groove open at the end of the rail, terminating in an enlarged vertical socket within the web and having a vertical shoulder on each side of the groove, and a bonding device formed of a web fitting the rail-grooves and having at each end an abutment fitting the vertical sockets of the grooves and having a shoulder each side of the web adapted to coact with the shoulders of the rail-grooves to cause a wedge action to draw and hold the rail ends together at the joint.

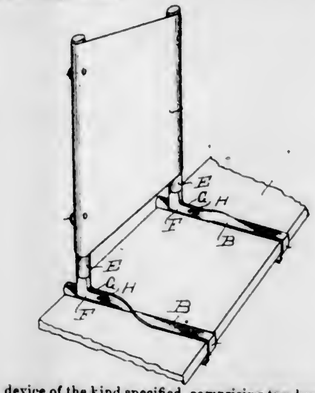
3. In a rail-joint the meeting ends having each a vertical base-groove open at the end of the rail and terminating in an enlarged vertical socket within the web forming a vertical shoulder on each side of the groove, a bonding device formed of a web having at each end an abutment fitting the vertical sockets of the grooves and having a shoulder on each side of the web, the said shoulders of the grooves and of the bonding-abutments adapted to have a wedge action to draw and hold the rails together and the grooves and the bonding-web having a wedge form in cross-section whereby the bonding device is caused to have a longitudinal and a transverse wedging action upon the rail ends.

4. In a rail-joint the meeting ends having each a vertical base-groove open at the end of the rail, and terminating in an enlarged vertical socket within the web and having a vertical wedge-formed shoulder on each side of the groove, a bonding device formed of a vertical web fitting the rail-grooves and having at each end a wedge-formed abutment fitting the vertical wedge-formed sockets of the grooves, and a base box-chair having its ends turned down and spiked to the opposite sides of the cross-tie and otherwise spiked thereto and to the rail-flanges.

5. In a rail-joint, the meeting ends having each a vertical base-groove open at the end of the rail, terminating in an enlarged vertical socket within the web and forming a vertical shoulder on each side of the groove, and a bonding-web fitting the rail-grooves and having at each end a vertical abutment fitting the sockets of the grooves, each abutment having a shoulder on each side of the web abutting the shoulders of the rail-grooves and adapted to coact with them in causing a wedge action drawing and holding the reins at the joint, in combination with a box-chair supporting the rails laterally, and means for fastening the chair endwise, sidewise and vertically.

823,199. PORTABLE KNOCKDOWN SEAT-BACK. JOSEPH L. AMANN, Chicago, Ill. Filed Sept. 6, 1904. Serial No. 223,518.

Claim.—1. A device of the kind specified, comprising two bars extending laterally over the seat and each provided at one end with devices engaging the forward end of the seat, posts or standards provided with bifurcated L-shaped lower ends and pivotally secured at the free ends of said L-shaped portions to said bars between the ends of the latter, the bottoms of the recesses in said L-shaped ends being adapted to rest upon the extreme free ends of said bars and forming stops to limit the rearward movement of said posts or standards, a flexible strip secured at its opposite ends to each of said posts, and cross-bars pivotally secured at their ends to one of said posts and removably engaging locking means on the other post to hold said posts in proper relative position.



2. A device of the kind specified, comprising two bars each provided at one end with a hook to receive one edge of the seat, said bars being adapted to rest upon the seat and being twisted between their ends so that their free ends rest edgewise on the seat, two posts or standards each having an L-shaped lower end pivotally secured at its free end to said free ends of said bars and having a recess to receive the latter, the elbow portions of said L-shaped ends being adapted to rest upon said bars and forming stops to limit the relative movement of said bars and standards in one direction, a flexible strip secured at its ends to said posts, and cross-bars removably mounted on said posts or standards at one end and removably engaging interlocking devices on the opposite post at their free ends.

3. A device of the kind specified, comprising two bars each provided at one end with a hook to receive one edge of the seat, a set-screw mounted in the bill of said hook to engage and clamp the seat therein, said bars being adapted to rest upon the seat and being twisted between their ends so that their free ends rest edgewise on the seat, two posts or standards each having an L-shaped lower end pivotally secured at its free end to said free ends of said bars and having a recess to receive the latter, the elbow portions of said L-shaped ends being adapted to rest upon said bars and forming stops to limit the relative movement of said bars and standards in one direction, a flexible strip secured at its ends to said posts, and cross-bars removably mounted on said posts or standards at one end and removably engaging interlocking devices on the opposite post at their free ends.

4. In a device of the kind specified, the combination of two detached bars, each provided at one end with a hook to receive the edge of a seat, two posts having each an L-shaped lower end, the extremities of the said L-shaped lower ends projecting forwardly and being pivotally attached to said bars, and within the ends of the latter, the elbow portions of said L-shaped ends resting on the upper edges of said bars within the ends of the same, a flexible strip connected at its ends to said post and cross-bars connecting said posts and detachable from one of the same.

5. Two bars twisted between their ends and provided with means for attaching them to a seat in such position that a portion of each bar will rest flat on the seat and a portion of each bar will be vertical and bear at its lower edge on the seat, posts or standards provided with bifurcated L-shaped lower ends and pivotally attached at the free ends of the L-shaped portions to the vertical portions of said first-named bars and a flexible strip secured at its opposite ends to said posts.

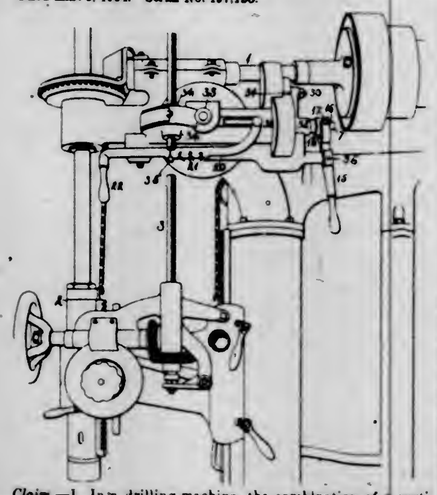
823,200. LAMP-BURNER. MELVILLE C. AYER, Biddeford, Me. Filed Feb. 6, 1906. Serial No. 299,849.

Claim.—In a lamp-burner the combination with the same of spring-arms attached to the base and forming a part of said burner, said spring-arms having spiral turns near the point of attachment of

said arms with said base, said arms extending vertically said vertical portions terminating in bends outward at obtuse angles, the extension of said bends terminating in bends inward at acute angles, the extension of said second bends terminating at points the diameter of the circle of which is less than the diameter of the base of the chimney that the burner is to carry, substantially as described.



823,201. **GEARING.** JOSEPH P. BARNES, Rockford, Ill., assignor to W. F. & John Barnes Company, Rockford, Ill., a Corporation of Illinois. Filed Mar. 8, 1904. Serial No. 197,125.

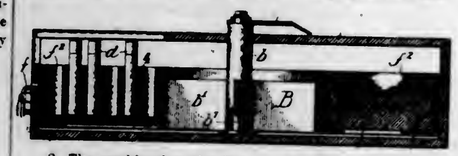


Claim.—1. In a drilling-machine, the combination of a vertically-arranged spindle, a toothed rack supported by the spindle, a cross-shaft, a pinion supported by the cross-shaft a main driving-shaft, means connected therewith for rotating the spindle, a secondary shaft, a disk having its face formed with a series of concentric rings of teeth, a toothed wheel supported by the secondary shaft, means for moving the toothed wheel into engagement with the teeth of the different rings, means for rotating the secondary shaft from the main shaft, a worm supported by the disk, a worm-wheel meshing with the worm, and a connection between the worm-wheel and cross-shaft.

2. In a drilling-machine, the combination of a vertically-arranged spindle, a toothed rack supported by the spindle, a cross-shaft, a pinion supported by the cross-shaft, a main driving-shaft, means connected therewith for rotating the spindle, a secondary shaft, a disk having its face formed with a series of concentric rings of teeth, a toothed wheel supported by the secondary shaft, means for moving the toothed wheel into engagement with the teeth of the different rings, two toothed wheels loosely mounted on the secondary shaft, a gear connection between the gears and the main driving-shaft, clutch mechanism for forming a connection between the secondary shaft and either of the toothed wheels mounted thereon, a worm supported by the disk, a worm-wheel meshing with the worm, and a connection between the worm-wheel and cross-shaft.

823,202. **COMMODITY-CABINET.** JAMES H. BOYE, Chicago, Ill., assignor to The Boye Needle Company, Chicago, Ill., a Corporation of Illinois. Filed Jan. 10, 1906. Serial No. 295,388.

Claim.—1. The combination of a rotary commodity-carrier provided with a plurality of chambers for receiving different commodities, a stationary cover having an index arranged in a circle concentric with the carrier and provided with an opening within the radius of the carrier and of a width corresponding approximately with the width of the various commodity-receptacles, and an indicator fixedly connected with the commodity-carrier, for the purpose set forth.



2. The combination of a frame equipped with a cover having a shaft-opening and a hand-opening, a rotary commodity-carrier mounted therein with a shaft projecting through said shaft-opening, said carrier having commodity-receptacles spaced at suitable angles about its axis, an index on the cover encircling said shaft and having characters spaced to correspond with the spacing of the commodity-receptacles, and an indicator fixed to said shaft and serving as a carrier-rotator, for the purpose set forth.

3. A commodity-cabinet comprising, in combination, a casing having a top provided with a shaft-opening and a hand-opening, a spider having a shaft extending through the shaft-opening and equipped with a rigidly-secured indicator, a member removably connected with the spider and provided with a plurality of commodity-receptacles arranged radially about the axis of the spider, and an index on the upper surface of the casing-top having radially-arranged characters spaced to correspond with the spacing of the commodity-receptacles, for the purpose set forth.

823,203. **SHOW-WINDOW AND SHOW-CASE.** HARRY BRANDENBERGER, Baltimore, Md. Filed Oct. 20, 1905. Serial No. 283,617.



Claim.—1. In a device of the class set forth, the combination of glass plates having their edges arranged in close relation, an inner angular vertically-extending post against which the inner sides of the edges of the plates are braced, the post having securing devices at the upper and lower ends thereof, a facing applied over the outer portions of the contiguous edges of the plates, and fastening means extending inwardly from the facing and held in the post, said fastening means passing between the contiguous edges of the plates.

2. In a device of the class set forth, the combination of glass plates having edges thereof in contact with each other, an inner post against which the inner portions of the plates are braced, a facing over the outer portions of the plates having angular terminals exerting a pressure on the latter, the post being provided at its upper and lower terminals with securing means serving to hold said post in positive position, and fastening means extending inwardly from the center of the faces between the contiguous edges of the plates and engaging the post.

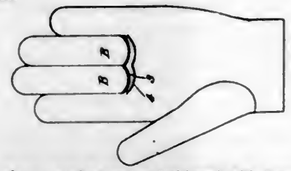
3. In a device of the class set forth, the combination of glass plates with contiguous edges, a post against which the inner portions of the plates are braced, said post having angular securing-lugs at the upper and lower ends thereof, a facing extending over the outer portion of the edges of the plate, and fastening means extending inwardly from the facing through the contiguous plate edges and into the post.

4. In a device of the class set forth, the combination of glass plates with contiguously-arranged edges, a facing over the outer portion of the plate edges, an angular post located at a distance inwardly from the facing and between which and the latter the edges of the plate are inserted, spring devices interposed between the plate edges and post, and fastening means extending inwardly from the facing between the plate edges and projecting into the post.

823,204. **GLOVE.** ROBERT N. CARSON, San Francisco, Cal. Filed Dec. 19, 1905. Serial No. 292,425.

Claim.—1. A glove having a palm portion and independent finger-fronts, said palm portion fashioned with fourchettes for the bases of the finger-fronts and also with a strip which extends substantially parallel with the fourchettes and is adapted to be folded over the seams at the base of the finger-fronts thereby reinforcing said seam.

2. In a glove, a palm portion fashioned with fourchettes and with a slit which is contiguous thereto and finger-fronts secured in the fourchettes, said slit forming a strip which is capable of being folded over the seams at the base of the finger-fronts to form a reinforce therefor.



3. In a glove, a palm portion fashioned with fourchettes and with a slit contiguous thereto, and having its ends terminating short of the ends of the fourchettes whereby the strip thus formed remains attached at its ends to the palm portion, and finger-fronts having their bases fitted into the fourchettes and secured, said strip being secured over the seams at the base of the finger-fronts and serving as a reinforce therefor.

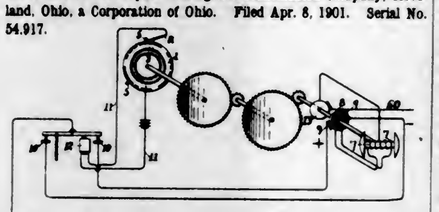
823,205. **STRUCTURAL PRESERVATIVE.** GEORGE D. COLEMAN, Brookline, Mass. Filed Mar. 20, 1905. Serial No. 251,172.

Claim.—1. A structural preservative consisting of a layer of slow-drying paint applied to the surface of the structure, an anchoring layer of granulated material embedded in but projecting from the surface of the paint, and a layer of hydraulic cement secured to and covering the anchoring layer, substantially as described.

2. A structural preservative, consisting of a layer of slow-drying paint applied to the surface of the structure, an anchoring layer of comminuted lead, and a layer of Portland cement applied to the anchoring layer of lead, substantially as described.

3. A structural preservative consisting of a layer of oil-paint applied to the surface of the structure, an anchoring layer of granulated material embeded in but projecting from the surface of the paint, and a layer of cement secured to and covering the anchoring layer, substantially as described.

823,206. **TELEGRAPH-TRANSMITTER.** ALBERT C. CREHORE, Tarrytown, N. Y., and GEORGE O. SQUIER, Washington, D. C., assignors to The Crehore-Squier Intelligence Transmission Company, Cleveland, Ohio, a Corporation of Ohio. Filed Apr. 8, 1901. Serial No. 54,917.



Claim.—1. In a telegraphic transmitter the combination substantially as described of a make-and-break ring, a drive-shaft therefor, means for coupling the ring and shaft at will, a generator of pulsating electromotive forces running synchronously therewith and conducting and insulating spaces on said ring all combined and proportioned as described to produce changes in the circuit of the ring synchronously with the production of the pulsations by said generator and to thereby impress upon the circuit pulsations of definite number and polarity.

2. In a telegraphic transmitting apparatus the combination substantially as described of a make-and-break ring, a drive-shaft, a pulsating generator with which said drive-shaft is run in synchronism, a key for coupling the ring and shaft at will, means for automatically uncoupling the ring and shaft when the ring has moved to a predetermined extent and conducting and insulating spaces on the ring all combined and proportioned as described to cause makes and breaks of circuit in synchronism with the production of pulsations by the generator and to thereby impress upon the circuit pulsations of definite number and polarity.

3. In a telegraph transmitting apparatus, the combination of a circuit making and breaking ring, a pulsating-current generator, a controlling key or lever and a clutch device controlled thereby for connecting the generator and ring in definite phase relation and causing them to run in synchronism, all combined and proportioned as described to permit the ring to impress definite whole pulsations of electromotive force positive and negative upon the circuit whenever the key is depressed.

4. In a telegraphic transmitting apparatus the combination substantially as described of a make-and-break ring, a drive-shaft, a coupling device adapted as described to connect the shaft and ring so that the ring will be in a definite phase relation to a generator, a key for coupling the ring and shaft at will, a pulsating-current generator running in synchronism with said drive-shaft and conducting and non-conducting spaces on the ring adapted to impress the pulsations of electromotive force upon the circuit in a predetermined order of time relation.

5. The combination substantially as described of a generator of alternating electromotive force, a circuit make-and-break ring in the direct circuit of the alternating pulsations, means for coupling said ring in definite phase relation with the alternations or pulsations produced by said generator and conducting and insulating spaces on said ring adapted to impress the alternating electromotive force upon the circuit as a series of pulses of predetermined order or sequence as to time and as to sign or polarity.

6. In a telegraphic transmitting apparatus the combination with a generator adapted to furnish two sets of pulsations positive and negative respectively, of a double or two-part make-and-break ring running in synchronism with said generator and having its parts included respectively in the circuit of the positive and negative pulsations said rings being provided with conducting and non-conducting spaces arranged and combined as described to cause the pulsations to be impressed upon the circuit as single pulsations or groups of pulsations and in predetermined order as to time and polarity.

7. In a telegraphic transmitting apparatus, a combination substantially as described of a pulsating-current generator furnishing two sets of pulsations positive and negative respectively, a double make-and-break ring having two rows of contacts in the circuit respectively of said pulsations, a controlling-key for coupling the same at will with a shaft running synchronously with the generator so that said ring may operate together in synchronism therewith, and make-and-break spaces on said ring adapted to operate on the circuit synchronously with the production of the individual pulsation.

8. In a telegraphic transmitting apparatus the combination with a pole-changing-transmitter device having two independently-operable circuit-closing levers, of a generator of pulsations of alternating electromotive force, electromagnets controlling the position of said lever and a double make-and-break ring adapted to be run in synchronism with said generator.

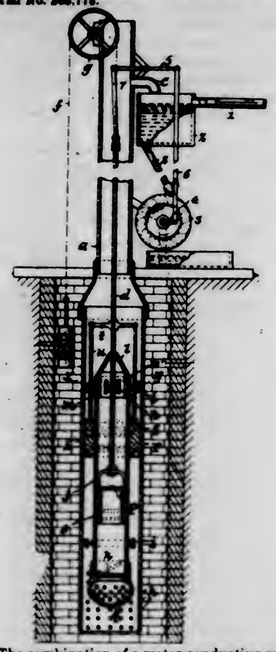
9. In a telegraphic transmitter the combination substantially as described of a make-and-break ring, a drive-shaft therefor, means for coupling the ring and shaft at will, and adjusted as described to secure a complete coupling of the ring and shaft when the parts are in definite phase relation to the generated alternating-current generator and conducting and insulating spaces on said ring adapted as described to produce changes in the circuit of the ring synchronously with the production of the pulsations by said generator.

10. In a telegraphic transmitting apparatus the combination substantially as described of a make-and-break ring, a drive-shaft, an alternating-current generator with which said drive-shaft is run in synchronism, a key for coupling the ring and shaft at will in definite phase relation with the alternating generator, means for automatically uncoupling the ring and shaft when the ring has moved to a predetermined extent and conducting and insulating spaces on the ring adjusted as described to cause makes and breaks of circuit in synchronism with the production of pulsations by the generator.

11. In a telegraphic transmitting apparatus the combination substantially as described of a circuit-make-and-break ring included in the circuit of an alternating-current generator and adapted to be run in synchronism with said generator, a controlling key or lever for setting said ring or disk into rotation in definite adjusted phase relation with the alternating-current generator at will, said ring being provided with conducting and non-conducting spaces adapted as described to make and break circuit in synchronism with the production of the pulsating electromotive force and to impress said electromotive forces on the circuit either singly or in groups and in any desired order predetermined by the arrangement of the spaces.

12. In a telegraphic transmitting apparatus the combination substantially as described of a make-and-break ring, a drive-shaft, a key for coupling the same with the shaft at will, a coupling device controlled thereby and having its parts organized as described to bring the ring and shaft into full coupled relation when the parts are in definite phase relation to one another as set forth, an alternating-current generator running in synchronism with said drive-shaft and conducting and non-conducting spaces on the ring adapted to impress the pulsations of electromotive force upon the circuit in a predetermined order or time relation.

828,207. PUMP. PHILIP H. DEIS, Washington, D. C. Filed June 5, 1905. Serial No. 263,778.



Claim.—1. The combination of a water-conducting means open to the water-supply in its lower portion, a pump-barrel, also open to the water-supply, inclosed in said conducting means and having an upwardly-opening valve, a sucker-rod, a piston arranged in said conducting means outside of said pump-barrel and carried by the sucker-rod, and means, arranged in said pump-barrel and also connected to said sucker-rod, for forcing water into said conducting means through the pump-barrel, substantially as described.

2. The combination of a water-conducting means open to the water-supply at the bottom, a pump-barrel, also open to the water-supply, inclosed in said conducting means and having an upwardly-opening valve, a sucker-rod, a piston arranged in said conducting means outside of said pump-barrel and relatively below said valve, and carried by the sucker-rod, and means, arranged in said pump-barrel and also connected to said sucker-rod, for forcing water into said conducting means through said pump-barrel, substantially as described.

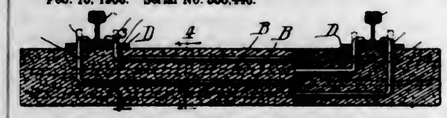
3. The combination of a water-conducting means open to the supply at the bottom, a pump-barrel, also open to the supply, inclosed in said conducting means and having upwardly-opening valves arranged the one above the other, a sucker-rod, a piston arranged in said conducting means outside of said pump-barrel and relatively below the upper valve, and carried by the sucker-rod, and means, arranged in said pump-barrel between the valves thereof and also connected to said sucker-rod, for forcing water into said conducting means through said pump-barrel, substantially as described.

4. The combination of a water-conducting means open to the supply at the bottom, a cylindrical pump-barrel, also open to the supply, arranged in said conducting means and having an upwardly-opening valve, a sucker-rod, a piston arranged in said conducting means and surrounding said pump-barrel, said piston being carried by the sucker-rod, and means, arranged in said pump-barrel and also connected to said sucker-rod, for forcing water into said conducting means through said pump-barrel, substantially as described.

5. The combination of a water-conducting means open to the supply at the bottom, a cylindrical pump-barrel, also open to the supply, arranged in said conducting means, an upwardly-opening inverted conical valve carried by said pump-barrel, a sucker-rod, a piston arranged in said conducting means and surrounding said pump-barrel, said piston being carried by the sucker-rod, and means, arranged in said pump-barrel and also connected to said sucker-rod, for forcing water into said conducting means through said pump-barrel, substantially as described.

6. The combination of a water-conducting means open to the supply at the bottom, a pump-barrel inclosed in said conducting means and having an upwardly-opening valve, a strainer device carried by said conducting means, carrying said pump-barrel and affording communication between the latter and the supply, a sucker-rod, a piston arranged in said conducting means outside of said pump-barrel and relatively below said valve and carried by the sucker-rod, and means, arranged in said pump-barrel and also connected to said sucker-rod, for forcing water into said conducting means through said pump-barrel, substantially as described.

828,208. RAILWAY-TIE. ROBERT C. DOERR, Chicago, Ill. Filed Feb. 10, 1906. Serial No. 300,446.

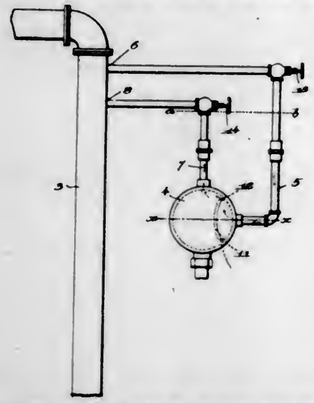


Claim.—1. The combination with a molded railway-tie, of rail-attaching rods embedded therein and extending upwardly therefrom for engagement with the base-flange of the rail, the inner ends of said rods being bent horizontally and constituting anchors therefor.

2. A molded railway-tie provided with longitudinally-arranged core-rods, the ends of which are bent upwardly and extend from the tie to constitute rail-fastening rods.

3. The combination with a molded railway-tie, of rail-attaching rods embedded therein and extending upwardly therefrom for engagement with the base-flange of the rail, a tie-plate adapted to be interposed between the tie and rail, and provided with apertures through which said rail-fastening rods extend, the inner ends of said rods being bent horizontally and constituting anchors therefor.

828,209. SIGHT-FEED FOR LUBRICATORS. JOHN A. ERICKSON, Malden, Mass. Filed Mar. 5, 1906. Serial No. 304,179.



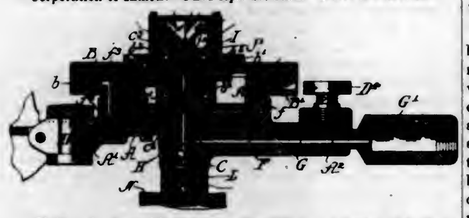
Claim.—1. In a device of the class described, a steam-main, an oil-supply pipe connected thereto, said pipe having an enlarged chamber, another pipe also connected to the steam-main and communicating with said chamber, and a sight-tube located in the oil-supply pipe between the chamber and the source of oil-supply.

2. In a device of the class described, a chamber, two pipes both connected with the steam-main, one entering the top of the chamber and the other the side thereof, an oil-supply pipe communicating with the bottom of the chamber, and a sight-tube within the oil-supply pipe and situated some distance below the chamber, said chamber having a transversely-arranged baffle opposite the pipe which enters the side thereof.

3. In a sight for a lubricator, two heads, a sight-tube situated between said heads, one of said heads having a nozzle entering one end of the sight-tube, a holder surrounding the ends of the sight-tube and interposed between the heads, and bolts connecting the heads.

4. In a sight for a lubricator, two heads, a sight-tube situated between said heads, one of said heads having a nozzle entering one end of the sight-tube, a holder surrounding the ends of the sight-tube and interposed between the heads, and bolts connecting the heads, said bolts passing through tubular posts forming part of the holder.

828,210. TURBINE-MOTOR. NATHAN W. FLETCHER, Chicago Heights, Ill., assignor to Turbine Motor Tool Company, Chicago, Ill., a Corporation of Illinois. Filed Apr. 27, 1904. Serial No. 205,093.



Claim.—1. A turbine-motor comprising a rotative wheel or member having a series of annularly-arranged blades or buckets, a non-rotative member provided with a supply-passage and with a discharge-passage, a valve controlling said discharge-passage, a valve-actuating member turning with the rotative member of the motor, a spring applied to move said valve-actuating member in one direction, and a centrifugally-acting governor-weight of wedge form adapted to slide radially on the rotative member and acting on the valve-actuating member to move the same against the tension of the said spring.

2. A turbine-motor comprising a non-rotative and rotative member, said non-rotative member being provided with a central valve-chamber, with a discharge-aperture and with a passage leading from said valve-chamber to said discharge-aperture, and the rotative member having a series of annularly-arranged blades or buckets, and with a central bore in alinement with the valve-chamber in the non-rotative part, a sliding piston in the non-rotative part, which forms with the inner end of the passage leading therefrom, a controlling-valve, an endwise-moving, valve-actuating, member in said central bore of the rotative member, and a centrifugally-acting weight carried by the rotative member and giving endwise movement to the said valve-actuating member.

3. A turbine-motor comprising non-rotative and rotative members, said non-rotative member being provided with a valve-chamber, and with a discharge-aperture, and the rotative member having a series of annularly-arranged blades or buckets, a sliding piston in the valve-chamber for controlling said discharge-aperture, a valve-stem attached to said piston, a balancing-piston on said valve-stem, a valve-actuating member carried by the said rotative member, and a centrifugally-acting weight carried by the rotative member and acting to give movement to said valve-actuating member.

4. A turbine-motor comprising non-rotative and rotative members, the non-rotative member being provided with a discharge-aperture, with a central valve-chamber in communication with the supply-passage and with said discharge-aperture, and the rotative member having a series of annularly-arranged blades or buckets, a sliding piston in said valve-chamber, and a valve-rod connected with said piston and extending to the exterior of said non-rotative member, for operating the said piston.

5. A turbine-motor comprising non-rotative and rotative members, said non-rotative member being provided with a central hollow spindle forming a valve-chamber and which projects beyond the face of said non-rotative member and forms a bearing for the rotative member, with annularly-arranged discharge-apertures, and discharge-passages leading from the said valve-chamber to the discharge-apertures, and the rotative member having a series of annularly-arranged blades or buckets located adjacent to said annularly-arranged discharge-apertures of the said non-rotative member.

6. A turbine-motor comprising non-rotative and rotative members, said non-rotative member having an annular, laterally-extending flange or projection provided with an exterior cylindric surface and discharge-apertures in said annular surface, and said non-rotative member also having a central bearing-spindle which projects therefrom within the said annular projection, and the rotative member having a central hub which is located within said projection and has bearing engagement with said bearing-spindle and is provided at its outer margin with a series of blades or buckets arranged exterior to the said annular projection.

7. A turbine-motor comprising non-rotative and rotative members, said non-rotative member being provided with a series of annularly-arranged discharge-apertures, with a central valve-chamber and with delivery-passages leading from said valve-chamber to said discharge-apertures, and the rotative member with a series of blades or buckets arranged adjacent to said discharge-apertures, a sliding piston in said valve-chamber, a valve-rod attached to said piston, and means for giving endwise movement to the valve-rod embracing a cam-surface on the non-rotative member and a radial arm on the said valve-rod adapted to engage said cam-surface.

8. A turbine-motor comprising non-rotative and rotative members, said non-rotative member being provided with a series of annularly-arranged discharge-apertures, with a central chamber and with delivery-passages leading from said valve-chamber to said discharge-apertures, and said rotative member being provided with a series of buckets arranged adjacent to said discharge-openings, a sliding piston in said valve-chamber, a valve-rod attached to said piston, and means for giving an endwise movement to the valve-rod embracing a cam-surface on the non-rotative member and a radial arm on the said valve-rod adapted to engage said cam-surface, said valve-rod being provided with a balancing-piston.

9. A turbine-motor comprising non-rotative and rotative members, said non-rotative member being provided with a series of annularly-arranged discharge-apertures, with a central valve-chamber and with delivery-passages leading from said valve-chamber to said discharge-apertures, and the rotative member with a series of buckets arranged adjacent to said discharge-apertures, a sliding piston in said valve-chamber, a valve-rod attached to said piston, a balancing-piston on said valve-rod, means for giving endwise movement to the valve-rod embracing a cam-surface on the non-rotative member and a radial arm on the said valve-rod adapted to engage said cam-surface, and a spring applied to move the valve-rod in a direction to hold said arm on the rod against said cam-surface.

10. A turbine-motor comprising a non-rotative member provided with annularly-arranged discharge-apertures, and a rotative member provided with an annularly-arranged series of blades or buckets, said non-rotative member being provided with a central valve-chamber, with a supply-passage communicating with said valve-chamber, and with delivery-passages leading from said valve-chamber to said discharge-apertures and a balanced controlling-valve embracing two connected pistons adapted to slide within said valve-chamber.

11. A rotative motor embracing non-rotative and rotative members, the non-rotative member being provided with a central valve-chamber communicating with a supply-passage and with a delivery-passage leading from said valve-chamber, an endwise-sliding valve-piston in said valve-chamber adapted to coact with the said inner end of said passage to form a regulating-valve, means embracing a centrifugally-acting weight carried by the rotative member for giving endwise movement to the said valve-piston in one direction and an opposing spring for giving movement to said valve-piston in the opposite direction.

12. A rotative motor embracing non-rotative and rotative members, said non-rotative member being provided with a central valve-chamber which communicates with a supply-passage, and with a delivery-passage leading outwardly from said valve-chamber, an endwise-movable valve-rod in said valve-chamber provided with a valve-piston, also with a counterbalanced piston and means for giving endwise movement to said valve-rod, embracing a centrifugally-acting weight which turns with the rotative member of the motor and a spring which acts endwise on said rod in opposition to the said centrifugally-acting weight.

13. A rotative motor embracing non-rotative and rotative members, said non-rotative member being provided with a central valve-chamber and with a delivery-passage leading from said valve-chamber, a sliding piston in said valve-chamber forming with the inner end of said discharge-passage, a regulating-valve, an endwise-movable actuating member arranged centrally of and turning with the rotative member of the motor, centrifugally-acting weights, mounted to slide radially in the rotative member, and acting on an oblique surface of the valve-actuating member to give endwise movement thereto, and a spring applied to act on said valve-piston in opposition to the said centrifugally-acting weight.

14. The combination with the rotative and non-rotative members of a motor, of a regulating-valve comprising a sliding piston and means for actuating said piston comprising a spring applied to move it in one direction, an endwise-movable actuating member which turns with the rotative member and which is provided with an oblique bearing-surface, and a radially-movable centrifugally-acting weight, said weight being provided with an oblique bearing-surface engaging the corresponding oblique bearing-surface on the actuat-

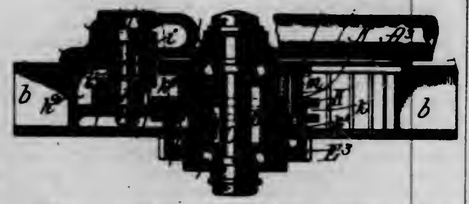
ing member, and having a bearing-surface which slides on a corresponding bearing-surface on the rotative member of the motor.

15. The combination with the non-rotative and rotative members of a motor, of a regulating-valve comprising an endwise-movable valve-piston, a centrifugally-acting weight carried by the rotative member of the motor and acting on said piston to move the same in one direction, a spring applied to move the piston in the opposite direction, a valve-rod connected with said piston and extending to the exterior of the stationary member, said stationary member being provided with a cam-surface and the valve-rod with a radial arm or handle adapted to act upon the said cam-surface when the handle is turned.

16. The combination with the non-rotative and rotative members of a motor, said non-rotative member being provided with a valve-chamber, of a regulating-valve comprising a piston adapted to slide in the valve-chamber, an actuating-rod attached to said piston, a balancing-piston on said valve-rod, a centrifugally-acting weight carried by the rotative member and acting on said valve-rod, a removable cap secured to the stationary member, and a spring interposed between the said cap and an opposing shoulder on said rod.

17. The combination with the non-rotative and rotative members of a motor, said non-rotative member being provided with a central valve-chamber, of a regulating-valve comprising a piston which slides in said valve-chamber, an actuating-rod attached to said piston, a balancing-piston on said rod, a centrifugally-acting weight carried by the rotative member and acting on said rod, a removable cap secured to the non-rotative member and provided with an aperture for the passage of the valve-rod, a spring interposed between the cap and a shoulder on the piston, a cam-surface on the non-rotative member and a radial arm on the outer end of the valve-rod adapted to engage the said cam-surface.

823,211. **TURBINE-MOTOR.** NATHAN W. FLETCHER, Chicago Heights, Ill., assignor to Turbine Motor Tool Company, Chicago, Ill., a Corporation of Illinois. Filed Jan. 3, 1905. Serial No. 239,488.



Claim.—1. A turbine-motor comprising a rotative wheel or member having a series of annularly-arranged blades or buckets, a non-rotative member provided with a supply-passage and with a discharge-passage, a valve controlling said discharge-passage, said valve being located eccentrically with respect to the rotative wheel or member and adjacent to the blades or buckets of the same, a valve-actuating member turning with the rotative member of the motor and having operative connection with the valve, a spring applied to move said valve-actuating member in one direction and a centrifugally-acting governor-weight of wedge form which slides radially on the rotative member or wheel and acts on the valve-actuating member to move same against the tension of said spring.

2. A turbine-motor comprising a rotative wheel or member having a series of annularly-arranged blades or buckets, a non-rotative member provided with a supply-passage and a discharge-passage and with a valve-chamber having a port communicating with said discharge-passage, said valve-chamber being located eccentrically with respect to the rotative wheel or member and adjacent to the blades or buckets of the same with its central axis parallel with the axis of the rotative wheel or member, a sliding piston in said valve-chamber, a valve-actuating member mounted on the rotative member of the motor concentrically therewith and connected with said piston, a spring applied to move said valve-actuating member in one direction, and a centrifugally-acting governor-weight acting on said valve-actuating member to move the same against the tension of said spring.

3. A turbine-motor comprising a rotative wheel or member having a series of annularly-arranged blades or buckets, a non-rotative member provided with a supply-passage, with a discharge-passage and with a valve-chamber having a port communicating with said discharge-passage, said valve-chamber being located eccentrically with respect to the rotative wheel or member and adjacent to the blades or buckets of the same, a valve-piston in said valve-chamber, a valve-actuating member mounted on the rotative member of the motor and connected with said piston, a spring applied to move said valve-actuating member in one direction and a centrifugally-acting governor-weight of wedge form which slides radially on said rotative wheel or member and acts on said valve-actuating member to move the same against the tension of said spring.

4. A turbine-motor comprising a rotative wheel or member having a series of annularly-arranged blades or buckets, a non-rotative member provided with a supply-passage, with a discharge-passage and with a valve-chamber having a port communicating with said discharge-passage, said valve-chamber being located eccentrically of the rotative member or wheel and adjacent to said blades or buckets, a sliding valve-piston in said chamber arranged parallel with the central axis of the motor, a laterally-sliding valve-actuating sleeve arranged concentrically with the central axis of the motor, a shoe attached to said piston and engaging said sleeve, a spring acting on said sleeve to move the same in one direction, and a centrifugally-acting governor-weight acting on said sleeve against the tension of said spring.

5. A turbine-motor comprising a rotative wheel or member having a series of annularly-arranged blades or buckets, a non-rotative member consisting of a plate provided with a supply-passage, a valve-block attached to said plate and provided with a plurality of discharge-passages and with a valve-chamber having ports communicating with said discharge-passages, a cylindric valve-bushing extending through the said nozzle-block and through the said non-rotative member into the said supply-passage, said valve-bushing having a supply-port communicating with the supply-passage and also having ports communicating with said discharge-passages, a sliding piston in the said bushing, and a centrifugally-acting governor-weight carried by the rotative member and actuating said valve-piston.

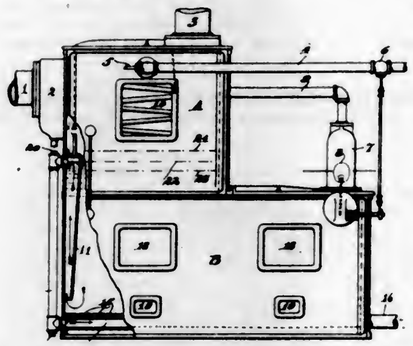
6. A turbine-motor comprising a rotative wheel or member having a central cylindric hub and a series of annularly-arranged blades or buckets, a non-rotative member provided with a supply-passage, with a discharge-passage and with a valve-chamber having a port communicating with said discharge-passage, a sliding valve-piston in said valve-chamber, a valve-actuating sleeve mounted to slide endwise on said hub of the rotative member and connected with said valve-piston, springs applied to move said sleeve on the hub in one direction, and a centrifugally-acting wedge-shaped weight adapted to slide radially on the rotative member and to act on said sleeve to move the same against the tension of said spring.

7. A turbine-motor comprising a rotative wheel or member having a central cylindric hub and a series of annularly-arranged blades or buckets, a non-rotative member provided with a supply-passage and with a discharge-passage, a valve controlling said discharge-passage, a valve-actuating sleeve mounted to slide endwise on said hub of the rotative member and connected with the said valve, a ring having screw-threaded engagement with said hub, guide-pins on said ring engaging the said valve-actuating sleeve, springs interposed between said ring and sleeve and centrifugally-acting wedge-shaped weights adapted to slide radially on the rotative member and to act on said sleeve to move the same against the tension of said springs.

8. A turbine-motor comprising a rotative wheel or member having a central cylindric hub and a series of annularly-arranged blades or buckets, a non-rotative member provided with a supply-passage and with a discharge-passage, a valve controlling said discharge-passage, a valve-actuating sleeve mounted to slide endwise on said hub of the rotative member and connected with the said valve, a ring having screw-threaded engagement with said hub, guide-pins on said ring engaging the said valve-actuating sleeve, springs interposed between said ring and sleeve, and a centrifugally-acting, wedge-shaped weight adapted to slide radially on the rotative member and acting on said sleeve to move the same against the tension of said spring, and means for clamping the said ring to the hub.

9. A turbine-motor comprising a rotative wheel or member having a central cylindric hub and a series of annularly-arranged blades or buckets, a non-rotative member provided with a supply-passage, and with a discharge-passage, a valve controlling said discharge-passage, a valve-actuating sleeve mounted to slide endwise on said hub of the rotative member and connected with the said valve-piston, a ring having screw-threaded engagement with said hub, guide-pins on said ring engaging the said sleeve, centrifugally-acting, wedge-shaped weights adapted to slide radially on the rotative member and acting on said sleeve to move the same against the action of said spring, and means for clamping the said ring on the hub, embracing a longitudinal slit or slot in the said ring and a screw in the ring engaging the parts of the same at the opposite sides of said slot or slit.

823,212. **APPARATUS FOR PURIFYING AND REGULATING WATER.** JOSEPH W. GAMBLE, Philadelphia, Pa., assignor to Joseph S. Lovering Wharton, William S. Hallowell, and John C. Jones, doing business as Harrison Safety Boiler Works, Philadelphia, Pa., a Firm. Filed Apr. 18, 1905. Serial No. 256,262.



Claim.—1. A filter; and a passage about the same opening into the outlet from the filter, and containing an obstruction adapted to be overcome as the resistance of the filter increases.

2. A filter; and a passage about the same opening into the outlet from the filter, and containing a loaded valve normally closed, but adapted to open when the resistance of the filter equals its own load.

3. A filter; and a passage about the same opening into the outlet from the filter, and containing a resistance adapted to be automatically overcome or renewed as the resistance of the filter increases or diminishes.

4. A filter; and a by-pass about the same opening into the outlet from the filter, and having a resistance therein greater than the normal resistance of the filter, adapted to be automatically overcome and established according as the resistance of the filter exceeds or falls below itself.

5. A filter; and a by-pass about the same opening into the outlet from the filter, and having an adjustable resistance therein, adapted to be overcome as the resistance of the filter increases.

6. The combination of a heater; a filter; and a conduit having its inlet covered by a hood vented at the top and opening below the water-line near the filter-bed, and having an outlet opening into the outlet of the heater.

7. The combination of a heater; a filter; and a conduit vented at the top and opening above and near the filter-bed, and having an outlet opening into the outlet of the heater, and provided with a resistance greater than the normal resistance of the filter-bed.

8. The combination of a water-purifier; a by-pass comprising a hood; a vent to said hood; a conduit, the inlet of which is located within the hood above the normal water-line, and the outlet of which communicates with the outlet of the purifier.

9. The combination of a water-heater; a chemical feeder; a filter; and means for automatically supplementing the outflow through the filter by an increment of chemically-treated water taken from a point near the filter and increasing in quantity according as the resistance of the filter increases.

10. The combination of a heater; a chemical-supply; a filter; and a by-pass around the filter to the outlet thereof, containing a resistance adapted to be automatically overcome as the resistance of the filter increases.

11. The combination of a water-heater; a chemical-supply; a filter; and means for automatically supplementing the outflow through the filter by an increment of chemically-treated water, varying inversely as the supply passing through the filter.

12. The combination of a heater; a chemical-supply; a filter; a conduit having an inlet at the water-line of the heater, and a closed hood vented at the top covering the inlet and opening below the water-line near the filter-bed, the outlet to the conduit opening into the outlet of the heater.

13. The combination of a heater; a chemical-supply; a filter; a conduit having a closed hood vented at the top covering the inlet to the conduit, and opening below the water-line near the filter-bed, and a loaded valve having a resistance greater than the normal resistance of the filter.

14. The combination of a heater; a chemical supply and feeder; a filter; and means for automatically supplementing the outflow from the filter by an increment of chemically-treated but unfiltered water.

15. The combination of a chemical water purifier and heater; a horizontal filter; and means for automatically and adjustably supplementing the outflow from the filter with an increment of chemically-treated but unfiltered water.

16. The combination of a filter and a submerged by-pass about the filter containing a resistance.

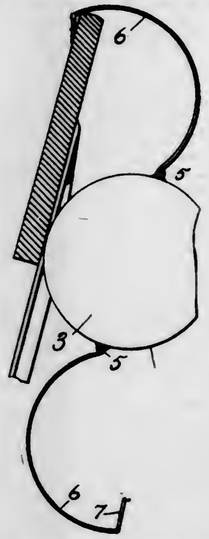
17. The combination of a filter, a submerged by-pass about the filter containing a resistance adapted to be overcome as the resistance of the filter increases.

18. The combination of a filter, a submerged by-pass about the filter, and means for automatically regulating the flow through the by-pass.

19. The combination of a filter, a submerged by-pass about the filter and means on the by-pass for automatically regulating the flow through the by-pass.

20. The combination of a filter, means for regulating the supply of water to the filter, and a submerged by-pass about the filter adapted to operate automatically when the water-level is above the normal.

823,213. **COMBINED HOOK AND BOX.** ELSIE E. GIBSON, San Francisco, Cal. Filed July 6, 1904. Serial No. 215,559.



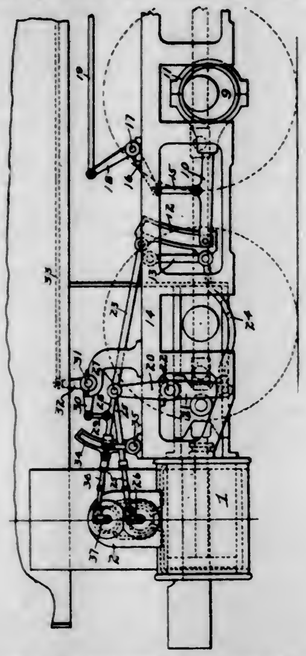
Claim.—1. An article of the character described, comprising a casing in the form of a closed curve, a lid hinged to the edge of the casing and adapted to be folded against the said edge to close the corresponding end thereof, and hooks hinged to said casing transversely thereto or at right angles to the first hinge, and adapted to lie along their whole length snugly against the curved side of the casing, and extending each substantially half-way around the same, substantially as described.

2. An article of the character described, comprising a substantially cylindrical casing, a lid hinged to the edge of the casing and adapted to be folded against said edge to close the corresponding end thereof, and hooks hinged to said casing transversely thereto or at right angles to the first hinge, and adapted to lie along their whole length snugly against the curved side of the casing, and extending each substantially half-way around the same, said casing having recesses to receive the ends of the hooks, and the free ends of the hooks being bent sharply inward, substantially as described.

823,214. **ROTARY VALVE MECHANISM.** EVANDER C. GODDARD, Peru, Ind. Filed June 23, 1905. Serial No. 266,615.

Claim.—1. In a rotary valve mechanism for locomotives or other steam-engines, the combination with a rotary admission-valve,

of a cut-off link to vary the movement of said valve and thereby vary the expansion of the steam behind the piston, double rocker-arms, connections between the cut-off link and said rocker-arms, a reversing-link which is operated from an eccentric on a driven axle and connections between said reversing-link and said rocker-arms.



2. In a rotary valve mechanism for locomotives and other steam-engines, the combination with a cylindrical rotary admission-valve, of a cut-off link to vary the movement of said valve, rocker-arms, connections between said cut-off link and said rocker-arms, and means for adjusting the positions of the connections between the cut-off link and the rocker-arms whereby the proper movements of the valve are obtained.

3. In a rotary valve mechanism of the type specified, the combination with a rotary admission-valve, of a cut-off link to vary the movements of said valve, rocker-arms, connections between said rocker-arms and the cut-off link, means for adjusting the position of said connections to vary the movements of the valve, a reversing-link, connections between said reversing-link and said rocker-arms, and an eccentric driven from an axle and connected with said reversing-link.

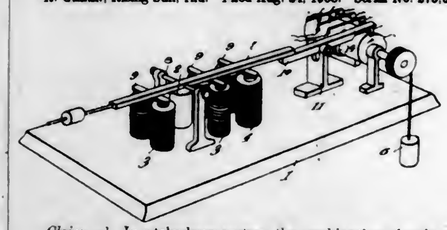
4. In a rotary valve mechanism, the combination with a rotary admission-valve and a similar exhaust-valve, rocker-arms, means interposed between said rocker-arms and said valves for imparting different movements to said valves, and a pivotal cut-off link with means for varying the connections therewith between said cut-off link and the admission-valve whereby the movements of the admission-valve may be varied.

5. In a rotary valve mechanism, the combination with rotary admission and exhaust valves, of double rocker-arms operated from one eccentric, connections between said rocker-arms and said valves whereby the admission-valve may be given variable movement while the exhaust-valve is given a definite movement.

6. In a rotary valve mechanism, the combination with rotary admission and exhaust valves, of a single eccentric, a reversing-link connected with said eccentric, a double rocker-arm, connections between said reversing-link and the upper and lower arms of said double rocker-arms, connections between the upper arm of said double rocker-arms and the admission and exhaust valves, and means interposed in the connections between the admission-valve and the rocker-arms for varying the movements of said admission-valve.

7. In a rotary valve mechanism, the combination with rotary admission and exhaust valves, rocker-arms, an eccentric, connections between said rocker-arms and said eccentric, connections between the upper arm of the rocker-arms and the exhaust-valve, connections between the upper arm of said rocker-arms and the admission-valve, said connections being upon a common pivot which connects with the upper arm of the rocker-arms, the connections with the admission-valve consisting of a cut-off link, and means interposed between said cut-off links and the rocker-arms for adjusting the positions of the connections between said rocker-arms and said cut-off link whereby the movement of the admission-valve is regulated to vary the expansion of steam admitted behind the piston.

823,215. **TELEPHONE SYSTEM.** CALVIN R. GREEN and DAVID R. GREEN, Rising Sun, Ind. Filed Aug. 24, 1905. Serial No. 275,645.



Claim.—1. In a telephone system, the combination of main and party lines, an electromagnet included in the main line, a separate electromagnet arranged to be included in either the main or the party line, a series of circuit-closers, a circuit-controller normally acted upon by a force, a detent for normally holding said circuit-controller in restraint against the force normally tending to move the same, an electrically-controlled releasing mechanism for liberating the circuit-controller to permit automatic actuation thereof, substantially as set forth.

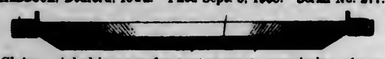
2. In a telephone system, the combination of main and party lines, circuit-closers therefor including a series of fixed and movable contacts, a circuit-controller for the movable contacts constructed to break certain circuits and to establish certain other circuits, means normally tending to move said circuit-controller, restraining means therefor, and separate electromagnets included in the main and party lines to be energized to effect release of the circuit-controller from the restraining device, substantially as specified.

3. In combination, main and party lines, a series of circuit-closers therefor comprising fixed and movable contacts, a circuit-controller normally acted upon by a force and comprising differential lifts or cam portions to effect unequal movement of the shiftable contacts, means for normally holding the circuit-controller in restraint, and an electrically-controlled releasing mechanism to effect liberation of said circuit-controller, substantially as specified.

4. In combination, main and party lines, circuit-closers therefor comprising fixed and movable contacts, a circuit-controller normally acted upon by a force and having differential cam portions or lifts and provided with corresponding stops, a detent coöperating with said stops to hold the circuit-controller in the predetermined position, and an electrically-controlled releasing mechanism to effect liberation of said detent-lever to permit establishing of the circuits and a resetting of the several parts in one complete movement of said circuit-controller.

5. In combination, main and party lines, a multiple electromagnet included in one line, a separate electromagnet adapted to be included in either of the lines, a circuit-controlling mechanism for throwing the circuits into and out of action, and a permanent magnet arranged between the members of the multiple electromagnet for polarizing the same to admit of selection being made when it is required to cut one of a series of circuits into the main circuit.

823,216. **BAKING-PAN FOR PASTRY-CRUSTS.** MARGARET C. HADDOCK, Bedford, Iowa. Filed Sept. 5, 1905. Serial No. 277,063.



Claim.—A baking-pan for pastry-crusts, consisting of two similar sheet-metal sections adapted to fit one within the other, with means for clamping the sections together upon an intervening layer of dough, substantially as described.

823,217. **CIGARETTE-ROLLER.** OSCAR F. HANNAH, Leechburg, Pa. Filed Nov. 25, 1905. Serial No. 289,094.

Claim.—1. A cigarette-roller comprising a casing provided with an apron contacting surface, a rocking tension device, an apron arranged between the contacting surface and the tension device, said tension device operated by a pull upon the apron, substantially as set forth.



2. A cigarette-roller comprising a casing, a rocking tension device comprising end pieces connected by cross-rods, an apron arranged between a portion of the casing and a cross-rod, said tension device operated by a pull upon the apron, substantially as set forth.

3. A cigarette-roller compirising a body portion, a traveling apron, guide-rollers, a rocking tension device, said apron arranged to pass under the tension device and over the guide-rollers, substantially as set forth.

4. A cigarette-roller comprising a casing having end pieces formed with slots or openings, a traveling apron, movable guide-rollers arranged to be moved in the slots or openings, a tension device, said apron arranged to be passed under the tension device and over the guide-rollers, substantially as set forth.

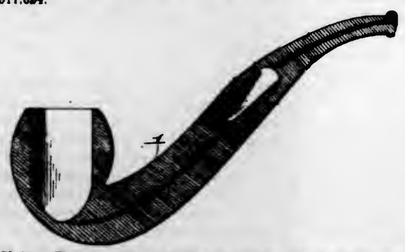
5. A cigarette-roller comprising a casing formed with longitudinal ledges, a traveling apron, guide-rollers, a tension device, said apron arranged to pass between the tension device and the ledges and over the guide-rollers, substantially as set forth.

6. A cigarette-roller comprising a casing having longitudinal ledges or supports and end pieces formed with slots, a traveling apron, movable guide-rollers arranged to be moved in the slots, a tension device, said apron arranged between the tension device and the ledges or supports and over the guide-rollers, substantially as set forth.

7. A cigarette-roller comprising a casing having end pieces formed with slots terminating in a downward looped portion constituting roller-guides, rollers arranged to be moved in said guides, a traveling apron, and a rocking extension device, substantially as set forth.

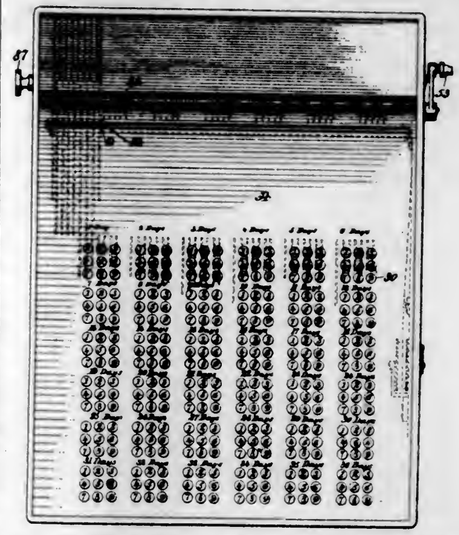
8. A cigarette-roller comprising a body portion formed of a single piece of metal having end pieces formed with slots terminating in a looped portion, a traveling apron, guide-rollers arranged to be moved in the slotted end pieces, a rocking tension device and a removable lid or cover, substantially as set forth.

823,218. **PIPE.** WILLIAM J. HAYES and JULIUS FERNANDEZ, Brooklyn, N. Y. Filed May 5, 1905. Renewed May 18, 1906. Serial No. 317,694.



Claim.—The herein-described pipe having the mouthpiece detachably coupled to its stem, the mouthpiece and the stem being each provided with a bore and with a counterbore, the said counterbores being at the meeting ends of the stem and mouthpiece to form a chamber at the point where they are coupled and extending across the joint between them, the bore of the mouthpiece communicating with the upper side of the upper end of said chamber, and the receptacle fitted in and filling the said chamber, said receptacle being closed at the end nearest the pipe-bowl, open at the opposite, upper end, having its upper side shortened at said open upper end, and having a passage on its upper side extending from the bore of the stem to the shortened upper end of the receptacle, said shortened upper end of the receptacle forming a gap between the said passage and the bore of the mouthpiece, for the purpose set forth, said receptacle extending across the joint between the stem and the mouthpiece and projecting beyond the outer end of the stem when the mouthpiece is removed.

823,219. **CALCULATING-MACHINE.** HUBERT A. HENSLEY, New Rochelle, N. Y. Filed Oct. 20, 1903. Serial No. 177,745.



Claim.—1. In a calculating-machine, the combination with counting mechanism, of digit-indicating devices, each denoting a certain number to be multiplied, and mechanism controlled thereby, including an element denoting a predetermined multiplier, for multiplying the selected number by said predetermined multiplier.

2. In a calculating-machine, the combination with counting mechanism, of a plurality of groups of digit-indicating devices, each denoting a certain number to be multiplied, each group being provided with mechanism for multiplying a selected number by a predetermined multiplier, the multipliers of the several groups differing from each other.

3. In a calculating-machine, the combination with a plurality of groups of digit-indicating devices, each denoting a certain number to be multiplied, of counting mechanism, and a traveling carriage on which the mechanism is mounted, whereby such counting mechanism may be brought into position to be operated by any of said groups.

4. A calculating-machine comprising a casing, a carriage movable therein, a plurality of counting-disks, a plurality of depressible keys, and means, including a serrated plate carried by each key, interposed between the keys and the counting-disks and operated by the depression of the keys for causing a predetermined number to be indicated by the counting-disks.

5. A calculating-machine comprising a casing, a movable carriage, counting mechanism, a key, and calculating means including means representing time and other means representing rate per cent. interposed between the key and the counting mechanism adapted upon the operation of the key, to calculate a desired proportion of a determined amount, such proportion being indicated by the counting mechanism.

6. A calculating-machine comprising a casing, a carriage therefor, means for imparting movement to the carriage, a shaft extending through the carriage, counting-disks on the shaft, and means for calculating a desired proportion of a predetermined amount and causing said proportion to be exhibited by the counting-disks, said last-mentioned means including means representing a definite period of time.

7. A calculating-machine comprising a casing, a carriage movable therein, a plurality of counting-disks, groups or series of depressible keys, a serrated plate carried by each key, and means for causing a predetermined number to be indicated by the counting-disks, such means including mechanism adapted to be placed in operation by contact of certain of the serrations of one of the plates with such mechanism, and means for rotating the disks.

8. A calculating-machine comprising a casing, a carriage movable therein, a shaft extending through said casing, counting devices within the casing, and means for operating said devices to cause a

certain number to be indicated thereby, said means including a movable key, an element having serrations of different length carried by the key, a bar in the casing adapted to be actuated by the movement of the key, means interposed between the bar and the counting devices designed to be actuated by the movement of the bar for selecting the number to be shown, and means for causing the counting devices to be rotated to cause the predetermined selected number to appear at the opening in the casing.

9. A calculating-machine comprising a casing, a carriage movable therein, counting devices within the casing, and means for operating said devices to cause a certain number to be indicated, such means including a depressible key, a serrated plate carried by said key, a bar within the casing designed to be moved by contact with a serration of the plate, a pivoted lever arranged to be moved by said bar, a pusher-rod actuated by said lever, means actuated by the movement of the rod for selecting the number to be indicated, and means for actuating the counting devices to cause said selected number to appear at an opening within the casing.

10. A calculating-machine comprising a casing, a carriage movable therein, counting devices within said casing, and means for operating said devices to cause a certain number to be indicated, such means comprising a depressible key, a serrated plate carried by said key, a bar within the casing designed to be moved by contact with a serration of the plate, a pivoted lever adapted to be moved by said bar, a pusher-rod actuated by said lever, a sliding toothed bar mounted on the carriage and adapted to be moved by the pusher-rod, means for engaging with certain of the teeth of the sliding bar for holding the latter against movement, and means for rotating the counting devices to cause a certain number to appear at an opening within the casing.

11. A calculating-machine comprising a casing, a carriage movable therein, a shaft journaled in said casing, counting devices carried by said shaft, a second shaft journaled in said casing, and means for causing a predetermined number to be indicated by the counting devices, said means including a key-actuated element having projections of different length for selecting the number to be indicated, and mechanism between the second-mentioned shaft and the counting devices and put into operation by the rotation of said second shaft, whereby such predetermined number will be caused to appear at an opening in the casing.

12. The combination with a casing and a movable carriage therefor, of a shaft journaled in said casing, counting-disks carried by said shaft and designed to be moved along said shaft with the travel of the carriage, key-actuated means for selecting a certain number on one of said counting-disks, a second shaft journaled in the casing, means for rotating the second shaft, mechanism interposed between the second shaft and the counting-disks for causing certain of said disks to be rotated to exhibit a number previously determined upon, and means for moving certain other of said disks to add to the number selected.

13. The combination with a casing and a movable carriage therefor, of a shaft journaled in said casing, counting-disks carried by said shaft and adapted to be moved along the shaft with the travel of the carriage, key-actuated means for selecting a certain number on one of the counting-disks, a second shaft, an eccentric mounted on the second shaft, and mechanism interposed between the eccentric and the counting-disks and operated by the movement of the eccentric and its shaft to engage with the counting-disks and cause the predetermined number to appear.

14. The combination with a casing, a movable carriage and counting-disks, of means for causing a certain number to be exhibited by said disks, such means including mechanism for selecting said number, and means for rotating the counting-disks to cause said number to appear at an opening in the casing, said latter means comprising a rotatable shaft journaled in the casing, an eccentric mounted on the shaft, and a toothed sliding bar operated by the movement of the eccentric and adapted to engage with a certain one of said counting-disks, the construction being such that said disk will be turned by the toothed bar to cause the number to appear at an opening in the casing.

15. The combination of a casing, a carriage movable therein, counting-disks, key-actuated means for selecting a certain number on one of the counting-disks, mechanism for rotating the counting-disk to cause said number to appear at an opening in the casing, such mechanism including a pivoted lever, a depressible bar coacting therewith, and a sliding bar movable by contact with the lever, and means for actuating certain other of said counting-disks to add to the said number, such means including a tripping and holding device pivoted to the carriage and adapted to engage with a counting-disk, and means for releasing and operating the tripping and holding device to cause certain of the disks to rotate.

16. The combination of a casing, a carriage movable therein, counting-disks within the casing, means for selecting a number on one of said counting-disks, such means comprising an element having a determined value in connection with the number selected, means for causing such number to appear at any opening in the casing, and means for adding a number to the selected number, such means including a tripping and holding device pivoted to the carriage, a shaft journaled in the carriage adjacent to the tripping and holding devices, means carried by the shaft adapted to engage with the device to throw the same into engagement with the counting-disks and cause said device to move the disks to exhibit the number, and a stop-pin adapted to contact with the tripping and holding device for releasing the latter and permitting it to return to its normal position.

17. A calculating-machine comprising a casing, a carriage movable therein, means for imparting a step-by-step movement to the carriage and locking the latter after each step, counting devices within the casing and movable with the carriage, means for selecting a certain number on said counting devices, means for causing the movement of said devices to expose a certain number, said means including a shaft journaled in the frame, means actuated by the rotation of the shaft for moving the devices, and means for adding a number to the number first exhibited by the devices, such adding means including a tripping device, means for actuating said tripping device to cause the latter to engage with the counting devices and move the last-mentioned devices to expose a new number, gearing between the rotatable shaft and the trip-actuating means for operating the latter, and means for returning the tripping device to its normal position.

18. A calculating-machine comprising a casing, a movable carriage, counting-disks, mechanism expressive of a percentage or proportion of a determined amount adapted to be placed in operative connection with said disks, means for actuating the disks to cause such proportion or percentage to be exhibited, and means for causing additions of other numbers or expressions to be made to the proportion or percentage expression first shown on the disks, said latter means comprising a device adapted to engage with certain of the disks, and means for actuating the device to cause the rotation of the disk engaged.

19. The combination of a casing, a movable carriage therefor, a plurality of movable counting-disks, means for actuating certain of said disks to cause a desired number to be exhibited by the disks, and mechanism, adapted on a subsequent operation of the machine, to cause additions to be made to the number first exhibited by the disks, such mechanism including a horizontally-disposed shaft provided with a plurality of projecting pins, a tripping device, comprising a pivoted bar and an angular, toothed pawl pivoted to the bar and arranged between the pin-carrying shaft and the disks and adapted to be moved by the shaft into engagement with the disks for turning the latter, and means for returning the tripping device to its normal position.

20. The combination of a casing, a carriage movable therein, counting-disks within the casing, means for selecting a certain number upon the counting-disks, means for causing said number to appear at an opening within the casing, and means for adding a number to the first-mentioned selected number, said means including a tripping device mounted on the movable carriage, said tripping device having a pivoted, spring-pressed pawl at one end, and means for actuating the tripping device to move the pawl into engagement with certain of the disks, said means including a revoluble shaft mounted on the carriage, and pins carried by said shaft designed to engage with and actuate the tripping device.

21. In a calculating-machine the combination of a counting device, and means, including a plate having a constant or fixed mathematical value representing the amount of interest on a predetermined amount of principal for a specified time, adapted to coöperate with said counting device.

22. In a calculating-machine, the combination of counting mechanism, and means coöperating with said counting mechanism to cause a desired amount of interest to be indicated by the latter, said means including mechanism capable of expressing an amount of interest, on a determined principal, at a desired rate, for a specified time.

23. In a calculating-machine, the combination of a counting device, and means including an element provided with members adapted to actuate the counting device to cause the latter to express a predetermined amount, each of said members of the element having a constant mathematical value.

24. In a calculating-machine, the combination of a counting device, and mechanism, including a serrated plate adapted to actuate the counting device to cause the latter to express a predetermined amount, each serration of the plate having a constant mathematical value.

25. The combination of counting mechanism, and means for calculating the interest on a determined amount of principal, for a period of time, adapted to coöperate with said counting mechanism, said means including means representing the time, and other means representing the rate per cent.

26. The combination of movable digit-carriers, and mechanism for computing or calculating the required interest on any amount of principal, for a desired period of time, coöperating with and affecting the digit-carriers to cause such amount of interest to be indicated by said carriers, such mechanism including means representing the rate per cent.

27. The combination of movable digit-carriers, a key, and interest-calculating mechanism interposed between the key and the digit-carriers and adapted, when operated, to calculate a desired amount of interest upon a predetermined amount for a period of time, and cause such interest to be indicated by the carriers, such interest-calculating mechanism including means representing time and other means representing rate per cent.

28. The combination of movable digit-carriers, a depressible key carrying an element having a determined value in connection with a predetermined amount, and mechanism interposed between the element and the digit-carriers adapted to coöperate with said element to calculate a desired proportion of a predetermined amount, and to cause such proportion to be indicated by the carriers.

29. The combination of a counting device, and means including a plate having projections of relatively different length adapted to calculate a desired amount of interest on a determined amount and cause such interest to be indicated by the counting device, each member of the element having a constant value.

30. The combination of a rotatable counting device, a key, and interest-calulating means interposed between the key and the counting device adapted when the key is actuated to automatically compute a desired amount of interest for any desired period of time on a determined amount and cause such interest to be indicated by the counting device, such means including means representing the time and other means representing the rate per cent.

31. The combination of a counting device, a movable key, and mechanism including an element carried by said key and movable therewith for calculating a desired amount of interest upon a predetermined amount, and causing said interest to be indicated by the counting device.

32. The combination of a counting device, a key, an element operated by said key, such element having a constant or fixed mathematical value as a proportion of a predetermined amount, and means for causing the constant or fixed mathematical value of the element to be indicated by the counting device when the key is actuated.

33. The combination of movable digit-carriers, a movable element having a constant mathematical value indicative of the interest of a determined amount, and operating mechanism for causing the value of the element to be indicated by the carriers.

34. The combination of counting devices, series or groups of depressible keys, a serrated plate carried by each key, each plate having a constant mathematical value, and mechanism interposed between the plates and the counting devices to cause the latter to express a predetermined number.

35. The combination of counting devices, a series or group of movable keys, each key having a constant value in connection with a determined amount, and mechanism interposed between the keys and counting devices to operate the latter and cause a proportion of the determined amount to be exhibited, such proportion depending on the key moved.

36. The combination of counting devices, a series of movable keys, each key having a constant determined value in connection with a predetermined amount, and mechanism including an element carried by each key adapted to calculate a desired amount of interest upon the determined value first mentioned, and operate the counting devices to cause the latter to indicate said interest amount.

37. The combination of counting devices, a series of movable keys, an element carried by each key, each element having serrations of relatively different length, each serration having a constant or fixed value, and means interposed between each element and the counting devices, designed to actuate the latter and cause the counting devices to express an amount dependent upon the valuation of the serrations of the element carried by the key moved.

38. The combination of a casing, a carriage movable therein counting devices movable with the carriage, a depressible key, an element controlled by said key and having a constant or fixed value expressive of a proportion of a determined amount, and mechanism interposed between the element and the counting devices for causing the constant or fixed value of the element to be indicated by said counting devices.

39. The combination of a casing, a carriage movable therein, a plurality of rotatable counting-disks movable with the carriage, means for imparting a step-by-step movement to the carriage, a series of depressible keys, an element carried by each key, which element has a constant or fixed value as a proportion of a determined amount, a connection between the elements and the counting-disks, and means for rotating the disks to cause the constant or fixed value of the elements to be indicated thereby.

40. In a calculating-machine the combination of a counting device, mechanism for calculating a desired amount of interest of a predetermined amount and causing such amount of interest to be indicated by the counting device, and means for transferring or adding the interest expression to a second interest expression obtained upon a subsequent operation of the machine.

41. In a calculating-machine the combination of a plurality of digit-carriers, means including key-actuated mechanism for calculating a desired amount of interest upon a determined amount of principal and causing such amount of interest to be expressed by the digit-carriers, and means for adding or transferring said interest expression to a second interest expression obtained upon a subsequent operation of the machine.

42. The combination of a counting device, and actuating devices for said counting device, indications for said actuating devices representing amounts or principals, and means between the actuating devices and the counting device which when operated by the actuating devices for any principal, cause the amount of interest on said principal at a determined rate for a specified time to be indicated by the counting device.

43. The combination of a counting device, a group of keys, indications for said keys, representing amounts or principals, and means between the keys and the counting device adapted to be placed in operation by said keys to coöperate with the counting device to cause the amount of interest on the principal at a determined rate for a specified time to be indicated by the counting device.

44. The combination of a counting device, means for calculating the amount of interest on a selected amount or principal, at a determined rate for a specified time, such means including means representing the time and means representing the rate per cent. and means for placing the calculating means in coöperation with the counting device to cause the latter to indicate the amount of interest desired.

45. The combination of a casing, counting devices, a group of keys, the group as a whole having a character indicating a specified period of time, each key of the group being designated by a numeral, and mechanism interposed between the groups of keys and the counting devices to cause the amount of interest on a selected amount or principal, at a determined rate for a specified time to be exhibited by the counting devices.

46. The combination of a counting device, a depressible key, means including an element carried by said key for calculating the amount of interest on a selected principal, at a determined rate for a specified time, and operating the counting devices to cause such amount of interest to be indicated by the latter, and means for adding or transferring the first-mentioned amount of interest expression by the counting device, to a second interest expression obtained on a subsequent operation of the machine.

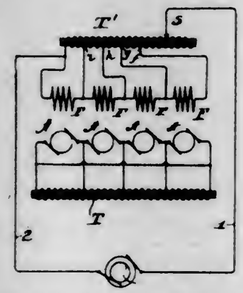
47. In an interest-calculating machine, the combination of a counting device, means representing amounts or principals, means representing rate per cent., and other means representing a specified period of time.

823,220. CIRCUIT CONNECTION FOR AND METHOD OF OPERATING ALTERNATING MOTORS. DUGALD C. JACKSON, Madison, Wis. Filed May 16, 1904. Serial No. 208,063.

Claim.—1. The combination with a plurality of alternating-current motors connected serially in a circuit bridging between the limbs of an alternating-current circuit, of means for maintaining, at the several motors, fixed proportions of the pressure impressed on the series.

2. The combination with an alternating-current circuit, of a plurality of serially-connected motors jointly driving a load, and means

for maintaining the total impressed pressure proportionately divided between said motors.



3. The combination with a plurality of alternating-current motors connected serially in a circuit bridging between the limbs of an alternating-current circuit, of an autotransformer for dividing the line-pressure proportionately between said motors.

4. The combination with a plurality of alternating-current motors connected serially in a circuit bridging between the limbs of an alternating-current circuit, of transformer means for dividing the line-pressure proportionately between windings of said motors.

5. The combination with a plurality of alternating-current motors connected serially in a circuit bridging between the limbs of an alternating-current circuit, of autotransformer means for dividing the line-pressure proportionately between windings of said motors.

6. The combination with a plurality of alternating-current motors connected serially in a circuit bridging between the limbs of an alternating-current circuit, of transformer means for dividing the line-pressure proportionately between the fields of said motors, and transformer means for dividing the pressure proportionately between the armatures of said motors.

7. The combination with a plurality of alternating-current motors connected serially in a circuit bridging between the limbs of an alternating-current circuit, of an autotransformer for dividing the line-pressure proportionately between the fields of said motors, and an autotransformer for dividing the pressure proportionately between the armatures of said motors.

8. The combination with an autotransformer having its winding connected between the limbs of an alternating-current circuit, of a plurality of motors connected serially together, terminals of said motors being connected with appropriate intermediate points on said autotransformer-winding.

9. The combination with a transformer having a winding connected between the limbs of an alternating-current circuit, of a plurality of motors connected serially together, the terminals of said motors being connected with appropriately-separated points on a winding of said transformer.

10. The combination with a plurality of alternating-current motors connected serially together, the terminals of said motors being connected with appropriate points on a winding of a transformer, and means for including more or less of a winding of said transformer in circuit between the limbs of an alternating-current circuit.

11. The combination with an autotransformer, of a plurality of alternating-current motors connected serially together, the terminals of said motors being connected with appropriate points on the autotransformer-winding, and means for including more or less of said winding serially in circuit with the line-limbs of an alternating-current circuit.

12. The combination with a plurality of alternating-current motors, of electromagnetic means for maintaining at the several motors fixed proportions of the total load delivered by the circuit.

13. The combination with the winding of a transformer, of a plurality of alternating-current motors connected serially together, terminals of said motors being connected with appropriate points on said winding, and switching means for including more or less of said winding in circuit with the limbs of an alternating-current-supply circuit.

14. The combination with a plurality of alternating-current motors connected together and in circuit with the limbs of an alternating-current-supply circuit, of means for dividing the line-pressure proportionately between said motors, and means for increasing the pressure across said motors above that of the line.

15. The combination with a plurality of alternating-current motors connected serially together and with the limbs of an alternating-current-supply circuit, of transformer means for dividing the line-pressure proportionately between said motors, and means for varying the pressure across said series of motors.

16. The combination with a plurality of alternating-current motors connected serially together and with the limbs of an alternating-current-supply circuit, of an autotransformer for dividing the pressure proportionately between said motors, and means for varying the pressure across said series of motors.

17. The combination with an autotransformer, of a series of motors connected together in bridge about part or all of said autotransformer-winding, intermediate terminals of said motors being connected with appropriate intermediate points of the transformer-winding, and means for including different portions of said transformer-winding in circuit between the limbs of an alternating-current-supply circuit.

18. The combination with an autotransformer, of a series of motors connected serially together and bridged about part or all of said autotransformer-winding, intermediate terminals of said motors being connected with appropriate intermediate points on the transformer-winding, and switching means for including different lengths of said transformer-winding in circuit between the limbs of an alternating-current-supply circuit.

19. The combination with a transformer connected with an alternating-current-supply circuit, of a series of alternating-current motors connected serially together, each motor of the series being bridged across an appropriate part of a winding of said transformer, and means for varying the pressure in said transformer-winding.

20. The combination with a transformer connected with an alternating-current-supply circuit, of a series of alternating-current motors connected serially together, each motor of the series being bridged across an appropriate part of a winding of said transformer, and means for changing the points or a point on a winding of the transformer at which the said supply-circuit connects with the said transformer-windings.

21. The combination with an autotransformer connected with an alternating-current-supply circuit, of a plurality of alternating-current motors, the fields of said motors being serially connected together and the terminals thereof connected with appropriate points on the transformer-winding, and an independent circuit connected with the armatures of said motors.

22. The combination with a plurality of alternating-current motors, of an autotransformer, the fields of said motors being connected serially together and the terminals thereof being connected with appropriate points on the autotransformer-winding, an alternating-current-supply circuit, means for including any part of said winding in said supply-circuit, the armatures of said motors being connected serially together, and an additional autotransformer connected from appropriate points with the terminals of said armatures.

23. The combination, with a plurality of alternating-current motors connected serially together in an alternating-current circuit, of an autotransformer, and parts of the winding of said transformer, one of the said parts being bridged at about a winding or windings of each motor.

24. The combination, with a plurality of alternating-current motors connected serially together in an alternating-current circuit, of an autotransformer, parts of the winding of said transformer, one of said parts being bridged about a winding or windings of each motor, and means for varying the pressure per unit of length impressed on said transformer-winding.

25. The method of operating a group of alternating-current motors connected serially together, which consists in subjecting each motor to the influence of part of an inductive winding to proportion the pressure between the motors, and varying the pressure across said group of motors.

26. The method of operating a group of alternating-current motors connected serially in circuit, which consists in subjecting said motors to the influence of interrelated inductve windings to equalize or to proportion the pressure between the motors, and varying the pressure across said motors by including more or less of the windings in the supply-circuit.

27. The method of causing motors which are connected together in series to deliver equal amounts of work, which consists in equalizing the pressure at the motors by subjecting each motor to the influence of an appropriate portion of inductance included in the supply-circuit.

28. The combination with a plurality of armature-windings of alternating-current dynamos, of means for maintaining a fixed proportion of the joint load on each armature-winding.

29. The combination of a load or interrelated loads to be driven by a plurality of alternating-current motors connected in series relation, and means for equalizing the electrical pressures applied to the individual motors.

30. The combination with an alternating-current circuit, of an autotransformer with its windings therein, and a plurality of motor-windings connected in series relation, the terminals of said motor-windings being conductively related with points on the winding of said autotransformer.

31. The combination for a polyphase alternating-current circuit, of an autotransformer with its winding relating to a phase, and a plurality of motor-windings connected in series relation, the terminals of said motor-windings being conductively related with points on the winding of the said autotransformer.

32. The combination with a polyphase alternating-curent circuit, of serially-connected motor-windings associated with each phase, and means independent of the motors for proportionally dividing the pressure of a phase between the windings associated therewith.

33. The method of compensating the load between a plurality of alternating-current motors with serially-connected windings, which consists in subjecting the series to the total working pressure, dividing the said pressure into proportional parts independently of the effect of the motors, and maintaining one of said parts impressed upon the windings of each motor.

34. The method of compensating the load between a plurality of alternating-current motors with serially-connected windings, which consists in subjecting the series to the total working pressure, dividing the said pressure into equal parts independently of the effect of the motors, and maintaining one of said parts impressed upon the windings of each motor.

35. The method of compensating the load between a plurality of alternating-current motors with serially-connected windings, which consists in subjecting the series to the total working pressure, dividing the said pressure into proportional parts by electromagnetic means independently of the effect of the motors, and maintaining one of said parts impressed upon the windings of each motor.

36. The method of compensating the load between a plurality of alternating-current motors with serially-connected windings, which consists in subjecting the series to the total working pressure, dividing the said pressure into equal parts by electromagnetic means independently of the effect of the motors, and maintaining one of said parts impressed upon the windings of each motor.

37. The method of simultaneously starting and controlling a plurality of alternating-current motors in series circuit which consists in subjecting the series to an electrical pressure, establishing a fixed division of the said total pressure into proportional parts, impressing a part upon each motor, and varying the total pressure.

38. The method of simultaneously starting and controlling a plurality of alternating-current motors in series circuit which consists in subjecting the series to an electrical pressure, establishing a fixed division of the said total pressure into equal parts, impressing part upon each motor, and varying the total pressure.

39. The method of simultaneously starting and controlling a plurality of alternating-current motors in series circuit which consists in subjecting the series to an electrical pressure, establishing division of the said total pressure into proportional parts by electromagnetic means, impressing a part upon each motor, and varying the total pressure.

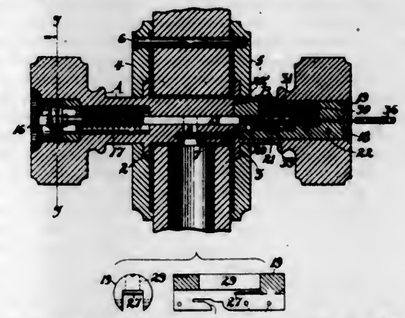
40. The method of simultaneously starting and controlling a plurality of alternating-current motors in series circuit which consists in subjecting the series to an electrical pressure, establishing a division of the said total pressure into equal parts by electromagnetic means, impressing a part upon each motor, and varying the total pressure.

41. The method of equalizing the load of alternating-current motors which consists in passing the current for each motor through inductive windings and causing the currents of each of the several motors to react on the circuit of each of the other motors.

42. The method of equalizing the load of alternating-current motors which consists in interlinking the circuits of the several motors by magnetic flux and thereby preventing an unproportional division of the power.

828,221. LOCK. JOHN JORGENSON, San Francisco, Cal., assignor of one-half to Augustus Quade, San Francisco, Cal. Filed Oct. 12, 1904. Serial No. 228,097.

Claim.—1. In a lock, the combination with a bolt, of a roll-back, a sleeve in which said bolt is movable, a spring normally operating to project the bolt outward beyond the sleeve, a link connected with the roll-back and with the end of the bolt and having a cross-head portion bearing on the end of the sleeve to limit the outward movement of the bolt, and means to operate the roll-back.



2. In a lock, the combination of a bolt, a roll-back, a flanged sleeve in which the bolt is operatable, a spring in said sleeve adapted to project the bolt normally outward, a link pivotally connected to the roll-back and to the bolt and having a cross-head portion bearing on the inner end of the sleeve, said link having a longitudinal slot in which the bolt-pivot is movable to permit of the retraction of the bolt independently of the roll-back and means to operate the roll-back.

3. In a lock, the combination with a roll-back, a locking mechanism connected therewith, of means for actuating said roll-back, said means including a knob-shank normally rotatable independently of the roll-back, a perforated locking member carried by the knob-shank and adapted to be engaged with the roll-back, tumbler devices operatable in the line of the perforations of said locking member, and means for moving said tumbler devices synchronously with the movements of said locking member.

4. In a lock, the combination with a roll-back and locking mechanism connected therewith, of a knob-shank rotatable independently of the roll-back, a perforated locking member reciprocal in the knob-shank and adapted to engage with the roll-back and tumbler members engageable in the perforations of said locking member and movable in unison with the latter.

5. In a lock, the combination with a roll-back and locking mechanism connected therewith, of a knob-shank rotatable independently of the roll-back, a perforated locking member reciprocal in the knob-shank and adapted to engage with the roll-back, tumbler means engageable in the perforations of said locking member and movable in unison with the latter, and means including a key having perforations corresponding with the perforations in the locking member to reciprocate the latter.

6. In a lock, the combination with a roll-back and locking mechanism connected therewith, of a knob-shank rotatable independently of the roll-back, a perforated locking member reciprocal in said knob-shank, tumbler devices operatable transverse to the line of reciprocation of said locking member and engageable with the perforations in the locking member and means to reciprocate the latter.

7. In a lock, the combination with a roll-back and locking mechanism connected therewith, of a knob-shank rotatable independently of the roll-back, a perforated locking member reciprocal in said knob-shank, tumbler devices operatable transverse to the line of reciprocation of said locking member and engageable with the perforations in the locking member, and means to reciprocate the latter, said last-named means including a key having perforations corresponding with the perforations in said locking member.

8. In a lock, the combination with a roll-back and locking mechanism operatable thereby, of a knob-shank rotatable independently of the roll-back, a perforated locking member reciprocal in the knob-shank and engageable with the roll-back, said locking member having a keyway intersecting the perforations therein, tumbler members engageable with said perforations and means to reciprocate the locking member.

9. In a lock, the combination with a roll-back and locking mechanism operatable thereby, of a knob-shank rotatable independently of the roll-back, a perforated locking member reciprocal in the knob-shank and engageable with the roll-back, said locking member having a keyway intersecting the perforations therein, tumbler members engageable with said perforations and means to reciprocate the locking member, said last-named means including a perforated key.

10. In a lock, the combination with a roll-back and locking mechanism operatable thereby, a knob-shank rotatable independently of the roll-back, a locking member reciprocal in the knob-shank and engageable with the roll-back, said locking member having a keyway and having perforations intersecting said keyway, tumbler members operatable in the line of said perforations, and means including a perforated key to operate said locking member.

11. In a lock, the combination with a locking mechanism including a roll-back, of a knob-shank rotatable independently of the roll-back, a reciprocating perforated member carried by the knob-shank and engageable with the roll-back, a perforated key having its perforations registrable with the perforations in the locking member, and tumbler members interposable in the path of the key and engageable with the perforations therein.

12. In a lock, the combination with a locking mechanism including a rotatable member, of a knob-shank rotatable independently of said member, a reciprocating perforated locking member carried by the knob-shank and engageable with the said rotatable member, a perforated key to operate said reciprocating member and having its perforations registrable with the perforations in the locking member, tumbler members interposable in the path of the key and engageable with the perforations therein, said key and locking member having lateral notches in addition to their perforations, and corresponding tumbler members engaging said notches.

13. In a lock, the combination of locking mechanism including a roll-back, an independently-rotatable knob-shank, a reciprocating locking member carried by the shank and provided with perforations, a perforated key to operate the reciprocating member said key having perforations registrable with the perforations in said member, and a plate supported independently of the locking member and having tumbler members interposable in the path of the key and engageable with the perforations therein.

14. In a lock, the combination of locking mechanism including a rotatable part, an independently-rotatable knob-shank, a reciprocating perforated locking member carried by the latter engageable with the said rotatable part, means for reciprocating said locking member, including a perforated key to project the member forward to engage the rotatable part, and tumbler members supported independently of the locking member and engageable with the perforations in the latter and in the key and having a limited movement in unison with the locking member.

15. In a lock, the combination with locking mechanism including a rotatable part, of an independently-rotatable member, a normally retracted latch-bolt carried by said member and engageable with the rotatable part, said latch-bolt having a keyway and perforations intersecting the keyway, a perforated key and tumbler members supported independent of the latch-bolt but engagable in the perforations therein and in the perforations in the key.

16. In a lock, the combination with locking mechanism including a rotatable part, of an independently-rotatable knob-shank, a bifurcated latch-bolt carried by the knob-shank and engageable with the said rotatable part, a keyway fitting the bifurcation in said bolt, stop means interposable in the path of the key and operatable transverse to the line of reciprocation of the bolt and protective means for the ends of the forks of said bolt.

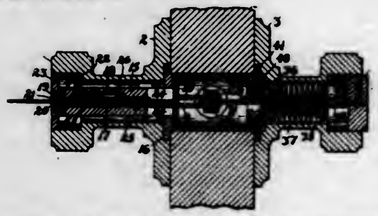
17. In a lock, the combination with locking mechanism including a rotatable part, of an independently-rotatable knob-shank, a latch-bolt reciprocal therein and engageable with the said rotatable part, said latch-bolt having keyway and perforations intersecting said keyway, a tumbler-plate reciprocal in unison with the latch-bolt and having projections interposable in the perforations in the bolt, means for reciprocating the bolt and means for giving the tumbler-plate a movement transverse to the line of reciprocation of said bolt to cause said projections to be projected across the keyway.

18. In a lock, the combination with a sliding latch-bolt provided with a keyway and having perforations intersecting said keyway, of a tumbler member supported independently of but movable with the bolt, said member operable across the keyway and having pins to engage said perforations.

19. In a lock, the combination with a sliding latch-bolt provided with a keyway and having perforations intersecting said keyway of a tumbler-plate supported independent of and movable transverse to the bolt and provided with projections registrable with the perforations in the bolt.

20. In a lock, the combination with a sliding latch-bolt provided with lateral notches and a keyway and having perforations intersecting the keyway, of a tumbler-plate provided with projections to engage said perforations and having other projections engaging the lateral notches in the bolt, and a key perforated and notched correspondingly with the projections on the tumbler-plate.

828,222. LOCK. JOHN JORGENSON, San Francisco, Cal., assignor of one-half to Augustus Quade, San Francisco, Cal. Filed June 7, 1906. Serial No. 264,097.



Claim.—1. In a lock, the combination of inner and outer hollow stationary knobs, a locking-bolt and separate actuators carried by each knob to retract the bolt, means to permit either of said actuators to operate independently of the other, and means to set one actuator to prevent the actuation of the other.

2. In a lock, the combination of outer and inner knobs, a locking-bolt, one of said knobs having a plurality of actuators operated by different means to reciprocate said bolt, and means carried by the inner knob to prevent the operation of one or both of said actuators.

3. In a lock, the combination of a locking-bolt, a knob supporting two actuators for said bolt, said actuators operable independently by different means, and means to permit the operation of only one of said actuators by its specific operating means.

4. In a lock the combination of a locking-bolt and operating means therefor, said operating means including a pair of actuators disposed on the same side of the bolt and engageable therewith, one of said actuators operable by a key only, and a key to operate said actuator.

5. In a lock, the combination of a locking-bolt and operating means therefor, said operating means including a pair of actuators disposed on the same side of the bolt and engageable therewith, one of said actuators operable by a key only, and a key to operate said actuator, and means to prevent the operation of the other.

6. In a lock, the combination of a locking-bolt and operating means therefor, said operating means including a pair of actuators disposed on the same side of the bolt and engageable therewith, one of said actuators operable by a key only, a key to operate said actuator, and means to prevent the operation of either of said actuators.

7. In a lock, the combination of inner and outer hollow, non-rotatable knobs, a locking-bolt, a plurality of actuators carried by one knob and engageable with the bolt to retract the same, said actuators operable by independent means, and an independent actuator carried by the other knob.

8. In a lock, the combination of inner and outer hollow, non-rotatable knobs, a locking-bolt, a plurality of actuators carried by one knob and engageable with the bolt to retract the same, said actuators operable by independent means, and an independent actuator carried by the other knob, means to set said independent actuator to prevent the operation of one of said other actuators.

9. In a lock, the combination of inner and outer hollow, non-rotatable knobs, a locking-bolt, a plurality of actuators carried by one knob and engageable with the bolt to retract the same, said actuators operable by independent means, an independent actuator carried by the other knob, and means to set said independent actuator to prevent the operation of either of said other actuators.

10. In a lock, the combination of inner and outer hollow, non-rotatable knobs, a locking-bolt, a plurality of actuators carried by one knob and engageable with the bolt to retract the same, said actuators operable by independent means, and an independent actuator carried by the other knob, said independent actuator mounted for both a rotative and reciprocating movement.

11. In a lock, the combination of inner and outer hollow, non-rotatable knobs, a locking-bolt, a plurality of actuators carried by one knob and engageable with the bolt to retract the same, said actuators operable by independent means, and an independent actuator carried by the other knob, said independent actuator mounted for both a rotative and reciprocating movement, and a non-reciprocating stop rotatable with said independent actuator and interposable in the path of one of the other actuators.

12. In a lock, the combination with inner and outer hollow, non-rotatable knobs, a locking-bolt, a pair of actuators carried by one of said knobs and reciprocal transverse to the bolt, said actuators operable by separate means, and one operable separably from the other, and means carried by the other knob to limit the movement of one or both of said actuators.

13. In a lock, the combination with inner and outer hollow, non-rotatable knobs, a locking-bolt, a pair of actuators carried by one of said knobs and reciprocal transverse to the bolt, said actuators operable by separate means, and one operable separably from the other, and means carried by the other knob to limit the movement of one or both of said actuators, said last-named means including an independent actuator interposable in the path of the first-named actuators.

14. In a lock, the combination with inner and outer hollow, non-rotatable knobs, a locking-bolt, a pair of actuators carried by one of said knobs and reciprocal transverse to the bolt, said actuators operable by separate means, and one operable separately from the other, and means carried by the other knob to limit the movement of one or both of said actuators, said last-named means including an independent actuator mounted for reciprocation and rotation, and a rotatable non-reciprocating part interposable in the path of one of the first-named actuators.

15. In a lock, the combination of a locking-bolt, a hollow knob, a carrier reciprocal in said knob, provided with an actuator engageable with the bolt, a second actuator supported by said carrier and movable independently thereof, and means to hold said bolt and actuators in normal operative relation to one another.

16. In a lock, the combination of a locking-bolt, a hollow knob, a carrier reciprocal in said knob, provided with an actuator engageable with the bolt, a second actuator supported by said carrier and movable independently thereof, and means to hold said bolt and actuators in normal operative relation to one another, said independently-operable actuator being provided with a keyway, and a key fitting said keyway.

17. In a lock, the combination of a locking-bolt, a hollow knob, a carrier reciprocal in said knob, provided with an actuator engageable with the bolt, a second actuator supported by said carrier and movable independently thereof, and means to hold said bolt and actuators in normal operative relation to one another, said independently-operable actuator being provided with a keyway, and means to prevent the actuation of the carrier to retract the bolt.

18. In a lock, the combination of a locking-bolt, a hollow knob, a carrier reciprocal in said knob, provided with an actuator engageable with the bolt, a second actuator supported by said carrier and movable independently thereof, means to hold said bolt and actuators in normal operative relation to one another, said independently-operable actuator being provided with a keyway, and means to prevent the operation of either of said actuators.

19. In a lock, the combination of a locking-bolt, a hollow knob, a carrier reciprocal in said knob, provided with an actuator engageable with the bolt, a second actuator supported by said carrier and movable independently thereof, means to hold said bolt and actuators in normal operative relation to one another, said independently-operable actuator being provided with a keyway, and means to prevent the operation of either of said actuators, said last-named means including a part interposable in the path of one of said actuators.

20. In a lock, the combination of a locking-bolt, a hollow knob, a carrier reciprocal in said knob, provided with an actuator engageable with the bolt, a second actuator supported by said carrier and movable independently thereof, means to hold said bolt and actuators in normal operative relation to one another, said independently-operable actuator being provided with a keyway, and means to prevent the operation of either of said actuators, said last-named means including a part non-interposable in the path of both of said actuators.

21. In a lock, the combination of a locking-bolt, a hollow knob, a carrier reciprocal in said knob, provided with an actuator engageable with the bolt, a second actuator supported by said carrier and movable independently thereof, means to hold said bolt and actuators in normal operative relation to one another, said independently-operable actuator being provided with a keyway, and means to prevent the operation of either of said actuators, said last-named means including a reciprocating rotatable wedge-shaped member.

22. In a lock, the combination of a locking-bolt, a hollow knob, a carrier reciprocal in said knob, provided with an actuator engageable with the bolt, a second actuator supported by said carrier and movable independently thereof, means to hold said bolt and actuators in normal operative relation to one another, said independently-operable actuator being provided with a keyway, and means to prevent the operation of either of said actuators, said last-named means including a reciprocating rotatable wedge-shaped member, and a non-reciprocating part rotatable with said member.

23. In a lock, the combination of a locking-bolt, a hollow knob, a carrier reciprocal in said knob and provided with an actuator to engage said bolt to operate the same, another actuator slidably supported in said carrier and operable independently of the first-named actuator, said independent actuator having a keyway and tumbler mechanism interposable in the keyway.

24. In a lock, the combination of a locking-bolt, a hollow knob, a carrier reciprocal in said knob and provided with an actuator to engage said bolt to operate the same, another actuator slidably supported in said carrier and operable independently of the first-named actuator, said independent actuator having a keyway and tumbler mechanism in the keyway, said tumbler mechanism including a tumbler-plate movable in cam-guides in the carrier and provided with pins fitting perforations in the keyway portion of said actuator and intersecting the keyway.

25. In a lock, the combination of a locking-bolt, a hollow knob, a carrier reciprocal in said knob and provided with an actuator to engage said bolt to operate the same, another actuator slidably supported in said carrier and operable independently of the first-named actuator, said independent actuator having a keyway and tumbler mechanism in the keyway, said tumbler mechanism including a tumbler-plate movable in cam-guides in the carrier and provided with pins fitting perforations in the keyway portion of said actuator and intersecting the keyway, and means to prevent the operation of either of said actuators.

26. In a lock, the combination of a locking-bolt, a hollow knob, a carrier reciprocal in said bolt and provided with an actuator to engage said bolt to operate the same, another actuator slidably supported in said carrier and operable independently of the first-named actuator, said independent actuator having a keyway and tumbler mechanism in the keyway, said tumbler mechanism including a tumbler-plate movable in cam-guides in the carrier and provided with pins fitting perforations in the keyway portion of said actuator and intersecting the keyway, and means to prevent the operation of either of said actuators, said last-named means including a wedge member interposable in the path of said actuators.

27. In a lock, the combination of a locking-bolt, a hollow knob, a carrier reciprocal in said bolt and provided with an actuator to engage said bolt to operate the same, another actuator slidably supported in said carrier and operable independently of the first-named actuator, said independent actuator having a keyway and tumbler mechanism in the keyway, said tumbler mechanism including a tumbler-plate movable in cam-guides in the carrier and provided with pins fitting perforations in the keyway portion of said actuator and intersecting the keyway, means to prevent the operation of either of said actuators, said last-named means including a wedge member interposable in the path of said actuators, and means permitting said wedge member to operate the bolt independent of said actuators.

28. In a lock, the combination of outer and inner hollow stationary knobs, a locking-bolt, a carrier mounted for reciprocation in the outer knob, a pair of actuators supported by said carrier, one of said actuators movable separately from the other, and an independent actuator carried by the inner knob and operable by a push-button.

29. In a lock, the combination of outer and inner hollow stationary knobs, a locking-bolt, a carrier mounted for reciprocation in the outer knob, a pair of actuators supported by said carrier, one of said actuators movable separately from the other, and an independent actuator carried by the inner knob and operable by a push-button, said independent actuator having a reciprocating and rotative movement.

30. In a lock, the combination of outer and inner hollow stationary knobs, a locking-bolt, a carrier mounted for reciprocation in the outer knob, a pair of actuators supported by said carrier, one of said actuators movable separately from the other, and an independent actuator carried by the inner knob and operable by a push-button, said independent actuator having a reciprocating and rotative movement, and a part rotatable with said independent actuator and interposable in the path of one of the first-named actuators on said carrier to prevent the operation thereof.

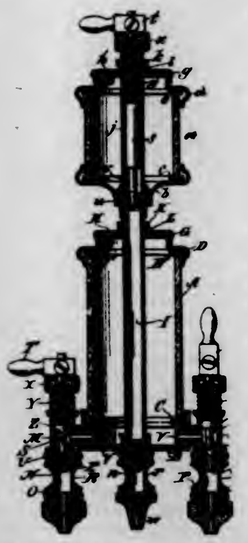
31. In a lock, the combination of outer and inner stationary knobs, a slotted locking-bolt, a pair of actuators operated by independent means suitably supported for reciprocation in the outer knob and engageable in the slot in said bolt to retract the latter, means for holding the bolt and actuators in operative relation, and an inde-

pendent actuator carried by the inner knob and engageable with the bolt to retract the latter.

32. In a lock, the combination of outer and inner stationary knobs, a slotted locking-bolt, a pair of actuators operated by independent means suitably supported for reciprocation in the outer knob and engageable in the slot in said bolt to retract the latter, means for holding the bolt and actuators in operative relation, an independent actuator carried by the inner knob and engageable with the bolt to retract the latter, said independent actuator mounted to rotate and adapted to lie in a plane parallel with the first-named actuators, or in a plane transverse thereto.

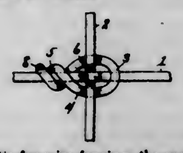
33. In a lock, the combination of outer and inner stationary knobs, a slotted locking-bolt, a pair of actuators operated by independent means suitably supported for reciprocation in the outer knob and engageable in the slot in said bolt to retract the latter, means for holding the bolt and actuators in operative relation, an independent actuator carried by the inner knob and engageable with the bolt to retract the latter, said independent actuator mounted to rotate and adapted to lie in a plane parallel with the first-named actuators, or in a plane transverse thereto, and a rotatable stop turnable with said independent actuator and interposable in the path of one of the first-named actuators.

823,223. **MULTIPLE DROP-FEED APPARATUS FOR LIQUIDS.** LEOPOLD KACSANDER, New York, N. Y., assignor to Nathan Manufacturing Company, New York, N. Y. Filed Mar. 6, 1906. Serial No. 304,537.



Claim.—In a multiple drop-feed apparatus, a plurality of distinct and separate non-communicating superposed liquid-containing vessels, a discharge-tube leading from the upper vessel down through the lower vessel, separate and distinct feed devices for the contents of each vessel, and regulating-valves for the several feeds, substantially as hereinbefore set forth.

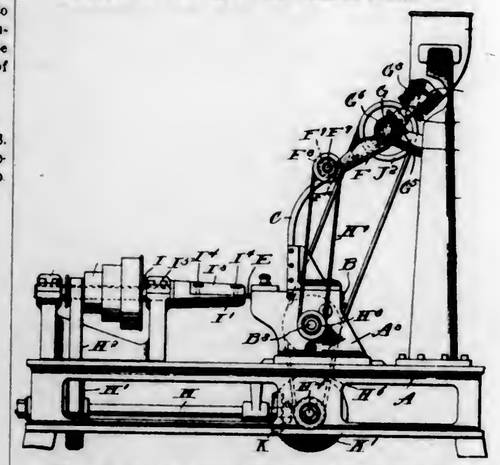
823,224. **TIE FOR WIRE FENCING.** JOHN J. MORAR, Adrian, Mich., assignor to Michigan Wire Fence Company, Adrian, Mich. Filed July 29, 1905. Serial No. 271,814.



Claim.—1. In a tie for wire fencing, the combination with the crossed strand and stay wires of a tie-wire having its loop end crossing the line-wire at one side of the stay-wire, legs passing in the rear of the stay-wire, the terminal of one leg crossing in front of the line-wire beyond the stay and formed into a spiral twist which partially embraces the line-wire, the terminal of the other leg crossing the face of the line-wire opposite to that crossed by the terminal of the first-mentioned leg, and culminating in a spiral twist around the line-wire.

2. In a tie for wire fencing, the combination with the crossed strand and stay wires, of a tie having its loop end crossing the strand-wire at one side of the stay-wire, legs passing in the rear of the stay-wire, the terminals of said legs crossing the strand-wire obliquely beyond the stay-wire on opposite sides of said strand-wire, their end portions culminating in a spiral twist around the strand-wire and terminating in approximate relation.

823,225. **NUT-TAPPING MACHINE.** WILLIAM M. MCKENZIE, Wilkinsburg, Pa. Filed July 17, 1905. Serial No. 270,002.



Claim.—1. In a nut-tapping machine, a threading-tap having its shank deflected, a holder or stock provided with a correspondingly-deflected passage inclosing the deflected portion of the shank and of greater diameter and disposed concentric to the longitudinal axis of the threading end of the tap, and means to rotate said holder.

2. In a nut-tapping machine, a threading-tap having its shank deflected, a holder or stock provided with a correspondingly-deflected passage inclosing the deflected portion of the shank and of greater diameter and disposed concentric to the longitudinal axis of the threading end of the tap, means to rotate said holder, and means for intermittently feeding material to said tap.

3. In a nut-tapping machine, a tap having opposite end portions in the same plane and an intermediate curved deflected portion merging into said end portions, and a holder provided with a correspondingly-deflected passage inclosing said deflected portion of the tap and of greater diameter and disposed concentric to the longitudinal axis of the threading end of the tap.

4. In a nut-tapping machine, a tap having its shank provided with oppositely-deflected portions, and a tubular holder or stock provided with a correspondingly-deflected interior passage of greater diameter than the tap-shank and completely inclosing the deflected portion thereof.

5. In a nut-tapping machine, a tap having its shank provided with oppositely-deflected portions, a tubular holder provided with a corresponding interior passage of greater diameter than the tap-shank within which the shank of the tap is disposed to permit the travel of nuts thereover, and a hollow delivery-shaft for said holder disposed adjacent to the free discharge end of said tap.

6. In a nut-tapping machine, a tap having its shank provided with oppositely-disposed crank portions intermediate of its ends, a holder for said shank having a passage of greater diameter than the shank to permit the travel of a nut upon the shank to effect a driving connection between the tap and holder and a hollow delivery-shaft extended into the end of said holder with the passage therein in alinement with the passage of the holder.

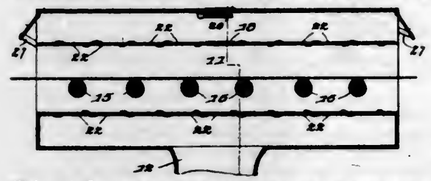
7. In a nut-tapping machine, a tap having its shank provided with oppositely-disposed crank portions intermediate of its ends, and a holder for said crank portions provided with a cooperating interior channel of greater diameter than said portions, and a removable cap-plate.

8. In a nut-tapping machine, a tap, a driving-pulley therefor, a head, a pusher mounted therein, a controlling-cam for said pusher mounted in said head, a driving-shaft disposed parallel to the tap and geared to the shaft thereof, a laterally-disposed counter-shaft, a driving connection between the driving-shaft and counter-shaft, a belted connection from said counter-shaft to the shaft of said cam, a shaker mechanism controlling a feed-chute, and a driving connection from the shaft of said cam to the shaker mechanism.

9. In a nut-tapping machine, a tap, a driving-pulley therefor, a head, a pusher mounted therein, a controlling-cam for said pusher mounted in said head, a driving-shaft disposed parallel to the tap and geared to the shaft thereof, a laterally-disposed counter-shaft, a driving connection between the driving-shaft and counter-shaft, a belted connection from said counter-shaft to the shaft of said cam, a shaker mechanism controlling a feed-chute, a driving connection from the shaft of said cam to said shaker mechanism, a hopper and feeding means therefrom, and a driving connection from said cam-shaft to said feeding means.

10. In a nut-tapping machine, a tap provided with an extended deflected shank, a holder for said shank provided with an interior passage of greater diameter than the shank and corresponding to the configuration of the shank to retain the shank against relative rotary or longitudinal motion by means of the completed article passing over the said shank, and a hollow delivery-shaft connected to said holder and having the free discharge end of said shank disposed therein.

823,226. **APPARATUS FOR BLUING METAL SHEETS.** AMBROSE RIDD, Newport, Ky. Filed Sept. 6, 1905. Serial No. 277,242.



Claim.—1. In apparatus of the class described, an oven open at its opposite ends, sheet-supporting means arranged within the oven, a casing surrounding the bottom, top and side walls of the oven, the lower central portion of the casing having means for directing a heating fluid against the lower central portion of the oven, and the opposite ends of the casing having outlets for the heating fluid, whereby a high temperature may be maintained at the central portion of the oven and gradually reduce toward both ends thereof.

2. In apparatus of the class described, an oven open at its opposite ends to permit the continuous passage of sheets to be annealed, sheet-supporting means arranged within and above the floor of the oven, a casing surrounding the bottom, top and side walls of the oven, there being an inlet for a heating fluid at the lower central portion of the casing, and outlets for such fluid at the upper outer ends of the casing.

3. In apparatus of the class described, a casing, an oven arranged within and having its top, bottom and side walls surrounded by and spaced from said casing, the opposite ends of the oven being open to permit the continuous passage of sheets to be annealed, shutters or dampers arranged in the walls of the oven for controlling the passage of a heating fluid into said oven.

4. In apparatus of the class described, an outer casing or jacket, an oven arranged within the same, shutters or dampers arranged in the top and bottom walls of the oven, and means for opening and closing said shutters.

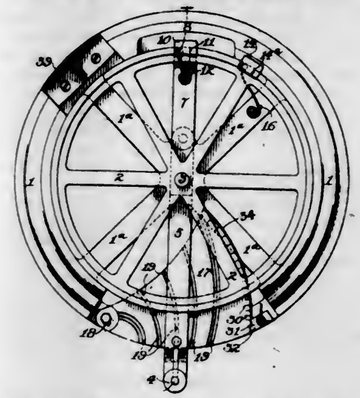
5. In apparatus of the class described, a casing or jacket, an oven arranged within the same, a plurality of shutters or dampers arranged in the top and bottom walls of said oven, and shutter-operating members extending to the exterior of the casing and connected for mutual movement.

6. In apparatus of the class described, an outer casing or jacket, an oven arranged within the same, a plurality of shutters or dampers arranged in the top and bottom walls of the oven, the pintles of said dampers extending outward through said casing, rocker-arms connected to said pintles, and means for connecting all of such rocker-arms for mutual movement.

7. In apparatus of the class described, an outer casing or jacket having an escape-opening, a damper for closing the same, an oven arranged within said casing, and a plurality of dampers or shutters in the top and bottom walls of said oven.

8. In apparatus of the class described, an outer casing having entrance and escape openings, dampers closing the escape-openings, an oven arranged within the casing and also having openings or shutters, and a single actuating means connecting all of the dampers or shutters, said actuating means being so arranged that when the dampers of the oven are moved to closed position the dampers of the casing will be moved to open position.

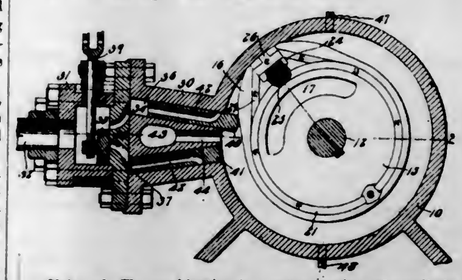
823,227. **CHEESE-CUTTER.** ARLAND B. ROACH, Los Angeles, and ARTHUR J. HODGE, Pasadena, Cal., assignors, by direct and mesne assignments, to Charles E. Doffemyer and David F. McKinney, Los Angeles, Cal. Filed Mar. 8, 1905. Serial No. 249,049.



Claim.—1. In a cheese-cutter, the combination of a frame, a cheese-carrier rotatably mounted thereon, a handle-lever connected to rotate said carrier, and provided with a stop device, a stop member pivoted on said frame to move transversely to the movement of the handle, and means for holding said stop member in different angular positions, said stop member being provided with stop portions arranged at variant distances in the path of movement of the stop device on the handle in the different angular positions of the stop member.

2. In a cheese-cutter, the combination of a frame, a cheese-carrier rotatably mounted thereon, a lever connected to rotate said carrier, a spring-operated stop-pin movable on said lever provided with releasing means, a stop-plate pivoted on the frame and having a plurality of stop portions for engagement with the stop device and extending eccentrically to said pivot, and a clamp device on the frame engaging and holding the stop-plate.

823,228. **ROTARY ENGINE.** JAMES P. SHEPARD, West Union, W. Va. Filed Oct. 7, 1905. Serial No. 281,824.



Claim.—1. The combination in a rotary engine, of a cylinder having a pair of spaced approximately radial recesses, an exhaust-port formed in the wall of the cylinder at a point between said recesses, a piston-drum arranged within the cylinder and provided with a radially-extending wing, radially-movable abutments mounted in the recesses and provided with ports that extend from the rear

edges of the abutments to the operating-faces thereof, and pressure-supply ports leading to the recesses and provided with a valve for controlling the flow of fluid to either recess, and thus governing the direction of movement of the piston.

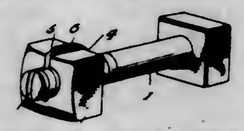
2. In a rotary engine, the combination with a cylinder, of a piston-drum having a cam-shaped wing, a packing-head arranged in the outer edge of the wing, packing-rings disposed in annular grooves at the opposite sides of the piston, and inclined packing-strips arranged in the groove formed in the opposite sides of the piston and extending from said annular grooves to the opposite edges of the packing-head.

3. In a rotary engine, the combination with a cylinder, of a piston-drum, a radially-extending piston-wing carried by the drum and provided with a recess facing the circular wall of the cylinder, a packing-head mounted in said recess, springs for holding said packing-head in contact with the wall of the cylinder, the opposite ends of said packing-head being provided with T-shaped slots or recesses, T-shaped packing members arranged in said slots or recesses, ring-packings at the ends of the piston, and inclined packing-strips extending from the ring-packings to the T-shaped packing members.

4. The combination in a rotary engine, of a cylinder, a piston-drum having a radially-extending abutment, that side of the drum bearing the abutment being cored out to evenly distribute the weight around the axis of rotation of the drum, packing-strips arranged at the ends of the drum, a ring bearing against said packing-strips, cylinder-heads, and ring-adjusting bolts extending through threaded openings in said cylinder-heads.

5. The combination in a rotary engine, of a cylinder having an extended abutment-receiving head at one side thereof, a steam-chest bolted to the head, radially arranged abutments mounted in recesses in the abutment-head, ports leading from said recesses to the steam-chest, a reversing-valve disposed in the steam-chest and controlling the flow of fluid through said ports, a main exhaust-passage formed in the abutment-head, exhaust-ports leading from the cylinder to said passage, a piston-drum arranged within the cylinder, and a wing extending from the drum and arranged to engage the abutments.

823,229. **NUT-LOCK.** GEORGE B. SHERWOOD, Cincinnati, Ohio. Filed Feb. 1, 1906. Serial No. 299,023.



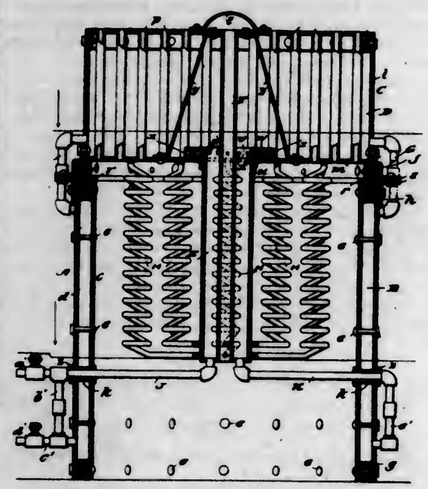
Claim.—In a nut-lock, the combination of a bolt provided with a slot leading from the outer extremity of its threaded portion, a nut screwed upon the bolt, and a lock member for said nut comprising a single length of wire bent to form an approximately round body from which the terminals of the wire extend laterally, one of the terminals being longer than the other, both of the terminals being bent at a right angle to the body to engage a side of the nut, the outer end portion of the longer terminal being bent against the outer side of the nut and into the slot of the bolt to prevent rotation of the locking member, the body of the locking member and the shorter terminal being flattened, the portion of the longer terminal in contact with the shorter terminal being also flattened.

823,230. **STEAM-GENERATOR.** JAMES C. SUYDAM, Edenton, N. C. Filed Feb. 3, 1906. Serial No. 299,353.

Claim.—1. A steam-generator comprising a lower section forming a water-leg, an upper section removably arranged on the lower section and forming a steam-chamber, means detachably connecting the lower and upper sections, exteriorly arranged, separable water-circulating connections intermediate the water-leg and the steam-chamber, and pendent water-holding means connected to and disposed below the steam-chamber and also connected with the water-leg.

2. A steam-generator comprising a lower section having an inner wall, an outer wall extending above the inner wall, and rings interposed and secured between said walls, in combination with an upper section set within the extended portion of the outer wall of the lower section, packing interposed between the adjacent portions of the sections, opposed lugs on the lower and upper sections, and means detachably connecting the said opposed lugs.

3. In a steam-generator the combination of a lower section having an inner wall, an outer wall extending above the inner wall and rings interposed and secured between said walls to form a water-leg, an upper section set within the extended portion of the outer wall of the lower section and forming a steam-chamber, water-circulating connections intermediate the water-leg and the steam-chamber, pendent water-holding means connected to and disposed below the steam-chamber and also connected with the water-leg, packing interposed between the adjacent portions of the lower and upper sections, opposed lugs on the said sections, and means detachably connecting the said lugs.



4. A steam-generator comprising a water-leg surrounding a combustion-chamber, a steam-chamber disposed above the water-leg and combustion-chamber and having a plurality of flues for products of combustion extending between its lower and upper heads, direct connections for the circulation of water between the water-leg and the steam-chamber, a central stand-pipe communicating with the steam-chamber and depending from the lower head thereof, a flue extending through said stand-pipe and steam-chamber, coils of pipe grouped in the combustion-chamber around the stand-pipe and connected at their upper ends to the steam-chamber and at their lower ends to the stand-pipe, connections intermediate the stand-pipe and the water-leg, and means for supplying the generator with water.

5. A steam-generator comprising a water-leg surrounding a combustion-chamber, a steam-chamber disposed above the water-leg and combustion-chamber and having a plurality of flues extending between its lower and upper heads, direct water-conduits intermediate the water-leg and the steam-chamber, a central stand-pipe extending through and depending from the lower head of the steam-chamber and having a ring resting on and connected to said head of the chamber and also having passages in its ring for distributing water over the lower head of the steam-chamber, a flue extending through the said stand-pipe and the steam-chamber, coils of pipe grouped in the combustion-chamber around the stand-pipe and connected at their upper ends to the steam-chamber and at their lower ends to the lower portion of the stand-pipe, direct connections intermediate the stand-pipe and the water-leg, a pipe extending from the stand-pipe through the water-leg and having a blow-off cock and also having a branch pipe connected with the water-leg and equipped with a blow-off cock, and a second pipe connected to the stand-pipe and extending through the water-leg and connected to said leg from the outside and adapted to be connected with means for supplying the generator with water.

6. In a steam-generator, the combination of a combustion-chamber, a steam-chamber disposed above the combustion-chamber, and a stand-pipe extending through an opening in the lower head of the steam-chamber and depending in the combustion-chamber and having a ring at its upper end resting on the head of the steam-chamber and also having lateral passages in said ring for distributing water from its interior over the lower head of the steam-chamber and means connecting said ring and head.

7. In a steam-generator, the combination of a combustion-chamber, a steam-chamber disposed above the combustion-chamber,

a central stand-pipe open at its upper end and extending through an opening in the lower head of the steam-chamber and depending in the combustion-chamber and having a ring at its upper end resting on the lower head of the steam-chamber and also having lateral passages in its ring for distributing water from its interior over the lower head of the steam-chamber, means connecting said ring and head, and one or more circular series of pipe-coils arranged in the combustion-chamber around the stand-pipe; the said coils being connected at their upper ends to the steam-chamber and at their lower ends to the lower portion of the stand-pipe.

823,231. **BLOCK.** ALFRED B. TARBOX, Boston, Mass. Filed June 24, 1905. Serial No. 266,756.



Claim.—1. A block of the character specified having cheeks, a sheave inclosed thereby, a sheave-pin on which said sheave is adapted to turn, straps making engagement with said sheave-pin, said straps having loops formed in the ends thereof, and a hook-carrying head combining with the looped ends of said straps, said head having a main portion with which the hook is adapted to make connection, flanges dependent therefrom adapted to straddle said looped ends of the straps and pins or bolts for securing said flanged sides of the head to said ends of the straps.

2. A block of the character specified having cheeks, a sheave inclosed thereby, a sheave-pin on which said sheave is adapted to turn, straps extending alongside said cheeks to make engagement with said sheave-pin, said straps having loops formed in the ends thereof, a hook-carrying head having dependent flanges adapted to straddle said looped ends of the straps, and pins or bolts extending through the flange-forming sides of said head and said looped ends of the straps, whereby said head may be made to pivot and said ends of the straps be held rigidly in place.

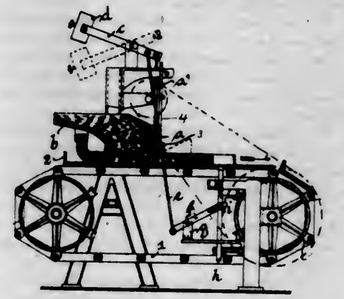
3. A block of the character specified having cheeks, a sheave inclosed thereby, a sheave-pin on which said sheave is adapted to turn, straps making engagement with said sheave-pin and extending above the upper edges of said cheeks, a head having flanged sides adapted to combine with said ends of the straps and make pivotal connection therewith, whereby said head may be turned, and extensions or projections on said flanged sides, on the edges thereof adjacent to the sheave and in line therewith, for holding said sheave rope or wire in place.

4. A block of the character specified having cheeks, a sheave inclosed thereby, a sheave-pin on which said sheave is adapted to turn, each of said cheeks having an outwardly-bulging annular wall forming on the inside an annular cavity and inside said annular wall a deeply-sunken center, straps extending through the annular wall of said respective cheeks at one side thereof, thence extending alongside their deeply-sunken center to make engagement with the sheave-pin and continued into the annular walls of the cheeks forming a means of concealment and guard therefor, said straps extending above the upper edges of said cheeks and having loops formed on the upper ends thereof, a hook-carrying head having flanges dependent therefrom, adapted by its flanges to straddle said looped ends of the straps, and pins or bolts extending through said flange-forming sides of the head and said looped ends of the straps, substantially as described.

5. A block of the character specified having cheeks, a sheave inclosed thereby, a sheave-pin on which said sheave is adapted to turn, said cheeks having integral, inwardly-extending, flange-carrying extensions at the bottom ends thereof, said flanges or extensions being adapted to be riveted together, whereby said cheeks are rigidly united and the extensions form the closed bottom of the block, straps making engagement with said sheave-pin and extending above the upper edges of the cheeks, said straps having loops formed on the ends thereof, and a hook-carrying head having dependent flanges adapted to straddle said looped ends of the straps, and pins or bolts extending through said flanges, whereby said head may be made to pivot and said ends of the straps may be held rigidly in place.

823,232. **BRICK-MACHINE.** PAUL THOMANN, Halle-on-the-Saale, Germany. Filed Sept. 11, 1905. Serial No. 277,997.

Claim.—In a brick-press, the combination with a hopper and a carrier moving beneath the same for conveying the molds to be filled under the hopper, of a movable gate for said hopper and operating means for opening said gate suddenly to its widest extent and then gradually closing it as the filling of the mold progresses.



823,233. **CHLOROFORM-DROPPER.** FREDERICK WACHTER, Jersey City, N. J. Filed Oct. 12, 1905. Serial No. 282,386.

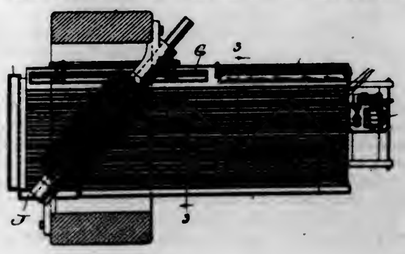


Claim.—1. A liquid-fluid dropper comprising a fluid-receptacle, a compound stopper and valve consisting of an inner part or plug with pin, and an outer shell having two incisions in its top which said pin engages alternately and a solid bottom part, the two parts having coinciding channels, and two small tubes connecting one each with one coinciding set of channels, all so arranged that the location of the channels in the plug may be changed by turning it ninety degrees, whereby the device is opened and closed.

2. A chloroform-dropper comprising a chloroform receptacle or bottle having a metal tube secured to its neck, a compound stopper and valve made in two parts having coinciding channels for the ingress of the air and the outflow of the chloroform, a leather washer with openings coinciding with said channels located between the two parts of the stopper, and a central pin with spring adapted to force said two parts together, all so arranged that the location of the channels in the upper part may be changed by turning said part ninety degrees whereby the device is opened and closed.

3. A chloroform-dropper comprising a chloroform-bottle having a metal tube secured to its neck, a compound stopper and valve adapted to be joined tightly to the bottle and made in two parts, an inner part or plug with pin and an outer shell having a solid bottom part and two incisions in its top in which the pin of the plug locates alternately, both parts having coinciding channels for the ingress of the air and the outflow of the chloroform, a leather washer between the two parts of the stopper with openings coinciding with said channels, and a central pin with spring adapted to force said two parts together, all so arranged that the location of the channels may be changed by turning said plug ninety degrees in a horizontal plane whereby the device is opened and closed.

823,234. **MAGNETIC ORE-SEPARATOR.** HENRY H. WAIT, Chicago, Ill., assignor to International Separator Company, Chicago, Ill., a Corporation of New Jersey. Filed Mar. 20, 1905. Serial No. 251,071.



Claim.—1. The combination with a shaking-table concentrator, of a magnet having permeable projections arranged to move close to the surface of the table, and at an angle to the direction of reciprocation thereof adapted to cause the more permeable particles to be moved out of their regular path.

2. The combination with a shaking-table concentrator having riffles thereon, of a magnet having means for producing flux divergencies, and means arranged to move said divergencies close to the surface of the table at an angle to said riffles; whereby the more permeable particles of material are shifted across the riffles by said moving flux divergencies.

3. The combination with a shaking-table concentrator, of a magnetic body under the table, and a magnetized cylinder provided with means for causing dispersions of the magnetic flux at its periphery, said cylinder being rotatably mounted above the table obliquely transverse thereto and closely approaching the surface thereof; whereby in the rotation of said cylinder, the more permeable particles of material upon the table are shifted out of their regular gravitational path.

4. In an ore-concentrator, magnet pole-pieces of opposite polarity, and a substantially horizontal magnetic cylinder arranged to rotate between said pole-pieces, said cylinder having means for causing divergencies of the magnetic flux at its periphery, in combination with a shaking table, means arranged to reciprocate said table between said rotating cylinder and the lower pole-piece at an angle to said cylinder, adapted to cause the more permeable particles to move out of their regular path, substantially as set forth.

5. In an ore-concentrator, the combination with a shaking table, of an armature arranged to revolve above the table, said armature being provided with permeable magnetic projections closely approaching the surface of the table in the rotation of said armature, a pole-piece forming a working magnetic gap with said armature, and means for reciprocating said shaking table in said gap, said armature being mounted at an angle to the table, and means for rotating said armature to cause the more permeable particles to move out of their regular path.

6. The combination with a shaking-table concentrator, of a rotating magnetic cylinder having teeth on its periphery for causing dispersions of the magnetic flux, said teeth being arranged to move close to the surface of said table and at an angle thereto, means for rotating said cylinder to cause the more permeable particles to be moved out of their regular path, and a field-magnet between the poles whereon said cylinder is mounted.

7. The combination with a shaking-table concentrator, of longitudinal riffles on said table, means for flowing water transversely across the table to remove the lighter material, a magnet having permeable projections arranged to move close to the surface of said table, and at an angle to the table capable of moving the more permeable particles out of their regular path, and means for moving said magnet.

8. The combination with a transversely-inclined shaking-table concentrator having longitudinal riffles thereon, of means for feeding materials to be separated to the table, means for flowing water transversely across the table to remove the lighter material, a rotatable magnetic cylinder arranged to move close to the surface of said table, and at an angle thereto, and means for rotating said cylinder to cause the more permeable particles to be moved out of their regular path.

823,235. MAGNETIC SEPARATOR. HENRY H. WAIT, Chicago, Ill., assignor to International Separator Company, Chicago, Ill., a Corporation of New Jersey. Filed Mar. 20, 1905. Serial No. 251,074.



Claim.—1. The combination with magnet-poles of opposite polarity facing each other to constitute a working passage, of means for directing material to be separated through said passage, means for concentrating the magnetic flux across said working passage in lines diagonal to said passage, and dividers above the diagonal lines of concentration adapted to prevent the magnetic particles from being deflected in approaching said lines of concentration.

2. The combination in a magnetic separator having a working passage, of means for establishing a magnetic riffle diagonally across said working passage, and a divider-plate in the path of material approaching the riffle, adapted to prevent the magnetic particles from being deflected in approaching said riffle substantially as and for the purpose set forth.

3. In a magnetic separator, the combination with a series of magnetic projections, of means for passing material to be separated across said projections, and divider-plates separating the attracted and non-attracted particles located in the path of material in the approaches to said projections, whereby the magnetic particles are permitted to move freely under the influence of the projection in one part of the field, but are prevented from moving in the opposite direction where the field has a counter action.

4. The combination in a magnetic separator having a working passage, of magnetic riffles in said working passage, and a series of divider-plates separating the attracted and non-attracted particles located in the path of the magnetic particles after the particles have left each riffle.

5. In a magnet separator, the combination with opposing magnet-poles of opposite polarity arranged to form a working passage, of means for directing material to be separated through said passage, said magnet-poles being formed with ridges in corresponding diagonal lines upon the faces thereof, forming a series of inclined magnetic riffles, vertical divider-plates beginning below each riffle and extending toward the succeeding riffle, whereby attracted material leaving the riffle upon one side of the divider-plate is prevented from being diverted toward the path of the non-attracted material by the action of the succeeding riffle.

6. In a magnetic separator, the combination with opposing magnet-poles of opposite polarity facing each other to constitute a working passage, of a series of ridges upon said pole-faces to concentrate the magnetic flux in lines diagonal to the working passage, the angles of inclination of said diagonal lines being increased toward the lower end of the passage.

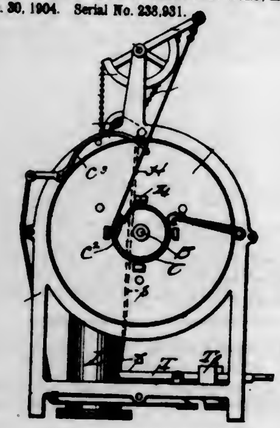
7. In a magnetic separator, the combination with magnet-poles of opposing polarity facing each other to constitute a working passage, of a series of diagonal magnetic riffles in said working passage, said riffles being located progressively at increasing distances apart and at progressively greater angles of inclination.

8. The combination in a magnetic separator having a working passage, of diagonally-inclined magnetic riffles in said working passage, and vertical dividing-plates located above said riffles, said riffles being spaced at successively greater distances apart and with successively greater inclinations toward the lower end of the working passage, substantially as set forth.

9. In a magnetic separator, the combination with magnet-poles of opposite polarity facing each other to constitute a working passage, of means for establishing a magnetic riffle diagonally across said passage, and a divider-plate in the path of material approaching said riffle.

10. The combination in a magnetic separator having a working passage, of diagonal magnetic riffles in said passage, and a series of divider-plates between the riffles between the paths of the attracted and non-attracted particles, adapted to prevent said attracted particles from being drawn into the path of said other particles.

823,236. HOOP-COILER. ALEXANDER F. WARD, Memphis, Tenn. Filed Dec. 30, 1904. Serial No. 238,931.



Claim.—1. In a hoop-coiling machine, the combination with a coiling-drum, a tension-strap surrounding said drum, a weight to keep said strap taut, and means for raising said weight to relieve the tension on said strap and permit the removal of a completed hoop-coil, of means operated by said weight for throwing off said coil.

2. In a hoop-coiling machine, the combination with a coiling-drum, a tension-strap surrounding said drum, a weight to keep said strap taut and means for raising said weight to relieve the tension on said strap, of a throw-off yoke, and means operated by the raising of said tension-weight to operate said yoke and throw off said hoop-coil.

3. In a hoop-coiling machine, the combination with a coiling-drum, a tension-strap surrounding said drum, a weight to keep said strap taut and means for raising said weight to relieve the tension on said strap, of a throw-off yoke, an arm operatively connected to said yoke and means operated by the raising of said tension-weight to operate said arm, for the purposes set forth.

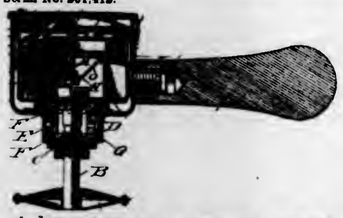
4. In a hoop-coiling machine, the combination with a coiling-drum, a tension-strap surrounding said drum, a weight to keep said strap taut and means for raising said weight to relieve the tension on said strap, of a throw-off yoke, an arm operatively connected to said yoke, a weight connected to said arm to hold said yoke retracted, said weight coacting with said tension-weight to operate said yoke, for the purposes set forth.

5. In a hoop-coiling machine, the combination with a coiling-drum, a tension-strap surrounding said drum, a weight to keep said strap taut and means for raising said weight to relieve the tension on said strap, of a throw-off yoke, an arm operatively connected to said yoke, a weight connected to said arm to hold said yoke retracted, and a cam attached to said weight and coacting with said tension-weight to operate said yoke, for the purposes set forth.

6. In a hoop-coiling machine, the combination with a coiling-drum, a tension-strap surrounding said drum, a weight to keep said strap taut, and means for raising said weight to relieve the tension on said strap, of a throw-off yoke, a cam operatively connected to said yoke, an arm extending upward from said weight and a roller on said arm coacting with said cam for the purposes set forth.

7. In a hoop-coiling machine, the combination with a coiling-drum, a tension-strap surrounding said drum, a weight to keep said strap taut and means for raising said weight to relieve the tension on said strap of a throw-off yoke, a double-faced cam operatively connected to said yoke, a roller on said weight coacting alternately with the two faces of said cam as the weight is raised and lowered.

823,237. MAGNETIC TACHOMETER. ARTHUR P. WARNER and CHARLES H. WARNER, Beloit, Wis., assignors to Warner Instrument Company, Beloit, Wis., a Corporation of Wisconsin. Filed May 20, 1905. Serial No. 261,413.



Claim.—1. In a tachometer, a magnet and a magnetic mass, one of these parts mounted to rotate, a freely-rotative scale-disk interposed between said magnet and mass, and means for automatically compensating for variations in electrical effect due to variations in atmospheric temperature at which the instrument is operated.

2. In a tachometer, a magnet and a magnetic mass, one of these parts mounted to rotate, a freely-rotative scale-disk interposed between said mass and magnet, and means for relatively moving said mass and magnet toward and from each other according to the degree of atmospheric temperature under which the instrument is operated.

3. In a tachometer, a magnet and a magnetic mass, one of these parts mounted to rotate, and means for supporting said parts for relative movement toward and from each other, said means operating according to the atmospheric temperature to move said parts nearer to or farther from each other, and a freely-rotative scale-disk interposed between said mass and magnet.

4. In a tachometer, a magnet and a magnetic mass mounted for relative rotation, and a thermostatic support for one of said parts, and a freely-rotative scale-disk interposed between said mass and magnet.

5. In a tachometer, a magnet and a magnetic mass, one of these parts mounted to rotate, thermostatic strips suspending the other of said parts in proximity to the rotating part, and a freely-rotative scale-disk interposed between said magnet and mass.

6. In a tachometer, a magnet and a magnetic mass, one of these parts mounted to rotate, metallic strips arranged in sets, each set composed of strips of different metals and forming a support for one of said parts, and a scale-disk interposed between said parts.

7. In a tachometer, a magnet and a magnetic mass, one of said parts being in the form of a split ring and the other in the form of a closed ring, said parts mounted with their side surfaces or faces juxtaposed with reference to each other, and for relative rotation, and a scale-disk interposed between the juxtaposed side surfaces or faces of said parts.

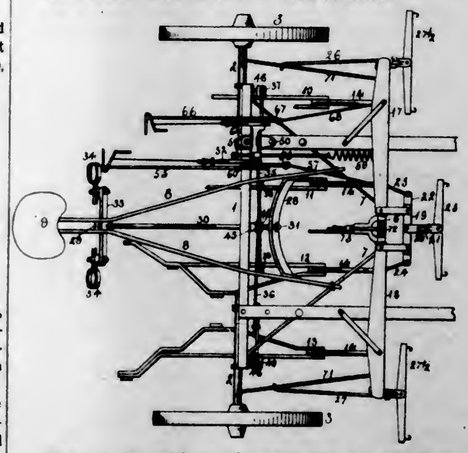
8. In a tachometer, a main case, a magnet mounted therein for rotative movement, an auxiliary case, a magnetic mass mounted therein, said auxiliary case adapted to be removably received within said main case, means for yieldingly maintaining said auxiliary case within said main case, and a scale-disk interposed between said magnet and mass.

9. In a tachometer, a main case, a magnet mounted to rotate therein, an auxiliary case removably mounted within said main case, said main case having a screw-top, a magnetic mass carried by said auxiliary case, a scale-disk also carried by said auxiliary case and between said magnet and the magnetic mass, and a spring-plate bearing upon said auxiliary case and engaged by said screw-top to hold said auxiliary case in place.

10. In a tachometer, a magnet and a magnetic mass, one of these parts mounted to rotate, a scale-disk interposed between the magnet and mass and mounted for free rotation, and means for automatically varying the reluctance of the magnetic field between said magnet and mass according to variations in the atmospheric temperature.

11. The combination with a magnetic mass, a magnet in the form of a split ring with the ends or poles brought into close proximity, said magnet and mass arranged side by side and in parallel relation and an armature interposed between the juxtaposed sides or surfaces of the mass and magnet, one of these parts mounted to rotate.

823,238. CULTIVATOR. LEWIS E. WATERMAN, Rockford, Ill., assignor to Emerson Manufacturing Company, Rockford, Ill., a Corporation of Illinois. Filed Mar. 30, 1904. Serial No. 200,806.



Claim.—1. In a cultivator, the combination of a main frame, two drag-bars, and means whereby the working depth of the shovels supported by the drag-bars can be independently adjusted and one drag-bar capable of being raised and lowered independently of the other drag-bar and both drag-bars capable of being raised and lowered in unison, said raising and lowering movements of the drag-bars being independent of the working adjustment of the shovels.

2. In a cultivator, the combination of a main frame, two drag-bars, two pivotally-supported toothed quadrants, a hand-lever for each quadrant, connections by which each hand-lever moves a drag-bar, one quadrant capable of a rocking movement independently of

the other quadrant and both quadrants capable of being rocked by a rocking movement imparted to one quadrant and a stop limiting the movements of the quadrants in one direction.

3. In a cultivator, the combination of a main frame, two drag-bars, two pivotally-supported toothed quadrants, a hand-lever for each quadrant, connections by which each hand-lever moves a drag-bar, one quadrant capable of a rocking movement independently of the other quadrant and both quadrants capable of being rocked by a rocking movement imparted to one quadrant, and an adjustable stop limiting the movement of one quadrant in one direction.

4. In a cultivator, the combination of a main frame, two drag-bars, two pivotally-supported toothed quadrants, a hand-lever for each quadrant, connections by which each hand-lever moves a drag-bar, one quadrant capable of a rocking movement independently of the other quadrant and both quadrants capable of being rocked by a rocking movement imparted to one quadrant, an arm having a pivotal connection with one of the quadrants, and a spring connection between the arm and a stationary support.

5. In a cultivator, the combination of a main frame, two drag-bars, two pivotally-supported toothed quadrants, a hand-lever for each quadrant, connections by which each hand-lever moves a drag-bar, one quadrant capable of a rocking movement independently of the other quadrant and both quadrants capable of being rocked by a rocking movement imparted to one quadrant, an arm having a pivotal connection with one of the quadrants, an adjustable stop carried by the arm, and a spring connection between the arm and a stationary support.

6. In a cultivator, the combination of a main frame, two drag-bars pivotally supported thereby, two pivotally-supported toothed quadrants, a hand-lever for each quadrant, a connection between each hand-lever and a drag-bar whereby one quadrant may be moved independently of the other and both moved by the movement of one.

7. In a cultivator, the combination of a main frame, two drag-bars pivotally supported thereby, two pivotally-supported toothed quadrants, a hand-lever for each quadrant, a connection between each hand-lever and a drag-bar, whereby one quadrant may be moved independently of the other, and both moved by the movement of one, and a spring exerting its force on both through a connection with one.

8. In a cultivator, the combination of a main frame, two drag-bars pivotally supported thereby, a bracket, a shaft supported by the bracket, a toothed quadrant fixedly connected to the shaft, a hand-lever connected to the quadrant and having a connection with a drag-bar, another quadrant pivotally supported by the shaft, a collar connected to the shaft with which the last-mentioned quadrant engages, and a hand-lever for the last-mentioned quadrant having a connection with a drag-bar.

9. In a cultivator, the combination of a main frame, a drag-bar pivotally supported thereby, a rocking toothed quadrant, a hand-lever for the quadrant, a connection between the hand-lever and drag-bar, an arm having a pivotal connection with the quadrant, a spring connected to the main frame and with the arm, and a stop device movably supported by the arm.

10. In a cultivator, the combination of a main frame, two drag-bars pivotally supported by the main frame, a bracket supported by the main frame, a shaft supported by the bracket, a toothed quadrant fixedly connected to the shaft, a hand-lever having an engagement with the quadrant and having a connection with a drag-bar, another quadrant pivotally supported by the shaft, a hand-lever for the quadrant having a connection with a drag-bar and a connection between the shaft and last-mentioned quadrant whereby the quadrant is rocked by the rocking movement of the shaft but capable of a rocking movement independently of the shaft.

11. In a cultivator, the combination of a main frame, two drag-bars pivotally supported by the main frame, a bracket supported by the main frame, a shaft supported by the bracket, a toothed quadrant fixedly connected to the shaft, a hand-lever having an engagement with the quadrant and having a connection with a drag-bar, another quadrant pivotally supported by the shaft, the quadrant fixedly connected to the shaft capable of engaging the last-mentioned quadrant and imparting a rocking movement thereto, and a hand-lever for the last-mentioned quadrant having a connection with a drag-bar.

12. In a two-row cultivator, the combination of a main frame, two sets of drag-bars, a two-section bail connecting the drag-bars, each section connecting the outer drag-bar of one set and the inner drag-bar of the other set, a toothed segment supported by one section of the bail, a hand-lever for the segment, pivotally connected with each section of the bail.

13. In a two-row cultivator, the combination of a main frame, two sets of drag-bars, a two-section bail connecting the drag-bars, each section connecting the outer drag-bar of one set and the inner drag-bar of the other set, a lever having a pivotal connection with both sections and means for locking the lever against movement in an adjustable manner.

14. In a two-row cultivator, the combination of a main frame, two sets of drag-bars pivotally supported thereby, a two-section bail connecting the drag-bars, each section connecting the outer drag-bar of one set and the inner drag-bar of the other set, a toothed segment supported by one section of the bail, a hand-lever for the segment, pivotally connected with each section of the bail alsoto a center support.

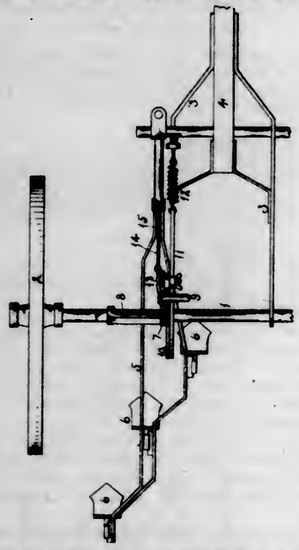
15. In a two-row cultivator, the combination of a main frame, two sets of drag-bars pivotally supported thereby, and a two-section bail connecting the drag-bars, each section connecting the outer drag-bar of one set and the inner drag-bar of the other set, each section in two parts adjustably connected.

16. In a two-row cultivator, the combination of a main frame, two sets of drag-bars pivotally supported thereby, a two-section bail connecting the drag-bars, each section connecting the outer drag-bar of one set with the inner drag-bar of the other set, a connection between the sections, a rod connected with the connection between the bails and extending rearward therefrom, and a foot-lever for moving the rod.

17. In a cultivator, the combination of a main frame, two drag-bars supported thereby, a bail connecting the drag-bars, a rod having a pivotal connection with the bail and having a rearward arched portion, and a foot-lever connected with the rod.

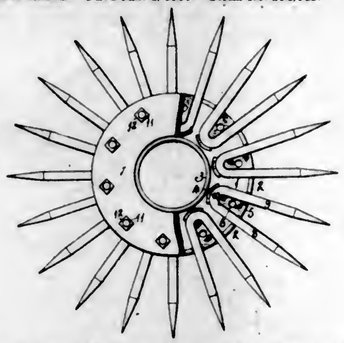
18. In a cultivator, the combination of a main frame, axles pivotally supported by the main frame, wheels connected to the axles, two bars extending transversely of the main frame and located end to end and each having a depending outer end, connections between the depending ends of the bars and the axles, a stationary toothed quadrant located adjacent to the inner ends of the bars, a yoke connected to the inner ends of the bars and a hand-lever connected with the yoke and having an engagement with the toothed quadrant.

823,239. **CULTIVATOR.** LEWIS E. WATERMAN, Rockford, Ill., assignor to Emerson Manufacturing Company, Rockford, Ill., a Corporation of Illinois. Filed Jan. 4, 1906. Serial No. 294,638.



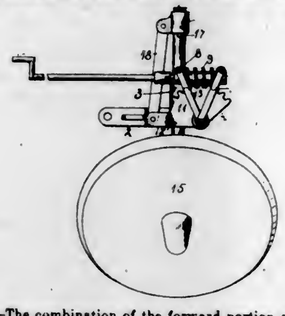
Claim.—In a cultivator, the combination of an axle, a toothed quadrant supported thereon in a manner to permit of a rocking movement, a hand-lever having an engagement with the quadrant, a beam, a connection between the hand-lever and beam, a link pivotally connected to the quadrant, a spring forming a connection between the link and a stationary support, and an adjustable stop carried by the quadrant with which the link engages.

823,240. **HARROW-DISK.** LEWIS E. WATERMAN, Rockford, Ill., assignor to Emerson Manufacturing Company, Rockford, Ill., a Corporation of Illinois. Filed Jan. 4, 1906. Serial No. 294,641.



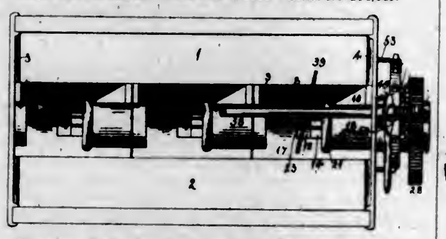
Claim.—A harrow-disk comprising a plate having curved projections, V-shaped projections, and a segmental flange, a series of double teeth held in position by the projections and flange, and a cap located over the teeth and secured in place.

823,241. **WHEELED PLOW.** LEWIS E. WATERMAN, Rockford, Ill., assignor to Emerson Manufacturing Company, Rockford, Ill., a Corporation of Illinois. Filed Jan. 4, 1906. Serial No. 294,642.



Claim.—The combination of the forward portion of a wheeled plow, a bracket secured thereto having a vertically-arranged opening, a front furrow-wheel having a shaft portion located in the opening, a worm and segmental worm-wheel in mesh and supported by the bracket, a link connection between the segmental worm-wheel and upper portion of the shaft, and means for rotating the worm.

823,242. **SEEDING-MACHINE.** LEWIS E. WATERMAN, Rockford, Ill., assignor to Emerson Manufacturing Company, Rockford, Ill., a Corporation of Illinois. Filed Jan. 4, 1906. Serial No. 294,643.



Claim.—1. In a seeding-machine, a seedbox having its bottom composed of a series of sections, each section in two planes, a seed-distributer supported by each section having its upper portion located above the lower surface of its section and means for rotating the distributers.

2. In a seeding-machine, a seedbox having its bottom composed of a series of sections, each section in two planes, each section in hopper form, a seed-distributer supported by each section having its upper portion located above the lower surface of its section, and means for rotating the distributers.

3. In a seeding-machine, a seedbox having its bottom in sections, each section composed of a bottom plate and a top plate located in different planes, a seed-distributer and a cut-off located between the sections, the bottom plate made in hopper form and terminating at the opening through which access is had to the distributer.

4. In a seeding-machine, a seedbox having its bottom in two different planes, a shaft, and a series of seed-distributers supported by the shaft, having their upper portions located above the lower plane of the bottom.

5. In a seeding-machine, the combination of a seedbox, seed-distributers supported by the box, means for rotating the distributers, clutch mechanism controlling the rotating means, a stationary stud, and a cam-lever mounted on the stud and having an engagement with the clutch mechanism for operating it.

6. In a seeding-machine, the combination of a seedbox, a shaft, seed-distributers supported by the shaft, means for rotating the distributers, clutch mechanism controlling the rotating means, a stationary stud, and a cam-lever mounted on the stud having an engagement with the clutch mechanism for operating it and having a movement in the lengthwise direction of the stud.

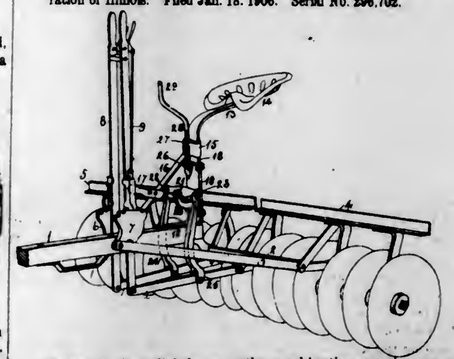
7. In a seeding-machine, the combination of a seedbox, a shaft, seed-distributers supported by the shaft, means for rotating the distributers, clutch mechanism controlling the rotating means, a stationary stud, a cam-lever mounted on the stud having an engagement with the clutch mechanism for operating it and having a movement in the lengthwise direction of the stud, and a spring exerting its force against the cam-lever tending to hold it against its seat.

8. In a seeding-machine, the combination of a seedbox, a shaft, seed-distributers supported by the shaft, means for rotating the distributers, clutch mechanism controlling the rotating means, a stationary stud, a cam-lever mounted on the stud having an engagement with the clutch mechanism for operating it and having a movement in the lengthwise direction of the stud, a spring exerting its force against the cam-lever tending to hold it against its seat, and means for varying the tension of the spring.

9. In a seeding-machine, the combination of a seedbox, a shaft, seed-distributers supported by the shaft, means for rotating the distributers, a clutch mechanism for controlling the rotation means, comprising two clutch-faces each provided with rectangular teeth, one face slidable toward and from the other face, a shipping-lever for moving the slidable clutch-section, and yielding means for moving the shipping-lever.

10. In a seeding-machine, the combination of a seedbox, a tubular stud extending from one end of the seedbox, an agitator-rod supported by the stud, a toothed wheel connected to the rod, a sprocket-wheel supported by the stud, and a clutch connection between the sprocket-wheel and toothed wheel.

823,243. **DISK HARROW.** LEWIS E. WATERMAN, Rockford, Ill., assignor to Emerson Manufacturing Company, Rockford, Ill., a Corporation of Illinois. Filed Jan. 18, 1906. Serial No. 296,702.



Claim.—1. In a disk harrow, the combination of a tongue, a frame secured to the tongue, two disk gangs connected to the frame, a vertically-arranged support, a sleeve slidably connected to the support, a connection between the sleeve and each disk gang, and means for holding the sleeve against movement in one direction.

2. In a disk harrow, the combination of a tongue, a frame se-

cured to the tongue, two disk gangs connected to the frame, a vertically-arranged support, a sleeve slidably connected to the support, a connection between the sleeve and each disk gang, and means for holding the sleeve against movement in one direction in an adjustable manner.

3. In a disk harrow, the combination of a tongue, a frame secured to the tongue, two disk gangs connected to the frame, a vertically-arranged support, a sleeve slidably connected to the support, a connection between the sleeve and each disk gang, and a screw for holding the sleeve against movement in one direction in an adjustable manner.

4. In a disk harow, the combination of a tongue, a frame secured to the tongue, two disk gangs connected to the frame, a vertically-arranged support, a sleeve slidably connected to the support, a cross-bar pivotally supported by the sleeve, a connection between the cross-bar and each of the disk gangs, and means for holding the sleeve against movement in one direction.

5. In a disk harrow, the combination of a tongue, a frame secured to the tongue, two disk gangs connected to the frame, a vertically-arranged support, a sleeve slidably connected to the support, a cross-bar pivotally supported by the sleeve, a link connecting each disk gang with the cross-bar, and means for holding the sleeve against movement in one direction.

6. In a disk harrow, the combination of a tongue, a frame secured to the tongue, two disk gangs connected to the frame, a seat-support, a sleeve slidably connected to the seat-support, a connection between the sleeve and each of the disk gangs, and means for holding the sleeve against movement in one direction.

7. In a disk harrow, the combination of a tongue, a frame secured to the tongue, two disk gangs connected to the frame, a seat-support, a sleeve slidably connected to the seat-support, a cross-bar pivotally supported by the sleeve, a connection between the cross-bar and each of the disk gangs, a bracket fixedly connected to the seat-support and located above the sleeve, and a screw supported by the bracket having its lower end engaging the sleeve.

8. In a disk harrow, the combination of a tongue, a frame secured to the tongue, two disk gangs connected to the frame, the connection comprising a brace-bar provided with a notch in one edge, a slide adjustably connected to the brace-bar and provided with a hook, and a support connected with a disk gang adapted to be secured within the notch of the brace-bar by the slide.

823,244. WHEELED PLOW. LEWIS E. WATERMAN, Rockford, Ill., assignor to Emerson Manufacturing Company, Rockford, Ill., a Corporation of Illinois. Filed Jan. 18, 1906. Serial No. 296,721.

Claim.—1. In a wheeled plow, the combination of a series of end-connected sections, wheels supporting the sections, a series of plowing attachments supported by each section, each section composed of two bars extending lengthwise of the section, braces holding the bars separated, and an end bar for each section.

2. In a wheeled plow, the combination of a series of end-connected sections, wheels supporting the sections, a brace connected with the forward end of each section in rear of the first section and connected to the section next in front in a manner to prevent lateral movement, and a series of plowing attachments supported by each section.

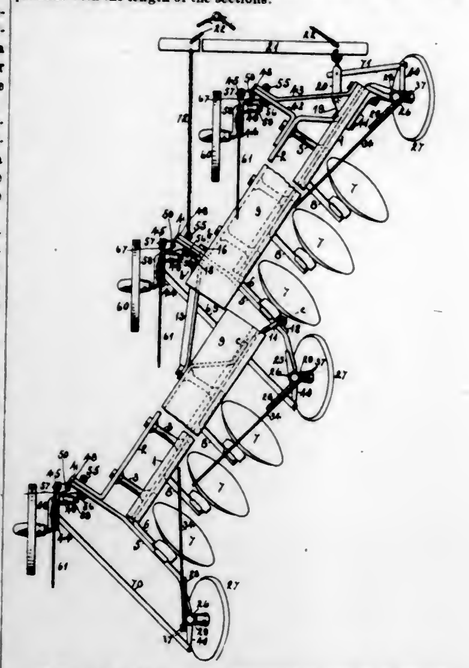
3. In a wheeled plow, the combination of a series of end-connected sections, wheels supporting the sections, a series of plowing attachments supported by each section, a draft-evener, and two connections between the evener and the front section, one of the connections attached near the forward end of the section, and the other connection attached near the rear end of the section.

4. In a wheeled plow, the combination of a series of end-connected sections held substantially rigid against lateral movement and capable of vertical oscillation at the point of connection, wheels supporting the sections, a series of plowing attachments supported by each section, the sections located in the same lengthwise direction but in different lateral planes.

5. In a wheeled plow, the combination of a series of directly-connected sections held substantially rigid against lateral movement and capable of vertical oscillation at the point of connection, wheels supporting the sections, a series of plowing attachments supported by each section, the sections located in the same lengthwise direction but in different lateral planes.

6. In a wheeled plow, the combination of a series of end-connected sections, a series of plowing attachments supported by each section, wheels supporting the sections and having a pivotal connection therewith and capable of being located in working position, or located parallel with the length of the sections.

7. In a wheeled plow, the combination of a series of end-connected sections, a series of plowing attachments supported by each section, wheels supporting the sections having a pivotal connection therewith and means retaining the wheels in working position, or parallel with the length of the sections.



8. In a wheeled plow, the combination of a series of end-connected sections, a series of plowing attachments supported by each section, wheels supporting the sections and having a pivotal connection therewith, means retaining the wheels either in working position or parallel with the length of the sections, and a hitch on the front section.

9. In a wheeled plow, the combination of a series of end-connected sections, wheels supporting the sections, a series of plowing attachments supported by each section, the sections located in the same lengthwise direction but in different lateral planes.

10. In a wheeled plow, the combination of a series of directly-connected sections, wheels supporting the sections, a series of plowing attachments supported by each section, the sections located in the same lengthwise direction but in different lateral planes.

11. In a wheeled plow, the combination of a series of end-connected sections, wheels supporting the sections, a series of plowing attachments supported by each section, the plowing attachments of all the sections located in the same general lengthwise direction, the plowing attachments of a section located laterally with respect to the plowing attachments of the other sections.

12. In a wheeled plow, the combination of a series of directly-connected sections, wheels supporting the sections, a series of plowing attachments supported by each section, the plowing attachments of all the sections located in the same general lengthwise direction, the plowing attachments of a section located laterally with respect to the plowing attachments of the other sections.

13. In a wheeled plow, the combination of a series of connected sections, wheels supporting the sections, and a series of plowing attachments supported by each section, the plowing attachments of all the sections located in the same general lengthwise direction, the plowing attachments of a section located laterally with relation to the plowing attachments of the other sections, one of the wheels being a furrow-wheel and located between the last plowing attachment of a forward section and the front plowing attachment of the next rear section.

14. In a wheeled plow, the combination of a series of end-connected sections, wheels supporting the sections, and a series of plowing attachments supported by each section, the plowing attachments of all the sections located in the same general lengthwise direction, the plowing attachments of a section located laterally with relation to the plowing attachments of the other sections, one of the wheels being a furrow-wheel and located between the last plowing attachment of a forward section and the front plowing attachment of the next rear section.

15. In a wheeled plow, the combination of a series of connected sections, a series of plowing attachments supported by each section, a series of wheels supporting the sections, one of the wheels being a furrow-wheel and located adjacent to the rear end of one section and the forward end of the next rear section.

16. In a wheeled plow, the combination of a series of end-connected sections, a series of plowing attachments supported by each section, a series of wheels supporting the sections, one of the wheels being a furrow-wheel and located adjacent to the rear end of one section and the forward end of the next rear section.

17. In a wheeled plow, the combination of a series of connected sections, a series of plowing attachments supported by each section, and a number of land and furrow wheels supporting the sections, there being one more furrow-wheel than the number of sections.

18. In a wheeled plow, the combination of a series of end-connected sections, a series of plowing attachments supported by each section, and a number of land and furrow wheels supporting the sections, there being one more furrow-wheel than the number of sections.

19. In a wheeled plow, the combination of a series of connected sections, a series of plowing attachments supported by each section, a single land-wheel, and a single furrow-wheel serving to support the rear portion of one section and the forward portion of another section.

20. In a wheeled plow, the combination of a series of connected sections, a series of plowing attachments supported by each section, a single land-wheel and a single furrow-wheel serving to support the rear portion of one section and the front portion of another section, and a connection between the wheels.

21. In a wheeled plow, the combination of a series of connected sections, a series of plowing attachments supported by each section, a land-wheel and two furrow-wheels connected to the forward section, and a single land-wheel and a single furrow-wheel connected to each other section.

22. In a wheeled plow, the combination of a series of connected sections, a series of plowing attachments supported by each section, a land-wheel and two furrow-wheels connected to the forward section, a connection between the land and rear furrow wheels, a single land-wheel and a single furrow-wheel connected to each other section, and a connection between the last-mentioned wheels.

23. In a wheeled plow, the combination of a series of connected sections, a series of plowing attachments supported by each section, two land-wheels and two furrow-wheels connected to the front section, and a single land-wheel and a single furrow-wheel connected to each other section.

24. In a wheeled plow, the combination of a series of connected sections, a series of plowing attachments supported by each section, two land-wheels and two furrow-wheels connected to the forward section, a connection between the rear land and furrow wheels of the forward section, a single land-wheel and a single furrow-wheel connected to each other section, and a connection between the wheels of each other section.

25. In a wheeled plow, the combination of a series of connected sections each capable of a vertical oscillation, a series of plowing attachments supported by each section, a single land-wheel and a single furrow-wheel serving to support the rear portion of one section and the forward portion of another section.

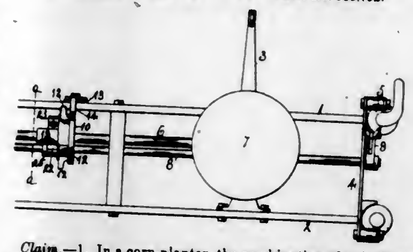
26. In a wheeled plow, the combination of a series of connected sections each capable of a vertical oscillation, a series of plowing attachments supported by each section, a single land-wheel and a single furrow-wheel serving to support the rear portion of one section and the forward portion of another section, and a connection between the wheels.

27. In a wheeled plow, the combination of a series of connected sections, a series of plowing attachments supported by each section, a single land-wheel, a single furrow-wheel, each having a caster movement and serving to support the rear portion of one section and the forward portion of another section, a connection between the wheels, and means for locking one of the wheels against caster movements.

28. In a wheeled plow, a plow-supporting frame, a furrow-wheel support, a furrow-wheel, a toothed quadrant capable of a swivel movement but held against lengthwise movement in connection with the furrow-wheel support, a collar having a swivel connection with the frame, a hand-lever pivotally connected to the toothed quadrant, a link forming a connection between the collar and hand-lever, and a spring having one end connected to the collar and its other end attached to the hand-lever.

29. In a wheeled plow, a plow-supporting frame, a wheel-support, a wheel, a toothed quadrant capable of a swivel movement but held against lengthwise movement in connection with the wheel-support, a collar having a swivel connection with the frame, a hand-lever pivotally connected to the toothed quadrant, a link forming a connection between the collar and hand-lever, and a spring having one end connected to the collar and its other end attached to the hand-lever.

823,245. CORN-PLANTER. LEWIS E. WATERMAN, Rockford, Ill., assignor to Emerson Manufacturing Company, Rockford, Ill., a Corporation of Illinois. Filed Apr. 14, 1906. Serial No. 311,792.



Claim.—1. In a corn-planter, the combination of a shaft adapted to operate the seed-dropping mechanism, a fork, a shaft adapted to be oscillated by the fork, a connection between the shafts whereby the fork will impart an intermittent rotary movement to the shaft operating the seed-dropping mechanism, and stops limiting the oscillations of the fork-shaft in both directions.

2. In a corn-planter, the combination of a shaft adapted to operate the seed-dropping mechanism, a fork, a shaft adapted to be oscillated by the fork, a connection between the shafts whereby the fork will impart an intermittent rotary movement to the shaft operating the seed-dropping mechanism, said connection formed with two stops which limit oscillations of the fork-shaft.

3. In a corn-planter, the combination of a shaft adapted to operate the seed-dropping mechanism, a fork, a shaft adapted to be oscillated by the fork, a gear-and-clutch connection between the shafts whereby the fork will impart an intermittent rotary movement to the shaft operating the seed-dropping mechanism, said gear-section formed with a stop which engages the other gear-section.

4. In a corn-planter, the combination of a shaft adapted to operate the seed-dropping mechanism, a casing fixedly connected to the shaft and provided with peripheral projections, a dog pivoted to a stationary support and adapted to engage the projections, a pawl carried by the casing, a cap portion pivotally mounted on the shaft having its inner face provided with a series of projections and its outer face provided with a toothed quadrant and a stop, a fork, a shaft adapted to be oscillated by the fork, a toothed segment fixedly connected to the fork-shaft and meshing with the toothed quadrant, the toothed segment provided with a projection adapted to engage the casing.

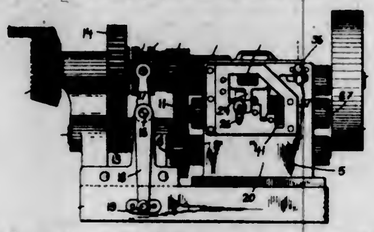
823,246. WATERPROOFING COMPOSITION. JULIUS WERKEL, New York, N. Y. Filed May 11, 1905. Serial No. 259,995.

Claim.—A composition of matter for the purpose specified, consisting of a mixture of pure white paraffin and a colorless distillate of petroleum of the specific gravity of 0.875 or 0.945 and stearic acid.

823,247. COMPOSITE SPEED-CHANGER. AUGUSTUS WOOD, Hamilton, Ohio, assignor to Niles-Bement-Pond Company, Jersey City, N. J. Filed Jan. 31, 1906. Serial No. 298,768.

Claim.—1. In a composite speed-changer, the combination, substantially as set forth, of a shaft, a pair of dissimilar-sized clutching-gears loose thereon, a clutch on said shaft adapted to lock either of said gears to the shaft, a second shaft parallel with the first-mentioned shaft, a pair of dissimilar-sized gears fast thereon and engaging said clutching-gears, a third shaft, a gear fast thereon engaging one of the gears on the second shaft, a pair of dissimilar-sized clutching-gears loose on the third shaft, a clutch on the third shaft adapted to lock thereto either of the gears thereon, a fourth shaft parallel

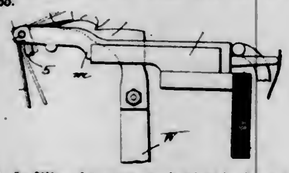
with the third shaft, a pair of dissimilar gears fast thereon and engaging the clutching-gears on the third shaft, additional dissimilar-sized gears fast on the fourth shaft, a fifth shaft parallel with the fourth shaft, a gear splined thereon, a tumbling-lever mounted on the fifth shaft and carrying the gear thereon, and a gear carried by the tumbling-lever and engaging the gear splined on the fifth shaft and adapted to selectively engage gears on the fourth shaft.



2. In a composite speed-changer, the combination, substantially as set forth, of a secondary speed-changer adapted to impart selective speeds to a machine, a plate forming a part of said secondary speed-changer and adapted for attachment to the machine, a gear forming a part of said secondary speed-changer, a casing separably secured to said plate, a primary speed-changing mechanism in said casing, comprising a shaft, a gear fast on said shaft and engaging the first-mentioned gear, an initial shaft, and means for imparting rotation to the last-mentioned shaft.

823,248. FILLING-DETECTING MECHANISM FOR LOOMS.

EVERETT S. WOOD, Hopedale, Mass., assignor to Draper Company, Hopedale, Mass., a Corporation of Maine. Filed Sept. 27, 1905. Serial No. 280,265.



Claim.—1. In filling-detecting mechanism for looms, a movable support, a filling-fork fulcrumed thereon and adapted to be tilted by engagement with the filling, and means including a hook, to coöperate with the fork and move its support upon detection of filling failure, said hook having a cam-surface to coöperate with and retain the fork in tilted position for a predetermined period after tilting thereof by the filling.

2. In filling-detecting mechanism for looms, a slidable support, a filling fork mounted therein and movable relatively thereto by engagement with the filling, and means to move the slidable support by or through coöperation with the fork upon detection of filling failure, said means also acting to retain the fork in abnormal position for a predetermined period when moved thereinto by engagement with the filling.

3. In filling-detecting mechanism for looms, a slidable support, a filling-fork mounted therein and movable relatively thereto by engagement with the filling, means to effect movement of said support by or through the fork upon detection of filling failure thereby, and a device to coöperate with and retain for a predetermined period the fork in the position to which it is moved by engagement with the filling.

4. In filling-detecting mechanism for looms, a filling-fork adapted to be intermittingly engaged and tilted by the filling when in tact, and means to prevent rebound of the fork when so tilted.

5. In filling-detecting mechanism for looms, a filling-fork adapted to be intermittingly engaged and moved by the filling when intact, and means to coöperate with and retain the fork in substantially such position for a predetermined period after movement thereinto.

6. In filling-detecting mechanism for looms, a filling-fork adapted to be intermittingly engaged and tilted by the filling when intact, and means to prevent the immediate return of the fork thereafter to detecting position.

7. In filling-detecting mechanism for looms, a filling-fork adapted to be intermittingly engaged and tilted by the filling when intact, means to retain the fork in tilted position for a predetermined period and to permit its gradual return thereafter toward detecting position, to prevent rebound of the fork.

8. In filling-detecting mechanism for looms, a filling-fork adapted to be intermittingly engaged and tilted by the filling when intact, a vibrating hook having a shoulder to coöperate with the fork upon filling failure, and a cam-surface on the hook to hold the fork in tilted position until the hook has made a predetermined movement, whereby rebound of the hook is prevented.

9. In filling-detecting mechanism for looms, a filling-fork adapted to be intermittingly engaged and tilted by the filling when intact, said fork having a tail, a vibrator, a hook fixedly mounted thereon and having a shoulder to engage the tail upon filling failure, and a cam-surface on the hook comprising a rise and a dwell or rest, to successively engage the tail when the fork is tilted and prevent its return until the hook has moved forward, and then back far enough to carry its shoulder past the fork-tail.

10. In a loom, a filling-fork, adapted to effect a change in the operation of the loom upon detection of filling failure, a temple thread-cutter, a device to cut and hold the filling end and draw the latter into coöperative relation with the temple thread-cutter, the latter and said device being located adjacent the filling-fork, and means to retract such fork to prevent improper engagement thereof with the filling end.

11. In a loom provided with automatic filling-replenishing mechanism, and with a filling-fork, in combination, a temple thread-cutter and a thread cutting and holding device, located at the replenishing side of the loom, said device cutting and holding the filling end of the outgoing filling, and bringing it into range of the temple thread-cutter, and means to act upon the filling-fork and retract the same to prevent breakage of the said filling end by the fork.

12. A filling-fork for looms, adapted to rock on a transverse axis, and means to bring the center of gravity of the fork below and substantially under its axis when the fork is in detecting position.

13. A filling-fork for looms, comprising a body portion adapted to rock on a transverse axis, tines and a tail connected with the body, and an enlargement on the body and in front of, and extending below the axis thereof, to bring the center of gravity below such axis when the fork is in detecting position.

14. A fork-slide, a filling-fork fulcrumed thereon, and means to bring the center of gravity of the fork substantially under its fulcrum when the fork is in detecting position, upward movement of the center of gravity toward the horizontal when the fork is tilted acting to gradually increase the resistance exerted by the fork, and to effect its quick return to detecting position.

15. A filling-fork for looms, comprising a body portion and tines, constructed and arranged to bring the center of gravity of the fork below and substantially under its fulcrum when the fork is in detecting position.

16. In a filling-fork for looms, a body portion adapted to rock on a pivotal support, tines carried by the body, and depending extensions on the latter to cause the center of gravtiy of the fork as a whole to fall below the axis on which the fork rocks when the fork is in detecting position.

17. A filling-fork for looms, having a body portion adapted to be rocked on a transverse axis, and an extension on the body to bring the center of gravity of the fork below its axis of movement when the fork is in detecting position.

18. A filling-fork adapted to rock on a transverse axis and provided with a tail, means to bring the center of gravity of the fork below the axis thereof when the fork is in detecting position, a vibrating hook to coöperate with the fork-tail upon detection of filling failure, and means on the hook to coöperate with the fork-tall and maintain the fork in tilted position for a predetermined period after coöperation with the filling.

19. In filling-detecting mechanism for looms, a fork-support and a filling-fork fulcrumed thereon having its center of gravity below the fulcrum when the fork is in detecting position.

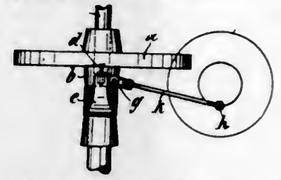
20. In a loom provided with filling-exhaustion-indicating mechanism adapted to effect a replenishment of the running-filling prior to complete exhaustion thereof, and two filling-detectors, in combination, a temple thread-cutter, a device to cut and hold the filling end and move the latter into coöperative relation with the temple thread-cutter, the latter and said device being located adjacent one of the filling-detectors, and means to prevent improper engagement of such detector with the filling end when filling replenishment is effected.

21. In a loom provided with filling-exhaustion-indicating mechanism adapted to effect a replenishment of the running-filling prior to complete exhaustion thereof, and two filling-detectors, in combination, a temple thread-cutter, a device to cut and hold the filling end and move the latter into coöperative relation with the temple thread-cutter, the latter and said device being located adjacent one of the filling-detectors, and means to act upon such detector and retract it from the path of the filling end when the latter is moved by the cutting and holding device.

22. In a loom provided with automatic filling-replenishing mechanism, and a filling-feeler to control the operation thereof, in combination, a filling-detector located at the replenishing side of the loom, a temple thread-cutter, a device to cut and hold the filling end and move it into coöperative relation with the temple thread-cutter upon filling replenishment, said cutting and holding device being located adjacent such filling-detector, and means to keep the latter away from the filling end when the same is moved by the cutting and holding device.

823,249. MEANS FOR INTERMITTENTLY ROTATING TABLES.

HEINRICH G. WULFF, Eilenburg, Germany. Filed July 26, 1905. Serial No. 271,337.

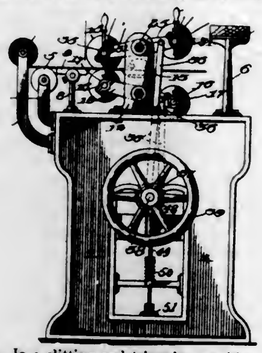


Claim.—1. A device for intermittently rotating a pivotally-supported table having ratchet-like depressions, said device comprising an arm loosely mounted on the pivot of the table, a crank-disk, a connecting-rod attached to said disk, a universal-joint connection between said arm and said connecting-rod, and means on the free end of the arm to engage with the aforesaid ratchet-like depressions and move the table at each reciprecation of the said arm.

2. A device for intermittently rotating a pivotally-supported table having ratchet-like depressions, said device comprising an arm loosely mounted on the pivot of the table, a crank-disk, a connecting-rod attached to said disk, a universal-joint connection between said arm and said connecting-rod, and a spring-pressed pin mounted on the free end of the arm to engage with the aforesaid ratchet-like depressions and move the table at each reciprocation of the said arm substantially as described.

823,250. MACHINE FOR TRIMMING AND SLITTING PAPER.

ALONZO ALDRICH, Beloit, Wis. Filed Aug. 10, 1904. Serial No. 220,234.



Claim.—1. In a slitting and trimming machine, the combination of two sets of slitters adapted for use alternately, each set comprising a plurality of pairs of slitters, the slitters of each pair being located upon opposite sides of the plane of the paper and movable toward and from said plane and toward and from each other, means for driving the slitters, means for laterally adjusting the pairs of slitters relatively to each other, and means for moving the paired slitters in opposite directions, toward and from said plane and toward and from each other, substantially as described.

2. In a slitting and trimming machine, the combination of two sets of slitters comprising a plurality of pairs of coöperating slitters, the coöperating slitters of each pair being located upon opposite sides of the plane of the paper and movable toward and from said plane and toward and from each other, and means common to both sets of slitters for simultaneously moving the slitters of each set in opposite directions, and corresponding slitters of the two sets in opposite directions, thereby moving one set into and the other set out of working position, substantially as described.

3. In a slitting and trimming machine, the combination of two sets of slitters comprising a plurality of pairs of coöperating slitters, the coöperating slitters of each pair being located upon opposite sides of the plane of the paper and movable toward and from said plane and toward and from each other, and means common to both sets of slitters for simultaneously moving the slitters of each set in opposite directions, and corresponding slitters of the two sets in opposite directions, thereby moving one set into and the other set out of working position, substantially as described.

4. In a slitting and trimming machine, the combination of two sets of slitters comprising a plurality of pairs of coöperating slitters, the coöperating slitters of each pair being located upon opposite sides of the plane of the paper and movable toward and from said plane and toward and from each other, and means for simultaneously moving corresponding slitters of the two sets in opposite directions, thereby bringing one set into and the other set out of working position, substantially as described.

5. In a slitting and trimming machine, the combination of two sets of slitters adapted for use alternately, each set comprising a plurality of pairs of slitters, the coöperating slitters of each pair being located upon opposite sides of the plane of the paper and movable toward and from said plane and toward and from each other, means including rock-arms carrying the slitters and means for rocking the arms to simultaneously move the slitters of each pair in opposite directions toward and from said plane and toward and from each other, substantially as described.

6. In a slitting and trimming machine, the combination of two sets of slitters adapted for use alternately, each set having a plurality of slitters located on opposite sides of the plane of the paper, means for driving the slitters, means for moving all of the slitters of one set that are located on one side of said plane toward and from said plane, and means for moving all of the slitters of the other set that are located on one side of said plane toward and from said plane, substantially as described.

7. In a slitting and trimming machine, the combination of two sets of slitters adapted for use alternately, each set having a plurality of slitters located on opposite sides of the plane of the paper, means for moving all of the slitters of one set that are located on one side of said plane toward said plane, and means for simultaneously moving all of the slitters of the other set that are located on one side of said plane away from said plane, and vice versa, substantially as described.

8. In a slitting and trimming machine, the combination of two sets of slitters adapted for use alternately, each set having a plurality of slitters located on opposite sides of the plane of the paper, means for moving all of the slitters of one set that are located on one side of said plane toward said plane, and means for simultaneously moving all of the slitters of the other set that are located on the aforesaid side of said plane away from said plane, and vice versa, substantially as described.

9. In a slitting and trimming machine, the combination of two sets of slitters adapted for use alternately, each set having a plurality of slitters located upon opposite sides of the plane of the paper, means for driving the slitters and means including rock-arms for moving the slitters of each set in opposite directions toward and from said plane, substantially as described.

10. In a slitting and trimming machine, the combination of a set of slitters arranged in pairs the slitters of each pair being located upon opposite sides of the plane of the paper and movable in opposite directions toward and from said plane and toward and from each other, means for laterally adjusting the pairs relatively to each other, means for simultaneously moving the slitters in opposite directions toward and from said plane, and means for simultaneously moving similar slitters laterally and in the same direction, substantially as described.

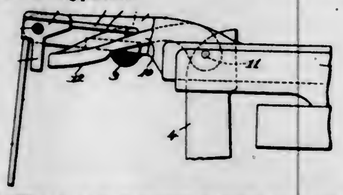
823,251. FILLING-DETECTING MECHANISM FOR LOOMS.

ARTHUR E. BENSON, Agricultural College, Miss., assignor to Draper Company, Hopedale, Mass., a Corporation of Maine. Filed Sept. 28, 1905. Serial No. 280,445.

Claim.—1. In filling-detecting mechanism for looms, a filling-fork adapted to be moved by engagement with the filling, and separate, positively-acting means to insure return of the fork to detecting position.

2. In filling-detecting mechanism for looms, a movable support, a filling-fork fulcrumed thereon, a vibrating member to coöp-

erate with the fork and thereby move its support upon detection of filling failure, and means whereby said member insures the return of the fork to detecting position.



3. In filling-detecting mechanism for looms, a filling-fork adapted to be tilted by engagement with the filling, an extension on the fork tending to balance the same in detecting position, and means adapted to engage said extension and insure return of the fork to detecting position.

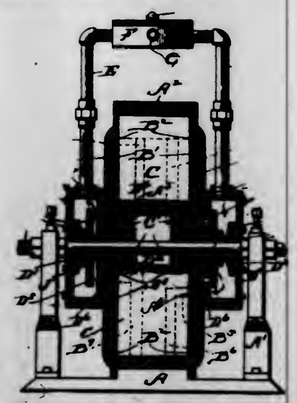
4. In filling-detecting mechanism for looms, a filling-fork adapted to be tilted by engagement with the filling, a depending extension on the fork near to and below its axis, a vibrator, a hook thereon to coöperate with the fork upon detection of filling failure and thereby effect a change in the operation of the loom, and means to move the tip of the hook upward on the outward stroke of the vibrator and thereby permit free tilting movement of the fork when engaged by the filling, the tip of the hook and the extension coöperating on the inward stroke, to insure return of the fork to detecting position.

5. A fork-slide having a hook-support, a filling-fork fulcrumed on the slide, a tail to coöperate with the hook upon detection of filling failure, a vibrator, and a connected hook slidable on the hook-support and having a cam portion to ride thereon when the hook moves outward, to elevate the hook and temporarily limit the return movement of the fork after it has been tilted.

6. A fork-slide, a filling-fork carried thereby provided with a tail and adapted to be tilted by engagement with the filling, a vibrating hook having a shoulder and a cam-surface between the shoulder and the tip of the hook, and means to lift the hook on its outward stroke to elevate the cam-surface and thereby limit descent of the fork-tail, to prevent rebound of the fork.

7. The combination, with a tiltable filling-fork, of a weft-hammer, a hook pivotally connected therewith, and means to lift the hook on the forward stroke of the weft-hammer, to coöperate with and decrease temporarily the return movement of the fork after it has been tilted.

823,252. **ROTARY ENGINE.** FREDRICK D. BLAKE, Chesterfield, S. C. Filed Oct. 10, 1905. Serial No. 282,134.



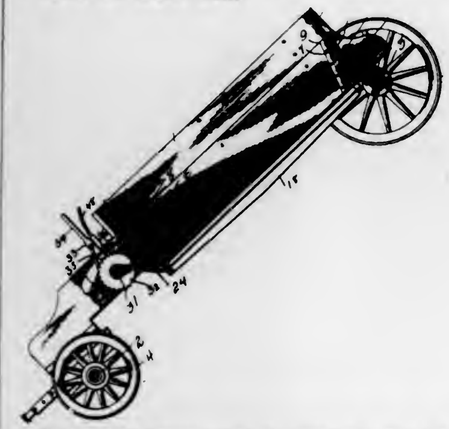
Claim.—1. In a rotary engine, steam-chests, a shaft passing through the chests, a cylindrical casing, a rotary piston having a movable wing mounted on the shaft, the said casing having slots on each side concentric with the shaft, a hub in each chest and fixed to the shaft, a flange on said hub contacting with the casing and covering the slots, ports in the flange adapted to aline with the slots, a sliding ring on the hub adapted to cover the ports alining with one of said slots, and means for admitting steam into the said chests.

2. The combination with a rotary engine, of a steam-chest, the engine-shaft passing loosely through said chest, a hub in the chest fixed to the shaft, a flange on the hub having inlet and exhaust ports adapted to aline with similar ports of the engine, a ring adapted to slide on the hub and cover the exhaust-ports, a pipe leading to said chest, and a valve adapted to admit or exhaust steam through the said pipe.

3. In a rotary engine, a casing, a shaft passing eccentrically through the casing, a piston thereon, a sliding wing carried by the piston, a steam-chest on each side of the casing, the casing having slots concentric with the shaft and with respect to each other, said slots overlapping and giving communication with the interior of the steam-chests, a rotary valve in the chest having ports adapted to aline with the slots, a sliding valve adapted to close the ports alining with one of the slots, a valve-casing, a steam-pipe leading thereto, an exhaust-pipe, a pipe leading from each of the steam-chests to the valve-casing, and a four-way valve in said valve-casing.

4. The combination with a rotary engine comprising a cylinder having slotted cylinder-heads and a rotatable shaft, the slots being concentric with each other and the shaft, steam-chests on the cylinder-heads and covering the slots, the shaft passing loosely through the said chests, a hub in each chest fixed on the shaft, inner and outer flanges on each hub, the inner flange having ports adapted to aline with the slots, a packing-ring on the outer flange, a ring sliding on the hub between the flanges and adapted to cover the ports alining with one of the slots, and means for admitting or exhausting steam through the said chests, as and for the purpose set forth.

823,253. **DUMPING-WAGON.** PETER BLATT, Allegheny, Pa. Filed Dec. 12, 1905. Serial No. 291,422.

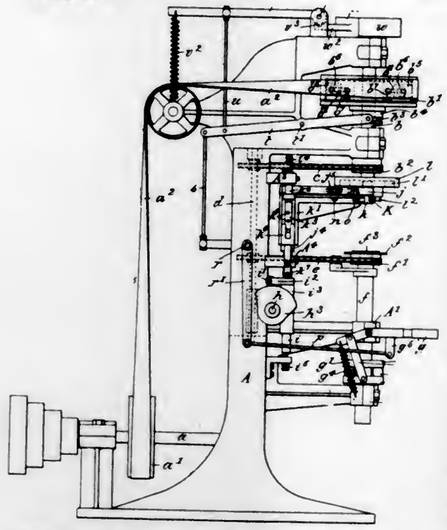


Claim.—1. In a dumping-wagon, the combination with a body portion, of two bottom sections, each hinged at one edge to the body, a beam carried by the free edge of each bottom section, a sheave carried on one end of one of said beams, a sheave mounted at each end of the body portion, a roller mounted on the body portion, means for rotating said roller, and a chain connected at one end to the end of the beam which is provided with a sheave and passing over one of the sheaves on the body portion, thence down to the other of said beams, along the same in frictional contact with the lower surface thereof, thence upwardly around the other sheave on the body portion, thence around the sheave on the first-named beam, and thence around said roller.

2. In a dumping-wagon, the combination with a body, movable bottom sections hinged to the body, and a chain connected to said bottom sections, of a roller to which said chain is connected, a ratchet-wheel carried by said roller, a dog pivotally attached to the body and engaging said ratchet-wheel, said dog being provided with a forwardly-projecting nose, a pivoted lever, a pivoted pawl mounted on said lever, a pin carried by said lever and adapted at one position of the lever to extend over the nose of the dog, thereby locking the dog in engagement with the ratchet-wheel.

3. In a dumping-wagon, the combination with a body and movable bottom sections, of a chain connected to said bottom sections, a roller connected to said chain, a ratchet-wheel carried by said roller, a pivoted lever, a pivoted pawl carried by said lever and engaging said ratchet-wheel, a dog pivotally mounted on the wagon-body, engaging said ratchet-wheel, a pin carried by said lever and adapted at one position of the lever to extend over said dog, and a projection or lug carried by the lever and adapted at another position of the lever to strike the under side of said dog and release it from engagement with the ratchet-wheel.

823,254. **CAN-HEADING MACHINE.** JULIUS BRENNINGER, Mount Vernon, N. Y., assignor to Sanitary Can Machinery Company, Ellsworth, Me., a Corporation of Maine. Filed June 15, 1905. Serial No. 265,408.



Claim.—1. In a can-heading machine, a guide-lever and a seaming-lever having coincident pivots, means for operating the guide-lever, and a vertically-slidable wedge adapted to operate the seaming-lever, substantially as specified.

2. In a can-heading machine, a guide-lever and a seaming-lever having coincident pivots, means for operating the guide-lever, an auxiliary lever connected to the guide-lever and the seaming-lever, and a wedge engaging the auxiliary lever, substantially as specified.

3. In a can-heading machine, a guide-lever and a seaming-lever having coincident pivots, means for operating the guide-lever, an auxiliary lever pivoted to the guide-lever, a link connecting the auxiliary lever to the seaming-lever, and a wedge engaging the auxiliary lever, substantially as specified.

4. In a can-heading machine, a guide-lever and a seaming-lever, said seaming-lever having a grooved hub, a vertically-movable wedge engaging said hub, an auxiliary lever engaged by the wedge, and means for pivotally connecting the auxiliary lever to the guide-lever and the seaming-lever, substantially as specified.

5. A can-heading machine provided with a spindle, a guide-lever fast thereon, a seaming-lever having a grooved hub rotatable on the spindle, a vertically-movable slide, a wedge connected thereto and engaging the grooved hub, an auxiliary lever engaged by the wedge, and means for pivotally connecting the auxiliary lever to the guide-lever and the seaming-lever, substantially as specified.

823,255. **CAR-BRAKE.** HENRY T. BROWN, Wilkinsburg, Pa. Filed Sept. 25, 1905. Serial No. 279,975.

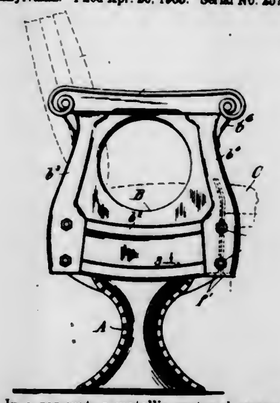
Claim.—1. In a brake, the combination with a truck, of transversely-arranged shafts, arms carried by the ends of said shafts, wheels journaled in the ends of said arms, shoes suspended from said trucks, auxiliary shoes carried by the first-named shoes, wheel brake-shoes suspended from said truck, and connected with the first-named shoes, means mounted above said truck to simultaneously partially rotate said shafts, means actuated by the rotation of said shafts to move said shoes outwardly, means actuated by the rotation of said shaft to simultaneously move said shoes and said wheel brake-shoes, substantially as described.

2. In a car-brake, the combination with a truck, of transversely-arranged shafts journaled in said truck, shoes suspended from said truck, means mounted above said truck to partially rotate said shafts in unison, means simultaneously actuated by the rotation of said shafts, to move said shoes downwardly and outwardly substantially as described.



3. In a car-brake, the combination with a truck, of transverse shafts journaled in said truck, means for rotating said shafts, angular arms carried by said shafts, brake-shoes suspended from the truck and adapted to bear on the rails and rollers carried by said angular arms and bearing on said brake-shoes whereby the rotation of said shafts will cause the brake-shoes to bear on the track.

823,256. **CAR-SEAT.** EDWARD G. BUDD, Philadelphia, Pa., assignor to Hale-Kilburn Metal Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Apr. 26, 1905. Serial No. 257,538.



Claim.—1. In a car-seat, a metallic seat end comprising two pressed sheet-metal plates having flanges at their lateral edges bent to close the lateral edges of the seat end and means for securing said plates together, a pedestal on which said seat end is mounted, a seat and a movable back supported by said seat end and an arm-rest secured on the upper edge of the seat end above the seat and in a plane parallel with the seat, substantially as set forth.

2. In a car-seat, a metallic seat end comprising two sheet-metal plates, a spacer between them and means securing the plates together, said plates having flanges at the lateral edges bent to close the lateral edges of the seat end, and a flange at the top, and an arm-rest secured

on said flange at the top of the seat end in a plane parallel with the seat, substantially as set forth.

3. In a car-seat, a metallic seat end comprising two sheet-metal plates, a spacer between them and means securing the plates together, said plates having flanges at the lateral edges bent to close the lateral edges of the seat end and inwardly-turned flanges on the upper edges of the plates, a seat and a movable back supported by said seat end, and an arm-rest detachably secured on said inwardly-turned flanges above the top of said seat, substantially as set forth.

4. In a car-seat, a metallic seat end comprising two sheet-metal plates, a spacer between them and means securing the plates together, said plates being pressed to form columns at the lateral edges and flanges at said edges bent to close the lateral edges of the seat end, a seat and a movable back supported by said seat end, and an arm-rest secured on the upper edge of said seat end above the top of said seat and overlying the ends of said columns, substantially as set forth.

5. In a car-seat, a metallic seat end comprising two sheet-metal plates, a spacer between them, means securing the plates together, flanges at the lateral edges of said plates bent to close the lateral edges of the seat end, flanges at the top of the plates and means for securing the last-named flanges together, and an arm-rest secured upon said last-named flanges, substantially as set forth.

6. In a car-seat, a metallic seat end comprising two sheet-metal plates, a spacer between them, means securing the plates together, flanges at the lateral edges of said plates bent to close the lateral edges of the seat end, flanges at the top of the plates and means for securing the last-named flanges together, and an arm-rest detachably secured upon said last-named flanges, substantially as set forth.

7. In a car-seat, a metallic seat end comprising two sheet-metal plates, a strut between them, a bolt passing through the plates and strut and securing them together, flanges closing the lateral edges of the plates, flanges at the upper edges of the plates and means securing said last-mentioned flanges together, and an arm-rest secured on said last-mentioned flanges, substantially as set forth.

8. In a car-seat, a metallic seat end comprising two sheet-metal plates, a strut between them, a bolt passing through the plates and strut and securing them together, flanges closing the lateral edges of the plates, flanges at the upper edges of the plates and means securing said last-named flanges together, and an arm-rest detachably secured on said last-mentioned flanges, substantially as set forth.

9. In a seat, the combination with a frame, of a seat end comprising two substantially parallel plates, means for securing said plates together at one edge thereof, an arm-rest secured upon said edge, a two-part strut between said plates and abutting against the internal faces thereof, and means for securing said plates and strut together, substantially as set forth.

10. In a seat, the combination with a frame, of a seat end formed in sections, a two-part strut between such sections and abutting against the internal faces thereof, and means for securing said sections and strut together, substantially as set forth.

11. In a seat, the combination with a frame, of a seat end formed in sections, a two-part strut between such sections, said parts being secured together but having passages between such parts, and bolts passing through said sections and through the passages in said strut, substantially as set forth.

12. In a car-seat, a metallic seat end comprising two sheet-metal plates, a perforated spacer between them having integral portions bent at an angle to the body portion thereof and means extending through the perforation in said spacer for securing the plates together, said plates having flanges closing the lateral edges of the seat end and a flange at the top and an arm-rest secured upon said flange at the top of the seat end, substantially as set forth.

13. In a car-seat, a metallic seat end comprising two pressed sheet-metal plates having flanges at their lateral edges bent to close the lateral edges of the seat end and having overlapping portions, rivets coacting with said portions to secure the plates together, a pedestal on which said seat end is mounted, a seat and a movable back supported by said seat end and an arm-rest secured on the upper edge of the seat end above the seat and in a plane parallel with the seat, substantially as set forth.

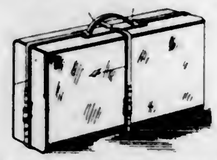
823,257. **SAFETY-INKSTAND.** BLAISE BUFFARD, Paris, France. Filed May 1, 1905. Serial No. 258,351.

Claim.—1. A safety-inkstand comprising an ink-containing chamber having a concave spherical upper surface, a cap the under surface of which is convex and parallel to the concave surface and a disk adapted to fit between the spherical surfaces with freedom of movement along the surfaces, the two spherical surfaces and the disk having central apertures the dimensions being such that when the disk is most eccentric to the cover the aperture in the under cover will be closed by the disk



2. A safety-inkstand comprising an ink-containing chamber, a double cover formed with two parallel spherical surfaces and a disk adapted to fit between the spherical surfaces with freedom of movement along the surface, the double cover and the disk having central apertures, the upper surface of the disk being concave and the dimensions such that when the disk is most eccentric to the cover the aperture in the under cover will be closed by the disk.

823,258. **PARCEL-CARRYING STRAP.** JOSEPH A. BURTON and EDWARD H. ROY, Nashville, Tenn., assignors to Burton Mfg. Co., Nashville, Tenn. Filed May 31, 1905. Serial No. 263,121.



Claim.—1. A parcel-carrying device comprising a bar provided at each end with two transverse slots and with longitudinal slots at an intermediate point, a strap passing through the longitudinal slots and designed to extend transversely around the parcel, and a second strap having portions passed downwardly through one of said transverse slots at each end of the bar and thence along the under side of the bar and upwardly through the next adjacent transverse slot, said second strap being designed to pass longitudinally around the parcel, and that portion of said second strap which is between the two sets of transvesre slots constituting a handle, as and for the purpose set forth.

2. A parcel-carrying strap comprising a bar having transverse slots at each end thereof and also having longitudinal slots at an intermediate point, a strap passing through the longitudinal slots and extending transversely around the parcel, and a second strap passing through the transverse slots at each end of the bar and extending longitudinally around the parcel, said straps having a sliding connection with, and frictionally engaging the bar which enables the portion of the second strap between the transverse slots at each end of the bar to be utilized as a handle.

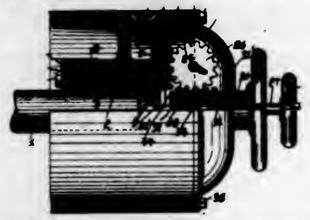
823,259. **CURTAIN-POLE.** JOHN F. BURNS, Allegheny, Pa. Filed Feb. 16, 1906. Serial No. 301,380.



Claim.—1. A curtain-fixture comprising angular supporting-sections, the upper ends of which are hollow and extend outwardly from a window-frame, hollow end sections having their outer ends curved inwardly to aline with the outer ends of the angular supporting-sections, connecting-sections telescoping into the outer ends of the supporting-sections and the outer ends of the end sections, and joining said end sections to the angular supporting-sections, a hollow central section, connecting-sections telescoping in the ends of the said central section and into the ends of said end sections, and joining the latter to the central section, the said end sections and the central sections having a recess to receive a curtain-pole, and said pole, substantially as described.

2. In a curtain-fixture, the combination with brackets having sockets and pierced plates above said sockets of angular supporting-sections having depending portions extending through said pierced plates and seating in said sockets, hollow end sections having inwardly-curved ends, telescopic connections between said end sections and said supports, a central section and telescopic connections between said central section and said end sections.

823,260. **CLUTCH.** JOHN J. CAMPBELL and HIRAM C. JOHNSON, Butler, Pa., assignors to T. W. Phillips Manufacturing Company, Butler, Pa., a Corporation of Pennsylvania. Filed Dec. 28, 1905. Serial No. 293,634.



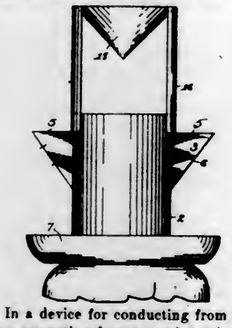
Claim.—1. In a clutch, the combination with a revoluble shaft, of a collar fixed upon said shaft, supporting-plates carried by said collar, said plates having guideways formed therein, pinion-carrying plates secured to said supporting-plates, a pulley revolubly mounted upon said collar, shoes mounted within said pulley and adapted to engage the inner sides thereof, racks carried by said shoes and engaging in the guideways of said supporting-plates, pinions journaled in said pinion-carrying plate, an outwardly-extending rod mounted in said pulley, a sleeve mounted upon said rod, means movable with said sleeve to move said shoes into engagement with said pulley, substantially as described.

2. In a clutch, the combination with a shaft, a pulley journaled upon said shaft, shoes mounted in said pulley and rotatable with said shaft pinion-carrying plates carried by said shaft, pinions journaled in said pinion-carrying plates and rotatable with said shaft, said pinions being adapted to engage said shoes, movable means mounted within the interior of said pulley and rotatable independently of said shaft, to rotate said pinions, substantially as described.

3. The combination with a shaft, a collar fixed upon said shaft, a pulley journaled upon said collar, shoes adapted to engage said pulley, of racks carried by said shoes, pinions carried by said collar and adapted to engage said racks, a rack-sleeve supported by said collar and engaging said pinions, means to longitudinally move said sleeve and thereby rotate said pinions, substantially as described.

4. The combination with a revoluble shaft, a pulley-wheel, shoes carried by said shaft and adapted to engage said pulley-wheel, of racks carried by said shoes, pinions engaging said racks, a rack-sleeve engaging said pinions, means engaging said sleeve to longitudinally move the rack-sleeve and thereby move said shoes, substantially as described.

823,261. **HOOD FOR GAS-JETS.** FRANK B. CATHER, Grafton, W. Va. Filed Feb. 28, 1906. Serial No. 303,356.



Claim.—1. In a device for conducting from a room the heat, smoke and fumes emanating from a gas-jet, a hood mounted over said gas-jet, said hood comprising a bell having an integral hollow stem projecting through a hole in the ceiling over the gas-jet, an integral collar carried by said stem for fitting against the ceiling, and integral oppositely-disposed lugs carried by said stem, said lugs being in supporting engagement with the plastering-lath of the ceiling, said lugs being substantially triangular in form and having their outer edges downwardly and inwardly inclined whereby they are adapted for supporting engagement with ceilings of varying thicknesses.

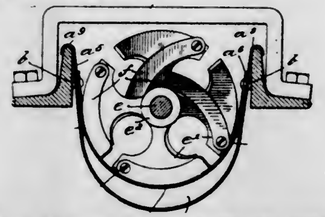
2. In a device of the character described, a bell having an integral internal upwardly-inclined flange at the mouth thereof, an integral hollow stem carried by the reduced, or upper, end of said bell, supporting-lugs carried by said stem, and a heat-distributer mounted upon the top of said stem and standing directly over the mouth thereof, said heat-distributer consisting of a sheet-metal conical cap, the apex of which points downward, and of integral supporting-legs carried by said cap.

3. In a device of the character described, a bell having an integral internal upwardly-inclined flange at its mouth, an integral hollow stem carried by the reduced end of said bell, integral supporting-lugs carried by said stem, said lugs being triangular in form and having their outer edges downwardly and inwardly inclined whereby said lugs are adapted for supporting engagement with ceilings of varying thicknesses, and a collar carried by said stem below said supporting-lugs.

4. As an article of manufacture, a bell having an integral internal upwardly-inclined flange at the mouth thereof, an integral hollow stem carried by the reduced end of said bell, a collar carried by said stem for fitting against a ceiling, and integral triangular supporting-lugs carried by said stem, said supporting-lugs having their outer edges downwardly and inwardly inclined whereby they are adapted for supporting engagement with ceilings of a thickness greater than the width of the space between said collar and said lugs.

5. In a device for conducting from a room the heat, smoke and fumes emanating from a gas-jet, a hood mounted over said gas-jet, said hood consisting of a bell having an integral hollow stem projected through a hole in the ceiling over the gas-jet, a collar carried by said stem in close engagement with the ceiling, integral oppositely-disposed lugs carried by said stem in supporting engagement with the plastering-lath of the ceiling, said lugs being substantially triangular in form and having their edges downwardly and inwardly inclined whereby they are adapted for supporting engagement with the plastering-lath of a ceiling the thickness of which is greater than the width of the space intervening between said lugs and said collar, an integral internal upwardly-inclined flange carried by said bell at its mouth, and a conical heat-distributer mounted over the end of said stem, said heat-distributer consisting of a conical cap, the apex of which points downward, and integral supporting-legs carried by said cap.

823,262. **DRIER.** ARTHUR T. COLLINS, Swarthmore, Pa. Filed Mar. 2, 1906. Serial No. 303,785.



Claim.—1. In a drier of the character described, a trough adapted to receive material to be dried, a conveyer having blades adapted to move the material forward in said trough, and a scraper carried by each of said blades adapted to be held by gravity in engagement with said trough and move forward portions of the material not affected by said blades.

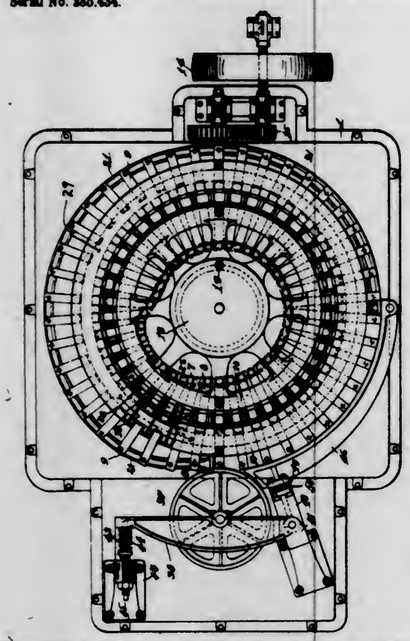
2. In a drier of the character described, a trough adapted to receive and dry material placed therein, a conveyer having disconnected spirally-set blades adapted to move the material forward in the trough, and a scraper pivotally connected with each of said blades, said scrapers arranged to follow irregularties of the inner wall of said trough to remove portions of the material not affected by said blades.

3. In a drier of the character described, a trough adapted to receive and dry material placed therein, a conveyer having disconnected spirally-set blades adapted to agitate and move the material forward in said trough, a scraper pivotally connected with each of said blades, said scrapers arranged to be actuated by said blades and to engage by gravity certain portions of said trough.

4. In a drier of the character described, a trough adapted to receive and dry material placed therein, a conveyer having disconnect-

ed spirally-set blades adapted to agitate and move the material forward in said trough, a scraper pivotally connected at one end with each of said blades and projecting beyond the same, each of said scrapers adapted to be held by gravity in engagement with certain portions of said trough and to follow irregularities thereof so as to move forward portions of the material not affected by said blades.

823,263. **BRIQUET-PRESS.** JAMES J. CRAWFORD, Oakland, Cal., assignor, by direct and mesne assignments, to Eureka Briquette Company, Oakland, Cal., a Corporation of California. Filed Nov. 1, 1905. Serial No. 285,434.



Claim.—1. In a briquet-press, a rotary member provided with a series of pockets adapted to receive material and a mold-chamber adjacent to each pocket and in the same horizontal plane therewith, and pairs of oppositely-located reciprocatory plungers for removing the material from the pockets and forming it into briquets in said mold members.

2. In a briquet-press, a rotary disk provided with a series of pockets in its upper surface for receiving material and discharge recesses or openings in its under surface for discharging the briquets, and mold-chambers between the pockets and openings, and pairs of oppositely-located, reciprocatory plungers in said disk adapted to remove the material from the pockets and form it into briquets in said mold-chambers and discharge the briquets through said recesses or openings.

3. In a briquet-press, a rotary disk provided with a series of pockets in its upper surface for receiving material and recesses or openings in its under surface for discharging the briquets and mold-chambers between the pockets and recesses or openings, the upper portion of the surrounding walls of each pocket being inclined or flaring and the upper edge of the partition between the pockets being a substantially sharp edge, and pairs of oppositely-located, reciprocatory plungers in the disk adapted to remove material from the pockets and form it into briquets in said mold-chambers and discharge the briquets through said recesses or openings.

4. In a briquet-press, a rotary disk provided with a series of pockets, mold-chambers adjacent thereto and discharge-openings, said chambers being in the same horizontal plane with the lower part of the pockets and with the upper part of the discharge-openings, radially-arranged pairs of plungers adapted to remove material from the pockets into the mold-chambers and then into the discharge-openings and means for moving one of the plungers of each pair independently, then moving both plungers toward each other, then moving them simultaneously in the same direction and then moving the first-mentioned plungers in the opposite direction from which they were originally moved.

5. In a briquet-press, a rotary receiving and forming disk, radially-arranged parts of reciprocatory plungers therein, the outer end of some of the plungers being recessed and provided with antifriction-rollers in said recesses and a pin on one side of the plungers, and cam-surfaces and grooved cam-rings for reciprocating the plungers.

6. In a briquet-press, a rotary receiving and forming disk, radially-arranged pairs of reciprocating plungers therein, cams and cam-rings for actuating the plungers, a cam-lever, and a pressure-wheel also actuating the plungers for giving the final pressure to the briquets.

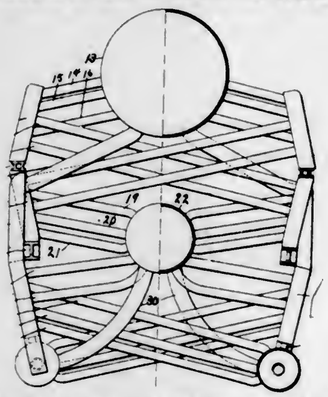
7. In a briquet-press, a rotary receiving and forming disk, radially-arranged pairs of reciprocatory plungers therein, inner and outer cam-rings, a pressure-lever pivotally secured at one end to the outer cam-ring, means at the free end for adjusting the lever relative to the outer plungers, and a pressure-wheel adjacent to the free end of said lever.

8. In a briquet-press, a rotary receiving and forming disk, radially-arranged pairs of reciprocatory plungers therein, inner and outer cam-rings, a pressure-wheel, means for adjusting it vertically, and adjustable means for holding said wheel yieldingly in position.

9. In a briquet-press, a rotary receiving and forming disk, radially-arranged pairs of reciprocatory plungers therein, inner and outer cam-rings, standards adjacent to the outer ring, each provided with an arm, a pressure-lever pivotally secured at one end to the outer ring and having its free end adjustably mounted on the arm of one of the standards, a yoke pivotally secured at one end to said standard and having its free end adjustably and yieldingly mounted on the arm of the other standard, and a wheel journaled in the yoke in position for engaging with the outer plungers.

10. In a briquet-press, a base, a column thereon provided with cam-shaped flanges near its top, one of which is provided with a cam-groove, a rotary disk mounted on the column with its outer portion substantially in the plane of said flanges and provided with pockets and compression-chambers, an outer cam-ring around said wheel, inner and outer reciprocatory plungers in the disk in position for being actuated by said cam and rings and rollers and pins on the inner plungers, said pins engaging with the cam-groove and the rollers with one of the flanges.

823,264. **WATER-TUBE BOILER.** HARRY DEL MAR, New York, N. Y., assignor to Boilers and Engineering Company, Jersey City, N. J., a Corporation of New Jersey. Filed Mar. 10, 1906. Serial No. 305,199.



Claim.—1. A water-tube steam-boiler comprising a steam-drum, a water-drum below the steam-drum, mud-drums, and headers on the sides of the boiler, the steam-drum, water-drum and mud-drums being connected by means of suitable tubes and through the headers with each other and the inlets and outlets of the several drums being of approximately equal area.

2. A water-tube steam-boiler comprising a steam-drum, a water-drum and mud-drums, vertical feed-pipes or water-legs at the corners of the boiler, and headers forming the boiler sides, the several drums being connected with the headers and the steam-drum and mud-drums connecting also with the aforesaid feed-pipes and water-legs.

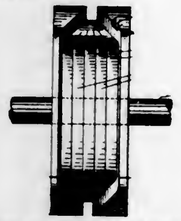
3. A water-tube steam-boiler comprising a steam-drum, a water-drum below the steam-drum, and mud-drums below the water-drum, a series of superposed headers forming the boiler sides, connections by means of suitable tubes between the mud-drums the lower headers and the water-drum, tube connections between the water-drum, the upper headers and the steam-drum, and a downflow connection between the steam-drum and the mud-drums.

4. The combination with the steam-drum and water-drum, of the superposed headers on the sides of the boiler, connections between the upper headers and the steam-drum, cross-tube connections between the upper headers and the next lower headers, and cross-tube connections between the said next lower headers and the water-drum.

5. A water-tube steam-boiler comprising a steam-drum, a water-drum below the steam-drum, mud-drums at the boiler sides, a series of superposed headers above the mud-drums, tube connections between the upper headers and the steam-drum, cross-tube connections between the upper headers and the next lower headers, tube connections between the said second headers and the water-drum, tube connections between the water-drum and the lower or third series of headers, connections between the lower headers and the mud-drums, and downflow connections between the steam and mud drums.

6. In a boiler such as described, the combination with the water-drum, mud-drums and lower headers, of tube connections between the water-drum and said lower headers, connections between the said lower headers and the mud-drums, and direct tube connections between the mud-drums and the water-drum.

823,265. **FRAME FOR WINDING ARMATURE-COILS.** LOUIS R. R. DE PLANQUE and JAMES BIGGERSTAFF, Yonkers, N. Y. Filed Sept. 14, 1905. Serial No. 278,495.



Claim.—1. A frame for winding armature-coils, comprising a member provided with a plurality of steps and a shoulder portion, and a detachable member adapted to act as a shoulder portion when assembled with the first member, the width of each individual step and the width of the least space between the shoulder portions, varying proportionately to the number of coils to be wound for a given thickness of wire.

2. A frame for winding armature-coils, comprising a member having a portion provided with a plurality of steps and a shoulder portion, pins arranged on each of said steps, and a detachable member adapted to act as a shoulder portion when assembled with the first member.

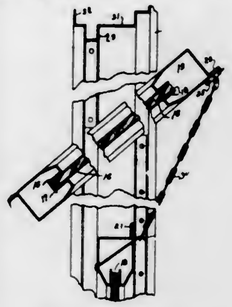
3. A frame for winding armature-coils, comprising a member having a portion provided with a plurality of steps and a shoulder portion, a detachable member adapted to act as a shoulder portion when assembled with the first member, and registering holes and slots in communication therewith, in each of said members.

4. A frame for winding armature-coils, comprising a member having a portion provided with a plurality of steps and a shoulder portion, a detachable member adapted to act as a shoulder portion when assembled with the first member, holes in one member, pins registering with said holes in the other member, and a shaft-hole passing through both members.

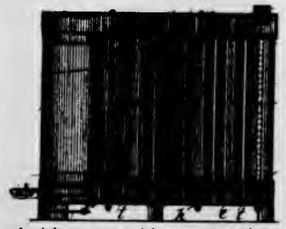
823,266. **METAL WINDOW-SASH.** CHARLES W. ECKER, Canton, Ohio, assignor to The Berger Manufacturing Company, Canton, Ohio, a Corporation of Ohio. Filed Feb. 7, 1905. Serial No. 244,641.

Claim.—1. A sash-rail for the purpose designed formed of a single piece of metal and provided with a glass-receiving groove, said groove adapted to be adjusted to different widths, and a portion of the metal located across the groove and formed of a width greater than the normal width of the groove, substantially as and for the purpose specified.

2. As an improved article of manufacture, a sash-rail formed of a single piece of metal and provided with an adjustable glass-receiving groove and means for closing the seat of the groove, substantially as and for the purpose specified.



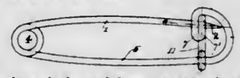
823,267. **GAS-HEATER.** CARL EICKEMEYER, Yonkers, N. Y. Filed Oct. 17, 1905. Serial No. 283,116.



Claim.—1. A heater comprising upper and lower heat-boxes, a burner-tube connecting the same, a burner arranged in the lower portion of said burner-tube, a plurality of upright radiator tubes or elements likewise connecting said heat-boxes, and partitions in said upper heat-box forming therein a single exhaust-compartment communicating directly with only one of said elements, the hot gases passing through said last-named element in upward direction, but through the other elements in downward direction.

2. In a heater, the combination of upper and lower heat-boxes, each made in superposed sections, bolts to interclamp the sections of each box, a burner-tube connecting said boxes, radiator-tubes also connecting the same, and bolts passing vertically through the upper heat-box, certain of said radiator-tubes, and the lower heat-box.

823,268. **SAFETY-PIN.** CHARLES W. ENGEL, Pittsburg, Pa. Filed June 7, 1905. Serial No. 264,083.

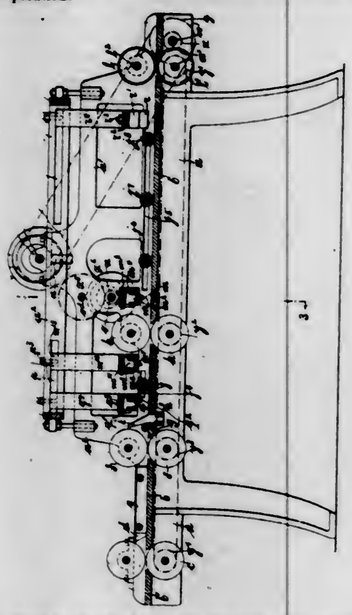


Claim.—A safety-pin formed from a single piece of wire bent to form a spring at one end and a substantial D-shaped guard at the other end, the said strand of wire being doubled to form a pin member, and an opposing arm or leg member, the guard being formed integral with said leg or arm member with a part thereof bent downwardly and then inwardly and upwardly at right angles to the pin member, and being crossed over said pin member and then bent downwardly and wrapped around the leg or arm member, the said downwardly-bent part of said guard thus lying in advance of the upwardly-bent part and acting as a brace for the same against strain through the pin member.

823,269. **MACHINE FOR MAKING LEATHER STRAPS AND BELTS.** ADOLF FEINBLATT, New York, N. Y., assignor of one-half to Sam Jaegur, New York, N. Y. Filed Dec. 23, 1905. Serial No. 293,051.

Claim.—1. A machine for making leather straps and belts comprising framework, a table thereon, feed and guiding rollers mounted in said framework, two knives for cutting straight the sides of the hide, a plurality of knives for cutting the hide into straps, a device for punching round holes, a device for punching long holes, a device for cutting off the rear ends, a device for cutting the acute angular

front ends, and a creasing device, all suitably mounted on the framework and so arranged that finished straps are made during one continuous operation.



2. A machine for making leather belts and straps comprising framework, feed and guiding rollers and a creasing device, a plurality of knives for cutting the hide into straps, and a device for cutting round holes into the straps means on said device for operating it independently, a separate top frame, a device for punching long holes one in each strap, a device for cutting off the rear ends of the straps, a device for cutting the acute angular front ends, all said three devices being mounted on the top frame, and means on said top frame for operating these three devices simultaneously.

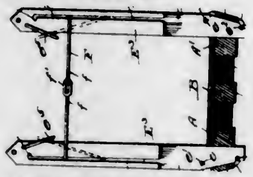
3. A machine for making leather straps comprising framework feed and guiding and creasing rollers therein, a device for cutting the hide into straps having knives which are adjustable as to their relative distance, a device for punching round holes into the straps having punches which are adjustable as to their relative distance, means on said device for operating it independently, a separate top frame, a device for punching long holes one in each strap having punches which are adjustable as to their relative distance, a device for cutting off the rear ends of the straps, and a device for cutting the acute angular front ends, and means on said top frame for operating these three devices simultaneously.

4. A machine for making leather straps comprising framework, feed and guiding and creasing rollers suitably mounted therein, an adjustable device for cutting the side ends of the hide and guiding the latter, an adjustable device for cutting the hide into straps, an adjustable device for punching round holes into the straps, an adjustable device for punching long holes one in each strap near the rear end of same adjustable in a horizontal plane, a device for cutting off the rear ends which is adjustable in a horizontal plane, and a device for cutting off the acute angular front ends also adjustable in a horizontal plane.

5. A machine for making leather straps comprising framework, feed and guiding and creasing rollers suitably mounted therein, an adjustable device for cutting the side ends of the hide and guiding the hide so cut, a device for cutting the hide into straps having knives which are adjustable as to their relative distance, a device for punching round holes into the straps having punches which are adjustable as to their relative distance and adapted to be operated aloue while the straps are moving, a top frame mounted on the framework, a device for punching long holes one in each strap having punches which are adjustable as to their relative distance, and a device for cutting off the rear ends of the straps, both last-named devices being adjustable horizontally as to their relative distance, and a device for cutting the acute angular front ends, all said three devices being mounted on the top frame and adapted to be operatod simultaneously, and means on said frame for adjusting the device for cutting the front ends relative to its disatnce from the device for cutting off the rear ends.

6. In a machine for making leather straps an adjustable device for cutting the hide into straps so that straps of various widths may be made, an adjustable device for punching round holes into the straps and adapted to be operated alone while the straps are moving so that any number of holes may be punched, and three devices adapted to be operated simultaneously, one for cutting off the rear ends, one for punching long holes, and one for cutting the acute angular front ends.

823,270. CAR-STAKE. CHARLES F. FLEMMING, Washington, D. C. Filed Mar. 30, 1906. Serial No. 308,355.



Claim.—1. A stake for cars and the like, comprising a body notched at its tapered lower end and provided with a vertical slot, a gravity-latch, and a tie-rod section adjustable in said slot.

2. A stake for cars and the like, comprising a body notched at its tapered lower end and provided with a vertical slot, grooved at its upper end, a gravity-latch and a tie-rod section adjustable in said slot.

3. A stake for cars and the like, comprising a body notched at its tapered lower end and provided with a vertical slot grooved at its upper end, a gravity-latch, a tie-rod section adjustable in said slot, a link for holding the end of the tie-rod section when not in use, and metal sheathing surrounding the slot and stake-body, substantially as described.

4. A stake for cars and the like, comprising a body notched at its tapered lower end and provided with a vertical slot grooved at its upper end, a gravity-latch, a tie-rod section adjustable in said slot, a link for holding the end of the tie-rod section when not in use, and an antifriction-sleeve surrounding the end bar of the tie-rod section, substantially as described.

5. In combination with a car-body or the like, having stake-pockets, a stake fitting each of the pockets, and having a notch in its lower end, a gravity-latch pivoted to the stake above the pocket and adapted to engage the notch of the stake with its lower free end, substantially as described.

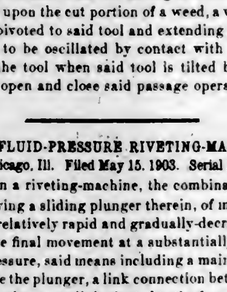
6. In combination with a car-body or the like, having stake-pockets, stakes each having a vertical slot grooved at its upper end, a tie-rod comprising sections united by a turnbuckle, the end bar of the yoke-like outer ends thereof being seated and adjustable in the vertical slot of the stakes, a notch in the lower end of each stake, and a gravity-latch pivoted to the stake above the pocket adapted to engage the notch of the stake with its lower free end, substantially as described.

7. In combination with a car-body or the like, having stake-pockets, stakes each having a vertical slot grooved at its upper end, a tie-rod comprising sections united by a turnbuckle, an antifriction-sleeve surrounding the end bar of the yoke-like outer ends thereof, said end bars being seated and adjustable in the vertical slots, a notch in the lower end of each stake, a gravity-latch pivoted to the stake above the pocket adapted to engage the notch of the stake with its lower free end, and a link for holding the end of the tie-rod section when not in use, substantially as described.

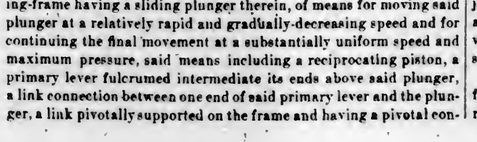
823,271. INFANT'S BED. JOHN GAMBER and OTTO F. HEER, Washington, Pa. Filed Dec. 11, 1905. Serial No. 291,343.

Claim.—1. A crib embodying a rectangular framework, frames hinged to the inner sides of said framework and adapted to fold inwardly to form a horizontal partition, an auxiliary crib resiliently suspended within said framework, a telescopic frame surrounding said auxiliary crib and resistently connected to said crib, means to detachably connect said telescopic frame to the upper edges of said framework, substantially as described.

2. In a crib, the combination with a framework, of frames hinged to the inner sides of said framework and adapted to fold inwardly, an auxiliary crib resiliently supported in said framework, a telescopic framework surrounding said auxiliary crib and resiliently connected to said auxiliary crib and means projecting from the framework to support the telescopic frame in elevated position, substantially as and for the purpose described.



823,272. WEEDING-TOOL. THEODORE D. HALPIN, Lapeer, Mich. Filed Jan. 12, 1906. Serial No. 295,738.



Claim.—1. In combination with a weeding-tool, a reservoir thereon for containing fluid, a passage leading from said reservoir adapted to deliver fluid from said reservoir to the portion of the weed cut by said tool, and means for opening and closing said passage adapted to be operated by contact with the earth when the handle of the tool is moved sidewise, substantially as described.

2. The combination of a weeding-tool, a reservoir thereon, a passage leading from said reservoir having its discharge-opening at the rear of said tool, a lever pivoted to said tool back of said opening and extending forward under said opening and back of said pivotal point, a valve adapted to close said opening upon said lever, and a spring adapted to force said lever against said opening.

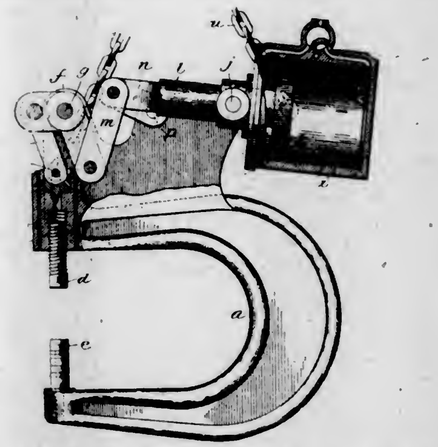
3. The combination of a weeding-tool, a reservoir thereon, a passage leading from said reservoir and having its mouth so located that it shall discharge upon the cut portion of a weed, a valve closing said passage, a lever pivoted to said tool and extending in position to be oscillated by contact with the earth in the ordinary use of said tool, and a valve adapted to open and close said passage operatively connected with said lever.

4. The combination of a weeding-tool, a reservoir thereon, a passage leading from said reservoir having its mouth so located that it shall discharge upon the cut portion of a weed, a valve closing said passage, a lever pivoted to said tool and extending backward there from in position to be oscillated by contact with the earth in the ordinary use of the tool when said tool is tilted backward, and a valve adapted to open and close said passage operatively connected with said lever.

823,273. FLUID-PRESSURE RIVETING-MACHINE. ELMER E. HANNA, Chicago, Ill. Filed May 15, 1903. Serial No. 157,234.

Claim.—1. In a riveting-machine, the combination with a supporting-frame having a sliding plunger therein, of means for moving said plunger at a relatively rapid and gradually-decreasing speed and for continuing the final movement at a substantially uniform speed and maximum pressure, said means including a main lever fulcrumed in the frame above the plunger, a link connection between one end of said lever and the plunger, a link pivoted to the frame, a link connection between said link and the opposite end of said lever, and means for moving the link pivoted to the frame about its pivot.

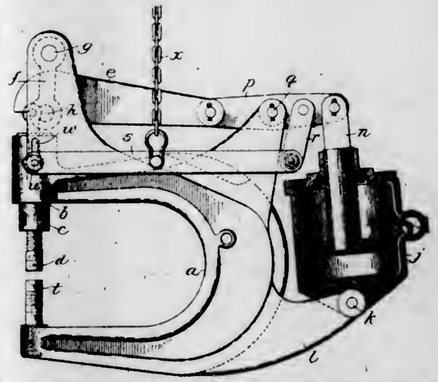
2. In a fluid-pressure riveter, the combination with a supporting-frame having a sliding plunger therein, of means for moving said plunger at a relatively rapid and gradually-decreasing speed and for continuing the final movement at a substantially uniform speed and maximum pressure, said means including a reciprocating piston, a primary lever fulcrumed intermediate its ends above said plunger, a link connection between one end of said primary lever and the plunger, a link pivotally supported on the frame and having a pivotal connection with the reciprocating piston, and a link connecting said last-mentioned link and the opposite end of the primary lever.



3. In a fluid-pressure riveter, a portable frame provided with an anvil, a movable plunger positioned in the frame above the anvil, a fluid-pressure cylinder supported in the frame, a piston therein, lever-and-link connections between said piston and plunger to effect the movement thereof, and hanger mechanism for suspending said frame connected to said plunger and said fluid-pressure cylinder.

4. In a fluid-pressure riveter, a portable frame provided with an anvil, a plunger movably supported within the frame above the anvil and provided with studs projecting laterally to each side of the frame of the machine, a fluid-pressure cylinder supported in the frame, a piston therein, lever-and link connections between said piston and the plunger, and suspension-chains having their ends secured respectively to the laterally-projecting studs of the plunger and to the fluid-pressure cylinder.

823,274. FLUID-PRESSURE RIVETING-MACHINE. ELMER E. HANNA, Chicago, Ill. Filed May 15, 1903. Renewed Apr. 25, 1906. Serial No. 313,680.



Claim.—1. In a fluid-pressure riveter, the combination of a frame, a plunger bearing a riveting or similar tool, a main operating-lever, a swinging fulcrum for such lever, link mechanism connecting the main operating-lever and plunger together, a fluid-pressure cylinder, a reciprocating piston therein provided with a piston-rod projecting therefrom, and an intermediate lever pivotally mounted upon and secured to the frame of the machine and pivotally connected with the piston-rod and main operating-lever, substantially as described.

2. In a fluid-pressure riveter, the combination of a supporting-frame, a plunger reciprocatingly mounted therein and carrying a riveting or similar tool, a main operating-lever, link mechanism piv-

otally mounted in the frame of the machine and in which the main operating-lever is fulcrumed, link mechanism connecting the plunger and main operating-lever together, a fluid-pressure cylinder, a reciprocating piston mounted therein and provided with a piston-rod projecting therefrom, and intermediate lever mechanism fulcrumed in the frame of the machine and pivotally connecting the main operating-lever and piston-rod together, substantially as described.

3. In a fluid-pressure riveter, the combination of a portable frame, a plunger slidingly mounted therein and provided with a riveting or similar tool, a main operating-lever, a swinging fulcrum for the said main lever, link mechanism pivotally connecting the plunger and main operating-lever together, a fluid-pressure cylinder pivotally secured on the portable frame of the machine, a reciprocating piston mounted therein and provided with a piston-rod projecting therefrom, and an intermediate lever fulcrumed in the frame of the machine and pivotally connecting the main operating-lever and piston-rod together, substantially as described.

4. In a fluid-pressure riveter, the combination of a bifurcated supporting-frame, a plunger slidably mounted in one arm of said frame and provided with a riveting or similar tool, pin mechanism secured to such plunger and extending out through openings in the frame of the machine, an operating-lever fulcrumed in the frame of the machine, link mechanism pivotally connected with the plunger and with the operating-lever, a fluid-pressure cylinder provided with a reciprocating piston and piston-rod connected with the operating-lever, and hanging mechanism connected with the pins on the plunger, substantially as described.

5. In a fluid-pressure riveter, the combination of a portable bifurcated frame, a plunger slidingly mounted in one arm of said frame and provided with a riveting or similar tool, pin mechanism secured to such plunger and extending out through elongated openings in the frame of the machine, a fluid-pressure cylinder provided with a reciprocating piston and piston-rod, a system of compound levers for transmitting power and motion from the piston-rod to the sliding plunger, and link mechanism pivotally secured to the projecting pins on the plunger and connected with said system of levers by which the machine is hung in position and the riveting operations facilitated, substantially as described.

6. In a fluid-pressure riveter, the combination of a bifurcated frame portion, a plunger slidably mounted in one arm of such frame and provided with a riveting or similar tool, a main operating-lever fulcrumed at right angles with the line of motion of said plunger, link mechanism pivotally mounted in the frame of the machine upon which said main operating-lever is fulcrumed, link mechanism connected with the plunger and main operating-lever, a fluid-pressure cylinder secured to the frame of the machine, a reciprocating piston mounted therein and provided with a projecting piston-rod, and an intermediate lever fulcrumed in the frame of the machine and pivotally connecting the main operating-lever and piston-rod together, substantially as described.

7. In a fluid-pressure riveter, the combination of a C-shaped portable supporting-frame, a plunger slidingly mounted in one arm of said frame and provided with a riveting or similar tool, projecting pin or stud mechanism secured to said plunger, a main operating-lever fulcrumed at right angles with the line of motion of said plunger, link mechanism pivotally secured in the frame of the machine in which such main operating-lever is fulcrumed, link mechanism pivotally securing the plunger and main operating-lever together, a fluid-pressure cylinder pivotally secured to the frame of the machine, a reciprocating piston mounted therein and provided with a piston-rod projecting therefrom, an intermediate lever fulcrumed in the frame of the machine and pivotally securing the main operating-lever and piston-rod together, and hanging-levers pivotally connected with the lever mechanism of the machine and with the projecting pins on the plunger mechanism, substantially as described.

8. In a machine of the class described, the combination of a frame, a plunger mounted in such frame and movable with relation thereto, and means for moving such plunger with relation to the frame at a relatively rapid and gradually-decreasing speed with increasing pressure throughout the first portion of its stroke and at a relatively slow uniform speed and pressure throughout a subsequent portion of the stroke, substantially as described.

9. In a machine of the class described, the combination of a frame, a plunger mounted in such frame and movable with relation thereto, means for applying a relatively light pressure and relative rapid gradually-decreasing speed to such plunger throughout a portion of its stroke and a maximum uniform pressure and substantially uniform speed throughout the last portion of its stroke, substantially as described.

10. In a machine of the class described, the combination of a frame, a plunger mounted in such frame movable with relation thereto, a fluid-pressure cylinder, a piston movably mounted in such cylinder, means for admitting fluid under pressure to the cylinder-chamber, and means for connecting such piston and plunger, whereby a relatively gradually decreasing speed and a gradually-increasing pressure is transmitted from the piston to the plunger throughout a portion of the stroke of the plunger and continued substantially uniform speed and a maximum substantially uniform pressure throughout the last portion of its stroke, substantially as described.

11. In a machine of the class described, the combination of a frame, a plunger mounted in such frame movable with relation thereto, a fluid-pressure cylinder, a piston movably mounted in such cylinder, means for admitting fluid under pressure to the cylinder-chamber, lever mechanism connecting such piston and plunger adapted to transmit an increasing pressure to the plunger and a relatively rapid gradually-decreasing speed throughout a portion of its stroke and a maximum substantially uniform pressure and speed throughout a substantial subsequent portion of such stroke, substantially as described.

12. In a machine of the class described, the combination of a frame, a piston-cylinder, a piston movably mounted in such piston-cylinder, means for admitting fluid under pressure to such piston-cylinder, a plunger mounted in such frame, and connected mechanism between the plunger and piston whereby the plunger is moved at a gradually-decreasing speed with relation to the movement of the piston during the first portion of its stroke and at a slower substantially uniform speed and in substantially uniform relation to the movement of the piston during a subsequent portion of its stroke, substantially as described.

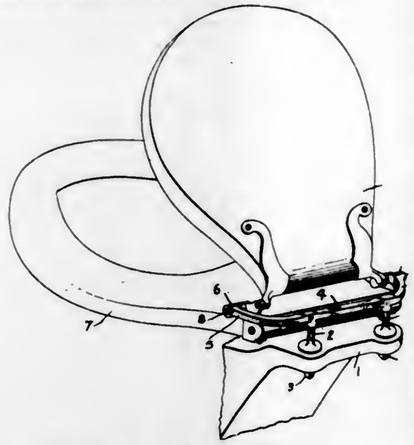
13. In a machine of the class described, the combination of a frame, a piston-cylinder mounted thereon, a piston movably mounted in such piston-cylinder, means for admitting fluid under pressure to such piston-cylinder, a plunger mounted in such frame movable at a gradually-decreasing speed and increasing pressure with relation to the movement of the piston during the first portion of its stroke and at a substantially uniform speed and pressure and in substantially uniform relation to the movement of the piston during the last portion of its stroke, and lever mechanism connecting such plunger and piston for operating the plunger in such relation to the piston, substantially as described.

14. In a machine of the class described, the combination of a frame, a piston-cylinder mounted thereon, a piston movably mounted in such piston-cylinder, means for admitting fluid under pressure to such piston-cylinder, a plunger mounted in such frame movable at a gradually-decreasing speed with relation to the movement of the piston during the first portion of its stroke and at a substantially uniform speed and in substantially uniform relation to the movement of the piston during the last portion of its stroke, a riveting-tool mounted in such plunger, an anvil mounted in the frame opposite such riveting-tool, and lever mechanism connected with such plunger and operated by such piston for transmitting an increasing pressure and relatively rapid decreasing speed to the plunger during the first portion of its stroke and a substantially uniform maximum pressure and speed throughout the last portion of its stroke, substantially as described.

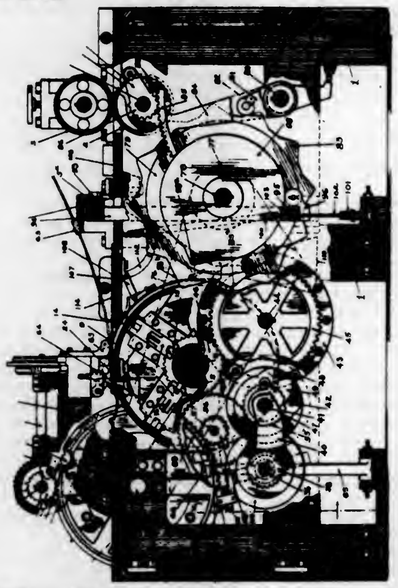
15. In a machine of the class described, the combination of a movable frame having upper and lower arms for receiving material to be operated upon therebetween, a plunger mounted in such movable frame and provided with a riveting-tool, means for holding such plunger in substantially fixed position, a lower riveting-tool mounted in the lower arm movable therewith and with relation to the plunger and the material to be operated upon, and means for moving the frame and such lower riveting-tool upward and downward with relation to the plunger under gradually-increasing pressure throughout the first portion of its stroke and under maximum and substantially uniform pressure throughout the last portion of its stroke, substantially as described.

823,275. HINGE FOR CLOSET-SEATS. WILLIAM A. HENN, Hamilton, Ohio, assignor to The Sanitary Manufacturing Company, Hamilton, Ohio. Filed Sept. 1, 1905. Serial No. 276,739.

Claim.—In a closet-seat hinge, the combination, substantially as set forth, of a pair of flanged studs adapted for attachment to the rearwardly-projecting portion of a closet-bowl, a bar rigidly uniting the upper ends of said studs and provided at each end with a forwardly-extending arm, and hinge-pivots adapted for engagement with the forward extremities of said arms and with a seat.



823,276. MACHINE FOR FORMING CYLINDRICAL PACKAGES. HENRY C. HERR, Detroit, Mich. Filed July 11, 1904. Serial No. 216,089.



Claim —1. The combination with a drum, means for intermittently partially rotating said drum, an intermittent feed mechanism for supplying to said drum the material for each partial rotation, means whereby said feed mechanism is timed to start and stop, respectively in advance of the starting and stopping of said drum.

2. The combination with a drum, means for intermittently partially rotating said drum, an intermittently-operated feed mechanism for supplying the material to said drum for each partial rotation thereof, means intermediate said feed mechanism and drum for periodically severing the material, and means for temporarily retarding the feed after the severing of the material, to separate the severed edges.

3. The combination with a drum, means for intermittently partially revolving said drum, of an intermittently-operated feed mechanism for supplying the material to said drum for each partial rotation thereof, means whereby said feed mechanism is timed to slacken the tension of the material during winding, and to draw the material taut at the end of each winding movement.

4. The combination with an intermittently-rotating winding-drum, of a nailing mechanism, means of timing the same to operate during intervals of rest of said drum, and a common drive mechanism for the winding and nailing mechanism, and means for stopping said drive mechanism at a point between the completion of the partial rotation of said drum and the succeeding operation of the nailing mechanism, whereby upon the restarting of said drive mechanism, said nailing mechanism will be operated in advance of the rotation of said drum.

5. The combination with an intermittently-rotating winding-drum, of a nailing mechanism, means of timing the same to operate during intervals of rest of said drum, a common drive mechanism for operating said intermittent drum and nailing mechanism, a clutch controlling said common drive, a trip operated by the completion of a rotation of said winding-drum to release said clutch and arrest movement of said common drive, the point at which said mechanism is arrested being between the completion of the partial rotation of said drum, and the next succeeding operation of the nailing mechanism.

6. The combination with an intermittently-operated winding-drum, of a nailing mechanism, of a guide for holding the hoop in relation to said nailing mechanism, a common drive mechanism for said winding-drum and nailing mechanism, means for arresting movement of said common drive after the winding of the ply to permit of the engagement of the hoop with its guide, the point of arrest being between the completion of the partial movement of the drum and the succeeding nailing operation, whereby the initial operation on restarting is the nailing of the hoop.

7. The combination with a winding-drum, means for rotating the same through a plurality of complete revolutions and means for arresting the movement of said drum at predetermined points of the work-holding clip carried by said drum, an actuating-arm for said clip, a stationary cam-track around which said arm travels in the rotation of said drum to hold the clip in clamping engagement, said track being cut away to permit the disengagement of said clip in the position of rest of said drum, and means for completing the cutaway portion of said track between successive revolutions of the drum.

8. A collapsible winding-drum comprising an arbor, separated heads thereon, drum-segments engaging radial guides on said heads and movable thereon, toggle-levers connected to said segments and heads, longitudinally-extending rods connecting the knuckles of said toggles, a collar longitudinally slidable on said arbor, links connecting the said longitudinal rods with said collar, and a lever fulcrumed on one of said segments and embracing and having a pivotal engagement with said collar for collapsing said drum, said lever being included within the circle of said drum, whereby the work may be passed over said lever when removed from said drum.

9. The combination with a collapsible winding-drum having annular grooves to receive inside hoops of the package, of a shield surrounding said drum and substantially concentric therewith adapted to support the package when the drum is collapsed and hold the hoops out of engagement with said grooves, so as to permit of the longitudinal withdrawal of the package.

10. A collapsible winding-drum comprising an arbor, separated heads thereon, drum-segments engaging radial guides on said heads and movable thereon, toggle-levers connected to said segments and heads, rods connecting the knuckles of said toggles, a collar longitudinally slidable on said arbor, links connecting said rods with said collar, and a lever for collapsing and expanding said drum, fulcrumed on one of said segments and pivotally engaging said collar and included within the circle of said segments, said lever being entirely supported on and rotating with said segments and collar.

11. The combination with a collapsible winding-drum, and a table over which the material is fed to said drum, of a shield surrounding said drum and concentric therewith, having a hinged segment and said table having a hinged section and a connection between said table-section and hinged segment whereby the swinging of the one will actuate the other.

12. The combination with a winding-drum, of a yielding guide for the work at the point of engagement with said drum, a movable shield inclosing said drum, and means between said shield and guide holding the latter in its guiding position, whereby the removal of said shield from the work will permit the automatic withdrawal of said guide, for the purpose described.

13. The combination with a winding-drum and a movable shield inclosing said drum, of guides for the web of the work and gage-stops for the hoops at the point of engagement with said drum, means op-

erating to hold said guide and gage-stops in operative position, and means operating on the removal of said shield to withdraw said guides and gage-stops out of engagement with the work, for the purpose described.

14. The combination with a winding-drum, of a plurality of guides for the work at its point of engagement with said drum, a removable shield for the drum, a removable work-supporting table, a lock therefor, means operated to hold said shield and guides in operative position, and automatic means operating on the release of said table, whereby said table, shield and guides are withdrawn from said work.

15. The combination with a collapsible winding-drum and mechanism for driving same, of a clutch for coupling said winding-drum with its drive mechanism, and means operated by the collapse of said drum for locking said clutch in its released position.

16. The combination with a winding-drum, of mechanism for intermittently rotating said drum through a plurality of revolutions by a series of partial revolutions which are of substantially equal lengths, one of said partial revolutions being slightly longer than the others, but the sum of said series being equal to an exact number of complete revolutions, and means for arresting said rotating mechanism to stop said drum alternately at points out of and in coincidence with its initial position.

17. The combination with a winding-drum and a nailing mechanism, of a gage-stop to position the hoop in relation to the winding-drum and nailing mechanism, yielding means holding said stop in the path of the hoop and permitting said hoop to push said stop out of the said path after the nailing of said hoop, and means for moving said yielding means and said stop to withdraw the latter from engagement with the work.

18. The combination with a winding-drum and a continuously-operating driving means, of connecting means therebetween operating to rotate said drum intermittently through a plurality of partial revolutions and means for automatically disconnecting said drum from said driving means, said disconnecting means operating to leave said drum alternately at points out of incidence and in coincidence with the initial position of said drum, for the purpose described.

19. The combination with a winding-drum and a continuously-operating driving means, of connecting means therebetween operating to rotate said drum intermittently through a plurality of partial revolutions, means for locking said drum from movement between said partial revolutions, and means for automatically disconnecting said drum from said driving means alternately at points out of incidence and in coincidence with the initial position of said drum.

823,277. CLASP. FRED HIRSH, New York, N. Y. Filed Aug. 21, 1905. Serial No. 275,098.



Claim.—1. A clasp consisting of two hinged members and a spring-tongue attached to one of said members and having at its outer end an inwardly-projecting stud, the head of which is adapted to snap past and engage with an edge of the other of said members.

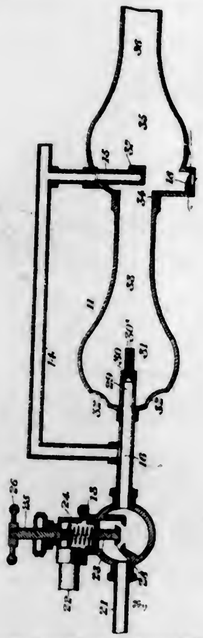
2. A clasp consisting of two hinged members to one of which is attached a spring-tongue having at its free end an inwardly-projecting stud, the head of which is adapted to snap past and engage with the edge of an orifice formed in the other member.

3. A clasp consisting of two hinged members, a spring-tongue formed in and as a part of one member and having an inwardly-projecting headed stud mounted upon its free end, and an orifice in the other member opposite said stud, the head of said stud being adapted to snap past and engage with the edge of said orifice as the two members are brought toward each other.

823,278. PNEUMATIC ECONOMIZER AND AIR-INJECTOR. EDMUND HOXIE, Everett, Mass. Filed Dec. 17, 1904. Serial No. 237,258.

Claim.—1. An air-injector, comprising a plurality of units arranged in tandem, means for passing air under pressure successively from one unit to the next in series and each unit of said series having also an independent connection with the air-supply for increasing the speed of the air already in motion, and an inwardly-opening check-valve for the unit or units beyond the first unit.

2. An air-injector having its units arranged in series, each comprising a commingling-chamber and an elongated discharge-mouth and having an inlet for air at atmospheric pressure, a supply-pipe discharging into the first unit, a discharge-nozzle for the second unit of less length than the dischage-nozzle for the first unit, a pipe leading from said supply-pipe to the second unit and a check-valve for said second uuit.



3. An air-injector having its units arranged in series, inlets for the induction of atmospheric air for each of said units, one of said inlets being provided with an inwardly-opening check-valve, and pipes for conveying air under pressure to said units, the discharge-nozzles of said pipes leading to said units being of different lengths and located slightly in advance of said inlets.

4. In an air-injector, a supply-pipe, a reducing-valve therein, a pipe adapted to lead motive fluid to said reducing-valve for the purpose of actuating the latter, a controlling-valve actuated by said reducing-valve, a discharge-pipe leading from said controlling-valve, a unit having a commingling-chamber into which said discharge-pipe extends, a second unit into which said commingling-chamber discharges, a pipe leading from a point intermediate said valve and first unit to said second unit, and a commingling-chamber in the latter into which said pipe discharges, the discharge-nozzles in said first unit being of greater length than the discharge-nozzles in said second unit.

5. In an air-injector, a supply-pipe, a reducing-valve therein, a pipe adapted to lead air or other fluid to said reducing-valve for the purpose of actuating the latter, a discharge-pipe leading from said valve, a unit having a commingling-chamber into which said discharge-pipe extends, a second unit into which said commingling-chamber discharges, a pipe leading from a point intermediate said valve and first unit to said second unit, a commingling-chamber in the latter into which said pipe discharges, a plurality of discharge-nozzles of different lengths in each unit, and a check-valve in said second unit said valve operating automatically to permit the ingress of atmospheric air.

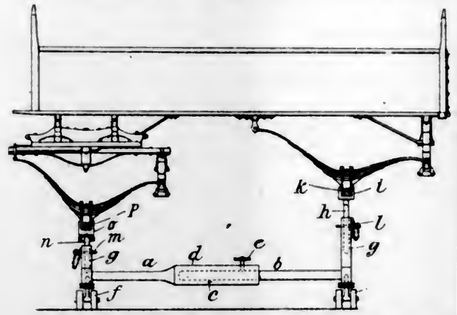
823,279. KNIFE-SHARPENER. WILLIAM M. KELLOGG, Pittsfield, Mass., assignor to The Yankee Novelty Company, a Corporation of Maine. Filed Aug. 14, 1905. Serial No. 274,192.

Claim.—1. In a device of the character described, the combination of a base-block having a recess therein, an abrading-block located in said recess, and a guard member of soft material projecting from the sides of the abrading-block near the outer edge thereof.

2. In a device of the character described, the combination of a base-block having a transversely-disposed recess in one side thereof, the sides of said recess flaring outwardly to form inclined guides for a knife-blade, an abrading-block located in said recess, and a guard member of soft material projecting from the sides of the abrading-block near the outer edge thereof.



823,280. DEVICE FOR SUPPORTING WAGONS FOR PAINTING. PERCIVAL C. KETTERER, New York, N. Y. Filed Feb. 24, 1906.



Claim.—1. A device of the character described, comprising two frame members relatively adjustable longitudinally, trucks at the extremities of said members and supporting-pillars and holders mounted upon said members at the extremities thereof.

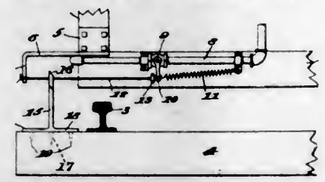
2. A device of the character described comprising two frame members relatively adjustable longitudinally, trucks at the extremities of said members supporting-pillars mounted upon said members at the extremities thereof, and holders mounted adjustably upon said pillars.

3. A device of the character described, comprising a frame, trucks at the extremities thereof, supporting-pillars and holders mounted on the frame at the rear extremities thereof, and a swiveled holder mounted upon said frame at the front end thereof.

4. A device of the character described comprising a frame, trucks at the extremities thereof, supporting-pillars mounted upon the frame at the extremities thereof, holders mounted in the pillars at the rear end thereof, a yoke mounted in the pillars at the front end thereof, and a swiveled holder mounted upon said yoke.

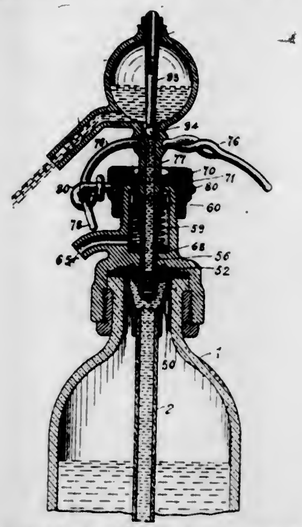
5. A device of the character described comprising two frame members relatively adjustable longitudinally, trucks at the extremities of said members supporting-pillars and holders mounted upon the rear member at its extremities, a swiveled holder supported by the front member.

823,281. TRAIN-STOPPING APPARATUS. JOHN H. KING, Cincinnati, Ohio. Filed Apr. 8, 1905. Serial No. 254,473.



Claim.—A train-stopping apparatus comprising a train-pipe connected with the brake mechanism and having an exhaust-valve, a projecting arm for said valve, a bracket secured to the engine and having a horizontal arm extended outwardly, the outer end of said horizontal arm being bent downwardly to aline with said valve-arm, a fragile connection having one end secured to said valve-arm and the opposite end secured to said downwardly-bent end of the horizontal arm, a spring connected to the opposite end of said valve-arm and secured to the engine, and an actuating device having an inclined knife-edge to engage said fragile connection.

823,282. HEAD AND FILLER FOR LIQUID-RECEPTACLES. DEWIS LANDAU, San Francisco, Cal. Filed Dec. 7, 1905. Serial No. 290,739.



Claim.—1. In a head and filler for liquid-receptacles, the combination of a valve adapted to be opened by a filling device, and a movable discharge-spout adapted to engage and open said valve, substantially as described.

2. In a head and filler for liquid-receptacles, the combination of a valve adapted to be opened by a filling device, a head for said receptacle, a spout hinged thereon and adapted in one position to open said valve and discharge the contents of said receptacle and in another position to turn to permit access to said valve, substantially as described.

3. In a head and filler for liquid-receptacles, the combination with the chambered head, of a valve and ported hollow valve-stem adapted to be engaged by a filling device for opening said valve, and a movable discharge-spout carried on said head and adapted in one position to engage said valve-stem and open said valve, substantially as described.

4. The combination with a receptacle, of a chambered head, a relief communicating therewith, a hollow ported valve-stem in said head communicating with the interior of said receptacle and a valve on said stem adapted to close said communication between said stem and said receptacle, substantially as described.

5. The combination with a receptacle, of a chambered head provided with a relief-orifice, a hollow valve-stem in said head provided with ports communicating with said receptacle, and a valve on said stem adapted to close the communication between said valve-stem and said receptacle, substantially as described.

6. The combination with the internal tube of a liquid-receptacle, of a valve arranged therein with a liquid-passage around said valve, a hollow ported valve-stem communicating with said tube when said valve is open, a head provided with a chamber in which said valve-stem works and a relief-opening from said chamber, a spring adapted to normally close said valve, and a cap for said head adapted to permit of access to said valve-stem for opening said valve, substantially as described.

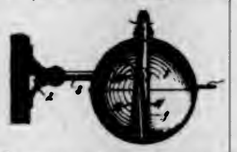
7. The combination with the internal tube of a liquid-receptacle, of a valve arranged therein with a passage in said tube around said valve, a hollow ported valve-stem adapted to connect with said tube when said valve is open, a chambered head within which said stem works provided with a relief, a cap on said head adapted to give access to said valve-stem, and a hinged discharge-spout adapted in one position to engage said valve-stem and open said valve, substantially as described.

8 The combination in a head and filler for liquid-receptacles having a discharge-opening, of a relief-chamber operatively communicating with said discharge-opening and with the interior of said receptacle, whereby the discharge from the receptacle enters and is equalized in said relief-chamber, substantially as described.

9. The combination in a head and filler for a liquid-receptacle

provided with a discharge-spout, of a valve, a hollow ported valve-stem therefor, and an equalising-chamber operatively connected with said spout and with said valve-stem, whereby the discharge from said receptacle is equalized, substantially as described.

823,283. VESSEL FOR DISPENSING LIQUIDS. LEWIS G. LANGSTAFF, Brooklyn, N. Y. Filed May 3, 1905. Serial No. 258,705.



Claim.—1. In combination, a bracket, a liquid-dispensing vessel pivoted thereto, a nozzle, a weighted plunger for positively ejecting the liquid through the nozzle when the vessel is inverted and a guide for the plunger arranged to deliver liquid from the bottom of the vessel to the nozzle.

2. In combination, a bracket, a liquid-dispensing vessel pivoted thereto, a nozzle, a tubular guide leading from the bottom of the vessel to the nozzle, said guide having a longitudinal slot leading from its bottom, and a weighted plunger in the guide arranged to positively eject the liquid through the nozzle when the vessel is inverted.

3. In combination, a bracket, a liquid-dispensing vessel pivoted thereto, a nozzle and a tubular guide extending from the bottom of the vessel to the nozzle and having its outer wall parallel with the central line of the nozzle and a plunger located in the guide arranged to positively eject the liquid through the nozzle when the vessel is inverted.

823,284. GARMENT-SUPPORTER. LILLIAN O. MA LONE, New Brighton, Pa. Filed Dec. 14, 1905. Serial No. 291,729.



Claim.—1. In a garment-supporter, the combination with corsets, of a strip adjustably connected to said corsets, said strip being bent to form a shoulder to limit the movement of undergarments, an extender detachably connected to said strip, hooks carried by said extender and adapted to have a corset-string, waist-string and a belt fastened thereto, substantially as described.

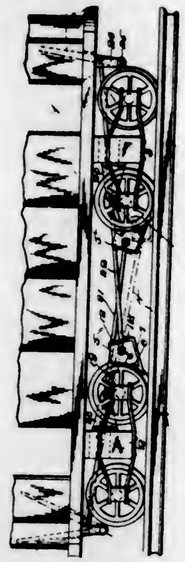
2. A garment-supporter composed of a strip formed of two integral sections disposed end to end, one section being provided with means for attaching it to a corset, the other section being provided with means for the attachment of a garment thereto, one section being in a different plane from the other section, and laterally disposed with relation thereto.

823,285. CAR-BRAKE. CHARLES B. MEAD and ROBERT S. FULLERTON, East Palestine, Ohio, assignors of one-third to James V. Murphy, East Palestine, Ohio. Filed Feb. 23, 1906. Serial No. 303,344.

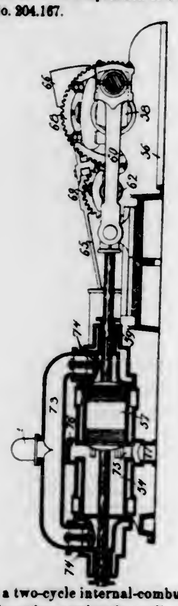
Claim.—1. In a car-brake, the combination with a car, and the trucks thereof, of blocks suspended from the trucks of said car in close proximity to the wheels of said truck, serrated shoes carried by said blocks, said shoes having each an upwardly-extending curved end engaging the front face of the block and a right-angular extension engaging the rear face of the block and means operated from the ends of said car to move said shoes into engagement with said wheels, and the rails upon which said wheels travel, substantially as described.

2. In a car-brake, the combination with the trucks and wheels upon which the trucks are mounted, of a plurality of brackets carried by each truck, links pivotally mounted in said brackets, a shaft carried by the links of each truck, blocks mounted on the ends of each of said shafts, shoes carried by said blocks and adapted to contact with the wheels and with the tracks, a rod connected to the shoe-carrying shaft of each truck and extending over the shoe-carrying shaft of the adjacent truck, and operating the levers connected to said rods and extending from below the bottom of the car to above the bottom of the same, substantially as described.

823,285.



823,286. INTERNAL-COMBUSTION ENGINE. LUDWIG MERTENS, Charlottenburg, Germany, assignor to "Abbé" Engineering Company, New York, N. Y., a Corporation of New York. Filed Apr. 21, 1904. Serial No. 204,167.

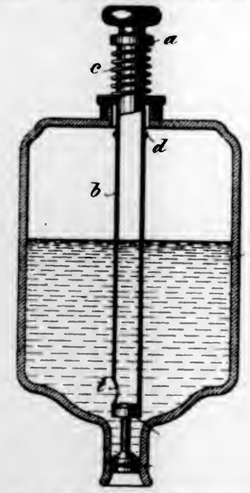


Claim.—1. In a two-cycle internal-combustion engine, the combination of a double-acting combustion-cylinder, a power-piston reciprocating in said cylinder, a feed-pump, a piston in said feed-pump, means operatively connecting the power-piston and pump-piston for imparting to the latter a number of strokes which is a multiple of the number made by said power-piston, and means for conducting the explosive charge from said feed-pump alternately to the opposite ends of said combustion-cylinder.

2. In a two-cycle internal-combustion engine, the combination of a double-acting combustion-cylinder, a power-piston reciprocating in said cylinder, a feed-pump, a piston in said feed-pump, means operatively connecting the power-piston and the pump-piston for imparting to the latter double the number of strokes made by the power-piston, and means for conducting the explosive charge from said feed-pump alternately to the opposite ends of said combustion-cylinder.

3. In a two-cycle internal-combustion engine, the combination of a plurality of double-acting combustion-cylinders, a power-piston reciprocating in each of the same, a feed-pump, a piston reciprocating in the feed-pump cylinder, means operatively connecting the power-pistons and the pump-piston for imparting to the latter a number of strokes which is a multiple of the number made by said power-pistons, means for supplying an explosive charge alternately to the opposite ends of said feed-pump, and means for conducting the explosive charge alternately from each end of said feed-pump alternately to the opposite ends of said combustion-cylinders.

823,287. APPARATUS FOR DELIVERING ACID AND ALKALINE LIQUIDS IN MEASURED QUANTITIES. MAX MEYER, Berlin, Germany. Filed Dec. 4, 1905. Serial No. 290,301.



Claim.—1. In an apparatus for delivering liquid in measured quantities, the combination of a closed vessel having a tubular extension at one extremity thereof, a double piston adapted to move in and partially out of said tubular extension, and a piston-rod passing through the other extremity of the vessel, said piston-rod being hollow and provided with an opening communicating with the interior of the vessel and an opening exterior of the vessel whereby the vessel can be filled with liquid through said rod.

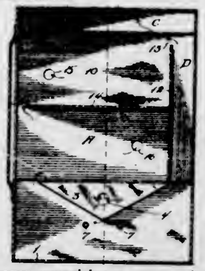
2. In an apparatus for delivering liquid in measured quantities, the combination of a closed vessel having a tubular extension at one extremity thereof, a double piston adapted to move in and partially out of said tubular extension, and a piston-rod passing through the other extremity of the vessel, said piston-rod being hollow and provided with an opening communicating with the interior of the vessel and an opening exterior of the vessel, together with means for closing said exterior opening.

3. In an apparatus for delivering liquid in measured quantities, the combination of a closed vessel having a tubular extension at one extremity thereof, a double piston adapted to move in and partially out of said tubular extension, and a piston-rod passing through the other extremity of the vessel, said piston-rod being hollow and provided with an opening communicating with the interior of the vessel and an opening exterior of the vessel, together with means for closing said exterior opening, said means comprising a knob adapted to serve as a handle for the piston-rod.

4. In an apparatus for delivering liquid in measured quantities, the combination of a closed vessel having a tubular extension at one extremity thereof, a double piston adapted to move in and partially out of said tubular extension, and a piston-rod passing through the other extremity of the vessel, said piston-rod being hollow and provided with an opening communicating with the interior of the vessel and an opening exterior of the vessel through which liquid can be supplied to the vessel, together with a spring normally tending to draw the double piston toward the interior of the vessel.

5. In an apparatus for delivering liquid in measured quantities, the combination of a closed vessel having a tubular extension at one extremity thereof, a double piston adapted to move in and partially out of said tubular extension, and a piston-rod passing through the other extremity of the vessel, said piston-rod being hollow and provided with an opening communicating with the interior of the vessel and an opening exterior of the vessel, a knob adapted to close the outer end of the piston-rod, and a spring normally tending to draw the double piston toward the interior of the vessel, said spring being located between the knob on the end of the piston and one extremity of the vessel.

823,288. OVEN. GEORGE R. MOON, Cleveland, Ohio. Filed Oct. 20, 1905. Serial No. 283,591.



Claim.—1. An oven comprising an outer casing, a drum extending from end to end of said casing and having outlet-openings at the bottom thereof, gas-burners arranged upon each side of said outlet-openings, and a baking-chamber located above said drum, the interior of said drum being in communication with the atmosphere.

2. An oven comprising an outer casing, a drum extending from end to end of said casing, said drum being triangular in cross-section and forming inclined side walls, the interior of said drum being in communication with the atmosphere and with the interior of the outer casing through openings formed at the lower portion of said drum, gas-burners arranged adjacent said drum upon each side of said openings, and a baking-chamber located above said drum.

3. An oven comprising an outer casing, a drum extending lengthwise of said casing, the interior of said drum being in communication with the atmosphere and said drum having air-outlet openings at its bottom, gas-burners arranged adjacent said outlet-openings, a baking-chamber located above said drum, means for conducting the heat from one of said gas-burners to the upper portion of the baking-chamber, means for conducting the heat from the other of said gas-burners to the lower portion of the baking-chamber, and means for permitting the passage of heat from the upper and lower portions of the baking-chamber to the interior of the outer casing.

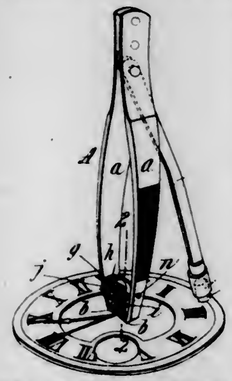
4. An oven comprising an outer casing, partitions located in said outer casing and forming a baking-chamber, said partitions comprising two side walls, a top wall and a rear wall which terminates short of the top wall, a deflecting-drum which forms the bottom of the oven, the interior of said drum being in communication with the atmosphere and said drum having air-outlet openings in its lower portion, burners arranged upon each side of said outlet-openings and said deflecting-drum being adapted to direct the products of combustion from one of said burners to a passage formed between the rear wall of the baking-chamber and the outer casing and to direct the products of combustion from the other of said burners to the lower portion of the baking-chamber.

823,289. WATCH-HAND REMOVER. ERASTUS N. PARKER, Springfield, Mass. Filed Dec. 21, 1905. Serial No. 292,801.

Claim.—1. A watch-hand remover consisting of opposite tweezer-like members having at their free extremities thin inwardly-turned members, and said device comprising an extension which is laterally offset from the plane of approaching movements of the said members, and the lower bearing extremity of which terminates outside of and approximately level with the lower ends of the tweezer-like members, and adapted to constitute a fulcrum on a watch-dial, remote from the place of engagement of said members, on which the device may be rocked or swung.

2. In a watch-hand remover the combination with a pincers hav-

ing the free extremities thereof inwardly approached, and for engagement about a staff and under a watch-hand, of a watch-hand-retaining member located between the opposite pincer members, movable in a direction toward and away from said inwardly-approached extremities, and having a bearing portion composed of elastic rubber or like yielding material, and means for imparting the movements to said retainer.



3. In a watch-hand remover the combination with a pincers having the free extremities thereof inwardly approached and adapted for engagement about a staff and under a watch-hand, of a watch-hand-retaining member located between the opposite pincers member, and consisting of a disk pivotally mounted on a horizontal axis on the inner side of one of the pincer members and provided with a radially-extending portion of yielding material.

4. In a watch-hand remover the combination with a pincers having the free extremities thereof inwardly approached, and for engagement about a staff and under a watch-hand, of a watch-hand-retaining member located between the opposite pincer members, movable in a direction toward and away from said inwardly-approached extremities, means for imparting the movements to said retainer, and an extension laterally offset from the implement and having its lower extremity adapted to constitute a rocking fulcrum.

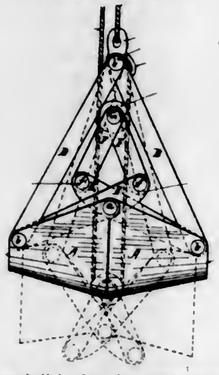
5. In a watch-hand remover the combination with opposite tweezer-like members having at their free extremities thin angularly and inwardly turned members, of an extension-arm pivotally connected to and between an upper portion of the implement, and having its lower bearing extremity terminated at a plane approximately coincident with the lower end of the implement, and said extension-arm when outwardly swung being adapted to constitute a fulcrum on which the device may be rocked or swung.

6. In a watch-hand remover the combination with tweezer-like members having at their free extremities thin angularly and inwardly turned members and a atop for limiting the degree to which the opposite members may be approached, of an extension-arm pivotally connected to and between an upper portion of the implement, and having its lower bearing extremity terminated at a plane approximately coincident with the lower end of the implement, and said extension-arm when outwardly swung being adapted to constitute a fulcrum on which the device may be rocked or swung.

7. In a watch-hand remover the combination of opposite upwardly-united tweezer-like members having at their free extremities angularly and inwardly turned wedge-shaped members, a disk having a radial extension of yielding material pivotally mounted on a screw engaging into the inner side of one of said members, and having a countersunk socket for the accommodation of the head of the pivot-screw, and the other side member having a perforation opposite the center of the screw-head, of an extension-arm pivotally connected to and between an upper portion of the implement, and having its lower bearing extremity terminated at a plane approximately coincident with the lower end of the implement, substantially as and for the purposes set forth.

823,290. CLAM-SHELL BUCKET. MICHAEL J. PURTLE, Erie, Pa. Filed Feb. 26, 1906. Serial No. 303,114.

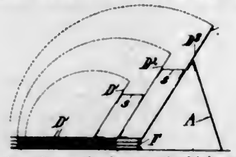
Claim.—1. In a clam-shell bucket the combination of body portions hinged together at their inner or adjacent ends, upwardly-extending links pivoted to a yoke at their upper ends, pivoted to the rear or outer ends of said body portions, a hoisting-cable secured to the yoke at the upper ends of said links, levers secured to each body portion having shorter ends extending past the end of the opposite body portion, links pivoted to the short ends of said levers and means adapted to exert a lifting strain upon the upper ends of said links, substantially as and for the purpose set forth.



2. In a clam-shell bucket the combination of body portions hinged together at their inner or adjacent ends upon a pintle extending across the bucket from one hinge to the other, upwardly-extending links pivoted to a yoke at their upper ends, pivoted to the rear or outer ends of said body portions upon pintles which extend across said rear ends from side to side, a hoisting-cable secured to said yoke, levers mounted upon said pintles with the short ends thereof extending over the opposite body portion, links pivoted to the short ends of said levers, a pintle passing through the upper ends of said links, and a closing-cable adapted to exert a lifting strain upon said pintle, substantially as and for the purpose set forth.

3. In a clam-shell bucket the combination of body portions pivoted together at their inner or adjacent ends, a pintle extending through the hinge on each side of the bucket, upwardly-exteuding links pivoted upon a yoke at their upper ends, pivoted to said body portions upon pintles extending across the rear ends of said body portions, a hoisting-cable secured to said yoke, levers mounted upon said pintles with their short ends extending over the opposite body portions, links pivoted to said levers, a pintle passing through the upper ends of said links, a sheave mounted upon said pintle, and a closing-cable operating around said sheave, substantially as and for the purpose set forth.

823,291. ALBUM FOR COLLECTING POST-CARDS. HERMANN QUENSEL, Leipsic, Germany. Filed July 10, 1905. Serial No. 269,052.



Claim.—1. An album, the leaves of which are provided with subleaves and means in connection with the same for automatically opening them up in tiers when the album is opened.

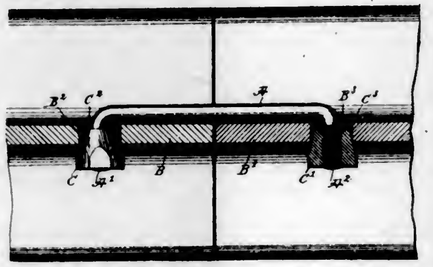
2. An album, the leaves of which are provided with subleaves, means for retaining the said subleaves a suitable distance apart and for opening them up in tiers when the album is opened substantially as described.

3. An album, the leaves of which are provided with subleaves, each subleaf being hinged to the back of the next following leaf and stays to retain the said leaf and subleaves a suitable distance apart.

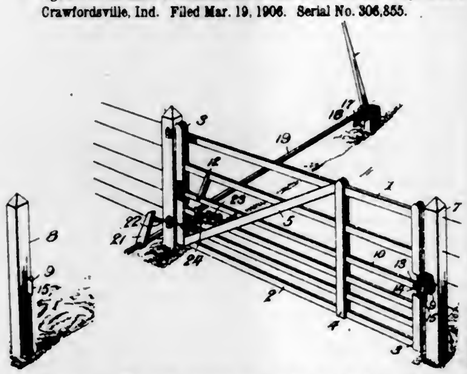
4. An album, the leaves of which are provided with subleaves, means for opening up the said subleaves when the book is opened and a supporting-leg hinged to one cover of the said album.

823,292. RAIL-BOND. EDWIN W. ROBINSON, Punxsutawney, Pa. Filed July 12, 1905. Serial No. 269,286.

Claim.—The combination with the rails, of a rail bond, comprising a conductor having a straight portion lying against the web of the rail upon one side thereof, and having angular screw-threaded ends projecting through apertures in the said webs, and frusto-conical nuts on the opposite side of the web from the conductors and engaging the screw-threaded ends, the ends of the nuts extending into the apertures, whereby the turning of the nuts will draw the straight portion of the conductor into close contact with the webs, and force the frusto-conical ends of the nuts into close contact with the walls of the apertures.



823,293. GATE. GEORGE R. ROGERS, Crawfordsville, Ind., assignor of one-third to Samuel Scott and one-third to George Little, Crawfordsville, Ind. Filed Mar. 19, 1906. Serial No. 306,855.



Claim.—1. The combination with a swinging gate, of latch-posts adapted to hold said gate in its opened or closed position, a slidably-mounted latch-bar arranged in said gate to engage keepers in said latch-posts, a right-angularly-formed gate-lever pivotally mounted on said gate, stop-lugs adapted to limit the pivotal movement of said gate-lever, an oscillatory operating-rod, a right-angularly-projecting arm fixed on one end of said rod and a crank-arm arranged on the opposite end of the same, a pivotally-mounted operating-lever, means to loosely connect said operating-lever with said crank-arm, a link to connect said right-angularly-projecting arm with said gate-lever, and means to connect said gate-lever with said latch-bar, substantially as described.

2. The combination with a swinging gate, of latch-posts adapted to hold said gate in its opened or closed position, a slidably-mounted latch-bar arranged in said gate to engage keepers in said latch-posts, a right-angularly-formed gate-lever pivotally mounted on said gate, stop-lugs adapted to limit the pivotal movement of said gate-lever, an oscillatory operating-rod, a right-angularly-projecting arm fixed on one end of said rod and a crank-arm arranged on the opposite end of the same, a pivotally-mounted operating-lever, means to loosely connect said operating-lever with said crank-arm, a link to connect said right-angularly-projecting arm with said gate-lever, a flexible connection between said gate-lever and latch-bar and means whereby said latch-bar is supported to cause the same to automatically engage said keepers in said latch-posts, substantially as described.

3. The combination with a swinging gate, of latch-posts adapted to hold said gate in its opened or closed position, a slidably-mounted latch-bar arranged in said gate to engage keepers in said latch-posts, a right-angularly-formed gate-lever pivotally mounted on said gate, stop-lugs adapted to limit the pivotal movement of said gate-lever, an oscillatory operating-rod, a right-angularly-projecting arm fixed on one end of said rod and a crank-arm arranged on the opposite end of the same, a pivotally-mounted operating-lever, means to loosely connect said operating-lever with said crank-arm, a link to connect said right-angularly-projecting arm with said gate-lever, a chain to connect said gate-lever with said latch-bar, obliquely-disposed hanger-bars adapted to support the inner end of said latch-bar and a bolt arranged in said gate to engage a slot in the outer end of said latch-bar thereby slidingly supporting this end of the same, substantially as described.

823,294. VAT-DYE AND PROCESS OF MAKING SAME. KARL SCHIRMACHER, Höchst-on-the-Main, Germany, assignor to Farbwerke, vorm. Meister, Lucius & Brüning, Höchst-on-the-Main, Germany, a Corporation of Germany. Filed Dec. 21, 1905. Serial No. 292,859.

Claim.—1. The process for the manufacture of a vat-dyestuff, which consists in heating the glycin of dianthranilic acid with alkalies and oxidizing the indoxyl melt thus formed in the usual manner.

2. The process for the manufacture of a vat-dyestuff, which consists in heating the glycin of dianthranilic acid with alkalies and in presence of a chemical capable of binding water and oxidizing the indoxyl melt thus formed in the usual manner.

3. As new product the vat-dyestuff obtained by heating the glycin of the dianthranilic acid with alkalies, being a dark green-black powder insoluble in water and the usual solvents, soluble in concentrated sulfuric acid to a green coloration and reducible to a vat from which it dyes in fast green shades.

823,295. DEVICE FOR CONTROLLING ELECTRICAL CIRCUITS. EDMUND O. SCHWEITZER, Chicago, Ill. Filed Mar. 26, 1904. Serial No. 200,130.



Claim.—1. A cut-out for electrical circuits, comprising a mobile conductor, and a closed case confining said conductor and having a fracturable retainer adapted to be fractured on the expansion of said conductor by the passage of an unduly strong current through it, said cut-out having provisions for including said conductor normally in circuit.

2. A thermal cut-out, comprising a closed case containing a liquid conductor, and having a fracturable retainer normally holding said conductor confined in said case, but adapted to be fractured on the expansion of said conductor by the passage of an unduly strong current, said cut-out having provisions for including said conductor normally in the circuit.

3. A cut-out, comprising a case made of insulating material, and provided with conducting contacts extending through its walls, a body of mercury confined in said case, said case having an aperture, and a fracturable retainer normally closing said aperture and adapted to be fractured by the expansion of the mercury by the passage of an unduly strong current through it.

4. A cut-out device comprising a case having a structurally separate fracturable retaining-section, and having provisions for including a conductor within the case in circuit.

5. A cut-out device, comprising a case made of insulating material and provided with conducting contacts extending through its walls, said case having an aperture, and a fracturable retainer normally closing said aperture.

6. In a device of the class specified, the combination with a case or receptacle, of a body or mass of conductiug liquid confined in said case or receptacle and included in the circuit, and a retainer for holding said liquid in suspense, said retainer being adapted to be actuated so as to permit the liquid to fall by the expansion of the same on the passage of an unduly strong current, substantially as described.

7. In a device of the class specified, the combination with a case or receptacle, of a body or mass of conducting liquid confined in said case or receptacle and included in the circuit, a retainer for holding said liquid in suspense, said retainer being adapted to be broken or fractured to permit the liquid to fall by the expansion of the liquid on being heated by the passage of an unduly strong current, substantially as described.

8. In a device of the class specified, the combination with a case or receptacle, of a liquid contained therein, a retainer for holding the liquid in said case or receptacle, whereby on the expansion of the liquid by an unduly strong current, the liquid will be released, and a second receptacle for receiving the liquid when released, substantially as described.

9. In a device of the class specified, the combination with a case or receptacle, of a quantity or mass of conducting liquid confined in said case, a diaphragm for holding said liquid in suspense, whereby when the liquid is expanded by an unduly strong current, the diaphragm will be broken or ruptured, and the liquid permitted to fall, and a second receptacle for receiving the liquid when so released, substantially as described.

10. In a device of the class specified, the combination of a case, a body or mass of conducting liquid contained therein, terminals in said case, adapted to make contact with said liquid therein, the bottom of the case being provided with an aperture, a diaphragm closing said aperture, and a chambered plug adapted to fit into the bottom of said case and having its upper wall provided with an aperture below said diaphragm, substantially as described.

11. In a device of the class specified, the combination of a case, a liquid contained therein, a diaphragm holding said liquid normally in suspense, and a receptacle for the liquid when released, said receptacle being formed of transparent material, substantially as described.

12. A device of the class specified, comprising a case provided with a pair of terminals and having its bottom provided with an aperture, a body or mass of liquid contained in said case, a diaphragm below said aperture, a chambered plug fitted into the bottom of the case and having an aperture below said diaphragm, and a transparent tube attached to said plug, substantially as described.

13. In a device of the class specified, the combination of a case, a conducting liquid contained in the case, the latter being provided with terminals, a threaded device passing through the wall of the case and made adjustable to permit variation of the size of the chamber formed by the case, a diaphragm holding the contents of the case normally therein, and a receptacle for receiving the contents of the case upon their release, substantially as described.

14. In a device of the class specified, the combination with a case or receptacle provided with terminals, of a liquid conductor confined therein, means whereby the conductor can be released on the passage of an unduly strong current, and a plug or closure associated with the case or receptacle for receiving the liquid when released, said plug or closure being provided with a pair of terminals between which connection is made by the liquid when in said plug or closure, substantially as described.

15. In a device of the class specified, the combination with a case or receptacle provided with terminals, of a liquid conductor confined therein, means whereby the conductor can be released on the passage of an unduly strong current, and a plug or closure associated with the case or receptacle for receiving the liquid when released, said plug or closure being provided with a vent for communicating with the outside air, substantially as described.

16. In a device of the class specified, the combination of a conductor included in the circuit, means for inclosing or confining said conductor, said inclosing means being provided with an independent relatively fragile portion whereby when the conductor is expanded by the passage through it of an unduly strong current, it ruptures said fragile portion, substantially as described.

17. In a device of the class specified, the combination with a mobile conductor included in the circuit, of a case confining said conductor, said casing having an independent relatively fragile portion adapted to be broken or ruptured on the expansion of the conductor by the passage of an unduly strong current through it, and said conductor being arranged to be removed from circuit on the breakage of said relatively fragile part so as to open the circuit, substantially as described.

18. In a device of the class specified, the combination with a conductor included in circuit, means for inclosing said conductor, a retainer for holding said conductor in said inclosing means, said retainer being adapted to be removed on the expansion of the conductor by the passage through it of an unduly strong current, substantially as described.

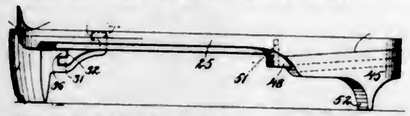
19. In a device of the class specified, a case for holding a conductor said case having an independent relatively weak portion, and means for including a conductor within the case, in circuit, substantially as described.

20. In a device of the class specified, a containing-case provided with terminals adapted to make connection with a conductor within the case, and a fracturable retainer for normally holding the contents of the case therein, substantially as described.

21. In a device of the class specified, a case provided with terminals extending from the interior to the exterior of the walls of the case, said case also having an opening, and a fracturable device for closing said opening, substantially as described.

22. In a device of the class specified, a case provided with terminals extending from the interior to the exterior of the walls of the case, said case also having an opening, a fracturable device for closing said opening, and a second case adapted to be fitted to the first-mentioned case and having an opening registering with the opening in said first-mentioned case and normally closed by said fracturable device, substantially as described.

823,296. **DETACHABLE-CALK HORSESHOE.** WILLIAM E. SHAW, San Francisco, Cal., assignor of one-half to Henry B. Copland, Boston, Mass. Filed Aug. 29, 1905. Serial No. 276,206.



Claim.—1. A horseshoe having a removable calk, the said shoe and calk having interlocking parts formed to be engaged by movement in the direction of the curve of the horseshoe, the said calk having a wide base with marginal portions embracing and closely fitting correspondingly-formed portions of the shoe, and having a central bearing and parallel side bearings in a different plane from that of the central bearing.

2. A horseshoe having removable toe and heel calks, the said shoe and calks having wedge-shaped interlocking portions formed to oppose movement of the calks along the body of the shoe, the said calks having wide bases with marginal portions embracing and closely fitting correspondingly-formed portions of the shoe, and the said body and calks having flat parallel bearing-faces in different planes.

3. A horseshoe-body having a removable calk, provided with a plurality of interlocking ribs and grooves having flat parallel bearing-faces in different planes, said ribs and grooves being wedge-shaped in the direction of their length.

4. A horseshoe-body having a removable calk, provided with a plurality of horizontally-projecting interlocking ribs and grooves in different planes, said body and calk being longitudinally wedge-shaped in form.

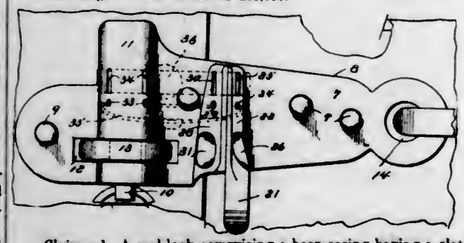
5. The combination with a horseshoe having inner and outer and intermediate ribs projecting horizontally from the toe portion thereof, of a toe-calk formed to engage said ribs.

6. The combination with a horseshoe having inner and outer and intermediate ribs projecting horizontally from the toe portion thereof, of a toe-calk formed to engage said ribs, and means for locking the parts together when engaged.

7. The combination with a horseshoe having inner and outer and intermediate ribs projecting horizontally from the toe portion thereof, of a toe-calk formed to engage said ribs, and means for locking the parts together when engaged, said means comprising a pin uniting the calk and body of the shoe.

8. The combination with a horseshoe, of a removable toe-calk having a sharpened edge at each end, and a sharpened intermediate recessed portion.

823,297. **SEAL-LOCK.** CHESTER G. SHEPHERD, Rutland, Ill. Filed Aug. 25, 1905. Serial No. 275,797.

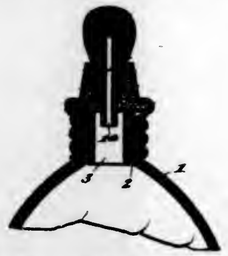


Claim.—1. A seal-lock comprising a hasp-casing having a slot for a staple, a bolt slidable in the casing and across the slot, a tumbler in the casing engaging the bolt and acting to slide the same, and a finger-piece operatively connected to the tumbler, and having means whereby it may be sealed against movement.

2. A seal-lock comprising a casing having attaching means at one end and a slot at the other end, and adapted to act as a hasp, a bolt slidable in the casing across the slot, and a finger-piece separate from and operatively connected with the bolt, said casing and finger-piece having registering holes arranged to receive a seal.

3. A seal-lock comprising a hasp-casing having a slot to receive a staple, a bolt slidable in the casing across the slot, and a finger-piece separate from and operatively connected with the bolt; the casing, finger-piece and bolt having holes arranged to register and to receive a seal.

823,298. **PASTE HOLDING AND APPLYING DEVICE.** ANTOINETTE L. SMITH, Norwood, Ohio. Filed Dec. 22, 1904. Serial No. 237,907.



Claim.—1. A paste-applying device comprising a collapsible receptacle formed from soft rubber and having a soft-rubber neck or nipple integrally formed on it, a shell having paste daubing and spreading means at its upper part and, at its lower part, an interiorly-screw-threaded socket in which said nipple is adapted to be received and also adapted to receive paste from said collapsible receptacle, and means in the nipple for distending it and simultaneously holding the soft-rubber walls thereof engaged with the interior screw-threads of said lower part.

2. The combination of a soft-rubber bulb having an integral neck or nipple at its upper part, a tubular spreader of hard material inserted within said neck or nipple, and a tubular shell provided, at its upper portion, with paste daubing and spreading means and, at its lower portion, with a socket, the walls of which latter have integral screw-threads for engagement in the said soft-rubber neck or nipple to contain and hold said paste daubing and spreading means detachably upon the bulb.

3. The combination of the casing or shell having at its lower part means of attachment to a paste-receptacle, a spongy part extended above said casing or shell with a lower portion housed therein, a paste-supply tube the upper end of which is adapted for communication with said spongy part and the lower end of which is adapted for communication with a paste-receptacle to which the casing or shell is attached and a filling within the hollow of the shell or casing for holding the spongy part in relation thereto.

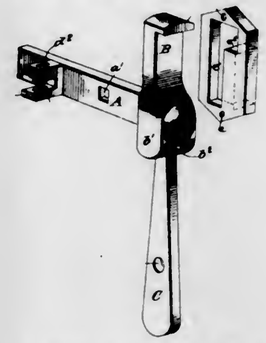
823,299. **TELEPHONE CALL-LIST AND MEMORANDUM-SLIP ATTACHMENT.** ANTOINETTE L. SMITH, Norwood, Ohio. Filed Dec. 30, 1904. Serial No. 239,088.



Claim.—1. In a device of the character described, the combination of a clamping device for attachment to the pedestal of a desk-telephone or the like, a casing or body portion having means for detachable connection with said clamping device and having a flat top plate provided with an opening and having rounded chambers at its lower part one of which has an opening through the wall of the casing, rollers journaled in the chambers of the casing and strips of fabric held on the rollers, the strip from one roller being extended through the opening in the top of the casing and being carried over the flat top plate thereof and the other roller being spring-actuated and having its strip passed through the opening in the casing-wall which communicates with the corresponding chamber and provided with a handle outside said casing.

2. In a device of the character described, the combination of a clamping device having arms to engage the neck of a desk-telephone pedestal and having a cross-bar the ends of which are extended at opposite sides of said pedestal and are provided with bent-over or folded extremities and a casing having flanges at opposite sides engaged in said bent-over or folded extremities and provided with projections engaged upon the cross-bar for detachable connection of the casing with said cross-bar.

823,300. **DOOR-FASTENER.** JAMES P. SNELGROVE, Atlanta, Ga. Filed Jan. 12, 1906. Serial No. 295,722.



Claim.—1. A fastener for doors comprising a keeper, and a plate having at one end a headed journal-pin, a yoke on the plate having projecting arms provided with alined perforations, a latch having at its upper end a lug for engaging the keeper, and at its lower end a notch for receiving the plate, the sides of the notch being provided with recesses for receiving the journal-pin, the latch having bearings below the recesses and at right angles thereto, a handle for swinging the latch having trunnions journaled in the bearings, the handle swinging in a plane at right angles to the plane of movement of the latch and adapted to be received between the arms of the yoke, the handle having a perforation adapted to register with the perforations in the arms.

2. A fastener for doors comprising a plate, a latch mounted to rotate transversely of the plate, a handle for manipulating the latch, said handle being pivoted to the latch for movement at a right angle to the plane of movement of the latch, a keeper for engaging the latch and a yoke on the plate having arms for receiving the handle.

3. A fastener for doors comprising a keeper, a plate having a swinging latch, an arm whereby to swing said latch transversely of the plate to engage the keeper, means whereby said arm may swing at a right angle to the plane of movement of the latch, said plate being provided with means for engaging the arm whereby to lock the latch in engagement with the keeper.

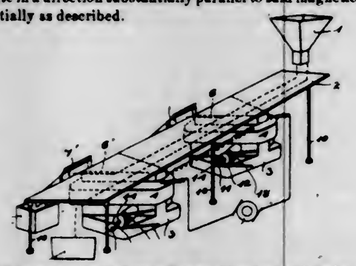
4. A door-fastener comprising a keeper and a plate having a swinging latch, means for swinging the latch into engagement with the keeper, comprising an arm pivotally mounted on the latch for movement in a plane at right angles to the plane of the movement of the latch, and means for engaging and retaining the arm at the end of said movement.

823,301. **MAGNETIC SEPARATOR.** FREDERICK T. SNYDER, Kansas City, Mo., assignor, by mesne assignments, to International Separator Company, Chicago, Ill., a Corporation of New Jersey. Filed Sept. 2, 1902. Serial No. 121,795.

Claim.—1. In a magnetic separator, the combination with a plane surface, of means for feeding materials to be separated to said surface, means for causing magnetic riffles diagonally along said surface, and means for vibrating said surface in a direction substantially parallel to said riffles, substantially as described.

2. In a magnetic separator, the combination with an inclined chute in the shape of a plane, of means for feeding materials to be separated to said chute, magnetic edges presented to the under side of said chute and extending diagonally across said chute to form magnetic riffles in said chute, and means for causing vibration of

said chute in a direction substantially parallel to said magnetic edges, substantially as described.

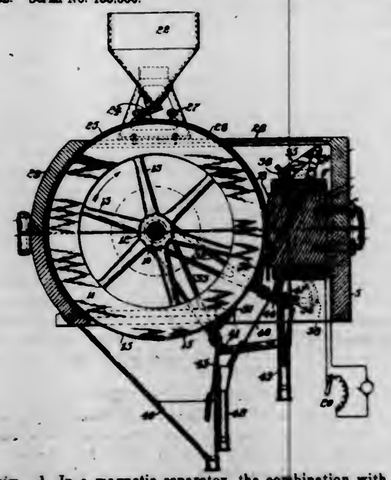


3. In a magnetic separator, the combination with a sloping table and means for feeding material to be separated upon the table at the top to pass said materials down the slope, of means for establishing a magnetic field through the table in a line diagonal to the line of passage of said material to form a magnetic riffle, and means for imparting a differential reciprocating motion to said table substantially parallel to the line of said magnetic field, adapted to cause a net movement of materials along said riffle.

4. In a magnetic separator, the combination with a table and means for passing materials to be separated along the same, of magnetic bodies adapted to form a series of narrow areas of magnetic concentration extending in lines diagonal to the direction of passage of said materials, and means for imparting a differential reciprocating motion to the table to cause a net movement of the attracted material along said areas of magnetic concentration.

5. In a magnetic separator, the combination with an inclined chute, of means for feeding materials to said chute, a magnet below the chute having one of its polar edges disposed diagonally across the bottom of the chute to divert permeable particles from the stream of material passing down the chute, supports for said chute, and rotatable cams for shaking said supports to vibrate said chute in a direction substantially parallel to the said polar edge to facilitate the travel of said diverted particles.

823,302. **MAGNETIC SEPARATOR.** FREDERICK T. SNYDER, Oak Park, Ill., assignor, by mesne assignments, to International Separator Company, Chicago, Ill., a Corporation of New Jersey. Filed Nov. 28, 1902. Serial No. 133,006.



Claim.—1. In a magnetic separator, the combination with a magnet, of a pole on said magnet, a cylindrical armature adapted to rotate by said pole, a divider mounted to rotate about the axis of said armature, links attached to said divider, means for moving said links and means for feeding material to be separated to said armature.

2. In a magnetic separator, the combination with a magnet, of poles of constant but opposite polarity, a hollow cylindrical armature mounted between said poles, and means for feeding material to be separated between said armature and one of said poles.

3. In a magnetic separator, the combination with a magnet, of a pole on said magnet, a shaft adapted to revolve before said pole, an armature mounted upon said shaft, dividers mounted adjustably upon said shaft, a hopper hinged to one of said dividers, an apron hinged to another of said dividers and engaging with said hopper, and means for feeding material to be separated to said armature.

4. In a magnetic separator, the combination with an axially-rotatable cylindrical armature, of an electromagnet having two pole-pieces of opposite polarity external to said armature and facing the same, one of said pole-pieces having its face of lesser area than the face of the other pole-piece, and a magnet-winding concentrated upon the pole-piece of lesser area, the other pole-piece having no winding thereon.

5. In a magnetic separator, the combination with a magnet, of a pole on said magnet having magnetizable pyramids at its surface, said pyramids being arranged in staggered rows and formed to present the angles of the pyramids of one row to the space between the pyramids of the preceding row, means for feeding material to be separated to said pyramids, and means for removing the attracted material.

6. In a magnetic separator, the combination with a magnet pole-piece, of a cylindrical iron armature mounted to rotate before said pole-piece, said cylinder having its surface provided with magnetizable pyramids arranged in staggered rows each of said pyramids being in contact with an adjacent pyramid at its base, said pyramids being formed and disposed to present the angles of the pyramids of each row to the space between the pyramids of the preceding row and means for feeding material to be separated between the armature and said pole.

7. In a magnetic separator, the combination with a hollow magnet, open at top and bottom, of bare poles of opposite polarity on said magnet, the face of one of said poles being vertical, a shaft adapted to revolve between said poles, bearings on said shaft mounted on neutral sides of said maguet, an armature, mounted upon said shaft, permeable projections on the surface of said armature, said projections being of such shape and spaced from said vertical pole such a distance, that material will be attracted from said pole to said projections, a divider mounted adjustably on said shaft, links attached to said divider, means for moving said links, means for rotating said armature, and means for feeding material to be separated to said armature.

8. In a magnetic separator, the combination with a hollow magnet, open at top and bottom, of bare poles of opposite polarity on said magnet, the face of one of said poles being vertical, a shaft adapted to revolve between said poles, having bearings mounted on neutral sides of said magnet, an armature, mounted upon said shaft, permeable projections on the surface of said armature, said projections being of such shape and spaced from said vertical pole such a distance, that material will be attracted from said pole to said projections, a divider mounted adjustably on said shaft, a hopper hinged to said divider, an apron hinged to said divider, and engaging another hopper, links attached to said divider, means for moving said links, means for rotating said armature, and means for feeding material to be separated to said armature.

9. In a magnetic separator, the combination with a hollow magnet, open above and below, of bare poles of opposite polarity on said magnet, the face of one of said poles being vertical, a horizontal shaft adapted to revolve between said poles, having bearings mounted on neutral sides of said magnet, a cylindrical armature, mounted upon said shaft, permeable projections on the surface of said armature, said projections being of such shape and spaced from said vertical pole such a distance, that material will be attracted from said pole to said projections, a divider mounted adjustably on said shaft between said vertical pole and said armature, the edge of said divider lying substantially in a vertical plane tangent to the periphery of said armature.

10. In a magnetic separator, the combination with a hollow magnet, open above and below, of bare poles of opposite polarity on said magnet, the face of one of said poles being vertical, a horizontal shaft, adapted to revolve between said poles, having bearings mounted on neutral sides of said magnet, a cylindrical armature, mounted upon said shaft, permeable pyramidal projections on the surface of said armature, each side of each projection being in contact with an adjacent projection, said projections being of such shape and spaced from said vertical pole such a distance, that material will be attracted from said pole to said projections, a divider mounted adjustably on said shaft, between said vertical pole and said armature, the edge of said divider lying substantially in a horizontal plane passing through the axis of said armature, a hopper hinged to said divider, an apron hinged to said divider, and engaging with another hopper, links attached to said divider, means for moving said links, means for rotating said armature, and means for feeding material to be separated to said armature.

11. In a magnetic separator, the combination with a hollow electromagnet, open above and below, of bare poles of opposite polarity and unequal area on said electromagnet, the face of the pole of lesser area being vertical, the winding of said electromagnet being concentrated near said vertical pole, a horizontal shaft, adapted to revolve between said poles, having bearings mounted on neutral sides of said electromagnet, a cylindrical armature mounted upon said shaft, permeable pyramidal projections on the surface of said armature, each side of each projection being in contact with an adjacent projection, said projection being of such shape and spaced from said vertical pole such a distance, that material will be attracted from said pole to said projections, a divider mounted adjustably on said shaft, between said vertical pole and said armature, a hopper hinged to said divider and engaged with another hopper, links attached to said divider, means for moving said links, means for rotating said armature, and means for feeding material to be separated to said armature.

12. In a magnetic separator, the combination with a hollow electromagnet, open above and below, of bare poles of opposite polarity on said electromagnet, the face of one of said poles being vertical, the winding of said electromagnet being concentrated near said vertical pole, a horizontal shaft, adapted to revolve between said poles, having bearings mounted on neutral sides of said electromagnets, a cylindrical armature, mounted upon said shaft, permeable pyramidal projections on the surface of said armature, each side of each projection being in contact with an adjacent projection, said projection being of such shape and spaced from said vertical pole such a distance, that material will be attracted from said pole to said projections, a divider mounted adjustably on said shaft, between said vertical pole and said armature, a hopper hinged to said divider, an apron hinged to said divider and engaging with another hopper, links attached to said divider, means for moving said links, means for rotating said armature, and means for feeding material to be separated to said armature.

13. In a magnetic separator, the combination with a cylindrical armature, of means for rotating said armature about a horizontal axis, an electromagnet having poles of different areas located on substantially diametrically opposite sides of said armature and having a winding adjacent to the air-gap between the armature and the pole of lesser area, means for feeding material to be separated between said armature and said pole of lesser area, pyramidal projections formed on the surface of said armature, said projections being of such shape and spaced from said pole of lesser area such a distance that a portion of the material to be separated may be attracted from said pole to said projection.

14. In a magnetic separator, the combination with a cylindrical armature, of means for rotating said armature about a horizontal axis, an electromagnet having poles of different areas located on substantially diametrically opposite sides of said armature and having a winding adjacent to the air-gap between the armature and the pole of lesser area, means for feeding materials to be separated between said armature and said pole of lesser area, and triangular pyramidal projections in staggered rows formed on the surface of said armature, said projections being of such shape and spaced from said pole of lesser area such a distance that a portion of the material to be separated may be attracted from said pole to said projections.

15. In a magnetic separator, the combination with a cylindrical armature, of means for rotating said armature about a horizontal axis, an electromagnet having poles of opposite polarity and of different areas located on substantially diametrically opposite sides of said armature and having the winding adjacent to the air-gap between the armature and the pole of lesser area, means for feeding materials to be separated between said armature and said pole of lesser area, triangular pyramidal projections in staggered rows formed on the surface of said armature, said projections being of such shape and spaced from said pole of lesser area such a distance that a portion of the materials to be separated may be attracted from said pole to said projections, and a divider interposed between attracted and non-attracted materials at a point where the direction of the force of attraction is substantially perpendicular to the direction of the force of gravity.

16. In a magnetic separator, the combination with a cylindrical armature, of means for rotating said armature about a horizontal axis, an electromagnet having poles of opposite polarity and of different areas located on substantially diametrically opposite sides of said armature, and having the winding adjacent to the air-gap between the armature and the pole of lesser area, means for feeding materials to be separated between said armature and said pole of lesser area, triangular pyramidal projections in staggered rows formed on the surface of said armature, said projections being of such shape and spaced from said pole of lesser area such a distance that a portion of the materials to be separated may be attracted from said pole to said projections, and a divider interposed between attracted and non-attracted materials at a point where the direction of the force of attraction is substantially perpendicular to the direction of the force of gravity, said pole of lesser area being formed to permit the free fall of material not attracted.

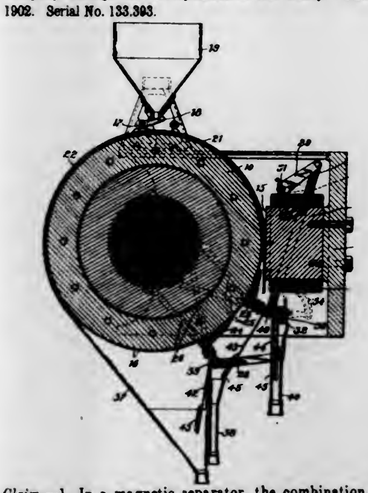
17. In a magnetic separator, the combination with a magnet, of a smooth pole on said magnet, a second pole opposite said smooth pole, the surface of said second pole being formed into triangular pyramidal projections arranged in staggered rows and disposed so as to present the angles of pyramids of one row to the spaces between the pyramids of the preceding row, and means for passing the material to be separated between said smooth pole and said projections, whereby it may be attracted to said projections, and means for removing the separated material.

18. In a magnetic separator, the combination with a magnet, of a pole on said magnet, a cylindrical armature mounted to rotate before said magnet-pole, the peripheral surface of said armature being formed into pyramidal projections, the side of each pyramid being in contact with the side of another pyramid, said pyramids being arranged in staggered rows in relative positions to present the angles of the pyramids of one row to the space between the pyramids of the preceding rows, and means for feeding materials to be separated between said pole and said armature.

19. In a magnetic separator, the combination with a magnet of an armature, means for rotating said armature, means for feeding materials to be separated to the bare surface of said armature, dividers adapted to rotate on the axis of said armature, means for adjusting said dividers, and means for clamping said dividers in adjustment.

20. In combination, a magnet, means for rotating the magnet, means for feeding material to be separated to the magnet, deflectors suspended in position to rotate about the axis of the magnet and means for adjusting the deflectors.

823,303. **MAGNETIC SEPARATOR.** FREDERICK T. SNYDER, Oak Park, Ill., assignor, by mesne assignments, to International Separator Company, Chicago, Ill., a Corporation of New Jersey. Filed Dec. 1, 1902. Serial No. 133,393.



Claim.—1. In a magnetic separator, the combination with a hollow iron cylinder having permeable projections thereon, of an electromagnet having a pole-piece external to said cylinder and facing the same, the face of said pole-piece being bare, an energizing-winding upon said pole-piece, a body of magnetic material forming a return magnetic circuit from the rear of said pole-piece to the inside of a said hollow cylinder, and means for passing material to be separated between the surface of said hollow cylinder and the face of said pole-piece and into contact therewith.

2. In a magnetic separator, the combination with a hollow iron cylinder mounted to rotate on a horizontal axis, having permeable projections on its outer surface, of a magnet having a central iron core forming one pole thereof, disposed within said hollow cylinder close to the inner surface of said cylinder, and a bare pole-piece of opposite polarity external to said cylinder and facing the outer surface thereof, and an energizing-winding for said magnet external to said cylinder, means for feeding material to be separated upon the upper surface of said cylinder, and means for passing said material into contact with said bare external pole-piece, substantially as set forth.

3. In a magnetic separator, the combination with an electromagnet, of a hollow permeable cylinder included in the magnetic circuit of said magnet, and means for feeding material to be separated to the outer surface of said cylinder, the winding being applied to said electromagnet outside of said cylinder, said magnet having a bare pole adjacent to one side of said cylinder, said pole being formed below the horizontal plane through the axis of the cylinder to lie back of a vertical plane tangent to the cylinder.

4. In a magnetic separator, the combination with an electromagnet, of a hollow permeable cylinder included in the magnetic circuit of the magnet, said magnet having one pole applied to the inside of the cylinder, and a second pole having a bare surface applied to the outside of said cylinder, permeable projections on the surface of said cylinder, means for feeding materials to be separated to the outer surface of said cylinder, and means for passing said materials into contact with the bare bole of the magnet applied to the outer surface of the cylinder.

5. In a magnetic separator, the combination with a cylindrical rotatable armature, permeable projections on the surface of said armature, an electromagnet constituting a frame supporting and inclosing mechanism of the generator, said magnet having poles of opposite polarity and different areas, one located on the inside of said hollow cylinder, the other located outside of the cylinder and having a bare face, the winding of said electromagnet being adjacent the air-gap between the armature and said outer pole, means for feeding materials to be separated to the upper surface of said armature, and means for rotating said armature to pass said materials into contact with said bare outer pole.

6. In a magnetic separator, the combination with a hollow cylindrical armature, of means for rotating said armature about a horizontal axis, an electromagnet having a pole on the inside of said electromagnet, and another pole having a bare face of smaller area on the outside of the magnet approximately on a level with the horizontal axis thereof, the winding of said electromagnet being placed adjacent to said outer pole of lesser area, means for passing materials to be separated between said armature and said pole of lesser area and into contact with the bare face of said pole, and permeable projections on the surface of said armature spaced from said pole of lesser area a distance such that the portion of the material to be separated may be attracted from said pole to said projections.

7. In a magnetic separator, the combination with a hollow cylindrical armature, of means for rotating said armature about a horizontal axis, an electromagnet having a pole located on the interior of said hollow cylindrical armature, and a pole having a bare face of lesser area than said internal pole located on the outside of said cylindrical armature facing the same, the winding of said electromagnet being provided upon said outer pole, means for passing materials to be separated between said armature and said outer pole, and permeable projections formed on the surface of said armature, said projections being of such shape and spaced from said outer pole a distance such that a portion of the materials to be separated may be attracted from said pole to said projections.

8. In a magnetic separator, the combination with a hollow cylindrical armature, of means for rotating said armature about a horizontal axis, an electromagnet having poles of opposite polarity and of different areas, the larger poles being located on the interior of the hollow armature and the pole of lesser area being located approximately on a level with the horizontal axis of the armature and on the outside thereof, the winding of the electromagnet being adjacent to the air-gap between the armature and the pole of lesser area, means for passing materials to be separated between said armature and said pole of lesser area and into contact with said pole, triangular pyramids in staggered rows formed on the surface of said armature, said projections being of such shape and spaced from said pole of lesser area such a distance that the portion of the materials to be separated may be attracted from said pole to said projections, and a divider interposed between attracted and non-attracted materials at a point where the direction of the force of attraction is substantially perpendicular to the force of gravity.

9. In a magnetic separator, the combination with a hollow cylindrical armature, of means for rotating said armature about a horizontal axis, an electromagnet having poles of opposite polarity and of different areas, the larger pole being located on the inside of said cylindrical armature and the pole of lesser area being located outside of said armature approximately on a level with the horizontal axis of rotation thereof, the winding of said electromagnet being applied adjacent to the air-gap between the armature and the pole of lesser area, means for passing materials to be separated between the armature and said pole of lesser area and into contact with the bare face of said pole, permeable projections on the surface of said armature spaced from the pole of said lesser area such a distance that a portion of the materials to be separated may be attracted from said pole to said projections, and a divider interposed between attracted and non-attracted material at a point where the direction of the force of attraction is substantially perpendicular to the direction of the force of gravity, said pole of lesser area being formed to permit the free fall of materials not attracted.

10. In a magnetic separator, the combination with a hollow cylindrical armature, of means for rotating said armature about a horizontal axis, an electromagnet having poles of opposite polarity, one located on the inside of said hollow cylindrical armature and the other located on the outside thereof, the winding of the electromagnet being adjacent to the air-gap between the armature and the pole located on the outside thereof, means for passing materials to be separated between said armature and the pole on the outside thereof and into contact with the bare face of said pole, triangular pyramidal projections in staggered rows, said projections being of such shape and spaced from said pole on the outside of said armature such a distance that the portion of the materials to be separated may be attracted from said pole to said projections, and a divider interposed between attracted and non-attracted materials at a point where the direction of the force of attraction is substantially perpendicular to the force of gravity, said pole on the outside of the armature being formed to permit the free fall of materials not attracted.

11. In a magnetic separator, the combination with a hollow iron cylinder mounted to rotate on a substantially horizontal axis, of a magnet-pole facing the inner side of said cylinder, a second magnet-pole of opposite polarity facing the outside of said cylinder, the face of said outer pole being vertical below a horizontal plane through the axis of said cylinder, permeable projections upon the cylinder, a divider-plate on the under side of said cylinder and separated from the surface thereof a distance sufficient to permit the passage of attracted material past its edge, the edge of said divider being located just inside a vertical tangent to said cylinder, means for feeding materials to be separated to the upper surface of said cylinder, and means for rotating said cylinder to pass materials through the gap between the cylinder and the external pole-piece.

823,304. **MAGNETIC SEPARATOR.** FREDERICK T. SNYDER, Oak Park, Ill., assignor, by mesne assignments, to International Separator Company, Chicago, Ill., a Corporation of New Jersey. Filed Dec. 6, 1902. Serial No. 134,117.

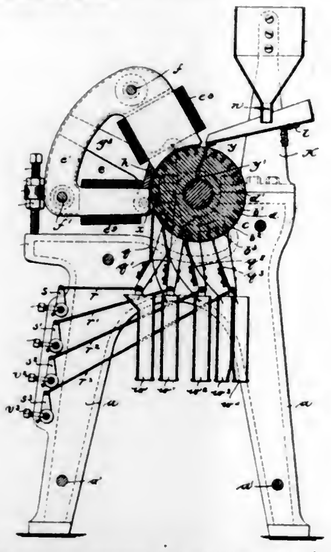
Claim.—1. In a magnetic separator, the combination with a field-magnet, of a bare armature, a winding on said armature adapted to have a current induced therein by said field-magnet to produce magnetic poles on said armature, and means for feeding materials to be separated into contact with the surface of said armature.

2. In a magnetic separator, the combination with a field-magnet, of a bare armature, a winding on said armature laid in slots therein, means for varying the current in said winding to vary the position of the poles of said armature with respect to said field-magnet, and means for feeding materials between said magnet and said armature and into contact with the bare surface of said armature.

3. In a magnetic separator, the combination with a field-magnet, of a bare armature having a neutral element, a winding laid in slots in said armature, and means for feeding materials to be separated to the bare surface of said armature.

4. In a magnetic separator, the combination with a bare armature, of a winding laid in slots on said armature carrying electric current, means for rotating said armature, a field-magnet for inducing poles on said armature at points removed from the poles produced by said current, and means for feeding materials into contact with the surface of said armature.

5. In a magnetic separator, the combination with a field-magnet, of an armature in position to be energized by said field-magnet, poles on said field-magnet applied to the armature near together to reduce the width of the weak field near the neutral point between the poles of the field-magnet, and means for feeding materials to be separated into said magnetic field and between the bare surface of said armature and said poles.



6. In a magnetic separator, the combination with an armature, of means for rotating said armature, a field-magnet so arranged as to induce poles on said armature less than one hundred and eighty degrees apart on one side of the armature, and means for feeding materials to be separated between said armature and said field-magnet.

7. In a magnetic separator, the combination with an armature, of means for rotating said armature, a field-magnet, poles on said field-magnet arranged near together one above the other at one side of the armature, and means for feeding materials to be separated between said magnet and said armature.

8. In a magnetic separator, the combination with an armature, of means for rotating said armature, a field-magnet, a pole on said field-magnet at one side of said armature in proximity to the horizontal plane of the axis of the armature, a second pole on said field-magnet at the same side of said armature above said horizontal plane, and means for passing materials to be separated between said field-magnet and said armature.

9. In a magnetic separator, the combination with a toothed armature, of means for rotating said armature, a vibrating feed-spout for feeding materials to be separated to said armature, and a mass of highly-permeable material attached to said spout and adapted to be attracted by the armature-teeth to cause the vibration of said spout.

10. In combination, a field-magnet, an armature, a winding on the armature, so related to the field-magnet as to generate an electric current, said current producing a magnetic field in the armature to act in conjunction with the magnetic field of the field-magnet, means for moving the armature and means for feeding material to be separated into the field between the field-magnet and the armature.

11. In combination, a field-magnet, a wound armature so related to the field-magnet that a magnetic field is produced having a neutral element on the side of the armature away from the field-magnet, means for moving the armature and means for passing material to be separated through the said magnetic field.

12. In combination, an armature provided with means for carrying electric current, means for moving the armature, a field-magnet for inducing poles in the armature adapted to act in combination with the poles produced by the current in the armature to form resultant poles, means for varying the strength of the field-magnet and hence the position of the resultant poles and means for feeding material to be separated to the armature.

13. In combination, a field-magnet, an armature in position to be energized by the field-magnet, the poles of the field-magnet being applied to the armature so near together as to maintain a magnetic field in proximity to the armature along the interval between the poles of the field-magnet, and means for feeding material to be separated into the magnetic field.

14. In combination, an armature, a field-magnet having its poles brought near together to produce a short magnetic circuit and means for feeding material to be separated between the magnet and armature.

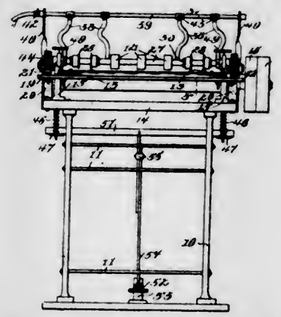
15. In combination, a field-magnet, an armature so related to the field-magnet as to be energized thereby, means for moving the armature and means for feeding material to be separated between the field-magnet and armature, the poles of the field-magnet being arranged, the one above the horizontal plane of the axis of the armature and the other in proximity to the horizontal plane of the axis of the armature whereby there is first produced a stratifying effect and then a separating effect upon the material passed between the field-magnet and armature.

16. In combination, a field-magnet, an armature in position to be energized by the field-magnet, means for moving the armature, the two poles of the field-magnet being applied at one side to the moving armature, a bridge of non-magnetic material filling the gap between the poles and forming a continuation of the pole-surfaces and means for feeding material to be separated between the field-magnet and armature.

17. In combination, an armature provided with short-circuited windings, a field-magnet for electrically energizing the windings, and means for feeding material to be separated into the field of the armature.

18. In combination, a wound armature provided with teeth having squared corners, the outer surface of the teeth forming a portion of the cylindrical surface of the armature, a field-magnet for magnetically energizing the armature and means for feeding material to be separated onto the armature.

823,305. **EMBOSSING OR CREASING MACHINE.** EDWARD E. SPENCER, Jr., New York, N.Y. Filed Aug. 17, 1904. Serial No. 221,022.



Claim.—1. In a machine of the character described, the combination of a frame, a shaft supported from the frame, a roll having an annular pocket in one face, the roll being mounted on the shaft to be adjustable endwise thereof, a second shaft carried by the frame and parallel with said shaft, and a gas-burner carried by said second shaft and adjustable thereon to have its end project into the pocket of said roll in its several positions of adjustment.

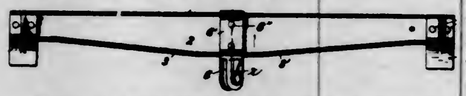
2. In a machine of the character described, the combination of a frame, a shaft journaled in the frame, a pair of arms secured to said shaft, a second shaft rotatably carried by said arms, means for rotating the second shaft in the several positions to which such shaft is carried by said arms, a roll mounted on the second shaft and having an annular pocket in one face, and a gas-burner supported on said first shaft and extending into the pocket of said roll.

3. In a machine of the character described, the combination of a frame, a shaft journaled in the frame, a pair of arms secured to said shaft, a second shaft rotatably carried by said arms, means for rotating the second shaft in the several positions to which such shaft is carried by said arms, a roll mounted on said second shaft to rotate therewith, and having an annular pocket in one face, and a gas-burner mounted on said first shaft and having its extremity extending into the pocket of said roll, the gas-burner being attached to the first shaft to swing therewith whereby the burner will remain immovable relative to said roll when the latter is rocked by the movement of said arms.

4. In a machine of the character described, the combination of a frame, a shaft journaled in the frame, a pair of arms secured to the shaft, a second shaft rotatably carried by said arms, a roll carried by

said second shaft to rotate therewith and adjustable along the shaft, the roll having an annular pocket in one face, and a gas-burner carried by said first shaft and having its end projecting into the pocket of said roll whereby the burner will be immovable relative to the roll upon the latter being locked by the movement of said arms, the burner being adjustably carried by said first shaft whereby it can be adjusted along its supporting-shaft to correspond with the adjustment of said roll along said second shaft.

823,306. **BRAKE-BEAM.** WILLIAM STEVENSON, Chicago, Ill. Filed Mar. 12, 1906. Serial No. 305,558.



Claim.—1. A brake-beam of the single-beam type comprising a single, rolled, flanged beam of a width at least equaling its height and having its flanges forced apart at the middle, in combination with a suitable strut, fulcrum-piece and heads, substantially as described.

2. A brake-beam of the single-beam type comprising a single, rolled, flanged beam of a width at least equaling its "height," the web of said beam being split and the flanges thereof being forced apart at the middle, in combination with a suitable strut, a fulcrum and heads, substantially as described.

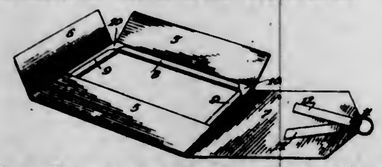
3. A brake-beam comprising a single, rolled, flanged beam of a width at least equaling its "height," in combination with a fulcrum-piece and brake-heads, the flanges of said beam being forced apart at the middle of the beam to afford requisite strength in the plane of the web of the beam, substantially as described.

4. A brake-beam comprising a single rolled, I-beam, having flanges whose width at least equals the "height" of the beam and whose web is distended at the middle, in combination with a suitable strut and brake-heads, substantially as described.

5. A brake-beam comprising a single, rolled, I-beam, having its web split and its flanges distended at the middle, the width of said flanges being at least equal to the height of the web at the ends of the beam, in combination with a suitable strut, a fulcrum and brake-heads, substantially as described.

6. A brake-beam comprising a single, rolled, I-beam, of a width at least equaling its "height" and having its web distended at the middle, whereby the flanges are abnormally separated at that point, in combination with a fulcrum-piece, corrected portions forming a strut between the flanges of the beam and brake-heads attached to the ends of said beam, substantially as described.

823,307. **PICTURE FRAME AND MOUNTING.** FREDERICK B. STOVEL, Toronto, Canada, assignor of one-half to Charles J. Stovel, San Francisco, Cal. Filed Mar. 10, 1905. Serial No. 249,486.



Claim.—The combination with a picture, its mat, and a transparent sheet, all loosely assembled, of an envelop having a display-opening larger than the opening in the mat and inwardly-projecting foldable flaps at the edges of said opening, a stiffening-frame to which said flaps are secured, the dimensions of said frame being the same as the dimensions of the picture, said envelop having outwardly-projecting side flaps, a short end flap and a long end flap having suspending means secured to the end thereof, said long end flap being of substantially the length of the picture, said outwardly-projecting flaps being adapted to be folded down behind the picture to hold the picture with its mat and transparent sheet against the stiffening-frame, substantially as described.

823,308. **GAS-BURNER.** HEINRICH SÜSSMANN, Berlin, Germany, assignor to Deutsche Gasglühlicht-Aktiengesellschaft, Berlin, Germany, a Firm. Filed Feb. 26, 1904. Serial No. 195,360.

Claim.—1. A gas-burner, comprising a nozzle-casing having an internal beveled surface inclining downwardly and outwardly, a slitted spring-cap mounted to slide in the casing and having its upper end tapering inwardly and upwardly, and a screw having a pointed end and mounted in the casing with its pointed end projecting into said casing below the lower end of the cap, whereby the slits of the cap are contracted when the cap is moved upwardly.



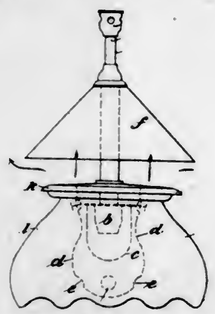
2. A gas-burner comprising a nozzle-casing having an internal beveled surface inclining downwardly and outwardly, a slitted spring-compressible cap adapted to slide lengthwise of the casing and having its upper end tapering inwardly and upwardly, a screw projecting with its pointed end into said casing and adapted to adjust the cap lengthwise and support it in all positions, and means projecting into the casing for preventing said cap from falling out.

3. A gas-burner comprising a nozzle-casing having a detachable head-piece provided with an internal beveled surface, a slitted spring-compressible cap adapted to slide lengthwise of said head-piece and having a beveled upper outer end, an adjusting-screw projecting into the casing below the head-piece and the cap and adapted to support the cap in all positions, and means also projecting into the casing below the cap, for preventing said cap from falling out.

4. A gas-burner, comprising a nozzle-casing having an internal beveled surface and above the beveled surface, a chamber having an apertured top plate, a slitted spring-cap in the casing and having a beveled upper end, and a screw having a pointed end and mounted in the casing with its pointed end projecting into the said casing below the lower end of the said cap.

5. A gas-burner, comprising a nozzle-casing having an internal beveled surface inclining downwardly and outwardly and above said surface a chamber having an apertured top plate, a slitted spring-cap in the casing and having its upper end beveled inwardly and upwardly, and a screw having a pointed end and mounted in the casing with its pointed end projecting into the casing below the lower end of the cap.

823,309. **INVERTED INCANDESCENT GAS-BURNER.** HEINRICH SÜSSMANN, Berlin, Germany, assignor to Deutsche Gasglühlicht-Aktiengesellschaft, Berlin, Germany, a Firm. Filed Mar. 3, 1904. Serial No. 196,400.



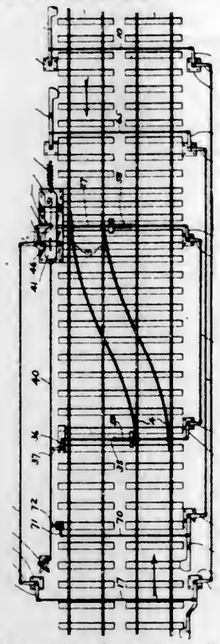
Claim.—1. In an inverted or downwardly-burning incandescent gas-burner, a mixing-tube increasing in diameter in direction from its upper to its lower end, and having an enlargement near its lower end, a gauze in the enlargement of the mixing-tube, a mantle on the lower end of the tube, a cap secured to the tube and extending downwardly around the same, and a globe or globes carried by the cap and surrounding the mantle.

2. In an inverted or downwardly-burning incandescent gas-burner, a mixing-tube increasing in diameter in direction from its upper to its lower end and having an enlargement, a gauze in the enlargement of the tube, a mantle on the lower end of said tube, and a cap secured to the tube and extending downwardly around the same.

3. In an inverted or downwardly-burning incandescent gas-burner, a mixing-tube increasing in diameter in direction from its upper to its lower end, and a cap mounted upon the tube and extending downwardly around the same, whereby the heated gases from the burner will be caused to circulate around the mixing-tube.

4. In an inverted or downwardly-burning incandescent gas-burner, a mixing-tube increasing in diameter in direction from its upper to its lower end, as and for the purpose set forth.

823,310. **SELF-ACTING SWITCH.** WILLIAM H. TAYLOR, Philadelphia, Pa., assignor of one-half to Thomas Cooney, Philadelphia, Pa. Filed Feb. 2, 1906. Serial No. 299,112.



Claim.—1. In a switch mechanism, in combination, a lever, a slidable plate having a cam-section upon one edge thereof, means interposed between the said lever and the said slidable plate for controlling the position of the latter, and means interposed between the said cam-section and the switch-rails, whereby movement of the said plate occasions movement of the said rails.

2. In a switch mechanism, in combination, a lever, a switch-plate having a notch in one edge thereof, one side of which notch forms a cam, switch-rails, a lug or projection adapted to be seated in the said notch, means for connecting the said lug or projection to the said switch-rails, and means connecting the said lever and the said lug or projection, whereby the latter may be removed from its seat in the said notch to permit movement of the switch-plate in a direction to bring the cam into engagement with the said lug or projection to occasion movement of the said switch-rails.

3. In a switch mechanism, in combination, a lever, a slidable switch-plate having a notch provided with a seat in one of its edges, switch-rails, means adapted to be seated in the said seat for the purpose of holding the switch-plate in a retracted position, means for connecting the said lever to the last-mentioned means, and a connecting-rod between the switch-rails and the means for holding the switch-plate in retracted position.

4. In a switch mechanism, in combination, a lever, switch-rails, a switch-plate having a notch provided with a seat in one edge thereof, one side of the said notch being inclined, means interposed between the said lever and the said switch-plate for controlling the same, and means interposed between the said switch-plate and the said switch-rails, whereby upon movement of the switch-plate in one direction the said switch-rails are moved in a direction to open the switch.

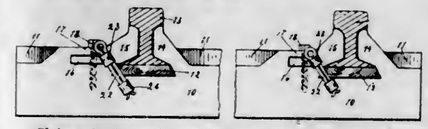
5. In a switch mechanism, in combination, a lever, a slidable switch-plate provided with a notch in one edge thereof, the said notch having a seat and one side of the said notch being inclined, a movable bar provided with a lug or projection adapted to be moved into and out of the said seat, means for connecting the said lever to the said bar, a spring connected to the said switch-plate which is adapted to occasion movement of the said plate in one direction, and means connecting the said bar and the said switch-rails, whereby movement of the said bar occasions movement of the said rails.

6. In a switch mechanism, in combination, a lever, a switch-plate provided with a notch in one edge thereof, one side of which is inclined longitudinally of the plate to the edge thereof, means connecting the said lever to the said switch-plate, whereby when the said lever is moved in one direction a pull is exerted upon the said switch-plate to occasion movement thereof, means adapted to engage the said switch-plate to hold it in retracted position, a second lever, means connecting the said second lever to the means for holding the said switch-plate in retracted position, whereby when the said second lever is moved in one direction the said holding means is moved out of its seat in the said notch, and a spring adapted to occasion movement of the said switch-plate when the said holding means is moved out of its seat.

7. In a switch mechanism, in combination, a movable plate or member having a cam surface or section upon an edge thereof, movable means adapted to engage the said member to hold it in retracted position, the said movable means being also adapted to engage the said cam surface or section, the switch-rails, and means connecting the said movable means and the said rails, whereby relative movement between the said movable means and the said movable plate or member occasions or permits movement of the said rails.

8. In a switch mechanism, in combination, a movable plate or member having a cam surface or section upon one edge thereof, and the said member also having a seat therein, means constantly exerting a force upon the plate or member to move it one in direction, means adapted to be located in the said seat to hold the said plate or member in retracted position in opposition to said force, means for removing the holding means from the said seat to permit movement of the said plate or member to move the cam surface or section into engagement with the said holding means, switch-rails, and means connecting the said rails to the said holding means, whereby movement of the latter in relation to the said cam surface or section occasions movement of the said rails.

823,311. **METALLIC RAILWAY-TIE.** FREDRICK H. URBAN, Brazil, Ind., assignor, by direct and mesne assignments, of one-fourth to Littleton Reffet and one-half to Orly E. Adams, Brazil, Ind. Filed Sept. 28, 1905. Serial No. 280,456.



Claim.—1 A metal cross-tie for railway use provided with an integral rail-holding abutment for engaging one side of the web of the rail and an integral flange on the cross-tie extending toward the other side of the rail, a removable rail-holding abutment movable in place under said flange and adapted to engage the web of the rail, and means extending through said flange and abutment into the cross-tie for removably securing it to the cross-tie.

2. A metal cross-tie for railway use provided with a pair of oppositely-extending and inclined rail-holding abutments, one of which is integral with the cross-tie and the other is removably secured thereto, a plate of wood or other similar material between said rail-holding abutments upon which the rail rests, and removable means for holding said wooden plate in place.

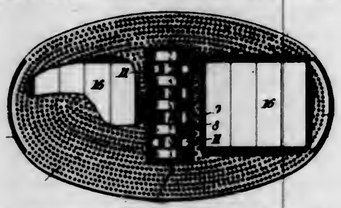
3. A metal cross-tie for railway use having a pair of oppositely-extending rail-holding abutments, one of which is integral with the cross-tie and the other removably secured thereto, a plate of wood or similar material between said abutments on which the rail rests, a flange secured to one side of the cross-tie for engaging one end of said plate and holding it in place, said flange having in it an opening through which a tool may be inserted for removing said plate, and means removably secured to the cross-tie for engaging and holding the other end of said plate.

4. A metal cross-tie for railway use consisting of a main or body portion, a rail-holding abutment integral therewith, for engaging one side of each rail and integral flanges on the other side of each rail, removable railway-abutments secured under said flanges, and an A-shaped rib along the upper surface of said cross-tie that reinforces said integral abutments and flanges.

823,312. **BRUSH.** ROBERT E. WILLIAMS, Dallas, Tex. Filed Dec. 1, 1905. Serial No. 289,809.

Claim.—1. A brush comprising a back of yielding material, a rubbing-surface of yielding material connected to the back, and a massage-roller arranged in the brush.

2. A brush comprising a back of yielding material, a rubbing-surface thereon consisting of yielding projections, the said brush having an opening through it, a metal casing arranged over said opening and a ribbed roller mounted to rotate in the casing.



3. A brush comprising a back of skeleton form, a flexible rubbing-surface on said back, and rods arranged in said back near the ends, engaging with straps.

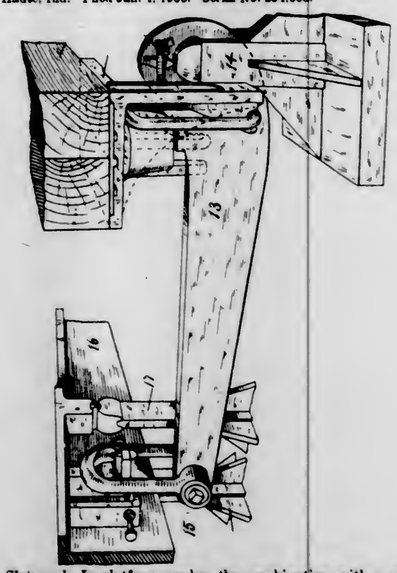
4. A brush comprising a back, having an opening through it, a yielding rubbing-surface on the back, a massage-roller arranged in said opening, and a casing extended over the roller and provided with perforations to receive members of a handle.

5. A brush comprising a back of flexible material, a rubbing-surface on the back, consisting of soft-rubber projections, a roller supported in the brush, and a hand-strap attached to the brush-back.

6. A brush comprising a frame of yielding material, a yielding rubbing-surface on said frame, yielding scrapers extended from the frame and a circumferentially-ribbed roller mounted in the brush.

7. A brush comprising a back or frame of skeleton form, a yielding brush material on said frame, a hand-strap consisting of two sections connected to opposite sides of the frame, and means for detachably securing the free ends of the sections together.

823,313. PLATFORM-SCALE. MARION H. WINSLOW, Terre Haute, Ind. Filed Jan. 4, 1906. Serial No. 294,603.



Claim.—1. In platform-scales, the combination with a platform-beam, a cross-lever, and a knife-edge secured in said cross-lever, of a bearing-block on said knife-edge with diagonally opposite upturned hooks thereon, links suspended on said hooks, and a plate on which the platform-beam rests with downwardly-extending legs having downwardly-turned hooks resting in the lower ends of said links.

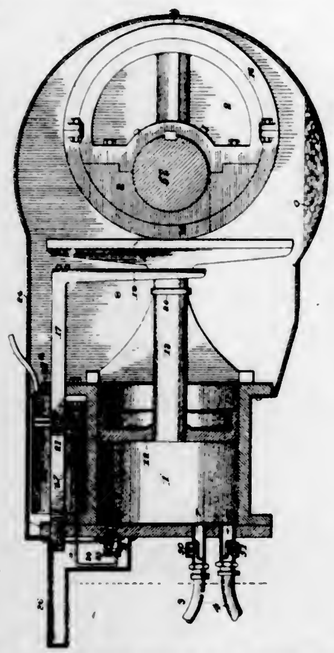
2. In platform-scales, the combination with a platform-beam, a cross-lever, and a knife-edge secured in said cross-lever, of a bearing-block upon said knife-edge that extends transversely of said cross-lever and has a pair of diagonally opposite upturned hooks secured to the sides of said block near its ends, links suspended on said hooks, and a plate upon which the platform-beam rests having at diagonally opposite corners a pair of downwardly-extending legs, one on each side of said cross-lever with downwardly-turned hooks on the lower end of said legs that rest in the lower ends of said links.

823,314. HEADWEAR. JOHN U. ADAMS, New Orleans, La. Filed Aug. 10, 1905. Serial No. 273,548.



Claim.—An article of headwear, embodying a sweat-band, comprising a cord at the lower inner edge of the article, and an inclosing strip therefor, said sweat-band being stitched to said inclosing strip, and a flexible strip secured at its lower edge between the inclosing strip and the sweat-band by long diagonally-disposed stitching whereby to permit motion of the parts upon each other, the flexible strip being provided at its ends with means for securing it in different positions of adjustment.

823,315. AIR-SUPPLY APPARATUS FOR AIR-BRAKES. ERNEST B. ALLEN, Louisville, Ky. Filed Feb. 13, 1906. Serial No. 300,852.



Claim.—1. An air-supply apparatus for air-brakes, comprising a main reservoir for compressed air, a single-acting pump mounted on the truck and having at one end a suction-valve opening inwardly from the atmosphere and an outlet-valve with pipe leading therefrom to the reservoir, a cam fixed to the car-axle, a piston in the pump-cylinder with rod and shoe having a range of adjustment to or from the cam, a slide-rod arranged beside and outside the pump-cylinder and having an arm connected to the piston-rod and shoes and means for adjusting said slide-rod and shoe to contact with the actuating-cam substantially as described.

2. An air-supply apparatus for air-brakes, comprising a main reservoir for compressed air, a single-acting pump mounted on the truck and having at one end a suction-valve opening inwardly from the atmosphere and an outlet-valve with pipe leading therefrom to the reservoir, a cam fixed to the car-axle, a piston in the pump-cylinder with rod and shoe having a range of adjustment to or from the cam, a slide-rod arranged beside and outside the pump-cylinder and having an arm connected to the piston-rod and shoe, a brake-cylinder and brake-rod, a yielding bar connected with the slide-rod, a hand-lever having three positions of adjustment, a pull-rod connecting it with the yielding bar and means connecting the pull-rod with the brake-rod for starting the pump either by the application of brakes, or at will by hand, or for cutting out the pump altogether as described.

3. An air-supply apparatus for air-brakes, comprising a main reservoir for compressed air, a pump having at one end a suction-valve opening inwardly from the atmosphere and an outlet-valve with pipe leading therefrom to the reservoir, a cam fixed on the car-axle, a piston in the pump-cylinder with rod and shoe having a range of adjustment to or from the cam, a slide-rod arranged beside and outside the pump-cylinder and having an arm connected to the piston-rod and shoe, a brake-cylinder and brake-rod, a yielding bar connected with the slide-rod, a hand-lever having three positions of adjustment, a pull-rod connecting it with the yielding bar and means connecting the pull-rod with the brake-rod for starting the pump either by the application of brakes, or at will by hand, or for cutting out the pump altogether as described.

4. An air-supply apparatus for air-brakes, comprising a main reservoir for compressed air, a pump having at one end a suction-valve opening inwardly from the atmosphere and an outlet-valve with pipe leading therefrom to the reservoir, a cam fixed on the car-axle, a piston in the pump-cylinder with rod and shoe having a range of adjustment to or from the cam, a slide-rod arranged beside and outside the pump-cylinder and having an arm connected to the piston-rod and shoe, a brake-cylinder and brake-rod, a yielding bar connected to the slide-rod, a hand-lever having three positions of adjustment, a pull-rod made in two parts, one section being connected to the yielding bar and the other section to the hand-lever and a connecting-lever for the adjacent ends of the sectional pull-rod, said connecting-lever having a sliding connection with the brake-rod substantially as described.

5. An air-supply apparatus for air-brakes, comprising a main reservoir for compressed air, a pump having at one end a suction-valve opening inwardly from the atmosphere and an outlet-valve with pipe leading to the reservoir, a cam fixed on the car-axle, a piston in the pump-cylinder with rod and shoe having a range of adjustment to or from the cam, a slide-rod arranged beside and outside the pump-cylinder and having an arm connected to the piston-rod and shoe, a brake-cylinder and brake-rod, a yielding bar connecting to the slide-rod, a hand-lever having three positions of adjustment, a pull-rod connecting therewith and to the yielding bar, means for adjusting the length of the pull-rod and means connecting the pull-rod to the brake-rod substantially as described.

6. An air-supply apparatus for air-brakes comprising a reservoir, an axle-driven pump for pumping air into the reservoir, a cam on the car-axle separated from the pump and a tangential shoe connected to the piston-rod of the pump and having a rectilinear adjustment beyond the stroke of the cam to wholly disconnect the pump parts from the actuating-cam substantially as described.

7. An air-supply apparatus for air-brakes, comprising a reservoir, an axle-driven pump for pumping air into the reservoir, a cam on the car-axle separated from the pump, the pump being provided with a piston-rod and shoe to be acted upon by the cam, an adjusting device for the shoe having a primary and secondary movement, the latter arranged to take the shoe entirely out of range of the cam to prevent dragging thereon as described.

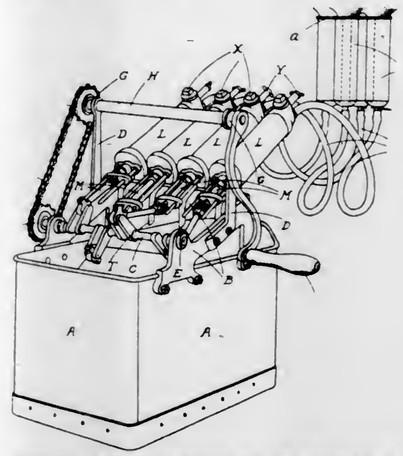
8. An air-supply apparatus for air-brakes, comprising a reservior, an axle-driven pump connected to the reservoir and having a piston-rod and shoe, a cam on the car-axle detached from the shoe, a slidable adjusting-rod with arm loosely connected to the piston-rod with a limited longitudinal movement and a spring for giving a secondary and final backward movement to the adjusting-rod.

9. An air-supply apparatus for air-brakes, comprising a reservoir, an axle-driven pump connected to the reservoir and having a piston-rod and shoe, a cam on the axle detached from the shoe, a slidable adjusting-rod with arm loosely connected to the piston-rod with a limited longitudinal play, pneumatic means for moving said rod and shoe away from the cam by an excess of pressure in the reservoir, a spring for giving a final or secondary back movement to said adjusting-bar, an escape-valve from the cylinder and means for opening the escape-valve by the final or secondary movement of the adjusting-rod as described.

10. An air-supply apparatus for air-brakes, comprising a reservoir, an axle-driven pump connected to the reservoir and having a piston-rod and shoe, a cam on the axle detached from the shoe, a slidable adjusting-rod 17 with arm loosely connected to the piston-rod with a limited longitudinal play and having a spring 19, a cylinder 21× with piston 28, a stem 27 connected to adjusting-rod 17 but detached from piston 28, a pipe 23 extending from cylinder 21× to the reservoir and opening into the same through a pressure-valve, a tappet projection 21 on rod 17, a lever 9 arranged to be struck thereby, a valve 5 arranged to be opened by said lever, a cylinder inclosing the valve-stem and having a piston and a pipe 24 extending from the end of this cylinder to the end of cylinder 21×.

11. An air-supply apparatus for air-brakes, comprising a reservoir, an axle-driven pump connected to the reservoir and having a piston-rod and shoe, a cam on the axle detached from the shoe, a slidable adjusting-rod 17 with arm loosely connected to the piston-rod with a limited longitudinal play and having a spring 19, a cylinder 21× with loose piston 28, a stem 27 connected to adjusting-bar 17, a tappet projection 21 on slide-rod 17, a lever 9 arranged to be struck thereby, a valve 5 arranged to be opened by said lever, a cylinder inclosing the valve-stem and having a piston, a pipe 24 extending from the end of the cylinder to the end of cylinder 21×, a pipe 23 extending from the same end of cylinder 21× to the reservoir, a valve-casing with valve opening outwardly from excess of pressure into pipe 23, a leak-hole being provided in open communication with the pipe 23 to allow the piston of valve 5 and the piston 28 to be restored to their normal positions.

823,316. MILKING APPARATUS. PETER ANDERSEN, Langdrathof, Hadersleben, Germany. Filed Nov. 3, 1905. Serial No. 285,718.



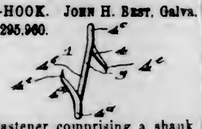
Claim.—1. In a milking-machine, the combination with a multiple suction-pump having a separate barrel, outlet-tube, inlet-tube, and teat-cups, to each teat of the animal, a piston-rod having a shoulder, a valve secured to the inner end of the rod, and a piston having passages therethrough and working loose on the rod between the said shoulder and valve, of an induction-valve interposed between each barrel and each teat appliance so that each teat can be separately disconnected from the pump by disconnecting the inlet-tube.

2. In a milking-machine, the combination with a multiple suction-pump having a separate barrel, outlet-tube, inlet-tube, and teat cup, to each teat of the animal, a piston-rod having a shoulder, a valve secured to the inner end of the rod, and a piston having passages therethrough and working loose on the rod between the said shoulder and valve, of an induction-valve interposed between each barrel and each teat appliance, and a passage past the induction-valve establishing a connection between the inlet-tube and the barrel, for the purpose of rendering the suction effect intermittent.

3. In a milking-machine, the combination with a multiple suction-pump having a separate barrel, outlet-tube, inlet-tube, and teat-cup to each teat of the animal, a piston-rod having a shoulder, a valve secured to the inner end of the rod, and a piston having passages therethrough and working loose on the rod between the said shoulder and valve, of an induction-valve interposed between each barrel and each teat appliance, a passage past the induction-valve establishing a connection between the inlet-tube and the barrel, and a regulating-valve in said passage whereby the suction on the teat is reduced on the return stroke of the piston and an intermittent action produced on each teat independently.

4. In a cow-milker, the combination of a multiple suction-pump having a separate barrel, outlet-tube, inlet-tube, and teat-cup to each teat of the animal, a piston-rod having a shoulder, a valve secured to the inner end of the rod, a piston working loose on the rod between the said shoulder and valve and having passages parallel with the rod, an induction-valve interposed between each barrel and each teat appliance, a passage past the induction-valve, a regulating-valve in said passage for regulating the suction on each teat, a multiple-throw crank-shaft, a counter-shaft having a crank-handle, bearings supporting the counter-shaft and elevating the handle, and suitable means for connecting the crank-shaft with the counter-shaft.

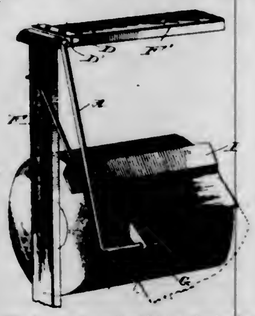
823,317. PIN-HOOK. JOHN H. BEST, Galva, Ill. Filed Jan. 13, 1906. Serial No. 295,960.



Claim.—1. A fastener comprising a shank having a central straight portion and laterally-bent end portions extending in opposite directions, and hooks formed at the ends of said bent portions, each hook bent in line with said bent portion of said shank and having its pointed end bent in the opposite direction from said bent portion of the shank.

2. A fastener comprising a shank 3 having a central straight portion 4^b and laterally-bent end portions 4^c extending in opposite directions, and hooks 4 and 4^a formed at the ends of sad bent portions, each hook bent in line with said bent portion of said shank and having its pointed end 4^e bent inward toward the shank and in the opposite direction from said bent portion of the shank.

823,318. PAPER-LIFTING DEVICE FOR PAPER-ROLLS. ERNEST S. BROWN, Washington, D. C. Filed Mar. 23, 1906. Serial No. 306,475.

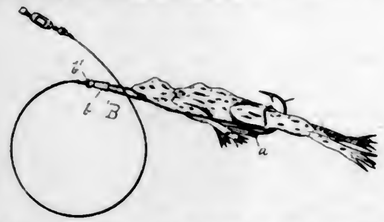


Claim.—1. The herein-described lifting device for use on paper-rolls, comprising a swinging bar provided at its lower end with a paper-lifting finger fitting and pinned on said lateral arm, the said finger being edged at its upper free end and curved on its under side leading up to said edged free end, a lateral arm at the upper end of the swinging bar, and a bracket having a top plate to rest on a supporting-bar, and a depending lug or rib to abut the edge of said supporting-bar and provided with a transverse opening in which said upper arm of the swinging bar is journaled, the end of the said arm being upset or riveted whereby to secure it permanently within the lug or rib, substantially as set forth.

2. A lifting device for use on paper-rolls, comprising a bracket having a top plate, and a lug or rib depending therefrom and having a transverse opening, a swinging bar having at its upper end a lateral arm journaled and held in said opening, the said bar being also provided at its lower end with a lateral arm, and a lifting block or finger having an opening fitted on said arm, and a pin passed through said finger and lateral arm and securing the same together, substantially as set forth.

823,319. FISHING-HOOK. WILLIAM COOPER, Chicago, Ill., assignor of one-half to James Courtland Cooper, Chicago, Ill. Filed July 13, 1905. Serial No. 269,508.

Claim.—1. A device of the class described comprising a fish-hook, means for securing the bait thereto, bait-supports secured to the shank of said hook and extending approximately parallel with each side thereof, the ends of said supports adapted to be looped over the bait, substantially as described.



2. In a device of the class described, the combination of a fish-hook, springs upon each side of said hook, said springs having loops upon the free ends thereof, substantially as described.

3. A fish-hook, a bait-engaging device secured to said hook, and springs extending approximately parallel with the shank of said hook upon either side thereof, said springs having loops upon the free ends thereof, substantially as described.

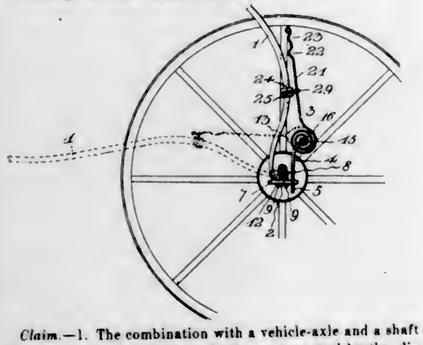
4. A fishing-hook, bait-supports projecting from each side of said hook, coils formed near the free ends of said supports, and engaging devices at the ends of said supports for holding the bait in position, substantially as described.

5. In a device of the class described, the combination of a fishing-hook, a sinker arranged thereon, bait-supports extending from either side of said hook and having means for engaging the bait, and a snap secured to one end of said hook whereby the bait is secured thereto, substantially as described.

6. A hook provided with a bait-engaging device at the shank end thereof, spring-supports extending approximately parallel with each side of the shank of said hook, said supports having loops upon the outer ends thereof, substantially as described.

7. In a device of the class described, the combination of a fish-hook, a bait-engaging device secured to the shank end of said hook, springs upon either side of said hook, said springs having loops upon the free ends thereof, and a sinker upon the shank of said hooks, substantially as described.

823,320. SHAFT-SUPPORT. HENRY W. DAVIS, Provo, Utah. Filed Sept. 18, 1905. Serial No. 278,982.

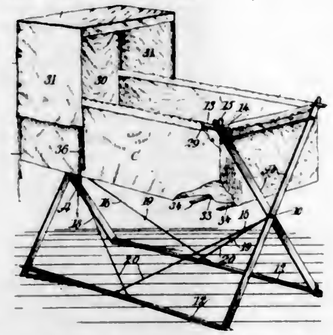


Claim.—1. The combination with a vehicle-axle and a shaft or thill, of a clip on the axle, a vertical arm supported by the clip, a spring-arm having a spring-coil at its inner end connected to and supported by the said vertical arm, and a projection on the shaft or thill to engage the free end of said spring-arm, substantially as described.

2. The combination with a vehicle-axle and a shaft or thill, of a clip adjustably secured upon said axle, an adjustable screw-threaded engagement with said clip, a bolt or stud adjustable in one end of said arm, a coiled spring having its inner end connected to said bolt and a projection or hook upon said shaft or thill adapted to engage the free end of said spring, substantially as described.

3. The combination with a vehicle-axle and a shaft or thill, of a U-shaped bolt engaged with said axle, a yoke or clip having an opening and a slot to receive the ends of said bolt, nuts upon the ends of said bolt, an arm having its lower screw-threaded end adjustable in a threaded opening in said yoke, a coiled spring having its inner end connected to the upper portion of said arm, and a projection or hook upon said shaft or thill adapted to engage the free end of said spring to support said shaft or thill in either its elevated or lowered position, substantially as described.

823,321. FOLDING CRIB. LOUIS DEJONGE, Jr., New York, N. Y. Filed Dec. 9, 1905. Serial No. 291,098.

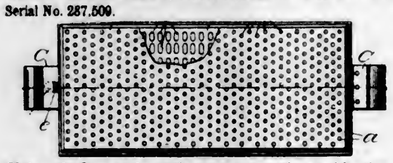


Claim.—1. A folding crib, comprising a frame composed of pairs of crossed legs, the members of the pairs being pivotally connected by eyebolts, removable upper and lower longitudinal bars connecting the corresponding ends of the legs, hooks connected to the lower bars, rods engaging the eyebolts and having eyes for engaging the hooks whereby to brace the frame, and a body of yielding material removably supported by the frame.

2. A folding crib, comprising a frame composed of pairs of crossed legs, the members of the pairs being pivotally connected by eyebolts, removable upper and lower longitudinal bars connecting the corresponding ends of the legs, hooks connected to the lower bars, rods engaging the eyebolts and having eyes for engaging the hooks whereby to brace the frame, a body of yielding material removably supported by the frame, and slats removably placed in the bottom portion of the body.

3. A folding crib comprising a frame composed of pairs of crossed legs pivotally connected at their point of intersection, removable upper and lower longitudinal bars connecting the corresponding ends of the legs, braces connecting the intersection of the legs with the respective lower longitudinal bars, and a body of yielding material removably supported by the frame.

823,322. APPARATUS FOR SEPARATING AND GRADING GRAIN. JOHN F. DELANY, Colona Station, Ill. Filed Nov. 15, 1905. Serial No. 287,509.



Claim.—1. In a grain-sorting apparatus, the combination of a pair of pan-shaped screens, adapted to form a closed receptacle, said screens having conoidal or funnel-shaped openings or perforations, the perforations of one screen being elongated and larger than the perforations in the other, and means for fastening the screens together, substantially as described.

2. In a grain-assorting apparatus, the combination of a pan-shaped member having conoidal-shaped openings, and a similar opposed member having openings of larger diameter, one member forming the closure for the other and adapted to be used successively, substantially as described.

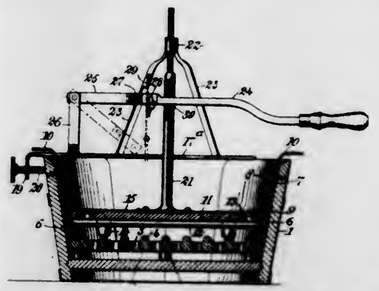
3. In a grain-sorting apparatus, the combination of a pan-shaped screen having conoidal or funnel-shaped perforations in its bottom, and handles attached to its ends; with a similar, but opposite screen having perforations of larger size and hinged at one end to one end of the first screen, and having a hand-piece on its other end adapted to fit against the adjacent handle on the first screen when closed thereagainst, and provided with a finger adapted to engage an opening in said handle to prevent lateral displacement of the screens when closed, substantially as described.

4. The combination in a grain-separating apparatus adapted to be held in and operated by the hands, of a pan-like member having circular openings or perforations in its bottom; with a similar opposed pan-like member having elongated perforations in its bottom larger than the perforations in the first member and connected to said first member so as to form a closed receptacle, substantially as and for the purpose described.

5. The combination in a grain-separating apparatus adapted to be held in and operated by the hands, of a pan-like member having outwardly-projecting funnel-shaped openings in its bottom, and handles attached to the ends of said member; with a similar opposed member having outwardly-projecting openings of larger size, and hinged to said first member so as to form a closed receptacle therewith, said members being usable successively, substantially as described.

6. In a grain-sorting apparatus, the combination of a screen having perforated protuberances in its bottom, and handles attached to its ends; with a similar screen having perforated protuberances of larger size in its bottom, and hinged at one end to one end of the first screen, and having a hand-piece on its other end adapted to fit against the handle on the first screen when the screens are closed, said screens forming a closed receptacle and adapted to be used successively, and means to prevent lateral displacement of the screens when closed, substantially as described.

823,323. WASHING-MACHINE. GEORGE W. DUNGAN, Shenandoah, Pa. Filed May 9, 1905. Serial No. 259,523.



Claim.—1. A washing-machine comprising a tub, a scrubber-board removably arranged in the lower portion thereof, a plunger coacting with the scrubber-board, and an extension-ring on the plunger, the said extension-ring having slots through which pins on the plunger pass permitting of expansion and contraction of the plunger-body relatively to the extension-ring.

2. A washing-machine comprising a tub, a scrubber-board arranged in the lower portion thereof, a plunger having an upwardly-extending rod, a spider removably attached to the upper end of the tub and having a central opening through which the plunger-rod passes, uprights mounted on said spider and having a bearing for the upper end of the plunger-rod, the said plunger-rod having a transverse opening, a post extended upward from the spider, and an actuating-lever pivoted to said post and passing through the transverse opening in the plunger-rod.

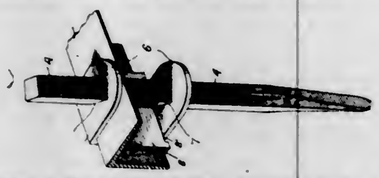
3. A washing-machine comprising a tub, a scrubber-board arranged in the lower portion thereof, a plunger coacting with the scrubber-board, a rod extended upward from the plunger and having a transverse opening, a spider seated on the upper end of the tub and having a central opening through which the plunger-rod passes, and an actuating-lever having a portion extended through said opening in the rod, the said actuating-lever consisting of two detachable sections.

4. A washing-machine comprising a tub, a scrubber-board arranged in the lower portion thereof, a plunger coacting with the scrubber-board, a rod extended upward from the plunger, a spider detachably connected with the tub and having an opening through which the plunger-rod passes, uprights on the spider supporting a bearing for the upper end of the plunger-rod, a post extending upward from the spider, a lever having swinging connection with said post and having a portion passing through an opening in the plunger-rod, the said lever consisting of two sections, one section at its inner end being bifurcated to receive the adjacent end of the other section, the said bifurcated portions and the inserted end of the said

other section of the lever being perforated, and a locking-pin for passing through said perforations.

5. A washing-machine comprising a tub, a scrubber-board arranged in the lower portion thereof, a plunger coacting with the scrubber-board, a rod extended upward from the plunger and having a transverse opening, a spider detachably connected to the tub, a post extended upward from the spider, a lever having swinging connection with the post and consisting of two sections, the inner end of one section being bifurcated to receive the adjacent end of the other section, the said bifurcated section having a perforation in its end, an extension-lug on said other section on the lever for engaging in said perforation, and a locking-pin for the two sections.

823,324. **HARROW-TOOTH HOLDER.** ANDREW G. DUNLOP, Minneapolis, Minn. Filed Feb. 1, 1906. Serial No. 298,965.



Claim.—1. The combination with a harrow-bar having an upright flange and provided with members projecting substantially parallel with one another in a direction at right angles thereto, and having vertical sockets, of a tooth fitting within said sockets, and a wedge inserted between said tooth and said upright flange and adjustable at right angles to said tooth to hold said tooth at various adjustments, substantially as described.

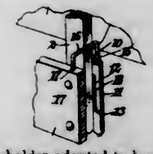
2. The combination with a harrow-bar having an upright flange, a flange at the top of said upright flange, and an ear at the lower edge of said upright flange, said last-named flange and ear being substantially parallel and extending in a direction at right angles to the upright flange and having sockets, of a harrow-tooth fitting within said sockets, and a wedge inserted between said tooth and upright flange and adjustable at right angles to the tooth for locking the tooth in its sockets, substantially as described.

3. The combination with a harrow-bar composed of angle-iron, a clip inclosing said bar and having ears extending horizontally, one of said ears resting on the horizontal flange of said bar and the other extending substantially parallel with said horizontal flange from the lower edge of the vertical flange, said ears and horizontal flange having sockets coinciding with one another, a tooth fitting within said sockets, and a wedge inserted between said tooth and said vertical flange and adjustable at right angles to the tooth for locking said tooth therein.

4. The combination with an angle-bar, of a clip inclosing the same and having right-angled extensions provided with sockets coinciding with a socket in the horizontal flange of said bar, a tooth fitting within said sockets, and a wedge interposed between said tooth and the vertical flange of said bar and adjustable at right angles to the tooth to lock the tooth in various adjustments thereof, substantially as described.

5. In a harrow-frame, a bar having an upright flange and provided with members projecting in a direction at right angles thereto in substantially parallel planes, said members having sockets, in combination with a tooth fitting within said sockets, and a wedge inserted between said tooth and said upright flange, and adjustable at right angles to the tooth for locking said tooth in its socket.

823,325. **STEP-HOLDER FOR CARS.** JOSEPH EDWARDS, New York, N. Y. Filed Mar. 15, 1906. Serial No. 306,149.



Claim.—1. A step-holder adapted to be attached to a car and consisting of a bracket presenting a guide-sleeve, and a keeper adapted to engage the car-step, said keeper having a stem guided in said sleeve to move longitudinally and to rotate.

2. A step-holder for a car-step consisting of a bracket having a vertical sleeve, a holder having a stem slidably mounted in said sleeve, and an arm adapted to engage the car-step, said stem being longitudinally movable in said sleeve, and means for guiding said stem to rotate as it advances within said sleeve.

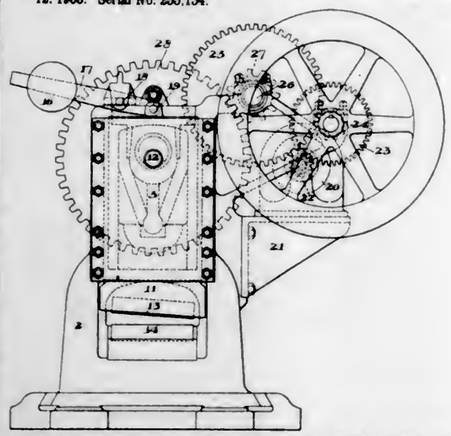
3. A step-holder for a car-step, consisting of a bracket having a vertically-disposed sleeve with a slot in the wall thereof, a keeper adapted to engage the upper edge of the car-step and having a stem passing through said sleeve, said stem having a pin received in said slot, said slot having a substantially straight portion occupied by said pin when said keeper is moved into engagement with the car-step, and having a curved portion adapted to throw the keeper back into an inoperative position when not engaging the car-step.

4. A step-holder for a car, consisting of a bracket having a vertical sleeve formed therein, said sleeve having a longitudinally-disposed slot, the upper portion of said slot being longitudinally disposed on said sleeve, the lower portion of said slot being disposed circumferentially in said sleeve, a keeper consisting of a stem received in said sleeve and having a pin and running in said slot, said keeper having a laterally-projecting arm adapted to engage the edge of the car-step.

5. In combination, a car having a step at the side thereof adapted to fold into a substantially vertical position, a bracket adapted to be fixed with respect to said car and constituting a guide, a keeper mounted in said bracket and adapted to engage the car-step, and means for holding said keeper folded back in an inoperative position when not engaging said car-step.

6. In combination, a car having a step adapted to fold into a substantially vertical position at the side thereof, a bracket adapted to be fixed to a part of said car and presenting a vertically-disposed sleeve, a keeper having a stem guided vertically in said sleeve and having an arm which may project outwardly to engage the upper edge of said step, said sleeve having a guiding-slot therein, controlling the position of said arm, said stem having a pin running in said guiding-slot whereby said keeper descends by gravity into a position with said arm disposed in a front and rear direction with said car.

823,326. **PIPE CRUSHING AND SHEARING MACHINE.** FRANK I. ELLIS, Pittsburg, Pa., assignor to United Engineering & Foundry Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed Apr. 12, 1905. Serial No. 255,154.



Claim.—1. A machine for the purpose described, having end housings, a crank-shaft journaled in said housings, a crushing-head arranged to reciprocate within the housings and operated by said shaft, and shear mechanism also operated by said shaft; substantially as described.

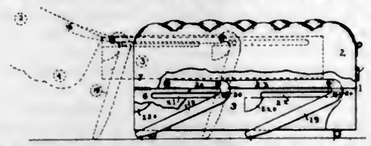
2. A machine for the purpose described, having end housings, and side guides within the housings, a reciprocating crushing-head working in said guides, a fixed bed-plate below the head, shear mechanism, and means for operating the crushing-head, and shear mechanism simultaneously to shear one portion of a pipe while another portion is being crushed down; substantially as described.

3. A machine for crushing and shearing pipe, having end housings provided with open windows, a crank-shaft journaled in said housings, a cross-head mounted to reciprocate within said housings, operating connections between the cross-head and the said shaft, a vertical slide or plunger at the outer side of one of the housings, a shear-blade carried thereby, a fixed coöperating shear-blade, means for actuating the slide or plunger from the said shaft, and a fixed bed-plate arranged to coact with the crusher-head; substantially as described.

4. In a machine of the character described, a pair of end housings, a flat bed-plate, between said housings, a crushing-head arranged to reciprocate between said housings and having a flat lower face with upwardly-curved ends, and shear mechanism outside of one of said housings at right angles to the crushing-head; substantially as described

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823,327. **COMBINED COUCH OR SOFA AND BED.** JOHN H. HAGEDORN, Cleveland, Ohio. Filed Nov. 25, 1904. Serial No. 234,112.



Claim.—1. In a couch, the combination of an upper and a lower member adapted to be unfolded to form a bed, and means connecting said members and adapted to move the lower member laterally in the direction of the unfolding of the upper member, substantially as specified.

2. In a couch, the combination of an upper and a lower member adapted to be unfolded to form a bed, and means connecting said members and adapted to elevate the lower member by the unfolding of the upper member and to move said lower member laterally in the direction of the unfolding of the upper member, substantially as specified.

3. In a couch, the combination of an upper member and a lower member adapted to be unfolded to form a bed, supports therefor, legs carried by said lower member and adapted to be operated to elevate said member above said supports, and means connected with the upper member for operating said legs to so elevate the lower member when the members are unfolded, said connecting means being adapted to move the lower member laterally toward the upper member when the members are so unfolded, substantially as specified.

4. In a couch, the combination of an upper and a lower member adapted to be unfolded to form a bed, and means connecting said members and adapted to move both of said members laterally in the direction of the unfolding of the upper member, substantially as specified.

5. In a couch, the combination of upper and lower members adapted to be unfolded to form a bed, means for supporting said members when folded together, a slotted frame at each end of the lower member, a leg having a pin extending into the slot of said frame, a link connected to said leg and with said upper member, a stop for engaging said leg, and means for supporting said upper member when the couch is unfolded to form a bed, substantially as specified.

6. In a couch, the combination of upper and lower members adapted to be unfolded to form a bed, means carried by the lower member for supporting both of said members when folded together to form a couch, a frame at each end of said lower member having oppositely-located slots therein, legs having pins extending into said slots, a link connecting the legs at each end of the lower member, an additional link connecting each of the former links with the upper member, stops for said legs, and means for supporting the upper member in a position to form a bed with the lower member, substantially as specified.

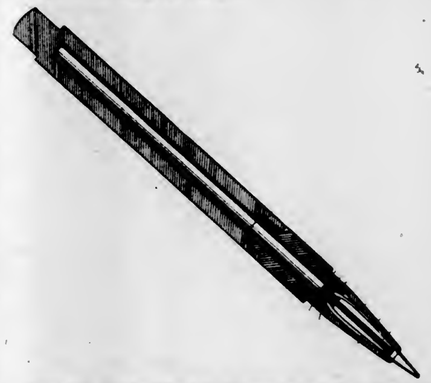
7. The combination of the frame of a sofa or the like, said frame having the ordinary back and arms, a combined folding bed and couch, said bed and couch when in its folded position forming with said frame a sofa, and means connecting the arms of said sofa with said bed and couch when the latter is in its folded position whereby said arms are supported against lateral pressure, substantially as specified.

8. The combination of the frame of a sofa or the like, of a couch comprising upper and lower members adapted to be unfolded to form a bed, means for supporting said couch within the frame and independently of the frame, and a breakable connection between the upper member and the arms of said frame, whereby said couch supports said arms against lateral displacement, substantially as specified.

9. In a couch, the combination of upper and lower members foldably connected together and adapted to be unfolded to form a bed, a frame at the end of each of said members, and a spring comprising a central coil and a pair of arms extending therefrom, one arm being connected to the frame of one of said members and the other arm being connected to the frame of the other of said members, substantially as specified.

10. In a couch, the combination of upper and lower members hinged together to permit them to be unfolded to form a bed, a common spring for said members, said spring having arms, one connected to one of said members and the other connected to the other of said members and adapted to assist in the unfolding of said members and to resist the final closing movement of said members, substantially as specified.

823,328. **FOUNTAIN-PEN.** ALFRED HALL, Chicago, Ill. Filed Aug. 18, 1905. Serial No. 274,760.



Claim.—1. In a fountain-pen, the combination of an ink-barrel, an annular member adjustably secured to said ink-barrel, pen-nibs adjustably secured inside of said annular member, and a feeding-tube inside of said nibs, substantially as described.

2. In a fountain-pen, the combination of an ink-barrel with a conical-shaped member secured to the lower portion thereof, the nibs of a pen supported inside of said conical-shaped member, and an ink-feeding tube inside of the nibs, substantially as described.

3. In a fountain-pen, the combination of an ink-barrel, a tubular extension secured to said ink-barrel, an annular member, a collar adapted to hold said extension and annular member in frictional contact, pen-nibs adjustably secured in said annular member and a feeding-tube inside of said nibs, substantially as described.

4. In a fountain-pen, the combination of an ink-barrel, an annular member adjustably secured to said ink-barrel, a feeding-tube inside of said annular member, said feeding-tube having recesses in the head thereof, the upper ends of the nibs of a pen extending into said recesses, and means for laterally adjusting said pen-nibs, substantially as described.

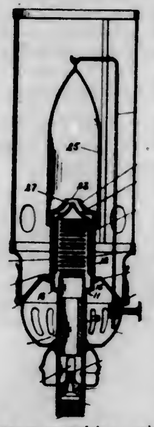
5. In a fountain-pen, the combination of an ink-barrel, an extension removably secured to said ink-barrel, an annular member removably secured to said extension, a tubular stem supported in said annular member, said stem having recesses in the head thereof, the nibs of a pen disposed within said annular member, the upper ends of said nibs extending into the aforesaid recesses, and the lower ends thereof projecting through the end of said annular member, substantially as described.

823,329. **ACETYLENE-GAS BURNER.** JOHN HARRIS, Cleveland, Ohio, assignor to The J. Harris Co., Cleveland, Ohio. Filed Sept. 11, 1905. Serial No. 277,842.

Claim.—1. A gaseous-fuel burner comprising a hollow body forming a mixing-chamber, said body having one end thereof closed by a tapered cap, means for supplying gaseous fuel to the interior of said body, a burner-casing communicating with said body, said casing having a tapered cap, spaced from the former cap to provide a restricted passage-way therebetween and provided with a central perforation, substantially as specified.

2. In a gaseous-fuel burner, the combination of a mixing-tube, a tubular member of greater diameter than said tube surrounding the

discharge end of the same and having its opposite end closed by a tapered cap, said cap terminating in a point, a casing surrounding said tubular member and extending beyond the end of the same, said casing having a tapered cap thereon provided with a central discharge-orifice in axial alinement with the point of the cap on the said tubular member, said member having a discharge orifice or orifices communicating with the interior of the casing, substantially as specified.



3. A gaseous-fuel burner comprising a mixing-tube, a tubular body into one end of which said tube projects and having at its other end a cap, a burner-casing surrounding said body and spaced a short distance therefrom to form a restricted annular passage-way, said body being provided with narrow slits communicating with said passage-way, and a cap for said casing spaced a short distance from the former cap and having therein a burner-opening, substantially as specified.

4. A gaseous-fuel burner having in combination a mixing-tube, a tubular body into one end of which said tube discharges, a cap for the other end of said body, a burner-casing surrounding said body and forming therewith a restricted annular passage-way, said body being provided with a series of narrow slits arranged transversely thereof and communicating with said passage-way, said series extending from the upper portion of said body to near the lower end thereof, and a burner-cap on the burner-casing provided with a restricted outlet, substantially as specified.

5. A gaseous-fuel burner comprising a mixing-tube, a tubular member surrounding the discharge end of said tube and having its opposite end closed by a tapering cap and provided with lateral slits intermediate said cap and the discharge end of the mixing-tube, a sleeve surrounding said tubular member and forming therewith a restricted passage-way with which said slits communicate, a cap on said sleeve corresponding in contour to the first-mentioned cap and having a restricted discharge-orifice therethrough, substantially as specified.

6. A gaseous-fuel burner comprising a tubular body forming a mixing-chamber, said body having a conical cap at one end thereof and a plurality of outlets through the wall thereof, means for supplying gaseous fuel to the interior of said body, a tubular burner-casing surrounding said body and forming therewith a restricted annular passage for the gaseous mixture supplied through said outlets, a conical cap on said casing provided with a central perforation therethrough, said cap being substantially parallel with the former cap and forming therewith a restricted passage-way, substantially as specified.

7. A gaseous-fuel burner comprising a mixing-tube, a hollow tubular body of greater diameter than said mixing-tube in axial alinement therewith, into the lower end of which said mixing-tube projects, a cap for the upper end of said body, said body being provided with a series of narrow transverse slits extending from below the cap to a point substantially in line with the top of the mixing-tube, a tubular burner-casing surrounding said tubular member and spaced a short distance therefrom to provide a restricted passage-way the lower end of which extends as far as the lowest slit in said member, and a cap on said casing having a central perforation therethrough, said cap being substantially parallel with the former cap and forming a restricted passage-way therewith, substantially as specified.

8. In a gaseous-fuel burner, the combination of a mixing-tube, a tubular member into one end of which said tube projects, a conical cap closing the opposite end of said member, the outer surface of said cap being concave, a burner-casing closed at its lower end and surrounding said member to form therewith a restricted annular passage-way, the upper end of said casing extending beyond the top of the vertical side wall of the said member, a cap at the upper end of said burner-casing corresponding in contour to the cap on said member and having a central perforation therethrough, said member being provided with a series of openings extending from below its cap to a point opposite the bottom of the annular passage-way, substantially as specified.

9. A gaseous-fuel burner having in combination an inner hollow body provided with a series of slits of the width of the thickness of twenty-seven-gage metal, and an outer casing receiving the fuel discharged through said slits, substantially as specified.

10. A gaseous-fuel burner comprising a casing having at one end a burner-orifice, means for directing gaseous fuel in contact with the inner wall of said casing in its passage to said orifice, and a coating of non-conducting material applied to the outside of said casing, substantially as specified.

11. In a gaseous-fuel burner, the combination of a mixing-tube, a vertically-extending burner-casing in communication with said mixing-tube, a perforated cap carried by said casing, a mantle in operative relation thereto, a gallery having openings in the lower portion thereof permitting the upward flow of air past said burner-casing, and a coating of powdered material carried by said casing, substantially as specified.

12. A gaseous-fuel burner comprising a vertically-arranged burner-casing having a burner-opening in the upper end thereof, a mantle supported in operative relation to said burner-opening, a perforated gallery below said casing, a chimney carried by said gallery, means for directing gaseous fuel in contact with the inner wall of said casing in its passage to the burner-opening, and a coating of non-conducting material applied to the outer wall of said casing, substantially as specified.

13. In a gaseous-fuel burner, the combination of a mixing-chamber, said chamber having its upper end closed by a tapered cap, a casing or sleeve surrounding said chamber and extending beyond the end of the same, said casing or sleeve having a tapered cap thereon provided with a central discharge-orifice in axial alinement with the point of the cap on the mixing-chamber, said mixing-chamber having a discharge orifice or orifices communicating with the interior of the sleeve or casing, substantially as specified.

14. A gaseous-fuel burner comprising a mixing-chamber having the upper end thereof closed by a tapered cap and provided with a discharge orifice or orifices in the body thereof, a sleeve or casing surrounding said chamber and forming therewith a passage-way with which said orifice or orifices communicate, said passage-way having a restricted outlet, a cap on said sleeve or casing having a central restricted discharge-orifice therethrough, said caps being spaced a short distance apart to provide a restricted passage-way therebetween, substantially as specified.

15. In a gaseous-fuel burner, the combination of a mixing-tube, a vertically-extending burner-casing in communication with said mixing-tube, a perforated cap carried by said casing, a mantle in operative relation thereto, a gallery having openings in the lower portion thereof permitting the upward flow of air along and past said burner-casing, and a coating of non-conducting material carried by said casing, substantially as specified.

16. A gaseous-fuel burner having in combination a discharge-orifice, a chamber communicating therewith, said chamber having a tapered cap, a burner-casing in communication with said chamber and having a tapered cap provided with a discharge-orifice in alinement with the point of the cap on the chamber, substantially as specified.

17. A gaseous-fuel burner having in combination a discharge-orifice, a chamber communicating therewith, said chamber having a tapered cap, a burner-casing in communication with said chamber and having a tapered cap provided with a discharge-orifice in alinement with the point of the cap, said caps being spaced a short distance apart to provide a restricted passage-way therebetween, substantially as specified.

18. A gaseous-fuel burner having in combination a discharge-orifice, a chamber communicating therewith and provided with discharge-outlets in the side wall thereof, a burner-casing forming with said chamber a passage-way having a restricted outlet for the fuel discharged through the chamber, and a cap for said chamber having a central outlet, substantially as specified.

19. A gaseous-fuel burner having in combination a mixing-tube, a hollow body communicating therewith and forming a chamber, a burner-casing surrounding said body and forming therewith a restricted annular passage-way, said body having a series of outlets by which the mixture therein is discharged into the passage-way, and a cap for the casing having a central restricted orifice therethrough, substantially as specified.

20. A gaseous-fuel burner having in combination a mixing-tube, a chamber in communication therewith, a burner-casing surrounding said chamber and forming therewith a restricted annular passage-way, said body having narrow slits therethrough, said casing projecting beyond the chamber and having the projecting end thereof provided with a restricted central outlet, substantially as specified.

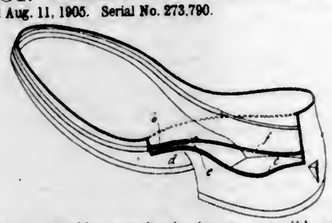
823,330. **WEATHERPROOF PASTE.** MATHIAS HENNEN, Minneapolis, Minn. Filed Feb. 6, 1906. Serial No. 299,824.

Claim.—1. The herein-described weatherproof composition consisting of putty, pumice-stone, varnish, raw linseed-oil, butter of antimony, japan, turpentine, and acetic acid.

2. The herein-described weatherproof composition comprising putty, powdered stone, varnish, oil, butter of antimony, turpentine, acetic acid, and a drier.

3. The herein-described weatherproof composition consisting of putty five pounds, pumice-stone one-fourth pound, varnish two ounces, raw linseed-oil two ounces, butter of antimony one ounce, japan two ounces, turpentine one ounce, and acetic acid one ounce.

823,331. **OVERSHOE.** CHARLES L. HIGGINS, Montreal, Canada. Filed Aug. 11, 1905. Serial No. 273,790.



Claim.—1. A rubber overshoe having an expansible cylindrical spring embedded therein and extending in a continuous length from one side to the other around the front thereof and means whereby the tensile strain of such spring is transmitted to the rear portion of the overshoe.

2. A shoe having its opening encircled by an expansible cylindrical spring with its ends connected by a flexible device to form a loop, for the purpose set forth.

3. In an overshoe means for retaining the same upon a boot or shoe, consisting of a device presenting an interiorly-protruding bead extending around the vamp, and a flat portion extending around the heel portion of the shoe.

4. In an overshoe means for retaining the same upon a boot or shoe, consisting of an elastic metallic device presenting an interiorly-protruding bead extending around the vamp and a straight strand connected to the ends of the elastic metallic device and extending around the heel portion of the shoe.

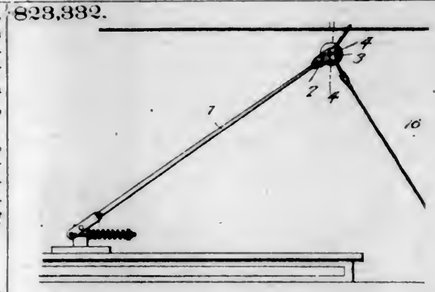
5. In an overshoe, means for retaining the same upon a boot or shoe, consisting of an expansible cylindrical spring having its end convolutions bent to form loops, and a flexible strand connecting such loops together, for the purpose set forth.

6. In an overshoe, means for retaining the same upon a boot or shoe, consisting of an expansible cylindrical spring of inwardly-tapered cross-section and having its end convolutions bent to form loops, and a flexible strand connecting such loops together, for the purpose set forth.

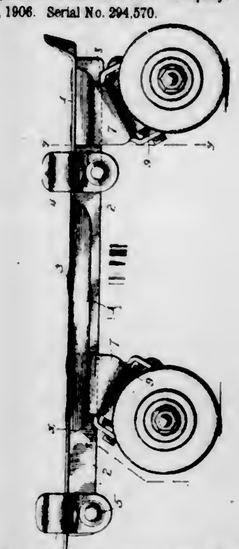
823,332. **TROLLEY-FINDER.** WILLIAM J. HINTON, Danville, Ill. Filed Aug. 16, 1900. Serial No. 274,444.

Claim.—In a device of the character described, the combination with a trolley-pole and a trolley-wheel journaled thereon, of elbow-bearing brackets journaled upon the trolley-pole and having their ends provided with recesses, a wire-engaging member detachably having its ends fitting in two of said recesses and a yoke having its ends fitting in the other two of said recesses, and bolts carried by the arms and engaging the ends of the wire-engaging member and yoke to removably secure them to the brackets.

823,332.



823,333. **ROLLER-SKATE.** CHRISTIAN G. HOERLE, Torrington, Conn., assignor to Union Hardware Company, Torrington, Conn. Filed Jan. 4, 1906. Serial No. 294,570.



Claim.—1. In a skate, the combination with a foot-plate, of a strengthening-rib disposed edgewise against the under face of the foot-plate and secured thereto, said strip extending continuously from the head portion of the foot-plate to a point in proximity to the toe of the foot-plate, truck-brackets secured to the foot-plate and straddling the rib and trucks attached to said truck-brackets.

2. In a skate, the combination with a sheet-metal foot-plate, of a sheet-metal strip having integral lugs on its upper edge riveted to the foot-plate, said strip extending continuously from the heel portion of the foot-plate to a point in proximity to the toe of the foot-plate, sheet-metal truck-brackets riveted to the foot-plate and straddling said sheet-metal strip, and trucks attached to said sheet-metal truck-brackets.

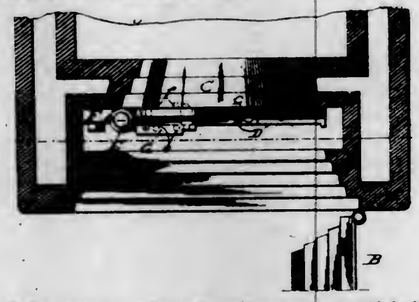
3. In a skate, the combination with a foot-plate, of a strengthening-rib secured longitudinally to the under face thereof and truck-brackets straddling said rib, said rib engaging said brackets to serve as a brace for the same.

4. In a skate, the combination with a foot-plate, a longitudinal strengthening-rib on the bottom thereof, said rib having shoulders on its lower edge, and truck-brackets secured to the foot-plate, straddling said rib and bearing against the shoulders on the latter.

5. In a skate, the combination with a foot-plate, a clamp and a screw for operating the clamp, of a strengthening-rib on the bottom of the foot-plate and having notches to receive the plain intermediate portion of the clamp-screw.

823,334. **SAFE, VAULT, &c.** THEODOR H. HOLSTEIN, Hamilton, Ohio, assignor to Herring-Hall-Marvin Safe Company, New York, N. Y., a Corporation of New York. Filed Aug. 26, 1904. Serial No. 223,335.

Claim.—1. In combination with a vault, safe, or other structure having an inner and an outer wall separated one from the other and each provided with a doorway or opening, a bar hinged at a point within the space between the two walls and adapted to swing inward across the inner doorway and outward through the outer doorway, and a door carried by said bar and movable longitudinally thereon, whereby it is adapted to be carried through the outer doorway and afford a clear way to the inner doorway.



2. In combination with a safe, vault or structure provided with an opening or doorway, a two-part bar hinged to the structure and adapted to swing across the opening; and a door or closure carried by and arranged to move lengthwise of said bar, the two sections of the bar being hinged or jointed one to the other, substantially as shown and described.

3. In combination with a safe, vault, or other structure having an inner and an outer wall separated one from the other and each provided with a doorway or opening, a door or closure C adapted to close the inner doorway, and a support for said door, comprising a bar hinged to the structure between the two walls and adapted to swing through the outer doorway, and a strap or slide G secured to the door and passing about said bar, substantially as described, whereby the door C may be moved through the outer doorway to afford a clear passage to the inner doorway.

4. In combination with a safe, vault or other structure having a doorway or opening, a door or closure therefor, a support for said door comprising a bar hinged to the structure, a strap or slide secured to the door and passing about the bar, and antifriction-rollers interposed between the bar and the strap or slide.

5. In combination with a safe, vault or other structure having a doorway or opening, a door or closure therefor; a bar D hinged to the structure and comprising two members *a* and *b* hinged or jointed one to the other; a strap or slide G secured to the door and passing about the bar D, and antifriction-rolls arranged to bear upon the bar and to reduce the friction of the door thereon.

6. In combination with a safe, vault or other structure having a doorway or opening, a door or closure therefor; a bar D hinged to the structure and comprising two members *a* and *b* connected by a knuckle-joint or hinge *c*, having interlocking tenons of a length to preclude buckling of the bar while the door lies against the back of its two parts; and a strap secured to the door, passing about the bar D, and forming a sliding support for the door whereby the latter may be moved to the outer section of the bar to permit the latter to be buckled.

823,335. WAGON-WHEEL. ISRAEL T. HURD, Lansing, Mich. Filed Nov. 16, 1905. Serial No. 287,605.



Claim.—1. The combination in a wheel with the central and side layers of the rim, of bolts extending through the rim at a point between the sections of the side layers thereof, and washers on said bolts and overlapping the joints between the sections of the outer layers.

2. A wagon-wheel comprising a hub, spokes attached at their inner ends to the said hub, a felly formed of layers made in sections fastened together, the outer ends of the spokes fitting between the adjacent ends of successive sections of the central layer, the sections of the layers breaking joints, transverse bolts for fastening the layers together, sundry of the bolts extending through the joints of the sections of the outer layers, and washers for the bolts passing through the joints, each washer extending across the joint and its ends being provided with inwardly-extending prongs driven into the adjacent sections.

3. A wagon-wheel comprising a hub having a polygonal face portion, an integral flange and a ring, the opening of which corresponds with the said polygonal face portion, spokes having their inner ends abutting against the polygonal face portion, transverse bolts for fastening the flange, spokes and ring together, a felly made of a central layer and outer layers superimposed on opposite faces of the said central layer, bolts for fastening the layers together, and bolts for fastening the outer layers and the outer spoke ends together.

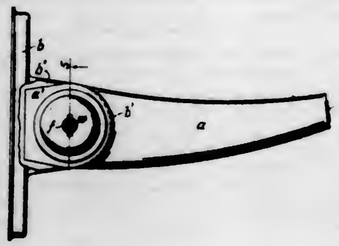
4. A wagon-wheel comprising a hub having a polygonal face portion, an integral flange and a ring, the opening of which corresponds with the said polygonal face portion, spokes having their inner ends abutting against the polygonal face portion, transverse bolts for fastening the flange, spokes and ring together, and a felly made of a central layer and outer layers superimposed on opposite faces of the said central layer, the central layer being made in sections abutting with their ends on the outer ends of the spokes.

5. A wagon-wheel comprising a hub having a polygonal face portion, an integral flange and a ring, the opening of which corresponds with the said polygonal face portion, spokes having their inner ends abutting against the polygonal face portion, transverse bolts for fastening the flange, spokes and ring together, and a felly made of a central layer and outer layers superimposed on opposite faces of the said central layer, the central layer being made in sections abutting with their ends on the outer ends of the spokes, the latter having shoulders for the ends of the said sections to rest on

6. A wagon-wheel comprising a hub having a polygonal face portion, an integral flange and a ring, the opening of which corresponds with the said polygonal face portion, spokes having their inner ends abutting against the polygonal face portion, transverse bolts for fastening the flange, spokes and ring together, and a felly made of a central layer and outer layers superimposed on opposite faces of the said central layer, the central layer being made in sections abutting with their ends on the outer ends of the spokes, the outer layers being also made in sections, breaking joints with each other and with the sections of the central layer.

7. A wagon-wheel comprising a hub having a polygonal face portion, an integral flange and a ring, the opening of which corresponds with the said polygonal face portion, spokes having their inner ends abutting against the polygonal face portion, transverse bolts for fastening the flange, spokes and ring together, a felly made of a central layer and outer layers superimposed on opposite faces of the said central layer, the central layer being made in sections abutting with their ends on the outer ends of the spokes, the outer layers being also made in sections, breaking joints with each other and with the sections of the central layer, transverse bolts for fastening the layers together, and transverse bolts for fastening the outer layers and the spokes together.

823,336. TRANSMITTER-ARM. HERBERT L. KNIGHT, Cleveland, Ohio, assignor to The Williams-Abbott Electric Company, Cleveland, Ohio, a Corporation of Ohio. Filed July 28, 1905. Serial No. 271,581.



Claim.—1. The combination with a supporting-bracket or base portion, of a reinforced and semiseamless transmitter-arm pivotally mounted therein, and means for frictionally engaging said arm to retain it in its positions of angular adjustment with respect to the base; the said arm being formed of a si gle stamping of sheet metal shaped with its edges abutting along its lower side, and having a reinforcing part interiorly inserted between the rear walls of said arm, substantially as set forth.

2. The combination with a supporting bracket or base, of a stamped or tubular transmitter-arm pivotally mounted therein, a tubular reinforcing part rearwardly inserted in said stamped arm at its pivotal mounting, and interiorly engaging its walls adjacent to said mounting and means for securing frictional engagement of the arm with its base or bracket, whereby it is securely held in its positions of adjustment, substantially as set forth.

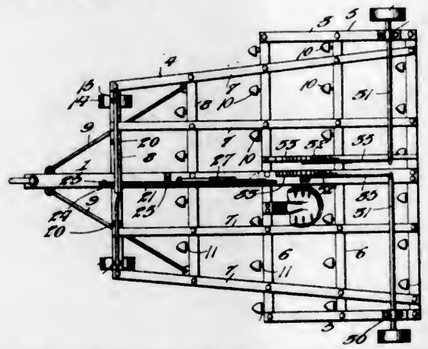
3. In a supporting-arm for telephone-transmitters, the combination with a base or bracket, of a pivoted, vertically-adjustable arm mounted therein, stationarily-mounted dished washers provided at the pivotal mounting of said arm to secure the desired frictional engagement, and a transverse pivot-bolt securely uniting the said parts, substantially as set forth.

4. In a supporting-arm for telephone-transmitters, the combination with a stamped base or bracket, of lateral ears provided thereon, a transmitter-arm pivotally mounted between the said ears, dished washers interposed between the said arm and engaging ears of the bracket, and a binding pivot-bolt securely uniting the said parts and retaining the washers against rotation, substantially as set forth.

5. The combination with a base portion or bracket having outwardly-extending ears, of a transmitter-arm pivotally mounted between the said ears, washers interposed at either side of said arm and between the ears of the bracket, and a transverse keyed or feathered binding-bolt adapted to secure the washers against movement with respect to one of the members of the pivotal mounting, substantially as set forth.

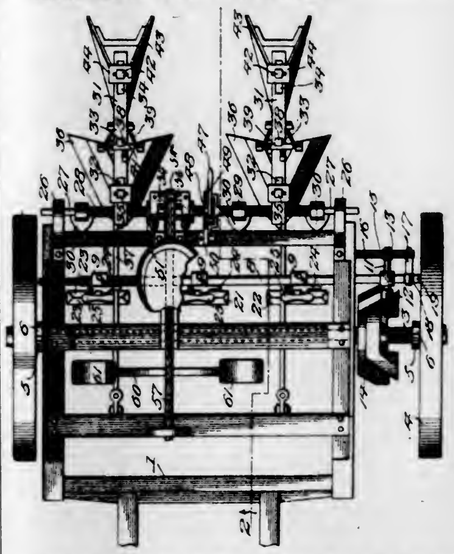
6. In a supporting-arm for telephone-transmitters, the combination with a stamped base or bracket having outwardly-extending ears, of a tubular or stamped transmitter-arm pivotally mounted between the said ears, a reinforcing part rearwardly inserted between the side walls of the arm adjacent to the pivotal mounting, dished washers positioned at either side of the arm between the ears of the bracket, and a keyed or feathered binding-bolt securing the washers against rotation with respect to the pivotal ears of said bracket, substantially as set forth.

823,337. WEEDER. JOHN H. LANDRY, Moro, Oreg. Filed Apr. 3, 1905. Serial No. 253,499.



Claim.—A weeder comprising a rectangular shovel-frame comprising longitudinal and transverse strips, an elongated shovel-frame comprising longitudinal strips secured to the transverse strips of the rectangular frame and projecting forwardly beyond said frame and transverse strips connecting the longitudinal strips with the elongated frame, shovels connected to and depending from the transverse strips of each frame, crank-arms movably supported on the rear end of the frame, wheels mounted on the free ends of said arms, rods vertically movable in the forward end of the elongated frame, caster-wheels carried on the lower end of said shafts, adjusting-bars pivotally supported on the forward end of the elongated frame and movably connected with the upper end of said rods, the inner ends of said bars overlapping and being formed with slots, and a lever mounted on the elongated frame and terminally engaging the slots in the ends of both of the adjusting-bars.

823,338. BEET-CULTIVATOR. ANDREE LARSEN, Stirling Alta, Canada. Filed Nov. 7, 1905. Serial No. 286,304.



Claim.—1. In a beet-harvester, the combination of a frame, a transverse supporting-bar slidably and pivotally mounted thereon, cultivator-shovels carried by the bar, beams also carried by the bar, cutting and earth-throwing devices carried by each beam, and each having a shank pivotally and adjustably attached to the beam, means connecting the devices to move in unison, a pressure-spring acting on the shank of the earth-throwing device, locking means for holding said devices in vertically-adjustable position, and means for oscillating and sliding the transverse bar.

2. In a beet-harvester, the combination of a frame, a transverse supporting-bar slidably and pivotally mounted thereon, beams carried by the bar, cutting and earth-throwing devices carried by each beam, and each having a shank pivotally and vertically adjustably attached to the beam, a link connecting the shanks of said devices to move in unison, a pressure-spring acting on the shank of the earth-throwing devices, locking means for holding said devices in adjusted position, an intermediate bar adjustably connected with the beam, a link connecting said bar with the cutting device, and means for oscillating and sliding the transverse bar.

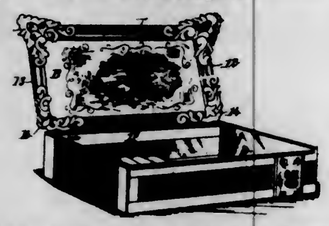
3. In a beet-harvester, the combination of a frame, a transverse supporting-bar slidably and pivotally mounted thereon, a sleeve non-rotatably mounted upon the bar and provided with terminal heads, a rack-yoke carried by said sleeve, a gear engaging the rack, means for actuating the gear to slide the rack and bar in either direction, means for rocking the bar, and cultivating devices supported by the bar and adjustable vertically and laterally through the action thereof.

4. In a beet-harvester, the combination of a frame, a transverse supporting-bar slidably and pivotally mounted thereon, cultivator-shovels carried by the bar, beams also carried by the bar, cutting and earth-treating devices carried by each beam, each having a shank pivotally and vertically adjustably attached to the beam, a link connecting the shanks of said devices to move in unison, a pressure-spring acting on the shank of the earth-throwing device, an intermediate bar vertically adjustable on the beam, a link connecting said bar with the cutting device, locking means for holding said shanks and intermediate bar in adjusted position, means for locking the supporting-bar to vertically adjust the devices, and rack and pinion mechanism for sliding said bar to laterally adjust said devices.

823,339. DISPLAY-FRAME. GEORGE E. LEIGH and JOHN A. COLEMAN, Mount Carroll, Ill. Filed Aug. 1, 1905. Serial No. 272,163.

Claim.—1. A framing device, consisting of a frame, diagonal

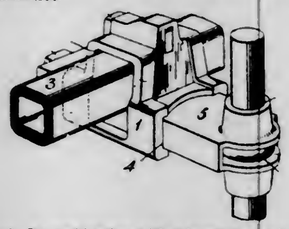
upper corner-keepers at the back of the frame, and pivoted keepers also at the back of the frame and located at the lower corners thereof, the lower ends of the pivoted keepers being free.



2. A framing device, consisting of a frame having outer marginal ribs at its back on its upper and its side members, the bottom member being without a rib, diagonal keepers located on the back of the frame at the upper corners thereof, and lower keepers pivotally attached at one end to the back of the frame adjacent to its lower corners, the outer ends of which lower keepers are free.

3. A framing device, consisting of a frame the top and side members whereof are provided with outer marginal ribs at the back, the lower member of the frame being without a rib, fixed keepers located at the back of the frame at its upper corners, extending diagonally from the side ribs to the upper rib, lower keepers pivoted at their upper ends to the lower portions of the side members of the frame, said lower keepers being free at their outer ends and being provided with a forwardly-extending shoulder adjacent to their lower ends, and a terminal lip.

823,340. DEVICE FOR SECURING SHOVEL-STANDARDS TO CULTIVATOR-BEAMS. AUGUST LINDGREN, Moline, Ill., assignor to Moline Plow Company, a Corporation of Illinois. Filed Mar. 31, 1906. Serial No. 309,156.



Claim.—1. In combination with a beam, a standard-fastening device, comprising a yoke formed with an opening for the beam, and with a second opening extending transversely of and in a plane parallel with the first and communicating therewith, and adapted to receive a standard-holder, a standard-holder mounted in the second opening, means for clamping said parts in fixed relations, and means carried by the standard-holder for securing the standard thereto.

2. The combination with a beam, of a standard-fastening device, comprising a yoke having an opening for the beam, and having a second opening extending transversely of and in a plane parallel with the first and communicating therewith, a standard-holder adapted to be adjusted transversely in the second opening, and a clamping-key adapted to clamp the parts in fixed relations, and means carried by the standard-holder for securing the standard thereto.

3. The combination with a beam, of a standard-fastening device, comprising a yoke having an opening for the beam, and having a second opening extending transversely of and in a plane parallel with the first and communicating therewith, a standard-holder adapted to be adjusted transversely in the second opening, means for clamping said parts in fixed relations, and a standard carried by the holder and adjustable vertically with relation thereto.

4. In combination with the beam, a standard-fastening device consisting of a yoke or member formed with a longitudinal opening to loosely receive the beam, with a transverse opening, and with an inclined surface, a standard-holder mounted in the transverse opening, and a clamping-key provided with an inclined face adapted to coöperate with the inclined surface on the yoke and clamp the said parts firmly together.

5. In combination with a beam, a yoke formed with a longitudinal opening to receive the beam, with an inclined wall above said opening, and with a transverse opening beneath the beam, a standard-holder mounted in the transverse opening and bearing against the under side of the beam, and a wedge-shaped key extending along the upper side of the beam and adapted to coöperate with the inclined wall of the yoke to firmly clamp said parts together.

6. In a standard-support, the combination with a yoke provided with two openings extending therethrough at an angle relatively, and communicating with each other and adapted to receive respectively the beam and a standard-holder, said yoke being provided further with an inclined wall adjacent one of said openings, of a key provided with an inclined face adapted to coöperate with said wall.

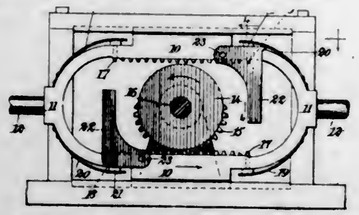
7. In combination with a beam, a yoke provided with an opening to receive the same and with a second transversely-extending opening, a standard-holder mounted in the second opening and contacting with the beam, a clamping device carried by the yoke and adapted by its coöperation with the beam and holder to hold said parts in fixed relations, and means carried by the holder for securing the standard thereto.

8. In combination with the beam, a yoke formed in its upper end with a longitudinal opening to loosely receive the beam and formed below said opening with a transversely-extending opening connected therewith, an elongated block mounted in the lower opening, a clamping device adapted to coöperate with the beam and hold said parts in fixed relations, an eyebolt extending endwise through the standard-holder, a standard mounted in the eye of said bolt, and a nut applied to the end of the bolt.

9. The improved standard supporting and fastening device, comprising in combination, a yoke formed with angularly-arranged horizontal openings to loosely receive a beam and standard-holder respectively, a standard-holder mounted in its opening in the yoke and adapted to bear against the beam, a device for binding the said holder firmly against the beam, and adapted to be actuated to release said parts to permit of adjustment, and means carried by the standard-holder for securing the standard adjustably thereto.

10. In combination with a horizontal beam, a standard-fastening device comprising a yoke formed with a horizontal opening to loosely receive the beam and formed with a second horizontal opening extending transversely of the first and communicating therewith, a standard-holder mounted loosely in the second transverse opening, means for clamping said parts in fixed relations; whereby when released the yoke may be adjusted along the beam and the standard-holder may be adjusted transversely within its opening in the yoke, and a standard mounted in the standard-holder and adjustable vertically therein.

823,341. MECHANICAL MOVEMENT. FRED N. LIVINGSTON, Ballard, Wash. Filed Aug. 25, 1905. Serial No. 275,747.



Claim.—1. The combination of a mutilated toothed gear, two toothed racks connected to reciprocate in unison and lying at opposite sides of the gear, said racks having movable teeth, and means for automatically moving said teeth.

2. The combination of a mutilated toothed gear, two toothed racks connected to reciprocate in unison and lying at opposite sides of the gear, each rack having a movable tooth at each end, means for yieldingly pressing said teeth into active position, and means in connection with one movable tooth of each rack for automatically retracting said teeth upon a change in the direction of movement of the racks, said means being located at opposite sides of the center of the gear.

3. The combination of a mutilated toothed gear, two toothed racks connected to reciprocate in unison and lying at opposite sides of the gear, each rack having a movable tooth at each end, means for yieldingly pressing said teeth into active position, and means in connection with one movable tooth of each rack for automatically retracting said teeth upon a change in the direction of movement of the racks, said means being located at opposite sides of the center of the gear, and said means consisting in tappets pivoted to the racks and adapted to engage a relatively stationary part.

4. The combination of a mutilated toothed gear, the end teeth of which are cornered off or inclined, two toothed racks connected to reciprocate in unison engaging opposite sides of the gear, each rack having a movable tooth at each end, means for yieldingly pressing said teeth into position, and means in connection with one tooth of each rack for automatically retracting said teeth, said means lying at opposite sides of the center of the gear and adapted to engage a relatively stationary part.

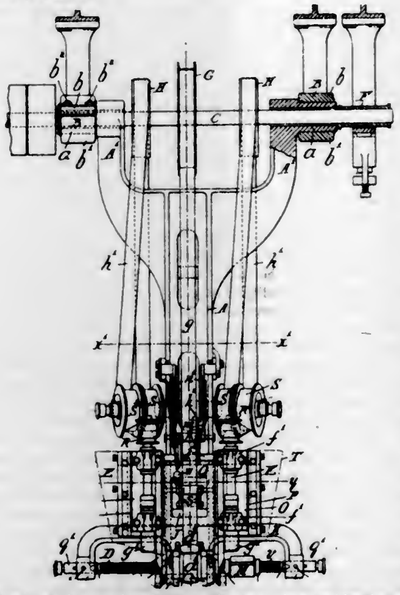
5. The combination of a toothed gear adapted to rotate, two toothed racks connected to reciprocate in unison, said racks having movable portions, and means for automatically disengaging the movable portions of one rack from the gear and engaging the movable portion of the rack with the gear upon a change of the direction of movement of said racks.

6. The combination of a mutilated toothed gear, two racks connected to reciprocate in unison and lying at opposite sides of the gear, each rack having a movable tooth for the purpose specified, devices moving with the racks and connected with the movable teeth, and relatively stationary means adapted to be periodically engaged by said devices, whereby automatically to retract the teeth.

7. The combination of a mutilated toothed gear, two racks connected to reciprocate in unison, each rack having at each end a movable tooth, springs pressing one tooth of each rack yieldingly into position, said teeth being oppositely situate, devices moving with the racks and connected with the other movable teeth, and relatively stationary means adapted periodically to be engaged by said devices, whereby automatically to retract the teeth connected thereto.

8. The combination of a mutilated gear, a shaft on which the gear is mounted, racks connected to reciprocate in unison and engaging opposite sides of the gear, each rack having a movable tooth, and elbow-levers fulcrumed on the racks and connected with the movable teeth, said elbow-levers being adapted to periodically strike said shaft, for the purpose specified.

823,342. WOODWORKING MECHANISM. THOMAS W. LOVATT and CHARLES PURSER, Wolverhampton, England. Filed Oct. 8, 1904. Serial No. 227,707.



Claim.—1. In woodworking mechanism, the combination of fixed upper bearings, a swinging frame or arm suspended directly from such bearings, a revolving tool-spindle carried by the lower portion of such frame or arm, a gage or bearer carried by the frame or arm and movable vertically with the spindle, a lever pivoted to the frame or arm, by means of which lever the spindle may be pressed down by hand, relatively to the frame or arm and the gage or bearer thereby caused to travel along a stationary surface the spindle being thereby automatically adjusted in relation to the frame or arm, and the depth of cut, in relation to the surface on which the gage or bearer travels, rendered uniform or substantially so, as set forth.

2. In woodworking mechanism, the combination of upper bearings, a swinging frame or arm suspended directly from such bearings, a vertical slider carried directly by the lower portion of such frame or arm, a revolving tool-spindle carried by such slider, a gage or bearer carried by the slider, and adapted to press upon and travel along the surface of the work or of a "former," a lever pivoted to the frame or arm by means of which the slider may be pressed down by hand and the gage or bearer thereby caused to travel along the surface of the wood which is being operated upon, or of a "former," the slider being thereby automatically adjusted in relation to the frame or arm, and the depth of cut, from the surface on which the gage or bearer travels, rendered uniform or substantially so, as set forth.

3. In woodworking mechanism, the combination of upper bearings, a swinging frame or arm suspended directly from such bearings, a vertical slider carried directly by the lower portion of the frame or arm, a vertical revolving tool-spindle carried by such slider, a gage or bearer carried by such slider and adapted to press upon and travel along the surface of the work or of a "former," and means by which the slider may be pressed down to bring the cutter of the spindle into the wood to be operated upon and the gage or bearer upon the surface of the wood or of a "former," and the gage or bearer be pressed down upon such surface or former while the tool is traversed by turning the frame or arm upon its axis of suspension, substantially as set forth.

4. In woodworking mechanism, the combination of upper bearings, a swinging frame or arm suspended directly from such bearings, a transverse guide thereon, a vertical guide carried by and adjustable along said transverse guide which is carried by the lower portion of such frame or arm, and a vertical revolving tool-spindle movable vertically and guided by such vertical guide, substantially as set forth.

5. In woodworking mechanism, the combination of upper bearings, a swinging frame or arm suspended from such bearings, a vertical slider carried by the lower portion of such frame or arm, a horizontal revolving tool-spindle carried by such slider, a second vertical slider also carried by the lower portion of such arm, a vertical revolving tool-spindle carried by such second slider, and means whereby each slider may be pressed down independently by hand relatively to such frame or arm, substantially as set forth.

6. In woodworking mechanism, the combination of upper bearings, a swinging frame or arm suspended from such bearings, a vertical slider carried by the lower portion of such arm, a horizontal revolving tool-spindle carried by such slider, a second vertical slider also carried by the lower portion of such arm, a vertical revolving tool-spindle carried by such second slider, a shaft having an axis common with that of the axis of suspension of the frame or arm, pulleys carried by such shaft, pulleys carried by the tool-spindles, and means by which such latter pulleys are driven from the pulleys carried by the shaft, and means by which said sliders may be pressed down independently by hand relatively to the arm, substantially as set forth.

7. In woodworking mechanism, the combination of upper bearings, a swinging frame or arm suspended from such bearings, a vertical slider carried by the lower portion of such frame or arm, depth-gaging means carried by said slider, a horizontal revolving tool-spindle carried by such slider, an overhead driving-shaft, a pulley carried by such shaft, a pulley carried by the tool-spindle, a belt which transmits motion from the shaft-pulley to the spindle-pulley, a belt-tightening device for such belt, and a lever pivoted to the frame or arm by means of which the slider may be moved down against an upward pull of the belt, upon the surface of the work or upon a "former," substantially as set forth.

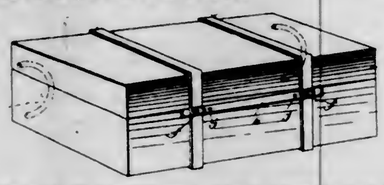
8. In woodworking mechanism, the combination of upper bearings, a swinging frame or arm suspended from such bearings, a vertical slider carried by the lower portion of such frame or arm, a horizontal revolving tool-spindle carried by such slider, an overhead shaft, a pulley carried by such shaft, a pulley carried by the tool-spindle, a belt which transmits motion from the shaft-pulley to the spindle-pulley, a belt-tightening device for such belt, means by which the slider is moved down against an upward pull of the belt, and a stop to arrest the action of the belt-tightener, whereby when the slider is raised to its upward position, after being moved down, the belt is slackened and the rotation of the spindle stopped, substantially as set forth.

9. In woodworking mechanism, the combination of upper bearings, a swinging frame or arm suspended from such bearings, a vertical slider carried by the lower portion of such arm, a horizontal re-

volving tool-spindle carried by such slider, a vertical revolving tool-spindle carried by such arm and capable of endwise movement in relation thereto, and means through which the slider and the vertical tool-spindle may be independently pressed down by hand, substantially as set forth.

10. In woodworking mechanism, the combination of upper bearings, a swinging frame or arm suspended from such bearings, two vertical sliders carried by the lower portion of such frame or arm, vertical guides within which such sliders can move, a horizontal guide along which the guides of the vertical sliders may be moved and to which they may be fixed to fix them in any desired position in relation to one another, a carrier-bar slidingly fitted within both the vertical sliders, means by which the sliders may be raised together through the medium of such carrier-bar, and a vertical revolving tool-spindle carried by each slider, substantially as set forth.

823,343. **TRUNK-FASTENER.** CHRISTIAN E. LUCAS, Atlanta, Ga. Filed July 6, 1905. Serial No. 268,563.



Claim.—1. In a trunk-fastener, a body, a cover for said body, provided with means to permit a lateral movement of the cover relative to the said body, straps encircling the said cover and body and provided upon one side with separable interengaging means and upon the opposite side with registering loops, and a slidable member arranged for insertion through the registering loop.

2. In a trunk-fastener, a body, a cover arranged to permit a lateral movement of the said cover relative to the body, straps encircling the said cover and body, and provided upon the rearward side with separable interlocking means adjacent the line between the cover and body, loops formed upon said straps at the forward side of the trunk adjacent the connecting-lines between the body and cover, and proportioned to register when the cover is in closed condition, a bar mountd upon the said body and arranged to slide longitudinally thereof, and pins carried by the bar and arranged to be inserted through the registering loops of the straps.

3. In a trunk-fastener, a body, a cover proportioned to close the said body, means arranged to permit a lateral movement of the cover relative to the body, straps encircling the trunk and body and provided at the rearward side with means arranged to interlock when the cover is in closed and registering position, loops formed upon said strap at the forward side proportioned to mutually register when the cover is in closed and registering position, a bar mounted upon said body and arranged for longitudinal movement relative thereto, pins carried by said bar and positioned for insertion through the registering loops when the cover is in closed and registering position, and a resilient member carried by said bar and arranged to lock the said bar at either extremes of its movement.

823,344. **PUMP-PISTON AND PACKING THEREFOR.** WILLIAM M. MALONEY, Chipmonk, N. Y. Filed June 9, 1905. Serial No. 264,419.

Claim.—1. A pump-piston packing consisting of a coil of metal having flat abutting edges and square corners; in combination with means for expanding the said coil, substantially as described.

2. A pump-piston packing consisting of an outer coil of metal and an inner coil; breaking joints of said outer coil, each of said coils having flat abutting edges and square corners; in combination with means for expanding said coils, substantially as described.

3. A pump-piston packing consisting of an outer coil of metal having flat abutting edges and square corners and an inner sleeve of resilient packing material; in combination with means for expanding said sleeve and coil, substantially as described.

4. A pump-piston packing consisting of an outer coil of metal having flat abutting edges and square corners; an inner sleeve of resilient packing material; and an expander acting against the said inner sleeve to expand the same, substantially as described.

5. In a pump-piston, a central tube; a resilient expansible sleeve surrounding said tube; a coil of packing material surrounding said inner sleeve and a tapered expander entering said inner sleeve and adapted to expand the same, substantially as described.



6. In a pump-piston, a central longitudinal tube; a surrounding sleeve of rubber or other resilient expansible material; an outer sheathing of metal surrounding the said rubber and expansible with the same; and means for expanding the rubber sleeve, substantially as described.

7. In a pump-piston, a central longitudinal tube; a resilient packing of rubber or other relatively soft expansible material surrounding said tube; an outer expansible sheathing surrounding said packing material and adapted to expand with the same without break in its continuity, substantially as described.

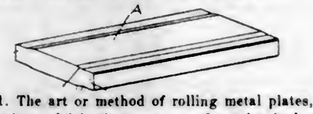
8. In a pump-piston, a central longitudinal tube; a surrounding sleeve of resilient packing material; and an expander mounted upon the said tube and free to move thereon against the resilient packing-sleeve, the said expander being provided with recesses adapted to be acted upon by the fluid being pumped to force the said expander into the packing material and expand the same against the pump-barrel, substantially as described.

9. In a pump-piston, a central tube and a surrounding sleeve of resilient packing material; and an expander mounted to move on said sleeve against the said packing material, the expander being provided with a plurality of projections having wedge-shaped faces adapted to enter recesses in the said packing and to force out the same when the said expander is moved inward, substantially as described.

10. In a pump-piston, in combination with a central tube; suitable packing surrounding the same; a ball-valve cage attached to one end of the central tube; a ball therein and a spring located above the ball but free therefrom, substantially as described.

11. In a pump-piston, a central tube; a foot-piece attached thereto at one end; a head-nut having screw-threaded engagement with the central tube at the other end thereof; a leather ring surrounding the central tube at its junction with the foot-piece; a sleeve of resilient packing material surrounding said central tube above the leather ring; an outer coil of metal surrounding the packing-sleeve having flat abutting edges; an intermediate metal coil between the outer coil and the said packing-sleeve breaking joints with the first-named sleeve and having flat abutting edges; an expander surrounding the said central tube and located above the said packing-sleeve and coils and having a tapered projection entering into a recess in the said packing-sleeve; and recesses in the outer face of the expander adapted to receive the pressure of water whereby the expander may be forced downwardly against said packing; a cage connected to the said head-nut; a ball located in said cage; and an adjustable spring located in the end of the cage above said ball but not touching the same but adapted to force the ball back in position when it is raised too high from its seat, substantially as described.

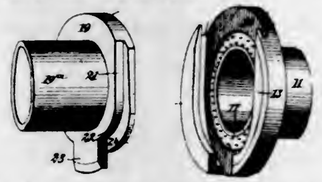
823,345. **ART OF ROLLING METAL PLATES.** THOMAS H. MATHIAS, Chicago, Ill., assignor to Illinois Steel Company, a Corporation of Illinois. Filed Sept. 16, 1904. Serial No. 224,657.



Claim.—1. The art or method of rolling metal plates, which consists in forming a slab having an excess of metal at its longitudinal central portion, then rolling said slab first in the direction of its length and second, at right angles to such direction, and finally rolling the shape produced by the preceding steps in the same direction as at first, the last two rolling operations being with plain cylindrical rolls.

2. The art or method of rolling metal plates, which consists in first forming a slab having an excess of metal at its longitudinal central portion but of the same cross-section throughout its length, then rerolling said slab first in the direction of its length, then at right angles to the first rerolling, and finally, in the same direction as at first, the first and second rerolling operations being with plain cylindrical rolls, for the purposes described.

823,346. **PIPE-FLANGE.** EDWARD L. MAXWELL, Mulberry, Fla. Filed Oct. 21, 1905. Serial No. 283,848.

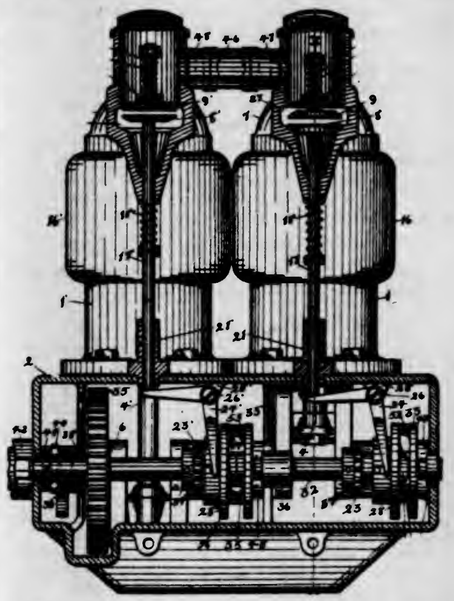


Claim.—1. As an improved article of manufacture, a pipe-flange comprising a male and a female section, both sections having an opening for the reception of a pipe, one section being provided at its inner face with a recess around the pipe-receiving opening, pins at the said recessed portion, and a gasket fitted in the said recess and engaging with the pins, the female section having side grooved wings spaced at the top and at the bottom, the male section being shaped to fit between the wings of the female section and provided with a marginal tongue to enter the grooves of the said wings, the male section being also provided with a lip which enters the lower space between the wings.

2. A pipe-flange, comprising a male and a female section, the female section consisting of a ring body having side wings at its front face and grooves in the inner faces of the said wings, the upper portions of the grooves being straight and the lower portions curved, spaces intervening between the upper and the lower portions of the wings, the said body of the female section being also provided with a recess for the reception of the gasket, the male section comprising a body having straight side edges, rounded lower edges and a downwardly-extending lower lip centrally located, the said body being likewise provided with an opening to receive a pipe and said body being also provided with a marginal lip having straight sides and rounded lower ends, the lower portions of the tongues being at the rear of the said lip, the tongues being adapted to the grooves in the female section and the body being adapted to fit between the wings of the said female section while the lip extends through the lower space between the wings.

3. In a flange for pipes, the combination with a female section comprising a disk body having an opening for the reception of a pipe and a recess in its front face around the said opening and pins in the recessed portion of the body, the said body being further provided with a gasket engaging the pins and with front wings at its sides, which wings are provided with downwardly-tapering grooves in their inner faces, having straight upper sections and curved lower sections, the inner faces of the wings being correspondingly formed, the said body being likewise provided with spaces between the wings at its top and bottom, of a male section comprising a body having an opening to receive a pipe, which body is provided with straight walls at its upper portion and with convexed side walls at its lower portion, the convexed side walls meeting a downwardly-extending lip and the said body being also provided with a downwardly-tapering or wedge-shaped marginal tongue at its rear portion, the upper portions of which tongue are straight and the lower portions convexed, the said body being adapted to fit into the space between the wings, the tongues to enter the grooves in the female section and the lip to enter the lower space between the wings of the female section, substantially as described.

823,347. **VALVE-GEAR FOR EXPLOSIVE-ENGINES.** ALBERT C. MENGES, Grand Rapids, Mich., assignor to William Harrison, Grand Rapids, Mich. Filed Dec. 23, 1904. Serial No. 238,140.



Claim.—1. In an explosive-engine, the combination of a revolving shaft, a primary cam device mounted thereon and revolving therewith, a secondary cam device slidably mounted on the shaft and engaging the primary cam device to be longitudinally moved thereby, an exhaust-valve, and means whereby the sliding movement of the secondary cam device actuates the said exhaust-valve.

2. In an explosive-engine, the combination of a revolving shaft, a primary cam-disk mounted thereon and revolving therewith, a beveled cam carried by such primary disk, a secondary cam-disk slidably mounted on such shaft, a beveled cam carried by such secondary disk and engaging the primary disk to be longitudinally moved thereby, an exhaust-valve, and means whereby the sliding movement of the secondary cam-disk actuates said exhaust-valve.

3. In an explosive-engine, the combination of a revolving shaft, a primary cam mounted thereon and revolving therewith, a secondary cam slidably mounted on such shaft, means for adjusting such secondary cam with reference to the primary cam, whereby the contact between the two may occur at any desired point in the revolution of the primary cam, an exhaust-valve, and means whereby the sliding movement of the secondary cam actuates said exhaust-valve.

4. In an explosive-engine, the combination of a revolving shaft, a primary cam mounted thereon and revolving therewith, a secondary cam slidably mounted on such shaft and engaging the primary cam to be longitudinally moved thereby, a gear attached to and rotatably adjusting such secondary cam, an intermeshing gear and actuating-lever for such intermeshing gear, whereby the operator may rotatably adjust such secondary cam, an exhaust-valve and means whereby the sliding movement of the secondary cam actuates such exhaust-valve.

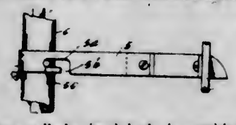
5. In an explosive-engine, the combination of a revolving shaft slidably mounted in a frame, a primary cam mounted upon and revolving with the said shaft, a secondary cam slidably mounted upon said shaft and engaging the primary cam to be longitudinally moved thereby, an exhaust-valve, means whereby the sliding movement of the secondary cam actuates said exhaust-valve and means whereby said shaft may be longitudinally shifted, whereby the distance between the secondary cam and the plane of revolution of the primary

cam may be adjusted and whereby the extent of their contact upon each revolution may be controlled.

6. In an explosive-engine, the combination of a revolving shaft slidably mounted in a frame, a primary cam-disk mounted on said shaft and revolving therewith, a secondary cam-disk slidably mounted on said shaft, a beveled cam carried by the primary disk, a beveled cam carried by the secondary disk and engaging the primary disk to be longitudinally moved thereby, an exhaust-valve, means whereby the sliding movement of the secondary cam actuates said exhaust-valve, a cam carried by the frame, and an adjustable cam carried by said shaft, whereby said shaft and the primary disk carried thereby may be longitudinally adjusted with reference to the secondary disk.

7. In an explosive-engine, the combination of a revolving shaft, a primary cam mounted thereon and revolving therewith, a secondary cam slidably mounted thereon and engaging the primary cam to be longitudinally moved thereby, an exhaust-valve, means whereby the sliding movement of the secondary cam actuates said exhaust-valve, means whereby the secondary cam can be rotatably adjusted to determine the time of its contact with the primary cam in the revolution of the latter, and means whereby the shaft carrying the primary cam can be longitudinally adjusted to determine the extent of the contact between the primary and secondary cams.

823,348. CYLINDER KNOB-LOCK. JOHN MONTGOMERY, Toronto, Canada. Filed Feb. 17, 1905. Serial No. 246,015.



Claim.—1. In a cylinder knob-lock, in combination, a rotary spindle provided with projecting pins, a latch provided with a yoke adapted to engage around said spindle, said yoke being provided with slots wherein said pins engage, and a member movable with respect to said spindle provided with a projecting portion, normally out of engagement with said yoke adapted to be moved to a position of locking engagement therewith, substantially as described.

2. In a cylinder knob-lock, in combination with a rotary spindle slotted near its middle point, a rotary arbor within said spindle having a screw-threaded center portion, a running-nut on said screw-threaded portion provided with a pin extending through the slot, rotative tumbler-carriers within said spindle between each end of the arbor and the ends of the spindle, means located near each end of the spindle for holding said tumbler-carriers from escape, a tumbler for each carrier adapted to interlock the carrier and the spindle, and to be unlocked only by its appropriate key, a yoke engaging about the spindle provided with a slotted portion adapted to be engaged by said pin, and a latch-bolt carried on the other end of the yoke from the spindle-engaging portion, substantially as described.

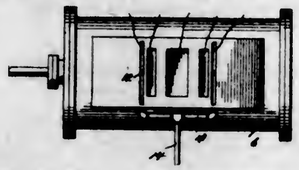
3. In a cylinder knob-lock, the combination of a latch-bolt, a slotted yoke carrying the same, a spindle passing therethrough, that portion of the spindle engaging said yoke having a plurality of projections adapted to engage in the slotted portions thereof, a pin member also projecting from said engaging portion of the spindle, a running-nut within the spindle whereon said pin is mounted and means adapted to be manually actuated for throwing said pin to interlocking engagement with said yoke, substantially as described.

4. In a knob-lock, in combination a spindle provided with projecting pins, a latch-bolt, a yoke therefor provided with bayonet-slots for engagement with said pins, whereby the yoke and the spindle can only be disengaged when the projectile part of the latch is retracted, substantially as described.

5. In a cylinder knob-lock, in combination, a latch-bolt, a yoke carrying the same, a spindle engaging through said yoke and adapted to be interlocked therewith, an arbor within said spindle, and means carried by said arbor and extending outside of said spindle adapted to be moved with said arbor with respect to said spindle into a position of binding engagement with said yoke.

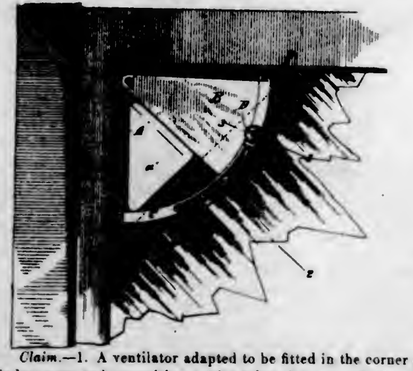
6. In a cylinder knob-lock, in combination a rotary spindle provided with projecting pins, a latch-bolt provided with a yoke member engaging thereabout, said yoke being provided with slots wherein said pins engage, an arbor within said spindle and rotatable with respect thereto, said arbor being screw-threaded along its middle portion, a running-nut on said screw-threaded portion, said nut carrying a headed pin extending outside said spindle, and means for actuating said arbor to cause said headed pin to binding engage said yoke, substantially as described.

823,349. LUBRICATOR FOR ENGINE-VALVES. DAVID MOREHOUSE, St. Elmo, Ill. Filed Oct. 13, 1905. Serial No. 282,656.



Claim.—In a lubricator for engine slide-valves, a valve-seat having oil-outlets in its face adjacent to and on the outer side of or beyond the inlet-ports therein and so arranged that both will be covered by the valve during the middle part of its stroke, and alternately covered and uncovered by the valve at the ends of its strokes, whereby oil delivered from the outlets will be carried into and through the ports into the cylinder as the inlet-ports are opened respectively, and means independent of the pressure in the valve-chest, to supply oil to said outlets.

823,350. VENTILATOR. HOLLIS L. MORRILL, Monticello, Me. Filed Aug. 21, 1905. Serial No. 275,032.



Claim.—1. A ventilator adapted to be fitted in the corner of a window-pane and comprising a triangular plate, one of whose angles is a right angle, the plate having a triangular opening therethrough of less area than one-half the area of the plate, a flange on the side of the plate opposite the right angle, a substantially triangular plate pivoted by its apex to the apex of the first plate and adapted to close the opening, a slotted guard for the free end of the second plate, and secured to the first plate at either end, and a latch for the second plate comprising a screw traversing the slot in the guard and engaging said second plate, a cam-shaped arm on the screw for engaging the guard and a knob above the arm.

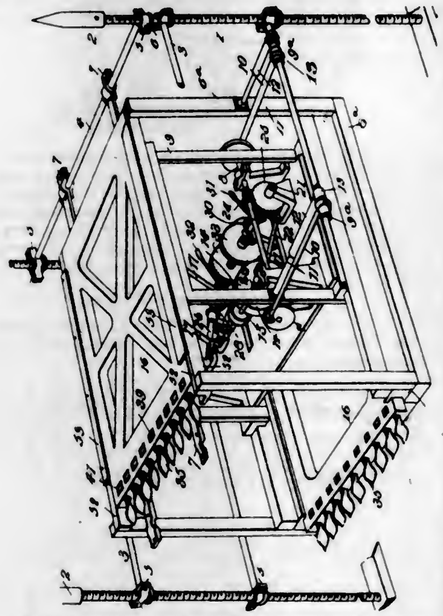
2. A ventilator comprising a triangular plate adapted to be fitted in the corner of a window-pane, the plate being provided with a triangular opening at one side thereof, a flange on the plate for engaging the edge of the window-pane, a cover for the opening pivoted to the plate, a guard for limiting the motion of the cover, and a latch for the cover comprising a screw connected with the cover, and having a cam-shaped arm for engaging the guard.

3. A ventilator comprising a triangular plate having a triangular opening of less extent than half the area of the plate and adapted to be fitted in the corner of a window-pane, a cover for the opening pivoted to the plate, a guard for limiting the motion of the cover, a latch for securing the cover in its adjusted position, and means on the plate for engaging the edge of the window-pane.

4. A ventilator, comprising a substantially triangular plate, adapted to be fitted in the corner of a window-pane and having an opening therethrough, a cover pivoted to the plate, a guard for limiting the movement of the cover, and a latch on the cover for engaging the guard to secure the cover in its position of adjustment.

823,351. STONE-QUARRYING MACHINE. EMERSON T. MORRIS, Derwent, Ohio, assignor of one-half to George H. Morris, Derwent, Ohio. Filed Mar. 3, 1905. Serial No. 248,120.

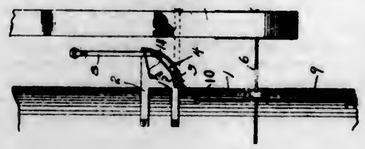
Claim.—1. In a stone-quarrying machine, the combination of a stationary structure, a main framework supported thereby, means for imparting a rectilinear reciprocating movement thereto, a cutter mounted upon said framework, means for reciprocating the cutter at a right angle to the plane of movement of the main framework, a second framework, operating mechanism carried by said second framework, a feed mechanism, connecting means between said operating mechanism and said cutter and feed mechanism, a crank connection between said second framework and the stationary structure and slidable with reference to the latter, whereby provision is had for proper feed of the cutter, and a telescoping guide connection between the main framework and said stationary structure.



2. In a stone-quarrying machine, the combination of a stationary structure comprising posts and connecting rods or bars having adjustable connection at their ends with said posts, a main framework supported by the connecting-rods of said posts, means for imparting a reciprocating movement thereto, a reciprocating cutter supported by the main framework, a second framework, operating mechanism sustained and carried by said second framework, and a pitman and crank connection between the second framework and a connecting rod or bar of the stationary structure, substantially as set forth.

3. In a stone-quarrying machine, the combination of a stationary structure comprising posts and connecting rods or bars vertically adjustable, a framework supported by said connecting-rods, means for imparting a reciprocating movement thereto, a cutter supported by said framework, means for imparting a reciprocating movement thereto in a plane at a right angle to the plane of movement of said framework, a second frame supported by the aforementioned framework, coöperating feed mechanism between the two frameworks, a pitman and crank connection between the second framework and the supporting structure and having a sliding movement with reference to the latter, and operating mechanism for the working part supported by said second framework and movable therewith, substantially as and for the purpose set forth.

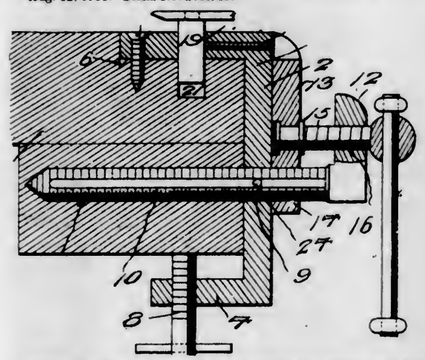
823,352. BELT-SHIFTER. DONALD MCDONALD, Crystal, N. D. Filed Aug. 15, 1905. Serial No. 274,330.



Claim.—1. A device of the character described comprising a quadrant-shaped plate having an arc-shaped slot adjacent one of its edges, an arm, means associated with said arm and working in the said arc-shaped slot whereby the arm may be shifted from one position to another with reference to said slot, a roller carried by the outer end of the arm, and a spring for returning the arm to the position from which it is moved by said means.

2. A device of the character described comprising a quadrant-shaped plate, the said plate having an arc-shaped slot adjacent one of its edges, a pulley-wheel for the guiding of a belt, an arm, means passing through the same and through said arc-shaped slot whereby the said arm may be pivoted to said plate, means for shifting the arm to engage the belt to remove the latter from the aforesaid wheel, and means for returning the arm to the position from which it is moved by the aforesaid means.

823,353. VISE. ROBERT F. MCNAMARA, Rochester, N. Y. Filed Aug. 12, 1905. Serial No. 273,940.



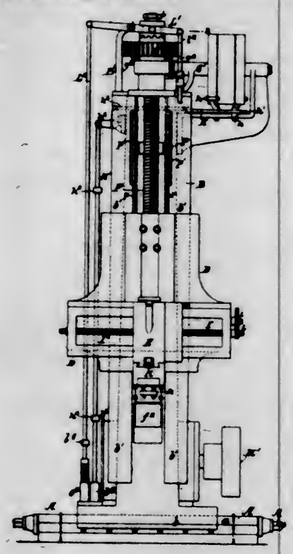
Claim.—A device of the character described comprising a supporting-bracket forming a fixed jaw, said bracket having upper and lower arms provided with means for fastening the same to a bench or other support, a screw-threaded supporting-rod carried by the bracket and having at its outer end an angularly-disposed extension, means upon the bracket for engaging and holding the rod from rotary movement, a movable jaw adjustable on the rod between the fixed jaw and the extension, said jaw being adjustable to a vertical or horizontal position by a rotary movement of the rod, and means supported by the said angularly-arranged extension for adjusting the movable jaw.

823,354. SLOTTING-MACHINE. CHARLES C. NEWTON, Philadelphia, Pa., assignor to Newton Machine Tool Works, Incorporated, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Feb. 11, 1901. Serial No. 46,863.

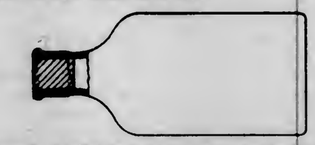
Claim.—1. The combination in a slotting-machine, of a standard, a driving-shaft carried thereby, a vertical feed-screw on the standard, a horizontal shaft on the standard, the same having means whereby it is driven in either direction from said driving-shaft, gearing connection between said horizontal shaft and the feed-screw, means for changing the direction of rotation of said horizontal shaft, a rod for actuating said rotation-changing means, adjustable blocks on said rod, a carriage on the standard movable by the screw, an arm on the carriage placed to be engaged by the blocks on the rod and a clutch for coupling the driving-shaft to the screw, with a second rod for operating the clutch, said latter rod having means placed to be actuated by the carriage but beyond the normal range of action thereof, substantially as described.

2. The combination of a standard, a feed-screw, means for driving said screw from a source of power, means for changing the direction of rotation of the screw, a carriage reciprocable by the screw upon the standard and controlling said direction-changing means, a tool-slide on the carriage, automatically-operating feed mechanism therefor including a rail on the standard, adjustably-mounted blocks on said rail, an arm on the carriage placed to engage said blocks, and a pawl-and-ratchet connection between said arm and the tool-slide feed mechanism, one of said blocks being placed to engage said arm and thereby cause operation of said mechanism, and the other being placed to positively engage the arm to restore it to its normal position after such operation, substantially as described.

3. The combination in a slotting-machine, of a standard, driving mechanism, a carriage on the standard, a tool carried by the carriage, mechanism for operating said carriage, a clutch for coupling the operating mechanism to the driving mechanism, a lever controlling the clutch, a rod on one arm of the lever in the path of the carriage on its upward stroke and a second rod also connected to the lever and having a projection in the path of the carriage on its downward stroke, substantially as described.



823,355. **SELF-FIXING PROTECTIVE COVERING FOR BOTTLES, JARS, OR OTHER VESSELS.** MAURICE G. OLIVIER, Paris, France, assignor to Société Française de la Viscose, Paris, France. Filed Feb. 1, 1906. Serial No. 299,039.



Claim.—1. A self-fixing protective covering for bottles, jars, or other vessels, comprising an appropriately-shaped film or covering of cellulose hydrate adapted, when placed upon the bottle or other vessel, to shrink by loss of moisture and so attach itself firmly at all points of possible contact, substantially as hereinbefore described.

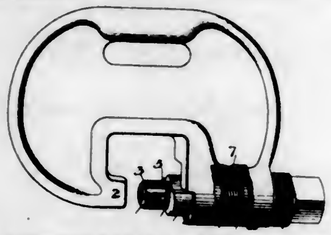
2. The method of producing a self-fixing protective covering for bottles, jars or other vessels, which consists in forming a body of cellulose hydrate into the shape of the covering desired, but slightly larger than the neck of the bottle or vessel to be covered, so that upon application to the bottle it will shrink by loss of moisture and attach itself firmly at all points of possible contact.

3. The method of producing a self-fixing protective covering for bottles, jars or other vessels, which consists in precipitating cellulose hydrate from the solution of cellulose known as viscose, and then shaping the cellulose into the form of a cap or covering of a size slightly larger than the neck of the bottle or vessel to be covered.

823,356. **COMPRESSOR FOR RAIL-BONDS.** CHARLES H. OSLUND, Worcester, Mass., assignor to The American Steel & Wire Company of New Jersey, Worcester, Mass., a Corporation of New Jersey. Filed Sept. 23, 1905. Serial No. 279,861.

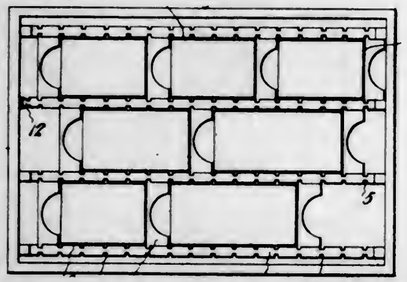
Claim.—1. A compressor for the purpose described, having a frame carrying an anvil portion, a compressor-screw in line with the anvil, an internally-threaded shell or sleeve in which the screw has its bearing, and which is slidingly mounted in said frame, and means whereby said shell may be locked and released by a turning movement; substantially as described.

2. A compressor for the purpose described, having a frame, a sleeve slidably and rotatably mounted in said frame and having an internal thread, a locking-ear on the sleeve, a groove in the frame in which the ear may travel, a bearing on the frame with which said ear may engage, and a compressor-screw having a threaded bearing in said sleeve; substantially as described.



3. In a compressor for the purpose described, a frame, a sleeve slidably and rotatably mounted in said frame, a head at one end portion of the sleeve arranged to bear against one face of said frame, an ear or projection at the opposite end portion of the sleeve arranged to bear against the opposite face of the frame, the frame having a groove to pass the said projection therethrough, and a compressing-tool having a threaded bearing in the said sleeve; substantially as described.

823,357. **HOLDER OR RECEPTACLE FOR LABELS, TICKETS, &c.** FRANKLIN O. PARSINO, Memphis, Tenn. Filed Oct. 10, 1905. Serial No. 282,198.



Claim.—1. A label-holder comprising a shallow rectangular box or receptacle provided at its ends with keepers, a plurality of longitudinal partitions slidably and releasably engaging said keepers, and transverse partitions coöperating with said longitudinal partitions to form compartments, one of said sets of partitions having grooves and the other tongues to engage the same, whereby the partitions are adjustably connected to form compartments of the same or different sizes, each of the transverse partitions being provided with a finger-recess opening through its upper edge and located wholly in one side thereof.

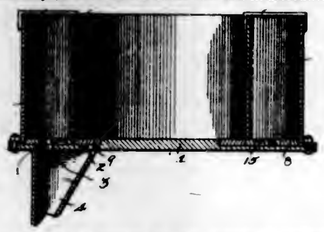
2. A label-holder comprising a receptacle provided with longitudinal and transverse partitions, one having grooves and the other tongues to engage the same, whereby the partitions are adjustably connected to form compartments of the same or different sizes, the longitudinal partition also being provided with terminal tongues, and keepers secured to the receptacle and having flanges forming slotted guideways receiving said tongues and also having wings adapted to be bent over upon the tongues to hold the longitudinal partitions in position.

823,358. **SEED-PLANTER.** DAVID M. PEARCE, Union City, Tenn. Filed Dec. 30, 1905. Serial No. 293,959.

Claim.—1. In a planter, a double hopper adapted to hold two kinds of seed, and means to feed both kinds of seed to the same row and in alternate hills.

2. In a planter, a hopper having concentric compartments adapted to hold two kinds of seed, perforated plates arranged at the bottom of said hopper, a base-plate arranged below said perforated plates and provided with two apertures; a spout arranged below said apertures and means to revolve said perforated plates to cause the perforations therein to pass over said apertures, whereby both kinds of seed may be sown in the same row but in alternate hills.

3. In a planter, a hopper having concentric compartments adapted to hold two kinds of seed, a base-plate having two apertures arranged in the same radial line, a spout arranged below said apertures, perforated plates arranged at the bottom of said hopper upon said base-plate, and means to revolve said perforated plates to cause the perforations therein to pass over said apertures, whereby both kinds of seed may be sown in the same row but in alternate hills.

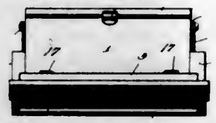


4. In a planter, a hopper having concentric compartments adapted to hold two kinds of seed, a base-plate having two apertures arranged in the same radial line, a spout arranged below said apertures, concentric perforated plates arranged at the bottom of said hopper upon said base-plate, lugs on one of said plates adapted to engage either of two sets of notches in the other plate, whereby the holes in the two plates may be arranged in the same radial lines or alternately to each other, and means to revolve said perforated plates to cause the perforations therein to pass over the apertures in the base-plate.

5. In a planter, a hopper having concentric compartments adapted to hold two kinds of seed, a base-plate having two apertures therein, a spout arranged below said apertures, concentric perforated plates arranged at the bottom of said base-plate, one of said plates having a gear-surface on its under surface, a gear-wheel meshing with said gear-surface, and means to revolve said gear, whereby the perforated plates are rotated to cause the perforations therein to pass over the apertures in the base-plate.

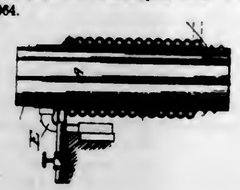
6. In a planter, a hopper having a base-plate provided with two apertures therein, an outer vertical ring secured to said base-plate, concentric perforated plates arranged on said base-plate, an inner vertical ring arranged concentrically to the outer ring upon said perforated plates near their meeting edges, and means to revolve said perforated plates to cause the perforations therein to pass over the apertures in the base-plate.

823,359. **MATCH-BOX.** DAVID J. POLLOCK, Nottingham, Pa. Filed Oct. 16, 1905. Serial No. 283,065.



Claim.—A match-box having bearing-plates attached to the ends thereof and provided with guide-grooves, the inner faces of the bearing-plates being recessed to form outer stop-shoulders, a movable bottom or slide having its ends seated in said grooves, a supporting-plate arranged beneath the slide and attached to the bearing-plates, said slide having a longitudinal match-receiving opening and being movable to carry the opening beyond the supporting-plate for delivering the matches, and springs attached to the ends of the box and each comprising a pair of arms, one of said arms being engaged with the slide and the other arranged to bear on the adjacent stop-shoulder.

823,360. **STEAM-HEATED COLLAR-SHAPER.** DELMER C. PORTER and JOSEPH ERWIN, Cedar Rapids, Iowa. Filed Oct. 3, 1904. Serial No. 227,064.



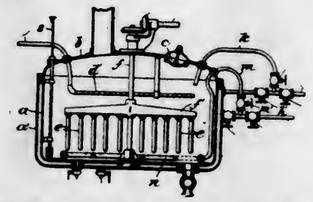
Claim.—1. A collar-shaper, comprising a tube notched at the upper end and provided with means for heating the same.

2. A collar-shaper, comprising a tube having notches at its upper end, and a heating-pipe coiled around said tube.

3. A collar-shaper, comprising a tube having a smooth interior, notched at the upper end and a grooved exterior and a heating-pipe coiled around the tube and fitting in the exterior grooves.

4. A collar-shaper comprising an upwardly and downwardly open tube having a smooth interior surface and circumferentially grooved upon its outer face, a plurality of pipe-coils resting in said grooves and means for admitting a heated fluid into said coils.

823,361. **METHOD OF TREATING MARINE-ANIMAL OILS.** MICHAEL POTOLOWSKY, Moscow, Russia. Filed Jan. 27, 1902. Serial No. 91,514.



Claim.—1. The process of purifying marine-animal oils which consists in converting the strong-smelling amins into soluble salts and removing the salts.

2. The process of purifying marine-animal oils which consists in subjecting the oils to the action of nitrous acid and a mineral acid, and washing the product.

3. The process of treating marine-animal oil, which consists in converting the strong-smelling amins of such an oil into odorless salts and then removing said odorless salts.

4. The process of treating marine-animal oils, which consists in acting upon such an oil with sulfuric and nitrous acids to convert the strong-smelling amins into odorless salts, and then removing said odorless salts.

5. The process of treating marine-animal oils, which consists in acting upon such an oil with sulfuric and nitrous acids and afterward treating the resultant product with steam.

6. The process of treating marine-animal oils, which consists in acting upon such an oil with sulfuric and nitrous acids at a temperature not above 60° centigrade, and afterward treating the resultant product with steam.

7. The process of treating marine-animal oils, which consists in acting upon such an oil with sulfuric and nitrous acids, afterward treating the resultant product with steam and then washing said product.

8. The process of treating marine-animal oils, which consists in acting upon such an oil with sulfurous and nitrous acids, then washing the resultant product, then submitting it to the action of steam, again washing it, and finally evaporating off any moisture remaining.

9. The process of treating marine-animal oils, which consists in adding sulfuric acid and nitrites to such an oil, stirring the mixture, washing it and then treating it with steam.

10. The process of treating marine-animal oils, which consists in adding sulfuric acid and nitrites to such an oil, maintaining the mixture at a temperature above 50° centigrade while stirring it and afterward acting upon the mixture with steam.

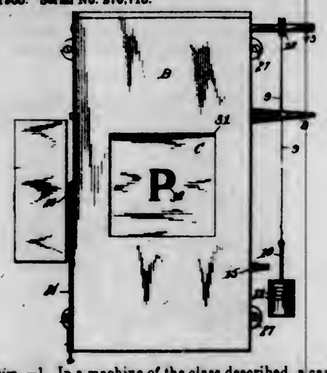
11. The process of treating marine-animal oils, which consists in adding sulfuric acid and nitrites to such an oil, maintaining the mixture at a temperature above 50° centigrade and stirring it, then washing it, and then submitting it to the action of steam.

12. The process of treating marine-animal oils, which consists in adding sulfuric acid and nitrites to such an oil, maintaining the mixture at a temperature above 50° centigrade, stirring it for several hours, then washing it, then submitting it to the action of steam, again washing it and finally evaporating off any moisture remaining.

13. The process of treating marine-animal oils, which consists in adding twenty to twenty-five per cent. of sulfuric acid to such an oil, adding ground nitrites in sufficient quantity to produce substantially five per cent. of free nitrous acid, maintaining the temperature below 60° centigrade, stirring the mixture, then washing the resultant product, then submitting it to the action of steam and finally again washing it.

14. The new product, marine-animal-oil tallow, consisting of sixty to seventy per cent. of solid fatty acids, twenty to thirty per cent. of liquid fatty acids and ten per cent. of anhydrous substances.

823,362. MACHINE FOR TEACHING TOUCH TYPE-WRITING. CHARLES R. POWELL and WILLIAM BEVAN, Scranton, Pa. Filed July 21, 1905. Serial No. 270,713.



Claim.—1. In a machine of the class described, a casing having a cover provided with a sight-opening, a winding-roller and a lesson-holding roller arranged parallel with one another, a lesson-strip in the rear of said cover, said strip having printing characters thereon arranged at substantially equal distances apart longitudinally of the strip and having its ends connected to said rollers, a weight arranged to rotate the winding-roller, a fan arranged to be operated by the lesson-holding roller, and means for gradually increasing the power applied by said weight to the winding-roller as the weight descends.

2. In a machine of the class described, a casing having a cover provided with a sight-opening, a winding-roller and a lesson-holding roller arranged parallel with one another, a lesson-strip in the rear of said cover, said strip having printing characters thereon arranged at substantially equal distances apart longitudinally of the strip and having its ends connected to said rollers, a fan arranged to be operated by the lesson-holding roller, a tapering spindle connected to the winding-roller, a cord having one end secured to the larger end of said spindle, and a weight secured to the other end of said cord.

3. In a machine of the class described, a casing having a front or cover provided with a sight-opening, a winding-roller and a lesson-holding roller arranged parallel with one another, a lesson-strip in the rear of the cover and having its ends connected to both of said rollers, a friction-roller arranged to be driven by said lesson-holding roller, a fan operatively connected to said friction-roller, means for disengaging said friction-roller from the lesson-holding roller, and a weight arranged to operate the winding-roller.

4. In a machine of the class described, a casing having a front or cover provided with a sight-opening, a winding-roller having a shaft journaled in said casing above said opening, a weight arranged to turn said shaft, a lesson-holding roller having a shaft removably journaled in said casing below said opening, said latter shaft being formed to receive a key, a lesson-strip having printing characters thereon and having its ends connected to said roller, a friction-roller movable into and out of engagement with said lesson-holding roller, and a fan operatively connected to the friction-roller.

823,363. BRUSH. SIMEON D. PURDY, Richmond Hill, N. Y. Filed Dec. 4, 1905. Serial No. 290,291.

Claim.—1. The combination of a brush-ferrule having internal shoulders, bristles and plugs within the bristles above and below said shoulders and means to draw the plugs toward each other to grip the surrounding bristles against the shoulders.

2. The combination of a brush-ferrule having internal shoulders, bristles and plugs above and below the shoulders and a threaded stem on which the plugs are mounted to draw the latter toward the shoulders, as and for the purpose described.

3. The combination of a brush-ferrule having internal shoulders, bristles and conical plugs above and below the shoulders and means to draw the plugs toward each other to grip the surrounding bristles against the shoulders.

4. A brush with a ferrule having two internal shoulders, in combination with bristles and two plugs connected with each other within the bristles, one above and the other below said shoulders to bind the bristles against the latter.



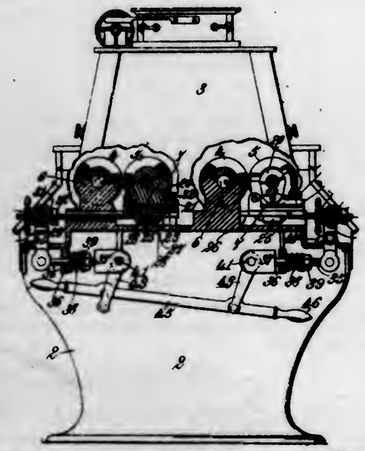
823,364. DIVIDERS. HENRY C. RICKERT, Pittsfield, Mass. Filed Apr. 5, 1905. Serial No. 253,943.



Claim.—1. Compasses or dividers provided with pivoted spring-spread legs formed with openings, one of said legs having on its outer side an elongated longitudinal socket and on its inner side a recess, both communicating with its opening, the walls of said socket and recess being frusto-conical shaped to form pivot portions, a stem extending through said openings and having at one end an elongated head seated in said socket, said stem being adapted by the form of the walls of the opening communicating with the socket to have play to vary its position in accordance with the adjustments of the legs, and a nut upon the opposite end of the stem.

2. In compasses or dividers, a leg having its upper and lower portions set at an angle, the lower portion being provided with a socket wholly formed therein and inclined to the axis thereof, and a tool having a shank fitted in said socket, the length of the shank being slightly greater than the length of the socket, whereby the upper end of the shank projects slightly beyond the upper end of the socket, the upper portion of the leg being formed in its outer side with a tapering groove communicating with the upper end of the socket and lying wholly within and with its open side flush with said portion of the leg, said groove receiving the projecting upper end of the tool-shank and having its inner wall lying substantially in the plane of the inner wall of the socket and adapted to serve as a guide and steady rest for an implement inserted in the groove in alinement with the tool, whereby the latter, when broken, may be forced downwardly out of the socket.

823,365. GRINDING-MILL. HARRY C. ROBINSON, Muncy, Pa. Filed Mar. 17, 1903. Serial No. 148,215.



Claim.—1. A grinding-mill including two pairs of differentially-speeded coöperative rolls and bearings therefor, the bearings for the high-speed rolls being stationary and those for the low-speed rolls being movable toward and from the companion stationary bearings, and the bearings for the low-speed rolls both being on the same side of the bearings for the high-speed rolls.

2. A grinding-mill including a roll, stationary bearings for supporting said roll, a pair of slides mounted for movement toward and from the stationary bearings, a second roll carried by the slides, rods connected with the slides, rock-arms connected at their upper ends to the respective rods, rods connected to the lower ends of the rock-arms, and manually-controlled means for moving the last-mentioned rods longitudinally.

3. A grinding-mill including a roll, stationary bearings for supporting said roll, a pair of slides mounted for movement toward and from the stationary bearings, a second roll carried by the slides, rods connected with the slides, rock-arms connected at their upper ends to the respective rods, rods connected to the lower ends of the rock-arms, a rock-shaft having crank-pins at its opposite ends, the last-mentioned rods being perforated to receive said crank-pins, and an actuating-lever connected with the rock-shaft.

4. A grinding-mill including a roll, stationary bearings for supporting the same, a pair of slides, pivotally-mounted blocks on said slides, a second roll directly supported by said pivotally-mounted blocks, rods connected with the slides, rock-arms yieldingly connected at their upper ends to the said rods and provided with stops adapted normally to engage the framework of the machine, rods connected with the lower ends of the rock-arms, a rock-shaft having crank-pins at its opposite ends, said last-mentioned rods being perforated to receive said crank-pins, and an actuating-lever connected with said rock-shaft.

5. A grinding-mill including a roll, stationary bearings for supporting said roll, a pair of slides, pivotally-mounted blocks on said slides, a second roll supported by the pivotally-mounted blocks, means for adjusting the pivotally-mounted blocks, a pair of rods connected with said slides, rockers provided with stops to normally engage the framework of the machine, the upper ends of the rockers being perforated to receive said rods, springs surrounding the rods and bearing at one end against the rockers, stops upon the rods for engaging the opposite ends of the springs, a second pair of rods connected with the lower ends of the rockers, springs surrounding the last-mentioned rods, the latter having stops to receive one end of the springs and the other end of the springs bearing against the framework, a rock-shaft having crank-pins at its opposite ends, said last-mentioned rods being perforated to receive the crank-pins, and an actuating-lever for said rock-shaft.

6. A grinding-mill including two pairs of coöperating rolls, one roll in each pair being bodily shiftable relatively to the other roll, a pair of rock-shafts operatively connected with and adapted, on their motion, to move the respective shiftable rolls, a hand-lever carried by each shaft, said hand-levers being upon opposite sides of the mill, rock-arms connected with the rock-shafts, both on the same side of the mill, having projections, and a notched coupling device, the notches of which are adapted to receive said projections.

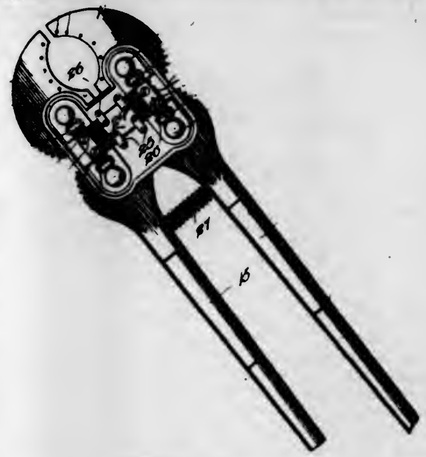
823,366. TREATING BREWERS' AND DISTILLERS' SLOP. CURT J. ROHNE, Philadelphia, Pa. Filed Mar. 13, 1905. Serial No. 249,935.

Claim.—1. The mode herein described of recovering glycerin, dextrin, or the like and lactic acid, from brewers' or distillers' slop, said mode consisting in first precipitating the protein contents of the slop by subjecting the same while it is maintained in a heated condition to the action of mineral matter dissolved in alkali, which mineral matter is not soluble in water, then separating the clear liquor from the precipitate, and then without material dilution of said liquor concentrating the latter by evaporation, substantially as specified.

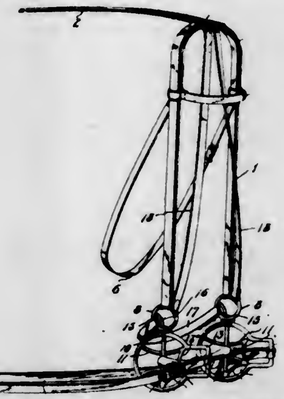
2. The mode herein described of recovering glycerin, dextrin, or the like, and lactic acid, from brewers' or distillers' slop, said mode consisting in first precipitating the protein contents of the slop by subjecting the same while maintained in a heated condition to the action of mineral matter dissolved in an alkali, said mineral matter being insoluble in water, then separating the clear liquor from the precipitate by filtration, and then concentrating said liquid, substantially as specified.

823,367. WRENCH. JOHN D. RYAN, Sistersville, W. Va., assignor of one-half to James Ryan, Chicago, Ill. Filed Feb. 18, 1905. Serial No. 246,293.

Claim.—A wrench comprising side plates, coöperating jaws pivotally mounted between said side plates and having gear elements adapted to intermesh with each other, handles pivotally mounted between said side plates and having gear elements intermeshing with each other and with the gear elements of said jaws, bolts connecting said side plates and serving as the fulcrum members of said jaws and handles, nuts on said bolts, locking-plates having depressions to receive the nuts and being formed with slots, clamping-plates on said side plates having outwardly-extending ends, and spring-plates on said outwardly-extending ends adapted to fit the slots in said locking-plates.



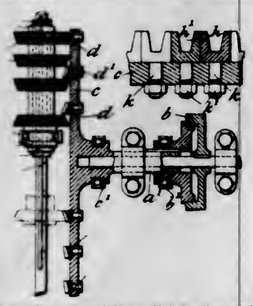
823,368. BRIDLE-BIT. HENRY SCHLUETER, Scribner, Nebr. Filed Oct. 23, 1905. Serial No. 284,027.



Claim.—In a harness the combination with a head-stall having head-straps and a bifurcated overcheck; of rings engaged by the terminale of the head-straps and bifurcated overcheck, a chin-strap secured to said rings, means within the rings for confining said strap in the lower portions of the rings, lower rings swiveled to the first-mentioned rings and having forwardly-projecting rectangular rein-engaging loops integral therewith, a centrally-disposed bar within each of the lower rings and parallel with the outer end of the rectangular loop of said ring, a mouth-bar pivotally connected to the central bar, oppositely-disposed curved retaining-bars integral with each of the lower rings and adapted to prevent sliding movement of the mouth-bar upon the central bar, a pair of segmental bars formed in each ring, one of said bars constituting a reinforce at the inner end of the rectangular loop, and the outer rectangular bar forming an eye within the ring to receive a strap, and strap-receiving loops upon the central bars and below the mouth-bar.

823,369. SPEED-GEARING. FREDERICK W. SCHROEDER, London, England. Filed Oct. 13, 1903. Serial No. 176,868.

Claim.—1. A speed-gearing comprising a disk having a plurality of concentric rows of teeth, an endwise-movable sleeve carrying the disk, a shaft at right angles to the axis of the disk, a sleeve arranged to slide on said shaft, pinions secured on the latter sleeve equal in number to and adapted to engage with the rows of teeth on the disk, each with each, an additional pinion on the pinion-sleeve adapted to engage with one of the rows of teeth on the opposite side of the disk-axis, said pinions being spaced to allow only one of them to mesh with the teeth on the disk at one time, means for withdrawing the disk-teeth from engagement with the pinions, and means for sliding the pinion-sleeve along its shaft; substantially as described.

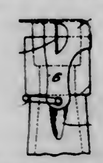


2. A speed-gearing comprising a disk having a plurality of rows of teeth attached to the said disk in segments, concentric with its axis, an endwise-movable sleeve carrying the disk, a shaft at right angles to the axis of the disks, a sleeve arranged to slide on the shaft, pinions secured on the latter sleeve equal in number to and adapted to engage with the rows of teeth on the disk, each with each, an additional pinion on the said sleeve adapted to engage with one of the rows of teeth on the opposite side of the disk-axis, the said pinions being spaced to allow only one of them to mesh with the teeth on the disk at one time, means for withdrawing the teeth on the disk from engagement with the pinions, and means for sliding the pinion-sleeve along its shaft, substantially as described.

3. A speed-gearing comprising an endwise-movable disk having a plurality of rows of teeth concentric with its axis and attached to said disk in segments each segment consisting of two half-teeth and a shank, the junction-faces of said segments being tapered, a shaft, a slidable sleeve on said shaft, a plurality of pinions on said sleeve, each adapted to engage one of the rows of disk-teeth, one of said pinions being arranged to drive said shaft in a reverse direction, and means for sliding said disk and said pinion-sleeve; substantially as described.

823,370. DEVICE FOR SECURING CORKS IN BOTTLES.

FREDERICK W. SCHROEDER, London, England. Filed July 7, 1904. Serial No. 215,561.



Claim.—1. In combination, a bottle-neck having oppositely-disposed longitudinal grooves, the bottoms of which incline toward each other in the direction of the mouth of the bottle, and means adapted to move longitudinally and pivotally in said grooves and to engage over the mouth of the bottle; substantially as described.

2. In combination, a bottle-neck having oppositely-disposed longitudinal grooves the bottoms of which incline toward each other in an upward direction, a spring-hoop with inwardly-turned ends engaging in said grooves, and a hood pivotally mounted on said hoop and adapted to engage over the mouth of the bottle; substantially as described.

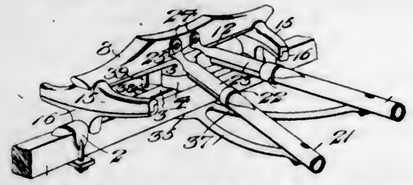
3. In combination, a bottle-neck having oppositely-disposed longitudinal grooves the bottoms of which incline toward each other, spring-urged pivot-supports engaging in said grooves and adapted to move longitudinally therein, and a hood pivotally mounted on said supports and adapted to engage over the mouth of the bottle; substantially as described.

4. In combination, a bottle-neck having oppositely-disposed longitudinal grooves, and a hood having a solid top and projecting legs, said hood being pivotally mounted in the said grooves; substantially as described.

5. In devices for securing corks in bottles, a hood pivotally supported on the neck of the bottle and adapted to engage over the cork, said hood having a plain flat top and a retaining-band situated above the pivot-axis; substantially as described.

823,371. VEHICLE RUNNING-GEAR.

FRANK J. SINGLER, Temple, Tex., assignor of one-half to M. D. Bartholomew, Minsola, Tex. Filed Aug. 1, 1906. Serial No. 272,223.

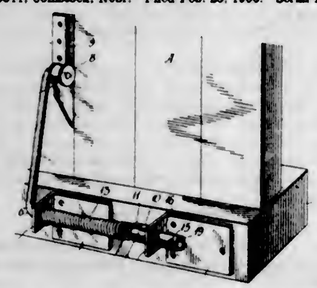


Claim.—1. In a vehicle running-gear, the combination with the head-block and rear axle of a vehicle, of tubular reach-beams provided with sockets adjacent to their ends, each reach-beam having its forward end tapered and its rear end reduced and squared, forward attaching members curved in cross-section and tapered to conform to the construction of the forward ends of the reach-beams, said attaching members being provided with upstanding and angularly-disposed heads, means passing through the heads for securing the attaching members to the head-block, rings applied over the attaching members and forward ends of the reach-beams, rearward attaching members socketed to receive the reduced and squared ends of the reach-beams, means for securing the reduced and squared ends of the reach-beams in the sockets of said rearward attaching members, and means for securing said rearward attaching members to the rear axle, said attaching members being provided with studs fitting in the sockets of the reach-beams.

2. In a vehicle running-gear, the combination with the head-block and rear axle of a vehicle, of tubular reach-beams provided with sockets adjacent to their ends, each reach-beam having its forward end tapered and its rear end reduced and squared, forward attaching members curved and tapered to conform to the forward ends of the reach-beams and provided with studs fitting in the sockets of the reach-beams, said forward attaching members being provided with upstanding and angularly-arranged heads, means passing through the heads for securing the forward attaching members to the head-block, rings fitting over the attaching members and the forward ends of the reach-beams, rearward attaching members comprising upper and lower members, the inner opposing faces of said upper and lower members being cut away to provide sockets for the reception of the reduced and squared ends of the reach-beams, clips for securing the members of the rearward attaching members about the reduced and squared ends of the reach-beams, and means for securing the rearward attaching members to the rear axle, said last-mentioned attaching means also serving to secure the members of the rearward attaching members together.

823,372. DOOR-OPENER.

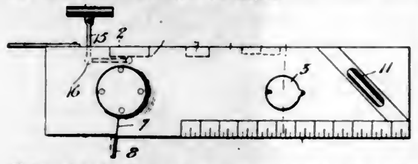
STURLEY T. STEVENS and ORVAL WALCOTT, Comstock, Nebr. Filed Feb. 23, 1906. Serial No. 302,448.



Claim.—A door-opener comprising bearing-brackets, a right-angled member having one arm journaled in the bearing-brackets, a sleeve detachably secured to and longitudinally adjustable on said arm, a coil-spring on said arm, having one end attached to said sleeve and the other end engaged with one of said brackets, a tappet on the other arm of the right-angled member, and a guide for engagement by the tappet and having a stop to coact therewith, for the purpose set forth.

823,373. COMBINED BEVEL AND COMPASSES.

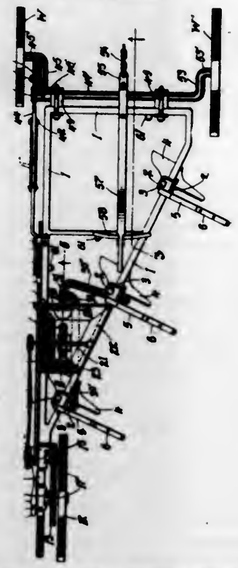
HENRY TATUM, Miakka, Fla., assignor of one-half to Wilbur Hodges, Miakka, Fla. Filed June 13, 1905. Serial No. 265,116.



Claim.—A tool of the type described comprising a body having a recess formed in one face thereof, an arm pivoted to fold into said recess, a telescope pivoted to and movable with said arm, and a cover movably connected with the body and adapted for normally closing the recess to house the telescope and arm therein.

823,374. PLOW AND SEEDER.

FRANK THURRID, St. Louis, Mo. Filed Feb. 24, 1906. Serial No. 302,762.



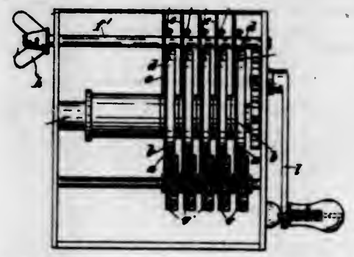
Claim.—In a plow and seeder, a suitable frame having one of its sides disposed diagonally to the general length of said frame, a series of plowshares disposed along said diagonal side, a rear running-wheel for the frame, a seed-hopper on the frame, a series of conveying-pipes leading from the hopper, devices within the hopper for delivering the seed into said pipes, and suitable gearing interposed between the running-wheel and said delivering devices for actuating the latter with the advance of the machine over the ground being plowed, substantially as set forth.

823,375. CALCULATING-MACHINE.

FRANZ TRINKS, Brunswick, Germany. Filed Feb. 2, 1905. Serial No. 243,867.

Claim.—1. A calculating-machine comprising rotatable disks having displaceable teeth, cam-disks for displacing the teeth, and a shaft bearing means for simultaneously returning the cam-disks to zero position.

2. A calculating-machine comprising rotatable disks having displaceable teeth, cam-disks for displacing the teeth, a shaft bearing means for simultaneously returning the cam-disk to zero position, and means for preventing the operation of the handle before the cam-disks have been returned completely to zero position and to maintain the cam-disks only in zero position when the handle is in its normal position.



3. A calculating-machine comprising rotatable disks having adjustable teeth, shiftable cam-disks for adjusting said teeth, and a shaft bearing means engaging the said disks for returning them to zero position, thereby returning the teeth to normal position.

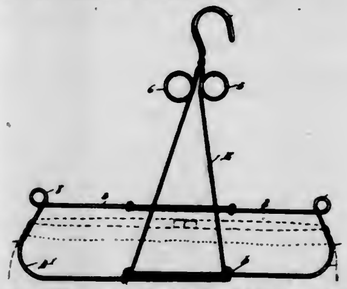
4. A calculating-machine comprising rotatable disks having adjustable teeth, shiftable cam-disks for adjusting said teeth, a shaft bearing means engaging the said disks for returning them to zero position, thereby returning the teeth to normal position, and means for preventing the operation of the handle before the cam-disks have been returned completely to zero position and to maintain the cam-disks only in zero position when the handle is in its normal position.

5. A calculating-machine comprising register-wheels, rotatable disks provided with adjustable teeth adapted to engage the said register-wheels for rotating them, shiftable disks adapted to adjust the said teeth, and a shaft bearing means for simultaneously returning said disks to zero position.

6. A calculating-machine comprising register-wheels, rotatable disks provided with adjustable teeth adapted to engage the said register-wheels for rotating the shiftable disks adapted to adjust the said teeth, a shaft bearing means for simultaneously returning said disks to zero position, a handle for operating said shaft and means for preventing the operation of the handle before the cam-disks have been returned completely to zero position and to maintain the cam-disks only in zero position when the handle is in its normal position

823,376. GARMENT-HANGER.

JAMES E. TWITCHELL, Detroit, Mich. Filed Dec. 5, 1904. Serial No. 235,458.

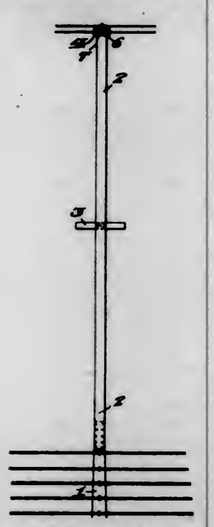


Claim.—1. In a garment-hanger, in combination with the frame of two U-shaped parts slidingly connected, a suspensor, having resilient diverging members engaging between the slidingly-connected branches at one side of said frame and connected to the branches of said U-shaped members at the opposite side of said frame, substantially as described.

2. In a garment-hanger, in combination a two-part frame, each part of said frame comprising terminals disposed in parallel relation and joined by a cross-bar that is inclined to the direction of the parallel terminals, the parallel terminals of one part engaging slidingly with the parallel terminals of the similar part, a suspensor member having divergent terminals, and means for spreading said terminals, the terminals of the suspensor part engaging between the slidingly-connected terminals at one side of said frame and connected to the slidingly-connected terminals of the other side of said frame, whereby the suspensor member is adapted to suspend said frame with its parallel members in a vertical plane, substantially as described.

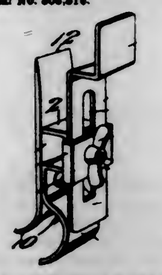
3. In a garment-hanger, in combination with a pair of slidingly-connected frames, a suspensor member having divergent resilient terminals secured to one side of said frame and slidingly engaging the opposite side of said frame, the cross-bars of the frame members being inclined to the parallel members thereof, and there being a projection formed by a coil on the outside of the frame, and on the side toward the hook of the suspensor member, substantially as described.

823,377. TELEPHONE OR OTHER LINE-SUPPORTING POST. GORDON H. VAN EVERY, Naper, Nebr., assignor of one-fourth to Krauth Harms Crossman, Naper, Nebr. Filed Nov. 28, 1905. Serial No. 289,544.



Claim.—The combination with a post arranged for the reception of fence line-wires, of side plates secured to opposite sides of the post and extending thereabove in spaced relation, a filler-block arranged between the upper ends of the plates, a bolt passed transversely through the filler-block and plates, said bolt terminally extending beyond the outer surfaces of the plates and adapted to receive and secure insulators.

823,378. GAGE. GEORGE H. WAGNER, Cedar Falls, Iowa. Filed Mar. 27, 1906. Serial No. 308,316.



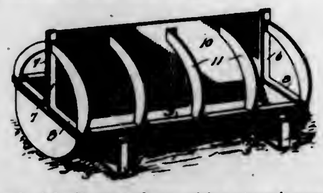
Claim.—In a device of the class described, a base member, a spacing member or block attached to said base member and comprising a single length of material bent into shape to form a substantially rectangular body portion and a bearing finger-piece, a supporting member provided with an engaging head, and means for adjustably connecting the supporting member with the spacing-block.

823,379. HANGER FOR PICTURES, CARDBOARD, AND THE LIKE. JAMES D. WALSH, St. Louis, Mo. Filed July 24, 1905. Serial No. 271,226.

Claim.—As an article of manufacture, a clasp made of a single sheet of metal and comprising a pair of normally open jaws connected by a resilient hinge-joint, a depending prong stamped from one of the jaws, an upwardly-projecting centrally-disposed tongue stamped from the opposite jaw, a pair of arms formed with the jaw carrying the prong and projecting forwardly and spanning the edges of the jaw carrying the tongue, a locking-lever pivoted between the ends of the arms, and having a basal eccentric serrated loop for forcing the jaws together, the adjacent jaw having serrations for engaging the serrations of the loop, and cushioning tips or pads on the jaws, substantially as set forth.



823,380. FEEDING-TROUGH. SIDNEY WALTER, Marysville, Kans. Filed Feb. 26, 1906. Serial No. 303,491.



Claim.—1. A feeding-trough comprising a trough proper, a partition-forming structure having hinged connection therewith, said structure comprising end stripe arranged to provide vertically-extending spaced arms, a partition-plate secured between said arms and extending longitudinally and centrally of the trough, and a series of division-arms connected to said plate and extending in opposite directions therefrom, said arms being outwardly and downwardly curved and supported above the side edges of the trough.

2. A feeding-trough comprising a trough proper, a partition-forming structure including end stripe arranged to provide vertically-extending spaced arms and laterally-extending arms, side stripe connecting the terminals of said laterally-extending arms, a partition-plate secured between the spaced arms of the end stripe and extending longitudinally of the trough, and a series of division-arms connected to the plate and to said side stripe.

3. A feeding-trough comprising a trough proper, a partition-forming structure including end stripe arranged to provide vertically-extending spaced arms and laterally-extending arms, side stripe connecting the terminals of said laterally-extending arms, a partition-plate secured between the spaced arms of the end stripe and extending longitudinally of the trough, and a series of division-arms connected to the plate and to said side stripe, said division-arms being arranged in edgewise relation to the partition-plate, whereby to present a relatively broad surface disposed at right angles to the partition-plate.

823,381. CONTAINER-TOP. JOHN B. WILLIAMSON and ALFRED V. OLDHAM, Louisville, Ky., assignors of one-fourth to T. L. Jefferson, Louisville, Ky. Filed Mar. 2, 1905. Renewed Dec. 26, 1905. Serial No. 293,360.



Claim.—1. In an apertured container-top, the combination with an apertured plate or disk forming an open frame, parallel guideways formed on the inner edges of said frame, an apertured valve-plate arranged in said frame to engage and slide between said apertures, a radially-projecting arm formed on said valve-plate, said arm extending through the side of said container-top and having formed thereon a finger-piece, and a spring secured to said valve-plate and engaging

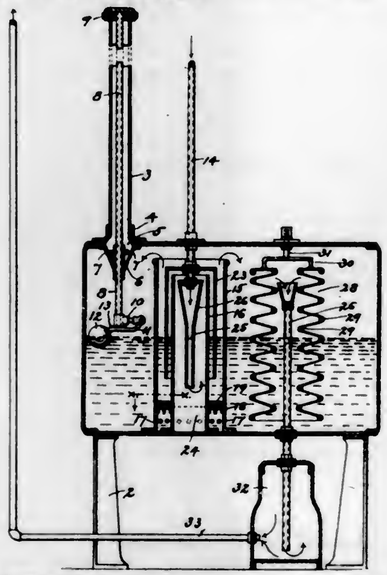
pins on said frame whereby when said valve-plate is shifted to uncover the opening in the top, the same will be automatically retracted to close said opening, substantially as described.

2. In an apertured container-top, the combination with a guide-frame arranged therein, an automatically-closing apertured valve slidably mounted in said frame, means whereby said valve is shifted to open the aperture in said top, and an automatically-operated mechanism to force a portion of the contents of the box through said opening in the top, substantially as described.

3. In an apertured container-top, the combination with a guide-frame arranged therein, an automatically-closing apertured valve slidably mounted in said frame, means whereby said valve is shifted to open the aperture in said top, and a discharge device actuated by the shifting of said valve-plate to force a portion of the contents of the container through the opening in the top, substantially as described.

4. In an apertured container-top, the combination with an apertured plate or disk forming an open frame, parallel guideways formed on the inner edges of said frame, an apertured valve-plate arranged in said frame to engage and slide between said apertures, a radially-projecting arm formed on said valve-plate, said arm extending through the side of said container-top and having formed thereon a finger-piece, a spring adapted to retract said valve-plate and close said discharge-opening, a bail-shaped discharge device, pivotally mounted in said frame and engaging notches in said valve-plate and lugs formed on said valve-plate whereby when the latter is shifted to open the aperture in said top, said discharge device will be actuated to force a portion of the contents of the box through the opening and when said valve-plate is retracted the discharge device will also be retracted thereby, substantially as described.

823,382. CARBURETER. ANDERS AKESON, Worcester, Mass., assignor to Standard Gas & Heating Company, Worcester, Mass. Filed Feb. 17, 1905. Serial No. 246,178.



Claim.—1. In a carbureter, the combination of a tank adapted to contain a hydrocarbon liquid; a vent-pipe secured to the top of said tank, and communicating with an opening formed in the same; a conical sleeve secured to the top of and depending within the tank, said sleeve having its larger end surrounding the vent-opening and provided with perforations communicating with the same; a liquid-fill pipe supported by the smaller end portion of said conical sleeve and projecting within the tank; a bracket secured on said fill-pipe, within the tank, and said bracket having an outer bifurcated portion; an arm pivotally mounted in the bifurcated portion of said bracket, and said arm carrying a ball-float thereon, and a cork disk mounted on said arm and adapted to close the discharge end of the fill-pipe after the refilled liquid has reached its proper level within the tank.

2. In a carbureter, the combination of a tank adapted to contain a hydrocarbon liquid; a carbureting-cylinder mounted in the tank and comprising two shells concentric to each other, having their upper ends open and extending above the liquid-level and their lower ends secured to the bottom of the tank, a partition between the shells near the bottom thereof, said partition provided with port-openings and a series of perforations formed in the outer shell and below said partition; cork disk valves mounted on the partition of said shells and each of said valves having a stem to project through each port-opening in said partition; a fixed wire guard for each of said valves; an air-inlet pipe secured to and projecting within said carbureting-cylinder, and said air-pipe supporting an air-cylinder having an open end adapted to extend within the liquid, between the shells of said carbureting-cylinder, and an air-discharge pipe within the inner shell of said carbureting-cylinder, and said last-named pipe having an integral conical portion whose larger end is closed and secured upon first-named air-pipe.

3. In a carbureter, the combination of a tank, horizontally arranged and adapted to contain a hydrocarbon liquid; two vertically-arranged cylindrical shells, concentric to each other, the outer shell provided with a series of perforations near its bottom portion, a check-valve to control passage of the liquid between the shells, each of said shells having their upper ends open and extending above the liquid-level and their lower ends secured to the bottom of the carbureter, and an air-inlet pipe secured to the top of the carbureter, depending within the latter and projecting below the open end of the inner shell.

4. In a carbureter, the combination of a tank adapted to contain a hydrocarbon liquid; an open-ended vertically-arranged carbureting-cylinder secured to the bottom of the tank and having a condensation-chamber and a hydrocarbon-chamber respectively, and a transversely-arranged valved flange secured in the liquid-chamber, near the bottom thereof, and said cylinder provided with perforations below its valved flange and communicating with the liquid-chamber of the tank; a pipe secured to and entering through the top of said cylinder and adapted to receive air under pressure; an air-discharge pipe in the condensation-chamber of said cylinder and having a closed end secured upon first-mentioned pipe, and said discharge-pipe having its closed end extending inwardly in conical form and which portion terminates with the main portion of said discharge-pipe; and a bell-shaped cylinder whose closed end is secured upon first-mentioned pipe, above the open end of said carbureting-cylinder, and said last-mentioned cylinder having its open end portion submerged in the liquid chamber of first-mentioned cylinder.

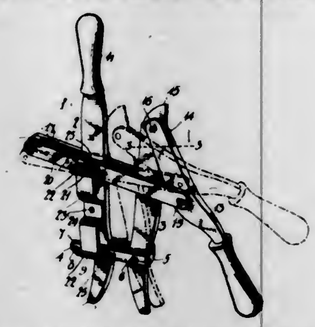
5. In a carbureter, the combination of a tank adapted to contain a hydrocarbon liquid; a liquid-fill pipe entering the tank; means mounted on said pipe, arranged to automatically close the mouth of the same after the liquid has reached its proper level in the tank; a carbureting-cylinder having an open end extending above the liquid in the tank and provided with a condensation-chamber and a hydrocarbon-liquid chamber respectively, said cylinder having a valved flange near the bottom of its liquid-chamber and also provided with perforations below said flange and communicating with the liquid in the tank; a bell-shaped air-cylinder whose open end is submerged in the liquid of first-mentioned cylinder, and said second-mentioned cylinder having its closed end above first-mentioned cylinder; an air-inlet pipe supporting second-mentioned cylinder and entering near to the bottom of the condensation of first-mentioned cylinder; a gas-outlet pipe projecting above the level of the liquid in the tank; and a collapsible bag partially submerged in the liquid of the tank, surrounding said outlet-pipe and projecting above the top thereof.

6. In a carbureter, the combination of a tank adapted to contain a hydrocarbon liquid; a vent-pipe communicating with said tank; a liquid-fill pipe mounted within said vent-pipe and entering said tank; a bracket secured on the end of said fill-pipe within said tank; an arm pivoted on the projecting end of said bracket and carrying a ball-float; a cork disk secured on said arm, between its float and pivot center, and said disk arranged to form a valve in closing the mouth of said fill-pipe after the liquid has reached its proper level within the tank.

7. In a carbureter, the combination of a tank adapted to contain a hydrocarbon liquid; a carbureting-cylinder secured in the tank and comprising two shells concentric to each other and whose upper ends are open and extending above the liquid in the tank, and a circular flange partition secured to the shells and provided with port-openings communicating with a liquid-chamber, formed by the shells each side of said partition, and one of the shells of said carbureting-cylinder provided with perforations below the partition and communicating with the liquid in the tank; cork disk valves having each a

stem to enter through each port-opening of the partition of said carbureting-cylinder; means to retain said valves in place upon the partition of said carbureting-cylinder; a pipe entering near to the bottom of the center shell of said carbureting-cylinder and adapted to receive air under pressure; a bell-shaped air-cylinder whose closed end is secured on said pipe, above the open ends of the shells of first-mentioned cylinder, and said second-mentioned cylinder projecting in the liquid-chamber of first-mentioned cylinder, so as to form a seal by the liquid therein; a gas-outlet pipe projecting above the liquid in the tank; and a collapsible bag supported from the top of the tank, surrounding said outlet-pipe, and said bag having its lower portion submerged in the liquid of the tank.

823,383. **HORSESHOE-SPREADER.** KASPAR K. ALLMAN, Alumbridge, W. Va. Filed Nov. 16, 1905. Serial No. 287,681.



Claim.—1. A device of the character described comprising two pivotally-connected members, a hand-lever pivoted to one of said members and an adjustable link connection between said hand-lever and the other of said members.

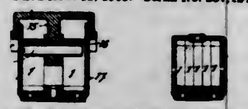
2. A device of the character described comprising two swinging jaw members, a cross-bar adjustably and pivotally connecting said members, a handle upon one of said members, a hand-lever pivoted to the other of said members, and a link connecting said hand-lever and the member having said handle.

3. A device of the character described comprising two swinging jaw members, a cross-bar adjustably and pivotally connecting said members, a handle upon one of said members, a hand-lever pivoted to the other of said members, and an adjustable link connection between said hand-lever and the member carrying said handle.

4. A device of the character described comprising a pair of jaw members, a pivot-pin for pivotally connecting the same, a hand-lever upon one of said members, a link connecting said hand-lever and the other of said members, a pivot-pin for pivoting said link to said member, and a spring upon the latter having its ends or arms connected to said pivot-pins, substantially as shown and described.

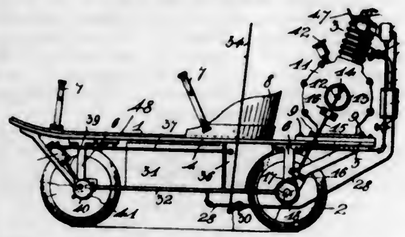
5. A device of the character described comprising jaw members, a cross-bar pivotally connecting said members and formed with a series of apertures, a pivot-pin coacting with said apertures to adjustably connect said bar to one of said members, a hand-lever pivoted to one of said members, a link connecting said hand-lever and the other of said members, said link being formed with a series of apertures, a pin inserted in one of said apertures to adjustably connect said link to said member, and a spring upon the latter member having its ends or arms engaged with said pivot-pins, substantially as described and for the purpose set forth.

823,384. **SPRING-WHEEL.** GEORGETTE BARDET, St.-Lou-Tavéray, France. Filed Nov. 13, 1905. Serial No. 287,134.



Claim.—In a wheel having an elastic tire, the combination of a hollow felly having two lateral cheeks and a median rib which form an E-shaped cross-section, pins secured to the median rib, and two undulated elastic rims the inner loops of which pass round the said pins and are capable of moving freely inward toward the bottom of the felly while the outer loops can slide freely between the said pins.

823,385. **MOTOR ROLLER-SKATE.** HENRY BEAUFORD, Kansas City, Mo. Filed Oct. 2, 1905. Serial No. 281,040.



Claim.—1. An automobile skate comprising a body having front and rear supporting-wheels, each provided with a gear-wheel, a longitudinal shaft having gear-wheels engaging the first-mentioned gear-wheels, an explosive-motor mounted on the body and having its power-shaft geared to one of the supporting-wheels, and an air-tank and a gasolene-tank for supplying the motor and arranged under the body between the said supporting-wheels.

2. The herein-described automobile skate comprising the body having the rear extension, and front and rear supporting-wheels, each provided with a gear-wheel, the explosive-motor mounted on the rear extension and having the exhaust provided with the valve 46, said valve having the operating-cord 47; the air and gasolene tanks arranged under the body between th supporting-wheels, the supply-pipe leading from the gasolene-tank to the carbureter of the motor and having the valve 30 provided with the operating-cord 34; the longitudinal shaft having the gears engaging those of the supporting-wheels, driving connections between the shaft of the motor and the rear supporting-wheel, and the air-pump under the front portion of the skate-body and connected to and operated by the shaft of the front supporting-wheel.

823,386. **SWING.** WALTON W. BENBURY, Hertford, N. C. Filed Dec. 16, 1905. Serial No. 292,070.



Claim.—1. A swing comprising a supporting-frame, a swing-body suspended thereon, and manually-operated swing-propelling mechanism consisting of an oar fulcrumed on the swing-body and terminally connected with the supporting-frame.

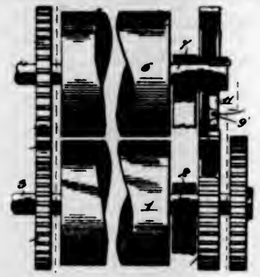
2. A swing comprising a supporting-frame, a swing-body suspended thereon, and manually-operated swing-propelling mechanism consisting of an oar fulcrumed on the swing-body, said oar being connected to the supporting-frame and being jointed between its fulcrum-point and its point of connection with the supporting-frame.

3. A swing comprising a supporting-frame, a swing-body suspended thereon, and provided with an oar-lock, and manually-operated swing-propelling mechanism consisting of an oar mounted in said oar-lock and terminally connected with the supporting-frame.

4. A swing comprising a supporting-frame, a swing-body suspended thereon, and a manually-operated swing-propelling device consisting of an oar fulcrumed on the swing-body, said oar having a pivotal connection at one end with the supporting-frame and being jointed between the fulcrum-point and point of connection with the supporting-frame.

5. A swing comprising a supporting-frame, a swing-body suspended thereon, manually-operated swing-propelling mechanism interposed between the swing-body and the supporting-frame, and fender-rollers on the supporting-frame for arresting and limiting the lateral movement of the swing-body.

823,387. **ROTARY PRINTING-PRESS.** BENJAMIN F. BERRY, St. Louis, Mo., assignor to United Printing Machinery Company, Boston, Mass., a Corporation. Filed Feb. 16, 1905. Serial No. 245,859.



Claim.—1. In a rotary printing-press, the combination of a form-cylinder, an impression-cylinder, means associated with one of said cylinders for driving the second cylinder and arranged to become inactive for driving effect upon the second cylinder during the printing action, and means independent of said first-named means gearing said cylinders to each other, substantially as set forth.

2. In a rotary printing-press, the combination of a form-cylinder, an impression-cylinder, a primary driving gear-wheel rigidly associated with one of said cylinders, a second primary gear-wheel loosely associated with the other cylinder and meshing with the first primary gear-wheel, and means rigidly associated with said last-named cylinder and loosely associated with said loose gear-wheel and arranged to be engaged by said primary driving gear-wheel, substantially as set forth.

3. In a rotary printing-press, the combination of a form-cylinder, an impression-cylinder, a primary driving gear-wheel rigidly associated with one of said cylinders, a second primary gear-wheel loosely associated with the other cylinder and meshing with the first primary gear-wheel, means rigidly associated with said last-named cylinder and loosely associated with said loose gear-wheel and arranged to be engaged by said primary driving gear-wheel, and means independent of said first-named means gearing said cylinders to each other, substantially as set forth.

4. In a rotary printing-press, the combination of a form-cylinder, an impression-cylinder, a primary driving gear-wheel rigidly associated with one of said cylinders, a second primary gear-wheel loosely associated with the other cylinder and meshing with the first primary gear-wheel, and a crank-arm rigidly carried by said second cylinder and having teeth arranged to intermittently engage said primary driving gear-wheel and loosely associated with said loose primary wheel, substantially as set forth.

5. In a rotary printing-press, the combination of a form-cylinder, an impression-cylinder, a primary driving gear-wheel rigidly associated with one of said cylinders, a second primary gear-wheel loosely associated with the other cylinder and meshing with the first primary gear-wheel, a crank-arm rigidly carried by said second cylinder and having teeth arranged to intermittently engage said primary driving gear-wheel, and mutilated secondary wheels rigidly associated with said cylinders and arranged for periodic engagement with each other, substantially as set forth.

6. In a rotary printing-press, the combination of a form-cylinder, an impression-cylinder, a primary driving gear-wheel rigidly associated with one of said cylinders, a second primary gear-wheel loosely associated with the other cylinder and meshing with the first primary gear-wheel, a crank-arm rigidly carried by said second cylinder and having teeth arranged to intermittently engage said primary driving gear-wheel and loosely associated with said loose primary wheel, and means for limiting the movement of said loose primary gear-wheel with respect to said crank-arm, substantially as set forth.

7. In a rotary printing-press, the combination of a form-cylinder, an impression-cylinder, a primary driving gear-wheel rigidly associated with one of said cylinders, a second primary gear-wheel loosely associated with the other cylinder and meshing with the first primary gear-wheel, a crank-arm rigidly carried by said second cylinder and having teeth arranged to intermittently engage said primary driving gear-wheel and loosely associated with said loose primary wheel, and adjustment-screws carried by said loose primary gear-wheel and disposed at opposite sides of said crank-arm, substantially as set forth.

823,388. **SOAP-BUBBLE PIPE.** JOSEPH BLONDE, Lenox Dale, Mass. Filed Feb. 10, 1906. Serial No. 300,523.



Claim.—1. A soap-bubble pipe consisting of a blowpipe having an inclined slotted wall at its discharge end, and an upstanding suds-receptacle extending at an angle to the discharge end of the blowpipe and arranged to discharge on the inclined slotted wall.

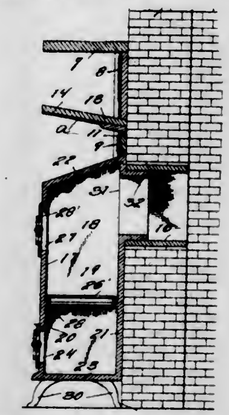
2. A soap-bubble pipe comprising a blowpipe having an inclined wall at its discharge end provided with a slot, and capillary fissures leading to said slot.

3. A soap-bubble pipe consisting of a blowpipe having an inclined wall at the discharge end thereof formed with a vertical slot and provided with downwardly-converging capillary fissures communicating with said slot.

4. A soap-bubble pipe comprising a blowpipe having an inclined and slotted wall at its discharge end, and a suds-receptacle extending upward from the blowpipe and provided with a discharge-vent located close to the slot in the discharge end of the blowpipe.

5. A soap-bubble pipe consisting of a blowpipe having an outlet-opening therein, a suds-receptacle extending upward from the pipe adjacent to the outlet-opening, and a bubble guiding and conducting element extending upward alongside the receptacle.

823,389. **STOVE.** HENRY B. BROOKS, Montgomery, Ala. Filed Sept. 19, 1905. Serial No. 279,152.



Claim.—The combination with a wall having a fireplace therein, of a mantel disposed above the fireplace, supporting-panels for the mantel at opposite sides of the fireplace, a frame surrounding the fireplace, securing devices engaged in the frame and in the wall, a body portion disposed with its rear portion within the inclosure of the frame, said body portion being adapted for the reception of fuel and being arranged for the combustion of said fuel therewithin, a fender secured to the frame between the body portion and the mantel, fireproofing material carried by the under surface of the fender, said

wall having a flue therewithin, a flue-box communicating with the flue, said body portion having a flanged opening in said rearward wall, said flange being disposed within the flue-box and shields secured to the side panels at opposite sides of the body portion.

823,390. **WRENCH.** WILLIAM BUHL, Minneapolis, Minn. Filed June 9, 1905. Serial No. 264,469.



Claim.—1. A wrench having a fixed jaw and a shank, a movable jaw slidable lengthwise the shank, and an operating-rod having threaded connection with the movable jaw and with the shank within the movable jaw, the threads of the latter connection being of greater pitch than the threads of the former connection.

2. A wrench having a shank, a jaw fixed thereto, a jaw movable thereon, a screw-rod having threaded connection with the movable jaw, said rod being formed within the jaw with worm-threads of greater pitch than the threads connecting said rod and the movable jaw, and a projection carried by the shank and arranged to engage said worm-threads.

3. A wrench having a shank, a jaw fixed thereto, a jaw movable thereon, a screw-rod formed with two sets of threads, the pitch of one set being greater than the pitch of the other, one set of threads engaging the movable jaw and the other set being arranged within the movable jaw and engaging the shank

4. A wrench having a shank, a jaw fixed thereto, a jaw movable thereon, a screw-rod formed at its lower end for threaded connection with the jaw, the upper end of the rod within the jaw being formed with a worm-thread, and a projection fixed to the shank and engaging said worm-thread.

5. A wrench having a shank, a jaw fixed thereto, a jaw movable thereon, a screw-rod formed at its lower end for threaded connection with the jaw, the upper end of the rod within the jaw being formed with a worm-thread, a projection fixed to the shank and engaging said worm-thread, and means for revolving the screw-rod.

6. A wrench having a shank, a jaw fixed thereto, a jaw movable thereon, a barrel depending from said movable jaw, a screw-rod having threaded connection with the barrel and extending upwardly therein, a nut fixed on the rod beyond the barrel, that portion of the rod within the barrel being formed with a worm-thread, and a projection secured to the shank and engaging said worm-thread.

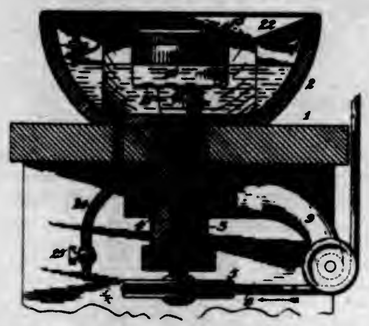
823,391. **APPARATUS FOR APPLYING LIQUID TO COVERS OF RECEPTACLES.** WILLIAM C. BUELER, San Francisco, Cal., assignor, by mesne assignments, to Hermetic Closure Co., Chicago, Ill. Filed Apr. 4, 1904. Serial No. 201,570.

Claim.—1. A device for moistening covers, comprising a hollow rotary head, having a seat for the cover, means for admitting a liquid to said head, and liquid-outlets through said seat.

2. A device for the described purpose, comprising a vessel for holding a liquid, a hollow rotary head, a passage for admitting the liquid to the interior of said head, a seat for the cover of a receptacle, and liquid-outlets through said seat.

3. A device for the described purpose, comprising a vessel for holding a liquid, a hollow rotary head within the same, a passage for admitting liquid to the interior of said head, a seat for the cover of a receptacle, and liquid-outlets through said seat.

4. A device for the described purpose, comprising a hollow open-topped rotary head, adapted to contain a liquid, openings in the upper edge of said head for the escape of such liquid, and a receptacle for containing said liquid in which said head rotates.



5. In a device for the described purpose, a hollow, open-topped, rotary head, a plate for closing said open top, means for admitting liquid to said hollow head, and outlets in the rim of said head for the escape of said liquid.

6. The combination with the stationary liquid-containing vessel, of a hollow head, rotary therein and having an opening for the admission of liquid, and passages formed in the wall of said head for the escape of such liquid.

7. The combination with a stationary liquid-containing vessel, of a hollow rotary head having its upper end formed so as to guide and seat the cover of a receptacle, outlets for liquid at such upper end, and an opening for the admission of liquid to the interior of said head.

8. In a device for the described purpose, a liquid-containing vessel, a rotary head therein, a scoop projecting from said head and communicating with its interior, a seat for covers at the upper end of said head, and passages from the interior through said seat.

9. In combination with a stationary liquid-containing vessel and with a rotary head therein, wings in said vessel for preventing said head from setting up rotary currents within said vessel.

10. In combination with a stationary liquid-containing vessel, and with a rotary head therein, a guard-disk extending inwardly from the rim of said vessel.

11. In combination with a stationary liquid-containing vessel, and with a rotary head therein, a removable structure comprising a guard-disk having wings, substantially as and for the purpose set forth.

12. In an apparatus for the described purpose, a hollow circular rotary head having outlets for the escape of liquid, and a depressible closing plate or piston adjacent to the liquid-outlets and adapted to receive the cover of a receptacle.

13. In an apparatus for the described purpose, a hollow rotary head having openings for the admission and escape of liquid, a depressible closing-plate adjacent to the liquid-outlets, and a spring opposing the depression of said plate.

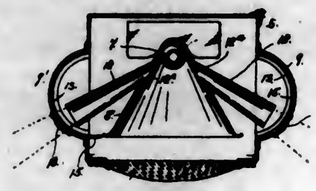
14. In an apparatus for the described purpose, a hollow rotary head having openings for the escape of liquid in combination with a depressible plate forming a seat for the cover of a receptacle, and acting, when depressed, as a piston to force liquid through said openings.

15. In an apparatus for the described purpose, a hollow circular rotary head having openings for the escape of liquid in combination with a depressible plate forming a seat for the cover of a receptacle, and acting, when depressed, as a piston to force liquid through said openings and a spring opposing the depression of said plate.

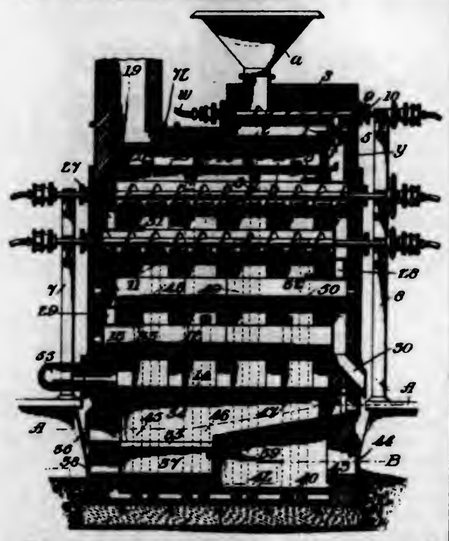
823,392. **LOCOMOTIVE HEAD AND SIGNAL LIGHT.** DAVID BURRFIELD, Denver, Colo. Filed June 19, 1905. Serial No. 265,847.

Claim.—In a locomotive head and signal light, the combination with the main casing, its lens, the reflector and illuminating device, of auxiliary casings located on opposite sides of and projecting laterally beyond the main casing and communicating with the latter, the auxilary casings being curved and having lenses located to receive rays from the illuminating device, the main reflector having openings to allow the light to pass from the illuminating device to the lenses of the auxilary casings, reflecting-tubes entirely concealed by

the main and auxiliary casings, the said tubes surrounding the said openings in the main reflector and being located in line with and between the illuminating device and the auxiliary lenses, and curved slides located in the auxiliary casings and adapted to move to positions in front of the lenses of the auxiliary casings, the said slides having openings provided with colored transparent material adapted to register with the lenses of the auxiliary casings.



823,393. **ROASTING-FURNACE.** ARTHUR W. CHASE, New York, N. Y. Filed July 1, 1903. Serial No. 163,910.



Claim.—1. In a roasting-furnace, the combination of end walls provided with openings, bridge-walls, a series of substantially U-shaped troughs supported within said end walls, conveyers in said troughs, means for driving said conveyers, a plate provided with circular openings adapted to fit around the openings in the end walls, said plate being provided with slots and removable plates each made in two sections fitting around the conveyer-shafts and adapted to close the openings in the end walls, said plates being adjustably secured to the first-named plate, substantially as described.

2. In a roasting-furnace, the combination of the furnace proper, a metallic hopper supported on said furnace, a combined feeder and drier provided with flange resting on said furnace, a conveyer in said feeder and drier, a water-cooled shaft for said conveyer, and gas-check devices, said hopper and the ore contained therein being supported directly upon the masonry walls of the furnace, said iron feeder and drier being supported directly upon the furnace, and said shaft and conveyer being supported upon outside bearings, substantially as described.

3. In a roasting-furnace, the combination of roasting-troughs arranged one above the other, conveyers in said troughs, and removable shelves whereby said furnace may be used either as a muffle-furnace or as a reverberatory furnace, substantially as described.

4. In a roasting-furnace, the combination of end walls, side walls, roasting-troughs supported between said walls, removable shelves located one above said roasting-troughs and one below the same, thereby shielding said troughs from direct contact with the heat-supplying means, and means for delivering air to said roasting-troughs, substantially as described.

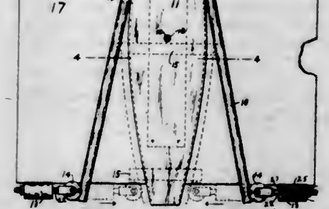
5. In a roasting-furnace, the combination of end walls, side walls, roasting-troughs secured between said walls, a fire-box, removable shelves, one located above said roasting-troughs and one below the same, means for conveying the flame and products of combustion from said fire-box around said roasting-troughs, and means for supplying air to said troughs, substantially as described.

6. In a roasting-furnace, the combination of end walls, side walls, roasting-troughs supported between said walls, a fire-box, removable shelves above and below said troughs, means for supplying air to said roasting-troughs, and a combined feeder and drier located above one of said roasting-troughs, substantially as described.

7. In a roasting-furnace, the combination of end walls, side walls, roasting-troughs therein, a conveyer in each of said troughs, shelves located one above said troughs and the other below the same thereby shielding said troughs from the direct action of the heating means, a combined feeder and drier for said troughs, said feeder and drier being shielded from the direct action of the heating means but being exposed to the action of the heated gases evolved from the roasting ore, and means for carrying off said gases, substantially as described.

8. In a roasting-furnace, the combination of end walls, side walls, a fire-box, a shelf located directly above said fire-box, roasting-troughs located above said shelf, a conveyer in each of said roasting-troughs, discharge-pipes for said roasting-troughs, a shelf located above said roasting-troughs, said shelves serving to shield said roasting-troughs from the direct action of the heating means, means for delivering air to said roasting-troughs, and means for carrying the products of combustion from the fire-box around said troughs, substantially as described.

823,394. **BENDING-MACHINE.** CHARLES H. CLOSTERMAN and GEORGE J. KUHENLE, Cincinnati, Ohio. Filed Sept. 23, 1905. Serial No. 279,639.



Claim.—1. In a bending-machine, the combination of a general machine-frame, a form detachably supported thereon, means to temporarily hold the material to be bent to this form, bending-arms one on each side of the form, racks arranged parallel to each other on which they are carried, guideways provided on the machine-frame in which these racks are supported for movement, and gearing to simultaneously move these racks.

2. In a bending-machine, the combination of a general machine-frame provided with guideways in its front, racks fitted for movement into these ways, bending-arms projecting upwardly from these racks and terminating above the top of the machine, a form detachably supported on this top, a pinion adapted to simultaneously engage and move both racks and means to rotate this pinion alternately in both directions.

3. In a bending-machine, the combination of a general machine-frame, a form detachably supported thereon, means to temporarily hold the material to be bent to this form, bending-arms one on each side of the form provided with yieldingly-held rollers at one of their ends, racks on which they are carried, guideways provided on the machine-frame in which these racks are supported for movement, and gearing to simultaneously move these racks.

4. In a bending-machine, the combination of a general machine-frame provided with guideways in its front, racks fitted for movement into these ways, bending-arms projecting upwardly from these racks and terminating above the top of the machine, a form detachably supported on this top, and an intermediate base removably supported on this latter to adjust the position of the form with reference to the bending-arms, a pinion adapted to simultaneously engage

and move both racks and means to rotate this pinion alternately in both directions.

5. In a bending-machine, the combination of a general machine-frame, oppositely-placed bending-arms, means to temporarily support the material to be bent between them, racks on which these bending-arms are carried, guiding means for them provided on the machine-frame, gearing to move these racks in either direction, machine elements to actuate this gearing, a trip carried by one of the racks and means adapted to be acted upon by this trip for controlling the operation of the machine elements mentioned.

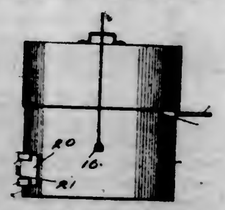
6. A machine for bending elongated pieces of wood in pairs, comprising the combination of a detachably-supported form, bending-arms placed opposite each edge thereof, means to move them to and from the edges of the form and a clamp to hold the wood to be bent to the form in opposition to the action of the bending-arms, said clamp engaging two pieces of wood simultaneously near one end of each.

7. In a bending-machine, the combination of oppositely-placed bending-arms, means to temporarily support the material to be bent between them, mechanism to reciprocate these arms in a rectilinear direction, machinery to operate this mechanism and intermediate means actuated by the bending-arms to control the operation of the machinery mentioned.

8. In a bending-machine, the combination of a general machine-frame, oppositely-placed bending-arms, means to temporarily support the material to be bent between them, racks on which these bending-arms are carried, guiding means for them provided on the machine-frame whereby they are supported parallel to each other, gearing to move these racks in either direction, machine elements to operate this gearing, lever-manipulated means to control this operation and means actuated by the bending-arms to operate the lever mentioned.

9. In a bending-machine, the combination of a general machine-frame, oppositely-placed bending-arms, means to temporarily support the material to be bent between them, racks on which these bending-arms are carried, guiding means for them provided on the machine-frame whereby they are supported parallel to each other, a pinion in engagement with each rack to move them simultaneously, reversible machinery to rotate this pinion in either direction, a clutch to control this machinery, an operatively-connected lever to manipulate this clutch, a shifter-rod to move this lever and means controlled by the movement of the bending-arms to act upon this shifter-rod.

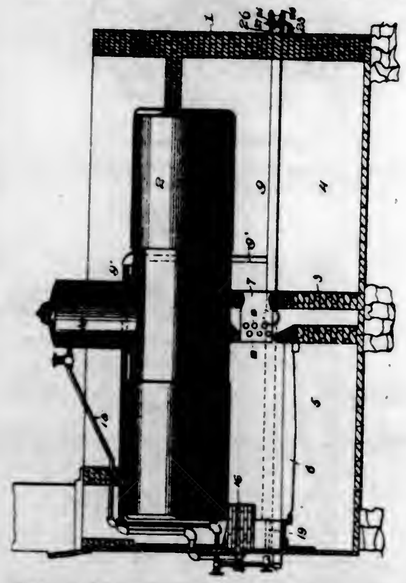
823,395. **COMBINED ASH SIFTER AND BUCKET.** CHARLES W. CONRADT, West Chester, Pa. Filed Dec. 28, 1904. Serial No. 238,009.



Claim.—1. In an ash-sifter, the combination with an outer receptacle having an inverted-T-shaped slot extending downwardly from its upper edge to a point above the bottom thereof, of supporting-strips secured at intervals against the inner face of the receptacle below the slot, and having their upper end portions bent inwardly in a common horizontal plane, a sifting member located within the outer receptacle upon the inwardly-bent portions of the strips, a handle carried by the sifting member and extending outwardly through the horizontal portion of the T-shaped slot, and being of a size to just pass through the stem of the slot, and a cover removably engaged over the outer receptacle and extending downwardly to close the whole of the stem of the T-shaped slot, said handle being movable longitudinally of the horizontal portion of the slot, to oscillate the inner receptacle.

2. An ash-sifter comprising an outer receptacle having a door in its lower portion, and having an inverted-T-shaped slot in its upper portion diametrically opposite from the door, the stem of the slot opening through the upper edge of the receptacle, supports for the sifting member, a handle carried by the sifting member and extending outwardly through the horizontal portion of the slot, and being of a size to just pass through the stem of the slot, said handle being movable longitudinally of the horizontal portion of the slot to oscillate the sifting member, a cover fitted upon the outer receptacle and closing the end of the slot, and a bail pivoted to the outer receptacle at points midway between the vertical plane of the door and the slot, said handle of the sifting member extending beyond the outer receptacle for manipulation to move the receptacle with respect to the bail.

823,396. **FURNACE DRAFT APPARATUS.** WILLIAM N. COX, Montgomery, Ala., assignor to The Mooney Development Co., a Corporation of New Jersey. Filed Aug. 15, 1904. Serial No. 220,813.



Claim.—1. In a draft apparatus, the combination with a furnace inclosure, of a pipe extending therethrough and provided with an opening intermediate its length for supplying air to the interior of said inclosure, a branch pipe between the air-inlet and the discharge-opening leading from said first-mentioned pipe, a nozzle in communication with said branch pipe and extending longitudinally of said first-mentioned pipe beyond the discharge-opening, a pressure-fluid injector discharging through said nozzle, and a baffle arranged in said first-mentioned pipe opposite the discharge-opening thereof.

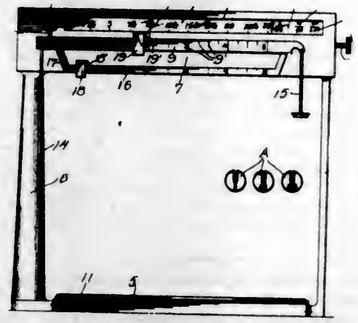
2. In a draft apparatus, the combination with a furnace inclosure, of a pipe for supplying air to the interior thereof, having one end exposed to the atmosphere, a conical valve-body disposed with its longitudinal axis in line with the longitudinal axis of said pipe, eyes carried by said body, and guiding-rods supporting said eyes for maintaining said valve in various positions with respect to the exposed end of said pipe for controlling the amount of air entering the same.

3. In a furnace draft apparatus, the combination with a furnace inclosure, and a header arranged at the front thereof, of an air-supply pipe leading from the atmosphere through said inclosure to the header, and having an opening intermediate its length discharging into said inclosure, a branch pipe leading from the air-supply pipe at a point between the inlet and the discharge-opening and extending to and communicating with the header, nozzles leading from the header into said furnace inclosure, a nozzle leading from said header into the air-supply pipe, means for supplying a pressure fluid to said nozzles for producing a flow of air from the branch pipe through said nozzles, and means in said air-supply pipe for directing the air discharged through the nozzle extending into said pipe through the discharge-opening therein.

4. In a furnace draft apparatus, the combination with a furnace inclosure, of an air-supply pipe extending into the same and formed with a discharge-opening intermediate its length, one end of said air-supply pipe being exposed to the atmosphere and the other being closed, a baffle arranged in said pipe opposite the discharge-opening, a branch pipe leading from the air-supply pipe at a point between the exposed end and the baffle and extending to a point for being heated and communicating with the said air-supply pipe at a point beyond the baffle, and means for creating a flow of air through said branch air-pipe and into said air-supply pipe for causing the air to be delivered against said baffle and to be directed thereby out the said discharge-opening.

5. In a furnace air-feeding mechanism, the combination with a furnace inclosure, of an air-supply pipe extending into said furnace from the rear thereof, the rear end of said pipe being exposed to the atmosphere, said pipe being provided with a discharge-opening intermediate its length for delivering air into the furnace inclosure, a baffle arranged within said air-supply pipe for preventing air from passing longitudinally of the pipe beyond the discharge-opening therein, and for directing air moving within said pipe through said opening, a branch pipe leading from said air-supply pipe at a point between said baffle and the open end of the pipe and extending to a point for being heated, and means for directing air under pressure from said branch pipe into that portion of the said air-supply pipe extending forwardly of the baffle.

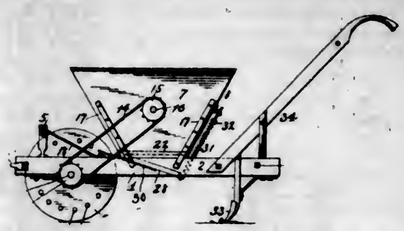
823,397. **PRICE-SCALE.** WILLIAM E. CRAFT, Anderson, Ind., assignor of one-fifth to W. H. Larmore, Anderson, Ind. Filed Aug. 25, 1905. Serial No. 275,803.



Claim.—In a scale, the combination with a base and a standard carried thereby, of a casing carried by the standard and extending laterally therefrom and having a longitudinal opening therein, a laterally-extending loop carried by the casing, a loop engaged with the first-named loop, a scale-arm having an opening therein adjacent to its rearward end in which the second loop is pivotally engaged for vertical movement of the arm upon the loop, a rod pivotally engaged in the scale-arm rearwardly of the loop and extending downwardly therefrom, a vertically-movable platform mounted in the base, connections between the platform and the arm for simultaneous movement thereof in the same direction, a supplemental scale-arm carried by the first-named scale-arm therebelow and lying in spaced relation thereto, a poise slidably mounted upon each scale-arm, a chart located within the casing, said chart having a series of characters thereon disposed in position to be seen through the opening in the casing, an indicator carried by the poise of the first-named scale-arm and arranged for indication of different characters in the series successively when the poise is slid upon the arm, said chart being movable within the casing and having additional series of characters thereon arranged for movement into position for observance through the opening successively as the chart is moved, and means for moving the chart.

823,398. **COMBINED FERTILIZER-DISTRIBUTER AND CULTIVATOR.** SIMEON S. CUDD, Elsie, S. C. Filed Apr. 17, 1906. Serial No. 312,154.

Claim.—1. In a combined fertilizer-distributer and cultivator, the combination with a supporting-frame, of a hopper arranged thereon, feed-openings formed in the bottom of said hopper, feed-plates, means to adjust said feed-plates to regulate the size of said feed-opening, a distributing-tray pivotally mounted at its forward end below said feed-opening, a spring to support the rear end of said distributing-tray, means to regulate the tension of said spring, trip-arms secured to the forward end of said tray, a tappet-wheel journaled in the supporting-frame of the machine, tappets arranged on said wheel to engage said trip-arms and thereby vibrate said distributing-tray, and means to agitate and force the fertilizer through the feed-opening in the hopper and onto said tray, substantially as described.



2. In a combined fertilizer-distributer and cultivator, the combination with a supporting-frame, of a hopper arranged thereon, feed-openings formed in the bottom of and adjacent to each side of said hopper, feed-plates pivotally mounted at their forward ends on said hopper-bottom, means to adjustably connect the opposite ends of said plates together, whereby the latter may be adjusted to regulate the size of said feed-openings, a distributing-tray pivotally mounted within said feed-opening, trip-arms secured to said tray and projecting forwardly from the same, a spring connected to the rear end of said tray, means to regulate the tension of said spring, a tappet-wheel journaled in the supporting-frame of the machine, tappet-pins arranged on said wheel to engage the trip-arms on said tray and thereby vibrate the same against the tension of said spring, agitating-wheels journaled in said hopper to force the fertilizer through said feed-openings, stirring-arms arranged on the shaft of said wheels, and means to drive said agitating-wheels and stirring-arms, substantially as described.

3. In a combined fertilizer-distributer and cultivator, the combination with a supporting-frame, of a hopper arranged thereon, feed-openings formed in the bottom of and adjacent to each side of said hopper, feed-plates pivotally mounted at their forward ends on said hopper-bottom, means to adjustably connect the opposite ends of said plates together, whereby the latter may be adjusted to regulate the size of said feed-openings, a distributing-tray pivotally mounted within said feed-opening, trip-arms secured to said tray and projecting forwardly from the same, a spring connected to the rear end of said tray, means to regulate the tension of said spring, a tappet-wheel journaled in the supporting-frame of the machine, tappet-pins arranged on said wheel to engage the trip-arms on said tray and thereby vibrate the same against the tension of said spring, agitating-wheels journaled in said hopper to force the fertilizer through said feed-openings, stirring-arms arranged on the shaft of said wheels, a sprocket-wheel fixed on the end of the shaft of said distributing-wheel, a sprocket-wheel fixed on the shaft of said tappet-wheel, a sprocket-chain connecting said sprocket-wheel, a draft-yoke and a clevis-bar arranged on and connected to the side bars of said supporting-frame at their forward ends, cultivator-blades secured to the rear ends of said side bars, and handles secured to said bars and projecting rearwardly from the machine, substantially as described.

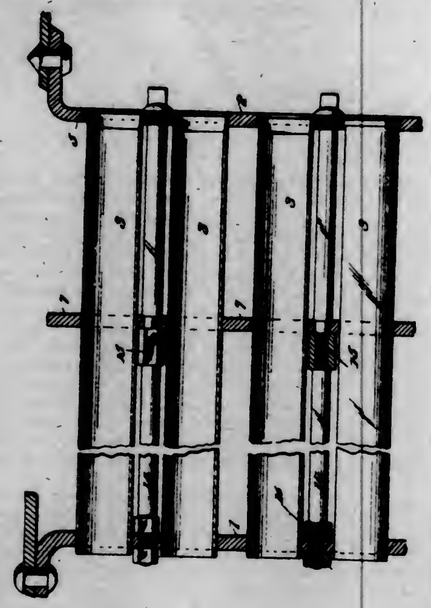
823,399. **STEAM-BOILER.** JOHN A. DOARNBERGER, Roanoke, Va. Filed July 25, 1905. Serial No. 271,190.

Claim.—1. In a steam-boiler, the combination with a flue-sheet having the ends of the flues joined thereto by a suitable rolled joint; an auxiliary reinforcing tube-sheet having the flues rolled therein; and stay-bolts rigidly connected with the main flue-sheet and the auxiliary or reinforcing sheet, substantially as and for the purpose hereinbefore set forth.

2. In a steam-boiler, the combination with a flue-sheet having openings of different diameters to produce annular shoulders and formed with an annular recess between said annular shoulders and the opening of largest diameter in the tube-sheet, flues located within the openings of the largest diameter and with the extreme ends or terminals abutting against the annular shoulders of the tube-sheet and with their circumferential walls in rear of their terminals or ends rolled into the annular recesses in the tube-sheet and into alinement with the opening of smallest diameter of the tube-sheet, substantially as hereinbefore set forth.

3. In a steam-boiler, the combination with a flue-sheet having flue-openings of different diameters and producing annular shoulders and with annular recesses adjacent to said shoulders; tubes located in the tube-sheet and with their extreme ends abutting against the annular shoulders of the tube-sheet; copper packing-rings located in

the annular recesses in the tube-sheet, and the body of the tubes in rear of their extreme ends rolled into the annular recess of the tube-sheet and into contact with the copper packing-rings and in alinement with the openings of smallest diameter in the flue-sheet, substantially as and for the purpose set forth.



4. In a steam-boiler, the combination with a flue-sheet having flue-openings of different diameters to constitute annular shoulders; annular recesses rectangular in cross-section in said sheet adjacent to said shoulders; flues located in the openings of the flue-sheet and with their ends abutting the annular shoulders and rolled into the annular recesses; and a reinforcing flue-sheet adjacent to the main flue-sheet and firmly attached thereto by suitable stay-bolts and having the flues rolled into the flue-openings of said reinforcing flue-sheet, substantially as and for the purpose set forth.

5. In a steam-boiler, in combination with front and back flue-sheets and flues having their ends suitably joined to said sheets; an intermediate flue-sheet disconnected from the boiler with the flues rolled therein, and rigidly tied or fixed in relation with the front and rear tube-sheets by stay-bolts, substantially as hereinbefore set forth.

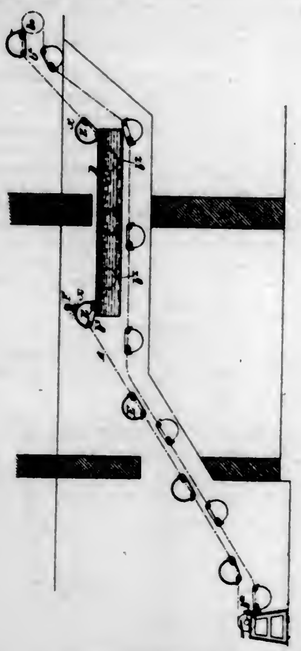
823,400. PLATE COOLING AND CONVEYING APPARATUS. LOUDEN B. EDGAR, Philadelphia, Pa., assignor to The Link Belt Engineering Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Jan. 18, 1904. Serial No. 189,543.

Claim.—1. The combination of an endless conveyer, a tank through which the carrying-run of the conveyer passes, an air-blast pipe at the delivery end of the tank, means for automatically controlling the flow of air through the pipe so that a plate carried by the conveyer will pass through the tank and be cooled and then subjected to a blast of air which is allowed to escape from the pipe while the plate is crossing its path, substantially as described.

2. The combination of an endless conveyer, plate-carriers mounted on the said conveyer, a tank through which the carrier on the chain passes, an air-blast pipe at the delivery end of the tank, and a valve for controlling the flow of air through the pipe, said valve being operated by the conveyer, substantially as described.

3. The combination in an endless conveyer, of two chains, transverse rods connecting the chains, a plate-carrying frame pivoted to one of the cross-bars of the chain and slotted for the free passage of another cross-bar so that the chain can have freedom in passing around guides, the said frame being curved for the reception of the plate and flanged at each edge to hold the plate in a fixed position, and a tank, with means for directing the conveyer through the tank, substantially as described.

823,400.



823,401. ROPE-FASTENING FOR WINDING-DRUMS. WALTER FERRIS, South Milwaukee, Wis., assignor to The Bucyrus Company, South Milwaukee, Wis., a Corporation of Wisconsin. Filed Aug. 2 1906. Renewed May 16, 1906. Serial No. 317,166.



Claim.—1. The combination with a winding-drum having a transverse hole, of a rope and a wedge securing said rope within said hole.

2. The combination with a winding-drum having a transverse hole and corrugations on the interior thereof, of a rope and a wedge pressing said rope against said corrugations.

3. The combination with a winding-drum having a plurality of transverse holes, of a rope and wedges securing said rope within said holes.

4. The combination with a winding-drum having a plurality of transverse holes and corrugations therein, of a rope and wedges pressing said rope against said corrugations.

5. The combination with a winding-drum having two transverse holes at one end and a groove in the winding-surface connecting the same, of a rope within said holes and groove.

6. The combination with a winding-drum having two transverse holes at one end opening into the winding-surface, of a rope within said holes and passing along said winding-surface from one opening to the other.

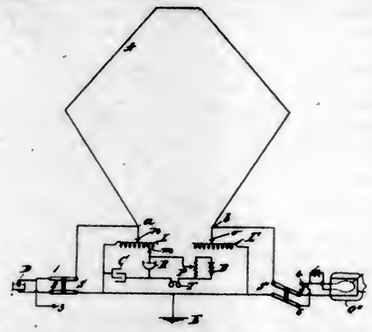
7. A winding-drum having a plurality of transverse holes at one end.

8. A winding-drum having a transverse hole and corrugations therein.

9. A winding-drum having two transverse holes at one end and a groove in the winding-surface connecting the same.

10. A winding-drum having two transverse holes at one end opening into the winding-surface.

823,402. STATIC VALVE FOR WIRELESS-TELEGRAPH SYSTEMS. LEE DE FOREST, New York, N. Y. Filed Dec. 9, 1905. Serial No. 291,067.



Claim.—1. In a wireless-telegraph receiving system, the combination with an oscillation-detector of an electrolytic static valve.

2. In a wireless-telegraph receiving system, an oscillation-detector and an electrolytic static valve so associated therewith as to protect the same from static effects.

3. In a wireless-telegraph receiving system, a receiving-antenna, an inductance included therein, a tuned receiving-circuit associated with said inductance, an oscillation-detector in said tuned receiving-circuit, and means offering greater opposition to electric currents of one character than to electric currents of different character connected between the earth and a point in said antenna above the point of connection of said inductance to said antenna.

4. In a wireless-telegraph receiving system, an oscillation-detector, and means offering greater opposition to electric currents of one polarity than to electric currents of the opposite polarity so associated with said detector as to protect said detector from the effects of the currents of that polarity to which said means offers the greater opposition.

5. In a wireless-telegraph receiving system, an oscillation-detector, and an asymmetric resistance so associated therewith as to protect the same from static effects.

6. In a wireless-telegraph receiving system, an oscillation-detector, a static valve connected therewith and means for reversing the connections of the terminals of said static valve with said oscillation-detector.

7. In a wireless-telegraph receiving system, an oscillation-detector, an asymmetric resistance so connected therewith as to protect the same from static effects, and means for reversing the connections of the terminals of said asymmetric resistance with said oscillation-detector.

8 In a wireless-telegraph receiving system, an oscillation-detector, and an electrolytic asymmetric resistance so associated therewith as to protect the same from static effects.

9. In a wireless-telegragph receiving system, an oscillation-detector, an electrolytic asymmetric resistance so connected therewith as to protect the same from static effects, and means for reversing the connections of the terminals of said electrolytic asymmetric resistance with said oscillation-detector.

10. In a wireless-telegraph receiving system, a receiving-antenna, an oscillation-detector associated therewith, and an electrolytic static valve connected between the earth and a point in said antenna above the point of association of said detector with said antenna.

11. In a wireless-telegraph receiving system, a loop antenna, an inductance included in each side thereof, an oscillation-detector associated with said loop antenna, a connection from each side of said loop antenna around each said inductance to earth and a static valve in each said connection.

12. In a wireless-telegraph receiving system, a loop antenna, an oscillation-detector associated therewith, a static valve associated with each side thereof, and means for reversing the connections of each said static valve with its respective side of said loop antenna.

13. As a static valve for a wireless-telegraph receiving system, an electrolytic asymmetric resistance.

14. As a static valve for a wireless-telegraph receiving system, an asymmetric resistance.

15. In a wireless-telegraph receiving system, a loop antenna, an inductance included in each side thereof, an oscillation-detector associated with said loop antenna, a connection from one side of said loop antenna around one inductance to earth and a static valve in said connection.

16. In a wireless-telegraph receiving system, a loop antenna, an inductance included in each side thereof, a tuned receiving-circuit associated with said loop antenna, an oscillation-detector in said tuned receiving-circuit, and a static valve connected between the earth and a point in said antenna above the point of connection of said inductance to said antenna.

17. In a wireless-telegraph receiving system, a receiving-antenna, an inductance included therein, a tuned receiving-circuit associated with said inductance, an oscillation-detector in said tuned receiving-circuit, and a static valve connected across the terminals of said inductance.

823,403. FULCRUM FOR BRAKE-BEAMS. HARRY W. FROST, Detroit, Mich., assignor to Chicago Railway Equipment Company, Chicago, Ill., a Corporation of Illinois. Filed Mar. 1, 1906. Serial No. 303,677.



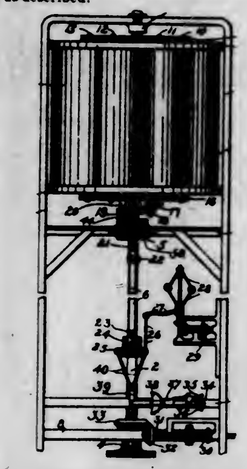
Claim.—1. In a brake-beam, the combination with flanged beam members, of a two-part fulcrum, each part consisting of a jaw and a head, said head portion fitting within the flanges of the beam members, and provided with an overlapping portion for coöperating with its companion, and a rivet passing through said head portions and said beam members; substantially as described.

2. In a brake-beam, the combination with two channels whose flanges are presented inwardly, and a two-part fulcrum, each part comprising a jaw and a head, the head of one fulcrum part fitting within the flanges of one of the beam members, and the head of the other fulcrum part fitting within the flanges of the other beam member, said heads being constructed so as to overlap each other, the overlapping portions being formed with registering openings, and a rivet passing through the beam members and registering openings in said head portions; substantially as described.

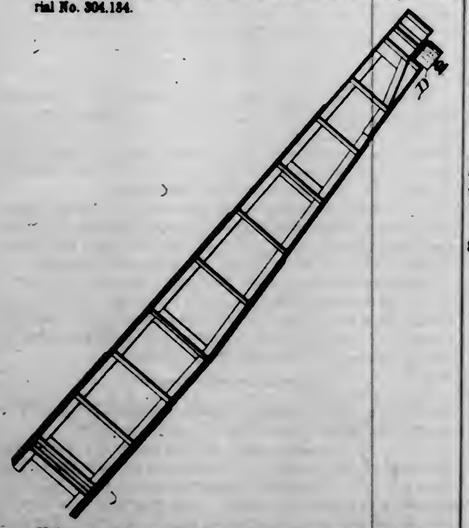
823,404. WIND-WHEEL. ELAN Q. FULLER and ELMER P. JOHNSTON, Milan, Mich. Filed Dec. 13, 1905. Serial No. 291,587.

Claim.—1. In a wind-wheel, the combination with the blades, of the vertical shafts secured to the blades, sprockets secured to the ends of the said vertical shafts, the chains engaging all said sprockets and compelling said blades to move simultaneously, a horizontal shaft 19, and gearing connecting said shaft 19 and one of said vertical shafts, a vertical main shaft, a rack-bar arranged to slide upon the said main shaft and to revolve with it, a pinion on said shaft 19, engaging the rack of said rack-bar, means for securing said rack-bar movably on said main shaft, a bearing constructed to hold said shaft and rack-bar rotatively, a governor, and connecting devices whereby the movements of the governor actuate the said rack-bar, substantially as described.

3. In a wind-wheel, the combination with the blades, of the vertical shafts secured to the blades, sprockets secured to the ends of the said vertical shafts, the chains engaging all said sprockets and compelling said blades to move simultaneously, a horizontal shaft 19, and gearing connecting said shaft 19 and one of the said vertical shafts, a vertical main shaft, a rack-bar arranged to slide upon the said main shaft and to revolve with it, a pinion on said shaft 19 engaging the rack of said rack-bar, means for securing said rack-bar movably on said main shaft, a bearing constructed to hold said shaft and rack-bar rotatively, a lever, connecting devices whereby the lever may actuate said rack-bar during its revolution, latching devices adapted to secure the lever, a governor, and connecting devices whereby the movements of the governor actuate the said rack-bar, substantially as described.



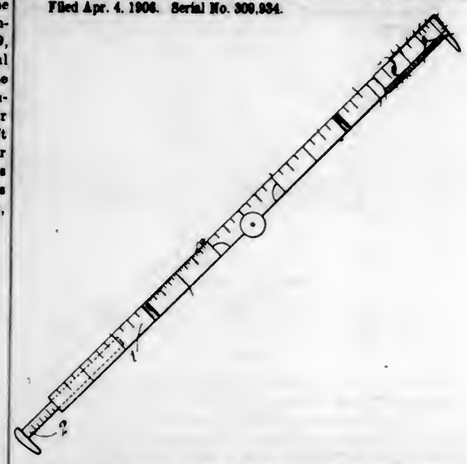
823,405. END SUPPORT FOR LOCOMOTIVE TURN-TABLES. HARRY FULLER, Cleveland, Ohio, assignor to The King Bridge Company, Cleveland, Ohio, a Corporation of Ohio. Filed Mar. 5, 1906. Serial No. 304,184.



Claim.—1. A locomotive turn-table having an end support comprising two independent truck-frames, each pivotally mounted so as to be capable of vertical oscillation.

2. A locomotive turn-table having an end support comprising a pair of independent trucks, each pivotally mounted to the table-frame, and each having a supporting-wheel on each side of its supporting-pivot.

823,406. RULE-MARKER. JOHN L. GASTINEAU, Alhambra, Cal. Filed Apr. 4, 1906. Serial No. 309,934.



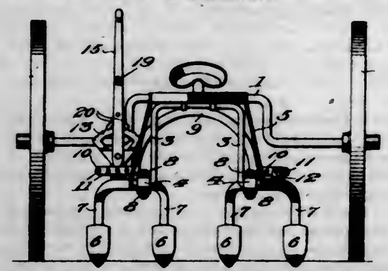
Claim.—1. A new article of manufacture comprising a sleeve adapted to slide upon the end of a rule said sleeve having a rectangular opening upon the lower edge thereof to receive a pencil, a spring-latch secured upon the upper edge of the sleeve adapted to engage a slot in the free end of the sleeve and to engage a recess in the end of the pencil within the sleeve.

2. An article of manufacture a rule-marker comprising a rectangular sleeve having an opening in one end thereof to receive the end of a rule, the other end of the sleeve provided with a slot, the lower edge of said sleeve having an opening near the end thereof, a spring-latch bent at an angle secured upon the upper edge of the sleeve and a pencil removably secured in the said opening of the sleeve.

3. A rule-marker comprising a rectangular sleeve opened at one end to receive the end of a rule and the opposite end of said sleeve provided with a slot, the lower edge of the sleeve having an opening near the end thereof, a pencil having a groove or recess and a spring-latch secured at one end to the sleeve and the opposite end of said latch having a lip adapted to reciprocate through the said slot and to engage the groove or recess in the pencil.

4. A rule-marker comprising a rectangular sleeve opened at one end to receive the end of the rule and provided with a slot in the opposite end thereof, the lower edge of the sleeve near the end thereof having an opening, a spring-latch secured to the sleeve carrying a lip upon the free end thereof, a pencil having a groove therein removably secured within the opening near the end of the sleeve, the said groove or recess adapted to receive the lip upon the said spring and means for retaining the sleeve upon the end of the rule.

823,407. CULTIVATOR. WILLIAM A. GILLENTINE, Goldthwaite, Tex. Filed Nov. 4, 1905. Serial No. 285,884.



Claim.—1. A cultivator comprising shovel-gangs, and a lever-and-ratchet mechanism mediately connected to one gang and immediately connected to the other gang, said lever when locked to the ratchet operating to simultaneously adjust the gangs in the same direction and when unlocked upon the ratchet serving to relatively adjust the gangs in opposite directions.

2. A cultivator comprising shovel-gangs movably supported on the frame, an arch-bar adjustably connected to one of said gangs, and lever-and-ratchet mechanism between the arch-bar and the remaining gang, the ratchet member of said mechanism being connected to the shovel-gang and the lever of said mechanism being connected to the arch-bar.

3. A cultivator comprising shovel-gangs movably supported on the frame, an arch-bar adjustably connected to one of said gangs, a ratchet member connected to the other gang, a lever pivotally supported on the ratchet member and adjustably connected to the adjacent end of the arch-bar, and means for securing said lever and ratchet member together.

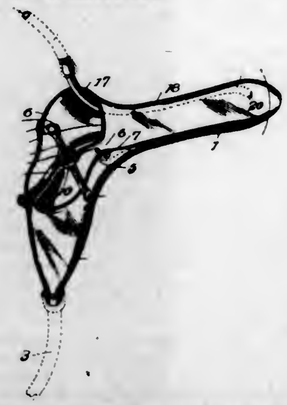
4. A cultivator comprising shovel-gangs, an arch-bar connected to one of the gangs, a lever-and-ratchet mechanism, and a connection between said mechanism and one of the gangs, and a second connection between said mechanism and the arch-bar, said connections serving in the operation of the lever when locked to the ratchet to simultaneously adjust the gangs in the same direction, and when unlocked from the ratchet to relatively adjust the gangs in the opposite directions.

823,408. GUARDED CASTER. ALONZO F. HASSY, New Orleans, La. Filed Oct. 4, 1905. Serial No. 281,293.



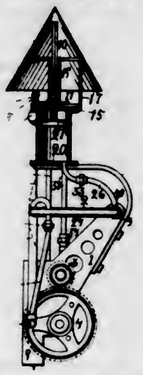
Claim.—The combination with a caster provided with a cup-shaped insect-guard having a corrugated internal wall, said wall being adapted to confine a liquid.

823,409. VAGINAL IRRIGATOR. THOMAS W. HEUSTON, Coffeyville, Kans., assignor of one-half to L. D. Winfers, Coffeyville, Kans. Filed Dec. 18, 1905. Serial No. 292,376.



Claim.—A speculum comprising a lower rigid bill-shaped jaw having a funnel-shaped member in communication with its inner free end, an upper jaw pivoted thereto and of a shape to correspond so that the edges of the outer ends of the jaws meet, an arm rigidly carried by the upper jaw and having an elongated opening intermediate its ends, a bolt pivotally connected to the lower rigid jaw and having a screw-threaded portion passing through the elongated opening in the arm, a thumb-nut carried by the bolt above the arm, and a medicine-supplying tube secured to the inner face of the upper jaw and extending adjacent the outer end of the jaw, the outer end of said tube being turned slightly downwardly and provided with spraying-openings.

823,410. WINDMILL-LUBRICATOR. CHARLES A. HOFF, Blair, Nebr. Filed Dec. 26, 1905. Serial No. 293,356.



Claim.—1. The combination of a cylindrical reservoir, a piston in said reservoir, a square piston-rod, a support having a square aperture to receive the piston-rod, and a nut threaded on said piston-rod.

2. A force-feed machine-lubricator having in combination, a cylindrical lubricant-reservoir with ducts leading to the machine-bearings, a piston in said reservoir, the piston-rod having a threaded part and a part square in cross-section disposed loosely through a square guide-aperture in a support-bar, a nut mounted on the threaded part of the piston-rod between the piston-head and support-bar.

3. A force-feed windmill-lubricator having in combination a cylindrical lubricant-reservoir in communication with the mill-bearings, a piston fitted in the reservoir, the piston-rod having a threaded portion and a part square in cross-section, a bar attached to said reservoir and having a square aperture to loosely receive and guide the square part of the piston-rod, a pin-toothed wheel-nut mounted on the threaded part of the piston-rod between the guide-bar and the piston-head, a toggle-jointed gravity-return pawl to engage the pin-toothed wheel-nut and a line connected to actuate the pawl.

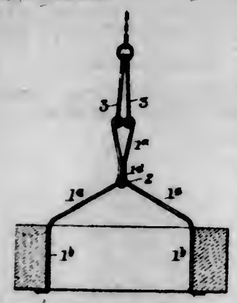
4. A force-feed windmill-lubricator having in combination a cylindrical lubricant-reservoir with ducts leading to the bearings of the mill, a piston in the reservoir, the piston-rod having a threaded part and a part square in cross-section, a support-bar having a square aperture to loosely receive the square part of the piston-rod, a pin-toothed wheel-nut mounted on the threaded part of the piston-rod and a sleeve-strut interposed between the wheel-nut and the support-bar on said piston-rod.

5. A force-feed windmill-lubricator having in combination a cylindrical lubricant-reservoir with communicating ducts leading to the bearings of the mill, a piston in said reservoir, the piston-rod having a threaded part and a part square in cross-section, a support-bar having a square aperture to loosely receive the square part of the piston-rod, a pin-toothed wheel-nut mounted on the threaded part of the piston-rod and a sleeve-strut interposed between the wheel-nut and the support-bar on the piston-rod, a gravity-return knee-jointed pawl to engage the pin-toothed wheel-nut and a dependent line connected to actuate the pawl.

823,411. GRAPPLING-TONGS. WILLIAM J. JONES, Franklin, Ind. Filed May 18, 1905. Serial No. 261,009.

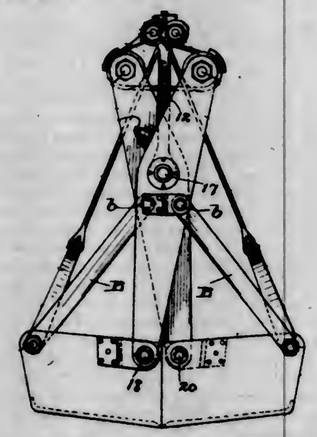
Claim.—1. A grappling device comprising two pivoted or connected-together hook or jaw members having their point of connection constituted of eyes or loops formed therewith and arranged side by side and of a pivot inserted through said eyes or loops, said members each having an arm inclined outward and upward above said point of connection and a leg having an upward and inward inclined portion and a practically right-lined lower portion terminated

into an outward-extended horizontal portion, whereby said hook or jaw members are rendered effective either with their lower terminals presented inward toward each other or outward away from each other for the purpose disclosed.



2. A grappling device comprising two connected-together hook or jaw members having their point of connection constituted of eyes or loops formed therewith and arranged side by side and of a pivot inserted through said eyes or loops, said members each having an arm inclined outward and upward above said point of connection and a leg having an upward and inward inclined portion and a practically right-lined lower portion terminated into an outward-extended horizontal portion, and link members effecting connection between the upper ends of said arms.

823,412. CLAM-SHELL BUCKET. ROBERT W. KALTENBACH, Bedford, and JUSTIN GRIESS, Jr., Cleveland, Ohio. Filed Oct. 25, 1905. Serial No. 284,356.



Claim.—1. In a clam-shell bucket having two trays arranged to swing toward or from each other according as the bucket is opened or closed, the combination of the trays; a bail arranged centrally of the bucket; laterally-spaced levers operatively attached to one of the trays and laterally-spaced levers operatively attached to the other tray, said levers being all pivotally connected with or fulcrumed to the bail and the levers attached to each tray crossing the levers attached to the other tray at the fulcrums of the levers; bars pivotally connected to the trays rearwardly of the levers, and the bars pivotally connected to each tray being pivoted also to the levers attached to the other tray at a point below the axes of the levers, and means for operating the levers, and the relative arrangement of the parts being such that when the bucket is closed the bars attached to the levers secured to one of the trays are wholly arranged at one side of the axes of the bail and the bars attached to the levers secured to the other tray are wholly arranged at the opposite side of the said axis.

2. In a clam-shell bucket having two trays arranged to swing toward or from each other according as the bucket is opened or closed, the combination of the trays; a bail arranged centrally of the bucket; laterally-spaced levers operatively attached to and at the forward end of one of the trays and laterally-spaced levers operatively attached to and at the forward end of the other tray, said levers being all pivotally connected with or fulcrumed to the bail, and the levers attached to each tray crossing the levers attached to the other tray at the fulcrums of the levers; bars pivoted to one of the trays rearwardly and at the outer sides of the levers attached to the respective tray, and bars pivotally connected to the other tray rearwardly of and at the inner sides of the levers attached to the last-mentioned tray, with the bars extending from the connected tray toward and pivoted also to the levers attached to the other tray at a point below the axes of the levers, and means for operating the levers, all arranged and operating substantially as shown, for the purpose specified.

3. In a clam-shell bucket having two trays arranged to swing toward or from each other according as the bucket is opened or closed, the combination of the trays; a bail arranged centrally o the bucket; levers operatively attached to and at the forward end of one of the trays and levers operatively attached to and at the forward end of the other tray, said levers being all fulcrumed to the bail and the levers attached to each tray crossing the levers attached to the other tray at their fulcrums; bars pivotally connected to the trays rearwardly of the levers, with the bars pivotally supported also below but in suitable proximity to the axes of the levers, and means for operating the levers, and the parts having such relative arrangement that when the bucket is closed the bars attached to the levers secured to one of the trays are wholly arranged at one side of the axis of the bail and the bars attached to the levers secured to the other tray are wholly arranged at the opposite side of the said axis.

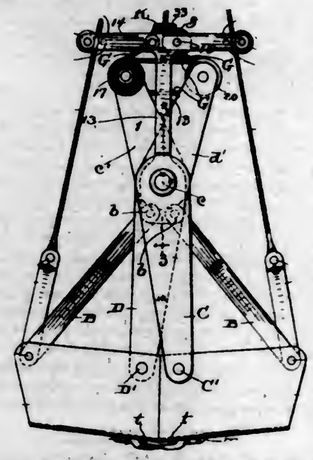
4. In a clam-shell bucket having two trays arranged to swing toward or from each other according as the bucket is opened or closed, the combination of the trays; an upright bail arranged centrally and transversely of the bucket and having end members arranged a suitable distance apart laterally; levers operatively attached to the trays at the forward ends of the trays and pivotally connected or fulcrumed to the lower portions of the end members of the bail; bars pivotally connected to the rear portions of the trays and pivoted to the levers below the fulcrums of the levers, and means for operating the levers, and the pivotal connections between each lever and the connected bar being arranged below the axes of the levers, with the relative arrangement of the parts such that when the bucket is open the bars or links pivotally connected to each tray cross the bars or links pivotally connected to the other tray below the bail and are arranged wholly above the lower surfaces of the levers.

5. In a clam-shell bucket having two trays arranged to swing toward or from each other according as the bucket is opened or closed, the combination of the said trays; an upright bail arranged centrally of the bucket; levers operatively attached to the trays at the forward ends of the trays and pivotally connected or fulcrumed to the bail; bars pivotally connected to the rear portions of the trays and pivoted to the levers below the fulcrums of the levers, and means for operating the levers, and the pivotal connection between each bar and the connected lever at one side of the axes of the levers and the pivotal connection between each bar and the connected lever at the opposite side of the axes of the levers being arranged both below but at opposite sides respectively of and equidistantly from the said axes so that when the bucket is open the bars or links pivotally connected to each tray cross the bars or links pivotally connected to the other tray below the bail.

6. In a clam-shell bucket having two trays arranged to swing from or toward each other according as the bucket is opened or closed, the combination of the trays; a bail arranged centrally of the bucket and provided at the top with sheaves; upright levers operatively attached to the forward portions of the trays and supported from the bail; sheaves borne by the levers at the upper ends of the levers; bars pivoted at one end to the rear portions of the trays and pivotally supported at the other end; cables attached to the upper portion of the bail, thence leading to and around the sheaves of the lever or levers attached to one of the trays, thence leading to and in under the sheaves of the lever or levers attached to the other tray, and thence in under the aforesaid sheaves of the bail, and guards supported from the bail and arranged to prevent displacement of the cables from the last-mentioned sheaves.

7. In a clam-shell bucket having two trays arranged to swing from or toward each other according as the bucket is opened or closed, the combination of the trays; a bail arranged centrally of the bucket and having end members which are arranged a suitable distance apart laterally and an upper central portion comprising two parallel axles extending between the end members of the bail; two upright levers operatively attached to opposite sides respectively of the forward portions of one of the trays and fulcrumed to the different end members respectively of the bail; two upright levers operatively attached to opposite sides respectively of the other of the said trays and fulcrumed to the different end members respectively of the bail and crossing the first-mentioned levers, with the axes of all of the said levers parallel with the axes of the trays; sheaves borne by the levers at the upper ends of the levers; bars pivotally connected at one end to the rear portions of the trays and pivotally supported at the other end; two sheaves on one of the aforesaid axles a suitable distance apart longitudinally of the respective axle; cables attached to the other of the aforesaid axles, thence leading to and around the sheaves of the levers attached to one of the trays, thence leading to and in under the sheaves of the levers attached to the other tray, and thence in under the aforesaid axle-sheaves, and guards mounted on the last-mentioned axles and arranged to prevent displacement of the cables from the axle-sheaves.

823,413. CLAM-SHELL BUCKET. ROBERT W. KALTENBACH, Bedford, and JUSTIN GRIESS, Jr., Cleveland, Ohio. Filed Nov. 13, 1905. Serial No. 287,108.



Claim.—1. In a clam-shell bucket having two suitably-supported trays arranged to swing from or toward each other according as the bucket is opened or closed, the combination of the trays; a shaft arranged centrally of the bucket and parallel with the axes of the trays and operatively provided centrally between the ends thereof with a lever for actuating the shaft, which shaft is also operatively provided with depending levers which are operatively attached to one of the trays; two sleeves loosely mounted on the shaft between the first-mentioned lever and opposite ends respectively of the shaft and operatively provided with depending levers which are operatively attached to the other tray, which sleeves are also operatively provided with levers for actuating the sleeves; an upright bail having laterally-spaced end members loosely embracing the sleeves; bars pivotally connected at one end to the trays and pivotally supported at the other end, and means for operating the first-mentioned lever of the shaft and the last-mentioned levers of the sleeves.

2. In a clam-shell bucket having two suitably-supported trays arranged to swing from or toward each other according as the bucket is opened or closed, the combination of the trays; a shaft arranged centrally of the bucket and parallel with the axes of the trays, which shaft is operatively provided with depending levers which are operatively attached to one of the trays; two sleeves loosely mounted on and spaced longitudinally of the shaft and operatively provided with depending levers which are operatively attached to the other tray; sleeve-actuating levers operatively mounted on the sleeves; an upright bail having laterally-spaced end members loosely embracing the sleeves; a shaft-actuating lever operatively mounted on the shaft between the sleeves; bars pivotally connected at one end to the trays and pivotally supported at the other end, and means for operating the last-mentioned lever of the shaft and the last-mentioned levers of the sleeves.

3. In a clam-shell bucket having two suitably-supported trays arranged to swing from or toward each other according as the bucket is opened or closed, the combination of the trays; a shaft arranged centrally of the bucket and operatively provided with a lever for actuating the shaft, which shaft is also operatively provided with depending levers which are operatively attached to one of the trays; two sleeves loosely mounted on the shaft and operatively provided with depending levers which are operatively attached to the other tray, which sleeves are also operatively provided with levers for actuating the sleeves; an upright bail loosely embracing the sleeves; bars pivotally connected at one end to the trays and pivotally supported at the other end, and means for operating the first-mentioned lever of the shaft and the last-mentioned levers of the sleeves.

4. In a clam-shell bucket having two trays arranged to swing from or toward each other according as the bucket is opened or closed, the combination of the trays; a shaft arranged centrally of the bucket and operatively provided with a lever for actuating the shaft, which shaft is also operatively provided with depending levers which are operatively attached to one of the trays; two sleeves loosely mounted on and spaced longitudinally of the shaft and operatively provided with depending levers which are operatively attached to the other tray, which sleeves are also operatively provided with levers for actuating the sleeves; bars pivotally connected at one end to the trays and pivotally supported at the other end; a single cable operatively connected with the first-mentioned lever of the shaft and the last-mentioned levers of the sleeves, and cables connected to the rear portions of the trays.

5. In a clam-shell bucket having two opposite trays arranged to swing from or toward each other according as the bucket is opened or closed, the combination of the trays; levers operatively attached to one of the trays; levers operatively attached to the other tray; an upright bail instrumental in supporting the levers and provided at the upper end with at least two arms overhanging the sweep of opposite trays respectively; bars pivotally connected at one end to the trays and pivotally supported at the other end; means for operating the levers; guide-sheaves supported from the aforesaid arms, and cables connected to the rear portions of the trays and leading upwardly from the trays to and guided by the said sheaves.

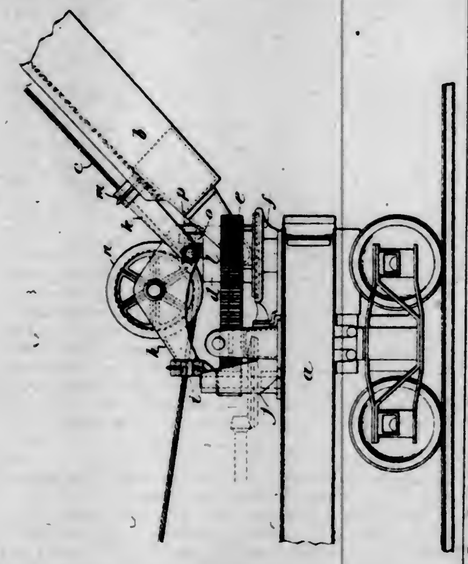
6. In a clam-shell bucket having two suitably-supported opposite trays arranged to swing from or toward each other according as the bucket is opened or closed, the combination of the trays; a shaft arranged centrally of the bucket and operatively provided with a lever for actuating the shaft, which shaft is also operatively provided with depending levers which are operatively attached to one of the trays; two sleeves loosely mounted on the shaft and operatively provided with depending levers which are operatively attached to the other tray, which sleeves are also operatively provided with levers for actuating the sleeves; two guide-sheaves supported from the last-mentioned levers and arranged equidistantly from the axis of the shaft; an upright bail loosely embracing the sleeves; two guide-sheaves supported from the first-mentioned lever of the shaft and arranged equidistantly from the shaft; bars pivotally connected at one end to the trays and pivotally supported at the other end, and a cable operatively connected with the first-mentioned lever of the shaft and last-mentioned levers of the sleeves, said cable being attached at one end to the upper end of the bail and guided by all of the aforesaid sheaves.

7. In a clam-shell bucket having two opposite suitably-supported trays arranged to swing from or toward each other according as the bucket is opened or closed, the combination of the said trays; an upright bail arranged centrally of the bucket; levers operatively attached to the trays and supported from the bail and arranged with their axes coincident with the axis of the bail; bars pivotally connected at one end to the trays rearwardly of the levers and pivoted at the other end to the bail, and means for operating the levers, and the pivotal connection between the bail and each bar extending to one of the trays from the bail and the pivotal connection between the bail and each bar extending from the bail to the other tray being arranged below but at opposite sides respectively of the axis of the bail.

823,414. FAIR-LEAD FOR HOISTING-CABLES. SAMUEL L. G. KNOX, Milwaukee, and WILLIAM B. MAGIE, South Milwaukee, Wis., assignors to The Bucyrus Company, South Milwaukee, Wis., a Corporation of Wisconsin. Filed Oct. 30, 1905. Serial No. 283,671.

Claim.—1. In power-shovel and like apparatus having a swinging boom and in which the boom and supporting-body have relative movement, a hoisting-cable leading over said boom, an intermediate sheave for guiding said cable, a frame in which said sheave is journaled, and a guide-arm connected to said sheave-frame, said frame and arm being supported by the respective relatively moving parts, whereby the sheave will be caused to lie in the plane of the cable for all positions of the boom.

2. In power-shovel and like apparatus, a guide-sheave for the hoisting-cable, a frame supporting said sheave and journaled on an axis substantially parallel with one of the cable-leads and a guide-arm connected to said frame and to the swinging boom, whereby said sheave will be caused to lie in the plane of the cable-leads for all positions of the boom.



3. In power-shovel and like apparatus, a fair-lead for the hoisting-cable, comprising a sheave-stand supported upon an axis substantially parallel with one of the cable-leads, and an arm connected to said stand and constrained to remain in substantial parallelism with the other lead of the cable, whereby the sheave is caused to lie in the plane common to both leads of the cable for all positions of the boom.

4. A fair-lead for power-shovel and like apparatus, comprising a guide-sheave mounted near the foot of the boom, and means for moving said sheave to lie in the planes defined by the cable-leads for all positions of the boom.

5. A fair-lead for power-shovel and like apparatus, comprising a guide-sheave, a frame in which said sheave is journaled mounted near the foot of the boom, and means for moving said frame to cause the sheave to lie in the planes defined by the cable-leads for all positions of the boom.

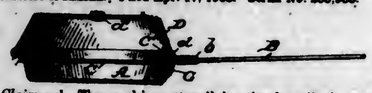
6. A fair-lead for power-shovel and like apparatus, comprising a sheave for guiding the hoisting-cable from the foot of the boom, a pivoted frame in which said sheave is journaled, a guide-arm connected to said frame, and means for moving said frame and guide-arm concurrently with the boom, to cause the sheave to lie in the planes defined by the cable-leads for all positions of the boom.

7. A fair-lead for power-shovel and like apparatus, comprising a sheave for guiding the hoisting-cable from the foot of the boom, a pivoted frame in which said sheave is journaled, a guide-arm connected to said frame, and means for moving said frame and guide-arm concurrently with the boom, to cause the sheave to lie in the planes defined by the cable-leads for all positions of the boom, the axes of rotation of the boom, the sheave-frame and the guide-arm intersecting in a common point.

8. A fair-lead for power-shovel and like apparatus, comprising a guide-sheave for the cable as it leaves the boom, a frame supporting said sheave and journaled on an axis substantially parallel with one of the cable-leads, and a guide-arm connected to said frame and to the swinging boom, the axis of rotation of the boom, the sheave-frame and the guide-arm intersecting in a common point.

9. In power-shovel and like apparatus, having a pair of hoisting-cables running over a swinging boom, a fair-lead for guiding the cables as they leave the boom at its lower end, comprising a sheave having means for guiding the cables, and means for swinging the sheave with the boom so that said sheave shall at all times occupy a plane parallel to that of the cable-leads.

823,415. **COOKING UTENSIL.** ROBERT A. W. KRAMPITZ, Valdez, District of Alaska. Filed Apr. 17, 1905. Serial No. 255,955.



Claim.—1. The cooking utensil herein described, comprising the pan provided on its outer side with the keeper having near its lower end the lateral openings or seats for the lateral studs of the detachable handle, the detachable handle having its side bars provided near their free ends with depending arms fitting on the keeper and with lateral studs or projections engaging with such keeper, the slide movable along the side bars of the detachable handle, the bails, the loops F arranged at the outer side of the frying-pan, the bails journaling in the said loops and resting when turned inward upon the upper edge of the frying-pan, the bread-pan having downturned flanges resting on said bails, and the cover-pan fitting over the bread-pan and the frying-pan and having an opening in its bottom, and the plug, for closing the same, substantially as set forth.

2. The combination with the frying-pan of the bails journaled at one edge in connection with the pan, and adapted to turn inwardly to support the bread-pan and to turn downwardly out of the way when desired, substantially as set forth.

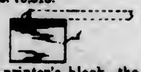
3. The combination with a frying-pan having an upright keeper G closed at its bottom and provided with lateral openings adjacent to said bottom, of the handle having its side bars provided near their free ends with depending arms to fit within the keeper and at the extremities of said arms with the lateral studs or projections to pass through the lateral openings in the keeper, substantially as set forth.

4. A pan provided with a keeper having its opposite side plates provided with seats for engagement by handle-studs, and a handle having arms provided with portions entering the keeper and with lateral studs springing into and out of engagement with the seats in the opposite sides of the keeper, substantially as set forth.

5. The combination with the pan, of the keeper G having lateral openings G^2 and the handle having its side bars provided with depending arms fitting in the keeper and with lateral studs or projections entering the openings G^2, substantially as set forth.

6. The combination in a cooking utensil of the frying-pan, the bails pivoted thereto and adapted to be turned inward to support the bread-pan, the bread-pan resting on such bails, and the cover, substantially as set forth.

823,416. **PRINTER'S BLOCK.** JOHN KYLE, Newark, N. J., assignor to The Challenge Machinery Company, Chicago, Ill. Filed July 31, 1901. Serial No. 70,318.



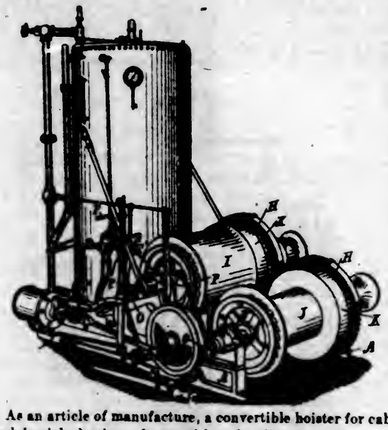
Claim.—1. In a printer's block, the combination of a block proper having a recess opened through the top and through one end, a disk closing the said end of the recess, a screw projecting longitudinally through said recess, and having one end bearing in the block proper, and the other end threaded in said disk, a hook projecting through the upper side of said recess, a slide sleeved loosely on said screw and supporting said hook, a spring sleeved on said screw between said slide and one end of the block proper, and a threaded turning head located on said screw between the other side of said slide and said disk, substantially as set forth.

2. In a printer's block, the combination of a block proper having a recess, a screw secured in said recess, a slide on said screw, a hook on said slide, a turning head threaded on said screw contiguous to said slide and hook, said turning head being let into the back of said slide and hook whereby the hook will overlie the turning head and a spring for pressing the turning head against the slide, substantially as set forth.

823,417. **PORTABLE HOISTER.** ABNER LAMBERT, Newark, N. J. Filed July 23, 1905. Serial No. 271,568.

Claim.—1. As an article of manufacture, a convertible hoister for cableways and derricks having a frame with bearings at opposite sides of the frame, and drums of different diameters with shafts fitted interchangeably to said bearings for shifting or hoisting the load at different rates of speed, as desired.

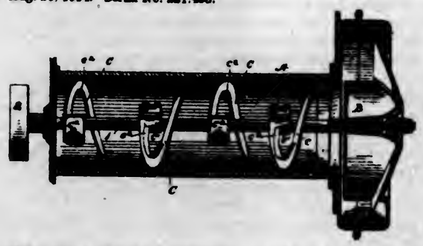
2. As an article of manufacture, a convertible hoister for cableways and derricks having a frame with a plurality of bearings at opposite sides of the frame, a plurality of shafts fitted to said bearings and provided each near one end with a gear-wheel and friction-driver, and drums of different diameters fitted interchangeably to said shafts and friction-drivers.



3. As an article of manufacture, a convertible hoister for cableways and derricks having a frame with a plurality of bearings at opposite sides of the frame, a plurality of shafts fitted to said bearings and provided each near one end with a gear-wheel and friction-driver and near the opposite end with a cross-key and thrust-pin, and drums of different diameters fitted interchangeably to said shafts and friction-drivers, and extending interchangeably to the cross-keys, whereby the drums may be connected with the friction-drivers when the shafts are fitted to the bearings and the thrust-screws are operated.

4. As an article of manufacture, a convertible hoister for cableways and derricks having a frame with bearings at opposite sides of the same, the bearings at one side being provided each with a thrust-screw, and drums of different diameters with shafts fitted interchangeably to said bearings, the larger drums having a concave face and the smaller drums being cylindrical, and the drums thus adapted respectively for hauling the load in cableways and derricks.

823,418. **CONVEYER.** FRANK F. LANDIS, Waynesboro, Pa. Filed Aug. 20, 1904. Serial No. 221,493.



Claim.—1. A conveyer comprising a casing, a driving-shaft having a discharger upon one end, conveyer-sections arranged at intervals throughout its length, each of said sections consisting of a hub and a single arm curved from said hub, first substantially at right angles with the shaft and then in a spiral direction toward the discharger end, substantially as set forth.

2. A conveyer comprising conveyer-sections consisting of a hub having a single spiral arm projecting from one side thereof and a counterbalance-weight mounted upon its opposite side substantially as set forth.

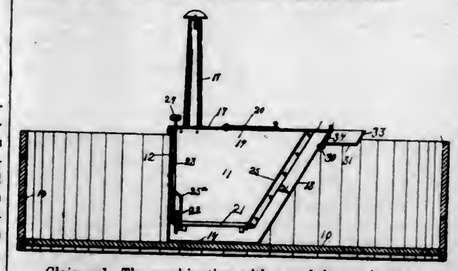
3. In a conveyer, the combination of the shaft having a series of conveyer-sections thereon, each of said conveyer-sections consisting of a hub having an outwardly-curved spiral arm projecting from one side thereof, said sections being arranged with their adjacent arms projecting from the shaft in different directions, substantially as set forth.

4. A conveyer-section comprising a hub carrying an outwardly and forwardly curved arm upon one side thereof, and a counterbalance-weight upon its opposite side in line with the center of gravity of said curved arm, substantially as set forth.

5. In a conveyer, the combination of a shaft, conveyer-sections mounted thereon each comprising a hub having a conveyer-arm formed on one side and projecting substantially at right angles with the shaft and then in a spiral direction, a counterbalance-weight mounted opposite the center of gravity of said arm, and a set-screw for securing said weight to said hub and said section to said shaft, substantially as set forth.

6. A conveyer comprising a conveyer-casing and shaft mounted thereon, a discharger mounted on the outer end of said shaft in a discharger-casing, said discharger-casing communicating with said conveyer-casing, a series of conveyer-arms mounted on said shaft each being formed to extend in a direction substantially at right angles with the shaft for a distance and then curved on a circle from the center of the shaft forwardly, and a counterbalance-weight located on the opposite side of said shaft in a line with the center of gravity of said arm, substantially as set forth.

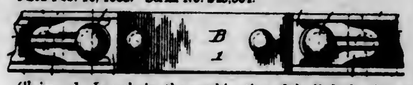
823,419. **TANK-HEATER.** IVAN J. LEE and ENOCH ERICKSON, Marathon, Iowa. Filed July 31, 1905. Serial No. 272,095.



Claim.—1. The combination with a tank-heater having an inclined passage-way extending from its top downwardly and toward the center of the tank-heater and communicating with the ash-pit thereof, lugs on the sides of the tank-heater, a lug at the end of the tank-heater and an ash-tray formed with an open top shaped to fit the end of the tank-heater surrounding the end of the tank-heater adjacent to the top of said passage-way and also shaped to overlap the sides of the tank-heater surrounding the said passage-way and lugs on the tray to pass under the lugs at the sides of the tank-heater.

2. The combination of a tank-heater provided with a passage-way extending from the top to the ash-pit of the heater, lugs on the sides of the tank-heater near the top of the passage-way, a lug at the end of the tank-heater near the top of the passage-way and an ash-tray open at its top and shaped to fit the end of the tank-heater adjacent to the passage-way and to extend around the sides thereof, its central portion designed to rest upon the lug at the end of the tank-heater and extensions on the ash-tray designed to pass under and engage the lugs at the sides of the tank-heater to thereby detachably support the ash-tray on the tank-heater.

823,420. **CHAIN.** CHRISTOPHER W. LEVALLEY, Milwaukee, Wis. Filed Feb. 16, 1905. Serial No. 245,864.



Claim.—1. In a chain, the combination of the links having overlapping side bars perforated near their ends, connecting-pintles arranged to pass through the perforations in the side bars, and a pair of bearing-pieces for each joint of the chain, such pieces being separate from the side bars, having elongated bearings for the pintles arranged to register with the perforations in the side bars and to extend beyond the faces of the side bars to which they are secured, and also having means for attachment to the side bars extending beyond the overlapping end of the side bars, substantially as set forth.

2. In a chain, the combination of the open links having opposite side bars, separate bearing-pieces secured to the outer faces of the side bars, and having bearings alining with the pintle-apertures in the side bars and extending outward beyond the faces of the side bars, and the connecting-pintles arranged to be seated in apertures in the said bearing-pieces and side bars, substantially as set forth.

3. In a chain, the combination of a series of open links, a series of intermediate links having separate side bars, the pintles for uniting the links of the chain, and the separate bearing-pieces secured to the inner faces of the side bars of the intermediate links, the said

bearing-pieces being each formed with a laterally-extending plate arranged to be secured directly to the inner face of one of the side bars of the said intermediate links, the bearing-pieces being also provided with elongated bearings for the connecting-pintles, such bearings extending out beyond the laterally-extending plate of the bearing-piece, and the said elongated bearings being so arranged as to abut end to end, whereby they serve to space apart the side bars of the links to which they are connected, substantially as set forth.

4. In a chain, the combination with the side bar of a link thereof, of a separate bearing-piece formed with a bearing for the pintle and having a supporting bracket or plate, and means for securing the said supporting-bracket directly to the side bar of the link, substantially as set forth.

5. In a chain, the combination of a link having its side bars of channel form, and a separate pintle-bearing secured to the said side bar between the flanges thereof, substantially as set forth.

6. In a chain, the combination of a link having side bars of channel form, a pintle-bearing consisting of a perforated block 4 arranged to lie between the flanges of the side bar, a bracket 7, and a stud 8 carried by the said bracket and arranged to be secured to the side bar of the link, substantially as set forth.

7. The combination of a chain having side bars formed of channel-shaped bars, the flanges of which are arranged to serve as wearing-shoes, substantially as set forth.

823,421. ORNAMENTAL STITCHED FABRIC. RUDOLF LOEB, Camden, N. J. Filed Dec. 9, 1903. Serial No. 184,465.



Claim.—1. An ornamental fabric having open spaces bounded by double rows of stitches paralleling each other, said double rows being arranged some distance apart and having crossing portions between the same, the stitches and crossing portions being formed of a single, continuous thread.

2. An ornamental fabric having open spaces bounded by one or more rows of chain-stitches paralleling each other and arranged some distance apart, said stitches having their loops disposed on one face of the fabric, and crossing portions joining said stitches and disposed on the other face of the fabric, the stitches and crossing portions being formed of a single, continuous thread.

3. An ornamental fabric having open spaces bounded by one or more rows of chain-stitches paralleling each other and arranged some distance apart, said stitches having their loops disposed on one face of the fabric, crossing portions joining said stitches and disposed on the other face of the fabric, the stitches and crossing portions being formed of a single, continuous thread, and an independent thread disposed intermediate said paralleling rows of stitches and confining at intervals series or bunches of the crossing portions of the main thread.

823,422. MACHINE FOR CUTTING TUBULAR BODIES. EUGENE J. LOGAN, Baltimore, Md., assignor to Thomas D. Miller, Baltimore, Md. Filed Nov. 18, 1903. Serial No. 181,655.

Claim.—1. The combination with a holder for tubular bodies, of a circular saw adjacent to an end of said holder, means for rotating said saw about its axis, and means for giving said saw an orbital movement about the axis of the holder.

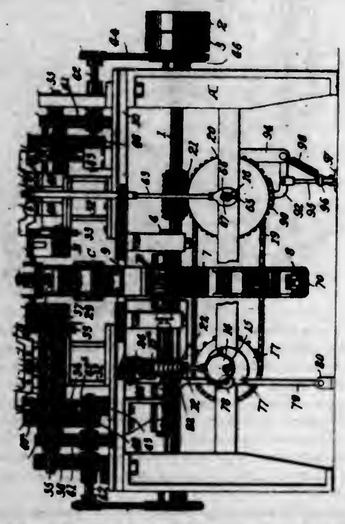
2. The combination with a holder for tubular bodies, of a circular saw adjacent to an end of said holder, means for rotating said saw about its axis, and means for giving said saw an orbital movement about the axis of the holder intermittently.

3. The combination with a holder for tubular bodies, of a pair of circular saws arranged adjacent to the ends of said holder, means for rotating said saws about their axes, and means for giving said saws an orbital movement about the axis of the holder.

4. The combination with a holder for tubular bodies, of a pair of circular saws arranged adjacent to the ends of said holder, means for rotating said saws about their axes, and means for giving said saws an orbital movement about the axis of the holder simultaneously.

5. The combination with a holder for tubular bodies, of a pair of circular saws arranged adjacent to the ends of said holder, means for rotating said saws about their axes, and means for giving said saws an orbital movement about the axis of the holder simultaneously and intermittently.

6. The combination with a circular saw, and means for rotating the same about its axis, of a feeding device having one or more holders for tubular bodies thereon, means for moving said feeding device intermittently to bring the tubular bodies against the saw, and means for giving said saw an orbital movement about the axis of each tubular body after it has been brought into engagement with the saw.



7. The combination of a saw-carrier journaled in a suitable bearing and a saw-arbor journaled in said carrier at one side of the axis of the carrier, a saw mounted upon said arbor, a shaft extending axially through said saw-carrier and geared to said arbor, means for rotating said shaft, and means for intermittently rotating said saw-carrier.

8. The combination of a saw-carrier journaled in a suitable bearing and a saw-arbor journaled in said carrier at one side of the axis of the carrier, a saw mounted upon said arbor, a shaft extending axially through said saw-carrier and geared to said arbor, means for rotating said shaft, means for rotating said saw-carrier, and means for locking the saw-carrier against movement at the completion of each revolution of the carrier.

9. The combination of a saw-carrier journaled in a suitable bearing and a saw-arbor journaled in said carrier at one side of the axis of the carrier, a saw mounted upon said arbor, a shaft extending axially through said saw-carrier and geared to said arbor, means for rotating said shaft, means for rotating said saw-carrier, intermittently, comprising a constantly-driven clutch member, a coöperating clutch member secured to the carrier, means for automatically connecting said clutch members, and means for automatically disengaging said clutch members at the completion of each revolution of the carrier.

10. The combination of a saw-carrier journaled in a suitable bearing and a saw-arbor journaled in said carrier at one side of the axis of the carrier, a saw mounted upon said arbor, a shaft extending axially through said saw-carrier and geared to said arbor, means for rotating said shaft, means for rotating said saw-carrier, intermittently, comprising a constantly-driven clutch member, a coöperating clutch member secured to the carrier, means for automatically connecting said clutch members, means for automatically disengaging said clutch members at the completion of each revolution of the carrier, and means for automatically locking the carrier against movement while the clutch members are disengaged.

11. In a machine for cutting tubular bodies, the combination with a suitable bearing and a saw-carrier comprising a sleeve journaled in said bearing, and having a head adapted to support a saw-arbor at one end of the bearing and a clutch member fixed to said sleeve at the opposite end of the bearing, of a constantly-driven clutch member journaled upon said sleeve, means for automatically engaging and disengaging said clutch members, a shaft extending axially through said sleeve, means for constantly driving said shaft, a saw-arbor mounted in said head parallel with the shaft and having a saw thereon, and gearing connecting said shaft and arbor.

12. In a machine for cutting tubular bodies, the combination with a suitable bearing and a saw-carrier comprising a sleeve journaled in said bearing, and having a head at one end adapted to support a saw-arbor and a clutch member secured to said sleeve at the opposite end of the bearing, of a gear, forming a clutch member, journaled upon said sleeve, a saw-arbor journaled in said head, a shaft extending axially through said sleeve and geared to said saw-shaft, a counter-shaft, and gearing connecting said counter-shaft with the shaft extending through the sleeve and with the gear journaled upon said sleeve.

13. In a machine for sawing tubular bodies, the combination with a saw-carrier comprising a sleeve journaled in a suitable bearing, of a clutch upon said sleeve at one end of said bearing, a collar secured to said sleeve at the opposite end of the bearing, a clutch-lever and a locking-lever pivoted adjacent to said bearing, said clutch-lever being adapted to engage and operate the clutch and said locking-lever being adapted to form a locking engagement with the collar, a rod connected to the free ends of said levers, and a shaft having a cam thereon adapted to operate said rod.

14. In a machine for sawing tubular bodies, a rotatable saw-carrier, a saw carried thereby at one side of the axis of the carrier, means for rotating said saw, means for intermittently rotating said carrier, a feed-wheel having one or more holders, each adapted to hold a tubular body with its end projecting in the plane of the saw, means for operating said feed-wheel to bring the tubular body or bodies into engagement with the saw, and means for holding said feed-wheel stationary while the saw-carrier is in motion.

15. In a machine for sawing tubular bodies, a rotatable saw-carrier and means for rotating the same, a saw-arbor journaled in said carrier at one side of the axis of the carrier said arbor having a saw thereon, a feeding device having one or more holders thereon each adapted to hold a tubular body, means for constantly rotating said saw, means for holding said carrier stationary, means for moving said feeding device to bring a holder opposite the end of the saw-carrier, with the tubular body in engagement with the saw, means for automatically starting said carrier into operation after the tubular body is in engagement with the saw, and means for automatically stopping the rotation of said carrier after it has made a complete revolution.

16. In a machine for sawing tubular bodies, a rotatable saw-carrier, and means for rotating the same, a saw-arbor journaled in said carrier at one side of the axis of the carrier, said arbor having a saw thereon, a feeding device having a series of holders thereon, each adapted to hold a tubular body, means for constantly rotating said saw, means for holding said carrier stationary, means for moving said feeding device intermittently to bring the holders successively into position opposite the end of the saw-carrier, with the tubular body in engagement with the saw, means for automatically starting said carrier into operation each time a tubular body is brought into engagement with the saw, and means for automatically stopping the rotation of the carrier after it has made a complete revolution.

17. In a machine for sawing tubular bodies, a rotatable saw-carrier and means for rotating the same, a saw-arbor journaled in said carrier at one side of the axis of the carrier said arbor having a saw thereon, a feed-wheel having one or more holders thereon each adapted to hold a tubular body, means for constantly rotating said saw, means for holding said carrier stationary, means for moving said feed-wheel to bring a holder opposite the end of the saw-carrier, with the tubular body in engagement with the saw, means for automatically starting said carrier into operation after the tubular body is in engagement with the saw, and means for automatically stopping the rotation of said carrier after it has made a complete revolution.

18. In a machine for sawing tubular bodies, a rotatable saw-carrier, and means for rotating the same, a saw-arbor journaled in said carrier at one side of the axis of the carrier, said arbor having a saw thereon, a feed-wheel having a series of holders thereon, each adapted to hold a tubular body, means for constantly rotating said saw, means for holding said carrier stationary, means for moving said feed-wheel intermittently to bring the holders successively into position opposite the end of the saw-carrier, with the tubular body in engagement with the saw, means for automatically starting said carrier into operation each time a tubular body is brought into engagement with the saw, and means for automatically stopping the rotation of the carrier after it has made a complete revolution.

19. In a machine for sawing tubular bodies, a saw, means for rotating the same upon its axis, a feed-wheel having one or more holders thereon each adapted to hold a tubular body transversely to the plane of the saw, means for rotating said feed-wheel to bring the tubular body into engagement with the saw, means for holding the feed-wheel stationary while the tubular body is in engagement with the saw, and means for giving the saw an orbital movement about the axis of the tubular body when the feed-wheel is at rest.

20. In a machine for sawing tubular bodies, a saw, means for rotating the same upon its axis, a feed-wheel having a series of holders thereon each adapted to hold a tubular body transversely to the plane of the saw, means for rotating said feed-wheel intermittently to bring the tubular body into engagement with the saw, means for holding the feed-wheel stationary each time a tubular body is brought into engagement with the saw, and means for giving the saw an orbital movement each time the feed-wheel is stopped.

21. In a machine for sawing tubular bodies, a pair of saws arranged in parallel planes, means for rotating said saws about their axes, a feed-wheel having one or more holders thereon, each adapted to hold a tubular body with its end portions projecting beyond the holder into the planes of the saws, means for rotating said feed-wheel to bring the tubular body or bodies into contact with the saws, means for holding the feed-wheel stationary while a tubular body is in engagement with the saws, and means for giving said saws a simultaneous orbital movement about the axis of the tubular body engaged by the saws while the feed-wheel is at rest.

22. In a machine for sawing tubular bodies, a saw, means for rotating the same upon its axis, a feeding device having a series of holders thereon each adapted to hold a tubular body transversely to the plane of the saw, means for rotating said feed-wheel intermittently to bring said tubular bodies successively into engagement with the saw, means for holding the feed-wheel stationary while each tubular body is in engagement with the saw, and means for giving said saw an orbital movement while the feed-wheel is stationary.

23. In a machine for sawing tubular bodies, a saw, means for operating the same to sever the tubular bodies, a feeding device having a series of holders thereon each adapted to hold a tubular body in the plane of the saw, means for intermittently operating said feeding device to bring successive holders opposite the saw, a cleaning device, and means for moving said cleaning device into and out of the interior of each holder after it has passed the saw and while the feeding device is at rest.

24. In a machine for sawing tubular bodies, a pair of saws, means for operating the same to sever the tubular bodies, a feeding device having a series of holders thereon each adapted to hold a tubular body with its ends projecting beyond the end of the holder into the planes of the saws, means for intermittently operating said feeding device to bring successive holders opposite the saws, a cleaning device and means for moving said cleaning device into and out of the interior of each holder after it has passed the saws and while the feeding device is at rest.

25. In a machine for sawing tubular bodies, a pair of saws arranged in parallel planes, a feed-wheel having a series of holders thereon each adapted to hold a tubular body with its end portions projecting transversely of the planes of the saws, means for intermittently moving said feed-wheel to bring successive holders between the saws, a longitudinally-movable shaft or spindle having a cleaning device thereon arranged in the rear of the saws, and means for giving said spindle a longitudinal reciprocating movement each time the feed-wheel is stopped.

26. In a machine for sawing tubular bodies, a pair of saws and means for operating the same to cut said bodies transversely, a feed-wheel having a series of holders thereon, each holder having a hinged outer jaw and being adapted to hold a tubular body with its ends projecting into the planes of the saws, means for rotating said feed-wheel intermittently, a curved guide extending around the upper and rear portions of the feed-wheel and adapted to hold said hinged jaws closed while the tubular bodies are being cut off, a cleaning device at the rear of the saws, and means for moving said device into and out of the holders while the jaws are closed by said guide and the feed-wheel is at rest.

27. In a machine for sawing tubular bodies, the combination with a pair of saws arranged in parallel planes, means for constantly rotating said saws about their axes, and means for giving said saws an intermittent orbital movement, of a feed-wheel having a series of holders thereon, mechanism for intermittently operating said feed-wheel, and means for automatically throwing said feeding mechanism out of action after each movement of the feed-wheel.

28. In a machine for sawing tubular bodies, the combination with a pair of saws arranged in parallel planes and means for constantly rotating said saws about their axes, of a feed-wheel, means for intermittently operating said feed-wheel, mechanism for giving said saws an intermittent orbital movement, and means for auto-

matically throwing said mechanisms out of action after each movement of the feed-wheel.

29. In a machine for cutting off the heads of sheet-metal cans, the combination with a pair of saws arranged in parallel planes and means for rotating said saws about their axes, of a holder arranged to hold a can-body with its end portions in engagement with the saws, and means for giving said saws and holder a complete orbital movement relatively to one another during the engagement of the saws with the can-body, to cause the severance of the can-heads.

30. In a machine for sawing tubular bodies, the combination with a saw, and means for rotating said saw about its axis, of a holder arranged to hold a tubular body transversely to the plane of the saw and in engagement with the saw, and means for giving said saw and holder a complete orbital movement relatively to one another during the engagement of the saw with the tubular body, to cause the severance of the tubular body.

31. In a machine for sawing tubular bodies, the combination with a saw, and means for rotating said saw about its axis, of a feeding device having a holder thereon adapted to hold a tubular body transversely to the plane of the saw, means for moving said feeding device to bring said tubular body into engagement with the saw, means for automatically locking said feeding device in stationary position while the tubular body is engaged by the saw, and means for moving said holder and saw relatively to one another, while the feeding device is stationary, to cause the saw-teeth to cut circumferentially around the tubular body from the interior of the tubular body outwardly.

32. In a machine for cutting off the heads of sheet-metal cans, the combination with a pair of circular saws arranged in parallel planes, and means for rotating said saws about their axes, of a feeding device having a holder thereon, said holder being arranged in a plane between the saws and adapted to hold a can-body with its end portions projecting into the planes of the saws, means for moving said feeding device to bring the can-body into engagement with the saws, means for locking said feeding device in stationary position while the can-body is engaged by the saws, and means for moving said holder and saws relatively to one another while the feeding device is stationary, to cause the teeth of the saws to cut circumferentially around the can-body from the interior of the can-body outwardly.

33. In a machine for sawing tubular bodies, a circular saw and means for rotating the same about its axis, a holder adapted to hlod a tubular body transversely to the plane of the saw, means for giving the saw and holder a relative feeding movement to cause the saw to make an initial cut through the wall of the tubular body at one side thereof, means for stopping this feeding movement after this initial cut has been made, and means for moving said saw and holder relatively to one another, after the feed movement has ceased, to cause the saw-teeth to cut circumferentially around the tubular body from the interior outwardly.

34. In a machine for cutting off the heads of sheet-metal cans, the combination with a pair of circular saws arranged in parallel planes and means for rotating said saws about their axes, of a holder arranged in a plane between said saws and adapted to hold a can-body with its end portions projecting into the planes of the saws, means for giving the saws and holder a relative feeding movement to cause the saws to make initial cuts through the wall of the can-body at one side thereof, means for stopping this feeding movement after the initial cuts have been made, and means for moving said pair of saws and the holder relatively to one another, after the feed movement has ceased, to cause the teeth of both saws to cut circumferentially around the can-body from the interior outwardly.

35. A machine to cut the heads and bottoms from can-bodies, having in combination a plurality of clamps to stationarily clamp can-bodies between their ends; means for intermittently moving said clamps to bring them successively to the operative position, and means to simultaneously make two cuts, one at each end, around the clamped can-body in position, whereby both ends of the can will be severed and removed while the body remains held in the clamp.

36. In a machine of the class described, the combination of a crank; a cutter-shaft carried by said crank; means for revolving said cutter-shaft continuously; means for revolving said crank intermittently, and a can-body clamp whose center is coincident with the axis of the cutter-shaft.

37. In a machine of the class described, the combination of a crank; a cutter-shaft carried by said crank and provided with a pinion; a shaft at the axis of said crank and carrying a gear which meshes with the pinion on said cutter-shaft to revolve the latter; means for revolving said gears and cutter-shaft continuously; means for revolving said crank intermittently and thereby move the revolving cutter-shaft in a circular path, and a can-body clamp whose center is coincident with the axis of the cutter-shaft.

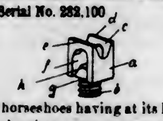
38. In a machine of the class described, the combination of a stationary table; a bearing supported above said table; a revoluble sleeve extending through said bearing and carrying a crank; means for revolving said sleeve; a cutter-shaft carried by said crank; a shaft extending through said sleeve; means for transmitting motion from said latter shaft to the cutter-shaft, and a can-body clamp whose center is coincident with the axis of the cutter-shaft.

39. In a machine of the class described, the combination of a crank; a cutter-shaft carried by said crank; means for revolving said cutter-shaft; means for revolving said crank intermittently whereby to move the cutter-shaft in a circular path; a plurality of can-body clamps; and means for successively moving said clamps into operative position with respect to said cutter-shaft.

40. In a machine of the class described; the combination of a crank; a cutter-shaft carried by said crank; means for revolving said crank to move the cutter-shaft in a circular path; a revoluble head carrying a plurality of can-body clamps, and means for intermittently revolving said head to successively bring the clamps into position opposite the crank-axis and hold them at rest while the cutter-shaft is moved in a circular path.

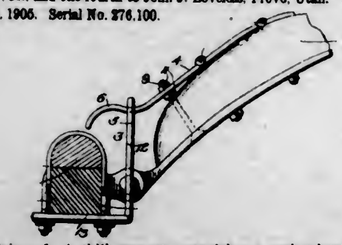
41. In a machine for cutting can-bodies, the combination of two cranks confronting each other but spaced apart; a rotary cutter carried by each crank; a plurality of movable clamps each adapted to clamp a can-body between its ends; means for successively moving the said clamps to a position in the space between the said two cranks with their centers coincident with the axis of the cutter-shaft, and means for intermittently revolving both cranks to cause the cutters to sever and remove the head and bottom while the body remains held in the clamp.

823,423. **HORSESHOE-CALK.** CARL LOIBL, Munich, Germany. Filed Oct. 10, 1906. Serial No. 282,100.



Claim.—A calk for horseshoes having at its lower side a canaliculated cavity or gutter *e* leaving two narrow tread-surfaces *d*, *e* and a bore *f* crossing and penetrating said cavity, and widenings of said bore forming beveled surfaces *g*.

823,424. **THILL-SUPPORT.** DAVID H. LOVELESS, Provo, Utah, assignor of one-fourth to Walter G. Taylor, one-fourth to George Taylor, Jr., and one-fourth to John J. Loveless, Provo, Utah. Filed Aug 28, 1906. Serial No. 276,100.



Claim.—1. A thill-support comprising a spring-latch secured on the upper side of a thill, projecting inwardly therefrom and having its inwardly-projecting portions curved to form a resilient jaw, means to adjust said jaw toward and from the pivot of the thill-coupling, and a keeper secured to the axle and having an upwardly-extended loop through which said resilient jaw of the latch passes, said jaw engaging the upper end of said loop.

2. A thill-support comprising a spring-latch secured on and longitudinally adjustable with reference to the thill and formed with a curved resilient jaw projecting beyond the inner end of the thill, and a keeper secured on the axle and having an upwardly-extended loop through which the said resilient jaw of the loop extends, said jaw engaging the upper end of the said loop.

823,425. **HUB-ATTACHING DEVICE.** JAMES W. MARLER, East Bend, N. C. Filed Nov. 9, 1906. Serial No. 286,695.

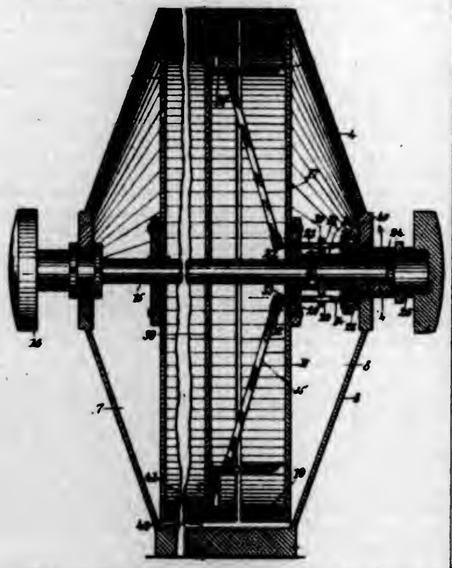
Claim.—1. A wheel-retainer having a cap for attachment to a wheel-hub, inwardly-extending converging spring-arms attached to said cap and having their inner ends interned to engage an annular groove in an axle-spindle, a longitudinally-movable rod carried and guided by said cap, and means operated by said rod to spread the inner ends of said spring-arms apart and disengage them from the axle-spindle, substantially as described.



2. A wheel-retainer having a cap for attachment to a wheel-hub, inwardly-extending converging spring-arms attached to said cap and having their inner ends interned to engage an annular groove in an axle-spindle, a longitudinally-movable rod carried and guided by said cap, means operated by said rod to spread the inner ends of said spring-arms apart and disengage them from the axle-spindle, and a spring to move said rod outwardly to normally permit said arms to engage the groove in the axle-spindle, substantially as described.

3. A wheel-retainer having a cap for attachment to a wheel-hub, inwardly-extending converging spring-arms attached to said cap and having their inner ends interned to engage an annular groove in an axle-spindle, a longitudinally-movable rod carried and guided by said cap, and a head operated by said rod to spread the inner ends of said spring-arms apart and disengage them from the axle-spindle, substantially as described.

823,426. **CALCULATING-MACHINE.** CARL A. MEILICKE, Hanley, Canada. Filed June 9, 1906. Serial No. 264,417.



Claim.—1. In a machine of the class described, in combination, a case presenting a sight-opening, a drum containing tabulated figures rotatably mounted within said case, a computing-wheel coaxial with said drum and rotatably mounted within said case, a thumb-head adapted to rotate said wheel and mechanism actuated by said thumb-head for locking said wheel to said drum.

2. In a machine of the class described, in combination, a case having a sight-opening therein, a drum rotatably mounted within said case and carrying tabulated figures, a counterweight on said drum adapted to maintain the same in a normal position, a detent-pawl carried by said case and engaging the face of said drum, said drum having a recess coöperating with said detent-pawl to maintain said drum in said normal position.

3. In a machine of the class described, in combination, a case, a drum carrying computing-tables and rotatably mounted therein, a wheel coöperating with said drum and rotatably mounted within said case, a thumb-head making a tongue-and-groove connection with the hub of said wheel, and affording means for rotating said wheel, and means actuated by the longitudinal movement of said thumb-head for locking said wheel to said drum.

4. In a machine of the class described, in combination, a case, a drum carrying computing-tables and rotatably mounted therein, a thumb-head lying outside of said case and adapted to rotate the said drum, a wheel rotatably mounted within said case and coöperating with said drum, a thumb-head lying outside of said case and slidably mounted upon the hub of said wheel, means for locking said thumb-head and said wheel against relative rotation whereby said thumb-head affords means for rotating said wheel, a clutch between said wheel and said drum, and a connection between said clutch and said thumb-head for actuating said clutch.

5. In a machine of the class described, in combination, a case, a drum carrying computing-tables and rotatably mounted therein, a computing-wheel coöperating with said drum and rotatably mounted within said case, oppositely-disposed clutches between said wheel and said drum and adapted to lock the same together, links connected with said clutches, a thumb-head adapted to rotate said wheel and slidably mounted on the hub thereof, and clutch-bars carried by said thumb-head and connected with said links.

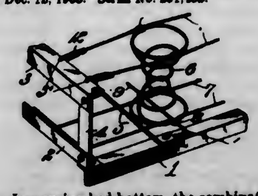
6. In a machine of the class described, in combination, a case, a drum carrying computing-tables and rotatably mounted therein, a computing-wheel rotatably mounted within said case, a clutch between said wheel and said drum, said wheel having a hub with laterally-projecting ears, said ears having guide-openings therethrough, clutch-bars projecting through said guide-openings and passing into the interior of said wheel, links connecting said clutch-bars with said clutches and a thumb-head attached to said clutch-bars and affording means for thrusting the same inwardly and a connection between said thumb-head and said wheel for rotating said wheel.

7. In a machine of the class described, in combination, a case, a drum carrying computing-tables and rotatably mounted therein, a computing-wheel rotatably mounted within said case and coöperating with said drum, clutches between said wheel and said drum, links affording means for operating said clutches, said wheel having a hub with laterally-disposed ears having openings therethrough, said openings presenting knife-edges, clutch-bars attached to said links passing through said knife-openings and presenting notches coöperating with said knife-edges, means for guiding said clutch-bars through said wheel, a thumb-head attached to said clutch-bars and affording means for rotating said wheel, said thumb-head being slidably mounted upon said hub and affording means for thrusting said thrust-bars inwardly to operate said clutches.

8. In a machine of the class described, in combination, a case, a drum carrying computing-tables and rotatably mounted therein, a wheel coöperating with said drum and rotatably mounted within said case, shoes carried by said wheel and adapted to engage said drum, links attached to said shoes and leading toward the hub of said wheel, a thumb-head slidably mounted on said hub and affording means for rotating said wheel, and connections from said thumb-head to said links for operating said shoes.

9. In a machine for computing interest on notes, a table containing interest amounts arranged successively in numbered divisions corresponding to the days for which the notes may run, and a calendar coöperating with said divisions and comprising calendar-strips having the months and days indicated thereon, the indications on said strips being arranged in reverse order with respect to each other.

823,427. **SPRING BED-BOTTOM.** GEORGE A. MELLON, St. Louis, Mo. Filed Dec. 13, 1905. Serial No. 291,408.



Claim.—1. In a spring bed-bottom, the combination of a frame having elevated ends, mainsprings, means connected to said frame

for supporting said mainsprings, and strain-wires connected directly to the elevated portions of said frame and having loose connection with terminal coils of said mainsprings, substantially as set forth.

2. In a spring bed-bottom, the combination of a frame having elevated ends, mainsprings, means connected to said frame for supporting said mainsprings, and strain-wires connected directly to the elevated portions of said frame and having connection with terminal coils of said mainsprings; said springs being arranged in rows in which the springs of each alternate row are out of line with the springs of the adjacent rows, substantially as set forth.

3. In a spring bed-bottom, the combination of coiled compression-springs having enlarged ends or heads, longitudinal wires, clasps connecting said longitudinal wires to terminal coils of said spring-heads at intervals along said longitudinal wires; said springs in each alternating row being out of line with the springs of the adjacent rows, substantially as set forth.

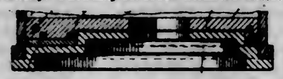
4. In a spring bed-bottom, the combination of a frame having elevated ends, mainsprings, means connected to said frame for supporting said mainsprings, strain-wires connected to the elevated portions of said frame, and metal clasps connecting terminal coils of said mainsprings to said strain-wires for the purpose of retaining the springs in definitely-spaced longitudinal rows determined by the diameter of the terminal coils of the springs, substantially as set forth.

5. In a spring bed-bottom, the combination of a frame having elevated ends, mainsprings, means connected to said frame for supporting said mainsprings, tension-springs connected to the elevated portions of said frame, and strain-wires connected to said tension-springs and having connection with said mainsprings, substantially as set forth.

6. In a spring bed-bottom, the combination of a frame, longitudinal and transverse wires connected to said frame, springs arranged in rows in which the springs of each alternating row are out of line with the springs of the adjacent rows; said wires serving as supports for said springs and one set of said wires being crimped to engage the coils of said springs and the other set of said wires being straight and passing through the crimps of the first set of wires, substantially as set forth.

7. In a spring bed-bottom, the combination of longitudinal and transverse wires, springs arranged in rows in which the springs of each alternating row are out of line with the springs of the adjacent rows; said wires serving to connect said springs and one set of said wires being crimped to engage the coils of said springs and the other set of said wires being straight and passing through the crimps of the first set of wires, substantially as set forth.

823,428. **PACKING FOR ROTARY ENGINES.** DAVID MORELL, Cassel, Germany. Filed May 10, 1906. Serial No. 316,183.



Claim.—1. In a rotary engine, the combination with the cylinder of a packing-disk located at one end thereof designed to move axially of the same, said disk having a plane inner face designed to contact with the piston and a recessed outer face, a cylinder-head provided with a projection snugly fitting said recess and means for dividing the space between the disk and head outside of said projection into a plurality of compartments comprising a plurality of packing-blocks spaced a distance from one another, substantially as described.

2. In a rotary engine, the combination with the cylinder of a packing-disk mounted at one end thereof designed to have movement axially of the same, said disk having a plane inner face designed to coact with the end of the piston and a recess in its outer face, a cylinder-head provided with a projection snugly fitting within said recess and means for dividing the space between the disk and head to the outside of said projection into a plurality of compartments comprising a plurality of radially-arranged packing-blocks held in the outer side of the disk and a plurality of longitudinally-arranged packing-blocks arranged in the periphery of the disk substantially coincident with the radially-arranged blocks, substantially as described.

3. In a rotary engine, the combination with the cylinder of a packing-disk located at one end thereof designed to have movement axially of the same, said disk having a plane inner face coacting with the side of the piston and an outer face having a recess therein with its peripheral wall arranged substantially concentric to the axis of the engine-shaft, a plurality of channels radiating from said recess and peripheral channels substantially coincident with said radial channels, a cylinder-head having a projection fitting within the recess in the outer face of the disk and packing-blocks located within said channels, substantially as described.

4. In a rotary engine, the combination with the cylinder of a packing-disk located at one end thereof designed to have movement axially of the same, said disk having a plane inner face coacting with the side of the piston and an outer face having a recess therein with its peripheral wall arranged substantially concentric to the axis of the engine-shaft, a plurality of channels radiating from said recess and peripheral channels substantially coincident with said radial channels, a cylinder-head having a projection fitting within the recess in the outer face of the disk packing-block located in the channels and springs coacting with the packing-blocks located in pockets within the disk in register with the channels, substantially as described.

5. In a rotary engine, the combination with the cylinder of a packing-disk located at one end thereof designed to have movement axially of the same, said disk having an outer face provided with a recess and channels radiating from the recess and the periphery of said disks being provided with longitudinally-extending channels arranged on opposite sides of the ends of the first-named channels, a cylinder-head having a projection fitting within the recess of the outer face of the disk and packing-blocks held within said channels, substantially as described.

823,429. **CAN-CLOSURE.** JOSEPH J. MOSER, West Covington, Ky. Filed Dec. 28, 1904. Serial No. 238,636.



Claim.—1. A can having a mouth formed of an annular wall of sheet metal terminating in an outer cut edge of said sheet metal, with a sheet-metal plug therefor comprising a connecting-web and an annular wall of inverted frusto-conical shape terminating at its upper end in a double bead having the cut end of the sheet metal composing the plug projected a considerable distance into the inside of said double bead, the inner and outer curls of said double bead forming adjacent mating side faces curled in similar general direction facing each other, with said annular wall of said can-mouth extending a considerable distance between said mating side faces and said cut edge of said can-mouth located a considerable distance into the interior of said double bead for forming side contacting faces between both sides of said annular wall of said can-mouth and said adjacent mating side faces of said double bead, substantially as described.

2. A can having an outwardly-extending mouth formed of an annular wall of upright frusto-conical shape terminating in a cut edge, and a plug having a transverse web and a wall of inverted frusto-conical shape merging into an outward double-curl bead having inner adjacent mating side faces projecting in the same general direction and the inner curl of which is curled upwardly from the lower part of said double-curl bead toward said inverted frusto-conical plug-wall and into the outer curl of said double-curl bead for forming a widened plug-mouth for the ready reception of said annular upright frusto-conical wall of said can-mouth, said can-mouth taking between and engaging said inner adjacent mating side faces of said double-curl bead for forming side contact-belts of considerable width formed by the said inner adjacent mating side faces and the side faces of said annular wall of said can-mouth, said belts of contact extending a considerable distance below the upper cut edge of said can-mouth to both sides of the wall of said mouth, substantially as described.

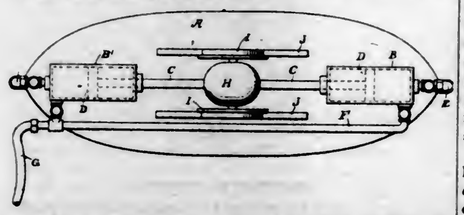
823,430. **CAN-CLOSURE.** JOSEPH J. MOSER, West Covington, Ky. Filed July 28, 1905. Serial No. 271,067.



Claim.—1. A friction-top can having a body whose upper end is provided with an inwardly laterally projecting annular web merging into an outwardly-projecting wall forming a mouth, said web comprising a curve at the bottom of said mouth, and a plug having tapering annular wall and an upper outer double-curled bead forming mating side faces facing each other in the inside of said bead at said tapering wall, the said wall of said body-mouth taking between said mating side faces in the inside of said double-curled bead of said plug, the said plug provided with an annular continuous rib extending laterally outwardly immediately below the said curve of said annular web of said body-mouth, substantially as described.

2. A friction-top can comprising a body whose upper edge is provided with an annular rim portion having an annular part projecting laterally and downwardly taperingly toward the longitudinal axis of the can and merging into an upwardly-opening semibead for forming an annular laterally inwardly extending strengthening-web having an annular shoulder therein and merging into an annular wall extending upwardly and taperingly toward the longitudinal axis of the can-body and being of frusto-conical shape and having an outer lip formed of the cut edge of the sheet metal composing said rim portion, said lip projecting above the horizontal plane of the upper edge of the can-body, and a plug having an annular wall tapering downwardly toward the longitudinal axis of the can-body in the form of an inverted frusto-cone having a connecting web at the smaller end thereof, and an outwardly-projecting outer double-curl bead at the outer end thereof, the outer and inner curls of said double-curl bead forming adjacent side faces facing each other at the inner portion of said double-curl bead and forming an outwardly-flaring mouth at its bottom for receiving said lip, the outer edge of said bead taking against said annular shoulder in said rim portion, for forming six engaging annularly continuous side faces at the mouth of the can in substantially the same horizontal plane, the smaller end of the taper of said plug being expanded under the portion of larger diameter of the taper of the can-mouth for forming a rib in substantially the horizontal plane of said strengthening-web of said rim portion, substantially as described.

823,431. **WAVE-MOTOR.** JOHN A. MCMANUS, Philadelphia, Pa. Filed Oct. 3, 1905. Serial No. 281,106.



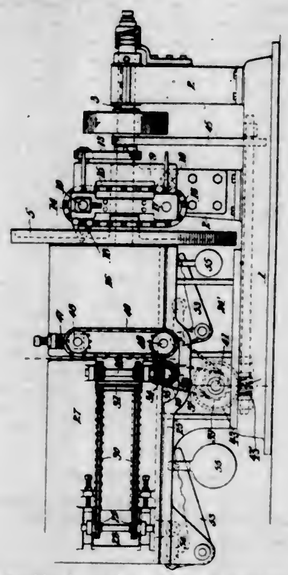
Claim.—1. A wave-motor consisting of a float, two cylinders located thereon, a single piston-rod passing into each of these cylinders, a piston carried at each end of the piston-rod, a feed-pipe leading to each cylinder, a discharge-pipe leading from each cylinder suitable check-valves located in these pipes, a flexible pipe leading from the discharge-pipe whereby the water or air delivered from the cylinders may be conveyed to a suitable reservoir or tank upon land and a weight adapted to move the piston-rod when the float is oscillated by the waves as specified.

2. A wave-motor consisting of a suitable float, two cylinders secured thereon, a piston fitted to each cylinder, a piston-rod secured to and connecting the two pistons, a weight carried by the piston-rod, truck-wheels supporting said weight, tracks upon which said truck-wheels are adapted to run, a feed-pipe leading to each of the cylinders, a discharge-pipe connected with each of the cylinders, check-valves located in each of these pipes and a flexible pipe leading from the discharge-pipe to a suitable reservoir or tank.

823,432. **EXCELSIOR-CUTTING MACHINE.** WILLIAM H. NIEMEYER, Baltimore, Md. Filed Sept. 6, 1904. Serial No. 223,513.

Claim.—1. In a machine for cutting excelsior, a cutter and a scorer carried by independently-mounted carriers, means for causing said cutter and scorer to move in the same straight line during a portion of the movement of the carriers, the scorer in advance of the cutter, and means for feeding a block of wood to position to be acted upon by the cutter and scorer.

2. In a machine for cutting excelsior, a rotary carrier, a cutter carried thereby, a carrier arranged adjacent to said rotary carrier and having its axis of movement at right angles to the axis of rotation of the rotary carrier, a scorer carried thereby, means for causing said scorer to move into and out of the plane of the cutter, and move therein during a portion of the movement of its carrier, in advance of the cutter, and means for feeding a block of wood to position to be acted on by the cutter and scorer.



3. In a machine for cutting excelsior, a rotary carrier, a cutter carried thereby, a scorer, a carrier for said scorer positioned adjacent to and mounted independent of said rotary carrier and constructed and arranged to swing said scorer into the plane of travel of the cutter in advance of the latter and to cause said scorer to move in the same straight line as the cutter and to swing said scorer out of the plane of travel of the cutter after the completion of said straight-line movement, and means for feeding a block of wood in position to be acted upon by said cutter and scorer.

4. In a machine for cutting excelsior, a rotary carrier, a cutter having its cutting edge upon the one side of the carrier, a scorer, a carrier for said scorer positioned on the opposite side of said rotary carrier, and constructed and arranged to bring said scorer into position upon the side of the rotary carrier carrying the cutting edge of the cutter and in advance thereof, and to impart a straight-line movement thereto, and remove the same therefrom after the completion of the straight-line movement, and means for feeding a block of wood to position to be acted upon by said cutter and scorer.

5. In a machine for cutting excelsior, a rotary carrier, a cutter having its cutting edge projecting from one side of said carrier, said carrier having an opening formed therein in advance of the cutter, a scorer, a carrier for said scorer positioned upon the opposite side of the rotary carrier, and arranged to move said scorer into and out of said opening, means for causing said carriers to move in unison while the scorer is in said opening and means for feeding a block of wood to position to be acted upon by said scorer and cutter.

6. In a machine for cutting excelsior, a rotary disk, a cutter carried thereby having its cutting edge upon one side thereof, said disk formed with an opening therethrough in advance of the cutter, a scorer, a carrier for said scorer positioned on the opposite side of the scorer, and arranged to move said scorer into and out of the opening, means for causing the carriers to move in unison, while the scorer is in said opening, and means for feeding a block of wood to position to be acted upon by said scorer and cutter.

7. In a machine for cutting excelsior, a cutter, a carrier therefor, a scorer arranged at the rear of the cutter and its carrier, a carrier for said scorer mounted independently of said cutter-carrier arranged to move said scorer into and out of the plane of travel of the cutter in advance thereof, and cause the same to move in the same straight line as the cutter, and a feed mechanism arranged at the front side of the cutter and its carrier for feeding a block of wood to position to be acted upon by said cutter and scorer.

8. In a machine for cutting excelsior, a carrier consisting of an endless chain or belt, a scorer carried thereby, a track arranged adjacent to said carrier, a roller carried by the scorer moving upon the

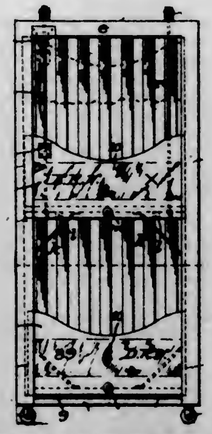
one side of the track, a yieldingly-mounted roller carried by the scorer moving upon the opposite side of the track, and means for imparting movement to said carrier.

9. In a machine for cutting excelsior, the combination with a cutter, of two independently-slidable feed boxes or ways arranged in such relative position that when the forward box has moved rearwardly a certain distance it will effect the rearward movement of the rear box and the two will move together, means for offering a resistance to the rearward movement of each box, and feeding devices operating in said box.

10. In a machine for cutting excelsior, a rotary carrier, a cutter carried thereby, a carrier positioned adjacent to said rotary carrier comprising an endless belt or chain arranged to move the scorer carried thereby into and out of the plane of the cutter and to cause the same to move therein during a portion of its movement in advance of the cutter, a scorer carried by said endless belt or chain, and means for feeding a block of wood to position to be acted upon by said cutter and scorer.

11. In a machine for cutting excelsior, a rotary carrier, a cutter having its cutting edge upon one side of the carrier, a scorer, a carrier for said scorer positioned on the opposite side of said rotary carrier, said scorer-carrier comprising an endless belt or chain constructed and arranged to bring said scorer into position upon the side of the rotary carrier carrying the cutting edge of the cutter and in advance thereof, and to impart a straight-line movement thereto, and remove the same therefrom after the completion of the straight-line movement, and means for feeding a block of wood to position to be acted upon by said cutter and scorer.

823,433. **ASSORTING-RECEPTACLE FOR LAUNDRIES.** ELMER E. NEWONGER and DANIEL R. NEWONGER, Dayton, Ohio. Filed Apr. 20, 1904. Serial No. 204,013.

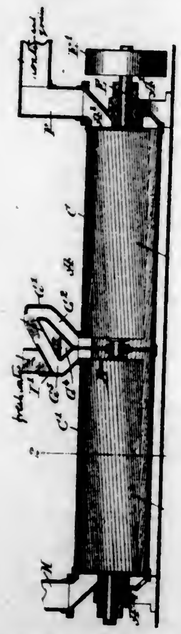


Claim.—The combination in an assorting-receptacle for clothes; of the exterior slatted body having a floor and a top provided with a longitudinal slot; the interior body formed by the movable platforms connected by posts or uprights; said platforms having the smooth-surfaced fronts, one of which is provided with lugs for engagement with its platform; and the pulleys, cables and weights for operating said body.

823,434. **WASHING AND SCOURING MACHINE.** ROMERO F. B. OTERASA, Antigua, Guatemala. Filed Feb. 25, 1905. Serial No. 247,288.

Claim.—1. A washing and scouring machine, comprising a cylindrical casing provided with spirally-arranged flutes and divided into a preliminary and a final cleansing chamber, means whereby to admit water and the material to be washed under pressure to the preliminary-cleansing chamber, means connecting the preliminary-cleansing chamber with the final-cleansing chamber for separating the dirty water from the material and for discharging the water from the machine, means for admitting fresh water to the final-cleansing chamber, an outlet-chute for the final-cleansing chamber, and a cylinder provided with spirally-arranged flutes mounted to rotate within the chambers.

2. A washing and scouring machine, comprising a preliminary and a final cleansing chamber, each of the chambers being provided with inlet and outlet chutes, the outlet-chute of the preliminary-cleansing chamber being at a higher level than the inlet-chute of the final-cleansing chamber and adjacent thereto, an inclined screen arranged between the outlet-chute of the preliminary-cleansing chamber and the inlet-chute of the final-cleansing chamber, means below the screen for discharging the dirty water from the machine, and means above the screen for admitting fresh water to the final-cleansing chamber.



823,435. **PROCESS OF TREATING ORGANIC SUBSTANCES IN PRESENCE OF VANADIUM COMPOUNDS.** ERICH OPPERMANN, Höchst-on-the-Main, Germany, assignor to Farbwerke, vorm. Meister, Lucius & Brüning, Höchst-on-the-Main, Germany, a Corporation of Germany. Filed Aug. 31, 1904. Serial No. 223,537.

Claim.—The herein-described process for treating organic substances, which consists in subjecting the same to electrolysis in an acid-bath in the presence of vanadium compounds.

823,436. **GRAIN DUMP AND ELEVATOR.** PETER P. OYER, Meadows, Ill. Filed May 31, 1905. Serial No. 263,000.

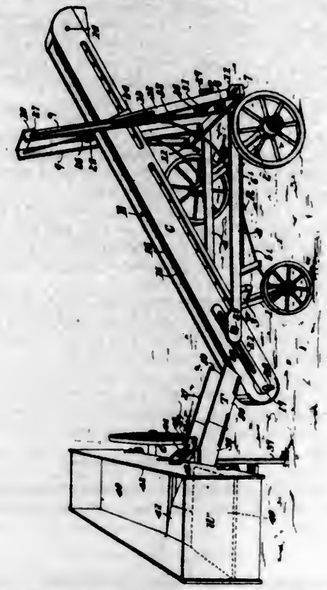
Claim.—1. A running-gear having longitudinal side members, an elevator-casing having a power-shaft extended at the sides thereof, brackets pivoted upon said shaft and having longitudinal slots, and bolts extending through said slots and through the side members of the running-gear and having tightening means.

2. A supporting-frame having side members, an elevator-casing, brackets pivoted upon the power-shaft of the elevator-casing, and means for connecting said brackets adjustably with the side members of the supporting-frame.

3. A supporting-frame having side members, a derrick supported upon said frame, an elevator-casing having pivoted brackets adjustably connected with the side members of the frame, and hoisting means connected with the derrick and with the elevator-casing for effecting adjustment of the latter.

4. A running-gear including front and rear axles, a bolster upon the front axle, a roller journaled in a recess of the bolster, and longitudinal frame members; a cross-bar upon the rear ends of the side members; an elevator-casing supported upon said cross-bar and upon the roller in the front bolster; brackets connected pivotally with the elevator-casing and adjustably with the side members of the frame; and means for elevating the discharge end of the elevator-casing.

5. A running-gear including longitudinal frame members, a cross-bar upon the rear ends of said frame members, and a roller supported for rotation upon the front bolster; an elevator-casing, arms connected pivotally with said casing and adjustably with the longitudinal frame members; a hoisting-derrick connected pivotally with lugs upon the cross-bar at the rear ends of the longitudinal frame members; and connecting means between said derrick and elevator-casing whereby said members may be elevated.



6. A running-gear including front and rear axles, a bolster upon the front axle, frame members supported upon the bolster and upon the rear axle, and a cross-bar supported upon the rear ends of said frame members; an elevator-casing movably supported upon said cross-bar and upon the roller, a power-shaft in said casing; brackets pivoted upon said shaft and connected adjustably with the side frame members; a derrick supported hingedly upon the rear cross-bar and having side members adjacent to the sides of the elevator-casing, and means connected with the derrick for hoisting said casing.

7. A supporting-frame, an elevator-casing, arms pivotally connected with said casing and connected adjustably with the frame, and a compound chute hingedly connected with and adapted to discharge into the elevator-casing, said chute comprising a plurality of hingedly-connected members and a support connected hingedly with the bottom of the outermost member.

8. An elevator-casing, means for adjustably supporting the lower end of said casing, a compound chute hingedly connected with and adapted to discharge into said casing, said chute comprising a plurality of hingedly-connected members having side flanges adapted to exteriorly engage the sides of the elevator-casing, and a supporting member hingedly connected with the outermost member of the compound chute.

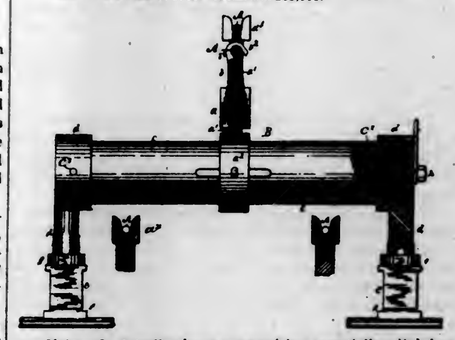
823,437. **BOTTLE-FASTENER.** PETER M. PETERSON, Narragansett Pier, R. I. Filed Aug. 8, 1905. Serial No. 273,301.

Claim.—1. The combination with a bottle having integral oppositely-disposed lugs formed upon the neck thereof, each lug having a perforation therethrough intersected by a recess arranged at a right angle to the perforation; of a cap for engagement over the mouth of the neck of the bottle, a bail connected with the cap, a yoke, spring-arms connected with the yoke and extending through the perforations of the corresponding lugs, the free ends of the said arms being in hooked form for engagement with the aforesaid recesses of the respective lugs when the said yoke is lifted to disengage the cap from the neck of the bottle.

2. The combination with a bottle having oppositely-disposed lugs each provided with a perforation and a recess intersecting the perforation of each lug; of a cap for closing the bottle, a bail connected with the cap, a yoke pivotally mounted upon the bottle and connected to said bail, spring-arms connected with said yoke and each slidably mounted in the perforation of the corresponding lug, the free ends of each spring-arm being provided with a hook for engagement in the aforesaid recess of the corresponding lug when the said yoke is raised; and a ring embracing the neck of the bottle and engaging said spring-arms to force the latter normally toward the bottle.



823,438. **TROLLEY-HANGER.** THOMAS PRICE, Minneapolis, Minn. Filed June 5, 1905. Serial No. 263,838.



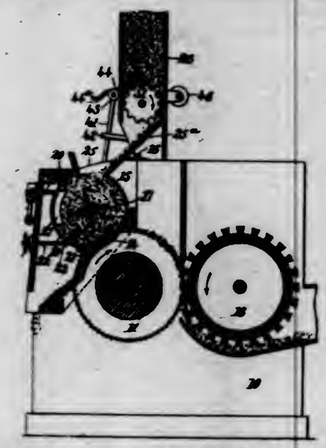
Claim.—1. A trolley-hanger comprising essentially a link having an upwardly-extending threaded pin portion and a swivel mounted thereon; a grapnel having a threaded opening therein and adapted to engagement with, and adjustment upon the said threaded pin portion; a cylindrical bar of non-conducting material suspended in the said link; legs rigidly secured to the said insulated bar; clamps or grips loosely connected to the said legs; a sleeve mounted upon and longitudinally movable upon the said leg and clamps and a jam-nut mounted and adjustable upon the said leg above the said sleeve, all substantially as shown and for the purposes specified.

2. In a trolley-hanger, the combination of a link; a grapnel adjustably affixed thereto; a cylindrical bar of non-conductive material suspended in the said link, legs of conductive material affixed to the said suspended bar; clamps loosely pivoted to the said legs, a sleeve mounted upon the said legs and means for holding the said sleeve in engagement with the said leg and clamps, substantially as shown and for the purposes specified.

3. In a trolley-hanger, the combination of the legs *d* square or rectangular in cross-section and having their lower portions reduced upon their opposite sides, pins extending laterally from the said reduced portions, clamps square or rectangular in cross-section, and having their upper portions reduced in thickness, holes in or through the said reduced portions, a square or rectangular sleeve mounted

upon and longitudinally movable upon the said legs and clamps, and means for holding the said sleeve in place, all substantially as shown and for the purposes specified.

823,439. GIN. MERCER REYNOLDS, Clarksdale, Miss. Filed Dec. 28, 1904. Serial No. 237,932.



Claim.—1. In a gin, the combination with a float, of a directing member having its edge situated adjacent to the float and inclined with respect thereto.

2. In a gin, the combination with a float, of an inclined directing member situated adjacent to the float and movable by the material operated upon.

3. In a gin, the combination with a float, of a feed mechanism, and means for varying the feed situated adjacent to and movable longitudinally of the float and connected with the feed mechanism.

4. In a gin, the combination with a float, of an inclined directing member situated adjacent to the float and movable by the material operated upon, and springs resisting the movement of the directing member.

5. In a gin, the combination with a float, of a plurality of movable members situated adjacent thereto, feed mechanism, a spring resisting the movement of each member, and a connecting member with which the springs coact and which is joined to the feed mechanism.

6. In a gin, the combination with a float, of a plurality of movable members situated adjacent thereto, feed mechanism, a spring resisting the movement of each member, a movable connecting member with which the springs coact and which is joined to the feed mechanism, and a spring resisting the movement of the connecting member and exerting a greater tension than any of the first-named springs.

7. In a gin, the combination with a float, of a plurality of movable members situated adjacent thereto, feed mechanism, a spring resisting the movement of each member, a movable connecting member with which the springs coact and which is joined to the feed mechanism, and a spring resisting the movement of the connecting member and exerting a tension substantially equal to the sum of the tensions of the first-named springs.

8. In a gin, the combination with a float, of a series of pivoted blades situated adjacent thereto, arms fixed to the blade-pivots, a rod movable in proximity to the arms, a spring coacting with each arm and with the rod, a spring acting upon the rod and resisting its movement, and feed mechanism controlled by the movement of the rod.

9. In a gin, the combination with a float, of a series of pivoted blades situated adjacent thereto, arms fixed to the blade-pivots, a rod movable in proximity to the arms, a spring coacting with each arm and with the rod, a spring acting upon the rod and resisting its movement, feed mechanism comprising a roll, ratchet mechanism for rotating the roll, and means for connecting the ratchet mechanism and rod.

10. In a gin, the combination with a float, of a feed-roll, a ratchet-wheel rotatable therewith, a revoluble driving member, a pawl reciprocated by the driving member and coacting with the ratchet-wheel, a guide for the pawl, a blade situated adjacent to the float and movable longitudinally thereof, and connections between the guide and blade.

11. A gin, comprising a saw-cylinder, and a finger-board, the edge of the finger-board being substantially radial to the saw-cylinder, and inclined outwardly toward one end away therefrom.

12. A gin comprising a saw-cylinder, and a finger-board, the edge of the finger-board being substantially radial to the saw-cylinder, and inclined outwardly toward one end away therefrom, and means for varying the angle of inclination.

13. A gin comprising a saw-cylinder, and a finger-board, the edge of the finger-board being substantially radial to the saw-cylinder, and inclined outwardly toward one end away therefrom, and means for independently moving different portions of the edge of the finger-board toward and from the saw-cylinder.

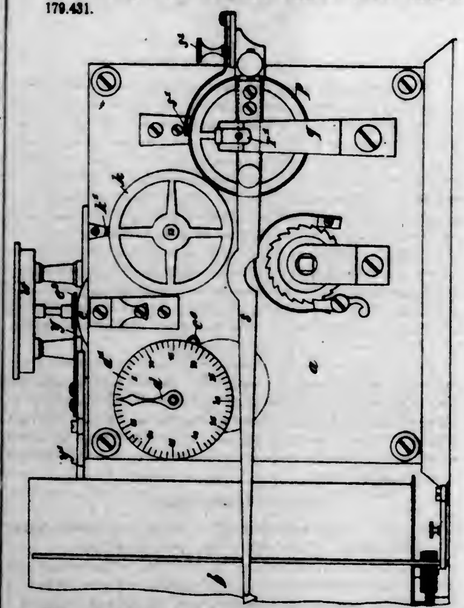
14. A gin comprising a saw-cylinder, a finger-board coöperating therewith and having an edge inclined with respect to the axis of the saw-cylinder, and means for independently moving different portions of the finger-board, to vary the inclination of the edge thereof with respect to the axis of the saw-cylinder.

15. A gin comprising a saw-cylinder, a sheet-metal finger-board coöperating therewith and having its edge inclined with respect thereto, and bending means connected at different points of the finger-board, for varying the inclination of the edge thereof with respect to the axis of the saw-cylinder.

16. A gin comprising a saw-cylinder, feed mechanism situated near one end of the cylinder, and a finger-board having its edge adjacent to the saw-cylinder inclined with respect to the axis thereof, and means for varying the angle of inclination.

17. A gin comprising a saw-cylinder, feed mechanism situated near one end of the cylinder, and a finger-board having its edge adjacent to the saw-cylinder inclined outwardly therefrom and diverging from the feed mechanism, and means for varying the angle of inclination.

823,440. REGISTERING DIFFERENTIAL-SPEED INDICATOR. JULES RICHARD, Paris, France. Filed Nov. 2, 1903. Serial No. 179,431.



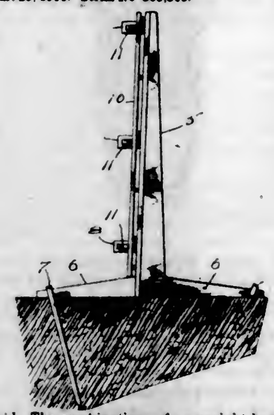
Claim.—1. A device for recording the coefficient of irregularity of a shaft comprising in combination, a motor with isochronous movement, a differential gear interposed between said motor and said shaft, friction-rollers affording means for driving said gear from said motor, means for adjusting said rollers to control the speed of said gear, and means for indicating the speed of said gear.

2. In combination, a pair of parallel wheels, means for imparting a uniform rotation thereto in opposite directions, a friction-disk running between said wheels and driven thereby, means for adjusting said friction-disk substantially radially with respect to said wheels, a differential gear-train, means for imparting the aforesaid uniform rotation to one side of said gear-train, means for imparting a rotation to be measured to the other side of said gear-train, recording means controlled through said gear-train, and a scale coöperating with said adjusting means.

3. In combination, a pair of oppositely-disposed wheels, means for imparting a substantially uniform rotation to the same in opposite directions, a friction-disk between the said wheels, a spindle carrying the same and disposed substantially radially with respect to said wheels, means for adjusting the same longitudinally, an elongated pinion on the said spindle, a crown-wheel meshing therewith, a differential gear-train, one side whereof receives motion from said crown-wheel, means for imparting a rotation to be measured to the other side of said gear-train and means for indicating the displacement of said gear-train due to differences in the rotations transmitted thereto.

4. In combination, a motor with an isochronous movement, a series of wheels operated by the motor and controlling a handle indicating the seconds, a pair of friction-plates arranged opposite one another, one of the plates being carried along by the motor having an isochronous movement, a pinion interposed between the plates and transmitting to the second plate a rotary motion in a reverse direction to that of the first one, a centrifugal regulator mounted upon the axis of the pinion, a friction-roller arranged between the two friction disks or plates, a spindle-rod carrying the roller and arranged substantially radially with reference to the plates, an elongated pinion mounted on the spindle, a carrier upon which the spindle is mounted, an operating device for imparting to the latter a longitudinal displacement, a scale indicating the speed of the rotary motion transmitted to the spindle, a toothed crown-wheel meshing with the elongated pinion, a differential train of gearing receiving on one side the movement of the toothed crown-wheel, means connecting the other side of the differential train of gearing to the shaft, the rotation of which is to be measured, a wheel milled on one side keyed to the shaft of the differential gear, and a handle adapted to be carried along in the motion imparted to the wheel keyed upon the shaft of the differential gear when the latter receives an angular displacement due to differences in the rotations imparted thereto.

823,441. FENCE-POST. CYRUS B. ROBINSON, Goldenridge, Me. Filed Mar. 28, 1906. Serial No. 306,560.



Claim.—1. The combination, of an upright having extensions at its base, pins adapted to be driven in the ground and engage the said extensions to maintain the upright in vertical position and slotted pins extended from said upright, with a second upright having apertures through which said pins may pass, and keys to be driven in the said slots.

2. The combination, with an upright, provided with laterally-projecting slotted pins, and means to maintain the upright in vertical position, with a second upright having apertures to receive the said pins therethrough and keys to drive in said slots outside of the second upright.

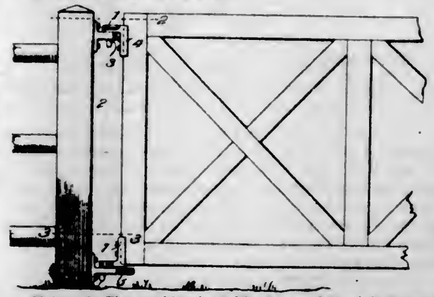
823,442. EMBROIDERING ATTACHMENT FOR SEWING-MACHINES. ROLLIN L. RODMAN, Lott, Tex. Filed Apr. 21, 1905. Serial No. 256,737.

Claim.—1. The combination with a sewing-machine having a needle-bar, of a tubular support, a lateral arm at the lower end of the support and provided with means for engaging the needle-bar, an extension on the arm, a bar movable within the support, a slotted presser-foot on the bar, an arm on the upper end of the bar, and a spiral spring connecting the arm and the extension of the lateral arm.



2. The combination with a sewing-machine having a needle-bar, of a tubular support, a lateral arm at the lower end of the support and having an eye for engaging the needle, an extension on the arm, a connector having an eye for engaging the needle beneath the lateral arm, means whereby said connector may be connected with the needle-bar, a bar movable within the support, a slotted presser-foot on the bar an arm on the upper end of the bar, and a spiral spring connecting the arm and the extension of the lateral arm.

823,443. HINGE. FREDERICK SANDHAM, Los Angeles, Cal. Filed Oct. 25, 1904. Serial No. 229,929.



Claim.—1. The combination with a gate, of a weight-supporting hinge, a second hinge comprising a plate formed with two slots or guideways each on a radius from the inner end of the other, and pintles fitting in said slots or guideways, the inner ends of the latter being equidistant from a vertical line through the axis of the first-mentioned hinge.

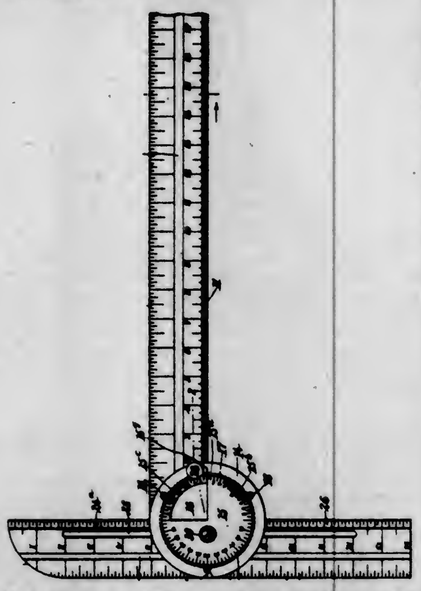
2. The combination with a gate, of a weight-supporting hinge, a second hinge comprising a plate formed with two intersecting slots each on a radius from the inner end of the other, and pintles carried by the gate and extending downwardly and through said slots, said pintles being greater in length than the thickness of the slotted plate.

3. A hinge comprising a plate formed with two slots each on a radius from the inner end of the other, and a coacting member having two pintles designed to extend downwardly and through said slots, said pintles being greater in length than the thickness of the slotted plate.

823,444. MEASURING INSTRUMENT. BENJAMIN F. SABSAMAN, Gibbstown, N. J. Filed May 1, 1905. Serial No. 258,247.

Claim.—1. A measuring instrument, comprising a blade having an annular bearing-collar provided with an index-mark, a circular plate rotatably mounted within the bearing-collar and provided with graduations, the plate having an angular aperture through which observations may be made, and downwardly-projecting lugs spaced apart and parallel with each other, a head having longitudinal grooves to receive the lugs, means for fixing the circular plate with respect to the head, and means for fixing the blade with respect to the circular plate.

2. A measuring instrument comprising a blade having an annular bearing-collar provided with an index-mark, a circular plate rotatably mounted within the bearing-collar and provided with graduations, the circular plate having an angular aperture through which observations may be made, and downwardly-projecting lugs spaced apart and parallel with each other, a head having longitudinal grooves to receive the lugs, means for fixing the circular plate with respect to the head, and a set-screw traversing the blade and having a head for engaging the circular plate.



3. A measuring instrument comprising a blade having an annular bearing-collar, a circular plate rotatably mounted within the bearing-collar, the circular plate having an aperture through which observations may be made, and downwardly-projecting lugs spaced apart and parallel with each other, a head having longitudinal grooves to receive the lugs, means for fixing the circular plate with respect to the blade, and means for fixing the head with respect to the circular plate.

4. A measuring instrument, comprising a blade having an annular bearing-collar, a circular plate rotatably mounted within the bearing-collar, the circular plate having downwardly-projecting lugs spaced apart and parallel with each other, a head having longitudinal grooves to receive the lugs, means for fixing the circular plate with respect to the blade, and means for fixing the head with respect to the circular plate.

828,445. MANUFACTURE OF IMITATION SILK. ERNST SCHMANN, Friedrichshagen, near Berlin, Germany. Filed Mar. 12, 1906. Serial No. 305,982.



Claim.—1. An imitation silk, consisting of a base of suitable material, a plastic adhesive agent adhering thereto, and very minute glass globules partly embedded in the adhesive agent, substantially as described.

2. An imitation silk, consisting of a base of pliant material, a plastic adhesive agent adhering thereto, and very minute glass globules partly embedded in the adhesive agent, substantially as described.

3. An imitation silk, consisting of a base of suitable material, a plastic colored adhesive agent adhering thereto, and very minute glass globules partly embedded in the adhesive agent, substantially as described.

4. An imitation silk, consisting of a base of suitable material, a plastic adhesive agent adhering thereto, a layer of color partly covering the adhesive agent, and very small glass globules embedded in the layer of color and the adhesive agent, substantially as described.

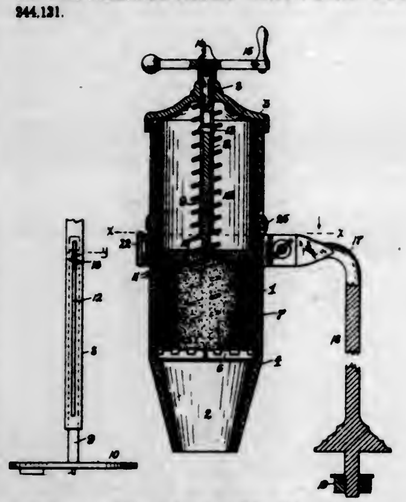
5. The process of manufacturing an imitation silk, consisting in coating a base of suitable material at desired parts with a plastic adhesive agent, and in embedding in the latter part of the surface of very small glass globules, substantially as described.

6. The process of manufacturing an imitation silk, consisting in coating a base of suitable material at desired parts with a plastic adhesive agent, in covering the latter at desired parts with paint, and in then embedding in the adhesive agent part of the surface of very small glass globules, substantially as described.

7. The process of manufacturing an imitation silk, consisting in coating a fabric at desired parts with a paste color, and strewing the layer of paint, before it dries, with small glass globules, substantially as described.

8. The process of manufacturing an imitation silk, consisting in coating a fabric at desired parts with a paste color, applying to the layer of paint at desired parts other paints, and strewing the surface, before it dries, with small glass globules, substantially as described

828,446. SOAP-DISPENSER. HARRY H. SCHUSTER, Mishawaka, and DAVID MAIER, South Bend, Ind. Filed Feb. 4, 1905. Serial No. 244,131.



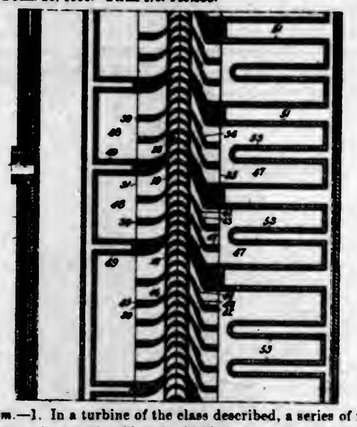
Claim.—1. A soap-dispenser comprising a receptacle, a follower provided with a shank located in said receptacle, a hollow spindle embracing said shank and having a longitudinal slot, a pin carried by the shank and playing in the slot of the spindle, in combination with a spring surrounding the spindle and bearing against the follower to project its shank from the hollow spindle, and means for rotating the follower.

2. A soap-dispenser comprising a receptacle having a contracted discharge-nozzle, a cutter mounted therein above the nozzle, a spring-pressed follower to hold the soap in contact with the cutter, a hollow spindle having a longitudinal slot, a shank on the follower telescoping within the spindle and having a pin playing in the slot, and a handle on the spindle to rotate the follower and soap.

3. A soap-dispenser of the class described, comprising a glass receptacle having an integral contracted nozzle at its lower end and a ledge at the top of the nozzle, a stationary cutter resting on the ledge, a cap to close the top of the receptacle, a rotatable spindle mounted in said cap, a follower having a shank telescoping in the spindle and rotatable therewith, a spring surrounding the spindle to hold the follower in contact with the soap, the follower having means to penetrate the soap so as to rotate therewith, and means to support the receptacle.

4. A soap-dispenser comprising a receptacle, a follower provided with a shank located in the receptacle, a hollow spindle embracing said shank and having a longitudinal slot, a pin carried by the shank for movement in the said slot, and a non-rotatable cutter in the receptacle.

823,447. STEAM-TURBINE. JOHN W. SMITH, Erie, Pa., assignor to Ball Engine Company, Erie, Pa., a Corporation of Pennsylvania. Filed Jan. 26, 1903. Serial No. 140,555.



Claim.—1. In a turbine of the class described, a series of rotating blades, casings at the sides of said blades, and admission-blades arranged in said casings for introducing the steam to the rotating blades, said admission-blades having shoulders thereon to form throats which terminate in enlarged mouths adjacent to the rotating blades, whereby the steam is expanded during its passage between said admission-blades.

2. In a turbine of the class described, a series of rotating blades, casings at the sides of said blades, and admission-blades arranged in said casings for introducing the steam to the rotating blades, said admission-blades having shoulders thereon to form throats which terminate in enlarged mouths adjacent to the rotating blades, whereby the steam is expanded during its passage between said admission-blades, one of said casings having an inlet for the steam and the other provided with an exhaust.

3. In a turbine of the class described, a rotating element provided with a series of blades, a steam-casing arranged around said blades and having division-walls forming a connected series of spiral chambers around the periphery of the rotating element for advancing the steam in successive steps around said rotating element, and admission and release blades arranged in said casing adjacent to the blades of the rotating element.

4. In a turbine of the class described, a rotating element having a series of blades, and a casing having a steam inlet and exhaust, said casing being provided with a spiral-like passage extending on each side of said inlet around the peripheral portion of said rotating element and terminating at the steam-exhaust, whereby the steam introduced through said inlet is split and guided from each side thereof to the exhaust.

5. In a turbine of the class described, a rotating element provided with a series of blades, and a casing surrounding said element and formed of complemental sections each of which is provided with an annular steam-casing, said casings having open sides adjacent to the blades of said rotating element, and an expansible supporting-ring carried by said rotating element to which said blades are applied, and stationary admission and release blades arranged in the open sides of said casings for effecting successive expansions of the steam during its traverse from said casings and through the blades of the rotating element.

6. In a turbine of the class described, a rotating element provided with a series of blades, a casing surrounding said element and comprising complemental sections each of which is provided with an annular steam-casing, said casings having open sides adjacent to the blades of said rotating element and provided with jackets for the reception of live steam to effect superheating of the steam within said casings, and stationary admission and release blades arranged in the open sides of said casings for effecting successive expansions of the steam in its traverse from said casings and through the blades of the rotating element.

7. In a turbine of the class described, a rotating element provided with a series of blades, a casing surrounding said element and formed of complemental sections each of which is provided with an annular steam-casing, said casings having their inner sides open, a series of stationary admission and release blades arranged in the open sides of said casings for effecting successive expansions of the steam in its passage from said casings through the blades of the rotating element, one of said casings being provided with a plurality of inlets at spaced intervals around the same, and the other casing being provided with a plurality of exhausts around the same but arranged at points between said inlets, and division-walls arranged in said casings and forming a connected series of spiral chambers, whereby the steam is successively advanced from the inlets to the exhausts.

8. In a turbine of the class described, a rotating element provided with a series of blades, a casing surrounding the same and provided with annular steam-chambers at opposite sides of the blades of said element, said chambers having their inner sides open, stationary admission and release blades arranged in the open sides of said casings for effecting successive expansions of the steam during its passage from the chambers and through the blades of the rotating element, one of said casings being provided with a plurality of steam-inlets and having a series of division-walls forming a series of connected chambers extending in opposite directions from each of said inlets, and the other casing being provided with a series of exhausts arranged at points intermediate said inlets, whereby the steam is expanded in a series of successive steps from the inlets to said exhausts.

9. In a turbine of the class described, a rotating element, an expansible supporting-ring mounted upon said element, an inner and an outer series of blades carried by said supporting-ring, steam-casings arranged at the sides of said blades and having their inner sides open, stationary admission and release blades arranged in the open sides of said casings for effecting successive expansions of the steam as it passes from said casing through the blades of the rotating element, and a connected series of spiral passages arranged in said casings for transferring the steam alternately between said casings during its passage therethrough.

10. In a turbine of the class described, a rotating element having its peripheral edge notched or serrated, an expansible supporting-ring mounted upon said element and provided with teeth or projections fitting within the notches or serrations thereof, means for securing said ring upon said element, a series of blades arranged upon said supporting-ring, a steam-chamber surrounding said blades and having a steam-passage therein, and stationary admission and release blades arranged in said casing for effecting successive expansions of the steam as it passes through said casing and the blades of the rotating element.

11. In a turbine of the class described, a rotating element, an inner and an outer series of blades carried by said rotating element, a binding-ring mounted upon the ends of the blades constituting the outer series, a steam-casing surrounding said blades, and stationary admission and release blades arranged in said casing for effecting successive expansions of the steam as it passes through said casing and the blades of the rotating element.

12. In a turbine of the class described, a rotating element, an expansible supporting-ring mounted thereon, an inner and an outer series of blades arranged upon said supporting-ring, the blades of said series being provided with end projections or lugs, the lugs upon the inner ends of the inner series being seated in said supporting-ring, a binding-ring arranged upon the outer ends of the outer series and provided with sockets for the reception of the lugs upon the outer ends of said blades, clamping-rings embracing the lugs upon the outer and inner ends of the inner and outer blades, a steam-casing surrounding the blades of the rotating element, and stationary admission and release blades arranged in said casing and adapted to effect successive expansions of the steam during its passage through said casing and the blades of the rotating element.

13. In a turbine of the class described, a rotating element, an expansible supporting-ring carried thereby and detachably connected thereto and having an inner and an outer series of blades mounted thereon, a steam-casing surrounding the blades of the rotating element, stationary admission and release blades arranged in said casing and adapted to effect successive expansions of the steam during its passage through said casing and the blades of the rotating element, division-walls arranged in said casing and forming a connected series of spiral chambers around the blades of the rotating element, and jackets surrounding said casing and said walls for the reception of live steam to superheat the steam within the casing during the successive expansions.

14. In a turbine of the class described, a rotating element having a series of blades, a casing having a steam inlet and exhaust, said casing surrounding said rotating element, a series of division-walls arranged in said casing and forming a series of connected chambers arranged spirally around the axis of rotation, said chambers extending in opposite directions from the steam-inlet to the exhaust, whereby the steam introduced through said inlet is split and guided from each side thereof to the exhaust, and admission and release blades arranged in said casing to successively expand the steam in its passage through the casing.

15. In a turbine of the class described, a rotating element having a series of blades, a casing having a steam inlet and exhaust, said casing surrounding said rotating element, a series of division-walls arranged in said casing and forming a series of connected chambers arranged spirally around the axis of rotation, said chambers gradually increasing in size from the inlet to the exhaust and extending in opposite directions from the steam-inlet to the exhaust, whereby the steam introduced through said inlet is split and guided from each side thereof to the exhaust, and admission and release blades arranged in said casing to successively expand the steam in its passage through the casing.

16. In a turbine of the class described, a rotating element having a series of blades, a casing associated with said rotating element and provided with admission and release blades for effecting expansion of the steam, a series of inlets for admitting steam to said casing, a supply-pipe, branch pipes leading from said supply-pipe to said inlets, and means for controlling each inlet independent of the others, whereby the turbine may be regulated in accordance with the variations in load and high efficiency maintained.

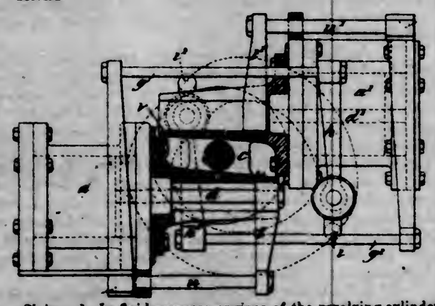
823,448. **PROCESS OF ATTACHING EXTRACTORS TO CORKS.** WILLIAM H. SMITH, Morton, Pa. Filed Apr. 23, 1906. Serial No. 313,190.



Claim.—1. The method of attaching extractors to corks, which consists in subjecting the cork to moisture, embedding a loop of the extractor deeply in the moist cork, and drying the cork for hardening it with the extractor embedded therein, substantially as described.

2. The method of attaching extractors to corks, which consists in subjecting the cork to hot moisture, embedding a loop of the extractor deeply in the moist cork, and drying the cork for hardening it with the extractor embedded therein, substantially as described.

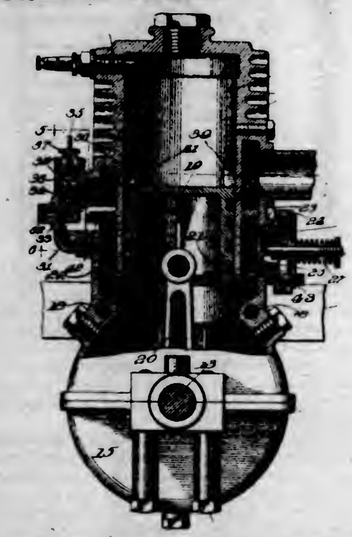
823,449. **ROTARY ENGINE.** ANGELICA M. A. SPONNECK-MAYER, Kensington, London, England. Filed July 13, 1905. Serial No. 269,493.



Claim.—1. In fluid-pressure engines of the revolving-cylinder type, a main shaft, a pair of cylinders mounted to rotate therewith and symmetrically disposed on either side of the shaft with their axes parallel to each other and orthogonal with the shaft, a transverse rod for each cylinder connected to reciprocate with the piston thereof, a longitudinal guideway fixed to each cylinder in which the said transverse rod is reciprocated, fixed cam-grooves in which the ends of the transverse rods engage, and means for admitting pressure-fluid to the said cylinders and exhausting the expanded fluid therefrom, substantially as described.

2. In fluid-pressure engines of the character herein described, means for admitting the working fluid to the cylinders and exhausting it therefrom, comprising a fixed cylindrical steam-chest having a lateral opening, a sleeve encircling said steam-chest and attached to the cylinder-covers, passages through the said sleeve and cylinder-covers adapted to register with the lateral opening in the steam-chest during part of a revolution, a fixed exhaust-chamber opening laterally and to the atmosphere, and passages in the cylinder-covers adapted to register with said lateral opening in the exhaust-chamber during a part of a revolution, substantially as described.

823,450. **GAS-ENGINE.** BENJAMIN F. STEWART, Chicago, Ill. Filed Feb. 10, 1905. Serial No. 245,080.



Claim.—1. In a gas-engine, in combination, an explosion-chamber having admission and exhaust ports, means for closing the ports, a compression-chamber delivering to the admission-port of the explosion-chamber, an air-induction port and a fuel-induction port entering the compression-chamber, a suction-opened spring-seated valve for the air-induction port, and a gravity-seated valve for the fuel-induction port adapted to be opened independently of the air-valve by pressure within the chamber.

2. In a gas-engine, in combination, an explosion-chamber having admission and exhaust ports, means for closing the ports, a compression-chamber delivering to the admission-port of the explosion-chamber, an air-induction port and a fuel-induction port entering the compression-chamber, a suction-opened spring-seated valve for the air-induction port, a damper for regulating the delivery of such port, and a gravity-seated valve for the fuel-induction port adapted to be opened independently of the air-valve by pressure within the chamber.

3. In a gas-engine, in combination, an explosion-chamber, a compression-chamber, a passage connecting the two chambers, an air-induction port entering the compression-chamber, a valve for such port, a fuel-induction port entering the passage, and a yieldingly-seated valve for the last-named port, a cylinder opening into the chamber and a piston movable within the cylinder and fixed to the stem of the last-named valve.

4. In a gas-engine, in combination, an explosion-chamber, a compression-chamber, a passage connecting the two chambers, an air-induction port entering the compression-chamber, a valve for such port, a damper for regulating the delivery of such port, a fuel-induction port entering the passage, and a yieldingly-seated valve for the last-named port adapted to be opened by pressure within the passage independently of the air-valve.

5. In a gas-engine, in combination, an explosion-chamber having admission and exhaust ports, means for closing the ports, a compression-chamber delivering to the admission-port of the explosion-chamber, an air-induction port and a fuel-induction port entering the compression-chamber, a valve for the air-induction port, a chambered casing, opening to the fuel-induction port, a tube passing through the wall of the casing, an opening in the tube within the chamber of the casing, a cylinder formed in the wall of the casing, a needle-valve for closing the opening in the tube, a piston on the stem of the valve and working within the cylinder, and a set-nut entering the cylinder for limiting the movement of the valve.

823,451. **JOINT.** WILLIAM W. SWEENEY and FRANK A. SYLVA, Los Angeles, Cal., assignors, by direct and mesne assignments, to Pacific Surgical Manufacturing Company, Los Angeles, Cal., a Corporation of California. Filed Feb. 9, 1905. Serial No. 244,865.

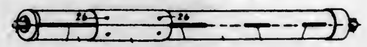


Claim.—1. A tube, the shell of which has two diametrically opposite perforations, one perforation being larger than the other, a lateral member having a stud projecting from its end and forming a shoulder, the main portion of the lateral member projecting through the large perforation of the tube and closely fitting in the large perforation, opposite edges of the shoulder of the lateral member resting against the inside wall of the shell at points opposite the axis of the small perforation, the stud fitting closely in the small perforation and being headed to retain the lateral member in place.

2. The combination with a tubular member of two attached members of smaller diameter than the tubular member and arranged transversely to one another and to said tubular member, the said tubular member having openings receiving and fitting said smaller members and having small openings diametrically opposed to the aforesaid openings, said smaller members having reduced portions at their ends to fit in said smaller openings, one of said members having a transverse perforation to receive the reduced portion of the other member.

3. The combination with a tubular member of two attached members of smaller diameter than the tubular member and arranged transversely to one another and to said tubular member, the said tubular member having openings receiving and fitting said smaller members, and having small openings diametrically opposed to the aforesaid openings, said smaller members having reduced portions at their ends to fit in said smaller openings, one of said members having a transverse perforation to receive the reduced portion of the other member, and a recess to receive the end of the body of the other member.

823,452. **SPRING SHADE-ROLLER.** FRANK M. VICKERY, Boston, Mass. Filed July 3, 1905. Serial No. 268,241.



Claim.—1. The combination with a shade-roller having a substantially radial longitudinal slot or pocket, of a shade having a stiffened inner end frictionally fitting said slot or pocket, said stiffened end being removable and replaceable radially when the curtain is entirely unwound, and means for limiting the unwinding the shade from the roller, whereby a convolution of the shade will retain said stiffened inner end in the slot.

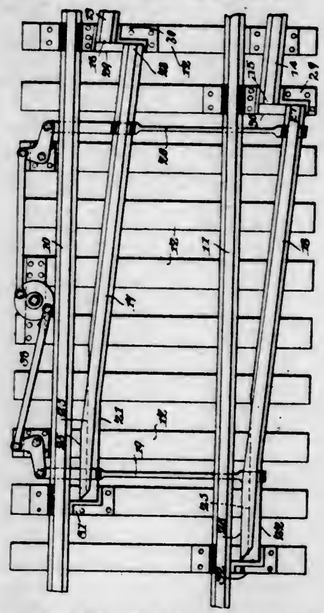
2. The combination with a shade-roller having a substantially radial longitudinal slot or pocket, of a shade having its inner end provided with a plurality of folded metal stiffening-strips frictionally fitting said slot or pocket, said stiffened inner end being removable and replaceable radially when the curtain is entirely unwound, and means for limiting the unwinding of the shade from the roller, whereby a convolution of the shade will retain said stiffened inner end in said slot.

3. A shade-roller bracket comprising a base portion, an arm projecting therefrom in a direction substantially parallel to the shade-roller to be supported and a shade-stop pivotally connected with the arm.

4. A shade-roller bracket comprising a base portion having one end bent back upon itself to furnish a roller-supporting arm, a stop-arm projecting from the base portion, and a shade-stop pivotally connected with said stop-arm.

5. A shade-roller having a screw-threaded spindle engaged with one end of the roller-spring, a bracket-engaging stud affixed to said spindle, a nut engaged with the screw-thread of the spindle, and having a projection engaging a longitudinal slot in the roller, and a stop-pin extending transversely through the spindle and bent at one end to engage the thread of the spindle, the opposite end portion of the pin having an enlargement and a bent stop-arm.

823,453. **RAILWAY-SWITCH.** LA FAYETTE T. WEVER, Crawfordville, Fla. Filed Oct. 31, 1905. Serial No. 285,299.



Claim.—1. In a railway-switch mechanism, spaced switch-rails coupled for simultaneous movement toward and away from the main-line rails of the side-track rails with the switch-rails cut away at one end for overlapping the main-line rails and with the other ends coinciding with the side-track rails when in closed position.

2. In a railway-switch mechanism, the combination with the main-line rails and the side-track rails, of switch-rails coupled for simultaneous movement toward and away from the main-line rails and toward and away from the side-track rails, and with the switch-rails formed to overlap the main-line rails at one end and coincide with the side-track rails at the other ends when in closed position.

823,454. **VEHICLE-WHEEL.** WILLARD S. WHITE, Chattanooga, Tenn. Filed July 29, 1905. Serial No. 271,739.



Claim.—1. In combination with a vehicle-wheel, an outer rim or tire provided along one edge with an outwardly-projecting tire-retaining flange and an inwardly-projecting bead, and having a rabbeted outer surface, a second rim having its body portion adapted to fit the rabbeted outer surface of the first rim and provided with an outwardly-extending tire-retaining flange, and an inwardly-extend-

ing flange adapted to embrace the edge of the previously-mentioned rim, and means of securing said rims to said felly.

2. In combination with a vehicle-wheel, an outer rim or tire provided along one edge with an outwardly-projecting tire-retaining flange and an inwardly-projecting bead, and having a dovetailed rabbeted outer surface, a second rim having its body portion adapted to fit the dovetailed rabbeted outer surface of the first rim and provided with an outwardly-extending tire-retaining flange, and an inwardly-extending flange adapted to embrace the edge of the previously-mentioned rim, and means of securing said rims to said felly.

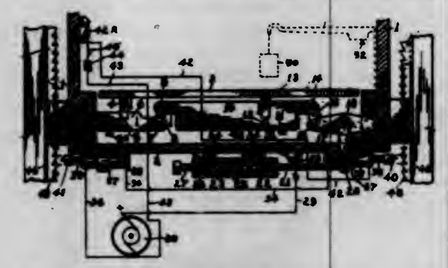
3. In combination with a vehicle-wheel, an outer removable rim or tire provided along one edge with an outwardly-projecting tire-retaining flange and an inwardly-projecting bead, and having a dovetailed rabbeted outer surface, a second removable rim having its body portion adapted to fit the dovetailed rabbeted outer surface of the first rim and provided with an outwardly-extending tire-retaining flange and an inwardly-extending flange adapted to embrace the edge of the previously-mentioned rim, and means of securing said rims to said felly.

4. In combination with a vehicle-wheel, an outer removable rim or tire provided along one edge with an outwardly-projecting tire-retaining flange and an inwardly-projecting bead adapted to engage with one side of said felly, said rim having a dovetailed rabbeted outer surface, a second removable rim having its body portion adapted to fit the dovetailed rabbeted outer surface of the first rim and provided with an outwardly-extending tire-retaining flange and an inwardly-extending flange adapted to embrace the edge of the previously-mentioned rim, and means of securing said rim to said felly.

5. In combination with a vehicle-wheel, an outer removable rim or tire provided along one edge with an outwardly-projecting tire-retaining flange and an inwardly-projecting bead adapted to engage with one side of said felly, said rim having a dovetailed rabbeted outer surface, a second removable rim having its body portion adapted to fit the dovetailed rabbeted outer surface of the first rim and provided with an outwardly-extending tire-retaining flange and an inwardly-extending flange adapted to embrace the edge of the previously-mentioned rim, and abut against one side of said felly and means of securing said rim to said felly.

6. In combination with a vehicle-wheel, an outer removable rim or tire provided along one edge with an outwardly-projecting tire-retaining flange and an inwardly-projecting bead adapted to engage with one side of said felly, said bead having a dovetailed rabbeted outer surface, a second rim having a dovetailed body portion adapted to engage with the dovetailed rabbeted outer surface of said first rim and provided with an outwardly-extending tire-retaining flange and an inwardly-extending flange adapted to embrace the edge of the previously-mentioned rim, and abut against one side of said felly, and means of securing said rim to said felly.

823,455. LOAD-LIMIT MECHANISM FOR ELEVATORS. JUNIUS R. WILLCOX, Norfolk, Va. Filed May 9, 1905. Serial No. 259,512.



Claim.—1. The combination in an elevator, of a frame, a yieldable platform supported on linked and pivoted beams or levers, and connecting means controlled by the beams for locking the frame in its path of movement by an excess of weight on said platform.

2. The combination in an elevator, of a frame, a floor thereto a yieldable floor above the first-named floor, a plurality of pivoted levers beneath the yieldable floor, and a plurality of reciprocating devices for locking the said frame in its ascent or descent when an excess load is upon the said yieldable floor.

3. The combination in an elevator, a frame or cage and its floor, a depressible platform above the floor, a series of pivoted link-connected levers under the said platform, a plurality of reciprocating mechanisms actuated by the said levers, means for locking the said frame in its ascent or descent and releasing the same according to the load on the platform, resilient means for cushioning the movement of the said levers, and means for adjusting the extent of the said cushioning effect.

4. The combination in an elevator, of a frame, a floor, a depressible resiliently-supported platform, a series of pivoted levers for supporting the said platform, a centrally-pivoted arm connected to the said levers, a depending arm at right angles thereto, a rod connected to the said arm, a piston on the said rod, an adjustable cushioning device for the piston, and reciprocating means controlled by the said pivoted levers for locking the said frame from movement and releasing the same according to the load on said platform.

5. The combination in an elevator, a depressible floor, a series of balanced knife-edge supported beams, a centrally-pivoted beam having an arm thereon, a rod connected thereto, a plunger or piston on one end of the rod, a cylinder inclosing and movably supporting the plunger, a spring in the said cylinder, means for compressing the spring according to the load on the depressible floor, a plurality of reciprocating devices for locking the said frame and floor from movement and releasing the same according to the extent of movement of the said balanced beams by the load on said floor.

6. An apparatus of the class described comprising a frame, a depressible floor or platform, a series of compensating pivoted levers for supporting the floor, a series of links connecting the levers, a centrally-pivoted arm, a depending lever thereon and moving coincidently therewith, a piston-rod on one end of the lever, a piston or plunger on the rod, a cylinder for movably inclosing the piston, a spring in the cyliander, means for compressing the spring a degree equal to the load on the depressible floor, screw means for adjusting the depression of the spring, an insulated contact-block on the said piston-rod, a contact-tongue on the frame in striking alinement with the block, a plurality of solenoids on each side of the frame, a reciprocating core in each solenoid having angular locking heads or blocks thereon, means for completing an electric circuit by movement of the piston-rod to operate the cores for stopping the frame in its movement when overloaded, and means for operating said solenoids.

7. An apparatus of the class described comprising a frame, vertical guideways therefor, a rack on the guideways having rows of oppositely-disposed teeth, a depressible platform on the frame, a series of compensating pivoted levers beneath the platform, a rocking centrally-pivoted lever between and connected to the said compensating levers, an arm on the centrally-pivoted lever, a piston-rod connected to the arm, a plunger or piston on the rod, a case or cylinder, a spring in the said case, a contact-block on the said rod, a spring-contact tongue in striking alinement with said block, a plurality of solenoids under the said frame having reciprocating cores therein, a locking or jam block on one end of each core, means for supplying an electric current for completing the circuit by the said contact-block and the tongue when the said rod is moved for causing the jam-blocks to engage the oppositely-disposed rows of teeth of the rack, means for compressing the said spring in the case to its maximum predetermined extent simultaneously with the operation of the solenoids.

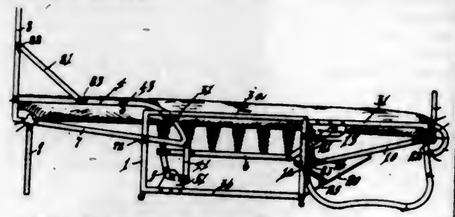
8. An apparatus of the class described and in combination with a plurality of shaft-guide beams, a car or platform movably supported therein, rack-bars on said shaft-beams having rows of oppositely-disposed teeth, and locking-heads carried by the car or platform having oppositely-disposed teeth adapted to engage and disengage said rack-bars.

9. An apparatus of the class described and in combination with vertical beams in the elevator-shaft, a car or platform movably positioned between said beams, rack-bars on the beams having a double row of oppositely-disposed teeth, locking-heads carried by the car or platform having teeth adapted to correspond with the rack-teeth for locking the car when ascending or descending, and means for reciprocating said locking-heads.

823,456. FOLDING BED. JOHN F. WILMOT, Detroit, Mich. Filed Apr. 23, 1905. Serial No. 256,903.

Claim.—1. In a folding bed, having a base-section, a foot extension adapted to fold over the base-section to form a seat, a head extension adapted to fold vertically to form the back to a seat, a folding headboard adapted to fold to face the back section, a footboard adapted to fold to form a partial facing to the back, substantially as described.

2. In a three-part folding bed, in combination with a webbing supported at its ends, a seat-frame secured to one of the folding sections and adapted to fold under the webbing and to swing away therefrom and to fold in a second position over said webbing, substantially as described.



3. In a folding bed, in combination with a base, a folding foot extension adapted to fold over the base and to fold out to a horizontal position at the foot end of the base, a seat-frame pivoted to the foot extension, means for limiting the swing of the seat-frame between a condition of entire clearance from the mattress-support when on the under side of said mattress-support, and a substantially horizontal position when above said mattress-support, substantially as described.

4. In combination with the extension part of a folding bed, a seat-frame binged thereto, and a limiting-guide for said seat-frame, whereby the seat-frame automatically assumes a horizontal position in the folded condition, and an inclined position in the unfolded position of the extension, substantially as described.

5. In combination with the extension part of a folding bed, a seat-frame attached thereto and adapted to assume a horizontal position in the folded condition, and an inclined position in the unfolded position of the extension, substantially as described.

6. In a folding bed, in combination with a base-section, a foot-section adapted to fold over the base-section and provided with a seat-frame, means whereby the said seat-frame assumes a horizontal position in the folded bed, and assumes an inclined position free from the mattress in the unfolded bed, substantially as described.

7. In a folding bed, in combination with a base-section and a foot-section adapted to fold as an extension thereto, a seat-frame pivoted in the foot-section with a swinging edge provided with a pin which engages through a slotted part in the foot-section, whereby the said seat-frame is adapted to swing and is guided and limited in its swinging movement, substantially as described.

8. In a folding bed, in combination with a base-section, a foot-section adapted to fold over the base-section and to fold away therefrom as an extension thereto, an apron pivoted to the base-section near the lower edge and on the side toward the foot-section thereof adapted to swing as the foot-section is opened out in extension of the base-section, and to close automatically on the reverse movement of the foot-section, substantially as described.

9. In a folding bed, in combination with a base-section, a head-section adapted to fold to a horizontal extension of the base-section and to a vertical position to form a back therewith, a headboard pivoted to the head-section adapted to partly cover the portion of the mattress and bedding contained in said head-section, and to be turned up to form a headboard when the head-section is extended, a footboard adapted to fold to cover the remainder of the mattress exposure, means for holding the headboard in vertical position with respect to the extended head-section, substantially as described.

10. In a folding bed, in combination with a base-section, a head-section adapted to fold to a horizontal extension of the base-section and to a vertical position to form a back therewith, a headboard pivoted to the head-section adapted to be turned up to form a headboard when the head-section is extended, a footboard adapted to form an extension of the headboard when the folded bed is in folded condition, means for holding the headboard in vertical position with respect to the extended head-section, substantially as described.

11. In a folding bed, in combination with a base-section, a foot-section adapted to fold as an extension thereto, a seat-frame pivoted in the foot-section and adapted to oscillate therein, and means for limiting the oscillation of said seat-frame, substantially as described.

12. In a folding bed, in combination with a base part, a foot extension provided with a seat-frame swinging with respect thereto and pivoted to fold over the base, a head extension pivoted to fold vertically over the rear of the base, a mattress-support held at its ends to the foot extension and the head extension, means for straining the mattress-support, a spring-support under the mattress-support, links connecting the foot extension and the head extension to the spring-support and adapted to lift the spring-support and hold it in place under the mattress-support, substantially as described.

13. In a folding bed, having a base-section, a foot extension provided with a swinging seat-frame and being adapted to fold over the base-section to form a seat, a head extension adapted to fold vertically to form the back to a seat, a folding headboard adapted to fold to face the back section, a folding footboard adapted to swing into the same plane with said headboard, substantially as described.

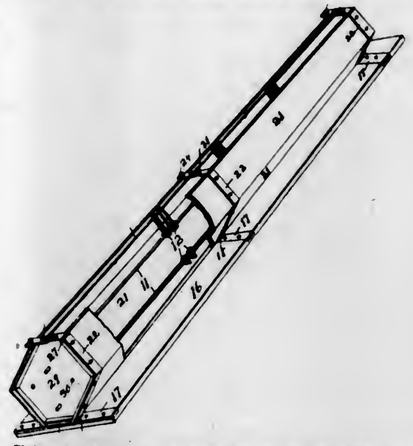
14. In a folding bed, the combination of a base-section, a head extension adapted to fold from a vertical to a horizontal position, a folding headboard, a foot extension adapted to fold from a horizontal position over the base to a horizontal position at the foot of the base, a pivoted footboard adapted to swing to face the head-section, said headboard and footboard folding into the same plane, substantially as described.

15. In a folding bed, in combination with a base-section, a spring-support, a folding head-section pivoted to the base-section, a bell-crank lever adapted to actuate the spring-support, and a link connection between the end of the bell-crank lever and the folding head-section, substantially as described.

16. In a folding bed, in combination with a base-section, a foot-section adapted to fold over the base-section and to fold in extension with the base-section, a head-section adapted to fold vertically with respect to the base-section, and horizontally in extension therewith, a headboard, a footboard, means for securing the same in a vertical position with respect to the unfolded foot-section, and means for securing the same vertically in the folded condition in continuous plane with the headboard, substantially as described.

17. In a folding bed, the combination of a base-section, a foot-section adapted to fold over the base-section, a seat-frame pivoted to the foot-section, means whereby the seat-frame assumes a substantially horizontal position when above the base-section, and an inclined position when folded away from the base-section, substantially as described.

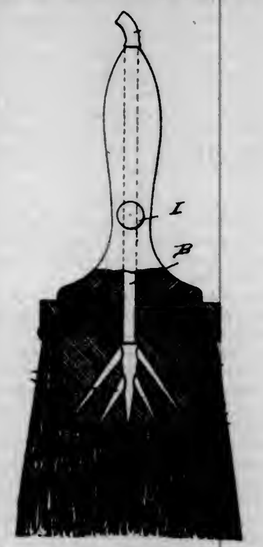
823,457. MOLD FOR CEMENT POSTS. JOHN T. WILSON, Des Moines, Iowa. Filed Aug. 12, 1905. Serial No. 273,983.



Claim.—1. In a cement-post-molding device, the combination of a base, cross-pieces on the base formed with notches, side mold members formed with projections to enter said notches for detachably connecting the side members with the base, said side members notched at their end portions, end mold members inserted in said notches and formed with openings to receive longitudinal wires, top pieces connecting the sides and holding them in position and a rod supported above said top pieces, said rod capable of supporting fence-wire-attaching devices partly out of and partly in the mold.

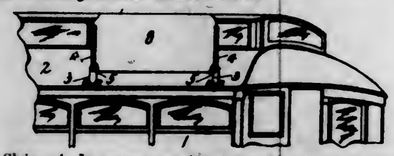
2. In a cement-post-molding device, the combination of a base formed with cross-pieces provided with notches, the longitudinal central portion of the base formed with notches in pairs to receive fence-wire-attaching devices, mold side members provided with metal straps formed with projections to enter the notches in the cross-pieces of the base, said sides also formed with notches near their ends to receive end pieces, end pieces in said notches formed with openings to receive longitudinal wires or rods, top pieces connecting said straps on the side pieces and a rod above and supported by said top pieces.

823,458. FOUNTAIN PAINT-BRUSH. CHARLES H. ABBOTT, Whittier, Cal. Filed Mar. 7, 1905. Serial No. 248,935.



Claim.—In a paint-brush, a head having a handle, said head being provided with a recess, a feeder-block fitting within the recess, said feeder-block being provided with series of diverging channels, a tube passing through the handle and head and communicating with the channels in the feeder-block, bristles carried by the head surrounding the block, and means for holding the bristles to the head, said means also holding the block to the head.

823,459. ADVERTISING-SIGN. MARK D. BATCHELDER, Peoria, Ill. Filed Aug. 10, 1905. Serial No. 273,606.



Claim.—1. In a street-car sign, in combination, a car-roof, a plate attached to the said roof, an advertising-hood adapted to be slipped over said plate, and means for securing the hood on said plate.

2. In a street-car sign, in combination, a car-roof, standards carried by said roof, a plate supported on said standards, and an advertising-hood adapted to be slipped over and inclosing the said plate and standards.

3. A street-car sign, consisting of a plate for containing suitable advertising matter and adapted to be supported on the roof of a car, a hood for containing suitable advertising matter and adapted for inclosing the said plate, one wall of said hood having a flap adapted to be secured to the opposite wall of the hood at the lower edge of said plate, and means for securing the flap to the wall of the hood as specified.

4. In a device of the class described, the combination of a pair of tubular sockets adapted to be secured to the roof of a car, standards detachably and adjustably supported in said sockets, a plate adapted to contain advertising matter attached to said standards, and a hood for containing suitable advertising matter on one of its faces, adapted to have a detachable relation with the said plate and its supporting-standards.

5. In a device of the class described, the combination of an outside sign adapted to be attached to the roof of street-cars, an advertising-hood having opposite walls closed on their ends and top, and open on the lower edge to adapt the same to be slipped over the sign aforesaid, and means for detachably securing the said hood on said sign.

6. In a device of the class described, the combination of an outside sign adapted to be attached to the roof of street-cars, an advertising-hood having opposite walls closed on their ends and top, and open on the lower edge to adapt the same to be slipped over the sign aforesaid, one of said walls having a depending flap adapted to be closed over the open end of the hood and secured to the opposite wall thereof, for the purpose specified.

823,460. FISH-HOOK. ALBERT F. BINGENHEIMER, Milwaukee, Wis. Filed July 17, 1905. Serial No. 269,945.



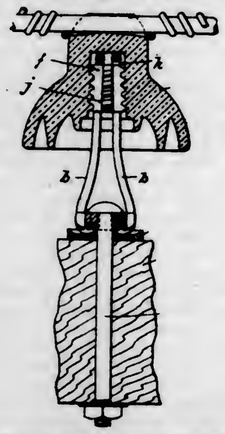
Claim.—1. In combination with a fish-hook, a yielding support and guard member and a V-shaped member attached thereto and supported yieldingly in proximity to the point of said hook.

2. In combination with a fish-hook, a weed-guard comprising a yielding stem and a loop having a V-shaped extremity the angle whereof is yieldingly supported in proximity to the point of the hook.

3. In combination with a fish-hook, a yielding support and guard member attached to the shank of the hook, and a V-shaped member supported thereby and having an angle *p* which is yieldingly supported in proximity to the point of the hook, the sides *q* of said member lying in a plane oblique to the pointed end of said hook.

4. In combination with a fish-hook, a weed-guard comprising a yielding stem secured to the shank of said hook, and a substantially skew-diamond-shaped loop at the end of said stem and yieldingly supported with its tip normally in proximity to the point of said hook, substantially as described.

823,461. INSULATOR-PIN. JAMES H. BULLARD, Springfield, Mass. Filed Mar. 29, 1905. Serial No. 253,715.



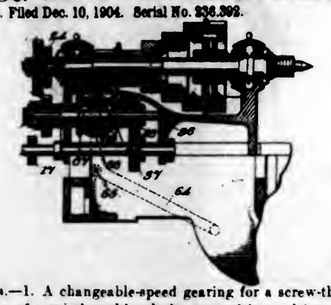
Claim.—1. An insulator-pin comprising a plurality of pin parts longitudinally disposed, on the free ends of which an insulator may be secured, and means to secure the insulator to the pin consisting of a slidable member fitted between the free ends of the pin with which member the insulator has a screw engaging, and means to secure the pin parts on a suitable support.

2. An insulator-pin consisting of a plurality of separated individual pin members the ends of which converge to receive an insulator, a tapered screw-threaded member movably located between said converged ends, the insulator being provided with a screw-threaded recess to receive said tapered member whereby in screwing the insulator on said member, the converged ends of the pin members may be separated to secure the insulator on the pin.

3. An insulator-pin consisting of a plurality of separated individual pin members, the converged ends of which constitute a support for an insulator, a screw-threaded member movably located between these ends, and means to limit the movement thereof toward the end of the pin, together with an insulator having a screw-threaded recess to receive said member.

4. An insulator-pin consisting of two substantially V-shaped pin members, the converged apices of which constitute a support for an insulator, a tapered block, cross-shaped in cross-section, movably located between the ends of the pin members, the edges of the arms of said block being screw-threaded and extending beyond the sides of the pin members, whereby an insulator having a threaded recess therein may be screwed onto said block to draw the latter toward the ends of the pin members to force them apart laterally against the wall of the recess in the insulator.

823,462. GEARING. ALEJANDRO DAMIANS Y ROVIRA, Barcelona, Spain. Filed Dec. 10, 1904. Serial No. 236,392.



Claim.—1. A changeable-speed gearing for a screw-threading mechanism, of a metal-working lathe, comprising a driven shaft, a series of fundamental gears mounted on said shaft, an idle shaft, a driving-pinion for the fundamental gears, and a series of gears on said idle shaft each bearing a different speed ratio to said driving-pinion, means for connecting the driving-pinion to any one of the series of fundamental gears, a driving-shaft, a pair of driving-gears thereon, each bearing a different speed ratio to the driving-pinion, a driving-train, and means for operatively connecting the train with either of the two driving-gears and any one of the speed-ratio gears, substantially as described.

2. A changeable-speed gearing for the screw-threading mechanism of a metal-working lathe, comprising a driven shaft, a series of fundamental gears, an idle shaft, a driving-pinion for said gears, a plurality of gears whose diameters increase in geometrical ratio with relation to said driving-pinion, means for connecting the driving-pinion to any one of the fundamental gears, a cone-spindle-driving shaft, a pair of driving-gears, having the speed ratio of unity and of two to one respectively to said driving-pinion, a driving-train, and means for operatively connecting said train with either one of the pair of driving-gears and with any one of said speed-ratio gears, substantially as described.

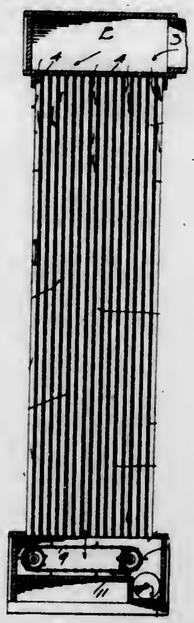
3. In a changeable-speed gearing, a driven shaft, a series of fundamental gears, an idle shaft, a driving-pinion for said gears, a series of gears mounted on the idle shaft the diameters of which increase in geometrical ratio with relation to the driving-pinion, means for connecting said driving-pinion to any one of the fundamental gears, a driving-shaft, a pair of driving-gears bearing the speed ratio of unity and of two to one with respect to said driving-pinion, a suitable driving-train connected with the driving-gears, and said speed-ratio gears, and driving any one of said speed-ratio gears from either of said driving-gears, or for disconnecting said driving-gears entirely, substantially as described.

4. A changeable-speed gearing for screw-threading mechanism, of a metal-working lathe, comprising a driving-shaft, a plurality of different-sized driving-gears mounted thereon, a bracket, a plurality of idle gears mounted thereon, each one being directly in line with each of said driving-gears, an intermediate shaft, a plurality of transmitting-gears each meshing permanently with one of said idle gears mounted upon the intermediate shaft, means for moving said bracket for the purpose of bringing any one of said idle gears in mesh with its alined driving-gear, a driven shaft and a suitable train between the intermediate shaft and the driven shaft, substantially as described.

5. A changeable-speed gearing for the screw-threading mechanism, of a metal-working lathe, comprising a driving-shaft, a pair of different-sized driving-gears, a bracket, a pair of idle gears supported thereon directly in alinement with each of the driving-gears, an intermediate shaft, a pair of transmitting-gears, each in permanent mesh with one of the idle gears, means for actuating said bracket to bring either of said idle gears in mesh with its alined driving-gear or for disconnecting both of said driving-gears, a driven shaft, and a suitable train disposed between the intermediate shaft and the driven shaft, substantially as described.

6. In a variable-speed mechanism for metal-working lathes, a driving-shaft, a plurality of different-size driving-gears, a plurality of idle gears, one directly in line with each of said driving-gears, a supporting-bracket therefor, a two-part intermediate shaft, mechanism connecting said parts and adapted to impart movement in two directions, a plurality of transmitting-gears carried by one part of said intermediate shaft, each gear meshing permanently with one of the idle gears, means for moving said bracket to bring any one of the idle gears in mesh with its alined driving-gear, a driven shaft, and a suitable train between the other part of said intermediate shaft and the driven shaft, substantially as described.

823,463. GRAVITY DUST-COLLECTOR. DENNIS DENEEN, Glencoe, Minn. Filed Nov. 15, 1904. Serial No. 232,797.



Claim.—1. A dust-collector, comprising a series of tubes of pervious fabric having open lower ends and closed at their upper ends except for narrow cracks or slots leading therein, said cracks being of less width than the space between the walls of each tube at its upper end and communicating with the air-blast and adapted to check the same and prevent it from entering the tubes under pressure, and said tubes being arranged close together whereby the air-currents passing through the meshes of contiguous tubes will oppose one another and be checked and the dust retained in the tubes will settle by gravity to the bottom.

2. A dust-collector comprising a series of tubes of pervious fabric of uniform diameter throughout their length and having open lower ends and closed at their upper ends except for narrow cracks or slots leading therein, said cracks being of less width than the space between the walls of each tube at its upper end and communicating with an air-blast and adapted to check the same and prevent it from entering the tubes under pressure whereby the dust will be precipitated by gravity to the bottom of the tubes and the air will pass out through the meshes thereof, substantially as described.

3. A dust-collector, comprising a series of parallel tubes of pervious fabric having open lower ends and closed at their upper ends except for narrow cracks or slots leading therein, said cracks communicating with the air-blast and adapted to check the same and prevent it from entering the tubes under pressure and said tubes being arranged close together, whereby the air-currents passing through the meshes of contiguous tubes will oppose one another and be checked and the dust retained in the tubes will settle by gravity to the bottom, and wire coils separating the wall of one tube from the contiguous parallel wall of the adjoining tube.

4. A dust-collector, comprising a series of upright bars ar-

ranged in pairs with spaces between them and a pervious fabric extending around the bars of the same pair from one to the other and forming a vertical flattened tube between them, the lower ends of the tubes being open and their upper ends closed, except for narrow cracks or slots leading therein, said cracks being of less width than the space between the walls of each tube at the top and communicating with an air-blast and adapted to check the same and prevent it from entering the tubes under pressure, the walls of the adjoining tubes being close together and substantially parallel with one another whereby the air-currents passing through the meshes of contiguous tubes will meet and oppose one another and be checked and the dust retained in the tubes will settle by gravity to the bottom, substantially as described.

823,464. COMBINED TOILET ARTICLE. ANTON C. ROGERS, New York, N. Y. Filed July 14, 1905. Serial No. 269,743.



Claim.—1. In a toilet-kit, the combination of a brush provided with a handle, an independent mirror seated upon the back of said brush and likewise provided with a handle, said mirror and its handle conforming throughout to the contour of said brush and the handle thereof, and a single independent device for detachably retaining said parts in fixed relation.

2. A device such as described embodying a hair-brush provided with a handle, a mirror seated upon the back of said brush, and likewise provided with a handle, and a spring-metal holder detachably fitting over said handles and interclamping the same.

3. A device such as described comprising a hair-brush provided with a handle and having upon its back a marginal seat extending throughout the edge of the same and said handle, a mirror likewise having a handle and provided with a corresponding marginal flange engaging said seat, and a single device fitting over said handles for detachably clamping together said mirror and brush.

4. A device such as described comprising a hair-brush provided with a handle, a mirror likewise provided with a handle and seated upon the back of said brush by means of a marginal rabbet-joint extending throughout the edges or peripheries of said brush and mirror and the handles thereof, and means for interclamping said parts.

5. The combination of a hair-brush, a mirror, and an independent comb-carrying device for interclamping the same.

6. A hair-brush, a mirror, and a device for interclamping said articles embodying a spring-metal comb-seat, and a comb frictionally held at one end in said comb-seat.

7. In a toilet-kit, a hair-brush, a mirror superposed thereon, an independent device for interclamping said parts, and a comb carried at one end by said device and extending between said parts.

8. In toilet articles, a hair-brush, a mirror superposed on the back thereof, said brush and mirror being each provided with a handle, an independent device for clamping together said handles, and a comb carried by said clamping device and interposed between said handles.

9. The combination, with a hair-brush, of a mirror seated upon the back thereof, said brush and mirror being each provided with a handle, and a clamping device embodying a socket fitting over the ends of said handles and a separate comb-receiving socket.

10. The combination of a hair-brush provided with a handle, a mirror likewise provided with a handle and seated face down upon the back of said brush, said last-named handle being provided with a longitudinally-extending recess and the mirror proper being spaced at its rear face from its back, a comb disposed in said recess and extending between the mirror proper and its back, and means for holding said parts in fixed relation.

11. The combination, with a hair-brush provided with a handle, of a mirror likewise provided with a handle and fitting upon the back of said brush, the handle of said mirror being provided with a longitudinally-extending recess, a holder fitting over the ends of said handles, and a comb carried by said holder and fitting in said recess.

12. The combination, with a brush provided with a handle, of a mirror seated upon the back of said brush and likewise provided with a handle, the handle of said mirror being provided upon its lower face with a longitudinally-extending recess, a device for interclamping said handles embodying a socket fitting over the ends of the same and a comb seat or holder within said socket, and a comb held in said comb-seat and fitting in said recess.

823,465. PHOTOGRAPHIC APPARATUS. ANDREW D. BRICKSON, Williston, N. D. Filed Sept. 21, 1905. Serial No. 279,517.



Claim.—In photographic apparatus, the combination of a base comprising sections hingedly connected at one end and adapted to be disposed flat against one another, transverse cleats applied to the outer end of each section, vertical openings in said cleats, vertical standards having the lower ends thereof removably received in the openings, each standard comprising telescopic sections, and an enveloping hood for the base adapted to be supported by said standards.

823,466. TONGS. WILLIAM C. FELTON, Mount Vernon, Ind. Filed Sept. 30, 1905. Serial No. 280,803.



Claim.—1. Tongs having movable jaws, and a bracing-yoke loosely straddling one jaw and pivotally connected to the other jaw.

2. Tongs having jaws, a bracing-yoke loosely straddling one jaw and carried by the other jaw, and guards carried by said jaws.

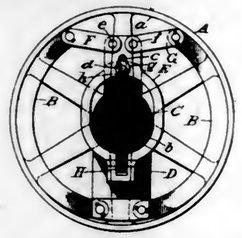
3. Tongs having jaws and a bracing-yoke loosely straddling one jaw and carried by the other jaw.

4. Tongs having jaws and a bracing-yoke loosely straddling one jaw and pivotally carried by the other jaw, said yoke having a detachable connection with the first-mentioned jaw to hold the jaws apart, and means to release the yoke from the first-mentioned jaw.

5. Tongs having jaws, projections carried by one of the jaws, a yoke loosely straddling said jaw and pivotally connected to the other jaw, said yoke being provided with notches for detachable engagement with the projections to hold the jaws apart, and means to disengage the yoke from the projections.

823,467. FRICTION-CLUTCH. HARVEY S. GLENN and COULTER B. GLENN, New Kensington, Pa. Filed Nov. 10, 1902. Serial No. 130,746.

Claim.—1. In combination with a shaft and with a wheel or pulley free to rotate thereon and relatively thereto, a plate or support secured to said shaft; friction-shoes pivoted to said plate and adapted to be pressed outward into contact with the interior face or surface of said wheel; links connected with the free ends of said shoes; a yoke or bail rotatable with the other clutch member, passing about the shaft and connected with the links and free to move in the direction of its length or at right angles to the axis of the shaft; and means to actuate the yoke by force applied from the side of the shaft opposite to that on which the links are located.



2. In combination with a wheel having a circular opening or interior space, and with a supporting-shaft C upon and relative to which said wheel is free to rotate; a supporting-plate D carried by and made fast to the shaft; shoes B, B pivotally connected at one end with said supporting-plate; links F, G connected with the opposite ends of said shoes, a yoke or bail E encompassing the shaft, rotatable with the other members of the clutch and connected at one end with the links F, G; and a lever H connected with the opposite end of said yoke or bail and serving to move the same longitudinally to straighten or bow the toggle formed by the links F, G, substantially as described.

3. In combination with shaft C, and wheel A loose thereon; supporting-plate D; shoes B, B pivotally connected with said plate; links F, G jointed to the free ends of said shoes; yoke or bail E pivotally connected with said links and encompassing the shaft C and movable in the direction of its length; lever H pivotally connected with the yoke E; sliding collar J; and link I connecting said collar and lever H.

4. In combination with shaft C, and wheel A loose thereon; supporting-plate D; shoes B, B pivotally connected with said plate; links F, G jointed to the free ends of said shoes; yoke or bail E pivotally connected with said links, encompassing the shaft C and movable lengthwise of itself; lever H pivotally connected with the yoke E; sliding collar J; and an adjustable link I connecting said collar and lever H.

5. In combination with a shaft and with a wheel or hub loose thereon, a clutch-support fixed upon said shaft; a movable clutch member carried by said support; and a yoke, movable in the direction of its length, carried by the clutch-support, connected with the clutch member at one side of the shaft and extending thence to the opposite side of said shaft, whereby the tendency of centrifugal force to apply the clutch member is in greater or less degree neutralized and actuation of said member from the opposite side of the shaft is made practicable.

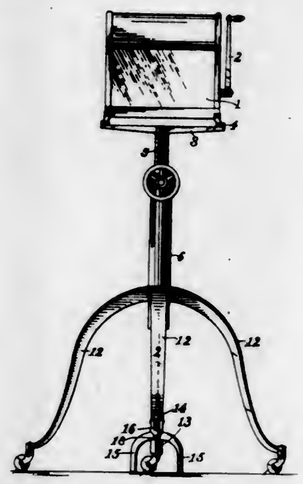
6. In combination with a shaft, a wheel or hub loosely mounted thereon; a clutch-support rigidly secured to said shaft; clutch members carried by said support; and a yoke movable in the direction of its length, carried by the clutch-support, connected at one side of the shaft to said clutch members, and extending thence to the opposite side of the shaft, substantially as and for the purpose set forth.

823,468. CASTER ATTACHMENT FOR ADDING-MACHINE STANDS. AUGUSTIN HENDRICKS, Grand Rapids, Mich. Filed Aug. 22, 1904. Serial No. 221,701.

Claim.—1. In a stand for adding-machines or the like, a tripod having two legs mounted on ordinary casters and a third leg bifurcated or divided and adapted to engage the floor at two remote points and mounted on a vertically-adjustable caster.

2. In a stand for adding-machines, or the like, a tripod having two legs mounted on casters, each caster being rotative about a vertical axis, and the third leg divided or bifurcated and spaced apart to contact the floor at two remote points, and mounted on a vertically-adjustable caster located between the ends of said leg and rotative about a vertical axis.

823,468.



823,469. LAP-ROBE. HARRY L. HOENIGSBERGER, Chicago, Ill. Filed Apr. 24, 1905. Serial No. 257,198.



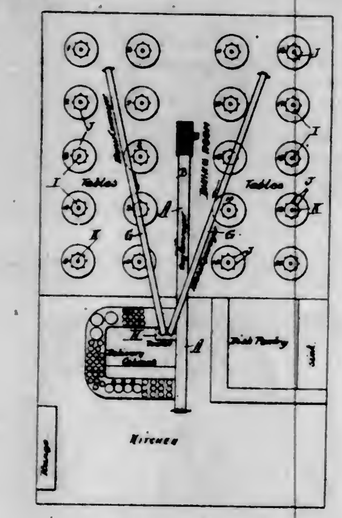
Claim.—A lap-robe of bag formation open at the top and closed at the bottom for the reception of the feet and provided at the back with a split extending from the closed bottom to the open top, the bottom being bifurcated to allow individual movement of the feet, the bag being of a size to allow the edges to the split to overlap each other very slightly to provide a close seam without interfering with the manipulation of the robe and a split hoop of spring metal secured to the open top of the bag and adapted in combination with the closed bottom to normally hold the split closed from top to bottom when the bag is being worn and adapting the bag to be removed from the body by distending the free ends of the spring.

823,470. CONVEYER FOR RESTAURANTS. THORVALD HOLMES, Chicago, Ill. Filed Aug. 21, 1903. Serial No. 170,356.

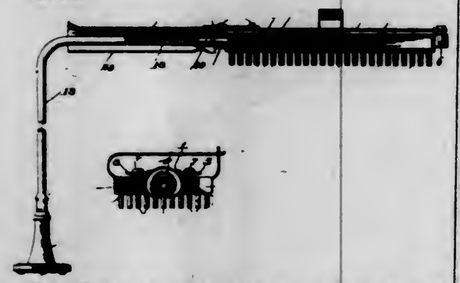
Claim.—1. In a restaurant device, a conveyer arranged to transfer dishes from one part of the restaurant to the other, sets of horizontally-arranged rollers transversely arranged in front of the discharge ends of the conveyers, and similar conveyers leading from the dining-room to a predetermined point in the kitchen of the restaurant; substantially as specified.

2. In a restaurant device, a pair of drums suitably journaled at different points in the restaurant, an endless belt passing over said drums, a pair of small drums journaled so as to cause the belt to travel downwardly before passing onto one of the first-mentioned drums, sets of horizontally-arranged rollers transversely arranged in front of the discharge ends of the belt, and a pair of smaller conveyers leading from suitable points within the dining-room to a common point within the kitchen adjacent one of the discharge ends of the first-mentioned conveyers, substantially as specified.

823,470.



823,471. BATH-BRUSH WITH DETACHABLE HANDLE. BURTON D. KNICKERBOCKER, Chicago, Ill. Filed Dec. 31, 1903. Serial No. 187,375.



Claim.—1. In combination, a brush having a flexible back and tooth formed upon said back, said back being hollow and provided with interstices, a tube connected to said back, a frame attached to said flexible back and supporting the same, and a handle mounted upon said frame.

2. In combination, a brush having a flexible back and teeth formed upon said back, said back being hollow and provided with interstices, a tube connected to said back, a frame attached to said flexible back and supporting the same, and a tubular handle mounted upon said frame, said tube being arranged within said handle.

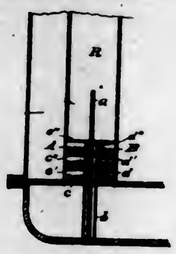
3. In combination, a brush having a flexible back and teeth formed upon said back, said back being hollow and provided with interstices, a tube connected to said back, a frame attached to said flexible back and supporting the same, and a tubular handle mounted upon said frame, and provided with a longitudinal slit, said tube being arranged within said handle and adapted to pass through said slit to place the same within the handle and remove the same therefrom.

4. In combination, a brush having a flexible back and teeth formed upon said back, said back being hollow and provided with interstices, a tube connected to said back, a frame supporting said brush, means attaching said frame to said flexible back and capable of permitting said brush to be readily detached from said frame, and a tubular handle mounted upon said frame.

5. In combination, a brush having a flexible back and teeth formed upon said back, said back being hollow and provided with interstices, a tube connected to said back, a frame supporting said brush and provided with studs, said studs being placed in holes formed in said back to connect said brush to said frame, and a handle mounted upon said frame.

6. In combination, a brush having a flexible back and teeth formed upon said back, said back being hollow and provided with interstices, a tube connected to said back, a frame supporting said brush, means attaching said frame to said flexible back and capable of permitting said brush to be readily detached from said frame, and a tubular handle mounted upon said frame, said tube being arranged within said handle.

823,472. PROCESS OF MAKING SULFURIC ANHYDRID. RUDOLF KNIETSCH, Ludwigshafen-on-the-Rhine, Germany, assignor, by mesne assignments, to General Chemical Company, a Corporation of New York. Original application filed Aug. 6, 1898. Serial No. 687,912. Divided and this application filed Feb. 18, 1901. Serial No. 47,730.



Claim.—1. The process of manufacturing sulfuric anhydrid which consists in subjecting gas containing sulfur dioxid and oxygen to successive contacts with separated bodies of contact material by which the conversion is effected in instalments while maintaining the zone of ultimate reaction substantially below the decomposing temperature of SO_3 by a cooling action intermediate between said contacts.

2. The process of manufacturing sulfuric anhydrid which consists in subjecting gas containing sulfur dioxid and oxygen to successive contacts with separated bodies of contact material by which the conversion is effected in instalments while maintaining the zone of ultimate reaction substantially below the decomposing temperature of SO_3 by a cooling action both intermediate between and during said contacts.

3. The process of manufacturing sulfuric anhydrid which consists in subjecting gas containing sulfur dioxid and oxygen to successive contacts with separated bodies of contact material by which the conversion is effected in instalments while maintaining the pressure at substantially that of the atmosphere or below and while maintaining the zone of ultimate reaction substantially below the decomposing temperature of SO_3 by cooling action intermediate between said contacts.

4. The process of making sulfuric anhydrid which consists in passing a gas containing sulfur dioxid and oxygen through separated bodies of contact material by which the conversion is effected in instalments while removing from the gases intermediate between said contacts excess of heat due to the reaction.

5. The process of manufacturing sulfuric anhydrid which consists in subjecting gas containing SO_3 and O to successive contacts with separated bodies of contact material by which the conversion is effected in instalments while maintaining the zone of ultimate reaction substantially below the decomposing temperature of SO_3 by an external cooling action intermediate between the said contacts.

6. The process of manufacturing sulfuric anhydrid which consists in subjecting gas containing SO_3 and O to successive contacts with separated bodies of contact material by which the conversion is effected in instalments while maintaining the zone of ultimate reaction substantially below the decomposing temperature of SO_3 by an external cooling action both intermediate between and during said contacts.

7. The process of manufacturing sulfuric anhydrid which consists in subjecting gas containing SO_3 and O to successive contacts with separated bodies of contact material by which the conversion is effected in instalments while maintaining the pressure at substantially that of the atmosphere or below, and while maintaining the zone of ultimate reaction substantially below the decomposing temperature of SO_3 by an external cooling action intermediate between said contacts.

8. The process of making sulfuric anhydrid which consists in passing a gas containing SO_3 and O through separated bodies of contact material by which the conversion is effected in instalments while removing from the gases intermediate between said contacts, excess of heat due to the reaction, by external cooling.

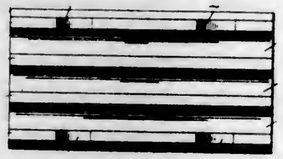
9. The process of making sulfuric anhydrid, which consists in subjecting a gaseous mixture containing SO_3 and O to catalytic action sufficient to effect only a partial conversion into SO_3, then discontinuing the catalytic action, and after such interruption again subjecting the mixture to catalytic action to continue the conversion into SO_3.

10. The process of making sulfuric anhydrid, which consists in subjecting a gaseous mixture containing SO_3 and O to catalytic action sufficient to effect only a partial conversion into SO_3, then discontinuing the catalytic action and cooling the partially-converted mixture during such period of interruption, and thereupon again subjecting the mixture to catalytic action to carry the conversion further.

11. The process of making sulfuric anhydrid, which consists in subjecting a gaseous mixture containing SO_3 and O to catalytic action sufficient to effect only a partial conversion into SO_3, and simultaneously employing a cooling agency to remove heat due to the catalytic reaction, then discontinuing the catalytic action while still continuing the cooling action, and after such interruption again subjecting the mixture to catalytic action to continue the conversion into SO_3, while at the same time continuing the cooling action to remove heat due to this second catalytic reaction.

12. The process of making sulfuric anhydrid which consists in subjecting a gaseous mixture containing SO_3 and O to catalytic action sufficient to effect only a partial conversion into SO_3, then discontinuing the catalytic action, and during such interruption cooling the gaseous mixture by an externally-applied agent kept separated from the said gaseous mixture, and after such interruption subjecting the resulting mixture of partially-converted and unconverted gases, in its original amount, to catalytic action to continue the conversion into SO_3.

823,473. PAVING OR FLAG STONE. SOLOMON W. LERCH, Manasquan, N. J., assignor of one-fourth to Asher Curtis and one-fourth to Theodore Cook, Manasquan, N. J. Filed Aug. 31, 1905. Serial No. 276,532.



Claim.—1. A paving-stone having a flat upper face formed with tapered edges, longitudinal grooves and ribs formed on the under face of the block, longitudinal grooves in the sides of the block and transverse grooves intersecting the outer of the longitudinal ribs.

2. A paving or flag stone consisting of a block having a flat upper face broader than the base and forming overhanging edges, longitudinal grooves in the sides of the block, longitudinal grooves and ribs in the under face of the block, and transverse grooves intersecting the outer ribs.

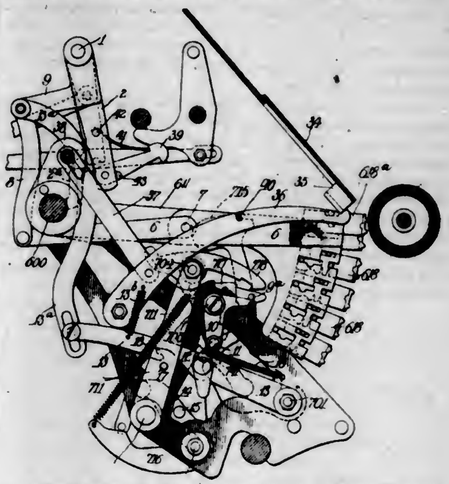
3. A paving or flag stone having the upper or tread surface flat and its ends contiguous to said flat surface tapered or inclined, the under surface of the block provided with a series of longitudinal grooves or channels and a series of transverse grooves or channels extending from the sides to the outer of the series of longitudinal grooves or channels and longitudinal grooves in the sides of the block.

823,474. ADDING-MACHINE. ALVAN MACAULEY, St. Louis, Mo., assignor, by mesne assignments, to Burroughs Adding Machine Company, Detroit, Mich. Filed June 9, 1903. Serial No. 160,717.

Claim.—1. In an adding-machine, the combination of printing and adding mechanism, for printing individual items and accumulating and printing the total thereof, and means for automatically printing with the total a suitable character to distinguish it from the individual items; substantially as described.

2. In an adding-machine, the combination, with printing and adding mechanism, and means for "clearing" the machine, of means for printing a distinguishing character as an incident to the operation of clearing the machine; substantially as described.

3. In an adding-machine, the combination of printing and adding mechanism for printing individual items and accumulating the total thereof and printing said total either with or without "clearing" the machine, and means for printing with the total a given distinguishing character when the machine is not cleared and another distinguishing character when the machine is cleared, to indicate subtotals and totals, respectively; substantially as described.



4. In an adding-machine, the combination of printing and adding mechanism, for printing individual items and accumulating and printing the total thereof, a special key requiring operation at the printing of a total, and printing devices controlled by said key and operating to print a distinguishing character whenever the operation of the machine is accompanied by operation of said key; substantially as described.

5. In an adding-machine, the combination, with printing and adding mechanism, and means for "clearing" the machine, of a special key requiring operation at the clearing of the machine, and printing devices controlled by said key and operating to print a distinguishing character whenever the machine is cleared; substantially as described.

6. In an adding-machine, the combination of printing and adding mechanism, for printing individual items and accumulating and printing the total thereof, a special printing device comprising a movable type-carrier, a spring-operated striker or hammer for forcing the type of said carrier against the platen, a latch normally restraining said striker from movement, a trip for said latch, and a "total-key" controlling the operation of said trip; substantially as described

7. In an adding-machine, the combination of printing and adding mechanism, for printing individual items and accumulating and printing the total thereof either with or without "clearing" the machine, two special type characters representing totals and subtotals respectively, and means for causing one of said characters to print when the machine is operated to print a total and clear the machine, and the other of said characters to print when the machine is operated to print a total without clearing the machine; substantially as described.

8. In an adding-machine, the combination of printing and adding mechanism, for printing individual items and accumulating and printing the total thereof either with or without "clearing" the machine, a special type-carrier bearing two type characters representing totals and subtotals respectively and movable to bring either character to the printing-line at will, and a "total-key" controlling the position of said special type-carrier and the operation of the printing devices coöperating with it, whereby upon operating the machine in conjunction with said total-key to print a total and clear the machine one of said type characters will print, and upon operating the machine in conjunction with the total-key to print the total without clearing the machine the other of said type characters will print; substantially as described.

9. In an adding-machine, the combination of printing and adding mechanism for printing individual items and accumulating and printing the total thereof either with or without "clearing" the machine, said printing devices comprising a platen and a series of type-carriers movable to bring their different types to the printing-line, and the adding mechanism comprising a train of accumulating-pinions, means intermediate the type-carriers and pinions whereby upon turning the pinions backward to initial position the type-carriers

will be moved corresponding distances and bring to the printing-line types representing the total previously accumulated upon the adding mechanism, a "total-key" controlling such backward movement of the pinions and setting of the type-carriers, and a special printing device controlled by said total-key and operating to print a distinguishing character in connection with the printing of a total; substantially as described.

10. In an adding-machine, the combination of printing and adding mechanism, for printing individual items and accumulating and printing the total thereof either with or without "clearing" the machine, and an adjustable type-carrier bearing two type characters representing totals and subtotals respectively, one of which characters stands at the printing-line when the carrier is in normal position, a "total-key" connected with said type-carrier and operable to bring the other type character to the printing-line, and printing devices coöperating with said type-carrier and controlled by said total-key, said devices being normally inoperative but brought into operation by the total-key; substantially as described.

11. In an adding-machine, the combination of printing and adding mechanism, for printing individual items and accumulating and printing the total thereof either with or without "clearing" the machine, a special type-carrier bearing two type characters representing totals and subtotals, respectively, and movable to bring either of said characters to the printing-line, a spring-operated hammer or striker for forcing said type-carrier toward the impression-platen, a latch for holding said striker out of operation, and a tripping device for said latch controlled by the "total-key;" substantially as described.

12. In an adding-machine, the combination of printing and adding mechanism for printing individual items and accumulating and printing the total thereof either with or without "clearing" the machine, a special type-carrier bearing two type characters representing totals and subtotals, respectively, one of which characters normally stands at the printing-line, a "total-key" and connections coöperating with the type-carrier for moving it to bring its other type character to the printing-line, a spring-operated striker or hammer for forcing the type-carrier toward the impression-platen, a latch normally holding said striker from movement, and a tripping device for said latch normally inoperative but moved to operative position by operation of the total-key; substantially as described.

13. In an adding-machine, the combination of printing and adding mechanism for printing individual items and accumulating and printing the total thereof either with or without "clearing" the machine, a special type-carrier bearing two type characters representing totals and subtotals, respectively, one of which characters normally stands at the printing-line, a "total-key" and connections coöperating with the type-carrier for moving it to bring its other type character to the printing-line, a spring-operated striker or hammer for forcing the type-carrier toward the impression-platen, a latch normally holding said striker from movement, a tripping device for said latch normally inoperative but moved to operative position by operation of the total-key, and means for preventing its return to inoperative position after the release of the total-key; substantially as described.

14. In an adding-machine, the combination of the levers B carrying the racks 610 at their forward ends and the type-plates 618 at their rear ends, the accumulating-pinions 916 coöperating with the racks and the platen 619 coöperating with the type-plates, the spring-actuated hammers 715 coöperating with the type-plates, the latches 717 normally restraining said hammers from movement, the tripping-pawls 718 for tripping said latches, the special type-plate 618ª bearing a type character representing totals, a spring-actuated hammer 715 coöperating with said type-plate, a latch normally holding said hammer from movement, a normally inoperative trip for said latch, and a "total-key" and connections for rendering said trip operative when the total-key is operated; substantially as described.

15. In an adding-machine, the combination of the levers B carrying the racks 610 at their forward ends and the type-plates 618 at their rear ends, the accumulating-pinions 916 coöperating with the racks and the platen 619 coöperating with the type-plates, the spring-actuated hammers 715 coöperating with the type-plates, the latches 717 normally restraining said hammers from movement, the tripping-pawls 718 for tripping said latches, the special type-plate 618ª carried by the lever 6 and bearing two type characters representing totals and subtotals, respectively, the "total-key" and connections between the same and the lever 6 for causing the depression of the total-key to move the lever 6 and bring the total-type character to the printing-line, the spring-actuated hammer 715 coöperating with the type-plate 618, the latch 717 normally restraining said hammer from movement, the bell-crank 10 coöperating with the stud 9 upon said latch, the pivoted arm 13 carrying the tripping-pawl 12 coöperating with the lower end of the bell-crank 10, the swinging arm 14 carrying the stud 15 normally traveling beneath the pawl 12, and a connection between the total-key and the arm 13 for causing the depression of said key to lower said arm and bring the tripping-pawl 12 into the path of the stud 15; substantially as described.

16. In an adding-machine, the combination of the levers B carrying the racks 610 at their forward ends and the type-plates 618 at their rear ends, the accumulating-pinions 916 coöperating with the racks and the platen 619 coöperating with the type-plates, the spring-actuated hammers 715 coöperating with the type-plates, the latches 717 normally restraining said hammers from movement, the tripping-pawls 718 for tripping said latches, the special type-plate 618ª carried by the lever 6 and bearing two type characters representing totals and subtotals respectively, the "total-key" and connections between the same and the lever 6 for causing the depression of the total-key to move the lever 6 and bring the total-type character to the printing-line, the spring-actuated hammer 715 coöperating with the type-plate 618, the latch 717 normally restraining said hammer from movement, the bell-crank 10 coöperating with the stud 9 upon said latch, the pivoted arm 13 provided with the notch 18, the tripping-pawl 12 pivoted on said arm, the swinging arm 14 provided with the stud 15, a connection between the total-key and the arm 13 for lowering the latter and bringing the end of the pawl 12 into the path of the stud 15, and the swinging arm 711 provided with the stud 17 coöperating with the notch 18 in the arm 13; substantially as described.

18. In an adding-machine, the combination of a platen-roller located at the rear side of the machine, a plurality of type-carriers located side by side in front of said platen and each carrying a plurality of types movable upon the carrier, means for adjusting said type-carriers vertically and forcing their types rearward into contact with the platen at a printing-line along its forward side and within the normal range of view of the operator, and an inking-ribbon movable in a horizontal path along said printing-line, between the types and the platen; substantially as described.

19. In an adding-machine, the combination of a platen-roller located at the rear side of the machine, a plurality of type-carriers located side by side in front of said platen and each carrying a plurality of types movable upon the carrier, means for adjusting said type-carriers vertically and forcing their types rearward thereon into contact with the platen at a printing-line along its forward side and within the normal range of view of the operator, an inking-ribbon movable in a fixed horizontal path along said printing-line, between the types and the platen, and means for automatically turning the platen at each operation of the machine, after the printing has been done, to carry the printed amount above the inking-ribbon and bring it into the view of the operator at the end of the operation; substantially as described.

20. In an adding-machine, the combination of a platen-roller journaled in fixed bearings at the rear side of the machine, a plurality of type-carriers located side by side in front of said platen and each carrying a plurality of printing-types movable upon the carrier, means for adjusting said type-carriers vertically and forcing their types rearward thereon into contact with the platen-roller at a printing-line along the forward side of the same and within the normal range of view of the operator, an inking-ribbon led between said types and platen, and means for turning the platen at each operation of the machine, after the printing has been done, to bring the printed amount into the view of the operator of the machine at the end of the operation; substantially as described.

21. In an adding-machine, the combination of a platen-roller journaled in fixed bearings at the rear side of the machine, a plurality

of type-carriers located side by side in front of said platen and each carrying a plurality of printing-types movable upon the carrier, means for adjusting said type-carriers vertically and forcing their types rearward thereon into contact with the platen-roller at a printing-line along the forward side of the same and within the normal range of view of the operator, and an inking-ribbon movable in a horizontal path along said printing-line, between said types and platen; substantially as described.

22. In an adding-machine, the combination of a platen-roller journaled in fixed bearings at the rear side of the machine, a plurality of type-carriers located side by side in front of said platen and each carrying a plurality of printing-types movable upon the carrier, means for adjusting said type-carriers vertically and forcing their types rearward thereon into contact with the platen-roller at a printing-line along the forward side of the same, an inking-ribbon movable in a fixed horizontal path along said printing-line, between the types and platen, and means for turning the platen at each operation of the machine, after the printing has been done, to carry the printed amount above the inking-ribbon and bring it into the view of the operator of the machine at the end of the operation; substantially as described.

23. In an adding-machine, the combination of printing and adding mechanism for printing individual items and accumulating and printing the total thereof, a casing inclosing said mechanism and provided with an opening through which the type-carriers of the printing mechanism are adapted to pass, a shutter for normally closing said opening, means for moving the shutter away from the opening at the operation of the machine to print an individual item, and means for returning the shutter to normal position when the machine is operated to print a total; substantially as described.

24. In an adding-machine, the combination of printing and adding mechanism for printing individual items and accumulating and printing the total thereof, a casing inclosing said mechanism and provided with an opening through which the type-carriers of the printing mechanism are adapted to pass, a shutter for normally closing said opening, means for moving the shutter away from the opening at the operation of the machine to print an individual item, means for holding the shutter in such moved position during the printing of succeeding individual items, and means for releasing the shutter and returning it to normal position at the printing of a total; substantially as described.

25. In an adding-machine, the combination of printing and adding mechanism for printing individual items and accumulating and printing the total thereof, a casing inclosing said mechanism and provided with an opening through which the type-carriers of the printing mechanism are adapted to pass, a shutter for normally closing said opening, means for moving the shutter away from the opening at the operation of the machine to print an individual item, a latch for holding the shutter in such moved position during succeeding operations of the machine to print individual items, and a trip for said latch operated at the printing of a total; substantially as described.

26. In an adding-machine, the combination of printing and adding mechanism for printing individual items and accumulating and printing the total thereof, said printing mechanism employing the type-carriers 611ª carrying the type-plates 618 and adapted to be swung upward to bring the different type-plates to the printing-line, the casing inclosing the printing and adding mechanism and provided with the opening 33 to accommodate the upward movements of the type-carriers, the shutter 34, mounted to reciprocate to and from the opening 33, to alternately close and open the same, means for moving said shutter away from the opening to permit the passage of the type-carriers at succeeding operations of the machine, and means for returning the shutter to normal position, to close said opening at the conclusion of operations of the machine, substantially as described.

27. In an adding-machine, the combination of printing and adding mechanism for printing individual items and accumulating and printing the total thereof, said printing mechanism employing the type-carriers 611ª carrying the type-plates 618 and adapted to be swung upward to bring the different type-plates to the printing-line, the casing inclosing the printing and adding mechanism and provided with the opening 33 to accommodate the upward movements of the type-carriers, the shutter 34, mounted to reciprocate to and from the opening 33, to alternately close and open the same, means for moving said shutter away from the opening to permit the passage of the type-carriers at succeeding operations of the machine, a latch for holding said shutter in moved position, and a trip for said latch; substantially as described.

28. In an adding-machine, the combination of printing and adding mechanism for printing individual items and accumulating and printing the total thereof, said printing mechanism employing the type-carriers 611ª carrying the type-plates 618 and adapted to be swung upward to bring the different type-plates to the printing-line, the casing inclosing the printing and adding mechanism and provided with the opening 33 to accommodate the upward movements of the type-carriers, the shutter 34, mounted to reciprocate to and from the opening 33, to alternately close and open the same, means for moving said shutter away from the opening to permit the passage of the type-carriers at succeeding operations of the machine, a latch for holding said shutter in moved position, and a trip for said latch automatically operated at the printing of a total; substantially as described.

29. In an adding-machine, the combination of printing and adding mechanism for printing individual items and accumulating and printing the total thereof, said printing mechanism employing the type-carriers 611ª carrying the type-plates 618 and adapted to be swung upward to bring the different type-plates to the printing-line, the casing inclosing the printing and adding mechanism and provided with the opening 33 to accommodate the upward movements of the type-carriers, the shutter 34, mounted to reciprocate to and from the opening 33, to alternately close and open the same, means for automatically moving said shutter away from said opening at the operation of the machine to print an individual item, and means for returning the shutter to normal position at the end of operations of the machine; substantially as described.

30. In an adding-machine, the combination of printing and adding mechanism for printing individual items and accumulating and printing the total thereof, said printing mechanism employing the type-carriers 611ª carrying the type-plates 618 and adapted to be swung upward to bring the different type-plates to the printing-line, the casing inclosing the printing and adding mechanism and provided with the opening 33 to accommodate the upward movements of the type-carriers, the shutter 34, mounted to reciprocate to and from the opening 33, to alternately close and open the same, means for automatically moving said shutter away from said opening at the operation of the machine to print an individual item, and means for automatically returning said shutter to normal position at the operation of the machine to print a total; substantially as described.

31. In an adding-machine, the combination of printing and adding mechanism for printing individual items and accumulating and printing the total thereof, said printing mechanism employing the type-carriers 611ª carrying the type-plates 618 and adapted to be swung upward to bring the different type-plates to the printing-line, the casing inclosing the printing and adding mechanism and provided with the opening 33 to accommodate the upward movements of the type-carriers, the shutter 34, mounted to reciprocate to and from the opening 33, to alternately close and open the same, means for automatically moving said shutter away from said opening at the operation of the machine to print an individual item, a latch for holding said shutter in moved position, and a trip for said latch; substantially as described.

32. In an adding-machine, the combination of printing and adding mechanism for printing individual items and accumulating and printing the total thereof, said printing mechanism employing the type-carriers 611ª carrying the type-plates 618 and adapted to be swung upward to bring the different type-plates to the printing-line, the casing inclosing the printing and adding mechanism and provided with the opening 33 to accommodate the upward movements of the type-carriers, the shutter 34, mounted to reciprocate to and from the opening 33, to alternately close and open the same, means for automatically moving said shutter away from said opening at the operation of the machine to print an individual item, a latch for holding said shutter in moved position, and a trip for said latch automatically operated at the printing of a total; substantially as described.

33. In an adding-machine, the combination of printing and adding mechanism for printing individual items and accumulating and printing the total thereof, said printing mechanism employing the type-carriers 611ª carrying the type-plates 618 and adapted to be swung upward to bring the different type-plates to the printing-line, the casing inclosing the printing and adding mechanism and provided with the opening 33 to accommodate the upward movements of the type-carriers, the slide 34, mounted in guideways 34ª upon the casing and adapted to slide to and from the opening 33, means for moving said slide away from said opening to permit the passage of the type-carriers through said opening at succeeding operations of the machine, and means for returning said slide to normal position

and closing the opening at the operation of the machine to print a total; substantially as described.

34. In an adding-machine, the combination of printing and adding mechanism for printing individual items and accumulating and printing the total thereof, said printing mechanism employing the type-carriers 611ª carrying the type-plates 618 and adapted to be swung upward to bring the different type-plates to the printing-line, the casing inclosing the printing and adding mechanism and provided with the opening 33 to accommodate the upward movements of the type-carriers, the slide 34, mounted in guideways 34ª upon the casing and adapted to slide to and from the opening 33, means for moving said slide away from said opening to permit the passage of the type-carriers through said opening at succeeding operations of the machine, a latch for holding the slide in such moved position, and a trip for the latch; substantially as described.

35. In an adding-machine, the combination of printing and adding mechanism for printing individual items and accumulating and printing the total thereof, said printing mechanism employing the type-carriers 611ª carrying the type-plates 618 and adapted to be swung upward to bring the different type-plates to the printing-line, the casing inclosing the printing and adding mechanism and provided with the opening 33 to accommodate the upward movements of the type-carriers, the slide 34, mounted in guideways 34ª upon the casing and adapted to slide to and from the opening 33, means for moving said slide away from said opening to permit the passage of the type-carriers through said opening at succeeding operations of the machine, a latch for holding the slide in such moved position, and a trip for the latch automatically operated at the printing of a total; substantially as described.

36. In an adding-machine, the combination of printing and adding mechanism for printing individual items and accumulating and printing the total thereof, said printing mechanism employing the type-carriers 611ª carrying the type-plates 618 and adapted to be swung upward to bring the different type-plates to the printing-line, the casing inclosing the printing and adding mechanism and provided with the opening 33 to accommodate the upward movements of the type-carriers, the slide 34, mounted in guideways 34ª upon the casing and adapted to slide to and from the opening 33, means for automatically moving said slide away from the opening at the operation of the machine to print an individual item, and means for returning the slide to normal position at the conclusion of operations of the machine; substantially as described.

37. In an adding-machine, the combination of printing and adding mechanism for printing individual items and accumulating and printing the total thereof, said printing mechanism employing the type-carriers 611ª carrying the type-plates 618 and adapted to be swung upward to bring the different type-plates to the printing-line, the casing inclosing the printing and adding mechanism and provided with the opening 33 to accommodate the upward movements of the type-carriers, the slide 34, mounted in guideways 34ª upon the casing and adapted to slide to and from the opening 33, means for automatically moving said slide away from the opening at the operation of the machine to print an individual item, a latch for holding said slide in moved position, and a trip for said latch; substantially as described.

38. In an adding-machine, the combination of printing and adding mechanism for printing individual items and accumulating and printing the total thereof, said printing mechanism employing the type-carriers 611ª carrying the type-plates 618 and adapted to be swung upward to bring the different type-plates to the printing-line, the casing inclosing the printing and adding mechanism and provided with the opening 33 to accommodate the upward movements of the type-carriers, the slide 34, mounted in guideways 34ª upon the casing and adapted to slide to and from the opening 33, means for automatically moving such slide away from the opening at the operation of the machine to print an individual item, a latch for holding said slide in moved position, and a trip for said latch automatically operated at the printing of a total; substantially as described.

39. In an adding-machine, the combination of printing and adding mechanism for printing individual items and accumulating and printing the total thereof, a casing inclosing said mechanism and provided with an opening through which the type-carriers of the printing mechanism are adapted to pass, a shutter for normally closing said opening, means for automatically moving the shutter away from the opening at the operation of the machine to print an individual item, a latch normally operating to hold the shutter in such moved position, a total-key requiring operation for the printing of a total, and a trip for the latch operated by said key; substantially as described.

40. In an adding-machine, the combination of printing and adding mechanism for printing individual items and accumulating and printing the total thereof, a casing inclosing said mechanism and provided with an opening through which the type-carriers of the printing mechanism are adapted to pass, a shutter for normally closing said opening, means for automatically moving the shutter away from the opening at the operation of the machine to print an individual item, a latch normally operating to hold the shutter in such moved position, a total-key requiring operation for the printing of a total, and means operated by the depression of said key to maintain the latch out of operative position; substantially as described.

41. In an adding-machine, the combination of printing and adding mechanism for printing individual items and accumulating and printing the total thereof, and means for printing with the total and at one side thereof and as an incident to the printing of such total a suitable character to distinguish it from individual items; substantially as described.

42. In an adding-machine, the combination, with printing and adding mechanism, and means for "clearing" the machine, of means for printing a distinguishing character at one side of the column of individual items and as an incident thereto whenever the machine is cleared; substantially as described.

43. In an adding-machine, the combination of printing and adding mechanism, for printing individual items and accumulating and printing the total thereof, of printing mechanism comprising a plurality of type-carriers located side by side and a special type-carrier located at one side of the first-mentioned type-carriers and bearing a distinguishing type character, and means coöperating with said special type-carrier to cause said character to be printed at one side of the total whenever the machine is operated to print a total; substantially as described.

44. In an adding-machine, the combination of printing and adding mechanism, for printing individual items and accumulating and printing the total thereof, of printing mechanism comprising a plurality of type-carriers located side by side and a special type-carrier located at one side of the first-mentioned type-carriers and bearing a distinguishing type character, and means coöperating with said special type-carrier to cause said character to be printed at one side of the column of individual items whenever the machine is cleared; substantially as described.

45. In an adding-machine, the combination of printing and adding mechanism, for printing individual items and accumulating and printing the total thereof either with or without clearing the machine, and a special printing device for printing a distinguishing character whenever the machine is operated either to print a total or to clear the machine; substantially as described.

46. In an adding-machine, the combination of printing and adding mechanism, for printing individual items and accumulating and printing the total thereof, a special type-carrier bearing a distinguishing type character, and means coöperating with said special type-carrier to cause said character to be printed whenever the machine is operated to print a total or clear the machine; substantially as described.

47. In an adding-machine in which individual items and the total thereof are accumulated and printed, means for automatically or incidentally printing with the total a suitable character to distinguish it from the individual items.

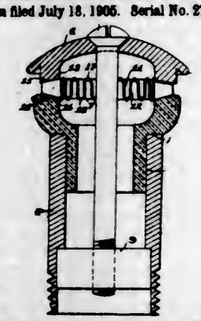
48. The combination with an adding-machine adapted to accumulate and record individual items and to record the sum of items previously accumulated and recorded, of means for automatically printing a suitable character whenever the sum of previously-accumulated items is recorded to distinguish the same from the individual items, and means for preventing the operation of the devices for printing such distinguishing character when items are being recorded.

49. The combination with an adding-machine adapted to accumulate and record individual items and to record the sum of items previously accumulated, of a type-carrier mounted independently of the devices by which the items and total thereof are recorded, a hammer adapted to actuate said carrier, means holding said hammer in inoperative position during the recording of individual items, and means for automatically releasing said hammer when the machine is adapted to record the sum of previously-recorded items, substantially as and for the purpose described.

50. The combination, in an adding-machine adapted to accumulate and record individual items and to also record the sum of items previously accumulated, of a type-carrier mounted independently of the devices by which the items and total thereof are recorded, a spring-operated hammer adapted to move said type-carrier to print a distinguishing character adjacent a number printed by the recording devices, a detent normally preventing movement of said hammer, and means controlled by the "total" device of the machine for releasing said detent.

51. The combination with an adding-machine adapted to accumulate and record individual items and to record the sum of items previously accumulated, of a type normally in printing position for printing a distinguishing character, and means controlled by the "total" device of the machine for actuating said distinguishing type-carrier.

823,475. **GAS-BURNER.** GEORGE MACKLET, Jr., Elizabeth, N. J. Original application filed Dec. 1, 1903, Serial No. 183,333. Divided and this application filed July 18, 1905. Serial No. 270,254.



Claim.—1. A gas-burner comprising a hollow body, a cap, and a single intervening screen consisting of a single thin annular diaphragm corrugated to form outwardly-directed flutes in its top and bottom surfaces; the flutes being deeper at their inlet ends, than at their outlet ends; said diaphragm fitted to and resting directly upon the body, and said cap fitted to and resting directly upon said diaphragm.

2. A gas-burner comprising a hollow member, a detachable cap, and a single intervening detachable screen consisting of a single annular diaphragm having radiating flutes formed alternately in its top and bottom surfaces, the flutes being deeper at their inlet ends than at their outlet ends; said diaphragm fitted to and resting directly upon the body, and said cap fitted to and resting directly upon said diaphragm.

3. A gas-burner comprising a tube having a rim, a cap having a rim, and a single intervening screen consisting of a single annular sheet-metal diaphragm formed with outwardly-directed corrugations which are deeper at their inner ends than at their outer ends; the edges of the rims of both said tube and said cap being beveled to conform to the screen.

4. A gas-burner comprising a tube having a rim, a cap having a rim, and a single intervening screen consisting of a single annular diaphragm formed with outwardly-directed corrugations which are deeper at their inner ends than at their outer ends; one of said rims being interiorly beveled so that a greater space is left between the rims at their inner edges than at their outer edges, and the screen fitting between said rims.

5. A gas-burner comprising a tubular body having a rim, a cap having a rim, and a single intervening screen consisting of a single annular diaphragm having outwardly-directed flutes and also having both upwardly and downwardly directed projections to engage said rims.

6. A gas-burner comprising a tubular body having a rim, a cap having a rim, and a single intervening screen consisting of a single annular diaphragm having outwardly-directed flutes formed alternately in its top and bottom surfaces, projections extending upwardly and downwardly from the ridges of said flutes to fit within said rims.

7. A gas-burner comprising a tubular body having an interior fixed nut, a cap, a single intervening screen consisting of a single ring having radial flutes, and a screw passing down through said cap and threaded into said nut; said ring fitted to and resting directly upon the body, and said cap fitted to and resting directly upon said ring.

8. A gas-burner comprising a tubular body having a rim, a cap having a rim, a single intervening screen consisting of a single annular diaphragm having outwardly-directed flutes formed alternately in its top and bottom surfaces, and having projections extending upwardly and downwardly to fit within said rims, a fastening device passing down through said cap into said tubular body, and means within the tube engaged by said fastening device.

9. A gas-burner comprising a tube, a cap, a single intervening screen consisting of a single ring, means upon said ring interlocking with said cap and tube, a screw passing through the cap, and a support within the tube into which the screw is threaded.

10. A gas-burner comprising a tube, a cap, a single intervening screen consisting of a single ring, projections upon said ring serving to interlock with said cap and tube, a screw passing through the cap, and means within the tube and engaging a shoulder formed within the latter, and connected to said screw to enable the latter to hold the cap.

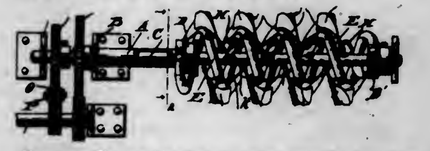
11. A gas-burner comprising a tubular body having an interior shoulder, a tubular head inserted within said body, a cap, a single screen consisting of a single annular diaphragm inserted between said cap and body and forming a screen, a screw passing down through said cap, and a nut into which said screw is threaded, said nut engaging said shoulder; said diaphragm fitted to the body, and said cap fitted to and resting directly upon said diaphragm.

12. A gas-burner comprising a hollow member, a detachable cap, and a single intervening detachable screen consisting of a single annular sheet-metal diaphragm corrugated to form radiating flutes in its top and bottom surfaces, all of the flutes being deeper at their inlet ends than at their outlet ends, said diaphragm fitted to and resting directly upon the body, and said cap fitted to and resting directly upon said diaphragm.

13. A gas-burner comprising a tubular body having a rim, a cap having a rim, and a single intervening screen consisting of a single annular sheet-metal diaphragm corrugated to form outwardly-directed flutes, and also having both upwardly and downwardly directed projections to engage said rims.

14. A gas-burner comprising a tubular body having a rim, a cap having a rim, a single intervening screen consisting of a single annular sheet-metal diaphragm corrugated to form outwardly-directed flutes, and projections extending upwardly and downwardly from the ridges of said flutes to fit within said rims.

823,476. **PROPELLER FOR MARINE VESSELS.** JOSEPH DELA MAR, New York, N. Y., assignor of one-half to Jacob J. Nichols, Brooklyn, N. Y. Filed Aug. 8, 1905. Serial No. 273,345.



Claim.—1. The combination of a set of propeller-blades on a spirally-formed rib, and another set of propeller-blades arranged within the annulus of the first-mentioned set, substantially as described.

2. The combination of a set of propeller-blades, on a spirally-formed rib, and another set of propeller-blades arranged within the annulus of the first-mentioned set, one of said sets of blades being adjustably fastened to its supports, substantially as described.

3. The combination of a set of propeller-blades on a spirally-formed rib, and another set of propeller-blades arranged within the annulus of the first-mentioned set, both of said sets of blades being adjustably fastened to their supports, substantially as described.

4. The combination of a set of propeller-blades on a spirally-formed rib, and another set of propeller-blades reversely inclined to and arranged within the annulus of the first-mentioned set, substantially as described.

5. The combination of a set of propeller-blades on a spirally-formed rib, another set of propeller-blades arranged within the annulus of the first-mentioned set, and means for rotating the two sets of propeller-blades at different rates of speed, substantially as described.

6. The combination of a set of propeller-blades on a spirally-formed rib, another set of propeller-blades reversely inclined to and arranged within the annulus of the first-mentioned set, and means for rotating the two sets of blades in opposite directions, substantially as described.

7. A propeller-wheel, comprising the combination of a tubular shaft having on its projecting end a rigid collar, an internal shaft through the tubular shaft and projecting beyond, provided with

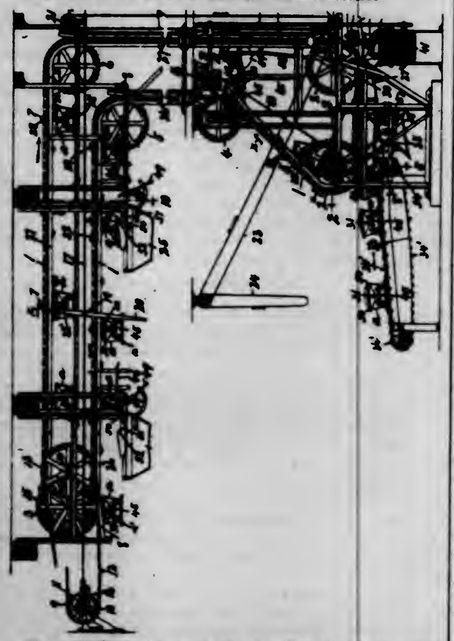
loose collar, a spiral rib secured at its opposite ends to the rigid collar on the tubular shaft, and to the loose collar on the internal shaft, a set of propeller-blades mounted on the spiral rib and a set of propeller-blades mounted on the internal shaft within said spiral rib, as set forth.

8. A propeller-wheel having a spiral rib secured to a tubular shaft and so arranged that the wheel in moving through the water will follow the motion of a screw, propeller-blades exteriorly on said rib, and propeller-blades within said rib, secured to an independent shaft, and disconnected from said rib.

9. A propeller-wheel having a series of adjustable propeller-blades arranged at regular intervals along a spirally-formed rib, and a series of adjustable propeller-blades on a shaft within said rib and operating independently of said outer blades.

10. A propeller-wheel having a series of adjustable propeller-blades arranged at intervals along a spirally-formed rib, and a series of adjustable propeller-blades on a shaft within said rib and rotating in a direction opposite to the blades on the rib.

823,477. CONVEYER SYSTEM. IRVING S. MERRELL, Syracuse, N. Y., assignor to Merrell-Soule Company, Syracuse, N. Y., a Corporation of New York. Filed Nov. 20, 1905. Serial No. 288,216.



Claim.—1. In a conveyer system, an endless belt having a series of cross-shafts each provided with a pair of swinging bucket-hangers having open-sided bearings, buckets supported in said bearings, an endless carrier below a portion of the return side of the endless belt and upon which the buckets are successively deposited, and means for intermittingly moving said carrier as each bucket is successively deposited thereon.

2. In a conveyer system, a main conveyer-belt having a series of cross-shafts each provided with a pair of swinging bucket-hangers, buckets detachably supported in said hangers, means for driving the belt, means for feeding the buckets successively into the path of the hangers to be picked up by said hangers, means for inverting the buckets in said hangers to dump the same, and intermittingly-moving means coacting with and actuated by the movement of the conveyer-belt to detach the empty buckets from their hangers and to convey them away from the place at which they were detached.

3. In a conveyer system, an endless conveyer-belt, an intermittingly-movable bucket-carrier for successively feeding the buckets one by one to the conveyer-belt, separate devices on the conveyer-belt for picking up the buckets as they are successively fed thereto, different locking elements arranged at intervals along the line of travel of the buckets, each bucket having a different locking element adapted to interlock with only one of the first-named locking elements for inverting and dumping the bucket while in transit.

4. In a conveyer system, a conveyer-belt and buckets detachably supported at intervals thereon, in combination with intermittingly-moving means coacting with and actuated by the movement of the conveyer to detach the empty buckets from said conveyer and to convey them away from the place at which they were detached.

5. In a conveyer system, an endless conveyer and actuating means therefor, bucket-supporting hangers upon the conveyer, mechanism actuated intermittingly by and moving in synchrony with the conveyer for feeding the buckets one by one into said hangers as they are successively presented at a certain point.

6. In a conveyer system, an endless belt having swinging bucket-supporting hangers thereon and means actuated intermittingly by said belt for feeding the buckets one by one into said hangers as they are successively presented at a certain point.

7. In a conveyer system, an endless conveyer and actuating means therefor, bucket-supporting hangers on the conveyer having open-sided bearings for receiving portions of the bucket, and intermittingly-movable means actuated by the conveyer to feed the buckets into position to be picked up by the said hangers.

8. In a conveyer system, a conveyer-belt composed of a pair of endless chains spaced apart side by side and cross-shafts connecting said chains, terminal supporting-drums for said belt, a bucket-supporting hanger suspended from each of said shafts and each provided with a pair of open-sided bearings also spaced apart for receiving and supporting the bucket and a bucket swinging in said bearings, each shaft being located in the path of the overturning side of the bucket.

9. In a conveyer system, a main conveyer-belt having a series of bucket-supporting hangers attached at intervals thereto and each provided with open-sided bearings which are brought into position at a certain point in the travel of the conveyer to automatically pick up a bucket, means actuated by the conveyer-belt to feed the buckets one by one into the path of said open-sided bearings, whereby the loaded buckets are conveyed upwardly, means for inverting the buckets while in transit, and a movable carrier in the path of the return empty buckets for receiving and supporting said buckets and allowing the open-sided bearings to automatically disengage therefrom as the conveyer-belt continues to move.

10. In a conveyer system, an endless conveyer having bucket-supporting hangers attached at intervals thereto, tracks or guides running along the outgoing and return sides of the conveyer, rollers on the conveyer traveling along said tracks, intermittingly-moving means actuated by the conveyer for feeding the filled buckets into the path of the hangers whereby they are picked up and carried by the outgoing side of the conveyer, means for automatically inverting and discharging the filled buckets while in transit, and additional means for stopping the empty buckets on their return whereby their hangers are disengaged.

11. In a conveyer system of the class described, a traveling bucket-carrier a bucket pivotally connected to the carrier automatic means for inverting the bucket during its travel and means for engaging and abruptly stopping the overturning of the bucket.

12. In a conveyer system of the class described, a traveling bucket-carrier, a bucket pivotally connected to said carrier, automatic means for inverting the bucket at a predetermined point in its travel and while in transit, and means on the carrier in the path of the overturning part of the bucket to engage and abruptly stop its overturning movement.

13. In a conveyer system of the class described, a traveling bucket-conveyer and mechanical means controlled at will to engage and invert the bucket while in transit and additional means in advance of the first-named means to engage the bucket and detach it from said first-named means.

14. In a conveyer system of the class described, a traveling bucket-carrier and buckets pivotally connected thereto and each having a locking member, means in the path of said member to interlock therewith and to invert the bucket while in transit, said means being movable at will into and out of the path of said member and a stop on the conveyer in the path of the overturning bucket to broadly limit such overturning movement.

15. In a conveyer system of the class described, a traveling bucket-carrier, means normally in but movable out of the path of the carrier mounted upon a fixed support for engaging and inverting the bucket, and additional means engaging the overturning part of the bucket for abruptly checking the tilting movement of the bucket when brought to an inverted position.

16. In a conveyer system of the class described, a traveling bucket-carrier, manually-shiftable means in the path of the bucket to tilt the same while in transit, a fixed abutment in advance of said means and engaged by the traveling bucket for further tilting the same to a complete inverted position, and an additional abutment on the carrier engaged by the overturning part of the bucket when brought to an inverted position.

17. In a conveyer system of the class described, a traveling carrier and swinging bucket thereon having a key or spur on each end to permit either end to be arranged foremost, manually-movable means in the path of the key or spur to engage the latter and tilt the bucket toward an inverted position, a fixed abutment also in the path of the bucket at one side of the spur for engaging and completing the inversion of the bucket, and additional means on the carrier engaged by the overturning part of the bucket to stop its swinging movement when brought to an inverted position.

18. In a conveyer system of the class described, an endless conveyer-belt and swinging hanger thereon, a bucket pivotally supported upon the hanger, means in the path of the bucket to engage at one side of its pivot and rock the same to an inverted position, and additional means engaging said bucket at the opposite side of its pivot for stopping the swinging of the bucket upon its pivot with a sudden jar when brought to an inverted position.

19. In a conveyer system, a pair of endless conveyer-chains traveling side by side, a tie-rod connecting said chains, a hanger mounted on the tie-rod, a bucket pivotally mounted upon the hanger and provided with a locking member, means in the path of said member to engage the same and rock the bucket upon its pivot, a fixed abutment for engaging the bucket and tilting it to an inverted position, and a stop-shoulder on the bucket swinging against the tie-rod when said bucket is brought to an inverted position.

20. In a conveyer system, a traveling conveyer-belt having a series of pairs of swinging hangers arranged one in advance of the other, buckets each supported in one of the pairs of hangers each bucket having a locking member attached to its bottom, separate locking members arranged one in advance of the other in the line of travel of the locking members of the buckets to interlock with those on the buckets and tilt said buckets to an inverted position, said separate locking members being movable out of the path of those on the buckets to prevent the dumping of the latter.

21. In a conveyer system, a traveling conveyer-belt and a bucket carried thereby and provided with a plurality of locking members, and separate devices arranged one in advance of the other in the direction of travel of said bucket, each of said devices being located in the path of one of said locking members to engage the same and tilt the bucket, each device being movable into and out of operative position whereby the bucket may be allowed to pass one of the devices and still be tilted by the next device.

22. In a conveyer system, a traveling conveyer-belt and a series of swinging buckets carried thereby, each bucket being provided with a plurality of locking members, and separate tripping devices, each movable into and out of the path of one of said locking members to interlock therewith and rock the bucket upon its swinging axis.

23. In a conveyer system, a bucket, and traveling conveyer-belt having means thereon to automatically pick up the bucket and carry it forward, means in the path of the bucket to engage and tilt the same to an inverted position while being carried forwardly by the belt and additional means to automatically disengage the bucket from the conveyer-belt.

24. In a conveyer system, a traveling conveyer-belt having open-sided bearings, buckets, and means to feed them one by one into said open-sided bearings as the latter are brought to a certain point and additional means mounted on a fixed support to invert the loaded buckets in their bearings, further means to stop the swinging of each bucket when brought to an inverted position.

25. In a conveyer system, a traveling conveyer-belt provided with bucket-supports, buckets journaled in said supports, means for rocking the buckets in said supports to an inverted position while in transit, and additional means for automatically detaching the empty buckets from the supports at a certain point along the return side of the conveyer-belt.

26. In a conveyer system, a traveling conveyer-belt having swinging bucket-supporting hangers, and buckets thereon, means for inverting the loaded buckets while in transit along the outgoing side of the conveyer, whereby said buckets are emptied, additional means for detaching the empty buckets at a certain point from the return side of the conveyer, an intermittingly-movable carrier for receiving the detached empty buckets, and additional means for synchronizing the movement of the carrier with that of the conveyer-belt to actuate the carrier after each successive bucket is deposited thereon.

27. In a conveyer system, a traveling conveyer-belt, means for feeding loaded buckets into proximity to the outgoing side of the conveyer-belt, pick-up devices mounted at intervals upon the conveyer-belt and adapted to pick up the buckets as they are successively fed thereto, means for inverting and thereby discharging the buckets while traveling along and upon the outgoing side of the conveyer, a carrier in the path of the returning empty buckets for receiving and supporting said buckets, whereby the pick-up devices automatically detach themselves from the buckets, and means for intermittingly moving said carrier as each successive bucket is deposited thereon.

28. In a conveyer system, a bucket-supporting conveyer-belt, and actuating means therefor, a carrier for feeding the loaded buckets one by one into proximity to the conveyer-belt, means for actuating said carrier intermittingly, pick-up devices mounted at intervals upon the conveyer-belt and each operating to pick up one of the buckets as they are successively fed to the conveyer-belt, additional means for inverting the loaded buckets while in transit on the outgoing side of the conveyer, a second carrier in the path of the returning empty buckets for receiving and supporting said buckets, the pick-up devices automatically disengaging themselves from their respective buckets as the latter are successively deposited upon the second carrier, and means for imparting intermitting motion to the second carrier as each bucket is successively deposited thereon.

29. In a conveyer system, a traveling conveyer-belt and swinging buckets thereon, each bucket or series of buckets having a different locking member or key and different locking devices or tumblers located at different points in the line of travel of the bucket and each corresponding to and arranged in the path of one of the keys whereby the key of each bucket automatically selects and engages its particular locking member independently of the others for inverting its bucket.

30. In a conveyer system, a traveling conveyer-belt and swinging buckets supported thereby, different locking members located at different points in the line of travel of the buckets, and different keys on the buckets each corresponding to and interlocking with one of the locking members separately from the others, whereby each bucket or series of buckets is caused to be inverted at a different point in its line of travel.

31. In a conveyer system, an endless bucket-conveyer, swinging hangers on the conveyer having open-sided bearings, buckets supported in said bearings, an endless carrier having a series of abutments spaced a uniform distance apart for engaging and feeding the buckets one by one into the path of the open-sided bearings as they are successively moved to a predetermined point whereby each succeeding bucket is picked up by each succeeding hanger, and means actuated by the conveyer-belt for moving the feeding-carrier one bucket-space at a time.

32. In combination with an endless conveyer-belt and a series of open-sided bearings mounted thereon, means actuated by said belt for feeding the buckets one by one into position to be picked up by said bearings, means for automatically dumping the buckets while traveling along the outgoing side of the conveyer, and additional means coacting with the return side of the conveyer-belt for disengaging the buckets from said bearings as they are successively returned to a predetermined point.

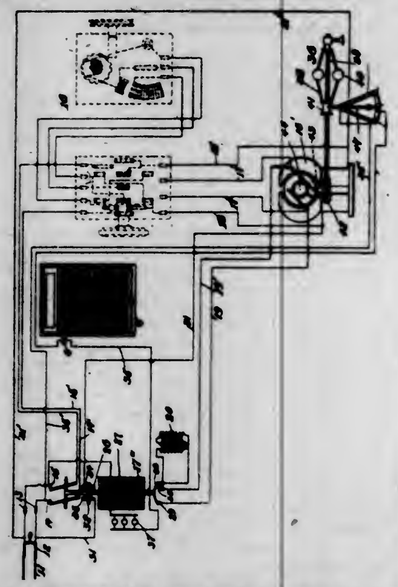
33. In combination with an endless conveyer-belt having a series of cross-shafts each supporting a pair of bucket-hangers, a bucket pivotally mounted in each pair of hangers, means in the path of the bucket for inverting it, and means on the bucket for engaging its shaft when brought to an inverted position.

34. In combination with an endless conveyer-belt, open-sided bucket-bearings mounted at intervals upon the belt, buckets supported in said bearings, means for inverting the bucket while in transit along the outgoing side of the belt, an endless carrier coacting with the return side of the belt to disengage the buckets from their bearings, and means actuated by the belt for moving said carrier intermittingly as the buckets are successively deposited thereon.

823,478. SAFETY SYSTEM FOR MOTOR-PROPELLED CARS. JOHN A. MILLER, Baltimore, Md., assignor to John M. Thurston, trustee, Washington, D. C. Filed Nov. 6, 1905. Serial No. 286,048.

Claim.—1. In a safety system of the class described, the combination with a motor and its independent controlling means, of a separate safety-circuit, an armature short circuit, opening and closing means for the safety-circuit independent of said motor-controlling means, and switch mechanism comprising means for opening and closing the motor-supply circuit, and for the reverse opening and closing of said short circuit.

2. In a safety system of the class described, the combination with a motor and its independent controlling means, of a motor-supply circuit, speed-governing means for the motor, a separate safety-circuit including said speed-governing means, opening and closing means for the safety-circuit independent of the said motor-controlling means, and means also included in the safety-circuit for controlling said supply-circuit and for applying a dynamic brake to the motor.



3. A safety system of the class described comprising a motor-supply circuit, a normally closed safety-circuit, opening and closing means included in said circuit, a current-indicator and spark-preventing means included in said circuit, and an electric switch arranged in operative relation to said safety-circuit and provided with means for opening and closing an armature short circuit for the motor.

4. A safety system of the class described comprising a supply-circuit for a motor, an armature short circuit therefor, an independent field-circuit for the motor, means for opening and closing said supply-circuit, means for causing the reverse opening and closing of the short circuit, and means for establishing the independent field-circuit to the motor.

5. In a safety system of the class described, the combination with a motor and its independent controlling means, of a motor-supply circuit, an armature having a plurality of circuits, one of which circuits is normally open and provided with resistance, a switch in each circuit for controlling the same independently of said motor-controlling means, and means for actuating the switches.

6. A safety system of the class described comprising a motor-supply circuit, a normally energized magnetic switch normally maintaining the current-supply for the motor, an armature branch short circuit including said switch and adapted to be closed upon the de-energization of the latter, a current-retaining circuit for the motor field-magnets, and means for energizing and de-energizing the magnetic switch from a remote point.

7. A safety system of the class described comprising a motor-supply circuit, an armature short circuit, an independent field-circuit, a separate safety-circuit, a switch included in said safety-circuit and comprising means for opening and closing the supply-circuit, for causing the reverse opening and closing of the armature short circuit, and for establishing said independent field-circuit for the motor, and a door or gate actuated circuit opening and closing means included in said safety-circuit.

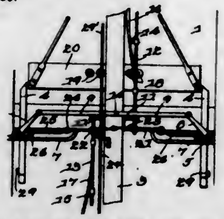
8. A safety system of the class described comprising a supply-circuit for a motor, an armature short circuit, an independent field-circuit, a separate safety-circuit, motor-governing means included in said safety-circuit, and a switch also included in said safety-circuit and comprising means for controlling all of said other circuits, and controlled itself by said governing means.

9. A safety system of the class described comprising a motor-supply circuit, an armature short circuit, a current-retaining branch for the field-magnet of the motor, a safety-circuit, a switch mechanism included in said safety-circuit and comprising means for controlling said other circuits, means independent of the usual motor-controlling means for opening and closing the safety-circuit, and a speed-governor included in the said safety-circuit and operatively related to said motor.

10. A safety system of the class described comprising a motor-supply circuit, a safety-circuit, a motor-governing means included in said safety-circuit, a switch mechanism also included in said circuit and comprising means for opening and closing the motor-supply circuit, an electrically-operated detent arranged in operative relation to said governing means for normally holding the switch mechanism in a closed position, and motor-armature short-circuit connections arranged to be controlled by said detent.

11. In a safety system for motor-propelled vehicles having a safety-closure and independent motor-controlling means, the combination of a safety mechanism having a controlling device operated solely from said closure and comprising means, independent of said motor-controlling means, for opening and closing the power-supply for the motor, and for simultaneously applying restraining means to the latter.

823,479. ELEVATOR-HATCHWAY CLOSURE. JOHN W. McGHEE, St. Louis, Mo., assignor of one-fourth to Robert J. Hotaling and one-fourth to John J. Bernard, St. Louis, Mo. Filed Oct. 31, 1905. Serial No. 285,335.



Claim.—1. In a device of the class described, a closure including a door, a rock-shaft supporting said door, track-engaging wheels upon said rock-shaft, tracks supporting said wheels, arms securely connected with the rock-shaft, links pivotally connecting said arms with stationary points, and means for moving the rock-shaft upon the tracks.

2. A door member, a shaft supporting the same and having antifriction-rollers, supporting-tracks for said rollers, bearings for said shaft including collars having radially-extending arms, a rock-shaft supported at right angles to the rock-shaft carrying the door member, connecting means between the two rock-shafts for moving the door-carrying rock-shaft in a horizontal plane when the rock-shaft connected therewith is oscillated upon its axis, and means for oscillating the door-carrying rock-shaft upon its axis so as to tilt the door while it is being moved in a horizontal plane.

3. A closure including two door members mounted upon horizontal rock-shafts, supporting-tracks upon which said rock-shafts may move in an approximately horizontal plane, means for moving said rock-shafts upon the tracks, and means for simultaneously tilting said rock-shafts upon their axes.

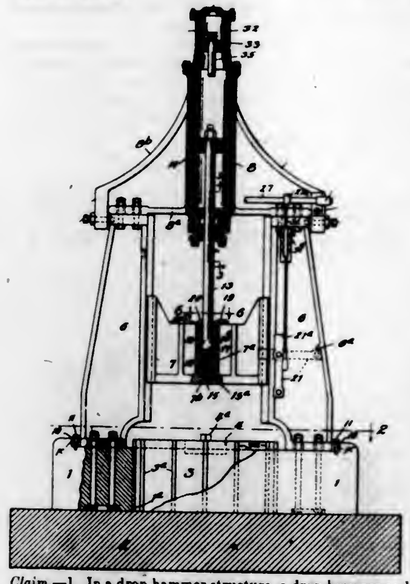
4. A closure including two door members, rock-shafts tiltingly supporting the door members, supporting-tracks, track-engaging rollers upon the rock-shafts, a pair of rock-shafts supported approximately at right angles to the door-supporting rock-shafts one being above and the other below the closure, arms upon the proximate ends of the rock-shafts, a link connecting said arms, an oppositely-extending auxiliary arm upon one of the rock-shafts, arms having collars loosely engaging the door-supporting rock-shafts, links connecting said arms with arms extending oppositely from the shafts at right angles to the door-supporting rock-shafts, spiral flanges upon the latter shafts, a movable car having flange-engaging rollers, fixed arms extending radially from the door-supporting rock-shafts, and links connecting said arms with relatively fixed points.

5. A hatchway-closure comprising a pair of tiltingly and slidably supported door members, and means for simultaneously tilting and sliding said door members in opposite directions.

6. A hatchway-closure comprising a pair of tiltingly and slidably supported door members, and means for simultaneously tilting and sliding said door members in opposite directions, in combination with latch means supporting the inner edges of the door members, when closed, and means for automatically operating said latch members when the door members are moved to an open position.

7. A hatchway-closure comprising a pair of tiltingly and slidably supported door members, and means for simultaneously tilting and sliding said door members in opposite directions; in combination with uprights forming guides, latch members pivoted upon said uprights, latch engaging members upon the door members, bell-crank levers pivoted upon the uprights above and below the latch members, links connecting the bell-cranks with the latch members, rollers supported upon the bell-cranks, a vertically-movable car, and a double-beveled track upon said car adapted for engagement with the rollers upon the latch-operating bell-cranks.

823,480. DROP-HAMMER. JOHN P. McLEOD, Chicago, Ill., assignor to Friedly & Voshardt, Chicago, Ill., a Firm. Filed July 6, 1905. Serial No. 268,409.



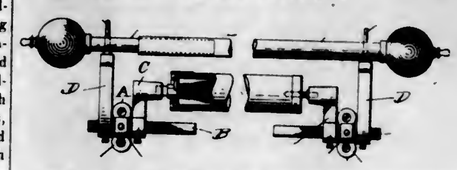
Claim.—1. In a drop-hammer structure, a drop-hammer and its lifting-rod, the rod having a ball-and-socket-joint connection with the hammer, the ball being formed on the end of the rod and the socket comprising a bottom seat and an annular cap, the hammer having a pocket in which the two socket elements are lodged; a wooden plug in the bottom of such pocket under the seat, and means for adjusting the cap to close up the socket.

2. In a drop-hammer structure, in combination with the hammer and its lifting-rod, elements forming a ball-and-socket joint between the lifting-rod and the hammer, comprising a bottom or seating element for the ball and an annular cap, the hammer having a vertical upwardly-open pocket; a wooden plug at the lower part of such pocket, the two-part socket being lodged above the wooden plug, and a threaded sleeve above the annular cap for closing up the socket and retaining it in the pocket.

3. In a drop-hammer structure, a hammer having a central bore from the top downward, and a central aperture from the bottom of the bore leading through the lower face of the bore; a wooden plug lodged in the bore resting on the head of the plug, the lifting-rod having a ball-terminal, and elements forming a socket for such ball lodged in the bore above the plug, and a sleeve screwed into the bore at the upper end for closing up the socket.

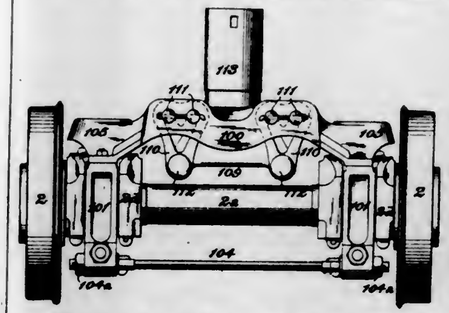
4. In a drop-hammer structure, in combination with the hammer, a lifting-rod for the same; a seat or box with which the lifting-rod makes a joint at the lower end, the hammer having a pocket in which the seat or box is lodged; a wooden plug in the pocket; means for retaining the seat or box in the pocket, the bottom of the pocket being apertured, and a false bottom or disk lodged in the bottom of the pocket which is accessible through the aperture by which the wooden plug may be driven out of the pocket.

823,481. ADJUSTABLE CURTAIN-FIXTURE. ARTHUR L. PERRA, Millbury, Mass., assignor of one-half to Albert E. Parise, Sutton, Mass. Filed Jan. 17, 1905. Serial No. 241,448.



Claim.—In a curtain-fixture, the combination of extensible supports adapted to be attached to the window-frame, a supporting-bar in each of said supports, each bar being independently adjustable transversely of the window-frame, shade-supporting arms independently adjustable on the inner ends of said bars and independently removable therefrom, and pole-supporting arms independently adjustable on the outer ends of said bars and independently removable therefrom, whereby the pole-supporting arms and the shade-supporting arms may be adjusted bodily and simultaneously to and from the window-frame and may also be adjusted independently of each other transversely of the window-frame, for the purposes set forth.

823,482. LOCOMOTIVE-TRUCK. JOHN PLAYER, Schenectady, N. Y., assignor to American Locomotive Company, New York, N. Y., a Corporation of New York. Filed Aug. 29, 1905. Serial No. 276,191.



Claim.—1. A frame for a lateral-motion truck, comprising, in an integral structure, front and rear members extending transversely to the longitudinal central plane of a locomotive and connected by shorter side members having plane lower faces for the attachment of pedestals, and recessed spring-bearings formed on the side members.

2. In a lateral-motion truck, the combination of a substantially rectangular integral frame, pairs of pedestal-jaws fixed to the side members of said frame, pedestal tie-bolts connecting the jaws of each pair, and tie-bolts extending through and connecting the jaws of the opposite pairs.

3. In a lateral-motion truck, the combination of a substantially rectangular integral frame, having recessed spring-bearings formed on its side members, pairs of pedestal-jaws fixed to the side members of said frame, means for bracing the pedestal-jaws both transversely and longitudinally of the frame, and a radius-bar fixed to the frame adjacent to the pedestal-jaws.

4. In a lateral-motion truck, the combination of a substantially rectangular integral frame having recessed spring-bearings on its side members, pairs of pedestal-jaws fixed to the side members on opposite sides of the spring-bearings, axle-boxes fitting between the pedestal-jaws, and springs interposed between and bearing on the axle-boxes and spring-bearings.

5. In a lateral-motion truck, the combination of a substantially rectangular integral frame, having recessed spring-bearings formed on its side members, pairs of pedestal-jaws fixed to the side members of said frame, axle-boxes fitted between said pedestal-jaws, an axle having wheels fixed upon it and journaled in said axle-boxes, springs through which the weight on the frame is transmitted to the axle-boxes, a swing-beam located in the rectangular space between the frame members, and swing-hangers through which said swing-beam is suspended on the frame members.

6. In a lateral-motion truck, the combination of a substantially rectangular integral frame having recessed spring-bearings on its

side members, pairs of pedestal-jaws fixed to the side members on opposite sides of the spring-bearings, axle-boxes fitting between the pedestal-jaws, springs interposed between and bearing on the axle-boxes and spring-bearings, an axle having wheels fixed upon it and journaled in said axle-boxes, a swing-beam located in the rectangular space between the frame members, and swing-hangers through which said swing-frame is suspended on the frame members.

823,483. **YOKE FOR SPLIT SHEET-METAL PULLEYS.** EDGAR T. SHEPARD, Oneida, N. Y. Filed June 16, 1905. Serial No. 265,604.



Claim.—1. A yoke for split sheet-metal wheel-hubs, said yoke having portions of its opposite sides between its ends cut away for forming opposed pairs of gripping-jaws, one pair at each side of the yoke whereby a slight yielding action of the jaws is permitted, each jaw being provided with a bolt-opening.

2. The combination with two opposed semiconical sheet-metal hub-sections, arranged base to base, of a yoke comprising semi-annular ends or heads and a connecting-neck which is narrower than the heads forming a jaw at each corner of the yoke, each jaw being provided with a bolt-opening and each of the heads being fitted within one of the hub-sections, said hub-sections having bolt-openings in registration with the openings in the jaws.

3. The combination with a half of a sheet-metal hub divided at right angles to the axis of the hub substantially midway between its ends forming opposed similar sections, each having a pair of bolt-openings at opposite sides of said axis, of a yoke comprising semi-annular ends or heads and a connecting-neck which is narrower than the heads forming a jaw at each corner of the yoke, each jaw being provided with a bolt-opening in alinement with one of the openings in the hub-section, and bolts passed through said openings for locking the hub-sections to the yoke.

823,484. **ELECTRIC-CONDUCTOR UNION.** FREDERICK W. SONS, Englewood, N. J. Original applications filed Aug. 1, 1903, Serial No. 167,258, and Aug. 17, 1903, Serial No. 169,679. Divided and this application filed Feb. 21, 1905. Serial No. 246,685.



Claim.—1. A torsional electric union formed with wire-pockets and with resilient wire-retaining projections adjacent said pockets to hold wires inserted therein, there being open lateral wire-inserting slots in said union.

2. A torsional electric union formed of resilient sheet metal and provided with an open lateral wire-inserting slot, said union being provided with a wire-retaining projection adjacent said slot to hold wires inserted therein, the surfaces of the wires themselves being forced into electrical contact on twisting said union.

3. An electric union formed of resilient sheet metal to provide a plurality of wire-pockets provided with wire-retaining projections, adjacent said pockets to hold wires inserted therein and provided with an open lateral wire-inserting slot.

4. A torsional electric union formed of resilient sheet metal of 3-shaped cross-section provided with an open lateral wire-inserting slot, said union being provided with a plurality of wire-pockets and with wire-retaining projections adjacent said pockets to hold wires inserted therein.

5. A torsional electric union formed of 3-shaped section to provide wire-pockets and having resilient wire-retaining projections adjacent said pockets to hold wires inserted therein, there being an open lateral wire-inserting slot in said union.

6. A torsional electric union formed of sheet metal of 3-shaped section to provide a plurality of wire-pockets adapted to hold wires with their surfaces in contact, there being an open wire-inserting slot in said union.

7. A torsional electric union formed in one piece and having two contiguous laterally-open pockets and a single inverted-V-shaped medial wire-retaining projection extending between said pockets nearly up to the line of contiguity of the same.

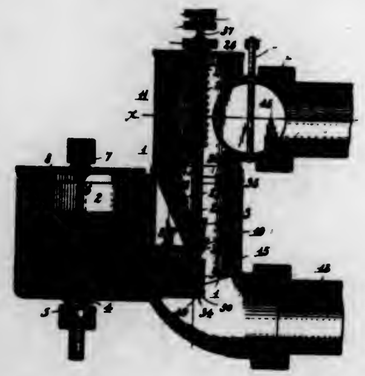
8. A torsional electric union having two contiguous longitudinal laterally-open pockets, the exterior sides of which are adapted to be bent over to inclose wires lying in contact therein and a single inverted-V-shaped medial wire-retaining projection extending nearly to the line of contiguity of said pockets.

9. A torsional electric union formed in one piece and having two contiguous laterally-open pockets tangent to each other and provided with an inverted-V-shaped medial projection extending nearly to the line of tangency of said pockets.

10. A torsional electric union having two contiguous laterally-open pockets adapted to maintain wires in tangential contact therein and having a single inverted-V-shaped medial projection extending nearly to the line of contact of said pockets.

11. A torsional electric union having two contiguous longitudinal laterally-open pockets of substantially circular cross-section, the exterior sides of which are adapted to be oppositely bent over so as to meet and form channels of circular cross-section and a single inverted-V-shaped medial projection extending nearly to the line of contiguity of said pockets.

823,485. **CARBURETER FOR EXPLOSIVE-ENGINES.** WILLIAM J. STEINBRENNER and GODFRIED J. MAYER, Buffalo, N. Y., assignors of one-third to William H. Kreinheder, Buffalo, N. Y. Filed Mar. 3, 1905. Serial No. 248,303.



Claim.—1. In a carbureter, the combination of a carbureter-chamber having a conical wall provided with a port, a rotary conical valve lying against the inner side of said wall and having an opening therein, a vaporizing-nozzle terminating adjacent said port, a device for maintaining the level of the liquid hydrocarbon in said nozzle, and a throttling-valve between said conical valve and the combustion-chamber of the engine.

2. In a carbureter, the combination with a gasolene-chamber, of a carbureter-chamber having a conical wall provided with a port, a rotary valve lying against the inner side of said wall and having an opening therein, a vaporizing-nozzle disposed substantially parallel with said conical wall, a gasolene-conduit connecting the gasolene-chamber with said vaporizing-nozzle and having a guide-tube extending upward through the top of the carbureting-chamber, a needle-valve regulating the flow of gasolene to the vaporizing-nozzle and extending through said guide-tube, means for mixing the vaporized air, and a throttling device to regulate the quantity of explosive mixture drawn into the combustion-chamber of the engine.

3. In a carbureter, the combination with a gasolene-chamber, of a carbureter-chamber having a wall therein with a port, an air-inlet and a mixture-outlet, a valve adapted to throttle said port and having a stem extending through the casing, a vaporizing-nozzle positioned with relation to said port that the air passing through the latter has an aspirating effect on said nozzle, a gasolene-valve controlling the flow of gasolene to said nozzle, a throttling device in the mixture-outlet, and means for simultaneously actuating said throttling-valve and the throttling device in the mixture-outlet.

4. In a carbureter, the combination with a gasolene-chamber, of a casing having a mixing-chamber and a vaporizing-chamber separated by a conical wall provided with a port, a conical valve seated against said conical wall to throttle said port and having a hollow stem extending through the top of the casing, a throttling-lever on said stem, an air-inlet, and a mixture-outlet, a vaporizing-nozzle in aspirating relation to the port in said conical wall and having connection with the gasolene-chamber, a valve regulating the flow of the gasolene to said vaporizing-nozzle, and connection between said conical valve and the gasolene-valve for causing the two to move simultaneously.

5. In a carbureter, the combination with a gasolene-supply and means for maintaining the gasolene at a constant level, of a chamber having an air-inlet, a mixture-outlet, and a valve-controlled ported wall between the two, a vaporizing-nozzle in aspirating relation to the port in said wall, and a throttling device in said mixture-outlet.

6. In a carbureter, the combination with a gasolene-supply and means for maintaining the gasolene at a constant level, of a chamber having an air-inlet, a mixture-outlet, and a valve-controlled ported wall between the two, a vaporizing-nozzle in aspirating relation to the port in said wall, and a butterfly-valve in said mixture-outlet.

7. In a carbureter, a mixing-chamber having a conical bottom provided with opposite ports and having a mixture-passage leading to the engine, vaporizing-nozzles held in such relation to said ports that the air passing therethrough has an aspirating effect on said nozzles, and a conical valve seated against said conical wall and having two openings therein, said valve serving to throttle the ports.

8. In a carbureter, a mixing-chamber having opposite ports and a mixture-passage above said ports, vaporizing-nozzles held in aspirating relation to said ports, and a valve to throttle said ports.

9. In a carbureter, a mixing-chamber having a conical bottom provided with opposite ports and having a mixture-passage leading to the engine, a radial wing at one side edge of each port on the outer face of said conical wall, vaporizing-nozzles in line with the other side edges of said ports and in aspirating relation to the latter, and a conical valve seated against the inner face of the conical wall and serving to throttle said ports.

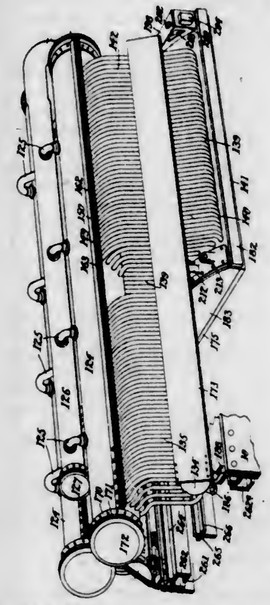
10. In a carbureter, the combination with a gasolene-chamber, a casing having an air-inlet, a mixture-outlet, and a conical wall dividing the casing into a vaporizing-chamber and a mixing-chamber, said wall having opposite ports and radial wings extending from one of the side edges of said ports, vaporizers located in line with the other side edges of said ports in aspirating relation to the latter and being connected with the gasolene-chamber, a conical valve seated against the conical wall and serving to throttle said ports, and a valve for regulating the flow of gasolene to said vaporizing-nozzles.

11. In a carbureter, the combination with a gasolene-chamber, of a carbureter-chamber having an air-inlet, a mixture-outlet, and a conical wall between the two provided with opposite ports, a conical valve seated against the inner face of said wall to throttle said ports and having opposite openings and a hollow stem projecting through the top of the casing, a gasolene-conduit connected to the gasolene-chamber and having a guide-tube extending upward through the valve and the hollow stem thereof and projecting above the upper end of said hollow stem, vaporizing-nozzles on said conduit held in aspirating relations to the ports in said conical wall, a headed needle-valve in said guide-tube to regulate the flow of gasolene to the vaporizing-nozzles and having threaded connection with the upper end of said tube, a throttle-lever secured to the projecting end of the valve-stem, a lock-bar loosely straddling the needle-valve underneath the head thereof and being connected with said throttle-lever to move therewith, and a clamping-nut on the needle-valve between said lock-bar and the upper end of said guide-tube to clamp said lock-bar to the needle-valve, or to lock the latter against movement.

12. In a carbureter, the combination with a gasolene-chamber, of a vaporizing-nozzle, a valve for regulating the flow of gasolene to the vaporizing-nozzle, a mixing-chamber having a port for the vaporized air, a valve for throttling said port, and means for connecting both valves to move them in common and to permit of locking one of said valves against movement, as desired.

13. In a carbureter, the combination with a gasolene-chamber, of a vaporizing-nozzle, a valve for regulating the flow of gasolene to the vaporizing-nozzle, a mixing-chamber having a port for the vaporized air, a valve or throttling said port, a lock-bar connected for movement with the throttling-valve at all times, and clamping means to cause the gasolene-valve to move with said lock-bar or to hold said gasolene-valve against movement.

823,486. **BOILER.** CORNELIUS VANDERBILT, New York, N. Y. Original application filed Dec. 17, 1900, Serial No. 40,162. Divided and this application filed Mar. 3, 1902. Renewed Sept. 17, 1904. Serial No. 234,860.



Claim.—1. In a steam-generator, the combination of a pair of drums, side headers placed beneath and at the sides of the same, an intermediate header located below the pair of drums and headers, and supports for the drums and headers permitting relative movement thereof to allow of longitudinal expansion and contraction, the supports for the intermediate header also permitting vertical movement of said header.

2. In a steam-generating device, the combination of a pair of main drums, side headers, a third header, tubes connecting said drums and headers and spring-supports for the last-named header to allow for the expansion and contraction of its connecting-tubes.

3. In a steam-generating device, the combination of a drum, a side header, a second header, tubes connecting the drum with the said headers, and spring-supports for the last-named header to allow for the expansion and contraction of its connecting-tubes.

4. In a steam-generator, the combination of a pair of drums, side headers placed beneath and at the sides of the same, a third header located below the pair of drums and beneath the plane of the side headers, tubes connecting each drum with one side header and with the lower header, and spring-supports for the last-named header to allow for the expansion and contraction of its connecting-tubes.

5. In a steam-generator, the combination of a drum, a header, tubes connecting the drum with the header, and spring-supports for the header to allow for the expansion and contraction of its connecting-tubes.

6. In a steam-generator, the combination of a drum, a header placed at the side of and beneath the drum, another header below the plane of the side header, substantially S-shaped tubes connecting said drums and side headers in one section of the system, substantially L-shaped tubes connecting the same parts in another section, and substantially vertical tubes between the drum and the lower header in the last-named section.

7. In a steam-generator, the combination of a pair of main drums connected above the water-line, side headers, one on each side of said drums and beneath the same, another header directly beneath the drums and below the plane of the side headers, and tubes extending from the lower halves of the drums to the inner sides of the side headers and the top of the lower header.

8. In a steam-generator, the combination of a pair of main drums, side headers, one on each side of said drums and below the same, a third header directly beneath the drum and below the plane of the side headers, and tubes interconnecting said drums and head-

ers, the side headers being flexibly mounted for longitudinal expansion and contraction, and the lower header for longitudinal expansion and contraction and for vertical movement.

9. In a steam-generator, the combination of a pair of drums, a header parallel with and below the drums, tubes interconnecting them, means for supporting an end of each of said drums and said header with freedom for longitudinal movement to allow for longitudinal expansion and contraction, and a yielding support for one of said parts to permit movement in a vertical direction and allow for the expansion and contraction of the tubes.

10. In a steam-generator, the combination of a pair of drums, a header, tubes extending between said drums and header, and means independent of the tubes for yieldingly supporting one of said connected parts, to allow for expansion and contraction of the tubes while relieving the tubes of the weight of the suspended parts.

11. In a steam-generator, the combination of a pair of drums, side headers, a lower header, tubes connecting the said drums and headers, a sectional inclosure for the whole system, and means for detachably securing together the sections of the inclosure whereby said inclosure may be removed in sections adjacent to the drums and headers.

12. In a steam-generator comprising a fire-box section and a forward section, the combination of a pair of drums, side headers, a lower header, tubes connecting said drums and headers in the fire-box section, said tubes leading substantially horizontally away from the drums, then vertically down to the said headers to provide room in the fire-box, and tubes in the forward section between the headers and drums and extending substantially vertically down from said drums, to substantially fill the space through which the products of combustion pass.

13. In a steam-generator, a drum, a header beneath and at the side of the same, tubes running down from the drum and then sidewise to the header, a covering for the whole seated upon a suitable framework, a projecting ledge being formed on a downward extension of said covering or framework, and a fire-brick lining for said covering supported by said projecting ledge.

14. In a steam-generator, a pair of drums, headers at each side beneath the same, another header lower than the side headers and beneath the drums, a substantially vertical bank of tubes between the drums and lower header, another bank of tubes bending substantially at right angles and extending between the drums and side headers, a sheathing or covering for the system, a fire-brick lining for the sheathing at the sides of the vertical tubes, and above and below the substantially horizontal portions of the tubes, and means for supporting the said lining.

15. In a steam-generator, the combination of drums, side headers, and interconnecting tubes, the longitudinal space beneath the drums having horizontal outwardly-extending spaces where the side headers are located, and the tubes extending across the spaces and being closer in the middle than at the sides.

16. In a steam-generator, the combination of a header, tubes connected therewith, a rigid support for the header at one end, and a knuckle-joint support at the other to allow for expansion and contraction of the same.

17. In a steam-generator, the combination of a header, tubes connected therewith, a rigid support for the header at one end, and knuckle-joint supports at the middle and at the other end.

18. In a steam-generator, the combination of a header, tubes connected therewith, and springs independent of the header to support the header and relieve the tubes.

19. In a steam-generator, the combination of a header, tubes connected with one side thereof, spring-supports at one end of the header, and link-supports at the other end thereof.

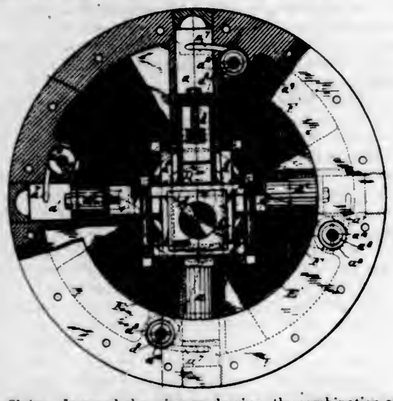
20. In a steam-generator, the combination of a header, a frame, coöperating guides on the header and frame to provide for longitudinal movement therebetween, and flexible spring-supports between the frame and the header.

21. In a steam-generator, the combination of a header, tubes connected therewith, a frame and spring-supported swing-links to suspend the header from the frame.

22. In a steam-generator, the combination of a header, a frame, coöperating guides at one end of the header and on the frame to provide for vertical movement of the header, other guides at the other end of the header and on the frame to provide for longitudinal movement therebetween, spring-supports at the former end of the header, and spring-supported links at the other end of the header.

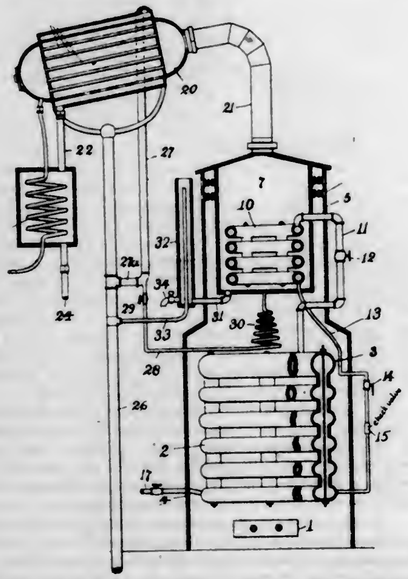
23. In a steam-generator, the combination of a drum a dry-pipe connected to the upper half of the drum, a covering over the whole, the upper half of said drum and the dry-pipe being removable, and means to close the opening between the sides of the drum and the covering to form a chamber inclosing the dry-pipe, the covering over the drum being removable.

823,487. **SPEED-CHANGING MECHANISM.** CHARLE C. WILLIAMS, Cleveland, Ohio, assignor, by direct and mesne assignments, of one-half to George B. Harbaugh and one-half to Webster F. Traves, Cleveland, Ohio. Filed Jan. 16, 1904. Serial No. 189,323.



Claim.—In speed-changing mechanism, the combination of two rotatable members; a liquid-reservoir connected with one of said members; two pairs of pump-cylinders carried in said reservoir and having fluid connection therewith; two pairs of pistons adapted to reciprocate within said pump-cylinders, respectively; yokes connecting said pairs of pistons, respectively, and provided with guiding-surfaces; a crank-shaft connected to the second rotatable member; a cross-head journaled on said crank-shaft and guided on the surfaces of said yokes; and manually-operated means adapted to control the amount of liquid flow between said reservoir and said pump-cylinders.

823,488. **WATER-STILL.** ROBERT P. BARNSTEAD, Boston, Mass. Filed Mar. 3, 1905. Serial No. 248,208.

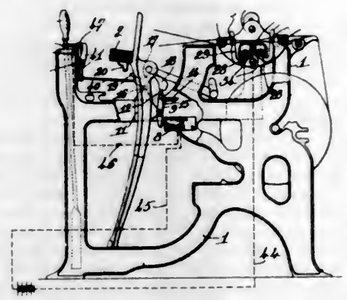


Claim.—1. In a water-still, the combination of a vertically-extended sheet-metal case, a source of heat within its lower part, a boiler located immediately above said source of heat, an evaporator located within the upper part of said case and disposed to allow an annular space between its entire periphery and the interior of said case, and a steam-coil within said evaporator communicating with said boiler; the upper part of said case being laterally apertured for the escape of the products of combustion therethrough.

2. A water-still, comprising a source of heat, steam-generator immediately above the same, an evaporator, steam-coils within said evaporator connected with said generator, a condenser taking vapor from said evaporator, means for supplying fresh water to said condenser and taking the same therefrom, a coil of tubing located upon said steam-generator and receiving the water from said condenser and connections between said coil and evaporator.

3. In a water-still, the combination of a case, a source of heat at its lower part, a steam-generator immediately above the latter, an evaporator located in the upper part of said case, a condenser, connections between said evaporator and condenser, means for supplying water to said condenser, a coil of piping located above said steam-generator and having its upper end opening through the bottom of said evaporator, an outlet for said condenser, and a connection between said outlet and the lower extremity of said coil; said connection having means for its partial closure.

823,489. **ELECTRIC WARP STOP-MOTION FOR LOOMS.** GEORGE E. CHANDLER, Taunton, Mass., assignor to Mason Machine Works, Taunton, Mass., a Corporation of Massachusetts. Filed Sept. 25, 1905. Serial No. 279,947.



Claim.—1. In a loom, in combination, a lay provided with a bunter, means, including a normally inoperative member, adapted to effect the operation of a stopping instrumentality, an operating electric circuit controlling the position of said member, and means to change the condition of the circuit by or through breakage of a warp-thread, such change causing the operative positioning of said member in the path of and to be engaged by the bunter on the backward stroke of the lay.

2. In a loom, in combination, a lay provided with a bunter, means adapted to effect the operation of a stopping instrumentality, said means including a trip, and a detent to normally maintain it out of the path of the bunter, an operating electric circuit to control the detent, and means to change the condition of the circuit by failure of a warp-thread, such change acting to disengage the trip and detent and permitting the former to move into the path of and to be engaged by the bunter on the backward stroke of the lay.

3. In a loom, in combination, a lay, means adapted to effect the operation of a stopping instrumentality, an operating electric circuit to cause said means to be actuated on the backward stroke of the lay upon a change in the condition of the circuit, and circuit-changing means operated by or through failure of a warp-thread.

4. In a loom, in combination, a lay, a shipper, releasing means therefor operative only upon the backward stroke of the lay, and an electric warp-stop-motion mechanism to control said releasing means and render the same operative upon failure of a warp-thread.

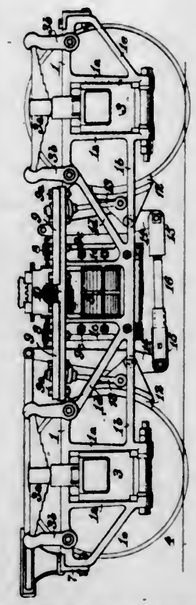
5. In a loom, in combination, a lay, a shipper, a knock-off lever therefor, means to cause the operation thereof by the lay on its backward stroke, and an electric warp-stop-motion mechanism to control said means and render the same operative upon failure of a warp-thread.

6. In a loom, in combination, a lay, a shipper, a knock-off lever therefor, means to cause the operation thereof by the lay on its backward stroke, said means including a normally inoperative trip, and a detent therefor, an electromagnet and an operating electric circuit in which it is included, to govern the detent, and means to change the normal condition of the circuit upon failure of a warp-thread, such change acting through the magnet and detent to release the trip and thereby render the same operative.

7. In a loom, in combination, a lay provided with a bunter, shipper, a knock-off lever therefor, a trip adapted to be engaged and moved by the bunter on the backward stroke of the lay, a lost-motion connection between the knock-off lever and trip, to operate the former by bunter-induced movement of the latter, a normally open operating electric circuit, an electromagnet included therein, an armature for the magnet, to normally retain the trip in inoperative position, and means to close the circuit and energize the magnet upon breakage of a warp-thread, consequent retraction of the armature releasing the trip, the lost-motion connection between it and the knock-off lever permitting the trip to move into position to be operatively engaged by the bunter.

8. In a loom, in combination, a lay provided with a bunter, a shipper, a knock-off lever therefor, a rocking trip adapted to be engaged and moved by the bunter on the backward stroke of the lay, a lost-motion connection between the knock-off lever and the trip, to operate the former by bunter-induced movement of the latter, a normally open operating electric circuit closed by or through failure of a warp-thread, an electromagnet included in said circuit, its armature having a beveled head to coöperate with the trip and retain it inoperative, and a spring to retract the armature, closing of the circuit energizing the magnet and attracting the armature to release the trip and permit it to move into position to be operatively engaged by the bunter, to effect shipper-release, return of the shipper to running position acting through the knock-off lever and lost-motion connection to partly reset the trip, the beveled head of the armature completing such resetting by or through the retracting action of its spring.

823,490. **ELECTRIC-MOTOR TRUCK.** WILLIAM DALTON, Schenectady, N. Y., assignor to American Locomotive Company, New York, N. Y., a Corporation of New York. Filed Aug. 29, 1905. Serial No. 276,219.



Claim.—1. In a car-truck, an integral side frame member comprising a top bar, pairs of pedestal-jaws projecting downwardly therefrom, a bottom bar connecting the two inner pedestal-jaws and thickened at its middle portion, vertical outwardly-flanged transoms connecting the top and bottom bars adjacent to the transverse central plane of the truck, inner diagonal braces extending from the top bar to the bottom bar, between the inner pedestal-jaws and the thickened middle portion of the bottom bar, and end diagonal braces extending from the top bar to the lower ends of the outer pedestal-jaws.

2. In a car-truck, the combination of two side frame members,

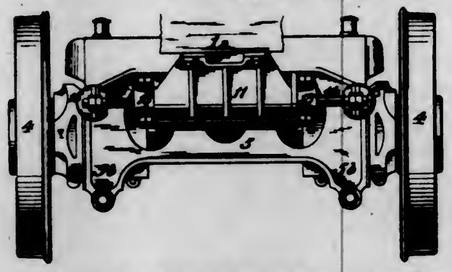
each having a pair of outwardly-flanged transom-posts at its middle portion, transoms having vertical flanges on their ends abutting against the transom-post flanges, and horizontal bolts connecting the flanges of the transom-posts and transoms.

3. In a car-truck, the combination of two side frame members, each having a pair of outwardly-flanged transom-posts at its middle portion, transoms having vertical bodies with outwardly-extending flanges which abut against the transom-post flanges, and horizontal top flanges which are widened at their ends and engage the top bars of the side members by recesses on their lower sides, horizontal bolts connecting the transom-post flanges and transom-body flanges, and vertical bolts connecting the top transom-flanges and the side member top bars.

4. In a car-truck, the combination of a side frame member comprising a top bar, pairs of pedestal-jaws projecting downwardly therefrom, a bottom bar connecting the two inner pedestal-jaws and thickened at its middle portion and diagonal braces extending from the top bar to the thickened portion of the bottom bar, axle-boxes fitted in the pedestal-jaws, springs bearing on the axle-boxes, and hangers coupling the inner ends of the springs to the top bar at the junction of the diagonal braces therewith.

5. In a car-truck, the combination of side frame members, a transom connecting said members, a hard-metal wearing-plate fitting on the top of the transom in position to support the nose of an electric motor, a strap to inclose the end of the motor-nose, and bolts securing said wearing-plate and strap to the transom.

823,491. **LOCOMOTIVE-TRUCK.** WILLIAM DALTON, Schenectady, N. Y., assignor to American Locomotive Company, New York, N. Y., a Corporation of New York. Filed Aug. 29, 1905. Serial No. 276,220.



Claim.—1. The combination, in a locomotive, of a main frame, a truck-frame connected, with the capacity of relative lateral movement thereto, a centering-spring interposed between abutments on the main frame and on the truck-frame, respectively, and acting to resist outward lateral movement of the truck-frame and effect inward lateral movement of said frame, abutting friction-faces on the main and truck frames, and an oil-chamber on the truck-frame surrounding and extending above said friction-faces whereby the same may be maintained continuously submerged in a lubricant.

2. The combination, in a locomotive, of a main frame, a truck-frame connected, with the capacity of relative lateral movement, thereto, a centering-spring interposed between abutments on the main frame and on the truck-frame, respectively, and acting to resist outward lateral movement of the truck-frame and effect inward lateral movement of said frame, a friction-plate fixed to the upper portion of the truck-frame, a lower center casting supported on said friction-plate, and an upper center casting fitting in the lower center casting and in a socket fixed to the main frame.

3. The combination, in a lateral-motion truck, of a truck-frame formed of an integral casting comprising two transverse members connected by a horizontal top member and having pedestal-jaws on their ends, a friction-plate fixed on the top member, and an oil-chamber on the top member surrounding and extending above the friction-plate.

4. The combination, in a lateral-motion truck, of a truck-frame comprising two transverse members connected by a top member, and axle-boxes interposed between the pedestal-jaws and having flanges on their outer ends and plane inner ends.

5. The combination, in a lateral-motion truck, of a truck-frame comprising two transverse members connected by a top member, axle-boxes interposed between the pedestal-jaws and having flanges on their outer ends and plane inner ends, and angular facing-plates fixed to the pedestal-jaws, and fitting between the same and the sides and flanges of the axle-boxes.

823,492. **MAGNETIC SEPARATOR.** LEWIS A. DUNHAM, Kansas City, Mo., assignor, by mesne assignments, to International Separator Company, Chicago, Ill., a Corporation of New Jersey. Filed Dec. 8, 1902. Serial No. 134,286.



Claim.—1. A magnetic separator comprising a movable separating-carrier having means for causing convergences of magnetic flux toward its surface, a magnet-pole facing said carrier, and means for passing material to be separated downwardly through the air-gap between said carrier and said pole, in combination with means for downwardly distorting the magnetic flux between the pole and said carrier.

2. A magnetic separator comprising a cylinder rotatable upon a substantially horizontal axis, and a magnet-pole facing the side of said cylinder, in combination with means for maintaining a magnetic flux of maximum density between said pole and said cylinder throughout an extended arc on the surface of said cylinder below and beyond the lower edge of said magnet-pole.

3. In a magnetic separator, the combination with a magnetic cylinder mounted to rotate upon a substantially horizontal axis, said cylinder having means for causing convergences of magnetic flux toward its surface, of an opposing magnet-pole facing the side of said cylinder and lying outside a vertical plane tangent to said cylinder, and means for distorting the flux from said pole downwardly along the under surface of said carrier.

4. In a magnetic separator, the combination with a hollow cylinder rotatable upon a substantially horizontal axis, of an external magnet pole-piece facing the side of said cylinder, means for passing material to be separated through the gap between said cylinder and said pole-piece, and a magnet-pole facing the inner surface of said cylinder along an arc offset obliquely below the arc faced by said outer pole-piece, whereby the concentrated magnetic flux from the outer pole is distorted downwardly toward the under surface of the cylinder, while a clear space is left below for the free fall of the unattracted material.

5. In a magnetic separator, the combination with a hollow separating-cylinder, of magnet pole-pieces outside and inside of said cylinder respectively, said pole-pieces being offset with reference to each other.

6. In a magnetic separator, the combination with magnet pole-pieces, of means for causing a convergence in the magnetic flux between said pole-pieces, and means for moving said convergence obliquely with respect to a line joining the magnetic centers of the pole-pieces, said pole-pieces being formed to lie outside a vertical plane extending downwardly from the place at which separation begins.

823,493. **VALVE FOR CORROSIVE LIQUIDS.** GEORGE E. GANNON, Colorado City, Colo. Filed May 20, 1905. Serial No. 261,399.



Claim.—1. A soft-metal valve device having a casing of soft metal consisting of a straight tube, a curved tube connected at the ends to said straight tube and communicating with the latter at one end, a connecting-tube containing a valve-seat and a valve and operating devices therefor, and reinforcing-rings of hard metal around said connecting-tube, and around the ends of the straight tube.

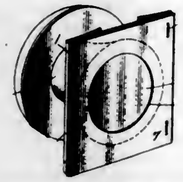
2. The combination in a soft-metal valve device of a casing of soft metal, having necks 3 and 4, a tube 1 extending above and below said necks, a curved section 5, and a connection consisting of a tube 2, extending from the section 5 into the lower end of the tube 1 and formed into a valve-seat, a valve adapted to said seat and operating devices therefor, and reinforcing-rings around the necks 3, 4, and around the upper and lower ends of the tube 1.

3. The combination in a soft-metal valve device of a casing of soft metal, having necks 3 and 4, a tube 1 extending above and below said necks, a curved section 5, and a connection consisting of a tube 2, extending from the section 5 into the lower end of the tube 1 and formed into a valve-seat, a valve adapted to said seat and operating devices therefor, and reinforcing-rings around the necks 3, 4 and around the upper and lower ends of the tube 1, and bolts connecting the rings around the tube 1.

4. The combination with the soft-metal casing, of a soft-metal cap having a stuffing-box, and a hard-metal reinforce inclosing said stuffing-box, substantially as set forth.

5. The combination of the casing A, soft-metal cap C having a stuffing-box, and a yoke G adapted to support the valve and having a base-piece recessed to receive and reinforce the stuffing-box, substantially as set forth.

823,494. **GUARD FOR THE MOUTHPIECES OF TELEPHONE-TRANSMITTERS.** GERHARDT E. GRIMM, Philadelphia, Pa. Original application filed Aug. 12, 1905, Serial No. 273,879. Divided and this application filed May 18, 1906. Serial No. 317,419.



Claim.—1. In a guard of the character described, a plate having an opening, a film of antiseptically-treated material located over said opening and fastening-wings carried by said plate and adapted to engage the mouthpiece of a transmitter, said wings being recessed at their free ends to conform substantially to the contour of and embrace the mouthpiece.

2. In a guard of the character described, a plate having an opening, a film of antiseptically-treated material located over said opening, fastening-wings formed integral with said plate and adapted to engage the mouthpiece of a transmitter, said wings being recessed at their free ends to conform substantially to the contour of and embrace the mouthpiece, and means to connect said wings to the plate at a point adjacent their bases.

3. In a guard of the character described, a plate having an opening, a film of antiseptically-treated material located over said opening, and oppositely-disposed fastening-wings formed integral with said plate and adapted to engage the mouthpiece of a transmitter, said wings being recessed at their engaging portions to conform substantially to the contour of the mouthpiece, and embrace the latter.

4. In a guard of the character described, a plate having an opening, a film of antiseptically-treated material located over said opening, two of the sides of said plate being parallel to each other and each formed with an integral recessed fastening-wing folded onto the rear side of the plate and having their engaging portions directed toward each other, and means to maintain said wings in folded and resilient condition.

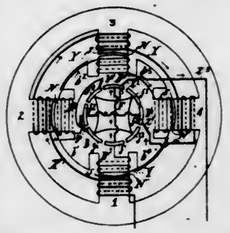
5. In a guard of the character described, a plate having an opening, a film of antiseptically-treated material located over said opening on the front of said plate, oppositely-disposed recessed fastening-wings formed integral with said plate and folded onto the rear side of said plate and having their engaging portions directed toward each other, a second apertured plate arranged over said film and first-named plate, and means for securing said plates together, said means also operating to maintain said wings in folded and resilient condition.

6. In a guard of the character described, a plate having an opening, a film of antiseptically-treated material located over said opening, on the front of said plate, oppositely-disposed fastening-wings formed integral with said plate and folded onto the rear side of said plate, and having their engaging portions directed toward each other, a second apertured plate arranged over said film and first-named plate, and means whereby the plates are secured together and the wings held in folded and resilient condition.

7. A guard for telephone-mouthpieces, comprising a plate having a film-covered sound-receiving aperture, holding-wings on opposite sides of said aperture, and fastening means passing through said plate and wings at points within their marginal edges to secure said wings and plate together and form resilient mouthpiece-engaging clips.

8. A guard for telephone-mouthpieces, comprising a plate having a film-covered sound-receiving aperture, infolded integral holding-wings at the edges of said plate, and means for securing said infolded wings to said plate at points within their marginal edges to afford resilient mouthpiece-engaging clips.

823,495. **ALTERNATING-CURRENT MOTOR.** JOHN O. HEINKE, Jr., Lowell, Mass. Original application filed July 22, 1903, Serial No. 166,621. Divided and this application filed May 29, 1905. Serial No. 262,771.

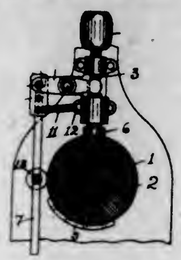


Claim.—1. A synchronous alternating motor, made up of a stationary member; a movable member; a field-circuit; an armature-circuit; means whereby said field-circuit may be connected in series with said armature-circuit, said motor, while said circuits are connected in series, operating as a series motor; and means whereby said armature-circuit may be closed upon itself to form a secondary circuit, said secondary circuit being acted upon inductively by said field or primary circuit; said closing of the armature-circuit to form the secondary circuit, taking place when the magnetic axes of the coils of the primary and secondary circuits are one and the same, and said connection of the armature-circuit and the field-circuit in series, taking place when the coils of the field and the coils of the armature are in neutral magnetic relations.

2. A synchronous alternating-current motor, made up of a stationary member; a movable member; a field-circuit; armature-circuits; means whereby said field-circuit may be connected in series with one of said armature-circuits; said motor, while said circuits are connected in series, operating as a series motor; and means whereby the other of said armature-circuits is closed upon itself and forms a secondary circuit, said secondary circuit being acted upon inductively by said primary circuit; said connection in series taking place when the coils of one of said armature-circuits are in neutral magnetic relations with said field-coils, and at said time, said other armature-circuit is closed upon itself and is in active relation with said field-circuit, so that said armature-circuits will with said field-circuit simultaneously form a primary circuit, and a secondary circuit; said motor operating simultaneously both as an induction-motor and as a series motor.

3. A synchronous alternating-current motor, made up of a field of electromagnets in a primary circuit; a rotatable armature, provided with electromagnets in a secondary circuit; a series of commutator-segments, mounted upon the armature-shaft; a pair of electrically-connected brushes, to engage the segments in the secondary circuit, to open and close said secondary circuit; and a pair of brushes in the primary circuit, to engage said segments in the secondary circuit, to connect said primary circuit and said secondary circuit in series; and a series of segments in circuit with which said brushes may engage to complete the primary circuit; said short-circuiting taking place when the magnetic axes of the coils of the primary circuit, and the coils of the secondary circuit, are one and the same; and said connection in series occurring when the coils of the primary circuit, and the coils of the secondary circuit, are in neutral magnetic positions.

828,496. CLUTCH-RELEASE MEANS. Louis J. Hinds, Toledo, Ohio. Filed Oct. 20, 1905. Serial No. 283,691.



Claim.—1. The combination with the releasing means of a clutch, of a member movable to effect a movement of said releasing means, means for normally retaining said member in one position of movement, a trip-rod having a relative angularly-movable pivotal connection with said member whereby a relative movement of the trip-rod in one direction when depressed permits a relative movement of the member in a different direction and an engagement of the stop means, and means for imparting the relative movement to the trip-rod at a predetermined point in a revolution of the clutch-shaft.

2. The combination with a normally engaged clutch, of the releasing member therefor and the trip-rod, one of which is formed with a cam-slot and the other a pivot operating in said slot whereby to permit a relative angular movement of said two parts when the clutch is in released position and a return of the releasing member to normal position, and means for causing such relative movements of said parts when the clutch-shaft has reached a predetermined point in its revolution.

3. The combination with the releasing means of a clutch, of a member connected to said releasing means and having a substantially right-angled slot therein, a trip-rod normally retained in one position and pivotally connected to said member with its pivot movable in said slot whereby a relative movement of the trip-rod in one direction when depressed permits a relative movement of the member in another direction to effect a release of the clutch, and means for causing a movement of the trip-rod relative to said member at a predetermined point in the revolution of the clutch when engaged.

4. The combination with a clutch mechanism, and the normally engaged stop means therefor, of a trip-rod, a member connecting said trip-rod and stop means and having relative angularly-movable pivotal connection with said trip-rod whereby a relative movement of the trip-rod in one direction when depressed permits a relative movement of the member in another direction and an engagement of the stop means, a protuberance revolving with a portion of the clutch mechanism, and means movable by said protuberance at a predetermined point in its movement for causing a movement of the trip-rod relative to said member.

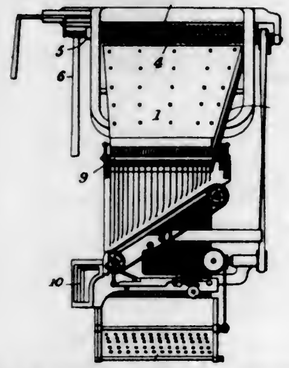
5. The combination with the releasing means of a clutch, of a member connected to said releasing means and having a cam-slot therein, a trip-rod normally retained in one position and pivotally connected to said member with its pivot movable in said cam-slot, and means for causing a movement of the trip-rod relative to said member whereby said member is permitted to have a movement independent of the trip-rod to cause a positive release of the clutch.

6. The combination with a clutch mechanism, and the means thereof movable to effect a release or engagement of the clutch, of a trip-rod having relative angularly-movable pivotal connection with said means whereby a lateral movement thereof when depressed permits a movement of said means for causing a release or disengagement of the clutch mechanism, a revolving member, and a lever movable by contact with said revolving member at a predetermined point in its revolution to cause a lateral movement of the trip-rod.

7. The combination with the element of a clutch movable to effect a release or engagement thereof, of a member movable to cause a movement of said element and having an outwardly and downwardly extending cam-slot in a portion thereof, a trip-rod, a lever having a vertically-disposed slot, a pin passing through an aperture in the trip-rod and the slots in said member and lever, means for normally retaining the pin in one portion of the cam-slot in said member, and means for imparting an oscillatory movement to the lever at a predetermined point in the revolution of the clutch when in operation whereby the pin is moved within the cam-slot to permit a movement of said member and element for releasing the clutch.

REISSUES.

12,494. LINOTYPE-MACHINE. Henry B. Bartlett, New York, N. Y., assignor to Mergenthaler Linotype Company, a Corporation of New York. Application for reissue filed Apr. 15, 1905. Serial No. 256,854. Original No. 741,294, dated Oct. 13, 1903.



Claim.—1. In a typographic machine, the combination of means for forwarding a line of matrices, and means for turning said matrices to different angles whereby they are adapted to be discharged into different magazines from a common distributing device.

2. In a typographic machine, the combination with a ribbed distributing-rail, of matrices having toothed notches, the notches in certain matrices being out of line with the notches in other matrices, and means for engaging all of said matrices with said distributing-rail.

3. In a typographic machine, the combination with a ribbed distributing-rail, of matrices having toothed notches, the notches in certain matrices being out of line with the notches in other matrices, means for forwarding a group of such matrices, and means for engaging all of said matrices with the distributing-rail.

4. In a typographic machine, the combination with matrices having toothed notches, the notches in certain matrices being out of line with the notches in other matrices, of means for forwarding a group of such matrices, and means for turning the matrices relatively to bring all the notches into alinement

5. In a typographic machine, the combination with a plurality of series of matrices provided with V-shaped toothed notches, the notches in the different series being differently located with respect to the outlines of the matrices, of means for forwarding a group of such matrices, means for turning the matrices relatively to bring their notches into alinement, a common distributing-rail, and means for engaging the matrices with said distributing-rail.

6. In a typographic machine, the combination with matrices having toothed notches, the notches in certain matrices being out of line with the notches in other matrices when the matrix-bodies are alined, of means for forwarding a group of such matrices, and a turning device arranged to act upon the matrices as they are forwarded to cause the toothed notches to aline, whereby they may be charged upon a common distributing-rail.

7. In a distributing mechanism for a typographic machine, the combination with a plurality of magazines arranged with their entrance ends parallel and adjacent, of a single distributing-rail common to said magazines, and means for discharging matrices from said rail directly into the several channels of each of said magazines.

8. In a typographic machine, the combination with a plurality of magazines arranged with their entrance ends parallel and adjacent, a single distributing-rail, and a plurality of series of matrices provided with toothed notches adapted for engagement with said rail, the matrices of the different series having their notches differently located, whereby the different series of matrices are held in different positions by the distributing-rail and are adapted to be discharged into their respective magazines.

9. In a typographic machine, the combination with two magazines, of a common distributing-rail and two series of toothed matrices adapted to engage with said rail, the teeth in the matrices of the different series being differently arranged and being adapted to hold the matrices at different angles with respect to the rail, and a fixed guide beneath the rail in contact with which the lower ends of the matrices travel.

10. In a typographic machine, the combination with a plurality of magazines, of escapements for the matrices of the several magazines, and means extending between the paths of the outgoing matrices and connecting the corresponding escapements of the different magazines.

11. In a typographic machine, a plurality of magazines arranged with their delivery ends parallel and adjacent, a series of escapements for each magazine, and a series of rods extending between the paths of the outgoing matrices, each rod being adapted to operate the corresponding escapements of the several magazines, a keyboard, and connections between said keyboard and said rods.

12. In a typographic machine, the combination with a plurality of magazines arranged with their delivery ends parallel and adjacent, of a series of pivotally-mounted escapements for each magazine, a series of rods each extending transversely through the several magazines, connections between each of said rods and the corresponding escapements of the several magazines, and means controlled by the keyboard for reciprocating said rods.

13. In a typographic machine, the combination with a plurality of magazines, of escapements for the matrices of the several magazines, means extending through the magazines and connecting the corresponding escapements of the different magazines, and means for preventing the escape of matrices from either of said magazines.

14. In a typographic machine, the combination with a plurality of magazines, of escapements for the matrices of the several magazines, means extending through the magazines and connecting the corresponding escapements of the different magazines, and means adapted to engage alternately with the matrices in the several magazines to prevent the escape of said matrices.

15. In a typographic machine, the combination with a plurality of magazines, of escapements for the matrices of the several magazines, means extending through the magazines and connecting the corresponding escapements of the different magazines, and means to engage the lowest matrices in any magazine and move them upward to lock the matrices within said mag: zine and relieve its escapements from frictional contact therewith.

16. A device for distributing and releasing different sorts of matrices, comprising in combination with matrices having eccentric teeth or indents, a device for turning same singly, a distributing-rail, screws by which the different sorts of matrices are conveyed along at any desired angle on either side of the rail, magazines arranged one behind the other below the distributing-rail to receive said matrices, and releasing devices for the various sorts arranged in and between the magazines, and means for preventing more than one sort of matrix leaving a magazine at a time, all substantially as described.

17. The turning device for the matrices, comprising a guide having projections corresponding to the matrices located in a prolongation of the distributing-box, and upon which the matrices are pressed and in consequence of the ascent turned, so that the matrices, according as to whether the indents or teeth lie eccentrically right or left, after leaving the said prolongation of the distributing-box are pushed to the right or left hand side of the distributing-rail, substantially as described.

18. In a typographic machine, a releasing device for the matrices, comprising detents pivoted within the channels of the magazines and devices extending through the magazines and connecting corresponding detents, whereby on depressing a key the matrices bearing the letter corresponding to said key in each magazine are set free, and control devices located below the exit-openings of the channels for preventing any matrix from being released except those of the magazine set free by said control devices, substantially as described.

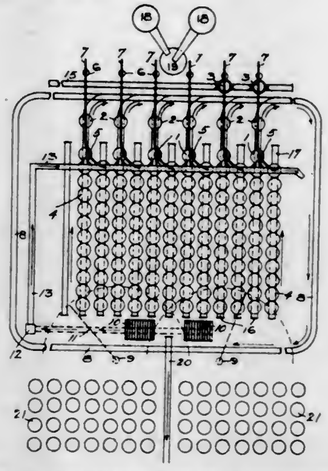
19. In a typographic machine, in combination with releasing devices comprising detents located within the magazine-channels, means extending through the magazines for operating said releasing devices, a device for controlling the exits of said channels, comprising a pivotal plate having projections and means for actuating same, said projections retreating the matrices for a short distance so that between the detent and the lugs of the matrices a space is formed and the detents relieved of the pressure of the matrices, substantially as described.

20. In a typographic machine, the combination with a plurality of magazines, of escapements for the several magazines, and means common to the several magazines and extending transversely of the magazines and arranged to operate the corresponding escapements of the different magazines.

21. In a typographic machine, the combination with a plurality of magazines arranged with their delivery ends parallel and adjacent and each provided with a series of escapements, of means common to the several magazines and extending transversely of the magazines and arranged to operate the corresponding escapements of the different magazines.

22. In a typographic machine, the combination with a plurality of magazines arranged with their delivery ends parallel and adjacent and each provided with a plurality of escapements, of a plurality of escapement-operating devices, each device extending transversely of the several magazines and adapted to operate corresponding escapements of the several magazines.

12,495. FOUNDRY OR CASTING PLANT. Joseph W. Henderson, Butler, Pa. Filed Mar. 7, 1906. Serial No. 304,803. Original No. 783,200, dated Feb. 21, 1905.



Claim.—1. In a foundry or plant for the manufacture of castings the combination of the cupolas at one end of the foundry-building; a plurality of parallel floor-tracks extending in a direction toward said cupolas; a transfer-track, 8, which extends crosswise of the cupola ends of said parallel tracks then back to and crosswise of the opposite ends of said tracks; cranes at said opposite ends of said parallel tracks; tracks connecting the ends of the parallel-tracks with said transfer-track; overhead tracks in alinement with said connecting-tracks and having travelers which move toward and away from said parallel tracks, and flasks mounted on rollers.

2. In a foundry or plant for the manufacture of castings the combination with the cupolas at one end of the foundry, of a plurality of parallel floor-tracks extending in a direction toward said cupolas; a transfer-track surrounding the parallel floor-tracks and passing the said cupolas; tracks connecting the ends of the parallel tracks with the transfer-track; a track, 15, interposed between the ends of said floor-tracks and the cupolas; a sand-grate at the opposite ends of said parallel floor-tracks and between the latter and the continuous transfer-track, and means for conveying the sand from said grates at one end of the floor-tracks to the opposite ends of said floor-tracks, for the purpose set forth.

3. In a foundry, the combination with flasks mounted on wheels or rollers, of a mold-forming and pouring space on the foundry-floor, a flask-shaking-out space, a flask-storing track inclined downwardly from the shaking-out space toward the mold-forming and pouring space, a transfer-track leading from the pouring-space to the shaking-out space, and a crane arranged to transfer the flasks from the transfer-track to the shaking-out space and from thence to the higher end of said inclined track.

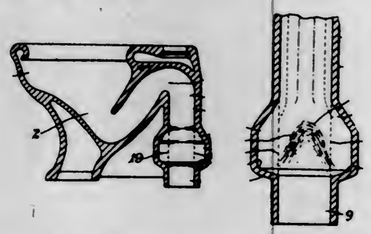
4. In a foundry, the combination with flasks mounted on wheels or rollers, of a mold-forming and pouring space at one end of the foundry, a flask-shaking-out space at the opposite end, a plurality of flask-storing tracks inclined downwardly from the shaking-out space toward the mold-forming and pouring space, a transfer-track leading from the pouring-space to the shaking-out space, and mechanism for transferring the flasks from the transfer-track to the shaking-out space and thence to the higher ends of said inclined tracks.

5. In a foundry, the combination with flasks mounted on wheels

or rollers, of a mold-forming and pouring space, a flask-shaking-out space, a flask-storing track inclined downwardly from the shaking-out space to the mold-forming and pouring space, a transfer-track leading from the pouring-space to the shaking-out space, a crane for transferring the flasks from the transfer-track to the shaking-out space and thence to the higher end of said inclined track, and a conveyer for transferring the sand from the shaking-out space to the mold-forming space.

6. In a foundry, the combination with flasks mounted on wheels or rollers, of a pouring-space at one end of the foundry, a shaking-out space at the opposite end of the foundry, a plurality of flask-storing tracks inclined downwardly toward the pouring-space, sand-supply means above the lower ends of said tracks, means for transferring the filled flasks from the lower ends of the inclined tracks to the pouring-space, a transfer-track leading from the pouring-space to the shaking-out space, mechanism for transferring the flasks from said transfer-track to the shaking-out space and thence to the higher ends of said inclined tracks, and a conveyer for returning the sand from the shaking-out space to said sand-supply means.

12,496. SIPHON-CLOSET. BERT O. TILDEN, New York, N. Y., assignor to American Sanitary Works, New York, N. Y., a Corporation of New York. Filed Mar. 30, 1906. Serial No. 309,005. Original No. 770,037, dated Sept. 13, 1904.



Claim.—1. The combination with a siphon water-closet bowl, of an outlet-passage therefrom which is at no point of less caliber in cross-section than the siphoning-passage in the bowl, which outlet contains an interior enlargement provided with a reflecting-surface in position to receive the impact of the water as it passes through the enlargement and sufficiently abrupt to cause the water reflected therefrom to impede the flow of water through the outlet, whereby a choking effect is produced to establish siphonic action.

2. The combination with a siphon water-closet bowl, of an outlet-passage therefrom which is at no point of less caliber in cross-section than the siphoning-passage in the bowl, which outlet embodies an interior enlargement provided with a reflecting-surface located at the base of the enlargement and in position to receive the impact of the water as it passes through the enlargement and sufficiently abrupt to cause the water reflected therefrom to impede the flow of water through the outlet, whereby a choking effect is produced to establish siphonic action.

3. The combination with a siphon water-closet bowl, of an outlet-passage therefrom comprising two pipe-sections which are each at no point of less caliber in cross-section than the siphoning-passage in the bowl, and between which sections is provided an enlargement having a reflecting-surface at the base thereof so positioned as to receive the impact of the water as it passes through the enlargement and sufficiently abrupt to cause the water reflected therefrom to impede the flow of water through the outlet, whereby a choking effect is produced to establish siphonic action.

4. The combination with a siphon water-closet bowl, of an outlet-passage therefrom which is at no point of less caliber in cross-section than the siphoning-passage in the bowl, which outlet contains an interior enlargement with its wall tapering to the upper portion of the outlet and provided with a reflecting-surface in position to receive the impact of the water as it passes through the enlargement and sufficiently abrupt to cause the water reflected therefrom to impede the flow of water through the outlet, whereby a choking effect is produced to establish siphonic action.

5. The combination with a siphon water-closet bowl, of an outlet-passage therefrom which is at no point of less caliber in cross-section than the siphoning-passage in the bowl, which outlet embodies an interior enlargement provided with a reflecting-surface communicating with the lower portion of the outlet and in position to receive the impact of the water as it passes through the enlargement and sufficiently abrupt to cause the water reflected therefrom to impede the flow of water through the outlet, whereby a choking effect is produced to establish siphonic action.

6. In a siphon water-closet, the combination with a bowl, of an outlet-passage and an enlarged chamber formed integral therewith, said chamber gradually flaring from one portion of the passage and communicating with another portion through an abrupt shoulder effective to establish siphonic action, the outlet-passage above the enlarged chamber being at no point of substantially less cross-sectional area than the inlet-passage in the bowl.

7. In a siphon water-closet, the combination with a bowl, of an outlet, an enlargement situated in said outlet, the wall of the enlargement gradually proceeding from one portion of the outlet and so communicating with another portion thereof as to form an abrupt shoulder effective to establish siphonic action a part of which shoulder is outside of the interior line of the wall of said outlet at any point thereof above and below said enlargement.

8. The combination with a siphon water-closet bowl, of an outlet-passage therefrom having therein an enlargement or chamber provided with a reflecting-surface in position to receive the impact of the water as it passes through the outlet and sufficiently abrupt to impede the flow of such water through the outlet whereby a choking effect is provided to establish siphonic action, the outlet-passage above and below the enlarged chamber each being of substantially uniform cross-sectional area throughout its length.

9. The combination with a siphon water-closet bowl, of an outlet-passage therefrom widened out intermediate its ends to form an enlargement or chamber with an abrupt bottom wall forming an annular reflecting-surface in position to receive the impact of the water as it passes through the outlet and sufficiently abrupt to impede the flow of such water through the outlet whereby a choking effect is provided and siphonic action first established in the region of such bottom wall.

10. A water-closet bowl having a siphon-passage therefrom, the outlet or down leg of which is provided with an enlarged portion or chamber separating such outlet into an upper and a lower portion, such upper portion being at no point of substantially less cross-sectional area than the inlet-passage in the bowl, the bottom of said chamber being in position to receive the impact of the water as it passes through the outlet and sufficiently abrupt to impede the flow of water through such outlet, whereby a choking effect is produced to establish siphonic action, the wall of the lower portion of such outlet running from the inner edge of the bottom wall of such chamber.

11. A siphon water-closet bowl having a siphon-passage therefrom the outlet-passage or down leg of which is widened out to provide an enlargement or chamber having a deflecting-surface in position to receive the impact of the water as it passes through such outlet and sufficiently abrupt to impede the flow of such water through the outlet thereby to establish siphonic action, the area of such outlet-passage being approximately not less at any point than substantially equal to the area of the inlet-passage.

12. The combination with a siphon water-closet bowl, of an outlet-passage therefrom formed without contracting it throughout the region of its upper portion and widened out under such upper portion to a greater diameter than that of such upper portion to form an enlarged chamber, and then contracted at the lower end of such enlarged chamber to form a sufficiently abrupt surface to establish siphonic action.

13. The combination with a siphon water-closet bowl, of a siphon member having an outlet-passage widened out intermediate its ends to form a chamber having greater diameter than any other part of the outlet-passage above and below such chamber, and having a reflecting-surface in position to receive the impact of the water as it passes through the outlet-passage and sufficiently abrupt to impede the flow of such water thereby to establish siphonic action.

14. In a siphon water-closet, the combination with a bowl, of a siphon member having an outlet-passage widened out intermediate its ends to form an enlargement or chamber provided with an abrupt surface effective to deflect the water and establish siphonic action.

DESIGNS.

38,066. BACK FOR HAND-MIRRORS, BRUSHES, AND SIMILAR ARTICLES. HENRY B. BEACH and HENRY KAYSER, Meriden, Conn., assignors to The International Silver Company, Meriden, Conn., a Corporation of New Jersey. Filed Apr. 27, 1906. Serial No. 314,101. Term of patent 3½ years.

38,066.



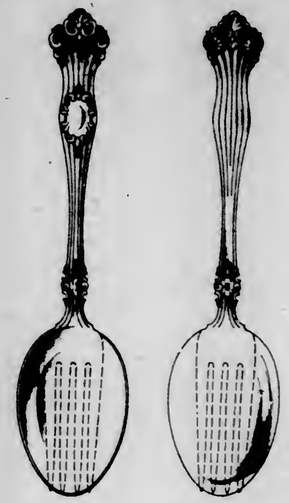
Claim.—The ornamental design for a back for hand-mirrors, brushes, and similar articles, as shown.

38,067. BACK FOR HAND-MIRRORS, BRUSHES, AND SIMILAR ARTICLES. HENRY B. BEACH and HENRY KAYSER, Meriden, Conn., assignors to The International Silver Company, Meriden, Conn., a Corporation of New Jersey. Filed May 8, 1906. Serial No. 315,849. Term of patent 3½ years.



Claim.—The ornamental design for a back for hand-mirrors, brushes and similar articles, as shown.

38,068. HANDLE OF SPOONS, FORKS, OR SIMILAR ARTICLES. FREDERICK HABERMACK, Sag Harbor, N. Y., assignor to Pairpoint Watch Case Company, New York, N. Y., a Corporation of New York. Filed May 4, 1906. Serial No. 315,267. Term of patent 7 years.



Claim.—The ornamental design for the handle of a spoon, fork or similar article, as shown.

38,069. HANDLE FOR SPOONS, FORKS, OR SIMILAR ARTICLES. HENRIK HILLBOM, Wallingford, Conn., assignor to R. Wallace & Sons Mfg. Co., Wallingford, Conn., a Corporation. Filed May 7, 1906. Serial No. 315,589. Term of patent 14 years.



Claim.—The ornamental design for a handle for a spoon, fork or similar article, as shown.

38,070. TRAPOT OR SIMILAR ARTICLE. HENRIK HILLBOM, Wallingford, Conn., assignor to R. Wallace & Sons Mfg. Co., Wallingford, Conn., a Corporation. Filed May 7, 1906. Serial No. 315,672. Term of patent 14 years.

38,070.



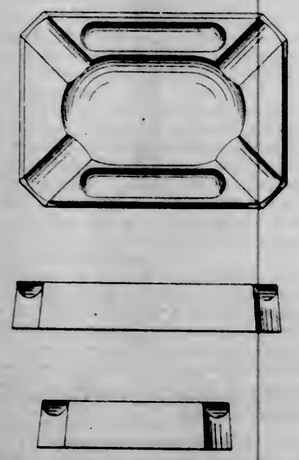
Claim.—The ornamental design for a teapot or similar article, as shown.

38,071. BEVERAGE-PERCOLATOR. GEORGE E. SAVAGE, Meriden, Conn., assignor to Manning, Bowman & Company, Meriden, Conn., a Corporation of Connecticut. Filed Apr. 30, 1906. Serial No. 314,609. Term of patent 14 years.



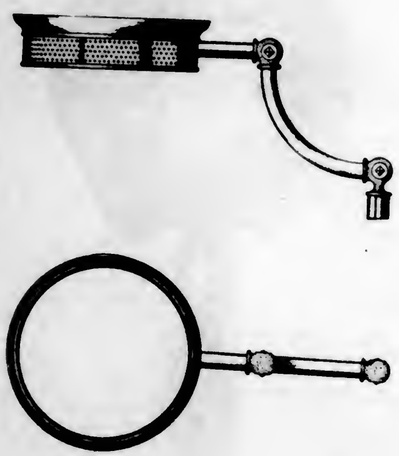
Claim.—The ornamental design for a beverage-percolator, as shown.

38,072. GLASS CIGAR AND ASH TRAY. EMANUEL SCHWAB, New York, N. Y. Filed Apr. 23, 1906. Serial No. 313,356. Term of patent 7 years.



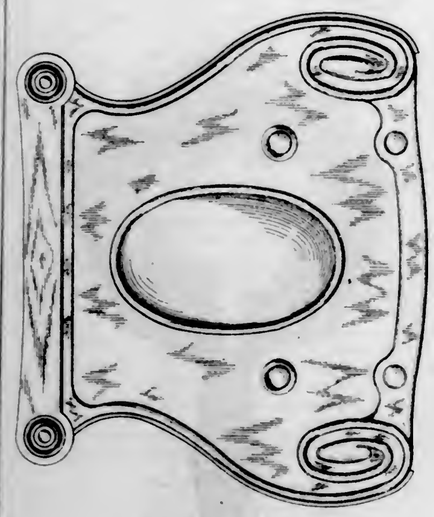
Claim.—The ornamental design for a glass cigar and ash tray as shown.

38,073. GLOBE-SUPPORT. CARL EDWARD WALDECK, Wayne, N. J., assignor to Hilliary Eldridge and James C. Young, Jersey City, N. J. Filed Apr. 23, 1906. Serial No. 313,359. Term of patent 7 years.



Claim.—The ornamental design for a globe-support, as shown.

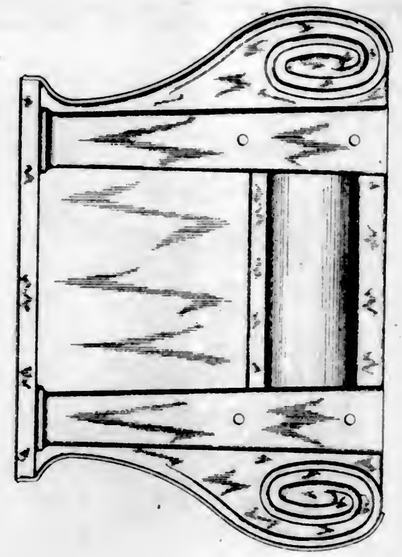
38,074. SEAT END. HARRY J. BELL, Philadelphia, Pa. Filed May 1, 1906. Serial No. 314,723. Term of patent 7 years.



Claim.—The ornamental design for a seat end as shown.

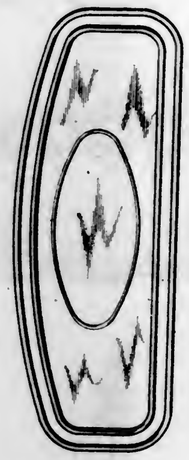
38,075. SEAT END. EDWARD G. BUDD, Philadelphia, Pa. Filed May 1, 1906. Serial No. 314,722. Term of patent 7 years.

38,075.



Claim.—The ornamental design for a seat end as shown.

38,076. SEAT END. JOHN B. KILBURN, Philadelphia, Pa. Filed May 1, 1906. Serial No. 314,724. Term of patent 7 years.



Claim.—The ornamental design for a seat end as shown.

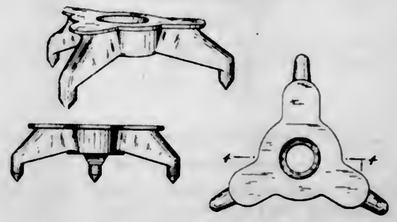
38,077. WALL-POCKET OR MUSIC-RACK. CHESTER A. FLANAGAN, Union, Oreg. Filed Apr. 30, 1906. Serial No. 314,584. Term of patent 14 years.

38,077.



Claim.—The ornamental design for a wall-pocket or music-rack, as shown.

38,078. TRIVET. CHRISTIAN L. BERGER, Boston, Mass. Filed Apr. 1, 1905. Serial No. 253,370. Term of patent 14 years.



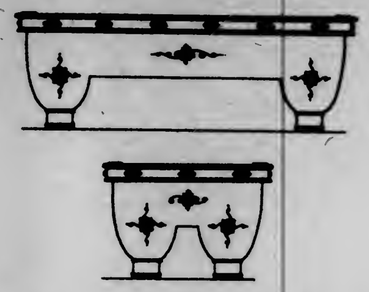
Claim.—The ornamental design for a trivet, as shown.

38,079. DENTAL CABINET. WILLIAM G. HULLHORST, Toledo, Ohio. Filed Apr. 11, 1906. Serial No. 311,197. Term of patent 14 years.



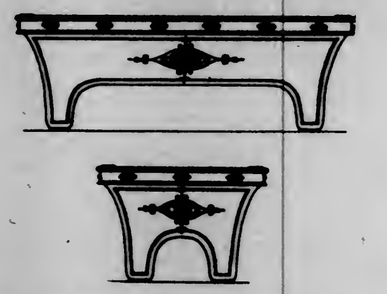
Claim.—The ornamental design for a dental cabinet, as shown.

38,080. BILLIARD-TABLE. WILLIAM C. HUBS, Cincinnati, Ohio. Filed May 7, 1906. Serial No. 315,690. Term of patent 7 years.



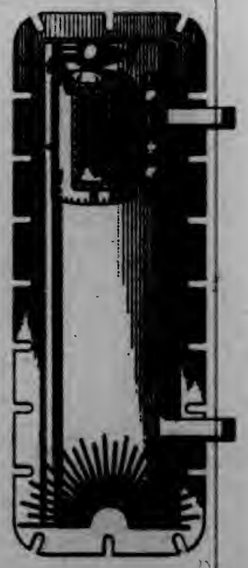
Claim.—The ornamental design for a billiard-table as shown.

38,081. BILLIARD-TABLE. WILLIAM C. HUBS, Cincinnati, Ohio. Filed May 7, 1906. Serial No. 315,691. Term of patent 7 years.



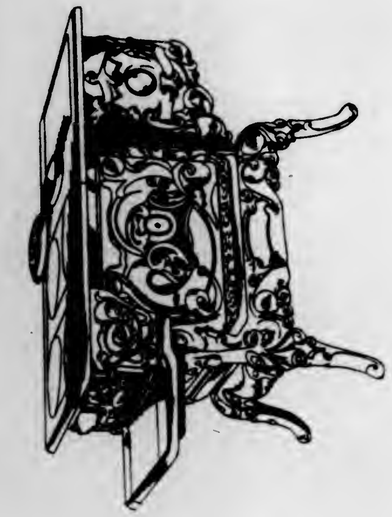
Claim.—The ornamental design for a billiard-table as shown.

38,082. DOOR FOR FEED-WATER HEATERS AND SIMILAR APPARATUS. MARK K. BOWMAN, Montclair, N. J. Filed Mar. 29, 1906. Serial No. 308,794. Term of patent 7 years.



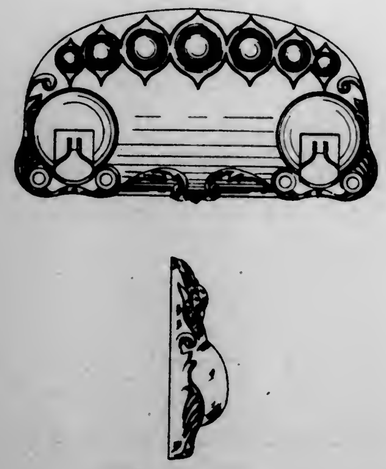
Claim.—The ornamental design for a door for feed-water heaters and similar apparatus, as shown.

38,083. STOVE. FRANK J. FREY, Quincy, Ill., assignor to H. Wetter Mfg. Co., Memphis, Tenn. Filed Apr. 17, 1906. Serial No. 312,270. Term of patent 7 years.



Claim.—The ornamental design for a stove, as shown.

38,084. CASKET-TRIMMING. WILLIAM B. STEVENS, New Haven, Conn., assignor to Sargent & Company, New Haven, Conn., a Corporation of Connecticut. Filed May 9, 1906. Serial No. 316,040. Term of patent 14 years.



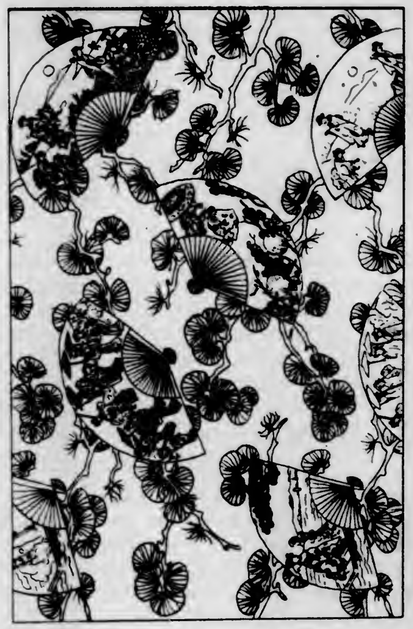
Claim.—The ornamental design for a casket-trimming, as shown.

38,085. TEXTILE FABRIC. SOPHIA L. CROWNFIELD, New York, N. Y., assignor to Cheney Brothers, South Manchester, Conn., a Corporation of Connecticut. Filed Apr. 20, 1906. Serial No. 312,923. Term of patent 3½ years.



Claim.—The ornamental design for a textile fabric, as shown.

38,086. TEXTILE FABRIC. SOPHIA L. CROWNFIELD, New York, N. Y., assignor to Cheney Brothers, South Manchester, Conn., a Corporation of Connecticut. Filed Apr. 20, 1906. Serial No. 312,927. Term of patent 3½ years.



Claim.—The ornamental design for a textile fabric, as shown.

TRADE-MARKS

PUBLISHED JUNE 12, 1906.

The following trade-marks have been adjudged entitled to registration under the act of February 20, 1905, and are published in compliance with section 6 of said act. Said section provides:

"Any person who believes he would be damaged by the registration of a mark may oppose the same by filing notice of opposition, stating the grounds therefor, in the Patent Office within thirty days after the publication of the mark sought to be registered, which said notice of opposition shall be verified by the person filing the same before one of the officers mentioned in section two of this act. If no notice of opposition is filed within said time the Commissioner shall issue a certificate of registration therefor, as hereinafter provided for."

Marks which are stated to have been "Used ten years" are registrable under the last proviso of section 5 of said act, which is as follows:

"And provided further, That nothing herein shall prevent the registration of any mark used by the applicant or his predecessors, or by those from whom title to the mark is derived, in commerce with foreign nations or among the several States, or with Indian tribes, which was in actual and exclusive use as a trade-mark of the applicant or his predecessors from whom he derived title for ten years next preceding the passage of this act."

Section 14 of said act provides for the following fee:

"On filing notice of opposition to the registration of a trade-mark, ten dollars."

SER. No. 162. SURGICAL DRESSINGS. SEABURY & JOHNSON, East Orange, N. J., and New York, N. Y. Filed Apr. 1, 1905.



A red Greek or Geneva cross.

SER. No. 288. LOGWOOD EXTRACTS AND LOGWOOD CRYSTALS. WEST INDIES CHEMICAL WORKS, LIMITED, Spanish Town, Island of Jamaica, West Indies. Filed Apr. 3, 1905.



The representation of an alligator.

SER. No. 551. BOTTLE AND PRESCRIPTION CORKS OF ALL KINDS. ARMSTRONG CORK COMPANY, Pittsburg, Pa. Filed Apr. 6, 1905.



The letter "A" inclosed within a circle.

SER. No. 783. GARTERS AND SLEEVE-HOLDERS OR ARMLETS. HARRIS SUSPENDER CO., New York, N. Y. Filed Apr. 8, 1905. Used ten years.

HARRIS

The arbitrary word HARRIS.

SER. No. 844. PULMONARY COUGH REMEDY IN LIQUID AND PILL FORM. THE LESTER H. GREENE CO., Montpelier, Vt. Filed Apr. 8, 1905.



Three bars arranged to form a triangle inclosing the letter G.

SER. No. 975. GAME WHICH IS PLAYED BY TOSSING AN OBJECT ONTO A FRAME HAVING OPENINGS THEREIN AND THUS ATTEMPTING TO LODGE SAID OBJECT IN ONE OF SAID OPENINGS. MILTON BRADLEY CO., Springfield, Mass. Filed Apr. 10, 1905.

SER. No. 975.

CONETTE

The arbitrary word "CONETTE."

SER. No. 976. GAME WHICH IS PLAYED WITH A PACK OF CARDS. MILTON BRADLEY CO., Springfield, Mass. Filed Apr. 10, 1906.

ZUM

The word "ZUM."

SER. No. 1,044. BEVERAGES MADE FROM COCA-LEAVES. MURFREESBORO BOTTLING WORKS, Murfreesboro, Tenn. Filed Apr. 10, 1906.

KOKE

The word "KOKE."

SER. No. 1,031. SHAVING-SOAP. J. B. WILLIAMS COMPANY, Glastonbury, Conn. Filed Apr. 10, 1905. Used ten years.

WILLIAMS.

The word WILLIAMS.

SER. No. 1,418. EXTRACT OF MALT FOR BAKER'S USE. THE HEISLER & JONES COMPANY, Chicago, Ill. Filed Apr. 13, 1905.

FOUREX MALTEX

A sign or symbol of four X's arranged in a line and surrounded by a diamond-shaped border, with the words "FOUREX MALTEX" directly underneath said border.

SER. No. 1,530. AUTOMATIC PIANO-PLAYERS. SIMPLEX PIANO PLAYER CO., Worcester, Mass. Filed Apr. 14, 1905.

SIMPLEX

The word SIMPLEX.

SER. No. 1,452. OVERCOATS AND SUITS. THE WM. H. RICHARDSON CO, Boston, Mass. Filed Apr. 14, 1905.



The representation of a lion rampant supporting a shield on which appear the words MEN'S TOGS inclosed in an oval.

SER. No. 1,782. TONIC BEVERAGE. CALEB D. BRADHAM, New Bern, N. C. Filed Apr. 15, 1905.

PEPSI-COLA

The hyphenated word PEPSI-COLA.

SER. No. 2,627. SOAP CONTAINING A FINE GRIT. THE KLEANIT MANUFACTURING COMPANY, Akron, Ohio. Filed Apr. 21, 1905. Used ten years.

KLEANIT

The word "KLEANIT" on a background of a contrasting color.

SER. No. 2,756. TOILET SOAP. IOWA SOAP COMPANY, Burlington, Iowa. Filed Apr. 24, 1905.

4

The numeral "4."

SER. No. 2,763. PULVERIZED OR POWDERED UNSWEETENED CHOCOLATE AND COCOA. FREDERICK BISCHOFF, New York, N. Y. Filed Apr. 24, 1905.

SER. No. 2,763.



The representation of a white star.

SER. No. 2,822. RYE WHISKY. ALLMENS DISTILLING COMPANY, Kansas City, Mo. Filed Apr. 24, 1905.



The word ALLMENS appearing upon a panel of irregular shape which is inclosed by an ornamental border conforming to same, and which also incloses in an oval loop on each side a spear of rye, and extends below said panel inclosing a space which is divided into two parts, the lower one being of substantially oval shape, and the upper one having at its sides leaves and a spear of wheat. In the center of the upper oval is a sheaf of wheat.

SER. No. 3,022. REMEDY FOR SUNBURN, CHAPPED HANDS, PIMPLES, SORES, CATARRH, ECZEMA, INFLAMMATION, AND SKIN ERUPTIONS. GEORGE W. RENSEN, Philadelphia, Pa. Filed Apr. 30, 1905.

AMBERINE

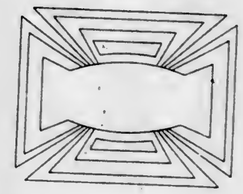
The word AMBERINE. The letters which form the word are arranged with their tops on a straight line, and their bottoms on a curved line, with the terminal letters larger than the intermediate letters, and the top and bottom lines of the letters run together to form single continuous lines, all represented on a background of different color.

SER. No. 3,821. WHISKY. WM LANAHAN & SON, Baltimore, Md. Filed May 1, 1905.

365

The number "365."

SER. No. 3,219. COOKING UTENSILS MADE OF TINWARE. THE LISK MANUFACTURING CO., LIMITED, Canandaigua, N. Y. Filed Apr. 27, 1905. Used ten years.



The representation of a Maltese cross.

SER. No. 3,986. SPICES AND MUSTARD. E. R. DURKEE & CO., New York, N. Y. Filed May 2, 1905.



The representation of a helmet.

SER. No. 4,059. BOILERS FOR STEAM AND WATER HEATING SYSTEMS. KEWANEE BOILER COMPANY, Kewanee, Ill. Filed May 3, 1905. Used ten years.

THE HAXTUN

The words THE HAXTUN.

SER. No. 4,482. WHISKY. EDGEWOOD DIST. CO., Cincinnati, Ohio. Filed May 6, 1905.

Pearl

The word "PEARL."

SER. No. 4,680. CREAM FOR THE TOILET. THE MISTLETOE MANUFACTURING COMPANY, Denver, Colo. Filed May 8, 1905.

Mistletoe

The word MISTLETOE.

SER. No. 4,696. HAMS, BREAKFAST-BACON, SUGAR-CURED SHOULDERS, DRY SALT SIDES, DRY SALT BELLIES, SMOKED SIDES AND SMOKED BELLIES, SAUSAGES, PORK PUDDINGS, FRESH PORK LOINS, AND FRESH PORK SHOULDERS. DUNLEVY & BROTHER, Pittsburg, Pa. Filed May 8, 1905.

SER. No. 4,696



The pictorial representation of a bunch or cluster of calla-lilies, and the words "WHITE LILY."

SER. No. 5,096. BINDING-CORDS OF JUTE FIBER. RALLI BROTHERS, New York, N. Y. Filed May 11, 1905.

RALLI BROTHERS



The words RALLI BROTHERS and a plurality of broken segmental lines terminating in fanciful representations of animal-heads and crossed by spirally-disposed lines.

SER. No. 5,104. BREAD. LAWRENCE A. O'NEILL, Holyoke, Mass. Filed May 11, 1905.

GUSTO

The arbitrary word "GUSTO."

SER. No. 5,126. LINIMENT FOR MAN OR BEAST FOR TREATMENT OF RHEUMATISM, NEURALGIA, CATARRH, HEADACHE, SORE THROAT, DIPHTHERIA, CAKED BREASTS, SPRAINS, BRUISES, WEAK JOINTS, SNAKE AND INSECT BITES, EARACHE, TOOTHACHE, WEAK BACK, RINGBONE, POLL EVIL, SPAVINS, SITFAST, CRACKED HEELS, FISTULA, SCRATCHES, MANGE, LAMENESS, FOUNDERED FEET, DISTEMPER, EXTERNAL POISON, LAME AND WEAK JOINTS. ALBERT B. REESE, Sherman, Tex. Filed May 11, 1905. Used ten years.

SER. No. 5,126.

Hunt's Lightning Oil.

The words HUNT'S LIGHTNING OIL.

SER. No. 5,139. GIN. BEN J. GOLDMAN CO., San Francisco, Cal. Filed May 11, 1905. Used ten years.

GOLDMAN'S

The name "GOLDMAN'S."

SER. No. 5,180. WHISKY. COLUMBIA DISTILLING CO., Albany, N. Y. Filed May 11, 1905.

SENECA CHIEF

The words "SENECA CHIEF."

SER. No. 5,332. WHISKY. THOMAS E. O'KEEFE, Oswego, N. Y. Filed May 12, 1905. Used ten years.

CHIPPEWA

The word CHIPPEWA.

SER. No. 5,677. WHISKY. HULMAN & CO., Terre Haute, Ind. Filed May 15, 1905.



The words "WHITE SEAL" printed upon a label diagonally thereof and associated with a medallion bearing a representation of a sheaf of grain and the monogram H & Co, together with the scrollwork.

SER. No. 5,797. WHISKY. WILLIAM B. SEEL, Harrisburg, Pa. Filed May 16, 1905. Used ten years.

SER. No. 5,797.

WALLER

The word WALLER.

SER. No. 5,854. LEATHER SHOES. PETERS SHOE CO., St. Louis, Mo. Filed May 16, 1905.

Peters
BLACK DIAMOND

The words "PETERS BLACK DIAMOND."

SER. No. 5,941. CALIPERS, DIVIDERS, AND TRY-SQUARES. BROWN & SHARPE MANUFACTURING COMPANY, Providence, R. I. Filed May 18, 1905.

B·S

The representation of a machinist's try-square, over the blade of which are the letters "B. S."

SER. No. 6,272. WHISKY. ARMIN BERKOWITZ, Hamilton, Ohio. Filed May 22, 1905.



The word "KISMET" and a representation of a girl riding in a boat drawn by a swan. The girl's lap is full of flowers, which trail gracefully into the water at either side of the boat. On the distant shore of the river are to be seen pyramids and palm-trees.

SER. No 6,498. SOAP. WILLIAM WALTER & CO., St. Louis, Mo. Filed May 24, 1905.



The words "TRUMPET SOAP" together with a bust picture of a bugler blowing a trumpet, which picture is inclosed in a circular border with scrolls extending therefrom, and which picture and words are inclosed by an oval border-line.

SER. No. 6,576. GIN. THE WM. BERGENTHAL CO., Milwaukee, Wis. Filed May 25, 1905.

ROSE BUD



The words "ROSE BUD" accompanied by the representation of three rose-buds tied with a ribbon and a scroll.

SER. No. 6,810. SEAMLESS WOVEN BAGS. STARK MILLS, Manchester, N. H. Filed May 27, 1905. Used ten years.

STARK MILLS
A
SEAMLESS

The words STARK MILLS SEAMLESS arranged in the form of a circle about the letter A.

SER. No. 6,816. CIGARS IN BOXES. O. W. CHASE & SON MERCANTILE CO., St. Joseph, Mo. Filed May 27, 1905.



The representation of two panels, one in the form of the segment of a circular band and the other a rectangular panel with sprays of leaves interwoven with the same. Upon one of the panels appears the word "CHASE'S" and upon the other the number "108."

SER. No. 7,184. WHISKY. MUELLER, WATHEN & KOBERT, Lebanon, Ky. Filed June 1, 1905. Used ten years.

SER. No. 7,184.

MORNING GLORY

The words MORNING GLORY.

SER. No. 7,185. WHISKY. MUELLER, WATHEN & KOBERT, Lebanon, Ky. Filed June 1, 1905. Used ten years.

MOORE & GRIGSBY

The words MOORE & GRIGSBY.

SER. No. 7,188. WHISKY. MUELLER, WATHEN & KOBERT, Lebanon, Ky. Filed June 1, 1905. Used ten years.

OLD BRADFORD

The words OLD BRADFORD.

SER. No. 7,189. WHISKY. MUELLER, WATHEN & KOBERT, Lebanon, Ky. Filed June 1, 1905. Used ten years.

MEDLOCK

The word MEDLOCK.

SER. No. 7,259. METALLIC ALLOYS. THE PHOSPHOR-BRONZE SMELTING CO., LIMITED, Philadelphia, Pa. Filed June 2, 1905.

DELTA

A pyramidal figure or triangular border inclosing the word DELTA.

SER. No. 7,283. WHEAT-FLOUR IN SACKS OR BARRELS. JOHN F. EDGEWORTH, Boston, Mass. Filed June 2, 1905.



A circular figure inclosing the words "EDGEWORTH FANCY PATENT FLOUR FROM MINNESOTA HARD WHEAT," and a coat of arms comprising a shield divided centrally by a panel and having a checker-board surface on which appear the letters "E" and surrounded by ornamental scrollwork and surmounted by a crest.

SER. No. 7,379. HATCHETS, ADZES, AND AXES. WELLS & NELLEGAR COMPANY, Chicago, Ill. Filed June 3, 1905. Used ten years.

TRIUMPH

The word "TRIUMPH."

SER. No. 7,403. TONIC. RECONSTRUCTIVE HISTOGENETIC. THEODORE W. STEMMLER, New York, N. Y. Filed June 5, 1905.

GALEGA-VERA

The words GALEGA-VERA.

SER. No. 7,410. BEER. A. J. HOUGHTON CO., Roxbury, Mass. Filed June 5, 1905. Used ten years.

PAVONIA

The word "PAVONIA."

SER. No. 7,699. BRANDY. HENRY R. MYERS, Covington, Ky. Filed June 8, 1905. Used ten years.

FULTON

The word FULTON.

SER. No. 7,447. GALL CURE. MARION W. SAVAGE, Minneapolis, Minn. Filed June 5, 1905. Used ten years.

INTERNATIONAL GALL CURE

The words "INTERNATIONAL GALL CURE."

SER. No. 7,783. LEATHER BOOTS AND SHOES AND LEATHER USED IN THEIR MANUFACTURE. RICE & HUTCHINS, INCORPORATED, Boston, Mass., assignor to Rice and Hutchins Incorporated, a Corporation of Maine. Filed June 10, 1905.



The word "MARVEL" on a circular band, said band inclosing a monogram of the letters "R H."

SER. No. 7,789. LEATHER BOOTS AND SHOES AND LEATHER USED IN THEIR MANUFACTURE. RICE & HUTCHINS, INCORPORATED, Boston, Mass., assignor to Rice and Hutchins Incorporated, a Corporation of Maine. Filed June 10, 1905.



The words "THE WHIRL OF THE TOWN" surrounded by an elliptical figure and the representation of two men facing each other, said men wearing silk hats and top coats, one man being represented at each end of the elliptical figure surrounding said words "THE WHIRL OF THE TOWN" and the man at the left holding a cane in both hands, while the man at the right is represented as holding his cane over his right shoulder.

SER. No. 7,820. CONDENSED MILK. BORDEN'S CONDENSED MILK CO., Jersey City, N. J., and New York, N. Y. Filed June 10, 1905. Used ten years.

DIRIGO BRAND

CONDENSED MILK.

The word DIRIGO associated with the word "BRAND" and the words "CONDENSED MILK."

SER. No. 7,829. CONDENSED MILK. MICHIGAN CONDENSED MILK CO., Lansing, Mich., and New York, N. Y. Filed June 10, 1905. Used ten years.



The arbitrarily-selected words FIRST PRIZE printed prominently at the upper edge of a background of scrollwork, in the center of which scrollwork appears a large medal.

SER. No. 7,830. CONDENSED MILK. MICHIGAN CONDENSED MILK CO., Lansing, Mich., and New York, N. Y. Filed June 10, 1905. Used ten years.

SHIELD BRAND PURE CONDENSED MILK

The word SHIELD, associated with the word BRAND and the words PURE CONDENSED MILK.

SER. No. 7,839. TIN AND TERNE PLATE. N & G. TAYLOR CO, Philadelphia, Pa. Filed June 10, 1905. Used ten years.

OLD STYLE



The words "OLD STYLE," and a representation of a target and an arrow pointing to the center thereof.

SER. No. 8,233. WHISKY. GOODHART-HARTMAN CO., Chicago, Ill. Filed June 15, 1905.

HERALD



The word HERALD, associated with the representation of a youth dressed in a herald costume and blowing a trumpet from which is suspended a banner bearing a monogram consisting of the letters G H Co. The design is surrounded by concentric circles.

SER. No. 8,362. NON-EXPLOSIVE LAMP-POWDER FOR RENDERING EXPLOSIVE OILS NON-EXPLOSIVE. ELMER E. JENNISON, Denver, Colo. Filed June 16, 1905.



The word EUREKA, associated with the representation of a burning lamp arranged at one side of the word and mounted on a curved panel. At one side of the lamp is a representation of a human hand.

SER. No. 8,387. CEREAL COFFEE. SLEEPY EYE MILLING COMPANY, Sleepy Eye, Minn. Filed June 17, 1905.



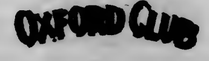
The pictorial representation of an Indian head wearing a headdress of feathers and ornaments.

SER. No. 8,463. WHISKY. H ROSENHEIM & SON, Baltimore, Md. Filed June 19, 1905.



The name "BRUTUS" and the picture of Edwin Booth inclosed in an oval outline.

SER. No. 8,685. GIN. BAIRD-DANIELS COMPANY, New York, N. Y. Filed June 21, 1905.



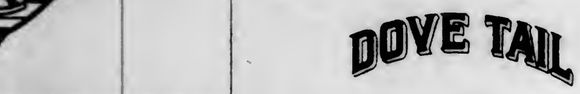
The words "OXFORD CLUB."

SER. No. 8,595. POPCORN. THE ALBERT DICKINSON COMPANY, Chicago, Ill. Filed June 20, 1905.



The representation of the conventional "UNCLE SAM."

SER. No. 8,737. WHISKY. HERMAN POPPER & BRO, Coney Island, N. Y. Filed June 21, 1905.



The words DOVE TAIL.

SER. No. 8,827. CIGARETTES. BUTLER-BUTLER, (INCORPORATED.) New York, N. Y. Filed June 23, 1905.



The words PALL MALL LONDON CIGARETTES, the name GUELPH in script, and a fanciful coat-of-arms comprising a crowned mantel with heraldic devices thereon.

SER. No. 8,832. SMOKING-TOBACCO. BUTLER-BUTLER (INCORPORATED), New York, N. Y. Filed June 23, 1905.



A rectangular panel having arranged therein the word MELLOWLEAF, below which is the picture of the bust of George Washington arranged upon a circular background surrounded by a band of contrasting color. In the circular background, about the bust, appear the words FIRST IN THE HEARTS OF HIS COUNTRYMEN.

SER. No. 8,868. DRESS-SHIELDS. JORDAN MARSH COMPANY, Boston, Mass. Filed June 24, 1905. Used ten years.



The word "ADELAIDE."

SER. No. 8,888. GIN. A. BRESLAUER COMPANY, Milwaukee, Wis. Filed June 24, 1905. Used ten years.



The name HENRY VAN EERDEN AND SONS, below which is a crescent and star and ribbon design, the whole inclosed in a fanciful outline shield-shaped border.

SER. No. 8,913. WHISKY. H. F. CORBIN & CO., Cincinnati, Ohio. Filed June 24, 1905.



The words HOFFMAN HOUSE.

SER. No. 9,002. ARTIST'S AND DRAFTSMAN'S PAPER AND CARDBOARD. L. F. HIGINBOTHAM CO., New York, N. Y. Filed June 24, 1905.

The word "DORÉ."

SER. No. 9,153. WHEAT-FLOUR. PHOENIX MILLING CO., Sacramento, Cal. Filed June 27, 1905.



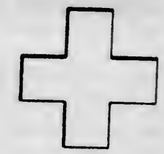
The words "DEXTER MILLS" and a picture of the race-horse "Dexter" with sulky and driver.

SER. No. 9,197. CANNED CORN. PORTLAND PACKING COMPANY, Portland, Me. Filed June 27, 1905.



The words or word-symbol RED RIBBON.

SER. No. 9,287. COFFEE. A. SCHILLING & COMPANY, San Francisco, Cal. Filed June 27, 1905. Used ten years.



A representation of a Greek cross.

SER. No. 9,289. BAKING-POWDER, BICARBONATE SODA, AND CREAM OF TARTAR. A SCHILLING & COMPANY, San Francisco, Cal. Filed June 27, 1905. Used ten years.



A representation of a Greek cross.

SER. No. 9,365. SPICES. A. SCHILLING & COMPANY, San Francisco, Cal. Filed June 27, 1905. Used ten years.



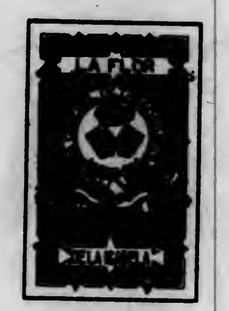
A representation of a Greek cross.

SER. No. 9,550. WATERPROOF COLLARS AND CUFFS COMPRISED IN PART OF PYROXYLINE. THE CELLULOID COMPANY, New York, N. Y., and Newark, N. J. Filed July 1, 1905. Used ten years.



The word LITHOID.

SER. No. 9,389. CIGARS. COMPAÑIA GENERAL DE TABACOS DE FILIPINAS. Barcelona, Spain. Filed June 30, 1905.



A central panel surrounded by a circular band, with two shields surmounted by a crown in said panel, one of said shields bearing the representation of a mythological animal and the other being quartered, each quarter being ornamented. The central panel is surrounded by representations of the tobacco and other plants and agricultural tools. Above and below the central panel are panels bearing the words "LA FLOR DE LA ISABELA," with an ornamental border around the whole. Below the shield is the word BARCELONA, and on the circular band are the words COMPAÑIA GENERAL DE TABACOS DE FILIPINAS.

SER. No. 9,554. WATERPROOF SHIRT FRONTS, COLLARS, AND CUFFS. THE CELLULOID COMPANY, New York, N. Y., and Newark, N. J. Filed July 1, 1905. Used ten years.

Victor

The word VICTOR.

SER. No. 9,556. WATERPROOF COLLARS, CUFFS, SHIRT FRONTS, AND BOSOMS. THE CELLULOID COMPANY, New York, N. Y., and Newark, N. J. Filed July 1, 1905.

ULTIMA

The word-symbol ULTIMA.

SER. No. 9,610. TIN AND TERNE PLATES. FOLLANSBEE BROTHERS COMPANY, Pittsburg, Pa. Filed July 3, 1905. Used ten years.

OLD RELIABLE
RE-DIPPED

The words OLD RELIABLE RE-DIPPED.

SER. No. 9,682. TIN AND TERNE PLATES. FOLLANSBEE BROTHERS COMPANY, Pittsburg, Pa. Filed July 3, 1905. Used ten years.

SER. No. 9,682.

FURNACE

The word FURNACE.

SER. No. 9,768. BEER. ANHEUSER-BUSCH BREWING ASSOCIATION, St. Louis, Mo. Filed July 3, 1905. Used ten years.

COLUMBIAN MUENCHENER

The words COLUMBIAN MUENCHENER.

SER. No. 9,904. BOOTS AND SHOES OF LEATHER. STERN & CO. (INCORPORATED), Richmond, Va. Filed July 7, 1905.



Lord Essex

The name "LORD ESSEX" and a representation of a heraldic shield bearing lions and fleurs-de-lis and surmounted by a crown, above which is a phenix, and rampant unicorns on each side of the shield, supported by scrollwork, on which appear the words "MADE ON HONOR."

SER. No. 10,009. WHEAT-FLOUR. ARTNA MILL & ELEVATOR COMPANY, Wellington, Kans. Filed July 11, 1905.

GOLD DOLLARS

The words "GOLD DOLLARS."

SER. No. 10,012. ALL KINDS OF FINE WRITING-PAPER. WORONOCO PAPER COMPANY, Woronoco, Mass. Filed July 11, 1905. Used ten years.

LUGANO

The word LUGANO.

SER. No. 10,013. ALL KINDS OF WRITING-PAPER. WORONOCO PAPER COMPANY, Woronoco, Mass. Filed July 11, 1905.

SER. No. 10,013.

REGAL

The word "REGAL."

SER. No. 10,014. ALL KINDS OF FINE WRITING-PAPER. WORONOCO PAPER COMPANY, Woronoco, Mass. Filed July 11, 1905. Used ten years.

SCOTIA

The word SCOTIA.

SER. No. 10,094. LEATHER BOOTS, SHOES, AND SLIPPERS. M. D. WELLS CO, Chicago, Ill. Filed July 11, 1905.

Great Western

The arbitrary words "GREAT WESTERN."

SER. No. 10,099. LEATHER BOOTS, SHOES, AND SLIPPERS. M. D. WELLS CO, Chicago, Ill. Filed July 11, 1905. Used ten years.

Advance

The arbitrary word "ADVANCE."

SER. No. 10,101. LEATHER BOOTS, SHOES AND SLIPPERS. M. D. WELLS CO, Chicago, Ill. Filed July 11, 1905.

Mastiff

The arbitrary word MASTIFF.

SER. No. 10,102. LEATHER BOOTS, SHOES, AND SLIPPERS. M. D. WELLS CO., Chicago, Ill. Filed July 11, 1905. Used ten years.

Alcalde

The arbitrary word "ALCALDE."

SER. No. 10,108. LEATHER BOOTS, SHOES, AND SLIPPERS. M. D. WELLS CO., Chicago, Ill. Filed July 11, 1905. Used ten years.

Buzz Saw

The arbitrary words "BUZZ SAW."

SER. No. 10,106. CHEWING-TOBACCO. RYAN-HAMPTON TOBACCO CO., Newburg, Ind. Filed July 11, 1905.



A circular panel bearing the word BANNO and the name HAMPTON TOB. CO.

SER. No. 10,184. BUTTER. FRANKLIN COUNTY CREAMERY ASSOCIATION, St. Albans, Vt. Filed July 12, 1905. Used ten years.



The words "ST. ALBANS, VT." surrounded by an annular buckled belt, bearing the inscription "FRANKLIN COUNTY CREAMERY ASSOCIATION." Within the belt above and below the words "ST. ALBANS, VT." respectively appear scroll-like ornaments.

SER. No. 10,529. LAUNDRY BLUE. WILLIAM EDGE & SONS, LIMITED, Bolton, England. Filed July 18, 1905.



The representation of two flags on staffs on either side of a solid rectangular ground. Between the flags and in the central portion of the groundwork is a bag-like arrangement, from which and secured thereto by cord is a stick protruding at its upper part. Below one of the flags are the words "COMMONLY CALLED," and below the other flag are the words "DOLLY BLUE," while on the bag are the words "THE FILTER BAG."

SER. No. 10,712. URIC-ACID SOLVENT. DUSAL CHEMICAL CO., New York, N. Y. Filed July 23, 1905.

Sal-Eliminant
(DUSAL)

The hyphenated word "SAL-ELIMINANT," and the word "DUSAL" inclosed in parentheses, the word "DUSAL" being arranged on a line below the word "SAL-ELIMINANT."

SER. No. 10,959. CERTAIN PLASTIC COMPOSITION CONTAINING SHELLAC, CLAY, AND FIBER. THE DURAROID M'F'G. CO., Newark, N. J. Filed July 28, 1905.

DURAROID

The word DURAROID.

SER. No. 10,976. LUBRICATING COMPOUNDS PARTICULARLY DESIGNED FOR COMMUTATORS. JAMES CHARLES ROYCE, Davenport, Ontario, Canada. Filed July 28, 1905.



The words "BLUE GLOSS" and below a pictorial representation of a commutator having brushes extending from the surface thereof.

SER. No. 11,066. LEATHER BOOTS, SHOES, AND SLIPPERS. M. D. WELLS CO., Chicago, Ill. Filed July 31, 1905. Used ten years.

Starkville

The arbitrary word STARKVILLE.

SER. No. 11,069. LEATHER BOOTS, SHOES, AND SLIPPERS. M. D. WELLS CO., Chicago, Ill., Filed July 31, 1905.

Biltonomna

The arbitrary word "BILTONOMNA."

SER. No. 11,072. LEATHER BOOTS, SHOES, AND SLIPPERS. M. D. WELLS CO., Chicago, Ill. Filed July 31, 1905.

Tornado

The arbitrary word TORNADO.

SER. No. 11,076. LEATHER BOOTS, SHOES, AND SLIPPERS. M. D. WELLS CO., Chicago, Ill. Filed July 31, 1905. Used ten years.

Victor

The arbitrary word VICTOR.

SER. No. 11,084. PLASTERS AND SALVES. P. BEIERSDORF & CO., Hamburg, Germany. Filed July 20, 1905.

LEUKOPLAST

The word LEUKOPLAST.

SER. No. 11,187. CAR-BOLSTER. EDWIN H. BENNERS, New York, N. Y. Filed Aug. 2, 1905.

CROWN

The arbitrary word CROWN.

SER. No. 11,435. HAVANA CIGARS. H. DE CABANAS Y CARBAJAL, New York, N. Y. Filed Aug. 8, 1905. Used ten years.

H DE CABAÑAS Y CARBAJAL

The initial and words, H DE CABAÑAS, located above a monogram, composed of the letters C A R B J L, and of the initial and word Y CARBAJAL located below such monogram.

SER. No. 11,505. WHISKY. EDWARD BLOCK & CO., Kansas City, Mo. Filed Aug. 10, 1905.

BUCKHORN.

The word "BUCKHORN."

SER. No. 11,669. COTTON-PLANTERS, GUANO-DISTRIBUTERS, AND GRAIN AND FERTILIZER DRILLS. JAMES T. GANTT, Macon, Ga. Filed Aug. 15, 1905. Used ten years.

GANTT

The word GANTT.

SER. No. 11,800. CHOCOLATE CREAMS AND CHOCOLATE-COATED CANDY. THE VONGELE & DINNING CO., Mansfield, Ohio. Filed Aug. 19, 1905.



The word BUSTER.

SER. No. 11,988. SODA-WATER WITH OR WITHOUT THE ADDITION OF FLAVORING MATERIALS. JOHN MATTHEWS, New York, N. Y. Filed Aug. 23, 1905. Used ten years.



A panel bearing the words MATTHEWS SODA WATER and concentric ellipses from which extend flame-like radiations.

SER. No. 11,977. MEDICINE FOR THE BLOOD. NICOLAY & CO., Zurich, Switzerland. Filed Aug. 24, 1905.



The representation of a lioness nursing her young inclosed by a double-lined triangle.

SER. No. 12,058. ELECTRICAL INSULATING AND PROTECTIVE DEVICES. THE JOHNS-PRATT CO., Hartford, Conn. Filed Aug. 28, 1905. Used ten years.

JOHNS-PRATT

The hyphenated word JOHNS-PRATT.

SER. No. 12,206. LIQUID TREE-WASH FOR SPRAYING TREES AND SHRUBBERY. JOHN F. DERROR, Mansfield, Ohio. Filed Sept. 2, 1905.



The portrait of the applicant surrounded by a circular band having thereon the words THE JOHN F. DERROR TREE FLUIDS, with an orange-vine entwined about said band.

SER. No. 12,101. BLOOD AND NERVE TONICS, AND AS A REMEDY FOR RHEUMATISM, BLOOD DISORDERS, STOMACH TROUBLES, LIVER AND KIDNEY COMPLAINTS, AND CONSTIPATION. CHARLES FRANKLIN, San Francisco, Cal. Filed Aug. 30, 1905.



A rectangular panel bearing the name "CAROB," the words "THE GREAT BRAZILIAN BLOOD AND NERVE TONIC" and a representation of the carob tree, beans, pods, blossoms, and leaves thereof and an enlarged section of a carob-bean. Across the tree are the letters "BCROA."

SER. No. 12,215. ANALGESICS. EL ZERNAC CO., New York, N. Y. Filed Sept. 5, 1905.

EL ZERNAC

The words EL ZERNAC.

SER. No. 12,388. EYELETS FOR SHOES. MANUFACTURE FRANÇAISE D'OEILLETS MÉTALLIQUES (ANCIENNE MAISON O. BAC.) Paris, France. Filed Sept. 8, 1905.



A panel bearing the representation of two rampant lions standing upon scrollwork and supporting by one of their paws the letters "G. B. A. C." and the other paws resting on shields on which appear representations of galleys, with an ornamental oval shield arranged below the letters and all associated with the words and letters "FABRIQUE G. B. PARIS OEILLETS RENFORCES."

SER. No. 12,642. WHISKY. HENRY CAMPE & CO., San Francisco, Cal. Filed Sept. 15, 1905.



The words BRIAR ROSE.

SER. NO. 12,689. OINTMENT. GOOD SAMARITAN OINTMENT COMPANY. Camden, N. J. Filed Sept. 15, 1905.

Good Samaritan



The words "GOOD SAMARITAN" and the representation of a man kneeling and in the act of giving assistance to a nude man lying by the wayside.

SER. NO. 12,695. SUSPENDERS. ADOLPH C. KNOTHE, New York, N. Y. Filed Sept. 16, 1905.



A circle with radiating lines associated with the word "KNOTHE" within the lines above the circle and the words "FIFTH AVENUE" within the lines below.

SER. NO. 12,800. RUBBER TIRES FOR VEHICLE-WHEELS. THE ELECTRIC RUBBER MANUFACTURING COMPANY, Rutherford, N. J. Filed Sept. 20, 1905.

Panther

The word PANTHER.

SER. NO. 12,807. BEER. AKTIENBRAUEREI ZUM LÖWENBRÄU IN MÜNCHEN, Munich, Bavaria, Germany. Filed Sept. 20, 1905.



The representation of a heraldic lion rampant with a group of three overlapping prize medals on each side. Above the lion and the medals are the words, AKTIEN-BRAUEREI ZUM LÖWENBRÄU and beneath these is the word, MÜNCHEN. Below both the lion and groups of medals extend the words, EXPORT-BIER, and the subscription, DIESES BIER IST IN DER KELLEREI DER BRAUEREI IN MÜNCHEN SELBST AUF FLASCHEN GEFÜLLT, the whole being inclosed by a border of heavy and light lines.

SER. NO. 12,946. FOUNTAIN-PENS AND OTHER WRITING-PENS EXCEPT GOLD PENS. THOMAS DE LA RUE AND COMPANY, LIMITED. London, England. Filed Sept. 25, 1905.



The word "ONOTO" within a border which is shown in the accompanying drawing as of approximately diamond shape with curved corners.

SER. NO. 12,996. WHITE LEAD AND OXIDS OF LEAD. NATIONAL LEAD & OIL CO. OF PA., Pittsburg, Pa. Filed Sept. 25, 1905. Used ten years.



The words "STERLING WHITE LEAD COMPANY PITTSBURGH."

SER. NO. 13,038. BEER. AKTIENBRAUEREI ZUM LÖWENBRÄU IN MÜNCHEN, Munich, Bavaria, Germany. Filed Sept. 26, 1905.



The representation of a heraldic lion rampant, the words, LÖWENBRÄU and MÜNCHEN appearing on the left and right, respectively, of the lion. Above the lion is the hyphenated word, AKTIEN-BRAUEREI, printed in a curved line and between said word and the lion is the word ZUM. Below the lion, appearing in a curved line are the words, EXPORT-BIER, joined by a hyphen, and the subscription, DIESES BIER IST IN DER KELLEREI DER BRAUEREI IN MÜNCHEN SELBST AUF FLASCHEN GEFÜLLT, the whole being inclosed by a border of light and heavy lines.

SER. NO. 13,041. PARTICULAR BRAND OF ROOFING-SLATE. R. F. SCHAEFFER, Bangor, Pa. Filed Sept. 26, 1905.

SER. NO. 13,041.



A crescent embracing four tiers of roofing-slate.

SER. NO. 13,068. BEER. AKTIENBRAUEREI ZUM LÖWENBRÄU IN MÜNCHEN, Munich, Bavaria, Germany. Filed Sept. 27, 1905.



The representation of a heraldic lion rampant, with the words, LÖWENBRÄU MÜNCHEN, printed below the same, the former in German text and the latter in block letters.

SER. NO. 13,077. SMOKING AND CHEWING TOBACCO. HERMAN RIPPEN, Perth Amboy, N. J. Filed Sept. 27, 1905.



The word "SVATOPLUK" and the picture of an ancient king of Bohemia called Svatopluk on horseback, surrounded by an ornamental border and the name "H. RIPPEN" printed diagonally across the same in a different color.

SER. NO. 13,090. CHEMICAL PREPARATION TO CLEAR RAIN-WATER. CRAVEN & BOWEN, Findlay, Ohio. Filed Sept. 27, 1905.



The words "THE OLD SETTLER" and the fanciful picture of an old man wearing a full beard and a slouch hat.

SER. NO. 13,108. HOSIERY. HERMANN STÄRKER, Chemnitz, Germany, and New York, N. Y. Filed Sept. 26, 1905.



The words STRONG WEAR arranged in the form of the words STRONG WEAR appearing in the middle portion of the letter S.

SER. NO. 13,136. COMPOSITION OF MATTER FOR COVERING FLOORS, WALLS, CEILINGS, &c., WHICH CONSISTS OF CASEIN SOLUBLE IN WATER, OF CORK-DUST OR VEGETABLE FIBERS MIXED WITH COLORING SUBSTANCE, AND OF GLYCERIN WITH RESINOUS OILS. LACTOLEUM-WERKE, GES. MIT BESCHR. HFTG., Berlin, Germany. Filed Sept. 29, 1905.

Lactoleum

The word "LACTOLEUM."

SER. NO. 13,256. WHISKY. STONE HILL WINE CO., Hermann, Mo. Filed Oct. 3, 1905. Used ten years.



The words "OLD STARK" in old English type, the representation of a five-pointed star and the letter "K" hyphenated above, each surrounded by radial lines representing a sunburst, and the star bearing the letters STARK, one on each of the five points, and the autograph firm signature "STARK DISTILLERY CO." in script below, the whole surrounded by a rectangular border with ornamental corners.

SER. NO. 13,370. HAIR-PRESERVATIVE. NATIONAL RENEDY COMPANY. New York, N. Y. Filed Oct. 6, 1905.



A representation of a lion rampant standing on a heraldic roll and holding a plummet, associated with the words COMMUNE BONUM. QUOD PETIS HIC EST, all inclosed within an ornamental circular border.

SER. No. 13,389. RIBBONS. THE PINE TREE SILK MILLS COMPANY, Philadelphia, Pa. Filed Oct. 6, 1905. Used ten years.



A representation of a pine tree.

SER. No. 13,434. HAMS, BREAKFAST-BACON, SHOULDERS, AND BACON BELLIES. THREEFOOT BROS & Co., Meridian, Miss. Filed Oct. 9, 1905.



The words RED ROSE and the representation of a full-blown red rose having leaves on its stem and a bud on a branch at one side thereof.

SER. No. 13,455. OLIVE-OIL. DIEGO SANI FRANCESCONI, Lucca, Italy. Filed Oct. 9, 1905.



A rectangular label bounded by lines and designs. On the upper part of the same, there appear on two lines, the words, SPECIALITÀ VERO OLIO D OLIVA DI LUCCA. The central part is filled in by medals obtained in various expositions and by a shield, all of which are interlaced with olive branches. The shield is surmounted by a helmet with the visor lowered, and by a dragon seen in profile. On the upper field of the shield, there appears a horse rampant; the lower part of the field is divided vertically; the left half is blue, and the right half is coated by diagonal white and blue lines. At the bottom of the medals and of the shield, there appears an inscription in design, with the words, CALLISTO FRANCESCONI, and under the inscription, the word, LUCCA.

SER. No. 13,520. GOOSE-GREASE. SAMUEL C. ELLIOTT, Bardstown, Ky. Filed Oct. 12, 1905.

SER. No. 13,520.

"Mother's"

The word MOTHER'S inclosed in quotation-marks.

SER. No. 13,653. WINDMILLS. AERMOTOR COMPANY, Chicago, Ill. Filed Oct. 16, 1905. Used ten years.

AERMOTOR

The word "AERMOTOR."

SER. No. 13,707. PICTORIAL POST-CARDS. RAPHAEL TUCK AND SONS CO., LTD., New York, N. Y. Filed Oct. 17, 1905.

"RAPHOTYPE"

The arbitrarily-selected word, RAPHOTYPE, placed in quotation-marks.

SER. No. 13,846. AXES, HATCHETS, AND ADZES. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill. Filed Oct. 21, 1905.



The word AJAX and the representation of the bust of AJAX wearing a helmet and holding in one hand a Grecian sword, all surrounded by an annular strap bearing the name HIBBARD SPENCER BARTLETT & Co.

SER. No. 13,874. PAINT, VARNISH, WHITEWASH, WALL, HORSE, HAIR, AND FLESH BRUSHES. WOOSTER BRUSH WORKS, Wooster, Ohio. Filed Oct. 23, 1905. Used ten years.



The word OHIO in plain type on a globe having lines of latitude and longitude, the same being shown on the representation of a red

disk or seal bearing two white rings concentric with said globe and two white radial bars connecting said rings on opposite sides of the center.

SER. No. 13,993. MEDICINAL AND ADHESIVE PLASTERS. JOHNSON & JOHNSON, New Brunswick, N. J. Filed Oct. 28, 1905.

BELLEVIEW

The word BELLEVIEW.

SER. No. 13,999. SURGICAL DRESSINGS. JOHNSON & JOHNSON, New Brunswick, N. J. Filed Oct. 28, 1905.

BELLEVIEW

The word BELLEVIEW.

SER. No. 14,001. SYRINGES. JOHNSON & JOHNSON, New Brunswick, N. J. Filed Oct. 28, 1905.

Belleview

The word "BELLEVIEW."

SER. No. 14,004. SOAP. JOHNSON & JOHNSON, New Brunswick, N. J. Filed Oct. 28, 1905. Used ten years.

LISTER'S

The word LISTER'S.

SER. No. 14,040. WINE. CALIFORNIA WINE ASSOCIATION, San Francisco, Cal. Filed Oct. 30, 1905.



The words "VINE CLIFF" and a barrel-head design bearing in the center the monogram N V W Co surmounted by streamers, bunches of grapes and vine-leaves. At the bottom appear fanciful scrolls, leaves and bunches of grapes. The figure is surrounded by four concentric circles and radiations.

SER. No. 14,137. KNIT STOCKINGS. SIMONS, HATCH & WHITTEN Co. Boston, Mass. Filed Oct. 31, 1905.

SER. No. 14,137.

Sanatized Maco

The words SANATIZED MACO and a representation of a red Greek cross arranged at each end thereof.

SER. No. 14,241. WEEKLY TRADE-JOURNAL. THE FINANCIER Co., New York, N. Y. Filed Nov. 3, 1905.

THE FINANCIER

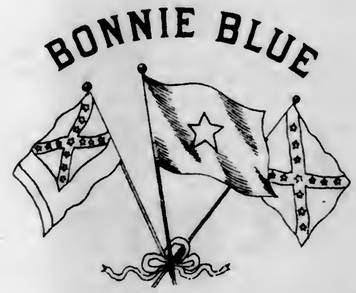
The name THE FINANCIER.

SER. No. 14,317. VAMPING-THREAD. THE CLARK THREAD CO., Newark, N. J. Filed Nov. 4, 1905.



A circle inclosing a diamond-shaped figure with concave sides, the spaces between the circle and the figure, as well as the space on the figure itself, being adapted to display printed matter, the whole design being emphasized by the use of contrasting colors.

SER. No. 14,370. WHISKY. LUTTERS 'SOTHERS, New York, N. Y. Filed Nov. 6, 1905.



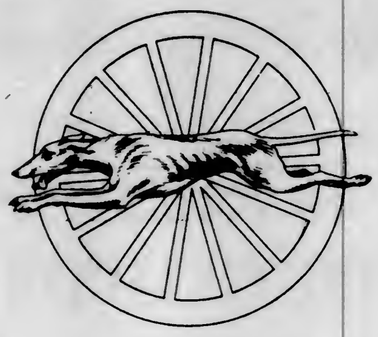
The words "BONNIE BLUE" and a representation of three flags with their staffs tied together, the outer flags showing stars and bars and the central flag a single star on a blue field.

SER. No. 14,518. CARBON-PAINTS. NASHVILLE CARBON & OIL COMPANY, Nashville, Tenn. Filed Nov. 11, 1905.

"DURBON"

The word DURBON inclosed in quotation-marks.

SER. No. 14,487. CARRIAGES AND WAGONS. MOLINE WAGON COMPANY, Moline, Ill. Filed Nov. 10, 1905.



The representation of a wheel spanned by a running greyhound.

SER. No. 14,520. GENERAL ANTISEPTICS FOR SURGICAL AND MEDICINAL USE IN CUTS, WOUNDS, AND BURNS, AS A WASH AND DEODORANT FOR TEETH AND MOUTH, A GARGLE FOR SORE THROAT AND HOARSENESS, A DOUCHE FOR NASAL CATARRH, AND INTERNALLY FOR FERMENTATIVE DYSPEPSIA. FREDERICK STEARNS & Co., Detroit, Mich. Filed Nov. 13, 1905.

Zymole

The word ZYMOLE.

SER. No. 14,704. BLEACHED AND UNBLEACHED SHIRTINGS AND SHEETINGS, CAMBRICS, AND LONG-CLOTH. GRINNELL WILLIS & Co., New York, N. Y. Filed Nov. 16, 1905.

OLD GLORY

The words OLD GLORY.

SER. No. 14,705. BLEACHED AND UNBLEACHED SHIRTINGS AND SHEETINGS, CAMBRICS, AND LONG CLOTH. GRINNELL WILLIS & Co., New York, N. Y. Filed Nov. 16, 1905.

VICTORY

The word VICTORY.

SER. No. 14,728. LEATHER BOOTS AND SHOES. F. MAYER BOOT & SHOE Co., Milwaukee, Wis. Filed Nov. 16, 1905. Used ten years.

MILWAUKEE F. MAYER B. & S. CO. CUSTOM MADE

The representation of a shoe contained within the inner of two concentric circles between which is the word MILWAUKEE above and the words CUSTOM MADE below, there being scrolls overlapping the pairs of circles on each side of the representation of a shoe, one containing the words F. MAYER and the other containing the characters B. & S. Co. and each of the circles being upon and crossed by pairs of radial lines.

SER. No. 14,728. POPCORN CONFECTIONERY. GEORGE R. VAN NEST, Revere, Mass. Filed Nov. 16, 1905.

LITTLE GEM CRISPETTES

The words LITTLE GEM CRISPETTES.

SER. No. 14,734. REMEDIES FOR CONSUMPTION, LIVER AND KIDNEY DISEASES. SCHIFFMANN COMPANY, Los Angeles, Cal. Filed Nov. 16, 1905.

BLUTAL

The word "BLUTAL" within an elliptical figure.

SER. No. 14,771. BLACK-HEAD PINS. ABEL MORRALL LIMITED, Redditch, England. Filed Nov. 17, 1905.

MULBERRY

The word MULBERRY.

SER. No. 14,774. CASTOR-OIL AND MEDICINAL SWEET OIL. E. R. DURKEE & Co., New York, N. Y. Filed Nov. 17, 1905.

CHALLENGE

The word CHALLENGE.

SER. No. 14,977. WHEAT-FLOUR. THE CRETE MILLS, Crete, Nebr. Filed Nov. 25, 1905.



The word VICTOR and the representation of a sword piercing certain letters of the word.

SER. No. 15,058. LADIES' DRESS-WAISTS, DRESS-SKIRTS, COATS, AND WRAPS. QUEEN MANUFACTURING COMPANY, New York, N. Y. Filed Nov. 28, 1905.

SER. No. 15,058.



A representation of a spray of golden rod upon which are the words "THE GOLDEN ROD."

SER. No. 15,441. COAL. ORIGINAL FARMERS COAL COMPANY, Kansas City, Mo. Filed Dec. 15, 1905. Used ten years.

FARMERS

The arbitrary word FARMERS.

SER. No. 15,464. SPECTACLE AND EYEGLASS LENSES AND FRAMES. WILLESTON W. BISSELL, Rochester, N. Y. Filed Dec. 16, 1905.

TOROIDS

The word TOROIDS.

SER. No. 15,573. HORSE-BLANKETS. WILLIAM AYRES & SONS Philadelphia, Pa. Filed Dec. 21, 1905.

BAKER

The word "BAKER."

SER. No. 15,607. TOILET OR FACE POWDERS, TOOTH-POWDERS, FACE-CREAMS, AND HAIR-SHAMPOOS. THE CITIZENS' WHOLESALE SUPPLY Co., Columbus, Ohio. Filed Dec. 23, 1905.



The representation of a shield bearing a monogram of the letters and abbreviation "C. W. S. Co." above which is a scroll bearing the words "GOLDEN RULE" and above the scroll in the corners of the shield appear two stars while in the bottom angle of the shield a single star appears.

SER. No. 15,689. SMOKING-TOBACCO, CHEWING-TOBACCO, AND SNUFF. GEBRÜDER BERNARD, Offenbach-on-the-Main, Germany. Filed Dec. 27, 1905.



The representation of the head and shoulders of a mountaineer, wearing a slouch hat and holding in the right hand a snuff-bottle and in the left hand snuff, which he is about to draw into his nostrils. The representation is inclosed by two black circles. Upon the space left between the head and shoulders of the mountaineer and the said circles the words "GESETZLICH GESCHÜTZT" are imprinted.

SER. No. 15,697. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio. Filed Dec. 28, 1905.



The representation of a rider seated on an autocycle.

SER. No. 15,698. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio. Filed Dec. 28, 1905.



The representation of a motor-vehicle and driver.

SER. No. 15,699. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio. Filed Dec. 28, 1905.



The representation of a rider seated on a safety-bicycle.

SER. No. 15,700. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio. Filed Dec. 28, 1905.



The representation of a rider seated on an old-style or ordinary bicycle.

SER. No. 15,701. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio. Filed Dec. 26, 1905.



The representation of a bicycle-pedal.

SER. No. 15,702. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio. Filed Dec. 26, 1905. Used ten years.



The representation of three wings inclosed in a wheel.

SER. No. 15,703. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio. Filed Dec. 26, 1905.



The representation of the propelling mechanism of the chainless bicycle.

SER. No. 15,737. MEDICATED PLASTERS. GEORGE T. RAYMOND, New York, N. Y. Filed Dec. 26, 1905.



The representation of two youths, one having in his hands a spoon and bottle and the other having upon his bared breast a plaster, the two youths having different expressions upon their countenances.

SER. No. 15,780. WHEAT-FLOUR. SAGINAW MILLING COMPANY, Saginaw, Mich. Filed Dec. 30, 1905.



The arbitrary word SAMICO, appearing upon the representation of a loaf of bread.

SER. No. 15,817. BUGGIES AND CARRIAGES. STUDEBAKER BROS. MFG. CO., South Bend, Ind. Filed Jan. 2, 1906.

IZZER

The word IZZER printed in bold-faced type.

SER. No. 15,835. MINERAL WATER. VOSBURG LITHIA SPRINGS CO., Gulfport, Miss. Filed Jan. 3, 1906.



The hyphenated word "VIS-VITAE," the words "WATER OF VITAL POWERS," and the pictorial representation of an upstanding lion drinking from a spring issuing from a rock within the outline of a keystone-shape figure.

SER. No. 15,875. LIQUEUR AND CORDIAL. SOCIÉTÉ ANONYME DE LA DISTILLERIE DE LA LIQUEUR BÉNÉDICTINE DE L'ABBAYE DE FÉCAMP, Fecamp, France. Filed Jan. 4, 1906.



The word BÉNÉDICTINE in plain block letters with a representation of a cross placed before and after said word.

SER. No. 15,902. COAL. UNITED STATES COAL AND OIL COMPANY, Holden, W. Va. Filed Dec. 21, 1905.



The monogram of the letters I C C O A L.

SER. No. 15,928. WHEAT-FLOUR. ZENITH MILLING COMPANY Kansas City, Mo. Filed Jan. 5, 1906.



The letter Z printed in red, and bearing the word AUTOCRAT, with a background of wheat ears and leaves.

SER. No. 15,975. WHISKY. GEO. BENZ & SONS, St. Paul, Minn. Filed Jan. 8, 1906.

DOCTOR'S

SPECIAL

The words DOCTOR'S SPECIAL.

SER. No. 16,001. WHISKY. EMINENCE DISTILLERY CO., St. Paul, Minn. Filed Jan. 8, 1906.

BLUE RIBBON

The words BLUE RIBBON.

SER. No. 16,024. WHISKY. T. BRENNAHAN & SON, Columbus, Ohio. Filed Jan. 8, 1906.

ACORN

The word ACORN.

SER. No. 16,030. WHISKY. A. BAUER & CO., INC., Chicago, Ill. Filed Jan. 8, 1906.

Dan Patch

The words "DAN PATCH."

SER. No. 16,050. POLISHING-POWDER TO BE USED IN MAKING A CLEANING SOLUTION. CARL HAMBUECHEN, Riverside, Ill. Filed Jan. 8, 1906.

TARN-DIP

The word-symbol "TARN-DIP."

SER. No. 16,073. A REMEDY FOR DISEASES ARISING FROM URIC-ACID DIATHESIS, FOR GENITO-URINARY DISEASES, AND FOR DISEASES OF THE THROAT AND LUNGS. JOSEPH COOPER DENSTEN, Scranton, Pa. Filed Jan. 9, 1906.

IODINSAL

The word "IODINSAL."

SER. No. 16,094. ROOFING PAINTS AND STAINS. PACIFIC REFINING & ROOFING CO., San Francisco, Cal. Filed Jan. 10, 1906.



The letters and characters W. & P. shown arranged as a monogram.

SER. No. 16,103. MATTRESSES. JOSEPH C. ROBERTS, Portland, Oreg. Filed Jan. 10, 1906.

BEST MATTRESS ON EARTH

Guaranteed Pure Felted

B M O E

Silk Floss Weight 35 Lbs.

PETERS & ROBERTS FURNITURE CO., PORTLAND, ORE.

The representation of a mattress bearing the letters "B. M. O. E." and associated with the words "BEST MATTRESS ON EARTH GUARANTEED PURE FELTED SILK FLOSS WEIGHT 35 LBS. PETERS & ROBERTS FURNITURE CO., PORTLAND, ORE."

SER. No. 16,119. LEATHER BOOTS AND SHOES FOR MEN, WOMEN, AND YOUTHS. THE COMMONWEALTH SHOE AND LEATHER COMPANY, Boston, Mass. Filed Jan. 11, 1906. Used ten years.



The word "COMMONWEALTH" and a representation of a mailed arm and hand bearing a sword and issuing from a heraldic roll.

SER. No. 16,141. NON-CORROSIVE AND ANTIFOULING PAINTS AND COMPOSITIONS USED FOR PAINTING SHIPS AND OTHER SUBMERGED STRUCTURES. HUMIDINE LIMITED, Cheapside, London, England. Filed Jan. 12, 1906.

HUMIDINE

The arbitrarily-selected word "HUMIDINE."

SER. No. 16,172. ALMOND-MEAL COMPOUND FOR THE TOILET. HOLTON & ADAMS, New York, N. Y. Filed Jan. 13, 1906. Used ten years.

Dr. Palmer's



ALMOND MEAL COMPOUND

The fanciful bust portrait of a young lady and the words DR. PALMER'S ALMOND MEAL COMPOUND.

SER. No. 16,202. PLASTIC COMPOSITIONS MADE FROM ANIMALS' HORNS AND HOOFS. KORNIT MANUFACTURING COMPANY, New York, N. Y. Filed Jan. 15, 1906.

KORNIT

The arbitrary word KORNIT.

SER. No. 16,220. PANTALOONS AND KNEE-PANTS. JAMISON BROS. Philadelphia, Pa. Filed Jan. 16, 1906.



The letters J B and a comma-like character, inclosed in concentric circles between which circles are the words WARRANTED NOT TO RIP BRAND.

SER. No. 16,225. SARDINES AND OTHER PRESERVED FISH. M. PITAT CIA. S. EN C., Vigo, Spain. Filed Jan. 16, 1906.



The representation of the head and bust of a woman with long flowing curling hair with three daisies therein. The head is located upon a black background with white spots thereon, which background is surrounded by two concentric circles between which circles are represented conventionalized leaves. The lower part of the outer circle is extended into the form of a panel forming a background for the bust, and underneath this panel is scrollwork and the word "MARGUERITE" in quotation-marks, the whole being surrounded by a double parallel border with rounded corners.

SER. No. 16,440. OINTMENTS, PASTES, PASTE PENCILS, AND CREAMS FOR OBVIATING PERSPIRATION. DAVID FRIEDLAENDER, Berlin, Germany. Filed Jan. 23, 1906.

Idrolyt

The word "IDROLYT."

SER. No. 16,441. OINTMENTS, PASTES, PASTE PENCILS, AND CREAMS FOR OBVIATING PERSPIRATION. DAVID FRIEDLAENDER, Berlin, Germany. Filed Jan. 23, 1906.



The representation of a foot and an erect hand placed thereon and divided therefrom by a bracelet.

SER. No. 16,458. HOSIERY. HERMANN STÄRKER, Chemnitz, Saxony, and New York, N. Y. Filed Jan. 24, 1906.

H. S S.

The letters H. S. spaced apart, and the monogram composed of the letters H S and arranged between the said spaced letters.

SER. No. 16,556. CEREAL DIABETIC FLOUR PREPARATIONS, INCLUDING BREAD AND LIKE PRODUCTIONS MADE THEREFROM. JIREH DIABETIC FOOD CO., New York, N. Y. Filed Jan. 26, 1906.



The words "JIREH STARCH-CHANGED FOODS" inclosed in concentric circles, between which appear the name of the applicant "JIREH DIABETIC FOOD CO." and the address, NEW YORK CITY.

SER. No. 16,557. MONTHLY PERIODICAL. FARM LIFE PUBLISHING CO., Chicago, Ill. Filed Jan. 26, 1906.

FARM LIFE
An Illustrated Monthly Magazine for Farm Folks

The words FARM LIFE AN ILLUSTRATED MONTHLY MAGAZINE FOR FARM FOLKS.

SER. No. 16,682. INSECTICIDE-POWDER FOR DISEASES OF PLANTS AND FRUIT-TREES. JEAN SOUHEUR, Antwerp, Belgium. Filed Jan. 30, 1906.

FOSTIT

The word FOSTIT.

SER. No. 16,711. ROACH AND BUG DESTROYER. MORRIS H. GREENFIELD, Newark, N. J. Filed Feb. 2, 1906.

RID-ALL

The word-symbol RID-ALL.

SER. No. 16,735. ANTISEPTICS, GERMICIDES, AND DISINFECTANTS. STEIN-FALKER COMPANY, New York and Syracuse, N. Y. Filed Feb. 3, 1906.

Streptocol

The arbitrary word "STREPTOCOL."

SER. No. 16,753. GIN. FREIBERG & KAHN, Cincinnati, Ohio. Filed Feb. 5, 1906.



The word STALLION associated with the picture of a stallion with open mouth and upreared on its hind legs.

SER. No. 16,761. REMEDY FOR CONSTIPATION AND KINDRED AILMENTS. THE SANATORIUM SYSTEM CO. South Orange, N. J. Filed Feb. 5, 1906.



A representation of a hand supporting a group of buildings within an oval panel. Around this panel is a margin or border, and within the inclosed space is the phrase THE SANATORIUM SYSTEM CO.

SER. No. 16,766. WELDED FLANGES. THE BALL & WOOD CO., Elizabeth, N. J., and New York, N. Y. Filed Feb. 5, 1906.

BALLWOOD

The word "BALLWOOD."

SER. No. 16,864. REMEDY FOR INDIGESTION. ROBERT DREGEN, Washington, D. C. Filed Feb. 9, 1906.



A rectangular panel having a fanciful scroll-like figure thereon, crossed by a band upon which appears the word "HERBAMER" and having above said band the word "ELIXIR" and below said band words descriptive of the goods of the applicant, and of his place of doing business; there being a representation of a Greek cross in each lower corner of the panel.

SER. No. 16,969. GOLD ENAMEL, ALUMINUM ENAMEL, AND BRONZE ENAMEL. EMIL SCHULZ, New York, N. Y. Filed Feb. 12, 1906.



The representation of the statue of Germania and consists of the figure of a woman holding a crown aloft in one hand and a sword in the other.

SER. No. 16,989. SAUSAGES. WILLIAM H. BURKE, Belmont, Mass. Filed Feb. 13, 1906. Used ten years.

"BELMONT"

The word BELMONT.

SER. No. 17,056. SPLINTS. J. ELLWOOD LEE COMPANY, Conshohocken, Pa. Filed Feb. 16, 1906. Used ten years

SER. NO. 17,056.

Levis's

The word LEVIS'S.

SER. NO. 17,060. MEDICINAL AND ADHESIVE PLASTERS. J. ELLWOOD LEE COMPANY, Conshohocken, Pa. Filed Feb. 16, 1906. Used ten years.



A representation of a wheel of legs.

SER. NO. 17,061. MEDICINAL AND ADHESIVE PLASTERS. J. ELLWOOD LEE COMPANY, Conshohocken, Pa. Filed Feb. 16, 1906. Used ten years.

LEE'S

The word "LEE'S."

SER. NO. 17,066. MEDICINAL AND ADHESIVE PLASTERS. J. ELLWOOD LEE COMPANY, Conshohocken, Pa. Filed Feb. 16, 1906. Used ten years.

POMEROY'S

The word "POMEROY'S."

SER. NO. 17,069. TRUSSES AND SUPPORTERS. J. ELLWOOD LEE COMPANY, Conshohocken, Pa. Filed Feb. 16, 1906. Used ten years.

Penfield

The word PENFIELD.

SER. NO. 17,103. MEDICINES IN THE FORM OF TABLETS USED AS A REMEDY FOR DISEASES OF THE BLOOD AND NERVOUS SYSTEM. DR. RICHARDS DYSPEPSIA TABLET ASSOCIATION, New York, N. Y. Filed Feb. 16, 1906.

SER. NO. 17,103.

Velcas

The coined word VELCAS.

SER. NO. 17,152. SNUFF. JOHN P. LARSON, Chicago, Ill. Filed Feb. 17, 1906.

ARROW BRAND SNUS

The representation of an arrow, associated with the words "ARROW BRAND SNUS."

SER. NO. 17,207. COFFEE SUBSTITUTE. THEODORE D. FLOTO, Brooklyn, N. Y. Filed Feb. 20, 1906.

CHICORINE

The word CHICORINE.

SER. NO. 17,248. WHISKY. SWOPE & MANGOLD INCORPORATED, Dallas, Tex. Filed Feb. 23, 1906. Used ten years.

Mecca

The word MECCA.

SER. NO. 17,265. HAIR-RESTORATIVES AND HAIR-TONICS. THE CITIZENS' WHOLESALE SUPPLY CO., Columbus, Ohio. Filed Feb. 23, 1906.



The representation of a shield bearing a monogram of the letters and abbreviation C W S Co, above which is a scroll bearing the words GOLDEN RULE, and above the scroll, in the corners of the shield, appear two stars, while in the bottom angle of the shield a single star appears.

SER. NO. 17,270. LADIES' SHIRT-WAISTS AND SHIRT-WAIST SUITS. EINSTEIN, GUGGENHEIM & COMPANY, Cleveland, Ohio. Filed Feb. 23, 1906.

SER. NO. 17,270.

Euclid

The word EUCLID printed in script with the flourish at the end of the "D" extending down and under the word.

SER. NO. 17,271. STOVE-POLISH. HENRY C. BOMHARD, Milwaukee, Wis. Filed Feb. 23, 1906.



The representation of a crow, associated with the word "CROW."

SER. NO. 17,324. FIREPROOF COMPOSITIONS OR COMPOUNDS FOR USE ON OR IN CONNECTION WITH WOOD AND ALL KINDS AND CLASSES OF TEXTILE MATERIAL. THE BLENIO FIREPROOFING CO. New York, N. Y. Filed Feb. 24, 1906.



A shield formed by an irregular transversely-arranged top figure and the word "BLENIO" placed thereunder, the words "THE FIREPROOFING CO." being placed on said irregular transversely-arranged top figure, and a streamer placed over and inclosing the sides of the shield and bearing the legend "INCORPORATED," "NEW YORK," "ALWAYS RELIABLE," and an eight-pointed star placed over the shield and within the streamer and indicating the cardinal points of the compass, the following letters being used to designate the separate points "N.," "N. E.," "E.," "S. E.," "S.," "S.W.," "W.," and "N.W."

SER. NO. 17,388. RHEUMATISM CURE. ALICE V. GARRISON, Reedville, Va. Filed Feb. 27, 1906.

SUCCESS

The word SUCCESS.

SER. NO. 17,415. COAL. THE OTTO MARMET COAL AND MINING COMPANY, Raymond City, W. Va. Filed Feb. 26, 1906. Used ten years.

SER. NO. 17,415.

RAYMOND COAL

The words RAYMOND COAL.

SER. NO. 17,436. COTTON PIECE GOODS. MASSACHUSETTS COTTON MILLS, Lowell, Mass. Filed Mar. 1, 1906.

GLADIATOR

The word GLADIATOR.

SER. NO. 17,455. CANNED SARDINES. U. H. DUDLEY & COMPANY, New York, N. Y. Filed Mar. 1, 1906.



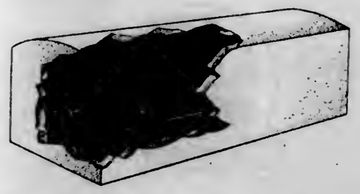
The representation of a sea-lion standing on an ice-floe, together with the words "OLGA PACKING CO" arranged above the representation of the sea-lion and the words "SEA-LION BRAND SMOKED SARDINES" arranged below the representation of the sea-lion.

SER. NO. 17,483. WHISKY. THE DAVIESS COUNTY DISTILLING CO., Owensboro, Ky. Filed Mar. 3, 1906.

KENTUCKY CLUB

The words "KENTUCKY CLUB."

SER. NO. 17,534. AIR-TIGHT BURIAL-VAULT. JAMES SHERMAN VAN FOSSEN, Macomb, Ill. Filed Mar. 5, 1906.



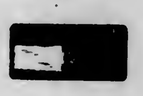
The representation of a rectangular vault, partially broken away to show a burial-casket therein.

SER. No. 17,592. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.: Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 6, 1906. Used ten years.



The word "STONEWALL" and the portrait of Stonewall Jackson partly inclosed by a wreath.

SER. No. 17,622. MATTRESSES. THE CHAS. A. MAISH CO., Cincinnati, Ohio. Filed Mar. 6, 1906.



A rectangular black panel bearing the representation of a pile of cotton and a mattress, with the words "BEFORE PUTTING ON THE TICK" above the cotton, and the words "MAISH LAMINATED COTTON DOWN MATTRESS" above the mattress.

SER. No. 17,628. WRITING-PAPER, ENVELOPS, AND TABLETS. LEWIS J. POWERS, Springfield, Mass. Filed Mar. 6, 1906.



An emblem comprising the representation of an envelop bearing the letters P P Co thereon, above which is a ribbon-like scroll bearing the words "CONNECTICUT VALLEY STATIONERY," and the representation of a plume or feather partially concealed by the envelop and scroll.

SER. No. 17,643. KIMONAS AND DRESSING-SACQUES. LION BROS. CO., Baltimore, Md. Filed Mar. 8, 1906.



The representation of a Japanese woman in Oriental costume in a stooping position holding in one hand a brush and in the other a cup. To one side of the female figure is a kettle with a colander on top and on top of the colander a ladle. In the background is a small screen behind which is a larger screen with ornamentation of flowers. In the upper left-hand portion of the picture is the word "LIONA" in ornamental caps written vertically. Surrounding the entire scene is a double circle.

SER. No. 17,679. PULVERIZED SCOURING-SOAP. M. H. FAIRCHILD & BRO., Chicago, Ill. Filed Mar. 8, 1906.



An oval-shaped panel bearing the representation of a child holding in its hands a package, and the words FAIR CHILD.

SER. No. 17,687. WHEAT-FLOUR. LIDGERWOOD MILL COMPANY, Lidgerwood, N. D. Filed Mar. 9, 1906.



The words PRINZ BISMARCK and a bust picture of Prince Bismarck.

SER. No. 17,694. CARBON-PAPER. FIDELITY CARBON PAPER COMPANY, Boston, Mass. Filed Mar. 9, 1906.



The word FIDELITY associated with the representation of the head of a dog.

SER. No. 17,718. CANDY. THE LIPPS-MURBACH CO. OF BALTIMORE CITY, Baltimore, Md. Filed Mar. 10, 1906.

SER. No. 17,718.



The hyphenated word "SNOW-FLAKE" arranged between two similar fanciful bust pictures of a child, the child being represented as attired in furs and as standing in a snow storm.

SER. No. 17,734. GOLF-BALLS. THE KEMPSHALL MANUFACTURING COMPANY, New York, N. Y. Filed Mar. 10, 1906.

CLICK

The word "CLICK."

SER. No. 17,757. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio. Filed Mar. 12, 1906.



A representation of four wings superimposed on a wheel, together with a star arranged in a circle.

SER. No. 17,758. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio. Filed Mar. 12, 1906.

ALLWHEEL

The word "ALLWHEEL."

SER. No. 17,761. CIGARS. REYMER & BROTHERS INCORPORATED, Pittsburg, Pa. Filed Mar. 12, 1906.

EL REYMERO

The words "EL REYMERO."

SER. No. 17,971. CORUNDUM, GARNET, AND EMERY PAPER AND CLOTH. MINNESOTA MINING & MANUFACTURING CO., Duluth, Minn. Filed Mar. 17, 1906.



A red diamond-shaped figure having the letter M in its center and the figure 3 in both its upper and left angles, with the abbreviation Co. in both its right and lower angles, so that reading either horizontally or vertically the characters 3 M Co. appear. Surrounding the diamond is a circular band or border inclosing the words MINNESOTA MINING AND MFG. CO. DULUTH, MINN.

SER. No. 18,052. LEATHER BOOTS AND SHOES. W. J. MARTINES & BROS., New Orleans, La. Filed Mar. 20, 1906.

APEX

The arbitrary word APEX.

SER. No. 18,081. DOOR-HINGES, DOOR-SPRINGS, AND DOOR-PULLS. THE COLUMBIAN HDW. CO., Cleveland, Ohio. Filed Mar. 21, 1906.

GEM

The word GEM.

SER. No. 18,082. LARD. S EWART & CO., Pittsburg, Pa. Filed Mar. 21, 1906.



The words DAISY BEST with the intervening figures of a dancing pig and boy, surmounted by applicants' firm-name S. EWART & CO. and the words PURE LEAF LARD underneath. These words and figures are arranged upon a substantially rectangular panel with a surrounding scroll or border upon a red background

SER. No. 18,121. LEAD-PENCILS. EAGLE PENCIL COMPANY, New York, N. Y. Filed Mar. 22, 1906.

MANIFOLD

The word MANIFOLD.

SER. No. 18,136. VAULT-LIGHTS AND SIDEWALK-LIGHTS. ARTHUR PRIDDLE, San Francisco, Cal. Filed Mar. 22, 1906.

SEARCHLIGHT

The word SEARCHLIGHT.

SER. No. 18,146. FLEXIBLE JOINT CONNECTIONS FOR BASIN AND BATH SUPPLIES. WOLVERINE BRASS WORKS. Grand Rapids, Mich. Filed Mar. 22, 1906.

WOB

The letters W and B, with a substantially rectangular figure composed of four inwardly-curved lines disposed between the said letters W and B.

SER. No. 18,149. WRITING-PAPERS. S. E. & M. VERNON, New York, N. Y. Filed Mar. 22, 1906.



A representation of the human eye with the words, BLUE BOND above the same, and the words, GOOD FOR THE EYES, below the same.

SER. No. 18,156. SHOE-KNIVES, RUBBER-KNIVES, BREAD-KNIVES, CIGAR-KNIVES, BUTCHER-KNIVES, CLOTH-KNIVES, KITCHEN-KNIVES, AND KNIVES OR KNIFE-BLADES FOR ANALOGOUS USES. HARRINGTON CUTLERY CO., Southbridge, Mass. Filed Mar. 22, 1906. Used ten years.

DEXTER

The word DEXTER.

SER. No. 18,180. ICE-CREAM. ALEXANDER I. NEBLE, New York, N. Y. Filed Mar. 23, 1906.

METROPOLITAN

The word "METROPOLITAN."

SER. No. 18,242. SPOKES AND NIPPLES FOR WHEELS OF BICYCLES, AUTOMOBILES, AND ALSO FOR OTHER WHEELS. THE STANDARD COMPANY, Torrington, Conn. Filed Mar. 24, 1906.



The capital letter E, inclosed within the walls of a diamond, which is broken away above and below said capital letter.

SER. No. 18,279. LAMPS FOR GENERATING AND BURNING ACETYLENE GAS. ACETYLENE LAMP CO., New York, N. Y. Filed Mar. 26, 1906.

SER. No. 18,279.



A double circle. Between the circles the word BECK-IDEN, is arranged at the top of the figure. At each end of said word is arranged a star between the two circles. Between said circles at the bottom of the figure occurs the word NEW YORK. In the center of the inner circle is a smaller circle crossed by a straight line running through its center.

SER. No. 18,322. COIN-OPERATED VENDING-MACHINES. MILLS NOVELTY CO., Chicago, Ill. Filed Mar. 23, 1906.



An owl within a double circle on a disk. About the outer circle are printed, in black type, the words and characters "MILLS NOVELTY CO. CHICAGO, U. S. A." and the disk is represented as being supported on a folded ribbon having two loops toward the folded end and terminating at its free ends in fringe, with a scroll behind and crossing the free ends of the ribbon.

SER. No. 18,329. MARBLE IN BLOCKS AND SLABS. REPUBLIC MARBLE COMPANY, Knoxville, Tenn. Filed Mar. 29, 1906.

R

The letter R.

SER. No. 18,339. ORGANS. W. W. KIMBALL COMPANY, Chicago, Ill. Filed Mar. 30, 1906. Used ten years.

SER. No. 18,339.

KIMBALL

The word KIMBALL.

SER. No. 18,370. MUSIC IN SHEET, FOLIO, AND BOOK FORM. MCKINLEY MUSIC CO., Chicago, Ill. Filed Mar. 30, 1906. Used ten years.

McKINLEY

The word MCKINLEY.

SER. No. 18,371. WHISKY. SWOPE & MANGOLD, INC., Dallas, Tex. Filed Mar. 30, 1906.

Clear Brook

The words "CLEAR BROOK."

SER. No. 18,372. PREPARATION FOR CLEANING FABRICS BY EVAPORATION. CARPETINA COMPANY, Minneapolis, Minn. Filed Mar. 30, 1906.



The representation of a crescent-shaped figure bearing the words "IT CLEANS BY EVAPORATION," and associated with the word "CARPETINA" and the representation of leaves, stems, and chrysanthemum flowers tied with a bow of ribbon, all arranged within the horns of the crescent.

SER. No. 18,374. MAGAZINE OR PERIODICAL. DAVID H. ANDERSON, Chicago, Ill. Filed Mar. 30, 1906. Used ten years.

THE IRRIGATION AGE

The words THE IRRIGATION AGE.

SER. No. 18,381. TELEPHONE SIGNALING APPARATUS. THE DEAN ELECTRIC COMPANY, Elyria, Ohio. Filed Mar. 30, 1906.

SER. No. 18,381.

HARMONIC CONVERTER

The words HARMONIC CONVERTER surrounded by an ellipse which covers the majority of a staff of music upon the right-hand end of which are shown a plurality of notes. Above and below each end of the ellipse and above and below the staff is shown fanciful scrollwork.

SER. No. 18,404. MAGAZINE OR PERIODICAL. HOME LIFE PUBLISHING COMPANY, Chicago, Ill. Filed Mar. 31, 1906. Used ten years.

HOME LIFE

The words HOME LIFE.

SER. No. 18,412. HOT-AIR, HOT-WATER, AND STEAM HEATERS OR FURNACES AND COOKING-RANGES. THATCHER FURNACE CO., Newark, N. J., and New York, N. Y. Filed Mar. 31, 1906. Used ten years.

THATCHER

The word THATCHER.

SER. No. 18,413. CARTRIDGES AND CARTRIDGE-SHELLS. THE UNION METALLIC CARTRIDGE COMPANY, Bridgeport, Conn., and New York, N. Y. Filed Mar. 31, 1906.



The letters U. M. C. S. L. R.

SER. No. 18,457. BLEACHED AND UNBLEACHED TEXTILE FABRICS. EVAN J. FRASER-CAMPBELL, New York, N. Y. Filed Apr. 3, 1906.



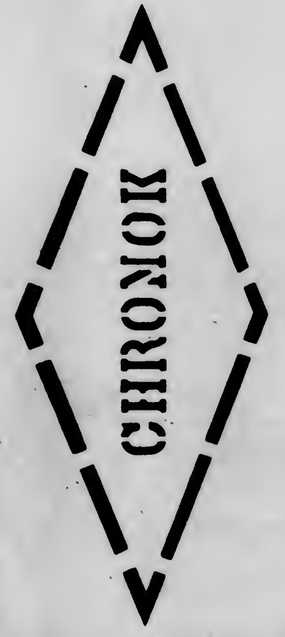
The representation of a globe having outlines of some of the continents appearing thereon, and a Chinese woman, the woman being in a standing attitude at the right with her hands resting upon the upper portion of the globe, together with the representation of a bolt of cloth partially covering the left side of the globe.

SER. No. 18,459. BLEACHED AND UNBLEACHED TEXTILE FABRICS. EVAN J. FRASER-CAMPBELL, New York, N. Y. Filed Apr. 3, 1906.



The representation of an Indian ox, standing facing toward the left.

SER. No. 18,473. PATENT-LEATHER FOR SHOES. W. D. BYRON & SONS, Williamsport, Md. Filed Apr. 3, 1906.



The word CHRONOK, inclosed within a diamond-shaped field.

SER. No. 18,477. GLUE. BINNEY & SMITH COMPANY, New York, N. Y. Filed Apr. 3, 1906.

SER. No. 18,477.



An elliptical border around the inside of which are printed the words "HAY'S WATERPROOF GLUE & NEW PATENT ENAMEL COMPOSITON & VARNISH COMPY LIMD" in plain block type, an elliptical line parallel with the outer border and inclosing the representation of a sailing vessel having a hull made to represent a fish sailing on water, with the word "I SOAR ABOVE" and "I DIVE BELOW" above and below the said representation of the sailing vessel, while across the letters and figures and within the outer border are printed letters "B. & S. Co." in a different color.

SER. No. 18,499. COPPER PLATES FOR ENGRAVERS' USE. HARRY A. GREENE, New York, N. Y. Filed Apr. 4, 1906.



The representation of a plate of copper, on which stands an owl with his feet apart and wings partially extended. The owl carries in his beak a scroll bearing the legend "OWL FINISH." In the plate of the copper is reflected the owl and the scroll. The plate also bears the words "ENGRAVERS' PLATES."

SER. No. 18,586. MAGAZINE OR PERIODICAL. THE SIMMONS PUBLISHING COMPANY, a Corporation, Springfield, Ohio. Filed Apr. 5, 1906. Used ten years.

FARM NEWS

The words FARM NEWS.

SER. No. 18,571. NEEDLES. HENRY MILWARD & SONS, LIMITED, Redditch, England. Filed Apr. 6, 1906.



The vignette or representation of a unicorn rampant, around which are two lines constituting an oval.

SER. No. 18,575. LEATHER AND CLOTH BOOTS, SHOES, AND SLIPPERS. HANAN & SON, New York, N. Y. Filed Apr. 6, 1906.



The representation of a portion of the globe floating in the clouds, a shoe resting thereon, upon which appears the word "HANAN;" a crescent, containing the representation of the face of a woman, from which rays of light are shown as being thrown upon the globe, associated with the phrase "THE BEST ON EARTH IS A HANAN SHOE" and the phrase "FOR MEN AND WOMEN" the whole being contained in a rectangular panel.

SER. No. 18,577. PERCOLATORS. LANDERS, FRARY AND CLARK, New Britain, Conn. Filed Apr. 6, 1906.

The word UNIVERSAL, followed by the word PERCOLATOR.

SER. No. 18,604. WATCHES, WATCHCASES, AND WATCH-MOVEMENTS. D. GRUEN & SONS, Cincinnati, Ohio. Filed Apr. 7, 1906. Used ten years.

GRUEN

The word "GRUEN."

SER. No. 18,617. OLEOMARGARINE. SWIFT AND COMPANY, Chicago, Ill. Filed Apr. 9, 1906.



The representation of three crescents, arranged upon a rectangular background, from the ends of which extend parallel wavy lines.

SER. No. 18,654. HOUSEHOLD UTENSILS MADE OF ENAMELED WARE. REED MANUFACTURING CO., Newark, N. Y. Filed Mar. 23, 1906.



The word FLINTSTONE.

SER. No. 18,677. WHEAT-FLOUR. ST. MARY'S MILL COMPANY, St. Marys, Mo. Filed Apr. 10, 1906.

SNOW WREATH

The words SNOW WREATH.

SER. No. 18,731. FILTER-PRESSES. THE NILES TOOL WORKS CO. Hamilton, Ohio. Filed Apr. 12, 1906.

ECLIPSE

The word ECLIPSE.

SER. No. 18,746. COTTON PIECE GOODS. KUNHARDT & CO., New York, N. Y. Filed Mar. 29, 1906.



A rectangular field comprising three bands, an upper and lower band of blue and an intermediate band of red, there being in the upper corner a blue field containing the representation of stars, and the words "STARS AND STRIPES" which appear upon the rectangular field. In the lower blue field the representation of a cluster of nasturtiums appears which extends slightly up into the red band.

SER. No. 18,805. CIGAR-CLIPPINGS. CHARLES HENRY LAWRENCE, El Paso, Tex. Filed Apr. 14, 1906.



The words TOBACCO DE RECORTE, a pictorial representation of a rooster and a hen below the same, and surrounded by a series

of angles inclosing vertical and horizontal lines arranged between a plain oblong border.

SER. No. 18,808. KINDLING. WILSON & HARRIS, Chicago, Ill. Filed Apr. 14, 1906.

KRACKER JACK

The words "KRACKER JACK."

SER. No. 18,905. SHAVING-BLADES AND WHITENING-BLADES FOR USE IN TANNERIES AND OTHER ESTABLISHMENTS. L. HARDY CO., Worcester, Mass. Filed Apr. 18, 1906.

H

The letter "H."

SER. No. 18,926. POCKET-KNIVES. PAVIAN-ADAMS CO., St. Paul, Minn. Filed Apr. 19, 1906.

SUMMIT

The word SUMMIT.

SER. No. 18,971. HEATING-FURNACES. WROUGHT IRON RANGE COMPANY, St. Louis, Mo. Filed Apr. 21, 1906.

HOME COMFORT

The words HOME COMFORT.

SER. No. 18,973. CLOTH-CUTTING MACHINES. UNIVERSAL CUTTER COMPANY, St. Louis, Mo. Filed Apr. 21, 1906.

Universal

The word UNIVERSAL.

SER. No. 18,977. PRINTED AND DYED TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa. Filed Apr. 21, 1906.

SIMPSON-EDDYSTONE
SILK FINISH
ROBES

A central oval panel bearing a representation of a lighthouse, with the words SIMPSON EDDYSTONE, associated with the words SIMPSON-EDDYSTONE SILK FINISH ROBES

SER. No. 18,993. WHISKY. A. M. TAEGER, Burlington, Iowa, administratrix of the estate of Charles H. Taeger, deceased. Filed Apr 21, 1906.

OLD
BLACKSTONE

The words OLD BLACKSTONE.

SER. No. 19,000. LUBRICATING-OILS. THE KEHEW-BRADLEY COMPANY, Boston, Mass. Filed Apr. 23, 1906. Used ten years.

RAPID
SPINDLE
OIL

The words RAPID SPINDLE OIL.

SER. No. 19,047. ISINGLASS OF A GELATINOUS NATURE. HOWE & FRENCH ISINGLASS CO., Boston, Mass. Filed Apr. 25, 1906. Used ten years.

RIPLEY
WARRANTED
PURE
AND MADE FROM
SELECTED STOCK
HOWE & FRENCH
ISINGLASS CO.
BOSTON.
AMERICAN ISINGLASS

The words RIPLEY AMERICAN ISINGLASS arranged in a circle, the words WARRANTED PURE AND MADE FROM SELECTED STOCK HOWE & FRENCH ISINGLASS CO., BOSTON, arranged in lines within the circle

SER. No. 19,048. ISINGLASS OF A GELATINOUS NATURE. HOWE & FRENCH ISINGLASS CO., Boston, Mass. Filed Apr. 25, 1906. Used ten years.

RIPLEY
WARRANTED PURE
AND MADE FROM
SELECTED STOCK
AMERICAN
ISINGLASS
HOWE & FRENCH
ISINGLASS CO.
BOSTON, MASS.

The words RIPLEY WARRANTED PURE AND MADE FROM SELECTED STOCK AMERICAN ISINGLASS HOWE & FRENCH ISINGLASS CO. BOSTON, MASS., said words being arranged in horizontal lines.

SER. No. 19,055. COTTON PIECE GOODS. MASSACHUSETTS COTTON MILLS, Lowell, Mass. Filed Apr. 25, 1906. Used ten years.



The representation of a man standing upright in a canoe.

SER. No. 19,208. STOVES. THE FEDERAL STOVE CO., New York, N. Y. Filed May 1, 1906.

AERPLANE

The word AERPLANE.

SER. No. 19,237. WAGON-SCALES, PITLESS SCALES, PLATFORM-SCALES, COUNTER-SCALES, AND VARIOUS FORMS OF PORTABLE, AUTOMATIC, AND COMPUTING SCALES. KIMBALL BROTHERS CO., Council Bluffs, Iowa. Filed May 2, 1906. Used ten years.

COLUMBIA

The word COLUMBIA.

SER. No. 19,242. RIGHT AND LEFT HAND STOP AND WASTE COCKS. LANDERS, FRARY AND CLARK, New Britain, Conn. Filed May 2, 1906.

SIMPLEX

The word "SIMPLEX."

SER. No. 19,247. ROOFING, SHEATHING, AND BUILDING PAPER. BARRETT MANUFACTURING COMPANY, New York, N. Y. Filed May 2, 1906. Used ten years.

Diamond

The word DIAMOND.

SER. No. 19,251. STOCKINGS. GLIDDEN, HYDE & CO., Boston, Mass. Filed May 3, 1906.

Our Boys

The words OUR BOYS.

SER. No. 19,301. MAGNET-STEEL. FIRTH-STERLING STEEL COMPANY, Pittsburg, Pa. Filed Apr. 28, 1906.

HOLD FAST

The words, HOLD FAST.

SER. No. 19,345. FOOD-CHOPPERS. COLEBROOKDALE IRON COMPANY, Colebrookdale, Pa. Filed May 7, 1906.

KEYSTONE

The word KEYSTONE and the representation of a keystone.

SER. No. 19,372. ANTIFRICTION METAL. EUREKA BRASS COMPANY, St. Louis, Mo. Filed May 8, 1906.

EUREKA SPECIAL

The words EUREKA SPECIAL.

SER. No. 19,378. PRESSURE-RECORDERS. THE BRISTOL COMPANY, Waterbury, Conn. Filed May 9, 1906. Used ten years.

BRISTOL'S

The word BRISTOL'S.

SER. No. 19,380. THERMOMETERS AND TELETHERMOMETERS. THE BRISTOL COMPANY, Waterbury, Conn. Filed May 9, 1906. Used ten years.

BRISTOL'S

The word BRISTOL'S.

SER. No. 19,381. ELECTRIC METERS. THE BRISTOL COMPANY, Waterbury, Conn. Filed May 9, 1906. Used ten years.

BRISTOL'S

The word BRISTOL'S.

SER. No. 19,422. VALVES AND PARTS THEREOF. STAR BRASS MANUFACTURING COMPANY, Boston, Mass. Filed May 10, 1906.

NON-CORROSIVE

The representation of a shield having a panel superimposed crosswise thereon. Associated with this and imprinted on the panel are the hyphenated words "NON-CORROSIVE."

PHOTO-LITHOGRAPHED BY
SACKETT & WILHELMS
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225 FOURTH AVENUE N.Y.
NEW YORK

TRADE-MARKS

REGISTERED JUNE 12, 1906.

53,654. WATER-TUBE BOILERS. A. D. GRANGER CO., New York, N. Y.
The word "STAR."
Filed May 11, 1905. Serial No. 5,203. PUBLISHED APRIL 17, 1906.

53,655. GUNPOWDER. AMERICAN POWDER MILLS, Boston, Mass.
The words "DEAD SHOT."
Filed June 19, 1905. Serial No. 8,511. PUBLISHED APRIL 17, 1906.

53,656. ROOFING MATERIAL. THE EASTERN GRANITE ROOFING COMPANY, New York, N. Y.
The arbitrary word-symbol "GRANITE."
Filed July 13, 1905. Serial No. 10,276. PUBLISHED APRIL 17, 1906.

53,657. PORTLAND CEMENT. THE EDISON PORTLAND CEMENT COMPANY, West Orange and New Village, N. J.
The autograph name "THOMAS A. EDISON."
Filed July 19, 1905. Serial No. 10,570. PUBLISHED APRIL 17, 1906.

53,658. HEATING-STOVES AND COOKING-STOVES. GEM CITY STOVE MANUFACTURING CO., Quincy, Ill.
The letter "G" grasping a Maltese cross between its arms and the letters "E" and "M" arranged on the arms of the cross.
Filed July 8, 1905. Serial No. 9,936. PUBLISHED APRIL 17, 1906.

53,659. RAZORS. HERMANN HESSENBRUCH, Philadelphia, Pa.
The fanciful title "PERFECTION" and the representation of a bear with a staff in his paws. Used ten years.
Filed June 8, 1905. Serial No. 7,628. PUBLISHED FEBRUARY 27, 1906.

53,660. VARNISH. E. H. HUETER, San Francisco, Cal.
The word "LUSTRELAC."
Filed July 13, 1905. Serial No. 10,270. PUBLISHED APRIL 17, 1906.

53,661. LIQUID-VARNISH COATING FOR INTERIOR WOODWORK. THE INTERIOR HARDWOOD CO., Indianapolis, Ind.
The word "PARQUET-LAC."
Filed April 15, 1905. Serial No. 1,770. PUBLISHED APRIL 17, 1906.

53,662. GINGER-CHAMPAGNE. THE MANITOU MINERAL SPRINGS COMPANY, Manitou, Colo.
The bust representation of an Indian rising above clouds, with the setting sun as a background, and holding in one hand a glass and in the other a pipe, a scene showing a house, a well-curb, a rock, trees, people in the foreground, and mountain-peaks in the background, the word "MANITOU" inclosed in quotation-marks, the words "ORIGINAL NATURAL MINERAL GINGER CHAMPAGNE BOTTLED AT THE FAMOUS EFFERVESCENT SPRINGS LYING AT THE FOOT OF PIKE'S PEAK, COLO. MANITOU, COLO. U. S. A. THE ONLY WATER ON THE AMERICAN CONTINENT RECHARGED WITH ITS OWN GAS. KEEP BOTTLE IN COOL PLACE AND LAY ON ITS SIDE," and the name of the company in script. Used ten years.
Filed May 16, 1905. Serial No. 5,812. PUBLISHED APRIL 17, 1906.

53,663. EFFERVESCENT OR CARBONATED MINERAL WATER. THE MANITOU MINERAL SPRINGS COMPANY, Manitou, Colo.
The bust representation of an Indian rising above clouds, with the setting sun as a background, and holding in one hand a glass and in the other a pipe, a scene showing a house, a well-curb, a rock, trees, and people in the foreground and mountain-peaks in the background, the word "MANITOU" inclosed in quotation-marks, the words "ORIGINAL NATURAL MINERAL TABLE WATER BOTTLED AT THE FAMOUS EFFERVESCENT SPRINGS LYING AT THE FOOT OF PIKE'S PEAK, COLO. MANITOU, COLO. U. S. A. THE ONLY WATER ON THE AMERICAN CONTINENT RECHARGED WITH ITS OWN GAS. KEEP BOTTLE IN COOL PLACE AND LAY ON ITS SIDE," and the name of the company in script. Used ten years.
Filed May 16, 1905. Serial No. 5,813. PUBLISHED APRIL 17, 1906.

53,664. GINGER-CHAMPAGNE. THE MANITOU MINERAL SPRINGS COMPANY, Manitou, Colo.
The representation of an Indian's head and shoulders rising above the clouds, with the setting sun in the background, holding a glass in one hand and a pipe in the other. Used ten years.
Filed August 17, 1905. Serial No. 11,729. PUBLISHED APRIL 17, 1906.

53,665. WRENCHES. MOSSBERG WRENCH COMPANY, Central Falls, R. I.
The word "MOSSBERG."
Filed May 2, 1905. Serial No. 4,041. PUBLISHED JUNE 27, 1905.

53,666. INSULATED WIRE AND INSULATING-TAPES. NEW YORK INSULATED WIRE COMPANY, New York, N. Y.
A raven perched within a border representing a coil of wire. A ribbon is held by the beak of the raven, together with the words "RAVEN CORE WIRE."
Filed July 15, 1905. Serial No. 10,372. PUBLISHED APRIL 17, 1906.

53,667. CERTAIN NAMED METAL MANUFACTURES. E. L. PARKER & CO., Baltimore, Md.
The arbitrary word "LEADER."
Filed July 19, 1905. Serial No. 10,566. PUBLISHED APRIL 17, 1906.

53,668. CERTAIN NAMED METAL MANUFACTURES. E. L. PARKER & CO., Baltimore, Md.
The arbitrary word "TRIPLE."
Filed July 19, 1905. Serial No. 10,568. PUBLISHED APRIL 17, 1906.

53,669. CANDY. SPRAGUE, WARNER & COMPANY, Chicago, Ill.
The arbitrarily-selected word "RICHELIEU."
Filed July 3, 1905. Serial No. 9,795. PUBLISHED APRIL 17, 1906.

53,670. PRESERVATIVE COATINGS FOR METALS. ALEXANDER H. STILLWAGON, Connellsville, Pa.
The representation of a corroded pipe and the word "COATAPAL."
Filed June 30, 1905. Serial No. 9,532. PUBLISHED APRIL 17, 1906.

53,671. CIGARS. JOSEPH WEINREICH, Dayton, Ohio.
The words "GENTLEMAN GEORGE," associated with a picture of King George IV.
Filed June 12, 1905. Serial No. 7,952. PUBLISHED APRIL 17, 1906.

53,672. CENTRIFUGAL PUMPS. WHEELER CONDENSER & ENGINEERING CO., New York, N. Y.
A volute figure, with the word "WHEELER" in a curved line above it.
Filed June 17, 1905. Serial No. 8,382. PUBLISHED APRIL 17, 1906.

53,673. WALL-PLASTER, PLASTER-OF-PARIS, CALCINED PLASTER, AND STUCCO. ACME CEMENT PLASTER CO., St. Louis, Mo.
The arbitrary word "ROYAL."
Filed October 9, 1905. Serial No. 13,444. PUBLISHED APRIL 17, 1906.

53,674. WALL-PLASTER, PLASTER-OF-PARIS, CALCINED PLASTER, AND STUCCO. ACME CEMENT PLASTER CO., St. Louis, Mo.
The word "ACME." Used ten years.
Filed October 9, 1905. Serial No. 13,447. PUBLISHED APRIL 17, 1906.

53,675. WALL-PLASTER, PLASTER-OF-PARIS, CALCINED PLASTER, AND STUCCO. ACME CEMENT PLASTER CO., St. Louis, Mo.
The word "CLIMAX." Used ten years.
Filed October 9, 1905. Serial No. 13,448. PUBLISHED APRIL 17, 1906.

53,676. SPRING-HINGES. THE COLUMBIAN HDW. CO., Cleveland, Ohio.
The word "AMERICAN." Used ten years.
Filed March 21, 1906. Serial No. 18,074. PUBLISHED APRIL 17, 1906.

53,677. COOKING RANGES AND STOVES. COOK AND VAN EVERA CO., Chicago, Ill.
The arbitrarily-selected word "AUTOBAKE."
Filed March 5, 1906. Serial No. 17,531. PUBLISHED APRIL 17, 1906.

53,678. SAWS. HENRY DISSTON & SONS, INCORPORATED, Philadelphia, Pa.
The name "C. BISHOP." Used ten years.
Filed October 31, 1905. Serial No. 14,104. PUBLISHED APRIL 17, 1906.

53,679. SHEARS AND SCISSORS. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill.
The letters "O V B," with a panel extending across the same, upon which appear the words "OUR VERY BEST." Used ten years.
Filed March 12, 1906. Serial No. 17,742. PUBLISHED APRIL 17, 1906.

53,680. SAWS AND SAW-BLADES. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill.
The letters "O V B," with a panel extending across the same, upon which appear the words "OUR VERY BEST." Used ten years.
Filed March 12, 1906. Serial No. 17,743. PUBLISHED APRIL 17, 1906.

53,681. FOOD AND MEAT CHOPPERS. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill.
The letters "O V B," with a panel extending across the same, upon which appear the words "OUR VERY BEST." Used ten years.
Filed March 12, 1906. Serial No. 17,745. PUBLISHED APRIL 17, 1906.

53,682. FERTILIZERS. RASIN-MONUMENTAL COMPANY OF ANNE ARUNDEL COUNTY, Baltimore, Md.
The words "WILLIAM PENN." Used ten years.
Filed March 15, 1906. Serial No. 17,902. PUBLISHED APRIL 17, 1906.

53,683. FERTILIZERS. RASIN-MONUMENTAL COMPANY OF ANNE ARUNDEL COUNTY, Baltimore, Md.
The word "ARUNDEL." Used ten years.
Filed March 15, 1906. Serial No. 17,917. PUBLISHED APRIL 17, 1906.

53,684. FERTILIZERS. RASIN-MONUMENTAL COMPANY OF ANNE ARUNDEL COUNTY, Baltimore, Md.
The word "DIXIE." Used ten years.
Filed March 15, 1906. Serial No. 17,919. PUBLISHED APRIL 17, 1906.

53,685. PLANES AND PLANE-IRONS. SIMMONS HARDWARE COMPANY, St. Louis, Mo.
The words "KEEN KUTTER" and a figure of wedge shape having three-sided projections at its sides and on which said words appear. Used ten years.
Filed November 23, 1905. Serial No. 14,939. PUBLISHED APRIL 17, 1906.

53,686. CHISELS AND GOUGES. SIMMONS HARDWARE COMPANY, St. Louis, Mo.
The words "KEEN KUTTER" and a figure of wedge shape having three-sided projections at its sides and on which said words appear. Used ten years.
Filed November 23, 1905. Serial No. 14,941. PUBLISHED APRIL 17, 1906.

53,687. RAZORS. SIMMONS HARDWARE COMPANY, St. Louis, Mo.
The words "KEEN KUTTER" and a figure of wedge shape having three-sided projections at its sides and on which said words appear. Used ten years.
Filed November 23, 1905. Serial No. 14,943. PUBLISHED APRIL 17, 1906.

53,688. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn.
The word "STONO." Used ten years.
Filed March 15, 1906. Serial No. 17,829. PUBLISHED APRIL 17, 1906.

53,689. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn.
The letters "C. C. C."
Filed March 15, 1906. Serial No. 17,837. PUBLISHED APRIL 17, 1906.

53,690. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn.
The word "NATIONAL." Used ten years.
Filed March 15, 1906. Serial No. 17,843. PUBLISHED APRIL 17, 1906.

53,691. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn.
The words and abbreviation "BALDWIN FERTILIZER CO'S." Used ten years.
Filed March 15, 1906. Serial No. 17,845. PUBLISHED APRIL 17, 1906.

53,692. SPRING-HINGES. THE COLUMBIAN HDW. CO., Cleveland, Ohio.
The word "ACME."
Filed March 21, 1906. Serial No. 18,075. PUBLISHED APRIL 17, 1906.

53,693. SPRING-HINGES. THE COLUMBIAN HDW. CO., Cleveland, Ohio.
The word "ACORN."
Filed March 21, 1906. Serial No. 18,076. PUBLISHED APRIL 17, 1906.

53,694. SPRING-HINGES. THE COLUMBIAN HDW. CO., Cleveland, Ohio.
The words "CLOVER LEAF."
Filed March 21, 1906. Serial No. 18,077. PUBLISHED APRIL 17, 1906.

53,695. SPRING-HINGES. THE COLUMBIAN HDW. CO., Cleveland, Ohio.
The word "CAMBRIDGE." Used ten years.
Filed March 21, 1906. Serial No. 18,078. PUBLISHED APRIL 17, 1906.

53,696. FERTILIZERS. GEORGIA CHEMICAL WORKS, Augusta, Ga.
The words "PON PON." Used ten years.
Filed March 15, 1906. Serial No. 17,871. PUBLISHED APRIL 17, 1906.

53,697. FERTILIZERS. GEORGIA CHEMICAL WORKS, Augusta, Ga.
The word "BALTIMORE." Used ten years.
Filed March 15, 1906. Serial No. 17,872. PUBLISHED APRIL 17, 1906.

53,698. FERTILIZERS. GEORGIA CHEMICAL WORKS, Augusta, Ga.
The words "GOOD AS GOLD."

Filed March 15, 1906. Serial No. 17,873. PUBLISHED APRIL 17, 1906.

53,699. SAWS. HENRY DISSTON & SONS, INCORPORATED, Philadelphia, Pa.
The words "GREAT AMERICAN." Used ten years.
Filed October 31, 1905. Serial No. 14,105. PUBLISHED APRIL 17, 1906.

53,700. SAWS. HENRY DISSTON & SONS, INCORPORATED, Philadelphia, Pa.
The word "BROWN'S." Used ten years.
Filed October 31, 1905. Serial No. 14,110. PUBLISHED APRIL 17, 1906.

53,701. SAWS. HENRY DISSTON & SONS, INCORPORATED, Philadelphia, Pa.
The name "T. TAYLOR." Used ten years.
Filed October 31, 1905. Serial No. 14,114. PUBLISHED APRIL 17, 1906.

53,702. SAWS. HENRY DISSTON & SONS, INCORPORATED, Philadelphia, Pa.
The word "LANCET."
Filed October 31, 1905. Serial No. 14,115. PUBLISHED APRIL 17, 1906.

53,703. FERTILIZERS. NAVASSA GUANO COMPANY OF WILMINGTON, Wilmington, N. C.
The word "OCCONNEECHEE." Used ten years.
Filed March 15, 1906. Serial No. 17,856. PUBLISHED APRIL 17, 1906.

53,704. FERTILIZERS. NAVASSA GUANO COMPANY OF WILMINGTON, Wilmington, N. C.
The word "CROATAN." Used ten years.
Filed March 15, 1906. Serial No. 17,859. PUBLISHED APRIL 17, 1906.

53,705. FERTILIZERS. NAVASSA GUANO COMPANY OF WILMINGTON, Wilmington, N. C.
The word "COREE." Used ten years.
Filed March 15, 1906. Serial No. 17,860. PUBLISHED APRIL 17, 1906.

53,706. FERTILIZERS. NAVASSA GUANO COMPANY OF WILMINGTON, Wilmington, N. C.
The word "OCONEE." Used ten years.
Filed March 15, 1906. Serial No. 17,861. PUBLISHED APRIL 17, 1906.

53,707. FERTILIZERS. NAVASSA GUANO COMPANY OF WILMINGTON, Wilmington, N. C.
The word "CLARENDON." Used ten years.
Filed March 15, 1906. Serial No. 17,862. PUBLISHED APRIL 17, 1906.

53,708. FERTILIZERS. RASIN-MONUMENTAL COMPANY OF ANNE ARUNDEL COUNTY, Baltimore, Md.
The word "EMPIRE." Used ten years.
Filed March 15, 1906. Serial No. 17,918. PUBLISHED APRIL 17, 1906.

53,709. POCKET-KNIVES. SIMMONS HARDWARE COMPANY, St. Louis, Mo.
The words "KEEN KUTTER" and a figure of wedge shape having three-sided projections at its side and on which said words appear. Used ten years.
Filed November 23, 1905. Serial No. 14,944. PUBLISHED APRIL 17, 1906.

53,710. AUGERS, BITS, AND GIMLETS. SIMMONS HARDWARE COMPANY, St. Louis, Mo.
The words "KEEN KUTTER" and a figure of wedge shape having three-sided projections at its sides on which said words appear. Used ten years.
Filed November 23, 1905. Serial No. 14,945. PUBLISHED APRIL 17, 1906.

53,711. FILES AND RASPS. SIMMONS HARDWARE COMPANY, St. Louis, Mo.
The words "KEEN KUTTER" and a figure of wedge shape having three-sided projections at its sides and on which said words appear. Used ten years.
Filed November 23, 1905. Serial No. 14,946. PUBLISHED APRIL 17, 1906.

53,712. CORN-KNIVES AND HAY-KNIVES. SIMMONS HARDWARE COMPANY, St. Louis, Mo.
The words "KEEN KUTTER" and the figure of a wedge shape having three-sided projections at its sides and on which said words appear. Used ten years.
Filed November 23, 1905. Serial No. 14,947. PUBLISHED APRIL 17, 1906.

53,713. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond, and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn.
The words and abbreviation "BERKELEY CHEMICAL CO'S." Used ten years.
Filed March 15, 1906. Serial No. 17,848. PUBLISHED APRIL 17, 1906.

53,714. PICTURE-FRAMES. A. M. COLLINS MANUFACTURING COMPANY, Philadelphia, Pa.
The word "FRAMELET."
Filed January 12, 1906. Serial No. 16,139. PUBLISHED APRIL 17, 1906.

53,715. LUBRICATING-OILS. ATLANTIC REFINING COMPANY, Franklin and Philadelphia, Pa.
The representation of two arrows crossed.
Filed May 18, 1905. Serial No. 6,051. PUBLISHED APRIL 17, 1906.

53,716. CHOCOLATE CREAMS, CARAMELS, AND CANDIES. THE BLUE RIBBON CANDY COMPANY OF BALTIMORE CITY, Baltimore, Md.
The words "THE BLUE RIBBON BRAND" printed upon the representation of a scroll or ribbon within a rectangle. Adjacent to this rectangle on the left end is a smaller rectangle, in which the word "PURE" is printed, and on the right end a similar rectangle, in which the word "CANDY" is printed. A large rectangle forms the background or border for the whole of the above.
Filed June 6, 1905. Serial No. 7,541. PUBLISHED APRIL 17, 1906.

53,717. COFFEE-MILLS. THE BRONSON-WALTON COMPANY, Cleveland, Ohio.
The word "MONITOR."
Filed March 5, 1906. Serial No. 17,522. PUBLISHED APRIL 17, 1906.

53,718. EXPLOSIVE-ENGINES. THE BUCKEYE MANUFACTURING COMPANY, Anderson, Ind.
The words "THE LAMBERT." Used ten years.
Filed October 14, 1905. Serial No. 13,588. PUBLISHED APRIL 17, 1906.

53,719. CIGARETTES. BUTLER-BUTLER, (INCORPORATED,) New York, N. Y.
The words "RED SUN."
Filed January 23, 1906. Serial No. 16,409. PUBLISHED APRIL 17, 1906.

53,720. CERTAIN NAMED TOOLS AND TOOL HOLDERS. THE CLEVELAND TWIST DRILL COMPANY, Cleveland, Ohio.
The letter "C" inclosed in a lozenge-shaped figure having concaved sides.
Filed March 12, 1906. Serial No. 17,754. PUBLISHED APRIL 17, 1906.

53,721. STEEL. CRUCIBLE STEEL COMPANY OF AMERICA, Pittsburg, Pa.
The word "DUQUESNE." Used ten years.
Filed May 13, 1905. Serial No. 5,510. PUBLISHED APRIL 17, 1906.

53,722. CERTAIN NAMED CUTLERY. GEORGE WOSTENHOLM AND SON, LIMITED, Sheffield, England.
The word "WOSTENHOLM." Used ten years.
Filed October 20, 1905. Serial No. 13,785. PUBLISHED APRIL 17, 1906.

53,723. RAZORS. A. GRAEF, New York, N. Y.
The representation of the head of an Indian chief inclosed in an ornamental border.
Filed February 16, 1906. Serial No. 17,096. PUBLISHED APRIL 17, 1906.

53,724. ELECTRICAL APPLIANCES FOR ASSISTING THE HEARING. CHARLES W. HARPER, Boston, Mass.
The word "ORIPHONE."
Filed October 10, 1905. Serial No. 13,464. PUBLISHED APRIL 17, 1906.

53,725. AUTOMOBILES. JOHN C. HIGDON, St. Louis, Mo.
The word "SUCCESS."
Filed September 18, 1905. Serial No. 12,740. PUBLISHED APRIL 17, 1906.

53,726. HARVESTERS AND PARTS THEREOF. INTERNATIONAL HARVESTER COMPANY OF AMERICA, Chicago, Ill.
The word "CHAMPION."
Filed May 17, 1905. Serial No. 5,910. PUBLISHED APRIL 17, 1906.

53,727. LUBRICATING OILS AND GREASE. CHARLES F. KELLOM, Philadelphia, Pa.
The word "INVADER" and a representation of a mounted knight. On one arm of the knight is the representation of a shield on which said word "INVADER" is placed.
Filed December 23, 1905. Serial No. 15,618. PUBLISHED APRIL 17, 1906.

53,728. WHITE LEAD. MOSES LUBELSKY & SON, New York, N. Y.
The words and letters "LA BELLE I X L WHITE LEAD" and the representation of the bust of a woman in evening dress, holding a fan to her head, all inclosed in an ornamental border. Used ten years.
Filed September 26, 1905. Serial No. 13,033. PUBLISHED APRIL 17, 1906.

53,729. STEAM AND HOT-WATER BOILERS FOR HEATING PURPOSES. NEW YORK CENTRAL IRON WORKS CO., Geneva, N. Y.
The word "DUNNING." Used ten years.
Filed May 20, 1905. Serial No. 6,121. PUBLISHED APRIL 17, 1906.

53,730. SOAP. THE PENNSYLVANIA SOAP COMPANY, Lancaster, Pa.
The word-symbol "POWERINE."
Filed February 23, 1906. Serial No. 17,297. PUBLISHED APRIL 17, 1906.

53,731. ANTISEPTIC AND DISINFECTANT MINERAL SOAP. THE PRESTON MANUFACTURING COMPANY, Portland, Oreg.
The word "RANIER" and a pictorial representation comprising a distant view of Mount Ranier, with a foreground including woods and water.
Filed February 20, 1906. Serial No. 17,203. PUBLISHED APRIL 17, 1906.

53,732. CANDY. THE ROBERT F. MACKENZIE CO., Cleveland, Ohio.
The words "BLUE BELL" on a fanciful panel design ornamented with a spray of bluebell stems, leaves, and flowers and with fanciful scrollwork, all surrounded by a background of the Mackenzie plaid.
Filed February 5, 1906. Serial No. 16,754. PUBLISHED APRIL 17, 1906.

53,733. HAT-PINS. SCOTT-BLAKE CO., Portland, Me.
The arbitrarily-chosen hyphenated word "CATCH-ON" printed with quotation-marks, all in Gothic type.
Filed October 2, 1905. Serial No. 13,221. PUBLISHED APRIL 17, 1906.

53,734. WATERPROOF ROOFING-FELT. ST. PAUL ROOFING, CORNICE & ORNAMENT COMPANY, St. Paul, Minn.
The word "COAT-ROID."
Filed January 10, 1906. Serial No. 16,088. PUBLISHED APRIL 17, 1906.

53,735. BLUING. THE ULTRAMARINE COMPANY, New York, N. Y.
The word "BLEACHETTE."
Filed February 10, 1906. Serial No. 16,901. PUBLISHED APRIL 17, 1906.

53,736. NAILS. UNITED SHOE MACHINERY COMPANY, Boston, Mass.
A figure having the shape of three bars merging at a common point of intersecton.
Filed July 13, 1905. Serial No. 17,681. PUBLISHED APRIL 17, 1906.

53,737. MIXED LIQUID PAINT. VANE-CALVERT PAINT CO., St. Louis, Mo.
The words "PALACE CAR COLORS," together with a representation of a railway-coach, which words are printed in a straight line immediately above the representation of the railway-coach. Used ten years.
Filed August 7, 1905. Serial No. 11,317. PUBLISHED APRIL 17, 1906.

53,738. CANNED SALMON. ALASKA PACKERS ASSOCIATION, San Francisco, Cal.
The word "ARGO."
Filed June 14, 1905. Serial No. 8,138. PUBLISHED APRIL 17, 1906.

53,739. CERTAIN NAMED METAL GOODS. AMERICAN SCREW COMPANY, Providence, R. I.
A representation of a spread-eagle upon a belted globe with a number of screws in each talon of the eagle.
Filed August 21, 1905. Serial No. 11,862. PUBLISHED APRIL 17, 1906.

53,740. WOVEN-WIRE FENCING. AMERICAN STEEL AND WIRE COMPANY, Chicago, Ill.
The word "BANNER."
Filed November 13, 1905. Serial No. 14,573. PUBLISHED APRIL 17, 1906.

53,741. CLOTHES-WRINGERS. THE AMERICAN WRINGER COMPANY, New York, N. Y.
The word "ELECTRIC."
Filed October 14, 1905. Serial No. 13,623. PUBLISHED APRIL 17, 1906.

53,742. WRINGERS. THE AMERICAN WRINGER COMPANY New York, N. Y.
The word "STAR." Used ten years.
Filed October 14, 1905. Serial No. 13,627. PUBLISHED APRIL 17, 1906.

53,743. MINERAL WATER. ARONDACK SPRING COMPANY, Saratoga Springs, N. Y.
The representation of a panel of general rectangular form with indented sides and having a blue background inclosed by a yellow border.
Filed July 21, 1905. Serial No. 10,659. PUBLISHED DECEMBER 5, 1905.

53,744. PNEUMATIC TIRES FOR WHEELS. THE B. F. GOODRICH COMPANY, Akron, Ohio.
The word "PALMER." Used ten years.
Filed January 25, 1906. Serial No. 16,506. PUBLISHED APRIL 17, 1906.

53,745. BREAD, BISCUITS, ROLLS, PIES, CAKES, AND CRACKERS. JAMES CLAREY, New York, N. Y.
The letters "O X O."
Filed February 1, 1906. Serial No. 16,664. PUBLISHED APRIL 17, 1906.

53,746. CATTLE-FOOD. DOCK & COAL CO., Plattsburg, N. Y.
The word "BUTTERCUP."
Filed February 6, 1906. Serial No. 16,782. PUBLISHED APRIL 17, 1906.

53,747. PERCUSSION-CAPS. ELEY BROTHERS LIMITED, London, England.
The representation of a shield having an ornamental border and with a monogram of the letters "E B L" upon its face.
Filed November 17, 1905. Serial No. 14,773. PUBLISHED APRIL 17, 1906.

53,748. COAL-MINERS' PICKS. FULTON TOOL WORKS, Canal Fulton, Ohio.
The word "FULTON." Used ten years.
Filed August 15, 1905. Serial No. 11,674. PUBLISHED APRIL 17, 1906.

53,749. DRIED AND EVAPORATED FRUITS. GRIFFIN & SKELLEY CO., San Francisco, Cal.
The word "ARROW."
Filed November 25, 1905. Serial No. 14,979. PUBLISHED APRIL 17, 1906.

53,750. MATERIALS SUITABLE FOR THE SIZING AND FINISHING OF TEXTILE FIBERS. H. A. METZ & CO., New York, N. Y.
The words "DIAMOND SIZE."
Filed November 15, 1905. Serial No. 14,684. PUBLISHED APRIL 17, 1906.

53,751. MATERIALS SUITABLE FOR THE SIZING AND FINISHING OF TEXTILE FIBERS. H. A. METZ & CO., New York, N. Y.
The word "VICTORIA." Used ten years.
Filed November 15, 1905. Serial No. 14,693. PUBLISHED APRIL 17, 1906.

53,752. SAWS. HENRY DISSTON & SONS, INCORPORATED, Philadelphia, Pa.
The word "JACKSON." Used ten years.
Filed October 31, 1905. Serial No. 14,118. PUBLISHED APRIL 17, 1906.

53,753. TELEPHONES. HUTCHISON ACOUSTIC COMPANY, New York, N. Y.
The word "MULTIPHONE."
Filed February 10, 1906. Serial No. 16,895. PUBLISHED APRIL 17, 1906.

53,754. POCKET-KNIVES AND BUTCHER-KNIVES. JAMES C. LINDSAY HARDWARE CO., Pittsburg, Pa.
The words "TRUE BLUE."
Filed January 24, 1906. Serial No. 16,461. PUBLISHED APRIL 17, 1906.

53,755. PREPARED FOOD FOR ANIMALS AND POULTRY. CHARLES PETER KERTELL, San Francisco, Cal.
The words "RED BALL" and the representation of a red ball.
Filed January 23, 1906. Serial No. 16,436. PUBLISHED APRIL 17, 1906.

53,756. CULINARY ARTICLES MADE OF TINWARE. THE LISK MANUFACTURING CO., LIMITED, Canandaigua, N. Y.
The word "LISK." Used ten years.
Filed April 20, 1905. Serial No. 2,502. PUBLISHED APRIL 17, 1906.

53,757. BREAD. CYRUS R. MILLER, Milwaukee, Wis.
A heart-shaped figure, upon which appear the words "SWEET-HEART BREAD." The heart is red in color and the words white, all within a blue square.
Filed January 20, 1906. Serial No. 16,345. PUBLISHED APRIL 17, 1906.

53,758. LINSEED-OIL. NATIONAL LEAD & OIL CO. OF PA., Pittsburg, Pa.
The words and abbreviations "ARMSTRONG-MCKELVY LEAD & OIL CO., PITTSBURGH, PA." Used ten years.
Filed September 25, 1905. Serial No. 12,999. PUBLISHED APRIL 17, 1906.

53,759. YEAST. NEW PROCESS YEAST CO., Chicago, Ill.
The words "HART'S YEAST" printed in white on a blue panel, with the representation of a heart printed in red in the center of the same.
Filed February 1, 1906. Serial No. 16,658. PUBLISHED APRIL 17, 1906.

53,760. CERTAIN NAMED METAL MANUFACTURES. E. L. PARKER & CO., Baltimore, Md.
The arbitrary word "CAPITAL."
Filed July 19, 1905. Serial No. 10,567. PUBLISHED APRIL 17, 1906.

53,761. CANDY. PAUL F. BEICH CO., Bloomington, Ill.
The word "PANSY," associated with the pictorial representation of a bunch or spray of pansies.
Filed October 5, 1905. Serial No. 13,323. PUBLISHED APRIL 17, 1906.

53,762. MEDICATED AND PERFUMED SOAP. POTTER DRUG & CHEMICAL CORPORATION, Boston, Mass.
The arbitrary word-symbol "CUTICURA."
Filed November 15, 1905. Serial No. 14,664. PUBLISHED APRIL 17, 1906.

53,763. SAWS, SAW-BLADES, AND SAW-HANDLES. SIMMONS HARDWARE COMPANY, St. Louis, Mo.
The words "KEEN KUTTER" and a figure of wedge shape having three-sided projections at its sides and on which said words appear. Used ten years.
Filed November 23, 1905. Serial No. 14,938. PUBLISHED APRIL 17, 1906.

53,764. EAVES-TROUGHS. ST. PAUL ROOFING, CORNICE & ORNAMENT COMPANY, St. Paul, Minn.
The words "EASY BEAD" arranged above the representation of the adjacent ends of two eaves-troughs pointing downwardly toward each other, the words and representation being upon a solid elliptical background.
Filed January 10, 1906. Serial No. 16,089. PUBLISHED APRIL 17, 1906.

53,765. PASTED LEATHER SHEETS. WESTERN LEATHER COMPANY, Milwaukee, Wis.
The arbitrary word "SPECIAL." Used ten years.
Filed April 21, 1905. Serial No. 2,579. PUBLISHED APRIL 17, 1906.

53,766. PASTED LEATHER SHEETS. WESTERN LEATHER COMPANY, Milwaukee, Wis.
The arbitrary words "SOLID SPLIT." Used ten years.
Filed April 21, 1905. Serial No. 2,580. PUBLISHED APRIL 17, 1906.

53,767. FLAVORING EXTRACTS. WITTEMANN BROS., New York, N. Y.
The word "WISCOLENE."
Filed February 2, 1906. Serial No. 16,678. PUBLISHED APRIL 17, 1906.

53,768. FLAVORING EXTRACTS. WITTEMANN BROS., New York, N. Y.
The word "CHAMPANOL."
Filed February 2, 1906. Serial No. 16,679. PUBLISHED APRIL 17, 1906.

53,769. FLAVORING EXTRACTS. WITTEMANN BROS., New York, N. Y.
The word "WISCOL."
Filed February 2, 1906. Serial No. 16,680. PUBLISHED APRIL 17, 1906.

53,770. FLAVORING EXTRACTS. WITTEMANN BROS., New York, N. Y.
The word "BRANDOL."
Filed February 2, 1906. Serial No. 16,681. PUBLISHED APRIL 17, 1906.

53,771. TYPE-WRITER RIBBON. BACON BROTHERS, Seattle, Wash.
A rectangular panel bearing the representation of a flower having thereon a monogram of the letters "K R," and the words "ITSGOOD KLEAN RIBBON MANUFACTURED BY ITSGOOD RIBBON CO ROCHESTER N Y."
Filed June 5, 1905. Serial No. 7,459. PUBLISHED APRIL 17, 1906.

53,772. FOOD FOR BABIES AND INVALIDS. THOMAS J. BALL, Chelsea Station, Mass.
The word "HARVARD." Used ten years.
Filed September 2, 1905. Serial No. 12,160. PUBLISHED APRIL 17, 1906.

53,773. CANNED FRUITS AND VEGETABLES. HARTLEY C. BAXTER, Brunswick, Me.
The words "BEST RESERVE." Used ten years.
Filed July 28, 1905. Serial No. 10,988. PUBLISHED APRIL 17, 1906.

53,774. PEGS AND CHIN AND SHOULDER RESTS. GUSTAV L. BECKER, New York, N. Y., executor of Francis L. Becker, deceased.
The word "BECKER'S." Used ten years.
Filed December 27, 1905. Serial No. 15,682. PUBLISHED APRIL 17, 1906.

53,775. SQUABS. EDITH E. BILLINGS, West Springfield, Mass.
The word "ALEGRIA," associated with the outline figure of a pigeon and forming a part of an inclosing arabesque design for the pigeon.
Filed July 11, 1905. Serial No. 10,077. PUBLISHED APRIL 17, 1906.

53,776. CONDENSED MILK. BORDEN'S CONDENSED MILK CO., Jersey City, N. J., and New York, N. Y.
The picture or representation of a lone pine-tree standing in the foreground, while in the background are other trees and a lake, the whole picture being inclosed in a heavy oval frame with a panel at its base and decorations of pine cones and needles and across the top the arbitrarily-selected words "PINE TREE."
Filed June 10, 1905. Serial No. 7,824. PUBLISHED APRIL 17, 1906.

53,777. SALT. BROWN & SHAW, New York, N. Y.
A chariot with a figure seated on the same and an open receptacle for salt resting on the rear end thereof and the word "STERLING" associated therewith.
Filed August 7, 1905. Serial No. 11,400. PUBLISHED APRIL 17, 1906.

53,778. WHEAT-FLOUR. COLLIN COUNTY MILL & ELEVATOR COMPANY, McKinney, Tex.
A marine scene with a lighthouse in the background and a sack of flour bearing the words "WHITE BILLOWS" floating in the water.

Filed June 9, 1905. Serial No. 7,762. PUBLISHED APRIL 17, 1906.

53,779. WRAPPING-PAPER. THE DAYTON PAPER NOVELTY CO., Dayton, Ohio.

A circle within which is displayed an arctic scene, with a bear shown in the foreground, the word "POLAR" being written above and the word "FIBER" under the bear.

Filed January 8, 1906. Serial No. 15,990. PUBLISHED APRIL 17, 1906.

53,780. FLAVORING EXTRACTS. E. R. DURKEE & CO., New York, N. Y.

The word "DRAGON" or the representation of a dragon, used singly or together.

Filed May 21, 1905. Serial No. 4,291. PUBLISHED APRIL 17, 1906.

53,781. SPICES AND MUSTARD. E. R. DURKEE & CO., New York, N. Y.

The representation of a dragon or the word "DRAGON," used singly or together.

Filed September 30, 1905. Serial No. 13,152. PUBLISHED APRIL 17, 1906.

53,782. LEATHER AND CANVAS SHOES. FOSS, PACKARD & CO., Boston, Mass.

The words "THE TIFFANY" printed in the particular or distinctive style shown and arranged below and to one side of the representation of a shield having a human hand extending upward therefrom and holding a diamond between the thumb and forefinger, the word "TIFFANY" also appearing on the face of the shield.

Filed December 28, 1905. Serial No. 15,723. PUBLISHED APRIL 17, 1906.

53,783. CALFSKIN. GEORGE MARTIN LEATHER CO., Milwaukee, Wis.

A circular design containing the word "ZENITH," appearing on the representation of a calf standing upon the pinnacle of a mountain with clouds in the background, and the words "MT. EVEREST," appearing in the lower foreground as if printed upon the rocks of the mountain.

Filed February 5, 1906. Serial No. 16,763. PUBLISHED APRIL 17, 1906.

53,784. OLIVES. GRIGGS, COOPER AND COMPANY, St. Paul, Minn.

The arbitrary word "WHYNOT."

Filed July 3, 1905. Serial No. 9,649. PUBLISHED APRIL 17, 1906.

53,785. ANKLE-SUPPORTING LEATHER SHOES. JOHN JUSTUS LATTEMANN, New York, N. Y.

The word "CORSET." Used ten years.

Filed September 30, 1905. Serial No. 13,178. PUBLISHED APRIL 17, 1906.

53,786. HOUSEHOLD ARTICLES MADE OF COPPER WARE. THE LISK MANUFACTURING CO., LIMITED, Canandaigua, N. Y.

The word "LISK." Used ten years.

Filed December 15, 1905. Serial No. 15,431. PUBLISHED APRIL 17, 1906.

53,787. DUPLICATING-INK. NEOSTYLE COMPANY, New York, N. Y.

The word "NEOSTYLE."

Filed May 18, 1905. Serial No. 5,928. PUBLISHED APRIL 17, 1906.

53,788. PIANOS. THE PACKARD COMPANY, Fort Wayne, Ind.

The word "PACKARD." Used ten years.

Filed October 17, 1905. Serial No. 13,703. PUBLISHED APRIL 17, 1906.

53,789. DOORS. PAINE LUMBER COMPANY, LIMITED, Oshkosh, Wis.

The word "KORELOCK" printed in peculiar form. The first letter "K" and the last letter "K" in the word are larger and extend above the upper and lower lines of the other letters "ORELOC." The right upper arm of the first letter "K" in the word is connected with the left upper arm of the last letter "K" by a line which is straight, excepting a slight angle therein over the letters "E" and "L." A similar line likewise connects the lower inside arms of said two letters "K."

Filed November 25, 1905. Serial No. 14,995. PUBLISHED APRIL 17, 1906.

53,790. CORNMEAL AND CORN-CHOP. PITTMAN & HARRISON CO., Sherman, Tex.

The representation of an ear of corn loaded upon a wagon to which is hitched a pair of horses driven by a man astride of said ear of corn, there being also near the front and rear ends of the ear of corn representations of male and female figures, which appear to be looking with wonderment at the team thus made up.

Filed May 16, 1905. Serial No. 5,819. PUBLISHED APRIL 17, 1906.

53,791. CANNED CORN. PORTLAND PACKING COMPANY, Portland, Me.

The word "YARMOUTH."

Filed June 27, 1905. Serial No. 9,187. PUBLISHED OCTOBER 17, 1905.

53,792. CANNED AND TINNED SALMON. RICHARD B. GREEN & CO. LIMITED, Liverpool, England.

An oblong panel having two disks, on each of which appears the representation of a salmon-steak fringed with pieces of parsley and associated with the words "PARSLEY BRAND," all of the oblong panel excepting where the disks appear being filled in by representations of salmon-scales.

Filed June 5, 1905. Serial No. 7,472. PUBLISHED APRIL 17, 1906.

53,793. PAPER WRAPPERS FOR ROLLS OF RIBBON. D. SHEELINE SON & CO., New York, N. Y.

The representation of the head of an elk, above which, inclosed in a double ellipse, are the words "ELK BRAND."

Filed November 29, 1905. Serial No. 15,063. PUBLISHED APRIL 17, 1906.

53,794. TEA AND COFFEE POTS. SILVER & COMPANY, New York, N. Y.

The representation of a coffee-pot, the body of which is shown in section with the cover removed and shown in edge view beneath the spout of the coffee-pot and with the representation of a measuring-cup held in a woman's hand above the open top of the coffee-pot and of boiling water flowing into the said open end from the cup and steam arising therefrom, together with the words "THE MARION HARLAND COFFEE POT AND PROCESS OF COFFEE MAKING" to the left of the hand and cup. Used ten years.

Filed January 6, 1906. Serial No. 15,941. PUBLISHED APRIL 17, 1906.

53,795. EXTRACTS FOR COFFEE. SMITH & WHEELER, Newark, N. J.

The representation of a woman holding in one hand a cup of coffee and the words "CARLSBADER HEALTH EXTRACT FOR COFFEE HEALTHFUL AND NOURISHING IT'S DELICIOUS," together with scrolls and wreaths.

Filed July 29, 1905. Serial No. 11,011. PUBLISHED APRIL 17, 1906.

53,796. AGRICULTURAL NEWSPAPERS. JOHN M. STAHL, Chicago, Ill.

The words "THE ILLINOIS FARMER, DEVOTED TO THE INTERESTS OF THE FARMERS OF ILLINOIS," the word "THE" having a scroll at each side thereof, a four-leaf clover at the right of the word "ILLINOIS," and a partly-husked ear of corn to the left of the word "FARMER."

Filed January 25, 1906. Serial No. 16,517. PUBLISHED APRIL 17, 1906.

53,797. PREPARED FOOD FOR INFANTS AND INVALIDS. THE TARO FOOD CO. INCD, Danbury, Conn.

The arbitrary word "TAROENA."

Filed April 18, 1905. Serial No. 2,120. PUBLISHED APRIL 17, 1906.

53,798. BAKING-POWDER. TONE BROS., Des Moines, Iowa.

The words "ECONOMY BAKING POWDER" and the representations of a cannon, cannon-balls, and ramrod. Used ten years.

Filed April 27, 1905. Serial No. 3,319. PUBLISHED APRIL 17, 1906.

53,799. LEATHER BOOTS AND SHOES. W. L. DOUGLAS SHOE CO., Portland, Me.

The name "W. L. DOUGLAS." Used ten years.

Filed November 11, 1905. Serial No. 14,489. PUBLISHED APRIL 17, 1906.

53,800. LEATHER BOOTS AND SHOES. W. L. DOUGLAS SHOE CO., Portland, Me.

The portrait of W. L. Douglas. Used ten years.

Filed November 11, 1905. Serial No. 14,490. PUBLISHED APRIL 17, 1906.

53,801. PASTED LEATHER SHEETS. WESTERN LEATHER COMPANY, Milwaukee, Wis.

The words "SOLID SPLIT SPECIAL." Used ten years.

Filed April 21, 1905. Serial No. 2,581. PUBLISHED APRIL 17, 1906.

53,802. PASTED LEATHER SHEETS. WESTERN LEATHER COMPANY, Milwaukee, Wis.

The word "BANNER."

Filed April 21, 1905. Serial No. 2,582. PUBLISHED APRIL 17, 1906.

53,803. WHIPS. CARGILL CLEVELAND & CO., Westfield, Mass.

The words "EARLY BIRD."

Filed January 8, 1906. Serial No. 16,045. PUBLISHED MARCH 6, 1906.

53,804. PERIODICAL PUBLICATION. THE DR. PETER FAHRNEY & SONS CO., Chicago, Ill.

The words "THE SURPRISE."

Filed September 25, 1905. Serial No. 12,953. PUBLISHED APRIL 17, 1906.

53,805. LEATHER SHOES. GILMAKER BROS., San Francisco, Cal.

The words "THE HERMOSA" in fanciful lettering, the words "SPECIAL SHOE EXTRA...HIGH...QUALITY" above said words, and "114 GRANT AVE. SAN FRANCISCO, CAL." in the right-hand corner below said words.

Filed January 25, 1906. Serial No. 16,514. PUBLISHED APRIL 17, 1906.

53,806. PERIODICAL PUBLICATION. HOLOPHANE GLASS COMPANY, New York, N. Y.

The words "LIGHT VERSUS ILLUMINATION."

Filed December 27, 1905. Serial No. 15,680. PUBLISHED APRIL 17, 1906.

53,807. PERIODICAL PUBLICATION. THE ILLUMINATING ENGINEERING PUBLISHING CO., New York, N. Y.

The words "THE ILLUMINATING ENGINEER."

Filed January 6, 1906. Serial No. 15,946. PUBLISHED APRIL 17, 1906.

53,808. PERIODICAL PUBLICATION. VAN RENSSELAER LANSINGH, New York, N. Y.

The words "ENGINEERING OF ILLUMINATION."

Filed December 27, 1905. Serial No. 15,681. PUBLISHED APRIL 17, 1906.

53,809. HOUSEHOLD ARTICLES MADE OF GALVANIZED WARE. THE LISK MANUFACTURING CO., LIMITED, Canandaigua, N. Y.

The word "LISK." Used ten years.

Filed December 15, 1905. Serial No. 15,430. PUBLISHED APRIL 17, 1906.

53,810. COFFEES. CHARLES H. MONTANYE, New York, N. Y., assignor to W. H. Montague & Company, a corporation of New York.

The representation of a tiger-head. Used ten years.

Filed June 21, 1905. Serial No. 8,676. PUBLISHED NOVEMBER 21, 1905.

53,811. LEATHER BOOTS, SHOES, AND SLIPPERS. WILLIAM A. MOODY, Boston, Mass., assignor to Brockton Shoe Company, a corporation of Massachusetts.

The words "THE JOHN MITCHELL SHOE" upon a scroll inclosing a portrait of John Mitchell, president of the United Mine Workers of America.

Filed September 12, 1905. Serial No. 12,496. PUBLISHED APRIL 17, 1906.

53,812. TOILET-PAPER. JOHN ROBERTSON & SON, Bellows Falls, Vt.

The words "EAGLE MILLS" and the representation of a spread-eagle perched on a heraldic roll.

Filed January 18, 1906. Serial No. 16,280. PUBLISHED APRIL 17, 1906.

53,813. CHAIRS. SHEBOYGAN CHAIR COMPANY, Sheboygan, Wis.

A monogram of the letters "S C Co" inclosed in a diamond-shaped border, on which appear the words "SHEBOYGAN CHAIR CO. SHEBOYGAN WIS. U. S. A."

Filed September 14, 1905. Serial No. 12,622. PUBLISHED APRIL 17, 1906.

53,814. TEA AND COFFEE POTS AND COFFEE-URNS. SILVER & COMPANY, New York, N. Y.

A side-view representation of a tea and coffee pot having in a central position the inscription "THE MARION HARLAND TEA & COFFEE POT" surrounded by an oval border. Used ten years.

Filed January 6, 1906. Serial No. 15,942. PUBLISHED APRIL 17, 1906.

53,815. CANNED VEGETABLES AND FRUITS. STODDARD, GILBERT & CO., New Haven, Conn.

The picture of a house of cottage type, adjacent to which is a flagpole from which a flag is flying bearing the word "HERMITAGE," the house being represented as built upon an elevation with surrounding rocks and low shrubbery.

Filed October 2, 1905. Serial No. 13,212. PUBLISHED FEBRUARY 6, 1906.

53,816. PAPER-FASTENERS. THE THOMAS STATIONERY MANUFACTURING COMPANY, Springfield, Ohio.

The words "COUNTING HOUSE" arranged over the illustration of a paper-fastener, with the word "PAPER" on one side of said illustration and the word "FASTENERS" on the other side thereof. Used ten years.

Filed December 4, 1905. Serial No. 15,194. PUBLISHED APRIL 17, 1906.

53,817. ALARM-CLOCKS. THE WM. L. GILBERT CLOCK COMPANY, Winsted, Conn.

The letter "G," within which appears the word "BEST."

Filed July 24, 1905. Serial No. 10,754. PUBLISHED APRIL 17, 1906.

53,818. LEATHER SHOES FOR MEN. WERTHEIMER-SWARTS SHOE CO., St. Louis, Mo.

The words "SIR KNIGHT," associated with a shield-shaped figure upon which appears the pictorial representation of an equestrian knight surrounded by a group of persons, and in the background is a floating banner bearing the design of a four-leaf clover, and the words "SIR KNIGHT."

Filed August 22, 1905. Serial No. 11,907. PUBLISHED APRIL 17, 1906.

53,819. GOLD FINGER-RINGS. J. R. WOOD & SONS, New York, N. Y.

The letter "W" laid on its side; thus "≷."

Filed June 20, 1905. Serial No. 8,597. PUBLISHED APRIL 17, 1906.

53,820. WHISKY. CHAS. SHAFFNER & CO., Chicago, Ill.

The word "ROSEWOOD."

Filed June 15, 1905. Serial No. 8,166. PUBLISHED APRIL 17, 1906.

53,821. LEATHER SHOES. LEWIS W. FRANKLIN, Boston, Mass.

The words "THE FRANKLIN SHOE" and a medallion bearing the portrait of Benjamin Franklin.

Filed July 11, 1905. Serial No. 10,121. PUBLISHED APRIL 17, 1906.

53,822. WHISKY. H. J. HELLERT & SONS, Vincennes, Ind.

The words "HARMONIE CLUB."

Filed May 24, 1905. Serial No. 6,472. PUBLISHED APRIL 17, 1906.

53,823. RYE WHISKY. JACOB HENRY HENTZ, Jr., Philadelphia, Pa.

A monogram of the letters and character "W H & Co" and the abbreviation and number "ESTBD. 1793" inclosed within concentric circles. Used ten years.

Filed May 19, 1905. Serial No. 6,069. PUBLISHED APRIL 17, 1906.

53,824. COTTON PIECE GOODS. MASSACHUSETTS COTTON MILLS, Lowell, Mass.

The arbitrarily-selected word "ALLEGHENY." Used ten years.

Filed May 10, 1905. Serial No. 4,987. PUBLISHED APRIL 17, 1906.

53,825. COTTON PIECE GOODS. MASSACHUSETTS COTTON MILLS, Lowell, Mass.

The arbitrarily-selected word "RELIANCE."

Filed May 10, 1905. Serial No. 4,988. PUBLISHED APRIL 17, 1906.

53,826. COTTON PIECE GOODS. MASSACHUSETTS COTTON MILLS, Lowell, Mass.

The arbitrarily-selected word "LEXINGTON." Used ten years.

Filed May 10, 1905. Serial No. 4,990. PUBLISHED APRIL 17, 1906.

53,827. WINE. HENRY R. MYERS, Covington, Ky.

The word "FULTON." Used ten years.

Filed June 8, 1905. Serial No. 7,698. PUBLISHED APRIL 17, 1906.

53,828. UNDERSHIRTS AND DRAWERS AND UNION SUITS. THE DEIMEL LINEN-MESH SYSTEM COMPANY, San Francisco, Cal., and New York, N. Y.

The word "DEIMEL." Used ten years.

Filed June 10, 1905. Serial No. 7,858. PUBLISHED APRIL 17, 1906.

53,829. MEN'S SHIRTS AND BOYS' SHIRTS, WAISTS, AND BLOUSES. CHARLES EISENMAN & CO., Cleveland, Ohio.

A scroll with a central panel on which are the letters and word "K AND E." Used ten years.

Filed June 23, 1905. Serial No. 8,857. PUBLISHED APRIL 17, 1906.

53,830. CHILDREN'S SUITS AND PARTS OF SUITS. JONES BROS. OVERALL COMPANY, Dubuque, Iowa.

The words "LITTLE TUDOR" and a representation of a little boy dressed in an overall suit wearing a hat.

Filed June 19, 1905. Serial No. 8,541. PUBLISHED APRIL 17, 1906.

53,831. COTTON PIECE GOODS. MASSACHUSETTS COTTON MILLS, Lowell, Mass.

The arbitrarily-selected words "GREAT WESTERN."

Filed May 10, 1905. Serial No. 4,992. PUBLISHED APRIL 17, 1906.

53,832. COTTON PIECE GOODS. MASSACHUSETTS COTTON MILLS, Lowell, Mass.

The arbitrarily-selected word "ARGUS." Used ten years.

Filed May 10, 1905. Serial No. 4,993. PUBLISHED APRIL 17, 1906.

53,833. COTTON PIECE GOODS. MASSACHUSETTS COTTON MILLS, Lowell, Mass.

The arbitrarily-selected word "MASSACHUSETTS." Used ten years.

Filed May 10, 1905. Serial No. 4,996. PUBLISHED APRIL 17, 1906.

53,834. COTTON PIECE GOODS. MASSACHUSETTS COTTON MILLS, Lowell, Mass.

The arbitrarily-selected words "CONCORD RIVER." Used ten years.

Filed May 10, 1905. Serial No. 4,998. PUBLISHED APRIL 17, 1906.

53,835. COTTON PIECE GOODS. TREMONT & SUFFOLK MILLS, Lowell, Mass.

The arbitrarily-selected abbreviation and word "ST. LAWRENCE." Used ten years.

Filed May 10, 1905. Serial No. 4,965. PUBLISHED APRIL 17, 1906.

53,836. COTTON PIECE GOODS. TREMONT & SUFFOLK MILLS, Lowell, Mass.

The arbitrarily-selected word "MASSASOIT."

Filed May 10, 1905. Serial No. 4,967. PUBLISHED APRIL 17, 1906.

53,837. COTTON PIECE GOODS. TREMONT & SUFFOLK MILLS, Lowell, Mass.

The representation of a locomotive with a man at the window of the cab thereof and the word "PROGRESS" on the tender.

Filed May 11, 1905. Serial No. 5,260. PUBLISHED APRIL 17, 1906.

53,838. COTTON, WORSTED, AND MIXED COTTON AND WOOL PIECE GOODS. YORK MANUFACTURING CO., Saco, Me.

The word "EDEN."

Filed May 11, 1905. Serial No. 5,270. PUBLISHED APRIL 17, 1906.

53,839. FIRE-EXTINGUISHERS. AMERICAN-LA FRANCE FIRE ENGINE CO., Elmira, N. Y.

The word "SALVAGE."

Filed November 15, 1905. Serial No. 14,641. PUBLISHED APRIL 17, 1906.

53,840 PERFUMES, TOILET WATERS, EXTRACTS, AND COLOGNES. D. R. BRADLEY & SON, New York, N. Y.

The word "TREFLORA."

Filed December 13, 1905. Serial No. 15,371. PUBLISHED APRIL 17, 1906.

53,841. WHISKY. OWEN J. CARPENTER, Covington, Ky.

The words "CARTERET CLUB" printed across the representation of a fanciful design resembling somewhat a clover-leaf.

Filed January 25, 1906. Serial No. 16,503. PUBLISHED APRIL 17, 1906.

53,842. REMEDY FOR CERTAIN NAMED DISEASES. THE CHARLES N. CRITTENTON COMPANY, New York, N. Y.

The words "HALE'S HONEY OF HOREHOUND AND TAR." Used ten years.

Filed February 9, 1906. Serial No. 16,847. PUBLISHED APRIL 17, 1906.

53,843. HAIR-RESTORER. THE CHARLES N. CRITTENTON COMPANY, New York, N. Y.

The word "REVIVUM" inclosed in quotation-marks. Used ten years.

Filed February 9, 1906. Serial No. 16,848. PUBLISHED APRIL 17, 1906.

53,844. HAIR-RESTORER. THE CHARLES N. CRITTENTON COMPANY, New York, N. Y.

The words "HAIR REVIVUM." Used ten years.

Filed February 9, 1906. Serial No. 16,849. PUBLISHED APRIL 17, 1906.

53,845. REMEDY FOR TOOTHACHE. THE CHARLES N. CRITTENTON COMPANY, New York, N. Y.

The words "PIKE'S UNIVERSAL VEGETABLE TOOTH-ACHE DROPS." Used ten years.

Filed February 9, 1906. Serial No. 16,851. PUBLISHED APRIL 17, 1906.

53,846. REMEDY FOR TOOTHACHE. THE CHARLES N. CRITTENTON COMPANY, New York, N. Y.

The words "PIKE'S TOOTHACHE DROPS." Used ten years.

Filed February 9, 1906. Serial No. 16,852. PUBLISHED APRIL 17, 1906.

53,847. TONIC, DIGESTIVE, AND NUTRIENT PREPARATION. THE CHARLES N. CRITTENTON COMPANY, New York, N. Y.

The words "HYDROLEINE, (HYDRATED OIL.)" Used ten years.

Filed February 9, 1906. Serial No. 16,853. PUBLISHED APRIL 17, 1906.

53,848. DYE FOR THE HAIR. THE CHARLES N. CRITTENTON COMPANY, New York, N. Y.

The words "BATCHELOR'S PREMIUM LIQUID HAIR DYE." Used ten years.

Filed February 9, 1906. Serial No. 16,855. PUBLISHED APRIL 17, 1906.

53,849. TOILET CREAM. CHARLES J. COUNTIE, Boston, Mass.

The fanciful word "MAGDA."

Filed May 27, 1905. Serial No. 6,817. PUBLISHED APRIL 17, 1906.

53,850. CORDIAL BITTERS. THE FRANCISCAN COMPANY, a Corporation, Santa Barbara, Cal.

A representation of Santa Barbara Mission, with a bell above suspended from a beam, and a palm-tree at each end of the picture, and associated with the words "THE GENUINE FRANCISCAN."

Filed January 19, 1906. Serial No. 16,323. PUBLISHED APRIL 17, 1906.

53,851. DYESTUFFS AND COLORING-MATTERS. H. A. METZ & Co., New York, N. Y.

The word "CHROMOGLAUCINE."

Filed November 15, 1905. Serial No. 14,672. PUBLISHED APRIL 17, 1906.

53,852. DYESTUFFS AND COLORING-MATTERS. H. A. METZ & Co., New York, N. Y.

The word "FLAVAZINE."

Filed November 15, 1905. Serial No. 14,673. PUBLISHED APRIL 17, 1906.

53,853. DYESTUFFS AND COLORING-MATTERS. H. A. METZ & Co., New York, N. Y.

The word "RODAZEINE."

Filed November 15, 1905. Serial No. 14,675. PUBLISHED APRIL 17, 1906.

53,854. DYESTUFFS AND COLORING-MATTERS. H. A. METZ & Co., New York, N. Y.

The word "SCARLATOL."

Filed November 15, 1905. Serial No. 14,677. PUBLISHED ALRIL 17, 1906.

53,855. DYESTUFFS AND COLORING-MATTERS. H. A. METZ & Co., New York, N. Y

The word "DIANIL."

Filed November 15, 1905. Serial No. 14,679. PUBLISHED APRIL 17, 1906.

53,856. DYESTUFFS AND COLORING-MATTERS. H. A. METZ & Co., New York, N. Y.

The word "MELANOGEN."

Filed November 15, 1905. Serial No. 14,680. PUBLISHED APRIL 17, 1906.

53,857. DYESTUFFS AND COLORING-MATTERS. H. A. METZ & Co., New York, N. Y.

The word "FLAVOPHOSPHINE."

Filed November 15, 1905. Serial No. 14,682. PUBLISHED April 17, 1906.

53,858. DYESTUFFS AND COLORING-MATTERS. H. A. METZ & Co., New York, N. Y.

The words "AZO ACID." Used ten years.

Filed November 15, 1905. Serial No. 14,690. PUBLISHED APRIL 17, 1906.

53,859. DYESTUFFS AND COLORING-MATTERS. H. A. METZ & Co., New York, N. Y.

The word "THIONINE." Used ten years.

Filed November 15, 1905. Serial No. 14,691. PUBLISHED APRIL 17, 1906.

53,860. DYESTUFFS AND COLORING-MATTERS. H. A. METZ & Co., New York, N. Y.

The words "GERMANIA BLACK." Used ten years.

Filed November 15, 1905. Serial No. 14,692. PUBLISHED APRIL 17, 1906.

53,861. DYESTUFFS AND COLORING-MATTERS. H. A. METZ & Co., New York, N. Y.

The word "AZOPHOR."

Filed November 29, 1905. Serial No. 15,078. PUBLISHED APRIL 17, 1906.

53,862. TOOTH-POWDER AND ANTISEPTIC MOUTH-WASH. THEODORE R. HARVEY, Westfield, N. J.

The word "OXADINE" surrounded by a wreath of oak-leaves and acorns tied with a ribbon, with the words "ANTISEPTIC" "ALKALINE" "PROPHYLACTIC" upon the same.

Filed January 20, 1906. Serial No. 16,354. PUBLISHED APRIL 17, 1906.

53,863. PRINTED COTTON FABRICS. JOSEPH W. WOODS AND SON CORPORATION, Boston, Mass.

The words "GLEN DENIM."

Filed January 17, 1906. Serial No. 16,257. PUBLISHED APRIL 17, 1906.

53,864. WHISKY. MAYER, SONS & Co., Philadelphia, Pa.

The words "PRIDE OF VIRGINIA" on a scroll of ribbon design. Used ten years.

Filed June 19, 1905. Serial No. 8,519. PUBLISHED APRIL 17, 1906.

53,865. WHISKY. MAYER, SONS & Co., Philadelphia, Pa.

The words "PRIDE OF PENNSYLVANIA" on a ribbon design. Used ten years.

Filed June 19, 1905. Serial No. 8,521. PUBLISHED APRIL 17, 1906.

53,866. WHISKY. ELIAS A. MCQUADE, Lowell, Mass.

The words "PULLMAN CLUB" and a circular design bearing the monogram "E A McQ." The circular figure is surrounded by fanciful scrolls and heads and leaves of grain.

Filed January 23, 1906. Serial No. 16,428. PUBLISHED APRIL 17, 1906.

53,867. REMEDY FOR DISEASES OF THE LIVER. PEACOCK CHEMICAL COMPANY, St. Louis, Mo.

The representation of a peacock standing upright upon a shield with its tail spread, the shield being surmounted by a scroll bearing the word "PURITY," and there being a scroll beneath the shield bearing the words "THE BEST IS THE CHEAPEST."

Filed January 8, 1906. Serial No. 16,031. PUBLISHED APRIL 17, 1906.

53,868. HOSIERY. REINS & MEISS, Cincinnati, Ohio.

The words "THE LOCKLAND MILLS" placed over a wreath. Used ten years.

Filed February 8, 1906. Serial No. 16,824. PUBLISHED APRIL 17, 1906.

53,869. OVERALLS, BIBS, AND COATS. RICHFORD GARMENT COMPANY, Richford, Vt.

The coined word "HARDKNOX."

Filed February 7, 1906. Serial No. 16,811. PUBLISHED APRIL 17, 1906.

53,870. KNIT UNDERWEAR. J. H. SEMEL & Co., New York, N. Y.

The words "MOHAWK MILLS" and the bust representation of a female Indian.

Filed February 6, 1906. Serial No. 16,797. PUBLISHED APRIL 17, 1906.

53,871. SKIN LOTIONS AND WASHES. ELIZABETH MARIE STEIBEL, Washington, D. C.

A bust pictorial representation of applicant with the initials "E. M. S." in script letters located directly over the head of said pictorial representation, the whole being surrounded by a band of ribbon having a bow-knot arranged at both the upper and lower portion of the said pictorial representation.

Filed December 4, 1905. Serial No. 15,172. PUBLISHED APRIL 17, 1906.

53,872. PENNYROYAL AND TANSY PILLS. HORACE B. TAYLOR, Philadelphia, Pa.

The words "DR. HOOPER'S GREEN SEAL EXTRA STRONG" on a green seal stamp in the center of an ornamental band label, with the word "STAMP" and the picture of a seal at one end and the word "OFFICE" at the other end. The words "HOOPER'S PILLS" and "ROYAL ENGLISH PENNYROYAL, GREEN SEAL, AND TANSY" appear on the label, which is decorated with a fanciful design.

Filed June 21, 1905. Serial No. 8,680. PUBLISHED APRIL 17, 1906.

53,873. MEDICINAL PREPARATION. VICTOR KOECHL & Co., New York, N. Y.

The words "DR. KNORR'S ANTIPYRINE." Used ten years.

Filed November 18, 1905. Serial No. 14,801. PUBLISHED APRIL 17, 1906.

53,874. WINE. WM. HOELSCHER AND CO., INCORPORATED, San Francisco, Cal.

The words "SPARKLING SYLVANA," associated with a fanciful bust picture of a woman with a wreath of leaves on her head and holding a wine-glass in her uplifted right hand. Beneath the picture is a spray of grape vines and leaves with bunches of grapes, and back of the woman's head is a circular aureole with radiating lines.

Filed February 5, 1906. Serial No. 16,755. PUBLISHED APRIL 17, 1906.

53,875. BEER. ANHEUSER-BUSCH BREWING ASSOCIATION, St. Louis, Mo.

A seal bearing the head of a goat and a cluster of hops and barley-heads inclosed in an oval-shaped panel.

Filed July 3, 1905. Serial No. 9,780. PUBLISHED APRIL 17, 1906.

53,876. REMEDY FOR EXTERMINATING PARASITES. HOMER E. BOWLES, Muncie, Ind.

The name "IKEY EINSTEIN."

Filed December 13, 1905. Serial No. 16,973. PUBLISHED APRIL 17, 1906.

53,877. MEN'S DRESS-SHIRTS. BROOM & NEWMAN, New York, N. Y.

The word "CLERMONT."

Filed October 21, 1905. Serial No. 13,801. PUBLISHED APRIL 17, 1906.

53,878. DYE FOR THE HAIR. THE CHARLES N. CRITTENTON COMPANY, New York, N. Y.

The words "BATCHELOR'S HAIR DYE." Used ten years.

Filed February 9, 1906. Serial No. 16,856. PUBLISHED APRIL 17, 1906.

53,879. WHISKY. JOHN MILLING CRANSTON, Augusta, Ga.

The words "JACK CRANSTON'S PRIVATE STOCK," associated with a monogram of the letters "J M C." Used ten years.

Filed June 24, 1905. Serial No. 8,879. PUBLISHED APRIL 17, 1906.

53,880. WHISKY. THE GEORGE BIELER SONS COMPANY, Cincinnati, Ohio.

A panel bearing the words "'RARE OLD PERFECT' BROOKFIELD RYE 'MADE FAMOUS BY PUBLIC FAVOR,'" the autograph firm-signature "GEO. BIELER SONS," and the place of doing business, "CINCINNATI. U. S. A.," the words "RARE OLD PERFECT"

and "MADE FAMOUS BY PUBLIC FAVOR" being inclosed in quotation-marks, and a fleur-de-lis being arranged at each end of the word "RYE." On the panel also appear two winged dragons rampant on either side of the letter "B," with the date "1867" beneath. Used ten years.

Filed May 11, 1905. Serial No. 5,113. PUBLISHED APRIL 17, 1906.

53,881. BEER AND LAGER-BEER. HARVARD BREWING Co., Lowell, Mass.

A groundwork formed of the representation of a plurality of flags arranged in substantially horizontal rows, each of said flags bearing the letter "H," and streamers interposed between the rows of flags. Upon some of said streamers are the words "PURE BEER" and "$1000.00" and on others the words "HARVARD" "BREWING" "COMPANY." Upon said background in fancy script letters is the word "HARVARD" and also the symbol "$1000.00," the words "PURE BEER," and the representation of a seal bearing a flag having the letter "H" thereon. On the seal is also the word "HARVARD." The whole is inclosed in a fancy border of "engine-work" scrolls, and approximately centrally of each of the end portions of said border is a star upon which appears a flag bearing the letter "H."

Filed June 26, 1905. Serial No. 9,058. PUBLISHED APRIL 17, 1906.

53,882. WITHDRAWN.

53,883. WITHDRAWN.

53,884. BEER. THE HOSTER-COLUMBUS ASSOCIATED BREWERIES Co., Columbus, Ohio.

The name "HOSTER'S" in heavy shaded script and arranged at a slight inclination to the horizontal.

Filed April 20, 1905. Serial No. 3,633. PUBLISHED APRIL 17, 1906.

53,885. WHISKY. KAUFMANN BROS. & Co., Toledo, Ohio.

The word "YONDOTA."

Filed June 24, 1905. Serial No. 8,951. PUBLISHED APRIL 17, 1906.

53,886. WHISKY. KIEFER & Co., Los Angeles, Cal.

The name "MICAWBER," associated with a picture representing Micawber twirling a cane.

Filed June 28, 1905. Serial No. 9,311. PUBLISHED APRIL 17, 1906.

53,887. WHISKY. LAZARUS & NASSAUER, Cairo, Ill.

The words "SILVER MOON."

Filed May 20, 1905. Serial No. 7,008. PUBLISHED APRIL 17, 1906.

53,888. WHISKY. ADOLPH LOEB, Cincinnati, Ohio.

The words "TWO O'CLOCK CLUB."

Filed June 24, 1905. Serial No. 8,965. PUBLISHED APRIL 17, 1906.

53,889. WHISKY. A. G. MARSHUETZ & Co., New York, N. Y.

A design representing a shield bearing the monogram "M M," through which is placed a torch held aloft by a hand. On either side of the shield is a fanciful scroll design.

Filed May 3, 1905. Serial No. 4,155. PUBLISHED APRIL 17, 1906.

53,890. WHISKY. MARYLAND DISTILLING Co., Chicago, Ill.

The word "ARTILLERIST."

Filed May 6, 1905. Serial No. 4,479. PUBLISHED APRIL 17, 1906.

53,891. WHISKY. NELSON DISTILLING Co., St. Louis, Mo.

The words "OAK HILL," beneath which is a monogram composed of the letters "N D Co." Used ten years.

Filed June 8, 1905. Serial No. 7,655. PUBLISHED APRIL 17, 1906.

53,892. BLEACHED, GRAY, PRINTED, AND FANCY DAMASKS. NEUSS, HESSLEIN & Co., New York, N. Y.

A representation of the statue of Ariadne riding a lioness.

Filed September 5, 1905. Serial No. 12,246. PUBLISHED APRIL 17, 1906.

53,893. LAGER-BEER. THE PETER SCHOENHOFEN BREWING COMPANY, Chicago, Ill.

A panel bearing the word "EDELWEISS," the name "P. SCHOENHOFEN BREWING Co. CHICAGO," and the word "(EXPORT)" inclosed in parentheses, a red, white, and blue striped shield bearing a representation of a Mercury staff with an "S" intertwined therewith and a wreath partially inclosing the same, an Alpine scene, and stalks of barley. Used ten years.

Filed September 29, 1905. Serial No. 13,133. PUBLISHED APRIL 17, 1906.

53 894. VENEREAL DISEASE REMEDIES. MAX PIORKOWSKI, Berlin, Germany.

The word "ANTILUIN."

Filed November 25, 1905. Serial No. 14,093. PUBLISHED APRIL 17, 1906.

53,895. COCKTAILS. S. C. HERBST IMPORTING Co. Milwaukee, Wis.

The words "OLD JUDGE."

Filed June 26, 1905. Serial No. 9,066. PUBLISHED APRIL 17, 1906.

53,896. UMBRELLA-FRAMES OF METAL. SAMUEL FOX & Co., LIMITED, Stocksbridge Works, near Sheffield, England.

The word "CRUSADE" in ordinary Roman capitals. Used ten years.

Filed September 14, 1905. Serial No. 12,591. PUBLISHED APRIL 17, 1906.

53,897. UMBRELLA-FRAMES AND RIBS OF METAL. SAMUEL FOX & Co., LIMITED, Stocksbridge Works, near Sheffield, England.

The word "LAURUS." Used ten years.

Filed September 14, 1905. Serial No. 12,592. PUBLISHED APRIL 17, 1906.

53,898. UMBRELLA-FRAMES. SAMUEL FOX & Co., LIMITED, Stocksbridge Works, near Sheffield, England.

The words "LOCK RIB" in capital letters, with the representation of a running fox, the whole inclosed by a border-line. Used ten years.

Filed September 14, 1905. Serial No. 12,612. PUBLISHED APRIL 17, 1906.

53,899. UMBRELLA-FRAMES. SAMUEL FOX & Co.. LIMITED, Stocksbridge Works, near Sheffield, England.

The word "ARCUS" in ordinary Roman capitals, with the representation of a running fox, the whole inclosed by a border-line. Used ten years.

Filed September 14, 1905. Serial No. 12,613. PUBLISHED APRIL 17, 1906.

53,900. UMBRELLA-FRAMES. SAMUEL FOX & Co., LIMITED, Stocksbridge Works, near Sheffield, England.

The word "PARAGON" in ordinary Roman capitals, with the representation of a running fox, the whole inclosed by a border-line. Used ten years.

Filed September 14, 1905. Serial No. 12,614. PUBLISHED APRIL 17, 1906.

53,901. UMBRELLA-FRAMES OF METAL. SAMUEL FOX & Co., LIMITED, Stocksbridge Works, near Sheffield, England.

The word "PARAGON" in Roman capitals. Used ten years.

Filed September 14, 1905. Serial No. 12,615. PUBLISHED APRIL 17, 1906.

53,902. UMBRELLA-FRAMES OF METAL. SAMUEL FOX & Co., LIMITED, Stocksbridge Works, near Sheffield, England.

The representation of a running fox. Used ten years.

Filed September 14, 1905. Serial No. 12,616. PUBLISHED APRIL 17, 1906.

53,903. WHISKY. STRAUSS, PRITZ & Co., Cincinnati, Ohio.

The words and figures "THE FAMOUS LEWIS 66." Used ten years.

Filed July 15, 1905. Serial No. 10,344. PUBLISHED APRIL 17, 1906.

53,904. GIN. SAMUEL STREIT & Co., New York, N. Y.

The word-symbol "DE STAR GIN," and the representation of a five-pointed star, all inclosed within a circle.

Filed April 17, 1905. Serial No. 1,867. PUBLISHED APRIL 17, 1906.

53,905. WINES. TO-KALON WINE Co., Washington. D. C.

The arbitrary word "TO-KALON" arranged upon an ornamental panel.

Filed April 1, 1905. Serial No. 73. PUBLISHED APRIL 17, 1906.

53,906. PILLS. ALLCOCK MANUFACTURING Co., New York, N. Y.

A rectangular device. In the center is a shield surmounted by an animal resembling a sheep couchant surrounded by a fancy circular border, the whole surrounded by a square fancy border, the spaces between the two borders and the space within the circular

border being occupied by printed matter, said printed matter consisting of the words "BRANDRETH'S PILLS, ALLCOCK'S POROUS PLASTER, B. BRANDRETH, FORWARD, PROPRIETARY." Used ten years.

Filed June 27, 1905. Serial No. 9,249. PUBLISHED APRIL 17, 1906.

53,907. CEREAL FOODS MADE FROM OATS. THE AMERICAN CEREAL COMPANY, Akron and Ravenna, Ohio; Chicago, Ill., and Cedar Rapids, Iowa.

The word "AVENA."

Filed May 15, 1905. Serial No. 5,608. PUBLISHED APRIL 17, 1906.

53,908. CEREAL FOODS MADE FROM OATS. THE AMERICAN CEREAL COMPANY, Akron and Ravenna, Ohio; Chicago, Ill., and Cedar Rapids, Iowa.

The pictorial representation of a man in Highland dress holding a bagpipe.

Filed May 15, 1905. Serial No. 5,609. PUBLISHED APRIL 17, 1906.

53,909. CEREAL FOODS MADE FROM OATS. THE AMERICAN CEREAL COMPANY, Akron and Ravenna, Ohio; Chicago, Ill., and Cedar Rapids, Iowa.

The pictorial representation of a man in Highland dress holding a bagpipe, and the word "SCOTCH."

Filed May 15, 1905. Serial No. 5,610. PUBLISHED APRIL 17, 1906.

53,910. CEREAL FOODS MADE FROM OATS. THE AMERICAN CEREAL COMPANY, Akron and Ravenna, Ohio; Chicago, Ill., and Cedar Rapids, Iowa.

The word "SCOTCH." Used ten years.

Filed May 15, 1905. Serial No. 5,611. PUBLISHED APRIL 17, 1906.

53,911. COCKTAILS. C. BERRY & Co., Boston, Mass.

The words "NORTHERN LIGHT."

Filed January 12, 1906. Serial No. 16,136. PUBLISHED APRIL 17, 1906.

53,912. PRINTED AND PIECE-DYED SILKS. CHENEY BROTHERS, South Manchester, Conn.

The hyphenated word "SHOWER-PROOF."

Filed November 23, 1905. Serial No. 14,923. PUBLISHED APRIL 17, 1906.

53,913. EMULSIFIED PREPARATIONS, COUGH MIXTURES, AND LOTIONS. A. H. DAYTON and G. T. WIGMORE, Naugatuck, Conn., administrators of James O. May, deceased.

The representation of a branch or spray of the marshmallow-plant bearing a bloom, leaves, and buds, the words "THE MARSHMALLOW," and the words "[GREEK Á AEW I HEAL.]" Used ten years.

Filed September 13, 1905. Serial No. 12,535. PUBLISHED APRIL 17, 1906.

53,914. WINE. GEO. BENZ & SONS, St. Paul, Minn.

The word "AURORA" surmounting an allegorical representation of dawn.

Filed January 8, 1906. Serial No. 15,979. PUBLISHED APRIL 17, 1906.

53,915. WORSTED, WOOLEN, AND COTTON-MIXED PIECE GOODS. GRIFFON COMPANY, New York, N. Y.

Two parallel stripes of yellow color, one broad and the other narrow, woven into the fabric near the selvage of the same.

Filed June 1, 1905. Serial No. 7,136. PUBLISHED APRIL 17, 1906.

53,916. DYESTUFFS AND COLORING-MATTERS. H. A. METZ & Co., New York, N. Y.

The word "CHROMOTROP." Used ten years.

Filed November 15, 1905. Serial No. 14,686. PUBLISHED APRIL 17, 1906.

53,917. DYESTUFFS AND COLORING-MATTERS. H. A. METZ & Co., New York, N. Y.

The word "THIOCHROMOGEN." Used ten years.

Filed November 15, 1905. Serial No. 14,687. PUBLISHED APRIL 17, 1906.

53,918. DYESTUFFS AND COLORING-MATTERS. H. A. METZ & Co., New York, N. Y.

The word "VIOLAMINE." Used ten years.

Filed November 15, 1905. Serial No. 14,689. PUBLISHED APRIL 17, 1906.

53,919. CERTAIN NAMED MEDICINAL PREPARATION. J. D. RIEDEL AKTIENGESELLSCHAFT, Berlin, Germany.

The word "MERGAL."

Filed November 11, 1905. Serial No. 14,502. PUBLISHED APRIL 17, 1906.

53,920. REMEDY FOR THE CURE OF DISEASES OF THE RESPIRATORY ORGANS. J. JUNGMANN, New York, N. Y.

The representation of several rough riders on kicking bronchos in front and the representation of a rider on horseback lassoing a broncho in the rear, with the words "A REMEDY FROM THE PRAIRIES" below said picture.

Filed July 21, 1905. Serial No. 10,646. PUBLISHED APRIL 17, 1906.

53,921. SALVE WHICH IS A CURE OR REMEDY FOR FRECKLES. JOHN J. KLINE, New York N. Y.

The word "FRECKELENE."

Filed October 5, 1905. Serial No. 13,305. PUBLISHED APRIL 17, 1906.

53,922. MOUTH, NOSE, AND THROAT WASH. LAVORIS CHEMICAL COMPANY, Minneapolis, Minn.

The word "LAVORIS."

Filed November 6, 1905. Serial No. 14,378. PUBLISHED APRIL 17, 1906.

53,923. FANCY FEATHERS, OSTRICH-FEATHERS, AND FEATHER TRIMMINGS. E. LEWINSOHN Berlin, Germany.

A panel on which is displayed an eagle holding in its talons a banner depending from a double-headed arrow, the word "BERLIN" appearing on the banner.

Filed July 19, 1905. Serial No. 10,575. PUBLISHED APRIL 17, 1906.

53,924. GIN. LUYTIES BROTHERS, New York, N. Y.

The representation of London Tower Bridge and the words "LONDON BRIDGE."

Filed November 15, 1905. Serial No. 14,652. PUBLISHED APRIL 17 1906.

53,925. COTTON PIECE GOODS. MASSACHUSETTS COTTON MILLS, Lowell, Mass.

The arbitrarily-selected word "LIBERTY."

Filed May 10, 1905. Serial No. 4,991. PUBLISHED APRIL 17, 1906.

53,926. WHISKY. MAYER, SONS & Co., Philadelphia, Pa.

The words "DELAWARE CLUB" on a ribbon design.

Filed June 19, 1905. Serial No. 8,518. PUBLISHED APRIL 17, 1906.

53,927. RUGS. MCCLEARY, WALLIN & CROUSE, Amsterdam, N. Y.

The letters "I S R."

Filed August 31, 1905. Serial No. 12,105. PUBLISHED APRIL 17, 1906.

53,928. PEPPER-SAUCE. E. MCILHENNY'S SON, Avery Island and New Iberia, La.

A central circular field inclosing the name and address "E. MCILHENNY, NEW IBERIA, LOUISIANA," and an annular band surrounding the same bearing the words "TABASCO PEPPER SAUCE," all appearing on a diamond-shaped figure. Used ten years.

Filed June 22, 1905. Serial No. 8,775. PUBLISHED APRIL 17, 1906.

53,929. PEPPER-SAUCE. E. MCILHENNY'S SON, Avery Island and New Iberia, La.

A central circular field inclosing the name and address "E. MCILHENNY, NEW IBERIA, LOUISIANA," and an annular band surrounding the same bearing the words "TABASCO PEPPER SAUCE," all appearing on a diamond-shaped figure, the name "E. MCILHENNY," part of the address, and the circular lines being printed in red, the other part of the address and the words "TABASCO PEPPER SAUCE" being printed in green, the diamond being printed in pink and bordered by a green line. Used ten years.

Filed June 22, 1905. Serial No. 8,777. PUBLISHED APRIL 17, 1906.

53,930. LAXATIVE REMEDY. MCKESSON & ROBBINS, New York N. Y.

The word "TARTAN."

Filed May 10, 1905. Serial No. 4,894. PUBLISHED APRIL 17, 1906.

53,931. CERTAIN NAMED MEDICINE. EDMOND R. MORAS, Chicago, Ill.

The word "DETOXYL" intersected by an arrow, the head of which is shewn broken off.

Filed July 3, 1905. Serial No. 9,660. PUBLISHED APRIL 17, 1906.

53,932. BEER. NEW ENGLAND BREWING COMPANY, Boston, Mass.

An ornamental panel having thereon the words "THE ROESSLE BREWERY PREMIUM LAGER BEER BOSTON, MASS. BREWED FROM THE CHOICEST MALT AND HOPS. BREWERY BOTTLING," and a spray of foliage having thereon overlapping medals. Used ten years.

Filed September 28, 1905. Serial No. 13,116. PUBLISHED APRIL 17, 1906.

53,933. HAIR TONICS, STAINS, REMOVERS, AND DANDRUFF CURES. HOWARD E. NICHOLS, St. Louis, Mo.

The representation of three walnuts arranged upon a single leaf, the word "WALNUTTA," inclosed in quotation-marks, being arranged across the walnuts.

Filed June 28, 1905. Serial No. 9,353. PUBLISHED APRIL 17, 1906.

53,934. HEMOSTATIC, ASTRINGENT, BLOOD-PRESSURE-RAISING, AND STIMULATING PREPARATIONS FOR MEDICINAL OR SURGICAL PURPOSES. PARKE, DAVIS & Co., Detroit, Mich., and New York, N. Y.

The word "ADRENALIN."

Filed August 22, 1905. Serial No. 11,909. PUBLISHED JANUARY 16, 1906.

53,935. POTASH. PENNSYLVANIA SALT MANUF'G CO., Philadelphia, Pa.

The words "AMERICAN PURE CRYSTAL POTASH." Used ten years.

Filed May 15, 1905. Serial No. 5,714. PUBLISHED APRIL 17, 1906.

53,936. BICARBONATE OF SODA. PENNSYLVANIA SALT MANUF'G CO., Philadelphia, Pa.

The words "NATRONA BRAND PENN'A SALT MFG. CO., PHILADELPHIA," arranged on a band extending diagonally across an annular band made up of concentric circles, the words "BICARB: SODA" within the circles, and the silhouette of the head of a Quaker inclosed in a substantially rectangular frame and arranged upon the diagonal and annular bands. Used ten years.

Filed May 17, 1905. Serial No. 5,882. PUBLISHED APRIL 17, 1906.

53,937. DISINFECTANTS AND ANTISEPTICS. SCHÜLKE & MAYR, Hamburg, Germany.

The word "LYSOL."

Filed September 1, 1905. Serial No. 12,130. PUBLISHED APRIL 17, 1906.

53,938. DISINFECTANTS AND ANTISEPTICS. SCHÜLKE & MAYR, Hamburg, Germany.

A triangle in which is a circular field of contrasting color, on which is inscribed the word "LYSOL."

Filed September 1, 1905. Serial No. 12,131. PUBLISHED APRIL 17, 1906.

53,939. WHEAT-FLOUR. SENECA MILL & ELEVATOR COMPANY, Seneca, Mo.

The representation of a top view of a brilliant or diamond having numerous facets and rays radiating from all sides of the figure.

Filed November 4, 1905. Serial No. 14,305. PUBLISHED DECEMBER 26, 1905.

53,940. REMEDY FOR CORNS, BUNIONS, AND INGROWN NAILS. STAFFORD DRUG CO. OF BALTIMORE CITY, Baltimore, Md.

The word "CORNICIDE," associated with a pictorial representation of a corn-plaster, comprising two concentric circular lines with zigzag lines radiating from within the smaller circle.

Filed August 30, 1905. Serial No. 12,100. PUBLISHED APRIL 17, 1906.

53,941. COTTON PIECE GOODS. TREMONT & SUFFOLK MILLS, Lowell, Mass.

The arbitrarily-selected word "SUFFOLK." Used ten years.

Filed May 10, 1905. Serial No. 4,964. PUBLISHED APRIL 17, 1906.

53,942. BEER. THE WACKER & BIRK BR'G & M'LT'G CO., Chicago, Ill.

The word "PERFECTO."

Filed December 11, 1905. Serial No. 15,327. PUBLISHED APRIL 17, 1906.

53,943. PREPARATIONS FOR COLORING BUTTER. WELLS & RICHARDSON COMPANY, Burlington, Vt.

In a rectangular frame the word "DANDELION," the representation of a dandelion-plant inclosed in a circular frame, the words, character, and abbreviation "WELLS & RICHARDSON COS." diagonally in the upper section upon a scroll, the words "BUTTER COLOR" upon a scroll beneath the word "DANDELION," the words "WILL NOT COLOR THE BUTTERMILK" in a panel, and across the bottom the words, character, and abbreviation "WELLS & RICHARDSON CO. PROP'S BURLINGTON VT."

Filed September 9, 1905. Serial No. 12,425. PUBLISHED APRIL 17, 1906.

53,944. LINIMENT. HENRY E. WRENSCH, Jr., Montclair, N. J.

The representation in three-quarter view of the head, neck, and bust of an Indian brave, wherein the bust is clad in full regalia and the head is surmounted by a feathered war-bonnet, and such head being surmounted by the word "WAHOO."

Filed October 24, 1905. Serial No. 13,894. PUBLISHED APRIL 17, 1906.

LABELS

REGISTERED JUNE 12, 1906.

12,930.—*Title:* "ELCO." (For a Beverage.) WM. E. RILEY, Louisville, Ky. Filed May 21, 1906.

12,931.—*Title:* "OLD GERMAN LAGER." (For Beer.) WILMANNS BROS. CO., Milwaukee, Wis. Filed May 17, 1906.

12,932.—*Title:* "A. No. 1." (For Tea.) A. & G. MEYER, Newburgh, N. Y. Filed May 18, 1906.

12,933.—*Title:* "GAY'S ISLAND BRAND CLAMS." (For Canned Clams.) EMERY B. HART, Thomaston, Me. Filed May 18, 1906.

12,934.—*Title:* "THE VIRGINIA BRAND." (For Pork Products.) LANGDON & BOYD, La Crosse, Wis. Filed May 7, 1906.

12,935.—*Title:* "COPALAC." (For a Floor-Finish.) BECKWITH-CHANDLER COMPANY, Newark, N. J. Filed May 14, 1906.

12,936.—*Title:* "FIRE CHIEF." (For a Dry Chemical Fire-Extinguisher.) THE WESTERN FIRE APPLIANCE CO., Toledo, Ohio. Filed May 5, 1906.

PRINTS

REGISTERED JUNE 12, 1906

1,695.—*Title:* "TARITA." (For Cigars.) AMERICAN CIGAR COMPANY, New York, N. Y. Filed May 17, 1906.

1,696.—*Title:* "MONTREAL MALT RYE." (For Liquors.) N. M. URI & CO., INC., Louisville, Ky. Filed May 22, 1906.

1,697.—*Title:* "WE ROOT FOR FLEISCHMANN'S YEAST." (For Yeast.) STAHL AND JAEGER, INC., New York, N. Y. Filed April 10, 1906.

1,698.—*Title:* "BOYS INDESTRUCTIBLE HOSE." (For Hosiery.) RACINE FEET KNITTING CO., Racine and Beloit, Wis. Filed May 19, 1906.

1,699.—*Title:* "COMPOSITE BRICK." (For Brick Manufactured from a Combination of Sand, Lime, and Cement.) LAURENCE ELKUS, Indianapolis, Ind. Filed May 18, 1906.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

EX PARTE CLUNIES.

Decided January 18, 1906.

PATENTABILITY.

Where the general arrangement of the flues in a stove as defined in the claims is shown in one patent and the specific form and location of horizontal flues are shown in other patents, *Held* that the claims are without invention.

APPEAL from Examiners-in-Chief.

HEATING-STOVE.

Messrs. Church & Church and *Mr. Frederick F. Church* for the appellant.

ALLEN, *Commissioner:*

This is an appeal from the decision of the Examiners-in-Chief affirming the action of the Primary Examiner rejecting the following claims:

1. In a heating-stove, the combination with the fire-pot, combustion-chamber and ash-pit, of a vertically-extending discharge-flue at the rear of the stove, a diving-flue also at the rear of the stove at one side of the discharge-flue and in contact with the latter, said diving-flue communicating at its upper end with the combustion-chamber, and two horizontal flues arranged in the stove-base at the side of the ash-pit but not extending directly beneath it, said horizontal flues communicating at their forward ends and one connected at its rear end with the discharge-flue and the other at its rear end only with the diving-flue.

2. In a heating-stove, the combination with the fire-pot, combustion-chamber and ash-pit, of a vertically-extending discharge-flue at the rear of the stove, opening at its upper end into the smoke-pipe, two diving-flues open at their upper ends into the combustion-chamber and arranged with their walls in contact with the sides of the discharge-flue, and horizontal return-flues arranged at the sides of the ash-pit but not beneath the latter and communicating at their rear ends only with the respective diving-flues and with the discharge-flue.

3. In a heating-stove, the combination with the ash-pit, fire-pot and combustion-chamber, of a vertically-extending discharge-flue at the rear, opening at its upper end into the smoke-pipe, two diving-flues opening at their upper ends into the combustion-chamber and arranged on opposite sides of the discharge-flue, the walls of said diving-flues also forming the walls of the discharge-flue, and the independent return-flues in the stove-base at the sides of the ash-pit formed in part by the outer walls of the former and communicating at the rear only with the lower ends of the diving-flues, thence extending toward the front of the stove-base, thence to the rear and discharging into the lower end of the discharge-flue.

4. In a heating-stove, the combination with the fire-pot and combustion-chamber, of a vertically-arranged discharge-flue at the rear connecting at its upper end with the smoke-pipe, the diving-flues arranged on opposite sides of the discharge-flue and in contact therewith to heat the same, upper and lower horizontal flues in the sides of the stove-base and at the sides of the ash-pit but not beneath it, the walls thereof being formed in part by the outer walls of the base, an upper and lower flue communicating at the forward ends, the rear end of the upper flues communicating only with the lower ends of the rear diving-flues and the rear ends of the lower flues communicating with the central discharge-flue.

5. In a heating-stove, the combination with the fire-pot, and combustion-chamber, of the vertical discharge-flue at the rear, and the diving-flues on opposite sides thereof, of the stove-base embodying the central ash-pit and hollow at the sides thereof and the partitions in each of said hollow sides dividing them into two flues communicating at the rear only with a diving-flue and the other with the discharge-flue.

6. In a heating-stove, the combination with the fire-pot and combustion-chamber, of the vertical discharge-flue at the rear, the diving-flues at each side thereof and in contact therewith extending to the stove-base beneath the fire-pot, the base having the hollow sides and the ash-pit between them and a partition-plate in each of the hollow sides of the base forming two horizontal flues connected at their forward ends and at their rear ends connected respectively with the diving and discharge flues.

7. In a heating-stove, the combination with the fire-pot and combustion-chamber, of the rear flue-section and the vertical flue-strips or partitions dividing it into a central discharge-flue and two dividing-flues, the stove-base having the central ash-pit and hollow at the sides and rear, of said ash-pit only, the horizontal partitions or flue-strips in the hollow sides, shorter than said hollow sides and connecting at the rear with the vertical flue-strips thereby forming two horizontal flues in sides of the base, the lower ones communicating with the central vertical flue and the upper ones with the diving-flues.

8. In a heating-stove, the combination with the fire-pot and combustion-chamber, the discharge and two diving flues at the rear of the stove, of the hollow stove-base consisting of the upper section or casting embodying the side, the lower and rear walls of the ash-pit and the depending outer walls, and the bottom section or casting coöperating with the lower outer walls of the ash-pit and with the outer depending walls of the upper section and the flue-strips or partitions between the sections forming two horizontal flues on each side of the ash-pit.

9. In a heating-stove, the combination with the fire-pot, combustion-chamber and ash-pit, of a centrally-arranged vertical discharge-flue at the rear of the stove having an opening into the combustion-chamber, a damper for closing it, two diving-flues one arranged on each side of the discharge-flue and in contact therewith and opening into the combustion-chamber at their upper ends, a pair of horizontal flues arranged in the stove-base on each side of the ash-pit but not extending below the lower wall of the latter, the members of each pair being connected at their forward ends, one of each pair of said horizontal flues connecting at its rear end only with the discharge-flue and the others connected at their rear ends with the lower ends of the diving-flues whereby when the damper is open, the entire products of combustion will pass down the diving-flues, forwardly at the sides of the ash-pit and thence to the discharge-flue.

10. In a heating-stove, the combination with the fire-pot, combustion-chamber and ash-pit, of three vertical flues arranged in the base on opposite sides of the ash-pit but not beneath the latter, and extending from rear to front and again to the rear of the stove, said horizontal flues connecting at their rear ends only with the vertical flues, whereby the products will pass downward from the combustion-chamber to and through the stove-base at both sides of the ash-pit, and thence upward to the smoke-pipe.

11. A heating-stove having a combustion-chamber and a fire-pot, the outer wall of which is exposed at the sides in combination with a base having the ash-pit the two horizontal flues therein arranged at each side of the ash-pit but not extending beneath it, said flues communicating at their forward ends, two diving-flues arranged at the rear of the stove, through which all the products of combustion pass and each communicating at its upper end with the combustion-chamber and at its lower end with one of the horizontal flues, and a vertical discharge-flue communicating at its lower end with the horizontal flues on opposite sides.

12. A heating-stove having a combustion-chamber and a fire-pot, the outer wall of which is exposed at the sides, in combination with a base having the ash-pit, two horizontal flues arranged in the base below the fire-pot and at the side of the ash-pit but not extending beneath the latter, said flues communicating at their forward ends, a diving-flue leading from the combustion-chamber to the rear end only of one horizontal flue leading from the rear end of the other horizontal flue.

The references are Martino, September 6, 1859, No. 25,365; Rand, August 14, 1866, No. 57,187; Willams, September 28, 1869, No. 95,399; Varney, March 6, 1877, No. 188,211; Richardson, February 13, 1883, No. 272,326; Hynes, September 23, 1884, No. 305,691; Magee, November 23, 1886, No. 353,033, and Stasch, January 17, 1893, No. 489,994.

The alleged invention to which the claims are drawn consists of an arrangement of flues in a stove. Some of the claims also include details in the form and arrange-

ment of plates. The flues defined in the claims are believed to be without invention in view of the general arrangement of flues in a stove shown by Patent No. 353,033, Magee, and in view of the specific form and location of horizontal flues shown by Patents No. 188,211, Varney; No. 305,691, Hynes; No. 95,399, Williams, and No. 272,326, Richardson. The plate construction included in the claims is believed to involve nothing more than mechanical skill in the design of stoves.

The decision of the Examiners-in-Chief affirming the rejection of the claims is affirmed.

LARKIN *v.* RICHARDSON.

Decided March 14, 1906.

1. INTERFERENCE—ORIGINALITY—EVIDENCE.

Upon the question of originality of invention the surrounding circumstances and the conduct of the parties at the time are more convincing as evidence than specific claims made by them long afterward, and it is essential in weighing the specific testimony to have in mind the relations of the parties to each other and to the principal facts proved or admitted in the development of the interference.

2. SAME—SAME—SAME—PRESUMPTIVE.

When the employer instructed the employee to stamp the article "Patent applied for," which he did without protest, *Held* that it was then, if at all, that the employee would naturally be expected to assert his claim of invention, and his failure to do so raises a strong presumption that the employer was the real inventor and that the present claim of the employee is a mere afterthought.

3. SAME—SAME—EMPLOYER SUGGESTING THE GENERAL PLAN IS THE INVENTOR.

Where R. suggested the main and predominating structural features of the invention and all that remained to be supplied were the details of the fastening means, *Held* that these details, if they called for anything more than the skill of the mechanic, are clearly merely ancillary features, brought about by the suggestion of the general plan or main structural features, and even in the absence of specific proof that they were suggested by R. they are to be regarded as his invention.

4. SAME—SAME—PRESUMPTION IN FAVOR OF INVENTOR OF BROAD IDEA.

Where the evidence is silent as to who suggested the specific details, the presumption is that the inventor of the broad idea also suggested the details.

APPEAL from Examiners-in-Chief.

STORAGE AND DISPLAY RECEPTACLE.

Messrs. Munday, Evarts & Adcock for Larkin.

Messrs. Offield, Towle & Linthicum for Richardson.

ALLEN, *Commissioner:*

This is an appeal by Richardson from the decision of the Examiners-in-Chief adjudging Larkin to be the prior inventor of the subject-matter of this interference. The Examiner of Interferences gave judgment in favor of Richardson.

The issue is as follows:

1. A receptacle of the class described, consisting of a sheet-metal can having a cover, and its front wall provided with oblong panel-like openings, the margins of the sheet metal surrounding said panel-openings being inturned, and sheets of material removably secured behind said openings, the upper sheet constituting a name-plate and the lower being transparent to display the contents in the bottom of said receptacle and held against the inturned margin of the metal surrounding the lower panel, substantially as described.

2. A receptacle of the class described, comprising a sheet-metal can having its front plate or side provided with two oblong panel-openings of substantially equal size and extending substantially across the front of the can, a name-plate fitted behind the upper panel-opening, the margins of the sheet along the lower panel-opening being inturned to provide a narrow ledge or bearing, and a sheet of glass removably secured behind the lower panel-opening in contact with said ledge, substantially as described.

3. A sheet-metal display can or box, comprising in combination a body having three sheet-metal sides, furnished at their upper ends with hollow, triangular strengthening bars or braces, and provided with a hollow triangular strengthening bar or brace at its front, and a sheet-metal front plate having an upper or sign opening therein, and provided with sheet-metal guides having horizontal and upright flanges soldered to said front plate to form a pocket thereon to receive a removable sign-plate, said front strengthening-bar and said front plate forming a slot between them for removal and insertion of the sign-plate, substantially as specified.

4. A sheet-metal display can or box, comprising in combination a bottom, a body, and a hinged cover, the front of the body having two openings therein, two removable plates for closing said openings, fixed guides for holding one of said plates in place, and fastening means for holding the other removable plate in place, substantially as specified.

5. A sheet-metal display can or box having a bottom, a body and a cover, the sheet-metal front of said body having two openings therein, two removable plates for closing said openings, guides for holding one of said plates in place, and a turn-button guide for holding the other plate in place, substantially as specified.

6. A sheet-metal display can or box having a bottom, a body and a cover, the sheet-metal front of said body having two openings therein, two removable plates for closing said openings, guides for holding one of said plates in place, a turn-button guide for holding the other plate in place, said turn-button guide being mounted on one of the guides for said first-mentioned plate, substantially as specified.

One and the same physical embodiment of the invention is claimed by each party as his reduction to practice, and there is in the case no question of dates to be determined. Each party claims to have originated the ideas which were embodied in the can actually built, and therefore the case turns upon the question which of the two suggested the improvements embodied in the device.

Upon a question of originality of invention as here presented the surrounding circumstances and the conduct of the parties at the time are more convincing as evidence than specific claims made by them long afterward. It is therefore essential in weighing the specific testimony to have in mind the relations of the parties to each other and to the principal facts proved or admitted in the development of the invention.

The real parties in interest here are The American Can Company, assignee of Larkin, and The National Biscuit Company, assignee of Richardson. Larkin is a workman employed by the American Can Company, and Richardson is manager of the advertising department of the National Biscuit Company. It appears that early in 1902 the National Biscuit Company, and particularly Richardson acting for them, was seeking to devise a new style of can to hold the products of the company. The old can had a single large opening in the front in which a glass plate was removably fitted, so that the contents could be seen. Above the opening the name of the company was embossed. Richardson had his draftsman, Fraser, make drawings of proposed modifications, and it clearly appears that he told Fraser he wished to have two openings substituted for the old single opening. The upper one was to receive a removable name-plate and the lower one was to receive the glass plate. Fraser made the drawings under Richardson's directions, and when they were completed Richardson instructed him to see the purchasing department about having samples made. Fraser did so and, with Barnard of the purchasing department, proceeded to the American Can Company and had an interview with Wells, who was western sales agent of the American Can Company. The drawings were shown to Wells and left with him, and it is said that Fraser made explanations as to what was desired. Wells interviewed the present claimant, Larkin, and told him what was wanted. Larkin refers to Wells in his testimony, saying:

> It was he that first suggested it to me that they (the National Biscuit Company) wanted to change their general style of can. (X-Q. 40.)

Larkin then had the workman, Branninger, make some sample cans intended to meet the wishes of the National

Biscuit Company, and those samples were forwarded to the National Biscuit Company in June or July, 1902. They included several different styles; but among them was "Richardson Original Can," which embodies the two openings and which was the construction upon which both applications here involved were drawn. It constitutes the invention which both parties are now claiming.

At a meeting of the officers of the National Biscuit Company in August, 1902, "Richardson Original Can" was adopted as the one to be used, and they were thereafter ordered and made by the American Can Company in large quantities. On November 1, 1902, Richardson filed his application here involved, and on March 30, 1903, the American Can Company was instructed to stamp the cans "Patent applied for," and they did so without protest. Larkin's application was not filed until January 14, 1904, nearly a year after his company had stamped the cans "Patent applied for" at the request of the National Biscuit Company.

These circumstances raise a very strong presumption that Richardson was the real inventor and that Larkin's present claim is a mere afterthought, brought about by some disagreement between the American Can Company and the National Biscuit Company. The presumption is such that it can be overcome only by clear and convincing proof.

On behalf of Larkin it is sought to overcome the force of these surrounding circumstances by the argument that the invention here in controversy is specific and is not broadly for a two-opening can with removable plates. It is urged that there is no evidence of a disclosure to Larkin, direct or indirect, of the particular construction embodied in the can and that there is no evidence that Richardson had any conception of that specific mechanism. It is contended that Richardson's idea related entirely to the appearance of the can, in which the name-space and transparent opening were to occupy about the same space upon the front of the can and that the American Can Company was to devise the proper mechanical construction to produce this result. It is said that the American Can Company did produce sixteen different samples, many of which did not embody this invention, and it is argued that this shows that the company was not merely producing a device embodying this invention upon the order of Richardson.

The marking of the cans "Patent applied for" is sought to be explained by calling attention to a patent granted to one Smith on June 16, 1903, (Evans, X-Q. 8,) on an application filed January 3, 1903. It does not appear, however, that the American Can Company knew of Smith's application at the time that they marked the cans, and therefore the actual existence of that application is no explanation of their silence when requested to mark their supposed invention "Patent applied for." It was then, if at all, that it would naturally be expected that they would assert their claim. It does not appear that the marking of the cans was changed when Smith's patent issued in June, 1903, and therefore they must have known then that Smith's invention was not that to which the marking referred.

The argument that the issues contain specific limitations and that there is no proof of disclosure by Richardson of those specific features at first sight seems to have force, and it was in view thereof that the Examiners-in-Chief decided in favor of Larkin.

It is true that neither Richardson nor his witnesses describe in detail the features of construction embodied in the counts of the issue, although they say that "Richardson Original Can" embodies them. The witness Fraser, however, makes it very clear that Richardson disclosed to him a two-opening can with the removable plates and that it was to secure such a can that he applied to the American Can Company. He says that enameled name-plates were ordered to be used in the cans even before the cans were made, thus showing that it was the intention and expectation that removable name-plates were to be used in them. The testimony of this witness inspires confidence. It is to be noted that he reproduced from memory many of the drawings which he gave to Wells, and after he had done so the American Can Company found the original drawings stored away in its factory and offered them in evidence.

The suggestion by Richardson that the can be made with two openings is not a mere suggestion of the appearance or design, but a suggestion of mechanical structure. When there is added to this the suggestion that the plates be removably secured behind the openings, the main and predominating structural features of the invention have been produced. All that remains is the details of the fastening means. Those details, if they call for anything more than the skill of the mechanic, are clearly merely ancillary features, brought about by the suggestion of the general plan or main structural features. Even in the absence of specific proof that they were suggested by Richardson they are to be regarded as his invention. (*Agawam Co.* v. *Jordan*, 7 Wall., 583; *Gedge* v. *Cromwell*, 98 O. G., 1486; *Milton* v. *Kingsley*, 75 O. G., 2193.)

It is particularly significant that the proofs on behalf of Larkin are as silent as to the details embodied in the counts of the issue as are the proofs for Richardson. He, like Richardson, refers to the two-opening can and the removable plates, but says nothing of the turn-button or other specific details of the fastening means. It is not apparent why he should be credited with suggesting those details any more than Richardson. He did not build the can. He merely told Branninger to build it. He does not allege that he explained the details to Branninger, but, on the contrary, his allegations of disclosure to Branninger are fully as broad and indefinite as the allegations of disclosure to his company by Richardson. In so far as appears he disclosed to Branninger merely what had been disclosed to him, and it is not clear why it should be assumed that the details which appeared in the can actually produced were suggested by him rather than Richardson. Since Richardson was undoubtedly the inventor of the broad idea of the can with the two openings with removable panels, it is more natural to believe that he suggested the details than to assume that they were suggested by one through whom his instructions were transmitted to the mechanic. There is just as much reason for assuming that Fraser or Wells, who is dead, suggested the details as for assuming that Larkin did so. No witness for either side refers specifically to the details.

The decision of the Examiners-in-Chief awarding priority of invention to Larkin is reversed, and priority of invention is awarded to Richardson.

ALLFREE *v.* SARVER.

Decided March 27, 1906.

1. INTERFERENCE—APPEALS ON MOTION—DELAY BEYOND LIMIT OF APPEAL.

A delay of three and a half months in taking an appeal from a Primary Examiner's decision holding that there was no interference in fact cannot be excused on the ground that the opposing party is a patentee and that therefore the delay will not injure him. Parties are not excused from compliance with the requirements of good practice because in their opinions opponents are not thereby injured.

2. SAME—DIFFERENT INVENTIONS OF DIFFERENT PARTIES DEFINED BY SAME CLAIM—CLAIM INDEFINITE.

Where the same language is used by different parties to define different inventions, it is an unavoidable conclusion that they have not distinguished their inventions from each other. In such cases if the inventions are in fact different and each party has a right to make the claim the language of the claim must be ambiguous or indefinite and should be amended to clearly distinguish the inventions before the issue of patents thereon.

3. SUPERVISORY AUTHORITY OF COMMISSIONER EXERCISED.

Where in an interference between a patent and an application upon the same claims the Primary Examiner has held that there is no interference in fact and the Examiners-in-Chief have held that the applicant has a right to make the claims and applicant has not appealed on the question of interference in fact, *Held* that under these circumstances the supervisory power of the Commissioner would be exercised to prevent the issue of a patent on the application without amendment to distinguish its claims from those of the patent or a determination that such amendment is unnecessary.

ON PETITION AND MOTION.

LOCOMOTIVE STEAM-ENGINE.

Mr. W. E. Schoenborn for Allfree.

Mr. Charles G. Hawley for Sarver.

ALLEN, *Commissioner:*

This case comes before me upon petition and motion by Sarver seeking to have heard and considered an appeal from the decision of the Primary Examiner granting Allfree's motion for dissolution of the interference. The petition was heard on October 12, 1905, and the motion on November 22, 1905. On January 2, 1906, decision upon these actions was suspended to await the decision of the Examiners-in-Chief upon a rehearing of an appeal to them in this case. The decision of the Examiners-in-Chief upon the rehearing has now been rendered and the case has been called up by Allfree for decision upon the present petition and motion.

The Primary Examiner held that the interference should be dissolved as to each count of the issue upon the grounds of non-interference in fact and lack of right on the part of Sarver to make the claims. Sarver appealed from this decision to the Examiners-in-Chief, who dismissed the appeal as to non-interference in fact for want of jurisdiction and affirmed the Primary Examiner as to Sarver's lack of right to make the claims except as to count 1, which count they held Sarver entitled to claim. Sarver has taken no appeal from the decision of the Examiners-in-Chief, nor did he appeal to me, within the time fixed for that purpose, from the decision of the Primary Examiner upon interference in fact. Sarver appears, therefore, to have acquiesced in the conclusion that he is not entitled to claim any of the counts of the issue except count 1, but wishes to contest as to this count the conclusion of the Primary Examiner that there is no interference in fact. The present petition and motion have been brought to secure consideration of his appeal to me upon the question of interference in fact.

The limit fixed for appeal from the decision of the Primary Examiner was May 29, 1905. The appeal was not filed until September 11, 1905. I find no good excuse for the delay. It is urged that Allfree has not been injured by the delay because he is a patentee. Parties are not excused from compliance with the requirements of good practice because in their opinions opponents are not thereby injured. It is also urged that confusion existed and still exists as to the proper course of appeal upon the question of non-interference in fact and that Sarver's appeal to the Examiners-in-Chief on this ground should be accepted as preserving his right to consideration. These contentions cannot be accepted as sufficient to justify me in entertaining the appeal. I know of no confusion in the practice at present existing as to the proper course of appeal upon the question of interference in fact. Rule 124 seems to be clear and unmistakable upon this point. It must be concluded that Sarver is not entitled to have his appeal considered. His petition and motion are accordingly denied.

I am of the opinion, however, that though Sarver has lost his right to further consideration of the question of interference in fact the circumstances of this case are such as make it my duty to consider this question upon my own motion as an exercise of the supervisory authority of the Commissioner of Patents upon matters concerning the proper issue of a patent. Allfree is a patentee, and count 1 of the issue of the interference is a claim appearing in his patent. Sarver has made this claim in his application, and the Examiners-in-Chief have held that it is rightfully made there. The Primary Examiner has found that there was no interference in fact as to this claim, and his decision has become final, unless it be set aside by an exercise of the supervisory authority. In the absence of such supervisory action the natural and expected course of events in this case will be dissolution of the interference and the issue of a patent to Sarver containing a claim identical in terms with a claim in the patent of Allfree and without a judgment that he is a prior inventor. It is self-evident that such a result is undesirable. The purpose of the claim is to define the invention of the applicant or patentee and to distinguish his invention from the inventions and devices of others. Where, however, the same language is used by different parties to define different inventions, it is an unavoidable conclusion that they have not distinguished their inventions from each other. In such cases if the inventions are in fact different and each party has a right to make the claim the language of the claim must be ambiguous or indefinite and should be amended to clearly distinguish the inventions before the issue of patents thereon.

I am of the opinion that two patents should not issue with identical claims except in those cases where such a result cannot be avoided without detriment to the rights of the parties. These exceptional cases, so far as I am now aware, are found only where after a patent has been issued to one party another party is adjudged to be the prior inventor of the matter claimed therein or where it is determined that the patentee has no right to make the claims of his patent. It has been supposed that the issue of two patents with the same claims might also be proper in those rarely-occurring cases, mentioned in *Blackmore* v. *Hall*, (119 O. G., 2524,) where identical terms as used in the claims by the different parties are considered to have distinctly different meanings in their respective applications; but it would seem from the reasoning of the preceding paragraph that two patents should not be issued with identical claims even in these rarely-occurring cases.

Since in the present case there has been no judgment of priority of invention in favor of Sarver nor any determination that Allfree is not entitled to make the claim in his patent, which is count 1 of the issue, and since the determination of the Primary Examiner that there is no interference in fact as to this count was based on no expressed conclusion that the issue is indefinite, requiring modification to clearly distinguish Sarver's invention from that of Allfree, I am of the opinion that there has been no determination by this Office justifying the issue of a patent to Sarver upon count 1 and that Sarver's application should therefore not be passed to issue until such determination has been made or until the claims thereof have been drawn to distinguish in terms and in substance from the subject-matter of the patent of Allfree. I am not disposed, however, to set the action of the Primary Examiner aside or to direct any specific action with a view to relieving the case from the improper condition in which it is believed to stand without affording the parties an opportunity to be heard. Proceedings will be suspended and a day of hearing fixed, after which I shall dispose of the case in such manner as may then seem most proper.

HOWELL *v.* HESS.

Decided March 28, 1906.

1. INTERFERENCE—PRIORITY—DILIGENCE.

Howell conceived the invention in the spring of 1900 and made a model in April, 1900, which he immediately showed to the typewriter-manufacturing company for whose use the improvement was primarily intended. He requested the company to adopt the invention, but they did not agree to do so. After this nothing was done by the inventor until December, 1900, except to call the attention of one of the company's officers during the summer of 1900 to the fact that nothing had been done with the invention. In the meantime, in September, 1900, Hess conceived the invention. *Held* that Howell was lacking in diligence.

2. SAME—SAME—REDUCTION TO PRACTICE—UNAUTHORIZED AGENT.

Where an inventor designed an improvement primarily for the use of a certain type-writer-manufacturing company and unsuccessfully negotiated with them with respect to the adoption thereof and after negotiations were broken off the company reduced the invention to practice without the inventor's knowledge or assistance, *Held* that the act of the company did not inure to the benefit of the inventor, as there was no relation between them of principal and agent, created either expressly or by implication.

3. SAME—SAME—SAME—CONSTRUCTIVE—EARLIER APPLICATION.

An applicant will not be deprived of the benefit of a prior application as a constructive reduction to practice on the ground that a device made in accordance with such application would be inoperative where the defect is clearly one that could be obviated by any mechanic.

APPEAL from Examiners-in-Chief.

TYPE-WRITING MACHINE.

Messrs. Briesen & Knauth for Howell.

Mr. Jacob Felbel for Hess.

ALLEN, *Commissioner:*

This is an appeal by Howell from a decision of the Examiners-in-Chief awarding priority of invention to Hess.

The issue is as follows:

1. In a type-writing machine, the combination of a type-bar formed with a recess therein, and a dust-shield for the bearing of said type-bar, said shield being adapted to be received within the recess in said type-bar.

2. In a front-strike type-writing machine, the combination of a type-bar segment, a series of segmentally-arranged type-bars pivoted to said segment and each provided with a recess therein, and a segmental strip that covers the pivot-bearings of said bars and is adapted to extend into the recess in each type-bar and constitutes a dust-guard to prevent the admission of dust or grit to said pivot-bearings.

3. In a type-writing machine, the combination of a pivoted type-bar, and a dust-shield to prevent the admission of dust to the pivot-bearing of the type-bar, said type-bar being formed to receive the dust-shield when the bar is in the printing position so as to enable the shield to cover the pivot-bearing and not interfere with the printing movement of the bar.

4. In a type-writing machine, the combination of a pivoted type-bar having a notch or recess, and a dust-shield which lies within said recess when the type-bar is in its printing position.

5. In a writing-machine, the combination of the platen, the type-bar segment, type-bars pivoted therein and notched or bent to form a recess in their front edges adjacent the pivots and a shield or guard located above the pivots, the front edge of which enters said recesses or notches as the type-bars approach the printing-point.

6. In a type-writing machine, the combination of a pivoted type-bar formed with a recess therein, and a dust-shield for the bearing of said type-bar located in close proximity to and partially inclosing said bearing, said shield being adapted to be received within the recess in said type-bar.

The essential feature of the construction in controversy lies in a dust-shield or dust-guard located above the pivotal points of the type-bars, whereby the fine particles resulting from erasures were prevented from falling into the slots in which the type-bars moved at these pivotal points.

The application of Hess here involved was filed June 30, 1903, as a division of a prior application filed August 28, 1901. On behalf of Howell it is claimed that this original application does not show an operative device and that Hess is therefore not entitled to the benefit of this application as a constructive reduction to practice. It is alleged that the device if constructed according to that application would be inoperative, because the dust-shield is in such a position with respect to the platen and the pivotal point of the type-bar as to prevent the type-bar from reaching the printing position without coming into contact with the dust-shield. While it appears to be true that the type-bar would be so obstructed by the dust-shield, it is believed that any mechanic could modify the construction to obviate this difficulty without exercising more than the skill of his calling. The original application is therefore held to constitute a constructive reduction to practice. Howell's application was filed December 26, 1901.

It is believed to be proved beyond question that Howell conceived the issue and embodied it in the model in evidence as "Howell's First Structure" in the spring of 1900. This does not seem to be seriously controverted. Howell does not claim that he or any one acting for him reduced the invention to actual practice until after Hess's constructive reduction to practice. It is therefore incumbent on Howell to show that he was exercising diligence in reducing the invention to practice at and before the time Hess entered the field.

Hess claims to have conceived the invention on September 14, 1900, and to have disclosed it to one Myers, a model-maker and machinist who was employed by him, within a few days or a week thereafter. At this time Hess gave Myers instructions to construct a model in accordance with his ideas, and in a few days thereafter a model substantially the same as the model in evidence as "Hess Exhibit Hess Construction" is alleged to have been produced. This model shows a key-lever mechanism including a pivoted type-bar having a recess or bend in it a short distance from its pivot and just above the pivot a flat plate designed to catch the fine particles or dust caused by erasures and prevent them from clogging the action of the type-bar. This flat plate or dust-guard was placed in various positions, (Q. 9, p. 11; Q. 48, p. 67;) but within a short time after it was first made it was inclined forwardly, as it now is, (X-Q. 115, p. 39,) and thereafter remained in this position until the present time. The testimony of Hess as to the construction of this model and the date of its construction is fully corroborated by Myers, and as there is nothing to cast discredit on their testimony these facts must be taken as established.

It is contended on behalf of Howell that this model does not show the invention for the same reasons urged against the original application as a constructive reduction to practice; but it is believed that this model, taken in connection with the disclosure of what it was designed to represent, as testified to by Hess and Myers, shows a complete conception of the invention at the date of its construction.

It is therefore necessary for Howell in order to prevail in this interference to show that he was exercising diligence in reducing his invention to practice at and before the latter part of September, 1900.

The testimony shows that Howell conceived the invention in the early spring of 1900 and made a model embodying his conception in April of this year. It appears that the desirability of a device to protect the slots of the segment of the Underwood type-writer in which the type-bars were pivoted was suggested by Stephen T. Smith, the general manager of the Underwood Typewriter Company.

Very shortly after receiving the suggestion Howell devised the model "Howell First Structure," which clearly shows the invention in issue. This model was shown by Howell to Smith and to Lee S. Burridge in the early part of April, 1900. (Folios 252, 281, and 354.) According to Howell's testimony, on the same day that he showed the model to Smith and Burridge he took it to John T. Underwood, who was the head of the Underwood Company, and left the same with him.

Howell heard nothing more of the model until some time in the summer, when it was returned to him by Mr. E. J. Manning, the factory superintendent of the Underwood Company. Shortly after this Smith returned from an extended western trip and either he asked Howell about the invention (folio 358) or Howell called Smith's attention to the fact that nothing had been done regarding the same. (Folio 263.) Smith thereupon took the model with him and upon a visit of Mr. Manning to New York showed it to him. Mr. Manning did not like the key-lever mechanism. Smith testifies that he then suggested that the dust-guard feature be adopted.

Nothing further appears to have been done about the invention until the latter part of December, 1900, (folios 359, 360, 403, 450,) when Howell received a message from Underwood stating that he wished to see him. Howell then called on Underwood, who told him that his patent solicitors had reported that the device was not patentable. (Folio 359.) Howell thought the device was patentable and immediately called upon the patent attorneys who had made the report. Howell testifies that at this interview he said that his "key-lever mechanism did infringe Mr. Felbel's patent and would therefore have to be abandoned." As to the dust-guard Howell states that Mr. Smith, the patent solicitor whom he interviewed, said that "there was not enough there to apply for a patent alone." (Folio 361.) Howell then saw Mr. Underwood, and in regard to the conversation between them at this time Howell's testimony is, in part, as follows:

> Mr. Underwood then told me that they always believed in treating inventors right who were trying to improve the Underwood machine, and asked me what I thought would be proper compensation for work I had done and the time I had spent. I told Mr. Underwood that inasmuch as my key-lever mechanism was clearly an infringement I did not think it right that I should be paid, and refused all compensation. (Folios 361, 362.)

After this Howell took the model to his home in Newark, and all negotiations were closed until November 30, 1901, when Underwood called on Howell at Burridge's office, reopened the matter, and as a consequence an agreement was entered into in which Howell agreed to assign the invention to the Wagner Typewriter Company, a company closely identified with the Underwood Company and which may be considered the same as the Underwood Company. This was three months subsequent to the date of filing of Hess's original application.

It appears from the testimony that Manning disclosed the dust-guard feature to the foreman of the factory, who endeavored to adapt the invention to the new model of type-writing machine upon which the company was then working, and as a result a segment containing the dust-guard was completed about March, 1901, along with other parts of the new machine. After this the work of getting the new machine on the market was actively proceeded with, the first of the new machines, which is in evidence as "Underwood No. 5 Machine, Model N," being completed about November 1, 1901.

From this testimony it appears that the only thing which Howell did in connection with the invention between the time that he showed his model to Smith, Burridge, and Underwood in April, 1900, and the latter part of December, 1900, was to call Smith's attention to the fact, in the summer of 1900, that nothing had been done in regard to the invention and authorize him to again show it to his company. In the meantime Hess conceived the invention—September, 1900—as shown in his model "Hess Exhibit Hess Construction." It appears, therefore, that at the time Hess conceived the invention Howell was doing absolutely nothing and had done nothing for several months previous thereto. In fact, the only act done within the five months previous thereto, as above stated, was to call the attention of Smith to the fact that nothing had been done with the invention, and from Howell's own testimony it appears that as to this matter Smith and not Howell took the initiative. (Folio 358.) Howell did not at any time take any steps to reduce the invention to actual practice or to file an application. It is true that he had an interview with the Underwood Company's attorneys in the latter part of December, 1900, after they had made a report to the company on the patentability of the invention; but this action was not done at his request or with his knowledge, and he can scarcely claim this act as exhibiting diligence on his part; but even assuming that he could claim this act as his own the action was not taken until after Hess had entered the field and is therefore of no avail.

The Examiner of Interferences and Examiners-in-Chief did not deem it necessary to decide whether or not Hess had proved a conception of the invention at the time claimed, as they were of the opinion that whatever diligence Howell may have exercised his efforts ceased entirely in 1900 and that the acts of the Underwood Company subsequent to that time could not inure to his benefit, as the relation between them of principal and agent was not established. This view of the case is believed to be correct. After the negotiations between Howell and the Underwood Company ceased in December, 1900, the latter began the construction of a new model machine and incorporated therein the invention in controversy. This work was diligently carried on until the machine was completed about November 1, 1901; but the evidence appears to show clearly that Howell did not expressly authorize them to do this work, nor is there anything to show an implied authorization. It appears from the testimony that Howell was not consulted in any way during the progress of the work of the Underwood Company, nor did he even know what they were doing. His own testimony shows that after his last interview with them he had given up the idea that they would purchase his invention, and there is nothing to show that he did anything whatever with the invention after this time. Under these circumstances it is believed that Howell is not entitled under the law to an award of priority.

The decision of the Examiners-in-Chief awarding priority to Hess is affirmed.

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

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Trade-Marks	279—No.	53,945 to No.	54,223, inclusive.
Labels	9—No.	12,937 to No.	12,945, inclusive.
Prints	8—No.	1,700 to No.	1,707, inclusive.
Reissues	None.		
Total issue	900		

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama	7	2	Nevada	1	.....
Alaska, District of	1	.....	New Hampshire	2	.....
Arizona Territory	1	.....	New Jersey	29	15
Arkansas	3	.....	New Mexico Ter't'y	1	.....
California	19	5	New York	76	76
Colorado	6	.....	North Carolina	.....	1
Connecticut	16	9	North Dakota	.....	.....
Delaware	1	1	Ohio	44	12
District of Columbia	4	1	Oklahoma Territ'y	5	.....
Florida	.....	1	Oregon	4	2
Georgia	4	2	Pennsylvania	52	27
Hawaii Territory	1	.....	Philippine Islands	.....	.....
Idaho	.....	.....	Rhode Island	15	4
Illinois	64	31	South Carolina	1	.....
Indian Territory	1	.....	South Dakota	1	.....
Indiana	18	2	Tennessee	4	7
Iowa	6	.....	Texas	6	1
Kansas	8	2	Utah	4	.....
Kentucky	6	2	Vermont	.....	.....
Louisiana	5	2	Virginia	5	4
Maine	2	10	Washington	6	3
Maryland	4	4	West Virginia	3	.....
Massachusetts	30	30	Wisconsin	12	2
Michigan	17	3	Wyoming	.....	.....
Minnesota	8	10	U. S. Army	.....	.....
Mississippi	2	1	U. S. Navy	.....	.....
Missouri	25	11			
Montana	2	1	Total to citizens of the United States	537	284
Nebraska	5	.....			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina	.....	.....	Netherlands	.....	.....
Austria-Hungary	1	2	Newfoundland	.....	.....
Belgium	2	.....	New South Wales	.....	.....
Brazil	.....	.....	New Zealand	2	.....
British West Indies	1	.....	Norway	.....	.....
Canada	6	.....	Portugal	.....	.....
Cape Colony	.....	.....	Queensland	.....	.....
Chile	.....	.....	Roumania	.....	.....
China	.....	.....	Russia	.....	.....
Costa Rica	.....	.....	San Salvador	.....	.....
Cuba	.....	.....	Scotland	7	.....
Denmark	.....	.....	Spain	.....	.....
Ecuador	.....	.....	Sweden	1	.....
England	16	5	Switzerland	3	.....
France	5	2	Tasmania	1	.....
Germany	16	3	Transvaal, South Africa	.....	.....
India	.....	.....	Victoria	2	.....
Ireland	3	.....	Western Australia	1	.....
Italy	.....	.....			
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Notice.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., June 16, 1906.

Such hearings of appeals and petitions to the Commissioner of Patents will be given during July and August as are rendered necessary by the number of such appeals and petitions.

F. I. ALLEN,
Commissioner.

Interference Notice.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., June 8, 1906.

Straus, Glaser & Company, their assigns or legal representatives, take notice:

An interference having been declared by this Office between the application of I. L. Pearl & Company, of Johnson, Vt., for registration of a trade-mark and a trade-mark registered to Straus, Glaser & Company, of 248 and 250 Monroe street, Chicago, Ill., and the notice of said declaration mailed by the Patent Office in the usual manner to the said Straus, Glaser & Company having been returned undelivered, notice is hereby given to the said Straus, Glaser & Company, their assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents, in order that the notices of declaration heretofore sent by and returned to the Office may be forwarded to them.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN,
Commissioner.

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business June 12, 1906.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
	In arrears—Under fifteen days.			
308	XV. Bread, Pastry, and Confections, Making, Coating, Laminated Sheets and Fabrics, Fuel, Glass, Hydraulic Lime and Cement, Paper-Making, Paving, and Plastics.	June 1	Apr. 2	464
322	XXXVI. Curtains, Shades, and Screens, Drafting, Driers, Measuring Instruments, and Wind-Wheels.	May 31	May 14	242
304	XXXIV. Railways, Railway-Brakes, Rolling-Stock.	May 29	Apr. 9	353
303	XVII. Linotyping, Printing, Matrix-Making, Nut and Bolt Locks.	May 29	Mar. 27	296
244	XXXV. Baggage, Buckles, Buttons, and Clasps, Card, Picture, and Sign Exhibiting, Deposit and Collection Receptacles, Package and Article Carriers, Packing and Storing Vessels, Photography.	May 29	Mar. 15	727
148	XXXII. Carbonating Beverages, Dispensing Beverages, Dispensing-Cans, Metallic Shipping and Storing Vessels, Packaging Liquids, Paper Receptacles, Refrigeration, Wooden Receptacles.	May 29	Jan. 27	675
378	XXXVIII. Artesian and Oil Wells, Bottles and Jars, Care of Live Stock, Fishing and Trapping, Stationery, Stone-Working.	May 28	Apr. 24	324
154	XI. Boot and Shoe Making, Boots, Shoes, and Leggings, Button, Eyelet, and Rivet Setting, Leather Manufacturing, Nailing and Stapling, Check-Controlled Apparatus, Whips and Whip Apparatus.	May 28	Mar. 1	364
332	X. Carriages and Wagons	May 28	Jan. 2	1068
330	XIII. Arms, Projectiles, and Explosive Charges, Making, Metal-Working, Needle and Pin Making.	May 28	Nov. 18	626
179	XX. Artificial Limbs, Builders' Hardware, Dentistry, Locks and Latches, Safes, Undertaking.	May 28	Sept. 28	544
	Under one month.			
172	XXXI. Alcohol, Charcoal and Coke, Distillation, Gas, Heating and Illuminating, Hides, Skins, and Leather, Liquid Coating Compositions, Oils, Fats, and Glue, Water Purification.	May 25	Apr. 16	259
107	XXXVII. Electricity, Conductors, Lighting, Special Apparatus.	May 25	Sept. 27	853
128	II. Bee Culture, Dairy, Label-Affixers, Paper Files and Binders, Presses, Store-Service, Tobacco, etc.	May 24	Mar. 6	323
321	I. Tillage, etc., Fences, and Railway Draft Appliances.	May 23	May 7	223
133	XXII. Air-Guns, Ammunition and Explosive Devices, Boats and Buoys, Catapults and Targets, Firearms, Marine Propulsion, Ordnance, Ships.	May 22	Jan. 3	326
379	XXIII. Acoustics, Coin-Handling, Horology, Recorders, Registers, Optics, Signals, Time Controlling Mechanism.	May 21	Dec. 7	794
327	XVIII. Steam-Engineering, etc	May 19	Feb. 7	432
312	VII. Velocipedes, Clutches, Fire-Escapes, Games and Toys, Ladders, Mechanical Motors, and Paper Manufactures.	May 19	Dec. 15	482
122	XIX. Stoves and Furnaces and Steam-Boiler Furnaces.	May 18	Nov. 25	716
152	XXX. Fluid-Pressure Regulators, Lamps and Gas-Fittings, Type-Writing Machines.	May 17	Nov. 10	683
318	VI. Bleaching and Dyeing, Chemicals, Explosives, Fertilizers, Medicines, Preserving, Sugar and Salt.	May 16	Feb. 16	423

Applications Under Examination—Continued.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
105	XXVI. Electricity, Generation, Electric Heaters, Electric Railways, Motive Power.	May 14	Oct. 19	713
164	XXXIII. Canes, Canopies, Cutlery, Domestic Cooking Vessels, Electricity, Medical and Surgical, Electric Signaling, Fireproof Buildings, Harness, Masonry, Tents, and Umbrellas.	May 12	Jan. 6	729
	Between one and two months.			
175	III. Annealing and Tempering, Coating with Metal, Electrochemistry, Metal-Founding, Metallurgy, Shaping Fluid Metal.	May 11	Apr. 14	346
324	XII. Elevators, Journal-Boxes, Lubricators, Machine Elements, Pulleys and Shafting.	May 11	Apr. 5	486
147	XXIX. Coopering, Roofs, Wheelwright-Machines, Wooden Buildings, Wood-Sawing, Wood-Turning, Woodworking-Tools.	May 11	Jan. 13	519
144	XXIV. Apparel, Apparel Apparatus, Sewing-Machines, Surgery, Toilet.	May 4	Jan. 11	588
307	XIV. Cutting and Punching Sheets and Bars, Farriery, Metal-Bending, Metal-Ornamenting, Metal Personal Wear, Making, Sheet-Metal Ware, Making, Tools, Wire-Working.	May 3	Jan. 16	397
109	XVI. Telegraphy and Telephony	Apr. 30	Mar. 10	423
142	IX. Baths and Closets, Fire-Extinguishers, Hydraulic Motors, Pumps, Sewerage, and Water Distribution.	Apr. 30	Oct. 2	1208
232	IV. Bridges, Conveyers, Cranes and Derricks, Excavating, Hoisting, Hydraulic Engineering, Loading and Unloading, and Towers.	Apr. 26	May 2	437
375	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, Washing Apparatus.	Apr. 20	Nov. 6	853
167	V. Fine Arts, Bookbinding, Harvesters, Jewelry, and Music.	Apr. 19	Feb. 19	499
	Between two and three months.			
315	XXV. Butchering, Mills, Threshing, and Vegetable Cutters and Crushers.	Apr. 10	Jan. 4	605
382	XXVIII. Air and Gas Engines, Air and Gas Pumps, Pneumatics.	Apr. 5	Aug. 19	1266
137	VIII. Beds, Chairs, Furniture, Kitchen and Table Articles, Store Furniture.	Mar. 29	Feb. 15	642
112	XXI. Textiles, Carding, Knitting, Spinning, Weaving, etc.	Mar. 21	Oct. 2	748

Total number of applications awaiting action 21,656

Room No.		Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
159	TRADE-MARKS, DESIGNS, LABELS AND PRINTS.			
	Under fifteen days.			
	Trade-Marks	June 4	Mar. 10	1732
	Designs	June 8	May 17	57
	Labels and Prints	June 6	June 5	15

Attorneys.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., June 14, 1906.

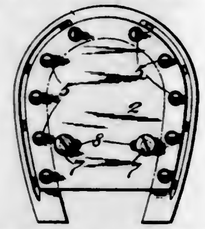
This Office has been advised by the Secretary of the Interior of the disbarment of the following attorneys from practice before the Department or any Bureau thereof: Martin Aronsohn, San Francisco, Cal., June 12, 1906; Eli H. Luttman, Corunna, Ind., April 25, 1906.

W. W. MORTIMER,
Acting Chief Clerk.

PATENTS

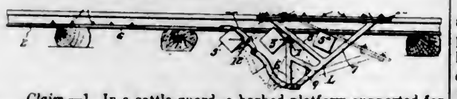
GRANTED JUNE 19, 1906.

823,497. **ANTISLIPPING DEVICE FOR HORSESHOES.** LOUIS ALARME, New York, N. Y. Filed Apr. 2, 1904. Serial No. 201,250.



Claim.—An improved antislipping device for horseshoes, comprising the plate 2 adapted to fit against the under side of a horseshoe and conforming in contour thereto, the lip 3 projecting upwardly and forwardly at the front end of the plate and adapted to engage over the top surface of the horseshoe at its front, the series of prongs 5 extending around the edge of the plate and projecting downwardly from the bottom surface thereof, the guides 4 4 projecting in parallel position from the top surface of the plate and extending transversely adjacent to the rear end of the plate, the elongated slots 8 in the plate between said guides, the blocks 6 slidable upon the top surface of the plate between said guides and having the lip 10 adapted to engage over the top surface of the horseshoe near its rear ends, and the securing-screws projecting upwardly through the said slots 8 into the blocks 6 which are slidably maintained and guided between the transverse guides 4, substantially as set forth.

823,498. **CATTLE-GUARD FOR RAILROADS.** IRVING J. BALL, Brock, Nebr. Filed Nov. 7, 1905. Serial No. 286,235.



Claim.—1. In a cattle-guard, a barbed platform supported for movement in a vertical arc, a supporting-shaft, a supporting-timber, and spikes engaging said timber and having perforated heads supporting the shaft.

2. In a cattle-guard, a supporting-timber, a plate or platform movable in a vertical arc, and a lever pivotally connected with the supporting-timber and having divergent arms terminating in bracket members supporting said plate or platform.

3. In a cattle-guard, a lever having a depending arm and divergent platform-supporting arms, a gate-supporting lever, and a link connecting the gate-supporting lever with the depending arm of the platform-supporting lever.

4. In a cattle-guard, a lever having divergent platform-supporting arms, and a supporting-timber disposed between said platform-supporting arms.

5. In a cattle-guard, a supporting-lever having divergent arms, a platform supported upon said arms, and a supporting-timber extending between said arms and platform to engage and support the latter when depressed.

6. In a cattle-guard, levers having depending arms and divergent platform-supporting arms, auxiliary levers supported at a distance from the platform-supporting levers, a gate member connected rigidly with the auxiliary levers, and connecting means between the gate-carrying levers and the platform-supporting levers whereby pressure upon the free inner end of the platform shall serve to elevate the free outer end or edge of the gate.

7. A platform supported to move in a vertical arc, a gate supported to move in a vertical arc, supporting means for the platform including divergent arms, a timber disposed between said platform and divergent arms to limit the downward movement of the platform, supporting means for the gate, and connections between the supporting means, the platform and the gate whereby downward pressure upon the free end of the platform will serve to elevate the free end of the gate.

8. A lever supported to swing in a vertical plane and having divergent arms, a platform supported upon said arms, and a timber supported between said arms and platform, said timber being tilted to present a flat side to support the platform when the latter is depressed.

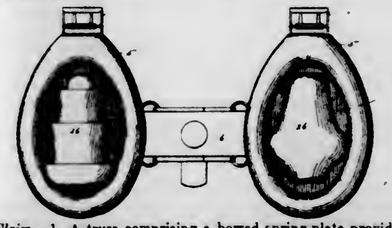
823,499. **SURGICAL APPLIANCE.** ASHBEL P. BARLOW, St. Joseph, Mich., assignor to Peter G. Kniebes, Benton Harbor, Mich. Filed Apr. 14, 1905. Serial No. 255,832.



Claim.—1. A device of the character described comprising a body provided with holes therein, a core extending through the body and bored throughout its length, a bolt arranged in said core, a pad, and means on the bolt for clamping the pad against the upper end of the body.

2. A device of the character described comprising a body open at its upper end and having a conical head and a cylindrical neck provided with holes, a core within the body bored throughout its length, a bolt in said bore having its head arranged at the apex of the conical head and its other end screw-threaded and projecting above the body, a pad on the bolt at the upper end of the body, a plug on the bolt above the body, a nut on the bolt for bearing on the plug to clamp the pad against the body, and a cork within the body at the upper end thereof.

823,500. **TRUSS.** ASHBEL P. BARLOW, St. Joseph, Mich., assignor to Peter G. Kniebes, Benton Harbor, Mich. Filed June 1, 1905. Serial No. 263,359.

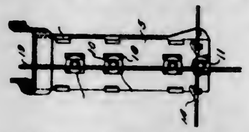


Claim.—1. A truss comprising a bowed spring-plate provided at each end with a series of openings disposed longitudinally of the plate, a truss-pad carried by the plate at its ends, said pad comprising a disk, a bulb, a bead on the disk surrounding the bulb, a screw-bolt screwed through the back of the disk and into the bulb, said screw-bolt being arranged in one of the openings in the plate, and a nut and

a lock-nut on the bolt to fasten the pad, the bolt and the plate together.

2. A truss comprising a bowed spring-plate provided at each end with a series of openings disposed longitudinally of the plate, a truss-pad carried by the plate at its ends, and comprising a disk and a bulb, a screw-bolt passing through the disk and screwed into the bulb, said bolt being arranged in one of the openings in the plate, a nut and a lock-nut on the bolt to fasten the pad, the bolt and the plate together, an adjusting-screw passing angularly through an opening in the plate at one side of said screw and bearing upon the back of said disk, and a nut arranged on said bolt between the bulb and the plate, substantially as described.

823,501. **SECURER FOR GATES AND DOORS.** JOHN W. BEALL, Chicago, Ill. Filed Mar. 19, 1906. Serial No. 306,882.



Claim.—1. A gate-securer comprising a plate, a brace hinged to said plate on a horizontal axis, a spring-clip mounted on said plate and adapted to retain the brace in a lifted positon, and a shoulder on the under side of said plate and adapted to engage the lower edge of a cross-bar on the gate for resisting the upward thrust of the brace when the same is in a downwardly-inclined position.

2. A gate-securer comprising a plate provided with means for securing the same to a cross-bar of a gate, a second plate hinged to the first and having on one face an end lug and a pair of side lugs, a brace secured to the said second plate and fitting between said side lugs and having a shoulder bearing against said end lug, and said first plate having thereon a lug adapted for engaging the lower edge of said cross-bar.

3. A gate-securer comprising a plate and a brace pivotally mounted on said plate, said plate having therethrough an aperture adapted to receive a bolt for securing the plate to the gate, lugs on the rear face of said plate at opposite sides of said aperture and spaced apart to permit a wire to be passed between the bolt and one of said lugs, shoulders on the rear face of said plate adapted to engage a horizontal wire for supporting the plate, and a bolt-hole located between said shoulders and the lower end of the plate for receiving a bolt adapted to prevent the wire from shifting out of engagement with said shoulder.

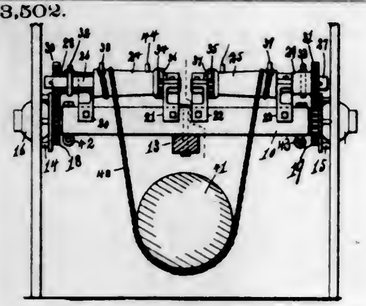
4. A gate-securer comprising a plate provided with bolt-holes for securing the same to a gate, a brace hinged to said plate and adapted to depend therefrom in an inclined position for propping the gate, a rearwardly-exteuding shoulder near the lower part of said plate having its upper face adapted for engaging the lower edge of a cross-bar as in a wooden gate and having its lower face in the form of a hook and adapted to engage a horizontal wire as in a wire-fence gate, said plate having on its rear face lugs located at opposite sides of said bolt-holes and spaced therefrom and adapted to confine a vertically-extending wire between said lugs and the bolts, bolts arranged to bear across said lugs for securing said plate against such vertical wire, and said plate having also a bolt-hole and lugs located below the hooked face of said shoulder, substantially as described.

5. A gate-securer comprising a plate, having on one face a bearing-surface adapted to fit against a flat surface, a brace hinged at one end to said plate, bolt-holes in said plate, bolts extending through said holes, the face of said plate being depressed from the bearing-surface at the sides of said bolt-holes to permit a wire to be confined between the plate and bolts in the manner described.

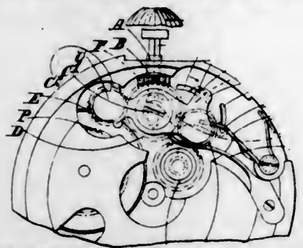
823,502. **LOG-HOIST.** WADE BEARRY, Escatawpa, Ala. Filed Aug. 26, 1905. Serial No. 275,941.

Claim.—In a device of the class described, an axle having bearing-wheels journaled thereon, gear-wheels attached to the hubs of said bearing-wheels, drums spaced apart and mounted for rotation upon said axle and with spindles extending from one end, ratchet-wheels connected to said drums, stop-pawls engaging said ratchet-wheels, sleeves rotative upon said spindles and having gears in constant engagement with the gears on said hubs, said sleeves and spindles having transversely-alined apertures, and pins for detachably engaging said apertures and locking the sleeves to the spindles, and a chain for detachably coupling to said drums.

823,502.



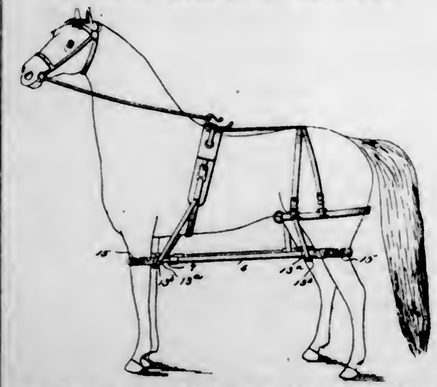
823,503. **STEM-WINDING WATCH.** NUMA BÉGUELIN, Solothurn, Switzerland. Filed Sept. 16, 1904. Serial No. 224,704.



Claim.—1. A winding and hand-setting mechanism for watches comprising a longitudinally-movable operating-stem, a pinion rotatable by the said stem, a series of gear-wheels driven by the said pinion, a pivoted lever carrying said gear-wheels, spring-winding mechanism and hand-setting mechanism adapted to be engaged respectively by said gearing in accordance with the position of the said lever, a second pivoted lever actuated by said operating-stem, two projections on said lever, one of which is adapted to engage the side of the first lever, a spring acting upon the other projection and a second spring acting in the opposite direction against the side of the said first lever: substantially as set forth.

2. In a winding and hand-setting mechanism for watches a longitudinally-movable operating-stem, a sleeve therefor, a pinion fast on said sleeve, a yoke, three gear-wheels on said yoke, the central one of which is in constant engagement with the said pinion and with the two outer gear-wheels, in combination with a pivoted plate H, two projections thereon, two pins thereon adapted to effect the pivotal movement of the yoke and the two springs G and J arranged substantially as and for the purpose specified.

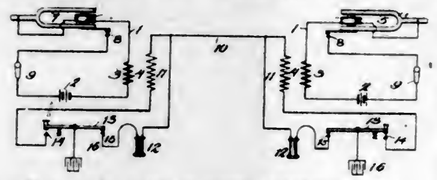
823,504. **PACING DEVICE FOR HORSES.** MICHAEL T. BRANSFIELD, Chicago, Ill. Filed Aug. 23, 1905. Serial No. 276,053.



Claim.—1. A device of the kind stated comprising telescopic tubes with a spring therebetween, arranged to cushion the movement of the respective tubes and having leg-straps at the outer ends of the tubes.

2. A pacing device for horses, comprising telescopic tubes having leg-straps at their outer ends, a bolt within the tubes having heads which fit snugly therein, and springs coiled around the bolt, between the tubes, to cushion the telescoping action thereof.

823,505. **ELECTRIC SYSTEM OF TRANSMISSION.** CHARLES G. BURKE, Brooklyn, N. Y., assignor of one-half to John Q. A. Whittemore, Boston, Mass. Filed Dec. 9, 1902. Serial No. 134,545.



Claim.—1. In a signaling system the combination of a main line, a receiving apparatus, a means for constantly charging the main line, and a capacity body for causing the charging means to affect the receiving apparatus when signals are sent over the line.

2. In an electric system the combination of a main line, a transmitting means for constantly charging the said main line, a receiving apparatus and means for bringing into operative connection with the line either the transmitting means for operatively affecting the main line when signals are set over the line or for connecting the receiving apparatus to the main line.

3. In an electric system the combination of a main line, a transmitting means for constantly charging the said main line, a receiving apparatus, a means for causing the said transmitting means to operatively affect the said main line and for permitting the receiving apparatus to be operatively affected by charges on the line when signals are sent.

4. In a signaling system the combination of a main line, means for constantly charging the said main line, receiving apparatuses located at different points along the said main line, and means for causing the said charging means to affect one of the said receiving apparatuses and to permit another of the said receiving apparatuses to be affected when signals are sent.

5. In an electric system the combination of a main line, a transmitting means and a receiving apparatus connected to the main line, a capacity body, and means for connecting the said capacity body with the said transmitting means or the said receiving apparatus and thereby connecting the said transmitting means or the said receiving apparatus in series with the said capacity body.

6. In an electric system the combination of a main line, means for constantly charging the said main line, a receiving apparatus, a capacity body, and means for connecting the capacity body to the main line either through the charging means or the receiving apparatus.

7. In an electric system the combination of a main line, means for constantly charging the line with pulsating charges, a receiving apparatus, a capacity body, a means for connecting the said capacity body with the said charging means and thereby affecting the said receiving means during the period that the capacity body is so connected.

8. In an electric system the combination of a main line, a transmitting means for constantly charging the said main line, a plurality of receiving devices, a capacity body, and means for connecting the said capacity body with the said transmitting means so as to affect the said receiving devices when signals are to be sent.

9. In an electric system the combination of a main line, a telephone transmitter and receiver, a means for constantly charging the said main line, a switch adapted to connect either the said telephone-transmitter or the said charging means in a local circuit, a capactiy body, and means for connecting the said capacity body to the said main line either through the said charging means or through the said receiver.

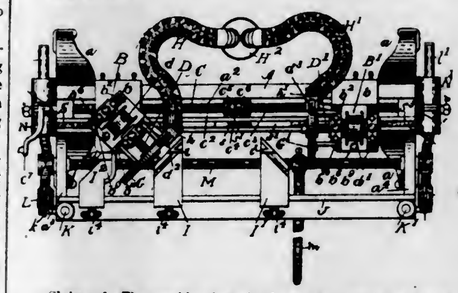
10. In an electric system the combination of a main line, a transmitting means, a receiving apparatus, a condenser, an earth connection, and means for bringing the said transmitting means or the said receiving apparatus into connection either with the said earth connection or the said capacity body.

11. In a signaling system the combination of a main line, a local circuit, a primary coil, a means connected in the said local circuit for producing a pulsating current, a secondary coil and a receiver connected to the said main line, a capacity body normally connected to the said receiver for permitting the receiver to be affected by charges in the said main line and a key for connecting the said capacity body with the said secondary coil and disconnecting the said capacity body from the said receiver.

12. In an electric system the combination of a single ungrounded main line, a telephone transmitter and receiver, a signaling means, a capacity body, and means for connecting either the said receiving means or the said signaling means with the said main line.

13. In an electric system the combination of a main line, a receiving apparatus and a means for charging the said main line, the said receiving apparatus and the said charging means being connected to the said main line, a capacity body and a key normally connecting the said capacity body to the said main line through the receiving apparatus and adapted to break the connection of the capacity body to the receiving apparatus and to connect the said capacity body to the main line through the said charging means.

823,506. **MITERING AND BEVELING MACHINE.** ALBERT CADORETTE and LOUIS LAFLAMME, Lowell, Mass. Filed Sept. 8, 1904. Serial No. 223,747.



Claim.—1. The combination of a frame, two heads, two saws, each carried by one of said heads, means for moving said heads simultaneously in opposite directions, equal distances, means for holding said saws at angles to each other and one of said saws at an inclination to the direction of movement of said heads, a scale-piece movable longitudinally on said frame and bearing two scales, a fixed point on said frame arranged and adapted to indicate on one of said scales the width of the stock and the other scale indicating the length of the longest side of said stock when cut in terms of the position of one head.

2. The combination of a frame, two heads, two saws, each carried by one of said heads, means for moving said heads simultaneously, equal distances, in opposite directions, means for holding said saws at angles of forty-five degrees with the direction of movement of said head and at an angle of ninety degrees with each other, an index fixed on said frame and a scale-piece movable longitudinally on said frame and bearing two scales, arranged and adapted, one coöperating with said index to indicate the width of the stock to be cut and the other indicating the length of the longest side of said stock when cut by said saws in terms of the position of one head.

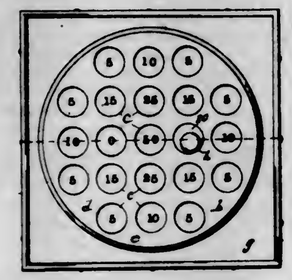
3. The combination of a frame, two heads, two saws, each carried by one of said heads, means of moving said heads simultaneously, equal distances in opposite directions, means for holding said saws at angles of forty-five degrees with the direction of movement of said head and at an angle of ninety degrees with each other, stop-gages arranged with their stop-surfaces parallel with the direction of movement of said head, an index fixed on said frame, a scale-piece movable longitudinally on said frame and bearing two scales, one of which in terms of the position of one head indicates the distance apart of said saws on a line parallel with said stop-surfaces and at a distance from said surfaces indicated by the other of said scales and said index.

823,507. **GAME-BOARD.** ROBERT T. CARR, Detroit, Mich. Filed Apr. 24, 1905. Serial No. 257,089.

Claim.—1. A game-board comprising a base provided with a series of pockets upon the upper surface thereof, molding surrounding the edge of the base, and a covering of fabric, located upon the upper surface of the base about said pockets.

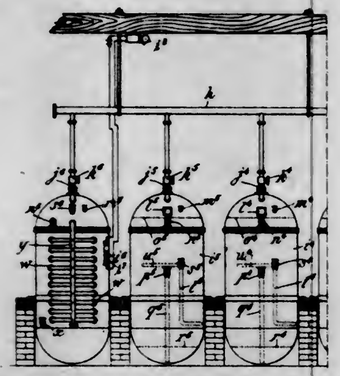
2. A game-board having a base, and a disk mounted thereupon

formed with a series of pockets extending therethrough, a molding about the edge of the base, a fabric at the base of the pockets, a fabric upon the upper surface of the disk, and a fabric upon the base about the periphery of the disk, the base forming the base of said pockets, and a receptacle about said disk.



823,508. APPARATUS FOR THE EXTRACTION OF TANNIN.

LOUIS CASTEYS, Dax, France. Filed Sept. 12, 1904. Serial No. 224,163.



Claim.—1. An apparatus for the extraction of tannin under the action of cold and *in vacuo*, comprising a series of receptacles each provided with a removable cover; two trunnions; two cocks enabling them to be placed in communication with the other receptacles; a descending tube fitted to one of these cocks, two tubes bent horizontally in opposite directions and fitted to the other of the cocks: an air-admission cock, and with a branch tube from a common conduit adapted to be connected with an air-pump; a clarifying-receptacle in communication with the above-named vacuum-conduit, and capable of connection with the last extraction vessel, and provided with an air-admission cock and a means of refrigerating or cooling.

2. An apparatus for the extraction of tannin under the action of cold and *in vacuo*, comprising a series of receptacles each provided with a removable cover; two trunnions; two cocks enabling them to be placed in communication with the other receptacles; a descending tube fitted to one of these cocks; two tubes bent horizontally in opposite directions and fitted to the other of the cocks; an air-admission cock, and with a branch tube from a common conduit adapted to be connected with an air-pump; a clarifying-receptacle in communication with the above-named vacuum-conduit, and capable of connection with the last extraction vessel, and provided with an air-admission cock and means of refrigerating or cooling; a receptacle situated in the course of said vacuum-conduit and serving to receive the froths or foams containing tannin.

3. An apparatus for the extraction of tannin under the action of cold and *in vacuo*, comprising a series of receptacles each provided with a removable cover; two trunnions; upper and lower perforated false bottoms, two cocks enabling each receptacle to be placed in communication with the others; a descending tube fitted to one of said cocks; two tubes bent horizontally in opposite directions and fitted to the other of the cocks; an air-admission cock, and with a branch tube from a common conduit adapted to be connected with an air-pump; a clarifying-receptacle in communication with the above-named vacuum-conduit, and capable of connection with the last extraction vessel, and provided with an air-admission cock and a means of refrigerating or cooling.

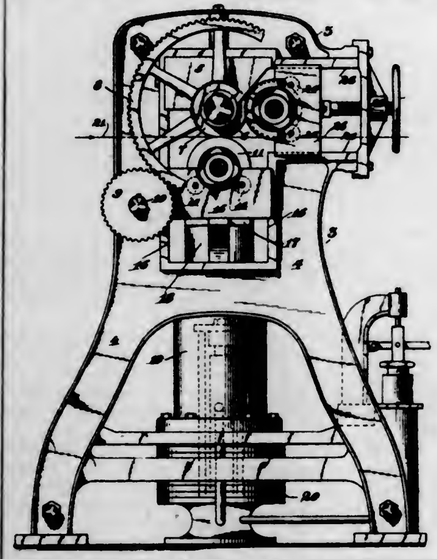
4. An apparatus for the extraction of tannin under the action of cold and *in vacuo*, comprising a series of receptacles each provided with a removable cover; two trunnions; two cocks enabling them to be placed in communication with the other receptacles; a descending tube fitted to one of these cocks; two tubes bent horizontally in opposite directions and fitted to the other of the cocks; an air-admission cock, and with a branch tube from a common conduit adapted to be connected with an air-pump; a clarifying-receptacle in communication with the above-named vacuum-conduit, and capable of connection with the last extraction vessel and provided with an air-admission cock and a set or cluster of tubes subjected to the action of a vacuum and in which adjustable cocks permit of the entrance of atmospheric air which dilates therein.

5. An apparatus for the extraction of tannin comprising a series of receptacles adapted to hold a quantity of material to be treated, a vacuum-conduit communicating with said receptacles, means for introducing a quantity of liquid into one of said receptacles, means for transferring said liquid from said receptacle directly into another receptacle, means for agitating the material in the receptacle, means for cooling the liquid after agitation, and a receptacle for receiving the cooled liquid

6. An apparatus for the extraction of tannin comprising a series of receptacles adapted to hold a quantity of material to be treated, a vacuum-conduit, means connecting each receptacle with said conduit, cocks for establishing communication between the receptacles, a tube descending from one cock, pipes branching from the other cock, a clarifying apparatus in communication with the vacuum-conduit, and a refrigerating-receptacle adapted to communicate with the aforesaid receptacles and the vacuum-conduit.

823,509. MACHINE FOR MAKING WATERED SILK.

JOHN J. CAVAGNARO, New York, N. Y. Filed Nov. 28, 1905. Serial No. 289,412



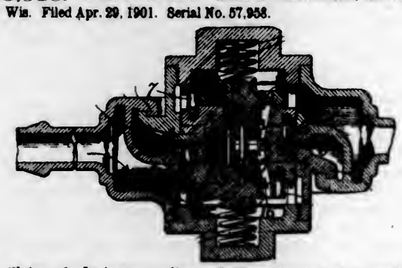
Claim.—1. In a machine for making watered silk, the combination with the frame, the impression-roll and means for rotating the same, of rotatable forming and re-forming rolls having ribs thereon, and means for pressing the forming and re-forming rolls against the impression-roll independently of each other and in different planes.

2. In a machine for making watered silk, the combination with the frame, the impression-roll and means for rotating the same, of a rotatable forming-roll having ribs thereon, and means for pressing the same yieldingly against the impression-roll in one plane, a rotatable re-forming-roll having ribs corresponding to those on the forming-roll, and means for pressing the re-forming-roll adjustably against the impression-roll in a plane different from that of the forming-roll.

3. In a machine for making watered silk, the combination with the frame, the impression-roll and means for rotating the same, of a rotatable forming-roll having movable bearings, a hydraulic press for pressing the forming-roll upward against the under side of the impression-roll a rotatable re-forming-roll, having movable bearings, the forming and re-forming rolls having ribs thereon, and means for adjusting the bearings of the re-forming-roll against the side of the impression-roll.

823,510. HOSE-COUPLING.

NIELS A. CHRISTENSEN, Milwaukee, Wis. Filed Apr. 29, 1901. Serial No. 57,956.



Claim.—1. In hose-couplings, the combination of a coupling-head having a lug and also a flange which is provided with a notch in its edge, said notch being arranged to permit the lug of a similar coupling-head to pass through in the coupling and uncoupling operation.

2. In hose-couplings, the combination of heads each having a pair of lugs and a notch to receive one of the lugs of a similar head coupled thereto and valves in said heads operated by the relative movements of the heads in the coupling and uncoupling operations.

3. In hose-couplings, the combination of heads each having a pair of lugs 18 and a notch 19 to receive one of the lugs of a similar head coupled thereto, said notch and said received lug corresponding accurately to make a single and definite angle between two heads in the coupling and uncoupling operations, and valves in said heads operated by the relative movements of the heads and adapted to be closed just prior to the time said angle is attained.

4. In a hose-coupling, the combination with the head, of a valve-seat therein having a port or passage, a valve movable thereon and having a port adapted to register with the port in the valve-seat, means for rotating or moving said valve when the head is coupled to or uncoupled from a similar head, means for preventing disengagement of the heads until the valves are closed comprising the flange 20 having a notch 19 near one end of the flange but leaving a portion 20*, and projecting lugs 18 and 18* which are separated a distance equal to the width of the portion 20*, the lug 18* of a companion head being adapted to pass through the notch 19.

5. In a hose-coupling the combination with a head of a valve-seat therein having a port or passage, a valve movable thereon and having a port adapted to register with the port in the valve-seat, means for stopping the valve movement when said ports are in register, means for automatically moving said valve in the coupling and uncoupling operations, and means for compelling a lateral movement of the heads in the coupling and uncoupling operations, which latter means comprise a pair of lugs and a notch arranged on each of the two coöperating heads, the notch of one head being arranged to receive one of the lugs of the coöperating head.

6. In a hose-coupling, the combination with the head, of a rotary valve therein controlling the passage through the head and having a stem provided with a projecting pin and a hole or socket arranged off the valve center whereby such stem is adapted to engage the stem of a similar coupling-head thereby automatically moving both valves in the coupling and uncoupling operations.

7. In a hose-coupling, the combination with the head, of a valve-seat therein having a port or passage, a valve seating on said seat, and having a port or passage adapted to register with the port in the valve-seat, a valve-stem passing through the valve-seat and having at its end a projecting pin and an adjacent hole or socket arranged off the valve center whereby such stem may be engaged by a similar stem in a similar hose-coupling.

8. In a hose-coupling, the combination with the head, of a valve-seat therein having a port or passage and also having a stationary projecting pin which is secured to such valve-seat, a valve seating on the seat and having a port or passage adapted to register with the valve-seat port, and also having a peripheral notch to receive the pin which limits the movement of such valve, and automatic means for moving the valve in the coupling and uncoupling operations.

9. In a hose-coupling the combination with the head, having an interior flange 5, provided with a hole 8, a valve-seat 2, having a port or passage and provided with a pin or screw 6 received by the hole 8, a valve 9 working on the seat and means for operating such valve.

10. In a hose-coupling, the combination with the head having a cap 14, a valve-seat 2 in the head and having a port or passage, a rotary disk valve 9 on such seat for governing said port, a spring 13 between such cap and valve and adapted to hold said valve in its seat and means for operating the valve.

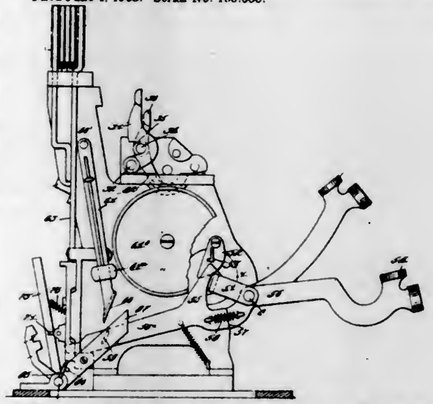
11. In a hose-coupling, the combination with the head having an interior flange 5, a valve-seat 2, having a port or passage, a pin 6 passing through said flange and entering said seat, a gasket between such seat and flange and also projecting outwardly, a valve 9 on such seat for governing such port or passage, and means for operating such valve.

12. In a hose-coupling, the combination with the head having an interior annular flange provided with a hole 8, a port-provided valve-seat supported by said flange and having on one face a pin 6 entering such hole and on the other face a stop-pin 7, a valve governing such port and having a peripheral notch coöperating with the stop-pin and means for automatically operating said valve in the coupling and uncoupling operations.

13. In a hose-coupling, the combination with the head 1 having an interior flange 5 provided with a hole 8, a valve-seat 2, having ports 3 and on one face a pin 6 received by hole 8 and also on the other face a pin 7 and a valve comprising a valve-body 9, and stem 10, the valve-body working on said seat, and having ports 16 adapted to register with ports 3, the periphery of the valve-body having a notch 17 coöperating with pin 7, the valve-stem passing centrally through the valve-seat and having a pin 11 and hole or socket 16

823,511. CASH-REGISTER.

LUKE COONEY, Jr., Chicago, Ill., assignor, by mesne assignments, to The National Cash Register Company, Dayton, Ohio, a Corporation of Ohio. (Incorporated in 1906.) Filed June 4, 1903. Serial No. 160,033.



Claim.—1. In a cash-register, the combination with a series of keys, of a series of indicators, a latch for supporting said indicators, a special key formed in two sections, means intermediate the rear section and the indicator-latch, and means for operating said rear section upon each operation of the keys; the construction being such that the rear section of the key may be held in its operated position irrespective of the movements of the amount-keys.

2. In a cash-register, the combination with a series of amount-keys, of a series of indicators, latches for the indicators, a speical key formed in two sections and controlling the indicator-latches, and means connecting the amount-keys to one of said sections with provisions for holding this section while the amount-keys are operated independently.

3. In a cash-register, the combination with a series of keys, indicators for the same, an indicator-support, a special key controlling said support and comprising two sections which are independently movable.

4. In a cash-register, the combination with an operating mechanism, of a key comprising two sections constructed so that they are free to move independently in one direction but will move together in the opposite direction, and means for yieldingly holding the two sections of the key together in normal position.

5. In a cash-register, the combination with an operating mechanism, of a key comprising two sections pivoted upon the same shaft and having abutting shoulders to cause simultaneous movement of the sections in one direction only, and spring means for normally holding the sections together.

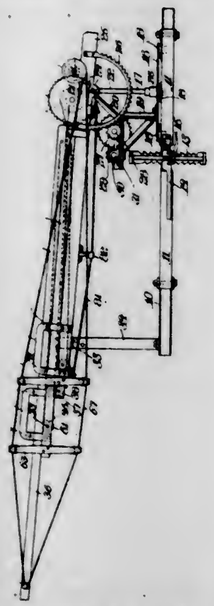
6. In a cash-register, the combination with a series of amount-keys, of a frame common to said keys, and a special key formed in two sections one of which is engaged by said frame and thereby operated upon each operation of the amount-keys; the construction being such that when the forward section of the special key is depressed the rear section of the key is held elevated irrespective of the return of the common frame.

7. In a cash-register, the combination with an operating mechanism, of a key, a series of indicators, a flash for concealing the indicators, means controlled by the key for moving the flash into its concealing position while permitting independent movement of the key, and means for effecting retraction of the flash upon the final increment of movement of the key back to normal position.

8. In a cash-register, the combination with an operating mechanism, of a key, a series of indicators, a flash for said indicators, a latch for securing the flash in its elevated position, means controlled by the key for raising the flash, and means controlled by the key for tripping the latch at the end of the return stroke of the key.

9. In a cash-register, the combination with a series of keys, of a series of indicators, supports for the indicators, a special key for tripping said supports, a flash for the indicators operated by the special key, and means for preventing the return of the flash until the special key has been returned to its normal position.

823,512. LADDER. CYRUS COPLANTZ, Joliet, Ill., assignor of one-half to A. S. Cheeseman, Joliet, Ill. Filed June 5, 1905. Serial No. 263,682.



Claim.—1. In a device of the class described, the combination with the base having the support at one end and the turn-table at the other end, of the bottom ladder-section pivotally mounted on said base and adapted to rest on the support when in a horizontal position, gearing for turning the lower section on its bearing to any desired extent, an intermediate section carried by and adapted to slide up on the bottom section, a top section carried by and adapted to slide up on the intermediate section, ropes connected to the bottom of each of the upper sections and running over sheaves on the tops of the adjacent lower sections, drums for winding up said ropes, and a single shaft driving all of said drums upon which all the ropes are wound to simultaneously slide both the upper sections up upon their supporting-sections.

2. In a device of the class described, the combination with the base having the support at one end and the turn-table at the other end, of the bottom ladder-section pivotally mounted on said base and adapted to rest on the support when in a horizontal position, gearing for turning the lower section on its bearing to any desired extent, an intermediate section carried by and adapted to slide up on the bottom section, a top section carried by and adapted to slide up on the intermediate section, truss-posts projecting from the tops of the lower sections, lifting-ropes connected to the bottom of each of the upper sections and running over sheaves on the tops of the adjacent lower sections, truss-ropes secured to the tops of the top sections and running over the truss-posts, drums for winding up all of said ropes, and a single shaft driving said drums, by which all the ropes are wound simultaneously to slide both of the upper sections up upon their supporting-sections and at the same time pay out the truss-ropes.

3. In a device of the class described, the combination with the base having the support at one end and the turn-table at the other end, of the bottom ladder-section pivotally mounted on said base and adapted to rest on the support when in a horizontal position, gearing for turning the lower section on its bearing to any desired extent, an intermediate section carried by and adapted to slide up on the bottom section, a top section carried by and adapted to slide up on the intermediate section, truss-posts projecting from the tops of the lower sections and running over sheaves on the tops of the adjacent lower sections, drums for winding up said ropes, and a single shaft driving all of said drums upon which all the ropes are wound to simultaneously slide both of the upper sections up upon their supporting-sections.

4. In a device of the class described, the combination with the base having the support at one end and the turn-table at the other end, of the bottom ladder-section pivotally mounted on said base and adapted to rest on the support when in a horizontal position, gearing for turning the lower section on its bearing to any desired extent, an intermediate section carried by and adapted to slide up on the bottom section, a top section carried by and adapted to slide up on the intermediate section, truss-posts projecting from the tops of the lower sections, guiding-sheaves on the truss-posts, lifting-ropes connected to the bottom of each of the upper sections and running over sheaves on the tops of the adjacent lower sections, truss-ropes secured to the tops of the top sections and running over the sheaves on the truss-posts, drums for winding up all of said ropes, and a single shaft driving said drums, by which all the ropes are wound simultaneously to slide both of the upper sections up upon their supporting-sections and at the same time pay out the truss-ropes.

5. In a device of the class described, the combination with the lower ladder-section, of the intermediate section adapted to slide on the lower section, the upper section adapted to slide on the intermediate section, a winding-drum associated with the lower section, a pair of ropes adapted to be wound thereon and secured to the bottom of the intermediate section, sheaves at the top of the lower section over which the ropes run, a second pair of ropes secured to the bottom of the uppermost section and to the winding-drum, a pair of sheaves at the top of the intermediate section over which the second pair of ropes run, the truss-posts carried at the tops of the lower and intermediate sections, sheaves carried by said truss-posts, the truss-ropes secured to the top of the uppermost section and extending down over the sheaves on the truss-posts, drums on which the truss-ropes are wound, and gearing between the winding-drums to rotate them in the proper direction and at the proper rates to alternately pay out and wind up said ropes.

6. In a device of the class described, the combination with the lower section, of the intermediate section adapted to slide thereon, the uppermost section adapted to slide on the intermediate section, the winding-drum journaled adjacent the lower end of the lower section, the lifting-ropes for the intermediate section secured at one end to the winding-drum and at the other end to the lower end of the intermediate section, the sheaves at the top of the lower section over which said ropes run, the winding-ropes for the uppermost section secured at one end to the winding-drum and at the other end to the bottom of the uppermost section, the sheaves at the top of the intermediate section over which the winding-ropes for the uppermost section run, the truss-posts carried at the tops of the lowermost and of the intermediate sections, the sheaves carried at the ends of said truss-posts, the truss-ropes secured at the top end of the uppermost section and extending down over the sheaves on the truss-posts, the winding-drum to which the truss-ropes are secured, and gearing between the two drums to rotate them in the opposite directions and in the proper sequence, substantially as described.

7. In a device of the class described, the combination with the lower section, of the intermediate section adapted to slide thereon, the uppermost section adapted to slide on the intermediate section, the winding-drum journaled adjacent the lower end of the lower section and having two sections of different diameters, the lifting-ropes for the intermediate section secured at one end to the larger portion of the winding-drum and at the other end to the lower end of the intermediate section, the sheaves at the top of the lower section over which said ropes run, the winding-ropes for the uppermost section secured at one end to the smaller portion of the winding-drum and at the other end to the bottom of the uppermost section, the sheaves at the top of the intermediate section over which the winding-ropes for the uppermost section run, the truss-posts carried at the tops of the lowermost and of the intermediate sections, the sheaves carried at the ends of said truss-posts, the truss-ropes secured at the top end of the uppermost section and extending down over the sheaves on the truss-posts, the winding-drum to which the truss-ropes are secured, and gearing between the two drums to rotate them in the opposite directions and in the proper sequence, substantially as described.

8. In a device of the class described, the combination with the lower section, of the intermediate section adapted to slide thereon, the uppermost section adapted to slide on the intermediate section, the winding-drum journaled adjacent the lower end of the lower section, the lifting-ropes for the intermediate section secured at one end to the winding-drum and at the other end to the lower end of the intermediate section, the sheaves at the top of the lower section over which said ropes run, the winding-ropes for the uppermost section secured at one end to the winding-drum and at the other end to the bottom of the uppermost section, the sheaves at the top of the intermediate section over which the winding-ropes for the uppermost section run, the truss-posts carried at the tops of the lowermost and intermediate sections, the sheaves carried at the ends of said truss-posts, the truss-ropes secured at the top end of the uppermost section, and extending down over the sheaves on the truss-posts, the winding-drum to which the truss-ropes are secured, a large gear on the lifting-rope drum, and a small gear on the truss-rope drum with which said large gear meshes, substantially as and for the purpose described.

9. In a device of the class described, the combination with the lower section, of the intermediate section adapted to slide thereon, the uppermost section adapted to slide on the intermediate section, the winding-drum journaled adjacent the lower end of the lower section, the lifting-ropes for the intermediate section secured at one end to the winding-drum and at the other end to the lower end of the intermediate section, the sheaves at the top of the lower section over which said ropes run, the winding-ropes for the uppermost section secured at one end to the winding-drum and at the other end to the bottom of the uppermost section, the sheaves at the top of the intermediate section over which the winding-ropes for the uppermost section run, the truss-posts carried at the tops of the lowermost and intermediate sections, the sheaves carried at the ends of said truss-posts, the truss-ropes secured at the top end of the uppermost section and extending down over the sheaves on the truss-posts, the winding-drum to which the truss-ropes are secured, a large gear on the lifting-rope drum, a small gear on the truss-rope drum with which said large gear meshes, and a clutch between the gears and the truss-rope-drum shaft so that the truss-rope-drum shaft can be tightened or loosened as desired, substantially as and for the purpose described.

10. In a device of the class described, the combination with a truck-base, of the extensible ladder mechanism thereon, the turn-table upon which it is mounted, the laterally-extensible horizontal bars pivoted to the sides of the base, and the adjustable legs carried by the ends of the bars, consisting of the vertical ratchet-bars, the levers pivoted to the ends of the horizontal bars, and the dogs carried by the levers coöperating with the ratchet-teeth, substantially as described.

11. In a device of the class described, the combination with the relatively stationary section carrying the antifriction-rollers at the top, and the yoke-shaped members carrying the antifriction-rollers on its upper side near the top, of the intermediate section adapted to slide between the rollers on the lower section, and carrying the antifriction-rollers near its upper end and the yoke-shaped members carrying antifriction-rollers on the upper side near the top of the intermediate section, the top section adapted to slide between the antifriction-rollers on the intermediate section, and means for extending and withdrawing the upper sections.

12. In a device of the class described, the combination with the relatively stationary section carrying the antifriction-rollers at the top, and the yoke-shaped members carrying the antifriction-rollers on its upper side near the top, of the intermediate section adapted to slide between the rollers on the lower section, and carrying the antifriction-rollers near its upper end and the yoke-shaped members carrying antifriction-rollers on the upper side near the top of the intermediate section, the top section adapted to slide between the antifriction-rollers on the intermediate section, the truss-posts having the sheaves at their ends carried at the upper ends of the lower and intermediate sections, the truss-ropes secured to the upper end of the top section and extending down over the sheaves, and means for extending and withdrawing the upper sections and at the same time keeping the truss-ropes taut.

13. In a device of the class described, the combination with the relatively stationary section carrying the antifriction-rollers at the top, and the yoke-shaped members carrying the antifriction-rollers on its upper side near the top, of the intermediate section adapted to slide between the rollers on the lower section, and carrying the antifriction-rollers near its upper end and the yoke-shaped members carrying antifriction-rollers on the upper side near the top of the intermediate section, the top section adapted to slide between the antifriction-rollers on the intermediate section, the truss-posts having the sheaves at their ends carried at the upper ends of the lower and intermediate sections, the truss-ropes secured to the upper end of the top section and extending down over the sheaves, a winding-drum journaled adjacent the bottom of the lower section, ropes adapted to be wound thereon and passing over sheaves carried at the top of the lowermost and intermediate sections and adapted to be secured to the bottoms of the uppermost and intermediate sections, respectively, another winding-drum for the truss-ropes, and means for rotating said drums.

14. In a device of the class described, the combination with the relatively stationary section carrying the antifriction-rollers at the top, and the yoke-shaped members carrying the antifriction-rollers on its upper side near the top, of the intermediate section adapted to slide between the rollers on the lower section, and carrying the antifriction-rollers near its upper end and the yoke-shaped members carrying antifriction-rollers on the upper side near the top of the intermediate section, the top section adapted to slide between the antifriction-rollers on the intermediate section, the truss-posts having the sheaves at their ends carried at the upper ends of the lower and intermediate sections, the truss-ropes secured to the upper end of the top section and extending down over the sheaves, a winding drum journaled adjacent the bottom of the lower section, ropes adapted to be wound thereon and passing over sheaves carried at the top of the lowermost and intermediate sections and adapted to be secured to the bottoms of the uppermost and intermediate sections, respectively, another winding-drum for the truss-ropes, and gearing between said drums adapted to rotate them in the opposite direction and at the proper speed so that as the lifting-ropes are wound up the truss-ropes are extended, and vice versa.

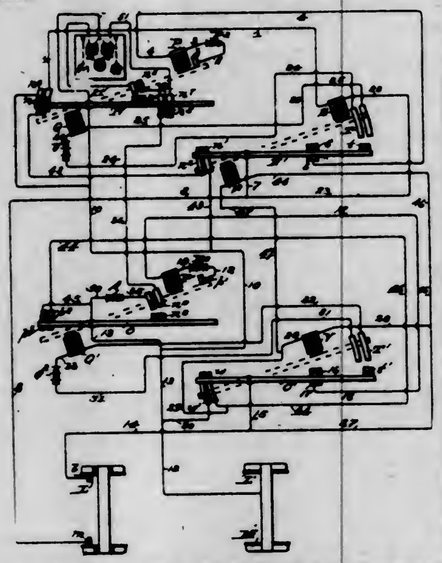
823,513. SAFETY SYSTEM FOR OPERATING RAILROADS. WILLIAM H. DAMMOND, Detroit, Mich. Filed Feb. 17, 1905. Serial No. 246,037.

Claim.—1. A vehicle adapted to travel on electrically-conducting track-rails, suitable track-circuits, electromechanical means carried by said vehicle and in circuit with an electric source on the vehicle, the circuit to said electromechanical means being operated by the track-circuits and capable of operating means by which to signal three distinct instructions for a block, switching means on said vehicle and controlling the circuit to said electromechanical means in such manner that when said switching means is in a predetermined position said electromechanical means is prevented from permitting a certain one of said instructions to be signaled.

2. A vehicle adapted to travel on electrically-conducting track-rails, suitable track-circuits, electromechanical means carried by said vehicle and in circuit with an electrical source on the vehicle, the circuit to said electromechanical means being operated by the track-circuits and capable of operating means for signaling in any block to stop, to slow down, or to run at full speed, according to conditions obtaining at predetermined places, switching means on said vehicle and controlling the circuit to said electromechanical means in such manner that when said switching means is in a certain position said electromechanical means is thereby prevented from permitting said signaling means to indicate to run at full speed.

3. In a safety system for railroads, a track containing insulated sections, a vehicle thereon provided with insulated contacting means adapted to make electrical contact with a track-rail, a partial electric circuit on the vehicle including an electric source thereon and containing a portion of track-rail and an uninsulated portion of the vehicle, said insulated contacting means causing said partial circuit

alternately to become closed through a portion of track-rail and to be thrown in circuit with a partial circuit extraneous to the vehicle, electromagnetic means on the vehicle for producing a definite result thereon and adapted to operate independently of the direction in which current is supplied thereto, said electromagnetic means being controlled by the partial circuit on the vehicle when said partial circuit is closed through said track-rail portion, or is thrown in circuit with the partial circuit extraneous to the vehicle, substantially as described.



4. A track containing insulated sections of rail, a vehicle thereon supplied with insulated contacting means, a partial electric circuit on the vehicle supplied from an electric source thereon, electromagnetic means on the vehicle controlling electromagnetic devices for producing definite results thereon and in turn controlled by the partial circuit being closed, a partial circuit from a source of electricity extraneous to the vehicle and including contacting means on the track insulated from adjacent portions of track-rail, said insulated contacting means of the vehicle and uninsulated portions of said vehicle being adapted to complete said partial circuit from said extraneous source through electromechanical means on the vehicle for closing the circuit controlling said electromagnetic means.

5. In a safety system for railroads, a track containing insulated sections, a locomotive or car thereon carrying insulated contacts adapted to travel on the track-rails, electromagnetic means for producing on the locomotive or car definite and distinct results corresponding to the conditions clear, caution and danger of predetermined portions of the railroad in such manner that the danger result will be produced when current controlled by said electromagnetic means ceases, circuits from an electric source on the locomotive or car and including the insulated contacts controlling the current to the electromagnetic means for producing the clear, danger and caution results thereon, and electrical means on the track and extending between insulated sections of the track-rails determining which results shall at definite times be produced on the locomotive or car.

6. A track divided into blocks of lengths determined by insulating means between sections of track-rail, contacting means in a block and insulated from adjacent portions of track-rail, a source of electricity electrically connected to track-rails on opposite sides of the track in a block, means adapted to be supplied with current from said source and controlling a partial circuit from an electrical source to said insulated contacting means and to a track-rail in such manner that such partial circuit shall be broken when said controlling means is deenergized, the circuit-controlling means so communicating with said electrical source connected to said opposite track-rails that current from said source shall be shunted away from the controlling means when an electrical conductor connects rails on opposite sides of the track in the block to rails of which said electrical source is connected, a vehicle on the track provided with insulated contacting means adapted to travel on a track-rail, means on the vehicle for producing definite results thereon and electrically connected to uninsulated portions of the vehicle and to the insulated contacting means thereof, said means for producing the results being adapted to produce a certain result when the vehicle-contacting means touches an insulated track-contacting means the said controlled partial circuit to which is unbroken and to produce a different result when the insulated contacting means of the vehicle touches an insulated track-contacting means the said controlled partial circuit to which is broken, substantially as described.

7. In a safety system for railroads, a locomotive or car, a source of electricity thereon, a switching device for causing the electric source alternately to supply current to either or both of two circuits for producing certain results on the locomotive or car and to open said electric circuits, electromagnetic means on the locomotive or car supplied from an electrical source thereon for controlling said switching device, electromagnetic means on said locomotive or car for diverting the current from an electrical source thereon to one or both of the circuits for producing said results, insulated contacts on the locomotive or car and in the circuits controlling said switching and diverting devices by which said circuits may be completed through rails of the track and uninsulated portions of the locomotive or car.

8. In a safety system for railroads, a diverting device on a locomotive or car by which current from an electrical source thereon may be supplied to either or both of two devices for producing results corresponding to the conditions clear and caution ahead, electromagnetic means for controlling said diverting device in such a manner that when said controlling means is energized it will cause the diverting device to send current to the devices for producing the results corresponding to clear ahead and when said controlling means is deenergized it will cause the diverting means to send current to the devices for producing the results corresponding to caution ahead, a switching device in the circuit to said means for controlling the diverting device such that when circuit to said controlling means is once opened at any other point said switching device will itself open and thus prevent subsequent closing of said circuit at said other point from again completing the circuit to said controlling means, electromagnetic means on said locomotive or car adapted to receive current from an electrical source extraneous to said locomotive or car which when energized will close a circuit through said device for controlling said diverting device when the circuit by way of said switching device is open at any other point and will cause said controlling device to remain closed until said other open circuit shall have become closed.

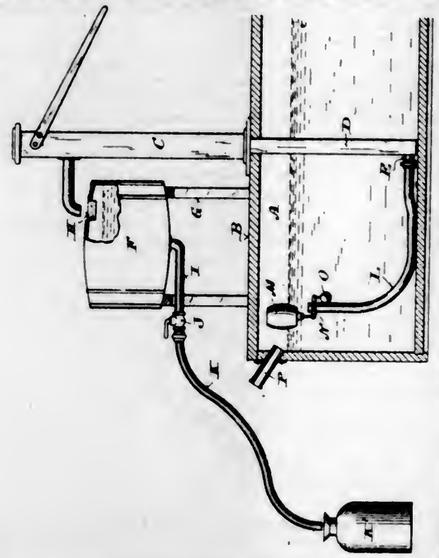
9. A source of electricity on a locomotive or car, electrically-controlled means on said vehicle for producing predetermined results thereon corresponding to conditions obtaining at a predetermined portion of a railroad, a switching device for operating a circuit from said electrical source, said circuit being adapted to actuate said electrically-controlled means and said switching device in turn so influenced by said electrically-controlled means that in case the circuit from said electrical source to said controlled means is opened at any other point than at said switching device said device will itself become open and thereby prevent the said circuit from becoming complete on the closing of the open circuit at said other point.

10. A source of electricity on a locomotive or car, electrically-controlled means on said vehicle for producing predetermined results thereon corresponding to conditions obtaining at a predetermined portion of a railroad, a switching device for operating a circuit from said electrical source, said circuit being adapted to actuate said electrically-controlled means and said switching device in turn so influenced by said electrically-controlled means that in case the circuit from said electrical source to said controlled means is opened at any other point than at said switching device, said device will itself become open and thereby prevent the said circuit from becoming complete on the closing of the open circuit at said other point, electromagnetic means adapted to cause said switching device to close at the proper time and to remain closed until the open circuit at said other point has become closed through a predetermined partial circuit.

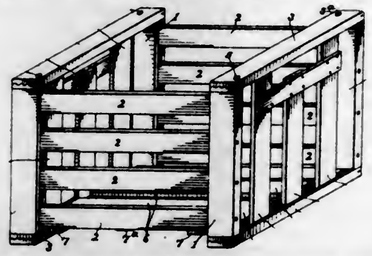
823,514. APPARATUS FOR THE DISTRIBUTION OF WHEY OR SKIMMED MILK. JOHN J. DANIEL, Cambria, Wis. Filed Apr. 2, 1906. Serial No. 309,258.

Claim.—1. A whey or skimmed-milk delivery apparatus comprising a tank, a pump having its suction end adjacent to the bottom of the tank, a hose connected to the suction end of the pump, and a float in connection with the free end of the hose.

2. A whey or skimmed-milk delivery apparatus comprising a tank, a pump having its suction end adjacent to the bottom of the tank, a hose connected to the suction end of the pump, a float in connection with the free end of the hose, a receiving-reservoir at the discharge end of the pump, and a discharge-pipe having a stop-cock and hose-coupling in connection with the receiving-reservoir.



823,515. FOLDING CRATE OR BOX. CHARLES L. DOLPH, Cadillac, Mich. Filed Oct. 26, 1905. Serial No. 284,500.



Claim.—1. A folding crate comprising sides and ends, said ends having inwardly-projecting top and bottom sills, corner-posts to the sides and pivots connecting the post at one end of each side with the sills near their outer angles and pivots connecting the other ends of the sides with the sills near their inner angles.

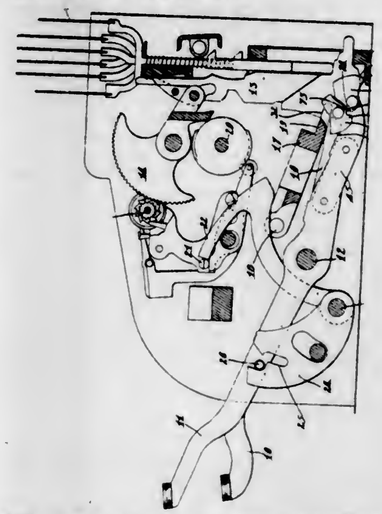
2. A folding crate comprising ends having inwardly-projecting top and bottom sills, sides pivotally connected to the sills each side having one end pivots located near the outer side of the end sills, and the other end pivots located near the inner side of said sills whereby the sides fold in separate parallel planes and between the end sills, and the sills of the respective ends are arranged in the same plane and end to end.

3. A folding crate comprising corner-posts connected in pairs by horizontal strips, said posts and strips forming the sides of the crate, top and bottom sills connected in pairs by vertical strips arranged near the outer edges of the sills, pivots connecting the post at one end of each side with one pair of sills near their outer angles, and pivots connecting the posts at the other ends of the sides of the sills near their inner angles.

4. In a folding crate, in combination with pivotally-connected sides and ends one side being flexible, a bottom having a fixed projection at one side adapted to extend beneath one side of the crate, and a fixed projection at the other side of the bottom adapted to spring the flexible side of the crate outward, and engage the under side of the same, to detachably secure the bottom in place.

5. In a folding-crate, corner-posts connected by flexible horizontal strips, top and bottom sills connected by vertical strips, pivots connecting the ends of the corner-posts with the sills, a bottom adapted to engage the respective posts at the respective corners, and fixed cleats on said bottom, said cleats projecting rigidly outside the opposite sides of the bottom to engage the lower edges of the horizontal strips and to detachably secure the bottom in place.

823,516. CASH-REGISTER. WALTER G. DOTY, Dayton, Ohio, assignor, by mesne assignments, to The National Cash Register Company, Dayton, Ohio, a Corporation of Ohio. (Incorporated in 1906.) Filed Nov. 15, 1904. Serial No. 232,832.



Claim.—1. In a cash-register, the combination with a key, and a member movable with said key; of a movable device mounted on said key for preventing the return of the key to normal position after an initial movement of the same and for also locking the key to said member after a certain partial movement of the key.

2. In a cash-register, the combination with a series of keys certain of which have provisions permitting an initial movement of the same, and a member common to said keys; of movable devices carried by the initially-movable keys for locking the same to said common member and for also latching such keys in initially-operated position.

3. In a cash-register, the combination with a series of keys certain of which have provisions permitting an initial movement of the same, and a member common to said keys; of movable devices carried by the initially-movable keys for latching the same to said common member and for also latching such keys in initially-operated position; and means coöperating with said movable devices for unlocking said initially-operative keys from said common member at the end of the operation of said member.

4. In a cash-register, the combination with a key formed with provisions permitting an initial movement, and a coupling member to which said key becomes coupled; of means coöperating with said key and said coupling member to positively return said key with said coupling member to normal position beyond its initially-operated position, said means also serving to latch the key in such initially-operated position.

5. In a cash-register, the combination with a special key having provisions formed thereon for permitting an initial movement, and a key-coupler coöperating with said key; of two coacting pawls pivoted upon said key and arranged to be operated by said key-coupler to lock the key to the coupler, said pawls also being constructed to latch said key in initially-operated position.

6. In a cash-register, the combination with a special key having provisions formed thereon for permitting an initial movement, and a key-coupler coöperating with said key; of two coacting pawls pivoted upon said key and arranged to be operated by said key-coupler to lock the key to the coupler; of a stationary abutment positioned to engage one of said pawls to cause said key to be latched in initially-

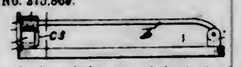
operated position, and also to engage said pawl at the completion of the stroke of the key to strip the pawl and destroy the locking relation with the key-coupler.

7. In a cash-register, the combination with a key having provisions formed thereon for permitting an initial movement, and a key-coupler to which said key becomes coupled; of a tripping-pawl pivoted upon said key and formed with operating projections; and a locking-pawl positioned to be operated by the movement of said coupler and formed with operating projections for engaging the operating projections of the tripping-pawl when the locking-pawl is moved by said key-coupler and thereby positively force said tripping-pawl into position to effect the latching of the key in initially-operated position.

8. In a cash-register, the combination with a key having provisions formed thereon for permitting an initial movement, and a key-coupler to which said key becomes coupled; of a stationary abutment; a tripping-pawl pivoted upon said key and formed with operating projections; and a locking-pawl positioned to be operated by the movement of said coupler and formed with operating projections for engaging the operating projections of the tripping-pawl when the locking-pawl is moved by said key-coupler and thereby positively force said tripping-pawl into position to engage said stationary abutment to effect the latching of the key in initially-operated position.

9. In a cash-register, the combination with a key having provisions formed thereon for permitting an initial movement, and a key-coupler to which said key becomes coupled; of a tripping-pawl pivoted upon said key and formed with operating projections; and a locking-pawl positioned to be operated by the movement of said coupler and formed with operating projections for engaging the operating projections of the tripping-pawl when the locking-pawl is moved by said key-coupler and thereby positively force said tripping-pawl into position to effect the latching of the key in initially-operated position, said two sets of operating projections also serving to lock the locking-pawl by the tripping-pawl and thereby lock the key to the key-coupler.

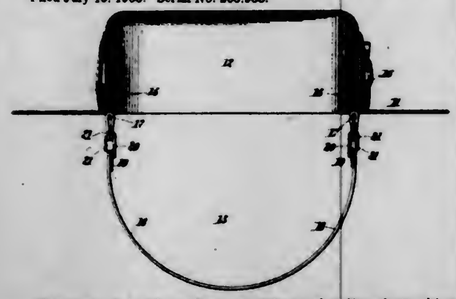
823,517. **SAFETY-LOCK FOR BROOCHES, SCARF-PINS, AND THE LIKE.** FREDERICK DRISSLER, New York, N. Y. Filed Aug. 26, 1905. Serial No. 275,869.



Claim.—In a device of the class described, a loop-shaped hook member open at one side and adapted to receive the pointed end of a pin, a locking-arm pivoted in the base of the hook member by means of a shank connected therewith and passing through said base, said shank being provided on the side of the base of the hook member opposite the locking-arm with a locking-finger adapted to be thrown into approximate engagement with the end of the hook member so as to complete the loop formed thereby, and means whereby the locking-arm may be engaged with the hook member when said arm and finger are in their operative positions, substantially as shown and described

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823,518. **HAT-FASTENING.** SARA F. BOAN, New York, N. Y. Filed July 10, 1905. Serial No. 268,903.

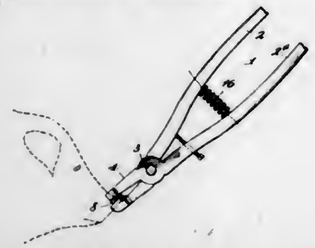


Claim.—1. A hat-fastening comprising a plurality of attaching members each consisting of a metal plate having attaching-prongs extending from its opposite ends, and an oblong eye arranged longitudinally of and adjacent to one of its edges, and a flexible connection or band having its ends secured in the oblong eyes of said attaching members, substantially as specified.

2. A hat-fastening comprising a plurality of attaching members each consisting of a metal plate having attaching-prongs extending from its opposite ends, and a longitudinal projection extending outwardly from one of its horizontal edges provided with a slot parallel to the longitudinal axis of said metal plate, and a flexible connection or band having its ends secured to said slotted longitudinal projection, substantially as specified.

3. A hat-fastening comprising a plurality of attaching members each consisting of a metal plate having foldable attaching-prongs at the opposite ends thereof formed integral with said plate, and a longitudinal projecting portion depending from the lower edge of said plate provided with a longitudinal slot arranged parallel to the longitudinal axis of said plate, and an adjustable flexible connection or band having its ends secured to said slotted projecting portion depending from the plate aforesaid, substantially as specified.

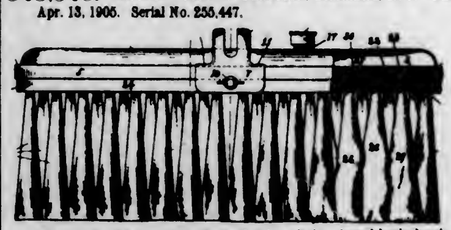
823,519. **SNOUT-PIERCING TOOL.** DAVID FALCONER, Utica, Mo. Filed Jan. 27, 1906. Serial No. 298,112.



Claim.—1. A tool of the character described consisting of a pair of handles pivotally secured together, jaws integral with said handles, the forward end of one of said jaws having a curved recess, shoulders integral with said forward end and arranged at opposite sides of the recess, a segmental blade secured in the recess and abutting at its sides against the shoulders, and the other jaw having a curved slot adapted to receive said blade.

2. A tool of the character described consisting of a pair of handles pivotally secured together, jaws integral therewith, one of said jaws being provided with a curved slot, a gage integral with said jaw rising above its face and arranged concentrically with the slot, and a concave blade secured to the opposing jaw and adapted to enter said slot.

823,520. **BRUSH.** JOHN W. FERGUSON, Bloomfield, N. J. Filed Apr. 13, 1905. Serial No. 255,447.



Claim.—1. The combination of a brush head or block having tufts drawn therein and having a recess or chamber in its top exposing the inner ends of a portion of said tufts, an absorbent pad in said recess, and a distributing-reservoir adapted to supply oil to said pad, said reservior having a depending flange which enters said recess and engages the pad, substantially as set forth.

2. The combination of a brush head or block having tufts therein and having a recess at its back exposing the inner ends of a portion of said tufts, an absorbent pad in said recess, an oil-storage reservoir upon the said brush head or block having a perforated bottom adapted to regulate the supply of oil to said pad, and having a depending flange formed continuously around the perforation in the bottom, and adapted to engage said pad, and means for fastening said brush-head and reservoir together.

3. The combination of a brush head or block longitudinally recessed at its back, tufts in said brush head or block a portion of which are open at their bases to said recess, an absorbent pad in the bottom of said recess means for holding said pad at the bottom of the recess, an oil-reservoir upon the said brush head or block having a port leading to said recess, and means for fastening said brush-head and reservoir together.

4. The combination of a brush head or block having tufts drawn therein and being recessed at its back to expose the inner ends of a portion of said tufts, an absorbent pad in said recess, an oil-storage reservoir having a depending bottom flange projecting into the said recess against the said pad and having discharge means within the space inclosed by said flange, and means for fastening said brush head or block and the oil-reservoir together.

5. The combination of a brush head or block having tufts drawn therein and being recessed at its back to expose the inner ends of a portion of said tufts, an absorbent pad in said recess, an oil-storage reservoir having a depending bottom flange projecting into the said recess against the said pad and having a discharge perforation within the space inclosed by said flange, and means for fastening said brush head or block and the oil-reservoir together.

6. The combination of a brush head or block having tufts drawn therein and being recessed at its back to expose the inner ends of a portion of said tufts, an absorbent pad in said recess, an oil-storage reservoir having its bottom edges forming a depending skirt or flange, an annular false bottom having its inner edges bent downward to form a flange adapted to engage said absorbent pad, the said reservoir having bottom discharge-ports in the space inclosed by the said inner flange, and means for fastening said brush head or block and the oil-reservoir together.

7. The combination of a brush head or block having a row of absorbent tufts drawn therein and being longitudinally recessed at its back to expose the inner ends of said tufts, an absorbent pad in said recess, an oil-storage reservior having a depending bottom flange projecting into said recess and engaging the said pad inside of the outer end tufts of said row, said reservoir having bottom discharge means within the said flange, and means for fastening said brush head or block and the oil-reservoir together.

8. The combination with a transversely-apertured brush-block, an oil-reservoir mounted upon said brush proper and having a skirt or flange extending down over the said head or block, and a transverse bail engaging the reservoir and having ends lying at the sides of the brush and being perforated in alinement with the said aperture of the head or block, of a fastening-bolt with a cylindrical shank portion adapted to lie in said aperture and eccentric portions adapted to lie in the said perforations of the bail ends.

9. The combination with a transversely-apertured brush-block, an oil-reservoir mounted upon said brush proper and having a skirt or flange extending down over the said head or block, and a transverse bail engaging the said reservoir and having ends lying at the sides of the brush and being perforated in alinement with the said aperture of the head or block, of a fastening-bolt with a cylindrical shank portion adapted to lie in said aperture and flattened portions adapted to lie in the said perforations of the said bail ends.

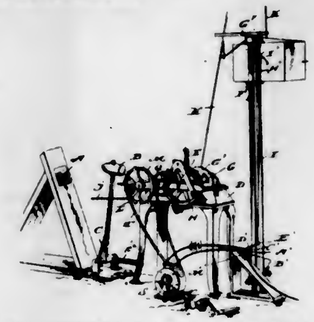
10. In a brush of the character described, a brush back or block having absorbent tufts in the bottom thereof and a recess at the top, an absorbent pad in said recess, the said pad and brush head or block having a vent-passage therethrough which opens at the bottom of the head or block adjacent to an absorbent tuft, and oil supply and distributing means upon the top of said head or block.

11. In a brush, the combination with a recessed block having absorbent bristle tufts extending from the outside in the recess, a porous pad arranged in the recess of said block, and a reservoir seated on said block and having a flange extending into the recess and against said pad and a perforation in its bottom through which fluid may pass to said pad, substantially as set forth.

823,521. **WEIGHT-ACTUATED APPARATUS.** EUGENE FULLER, Arctic, R. I., assignor of one-fifth to Joseph R. Bourgeois, one-fifth to Thomas Robert, and one-fifth to Raymond Geoffroy, Arctic, R. I. Filed May 15, 1905. Serial No. 260,504.

Claim.—1. The combination of a device to be actuated, an actuating-weight, means for raising the weight, means arranged when put in operation to interrupt the connection between the weight-raising means and the weight and transfer the power of the weight to the device to be actuated and reëstablish the connection between the weight-raising means and the weight subsequent to the actuation of the device, and means for putting said means in operation.

2. The combination of a device to be actuated, an actuating-weight, means for raising the weight, electromechanical means arranged when put in operation to interrupt the connection between the weight-raising means and the weight and transfer the power of the weight to the device to be actuated and reëstablish the connection between the weight-raising means and the weight subsequent to the actuation of the device, and means for putting said electromechanical means in operation.



3. The combination of a device to be actuated, an actuating-weight, means for raising the weight, an electromagnet designed to be arranged in an electric circuit, and means controlled by the said electromagnet for interrupting the connection between the weight-raising means and the weight and transferring the power of the weight to the device to be actuated and reëstablishing the connection between the weight-raising means and the weight subsequent to the actuation of the device.

4. The combination of a device to be actuated, an actuating-weight, means for raising the weight, an electromagnet designed to be arranged in an electric circuit, and means controlled by the said electromagnet for interrupting the connection between the weight-raising means and the weight and transferring the power of the weight to the device to be actuated and reëstablishing the connection between the weight-raising means and the weight subsequent to the actuation of the device; the said means comprising a finger movement of which in one direction is prevented by the device to be actuated when said device is in its normal position.

5. The combination of a device to be actuated, an actuating-weight, means for raising the weight, a connection intermediate said weight-raising means and the weight comprising a clutch, an electromagnet, means controlled by the said electromagnet for transferring the power of the weight to the device to be actuated, and a lever connected with the said means and having an arm for moving one member of the clutch and also having means disposed at one side of the device to be actuated whereby said device in its normal position is enabled to prevent reëstablishment of the connection between the weight-raising means and the weight.

6. The combination of a device to be actuated, an actuating-weight, a drum, means whereby motion is transmitted from the drum to the device when the drum is rotated in one direction and the device is left idle when the drum is rotated in the opposite direction, a cable passed over a sheave and connecting the drum and the weight, means for raising the weight, and electromechanical means for interrupting the connection between the weight-raising means and the weight and transferring the power of the weight to the device to be actuated and reëstablishing the connection between the weight-raising means and the weight subsequent to the actuation of the device.

7. The combination of a device to be actuated, an actuating-weight, a drum, means whereby motion is transmitted from the drum to the device when the drum is rotated in one direction and the device is left idle when the drum is rotated in the opposite direction, a cable passed over a sheave and connecting the drum and the weight, means for raising the weight, a driving connection intermediate said means and the weight comprising a clutch, an electromagnet, an armature complementary thereto, means connected with said armature for controlling the transmission of motion from the drum to the device to be actuated, and a lever connected with the latter means and arranged to open the clutch and having a finger arranged to be held against movement in one direction by the actuating device when said device is in its normal position.

8. The combination of a device to be actuated, an actuating-weight, a connection between the weight and the device, an electromotor, a connection between said motor and the weight for raising the latter by the former, a source of electric energy arranged in circuit with the motor, a switch also arranged in circuit with the motor and the source of electric energy, means on the weight and the switch for closing the switch when the weight moves downwardly and opening the switch when the weight moves upwardly, and means

for interrupting the connection between the weight-raising means and the weight and transferring the power of the weight to the device to be actuated and reëstablishing the connection between the weight-raising means and the weight subsequent to the actuation of the device; the said means comprising a finger, movement of which in one direction is prevented by the device to be actuated when the latter is in its retracted position.

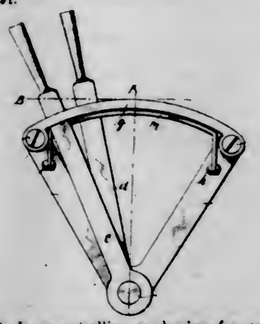
9. The combination of a device to be actuated, an actuating-weight, a connection between the weight and the device, an electromotor, a connection between said motor and the weight for raising the latter by the former, a source of electric energy arranged in circuit with the motor, a switch also arranged in circuit with the motor and the source of electric energy, means on the weight and the switch for closing the switch when the weight moves downwardly, and opening the switch when the weight moves upwardly, an auxiliary circuit including a source of electric energy and a signal, and means whereby the auxiliary circuit is completed when the weight moves downwardly subsequent to completing the first-mentioned circuit.

10. The combination of a device to be actuated, an actuating-weight, means for raising the weight, and means for interrupting the connection between the weight-raising means and the weight and transferring the power of the weight to the device to be actuated and reëstablishing the connection between the weight-raising means and the weight subsequent to the actuation of the device; the said means comprising a finger movement of which in one direction is prevented by the device to be actuated when the latter is in its normal position.

11. The combination of a device to be actuated, an actuating-weight, means for raising the weight, a connection intermediate said weight-raising means and the weight comprising a clutch, means for transferring the power of the weight to the device to be actuated, and a lever connected with the said means and having an arm for opening the said clutch and also having a finger disposed at one side of the device to be actuated whereby the latter is enabled in its retracted position to prevent reëstablishment of the connection between the weight-raising means and the weight.

12. The combination of a device to be actuated, an actuating-weight, a drum, means whereby motion is transmitted from the drum to the device when the drum is rotated in one direction and the device is left idle when the drum is rotated in the opposite direction, a cable connected with the drum and the weight, means for raising the weight, means arranged when put in operation to interrupt the connection between the weight-raising means and the weight and transfer the power of the weight to the device to be actuated and reëstablish the connection between the weight-raising means and the weight subsequent to the actuation of the device, and means for putting said means in operation.

823,522. CONTROLLING MECHANISM FOR AUTOMOBILES. BENJAMIN A. GRAHM, Chillicothe, Ohio. Filed Nov. 17, 1905. Serial No. 287,891.



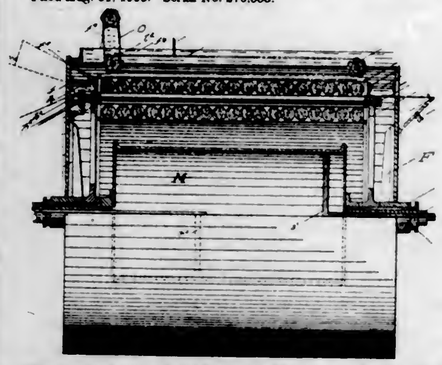
Claim.—1. In a controlling mechanism for automobiles, the combination of a supporting-frame; a power-controlling lever mounted therein; a speed-controlling lever mounted in said frame; and a swinging bar pivotally mounted in said frame between said levers, said levers lying on opposite sides of said bar, said bar being formed with a notch in one of its ends shaped to receive one of said levers and holding one of said levers locked while the other is free to move; the movement of one of said levers shifting said bar toward the other lever to lock the same.

2. In a controlling mechanism for automobiles, the combination of a supporting-frame; a pair of coöperating side members mounted therein; a speed-controlling lever fulcrumed in said frame between said side members the face of one of said side members opposed to said lever being formed with notches in which said lever is adapted to rest; a power-controlling lever fulcrumed in said frame between said side members; a movable shuttle-bar which lies between said levers and is shifted by the movement of one of said levers to lock the other lever against simultaneous operation.

3. In a controlling mechanism for automobiles, the combination of a supporting-frame; a pair of side members mounted in said frame; a speed-controlling lever mounted in said frame between said side members, the face of one of said side members opposed to said levers being formed with notches in which said lever is adapted to rest; a power-controlling lever mounted in said frame between said side members; and a shuttle-bar formed with a notch adapted to receive said power-controlling lever and to lock the same against one of said side members; said shuttle-bar being shifted by the movement of one of said levers toward the other of said levers to lock the same against simultaneous operation.

4. In a controlling mechanism for automobiles, the combination of a supporting-frame provided with side members; a pair of levers mounted in sid frame between said side members; a locking shuttle-bar which is interposed between said levers and coöperates with one of said side members to lock against it that one of said levers lying between said shuttle-bar and coöperating side members; said shuttle-bar being by the movement of one of said levers shifted toward the other of said levers to lock said other lever against simultaneous movement.

823,523. CANNED-GOODS COOKER. CHARLES F. GRAY, Indianapolis, Ind., assignor to Walter A. Knight, trustee, Cincinnati, Ohio. Filed Aug. 31, 1905. Serial No. 276,553.



Claim.—1. A canned-goods cooker having a tank adapted to hold the cooking liquid, a main revolving reel within said tank, a plurality of secondary reels sustained upon said main reel, a plurality of can-frames formed within said secondary reels; means for depositing cans into and ejecting cans from said frames, means for properly actuating said mechanism and means for heating the cooking fluid in said tank to cook the goods.

2. A canned-goods cooker having a main tank adapted to hold the cooking liquid, a main reel revolving within said tank, a plurality of revolving secondary reels sustained upon said main reel, a plurality of can-frames formed within said secondary reels, means for depositing cans into and ejecting cans from said frames, a secondary tank, pipes and valves connecting said main and secondary tanks, means for actuating said cooker mechanism, and means for heating the cooking fluid in said tank to cook the goods.

3. In a canned-goods cooker a main cooking-tank, a secondary tank within the main tank, pipe and valve connections adapted to convey an excess of fluid from the main tank to the secondary tank and vice versa, pipe connections leading from steam-supply to two points within the secondary tank and one in main tank, a valve on said steam-pipes leading from said steam-supply to one point in said secondary tank and another on pipe leading to said main tank, and means for automatically operating said valves by the rise and fall of fluid in the main tank.

4. In a cooker for canned goods a plurality of reels adapted to be rotated, a plurality of frames in said reels, adapted to receive and hold cans, means for depositing said cans by gravity, and means for ejecting said cans.

5. In a cooker for canned goods a plurality of reels adapted to be rotated, a plurality of open-ended can-frames in said reels, adapted to receive a plurality of cylindrical cans, means for closing the open ends of said frames at all points except where opened for depositing or receiving cans, and means for suitably rotating said reels.

6. In a cooker for canned goods a tank for the cooking fluid an overflow-tank, suitable steam and fluid connections between said tanks, can-carrying mechanism within said main tank, mechanism for alternately rotating and stopping said can-carrier, means for ejecting said cans from the carrier and means for automatically closing and opening the entrance for cans.

7. In combination with a canned-goods cooker, reels, H, having two or more disks, h, having a plurality of can-openings, h', connected with the periphery by spaces, h^6, frame sides, h^7, shaft, h^4, extending axially through the reel, gear, h^3, rotatively attached to said shaft, and as many pins, h^5, fixed in the side of said gear, as there are frames in the reel.

8. A canned-goods cooker having a tank, F, adapted to contain the cooking substance, said tank having a suitable can inlet at one end and outlet at the other, an overflow-tank, M, within the main tank, spiders, I, I, one rotatively attached to each end of tank, M, a revolving reel, shafts, K, K', upon which in suitable journals main reel revolves, a plurality of small revolving reels H, with a plurality of can-frames therein, a gear, h^3, with pins, h^5, on the shaft, h^4, of each reel, H, a track, P, with slot, p^2, in which pins, h^5, are adapted to slide, rack, f^3, adapted to engage gear, h^3, at the opening, p, in track, P, said opening in track deflections p', p^2, in track, P, to carry upper reel-frames into registry with tank inlet and outlet, plate, h^6, ring, f', sprocket-chain, L, carrying projection, l', adapted to eject cans from frame, means for intermittently actuating said sprocket-chain, the shutter, G, and attendant mechanism adapted to intermittently rise and fall to admit and shut off cans from reel-frames, and the main driving-shaft, A, A', and attendant parts, gear, D, and the attendant parts.

823,524. DIFFERENTIAL-GEAR CASING. EMMET P. GRAY, Cincinnati, Ohio, assignor to Gray Manufacturing Company of Detroit, Detroit, Mich., a Corporation of Michigan. Filed Jan. 2, 1904. Renewed Feb. 19, 1906. Serial No. 301,913.

Claim.—1. In gear-casing construction and in combination, tubes adapted to inclose shafts, said tubes having one end split, said split portions being spread to form frames embracing the adjacent ends of said shafts, and means for securing said frames together to maintain said tubes in proper alinement, substantially as described.

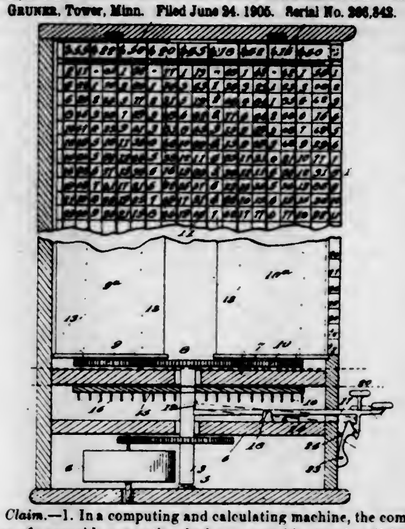
2. In gear-casing construction and in combination, tubes adapted to inclose shafts, said tubes having one end split, said split portions being spread to form frames embracing the adjacent ends of said shafts, reinforcing-frames secured to said first-named frames, and means for securing said frames together to maintain said tubes in proper alinement, substantially as described.

3. In gear-casing construction and in combination, tubes adapted to inclose shafts, said tubes having one end split, said split portions being spread to form frames embracing the adjacent ends of said shafts, housings adapted to slip over and inclose said frames and provided with an aperture for the transmission of power therethrough, and means for securing said frames and housings together to maintain said tubes in proper alinement, substantially as described.

4. A gear-casing construction comprising alined tubular portions and an intermediate construction formed from said tubular portions by splitting and expanding the same.

5. A gear-casing comprising alined tubular portions having their adjacent ends split and spread to form frames, and means to secure said frames together.

823,525. CALCULATING OR COMPUTING MACHINE. JULIUS GRUNER, Tower, Minn. Filed June 24, 1905. Serial No. 266,843.



Claim.—1. In a computing and calculating machine, the combination of a movable computing device, a rotatable stopping-disk operatively connected therewith, projections extended from the stopping-disk at different distances from the line of axis thereof, a plurality of key-bars, and members projected from the key-bars to coact with a single projection on the stopping-disk at a predetermined point in the movement of said disk.

2. A device of the character described comprising a casing, a computing device within the casing and comprising sets of rollers and belts containing suitable indicia and mounted around said rollers, a revoluble disk connected with said rollers to move therewith and porvided with a series of projections at different distances from the center of rotation of said disk, a series of key-bars arranged parallel in said casing and each of which is designed for contact with one of the projections on said disk, and a detent-bar mounted for engagement with said key-bars, as and for the purpose set forth.

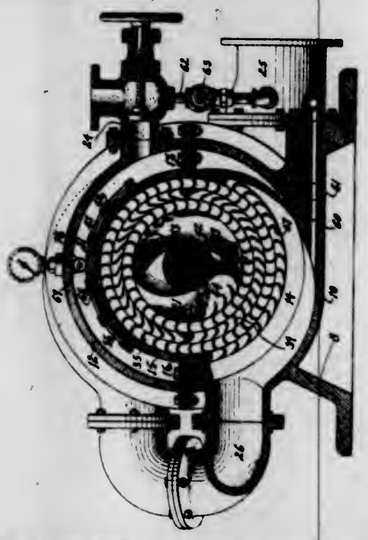
3. A device of the character described comprising a casing, rollers mounted in said casing and containing piercing projections, and belts containing suitable indicia and traveling around said rollers in engagement with said projections, a revoluble disk connected with said rollers to move therewith and provided with a series of projections at different distances from the center of rotation of said disk, a series of key-bars arranged parallel in said casing and each of which is designed for contact with one of the projections on said disk, and a detent-bar mounted for engagement with said key-bars, as and for the purpose set forth.

4. A device of the character described comprising a casing, a computing device within said casing, a revoluble disk operatively connected with said computing device to move therewith, means for moving said disk and computing device, and provided with a series of projections, a series of key-bars mounted in said casing and extending through the front side of the same and arranged parallel, each one of said key-bars being provided with a downwardly-extending hook, and a detent-bar 22 pivotally mounted along the front side of the casing and spring-pressed toward the hooks of said key-bars, as and for the purpose set forth.

5. A device of the character described comprising a casing, a computing device within the casing and comprising sets of rollers and belts containing suitable indicia and mounted around said rollers, a revoluble disk connected with said rollers to move therewith and provided with a series of projections at different distances from the center of rotation of said disk, a series of key-bars arranged parallel in said casing and each of which is designed for contact with one of the projections in said disk, a detent-bar mounted for engagement with said key-bars, a vertical guide-rod secured on said casing, and a slide-frame designed to be brought in front of the indicia or other characters carried by said belts.

823,526. TURBINE-ENGINE. LOUIS HACHENBERG, New York, N. Y. Filed Sept. 9, 1905. Serial No. 277,715.

Claim.—1. In a turbine-engine, a rotary shaft, a cylinder, a piston fixed to the shaft, alternating annular series of stationary and piston wings, a partition dividing the central space within the inner annular series of wings into two separate chambers and means for directing the motive fluid from the periphery to the center and from thence outwardly to the periphery in engagement with the stationary and piston wings.



2. In a turbine-engine, a rotary shaft, a cylinder, a piston fixed to the shaft for dividing the cylinder into two piston-chambers, annular series of stationary and piston wings in each piston-chamber, a partition in each piston-chamber dividing the space within the inner annular series of wings into two chambers and means for simultaneously directing the motive fluid from the periphery through both of the piston-chambers to the center and from thence outwardly to the periphery in engagement with the stationary and piston wings.

3. In a turbine-engine, a cylinder having heads, inner and outer rings and partitions dividing the interior into inlet, exhaust and piston chambers, a shaft, a piston fixed thereto, annular series of stationary and piston wings and a partition dividing the central piston-space into two chambers.

4. In a turbine-engine, a cylinder having heads, inner and outer rings and partitions dividing the chambers into inlet, exhaust and piston chambers, a rotary shaft, a disk piston fixed thereto, annular series of piston-wings projecting from opposite sides of the piston, annular series of stationary wings arranged to coact with the piston-wings and a partition for dividing each of the central piston-spaces into two separate chambers.

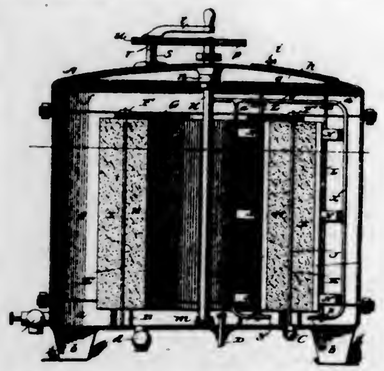
5. In a turbine-engine, a rotary shaft, a cylinder, a piston fixed to the shaft, alternating annular series of stationary and piston wings, a laterally-enlarged central piston-space and a partition for dividing the space into two separate chambers.

6. In a turbine-engine, a rotary shaft, a cylinder, a piston fixed to the shaft, alternating annular series of stationary and piston wings, a partition dividing the central space within the inner annular series of wings into two chambers, each chamber being open at one end and provided with wings for giving direction to the motive fluid at the other end.

7. In a turbine-engine, a rotary shaft, a cylinder, a piston fixed to the shaft, alternating annular series of stationary and piston wings, a partition dividing the central space within the inner annular series of wings into two chambers, one of said chambers being provided with wings for directing the motive fluid into the same and the other chamber being provided with wings for directing the motive fluid out of the same.

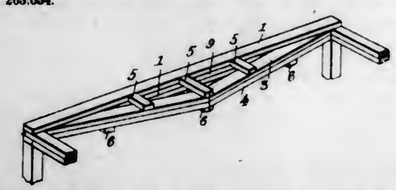
8. In a turbine-engine, a rotary shaft, a cylinder, a piston fixed to the shaft, alternating annular series of stationary and piston wings, a partition dividing the central space within the inner annular series of wings into two separate chambers, one of said chambers being provided with wings at one end for directing the motive fluid into the same and having its other end open for permitting the escape of the fluid and the other of said chambers having an open end for receiving the motive fluid from the annular series of wings at one point and provided with wings at its other end for directing the motive fluid from the chamber into engagement with the annular series of wings at another point.

823,527. FILTER. FRANK HARDIE, New Orleans, La. Filed Oct. 5, 1905. Serial No. 281,450.



Claim.—In a filter, the combination of a case having an inlet for water, an annular pure-water receptacle arranged on the bottom of the case and open at its upper side and having a discharge, inner and outer annular walls of porous material arranged on and clamped against the water-receptacle and having a space between them in communication with and adapted to supply said annular receptacle and also having said space isolated from the interior of the case, a central shaft journaled in the case and extending outside the same and having a radial arm disposed within the case and provided with depending portions arranged at opposite sides of the porous walls and terminating in horizontal arms, rods movable inwardly and outwardly in the said arms and carrying scrapers, and springs interposed between the scrapers and the depending portions of the first-mentioned arm, whereby the scrapers are yieldingly held against the porous walls.

823,528. BUILDING CONSTRUCTION. NOAH W. HARRIS and GEORGE W. STOCKER, Woodland, Ill. Filed May 31, 1905. Serial No. 263,034.

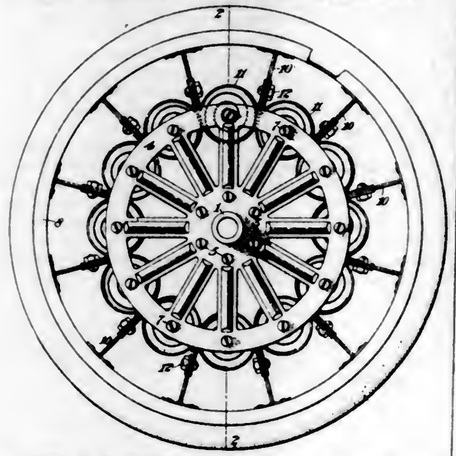


Claim.—1. A wall-plate comprising parallel strips, pairs of braces secured to the ends of the strips, one of said pairs extending between the strips and the other pair secured to one of the strips, the braces diverging from the strips and abutting at a point approximately opposite the center thereof, and ties connecting the abutting ends and other portions of the braces to the strips.

2. A wall-plate comprising parallel strips, pairs of parallel braces secured to the ends of the strips, one of said pairs extending between the strips and the other pair secured to the face of one of the strips, the braces diverging from the strips and abutting at a point approximately opposite the center thereof, a filler between the strips, and ties connecting the abutting ends and other portions of the braces to the strips.

3. The combination with the walls of a structure; of a wall-plate, secured upon one of the walls and fastened at its opposite ends to other walls, and comprising parallel strips, pairs of braces secured to the ends of the strips, one of said pairs extending between the strips and the other pair secured to one of the strips, the braces diverging from the strips and abutting at a point approximately opposite the center thereof, and ties connecting the abutting ends and other portions of the braces to the strips.

823,529. SPRING-WHEEL. EDWARD V. HARTFORD, New York, N. Y., and AUGUST W. SCHEUBER, Hoboken, N. J.; said Scheuber assignor to said Hartford. Filed June 22, 1905. Serial No. 266,518.



Claim.—1. A vehicle-wheel comprising a hub, a series of radiating spokes symmetrically disposed thereon, a rim and a series of inwardly-extending spokes attached thereto, each pair of spokes being connected at their inner ends forming a spring-seat, a spiral spring within each seat, removable means for holding said spring in place and a connection between said spring and said hub-spokes, substantially as described.

2. A vehicle-wheel comprising a hub, a series of radiating spokes symmetrically disposed thereon, a rim and a series of inwardly-extending spokes attached thereto, each pair of spokes being connected at their inner ends forming a spring-seat, a spiral spring within each seat, removable means for holding said spring in place and a connection between the outer end of said hub-spokes and the inner end of said spiral springs, substantially as described.

3. A vehicle-wheel comprising a hub, spoke-flanges thereon, a series of radially-disposed spokes secured to said flanges, a rim, a series of inwardly-extending spokes attached thereto, each pair of spokes being connected at their inner ends forming spring-seats and overlapping the outer ends of the hub-spokes, a spiral spring within each seat, removable means for holding said spring in place, and a connection between said spring and the hub-spokes, substantially as described.

4. A vehicle-wheel comprising a hub, spoke-flanges thereon, a series of radially-disposed spokes secured to said flanges, a rim, a series of inwardly-extending spokes attached thereto, each pair of spokes being connected at their inner ends forming spring-seats and overlapping the outer ends of the hub-spokes, a spiral spring within each seat, removable means for holding said spring in place, and a connection between the outer ends of said hub-spokes and the inner ends of said spiral springs, substantially as described.

5. A vehicle-wheel comprising a hub, spoke-flanges thereon, a series of radially-disposed bifurcated spokes secured to said flanges, a rim, a series of inwardly-extending spokes attached thereto, each pair of spokes being connected at their inner ends forming spring-seats and overlapping the outer ends of the hub-spokes, a spiral spring within each seat, removable means for holding said spring in place and a rod connecting the outer end of each of said bifurcated spokes and attached to the inner end of said spiral spring, substantially as described.

6. A vehicle-wheel comprising a hub, a rim having a plurality of seats or spring-retaining cylinders provided with removable sections, and a series of spiral springs located one in each of the said seats and having their centers connected to the hub of the wheel.

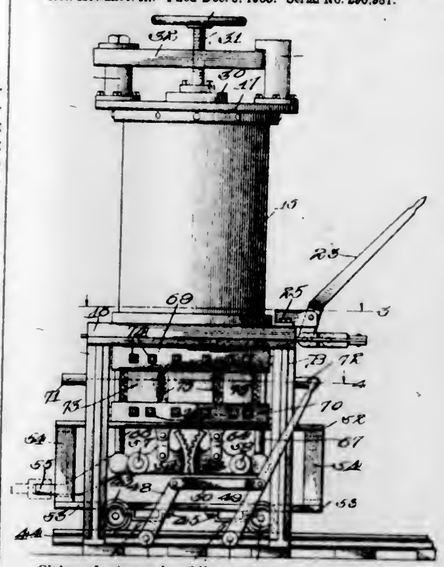
7. A vehicle-wheel comprising a hub, a rim having a plurality of U-shaped spokes the inner ends of which are formed into spring seats or recesses, and a series of spiral springs located one in each of said seats and a connection between the center of each of said springs and the hub of the wheel.

8. A vehicle-wheel comprising a hub provided with two sets of radiating spokes symmetrically disposed about said hub, connecting means or rods located at the outer ends of each pair of spokes, a series of independently-removable spiral springs the inner portions of which are connected to said spoke-connecting rods, a rim and connecting means between said rim and the outer portions of said springs.

9. A vehicle-wheel comprising a hub provided with two sets of radiating spokes symmetrically disposed about said hub, connecting rods or shafts at the outer ends of each pair of spokes, a series of spiral springs the inner portions of which are connected to said spoke-connecting rods, a rim having a plurality of spokes extending within the same and cylindrical seats at the inner ends of said spokes in which the spiral springs are located.

10. A vehicle-wheel comprising a hub provided with two sets of radiating spokes symmetrically disposed about said hub, connecting rods or shafts located at the outer ends of each pair of spokes, a series of spiral springs the inner portions of which are connected to said spoke-connecting rods, a rim having a plurality of spokes extending within the same cylindrical seats at the inner ends of said spokes and in which the spiral springs are located and which embrace and hold firmly the periphery of said spring and removable segments or sections to said seats to permit the removing of individual springs.

823,530. MOLDING APPARATUS. MADDRA J. HEWLETT, Kewanee, Ill., assignor of one-half to himself and one-half to Alfred M. Hewlett, Kewanee, Ill. Filed Dec. 8, 1905. Serial No. 290,981.



Claim.—1. A sand-molding apparatus, comprising a sand-holding receptacle having a plurality of sand-outlets, means for supporting the mold adjacent thereto, valve mechanism controlling said outlets, and means for supplying compressed air to said receptacle.

2. A sand-molding apparatus, comprising a sand-receptacle having a plurality of sand-outlets in the lower portion thereof, means for supporting the mold adjacent to said outlets, valve mechanism controlling said outlets, and means for supplying compressed air to said receptacle.

3. A sand-molding apparatus, comprising a sand-receptacle having a plurality of sand-outlets in the bottom thereof, means for supporting the mold adjacent to said outlets, valve mechanism controlling said outlets, and means for supplying compressed air to said receptacle.

4. A sand-molding apparatus, comprising a mold-support, and means for introducing compressed air charged with sand into the mold at a plurality of points and permitting the air to expand in the mold and distribute the sand therein by its expansive force.

5. A sand-molding apparatus, comprising a mold-support, and means for introducing compressed air charged with sand into the mold at a plurality of points, said means having a plurality of contracted discharge-passages.

6. A sand-molding apparatus, comprising a sand-chamber adapted to contain sand under pressure, means for admitting sand to the mold, and valve mechanism therefor.

7. A sand-molding apparatus, comprising a sand-chamber adapted to contain sand under pressure, outlet-passages arranged to supply the sand to the mold at a plurality of points, and valve mechanism for said outlet-passages.

8. A sand-molding apparatus, comprising a sand-chamber having a plurality of outlets, means for supporting the mold adjacent to said outlets, a mold having a plurality of air-escape openings, and means for discharging compressed air charged with sand from said sand-chamber into said mold.

9. A sand-molding apparatus, comprising a sand-chamber having a plurality of outlets, means for supporting the mold adjacent to said outlets, a mold having a plurality of air-escape openings, and valve mechanism controlling said outlets.

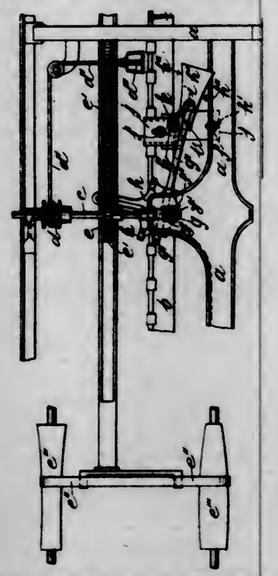
10. A sand-molding apparatus, comprising a sand-receptacle having a plurality of outlet-passages in the bottom thereof, valve mechanism controlling said outlet-passages, means for supporting the mold adjacent to said outlet-passages, and means for supplying compressed air to said sand-receptacle.

11. A sand-molding apparatus, comprising a sand-receptacle having a plurality of outlet-passages in the bottom thereof, a plurality of valve members controlling said outlet-passages, means for supporting the mold adjacent to said outlet-passages, and means for supplying compressed air to said sand-receptacle.

12. A sand-molding apparatus, comprising a sand-receptacle having a plurality of outlet-passages in the bottom thereof, a plurality of sliding valve-plates controlling said outlet-passages, means for supporting the mold adjacent to said outlet-passages, and means for supplying compressed air to said sand-receptacle.

13. A sand-molding apparatus, comprising a mold or flask having a plurality of minute openings adapted to permit the escape of air therefrom while sand is retained therein, and means for introducing compressed air charged with sand into said mold.

823,531. **BUILDING-MOTION OF SLUBBING, INTERMEDIATE, AND ROVING AND LIKE FRAMES.** JAMES HEYWOOD, Manchester, England. Filed Mar. 23, 1904. Serial No. 199,486.



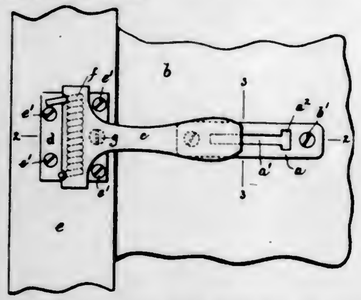
Claim.—1. In a building-motion of slubbing, intermediate and roving and like frames a shortening-rack, a pivoted cradle in which said rack is mounted, a shaper-plate carried by the rack, shafts and spur-gear devices for operating the rack and a bracket secured to the lifting-rail, said bracket having located thereon projections between which the shaper-plate works substantially as and for the purpose described.

2. In a building-motion of slubbing, intermediate and roviag and like frames a shortening-rack, a pivoted cradle in which said rack is mounted, a shaper-plate carried by the rack, means for securing said shaper-plate to the rack-shafts and spur-gear devices for operating the rack and a bracket secured to the lifting-rail, said bracket having located thereon projections between which the shaper-plate works substantially as and for the purposes described.

3. In a building-motion of slubbing, intermediate and roving and like frames a shortening-rack, a pivoted cradle in which said rack is mounted, a shaper-plate carried by the rack, means for securing said shaper-plate to the rack, shafts and spur-gear devices for operating the rack, a bracket secured to the lifting-rail, said bracket having located thereon adjustably-arranged studs, and bowls mounted on said studs between which the shaper-plate works substantially as and for the purposes described.

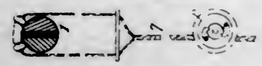
4. In a building-motion of slubbing, intermediate and roving and like frames a shortening-rack, shafts and spur-gear devices for operating the rack, a transverse slotted arm at one end of the rack, divided shaper-plates secured to said arm at their rear ends and pivoted to the rack at their forward ends in combination with a bracket secured to the lifting-rail, said bracket having located thereon adjustably-arranged studs, bowls mounted on said studs between which the divided shaper-plate works substantially as and for the purposes described.

823,532. **DOOR CLOSER AND STOP.** WILLIAM A. HILDYARD and ALEXANDER B. DRUMMOND, Crouch End, England. Filed May 13, 1905. Serial No. 260,360.



Claim.—The combination with a hinged door and its post, of a device for holding open and closing said door comprising a keeper secured to the rear side or back of the door and provided with a slot, a base-plate secured to the door-post, an arm pivotally connected with said base-plate and having at its forward end a downwardly-bent shouldered portion adapted to ride on the keeper during the opening of the door and to engage in the slot in said keeper when the door is opened to a predetermined extent and to be automatically disengaged from said slot when the door is moved slightly in the direction of closing, and a spring arranged to effect the full closing of the door when the shouldered portion of the arm has been disengaged from the slot in the keeper, substantially as described.

823,533. **ELECTRIC-LIGHT BRACKET.** EUGENE F. HUG, Elgin, Oreg. Filed June 19, 1905. Serial No. 266,065.



Claim.—1. An electric-light support or fixture comprising an arm pivotally supported to swing in an approximately horizontal plane and constituting a conductor, and an electric lamp mounted to travel upon said arm and deriving current therefrom by direct contact in any adjusted position.

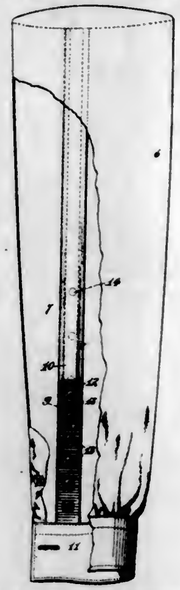
2. An electric-light fixture comprising a pivotally-mounted arm composed of longitudinally-arranged bars electrically insulated from each other and forming conductors, an electric lamp mounted to travel upon the members of said arm and receiving current therefrom in any adjusted position, and means for adjustably connecting the lamp with the said arm.

3. An electric-light fixture comprising a swinging arm embodying longitudinal sections electrically insulated from each other, means for supplying an electric current to said sections, and an electric lamp mounted to travel upon the arm and in electric connection with the respective sections thereof.

4. An electric-light fixture comprising a pivotally-mounted arm comprising longitudinal sections electrically insulated from each

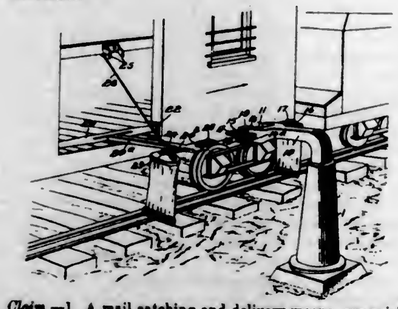
other, a carrier mounted to travel upon said arm and having electrically-insulated parts in electrical connection with corresponding sections of the arm, an electric lamp, an electric cord connecting said lamp with the respective parts of the carrier, and a take-up in the length of said electric cord to admit of lengthening and shortening it.

823,534. **SLEEVE-ADJUSTER.** CHARLES W. HUTCHINSON, Allendale, N. J. Filed Oct. 25, 1905. Serial No. 284,279.



Claim.—A device of the character described, comprising a pocket made of fabric and stitched at its edges to the inner side of a garment, the fabric forming the rear side or portion of said pocket being extended at its lower end beyond that forming the front of said pocket, a tape contained within said pocket having its upper end stitched to the upper end of said pocket, the lower end of said tape being free, and coöperating metal fastening devices, one member thereof being secured to the free end of the tape and the other member to the elongated fabric forming the rear side of the pocket, substantially as described.

823,535. **RAILWAY MAIL CATCHING AND DELIVERY MEANS.** JACOB G. JOHNSON, Ivanhoe, Va., assignor of one-half to William B. Hillenberg, Crockett Depot, Va. Filed Apr. 6, 1906. Serial No. 310,311.



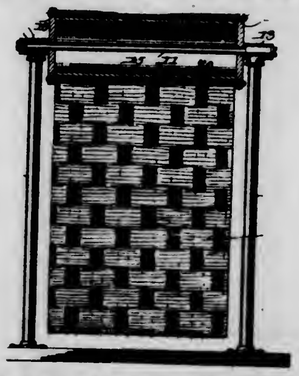
Claim.—1. A mail catching and delivery means, comprising a supporting member held in horizontal alinement with the bottom of a mail-car body, said supporting member having a horizontally-bifurcated head, and devices at each end of the head for pendently supporting a mail-bag; of a swinging support hingedly secured in the car-door opening to fold down in a plane with the car-bottom and having a cross-head movable through the bifurcated head, said cross-head having means for sustaining the mail-bag, and a projection on the bifurcated head for catching the mail-bag and slipping it off the movable cross-head, as set forth.

2. A mail catching and delivering means, comprising an arm secured to and adapted to be projected from the car, said arm having a horizontally-disposed cross-head, the end members of which are of like construction and provided with means for holding a mail-bag pendently therefrom; a stationary head horizontally bifurcated and provided at each side with a pair of oppositely-disposed upper and lower extensions parallel with the track, the lowermost extensions being of less length than the upper, substantially as shown and for the purposes described.

3. The combination with the stationary post having a head member horizontally bifurcated its length and provided at each end with an upper and a lower longitudinal extension, the upper being above and the lower being below the horizontal opening in the head, means on the upper extended members for gripping and holding the loop or handle of the mail-bag; of a frame hinged at its lower end in the bottom of the car-doorway and adapted to swing outwardly in the horizontal plane thereof and in the plane of the bifurcation in the stationary head, said frame including a cross-head having like end members, each provided with means for pendently supporting a mail-bag therefrom, said cross-head being arranged to travel through the bifurcation of the stationary head and between its upper and lower longitudinal extensions, as set forth.

4. The combination with an arm for receiving and delivering mail-bags hinged in the bottom of a car-door opening to swing vertically upward in said door-opening and adapted, when lowered, to project laterally from the car in line with the bottom thereof, said arm having an integral cross-head in the plane thereof, the opposite ends of the cross-head being of like construction; of a support adjacent the track and having a head portion located in the plane of the car-bottom, said head being horizontally bifurcated and provided at each end with an upper and a lower extension projected in the longitudinal direction of the bifurcated head, the lower extension being of less length than the upper ones and provided near their point of connection with the head with transverse seats in the upper face, for the purposes described.

823,536. **DISPLAY DEVICE.** EDWARD A. KAHN and RALPH A. SEIGLE, Indianapolis, Ind. Filed Mar. 21, 1905. Serial No. 251,362.



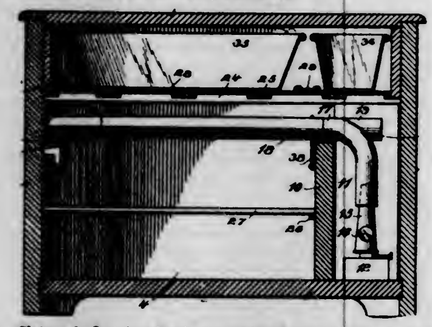
Claim.—1. A display device comprising a rotatable drum provided with grooves in its periphery disposed longitudinally and substantially U-shaped in cross-section, rods disposed longitudinally within the grooves and means to secure the rods at varying distances from the bottoms of the grooves.

2. A display device comprising a rotatable drum provided with grooves in its periphery disposed longitudinally and substantially U-shaped in cross-section, flanges carried at the ends of the drums and provided with radial slots registering at their lower ends with the bottom of the grooves, rods inserted through alined slots and disposed within the grooves and means of securing the rods at varying distances from the bottoms of the grooves.

3. A display device comprising a rotatable drum provided with grooves in its periphery disposed longitudinally and substantially U-shaped in cross-section, flanges carried at the ends of and outstanding beyond the periphery of the drum and provided with radial slots reg-

istering at their lower ends with the bottom of the groove but the top stopping short of the top of the groove, rods disposed within the grooves and extending at each end through the slots and means carried upon the opposite ends of the rods and without the flanges to secure the rods at varying distances from the bottoms of the grooves.

823,537. DOUGH-RAISER. JOSEPH H. KEPAUVER, Middletown, Md. Filed June 30, 1905. Serial No. 267,858.



Claim.—1. In a dough-raiser, a cabinet having a lamp-chamber and a heating-chamber, a heating-flue formed of two parallel sections, and having the end of one section extending down into the lamp-chamber, and an exhaust-pipe entering said heating-flue near the end of the other section, substantially as described.

2. In a dough-raiser, a cabinet having a lamp-chamber and a heating-chamber, a heating-flue passing from said lamp-chamber to said heating-chamber, means arranged above said heating-flue for supporting the dough during the kneading, means arranged below said heating-flue for supporting the dough during the raising and means for raising or lowering said heating-flue, substantially as described.

3. In a dough-raiser, a cabinet having a lamp-chamber and a heating-chamber, a heating-flue passing from said lamp-chamber to said heating-chamber, a partition above said heating-flue to support the dough, and a damper in said partition to regulate the amount of heat passing from said heating-chamber, substantially as described.

4. In a dough-raiser, a cabinet having a lamp-chamber, a heating-chamber, a partition between the said chambers, a heating-flue above said partition and passing from said lamp-chamber to said heating-chamber, an exhaust-pipe passing from said heating-flue through the side of the cabinet, the said heating-flue being arranged above the said partition in such manner that it can be moved laterally to withdraw the said exhaust-pipe from the side of the cabinet to remove the said heating-flue from the cabinet, substantially as described.

5. In a dough-raiser, a cabinet having a heating-flue therein, means arranged above and below said heating-flue for supporting the dough, and means for raising and lowering said heating-flue, substantially as described.

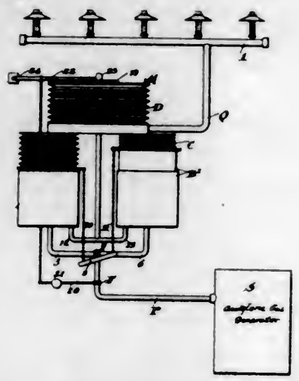
6. In a dough-raiser, a cabinet having a heating-flue therein a partition arranged above said heating-flue for supporting the dough, a damper in said partition for regulating the heat passing to the dough and means arranged below said heating-flue for supporting the dough, substantially as described.

7. In a dough-raiser, a cabinet having a heating-flue arranged therein, means for supporting the dough within the cabinet, and an exhaust-pipe entering said heating-flue, said exhaust-pipe being of less diameter than the heating-flue in order to longer retain the heat in said heating-flue, substantially as described.

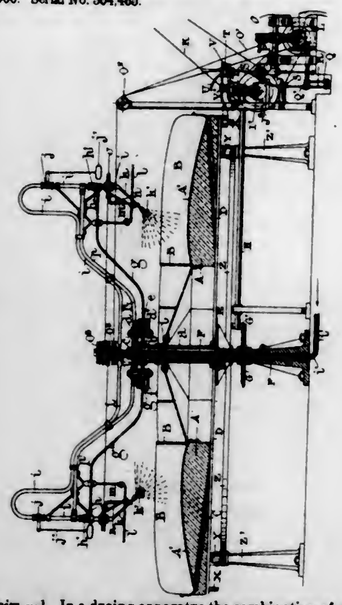
823,538. METHOD OF MIXING ACETYLENE GAS AND AIR FOR HEATING PURPOSES. ALEXANDER KEITH, Toronto, Canada. Filed Apr. 4, 1905. Serial No. 254,142.

Claim.—The method herein described of mixing acetylene gas and air for heating purposes, the same consisting in continuously mixing with said gas, air at a pressure in excess of atmospheric pressure in approximately equal proportions to produce a solely calorific flame by utilizing the pressure of the gas between the generator and burner, which produces a mixture of necessarily a lower pressure than the pressure of the gas, and burning the mixture within a mantle of incandescing material, substantially as described.

823,538



823,539. APPARATUS FOR DYEING HIDES AND SKINS. ROMAIN MARTINET and ADOLPHE DULAC, Grenoble, France. Filed Mar. 6, 1906. Serial No. 304,465.

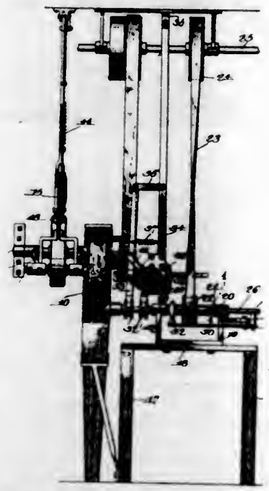


Claim.—1. In a dyeing apparatus the combination of a table divided into a plurality of compartments for reception of the articles to be treated and adapted to be intermittently rotated through suitable fractions of a revolution, a plurality of sprayers adapted to discharge into said compartments, means for conveying various liquids to said sprayers, cocks controlling the latter and means whereby said cocks are automatically opened when the table is at rest and closed when the table rotates substantially as described.

2. In a dyeing apparatus the combination of a table divided into a plurality of compartments for reception of the articles to be treated and adapted to be intermittently rotated through suitable fractions of a revolution, a plurality of sprayers adapted to discharge into said compartments, means for conveying various liquids to said sprayers, cocks controlling the latter, means whereby said cocks are automatically opened when the table is at rest and closed when the table rotates and means for imparting curvilinear movements to the sprayers while the aforesaid cocks are opened substantially as described.

823,540. POLISHING-MACHINE. DAVID MCCANCE, Lockport, N. Y. Filed June 26, 1905. Serial No. 267,494.

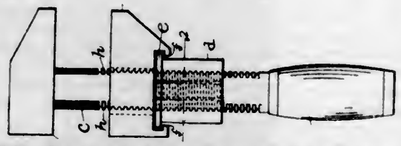
Claim.—1. The combination with a polishing-wheel, of a chuck, a spindle carrying said chuck, means for revolving the spindle, and means for reciprocating said spindle in a direction parallel with the axis of the polishing-wheel, whereby the work carried by the chuck may be moved transversely across the periphery of said polishing-wheel.



2. In a polishing-machine, the combination with a polishing member, of a chuck formed of a plurality of sections, a pair of grooved sleeves independently connected to said sections, a pair of levers having bifurcated end portions provided with pins entering said grooved sleeves, a spring tending to draw the levers toward each other, and a revoluble cam for separating said levers.

3. In a device of the class specified, the combination with a polishing member, of a frame, a hollow shaft having bearings in said frame, a spindle extending through such hollow shaft, and feathered thereto, said spindle having a reduced portion at one end, a collar fitting on the reduced end portion of the spindle, a pin projecting from the collar, a lever fulcrumed to the frame and carrying said pin, a two-part chuck arranged at the opposite end of the spindle, grooved collars connected to the chuck members, and a pair of levers having bifurcated end portions provided with pins entering said grooved collars, a spring tending to draw the levers toward each other, and a revoluble cam arranged between the two levers and designed to separate the same and open the chuck.

823,541. QUICK-ACTING WRENCH. FREDERIC NORWOOD, Gloucester, Mass. Filed June 21, 1904. Renewed Jan. 24, 1906. Serial No. 297,612.



Claim.—In a wrench of the class described, in combination, a fixed jaw, a shank having a narrow front edge and a wider rear edge provided with threads, a movable jaw, and a nut threaded on its interior to engage the threads of said shank and provided with a recess of a width sufficient to receive the narrow threaded edge of said shank and not sufficient to receive the wider threaded edge of said shank, for the purpose specified.

823,542. FIRE-ALARM. GEORGE H. OATWAY and CHARLES E. MAY, London, England. Filed Apr. 3, 1905. Serial No. 253,555.

Claim.—1. The combination of a compensator or base constructed to expand approximately equally with the other parts of the apparatus when the rise of temperature is slow and which is exposed to changes in the atmosphere, a lever pivoted to the base, a quickly-expansible rod having one end fixed to the base and the other end pivotally connected with one arm of the lever and a flexible wire having one end connected to the base and the other end to the other arm of the lever.

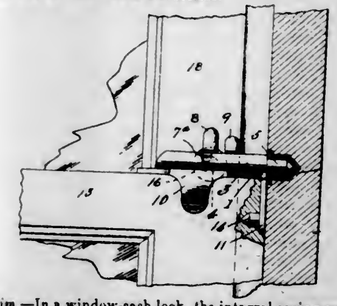


2. The combination of a compensator or base constructed to expand approximately equally with the other parts of the apparatus when the rise of temperature is slow and which is exposed to changes in the atmosphere, but to expand more slowly than the other parts when the rise of temperature is sudden, a lever pivoted to the base, an expansible rod having one end fixed to the base and the other end pivotally connected with one arm of the lever, and an expansible and flexible wire having one end connected to the base and the other end to the other arm of the lever.

3. The combination of a compensator or base constructed to expand approximately equally with the other parts when the rise of temperature is slow, but to expand more slowly than the other parts when the rise of temperature is sudden, an expansible rod having one end fixed to the base and the other to one arm of the lever, a weighted lever pivoted to the base and a wire having one end connected to the weighted lever and the other end to the other arm of the first lever.

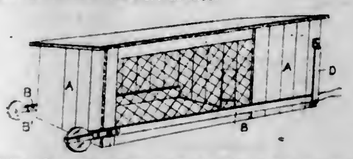
4. The combination of a compensator or base constructed to expand approximately equally with the other parts of the apparatus when the rise of temperature is slow, but to expand more slowly than the other parts when the rise of temperature is sudden, an expansible rod having one end fixed to the base and the other end pivoted to one arm of the lever, a weighted lever pivoted to the base and an expansible wire having one end connected to the lever and the other end to the other arm of the first lever.

823,543. SASH-LOCK. JESSE S. PACKER, Salt Lake City, Utah. Filed May 20, 1905. Serial No. 261,328.



Claim.—In a window-sash lock, the integral casing comprising a horizontal plate, a downwardly-extending flange adapted to be secured to the side of the lower window-sash, downwardly-extending flanges which overhang the edge of the lower window-sash and rest in a recessed portion, dowel-pins carried by said last-named flanges and entering the body of the window-sash and bolt-casings formed upon the horizontal bolt, said casings lying at right angles to each other, in combination with bolts slidably disposed in said casings.

823,544. MEANS FOR TRANSPORTING RABBIT OR POULTRY HUTCHES OR THE LIKE. JOHN PARKER, Manchester, England. Filed Jan. 2, 1906. Serial No. 294,305.



Claim.—In combination, a hutch, a fixed stud on each side of the hutch and near one end, a long lever mounted near one end on each stud, a roller and roller axis carried by each lever at such end, and the opposite ends of the levers formed as handles, and guides

fixed to the hutch through which the handle ends of the levers pass, substantially as and for the purposes herein set forth.

823,545. CHUCK. JOSEPH PETRELLI, New Haven, Conn. Filed Mar. 1, 1905. Serial No. 247,858.



Claim.—1. In a chuck, the combination with a chambered body, of a back and a front pair of jaws, two operating-rings mounted upon the said body upon which they are free to slide and respectively coacting with the said jaws; and unitary means free to move longitudinally of the axis of the chuck except for the restraint of the said rings and coacting with the said rings to cause them to approach or separate from each other, whereby the jaws are simultaneously or successively brought to bear upon the piece to be held.

2. In a chuck, the combination with a chambered body, of a back and a front pair of jaws located therein, each jaw having a bevel at its outer end, two operating-rings mounted upon the said body upon which they are free to slide, one ring coacting with the bevels at the outer ends of the jaws of one pair and the other ring coacting with the bevels at the outer ends of the jaws of the other pair; and unitary means free to move longitudinally of the axis of the chuck except for the restraint of the said rings and coacting with the said rings to cause them to approach or separate from each other, whereby the jaws are simultaneously or successively brought to bear upon the piece to be held.

3. In a chuck, the combination with a chambered body, of a back and front pair of jaws located therein, two operating-rings mounted to slide upon the said body and respectively adapted to coact with the outer ends of the jaws of the said pairs of jaws, and one ring being formed with a peripheral right-hand thread and the other with a peripheral left-hand thread, and an operating-sleeve having corresponding internal right and left hand threads for the operation of the said rings.

4. In a chuck, the combination with a chambered body, of a back and front pair of jaws located therein, each jaw having a bevel at its outer end; two operating-rings mounted to slide upon the said body and adapted to coact with the bevels at the outer ends of the said jaws, and one ring being formed with a peripheral right-hand thread and the other with a peripheral left-hand thread; and an operating-sleeve having corresponding internal right and left hand threads for the operation of the said rings.

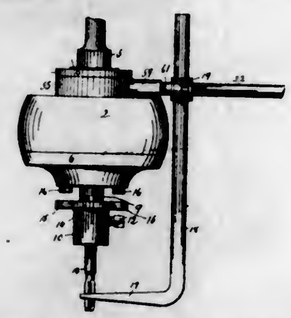
5. In a chuck, the combination with a chambered body, of a back and front pair of jaws located therein, springs for forcing the jaws outward in the said body, two operating-rings sliding upon the said body and respectively coacting with the said jaws, and one ring being formed with a peripheral right-hand thread and the other with a peripheral left-hand thread; and an operating-sleeve having correspondingly internal right and left hand threads for the operation of the said rings.

6. In a chuck, the combination with a chambered body, of a back and front pair of jaws located therein, two operating-rings sliding upon the said body and receiving the outer ends of the jaws of the said pairs of jaws, and one ring being formed with a peripheral right-hand thread and the other with a peripheral left-hand thread; and an operating-sleeve having correspondingly internal right and left hand threads for the operation of the said rings.

7. In a chuck, the combination with a chambered body, of a back and front pair of jaws located therein, each jaw being formed at its outer end with a bevel, two operating-rings sliding upon the said body and having their inner faces slotted to receive the outer ends of the said jaws with the bevels of which the bottom walls of the slots coact to move the jaws inward, and one of the said rings being formed with a peripheral right-hand thread and the other with a peripheral left-hand thread; and an operating-sleeve having correspondingly internal right and left hand threads for the operation of the said rings.

823,546. DRILLING AND TAPPING DEVICE. JOSEPH PETRELLI, New Haven, Conn. Filed Mar. 14, 1905. Serial No. 250,042.

Claim.—1. In a drilling and tapping device, the combination with a rotatable case, of a tool-carrying spindle, an externally-toothed fulcrum-gear and a driven gear differentiated from each other in size and concentric with the said case and spindle, a driving-pinion and a driven pinion differentiated in size, rotating on the same axis, meshing directly into the fulcrum and driven gears respectively, and revolved planetwise around the same with the case, and means for coupling the said spindle with the case for its rotation therewith and for coupling the said spindle with the said driven gear for its reverse rotation thereby.



2. In a drilling and tapping device, the combination with a rotatable case, of a tool-carrying spindle, an externally-toothed fulcrum-gear concentric with the said case and spindle, a relatively smaller driven gear concentric with the said case and spindle, a driving-pinion and a relatively larger driven pinion rotating together on the same axis, meshing directly into the said fulcrum and driven gears respectively and revolved planetwise around the same with the case, and means for coupling the spindle with the case for its rotation therewith and for coupling the spindle with the driven gear for its reverse rotation thereby.

3. In a drilling and tapping device, the combination with a rotatable case, of a longitudinally-movable tool-carrying spindle arranged to be coupled with the said case, an externally-toothed fulcrum-gear concentric with the said case and spindle, a driven gear concentric with the said case and spindle and having a central opening through which the spindle extends upward into the case, a driving-pinion and a driven pinion differentiated in size, rotating on the same axis, meshing directly into the fulcrum and driven gears respectively and revolved planetwise around the same, and a clutch-collar non-rotatably connected with the upper end of the spindle and adapted to be engaged with the said driven gear for the rotation of the spindle thereby.

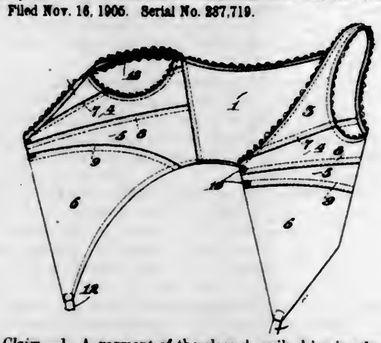
4. In a drilling and tapping device, the combination with a rotatable case, of a longitudinally-movable tool-carrying spindle arranged to be coupled with the said case, an externally-toothed fulcrum-gear concentric with the said case and spindle, a driven gear concentric with the said case and spindle and having a circular central opening through which the spindle extends upward into the case, coupling-pins carried by the said driven gear and projecting into the central opening thereof, a driving-pinion and a driven pinion differentiated in size, rotating on the same axis, meshing directly into the said fulcrum and driven gears respectively and revolved planetwise around the same with the case, a clutch-collar non-rotatably connected with the upper end of the said spindle and adapted to be entered at its lower end into the said opening in the driven gear, and coupling-pins carried by the said clutch-collar and engaging with the coupling-pins carried by the said driven gear for coupling the spindle with the driven gear by which it is rotated.

5. In a drilling and tapping device, the combination with a rotatable case, of a longitudinally-movable tool-carrying spindle arranged to be coupled with the said case, an externally-toothed fulcrum-gear concentric with the said case and spindle, a driven gear concentric with the said case and spindle and having a central opening through which the spindle extends upward into the case, a driving-pinion and a driven pinion differentiated in size, rotating on the same axis, meshing directly into the fulcrum and driven gears respectively and revolved planetwise around the same with the case, a clutch-collar fitted over the upper end of the said spindle and adapted to be coupled with the said driven gear, and a screw entering the upper end of the said clutch-collar on which it has bearing and also entering the upper end of the said spindle, whereby the collar is secured in place against endwise movement.

6. In a drilling and tapping device, the combination with a rotatable chambered case having a cover, of a tool-carrying spindle entering the case through the cover, an externally-toothed fulcrum-gear and a driven gear differentiated from each other in size and concentric with the said case and spindle which latter passes through the driven gear, a driving-pinion and a driven pinion differentiated in size, rotating on the same axis, meshing directly into the fulcrum and driven gears respectively and revolved planetwise around the same with the case the cover of which closes in the said driven gear and driven pinion, and means for coupling the spindle with the case for its rotation therewith and for coupling the spindle with the driven gear for its reverse rotation thereby.

7. In a drilling and tapping device, the combination with a rotatable case, of a longitudinally-movable tool-carrying spindle arranged to be coupled with the said case and having a flattened tang at its upper end, an externally-toothed fulcrum-gear concentric with the said case and spindle, a driven gear concentric with the said case and spindle and having a circular central opening through which the spindle projects upward into the case, a driving-pinion and a driven pinion differentiated in size, rotating on the same axis, meshing directly into the fulcrum and driven gears respectively and revolved planetwise around the same, and a clutch-collar applied to the upper end of the said spindle over the said tang and adapted to be engaged with and disengaged from the said driven gear by means of which the spindle is rotated.

823,547. BRASSIÈRES. GABRIELLE M. POIX, New York, N. Y. Filed Nov. 16, 1905. Serial No. 287,719.



Claim.—1. A garment of the class described having front portions, each composed of a plurality of tapered gores, the upper of which is formed with a shoulder-strap, and the lowest of approximately triangular form, and provided with means secured at its downwardly-extending apex for drawing it across the corresponding gore of the other portion and around the waist of the wearer for a substantial portion of its extent.

2. A garment of the class described having front portions, each composed of a plurality of tapered gores, the lower of which are of approximately triangular form and are provided with means for drawing them downwardly and across each other around the waist of the wearer.

3. A garment of the class described having front portions, each composed of a plurality of upper gores meeting and secured together at their forward edges, and a lower gore having a downwardly-extending portion, the lower gores of both said front portions being adapted to overlap each other and to extend a substantial distance around the waist of the wearer.

4. A garment of the class described having front portions, each composed of a plurality of tapered gores and together forming a curved bust-inclosing front, the lower pair of said gores being provided with tapes for drawing them downwardly and across each other, said tapes being adapted to pass around the waist of the wearer.

5. A garment of the class described having front portions, each composed of a plurality of tapered gores and together forming a curved bust-inclosing front, certain of the intermediate gores of the two portions having meeting edges provided with means for securing said front portions together and the lower gores of the two portions having downwardly-extending corners adapted to partially encircle the waist of the wearer and provided with tapes adapted to pass around the waist of the wearer for securing it in its waist-encircling position.

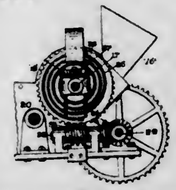
823,548. GAME. SAMUEL F. RANDALL, Chicago, Ill. Filed Dec. 9, 1905. Serial No. 291,054.

Claim.—1. In a device of the kind described, in combination, a box having an alcove in its wall, the floor of the box extending into the alcove, and a plurality of playing-pieces fitting within the box and movable over its floor, each of the playing-pieces being marked to distinguish it from all of the others and the alcove being adapted to receive one of the playing-pieces.



2. In a device of the kind described in combination, a plurality of playing-pieces rectangular in shape and each marked to distinguish it from all of the others, and a box having an alcove in its wall, the floor of the box extending into the alcove and having a plurality of contiguous spaces each equal in size and shape to the base of one of the playing-pieces, one thereof being in the alcove and each of the others being marked to correspond with one of the pieces.

823,549. FUEL-FEEDING DEVICE FOR BOILER-FURNACES. JAMES REAGAN and WILLIAM REAGAN, Philadelphia, Pa. Filed May 8, 1905. Serial No. 259,273.



Claim.—1. The combination of means for delivering successive charges of fuel, and a driving mechanism therefor including devices for automatically and intermittingly disconnecting it from said means, substantially as described.

2. A feeder for furnaces including a driving mechanism for intermittingly actuating said feeder, the driving mechanism being provided with a member carrying an element which is adapted to automatically and periodically engage with another element of said mechanism, and thereby cause the feeder to operate to deliver a single charge of fuel, substantially as described.

3. A feeder for furnaces including a driving mechanism for intermittingly actuating said feeder, the driving mechanism being provided with a member carrying an adjustable element which is adapted to automatically and periodically engage with another element of said mechanism, and thereby cause the feeder to operate to deliver a single charge of fuel, substantially as described.

4. A feeder for furnaces including a driving mechanism for intermittingly actuating said feeder, the driving mechanism being provided with a rotary member having a series of holes and carrying a stud insertible in any of said holes, and said driving mechanism being also furnished with an element adapted to be periodically engaged by said stud and with means for automatically producing the engagement, substantially as described.

5. A furnace having in connection a rotary shaft carrying shovels, a spirally-grooved wheel mounted loosely thereon, driving means for said wheel, a spring-actuated bolt carried by the shaft normally extending into the spiral groove, a stud in said spiral groove and means for retracting said bolt after a single revolution of said shaft, substantially as described.

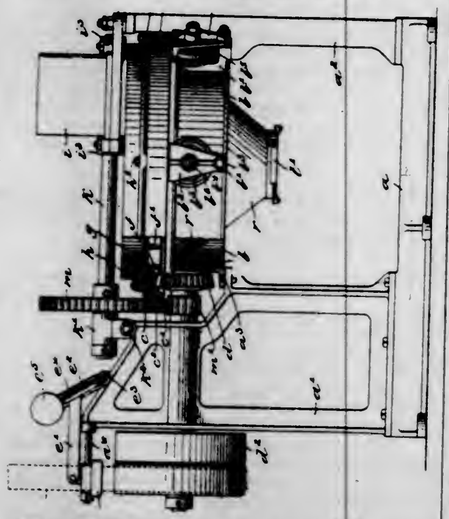
6. A furnace-feeder having in combination a rotary shaft carrying shovels, a spirally-grooved wheel mounted loosely thereon, a stud in the spiral groove, means for driving said wheel, a two-part cross-head carried by the shaft, a spring-actuated bolt extending through one part of the cross-head, guides connected to said part of the cross-head and extending through the other part thereof, a cam mounted on said bolt and a detent lying in the path of the said cam so as to withdraw said bolt from the path of said stud after one revolution of the feeder-shaft, substantially as specified.

7. The combination of a rotary feeder, intermittently-acting op-

erating means therefor, a furnace, and fuel-door situated at the entrance of said furnace, and mechanism for causing said door to open when the fuel is being supplied to the combustion-chamber and to close when a charge of fuel has entered the furnace, substantially as described.

8. A fuel-feeder for furnaces consisting of a distributer having a series of rotary blades or beaters, mounted upon a single shaft, a series of shovel-blades mounted upon a secondary shaft, having an intermittent operation, and an automatic driving mechanism, having an adjustable element adapted to periodically move into contact with an adjacent element of same mechanism, and thereby cause the entire mechanism to operate and deliver a single charge of fuel, substantially as described.

823,550. GRANULATING-MACHINE. EMANUEL L. RICHARDS, New London, Conn. Filed Feb. 5, 1906. Serial No. 299,481.



Claim.—1. In a machine of the character described, a receptacle for material to be granulated, a rotatable slotted disk traveling beneath said receptacle, a shaft mounted in said receptacle and carrying arms having successive portions for forcing the material to and through said disk.

2. In a machine of the character described, a receptacle for material to be granulated, a disk having openings rotating beneath said receptacle, and means arranged parallel to said disk and adapted to be brought successively into proximity to said disk to force the material to be granulated to and through the slots of said disk.

3. In a machine of the character described, a receptacle for material to be granulated, a slotted disk traveling beneath said receptacle, oblong means arranged in said receptacle parallel to said disk, and adapted to be brought successively into the path of the traveling disk to force the material to be granulated to and through the slots of said disk.

4. In a machine of the character described, a receptacle for material to be granulated, a slotted disk rotating beneath said receptacle, a shaft mounted in said receptacle and carrying a device provided with oppositely-curved portions adapted to be successively brought into the path of travel of said disk to force the material to be granulated to and through the slots of said disk.

5. In a machine of the character described, a receptacle for material to be granulated, a disk having slots and raised portions forming cutting edges traveling beneath said receptacle, a shaft mounted in said receptacle parallel to said disk and carrying a device having portions oppositely conforming in shape to each other to force successively the material to be granulated to said disk and for cutting said material prior to its passage through the slots thereof.

6. In a machine of the character described, a receptacle for material to be granulated, a slotted disk having bent portions forming cutting edges, means for holding said disk beneath said receptacle and rotating in one direction a shaft mounted in said receptacle and carrying arms having portions oppositely conforming in shape to each other and revolving in said receptacle in a direction opposite to that of the said disk, said arms arranged to successively force said material to be granulated to and through the slots of said disk, and the cutting edges of said disk so arranged as to facilitate the granulation of said material prior to its passage through the slots of said rotatable disk.

7. In a machine of the character described, a receptacle for material to be granulated, a slotted disk, means for supporting and rotating said disk beneath said receptacle, a shaft mounted in said receptacle parallel to said disk and carrying arms having end portions oppositely conforming in shape to each other to successively force material to be granulated to and through the slots of said disk and means for supporting said receptacle in variable positions with respect to said rotatable disk.

8. In a machine of the character described, a receptacle for material to be granulated, a slotted disk, means for supporting and rotating said disk beneath said receptacle, a shaft mounted in said receptacle and carrying revolving arms for successively forcing the material to be granulated to and through the slots of said disk, means for holding said receptacle in variable positions with respect to said disk and means for receiving and supporting the granulated material and having an outlet-opening provided with a slide for removably closing the same.

9. In a machine of the character described, a receptacle for material to be granulated, a disk having slots, means for supporting and rotating said disk beneath said receptacle, said means arranged to retain the material leaving said receptacle, and said disk in conjunction with said means arranged to conduct the material back to said receptacle.

10. In a machine of the character described, a receptacle for material to be granulated, a disk having slots rotating beneath said receptacle, and arms having curved ends revolving in said receptacle the curved ends of said arms arranged to be successively moved over said disk to force the material into engagement therewith and through the slots thereof.

11. In a machine of the character described, a receptacle for material to be granulated, a disk having slots or openings arranged beneath the outlet-opening thereof, a support for said disk, means having rolls for holding and maintaining said support in proper position with respect to said receptacle, and means for engaging said support and for moving the same over said rolls.

12. In a machine of the character described, a receptacle for material to be granulated, a disk having slots or openings for partially closing the outlet thereof, a holder for said disk, comprising a ring, a grated body arranged in the ring supporting said disk, and an annulus for removably holding said grated body and disk in position in said ring.

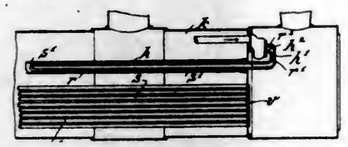
13. In a machine of the character described, a receptacle for material to be granulated, a disk having slots or openings for partially closing the outlet thereof, a holder for said disk, comprising a ring, a grated body arranged in the ring supporting said disk, an annulus for removably holding the grated body and disk in position in said ring, and a holder for the ring having rolls for supporting said ring, and means for engaging said ring and revolving the same on said rolls.

14. In a machine of the character described, a receptacle for material to be granulated, a disk having slots or openings for partially closing the outlet thereof, a ring for the disk having teeth, a support for the ring having rolls upon which said ring is placed, means for engaging the teeth of said ring and moving the same over said rolls, a receptacle for material passing through the slots of the disk and carried by said support, said receptacle having means for closing the outlet thereof.

15. In a machine of the character described, a standard, a receptacle for material to be granulated engaging said standard, a shaft supported by the standard and receptacle, a disk having slots arranged below the receptacle in said standard, and means carried by said standard for engaging said receptacle and arranged to hold the same in varying positions with respect to said disk.

16. In a machine of the character described, a standard, a positively-driven shaft, a receptacle for material to be granulated engaging said standard, a second shaft pivotally supported at one end by said standard and at the other end by said receptacle, said second shaft arranged to assist in the suppoft of said receptacle, a disk having slots, a holder for said disk rotatably arranged in said standard having teeth, arms secured to said second shaft and arranged in said receptacle, said arms adapted when rotated to force the material against said disk and through the slots thereof, and a gear mechanism arranged to transmit the movement of the positively-driven shaft to the second shaft and the arms thereof and to said holder by engaging the teeth thereof.

823,551. BOILER WITH SUPERHEATING-TUBES. WILHELM SCHMIDT, Wilhelmshöhe, near Cassel, Germany. Filed Jan. 3, 1905. Serial No. 239,481.



Claim.—1. A boiler, with superheating-tubes, arranged in some enlarged smoke-tubes of the boiler, the ends of the superheating-pipes being bent backward in such a manner that they are turned backward into the direction of the tube-plate of the smoke-box.

2. A boiler, with superheating-tubes, arranged in some enlarged smoke-tubes of the boiler, the ends of the superheating-pipes being bent backward in such a manner that they are turned backward into the direction of the tube-plate of the smoke-box, the single superheating-tubes consisting of an outward and return steam-passage arranged in an enlarged smoke-tube of the boiler.

3. A boiler, with superheating-tubes, arranged in some enlarged smoke-tubes of the boiler, the ends of the superheating-pipes being bent backward in such a manner that they are turned backward into the direction of the tube-plate of the smoke-box, the single superheating-tubes consisting of several outward and return steam-passages arranged in an enlarged smoke-tube of the boiler.

4. A boiler, with superheating-tubes, arranged in some enlarged smoke-tubes of the boiler, the ends of the superheating-pipes being bent backward in such a manner that they are turned backward into the direction of the tube-plate of the smoke-box, the ends of the tubes being tightened to steam-chambers by means of flanges, firmly attached to the ends of the superheating-tubes, the front of the steam-chamber being in an upright position and directed toward the door of the smoke-box of the boiler.

5. A boiler, with superheating-tubes, arranged in some enlarged smoke-tubes of the boiler, the ends of the superheating-pipes being bent backward in such a manner that they are turned backward into the direction of the tube-plate of the smoke-box, the ends of the tubes being tightened to steam-chambers by means of flanges, firmly attached to the ends of the superheating-tubes, and of fastening means lying in the middle line between the ends of the superheating-tubes, the front of the steam-chamber being in an upright position and directed toward the door of the smoke-box of the boiler.

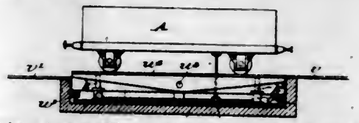
6. A boiler, with superheating-tubes, arranged in some enlarged smoke-tubes of the boiler, the ends of the superheating-pipes being bent backward in such a manner that they are turned backward into the direction of the tube-plate of the smoke-box, the single superheating-tubes consisting of an outward and return steam-passage arranged in an enlarged smoke-tube of the boiler, and the ends of these tubes being tightened to steam-chambers by means of flanges firmly attached to the ends of the superheating-tubes, and of fastening-screws lying between the ends of the superheating-tubes, the front of the steam-chamber being in an upright position and directed toward the door of the smoke-box of the boiler.

7. A boiler, with superheating-tubes, arranged in some enlarged smoke-tubes of the boiler, the ends of the superheating-pipes being bent backward in such a manner that they are turned backward into the direction of the tube-plate of the smoke-box, the single superheating-tubes consisting of several outward and return steam-passages arranged in an enlarged smoke-tube of the boiler, and the ends of these tubes being tightened to steam-chambers by means of flanges firmly attached to the ends of the superheating-tubes, and of fastening-screws lying between the ends of the superheating-tubes, the front of the steam-chambers being in an upright position and directed toward the door of the smoke-box of the boiler.

8. A boiler, with superheating-tubes, arranged in some enlarged smoke-tubes of the boiler, the ends of the superheating-pipes being bent backward in such a manner that they are turned backward into the direction of the tube-plate of the smoke-box, the single superheating-tubes consisting of several outward and return steam-passages arranged in two enlarged smoke-tubes.

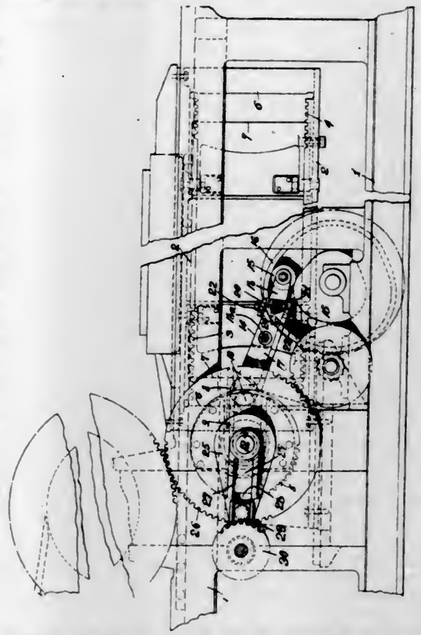
9. A boiler, with superheating-tubes, arranged in some enlarged smoke-tubes of the boiler, the ends of the superheating-pipes being bent backward in such a manner that they are turned backward into the direction of the tube-plate of the smoke-box, the single superheating-tubes consisting of several outward and return steam-passages arranged in two enlarged smoke-tubes, the ends of the tubes being tightened to steam-chambers by means of flanges and of fastening-screws lying on the middle line between the ends of the superheating-tubes, the front of the steam-chamber being in an upright position and directed toward the door of the smoke-box of the boiler.

823,552. TURN-TABLE. JULIUS SCHNELL, Rührort, Germany. Filed Aug. 8, 1905. Serial No. 273,236.



Claim.—A turn-table provided with a rotatable platform, an undivided diametrically-extending track pivoted centrally to the platform, and means for tilting the track, combined with a delivery-track, and a receiving-track arranged radially to the platform, substantially as specified.

823,553. PRINTING-MACHINE. WALTER SCOTT, Plainfield, N. J. Filed Sept. 14, 1904. Serial No. 224,355.



Claim.—1. In a printing or other machine, the combination with an upper and a lower rack and a gear adapted to alternately engage with the same, of means for periodically lowering and raising the said gear comprising a pivoted bracket having bearings at its free end, a shaft on which the said gear is mounted supported in the said bearings, an arm carried by the said bracket composed of two parts bolted together at one point, a slot and corresponding bolt on the said two parts at another point, extensions on one of said parts projecting over the other of the said parts, and set-screws passing through the said projections and bearing against the said other part, a roll carried at the end of said arm, and a cam with which the said roll engages.

2. In a printing or other machine, the combination with an upper and a lower rack and a gear adapted to alternately engage with the same, of means for periodically lowering and raising the said gear comprising a pivoted bracket having bearings at its free end, a shaft on which the said gear is mounted supported in the said bearings, means for rocking the said bracket, a stationary hub surround-

ing one of the bearings of the bracket, a gear mounted on the said hub, and means for transferring the motion from the said gear on the hub to the shaft carried by the bracket.

3. In a printing or other machine, the combination with an upper and a lower rack and a gear adapted to alternately engage with the same, of means for periodically lowering and raising the said gear comprising a pivoted bracket having bearings at its free end, a shaft on which the said gear is mounted supported in the said bearings, means for rocking the said bracket, a stationary hub surrounding one of the bearings of the said bracket having an axial hole somewhat larger than the diameter of the said bearing, a gear mounted on the said hub, and means for transferring the motion from the said gear to the shaft carried by the bracket.

4. In a printing or other machine, the combination with an upper and a lower rack and a gear adapted to alternately engage with the same, of means for periodically lowering and raising the said gear comprising a pivoted bracket having bearings at its free end, a shaft on which the said gear is mounted supported in the said bearings, means for rocking the said bracket, a stationary hub surrounding one of the bearings of the said bracket, a gear mounted on the said hub, and a guideway and sliding block mounted one on the gear on the hub and the other on the shaft supported by the bearings of the bracket for imparting the motion of the said gear to the said shaft.

5. In a printing or other machine, the combination with an upper and a lower rack and a gear adapted to alternately engage with the same, of means for periodically lowering and raising the said gear comprising a pivoted bracket having bearings at its free end, a shaft on which the said gear is mounted supported in the said bearings, means for rocking the said bracket, a stationary hub surrounding one of the bearings of the said bracket having an axial hole somewhat larger than the diameter of the said bracket, a gear mounted on the said hub, and a guideway and sliding block mounted one on the gear on the hub and the other on the shaft carried by the bearings of the bracket for imparting the motion of the said gear to the said shaft.

6. In a printing or other machine, the combination with an upper and a lower rack and a gear adapted to alternately engage with the same, of means for periodically lowering and raising the said gear, comprising: a pivoted bracket, a shaft on which the gear is mounted supported by said bracket, means for rocking the said bracket, a stationary hub surrounding a portion of the shaft, a gear mounted on the said hub, and means for transferring the motion from the said gear on the hub to the shaft carried by the bracket.

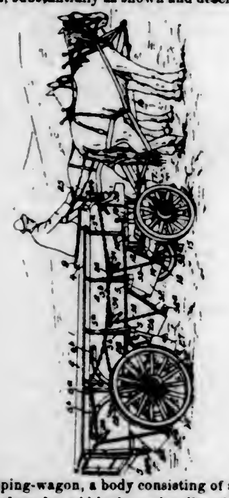
7. In a printing or other machine, the combination with an upper and a lower rack and a gear adapted to alternately engage with the same, of means for periodically lowering and raising the said gear, comprising: a pivoted bracket, a shaft on which the gear is mounted supported by said bracket, means for rocking the said bracket, a stationary hub surrounding a portion of the shaft, a gear mounted on the said hub, and a guideway and sliding block mounted one on the gear on the hub and the other on the shaft carried by the bracket for imparting the motion of the said gear to the said shaft.

8. In a printing or other machine, the combination with an upper and a lower rack, and a gear adapted to alternately engage with the same, of means for periodically lowering and raising the said gear, comprising a pivoted bracket having bearings at its free end, a shaft on which the said gear is mounted supported in said bearings and means for rocking the said bracket, a gear mounted at the outer end of the said shaft, and a loose driving connection between said gear and shaft.

9. In a printing or other machine, the combination with an upper and a lower rack, and a gear adapted to alternately engage with the same, of means for periodically lowering and raising the said gear, comprising a pivoted bracket having bearings at its free end, a shaft on which the said gear is mounted supported in said bearings, an arm carried by said bracket, a friction-roll mounted on the same, and a cam in which the said friction-roll engages, a gear mounted at the outer end of the said shaft, and a loose driving connection between said gear and shaft.

823,554. DUMPING-WAGON. ENOCH SMITH, Salt Lake City, Utah, assignor of one-third to George Curley, Salt Lake City, Utah. Filed May 3, 1905. Serial No. 258,449.

Claim.—1. In a dumping-wagon, a body consisting of side and end portions, a front platform for said body, a plurality of transverse brace-beams beneath the body, door members hinged to the brace-beams and adapted when closed to form the bottom of the wagon-body, chains connected to the free ends of the doors, flexible connecting means connecting all of said chains together, and means on the front platform of the wagon under control of the driver and connected with said flexible connecting means for drawing in and letting out said flexible connecting means and said chains to open and close the bottom doors, substantially as shown and described.



2. In a dumping-wagon, a body consisting of side and end portions, a front platform for said body, a plurality of transverse brace-beams beneath the body, door members hinged to the brace-beams and adapted when closed to form the bottom of the wagon-body, chains connected to the free ends of the doors, flexible connecting means connecting all of said chains together, means on the front platform of the wagon under control of the driver and connected with said flexible connecting means for drawing in and letting out said flexible connecting means and said chains to open and close the bottom doors, and means on the wagon-body for engaging said chains to hold one or more of said doors closed independently of the others, substantially as shown and described.

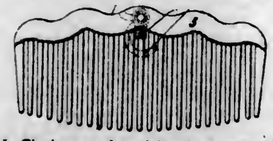
3. In a wagon of the class described, a body consisting of side and end portions, a plurality of beams arranged transversely of the wagon-body beneath the same, brace-straps secured to the wagon sides and to the beam ends, a rear wheeled truck secured to one of said beams, supplemental brace members for said beam which is secured to the wheeled truck, a pair of parallelly-arranged beams at the front of the wagon, a front wheeled truck pivotally secured beneath said parallelly-arranged beams, a draft-block secured to the front wheeled truck, a draft-tongue secured to the draft-block, a crosstree secured to the draft-block and tongue on the upper side thereof, a plurality of doors hingedly secured to the brace-beams below the wagon sides and adapted when closed to form a continuous bottom for the wagon, chain members secured to the said doors at their free ends, idler-pulleys on one of the wagon sides, said chain members adapted to pass over said idler-pulleys, a main chain connecting said first-mentioned chain members together, idler-pulleys on one of the sides of the wagon-body for said main chain, said wagon-body having a front platform, a turn-rod mounted on said front platform, said main-chain member connected to said turn-rod and adapted to be wound upon the same, a hand-wheel for said turn-rod and a ratchet-and-pawl device for holding the turn-rod in its turned positions, said turn-rod and said chains being arranged so that when the turn-rod is manipulated the hinge-doors will be opened or closed, substantially as shown and described.

4. In a wagon of the class described, a body consisting of side and end portions, a plurality of beams arranged transversely of the wagon-body beneath the same, brace-straps secured to the wagon sides and to the beam ends, a rear wheeled truck secured to one of said beams, supplemental brace members for said beam which is secured to the wheeled truck, a pair of parallelly-arranged beams at the front of the wagon, a front wheeled truck pivotally secured beneath said parallelly-arranged beams, a draft-block secured to the front wheeled truck, a draft-tongue secured to the draft-block, a crosstree secured to the draft-block and tongue on the upper side thereof, a plurality of doors hingedly secured to the brace-beams below the wagon sides and adapted when closed to form a continuous bottom for the wagon, chain members secured to the said doors at their free ends, idler-pulleys on one of the wagon sides, said chain members adapted to pass over said idler-pulleys, a main chain connecting said first-mentioned chain members together, idler-pulleys on one of the sides of the wagon-body for said main chain, said wagon-body having a front platform, a turn-rod mounted on said front platform, said main-chain member connected to said turn-rod and adapted to be wound upon the same, a hand-wheel for said turn-rod and a ratchet-and-pawl device for holding the turn-rod in its turned positions, said turn-rod and said chains being arranged so that when the turn-rod is manipulated the hinged doors will be opened or closed, a duplicate set of chain and idler pulleys on the other side of the wagon-body corresponding to those on the first-mentioned side of the wagon-body and connected with said doors at the other side, said duplicate set of chains including a main chain, idler-pulleys on said pair of cross-beams around which duplicate main chain passes, said duplicate chain connecting with said first-mentioned main chain, so that when the turn-rod is manipulated, both sets of chains will be operated to open or close the doors substantially as shown and described.

5. In a wagon of the class described, a body consisting of side and end portions, a plurality of beams arranged transversely of the wagon-body beneath the same, brace-straps secured to the wagon sides and to the beam ends, a rear wheeled truck secured to one of said beams, supplemental brace members for said beam which is secured to the wheeled truck, a pair of parallelly-arranged beams at the front of the wagon, a fifth-wheel member secured to the under side of said pair of beams, a front wheeled truck, a fifth-wheel member secured to said front wheeled truck to coöperate with the fifth-wheel member of the pair of beams, a draft-block secured to the front wheeled truck, a draft-tongue secured to the draft-block, a crosstree secured to the draft-block and tongue on the upper side thereof, a plurality of doors hingedly secured to the brace-beams below the wagon sides and adapted when closed to form a continuous bottom for the wagon, chain members secured to said doors at their free ends, idler-pulleys on one of the wagon sides, said chain members adapted to pass over said idler-pulleys, a main chain connecting said first-mentioned chain members together, idler-pulleys on one of the sides of the wagon-body for said main chain, said wagon-body having a front platform, a turn-rod mounted on said front platform, said main chain member connected to said turn-rod and adapted to be wound upon the same, a hand-wheel for said turn-rod and a ratchet-and-pawl device for holding the turn-rod in its turned positions, said turn-rod and said chains being arranged so that when the turn-rod is manipulated the hinged doors will be opened or closed, a duplicate set of chain and idler pulleys on the other side of the wagon-body corresponding to those on the first-mentioned side of the wagon-body and connected with said doors at the other side, said duplicate set of chains including a main chain, idler-pulleys on said pair of cross-beams around which said duplicate main chain passes, said duplicate main chain connecting with said first-mentioned main chain, so that when the turn-rod is manipulated, both sets of chains will be operated to open or close the doors, and means on the wagon-body for holding one of said doors closed independently of the others, substantially as shown and described.

6. A wagon of the class described comprising a body consisting of sides and ends, a bottom therefor composed of a plurality of doors hinged transversely to the wagon-body and arranged when closed to abut one another, means controlled from the front of the wagon for simultaneously opening and closing all of said doors, wheeled trucks upon which said wagon-body is mounted, and means for holding one or more of said doors closed independently of the others, said last-named means comprising chains secured to the doors, and stop members secured to the wagon sides for engaging said chains to hold the doors closed.

823,555. COMB-FASTENER. GEORGE H. SMITH and JACOB STIEGLITZ, Yonkers, N. Y. Filed Feb. 18, 1905. Serial No. 246,353.

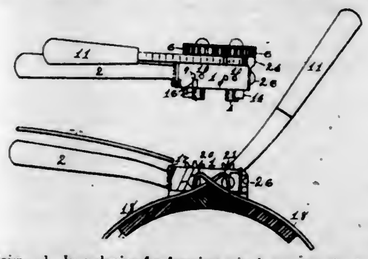


Claim.—1. The improved comb herein described having a hook pivoted between the ends thereof, near the upper edge, and movable in a plane parallel with the plane of the series of comb-teeth, said hook having a finger-piece or part movable therewith in said parallel plane and adapted to lie either at the comb-back in parallel relation therewith or to project above said edge, substantially as set forth.

2. The combination with a comb, of a clip and hook held together by an eyelet, the said clip having arms whereby it may be fastened to the tooth of the comb, substantially as set forth.

3. The combination with a comb, of a clip and hook held together by an eyelet, the said clip having arms whereby it may be fastened to the tooth of the comb, and having its extremity lying in a curved line concentric with the center of the eyelet, substantially as set forth.

823,556. WIRE-HOOP-LOCK-FORMING DEVICE. HENRY S. SMITH, Neenah, Wis. Filed Jan. 2, 1906. Serial No. 294,134.



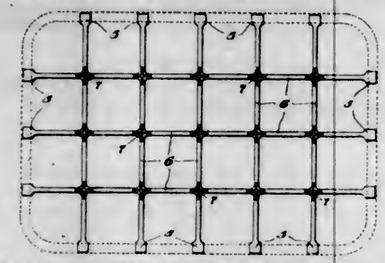
Claim.—1. In a device for forming a lock upon a wire hoop, a tool-stock, a handle fixed to one end thereof, two spindles geared together for a simultaneous movement toward and from each other, mounted for revolution transversely of, and extending through and beyond said stock, means for preventing their endwise movement, an open-ended slot across each of said extending ends adapted for receiving a wire, a stop arranged outside and adjoining one of said extending ends, a shear-knife arranged outside of and adjoining the other extending end, a lever-handle upon one of said spindles for turning the spindles a part of a revolution and thereby severing the wire from a coil of wire, making a substantially quarter-bend near each end of the severed wire and holding said ends in position for being twisted around each other, inside of said bends, by a half-turn of said tool in a horizontal plane and leaving the extreme ends of the wire of each bend in position for being driven into the wood of the article being hooped, substantially as described.

2. In a device for forming a lock upon a wire hoop, a tool-stock, a suitable handle therefor, two spindles spaced apart, arranged transversely of said stock for a simultaneous movement toward and from each other, each spindle extending through and outside of said stock, means for preventing their endwise movement, an open-ended slot in each extending end adapted to receive a wire, a stop arranged outside of and adjoining one of said ends, a shear-knife arranged outside of and adjoining the other of said ends, a lever-handle arranged for turning the spindles a part of a revolution and thereby severing the length of wire necessary for a hoop from a coil of wire, making a substantially quarter-bend near each end of the severed wire and holding said bent ends in position for being twisted around each other at a point inside of said bends by a half-turn of said tool in a horizontal plane and leaving the extreme ends of the wire of each bend in position for being driven into the wood of the article being hooped, substantially as set forth.

3. In a device for forming a lock upon a wire hoop, a tool-stock, a suitable handle therefor, two spindles spaced apart, arranged transversely of said stock for a simultaneous movement toward and from each other, each spindle extending through and outside of said stock, means for preventing their endwise movement, an open-ended slot in each extending end adapted to receive a wire, a stop arranged outside of and adjoining one of said ends, a shear-knife arranged outside of and adjoining the other of said ends, a lever-handle arranged for turning the spindles a part of a revolution and thereby severing the length of wire necessary for a hoop from a coil of wire, making a substantially quarter-bend near each end of the severed wire and holding said bent ends in position for being twisted around each other at a point inside of said bends by a half-turn of said tool in a horizontal plane and leaving the extreme ends of the wire of each bend in position for being driven into the wood of the article being hooped, and a housing partially covering the cogs or other mechanism for preventing the defacement of the article being hooped, substantially as described.

823,557. PARTITION STRUCTURE. ARTHUR R. SPEER, Pittsburg, Pa. Filed Feb. 6, 1905. Serial No. 244,493.

Claim.—1. A partition structure consisting of a plurality of strips of sheet metal crossed at right angles to each other, flattened at the crossing juncture and provided with cross-grooves pressed through both members, the intervening portion of the strips being bent into inverted-U form, substantially as set forth.



2. A partition structure consisting of a plurality of strips of sheet metal crossed at right angles to each other, flattened at the crossing juncture and provided with cross-grooves pressed through both members, the intervening portion of the strips being bent into inverted-U form, and provided with flattened attaching-terminals, substantially as set forth.

3. The combination with a sheet-metal case formed of continuous jointed sections, of a partition structure consisting of a plurality of strips of sheet metal crossed at right angles to each other, flattened at the crossing juncture and provided with cross-grooves pressed through both members, the intervening portion of the strips being bent into inverted-U form, and provided with flattened attaching-terminals inserted between the meeting portions of adjacent sections, substantially as set forth.

4. The combination with a sheet-metal case having outwardly-extending strengthening-ribs formed of bent portions of the casing, of a partition structure having its terminals projecting between and embraced by the sides of said ribs, and means for securely holding the terminals therein substantially as set forth.

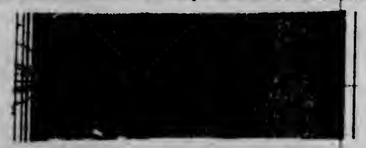
5. The combination with a sheet-metal case formed of jointed sections, of a partition structure consisting of a plurality of cross-strips, secured together, and provided with attaching-terminals inserted between the meeting portions of adjacent sections, and means for securely holding the terminals therein substantially as set forth.

6. The combination with a sheet-metal case formed of jointed sections, of a partition structure consisting of a plurality of strips crossed at right angles to each other, secured together, and provided with attaching-terminals inserted between the meeting portions of adjacent sections with means for securing the partition-terminals between the sections, substantially as set forth.

7. The combination with a sheet-metal case formed of jointed sections, of a partition structure consisting of a plurality of strips crossed at right angles to each other, secured together, and provided with attaching-terminals inserted between the meeting portions of adjacent sections, and held therein by securing-indentations, substantially as set forth.

8. The combination with a sheet-metal case formed of jointed sections connected together by folding the edge of one section around an engaging flange in the adjacent section, of partition devices having their terminals extending between said meeting portions of the case, and means for securing the terminals in position, substantially as set forth.

823,558. FLOOR-SUPPORT FOR BUILDINGS. EVELYN P. SPEARY, Oak Park, Ill. Filed Sept. 15, 1905. Serial No. 278,568.



Claim.—1. In a device of the class described, a floor-strip formed of metallic side members provided with lateral bottom flange portions and having integral outwardly-folded upper portions, and means for securing such side members together in engagement with the opposite sides of floor-nails driven therebetween.

2. In a device of the class described, a floor-strip formed of parallel metallic side members provided with lateral bottom flange portions and having integral upper outwardly-folded portions forming longitudinal openings, and means for securing such parallel side members together in engagement with the opposite sides of floor-nails driven therebetween.

3. In a device of the class described, the combination of a plurality of floor-strips mounted end to end, each formed of parallel metallic side members having upper outwardly-folded portions forming longitudinal openings for receiving a connecting-rod, and a connecting-rod mounted in such openings and connecting the adjacent end portions of such floor-strips.

4. In a device of the class described, the combination of a plurality of floor-strips mounted end to end, each formed of metallic side members having lateral bottom flanges and upper outwardly-folded portions forming longitudinal openings, connecting-rods mounted in such longitudinal openings and connecting the upper end portions of such floor-strips, and metallic clips mounted upon the bottom flanges and connecting the lower end portions of such strips.

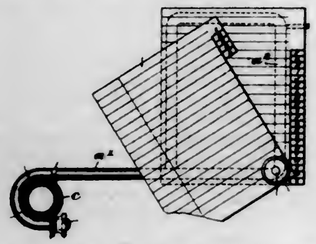
5. In a device of the class described, the combination of a plurality of floor-strips mounted end to end, each formed of metallic side members having outwardly-folded upper portions, said side members being secured together and provided with a space therebetween for receiving floor-nails, cement in which such floor-strips are embedded, and means for supporting such floor-strips and the cement in which they are embedded.

6. In a device of the class described, the combination of a plurality of floor-strips, each formed of metallic side members having outwardly-folded upper portions and having lateral bottom flanges, cement in which such laterally-flanged floor-strips are embedded, and metallic floor-beam mechanism upon which such floor-strips are laid for supporting the floor-strips and cement and thereby the floor to be laid thereon.

7. In a device of the class described, the combination of a floor-beam, a floor-strip laid thereon formed of metallic side members secured together and having outwardly-folded upper portions and provided with lateral bottom flanges, and a layer of cement in which such laterally-flanged floor-strip is embedded.

8. In a device of the class described, the combination of a floor-beam, a floor-strip laid thereon formed of metallic side members, each of such side members being provided with a lateral bottom flange and having an upper folded portion forming a longitudinal opening for receiving connecting-rod mechanism, longitudinally-extending rods mounted in such openings in the side members, metallic clips mounted in engagement with the lateral flanges of the side members, and a layer of cement in which such laterally-flanged floor-strip is embedded.

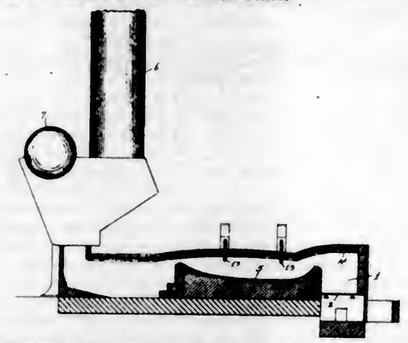
823,559. DIRECTORY ATTACHMENT. HARRY W. STONE, Brooklyn, N. Y. Filed June 10, 1904. Serial No. 211,922.



Claim.—1. A directory attachment for a telephone instrument comprising a supporting-arm provided with means for removable attachment to said instrument, a supporting-frame carried by said arm, a plurality of superposed directory elements pivoted at the bottom of their outer edges to the outer edge of said frame, and a stop also on the outer edge of said frame above the pivotal point of said elements whereby said elements may be swung toward the instrument in consulting the directory, and returned to normal position against said stop.

2. A directory attachment for a telephone instrument comprising a support adapted to be attached to said instrument, a plurality of superposed directory elements pivoted at their lower outer edges to the outer edge of said support, a stop on the outer edge of said support and above the pivotal point of said elements, whereby said elements may be swung toward the instrument in consulting the directory and returned to normal position against said stop.

823,560. ART OF METALLURGY. ENRIQUE A. TOUCEDA, Albany, N. Y. Filed Jan. 28, 1905. Serial No. 243,015.



Claim.—1. That improvement in the art of metallurgy which consists in converting into electrical energy heat emanating from a metallurgical furnace, and converting said electrical energy into heat within the furnace.

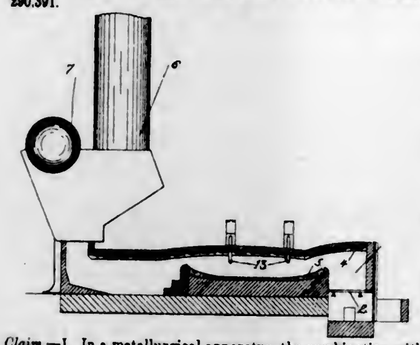
2. That improvement in the art of metallurgy which consists in converting into electrical energy heat passing from the hearth of a reverberatory furnace, and converting said electrical energy into heat adjacent to the hearth within the furnace.

3. That improvement in the art of metallurgy which consists in converting into electrical energy heat passing from the hearth of a non-regenerative reverberatory furnace, and converting said electrical energy into heat within the furnace.

4. That improvement in the art of metallurgy which consists in converting into electrical energy heat emanating from a reverberatory furnace, and forming by said electrical energy an electric arc adjacent to the hearth within the furnace.

5. That improvement in the art of metallurgy which consists in converting into steam energy heat emanating from a metallurgical furnace, converting said steam energy into electrical energy, and converting said electrical energy into heat within the furnace.

823,561. METALLURGICAL APPARATUS. ENRIQUE A. TOUCEDA, Albany, N. Y. Original application filed Jan. 28, 1905, Serial No. 243,015. Divided and this application filed Dec. 5, 1905. Serial No. 290,391.



Claim.—1. In a metallurgical apparatus, the combination with a metallurgical furnace, of means for converting heat emanating from said furnace into electrical energy; and means for converting said electrical energy into heat within the furnace.

2. In a metallurgical apparatus, the combination with a fuel-burning metallurgical furnace; of means for converting heat emanating from said furnace into electrical energy; and means for converting said electrical energy into heat within the furnace.

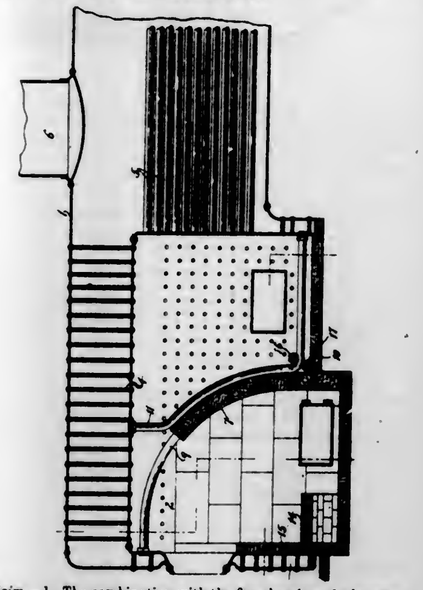
3. In a metallurgical apparatus, the combination with a fuel-burning metallurgical furnace; of an electric heater located within said furnace; an electrical generator connected with said electric heater, and a generator-operating motor operated by heat emanating from said furnace.

4. In a metallurgical apparatus, the combination with a metallurgical furnace; of an electric heater located within said furnace; means for converting heat emanating from said furnace into electrical energy; and means for supplying said electrical energy to said electric heater.

5. In a metallurgical apparatus, the combination with a reverberatory furnace; of a steam-boiler; means for supplying to said boiler heat emanating from said furnace; a steam-engine; means for supplying said engine with steam from said boiler; an electrical generator operatively connected with said engine; and an electric heater located within said furnace in circuit with said electrical generator.

6. In a metallurgical apparatus, the combination with a reverberatory furnace; of a steam-boiler; means for supplying to said boiler heat emanating from said furnace; a steam-engine; means for supplying said engine with steam from said boiler; an electrical generator operatively connected with said engine; and a pair of arc-forming electrodes located within said furnace in circuit with said generator.

823,562. LOCOMOTIVE-BOILER. HERBERT J. TRAVIS, New York, N. Y. Filed May 12, 1905. Serial No. 260,099.



Claim.—1. The combination with the fire-chamber of a locomotive provided with an opening for the discharge of pulverized fuel through its rear wall, of a partition-wall extending upwardly and rearwardly from the bottom of the chamber intermediate the ends thereof, said wall being located opposite the opening for the discharge of pulverized fuel, and composed of superposed bricks and water-circulating tubes connected with the walls of the fire-chamber and extending through the partition-wall, forming a support for the bricks.

2. The combination with the fire-chamber of a locomotive provided with an opening for the discharge of pulverized fuel through its rear wall, of a partition-wall extending upwardly and rearwardly from the bottom of the chamber intermediate the ends thereof, said wall being located opposite the opening for the discharge of pulverized fuel, and composed of superposed bricks and water-circulating tubes connected with the walls of the fire-chamber and extending from the upper part of the chamber to the lower part thereof and through the partition-wall, said tubes forming a support for the bricks.

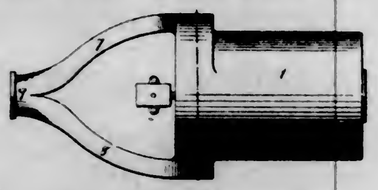
3. The combination with the fire-chamber of a locomotive, of a partition-wall uprising from the bottom of the chamber intermediate of the ends of the chamber, water-circulating tubes housed within the wall and water-circulating tubes exterior to the wall and forming a support for the wall.

4. The combination with the fire-chamber of a locomotive, provided with a partition-wall extending upwardly from the bottom of the chamber intermediate of the ends of the chamber, of water-circulating tubes forming a support for the wall, the said tubes being ex-

tended along the front portion of the fire-chamber near the bottom thereof.

5. The combination with the fire-chamber of a locomotive, provided with a partition-wall uprising from the bottom thereof and terminating at a point below the top of the chamber, of water-circulating tubes in proximity to the said wall and forming a support for the wall, the said tubes being disposed in a general longitudinal direction within the chamber and transverse water-circulating tubes for holding the said wall-supporting tubes in position.

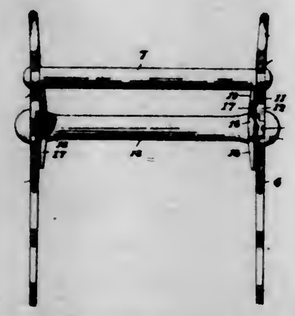
823,563. **FUEL-FEEDING APPARATUS.** HERBERT J. TRAVIS, New York, N. Y. Filed Sept. 7, 1905. Serial No. 277,313.



Claim.—1. The combination with the cylinder, of a discharge-conduit extending tangentially from the periphery of the cylinder and gradually curved into a position extending in a direction corresponding to the longitudinal axis of the cylinder.

2. The combination with the cylinder, of a plurality of discharge-conduits extending tangentially from the periphery of the cylinder and gradually curved and merged into one conduit extending in a direction corresponding to the longitudinal axis of the cylinder.

823,564. **BRIDLE-BIT.** HARRY TURTON, Newark, N. J., assignor to August Buermann, Newark, N. J. Filed Nov. 19, 1904. Serial No. 233,474.

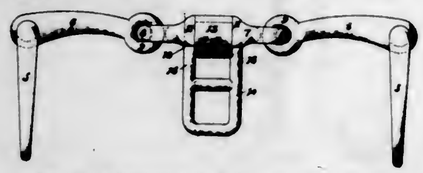


Claim.—1. The improved bit for horses, comprising cheek-pieces, a mouthpiece rigidly joining said cheek-pieces, and a second mouthpiece having its opposite ends slidably arranged in said cheek-pieces, said second mouthpiece being movable toward and from the rigid mouthpiece, and having supplemental cheek-pieces with passages 18, and recesses 19, substantially as set forth.

2. The improved bit for horses, comprising cheek-pieces, a mouthpiece rigidly joining said cheek-pieces, and a second mouthpiece having its opposite ends slidably arranged in said cheek-pieces, said second mouthpiece being movable toward and from the rigid mouthpiece, and having supplemental cheek-pieces recessed at points contiguous to the first said mouthpiece, substantially as set forth.

3. The improved bridle-bit herein described comprising cheek-pieces having semicircular extensions forming with the bodies of the cheek-pieces rings for the driving-reins, the bodies of the said cheek-pieces extending diametrically through said driving-rein rings and the said bodies being slotted longitudinally at points within said rein-rings, a rigidly-fixed mouthpiece joining said cheek-pieces and a second mouthpiece, the ends of which are arranged in said slots and are free to move toward and from the rigid mouthpiece, the movable mouthpiece at the inner sides of the said cheek-pieces having supplemental cheek-pieces adapted to guard the flesh of the animal's mouth from entering the said slots, substantially as set forth.

823,565. **BRIDLE-BIT.** HARRY TURTON, Newark, N. J., assignor to August Buermann, Newark, N. J. Filed Dec. 5, 1905. Serial No. 290,345.

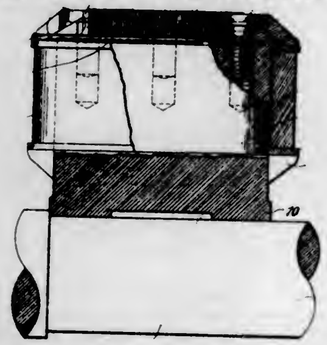


Claim.—1. An improved bit having a tongue pivotally arranged at its center, and stops on the bit to limit the movement of the tongue.

2. An improved bit having three mouthpieces linked together, the center mouthpiece having a tongue pivoted thereon, and stops on the center mouthpiece to limit the swinging of the tongue.

3. An improved bit having end mouthpieces, and a center mouthpiece linked to the end mouthpieces, a tongue having an eye embracing the center mouthpiece, and stops on the center mouthpiece limiting the movement of the tongue.

823,566. **DYNAMO-ELECTRIC MACHINERY.** WILLIAM L. WATERS, Milwaukee, Wis. Filed Sept. 24, 1904. Serial No. 225,733.



Claim.—1. In a dynamo-electric machine, the combination with a rotating field-magnet having salient pole-pieces, of a laminated pole-shoe for each pole-piece, a cradle comprising end plates, flanges and cross-bars, the laminæ of said pole-shoe being placed between said end plates, rivets passing through said end plates and said laminæ, and cap-screws set in recesses formed in said end plates and said pole-shoe and serving to secure said pole-shoe to the associated pole-piece.

2. In a dynamo-electric machine, the combination with a rotating field-magnet having rotating pole-pieces, of a laminated pole-shoe for each pole-piece, a cradle having end plates and cross-bars, the laminæ of said pole-shoe being placed between said end plates, rivets passing through said end plates and said laminæ, and cap-screws set in countersunk holes formed in said end plates and said pole-shoe, and serving to secure said pole-shoe to said pole-piece.

3. In a dynamo-electric machine, the combination with a rotating field-magnet having salient pole-pieces, of a coil upon each of said pole-pieces, a laminated pole-shoe for each pole-piece, a cradle comprising end plates, flanges and cross-bars, the laminæ of said pole-shoe being placed between said end plates, rivets passing through said end plates and said laminæ, said flanges engaging the coil of the associated pole-piece to retain the same in position, and means for clamping said cradle to the associated pole-piece.

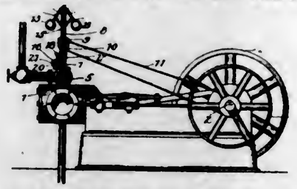
4. In a dynamo-electric machine, the combination with a rotating field-magnet having salient pole-pieces, of a field-magnet coil upon each of said pole-pieces, brackets to support the inner ends of said coils, a laminated pole-shoe for each pole-piece, a cradle for each shoe, said cradle comprising end plates, flanges and cross-bars, the laminæ of said pole-shoe being placed between a pair of end plates, the flanges and cross-bars of said cradle serving as the support for the outer ends of the associated field-magnet coil, rivets passing through said end plates and said laminæ, and means for securing said cradle to the associated pole-piece.

5. In combination, a rotating magnet having salient pole-pieces, a plurality of soft-iron laminæ forming a pole-face for each pole-piece, a coil wound upon each pole-piece, a frame for supporting and retaining in position the laminæ of each pole-face, said frame serving also as a support for the outer end of the associated coil, and means for securing said frame to the associated pole-piece.

6. In combination, a field-magnet having salient pole-pieces extending from a hub, the width of said pole-pieces being substantially equal to the width of said hub, field-coils surrounding said pole-pieces, a supporting-ring disposed between each coil and said hub, and brackets extending from said supporting-rings and engaging said hub for supporting the overhanging ends of said supporting-rings and said coils.

7. In combination, a rotating field-magnet having salient pole-pieces extending from a hub, the width of said pole-pieces being substantially equal to the width of said hub, a plurality of soft-iron laminæ forming a pole-face for each pole-piece, a coil formed upon each pole-piece, a frame for supporting and retaining in position the laminæ of each pole-face and for retaining said coil in position on said pole-piece, means for securing each frame to the associated pole-piece, a supporting-ring disposed between each coil and said hub, and brackets extending from said supporting-rings and engaging said hub for supporting the overhanging ends of said supporting-rings and said coils.

823,567. **GOVERNING MECHANISM FOR ENGINES.** WILLIAM L. WATERS, Milwaukee, Wis. Filed Dec. 5, 1904. Serial No. 235,458.



Claim.—1. In a dash-pot mechanism for engine-governors, the combination with an outer and inner vessel, of a plunger adapted to reciprocate within the inner vessel, an adjustable by-pass connecting the upper and lower ends of said inner vessel, and a valve in the lower part of said vessel adapted to prevent communication between the vessels during one direction of movement of the piston and adapted to open communication between the vessels during the opposite direction of motion of the piston.

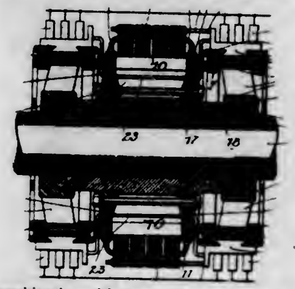
2. In a dash-pot mechanism for engine-governors, the combination with an inner and outer vessel having communication at their upper end and both filled with fluid, of a piston for reciprocating within the inner vessel, an adjustable by-pass connecting the upper with the lower part of the inner vessel, and a check-valve in the base-wall of the inner vessel adapted to prevent communication between the inner and outer vessels upon downward stroke of the piston and to allow communication between the vessels upon upward stroke of the piston.

3. In a dash-pot mechanism for engine-governors, the combination with an inner and outer vessel having communication at their upper end and both filled with fluid, of a piston for reciprocating within the inner vessel, an adjustable by-pass connecting the upper with the lower part of the inner vessel, and a check-valve in the base-wall of the inner vessel adapted to prevent communication between the inner and outer vessels upon downward stroke of the piston and to allow communication between the vessels upon upward stroke of the piston, said check-valve being adjusted to be unresponsive upon slow speed of the piston and to be responsive to allow communication only upon sudden and quick movements of the piston in an upward direction.

823,568. **COMMUTATOR.** WILLIAM L. WATERS, Milwaukee, Wis. Filed Dec. 5, 1904. Serial No. 235,462.

Claim.—1. The combination with an armature, of a commutator arranged at each side thereof and adapted to rotate therewith, the segments of one commutator being suitably connected with the coils of the armature, the segments of the other commutator having no direct connection with the coils, ventilating-passages through the interior of the armature, and conductors passing through said ventilating-passages and connecting with the segments of the commutators for affording an electrical path between the corresponding segments of the commutators.

2. The combination with an armature, of a commutator arranged at each side thereof, said commutators being of similar construction, a supporting-rim for each commutator for supporting the segments thereof, clamping-rings engaging the edges of said rim and said segments, a hub for each commutator, spokes connecting said rim with said hub to form passage-ways through each commutator, the segments of one commutator being suitably connected with the coils of the armature, the segments of the other commutator having no direct connection with the coils, ventilating passage-ways through the core of the armature, and conductors passing through said passage-ways and connecting corresponding segments of the commutators.



3. The combination with an armature, of a commutator associated with each end thereof, a sleeve provided with two sets of shoulders, the end plates of said armature engaging said sleeve against one set of shoulders, said commutators being mounted on said sleeve, and each engaging one of the other shoulders, the segments of one commutator being suitably connected with the coils of the armature, and conductors for joining corresponding segments of the commutators.

4. The combination with an armature, of two commutators, one disposed at each side thereof, a sleeve, sets of shoulders on said sleeve, the end plates for said armature engaging said sleeve and one set of said shoulders, commutators being mounted on said sleeve, and each engaging one of the other shoulders, ventilating passage-ways extending through said armature through said commutators, the segments of said comutators being suitably connected with each other and with the armature-coils.

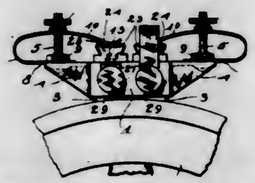
5. The combination with an armature, of a commutator disposed at each end thereof, a sleeve provided with two sets of shoulders, the end plates of said armature engaging said sleeve and one set of shoulders, said commutators being also mounted on said sleeve and each engaging one of the other shoulders, ventilating passage-ways extending through said armature and through said commutators, the segments of one commutator being suitably connected with the coils of the armature, the segments of the other commutator having no direct connection with the coils, and conductors passing through the ventilating passage-ways of the armature for connecting corresponding segments of the commutators.

6. The combination with an armature, of a commutator disposed at each side thereof, a sleeve upon which said armature and said commutators are rigidly mounted, a supporting-rim for the segments of each commutator, clamping-rings for securing the segments of each commutator to the corresponding supporting-rim, a hub for each commutator, spokes extending from the rim to the hub to form ventilating passage-ways, ventilating passage-ways through the armature, conductors passing through said armature passage-ways for suitably connecting together corresponding commutator-segments, the segments of one of said commutators being suitably connected with the armature-coils.

7. The combination with an armature, of a commutator disposed at each side thereof, a sleeve provided with two sets of shoulders, the end plates of the armature engaging said sleeve and one set of shoulders, hub portions of the commutators mounted on said sleeve and engaging the other shoulders, a supporting-rim for each commutator, spokes for connecting each supporting-rim with the corresponding hub, clamping-rings for securing the commutator-segments to the rim, said clamping-rings and spokes forming passage-ways through the commutators, ventilating passage-ways through the armature, and conductors passing through said armature passage-ways for connecting together corresponding segments of the commutators, the segments of one of said commutators being suitably connected with the armature-coils.

823,569. **BRUSH-HOLDER.** WILLIAM L. WATERS, Milwaukee, Wis. Filed Jan. 20, 1905. Serial No. 241,963.

Claim.—1. In a brush-holder, the combination with a supporting-frame, of a brush-chamber extending through said frame, a carbon brush extending through said chamber for engagement with a commutator or collector-ring with which the brush-holder is associated, said brush having a dovetailed upper end, a metallic cap-plate engaging said dovetailed end, a pressure-spring engaging the top of the cap-plate for pressing said brush into engagement with the commutator or collector-ring, and a flexible conductor engaging below said cap-plate and connected with said frame.



2. In a brush-holder, the combination with a supporting-frame, of a brush-chamber extending vertically through said frame, a carbon brush extending through said chamber for engagement with a commutator or collector-ring with which the brush-holder is associated, said brush having a dovetailed upper end, a metallic cap-plate engaging said dovetailed end, a groove in the upper end of the brush below the cap-plate, and a flexible conductor secured to the supporting-frame and engaging in said groove, said conductor serving to afford increased electrical contact between the brush and the supporting-frame.

3. In a brush-holder, the combination with a supporting-frame, of a brush-chamber extending therethrough, a carbon brush extending through said chamber for engagement with a commutator or collector-ring with which said brush is associated, a metallic cap-plate for said brush, a flat spring secured at one end to said supporting-frame, means for causing pressing engagement of the other end of said spring with the top of the cap-plate for pressing said brush against the commutator or collector-ring, a groove along the upper end of said brush below said cap-plate, and a flexible conductor of sheet material secured at one end to the supporting-frame, the other end of said conductor engaging in said groove and secured to the cap-plate.

4. In a brush-holder, the combination with a supporting-frame, of a brush-chamber extending therethrough, a carbon brush extending through said brush-chamber for engagement with a commutator or collector-ring, said brush having a dovetailed upper end, a metallic cap-plate engaging said dovetailed end, a groove extending along the upper end of said carbon brush below said cap-plate, a U-shaped spring clamped at one end to said supporting-frame, means for holding the other end of said spring in pressing engagement with the top of the metallic cap-plate to press the brush against the commutator or collector-ring, means for adjusting the pressure of said spring on said brush, a flat flexible conductor clamped at one end to the supporting-frame, the other end of said conductor extending in said groove in intimate contact with said cap-plate, said conductor and spring affording electrical connection between the brush and the frame, and a support for said brush-holder.

5. In a brush-holder, the combination with a supporting-frame, of a brush-chamber extending therethrough, a carbon brush extending through said chamber for engagement with a commutator or collector-ring, the upper end of said brush being dovetailed, a metallic cap-plate engaging said dovetailed end, a slot in one end of said cap-plate, a groove extending along the top of said brush and below said cap-plate, and a conductor secured at one end to the supporting-frame, the other end of said conductor engaging in said slot and said groove.

6. In a brush-holder, the combination with a supporting-frame, of a brush-chamber extending therethrough, a carbon brush extending through said chamber for engagement with a commutator or collector-ring, said brush having a dovetailed upper end, a metallic cap-plate engaging said dovetailed end, a slot in one end of said cap-plate, a groove extending along the top of the carbon brush directly below said cap-plate, a post extending from said supporting-frame, a U-shaped spring having one of its limbs clamped to said supporting-frame by said post, a slot in the other limb of said spring through which said post extends, the end of said other limb engaging the top of the cap-plate, a thumb-nut having adjustable engagement with said post above said spring, whereby the pressure of said spring on the brush may be adjusted, and a conductor secured at one end to the supporting-frame, the other end of said conductor engaging in said slot and said groove below the cap-plate, said conductor serving to increase electrical connection between the brush and the supporting-frame.

7. In a brush-holder, the combination with a supporting-frame, of two brush-chambers extending therethrough, a carbon brush extending through each chamber for engagement with a commutator or collector-ring, said brushes having a dovetailed upper end, a metallic cap-plate for each brush engaging the dovetailed end, a groove extending along the top of the carbon brush below the cap-plate, a shelf extending from each side of the supporting-frame, a post extending upwardly from the shelf, a U-shaped spring having its one limb clamped to the shelf by the corresponding post, a slot in the other limb of each spring through which the corresponding post extends, the free end of each spring being in engagement with the top of the cap-plate of the corresponding brush and tending to press said brush into engagement with the commutator or collector-ring, a thumb-nut engaging the upper end of each post whereby the pressure of said spring upon the brushes may be adjusted, and a flat flexible conductor for each brush clamped at one end to the front of said supporting-frame, the other end of each conductor engaging in the slot of the corresponding brush below the cap-plate in intimate contact with the cap-plate.

8. In a brush-holder, the combination with a supporting-frame, of a brush-chamber extending therethrough, a carbon brush extending through said chamber for engagement with a commutator or collector-ring with which the brush is associated, a channel extending across the top of the brush, a cap-plate secured to the top of the brush over said channel, a spring engaging the top of said cap-plate for pressing the brush for engagement with the commutator, and a flexible conductor secured to the brush-holder frame and engaging in said channel below the cap-plate.

9. In a brush-holder, the combination with a supporting-frame, of a brush-chamber extending therethrough, a carbon brush extending through said chamber for engagement with a commutator or collector-ring with which the brush is associated, said brush having a dovetailed upper end, a cap-plate securely held on the brush by engagement with said dovetailed end, and a flexible conductor connected with the brush-holder frame and clamped between the tip of the brush and said cap-plate.

10. In a brush-holder, the combination with a supporting-frame, of a brush-chamber extending therethrough, a carbon brush extending through said chamber for engagement with a commutator or collector-ring with which the brush is associated, the top end of the brush being dovetailed, a channel extending across the top of the brush, a metallic cap-plate engaging the dovetailed end over the channel, and a flexible conductor connected with the brush-holder frame and engaging in said channel to be clamped between the top of the brush and said cap-plate.

11. In a brush-holder, the combination with a supporting-frame, of a brush-chamber extending therethrough, a carbon brush extending through said chamber for engagement with a commutator or collector-ring with which the brush is associated, the upper end of said brush being dovetailed, a metallic cap secured to the brush by engaging in the dovetailed end, and a spring engaging the top of the cap-plate for pressing the brush against the commutator.

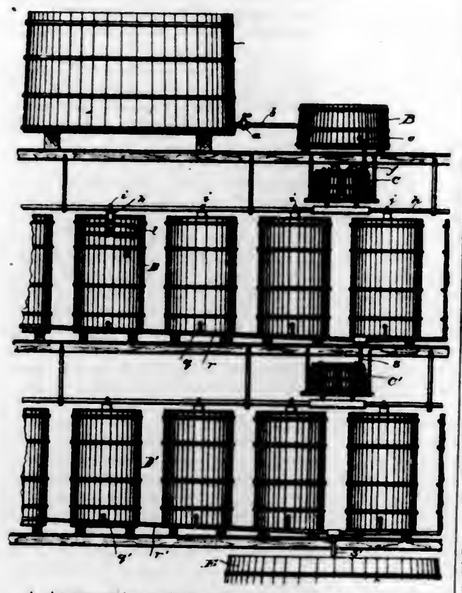
12. In a brush-holder, the combination with a supporting-frame, of a brush-chamber extending therethrough, a carbon brush extending through said chamber for engagement with a commutator or collector-ring with which the brush is associated, the upper end of said brush being dovetailed, a metallic cap-plate secured to the brush by engaging the dovetailed end, a slot in said cap-plate, and a flexible conductor connecting at one end with the brush-holder frame, the other end of said conductor engaging in the cap-plate slot and between the cap-plate and top of the brush to be securely clamped to the brush.

823,570. VINEGAR APPARATUS. CHARLES WENT, Chicago, Ill., assignor of one-half to Rudolph Mueller, Chicago, Ill. Filed Oct. 28, 1905. Serial No. 284,375.

Claim.—1. In a vinegar apparatus, in combination, a supply-tank having means to maintain a constant head therein, an evacuation or feeding tank connected to the generators, and a connection between the supply-tank and the evacuation-tank having means to deliver a predetermined quantity of liquid to the latter in a certain time.

2. An evacuation-tank for a vinegar apparatus having a floating jar and main siphon therein, the jar having a siphon extending through the bottom of the same and arranged to fill the jar and sink the main siphon when the liquid in the tank reaches a certain height.

3. An evacuation-tank for a vinegar apparatus having a float therein and a jar mounted on the float, a siphon having two legs connected by a flexible section, the inner leg being mounted on the float and the outer leg extending through the wall of the tank, and a siphon carried by the jar and arranged to fill the same and sink the float at a certain height.



4. An evacuation-tank for a vinegar apparatus, having therein a float carrying a jar and a main siphon, an adjustable stop at the top of the tank arranged to limit the rise of the float, and a small siphon carried by the jar and arranged to fill the same and sink the float after the rise of the float is arrested by the stop.

5. An evacuation-tank for a vinegar apparatus, having therein a float having depending legs, a pair of flexible siphons the inner legs of which are attached to and open under the float, a jar mounted on the float between the siphons and having extending through the bottom thereof a small siphon, and a stop for the float in the top of the tank.

6. In a vinegar apparatus, the combination with a generator having a sprinkler therein, and a supply-pipe, of a funnel connected to the sprinkler and having a closed top, and a siphon which taps the pipe and extends into the funnel.

823,571. TAMPING-BAR AND POST-HOLE PICK. EDWARD E. WHITEHEAD, Goshen, Ind. Filed Nov. 25, 1905. Serial No. 289,123.



Claim.—1. In a post-hole digger, a handle, and a reversible digging portion made of angle-iron removably and replaceably secured thereto, substantially as shown and described.

2. In a post-hole digger, a handle, a reversible digging portion removably and replaceably secured thereto, and a lever-handle pivotally secured to the handle, substantially as shown and described.

3. In a post-hole digger, a handle, a reversible digging portion made of angle-iron removably and replaceably secured thereto, and a lever-handle pivotally secured to the handle, substantially as shown and described.

4. A post-hole digger and tamping-bar comprising a handle, a removable and replaceable digging portion, having its two ends sharpened, secured to said handle, a tamping-head secured to said handle, and a lever-handle pivotally secured to the handle, substantially as shown and described.

5. A post-hole digger and tamping-bar comprising a handle, a removable and replaceable digging portion, made of angle-iron and having its two ends sharpened, secured to said handle, a tamping-head secured to said handle and a lever-handle pivotally secured to the handle, substantially as shown and described.

823,572. SOAP-HOLDER. FRANCIS W. WILSON, Boston, Mass. Filed Aug. 9, 1901. Renewed Dec. 1, 1905. Serial No. 289,778.



Claim.—1. A soap-holder comprising a casing; a rotary cutting-head fitting over one end thereof; a screw-threaded rod mounted to rotate in the casing independent of said cuting-head, a follower on said rod; and a spring engaged with the said follower and adapted to press the soap against the cutting-head, substantially as described.

2. A soap-holder comprising a casing; a rotary cutting-head fitting thereover; a rotatable screw-threaded rod extending through the casing and mounted to rotate independent of said cutting-head, a sliding back-rest for the soap; a follower engaged with the screw-threads of the rod and held from turning, and a spring between the follower and the back-rest.

3. A soap-holder comprising a casing; a rotary cutting-head fitting over one end thereof; a screw-threaded rod journaled at one end in the base of the casing and at the other end in the cutting-head whereby the same is free to rotate independent of said head, said rod having manipulative devices on its ends for turning it; a soap back-rest slidably mounted in the casing and on the rod; an adjustable follower slidably mounted within the casing and engaged as a nut with the rod; and a spring interposed between the follower and the back-rest, substantially as and for the purpose described.

4. In a soap-holder the combination of an inclosing casing; a rotary cutting-head removably mounted on one end of the same; a screw-threaded rod longitudinally disposed in the casing and having its ends rotatably mounted in said head and the base of said casing, whereby said rod is free to rotate independent of said head, removable end pieces on said rod for confining the same in its operating position and likewise confining the cutting-head, and also for supplying manipulative means by which to turn the rod; a sliding back-rest for the soap loosely surrounding the rod; a sliding follower engaging the screw-threads of the latter; and a spring interposed between the follower and the back-rest.

5. In a soap-holder the combination of an inclosing casing; a rotary cutting-head removably mounted on one end of the same; a screw-threaded rod longitudinally disposed in the casing and having its ends rotatably mounted in said head and the base of said casing, whereby said rod is free to rotate independent of said head, said end portions being screw-threaded reversely to the body of the rod; nuts engaging the end portions to confine the rod and the cutting-head in place and to constitute manipulative means for turning the rod; a follower having a nut formation engaging the rod; a spring engaging said follower; and a back-rest for the soap surmounting said spring.

823,573. PROCESS OF MAKING EXCELSIOR FROM BROOM-CORN CLIPPINGS. SCOTT K. WILSON, Grand Rapids, Mich. Filed Feb. 17, 1906. Serial No. 301,602.

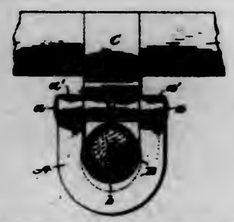
Claim.—The process of converting broom-corn clippings into an excelsior-like substance suitable for use as a filling for mattresses and the like, consisting in first washing the broom-corn clippings in water, then macerating the material for approximately twenty-four hours in a solution of caustic soda and water, then washing thoroughly and slowly drying the resulting product by application of mild heat, substantially as herein described.

823,574. NECK-YOKE. THOMAS J. WOODROW, Fountain Park, Ohio. Filed Nov. 3, 1905. Serial No. 285,753.

Claim.—1. The combination with a neck-yoke, of a pole-hanger provided with a recess to accommodate the holdback-flange of the pole, and a clip connecting said hanger with the neck-yoke, said clip having a projection extending normally beyond the plane of said recess

2. The combination with a neck-yoke, of a substantially U-shaped pole-hanger provided on its interior with an inwardly-extending recess to accommodate the holdback-flange of the pole and one of the arms of said hanger having an outwardly-extending lip

affording an entrance to said recess, and means pivotally connecting said hanger to the neck-yoke.



3. The combination with a neck-yoke, of a substantially U-shaped hanger provided on its interior with an inwardly-extending recess to accommodate the holdback-flange of the pole, one of the arms of said hanger having an outwardly-extending lip affording an entrance to said recess, and a clip pivotally connecting the upper end of said hanger with the neck-yoke, said clip being provided with a portion normally projecting beyond the plane of the entrance to said recess.

4. The combination with a neck-yoke, of a substantially U-shaped hanger provided on its interior with an inwardly-extending recess to accommodate the holdback-flange of the pole, one of the arms of said hanger being provided with means affording an entrance to said recess, a cross-bar rigidly connecting the upper ends of the arms of said hanger, a clip secured to the neck-yoke and loosely embracing the cross-bar of the hanger, a portion of said clip extending normally beyond the plane of the entrance to said recess.

5. The combination with a neck-yoke, of a substantially U-shaped pole-hanger secured thereto and provided on its interior with an inwardly-extending recess to accommodate the holdback-flange of the pole, said hanger having an outwardly-extending lip affording an entrance to said recess.

6. The combination with a neck-yoke, of a substantially U-shaped hanger provided on its interior with an inwardly-extending recess to accommodate the holdback-flange of the pole, and a clip pivotally connecting the upper end of said hanger with the neck-yoke, said clip being provided with a portion normally projecting beyond the plane of the entrance to said recess.

823,575. **NECK-YOKE CENTER.** GEORGE AID and FREDERICK AID, Gallatin, Mo. Filed Dec. 20, 1905. Serial No. 293,564.

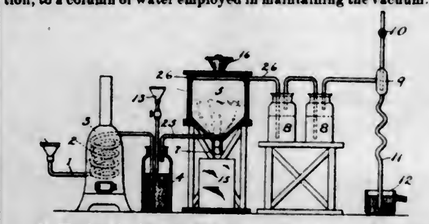


Claim.—A neck-yoke center comprising a yoke-band and pole-ring, a cam-block having a concave bearing-face upon its under side extending the entire length thereof and provided with upwardly-projecting ears, a presser-block located between the ears of said bearing, a single pivot connecting the cam-block and the presser-block together and to the pole-ring, the ends of said blocks extending out beyond the pole-ring and the presser-block pivotally connecting with the yoke-band, substantially as and for the purpose set forth.

823,576. **PROCESS OF EXTRACTING METALS FROM THEIR ORES.** CRAIG R. ARNOLD, Philadelphia, Pa. Filed Dec. 30, 1903. Serial No. 187,896.

Claim.—1. The herein-described process of recovering gold and silver from ores by the cyanid process, consisting in drawing air by suction, first, through a generator of a halogen gas, then through a pulp containing the cyanid salts and in sufficient volume to thoroughly agitate the same and finally carrying the waste and resultant gases from the tank, first through an absorption tank or vat and then through a column of liquid before permitting any escape to the external atmosphere.

2. The herein-described improvement in recovering metals by the cyanid process, consisting in maintaining a partial vacuum in the gas-space above the pulp of the ore and a cyanid salt while contained in a suitable closed vessel, introducing air by the exhaust action thus produced in sufficient amount beneath the body of pulp to thoroughly agitate the same, passing the escape or waste gases passing from the tank by the vacuum maintained, through a caustic solution and finally delivering the remaining gases which pass through such solution, to a column of water employed in maintaining the vacuum.

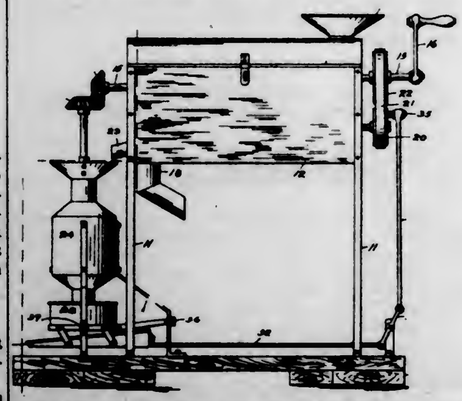


3. The herein-described improvement in recovering metals by the cyanid process consisting in forming a pulp of the ore and a solution of a cyanid salt, agitating the pulp while contained in a closed vessel by drawing air through a heater and a generator of a halogen gas and then through the body of pulp by maintaining a partial vacuum in the gas-space above the pulp-body and passing the gases evolved in the pulp-containing tank by the vacuum maintained therein, through a caustic solution and an exhaust-pump of hydraulic type to the external atmosphere.

4. The herein-described process of extracting precious metals from their ores, consisting in forming a pulp of the ore and a cyanid solution drawing air through the pulp in sufficient amount to thoroughly agitate the ore-pulp by maintaining the vacuum in the space above the body of pulp and delivering the gases exhausted from the space above the pulp to a regenerating solution and to a column of water which maintains the vacuum, said solution and column being in series with one another.

5. The herein-described process of recovering precious metals, consisting in forming a pulp of the ore and a cyanid solution, maintaining the vacuum above the body of pulp by drawing air, first, through a heater and then through a generator of a halogen element, and finally through the body of pulp in sufficient quantity to agitate the same and delivering the air or gases exhausted from the tank to a column of liquid by which the vacuum is maintained.

823,577. **MERCURIAL AMALGAMATOR.** BARLOW BALDWIN, Chicago, Ill., assignor, by direct and mesne assignments, of four-tenths to Erwald S. Hinton and two-tenths to George A. Hamlin, Chicago, Ill. Filed Dec. 4, 1903. Serial No. 183,737.



Claim.—1. In a mercurial amalgamator, in combination, a tank for the mercury, a hopper for dry auriferous material, a spout extending from said hopper into said tank, and a conveyer adapted to drive the aforesaid material into and through said spout without clogging thereof, and a nearly plane horizontal distributer adapted to spread said material over the bottom of said tank without agitative stirring of the mercury, substantially as specified.

2. In a mercurial amalgamator, in combination, a tank for the mercury, a hopper for dry auriferous material, a spout extending from said hopper into said tank, a conveyer adapted to drive the aforesaid material into and through said spout without clogging thereof, and a nearly plane horizontal paddle adapted to spread said material over the bottom of said tank without agitative stirring of the mercury, substantially as specified.

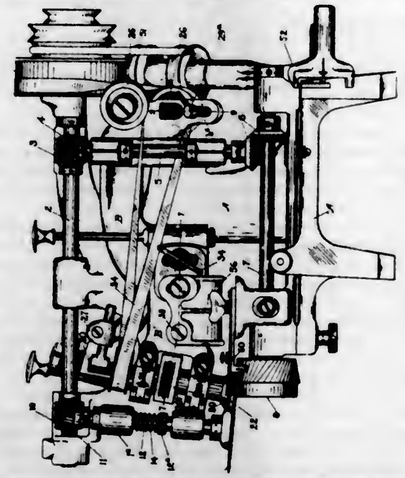
3. In a mercurial amalgamator, in combination, a tank for the mercury, a hopper for dry auriferous material, a spout extending from said hopper into said tank, a conveyer adapted to drive the aforesaid material into and through said spout without clogging thereof, and a nearly plane horizontal paddle adapted to spread said material over the bottom of said tank without agitative stirring of the mercury, substantially as specified.

4. In a mercurial amalgamator, in combination, a tank for the mercury, a hopper for dry auriferous material, a spout extending from said hopper into said tank, a screw conveyer adapted to drive the aforesaid material into and through said spout without clogging thereof, and a nearly plane horizontal paddle adapted to spread said material over the bottom of said tank without agitative stirring of the mercury, substantially as specified.

5. In a mercurial amalgamator, in combination, a tank for the mercury, a hopper for dry auriferous material, a spout extending from said hopper into said tank, and a conveyer extending through said hopper and said spout and adapted to drive the aforesaid material out of the said hopper and into and through said spout without clogging thereof, and a nearly plane horizontal distributer adapted to spread said material over the bottom of said tank without agitative stirring of the mercury, substantially as specified.

6. In a mercurial amalgamator, in combination, a tank for the mercury, a hopper for dry auriferous material, a spout extending from said hopper into said tank, and a screw conveyer extendng through said hopper and said spout and adapted to drive the aforesaid material out of the said hopper and into and through said spout without clogging thereof, and a nearly plane horizontal distributer adapted to spread said material over the bottom of said tank without agitative stirring of the mercury, substantially as specified.

823,578. **SKIVING-MACHINE.** CHARLES H. BAYLEY, Boston, Mass., assignor to United Shoe Machinery Company, Paterson, N. J., a Corporation of New Jersey. Filed June 11, 1902. Serial No. 111,168.



Claim.—1. A skiving-machine comprising a machine-frame, a knife-frame, adjustable with relation to the machine-frame, a driving-shaft carried by said machine-frame and provided with a pulley, a movable knife carried by said knife-frame, idle pulleys also carried by said knife-frame, and a belt connecting said driving-pulley and said movable knife to actuate the latter, said belt being adapted to be passed around said idle pulleys, whereby the tension of said belt is maintained substantially uniform in the varying relative adjustments of the said frames.

2. A skiving-machine comprising a machine-frame, a driving-shaft mounted thereon, a pulley on said shaft, a work-feeding mechanism also mounted on said frame, a knife-frame, a movable knife supported thereon, means whereby said two frames may be adjusted to vary the relative positions of the knife and work-feeding mechanism, an extension carried by the knife-frame, a pair of idle pulleys carried by said extension, and a belt connecting said driving-pulley and said movable knife to operate the latter, said belt being passed around said idle pulleys, whereby the tension of the belt is maintained substantially uniform in the various adjustments of the two frames.

3. A skiving-machine, comprising a machine-frame, a driving-shaft mounted thereon, a pulley on said shaft, a work-feeding mechanism also mounted on said frame, a knife-frame, a movable knife supported thereon, means whereby said two frames may be adjusted to vary the relative position of the knife and work-feeding mechanism, an extension carried by the knife-frame, a pair of idle pulleys carried by said extension and a belt connecting said driving-pulley and said movable knife to operate the latter, said belt being passed around said idle pulleys, whereby the tension of the belt is maintained substantially uniform in the varying adjustments of the knife toward and from the work-feeding mechanism, in combination with means permitting adjustment of one of said idle pulleys to regulate the tension of the belt.

4. A skiving-machine comprising a suitable frame, a driving-shaft mounted thereon, a rotatable skiving-knife, a support for the knife connected to the frame for adjustment in the direction of the length of the driving-shaft, means for securing the knife-support in adjusted position, intermediate mechanism connecting said driving-shaft and knife to actuate the latter, and means movable with the knife-support for effecting adjustment of said connecting mechanism simultaneously with the adjustment of the knife and knife-support whereby to compensate for variations in the position of the knife with relation to the driving-shaft.

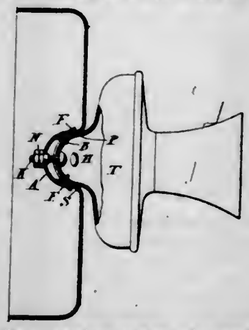
5. A skiving-machine comprising a driving-shaft, a pulley mounted in fixed relation thereon, a cutter, mechanism connecting said cutter and the driving-pulley, and means whereby said cutter may be adjusted longitudinally of the driving-shaft toward and from the pulley while maintaining the operative connection between the cutter and pulley.

6. A skiving-machine comprising a driving-shaft, work-feeding mechanism, a cutter, connecting mechanism between said cutter and the driving-shaft, and a support for the cutter movable in the direction of the length of the driving-shaft, said machine having provision for adjusting said support and cutter longitudinally of the driving-shaft toward and from the work-feeding mechanism without disturbing the operative relation of the connecting mechanism with the shaft and cutter.

7. In a skiving-machine, a knife-shaft mounted in suitable bearings, a knife carried on the end of said shaft, a pulley also carried by said shaft near the opposite end, a driving-shaft, a belt connecting said driving-shaft and said pulley, and a support for the end of the knife-shaft adjacent to the pulley to resist lateral strain due to the belt and to prevent uneven wear of the shaft-bearings.

8. In a skiving-machine, a shaft mounted in suitable bearings, a rotary skiving-knife mounted on said shaft, a pulley carried by said shaft near one end, and an adjustable half-bearing for said shaft at the end adjacent to the pulley to support the shaft against lateral strain.

823,579. **TRANSMITTER-SUPPORT.** SIDNEY A. BEYLAND, Elyria, Ohio, assignor to The Dean Electric Company, Elyria, Ohio, a Corporation of Ohio. Filed Feb. 28, 1905. Serial No. 247,683.



Claim.—1. In a transmitter-support, a base-plate and a transmitter-mounting provided with curved surfaces nesting together to

form a ball-and-socket joint, and means passing through both and securing said parts together, one of said parts provided with an opening to permit play of said securing means.

2. In a transmitter-support, a sheet-metal base formed up with a curved socket of spherical figure, a transmitter mount or shell having a curved projection to fit the socket, a bolt for securing the parts together, and a friction-spring secured by the bolt to one part and moving on the other, together with an opening in the latter permitting play of the bolt.

3. In a transmitter-support a metal base-plate, a curved socket formed therein, a similarly-curved transmitter-mount fitting the socket, a vertical slot in the socket-wall, a bolt secured in the mount and passing through said slot, a nut on said bolt, a friction-spring held by said nut against the inner surface of the socket-plate, and projections on said spring extending through said slot into engagement with said mount to serve as limiting-stops for the motion thereof.

4. In a transmitter-support, the sheet-metal plate C having the curved socket S, a transmitter mount or shell having the coöperating curved projection P, a slot *x* formed in said socket, a bolt K attached to the part P and playing in said slot, a spring A held by said bolt against the inner face of the socket-plate, friction-fingers F on said spring, and stop-fingers B extending through the slot into engagement with the curved projection P.

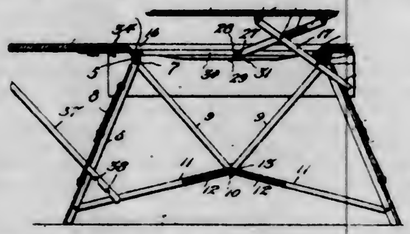
5. In a transmitter-support, the base and transmitter-mount provided with coöperating curved friction-surfaces, a single securing device and spring take-up therefor, and means to prevent side play.

6. In a transmitter-support, a ball-and-socket joint, openings therein to pass circuit-wires, and a single securing device passing through said ball-and-socket joint, substantially as described.

7. In a transmitter-support, a base-plate having a curved socket, a transmitter-shell having a curved projection formed integral with its body, and resilient means to secure the shell upon the plate, substantially as described.

8. In a transmitter-support, a base-plate and a transmitter-mounting provided with curved surfaces nesting together to form a ball and socket, resilient means holding said parts in frictional relation and securing means therefor, one of said parts having an opening adapting to permit play of said adjusting and securing means.

823,580. **IRONING-TABLE.** LEWIS C. BULLOCK, Millsburg, Pa. Filed Aug. 9, 1904. Serial No. 220,104.



Claim.—1. An ironing-table comprising a table proper, a bosom-board fitting an opening formed in the table and lying flush with the surface of the table when in normal position, arms pivoted to said board and to the table to permit an elevating movement of the board, locking-bars pivoted to the board and to said arms, and coacting locking means on the table to be engaged by said bars when the board is elevated.

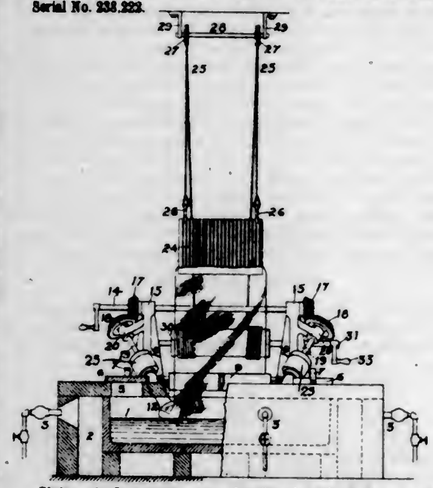
2. An ironing-table comprising a table proper, a bosom-board normally fitting an opening formed in the table, arms pivoted to the table and to said board to permit an upward movement of said board, one of said arms being extended to form a handle for operating the board, locking-bars pivoted to the board and to said arms, and means for engaging said bars and thereby locking the board in elevated position.

3. An ironing-table comprising a table proper, a bosom-board fitting an opening formed in the table, arms pivoted to said board and to the table to permit an elevating movement of the board, one of said arms being extended to form a handle for operating the board, locking-bars pivoted to the board and to said arms, the free ends of the bars being notched, and a locking device extending transversely of the table and adapted to be engaged by the notched ends of the bars when the board is elevated.

4. An ironing-table comprising a table proper, sets of legs pivotally connected to the ends of the table, sets of hanger-bars pivoted to the table at its ends, a rod arranged transversely of the table, the opposite ends of said hanger-bars being connected to said rod, adjusting-bars connecting said rod and the lower ends of the legs, braces connecting the legs of each set, an ironing-board connected to one end of the table, and locking-bars pivoted to said board and adapted to engage the braces of the adjacent set of legs when the latter are extended.

5. An ironing-table, comprising a table proper, means for adjusting the height of the table, a bosom-board fitting an opening formed in the table and lying flush with the surface of the table when in normal position, arms pivoted to said board and to the table to permit an elevating movement of the board to a position above the table, locking-bars pivoted to the board and to said arms, the free ends of the bars being notched, and a rod arranged transverse of the table-opening to be engaged by the notched ends of the bars when the board is elevated.

823,581. **APPARATUS FOR DRAWING SHEET-GLASS.** IRVING W. COLBURN and EDGAR WASHBURN, Franklin, Pa.; said Washburn assignor to said Colburn. Filed May 20, 1904. Renewed Dec. 24, 1904. Serial No. 238,223.



Claim.—1. In an apparatus for drawing sheet-glass, a receptacle containing molten glass, means for drawing glass therefrom in sheet form in a longitudinal direction, and two surfaces revolving in opposite directions and engaging the molten glass in the receptacle and a face of the sheet as drawn.

2. In an apparatus for drawing sheet-glass, a receptacle containing molten glass, means for drawing glass therefrom in sheet form in a longitudinal direction, and two oppositely-revolving rollers engaging the molten glass in the receptacle and a face of the drawn sheet.

3. In an apparatus for drawing sheet-glass, a receptacle containing molten glass, means for drawing glass therefrom in sheet form in a longitudinal direction, and two oppositely-revolving conical surfaces engaging the molten glass in the receptacle and a face of the sheet as drawn.

4. In an apparatus for drawing sheet-glass, a receptacle containing molten glass, means drawing glass therefrom in sheet form in a longitudinal direction, and two conical rollers revolving in opposite directions each having a portion of their surface dipping into the mass of molten glass in said receptacle and a portion engaging the surface of the sheet as drawn, whereby said rollers serve not only to draw glass from the receptacle to form a portion of the sheet, but also to stretch said sheet laterally.

5. In an apparatus for drawing sheet-glass, a receptacle containing molten glass, means drawing glass therefrom in sheet form in a longitudinal direction, and two oppositely-revolving surfaces whose axes of rotation are inclined at an angle to the surface of the molten glass and to the surface of the drawn sheet, said revolving surfaces engaging the molten glass in the receptacle and a face of the sheet as drawn.

6. In an apparatus for drawing sheet-glass, a receptacle containing molten glass, means drawing glass therefrom in sheet form

in a longitudinal direction, and two oppositely-revolving conical surfaces whose axes of rotation are inclined at an angle to the surface of the molten glass and to the surface of the drawn sheet, said revolving surfaces engaging the molten glass in the receptacle and a face of the sheet as drawn.

7. In an apparatus for drawing sheet-glass, a receptacle containing molten glass, means drawing glass therefrom in sheet form in a longitudinal direction, two oppositely-revolving surfaces whose axes of rotation are inclined at an angle to the surface of the molten glass and to the surface of the drawn sheet, said revolving surfaces engaging the molten glass in the receptacle and a face of the sheet as drawn, and devices for operating said surfaces at variable speeds.

8. In an apparatus for drawing sheet-glass, a receptacle containing molten glass, means drawing glass therefrom in sheet form in a longitudinal direction, two oppositely-revolving conical surfaces whose axes of rotation are inclined at an angle to the surface of the molten glass and to the surface of the drawn sheet, said revolving surfaces engaging the molten glass in the receptacle and a face of the sheet as drawn, and devices for operating said surfaces at variable speeds.

9. In an apparatus for drawing sheet-glass, a receptacle containing molten glass, means for drawing glass therefrom in sheet form in a longitudinal direction, two revolving surfaces turning in opposite directions and engaging the face of said sheet within said receptacle.

10. In an apparatus for drawing sheet-glass, a receptacle containing molten glass, means drawing glass therefrom in sheet form in a longitudinal direction, and two oppositely-revolving surfaces having axes of rotation inclined at an acute angle to the surface of said sheet and to the surface of the molten glass in said receptacle and each engaging a face of said sheet and the molten glass in the receptacle.

11. In an apparatus for drawing sheet-glass, a receptacle containing molten glass, means drawing glass therefrom in sheet form, and two conical surfaces each engaging a face of said sheet adjacent the surface of the molten glass, and means revolving said conical surfaces in opposite directions.

12. In an apparatus for drawing sheet-glass, a receptacle containing molten glass, means drawing glass therefrom in sheet form, two conical surfaces within said receptacle each engaging a face of said sheet adjacent to the surface of the molten glass, and means revolving said surfaces in opposite directions.

13. In an apparatus for drawing sheet-glass, a receptacle containing molten glass, means drawing glass therefrom in sheet form, two conical surfaces each engaging the face of said sheet adjacent to each edge thereof, and means revolving said surfaces in opposite directions.

14. In an apparatus for drawing sheet-glass, a receptacle containing molten glass, means for drawing glass therefrom in sheet form, two conical surfaces engaging the molten glass in said receptacle and a face of the sheet as drawn, means revolving said surfaces in opposite directions, and means cooling the sheet as drawn.

15. In an apparatus for drawing sheet-glass, a receptacle containing molten glass, means drawing glass therefrom in sheet form, two surfaces each engaging the molten glass in the receptacle and the lateral portions of the face of the sheet, means revolving said surfaces in opposite directions, and means for supplying heat to the opposite faces of the sheet during the drawing operation.

16. In an apparatus for drawing glass, a receptacle containing molten glass, a corrugated sheet-metal bait, and means for lowering said bait into said receptacle and withdrawing it therefrom.

17. In an apparatus for drawing glass, a receptacle containing molten glass, a corrugated bait, means for lowering said bait into the molten glass in said receptacle and withdrawing it therefrom, and a plurality of oppositely-revolving surfaces engaging the molten glass in said receptacle and the face of the sheet as drawn.

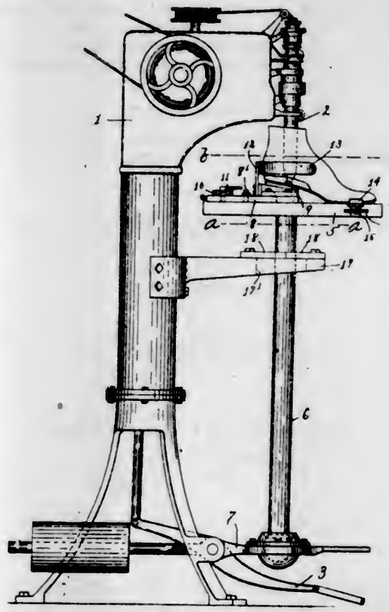
18. In an apparatus for drawing glass, a corrugated sheet-metal bait, a receptacle containing molten glass, and means for operating said bait.

19. In an apparatus for drawing glass, a corrugated bait, a receptacle containing molten glass, and means for operating said bait.

20. In an apparatus for drawing glass, a receptacle containing molten glass, a corrugated metallic bait, and means for operating said bait.

823,582. **HEEL-NAILING MACHINE.** JAMES E. COLLINS, Danvers, Mass., assignor to United Shoe Machinery Company, Boston, Mass., a Corporation of New Jersey. Filed Aug. 12, 1904. Serial No. 220,447.

Claim.—1. A heel-nailing machine, comprising means for sustaining a shoe and heel in attaching position, and a nail-driving device for driving nails into the heel having a nail-delivering nozzle to enter the shoe, said sustaining means and nail-driving device being arranged for relative movement in a direction transverse to the path of the nails.



2. A heel-nailing machine, comprising means for sustaining a shoe and heel in attaching position, a nail-driving device for driving nails into the heel having a nail-delivering nozzle to enter the shoe, said sustaining means and nail-driving device being arranged for relative movement in a direction transverse to the path of the nails, and means for restricting said relative movement to a predetermined limit.

3. A heel-nailing machine, comprising means for sustaining a shoe and heel in attaching position, and a nail-driving device for driving nails into the heel having a nail-delivering nozzle to enter the shoe, said sustaining means and nail-driving device being arranged for relative movement laterally and longitudinally of the heel whereby the attaching-nails may be successively inserted over approximately the entire area of the heel.

4. A heel-nailing machine comprising an upright heel-support having at its upper end means for holding the shoe upright in position on the heel, nail-driving devices having a depending nail-delivering nozzle adapted to enter the shoe above the heel, and means permitting rotary movement of said support about a center which is eccentric to the throat of said nozzle, substantially as described.

5. A heel-nailing machine comprising an upright heel-support having at its upper end means for holding the shoe upright in position on the heel, nail-driving devices having a depending nail-delivering nozzle adapted to enter the shoe above the heel, means permitting universal transverse movement of said support, and stationary guiding devices surrounding said support for limiting said movement, substantially as described.

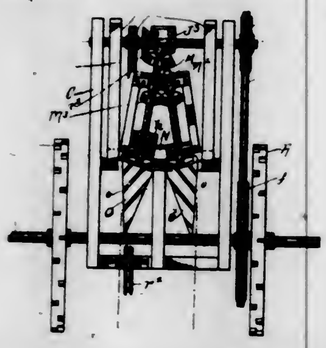
6. A machine of the character described, comprising a pair of heel-clamping jaws, and means for moving them into locking engagement with a heel, a pair of diverging spring-actuated fingers, one secured to each jaw and movable therewith, the faces of said fingers being equidistant from the faces of said jaws for centering the heel portion of the shoe in position over the heel while held by said jaws, and nail-driving means having its delivering-nozzle located between said fingers, substantially as described.

7. A machine of the character described, comprising a rotatably-mounted support, a pair of heel-clamping jaws mounted on said support and movable transversely thereof, a pair of divergent fingers carried by said support and arranged directly above said jaws and equidistant therefrom for centering the heel end of the shoe on the

heel as it is held by said jaws, a fore-part holder in front of said jaws on said support, and a nail-driving means having its delivery-nozzle between said fingers, substantially as described.

8. A machine of the character described, comprising a heel-support, a shoe centering and holding means directly above said support for holding the shoe in position on a heel held by said support, and a nail-driving means having its delivery-nozzle arranged to enter the shoe above the heel, said nozzle having a transversely-extending guard at its end, the edge of said guard being curved and the face thereof being upwardly beveled from the throat of the nozzle to said edge, substantially as described.

823,583. **BEET-HARVESTING MACHINE.** GEORGE F. CONNER, Port Huron, Mich. Filed Feb. 2, 1903. Serial No. 141,453.



Claim.—1. A beet-harvester comprising power-driven pulling mechanism and means to tilt said mechanism in planes transverse to each other.

2. In a beet-harvester, a pair of rotatable pulling-cones whose axes are oblique to each other, and means for adjustably tilting them both laterally and longitudinally.

3. In a beet-harvester, a pair of rotatable pulling-cones so disposed that the outer lines of contact with the surface of the soil are approximately parallel.

4. In a beet-harvester, a pair of rotatable pulling-cones in fixed relative position so that their outer lines of contact with the surface of the ground are approximately parallel, said pair of cones being both laterally and longitudinally tiltable.

5. In a beet-harvester, a pair of rotatable putting-cones whose peripheries are provided with spirally-arranged grooves.

6. In a beet-harvester a pair of rotatable pulling-cones whose surfaces are provided with oppositely-disposed grooves adapted to move approximately parallel to the surface of the ground as they pass upward therefrom.

7. In a beet-harvester, a pair of rotatable pulling-cones adapted to penetrate the earth, whose axes are oblique to each other.

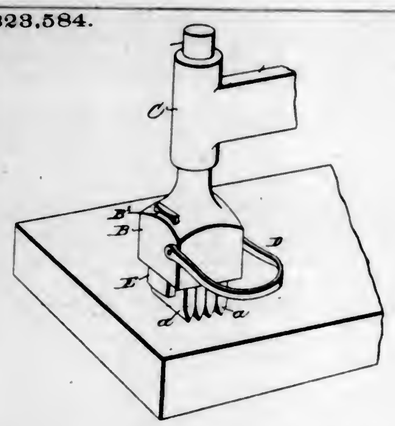
8. In a beet-harvester, a pulling-cone adapted to penetrate the earth, whose vertical axial plane is oblique to the longitudinal axis of the machine, operatively connected to the traction-wheels of the

823,584. **CUTTING OR DRESSING TOOL FOR MARBLE, STONE, &c.** JOSEPH S. COSTA, Quincy, Mass. Filed Dec. 4, 1905. Serial No. 290,066.

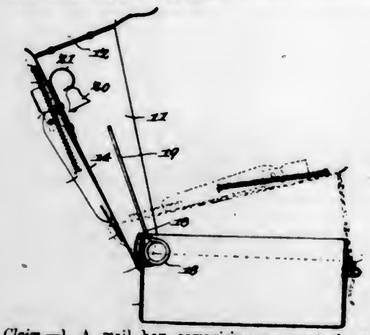
Claim.—1. In a machine for dressing stone and the like, a tool comprising a head, a series of bits contained within said head, a wedge freely inserted with its small end uppermost between the bits and one side of the head, a spindle projecting upward from the head to receive the blows of any suitable hammering device, said blows serving to seat the wedge firmly in place to bind the bits in the head.

2. In a machine for dressing stone and the like, a tool comprising a head, a series of bits contained within said head, a wedge freely inserted with its small end uppermost between the bits and one side of the head, a spindle projecting upward from the head to receive the blow of any suitable hammering device, a sleeve loosely embracing the spindle above the head, said blows serving to seat the wedge firmly in place to bind the bits in the head.

823,584.



823,585. **MAIL-BOX.** SAMUEL L. COULTER, Caldwell, Ohio. Filed Dec. 29, 1905. Serial No. 293,337.



Claim.—1. A mail-box comprising a receptacle, a closure hinged thereto, a lock therefor, means for automatically raising the closure when unlocked and a resiliently-supported bell within and movable with the closure, said bell adapted to be vibrated and sounded by the movement of the closure.

2. A mail-box comprising a receptacle, a closure hinged thereto, a lock therefor, means for automatically raising the closure when unlocked, a bow-spring within and carried by the closure, and a bell carried by said spring, said spring and bell adapted to be vibrated by the movement of the closure.

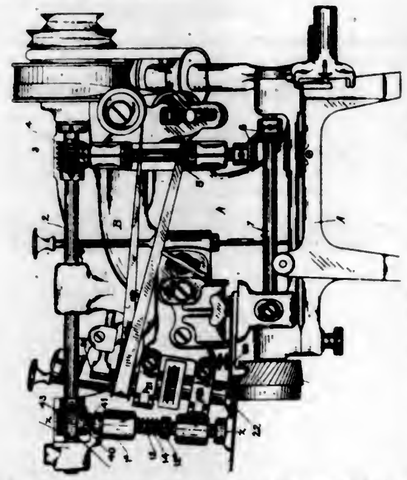
823,586. **SKIVING-MACHINE.** EUGENE F. DAVENPORT, Melrose, Mass., assignor to United Shoe Machinery Company, Paterson, N. J., a Corporation of New Jersey. Filed May 12, 1903. Serial No. 156,979.

Claim.—1. In a machine of the class described, a device for operating upon the work, in combination with independent mechanism for feeding the work to said operating device, said work-feeding mechanism comprising a feeding-disk, means to actuate said disk, and a connection between said actuating means and said disk arranged to permit the movement of the feeding-disk to be retarded by resistance applied to said disk and to allow the actuating mechanism to move independently of said disk.

2. In a skiving-machine, the combination, with devices for operating on the work, of feeding mechanism, comprising a work-support, a feeding-disk, and means for rotating the work-support and feeding-disk, said means including a positively-actuated member and a connection between the feeding-disk and said positively-actuated member, constructed and arranged to permit the operator to retard the rotation of the feeding-disk by holding back the work.

3. In a skiving-machine, the combination with a cutter, of mechanism independent of the cutter for feeding the work, said feeding mechanism comprising a work-support and a feeding-disk adapted to coöperate to feed the work, a driving-shaft to actuate said feeding members, and connecting means between said driving-shaft and one of said feeding members, arranged to permit relative

movement of said parts and allow the operator to retard the feeding member by holding back the work.



4. In a skiving-machine, the combination with a cutter, feeding members coöperating to advance the stock to the cutter, and positively-driven mechanism for actuating one of said feeding members, of mechanism for actuating the other feeding member constructed and arranged to permit the movement of said other feeding member to be retarded by resistance transmitted through the work being fed.

5. In a skiving-machine, the combination, with a cutter, of mechanism independent of the cutter for feeding the work, said feeding mechanism comprising a work-support, a feeding-disk, a driving-shaft, and operative connections between said driving-shaft and the feeding-disk, said connections including a cone-clutch, the members of which are held yieldingly in engagement and are arranged to move relatively to permit the rotation of the feeding-disk to be manually retarded for varying the rate at which the work is fed.

6. In a skiving-machine, the combination with a cutter, of a work-support, a driving-shaft, a feeding-disk shaft and connected with said driving-shaft and carrying a feeding-disk, said feeding-disk shaft comprising two sections provided, respectively, with the members of a cone-clutch, yielding means for holding said clutch members in engagement, and means for adjusting the force of such holding means.

7. In a skiving-machine, the combination with a skiving-knife, of a feeding mechanism comprising a driving-shaft, a work-support, a positive connection between said work-support and the driving-shaft to actuate the work-support, a feeding-disk also actuated from said driving-shaft and adapted to coöperate with the work-support to feed the work at a normal speed, and a connection between said disk and the driving-shaft arranged to permit the work being fed to be manually retarded and fed at less than normal speed.

8. In a skiving-machine, a driving-shaft, a work-support, a feeding-disk, a shaft on which said feeding-disk is mounted, a pinion on said disk-shaft in operative connection with said driving-shaft, a socket formed in said pinion, a cone-clutch member adjustably mounted on said disk-shaft and adapted to coöperate with said socket in the pinion to actuate the disk-shaft from the driving-shaft, and yielding means for holding said cone in its socket whereby the feeding-disk may be retarded by the operator to control the feeding of the work.

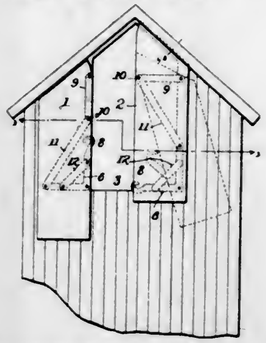
9. In a skiving-machine, the combination with a cutter, a work-feeding roll arranged to support the work and to advance it to the cutter, a coöperating work-feeding disk arranged to engage by its marginal face upon the upper surface of the work, a shaft upon which the disk is mounted, and a driving-shaft, of a connection between the driving-shaft and the feeding-disk shaft whereby the rotation of the feeding-disk may be retarded by resistance applied to the work by the operator while guiding the work.

10. In a machine of the class described, the combination with a device for operating upon the work, of a work-feeding mechanism comprising a feeding member, actuating means therefor, and a frictional connection between the feeding member and the actuating means arranged to allow the movement of the feeding member to be retarded by unusual resistance while the actuating means continues its normal movement.

11. In a skiving-machine, the combination with a cutter, a work-feeding device, and actuating mechanism connected with the cutter and the feeding device to drive said devices normally at predetermined relative speeds, of a connection between the feeding device and said actuating mechanism arranged to permit the movement of the feeding device to be retarded by resistance applied to said device without changing the speed of the cutter.

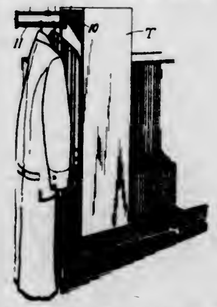
12. In a skiving-machine, the combination with a cutter, a work-feeding device, and actuating means connected with the cutter and the feeding device to drive said devices normally at predetermined relative speeds, of a frictional connection located between the feeding device and said actuating mechanism and arranged to allow the operator to retard the movement of the feeding device by holding back the work.

823,587. **GABLE-DOOR.** JEREMIAH F. DEARDURFF, Fairfield, Iowa. Filed Oct. 20, 1905. Serial No. 283,697.



Claim.—The combination with a gable-wall having an opening therein, of a door or closure movable vertically and laterally to and from said opening and consisting of two independent sections, bell-crank levers fulcrumed on the wall in the space between the door and said wall, one arm of each lever having one end projecting beyond the inner vertical edge of the adjacent door-section, and the other arm of each lever being connected to said door-section, and links arranged in the space between and pivotally connected to the wall and said door-sections, substantially as and for the purpose described.

823,588. **EXTENSIBLE BRACKET.** FRANK L. DEMARTINI, St. Louis, Mo. Filed Oct. 30, 1905. Serial No. 285,137.

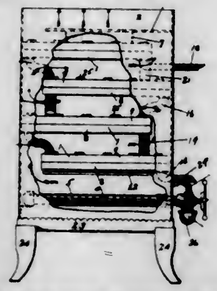


Claim.—1. In a folding bracket, a suitable sliding section, a longitudinally-disposed rod forming a part of said section, a sleeve enveloping said rod, a second sliding section having a tubular member telescoping with the rod and operating within the sleeve, and a head carried by the second section adapted to come in contact with the sleeve and be arrested thereby, substantially as set forth.

2. A wardrobe-bracket comprising a plate forming a relatively stationary section, flanges at opposite ends of the plate, rods disposed between and secured to one of the flanges, an inner sliding section comprising tubular members telescoping with the rods aforesaid, terminal heads at opposite ends of the tubular members, a cen-

tral rod connecting the heads, lips formed on the plate for engaging the inner head of the inner sliding section, bearings formed in the outer flange for supporting the tubular members, a sleeve enveloping the central rod projecting from the outer head of the sliding section, a second or outer sliding section having a tubular member telescoping with the central rod of the first sliding section and operating within the sleeve thereof, terminal heads for said last-mentioned tubular member, and a bar for suspending the articles of apparel, disposed between the heads, the parts operating substantially as, and for the purpose set forth.

823,589. **WATER-HEATER.** EDWARD W. DIETERLE, St. Louis, Mo. Filed July 13, 1905. Serial No. 269,471.

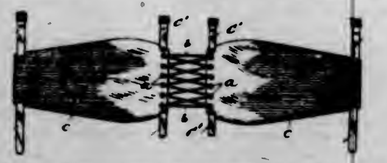


Claim.—1. In a water-heater, a casing rectangular in cross-section and entirely open at its top and bottom, water-coils arranged in superimposed relation in said casing, each of said coils consisting of a pair of flat plates arranged to contact with one another and formed on their contacting faces with registering grooves, said coils being arranged in staggered relation and having one end and both sides of each closely abutting the adjacent walls of the casing, and the opposite end spaced from the adjacent wall of the casing, and means for supporting an upper coil from a lower one consisting of a pipe at one end establishing communication betweeen adjacent coils, and a standard at the opposite ends of said coils.

2. In a water-heater, a casing entirely open at its ends, water-coils in superimposed and staggered relation in said casing, each of said coils consisting of a pair of flat-faced plates secured together and formed on their contacting faces with semicircular grooves which register and form tubes, the lower plate of each coil having an opening therein at one corner, and the upper plate of each coil having an opening therein at an opposite corner to said first-named corner, pipes leading into said openings of the plates, said pipes leading from the opening of an upper plate into the opening of a lower plate, and standards arranged between the opposite ends of said plates of the coils.

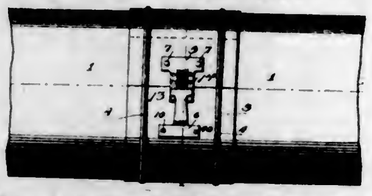
3. In a water-heater, a casing, water-coils in superimposed relation therein, each of said coils consisting of a pair of solid flat-faced plates arranged to contact with one another and grooved on their contacting faces to form tubes therebetween, each of said plates having an opening therein, the opening of an upper plate underlying and being adjacent to the opening of an under plate, a pipe leading into each of said openings, and a deflector supported by the uppermost coil and extending beyond one end of the same to contact with one side of said casing and at its opposite end being spaced from the side of said casing opposite to said first-named side thereof.

823,590. **PAD FOR GIG-SADDLES AND BACK-BANDS.** ADOLPH G. EICHHORN, St. Louis, Mo. Filed July 20, 1904. Serial No. 217,415.



Claim.—As a new article of manufacture a gig-pad composed of separate sides or sections, the adjacent ends of said sections being provided with eyelets, straps c' secured respectively in the outermost eyelets at the said adjacent ends of the sections, lacings threaded through the remaining eyelets at the said ends of said sections and adjustably securing said sections together and other straps c' secured to the outer ends of each of said sections.

823,591. **STOVEPIPE-COUPLING.** HARRY B. EAGER, South Bend, Ind. Filed Apr. 5, 1905. Serial No. 253,941.



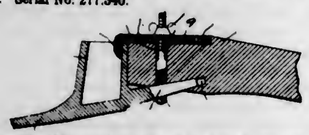
Claim.—1. A pipe-coupling comprising a divided band, and a lock secured thereto said lock comprising two members respectively secured to the band on opposite sides of the division thereof, one of said members being formed with a plurality of teeth and a plurality of apertures; and the other of said members being formed with a single tooth adapted to engage with any of the teeth of the first-mentioned member and with concaved shoulders, said apertures in the first-mentioned member, and the concaved shoulders in the second-mentioned member adapted to be engaged by a pointed instrument to effect the engagement of said members.

2. A pipe-coupling comprising a divided band, a locking means secured thereto, said locking means comprising two members respectively secured to the band on opposite sides of the division thereof, one of said members having a series of teeth, and a plurality of apertures arranged on opposite sides of said series, the other of said members being provided with a single tooth adapted to engage any one of the teeth of said series and with concaved shoulders, the apertures of said first-mentioned member and the shoulders of the second-mentioned member being adapted to be engaged by an instrument to effect the engagement of said members.

3. A pipe-coupling comprising a divided band, and a lock secured thereto, said lock comprising two members respectively secured to the band on opposite sides of the division thereof, one of said members being provided with a tooth and an aperture, and the other of said members being provided with a single tooth arranged to engage with the tooth of the first-mentioned member and with a shoulder, the aperture of said first-mentioned member and the shoulder of the second-mentioned member being adapted to be engaged by an instrument to effect the engagement of said members.

4. A pipe-coupling comprising a divided band, a lock secured thereto, said lock comprising two members respectively secured to the band on opposite sides of the division thereof, and adapted to have an interlocking engagement, one of said members being provided with an aperture and the other of said members being provided with a shoulder, said aperture and shoulder being adapted to be engaged by an instrument to effect the locking engagement of said members.

823,592. **WOODWORKING-TOOL.** MICHAEL ENRIGHT, Norfolk, Va., assignor of one-half to George Silk, Norfolk, Va. Filed Sept. 7, 1905. Serial No. 277,340.



Claim.—1. The combination of a handle having a projection disposed in advance and extending across the front end of the handle, an eyebolt extending loosely through the handle and provided with a clamping-nut, the eye of the bolt being located at that side of the handle opposite the projection, the handle having an oblique socket formed therein in rear of the eye, and a blade member having one end sharpened to form a cutting edge, its opposite end provided with a projection passing through the eye of the bolt and engaging the socket of the handle, the blade being provided with an intermediate laterally-projected eye which is engaged by the projection on the handle.

2. The combination with an adz-head having an intermediate laterally-projected eye and a balancing projection extending therefrom, of a handle having an oblique socket to receive the balancing projection of the adz-head, an eyebolt extending loosely through the handle with the balancing projection extending through the eye, a plate applied to the other face of the handle and having a projection extending transversely across the adjacent end of the handle and engaging the eye of the adz-head, and a clamping-nut carried by the eyebolt for engagement with the plate.

3. As a new article of manufacture, a tool-handle provided with a transverse opening extending therethrough adjacent one end and also provided with an inclined socket in one face of the handle in rear of the transverse opening, a plate applied to the opposite face of the handle with its outer end projecting beyond the adjacent end of the handle and having a lateral projection extending across said end of the handle, an eyebolt extending through the opening in the handle and also through the plate with its eye at the socketed side of the handle, and a clamping-nut upon the other end of the bolt, the lateral projection being adapted to engage the eye of an adz-head and the socket of the handle being adapted to receive the balancing projection of the adz-head.

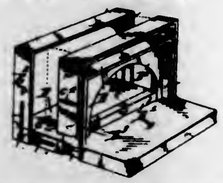
4. As a new article of manufacture, a tool-handle provided with a transverse opening extending therethrough adjacent one end thereof, a plate applied to one face of the handle and provided with a lateral projection spaced from and lying across the adjacent end of the handle, and an eyebolt extending through the opening in the handle and provided with a clamping-nut engaging the plate, the lateral projection being adapted to engage the eye of an adz-head and the socket of the handle being adapted to receive the balancing projection of the adz-head.

5. As a new article of manufacture, a tool-handle provided with a transverse opening extending therethrough adjacent one end, a plate countersunk in one face of the handle and provided with a lateral projection lying across and spaced from the adjacent end of the handle, said plate also being provided with an opening in alinement with the opening in the handle, and an eyebolt passing through the opening and provided with a clamping-nut engaging the plate, the lateral projection being adapted to engage the eye of an adz-head and the socket of the handle being adapted to receive the balancing projection of the adz-head.

6. A slicker comprising a bit having a transverse eye and a longitudinal projection, a handle provided with a removable laterally-disposed projection lying across the forward end of the handle and engaging the eye of the bit, and an eyebolt piercing the handle and receiving the projection of the bit.

7. A slicker comprising a bit having a transverse eye and a longitudinal projection, a removable element applied to one side of the handle and having a lateral projection lapping the forward end of the handle and engaging the eye of the bit, and an eyebolt piercing the handle and the removable element with the projection of the bit received within the eye of the bolt.

823,593. **MORTAR-GAGE.** GEORGE F. FISHER, North Tonawanda, N. Y. Filed July 5, 1904. Serial No. 215,440.



Claim.—1. In a mortar-gage, the combination with a frame, of a gage member mounted on said frame and adapted to lie against adjoining edges of a building-block to gage the thickness of the layer of mortar to be applied to said block.

2. In a mortar-gage, the combination with a frame, of a gage member vertically adjustable on said frame and adapted to lie against adjoining edges of a building-block to gage the thickness of the layer of mortar to be applied to said block.

3. In a mortar-gage, the combination with a frame, of a gage member adjustable on said frame and adapted to lie against adjoining edges of a building-block to gage the thickness of the layer of mortar to be applied to said block.

4. In a mortar-gage, the combination with a frame comprising a base and an upright abutment against which a building-block is set, of a gage member carried on said abutment and adapted to lie against adjoining edges of the building-block to gage the thickness of the layer of mortar to be applied to said block.

5. In a mortar-gage, the combination with an abutment against which a building-block is to be set, of a gage member adapted to lie against adjoining edges of the building-block to gage the thickness of the layer of mortar to be applied to the block and being laterally adjustable to gage the extent of surface on the block to be covered with mortar.

6. In a mortar-gage for applying a layer of mortar to a block, the combination with a suitable frame to support a building-block, of an adjustable gage member supported thereon and adapted to lie against the marginal portion of one or more surfaces of a block for gaging the thickness of the layer of mortar to be applied and for gaging the extent of surface to be covered with mortar.

7. In a mortar-gage, an upright abutment comprising an upper horizontal flange, a lower horizontal flange, and upright side flanges, the bearing-surfaces of said flanges all lying in the same plane; combined with a gage member comprising a laterally-adjustable part and a vertically-adjustable part.

8. In a mortar-gage, an upright abutment comprising an upper horizontal flange, a lower horizontal flange, and upright side flanges and a cored-out web connecting said flanges, the bearing-surfaces of said flanges all lying in the same plane; combined with a gage member comprising a laterally-adjustable part and a vertically-adjustable part.

9. In a mortar-gage, the combination with a frame, of a two-part gage member mounted thereon and adapted to receive a building-block, one part of the gage being adjustable on the other part thereof and adapted to lie against two adjoining edges of the block to gage the thickness of the layer of mortar to be applied thereto.

10. In a mortar-gage, the combination with a frame having upright notches, and an upright abutment; of a gage member adapted to receive a building-block and comprising two parts, one part being vertically adjustable in said notches, and the other part being laterally adjustable on the first part.

11. In a mortar-gage, the combination with a frame having upright notches, and an upright abutment mounted between said notches; of a gage member adapted to receive a building-block and comprising two parts, one part being vertically adjustable on the abutment in said notches, and means for laterally adjusting the other part on the first part.

12. In a mortar-gage, the combination with a frame having upright notches, and an upright abutment having vertical slots; of a gage member adapted to receive a building-block and comprising two parts, one part being adapted to slide in said notches and having bolts engaging with said slots, and the other part being laterally adjustable on the first part.

13. In a mortar-gage, the combination with a frame having an upright abutment; of a gage member adapted to receive a building-block and comprising a guide-yoke and a gage-yoke, said guide-yoke fitting over the abutment and comprising an upper horizontal cross-bar and depending guide-bars vertically adjustable on said abutment, and said gage-yoke fitting over the guide-yoke and comprising an upper horizontal cross-bar and upright side bars laterally adjustable on the guide-yoke.

14. In a mortar-gage, the combination with an abutment having an upright bearing-surface; of a gage member adapted to receive a building-block comprising a vertically-adjustable guide-yoke and a laterally-adjustable gage-yoke, said guide-yoke fitting over the abutment and comprising an upper horizontal cross-bar and depending guide-bars, all said bars having bearing-surfaces lying in the same plane with the bearing-surfaces of the abutment.

15. In a mortar-gage, the combination with an upright abutment; of a gage member adapted to receive a building-block and comprising a guide-yoke fitting over the abutment and being vertically adjustable thereon, and a gage-yoke fitting over said guide-yoke and having upright side bars provided with horizontal slots, and bolts countersunk in said slots and entering the guide-yoke.

16. In a mortar-gage, the combination with a frame and an adjustable gage member thereon adapted to receive a building-block; of a supplemental adjustable gage member mounted on the frame opposite the first gage member, said supplemental gage member being also adapted to receive the block.

17. In a mortar-gage, the combination with a frame and a gage member comprising a laterally-adjustable part and a vertically-adjustable part and adapted to receive a building-block; of a supplemental gage member mounted on the frame opposite the first gage member and also adapted to receive the block.

18. In a mortar-gage, the combination with a frame and an adjustable gage member thereon adapted to receive a building-block; of a laterally and vertically adjustable supplemental gage member mounted on the frame opposite the first gage member, said supplemental gage member being also adapted to receive the block.

19. In a mortar-gage, the combination with a frame and an adjustable gage member thereon adapted to receive a building-block; of a supplemental adjustable gage member mounted on the frame opposite the first gage member, said supplemental gage member being adapted to be swung down clear of the building-block and being also adapted to receive the block when in operative position.

20. In a mortar-gage, the combination with a frame having horizontal slots, and an adjustable gage member mounted thereon adapted to receive a building-block; of a supplemental gage member also adapted to receive the block, said supplemental gage member comprising a yoke having an upper horizontal cross-bar and upright side bars having vertical slots, and means passing through the slots in the frame and supplemental gage member for adjustably securing said supplemental gage member.

21. In a mortar-gage, the combination with a frame having horizontal slots, and an adjustable gage member mounted thereon adapted to receive a building-block; of a supplemental gage member also adapted to receive the block, said supplemental gage member comprising a yoke having an upper horizontal cross-bar and upright side bars having vertical slots, bolts passing through the slots in the frame and supplemental gage member, and means for tightening said bolts.

823,594. SUPPORT FOR PUNCHING-BAGS. JACKSON F. FRASER, San Francisco, Cal. Filed Jan. 27, 1905. Serial No. 243,856.



Claim.—1. A support for punching-bags consisting of a suitable base-plate having a depending extension, a stem rotatably secured within the extension of the base-plate and projecting therefrom, of bearing-balls within the said extension against which the rotatable stem works, a holder secured to the projecting end of the rotatable stem, a spherical member held within said holder so as to have universal movement therein, and a securing member for the suspension-rope carried by the spherical member.

2. A support for punching-bags comprising a suitable base-plate, a stem rotatably connected thereto, a holding-shell secured to the lower end of said stem, a spherical member loosely held within the shell of the said stem so as to have universal movement therein, and a suspension-rope holder secured to and depending from the spherical member, and ball-bearings interposed between the stem and the base-plate.

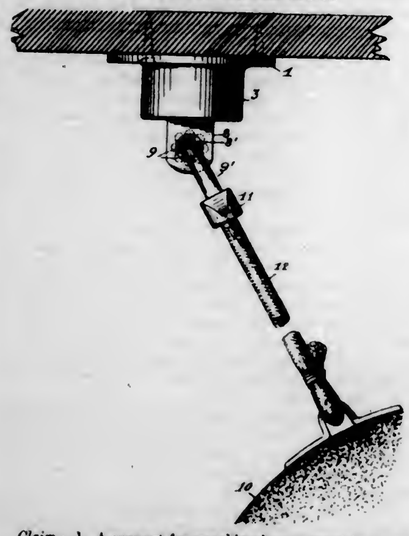
3. A support for punching-bags comprising a suitable base-plate, a stem rotatably connected thereto, a spherical member united to the said stem by a universal-joint connection, a suspension-rope holder secured to the spherical member, a socket in said holder for the insertion of one end of the suspension-rope, said socket being intercepted by a side opening in the holder and through which the end of the suspension-cord extends, and a movable ball or lock device fitted within the socket of the rope-holder.

4. A support for punching-bags comprising a suitable base-plate, of a stem rotatably connected thereto, a spherical member held thereto by a shell depending from the rotatable stem, and a rope-holder secured to and depending from the spherical member.

5. A support for punching-bags comprising a suitable base-plate, of a stem rotatably held therein, ball-bearing between the stem and an extension of the base-plate, a spherical member connected to the stem by means of a shell carried by the stem, and means carried by the spherical member for uniting thereto one end of a suspension-rope.

6. A support for punching-bags comprising a suitable base-plate, an extension depending therefrom, circular seats formed therein, a series of balls arranged in each seat, a stem rotatably held within the said depending extension, cone-surfaces on the rotatable stem which bear onto the series of balls, a holder for a spherical member secured on the lower end of the rotatable stem, a spherical member held within said holder so as to have universal movement, and means carried by said member for the attachment of a suspension-rope thereto.

823,595. MULTIPLE BALL-BEARING SUPPORT FOR PUNCHING-BAGS. JACKSON F. FRASER, San Francisco, Cal. Filed Jan. 27, 1905. Renewed Jan. 26, 1906. Serial No. 296,063.



Claim.—1. A support for punching-bags comprising a suitable base-plate provided with a depending suspension, a stem rotatably held within the extension of the base-plate, an eye in the end portion of the stem, a series of bearing-balls held within said eye, a hook member secured within the eye of the stem and working on the bearing-balls therein, and means carried by the hook member for the attaching of one end of a suspension-cord.

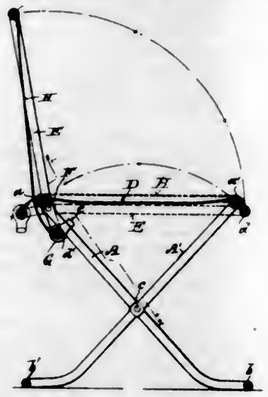
2. A support for punching-bags comprising a suitable base-plate provided with a depending extension, a stem rotatably held in the depending extension, a series of bearing-balls located within the said extension and against which the rotatable stem works, a hook member for the suspension-cord of a punching-bag movably united to the rotatable stem, and bearing-balls interposed between said hook member and the rotatable stem.

3. A support for punching-bags comprising a suitable base-plate provided with a depending extension, wear-cups fitted within the said extension, a series of bearing-balls held within each wear-cup, a stem rotatably held within the extension of the base-plate, cones on said stem which work on the bearing-balls, an eye in the lower end or enlarged head of the stem, a series of bearing-balls fitted within the eye of the stem, a hook member working on the bearing-balls of the rotatable stem, and means carried by said hook member for the attachment of the suspension-cord of a punching-bag.

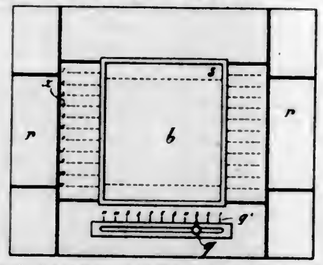
823,596. BACK FOR FOLDING STOOLS. GEORGE B. FREEMAN, Racine, Wis. Filed June 13, 1905. Serial No. 264,787.

Claim.—1. In a collapsible stool comprising intersecting legs pivoted together, upper and lower cross-bars for said legs, a flexible seat connecting the upper cross-bars, and a rectangular back-frame having side bars connected by upper and lower cross-bars, pivots supported in a pair of the stool-legs near the upper ends of same and in the side bars of the frame near the lower cross-bar of said frame, and a longitudinally-adjustable locking-dog mounted upon said lower cross-bar of the frame, whereby the latter is secured to one of the stool-legs.

2. In a folding back for collapsible stools or the like, a rectangular frame composed of side bars and upper and lower cross bars, a pivoted connection between the side bars of one frame and the rear legs of the stool, and a longitudinal adjustable locking-dog mounted upon the lower cross-bar of the frame whereby the latter is secured to one of the stool-legs.



823,597. STATION-INDICATOR. LÉON GRILLON, Lausanne, Switzerland. Filed July 31, 1905. Serial No. 272,044.



Claim.—1. An apparatus of the class described comprising a casing provided with an opening, a band on which printed matter is disposed, rollers operating said band abreast of said opening, said rollers having spindles rotatively mounted, cords each wound upon said spindles in opposite directions and each cord being made in a plurality of sections, springs connecting the ends of the sections of said cords, an operating-cord connected with said springs, rollers for said operating-cord, and a button or the like on said cord adapted to project through suitable slots in the casing, said casing having the subject-matter of the band tabulated thereon and each tabulation identified by suitable signs or numerals, corresponding signs or numerals being located adjacent said slot, substantially as described.

2. An apparatus of the class described comprising a casing provided with an opening, a band on which printed matter is disposed, rollers operating said band abreast of said opening, cords for opposite ends of said rollers, each cord having its ends wound thereon in opposite directions, the winding of said cords being reversed with respect to each other, and a cord for operating said band in opposite directions.

3. An apparatus of the class described comprising a casing provided with an opening, a band on which printed matter is disposed, rollers operating said band abreast of said opening, cords for opposite ends of said rollers, each cord having its ends wound on the rollers in opposite directions, the winding of said cords being reversed with respect to each other, tension means applied to said cords, and an operating-cord secured to said tension means for operating said band in opposite directions.

4. An apparatus of the class described comprising a casing provided with an opening, a band on which printed matter is disposed, rollers operating the band abreast of said opening, cords each wound on said rollers in opposite directions and each cord being made in a plurality of sections, springs connecting the ends of said cord-sections, an operating-cord connected with said springs, said casing having the subject-matter of the band tabulated thereon and each tabulation identified by suitable signs or numerals, corresponding signs or numerals adjacent said operating-cord, and a suitable pointer carried by said cord for registering with said last-mentioned numerals or signs.

5. An apparatus of the class described comprising a casing provided with an opening, a band on which printed matter is disposed, rollers operating said band abreast of said opening, mechanism operatively connecting two adjacent ends of said rollers and operating in one direction, mechanism operatively connecting the remaining two ends of said rollers and operating in a direction reverse to that of said first-mentioned mechanism, and a controlling device connected with the said oppositely-operating mechanisms to operate the same in reverse directions and effect movement of the band abreast of said opening.

6. An apparatus of the class described comprising a casing provided with an opening, a band on which printed matter is disposed, rollers operating said band abreast of said opening, yieldingly-acting mechanism operatively connecting two adjacent ends of said rollers and operating in one direction, yieldingly-acting mechanism opertively connecting the remaining two ends of said rollers and operating in a direction reverse to that of said first-mentioned mechanism, and a controlling device connected with the said oppositely-operating mechanisms, said mechanisms serving to maintain the band taut upon the rollers.

823,598. VALVE FOR ACETYLENE-GAS GENERATORS. ISAAC W. HIGGS and HOKON HOYOES, Chicago, Ill., assignors, by mesne assignments, to Home Carbide Gas Company, Chicago, Ill., a Corporation of South Dakota. Filed Aug. 8, 1903. Serial No. 118,898.



Claim.—1. An induction-tube provided with an inclined chute in combination with a rotary valve having serial peripheral pockets, the chute being inclined downward toward the valve in the direction of the revolution of the pockets and having its discharge end located about at the intersection of a horizontal plane tangent to the top of the circle described by the valve with a vertical plane coincident with the vertical position of the rear side of the pockets when adjacent to said horizontal plane, as specified.

2. An induction-tube having an interior chute in combination with a rotary valve provided with peripheral pockets inclined in the direction of revolution, the chute being inclined downward toward the valve in the direction of the rotation and having its discharge end located at about the intersection of a horizontal plane tangent to the top of the circle described by the valve with a vertical plane coincident with the vertical position of the rear side of the pockets when adjacent to said horizontal plane, as specified.

3. An induction-tube having an interior chute comprising a series of baffle-plates extended alternately from opposite sides of the tube in combination with a rotary valve provided with peripheral pockets, the last plate of the chute being inclined downward toward the valve in the direction of the rotation of the pockets and having its discharge end located at the intersection of a horizontal plane tangent to the top of the circle described by the valve with a vertical plane coincident with the vertical position of the rear side of the pockets when adjacent to said horizontal plane, as specified.

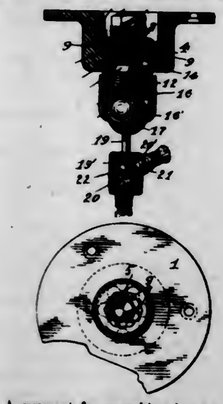
4. An induction-tube provided with an inclined chute in combination with a rotary valve having serial peripheral pockets inclined in the direction of the revolution and separated by division-plates having their peripheral margins curved or projected forward, the

19. In a mortar-gage, the combination with a frame and an adjustable gage member thereon adapted to receive a building-block; of a supplemental adjustable gage member mounted on the frame opposite the first gage member, said supplemental gage member being adapted to be swung down clear of the building-block and being also adapted to receive the block when in operative position.

20. In a mortar-gage, the combination with a frame having horizontal slots, and an adjustable gage member mounted thereon adapted to receive a building-block; of a supplemental gage member also adapted to receive the block, said supplemental gage member comprising a yoke having an upper horizontal cross-bar and upright side bars having vertical slots, and means passing through the slots in the frame and supplemental gage member for adjustably securing said supplemental gage member.

21. In a mortar-gage, the combination with a frame having horizontal slots, and an adjustable gage member mounted thereon adapted to receive a building-block; of a supplemental gage member also adapted to receive the block, said supplemental gage member comprising a yoke having an upper horizontal cross-bar and upright side bars having vertical slots, bolts passing through the slots in the frame and supplemental gage member, and means for tightening said bolts.

823,594. SUPPORT FOR PUNCHING-BAGS. JACKSON F. FRASER, San Francisco, Cal. Filed Jan. 27, 1905. Serial No. 242,856.



Claim.—1. A support for punching-bags consisting of a suitable base-plate having a depending extension, a stem rotatably secured within the extension of the base-plate and projecting therefrom, of bearing-balls within the said extension against which the rotatable stem works, a holder secured to the projecting end of the rotatable stem, a spherical member held within said holder so as to have universal movement therein, and a securing member for the suspension-rope carried by the spherical member.

2. A support for punching-bags comprising a suitable base-plate, a stem rotatably connected thereto, a holding-shell secured to the lower end of said stem, a spherical member loosely held within the shell of the said stem so as to have universal movement therein, and a suspension-rope holder secured to and depending from the spherical member, and ball-bearings interposed between the stem and the base-plate.

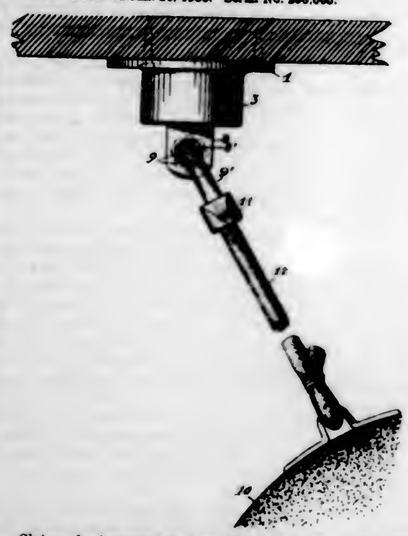
3. A support for punching-bags comprising a suitable base-plate, a stem rotatably connected thereto, a spherical member united to the said stem by a universal-joint connection, a suspension-rope holder secured to the spherical member, a socket in said holder for the insertion of one end of the suspension-rope, said socket being intercepted by a side opening in the holder and through which the end of the suspension-cord extends, and a movable ball or lock device fitted within the socket of the rope-holder.

4. A support for punching-bags comprising a suitable base-plate, of a stem rotatably connected thereto, a spherical member held thereto by a shell depending from the rotatable stem, and a rope-holder secured to and depending from the spherical member.

5. A support for punching-bags comprising a suitable base-plate, of a stem rotatably held therein, ball-bearing between the stem and an extension of the base-plate, a spherical member connected to the stem by means of a shell carried by the stem, and means carried by the spherical member for uniting thereto one end of a suspension-rope.

6. A support for punching-bags comprising a suitable base-plate, an extension depending therefrom, circular seats formed therein, a series of balls arranged in each seat, a stem rotatably held within the said depending extension, cone-surfaces on the rotatable stem which bear onto the series of balls, a holder for a spherical member secured on the lower end of the rotatable stem, a spherical member held within said holder so as to have universal movement, and means carried by said member for the attachment of a suspension-rope thereto.

823,595. MULTIPLE BALL-BEARING SUPPORT FOR PUNCHING-BAGS. JACKSON F. FRASER, San Francisco, Cal. Filed Jan. 27, 1905. Renewed Jan. 26, 1906. Serial No. 296,063.



Claim.—1. A support for punching-bags comprising a suitable base-plate provided with a depending suspension, a stem rotatably held within the extension of the base-plate, an eye in the end portion of the stem, a series of bearing-balls held within said eye, a hook member secured within the eye of the stem and working on the bearing-balls therein, and means carried by the hook member for the attaching of one end of a suspension-cord.

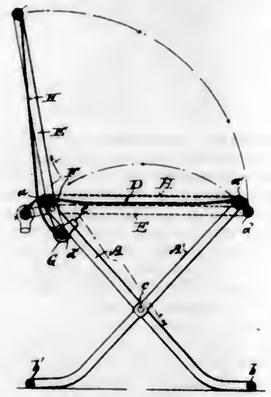
2. A support for punching-bags comprising a suitable base-plate provided with a depending extension, a stem rotatably held in the depending extension, a series of bearing-balls located within the said extension and against which the rotatable stem works, a hook member for the suspension-cord of a punching-bag movably united to the rotatable stem, and bearing-balls interposed between said hook member and the rotatable stem.

3. A support for punching-bags comprising a suitable base-plate, provided with a depending extension, wear-cups fitted within the said extension, a series of bearing-balls held within each wear-cup, a stem rotatably held within the extension of the base-plate, cones on said stem which work on the bearing-balls, an eye in the lower end or enlarged head of the stem, a series of bearing-balls fitted within the eye of the stem, a hook member working on the bearing-balls of the rotatable stem, and means carried by said hook member for the attachment of the suspension-cord of a punching-bag.

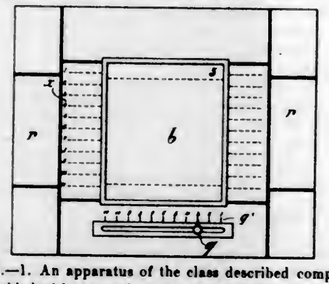
823,596. BACK FOR FOLDING STOOLS. GEORGE B. FREEMAN, Racine, Wis. Filed June 13, 1905. Serial No. 264,787.

Claim.—1. In a collapsible stool comprising intersecting legs pivoted together, upper and lower cross-bars for said legs, a flexible seat connecting the upper cross-bars, and a rectangular back-frame having side bars connected by upper and lower cross-bars, pivots supported in a pair of the stool-legs near the upper ends of same and in the side bars of the frame near the lower cross-bar of said frame, and a longitudinally-adjustable locking-dog mounted upon said lower cross-bar of the frame, whereby the latter is secured to one of the stool-legs.

2. In a folding back for collapsible stools or the like, a rectangular frame composed of side bars and upper and lower cross bars, a pivoted connection between the side bars of one frame and the rear legs of the stool, and a longitudinal adjustable locking-dog mounted upon the lower cross-bar of the frame whereby the latter is secured to one of the stool-legs.



823,597. STATION-INDICATOR. LÉON GRILLON, Lausanne, Switzerland. Filed July 31, 1905. Serial No. 272,044.



Claim.—1. An apparatus of the class described comprising a casing provided with an opening, a band on which printed matter is disposed, rollers operating said band abreast of said opening, said rollers having spindles rotatively mounted, cords each wound upon said spindles in opposite directions and each cord being made in a plurality of sections, springs connecting the ends of the sections of said cords, an operating-cord connected with said springs, rollers for said operating-cord, and a button or the like on said cord adapted to project through suitable slots in the casing, said casing having the subject-matter of the band tabulated thereon and each tabulation identified by suitable signs or numerals, corresponding signs or numerals being located adjacent said slot, substantially as described.

2. An apparatus of the class described comprising a casing provided with an opening, a band on which printed matter is disposed, rollers operating said band abreast of said opening, cords for opposite ends of said rollers, each cord having its ends wound thereon in opposite directions, the winding of said cords being reversed with respect to each other, and a cord for operating said band in opposite directions.

3. An apparatus of the class described comprising a casing provided with an opening, a band on which printed matter is disposed, rollers operating said band abreast of said opening, cords for opposite ends of said rollers, each cord having its ends wound on the rollers in opposite directions, the winding of said cords being reversed with respect to each other, tension means applied to said cords, and an operating-cord secured to said tension means for operating said band in opposite directions.

4. An apparatus of the class described comprising a casing provided with an opening, a band on which printed matter is disposed, rollers operating the band abreast of said opening, cords each wound on said rollers in opposite directions and each cord being made in a plurality of sections, springs connecting the ends of said cord-sections, an operating-cord connected with said springs, said casing having the subject-matter of the band tabulated thereon and each tabulation identified by suitable signs or numerals, corresponding signs or numerals adjacent said operating-cord, and a suitable pointer carried by said cord for registering with said last-mentioned numerals or signs.

5. An apparatus of the class described comprising a casing provided with an opening, a band on which printed matter is disposed, rollers operating said band abreast of said opening, mechanism operatively connecting two adjacent ends of said rollers and operating in one direction, mechanism operatively connecting the remaining two ends of said rollers and operating in a direction reverse to that of said first-mentioned mechanism, and a controlling device connected with the said oppositely-operating mechanisms to operate the same in reverse directions and effect movement of the band abreast of said opening.

6. An apparatus of the class described comprising a casing provided with an opening, a band on which printed matter is disposed, rollers operating said band abreast of said opening, yieldingly-acting mechanism operatively connecting two adjacent ends of said rollers and operating in one direction, yieldingly-acting mechanism opertively connecting the remaining two ends of said rollers and operating in a direction reverse to that of said first-mentioned mechanism, and a controlling device connected with the said oppositely-operating mechanisms, said mechanisms serving to maintain the band taut upon the rollers.

823,598. VALVE FOR ACETYLENE-GAS GENERATORS. ISAAC W. HIGGS and HOKON HOYOSS, Chicago, Ill., assignors, by mesne assignments, to Home Carbide Gas Company, Chicago, Ill., a Corporation of South Dakota. Filed Aug. 8, 1903. Serial No. 118,898.



Claim.—1. An induction-tube provided with an inclined chute in combination with a rotary valve having serial peripheral pockets, the chute being inclined downward toward the valve in the direction of the revolution of the pockets and having its discharge end located about at the intersection of a horizontal plane tangent to the top of the circle described by the valve with a vertical plane coincident with the vertical position of the rear side of the pockets when adjacent to said horizontal plane, as specified.

2. An induction-tube having an interior chute in combination with a rotary valve provided with peripheral pockets inclined in the direction of revolution, the chute being inclined downward toward the valve in the direction of the rotation and having its discharge end located at about the intersection of a horizontal plane tangent to the top of the circle described by the valve with a vertical plane coincident with the vertical position of the rear side of the pockets when adjacent to said horizontal plane, as specified.

3. An induction-tube having an interior chute comprising a series of baffle-plates extended alternately from opposite sides of the tube in combination with a rotary valve provided with peripheral pockets, the last plate of the chute being inclined downward toward the valve in the direction of the rotation of the pockets and having its discharge end located at the intersection of a horizontal plane tangent to the top of the circle described by the valve with a vertical plane coincident with the vertical position of the rear side of the pockets when adjacent to said horizontal plane, as specified.

4. An induction-tube provided with an inclined chute in combination with a rotary valve having serial peripheral pockets inclined in the direction of the revolution and separated by division-plates having their peripheral margins curved or projected forward, the

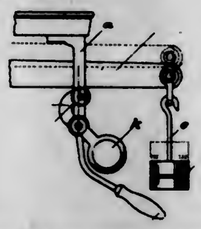
valve being arranged close under and behind the discharge end of the chute as specified.

5. An induction-tube having an interior chute in conjunction with a rotary valve provided with serial peripheral pockets, the chute being inclined downward toward the valve in the direction of revolution and having its discharge end located at about the intersection of a horizontal plane tangent to the top of the circle described by the valve with a vertical plane coincident with the vertical position of the rear side of the pockets when adjacent to said horizontal plane and a hinged cover for the pockets arranged above and in front of the chute so as to fall upon the valve, as specified.

6. An induction-tube provided with an inclined chute in combination with a rotary valve provided with a series of large peripheral pockets adapted and arranged to receive and control the entire mass of carbid passing down the chute, and a hinged cover for the pockets, arranged to have its free end fall over and project into the pockets so as to slide over the front sides thereof in revolution as specified.

7. In an apparatus of the class described an induction-tube provided with a chute in combination with a rotary valve provided with peripheral pockets, the chute being inclined downward toward the valve in the direction of the rotation and having its discharge end located at about the intersection of a horizontal plane tangent to the top of the circle described by the valve with a vertical plane coincident with the vertical position of the rear side of the pockets when adjacent to said horizontal plane, and mechanism connecting the valve-shaft with the gas-bell for causing the valve to rotate, as specified.

823,599. ATTACHMENT FOR AUTOMATIC SCALES. GEORGE HOEPNER, Sandwich, Ill., assignor to R. and T. Fairbanks and Company, St. Johnsbury, Vt., a Corporation of Vermont. Filed Nov. 22, 1905. Serial No. 288,590.



Claim.—1. In a weighing-scale, a scale beam or lever, the counterpoise end of which is arranged during each operation to move upward under a primary load at the load end and to complete its upward movement under a final or complete load, and means for preventing the return of the beam after completing its initial movement.

2. In a weighing-scale, a scale beam or lever, and means operating to accelerate its movement as the lever moves from its point of rest and operating with gradually-increased force from the beginning of the movement of the scale-beam; substantially as described.

3. In a weighing-scale, a scale beam or lever, and a counterweighted means acting to raise the poise end of said beam and to lock the same from return movement; substantially as described.

4. In a weighing-scale, a scalebeam or lever, and means arranged at the poise end of the beam and acting throughout the whole of the initial weighing movement, as an auxiliary to the load in raising the poise end of the beam and serving to prevent the return movement of said beam to its position of rest; substantially as described.

5. In a weighing-scale, a scale beam or lever, a bracket, a shaft journaled therein, an arm carried by the shaft and having an anti-friction-roller resting against the lower edge of the beam, a weighted arm secured to the shaft, and tending to rock the latter and raise the arm, and a restoring-lever secured to said shaft; substantially as described.

6. In a weighing-scale, a scale beam or lever, and means tending to overcome the inertia of the lever and accelerate its movement during the initial weighing movement thereof and serving also to prevent return movement of said beam or lever.

823,600. SPRING BED-BOTTOM. LEONARD B. HOUSTON, Mobile, Ala. Filed Apr. 16, 1904. Renewed Nov. 17, 1905. Serial No. 287,942.

Claim.—1. In a device of the class specified, a plurality of springs, and a brace member formed integral with each spring and provided with a plurality of hooks or catches for engagement with adjacent springs, each brace including a rigid member extending diagonally from spring to spring.



2. In a device of the class specified, a spring having a brace portion integral with and forming a continuation of the upper part of the spring, said brace member being provided with three engaging hooks or catches for engagement with separate springs, and each of such brace portions including a diagonally-extending rigid member.

3. In a device of the class specified, a spring having a brace portion integral with and forming a continuation of the upper coil of the spring, said brace member being bent in such manner as to form a pair of rigid brace-bars arranged at right angles to each other and provided with terminal hooks or catches.

4. In a device of the class specified, a spring having a brace member forming a continuation of the upper coil of the spring and bent to form a plurality of spring-engaging hooks or catches, one of which is engaged with a subjacent coil of the spring of which it forms a part.

5. In a device of the class specified, a group of springs formed of interconnected pairs, each pair being formed of a single piece of wire, that portion of the wire between each pair being bent to form a straight bar or brace disposed in a plane at a right angle to a plane including the centers of the springs of which it forms a part, said bar or brace being provided with terminal hooks or catches for engagement with the springs of the opposite pair.

6. In a device of the class specified, a rigid frame formed of a plurality of angle-bars having vertical and horizontal webs, the vertical webs forming the outer walls of the frame, there being slots in the horizontal webs of the side members of the frame, T-shaped spring-supporting bars having their vertical webs adapted to said slots, and held from longitudinal play by the engagement of the horizontal webs of the T-bars with the vertical webs of the frame-bars and springs supported by said bars.

7. In a device of the class specified, side and end bars formed of angle-iron and connected together to form a rectangular frame, the horizontal webs of the side bars being provided with oppositely-disposed slots, T-shaped bars having their central webs adapted to said slots and each of said central webs having a plurality of spring-receiving openings, and springs supported on the bars and having their lower ends extending through said openings.

8. In a device of the class specified, a main frame formed of angle-iron, a supplemental frame also formed of angle-iron and adjustable at an angle to the horizontal, a tongue depending from the supplemental frame and engaging the side bars of the main frame, a plurality of springs assembled to form a mattress, said springs being supported in part by the main frame and in part by the auxiliary frame, and a continuous spring-brace extending around all of the springs and connected thereto.

823,601. BRAKE-BEAM. CHARLES F. HUNTOON, Chicago, Ill., assignor to Chicago Railway Equipment Company, Chicago, Ill., a Corporation of Illinois. Filed Feb. 26, 1906. Serial No. 303,043.

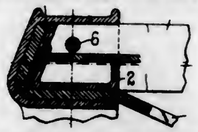


Claim.—1. In a trussed brake-beam, the combination with a flanged compression member, of a thrust-block fitting within the flanged compression member and having lateral extensions overlapping the ends of the flanges of said compression member, a tension member whose end is bent around said thrust-block, and a brake-head; substantially as described.

2. In a brake-beam, the combination with a flanged compression member, a thrust-block fitting between the flanges of said compression member and having projections at its ends overlapping the flanges of said compression member, the outer end of said thrust-block being inclined, a tension member fitting between the flanges of said compression member and bent around said thrust-block, and a brake-head; substantially as described.

3. In a brake-beam, the combination with a channeled compression member, a thrust-block fitting between the flanges of said compression member and having lateral projections extending over the ends of the flanges of said compression member, a tension member fitting between the flanges of said compression member and having its end bent around said thrust-block, a brake-head having a sleeve portion which is designed to be slipped in position on the end of the beam, and a fastening device for holding said brake-head in place; substantially as described.

823,602. BRAKE-BEAM. CHARLES F. HUNTOON, Chicago, Ill., assignor to Chicago Railway Equipment Company, Chicago, Ill., a Corporation of Illinois. Filed Feb. 26, 1906. Serial No. 303,043.



Claim.—1. In a brake-beam, the combination with an I-shaped compression member, of a thrust-block arranged between the inwardly-extending flanges of the I-beam and whose end overlaps said inwardly-extending flanges and also the outwardly-extending flanges of said I-beam, a tension member whose end is bent around said thrust-block, and a brake-head; substantially as described.

2. In a brake-beam, the combination with an I-beam compression member whose web is vertically disposed, of a thrust-block arranged between the forwardly-extending flanges of said I-beam, the end wall of said thrust-block being inclined and providing a seat for the web and flanges of said I-beam compression member, a flat plate tension member bent around said thrust-block, and a brake-head secured in position on the end of the beam; substantially as described.

3. In a brake-beam, the combination with an I-beam compression member, of a thrust-block providing a seat for the end of said compression member and which thrust-block is extended inwardly between the forwardly-projecting flanges of said compression member so as to provide a seat for the tension member, a tension member which is bent around said thrust-block, and a brake-head which is slipped in position on the end of the beam for holding the bent end of said tension member in position; substantially as described.

823,603. BRAKE-BEAM. CHARLES F. HUNTOON, Chicago, Ill., assignor to Chicago Railway Equipment Company, Chicago, Ill., a Corporation of Illinois. Filed Feb. 26, 1906. Serial No. 303,054.



Claim.—1. In a trussed brake-beam, the combination with a flanged compression member, of a thrust-block fitting within the flanged compression member and having lateral extensions overlapping the ends of the flanges of said compression member, a tension member whose end is bent around said thrust-block and terminates behind the compression member, and a brake-head; substantially as described.

2. In a brake-beam, the combination with a channeled compression member, a thrust-block fitting between the flanges of said compression member and having lateral projections extending over the ends of the flanges of said compression member, a tension member fitting upon the flanges of the compression member and upon said thrust-block, and bent around said thrust-block and said compression member, a brake-head having a sleeve portion which is designed to be slipped in position on the end of the beam, and a fastening device for holding said brake-head in place; substantially as described.

823,604. FOLDING DISPLAY-BOX. CLARENCE E. ISACKE, New York, N. Y. Filed Apr. 20, 1905. Serial No. 256,605.

Claim.—1. A folding display-box formed of an integral sheet of material and having top and bottom sections, end sections and side sections adapted to be joined together to form a rectangular box, a flap projecting from the top section whereby to represent the open lid of the box, and a fastening-tongue projecting from the rear side and extending through the sheet of material at the inner edge of said projecting flap, the tongue being located outside of the box and extending over the top wall of the same and representing the name-flap of a cigar-box.



2. A folding display-box formed of an integral sheet of material and capable of being knocked down or laid out flat, said device comprising walls forming when assembled a six-sided box, and a lid-like wing projecting from one edge or corner thereof, said sheet of material having a fastening-tongue adapted to extend through an opening in the sheet formed at the point of the juncture between said lid-like wing and one wall of the box, the tongue lying outside of the box over the top thereof.

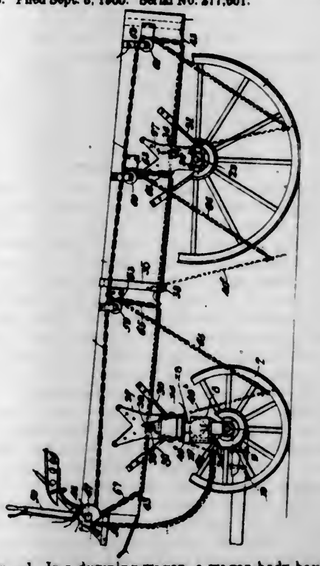
823,605. BOOK-COVER. CHRISTIAN A. JOHNSON, Chicago, Ill. Filed Sept. 20, 1905. Serial No. 279,240.



Claim.—1. A book-cover of the class described comprising the back piece in combination with the side parts composed of a rigid marginal frame, braces and side parts connected to form a hollow space, and the outer finishing layer applied and secured to the same as specified.

2. In a book-cover of the class specified, a marginal frame for the side parts comprising opposite members provided with a kerf along their entire inner edges, other members having corresponding tongues on their opposite ends, rabbets formed around the inner margin of said frame on opposite sides thereof in combination with oppositely-arranged thin boards fitted and glued within said rabbets, and an outer finishing-cover as specified.

823,606. DUMPING-WAGON. WILLARD O. LONG, Mansfield, Ohio. Filed Sept. 8, 1905. Serial No. 277,601.



Claim.—1. In a dumping-wagon, a wagon-body having a bottom composed of a plurality of trap-doors, and brackets secured upon

the side members of said body and provided with body-supporting cleats.

2. In a dumping-wagon, a wagon-body having a bottom composed of a plurality of trap-doors, brackets secured upon the side members of said body and having body-engaging cleats, and running-gear including supporting means for said brackets.

3. In a dumping-wagon, a wagon-body having a bottom composed of a plurality of trap-doors, brackets secured upon the side members of the body and provided with body-engaging cleats, running-gear including supporting means for the brackets, and means rigidly connecting the body with the bracket-supporting means.

4. Front and rear running-gear including a front bolster and a rear axle, a wagon-body, brackets connected with the body and having body-engaging cleats, means for rigidly connecting said brackets with the front bolster and the rear axle, and trap-door-carrying shafts having bearings in said brackets.

5. In a dumping-wagon, a wagon-body having supporting-brackets, and trap-door-carrying shafts journaled in said brackets.

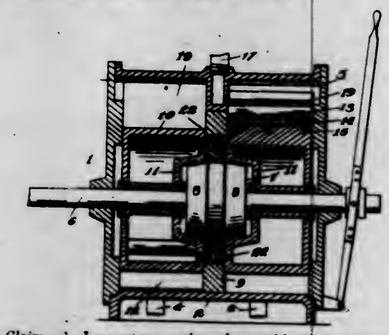
6. In a dumping-wagon, a wagon-body, supporting-brackets connected with the side members of said body, and shafts journaled in said brackets and having keys to prevent the spreading of the brackets and side members.

7. In a dumping-wagon, a wagon-body, supporting-brackets connected with the side members of said body and having body-engaging cleats, and shafts journaled in said brackets and having keys to prevent the spreading of the brackets and side members.

8. In a dumping-wagon, a wagon-body, supporting-brackets secured to the side members of the body and having body-engaging cleats, shafts journaled in said brackets, keys extending through the projecting ends of the shafts, and trap-doors hingedly supported upon the latter.

9. A wagon-body having a transverse shaft and a trap-door having hinge members engaging said shaft and provided near its free end with a channel-bar having projecting ends, in combination with hoisting-chains connected with the projecting ends of the channel-bars.

823,607. ROTARY ENGINE. GEORGE S. MACDONALD, Helena, Mont. Filed Dec. 11, 1905. Serial No. 291,307.



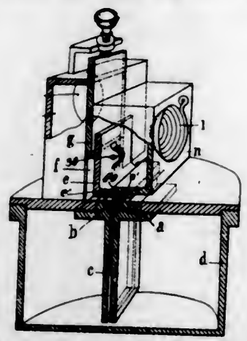
Claim.—1. In a rotary engine, the combination of oppositely-moving pistons provided with clutch members, a shaft, and a clutch-head mounted on said shaft between said pistons and arranged for engagement with either of the same, as and for the purpose set forth.

2. In a rotary engine, the combination with the cylinder and the two pistons working therein side by side and provided on their opposing faces with gearing-teeth, a partition-ring between said pistons and provided with pinions meshing with the teeth thereof, each of said pistons being provided on its inner face with a female clutch member and a shaft mounted in said cylinder and provided with a clutch-head designed to be moved into engagement with either clutch member of the pistons as and for the purpose set forth.

3. A rotary engine comprising a cylinder, two pistons located in said cylinder side by side and provided on their opposing faces with gear-teeth, and also provided on said faces with female clutch members, pinions interposed between the two faces of the pistons and meshing with the teeth thereof, whereby the pistons will turn in opposite directions, means for admitting steam to said pistons and for exhausting it from the cylinders, a shaft mounted in the cylinder, and a clutch-head on said shaft between the two pistons and arranged for engagement with the clutch member of each piston, as and for the purpose set forth.

4. A rotary engine, comprising a cylinder provided with a steam-chest divided into two compartments and said cylinder also provided with a partition dividing it into two compartments, pistons mounted to turn in said cylinder on opposite sides of said ring and provided on their opposing faces with female clutch members, pinions mounted in said partition-ring and engaging said opposing faces of the two pistons, and a shaft mounted with a clutch-head designed to be moved into engagement with the clutch member of the pistons, and means for admitting steam alternately into the compartment of the cylinder whereby to act successively on the two pistons, as and for the purpose set forth.

823,608. CARBURETER FOR EXPLOSIVE-ENGINES. JEAN B. D. M. MALEZIEUX, Paris, France. Filed July 18, 1904. Serial No. 217,069.



Claim.—1. In a carbureter, the combination of a reservoir, for containing a carbureting liquid, an air-receiving chamber having an air-inlet, a valve normally closing said inlet, a carbureted air-delivery chamber communicating with said air-chamber, a spraying device delivering said liquid to the air-chamber, a valve simultaneously controlling said spray device and a passage between said two chambers, and a valve for independently controlling said passage.

2. In a carbureter, the combination of a reservoir for containing a carbureting liquid, an air-chamber having an air-inlet, a valve normally closing said inlet, a carbureted air-delivery chamber communicating with said air-chamber, a spraying device, comprising a flattened tube having one end opening into the reservoir and the other provided with branching conduits, one communicating with the atmosphere and the other with the air-chamber, and a valve simultaneously controlling the passage between said chambers and the openings of said slits.

3. In a carbureter, the combination of a reservoir for containing a carbureting liquid, an air-chamber having an air-inlet, a valve normally closing said inlet, a carbureted air-delivery chamber communicating with said air-chamber, a spraying device comprising a flattened tube having one end opening into the reservoir, and the other provided with branching conduits, one communicating with the atmosphere and the other with the said air-chamber, and an L-shaped valve simultaneously controlling the passage between said chambers and the openings of said branching conduits.

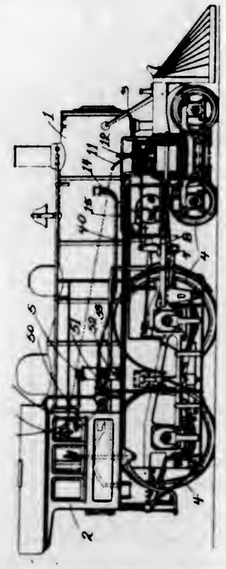
823,609. LUBRICATING SYSTEM FOR LOCOMOTIVES. CHARLES W. MANKEL, Buffalo, N. Y., assignor, by mesne assignments, to Mansel Brothers Co., a Corporation of New York. Filed Jan. 21, 1903. Serial No. 139,880.

Claim.—1. An automatic lubricating system for locomotives or the like, having a lubricating-pump, means for supplying oil to said pump, an air-cylinder connecting by piping to said pump and a valve controlling the air-supply and automatically operated from the motive power of the locomotive.

2. An automatic lubricating system for locomotives or the like having a lubricating-pump, compressed-air mechanism for operating said pump and a valve controlling the air-supply.

3. In an automatic lubricating system for locomotives or the like, the combination with an air-cylinder of a lubricating-pump, pipes connecting the air-cylinder to the lubricating-pump and a valve controlling the air-supply automatically operated from the motive power of the locomotive.

4. An automatic lubricating system for locomotives or the like having a lubricating-pump, an oil-reservoir, a pipe connecting the oil-reservoir to the lubricating-pump, an air-cylinder, a pipe connecting the air-cylinder to the lubricating-pump and a valve controlling the air-supply.



5. An automatic lubricating system for locomotives or the like having a lubricating-pump, an oil-reservoir, a pipe connecting the oil-reservoir to the lubricating-pump, an air-cylinder, a pipe connecting the air-cylinder to the lubricating-pump and a valve automatically operated from the motive power of the locomotive and controlling the air-supply.

6. In a lubricating system for locomotives and the like, a plurality of lubricating-pumps, pneumatic mechanism for operating said pumps, an oil-reservoir, a hand-pump connecting to the oil-reservoir and pipes connecting the hand-pump to the lubricating-pump.

7. In a lubricating system, an air-pump, a lubricating-pump connecting to the air-pump, pneumatic mechanism for operating the lubricating-pump connected to the air-pump and a valve controlling said pneumatic mechanism automatically operated by the mechanism requiring lubrication, substantially as set forth.

8. In a lubricating system for locomotives and the like, a lubricating-pump connected with each steam-chest, a lubricating-pump connected with the air-pump, pneumatic mechanism for operating the lubricating-pumps connected to the steam-chests, a valve device controlling said pneumatic mechanism, mechanism for operating the pump for lubricating the air-pump, a hand-pump, an oil-reservoir, an oil-conducting pipe connecting the hand-pump to the oil-reservoir, and oil-conducting pipes connecting the hand-pump to all of the lubricating-pumps, substantially as set forth.

9. In a lubricating system for locomotives, an oil-reservoir, a hand-pump within convenient reach of the engineer, a pipe connecting the hand-pump to the oil-reservoir, a series of pneumatically-operated lubricating-pumps and pipes connecting the lubricating-pumps to the hand-pump.

10. In a lubricating system for locomotives, an oil-reservoir, a hand-pump within convenient reach of the engineer, a pipe connecting the hand-pump to the oil-reservoir, a series of pneumatically-operated lubricating-pumps mounted on the steam-chests, a valve device controlling said lubricating-pumps, and a friction mechanism actuated from the motive power of the locomotive for operating the valve device.

11. In a lubricating system for locomotives, a lubricating-pump, pneumatic mechanism for operating said lubricating-pump, a valve device controlling said pneumatic mechanism, and a friction mechanism actuated from the motive power of the locomotive for operating the valve device.

12. In a lubricating system for locomotives, a lubricating-pump, pneumatic mechanism for operating said lubricating-pump, a valve device controlling said pneumatic mechanism, and means actuated from the motive power of the locomotive for operating the valve device.

13. In a lubricating system for locomotives, a lubricating-pump, mechanism for operating said lubricating-pump, a valve device controlling said mechanism, and a friction mechanism actuated from the motive power of the locomotive for operating the valve device.

14. In a lubricating system for locomotives, an oil-reservoir a series of pneumatically-operated lubricating-pumps mounted on the steam-chests and connected to the oil-reservoir and a valve device controlling said lubricating-pumps.

15. In a lubricator, the combination with a reservoir, of a pump supplied from the reservoir, fluid-pressure mechanism for operating the pump, and a rotary valve actuated by the movement of the apparatus being lubricated for controlling the admission of fluid to the said mechanism.

16. In a lubricator, the combination with a reservoir, of a pump supplied from the reservoir, fluid-pressure mechanism for operating the pump, a valve for controlling admission of fluid to the said means, and a connection with apparatus being lubricated for imparting intermittent rotary movement to the valve.

17. In a lubricator, the combination with a reservoir, of a pump supplied from the reservoir, fluid-pressure mechanism for operating the pump, a source of fluid under pressure, a rotary valve for controlling admission of fluid to the said mechanism, and means for rotating the valve intermittently.

18. In a lubricator, the combination with a reservoir, of a pump supplied from the reservoir, fluid-pressure mechanism for operating the pump, a source of fluid under pressure, a rotary valve for controlling the admission of fluid to the said mechanism and an oscillating member for imparting intermittent rotary motion to the valve.

19. An automatic lubricating system for locomotives or the like having a lubricating-pump, means for supplying oil to said pump, fluid-pressure mechanism for operating said pump and a valve controlling the air-supply and automatically operated from the motive power of the locomotive.

20. In mechanism of the class described, a reservoir, a pump supplied from said reservoir, mechanism for operating said pump, and a valve device controlled by the mechanism requiring lubrication and in turn controlling the pump-operating mechanism.

21. In combination, an oil-pump, fluid-pressure mechanism for operating said oil-pump and a valve device actuated by the movement of the mechanism requiring lubrication for controlling the admission of fluid to said fluid-pressure mechanism.

22. In combination, an oil-pump, elastic fluid-pressure mechanism for operating said oil-pump and a valve device actuated by the movement of the mechanism requiring lubrication for controlling the admission of elastic fluid to said fluid-pressure mechanism.

23. The combination with an oil-pump, of fluid-pressure mechanism for operating said oil-pump which is automatically controlled from the mechanism requiring lubrication.

24. The combination with an oil-pump, of fluid-pressure mechanism for operating said oil-pump which is automatically controlled from the mechanism requiring lubrication and a manually-operative device such as a hand-pump for independently operating said oil-pump.

25. In a lubricating system, an oil-pump, automatic means controlled from the mechanism requiring lubrication for operating said pump and manually-operative means for independently operating said pump.

26. In a lubricating system for locomotives, the combination with lubricating mechanism which is automatically operated, of manually operative means for independently operating said lubricating mechanism.

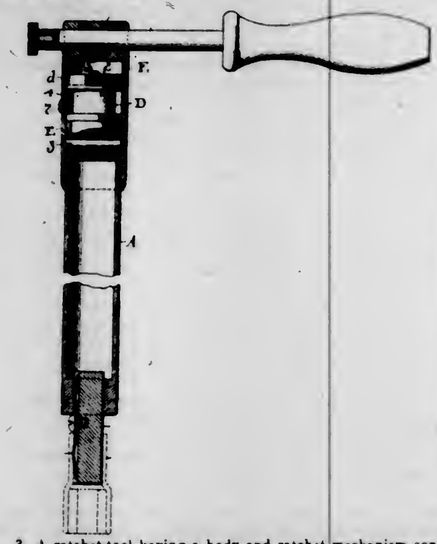
27. In a lubricating system for locomotives, the combination with lubricating mechanism, of mechanism for automatically operating said lubricating mechanism, and a hand-pump for independently operating said lubricating mechanism.

28. In a lubricating system for locomotives, the combination with lubricating mechanism, of fluid-pressure mechanism for automatically operating said lubricating mechanism and a hand-pump for independently operating said lubricating mechanism.

823,610. RATCHET TAP AND NUT WRENCH. FRANK G. MARRACH, Medina, Ohio. Filed Feb. 12, 1906. Serial No. 300,586.

Claim.—1. In ratchet-tools, a barrel and a ratchet-head at the upper end of said barrel, and a cap sleeved over said head and the end of the barrel and provided with a cross-piece internally adapted to engage said head.

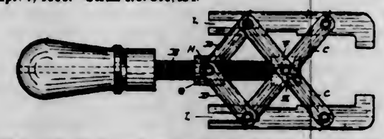
2. A ratchet-tool having a suitable barrel, a ratchet member fixed in said barrel and extending above the same, a cap slidably and rotatably engaged with said ratchet member, a cross part in said cap adapted to engage said ratchet member and means to rotate said parts fixed in said cap.



3. A ratchet-tool having a body and ratchet mechanism connected therewith, said mechanism comprising a ratchet-head having open slots at right angles across its top, a slidable sleeve on said body and means to engage said ratchet projecting through said sleeve.

4. A ratchet-tool having a body and a ratchet connected with the top thereof, a sleeve slidably engaged over the said ratchet and provided with a handle at its top and a device in said sleeve to engage said ratchet.

823,611. **HAND-VISE.** HARRY T. MARTIN, Milwaukee, Wis. Filed Apr. 7, 1906. Serial No. 310,454.



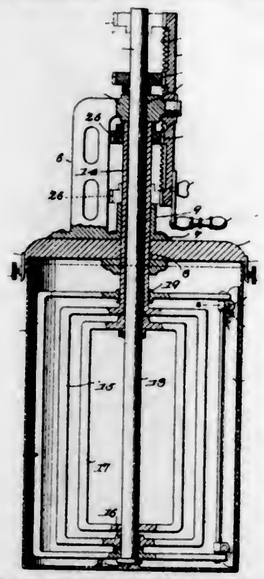
Claim.—1. In a hand-vise of the class described the combination of a pair of parallel jaws, a screw-threaded shaft centrally located between said jaws, two pairs of crossed levers pivotally connected at their outer or diverging ends with said jaws and at their converging ends through a sleeve and nut with said central shaft.

2. In a hand-vise of the class described the combination of a pair of parallel jaws, a screw-threaded shaft provided with an operating-handle centrally located between said jaws, two pairs of crossed levers located upon the respective sides of said jaws and central shaft, both pairs of said levers being pivotally connected at their outer or diverging ends with said jaws and at their converging ends through a sleeve and nut with said central shaft.

3. In a hand-vise of the class described the combination of a pair of parallel jaws, a screw-threaded shaft provided with an operating-handle centrally located between said jaws, two pairs of two-armed crossed levers and two pairs of one-arm crossed levers located upon the respective sides of said jaws and central shaft, both pairs of said levers being pivotally connected at their outer or diverging ends with said jaws and at their converging ends one through a sleeve and the other through a nut with said central shaft, one end of both pairs of said two-armed crossed levers being provided with sliding pivotal connections with one end of said jaws.

4. In a hand-vise of the class described the combination of a pair of parallel jaws, a hollow screw-threaded shaft centrally located between said jaws, two pairs of crossed levers pivotally connected at their outer or diverging ends with said jaws and at their converging ends through a sleeve and nut with said central shaft.

823,612. **COMBINED CHURN AND ICE-CREAM FREEZER.** DANIEL D. MAYFIELD and ELLA F. MAYFIELD, Thayer, Mo. Filed Oct. 10, 1904. Serial No. 227,925.



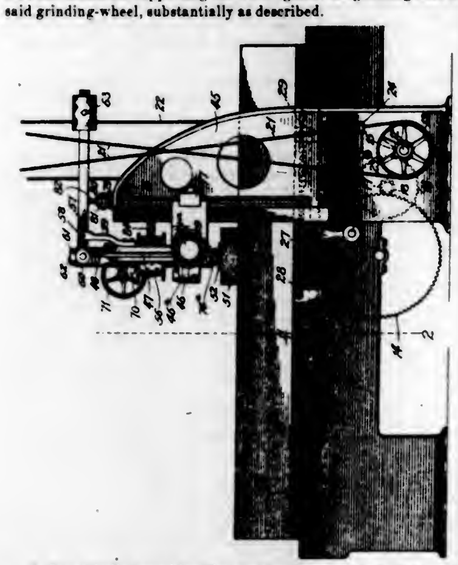
Claim.—A convertible churn and ice-cream freezer comprising a receptacle, a top therefor, a bracket upon the top and provided with a horizontally-disposed arm, a dasher-shaft rotatably piercing the top and the arm and rising above the latter, a dasher carried by the shaft, a tubular shaft embracing the dasher-shaft and rotatably piercing the top with its upper end engaging the under side of the arm, a dasher carried by the tubular shaft, a drive-gear mounted upon the outer end of the arm and provided with two concentric sets of teeth, a pinion carried by the dasher-shaft above the arm and adjustable into engagement with the respective sets of teeth of the drive-gear, another pinion carried by the tubular shaft between the arm and the top of the churn and adjustable into engagement with the two sets of teeth of the drive-gear independently of the first-mentioned pinion, a sleeve carried by the top and embracing the tubular shaft with its upper end disposed to form a stop for limiting the downward adjustment of the pinion upon the tubular shaft and to support the same in engagement with the outer set of the teeth.

823,613. **GRINDING-MACHINE.** JOHN C. MILLER, Oak Park, and LESLIE E. HOWARD, La Grange, Ill., assignors to Simonds Manufacturing Company, Fitchburg, Mass., a Corporation of Massachusetts. Filed Dec. 27, 1904. Serial No. 238,400.

Claim.—1. In a grinding-machine, the combination with a vertical spindle and a grinding-wheel mounted on the lower end thereof, of suitable bearings in which said spindle is journaled, means for driving said spindle, means for overbalancing the gravity effect of said grinding-wheel and its driving mechanism, and means for supporting the work against the grinding-face of said grinding-wheel, substantially as described.

2. In a grinding-machine, the combination with a vertical spindle and a grinding-wheel mounted on the lower end thereof, of suitable bearings in which said spindle is journaled with capacity for vertical adjustment, means for driving said spindle, means for vertically adjusting said spindle, means for overbalancing the gravity effect of said grinding-wheel and its driving and adjusting mechanism, and means for supporting the work against the grinding-face of said grinding-wheel, substantially as described.

3. In a grinding-machine, the combination with a vertical spindle and a grinding-wheel mounted on the lower end thereof, of suitable bearings in which said spindle is journaled with capacity for both vertical and angular adjustment, means for driving said spindle, means for vertically adjusting said spindle, other means for angularly adjusting said spindle, means for overbalancing the gravity effect of said grinding-wheel and its driving and adjusting mechanism, and means for supporting the work against the grinding-face of said grinding-wheel, substantially as described.



4. In a grinding-machine, the combination with a grinding-tool and means for actuating the same, of a substantially water-tight work-supporting case, an electromagnet contained in the latter, means for directing the lines of magnetic force through said case and the work laid thereon so as to hold the latter to the former through magnetic attraction, and a tank containing said work-supporting case and adapted to be filled with water to a level above the surface of the work to be ground, substantially as described.

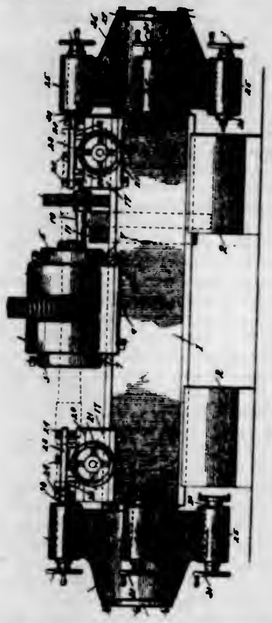
5. In a grinding-machine, the combination with a stationary frame, of a bed-plate reciprocable thereover, a tank carried by said bed-plate, a work-supporting device contained in said tank, a stationary housing rising above said tank, a horizontally-disposed yoke carried by said housing extending across said tank, a vertical spindle supported by said yoke, a grinding-wheel on the lower end of said spindle, means for driving said spindle, means for overbalancing the gravity effect of said grinding-wheel and its driving mechanism, and means for adjusting said grinding-wheel into operative contact with the work, substantially as described.

6. In a grinding-machine, the combination with a stationary frame, of a bed-plate reciprocable thereover, a tank carried by said bed-plate, a work-supporting device contained in said tank, a stationary housing rising above said tank, a horizontally-disposed yoke carried by said housing extending across said tank, a vertically-disposed yoke pivotally mounted in said horizontal yoke and containing bearings, a spindle mounted in said bearings, a grinding-wheel on the lower end of said spindle, means for driving said spindle, means for overbalancing the gravity effect of said grinding-wheel and its driving mechanism, and means for angularly adjusting said vertical yoke and said spindle mounted therein, whereby to effect concave or hollow grinding, substantially as described.

7. In a grinding-machine, the combination with a stationary frame, of a bed-plate reciprocable thereover, a tank carried by said bed-plate, a work-supporting device contained in said tank, a stationary housing rising above said tank, a vertically-adjustable horizontally-disposed yoke carried by said housing extending across said tank, an angularly-adjustable vertically-disposed yoke pivotally mounted in said horizontal yoke and containing bearings, a vertically-adjustable spindle mounted in said bearings, a grinding-wheel on the lower end of said spindle, means for driving said spindle, and means for overbalancing the gravity effect of said grinding-wheel and its driving mechanism, substantially as described.

8. In a grinding-machine, the combination with a grinding-tool and means for actuating the same, of a work-supporting case, an electromagnet contained in the latter, a water-tight sheathing or covering surrounding said electromagnet, means for directing the lines of magnetic force through said case and the work laid thereon so as to hold the latter to the frame through magnetic attraction, and a tank containing said work-supporting case and adapted to be filled with water to a level above the surface of the work to be ground, substantially as described.

823,614. **LATHE FOR TURNING AXLES.** CHARLES MILLS, Newton Upper Falls, Mass., assignor to Willis C. Swift, Fitzwilliam, N. H. Filed May 15, 1903. Serial No. 157,203.



Claim.—1. The combination with a lathe-bed, of a foot-stock at each end of said bed pivoted out of alinement with the lathe center and a chuck disposed between said foot-stocks for holding the article to be turned, said foot-stocks having movement transversely in a plane perpendicular to the lathe center, whereby the article to be turned may be easily inserted into said chuck at one end of the lathe and easily removed therefrom at the other end of the lathe, substantially as described.

2. The combination with a lathe-bed, of a plurality of foot-stocks arranged at each end of said bed, a central chuck mounted upon said bed for holding the article to be turned, said foot-stocks being pivoted out of alinement with the lathe center and having movement transversely in a plane perpendicular to the lathe center, whereby said foot-stocks may be brought successively opposite the lathe center and the article to be turned may be easily inserted into said chuck at either end of the lathe, substantially as described.

3. The combination with a lathe-bed, of a plurality of foot-stocks arranged at each end of said bed, means disposed between said foot-stocks for holding the article to be turned, said foot-stocks being pivoted out of alinement with the lathe center and having movement transversely in a plane perpendicular to the lathe center and means for locking any one of said foot-stocks when said foot-stock is opposite the lathe center, substantially as described.

4. The combination with a lathe-bed, of means carried by said bed for holding the article to be turned, a hub journaled at each end of said bed, and a plurality of foot-stocks carried by each of said hubs and movable transversely in a plane perpendicular to the lathe center, said foot-stocks being arranged with spaces between them, whereby the article to be turned may be passed endwise into position at one end of the lathe and removed endwise from position at the opposite end, substantially as described.

5. The combination with a lathe-bed, of a hub journaled at each end of said bed, a plurality of foot-stocks carried by each of said hubs and movable transversely in a plane perpendicular to the lathe center, a chuck disposed between said hubs for holding the article to be turned, and means for locking said hubs against rotation, substantially as described.

6. The combination with a lathe-bed, of a plurality of foot-stocks arranged at each end of said bed and movable transversely in a

plane perpendicular to the lathe center, tools carried by said foot-stocks, and means for rotating the tool carried by one of said foot-stocks when said tool is in position to operate upon the article to be turned, substantially as described.

7. The combination with a lathe-bed, of a plurality of foot-stocks arranged at each end of said bed and movable transversely in a plane perpendicular to the lathe center, tools carried by said foot-stocks, and means for operating the tool carried by any one of said foot-stocks, substantially as described.

8. The combination with a lathe-bed, of means carried by said bed for holding the article to be turned, a plurality of foot-stocks arranged at each end of said bed, said foot-stocks being disposed out of alinement with the lathe center and movable transversely in a plane perpendicular to the lathe center, said foot-stocks being arranged with spaces between them whereby the article to be turned may be inserted endwise into position at either end of the lathe, substantially as described.

9. The combination with a lathe-bed, of a hub journaled at each end of said bed, a plurality of foot-stocks carried by each of said hubs and having movement transversely in a plane perpendicular to the lathe center, said foot-stocks being arranged with spaces between them, a chuck mounted upon the bed for holding the article to be turned, means for rotating said chuck, and a tool-carriage on each side of said chuck, whereby the article to be turned may be passed endwise into position at one end of the lathe and removed endwise from position at the opposite end, substantially as described.

10. The combination with a lathe-bed, of a movably-mounted foot-stock arranged at each end of said bed, a chuck disposed between said foot-stocks for holding the article to be turned, said foot-stocks being movable in a plane perpendicular to the lathe center, whereby the article may be readily inserted into the chuck and removed therefrom at the end of the lathe.

11. The combination with a lathe-bed, of plurality of movably-mounted foot-stocks arranged at each end of said bed, a chuck disposed between the ends of said bed for holding the article to be turned, said foot-stocks being movable out of alinement with the lathe center in a plane perpendicular thereto, whereby articles may be readily inserted into said chuck at one end of the lathe and removed therefrom at the opposite end thereof.

12. The combination with a lathe-bed, of movably-mounted foot-stocks arranged at each end of the said bed, means disposed between said foot-stocks for holding the article to be turned, and a tool-holder mounted upon either side of said means, said foot-stocks being movable in a plane perpendicular to the lathe center and out of alinement therewith, whereby the article may be easily inserted into and removed from the holding means.

13. The combination with a lathe-bed, of a plurality of movably-mounted foot-stocks arranged upon each end of the said bed, a chuck disposed between said foot-stocks for holding the article to be turned, said foot-stocks being movable in a plane perpendicular to the lathe center, and means for locking any one of said foot-stocks in position when the same is in operative engagement with the article.

14. The combination with a lathe-bed, of a plurality of movably-mounted foot-stocks arranged at each end thereof carrying suitable tools, a chuck arranged between the ends of said bed for holding the article to be turned, said foot-stocks being movable in a plane perpendicular to the lathe center, and means for rotating the tool carried by any one of said foot-stocks when the same is in position to operate upon the article to be turned.

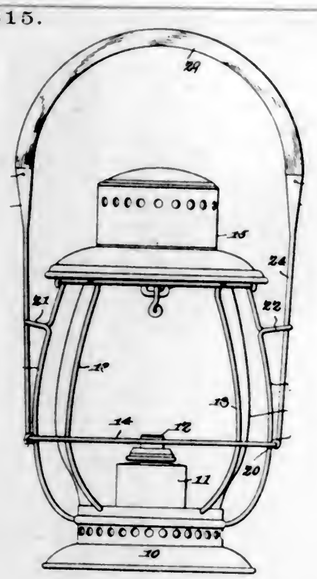
823,615. RAILWAY SIGNALING-LANTERN. THOMAS L. MOORE, San Antonio, Tex. Filed Dec. 30, 1905. Serial No. 293,950.

Claim.—1. The combination with a lantern including a guard-frame, of spaced standards connected to said frame and provided with laterally-extending guides, rods connected at the lower ends to said frame and extending through said guides and provided with sockets at the upper ends, and a U-shaped grip member connected at its ends in said sockets.

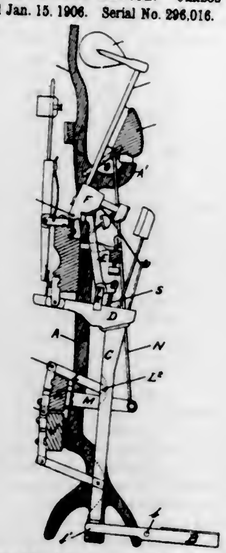
2. A lantern having a wire cage to protect the chimney thereof, diametrically opposite wires of the cage being provided with transversely-disposed loops, rods carried by the lower portion of the cage and rising through the respective loops, and a handle connecting the upper ends of the rods and arched over the top of the lantern.

3. A lantern having a cage to protect the chimney thereof, rods rising from the cage at diametrically opposite sides thereof and provided at their upper ends with sockets, and an arched handle of heat-non-conducting material spanning the top of the lantern and having its ends seated within the sockets.

823,615.



823,616. PIANISSIMO DEVICE. CARLOS MORGAN, Castleton, N. Y. Filed Jan. 15, 1906. Serial No. 296,016.

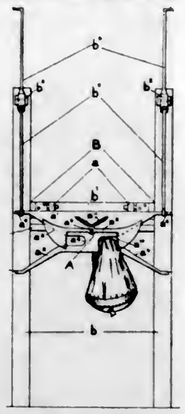


Claim.—1. In an upright-piano action, a key, a sticker operated thereby, a whippen having its lower surface beveled to correspond to the beveled end of said sticker and in contact therewith, the beveled end of said sticker being of sufficient length to remain in continual contact with the lowest point of the lower surface of the whippen, means for moving the beveled end of said sticker along the beveled surface of said whippen, thus raising and lowering said whippen and means for operating the hammer from said whippen in combination with said hammer, substantially as described.

2. In an upright-piano action, a key, a sticker operated thereby, a whippen having its lower surface beveled to correspond with the beveled end of the sticker and in contact therewith, a rail fixedly attached to the frame supporting the action, an auxiliary rail hinged horizontally thereto, a link connecting said auxiliary rail to said sticker whereby when said auxiliary rail is turned on its hinges said link will move the beveled end of said sticker along the beveled surface of said whippen thereby raising and lowering said whippen, the beveled end of said sticker being of sufficient length to remain in continual contact with the lowest point of the lower surface of the whippen, in combination with a hammer-rest rail and means for operating said auxiliary rail from said hammer-rest rail and a hammer and intermediate connections for operating the same from said whippen, substantially as described.

3. In an upright-piano action, a key, a sticker operated thereby, a whippen having its lower surface beveled to correspond to the beveled edge of the sticker, a horizontal auxiliary rail hinged to some stationary part of the action, a link pivoted to said auxiliary rail at one end and pivoted to said sticker at the other end at a point lower down than the point where it is pivoted to said rail, in combination with a hammer-rest rail, a rod extending downward from said hammer-rest rail, an arm fixedly attached at one end to said auxiliary rail and pivotally attached at the other end to said rod, whereby the raising of said hammer-rest rail will tip said auxiliary rail on its hinges, the beveled end of said sticker being of sufficient length to remain in continual contact with the lowest point of the lower surface of the whippen, and a hammer and intermediate connections for operating the same from said whippen, substantially as described and for the purposes set forth.

823,617. MAIL-POUCH-EXCHANGING DEVICE. GEORGE W. MOSHER, Newport, Ky. Filed Dec. 20, 1905. Serial No. 292,590.



Claim.—1. In a mail-pouch-exchanging device, the combination of a fixed frame suitably placed in proximity to a railway-track said frame carrying a combined pouch delivering and catching mechanism, said catching mechanism comprising a forked member and a latch guarding the entrance thereto, said latch adapted to be pressed aside by an entering pouch, and a spring adapted to return said latch to position, and a combined pouch holding and catching mechanism attached to a mail-car.

2. In a mail-pouch-exchanging device, the combination of a fixed frame suitably placed in proximity to a railway-track, said frame carrying a double pouch holding and catching mechanism, said catching mechanism provided with a latch adapted to be pressed aside by an entering pouch and a spring adapted to return said latch to position and a combined double pouch holding and catching mechanism attached to a mail-car, said car mechanism also provided with said latch and spring.

3. In a mail-pouch-exchanging device the combination of a frame fixed in proximity to a railway-track, a mail pouch receiving and delivering mechanism attached to said frame and including a plate having its opposite ends forked, and a spring-pressed latch controlling the entrance to each of the forks of said plate, a substantially corresponding pouch holding and catching mechanism attached to a car, and a mechanism on the car upon which the pouch holding and catching devices of said car are movably supported.

4. In combination with a mail-pouch-exchanging device, a combined receiving and delivering car mechanism said mechanism including a member having its opposite ends forked, a spring-latch guarding the entrances to said forks, means whereby the forked plate is hung from the car, a handle whereby said plate may be turned about its support, and means adapted to engage and hold said handle to maintain the plate in position.

5. In combination with a mail-pouch-exchanging device, a combined receiving and delivering car mechanism, and readily-removable means for slidably hinging said mechanism on a horizontal bar across the car-door, said means including said bar, guides having recesses for the bar, plates fitting over the open sides of the recesses and means for securing said plates.

6. A mail-pouch-exchanging device, consisting of a fixed frame suitably placed in proximity to a railway-track, a double pouch holding and catching mechanism horizontally hinged thereto, said catching mechanism consisting of a bifurcated plate, the entrance to which is guarded by a latch yieldably held in position by springs; and a combined double pouch holding and catching mechanism similar to the one above mentioned so attached to a horizontal bar across the side doorway of a railway mail-car as to be readily removable therefrom or to be slid on said bar clear of the doorway.

823,618. SEESAW AND ROUNDABOUT. JOHN MUELLER, Elmhurst, Ill. Filed Oct. 18, 1905. Serial No. 283,299.



Claim.—1. A seesaw and roundabout comprising an upright, a beam balanced and rotatable on the top of said upright, said beam comprising a pair of side bars secured together and disposed on edge in parallel relation to each other, spacers separating said bars, a block mounted between said bars at each end of said beam, each of said blocks having thereon a seat and being slidable longitudinally of the beam and means for drawing the side bars toward each other for clamping the block in a fixed position.

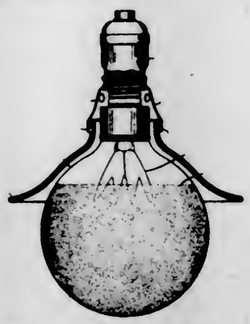
2. A seesaw and roundabout comprising an upright, a beam balanced and rotatable on the top of said upright, said beam comprising a pair of side bars secured together and disposed in parallel relation to each other, spacers separating said bars, a block mounted between said bars at each end of said beam, each of said blocks having thereon a seat and being slidable longitudinally of the beam, and means for drawing the side bars toward each other for clamping the block in a fixed position, said beams having longitudinal grooves in their opposed faces and said blocks having projections extending into said grooves to prevent said block from tilting with respect to the beam.

3. A seesaw and roundabout comprising an upright, a beam balanced and rotatable on the top of said upright, said beam comprising a pair of side bars secured together and disposed in parallel relation to each other, spacers separating said bars, a block mounted between said bars at each end of said beam, each of said blocks having thereon a seat and being slidable longitudinally of the beam, a spacer at each end of the beam outside of said movable block and forming a stop for limiting the outward adjustment of said block,

said spacer being of substantially the same thickness as said block, a second spacer inward of each end and being of greater thickness than said block, and a bolt extending through said bars at a point between said spacers and adapted to draw said side bars together for clamping said block.

4. In a seesaw and roundabout, the combination of an upright post, a beam balanced upon the top of said post and rotatable thereon, said beam having a central oblong aperture and a cap seated in said aperture for engaging the top of the post, said cap being bent to an inverted-U-shaped form having lateral base-flanges for engaging the bottom face of the beam, the top of said U-shaped cap being indented at each end to form a central seat for the top of the post between said indentations, all arranged to permit said beam to tilt longitudinally and to prevent said beam from tilting transversely.

823,619. COMPOSITE ELECTRICAL LAMP AND PRISMATIC-GLASS REFLECTOR. OTIS A. MYGATT, New York, N. Y. Filed Mar. 31, 1904. Serial No. 200,981.

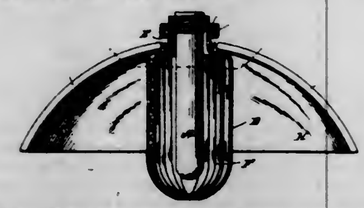


Claim.—1. The combination of a socket, an incandescent lamp therefor having a spherical bulb a portion of the surface of which is of clear glass and the major portion frosted, a filament located eccentrically in the bulb of said lamp, a reflector-holder formed at a permanent part of the socket, and a prism-glass reflector carried thereby in proximity to the bulb of said lamp but out of contact therewith.

2. The combination of a socket, an incandescent lamp having a spherical bulb the surface of which is frosted except over a zone the maximum diameter of which is less than the maximum diameter of the bulb, a filament in said lamp located in or near the plane separating the frosted from the unfrosted portions of the bulb, and a prism-glass reflector carried by the socket and shaped so that a portion thereof conforms in curvature with the curvature of the bulb leaving a space between while the outer portion of the reflector is flared out from the bulb.

3. The combination of an incandescent lamp having a spherical bulb frosted except over a zone less in diameter than the maximum diameter of the bulb, a filament in the bulb located so as to be approximately in the plane separating the frosted and unfrosted portions of the bulb, a prism-glass reflector having an outwardly-flared edge, extending outwardly beyond the greatest diameter of the bulb, but covering only the upper part of the bulb and leaving a ventilating-space between.

823,620. ILLUMINATOR. OTIS A. MYGATT, New York, N. Y. Filed May 20, 1904. Serial No. 208,831.



Claim.—1. The combination with an electric light surrounded by a closed glass casing, of a light-diffusing shade surrounding said glass casing, and a glass reflector surmounting said diffusing-shade, and having reflecting-prisms on its upper surface.

2. The combination with an electric light in a closed glass casing, of a light-diffusing shade having internal ribs and surrounding said casing, and a glass reflector surmounting said shade, and having reflecting-prisms on its upper surfaces.

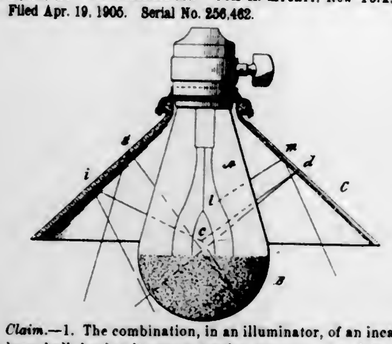
3. The combination with an electric light in a closed glass casing, of a light-diffusing shade surrounding said casing at a little distance and having internal ribs and a partly-smooth exterior, and a glass reflector surmounting said shade and having external reflecting-prisms.

4. The combination with a closed electric lamp, of a surrounding light-diffusing shade having internal vertical ribs and being smooth on its outer lower portion, and a glass reflector resting on said shade and having external reflecting-prisms.

5. The combination with an electric light in a closed glass casing of a shade a little removed therefrom but of a generally similar form, and having internal diffusing-ribs and being smooth on the lower exterior part of its outer surface, and a glass reflector surmounting said shade, and having external reflecting-ribs and a smooth interior surface.

6. The combination with an electric light in a closed glass casing, of a glass shade, open at the bottom and closed at the top, surrounding said casing, and having internal light-diffusing bodies and a partly-smooth exterior, and a superposed reflector of glass having reflecting-prisms on its upper surface only.

823,621. ILLUMINATOR. OTIS A. MYGATT, New York, N. Y. Filed Apr. 19, 1905. Serial No. 256,462.



Claim.—1. The combination, in an illuminator, of an incandescent lamp-bulb having its upper portion transparent and its lower portion frosted, and a separate reflector a little removed from said bulb, and surrounding the clear portion thereof, leaving the frosted portion of the bulb projecting below the bottom of the reflector.

2. The combination, in an illuminator, of an incandescent lamp-bulb and a little removed from said bulb frosted at its lower end and transparent above the frosting, and a separate and removable reflector of prismatic glass surrounding the clear end of the bulb and flaring outward beyond the widest part of the bulb.

3. The combination, in an illuminator, of an incandescent lamp-bulb frosted at its lower end and transparent above the frosting, and a separate and removable reflector of prismatic glass, having its outer surface substantially covered with double reflecting-prisms, arranged about the transparent end of the bulb and a little removed from said bulb and projecting outward beyond the greatest diameter of the bulb.

4. The combination, in an illuminator, of an electric lamp-bulb having its lower part frosted and its upper part transparent, and a prismatic glass reflector surrounding the clear part of said bulb and a little removed therefrom, said reflector having its outer surface substantially covered with double reflecting-prisms arranged radially, the lower edge of the reflector flaring beyond the largest diameter of the lamp and terminating above the plane of the frosted portion of the bulb.

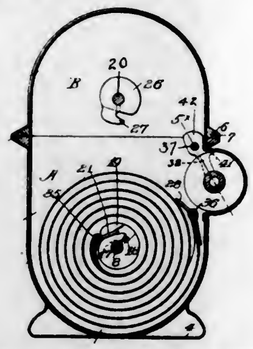
5. The combination, in an illuminator, of an incandescent lamp-bulb frosted at its lower end and transparent above the frosting, and a separate and removable reflector of prismatic glass surrounding the clear end of the bulb and a little removed therefrom, said reflector flaring outwardly beyond the widest part of the lamp-bulb, so as to direct the majority of the reflected light-rays away from the lamp-bulb.

823,622. COMPOSITE SHADE FOR ARTIFICIAL LIGHTS. OTIS A. MYGATT, New York, N. Y. Filed Mar. 9, 1906. Serial No. 305,103.

Claim.—An integral shade of transparent glass, having external light-directing prisms on its upper body, internal diffusion-prisms opposite the same, and a zone of thinner glass below said prismatic portion.



823,623. PHOTOGRAPHIC DEVELOPING APPARATUS. ARTHUR W. MCCURDY, Toronto, Canada, assignor to Eastman Kodak Company, Rochester, N. Y., a Corporation of New York. Filed Apr. 20, 1904. Serial No. 204,081.



Claim.—1. In a photographic developing-machine, the combination with a casing, two shafts therein and an apron, of devices on the shafts adapted to detachably engage the ends of the apron whereby the latter may be unwound from either shaft and wound wholly upon the other, and means for supporting a spool of sensitized material in the casing.

2. In a photographic developing-machine, the combination with a casing, a receiving-shaft and a winding-shaft therein and an apron, of detachable connections between said shafts and the ends of the apron operating when said shafts are revolved in opposite directions to wind said apron thereon, and means for supporting a spool of sensitized material in the casing.

3. In a photographic developing-machine, the combination with a casing, and an apron having engaging members at the end thereof, of a winding-shaft, hubs thereon and projections extending outwardly therefrom and adapted to engage the members on the apron when the shaft is revolved in one direction, means for operating it and devices for supporting a spool of sensitized material in the casing.

4. In a photographic developing-machine, the combination with a casing, a flexible apron having a loop at its end and a bar extending through the loop and having engaging members at its ends, of a winding-shaft, projections thereon coöperating with said members, means for rotating the shaft and a device for supporting a spool of sensitized material in the casing.

5. In a photographic developing-machine, the combination with a casing, an apron, a winding-shaft and means for detachably connecting the apron to the shaft, of a device for supporting a spool of sensitized material in the casing and a rod arranged parallel to the shaft beneath which the end of the material on the spool may be secured.

6. In a photographic developing-machine, the combination with a casing, an apron and a shaft having hubs thereon, of fingers on the latter adapted to engage the end of the apron, a rod extending over the shaft and having the ends extending through the latter and the hubs and a device for supporting a spool of sensitized material in the casing.

7. In a photographic developing-machine, the combination with a casing, an apron, having a cross-bar at its end and engaging devices attached to said bar, of a winding-shaft, hubs thereon adapted to receive the engaging devices and provided with recesses adapted to receive the bar, a device for supporting a spool of sensitized material in the casing and means for connecting the end of said material to the winding-shaft.

8. In a photographic developing-machine, the combination with a casing, an apron and a winding-shaft connected thereto, of a device for supporting a spool of sensitized material in the casing and a rod arranged parallel to the shaft beneath which the end of the material on the spool may be secured and having the ends secured in apertures in said shaft.

9. In a photographic developing-machine, the combination with a casing, an apron and a shaft supporting the latter, of a revoluble winding-shaft connected to one end of the apron, detachable connections between the other end of the apron and the supporting-shaft whereby the apron may be automatically disconnected from the supporting-shaft when wound upon the winding-shaft and means for supporting a spool of sensitized material in the casing.

10. In a photographic developing-machine, the combination with a casing having separable parts, one comprising an apron-holding chamber and the other an apron-receiving chamber, of a winding-shaft in each chamber, and a supporting device in the casing for holding a roll of sensitized material.

11. In a spool-holder for photographic developing-machines embodying a casing, the combination with a rod arranged therein and an arm guided on the rod, of a journal-pin on the arm adapted to support one end of a spool and a spring-operated bearing adapted to support the opposite end of the spool.

12. In a spool-holder for photographic developing-machines embodying a casing, the combination with a rod supported in the casing in proximity to the side thereof, of an arm guided thereon having a foot engaging the casing, and provided with a journal adapted to support one end of a spool, and a relatively movable bearing for the other end of the spool.

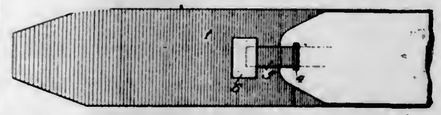
13. In a spool-holder for photographic developing-machines embodying a casing, the combination with a rod supported therein, an arm guided on the rod, of a journal on the arm adapted to support one end of a spool, a journal-pin for the opposite end of the spool guided to move longitudinally in the casing having the end located exteriorly thereof, a friction-head on said pin and a spring for moving the latter inwardly.

14. In a photographic developing-machine, the combination with a casing, and a cover portion coöperating therewith, of shafts journaled in the casing and cover portion, an apron adapted to be unwound from one shaft onto the other and means for supporting a roll of sensitized material in the casing.

15. In a photographic developing-machine, the combination with a casing forming a developing-chamber, having a recess therein and a cover portion forming an apron-holding chamber and coöperating with the casing to close the developing-chamber, of a shaft arranged in each chamber, an apron adapted to be unwound from one shaft onto the other and means for supporting a roll of sensitized material in the recess in the developing-chamber.

16. In a photographic developing-machine, the combination with a casing, a cover portion hinged thereto, the engaging portions of said casing and cover overlapping, of shafts journaled in the casing and cover portion, an apron adapted to be carried on the shaft in the cover portion and wound onto the shaft in the casing and means for supporting a roll of sensitized material in proximity to the shaft in the casing.

823,624. FILM-CARTRIDGE. ARTHUR W. MCCURDY, Baddeck, Canada, assignor to Eastman Kodak Company, Rochester, N. Y., a Corporation of New York. Filed Apr. 17, 1905. Serial No. 256,069.



Claim.—1. A film-cartridge embodying a flexible photographic film and a covering-strip of flexible opaque material longer than the film and attached to one end of the latter and means for loosely connecting the opposite end of the film at its central portion to the cov-

ering-strip to permit relative longitudinal movements of the connected parts.

2. A film-cartridge embodying a flexible photographic film tapering toward the center at the rear end, a covering-strip of flexible opaque material longer than the film and fixedly attached to one end of the latter and a loose connection located between the converging sides of the tapered end of the film and the covering-strip permitting relative movements of the parts.

3. A film-cartridge embodying a flexible photographic film having an aperture at one end, a covering-strip of opaque flexible material longer than the film and attached to one end of the latter and a loop connected at its ends to the covering-strip and passing through the aperture in the film.

4. A film-cartridge embodying a flexible photographic film having an aperture at one end, and a covering-strip of flexible opaque material longer than the film and attached to one end of the latter, said covering-strip having a loop thereon connected at both its ends and passing through the aperture in the end of the film.

5. A film-cartridge embodying a flexible photographic film having a tapering end, and an aperture therein, and a covering-strip of flexible opaque material longer than the film and attached to one end of the latter, said covering-strip having a tongue thereon connected at both its ends and passing through the aperture in the end of the film.

6. A film-cartridge embodying a flexible photographic film having a tapering end and an aperture therein, and a covering-strip of flexible opaque material longer than the film and attached to one end of the latter, said covering-strip having a tongue formed therein and passing through the aperture in the film and means for securing the free end of the tongue.

7. A film-cartridge embodying a flexible photographic film having a covering-strip of flexible opaque material longer than the film and attached to one end of the latter, said strip having the tongue formed therein and extending through the aperture in the film and a sticker for securing the free end of the tongue to the strip.

8. A film-cartridge embodying a flexible photographic film provided with an aperture therein and a covering-strip of opaque flexible material longer than the film and attached to one end of the latter and a connecting-loop passing loosely through the aperture in the film and attached to the covering-strip forwardly and in rear of the said aperture.

823,625. **MUSICAL INSTRUMENT.** OSCAR H. NEWMAN, Oracle, Ariz. Filed Aug. 23, 1904. Serial No. 221,686.



Claim.—1. A musical instrument comprising strings, frets therefor, a fret-arm for each fret coöperating with the fret to control the pitch of the strings, a series of keys for each string and movable to engage and operate the respective fret-arms, and hammer means for each string engaged and operated by all of the corresponding series of keys.

2. A musical instrument comprising strings, frets therefor, a key for each fret of each string, fret means operated by the keys to engage the strings with the frets, and hammer means for each string having an operating-bar extending into proximity to all the keys corresponding to that string, to operate the hammer by the operation of any one of the keys of said string.

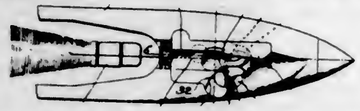
3. A musical instrument comprising strings, frets therefor, a fret spring-arm adjacent to each fret, movable to engage the string on the fret, a key for each fret, operating the corresponding fret spring-arm and a hammer for each string provided with operating means extending adjacent to the keys and operated thereby.

4. A musical instrument comprising strings, frets therefor, a fret spring-arm adjacent to each fret movable to engage the string on the fret, a key for each fret provided with a spring interposed between it and said arm to operate the arm and permit further movement of the key, a hammer for each string and a hammer-operating bar extending adjacent to the keys to be operated by any one of the keys for the corresponding string.

5. A musical instrument comprising strings, frets therefor, a fret spring-arm adjacent to each fret, a key-stem movable in said arm and carrying a key, a spring in said stem engaging said key and arm to operate the arm from the key, a key-bar extending adjacent to and operated by the key-stems and a hammer for each string operated by the key-bar corresponding to that string.

6. A musical instrument comprising a series of strings, a pivoted hammer for each string, a key-bar for each string pivoted to the hammer-bar and provided with perforations, a series of keys for each string, each key having a stem with a pin which lies in a perforation in the key-bar, an element with frets under the strings, and means operated by each key for pressing the associated string against the adjacent fret.

823,626. **SELF-THREADING LOOM-SHUTTLE.** JONAS NORTHROP, Hopedale, Mass., assignor to Draper Company, Hopedale, Mass., a Corporation of Maine. Filed July 12, 1905. Serial No. 269,328. (Model.)



Claim.—1. In a loom-shuttle having a side delivery-eye and an open slot leading thereto, means to direct the thread through the slot and into the delivery-eye, and a separate non-metallic wear-resisting block inserted in the shuttle-body and having a slotted eye portion adjacent and registering with the delivery-eye and the slot leading thereto, to protect the shuttle-wood from wear by passage of the thread.

2. In a loom-shuttle having an open delivery-eye for the thread, means to direct the thread into the eye to be delivered, and a separate eye-guard of vitreous-like material inserted in the shuttle-body and having an upturned thread-delivering portion adjacent and registering with the delivery-eye of the shuttle at its inner side, to protect the contiguous shuttle-wood from wear by the thread.

3. The combination, in a loom-shuttle having an open, side delivery-eye, and means to automatically assume control of the thread and direct the same to the delivery-eye, to be delivered, of a separate porcelain block inserted in the shuttle-body and having an eye portion and a slot-like entrance thereto, said eye portion and entrance being located adjacent the delivery-eye of the shuttle and registering therewith to sustain the thread as it is delivered and thereby protect the shuttle delivery-eye from becoming worn.

4. The combination, in a loom-shuttle having an automatic self-threading device and a side delivery-eye through which the thread draws, the shuttle-body being recessed behind and adjacent said delivery-eye, of a separate hard, smooth-surfaced and non-metallic wear-resisting member having a slotted eye portion inserted in the said recessed portion of the shuttle-body, to register with and protect the delivery-eye and its entrance and protect the same from wear, and an upturned guide on said member and around which the thread travels as it is drawn off to be delivered.

5. In a loom-shuttle having an open side delivery-eye and recessed adjacent the same, a wear-resisting member of vitreous-like material inserted in the recess and comprising a supporting-base, an upturned eye portion thereon adapted to substantially line the delivery-eye and protect it from wear by the thread, an upright guide-prong on the base to change the direction of the thread as it passes laterally to the delivery-eye and separate means to prevent the thread from passing over said prong.

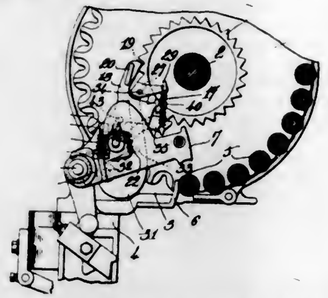
6. In a loom-shuttle having an open side delivery-eye and recessed adjacent the same, a wear-resisting member of glazed porcelain inserted in the recess and comprising a flat base having an upturned slotted eye portion adapted to substantially register with the delivery-eye and protect the same from wear by the thread, a guide-prong on the base adjacent the eye portion, to change the direction of the thread, and means to hood the tip of the prong.

7. In a loom-shuttle having an open side delivery-eye, an automatic self-threading device to direct the thread into the delivery-eye, said device having a depending horn to direct the thread to the eye in the threading operation and provided with a pocket, combined with a porcelain guard inserted in the shuttle-body and having an upturned, slotted eye portion adjacent and registering with the delivery-eye of the shuttle and prevent wear upon said delivery-eye, and a guide-prong on the guard upturned adjacent the base of the horn, to receive the thread therefrom and effect a change in the path thereof to direct it to the delivery-eye, the tip of the prong projecting into the pocket.

8. In a loom-shuttle having a side delivery-eye with a slot-like entrance thereto, and means to assume control of the thread and direct it automatically through said entrance and into the delivery-eye, the combination with a separate porcelain guard comprising a base, and an upright portion thereon having an eye and a slotted entrance therefor, located adjacent and registering with the delivery-eye and its slot-like entrance, to protect the same from wear by the thread as it is delivered, the thread drawing over the top of the base of the guard.

9. In an automatically-self-threading loom-shuttle having a slotted side delivery-eye, a threading device having a horn and a downwardly-open pocket behind it, and a porcelain wear-resisting block inserted in the shuttle and having upright abutments to present an eye and a slot registering with the slotted delivery-eye, and an upturned prong on said block adjacent the abutments and projecting into the pocket, the thread drawing around the prong as it passes laterally between the abutments and out through the shuttle-eye.

823,627. **HOPPER-ACTUATING MECHANISM FOR AUTOMATIC LOOMS.** JONAS NORTHROP, Hopedale, Mass., assignor to Draper Company, Hopedale, Mass., a Corporation of Maine. Filed July 12, 1905. Serial No. 269,329.



Claim.—1. A movable hopper to hold a series of filling-carriers, a ratchet movable therewith, a transferrer, a spring-actuated feed-pawl to coöperate with the ratchet, means to positively set the pawl by or through operative movement of the transferrer, the pawl acting to advance the hopper on the return movement of the transferrer, a detent for the ratchet, the ratchet being engaged normally by the pawl and detent, and means to disengage either one of said members from the ratchet by or through manual disengagement of the other member from said ratchet.

2. A movable hopper to hold a series of filling-carriers, a ratchet movable therewith, a transferrer, feed and detent pawls coöperating with the ratchet, means to set the feed-pawl by or through operative movement of the transferrer, to advance the hopper on the return of the transferrer to normal position, and means to disengage both pawls from the ratchet by or through manual retraction of either pawl.

3. A movable hopper to hold a series of filling-carriers, a ratchet movable therewith, a transferrer, feed and detent pawls coöperating with the ratchet, a spring to actuate the feed-pawl, means to set the latter positively by or through operative movement of the transferrer, the spring acting through said feed-pawl to advance the hopper on the return of the transferrer, and a normally inoperative connection between the pawls whereby manual retraction of the feed-pawl disengages the detent-pawl and the ratchet.

4. A movable hopper to hold a series of filling-carriers, a ratchet movable therewith, feed and detent pawls coöperating with the ratchet, means to control the operation of the feed-pawl to effect the advance of the hopper upon each operation of the transferrer, a connection between the pawls whereby both may be disengaged from the ratchet by manual retraction and disengagement of the feed-pawl, and a transferrer to remove the filling-carriers one by one.

5. A movable hopper to hold a plurality of filling-carriers, a transferrer to remove the latter one by one, means to advance the hopper step by step, a device to prevent retrograde movement of the hopper, and means to free the hopper from the control of said device and the advancing means by or through manual movement of a member of such advancing means to inoperative position.

6. A rotatable hopper to hold a circularly-arranged series of filling-carriers, a transferrer to remove the latter one by one, means to advance automatically the hopper step by step, a device to prevent retrograde rotation of said hopper, and means to free the hopper from the control of said device and said advancing means by or through manual movement of a member of such advancing means into inoperative position.

7. A movable hopper to hold a series of filling-carriers, a ratchet movable therewith, a transferrer, a spring-actuated feed-pawl to coöperate with the ratchet, a lost-motion connection between said pawl and transferrer to set the former by operative movement of the latter, a device to prevent retrograde movement of the ratchet, and means to disengage said device and the ratchet by or through manual retraction of the feed-pawl from coöperation with said ratchet.

8. A movable hopper to hold a series of filling-carriers, a ratchet movable therewith, a transferrer, a spring-actuated feed-pawl to coöperate with the ratchet, a slot-and-pin connection between the pawl and transferrer, to set the former as the latter completes its operative movement, the pawl advancing the hopper on the return movement of the transferrer, a detent for the hopper, and a connection between said detent and pawl whereby the former is disengaged from the ratchet by manual movement of the pawl into inoperative position.

9. A rotatable hopper to contain a plurality of filling-carriers, a transferrer to remove the latter one by one, spring-acting means to advance the hopper step by step, a connection between said means and the transferrer to set the former by operative movement of the latter, a hopper-detent, and means to free the hopper from control of both said advancing means and the detent when said means is rendered inoperative manually.

10. A rotatable hopper to contain a plurality of filling-carriers, a transferrer to remove the latter one by one, hopper-advancing means, comprehending a ratchet movable with the hopper, a coöperating feed-pawl, an operating-spring therefor, and a connection between the pawl and transferrer to set the former by movement of the latter to remove a filling-carrier, a detent normally coöperating with the ratchet, and a connection between said detent and pawl whereby both are disengaged from the ratchet by manual retraction of the pawl.

11. A movable hopper to hold a plurality of filling-carriers, a transferrer to remove the latter one by one, a ratchet movable with the hopper, a spring-actuated feed-pawl to coöperate with the ratchet, and a lost-motion connection between the pawl and transferrer to set the former by or through operative movement of the latter, the spring-actuated pawl advancing the hopper as the transferrer returns to normal position.

12. A movable hopper to hold a plurality of filling-carriers, a ratchet movable with the hopper, a coöperating feed-pawl, a transferrer, one having a slot and the other provided with a pin entering the slot, constituting a positive, lost-motion connection between the pawl and transferrer, operative movement of the latter acting through such connection to set the pawl as a filling-carrier is transferred from the hopper, and a spring to actuate the feed-pawl and advance the hopper while the transferrer returns to normal position.

13. A movable hopper to hold a plurality of filling-carriers, a ratchet movable with the hopper, a coöperating feed-pawl, a transferrer, one having a slot and the other provided with a pin entering the slot, whereby the transferrer and pawl are capable of limited relative movement, said parts moving in unison to set the pawl as the transferrer completes its operative stroke, and a spring to actuate the feed-pawl and advance the hopper as the transferrer returns to its normal position.

14. A rotatable hopper to hold a series of filling-carriers, a ratchet movable therewith, a transferrer, a feed-pawl carried by and also movable relatively to the transferrer, means acting by or through operative movement of the latter to set the feed-pawl, a spring to actuate the pawl and advance the hopper on the return of the transferrer, a detent-pawl, and means to disengage both pawls from the ratchet by manual retraction of the feed-pawl.

15. A rotatable hopper to hold a series of filling-carriers, a ratchet movable therewith, a transferrer, means, including a feed-pawl, to advance the hopper upon each operation of the transferrer, a detent-pawl, a stop-pawl to positively limit each advance of the hopper, and means to disengage all of said pawls from the ratchet by manual retraction of the feed-pawl.

16. A rotatable hopper to hold a series of filling-carriers, a ratchet movable therewith, a transferrer, a feed-pawl carried by and also movable relatively to the transferrer, and positively set by operative movement of the latter, a spring to act through said pawl to advance the hopper upon return movement of the transferrer, a detent to prevent retrograde rotation of the hopper, and a stop coöperating with the ratchet to limit advance of the hopper and rendered inoperative by the setting movement of the feed-pawl.

17. A rotatable hopper adapted to hold a series of filling-carriers and having an attached ratchet, a transferrer, a spring-actuated feed-pawl to coöperate with the ratchet and advance the hopper after each operative movement of the transferrer, a detent to prevent reverse rotation of said hopper, and a stop coöperating with the ratchet to limit advance of the hopper and rendered inoperative by the setting movement of the feed-pawl.

18. A rotatable hopper adapted to hold a series of filling-carriers and having an attached ratchet, a transferrer, a spring-actuated feed-pawl to coöperate with the ratchet and advance the hopper after each operative movement of the transferrer, a movable stop to engage the ratchet and limit advance of the hopper, and means to render the stop inoperative by setting movement of the feed-pawl.

19. A rotatable hopper adapted to hold a series of filling-carriers and having an attached ratchet, a transferrer, a spring-actuated feed-pawl to coöperate with the ratchet and advance the hopper after each operative movement of the transferrer, a pivotally-mounted, spring-controlled stop-pawl to coöperate with the ratchet and limit advance of the hopper, and positively-acting means to render said stop-pawl inoperative by setting movement of the feed-pawl.

20. A rotatable hopper adapted to hold a series of filling-carriers and having an attached ratchet, a transferrer, a spring-actuated feed-pawl to coöperate with the ratchet and advance the hopper, a connection between said pawl and the transferrer, to set the former by the operative movement of the latter, a spring-controlled stop-pawl to coöperate with the ratchet and limit advance of the hopper, and means to disengage the stop-pawl and ratchet by the setting movement of the feed-pawl or by its manual disengagement from the ratchet.

21. A rotatable hopper adapted to hold a series of filling-carriers and having an attached ratchet, a transferrer, a spring-actuated feed-pawl to coöperate with the ratchet and advance the hopper, a connection between said pawl and the transferrer, to set the former by the operative movement of the latter, a spring-controlled stop-pawl, to coöperate with the ratchet and limit advance of the hopper, a detent-pawl coöperating with the ratchet, and means to simultaneously disengage both the stop and detent pawls from the ratchet by or through manual retraction of the feed-pawl to inoperative position.

22. A rotatable hopper adapted to contain a series of filling-carriers and having an attached ratchet, a transferrer to remove the filling-carriers one by one, a feed-pawl operatively connected with and set by operative movement of the transferrer, an actuating-spring to cause the pawl to advance the hopper on return movement of the transferrer, a detent-pawl and a stop-pawl, both coöperating with the ratchet to respectively prevent retrograde motion and limit the advance of the hopper, a yielding connection between said pawls, and means to retract the stop-pawl by or through setting movement of the feed-pawl.

23. A rotatable hopper adapted to contain a series of filling-carriers and having an attached ratchet, a transferrer to remove the filling-carriers one by one, a feed-pawl operatively connected with and set by operative movement of the transferrer, an actuating-spring to cause the pawl to advance the hopper on return movement of the transferrer, a detent-pawl and a stop-pawl, both coöperating with the ratchet to respectively prevent retrograde motion and limit the advance of the hopper, a yielding connection between said pawls, means to render inoperative both of said pawls by manual disengagement of the feed-pawl from the ratchet, and means to positively retract the stop-pawl by or through setting movement of the feed-pawl.

24. A rotatable hopper adapted to contain a series of filling-carriers and having an attached ratchet, a transferrer to remove the filling-carriers one by one, a feed-pawl operatively connected with and set by operative movement of the transferrers, an actuating-spring to cause the pawl to advance the hopper on return movement of the transferrer, a detent-pawl and a stop-pawl, both coöperating with the ratchet to respectively prevent retrograde motion and limit the advance of the hopper, a yielding connection between said pawls, to normally effect their coöperation with the ratchet, the stop-pawl being fulcrumed coaxially with the transferrer, a separate fixed fulcrum for the detent-pawl, and means to render inoperative the stop-pawl during a portion of the setting and operating movement of the feed-pawl.

25. A rotatable hopper adapted to contain a series of filling-carriers and having an attached ratchet, a transferrer to remove the filling-carriers one by one, a spring-actuated feed-pawl to advance the hopper step by step, a connection between said pawl and the transferrer to set the former by operative movement of the latter, a hopper-detent and a hopper-stop, normally acting to prevent retrograde motion and to limit advance of the hopper, respectively, and means to free the hopper from the control of said feed-pawl, detent and stop by or through manual retraction of the feed-pawl.

26. A rotatable hopper adapted to contain a series of filling-carriers and having an attached ratchet, a transferrer to remove the filling-carriers one by one, a feed-pawl fulcrumed on the transferrer, a slot-and-pin connection between them, a spring to retain the pawl in coöperation with the ratchet and also to effect feed movement of said pawl to advance the hopper, operative movement of the transferrer setting the feed-pawl, a detent-pawl provided with a projection, a pivotally-mounted stop-pawl to coöperate with the ratchet and prevent overrunning of the hopper, a spring to normally control the stop-pawl, two cams on the latter, a lug on the feed-pawl to coöperate with one cam and disengage the stop-pawl from the ratchet when the feed-pawl is set, and to coöperate with the other cam when the feed-pawl is retracted manually, and a finger on the feed-pawl to engage the projection on the detent-pawl and disengage the latter from the ratchet when the feed-pawl is retracted manually.

27. A rotatable hopper adapted to retain a series of filling-carriers and having an attached ratchet, a transferrer to remove the filling-carriers one by one, a feed-pawl fulcrumed on the transferrer, a slot-and-pin connection between them, a spring to retain the pawl in coöperation with the ratchet and also to effect feed movement of said pawl to advance the hopper, operative movement of the transferrer setting the feed-pawl, a detent-pawl and a stop-pawl, mounted to rock on separate fulcra, a spring connecting said pawls and normally effecting their coöperation with the ratchet, and separate devices on the feed-pawl to engage respectively the detent and stop pawls to free the hopper from control thereof by or through manual retraction of the feed-pawl.

28. A rotatable hopper having an attached ratchet and adapted to contain a series of filling-carriers, a rocking transferrer to remove the latter one by one, feed mechanism for the hopper, comprising feed and stop pawls to coöperate with the ratchet and advance the hopper a predetermined distance upon each operation of the transferrer, a spring to effect advance of the hopper by or through the feed-pawl, a detent-pawl to prevent retrograde rotation of the hopper, and means to free the hopper from the control of all of said pawls by or through manual retraction of one of them.

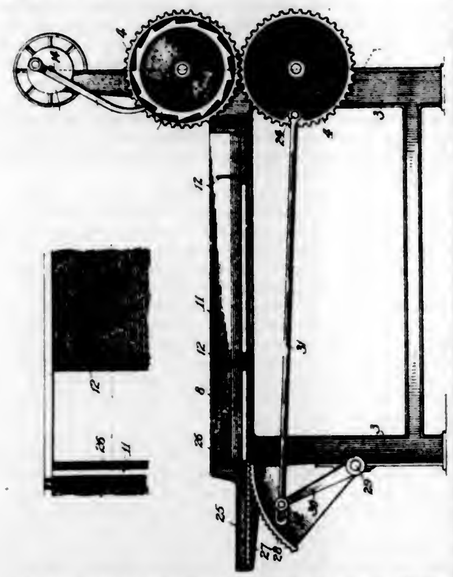
29. A rotatable hopper having an attached ratchet and adapted to contain a series of filling-carriers, a rocking transferrer to remove the latter one by one, feed mechanism for the hopper, comprising feed and stop pawls to coöperate with the ratchet and advance the hopper a predetermined distance upon each operation of the transferrer, the stop-pawl being fulcrumed coaxially with the transferrer, a lost-motion connection between the feed-pawl and transferrer, to set the former positively upon operative movement of the latter, an actuating-spring for the feed-pawl, a detent-pawl coöperating with the ratchet, a spring connecting the detent and stop pawls adjacent their ratchet-engaging portions, means to render inoperative the stop-pawl by setting movemer of the feed-pawl, and means to free the hopper from the control of all of said pawls by or through manual retraction of one of them.

30. A rotatable hopper having an attached ratchet and adapted to contain a series of filling-carriers, a rocking transferrer to remove the latter one by one, feed mechanism for the hopper, comprising feed and stop pawls to coöperate with the ratchet and advance the hopper a predetermined distance upon each operation of the transferrer, the stop-pawl being fulcrumed coaxially with the transferrer, a lost-motion connection between the feed-pawl and transferrer, to set the former positively upon operative movement of the latter, an actuating-spring for the feed-pawl, a detent-pawl coöperating with the ratchet, a spring connecting the detent and stop pawls adjacent their ratchet-engaging portions, means to render inoperative the stop-pawl by setting movement of the feed-pawl, a finger-piece on the latter, and means to free the hopper from the control of all of said pawls by manual retraction of the feed-pawl through its finger-piece.

31. A rotatable hopper having an attached ratchet and adapted to contain a series of filling-carriers, a rocking transferrer to remove the latter one by one, feed mechanism for the hopper, comprising feed and stop pawls to coöperate with the ratchet and advance the hopper a predetermined distance upon each operation of the transferrer, a spring to effect advance of the hopper by or through the feed-pawls, a detent-pawl coöperating with the ratchet between the feed and stop pawls, to prevent retrograde rotation of the hopper when the feed-pawl is being set, and means to render inoperative said stop-pawl by or through setting movement of the feed-pawl.

823,628. MACHINE FOR WEAVING SHEET-LATHING. JOHN D. O'BRIEN, St. Louis, Mo., assignor to National Patent Lath and Manufacturing Company, a Corporation of Missouri. Filed Oct. 10, 1904. Serial No. 227,633.

Claim.—1. In a machine for weaving sheet-lathing and the like, the combination of two series of rows of shed-forming projections arranged in apposition, each row comprising a number of separated projections arranged in staggered relation to the like projections of the next adjacent rows, and means for imparting intermittent travel to both series of projections in curved and divergent paths, substantially as set forth.



2. In a machine for weaving sheet-lathing and the like, the combination of two series of rows of shed-forming projections arranged in apposition, each row comprising a number of separated projections each formed with a central recess, the projections of each row having a staggered relation to the like projections of the next adjacent rows, and means for imparting intermittent travel to both series of projections in curved and divergent paths, substantially as set forth.

3. In a machine for weaving sheet-lathing and the like, the combination of two series of rows of shed-forming projections arranged in apposition, each row comprising a number of separated projections arranged in staggered relation to the next adjacent rows, means for feeding a series of warp-strips between the two series of rows, and means for imparting intermittent travel to both series of projections in curved and divergent paths, substantially as set forth.

4. In a machine for weaving sheet-lathing and the like, the combination of two series of rows of shed-forming projections arranged in apposition, each row comprising a number of separated projections each formed with a central recess, the projections of each row having a staggered relation to the like projections of the next adjacent rows means for feeding a series of warp-strips between the two series of rows, and means for imparting intermittent travel to both series of projections in curved and divergent paths, substantially as set forth.

5. In a machine for weaving sheet-lathing and the like, the combination of two series of rows of shed-forming projections arranged in apposition, each row comprising a number of separated projections arranged in staggered relation to the like projections of the next adjacent rows, means for feeding a single weft-strip between the two series of rows, and means for imparting intermittent travel to both series of projections in curved and divergent paths, substantially as set forth.

6. In a machine for weaving sheet-lathing and the like, the combination of two series of rows of shed-forming projections arranged in apposition, each row comprising a number of separated projections each formed with a central recess, the projections of each row having a staggered relation to the like projections of the next adjacent rows, means for feeding a single weft-strip between the two series of rows, and means for imparting intermittent travel to both series of projections in curved and divergent paths, substantially as set forth.

7. In a machine for weaving sheet-lathing and the like, the combination of two series of rows of shed-forming projections arranged in apposition, each row comprising a number of separated projections arranged in staggered relation to the like projections of the next adjacent rows, means for feeding a series of warp-strips between the two series of rows, means for feeding a single weft-strip between the two series of rows, and means for imparting intermittent travel to both series of projections in curved and divergent paths, substantially as set forth.

8. In a machine for weaving sheet-lathing and the like, the combination of two series of rows of shed-forming projections arranged in apposition, each row comprising a number of separated projections each formed with a central recess, the projections of each row having a staggered relation to the like projections of the other next adjacent rows, means for feeding a series of warp-strips between the two series of rows, means for feeding a single weft-strip between the two series of rows, and means for imparting intermittent travel to both series of projections in curved and divergent paths, substantially as set forth.

9. In a machine for weaving sheet-lathing and the like, the combination of two circularly-arranged series of rows of shed-forming projections, each row comprising a number of separated projections arranged in staggered relation to a series of like projections of the next adjacent rows in both a parallel and a transverse direction, and means for imparting intermittent travel to both series of projections, substantially as set forth.

10. In a machine for weaving sheet-lathing and the like, the combination of two circularly-arranged series of rows of shed-forming projections, each row comprising a number of separated projections each formed with a central recess, the projections of each row having a staggered relation to the series of like projections of the next adjacent rows in both a parallel and transverse direction, and means for imparting intermittent travel to both series of projections, substantially as set forth.

11. In a machine for weaving sheet-lathing and the like, the combination of two circularly-arranged series of rows of shed-forming projections, each row comprising a number of separated projections arranged in staggered relation to a series of like projections of the next adjacent rows in both a parallel and transverse direction, means for feeding a series of warp-strips between the two series of rows, and means for imparting intermittent travel to both series of projections, substantially as set forth.

12. In a machine for weaving sheet-lathing and the like, the combination of two circularly-arranged series of rows of shed-forming projections, each row comprising a number of separated projections each formed with a central recess, the projections of each row having a staggered relation to the series of like projections on the next adjacent rows in both a parallel and transverse direction, means for feeding a series of warp-strips between the two series of rows, and means for imparting intermittent travel to both series of projections, substantially as set forth.

13. In a machine for weaving sheet-lathing and the like, the combination of two circularly-arranged series of rows of shed-forming projections, each row comprising a number of separated projections arranged in staggered relation to a series of like projections of the next adjacent rows in both a parallel and transverse direction, means for feeding a single weft-strip between the pair of rows in apposition, and means for imparting intermittent travel to both series of projections, substantially as set forth.

14. In a machine for weaving sheet-lathing and the like, the combination of two circularly-arranged series of rows of shed-forming projections, each row comprising a number of separated projections each formed with a central recess, the projections of each row having a staggered relation to the series of like projections of the next adjacent rows in both a parallel and transverse direction, means for feeding a single weft-strip between the pairs of rows in apposition, and means for imparting intermittent travel to both series of projections, substantially as set forth.

15. In a machine for weaving sheet-lathing and the like, the combination of two circularly-arranged series of rows of shed-forming projections, each row comprising a number of separated projections arranged in staggered relation to a series of like projections of the next adjacent rows in both a parallel and transverse direction, means for feeding a series of warp-strips between the two series of rows, means for feeding a single weft-strip between the pair of rows in apposition, and means for imparting intermittent travel to both series of projections, substantially as set forth.

16. In a machine for weaving sheet-lathing and the like, the combination of two circularly-arranged series of rows of shed-forming projections, each row comprising a number of separated projections each formed with a central recess, the projections of each row having a staggered relation to the series of like projections of the

next adjacent rows in both a parallel and transverse direction, means for feeding a series of warp-strips between the two series of rows, means for feeding a single weft-strip between the pair of rows in apposition, and means for imparting intermittent travel to both series of projections, substantially as set forth.

17. In a machine for weaving sheet-lathing and the like, the combination of a supporting-frame, a pair of drums journaled in apposition on said frame, rows of shed-forming projections secured in separated relation on the periphery of said drums, each row comprising a number of separated projections arranged in staggered relation to the projections of the next adjacent rows in both a parallel and transverse direction, and means for imparting intermittent rotation to the pair of drums, substantially as set forth.

18. In a machine for weaving sheet-lathing and the like, the combination of a supporting-frame, a pair of drums journaled in apposition on said frame, rows of shed-forming projections, secured in separated relation on the periphery of said drum, each row comprising a number of separated projections each formed with a central recess, the projections of each row having a staggered relation to the projections of the next adjacent rows in both a parallel and transverse direction, and means for imparting intermittent rotation to the pair of drums, substantially as set forth.

19. In a machine for weaving sheet-lathing and the like, the combination of a supporting-frame, a pair of drums journaled in apposition on said frame, rows of shed-forming projections secured in separated relation on the periphery of said drums, each row comprising a number of separated projections arranged in staggered relation to the projections of the next adjacent rows in both a parallel and transverse direction, means for feeding a series of warp-strips between the two series of rows, and means for imparting intermittent rotation to the pair of drums, substantially as set forth.

20. In a machine for weaving sheet-lathing and the like, the combination of a supporting-frame, a pair of drums journaled in apposition on said frame, rows of shed-forming projections secured in separated relation on the periphery of said drum, each row comprising a number of separated projections each formed with a central recess, the projections of each row having a staggered relation to the projections on the next adjacent rows in both a parallel and transverse direction, means for feeding a series of warp-strips between the two series of rows, and means for imparting intermittent rotation to the pair of drums, substantially as set forth.

21. In a machine for weaving sheet-lathing and the like, the combination of a supporting-frame, a pair of drums journaled in apposition on said frame, rows of shed-forming projections secured in separated relation on the periphery of said drums, each row comprising a number of separated projections arranged in staggered relation to the projections of the next rows in both a parallel and transverse direction, means for feeding a single weft-strip between the pair of rows in apposition, and means for imparting intermittent rotation to the pair of drums, substantially as set forth.

22. In a machine for weaving sheet-lathing and the like, the combination of a supporting-frame, a pair of drums journaled in apposition on said frame, rows of shed-forming projections secured in separated relation on the periphery of said drum, each row comprising a number of separated projections each formed with a central recess, the projections of each row having a staggered relation to the projections of the next adjacent rows in both a parallel and transverse direction, means for feeding a single weft-strip between the pair of rows in apposition, and means for imparting intermittent rotation to the pair of drums, substantially as set forth.

23. In a machine for weaving sheet-lathing and the like, the combination of a supporting-frame, a pair of drums journaled in apposition on said frame, rows of shed-forming projections secured in separated relation on the periphery of said drums, each row comprising a number of separated projections arranged in staggered relation to the projections of the next adjacent rows in both a parallel and transverse direction, means for feeding a series of warp-strips between the two series of rows, means for feeding a single weft-strip between the pairs of rows in apposition, and means for imparting intermittent rotation to the pair of drums, substantially as set forth.

24. In a machine for weaving sheet-lathing and the like, the combination of a supporting-frame, a pair of drums journaled in apposition on said frame, rows of shed-forming projections secured in separated relation at the peripheries of said drums, each row comprising a number of separated projections each formed with a central recess, the projections of each row having a staggered relation to the projections of the next adjacent rows in both a parallel and transverse direction, means for feeding a series of warp-strips between the two series of rows, means for feeding a single weft-strip between the pairs of rows in apposition, and means for imparting intermittent rotation to the pairs of drums, substantially as set forth.

25. In a machine for weaving sheet-lathing and the like, the combination of two circularly-arranged series of rows of shed-forming projections, each row comprising a number of separated projections each formed with a central recess, the projections of each row having a staggered relation to the projections of the next adjacent rows in both a parallel and transverse direction, means for feeding a series of warp-strips between the two series of rows, the same comprising a containing-hopper for the warp-strips, a slide moving in the bottom of said hopper and adapted to feed the lowermost warp-strip out of said hopper, means for imparting reciprocation to said slide, and means for imparting intermittent travel to both series of projections, substantially as set forth.

26. In a machine for weaving sheet-lathing and the like, the combination of two circularly-arranged series of rows of shed-forming projections, each row comprising a number of separated projections each formed with a central recess, the projections of each row having a staggered relation to the projections of the next adjacent rows, in both a parallel and transverse direction, means for feeding a series of warp-strips between the two series of rows, the same comprising a containing-hopper for the warp-strips, a slide moving in the bottom of said hopper and adapted to feed the lowermost warp-strips out of said hopper, transversely-arranged temple-pins in said hopper, means for imparting reciprocation to said slide, and means for imparting intermittent travel to both series of projections, substantially as set forth.

27. In a machine for weaving sheet-lathing and the like, the combination of two circularly-arranged series of rows of shed-forming projections, each row comprising a number of separated projections each formed with a central recess, the projections of each row having a staggered relation to the projections of the next adjacent rows in both a parallel and transverse direction, means for feeding a single weft-strip between the pair of rows in apposition, the same comprising a containing-hopper for the weft-strips, a slide moving in the bottom of said hopper and adapted to feed the lowermost weft-strip out of said hopper, means for imparting reciprocation to said slide, and means for imparting intermittent travel to both series of projections, substantially as set forth.

28. A weaving-machine provided with coöperating rollers, having arranged about their peripheries coacting rows of shed-forming devices.

29. A weaving-machine, provided with coöperating rollers, having arranged about their peripheries coacting rows of shed-forming devices, the members of each row on one roller alternating with the members of a corresponding row on the other roller and being in alinement therewith as opposite rows successively occupy the pass between the rollers.

30. A weaving-machine, provided with coöperating rollers, having arranged about their peripheries coacting rows of shed-forming devices, said rows being staggered with respect to each other on each roller.

31. A weaving-machine, provided with coöperating rollers, having arranged about their peripheries coacting rows of shed-forming devices, said rows being staggered with respect to each other on each roller, and presenting guideways longitudinally of the rollers for the passage of the weft, and transversely of the rollers for the passage of the warp.

32. A weaving-machine, provided with coöperating rollers, having arranged about their peripheries coacting rows of shed-forming devices having lateral projections to straddle the weft and bear upon the warp at the pass between the rollers.

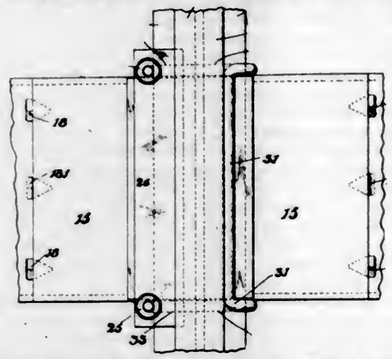
33. A weaving-machine, provided with coöperating rollers, having arranged about their peripheries coacting rows of shed-forming devices, and an automatic feed for the warp and weft respectively.

34. A weaving-machine provided with coöperating rollers having coacting rows of shed-forming devices arranged about their peripheries, intermeshing gears mounted on the roller-shafts, a ratchet on one of said shafts, a driving-pawl coöperating with said ratchet, and means for operating said driving-pawl; substantially as described.

823,629. **METAL TIE AND RAIL FASTENER.** DAVID E. OLDS, Newark, N. J. Filed June 29, 1905. Serial No. 267,457.

Claim.—1. The combination with a metallic tie and the railway-rail, of elastic blocks arranged above and below said metallic tie, and fasteners holding said rails, blocks, and metallic tie in fixed relation, substantially as set forth.

2. The combination with a metallic tie and the flanged railway-rails, of elastic blocks and fasteners extending from the top of the flange of said rail downward at the sides of the block and tie and having a plate extending underneath the tie, substantially as set forth.



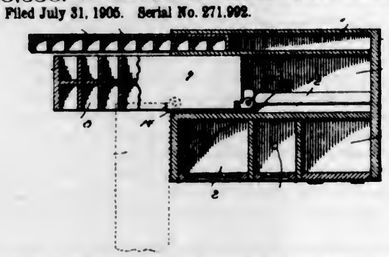
3. The combination with a metallic tie and a flanged railway-rail, of a block of wood seated on said tie, a plate seated on said block and adapted to receive said rail and a frame-like fastener extending from one flange of the rail downward at opposite sides of the block and tie and underneath said tie to a plate extending underneath the tie, and thence extending upward, a keeper-plate receiving the upper ends of said fastener, nuts and said plate extending underneath the tie, substantially as set forth.

4. In a rail-fastening, the metallic tie having integral lugs extending upward from the top of the tie, in combination with elastic blocks inserted between said integral lugs and prevented from moving lengthwise of said metallic tie in either direction, and clamping means extending underneath the said block and tie and upward to engage the opposite sides of the base-flange of the rail.

5. The combination with the metallic tie having upwardly and downwardly extending lugs, of elastic blocks arranged above and beneath the metallic tie and means for fastening the upper and lower blocks to the tie and the rail onto the upper block, substantially as set forth.

6. The combination with the metallic tie, of wooden blocks arranged above and beneath the tie, the upper block furnishing a seat for the rail, and means for clamping the upper and lower blocks to the tie and the rail on said upper block, substantially as set forth.

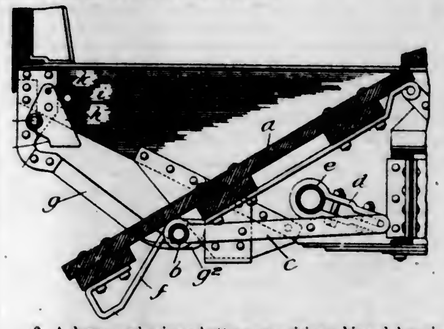
823,630. **POSTAL CABINET.** RICHARD O'REILLY, St. Louis, Mo. Filed July 31, 1905. Serial No. 271,992.



Claim.—A cabinet having in the front thereof compartments which open at the front and are of less depth than the whole depth of the cabinet, and having in the back thereof a plurality of compartments which extend across the whole width of the cabinet and are open at one side, and one of which is provided with tracks at top and bottom, a rod having rollers which travel on said track, and a case slidable in and out of said latter compartment and having pigeonholes on both sides, said case being hinged at one corner to the rod, so that it may be swung to expose either side.

823,631. **DUMP-CAR.** SPENCER OTIS, Chicago, Ill., assignor to National Dump Car Company, Augusta, Me., a Corporation of Maine. Filed Mar. 3, 1906. Serial No. 304,056.

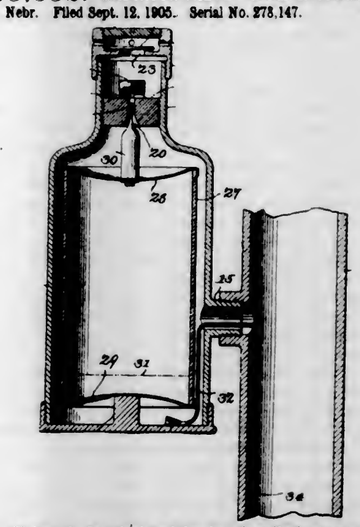
Claim.—1. A dump-car having a bottom comprising a hinged door, means movable longitudinally of the door to open and close the door, a track supporting the door-operating means, and a gravity-latch pivoted above the track and engaging the door-operating means when the door is in closed position.



2. A dump-car having a bottom comprising a hinged dumping-door, means comprising a transversely-moving bar for operating the door, a latch pivoted to one of the transverse members of the car-frame and engaging the bar for locking the door-operating means when the door is in operative position, and means for sealing the lock to prevent tampering therewith.

3. In a dump-car, a hinged dumping-door, a bar movable longitudinally of the door to open and close the same, a track upon which said bar is supported, a gravity-latch pivoted above the track and engaging the bar when the door is in closed position, said latch being provided with a perforation at one end, a locking-pin passing through the perforation thereof and a similar registering perforation in the car-frame.

823,632. **RADIATOR-VALVE.** ELMER H. PACKARD, Omaha, Nebr. Filed Sept. 12, 1905. Serial No. 278,147.

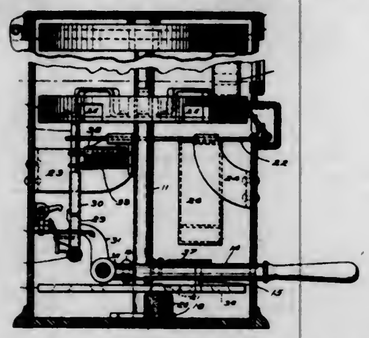


Claim.—1. In a device of the class described, an outer shell having an intermediate inlet and with a contracted upper portion interiorly threaded and with a detachable closure at the lower end provided with a stud extending into the shell, a threaded plug engaging said threaded contracted portion and provided with a wrench-head upon the upper part having transverse escape-apertures and with a vertical aperture intersecting said escape-apertures, the lower end of said vertical aperture expanded into a valve-seat, and a casing disposed in said shell and provided with expansible ends and containing a vaporizable element, one of said expansible ends bearing upon said stud and the other of said expansible ends carrying a valve for engagement with said valve-seat when the vaporizable element is subjected to heat and expands said ends.

2. In a device of the class described, an outer shell having an intermediate inlet and with a contracted upper portion interiorly threaded and with a detachable closure at the lower end provided with a stud extending into the shell, a threaded plug engaging said

threaded contracted portion and provided with a wrench-head upon the upper part having transverse escape-apertures and with a vertical aperture expanded into a valve-seat, a casing disposed in said shell and provided with expansible ends and containing a vaporizable element one of said ends bearing upon said stud and the other of said ends carrying a valve for engagement with said valve-seat when the vaporizable element is subjected to heat and expands said ends, a cap engaging the exteriorly-threaded terminal of said contracted portion and provided with an internal valve-seat and with transverse discharge-apertures, and a valve seated upon said valve-seat.

823,633. **VENDING-MACHINE.** JOHN E. PACKARD, Chicago, Ill., assignor to Multi-Vending Company, a Corporation of South Dakota.



Claim.—1. In a vending-machine, in combination, a movable goods-carrier mechanism, an independently-movable delivery mechanism coöperating therewith, a coin-controlled device controlling only one of said mechanisms, a single operating member whereby each of said mechanisms may be repeatedly operated independently of the other, and separate means for connecting said member with said mechanisms respectively, substantially as specified.

2. In a vending-machine, in combination, a pivotally-movable goods-carrier mechanism, an independently-movable delivery mechanism coöperating therewith, a coin-controlled device controlling only one of said mechanisms, a single operating member whereby each of said mechanisms may be repeatedly operated independently of the other, and separate means for connecting said member with said mechanisms respectively, substantially as specified.

3. In a vending-machine, in combination, a rotary goods-carrier mechanism, an independently-movable delivery mechanism coöperating therewith, a coin-controlled device controlling only one of said mechanisms, a single operating member whereby each of said mechanisms may be repeatedly operated independently of the other, and separate means for connecting said member with said mechanisms respectively, substantially as specified.

4. In a vending-machine, in combination, a movable goods-carrier mechanism, an independently-movable and coin-controlled delivery mechanism coöperating therewith, a single operating member whereby each of said mechanisms may be repeatedly operated independently of the other, and separate means for connecting said member with said mechanisms respectively, substantially as specified.

5. In a vending-machine, in combination, a pivotally-movable goods-carrier mechanism, an independently-movable and coin-controlled delivery mechanism coöperating therewith, a single operating member whereby each of said mechanisms may be repeatedly operated independently of the other, and separate means for connecting said member with said mechanisms respectively, substantially as specified.

6. In a vending-machine, in combination, a rotary goods-carrier mechanism, an independently-movable and coin-controlled delivery mechanism coöperating therewith, a single operating member whereby each of said mechanisms may be repeatedly operated independently of the other, and separate means for connecting said member with said mechanisms respectively, substantially as specified.

7. In a vending-machine, in combination, a hand-operated movable goods-carrier mechanism, an independently-movable hand-operated delivery mechanism coöperating therewith, a coin-controlled device controlling only one of said mechanisms, a single operating member whereby each of said mechanisms may be repeatedly operated independently of the other and whereby one of the mechanisms is hand-operated as aforesaid, and separate means for connecting said member with said mechanisms respectively, substantially as specified.

8. In a vending-machine, in combination, a hand-operated pivotally-movable goods-carrier mechanism, an independently-movable delivery mechanism coöperating therewith, a coin-controlled device controlling only one of said mechanisms, a single operating member whereby each of said mechanisms may be repeatedly operated independently of the other and whereby one of the mechanisms is hand-operated as aforesaid, and separate means for connecting said member with said mechanisms respectively, substantially as specified.

9. In a vending-machine, in combination, a hand-operated rotary goods-carrier mechanism, an independently-movable delivery mechanism coöperating therewith, a coin-controlled device controlling only one of said mechanisms, a single operating member whereby each of said mechanisms may be repeatedly operated independently of the other and whereby one of the mechanisms is hand-operated as aforesaid, and separate means for connecting said member with said mechanisms respectively, substantially as specified.

10. In a vending-machine, in combination, a hand-operated movable goods-carrier mechanism, an independently-movable hand-operated and coin-controlled delivery mechanism coöperating therewith, a single operating member whereby each of said mechanisms may be repeatedly operated independently of the other and whereby one of the mechanisms is hand-operated as aforesaid, and separate means for connecting said member with said mechanisms respectively, substantially as specified.

11. In a vending-machine, in combination, a hand-operated pivotally-movable goods-carrier mechanism, an independently-movable hand-operated and coin-controlled delivery mechanism coöperating therewith, a single operating member whereby each of said mechanisms may be repeatedly operated independently of the other and whereby one of the mechanisms is hand-operated as aforesaid, and separate means for connecting said member with said mechanisms respectively, substantially as specified.

12. In a vending-machine, in combination, a hand-operated rotary goods-carrier mechanism, an independently-movable hand-operated and coin-controlled delivery mechanism coöperating therewith, a single operating member whereby each of said mechanisms may be repeatedly operated independently of the other and whereby one of the mechanisms is hand-operated as aforesaid, and separate means for connecting said member with said mechanisms respectively, substantially as specified.

13. In a vending-machine, in combination, a movable goods-carrier mechanism, an independently-movable delivery mechanism coöperating therewith, a coin-controlled device controlling only one of said mechanisms, a hand-actuated operating member whereby each of said mechanisms may be repeatedly operated independently of the other, and separate means for connecting said member with said mechanisms respectively, substantially as specified.

14. In a vending-machine, in combination, a pivotally-movable goods-carrier mechanism, an independently-movable delivery mechanism coöperating therewith, a coin-controlled device controlling only one of said mechanisms, a hand-actuated operating member whereby each of said mechanisms may be repeatedly operated independently of the other, and separate means for connecting said member with said mechanisms respectively, substantially as specified.

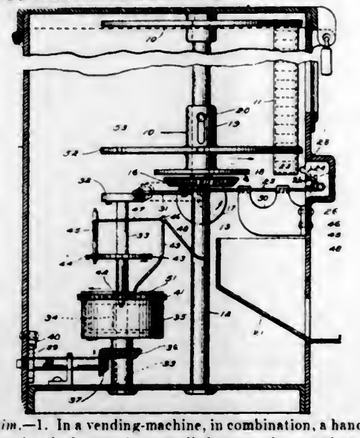
15. In a vending-machine, in combination, a rotary goods-carrier mechanism, an independently-movable delivery mechanism coöperating therewith, a coin-controlled device controlling only one of said mechanisms, a hand-actuated operating member whereby each of said mechanisms may be repeatedly operated independently of the other, and separate means for connecting said member with said mechanisms respectively, substantially as specified.

16. In a vending-machine, in combination, a movable goods-carrier mechanism, an independently-movable delivery mechanism coöperating therewith, a coin-controlled device controlling only one of said mechanisms, a single operating device whereby each of said mechanisms may be repeatedly operated independently of the other, and means whereby a goods-magazine is automatically brought into proper registry with the goods-ejector before a movement of the delivery mechanism can be effected by the operator, substantially as specified.

17. In a vending-machine, in combination, a movable goods-carrier mechanism, an independently-movable delivery mechanism coöperating therewith, a handle adapted to move both mechanisms, the one in alternation with the other, and automatic means whereby said goods-carrier is disengaged from said handle at the limit of a movement sufficient to bring a new goods-magazine into registry with the discharge mechanism but is returned with the return movement of said handle if the forward movement of the latter has been less than sufficient to so bring a new goods-magazine into registry with the discharge mechanism, substantially as specified.

18. In a vending-machine, in combination, a discharge device, a movable coin-chute section, an independent hand-operated arm for moving said chute-section, a mechanism adapted to retain a coin in said chute-section, and in front of said arm, when said section is in normal position and to release said coin when said chute-section has been rocked back by said arm, a catch for momentarily detaining said chute-section in the latter position, and a trip adapted to release said catch as the aforesaid arm returns to normal position, substantially as specified.

823,634. **VENDING-MACHINE.** JOHN E. PACKARD, Chicago, Ill., assignor to Multi-Vending Company, a Corporation of South Dakota. Filed Nov. 2, 1903. Serial No. 179,514.



Claim.—1. In a vending-machine, in combination, a hand-actuated operating device, a coin-controlled automatic operating device, a movable goods-carrier mechanism and, coöperating therewith, an independently-movable delivery mechanism, one of said devices being connected to one and the other to the other of said mechanisms, and means for permitting the two said mechanisms to be operated simultaneously without interfering with each other, substantially as specified.

2. In a vending-machine, in combination, a hand-actuated operating device, a coin-controlled automatic operating device, a pivotally-movable goods-carrier mechanism and, coöperating therewith, an independently-movable delivery mechanism, one of said devices being connected to one and the other to the other of said mechanisms, and means for permitting the two said mechanisms to be operated simultaneously without interfering with each other, substantially as specified.

3. In a vending-machine, in combination, a hand-actuated operating device, a coin-controlled automatic operating device, a rotary goods-carrier mechanism and, coöperating therewith, an independently-movable delivery mechanism, one of said devices being connected to one and the other to the other of said mechanisms, and means for permitting the two said mechanisms to be operated simultaneously without interfering with each other, substantially as specified.

4. In a vending-machine, in combination, a hand-operated movable goods-carrier mechanism and, coöperating therewith, an independently-movable coin-controlled and automatic delivery mechanism, and means for permitting the two said mechanisms to be operated simultaneously without interfering with each other, substantially as specified.

5. In a vending-machine, in combination, a hand-operated pivotally-movable goods-carrier mechanism and, coöperating therewith, an independently-movable coin-controlled and automatic delivery mechanism, and means for permitting the two said mechanisms to be operated simultaneously without interfering with each other, substantially as specified.

6. In a vending-machine, in combination, a hand-operated rotary goods-carrier mechanism and, coöperating therewith, an independently-movable coin-controlled and automatic delivery mechanism, and means for permitting the two said mechanisms to be operated simultaneously without interfering with each other, substantially as specified.

7. In a vending-machine, in combination, a movable goods-carrier mechanism, an independently-movable delivery mechanism coöperating therewith, means for permitting the two said mechanisms to be operated simultaneously without interfering with each other, a hand-actuated operating device, and a coin-controlled motor, said device being connected to one and said motor to the other of said mechanisms, substantially as specified.

8. In a vending-machine, in combination, a pivotally-movable goods-carrier mechanism, an independently-movable delivery mechanism coöperating therewith, means for permitting the two said mechanisms to be operated simultaneously without interfering with each other, a hand-actuated operating device, and a coin-controlled motor, said device being connected to one and said motor to the other of said mechanisms, substantially as specified.

9. In a vending-machine, in combination, a rotary goods-carrier mechanism, an independently-movable delivery mechanism coöperating therewith, means for permitting the two said mechanisms to be operated simultaneously without interfering with each other, a hand-actuated operating device, and a coin-controlled motor, said device being connected to one and said motor to the other of said mechanisms, substantially as specified.

10. In a vending-machine, in combination, a hand-operated movable goods-carrier, an independently-movable delivery mechanism coöperating therewith, means for permitting the two said mechanisms to be operated simultaneously without interfering with each other, and a coin-controlled motor to actuate said delivery mechanism, substantially as specified.

11. In a vending-machine, in combination, a hand-operated pivotally-movable goods-carrier mechanism, an independently-movable delivery mechanism coöperating therewith, means for permitting the two said mechanisms to be operated simultaneously without interfering with each other, and a coin-controlled motor to actuate said delivery mechanism, substantially as specified.

12. In a vending-machine, in combination, a hand-operated rotary goods-carrier mechanism, an independently-movable delivery mechanism coöperating therewith, means for permitting the two said mechanisms to be operated simultaneously without interfering with each other, and a coin-controlled motor to actuate said delivery mechanism, substantially as specified.

13. In a vending-machine, in combination, a hand-actuated operating device, a coin-controlled automatic operating device, a movable goods-carrier mechanism, an independently-movable delivery mechanism coöperating therewith, one of said devices being connected to one and the other to the other of said mechanisms, means for permitting the two said mechanisms to be operated simultaneously without interfering with each other, and means whereby the coöperating parts of the two said mechanisms are intermittently brought into proper registry with each other for such coöperation, substantially as specified.

14. In a vending-machine, in combination, a hand-actuated operating device, a coin-controlled automatic operating device, a movable goods-carrier mechanism, an independently-movable delivery mechanism coöperating therewith, one of said devices being connected to one and the other to the other of said mechanisms, means for permitting the two said mechanisms to be operated simultaneously without interfering with each other, and a cam-controlled device whereby the coöperating parts of the two said mechanisms are intermittently brought into proper registry with each other for such coöperation, substantially as specified.

15. In a vending-machine, in combination, a hand-operated movable goods-carrier mechanism, an independently-movable coin-controlled and automatic delivery mechanism coöperating therewith, the two said mechanisms being relatively so arranged and connected that they may be operated simultaneously without interfering with each other, and means adapted to facilitate the proper positioning of the goods-carrier for the delivering of goods, substantially as specified.

16. In a vending-machine, in combination, a hand-operated movable goods-carrier mechanism, an independently-movable coin-controlled and automatic delivery mechanism coöperating therewith, means for permitting the two said mechanisms to be operated simultaneously without interfering with each other, and a cam-controlled device adapted to facilitate the proper positioning of the goods-carrier for the delivering of goods, substantially as specified.

17. In a vending-machine, in combination, a hand-operated goods-carrier mechanism having both pivotal and bodily reciprocatory movements, an independently-movable coin-controlled and automatic delivery mechanism coöperating therewith, means for permitting the two said mechanisms to be operated simultaneously with-

out interfering with each other, and a cam-controlled device adapted to effect the aforesaid reciprocation of the goods-carrier to prevent the latter from interfering with and to bring it in proper registry with the delivery mechanism, substantially as specified.

18. In a vending-machine, in combination, a hand-operated movable goods-carrier mechanism, an independently-movable coin-controlled and automatic delivery mechanism, means for permitting the two said mechanisms to be operated simultaneously without interfering with each other, and means adapted to prevent the insertion of coins except when a goods-magazine is in proper registry with the delivery mechanism, substantially as specified.

19. In a vending-machine, in combination, a movable goods-carrier mechanism, an independently-movable delivery mechanism coöperating therewith, the two said mechanisms being relatively so arranged and connected that they may be operated simultaneously without interfering with each other, a coin-controlled device, and means whereby the coöperating parts of the two said mechanisms are intermittently brought into proper registry with each other for such coöperation, substantially as specified.

20. In a vending-machine, in combination, a movable goods-carrier mechanism, an independently-movable delivery mechanism coöperating therewith, a coin-controlled device connected to said mechanism, means for permitting the two said mechanisms to be operated simultaneously without interfering with each other, and a cam-controlled device whereby the coöperating parts of the two said mechanisms are intermittently brought into proper registry with each other for such coöperation, substantially as specified.

21. In a vending-machine, in combination, a hand-operated movable goods-carrier mechanism, an independently-movable coin-controlled delivery mechanism coöperating therewith, the two said mechanisms being relatively so arranged and connected that they may be operated simultaneously without interfering with each other, and means adapted to facilitate the proper positioning of the goods-carrier for the delivering of goods, substantially as specified.

22. In a vending-machine, in combination, a hand-operated movable goods-carrier mechanism, an independently-movable coin-controlled delivery mechanism coöperating therewith, means for permitting the two said mechanisms to be operated simultaneously without interfering with each other, and a cam-controlled device adapted to facilitate the proper positioning of the goods-carrier for the delivering of goods, substantially as specified.

23. In a vending-machine, in combination, a hand-operated goods-carrier mechanism having both pivotally and bodily reciprocatory movement, an independently-movable coin-controlled delivery mechanism coöperating therewith, means for permitting the two said mechanisms to be operated simultaneously without interfering with each other, and a cam-controlled device adapted to effect the aforesaid reciprocation of the goods-carrier to prevent the latter from interfering with and to bring it in proper registry with the delivery mechanism, substantially as specified.

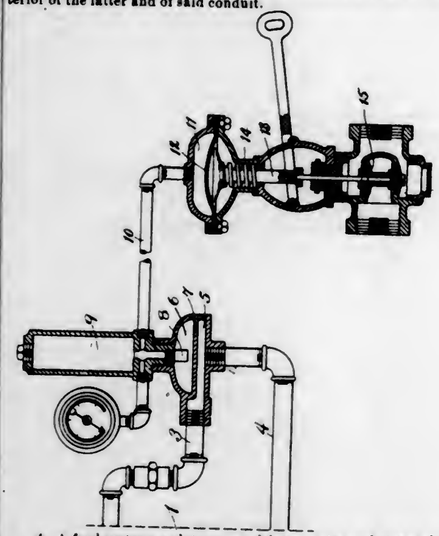
24. In a vending-machine, in combination, a hand-operated movable goods-carrier mechanism, an independently-movable coin-controlled delivery mechanism, means for permitting the two said mechanisms to be operated simultaneously without interfering with each other, and means adapted to prevent the insertion of coins except when a goods-magazine is in proper registry with the delivery mechanism, substantially as specified.

823,635. **FEED-WATER REGULATOR.** FRED H. FLOUTY, Boston, Mass. Filed Jan. 11, 1904. Serial No. 188,585.

Claim.—1. In a feed-water regulator, a chamber containing a quantity of vaporizable liquid insufficient to fill the same and having an internal pressure at ordinary temperature considerably lower than that of the atmosphere, a water and steam chamber in close, heat-transferring relation with the first chamber, and adapted to be connected with the boiler above and below the water-level thereof, and fluid-operated feed-controlling means connected with said first chamber.

2. In a feed-water regulator, the combination with the boiler, of a water and steam chamber connected with the water and steam spaces of the boiler, a vaporizing-surface of relatively large area formed on a wall of said chamber, a liquid-chamber including said surface, a conduit of relatively small aperture leading from said liquid-chamber for carrying a liquid to operate a feed-controller, and a vacuum-chamber containing a quantity of liquid and forming an overlying pocket in branch connection with the interior of said liquid-chamber and conduit.

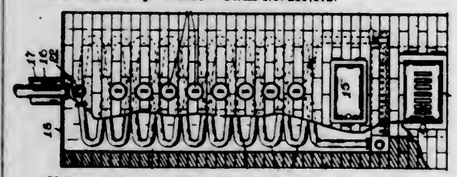
3. In a feed-water regulator, a water and steam chamber, a liquid-chamber above the latter and in heat-transferring relation thereto, a conduit having an inlet in said liquid-chamber extending and having its outlet below the upper end thereof and adapted for connection with a feed-controller, and a vacuum reservoir-chamber above said liquid-chamber having a branch connection with the interior of the latter and of said conduit.



4. A feed-water regulator comprising a water and steam chamber connected with the water and steam spaces of a boiler, a water and air chamber above and in heat-transferring relation with the water and steam chamber, a vacuum-chamber above the water and air chamber, an expansible chamber, a conduit leading from the vacuum-chamber to the water and air chamber and opening below the top thereof, a second conduit leading from the vacuum-chamber to the expansible chamber, a body of water filling the expansible chamber, the conduits and the lower portions of the water and air and vacuum chambers, and feed-controlling means operable by said expansible chamber.

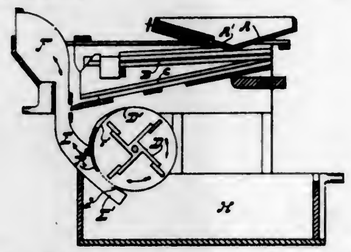
5. In a feed-water regulator, a water and steam chamber having communication with the water and steam spaces of a boiler, a liquid-chamber above the same and separated therefrom by a heat-transferring partition, a feed-controller comprising a valve and fluid-operated mechanism for actuating the same, a conduit connecting said controller and liquid-chamber, said liquid-chamber, conduit and a chamber in the feed-controller being filled with a vaporizable liquid, and a vacuum-chamber above said liquid-chamber in communication therewith and with the conduit, the said vacuum-chamber containing a quantity of liquid in its lower portion and at ordinary temperatures, a vacuum in its upper portion.

823,636. **WATER-HEATER.** CHRISTOPHER PORTER, St. Paul, Minn. Filed May 10, 1905. Serial No. 259,672.



Claim.—A device of the class set forth, consisting of a suitable furnace inclosure, a plurality of water-tubes in said inclosure, each tube being reflexed a number of times to present a maximum amount of heating-surface within said inclosure and their reflexed parts, when viewed from one side, appearing to intersect each other, a hollow base with which the lower ends of said tubes are connected and formed with an opening and a shoulder on its inner faces, fire-grates resting on said shoulder and across said opening, a drain-faucet connected with said base, a head with which the upper ends of said tubes are connected, nipples between the ends of said tubes and said base and head, and clean-outs through the walls of said furnace positioned opposite the spaces between the reflexed parts of said water-tubes.

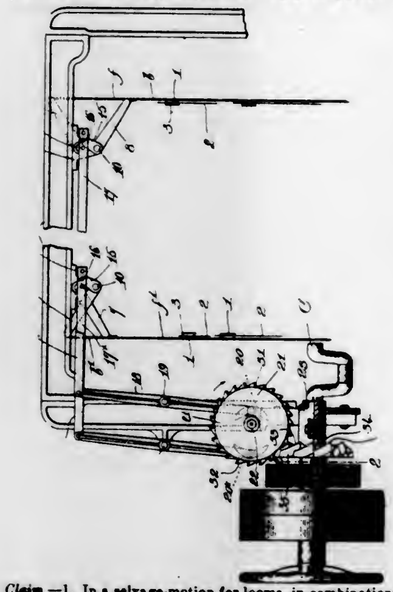
823,637. **BLAST-REGULATOR FOR GRAIN AND SEED CLEANERS.** FRANK J. PRANE, Shiloh, Ohio. Filed July 14, 1905. Serial No. 269,576.



Claim.—1. In a drain and seed-cleaner, the combination of a substantially vertical air-shaft, an air-drum laterally contiguous thereto and opening therein, the lower lip of said drum where it opens into said air-shaft being flared outwardly, a valve of cylindrical shape to conform to the shape of said drum fitted within the upper part of the same and movable toward and from said lower lip, and a rack and pinion for positioning said valve.

2. In a grain and seed cleaner, the combination of an air-drum, a fan therein, a substantially vertical air-shaft open at both ends and connected with said air-drum, the lower lip of such air-drum where it opens into said air-shaft being flared outwardly, a valve of cylindrical shape to conform to the shape of said drum slidably mounted in the opening between said drum and air-shaft, a rack transversely mounted on said valve, a shaft bearing a pinion adapted to mesh therewith and provided with a handle, and a set-screw adapted to hold said shaft against turning.

823,638. **SELVAGE-MOTION FOR LOOMS.** CHARLES F. ROPER, Hopedale, Mass., assignor to Draper Company, Hopedale, Mass., a Corporation of Maine. Filed June 19, 1905. Serial No. 265,534.



Claim.—1. In a selvage-motion for looms, in combination, two selvage-harnesses at each side of the loom, a connection between and to cause opposite reciprocation of the harnesses of each pair, a common actuator, and separate transmitting means between it and the two connections.

2. In a loom, a shed-forming mechanism for each selvage, including two positively-connected and oppositely-movable harness members for the selvage-warps, combined with a common actuating device, and separate transmitting means between it and the two shed-forming mechanisms to operate the same.

3. In a loom, a shed-forming mechanism for each selvage, including two positively-connected and oppositely-movable harness members for the selvage-warps, and means to cause a differential movement of the connected harness members, combined with a common actuator for said mechanisms, and separate transmitting means between the latter and the actuator.

4. In a selvage-motion for looms, in combination, two selvage-harnesses at each side of the loom, a positive overhead connection between and to cause opposite reciprocation of the harnesses of each pair, an actuator, and independent, positively-acting transmitting means between it and each of the two overhead connections.

5. In a selvage-motion for looms, in combination, two selvage-harnesses at each side of the loom, a positive overhead connection between and from which the harnesses of each pair are suspended, each connection including means to cause opposite reciprocation of the adjacent harnesses and impart a greater stroke to the back harness, an actuator, and separate transmitting means between it and each connection.

6. In a loom, a shed-forming mechanism for each selvage, including two oppositely-movable harness members for the selvage-warps, combined with actuating means including a single cam and separate, positively-acting transmitting devices intermediate it and the two shed-forming mechanisms, to operate the same.

7. In a loom, separate shed-forming mechanism for each selvage, means to cause the planes of the selvage-sheds to substantially coincide with the planes of the main sheds, and a common actuating-cam operatively and independently connected with each of said selvage mechanisms.

8. In a loom, separate shed-forming mechanism for each selvage, a common actuator, and a separate transmitting connection between it and each of said selvage mechanisms.

9. In a selvage-motion for looms, in combination, two selvage-harnesses at each side of the loom, a positive, differential connection between each pair of harness, to effect their movement in opposite directions with strokes of different length, a common actuator, and transmitting means between it and the two connections, to operate the same.

10. In a loom, separate shed-forming mechanism for each selvage, including oppositely-movable harness members for the selvage-warps, and means to cause a differential reciprocating movement of the said harness members to thereby bring the planes of the selvage-sheds into substantial alinement with the planes of the main shed, combined with an actuating-cam common to both mechanisms, and separate transmitting connections between the latter and said cam.

11. In a loom, separate shed-forming mechanism for each selvage, including oppositely-movable harness members for the selvage-warps, combined with an actuating-cam having a crossed cam-path, and connections between the said mechanisms and the cam, each connection including a follower coöperating with the cam-path.

12. In a loom, separate shed-forming mechanism for each selvage, including oppositely-movable harness members for the selvage-warps, combined with an actuating-cam having a crossed cam-path, and positive connections between said mechanisms and the cam, each connection including a vibrator having a follower coöperating with the cam-path.

13. In a loom, separate shed-forming mechanism for each selvage, including oppositely-movable harness members for the selvage-warps, combined with an actuating-cam having a crossed cam-path, and connections between the said mechanisms and the cam, each connection including a switch-follower coöperating with the cam-path.

14. In a loom, separate shed-forming mechanism for each selvage, combined with an actuating-cam, two vibrators coöperating therewith, and a link operatively connecting each vibrator with one of said mechanisms.

15. In a selvage-motion for looms, in combination, two oppositely-movable harness members at each side of the loom, for the selvage-warps, a pair of positively-connected and oppositely-moving rockers for and from which each pair of harness members is suspended, an actuator, and separate operating connections between it and one of the rockers of each pair, to therethrough effect reciprocation of the harness members suspended therefrom.

16. In a selvage-motion for looms, in combination, two oppositely-movable harness members at each side of the loom, for the selvage-warps, an overhead rocker for and from which each harness member is suspended, gearing connecting the adjacent rockers, to effect their angular movement oppositely and thereby reciprocate the connected harness members, an actuating member, and connec-

tions between it and each pair of rockers, said connections including links pivotally attached to one rocker of each pair.

17. In a selvage-motion for looms, a pair of rockers at each side of the loom, gearing to effect opposite and differential movement of the rockers of each pair, a harness member for the selvage-warp positively connected with each rocker, an actuating-cam having a crossed cam-path, two vibrators provided with followers coöperating with the cam-path, and a link connecting each vibrator with one of the rockers of a pair, to effect opposite reciprocation of the adjacent pairs of harness members with a differential stroke.

18. The combination, with two selvage-harnesses at each side of the loom, and an overhead connection between each pair, comprising two rocking members geared together to move oppositely and from which the harnesses are suspended, a pattern-surface, and separate transmitting means between it and the overhead connections, to operate the harnesses therethrough.

19. The combination, with two selvage-harnesses at each side of the loom, and an overhead connection between each pair, comprising two rocking members, from which the harnesses are suspended and differentially geared together to move oppositely and impart a differential reciprocation to their harnesses, a pattern-surface, and separate transmitting means between it and the overhead connections, to operate the harnesses therethrough.

20. In a loom, a crank-shaft, separate shed-forming mechanism for each selvage, an actuator common to both mechanisms and operatively connected therewith, and meshing gears fast with relation to the crank-shaft and actuator, respectively, to rotate the latter.

21. In a loom, a crank-shaft, separate shed-forming mechanism for each selvage, an actuating-cam for and operatively and separately connected with both of said mechanisms, and a direct driving connection between the crank-shaft and cam.

22. In a loom, separate shed-forming mechanism for each selvage, an actuating-cam having a continuous, crossed cam-path, two vibrators each connected with one of said mechanisms, a switch-follower on each vibrator to coöperate with the cam-path, and means to rotate the cam, each follower traversing the entire cam-path for every two revolutions of the cam.

23. In a loom, separate shed-forming mechanism for each selvage, an actuating-cam having a continuous, crossed cam-path, two vibrators each connected with one of said mechanisms, a follower on each vibrator to coöperate with the cam-path, and means to cause each follower to cross from one to the other portion of the cam-path to traverse the entire length thereof.

24. In a loom, separate shed-forming mechanism for each selvage, a common actuator for said mechanisms, consisting of a peripherally skew-toothed disk having a cam-groove on its face composed of inner and outer communicating lobes, a continuously-rotating driving-gear having spirally-arranged skew-teeth to mesh with and rotate said disk, and connections between the latter and the selvage mechanisms, each connection including a vibrator and a switch-follower to traverse the cam-groove and pass automatically from one to the other lobe thereof.

25. In a loom, separate shed-forming mechanism for each selvage, a common actuator, and operative connections between said mechanisms and actuator, whereby the separate selvage mechanisms shall be operated at different times.

823,639. **BOTTLE.** HENRY D. SCHAAD, Chicago, Ill. Filed Nov. 5, 1904. Serial No. 231,690.



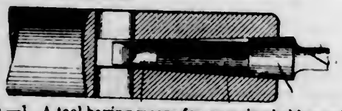
Claim.—1. The combination of a bottle provided with a neck, said neck being constructed to form a weight-chamber therein, a partition within the body of the bottle and having an aperture therein, said partition being spaced from the base of the neck to form a float-chamber, a float within said chamber, and a weight located in the weight-chamber and engaging the float, said float being adapted to close the aperture in the partition and to keep the weight confined within its respective chamber.

2. The combination with a bottle provided with a neck, a partition within the bottle and provided with an aperture, said neck being constructed to form a weight-chamber disposed opposite the aperture in the partition, a shoulder constructed at the base of the neck and coöperating with the partition to form a float-chamber, a float within said chamber, and a weight movable in the weight-chamber and engaging the float to regulate the movements thereof, said float being adapted to close the aperture in the partition and to hold the weight at all times within its respective chamber.

3. The combination of a bottle provided with a neck constructed to form a weight-chamber therein, a partition within the body of the bottle, said partition being provided with an aperture and spaced from the base of the neck to form a float-chamber, a float-valve therein, and a weight within the weight-chamber adapted to engage the float to close the aperture in the partition, said float being adapted to keep the weight confined within its respective chamber.

4. The combination of a bottle provided with a neck constructed to form a tapering weight-chamber therein, spaced ribs within said chamber, a partition within the body of the bottle, said partition being provided with an aperture, and spaced from the base of the neck to form a valve-chamber, a float-valve therein, and a weight within the weight-chamber adapted to engage the float to cause the latter to close the aperture, said float also serving to retain the weight within its respective chamber.

823,640. **TOOL-SHANK.** ANDREW SCHULER, Washington, D. C., assignor of one-half to John C. Pennie, Washington, D. C. Filed Dec. 6, 1905. Serial No. 290,616.



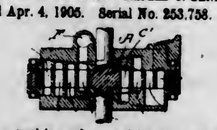
Claim.—1. A tool having means for engaging holder-sockets of different forms, including two taper sections of substantially equal inclination, and an intermediate section the surface of which is substantially parallel to the axis of the holder-socket.

2. A tool having means for engaging holder-sockets of different forms, including two taper surfaces lying in the same surface of revolution, and an intermediate cylindrical surface.

3. A tool having means for engaging holder-sockets of different forms, including two surfaces tapering at the same angle, and an intermediate cylindrical surface.

4. Means for engaging a tool with holder-sockets of different forms, said means consisting of a separable sleeve forming a rigid part of the tool when in use and including two tapering surfaces, and an intermediate non-tapering surface.

823,641. **STEAM-TURBINE.** ALFRED I. SENIOR, Motueka, New Zealand. Filed Apr. 4, 1905. Serial No. 253,758.



Claim.—1. In a turbine, the combination of a rotative disk or piston provided with a plurality of concentric series of apertures each having an inclined radially-disposed wall constituting a vane or bucket, the walls in each series being oppositely inclined from those in the next adjacent series, and end plates arranged in facial contact with the side faces of the disk, said plates having circular concentric channels, the bottom walls of which are of gradually-increasing depth from one end of said channels to the other, said channels registering with the series of apertures in the piston, and the deep portion of the channel in one plate registering with the shallow portion of the corresponding channel in the other plate.

2. In a turbine, the combination of a rotative disk or piston provided with a plurality of concentric series of apertures, each having an inclined radially-disposed wall constituting a vane or bucket, the walls in each series being oppositely inclined from those in the next adjacent series, and end plates having annular concentric channels, the bottom walls of which are of gradually-increasing depth from one end of the channels to the other, the bottom wall of each being inclined oppositely to the bottom of the next adjacent channels, said plates being so arranged that said channels register with the series of apertures in the rotative disk, and the deep portion of each channel in one plate in register with the shallow portion of the corresponding groove in the other plate.

3. In a turbine, the combination of a rotative disk or piston provided with a plurality of concentric series of apertures, each having an inclined radially-disposed wall constituting a vane or bucket, the walls in each series being oppositely inclined from those in the next adjacent series, and end plates having annular concentric channels, the bottom walls of which are of gradually-increasing depth from one end of the channels to the other, the bottom wall of each channel being inclined oppositely to the bottoms of the next adjacent channels, the channels in each plate communicating with each other at their deepest point, said plates being so arranged that said channels register with the series of apertures in the rotative disk, and the deep portion of each channel in one plate registers with the shallow portion of the corresponding groove in the other plate.

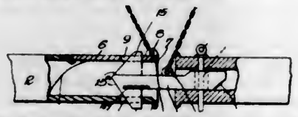
4. In a turbine, the combination of a rotative disk or piston provided with a plurality of concentric series of vanes, and end plates arranged in facial contact with the side faces of said piston, said plates having circular concentric channels varying in depth from one end to the other, said plates being arranged with the channels registering with the series of vanes, the deep portion of each channel in one plate registering with the shallow portion of the corresponding channel in the other plate.

823,642. **COLLECTING-BRUSH FOR ELECTRIC-CURRENT GENERATORS AND MOTORS.** OTTO SIEBERS, Dresden, Germany. Filed July 9, 1903. Renewed Jan. 2, 1906. Serial No. 294,187.



Claim.—A collecting-brush for electric-current generators and motors, consisting of sheets of metal, each of which is twice the width of the brush, folded over at the center and inserted one in the other in zigzag manner so that each member of each folded sheet is between the two members of another folded sheet, and a sheet incasing the said series of folded sheets, having its ends inserted between the latter, the said folded sheets and the casing-sheet being held together by solder applied on the outside, substantially as described.

823,643. **CAR-COUPLING.** WESLEY SLAYDEN, Wichita, Kans. Filed Jan. 3, 1906. Serial No. 294,208.



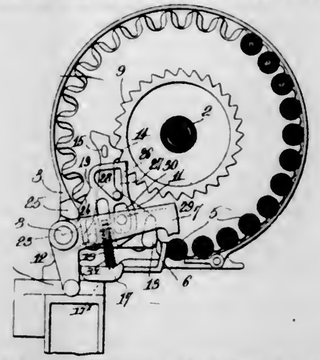
Claim.—1. A car-coupler having in combination two draw-heads one of which is hollow and is provided with a hinged portion and with an opening therein and in said portion, a link secured to the other head and provided with an end arranged to be locked in said two openings, a manually-operable cord or chain secured to the free end of said hinged portion to raise the same, and another manually-operable cord or chain attached to the link and arranged to lift the latter, the said two cords being operatively connected to the two respective cars carrying said draw-heads.

2. A car-coupler having in combination two draw-heads, one of which is hollow and is provided with a hinged portion and with registering openings in its bottom and in said hinged portion, a link secured to the other draw-head and arranged to be locked in said openings, means for raising the hinged portion of the hollow draw-head, and independent means for lifting the link.

3. A car-coupler comprising a hollow draw-head provided with a hinged portion and with an opening in its bottom and also in said hinged portion, a link arranged to be detachably secured in another draw-head and provided at its attached end with a beveled lower edge 14, the said link being arranged to rock vertically on the said beveled lower edge and being provided at one end with oppositely-beveled wings designed to enter the first-named draw-head, whereby the hinged portion thereof may be automatically raised and the said wings find lodgment in the openings in said hinged portion and in the bottom of the draw-head.

4. A car-coupler having in combination two draw-heads one of which is hollow and is provided with a hinged portion and with registering openings in its bottom and in said hinged portion, a link secured to the other draw-head and provided with an end arranged to be locked in said openings, a manually-operable cord or chain secured to the free end of said hinged portion to raise the same, and another manually-operable cord or chain attached to the link and arranged to lift the latter, as and for the purpose set forth.

823,644. **HOPPER-ACTUATING MECHANISM FOR AUTOMATIC LOOMS.** EDWARD S. STIMPSON and WILLIAM S. SOUTHWICK, Hopedale, Mass., assignors to Draper Company, Hopedale, Mass., a Corporation of Maine. Filed July 20, 1905. Serial No. 270,488.



Claim.—1. A movable hopper to hold a series of filling-carriers, a ratchet movable therewith, a transferrer, a spring-actuated feed-pawl to coöperate with the ratchet, means to positively set the pawl by or through operative movement of the transferrer, the pawl acting to advance the hopper on the return movement of the transferrer, a detent for the ratchet, and means to disengage the feed-pawl and ratchet by retraction of the detent.

2. A movable hopper to hold a series of filling-carriers, a ratchet movable therewith, a transferrer, feed and detent pawls coöperating with the ratchet, means to set the feed-pawl by or through operative movement of the transferrer, to advance the hopper on the return of the transferrer to normal position, and means to disengage both pawls from the ratchet by or through manual retraction of the detent-pawl.

3. A movable hopper to hold a series of filling-carriers, a ratchet movable therewith, a transferrer, feed and detent pawls coöperating with the ratchet, a spring to actuate the feed-pawl, means to set the latter positively by or through operative movement of the transferrer, the spring acting through said feed-pawl to advance the hopper on the return of the transferrer, and a normally passive connection between the pawls whereby manual retraction of the detent-pawl disengages the feed-pawl and the ratchet.

4. A movable hopper to hold a series of filling-carriers, a ratchet movable therewith, a transferrer, a spring-actuated feed-pawl and a gravity detent-pawl, both coöperating with the ratchet, means to set the feed-pawl by operative movement of the transferrer, the spring acting through said pawl to advance the hopper on the return movement of the transferrer, and a connection between said pawls whereby both may be disengaged from the ratchet by manual retraction of the detent-pawl.

5. A movable hopper to hold a series of filling-carriers, a ratchet movable therewith, feed and detent pawls coöperating with the ratchet, means to control the operation of the feed-pawl to effect the advance of the hopper upon each operation of the transferrer, a connection between the pawls whereby both may be disengaged from the ratchet by manual retraction of the detent-pawl, and a transferrer.

6. A movable hopper to hold a plurality of filling-carriers, a transferrer to remove the latter one by one, means to advance the hopper step by step, a device to prevent retrograde movement of the hopper, and means to free the hopper from the control of said ad-

vancing means by or through manual movement of said device into inoperative position.

7. A movable hopper to hold a plurality of filling-carriers, a transferrer to remove the latter one by one, spring-actuated means to advance the hopper step by step, a detent to prevent retrograde movement of the hopper, and a connection between said means and the detent to free the hopper from the control of such means by movement of the detent into inoperative position.

8. A movable hopper to hold a plurality of filling-carriers, a transferrer to remove the latter one by one, and hopper-controlling means, including a device to prevent retrograde movement of the hopper, manual retraction of the said device automatically releasing the hopper from coöperation with said means and permitting hopper movement by hand in either direction.

9. A rotatable hopper to hold a circularly-arranged series of filling-carriers, a transferrer to remove the latter one by one, means to advance automatically the hopper step by step, a device to prevent retrograde rotation of said hopper, and means to free the hopper from the control of its advancing means by or through manual movement of said device into inoperative position.

10. A movable hopper to hold a series of filling-carriers, a ratchet movable therewith, a transferrer, a spring-actuated feed-pawl to coöperate with the ratchet, a lost-motion connection between said pawl and transferrer to set the former by operative movement of the latter, a device to prevent retrograde movement of the ratchet, and means to disengage the pawl and ratchet by or through manual retraction of the said device.

11. A movable hopper to hold a series of filling-carriers, a ratchet movable therewith, a transferrer, a spring-actuated feed-pawl to coöperate with the ratchet, a slot-and-pin connection between the pawl and transferrer, to set the former as the latter completes its operative movement, the pawl advancing the hopper on the return movement of the transferrer, a detent for the hopper, and a connection between said detent and pawl whereby the latter is disengaged from the ratchet by manual movement of the detent into inoperative position.

12. A rotatable hopper to contain a plurality of filling-carriers, a transferrer to remove the latter one by one, spring acting means to advance the hopper step by step, a connection between said means and the transferrer to set the former by operative movement of the latter, a hopper-detent, and means to free the hopper from control of the advancing means when the detent is rendered inoperative manually.

13. A rotatable hopper to contain a plurality of filling-carriers, a transferrer to remove the latter one by one, hopper-advancing means, comprehending a ratchet movable with the hopper, a coöperating feed-pawl, an operating-spring therefor, and a connection between the pawl and transferrer to set the former by movement of the latter to remove a filing-carrier, a detent normally coöperating with the ratchet, and a connection between said detent and pawl whereby both are disengaged from the ratchet by manual retraction of the detent.

14. A movable hopper to hold a plurality of filling-carriers, a transferrer to remove the latter one by one, a ratchet movable with the hopper, a spring-actuated, sliding and rocking feed-pawl to coöperate with the ratchet, and a lost-motion connection between the pawl and transferrer to set the former by or through operative movement of the latter, the spring-actuated pawl advancing the hopper as the transferrer returns to normal position.

15. A movable hopper to hold a plurality of filling-carriers, a ratchet movable with the hopper, a coöperating feed-pawl, a transferrer, one having a slot and the other provided with a pin entering the slot, constituting a positive, lost-motion connection between the pawl and transferrer, operative movement of the latter acting through such connection to set the pawl as a filling-carrier is transferred from the hopper, a spring to actuate the feed-pawl and advance the hopper while the transferrer returns to normal position, and a pawl-support independent of the transferrer.

16. A movable hopper to hold a plurality of filling-carriers, a ratchet movable with the hopper, a coöperating sliding and rocking feed-pawl, a transferrer, one having a slot and the other provided with a pin entering the slot, whereby the transferrer and pawl are capable of limited relative movement, said parts moving in unison to set the pawl as the transferrer completes its operative stroke, and a spring to actuate the feed-pawl and advance the hopper as the transferrer returns to its normal position.

17. A movable hopper to hold a plurality of filling-carriers, a transferrer to remove the latter one by one, a ratchet movable with the hopper, a spring-actuated feed-pawl to coöperate with the ratchet, said pawl having a sliding setting and advancing movement, and also a rocking movement, to pass over the teeth of the ratchet in setting, and means to set the pawl by or through operative movement of the transferrer, the spring actuating the pawl to advance the hopper on the return movement of the transferrer.

18. A rotatable hopper adapted to hold a circularly-arranged series of filling-carriers, a transferrer, spring acting means set by operative movement of the transferrer to effect a predetermined angular advance of the hopper after each transferrer operation, a hopper-detent, and means to automatically release the hopper from the control of said spring acting means when the detent is rendered inoperative manually.

19. A rotatable hopper adapted to hold a circularly-arranged series of filling-carriers, a ratchet-disk movable therewith, a transferrer, a slidably-movable spring-actuated feed-pawl to coöperate with said disk, and effect a predetermined angular advance of the hopper after each transferrer operation, and means to effect positive coöperation of the transferrer and feed-pawl on the operative movement of the former, to operatively position the latter for the next advance of the hopper.

20. A rotatable hopper adapted to hold a circularly-arranged series of filling-carriers, a ratchet-disk movable therewith, a rocking transferrer having a lateral pin thereon, a feed-pawl having an elongated opening into which the pin projects and also having a guide-slot, a fixed guide-pin extended through said slot, an upturned rod on which the pawl is loosely mounted to slide, an actuating-spring to lift the pawl and thereby cause it to coöperate with the ratchet-disk and advance the hopper, the operative movement of the transferrer causing the pin thereon to act upon the bottom of the opening in and depress the pawl to set it, thereby compressing the spring, and a fixed abutment, said abutment and guide-pin directing the setting movement of the pawl and permitting it to rock slightly to pass over the next tooth of the disk to be engaged.

21. A rotatable hopper adapted to hold a circularly-arranged series of filling-carriers, a ratchet-disk movable therewith, a rocking transferrer having a lateral pin thereon, a feed-pawl having an elongated opening into which the pin projects and in which it has lost motion, a fixed guide-pin and an abutment, both coöperating with the pawl to control its sliding and rocking movement, a rod on which the pawl is loosely mounted to slide, and an actuating-spring to lift the pawl and by coöperation with the disk advance the hopper, the pin on the transferrer acting to depress and set the pawl on the latter part of the operative transferrer-stroke, compressing the spring, the pawl rocking slightly during the setting movement to pass over the next tooth of the disk to be engaged.

22. A rotatable hopper adapted to hold a circularly-arranged series of filling-carriers, a ratchet-disk movable therewith, a transferrer, a slidably-movable spring-actuated feed-pawl to coöperate with said disk and effect a predetermined angular advance of the hopper after each transferrer operation, a pin-and-slot connection between the pawl and transferrer, to operatively position the pawl for the next advance of the hopper as operative movement of the transferrer is effected, a detent mounted on a fixed fulcrum and normally coöperating with the ratchet-disk, a projection on said detent, and a cam on the feed-pawl with which said projection is adapted to coöperate, to disengage the pawl and ratchet-disk when the detent is manually disengaged from the latter.

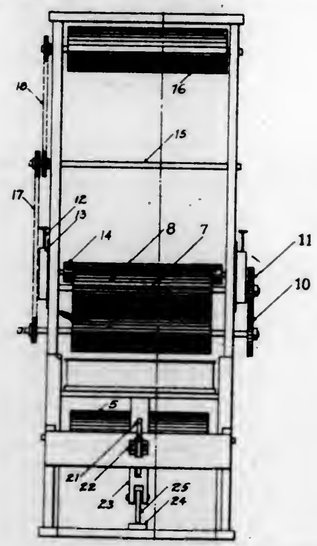
23. A rotatable hopper adapted to hold a circularly-arranged series of filling-carriers, a ratchet-disk movable therewith, a rocking transferrer having a lateral pin thereon, a feed-pawl having an elongated opening into which the pin projects and in which it has lost motion, a fixed guide-pin and an abutment, both coöperating with the pawl to control its sliding and rocking movement, a rod on which the pawl is loosely mounted to slide, and an actuating-spring to lift the pawl and by coöperation with the disk advance the hopper, the pin on the transferrer acting to depress and set the pawl on the latter part of the operative transferrer-stroke, compressing the spring, the pawl rocking slightly during the setting movement to pass over the next tooth of the disk to be engaged, combined with a detent-pawl mounted on a fixed fulcrum and normally coöperating with the ratchet-disk, a projection on the detent-pawl, and a cam on the feed-pawl, manual disengagement of the detent-pawl from the ratchet causing coöperation of the projection and cam to also disengage the feed-pawl and thereby release the hopper.

24. A rotatable hopper to hold a circularly-arranged series of filling-carriers and having an attached ratchet, a transferrer, a spring-actuated feed-pawl to coöperate with the ratchet, and means to positively set the feed-pawl by or through operative movement of the transferrer, the pawl then coöperating with the ratchet to prevent premature advance of the hopper during transfer, the feed-pawl acting to advance the hopper on the return movement of the transferrer.

25. A rotatable hopper to hold a circularly-arranged series of filling-carriers and having an attached ratchet, a transferrer, a feed-pawl to coöperate with the ratchet, means to positively set the feed-pawl by or through operative movement of the transferrer, and means to cause said pawl to coöperate with the ratchet and prevent premature advance of the hopper during transfer and thereafter to cause the pawl to advance the hopper on the return movement of the transferrer.

26. A rotatable hopper to hold a circularly-arranged series of filling-carriers and having an attached ratchet, a transferrer, a spring-actuated feed-pawl to coöperate with the ratchet, means to positively set the feed-pawl by or through operative movement of the transferrer, said pawl acting to advance the hopper on the return movement of the transferrer, a detent-pawl coöperating with the ratchet, means to disengage both pawls from the ratchet by manual retraction of the feed-pawl, and a fixed guide or stop for the endmost filling-carrier of the series, the feed-pawl, upon return from such manually-effected disengagement, acting immediately through the ratchet to hold the endmost filling-carrier firmly against the said guide or stop.

823,645. CARD-PAINTING MACHINE. JOHN W. STOCKER, Chicago, Ill. Filed Feb. 16, 1906. Serial No. 301,336.

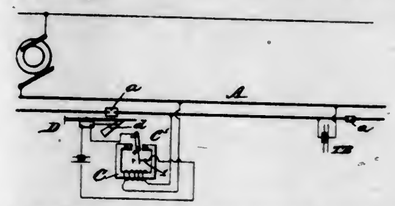


Claim.—1. In a card-painting machine, the combination; of the rollers 7 and 8 journaled in the upright 9 9, the table, 20, secured between the uprights 9 9; the lever, 21, pivoted at its fulcrum in the framework of the adjusting device; the upright, 23, secured to the under side of the table and pivoted to the end of the short arm of the lever; and the paint-trough, 19, located on the table below the roller 7 and so near to it that the roller will reach the paint in the trough; substantially as and for the purposes specified.

2. In a card-painting machine, the combination; of the uprights, 9 9, the rollers, 7 and 8, journaled in these uprights and fitted with gears meshing with each other; the spool, 5, bearing the roll of paper journaled in the uprights, 6 6; the idler, 14, journaled in the uprights, 6 6, above the line of meeting of the sprocket-wheels of the rollers, 7 and 8; the auxiliary shaft, 15, journaled between the uprights, 6 6, above the idler, 14; the shaft, 16, journaled in the uprights, 9 9, at their top; and the sprocket-wheels, 17 and 18, connecting respectively the roller, 7 and the shaft, 16, with the auxiliary shaft, 15, substantially as and for the purposes specified.

823,646. SIGNALING SYSTEM. JACOB B. STRUBLE, Wilkinsburg, Pa., assignor to The Union Switch and Signal Company, Swissvale, Pa., a Corporation of Pennsylvania. Filed Feb. 12, 1903. Renewed Apr. 11, 1905. Serial No. 255,008.

Claim.—1. The combination with a railway employing alternating current as a motive power and one of the rails of the track as a return for the alternating current, of an alternating-current supply for the railway, and a signaling system comprising a circuit which includes the return-rail and an insulated section of the other track-rail, a direct-current supply for such circuit, and a translating device also in said circuit and affected by the direct current therein to control a signal device which gives service indications of the railway or section of railway.



2. The combination with a railway employing alternating current as a motive power and one of the rails of the track as a return for the alternating current, of an alternating-current supply for the railway, and a signaling system comprising a circuit which includes the return track-rail and an insulated part of the other track-rail, a direct-current supply for said circuit, and a translating device having a movable part to control a circuit which also includes an operating mechanism of a railway-signal, said translating device being affected by the absence or presence of the direct current in its circuit in operating the movable part to control the signal-circuit.

3. The combination with a railway employing alternating current as a motive power and one of the rails of the track as a return for the alternating current, of an alternating-current supply for the railway, and a signaling system comprising a circuit which includes the return track-rail and an insulated part of the other track-rail, a direct-current supply for said circuit, a translating device included in said circuit as to have the direct current give it a fixed polarity, and a polarized armature which is under the influence of the polarity of the translating device, and an operating mechanism of a railway-signal controlled by said polarized armature.

4. In a signaling system for use on electric railways employing alternating current as a motive power, and a rail for the return thereof, the combination of a series of block-sections, a closed track-circuit for each block-section which includes a portion of both track-rails, a source of direct current for each track-circuit, a translating device included in each track-circuit, and means in each track-circuit for preventing alternating current effectively operating the translating device.

5. In a signaling system for use on electric railways employing alternating current as a motive power, and a track-rail for the return, the combination of a series of block-sections, a track-circuit for each block-section, a source of direct-current supply for each track-circuit, a translating device included in each track-circuit, and means for preventing alternating current operating the translating device to control a railway-signal.

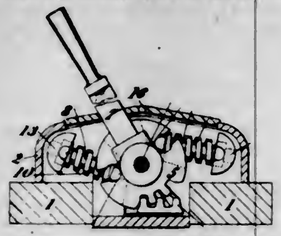
6. A signaling system comprising a source of alternating current, a source of direct current, a common return for both currents, motor-vehicles actuated by the alternating current, signaling devices actuated by the direct current, and means controlled by the movement of the motor-vehicle for controlling the movement of the signaling devices.

7. A signaling system comprising a source of alternating current, a source of direct current, a common return for both currents, motor-vehicles actuated from the source of alternating current, signaling devices actuated from the source of direct current, and means carried by the moving vehicles and adapted to shunt the direct current around signaling devices.

8. In an electric-railway system, a source of alternating power-current, a power-circuit, signaling circuits formed by the track and electrically separated from each other, a direct-current supply for each of the signaling-circuits, and signaling devices controlled from the signaling-circuits.

9. In an electric-railway system, a source of alternating power-current, a power-circuit in which the track of the railway forms a part, signaling-circuits formed in part by the track, a source of direct current for each signaling-circuit, and a relay also in each signaling-circuit responsive to the direct current of its signaling-circuit to control a signal device and not responsive to the flow of alternating currents to control the signal device.

823,647. SWITCH MECHANISM. HUGH A. THOMSON, Shawlands, Scotland. Filed Sept. 21, 1905. Serial No. 279,454.



Claim.—1. An apparatus of the class described comprising in combination a member adapted to be thrown in opposite or set positions, a switch-throwing element in operative relation with said member, and yieldingly-acting means engaging said member on opposite sides of its axis and serving to hold it in opposite or set positions, said means exerting pressure on said member to force the same toward said element.

2. An apparatus of the class described comprising in combination a member having a horizontal axis of movement and adapted to be swung in a vertical plane in opposite or set positions, a switch-throwing element in operative relation with said member, and springs engaging said member above and below its axis, the outer ends of said springs being mounted above the axis of said member.

3. An apparatus of the class described comprising a switch-throwing member adapted to be thrown in extreme or set positions to open and close the switch-points, springs engaging said member at their inner ends on opposite sides of its axis to maintain said member in set positions, fulcrumed mountings for the outer ends of said springs, said fulcrumed mountings being located above the axis of said member.

4. An apparatus of the class described comprising a switch-throwing member adapted to be thrown in opposite extreme or set positions to open and close the switch-points, springs engaging said member on opposite sides of its axis to maintain said member in set positions, said springs being mounted at their outer ends at points above the axis of said member, and a lever connected with said switch-points and geared to said member.

5. An apparatus of the class described comprising a switch-throwing member provided with gear-teeth and adapted to be thrown in extreme or set positions to open and close said switch, springs engaging said member on opposite sides of its axis to maintain said member in set positions, said springs being mounted at their outer ends at points above the axis of said member, and a bell-crank lever connected with said switch and provided with gear-teeth adapted to mesh with the teeth of said member.

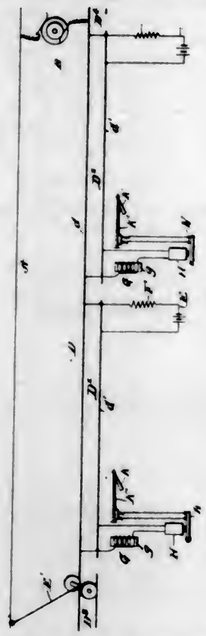
6. An apparatus of the class described comprising a switch-throwing member provided with gear-teeth and adapted to be thrown in extreme or set positions to open and close said switch, springs engaging said member at their inner ends on opposite sides of its axis to maintain said member in set positions, fulcrumed mountings for the outer ends of said springs, said mountings being movably secured at points above the axis of said member and a bell-crank lever connected with the switch-points and provided with gear-teeth adapted to mesh with the teeth of said member.

7. An apparatus of the class described comprising a switch-throwing member provided with gear-teeth and adapted to be thrown in extreme or set positions to open and close said switch, springs engaging said member at their inner ends on opposite sides of its axis to maintain said member in set positions, fulcrumed mountings for the outer ends of said springs, the said fulcrumed mountings being located above the axis of said member, and a bell-crank lever connected with the switch-points and provided with gear-teeth adapted to mesh with the teeth of said member.

8. An apparatus of the class described comprising a switch-throwing member provided with gear-teeth and adapted to be thrown in extreme or set positions to open and close said switch, said member having an oil-conduit extending from its upper portion and delivering to said gear-teeth, springs engaging said member at their inner ends on opposite sides of its axis to maintain said member in set positions, fulcrumed mountings for the outer ends of said springs, the said fulcrumed mountings being located above the axis of said member, a bell-crank lever connected with the switch-points and provided with gear-teeth adapted to mesh with the teeth of said member, and a casing for said apparatus provided with an oil-hole registering with the receiving end of said oil-conduit.

9. An apparatus of the class described comprising in combination a member adapted to be thrown in opposite set positions, a switch-throwing element in operative relation with said member, springs engaging said member on opposite sides thereof and in planes oppositely disposed with respect to the axis of said member, both of the outer ends of said springs being anchored in a plane at one side of the points of engagement of said springs with said member and at one side of the axis of said member.

823,648. RAILWAY SIGNALING. LOUIS H. THULLEN, Edgewood, Pa. Filed Feb. 5, 1904. Renewed May 10, 1906. Serial No. 316,080.



Claim.—1. In a signaling system for use on electric railways employing alternating current as motive power and a rail for the return thereof, the combination of a series of block-sections, a closed track-circuit for each block-section which includes a portion of both track-rails, a source of direct current for each track-circuit, a translating device included in each track-circuit, and an inductive winding included in the track-circuit for preventing alternating current effectively operating the translating device.

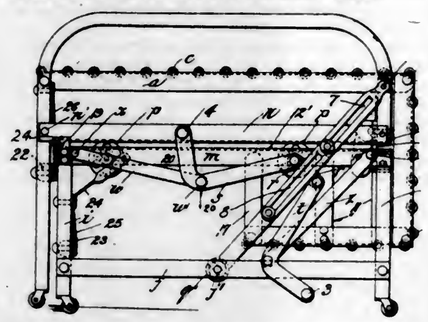
2. In a signaling system for use on electric railways employing alternating current as motive power and a rail for the return thereof, the combination of a series of block-sections, a closed track-circuit for each block-section which includes a portion of both track-rails, a source of direct current for each track-circuit, a translating device included in each track-circuit, an inductive winding included in the track-circuit for preventing alternating current effectively operating the translating device, and means for counteracting the magnetization of the core of the inductive winding caused by the direct current in the track-circuit.

3. In a signaling system for use on electric railways employing alternating current as a motive power and a rail for the return thereof, the combination of a series of block-sections, a closed track-circuit for each block-section which includes a portion of both track-rails, a source of direct current for each track-circuit, a translating device included in each track-circuit, a resistance included in the track-circuit between the battery and the rails, and means also in each track-circuit for preventing alternating current effectively operating the device.

4. In the signaling system for use on electric railways employing alternating current as motive power, and the rail for the return thereof, the combination of a series of block-sections, a closed track-circuit for each block-section including a portion of both track-rails, a source of direct current for each track-circuit, a translating device included in each track-circuit, an inductive winding included in the track-circuit for preventing alternating current effectively operating the translating device, and a second winding on the core of the inductive winding, which second winding is included in multiple with the direct-current supply for counteracting the magnetization of the core of the inductive winding caused by the direct current in the track-circuit.

5. A signaling system for railways the trackway of which is employed as a return for alternating propulsion-current, a source of alternating propulsion-current, a series of track-circuits formed in part by the trackway, a source of direct current for each track-circuit a relay for each track, and an impedance-coil in each track-circuit.

823,649. EXTENSIBLE SOFA-BED. FRANCIS M. TINKHAM, Springfield, Mass. Filed Feb. 15, 1906. Serial No. 301,238.



Claim.—1. In an extensible sofa-bedstead, the combination of a main frame, an extensible auxiliary frame, a one-piece fabric secured to said frames and capable of being partially folded alongside of and directly below the main frame.

2. In an extensible sofa-bedstead, the combination of a main frame, an extensible auxiliary frame, a one-piece fabric secured to said frames and capable of being folded alongside of and into the main frame, means for retaining the extensible auxiliary frame in extended position so that the one-piece fabric is placed under tension.

3. In a sofa-bedstead, an auxiliary frame, extension-pieces secured thereto and comprising jointed portions, a one-piece fabric secured to the auxiliary frame and the jointed portions, and means for folding the jointed portions alongside of, and into the main frame.

4. In an extension sofa-bedstead, a main frame, an auxiliary frame movable relative to each other in open and nested positions, a longitudinal rock-shaft pivoted in the main frame, an oscillatory lever secured at each end of the rock-shaft and to the auxiliary frame, a pair of toggle-levers pivoted to each end of the main frame and to said oscillatory operating-lever, an articulated frame pivoted to the main and auxiliary frames, one part of the articulated frame being adapted to fold against and into the main frame, a one-piece fabric secured to the main and auxiliary frames whereby when the bedstead is extended one pair of toggle-levers is closed and the other pair open, and whereby when the main and auxiliary frames are nested the other pair of toggle-levers is open and the other pair closed, as described.

5. In an extension sofa-bedstead, a main frame, an auxiliary frame movable relative to each other in open and nested positions, a longitudinal rock-shaft pivoted in the main frame, said rock-shaft being secured to the main frame midway of its width, an oscillatory lever secured at each end of the rock-shaft and to the auxiliary frame, a pair of toggle-levers pivoted to each end of the main frame and to said oscillatory operating-lever, an articulated frame pivoted to the main and auxiliary frames, one part of the articulated frame being adapted to fold against and into the main frame, a one-piece fabric secured to the main and auxiliary frames whereby when the bedstead is extended one pair of toggle-levers is closed and the other pair open, and whereby when the main and auxiliary frames are nested the other pair of toggle-levers is open and the other pair is closed, as described.

6. In a sofa-bedstead, an auxiliary frame, a main frame secured thereto, said main frame having jointed portions, a one-piece fabric secured to the auxiliary frame and the jointed portions, means for supporting the outermost one of the jointed portions, and means for folding the jointed portions on the main frame and at the same time folding the one-piece fabric into nested relation to the two frames.

7. In a sofa-bedstead, a main frame, an auxiliary frame, a one-piece fabric carried by said frames, means on the main frame for preventing the main frame from sliding down in open position, said means consisting of a lug secured to the main frame against which the auxiliary frame rests when in open position, and means for disengaging the auxiliary frame from the lug when the main and auxiliary frames are nested, as described.

8. An extensible sofa-bedstead, a main frame, an auxiliary frame, a one-piece fabric connecting the two frames, and means for nesting the two frames relative to each other, comprising an articulated frame connected to the auxiliary and main frame and foldable into the main frame.

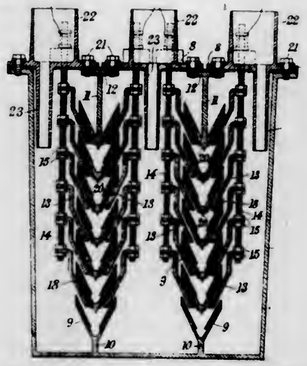
9. In an extensible sofa-bedstead, a main frame and auxiliary frame secured thereto, extension-pieces pivotally supported by the main frame and connected to the auxiliary frame and carrying a fabric, and means for nesting the pivoted outer portion only of the extension-pieces into the main frame.

10. In an extension sofa-bedstead, an articulated frame secured to the main frame, an auxiliary frame pivotally secured to the main frame, a fabric secured to the articulated and auxiliary frames, means for nesting the articulated frame into the main frame, said means consisting of a link pivoted to one member of the main frame and rigidly secured to a member of the articulated frame, whereby when the auxiliary and articulated frame are operated one member of the articulated frame will be nested into the main frame.

11. In an extension sofa-bedstead, a main and auxiliary frame pivoted to each other, portions of the auxiliary frame supported on the main frame, a fabric secured to the auxiliary frame and pivoted portions of the main frame, and means for rotating a portion of the pivoted frame about a fixed point on the main frame, whereby a portion of the auxiliary frame is nested into the main frame.

12. An extensible sofa-bedstead, a main frame, an auxiliary frame, two sets of angle-irons included as a part of each of said frames, one set including jointed members and pivoted to the auxiliary and main frames respectively, whereby when the auxiliary frame is moved into nesting relation with the main frame the jointed members are carried below and into the main frame.

823,650. APPARATUS FOR THE ELECTROLYSIS OF WATER. KARL J. VARRILLE, Levallois-Perret, France. Filed Nov. 15, 1905. Serial No. 287,502.



Claim.—1. An electrolytic apparatus comprising in combination a tank, a plurality of superposed troughs, and a plurality of electrodes interposed between the walls of said troughs, said troughs and electrodes being so arranged that the bottom of each trough projects below the lower edge of the corresponding electrode.

2. An electrolytic apparatus comprising in combination a tank, a plurality of superposed troughs, and a plurality of electrodes interposed between the walls of said troughs, said troughs and electrodes being so arranged that the bottom of each trough projects below the lower edge of the corresponding electrode, the walls of said trough being insulated at points adjacent the electrodes.

3. An electrolytic apparatus comprising in combination a tank, a plurality of superposed V-shaped troughs, and a plurality of electrodes interposed between the walls of said troughs, said troughs and electrodes being so arranged that the bottom of each trough projects below the lower edge of the corresponding electrode.

4. An electrolytic apparatus comprising in combination a tank, a plurality of superposed V-shaped troughs, and a plurality of elec-

trodes interposed between the walls of said troughs, said troughs and electrodes being so arranged that the bottom of each trough projects below the lower edge of the corresponding electrode, the walls of said trough being insulated at points adjacent the electrodes.

5. An electrolytic apparatus comprising in combination a tank, a plurality of superposed troughs cast integral therewith, a plurality of electrodes interposed between the walls of said troughs, adjustable rods depending from the upper wall of the tank, and means for adjustably securing said electrodes upon said rods.

6. An electrolytic apparatus comprising in combination a tank, a plurality of superposed troughs cast integral therewith, a plurality of electrodes interposed between the walls of said troughs, adjustable rods depending from the upper wall of the tank, and means for adjustably securing said electrodes upon said rods, said troughs and electrodes being so arranged that the bottom of each trough projects below the lower edge of the corresponding electrode, the walls of said trough beiag insulated at points adjacent the electrodes.

7. An electrolytic apparatus comprising in combination a tank, a plurality of superposed V-shaped troughs cast integral therewith, a plurality of electrodes interposed between the walls of said troughs, adjustable rods depending from the upper wall of the tank, and means for adjustably securing said electrodes upon said rods, such troughs and electrodes being so arranged that the bottom of each trough projects below the lower edge of the corresponding electrode.

8. An electrolytic apparatus comprising in combination a tank, a plurality of superposed V-shaped troughs cast integral therewith, a plurality of electrodes interposed between the walls of said troughs, adjustable rods depending from the upper wall of the tank, and means for adjustably securing said electrodes upon said rods, said troughs and electrodes being so arranged that the bottom of each trough projects below the lower edge of the corresponding electrode, the walls of said trough being insulated at points adjacent the electrodes.

9. An electrolytic apparatus comprising in combination a tank, a plurality of superposed troughs, a plurality of electrodes interposed between the walls of said troughs, said troughs and electrodes being so arranged that the bottom of each trough projects below the lower edge of the corresponding electrode, and a plurality of filling-tubes for said tank having projections extending to a point below the uppermost trough.

10. An electrolytic apparatus comprising in combination a tank, a plurality of superposed V-shaped troughs, a plurality of electrodes interposed between the walls of said troughs, said troughs and electrodes being so arranged that the bottom of each trough projects below the lower edge of the corresponding electrode, and a plurality of filling-tubes for said tank having projections extending to a point below the uppermost trough.

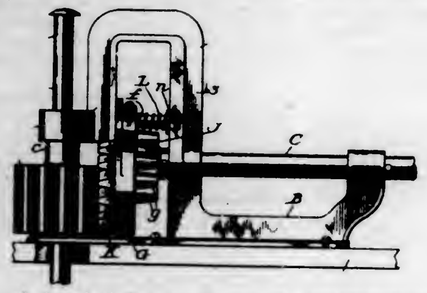
11. An electrolytic apparatus comprising in combination a tank, a plurality of superposed troughs cast integral therewith, a plurality of electrodes interposed between the walls of said troughs, adjustable rods depending from the upper wall of the tank, means for adjustably securing said electrodes upon said rods, and a plurality of filling-tubes for said tank having projections extending to a point below the uppermost trough.

12. An electrolytic apparatus comprising in combination a tank, provided with a top wall composed of separate sections, each section being provided with a filling-tube extending downwardly into said tank, means for insulating said sections from the tank, adjustable rods extending downwardly from said sections into said tank and insulated from said sections, a plurality of superposed V-shaped troughs cast integral with said tank, the uppermost troughs having central walls forming supports for said sections intermediate the sides of the tank, and a plurality of electrodes adjustably mounted on said rods and projecting between the walls of said troughs, said troughs and electrodes being so arranged that the bottoms of said troughs extend below the lower portions of said electrodes.

823,651. MECHANICAL MOVEMENT. WILLIAM H. VOSS, Davenport, Iowa. Filed Jan. 15, 1906. Serial No. 296,150.

Claim.—1. A mechanical movement comprising a continuously-revolving shaft, a pendulous rack the pivotal means of which has a movement at right angles to said continuously-revolving shaft, and a rotary reciprocal shaft operatively connected to and actuated by said rack.

2. A mechanical movement comprising a continuously-revolving shaft, a pinion on the end thereof, a pendulous rack the horizontal axis of which moves up and down in addition to its rotary reciprocal movement consisting of a plate having a segmentally-arranged series of studs projecting therefrom that are engaged by said pinion, and a rotary reciprocal shaft operatively connected to and actuated by said rack.



3. A mechanical movement comprising a continuously-revolving shaft, a pinion on the end thereof, a pendulous rack the horizontal axis of which moves up and down in addition to its rotary reciprocal movement consisting of a plate having a segmentally-arranged series of studs projecting therefrom that are engaged by said pinion and having an endless runway surrounding said studs into which the extended end of said continuously-revolving shaft enters, and a rotary reciprocal shaft operatively connected to and actuated by said rack.

4. A mechanical movement comprising a continuously-revolving shaft, a pinion on the end thereof, a pendulous rack the pivots of which have a reciprocal movement at right angles to said shaft, and which consists of a plate having a segmentally-arranged series of studs projecting therefrom that are engaged by said pinion, and a rotary reciprocal shaft operatively connected to and actuated by said rack.

5. A mechanical movement comprising a continuously-revolving shaft, a pinion on the end thereof, a pendulous rack the pivots of which have a reciprocal movement at right angles to said shaft, and which consists of a plate having a segmentally-arranged series of studs projecting therefrom that are engaged by said pinion and having an endless runway surrounding said studs into which the extended end of said continuously-revolving shaft enters, and a rotary reciprocal shaft operatively connected to and actuated by said rack.

6. A mechanical movement comprising a continuously-revolving shaft, a pinion on the end thereof, a pendulous rack the horizontal axis of which moves up and down in addition to its rotary reciprocal movement consisting of a plate having a segmentally-arranged series of studs projecting therefrom that are engaged by said pinion and having a segmental gear projecting from the side thereof opposite said studs, a rotary reciprocal shaft, and a pinion on said shaft engaged by said segmental gear.

7. A mechanical movement comprising a continuously-revolving shaft, a pinion on the end thereof, a pendulous rack the horizontal axis of which moves up and down in addition to its rotary reciprocal movement consisting of a plate having a segmentally-arranged series of studs projecting therefrom that are engaged by said pinion and having an endless runway surrounding said studs into which the extended end of said continuously-revolving shaft enters, and also having a segmental gear projecting from the side thereof opposite said studs, a rotary reciprocal shaft, and a pinion on said shaft engaged by said segmental gear.

8. A mechanical movement comprising a continuously-revolving shaft, a pinion on the end thereof, a pendulous rack the pivots of which have a reciprocal movement at right angles to said shaft, and which consists of a plate having a segmentally-arranged series of studs projecting therefrom that are engaged by said pinion and having a segmental gear projecting from the side thereof opposite said studs, a rotary reciprocal shaft, and a pinion on said shaft engaged by said segmental gear.

9. A mechanical movement comprising a continuously-revolving shaft, a pinion on the end thereof, a pendulous rack the pivots of which have a reciprocal movement at right angles to said shaft, and which consists of a plate having a segmentally-arranged series of studs projecting therefrom that are engaged by said pinion and having an endless runway surrounding said studs into which the extended end of said continuously-revolving shaft enters, and also having a segmental gear projecting from the side thereof opposite said studs, a rotary reciprocal shaft, and a pinion on said shaft engaged by said segmental gear.

10. A mechanical movement comprising a continuously-revolving shaft, a pinion on the end thereof, a pendulous rack the horizontal axis of which moves up and down in addition to its rotary reciprocal movement consisting of a plate having a segmentally-arranged series of studs projecting therefrom that are engaged by said pinion and having a segmental gear projecting from the side thereof opposite said studs, a rotary reciprocal shaft, and an elongated pinion on said shaft engaged by said segmental gear.

11. A mechanical movement comprising a continuously-revolving shaft, a pinion on the end thereof, a pendulous rack the horizontal axis of which moves up and down in addition to its rotary reciprocal movement consisting of a plate having a segmentally-arranged series of studs projecting therefrom that are engaged by said pinion and having an endless runway surrounding said studs into which the extended end of said continuously-revolving shaft enters, and also having a segmental gear projecting from the side thereof opposite said studs, a rotary reciprocal shaft, and an elongated pinion on said shaft engaged by said segmental gear.

12. A mechanical movement comprising a continuously-revolving shaft, a pendulous rack engaged thereby, spring-actuated means for muffling the rattle of said rack, and a rotary reciprocal shaft operatively connected to and actuated by said rack.

13. A mechanical movement comprising a continuously-revolving shaft, a pinion on the end thereof, a pendulous rack consisting of a plate having a segmentally-arranged series of studs projecting therefrom that are engaged by said pinion, a shaft on which said plate is pivoted having a reciprocal movement at right angles to said shaft, means thereon for muffling the rattle of said shaft and rack, and a rotary reciprocal shaft operatively connected to and actuated by said rack.

14. A mechanical movement comprising a continuously-revolving shaft, a suitable frame in which said shaft is journaled, which has an inverted-U-shaped extension projecting from one end thereof, the opposing faces of the parallel branches of which have longitudinal guide-grooves therein, a pendulous rack, a shaft on which said rack is pivoted having its ends extended into said guide-grooves and reciprocal therein at right angles to said continuously-revolving shaft, and a rotary reciprocal shaft operatively connected to and actuated by said rack.

15. A mechanical movement comprising a continuously-revolving shaft, a suitable frame in which said shaft is journaled, which has an inverted-U-shaped extension projecting from one end thereof, the opposing faces of the parallel branches of which have longitudinal guide-grooves therein, a pendulous rack consisting of a plate having a segmentally-arranged series of studs projecting therefrom which are engaged by said continuously-revolving shaft, a shaft on which said plate is pivoted having its ends extended into said guide-grooves and reciprocal therein at right angles to said continuously-revolving shaft, and a rotary reciprocal shaft operatively connected to and actuated by said rack.

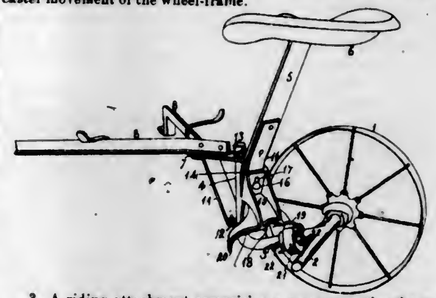
16. A mechanical movement comprising a continuously-revolving shaft, a suitable frame in which said shaft is journaled, which has an inverted-U-shaped extension projecting from one end thereof, the opposing faces of the parallel branches of which have longitudinal guide-grooves therein, a pendulous rack, a shaft on which said rack is pivoted having its ends extend into said guide-grooves and reciprocal therein at right angles to said continuously-revolving shaft, a coil expansion-spring surrounding said shaft between said rack and the end thereof farthest from the rack and a rotary reciprocal shaft operatively connected to and actuated by said rack.

17. A mechanical movement comprising a continuously-revolving shaft, a suitable frame in which said shaft is journaled, which has an inverted-U-shaped extension projecting from one end thereof, the opposing faces of the parallel branches of which have longitudinal guide-grooves therein, a pendulous rack consisting of a plate having a segmetally-arranged series of studs projecting therefrom which are engaged by said continuously-revolving shaft, a shaft on which said plate is pivoted having its ends extend into said guide-grooves and reciprocal therein at right angles to said continuously-revolving shaft, a coil expansion-spring surrounding said shaft between said rack and the end thereof farthest from the rack and a rotary reciprocal shaft operatively connected to and actuated by said rack.

823,652. RIDING ATTACHMENT FOR HARROWS. LEWIS E. WATERMAN, Rockford, Ill., assignor to Emerson Manufacturing Company, Rockford, Ill., a Corporation of Illinois. Filed Jan. 4, 1906. Serial No. 294,640.

Claim.—1. A riding attachment comprising a seat-supporting frame, a wheel-frame adapted to have a caster movement in connection with the seat-supporting frame, and means for retarding the caster movement of the wheel-frame.

2. A riding attachment comprising a seat-supporting frame, a wheel-frame adapted to have a caster movement in connection with the seat-supporting frame, and adjustable means for retarding the caster movement of the wheel-frame.



3. A riding attachment comprising a seat-supporting frame, a wheel-frame adapted to have a caster movement in connection with the seat-supporting frame, and means for retarding and limiting the caster movement of the wheel-frame.

4. A riding attachment comprising a seat-supporting frame, a wheel-frame, a bracket carried by one of the frames and a roller carried by the other frame, said bracket and roller resting in contact.

5. A riding attachment comprising a seat-supporting frame, a wheel-frame, a bracket carried by one of the frames and having a recess in its face, and a roller carried by the other frame, said roller resting in the recess.

6. A riding attachment comprising a seat-supporting frame, a wheel-frame, a bracket carried by one of the frames and having laterally-turned ends, and a roller carried by the other frame, said bracket and roller resting in contact.

7. A riding attachment comprising a seat-supporting frame, a wheel-frame, a bracket carried by the seat-supporting frame, and a roller carried by the wheel-frame upon which the bracket rests.

8. A riding attachment comprising a seat-supporting frame, a wheel-frame, a bracket carried by the seat-supporting frame and having a recess in its under face, and a roller carried by the wheel-frame adapted to be received in the recess.

9. A riding attachment comprising a seat-supporting frame, a wheel-frame, a bracket carried by the seat-supporting frame, having a recess in its under face and provided with two side wings, and a roller carried by the wheel-frame adapted to be received in the recess or ride against the wings.

10. A riding attachment comprising a seat-supporting frame, a wheel-frame, a bracket carried by the seat-supporting frame, having a recess in its under face and provided with two side wings each having a depending end, and a roller carried by the wheel-frame adapted to be received in the recess or ride against the wings, the depending ends of the wings forming stops to the movement of the roller.

11. A riding attachment comprising a seat-supporting frame, a wheel-frame, a bracket carried by the seat-supporting frame and having two laterally-extending wings, and a roller carried by the wheel-frame upon which the wings of the bracket rest.

12. A riding attachment comprising a seat-supporting frame, a wheel-frame, a bracket carried by the seat-supporting frame, and having two laterally-extending wings with downturned ends, and a roller carried by the wheel-frame upon which the wings of the bracket rest.

13. A riding attachment comprising a seat-supporting frame, a wheel-frame, a bracket carried by the seat-supporting frame and made adjustable toward and from the wheel-frame, and a roller carried by the wheel-frame upon which the bracket rests.

14. A riding attachment comprising a seat-supporting frame, a wheel-frame, a bracket carried by the seat-supporting frame, and a two-part roller carried by the wheel-frame upon which the bracket rests.

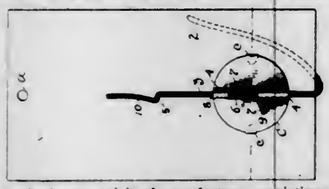
823,653. BINDER-FRAME. WILLIAM J. WATTERS, Chicago, Ill., assignor to Office Supply Company, Chicago, Ill., a Corporation of Illinois. Filed July 28, 1905. Serial No. 271,586.

Claim.—1. A binder-frame comprising a back member and two relatively movable members, a screw-rod mounted on one of said movable members, a guide-rod on the other movable member, travelers on said rods, and parallel cross-pieces pivotally mounted on the back member near the ends of the frame and pivotally connected at their ends to said travelers.

2. A binder-frame comprising a back member and two relatively movable members, a screw-rod mounted within one of said members, a guide-rod mounted within the other movable member, a pair of parallel cross-pieces pivotally mounted on the back member near the ends of the frame, a pair of travelers on the guide-rod pivotally connected to the ends of the cross-pieces, and a pair of screw-threaded travelers on the screw-rod pivotally connected to the other ends of the cross-pieces.



823,654. WIRE-HOOK BILL-FILE. FRANK L. WEST and CONRAD J. KORTZ, Cleveland, Ohio. Filed Feb. 13, 1906. Serial No. 300,842.



Claim.—1. A new article of manufacture, consisting of a flexible board, a bill-hook having a stem with a single right-angled bend between its ends and its upper extremity inclined inwardly from said bend, and a sheet-metal plate fixed to the back of said board and having an inside channel for said stem from top to bottom provided with an open slot between its ends, the said slot having outwardly-projecting parallel side walls from end to end adapted to bear laterally against the bend in said stem and hold the hook firmly in working position.

2. In bill-files, a flexible board, a metallic plate having ears integral therewith oppositely at its edge engaged through said board and locked thereon and provided with a vertical channel inside midway between said ears, said channel having an open slot with outwardly-projecting parallel walls at its sides, in combination with a bill-hook in said channel having a single right-angled bend adapted to be engaged on its sides by said walls to prevent lateral play of said hook, and the said bend forming a shoulder adapted to seat upon the lower edge of said slot.

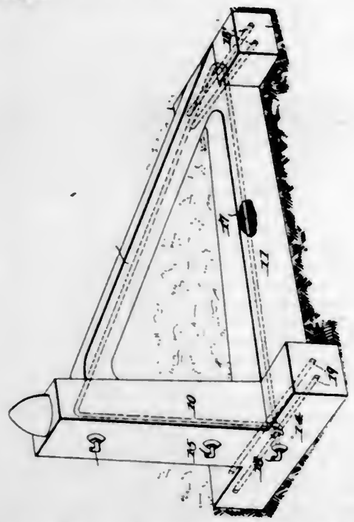
3. A bill-file having a flexible board, a sheet-metal plate fixed to said board at its edge and provided with a struck-up channel having an open-walled slot between its ends and an outwardly-flared lip at the entrance to said channel, in combination with a bill-hook having a single right-angled bend in its stem adapted to be drawn into said walled slot beneath said flared lip, and the upper portion of said stem inclined from said bend inward substantially into alinement with the body of the stem.

823,655. FENCE-POST. JOSEPH W. WESTLAKE, Marysville, Ohio. Filed Oct. 6, 1905. Serial No. 281,692.

Claim.—1. A fence-post comprising an elongated base, provided with oppositely-disposed cross-heads, a standard secured to the base at a point intermediate one of the cross-heads, and a diagonal brace spaced from the base and connecting the free end of the standard and the opposite cross-head.

2. A plastic fence-post comprising a horizontally-disposed base having a cross-head at each end thereof and extending laterally beyond the general longitudinal plane of the base, a standard secured to the base at a point intermediate one of the cross-heads, and an integral brace spaced from the base and connecting the free end of the standard and the intermediate portion of the opposite cross-head.

3. A plastic fence-post comprising a horizontally-disposed base having integral cross-heads at opposite ends thereof and extending laterally beyond the general longitudinal plane of the base, an integral standard extending vertically from the base at a point intermediate one of the cross-heads, an integral diagonally-disposed brace spaced from the base and connecting the free end of the standard and intermediate portion of the opposite cross-head, a continuous reinforcing-bar embedded in the base, standard and diagonal brace, and bars extending longitudinally of the cross-heads and engaging the reinforcing-bar.



4. A plastic fence-post comprising a horizontally-disposed base having integral cross-heads at opposite ends thereof and extending laterally beyond the general longitudinal plane of the base, a standard secured to the base at a point intermediate one of the cross-heads, a diagonal brace spaced from the base and connecting the free end of the standard and the intermediate portion of the opposite cross-head, a triangular-shaped reinforcing-bar embedded in the base, standard and brace and having one end thereof extending beyond the adjacent cross-head to form an anchor-engaging hook, and bars extending longitudinally of the cross-heads and engaging the reinforcing-bar.

823,656. SASH-LOCK. DAVID WILKIE, Battle Creek, Mich. Filed Mar. 14, 1905. Serial No. 249,979.



Claim.—1. A sash-lock comprising a casing having an inner shell with a bottom and two sides, and an outer shell having a top, two sides and an end, the latter adapted to inclose the former, the two being pivotally hinged at the rear end sides, the inner of said shells adapted to be screwed to the top of a lower window-sash, a rack having apertures in its face side thereof, screwed near the lower end of an upper sash, a plunger-bolt operative within said casing adapted to engage the apertures within said rack, means for causing said plunger-bolt to engage said rack when said casing is closed, and a lock to secure said casing when closed, substantially as, and for the purpose set forth.

2. A sash-lock comprising a casing having an inner shell with a bottom and two sides, and an outer shell having a top, two sides and an end, the latter adapted to inclose the former, the two being pivotally hinged at the rear end sides, the inner of said shells being screwed to the top of a lower window-sash, a rack having apertures screwed near the lower end of an upper sash, a dog having jaws slidably adapted to engage said rack operative from within said inner shell, a plunger-bolt operative within said dog adapted to engage in the apertures within said rack, means for causing said dog and plunger-bolt to engage said rack when said casing is closed, and a lock to secure said casing when closed, substantially as, and for the purpose set forth.

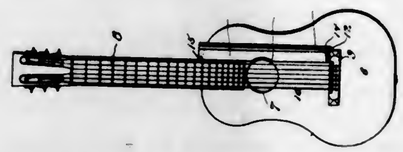
3. A sash-lock comprising a casing having an inner shell with a bottom and two sides, and an outer shell having a top, two sides and an end, the latter adapted to inclose the former, the two being pivotally hinged at the rear end sides, the inner of said shells being adapted to be secured to the top of a lower window-sash, a rack having apertures screwed near the lower end of an upper sash, a dog having jaws slidably adapted to engage said rack operative from within said inner shell, a plunger-bolt operative within said dog adapted to engage said apertures, said plunger-bolt having a beveled shoulder, and said dog having an inwardly-beveled shoulder, means on said outer shell to engage the beveled surfaces of said plunger-bolt and dog, when closed, to cause said dog and plunger-bolt to engage said rack, and a lock to secure said casing when closed, substantially as, and for the purpose set forth.

4. A sash-lock comprising a casing having an inner shell with a bottom and two sides, and an outer shell having a top, two sides and an end, the latter adapted to inclose the former, the two being pivotally hinged at the rear end sides, the inner of said shells being adapted to be secured to the top of a lower window-sash, a wedge-shaped rack having apertures secured to the upper sash near the bottom thereof, a dog having double jaws and an inwardly-beveled rear extremity slidably adapted to engage said rack, a plunger-bolt having a rearwardly-beveled extremity operative within said dog between the jaws thereof adapted to engage in said apertures, a tapering rib operative from the outer shell adapted to contact with the beveled extremities of said dog and plunger-bolt when the casing is closed and cause said dog and plunger-bolt to engage said rack, means to retract said plunger-bolt, and a lock secured within the outer casing adapted to engage with the inner casing to secure the same when closed, substantially as, and for the purpose set forth.

5. A sash-lock comprising a casing having an inner shell with a bottom with two sides, and an outer shell having a top, two sides and an end, the latter adapted to inclose the former, the two being pivotally hinged at the rear end sides, the inner of said shells being secured to the top of a lower window-sash, a wedge-shaped rack having apertures therein and adapted to be secured to an upper sash near the bottom thereof, a dog having double jaws and an inwardly-beveled rear extremity slidably adapted to engage said rack, a plunger-bolt having a rearwardly-beveled rear extremity operative within said dog between the jaws thereof adapted to engage in said apertures, a tapering rib operative from sad outer shell adapted to engage between the bevels of said plunger-bolt and dog when said casing is closed, to cause said dog and plunger-bolt to engage said rack, means for retracting said plunger-bolt, means for limiting the travel of said dog, and a lock to retain said casing when closed, substantially as, and for the purpose set forth.

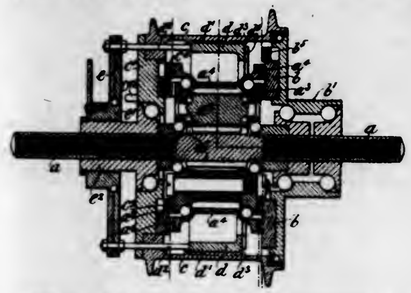
6. A sash-lock comprising a casing having an inner shell with a bottom and two sides, and an outer shell having a top, two sides and an end, the latter adapted to inclose the former, the two being pivotally hinged at the rear end sides, the inner of said shells being adapted to be secured to the top of a lower window-sash, a wedge-shaped rack, having apertures screwed to the upper sash, terminating at the bottom thereof, a dog having jaws slidably adapted to engage said rack, a plunger-bolt operative within said dog between the jaws thereof adapted to engage said apertures, said plunger-bolt having a rearward beveled extremity, said dog having a rib beveled toward the bevel of said plunger-bolt, a tapering rib operative from said outer casing adapted to engage between the bevel of said plunger-bolt and said dog, respectively, when said casing is closed to cause the dog and plunger-bolt to engage said rack, means for retracting said plunger-bolt, the body of said dog slidably adapted to operate within the inner casing, the pivots of said hinges projecting inwardly, shoulders formed on said dog adapted to abut against said pivots to limit its movement outward, and a lock within the outer end of the outer casing adapted to engage with the inner casing to secure the same when closed, substantially as, and for the purpose set forth and described.

823,657. ATTACHMENT FOR GUITARS. HOUSTON M. WILLIS, Prairieville, Ala. Filed Nov. 20, 1905. Serial No. 288,189.



Claim.—The combination with a guitar, of a strip secured to the sounding-board and extending from the bridge to the neck, the outer longitudinal edge of the strip being formed with an upturned flange.

823,658. VARIABLE-SPEED GEAR. REGINALD W. WILSON and FRANCIS G. D. JOHNSTON, Newcastle-upon-Tyne, England. Filed Dec. 9, 1905. Serial No. 291,055.



Claim.—1. In a variable-speed gear, the combination of a driving member, an epicyclic gear, a driven member, means for connecting and disconnecting the driving and driven members to and from the epicyclic gear, and reverse means for directly connecting the driving and driven members, substantially as described.

2. In a variable-speed gear, the combination of a driving member, an epicyclic gear, a driven member, means for connecting and disconnecting the driving and driven members to and from the epicyclic gear, a pawl on the driving member, and a ring of teeth on the driven member capable of engaging the pawl, substantially as described.

3. In a variable-speed gear, the combination of a driving member, two pawls upon its face, an epicyclic gear, there being ratchet-teeth upon both faces of the planet-cage and also upon both faces of the ring engaging the planets, a driven member, two pawls upon its face, and means for withdrawing either one, two or three pawls from the paths of the ratchet-teeth, substantially as described.

4. In a variable-speed gear, the combination of a driving member, two forward pawls and one reverse-pawl upon its face, an epicyclic gear, there being ratchet-teeth upon both faces of the planet-cage and also upon both faces of the ring engaging the planets, a driven member, two pawls upon its face, means for withdrawing either one, two or three pawls from the paths of the ratchet-teeth, a ring of teeth carried by the driven member, and means for sliding this ring into engagement with the reverse-pawl, substantially as described.

5. In a variable-speed gear, the combination of a driving member, an epicyclic gear, there being ratchet-teeth upon both faces of the planet-cage and also upon both faces of the ring engaging the planets, three pawls on the driving member, the first engaging teeth on the cage, the second engaging teeth on the ring, and the third a reverse-pawl, a driven member, two pawls upon it, a ring carried by the driven member and adapted to withdraw the first-mentioned pawl, teeth upon the ring adapted to engage the reverse-pawl, and means for moving the ring longitudinally, substantially as described.

6. In a variable-speed gear, the combination of a driving member, an epicyclic gear, there being ratchet-teeth upon both faces of the planet-cage and also upon both faces of the ring engaging the planets, three pawls on the driving member, the first engaging teeth on the cage, the second engaging teeth on the ring, and the third a reverse-pawl, a driven member, two pawls upon it, a ring carried by the driven member and adapted to withdraw the first-mentioned pawl, there being teeth upon the ring adapted to engage the reverse-pawl, a disk connected to the ring and adapted to withdraw the two pawls on the driven member, and means for moving the disk longitudinally, substantially as described.

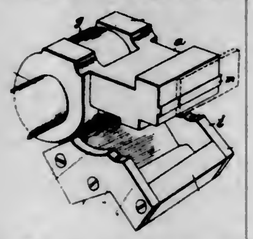
823,659. SASH HOLDER AND FASTENER. GEORGE H. ARRIDGE, Hartsfield, Ga. Filed Oct. 2, 1905. Serial No. 281,042.



Claim.—In a sash-fastener, the combination of a window-frame, and a sash movable therein, of a pawl or dog 4 pivotally mounted near one end on the window-frame, said dog being provided at one end with a hook facing the pivot and at its other end with an angular notch slightly offset from the pivot and facing away from

the same, the edges of the said notch providing biting surfaces and the notch and hook also facing in opposite directions with respect to the median line of the dog, the hook at one end of the dog being designed to take over the upper edge of the window-sash to prevent the same from being raised, the angular notch being designed to receive the lower edge of said sash whereby to sustain the sash in a raised position and the edges of the notch providing means for biting into a side of the sash whereby to sustain the latter in an intermediate position, as and for the purpose set forth.

823,660. CASTING-BOX FOR LINOTYPE-MACHINES. JAMES B. ALLEN, Detroit, Mich. Filed Aug. 18, 1903. Serial No. 169,874.



Claim.—1. The combination with a series of alined matrices, of a reciprocating nozzle for the molten metal and an oscillating intermediate mold formed in two sections, with a transverse space between said sections forming the mold said sections being movable in relation to each other.

2. The combination with a series of alined matrices, of a reciprocating nozzle, and an intermediate mold formed in two sections, one section fitting in the other section, the inner section being shorter than the outer section so as to form a space between the ends of the sections said sections being movable in relation to each other and means for temporarily locking the sections together.

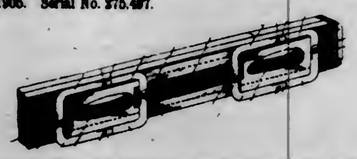
3. The combination with a series of alined matrices, a reciprocating nozzle for the metal, and an oscillating intermediate mold formed in sections said sections being movable in relation to each other.

4. The combination with a series of alined matrices, a reciprocating nozzle for the metal and an oscillating intermediate mold formed in sections said sections having a transverse slot between their ends and being movable in relation to each other.

5. The combination with a series of alined matrices, a reciprocating nozzle, and an intermediate mold, said mold consisting of two sections one section being provided with side plates supporting a top piece h and the other section fitting in said section so as to leave a space between its ends and the top piece h of the other section said sections being movable in relation to each other and means for temporarily locking the sections together.

6. The combination with a series of alined matrices, of a reciprocating nozzle for the molten metal, an oscillating shaft, an intermediate mold formed in sections carried by said shaft, one of said sections being rigidly secured to the shaft and the other section being loosely connected thereto so that one section has movement in relation to the other, and means for locking the sections together.

823,661. TRACE. JAMES ANDERSON, Harrodsburg, Ky. Filed Aug. 23, 1905. Serial No. 275,497.



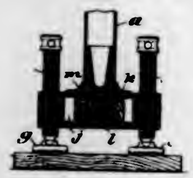
Claim.—1. The combination with a trace having an eye; of a protector surrounding the said eye; the said protector comprising sections flexibly connected together and to the trace.

2. The combination with a trace having an eye; of a protector surrounding the eye and comprising sections having their meeting ends lapped, and transverse pivot-pins extending through the lapped ends of the sections, and also through the trace and secured to the latter.

3. The combination with a trace having eyes; of protectors surrounding the eyes and respectively comprising sections flexibly connected together and to the trace, and a link interposed between and pivotally connected to the adjacent ends of the protectors.

4. The combination with a trace having eyes; of protectors surrounding the eyes and respectively comprising sections having their meeting ends lapped and transverse pivot-pins extending through the lapped ends of the sections and also through the trace and secured to the latter, and a link interposed between the protectors and pivotally connected to the same by two of the said pins.

823,662. SUPPORT FOR DRILLS OR THE LIKE. ALBERT BALL, Claremont, N. H., assignor to Sullivan Machinery Company, Claremont, N. H., a Corporation of New Hampshire. Filed Dec. 16, 1904. Serial No. 237,111.



Claim.—1. A double-screw column for a drilling-machine provided with a base having a cavity therein, a block resting upon the bottom of said cavity and a foot secured to said column said foot resting upon said block and shaped to conform to the walls of said cavity.

2. In an apparatus of the class described, the combination with a column having drill-supporting means thereon, of a base provided with a cavity, and cushioning means within said cavity extending to near the top thereof, and a foot on said column adapted to engage said cushioning means and constructed to interlock with said base to prevent said column from turning with relation to the base.

3. In an apparatus of the class described, the combination with a column having drill-supporting means thereon, of a base, cushioning means between said base and said column, and means positively to lock the parts to prevent the column from turning with relation to the base.

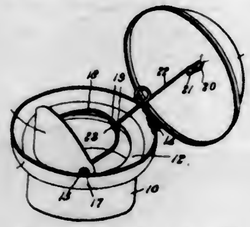
4. In an apparatus of the class described, the combination with a column, of a base upon which said column is mounted cushioning means between said column and said base, and means positively to prevent said column from turning, said column being free for withdrawal from said base.

5. In an apparatus of the class described the combination with a column and base, a cushioning-block between said base and said column, said column being free for withdrawal from the block and interlocking surfaces between said column and said block, thereby positively to prevent the former from turning.

6. In an apparatus of the class described the combination with a column of a pair of adjusting-screws therefor, a base between said screws and upon which said column is supported, and a cushioning-block loosely interposed between said column and said base.

7. In an apparatus of the class described the combination with a column member having drill-supporting means thereon of a base member upon which said column member is supported, one of said members having a recess, and cushioning means within said recess and between said column and base members.

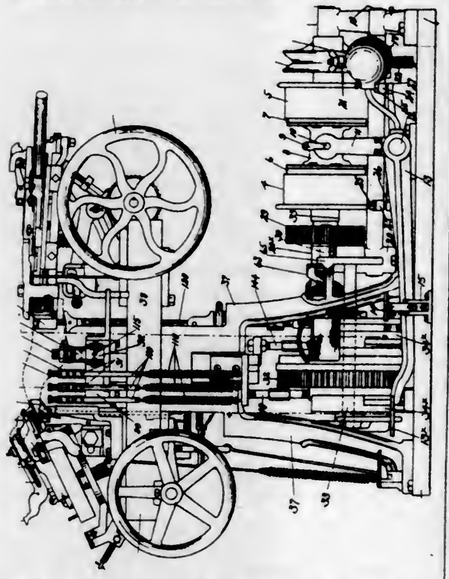
823,663. SYRUP-PITCHER. MCDUFFIE BRADFORD, Nocona, Tex. Filed Nov. 6, 1905. Serial No. 286,083.



Claim.—1. In a syrup-pitcher a neck member having an inwardly-extending flange, a lid hinged to said neck and provided with an eye depending from its interior, spaced apertured ears extending from said flange, a resilient lip disposed between said ears and bearing upon said flange and with laterally-extending pintles movably engaging said ears a bail connected to said lip, and an arm movably engaging said bail at one end and with an open hook at the other end for detachably engaging the eye within said lid.

2. In a syrup-pitcher, a neck member having an inwardly-extending flange, a lid hinged to said neck and provided with an eye-loop, spaced ears transversely apertured and extending from said flange, a resilient lip disposed between said ears and bearing upon said flange, a resilient bail having outturned ends extending through said lip and forming pintles for passing through said ears, and an arm movably engaging said bail at one end and terminating in a hook at the other end for detachable engagement with loop-eye of said lid.

823,664. LASTING-MACHINE. MATTHIAS BROCK, Boston, Mass., assignor to United Shoe Machinery Company, Paterson, N. J., a Corporation of New Jersey. Filed June 13, 1903. Serial No. 161,839.



Claim.—1. In a machine of the class described, straps for encircling the last and folding the edges of the upper over the last upon its opposite sides, in combination with means for automatically causing the straps to act uniformly on the shoe at the two sides of the last.

2. In a machine of the class described, side-lasting mechanism comprising girth-fingers, girth-straps, and means for actuating said girth-fingers to cause the girth-straps to encircle the last, said actuating mechanism having provision for automatically causing the girth-straps to act uniformly on the shoe at the opposite sides of the last.

3. In a machine for lasting shoes, side-lasting mechanisms arranged at opposite sides of the machine, each mechanism comprising girth-straps for lasting the fore part and girth-straps for lasting the shank, in combination with actuating mechanism for causing the two side-lasting mechanisms to act uniformly upon the opposite sides of the shoe, said actuating mechanism comprising independent operating means for the fore-part girth-straps and the shank girth-straps arranged to permit said girth-straps to position themselves relatively according to the contour of the side of the last.

4. In a machine of the class described, the combination with side-lasting devices for operating at the sides of a shoe, of actuating mechanism therefor comprising a reciprocating slide-plate, a cam-plate pivotally mounted on said slide-plate, and means connected with the side-lasting devices and controlled by said cam-plate for moving the side-lasting devices positively toward and from the shoe.

5. In a machine of the class described, the combination with side-lasting mechanisms for operating upon opposite sides of a shoe, of actuating mechanism therefor comprising a reciprocating slide-plate, a cam-plate pivotally mounted on said slide-plate and provided with oppositely-inclined slots, levers having rolls standing in said slots and connected at their opposite ends with the side-lasting mechanisms, whereby as the slide-plate is moved in one direction the levers will force the side-lasting mechanisms toward each other until one of said mechanisms contacts with the edge of the shoe, and then said cam-plate will turn on its pivot until the other side-lasting mechanism reaches the edge of the shoe toward which it is moving, after which said two lasting mechanisms will be moved together for equal distances over the bottom of the shoe.

6. In a machine of the class described, the combination with side-lasting devices for operating upon the sides of a shoe, of actuating mechanism therefor comprising a reciprocating slide-plate, a cam-plate provided with oppositely-inclined slots, levers controlled by said slots and connected with said lasting mechanisms for moving said mechanisms positively back and forth, and a movable connection between the slide-plate and the cam-plate whereby the side-lasting mechanisms may be moved together until one of them contacts with the edge of the last and is brought to rest and the other side-lasting mechanism will continue to move until it also contacts with the edge of the last, after which both mechanisms will be actuated together to lay the upper over the inner sole.

7. In a machine of the class described, the combination with side-lasting mechanisms for operating upon opposite sides of a shoe, of actuating mechanism therefor comprising a vertically-movable cross-head supporting said lasting mechanisms, means to actuate the cross-head, a slide-plate movably mounted in the cross-head, a cam-plate carried by the slide-plate and provided with guiding means, levers controlled by said guiding means and connected to said lasting mechanisms for moving them horizontally, means for actuating the said plate independently of the cross-head, and a pivotal connection between the cam-plate and the slide-plate to permit a relative movement between said plates for equalizing the pressure applied to the two side-lasting mechanisms.

8. In a machine of the class described, the combination with side-lasting mechanisms for operating upon opposite sides of a shoe, each lasting mechanism comprising independently-movable lasting devices, of actuating mechanism comprising a plurality of cam-plates and means connected with said lasting devices and controlled by the cam-plates for operating the lasting devices, said cam-plates being relatively movable whereby the lasting devices are independently actuated and permitted to have relative movement.

9. In a machine of the class described, the combination with side-lasting mechanisms for operating upon opposite sides of a shoe, each lasting mechanism comprising independently-movable lasting devices arranged along the same side of the shoe, of actuating mechanism comprising a plurality of cam-plates and means connected with said lasting devices and controlled by the cam-plates for operating the lasting devices, said cam-plates being relatively movable whereby the lasting devices on the same side of the shoe are independently actuated and permitted to have relative movement.

10. In a machine of the class described, side-lasting devices for operating upon the opposite sides of the fore part of a shoe, actuating mechanism therefor comprising a reciprocating slide-plate, a cam-plate pivotally mounted on said slide-plate, and means connected with said side-lasting mechanisms and controlled by said cam-plate for moving the side-lasting devices toward and from the fore part of the shoe, in combination with lasting devices for operating on the opposite sides of the shank of the shoe, and actuating mechanism therefor comprising a cam-plate pivotally mounted on said slide-plate, and means connected with said shank-lasting mechanisms and controlled by said cam-plate for moving said mechanisms toward and from the shank of the shoe.

11. In a machine of the class described, the combination with side-lasting devices for operating on opposite sides of the shoe, of actuating mechanism therefor, comprising a slide-plate, a cam-plate, means connected with said lasting mechanisms and controlled by said cam-plate for operating the lasting mechanisms to lay the upper over the inner sole when the slide-plate is moved in one direction, said cam-plate being movably connected to the slide-plate whereby the side-lasting mechanisms may be operated through different distances, and means for restoring said cam-plate to normal central position when the slide-plate is moved in the reverse direction.

12. In a machine of the class described, side-lasting mechanism comprising a finger-carrier, a girth-finger, and a pivotal connection between the carrier and the finger, said parts being constructed and arranged to permit longitudinal movement of the girth-finger relatively to its carrier during the normal operation of the machine.

13. In a machine of the class described, side-lasting mechanisms for operating upon opposite sides of a shoe, said mechanisms comprising girth-fingers, girth-straps attached thereto, carriers pivotally supporting said girth-fingers, said fingers and carriers being constructed and arranged to permit longitudinal movement of the girth-fingers relatively to the carriers, and means for actuating said car-

riers to move the girth-fingers yieldingly toward the median line of the machine, said mechanisms having provision for allowing the girth-fingers to be arrested by excessive resistance while the actuating means and carriers continue to move.

14. In a machine of the class described, side-lasting mechanisms for operating upon opposite sides of a shoe, said mechanisms comprising opposing girth-fingers, carriers upon which the girth-fingers are mounted for longitudinal movement during the operation of the machine, a girth-strap connecting said opposing girth-fingers, and yielding means acting on said girth-strap for drawing said girth-fingers normally toward each other.

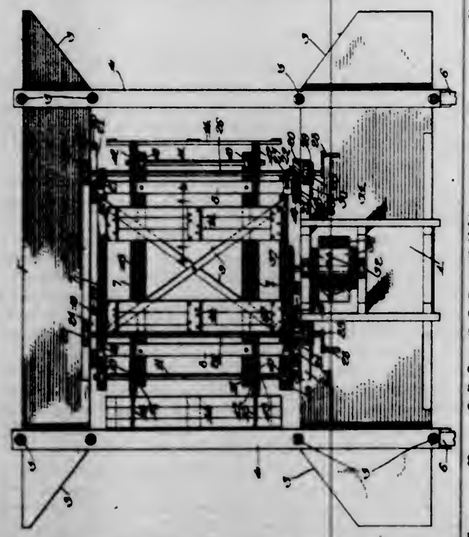
15. In a machine of the class described, side-lasting mechanism comprising a finger-carrier, a girth-finger, a pivotal connection between said finger and finger-carrier, said parts being constructed and arranged to permit longitudinal movement of the finger relatively to the carrier during the operation of the machine, and yielding means for holding the girth-finger normally at one limit of its longitudinal movement.

16. In a machine of the class described, side-lasting mechanism comprising a finger-carrier provided with a longitudinal guideway, a finger mounted in said guideway, a pivotal connection between the finger and the finger-carrier, said carrier and finger being constructed and arranged to permit longitudinal movement of the finger in said guideway during the normal operation of the machine.

17. In a machine of the class described, side-lasting mechanisms for operating upon opposite sides of a shoe, each of said mechanisms comprising a finger-carrier, a girth-finger longitudinally movable thereon, guiding devices on the girth-finger and the finger-carrier and a girth-strap connected at one end to said girth-finger and threaded through guiding devices on a girth-finger and its carrier of the opposite side-lasting mechanism, yielding means for holding each girth-finger at the innermost limit of its movement, and means for moving said lasting mechanisms vertically with relation to the last for stretching the upper along the sides of the last.

18. In a machine of the class described, side-lasting mechanisms for operating upon opposite sides of a shoe, each of said mechanisms comprising a finger-carrier, a girth-finger longitudinally movable thereon, guiding devices on the girth-finger and the finger-carrier and a girth-strap connected at one end to said girth-finger and threaded through guiding devices on the girth-finger and its carrier of the opposite side-lasting mechanism, and yielding means for holding said girth-strap under tension, said guiding devices being so arranged that the girth-strap holds the opposing girth-fingers at the innermost limit of their movement on their carriers.

823,665. **CURRENT-MOTOR.** CHARLES R. RUFFINGTON, Fort Benton, Mont. Filed July 13, 1905. Serial No. 269,515.



Claim.—1. In a current-motor, a pair of floats spaced and connected to form a sluiceway, pairs of guides supported upon said floats opposite to each other and having correspondingly-curved arcuate grooves, a rectangular frame or carriage having cross-bars vided with rollers guided in said grooves, frames supported upon the floats adjacent to the guides, a pair of shafts or drums journaled upon said frames and extending transversely across the sluiceway, flexible members connecting said drums with the cross-bars of the frame or carriage, means for operating the drums to effect vertical adjustment of the frame or carriage, shafts journaled in the frame or carriage, sprocket-wheels upon said shafts, paddle-carrying chains guided over said sprocket-wheels, a shaft supported for rotation concentric with the arcuate grooves in one pair of guides, and means for transmitting motion to said shaft from one of the motor-shafts journaled in the frame or carriage.

2. In a current-motor, a pair of floats spaced and connected to form a sluiceway, pairs of guides supported upon said floats opposite to each other and having correspondingly-curved arcuate grooves, ribbed rails secured upon the faces of said grooves, a rectangular frame or carriage having cross-bars provided with annularly-grooved rollers guided in the arcuate grooves and engaging the ribbed rails with which said grooves are faced, frames supported upon the floats adjacent to the guides, a pair of shafts or drums journaled upon said frames and extending transversely across the sluiceway, flexible members connecting said drums with the cross-bars of the frame or carriage, means for operating the drums to effect vertical adjustment of the frame or carriage in the arc of a circle, motor-shafts journaled in the carriage, endless chains guided over said shafts and carrying blades or paddles, a shaft supported for rotation concentric with the arcuate grooves in one pair of guides, and means for transmitting motion to said shaft from one of the motor-shafts upon the carriage.

823,666. **WIRE-TIGHTENER.** ISAAC U. CAMPBELL, Erin, Tenn. Filed Nov. 29, 1905. Serial No. 289,684.



Claim.—1. A wire-tightener comprising a handle and a pair of pins carried upon each end of said handle and projecting in opposite directions.

2. A wire-tightener comprising a pair of heads, a handle diagonally disposed between said heads and a pair of pins carried by each of said heads, said pins projecting in opposite directions.

823,667. **PIPE GRAPPLE OR PULLER.** HOLLIS B. CHILDRESS, Granite, Okla. Filed July 7, 1906. Serial No. 265,606.



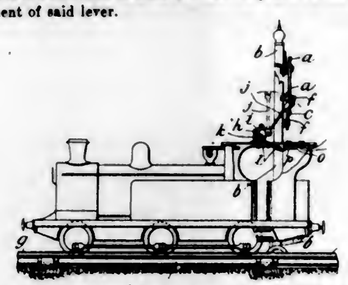
Claim.—1. A grapple comprising a frame, fulcrum-blocks adjustably mounted within the frame, arms pivotally mounted on said fulcrum-blocks, and means whereby the fulcrum-blocks may be relatively adjusted.

2. A grapple comprising a frame provided with an elongated opening, an arm having its pivot-pin adjustably mounted within said opening, a member carried by said pivot-pin, and means engaging said member whereby to adjust the pivot of said arm.

3. In the combination of a frame, grapple-arms having concaved active faces and provided with shoulders, sliding mounts for adjusting the said grapple-arms and adapted to engage their shoulders and prevent the arms from falling too far to the sides.

823,668. **ALARM-SIGNAL ARRANGEMENT FOR USE IN CONNECTION WITH RAILWAYS.** RICHARD W. CLERY, Maryborough, Ireland. Filed Jan. 29, 1906. Serial No. 298,385.

Claim.—1. In an alarm-signal device, the combination with a post and a semaphore-arm connected thereto, of a lever carried by said post and connected with said arm arranged and adapted to be contacted by means carried by a moving vehicle, an alarm mechanism carried by said vehicle and adapted to be set off by the movement of said means, and an electric circuit adapted to be closed by the movement of said lever.

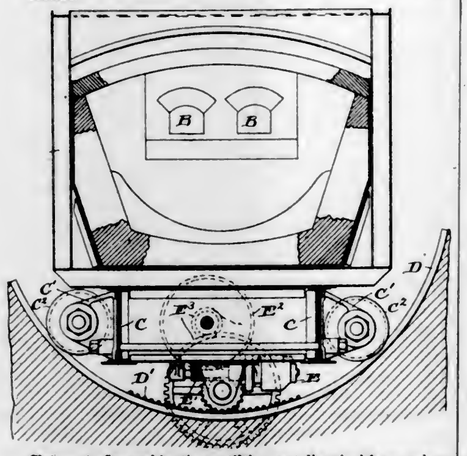


2. In an alarm-signal device, the combination with a post and a semaphore-arm carried thereby, of means carried by said post and connected to said arm, arranged and adapted to be actuated by a moving vehicle and when so actuated to close an electric circuit and to release an alarm mechanism carried by said vehicle.

3. In an alarm-signal device the combination with a signal-post carrying a pivoted semaphore-arm, of a lever pivoted to said post, a rod connecting one end of said lever with the semaphore-arms, means on the lever adapted to close the circuit of an electric alarm such means comprising a contact part on the signal-post and a contact part carried by the lever for engaging therewith, spring-controlled means carried by a moving vehicle for raising said lever, means connected to said spring-controlled means, and an alarm-bell mechanism carried by the moving vehicle and adapted to be controlled by said last-mentioned means.

4. In an alarm-signal device the combination with a signal-post and a semaphore-arm pivoted thereto, of a lever pivoted to said post, a rod connecting one end of said lever with the semaphore-arm, means on the lever adapted to close an electric circuit for sounding a signal, spring-controlled means carried by a moving vehicle for engaging said lever, a further lever connected to said spring-controlled lever and an alarm-bell mechanism carried by the moving vehicle and adapted to be controlled thereby.

823,669. **TILTING FURNACE.** JOHN C. CROMWELL, Cleveland, Ohio, assignor to The Garrett-Cromwell Engineering Company, Cleveland, Ohio, a Corporation of Ohio. Filed Apr. 9, 1906. Serial No. 310,624.



Claim.—1. In combination, a tilting metallurgical furnace having a frame, a curved supporting-trackway for the furnace, each end of the furnace having journaled therein two supports which bear on said trackway.

2. In combination, a furnace adapted to rotate about a given axis having a frame having two supports journaled at each end, a supporting-base having a fixed curved runway upon which said supports bear, and motor mechanism mounted on the furnace and adapted to rotate the same.

3. In combination, a tilting metallurgical furnace having a frame, a curved supporting-trackway for the furnace, each end of the furnace having journaled therein two equalizing-beams which have two rollers journaled thereon and bearing on the trackway.

4. In combination, a tilting furnace, a curved trackway for the furnace, each end of the furnace having supports mounted thereon and riding upon said trackway in such manner as to be independent in their supporting function of the expansion of the furnace.

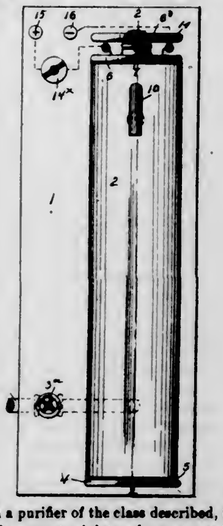
823,670. **TEA STRAINER AND INFUSER.** FRANCIS N. DENISON, Victoria, Canada. Filed Apr. 21, 1905. Serial No. 256,762.



Claim.—1. In a tea infuser and strainer, the combination with the pot and the lid having an opening therein, of a perforated tea-receptacle and a divided stem having a lower portion connected to the receptacle and an upper lifting portion pivotally connected to the lower portion and having lateral resiliency as and for the purpose specified.

2. The combination with the pot having a gauze or similar receptacle having a reinforcing annular bead or edge, of a perforated cover having spring-lips designed to grip such edge and a wire stem secured to the cover and designed to extend through the hole in the lid of the teapot and a wire removing-stem pivotally connected to the top of the aforesaid stem and having a lateral spring or resiliency as and for the purpose specified.

823,671. **ELECTRIC WATER-PURIFIER.** ALBERT E. DIETERICH, Washington, D. C., assignor to E. E. Sager and F. E. Holt. Filed Apr. 10, 1906. Serial No. 310,889.



Claim.—1. In a purifier of the class described, the combination with a casing having a water-inlet and a water-outlet, of a double spiral member mounted within said casing to form double spiral water-passages therein, and means for connecting said double spiral member to the terminals of an electric circuit, substantially as shown and described.

2. In a purifier of the class described, the combination with a casing having a water-inlet and a water-outlet, of a double spiral member mounted within said casing to form double spiral water-passages therein, means for connecting said double spiral member to

the terminals of an electric circuit, and means for rotating said double spiral member, substantially as shown and described.

3. An apparatus of the class described, comprising in combination with a casing having a water-receiving chamber at one end and a water-outlet at the other end, of a rod mounted in said casing, a pair of electrodes arranged spirally around said rod and carried thereby, to form spiral water-passages between the electrodes from one end of the casing to the other, and means for connecting said electrodes to an electric circuit.

4. An apparatus of the class described, comprising in combination with a tubular casing, of removable closure-traps for each end of said casing, said caps having bearing portions, a rod held in said bearing portions, a pair of spiral electrodes carried by said rod, means exterior of the casing for turning said rod, means for connecting said electrodes with the electric circuit, said casing having a water-inlet at the bottom and a water-outlet at the top and having a collection-chamber at the bottom to receive deposited sediment, substantially as shown and described.

5. An apparatus of the class described, comprising a tubular casing having a water-inlet at one end and a water-outlet at the other end, a rod centrally mounted within said casing, a pair of spiral electrodes carried by said rod and spaced a gradual increasing distance apart from one end to the other end of the rod, said spiral electrodes forming a spiral water-passage from one end of the casing to the other, and means for connecting said electrodes to an electric circuit.

6. An apparatus of the class described, comprising a tubular casing having a water-inlet at one end and a water-outlet at the other end, a rod centrally mounted within said casing, a pair of spiral electrodes carried by said rod and spaced a gradual increasing distance apart from one another from one end to the other end of the rod, said spiral electrodes forming a spiral water-passage from one end of the casing to the other, means for connecting said electrodes to an electric circuit, and means for rotating said rod and said electrodes, substantially as shown and described.

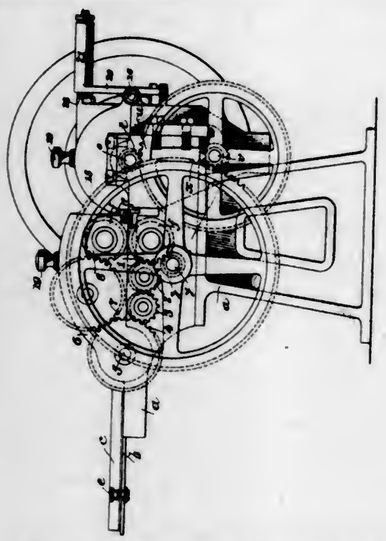
7. An apparatus of the class described, comprising a tubular casing having a water-inlet at one end and a water-outlet at the other end, a rod centrally mounted within said casing, a pair of spiral electrodes carried by said rod and spaced a gradual increasing distance apart from one another from one end to the other end of the rod, said spiral electrodes forming a spiral water-passage from one end of the casing to the other, means for connecting said electrodes to an electric circuit, and means for rotating said rod and said electrodes to discharge sediment collected on the electrodes, said casing having a chamber below said electrodes to receive said discharged sediment, substantially as shown and described.

8. A purifier of the class described, comprising an open-ended cylindrical casing, closure-plugs for each end of said casing, said closure-plugs being formed with bearing portions, a rod held in said bearing portions between said closure-plugs, a pair of spiral electrodes held on said rod and in engagement with the walls of said casing to form spiral water-passages from one end of the casing to the other, said casing extending beyond said electrodes to form a collection-chamber, a water-inlet for said casing at one end thereof, and a water-outlet for said casing at the other end thereof, a pair of contact-plates carried by one of said closure members, contact-brushes carried by said electrodes for engaging said contact-plates, and means for connecting said contact-plates with an electric circuit.

9. A purifier of the class described, comprising an open-ended cylindrical casing, closure-plugs for each end of said casing, said closure-plugs being formed with bearing portions, a rod held in said bearing portions between said closure-plugs, a pair of spiral electrodes held on said rod and in engagement with the walls of said casing to form spiral water-passages from one end of the casing to the other, said casing extending beyond said electrodes to form a collection-chamber, a water-inlet for said casing at one end thereof, and a water-outlet for said casing at the other end thereof, a pair of contact-plates carried by one of said closure members, contact-brushes carried by said electrodes for engaging said contact-plates, means for connecting said contact-plates with an electric circuit, said rod having a portion projecting through one of said closure-plugs, and a hand-wheel connected to said extended portion of the rod for turning the rod and the electrodes, substantially as shown and described.

823,672. MACHINE FOR MAKING GRAINS OR FLAKES OF POWDER. CHARLES DOBBS and JOHN R. PITMAN, Haskell, N. J., assignors to The E. I. Du Pont de Nemours Powder Company, Wilmington, Del., a Corporation of New Jersey. Filed June 20, 1905. Serial No. 267,511.

Claim.—1. In a machine for forming powder grains or flakes, the combination, with feed-rolls of a plurality of rotating cutters, the cutting edges of pairs of cutters being staggered, with respect to each other, a non-rotatable cutter coacting therewith and means to reciprocate said non-rotatable cutter.



2. In a machine for forming powder grains or flakes, the combination, with feed-rolls of a plurality of rotating cutters, the cutting edges of pairs of cutters being staggered, with respect to each other, a non-rotatable cutter coacting therewith and means to give a relative movement longitudinally of the rolls between the rotating and non-rotating cutters.

3. In a machine for forming powder grains or flakes, the combination, with feed-rolls of a plurality of rotating cutters, the cutting edges of each cutter being in the form of a semipolygon and the cutting edges of pairs of cutters being staggered, with respect to each other, a non-rotatable cutter, the cutting edges being in the form of a semipolygon and means to reciprocate said non-rotatable cutter.

4. In a machine for forming powder grains or flakes, the combination, with feed-rolls of a plurality of rotating cutters, the cutting edges of each cutter being in the form of a semipolygon and the cutting edges of pairs of cutters being staggered, with respect to each other, a non-rotatable cutter, the cutting edges being in the form of a semipolygon and means to give a relative movement longitudinally of the rolls between the rotating and non-rotating cutters.

5. In a machine for forming powder grains or flakes, the combination, with feed-rolls of a plurality of rotating cutters, the cutting edges of pairs of cutters being staggered with respect to each other, a non-rotatable cutter coacting therewith and means to move the non-rotatable cutter with respect to the rotating cutters.

6. In a machine for forming powder grains or flakes, the combination, with feed-rolls of a plurality of rotating cutters, the cutting edges of pairs of cutters being staggered with respect to each other, a non-rotatable cutter coacting therewith and means to move the non-rotating cutter longitudinally of the rolls.

7. In a machine for forming powder grains or flakes, the combination, with feed-rolls of a plurality of rotating cutters, the cutting edges of each cutter being in the form of a semipolygon and the cutting edges of pairs of cutters being staggered, with respect to each other, a non-rotatable cutter, the cutting edges being in the form of a semipolygon and means to move the non-rotating cutter with respect to the rotating cutters.

8. In a machine for forming powder grains or flakes, the combination, with feed-rolls of a plurality of rotating cutters, the cutting edges of each cutter being in the form of a semipolygon and the cutting edges of pairs of cutters being staggered, with respect to each other, a non-rotatable cutter, the cutting edges being in the form of a semipolygon and means to move the non-rotating cutter longitudinally of the rolls.

9. In a machine for forming powder grains or flakes the combination, with feed-rolls of a plurality of rotating cutters, the cutting edges of pairs of cutters being staggered with respect to each other, a non-rotatable cutter coacting therewith and means to move the non-rotatable cutter with respect to the rotating cutters, between the passage of successive rotating cutters.

10. In a machine for forming powder grains or flakes, the combination, with feed-rolls of a plurality of rotating cutters, the cutting edges of pairs of cutters being staggered with respect to each other, a non-rotatable cutter coacting therewith, and means to move the non-rotating cutter longitudinally of the rolls between the passage of successive rotating cutters.

11. In a machine for forming powder grains or flakes, the combination, with feed-rolls of a plurality of rotating cutters, the cutting edges of each cutter being in the form of a semipolygon and the cutting edges of pairs of cutters being staggered, with respect to each other, a non-rotatable cutter, the cutting edges being in the form of a semipolygon and means to move the non-rotating cutter with respect to the rotating cutters between the passage of successive rotating cutters.

12. In a machine for forming powder grains or flakes, the combination, with feed-rolls of a plurality of rotating cutters, the cutting edges of each cutter being in the form of a semipolygon and the cutting edges of pairs of cutters being staggered, with respect to each other, a non-rotatable cutter, the cutting edges being in the form of a semipolygon and means to move the non-rotating cutters longitudinally of the rolls, between the passage of successive rotating cutters.

13. In a machine for forming powder grains or flakes, in combination, a plurality of cutters in pairs, the cutting edges of such pairs being staggered with reference to each other and means to rotate said cutters.

14. In a machine for forming powder grains or flakes, in combination, a plurality of cutters in pairs, the cutting edges of such pairs being in the form of a semipolygon and staggered with reference to each other.

15. In a machine for forming powder grains or flakes, in combination, a plurality of cutters in pairs, the cutting edges of such pairs being staggered with reference to each other, means to rotate said cutters, and a non-rotatable cutter coacting therewith and means to produce a relative movement between the rotating and non-rotating cutters.

16. In a machine for forming powder grains or flakes in combination, a plurality of cutters in pairs, the cutting edges of such pairs being in the form of a semipolygon and staggered with reference to each other, and a non-rotatable cutter coacting therewith and means to produce a relative movement between the rotating and the non-rotating cutters.

17. In a machine for forming powder grains or flakes, in combination a plurality of cutters in pairs, the cutting edges of such pairs being staggered with reference to each other, means to rotate said cutters, and a non-rotatable cutter coacting therewith and means to produce a relative movement between the rotating cutters and non-rotating cutters, between the passage of successive rotating cutters.

18. In a machine for forming powder grains or flakes, in combination, a plurality of cutters in pairs, the cutting edges of such pairs being in the form of a semipolygon and staggered with reference to each other, and a non-rotatable cutter coacting therewith and means to produce a relative movement between the rotating cutters and non-rotating cutter, between the passage of successive rotating cutters.

19. In a machine for forming powder grains or flakes, in combination, a pair of feed-rolls, a source of driving-power and gear connection between said driving power and said rolls for driving the same, a hinged cover for said rolls, one of said gears being supported in the axis of said hinge.

20. In a machine for forming powder grains or flakes, in combination, with the feeding-rolls and revolving cutters, of a hinged cover for the rolls, and a hinged cover for the cutters, one cover being hinged so as to overlie the other and a locking device for the overlying cover.

823,673. COMPOSITION FOR PREVENTING SET-OFFS IN PRINTING. GEORGE S. DUNCAN and GEORGE H. POTTS, Edinburgh, Scotland, assignors to American Offset Company, New York, N. Y., a Corporation of New York. Filed May 8, 1905. Serial No. 259,374.

Claim.—1. A composition for preventing "set-off" comprising a non-volatile oil and a resinous substance.

2. A composition for preventing "set-off" comprising olive-oil and a resinous liquid.

3. A composition for preventing "set-off" comprising a non-volatile oil and turpentine.

4. A composition for preventing "set-off" comprising an oil, a resinous substance, soap and a solvent of soap.

5. A composition for preventing "set-off" comprising an oil, a resinous substance, soap and a volatile solvent.

6. A composition for preventing "set-off" comprising an oil, a resinous liquid, soap and naphtha.

7. A composition for preventing "set-off" comprising a non-volatile oil, turpentine, soap and a volatile solvent.

8. A composition for preventing "set-off" comprising a non-volatile oil, turpentine, soap and a volatile mineral solvent.

9. A composition for preventing "set-off" comprising a non-volatile oil, a resinous substance, soap, a solvent of soap and an oxidizing-oil.

10. A composition for preventing "set-off" comprising a non-volatile oil, a resinous liquid, soap, a solvent of soap and linseed-oil.

11. A composition for preventing "set-off" comprising a non-volatile oil, turpentine, soap, a volatile mineral solvent and boiled linseed-oil.

12. A composition for preventing "set-off" comprising a non-drying oil, a resinous substance, soap, a volatile solvent, an oxidizing-oil and a stable lubricating-oil.

13. A composition for preventing "set-off" comprising a non-drying oil, a resinous substance, soap, a volatile solvent, an oxidizing-oil and neat's-foot oil.

14. A composition for preventing "set-off" comprising a non-volatile oil, turpentine, soap, a volatile mineral solvent, boiled linseed-oil and neat's-foot oil.

15. A composition for preventing "set-off" comprising a non-volatile oil, a resinous liquid, soap, a volatile mineral solvent, an oxidizing-oil, a stable lubricating-oil and an organic solvent.

16. A compositoin for preventing "set-off" comprising a non-volatile oil, a resinous liquid, soap, a volatile mineral solvent, an oxidizing-oil, a stable lubricating-oil and methylated spirits.

17. A composition for preventing "set-off" comprising a non-drying oil, turpentine, soap, a volatile solvent, linseed-oil, neat's-foot oil and an organic solvent.

18. A composition for preventing "set-off" comprising olive-oil, turpentine, soap, naphtha, boiled linseed-oil, neat's-foot oil and methylated spirits, in substantially the proportions specified.

823,674. COMPOSITION FOR PREVENTING SET-OFFS IN PRINTING. GEORGE S. DUNCAN and GEORGE H. POTTS, Edinburgh, Scotland, assignors to American Offset Company, New York, N. Y., a Corporation of New York. Filed Aug. 7, 1905. Serial No. 273,138.

Claim.—1. A composition for preventing set-off comprising hard soap, soft soap, olive-oil, and turpentine.

2. A composition for preventing set-off comprising brown Windsor soap, soft soap, olive-oil and turpentine.

823,675. COMPOSITION FOR PREVENTING SET-OFFS IN PRINTING. GEORGE S. DUNCAN and GEORGE H. POTTS, Edinburgh, Scotland, assignors to American Offset Company, New York, N. Y., a Corporation of New York. Filed Aug. 7, 1905. Serial No. 273,139.

Claim.—A composition for preventing set-off comprising palm-oil, lard-oil, cotton-seed oil, sperm-oil, methylated spirits, naphtha and turpentine.

823,676. COMPOSITION FOR PREVENTING SET-OFFS IN PRINTING. GEORGE S. DUNCAN and GEORGE H. POTTS, Edinburgh, Scotland, assignors to American Offset Company, New York, N. Y., a Corporation of New York. Filed Aug. 7, 1905. Serial No. 273,140.

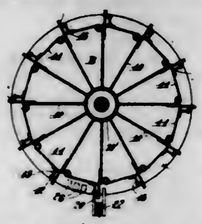
Claim.—1. A composition for preventing set-off comprising palm-oil, lard-oil, soap, spirits of wine, naphtha, and turpentine.

2. A composition for preventing set-off comprising palm-oil, lard-oil, sperm-oil, soap, spirits of wine, naphtha and turpentine.

823,677. ACETYLENE-GENERATOR. EUGÈNE FONDONNE, Antwerp, Belgium. Filed Nov. 16, 1905. Serial No. 287,568.

Claim.—1. A carbid-feeding device for acetylene-generators comprising a rotatable drum, compartments arranged in a circumferential row or rows in said drum, a cover for each compartment, a locking device for each cover, disks partly forming the walls of said compartments and all but the last two provided with a radial slot in their projecting circumference, a slide-bar arranged below said drum, means on said slide-bar to contact successively with the locking devices of said covers to open the latter, a nose on said slide-bar

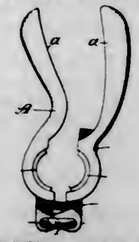
to pass successively through said slots after having been kept in contact with each of said slotted disks during one revolution of said drum, and means for advancing said slide-bar when said nose registers with any of said circumferential slots.



2. A carbid-feeding device for acetylene-generators comprising a rotatable drum, compartments arranged in a circumferential row or rows in said drum, a hinged cover for each compartment, an elastic locking device for each cover, disks partly forming the walls of said compartments and all but the last two provided with a radial slot in their projecting circumference, a drum-shaft, driving means thereon to rotate said drum when driven in one direction and leave said drum stationary when driven in the opposite direction, a slide-bar arranged beneath said drum, means on said slide-bar to contact successively with said elastic locking devices to open said covers, a nose on said slide-bar to pass after each revolution of said drum through one of said radial disk-slots, and means for keeping said nose successively in contact with said slotted disks and advance said slide-bar when said nose registers with any one of said slots.

3. The combination with an acetylene-generator of a rotatable drum, compartments arranged therein, a hinged cover for each compartment, locking means for each cover, a drum-shaft, driving means on said drum-shaft to rotate said drum when rotated in one direction and leave it stationary when rotated in the opposite direction, disks projecting with their circumference over said covers and all but the last two provided with a radial slot, a weight-controlled slide-bar arranged beneath and adjacent to said drum, a contact-pin on said slide-bar for opening said covers, and a nose on said slide-bar capable of passing through any one of said radial disk-slots after the adjacent row of compartments lying in the direction of travel of said slide-bar has been emptied.

823,678. **BOTTLE-HOLDER.** RAYMOND B. GILCHRIST, Newark, N. J. Filed Mar. 3, 1905. Serial No. 248,230.



Claim.—1. A bottle-holder comprising the combination of a pair of jaws, pivots relatively eccentric with respect to each other, for the jaws respectively, and a pin extending through both of the jaws and whereby the jaws will be pivotally connected to each other and simultaneously and equidistantly shifted, substantially as described.

2. A bottle-holder comprising the combination of a pair of jaws relatively eccentric pivots for the jaws respectively, overlapping perforated lugs on the jaws respectively, and a pin extending through the perforations and pivotally connecting the jaws to each other, substantially as described.

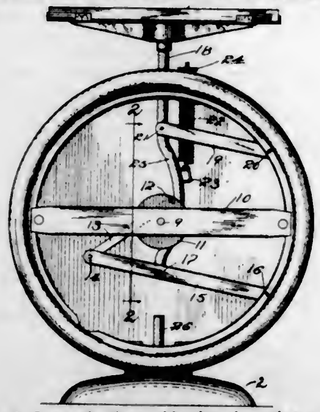
3. A bottle-holder comprising the combination of a support a pair of jaws having perforations therein, and a staple having arms extending through said perforations forming relatively eccentric pivots for the jaws respectively and removably held in said support, substantially as described.

4. A bottle-holder comprising the combination of a pair of jaws, a staple having arms forming relatively eccentric pivots for the jaws respectively, and a pin whereby the jaws are pivotally connected to each other, substantially as described.

5. A bottle-holder comprising the combination of a frame a pair of jaws, a staple having arms forming relatively eccentric pivots for the jaws respectively, adapted to pass through perforations in the frame, and having their ends perforated, and pins adapted to pass through said perforations to removably secure the bottle-holder and frame in connected relation, substantially as described.

6. The combination with a frame of a bottle-holder comprising a pair of jaws, a staple having arms forming relatively eccentric pivots for the jaws respectively, a pin pivotally connecting the jaws to each other, and means for removably securing the staple in the frame, substantially as described.

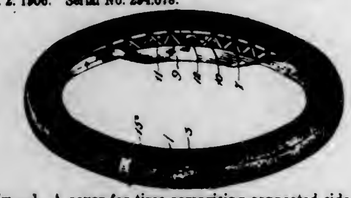
823,679. **WEIGHING-SCALE.** BESSINGTON N. GILFILLAN, Chicago, Ill., assignor to the American Cutlery Company, Chicago, Ill., a Corporation of Illinois. Filed Oct. 10, 1904. Serial No. 227,830.



Claim.—1. In a scale, the combination of a casing, a pan-supporting standard, parallel arms, one end of said arms being pivoted to the casing and the other end to the standard, one of said arms being provided with an extension, a rotary index-arbor mounted in the casing between the arms and adjacent the standard, a crank carried by the arbor, a link connected to the extension on the arm and engaging the crank, and a spring supporting the standard, said spring being adapted to cause the point of connection of the crank and link to normally stand adjacent the standard.

2. In a scale the combination of a rotary index-arbor, a crank thereon, a pan-supporting standard arranged over said arbor and extending below the same and having an offset where it passes the arbor, means for maintaining the equilibrium of said standard, a spring for supporting said standard and a means connecting said crank with said standard.

823,680. **TIRE-COVER.** JOHN P. GORDON, Columbus, Ohio. Filed Jan. 2, 1906. Serial No. 294,078.

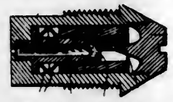


Claim.—1. A cover for tires comprising connected side pieces, a flap secured to one of the side pieces, hooks arranged adjacent to the intersection of the side piece and flap, a second flap secured to the other side piece, elastic fastening means arranged adjacent the intersection of the second flap and the side piece and adapted to be engaged with the hooks, and a cover-flap extending over the hooks and the fastening means.

2. A vehicle-tire cover open entirely around its inner periphery, elastic fastening means carried by one of the edges of said covering and fastening devices carried by the other edge of said cover with which said elastic fastening means are adapted to engage.

823,681. **PERCUSSION-FUSE.** CHARLES L. GULICK, Bridgeport, Conn. Filed Feb. 8, 1905. Renewed May 23, 1906. Serial No. 318,230.

Claim.—1. In a percussion-fuse, a member adapted to normally prevent contact between the primer and firing-point, and a substantially cup-shaped disk for holding said member in this position adapted to be collapsed or flattened by said member on "set-back."



2. In a percussion-fuse, a member adapted to normally prevent contact between the primer and firing-point, and two substantially cup-shaped disks placed in contact for holding said member in this position adapted to be collapsed or flattened by said member on "set-back" caused by the firing of the gun.

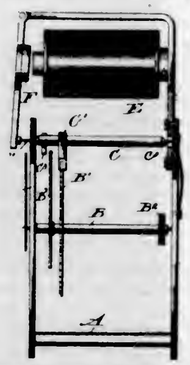
3. In a percussion-fuse, a fuse-case, a plunger movable longitudinally therein, a primer and a firing-point carried one by the plunger and the other by the fuse-case, a member movable on the plunger, and a substantially cup-shaped disk arranged on said plunger for holding said member in position preventing contact between the primer and firing-point adapted to be collapsed or flattened by said member on "set-back."

4. In a percussion-fuse, a fuse-case, a plunger movable longitudinally therein, a primer and a firing-point carried one by the plunger and the other by the fuse-case, a member movable on the plunger, and two substantially cup-shaped disks arranged on said plunger for holding said member in position preventing contact between the primer and firing-point adapted to be collapsed or flattened by said member on "set-back."

5. In a percussion-fuse, a fuse-case, a plunger movable therein tapered slightly, a primer and a firing-point carried one by the plunger and the other by the fuse-case, a member having a tapered opening to receive the plunger, and a collapsible disk on said plunger for holding said member in position preventing contact between the primer and firing-point adapted to be collapsed by the plunger on "set-back."

6. In a percussion-fuse, a fuse-case, a plunger movable longitudinally therein, a primer and a firing-point, carried one by the plunger and the other by the fuse-case, a member movable on the plunger, and a bowed or arched member arranged on said plunger for holding said first-mentioned member in position preventing contact between the primer and the firing-point, said bowed or arch-shaped member adapted to be collapsed or flattened on set-back.

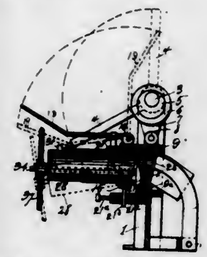
823,682. **SYNCHRONIZING MECHANISM FOR TIMEPIECES.** AUGUSTUS L. HAHL, Chicago, Ill. Filed Sept. 26, 1903. Serial No. 174,777.



Claim.—1. The combination with a timepiece, of an escapement comprising an escape-wheel fixed upon the seconds-hand shaft and a coöperating anchor, an axially-movable shaft upon which the anchor is mounted, a radial finger fixed upon the seconds-hand shaft, a pin fixed upon the anchor-shaft, and means for axially moving said anchor-shaft and thereby locating the anchor in a plane out of the path of movement of the escape-wheel and simultaneously locating the fixed pin on the anchor-shaft in the path of movement of the radial finger on the seconds-hand shaft.

2. The combination with a timepiece, of an escapement comprising an escape-wheel fixed upon the seconds-hand shaft and a coöperating anchor, an axially-movable shaft upon which the anchor is mounted, a radial finger fixed upon the seconds-hand shaft, a pin fixed upon the anchor-shaft, a magnet supported upon the timepiece, an armature coöperating with said magnet, a lever actuated by the armature adapted to engage said anchor-shaft and axially move the same thereby locating the anchor in a plane out of the path of movement of the escape-wheel and simultaneously locating the fixed pin on the anchor-shaft in the path of movement of the radial finger on the seconds-hand shaft.

823,683. **ELBOW-FORMING MACHINE.** NOBLE W. HARTMAN, Toledo, Ohio, assignor of one-half to Daniel W. Conger, Toledo, Ohio. Filed June 3, 1903. Serial No. 159,962.



Claim.—1. In an elbow-forming machine, a pair of interior supports for the tube-blank, a pair of mechanisms which clamp the blank upon said interior supports, a creasing-wheel journaled in one of said interior supports and adapted to form an outwardly-projecting circumferential crease on one side of the tube-blank, and means for deflecting one of said interior supports and its coöperating clamping mechanism relatively to the other internal support and its coöperating clamping mechanism, whereby a tube-blank may be bent while engaged with said internal supports and said external clamping mechanisms.

2. In an elbow-forming machine, two internal holders for a tube-blank, two pairs of clamping-jaws which coöperate with said internal holders, a creasing-wheel mounted eccentrically upon one of said holders and between said two holders, means for revolving said creasing-wheel, and means for the axial deflection of said holders and internal supports relatively to each other.

3. In an elbow-forming machine, a holder for the tube-blank, an expanding mandrel for the tube-blank, a pair of jaws for clamping the tube-blank upon the holder, a pair of jaws for clamping the tube-blank upon the expanding mandrel, a crank-shaft eccentrically mounted in the holder, a creasing-wheel on the crank of the shaft, means for turning the shaft and means for the axial deflection of the holder and the mandrel relatively to each other.

4. In an elbow-forming machine, a pair of adjacent holders for the tube-blank, a creasing-wheel mounted to travel eccentrically within the blank between the holders, a clamping mechanism coöperating with one of said holders, a pair of clamping-jaws coöperating with the other of said holders, a curved projecting edge upon one of said clamping-jaws adapted to engage one side of the crease formed in the tube-blank by said creasing-wheel, a pivotal support for said edged jaw, and means for swinging said jaw on its pivotal support.

5. In an elbow-forming machine, a curved bracket, a mandrel on the end of the bracket, a pair of jaws which clamp the tube upon the mandrel, a holder adapted to be slipped into the end of the tube-blank, another pair of jaws which clamp the tube upon said holder, a creasing-wheel operatively mounted at the inner end of said holder and adapted to form a crease in one side of the tube-blank, a pivotal support for said latter pair of jaws, means for swinging said latter paid of jaws on their pivotal support, and a curved projecting portion on said latter jaws adapted to engage one side of the crease formed by said creasing-wheel.

6. In a machine for forming elbows, a pair of clamping-jaws for clamping the tube-blank, a pivotal support for said pair of jaws, a lever fulcrumed upon one of said jaws and connected with the other jaw, the arrangement being such that by the movement of the lever the jaws are first moved into clamping position and are then by the further movement of the lever swung upon their pivotal support.

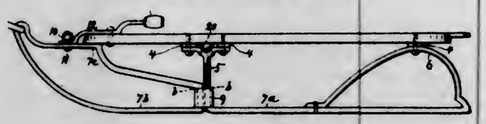
7. In an elbow-forming machine, a cylindrical holder for the tube-blank having a longitudinal slat therein, a stepped gage-bar pivotally supported at one end within said slot, and a spring arranged to hold the stepped portion of the gage-bar normally beyond the outer surface of the holder.

8. In an elbow-forming machine, a holder for the tube-blank adapted to be slipped into the end of the blank, a shaft mounted and journaled eccentrically to the axis of the holder, a crank at one end of said shaft, a creasing-wheel mounted on said crank, and means at the other end of the shaft for turning the shaft and operating the creasing-wheel.

9. In an elbow-forming machine, a curved bracket having a wedge-shaped extremity, a two-part mandrel having in the meeting faces of the two parts a recess corresponding with the wedge-shaped extremity of the bracket, and pivotal connections between the two parts of the mandrel opposite the apex of the wedge-shaped recess, said mandrel being supported upon said wedge-shaped extremity of the bracket.

10. In an elbow-forming machine, a pair of clamping-jaws, one of said jaws being fixed and the other movable, a lever, and connections between the movable jaw and the lever, another pair of clamping-jaws, another lever mounted upon one of said latter jaws, connections between the latter lever and the latter jaws for moving them into and out of clamping position, and pivotal connections between said two pairs of jaws which permit said latter jaws to be swung upon the jaws first mentioned.

823,684. **SLED** WILLIS L. HOLLOWAY and ELI BROWNING, West Branch, Iowa; said Holloway assignor to said Browning. Filed Jan. 21, 1905. Renewed Jan. 19, 1906. Serial No. 296,830.



Claim.—1. A sled having two runners, each comprising a front and rear section pivotally joined together with their adjacent ends, a transverse bar or yoke pivotally connecting the front sections of the runners, and operating-levers pivoted to the sled and operatively connected with the front runner-sections to swing them from side to side.

2. A sled having two runners, each comprising a front and rear section pivotally joined together with their adjacent ends, a transverse bar or yoke pivotally connecting the front sections of the runners, and operating-levers pivoted to the sled and operatively connected with the front runner-sections to swing them from side to side, and means to limit such side motion.

3. A sled having two runners, each comprising a front and rear section pivotally joined together with their adjacent ends, a transverse bar or yoke pivotally connecting the front sections of the runners, and operating-levers pivoted to the sled and operatively connected with the front runner-sections to swing them from side to side, the front end of the sled being partly supported on the front sections of the runners.

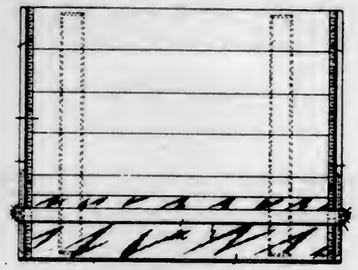
4. A sled having two runners, each comprising a front and rear section pivotally joined together with their adjacent ends, a transverse bar or yoke pivotally connecting the front sections of the runners, and operating-levers pivoted to the sled and operatively connected with the front runner-sections to swing them from side to side, the front end of the sled being partly supported on the front sections of the runners, and the joint of the runner-sections having a vertical play.

5. A sled having two runners, each comprising a front and rear section pivotally joined together with their adjacent ends, a transverse bar or yoke pivotally connecting the front sections of the runners, and operating-levers pivoted to the sled and operatively connected with the front runner-sections to swing them from side to side, said yoke being adapted also for hitching shafts and a horse to it.

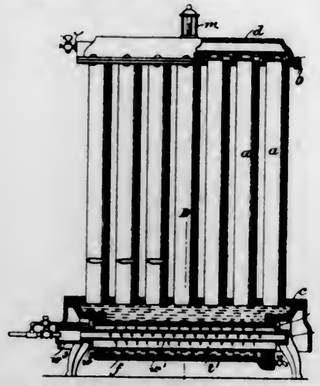
823,685. **MAT-CUTTING BOARD.** CHARLES H. HOWARD, Paterson, N. J. Filed Jan. 20, 1906. Serial No. 296,949.

Claim.—In a device for use in cutting picture-mats and the like, the combination of a base-board having an abutment for one side of the mat to be cut and two opposite sides thereof arranged at right angles to said abutment, slotted strips arranged against said sides, screws arranged in the slots of said strips and having their heads projecting inwardly, a guide carried by each screw and having upwardly-projecting lugs, a wing-nut carried by each screw and adapted to clamp each guide against the strip, and a cutting-bar engaged loosely between the lugs of and adapted to move with, said guides, substantially as described.

823,685.



823,686. **HEATING APPARATUS.** WILLIAM KANE, Philadelphia, Pa. Filed Feb. 11, 1905. Serial No. 245,263.



Claim.—1. A unitary independent heating apparatus, consisting of a series of exposed massed vertical tubes, a horizontal plate provided with apertures through which the lower ends of said tubes open and in which said ends are secured, a base-frame detachably secured to the lower face of said horizontal plate and forming a water-space extending below and communicating with the lower open ends of said tubes, a heating-flue extending longitudinally below the horizontal plate through said water-space, and a crown extending over the upper open ends of the tubes.

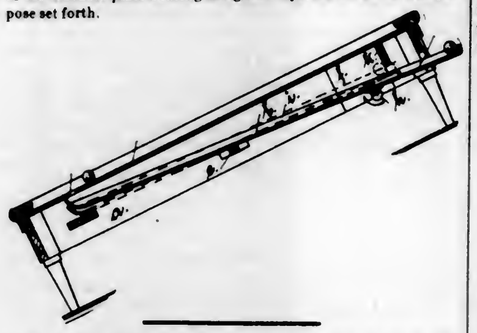
2. A unitary independent heating apparatus, consisting of a series of exposed massed vertical tubes, a horizontal plate provided with apertures through which the lower ends of said tubes open and in which said ends are secured, a base-plate detachably secured to the lower face of said horizontal plate and forming a water-space extending below and communicating with the lower open ends of said tubes, a heating-flue extending longitudinally below said detachable horizontal plate through said water-space and open at its ends, a gas-burner extending longitudinally through said heating-flue, and a crown extending over the upper open ends of the tubes.

823,687. **AUTOMATIC REGISTERING POOL-TABLE.** GUSTAV KINDLING, Magdeburg, Germany. Filed Nov. 21, 1904. Serial No. 233,733.

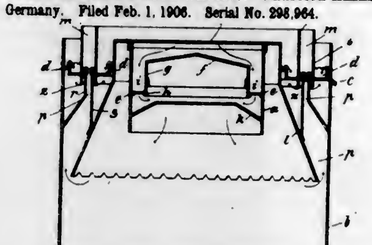
Claim.—1. In a pool-table the combination of the framework bearing the table-board, a swinging plate bearing the guideways for the balls underneath the table-board, a fixed inclined plate having guideways and a rack terminating the guideways all as and for the purpose set forth.

2. In a pool-table a seesaw movable plate underneath the table-board, guideways for the balls on this plate, an axis across the framework bearing the plate, a cross-bar above the rear end of the plate and its guideways to limit the seesaw motion and hinder the running out of the balls out of the guideways, a fixed plate provided with guideways arranged continuous to those of the swinging plate in its inclined position, all as described and for the purpose set forth.

3. In a pool-table a seesaw movable plate underneath the table-board, guideways for the balls on this plate, an axis across the framework bearing the plate, a cross-bar above the rear end of the plate and its guideways to limit the seesaw motion and hinder the running out of the balls out of the guideways, a fixed plate provided with guideways arranged continuous to those of the swinging plate in its inclined position, an axis, eccentrics on this axis in gear with one end of the movable plate bearing the guideways, all as and for the purpose set forth.



823,688. **APPARATUS FOR THE RECOVERY OF FATS AND THE LIKE FROM WASTE WATERS.** CHRISTOPH KRENER, Berlin, Germany. Filed Feb. 1, 1906. Serial No. 298,964.



Claim.—1. In an apparatus for recovery of fat from liquids, the combination of an outer vessel, an inner vessel open at its bottom, a ring-like fat-collecting chamber between the said vessels, and a channel for leading water discharged from the inner vessel to the lower part of the fat-collecting chamber, discharge-orifices being formed between the upper end of the said channel and the lower end of said chamber.

2. In an apparatus for recovery of fat from liquids, the combination of an outer vessel, an inner vessel open at its bottom, a fat-collecting chamber between the inner and outer vessels, a channel for leading water discharged from the inner vessel to the fat-collecting chamber aforesaid, an overflow-channel arranged externally of said chamber, and a discharge-orifice from the chamber to the overflow-channel.

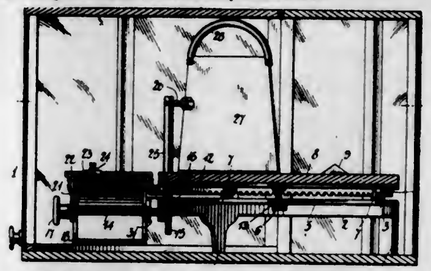
3. In an apparatus for recovery of fats from liquids, the combination of an outer vessel, an inner fat-collecting vessel *a* open at its bottom, an annular fat-collecting chamber *m* open at its bottom and consisting of two parallel plates arranged outside of and away from the vessel *a*, an annular chamber below said chamber *m* and open at its top and with said open top entering and spaced away from the open bottom of the chamber *m*.

4. In an apparatus for the recovery of fats from liquids, the combination of an outer vessel, an inner fat-collecting vessel *a* open at its bottom, a baffle device located below said inner vessel, an annular fat-collecting chamber *m* open at its bottom and consisting of two parallel plates arranged outside of and away from the vessel *a* and an annular channel below said chamber *m* and open at its top and with said open top entering and spaced away from the open bottom of the chamber *m*.

5. In an apparatus for recovery of fats from liquids, the combination of an outer vessel, an inner fat-collecting vessel *a* open at its bottom, a conical channel located below said inner vessel, an annular fat-collecting chamber *m* open at its bottom and consisting of two parallel plates arranged outside of and away from the vessel *a*, and an annular channel below said chamber *m*, and open at its top and with said open top entering and spaced away from the open bottom of the chamber *m*.

823,689. **COMPUTING CHEESE-CUTTER.** CHARLES D. LENDER, Centralia, Ill. Filed Dec. 18, 1905. Serial No. 292,312.

Claim.—1. In a cheese-cutter of the character described, the combination with a suitable casing adapted to be opened, of a supporting base or frame arranged therein, a table or platform revolubly mounted on said frame, a pivotally-mounted cutting-blade to coact with said table, mechanism to revolve said table, means to lock the same against movement and a computing-cylinder adapted to be turned to operate in one direction by the movement of said table-revolving mechanism, substantially as described.



2. In a cheese-cutter of the character described, the combination with a suitable casing having a hinged swinging section of a supporting-frame arranged in said casing, a table revolubly mounted on said frame, antifriction-rollers to support said table, an annular rack arranged on the under side of the latter, a shaft journaled in said supporting-frame, a spur-gear pinion fixed on said shaft to engage said rack, means to revolve said shaft, a computing-cylinder loosely mounted on said shaft, a pawl-and-ratchet connection between said shaft and cylinder, an indicating-finger adjustably mounted to coact with said cylinder, and a cutting-blade pivotally mounted on said frame, substantially as described.

3. In a cheese-cutter of the character described, the combination with a suitable casing having a hinged swinging section, of a supporting-frame arranged in said casing, a table revolubly mounted on said frame, antifriction-rollers to support said table, an annular rack arranged on the under side of the latter, a shaft journaled in said supporting-frame, a spur-gear pinion fixed on said shaft to engage said rack, a hand-wheel fixed on the opposite end of said shaft, a computing-cylinder loosely mounted on the shaft, a pawl-and-ratchet engagement between said shaft and cylinder whereby the latter is turned by the shaft in one direction, an indicating-finger adjustably mounted above said cylinder to coact therewith, an upright frame arranged on said supporting-frame, a cutting-blade pivotally mounted in said frame, a bail-shaped handle connected to said blade, and a set-screw arranged in said supporting-frame to engage and hold said table, substantially as described.

823,690. **SAFETY-SEAT.** WILLIAM H. A. LEWIS, Evansville, Ind. Filed June 26, 1905. Serial No. 267,125.

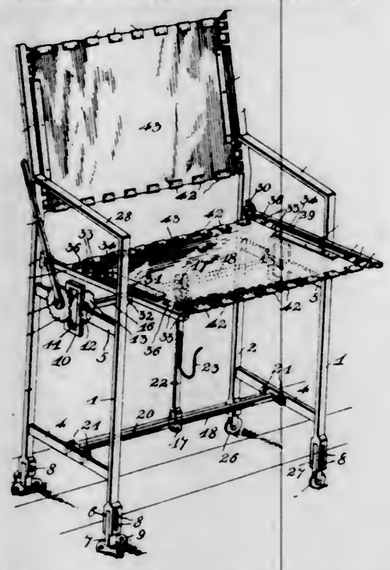
Claim.—1. In a seat of the character described, a chair-frame comprising two side members, one of said members being rigidly secured to the floor and the other member adapted to move to and from said rigidly-secured member, feet secured to the lower ends of one of said members, and one of said feet being vertically adjustable, the other side frame being mounted on rollers, one of said rollers being adjustable, a foldable chair-seat, jointed brace-bars pivoted to cross-bars below the seat, and means for moving the brace-bars to draw the movable member toward the rigidly-secured member to fold the chair, substantially as described.

2. In a safety-chair, the combination of a rigidly-secured frame, a movable frame, a foldable seat and back, jointed brace-bars pivotally conneced to cross-bars under the seat, beveled gears mounted on the rigidly-secured frame, and a lever formed on one of said gears for moving the movable frame toward the rigidly-secured frame, substantially as described.

3. A chair-back comprising a plurality of sheet-metal plates hinged together by torsional spring-rods 7° chair-seat comprising a plurality of thin sheet-metal sections, the outer sections being connected to the side bars of the chair-seat and the intermediate sections being connected to torsional spring-rods, said rods being secured rigidly to end lugs of the sections, for the purpose described.

4. A chair-seat comprising side bars, a plurality of sheet-metal sections connected together and to the side bars of the chair-seat, said sections being connected together by torsional spring-rods and said sections creating a torsional stress in opposite directions, substantially as described.

5. A safety-seat of the character described comprising two side frames, one of which is adapted to be rigidly secured to the floor and the other being mounted on rollers to move in relation to the first-mentioned member, a foldable chair-seat comprising sheet-metal members connected together by torsional spring-rods, a chair-back formed of similar construction to the seat and means for moving the movable side frame in relation to the rigid frame and folding the sections of the seat and back together, substantially as described.



6. A chair-seat comprising a series of sheet-metal sections connected together by torsional spring-rods, a cover for said seat, U-shaped clasps for inclosing the sheet-metal sections and the cover and for holding said cover in place, substantially as described.

823,691. **PRESS-COPYING.** JOSEPH W. LIGON, Greenville, S. C. Filed Nov. 16, 1904. Serial No. 233,035.

Claim.—1. The process of producing copies from impressions made with press-copying ink, which consists in applying an aqueous solution of a substance more active than water in attacking said ink to a sheet of paper or other material and bringing it while moist in contact with the impression to be copied, substantially as described.

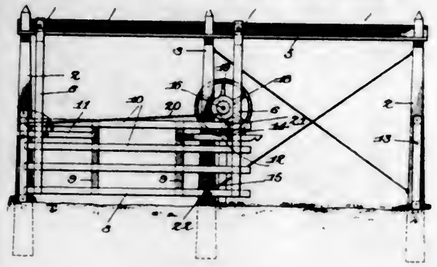
2. The process of producing copies from impressions made with press-copying ink, which consists in moistening with a dilute acid a sheet of paper or other material and bringing it while moist in contact with the impression to be copied, substantially as described.

3. The process of producing copies from impressions made with press-copying ink, which consists in moistening with dilute acetic acid a sheet of paper or other material and bringing it while moist in contact with the impression to be copied, substantially as described.

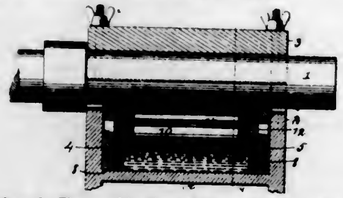
4. The process of producing copies from impressions made with press-copying ink which consists in applying an aqueous solution of a substance more active than water in attacking the ink, to said ink and pressing the sheet to receive the copy against the ink while it is moist, substantially as described.

823,692. **GATE.** CALVIN G. LINDSAY, Lexington, Ill. Filed Jan. 23, 1904. Serial No. 190,192.

Claim.—In a gate the combination with an intermediate and end standards, and a track supported by the standards; of a gate, hangers extending therefrom and movably mounted upon the track, latches pivotally connected at their inner ends, to the gate and projecting beyond the ends of the gate, a coiled spring interposed between each latch and the top rail of the gate, eyes carried by the top rail of the gate at points between its ends, a shaft journaled upon the intermediate standard and extending to opposite sides of the gate, hand-wheels for rotating the shaft, a drum upon the shaft and between the intermediate standards and the path of the hangers, said drum overlapping and disposed close to the top rail of the gate, and a cable wound upon the drum and extending over one side of and shielded by the top rail of the gate, the ends of said cable being movably mounted within the eyes and secured to the latches.



823,693. **JOURNAL-BEARING.** DAVID J. LLEWELLYN, Wilmerding, Pa. Filed Apr. 1, 1905. Serial No. 253,280.

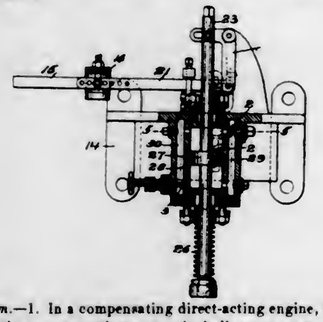


Claim.—1. The combination of a journal, a journal-box and within said box a hollow roller having liquid-escape apertures in its wall, circumferential flanges on the ends of said roller and means for holding said flanges in contact with said journal.

2. The combination of a journal, a journal-box, loose plates in said box provided with bearing-recesses, and a roller rotatably supported in said plates, having circumferential flanges and constructed to project liquid lubricant centrifugally from its periphery to said journal: the said journal having its bearings both on said roller-flanges and in said bearing-plate recesses.

3. The combination of a journal, a journal-box, loose plates in said box disposed below said journal and provided with bearing-recesses for said journal in their upper edges, springs supporting said plates, a roller rotatably supported in said plates constructed to project liquid lubricant centrifugally from its periphery to said journal, and circumferential end flanges on said roller in contact with said journal.

823,694. **COMPENSATING DIRECT-ACTING ENGINE.** FRANK F. NICKEL, East Orange, N. J., assignor to Henry R. Worthington, New York, N. Y., a Corporation of New Jersey. Filed Aug. 26, 1905. Serial No. 275,858.



Claim.—1. In a compensating direct-acting engine, the combination with a compensating system including one or more compensating cylinders and their pistons, of a valve actuated by pressure in the compensating system to control the compensating pressure, and means controlled by the length of the engine-stroke for varying the resistance to movement of said valve to vary the compensating pressure.

2. In a compensating direct-acting engine, the combination with a compensating system including one or more compensating

cylinders and their pistons and means for applying fluid in opposition to the working pressure to adjust the compensating pressure, of a valve opened by the opposing pressure to permit the escape of opposing fluid, and means controlled by the length of the engine-stroke for varying the resistance to the opening movement of said valve to vary the compensating pressure.

3. In a compensating direct-acting engine, the combination with a compensating system including one or more compensating cylinders and their pistons and an accumulator through which the compensating pressure is derived, of a valve actuated by pressure in the compensating system to control the accumulator pressure, and means controlled by the length of the engine-stroke for varying the resistance to movement of said valve to vary the compensating pressure.

4. In a compensating direct-acting engine, the combination with a compensating system including one or more compensating cylinders and their pistons and an accumulator through which the compensating pressure is derived, and a back-pressure system for applying fluid to the accumulator-piston in opposition to the working pressure, of an escape-valve on the back-pressure system, and means controlled by the length of the engine-stroke for varying the resistance to opening said valve to vary the compensating pressure.

5. In a compensating direct-acting engine, the combination with a compensating system including one or more compensating cylinders and their pistons, of a weighted valve actuated by the pressure in the compensating system to control the compensating pressure, means actuated by the engine-piston for shifting said weight to vary the pressure on the valve, and means for slowly returning the weight when shifted by the engine.

6. In a compensating direct-acting engine, the combination with a compensating system including one or more compensating cylinders and their pistons, of a weighted valve actuated by the pressure in the compensating system to control the compensating pressure, means actuated by the engine-piston for shifting said weight to vary the pressure on the valve, a spring for returning the weight, and retarding devices for securing a slow return movement of the weight.

7. In a compensating direct-acting engine, the combination with a compensating system including one or more compensating cylinders and their pistons, of a weighted valve actuated by the pressure in the compensating system to control the compensating pressure, means actuated by the engine-piston for shifting said weight to vary the pressure on the valve, a spring for returning the weight, a fluid-cylinder having its piston connected to said weight and moved in opposite directions by the engine-piston and the spring, and connections permitting a free circulation of fluid between the opposite ends of the cylinder when the piston is moved by the engine and retarding the circulation when the piston is moved by the spring.

8. The combination with a direct-acting engine and its compensating system, of devices for controlling the compensating pressure including a valve, a pressure device acting on said valve, means actuated by the engine-piston for actuating the pressure device to vary the pressure when the length of the engine-stroke is increased, and means for returning the pressure device to normal position.

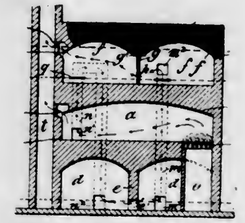
9. The combination with a direct-acting engine and its compensating system, of devices for controlling the compensating pressure including a valve, a pressure device acting on said valve, means actuated by the engine-piston for actuating the pressure device to vary the pressure when the length of the engine-stroke is increased, and means for returning the pressure device to normal position, including retarding devices for securing a slow return movement.

10. The combination with a direct-acting engine and its compensating system, of an escape-valve opened by pressure in the system, a weight-lever and shiftable weight controlling said valve, a rod and connections for shifting said weight, a tappet moved by the engine-piston for shifting said rod, a spring for returning the rod and a cataract-cylinder having a piston connected to said rod and arranged to retard the return movement of the rod.

11. The combination with a direct-acting engine and its compensating system, including an accumulator and back-pressure system for adjusting the accumulator pressure, of an escape-valve on the back-pressure system, a weight-lever and shiftable weight controlling said valve, a rod and connections for shifting said weight, a tappet moved by the engine-piston for shifting said rod, a spring for returning the rod and a cataract-cylinder having a piston connected to said rod and arranged to retard the return movement of the rod.

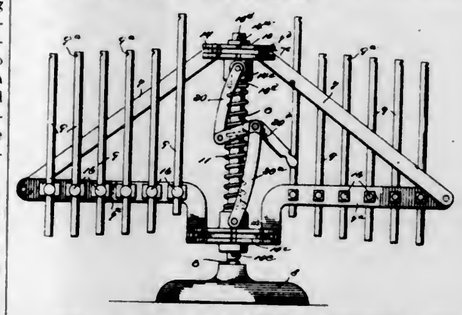
823,695. **BAKER'S OVEN.** WILTON H. PERRY, New York, N. Y. Filed Nov. 18, 1904. Serial No. 233,251.

Claim.—1. In a baker's oven, the combination of a baking-chamber, a fire-grate in communication therewith, a chamber below and a chamber above said baking-chamber, the walls of said chambers formed with a plurality of flues, one of such flues communicating with the baking-chamber and passing upwardly and then downwardly to an opening near the floor of the lower chamber, and another of said flues communicating with the lower chamber and passing upwardly into the chamber above the baking-chamber, and an exit-flue communicating with said upper chamber, substantially as described.



2. In a baker's oven the combination of a baking-chamber, a fire-grate in communication therewith, a chamber below and a chamber above said baking-chamber, a longitudinal dividing-wall in said lower chamber having an aperture therein, a longitudinal dividing-wall in said upper chamber having an aperture therein, the walls of said chambers formed with a plurality of flues, one of such flues communicating with the baking-chamber and passing upwardly and then downwardly to an opening near the floor of the lower chamber, and another of said flues communicating with the lower chamber and passing upwardly into the upper chamber, and an exit-flue communicating with said upper chamber.

823,696. **HAT-FRAME FORMER.** GEORGE W. PRICE, Chicago, Ill. Filed Oct. 3, 1905. Serial No. 281,139.



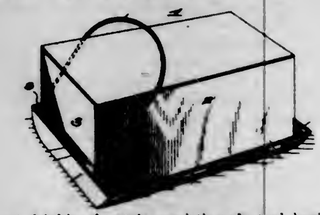
Claim.—1. A former for wire hat-frames, comprising a central post, upper and lower heads rotatable thereon and having a spring in compression therebetween, radial arms pivoted at their inner ends to one of the heads and having supporting connections to the other head, and upright rods connected to the arms and having means to engage wires, and adapted to tilt when the heads are pushed toward each other.

2. In a former for wire hat-frames, the combination of a central post, heads mounted thereon radial arms pivotally connected to one of the heads and having supports connected to the other, upright rods supported on said arms, a spring in compression between the heads, and a lever connected to the respective heads and arranged to draw the same together.

3. In a former for wire hat-frames, the combination of a central post, upper and lower heads mounted thereon, sets of radial arms pivotally connected at their inner ends to the respective heads and to each other at their outer ends, upright rods supported on one of said sets, and a lock-lever connected to the respective heads and adapted to draw the same together.

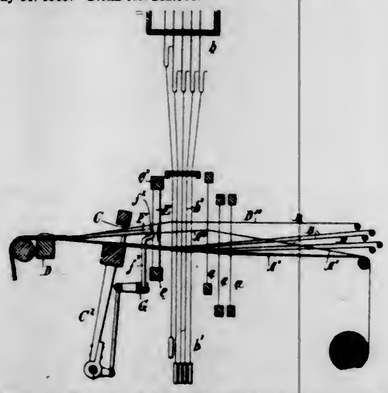
4. In a hat-frame former, in combination, an upright post having upper and lower heads thereon movable to and from each other, and upper and lower sets of arms which are hinged at their inner ends to the heads respectively, and at their outer ends to each other wire-engaging rods carried by the lower set of arms, and means to move the heads toward or from each other.

823,697. **DRINKING-FOUNTAIN.** ELMER S. RICHARDSON, Farmer, Ohio. Filed Apr. 5, 1906. Serial No. 310,100.



Claim.—A drinking-fountain consisting of a tank having an inwardly-inclined front end, a flange projecting from the bottom of said tank, and side troughs connected to said flange and extending to the rear of the tank, the sides of said tank abutting against the inner wall of the front flange, said tank being provided with openings in the sides thereof below the line of the trough, substantially as described.

823,698. **LOOM FOR WEAVING PILE FABRIC.** ANDREW G. ROBERTSON, Philadelphia, and JOHN H. ROBERTSON, Cheltenham, Pa.; said John H. Robertson assignor to said Andrew G. Robertson. Filed May 31, 1905. Serial No. 263,978.



Claim.—1. In a loom for weaving pile fabrics, the combination of a series of upright guide-blades, a pile-wire projecting from between each of said upright guide-blades, a stationary bar for securing one end of said upright guide-blades and a reciprocating bar for securing the opposite ends of said upright guide-blades, substantially as described.

2. In a loom for weaving pile fabrics the combination of a series of upright guide-blades, a pile-wire having a portion thereof located between each of said upright guide-blades, a stationary bar holding the lower ends of said upright guide-blades, a reciprocating bar holding the upper ends of said upright guide-blades and means for reciprocating said last-mentioned bar, substantially as described.

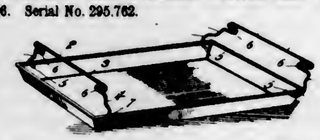
3. In a loom for weaving pile fabrics, the combination of a series of upright guide-blades, a pile-wire projecting between each of the same, means for bringing said upright guide-blades in contact with each of said pile-wires, and a projection formed on either side of said upright guide-blades at points adjacent said pile-wires, whereby a thread may be guided over said pile-wire, substantially as described.

4. In a loom for weaving pile fabrics, the combination of a series of upright guide-blades, a series of pile-wires located in front of said series of upright guide-blades, each of said pile-wires having a loop exending between each of said upright guide-blades and means for bringing said upright guide-blades in contact with either side of the loop of the pile-wires, substantially as described.

5. In a loom for weaving pile fabrics, the combination of a series of upright guide-blades, pile-wires having loops at their rear ends adapted to enter the spaces formed between the upright guide-blades, a supporting-arm for each of said pile-wires, and a cross-bar in which said supporting-arms are secured located in a different vertical plane from said upright guide-blades, substantially as described.

6. In a loom for weaving pile fabrics, the combination of a series of upright guide-blades, a pile-wire having a knife thereon and located between each of said upright guide-blades, arms forming part of said pile-wires, a cross-bar in which said arms of the pile-wires are secured, and means for rocking said cross-bar, substantially as described.

823,699. **ATTACHMENT FOR PANS AND THE LIKE TO PREVENT BURNING.** MARY T. ROEMER, Wabasha, Minn. Filed Jan. 12, 1906. Serial No. 295,762.



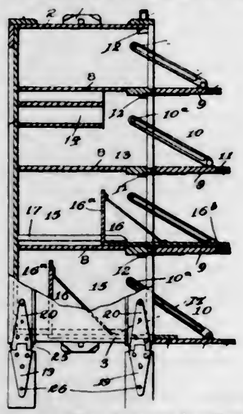
Claim.—1. The combination of a pan, and a bail-like attachment therefor, said attachment comprising a cross-bar, and arms which have their free ends pivotally connected to the sides of the pan, said arms being provided with inwardly-projecting shoulders which are located near the cross-bar and which are adapted to engage with the bottom of the pan to hold the cross-bar spaced therefrom.

2. The combination of a pan, and a bail-like attachment therefor, said attachment comprising a cross-bar and arms having their free ends pivotally connected to the sides of the pan, said arms being provided with outwardly-projecting bends which form finger-pieces and also with inwardly-projecting shoulders which are adapted to engage with the bottom of the pan to hold the cross-bar spaced therefrom.

3. The combination of a pan, and a bail-like attachment therefor, said attachment comprising a cross-bar and arms which have their free ends pivotally connected to the sides of the pan, said arms being provided with finger-pieces formed by outwardly-projecting U-shaped bends in the arms, and also with shoulders formed by inwardly-projecting U-shaped bends, said shoulders being adapted to engage with the bottom of the pan to hold the cross-bar spaced therefrom.

4. The combination of a pan, and a bail-like attachment therefor, said attachment being formed of a single piece of wire and comprising a cross-bar and arms, the latter having their free ends bent inwardly and passed through openings in the sides of the pan, said arms being formed with outwardly-projecting U-shaped bends which form finger-pieces and are located adjacent to the before-mentioned inwardly-bent ends, and also with inwardly-projecting U-shaped bends which are located near the cross-bar and form shoulders which are adapted to engage with the bottom of the pan and hold the cross-bar spaced therefrom.

823,700. **FIELD CHEST AND DESK.** EDMUND S. SAYER, Jr., Oklahoma, Okla. Filed Nov. 20, 1905. Serial No. 288,223.



Claim.—1. A device of the character described comprising a chest or the like provided with strengthening or binding strips at its sides, hinges one leaf of each of which is secured to the lower ends of the respective binding-strips and foldable legs carried by the other leaf of said hinges and arranged to fold inwardly whereby the pintle of the hinge will form a metallic corner-brace when the legs are in folded position.

2. A device of the character described comprising a chest or the like provided with side and bottom strengthening-strips, and legs pivotally attached to said chest and designed to fold inwardly at opposite sides of the bottom binding-strip and forming a continuation thereof.

3. A chest or the like provided at its bottom with binding or strengthening strips extending short of the sides thereof, and foldable legs arranged to form a continuation of said bottom binding-strip when in folded position.

4. A device of the character described comprising a chest or the like provided at its edges with strengthening or binding strips metallic corner-pieces for the upper ends of the same, strap-hinges secured to the lower ends of said strips with their pintles projecting, and foldable legs carried by said hinges and arranged to fold inwardly, whereby the pintles of said hinges form bottom corner-pieces.

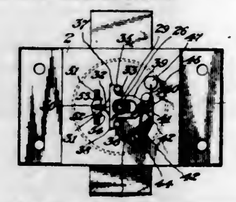
5. A device of the character described comprising a chest or the like provided with bottom binding or strengthening strips, legs designed to fold inwardly against opposite ends of said strips whereby to form a continuation thereof, and means for locking the said legs in folded position.

6. A device of the character described comprising a chest or the like, leaf or strap hinges having one member attached to the chest at the lower face thereof, and legs attached to the other member of said hinge, a locking-bolt serving as one of the attaching means between the legs and the hinge members, and means designed to engage said bolts to hold the respective legs in folded position.

7. A device of the character described comprising a chest divided into a series of compartments, a door for each of said compartments, said doors being provided with independent locking means, and a locking-bar having means whereby it may be secured to said chest and extend over all of said door-locking means.

8. A device of the character described comprising a chest or the like divided into compartments each of which is provided with a door having independent locking means, and a locking-bar provided at one end with a hook whereby it may be detachably engaged with one end of said chest and arranged to extend over all of the door-locking means, the other end of said locking-bar being provided with means whereby it may be secured to the chest.

823,701. **ALARM-LOCK.** ARNOLD SCHOENMAN, New York, N. Y. Filed Mar. 15, 1905. Serial No. 250,176.

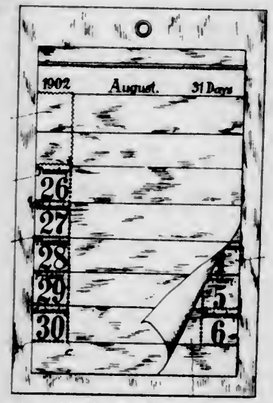


Claim.—1. In an alarm-lock, the combination of a bell having a clapper, a reciprocal bolt, reciprocal tumbler-plates adapted to hold said bolt in locked or unlocked position, means from the front of the lock for operating said tumblers and bolt and sounding said bell, means from the rear of the lock for operating said tumblers and sounding said bell, said last-mentioned means embodying a rotatable shaft having a cross-bar engaging said tumblers and bolt, a plate mounted to be oscillated on said rotatable shaft by the bolt and a plate mounted to be reciprocated on said rotatable shaft by said oscillatory plate to operate said bell-clapper, substantially as described.

2. In an alarm-lock, the combination of a bell having a clapper, a reciprocal bolt, bodily concurrently slidable tumbler-plates adapted to hold said bolt in locked or unlocked position, means from the front of the lock for operating said tumblers and bolt and sounding said bell, means from the rear of the lock for operating said tumblers and bolt and sounding said bell, said last-mentioned means embodying a rotatable shaft having a cross-bar engaging said tumblers and bolt, a plate mounted to be oscillated on said rotatable shaft by the bolt and a plate mounted to be reciprocated on said rotatable shaft by said oscillatory plate to operate said bell-clapper, substantially as described.

3. In an alarm-lock, the combination of a bell having a clapper, a reciprocal bolt having a pin provided with a plate, bodily concurrently slidable tumbler-plates adapted to hold said bolt in locked or unlocked position, means from the front of the lock for operating said tumblers and bolt and sounding said bell, means from the rear of the lock for operating said tumblers and bolt and sounding said bell, said last-mentioned means embodying a rotatable shaft having a cross-bar engaging said tumblers and bolt, a plate mounted to oscillate on said rotatable shaft and having lugs and a nose adapted to be engaged by the plate carried by the bolt, a plate mounted to reciprocate on said rotatable shaft and having arms adapted to be engaged by lugs of the oscillatory plate, and a pivoted arm having a lug extending through the reciprocatory plate and securing the bell-clapper thereto, substantially as described.

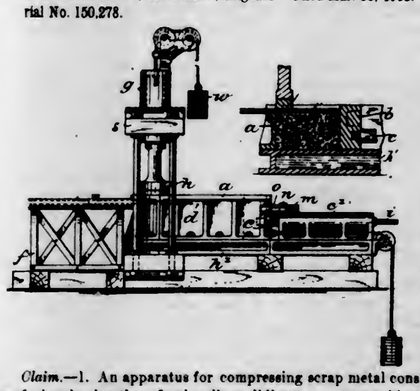
823,702. **COMBINED DATE AND NOTE BLOCK.** JAKOB SCHWARZ, Budapest, Austria-Hungary. Filed Mar. 10, 1905. Serial No. 249,503.



Claim.—1. A combined date and note block, comprising a plurality of superposed sheets, each of which is divided into date-compartments and a memorandum-space detachably connected thereto, the date-compartments of each sheet being superposed upon an undated portion of the succeeding sheet, substantially as described.

2. A combined date and note block, comprising a plurality of superposed sheets, each of which is divided into date-compartments and a memorandum-space detachably connected thereto, the date-compartments of each sheet being located on the opposite sides of the latter to the date-compartments of the succeeding sheet, substantially as described.

823,703. **APPARATUS FOR COMPRESSING SCRAP METAL.** TREVELYAN SHARP, Manchester, England. Filed Mar. 30, 1903. Serial No. 150,278.



Claim.—1. An apparatus for compressing scrap metal consisting of a box having three fixed walls, a sliding cover, a movable wall or ram which engages with and moves the sliding cover with it during the compression-stroke of the ram, and a second ram at right angles to the first and operating to complete the compression of the scrap, substantially as set forth.

2. In apparatus for compressing scrap metal, a box having a sliding cover and three fixed sides, in combination with a ram to compress the scrap under the cover, said ram engaging with the sliding cover and moving it with it during the compression-stroke, and a second ram moving at right angles to the first to further compress the

scrap after the cover has been withdrawn from the box, the faces of the rams and the inner face of the end of the box forming a diagonal chamber in the end of the box, substantially as described.

3. In an apparatus for compressing scrap metal, the combination of a compression-box having an inclined face at its inner end, a sliding cover, a main ram having an inclined face abutting against one end of said sliding cover, and a secondary or final ram to complete the compression of the scrap, the faces of the two rams and the inclined face at the inner end of the compression-box forming a diagonal chamber in the end of said box.

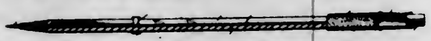
4. In apparatus in which scrap metal is compressed in a box by two rams having their axes at right angles, the combination with the box and with the horizontal ram, of a sliding cover which is engaged by and moves with the horizontal ram during the compression-stroke and under which compression is effected.

823,704. **NAPKIN-HOLDER.** JAMES SIMPSON, Crookston, Minn. Filed Mar. 9, 1905. Serial No. 249,313.



Claim.—The herein-described napkin-holder made of a single piece of resilient wire doubled to form a hook having a downwardly-directed bill, vertical spaced portions 6 at the inner end of the bill, lateral oppositely-extending jaws 3 having the inner side portions 7 bent outwardly from the lower ends of the portions 6 and extending at right angles to said portions 6 and the outer side portions 8 bent reversely with reference to and converging inwardly toward and coming in contact with the sides 7, and the outwardly-curved finger-piece 4 connecting the ends of the outer side portions 8 of said jaws.

823,705. **PENCIL.** JACOB A. STAHLE, Ogden, Utah. Filed Mar. 5, 1906. Serial No. 304,331.



Claim.—1. The combination of a pencil having a slot in the body thereof, a plate fitting removably within the slot, said plate being provided with an abrading-surface for sharpening the pencil-point, and a laterally-extending flange projecting from an edge of the plate, said flange normally fitting against the side of the pencil when the plate is in position in the slot, but serving as a guide and protection to the lead-point, when the latter is being sharpened upon the before-mentioned abrading-surface.

2. The combination of a pencil having a point at one end and a transverse slot at the opposite end, a ferrule fitting loosely over the said opposite end, a plate secured to the ferrule and fitting removably within the slot, and a strip of sandpaper bent around and fastened to the plate to form an abrading-surface for sharpening the pencil-point.

3. The combination of a pencil having a point at one end thereof and a transverse slot at the opposite end thereof, a plate movably fitting within the slot and provided with an abrading-surface for sharpening the point, and outwardly-extending flanges upon opposite sides of the plate which prevent lateral displacement of the plate and serve as a guide and protection to the lead-point during the process of sharpening.

4. The combination of a pencil having a point at one end and a transverse slot at the opposite end, and a plate fitting removably within the slot and formed with an abrading-surface to be employed in sharpening the point, the edges of the plate being bent outwardly to form oppositely-extending flanges which prevent lateral displacement of the plate and serve as a guide and protection for the lead-point during the process of sharpening.

5. The combination of a pencil having a point at one end thereof and a transverse slot at the opposite end thereof, a ferrule fitting loosely over the said opposite end, a plate secured to the ferrule and fitting loosely within the transverse slot, the said plate being formed with an abrading-surface to be employed in sharpening the point, and outwardly-extending flanges projecting from the edges of the plate to prevent lateral displacement thereof and serve as a guide and protection to the lead-point during the process of sharpening.

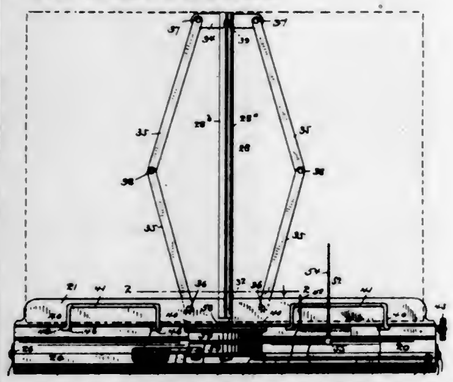
823,706. **PENCIL.** JACOB A. STAHLE, Ogden, Utah. Filed Apr. 2, 1906. Serial No. 309,461.



Claim.—1. In a pencil, the combination of an outer casing provided with a longitudinal opening and having a recess in one end thereof, a lead located within the longitudinal opening, and an approximately cylindrical collar surrounding the lead and formed of resilient material, one end of the collar fitting within the recess in the end of the casing, while the opposite end of the collar projects beyond the end of the casing and serves the double function of forming a finger-hold and of transmitting the pressure of the fingers so as to produce a binding effect upon the lead when the pencil is in use.

2. In a pencil, the combination of an outer casing provided with a longitudinal opening and having a recess in one end thereof, a lead located within the longitudinal opening, and a resilient collar surrounding the lead, one end of the collar fitting within the recess in the end of the casing, while the opposite end projects beyond the end of the casing, the inner end of the collar being formed with a depression, the sides of which form a guideway and tend to direct the point of the lead into the opening through the collar when the lead is being placed in position from the opposite end of the casing.

823,707. **MUSIC HOLDER AND TURNER.** EDGAR S. STEM, Alderson, Pa., assignor of two-fifths to Thomas S. Boyd, Alderson, Pa. Filed Feb. 21, 1906. Serial No. 246,681.



Claim.—1. In a device of the character described, the combination with a case having a slot, of spring-actuated leaf-turners projecting through said slot, a plate pivoted to the case adjacent to one end of the slot and formed with a recess and having a detent extending to a point normally above the plane of the slot and adapted to cross the slot, a dog pivoted to the plate and having its tip normally crossing the slot a short distance from the tip of the detent, a spring secured to the pivoted plate and having one end engaging the dog to hold it in its normal position and having its other end bearing on a fixed support whereby said spring will also hold the plate with its detent in normal raised position, and means for manually oscillating said plate to depress both the detent and dog.

2. The combination with a base, and leaf-turning mechanism carried thereby, of a sheet-holder comprising spring clamping members adapted to clamp loose sheets, and means for removably supporting said sheet-holder in upright position on said base.

3. In combination, a casing, leaf-turners having coil-springs at their inner ends, and a rotary post to which said springs are connected, said post having a threaded end extending through the casing and having a lock-nut for locking the post after the tension of the spring has been adjusted.

4. A leaf-turner comprising a straight arm and a pair of carrying-arms directly hinged thereto so that they may be turned downward out of operative position in substantially a uniform plane.

5. A leaf-turner comprising a straight arm having at its inner end a coil-spring and at its outer end carrying-arms directly hinged thereto which are adapted to lie on opposite sides of a leaf to be turned, the carrying-arms being adapted to be turned downward to substantially the same plane as that of said straight arm.

6. In a device of the character described, the combination with a base and a plate secured thereto and provided with slots, of leaf-turning mechanism a book-holder socketed in the base and having holding-arms adapted to lie in said slots and a spring for retaining the book-holder in operative position, substantially as described.

7. In a device of the character described, the combination with a base and a plate secured thereto and provided with slots, of leaf-turning mechanism a book-holder socketed in the base and having holding-arms adapted to lie in the slots to hold unused leaves, a spring for retaining the book-holder in operative position and means for locking the book-holder out of operative position.

8. In a device of the character described, the combination with a base and a plate secured thereto and provided with slots 46, notches 47 and projections 48, of leaf-turning mechanism an oscillatory longitudinally-movable book-holder socketed in the base and having holding-arms adapted to lie in the slots to hold unused leaves and a spring for retaining the book-holder in operative position, said book-holder being adapted to be locked out of operative position vertically by engagement of the holding-arms with the notches and to be locked out of operative position horizontally by engagement of the holding-arms under the projections.

9. In a device of the character described, the combination with a base, of leaf-turning mechanism and a rest-plate adjustably secured to the base and having a downwardly-curved front adapted to engage the grooves in the music-rest of a piano and retain the base at any required angle of inclination.

10. In a device of the character described, the combination with a base, of leaf-turning mechanism and a rest-plate having a downwardly-curved front for the purpose set forth, and slotted flanges engaging the ends of the base whereby it may be adjustably secured thereto.

11. In a device of the character described, the combination with a base, of leaf-turning mechanism an angle-plate secured to the base, a sheet-holder engaging the angle-plate, a cross-piece engaging the sheet-holder and jointed arms pivoted to the cross-piece and to the angle-plate whereby the sheet-holder is retained in place.

12. In a device of the character described, the combination with an angle-plate having a notch and a sheet-holder having a downwardly-turned lip engaging said notch and an upwardly-turned lip near its upper end, of a cross-piece having a notch to engage the upwardly-turned lip, jointed arms pivoted to the cross-piece and to the angle-plate whereby the sheet-holder is retained in place, and leaf-turning mechanism supported adjacent to said angle-plate.

13. The combination with a base, and leaf-turning mechanism supported thereby, of sheet-holder 28 comprising members hinged together and adapted to clamp loose sheets, a spring for retaining the members in the clamping position upwardly and downwardly turned lips, and means connected with said base to engage said lips to support the holder 28 in upright position substantially as shown, for the purpose specified.

823,708. **MUSIC HOLDER AND TURNER.** EDGAR S. STEM, Alderson, Pa., assignor of two-fifths to Thomas S. Boyd, Alderson, Pa. Filed Nov. 11, 1905. Serial No. 286,824.



Claim.—1. A device of the character described, comprising a plurality of spring-actuated arms, a case having a slot forming a guideway for said arms, a lever extending through the case below said slot and having a detent and a laterally-extending arm inside the case, a dog pivoted adjacent the slot and having a lug engaged by said arm of the lever, and a spring for normally holding the dog across the slot

2. A device of the character described comprising a plurality of spring-actuated arms, a case having a slot forming a guideway for said arms, a lever extending through the case below said slot and having a detent and a laterally-extending arm inside the case, a dog pivoted adjacent the slot and having a lug engaged by said arm of the lever, a spring for normally holding the dog across the slot, and means for actuating the lever to reverse the relative positions of the detent and dog.

3. A device of the character described, comprising a case having a horizontal slot and a vertical slot adjacent thereto, a plurality of spring-actuated leaf-turning arms extending through said horizontal slot, a lever extending through the vertical slot and having a detent and a laterally-extending arm inside the case, an independently-pivoted dog having a lug engaged by said arm of the lever, and a spring coiled about the pivot-pin of the dog and bearing upon the said lug and upon the lever adjacent to its detent and normally holding said lever and dog in engagement.

4. A device of the character described, comprising in its construction a jointed leaf-turning arm the inner member having ears, a pin and a slot below said pin, the outer member having an elongated slot through which said pin passes, the inner or lower end of said outer member being adapted to protrude through the slot of the inner member when in upright position.

5. A jointed arm for a leaf-turning mechanism comprising an outer member having a loop and means for engaging a leaf, and an inner member having ears and a pin extending through said loop and formed with an opening to receive the lower end of said loop when the outer member is turned at an angle to the inner member.

6. A jointed arm for a leaf-turning mechanism comprising an inner member having a clip rigidly secured thereto, said clip having ears connected by a cross-pin or rivet and formed with an opening below said pin, and an outer member comprising a wire doubled and twisted and having leaf-engaging fingers, the doubled end of the wire being formed as a loop embracing said pin and adapted to enter the opening of the clip.

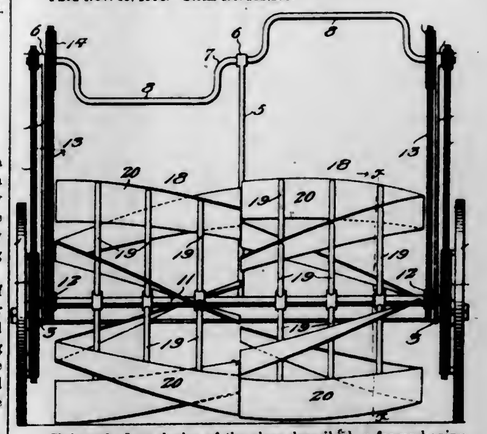
823,709. **BURIAL-VAULT.** THEODORE A. STEVENSON, Lansing, Kans. Filed Mar. 9, 1906. Serial No. 305,146.



Claim.—1. A burial-vault consisting of vertical side walls, longitudinal shoulders integral with said walls, longitudinal flanges communicating with said shoulders and extending above the latter, gabled end walls integral with the side walls, inverted-V-shaped shoulders integral with said end walls and communicating with the shoulders on the side walls, a bottom portion integral with the walls, and an inverted-V-shaped lid adapted to rest upon the shoulders.

2. A burial-vault consisting of vertical side walls, gabled end walls integral with said side walls, a bottom portion integral with the walls, keepers embedded in the upper portion of the end walls, a V-shaped lid for closing the upper portion of the vault, and spring-catches depending from the apex of said lid and adapted to automatically engage the keepers.

823,710. **SAND-MIXER.** WILLIAM G. STOCKHAM, Piqua, Ohio. Filed Nov. 10, 1904. Serial No. 232,238.



Claim.—1. In a device of the class described, a frame having transporting-wheels, a shaft sustained by the frame and operatively connected with and for driving the transporting-wheels, a second shaft operatively connected with and driven by the first-named shaft, and cutting-blades carried by the second shaft.

2. In a device of the class described, a frame having transport-

ing-wheels, a rotary crank-shaft carried by the frame, a gear connected with and for driving one of the transporting-wheels, a chain connection between said gear and crank-shaft, a cutter-shaft, cutting-blades carried thereby, and a gear and chain connection between the crank-shaft and cutter-shaft for driving the latter.

3. In a device of the class described, a frame having transporting-wheels, a gear fixed for rotation with one of said wheels, a rotary crank-shaft sustained by the frame, a pinion fixed on said shaft, a chain traveling upon and connecting the gear and pinion for driving the transporting-wheel from the crank-shaft, a cutter-shaft, cutting-blades carried thereby, a pinion fixed on the cutter-shaft, a gear fixed on the crank-shaft, and a chain operatively connecting the latter gear and pinion, whereby the cutter-shaft is driven from the crank-shaft.

4. In a device of the class described, a frame having transporting-wheels, a cutter-shaft carried by the frame, cutting-blades carried by the shaft, and a power-shaft sustained by the frame and operatively connected with and for simultaneously driving both the ground-wheels and cutter-shaft.

5. In a device of the class described, a frame having transporting-wheels, arms pivoted to the frame for vertical swinging movement, a cutter-shaft carried by the arms for movement therewith, cutting-blades on said shaft, a power-shaft, operative connections between the power-shaft and transporting-wheels and also between the power-shaft and cutter-shaft.

6. In a device of the class described, a frame having transporting-wheels, a pair of arms pivotally connected with the frame to swing in a vertical plane, a cutter-shaft carried by and for movement with the arms, means for normally fixing the arms against movement, cutting-blades carried by the shaft, a power-shaft sustained by the frame, and operative connections between the power-shaft and cutter-shaft for driving the latter.

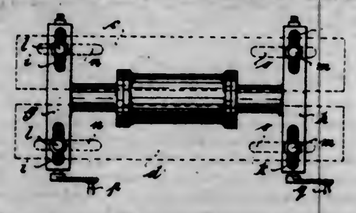
7. In a device of the class described, a frame having transporting-wheels, a shaft journaled in the frame, mechanism for driving said shaft, and a pair of cutter members fixed upon and for rotation with the shaft, said members each comprising arms radiating from the shaft and blades attached to and carried by the arms, said blades being arranged in pairs each pair formed from a single length of material bent adjacent its longitudinal center upon itself and the blades of the respective members being arranged in relatively staggered relation and spirally twisted from end to end.

8. A machine for working sand or like material in bulk, the same comprising a frame, a mixing or kneading device mounted upon or carried by the frame and comprising elements arranged to work the material in the plane of movement of the machine and simultaneously back and forth to effect a blending and a ridging thereof, propelling means supporting the said frame, and actuating means for the mixing or kneading device and for the said propelling means mounted upon the frame to admit of the machine being run backward and forward.

9. A machine for working sand or like material in bulk, the same embodying a mixing or kneading device comprising blades alternately inclined in opposite directions to the plane of movement of the machine, and actuating means for said mixer or kneader to effect a blending and working of the material by a combined tossing and back-and-forth movement thereof without scattering or spreading.

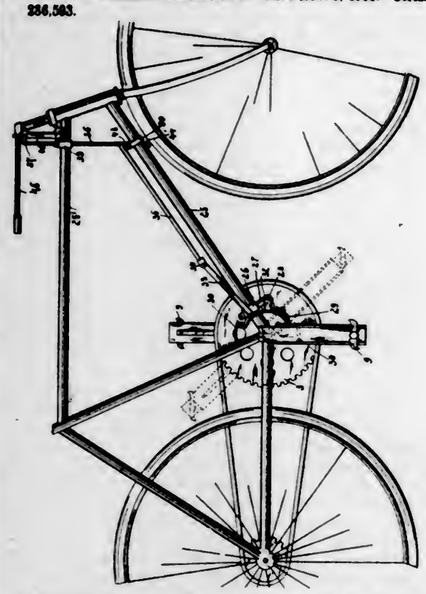
10. A machine for working sand or like material in bulk, the same comprising a mixing or kneading device and means for rotating said device, said rotary mixer comprising blades alternately inclined in opposite directions lengthwise thereof to simultaneously toss the material in the plane of travel of the machine and move it back and forth to effect a thorough blending without scattering or spreading thereof.

823,711. APPARATUS FOR MAKING FRAMES FOR MINE-CAGES AND THE LIKE. PETER THIELMANN and JOHANN MERKENBUSE, Duisburg, Germany. Filed Jan. 24, 1905. Serial No. 242,531.



Claim.—Apparatus for transforming seamless rings into rectangular frames for mine-cages and the like, comprising two parallel cross-heads, right and left hand screwed spindles turning therein, vertical pins traveling on the spindles, slotted platforms through each of which one pin of each cross-head projects, pistons connected with the cross-heads, and pressure-cylinders in which the pistons work, substantially as described.

823,712. ADJUSTABLE PEDAL-CRANK FOR BICYCLES. BERNHARD UHLMANN, Passaic, N. J. Filed Nov. 9, 1905. Serial No. 286,563.



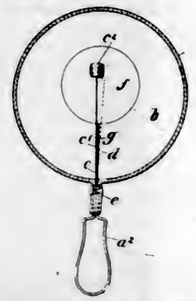
Claim.—1. The combination with a cycle-wheel, of adjustable pedal-cranks to permit various throws thereof, a lock mechanism for each crank to lock the latter in various positions, means for automatically releasing said locks and means to allow a manual adjustment of the releasing device, substantially and for the purpose as specified.

2. The combination with a cycle-wheel, of an adjustable pedal-crank, comprising an outer frame, a sliding part guided therein and forming the crank proper, said movable part carrying the pedal, notches in said movable part, an angular lever attached to the frame of the crank, a lock bolt or pin at one end of said lever, a transversal bore in the frame, the bolt being guided in said bore and adapted to engage one of the notches of the sliding crank and lock the latter, a device for automatically releasing the locking-bolt and means to allow a manual adjustment of the releasing device, substantially and for the purpose as specified.

3. The combination with a cycle-wheel, of adjustable cranks for the pedals, each comprising an outer frame and a slide guided therein, a crank-shaft, the said frame being secured thereto, a lever pivoted to the said frame, a locking bolt or pin at one end of said lever, and a projecting nose at the opposite end, a pivot secured to the bicycle-frame at one side of the crank-shaft, cam-shaped bodies capable of swinging around the said pivot mounted eccentrically to the crank-shaft and through the path of the projecting nose of the lever, a bracket attached to the bicycle-frame bearing said pivot, said cam-shaped bodies being adapted when properly adjusted to come in contact with said nose of the locking-lever and automatically release the sliding part of the crank, and means to allow a manual adjustment of the cam-shaped bodies, substantially and for the purpose as specified.

4. The combination with a cycle-wheel, of adjustable cranks for the pedals, each comprising an outer frame and a slide guided therein, a crank-shaft, the said frame being secured thereto, a lever pivoted to the said frame, a locking bolt or pin at one end of said lever, and a nose at the opposite end thereof, a pivot secured to the bicycle-frame at one side of the crank-shaft, cam-shaped bodies capable of swinging around the said pivot mounted eccentrically to the crank-shaft and through the path of the said nose, a bar projecting forward from each cam-shaped body, the forward ends of said bars being bent toward each other, a connecting-rod hinged to said bars, a rod adjacent to the steering-tube, said rod having a handle at its upper end and a crank-arm at its lower end, the connecting-rod being attached to said crank-arm, substantially and for the purpose as specified.

823,713. TOY. JULIUS CHEIN, New York, N. Y. Filed Nov. 18, 1904. Serial No. 233,255.



Claim.—1. In a device of the type set forth, a wire frame consisting of a handle and a hoop formed integral with one another, a vibrating sheet stretched upon said hoop, a plurality of hammers each consisting of a spring member having a head, said hammers having their lower ends extending downwardly to engage the handle on its opposite sides, and means to secure said ends to said handle.

2. A toy consisting of a handle carrying a vibrating sheet, hammers each consisting of a spring member having a head, the lower ends of the members extending downwardly to engage opposite sides of said handle, an element for regulating the sound having its lower end engaging said handle and its upper end engaging the vibrating sheet, and means to secure said element and said spring members to the handle.

3. In a toy, a handle and a vibrating sheet carried thereby, hammers each consisting of a spring member having a head on its upper end, the lower ends of said members extending to engage the opposite sides of the handle, and means for rigidly supporting said lower ends of the spring members from the handle.

4. In combination with a handle having a vibrating sheet secured thereto, hammers having their lower ends engaging the handle, a piece of wire having its lower end engaging the handle, and having its upper end curved or bowed to engage said sheet.

5. In combination with a handle and a vibrating sheet secured thereto, hammers consisting of spring members having heads, the lower ends of the said members engaging the handle on opposite sides thereof, and means encircling the said lower ends to bind said hammers to said handle.

823,714. GUMMING-MACHINE. EMIL A. CLAUS, Hartford, Conn. Filed Oct. 7, 1905. Serial No. 281,746.

Claim.—1. The combination, with a blank-conveyer, and a gumming mechanism comprising a gum-supply device; of a gumming device, and means for bringing said gumming device repeatedly into contact with said supply device and a blank on the conveyer, alternately, to lay a plurality of gum films on the same portion of the blank-surface.

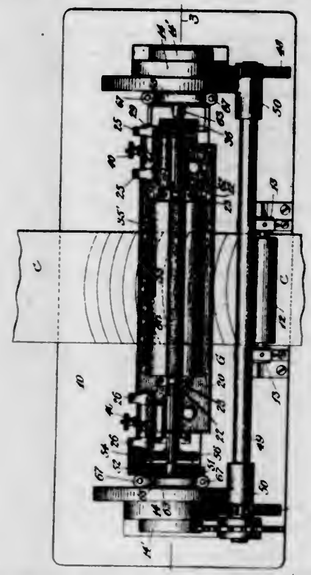
2. The combination, with a blank-conveyer, a gumming mechanism comprising a gumming device, and means for actuating the same for laying a plurality of gum films on each one of the blanks; of a blank-retaining device coöperative with the conveyer and for holding the blanks thereon during the gumming operation.

3. The combination, with a blank-conveyer, a gumming mechanism comprising a gumming-roller, and means for guiding the same in parallelism with said conveyer and into contact with the blanks thereon, of a blank-retaining device coöperative with the conveyer and for holding the blanks thereon during the gumming operation.

4. The combination, with a blank-conveyer, and a gumming mechanism comprising a gum-supplying device; of a gumming-roller, means for guiding said gumming-roller in parallelism with the conveyer and into contact with the blanks on the conveyer, and a device for holding the blanks during the gumming operation.

5. The combination, with a blank-conveyer, and a gumming mechanism comprising a gumming-roller; of means for bringing said roller into contact with the blanks on the conveyer, and a friction-roller coöperative with the conveyer and for holding the blanks thereon during the gumming operation.

6. The combination, with a blank-conveyer, and a gumming mechanism comprising a gum-reservoir, a gum-supplying roller cooperative therewith; and a gumming-roller; of a cam for bringing said gumming-roller into contact with said supplying-roller and the blanks on the conveyer, alternately.



7. The combination with a blank-conveyer, and a gumming mechanism comprising a gum-reservoir, a gum-supplying roller, and a gumming-roller; of a cam for guiding said gumming-roller in parellelism with the conveyer, and for repeatedly gumming each blank thereon.

8. The combination with a blank-conveyer, a gumming mechanism comprising a gum-reservoir, and a gum-supplying device, and a gumming-roller; of a pair of stationary cams for guiding said gumming-roller in parallelism with the conveyer, and means for actuating said roller.

9. The combination with a blank-conveyer, a gumming mechanism comprising a gum-reservoir and a gum-supplying device, and a gumming-roller; of a pair of stationary cams for guiding said gumming-roller in parallelism with the conveyer, and means for actuating said roller, and a device for holding the blanks on the conveyer during the gumming operation.

10. In a gumming-machine, the combination, with a gum-reservoir, a gum-supplying device, and a gumming-roller; of means for bringing said roller into contact with said supply device and to lay a film of gum substantially on the entire surface of said gumming-roller.

11. In a gumming-machine, the combination, with a gum-reservoir, a gum-supplying device, and a gumming-roll; of a cam for bringing said roller into contact with said supply device and to lay a film of gum substantially on the entire surface of said gumming-roller.

12. In a gumming-machine, the combination, with a gum-reservoir, and a supply-roller; of a yoke mounted for revolution around the reservoir, a gumming-roll carried by said yoke, and means for controlling the movement of the yoke and for bringing said roll into contact with the supply-roller.

13. In a gumming-machine, the combination, with a gum-reservoir, and a supply-roller; of a yoke mounted for revolution around the reservoir, a gumming-roll carried by said yoke, and a cam for controlling the movement of the yoke and for bringing said roll into contact with the supply-roller.

14. In a gumming-machine, the combination, with a gum-reservoir, and a supply-roller; of a pair of yokes mounted for simultaneous revolution around said reservoir, a gumming-roll carried by said yokes, a pair of stationary cams for controlling the movement of the yokes, and means for positioning the gumming-roll on said yokes.

15. In a gumming-machine, the combination, with a gum-reservoir, and a gum-supplying roller, of a pair of yokes mounted for revolution around said reservoir, a gumming-roll carried by said yoke,

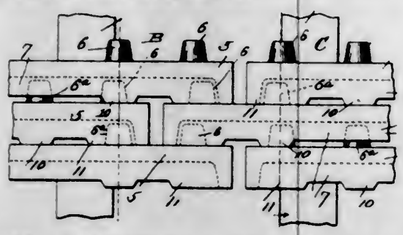
means for controlling the radial movement of said yokes, and means for positioning the gumming-roller on the yokes.

16. In a gumming-machine, the combination, with a gum-reservoir, a ductor-roll, and a transfer-roller; of means for positioning said transfer-roller relatively to the ductor-roll, and means for actuating the transfer-roller at a greater circumferential speed than that of the ductor-roll.

17. In a gumming-machine, the combination, with a pair of supports, and gum-reservoir mounted for rotation therein; of a gum-supplying device, a gumming-roll mounted for revolution around the reservoir, and means for controlling the movement of said roll toward and away from the supply device.

18. In a gumming-machine, the combination, with a gum-reservoir, a ductor-roll rotatable therein, a transfer-roller coöperative with the ductor-roll, and means for positioning said transfer-roller relatively to the ductor-roll; of a pair of yokes mounted for revolution around said reservoir, a gumming-roll carried by said yokes, and means for positioning the gumming-roll on the yoke.

823,715. **FURNACE-GRATE.** ALFRED COTTON, Newark, N. J. Filed Sept. 21, 1905. Serial No. 279,396.



Claim.—1. A grate consisting of a plurality of files each file being formed of a series of grate-bars arranged end to end in such manner as to break joints with bars in adjoining files, and means for interlocking the overlapped ends of said grate-bars against independent vertical movement.

2. A grate formed of a series of grate-bars arranged in longitudinal files or lines and in transverse ranks, the bars in one file breaking joints with the bars in adjoining files, means for loosely interlocking the overlapped ends of adjoining bars, and means for loosely interlocking against independent vertical movement the outer ends of the bars of the end ranks.

3. A grate composed of a series of grate-bars arranged in longitudinal files or lines and transverse ranks or groups, the bars of the intermediate rank or ranks overlapping some of the bars of the end ranks and means for interlocking the overlapped ends of the bars of one rank with the bars of the adjoining rank and for interlocking the bars of the end ranks which are not overlapped with those that are overlapped.

4. A furnace-grate composed of a series of grate-bars arranged in ranks and files, means formed integral with each bar for loosely interlocking it with the adjoining bars of the same rank against vertical and endwise movement and for interlocking some of the bars of one rank with the adjoining bars of the next rank, whereby the ranks will be interlocked against independent endwise or vertical movement.

5. A furnace-grate composed of a series of grate-bars arranged in ranks and files the end ranks being formed of long and short bars, the long bars extending inward beyond the ends of the short bars, and an intermediate or middle rank composed of bars of equal length, means on the long bars of the end ranks for loosely interlocking said bars with the adjoining bars of the intermediate rank and means on the adjoining short bars of the end ranks, and the bars of the intermediate rank to loosely interlock said bars with the long bars of the end ranks and the adjoining bars of said intermediate rank.

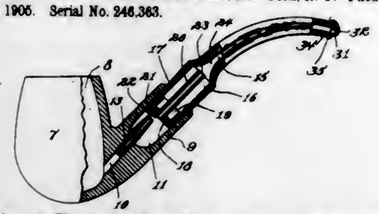
6. A grate formed of a series of bars arranged in files and ranks, the bars in the files being arranged end to end and the bars in the ranks being so arranged that the bars of one file will break joints with the bars in the adjoining files, means for interlocking the ends of said bars against independent vertical movement.

7. A grate formed of a series of bars arranged in files and ranks, the bars in the files being arranged end to end and the bars in the ranks being so arranged that the bars of one file will break joints with the bars in the adjoining files, means integral with the bars and projecting from the sides thereof to interlock said bars against independent vertical movement.

8. A grate formed of a series of bars arranged in files and ranks, the bars in the files being arranged end to end and the bars in the ranks being so arranged that the bars of one file will break joints with the bars in the adjoining files, and means for interlocking the bar which breaks the joints between the bars of adjoining files to the four adjoining bars.

9. A grate formed of a series of bars arranged in files and ranks, the bars in the files being arranged end to end and the bars in the ranks being so arranged that the bars of one file will break joints with the bars in the adjoining files, each bar being provided on one side and near each of its ends with a pair of horizontal laterally-extending bosses 6 and 6ª and on its other side near each of its ends with the rib 8 and an enlargement 11 and with the rib 9 and an enlargement 10, the rib 8 and enlargement 11 being in the same transverse plane with the bosses 6 and the rib 9 and the enlargements 10 being in the same transverse plane with the bosses 6ª, said ribs and enlargements being separated from each other vertically a distance substantially equal to the diameter of the adjoining boss 6 or 6ª.

823,716. **PIPE.** LAWRENCE E. DARE, New York, N. Y. Filed Feb. 20, 1905. Serial No. 246,363.



Claim.—1. The combination with a bowl member having a chamber at its upper end, and a stem having a chambered portion at its lower end with such end fitting into the end of the bowl member, of a cup member comprising a cylindrical portion closed at one end and having its other end arranged to fit into the engaging end of the stem, the cup member having an elongated tube extending from its closed end portion upward beyond the cylindrical portion into the chamber of the stem, the bore of the tube being continued through the end portion of the cylindrical part.

2. In a pipe, the combination with the bowl member having its upper end chambered, and the stem having its lower end chambered and fitted into the bowl member, of an integral cup member comprising a cylindrical portion 19, having a closed end 18 and flange 25, whereby the member can be inserted in the lower end of the stem with the flange engaging the end portion thereof, the cup member also having an integral tube 20 extending upward from the parts beyond the cylindrical portion 19 and provided with the bore 23 continuing through the end portion 18, substantially as set forth.

823,717. **ROTARY MOTOR.** PETER ELLIS, Wellington, New Zealand. Filed Apr. 19, 1906. Serial No. 312,632.

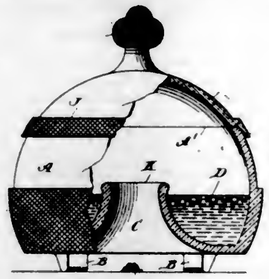


Claim.—1. A motor comprising in combination, a drum having a series of radially-formed cylinders, pistons for each of said cylinders, a casing of larger circumference receiving said drum and supported only by said pistons and an axle upon which the drum is revolubly mounted, said axle having motive-fluid and exhaust passages, each cylinder having a port giving communication with said motive-fluid and exhaust passages in the spindle alternately substantially as specified and illustrated.

2. A motor comprising in combination, a drum having a series of radially-formed cylinders, pistons for each of said cylinders, a loose casing of larger circumference than and receiving said drum and supported only by said pistons and an axle upon which the drum is revolubly mounted, said axle having motive-fluid and exhaust-passages, each cylinder having a port giving communication with said motive-fluid and exhaust-passages in the spindle alternately, and a pulley in adjustable contact with the periphery of said casing and affording an abutment to cause the drum and casing to revolve, substantially as herein specified and illustrated.

3. In a motor of the type indicated, a drum having a series of radial cylinders fitted with pistons, a loose casing larger than and receiving said drum and supported only on said pistons, a spindle upon which said drum is mounted having passages for the admission and exhaust of motive fluid from said cylinders, the drum and the casing revolving in the same direction substantially as herein specified and illustrated.

823,718. **INSECT-TRAP.** HENRY FREIMANN, Fort Wadsworth, N. Y. Filed Mar. 7, 1906. Serial No. 304,647.



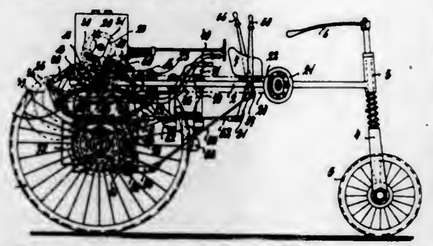
Claim.—1. An insect-trap comprising a transparent body having an internal trough and an upper edge which is directly above said trough, the said body having a non-transparent band or portion at the level of said trough, and a cover set upon said upper edge and having a flange surrounding the same and also having a non-transparent band to conceal the joint of the cover and the body.

2. An insect-trap comprising a transparent body having an internal trough and an upper edge which is directly above said trough, and a cover set upon said upper edge and having a flange surrounding the same and also having a non-transparent band to conceal the joint of the cover and the body.

3. An insect-trap comprising a transparent body having an internal trough, and a cover for said body, provided with a non-transparent band to conceal the joint of the cover and the body.

4. An insect-trap comprising a transparent body having an internal trough, and a cover set on said body and carrying a fuel-cup with a light-increasing outer surface.

823,719. **MOTOR-VEHICLE.** ALBERT FRÖDE, Bautzen, Germany. Filed Apr. 19, 1904. Serial No. 203,959.



Claim.—A motor-vehicle for agricultural purposes, in which the motor 20 is arranged on two cross-bars 18 and 19 on which it can be shifted and of which one is provided with a screw-thread 17 in a manner that the lateral shifting of the motor 20 may be effected from the seat 7 of the driver by means of suitable transmission devices, substantially as set forth.

823,720. **ELEVATOR-BRAKE.** MCCLELLAN FULLENLOVE, Louisville, Ky., assignor to Fullenlove Elevator Company, Louisville, Ky., a Corporation of Kentucky. Filed Jan. 13, 1905. Serial No. 240,943.



Claim.—1. In an elevator-brake, the combination with the cage, of a fixed rack, a spiral traveling on the rack, and cable connections between the spiral and the cage.

2. In an elevator-brake, the combination with a cage, of a fixed rack, a spiral traveling on the rack, a frame in which the spiral is axially movable, and cable connections between the frame and the rack.

3. In an elevator-brake, the combination with the cage, of a brake traveling with the cage, and cable connections between the cage and the brake to cause them to move together.

4. In an elevator-brake, the combination with the cage of a traveling spiral, means for braking the spiral, and a cable connection between the cage and the spiral.

5. In an elevator-brake, the combination with a cage, of a spiral traveling with the cage and movable axially downwardly to cause a braking action, and a spring normally preventing the braking action.

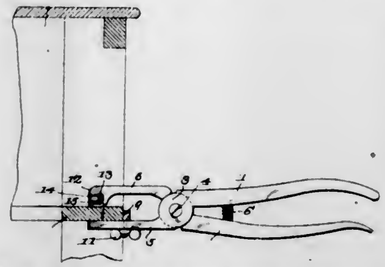
6. In an elevator-brake, the combination with the cage, of a spiral traveling with the cage and movable axially downwardly to cause a braking action.

7. In an elevator-brake, the combination with the cage, of a spiral traveling with the cage and movable axially upwardly and downwardly to cause a braking action in either direction.

8. In an elevator-brake, the combination with the cage, of a spiral movable with the cage and upward and downward axially to cause a braking action, and a spring normally preventing the downward axial movement.

9. In an elevator-brake, the combination with the cage of a fixed slotted tube mounted to one side of the cage, a rack mounted within the tube, a spiral for travel on the rack, a frame carrying the spiral and extending through the slot in the tube, means for braking the traveling spiral and a cable connection between the cage and the frame.

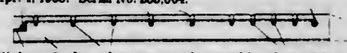
823,721. **TOOL FOR SETTING DRAWER-STOPS.** CHARLES T. GARDEN, and HARRY GARDEN, Macon, Ga. Filed June 20, 1905. Serial No. 266,187.



Claim.—1. A tool of the character described comprising a pair of handle-controlled pivotally-connected jaws, one of the jaws being provided in its inner face with a work-receiving seat having a lateral recess communicating therewith, and a spring one end of which is seated in the lateral recess and its opposite end disposed within the work-receiving seat.

2. A tool of the character described, comprising a pair of pivotally-connected handle-controlled jaws, one of the jaws being provided in its inner face with a work-receiving seat having a lateral recess communicating therewith, a spring seated in the lateral recess and having its intermediate portion bowed and disposed within the work-receiving seat, and a gage carried by the inner face of the other jaw and adjustable with respect to the seat.

823,722. **FENCE-POST.** FRANK M. GARRY, Bergen, N. Y. Filed Apr. 4, 1905. Serial No. 253,864.



Claim.—1. In a fence-post, the combination with spaced portions having notches therein registering in pairs and having registering perforations therein above and below the notches, of a pivot-pin engaged in the lowermost perforations, a member having its lower end bent to form a loop, said pin being engaged in the loop for pivotal movement of the member thereupon into and out of the space between the spaced portions, the registering notches being adapted for the reception of the wires, the upper end of said member being bent inwardly and then upwardly, the upwardly-bent portion lying at the opposite side of the uppermost perforations from the notched edges

of the spaced portions, and a pin removably engaged in the uppermost perforations in engagement with the upwardly-bent portion of the member to hold the latter against outward pivotal movement, said member when between the spaced portions being adapted for engagement of wire disposed in the notches to hold them in such position.

2. A fence-post comprising a metallic plate bent longitudinally to form portions extending at an angle to each other, said portions having pairs of registering notches in their free edges and having pairs of registering perforations adjacent to their ends, a pivot-pin engaged in the lower pair of perforations, a retaining-bar bent at its lower end to form an offset loop encircling the pivot-pin, and a pin removably engaged in the upper perforations, said retaining-bar being bent inwardly and then upwardly at its upper end and lying with its upwardly-bent portion inwardly of the removable pin to prevent outward movement of the retaining-bar, said bar when in engagement with the removable pin lying in position for engagement of wires disposed in the notches to prevent removal thereof.

823,723. **PERPETUAL CALENDAR.** JOSEPH GUIDINGER, Los Angeles, Cal. Filed Jan. 3, 1905. Serial No. 239,320.



Claim.—1. A perpetual calendar comprising two relatively rotatable members, the corresponding faces of the members being provided on one side respectively with groups of marks designating the months and the years, and on the other side with marks designating respectively the days of the week and the dates of the month.

2. A calendar comprising two relatively rotatable members, one of the members carrying on its front face marks designating the months arranged in seven angularly-equidistant groups, and the other member carrying on its front face marks designating the years arranged in seven equidistant groups; and one of the members carrying on its rear face angularly-equidistant marks designating the seven days of the week, and the other member carrying on its rear face marks designating the days of the month arranged in seven angularly-equidistant groups, the members increasing progressively by seven in each group, and increasing from one group to the next by a difference of one.

3. A calendar comprising an outer member, an inner disk member rotatable within the outer member, the front faces of the said members being provided respectively with seven angularly-equidistant groups of marks designating years, and with angularly-equidistant groups of marks designating months, and the rear faces of the respective members being provided with angularly-equidistant groups of marks designating the days of the month, and with angularly-equidistant marks designating the days of the week.

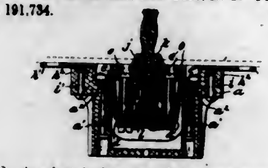
4. A calendar comprising two relatively rotatable members, one of the members carrying on its rear face angularly-equidistant marks designating the seven days of the week, and on the front face marks designating the months arranged in seven angularly-equidistant groups, and the other member carrying on its rear face, marks designating the days of the month arranged in seven angularly-equidistant groups, the numbers increasing progressively by seven in each group and increasing from one group to the next by a difference of one, said other member carrying on its front face marks designating the years arranged in seven equidistant groups, the marks designating leap-years being duplicated in adjacent groups and one of said duplicate marks having a special designating-mark.

5. A perpetual calendar composed of an outer member, and a disk member revolving within said outer member, with the years and months on the front faces of said members arranged in relation to the days of the month and days of the week on the back faces, so that revolving the disk and thus setting a given month and year to register opposite each other will automatically set its back face to properly register the days of the week over the columns of days of the month for that particular month of that year.

6. A calendar comprising an outer member having an opening, a ring in said opening, and a disk member within the ring, the ring having continuous flanges on both sides of said members extending outwardly over the outer member and inwardly over the inner member.

7. A calendar comprising an outer member having an opening, a ring in said opening, and a disk member within the ring, said inner member being smaller in diameter than the opening in the outer member, and the said ring being bent on both sides of said members to form flanges extending outwardly over the outer member and inwardly over the inner member on both sides thereof.

823,724. **ELECTRICAL RECEPTACLE AND PLUG.** JOHN C. HATZEL and EDGAR L. MORLEY, New York, N. Y. Filed Feb. 2, 1904. Serial No. 191,734.



Claim.—1. An electrical receptacle having a recessed extension at each end adjacent to its open side, each extension provided with slots, a contact-spring secured in each recess, the free end of each spring projecting into the interior of the receptacle, means in connection with each contact-spring for securing a circuit-wire directly thereto, whereby the use of intervening tap-wires is avoided.

2. An electrical receptacle comprising an oblong box made of insulating material, open on its upper side, extensions provided with recesses and open slots located at the ends of the open side of said box, L-shaped contact-springs secured in said recesses and projecting inwardly into the body of the box, contact-plates resting upon said springs means for securing said plates and springs within said recesses, means for securing the ends of circuit-wires to said plates, a plug for said receptacle, said plug having oppositely-disposed pole-pieces for contact with the L-shaped springs of said receptacle.

3. An electrical receptacle, comprising an oblong porcelain box open upon its upper side, recessed extensions provided with open slots on the upper side of said box, contact plates and springs secured in said recessed extensions, said springs extending into said box, means for securing circuit-wires to said contact-plates, and a plug for said receptacle, said plug having contact-springs secured upon its opposite sides for contact with the contact-springs of said receptacle.

4. An electrical receptacle comprising an oblong porcelain box open upon its upper side, recessed extensions located at the ends of the open side of said box, two open slots leading from the outer side of each of said recessed extensions, means for securing circuit-wires in said recessed extensions, and a plug having leading-out wires and contact-springs for insertion into the open side of said box.

5. An electrical receptacle consisting of an oblong hollow box, provided with recessed extensions on the opposite ends of its open side, two open slots in each of the said recessed extensions, and means for securing electrical connections in said recessed extensions, such connections leading out through said open slots.

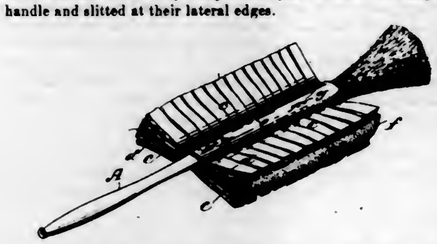
6. An electrical receptacle comprising an oblong box made of insulating material, open on its upper side, extensions provided with recesses and open slots located at the ends of the open side of said box, L-shaped contact-springs secured in said recesses and projecting inwardly into the body of the box, contact-plates resting upon said springs, means for securing said plates and springs within said recesses, and means for securing the ends of circuit-wires to said plates.

7. An electrical receptacle comprising an oblong porcelain box open upon its upper side, recessed extensions located at the ends of the open side of said box, two open slots leading from the outer side of each of said recessed extensions, means for securing circuit-wires in said recessed extensions.

8. An electrical receptacle, comprising an oblong porcelain box open upon its upper side, recessed extensions provided with open slots on the upper side of said box, contact plates and springs secured in said recessed extensions, said springs extending into said box, means for securing circuit-wires to said contact-plates.

823,725. **DUSTER.** HENRY A. HAYDEN, Jersey City, N. J. Filed Sept. 9, 1905. Serial No. 277,661.

Claim.—1. A duster, having a handle, a fiber brush at the end of the handle, and a body composed of plies of felt embracing the handle and slitted at their lateral edges.



2. A duster, having a handle, a brush secured to the end of the handle with its fibers extending substantially parallel with the handle, and a body consisting of two sheets or plies of felt which embrace the handle and are slitted at their lateral margins, and pieces of slitted felt between said plies at the respective sides of the handle, the felt being secured together at the sides of the handle.

3. A duster, having a handle A, with a flattened portion *a*, a brush B on its end composed of fiber, and a body portion C, composed of two sheets *c*, *c*, of thick felt, embracing the flattened handle and slitted at their lateral edges, the folded and slitted pieces of felt *d* embraced between the sheets *c*, *c* at the respective sides of the handle, and the fiber *f* between the folds of the felt *d*, as set forth.

823,726. **SWITCH-SIGNAL.** JAMES W. HICKS, Everson, Pa. Filed Mar. 22, 1906. Serial No. 307,436.

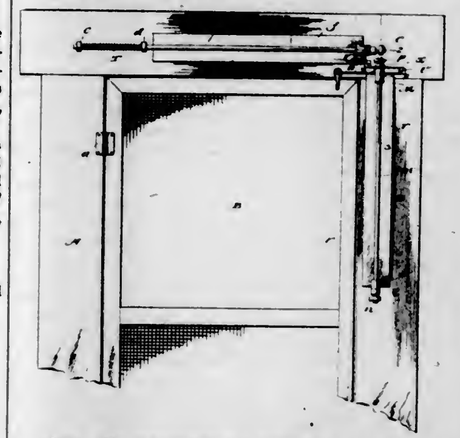


Claim.—1. A signal comprising a support, a vertical rod pivoted upon the support, a signaling device carried by the upper end of the rod, said rod being movable to bring the signaling device within reach of the ground, said rod being movable to shift the signaling device into different signaling positions, and means engaged with the lower end of the rod for shifting the rod, said rod being movable slidably out of engagement with the shifting means to permit of downward movement of the upper end of the rod.

2. A signal comprising a support, a vertical rod pivoted upon the support for downward movement of its upper end, a lamp pivotally mounted upon the upper end of the rod for movement upon a horizontal axis to maintain a vertical position at all times, and means for holding the lamp against movement with respect to the rod when the latter is in vertical position, said rod being movable to bring the holding means out of operative position.

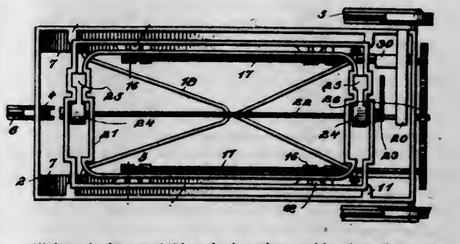
3. A signal comprising a support, a vertical member pivoted upon the support for movement of its upper end toward the ground, a lamp pivotally mounted upon the upper end of the member for swinging movement upon a horizontal axis, said rod having a cross-sectionally-angular passage formed longitudinally therethrough, a revoluble socket-piece mounted vertically at the lower end of the rod, a bar fitted within the passage of the rod for sliding movement therewithin, said bar being engaged at its upper end in the lamp and at its lower end in the socket-piece for rotation of itself and the rod with the socket-piece, and means for rotating the socket-piece, said rod being movable vertically independently of the bar to bring the latter out of engagement with the lamp, said bar being constructed and arranged for subsequent vertical movement with the rod to bring the bar out of engagement with the socket-piece.

823,727. **FLY-FAN.** PHILIP F. HODGES, Collegeview, Nebr. Filed June 29, 1905. Serial No. 267,571.



Claim.—The combination of a door-casing, a swinging door, rotary fans mounted on the casing above and at one side of the door and each comprising a shaft, a blade carried by and fixed to each shaft, and a drum arranged on each shaft and having a kerf in its inner end receiving one end of the blade, whereby the drum is fixed to the shaft by the blade, a spring for rotating the fan above the door in one direction, and a cable connected to the drum of the said fan and the swinging door and engaging the drum of the fan at the side of the door.

823,728. **SCALE.** JOHN W. HUGHES, Quincy, Ill. Filed June 30, 1905. Serial No. 267,838.

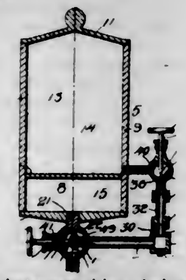


Claim.—1. In a weighing device, the combination of a scale-truck, a frame associated therewith, means for raising said frame, scale-levers carried by said frame, a scale-frame supported by said scale-levers, a locking means arranged to engage said frame and scale-frame for locking said scale-frame against lateral movement, substantially as described.

2. In a weighing device, the combination of a scale-truck, scale-levers associated therewith, means carried on said scale-truck for raising said scale-levers, a scale-frame supported by said scale-levers, and means engaging the outside of said scale-frame for locking said scale-frame against lateral movement, substantially as described.

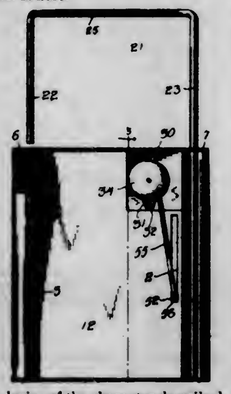
3. In a weighing device, the combination of a scale-truck, a frame associated therewith, means carried on said scale-truck for raising said frame, scale-levers carried by said frame and a scale-frame supported on said scale-levers, substantially as described.

828,729. **LUBRICATOR.** BURT O. KELLY, Petroleum, Ind., assignor of one-half to William R. Allyn, Ponsto, Ind. Filed Apr. 4, 1905. Serial No. 253,821.



Claim.—A lubricator comprising a body portion having an oil-reservoir therewithin, a downwardly-extending stem carried by the body portion, said stem having laterally and vertically communicating passages therewithin and being adapted for connection of its vertical passage with the cylinder of a gas-engine, a horizontal pipe engaged in the lateral passage, connections between said pipe and oil-reservoir for the passage of oil from the reservoir to the pipe, said pipe extending into the stem and having a valve-seat at its inner end, a valve-stem slidably engaged in the first-named stem at the opposite side thereof from the horizontal pipe and adapted for movement to bring its inner end into engagement with the valve-seat to close the horizontal pipe, a spring arranged to hold the valve-stem yieldably out of operative position and a flange carried by the valve-stem and extending toward the horizontal pipe, said flange being adapted to receive pressure thereagainst to move it toward the pipe and to bring the valve-stem into position to close said pipe.

828,730. **MAIL-BOX.** ALMER KING, Aurora, Ill. Filed Oct. 27, 1905. Serial No. 284,663.

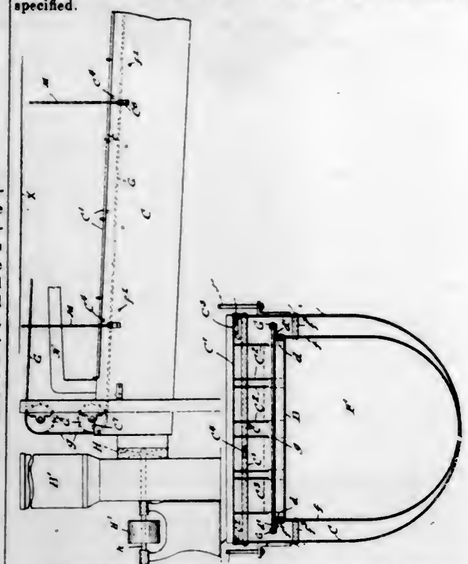


Claim.—In a device of the character described, a mail-box comprising telescoping parts, one part having a mail-receiving slot therein and also a guide-slot, a bell mounted within one of said parts, and means having one end working in said guide-slot with its opposite end connected with the bell to ring the latter upon movement of one telescopic part with relation to the other in either direction.

828,731. **APPARATUS FOR DRYING CANS.** MEREDITH LEITCH, New York, N.Y., assignor to American Can Company, New York, N.Y., a Corporation of New Jersey. Filed Mar. 6, 1905. Serial No. 248,783.

Claim.—1. In a can-drying apparatus, the combination with a furnace a smoke-stack and a boiler, of a can-drying conduit, a flue extending within and through said conduit from the boiler to the smoke-stack, and having a flat can heating and drying plate for its upper wall, an endless flexible can-conveyer, having its lower run entering said conduit at one end thereof and extending through said conduit over said can heating and drying plate for conveying the cans over the plate and through the conduit, and having its upper run extending above said conduit, substantially as specified.

2. In a can-drying apparatus, the combination with a furnace a smoke-stack and a boiler, of a can-drying conduit, a flue extending within and through said conduit from the boiler to the smoke-stack, and having a flat can heating and drying plate for its upper wall, an endless flexible can-conveyer, having its lower run entering said conduit at one end thereof and extending through said conduit over said can heating and drying plate for conveying the cans over the plate and through the conduit and having its upper run extending above said conduit, and a fan or blower in said flue, substantially as specified.



3. In a can-drying apparatus, the combination with a furnace, a smoke-stack and a boiler, of a can-drying conduit, a flue extending within and through said conduit from the boiler to the smoke-stack, and having a flat can heating and drying plate for its upper wall, a can-conveyer extending through said conduit over said can heating and drying plate for conveying the cans over the plate and through the conduit, said conduit being furnished with longitudinal separator or partition plates dividing the space in the conduit above said can heating and drying plate into a plurality of parallel can-runways, substantially as specified.

4. In a can-drying apparatus, the combination with a furnace a smoke-stack and a boiler, of a can-drying conduit, a flue extending within and through said conduit from the boiler to the smoke-stack, and having a flat can heating and drying plate for its upper wall, an endless flexible can-conveyer, having its lower run entering said conduit at one end thereof and extending through said conduit over said can heating and drying plate for conveying the cans over the plate and through the conduit and having its upper run extending above said conduit, and suspension-rods for suspending said conduit overhead from the ceiling, substantially as specified.

5. In a can-drying apparatus, the combination with a furnace a smoke-stack and a boiler, of a can-drying conduit, a flue extending within and through said conduit from the boiler to the smoke-stack, and having a flat can heating and drying plate for its upper wall, a can-conveyer extending through said conduit over said can heating and drying plate for conveying the cans over the plate and through the conduit, said conduit being furnished with longitudinal separator or partition plates dividing the apace in the conduit above said can heating and drying plate into a plurality of parallel can-conveyers, and can-runways for delivering the cans to be dried into said conduit and onto said drying-plate, substantially as specified.

6. In a can-drying apparatus, the combination with a can-drying conduit, of a flue extending within and through said conduit, having a flat upper plate or wall over which the cans may be conveyed or rolled, an endless flexible can-conveyer having its lower end entering said conduit at one end thereof and extending through said conduit over said flat upper plate of said flue for conveying the cans over said plate and through the conduit, said conveyer having its upper run extending above and outside the conduit and means for suspending said conduit overhead from the ceiling, substantially as specified.

7. In a can-drying apparatus, the combination with a can-drying conduit, of a flue extending within and through said conduit, having a flat upper plate or wall over which the cans may be conveyed or rolled, a can-conveyer extending through said conduit over said flat plate, and longitudinal separator-plates forming separate can-runways over said plate, substantially as specified.

8. In a can-drying apparatus, the combination with a can-drying conduit, of a flue extending within and through said conduit, having a flat upper plate or wall over which the cans may be conveyed or rolled, a can-conveyer extending through said conduit over said flat plate, and laterally-adjustable longitudinally-extending separator-plates above said flat can-drying plate to form a plurality of can-runways thereon, substantially as specified.

828,732. **SAFETY RAILWAY-SWITCH STRUCTURE.** HENRY R. LUTHER, Newton, Mass. Filed Sept. 1, 1905. Serial No. 276,731.

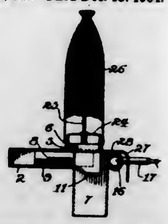


Claim.—1. In a railway-switch, a body part; a semicircular beveled bearing in said body part; a switch-tongue provided with a semicircular beveled bearing portion mounted in said body part, and adapted to fit the bearing therein and swing laterally thereof; a triangular projecting cam portion on the bottom of the switch-tongue; a yielding spring arranged to contact with said triangular cam-shaped projection for retaining the heel of the tongue in its bearing in the body part; and means for adjusting the tension on said spring.

2. In a railway-switch, a body part; a laterally-moving tongue mounted in said body part and arranged to oscillate laterally thereof; a triangular-shaped cam portion formed on the bottom of said switch-tongue; a spring mounted in housings attached to said body part; a triangular cam formed upon said spring and adapted to contact with either side of the triangular cam portion formed upon the switch-tongue.

3. In a railway-switch, a body part; a semicircular undercut bearing in said body part; a switch-tongue provided with a semicircular beveled heel portion adapted to fit in the semicircular undercut bearing in the body part, and swing laterally therein; a cam-surface on the bottom of said tongue adapted to contact with cam-surfaces on a transversely-disposed spring; said spring; and means for adjusting the tension thereof to hold the tongue in its bearing, and to prevent it laterally swinging therein.

828,733. **KEROSENE INCANDESCENT LAMP.** JOHN A. MATHES, San Diego, Cal. Filed Dec. 13, 1904. Serial No. 236,652.



Claim.—1. An incandescent vapor-burner comprising a short, wide, hollow casing having an imperforate bottom, a top having a flanged outlet and imperforate except through said outlet, and a side or wall having a perforated portion, the perforations of which extend from said outlet downwardly, a mixing-tube extending into said casing at one side of said perforated side, a vaporizing-tube having a straight unitary vaporizing-chamber arranged sidewise to and transversely of said downwardly-extending perforated portion of said side, and adapted to be in direct contact with the flame therefrom, said vaporizing-tube having an inlet and an outlet, the inlet being arranged below the level of the outlet, means for supplying oil to said vaporizing-tube, said vaporizing-tube opening into said mixing-tube, and means for admitting air to said mixing-tube.

2. An incandescent vapor-burner comprising a casing having a mixing-chamber, a flanged top outlet, a side air-inlet, a downwardly-perforated side portion, a mixing-tube extending into said chamber, a straight vaporizing-tube having a unitary straight vaporizing-chamber arranged sidewise to and transversely of said downwardly-extending side portion in close proximity thereto, and having a peripheral outlet into said mixing-tube and an inlet arranged below the level of said outlet, a valve extending transverse of said vaporizing-tube controlling said peripheral outlet and means for supplying oil to said vaporizing-tube.

3. An incandescent vapor-burner, comprising a casing having a mixing-chamber, a flanged top outlet, a side air-inlet, a downwardly-extending perforated side portion, a mixing-tube extending into said chamber, a straight vaporizing-tube having a unitary straight vaporizing-chamber arranged sidewise to and transversely of said perforated side portion in close proximity thereto and having a peripheral outlet into said mixing-tube, a valve for said peripheral outlet extending transverse of said vaporizing-tube, means for supplying oil to said vaporizing-tube, a mantle on said flanged outlet, and a hood supported on said casing and extending out down over said vaporizing-tube, said hood provided with an opening allowing communication of flame between said mantle and perforated side.

4. An incandescent vapor-burner comprising a short, wide, hollow casing having an imperforate bottom, a top provided with a flanged outlet, and a side wall having a perforated portion, a mantle positioned above and extending down to said outlet, a mixing-tube extending into the chamber of said casing, a single straight vaporizing-tube having a straight unitary vaporizing-chamber arranged sidewise transverse to the length of said casing and in close proximity to the perforated portion thereof, the perforations of said side extending downward from said mantle to opposite the lower edge of said vaporizing-tube, said vaporizing-tube provided with a peripheral outlet-opening into said mixing-tube, a valve for said peripheral outlet, the stem of said valve extending transversely through said vaporizing-tube, and means for supplying oil to said vaporizing-tube.

5. An incandescent vapor-burner comprising a short, wide, hollow casing having an imperforate bottom, a top provided with a flanged outlet, a side wall having a perforate portion, a mantle positioned above and extending down to said outlet, a mixing-tube extending into the chamber of said casing, a single straight vaporizing-tube having a single straight vaporizing-chamber arranged sidewise and transverse to the length of said casing and in close proximity to the perforated portion thereof, all portions of said vaporizing-tube between the inlet and outlet thereof being in direct contact with the flame from said perforated side portion, the perforations of said side portion extending downwardly from said mantle to opposite the lower edge of said vaporizing-tube, said vaporizing-tube provided with a peripheral outlet opening into, said mixing-tube, a valve for said peripheral outlet, the stem of said valve extending transversely through said vaporizing-tube, a hood extending over the top and down the side of said vaporizing-tube, said hood provided with a top opening permitting the union of flame between said mantle and said perforated side portion, and means for supplying oil to said vaporizing-tube.

6. An incandescent vapor-burner comprising a casing having a central mixing-chamber, a flanged outlet therefrom, a downwardly-extending perforated portion, a mixing-tube extending into said casing at the side of said perforated side portion, a single straight vaporizing-tube having a unitary straight vaporizing-chamber arranged transverse of said downwardly-extending perforated side portion and in close proximity thereto, all portions of said vaporizing-tube between the inlet and outlet thereof being in direct contact with the flame from said perforate side portion, said vaporizing-tube having a peripheral outlet into said mixing-chamber, a valve for said peripheral outlet operating transversely of said vaporizing-tube, and means for supplying oil to said vaporizing-tube.

7. An incandescent vapor-burner comprising a short, wide hollow casing having an imperforate bottom. a top provided with a

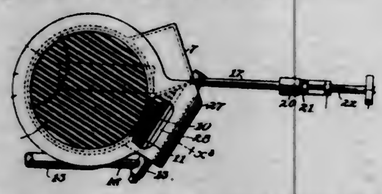
flanged outlet and a side wall having a perforated portion, a mantle positioned above and extending down to said outlet, a mixing-tube extending into the chamber of said casing at the side of said perforated portion, an air-supplying tube communicating from below said casing to said mixing-tube, a vaporizing-tube having a single straight vaporizing-chamber arranged sidewise and transverse to the length of said casing and in close proximity to the perforated portion thereof, the perforations of said side extending downward from said mantle to opposite the lower edge of said vaporizing-tube and extending from close proximity to the inlet end of said vaporizing-tube to close to the outlet therefrom, said vaporizing-tube provided with a peripheral outlet opening through said air-supplying tube, a valve for said peripheral outlet, the stem of said valve extending ransversely through said vaporizing-tube, and means for supplying oil to the inlet end of said vaporizing-tube.

8. An incandescent vapor-burner comprising a short, wide, hollow casing having an imperforate bottom, a top provided with a flanged outlet and a side wall having a perforated portion, a mantle positioned above and extending down to said outlet, a vaporizing-tube having a single straight vaporizing-chamber arranged sidewise to and transverse to the length of said casing, and in close proximity to the perforated portion thereof, the perforations of said side extending downward from said mantle to opposite the lower edge of said vaporizing-tube, and extending from close proximity to the inlet end of said vaporizing-tube to close to the outlet therefrom, said vaporizing-tube provided with a peripheral outlet into said casing, a valve for said outlet, the stem of said valve extending transversely through said vaporizing-tube, and means for supplying oil to the inlet end of said vaporizing-tube.

9. An incandescent vapor-burner comprising a casing having a central mixing-chamber, a flanged outlet therefrom, a downwardly-extending perforated side portion, a mixing-tube extending into said casing at the side of said perforated side portion, a single straight vaporizing-tube arranged sidewise to and transverse of said downwardly-extending perforated side portion and in close proximity thereto, all portions of said vaporizing-tube between the inlet and outlet thereof, being in direct contact with the flame from said perforated side portion, a light anticarbonizing filling in said vaporizing-tube, means for supplying oil to said vaporizing-tube, said vaporizing-tube discharging into said mixing-tube, said mixing-tube adapted to receive air from outside said casing

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823,734. KEROSENE-VAPOR STOVE. JOHN A. MATHES, San Diego, Cal. Filed Dec. 13, 1904. Serial No. 236,653.



Claim.—1. A burner, comprising a cylindrical casing having an open top, a burner-plate arranged on said top, and a slotted side portion forming a downwardly-extending continuation of said burner-top, a mixing-chamber, a single straight vaporizing-tube having a single vaporizing-chamber arranged alongside of and transversely to said downwardly-extending slotted side portion and positioned to be in direct contact with the flame therefrom, an air-mixing tube extending from proximity to said vaporizing-tube into said mixing-chamber, a valved outlet from said vaporizing-chamber into said air-mixing tube, and means for supplying oil to said vaporizing-tube.

2. A burner comprising a casing having a mixing-chamber and provided with a slotted burner extending over the top of said chamber and down one side of said casing, a single straight vaporizing-tube having a unitary vaporizing-chamber arranged alongside of and transversely to said downwardly-extending slotted side of said casing, said tube having all portions of its outer surface between the inlet and outlet thereof in direct contact with the flame from said slotted side of said casing, a mixing-tube extending from proximity to said vaporizing-tube into said mixing-chamber, an outlet from said vaporizing-tube opening into said mixing-chamber, and means for supplying oil to said vaporizing-tube.

3. A burner comprising a hollow body having an imperforate bottom, a perforate top, and a cylindrical wall, only a portion of which is perforate, said perforated portion forming a downward side extension of said perforate top of said body, thus forming a unitary mixing-chamber, all portions of which intercommunicate, a single straight vaporizing-tube arranged alongside of and transversely of said perforated side and in direct heat-receiving relation thereto, said vaporizing-tube communicating into said mixing-chamber through an inlet thereinto of larger diameter than the diameter of the outlet from said vaporizing-tube, and means for supplying oil to said vaporizing-tube.

4. A burner comprising a short hollow cylindrical body having an imperforate bottom, a perforate top, a cylindrical wall forming a unitary mixing-chamber, all portions of which directly intercommunicate, a portion of said wall being downwardly perforated and forming a downward side extension of said perforate top, a vaporizing-tube arranged sidewise to and transversely of said downwardly-extending perforate side and in direct heat-receiving relation thereto, the inlet and outlet of said vaporizing-tube arranged just beyond the limit of perforation of said side and having all its intermediate portions between said inlet and outlet in direct contact with the flame from said perforate side extension, an air-mixing tube extending into said chamber, an air-tube extending from below said body and opening into said mixing-tube, said vaporizing-tube provided with a peripheral outlet arranged opposite and opening into the inlet end of said mixing-tube, a valve arranged transversely of said vaporizing-tube to control said outlet, a light filling in said vaporizing-tube and means connected with the inlet end of said vaporizing-tube for supplying oil to said vaporizing-tube, said vaporizing tube having its outlet above its inlet.

5. A burner comprising a body having a mixing-chamber, a single straight vaporizing-tube having a single unitary vaporizing-chamber arranged alongside of and transversely of the side of said body, said body provided with a slotted top and with a slotted side opposite said vaporizing-tube, a hood over and embracing said vaporizing-tube, said hood provided with an opening permitting the union of the flame between said slotted top and slotted side, a mixing-tube in said chamber, an air-tube extending from below said body into communication with said mixing-tube, said vaporizing-tube provided with a peripheral outlet opening opposite the inlet end of said mixing-tube, a valve extending transversely through said vaporizing-tube to control said outlet, said vaporizing-tube having all portions of its outer surface between the inlet and outlet in the flame of said slotted side and means for supplying oil to said vaporizing-tube, said vaporizing-tube having its outlet above its inlet.

6. A burner comprising a body having a mixing-chamber all portions of which directly intercommunicate, said body having a slotted top and a downwardly-extending slotted side, a single straight vaporizing-tube having a single unitary vaporizing-chamber arranged alongside of and transversely of said slotted side, a mixing-tube extending into said mixing-chamber, said vaporizing-tube provided with a peripheral outlet opening into the intlet end of said mixing-tube, means for supplying oil to said vaporizing-tube at a point below said outlet, and a hood over and enveloping said vaporizing-tube, said hood provided for intercommunication between the flame from said slotted top and said slotted side.

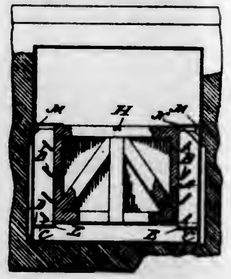
7. A burner comprising a short hollow cylindrical body having an imperforate bottom, a perforate top and a cylindrical wall forming a unitary mixing-chamber, all portions of which directly intercommunicate, a portion of said wall being downwardly perforate, and forming a downward side extension of said perforate top, a vaporizing-tube having a single unitary vaporizing-chamber arranged sidewise to and transversely of said downwardly-extending perforate side and in direct heat-receiving relation thereto, a light filling loose in said vaporizing-tube, means for supplying oil to said vaporizing-tube, said vaporizing-tube having a peripheral outlet into said mixing-chamber, and an inlet below said outlet, and means for admitting air to said mixing-chamber.

8. A vapor-burner comprising a short hollow body having an imperforate bottom, a perforate top and a cylindrical wall forming a unitary mixing-chamber, all portions of which directly intercommunicate, a portion of said wall being downwardly perforated and forming a downward side extension of said perforate top, a single straight vaporizing-tube having a single vaporizing-chamber arranged sidewise to and transversely of said downwardly-extending perforated side and in direct contact with the frame therefrom, means for supplying oil to said vaporizing-tube, said vaporizing-tube having a peripheral outlet into said mixing-chamber, and an inlet at its other end and below the level of said outlet, a valve for said peripheral outlet, the stem of said valve extending transversely through said vaporizing-tube and means for admitting air to said mixing-chamber.

9. A burner comprising a body having a mixing-chamber, said body provided with a slotted top and a downwardly-extending slotted side, a single straight vaporizing-tube having a single unitary vaporizing-chamber arranged at the side of and transversely of said slotted side, said vaporizing-tube having all portions of its outer surface, between the inlet and outlet thereof, in direct contact with the frame from said slotted side, a light filling in said vaporizing-tube, an air-mixing tube in said mixing-chamber, said vaporizing-tube provided with a peripheral outlet opening into said air-mixing tube, a valve for said peripheral outlet, a valve-stem for said valve extending transversely through said vaporizing-tube and means for supplying oil to said vaporizing-tube.

10. A burner comprising a body having a mixing-chamber all portions of which directly intercommunicate, said body having a slotted top and a downwardly-extending slotted side, a single vaporizing-tube having a single unitary vaporizing-chamber arranged alongside of and transversely of said slotted side, and having a peripheral outlet, a mixing-tube extending into said mixing-chamber into which said peripheral outlet communicates, a valve for said peripheral outlet, a valve-stem forjsaid valve extending transversely through said vaporizing-tube, means for supplying oil to said vaporizing-tube and a hood over and enveloping said vaporizing-tube, said hood provided with a perforation allowing the union of the flame of said slotted top and slotted side.

823,735. GRAIN-DOOR FOR CARS. LOUIS J. MICHELL, Lake City, Iowa. Filed Aug. 1, 1905. Serial No. 272,268.



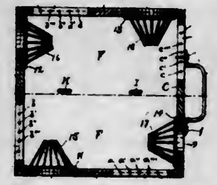
Claim.—1. A grain-door having extension-plates at its ends slidably connected thereto by means which cause a relative vertical motion between said door and plates to produce an inward lateral motion of said plates in combination with door-posts slotted to receive the projected portions of said plates, the upper ends of the slots providing shoulders against which the upper ends of said plates abut when the door is raised to cause said plates to recede.

2. A grain-door having extension-plates at its ends slidably connected thereto by means which cause a relative vertical motion between said door and plates to produce an outward lateral motion of said plates in combination with door-posts slotted to receive the projected portions of said plates, said plates tending to depend below the edge of the door so that as the door is lowered to place they will meet the sill and be caused to rise and project laterally into the slots in the door-posts.

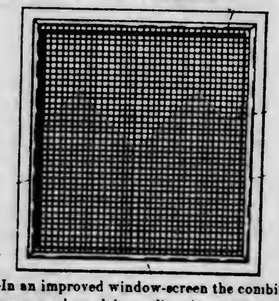
3. A grain-door having extension-plates at its ends slidably connected thereto by means which cause a relative vertical motion between said door and plates to produce an inward and outward lateral motion of said plates in combination with door-posts slotted to receive the projected portions of said plates, the upper ends of the slots providing shoulders against which the upper ends of said plates abut when the door is raised to cause said plates to recede; said plates tending to depend below the edge of the door so that as the door is lowered to place they will meet the sill and be caused to rise and project laterally into the slots in the door-posts.

823,736. ANIMAL-TRAP. MARTHA B. MIXSON, Burnsville, Ala. Filed Jan. 10, 1906. Serial No. 296,337.

Claim.—An animal-trap comprising in combination, a box-like receptacle having four sides each being provided with a port and a window therethrough, a permanent top and a slidable bottom to inclose said receptacle, a resilient gasket surrounding each of said ports and secured to the inner face of the respective sides, the apertures through said gaskets being less than the port-apertures which they surround, a plurality of sharp-pointed spikes extending inward and convergingly from around each gasket, bait-hooks suspended from the top into the interior of the receptacle, and bars for guarding said windows, all substantially as shown and described and for the purposes set forth.

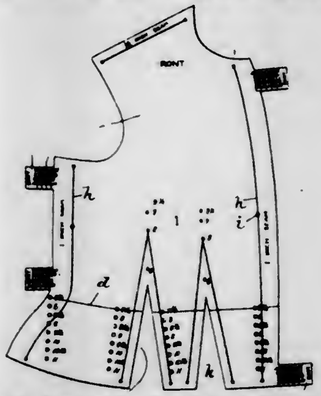


823,737. WINDOW-SCREEN. GEORGE W. MCFARLAND, Dayton, Ohio. Filed Dec. 1, 1905. Serial No. 289,719.



Claim.—In an improved window-screen the combination of the frame with groove enlarged inwardly, the resilient slotted tubes forming a filling-piece adapted to be inserted in said groove, the wire fabric to be engaged therein, substantially as described.

823,738. PATTERN-CHART. GEORGE F. PARKER and MARIE E. M. WHITING, Boston, Mass. Filed Aug. 25, 1905. Serial No. 275,765.

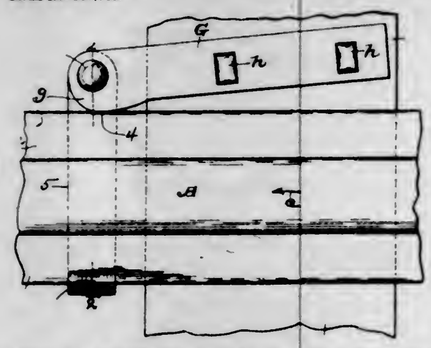


Claim.—1. A pattern-chart comprising a body having portions of its outline or edges adapted to constitute guides for a marker, and a projection or size-indicator having a scale extending from an edge of the body and flexibly united thereto, so that it may be turned back on such edge to leave an uninterrupted guiding edge.

2. A pattern-chart comprising a body having portions of its outline or edges adapted to constitute marking-guides, said body having also a base-line intermediate its ends, and a graduated scale extending away therefrom, and an extension or size-indicator flexibly secured to an edge of the body, so as to project outwardly therefrom, and capable of being turned back on the line of such edge to leave unobstructed the marking-guide.

3. A pattern-chart comprising a body having portions of its outline or edges adapted to constitute guides for a marker, and a projection or indicator having a scale, and formed with perforations on the guide-lines of the scale, extending from an edge of the body and flexibly united thereto, so that it may be turned back on such edge to leave an uninterrupted guiding edge.

823,739. DEVICE FOR PREVENTING THE CREEPING OF RAILS. GEORGE H. PRENTICE, Painesville, Ohio. Filed Mar. 23, 1906. Serial No. 307,715.



Claim.—1. The combination, with a rail, and a tie arranged under and transversely of the rail, of a bar arranged upon and transversely of the tie at one side and longitudinally of the rail, which bar is spiked or secured to the tie and has a free end projecting beyond the tie in the direction in which the rail tends to creep and is provided at its said end with a jaw which grips or clamps the adjacent edge of the base of the rail at the aforesaid side of the rail, said end of the bar having a rail-clamping arm arranged under and at a right angle to the rail, which arm terminates at the opposite side of the rail in a jaw for clamping or gripping the longitudinal edge of the base of the rail at the last-mentioned side of the rail so that any tendency of the rail to creep will tend to actuate the arm into a position somewhat diagonally of the rail and thereby tend to tighten the grip of the jaws.

2. The combination, with a rail, and a tie arranged under and transversely of the rail, of a bar arranged upon the tie at one side of and spiked or secured to the tie, which bar has a free end which projects beyond the tie in the direction in which the rail tends to creep and is provided at its said end with a jaw for clamping or gripping the base of the rail at the aforesaid side of the rail, said end of the bar having a rail-clamping arm arranged under and transversely of the rail, which arm terminates at the opposite side of the rail in a jaw for clamping the rail-base at the last-mentioned side of the rail so that any tendency of the rail to creep will tend to tighten the grip of the jaws.

3. The combination, with a rail, of a suitably-supported bar arranged at one side of the rail and projecting in the direction in which the rail tends to creep and provided at its forward end with a jaw for clamping or gripping the base of the rail at the aforesaid side of the rail, which bar has a rail-clamping arm which is arranged under and transversely of the rail and terminates at the opposite side of the rail in a jaw for clamping or gripping the rail-base at the last-mentioned side of the rail so that any tendency of the rail to creep will tend to actuate the arm into a position somewhat diagonally of the rail and thereby tend to tighten the grip of the jaws.

4. The combination, with a rail, and the tie arranged under and transversely of the rail, of a bar secured to the tie and arranged at one side of the rail and having a free end projecting laterally of the tie, with the end of the bar provided with a jaw for clamping or gripping the base of the rail at the aforesaid side of the rail, said end of the bar having a rail-clamping arm which is arranged under and transversely of the rail and terminates at the opposite side of the rail in a jaw for clamping or gripping the rail-base at the last-mentioned side of the rail so that any tendency of the rail to creep will tend to tighten the grip of the jaws.

5. The combination, with a rail, and a tie arranged under and transversely of the rail, of a bar arranged upon and transversely of the tie at one side and longitudinally of the rail, which bar is spiked or secured to the tie and projects beyond the tie in one direction, with the projecting end of the bar provided with a jaw for clamping or gripping the adjacent edge of the base of the rail at the aforesaid side of the rail, said bar having a rail-clamping arm which is arranged under and transversely of the rail and pivoted vertically to the bar in suitable proximity to the rail-clamping surface of the aforesaid jaw, which arm terminates at the opposite side of the rail in a jaw engaging the longitudinal edge of the base of the rail at the last-mentioned side of the rail so that any tendency of the rail to creep will tend to tighten the grip of the jaws.

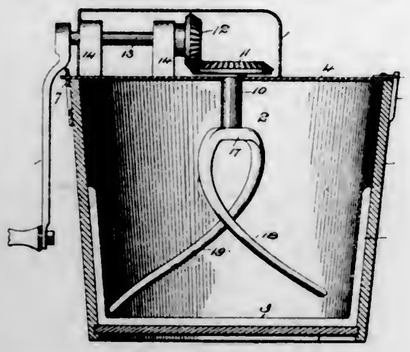
6. The combination, with a rail, of a suitably-supported bar arranged at one side of the rail and projecting in the direction in which the rail tends to creep and provided at its forward end with a jaw for clamping or gripping the adjacent edge of the base of the rail at the aforesaid side of the rail, which bar has a rail-clamping arm which is arranged under and transversely of the rail and pivoted to the bar in suitable proximity to the rail-clamping surface of the aforesaid jaw, which arm terminates at the opposite side of the rail in a jaw for clamping or gripping the longitudinal edge of the base of the rail at the last-mentioned side of the rail.

7. The combination, with a rail, of a suitably-supported bar arranged at one side of the rail and projecting in the direction in which the rail tends to creep and provided at its forward end with a jaw for clamping or gripping the base of the rail at the aforesaid side of the rail, which bar has a rail-clamping arm which is arranged under and transversely of the rail and pivoted vertically to the bar in suitable proximity to the rail-clamping surface of the aforesaid jaw, which arm terminates at the opposite side of the rail in a jaw for clamping or gripping the rail-base at the last-mentioned side of the rail, and the aforesaid clamping-surface of the first-mentioned jaw being gradually spaced farther from the axis of the arm in the direction of the rear end of the bar.

8. The combination, with a rail, and a tie arranged under and transversely of the rail, of a bar arranged upon and secured to the tie at one side of the rail and projecting laterally of the tie, with the projecting end of the bar provided with a jaw for clamping or gripping the base of the rail at the aforesaid side of the rail, which bar has a rail-clamping arm which is arranged under and transversely of the rail and pivoted vertically to the bar in suitable proximity to the rail-clamping surface of the aforesaid jaw, which arm terminates at the opposite side of the rail in a jaw for clamping or gripping the rail-base at the last-mentioned side of the rail, and the first-mentioned jaw and the adjacent portion of the arm being somewhat depressed substantially as and for the purpose set forth.

9. A device instrumental in preventing the creeping of a rail and comprising a bar provided at one end with a jaw for clamping or gripping the base of the rail at one side of the rail, which bar has an arm vertically pivoted at one end to the bar in suitable proximity to the rail-clamping surface of the aforesaid jaw and provided at its opposite end with a jaw for clamping or gripping the rail at the opposite side of the rail.

823,740. DOUGH-MIXING MACHINE. JOSEPH A. REAMS, Norfolk, Va., assignor of one-half to Thomas K. Parrish, Richmond, Va. Filed Jan. 25, 1905. Renewed May 22, 1906. Serial No. 318,229.



Claim.—1. A mixing apparatus comprising a receptacle, and a mixing and kneading device mounted therein having downwardly and outwardly increasing spirally-curved ingredient-rolling arms, and means for rotating the same within the receptacle.

2. A mixing apparatus comprising a receptacle, a depending mixing device mounted therein, and having a cross-head, arms curving downwardly and outwardly gradually so as to increase their distance continually from the axis of movement as they approach the bottom of the receptacle, the shape of the arms causing them to produce a rolling and kneading action upon the materials in the receptacle and means for rotating the said mixing device.

3. An ingredient-mixing apparatus, comprising a receptacle, a mixing device revolubly mounted therein and having a plurality of arms curving downwardly for rolling or kneading materials to be mixed, the arms increasing their distance from the axis of motion toward their lower ends, one of said arms starting in its downward curvature from a point nearer the said axis of movement than the other and a retarding means mounted within said receptacle.

4. A mixing apparatus, comprising a receptacle, a revoluble mixing device mounted within the same, downwardly and outwardly curving arms increasing their distance from the center of axis toward their lower ends, the shape of the arms causing them to roll the mixtures in the receptacle, the said arms following each other in movement but in different concentric paths, and means for rotating the said mixing device.

5. A mixing apparatus, comprising a receptacle, a depending device revolubly mounted upon the receptacle, arms of different lengths extending into the receptacle and increasing their distance from the center of axis toward their outer ends, and means for moving the arms about the said center of motion, the shape of the arms facilitating the rolling or kneading of the materials placed in the receptacle

6. A mixing apparatus, comprising a receptacle, a rotating shaft mounted above the same, a cross-head secured to the said shaft and projecting unequal distances upon opposite sides of the shaft, curved arms extending downwardly from the ends of the cross-head and increasing their distance from the axis of rotation of the shaft continuously toward their outer ends, the curvature of the said arms causing the rolling of the materials beneath them within the receptacle.

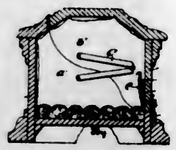
7. A dough-mixing apparatus comprising a receptacle, a rotating mixing device extending into the same and having curved dough-rolling arms extending outwardly gradually from the axis of rotation toward the side walls of the receptacle, and a retarding means extending across the bottom of the receptacle and up upon the sides thereof, the said retarding means being rigidly secured both to the bottom and to the sides of said receptacle.

8. A dough-mixing apparatus comprising a receptacle, a rotating, kneading and mixing device mounted therein and having downwardly-converged arms for rolling upon the dough and a retarding-cleat secured to the inner surface of the receptacle and extending to the center of the receptacle.

9. A dough-mixing apparatus, comprising a receptacle, a stirring and kneading device revolubly mounted therein, having curved arms capable of rolling the dough in the receptacle and a retarding-cleat having a curved surface extending into the receptacle, the said cleat being secured rigidly to the bottom and to the sides of the receptacle.

10. A dough-mixing apparatus comprising a receptacle having a flat bottom, a plurality of curved arms revolubly mounted above the said bottom and curving in downwardly-increasing spiral directions, means for turning the said arms to roll materials upon the bottom of the receptacle and removable means for holding the said mechanism in position upon the receptacle.

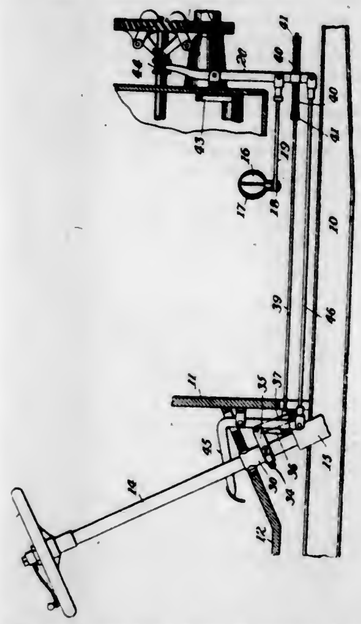
823,741. BURIAL-CASKET. JOHN D. RENSHLER, Findlay, Ohio. Filed Apr. 28, 1906. Serial No. 314,215.



Claim.—In a casket of the type set forth, the combination of a main section, an upper section hinged thereto at its rear edge and consisting of the top and the front wall of the casket, this front wall being adapted to extend horizontally outward when the casket is open, a drapery-carrying frame hinged to and depending from the front edge of the said forwardly-projecting front wall, and means for fastening said frame to the inner face of said front wall when the casket is closed, substantially as set forth.

823,742. CARBURETER-CONTROL MECHANISM FOR MOTOR-VEHICLES. CHARLES SCHMIDT, Detroit, Mich., assignor to Packard Motor Car Company, Detroit, Mich., a Corporation of West Virginia. Filed Mar. 10, 1905. Serial No. 249,441.

Claim.—1. The combination with a mixer and vaporizer, of a mixture-valve, means for locking said valve yieldingly against movement in either direction from a given position, and means governed by the speed of the engine for regulating the opening and closing of said valve without disturbing said locking means.



2. The combination with a mixer and vaporizer, of a mixture-valve, means for locking said valve yieldingly against movement in either direction from a given normal position, a governor, and means connecting said governor with said valve whereby the valve is automatically moved in either direction from its normal position without disturbing said locking means.

3. The combination with a mixer and vaporizer, of a mixture-valve, means for locking said valve yieldingly against movement in either direction from a given normal position, means controlled by the speed of the engine for adjusting said valve in either direction from its normal position without disturbing said locking means, and manually-operated means for adjusting said valve without disturbing said locking means.

4. The combination with a mixer and vaporizer, of a mixture-valve controlling the discharge from said mixer and vaporizer, means including an elastic connection for locking said valve against movement in either direction from a given normal position, a governor, and connections for adjusting said valve automatically without disturbing said locking means, said elastic connection permitting the valve to be moved in either direction from its normal position.

823,743. SAFETY ATTACHMENT FOR SCARF-PINS. ELIAS L. SCHREIBER, New York, N. Y., assignor of one-half to Denizen H. Phillips, New York, N. Y. Filed Dec. 5, 1905. Serial No. 290,344.



Claim.—A safety attachment for scarf and other pins, comprising a screw provided with a head having transversely therethrough an opening through which the pin may be passed, and a nut mounted on said screw and provided at one side with a projection or hub member having a recess adapted to receive a part of the head of the screw, the rim of the projection or hub member being adapted to bear on the pin, substantially as shown and described.

823,744. HAME-TUG. ALFRED J. SMITH, Mauch Chunk, Pa. Filed June 29, 1905. Serial No. 267,644.

Claim.—1. A hame-tug comprising a glip, said glip having an

elongated body portion, an eye formed at one end of said glip and a short arm extending from said eye; a pair of leather covering members one of which lies upon each side of the elongated portion of the glip, the rear end of each of said covering members extending beyond the glip, said ends being secured to each other and having a trace-receiving opening formed therethrough, a buckle-carrying strap which is stitched to one of the leather covering members and extends substantially to the front end of the tug, the short arm of the glip being adapted to clamp the front end of the strap upon the covering member to which said strap is stitched, fastening devices which pass through both of the covering members, the glip and the buckle-carrying strap, and a buckle carried by said strap and overlying the opening formed through the covering members.



2. A hame-tug comprising a glip, said glip having an elongated body portion, an eye formed at one end of said glip and a short arm extending from said eye; a pair of leather covering members one of which lies upon each side of the elongated portion of the glip, the rear end of each of said covering members extending beyond the glip, said ends being secured to each other and having a trace-receiving opening formed therethrough, a buckle-carrying strap which is stitched to one of the leather covering members and extends substantially to the front end of the tug, the short arm of the glip being adapted to clamp the front end of the strap upon the covering member to which said strap is stitched, fastening devices which pass through both of the covering members, the glip and the buckle-carrying strap, a buckle carried by said strap and overlying the opening formed through the covering members, a box-loop and a metal plate which passes through said box-loop and is secured to the covering members and the glip by fastening-rivets or the like.

823,745. SHADE-FIXTURE. SCOTT STEWART, Fairmont, W. Va. Filed Oct. 4, 1905. Serial No. 281,315.



Claim.—1. The combination with a shade-roller and its clutch mechanism of means for automatically stopping said roller when the roller rotates at an excessive speed and a friction device adapted to render said stopping gradual.

2. The combination with a spring-actuated roller and its clutch mechanism, of a fixed obstruction, centrifugally-operated means on the roller adapted to contact with said obstruction when the roller rotates at an excessive speed, and friction means to render the resulting stopping gradual.

3. The combination with a shade-roller and its clutch mechanism, of a fixed member having an obstruction thereon, centrifugally-operated means on the roller adapted to contact therewith to stop the accidental winding rotation of the roller, and friction means for rendering said stopping gradual.

4. The combination with a spring-operated shade-roller and its clutch mechanism, of a casing, a pivoted detent therein adapted to be moved by centrifugal action, a spindle, a bracket having a catch-arm in the path of centrifugal travel of the detent, and a friction member between the casing and roller.

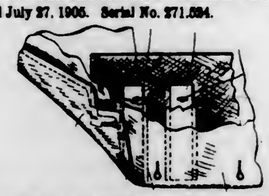
5. The combination with a spring-operated shade-roller, of a spindle, a member thereon having a pivoted detent adapted to be moved by centrifugal action, a bracket having a catch-arm in the centrifugal path of travel of said detent, and friction means for taking up the shock of contact between said detent and catch-arm.

6. The combination with a spring-operated shade-roller and its clutch mechanism, of a spindle, a member thereon having a pivoted detent adapted to be moved by centrifugal action, a fixed obstruction in the centrifugal path of travel of said detent, and friction means located between the roller and the detent for gradually stopping the winding rotation of the roller.

7. The combination with a spring-operated shade-roller and its clutch mechanism, of a spindle, a slotted casing thereon having a pivoted detent therein, a bracket and an obstruction thereon in the path of centrifugal travel of said detent, and a friction member located on the spindle between the casing and roller.

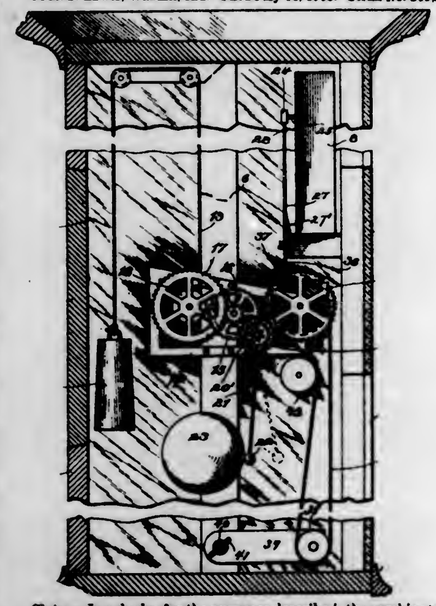
8. The combination with a shade-roller and spring-rod having a notched disk thereon, a spring adapted to impart motion to the roller in one direction an open ring surrounding said disk and provided with notches, and balls to engage said notches; means for stopping the winding rotation of the roller when the roller rotates at an excessive speed, and friction means for rendering said stoppage gradual.

823,746. STAY-PLATE FOR COATS. JAMES A. VAUGHN, Chanute, Kans. Filed July 27, 1905. Serial No. 271,694.



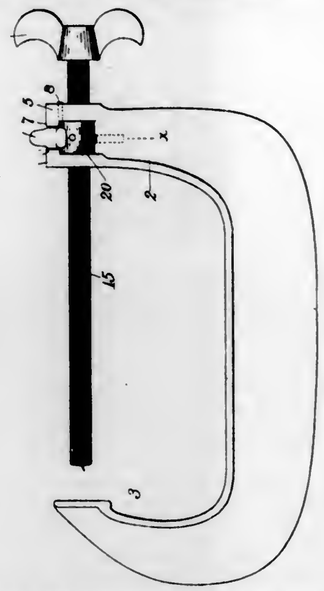
Claim.—A device for preventing coats from wrinkling comprising a series of pockets fastened in parallel relation to each other and secured to the lining of a coat, a stiffening-strip held in each pocket with the opposite longitudinal edges of each strip in contact with the stitching at the edges of the pocket, and means for fastening each strip to the lining of the coat, as set forth.

823,747. SHOW-WINDOW FIXTURE. ORVILLE WAGNER and JOHN S. LEWIS, Wabash, Ind. Filed July 11, 1905. Serial No. 269,240.



Claim.—In a device for the purposes described, the combination with a clock, name-sheet rollers and mechanism for operating said rollers, of an eccentric carried on a shaft of the clock, a lever in engagement with said eccentric, said lever having one of its arms substantially at right angles to the other, a lever having one of its arms in engagement with said first-mentioned lever, a trigger carried by said last-mentioned lever, a pivoted locking-dog having one end thereof normally locking one of said name-sheet rollers against rotation, and its other end arranged to be engaged and tripped by said trigger in such manner that a downward movement of said trigger rocks said locking-dog unlocking said roller and trips said locking-dog whereby it resumes its normal position, said trigger being arranged on said last-mentioned lever in such manner that the said locking-dog is unaffected by an upward movement of the trigger, substantially as described.

823,748. CLAMP. FREDERICK H. WALDEN, Worcester, Mass., assignor to Bay State Tool Company, Boston, Mass., a Corporation of Maine. Filed Aug. 26, 1905. Serial No. 275,879.

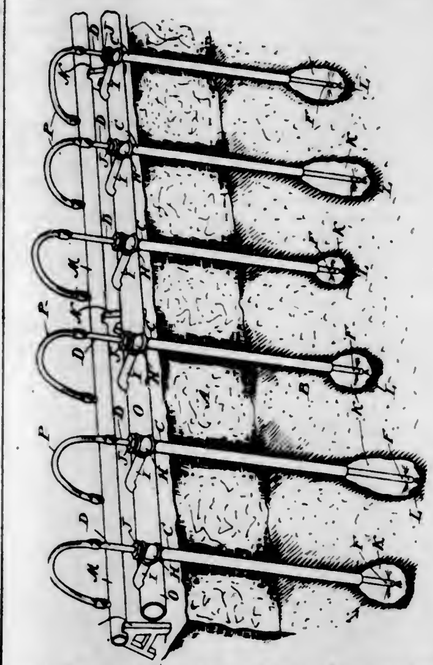


Claim.—1. The combination with a clamping member having centrally-apertured separated abutments, of a screw slidable therein, a cylindrical eccentric nut having its opening threaded to correspond with said screw but larger in diameter, and located between said abutments, semiperipheral flanges formed on said abutments and partially embracing said nut, and a locking-pin inserted at the termination of one of said flanges to prevent the withdrawal of said nut.

2. The combination with a clamping member having centrally-apertured separated abutments, of a screw slidable therein, a cylindrical eccentric nut having its opening threaded to correspond with said screw but larger in diameter, and located between said abutments, semiperipheral flanges formed on said abutments fitted to said nut, a locking-pin to prevent the withdrawal of said nut, and a pointed plunger resiliently pressed against said nut; the latter being formed with depressions to partially receive said plunger, and the nut being provided with projections for its easy rotation.

823,749. METHOD OF SIMULTANEOUSLY MINING AND WASHING CLAY, KAOLIN, &c. MARTIN WANNER, New York, N. Y., assignor of one-half to Thomas Skelton Harrison, Philadelphia, Pa. Filed Mar. 28, 1905. Serial No. 252,543.

Claim.—1. The process of mining clay and similar subterranean deposits consisting in disintegrating the deposit by means of water under pressure carried through the overburden and projected against the deposit, maintaining sufficient water-pressure in the cavity thus formed in the deposit to regulate the subsidence of the overburden and to convey the finer particles of the disintegrated material to the surface by the return-flow of the water in its escape from said cavity, and continuously conveying the same thence for further manipulation.



2. The process of mining clay and similar subterranean deposits consisting in disintegrating the deposit by means of water carried through the overburden and projected against the deposit under such pressure as will disintegrate it and maintain sufficient pressure in the cavity formed in the deposit to regulate the subsidence of the overburden and convey the finer particles of the disintegrated material to the surface by the return-flow of the water, leaving the coarser material within the cavity of the excavation.

3. The process of mining clay and similar subterranean deposits consisting in breaking up the deposit by means of water carried through the overburden and projected against the deposit under sufficient pressure to disintegrate it and maintain pressure in the cavity formed in the deposit adequate to regulate the subsidence of the overburden and to convey the finer particles of the disintegrated material to the surface by the return-flow of the water, leaving the coarser material within the cavity of the excavation and continuously conveying the fine removed material away for further manipulation.

4. The process of mining clay and similar subterranean deposits consisting in disintegrating the deposit by means of a series of water columns under pressure carried through the overburden and projected against the deposit, maintaining sufficient water-pressure in the cavity thus formed in the deposit to regulate the subsidence of the overburden and to convey the finer particles of the material disintegrated by each water column to the surface by the return-flow of the water of that column in its escape from said cavity and conveying the same thence for further manipulation.

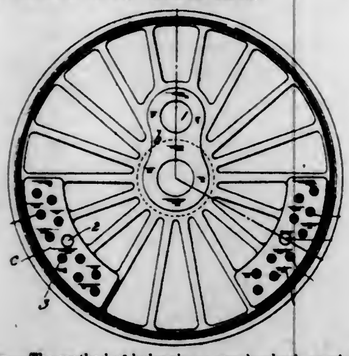
5. The process of mining clay and similar subterranean deposits consisting in disintegrating the deposit by means of a series of water columns under pressure carried through the overburden and projected against the deposit maintaining water-pressure in the cavity formed in the deposit, conveying the fine material disintegrated by the water columns to the surface of the return-flow of the water in its escape from said cavity, the several water columns being so located relative to each other that the series of excavations made by them in the deposit will be of such area and so located as to permit uniform subsidence of the superposed deposit without producing material rupture of or fissures in it.

6. The process of mining clay and similar subterranean deposits consisting in disintegrating the deposit by means of a series of water columns under pressure carried through the overburden and projected against the deposit maintaining water-pressure in the cavity

formed in the deposit, the pressure being so regulated as that the return-flow of the water in its escape from said cavity will elevate to the surface the fine disintegrated material, leaving the coarser material within the excavations, the water columns being so located relative to each other that the series of excavations made by them in the deposit will be of such area and so located as to permit uniform subsidence of the superposed deposit without producing material rupture of or fissures in it.

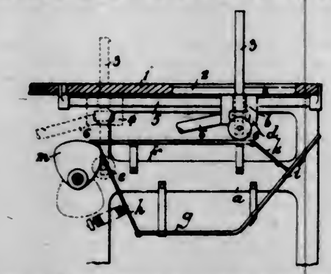
7. The process of mining clay and similar subterranean deposits consisting in disintegrating the deposit by means of water under pressure carried through the overburden and projected against the deposit, maintaining sufficient water-pressure in the cavity thus formed in the deposit to regulate the subsidence of the overburden and to convey the finer particles of the disintegrated material to the surface by the return-flow of the water in its escape from said cavity, and adjusting the point of projection of the water under pressure against the walls of the excavation as it gradually enlarges.

823,750. METHOD OF COUNTERBALANCING CRANK-WHEELS. CHARLES T. WESTLAKE, St. Louis, Mo., assignor to Davis Locomotive Wheel Company, St. Louis, Mo., a Corporation of Delaware. Filed Feb. 12, 1906. Serial No. 300,830.



Claim.—The method of balancing a crank-wheel, consisting in forming the counterbalance thereof initially of less weight than that of the parts to be balanced, forming a hole in the counterbalance at its center of gravity parallel to the axis of the said wheel, forming a recess in the counterbalance at each side of a radial line passing through the centers of the said axis and hole, the said recesses being symmetrically arranged relatively to the said hole and to each other, determining the extra weight to be added to the counterbalance by suspending weights respectively from the crank-wheel at the center of its crank-pin hole, and from the counterbalance at its center of gravity, and inserting the proportionate part of the said weight within each of the said recesses, substantially as described.

823,751. PARCEL-BUNDLING MACHINE. GEORGE H. ADEHEAD, London, England. Filed May 1, 1905. Serial No. 258,366.



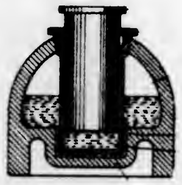
Claim.—1. In combination in a machine of the class described, a table, a bracket reciprocating beneath the same horizontally, feed-fingers slidable vertically through the said bracket and means controlling the elevation of the feed-fingers in respect to the table whereby they will be projected above the same for the feeding stroke and will be lowered for the return stroke, substantially as described.

2. In combination in a machine of the class described, a feeding-finger movable vertically in relation to the table or surface over which the material is to be fed, and means for lowering the said feed-finger on its return stroke to avoid contact with the material, said means including a lifting-lever, substantially as described.

3. In combination in a machine of the class described, a feeding-finger movable vertically in relation to the table or surface over which the material is to be fed, and means for lowering the said feed-finger on its return stroke to avoid contact with the material, said means including a lifting-lever and means for holding the finger up and adapted to be disengaged therefrom when a certain position is reached, substantially as described.

4. In combination in a machine of the class described, feeding-fingers, means for raising and lowering the feed-fingers in relation to the table, means for moving the feed-fingers along the table, a table slotted for said fingers and means for closing the slots along which the feeding-fingers pass, substantially as described.

823,752. AUTOMATIC INKSTAND. FRANK M. ASHLEY, New York, N. Y. Filed Oct. 22, 1902. Serial No. 128,265.



Claim.—1. In an inkstand of the character described, a main reservoir containing a primary ink-compartment and lower depression below the bottom surface of said compartment, a sleeve within said compartment and having a closed lower end extending within said depression, said sleeve containing lateral holes establishing communication with the primary compartment, and below which holes the sleeve constitutes a supplementary reservoir, and a pen-float vertically movable within said sleeve and adapted to be depressed to cover said holes for successively isolating a quantity of ink within the reservoir and for forcing said ink upward within the float.

2. In an inkstand of the character described, a main reservoir, a sleeve closed at its lower extremity and provided with lateral holes a short distance above its lower end which establish communication with the main reservoir, the sleeve below said holes constituting a supplementary reservoir, a pen-float vertically movable within said sleeve and supplementary reservoir adapted to force ink in the top of said float.

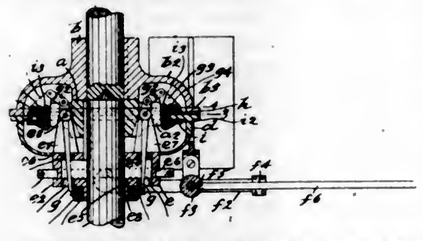
3. In an inkstand of the character described, a main reservoir, a sleeve closed at its lower extremity and provided with lateral holes establishing communication with the main reservoir, the sleeve below said holes constituting a supplementary reservoir, a pen-float vertically movable within said sleeve and adapted to be depressed below said holes and thereby force a quantity of ink upward to the top of the float.

4. In an inkstand of the character described, a main reservoir, a sleeve closed at its lower extremity and provided with lateral holes establishing communication with the main reservoir, the sleeve below said holes constituting a supplementary reservoir, a pen-float vertically movable within said sleeve and adapted to be depressed below said holes and thereby force a quantity of ink upward to the top of the float, said lateral holes in the sleeve being located below the plane of the bottom of the main reservoir for the purpose set forth.

5. In an inkstand of the character described, a main reservoir containing a primary ink-compartment and a lower depression below the bottom surface of said compartment, a sleeve extending through the main reservoir into the said lower depression, provided with an opening adapted to admit ink within said sleeve from the reservoir, and a float vertically movable within said sleeve adapted to force ink within said sleeve to the upper end of the float.

6. In an inkstand of the character described, a main reservoir containing a primary ink-compartment and a lower depression below the bottom surface of said compartment, a sleeve extending within said lower depression provided with an opening adapted to admit ink within said sleeve from the reservoir, and a float vertically movable within said sleeve adapted to trap and upwardly force a quantity of ink to the upper end of said float.

823,753. FRICTION-CLUTCH. JOSÉ G. BABIO, New York, N. Y. Filed Jan. 10, 1906. Serial No. 295,343.



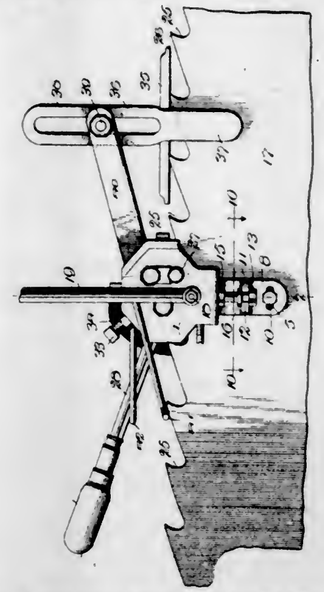
Claim.—1. In a clutch of the class described, a casing adapted to be secured to a driven shaft and provided with a main annular clutch member, a driving-hub adapted to be connected with a driving-shaft and provided with radial arms having recesses in the ends thereof and projecting fingers, supplemental annular clutch members mounted on the opposite sides of the main clutch member and in the recesses of said arms, one of said supplemental annular clutch members being provided with ears which extend transversely of the other supplemental annular clutch member and inwardly thereof, toggle-levers pivoted to the fingers of said arms and to one of said supplemental annular clutch members and to the ears of the other supplemental annular clutch member, and means for moving the supplemental annular clutch members toward and from the main clutch member, substantially as shown and described.

2. In a clutch of the class described, a casing adapted to be secured to a driven shaft and provided with a main annular clutch member, a driving-hub adapted to be connected with a driving-shaft and provided with radial arms having recesses in the ends thereof and projecting fingers, supplemental annular clutch members mounted on the opposite sides of the main clutch member and in the recesses of said arms, one of said supplemental annular clutch members being provided with ears which extend transversely of the other supplemental annular clutch member and inwardly thereof, toggle-levers pivoted to the fingers of said arms and to one of said supplemental annular clutch members and to the ears of the other supplemental annular clutch member, and means for moving the supplemental annular clutch members toward and from the main clutch member, comprising a collar adapted to be mounted and movable longitudinally on the driving-shaft and provided with arms which project into said casing, main levers pivoted to the inner ends of said arms and extending outwardly through said collar, link devices connecting the main levers with said toggle-levers, and tensional devices connected with the collar for holding the said levers in a predetermined position, substantially as shown and described.

3. In a clutch of the class described, a casing adapted to be connected with a driven shaft and provided with a main annular clutch member, a driving-hub adapted to be connected with a driving-shaft and provided with radial arms, supplemental annular clutch members mounted on the opposite sides of the main clutch member, toggle-levers pivoted to said arms and loosely connected with said supplemental annular clutch members, and means for moving the supplemental annular clutch members toward and from the main clutch member, comprising a collar adapted to be mounted on and movable longitudinally on the driving-shaft and provided with arms which project into said casing, levers pivoted to said arms and extending outwardly through the collar and in operative connection with said toggle-levers, and tensional devices for holding said levers in a predetermined position, substantially as shown and described.

4. In a clutch of the class described, a casing composed of separate detachable parts and adapted to be connected with a driven shaft and provided with an inwardly-directed annular main clutch member, a hub adapted to be connected with a driving-shaft and provided with radially and outwardly directed arms within said casing, supplemental clutch members mounted on the opposite sides of the main clutch member and supported by the arms of said hub, toggle-levers pivoted to said arms and to the supplemental clutch members, a cone device mounted on the driving-shaft and movable longitudinally thereof and provided with arms which project inwardly between the arms of said hub, main levers pivoted to the arms of the cone device and provided with links which are connected with said toggle-levers, a spiral spring wound on a reduced portion of the cone device and one end of which is connected therewith, a ring member inclosing said spiral spring and to which the other end of said spring is secured, said ring member being provided with a deep annular groove, the side walls of which are provided with transverse notches or recesses forming teeth which project in the same direction, pulleys connected with the cone member, and flexible devices connected with the ends of the main levers and passed around said pulleys and provided at their free ends with heads adapted to engage said teeth, substantially as shown and described.

823,754. SAW SWAGE AND SHAPER. WILLIAM BAKKLA, Spokane, Wash. Filed Dec. 17, 1904. Serial No. 237,267.



Claim.—1. In a device of the character described, the combination with the body thereof having a saw-receiving opening therein; of oppositely-disposed tooth-shaping members within the body, adjusting-screws mounted within the body and engaging and connected to the tooth-shaping members, and screw-threaded supports depending from the body, said shaping members being connected thereto so as to slide laterally and supported thereby.

2. In a device of the character described, the combination with a body having a saw-receiving opening therein; of clamping members within the body and at opposite sides of the opening, slotted ears extending from said members, adjusting devices secured to the body and engaging and supporting the ears, said ears being mounted upon the adjusting devices so as to slide laterally, means for independently adjusting the clamping members laterally, said members remaining parallel during their adjustment, and tooth-shaping members adjustably secured to the clamping members.

823,755. MANIFOLDING ACCOUNT-BOOK. BERRY A. BAXTER, Mansfield, Ohio. Filed Jan. 26, 1903. Serial No. 140,567.



Claim.—1. In a manifolding account-book, a back therefor consisting of a single piece of metal shaped with two pockets confronting each other and constructed to clamp in position entire leaf-sections, one pocket being raised above the level of the other pocket.

2. A manifolding account-book consisting of a single-piece metal back shaped with two clamping-pockets on the same side of said back, one at each end thereof, one pocket being raised above the other pocket, two independent leaf-pads secured within said pockets and arranged one to overlie the other, and a carbon-sheet adapted to be interposed between a sheet of the upper leaf-pad and a sheet of the lower leaf-pad.

3. A manifolding-book consisting of a single-piece metal back shaped with two clamping-pockets on the same side of said back,

one at each end thereof, one pocket being raised above the level of the other pocket, two independent leaf-pads adapted to be detachably secured within said pockets, and arranged one to overlie the other and a carbon-sheet adapted to be interposed between a sheet of the upper leaf-pad and a sheet of the lower leaf-pad.

4. A manifolding account-book consisting of a single-piece metal back having a raised shelf at one end, a pocket adjacent to said shelf, a second pocket at the opposite end of said back, two independent leaf-pads secured within said pockets and a carbon-sheet adapted to be interposed between a sheet of the upper leaf-pad and a sheet of the lower leaf-pad.

5. A manifolding account-book consisting of a single-piece metal back having a raised shelf at one end, a pocket adjacent to said shelf, a second pocket at the opposite end of said back, two adjacent leaf-pads adapted to be detachably secured within said pockets, and a carbon-sheet adapted to be interposed between a sheet of the upper leaf-pad and a sheet of the lower leaf-pad.

6. As an article of manufacture, a back for manifolding account-books, comprising a single piece of metal having a flat body part, and bent at one end into the shape of a pocket, and at the other end bent in such manner as to form a vertical shoulder, a horizontal shelf at right angles thereto, and a second pocket at the end of said shelf, substantially as and for the purpose described.

823,756. **MANIFOLDING ACCOUNT-BOOK.** BERRY A. BAXTER, Mansfield, Ohio. Filed Jan. 26, 1903. Serial No. 140,568.



Claim.—1. In a manifolding account-book the combination with a metal back, of an under leaf-pad detachably secured at one end of said back, an upper leaf-pad, and means for detachably securing the same to said back with provisions permitting adjustment thereof to and from the under leaf-pad.

2. A manifolding account-book consisting of a metal back having at one end a pocket adapted to hold a detachable leaf-pad and having at the other end an enlarged pocket adapted to hold a detachable leaf-pad, two independent leaf-pads for said pockets, and means for attaching one of said leaf-pads within said enlarged pocket with provisions permitting the adjustment of said leaf-pad to and from the other leaf-pad.

3. A manifolding account-book consisting of a metal back having at one end a pocket adapted to hold a detachable leaf-pad and having at the other end an enlarged pocket adapted to hold a detachable leaf-pad, two independent leaf-pads for said pockets, means for attaching one of said leaf-pads within said enlarged pocket with provisions permitting the adjustment of said leaf-pad to and from the other leaf-pad, and a carbon sheet adapted to be interposed between a sheet of the upper leaf-pad and a sheet of the under leaf-pad.

4. In a manifolding account-book the combination with two independent leaf-pads superposed one over the other, of a single-piece metal back adapted to hold said leaf-pads, and bent slightly at one end to raise the level of the binding end of the under leaf-pad, and means for attaching the upper leaf-pad to the other end of said back, with provisions permitting adjustment thereof to and from the other leaf-pad.

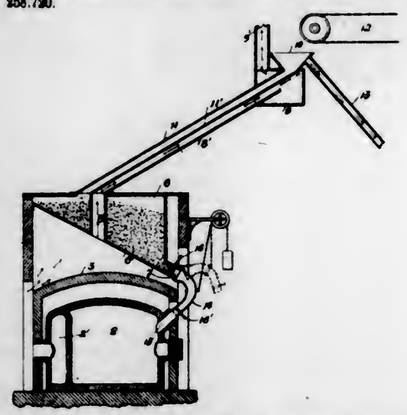
5. As an article of manufacture, a back for manifolding account-books, consisting of a single piece of metal having a body part, and bent at one end into the shape of a pocket to receive a single leaf-pad, and at the other end into an enlarged pocket having a straight end wall and of depth substantially double that of the thickness of one such pad, said body part being slightly bent upward near the end which has the pocket for the single leaf-pad.

6. In a manifolding account-book, the combination with two independent leaf-pads superposed one over the other, of a suitable back, and means for attaching the upper leaf-pad to said back including provisions for permitting the adjustment of said leaf-pad to and from the lower leaf-pad but preventing displacement in any other direction.

7. In a manifolding account-book, the combination with two independent leaf-pads superposed one over the other, of a suitable back, and means attached to one of said leaf-pads and adjustably engaged with said back to permit adjustment of said leaf-pad to and from said back but preventing displacement in any other direction.

8. In a manifolding account-book, the combination with two independent leaf-pads superposed one over the other, of a suitable back, and a binding-clip fastened to one of said leaf-pads and formed with provisions for adjustably engaging said leaf-pad with said back to permit adjustment of said leaf-pad to and from said back but preventing displacement in any other direction.

823,757. **BATCH DRYING, HEATING, AND FEEDING APPARATUS FOR GLASS-FURNACES.** CHARLES L. BETZ, Rochester, Pa., assignor to Henry C. Fry, Rochester, Pa. Filed May 3, 1905. Serial No. 258,720.



Claim.—1. The combination of a glass-melting furnace, a source of batch-supply above the furnace, a batch-conduit leading from the source of supply to the furnace, and a product or hot-air flue leading from the furnace and extending alongside of said conduit.

2. The combination of a furnace structure, a source of batch-supply above the furnace, a batch-heating receptacle within the furnace structure, a conduit extending from the source of supply to the receptacle, a product or hot-air flue leading from the furnace and extending alongside of said conduit, a glass-melting pot within the furnace, and means for passing the heated batch from said receptacle into the pot.

3. The combination of a glass-melting furnace, a source of batch-supply, a conduit leading from said source of supply to the furnace, and a product-flue extending from the furnace and located adjacent said conduit for the purpose of heating the same.

4. The combination of a glass-melting furnace, a source of batch-supply above the furnace, a batch-conduit leading from the source of batch-supply to the furnace, and a product-flue extending from the furnace and located adjacent the conduit for the purpose of heating the same.

5. The combination of a glass-melting furnace, a source of batch-supply above the furnace, a batch-conduit leading from the source of batch-supply to the furnace, and a product-flue leading from the furnace and paralleling said conduit and separated therefrom by a partition.

6. The combination of a glass-melting furnace, a source of batch-supply above the furnace, an inclined conduit extending from the source of batch-supply to the furnace, and a product-flue leading from the furnace and separated from the conduit by a partition, said partition forming the bottom of the conduit.

7. In glass-melting apparatus, the combination of a furnace structure, separate batch-heating and batch-melting receptacles within the structure, and a product-flue for the furnace structure extending through the batch-heating receptacle.

8. In glass-melting apparatus, the combination of a furnace structure, separate glass-heating and glass-melting receptacles therein, a source of batch-supply separate and apart from the furnace structure, a conduit leading from said source of supply to the batch-heating receptacle, and a product-flue for the furnace structure extending through the said heating-receptacle and leading from the furnace structure in close proximity to and heating the said conduit.

9. The combination of a glass-melting furnace, an elevated source of batch-supply, a conduit leading therefrom to the furnace, a product-chamber through which the upper portion of the conduit extends, and a product-flue leading from the furnace to said chamber.

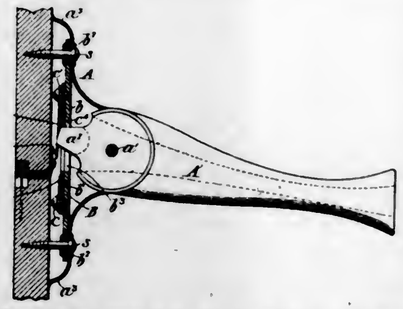
10. The combination of a glass-furnace structure, a batch-receptacle in the upper portion of the structure and adapted to be heated by heat radiated from the furnace, and a hot-air outlet extending through the receptacle.

11. The combination of a series of glass-melting furnaces, a series of batch-receptacles—one for each furnace, means for heating the receptacles, a batch-receiving hopper, and chutes leading from the hopper to each of the receptacles.

12. The combination of a furnace structure, a series of glass-melting furnaces therein, a series of batch-receptacles in the upper portion of the structure, a batch-receiving hopper, and a series of chutes extending from the hopper to each of the melting-furnaces.

13. The combination of a furnace structure, a series of glass-melting furnaces therein, batch-receptacles within the upper portion of the structure and located one over each melting-furnace, hot-air flues extending through the receptacles, a chimney connection common to all of said flues, a batch-receiving hopper, and a series of chutes extending from the hopper alongside the said flues and opening into the said receptacles.

823,758. **SUPPORTING-ARM FOR TELEPHONE-TRANSMITTERS.** SIDNEY A. BEYLAND, Elyria, Ohio, assignor to The Dean Electric Company, Elyria, Ohio, a Corporation of Ohio. Filed May 12, 1904. Serial No. 207,664.



Claim.—1. In a device of the class described, the combination with a base, of a transmitter-arm pivoted to said base, and means within said base for supporting terminal contacts for the conductors, said means limiting the movement of said transmitter-arm.

2. In a device of the class described, the combination with a base, of a transmitter-arm pivoted thereto and provided with a projecting member, apertured means within said base for supporting terminal contacts for the conductors, said projecting member adapted to coact with said apertured means to limit the movement of said transmitter-arm.

3. In a supporting-arm for transmitters, a hollow base, a transmitter-arm pivoted thereto, a terminal-rack mounted within said base, and a stop between said transmitter-arm and said base for limiting the movement of said arm.

4. In a supporting-arm for telephone-transmitters, a hollow base, a transmitter-arm proper pivotally attached thereto, a terminal-rack mounted within said base adjacent said pivot-mounting and provided with a slot, and a lug upon said transmitter-arm proper working within said slot for limiting the movement of said arm, substantially as described.

5. In a supporting-arm for telephone-transmitters, a base, a transmitter-arm proper pivotally attached thereto, a terminal-rack mounted within said base, a stop between said transmitter-arm and base for limiting the movement of said arm, and terminal contacts for the transmitter-conductors mounted upon said rack to coöperate with fixed contacts upon a backboard or support, substantially as described.

6. The combination with a hollow base for electrical apparatus, of a terminal-rack, means for rigidly securing said rack within said base, said securing means being apertured, and means passing through said securing means adapted to secure the base to a support.

7. The combination with a hollow base for electrical apparatus, of a terminal-rack, apertured rivets for securing said rack within said base and means passing through said apertured rivets for securing the base to a suitable support.

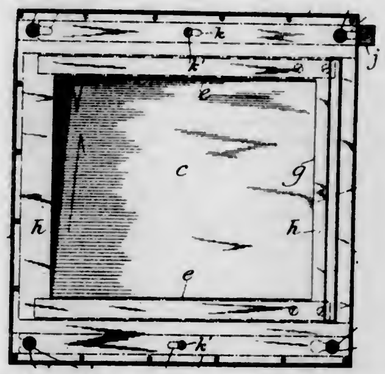
8. In a supporting-arm for telephone-transmitters, the combination with a hollow base, of a transmitter-arm pivoted thereto, a terminal-rack, and rivets for securing said rack within said base, said rivets each being provided with an aperture, and means passing through said apertured rivets adapted to secure the base to a suitable support.

9. The combination with a hollow base for electrical apparatus, of a terminal-rack rigidly mounted within said base and bridging the hollow thereof to constitute a brace, fixed line-terminals and terminals for the electrical apparatus mounted upon said rack adapted to connect with said fixed line-terminals, substantially as described.

10. The combination with a hollow base for electrical apparatus, a terminal-rack mounted within said base, a conductor-terminal attached to said rack having means for attachment of a conductor thereto and provided with a conductor-supporting loop or clip supplemental to the conductor-attachment means, and a contact member for said terminal to coöperate with a fixed terminal upon a backboard or support, substantially as described.

11. In a supporting-arm for telephone-transmitters, a hollow base, a transmitter-arm proper attached thereto, a terminal-rack mounted within said base, conductor-terminals attached to said rack each having means for attachment of a conductor thereto and provided with a conductor-supporting loop or clip supplemental to the conductor-attachment means, and contact members for said terminal to coöperate with fixed terminals upon a backboard or support, substantially as described.

823,759. **REVERSIBLE BACK FOR PHOTOGRAPHIC CAMERAS.** LOUIS BORSUM, Plainfield, N. J. Filed Oct. 5, 1905. Serial No. 281,418.



Claim.—1. A square reversible camera-back having four symmetrically-disposed apertures in its rear face, one adjacent each corner, and adapted to receive headed posts correspondingly located upon the rear of a camera-box, and slotted slides fitted in the back adjacent opposite edges thereof and adapted to lock or release the headed posts whereby the back may be set in desired position upon the camera-box.

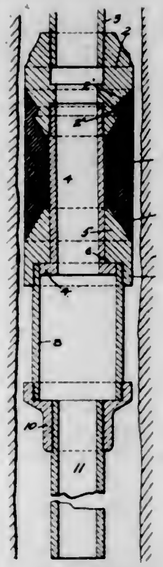
2. A square reversible camera-back, having a flange projecting from its rear face and adapted to fit over the correspondingly-shaped rear of a camera-box and also having four symmetrically-disposed apertures in its rear face, one adjacent each corner, adapted to receive correspondingly-placed headed posts projecting from the rear of the camera-box, and slotted slides adjacent opposite edges of the back adapted to lock or release the headed posts, whereby the reversible back may be placed in desired position on the rear of the camera-box.

823,760. **SOFT-METAL WALL-PACKER.** JAMES T. CALLANAN, Parkersburg, W. Va., assignor to The Parkersburg Machine Company, Parkersburg, W. Va., a Corporation of West Virginia. Filed Oct. 12, 1904. Serial No. 228,220.

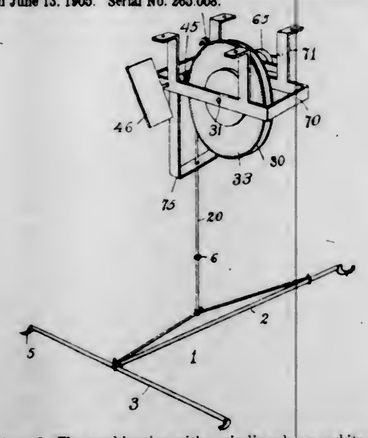
Claim.—1. In a wall-packer, the combination of a packer-body, separated heads on the packer-body, one movable toward the other, the end of one of said heads being reduced and notched, and a sleeve of soft metal surrounding the packer-body between the heads and embracing the said reduced and notched head end.

2. In a wall-packer, the combination of a packer-body, a sleeve of soft metal surrounding the body, two oppositely-tapered packer-heads at opposite ends of the sleeve, the tapered ends of the heads being embedded in the soft metal, one of the heads being formed with a notch to interlock with the soft metal, and means for moving one of said heads toward the other.

823,760.



823,761. HARNESS-SUPPORT. OSCAR M. CARLETON, Somerville, Mass., assignor of one-half to Albert Robart, Cambridge, Mass. Filed June 13, 1905. Serial No. 265,008.



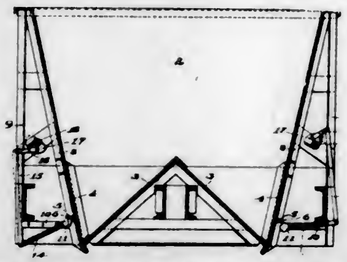
Claim.—1. The combination with a winding-drum and its shaft, of a spring operating said drum, an arm connected with said shaft, a second arm eccentric with the first, a spring resisting the latter's rotation, a movable connection between the end of the second-named arm and the edge of the other arm, means whereby the rotation of said drum about its shaft moves said drum and first-named arm toward each other, and means for the engagement of this arm by said drum when thus brought near together.

2. The combination with a winding-drum and shaft upon which it is loosely mounted, of a spring operating said drum, an arm connected with said shaft, a second arm eccentric with the first, a spring resisting the latter's rotation, a roll projecting from the second-named arm into engagement with the edge of the other, a projection from said drum toward the first-named arm but normally out of reach thereof, and means whereby the rotation of said drum upon its shaft moves the drum toward the first-named arm until said projection engages the latter.

3. The combination of a winding-drum, a shaft upon which the same is loosely mounted, a spring connected with said shaft and drum and operating the latter, an arm connected with said shaft, a second arm eccentric with the first and a spring resisting its rotation, a movable connection between the end of the second-named arm and the edge of the other, and a fixed stop in one direction for the second-named arm; said drum and first-named arm being constructed for mutual engagement after a limited number of rotations of the drum.

4. The combination of a winding-drum, a shaft upon which the same is loosely mounted, a collar on said shaft, said drum and collar being correspondingly threaded to provide longitudinal motion of the drum along the shaft, a spring attached to said shaft and drum, an arm projecting from said collar, a projection from said drum normally out of reach of said arm but brought into engagement therewith by said longitudinal motion of the drum along the shaft, a second arm eccentric with the first, a spring wound by the last-named arm, a roll projecting from the latter into the path of the first-named arm, an elbow rigid with the last-named arm, and a cushion-buffer stop for said elbow.

823,762. LOCK FOR CAR-DOORS. CYRUS M. CARNAHAN, Sandy Lake, Pa., assignor to Fidelity Title and Trust Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed Aug. 16, 1905. Serial No. 274,357.



Claim.—1. A lock for car-doors consisting of a rocking bar, the head of which is adapted to engage with the swinging door of the car; a rod pivoted to the outer end of the rocking bar, and a toggle connection at the other end of the rod; substantially as specified.

2. In a lock for car-doors, the combination of a pivoted rocking bar, a swinging car-door having a projection adapted to engage with the head of the rocking bar, a rod pivoted to the free end of the rocking bar, and a toggle connection at the other end of the rod; substantially as specified.

3. A lock for car-doors consisting of a rocking bar, the end of which is adapted to engage with the car-door, a rod pivoted to the free end of the rocking bar, a toggle connection at the other end of the rod, and a shaft adapted to give a partial rotatory movement to the toggle connection; substantially as specified.

4. A lock for car-doors consisting of a pivoted rocking bar, one end of which is adapted to lock the door when the door is in its closed position, a rod pivoted to the outer end of the rocking bar, and an arm pivoted at one end to a movable support and at the other end to the upper end of the rod, the parts being so arranged that the dropping of the outer end of the rocking bar brings the rocking bar to lock position; substantially as specified.

5. A lock for car-doors consisting of a pivoted rocking bar, one end of which is adapted to lock the door when the door is in its closed position, a rod pivoted to the outer end of the rocking bar, an arm pivoted at one end to a movable support and at the other end to the upper end of the rod, and the operating-shaft, the parts being so arranged that the dropping of the outer end of the rocking bar brings the rocking bar to lock position; substantially as specified.

823,763. TELEPHONE-RELAY. EDWARD E. CLEMENT, Washington, D. C. Filed June 16, 1898. Serial No. 683,651.



Claim.—1. In a relay, a magnetic circuit composed in part of a divided variable-resistance medium, two electric circuits, means connected in one electric circuit to produce changes in the magnetic circuit, said variable-resistance medium being connected into the second electric circuit, whereby electrical changes in the first circuit are translated into magnetic changes in the relay, and directly into electrical changes in the second circuit.

2. In a relay, a coil connected to a transmitting-circuit, of a magnetic variable-resistance medium forming part of a second circuit, said resistance-varying medium being arranged with relation to the said coil so as to be directly affected thereby without the interposition of a diaphragm or other mechanically-moving parts, and in exact accordance with electrical changes in the first circuit, whereby said changes are reproduced in the second circuit.

3. In a relay system, a transmitting-circuit containing a coil, and a receiving-circuit having included therein a magnetic resistance-varying medium placed witbin said coil, substantially as described.

4. A relay consisting of a spool carrying windings connected into a transmitting-circuit, electrodes arranged within the bore of said spool and connected in a receiving-circuit, and resistance-varying material between said electrodes, substantially as described.

5. In a relay, a magnet, electrodes and a resistance-varying medium included between the poles of said magnet, and completing the magnetic circuit, and a coil surrounding said electrodes and resistance-varying medium, substantially as described.

6. In a relay, a permanent magnet, a coil on the magnet included in a first or transmitting circuit, electrodes and granular material arranged in close proximity to and adapted to be directly affected by said coil, and included in a second or receiving circuit together with a source of current; said granular material being susceptible to magnetic influence, substantially as described.

7. In a relay, a coil included in a first or transmitting circuit, electrodes and granular material arranged in close proximity to and adapted to be directly affected by said coil, and included in a second or receiving circuit, together with a source of current; said granular material being susceptible to magnetic influence, substantially as described.

8. In a relay, a resistance medium of carbon granulate incorporated with iron, two electric circuits, means connected in one electric circuit to produce changes in the carbon iron granulate, said granulate being connected into the second electric circuit, whereby electrical changes in the first circuit are translated into magnetic changes in the relay, and directly into electrical changes in the second circuit, substantially as described.

9. A relay for telephones or other electric apparatus in which an undulating current is used, said relay consisting of a magnetizing-coil adapted for connection with the transmitting-circuit, electrodes located within the coil, particles of magnetizable material located between said electrodes and adapted to form a conducting-path from one electrode to the other, and a relay-circuit in which said electrodes are included, substantially as described.

10. A relay or repeater, comprising a coil or electromagnet, and a granular resistance-varying medium, responsive in itself to magnetic variation, exposed to the field of said coil or electromagnet, and included in a relaying or repeating circuit, substantially as described.

11. A relay or repeater for use between two circuits, comprising an electromagnet or coil included in one circuit, two electrodes included in the other circuit, which forms a relaying or repeating circuit, and a magnetic granular resistance-varying medium arranged between said electrodes and exposed to the field of said electromagnet or coil, substantially as described.

12. A relay or repeater for use between two circuits, comprising an electromagnetic or coil included in one circuit, and a granular resistance-varying medium made up of particles of magnetic material coated with a non-oxidizing material, exposed to the field of said electromagnet or coil, and included in the other circuit, substantially as described.

13. A relay or repeater for use between two circuits, comprising an electromagnet or coil included in one circuit, and a granular resistance-varying medium made up of particles of iron or steel, coated with carbon, exposed to the field of said electromagnet or coil, and included in the other circuit, substantially as described.

14. In a telephone system, the combination of a line-circuit, an electromagnet or coil included therein, and a magnetic granular resistance-varying medium included in a relaying or repeating circuit, with a fresh source of electricity therein, substantially as described.

15. In a telephone system, the combination of a line-circuit, an electromagnet or coil included therein, a magnetic granular resistance-varying medium included in a relaying or repeating circuit, with a fresh source of electricity therein, an induction-coil having its primary included in the relaying or repeating circuit, and its secondary connected to a receiver, or to the next section of the line-circuit, substantially as described.

16. In a telephone system, the combination with a transmitting-circuit and a receiving-circuit of a repeater comprising a group of magnetizable metal particles, means for varying the coherence of the particles by the undulatory current of the transmitting-circuit, an induction-coil the secondary of which is connected to the receiving-circuit, and a local circuit including the primary winding of said coil and the group of metal particles.

17. In a telephone system, the combination with a transmitting-circuit and a receiving-circuit, of a repeater comprising an electromagnet the coils of which are connected to the transmitting-circuit, magnetizable particles of metal arranged within the influence of said coils, a local circuit in which said particles are included, and an induction-coil the primary winding of which is included in said circuit and the secondary winding of which is connected to the receiving-circuit.

18. A telephone-repeater comprising an induction-coil, the secondary of which is adapted to be connected to a receiving-circuit, a local circuit including the primary winding of said coil, a chain of magnetizable metal particles, in said local circuit, and a magnet-coil arranged to influence the coherence of said particles and adapted to be connected in a transmitting-circuit.

19. A telephone-repeater comprising an induction-coil, the secondary winding of which is adapted to be connected to a receiving-circuit, a local circuit including the primary winding of said coil, a chain of magnetizable metal particles in said local circuit, a permanent magnet arranged to cause the constant coherence of said particles, and a magnet-coil arranged to influence the degree of coherence of said particles and adapted for connection to a transmitting-circuit.

20. A telephone-repeater comprising an induction-coil the secondary winding of which is adapted to be connected to a receiving-circuit, a local circuit including the primary winding of said coil, a chain of magnetizable metal particles in said local circuit, a soft-iron core adjacent to said particles, a permanent magnet adjacent to said soft-iron core, and a magnet-coil surrounding said core and adapted to be connected to a transmitting-circuit.

21. A telephone-repeater comprising an induction-coil the secondary winding of which is adapted to be connected to a receiving-circuit, a local circuit including the primary winding of said coil, a permanent magnet, a pair of soft-iron cores each having an end adjacent to said magnet, the opposite ends of said cores being arranged in proximity to one another, a group of magnetizable metal particles adjacent to said proximate ends and included in the local circuit, and coils upon said cores adapted to be connected to a transmitting-circuit.

22. A telephone-repeater comprising an induction-coil, the secondary winding of which is adapted to be connected to a receiving-circuit, a local circuit including the primary winding of said coil, a chain of magnetizable metal particles in said local circuit, a soft-iron core adjacent to said particles, a permanent magnet adjacent to said soft-iron core, and a magnet-coil surrounding said core and adapted to be connected to a transmitting-circuit, and a box arranged to hold the particles adjacent to the core.

23. In a telephone-repeater, a group of magnetizable metal particles, a transmitting-circuit, means operated by the current in said circuit for varying the coherence of said particles, a circuit in which said particles are included, and a receiver arranged to be operated by the current in said latter circuit.

24. In a telephone-repeater, a group of magnetizable metal particles having a coating of carbon in combination with a local circuit in which said particles are included, and means for varying the coherence of said particles.

25. In a telephone-repeater, a coherer comprising a pair of soft-iron cores, a group of magnetizable metal particles between adjacent ends of said cores and a magnet having its poles adjacent to said cores.

26. In a relay, a resistance medium of carbon granulate incorporated with iron, a transmitting apparatus adapted to produce electrical changes in intervening media, and thereby to affect the carbon-iron mixture to alter its resistance, and a receiving-circuit including the resistance medium, whereby changing electrical conditions produced by the transmitting apparatus produce changes of resistance in the relay and thereby produce electrical changes in the receiving-circuit.

27. An electrical relay comprising fixed non-vibratory electrodes, a mixture of iron and carbon between said electrodes, and means for confining the same.

28. An electrical relay comprising fixed non-vibratory electrodes and a mixture of finely-divided carbon, and iron, therebetween.

29. An electrical relay comprising fixed non-vibratory electrodes and a mixture of carbon and finely-divided iron therebetween.

30. In an electrical transmission system, a transmitting apparatus, a receiving apparatus, and a sensitive resistance device connected with the latter comprising as its essential feature a mixture of carbon and iron, with means whereby the transmitting apparatus may act electrically through intervening media to affect the resistance device to alter its condition, and the change thus produced may affect the receiving apparatus.

31. An electrical relay comprising as its essential feature a semiconductor, as carbon, and a metal, as iron, arranged to coöperate in response to electrical changes produced in their vicinity to alter their joint resistance, with a circuit including said materials and means for indicating the changes in resistance.

32. A relay comprising as its essential element a mixture of carbon and iron, and circuit connections therefor relatively fixed during operation of the relay.

33. A relay comprising as its essential element a mixture of carbon and a metal, and circuit connections therefor relatively fixed during operation of the relay.

34. A relay comprising as its essential element a mixture of iron and a semiconductor, and circuit connections therefor relatively fixed during operation of the relay.

35. In an electrical relay, relatively fixed terminal electrodes of iron, and a semiconductor interposed between said electrodes and bridging across the same.

36. An electrical relay comprising relatively fixed electrodes, a mixture of iron and carbon between said electrodes, and means for confining the same.

37. An electrical relay comprising relatively fixed electrodes and a mixture of finely-divided carbon, and iron, therebetween.

38. An electrical relay comprising relatively fixed electrodes and a mixture of carbon and finely-divided iron therebetween.

39. In an electrical relay device, a metallic resistance medium magnetically responsive, a circuit, means to develop a variable magnetic field in accordance with current change in said circuit, and electrical connections through said metallic medium, all so arranged that the said metallic medium may be affected magnetically to produce changes within itself and in its circuit, corresponding to the electrical changes in the first circuit.

40. In a relay system, a transmitting-circuit and means to produce electrical changes therein, means responding to said changes to produce a varying magnetic field, a sensitive resistance medium exposed to said magnetic field and directly responding to changes therein by changes in itself, together with a second circuit connected with said sensitive resistance medium.

41. In a relay system, a transmitting-circuit and means to produce changes therein, means connected to said circuit to produce and to vary a magnetic field in response to said changes, a sensitive resistance medium directly responsive to said magnetic variations to produce changes in its own character or condition, and a second circuit connected to said sensitive resistance medium to be affected thereby.

42. A relay system comprising means for producing initial electrical or electromagnetic effects, a sensitive resistance medium responding directly thereto by changes in its own character or condition, and means affected by the changes in said resistance medium to produce secondary electrical or electromagnetic effects corresponding to the initial effects.

43. A telephonic relay system comprising means to produce initial electrical circuit changes, a sensitive resistance medium responding directly thereto by changes in its own condition, and means to render said changes effective electrically or electromagnetically in a second circuit.

44. As a means for reproducing the variations of current in an electric circuit, an electromagnet subject to the influence of said variations, and a sensitive resistance medium of the general character described located in the field of force of the said magnet.

45. As a means for reproducing current variations in an electric circuit, an electromagnet subject to the influence of said variations, a sensitive resistance medium located in the field of force of the said magnet, and a receiving apparatus in circuit with the sensitive resistance medium.

46. The combination of a telephonic transmitting-circuit, a telephone-receiver, a circuit including the latter, and an inclosed sensitive resistance medium included in the latter circuit, and an electromagnet traversed by electric currents due to the effects of the transmitting-circuit, and acting upon the sensitive resistance medium, substantially as described.

47. The combination with a telephonic transmitting-circuit, an electromagnet included therein, a telephonic receiving-circuit having an inclosed sensitive resistance medium inserted therein, the sensitive resistance medium and the electromagnet occupying such relative positions that a portion at least of the lines of force from the electromagnet act upon the sensitive resistance medium.

48. The combination with a telephonic transmitting-circuit and an electromagnet included therein, of a telephonic receiving-circuit and a resistance apparatus included therein, said resistance apparatus comprising a completely-inclosed chamber and a sensitive resistance material therein, the resistance apparatus and magnet occupying such relative positions that a portion at least of the lines of force from the magnet will act upon the sensitive resistance material.

49. The combination with a telephonic transmitting-circuit and an electromagnet included therein, of a telephonic receiving-circuit and a resistance apparatus included therein, said resistance apparatus comprising an exhausted chamber and a sensitive resistance medium inclosed therein, said resistance apparatus and magnet occupying such relative positions that some or all of the lines of force from the magnet will act upon the sensitive inclosed medium.

50. The combination with a telephonic transmitting-circuit and an electromagnet included therein, of a telephonic receiving-circuit and a resistance apparatus included therein, said resistance apparatus comprising a chamber exhausted of air and a sensitive resistance medium inclosed therein, said resistance apparatus and said magnet occupying such relative positions that a portion at least of the lines of force from the magnet will act upon the sensitive resistance medium.

51. In an apparatus of the class described, a local circuit having a portion thereof formed of comminuted magnetic particles in relatively loose contact, a normal magnetic flux through such particles, and a winding around said particles adapted to be energized by received impulses

52. In apparatus of the class described, a conductor of relatively high resistance composed of a mass of comminuted magnetic particles in relatively loose contact, means for setting up a normal magnetic flux therethrough, and a winding around said mass adapted to be energized by high-frequency oscillations, substantially as described.

53. In apparatus of the class described a mass of comminuted material permeable to magnetic lines of force, means for setting up a normal magnetic flux therethrough, a local circuit embracing such mass, and a winding around such mass adapted to be energized by high-frequency impulses.

54. In an apparatus of the class described, a mass of magnetic particles in relatively loose contact, means for setting up a magnetic flux therethrough, and means for varying the magnetic permeability of such mass consisting in a winding around such mass adapted to be energized by received impulses.

55. In apparatus of the class described contact of variable resistance having its members of magnetic material, a normal magnetic flux therethrough, and a winding around said members adapted to be energized by high-frequency impulses.

56. In apparatus of the class described a variable-resistance contact composed of members of magnetic material, a normal magnetic flux therethrough, and means for altering the permeability of such members by means of a winding adapted to be energized by high-frequency impulses.

57. In apparatus of the class described a magnetic resistance variable in a function of the intensity of magnetic flux therethrough, and a winding for received impulses adapted when energized to vary the normal magnetic flux.

58. In an apparatus of the class described, a mass of comminuted particles embracing magnetic material, a normal magnetic flux therethrough, a local circuit embracing such mass as a resistance, and a winding around such mass energized by received impulses.

59. In an apparatus of the class described, a mass of comminuted particles embracing magnetic material, and forming part of a local circuit, a normal magnetic flux therethrough, and a winding around such mass energized by received impulses.

60. A variable contact composed of members permeable to magnetic lines of force, a normal magnetic flux therethrough, and a winding energized by high-frequency impulses and adapted to vary the permeability of such members.

61. In apparatus for transmitting messages, means for transforming electrical undulations into qualitatively-corresponding magnetic undulations within a supplemental magnetic field, producing thereby qualitatively-corresponding resultant magnetic product undulations, and causing qualitatively-corresponding mechanical vibrations quantitatively proportionate to the resultant magnetic product undulations, thereby quantitatively enhancing the mechanical result while preserving therein the characteristic quality of the original electrical undulations.

62. In apparatus for transmitting messages, a supplemental magnetic field, and means operating within said field for transforming electrical undulations into qualitatively-corresponding magnetic undulations, producing thereby qualitatively-corresponding resultant magnetic product undulations, means for establishing and maintaining a symmetrical relation between the forces of the supplemental field and the electrically-induced magnetism respectively, and transforming the resultant magnetic product undulations into qualitatively-corresponding mechanical vibrations or changes.

63. In apparatus for transmitting telephonic messages, means for transforming electrical undulations into qualitatively-corresponding magnetic undulations within a supplemental magnetic field, and for producing by means of the said resultant magnetic product undulations rectilinear mechanical vibrations quantitatively proportionate and qualitatively corresponding to the resultant magnetic product undulations, and means responding to the qualitatively-corresponding electrical undulations caused thereby.

64. An electrical relay comprising a magnetic field, means for transforming electrical undulations into corresponding magnetic undulations within said field, and a magnetic variable-resistance medium responsive to the resultant magnetic effects thus produced.

65. A telephone-relay comprising a coil connected in one circuit inclosing a magnetic variable-resistance device connected in a second circuit.

66. In a relay, a magnetic circuit composed in part of a non-solid or substantially fluent variable-resistance medium, two electric circuits, means connected in one electric circuit to produce changes in the magnetic circuit, said variable-resistance medium being connected into the second electric circuit, whereby electrical changes in the first circuit are translated into magnetic changes in the relay, and directly into electrical changes in the second circuit.

67. In a relay, a coil connected to a transmitting-circuit, of a non-solid variable-resistance medium forming part of a second circuit, said resistance-varying medium being arranged with relation to the said coil so as to be directly affected thereby without the interposition of a diaphragm or other mechanically-movable parts, and in exact accordance with electrical changes in the first circuit, whereby said changes are reproduced in the second circuit.

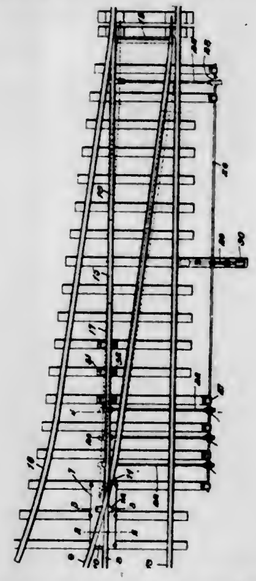
68. In a relay, a magnetic circuit including a variable-resistance medium whose ultimate constituent particles are movable with respect to each other, two electric circuits, means connected in one electric circuit to produce changes in the magnetic circuit, said variable-resistance medium being connected into the second electric circuit, whereby electrical changes in the first circuit are translated into magnetic changes in the relay, and directly into electrical changes in the second circuit.

823,764. RAILWAY-SWITCH. CHARLES F. CONER and HARRY LIGHTCAP, Michigan City, Ind. Filed Nov. 4, 1905. Serial No. 285,588.

Claim.—1. In a railway-switch the combination with the rails of a siding and main line, the inner rail of the main line terminating at its point of intersection with the inner rail of the siding; of an extension to the inner rail of the siding extending between the rails of the main line and adapted to be swung laterally into contact with the outer rail of the main line, and rail-sections secured at their adjoining ends between the rails of the siding and in alinement with the inner rail of the main line, and means for simultaneously shifting one of the rail-sections and the rail extension and the other rail-section in opposite directions to open or close the switch.

2. The combination with the rails of a main line and siding, the inner rail of the main line terminating at its point of intersection with the inner rail of the siding; of an extension to the inner rail of the siding extending in close proximity to, and adapted to move laterally into contact with, the outer rail of the main line, oppositely-extending rail-sections secured between the rails of the siding and in alinement with the inner rail of the main line, said sections having their points free and capable of swinging laterally, chairs engaging the rail-sections adjacent their points, and means for simultaneously moving the points in opposite directions to open or close the switch, the rail extension being connected to and movable with one of the points.

3. The combination with the rails of a main line and siding, the inner rail of the main line terminating at its point of intersection with the inner rail of the siding; of an extension to the inner rail of the siding extending in close proximity to, and adapted to move laterally into contact with, the outer rail of the main line, oppositely-extending rail-sections secured between the rails of the siding and in alinement with the inner rail of the main line, said sections having their points free and capable of swinging laterally, chairs engaging the rail-sections adjacent their points, a rotatable rod adjacent the rails and having oppositely-extending cranks, means connecting the cranks and chairs, and a weighted actuating-arm secured to the rod adapted to rotate and hold the same to simultaneously shift the points of the rail-sections to open or close the switch, the rail extensions being connected to and movable with one of said points.



4. The combination with the rails of a main line and siding, the inner rail of the main line terminating at its point of intersection with the inner rail of the siding; of an extension to the inner rail of the siding extending in close proximity to, and adapted to move laterally into contact with, the outer rail of the main line, oppositely-extending rail-sections secured between the rails of the siding and in alinement with the inner rail of the main line, said sections having their points free and capable of swinging laterally, chairs engaging the rail-sections adjacent their points, a rotatable rod adjacent the rails and having oppositely-extending cranks, means connecting the cranks and chairs, a weighted actuating-arm secured to the rod adapted to rotate and hold the same to simultaneously shift the points of the rail-sections to open or close the switch, the rail extensions being connected to and movable with one of said points, a bed-plate extending under and engaging the intersecting portions of the inner rails of the main track and siding, and stop-plates extending under one of the rail-sections and adapted to limit its movement in one direction.

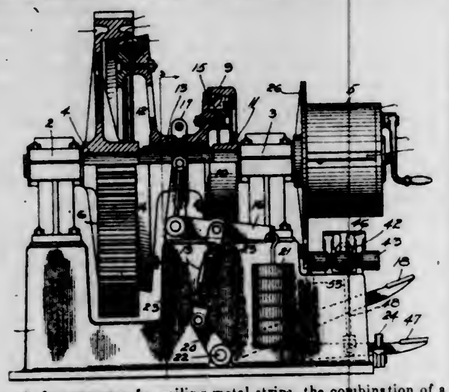
823,765. METAL COILING AND STRAIGHTENING APPARATUS. WILLIAM F. CONKLIN, Leechburg, Pa., assignor to West Leechburg Steel Co., Pittsburg, Pa., a Corporation of Pennsylvania. Filed Aug. 4, 1904. Serial No. 219,559.

Claim.—1. In apparatus for coiling metal strips, the combination of an expansible reel provided with a slot for the entrance of the strip, mechanism mounted in said reel arranged to both engage the strip and clamp the same to expand the reel, and a driven shaft on which said reel is fixedly mounted.

2. In apparatus for coiling metal strips, the combination of a reel having a stationary section and a movable section and provided with a slot for the entrance of the strip, a cam mounted in said reel between said sections and arranged to press the strip against the stationary section to clamp the same and also engage the movable section to expand the reel, and a driven shaft on which said reel is fixedly mounted.

3. In apparatus for coiling metal strips, the combination of a reel-body secured upon a driving-shaft and having a hub provided

with guideways, a stationary reel-section, and a sliding reel-section having guide-arms engaging with the guideways of the hub.



4. In apparatus for coiling metal strips, the combination of a reel-body secured upon a driving-shaft and having a hub provided with guideways, a stationary reel-section, a sliding reel-section having guide-arms engaging with the guideways of the hub, and a connecting-plate between said guide-arms and a spring confined between the hub and plate for contracting the reel.

5. In apparatus for coiling metal strips, the combination of a reel-body secured upon a driving-shaft and having a hub provided with guideways, a stationary reel-section, a sliding reel-section having guide-arms engaging with the guideways of the hub, a connecting-plate between said guide-arms, a spring confined between the hub and plate for contracting the reel, and a cam engaging with the connecting-plate for expanding the reel.

6. In apparatus for coiling metal strips, the combination of a frame, a shaft mounted therein and carrying a reel, a driving-wheel fitting around said shaft and having a clutch-face, a stationary clutch member supported on the frame, a sliding clutch connected with said shaft and adapted to engage the driving-wheel and stationary clutch member, a treadle arranged to move the clutch into engagement with the driving-wheel, and automatically-acting means for throwing said clutch into engagement with the stationary clutch member, and a lock for holding said last means inoperative.

7. In apparatus for coiling metal strips, the combination of a frame, a shaft mounted therein and carrying the reel, a driving-wheel fitting around said shaft and having a clutch-face, a stationary clutch member supported on the frame, a sliding clutch connected with said shaft and adapted to engage the driving-wheel, and the stationary clutch member, the clutch-lever 16 carrying the weight 21 and the treadle 18 having the toggle connections 19 20 with the clutch-lever.

8. In apparatus for coiling metal strips, the combination of a frame, a shaft mounted therein and carrying the reel, a driving-wheel fitting around said shaft and having a clutch-face, a stationary clutch member supported on the frame, a sliding clutch connected with said shaft and adapted to engage the driving-wheel and the stationary clutch member, the clutch-lever 16 carrying the weight 21 and the treadle 18 having the toggle connections 19 20 with the clutch-lever, the toggle-link 19 being longitudinally adjustable.

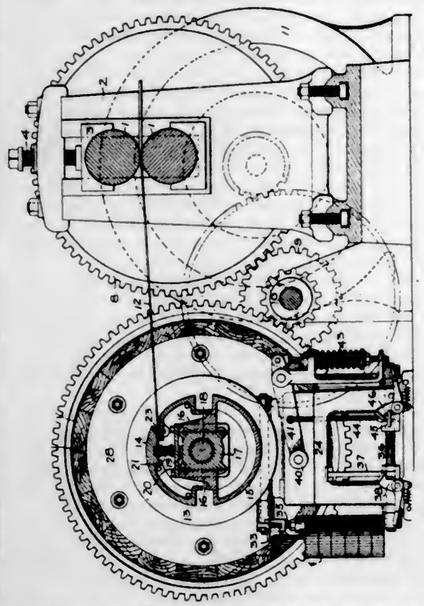
9. In apparatus for coiling metal strips, the combination of a power-driven reel and a spring-operated pressure-roller mounted therewith and adapted to contact with the material coiled upon said reel, a treadle and connections between the spring-pressure roller and treadle, and a spring-catch for holding the treadle.

10. In apparatus for coiling metal strips, the combination of an expansible reel having clamping mechanism for engaging the strips, and recesses formed therein for binding the coil, and a pressure-roller adapted to engage the material coiled upon the reel.

11. In apparatus for coiling metal strips, the combination of an expansible reel having clamping mechanism for engaging the strips, and recesses formed therein for binding the coil, a pressure-roller adapted to engage the material coiled upon the reel, and locking mechanism adapted to engage with the reel.

12. In apparatus for coiling metal strips, the combination with a power-driven reel, a pressure-roller coöperating therewith, a lever carrying said roller, a yoke in which said lever is mounted, a spring carried by said yoke and connected to said lever, and a treadle also connected to said lever and arranged to move the lever against the tension of the spring.

823,766. METHOD OF FINISHING AND STRAIGHTENING FLAT METAL STRAPS. WILLIAM F. CONKLIN, Leechburg, Pa., assignor to The West Leechburg Steel Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed Aug. 14, 1905. Serial No. 274,081.



Claim.—1. The method of finishing and straightening flat metal strips, which consists in giving to the same a finishing reduction, and coiling or winding the finished strip at such a rate of speed as to stretch the portion between the coil and the finishing device.

2. The method of finishing and straightening flat metal strips, which consists in giving the same, while cold, a finishing compression, and simultaneously therewith coiling or winding the finished strip at such a rate of speed as to stretch the portion between the coil and the finishing device.

3. The method of finishing and straightening flat metal strips, which consists in giving to the same a finishing reduction, and coiling or winding the finished strip with a yielding pull at such a rate of speed as to stretch the portion between the coil and the finishing device.

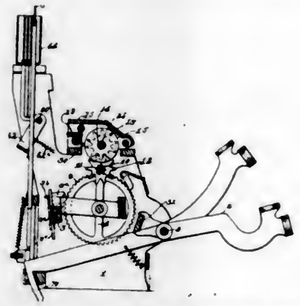
4. The method of finishing and straightening metal strips, which consists in passing the same through finishing-rolls and coiling or winding the finished strip or band at such a rate of speed as to stretch the portion between the coil and the rolls.

5. The method of finishing and straightening metal strips, which consists in rolling the same while cold to finish the same, and simultaneously therewith winding or coiling the finished portion at such a rate of speed as to stretch the same and with a yielding pull.

823,767. CASH-REGISTER. LUKE COONEY, Jr., Chicago, Ill., assignor, by mesne assignments, to The National Cash Register Company, Dayton, Ohio, a Corporation of Ohio. (Incorporated in 1906.) Original application filed June 4, 1903, Serial No. 160,033. Divided and this application filed July 27, 1904. Serial No. 218,385.

Claim.—1. In a registering-machine, the combination with a counter-operating mechanism, of a counter mounted in a movable frame for permitting disengagement of the counter from its operating mechanism, stop provisions formed on the counter elements, and a stationary abutment coöperating with said stop provisions when the counter is rocked out of engagement with its operating mechanism to limit the zero-setting movement of the counter elements.

2. In a registering-machine, the combination with a counter-operating mechanism, of a series of counter-wheels operated thereby and mounted in a movable frame, a manipulative device for moving said frame to rock said counter-wheels out of engagement with their operating mechanism and to hold the same latched in depressed position, a turn-to-zero shaft for said counter-wheels, stop projections mounted on said wheels, and a stationary abutment coöperating with said projections to limit the zero-cutting movement of said wheels when the same are rocked out of engagement with the counter-operating mechanism.



3. In a registering-machine, the combination with a counter-operating mechanism, of a series of counter-wheels operated thereby and mounted in a movable frame, a manipulative device for moving said wheels to rock said counter-wheels out of engagement with their operating mechanism and to hold the same latched in depressed position, a turn-to-zero shaft for said counter-wheels, spring-pressed pins carried by said shaft and frictionally engaging said counter-wheels to reset the same to zero by the rotation of said shaft, stop projections mounted on said wheels, and a stationary abutment coöperating with said projections to limit the zero-setting movement of said wheels when the same are rocked out of engagement with the counter-operating mechanism.

4. In a registering-machine, the combination with a counter-operating mechanism, of a series of counter-wheels operated thereby and mounted in a movable frame, a hand-operated lifting-lever attached to said frame for rocking the latter to disengage the counter-wheels from their operating mechanism, a latching-lever adjacent to said lifting-lever and coöperating with a projection on said frame to latch the latter in normal position, a stationary abutment coöperating with said lifting-lever to latch the frame in displaced position when the same is rocked to disengage the counter, stop provisions carried by the counter-wheels, and a stationary abutment coöperating with said stop provisions to limit the resetting movement of the counter-wheels when said frame is rocked to disengage the counter, substantially as described.

5. In a cash-register, the combination with a series of keys, of a registering-frame operated thereby, an operating-pawl mounted on said frame, a register-operating wheel arranged to be engaged by the pawl, a locking-pawl mounted on said frame and arranged to lock the first-mentioned pawl to the wheel, means operated by the keys for positively actuating the said locking-pawl to cause the same to engage the operating-pawl, and a counter controlled by the operating-wheel.

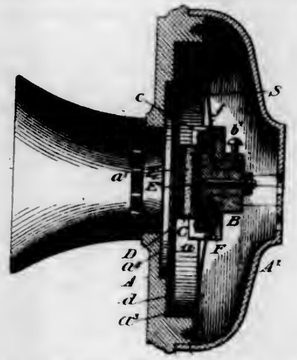
6. In a cash-register, the combination with a series of operating-keys, of a registering-frame, a slide carried by said frame and operated by the keys, a register-operating wheel, a pawl mounted on the frame and engaging the wheel, a pivoted pawl also mounted on said frame and operated by the slide to lock the first-mentioned pawl to the operating-wheel, and a counter controlled by said wheel.

7. In a cash-register, the combination with a register-operating member, of a registering-frame, a pawl mounted on said frame and arranged to engage said member, a pivoted locking-pawl engaging the first-mentioned pawl, and a movable part on said frame engaging said locking-pawl.

8. In a cash-register, the combination with a series of keys, of a pivoted registering-frame, a register-operating wheel, a pivoted pawl mounted on said frame and engaging said wheel, a sliding plate mounted on the frame for locking the pawl to the wheel and for also locking the keys to the frame, and an additional locking-pawl mounted on the frame and operated by the slide to lock the first-mentioned pawl to the wheel.

9. In a cash-register, the combination with a series of operating-keys, of a registering-frame, a register-operating wheel, a pawl mounted on the frame and engaging the wheel, and a movable device carried by said frame and actuated by said keys upon their initial movement to positively actuate said pawl and lock the same into engagement with the register-operating wheel, and likewise effect the locking of said pawl to said movable device.

823,768. TELEPHONE-TRANSMITTER. WILLIAM W. DEAN, Elyria, Ohio, assignor to The Dean Electric Company, Elyria, Ohio, a Corporation of Ohio. Filed Sept. 13, 1904. Serial No. 224,299.



Claim.—1. In a telephone-transmitter, a vibrating diaphragm, an independently-supported cup having an electrode, springs pressing said cup against the diaphragm, a second electrode independently and rigidly fixed with respect to the first, and granular conducting material between the electrodes in the cup.

2. In a telephone-transmitter, a vibrating diaphragm, a containing-cup separately supported but vibrating with the diaphragm, an electrode seated in said cup, a second electrode fixed with respect to the first and extending into the cup, together with granular conducting material in the cup between the electrodes, substantially as described.

3. In a telephone-transmitter, a vibrating diaphragm, a containing-cup spring-pressed against the diaphragm, an electrode seated in said cup, a second electrode rigidly fixed with respect to the first and extending into the cup, together with granular conducting material in the cup between the electrodes, substantially as described.

4. In a telephone-transmitter, a vibrating diaphragm, a containing-cup independently supported but vibrating with the diaphragm, one electrode seated in said cup, a second electrode fixed with respect to the first, an auxiliary diaphragm peripherally secured to the edge of the cup and connecting the same with the fixed electrode, together with granular conducting material in the cup and between the electrodes, substantially as described.

5. In a telephone-transmitter, a vibrating diaphragm, an independently-supported containing-cup spring-pressed against the diaphragm, an electrode seated in the cup, a second electrode fixed with respect to the first, an auxiliary diaphragm peripherally secured to the cup and centrally secured to the fixed electrode, together with granular conducting material in the cup and between the electrodes, substantially as described.

6. In a telephone-transmitter, a diaphragm, a pair of electrodes, and a containing-cup therefor, one electrode vibrating with the diaphragm and the other fixed in a suitable support, a contact-spring secured to but insulated from said support and pressing against the conducting parts connected with the movable electrode, together with means to insulate the fixed electrode from the support, whereby circuit may be made through the electrodes without passing through the supporting parts, substantially as described.

823,769. MACHINE FOR VENDING POSTAGE-STAMPS. MISAEL DELUDE, North Brookfield, Mass. Filed Dec. 7, 1905. Serial No. 290,667.



Claim.—1. An apparatus of the class described, comprising a pusher-slide having side pieces which swing in toward the slide, and pivoted fingers which normally hang at an angle to the length of the slide, the side pieces and fingers being mounted to be held in operative position by coins of the proper dimensions.

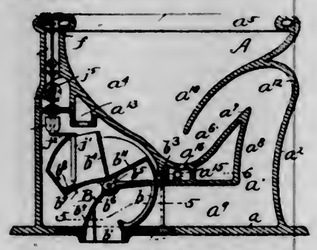
2. In an apparatus of the class described, the combination of a pusher-slide having pivoted fingers which normally hang at an angle

to the length of the slide, said fingers being mounted to be held in operative position by coins of a proper dimension, and a stop-piece having openings for registering with said fingers only when the same are held in place by coins.

3. In an apparatus of the class described, the combination of a pusher-slide having side pieces which swing in toward the slide, and pivoted fingers which normally hang at an angle to the length of the slide, the side pieces and fingers being mounted to be held in operative position by coins of the proper dimensions, and a stop-piece having openings for registering with the movable pieces or feelers of the slide only when the same are held in place by coins.

4. In a machine for vending postage-stamps, the combination of feed-rolls, coin-controlled means for operating the feed-rolls, and an automatic stop for preventing coins from being inserted when the supply of stamps is exhausted, said stop comprising a pivoted member having a blade adapted to move into position for intercepting the coins, and a rearwardly-extending projection normally held down by the stamps in the machine.

828,770. **WATER-CLOSET.** BERNARD M. DRAWE, Sandusky, Ohio, assignor of one-third to Robert Weigel, Sandusky, Ohio. Filed Apr. 4, 1906. Serial No. 311,763.



Claim.—1. In a water-closet, the combination of a bowl, a removable gate mechanism for closing the discharge passage-way therefrom, said gate mechanism including a portion of the discharge-conduit, a member adapted to move across the same, and a bucket connected with said member for moving it.

2. In a water-closet, the combination of a bowl, a passage-way therefrom, and a removable gate mechanism for closing said passage-way including a base-plate, a casing carried thereby and forming a portion of the discharge passage-way, a bucket pivoted on the upper side of the casing, and a gate connected with the bucket and movable through a slot in the casing.

3. In a water-closet, the combination of a bowl, a passage-way therefrom, pivoted gate mechanism for closing said passage-way including a plate adapted to project downward through a slot in the upper wall of the discharge passage-way, and a bucket rigidly connected with said plate.

4. In a water-closet, the combination of a bowl, a passage-way therefrom, a gate for closing said passage-way, said gate being arc-shaped and pivoted at its center of curvature, a bucket connected with the gate beyond the pivot thereof, and means for directing water into the bucket.

5. In a water-closet, the combination of a bowl, a passage-way therefrom, water-operated mechanism for controlling the passage-way, and a pipe leading to said mechanism from a point in the discharge passage-way.

6. In a water-closet, the combination of a bowl, a passage-way therefrom, a gate for the passage-way, a bucket for operating the gate, and a pipe leading from a point in the discharge passage-way to said bucket, said pipe bending downward intermediately of such points.

7. In a water-closet, the combination of a bowl, a passage-way therefrom, a gate for the passage-way, a bucket for operating the gate and a pipe leading from a point in the discharge passage-way to said bucket, said pipe starting at a point in the discharge-pipe above the normal water-level.

8. In a water-closet, the combination of a bowl, a passage-way from the base thereof leading upward and then downward and backward, gate mechanism adapted to be operated by water for controlling the passage-way, a pipe leading from a comparatively high point in the passage-way to such gate mechanism, and valve mechanism for controlling the admission of water to the bowl.

9. In a water-closet, the combination of a bowl, a passage-way therefrom, gate mechanism adapted to be operated by water for controlling the passage-way, a pipe leading from the passage-way to such gate mechanism, valve mechanism for controlling the admission of water to the bowl, means for manually opening the valve, means for thereafter holding it open, and means operated by the gate mechanism for thereafter allowing the valve to close.

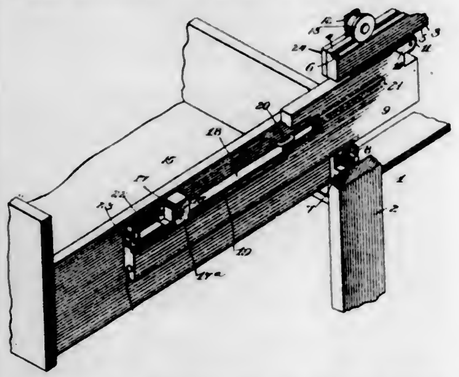
10. In a water-closet the combination of a bowl, a passage-way therefrom, a gate for the passage-way, and means for concurrently operating the gate and admitting a boosting-jet to the base of the bowl.

11. The combination of a bowl, an exit passage-way therefrom, a gate for closing such passage-way, water-operated means for moving said gate, a valve for admitting water to such means, mechanism for opening said valve, and mechanism for retarding the closing thereof.

12. The combination of a bowl, a passage-way therefrom, a gate for closing the passage-way, a bucket for operating the gate, a valve for admitting water to the bucket, means for opening said valve to initiate the admission of water, mechanism for retarding the closing of the valve, such mechanism being operated by the moving of the bucket to allow the valve to close.

13. The combination of a bowl, a gate therefor, water-controlled means for opening the gate, a valve for admitting water to such means, and mechanism operated by such means for governing the closing of such valve.

828,771. **DRAWER-SUPPORT FOR FILING-CASES.** CARL ERNST, Rochester, N. Y. Filed May 4, 1906. Serial No. 316,782.



Claim.—1. The combination with a casing having a drawer-receptacle therein, a drawer adapted to operate in the receptacle and horizontal ways on the casing, of sliding supports for the drawer arranged to operate beneath said ways and having bearings upon opposite sides of the ways.

2. The combination with a casing having a drawer-receptacle therein, a drawer adapted to operate in the receptacle and guides on the casing, of sliding supports for the drawer having rollers operating on tracks upon opposite sides of the guides.

3. The combination with a casing having a drawer-receptacle therein, a drawer adapted to operate in the receptacle and guides on the casing, of a pair of sliding supports arranged between the sides of the drawer and the casing, having rollers engaging the upper sides of the guides, and rollers arranged at the front of the receptacle and bearing on the under sides of the supports.

4. The combination with a casing having a drawer-receptacle therein, a drawer adapted to operate in the receptacle and ways on the casing, of sliding supports for the drawer guided by said ways and having grooves on their under sides, rollers arranged at the front of the receptacle and bearing on the under sides of the supports and means coöperating with the grooves in the supports for preventing lateral displacement of the latter.

5. The combination with a casing having a drawer-receptacle therein, a drawer adapted to operate in the receptacle, guides on the casing having grooves therein, and sliding supports for the drawer having grooves on the under sides thereof, of flanged rollers on the supports engaging the grooves in the guides, rollers arranged near the front of the receptacle and coöperating with the under sides of the supports, and devices engaging the grooves in the supports to prevent lateral displacement of the latter.

6. The combination with longitudinal supports having tracks and a drawer movable with relation thereto, of bearings attached to the drawer provided with extensions having lateral engagement with the supports to prevent displacement of the drawer and supports, and rollers journaled on said bearings and coöperating with the tracks of said supports.

7. The combination with horizontal supports having tracks provided with grooves, and a drawer movable longitudinally thereof, of bearings supported on the sides of the drawer having projections coöperating with said grooves, to prevent lateral disengagement of the drawer and supports, and rollers journaled in the bearings and arranged to operate in said tracks.

8. The combination with the casing having a drawer-receptacle therein, a drawer adapted to operate in the receptacle, and movable supports mounted to operate in the drawer-receptacle having ways thereon and guiding-grooves extending longitudinally thereof, of supporting-rollers carried by the drawer and arranged to operate on the ways of the supports, and projections on the drawer arranged to operate in the guiding-grooves of the supports for preventing tilting motion of the drawer.

9. The combination with the casing having a drawer-receptacle therein, a drawer adapted to operate in the receptacle, and extension-supports mounted to operate in the drawer-receptacle having ways thereon, and guiding-grooves arranged adjacent to the ways, of supporting devices carried by the drawer and arranged to operate on the ways of the supports, and projections arranged to operate in the guiding-grooves adjacent to the ways for retaining the drawer and supports in coöperative relation.

10. The combination with the casing having a drawer-receptacle therein, a drawer adapted to operate in the receptacle, movable supports mounted to operate in the drawer-receptacle and devices for supporting the drawer on the supports, of guides secured to the casing having upper and lower ways thereon, and supporting devices carried by the supports arranged to coöperate respectively with the upper and lower ways of the guides.

11. The combination with the casing having a drawer-receptacle therein, a drawer adapted to operate in the drawer-receptacle, extension-supports arranged to operate in the drawer-receptacle and devices for supporting the drawer on the supports, of guides arranged longitudinally in the drawer-receptacle having upper and lower ways thereon, rollers carried by the supports and arranged to operate on the upper ways of the guides for suspending the supports, and rollers carried by the supports in rear of the suspension-rollers and arranged to operate on the lower ways of the guides for preventing tilting of the supports.

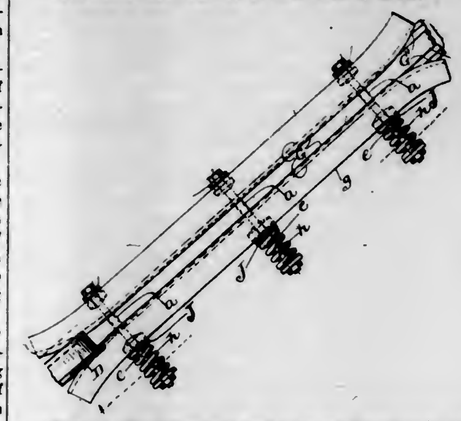
12. The combination with the casing having a drawer-receptacle therein, a drawer adapted to operate in the receptacle, supports for the drawer arranged to operate in the drawer-receptacle, of guides arranged in the drawer-receptacle having upper and lower ways thereon, the upper ways having guiding-grooves extending longitudinally thereof, supporting devices carried by the supports arranged to operate on the upper ways and having portions arranged to cooperate with the guiding-grooves to prevent lateral displacement of the supports, and devices carried by the supports and arranged to coöperate with the lower ways of the guides.

13. The combination with the casing having a drawer-receptacle therein, a drawer adapted to operate in the drawer-receptacle, and extension-supports for the drawer arranged to operate in the drawer-receptacle, of guides arranged in the drawer-receptacle having ways at the upper sides thereof and guiding-grooves arranged longitudinally of the ways, and flanged rollers carried by the support having portions arranged to operate on the ways and flanges to cooperate with the grooves for guiding the rollers on the guides.

14. The combination with the casing having a drawer-receptacle therein, and a drawer adapted to operate in the drawer-receptacle, of extension-supports arranged to operate in the drawer-receptacle having ways at their lower sides, and guiding-grooves extending longitudinally of the ways, rollers on the casing arranged to cooperate with the ways of the supports, and projections arranged to operate in the guiding-grooves of the supports.

15. The combination with the casing having a drawer-receptacle therein, and a drawer adapted to operate in the receptacle, of extension-supports arranged to operate in the drawer-receptacle having ways at their lower sides, rollers mounted on the casing in the forward portion of the drawer-receptacle, and arranged to coöperate with the ways of the supports, guides arranged above the supports having ways at their upper and lower sides, and rollers journaled on the supports near their rear ends and arranged to coöperate respectively with the upper and lower ways of the guides.

828,772. **TRACK-BRAKE.** THOMAS W. FITCH, Jr., Cleveland, Ohio, assignor to The Interstate Engineering Company, Bedford, Ohio, a Corporation of Ohio. Filed Dec. 22, 1905. Serial No. 293,033.



Claim.—1. The combination, with a rail; two laterally-movable pressure-exerting or clamping bars arranged above and longitudinally of the rail at opposite sides respectively of the rail, which bars are normally in their inner and pressure-exerting position, and upright lever-forming bars secured at their upper ends to the clamping-bars and movable from and toward each other, of bolts extending between and loosely through the lever-forming bars, which bolts project a suitable distance beyond the outer sides of the lever-forming bars and are arranged with their heads at the outer sides of the lever-forming bar at one side of the rail; nuts on the shanks of the bolts at the outer side of the lever-forming bars at the other side of the rail; washers on the bolts between the heads of the bolts and the adjacent clamping-bar; washers on the bolts between the nuts and the adjacent clamping-bar, and spiral springs confined on the bolts between the last-mentioned bar and the last-mentioned washers and acting to retain the lever-forming bars in their inwardly-swung and normal position, and the inner faces of the washers receding from the clamping-bars toward the edges of the washers.

2. The combination, with a rail; two laterally-movable pressure-exerting or clamping bars arranged above and longitudinally of the rail at opposite sides respectively of the rail, which bars are normally in their inner and pressure-exerting position, and upright lever-forming bars secured at their upper ends to the clamping-bars and movable laterally, of bolts extending horizontally through the web of the rail and loosely through the lever-forming bars, which bolts project a suitable distance beyond the outer sides of the lever-forming bars and are arranged with their heads at the outer sides of the lever-forming bar at one side of the rail; nuts on the shanks of the bolts at the outer side of the lever-forming bar at the other side of the rail: washers on the bolts between the heads of the bolts and the adjacent clamping-bar; washers on the bolts between the nuts and the adjacent clamping-bar, and spiral springs confined on the bolts between the last-mentioned bar and last-mentioned washers and acting to retain the lever-forming bars in their inwardly-swung and normal position.

3. The combination, with a rail; two laterally-movable pressure-exerting or clamping bars arranged above and longitudinally of the rail at opposite sides respectively of the rail, which bars are normally in their inner and pressure-exerting position, and upright lever-forming bars secured at their upper ends to the clamping-bars and movable laterally, of bolts extending between and loosely through the lever-forming bars, which bolts project a suitable distance beyond the outer sides of the lever-forming bars and are arranged with their heads at the outer sides of the lever-forming bar at one side of the rail; nuts on the shanks of the bolts at the outer side of the lever-forming bar at the other side of the rail; washers on the bolts between the heads of the bolts and the adjacent clamping-bar; washers on the bolts between the nuts and the adjacent clamping-bar, and spiral springs confined on the bolts between the last-mentioned bar and last-mentioned washers and acting to retain the lever-forming bars in their inwardly-swung and normal position.

4. The combination, with a rail, of two laterally-movable pressure-exerting or clamping bars arranged above and longitudinally of the rail at opposite sides respectively of the rail, which bars are normally in their inner and pressure-exerting position; upright lever-

forming bars secured at their upper ends to the clamping-bars and movable to increase the space between the clamping-bars, and springs acting to retain the clamping-bars in their inner and normal position.

5. The combination, with a rail, of two pressure-exerting or clamping bars located above and extending longitudinally of the rail at opposite sides respectively of the rail, which bars are relatively movable to increase the space between them and arranged to engage opposite faces respectively of wheels on the said rail, and lever-forming bars secured to the clamping-bars and movable to increase the space between the clamping-bars, and means acting to retain the clamping-bars in their inner and normal position.

6. The combination, with a rail, of two pressure-exerting or clamping bars arranged above and longitudinally of the rail at opposite sides respectively of the rail, which bars are normally in their inner and pressure-exerting position and relatively movable to increase the space between them, said bars diverging laterally at the ends to increase the width of the space between them in the direction of the free extremity of the said ends, and means acting to retain the said bars in their inner and normal position.

7. The combination, with a rail, of two pressure-exerting or clamping bars located above and extending longitudinally of the rail at opposite sides respectively of the rail, which bars are normally in their inner and pressure-exerting position and relatively movable to increase the space between them and arranged to engage opposite faces respectively of a wheel on the rail, and means acting to retain the bars in their inner and normal position.

8. The combination, with a rail, of two pressure-exerting or clamping bars arranged above and longitudinally of the rail at opposite sides respectively of the rail, which bars are normally in their inner and pressure-exerting position and relatively movable to increase the space between them, and each bar being provided at the top and outer side with a laterally and outwardly projecting flange extending longitudinally of the bar, and means acting to retain the bars in their inner and normal position.

9. The combination, with a rail, of two laterally-movable pressure-exerting or clamping bars arranged above and longitudinally of the rail at opposite sides respectively of the rail, which bars are normally in their inner and pressure-exerting position, means for limiting the inward movement of the clamping-bars, and means acting to retain the bars in their inner and normal position.

10. The combination, with a rail; a sleeper arranged below and longitudinally of the rail, and two pressure-exerting or clamping bars arranged above and longitudinally of the rail at opposite sides respectively of the rail, of bolts extending laterally through and transversely of the sleeper, which bolts project a suitable distance beyond the outer sides of the sleeper; two pairs of washers on each bolt at opposite sides respectively of the sleeper, with the two washers of each pair of washers spaced longitudinally of the bolt, with the inner washer of each pair of washers abutting against the adjacent side of the sleeper, with the head of each bolt abutting against the outer side of the outer washer of one of the pairs of washers on the bolt and with a nut mounted on the shank of the bolt at the outer side of the outer washer of the other pair of washers on the bolt; an upright bar loosely mounted on each bolt between the washers of each pair of washers on the said bolt and extending upwardly and overlapping the outer side of and secured to the adjacent clamping-bar, and means acting to retain the clamping-bars in their inner and normal position.

11. The combination, with a rail; the rail-support arranged below and longitudinally of the rail, and two pressure-exerting or clamping bars arranged above and longitudinally of the rail at opposite sides respectively of the rail, of bolts extending through and transversely of the rail-support, which bolts project a suitable distance beyond the outer sides of the rail-support; two pairs of washers on each bolt at opposite sides respectively of the sleeper, with the two washers of each pair of washers spaced longitudinally of the bolt, with the inner washer of each pair of washers abutting against the adjacent side of the sleeper, with the head of each bolt abutting against the outer side of the outer washer of one of the pairs of washers on the bolt and with a nut mounted on the shank of the bolt at the outer side of the outer washer of the other pair of washers on the bolt; an upright bar loosely mounted on each bolt between the washers of each pair of washers on the said bolt and extending upwardly and secured to the adjacent clamping-bar, and means acting to retain the clamping-bars in their inner and normal position.

12. The combination, with a rail; the rail-support arranged below and longitudinally of the rail, and two pressure-exerting or clamping bars arranged above and longitudinally of the rail at opposite sides respectively of the rail; bolts extending through and transversely of the rial-support, which bolts project a suitable distance beyond the outer sides of the rail-support; two pairs of washers on each bolt at opposite sides respectively of the sleeper, with the two washers of each pair of washers spaced longitudinally of the bolt, with the inner washer of each pair of washers abutting against the adjacent side of the sleeper, with the opposing surfaces of the washers of each pair of washers receding from the bolt toward the edges of the washers, with the head of each bolt abutting against the outer side of the outer washer of one of the pairs of washers on the bolt and with a nut mounted on the shank of the bolt at the outer side of the washer of the other pair of washers on the bolt; an upright bar loosely mounted on each bolt between the washers of each pair of washers on the said bolt and extending upwardly and secured to the adjacent clamping-bar, and means acting to retain the clamping-bars in their inner and normal position.

13. The combination, with a rail, the rail-support arranged below and longitudinally of the rail, and two pressure-exerting or clamping bars arranged above and longitudinally of the rail at opposite sides respectively of the rail; bolts extending through and transversely of the rail-support, which bolts project a suitable distance beyond the outer sides of the rail-support; two upright bars mounted on the bolts at opposite sides respectively of the rail-support and extending upwardly and overlapping the outer side of and secured to opposite clamping-bars respectively, said upright bars being relatively movable to accommodate the movement of the clamping-bars to widen the space between the clamping-bars, and means acting to retain the clamping-bars in their inner and normal position.

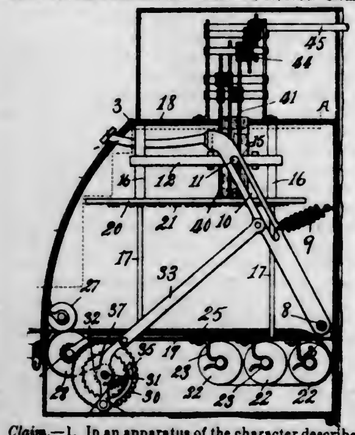
14. The combination, with a rail, and the rail-support below and longitudinally of the rail, of two pressure-exerting or clamping bars arranged above and longitudinally of the rail at opposite sides respectively of the rail; pairs of upright bars supported from the rail-support and supporting the clamping-bars, with the bars of each pair of supporting-bars arranged at opposite sides respectively of the rail-support and relatively movable to accommodate the movement of the clamping-bars, to widen the space between the clamping-bars and means acting to retain the clamping-bars in their inner and normal position.

15. The combination, with a rail, and the rail-support arranged below and longitudinally of the rail, of two laterally-movable pressure-exerting or clamping bars supported from the rail-support and arranged above and longitudinally of the rail at opposite sides respectively of the rail, which bars have their end portions diverging laterally toward the free extremities of the said end portions, and means acting to retain the bars in their inner and normal position.

16. The combination, with a rail, and the rail-support arranged below and longitudinally of the rail, of two pressure-exerting or clamping bars movable laterally and outwardly and arranged above and longitudinally of the rail at opposite sides respectively of the rail, which bars are supported from the rail-support; means for limiting the movement of the bars toward each other, and means acting to retain the bars in their inner and normal position.

823,773. BILL-DELIVERY MECHANISM FOR METERS.

RICHARD W. GALLAGHER, San Francisco, Cal., assignor to Automatic Meter Co., San Francisco, Cal. Filed May 19, 1904. Serial No. 208,670.



Claim.—1. In an apparatus of the character described, the combination with a set of counting-wheels, of recording-wheels, a lever carrying the same, said recording-wheels being adapted to be moved onto recording-sheets to record the numbers thereof, said recording-wheels in their normal position meshing with said counting-wheels, and means for advancing said recording-sheets, automatically operated by the movement of said lever, substantially as described.

2. In an apparatus of the character described, the combination of a set of counting-wheels, recording-wheels normally meshing with said counting-wheels, a lever carrying said recording-wheels, said recording-wheels being adapted to be moved onto recording-sheets by said lever, and means automatically operated upon the return movement of the lever for advancing said recording-sheets, substantially as described.

3. In an apparatus of the character described, the combination of counting-wheels, recording-wheels having on their peripheries needle-points in the form of figures and having gear-wheels meshing with said counting-wheels, a shaft upon which said recording-wheels revolve, a frame carrying said shaft, and means for moving said frame, said recording-wheels being adapted to be moved onto recording-sheets by the movement of said frame, substantially as described.

4. In an apparatus of the character described, the combination of counting-wheels, recording-wheels having on their peripheries needle-points in the form of figures and having gear-wheels meshing with said counting-wheels, a shaft upon which said recording-wheels revolve, a frame carrying said shaft, a plate surrounding the lower portions of said recording-wheels and likewise having on its under side needle-points in the form of letters or characters, and means for moving said frame and plate, said recording-wheels and plate being adapted to be moved onto recording-sheets, substantially as described.

5. In an apparatus of the character described, the combination of counting-wheels, recording-wheels having gear-wheels meshing with said counting-wheels, a shaft upon which said recording-wheels revolve, a frame carrying said shaft, means for moving said frame, said recording-wheels being adapted to be moved onto recording-sheets by the movement of said frame, and means for taking an impression from said wheels on said sheets, substantially as described.

6. In an apparatus of the character described, the combination of counting-wheels, recording-wheels having gear-wheels meshing with said counting-wheels, a shaft on which said recording-wheels revolve, a frame carrying said shaft, a plate surrounding the lower portion of said recording-wheels, means for moving said wheels and plate onto recording-sheets and means for taking an impression therefrom onto said sheets, substantially as described.

7. In an apparatus of the character described, the combination of counting-wheels, a frame carrying a shaft and a recording-plate, recording-wheels on said shaft having gear-wheels arranged in their normal position to mesh with the counting-wheels, said recording-plate and wheels being provided with means for making an impression, guides for said frame guiding its movement to and from the counting-wheels, a lever engaging said frame to move it to recording-sheets, and springs for retracting the lever and frame, substantially as described.

8. In an apparatus of the character described, the combination of counting-wheels, a frame carrying a shaft and a recording-plate, recording-wheels on said shaft having gear-wheels arranged in their normal position to mesh with the counting-wheels, said recording plate and wheels being provided with means for making an impression, guides for said frame guiding its movement to and from the counting-wheels, a lever engaging said frame to move it to recording-sheets, springs for retracting the lever and frame and means automatically operated by the movement of the lever for advancing the sheets, substantially as described.

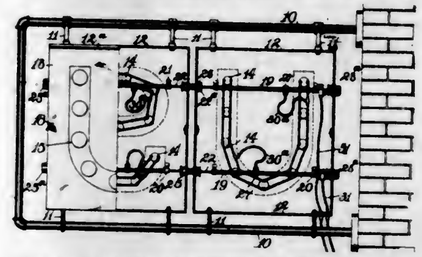
9. The combination of a casing, counting-wheels, recording-wheels arranged in their normal position to be actuated by said counting wheels, a frame carrying said recording-wheels, a lever for moving said frame, said lever being accessible from the outside of the casing, the recording-wheels being adapted to be moved onto recording-sheets by said lever, and a door or closure for said casing prevented from being opened by said lever except when it has been brought to a position to make an impression from the recording-wheels on the recording-sheets, substantially as described.

10. In an apparatus of the character described, the combination of three gear-wheels on separate shafts, the second engaged by a pinion on the same shaft as the first and third by a pinion on the same shaft as the second, three recording-wheels all on the same shaft and severally in mesh with the respective gear-wheels, and means for taking an impression on recording-sheets from said recording-wheels, substantially as described.

11. In an apparatus of the character described, the combination of three gear-wheels, the second engaged by a pinion on the same shaft as the first and the third by a pinion on the same shaft as the second, three recording-wheels all on the same shaft and respectively operated by the gear-wheels, means for taking an impression on recording-sheets from said recording-wheels, and means for advancing said recording-sheets, operated by the return movement of taking the impression, substantially as described.

823,774. ELECTRIC SIGN.

WILLIAM GIERTH and GEORGE LATIMER, Jr., Newark, N. J. Filed Oct. 20, 1905. Serial No. 283,564.



Claim.—1. An electric sign comprising a series of boxes having characters formed of electric lights on their faces, rigid conductors in the boxes for transmission of the electric current, electrical connections between the rigid conductors and the lights on the faces of the boxes, and telescopic connection between the rigid conductors in one box to the rigid conductors in the next succeeding box.

2. An electric sign comprising a series of boxes, faces carrying characters made of electric lights, rigid conductors in the boxes for transmission of an electric current, electrical connection from the rigid conductors to the lights on the faces of the boxes, insulated hollow connections between the boxes, and telescopic connection between the rigid conductors in each box to the rigid conductor in the next succeeding box, telescopic connection passing through the insulated connection between the boxes.

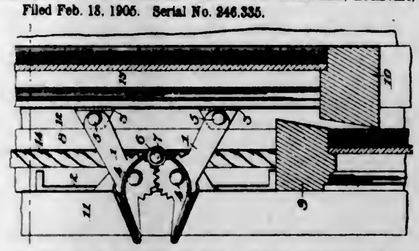
3. An electric sign comprising a series of boxes, rigid conductors in each box having hollow ends, insulated couplings connecting the boxes, and rods arranged to fit in the hollow ends of the rigid conductors and passing through the insulated connection, said rods sliding in the hollow ends of the conductors, and clamps on the ends of the rigid conductors to fasten the rods in the conductors.

4. An electric sign comprising a series of boxes, rigid conductors in each box telescopically connected to the rigid conductors in the next succeeding box, face-plates on the boxes carrying lamp-sockets, and means for connecting each rigid conductor with the sockets on each face of each box.

5. A box for an electric sign comprising a casing, a removable face on each side of the casing, lamp-sockets arranged on each face, a pair of rigid conductors in the box, means for connecting the pair of conductors with an electric circuit, and binders connecting the circuit of each face of the box with the rigid conductors.

823,775. SASH-LOCK.

RUPERT E. HARRYMAN, Louisville, Ky. Filed Feb. 18, 1905. Serial No. 246,335.

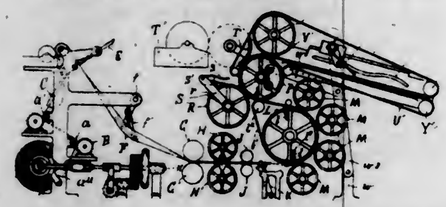


Claim.—1. A portable window-sash lock comprising in combination a base-plate, a pair of diverging legs and integral handles pivoted on said base-plate, a spring pressing against and adapted to spread said handles and converge said legs, a pivoted foot on the end of each leg adapted to engage the sash, said base-plate provided with an extended portion disposed in a plane at right angles to the plane of said legs having its outer surface serrated or roughened and adapted to engage the window-stop and having its extended ends bent at

an angle and thus adapted to engage the top rail of the lower sash, substantially as specified.

2. As an article of manufacture, a portable sash-lock, comprising a base-plate, means for engaging the inner face of the side rail of the upper sash and securing it against movement in either direction consisting of spreading legs pivoted on said base-plate and feet pivoted on said legs, corresponding means for engaging the window-stop provided by said base-plate, and means for engaging the top of the lower sash and securing it against upward movement provided by extensions of said base-plate, substantially as specified.

823,776. **PAPER-BAG MACHINE.** GEORGE HARTMAN, Cincinnati, Ohio, assignor of two-fifths to Edward Wenning, Cincinnati, Ohio. Filed July 28, 1905. Serial No. 271,576.



Claim.—1. In a paper-bag machine the combination of the feed-roll for the paper, devices adjacent to the feed-roll for fraying the surface of the paper to prepare it for receiving paste, pasters, and folding devices for forming the paper into a tube.

2 In a paper-bag machine for forming bags from a paper tube, the combination of the feed-roll the tube-folding devices, the gluing apparatus between the folding devices and the feed-roll and a paper-moistening device located between the feed-roll and the gluing apparatus and consisting of a chamber with ways for keeping the edges of the paper dry.

3. In a paper-bag machine of the character described the combination of the feed-roll the tube-folders, a rotating knife between the feed-roll and said folders for centrally notching the paper, means located adjacent to the folders for severing the blank from the tube a swinging arm with fingers for engaging the blank before it is severed and for carrying it forward toward the bottom-folders.

4. In a paper-bag machine a tube-forming mechanism, means for severing blanks from the tube, bottom-folders and a swinging mechanism for carrying the blank forward from the severing means toward the bottom-folders consisting of an arm pivoted at one end having spring-pressed fingers at the other end and cams located at the sides of the arm for contacting the fingers and opening them to receive and to release the blank.

5. A carrying mechanism for conveying blanks from the severing-knife to the bottom-folders consisting of a swinging arm for receiving the blank from the severing-knife, a rotating wheel with fingers upon its circumference, means for holding the fingers normally closed and stationary studs located in the path of the fingers to open them to receive the blanks from the swinging arm.

6. In a paper-bag machine the combination of a tube-former, a severing means for cutting blanks from the tube, a conveying-cylinder for receiving the blanks, a series of printing-rolls contacting the conveying-cylinder, and bottom-formers adjacent to the conveying-cylinder.

7. In a paper-bag machine the combination of a wheel for conveying blanks cut from a paper tube to the bottom-folders, means for holding the blank upon the wheel, and printing-rolls contacting the conveying-wheel, and a wheel with automatically-changing drying-surface located adjacent to the printing-rolls.

8. In a paper-bag machine the combination of means for printing the surfaces of the blank, a drying-cylinder located adjacent to the printing apparatus, and having journaled within it spools for holding cord, and the cord zigzagged through the surface of the cylinder for rotating the spools and winding the cord from one to the other spool.

9. In a paper-bag machine folders for laying the diamond folds in the blank consisting of a rotating cylinder having two longitudinal blades and pins between the blades, the blades for cutting longitudinal slits in the blank and the pins for catching the part of the blank which forms the rear flap, a conveying-cylinder with a finger for grasping the front flap and a stripper for disengaging the pin from the rear flap.

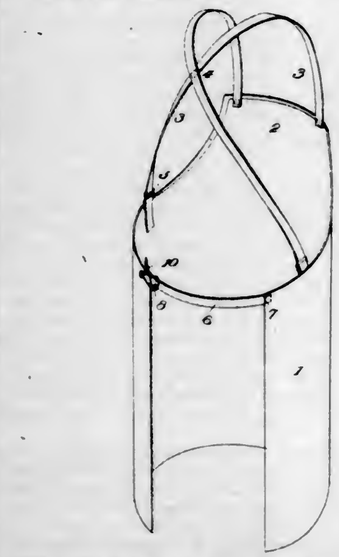
10. In a paper-bag machine the combination of the folders for laying the diamond folds in the blank, belts for carrying the blank forward, creasing-blades for making transverse creases across the blank, a reciprocating blade for taking under the rear flap of the blank and turning it down in advance of the folding of the front flap, a means for reciprocating the blade and means for turning down the front flap over the rear one.

11. In a paper-bag machine the combination of folders for laying the diamond folds in the blank, belts for engaging the sides of the blanks and carrying them forward, side frames adjacent to the belt having curved slots in them, a rod mounted to slide in the slots, a blade secured to the rod a reciprocating arm pivoted to the blade whereby the reciprocating of the arm causes the blades to take under the rear flap of the blank and to turn it over in advance of the front flap and means for turning the front flap down on the rear one.

12. In a paper-bag machine the combination of tube-formers, rolls for feeding the tube forward, means located adjacent the rolls for severing blanks from the tube and a reciprocating arm for engaging the blanks and carrying them forward toward the bottom-folders.

13. In a paper-bag machine the combination of a feed-roll for the paper, guide-rolls adjacent to the feed-roll over which the paper passes toward the paster, rotating shafts located upon opposite sides of the paper adjacent to the guide-rolls and supplied with splines for fraying the edges of the paper upon opposite sides, pasters and folding devices for forming the paper into a tube.

823,777. **APRON.** WILLIAM H. HATTON, Lebanon, N. H. Filed June 28, 1905. Serial No. 267,422.

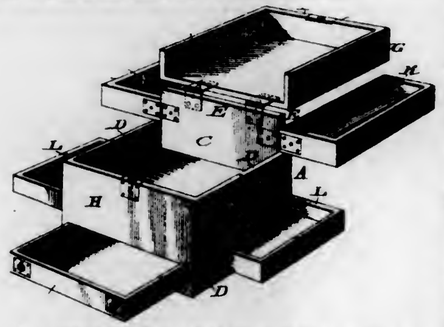


Claim.—An apron provided with a body portion 1 and the bib portion 2, shoulder-straps 3 permanently attached at their front ends to the upper edge of the bib portion of the apron on the inner side thereof and crossing rearwardly and permanently secured together at their point of crossing, buckles 5 attached to the side edges of the body portion of the apron near the rear thereof and on the inner side of the apron, the ends of said shoulder-straps being adjustably secured in said buckles and designed to be passed downwardly therefrom on the inner side of the apron, and a waist-strap 6 permanently attached at one end to one rear edge of the apron-body on the inner side thereof and provided at its other end with an adjustable buckle 8 provided with a loop 9, and a button 10 or like member attached to the other rear edge of the apron-body and designed to be received by the said loop 9.

823,778. **DISPLAY-CHEST FOR SILVERWARE, &c.** EMIL HERBECK, Philadelphia, Pa. Filed Jan. 10, 1906. Serial No. 295,381.

Claim.—1. A chest having a body, a lid and a swinging tray, one of the walls of said body having an upward extension and said swinging tray being pivotally connected with the side of said extension.

2. A chest having one of the walls of its body provided with an upward extension, a lid pivotally connected with the top thereof, a tray pivotally connected with the side of the same and a slidable tray adapted to enter said body below the pivotal tray.



3. A chest composed of a body, one of the walls of which is provided with an upward extension, a swinging tray connected with the side of said extension, a slidable tray adapted to enter said body below said swinging tray and a lid pivotally connected with said extension and adapted to inclose said swinging tray.

4. A chest composed of a body and lid, movable trays in the walls of said body, one of said walls having an extension upwardly above the other walls thereof, a lid pivotally connected with the top of said extension and a swinging tray connected with said extension and adapted to be placed rearward of the same and over said body and be inclosed by said lid.

5. A chest composed of a body and a lid, a movable tray in the walls of said body, one of the walls of said body having an extension upwardly above the other walls thereof, a lid pivotally connected with the top of said extension and a swinging tray connected with said extension and adapted to be placed rearward of the same and over said body and be inclosed by said lid.

6. A chest composed of a body and a lid, a movable tray in the walls of said body, one of the walls of said body having an extension upwardly above the other walls thereof, a lid pivotally connected with the top of said extension and a swinging tray connected with said extension and adapted to be placed rearward of the same and over said body and be inclosed by said lid, said body having a horizontal partition therein over said slidable trays forming a chamber between said movable and swinging trays.

823,779. **PLUG-COCK.** EBENEZER HILL, Jr., Norwalk, Conn. Filed June 29, 1905. Serial No. 267,632.



Claim.—1. A plug-cock having a body with a solid integral wall containing a tapering plug-chamber having an imperforate bottom and a cylindrical lock-chamber, a tapering plug rotatable in the plug-chamber, a cylinder-lock fitting the lock-chamber, means connecting the lock-cylinder and the plug, a washer secured in the outer end of the lock-chamber and holding the cylinder in place, and a key for manipulating the lock and turning the cylinder and the plug, substantially as specified.

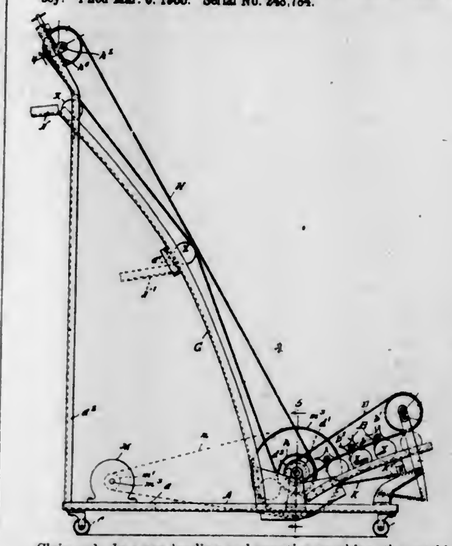
2. A plug-cock having a body with a solid integral wall containing a tapering plug-chamber having an imperforate bottom and a cylindrical lock-chamber, a tapering plug rotatable in the plug-chamber, a cylinder-lock fitting the lock-chamber, means connecting the lock-cylinder and the plug, a slotted washer secured in the outer end of the lock-chamber, a pin extending from the end of the lock-cylinder into the slot for determining the movement of the cylinder, and a key for manipulating the lock and turning the cylinder and plug, substantially as specified.

3. A plug-cock having a body with a solid integral wall containing a tapering plug-chamber having an imperforate bottom and a cylindrical lock-chamber, a tapering plug rotatable in the plug-chamber, a cylinder-lock secured in the lock-chamber, means connecting the lock-cylinder and the plug, means above the plug for holding the plug down tightly in the plug-chamber, and a key for manipulating the lock and turning the cylinder and plug, substantially as specified.

4. A plug-cock having a body with a tapering plug-chamber and a cylindrical lock-chamber, a tapering plug rotatable in the plug-chamber, a cylinder-lock secured in the lock-chamber, means connecting the lock-cylinder and the plug, a packing bearing on the large end of the plug, a nut turning in the body against the outer face of the packing for holding the packing and plug in place and preventing leakage from the plug-chamber, and a key for manipulating the lock and turning the cylinder and plug, substantially as specified.

5. A plug-cock having a tapering plug-chamber and a cylindrical lock-chamber contained in an integral body with an imperforate bottom, a tapering plug rotatable in the plug-chamber, a cylinder-lock secured in the lock-chamber, and connected with the plug, a yielding washer bearing against the large end of the plug and packing the stem of the plug, a nut screwed into the chamber for holding the stem-packing, a yielding washer above this nut and packing the outer wall of the chamber, a nut screwed into the chamber for holding the wall-packing, and a key for manipulating the lock and turning the cylinder and plug, substantially as specified.

823,780. **MECHANISM OR APPARATUS FOR LOADING AND COUNTING CANS.** JOHN G. HODGSON, Maywood, Ill., assignor to American Can Company, New York, N. Y., a Corporation of New Jersey. Filed Mar. 6, 1905. Serial No. 248,784.



Claim.—1. In a can loading and counting machine, the combination with a portable or wheeled frame or carriage, of a curved or cambered can-counting runway, an endless belt for rolling the cans along said counting-runway, a can-counter having a spider or counter-wheel arranged in the path of the cans to be engaged thereby as they roll along said counter-runway, an upright or elevating curved or cambered can-loading runway, an endless flexible belt for rolling the cans up said runway, a flexible connection or strip connecting said can-counting and said can-loading runways, and a wheel or pulley coöperating with said flexible connection to deliver the cans from said can-counting runway to said can-loading runway, substantially as specified.

2. The movable can loading and counting machine, consisting in the combination with a portable or wheeled frame or carriage, of a curved or cambered can-counting runway, an endless belt for rolling the cans along said counting-runway, a can-counter having a spider or counter-wheel arranged in the path of the cans to be engaged thereby as they roll along said counter-runway, an upright or elevating curved or cambered can-loading runway, an endless flexible belt for rolling the cans up said runway, a flexible connection or

strip connecting said can-counting and said can-loading runways, a wheel or pulley coöperating with said flexible connection to deliver the cans from said can-counting runway to said can-loading runway, and means for adjusting the upper pulley of the can elevating or loading runway, substantially as specified.

3. In a can loading and counting machine, the combination with a portable or wheeled frame or carriage, of a curved or cambered can-counting runway, an endless belt for rolling the cans along said counting-runway, a can-counter having a spider or counter-wheel arranged in the path of the cans to be engaged thereby as they roll along said counter-runway, an upright or elevating curved or cambered can-loading runway, an endless flexible belt for rolling the cans up said runway, a flexible connection or strip connecting said can-counting and said can-loading runways, a wheel or pulley coöperating with said flexible connection to deliver the cans from said can-counting runway to said can-loading runway, one of the pulleys of said can-counter runway being mounted on a vibrating arm, furnished with a spring to keep the belt under tension, substantially as specified.

4. The combination with a curved or cambered can-counter runway, a belt for rolling the cans along the same, pulleys for said belt, a spring-actuated tension-arm upon which one of said pulleys is mounted, and a counter having its spider or counter-wheel in the path of the cans as they roll along said runway, whereby the counter mechanism is actuated by the cans without shock substantially as specified.

5. The combination with a can-counter, of a curved or cambered can-counter runway and a belt for rolling the cans along said curved runway, said counter having a spider or counter-wheel projecting in the path of the cans as they are rolled along said runway by said belt, whereby the counter is smoothly actuated by the cans and without blows therefrom substantially as specified.

6. The combination with a curved or cambered can-counter runway, of a can-rolling belt, a counter, a curved or cambered elevating-runway, a belt for rolling the cans up said runway, a flexible strip connecting said runways coöperating with the lower pulley of the can-elevating belt to deliver the cans from the counter-runway to the elevating or loading runway, substantially as specified.

7. The movable or portable can counting and loading machine herein shown and described, consisting in the combination with a curved or cambered can-counter runway, of a can-rolling belt, a counter, a curved or cambered elevating-runway, a belt for rolling the cans up said runway, a flexible strip connecting said runways coöperating with the lower pulley of the can-elevating belt to deliver the cans from the counter-runway to the elevating or loading runway, and a wheeled frame upon which the same is mounted, substantially as specified.

8. The combination with a curved or cambered upwardly-extending can loading or elevating runway, of an endless belt for rolling the cans up said runway, substantially as specified.

9. The movable or portable can-body mechanism consisting in the combination with a curved or cambered upwardly-extending can loading or elevating runway, of an endless belt for rolling the cans up said runway, and a wheeled frame upon which the same is mounted, substantially as specified.

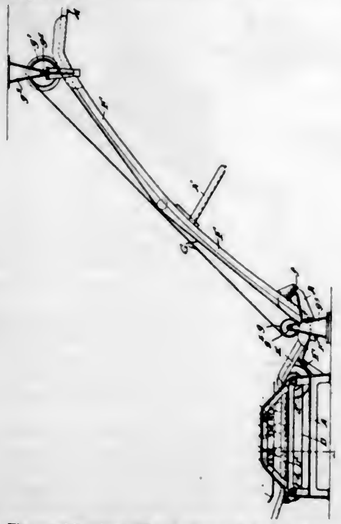
10. The combination with a curved or cambered can loading or elevating runway, of an endless belt for rolling the cans up said runway, a can-counting runway and a counter and a flexible connection between said two runways, coöperating with the belt-pulley of the elevating-runway to roll the cans along said flexible connection to the elevating-runway, substantially as specified.

11. The combination with a curved or cambered upwardly-extending can loading or elevating runway, of an endless belt for rolling the cans up said runway, pulleys for said belt, and means for adjusting the upper pulley of said belt, substantially as specified.

12. The combination with a curved or cambered can loading or elevating runway, of an endless belt for rolling the cans up said runway, a can-counting runway and a counter and a flexible connection between said two runways, coöperating with the belt-pulley of the elevating-runway to roll the cans along said flexible connection to the elevating-runway, and a spring for keeping said flexible connection under tension, substantially as specified.

823,781. CAN LOADING AND COUNTING MACHINE. JOHN G. HOSSENS, Maywood, Ill., assignor to American Can Company, New York, N. Y., a Corporation of New Jersey. Filed Mar. 6, 1905. Serial No. 248,736.

Claim.—1. In a can counting and loading apparatus, the combination with a plurality of can-delivery runways, of a plurality of can-rolling belts, a plurality of guides above said can-rolling belts, a plurality of sets of counters having spiders or counter-wheels arranged in the path of the cans, a plurality of can loader or elevating belts for rolling the cans up said runways and a plurality of inclined chutes or runways for delivering the cans from the can-rolling belts of the counter mechanism to the elevating or loading can runways or belts, and means for driving said can loader or elevating belts at a higher speed than said can-rolling belts of the counter mechanism substantially as specified.



2. The combination with a horizontal guide beneath which the cans may be rolled, of a belt for rolling the cans under and along said guide, a counter having a spider or counter-wheel arranged in the path of the cans as they are rolled under said guide by said belt, substantially as specified.

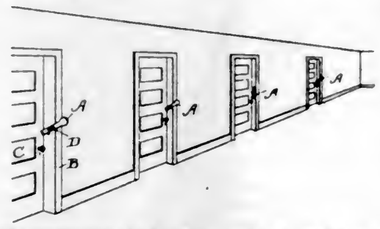
3. In a can counting and loading apparatus, the combination with a plurality of can-delivering runways, of a plurality of can-rolling belts, a plurality of guides above said can-rolling belts, a plurality of sets of counters having spiders or counter-wheels arranged in the path of the cans, a plurality of can loading or elevating belts for rolling the cans up said runways, a plurality of can loader or elevating runways, a plurality of inclined chutes or runways for delivering the cans from the can-rolling belts of the counter mechanism to the elevating or loading can runways or belts, said can-elevating runways being curved or cambered toward said belts for rolling the cans up said runways, substantially as specified.

4. In a can counting and loading apparatus, the combination with a plurality of can-delivering runways, of a plurality of can-rolling belts, a plurality of guides above said can-rolling belts, a plurality of sets of counters having spiders or counter-wheels arranged in the path of the cans, a plurality of can loader or elevating belts for rolling the cans up said runways, a plurality of inclined chutes or runways for delivering the cans from the can-rolling belts of the counter mechanism to the elevating or loading can runways or belts, and springs acting against said guides to cause the same to exert a yielding pressure against the cans as they are rolled and conveyed beneath the same, substantially as specified.

5. In a can counting and loading apparatus, the combination with a plurality of can-delivering runways, of a plurality of can-rolling belts, a plurality of guides above said can-rolling belts, a plurality of sets of counters having spiders or counter-wheels arranged in the path of the cans, a plurality of can loader or elevating belts for rolling the cans up said runways, a plurality of inclined chutes or runways for delivering the cans from the can-rolling belts of the counter mechanism to the elevating or loading can runways or belts, and means for independently adjusting each of said can-elevating runways to and from its coöperating belt, substantially as specified.

823,782. DOOR-INDICATOR. LIBERTY D. HOLDEN, Glenville, Ohio; Virginia Hawley Holden executrix of said Liberty D. Holden, deceased. Filed Mar. 2, 1904. Serial No. 196,125.

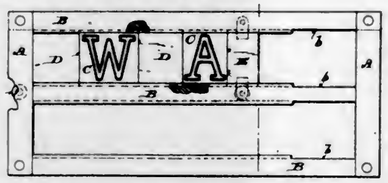
Claim.—1. The combination with a door-frame, and a door hinged thereto, of a signal-arm pivoted to that side of the door-frame with which the free edge of the door coöperates, said arm having a tendency to swing into a non-display position by gravity and being arranged to have one of its ends abut the face of the door and be thereby held in display position, the other end carrying a signal which projects beyond the door-frame when the arm is in display position, substantially as specified.



2. The combination of a door-frame and the hinged door, with a signal-arm having a longitudinal slot, a pivot-pin passing through said slot and secured to said frame, said arm having its outer end counterweighted and adapted to engage at its inner end with the door when closed and to be thereby restrained from movement, substantially as specified.

3. The combination with a door-frame, and a door hinged thereto, of a signal-arm longer than the horizontal distance across the door-frame, said arm having a longitudinal slot, a pivot-pin passing through said slot into the frame adjacent to the free edge of the door, whereby said arm may hang down idly alongside of the frame, or may be turned up having its outer end projecting beyond the frame and its inner end abutting the face of the closed door, and held in position thereby, substantially as specified.

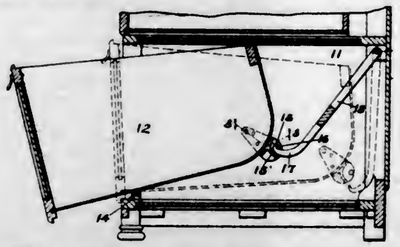
823,783. PRINTING DEVICE. ANDREW HOLTUM, Clinton, Wis. Filed Jan. 3, 1906. Serial No. 295,032.



Claim.—1. A printing device consisting of a holder in the form of a frame having parallel bars oppositely recessed at one end to provide clearance-space, type and space blocks having sliding engagement with the frame-bars, and a locking-slide engaging said bars.

2. A printing device consisting of a holder in the form of a frame having parallel bars oppositely recessed at one end to provide clearance-space, type and space blocks having sliding engagement with the frame-bars, another block having similar engagement with said bars, lugs extending from the latter block, and set-screws engaged with the lugs to oppose the aforesaid bars.

23,784. SLIDING BIN. WILLIAM C. HORNER, Indianapolis, Ind., assignor to Charles P. McDougall, Indianapolis, Ind. Filed Oct. 7, 1905. Serial No. 281,553.



Claim.—1. The combination, with a suitable supporting structure, of a bin mounted therein and slidably supported near its lower corner, a swinging link pivoted in the supporting structure, and a separable connection between said link and the inner end of the bin, said connection being separable by an unusual movement of the bin relative to the link.

2. The combination, with a suitable supporting structure, of a bin mounted therein and slidably supported near its lower corner, a swinging link pivoted in the supporting structure, a separable connection between said link and the inner end of the bin, and interengaging portions between said bin and link serving to prevent separation except in one position of the bin relative to the link.

3. The combination, with a suitable supporting structure, of a bin slidably mounted therein, a link pivotally mounted in said structure, a separable pin-and-hook connection between said link and the inner end of the bin, and means for preventing separation of said pin-and-hook connection except in one position.

4. The combination, with a suitable supporting structure, of a bin slidably mounted therein, a fitting attached to the inner end of said bin and provided with a pin 16 partially guarded by a guard 15′, and a pivoted link mounted within the structure and provided with a hooked end adapted to pass between the pin and guard, substantially as and for the purpose set forth.

823,785. UPHOLSTERY. EDWIN M. HULSE, Columbus, Ohio. Filed Oct. 6, 1905. Serial No. 281,676.



Claim.—1. In upholstery, the combination with a springwork structure, of a top or pad therefor, a stiffening-strip for the edge of said top or pad secured thereto independently of the springwork structure and metallic buttons or fastening devices constituting the means securing said strip to said edge.

2. The combination with a top or pad for application to upholstery-springwork, of a strip of stiff material provided with openings for the passage of fastening devices, and said fastening devices passed through said openings to secure the strip to the pad, said strip being adapted and arranged to fit next to and engage the wall of the springwork structure substantially as described.

3. A pad for springwork-upholstery comprising in combination a padded portion proper having a pliable under covering, a metallic stiffening-strip provided with openings for the passage of fastening devices, fastening devices passed through said openings and securing said strip along the edge of the padded portion, and a flexible fastening-piece beyond the stiffening-strip to secure the pad with reference to the springwork structure.

4. A pad for springwork-upholstery, comprising in combination a padded portion proper having a pliable under covering, a stiffening-strip provided with openings secured along the edge of said padded portion in a position substantially at right angles to the plane of said padded portion, and a flexible fastening-piece beyond the stiffening-strip to secure the pad with reference to the springwork structure.

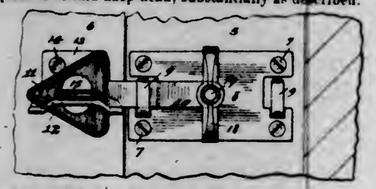
5. The combination with a springwork structure including a frame, as 7, of a pad for the springwork structure comprising a padded body proper having a pliable under covering, a stiffening-strip at the edge thereof, a flexible fastening-piece beyond the stiffening-strip and fastened to said frame, said stiffening-strip lying adjacent the corner of the wall of the springwork.

6. The combination with a springwork structure, of a pad for said structure comprising the padded body proper, a stiffening-strip having holes therein along the edge of the body of the pad, and staple-like fastening devices located end to end on said stiffening-strip and having contiguous prongs passed through the same hole in said stiffening-strip.

823,786. DOOR-LATCH. NOAH M. HUTTON, Chicago, Ill. Filed Apr. 3, 1904. Serial No. 201,206.

Claim.—1. A reversible door-fastening of the character de-

scribed, comprising, in combination, a latch-plate having hasp-supporting tongues projecting laterally from each end thereof, respectively, a pivot-pin rotatably mounted in said latch-plate centrally thereof and provided on each end with turning means, a hasp fast at one end on said pivot-pin and having a vertically-disposed flat triangular or spear-shaped head on its other end, and a horizontally-disposed staple secured to the casing and adapted to receive and seat the lower portion of said hasp-head, substantially as described.



2. A reversible door-fastening of the character described, comprising, in combination, a latch-plate having hasp-supporting tongues projecting laterally from each end thereof, respectively, a pivot-pin rotatably mounted in said latch-plate centrally thereof and provided on each end with turning means, a hasp fast at one end on said pivot-pin, said hasp having at its other end a vertically-disposed flat triangular or spear-shaped head provided with a central horizontally-extending staple, and a horizontally-disposed staple secured to the casing and adapted to receive and seat the lower portion of said hasp-head and be locked to said hasp-head staple, substantially as described

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823,787. **KNIFE FOR STRIKING OFF BRICK.** JESSE JACKSON and GEORGE R. HOBBS, Louisville, Ky. Filed Mar. 7, 1906. Serial No. 304,772.



Claim.—1. In combination with a brick-molding machine, having a table, a conical-shaped knife, a rod secured to the enlarged end of said knife, the other end of which rod is fastened to a stationary object, a means for fastening the tapering end of the knife to said table, the cutting edge of said knife being positioned above the path of the molds as they issue from the machine, as set forth.

2. In combination with a brick-molding machine having a laterally-projecting table, a knife, a rod fastened to the enlarged end of said knife, the other end fastening to a fixed object, yielding connections between the opposite ends of said knife and the table of the machine, as set forth.

3. In combination with a brick-molding machine having laterally-projecting table, a conical-shaped knife, bracket-arms secured to the table of the machine, rods passing through one of said bracket-arms and engaging one end of the knife, nuts upon the said rods, springs bearing between said nuts and the adjacent bracket-arms, a bail having a yielding connection to one of said bracket-arms and a rod fastened to the enlarged end of the knife and connected to a stationary object, as set forth.

823,788. **MACHINE FOR CUTTING OR SHORTENING LINOTYPE-SLUGS.** ROBERT F. JACOBS, Baltimore, Md., assignor of one-half to Charles F. Walther, Howardville, Md. Filed Feb. 15, 1906. Serial No. 301,164.

Claim.—1. A linotype-slug-cutting machine having a platen on which the slug is to lie; a cutter; and a plural number of movable spacers which are of varying width and arranged relative to each other so that any one spacer may be used alone and any number of selected spacers may be moved and used together to form a gage on the platen.

2. A linotype-slug-cutting machine having a platen on which the slug is to lie; a cutter; a stop device movable on the platen; and a plural number of spacers which are of varying width and arranged so that any one and any number may be moved to shift the stop device.

3. A linotype-slug-cutting machine having a platen on which the slug is to lie; a cutter; a movable stop device which is spring-pressed in a direction away from the said cutter; and a plural number of movable spacers which are of varying width and arranged so that any one and any number may be put into operative position.



4. A linotype-slug-cutting machine having a platen on which the slug is to lie; a cutter; a stop device movable on the platen; and a plural number of spacers all of which have a slidable movement in a direction toward and away from the said cutter and each of which is also independently movable in another direction.

5. A linotype-slug-cutting machine having a platen on which the slug is to lie; a cutter; a movable stop device which is spring-pressed in a direction away from the said cutter; and a plural number of spacers of varying width all of which are capable of sliding together in the same direction, and each one of which is movable along in another direction.

6. A linotype-slug-cutting machine having a platen; a cutter having movement in a plane crosswise of the platen; a fixed abutment on the platen; and a plural number of spacers any one and any number of which may be moved to take an interposed position on the platen between said abutment and cutter, whereby the exact length to be cut off from the slug may be predetermined.

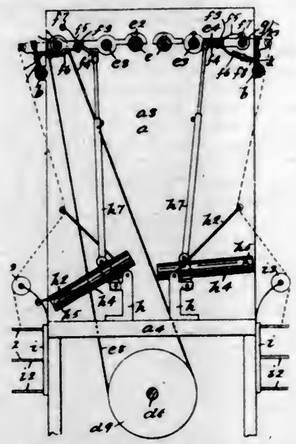
7. A linotype-slug-cutting machine having a platen; a cutter having movement in a plane crosswise of the platen; a fixed abutment on the platen; a gage device movable along the platen, and a plural number of spacers movable into position between the said fixed abutment and the gage device.

8. A linotype-slug-cutting machine having a platen; a cutter having movement in a plane crosswise of the platen; a fixed abutment on the platen, and a plural number of wedge-spacers of varying width arranged relative to the platen so that any one of which and any number of which may be moved into position.

823,789. **QUILL OR COP WINDING MACHINE.** HEINRICH KAUFMANN, College Point, N. Y. Filed June 22, 1905. Serial No. 266,388.

1. A silk-winding machine, comprising a frame, a quill rotatably and detachably mounted therein, devices for guiding silk onto said quill and means for rotating said quill; a plurality of pivoted arms, each of which is adapted to engage one of the silk threads being wound on said quill, and devices for stopping the rotation of said quill when one of said threads is broken and the corresponding one of said pivoted arms is thereby released, comprising a pivotally-mounted casing provided with outwardly-directed arms adapted to be struck by said pivoted arms, a ball mounted in said casing, a clutch in operative connection with the power-shaft of said machine and with the said quill and a rod in operative connection with said casing and with said clutch for releasing the same when said casing is forced downwardly, substantially as shown and described.

2. In a machine of the class described, a horizontally-movable rod, and eyelet-holder mounted thereon, a quill-holder mounted adjacent to said rod and comprising a pulley, a clutch-disk movable toward and from said pulley and provided with a shank adapted to engage one end of the quill, means for supporting the other end of said quill, a clutch-rod movable parallel with the quill when the latter is in position and provided with two outwardly-directed arms between which the coupling is placed, one of said arms being provided with a roller and the other with a disk which projects beyond the quill in the direction of the eyelet-holder, and a pivoted arm connected with the clutch-rod and adapted to move the pulley toward and from the clutch-disk, substantially as shown and described.



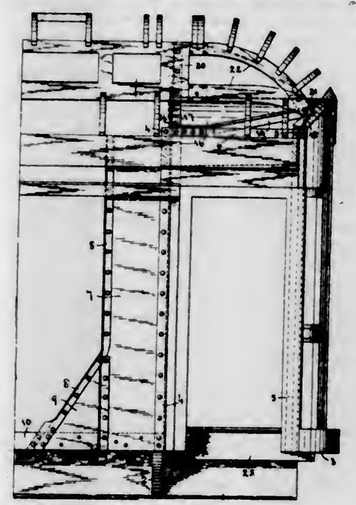
3. In a machine of the class described, a horizontally-reciprocating rod, and eyelet-holder connected therewith, and means for supporting a quill parallel with the reciprocating rod, comprising a yoke provided with a clutch-disk having a shank adapted to engage one end of said quill, a pulley movable toward and from said clutch-disk, the other end of said quill being supported by a spring-operated pin, a clutch-rod mounted in said yoke and movable parallel with the quill-supports and provided with outwardly-directed arms between which the quill is placed, one of said arms being provided with a roller and the other with a disk which extends in the direction of the eyelet-holder, an arm pivoted to said yoke and conneced with said clutch-rod and adapted to move the pulley toward and from the clutch-disk, said clutch-rod being also provided with an inwardly-directed arm, supports mounted in the bottom portion of the machine, thread-guiding arms pivoted to said supports, an oblong casing or tube pivoted between said thread-guiding arms and adapted to swing in a vertical plane, a ball placed in said casing or tube, a rod pivoted to said casing or tube and connected with the inwardly-directed arm of the clutch-rod, said clutch-rod being rotatable in said yoke and movable longitudinally therein, and means for holding said clutch-rod in different positions in said yoke, substantially as shown and described.

4. In a machine for winding slik, a main frame, a main power-shaft mounted in said frame, a vertically-arranged shaft geared in connection therewith and provided with a cam-block having a cam-groove in the face thereof, stationary supports at the opposite sides of the vertically-arranged shaft, adjustable blocks mounted in said supports, crank-levers pivoted to said blocks and provided with horizontal and vertically-arranged arms, means whereby the rotation of said vertically-arranged shaft will operate said crank-levers, horizontally-reciprocating rods mounted in the main frame, and means for connecting the upwardly-directed arms of the crank-levers with said rods, substantially as shown and described.

5. In a machine for winding silk, a horizontally-reciprocating rod, an eyelet-holder connected therewith, and means for supporting a quill parallel with the reciprocating rod, comprising a yoke provided with a clutch-disk having a shank adapted to engage one end of said quill, a pulley movable toward and from said clutch-disk, the other end of said quill being supported by a spring-operated pin, a clutch-rod mounted in said yoke and movable parallel with the quill-supports and provided with outwardly-directed arms between which the quill is placed, one of said arms being provided with a roller and the other with a disk which extends in the direction of the eyelet-holder, and an arm pivoted to said yoke and connected with said clutch-rod and adapted to move the pulley toward and from the clutch-disk, said clutch-rod being also provided with an inwardly-directed arm, substantially as shown and described.

6. In a machine of the class described, a main frame, supports mounted in the bottom portion thereof, a yoke mounted in said frame, thread-guiding arms pivoted to said supports, an oblong casing pivoted between said thread-guiding arms and adapted to swing in a vertical plane, a ball placed in said casing, a rod pivoted to said casing and connected with the inwardly-directed arm of the clutch-rod, said clutch-rod being rotatable in said yoke and movable longitudinally therein, and means for holding said clutch-rod in different positions of said yoke, substantially as shown and described.

823,790. **FRAME FOR RAILWAY-CARS.** WILLIAM F. KIESEL, Jr., Altoona, Pa. Filed Aug. 23, 1905. Serial No. 275,388.



Claim.—1. In a car-frame, the combination, with the corner-posts and side sills, of vertical brace-plates rising from the side sills at the back of the posts, angle-bars riveted to the brace-plates at their inward edges, said angle-bars being inclined away from the plates at their lower ends, and gusset-plates filling the spaces made thereby, said brace-plates, gusset-plates and angle-bars being attached along their base sides to the side sills.

2. In a car-frame, the combination, with the car-body end sills, side sills and platform end sills, of corner-posts rising from the car-body end sills and from the platform end sills, top side plates extending between and joining the corner-posts at each side, front and back top plates extending across between posts on opposite sides, horizontal brace members extending from the car-body corner-posts at the top to intermediate points on the front top plate, and brace-plates rising from the side sills back of the car-body corner-posts.

3. In a car-frame, the combination, with the car-body end sills, side sills and platform end sills, of corner-posts rising from the car-body end sills and from the platform end sills, top side plates extending between the corner-posts at each side, front and back top plates extending across between posts on opposite sides, and a ceiling-plate extending between the front and back top plates.

4. In a car-frame, the combination, with the car-body and vestibule corner-posts, of top side plates extending between the posts at each side, front and back top plates extending across between opposite posts, and a ceiling-plate extending between the front and back top plates, said ceiling-plate having its front corners cut off diagonally and reinforced by angle-bars and its sides, back of the diagonal cuts, riveted to the top side plates.

5. In a car-frame, the combination, with the car-body and vestibule corner-posts, of top side plates extending between the posts at each side, front and back top plates extending across between opposite posts, a ceiling-plate extending between the front and back top plates, and longitudinal brace-bars extending between the front and back top plates and attached to the under side of the ceiling-plate.

6. In a car-frame, the combination, with the car-body and vesti-

bule corner-posts and car-body door-posts, of top side plates extending between the car-body and vestibule corner-posts at each side, front and back top plates extending across between opposite posts, the door-posts being united at the top to the back top plate, longitudinal braces extending from the back top plate where the door-posts are attached thereto to the front top plate, and a ceiling-plate extending between the front and back top plates and attached to the longitudinal braces.

7. In a car-frame, the combination, with the corner-posts 4 and 5 and the brace-plates 7, of the top side plates 6, the arched front and back top plates 15 and 14, the ceiling-plate 16 cut diagonally at each side and reinforced by angles 19, the arched angle-bars 18 and 17 riveted to the front and back top plates and uniting the ceiling-plate thereto, the door-posts 11 united at the top to the back top plate, and the channel-braces 23 extending from the door-posts to the front top plate and riveted to the under side of the ceiling-plate.

8. In a car-frame, the combination, with the car-body and vestibule corner-posts, of front and back top plates extending across between opposite posts, ventilator side plates passing over the back top plate and having their ends attached to the front top plate, and transverse angle-braces between the back top plate and the ventilator side plates.

9. In a car-frame, the combination, with the end door-posts and vestibule door-posts, of longitudinal braces extending between their upper ends and provided with guideways for the upper buffer stems and springs.

10. In a car-frame, the combination, with the end door-posts and vestibule door-posts and the vestibule ceiling-plate, of longitudinal channels riveted to the under side of said plate between posts, said channels having longitudinal angles riveted to their webs on the flanged side for the purpose set forth.

11. In a car-frame, the combination, with a continuous center sill, of a car-body end sill comprising vertical plates projecting from each side of the center sill back of the end, a platform end sill passing across the end of the center sill and supported thereby, longitudinal braces extending between the car-body end sill plates and the platform end sill at each side of the center sill, posts rising from the ends of the car-body and platform end sills, top side plates extending between posts at each side of the car, a ceiling-plate passing across between the top side plates, a front, or end top plate passing across between the ends of the top side plates and riveted to the outer edge of the ceiling-plate, and longitudinal braces riveted to the under side of the ceiling-plate at each side of the center.

823,791. MAIL-BOX SIGNAL. ERNEST B. KITCHEN, White Post, Va. Filed Feb. 12, 1906. Serial No. 300,772.



Claim.—1. A device of the character described comprising a box provided with a lid, a spring secured at one end to the under side of said lid and provided at its free end with a downwardly-extending lug, a signal-arm provided with a target and hinged to the side of said box, and a cam-detent connected with said arm to move therewith, the arm being arranged for manual actuation and the detent being designed to spring past the lug with the lid in the lower or closed position, so that the lug will engage with the detent and hold the arm with its target in the visible position.

2. A device of the character described, comprising a mail-box provided at its top with a hinged lid, a spring secured at one end to the under side of said lid and provided with a portion offset from the under side of the lid and formed at its extremity with a downwardly-extending portion returned upon itself to form a lug, an arm provided at one end with a pivoted stud mounted in one side of the box, said stud extending through the box, a cam-detent secured to the extension of said stud and designed to spring past said lug with the lid in the lowered position whereby said lug will engage the detent and hold the arm raised, and said arm carrying at its other end a target, as and for the purpose set forth.

823,792. HEAD-REST. SAMUEL KLINE, Trenton, N. J. Filed Feb. 25, 1905. Serial No. 247,213.

Claim.—1. The combination with opposed parallel guides; of a bar provided with a rack arranged to reciprocate between said guides, and carry a bracket with a cylindriform head provided with a peripheral groove; a spring-pressed pawl pivoted on said guides, arranged to retain said bar in adjusted position; a head-rest block having a socket fitted to said head; and, a set-screw carried by said block, arranged to engage the groove on said head, substantially as set forth.



2. The combination with opposed parallel guides; of a supporting-bar arranged to reciprocate between said guides and provided with a bracket with a cylindriform head having serrations extending parallel with its axis; means arranged to retain said bar in adjusted position; a head-rest block provided with a socket having serrations fitted to the serrations on said head; and, means arranged to normally secure said head-rest block against lateral displacement with respect to said head, substantially as set forth.

3. In a head-rest, the combination with a bracket comprising a cylindriform head having a peripheral groove; of a head-rest block having a cylindriform socket fitted to said head in removable relation therewith; and, a set-screw carried by said block, arranged to engage the groove in said head and prevent the removal of said block, substantially as set forth.

4. In a head-rest, the combination with a bracket having a cylindriform head, comprising serrations extending parallel with its axis; of a head-rest block provided with a cylindriform socket having complementary serrations fitted to the serrations on said head, in removable relation therewith; and, a set-screw carried by said block arranged to engage said head and prevent the removal of said block, substantially as set forth.

5. The combination with opposed parallel guides; of a supporting-bar arranged to reciprocate between said guides; a bracket carried by said bar, and having a cylindriform head with its axis extending transversely with respect to said bar; means arranged to retain said bar in adjusted position between said guides; a head-rest block having a cylindriform socket fitted in removable relation on said head; and, means carried by said block arranged to engage said head and prevent the removal of said block, substantially as set forth.

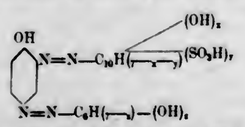
6. The combination with opposed parallel guides; of a supporting-bar arranged to reciprocate between said guides; a bracket carried by said bar in rigid relation therewith, and having a cylindriform head with its axis extending transversely with respect to said bar; means arranged to retain said bar in adjusted position between said guides; a head-rest block having a cylindriform socket fitted in removable relation on said head; and, means carried by said block arranged to engage said head and prevent the removal of said block, substantially as set forth.

823,793. DISAZO DYE AND PROCESS OF MAKING SAME. THILO KROEBER, Basel, Switzerland, assignor to The Firm of "Society of Chemical Industry in Basle," Basel, Switzerland. Filed Jan. 3, 1906. Serial No. 294,473.

Claim.—1. The process for the manufacture of disazo dyestuffs, which consists in combining one molecule of the tetrazo derivative of the diamidophenol ($OH:NH_2:NH_2=1:2:4$) with one molecule of an azo coloring-matter compound to form an intermediate product and then combining the intermediate product thus obtained with a further molecule of an azo coloring-matter compound, as described.

2. The process for the manufacture of disazo dyestuffs which consists in combining one molecule of the tetrazo derivative of the diamidophenol ($OH: NH_2: NH_2 = 1:2:4$) first with one molecule of a sulfonated naphtholic compound to form an intermediate product and then combining the intermediate product thus obtained with one molecule of a non-sulfonated naphtholic compound as described.

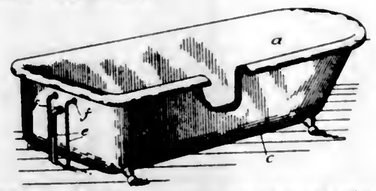
3. As new products, the disazo dyestuffs corresponding to the formula:



which dye wool in an acid-bath brown to violet tints, which turn to black by treatment with chromium compounds and constitute in dry state dark powders soluble in water with a coloration varying from violet and blue to black and in concentrated sulfuric acid with a blue to black coloration.

4. As a new article of manufacture, the herein-described disazo dyestuffs derived from the tetrazo derivative of the diamidophenol ($OH: NH_2: NH_2 = 1:2:4$), 1:4 naphthol-sulfonic acid and beta-naphthol, which dyes wool in an acid-bath brownish-violet tints turning on the treatment with chromium compounds to a deep violet-black very fast to milling, washing, potting and light, and constitutes in dry state a dark powder with bronze-like luster, soluble in water with a bluish-violet color and in concentrated sulfuric acid with a dark-blue color.

823,794. BATH-TUB. JOHN A. LEFFERTS, Elizabeth, N. J. Filed Apr. 22, 1906. Serial No. 312,912.



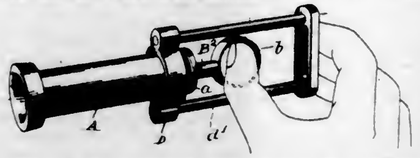
Claim.—1. A bath-tub composed of two cast-metal shells, each enameled by the dry process and one mounted within the other.

2. A bath-tub comprising a cast-metal outer shell, and a cast-metal inner shell removably supported in the outer shell, each shell being enameled by the dry process, the outer shell being enameled on its outer surface in one color and the inner shell on the inner surface in a contrasting color.

3. A bath-tub comprising a cast-metal outer shell having an outwardly-extending marginal flange, and a cast-metal inner shell closely fitting the outer shell and having an outwardly-extending marginal flange fitting upon the flange of said outer shell, each shell being enameled by the dry process, the outer one on its outer surface and the inner one on its inner surface.

4. A bath-tub comprising an outer shell having a straight marginal and apertured flange, an inner shell fitting within the outer shell and having a curved marginal flange provided with apertured lugs resting upon the flange of the outer shell, and screws passing through the apertures of the flange of the outer shell into the apertures of said lugs.

823,795. VACUUM DEVICE. SYLVESTER S. LEONARD, Chicago, Ill. Filed Oct. 6, 1905. Serial No. 281,637.



Claim.—1. In a device of the class described, the combination with a pump-cylinder, a piston movable therein, a piston-rod secured to the piston and projecting from the rear of the cylinder, and a handle at the rear end of the piston-rod, of a frame slidably mounted on the cylinder, a perforation in the rear end of the frame through which the handle can pass and means for locking the frame in its rear position.

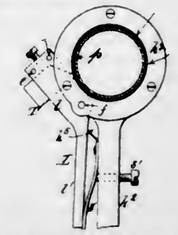
2. In a device of the class described, the combination with a pump-cylinder, a piston movable therein, a piston-rod secured to the piston and projecting from the rear of the cylinder, and a handle at the rear end of the piston-rod, of a frame slidably mounted on the cylinder, a perforation in the rear end of the frame through which the handle can pass and a pin-and-bayonet-slot connection between the frame and cylinder whereby the frame can be locked in its rear position.

3. In a device of the class described, the combination with a pump-cylinder, a piston movable therein, a piston-rod secured to the piston and projecting from the rear of the cylinder, and a handle at the rear of the piston-rod, of a frame slidably mounted upon the cylinder, a perforation in the rear end of the frame through which the handle can pass, means for locking the frame in its rear position on the cylinder, and a spring adapted to hold the piston normally forward

4. In a device of the class described, the combination with a cylinder, a piston movable therein, a piston-rod secured to the piston and extending rearwardly from the cylinder and a handle at the rear of the piston-rod, of a cross-piece slidably mounted on the cylinder, rods extending rearwardly from the cross-piece on opposite sides of the cylinder, a brace connecting the rear ends of the rods, said brace being perforated for the passage of the handle, a pin-and-bayonet-lock connection between the rear of the cylinder and the cross-piece whereby the cross-piece can be locked in its rear position.

5. In a device of the class described, the combination with a cylinder, a piston movable therein, a piston-rod secured to the piston and extending rearwardly from the cylinder and a handle at the rear of the piston-rod, of a cross-piece slidably mounted on the cylinder, rods extending rearwardly from the cross-piece on opposite sides of the cylinder, a brace connecting the rear ends of the rod, said brace being perforated for the passage of the handle, a pin-and-bayonet-lock connection between the rear of the cylinder and the cross-piece whereby the cross-piece can be locked in its rear position, and a spring exerting a forward pressure on the piston.

823,796. PIPE-CUTTER. LOUIS LEYES, City Island, N. Y. Filed Mar. 24, 1906. Serial No. 307,767.



Claim.—1. In an implement of the character designated, the combination of a cylindrical clamping-sleeve of flexible resilient material formed with a longitudinal opening extending the full length thereof and with an annular peripheral shoulder, a rotatable tool-head mounted upon said cylindrical clamping-sleeve and interlocking with said annular peripheral shoulder on the sleeve, and a cutting-tool mounted on said rotatable tool-head, for the purpose described.

2. In an implement of the character designated, the combination of a cylindrical clamping-sleeve of flexible resilient material formed with a longitudinal opening extending the full length thereof and with an annular peripheral shoulder, a rotatable tool-head mounted upon said cylindrical clamping-sleeve and interlocking with said annular peripheral shoulder on the sleeve, a tool-holding lever fulcrumed on said rotatable tool-head, a cutting-tool mounted on said lever, and a spring bearing against said lever, for the purpose described.

3. In an implement of the character designated, the combination of a cylindrical clamping-sleeve of flexible resilient material formed with a longitudinal opening extending the full length thereof and with an annular peripheral shoulder, a rotatable tool-head mounted upon said cylindrical sleeve and interlocking with said annular peripheral shoulder on the sleeve, a tool-holding lever fulcrumed on said rotatable head, a cutting-tool mounted upon one arm of said lever, and a spring interposed between the other arm of said lever and a projection of the rotatable tool-head, for the purpose described.

4. In an implement of the character designated, the combination of a cylindrical clamping-sleeve of flexible resilient material formed with a longitudinal opening extending the full length thereof and with an annular peripheral shoulder, a rotatable tool-head mounted upon said cylindrical clamping-sleeve and interlocking with said annular peripheral shoulder on the sleeve, a rockable tool-holder fulcrumed on said rockable head, a cutting-tool mounted upon said rockable tool-holder, and a spring bearing against said rockable tool-holder, for the purpose described.

5. In an implement of the character designated, the combination of a cylindrical clamping-sleeve of flexible resilient material formed with a longitudinal opening extending the full length thereof and with an annular peripheral shoulder, a rotatable tool-head mounted upon said cylindrical clamping-sleeve and interlocking with said annular peripheral shoulder on the sleeve, said rotatable tool-head being formed with a projecting handle, a tool-holding lever fulcrumed on said rotatable head, a cutting-tool mounted upon one

arm of said lever, and a flat metal spring interposed between the other arm of said lever and the handle of the rotatable tool-head, for the purpose described.

6. In an implement of the character designated, the combination of a cylindrical clamping-sleeve of flexible resilient material formed with a longitudinal opening extending the full length thereof and with an annular peripheral shoulder, a rotatable tool-head mounted upon said cylindrical clamping-sleeve and interlocking with said annular peripheral shoulder on the sleeve, said rotatable tool-head being formed with a projecting handle, a tool-holding lever fulcrumed on said rotatable head, a cutting-tool mounted upon one arm of said lever, a flat metal spring interposed between the other arm of said lever and the handle of the rotatable tool-head, and means for regulating the pressure exerted by said spring for the purpose described.

7. In an implement of the character designated, the combination of a cylindrical clamping-sleeve of flexible resilient material formed with a longitudinal opening extending the full length thereof and with an annular peripheral shoulder, a rotatable tool-head mounted upon said cylindrical clamping-sleeve and interlocking with said annular peripheral shoulder on the sleeve, said rotatable tool-head being formed with a projecting handle, a tool-holding lever fulcrumed on said rotatable head, a cutting-tool mounted upon one arm of said lever, a flat metal spring interposed between the other arm of said lever and the handle of the rotatable tool-head, and an adjusting-screw on said handle arranged to bear against said spring for the purpose described.

8. In an implement of the character designated, the combination of a cylindrical clamping-sleeve of flexible resilient material formed with a longitudinal opening extending the full length thereof and with a peripheral shoulder, a rotatable tool-head mounted upon said cylindrical clamping-sleeve and interlocking with said annular peripheral shoulder on the sleeve, a cutting-tool mounted on said rotatable tool-head, and a split bushing of flexible resilient material fitting within said cylindrical clamping-sleeve for the purpose described.

9. In an implement of the character designated, the combination of a cylindrical clamping-sleeve of flexible resilient material formed with a longitudinal opening extending the full length thereof and with an annular peripheral shoulder, a rotatable tool-head mounted upon said cylindrical clamping-sleeve and interlocking with said annular peripheral shoulder on the sleeve, said rotatable tool-head being formed with a projecting handle, a tool-holding lever fulcrumed on said rotatable head, means for adjusting said tool-holding lever on said rotatable head, a cutting-tool mounted upon one arm of said lever, and a spring interposed between the other arm of said lever and the handle of the rotatable tool-head, for the purpose described.

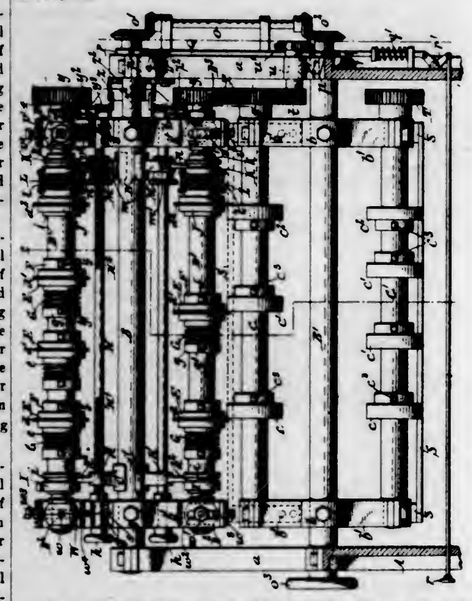
10. In an implement of the character designated, the combination of a cylindrical clamping-sleeve of flexible resilient material formed with a longitudinal opening extending the full length thereof and with an annular peripheral shoulder, a rotatable tool-head mounted upon said cylindrical clamping-sleeve and interlocking with said annular peripheral shoulder on the sleeve said rotatable tool-head being formed with a projecting handle, a tool-holding lever fulcrumed on said rotatable head, means for adjusting said tool-holding lever on said rotatable head, a cutting-tool mounted upon one arm of said lever, a plate pivotally supported on the handle of the rotatable tool-head, a flat metal spring secured to said pivotally-supported plate and bearing against the other arm of said tool-holding lever, and a screw on the handle of the rotatable tool-head arranged to bear on the inner side of said pivotally-supported plate for the purpose described.

823,797. PAPER-SLITTER. WILLIAM J. LUPTON, Lockport, N. Y. Filed Nov. 27, 1905. Serial No. 289,205.

Claim.—1. A paper-slitter comprising two frames arranged on opposite sides of the path of the web to be cut and each pivoted on an axis parallel to the plane of said web and capable of making a complete turn, two sets of cutters mounted on each frame, and means for turning said frames and bringing the companion sets of cutters thereof into coöperative relation, substantially as set forth.

2. A paper-slitter comprising two rotary frames pivoted on opposite sides of the path of the web to be cut, two sets of cutters mounted on each of said frames on opposite sides of its pivot, and means for turning said frames for bringing each of its sets of cutters between the two pivots of the two frames, substantially as set forth.

3. A paper-slitter comprising two rotary frames pivoted on opposite sides of the path of the web to be cut, coöperating cutters mounted respectively on said frames and connecting mechanism between said frames operating to turn the same together substantially as set forth.



4. A paper-slitter comprising two rotary frames pivoted on opposite sides of the path of the web to be cut, coöperating cutters mounted respectively on said frames and connecting mechanism between said frames operating to turn the same together and consisting of an intermediate shaft and bevel-gearing connecting said shaft with the pivot of said frames, substantially as set forth.

5. A paper-slitter comprising two rotary frames pivoted on opposite sides of the path of the web to be cut, coöperating cutters mounted respectively, on said frames, and a locking device for holding both of said frames against turning, consisting of locking-disks arranged on the pivots of said frames and each having notches or recesses in its periphery, a reciprocating locking-bar, and pawls arranged on said bar and constructed to enter the notches or recesses of said disks, substantially as set forth.

6. A paper-slitter comprising two rotary frames pivoted on opposite sides of the path of the web to be cut, coöperating cutters mounted respectively on said frames, and a locking device for holding both of said frames against turning consisting of locking-disks arranged on the pivots of said frames and each having notches or recesses in its periphery, a reciprocating locking-bar and pawls arranged on said bar and constructed to enter the notches or recesses of said disks, a spring for moving said bar in one direction and a shifting-rod connected by an elbow-lever with said bar and operating to move the same in the opposite direction, substantially as set forth.

7. A paper-slitter comprising two rotary frames pivoted on opposite sides of the path of the web to be cut, cutter-shafts journaled on each of said frames on opposite sides of its pivot and parallel therewith, cutters mounted on each of said cutter-shafts, and a gear-wheel mounted on each cutter-shaft, the gear-wheel of the companion cutter-shaft of the two frames being movable into and out of engagement with each other upon rotating said frames, substantially as set forth.

8. A paper-slitter comprising two rotary frames pivoted on opposite sides of the path of the web to be cut, cutter-shafts journaled on each of said frames on opposite sides of its pivot and parallel therewith, cutters mounted on each of said cutter-shafts, gear-wheels mounted on said cutter-shafts, and the gear-wheels of the companion shafts of both frames being movable into and out of engagement upon rotating said frames, and a driving gear-wheel arranged to be engaged by one of each pair of companion gear-wheels upon turning said frame into an operative position, substantially as set forth.

9. A paper-slitter comprising two rotary frames pivoted on opposite sides of the path of the web to be cut, cutter-shafts arranged on said frames and parallel therewith, swiveling bearings pivoted on one of said frames and each supporting one end of one of its cutter-shafts, a radially-movable bearing guided on said last-mentioned frame supporting the opposite end of one of its cutter-shafts, a gear-wheel secured to the last-mentioned cutter-shaft adjacent to its radially-movable bearing and adapted to move into and out of engagement with a gear-wheel on the other cutter-shaft, substantially as set forth.

10. A paper-slitter comprising two rotary frames pivoted on opposite sides of the path of the web to be cut, cutter-shafts arranged on said frames and parallel therewith, swiveling bearings pivoted on one of said frames and each supporting one end of one of its cutter-shafts, a radially-movable bearing guided on said last-mentioned frame supporting the opposite end of one of its cutter-shafts, a gear-wheel secured to the last-mentioned cutter-shaft adjacent to its radially-movable bearing and adapted to move into and out of engagement with a gear-wheel and the other cutter-shaft, and springs operating to hold said radially-movable bearing yieldingly in its normal position, substantially as set forth.

11. A paper-slitter comprising two rotary frames pivoted on opposite sides of the path of the web to be cut, cutter-shafts arranged on said frames and parallel therewith, swiveling bearings pivoted on one of said frames and each supporting one end of one of its cutter-shafts, a radially-movable bearing guided on said last-mentioned frame supporting the opposite end of one of its cutter-shafts, a gear-wheel secured to last-mentioned cutter-shaft adjacent to its radially-movable bearing and adapted to move into and out of engagement with a gear-wheel on the other cutter-shaft, and radially-adjustable pivots mounted on one of said frames and supporting said swiveling bearing, substantially as set forth.

12. A paper-slitter comprising two rotary frames pivoted on opposite sides of the path of the web to be cut, cutter-shafts arranged on said frames and parallel therewith, swiveling bearings pivoted on one of said frames and each supporting one end of one of its cutter-shafts, a radially-movable bearing guided on said last-mentioned frame and supporting the opposite end of one of its cutter-shafts, a gear-wheel secured to last-mentioned cutter-shaft adjacent to its radially-movable bearing and adapted to move into and out of engagement with a gear-wheel on the other cutter-shaft, and pivots for said swiveling bearing arranged on bolts which are adjustable radially in slots formed in one of said frames, substantially as set forth.

13. A paper-slitter comprising two rotary frames pivoted on opposite sides of the path of the web to be cut, cutter-shafts arranged on said frames and parallel therewith, swiveling bearings pivoted on one of said frames and each supporting one end of one of its cutter-shafts, a radially-movable bearing guided on said last-mentioned frame supporting the opposite end of one of its cutter-shafts, a gear-wheel secured to said last-mentioned cutter-shaft adjacent to its radially-movable bearing and adapted to move into and out of engagement with a gear-wheel and the other cutter-shaft, pivots for said swiveling bearing adjustable radially on one of said frames and adjusting-screws mounted on said last-mentioned frame and engaging with the inner and outer sides of said swiveling bearing, substantially as set forth.

14. A paper-slitter comprising two rotary frames pivoted on opposite sides of the path of the web to be cut, cutter-shafts arranged on said frames and parallel therewith, swiveling bearings pivoted on one of said frames and each supporting one end of one of its cutter-shafts, a radially-movable bearing guided on said last-mentioned frame supporting the opposite end of one of its cutter-shafts, a gear-wheel secured to last-mentioned cutter-shaft adjacent to its radially-movable bearing and adapted to move into and out of engagement with a gear-wheel and the other cutter-shaft, a spring arranged on said last-mentioned frame and bearing against the inner side of said radially-movable bearing, and an adjusting-screw arranged on said last-mentioned frame and bearing against the outer side of said radially-movable bearing, substantially as set forth.

15. A paper-slitter comprising two rotary frames pivoted on opposite sides of the path of the web to be cut, cutter-shafts arranged on said frames and parallel therewith swiveling bearings pivoted on one of said frames and each supporting one end of one of its cutter-shafts, a radially-movable bearing guided on said last-mentioned frame and supporting the opposite end of one of its cutter-shafts, a gear-wheel secured to the last-mentioned cutter-shaft adjacent to its radially-movable bearing and adapted to move into and out of engagement with a gear-wheel on the other cutter-shaft, and a locking device for holding said radially-movable bearing in its normal position, substantially as set forth.

16. A paper-slitter comprising two rotary frames pivoted on opposite sides of the path of the web to be cut, cutter-shafts arranged on said frames and parallel therewith, swiveling bearings pivoted on one of said frames and each supporting one end of one of its cutter-shafts, a radially-movable bearing guided on said last-mentioned frame and supporting the opposite end of one of its cutter-shafts, a gear-wheel secured to last-mentioned cutter-shaft adjacent to its radially-movable bearing and adapted to move into and out of engagement with a gear-wheel on the other cutter-shaft, and an automatic locking device for holding said radially-movable bearing in its normal position and operated by the rotation of said last-mentioned frame, substantially as set forth.

17. A paper-slitter comprising two rotary frames pivoted on opposite sides of the path of the web to be cut, cutter-shafts arranged on said frames and parallel therewith, swiveling bearings pivoted on one of said frames and each supporting one end of one of its cutter-shafts, a radially-movable bearing guided on said last-mentioned frame and supporting the opposite end of one of its cutter-shafts, a gear-wheel secured to the last-mentioned cutter-shaft adjacent to its radially-movable bearing and adapted to move into and out of engagement with a gear-wheel on the other cutter-shaft, and a locking device for holding said radially-movable bearing in its normal position consisting of a latch mounted on the last-mentioned frame and engaging with an abutment on said radially-movable bearing, and a cam operatively connected with said latch, substantially as set forth.

18. A paper-slitter comprising two rotary frames pivoted on opposite sides of the path of the web to be cut, cutter-shafts arranged on said frames and parallel therewith, swiveling bearings pivoted on one of said frames and each supporting one end of one of its cutter-shafts, a radially-movable bearing guided on said last-mentioned frame and supporting the opposite end of one of its cutter-shafts, a gear-wheel secured to the last-mentioned cutter-shaft adjacent to its radially-movable bearing and adapted to move into and out of engagement with a gear-wheel on the other cutter-shaft, and a locking device for holding said radially-movable bearing in its normal position consisting of latches pivoted on the frames and normally engaging abutments on said last-mentioned bearings, a slide guided on said last-mentioned frame and having a cam-slot engaging with a pin on said latch, a spring for shifting said slide in a direction for moving said latch into its normal position, and an actuating-cam operating to move said slide in the opposite direction, substantially as set forth.

19. A paper-slitter comprising two rotary frames pivoted on opposite sides of the path of the web to be cut, cutter-shafts arranged on said frames and parallel therewith, swiveling bearings pivoted on one of said frames and each supporting one end of one of its cutter-shafts, a radially-movable bearing guided on said last-mentioned frame and supporting the opposite end of one of its cutter-shafts, a gear-wheel secured to the last-mentioned cutter-shaft adjacent to its radially movable bearing and adapted to move into and out of engagement with a gear-wheel on the other cutter-shaft, and a locking device for holding said radially-movable bearing in its normal position consisting of a latch pivoted on the last-mentioned frame and normally engaging an abutment-screw on said radially-movable bearing, a stop arranged on said last-mentioned frame and limiting the movement of said latch in one direction, a slide arranged on said last-mentioned frame and having a cam-slot which receives a pin on said latch, a spring operating to move said slide in the direction for moving the latch into its normal operative position, a stationary guide-ring which receives a shifting-finger on said slide, and a pivoted cam engaging its free end with said guide-ring and arranged to be engaged by said shifting-finger for moving said slide in the direction for retracting the latch from said abutment-screw, substantially as set forth.

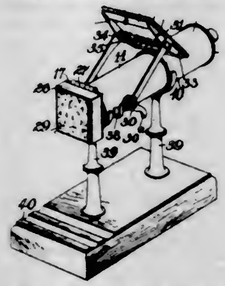
20. A paper-slitter comprising a supporting-frame, a cutter-shaft journaled on said frame and capable of axial movement a plurality of cutters mounted on one end of said shaft so as to normally move axially therewith, a single cutter mounted on the opposite end of said shaft but constantly free to move axially independent thereof, an adjusting-shaft journaled on said frame and having screw-threads inclining in opposite directions, and screw-nuts engaging said threads and operatively connected with said shaft and with said single cutter, substantially as set forth.

21. A paper-slitter comprising a supporting-frame, a cutter-shaft journaled on said frame and capable of axial movement, a plurality of cutters mounted on one end of said shaft so as to normally move axially therewith, front and rear stop-collars secured to said shaft on opposite sides of each of said plurality of cutters, a spring interposed between each front stop-collar and the front side of the adjacent cutter, a grooved coupling-collar connected with said shaft, a single cutter mounted on the opposite end of said shaft but constantly free to move axially independent thereof, a groove coupling-collar mounted on said shaft and loosely connected with said single

cutter, a spring interposed between said single cutter and the last-mentioned coupling-collar, an adjusting-shaft journaled on said frame and having screw-threads inclining in opposite directions, and nuts engaging with said threads and having fingers engaging with the grooves of said coupling-collars, substantially as set forth.

22. A paper-slitter comprising a supporting-frame, a cutter-shaft journaled on said frame and capable of axial movement a plurality of cutters mounted on one end of said shaft so as to normally move axially therewith, a single cutter mounted on the opposite end of said shaft but constantly free to move axially independent thereof, an adjusting-shaft journaled on said frame and having screw-threads inclining in opposite directions, a nut engaging with one of said threads and loosely connected with said shaft, a carrier loosely coupled with said single cutter, a nut engaging with the other thread and journaled in said carrier but held against axial movement relatively thereto, and a set-screw for holding the last-mentioned nut against turning in said carrier, substantially as set forth.

823,798. **DESK UTENSIL.** JOSEPH N. MAINGOT, Trinidad, British West Indies. Filed Oct. 3, 1905. Serial No. 281,163.



Claim.—1. An article of the kind described comprising a tubular casing forming a handle, said casing having two compartments at the ends thereof and being separable at a point below the upper compartment, an absorbent pad at the end of one compartment, and means as the perforated spring-pressed disks adapted to turn in relation to each other for regulating the flow to said pad.

2. An article of the kind described, comprising a tubular casing divided into two compartments one adapted to contain mucilage and the other water, an absorbent pad at the end of the water-compartment, and means as the perforated spring-pressed disks adapted to turn in relation to each other for regulating the flow of water to the pad.

3. The combination with the casing having a water-compartment, and the absorbent pad supplied from the water-compartment, of the frame supported on the casing and adapted to swing beneath the absorbent pad, said frame having means for supporting a blotter thereon.

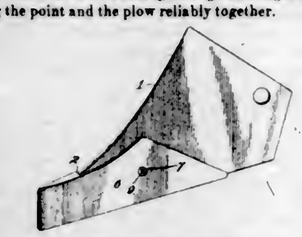
4. The combination with the tubular casing having the water-compartment and means for regulating the flow of water from the end of the compartment, of a swinging pad-holder supported at the end of the compartment, means for securing the pad-holder in place, and an absorbent pad in the pad-holder.

5. The combination with the tubular casing having a water-compartment in the end thereof, of the absorbent pad at the end of the water-compartment, the swinging blotter-holder to move opposite the pad, said blotter-holder having means for carrying a blotter thereon, and arms pivoted on the casing and secured to the blotter-holder.

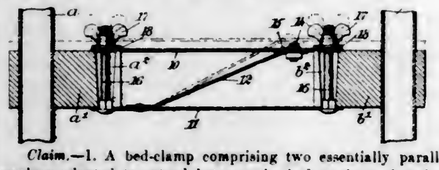
6. The combination with the tubular casing having a water-compartment with a perforated bottom therein, of a perforated disk held opposite the bottom of the water-compartment, spring-pressed means for holding the disk snug against the said bottom, and an absorbent pad held against the said perforated disk.

823,799. **PLOW.** THOMAS W. MARCUM, Cairo, Ind. Ter. Filed May 17, 1905. Serial No. 260,890.

Claim.—The combination with a plow provided at its front end with a tongue 3 and shoulders 2 above and below said tongue, and also with a hole 4, of a point having a nose 5 to fit squarely against shoulders 2 and pocket 8 to receive tongue 3, and having also at one side of said pocket, an arm 6 adapted to fit against the landside of the plow and provided with a hole registering with the said hole of the plow, and a device extending through said registering holes and securing the point and the plow reliably together.



823,800. **BED-CLAMP.** FREDERICK W. MERRIWEATHER, Kansas City, Mo. Filed Feb. 9, 1906. Serial No. 300,260.



Claim.—1. A bed-clamp comprising two essentially parallel members adapted to extend between the bed-sections, clamping-bolts extending between the ends of said members and adapted to draw them together against the parts of the bed to be connected, and a diagonal brace extending between said members.

2. A bed-clamp comprising two essentially parallel members adapted to extend between the bed-sections, clamping-bolts extending between the ends of said members and adapted to draw them together against the parts of the bed to be connected, and a diagonal brace permanently secured to one member and adjustably secured to the other member.

3. A bed-clamp comprising two essentially parallel members adapted to extend between the bed-sections, clamping-bolts extending between the ends of said members and adapted to draw them together against the parts of the bed to be connected, and a diagonal brace one end of which is permanently secured to one of the members, the other member being formed with a slot, and the other end of the brace having a bolt adjustable in the slot.

4. A clamp for bedsteads, comprising two essentially parallel members adapted to extend between the parts of the bedstead to be connected and lying on opposite sides thereto, means for clamping said members against said parts of the bedstead, and a diagonal brace extending between said members and having adjustable connection with one of the same.

5. A clamp for bedsteads comprising two members adapted to extend between the sections of the bedstead and to bear on opposite sides of the fastening castings or lugs thereof, and two connecting-bolts adapted to extend between the ends of said members through the openings in the said fastening castings or lugs whereby to draw said members toward each other and clamp them against the lugs.

823,801. **PAINT-REMOVER.** GUSTAVUS MICHAELIS, Albany, N. Y., assignor to Albany Chemical Company, Albany, N. Y. Filed Jan. 27, 1906. Serial No. 298,217.

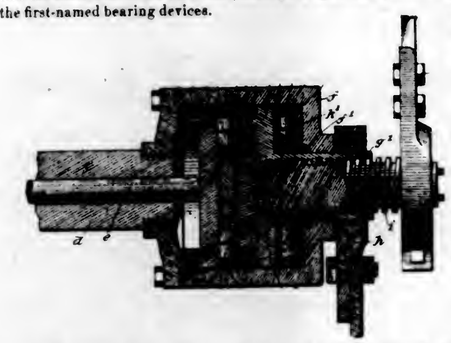
Claim.—A paint-remover comprising a volatile paint solvent with petrolatum dissolved therein as a retarding agent.

823,802. **FRICTION-SET.** MONTIE B. MINER, Sampson, Oreg. Filed July 12, 1905. Serial No. 269,296.

Claim.—1. The combination with a shaft and a pin movable through the same, of a box having connection with the shaft, a head located in the box and having an internally-threaded tubular portion projecting through the outer end of the box, means engaged with said tubular portion for holding the head against rotation, an actuating-screw operating in the tubular portion of the head, antifriction bearing devices acting between the head and the outer end of the box, and antifriction bearing devices acting between the head and said pin of the shaft.

2. The combination with a shaft and a pin movable through the same, of a box having connection with the shaft, a head located in the box and having an internally-threaded tubular portion projecting through the outer end of the box, means engaged with said tubu

lar portion for holding the head against rotation, an actuating-screw operating in the tubular portion of the head, antifriction bearing devices acting between the head and the outer end of the box, antifriction bearing devices acting between the head and said pin of the shaft, and a packing acting between the tubular portion of the head and the outer wall of the box, said packing being held in position by the first-named bearing devices.



3. The combination with a shaft and a pin movable through the same, of a box having connection with the shaft, a head located in the box and having an internally-threaded tubular portion projecting through the outer end of the box, means engaged with said tubular portion for holding the head against rotation, an actuating-screw operating in the tubular portion of the head, antifriction bearing devices acting between the head and the outer end of the box, antifriction bearing devices acting between the head and said pin of the shaft, the first-named bearing devices comprising a carrier or cage disk, bearing members held therein, and wear-plates at the sides of the carrier-disk, the wear-plates being engaged by said bearing members and engaging respectively with the head and the box.

4. The combination with a shaft and a pin movable through the same, of a box having connection with the shaft, a head located in the box and having an internally-threaded tubular portion projecting through the outer end of the box, means engaged with said tubular portion for holding the head against rotation, an actuating-screw operating in the tubular portion of the head, antifriction bearing devices acting between the head and the outer end of the box, antifriction bearing devices acting between the head and said pin of the shaft, said second-named bearing members acting between the screw and pin comprising disks respectively engaged with the screw and pin, and having sliding connection respectively with the head and box, a cage or carrier disk located between the first-named disks, and bearing members held in the carrier-disks and engaged respectively with the first-named disks.

5. The combination with a shaft and a pin movable through the same, of a box having connection with the shaft, a head located in the box and having an internally-threaded tubular portion projecting through the outer end of the box, means engaged with said tubular portion for holding the head against rotation, an actuating-screw operating in the tubular portion of the head, antifriction bearing devices acting between the head and the outer end of the box, antifriction bearing devices acting between the head and said pin of the shaft, the second bearing members acting between the screw and pin comprising a disk juxtaposed to the head and having an opening therein, a pin attached to the head and loosely fitted in the opening, a second disk engaged with the said pin of the shaft and having an opening therein, a pin carried by the box and fitted loosely in the opening of the second-named disk, a carrier or cage disk bearing between the two disks first named, and bearing members held by the carrier-disk and engaged with the first-named disks.

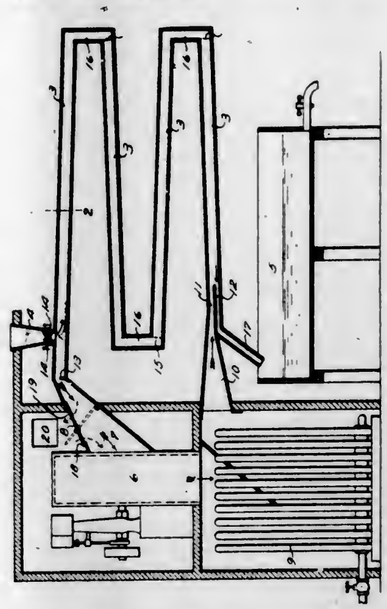
6. The combination of a shaft, a pin axially movable therein, a box connected with the shaft, a head stationary relatively to the box, an actuating-screw operating in the head, antifriction devices acting between the head and box, and antifriction bearing devices acting between the screw and pin.

7. The combination with the shaft of a hoisting-engine drum and a friction-pin movable through the shaft, of a box in connection with the shaft, a relatively stationary head, antifriction devices acting between the head and box, and means in connection with the head for actuating said pin, said means for actuating the pin comprising a screw threaded in the head, and antifriction bearing devices acting between the screw and pin.

8. The combination of a shaft, a pin axially movable therein, a box connected with the shaft, a head stationary relative to the box, an actuating-screw operating in the head, a disk for receiving the thrust of the screw, means for constraining the disk to move with the head, a disk for transmitting the thrust to the pin, means for constraining said disk to move with the box, and antifriction devices between the head and the box, and between the disks.

9. The combination of a shaft, a pin axially movable therein, a box connected to the shaft, a head stationary relative to the box, an actuating-screw operating in the head, a disk for receiving the thrust of the screw, a disk for transmitting the thrust to the pin, and antifriction devices between the head and the box and between the disks.

823,803. **APPARATUS FOR MELTING AND PURIFYING BUTTER AND FATS.** CHARLES D. MONROE, Elgin, Ill., assignor to American Farm Products Company, a Corporation of New Jersey. Filed Sept. 18, 1905. Serial No. 279,004.



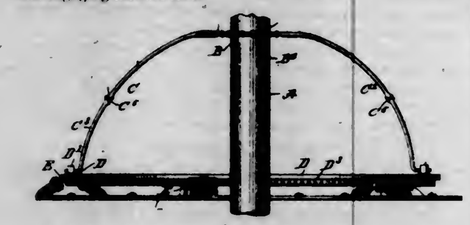
Claim.—1. A butter or fat melting and purifying apparatus comprising an inclined tubular conduit open at its ends, a hopper for feeding fatty particles to the upper end of said conduit, a pair of longitudinally-corrugated rollers meshing with each other and closing the throat of said hopper and adapted to control the discharge thereof, a passage connecting the upper and lower ends of said conduit, an air-heater in said passage, means for causing air from said heater to flow along the conduit into contact with its contents, and a receptacle for receiving the molten fat at the lower end of the conduit.

2. The combination of a series of horizontally-disposed closed pans arranged one above the other and adapted to hold butter or fat, each of said pans being slightly inclined and connected at its lower end with the next succeeding pan to form a closed conduit, and means for causing heated air to flow along said conduit for melting and purifying the contents of the pans, an air-passage connecting the lower end of the lowest pan with the upper end of the uppermost pan, a blower in said passage for causing the circulation of air along the pans, a heater for heating said air, and means for admitting fresh air and discharging impure air at the upper part of said passage.

823,804. **MACHINE FOR TURNING PIPES AND OTHER ARTICLES.** CHARLES H. MCCREADY, Neodesha, Kans. Filed Dec. 15, 1905. Serial No. 291,870.

Claim.—1. A machine for turning pipes, screw-rods, and like articles, comprising jaws adapted to grip the article, levers comprising jointed sections having a limited angular movement with respect to each other and connected with the said jaws, and a ring mounted to turn and engaging the said levers.

2. A machine for turning pipes, screw-rods and like articles, comprising jaws adapted to grip the article, a lever fulcrumed on one jaw and connected with the other jaw, and a ring mounted to turn and engaging the said lever.



3. A machine for turning pipes, screw-rods and like articles, comprising flexible jaws adapted to encircle and grip the article, levers, each fulcrumed on one jaw and pivotally connected with the other jaw, and a ring mounted to turn and engaging the free ends of the said levers.

4. A machine for turning pipes, screw-rods and like articles, comprising flexible jaws adapted to encircle and grip the article, each jaw being formed of a plurality of removable links to permit the use of more or less links, according to the size of the article to be gripped, levers, each fulcrumed on one jaw and pivotally connected with the other jaw, and a ring mounted to turn and engaging the free ends of the said levers.

5. A machine for turning pipes, screw-rods and like articles, comprising flexible jaws adapted to encircle and grip the article, levers, each fulcrumed on one jaw and pivotally connected with the other jaw, each lever being segmental in form and made in sections yieldingly connected with each other, and means for operating the said levers in unison.

6. A machine for turning pipes, screw-rods and like articles, comprising flexible jaws adapted to encircle and grip the article, levers having swivel ends pivotally connected with the adjacent ends of the jaws, and means for operating the said levers.

7. A machine for turning pipes, screw-rods and like articles, comprising flexible jaws adapted to encircle and grip the article, levers having swivel ends pivotally connected with the adjacent ends of the jaws, the levers being segmental in shape and made in sections yieldingly connected with each other to compensate for the movement of the article in the direction of its length, and means for operating the said levers.

8. A machine for turning pipes, screw-rods and like articles, comprising flexible jaws adapted to encircle and grip the article, levers having swivel ends pivotally connected with the adjacent ends of the jaws, a ring connected with the free ends of the said levers, and a bearing for the said ring to turn on.

9. A machine for turning pipes, screw-rods and like articles, comprising flexible jaws adapted to encircle and grip the article, levers having swivel ends pivotally connected with the adjacent ends of the jaws, a ring connected with the free ends of the said levers, and a bearing for the said ring to turn on, the said jaws and ring lying in different parallel planes.

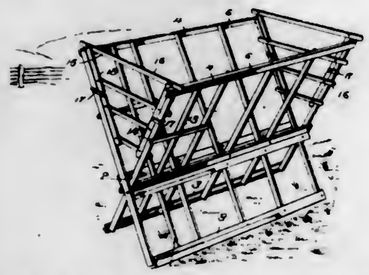
10. A machine for turning pipes, comprising a ring mounted to turn, gripping-jaws offset vertically from the ring and coaxial therewith, and levers comprising jointed sections connecting the jaws and the ring, the sections of the levers having a limited angular movement with respect to each other whereby to compensate for the movement of the jaws.

823,805. **RELIEF-VALVE FOR HEATING SYSTEMS.** ARTHUR MCGONAGLE. East Orange, N. J. Filed Sept. 1, 1905. Serial No. 276,678.



Claim.—In a valve of the class described, the combination with a casing-body and a removable cap or cover secured thereto, said casing-body having a discharge-opening with a valve-seat formed therein and provided with an air-passage, and the cap having a cylindrical recess of substantially the same diameter as that of the discharge-opening, opposite said opening and axially in line therewith, of a valve fitted to said opening and provided with a hollow tubular stem of substantially the same diameter as that of the opening and of the recess, and extending upward into said recess, and a float secured to said stem, substantially as set forth.

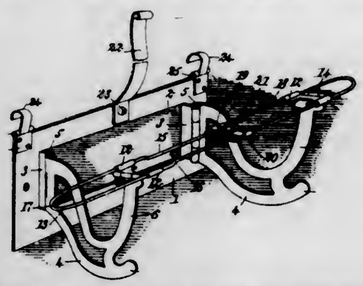
823,806. **STOCK-FEEDING DEVICE.** MARTIN J. OVERFIELD. Corydon, Ky. Filed Apr. 25, 1906. Serial No. 313,627.



Claim.—1. A rack of the class described comprising a plurality of crossed bars arranged in pairs, cap-plates secured to the ends of said bars, said cap-plates being of less width than said bars, interlocking cleats secured to said crossed bars at their point of intersection, and removable end gates for said rack.

2. A rack of the class described comprising a plurality of crossed bars arranged in pairs, cleats uniting said bars at their opposite ends, cap-plates for said bars of less width than said bars, auxiliary bars for said rack, means to secure said bars to said rack, and interlocking cleats secured to said bars at their point of intersection.

823,807. **FOLDING CLOTHES-RACK.** ANTON F. PETERS. Cortland, N. Y. Filed Oct. 14, 1905. Serial No. 282,747.



Claim.—1. In a device of the class described, in combination, a frame, folding arms carried thereby, folding bars pivotally connected with said arms and adapted to be extended into a substantially horizontal position, and a sliding connection between said bars.

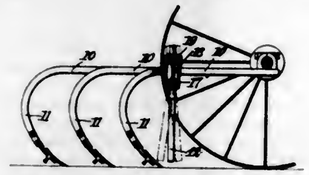
2. In a device of the class described, in combination, a frame, arms carried thereby and projecting laterally therefrom, knuckle-plates jointed on said arms, bars slidably mounted through said knuckle-plates, and means for connecting said bars.

3. A device of the class described, having a pair of oppositely-disposed folding arms, folding bars pivotally connected with said arms, and means for connecting said folding bars.

4. In a device of the class described, in combination, a frame, arms carried thereby and adapted to fold upon the face thereof, and a hook movably mounted on said frame, constituting a garment-support and adapted to occupy a position projecting across said frame to retain said arms in a folded position.

5. In a device of the class described, in combination, a frame, arms jointed thereto near the extremities thereof and adapted to project laterally, knuckle-plates presenting sleeves jointed to said arms, bars slidably mounted through said sleeves, and means for connecting said bars so as to bridge said arms.

823,808. **CULTIVATOR ATTACHMENT.** AUGUSTUS M. POTTS. Cedar Point, Kans. Filed Mar. 2, 1906. Serial No. 303,824.

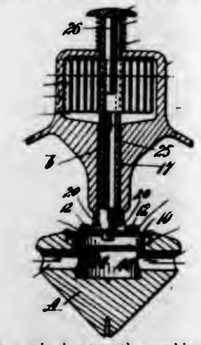


Claim.—1. In a cultivator, the combination with the beam, of a clamp comprising jaws provided with coöperating recesses to receive the beam, said jaws having alined openings below the beam, and alined slots above the beam, a holder provided with openings registering with the openings and the slots of the jaws, bolts traversing said openings and slots for securing the jaws to the beam, and the holder to the jaws, and a knife comprising a shank and an angular blade adjustably mounted in the holder.

2. In a cultivator, the combination with the beam, of a clamp comprising jaws provided with coöperating recesses to receive the beam, said jaws having alined openings below the beam, and alined slots above the beam, bolts traversing the openings and the slots, a holder secured to one of the jaws, and a knife comprising a shank adjustably mounted in the holder, and an angular blade connected with the shank.

3. The combination with a cultivator having a beam with a cultivating-tool thereon, of two clamp-jaws, adapted to embrace the beam, a holder, a bolt pivotally connecting the holder and clamp-jaws, a second bolt fastened to the holder and extending through slots in the clamp-jaws, and a knife having a vertical shank engaged in the holder and a horizontally-disposed blade at the lower end of the shank.

823,809. **SPINNING-TOP.** MICHAEL L. POWERS. Springfield, Mass. Filed Dec. 7, 1905. Serial No. 290,797.



Claim.—1. In a spinning-top, the combination with a top having one or more upper side abutments, of a whirling device comprising a holder having an intermediate sidewise-open aperture and lower end ratchets, a spindle extending vertically through the holder, rotatable therein, and also having a limited degree of endwise movement, and provided at its lower end with one or more transverse members adapted to engage the top abutments and also with said ratchets, and a spring located within said holder-aperture, having its outer end in engagement with the holder and its inner end with the spindle.

2. In a spinning-top, the combination with a top having one or more upper side abutments, each comprising an upstanding member and a horizontally-extending member, of a whirling device comprising a holder having an intermediate sidewise-open aperture and lower end ratchets, a spindle extending vertically through the holder, rotatable therein, and also having a limited degree of endwise movement, and provided at its lower end with one or more transverse members adapted to engage the top abutments and also with said ratchets, and a spring located within said holder-aperture, having its outer end in engagement with the holder and its inner end with the spindle.

3. In a spinning-top, the combination with a top having one or more upper side abutments, of a whirling device comprising a holder having an intermediate sidewise-open aperture, lower end ratchets and opposite edgewise-extended finger-rests, a spindle extending vertically through the holder, rotatable therein, and also having a limited degree of endwise movement, and provided at its lower end with one or more transverse members adapted to engage the top abutments and also with said ratchet, and a spring located within said holder-aperture, having its outer end in engagement with the holder and its inner end with the spindle.

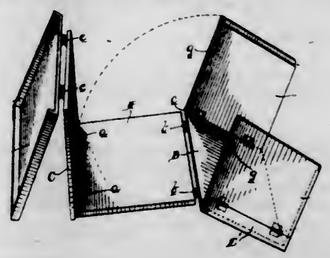
4. In a spinning-top, the combination with a top having one or more upper side abutments, of a whirling device comprising a holder having an intermediate sidewise-open aperture, lower end ratchets, and opposite edgewise-extended finger-rests, a spindle extending vertically through the holder, rotatable therein, and also having a limited degree of endwise movement, provided at its upper end with a head relatively to which it is independently rotatable, and provided at its lower end with one or more transverse members adapted to engage the top abutments and also with said ratchet, and a spring located within said holder-aperture, having its outer end in engagement with the holder and its inner end with the spindle.

5. In a spinning-top, the combination with a top having one or more upper side abutments, of a whirling device comprising a holder having an intermediate sidewise-open aperture, lower end ratchets, and a spindle extending vertically through the holder, rotatable therein, and also having a limited degree of endwise movement, and provided at its lower end with one or more transverse members adapted to engage the top abutments and also with said ratchet; a spring located within said holder-aperture, having its outer end in engagement with the holder and its inner end with the spindle, and a spiral spring surrounding the spindle and in compression between the top of the holder and a shouldered upper part of the spindle.

6. In a spinning-top, the combination with a top having one or more upper side abutments, of a whirling device comprising a holder having an intermediate spring-accommodating space and lower end ratchets, a tubular upwardly-open spindle extending vertically through the holder, rotatable therein, and also having a limited degree of endwise movement, and provided at its lower end with one or more transverse members adapted to engage the top abutments and also with said ratchets, a spring located within the said space in the holder, having its outer end in engagement with the holder and its inner end with the spindle, a supplemental spindle-section tightly fitting in the upper portion of the tubular-formed spindle, proper, and having at its upper end a button relatively to which it is freely rotatable, and a spiral spring encircling the upper portion of the spindle and in compression between the top of the holder and said button.

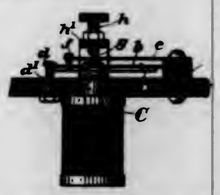
7. In a spinning-top, the combination with a top having one or more upper side abutments, of a whirling device comprising a holder having an intermediate spring-accommodating space and lower end ratchets, a tubular upwardly-open spindle extending vertically through the holder, rotatable therein, and also having a limited degree of endwise movement, and provided at its lower end with one or more transverse members adapted to engage the top abutments and also with ratchets, a supplemental spindle-section tightly fitting in the upper portion of the tubular-formed spindle, proper, and having at its upper end a button relatively to which it is freely rotatable, said two spindle-sections being longitudinally slotted, a spiral spring encircling the upper portion of the spindle and in compression between the top of the holder and said button, and a clock or like spring located in said holder-aperture having its outer end in engagement with the holder and its inner end engaging through the matched slots in said spindle-sections.

823,810. **FOLDING BOX.** WILLIAM H. RICHMOND. Mount Pleasant, Mich. Filed Mar. 7, 1905. Serial No. 248,824.



Claim.—In a folding box having a hinged cover, of a bottom and front and rear members hinged to the bottom by outside and inside hinges adapting them to fold respectively against the under and upper faces of said bottom, and end members, one of which is hinged by inside hinges to the front member adapting it to fold flat against said member and the other one of which is correspondingly hinged to a complementary portion thereof, which is rigidly secured to the front member adapting said end member to fold flat upon the other end member—the box being of cubical shape—said front, rear and end members being of uniform height and extending with their lower edges over the outer edges of the bottom member and adapted to be held in rigid relation to each other by screws passing through the end members into the bottom member.

823,811. **AUTOMATIC CIRCUIT MAKING AND BREAKING DEVICE FOR AUTOMOBILES AND THE LIKE.** ANDREW L. RIKER, Bridgeport, Conn., assignor to The "Locomobile" Company of America, New York, N. Y., a Corporation of West Virginia. Filed Oct. 8, 1903. Serial No. 176,223.



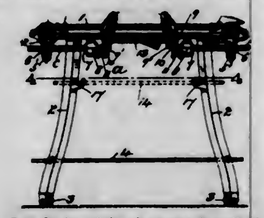
Claim.—1. An automatic circuit making and breaking device containing an electromagnet, its armature, and a resilient carrier therefor, a resiliently-mounted contact member, a headed connection between said armature-carrier end contact member, and retractile stope for said armature-carrier and contact member, and arranged to provide a lost motion between the said headed connection and said contact member.

2. The combination with a sparking coil and spark-points, of a circuit making and breaking device in circuit therewith and comprising an electromagnet, its armature having a positive retractile stop and a contact member moved by said armature and having also a positive retractile stop with a lost motion between said armature and contact member upon attracted movement of one by the other.

3. An automatic circuit making and breaking device containing an electromagnet, an elastically-mounted armature member, a contact member, and means for causing engagement between said armature member and contact member after the former has acquired an appreciable momentum, said armature member having a relatively great mass in comparison with its resistance to the attraction of the armature, thereby quickly to acquire its momentum.

4. An automatic circuit making and breaking device comprising an electromagnet, a resiliently-mounted armature member, a positive stop for the retractile movement thereof, and a resiliently-mounted contact member adapted to be engaged by said armature member after the initial movement of the latter, said armature member being between the magnet and said contact member.

823,812. **BABY HOLDING AND WALKING DEVICE.** PHILIP T. RITTER, St. Louis, Mo. Filed Aug. 10, 1905. Serial No. 273,587.



Claim.—1. In a device of the character described, the combination with a suitable framework adapted to travel along a floor, of two opposite clamps removably fixed to, and adjustable along the said framework, a rod removably fixed to, and slidable longitudinally through each of the said clamps, and a block coupled to one end of the said rod and adjustable radially thereto, the said blocks being adapted to partially surround and to support a child in a standing position on the floor between the said blocks and within the said framework, substantially as described.

2. In a device of the character described, the combination with a suitable framework adapted to travel along a floor, of two opposite clamps removably fixed to, and adjustable along the said framework, and having respectively a lug, a rod removably fixed in, and slidable longitudinally through the said lug, a ball on one end of the rod, a socket engaged by the said ball and radially adjustable thereto, means for fixing the socket in its adjusted positions respectively, to the said ball, a shank on the socket, and a block fixed to the shank, the said blocks being adapted to partially surround and to support a child in a standing position on the floor between the said blocks and within the said framework, substantially as described.

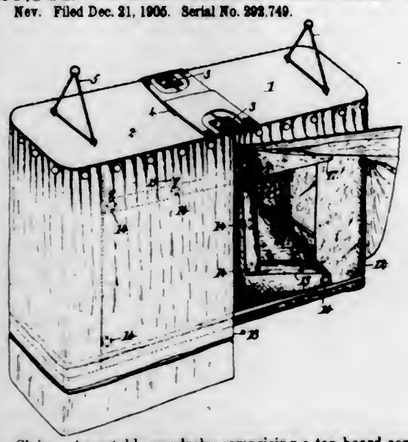
823,813. **COLLAPSIBLE BOX.** ROMEO RONCONI, New York, N. Y. Filed July 26, 1905. Serial No. 271,269.



Claim.—1. A collapsible box, comprising a box-body, consisting of sides, hinged together at the corners to fold in upon one another, an endless cord extending through the sides adjacent to their lower edge and at a point about midway between their hinged edges, and across the corners of the box-body near the bottom of the same, to support a bottom, said cord being under tension, and a bottom having an upturned flange, said bottom resting on the diagonal portions of the endless cord and serving as a brace for the sides of the box-body when set up, as herein set forth.

2. A collapsible box, comprising a box-body, consisting of sides hinged together at the corners, to fold in upon one another, an endless cord, extending through the sides adjacent to their lower edge and at a point about midway between their hinged edges and across the corners of the box-body near the bottom of the same, to support a bottom, said cord being under tension, a bottom having an upturned flange, said bottom resting on the diagonal portions of the endless cord, and serving as a brace for the sides of the box-body with means for securing the body thereto; and a cover having a depending flange, adapted to inclose the box body and bottom when folded, as herein set forth.

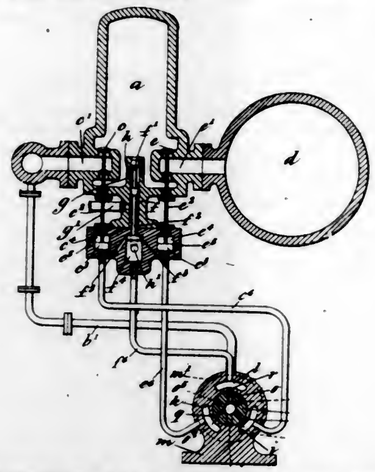
823,814. **PORTABLE WARDROBE.** ANNA M. SCHERFF, Wells, Nev. Filed Dec. 21, 1905. Serial No. 292,749.



Claim.—A portable wardrobe comprising a top board consisting of two hinged sections, hangers attached to the upper side of said top board, an eye on the under side of each of the top-board sections, a rod for engaging in said eyes, a wedge for engaging between the rod and top-board sections and a bag-like structure extended from the top board.

823,815. **APPARATUS FOR PROPELLING ROTARY MOTORS.** JAMES M. SMALL, Westminster, England. Filed Aug. 26, 1903. Serial No. 170,330.

Claim.—1. Apparatus for propelling turbines or other rotary motors, comprising a combustion-chamber provided with valves communicating respectively with a supply of compressed air, a supply of oil, gas, or vapor under pressure, and a discharge-pipe leading to the motor to be driven, and means for successively operating the valves directly by the compressed-air supply.



2. Apparatus for propelling turbines or other rotary motors, comprising a series of combustion-chambers each provided with valves communicating respectively with a supply of compressed air, a supply of oil, gas or vapor under pressure, and a discharge-pipe leading to the motor to be driven, and means for successively operating the valves in each chamber with respect to each other and to the valves in the other chambers of the series directly by the compressed-air supply; substantially as described.

3. Apparatus for propelling turbines or other rotary motors, comprising a series of combustion-chambers each provided with valves communicating respectively with a compressed-air supply, a supply of oil, gas or vapor under pressure, and a discharge-pipe leading to the motor to be driven, and means by which the individual valves in each of the combustion-chambers are successively operated with respect to each other and corresponding valves in the series of chambers are successively operated with respect to each other directly by the compressed-air supply; substantially as described.

4. Apparatus for propelling turbines or other rotary motors, comprising a combustion-chamber provided with valves communicating respectively with a supply of compressed air, a supply of oil, gas or vapor under pressure, and a discharge-pipe leading to the motor to be driven, pistons attached to each of the valve-rods and working in cylinders, and means for successively connecting each of the cylinders to a supply of compressed air; substantially as described.

5. Apparatus for propelling turbines or other rotary motors, comprising a series of combustion-chambers each provided with valves communicating respectively with a supply of compressed air, a supply of oil, gas or vapor under pressure, and a discharge-pipe leading to the motor to be driven, pistons attached to each of the valve-rods and working in cylinders, and means by which the individual cylinders of each combustion-chamber and also the corresponding cylinders of the series of chambers are successively connected to a supply of compressed air; substantially as described.

6. Apparatus for propelling turbines or other rotary motors, comprising a combustion-chamber provided with valves communicating respectively with a supply of compressed air, a supply of oil, gas or vapor under pressure, and a discharge-pipe leading to the motor to be driven, pistons attached to each of the valve-rods and working in cylinders which are in communication with chambers in a valve-casing, and a rotary valve adapted to connect the said chambers successively to a supply of compressed air; substantially as described.

7. Apparatus for propelling turbines or other rotary motors, comprising a series of combustion-chambers each provided with valves communicating respectively with a compressed-air supply, a supply of oil, gas or vapor under pressure, and a discharge-pipe leading to the motor to be driven, pistons attached to each of the valve-rods and working in cylinders which are connected by pipes with chambers in a valve-casing, and a rotary piston adapted to connect each of the chambers to a supply of compressed air, the said chambers being so arranged that the individual valves in each combustion-chamber and also corresponding valves in the series of chambers, are successively operated with respect to each other; substantially as described.

8. In apparatus of the kind herein described a combustion-chamber a valve for the admission of the charge of oil to the combustion-chamber comprising a double piston-valve working in a valve-casing, a second piston attached to the valve-rod and working in a cylinder arranged to be connected with a supply of compressed air, an oil-inlet in the valve-casing, a plurality of small channels in the valve-casing communicating with the combustion-chamber, and a duct which communicates with a supply of compressed air and is uncovered by the pistons when the valve is in position for discharging the oil into the combustion-chamber; substantially as described.

823,816. **SHEARS.** WILLIAM P. SPRAGG, Moberly, Mo. Filed Oct. 3, 1905. Serial No. 281,118.



Claim.—1. Shears, comprising handles having intermeshing teeth and pivotally connected with each other intermediate of their ends, and blades pivotally connected with each other and with the inner ends of the handles.

2. Shears, comprising handles having intermeshing teeth and pivotally connected with each other intermediate of their ends, and blades pivoted to the inner ends of the handles and having a link connection with each other adjacent their cutting edges.

3. Shears, comprising lever-handles having intermeshing toothed segments, links pivotally connecting the lever-handles, blades pivoted to the inner ends of the lever-handles, and links pivotally connecting the blades, adjacent to the cutting edges thereof.

4. Shears, comprising lever-handles provided adjacent to their inner ends with intermeshing toothed segments, parallel links pivotally connecting the inner ends of the lever-handles, blades having diverging inner ends pivoted to the inner ends of the lever-handles, and parallel links pivotally connecting the outer ends of the blades.

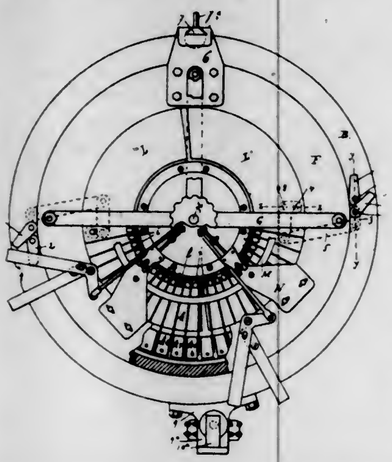
5. Shears, comprising lever-handles having intermeshing teeth and pivotally connected with each other intermediate of their ends, blades pivotally connected with each other and with the inner ends of the lever-handles, and an adjustable stop on one of the lever-handles.

823,817. **COIN-CARD.** FREDERIC W. STACK, New York, N. Y. Filed Apr. 12, 1905. Serial No. 255,164.

Claim.—A coin-holder, comprising a piece of stiff material doubled for a portion of its length and provided in one of the layers of the doubled portion with a transverse slot for the insertion of a

çois and an approximately circular embossed pocket-forming part which connects with said slot for a distance smaller than the length of the slot, the ends of the slot extending beyond the said embossed part.

823,818. **RACK-STITCH RIB-KNITTING MACHINE.** WALTER STAFFORD and ROBERT C. HOLT, Little Falls, N. Y. Filed Dec. 29, 1904. Serial No. 238,708.



Claim.—1. In a circular-rib-knitting machine, the combination of a cylinder needle-bed containing cylinder-needles, a cam-ring and cams, a dial-needle bed containing dial-needles, a cam-plate and cams, the said dial-needle bed comprising an outer annular member fixedly mounted and adapted to receive needles and an inner annular member divided into segments each segment being movable and having needle-engaging means thereon, substantially as described.

2. In combination in a circular-knitting machine, a cylinder-needle bed with needles, a cylinder cam-ring with cams for one or more feeds all of the same being within one-half the circumference of the ring, a dial-needle bed containing needles and composed of two annular plates one integral and the other divided into segments, a dial cam-plate with cams to correspond with the cams on the cylinder cam-ring, a bracket, a plunger adapted to move in the bracket to shift the segments of the said portion of the dial-plate, means operative between the plunger and the dial-plate for said purpose, substantially as shown.

3. In a circular-knitting machine, a dial-needle bed containing needles and comprising a fixed outer annular member and an inner annular member divided into segments each movable and supporting the needles at one end and adapted to control their direction of action, a dial cam-plate with cams, and means for automatically racking the sections of the inner member of the dial, substantially as described.

4. In a circular-knitting machine, a dial composed of annular members, the outer being integral and fixed and having thereon pivotally-mounted needle-guiding members and the inner of the said annular members being divided into annular sections each movable and having thereon needle-holding members whereby in the racking of the needles the latter may be swung on the dial members in either direction, means for automatically racking the sections of the inner member of the dial, substantially as shown.

5. In a knitting-machine, a dial-plate comprising two separate annular members supporting the needles at each end the inner one provided with means for engaging the ends of the needles at the side and being radially divided into parts and means for automatically shifting the said parts for racking the needles in either direction, substantially as shown.

6. In a knitting-machine, a dial-plate comprising a series of annular members, the outer being fixed and provided with a series of sector-like lands adapted to engage the needles, the said lands being pivotally mounted, means for automatically racking the needles by contact of such means at the latch ends of the needles, substantially as shown.

7. In a circular-knitting machine provided with cylinder and dial knitting means, means for automatically racking the dial-needles, the said means comprising notched guides engaging the needles, a bracket, a vertically-adjustable plunger therein having a horizontal lug thereon, a guide operated by pattern mechanism and adapted to engage the said plunger and adjust its operative position, a series of lever connections with the said notched guides operative by contact with the plunger-lug therewith to swing the same to rack the needles in either direction, and a pattern mechanism, substantially as shown.

8. In a circular-knitting machine, a dial supporting the needles in their operation and composed of two annular members, the outer integral and the inner formed of a plurality of parts each movable and provided with needle-engaging means to rack the dial-needles and means for automatically swinging the parts of the inner dial member to rack the needles, substantially as shown.

9. In a circular-knitting machine, a dial composed of a fixed outer annular member and of an inner member of sector-like parts having thereon means for swinging the inner end of the needles on the dial members, the outer of said dial members having swinging grooved parts engaging the needles, substantially as shown.

10. In a circular-knitting machine provided with a dial and dial-needles, means engaging the said needles to permit racking the same by swinging them in either direction and means for racking the needles, the said means comprising an adjustable plunger with a lug to engage the racking means, substantially as shown.

11. In a circular-knitting machine, a dial-plate comprising two annular members, the outer being fixed and adapted to receive needles and having pivotally-mounted members therefor and the inner composed of a plurality of sections movable in succession to rack the needles and having needle-engaging means thereon, and means for moving the sections in either direction, substantially as shown.

12. In a circular-knitting machine, a dial composed of separate ring portions, one being fixed and having thereon swinging grooved parts for the needles and the other portion being divided radially into parts each movable and having needle-engaging means to swing the needles in either direction to make a rack-stitch, substantially as shown.

13. In a circular-knitting machine, a dial-plate with needles and composed of two annular plates one integral and the other divided into sectors each independently movable, a dial cam-plate with cams, a plunger having a lug thereon and means engaging the lug and connected with the sectors of the dial to swing the same in either direction and to a degree depending upon the size of the lug on the plunger, substantially as shown.

14. In a knitting-machine, a dial-plate composed of two annular members, the inner one being radially divided into parts each being movable circumferentially and having needle-engaging means and the outer one being fixed and provided with swinging means to engage the needles as reciprocated, substantially as shown.

15. In a circular-knitting machine, a dial comprising a fixed ring and an inner ring composed of sections movable circumferentially in succession, and means for moving the said sections to and fro, substantially as shown.

823,819. **TOBACCO-PIPE.** FREDERICK A. STROMER, Cincinnati, Ohio. Filed Dec. 7, 1904. Serial No. 235,782.



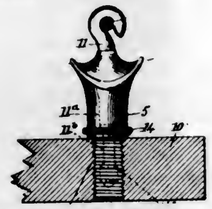
Claim.—1. A tobacco-pipe having a stem consisting of a tube grooved longitudinally, an external wrapping and internal plug of absorbent material.

2. In a tobacco-pipe the combination of a bowl having an annular extension with an enlarged bore, a stem consisting of a tube externally grooved and a wrapping of absorbent material, and a mouthpiece for engaging the end of the stem.

3. In a tobacco-pipe the combination of a bowl having an annular extension with an internal bore, a stem engaging the bore and consisting of a tube longitudinally grooved externally and internally, upon the exterior a wrapping and upon the interior a plug of absorbent material, and a mouthpiece engaging the end of the stem.

823,820. **PRONG-INSULATOR.** LOUIS STEINBERGER, New York, N. Y. Filed July 10, 1905. Serial No. 268,962.

Claim.—1. An insulator, comprising a body member of insulating material having a frusto-conical portion provided with spouts and with sheltering portions disposed intermediate of said spouts, and a metallic member connected with said body member of insulating material and provided with prongs disposed in alinement with said sheltering portion.



2. An insulator, comprising a body portion of insulating material provided with spouts, said spouts being so positioned that divers of them are staggered relatively to other spouts, and also inverted relatively thereto.

3. An insulator, comprising a body portion of insulating material provided with spouts, and a metallic member connected with said body portion and provided with prongs disposed intermediate of said spouts.

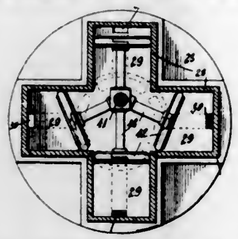
4. An insulator, comprising a body portion of insulating material provided with oppositely-disposed spouts, certain of said spouts being intermediate of certain other of said spouts and inverted relatively thereto so as to render said body portion reversible, all of said spouts being provided with raised walls for directing the flow of moisture, and a metallic member connected with said body portion of insulating material.

5. An insulator, comprising a metallic member and a body portion of insulating material, said body portion being provided with different groups of spouts located upon opposite sides thereof, the spouts of one group being inverted relatively to the spouts of another group.

6. An insulator, comprising a reversible member provided with a plurality of spouts, certain of said spouts being inverted relatively to others, and means for mounting said member.

7. An insulator, comprising a reversible body portion of insulating material provided with spouts, one of said spouts being inverted relatively to another, and a metallic member having a shank anchored within said body portion of insulating material and provided with means for supporting a conductor.

823,821. **ROTARY ENGINE.** JAMES L. STRICKLAND, Westport, Canada, assignor of fifty-one one-hundredths to Harry Richards McLellan, St. Johns, Canada. Filed Nov. 9, 1905. Serial No. 286,484.



Claim.—1. In a rotary engine, the combination comprising a bed-plate, a plurality of bearings on the bed-plate, a shaft disposed in the bearings, a plurality of cylinders secured on the shaft, a bearing for the cylinders, means for admitting steam to the cylinders, means for exhausting steam from the cylinders, oscillating pistons disposed in the cylinders, and means for overcoming the thrust of the shaft.

2. In a rotary engine, the combination comprising a bed-plate, a main bearing on the bed-plate, a pair of cylinders carried on the main bearing, means for admitting steam to the cylinders, a ring connecting the cylinders and provided with steam-passages terminating in slots, a ring secured on the shaft and provided with steam-passages adapted to register with the slots, a plurality of cylinders secured on the shaft in connection with the steam-passages, oscillating pistons disposed in the cylinders on the shaft, and means for overcoming the thrust of the shaft.

3. In a rotary engine, the combination comprising a bed-plate, a main bearing on the bed-plate, a pair of cylinders carried on the main bearing, means for admitting steam to the cylinders, a ring connecting the cylinders and provided with steam-passages terminating in a pair of slots arranged in the same horizontal plane, a ring secured on the shaft and provided with four steam-passages, two of which are adapted to register with the slots at the same time, a plurality of cylinders secured on the shaft and provided with ports communicating with the steam-passages, oscillating pistons disposed in the cylinders on the shaft, and means for overcoming the thrust of the shaft.

4. In a rotary engine, the combination comprising a bed-plate, a main bearing on the bed-plate, a pair of cylinders carried on the main bearing, means for admitting steam to the cylinders, a ring connecting the cylinders and provided with steam-passages terminating in slots, a ring secured on the shaft and provided with steam-passages adapted to register with the slots in the ring, a plurality of cylinders secured on the shaft in connection with said steam-passages, oscillating pistons disposed in the cylinders on the shaft each comprising a pair of plates, packing arranged in sections disposed between the plates, and means for actuating the packing outward, and means for overcoming the thrust of the shaft.

5. In a rotary engine, the combination comprising a shaft, a ring secured to the shaft and provided with steam-passages, a plurality of cylinders secured to the ring and provided with ports communicating with said steam-pistons, oscillating passages disposed in the cylinders each comprising a plurality of plates, packing arranged in sections between said plates, and springs disposed behind said packing and adapted to actuate the same outwardly, means for admitting steam to said passages, and means for balancing the thrust of the shaft.

6. In a rotary engine, the combination comprising a bed-plate, a plurality of bearings on one end of the bed-plate, a shaft rotatably disposed in the bearings, a disk on the shaft, a second disk provided with a web connected to the disk on the shaft, said web being formed with cylinders, means for admitting steam to the cylinders, oscillating pistons disposed in the cylinders, and means for balancing the thrust of the shaft.

7. In a rotary engine, the combination comprising a bed-plate, a plurality of bearings on one end of the bed-plate, a main shaft disposed in the bearings, a plurality of cylinders secured on the shaft, oscillating pistons disposed in the cylinders, means for admitting steam to the cylinders, a disk secured to the cylinders and provided with a flanged opening, a bearing disposed in the opening and secured to the bed-plate, and means for balancing the thrust of the shaft.

8. In a rotary engine, the combination comprising a bed-plate, a plurality of bearings on one end of the bed-plate, a main shaft disposed in the bearings, a plurality of cylinders secured on the shaft, oscillating pistons disposed in the cylinders, means for admitting steam to the cylinders, a disk secured to the cylinders and provided with a flanged opening, a bearing disposed in the opening and secured to the bed-plate, a shaft secured to the bearings, a plurality of rods pivotally mounted on the shaft and connected to the pistons, and means for balancing the thrust of the shaft.

9. In a rotary engine, the combination comprising a bed-plate, a plurality of bearings on one end of the bed-plate, a main shaft disposed in the bearings, a plurality of cylinders secured on the shaft, oscillating pistons disposed in the cylinders, means for admitting steam to the cylinders, a disk secured to the cylinders and provided with a flanged opening, a bearing disposed in the opening and secured to the bed-plate, a shaft secured to the bearings eccentric to the main shaft, a plurality of rods pivotally mounted on the shaft and connected to the pistons, and means for balancing the thrust of the shaft.

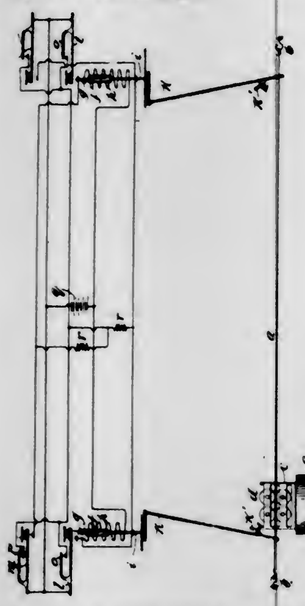
10. In a rotary engine, the combination comprising a bed-plate, a plurality of bearings on one end of the bed-plate, a main shaft disposed in the bearings, a plurality of cylinders secured on the shaft, oscillating pistons disposed in the cylinders, means for admitting steam to the cylinders, a disk secured to the cylinders and provided with a flanged opening, a bearing disposed in the opening and secured to the bed-plate, a shaft secured to the bearings, a plurality of rods pivotally mounted on the shaft and connected to the pistons, an inlet-pipe, and an exhaust-pipe disposed through said bearing.

11. In a rotary engine, the combination comprising a bed-plate, bearings on the bed-plate, a shaft disposed in the bearings, a plurality of cylinders carried by one of the bearings, a plurality of cylinders disposed in the first cylinders, packing-rings and springs interposed between said cylinders, means for admitting steam to the cylinders, a plurality of cylinders rotatable with the shaft, means for

admitting steam to the rotatable cylinders, oscillating pistons disposed in the rotatable cylinders, and means for balancing the thrust of the shaft.

12. In a rotary engine, the combination comprising a shaft, a pair of cylinders disposed adjacent the shaft, a ring disposed around the shaft and provided with a pair of cylinders disposed within the first cylinders, a disk secured on the shaft and provided with steam-passages, said ring being provided with steam-passages connecting with the disk and the cylinders, a plurality of cylinders secured on the shaft in connection with the steam-passages in the disk, passages in the cylinder, and means for balancing the thrust of the shaft.

823,822. **CARRIER SYSTEM.** JOSEPH A. SUERTH, Chicago, Ill. Filed Aug. 7, 1905. Serial No. 273,974.



Claim.—1. A carrier system including the carrier-supporting means, a carrier supported thereby, electromagnetic mechanism for imparting motion to the carrier, and suitable circuit and switching apparatus for governing the operation of the electromagnetic mechanism, the said magnetic apparatus including a bell-crank lever, one arm of which engages the carrier in effecting its movement.

2. A carrier system including the carrier-supporting means, a carrier supported thereby, electromagnetic mechanisms at communicating positions for imparting motion to the carrier, suitable circuit connections intervening between the positions, and switching apparatus whereby the magnetic mechanism at one position may have its operation effected at another position.

3. A carrier system including the carrier-supporting means, a carrier supported thereby, electromagnetic mechanisms at communicating positions for imparting motion to the carrier, suitable circuit connections intervening between the positions and switching devices at the communicating positions whereby the magnetic mechanisms may be operated at each position and a magnetic mechanism at one position may have its operation effected from another position.

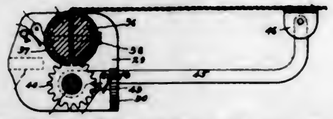
4. A carrier system including the carrier-supporting means, a carrier supported thereby, electromagnetic mechanisms at communicating positions for imparting motion to the carrier, suitable circuit connections intervening between the positions, and two switching devices at each of two communicating positions, one switching device at each position serving to operate the electromagnetic device at that position and the other switching device at each position serving to operate the electromagnetic device at the other position.

823,823. **BOX.** JOHN SUTHERLAND, Springer, N. Mex. Filed Aug. 4, 1905. Serial No. 272,691.

Claim.—A box, a cover therefor, having an opening in its top, a closure slidable on the cover and having an opening adapted to register with the first-named opening, the top of said cover being provided with slots, lugs extended from the closure through said slots, cross-bars connecting with opposite lugs, and a spring connection between one of the cross-bars and an end wall of the cover.



823,824. **AUTOMATIC TIGHTENER FOR BED-SPRINGS.** JAMES H. THAYER, Chicago, Ill. Filed Jan. 23, 1906. Serial No. 297,133.



Claim.—1. In a bed-spring tightener, the combination with the tightener-frame, of a winding-shaft transversely journaled thereon at one of its ends, a pinion on one end of said shaft, a web or fabric secured at one of its ends to one end of the frame and at its other end to the shaft, a pinion journaled on the frame and meshing with the pinion on the winding-shaft, a ratchet-wheel journaled to move in unison with the last-named pinion, a lever fulcrumed at one of its ends and having its other end adapted to engage the fabric, and a pawl on said lever to engage the ratchet-wheel, substantially as described.

2. In a bed-spring tightener, the combination with the tightener-frame, of a winding-shaft and an operating-shaft transversely journaled thereon in parallelism, intermeshing gears and ratchet-wheels on one of the ends of said shafts, a web or fabric secured at one of its ends to one end of said frame and at its other end to the winding-shaft, a lever mounted at one of its ends on the operating-shaft and in engagement at its other end with the web or fabric, and a pawl on the lever to engage the ratchet-wheel on the operating-shaft, substantially as described.

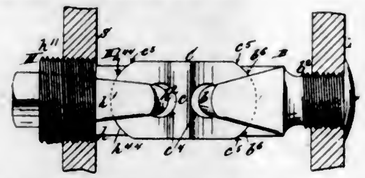
3. In a bed-spring tightener, the combination with the tightener-frame, of a winding-shaft and operating-shaft transversely journaled thereon in parallelism, intermeshing gears and ratchet-wheels on one of the ends of said shafts, a spring-pressed pawl to engage the ratchet-wheel on the winding-shaft, a web or fabric secured at one of its ends to one end of said frame and at its other end to the winding-shaft, a lever mounted at one of its ends on the operating-shaft and in engagement at its other end with the web or fabric, and a pawl on the lever to engage the ratchet-wheel on the operating-shaft, substantially as described.

4. In a bed-spring tightener, the combination with the tightener-frame, of a winding-shaft and operating-shaft transversely journaled thereon in parallelism, intermeshing gears and ratchet-wheels on both of the ends of said shafts, a web or fabric secured at one of its ends to one end of said frame and at its other end to the winding-shaft, spring-pressed pawls to engage the ratchets on the winding-shaft, a lever mounted at one of its ends on the operating-shaft near each of its ends, a bar transversely uniting the other ends of the levers and adapted to engage the fabric, and spring-pressed pawls on the lever to engage the ratchet-wheels on the operating-shaft, substantially as described.

5. In a bed-spring tightener, the combination with the tightener-frame, of a winding-shaft tapered from its middle toward each of its ends and an operating-shaft journaled transversely on said frame near one of its ends, intermeshing gears and ratchet-wheels on both of the ends of said shafts, a web or fabric secured at one of its ends to one end of said frame and at its other end to the winding-shaft, spring-pressed pawls to engage the ratchet-wheels on the winding-shaft, a lever mounted at one of its ends on the operating-shaft near each of its ends, a bar pivotally and transversely secured on the other ends of said levers and adapted to engage the fabric, and spring-pressed pawls on the levers to engage the ratchet-wheels on the operating-shaft, substantially as described.

6. In a bed-spring tightener, the combination with the tightener-frame, of a winding-shaft tapered from its middle to each of its ends and an operating-shaft transversely journaled in parallelism on the frame near one of its ends, intermeshing gears and ratchet-wheels on one of the ends of said shafts, a web or fabric secured at one of its ends to one end of said frame and at its other end to the winding-shaft, a spring-pressed pawl to engage the ratchet-wheel on the winding-shaft, a lever mounted at one of its ends on the operating-shaft and adapted to engage with its other end the web or fabric, and a pawl on the lever to engage the ratchet-wheel on the operating-shaft, substantially as described.

823,825. **STAY-BOLT.** GEORGE S. THOMPSON, Hockessin, Del. Filed Oct. 7, 1905. Serial No. 281,841.



Claim.—1. An articulated stay-bolt having an eye-head consisting of a central filler the inner edge of which is formed with a concave bearing-surface concentric to the opposed inner surface of the eye-loop for engagement with the concentric surface of the part to which the eyebolt is coupled, and a strap formed of a cylindrical rod looped into the eye of the part to which the eye-head is coupled, said cylindrical rod being bent to form the eye of the head, and having its ends welded to the filler on opposite sides thereof, for the purpose described.

2. An articulated stay-bolt having an eye-head consisting of a central filler the inner edge of which is formed with concave bearing-surfaces with a depression between them, said concave bearing-surfaces being concentric to the opposed inner surface of the eye loop or knuckle for engagement with the concentric surface of the part to which the eyebolt is coupled, and a strap formed of a cylindrical rod looped into the eye of the part to which the eye-head is coupled, said cylindrical rod being bent to form the eye of the head and having its ends welded to the filler on opposite sides thereof, for the purpose described.

3. An articulated stay-bolt having an eye-head consisting of a central filler the inner edge of which is formed with a concave bearing-surface concentric to the opposed inner surface of the eye-loop for engagement with the concentric surface of the part to which the eyebolt is coupled, and a strap formed of a cylindrical rod looped into the eye of the part to which the eye-head is coupled, said cylindrical rod being bent to form the eye of the head and having its ends welded to the filler on opposite sides thereof, the welded portions being shaped into a peripherally-threaded conic frustum, for the purpose described.

4. An articulated stay-bolt having an eye-head consisting of a central filler the inner edge of which is formed with concave bearing-surfaces with a depression between them, said concave bearing-surfaces being concentric to the opposed inner surface of the eye-loop for engagement with the concentric surfaces of the part to which the eyebolt is coupled, and a strap formed of a cylindrical rod looped into the eye of the part to which the eye-head is coupled, said cylindrical rod being bent to form the eye of the head and having its ends welded to the filler on opposite sides thereof, the welded portions being shaped into a peripherally-threaded conic frustum, for the purpose described.

5. An articulated stay-bolt having an eye-head consisting of a central filler having recessed sides and an inner edge formed with a concave bearing-surface concentric to the opposed inner surface of the eye-loop for engagement with the concentric surface of the part to which the eyebolt is coupled, and a strap formed of a cylindrical rod looped into the eye of the part to which the eye-head is coupled, said cylindrical rod being bent to form the eye of the head and having its ends fitting in the recessed sides of the filler and welded thereto, for the purpose described.

6. An articulated stay-bolt having an eye-head consisting of a central filler having recessed sides and an inner edge formed with concave bearing-surfaces with a depression between them, said concave bearing-surfaces being concentric to the opposed inner surface of the eye-loop for engagement with the concentric surface of the part to which the eyebolt is coupled, and a strap formed of a cylindrical rod looped into the eye of the part to which the eye-head is coupled, said cylindrical rod being bent to form the eye of the head, and having its end fitting in the recessed sides of the filler and welded thereto, for the purpose described.

7. An articulated stay-bolt having an eye consisting of a central filler having recessed sides and an inner edge formed with a concave bearing-surface concentric to the opposed inner surface of the eye-loop for engagement with the concentric surface of the part to which the eyebolt is coupled, and a strap formed of a cylindrical rod looped into the eye of the part to which the eye-head is coupled, said cylindrical rod being bent to form the eye of the head and having its ends fitting in the recessed sides of the filler and welded thereto, the welded portions being shaped into a peripherally-threaded conic frustum for the purpose described.

8. An articulated stay-bolt having an eye-head consisting of a central filler having recessed sides and an inner edge formed with concave bearing-surfaces with a depression between them, said concave bearing-surfaces being concentric to the opposed inner surface of the eye-loop for engagement with the concentric surface of the part to which the eyebolt is coupled, and a strap formed of a cylindrical rod looped into the eye of the part to which the eye-head is coupled, said cylindrical rod being bent to form the eye of the head and having its ends fitting in the recessed sides of the filler and welded thereto, the welded portions being shaped into a peripherally-threaded conic frustum for the purpose described.

9. An articulated stay-bolt having an eye-head formed with a body in the shape of a peripherally-threaded conic frustum with an eye-loop the inner surfaces of which are concentric, a link of less width than the threaded portion of the eye-head, said link being formed with concentric surfaces for engagement with the concentric inner surfaces of the loop in the eye-head, and an eyebolt of less diameter than the eye-head and coupled to the latter by said link, for the purpose described.

10. An articulated stay-bolt having an eye-head formed with a body portion in the shape of a peripherally-threaded conic frustum with an eye-loop the inner surfaces of which are concentric, a link of less width than the threaded portion of the eye-head formed with concentric surfaces for engagement with the concentric inner surfaces of the loop in the eye-head, and also formed with concentric surfaces for engagement with the corresponding concentric inner surfaces of the loop of an eyebolt, and said eyebolt also of less diameter than the threaded portion of the eye-head, and formed with a loop having inner concentric surfaces for engagement with the link, for the purpose described.

11. An articulated stay-bolt having an eye-head formed with a body portion in the shape of a peripherally-threaded conic frustum with an eye-loop the inner surfaces of which are concentric, a link of less width than the threaded portion of the eye-head formed with concentric surfaces for engagement with the concentric inner surfaces of the loop in the eye-head, and also formed with concentric surfaces for engagement with the corresponding concentric surfaces of the loop of an eyebolt, and said eyebolt also of less diameter than the threaded portion of the eye-head and formed with a loop having inner concentric surfaces for engagement with the link, said link being also formed with a central web between its eyes for the purpose described.

12. An articulated stay-bolt having an eye-head formed with a body portion in the shape of a peripherally-threaded conic frustum with an eye-loop the inner surfaces of which are concentric, a link of less width than the threaded portion of the eye-head, formed with concentric surfaces for engagement with the concentric inner surfaces of the loop in the eye-head, and also formed with concentric surfaces for engagement with the corresponding concentric inner surfaces of the loop of an eyebolt, and said eyebolt also of less diameter than the threaded portion of the eye-head and formed with a loop having inner concentric surfaces for engagement with the link, said link being also formed with a central web between its eyes of greater width than the ends of the link, for the purpose described.

13. An articulated stay-bolt having an eye-head formed with a body portion in the shape of a peripherally-threaded conic frustum with an eye-loop the inner surfaces of which are concentric, a link of less width than the threaded portion of the eye-head, formed with concentric surfaces for engagement with the concentric inner surfaces of the loop in the eye-head, and also formed with concentric surfaces for engagement with the corresponding concentric inner surfaces of the loop of an eyebolt, and said eyebolt also of less diameter than the threaded portion of the eye-head and formed with a loop having inner concentric surfaces for engagement with the link, the eyes in the said link being formed with semicircular seats of the same diameter as the engaging portions of the loops of the eye-head and eyebolt respectively, and with spaces back of said semicircular seats of greater diameter than that of the seats for the purpose described.

14. An articulated stay-bolt having an eye-head formed with a body portion in the shape of a peripherally-threaded conic frustum with an eye-loop the inner surfaces of which are concentric, a link of less width than the threaded portion of the eye-head, formed with concentric surfaces for engagement with the concentric inner surfaces of the loop in the eye-head, and also formed with concentric surfaces for engagement with corresponding concentric inner surfaces of the loop of an eyebolt, and said eyebolt, also of less diameter

than the threaded portion of the eye-head and formed with a loop having inner concentric surfaces for engagement with the link, said link being formed in one piece without joint or weld, and the loops of the eyebolt and of the eye-head being formed of cylindrical rods which are passed through the eyes in the link and then bent and welded to fillers, for the purpose described.

15. An articulated stay-bolt consisting of an eye-head the body of which is in the form of a conical frustum threaded peripherally, a screw-eyebolt, and a link coupling the screw-eyebolt to the eye-head, the joints between the parts being formed to allow of pivotal or lateral play only, so that the parts are sustained against longitudinal movement upon or with relation to each other, for the purpose described.

16. An articulated stay-bolt consisting of an eye-head the body of which is in the form of a conic frustum threaded peripherally, a threaded eyebolt, and a link coupling the said threaded eyebolt to the said eye-head, the eyebolt and the coupling-link being both of less width than the eye-head, and the joints between the parts being formed to allow of pivotal or lateral play only so as to sustain the parts against longitudinal movement upon or with relation to each other, for the purpose described.

17. An articulated stay-bolt formed with a threaded eyebolt having a nose of less diameter than the threaded portion of the bolt for the purpose described.

18. The combination with boiler and furnace plates formed with opposed and coinciding screw-holes, of an articulated stay-bolt having an eye-head formed with a body portion in the shape of a peripherally-threaded conic frustum, and a threaded eyebolt coupled to the eye-head by a link having eyes which closely fit the loops of both the eye-head and the eyebolt so as to admit of pivotal or lateral flexure while preventing longitudinal movement between the parts, for the purpose described.

19. The combination with boiler and furnace plates formed with opposed and coinciding screw-holes, of an articulated stay-bolt having an eye-head formed with a body portion in the shape of a peripherally-threaded conic frustum, and a threaded eyebolt coupled to the eye-head by a link having eyes which closely fit the loops of both the eye-head and the eyebolt, so as to admit of pivotal lateral flexure while preventing longitudinal movement between the parts, said eyebolt being formed with a nose of less diameter than its threaded portion for the purpose set forth.

20. The combination with boiler and furnace plates formed with opposed and coinciding screw-holes, of an articulated stay-bolt having an eye-head formed with a body portion in the shape of a conic frustum threaded externally for engagement with the outer or boiler plate, and an eyebolt threaded for engagement with the plate of the fire-box, the eyebolt and the eye-head being coupled together by a link having eyes which closely fit the loops of both the eye-head and the eyebolt, so as to admit of pivotal or lateral flexure while preventing longitudinal movement between the parts, said eyebolt being formed with a telltale-bore opening into the fire-box, for the purpose described.

21. A three-part articulated stay-bolt consisting of two threaded eyepieces coupled together by a link formed of one solid piece without joint or weld with a central web of greater thickness than the other parts of the link, for the purpose described.

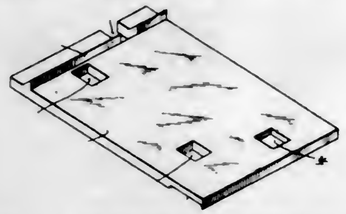
22. A three-part articulated stay-bolt consisting of two threaded eyepieces coupled together by a link, the link being formed with concentric bearing-surfaces at each end, and each eyepiece being formed with concentric bearing-surfaces which engage directly with those of the link so as to permit of pivotal flexure between the parts only, for the purpose described.

23. A three-part articulated stay-bolt consisting of two threaded eyepieces coupled together by a link, the link being formed with oblong eyes and with concentric bearing-surfaces at each end, and each eyepiece being formed with concentric surfaces which engage directly with those of the link so as to permit of pivotal flexure between the parts only, for the purpose described.

24. A three-part stay-bolt consisting of an eye-head and an eyebolt each formed with an internal convex semicircular seat in its eye and with an internal concave bearing-surface concentric to said convex seat, and a coupling-link interposed between the said eye-head and said eyebolt and formed with concentric bearing-surfaces which engage with said concentric surfaces on the eye-head and eyebolt, for the purpose described.

25. A three-part stay-bolt consisting of an eye-head and eyebolt each formed with an internal convex semicircular seat in its eye and with an internal concave bearing-surface concentric to said convex seat, and a coupling-link interposed between the said eye-head and said eyebolt and formed with concentric bearing-surfaces which engage with said concentric surfaces on the eye-head and eyebolt, and with elongated eyes which create a space between the link and the external surfaces of the said eye-head and eyebolt, for the purpose described.

823,826. **TIE-PLATE.** DAVID F. VAUGHAN, Haddonfield, N. J. Filed Dec. 9, 1905. Serial No. 291,033.



Claim.—1. A tie-plate having a longitudinal rib projecting from one of its faces away from the center thereof, said plate having a spike-hole arranged outwardly from the inner face of said rib, and said plate having a spike-hole arranged inwardly from the inner face of said rib, the distance apart of the planes of the inner walls of said holes being substantially equal to the distance between the side of the foot-flange of a rail and the side of the foot-flange of a splice-bar, substantially as and for the purpose set forth.

2. A tie-plate having a longitudinal rib projecting from one of its faces away from the center thereof, and having two pairs of spike-holes, the distance between the two holes of one pair at right angles to said rib being substantially equal to the distance between the two holes of the other pair at right angles to said rib, one spike-hole of one pair being arranged outwardly of the inner face of said rib, and one spike-hole of the other pair being arranged inwardly of the inner face of said rib, substantially as and for the purpose set forth.

3. A tie-plate having a longitudinal rib projecting from one of its faces away from the center thereof, and a longitudinal rib projecting from the other of its faces, the inner faces of said ribs being substantially in vertical alinement, said plate having a spike-hole arranged outwardly of the inner faces of said ribs, and said plate having a spike-hole arranged inwardly of the inner faces of said ribs, the distance apart of the planes of the inner walls of said holes being substantially equal to the distance between the side of the foot-flange of a rail and the side of the foot-flange of a splice-bar, substantially as and for the purpose set forth.

4. A tie-plate having a longitudinal rib projecting from one of its faces away from the center thereof, and a longitudinal rib projecting from the other of its faces, the inner faces of said ribs being substantially in opposite alinement, said plate having two pairs of spike-holes, the distance between the two holes of one pair at right angles to said ribs being substantially equal to the distance between the two holes of the other pair at right angles to said ribs, one spike-hole of one pair being arranged outwardly of the inner faces of said ribs, and one spike-hole of the other pair being arranged inwardly of the inner faces of said ribs, substantially as and for the purpose set forth.

5. A tie-plate having a longitudinal rib projecting from one of its faces and arranged on one side of the center thereof, said plate having a longitudinal depression in the other of its faces and arranged on the other side of the center of the plate substantially parallel to the rib, substantially as and for the purpose set forth.

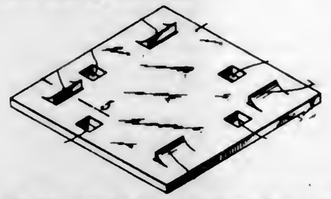
6. A tie-plate having a longitudinal rib projecting from one of its faces and arranged on one side of the center thereof, said plate having a longitudinal depression in the other of its faces and arranged on the other side of the center of the plate substantially parallel to the rib, said plate being provided with a spike-hole arranged outwardly of the inner edge of said rib, and said plate being provided with a spike-hole arranged inwardly of the inner edge of said rib, substantially as and for the purpose set forth.

7. A tie-plate having a longitudinal rib projecting from one of its faces and arranged on one side of the center thereof, said plate having a longitudinal depression in the other of its faces and arranged on the other side of the center of the plate substantially parallel to the rib, said plate being provided with a spike-hole arranged outwardly of the inner edge of said depression, and said plate being provided with a spike-hole arranged inwardly of the inner edge of said depression, substantially as and for the purpose set forth.

8. A tie-plate having a longitudinal rib projecting from one of its faces and to one side of its center, said plate having a longitudinal depression formed in its other face and to the other side of its center and substantially parallel to said rib, said plate being provided with spike-holes arranged outwardly of the inner edges of said rib and depression respectively, and said plate being provided with spike-holes arranged inwardly of the inner edges of said rib and depression respectively, substantially as and for the purpose set forth.

9. A tie-plate having a longitudinal rib projecting from one of its faces and to one side of its center, and a longitudinal rib projecting from the other of its faces, the inner faces of said ribs being substantially in opposite alinement said plate having a longitudinal depression formed in its other face and to the other side of its center and substantially parallel to said ribs, said plate being provided with spike-holes arranged outwardly of the inner edges of said ribs and depression respectively, and said plate being provided with spike-holes arranged inwardly of the inner faces of said ribs and depression respectively, substantially as and for the purpose set forth.

823,827. **TIE-PLATE.** DAVID F. VAUGHAN, Haddonfield, N. J. Filed Dec. 11, 1905. Serial No. 291,186.



Claim.—1. A tie-plate having a longitudinal rib projecting from one of its faces, and a longitudinal rib projecting from the other of its faces substantially at right angles to the first-named rib, said plate having a spike-hole arranged outwardly of the inner face of one of said ribs, and said plate having a spike-hole arranged inwardly of the inner face of the other of said ribs, substantially as and for the purpose set forth.

2. A tie-plate having a longitudinal rib projecting from one of its faces, and a longitudinal rib projecting from the other of its faces substantially at right angles to the first-named rib, said plate having two pairs of spike-holes, the distance between the two holes of one pair at right angles to one rib being substantially equal to the distance between the two holes of the other pair at right angles to the other rib, one spike-hole of one pair being arranged outwardly of the inner face of one of said ribs and one spike-hole of the other pair being arranged inwardly of the inner face of the other of said ribs, substantially as and for the purpose set forth.

3. A tie-plate having two longitudinally-alined ribs projecting from one of its faces, and a longitudinal rib projecting from the other of its faces substantially at right angles to the first-named ribs, said plate having a spike-hole arranged between and outwardly of the inner faces of said alined ribs, and said plate having a spike-hole arranged inwardly of the inner face of said rib, substantially as and for the purpose set forth.

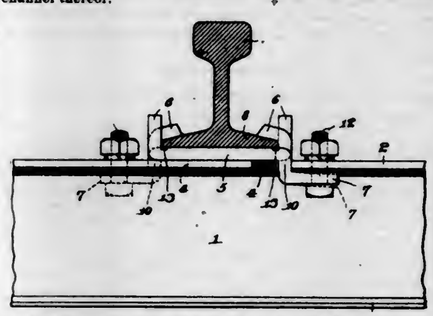
4. A tie-plate having two longitudinal parallel ribs projecting from one of its faces, and a longitudinal rib projecting from the other of its faces substantially at right angles to the first-named ribs, said plate having spike-holes arranged outwardly of the inner faces of said parallel ribs, and said plate having a spike-hole arranged inwardly of the inner face of said rib, substantially as and for the purpose set forth.

5. A tie-plate having a longitudinal rib projecting from one of its faces and arranged to one side of the center thereof, and having another longitudinal rib projecting from the other of its faces and arranged at right angles to the first-named rib and to one side of the center of the plate, substantially as and for the purpose set forth.

823,828. **MEANS FOR SECURING RAILS.** DAVID F. VAUGHAN, Haddonfield, N. J. Filed Jan. 20, 1906. Serial No. 296,411.

Claim.—1. The combination of a tie having an upper flange the opposite edges of which are provided with diagonally opposite recesses, a chair resting upon the tie and engaging the walls of said recesses, and a rail secured to said chair.

2. The combination of a tie having an upper flange the opposite edges of which are provided with diagonally opposite recesses, a chair provided with a channel and resting upon the tie and engaging the walls of said recesses, and a rail secured to the chair within the channel thereof.



3. The combination of a tie having an upper flange, the opposite edges of which are provided with diagonally opposite recesses, a chair provided with a channel and resting upon the tie and engaging the walls of said recesses, and a rail resting upon the chair within the channel thereof, said channel having portions of its walls bent into engagement with the top of the foot-flange of the rail.

4. The combination of a tie having an upper flange provided with diagonally opposite recesses, a chair resting upon the tie and provided with projections extending through said recesses and engaging the walls thereof and engaging the bottom of said flange, and a rail secured to said chair.

5. The combination of a tie having an upper flange the opposite edges of which are provided with diagonally opposite recesses, a chair provided with a channel and projections extending through said recesses and engaging the walls thereof and engaging the bottom of said flange, and a rail secured to said chair within said channel.

6. The combination of a tie having an upper flange provided with diagonally opposite recesses, a chair resting upon the tie and provided with a channel and projections extending through said recesses and engaging the walls thereof and the bottom of said flange, and a rail secured to said chair having portions of its walls bent into engagement with the top of the foot-flange of the rail.

7. The combination of a tie having an upper flange the opposite edges of which are provided with diagonally opposite recesses, a chair resting upon the tie and provided with projections extending through said recesses and engaging the walls thereof and the bottom of said flange, means for securing said projections to said flange, and a rail secured to said chair.

8. The combination of a tie, a rail, and a chair secured to the tie and comprising a base upon which the rail is seated and vertical flanges engaging the edges of the foot-flange of the rail, said flanges being slotted to divide them into sections and sections of said flanges being bent into engagement with the top of the foot-flange of the rail.

9. The combination of a tie, a rail, and a chair secured to the tie and comprising a base upon which the rail is seated and vertical flanges engaging the edges of the foot-flange of the rail, said base being provided with a groove at the base of the inner wall of each flange, and portions of said flanges being bent into engagement with the top of the foot-flange of the rail.

10. The combination of a tie, a rail, and a chair secured to the tie and comprising a base upon which the rail is seated and vertical flanges engaging the edges of the foot-flange of the rail, said base being provided with a groove at the base of the inner wall of each flange, said flanges being slotted to divide them into sections and sections of said flanges being bent into engagement with the top of the foot-flange of the rail.

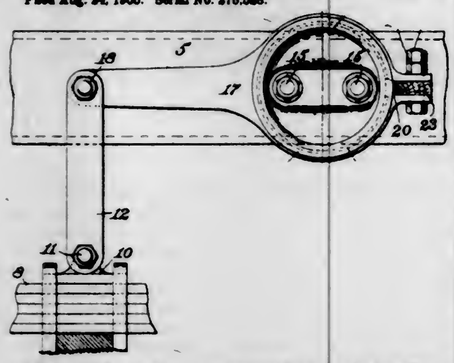
11. The combination of a tie, having an upper flange provided with a recess therein, a chair, resting upon the tie and engaging the wall of said recess, a rail resting upon the chair, a splice-bar secured to the rail and having a slot therein, and a projection on said chair engaging the walls of said slot to prevent longitudinal movement of the rail upon the chair.

12. The combination of a tie, a chair secured thereto and provided with a channel, a rail resting upon the chair within the channel thereof, a splice-bar secured to the rail and having a slot therein, and a projection on said chair engaging the walls of said slot to prevent longitudinal movement of the rail upon the chair.

13. The combination of a tie, a chair secured thereto and provided with a channel, a rail resting upon the chair within the channel

thereof, a splice-bar secured to the rail and having a slot therein, and a projection on said chair engaging the walls of said slot to prevent longitudinal movement of the rail upon the chair, said channel having portions of its walls bent into engagement with the top of the foot of the splice-bar.

823,829. SHOCK-ABSORBER. OSCAR E. VESTAL, Pittsburg, Pa. Filed Aug. 24, 1905. Serial No. 275,583.

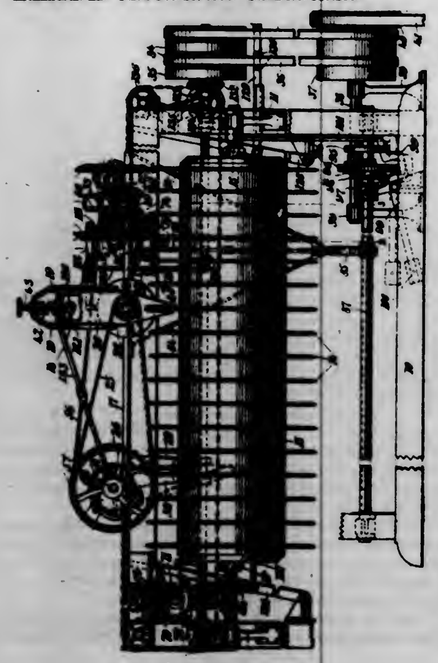


Claim.—1. In combination, a vehicle body, a vehicle spring, a friction drum secured to the vehicle body, a split friction band thereon having an operating arm intermediate the ends of the split band, means for securing the ends of the split band rigidly and adjustably in position, and a connecting arm pivotally secured to the band arm at one end and to the springs at the other.

2. In combination, a drum provided with attaching means, a split friction band provided with securing lugs and an arm, an interposed yielding block between the lugs, means for adjusting the relative position of the lugs, and means for securing the arm to a spring.

3. In combination, a drum provided with attaching means, a split friction band provided with securing lugs and an arm, yielding means between the lugs, means for adjusting the relative position of the lugs, and means for securing the arm to a spring.

823,880. SAW-SHARPENING MACHINE. JOHN M. WADDELL, Alexandria, La. Filed Oct. 20, 1904. Serial No. 229,253.



Claim.—1. A saw-sharpening machine comprising a rotatable work-support, a plurality of side-grinding wheels and a throat-grinding wheel, a single means for simultaneously moving each of the grinding-wheels toward and from the work-support, means for simultaneously moving all of the grinding-wheels longitudinally of the work-support at the end of a complete rotation of said support, and means controlled by the rotation of the work-support for actuating said last-named means.

2. A saw-sharpening means comprising a rotatable work-support, a movable grinding member, means for moving the grinding member toward and from the work and means on the work-support for controlling said movements.

3. A saw-sharpening machine comprising a rotatable work-support, a movable grinding member, means controlled by the movement of the work-support for moving the grinding member toward and from the work, and means for fixing the position of the grinding member after its movement.

4. A saw-sharpening machine comprising a side-grinding member, a throat-grinding member, means for simultaneously moving said grinding members from the work, and independent means for moving the throat-grinding member.

5. In a saw-sharpening machine, the combination of a rotatable work-support, a carriage, a plurality of side-grinding wheels rotatable in bearings movably mounted upon the carriage, means for simultaneously moving the bearings to and from the work-support, and means controlled by the rotation of the work-support for moving the carriage longitudinally thereof at the end of a complete rotation of the said support.

6. In a saw-sharpening machine, the combination with a work-support, of a carriage provided with ways and movable longitudinally of the work-support, a head sliding upon the ways, a shaft journaled in the head, a grinding-wheel carried by the shaft, means for intermittently moving the head in the ways, and means having a lost-motion connection with the head for limiting the movement thereof in the direction of the support.

7. In a saw-sharpening machine, the combination with a rotatable work-support, of a carriage provided with ways and movable longitudinally of the support, a head sliding upon the ways toward and from the support, a shaft journaled in the head, a grinding-wheel carried by the shaft, means for moving the head upon the advance of each tooth of the saw, means for moving the carriage at the end of a complete rotation of the work-support, and means whereby the rotation of the work-support may control said carriage-moving means.

8. In a saw-sharpening machine, the combination with a rotatable support adapted to receive a plurality of saws, of a traveling carriage provided with ways, a head sliding upon the ways, a shaft journaled in the head, a grinding-wheel carried by the shaft, continuously-rotatable means for moving the head upon the advance of each tooth of the saw, and intermittently-operating means for moving said head for each rotation of the saws.

9. In a saw-sharpening machine, the combination with a work-support, of a carriage provided with ways, a head sliding upon the ways, a shaft journaled in the head, a grinding-wheel carried by the shaft, means for moving the head, a member for limiting the movement of the head, a link connecting said limiting member with the carriage and a lost-motion connection between the head and the moving means.

10. In a saw-sharpening machine, the combination with a work-support, of a carriage, a carrier movable upon the carriage, a shaft journaled in the carrier and longitudinally movable therethrough, a grinding-wheel fixed to the shaft, a collar carried by the shaft, and an actuating member projecting from the carriage and with which the collar contacts.

11. In a saw-sharpening machine, the combination with a work-support, of a carriage, a carrier movable upon the carriage, a shaft journaled in the carrier and longitudinally movable therethrough, a grinding-wheel fixed to the shaft, a collar carried by the shaft, and an actuating member projecting from the carriage, and with which the collar contacts, said actuating member having contact faces lying in different planes.

12. In a saw-sharpening machine, the combination with a work-support, of a carriage, a carrier movable upon the carriage, alined shafts journaled in the carrier and longitudinally movable therethrough, tension means for effecting the movement of the shafts, and grinding-wheels fixed to the shafts.

13. In a saw-sharpening machine, the combination with a work-support, of a carriage, a carrier movable upon the carriage, alined shafts journaled in the carrier and longitudinally movable therethrough, grinding-wheels fixed to the shafts, and means for forcing the shafts apart.

14. In a saw-sharpening machine, the combination with a work-support, of a carriage, a carrier movable upon the carriage, alined shafts journaled in the carrier and longitudinally movable therethrough, automatic means for effecting the movement, and a spring interposed between the shafts.

15. In a saw-sharpening machine, the combination with a work-supporting shaft, of a carriage, a grinding member mounted upon the carriage, a driving-shaft, a loose pulley on the driving-shaft, a connection between the loose pulley and the carriage, a power-shaft and means whereby the power-shaft and the loose pulley may be connected and disconnected by the movement of the carriage.

16. In a saw-sharpening machine, the combination with a work-supporting shaft, of a carriage, a grinding member mounted upon the carriage, a driving-shaft, a loose pulley thereon, gearing associated with the loose pulley, a chain connecting the gearing and the carriage, a power-shaft, and means whereby the power-shaft and the loose pulley may be connected and disconnected by the movement of the carriage.

17. In a saw-sharpening machine, the combination with a work-supporting shaft, of a carriage, a grinding member mounted upon the carriage, a driving-shaft, fast and loose pulleys thereon, connections between the loose pulley and the carriage, a power-shaft, a belt connecting the power-shaft and the loose pulley, a belt-shifter associated with the belt for shifting the same to the fast pulley, and means whereby the belt-shifter may be operated by the movement of the carriage.

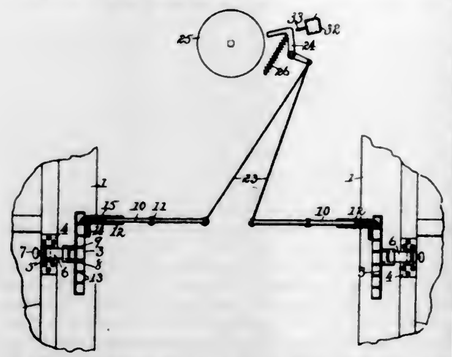
18. In a saw-sharpening machine, the combination with a work-supporting shaft, of a carriage, a grinding member mounted upon the carriage, a driving-shaft, a fast pulley and a plurality of loose pulleys thereon, connections between one of the loose pulleys and the carriage, a power-shaft, belts connecting the power-shaft and the pulleys, a belt-shifter associated with the belts and having a plurality of projections adjacent to the pulley to which the carriage is connected, and a single projection adjacent to the fast pulley and means whereby the belt-shifter may be operated by the movement of the carriage.

19. In a saw-sharpening machine, the combination with a rotatable work-support, of a movable grinding member, a shaft from which the grinding member is moved, a clutch controlling the rotation of the shaft, and means for operating the clutch by the work-support.

20. In a saw-sharpening machine, the combination with a rotatable work-support, of a movable grinding member, a shaft from which the grinding member is moved, a clutch controlling the rotation of the shaft, means for effecting an engagement of the clutch by the movement of the work-support, and gravity-actuated means for releasing the clutch.

21. In a saw-sharpening machine, the combination with a rotatable work-support, of a movable grinding member, a shaft from which the grinding member is moved, a clutch controlling the rotation of the shaft, means for effecting an engagement of the clutch by the work-support, gravity-actuated means for releasing the clutch, and means rotatable with the clutch for controlling its movement.

823,831. BURGLAR-ALARM. ISAAC WATKINS, Hartford, Conn. Filed July 12, 1905. Serial No. 269,316.



Claim.—1. An alarm, a striker appurtenant thereto, a trip-plate provided with means of attachment to a movable part and bearing trips, a trip-lever interposed in the path of movement of the trip-plate and having a pawl to compel movement of the lever in the movement of the trip-plate in one direction but yielding to allow movement of the trip-plate in the opposite direction, and a lengthwise-movable connection between the trip-lever and striker.

2. A trip-plate bearing a number of trips and arranged to be secured to a movable part, a trip-lever bearing a pawl compelling movement of the lever in one direction of movement of the trip-plate, but yielding to allow it to pass in a movement in the opposite direction, a gong with a striker appurtenant thereto, and means on said striker for direct attachement of lengthwise-movable connections with a plural number of trip-levers.

3. In an alarm device, a base with means of attachment to a movable part and having a socket-piece, an arm adjustably mounted in the socket-piece, a trip-plate borne by said arm and having a trip, a trip-lever having a pawl located in the path of movement of said trip, said pawl yielding to permit movement of the trip in one direction but unyielding in the movement of the trip in the opposite direction, a gong, a striker therefor, and connections between said striker and trip-lever.

4. In an alarm device, a base having means for attachment to a movable part, an arm supported by the base, a trip-plate having a socket-piece adjustably mounted on said arm and bearing a trip, a trip-lever having a pawl located in the path of movement of said trip and yielding to allow movement of the trip in one direction but unyielding in the movement of the trip in the opposite direction, a gong, a striker therefor, and connections between said striker and trip-lever.

5. In an alarm device, a base provided with attachment to a movable part and having a socket-piece, an arm adjustably mounted in said socket-piece, a trip-plate having a socket-piece adjustably mounted on said arm and bearing a trip, a trip-lever having a pawl located in the path of movement of said trip and yielding in the movement of the trip in one direction but unyielding in its movement in the opposite direction, an alarm, a striker therefor, and connections between said striker and trip-lever.

6. In an alarm device, a trip-plate provided with means for attachment to a movable member and provided with a trip, a trip-lever, a pawl yieldingly mounted on the trip-lever and movable lengthwise thereof, an alarm, a striker therefor, and connections between the trip-lever and striker.

7. In an alarm device, in combination with a gong, a swinging striker therefor, means for operating the striker, and an indicator consisting of a case with a slide therein having a stem located in the path of movement of the striker.

8. In an alarm device, a gong, a plural number of striker-arms arranged about the gong, means for operating said arms, and an indicator appurtenant to each arm and including a case with a plate slidable therein having a stem projecting through the case into the path of movement of the striker-arm.

9. In an alarm device, a base with means of attachment to a movable part and having a socket-piece, an arm adjustably mounted in the socket-piece, a trip-plate borne by said arm and having a trip, a trip-lever bearing a pawl to be engaged by the trip, a gong, a striker therefor, and connections between said striker and trip-lever.

10. In an alarm device, a base having means for attachment to a movable part, an arm supported by the base, a trip-plate having a socket-piece adjustably mounted on said arm and bearing a trip, a trip-lever having a pawl located in the path of movement of said trip, a gong, a striker therefor, and connections between said striker and trip-lever.

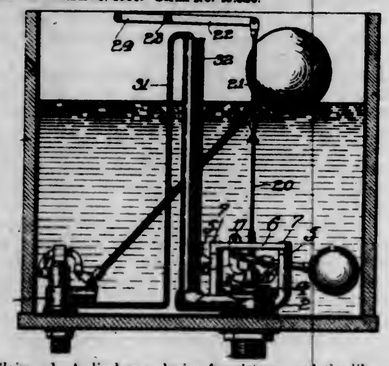
11. In an alarm device, a base provided with attachment to a movable part and having a socket-piece, an arm adjustably mounted in said socket-piece, a trip-plate having a socket-piece adjustably mounted on said arm and bearing a trip, a trip-lever having a pawl located in the path of movement of said trip, an alarm, a striker therefor, and connections between said striker and trip-lever.

12. In an alarm device, a trip-plate provided with means for attachment to a movable member and having a trip, a trip-lever, a pawl yieldingly mounted on the trip-lever and movable lengthwise thereof in one direction of movement of the trip but unyielding independently of the lever in the movement of the trip in the opposite direction, a stop for holding the pawl disengaged from the trip, an alarm, a striker therefor, and connections between the trip-lever and striker.

13. In an alarm device, a trip-plate provided with means for attachment to a movable member and provided with a trip, a trip-lever, a pawl yieldingly mounted on the trip-lever and movable lengthwise thereof and having a limited rotary movement thereon, said pawl yielding to permit movement of the trip in one direction but unyielding, independently of the lever, in the movement of the trip in

the opposite direction, means to engage said pawl in its rotative movement to hold it disengaged from the trip, an alarm, a striker therefor, and connections between the trip-lever and striker.

823,832. CISTERN. WILLIAM O. WAYMAN, Chicago, Ill., assignor to Illinois Malleable Iron Company, Chicago, Ill., a Corporation of Illinois. Filed Mar. 1, 1901. Serial No. 49,586.



Claim.—1. A discharge device for cisterns and the like comprising a valve having a stem and governing the discharge-passage and means for holding the valve open, when opened until the water is drained from the cistern and consisting of a catch device having a ring or curved member extending on either side of the valve-stem with a ball-float rigidly connected thereto at one end whereby such ring moves with every movement of the float and a hook or catch proper at the other end to engage the valve when raised, said float actuating the catch to both engagement and disengagement position and transmitting all its movements to such catch.

2. In a cistern for water-closet valves and the like the combination of a valve having a stem and governing the discharge and a catch device comprising a curved or ring portion 12 surrounding the valve-stem and a hook 16 on the ring and pivoted at its upper end and also having a curved end 18 adapted to engage the valve when raised and a float connected to said ring at a point substantially opposite the hook 16.

3. In a cistern for water-closets and the like, the combination of the nozzle or outlet-pipe leading from the cistern and having a valve-seat, a valve seating on said seat, and having a stem, an upwardly-extending frame in said nozzle, a cross-bar on such frame, and having a central hole to receive and guide said stem and also having a slot at one side of said hole, lugs on the cross-bar adjacent to said slot and a float-actuated catch passing through said slot and pivoted to said lug, said catch having a hook adapted to engage the valve when raised.

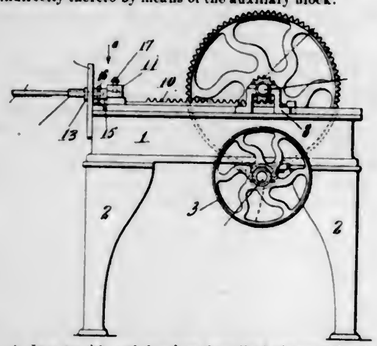
4. In a cistern and the like, the combination of a nozzle 2 having a seat 3, a valve 4 seating thereon, a valve-stem 9 having a truncated conical projection 10, standards 5 on the nozzle, a cross-bar 6 between the standards and a catch device comprising a ring-piece 12 having on one side a hook proper 16 with pivotal connection at its upper end on the cross-bar at 17 and having a curved depending end 18 adapted to engage under said projection 10 when the valve is raised, a float 15 and a stem 14 connecting the float and ring.

823,833. MACHINE FOR FORMING KEY-SEATS IN HUBS OF GEARS, &c. GEORGE H. WEBB, Pawtucket, R. I. Filed Feb. 3, 1905. Serial No. 243,833.

Claim.—1. In a machine of the class described, the combination with a reciprocating rack having a block permanently connected thereto, said block being provided with the usual opening adapted to receive the end of a cutter-bar, of an auxiliary block having a part adapted to fit the usual cutter-bar opening in said permanently-connected block, and means for connecting the end of a cutter-bar to said auxiliary block whereby cutter-bars may be secured directly to the permanently-connected block or to the auxiliary block.

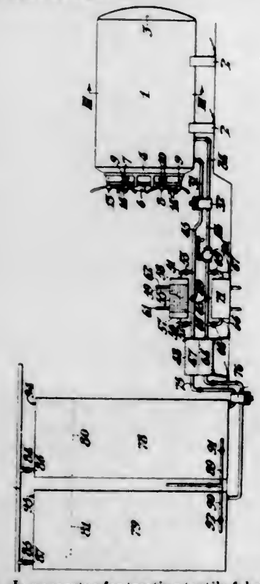
2. In a machine of the class described, the combination with a reciprocating rack having a permanent block, said block having the usual opening for securing a cutter-bar therein, an auxiliary block adapted to be secured in the usual cutter-bar opening of the permanent block, said auxiliary block having a cutter-bar opening of different size than the corresponding opening of the permanent block, and means for securing a cutter-bar in the opening of the auxiliary block.

3. In a machine of the class described, the combination of a reciprocating rack, a permanent block and an auxiliary block, each provided with means for securing cutter-bars thereto, and means for detachably connecting the auxiliary block to the permanent block so that cutter-bars may be connected directly to the permanent block, or indirectly thereto by means of the auxiliary block.



4. In a machine of the class described, the combination of a reciprocating rack, a block permanently secured thereto and having the usual tool-opening for securing a cutter-bar therein, an auxiliary block having a reduced end to fit the usual tool-opening in the permanent block, the other end of said auxiliary block having a horizontal opening to receive the end of the cutter-bar, and another opening at right angles thereto, and a removable bifurcated pin fitted in said last-named opening and engaging opposite sides of the cutter-bar.

823,834. APPARATUS FOR TREATING TEXTILE FABRICS. WALTER D. WEST and VICTOR MAUCK, Conshohocken, Pa. Filed Feb. 27, 1904. Serial No. 195,534.

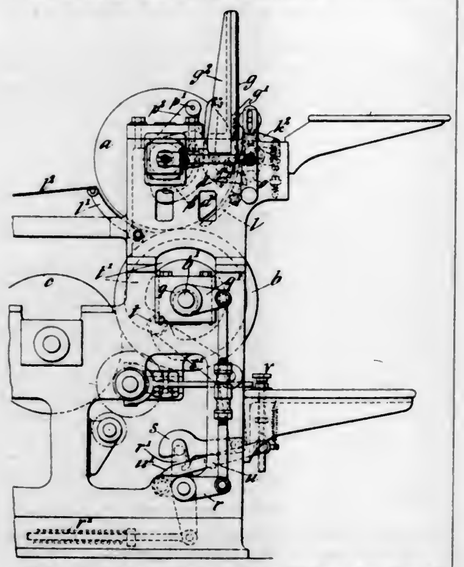


Claim.—1. In apparatus for treating textile fabrics, the combination with a treating-tank; of a foraminous drum in said tank; a conduit extending from said drum; a conduit extending from the chamber in said tank exterior to said drum; a pair of fluid-supply conduits; a valve arranged to reverse the direction of flow of fluid through said conduits; a pair of supply-conduits in operative connection with said valve; an automatically-operative pressure-regulator in one of said conduits; a fluid-heater in a by-pass connected with one of said supply-conduits; a fluid-cooler in a by-pass connected with the other of said supply-conduits; and, valves controlling the passage of fluid through said supply-conduits and said by-passes, substantially as set forth.

2. In apparatus for treating textile fabrics, the combination with a treating-tank; of a foraminous drum in said tank; a conduit extending from said drum; a conduit extending from the chamber in said tank exterior to said drum; a pair of fluid-supply conduits; a valve arranged to reverse the direction of flow of fluid through said conduits; a pair of supply-conduits in operative connection with said valve; an automatically-operative pressure-regulator in one of said conduits; a fluid-heater in a by-pass connected with one of said supply-conduits; a fluid-cooler in a by-pass connected with the other of said supply-conduits; valves controlling the passage of fluid through said supply-conduits and said by-passes; a manifold comprising separate chambers respectively connected with said supply-conduits; and, means for supplying said manifold with fluid, comprising a plurality of supply-tanks connected therewith, substantially as set forth.

3. In apparatus for treating textile fabrics, the combination with a treating-tank; of a foraminous drum in said tank; a conduit extending from said drum; a conduit extending from the chamber in said tank exterior to said drum; a pair of fluid-supply conduits; a valve arranged to reverse the direction of flow of fluid through said conduits; a pair of supply-conduits in operative connection with said valve; an automatically-operative pressure-regulator in one of said conduits; means operatively related to said conduits arranged to vary the temperature of the fluid passed therethrough; and, valves controlling the passage of fluid through said supply-conduits and said tank, substantially as set forth.

823,835. MACHINE FOR PRINTING ON TIN PLATES OR THE LIKE. GEORG C. H. WICHMANN and ARTHUR B. EVANS, Leeds, England. Filed Aug. 30, 1904. Serial No. 222,774.



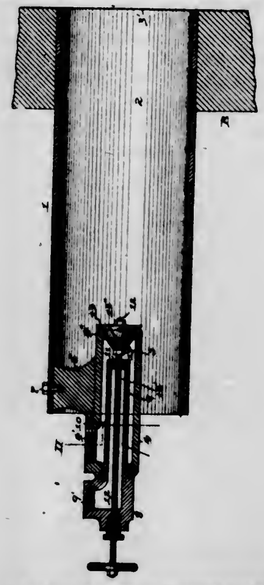
Claim.—1. A machine for printing on tin plates comprising a cylinder, an inked design thereon, a second cylinder adapted to revolve continuously in contact with the first-named cylinder, a surface on the said second cylinder to which the design can be transferred a third cylinder adapted to revolve continuously in contact with the said second cylinder, grippers carried by the said third cylinder adapted to seize and hold the tin-plate to cause it to pass between the said second and third cylinders, and a mechanically-operated device adapted to allow the tin-plate to fall at the moment it is seized by the said grippers.

2. A machine for printing on tin plates comprising a cylinder, an inked design thereon, a second cylinder adapted to revolve continuously in contact with the first-named cylinder, a surface on the said second cylinder to which the design can be transferred, a third cylinder adapted to revolve continuously in contact with the said second cylinder, grippers carried by the said third cylinder adapted to seize and hold the tin-plate to cause it to pass between the said second and third cylinders, a mechanically-operated device adapted to allow the tin-plate to fall at the moment it is seized by the said grippers, and means whereby the said second cylinder can be caused to move out of contact with the other two.

3. In a machine for printing on tin plates wherein the tin-plate is held by grippers on a backing-cylinder and caused to pass between the said backing-cylinder and a printing-cylinder, a frame, a vertical feed-board carried by the said frame, a rocking shaft, arms on the said rocking shaft adapted to receive the tin-plate as it is fed down the said feed-board, guides carried by the said feed-board and adapted to guide the tin-plate into position on the said arms, and means adapted to rock the said shaft to remove the said arms from beneath the tin-plate at the moment when the latter is seized by the said grippers.

4. In a machine for printing on tin plates wherein the tin-plate is held by grippers on a backing-cylinder and caused to pass between the said backing-cylinder and a printing-cylinder, a frame, a vertical feed-board carried by the said frame, a rocking shaft, arms on the said rocking shaft adapted to receive the tin-plate as it is fed down the said feed-board, guides carried by the said feed-board and adapted to guide the tin-plate into position on the said arms, a second rocking shaft linked to the first to operate therewith, smoothers carried by the said second shaft and means carried by the said backing-cylinder and adapted to rock the said shafts to move the said arms and smoothers away from the tin-plate at the moment when the latter is seized by the said grippers.

823,836. GAS-BURNER. WILLIAM P. WIEMANN, Allegheny, Pa., assignor to Empire Machine Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed Apr. 14, 1905. Serial No. 255,499.

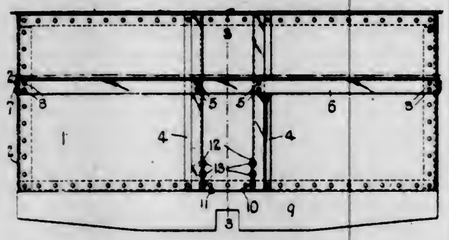


Claim.—1. A gas-burner comprising a casing having an inlet for gas at its outer end and a valved outlet at its inner end an air-chamber around said casing having an opening at its outer end for entrance of air for mixing with the gas and steam issuing from said valved outlet, a second casing having a closed inner end and an inlet for steam at its outer end, said second casing extending longitudinally within the first casing so as to provide a gas-chamber between the walls of the two casings and being provided with ports leading through its side into the gas-chamber beyond the gas-inlet port, said ports being inclined so as to direct the steam against the gas in the direction of the travel of the gas through the gas-chamber from the gas-inlet to the valved outlet; substantially as described.

2. A gas-burner comprising a casing having an inlet for gas at its outer end and a valved outlet at its inner end an air-chamber around said casing having an opening at its outer end for entrance of air for mixing with the gas and steam issuing from said valved outlet, a second casing having a closed inner end and an inlet for steam at its outer end, said second casing extending longitudinally within the first casing so as to provide a gas-chamber between the walls of the two cas-

ings and being provided with ports leading through its side into the gas-chamber beyond the gas-inlet port, said ports being located some distance from the inner closed end of the steam-chamber and being inclined so as to direct the steam against the gas in the direction of the travel of the gas through the gas-chamber from the gas-inlet to the valved outlet, substantially as described.

823,837. **END BRACE FOR CARS.** HERBERT W. WOLFF, St. Louis, Mo., assignor to American Car & Foundry Company, St. Louis, Mo., a Corporation of New Jersey. Filed Dec. 11, 1905. Serial No. 291,259.



Claim.—1. A car provided with an end wall, an end stake at approximately the center of said wall, and a transversely-extending brace connected to said stake and to the opposite edge portions of the end wall; substantially as described.

2. A car comprising an end wall, side walls, an end sill, a vertically-extending stake connected to said end wall and to the end sill, and a brace extending transversely outside of the end wall of the car and connected to said stake and to the side walls; substantially as described.

3. A car comprising an end wall, side walls, a plurality of channel-shape stakes near the center of the end wall, and a transversely-extending brace having its end connected to the side walls of the car, one leg of each channel being connected to the end wall and the other leg being connected to said brace; substantially as described.

4. A car comprising an end wall, side walls and an end sill, a plurality of channel-shape stakes near the center of the end wall, a U-shape angle having its web connected to the end sill and its legs connected to the webs of the channel-shape stakes, and an angle extending transversely across the end of the car having its vertical leg connected to the stakes and its ends bent around the side walls of the car and connected thereto; substantially as described.

5. A car comprising side walls, an end wall and end sill, vertically-extending stakes located near the center of the end wall, a U-shape angle having a relatively wide web connected to the end sill, and tapering legs which are connected to said stakes, and a transversely-extending brace connected to the stakes and to the side walls of the car; substantially as described.

6. A brace for the end of a car comprising a transversely-extending tension member located entirely at the outside of the end wall of the car and connected to said end wall thereof; substantially as described.

7. A brace for the end of a car comprising a tension member extending transversely outside the end of the car and connected to the side walls thereof; substantially as described.

8. A brace for the end of a car comprising a tension member extending transversely outside the end of the car and connected to the end and side walls thereof; substantially as described.

9. An end truss for cars consisting of a tension-brace extending transversely outside the end of the car and connected to the end and side walls thereof, and a strut coöperating with said tension-brace; substantially as described.

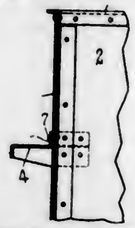
10. The metallic end wall of a car acting as the compression member of trussed end bracing in combination with a strut and a compression member extending transversely outside the end wall of the car; substantially as described.

11. The combination with the metallic end wall of a car which acts as a compression member of a trussed end bracing, a strut carried by said end wall, and a tension member of said bracing coöperating with said strut and said end wall; substantially as described.

12. The combination with the metallic end wall of a car which acts as a compression member of a trussed end bracing, a strut carried by said end wall, and a tension member of said bracing coöperating with said strut and said end wall, the ends of said tension member being connected to said end wall; substantially as described.

13. The combination with the metallic end wall of a car which acts as a compression member of a trussed end bracing, a strut carried by said end wall, and a tension member of said bracing coöperating with said strut and said end wall, the ends of the tension member being connected to the side wall; substantially as described.

823,838. **END BRACING FOR CARS.** HERBERT W. WOLFF, St. Louis, Mo., assignor to American Car & Foundry Company, St. Louis, Mo., a Corporation of New Jersey. Original application filed Dec. 11, 1905, Serial No. 291,257. Divided and this application filed Mar. 19, 1906. Serial No. 306,815.



Claim.—1. A brace for strengthening the end wall of a car intermediate its upper and lower edges consisting of a plate bent to present a horizontal portion with legs or flanges at its opposite edges extending in opposite directions; substantially as described.

2. A brace for strengthening the end wall of a car intermediate its upper and lower edges consisting of a plate bent to present a horizontal portion widest at the center and legs or flanges at each edge which extends in opposite directions; substantially as described.

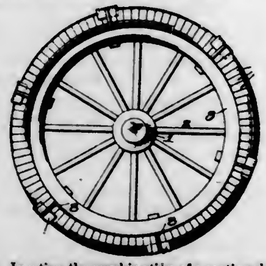
3. A brace for strengthening the end wall of a car intermediate its upper and lower edges consisting of a plate bent to present a horizontal portion widest at the center, and oppositely-extending legs or flanges which are bent around the corners of the car and secured to the side walls thereof, the portions of said flanges which are bent around the corners of the car being separated from each other by means of slits formed in said plate; substantially as described.

4. An end brace for cars having a horizontal portion and an upwardly-extending flange at its inner edge which is secured to the end wall of the car intermediate its upper and lower edges, and a downwardly-extending leg or flange at the outer edge of said horizontal portion; substantially as described.

5. An end brace for cars consisting of a horizontal portion having an upwardly-extending leg or flange at its inner edge which is secured to the end wall of the car intermediate its upper and lower edges, said horizontal portion being widest at its center and provided with a downwardly-extending leg or flange at its outer edge; substantially as described.

6. An end brace for cars consisting of a horizontal portion widest at its center and provided with an upwardly-extending leg or flange at its inner edge which is secured to the end wall of the car intermediate its upper and lower edges, and a downwardly-extending leg at its outer edge, both of said flanges extending around the corners of the car and being secured to the side walls thereof; substantially as described.

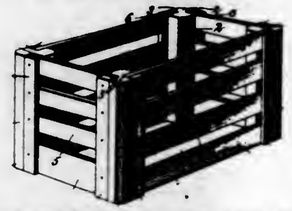
823,839. **TIRE.** WILLIAM N. WRIGHT and ELMER CARSON, Beaver, Pa. Filed Apr. 25, 1905. Serial No. 257,379.



Claim.—1. In a tire, the combination of a sectional metallic core, a plurality of circular wedge-shaped disks arranged on said core, and bolts arranged at intervals and extending between the disks, said bolts having bearing-surfaces extending beyond the outer surface of the tire, substantially as described.

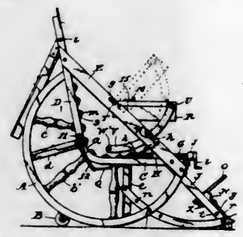
2. A tire composed of a plurality of circular disks, a central core and a plurality of bolts having substantially Z-shaped outer ends projecting beyond the surface of the adjacent disks.

823,840. **SHIPPING-CRATE.** FREDERICK W. BENDER, Crystal-lake, N. J. Filed Aug. 1, 1905. Serial No. 272,147.



Claim.—A crate having corner-posts and longitudinally-disposed rabbets formed therein, vertical walls composed of horizontally-disposed slats having their ends attached in said rabbets, reinforcing-strips attached over the ends of said slats at said rabbets and having their outer faces flush with the outer faces of said posts, an opposite pair of said slats having shoulders formed on the inner faces thereof above the lower extremities of said posts, and slats resting on said shoulders and constituting a bottom for said crate.

823,841. **COMBINED FRACTURE-BED AND INVALID'S CHAIR.** JAMES T. BOYD, Indianapolis, Ind. Filed Nov. 6, 1905. Serial No. 285,960.



Claim.—1. A combined bed and chair including a main frame comprising a pair of rockers each provided with a roller approximately at the middle thereof, a pair of combined seat-rails and back-posts attached to the ends of the rockers, an adjustable foot-plate frame, and a flexible combined seat and back supported adjustably by the main frame and the foot-plate frame.

2. A combined bed and chair including a pair of seat-rails and supports therefor, a pair of back-posts suitably supported, a pair of journal-boxes mounted movably on the seat-rails, means for moving and controlling the journal-boxes, a roller mounted in the journal-boxes, a foot-plate frame pivotally connected to the journal-boxes, and a flexible combined seat and back supported by the seat-rails and back-posts and extending over the roller and connected with the foot-plate frame.

3. A combined bed and chair including a main frame, a seat and back supported by the main frame, a foot-plate frame connected with the main frame and provided with a winding-drum, a pair of foot-plates mounted movably on the foot-plate frame and provided with cables connected therewith and attached to the winding-drum, and braces connecting the foot-plate frame adjustably with the main frame.

4. A combined bed and chair including a pair of seat-rails and supports therefor, a pair of back-posts suitably supported, a foot-plate frame mounted on adjustable pivots and provided with end supports, means for adjusting the pivots, a flexible combined seat and back supported by the seat-rails and back-posts and connected with the foot-plate frame, and a roller mounted adjustably under and partially supporting the seat part of the combined seat and back.

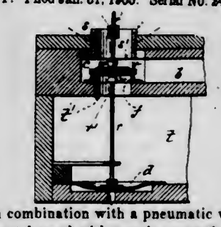
5. A combined bed and chair including a pair of seat-rails and supports therefor, a pair of back-posts suitably supported, a pair of journal-boxes supported adjustably, a roller mounted in the journal-boxes, a foot-plate frame pivoted at the journal-boxes and axis of the roller and adjustable therewith, means for adjusting and controlling the journal-boxes, supports connected to the free end of the foot-plate frame, and a flexible combined seat and back supported by the seat-rails and back-posts and extending over the roller and connected with the foot-plate frame.

6. A combined bed and chair including a main frame having a seat and a back, a foot-plate frame connected to the main frame, braces connecting the end of the foot-plate frame with the main frame, a foot-rail mounted slidingly on the foot-plate frame and having a pair of foot-plates secured thereto, means for binding the foot-rail to the foot-plate frame, and means for altering the position of the forward end of the seat with respect to the back.

7. A combined fracture-bed and invalid's chair including a main frame having a pair of rockers provided each with a roller, a pair of seat-rails and back-posts secured to the rockers, a pair of side bars secured to the seat-rails and also to the back-posts, and X-braces connected with the two sides of the main frame; a prop pivoted to the back-posts, a pair of journal-boxes mounted movably on the side rails, a roller mounted in the journal-boxes, a pair of screws mounted on the side rails and controlling the journal-boxes, a foot-plate frame pivotally connected with the journal-boxes and provided with a winding-drum having a ratchet-and-pawl lock, a pair of foot-plates mounted movably on the foot-plate frame and provided with cables connected to the winding-drum, a flexible combined seat and back mounted on the main frame and extending over the roller and connected with the foot-plate frame, and a desk mounted removably and adjustably on the pair of side bars of the main frame.

8. In a combined bed and chair, the combination of a main frame having a pair of rockers, a pair of seat-rails and back-posts provided with pegs and secured to the ends of the rockers, and X-braces connected to the two sides of the main frame, a pair of journal-boxes supported adjustably and suitably guided, a roller mounted in the journal-boxes, a pair of screws suitably supported and controlling the journal-boxes, a foot-plate frame pivotally connected with the journal-boxes and provided with an end support, a pair of foot-plates mounted adjustably on the foot-plate frame, and a flexible combined seat and back connected with the pegs and also with the foot-plate frame and extending over the roller.

823,842. **PNEUMATIC VALVE AND SEAT.** GEORGE P. BRAND, New York, N. Y. Filed Jan. 31, 1905. Serial No. 243,462.



Claim.—1. In combination with a pneumatic valve, a metallic cylindrical valve-seat formed with a male screw-thread and with a cross-bar having an eye for the support of the valve-rod, said cross-bar being formed of a relatively soft material and being forced into position on the valve-seat, and a support formed with a female screw-thread for the reception of said cylindrical valve-seat, whereby the latter may be adjusted with relation to the pneumatic valve.

2. In combination with a pneumatic valve, a metallic cylindrical valve-seat formed with a male screw-thread, and with roughened surfaces for contact with a cross-bar of relatively soft material, said cross-bar formed with an eye for guidance and support of the valve-rod, and a support formed with a female screw-thread for the reception of said cylindrical valve-seat, whereby the latter may be adjusted with relation to the pneumatic valve.

3. In combination with a pneumatic valve, a cylindrical metallic valve-seat formed with a peripheral male screw-thread, a cross-bar having an eye for the support of a valve-rod, said cross-bar being formed of relatively soft material with end shoulders for engagement with the rim of the valve-seat body and being forced into position on said valve-seat body, and a support formed with a female screw-thread for the reception of the peripheral thread on said cylindrical valve-seat, for the purpose described.

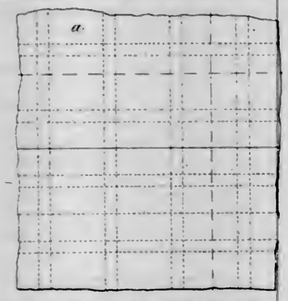
4. In combination with a pneumatic valve, a cylindrical valve-seat formed with a peripheral male thread, and a removable seat-plate formed with a female screw-thread for the reception and support of said cylindrical valve-seat, for the purpose described.

5. In pneumatic apparatus, the combination of a cylindrical valve-seat body formed with a valve-bearing consisting of the edge of the cylinder of which the valve-seat is formed, said cylindrical valve-seat being also formed with an external peripheral male screw-

thread, a support for said adjustable cylindrical valve-seat formed with a female thread for engagement with the male screw-thread on said valve-seat, a pneumatic valve of greater diameter than the bearing edge of said adjustable cylindrical valve-seat, and a secondary stationary valve-seat for said pneumatic valve, whereby the extent of motion or play between the opposed valve-seats may be varied for the purpose described.

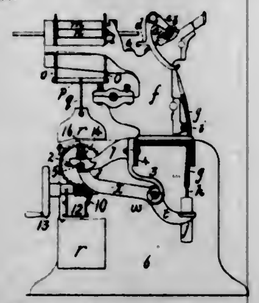
6. In pneumatic apparatus, the combination of a cylindrical valve-seat body formed with a valve-bearing consisting of the edge of the cylinder of which the valve-seat is formed, said cylindrical valve-seat being formed with an external peripheral male screw-thread, a removable valve-plate formed with a cylindrical threaded bore for the reception of said valve-seat body, a pneumatic valve of greater diameter than the bearing edge of the said valve-seat body and a secondary fixed valve-seat for said pneumatic valve, whereby the motion or play between the opposed valve-seats may be adjusted, for the purpose described.

823,843. **COMPOUND WOODEN PLATE.** HERMANN BUTTEN, Düsseldorf, Germany. Filed Apr. 9, 1904. Serial No. 202,283.



Claim.—A compound wooden plate composed of an upper veneer and a lower veneer having their grain running in the same direction, a central layer of spaced parallel laths having their grain running in a like direction, and upper and lower layers of spaced parallel laths intermediate the veneers and the central layer and having their grain run at right angles to that of the veneers and the central layer, substantially as specified.

823,844. **MACHINE FOR COMBING COTTON, WOOL, &c.** FRANK W. CRADDERTON, Oldham, England. Filed Feb. 25, 1902. Serial No. 95,517.



Claim.—1. In a combined combing-machine and drawing-frame, the combination with the top detaching-rollers, weights supported thereby and exerting pressure thereon during the working of the machine, the top rollers of the draw-box, weights supported thereby and exerting pressure thereon during the working of the machine and means whereby the weights supported by the top detaching-rollers during the working of the machine may be raised and supported when the machine is stopped, of a device arranged to engage with the said top drawing-roller weights and raise and support them, a cam to move the said device, a worm-wheel connected to the said cam, a worm engaging with such worm-wheel and means to turn such worm.

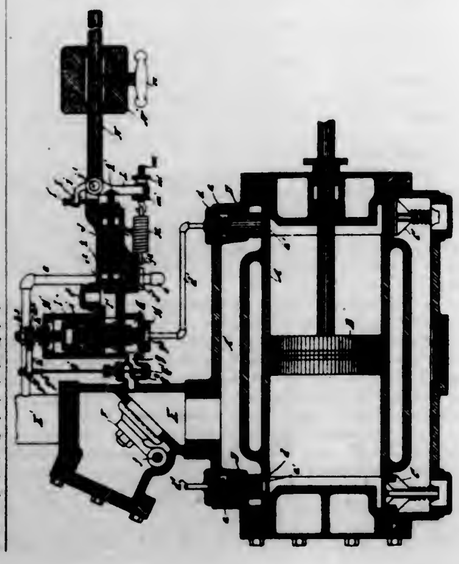
2. In a combined combing-machine and drawing-frame, the combination with the top detaching-rollers, weights supported thereby and exerting pressure thereon during the working of the machine, the top rollers of the draw-box, weights supported thereby and exerting pressure thereon during the working of the machine and means whereby the weights supported by the top detaching-rollers during the working of the machine may be raised and supported when the machine is stopped, of a rod arranged to engage with the said top drawing-roller weights and raise and support them, cams to act on the said rod and means to turn such cams and simultaneously raise both sets of weights.

3. In a combined combing-machine and drawing-frame, the combination with the top detaching-rollers, weights supported thereby and exerting pressure thereon during the working of the machine, the top rollers of the draw-box and weights supported thereby and exerting pressure thereon during the working of the machine and means whereby the weights supported by the top detaching-rollers during the working of the machine may be raised and supported when the machine is stopped, of a rod arranged to engage with the said top drawing-roller weights and raise and support them, cams to act on the said rod, a worm-wheel connected to the said cams, a worm engaging with the said worm-wheel and means to turn the said worm and simultaneously raise both sets of weights.

4. In a combined combing-machine and drawing-frame, the combination with the top detaching-rollers, weights supported thereby and exerting pressure thereon during the working of the machine, the top rollers of the draw-box, weights supported thereby and exerting pressure thereon during the working of the machine and means whereby the weights supported by the top detaching-rollers during the working of the machine may be raised and supported when the machine is stopped, of a rod arranged to engage with the said top drawing-roller weights and raise and support them, cams each with two surfaces to act on the said rod and means to turn such cams.

5. In a combined combing-machine and drawing-frame, the combination with the top detaching-rollers, weights supported thereby and exerting pressure thereon during the working of the machine, the top rollers of the draw-box, weights supported thereby and exerting pressure thereon during the working of the machine and means whereby the weights supported by the top detaching-rollers during the working of the machine may be raised and supported when the machine is stopped, of a rod arranged to engage with the said top drawing-roller weights and raise and support them, cams each with two surfaces to act on the said rod, a worm-wheel connected to the said cams, a worm engaging with the said worm-wheel and means to turn the said worm.

823,845. **RELIEF DEVICE AND ATTACHMENT FOR COMPRESSORS.** RUDOLPH CONRADER, Erie, Pa. Filed Jan. 29, 1902. Serial No. 91,783.



Claim.—1. In a relief device for compressors the combination with the compressor-valve; a chamber for said valve; a primary motor; a valve controlled by said primary motor; means for connecting said primary motor with the passage into which fluid is pumped; a secondary motor controlled by the valve actuated by the primary motor; a fluid-passage into which the fluid is pumped by the compressor; a connection between said passage and said compressor-valve chamber; the valve G′ in said connection; means for connecting the valve G′ with the secondary motor; and the valve H controlling an outlet to the atmosphere from the connection between said passage and the valve-chamber whereby the connection is closed to the fluid-passage when said connection is open to the atmosphere.

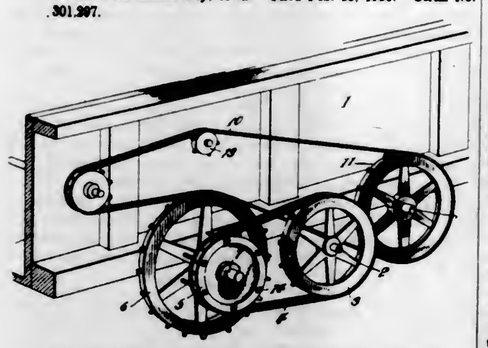
2. In a relief device for compressors the combination with the compressor-valve D; the chamber *a* in which said valve operates the passage E into which fluid is pumped by the compressor; a connection between said passage and the chamber *a*; a primary motor connected with the passage into which fluid is pumped; a valve controlled by said motor, said valve controlling a passage leading to a chamber I′, said chamber having a contracted outlet-passage i^3; a secondary motor in communication with the chamber I′; and valves operated by said secondary motor to close the connection between the passage E and the chamber *a* and to open the connection to bring the chamber *a* into communication with the atmosphere.

3. In a relief device for compressors the combination with the compressor-valve D; the chamber *a* in which said valve operates; the passage E into which fluid is pumped by the compressor; a connection between said passage and the chamber *a*; a primary motor connected with the passage into which fluid is pumped; a valve controlled by said motor, said valve controlling a passage leading to a chamber I′, said chamber having a contracted outlet-passage i^3; the secondary motor comprising the cylinder I and piston H′, the gland *i* on said cylinder; the valve H extending through said gland and connected with the piston H′; the stem *h* extending from the piston H′; the valve G′ arranged to control the connection between the passage E and chamber *a*; and means connecting the valve with the stem *h*.

4. In a relief device for compressors a receiver connection in communication with the compressor; a valve arranged to prevent backflow from said receiver connection toward the compressor; a valve-motor for opening said valve; a valve for controlling said valve-motor; a separate motor for actuating the relief device; and means acting with the relief device for actuating the valve controlling the valve-motor.

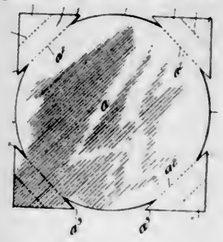
5. In a relief device for compressors, the combination of the receiver connection E′; the check-valve F for preventing a backflow of pressure therefrom; the stem *f* for said check-valve; the arm Q on said stem said stem and arm being arranged to actuate the valve F; the cylinder O; a plunger in said cylinder; springs tensioned against said plunger; a connection between said plunger and the arm on the stem; a passage controlled by the relief device for admitting fluid under pressure to said cylinder when the relief device is out of operation; means for reducing the pressure in said passage when the relief device is in operation and a separate motor for controlling the relief device.

823,846. **DRIVE-GEARING FOR MANURE-SPREADERS.** GUY E. CROWELL, Mason City, Iowa. Filed Feb. 15, 1906. Serial No. 301,297.



Claim.—In drive-gearing for manure-spreaders, the combination of an axle-sprocket, a drive-sprocket adjacent thereto, an auxiliary sprocket secured to the drive-sprocket at one side thereof, a sprocket-chain connecting the axle-sprocket with the auxiliary sprocket, an apron-driving shaft, a sprocket applied to said apron-driving shaft, a cylinder-shaft, a sprocket secured to said cylinder-shaft, a sprocket-chain connecting the sprockets of the cylinder-shaft and of the apron-driving shaft and having the lower lag thereof in engagement with the drive-sprocket above mentioned, and an idler-sprocket supporting the upper lag of the sprocket-chain which connects the cylinder-shaft and the apron-driving shaft.

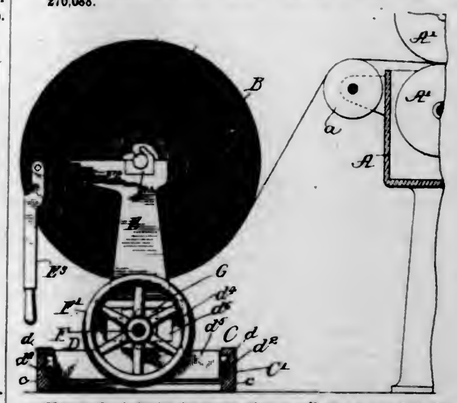
823,847. **PAPER TRAY.** FRANK B. DAVIDSON, Marseilles, Ill., assignor to The Howe & Davidson Company, East Orange, N. J., a Corporation of New Jersey. Filed Oct. 10, 1904. Serial No. 228,546.



Claim.—1. A substantially circular tray consisting of two pieces of sheet material, to wit, a main part constituting a flat bottom and provided with a plurality of separated marginal flaps which are folded upwardly on score-lines which meet the curved margins of the bottom at the sides of the flaps, and a strip which extends around the margin of the bottom, with its lower edge in contact with said margin, and with said flaps forms a rim therefor, said strip being inserted through slits in said flaps.

2. A tray having a flat circular bottom and four marginal triangular flaps arranged equidistant from each other, and folded upwardly from said bottom at right angles thereto, said tray comprising a blank of substantially rectangular form having its side margins between its corner portions of convexly-curved form to constitute parts of the margin of the circular flat bottom, and its corner portions shaped to form the four triangular flaps, which flaps are separated at the sides thereof from the curved marginal parts of the bottom, by notches, the inner ends of which meet the lines of fold at the bases of the flaps, said notches forming on the flaps lateral extensions the inner margins of which, in the blank, constitute straight continuations of said lines of fold, and which in the finished tray are bent inwardly to conform to the curvature of the said curved marginal parts of the bottom.

823,848. **PAPER-ROLL ADJUSTMENT.** FRANK B. DAVIDSON, Marseilles, Ill., assignor to Howe and Davidson Company, East Orange, N. J., a Corporation of New Jersey. Filed July 17, 1905. Serial No. 270,088.



Claim.—1. A device for supporting a roll of paper and the like in position to feed the same to a machine comprising a stationary

base provided with two longitudinal guide members and transverse connecting members joining the same, a carriage supported upon the guide members of said base and movable thereon in a direction transverse to the direction of feeding movement of the paper, standards rising from the ends of the carriage and provided with bearings designed to receive the projecting ends of the core about which the roll revolves, and adjusting means engaged with the base and the carriage for moving said carriage on the base and locking it in its adjusted position.

2. A device for supporting a roll of paper and the like in position to feed the same to a machine, comprising a stationary base provided with two longitudinal guide members and transverse connecting members joining the same, a carriage supported upon the guide members of said base and movable thereon in a direction transverse to the direction of feeding movement of the paper, and standards rising from the ends of the carriage and provided with bearings designed to receive the projecting ends of the core about which the roll revolves, said standards being provided with rearwardly-directed horizontal arms constituting ways or supports for the projecting ends of the core.

3. A device for supporting a roll of paper and the like in position to feed the same to a machine, comprising a stationary base, a carriage supported upon said base and movable thereon in a direction transverse to the direction of feeding movement of the paper, standards rising from the ends of the carriage and provided with bearings designed to receive the projecting ends of the core about which the roll revolves, rearwardly-directed supporting-arms on said standard, and vertically-swinging hand-levers pivoted to the ends of said supporting-arms.

4. A device for supporting a roll of paper and the like in position to feed the same to a machine, comprising a stationary base, a carriage supported upon said base and movable thereon in a direction transverse to the direction of the feeding movement of the paper, said carriage being provided with bearings to receive the ends of the core about which the roll revolves, and means for moving said carriage on its base, comprising a shaft having right and left hand screw-threads, one end of which has screw-threaded engagement with the base and the other end with the carriage and means for rotating said shaft.

5. A device for supporting a roll of paper and the like in position to feed the same to a machine, comprising a base consisting of longitudinal side and transverse end members and disposed transversely to the direction of feeding movement of the paper, tracks or ways on the side members of said base, a carriage provided with rollers which rest and roll on said tracks, whereby it is movable longitudinally of said base, said carriage being provided with bearings to receive the ends of the core about which the roll revolves, and means for moving the carriage endwise of said base, comprising a rotative shaft having right and left hand screw-threads, one end of which has screw-threaded engagement with the base, and the other end with the carriage, and a hand-wheel fixed to the shaft between the two sets of screw-threads thereof.

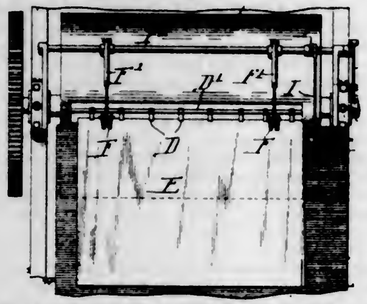
6. A device for supporting a roll of paper and the like in position to feed the same to a machine, comprising a base, including longitudinal side members extending transversely to the direction of feeding movement of the paper and provided on their inner faces with inwardly-opening channels, a carriage provided with laterally-extending rollers which travel in said channels, whereby the carriage is movable longitudinally of said base, said carriage being provided with upwardly-opening bearing-sockets adapted to receive the extensions of the core about which the roll revolves, and means for moving said carriage longitudinally of its base and locking it in an adjusted position.

823,849. PAPER-GUIDE FOR PRESSES. FRANK B. DAVIDSON, Marseilles, Ill., assignor to Howe and Davidson Company, East Orange, N. J., a Corporation of New Jersey. Filed July 20, 1905. Serial No. 270,569.

Claim.—1. In a sheet-feeding device, a laterally-shifting side-register gage, means for locking said gage in its operative position, and means for moving said gage into its operative position when shifted outwardly therefrom.

2. In a sheet-feeding device, a laterally-shifting side-register gage, means for locking said gage in its operative position, means for automatically actuating the locking means to release the gage and means for moving said gage into its operative position when shifted outwardly therefrom.

3. In a sheet-feeding device, a yielding side-register gage which is movable laterally toward and from its operative position and means for locking said gage in its operative position.



4. In a sheet-feeding device, a yielding side-register gage movable laterally into and out of its operative position, means for locking the gage in its operative position, and means for automatically actuating the locking means for releasing the locking mechanism to permit the gage to be moved laterally from its operative position.

5. In a sheet-feeding device, a laterally-movable side-register gage, a spring acting to normally maintain the gage in its operative position, means for locking said gage in the latter position, and means for releasing said locking means, whereby the gage is movable out of its operative position against the action of said spring.

6. In a sheet-feeding device, a side-register gage movable laterally toward and from its operative position, a spring acting to hold said gage in its operative position, a stop for limiting the movement of the gage toward its operative position, means for locking the gage in its operative position, and means for releasing said locking means to permit the retraction of said gage against the action of said spring.

7. In a sheet-feeding device, the combination with sheet-stops movable into and out of the path of the sheet, of a side-register gage movable laterally into and out of its operative position, means for locking the register-gage in the latter position, and means operated by the sheet-stop-actuating device for actuating said gage-locking means to release the gage.

8. A side-register gage for sheet-feeding devices, comprising an endwise-movable slide-bar provided at one end with a gage-plate adapted for engagement with the side margin of a sheet, a stop for limiting the movement of the gage-plate toward the sheet, a spring acting to normally hold said gage-plate in its operative position, means for locking said slide-bar from retraction, and means for releasing said locking means.

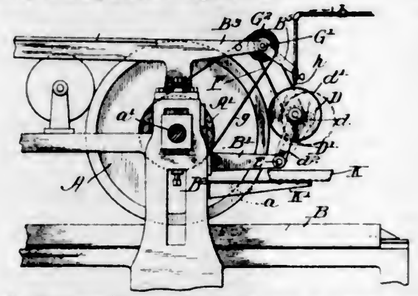
9. A side-register gage for sheet-feeding devices, comprising an endwise-movable slide-bar provided at one end with a gage-plate adapted for engagement with the side margin of the sheet, a stop for limiting the movement of the gage-plate toward the sheet, a spring acting to normally hold said gage-plate in its operative position, means for locking said slide-bar from retraction, comprising a swinging locking-latch, a lug on the slide into the path of which the latch is swung, and means for swinging said latch out of the path of said lug.

10. A side-register gage for sheet-feeding devices, comprising an endwise-movable slide-bar, a gage-plate carried by the bar, a guide for said slide-bar, a spring interposed between said slide-bar and a shoulder in the guide for holding the gage in its operative position, means for locking said slide bar to hold the gage in its operative position, and means for releasing said guide-bar and gage to permit the latter to be retired laterally from its operative position.

11. In a sheet-feeding device, the combination with a feed-board, sheet-stops movable into and out of the path of the sheets, and a rock-shaft operating to actuate said stops, of a side-register gage comprising a slide-bar supported on the feed-board and movable laterally toward and from the margin of a sheet on said board and provided at its inner end with a gage-plate, a spring acting on said slide-bar for normally holding the gage in its operative position, means for locking the gage in operative position, and means operated from said rock-shaft for actuating said gage-locking means to release the gage.

823,850. MEANS FOR DAMPENING THE SCORE-LINES OF FOLDING-BOX BLANKS. FRANK B. DAVIDSON and JOSEPH WILSON, Marseilles, Ill., assignors to Howe and Davidson Company, East Orange, N. J., a Corporation of New Jersey. Filed Aug. 7, 1905. Serial No. 273,186.

Claim.—1. The combination with a scoring-machine, of means for dampening prescribed areas of a sheet or blank to be scored preparatory to scoring the sheet along said areas.



2. The combination with a scoring-machine, of dampening-surfaces adapted to be moved into contact with a sheet or blank to be scored along prescribed areas preparatory to scoring the blank along said areas.

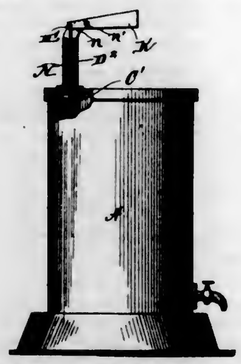
3. The combination with a scoring-machine, of dampening-surfaces adapted to be moved into contact with a sheet or blank to be scored along prescribed areas preparatory to scoring the blank along said areas, said dampening-surfaces being constructed to be adjusted to vary the width apart of the dampened areas on said sheet.

4. The combination with a scoring-press, including a rotary impression-cylinder, of means for dampening prescribed areas of a sheet or blank preparatory to scoring the sheet along said areas.

5. The combination with a scoring-press, including a rotary impression-cylinder, of rotary dampening-surfaces adapted for contact with the sheets or blanks while on the cylinder to dampen prescribed areas of a sheet or blank preparatory to the scoring of the same along said areas.

6. The combination with a scoring-press, including a rotary impression-cylinder, of rotary dampening-surfaces adapted for contact with sheets or blanks while on the cylinder to dampen prescribed areas of the sheet preparatory to scoring of the same, said dampening-surfaces being removable whereby they may be adjusted to dampen variously-located areas of the sheet.

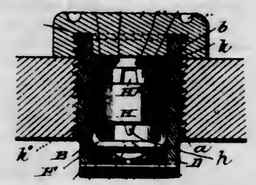
823,851. VENT FOR RECEPTACLES. PERCY DONALDSON, Baltimore, Md. Filed May 27, 1904. Renewed Sept. 16, 1905. Serial No. 278,783.



Claim.—1. An automatic vent for receptacles adapted to contain volatile liquids under normal pressure, comprising an open-ended tube adapted for attachment to a receptacle, a weighted lever pivoted to said tube, a rod pivotally connected to said lever, and a valve carried by said rod and adapted to be held by said lever against the bottom of the tube, as set forth.

2. An automatic vent for receptacles adapted to contain volatile liquids under normal pressure, comprising an open-ended tube adapted for attachment to a receptacle, one end of said tube being bifurcated and having curved arms, a weighted lever pivotally connected to said arms, a rod pivotally connected to said lever and passing through said tube, and a valve at the end of said rod adapted to be normally held by said lever against the bottom of said tube, as set forth.

823,852. SHELL-FUSE. LOUIS L. DRIGGS, Sharon, Pa., and ERNEST WILKINSON, Washington, D. C.; said Wilkinson assignor to said Driggs. Filed Oct. 13, 1905. Serial No. 282,633.



Claim.—1. A shell-fuse for large-caliber projectiles comprising three separate parts adapted to be readily assembled and disassembled, to wit, a fuse-stock permanently attached to the shell and having a bore adapted to permit the ready introduction and removal of the bursting charge, a cap adapted to be secured on said fuse-stock, and percussion firing mechanism mounted in the bore of said fuse-stock beneath said cap and capable of being independently inserted in or removed from said stock at one operation, substantially as described.

2. A shell-fuse comprising three separate parts adapted to be readily assembled and disassembled, to wit, a fuse-stock, a cap adapted to be secured on said fuse-stock, and firing mechanism mounted in said fuse-stock beneath said cap and capable of being inserted in or removed from said stock at one operation, with a bag of kid or other soft material inclosing said firing mechanism, substantially as described.

3. A shell-fuse for large-caliber projectiles comprising three separate parts adapted to be readily assembled and disassembled, to wit, a fuse-stock provided with external screw-threads adapted to engage in the shell and to project therefrom, the said fuse-stock being permanently attached to the shell, and having a bore adapted to permit the ready introduction and removal of the powder charge, a cap adapted to be screwed on said fuse-stock, on the projecting portion thereof, and percussion firing mechanism mounted in the bore of said fuse-stock beneath said cap and capable of being inserted in or removed from said stock at one operation, substantially as described.

4. A shell-fuse comprising three separate parts adapted to be readily assembled and disassembled, to wit, a fuse-stock, provided with external screw-threads adapted to engage in the shell and to project therefrom, a cap adapted to be screwed on said fuse-stock, on the projecting portion thereof, and firing mechanism mounted in said fuse-stock beneath said cap and capable of being inserted in or removed from said stock at one operation, with a bag of kid or other soft material engaging said firing mechanism, subtantially as described.

5. A shell-fuse for large-caliber projectiles comprising three separate parts adapted to be readily assembled and disassembled, to wit, a fuse-stock provided with external screw-threads adapted to engage in the shell and to project therefrom, the said fuse-stock being permanently attached to the shell, and having a bore adapted to permit the ready introduction and removal of the powder charge, a cap adapted to be screwed on said fuse-stock, on the projecting portion thereof, an annular washer of leather or similar material held in said cap and adapted to form a tight joint with the end of said fuse-stock, and firing mechanism mounted in said fuse-stock beneath said cap and capable of being inserted in or removed from said stock at one operation, substantially as described.

6. A shell-fuse for large-caliber projectiles comprising three separate parts adapted to be readily assembled and disassembled, to wit, a fuse-stock permanently attached to the shell and having a bore adapted to permit the ready introduction and removal of the bursting charge, a cap adapted to be secured on said fuse-stock, and percussion firing mechanism mounted in the bore of said fuse-stock beneath said cap and capable of being independently inserted in or removed from said stock at one operation, with means carried by or integral with said stock for holding said firing mechanism in said stock beneath said cap, substantially as described.

7. A shell-fuse comprising three separate parts adapted to be readily assembled and disassembled, to wit, a fuse-stock having a pin across its inner end, a cap adapted to be secured on said fuse-stock, and firing mechanism mounted in said fuse-stock beneath said cap and engaging said pin, substantially as described.

8. A shell-fuse comprising three separate parts adapted to be readily assembled and disassembled, to wit, a fuse-stock adapted to be secured in the shell and having a pin across its inner end, a cap adapted to be secured on said fuse-stock, and firing mechanism

mounted in said fuse-stock beneath said cap and provided with a transverse groove to engage said pin, substantially as described.

9. A shell-fuse comprising three separate parts adapted to be readily assembled and disassembled, to wit, a fuse-stock adapted to be secured in the shell and having a pin across its inner end, a cap adapted to be secured on said fuse-stock, and firing mechanism mounted in said fuse-stock beneath said cap and provided with a transverse groove to engage said pin, with a bag of kid or other soft material inclosing said firing mechanism, substantially as described.

10. A shell-fuse comprising three separate parts adapted to be readily assembled and disassembled, to wit, a fuse-stock, a cap adapted to be secured on said fuse-stock, and firing mechanism adapted to be put in operative position by the spinning of the shell mounted in said fuse-stock beneath said cap and capable of being inserted in or removed from said stock at one operation, with means for holding said firing mechanism against rotation relative to said stock, and a bag of kid or other soft material inclosing said firing mechanism, substantially as described.

11. A shell-fuse comprising three separate parts adapted to be readily assembled and disassembled, to wit, a fuse-stock provided with external screw-threads adapted to engage in the shell and to project therefrom, a pin extending across the inner end of said fuse-stock, a cap adapted to be screwed on said fuse-stock, on the projecting portion thereof, and firing mechanism provided with a notch engaging said pin, mounted in said fuse-stock beneath said cap and capable of being inserted in or removed from said stock at one operation, substantially as described.

12. A shell-fuse comprising three separate parts adapted to be readily assembled and disassembled, to wit, a fuse-stock provided with external screw-threads adapted to engage in the shell and to project therefrom, a pin extending across the inner end of said fuse-stock, a cap adapted to be screwed on said fuse-stock, on the projecting portion thereof, and firing mechanism adapted to be put in the operative relation by the spinning up of the shell provided with a notch engaging said pin mounted in said fuse-stock beneath said cap and capable of being inserted in or removed from said stock at one operation, substantially as described.

13. A shell-fuse comprising three separate parts adapted to be readily assembled and disassembled, to wit, a fuse-stock provided with external screw-threads adapted to engage in the shell and to project therefrom, a pin extending across the inner end of said fuse-stock, a cap adapted to be screwed on said fuse-stock, on the projecting portion thereof, and firing mechanism adapted to be put in the operative relation by the spinning up of the shell provided with a notch engaging said pin mounted in said fuse-stock beneath said cap and capable of being inserted in or removed from said stock at one operation, with a bag of kid or other soft material engaging said firing mechanism, substantially as described.

14. A shell-fuse comprising three separate parts adapted to be readily assembled and disassembled, to wit, a fuse-stock provided with external screw-threads adapted to engage in the shell and to project therefrom, a cap adapted to be screwed on said fuse-stock, on the projecting portion thereof, an annular washer of leather or similar material held in said cap and adapted to form a tight joint with the end of said fuse-stock, and firing mechanism provided with a notch engaging said pin, mounted in said fuse-stock beneath said cap and capable of being inserted in or removed from said stock at one operation, substantially as described.

15. A shell-fuse for large-caliber projectiles comprising a substantially cylindrical fuse-stock having its bore open at both ends, a cap adapted to screw on the exterior of said stock, and percussion firing mechanism comprising the primer and means for exploding same, removably mounted in the bore of said stock beneath said cap, substantially as described:

16. A shell-fuse for large-caliber projectiles comprising a substantially cylindrical fuse-stock, having its bore open at both ends and exteriorly screw-threaded to screw into the shell, and adapted to project beyond the face of the shell, a screw-cap adapted to screw over the projecting end of the fuse-stock, and a percussion primer and mechanism for exploding same, removably mounted in the bore of said stock beneath said cap, substantially as described.

17. A shell-fuse for large-caliber projectiles comprising a substantially cylindrical fuse-stock open at both ends, a cap adapted to screw on the exterior of said stock, a plunger mounted in said stock, a primer connected to and operated by said plunger, the said primer and plunger being removable at one operation from said stock, with means automatically operated by the spinning of the shell for causing said primer and plunger to assume the operative position relative to each other, substantially as described.

18. In a large-caliber shell, the combination with the shell-body, of a fuse-stock having its bore open at both ends and secured to or integral with the shell-body the said fuse-stock being adapted to permit the ready introduction and withdrawal of the bursting charge of the shell, percussion firing mechanism adapted to be held in the bore of said fuse-stock, and capable of being inserted in or removed from said stock at one operation, and a cap secured over the outer end of said fuse-stock, substantially as described.

19. In a large-caliber shell, the combination with the shell-body, of a fuse-stock having its bore open at both ends and secured to or integral with the shell-body the said fuse-stock being adapted to permit the ready iptroduction and withdrawal of the bursting charge of the shell, percussion firing mechanism adapted to be held in the bore of said fuse-stock, and capable of being inserted in or removed from said stock at one operation, and a cap secured over the outer end of said fuse-stock, with a washer beneath said cap, substantially as described.

20. In a large-caliber shell, the combination with the shell-body, of a fuse-stock having its bore open at both ends and secured to or integral with the shell-body the said fuse-stock being adapted to permit the ready introduction and withdrawal of the bursting charge of the shell, percussion firing mechanism put in operative position by the spinning up of the shell adapted to be held against turning in the bore of said fuse-stock, and capable of being inserted in or removed from said stock at one operation, and a cap secured over the outer end of said fuse-stock, substantially as described.

21. In a shell, the combination with the shell-body, of a fuse-stock open at both ends and secured to or integral with the shell-body, and provided with an outwardly-projecting portion exteriorly screw-threaded, firing mechanism put in operative position by the spinning up of the shell adapted to be held against turning in said fuse-stock, and capable of being inserted in or removed from said stock at one operation, and a cap screwed on over the projecting end of said fuse-stock, substantially as described.

22. In a point-fuse shell, the combination with the shell-body, of a fuse-stock open at both ends and secured to or integral with the shell-body and projecting forwardly therefrom, firing mechanism put in operative position by the spinning up of the shell adapted to be held against turning in said fuse-stock, and capable of being inserted in or removed from said stock at one operation, and a cap forming the nose of the shell secured over the outer end of said fuse-stock, substantially as described.

23. A shell-fuse comprising a substantially cylindrical fuse-stock, open at both ends and exteriorly screw-threaded to screw into the shell, and adapted to project beyond the face of the shell, a screw-cap adapted to screw over the projecting end of the fuse-stock, and a primer and mechanism for exploding same put into operative relation by the spinning up of the shell, removably mounted in said stock beneath said cap, with means for holding said mechanism in said stock and against turning therein, substantially as described.

823,853. BOOT-TREE AND THE LIKE. FRITS VON ESSEN, Sköfde, Sweden, assignor to Aktiebolaget Tidan, Mariestad, Sweden. Filed Mar. 3, 1905. Serial No. 248,036.



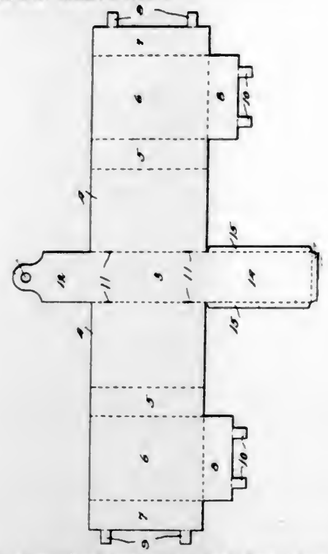
Claim.—1. An expander for boot-legs and the like, comprising a slightly conical form of resilient material split longitudinally, the edges formed by the split being separated by a gap and handles secured centrally to the inner surface of the said conical form and adjacent to the edges made by the split therein whereby the said form may be contracted for insertion in a boot-leg or the like.

2. An expander for boot-legs and the like, comprising a longitudinally-split slightly conical form of resilient material adapted to be placed within a boot-leg, the edges of the longitudinal split being separated by a gap, handles secured to the inner surface of the said conical form adjacent to the separated longitudinal edges made by the longitudinal split therein, and means interiorly of the said form for expanding the same.

3. An expander for boot-legs and the like, comprising a split slightly conical form of resilient material the edges formed by the split being separated by a gap, abutments fixed in the said conical form and springs extending between the said abutments and across the gap between the said edges, and means transversely placed for causing those parts of the springs which extend between the said edges to conform to the curve of the said cylindrical form.

4. An expander for boot-legs and the like, comprising a split slightly conical form of resilient material, the edges formed by the split being separated by a gap, U-shaped guides fixed at one end within the said conical form and extending across the gap between the said edges thereof, abutments fixed within the said conical form in line with the said U-shaped members and springs extending between the said abutments and within the said U-shaped members.

823,854. MATCH-SAFE. GEORGE F. GARRITY, Scranton, Pa. Filed Feb. 20, 1906. Serial No. 302,079.



Claim.—A match-safe comprising a body formed from a single blank, said body comprising a back having a central portion and main lateral extensions, said central portion being formed with upwardly and downwardly projecting suspending and igniter-carrying extensions, the latter being provided at its sides and lower edge with inturned confining-flanges, safe-forming extensions projecting from the main lateral extensions of the back, each comprising portions folded and bent to form the front, outer end inner end walls of a safe-body closed at back by the coacting main lateral extension, the outer longitudinal edges of the inner end and bottom walls of the safe being provided with tongues interlocking with the back, whereby a pair of safes or receptacles are formed on opposite sides of the central portion of the back, and an igniting-strip upon the said igniter-carrying extension removably held in the guideway formed by the confining-flanges thereof, substantially as described.

823,855. UNIVERSAL EXCAVATING AND GRADING MACHINE. WILLIAM GILMORE, Meridian, Miss. Filed Aug. 26, 1905. Serial No. 275,906.

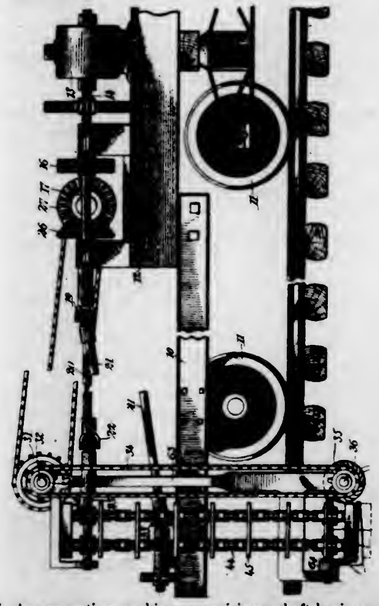
Claim.—1. In an excavating-machine, the combination of an earth-cutting device, means for moving the earth longitudinally with respect thereto, and a conveyer for receiving the earth from said means.

2. In an excavating-machine, the combination of a rotary excavating device having a series of cutters, a link conveyer located adjacent thereto and adapted to move material along the excavating device to one side of the machine, and an endless-chain conveyer for receiving material from the first-mentioned conveyer and transferring it away from the machine.

3. In an excavating device, the combination of a rotary shaft, a series of cutters arranged each at an angle to the others about said shaft, and means for conveying material along the shaft at the rear thereof.

4. An excavating-machine, having a shaft, and a series of cutters mounted on the shaft, each cutter being arranged at an angle from the cutter upon each side thereof.

5. An excavating-machine, comprising a shaft having a series of perforations, each perforation being located at an angle with respect to the next one, and a series of cutters each having a shank adapted to pass through one of said perforations, said cutters being provided with flanges whereby the cutting-blades present a substantially continuous surface.



6. An excavating-machine, comprising a shaft having a series of perforations, each perforation being located at an angle with respect to the next one, and a series of cutters each having a shank adapted to pass through one of said perforations, said cutters being provided with flanges whereby the cutting-blades present a substantially continuous surface, and each cutter being provided with a projection extending to the rear and adapted to engage the surface of the shaft.

7. An excavating-machine, comprising a shaft having a series of perforations, each perforation being located at an angle with respect to the next one, and a series of cutters each having a shank adapted to pass through one of said perforations, said cutters being provided with flanges whereby the cutting-blades present a substantially continuous surface; in combination with a frame for supporting said shaft, and means for mounting said frame below a car-track, whereby the car-track may be graded without taking up the track.

8. An excavating device, comprising a shaft, a series of cutters thereon, and means for supporting said shaft and moving it along below a track, whereby earth below the track can be excavated without removing the track.

9. An excavating-machine, comprising a truck, a frame adjustably mounted thereon, a cutting device supported by said frame below the track upon which the truck runs, and means mounted adjacent to the cutting device for moving material therefrom to one side of the track.

10. An excavating-machine, comprising a truck, a frame connected therewith, said frame having a nut, a screw mounted in said nut, a second frame to which the screw is swiveled, and an excavating device mounted on said second frame.

11. In an excavating-machine, the combination of a truck, a motor thereon, a pair of shafts connected with said motor, a second pair of shafts connected with the first-mentioned shafts, universal joints between said two sets of shafts, an excavating device connected with one of said last-mentioned shafts, and a conveyer connected with the other.

12. In an excavating-machine, the combination of a motor, a shaft therefor, a second shaft operatively connected with the first shaft, a universal joint mounted upon each of said shafts, an excavating device connected with one shaft, a conveyer connected with the other shaft for removing material from the excavating device, and a second conveyer connected with the first-mentioned shaft.

13. In an excavating-machine, the combination of a motor, a shaft therefor, a second shaft operatively connected with the first shaft, a universal joint mounted upon each of said shafts, an excavating device connected with one shaft, a conveyer connected with the other shaft for removing material from the excavating device, and a second conveyer connected with the first-mentioned shaft, and a trough located adjacent to the excavating device for receiving material from the latter and delivering it to the first conveyer.

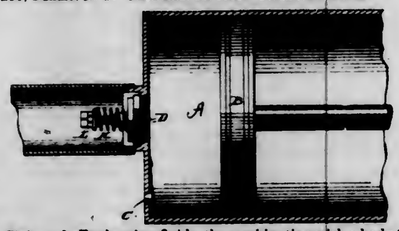
14. In an excavating-machine comprising an excavating device, a platform for receiving material therefrom and a conveyer operable along said platform for removing material therefrom.

15. An excavating-machine comprising a rotary excavating device, a platform extending parallel with the excavating device and adjacent thereto and an endless conveyer mounted over said platform and adapted to move along the platform.

16. In an excavator, the combination of an adjustable frame, an excavating device mounted thereon, a conveyer on the frame for moving material to one side of the frame, a second conveyer pivotally mounted upon said frame, means for operating the second conveyer, and means for adjusting it to any desired angle with respect to the frame.

17. In an excavator, the combination of a truck, a platform thereon, a motor on the platform, a shaft operated by the motor, a second shaft operated by the first shaft, an excavating device operated by the first shaft, and two conveyers, one operated by each of said shafts, a pivoted frame upon which one of said conveyers is mounted, a sprocket-chain for operating said conveyer, a sprocket-wheel with which the chain engages, and means for adjusting said sprocket-wheel toward and from the conveyer which it operates.

823,856. **HEATING FLUIDS MECHANICALLY.** FRANK J. GILROY, Buffalo, N. Y. Filed Mar. 18, 1903. Serial No. 148,369.



Claim.—1. For heating fluids, the combination with a body traversed by an attenuated passage whose walls are capable of relative lateral movement, of means for forcing fluid through said passage, and means for opposing yielding resistance to increasing the distance between its opposite walls.

2. For heating fluids, the combination with a body having an attenuated passage therethrough, of means for forcing fluid through said passage, and means for opposing yielding resistance to the escape of fluid from the mouth of said passage.

3. For heating fluids, the combination with a body having an attenuated passage, therethrough, whose cross-sectional area varies repeatedly, of means for forcing fluid through said passage.

4. For heating fluids, the combination with a body traversed by a narrow passage having forwardly-convergent portions, of means for forcing fluid through said passage.

5. For heating fluids, the combination with a body traversed by a capillary passage having broad parallel walls, of means for forcing fluid through said passage.

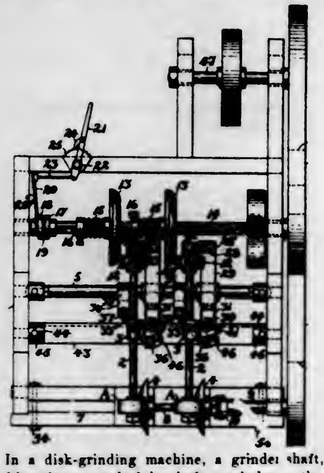
6. For heating fluids, the combination with a body traversed by a capillary passage having broad, walls changing in direction at successive points, and means for forcing fluid through said passage.

7. For heating fluids, the combination with a chamber having an exit adapted to permit a large stream of fluid to pass, of means for subjecting fluid in said chamber to pressure, and means for compelling all portions of the escaping stream to assume an attenuated form and pass between only slightly-separated passage-walls, whereby the contact-surface of the stream with the walls is made very great.

8. For heating fluids, the combination with a body channeled to form capillary paths which merge, of means for forcing fluid under pressure to pass along said paths through said body.

823,857. **GRINDER FOR CULTIVATOR DISKS AND TOOLS.** GEORGE B. GARNER, Courtland, Cal. Filed Sept. 2, 1905. Serial No. 276,812.

Claim.—1. In a disk-grinding machine, the combination of means for supporting and for revolving a disk, a grinder having a movement laterally and vertically with respect to the disk, means to revolve the grinder, and means to effect said lateral and vertical movement and to maintain the grinder in operative contact with the disk.



2. In a disk-grinding machine, a grinder shaft, a swivelly-mounted box for one end of the shaft, a grinder on the other end of the shaft, a spring-supported box for the shaft between its ends, and means to revolve the shaft.

3. In a disk-grinding machine, a grinder-shaft, a swivelly-mounted box for one end of the shaft, a spring-supported box for the shaft between its ends, means to revolve the shaft, and means to vary the tilt of the shaft.

4. In a disk-grinding machine, the combination of a support, a carriage rockable on said support, a grinder-shaft mounted on said carriage to have a swiveled movement sidewise and vertically, a grinder on said shaft, and means to rotate the shaft.

5. In a disk-grinding machine, the combination of a support, a carriage rockable on said support, a grinder-shaft mounted on said carriage to have a swiveled movement sidewise and vertically, a grinder on said shaft, and means to rotate the shaft, said carriage having also a lateral sliding movement on its support.

6. In a grinding-machine, the combination of a fulcrum-shaft, two sleeves turnable thereon and one slidable on the shaft with respect to the other, boxes carried by one sleeve, a grinder-shaft supported in said boxes, a grinder in the grinder-shaft, and articulated connections between the two sleeves to permit a change in the inclination of the grinder-shaft with respect to said fulcrum-shaft, and means to revolve the grinder-shaft.

7. In a grinding-machine, the combination of a fulcrum-shaft, two sleeves turnable thereon, and one slidable on the shaft with respect to the other, boxes carried by one sleeve, a grinder-shaft supported in said boxes, a grinder in the grinder-shaft, and articulated connections between the two sleeves to permit a change in the inclination of the grinder-shaft with respect to said fulcrum-shaft, and means to revolve the grinder-shaft irrespective of said changes in inclination.

8. In a grinding-machine, the combination of a fulcrum-shaft, two sleeves turnable thereon and one movable to and from the other, swivelly-mounted boxes carried by one sleeve, a grinder-shaft supported in said boxes, a grinder on said shaft, means to revolve said shaft, and articulated connections between the boxes to allow of a change in inclination of the grinder-shaft with respect to said fulcrum-shaft.

9. In a grinding-machine, a rotary grinder, a shaft therefor, a swiveled bearing for one end of said shaft and a spring-support bearing for the other end of the shaft to permit the latter to have a horizontal and vertical movement, and means to operate the shaft.

10. In a grinding-machine, a grinder, a shaft therefor, boxes for said shaft, a resilient support for one of said boxes, and means to support the other box to permit it to be rocked in either horizontal or vertical planes.

11. In a grinding-machine, a support, a carriage turnable on said support, a shaft mounted on said carriage, a grinder on the shaft, and means to permit the shaft a swiveled movement on the carriage.

12. In a grinding-machine, a grinder, a shaft therefor, boxes for said shaft, a movable carriage, an oscillating resilient support for one of said boxes on said carriage, and connections between the carriage and the other box to permit the latter to move both vertically and horizontally.

13. In a grinding-machine, a support, an oscillating carriage thereon, a shaft swivelly mounted on said carriage, a grinder on said shaft, and means permitting a change in the angle of inclination of the shaft relative to the axis of oscillation of said carriage.

14. In a grinding-machine, a support, a carriage turnable and slidable on said support, a grinder-shaft and grinder-boxes for the shaft mounted on the grinder permitting an oscillatory movement of the shaft relative to said carriage in a plane at the right angles to the plane of oscillation of the carriage.

15. In a grinding-machine, a carrier, a grinder-shaft, grinder, mountings for said shaft on the carrier to permit an oscillatory movement of the shaft on the carriage, a friction-pulley on the shaft, and a resiliently-supported drive disk or pulley engageable with said friction-pulley.

16. In a grinding-machine, a supporting-rod, a carriage turnable and slidably mounted on the rod, a grinder-shaft mounted on the carriage and capable of a limited oscillatory movement, a grinder, and means to operate the shaft, said last-named means including a friction-roller on the shaft, and a resiliently-supported driving-disk.

17. In a grinding-machine, a supporting-rod, a carriage turnable and slidably mounted on the rod, a grinder-shaft mounted on the carriage and capable of a limited oscillatory movement, a grinder, means to operate the shaft, and means for vertically and horizontally adjusting said carriage-support.

18. In a grinding-machine, a grinder-shaft, a grinder, means for supporting said shaft to permit it to have a limited movement in all directions, and a vertically-adjustable work-support disposed relative to said grinder.

19. In a grinding-machine, a grinder, a grinder-shaft, a resilient oscillating support therefor, a drive-shaft, connections between the drive-shaft and the grinder-shaft, means for supporting a disk to be ground, and means to rotate the disk.

20. In a grinding-machine, a grinder, a grinder-shaft, an oscillating carriage, adjustable boxes for said shaft on said carriage, a drive-shaft, and frictional driving connections between the drive-shaft and the grinder-shaft.

21. In a grinding-machine the combination of a grinder, a grinder-shaft, an oscillating carriage for the shaft, a friction-pulley on said shaft, a drive-shaft, and a resiliently-supported driving-disk rotatable and slidable on said drive-shaft and engaged with said drive-roller.

22. In a grinding-machine the combination of a grinder, a grinder-shaft, an oscillating carriage for the shaft, a friction-pulley on said shaft, a drive-shaft, a resiliently-supported driving-disk rotatable and slidable on said drive-shaft and engageable with said drive-roller, and means for giving a reciprocatory movement to said drive-shaft.

23. In a grinding-machine, the combination of means for simultaneously supporting and rotating a plurality of disks, a plurality of grinders for said disks, means for independently supporting said grinders to permit them to follow their respective disks and to accommodate themselves thereto during the grinding operations, and means for operating said grinders simultaneously.

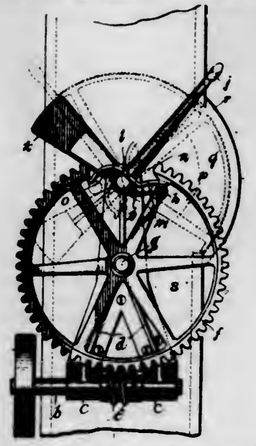
823,858. **PNEUMATIC COTTON-ELEVATOR.** THADDEUS S. GRIMES, Atlanta, Ga., assignor to Edward Van Winkle, Atlanta, Ga. Filed Sept. 30, 1905. Serial No. 280,837.

Claim.—1. The combination of a suction-pipe provided with an opening in its side of substantially the same area as the pipe itself, a valve adapted to normally close said opening, and means for opening and closing said valve at intervals, substantially as described.

2. The combination of a suction-pipe provided with an opening in its side of substantially the same area as the pipe itself, a quadrant-valve centrally mounted in said pipe, and means for automatically operating said valve at intervals, consisting of a cam, a gear-wheel provided with a roller, and means for operating said gear-wheel, substantially as described.

3. The combination of a suction-pipe provided with an opening in its side of substantially the same area as the pipe itself, a quadrant-valve mounted on a shaft located in the center of the pipe and provided with a handle and counterweight, and means for automatically operating said valve, substantially as described.

4. The combination of a suction-pipe provided with an opening in its side of substantially the same area as the pipe itself, a shaft centrally mounted in said pipe, a quadrant-valve mounted on said shaft, a handle, counterweight and cam also mounted on said shaft, a wheel carrying a roller adapted to engage with said cam, and means for operating said wheel, substantially as described.



5. The combination of a suction-pipe provided with an opening in its side of substantially the same area as the pipe itself, and also provided with curved extensions, a shaft centrally mounted in said pipe, a quadrant-valve mounted on said shaft, an operating-handle, counterweight and cam also mounted on said shaft, a gear-wheel provided with a roller adapted to engage said cam, and a worm for operating said gear-wheel, substantially as described.

823,859. **APPARATUS FOR SHAKING THERMOMETERS.** FRIEDRICH GRÖSCHE, Ilmenau, Germany. Filed Feb. 23, 1906. Serial No. 303,476.



Claim.—1. An apparatus for shaking thermometers to effect the quick return of the mercury column, comprising an elastic socket member, and means for securing a thermometer therein.

2. An apparatus for shaking thermometers to effect the quick return of the mercury column, comprising a handle affording at one end an elastic portion, and means for securing a thermometer to said elastic portion.

3. An apparatus for shaking thermometers to effect the quick return of the mercury column, comprising a handle affording at its outer end an elastic portion, and a coupling member secured in said elastic portion and adapted to have the end of the thermometer secured therein.

4. An apparatus for shaking thermometers to effect the quick return of the mercury column, comprising an elastic handle, and means for securing a thermometer in one end thereof.

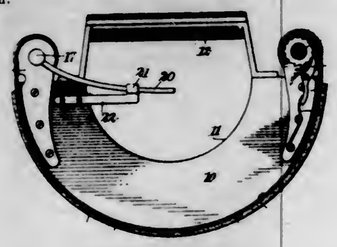
5. An apparatus for shaking thermometers to effect the quick return of the mercury column, comprising a socket member formed of a continuous helically-wound wire, and means for securing a thermometer in one end of said socket member.

823,860. **COPYING DEVICE.** HENRY H. HARRISON, New York, N. Y. Filed Jan. 6, 1906. Serial No. 294,871.

Claim.—1. A copying device comprising a body, the lower or working surface of which is curved, a handle attached to the body, drums mounted to turn on the body respectively at the ends of the curved working surface thereof, a pawl and ratchet in connection with one drum adjustably to hold the same, a resilient arm attached to the other drum, and a retaining device secured to the body and adapted to hold said resilient arm.

2. A copying device comprising a body with a curved working or lower surface, a handle on the body, two drums secured to the body respectively at the ends of said curved working surface thereof, means for holding one drum against rotation, a resilient arm at-

tached to the other drum, and a device for retaining said resilient arm in position.



823,861. APPLIANCE FOR LIFTING, MOVING, AND DEPOSITING MATERIALS. JOHN M. HENDERSON, Aberdeen, Scotland. Filed June 20, 1905. Serial No. 266,142.



Claim.—1. A device for the lifting, moving and depositing of materials, comprising a foundation, supporting-beams hinged thereto and arranged in pairs at opposite ends of the device with an inclination away from each other, girders carried on said supporting-beams, and cables stretched between said girders, the weight of said supporting-beams and girders serving to put the necessary tension on the cables.

2. A device for the lifting, moving and depositing of materials, comprising a foundation, supporting-beams hinged thereto and arranged in pairs at opposite ends of the device, with an inclination away from each other, girders carried on said supporting-beams, and cables stretched between said girders, the weight of said supporting-beams and girders serving to put the necessary tension on the cables, in combination with another cable, stretched between said girders, having means at its ends to permit movement along said girders.

3. A device for the lifting, moving and depositing of materials, comprising a foundation, supporting-beams hinged thereto and arranged in pairs at opposite ends of the device with an inclination away from each other, girders carried on said supporting-beams, and cables stretched between said girders, the weight of said supporting-beams and girders serving to put the necessary tension on the cables, in combination with another cable having a carriage at each end with means carried thereby to move said cable transversely along said girders.

4. A device for the lifting, moving and depositing of materials, comprising a foundation, supporting-beams hinged thereto and arranged in pairs at opposite ends of the device with an inclination away from each other, girders carried on said supporting-beams, and cables stretched between said girders, the weight of said supporting-beams and girders serving to put the necessary tension on the cables, in combination with another cable, a load-carriage supported thereby, and means carried by said carriage for moving itself along said cable.

5. A device for the lifting, moving and depositing of materials, comprising a foundation, supporting-beams hinged thereto and arranged in pairs at opposite ends of the device with an inclination away from each other, girders carried on said supporting-beams, cables stretched between said girders, the weight of said supporting-beams and girders serving to put the necessary tension on the cables, in combination with another cable, a load-carriage supported thereby having means for moving itself along said cable and means at each end of said cable for moving said cable transversely along the girders.

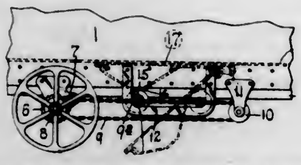
6. A device for the lifting, moving and depositing of materials, comprising supporting pivoted beams at opposite ends of the device, girders connecting said supporting-beams, and stay-cables stretched between said girders, in combination with load-carrying cables, a load-carriage supported on each load-carriyng cable and having means to move itself along the cable, and means independent of said motive means at the end of each of the latter cables for moving the cable transversely along the girder.

7. A device for the lifting, moving and depositing of materials, comprising supporting means at opposite ends of the device, a load-cable and hauling-ropes connecting said supporting means, and a framework carriage having hauling-pulleys for moving itself along the load-cable by means of the hauling-ropes, in combination with end carriages to which said cables are secured, having means for moving the cables and the load-carriage transversely and means on the load-carriage for rotating the hauling-pulleys.

8. A device for the lifting, moving and depositing of materials, comprising supporting means at opposite ends of the device, a cable and hauling-ropes connecting said supporting means, and a framework carriage having means for moving itself along said cable by means of said hauling-ropes, in combination with a carriage at each end of the cable and means carried by the carriage for moving the cable transversely.

9. A device for the lifting, moving and depositing of materials, comprising supporting-beams arranged in pairs at the opposite ends of the device, girders carried on said beams, a cable stretched between said girders, and a carriage adapted to travel along said cable, in combination with a carriage at each end of said cable, a track along which said carriage travels and means carried by the carriage to propel itself along said track.

823,862. CAR-DOOR-OPERATING MECHANISM. JULIUS C. HERRMANN, St. Louis, Mo., assignor to American Car & Foundry Company, St. Louis, Mo., a Corporation of New Jersey. Filed Jan. 2, 1906. Serial No. 294,239.

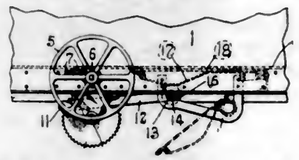


Claim.—1. In a car-door-operating mechanism, the combination with a door provided with bearing-surfaces, a reciprocating shaft having a roller coöperating with said bearing-surfaces, a track for guiding and limiting the movement of said shaft, chains in which the ends of said shaft are mounted, and means for imparting uniform motion to said chains; substantially as described.

2. In a car-door-operating mechanism, the combination with a hinged door having inclined bearing-surfaces on its under side, a reciprocating shaft having a plurality of rollers loosely mounted thereon for coöperating with said bearing-surfaces, tracks upon which said shaft is mounted, parallel chains carrying bearings in which the ends of said shaft are mounted, and means for imparting uniform motion to said chains; substantially as described.

3. In a car-door-operating mechanism, the combination with a pair of hinged doors, each of said doors having bearing-surfaces, a reciprocating shaft carrying rollers coöperating with the bearing-surfaces on said doors, tracks for guiding the movement of said shaft, chains mounted at each side of the car, said chains carrying links in which the ends of said shaft are mounted, connected sprockets over which said chains pass, a ratchet-wheel operating in connection with said sprockets, and a pawl coöperating with said ratchet-wheel; substantially as described.

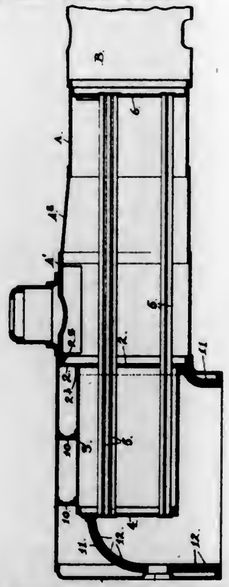
823,863. CAR-DOOR-OPERATING MECHANISM. JULIUS C. HERRMANN, St. Louis, Mo., assignor to American Car & Foundry Company, St. Louis, Mo., a Corporation of New Jersey. Filed Jan. 2, 1906.



Claim.—1. In a car-door-operating mechanism, the combination with doors located on opposite sides of the center sills of the car, of a shaft extending across the car and provided with sets of rock-arms, links connected to said rock-arms, a reciprocating shaft mounted in the opposite ends of each set of links, tracks coöperating with the ends of said reciprocating shaft, rollers on said reciprocating shaft coöperating with said doors, gearing located between the center sills of the car for driving the shaft which carries the rock-arms, and means extending to one side of the car for operating said gearing; substantially as described.

2. In a car-door-operating mechanism, the combination of a driving-shaft 4 having a pinion mounted thereon, a shaft 10 having a gear-wheel 9 meshing with the pinion on the first-mentioned shaft, rock-arms on the shaft 10, links 12 connected to said rock-arms, a shaft 13 mounted in the ends of links 12, rollers 14 on the ends of shaft 13, tracks 15 with which said rollers coöperate, rollers 16 carried by the shafts 13, and a hinged door provided with a bearing-surface 17 for coöperating with said rollers 16; substantially as described.

823,864. STEAM-BOILER. FRANCIS J. HICKEY, Sacramento, Cal., assignor of one-half to James M. Dunnigan, Sacramento, Cal. Filed Sept. 29, 1905. Serial No. 280,610.



Claim.—1. A steam-boiler having in combination a main boiler-shell, a cylindrical rearward-extending shell of smaller diameter, an annular head connecting the two shells, an exterior shell having a diameter substantially equal to the diameter of the rear end of the main shell, and secured thereto and extending over and beyond the smaller rearward-extending shell, flues extending through the main and supplemental shells, and a shell within the fire-box and inclosing the lower rear portion of the supplemental shell, said fire-box shell having a lining of non-conducting material.

2. A steam-boiler having two diameters forming main and supplemental shells, an exterior shell having a diameter substantially equal to that of the main shell and greater than that of the supplemental shell, said exterior shell extending rearward over and beyond the supplemental shell, flues extending through the main and supplemental shells, and a fire-box of non-conducting material within the exterior shell and inclosing the lower rear portion of the supplemental shell.

3. In a boiler, a main boiler-shell having a rear head formed with flanges and a central opening, a cylindrical extension riveted into the inner flange of said head and having a head at its rear end, flues connecting said rear head of the extension and the front head of the main boiler-shell, an exterior shell having the upper segmental portion riveted to the rear of the main boiler-shell and extending behind the extension of said shell to form an inclosure therefor, segmental plates riveted to the interior of said shell and to the top of the extension, and a heat-resisting furnace located interior to the said shell.

4. In a boiler, a main shell, an extension rearward thereto of smaller diameter, an exterior shell having its front end secured to the rear end of the main shell and extending rearward over and beyond the rear end of the supplemental shell, flues extending through the rear and front heads of the main and supplemental shells respectively, a furnace inclosed by the exterior shell, said furnace consisting of a shell inclosing and surrounding a lower portion of the boiler extension, said shell having a heat-resisting lining, and means for locking said lining to the shell.

5. In a boiler, a main shell, a supplemental shell of smaller diameter extending rearward therefrom, an exterior shell secured to the main shell and extending over and beyond the rear end of the supplemental shell, flues connecting the rear and front heads of the main and supplemental shells, a furnace within the exterior shell and consisting of a metal shell inclosing the lower part of the boiler extension, a non-conducting lining for said metal shell, and brackets riveted to the shell having oppositely-turned flanges projecting and interlocking with the lining substance.

6. In a boiler, a main shell, an extension rearward of smaller diameter, flues connecting the rear head of the extension with the front head of the boiler, a furnace consisting of a metal shell inclosing the lower portion of the boiler extension and having a heat-resisting lining as shown, an exterior shell extending from the rear of the main boiler-shell inclosing the upper part of the cylindrical extension and the exterior of the furnace, and brackets connecting said shell with the upper part of the extension.

823,865. PARALLEL-RULER. ISAK M. HOPSTAD, Wrangell, Alaska. Filed Dec. 26, 1905. Serial No. 293,256.

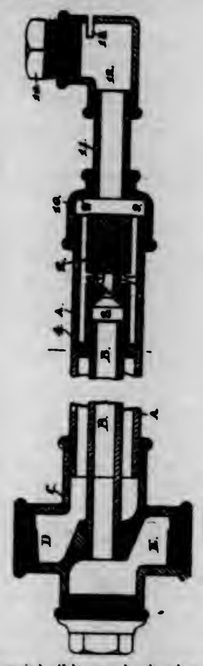


Claim.—1. A parallel-ruler, comprising a pair of transparent cylinders, and means for retaining said cylinders in parallelism and permitting movement of the cylinders longitudinally with respect to each other.

2. A parallel-ruler, comprising a pair of parallel cylinders, and pistons mounted to slide therein, the piston-rod of the piston in one cylinder being connected with the other cylinder.

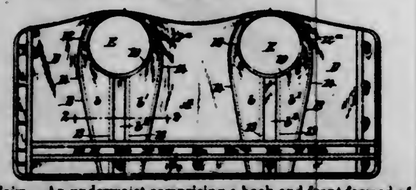
3. A parallel-ruler, comprising a pair of glass cylinders having bearings in their ends, pistons movable in the said cylinders, and piston-rods for the said pistons, the piston-rod in one cylinder extending through one of the bearings thereof, to engage a bearing in the other cylinder.

823,866. OIL-BURNER. WILLIAM F. HOGAN, San Francisco, Cal. Filed Sept. 20, 1905. Serial No. 279,003.



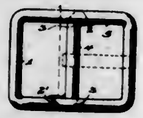
Claim.—An improved oil-burner having in combination, concentric pipes for the passage of oil and steam, a cylindrical plug fixed to the end of the inner tube and having a smaller diameter than the outer tube, said plug having a head rectangular in cross-section and the angles of which fit the outer tube at separated points, the straight outer sides of the head between the said angles forming segmental passages for the steam, said plug having a chamber at one end connecting with the oil-pipe, and having an annular groove at an intermediate point with a radial hole therethrough leading the oil into the chamber between the plug and outer tube, a coupling on the end of the outer tube having an internal shoulder projected across the path of the steam and oil delivered through said annular chamber, and a burner-head and means connecting it to said coupling.

823,867. UNDERWAIST. EDWARD H. HORWOOD, Hoboken, N. J. Filed Feb. 17, 1906. Serial No. 301,657.



Claim.—An underwaist comprising a back and front formed of two sections, and side sections, each side section being formed of outer subsections and an intermediate subsection, each outer subsection being formed of duplicate members having duplicate extensions to constitute shoulder-straps and the sides and lower side portions of the armholes, the intermediate subsections being formed of a single member whose upper edge constitutes the armpit edge of an armhole, the said single subsection extending otherwise the length of the outer subsections, the outer subsections of the side sections having their body extensions stitched together and their opposing longitudinal edges stitched to the intermediate subsections, the said side sections being also stitched directly to the back and the front sections, whereby to reinforce the armholes and side portions of the garment below the armholes and provide for a thin portion beneath the armpit-sections of the armholes and corresponding portions of the sides of the garment, for the purpose set forth, said thin portions of the side sections of the garment being between the reinforced portions.

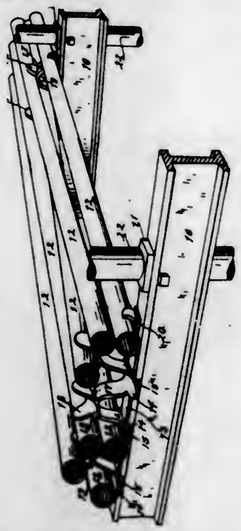
823,868. WROUGHT-METAL BUCKLE. CHARLES S. HUNTINGTON and ARTHUR S. HUNTINGTON, Omaha, Nebr. Filed May 15, 1905. Serial No. 260,456.



Claim.—1. A buckle-frame comprising a strand of wrought metal, having its central portion arranged to form a cross-bar and its end portions formed into reversely-disposed loops united with the ends of the cross-bar portion, the terminal portions of the blank and the intersecting portions of the cross-bar and outer frame portions being provided with interformed and positively-interlocking parts, rigidly uniting said parts to form a continuous ring-frame and an integral cross-bar.

2. A buckle-frame composing a strand of wrought metal, having one portion arranged to form a cross-bar and other portions formed into loops united with the ends of the cross-bar portion, the terminal portions of the blank and the intersecting portions of the cross-bar and outer frame portions being provided with interfitting parts, rigidly uniting said parts to form a continuous ring-frame and an integral cross-bar.

823,869. SPACER AND HOLDER FOR HEATING-PIPES. WILLIAM P. HUMBEY, Indianapolis, Ind., assignor to Standard Dry Kiln Company, Indianapolis, Ind., a Corporation of Indiana. Filed July 13, 1905. Serial No. 269,568.



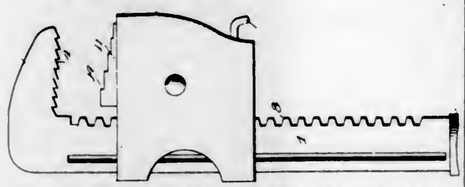
Claim.—1. The combination with heating-pipes and a bar for supporting the same, of a spacer consisting of a base-plate resting on said bar, means thereon for holding the pipes, and lugs extending downward on each side of said supporting-bar.

2. The combination with heating-pipes and a bar for supporting the same, of a spacer consisting of a plate adapted to rest upon said bar, lugs extending downward therefrom on each side of said bar, and pipe-holders on said plate with the parts thereof under the pipe wider than said plate, whereby the creeping of the pipes will not tilt or dislocate the spacer.

3. The combination with heating-pipes and a bar for supporting the same, of a spacer consisting of a plate adapted to rest upon said bar, a series of pipe-holding stands secured thereto the adjacent stands being spaced apart and forming pipe-holders therebetween and a pipe-holder upon each stand, whereby it will support an upper and a lower series of pipes and the pipes of the two series will all be in different vertical planes.

4. The combination with heating-pipes and a bar for supporting the same, of means for spacing and holding the pipes consisting of a plurality of sections, the adjacent ends of which side lap and have a pipe-bearing so that a pipe resting upon said side-lapping ends will hold the sections together.

823,870. WRENCH. THOMAS W. JESTER, Bainbridge, Ga. Filed Aug. 5, 1905. Serial No. 272,566.



Claim.—1. A wrench comprising a fixed jaw, a movable jaw, a sliding section carried by the jaw, and means other than said section and adapted for operation thereby to force the sliding jaw toward the fixed jaw in the operation of the wrench

2. A wrench comprising a fixed jaw and a movable jaw, movable means carried by said latter jaw to coöperate with the fixed jaw, and means other than the movable means adapted to force said movable jaw toward the fixed jaw in the operation of the movable means in one direction.

3. A wrench comprising a fixed jaw, a movable jaw, means carried by said latter jaw to feed the movable jaw to and from the fixed jaw, and means carried by the movable jaw to coöperate with said feeding means to force the movable jaw toward the fixed jaw in the operation of the wrench.

4. A wrench comprising a shank formed with a fixed jaw, a sliding jaw movable longitudinally of the shank, a movable section carried by said sliding jaw and arranged to coöperate with the fixed jaw, a gear-pinion mounted in the sliding jaw arranged to coöperate with the teeth formed with the shank, and means carried by the movable section to engage and move said pinion in the use of the wrench.

5. A wrench comprising a shank formed with a fixed jaw, a movable jaw embracing the shank, the forward face of the shank being formed with teeth, a gear-pinion mounted within the movable jaw and arranged to engage the teeth on the shank, a movable section carried by the movable jaw and adapted to coöperate with the fixed jaw, and a tooth depending from said section and adapted on movement of the section to engage and operate the pinion.

6. A wrench comprisng a shank formed with a fixed jaw, a movable jaw embracing the shank, the forward face of the shank being formed with teeth, a gear-pinion mounted within the movable jaw and arranged to engage the teeth on the shank, a movable section carried by the movable jaw and adapted to coöperate with the fixed jaw, and a tooth depending from said section and adapted on movement of the section to engage and operate the pinion, and means for returning said movable section to normal position.

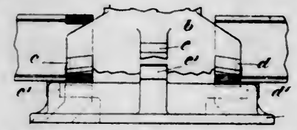
7. A wrench comprising a shank formed with a fixed jaw, a movable jaw embracing the shank, the forward face of the shank being formed with teeth, a gear-pinion mounted within the movable jaw and arranged to engage the teeth on the shank, a movable section carried by the movable jaw and adapted to coöperate with the fixed jaw, and a tooth depending from said section and adapted on movement of the section to engage and operate the pinion, and means for securing said movable jaw in adjusted position with relation to the fixed jaw.

8. A wrench comprising a shank formed with a fixed jaw, a movable jaw embracing the shank, the forward face of the shank being formed with teeth, a gear-pinion mounted within the movable jaw and arranged to engage the teeth on the shank, a movable section carried by the movable jaw and adapted to coöperate with the fixed jaw, and a tooth depending from said section and adapted on movement of the section to engage and operate the pinion, and an arm movably mounted in the movable jaw and adapted to coöperate with the teeth on the shank.

9. A wrench comprising a shank formed with a fixed jaw, a movable jaw embracing the shank, the forward face of the shank being formed with teeth, a gear-pinion mounted within the movable jaw and arranged to engage the teeth on the shank, a movable section carried by the movable jaw and adapted to coöperate with the fixed jaw, and a tooth depending from said section and adapted on movement of the section to engage and operate the pinion, and a spring housed within the movable section and terminally connected to said section and to the movable jaw.

10. A wrench comprising a shank having a fixed jaw, a sliding jaw movable on the shank, feeding means carried by the sliding jaw to coöperate with the shank, and means independent of the feeding means and carried by the sliding jaw, said latter means being adapted to operate the feeding means in the use of the wrench.

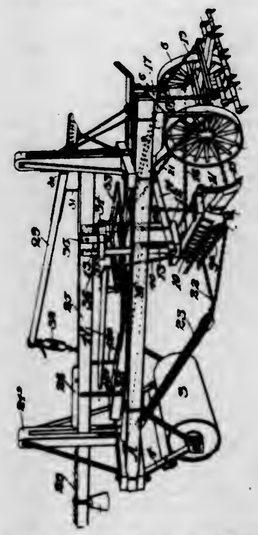
823,871. APPARATUS FOR CUTTING GIRDERS. HUGO JOHN, Ilversgehofen, near Erfurt, Germany. Filed Sept. 11, 1905. Serial No 278,023.



Claim.—1. An apparatus of the class set forth, embodying two pairs of cutters of U shape arranged in upper and lower relation, the upper cutters being driven and the lower cutters fixed, and upper and lower straight cutters between the said U-shaped cutters and parallel to the arms of the latter.

2. An apparatus for cutting I-section girders characterized by an upper pair of driven cutters, a lower pair of fixed cutters, the cutters being of U shape and similarly arranged to coöperate with each other, and upper and lower straight cutters.

823,872. EARTH CUTTER AND GRADER. DANIEL W. JONES, Sacramento, Cal. Filed Aug. 29, 1905. Serial No. 276,940.



Claim.—1. An apparatus of the character described comprising a main frame, turnably-mounted wheels at the front thereof, a roller at the rear of the frame, a cutter, a scraper in advance of the cutter and connected thereto, means for applying draft directly to said scraper and cutter, and means coacting with the last-named means for adjusting the angle of the cutter and the scraper.

2. An apparatus of the character described comprising a main frame with rear bearing-roller and front, turnably-supported bearing-wheels, a cutter and scraper suspended between said roller and wheels, a hinge connection between the cutter and scraper whereby the scraper may be thrown into and out of action, means for applying

draft directly to the scraper and cutter, and means coacting with the last-named means for adjusting the angle of said cutter and scraper.

3. An apparatus comprising a main frame with a rear bearing-roller and front, turnably-supported bearing-wheels, a cutter and scraper suspended between said roller and wheels, connections between the cutter and scraper, and a draft apparatus, and adjustable connections between the rear of the cutter and scraper, and the rear portion of the main frame.

4. An apparatus comprising a main frame, front turnable bearing-wheels and a rear roller, a cutter and scraper suspended between the bearing-wheels and roller, means for varying the pressure upon said cutter and scraper, and means consisting of draft-chains in front and block and tackle in the rear whereby the angle of the cutters and the depth cut are adjusted.

5. An apparatus comprising a main frame, front turnable bearing-wheels and a rear supporting-roller, a frame or bar, cutters fixed to said bar, connections between the bar and the king-bolt and frame at the front, and connections between the rear of the cutters and the rear of the frame whereby rocking and vibration are prevented.

6. An apparatus comprising a main frame with bearing-wheels and a roller at opposite ends, a frame or bar having cutters supported therefrom, and a scraper hinged thereto, a suspending mechanism and a swivel-pin about which the cutters and scraper are turnable, draft-chains connecting with the scraper and having one end connected with the king-bolt of the front wheels and the other with a fixed attachment to the frame whereby the cutters and scraper may be turned to stand at an angle with the line of travel of the machine.

7. An apparatus comprising a main frame, bearing and steering wheels and a roller by which the opposite ends of said frame are supported, a bar having cutters and a scraper carried thereon, draft-chains connecting the scraper with the center of the front axle and with either side of the main frame, a transverse timber to which the cutter-bar is centrally swiveled, bars extending upwardly, springs mounted upon the frame upon which the upper end of said bars are carried, and a mechanism by which the springs are compressed or allowed to extend to vary the depth at which the cutters and scraper operate.

8. An apparatus comprising a main frame, steering-wheels at the front and a roller at the rear, a cutter and a scraper and a supporting-bar therefor, a transverse bar having distance-rods connected with the main frame and to which the cutter and scraper bar is turnably swiveled, springs mounted upon the main frame, a transverse bar resting upon said springs, vertical bars connecting the cutter, and the bar which rests upon the springs, and means for raising and lowering said suspended bars with relation to the spring-bar.

9. An apparatus comprising a main frame, guiding-wheels at the front and a roller at the rear, cutters and scraper and a bar upon which they are carried between the wheels and roller, a transverse bar to which the cutter-bar is swiveled, draft-chains and connections by which the angle of travel of the cutter-bar may be changed, suspending-bars extending upwardly from the bar to which the cutter-bar is swiveled, said vertical bars having teeth at the upper end, springs fixed to the main frame, a bar fixed transversely upon the springs and having slots at the ends through which the vertical bars are movable, locking devices adapted to engage the notches of the vertical bars and a vertically-movable lever connected with the transverse spring-bar whereby the springs are compressed and allowed to extend to vary the position of the cutters and scraper.

10. An apparatus comprising a main frame, front steering-wheels and a rear roller, a bar, cutters fixed thereto, and a scraper swiveled thereon, draft-chains and an antirocking connection with the rear of the cutters, springs fixed upon the main frame, a transverse bar to which the upper parts of the springs are clipped, vertical bars extending upward from the cutter-frame and adjustable in the transverse spring-bar, a lever connected with said spring-bar extending longitudinally above the main frame, guides between which said lever is movable, and a cam-lever fulcrumed above said first-named lever and movable to vary the contact of the cam with the lever.

11. An apparatus comprising a main frame, front steering-wheels and a rear roller upon which said frame is carried, a bar having cutters and a scraper carried thereon, a transverse bar upon which said cutter-bar is pivoted and turnable, draft-chains and steady devices connected therewith, springs supported from the main frame, a transverse bar resting upon said springs, side bars by which the cutters are suspended from the transverse spring-bar, a longitudinally-disposed guiding-lever connected with the spring-bar having a seat thereon, a lever fulcrumed to the front guides and having a cam beneath which the front end of the seat-lever extends, said cam-lever being movable to vary the fulcrum-point of the seat-lever.

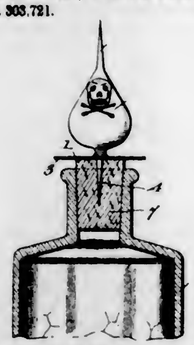
12. An apparatus comprising a main frame, guiding-wheels and a roller by which opposite ends of said frame are supported, cutters and a scraper located between the wheels and roller, springs mounted upon the main frame, and transverse bar fixed upon the springs, side bars connecting the cutter with said transverse bar, a horizontal fulcrumed seat-bar connected with the spring-bar, a foot-lever fulcrumed beneath the seat-lever, flexible connections between the front ends of said lever and the cutter-bar, hand-levers located contiguous to the seat and foot lever, and flexible connection between said levers and the cutter-bar attachments, whereby the latter are adjusted transversely.

13. An apparatus comprising a main frame, a roller at the rear and turnable wheels at the front upon which the frame is supported, a loosely-suspended bar located between the wheels, and bar having cutters and scraper carried thereon, a pole and draft attachments connected with the axle of the front wheels, a flexible connection between one end of the cutters and the center of the wheel-axle, a similar flexible connection between the other end of the cutters and a fixed portion of the main frame, flexible connections extending upwardly from the draft devices and from the wheel-axle and connected with the main frame, whereby the draft is equalized.

14. An apparatus comprising a main frame with front steering-wheels and a rear roller upon which said frame is carried, a loosely-suspended horizontally-turnable bar having cutters and scraper carried thereon, connections between the ends of said cutters and scraper and the wheel-axle and main frame respectively, draft devices connecting with the front axle and flexible connections between the main frame and said draft devices and the wheel-axle, substantially as described.

15. An apparatus comprising a main frame with bearing-wheels and roller at the front and rear respectively, a horizontally and vertically adjustable bar located between the wheels and roller and carrying cutters and a scraper, flexible connections between said cutters and scraper and the wheel-axle and draft devices, springs mounted upon the main frame, vertical connections between the cutter-bar and said springs, a fulcrumed seat-lever connecting with the springs, and foot and hand levers connecting with the cutter-bar, whereby the cutters and scraper may be adjusted both vertically and horizontally.

823,873. POISON-INDICATOR. PHILIP H. JONES, Lutcher, La., assignor of one-half to Rodney P. Woods, Lutcher, La. Filed Mar. 1, 1906. Serial No. 303,721.

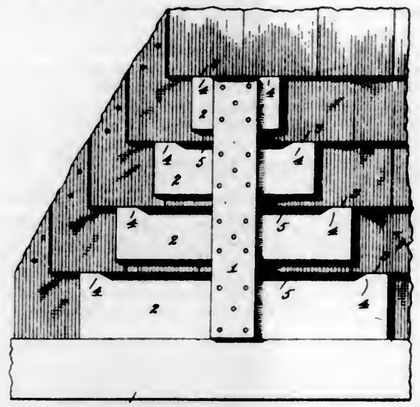


Claim.—1. An indicator for use in connection with a stoppered receptacle, comprising a peripherally-toothed circular protecting-plate and means for detachably securing same above said stopper, and a label-plate superposed on said protecting-plate, substantially as described.

2. An indicator for use in connection with a stoppered receptacle, comprising a circular protecting-plate provided with peripheral teeth adapted to project laterally of the receptacle, and an affixing-pin carried by said plate adapted to be inserted in the stopper of said receptacle, and an integral label-plate superposed on said protecting-plate and provided with a sharpened finger, substantially as described.

823,874. SHINGLE-GAGE. WILLIAM W. JONES, Moro, Tex. Filed Mar. 27, 1906. Serial No. 308,259.

Claim.—1. A shingle-gage comprising a standard and a plurality of arms or rests secured to and projecting laterally from the standard at right angles thereto, the said several arms successively decreasing in length upward and arranged in parallel planes which are inclined relative to the plane of the standard.



2. A shingle-gage comprising a standard and a plurality of arms or rests secured to and projecting laterally from the standard at right angles thereto and provided with lugs on their upper edges at their outer ends.

3. A shingle-gage comprising a removable gage-board, a standard arranged to rest upon the upper edge of the said board, and a plurality of arms secured to and projecting laterally from the said standard, the lower edge of the lowermost arm being arranged to rest upon the upper edge of the gage-board.

823,875. DUST-PROOF INK-WELL COVER. JOHN KASTNER, Jr., Evansville, Ind., assignor of two-thirds to Sigurd E. Anderson and Fred W. Goedeke, Evansville, Ind. Filed Sept. 19, 1905. Serial No. 279,063.



Claim.—1. In an ink-well cover or closure attachment for desks, the combination with a guiding-frame adapted for attachment to the desk, and a cover or slide guided by said guiding-frame and adapted to close the ink-well, of spring means adapted for holding the cover or slide in yielding slidable engagement with the guiding frame.

2. In an ink-well cover or closure attachment for desks, the combination with a two-part guiding-frame adapted for attachment to the desk, and a cover or slide positioned between the parts of said two-part guiding-frame and adapted to close the ink-well, of spring means adapted to insure a yielding slidable engagement of the cover with the guiding-frame.

3. In an ink-well cover or closure attachment for desks, the combination with a two-part guiding-frame adapted for attachment to the desk, said frame having its parts loosely associated, and a cover or slide positioned between the two parts of said frame and adapted to close the ink-well, of spring means adapted for pressing the frame parts and the slide or cover together.

4. In an ink-well cover or closure attachment for desks, the combination with a guiding-frame composed of outer and under parts, the outer part being adapted for attachment to the desk and the under part lying against the desk, said parts being loosely associated, and a cover or slide positioned between the outer and under parts of said frame and adapted to close the ink-well, of a spring interposed between the under frame part and the desk and adapted for pressing the frame parts and the cover together.

5. In an ink-well cover or closure attachment for desks, the combination with a gulding-frame composed of outer and under parts, the outer part being adapted for attachment to the desk and the under part lying against the desk, said parts being loosely associated, and a cover or slide positioned between the outer and under parts of said frame and adapted to close the ink-well, of a spring secured to the under frame part and bearing against the desk, said spring being adapted for pressing the frame parts and the cover together.

823,876. NUT-LOCK. WILLIAM N. KERR, Abita Springs, La., assignor of one-half to P. H. Hansbrough, Abita Springs, La. Filed July 3, 1905. Serial No. 268,141.

Claim.—As an article of manufacture, a nut-locking washer, formed of sheet metal and comprising a body having an aperture to receive a bolt and also having a concave inner side and a convex outer side, and a wing at one end of the body integral therewith; the said wing being disposed at an obtuse angle to the body, whereby it is adapted to permit of the placing of a prying instrument between itself and an adjacent fish-plate and is also adapted to bend backwardly when a nut is turned against the face of the washer.



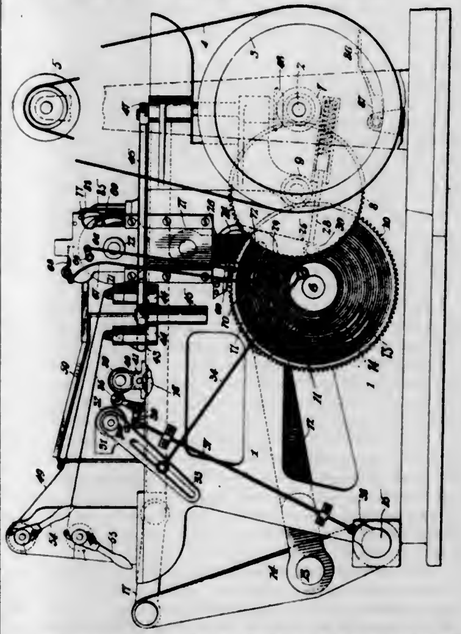
823,877. SURGICAL IMPLEMENT. ALONZO C. KELLOGG, Portage, Wis. Filed Sept. 11, 1905. Serial No. 277,841.



Claim.—1. A device for applying constrictive rings to the umbilical cord, consisting of a rigid tube open at one end and extended at the other end in the form of a solid tapering attenuated and smooth dilator.

2. A device for applying constrictive rings to the umbilical cord, consisting of a tube open at one end and extended at the other in the form of a tapering, attenuated and smooth dilator, and a stopple for the open end to form a closed storage-container for the rings.

823,878. PLATE-PRINTING MACHINE. GEORGE H. KENDALL, New York, N. Y. Filed Dec. 9, 1905. Serial No. 291,030.



Claim.—1. In a plate-printing machine, a main power-shaft, an operating-shaft geared to said main power-shaft, a bed carrying a rack connected to be reciprocated by said main power-shaft, an impression-cylinder geared to said rack, front stops and gripper-fingers, link connections from said front stops and additional link connections arranged to operate said gripper-fingers extending in proximity to said main operating-shaft, and means on said operating-shaft for impinging against said links to operate said parts, said means being so timed as to cause a sheet to be received and delivered

upon rearward movements of said bed, whereby an impression is made by the printing-plate after it has been inspected by the operator.

2. In a plate-printing machine, a bed carrying a rack and having its end cut away adjacent to such rack, whereby an opening is left for the operator to stand and inspect the plate, an impression-cylinder geared to said rack, and inking means and wipers on each side of said impression-cylinder from that where the operator stands.

3. In a plate-printing machine, a bed having a rack and a cut-away portion at one end adjacent to said rack whereby an opening is left for the operator to stand and inspect the plate, an impression-cylinder geared to said rack, inking means and wipers in the rear of said impression-cylinder, and means for moving said bed to initially present the plate for inspection by the operator and subsequently pass it beneath the impression-cylinder and inking and wiping means.

4. In a plate-printing machine, a reciprocating bed having an extension at its forward end, a rack upon said bed projecting over said extension, an impression-cylinder geared to said rack, a printing-plate upon said bed in proximity to said forward end of the bed, and inking and wiping means, whereby the same may pass from a position in front of the operator successively under the impression-cylinder and under the inking and wiping means.

5. In a plate-printing machine, a main frame having an operating-shaft, a pitman connection therefrom, a bed guided by said frame to have a fixed movement from said pitman, a rack on said bed and projecting beyond the forward end thereof, an impression-cylinder in mesh with said rack, an additional rack on the bed projecting beyond the rear end thereof, a bearing-roller having a gear in mesh with said rack, and a printing-plate at one end of said bed, whereby the same is initially in position to be inspected by the operator, and then successively passes under the impression-cylinder and under inking and wiping means.

6. In a plate-printing machine, a frame having a main operating shaft, a bed guided to reciprocate in said frame, a pitman connection from said operating-shaft to said bed, a rack upon said bed and projecting beyond the forward end thereof, an impression-cylinder geared to said rack at substantially the central portion of its throw, an additional rack projecting beyond the rear end of the bed, a bearing-roller having a gear in mesh with said rack, and a printing-plate in proximity to the end of said bed, whereby it successively passes under said impression-cylinder and under inking and wiping means.

7. In a plate-printing machine, a frame having a main operating-shaft, a bed guided to reciprocate in said frame, a pitman connection from said operating-shaft to said bed, and a cut-away portion on said bed adjacent to the printing-plate, whereby the operator may inspect the work prior to its passage under the impression-cylinder.

8. In a plate-printing machine, a frame having a reciprocating bed, an impression-cylinder geared thereto, inking and wiping means at one side of said impression-cylinder, a feed-board at the same side of said impression-cylinder, and a cut-away portion on said bed whereby a clear space is provided for the operator to inspect the work.

9. In a plate-printing machine, a reciprocating bed having a rack projecting forwardly therefrom at its forward end, an impression-cylinder in gear with said rack, a second rack upon the bed projecting beyond the bed at its rear end, inking mechanism in gear with said last-named rack, and wiping means intermediate said impression-cylinder and inking mechanism whereby the operator may stand in a position to wipe the plate regardless of the movements of the bed.

10. In a plate-printing machine, a reciprocating bed having a plate thereon, an impression-cylinder journaled above said plate and arranged to contact therewith upon the rearward stroke of the bed, stripper-fingers adjacent to said impression-cylinder, and cam-surfaces fixed upon said bed and movable therewith for throwing said stripper-fingers into operative relation as the bed completes its rearward movement.

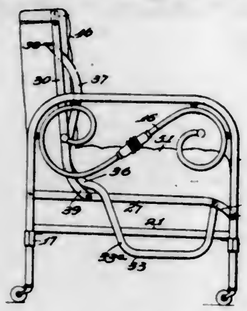
11. In a plate-printing machine, a reciprocating bed having a printing-plate thereon, an impression-cylinder above said bed, stripper-fingers adjacent to the upper peripheral surface of said cylinder, lifter-fingers upon said cylinder, and cam means upon said bed for operating said stripper and lifter fingers.

12. In a plate-printing machine, a reciprocating bed having a printing-plate thereon near its forward end, an impression-cylinder, journaled slightly forward of the mean position of the throw of said plate, stripper and lifter fingers in operative relation to said impression-cylinder, and a pair of cam-surfaces upon the bed for operating said stripper and lifter fingers as the bed completes its rearward movement.

13. In a plate-printing machine, a reciprocating bed having a printing-plate thereon, an impression-cylinder journaled above said plate, stripper-fingers operatively related to said impression-cylinder, a cam-wedge surface upon said bed for lowering said stripper-fingers, lifter-fingers upon the impression-cylinder, and a comparatively short cam-wedge for operating said lifter-fingers when the stripper-fingers are lowered.

14. In a plate-printing machine, a main power-shaft, a central operating-shaft geared to said main power-shaft by reduction-gearing, a bed, means for reciprocating said bed from said operating-shaft, an impression-cylinder, front stops and gripper-fingers operatively related to said impression-cylinder, and cams upon said operating-shaft for actuating said front stops and grippers as the bed moves rearward.

823,879. DAVENPORT-BED. CHARLES J. KINDEL and RUDOLPH COOPERSMITH, St. Louis, Mo. Filed Oct. 28, 1905. Serial No. 284,888.



Claim.—1. A davenport-bed comprising a bed member, a seat member, and a back member hingedly secured together, side frames, a plurality of bars and levers carried by the side frames and back member permitting the back member to contact with the seat member, to be reversed on a parallel line with the bed member, substantially as specified.

2. A davenport bed comprising a bed member mounted upon a frame, a seat member hingedly connected to the bed member, a back member hingedly connected to the seat member, a plurality of bars and levers carried by the frame and arranged to support and permit the back member to turn down on the seat member and both members reversed by a somersault movement, to a bed extension on a parallel line with the bed member, substantially as specified.

3. A davenport-bed comprising a pair of side frames, a bed-frame mounted upon said side frames, a bed member located upon the bed-frame, levers and bars carried by the side frames, a back member supported by one of said bars, a seat member hingedly connected to the back member and to the bed member, said bars and levers arranged to permit the back member to fold against the seat member, and both together forming the bed extension and held in position by one of the levers, substantially as specified.

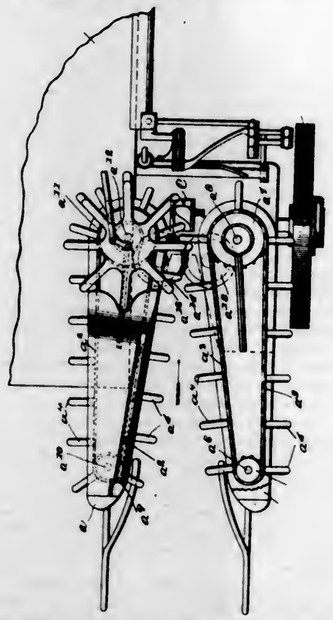
4. A davenport-bed comprising side frames, a bed-frame mounted in said side frames, clamps located upon the side frames to support the bed-frame, wedges located upon the bed-frame to wedge within sockets formed on the clamps, a bed member supported by the bed-frame, a seat member located upon the bed member and hingedly secured thereto, a back member hingedly connected to the seat member, a converting mechanism carried by the side frames and supporting the back member, a lever forming a part of the converting mechanism, so bent to support the back member when in upright position, said lever pivoted to permit the back member to fold against the seat member when in extended position, and to form the extended leg when the back member and seat member are in folded position and extended on a horizontal line with the bed member, substantially as specified.

5. A davenport-bed comprising a pair of side frames, sockets located upon said side frames, a bed-frame, wedges carried by the bed-frame to communicate with the sockets located on the side frames, a bed member mounted upon the bed-frame, a back member composed of a back-frame, a seat member located upon the bed member, and hingedly connected to said bed member and the back member, a plurality of fastening devices mounted upon the bars of the back frame and bed-frame to keep the fabric in tant position, and to support the upholstering material, a plurality of bars and levers pivotally connected together and mounted upon the side frames, one of said bars connected to the back-frame, and a lever to support the back member when in upright position, and to form the leg for the members when in extended position, said lever bent to freely pass the pivotal connections when in extended position, substantially as specified.

6. A davenport-bed comprising a pair of side frames, a bed-frame composed of angle-bars, cross-bars, and a plurality of slats connected together located between the side frames, clamps carried by the side frames to support the said bed member, a back member composed of angle-bars, side bars and a plurality of slats connected together, and covered with suitable upholstering material, a bed member mounted upon the bed-frame, a seat member hingedly connected to the bed member and back member, a plurality of bars and levers pivotally connected together and supported by the side frames, said bars and levers arranged and bent to permit the same to pass the pivotal points and fold to an extended position, one of said bars supporting the back member, and a lever provided with a foot to support the back member when in upright position, and to act as a leg when in an extended position, the back member and seat member arranged to fold together when in folded position to form the bed extension, substantially as specified.

7. A davenport-bed comprising a pair of side frames, a bed-frame composed of angle-bars, cross-bars, and a plurality of slats connected together, located between the side frames, clamps carried by the side frames to support the said member, a back member composed of angle-bars, side bars and a plurality of slats connected together, and covered with suitable upholstering material, a bed member mounted upon the bed-frame, a seat member hingedly connected to the bed member and back member, a plurality of bars and levers pivotally connected together and supported by the side frames, said bars and levers arranged and bent to permit the same to pass the pivotal points and fold to an extended position, one of said bars supporting the back member, and a lever provided with a foot to support the back member when in upright position, and to act as a leg when in an extended position, said lever bent to form a head and foot rest, the back member and seat member arranged to fold together when in folded position to form the bed extension, substantially as specified.

823,880. CORN-HARVESTER. WILLIAM E. KOCH, Duvall, Ohio. Filed Dec. 23, 1905. Serial No. 293,100.



Claim.—1. In a corn-harvester, the combination with the frame, of conveyer-chains on the frame for engaging the stalks, a cutter on the frame at the rear of the conveyer-chains, star-wheels for receiving the stalks from the conveyer-chains, and a check for the butts of the stalks, comprising a bracket secured to the frame behind the cutter, and provided with upstanding sides, a stop hinged to one of the sides and comprising a curved vertical plate normally extending between the sides of the bracket, the plate having upon its upper edge a flange, a spring for maintaining the stop in position, and means for regulating the tension of the spring.

2. In a corn-harvester, the combination with the frame, of conveyer-chains on the frame for engaging the stalks, a cutter on the frame at the rear of the conveyer-chains, star-wheels for receiving the stalks from the conveyer-chains, and a check for the butts of the stalks comprising a bracket having upstanding sides, a curved vertical plate hinged to one side of the bracket, the plate having a flange on its upper edge, and means for yieldingly maintaining the plate in position across the bracket.

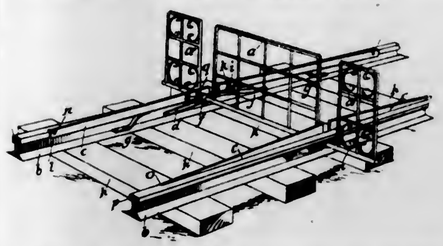
3. In a corn-harvester, the combination with the frame, of conveyer-chains on the frame for engaging the stalks, a cutter for receiving the stalks, star-wheels for receiving the stalks from the conveyer-chains, and a check for the butts of the stalks, comprising a spring-pressed plate normally extending across the path of travel thereof.

4. In a corn-harvester, the combination with the frame having a cutter thereon, of means for straightening the leaning stalks, comprising conveyer-chains for engaging the tops thereof, a spring-pressed stop for engaging the butts of the stalks, and means for engaging the tops and bottoms of the stalks at the rear of the conveyer-chains to force the stalks beyond the stop.

5. In a corn-harvester, the combination with the frame having a cutter thereon, of means for raising the stalks into a perpendicular position, comprising conveyer-chains for elevating the upper end thereof, and a spring-pressed stop for engaging the butt of the stalk.

6. In a corn-harvester the combination with the frame having a cutter thereon, of means for straightening the leaning stalks, comprising means for engaging the top of the stalks, and a yielding stop for engaging the butt of the stalk.

823,881. RAILROAD CATTLE-GATE. CHARLES R. LARKIN, Nashville, Tenn. Filed Aug. 28, 1905. Serial No. 276,170.



Claim.—1. In a railroad-gate, the combination of a transversely-disposed rock-shaft, a pinion thereon, tread-levers extending longitudinally at either side of said shaft and normally inclined with their inner ends elevated, pivotally-supported links disposed longitudinally below said tread-levers, and connected together at their inner ends, an upright rack connecting one of said links and its overlying tread-lever and meshing with said pinion, and a connection between the other link and its overlying tread-lever.

2. In a railroad-gate, the combination with track-rails, of a rock-shaft disposed transversely of said rails, a pinion on said shaft, a normally upright gate carried by the shaft, tread-levers extending longitudinally at either side of the gate and normally inclined with their inner ends elevated above the rail-treads and their outer ends substantially flush therewith, pivotally-supported links disposed longitudinally below said tread-levers and connected directly together for simultaneous movement, an upright track connecting one of said links and its overlying tread-lever and meshing with said pinion, and a connection between the other link and its overlying tread-lever.

3. In a railroad-gate, the combination with track-rails, of a rock-shaft disposed transversely of said rails, a pinion on said shaft, a normally upright gate carried by the shaft, tread-levers extending longitudinally at either side of the gate and normally inclined with their inner ends elevated above the rail-treads and their outer ends substantially flush therewith, links disposed longitudinally below said tread-levers pivotally supported at their outer ends and connected together at their inner ends, an upright track connecting one of said links with its overlying tread-lever and meshing with said

pinion, a connection between the other link and its overlying tread-lever, and means for returning the gate to normal position after having been depressed by said tread-lever.

4. In a railroad-gate, the combination with track-rails, of a rock-shaft journaled transversely in said rails, a pinion on said shaft, normally upright gate carried by the shaft, a tread-lever disposed longitudinally at each side of the gate in a recess in the tread of one of the rails and having its outer end pivoted to the rail and substantially flush with the tread thereof, springs tending to maintain the inner ends of said levers above the rail-tread, links disposed longitudinally below said tread-levers pivotally connected at their outer ends to the rail and connected together at their inner ends, an upright rack connecting one of said links with its overlying tread-lever, and a connection between the other link and its overlying tread-lever.

5. In a railroad-gate, the combination of a pair of transversely-disposed rock-shafts, a pinion on each shaft, a normally upright gate carried by each shaft, a tread-lever extending longitudinally outside of each gate and normally inclined with its inner end elevated, pivotally-supported links disposed longitudinally below said tread-levers and connected directly together for simultaneous movement, and an upright rack connecting each of said links and its overlying tread-lever and meshing with the adjacent pinion.

6. In a railroad-gate, the combination with track-rails, of a pair of rock-shafts disposed transversely of said rails, a pinion on each shaft, a normally upright gate carried by each shaft, a tread-lever extending longitudinally outside each gate and normally inclined with its inner end elevated above the treads of the rails and its outer end substantially flush therewith, longitudinal links below said tread-levers pivotally supported at their outer ends and connected together at their inner ends, an upright rack connecting each of said links and its overlying tread-lever and meshing with the adjacent pinion, and means for returning the gates to normal position after having been depressed by said tread-levers.

823,882. **MECHANICAL TOY.** CHARLES A. LEWIS, Denver, Colo. Filed Feb. 23, 1906. Serial No. 302,369.



Claim.—1. A mechanical toy comprising an animal member consisting of a number of parts pivotally connected together, one of said parts being relatively stationary and the others movable, a motor, a pitman connecting one movable part of the animal portion of the toy with the motor, whereby movement is imparted directly to the said part and indirectly to another part, and a link connection between the stationary part and one of the movable parts.

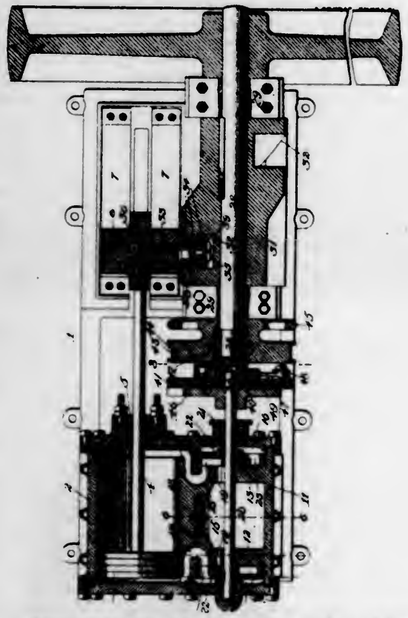
2. A toy of the class described, comprising an animal portion composed of a head and neck member, a body member, a relatively stationary front leg member and a rear member, the head and neck member being pivotally connected with the body member, the rear member being pivotally connected with the body member, and the body member being pivotally connected with the stationary front leg member, an operating-pitman connected with the head and neck member, and a link connection between the front leg member and the rear member, the points of connection of the link and pitman being different from the pivotal points where the members of the animal are connected for the purpose set forth.

3. A mechanical toy comprising the representation of an animal consisting of a head and neck member, a body member pivotally connected with the head and neck member, a relatively stationary front leg member also pivotally connected with the body member, a rear member pivotally connected with the body member, an operating-pitman connected with the head and neck member, and a link connection between the front leg member and the rear member for the purpose set forth.

4. A toy of the class described, comprising a vehicle, a spring-motor mounted thereon, an animal device comprising various members pivotally connected together, an operating-pitman leading from the motor to one of the said members, a link connection between two other members, and a rider device detachably connected with the animal device.

5. A mechanical toy comprising the representation of an animal consisting of a relatively stationary member, a number of movable members, a motor, a pitman connecting one of the movable members with the motor, and a link connecting another movable member with the stationary member.

823,883. **ROTARY VALVE FOR ENGINES.** FRANK T. LIGGETT, North Yakima, Wash., assignor of one-half to James A. Drain, Olympia, Wash. Filed Aug. 21, 1905. Serial No. 275,101.



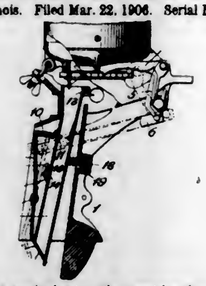
Claim.—1. In an engine provided with a cylinder, a reciprocating piston, a driven shaft parallel to the piston-rod and power-transmitting means between said rod and shaft; a steam-chest having ports opening into the cylinder, valves to open and close said ports, a shaft connected with said valves and arranged in alinement with the said driven shaft, a disk on the driven shaft, a disk on the valve-shaft, said disks each having cam-slots, a pin passing through said slots, links connecting the pin with one of the disks, and means for moving said links to vary the position of the pin.

2. In an engine, the combination with a cylinder, provided with a reciprocating piston, a steam-chest provided with ports opening into the cylinder, valves to open and close the ports, a valve-shaft by which the valves are operated, a second shaft driven by the engine, said shafts being in line with each other, a disk on the driven shaft, and a disk on the valve-shaft, cam-slots in each of said disks, a pin passing through said cam-slots and means for moving said pin in said slots to cause the disks to move in relation to each other and reverse the engine.

3. In an engine, the combination with a cylinder, provided with a reciprocating piston, a steam-chest provided with ports opening into the cylinder, valves to open and close the ports, a valve-shaft by which the valves are operated, a second shaft driven by the engine, said shafts being in line with each other, a disk on the driven shaft, and a disk on the valve-shaft, cam-slots in each of said disks, a pin passing through said cam-slots and links carried by one of said disks and connected to the pin and means for operating said links to move the pin in the slots to cause the disks to rotate in relation to each other and reverse the engine.

4. In an engine, the combination with a cylinder, provided with a reciprocating piston, a steam-chest provided with ports opening into the cylinder, valves to open and close the ports, a valve-shaft by which the valves are operated, a second shaft driven by the engine, said shafts being in line with each other, a disk on the driven shaft, a disk on the valve-shaft, cam-slots in each of said disks, a pin passing through said cam-slots, a third disk provided with means whereby it can be rotated with respect to the first disk, link connections between said first disk and said pin, whereby when said third disk is moved in relation to the first disk the pin in the cam-slots causes the first and second disks to move in relation to each other and reverse the engine.

823,884. **VALVE MECHANISM FOR SEED-PLANTERS.** ALEXUS C. LINDGREN, Moline, Ill., assignor to Moline Plow Company, a Corporation of Illinois. Filed Mar. 22, 1906. Serial No. 307,386.



Claim.—1. In a seed-planter, the combination of seed-discharging mechanism, a rearwardly-inclined movable seed-conductor, a valve adapted when the lower end of said conductor is in its rearward position to coöperate therewith for "hill-dropping," and means for adjusting said lower end of the conductor forward to a vertical position free of coöperation with the valve, for drilling.

2. In a seed-planter, the combination of seed-discharging mechanism, a seed-conductor hung at its upper end to swing forward, a valve coöperating with the conductor when the latter is in its rear position, a spring acting to retain the conductor in its rear position, and an adjusting device for retaining the conductor in its forward position.

3. In a seed-planter, the combination of seed-discharging mechanism, a runner-shank, a seed-conductor mounted therein on a transverse axis and provided on its rear side with a stop projection, a spring sustained by the runner-shank and bearing on the front side of the conductor and tending to hold the same yieldingly in its rearward position, and an adjusting-dog mounted in the runner-shank and formed with a finger adapted to engage the conductor and coöperate with the stop projection thereon.

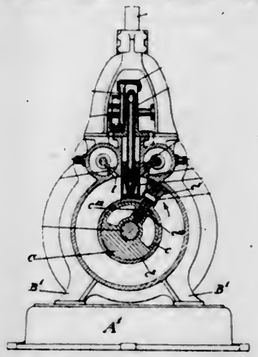
4. In a seed-planter, the combination of seed-discharging mechanism, a runner-shank, a seed-conductor therein, movable back and forth, an adjusting-dog mounted in the runner-shank on a transverse axis in rear of the conductor and formed with a finger adapted to engage the conductor and move the same forward, a turning-head on the dog situated at the outside of the shank, and a valve adapted to coöperate with the conductor when in its rearward position.

5. In a seed-planter, the combination of seed-discharging mechanism, a runner-shank, a seed-conductor mounted near its upper end in the shank on a horizontal axis, an adjusting-dog mounted in the shank on a horizontal transverse axis and in rear of the conductor, a finger on the dog adapted when the latter is turned on its axis, to engage and urge the conductor forward, and a projection on the conductor in position to be engaged by the finger when the latter is turned forward.

6. In a seed-planter, the combination of seed-discharging mechanism, a runner-shank, a seed-conductor mounted therein and movable back and forth, a spring acting on the conductor and holding the same yieldingly in its rearward position, an adjusting-dog mounted in the shank and formed with a swinging finger adapted when turned forward to engage and urge the conductor forward, and a stop on the shank adapted to be engaged by the finger and limit the rearward movement of the conductor.

7. In a seed-planter, the combination of seed-discharging mechanism, a movable seed-conductor in position to receive the seed from the discharging mechanism, a valve adapted to alternately close and open the lower end of the conductor for "hill-dropping," and means for adjusting the lower end of the conductor free of coöperation with said valve, for drilling.

823,885. **ROTARY ENGINE.** WILLIAM LISTER, Chicago, Ill. Filed Feb. 11, 1904. Renewed Mar. 23, 1906. Serial No. 307,708.



Claim.—1. The combination of a stationary cylinder, a rotary piston, gate-actuating means, and a reciprocating gate comprising side sections, and a relatively movable intermediate member through the medium of which the gate is expanded when seated, for the purpose set forth.

2. The combination of a stationary cylinder, a rotary piston, gate-actuating means, and a reciprocating gate comprising side sections and an interposed wedge member having lost-motion connection with said side sections and serving to actuate the gate and to expand the same when seated, for the purpose set forth.

3. The combination of a stationary cylinder, a rotary piston, gate-actuating means, and a reciprocating gate comprising side sections and an interposed wedge member, said sections being keyed together to permit expansion of the gate when the gate is in its depressed position, for the purpose set forth.

4. In a rotary engine, a laterally-expansible gate for a stationary cylinder, comprising two suitably-connected side sections provided interiorly with beveled surfaces, and an interposed wedge provided with coacting lateral beveled surfaces, for the purpose set forth.

5. In a rotary engine, a laterally-expansible gate for a stationary cylinder, comprising two suitably-connected side sections provided interiorly with beveled surfaces and having bottom flanges keyed to permit separation and top flanges perforated to permit passage of stems, an interposed wedge free to move relatively to said side sections, and stems extending through the top flanges of said side members, for the purpose set forth.

6. The combination of a stationary cylinder having a longitudinal slotted enlargement at its top, removable ends for said cylinder having projections covering the ends of said enlargement, a removable top plate for said enlargement provided with perforations, a gate movable vertically in said slot provided with stems projecting through said top plate, a cross-head connecting said stems, actuating means for the cross-head, including a lever and a vertically-movable slide, a rotary piston, and a rotary cam serving to actuate said slide, for the purpose set forth.

7. The combination with a stationary cylinder, of a rotary piston therein, comprising a core, and an extensible shell enveloping said core and provided with suitable cylinder ends contacting surfaces, for the purpose set forth.

8. The combination with a stationary cylinder, of a rotary piston therein, comprising a core, and a shell comprising two substantially cylindrical sections provided with ends for contacting with the cylinder ends, and springs tending to separate said sections and maintain close joints at said ends, for the purpose set forth.

9. The combination with a stationary cylinder, of a rotary piston therein, comprising a core having a longitudinal lateral slot, a longitudinally-extensible cylinder-contacting member in said slot, and a longitudinally-extensible cylindrical shell with a slotted lateral abutment receiving said cylinder-contacting member, said abutment being connected with said cylinder-contacting member, whereby the shell and said member are caused to expand simultaneously, for the purpose set forth.

10. In a rotary engine, a rotary piston, comprising a core having

a lateral slot, a shell comprising two cylindrical members provided with ends and having lateral projections provided with longitudinal slots, and a radially-self-adjusting cylinder-contacting member confined in said slots and having sections connected, respectively, with the corresponding sections of said shell and movable therewith to produce longitudinal extension, for the purpose set forth.

11. In a rotary engine, a rotary piston comprising a core, a shell enveloping said core comprising two sections having ends contacting with the ends of the cylinder and adjacent edges connected by mortise-and-tenon joints, said sections having lateral abutments provided with alined slots, and a cylinder-contacting abutment member in said slots, for the purpose set forth.

12. In a rotary engine, the combination of a stationary cylinder equipped with a longitudinal gate-guide, a gate confined in said guide and provided with longitudinally-alined stems, a cross-head joining said stems, a lever swinging in a longitudinal plane and having one end linked to said cross-head, a slide linked to the other end of said lever, and a cam on the shaft of the piston actuating said slide, for the purpose set forth.

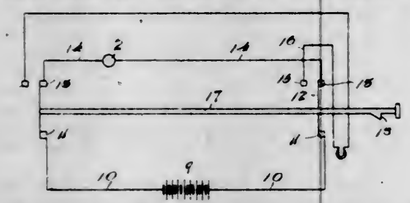
13. In a rotary engine, the combination of a piston having an extensible shell comprising members fitted together with interlocking tenons, a cylinder, and a gate having a piston-contacting surface of greater width than said tenons, whereby "blowing back" of the fluid underneath the gate is prevented, for the purpose set forth.

14. A piston for a machine of the character set forth, comprising a core and a longitudinally-extensible shell for said core comprising two cylindrical members movable with relation to said core, for the purpose set forth.

15. A gate for a machine of the character described, comprising two side members provided with internal downwardly-converging surfaces and a wedge confined between said members and movable with relation thereto, for the purpose set forth.

16. The combination of a stationary cylinder having a lateral longitudinally-extending gate-guide, an expansible gate in said guide of greater length than the body of the cylinder, cylinder ends having radial grooves forming prolongations of the gate-guide, and means for actuating said gate, said gate making fluid-tight joints with the side walls of its guide when the gate is seated, for the purpose set forth.

823,886. **TELEPHONE.** THOMAS J. MERRYMAN and CARL L. ALLEN, Lincoln, Nebr. Filed Aug. 25, 1904. Serial No. 222,044.



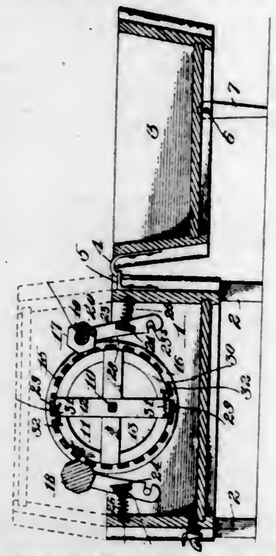
Claim.—1. In a telephone lighting system, the combination of a telephone instrument having a transmitter, a receiver, and a hook for the latter, a transmitter-circuit, including a resilient contact and a binding-post against which the resilient contact normally rests, a lamp-circuit having a terminal secured to a binding-post disposed adjacent to that of the transmitter-circuit, a source of electrical energy for the circuits, and a slidable device mounted in the instrument and connected to the contact and arranged when moved to cause said contact to engage the binding-post of the lamp-circuit.

2. In a telephone lighting system, a transmitter-circuit, including resilient contacts and binding-posts with which the contacts normally engage, a lamp-circuit having its terminals secured to binding-posts disposed adjacent to those of the transmitter-circuit, a source of electical energy for the circuits and means for flexing the contacts to cause them to engage the binding-posts of the lamp-circuit, thus to open the transmitter-circuit and close the lamp-circuit.

3. In a telephone lighting system, a transmitter-circuit including resilient contacts and binding-posts with which the contacts normally engage, a lamp-circuit having its terminals secured to binding-posts disposed adjacent to those of the transmitter-circuit, a source of electrical energy for the circuits and a push-bar for actuating the contacts to open the transmitter-circuit and close the lamp-circuit.

823,887. **WASHING-MACHINE.** CURRAN H. MITCHELL, Fort Payne, Ala. Filed June 24, 1904. Serial No. 213,968.

Claim.—1. In a washing-machine, a receptacle, a drum rotatably mounted in the receptacle, supporting-frames removably pivoted adjacent to opposite ends of the receptacle and having pivoted cross-bars, rollers mounted in the upper extremities of the frames, and springs interposed between the cross-bars and the ends of the receptacle.



2. In a washing-machine, a receptacle, a drum rotatably and removably mounted in the receptacle, supporting-frames removably pivoted in the receptacle adjacent to opposite ends of the latter and having pivoted cross-bars with outwardly-projecting studs, springs engaging the said studs and the ends of the receptacle, and rollers mounted in the upper extremities of the frames and normally held in engagement with opposite portions of the drum.

3. In a washing-machine, a receptacle, a drum rotatably mounted in the receptacle, supporting-frames pivotally disposed in the receptacle adjacent to opposite portions of the latter, and having intermediate movable elements, rollers held by the upper extremities of the frames, and springs engaging the intermediate movable elements of the frames and the ends of the receptacle to force the rollers into normal contact with the drum.

823,888. **DUMMY KEYBOARD.** JOSEPH W. MCCANN, Washington, D. C. Filed July 27, 1905. Serial No. 271,522.



Claim.—1. A dummy keyboard comprising a body, keys, of spring metal, fixed at one end to the body, a space-bar having a finger-piece at one end and a dog on said finger-piece, spring-metal strips connecting the space-bar and the body, a toothed wheel arranged to be rotated in one direction by the dog, means for preventing retrograde movement of the toothed wheel, a bell carried by the body, and means operated by the toothed wheel for striking the bell when the wheel is turned through a complete revolution.

2. A dummy keyboard comprising a body, keys, of spring metal, fixed at one end to the body, a space-bar, a spring connection between the bar and the body, a bell, and means operated by the space-bar for ringing the bell when said bar is depressed a predetermined number of times.

3. A dummy keyboard comprising a body having an upper surface which forms an inclined plane, and keys, of spring metal, fixed at their inner ends directly to the inclined plane of the body and resting above and at an acute angle thereto.

4. A dummy keyboard comprising a body having an upper surface arranged to form an inclined plane, and keys, of spring metal, having inner, bent ends brazed to the inclined plane of the body, whereby the keys rest horizontally at an acute angle to the inclined plane.

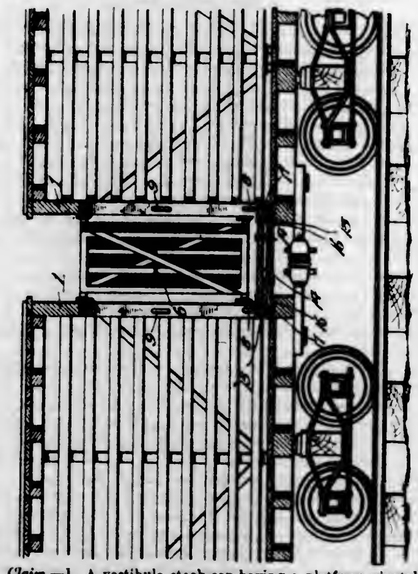
5. A dummy keyboard comprising a body having an upper surface arranged to form an inclined plane, and keys having bodies, of spring metal, provided with inner bent ends brazed to the inclined plane of the body and also provided adjacent to their free ends with shoulders, and looped, character-bearing labels receiving and connected by adhesive to the free ends of the key-bodies and having their ends alined with the shoulders of said bodies.

823,889. **CLOTHES-PIN.** JESSE M. MCCRESNEY, Honolulu, Hawaii. Filed Apr. 6, 1905. Serial No. 254,188.



Claim.—The herein-described clothes-pin comprising the pair of spring-pressed jaws, normally closed and each having a lever-arm, the said lever-arms being normally pressed apart at their outer ends by the action of the spring in closing the jaws, and the bail 5 pivoted to one of said lever-arms and having its pivot 7 in a bearing in, extending through and at right angles to said arm, said pivot preventing angular movement of the bail excepting at right angles to the common plane of the lever-arms, said bail extending across and arched above the space between the lever-arms, terminating in the downturned portion 6 overlapping and bearing against the outer side of the lever-arm opposite that to which said bail is pivoted, the said bail serving to suspend the pin and the load carried thereby from a line.

823,890. **STOCK-CAR.** CHARLES W. MCKEEHEN, Richards, Okla. Filed Jan. 16, 1905. Serial No. 241,296.



Claim.—1. A vestibule stock-car having a platform pivotally connected with the end thereof, said platform at its point of pivotal connection with the car being capable of vertical and horizontal movement.

2. A car having a door-frame provided with side bars having upper and lower vertical slots, a platform having slotted corner-brackets, bolts engaging the slotted corner-brackets and the lower vertical slots of the side bars, and locking devices on the free ends of the platform.

3. A car having doors horizontal bars connected therewith, and hook members connected with said bars, the hook members on the doors of one car being adapted to engage the horizontal bars in the doors of another car.

823,891. **TROUSERS HOLDER AND PRESSER.** KENZAEMON NISHIMOTO, San Francisco, Cal. Filed Feb. 9, 1906. Serial No. 300,266.



Claim.—1. A trousers-presser comprising a suitable support, a board hinged to move to and from the support and between which parts the trousers are held and pressed, means for pressing said board upon said support, said means including a lever-fulcrum between its ends and connected at one end to the board, and means for applying power simultaneously to both sides of the fulcrum of said lever.

2. A trousers-presser comprising a supporting-board, a board movable to and from said supporting-board, a lever pivoted to said movable board and fulcrumed to a part rigid with the base-board, and spring means acting on said lever to press the two parts together.

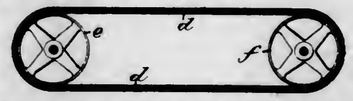
3. A trousers-presser comprising a supporting-board, a board movable to and from said supporting-board, a lever pivoted to said movable board and fulcrumed to a part rigid with the base-board, and spring means acting on the lever on both sides of its fulcrum to press the two parts together.

4. A trousers-presser comprising a base presser member, a movable presser member, a lever connected with the movable presser member and fulcrumed between its ends, and means operating on both sides of the fulcrum of the lever to press the two presser members together.

5. A trousers-presser comprising a stationary presser member, a movable presser member, a lever connected with the movable presser member and fulcrumed between its ends, a bell-crank lever having a cam-shaped arm engaging the first-named lever on one side of its fulcrum and a spring connected with the arm of the bell-crank lever and with its first-named lever on the opposite side of its fulcrum, said bell-crank lever and spring adapted to act simultaneously on said first-named lever to press the two presser members together.

6. A trousers-presser comprising a supporting-board, means engaging the opposite ends of the trousers to hold the same in position on the board, a movable presser-board, transversely-extending leaf-springs carried by said movable presser-board, levers connected with said springs and fulcrumed between their ends, and means for applying power to said levers on both sides of their fulcra to press the movable presser-board down upon the trousers.

823,892. **DRIVING-BELT.** GEORGE W. PARKES, Manchester, England. Filed Dec. 30, 1903. Serial No. 187,226.



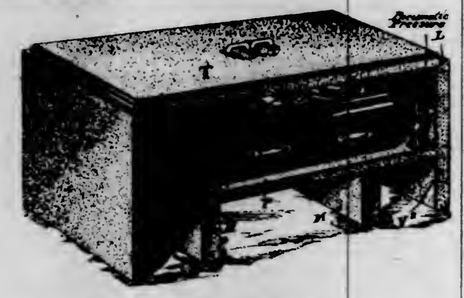
Claim.—A driving band or belt comprising a body portion of solidly-woven fabric, said fabric having loose, comparatively flat textile loops projecting from its pulley-engaging surface, and engaging the pulley whereby said loops are flattened down in use so as to form a flat even pulley-engaging surface upon the belt.

823,893. **PORTABLE BURIAL-VAULT.** WILLIAM PARRY, Crown Point, Ind. Filed Dec. 7, 1905. Serial No. 290,805.

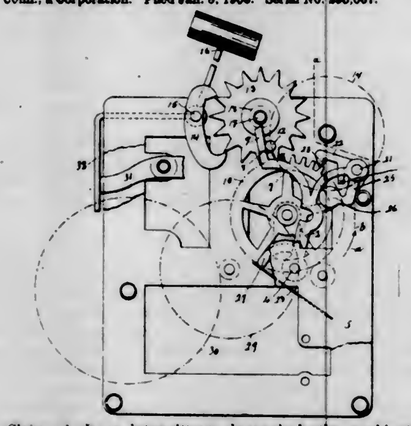
Claim.—1. A burial-vault consisting of a coffer-dam or curb portion whose sides and ends are integrally constructed of cement, but with open top and bottom, the walls of the same being made perpendicular and of uniform thickness and having along the inner side of its upper edge a continuous recess and a detachable cover fitting this recess and adapted to be hermetically sealed therein.

2. A burial-vault consisting of a coffer-dam or curb portion whose sides and ends are integrally constructed of cement but with

open top and bottom, the walls of the same being made perpendicular and of uniform thickness and having along the inner side of the upper edge a continuous recess, a detachable cover fitting this recess, pillow-blocks arranged within the bottom of the inclosure and a platform mounted on the pillow-blocks.



823,894. INTERMITTENT-ALARM CLOCK. WILSON B. PORTER, New Haven, Conn., assignor to New Haven Clock Co., New Haven, Conn., a Corporation. Filed Jan. 8, 1906. Serial No. 295,067.



Claim.—1. In an intermittent-alarm clock, the combination with a wheel of the alarm-train, of a pin carried thereby, a vibratory alarm-lever having a stop-finger for engagement by the said pin, a coupling-hook carried by the said lever, and a wheel of the time-train engaged by the said hook, whereby the lever is coupled with the said wheel.

2. In an intermittent-alarm clock, the combination with a wheel of the alarm-train, of a pin carried thereby, a vibratory alarm-lever having a finger for engagement by the said pin, a pivotal hook carried by the said lever, a wheel of the time-train engaged by the said hook, and a spring for the actuation of the said lever.

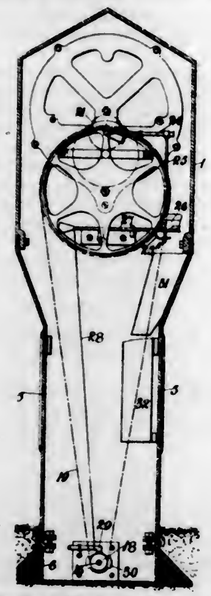
3. In an intermittent-alarm clock, the combination with the escapement-wheel of the alarm-train, and the third wheel of the time-train, of a pin carried by the said escapement-wheel, a vibratory alarm-lever having a stop-finger for engagement by the said pin, a spring for operating the said lever, and a pivotal hook carried by the said lever and coacting with the said third wheel for coupling the lever therewith.

823,895. DYNAMOMETER. HUME PURDIE, Edinburgh, Scotland. Filed Sept. 2, 1905. Serial No. 276,868.

Claim.—1. The combination, with a revoluble supporting-shaft, and a captive golf-ball connected to the said shaft; of an operating-shaft, a spring-coupling between the two said shafts, and distance-indicating mechanism driven by the said operating-shaft.

2. The combination, with a revoluble supporting-shaft, and a captive golf-ball connected to the said shaft; of an operating-shaft, a spring-coupling between the said shafts, distance-indicating mechanism driven by the said operating-shaft, a locking-clutch controlling the said operating-shaft, and means for operating the said clutch at will to release the said operating-shaft.

3. The combination, with a casing having an opening in its upper side, of a revoluble shaft arranged inside the said casing and provided with an arm which projects through its said opening, a dummy golf-ball carried by the said arm, an operating-shaft also arranged inside the said casing, a spring-coupling between the two said shafts, and distance-indicating mechanism driven by the said operating-shaft.



4. The combination, with a casing having an opening in its upper side, of a revoluble shaft arranged inside the said casing and provided with an arm which projects through its said opening, a dummy golf-ball carried by the said arm, an operating-shaft also arranged inside the said casing, a spring-coupling between the two said shafts, a locking-clutch controlling the said operating-shaft, means for operating the said clutch at will and thereby releasing the said operating-shaft, and distance-indicating mechanism driven by the said operating-shaft.

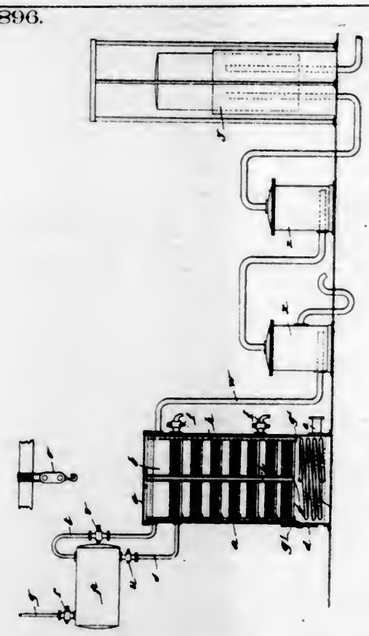
823,896. PROCESS FOR THE MANUFACTURE OF SULFID OF ZINC. GEORGES RANSON, Brussels, Belgium, assignor to Eugene Marlier, Brussels, Belgium. Filed Apr. 27, 1904. Serial No. 206,234.

Claim.—1. The process consisting in decomposing a solution of sulfid of barium by means of zincate of barium, the said zincate of barium being formed by dissolving metallic zinc by means of barium hydroxid in th presence of the sulfid of zinc produced so as to subject the said sulfid of zinc to the action of the nascent hydrogen liberated by the reaction of the barium hydroxid on the metallic zinc substantially as and for the purpose described.

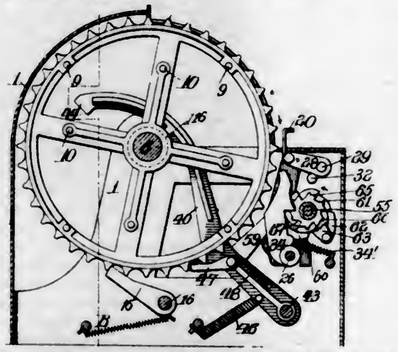
2. The process which consists in first heating metallic zinc, crystallized barium hydroxid and water so as to dissolve the barium hydroxid and convert it into zincate of barium with evolution of hydrogen, then introducing a solution of sulfid of barium and finally decomposing said solution by means of the zincate of barium and in the presence of the nascent hydrogen liberated by the reaction of the barium hydroxid on the metallic zinc substantially as and for the purpose described.

3. The process which consists in first heating metallic zinc, crystallized barium hydrate and water, so as to dissolve the barium hydroxid and convert it into zincate of barium with evolution of hydrogen, then introducing a solution of sulfid of barium of a strength of about two hundred and thirty grams of sulfid per liter, as soon as the quantity of the zinc dissolved by the barium hydroxid has attained about forty-seven one-hundredths of the quantity of zinc which is capable of being dissolved by the barium hydroxid present and then finally decomposing the said solution of sulfid of barium by means of the zincate of barium and in the presence of the nascent hydrogen liberated by the reaction of the barium hydroxid on the metallic zinc so as to obtain a precipitation of sulfid of zinc which takes place simultaneously with the formation of barium hydrate, substantially as and for the purpose described.

823,896.



823,897. CALCULATING-MACHINE. GEORGE H. SEARS, Rochester, N. Y., assignor, by direct and mesne assignments, of three-fourths to Warren B. Huther and Angus E. Huther, Rochester, N. Y. Filed May 24, 1902. Serial No. 108,866.



Claim.—1. In a calculating-machine, the combination with a plurality of counter-wheels and carrying devices arranged between adjacent wheels and actuated by one wheel to revolve the other, of a locking mechanism for arresting the movement of the driven wheel operable by the driving-wheel, and devices operated independently of the counter-wheels for releasing said locking mechanism.

2. In a calculating-machine, the combination with counter-wheels and stop devices coöperating therewith, of carrying devices between the wheels actuated by one of them, means for locking the carrying devices controlled by said stop devices.

3. In a calculating-machine, the combination with counter-wheels, of carrying devices operating between the wheels and manually-operated stops for limiting the movement of the wheels and means for locking the carrying devices controlled by the operation of the stops.

4. In a calculating-machine, the combination with a plurality of counter-wheels, of carrying devices actuated by one wheel to move another, stop devices for arresting the movement of the counter-wheels and mechanism controlled by the movement of the stops for governing the movement of the carrying devices.

5. In a calculating-machine, the combination with a plurality of manually-operated counter-wheels and manually-operated stop devices coöperating therewith, of carrying devices and mechanism actuated by the stops for governing the movement of the carrying devices.

6. In a calculating-machine, the combination with counter-wheels of higher and lower orders, a carrying device actuated by the lower wheel and coöperating with the higher one, a governing mechanism arresting movement of the carrying device and means for releasing the latter at the completion of the movement of the lower wheel.

7. In a calculating-machine, the combination with counter-wheels of higher and lower orders, of carrying devices actuated by the lower wheel and coöperating with the higher one, means for locking the carrying devices and a locking device operable to arrest the lower wheel and operating to release the carrying device.

8. In a calculating-machine, the combination with counter-wheels of higher and lower orders and a carrying device actuated by the lower wheel and coöperating with the higher one, of a governor operated by the carrying device to lock it in actuated position and means coöperating with the governor to release said carrying device.

9. In a calculating-machine, the combination with counter-wheels of higher and lower orders and a carrying device actuated by the lower wheel and coöperating with the higher one, of a governor operated by the carrying device to lock it in actuated position and means operated at the completion of the movement of the lower wheel to release said carrying device.

10. In a calculating-machine, the combination with counter-wheels of higher and lower orders, a carrying device actuated by the lower wheel and coöperating with the higher one and a stop for the lower wheel, of a governor actuated by the carrying mechanism and coöperating with the stop to lock the lower wheel and means coöperating with the governor to release said wheel and carrying devices.

11. In a calculating-machine, the combination with counter-wheels of higher and lower orders, a carrying device actuated by the lower wheel and coöperating with the higher one and a stop for the higher wheel, of a governor controlling the movement of the carrying device and actuating the stop and means for operating the governor to release the higher wheel and carrying devices.

12. In a calculating-machine, the combination with counter-wheels of higher and lower orders, a carrying device actuated by the lower wheel and coöperating with the higher one and a stop, of a governor controlling the carrying device and actuating the stop into engagement with one of the wheels and means operated at the completion of the movement of the lower wheel to actuate the governor into position to release said carrying devices and stop.

13. In a calculating-machine, the combination with counter-wheels of higher and lower orders, a carrying device actuated by the lower wheel and coöperating with the higher one and a stop for limiting the movement of the higher wheel, of a governor actuated by the carrying device to operate the stop, mechanism for arresting the movement of the lower wheel coöperating with the governor to release the higher wheel and carrying devices.

14. In a calculating-machine, the combination with counter-wheels of higher and lower orders and carrying devices between them, of means for arresting the higher wheel actuated by the carrying devices, locking mechanism for the latter and means coöperating therewith and with the lower wheel to arrest its movement and release the higher wheel.

15. In a calculating-machine, the combination with a higher and lower counter-wheel, carrying devices engaging the higher wheel and actuated by the lower wheel into operative position and means for locking it in such position, of a device operated at the completion of the movement of lower wheel for releasing the carrying device.

16. In a calculating-machine, the combination with a higher and lower counter-wheel, carrying devices engaging the higher wheel and actuated by the lower wheel into operative position and means for locking it in such position, of a movable member separate from the lower wheel and operated at the completion of the movement thereof to release the carrying device.

17. In a calculating-machine, the combination with counter-wheels and carrying devices between them actuated by one of the wheels, of a locking mechanism operated by the carrying devices to lock the other counter-wheel and separate releasing devices operated independently of the carrying devices for restoring said mechanism to its normal position.

18. In a calculating-machine, the combination with counter-wheels and a carrying device between them and actuated by one of said wheels, of a stop operated by the carrying device to engage the

other counter-wheel and releasing devices capable of operation independently of the carrying device for disengaging the stop.

19. In a calculating-machine, the combination with counter-wheels and a carrying device between them, of a stop and operating connections between it and the carrying device, whereby the stop is operated into engagement with one of the counter-wheels to lock it and also lock the carrying mechanism, to prevent its return movement and a releasing device for restoring said parts.

20. In a calculating-machine, the combination with counter-wheels and carrying devices between them, of a stop, connections between it and the carrying mechanism operating the stop into engagement with one of the wheels and preventing the return of the carrying devices, a projection on the other wheel adapted to engage the stop on said carrying device, to limit its movement, and means for disengaging the stop to release the parts.

21. In a calculating-machine, the combination with counter-wheels, and carrying devices between them, of a movable stop adapted to engage one of the wheels, normally held in an inoperative position, a governing device coöperating with the stop, connections between said device and the carrying devices, to move the stop into engagement with the counter-wheel, and means for operating the governing device to release the stop.

22. In a calculating-machine, the combination with counter-wheels having teeth thereon, stops adapted to engage the latter, and separate manually-actuated keys operating the stops to arrest the movement of the counter-wheels, and carrying devices between the wheels, of a governing device for each stop, operating connections between the governing devices and the carrying devices causing the stops to engage their wheels when the carrying devices are operated and releasing mechanism operated by the keys causing the governing devices to disengage their stops.

23. In a calculating-machine, the combination with counter-wheels having teeth thereon, stops adapted to engage the latter, a separate key for each wheel actuated at the end of the movement of the latter to operate the stop into engagement therewith and carrying devices between the wheels, of a governing-wheel coöperating with the stops, connections between the carrying devices and the governing-wheels to throw the stops into operative position and restoring devices actuated by the keys to operate the governing-wheels and permit the stops to return to the inoperative position.

24. In a calculating-machine, the combination with a plurality of counter-wheels, pawls adapted to engage them, and carrying devices between the wheels, of governing-wheels for the pawls, connections between each of the latter and the carrying devices operated by an adjacent counter-wheel to throw the stop of the next higher counter-wheel into engagement therewith, keys adapted to be operated at the completion of the operation of any of the counter-wheels and restoring devices operated by said keys to revolve any of said governing-wheels, previously operated, to limit the stops operated thereby to be disengaged from their counter-wheels.

25. In a calculating-machine, the combination with relatively arranged higher and lower counter-wheels, stops adapted to engage therewith, the stop engaging with the higher wheel having a projection and carrying device between the counter-wheels, of a governing-wheel provided with teeth arranged in pairs having recesses between said pairs of teeth and adapted to coöperate with the projection on said stop, a ratchet-wheel connected to the governing-wheel and a pawl coöperating with said ratchet-wheel operated by the carrying device to actuate the governing-wheel and move the stop into engagement with its counter-wheel, movable keys independently operating the stops to arrest the movement of their respective counter-wheels and a restoring device actuated by each key to move the governing-wheel one space to permit the stop to return to its inoperative position.

26. In a calculating-machine, the combination with relatively arranged higher and lower counter-wheels having teeth thereon, an operating-lever between them coöperating with the higher wheel to actuate it, a projection on the lower wheel for operating the lever, as the wheel is revolved, means for locking the higher counter-wheel and releasing devices operated at the completion of the movement of the lower wheel.

27. In a calculating-machine, the combination with relatively movable higher and lower wheels, of an operating-lever carrying a pawl adapted to engage the higher wheel and provided with a stop, a projection on the lower wheel operating the lever to cause the pawl thereon to be raised into engagement with the counter-wheel, locking mechanism operated by the lever to prevent the movement of said higher counter-wheel, a projection on the lower wheel adapted to engage the stop on the lever to limit its movement until the higher wheel is released, and mechanism operated at the completion of the movement of the lower wheel for releasing the higher counter-wheel.

28. In a calculating-machine, the combination with relatively higher and lower counter-wheels having a plurality of series of numerals thereon reading from zero to nine, means for limiting the rotation of a wheel through a distance of more than the space occupied by the ten figures at a single operation, of a member coöperating with the higher wheel, projections on the lower wheel arranged one for each multiple of the ten figures thereon and adapted to operate the member into position to advance the higher counter-wheel one space, a locking mechanism preventing the operation of said wheel and releasing devices for the locking mechanism actuated at the comple tion of the operation of the lower wheel.

29. In a calculating-machine, the combination with relatively higher and lower counter-wheels having a plurality of series of numerals thereon reading from zero to nine, an index-plate extending over the wheels provided with indicators coöperating with a single figure on each wheel and having figures corresponding to those on the wheels and locking devices adapted to engage the wheels, of a key operated at the completion of each movement of a counter-wheel to throw the locking devices into engagement therewith, an operating member adapted to engage the higher wheel, a projection arranged upon the lower wheel for each multiple of ten figures thereon adapted to operate the member into position to advance the higher counter-whel one space, connections between the locking mechanism and the member to prevent the movement of the latter and a releasing device actuated by the key.

30. In a calculating-machine, the combination with the separately-operable units, tens and hundreds counter-wheels having operating portions at their peripheries, automatic carrying mechanism between the wheels, locking devices for arresting said wheels actuated by the carrying mechanism and devices for releasing the locking mechanism arranged in proximity to the operating portions of the wheels.

31. In a calculating-machine, the combination with the separately-operable counter-wheels having operating portions at their peripheries, automatic carrying mechanism between the wheels, locking devices for the wheels controlled by the carrying mechanism and releasing devices for the locking devices having operating portions in proximity to the operating portions of the wheels.

32. In a calculating-machine, the combination with the separately-operable counter-wheels having operating portions at their peripheries, carrying devices between them, locking devices for the wheels and means arranged in proximity to the operating portions of the wheels for releasing the locking devices at the end of the operating movement of the wheels.

33. In a calculating-machine, the combination with separately-operable counter-wheels, locking devices for arresting said wheels and carrying mechanism between the latter, connections between it and said locking devices and a releasing mechanism, of an operating member coöperating alternately with the locking devices and the releasing mechanism.

34. In a calculating-machine, the combination with separately-operable counter-wheels having operating portions at their peripheries, locking devices for arresting their movement and carrying mechanism between the wheels, connections between said mechanism and the locking devices and a releasing mechanism for the latter, of a key arranged in proximity to the operating portions of the wheels adapted to coöperate alternately with the locking devices and the releasing mechanism.

35. In a calculating-machine, the combination with counter-wheels, a pivoted lever operating between them adapted to engage one of the wheels, and a projection on the other wheel adapted to engage the lever to move it into the operative position, of locking-stops pivoted in front of each wheel, manually-operated keys for engaging said stops to throw them into engagement with their counter-wheels and governing-wheels, located in rear of the stops, having teeth arranged in pairs and provided with recesses between each pair of teeth, connections between the respective lever and governing-wheel for each counter-wheel, operating to actuate the stop into engagement with its counter-wheel, a rock-shaft, operated by the keys, and connections between the shaft and governing-wheels to move the latter and permit the stop controlled thereby to be disengaged from its counter-wheel.

36. In a calculating-machine, the combination with a higher and a lower counter-wheel having teeth thereon, a pivoted lever operating between them and carrying an operating-pawl, a projection on the lower wheel coöperating with the lever to raise it and carry the pawl over a tooth on the higher counter-wheel and pawls preventing the rearward movement of said wheels, of a pivoted stop in line with each wheel having a cam-surface thereon, a governing device engaging said stop to alternately throw it into engagement with the teeth on the wheel and to release it and a ratchet-wheel connected to the governing device, a toggle connected to the lever and carrying a pawl engaging the ratchet-wheel whereby the governing device is actuated to engage the stop with the counter-wheel, a key movable into engagement with the stop to independently operate it and devices connected to the key to actuate the governing device and release the stop.

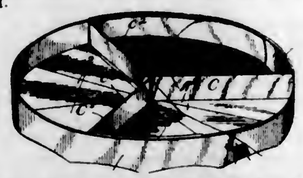
37. In a calculating-machine, the combination with a higher and a lower counter-wheel having teeth thereon and pawls limiting their movement in one direction, of an operating-lever extending between them having an engaging face and carrying a pawl engaging the teeth on the higher wheel, a projection on the lower wheel coöperating with the face on the lever to operate the latter and carry the pawl thereon over one tooth on the higher counter-wheel, a locking mechanism actuated by the lever to arrest the movement of said counter-wheel and releasing devices.

38. In a calculating-machine, the combination with a plurality of counter-wheels, carrying devices arranged between the wheels and a stop for each counter-wheel, separate governing devices for each stop to alternately operate and release them, a shaft, and ratchet-wheels journaled thereon and attached to said governing devices, of arms connected to the carrying devices journaled on the shaft and carrying pawls coöperating with the ratchet-wheels to cause the stops to be thrown into operative position, separate arms rigidly attached to the shaft provided with pawls also coöperating with said ratchet-wheels to cause the stops to be released and means for rocking said shaft.

39. In a calculating-machine, the combination with a plurality of counter-wheels having teeth, carrying devices between them and pivoted stops adapted to engage the wheels having cam-surfaces and projections, a rock-shaft having arms thereon, of ratchet-wheels journaled on the shaft, projections carried on the ratchet-wheels engaging the projections on the stops to throw the latter into engagement with their respective counter-wheels, and arms journaled on the shaft having pawls thereon engaging the ratchet-wheels and connected to the carrying devices, separate pawls coöperating with the ratchet-wheels carried by the arms attached to said rock-shaft, a key for each counter-wheel adapted to be moved into engagement with the cam-surface on its respective stop, a bar adapted to be moved by the operation of any of the keys and connections between the bar and rock-shaft.

40. In a calculating-machine, the combination with a higher and a lower counter-wheel and carrying mechanism engaging the higher wheel, of means on the lower wheel for actuating said mechanism into the operative position and releasing it whereby the carrying mechanism operates the higher counter-wheel independently of the lower wheel.

823,898. **PAPER TRAY OR RECEPTACLE.** HARRY P. SHOTTS, Chicago, Ill., assignor to Howe and Davidson Company, East Orange, N. J., a Corporation of New Jersey. Filed June 6, 1903. Serial No. 160,301.



Claim.—1. A tray comprising a rim made from a single strip which is joined at its ends and is provided on its lower edge with lateral, tapered projections which form the bottom of the tray, and a plurality of radial partitions each consisting of a strip, the base of which is joined laterally to the upper edge of the rim and is folded inwardly on said rim.

2. A blank for making trays or the like consisting of a single main strip having lateral projections adapted to form the bottom of the tray and three partition-strips parallel with the main strip and joined to the same by connecting parts which project laterally from the main strip, two of said partition-strips being connected at their ends or made continuous with each other.

3. A blank for making trays or the like consisting of a single main strip having lateral projections adapted to form the bottom of the tray and three partition-strips parallel with the main strip and joined to the same by connecting parts which project laterally from the main strip, two of said partition-strips being connected at their ends or made continuous with each other, the two connected strips being provided with a locking-notch at their meeting ends and the third strip having a locking-notch near its extremity.

4. A tray consisting of a rim made from a continuous strip, a bottom consisting of lateral, tapered projections on the main strip, and radial partition-strips joined to the main strip by connecting parts which are made integral with the main strip and are folded inwardly against the same.

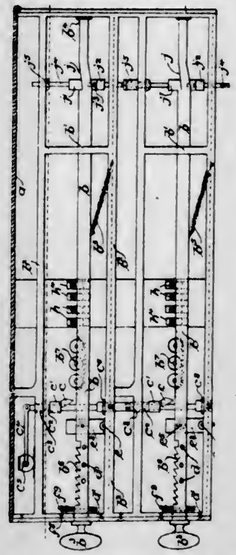
5. A tray consisting of a rim, a bottom wall, and radial partition-strips joined at their outer ends to the rim by connecting parts which are integral with the rim and are folded inwardly against said rim, said partition-strips being joined at their inner ends to each other.

6. A tray consisting of a rim, a bottom wall, and a plurality of radial partition-strips joined at their outer ends to the rim by connecting parts which are integral with the rim and are folded inwardly against the same, said strips being provided with lateral notches whereby they may be interlocked at their inner ends.

7. A tray consisting of a rim, a bottom wall, and three radial partition-strips, two of which are made continuous with each other, and which are joined at their outer ends to the said rim by connecting parts which are integral with said rim and folded inwardly against the same; the two connected strips being bent at an angle to each other at their meeting ends, and the free end of the third strip being attached to the meeting ends of the said connected strips.

8. A tray consisting of a rim, a bottom wall, and three radial partition-strips, two of which are made continuous with each other and which are joined at their outer ends to said rim by connecting parts which are integral with said rim and folded inwardly against the same; the two connected strips being bent at an angle to each other and provided with a notch at their meeting ends and the third strip having a notch adapted to interlock with the notch at the meeting ends of the connected strips.

823,899. **VOTING-MACHINE.** GEORGE STACY, Perth, Western Australia, Australia. Filed June 26, 1905. Serial No. 267,058



Claim.—1. In a voting-machine, a casing having a movable door, a plurality of normally locked pull-bars arranged in vertical and horizontal rows, each of said bars having in one of its upper faces thereof and near their forward terminals a series of depressions forming teeth, registering devices operative by each of said bars in the vertical rows, releasing mechanism for the respective bars in the horizontal rows and adapted to be actuated by the movement of the door in one direction to allow said bars to be pulled outward, means adapted to engage in any one of the depressions in the horizontal bars to hold the same in a fixed position when pulled outward and upon movement of the door in the opposite direction to allow releasement of the said pull-bars to return to their normal position.

projections on the respective bars in the horizontal rows, means in engagement with the projections on the respective bars in the horizontal rows and upon movement of any one of the same adapted to release said means for locking the remainder of said bars against movement, and means actuated by the outward movement of any one of the pull-bars in the vertical rows for locking the remainder of said bars against movement.

2. In a voting-machine, a casing having pull-bars arranged in horizontal vertical rows, a swinging door, mechanism normally in engagement with each of the pull-bars in the horizontal rows and adapted to be actuated by the closing of the door for the releasement of the bars in the said rows, means for engagement with any one of the bars in the horizontal rows for retaining the same in a fixed position when pulled outwardly and adapted to be actuated by the opening of the door to allow the said pull-bar to return to normal position, registering devices operative upon outward movement of any one of the pull-bars in the vertical and horizontal rows, and independent means for the respective pull-bars in the vertical and horizontal rows and adapted to be actuated by movement of any one of the bars in the respective rows for locking the remainder of said bars against movement in the respective rows.

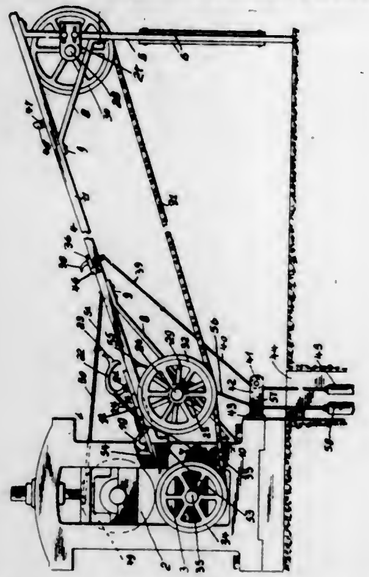
3. In a voting-machine, pull-bars arranged in rows, registering devices actuated upon movement of any one of the pull-bars in the rows, means normally in engagement with the respective pull-bars for locking the same, a movable door for releasing the said means when actuated in one direction to allow said pull-bars to be pulled outward, means having automatic engagement with the pull-bars to hold the same in a fixed position when pulled outward, and adapted to be actuated upon movement of the door in an opposite direction to allow the said bars to return to their normal position, each of said bars provided with an inclined face, vertically-arranged bars having means engaging the inclined faces of the respective bars and upon movement of any one of the latter to cause locking engagement of said means with the other of said bars to prevent outward movement thereof in one of the rows, and independent means operative upon movement of any one of the bars in another of the rows for locking the remainder of said bars in the said rows against movement.

4. In a voting-machine, a casing having a swinging door for movement in two directions, pull-bars supported in said casing and arranged in vertical and horizontal rows, a transversely-arranged rod having connection with the door and adapted to be actuated by the latter when moved in one direction, locking members on the said rod and in engagement with the pull-bars in the horizontal rows, said rod when moved in one direction adapted to release the outward movement of the pull-bars in the horizontal rows, means for automatically engaging the pull-bars to retain the same in a fixed position when pulled outward and adapted to be actuated upon movement of the door in an opposite direction to allow the said bars to return to a normal position, projections on each of the bars, a series of horizontally-arranged movable rods having bars for engagement with the said projections on the bars and adapted to be actuated by any one of the bars in the horizontal rows upon movement thereof to bring said members in locking engagement with the remainder of said bars in the respective rows to prevent movement of the latter, each of said bars near the rear extremities thereof having an inclined surface, vertically-movable rods, and locking means carried by the latter and adapted to be actuated by the inclined surface by any one of the bars in the vertical rows upon outward movement thereof to lock the remainder of said bars in the respective rows against movement.

823,900. CONVEYER. GILBERTH STITT, Saltsburg, Pa. Filed Jan. 3, 1906. Serial No. 294,411.

Claim.—1. In a conveyer, the combination with a housing of rolls, of angularly-disposed guideways, a plate slidably mounted upon said guideways, a cross-head slidably mounted upon said guideways, rails supported by said housing, hinged members carried by said rails and resting upon said guideways, a gripping mechanism carried by said plate and adapted to be actuated by a pack passing between said rolls, means engaged by said gripping mechanism to convey said plate, said pack and said cross-head upon said guideways, means to release said gripping mechanism, and means to return said plate and said cross-head to their normal position, substantially as described.

2. In a conveyer, the combination with a housing of rolls, of angularly-disposed guideways, a traveling chain mounted between said guideways, a plate mounted upon said guideways, gripping mechanism carried by said plate and adapted to be actuated by a pack passing between said rolls, to engage said packs and grip said chain, rails carried by said housing, hinged members carried by said rails and resting upon said guideways, a cross-head slidably mounted upon said guideways, and adapted to be moved by said plate, means to release said gripping mechanism, means to return said plate and said cross-head to their normal position, means to operate said chain, and means to support said guideways, substantially as described.



3. In a conveyer, the combination with the housing of rolls, of guideways, a plate slidably mounted upon said guideways, a cross-head mounted upon said guideways and adapted to be moved by said plate, a gripping mechanism carried by said plate and actuated by a pack passing between said rolls, rails carried by said housing and resting upon said guideway, means to move said plate upon said guideway, means to return said plate and said cross-head to their normal position, and means to support said guideway, substantially as described.

4. In a conveyer, the combination with a housing of rolls, guideways supported adjacent to said housing, a plate slidably mounted upon said guideways, a cross-head slidably mounted upon said guideways, means to move said plate and said cross-head, means carried by said plate to grip a pack passing through said rolls, means to return said plate and said cross-head to their normal position, and means to convey said gripped pack over said rolls, substantially as described.

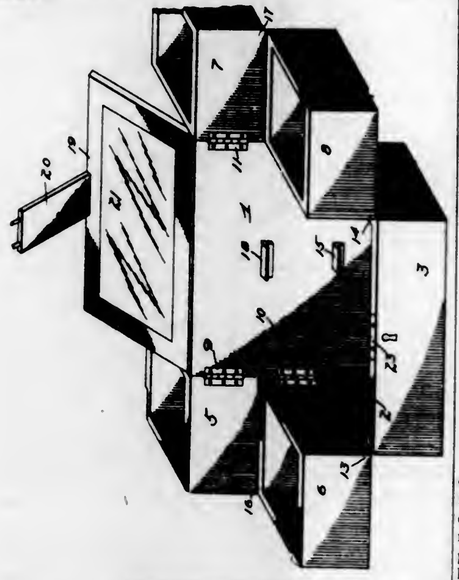
5. In a conveyer, the combination with rolls, guideways mounted adjacent to said rolls, gripping mechanism slidably mounted upon said guideways, said gripping mechanism embodying means to grip a pack, means to move said gripping mechanism upon said guideways, means to release said gripping mechanism, means to convey said pack over said rolls, and means to return said gripping mechanism to its normal position, substantially as described.

6. In a conveyer, the combination with rolls, of guideways, means to convey a pack upon said guideways, means to release said pack, and means to guide said pack over said rolls, substantially as described.

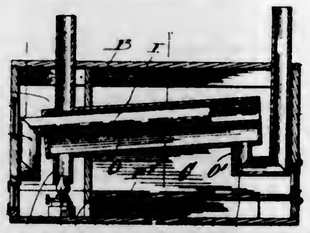
7. The combination with rolls, of a gripping mechanism adapted to grip a pack, means to move said gripping mechanism, means to release said mechanism, and means to convey said pack over said rolls, substantially as described.

823,901. COMPARTMENT-CABINET. RICHARD W. STURR, Dayton, Ohio. Filed Feb. 10, 1906. Serial No. 300,468.

Claim.—In a cabinet, a lower compartment having a back extending upwardly therefrom, a series of smaller compartments above said lower compartment and hinged to the back at their corners and at the vertical edges of the back to move inwardly and outwardly above the lower compartment, brackets mounted on the back in central positions to support the free corners of the smaller compartments when such compartments are swung inwardly above the lower compartment, each of said smaller compartments having a recess adjacent to a corner which recesses are in alinement when said smaller compartments are swung inwardly, a lid hinged to the upper edge of the back in a position to close the upper smaller compartments when the compartments are swung inwardly, and a hasp hinged to said lid in a position to lie within the recesses in the smaller compartments when said compartments are swung inwardly, and a lock engaging said hasp, all substantially as shown and described.



823,902. CHICKEN-BROODER. GEO. S. SUMMERS, Gordonville, Mo. Filed Apr. 20, 1906. Serial No. 312,878.



Claim.—1. A chicken-brooder comprising a casing divided by a partition into lamp and brooding chambers, a double floor within said brooding-chamber with the space between the floors divided into longitudinal communicating passage-ways, one of which communicates with the lamp-chamber and the others with the brooding-chamber, a heating-drum passing through said partition, a lamp-pipe leading to said heating-drum, a fresh-air pipe leading through the end of the casing passing through the lamp-chamber and said heating-drum, making exit into the brooding-chamber, as set forth.

2. A chicken-brooder comprising a casing divided by a partition into lamp and brooding chambers, a double floor within said brooding-chamber, longitudinal partitions mounted in the space between the floors and terminating a slight distance from the end of the brooder, thus dividing said space into longitudinal passage-ways in communication with one another, the upper floor having openings adjacent to the partition dividing the lamp-chamber from the brooding-chamber, and the central one of said passage-ways between the floors communicating with the lamp-chamber, a heating-drum passing through the partition between the two chambers, a lamp-pipe leading into said drum, and a fresh-air pipe leading through the end of the casing and passing through said drum, and opening at its inner end into the brooding-champer, as set forth.

3. A chicken-brooder comprising a casing divided by a partition into lamp and brooding chambers, a double floor within said brooding-chamber with the space between the floors divided into longitudinal communicating passage-ways, one of which communicates with the lamp-chamber and the others with the brooding-chamber, a heating-drum passing through the chambers and set at an inclination, a lamp-pipe leading into said drum, and a fresh-air pipe opening through one end of the casing and having an inlet end on a level with the opening into the lamp-pipe and passing longitudinally through the heating-drum into the brooding-chamber, as set forth.

4. A chicken-brooder comprising a casing divided by a partition into lamp and brooding chambers, a double floor within said brooding-chamber with the space between the floors divided into longitudinal communicating passage-ways, one of which communicates with the lamp-chamber and the others with the brooding-chamber, a heating-drum passing through the chambers and set at an inclination, a lamp-pipe leading into said drum, a fresh-air pipe opening through one end of the casing and having an inlet end on a level with the opening into the lamp-pipe and passing longitudinally through the heating-drum into the brooding-chamber, and an exit-pipe for the products of combustion leading downwardly from the under side of the inner end of the heating-drum, thence upwardly turned and passing through the top of the brooder, as set forth.

823,903. CLAMP. DAVID SWOPE, Merchantville, N. J. Filed Apr. 24, 1905. Serial No. 257,279.



Claim.—1. A clamp consisting of two members, one member comprising a front piece having a rearwardly-extending jaw, and having side pieces connected with said front piece and rearwardly extending to come into proximity at their rear ends, and a second member comprising a front piece pivoted to said first member and provided with an arm extending rearwardly therefrom and angularly thereto, said arm and the rear ends of said side pieces being apertured, and movable toward each other to cause the clamping

2. In a device of the character described, a hollow apertured member having a front piece and an upper rearwardly-extending jaw thereon, and an internal member pivoted within said hollow member and having a clamping-jaw, the upper edge of which, when in clamped position, engages said front piece beneath said upper rearwardly-extending jaw, whereby the material is clamped between the clamping-jaw of the internal member and the front piece and rearwardly-extending jaw of the hollow member, and means engaging said internal member and passing through said aperture for clamping said members.

3. In a device of the character described, a hollow member having a rearwardly-extending jaw and a rear aperture, and an internal member pivoted to said hollow member and having a clamping-jaw and an arm rearwardly deflected therefrom, the end of said arm terminating within said hollow member, and means engaging said aperture for moving the jaws toward each other to clamp them.

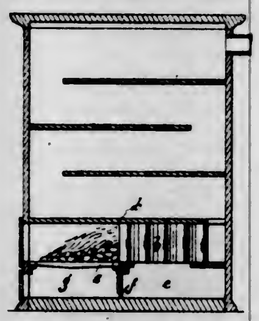
4. In a device of the character described, a hollow member comprising a front piece, rearwardly-extending side arms overlapping each other at their rear, and a rearwardly-extending jaw at the upper end of said front piece, an internal clamping member pivoted to the rearwardly-extending arms of said hollow member in proximity to the front piece thereof, said internal member comprising a clamping-jaw and an arm extending angularly therefrom, and means engaging said arm and passing through said hollow member to clamp the material between the clamping-jaw of the internal member and the front piece and rearwardly-extending jaw of said hollow member.

5. In a device of the character described, a hollow member having a rearwardly-extending jaw and rearwardly-extending side arms converging at their rear and united by transverse overlapping extensions, said extensions having an aperture therethrough, and an internal pivoted member comprising a clamping-jaw, and an arm extending therefrom, said arm having an aperture therein, and a connector in connection with the aperture of said internal clamping member and passing through the aperture in the transverse overlapping extensions of said hollow member.

6. In a device of the character described, a hollow member having a rearwardly-extending jaw, rearwardly-extending side arms

converging at their rear end and united by transverse overlapping extensions, said extensions having an aperture therethrough, and an internal pivoted member comprising a clamping-jaw, and an arm extending therefrom, and a connector secured to said internal member and passing through the aperture in the transverse overlapping extensions of said hollow member, the rearwardly-extending portions of said hollow member being bent upwardly at their rear so that the aperture through said transverse extensions is in a plane above the pivotal point of said internal clamping member.

823,904. STOVE, FURNACE, AND THE LIKE. PAUL TIDICK, Niederhof, near Bischdorf, Germany. Filed Nov. 21, 1904. Serial No. 233,746.



Claim.—In a heating apparatus, the combination of a fire-box, an ash-chamber below said fire-box, a removable division-wall within said ash-chamber dividing the same into two compartments, a grate, a series of vertically-arranged corrugated plates disposed to the rear of said grate and in the path of the products of combustion of said fire-box, said plates being spaced apart and open to said fire-box and to the rear compartment of said ash-chamber, and means whereby air is admitted between said plates through said removable division-wall, substantially as described.

823,905. SAFETY-PIN. JOHN C. TRAILL, Malvern, Victoria, Australia. Filed June 26, 1905. Serial No. 267,065.



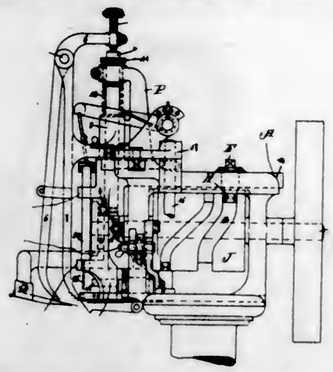
Claim.—1. A double safety-pin formed of a single piece of wire bent upon itself to form a central pocket portion and having its extremities extended into opposite pin portions, the free ends or points of the pin portions being directed toward the pocket portion and adapted to be engaged therewith and be closed thereby, and the wire in each of the two pin portions being bent one and a half times to form springs H, H, at that end of the pin portion farthest removed from the pin-point, all as shown and described.

2. The herein-described double safety-pin formed of a piece of wire, bent centrally upon itself to form a closed pocket as at F, by which it can be suspended, the legs G, G', being bent into oppositely-extending pin portions with their free ends pointing inwardly toward the pocket, and respectively adapted to have their points engaged therewith and closed thereby, each leg being an elongation of the side of the pocket farthest removed from the pin-point, all substantially as described.

3. The combination of a double safety-pin formed of a single piece of wire bent upon itself to form a central pocket portion and having its extremities extended into opposite pin portions, the free ends or points of the pin portions being directed toward the pocket portion and adapted to be engaged therewith and be closed thereby, each pin portion being an elongation of the side of the pocket portion farthest removed from the point of the pin; with a suspending device attached to the pocket portion where the wire crosses itself subetantially as described.

823,906. LASTING MECHANISM FOR TACKING AND STAPLING MACHINES. HEINRICH WALTHER, Weissenfels, Germany, assignor to The Firm of Nollesche Werke, Weissenfels, Germany. Filed Nov. 26, 1904. Serial No. 234,410.

Claim.—1. A lasting mechanism for tacking and stapling machines, comprising a vertically-movable pair of tongs, a regulating-screw carried by one of the members of said tongs, a vertically-movable rod adapted to engage said screw and impart a vertical and closing movement to the tongs, a sleeve carried by one of the members of the tongs and adapted to surround said rod, an adjustable sleeve through which said rod passes, a spring interposed between said adjustable sleeve and the sleeve carried by one of the members of the tongs and adapted to automatically lower said tongs, and an eccentric for moving said rod vertically to engage the screw.



2. In a lasting mechanism for tacking and stapling machines, the combination with a pair of laterally-displaceable tongs, of means for displacing the tongs, said means consisting of a pair of springs connected at one end with the opposite sides of one of the members of the tongs and adapted when tension is applied to one of the springs to cause the tongs to be displaced in one direction and when tension is applied to the other of the springs to cause the tongs to be displaced in the opposite direction, a pair of levers connected to the other end of the spring for applying tension thereto, a pair of rollers for actuating the levers, and a slide for shifting the rollers.

3. In a lasting mechanism for tacking and stapling machines, the combination with a pair of laterally-displaceable tongs, of means for displacing the tongs, said means consisting of a pair of springs connected at one end with the opposite sides of one of the members of the tongs and adapted when tension is applied to one of the springs to cause the tongs to be displaced in one direction and when tension is applied to the other of the springs to cause the tongs to be displaced in the opposite direction, a pair of levers connected to the other end of the spring for applying tension thereto, a pair of rollers for actuating the levers, a slide for shifting the rollers, and means for shifting the slide.

4. A lasting mechanism for tacking and stapling machines, comprising the combination with an oscillatory pair of tongs having the gripping ends thereof situated outside of the axis of oscillation, of means for imparting a vertical and closing movement to the tongs, and means for moving the tongs horizontally and means for causing the tongs to oscillate during such movement.

5. A lasting mechanism for tacking and stapling machines, comprising the combination with a pair of laterally-displaceable tongs, of means for displacing the tongs, said means consisting of a pair of springs connected to opposite sides of one of the members of the tongs and adapted when tension is applied to one of the springs to cause the tongs to be displaced in one direction and when tension is applied to the other of the springs to cause the tongs to be displaced in the opposite direction, means for applying tension to the springs, means for actuating said tension-applying means, and means for operating said actuating means.

6. A lasting mechanism for tacking and stapling machines, comprising the combination with a pair of laterally-displaceable tongs of means for displacing the tongs, said means consisting of a pair of springs connected to opposite sides of one of the members of the tongs and adapted when tension is applied to one of the springs to cause the tongs to be displaced in one direction and when tension is applied to the other of the springs to cause the tongs to be displaced in the opposite direction, means for applying tension to the springs, means for actuating said tension-applying means, means for operating said actuating means, and means for operating the operating means for said actuating means.

7. In a lasting mechanism for tacking and stapling machines, comprising the combination with a pair of laterally-displaceable tongs, means for displacing the tongs, said means consisting of a pair of springs connected to opposite sides of one of the members of the tongs, and adapted when tension is applied to one of the springs to cause the tongs to be displaced in one direction and when tension is applied to the other of the springs to cause the tongs to be displaced in the opposite direction, a pair of levers for imparting tension to the springs, a pair of rollers for actuating the levers, a slide for shifting the levers, a shifting means for the slide, and a lever for operating said means.

823,907. BOILER-FLUE. ALDIN V. WALTERS, Galion, Ohio. Filed Mar. 15, 1906. Serial No. 306,157.



Claim.—1. A boiler-flue comprising a tubular body having an annular concentric flange near one end, means for securing said flange to the inner side of the flue-sheet, and extremities adapted to attach in openings in the flue-sheets.

2. A boiler-flue comprising a tubular body having an annular concentric flange near one end provided with a threaded rim adapted to engage with a threaded groove in the flue-sheet, and extremities adapted to be expanded in openings in the flue-sheets.

3. A boiler-flue comprising a tubular body, an exterior concentric flange having an annular rim provided externally and internally with screw-threads adapted to engage with a correspondingly-threaded groove in the flue-sheet, and extremities adapted to be expanded in openings in the flue-sheets.

4. A boiler-flue comprising a tubular body, an exterior concentric flange having a threaded rim adapted to engage with a correspondingly-threaded groove in the rear flue-sheet, and extremities adapted to be expanded in openings in the flue-sheets, one of said extremities flaring outwardly and secured in an opening in the front flue-sheet.

5. The combination with a boiler having flue-sheets provided with openings and a threaded groove on the inner side of one of said flue-sheets, of a flue having a tubular body, an annular flange near one end having a threaded rim adapted to engage with said groove, and extremities adapted to be expanded in said openings.

823,908. COPY-HOLDER. FREDERICK B. WHITAKER, New Haven, Conn. Filed Feb. 19, 1906. Serial No. 301,829.

Claim.—1. A copy-holder comprising a table adjustably mounted upon a standard, said table formed with transverse slots, brackets secured to the face of said table at the ends of said slots, a roller mounted in said brackets, journal-boxes secured to the under face of said table, journal-blocks mounted therein, a second roller mounted in said journal-blocks, stems connected with said blocks and extending through said boxes, said stems formed with heads at their outer ends, springs in said boxes around said stems, a shaft between said heads having eccentric trunnions entering said heads, said shaft bearing upon the outer ends of said boxes and knobs secured to one end of said rollers and shaft, substantially as described.



2. A copy-holder comprising a table adjustably mounted upon a standard, said table formed with a transverse slot the upper edge of which is turned inward, brackets secured to the face of said table at the ends of said slot, a roller mounted in said brackets, a straight edge secured to said brackets above said roller, journal-boxes secured to the under face of said table, journal-blocks mounted therein, a second roller mounted in said journal-blocks, stems connected with said blocks and extending through said boxes, said stems formed with heads at their outer ends, springs in said boxes around said stems, a shaft between said heads having eccentric trunnions entering said heads, said shaft bearing upon the outer ends of said boxes, and knobs secured to the ends of said rollers and to the end of said shaft, substantially as described.

823,909. ELASTIC-FLUID-TURBINE NOZZLE. JAMES WILKINSON, Providence, R. I., assignor to Wilkinson Turbine Company, a Corporation of Alabama. Filed May 22, 1905. Serial No. 261,675.



Claim.—1. In a turbine, a motor-fluid passage, oppositely-disposed tapering recesses in the side walls of said passage, and one or more tapering director-plates adapted to engage in said tapering recesses of said passage, substantially as described.

2. In a turbine having a motor-fluid passage, grooves formed in the sides of said passage which increase in depth toward the discharge end thereof, a tapering director-plate adapted to enter opposite grooves, and means to engage said plate to lock it in position against longitudinal movement in said grooves.

3. In an elastic-fluid turbine, a stationary element or elements provided with a nozzle-passage, oppositely-disposed grooves formed in the side walls of said nozzle and increasing in depth toward the discharge end thereof, in combination with director-plates which taper in width and are adapted to be inserted from the discharge end of said nozzle into the grooves therein, said plates being provided with transverse openings, and locking-pins which project through a side wall of the nozzle to engage within said opening in each director-plate.

4. In an elastic-fluid turbine, a supply-head for a wheel-compartment, a nozzle leading therethrough, one or more director-plates in said nozzle which have rounded ends disposed near the supply end of said nozzle, one or more transverse locking-pins which engage said ends of the plate or plates, and grooves in the side walls of said nozzle to receive and hold said plate or plates, substantially as described.

5. In an elastic-fluid turbine, a supply-head for a wheel-compartment having a nozzle-passage, a recess in the periphery of said head opposite said nozzle-passage, director-plates disposed in said nozzle-passage and having their lower-ends in engagement with the side walls thereof, transverse openings in the upper ends of said plates, and screw-bolts adapted to be inserted radially into the head and to pass through the openings in said plates to lock them in position, said bolts having their heads disposed in the peripheral recess of the supply-head.

823,910. IRONING-BOARD. GEORGE H. AIGIN, Delaware, Ohio. Filed Mar. 20, 1905. Serial No. 250,964.

Claim.—1. The combination, with an ironing-board having a series of lateral pins for holding the top covering, of a frame for clamping the latter, and devices in the form of right-angular clips which are attached to the frame and adapted for adjustment vertically and for engagement with the board, substantially as described.

2. The combination, with an ironing-board having lateral pins for the purpose specified, of the frame for clamping the edges of the top covering or dressing, the same being provided with notches in its under side corresponding to the said pins, and right-angular clips provided with slots in their vertical portions and extending beneath the board, and means for securing the clips so that they are adjustable vertically, substantially as described.



823,911. HINGE. JOSEPH C. ANDERSON, Cordova, Ala. Filed June 24, 1905. Serial No. 266,530.



Claim.—A hinge of the character described comprising a keeper-plate provided with a recessed face forming a seat portion, said seat portion having a longitudinal dovetailed slot, a hinge proper comprising pivotally-connected leaves, one of said leaves having a dovetailed lug to engage the slot in the keeper-plate, the pivotal connections of the leaves comprising detachable engaging portions, a spring associated therewith to hold the same in pivotal engagement, one of the pivotal portions of one of the leaves carrying a detent-pin of angular form in cross-section to provide oppositely-disposed flat faces and a bearing edge to engage and cooperate with the spring, the lug-carrying leaf being shaped to engage the seat of the keeper-plate so that its outer face will lie flush with the unrecessed portion of said plate, and a projection upon the other leaf cooperating with the retaining-lug on the keeper-plate to hold the leaves from disconnection, said projection being provided with a cut-away portion to clear said retaining-lug when the door-carrying leaf is swung to fully open position

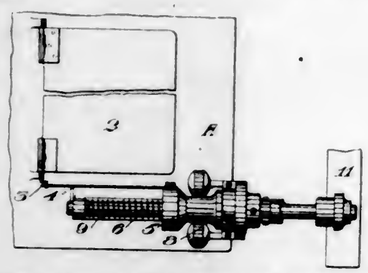
823,912. INSULATOR. AUGUST BIELE, New Haven, Mo. Filed July 25, 1905. Serial No. 271,220.



Claim.—A device of the character described, comprising an insulating-block having a longitudinal groove or passage opening out laterally therethrough, also an additional longitudinal passage, said passages receiving the line-wire and a tie-wire for the latter, respectively, said block being arranged in a bore or opening in an arm or tree of a telegraph-wire or other pole and adapted to permit the insertion of said line-wire through it into said block, a plate effective for the closure of the entrance to the initial line-wire-receiving passage, said closure-plate having an aperture through it and said block having also a transverse passage in its outer edge, and a key insertible through said plate or closure-aperture and said transverse passage of the block.

823,913. PROTECTIVE GATE FOR MOVING PICTURES. LEON BOSTIS, San Francisco, Cal. Filed Nov. 15, 1905. Serial No. 287,426.

Claim.—1. The combination with a kinetoscope having a fly-wheel, of a gate, hinged at one edge and turnable outwardly about its hinges, and means by which the gate is opened while the films are in motion, and closed when the motion ceases, said means including a governor and stem, a sleeve slidable on its stem, a crank on the gate-axis, and a connecting-rod between the sleeve and crank, and a friction-roller carried on the governor-stem, and contacting with the fly-wheel.



2. The combination with a kinetoscope, of a hinged gate, means for turning the gate outwardly about its hinges, said means including a ball-governor and journaled stem turnable in unison with the movement of the film-carrying mechanism, an independent spring-returned sleeve slidable on the stem, a crank on the gate-axis, and a connecting-rod between said sleeve and the gate-crank.

3. The combination with a kinetoscope, of a hinged gate turnable outwardly about its hinges, a ball-governor and stem revoluble in unison with the movement of the film-carrying apparatus, a slidable sleeve, bell-crank governor-arms, the inner ends of which contact with the sleeve, a returning-spring on said stem having one end bearing against the sleeve, connections between said sleeve and the gate, and a crank rigid with the hinge-pintle whereby the gate is opened while the films are in motion and closed when they cease to move.

4. The combination with a kinetoscope, of a hinged gate having a crank-arm, a governor, a journaled stem and bell-crank arms by which the governor is carried, a sleeve slidable upon the spindle, with which sleeve the inner ends of the arms contact, a spring adapted to be compressed by the sleeve when the governor is extended by centrifugal action, said spring returning the sleeve and the governor when the motion ceases, and a rod connecting the sleeve with the crank-arm of the gate, and a friction-roller through which motion is transmitted to revolve the governor-stem.

5. The combination with a kinetoscope having an opening across which the films pass and through which they are illuminated, of a gate closable over said opening when the motion of the apparatus ceases, a governor, a spindle by which the governor is carried, connections between the governor and the gate whereby the latter is opened and closed, a frictional roller carried upon the end of the governor-stem, said roller contacting with a revoluble part of the apparatus whereby the governor is moved in unison with said apparatus, and a slidable journal-box forming a bearing for the governor-spindle, and automatically adjustable to compensate irregularities in the movement of the frictional contact parts.

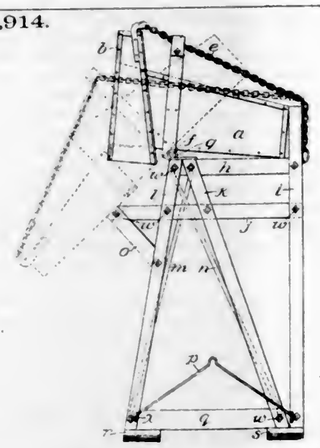
823,914. TILTING PLATFORM. JAMES E. BRIGGS, Waterloo, Iowa. Filed Jan. 18, 1906. Serial No. 296,618.

Claim.—1. A device of the character described, comprising a tilting platform pivotally supported on a suitable base, a conveyer-spout linked to said platform, and communicating therewith, suitable means for tilting said platform, and means whereby said framework may be shifted from place to place.

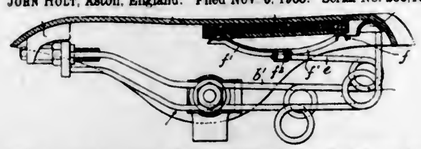
2. A device of the character described, comprising a tilting platform pivotally supported on a knockdown framework, a conveyer-spout linked to said platform and communicating therewith, guides on said tilting platform, a chain connected to said conveyer-spout and movable through said guides, and means whereby said framework may be shifted from place to place.

3. A device of the character described, comprising a tilting platform closed at front and sides but open at the back and pivotally supported on a knockdown framework, a conveyer-spout linked to said platform and communicating therewith, guides on said tilting platform, a chain connected to said conveyer-spout and movable through said guides, and means whereby said framework may be shifted in position from place to place.

823,914.



823,915. CYCLE-SADDLE. JOHN B. BROOKS, Birmingham, and JOHN HOLT, Aston, England. Filed Nov. 6, 1905. Serial No. 286,162.



Claim.—1. In a cycle-saddle, the combination with a seat having underframing-springs, of supporting devices arranged underneath the rear portion of the seat, and spring means engaging the said supporting devices and independent of the underframing-springs, the said spring means being carried by a relatively stationary part of the saddle.

2. In a cycle-saddle, the combination with a seat having a yielding underframing, of supporting devices arranged underneath the rear portion of the seat, and levering-arm springs connected to and upholding and sustaining the said supporting devices, the levering-arm springs being distinct from the yielding underframing.

3. In a cycle-saddle, the combination with a seat and a yielding underframing, of supporting devices arranged underenath the rear portion of the seat, and levering-arm springs continuing from the members of the underframing and connected to and sustaining and upholding the said supporting devices.

4. In a cycle-saddle, the combination with a seat and a yielding underframing, of branched fittings disposed under the rear portion of the seat and provided with spring supporting means, and pads arranged between the seat and the fittings and held by the latter in point-sustained condition.

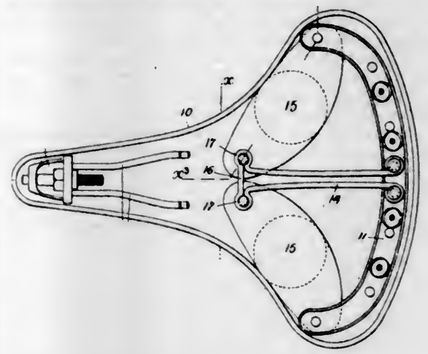
5. In a cycle-saddle, the combination with a seat and a yielding underframing, of rigid fittings having radiating arms or branches and provided with spring supporting means, and pads arranged between the seat and the fittings and connected in point suspension to the arms of the latter, the fittings with their radiating arms serving as spreader-brackets or stretchers for the said pads.

823,916. CYCLE-SADDLE. JOHN B. BROOKS, Birmingham, and JOHN HOLT, Aston, England. Filed Nov. 6, 1905. Serial No. 286,163.

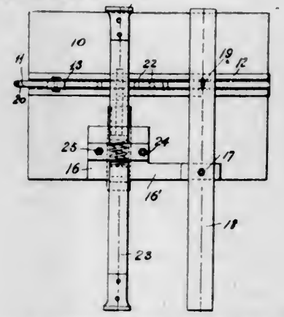
Claim.—1. In a cycle-saddle, the combination of a seat, diagonally-arranged flexible devices under the rear portion of the seat and supporting the latter, and yielding means connected to the inner end of the said devices and to the rear portion of the seat.

2. In a cycle-saddle, the combination of a seat, diagonally-directed flexible seat-supporting devices arranged under the rear portion of the said seat, and yielding bracket means connected to the inner ends of the said devices and to the seat-cantle, the outer ends of the devices being also attached to the cantle.

3. In a cycle-saddle, the combination of a seat, means for upholding the seat-leather from the under side and consisting of diagonally-arranged flexible tension devices, stretcher means attached to the inner ends of the said devices and also movably connected to the cantle of the saddle, the outer ends of the said upholding devices being also attached to the cantle of the saddle.



823,917. RAILWAY-BRAKE ADJUSTER. ROBERT E. BROOKS, FRANK T. NEWITT, and ANDREW J. SMITH, Buena Vista, Colo. Filed Dec. 27, 1905. Serial No. 293,471.



Claim.—1. In combination with the dead-lever of a brake, a slide connected thereto, and a pivoted cross-lever pivotally secured to the slide.

2. In combination with a dead-lever brake, a base, a slide carried by the base, a connection between the slide and dead-lever, a lever arranged transversely of the base pivoted to the base and to the slide.

3. In combination with a dead-lever brake, a base, a guide formed on the base, a slide within the guide, a connection between the slide and dead-lever, and a lever pivoted to the base and to the slide.

4. In combination with a dead-lever brake, a base, a slide in the base, means for imparting motion to the slide, a locking-pin for the slide, a connection between the slide and dead-lever, and a sliding lever for releasing the pin from the slide.

5. In combination with a dead-lever brake a base, a slide carried thereby, a connection between slide and dead-lever, means for imparting motion to the slide, a locking-pin normally engaging the slide and means for holding the pin in its normal position.

6. In combination with a dead-lever of a brake, a base, a slide carried by the base connected to the dead-lever, and a lever pivoted to the base and to the slide.

7. In combination with a dead-lever of a brake, a base, a slide on the base, means for imparting motion to the slide, a connection between the slide and the dead-lever, and locking means carried by the base for the slide.

8. In combination with a dead-lever of a brake, a base, a slide on the base, means for imparting motion to the slide, a connection between the slide and the dead-lever, and locking means carried by the base for the slide, said means being movable transversely of the slide.

9. In combination with a dead-lever of a brake, a base, a guide formed in the base, a slide within the guide, and means engaging both the guide and the slide for locking said slide against movement.

10. In combination with a dead-lever of a brake, a base, a slide

on the base, a connection between the slide and dead-lever, a locking-pin for the slide, and means for releasing the pin from the slide.

11. In combination with a dead-lever of a brake, a base, a slide in the base, a connection between this line and the dead-lever, a spring-pressed locking-pin normally engaging the slide.

12. In combination, a base, a slide on the base, a connection between the slide and dead-lever, a locking-pin for the slide, a spring engaging the pin to hold it normally in engagement with the slide and means for varying the tension of the spring.

13. In combination with a dead-lever of a brake, a base, a slide in the base, a connection between the slide and dead-lever, a locking-pin in the slide, a lever, and means carried by the lever engaging the pin to release said pin from the slide.

14. In combination with a dead-lever brake, a base, a slide on the base, a connection between the slide and dead-lever, a locking-pin for the slide, a sliding lever for releasing the pin from the slide and a guide for the sliding lever.

15. In combination with a dead-lever of a brake, a base, a slide on the base, a connection between the slide and the dead-lever, a locking-pin for the slide, a guide for the locking-pin, and means for releasing said locking-pin from the slide.

16. In combination with a dead-lever of a brake, a base, a slide on the base, a connection between the slide and dead-lever, a locking-pin for the slide, a guide for the locking-pin, means for releasing said locking-pin from the slide, and a spring within the guide bearing on the pin to hold said pin normally in engagement with the slide.

17. In combination, a base, a slide in the base, said slide having a series of perforations, a connection between the slide and the dead-lever, and a locking-pin for engaging the perforations of the slide.

18. In combination with a dead-lever brake, a base, a slide on the base, a connection between the slide and dead-lever, a locking-pin for engaging the slide, said pin having a head, a lever, means for engaging the head of the pin for releasing said pin from the slide.

19. In combination, a base, a slide on the base, a locking-pin for engaging the slide, said pin having a head, a lever, and means carried by the lever for engaging said head for releasing said pin from the slide.

20. In combination, a base, a slide on the base, a locking-pin for the slide, a lever, a flange on the lever, and means carried by the flange for releasing said pin from the slide.

21. In combination, a base, a slide on the base, a locking-pin for the slide, a lever, a flange on the lever, means carried by the flange for engaging the pin and for releasing said pin from the slide, said pin passing through the flange of the slide.

22. In combination, a base, a slide on the base, a locking-pin for the slide, a lever, a flange on the lever, a rigid connection between the flange and the pin for releasing the pin from the slide.

23. In combination, a base, a slide on the base, a locking-pin for the slide, said pin having a head, a lever a flange on the lever, and rigid connections between the flange of the lever and the head of the pin for releasing said pin from the head.

24. In combination, a base, a slide on the base, a tubular body arranged adjacent the slide, a locking-pin movable within the tubular body and engaging the slide, and means for imparting motion to the pin.

25. In combination, a base, a slide on the base, a bracket arranged adjacent the slide, a lever pivoted to the bracket and to the slide, and means movable within the bracket for engaging and locking the slide.

26. In combination, a base, a slide on the base, a bracket adjacent the slide, a lever pivoted to the bracket and to the slide, a locking-pin for the slide movable within the bracket, and a sliding lever held by the bracket engaging the pin to release said pin from the slide.

27. In combination, a base, a slide on the base, a locking-pin for the slide, a sliding lever for releasing the pin from the slide, and a guide for the sliding lever, said guide providing a supporting means for the lever.

823,918. **ERASER.** FRANK M. BURROWS, Pittsburg, Pa. Filed Feb. 28, 1906. Serial No. 303,348.



Claim.—1. In an eraser, the combination with supports or shields, of a disk eraser journaled between said supports, a brush mounted between said supports, the upper ends of said supports being bent outwardly to form protectors, substantially as described.

2. In an eraser, the combination with supports, of a disk eraser journaled between said supports, the edges of said supports being bent outwardly, to form shields, substantially as described.

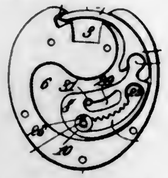
3. The combination with supports, of a disk eraser mounted between said supports, said supports being bent outwardly to form shields, substantially as described.

4. The combination with a disk eraser, of supports arranged upon the sides of said eraser, and having their edges bent outwardly to form shields, substantially as described.

5. An eraser comprising a holder embodying cheek-pieces, an eraser member rotatably mounted between the cheek-pieces, and finger-shields carried by said cheek-pieces and extending outwardly at right angles thereto.

6. As a new article of manufacture, an eraser, comprising a flat eraser member, an eraser-member holder, embodying two separate spaced cheek-pieces between which the eraser member is held, and finger-shields carried by the cheek-pieces extending at right angles thereto.

823,919. **PADLOCK.** YANCEY Q. CALDWELL, Paris, Tenn. Filed Aug. 25, 1905. Serial No. 275,788.



Claim.—1. In a lock, the combination of a casing, a bolt or shackle, a sliding toothed actuator for and separably connected at one end to the bolt or shackle, and toothed means for shifting the actuator in opposite directions to expel and retract the bolt or shackle.

2. In a lock, the combination of a casing, a bolt or shackle having a coupling-slot at its inner extremity, and sliding actuating mechanism for the bolt or shackle having a coupling-head loosely and removably engaging the said coupling-slot of the bolt or shackle.

3. In a lock, the combination of a casing, a bolt or shackle having a curved slot in its inner extremity, sliding toothed actuating means for the bolt or shackle having a curved coupling-head at one end to loosely and removably engage the said slot, whereby either the bolt or shackle or the actuating means may be replaced by another like part, and a rotary toothed device fitted in and engaging a part of said actuating means.

4. In a lock, the combination of a casing, a bolt or shackle having a slot at its inner extremity with guards on opposite sides thereof, a sliding toothed actuating means having a head loosely and removably disposed in said slot, and opposite seats to receive the guards, and a rotatable toothed device fitted in and engaging a portion of the said actuating means.

5. In a lock, the combination of a casing, a bolt or shackle, an actuator or controller loosely connected to the inner extremity of the bolt or shackle and provided with a lower elongated curved slot with an upper toothed wall and upper shorter curved slot, a pinion fitted in the lower curved slot, and a pin engaging the upper wall of the shorter slot.

6. In a lock, the combination of a casing, a bolt or shackle, an actuator or controller loosely connected at one end to the bolt or shackle and provided with an elongated curved slot having an upper toothed wall, a pinion engaging the slot and held in mesh with the upper toothed wall, and means for rotating the pinion to shift the actuator or controller in opposite directions.

7. In a lock, the combination of a casing, a bolt or shackle, an actuator or controller loosely connected at one end to the bolt or shackle and provided with a curved slot, a pin engaging said slot and operating as a stop means with respect to opposite terminals of said slot, and means for shifting the actuator or controller in opposite directions.

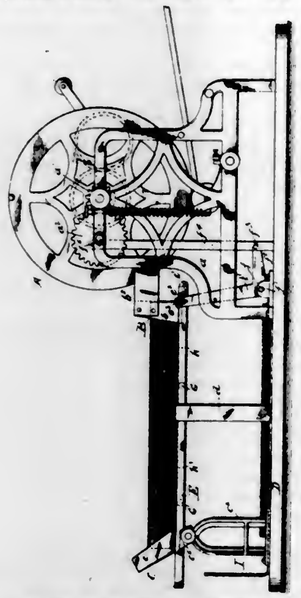
8. In a lock, the combination of a casing, a bolt or shackle, an actuator or controller attached to the bolt or shackle and provided with a curved slot upwardly projected at one extremity to form a seat, a pin projecting through said slot and adapted to engage the said seat to limit the movement of the actuator or controller, and means for operating the actuator or controller.

9. In a lock, the combination of a casing, a bolt or shackle, an actuator or controller connected to the bolt or shackle and provided with a lower elongated curved slot having an upper toothed wall and a shorter curved slot above the former slot, the shorter curved slot having a cam projection at its upper wall and a seat at one extremity, a pin extending through the shorter curved slot and adapted to engage the cam projection and seat, a pinion inserted through the lower longer curved slot and held in mesh with the upper toothed wall of the latter, and means for operating the pinion.

10. In a lock, the combination of a casing, a bolt or shackle, an actuator or controller connected to the bolt or shackle and having a lower slot with an upper curved toothed wall, the opposite extremities of the latter wall projecting upwardly, said actuator or controller also having a shorter slot above the former provided with a terminal locking-seat, a pin extending through the shorter slot to engage the seat, a pinion fitted in the lower slot and held in mesh with the curved toothed wall of the latter, and means for operating the pinion.

11. In a lock, the combination of a casing, a bolt or shackle, an actuator or controller connected to the bolt or shackle, and provided with a lower curved slot formed with an upper toothed wall and an enlarged opening at one extremity, a pinion inserted through said opening and adapted to be disposed in position through the said slot, and means for operating the said pinion.

823,920. **DUPLICATING APPARATUS.** MCION J. D. CARTER, Hackney, London, England, assignor to A. B. Dick Company, Chicago, Ill., a Corporation of Illinois. Filed June 27, 1904. Serial No. 214,373.



Claim.—1. In duplicating apparatus, the combination with devices for printing and feeding sheets successively, of a plurality of movable supporting-fingers adapted to wholly support a pile of disconnected interleaving sheets having notches at their edges corresponding with said fingers, the notches of alternate sheets being in register, and means controlled by said printing and feeding devices for reciprocating said fingers to release said interleaving sheets successively and permit them to fall bodily by gravity, substantially as set forth.

2. In duplicating apparatus, the combination with devices for printing and feeding sheets successively, of a plurality of movable supporting-fingers adapted to wholly support a pile of disconnected interleaving sheets having notches at their edges corresponding with said fingers, the notches of alternate sheets being in register, means controlled by said printing and feeding devices for reciprocating said fingers to release said interleaving sheets successively and permit them to fall bodily by gravity, and means coacting with said sheet pile to prevent movement thereof when said fingers are reciprocated, substantially as set forth.

3. In duplicating apparatus, the combination with devices for printing and feeding sheets successively, of a horizontally-disposed rectangular frame mounted for horizontal movement, inwardly-extending projections on said frame adapted to support a pile of disconnected interleaving sheets having notches to correspond therewith, the notches of alternate sheets only being in register, and means operated by said printing and feeding devices for reciprocating said frame horizontally to release said interleaving sheets successively and permit them to fall bodily by gravity, substantially as set forth.

4. In duplicating apparatus, the combination with devices for printing and feeding sheets successively, of a horizontally-disposed rectangular frame mounted for horizontal movement, inwardly-extending projections on said frame adapted to support a pile of disconnected interleaving sheets having notches to correspond therewith, the notches of alternate sheets only being in register, means operated by said printing and feeding devices for reciprocating said frame horizontally to release said interleaving sheets successively and permit them to fall bodily by gravity, and means coacting with said sheet pile to prevent movement thereof when said fingers are reciprocated, substantially as set forth.

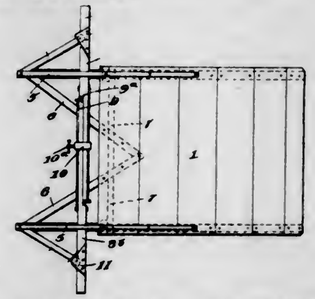
5. In duplicating apparatus, the combination with devices for printing and feeding sheets successively, of a plurality of fingers mounted for movement adapted to wholly support a pile of disconnected interleaving sheets, each of said sheets having a plurality of notches at each of its sides, the notches of alternate sheets only being in register, and means controlled by said printing and feeding devices, for reciprocating said fingers to release said sheets successively and permit them to fall by gravity, substantially as set forth.

6. In duplicating apparatus, the combination with devices for printing and feeding sheets successively, of a plurality of movable supporting-fingers adapted to support a pile of disconnected interleaving sheets having notches at their opposite edges corresponding with said fingers, the notches of alternate sheets only being in register, and means controlled by said printing and feeding devices for reciprocating said fingers to release said interleaving sheets successively and permit them to fall bodily by gravity, substantially as set forth.

7. In duplicating apparatus, the combination with devices for printing and feeding sheets successively, of a pile of disconnected interleaving sheets, each of said sheets having a notch on each of the lateral edges thereof and said notches being so disposed that the notches of alternate sheets only are in register, and means coöperating with said pile of sheets for supporting the same, said means coacting with said notches to release the sheets of the pile successively, substantially as set forth.

8. In duplicating apparatus, the combination with devices for printing and feeding sheets successively, of a pile of disconnected interleaving sheets, each having a plurality of notches at each of the opposite sides thereof so disposed that the notches of alternate sheets only are in register, and means coöperating with said pile of sheets for supporting the same, said means coacting with said notches to release the sheets of the pile successively, substantially as set forth.

823,921. **WINDOW-WASHER'S PLATFORM.** COLBURN N. CHRISTOFFERSON and JOHN F. LINDBERG, Hibbing, Minn. Filed Nov. 20, 1905. Serial No. 288,204.



Claim.—1. A device of the character described, comprising a platform, supports therefor, a laterally-extending extensible bar connected to said platform, and means whereby the extension of said bar will effect its movement away from said support and vice versa.

2. A device of the character described comprising a platform provided with supporting-legs, a laterally-extending extensible bar, and a pivotal connection between the platform and the sections of

said bar whereby as the same is extended it will move away from the legs and vice versa.

3. A device of the character described comprising a platform, stringers embodied therein, supporting-legs connected to said platform, longitudinally-extending bands secured to said platform and stringers and providing at their rear ends elongated openings, an extensible sectional bar mounted to move through said openings, and links connecting the sections of said bar with the said stringers.

4. A device of the character described comprising a platform including longitudinally-extending stringers, legs secured to said stringers, bands secured to said platform and providing at their rear ends suitable openings, a transversely-extending sectional bar provided with overlapping ends, means for clamping the sections of said bar in differently-extended positions, and links pivotally connecting the ends of said bar with said stringers, said ends working through said openings.

5. A platform for the purpose set forth, comprising a platform proper embodying longitudinally-extending stringers, bands secured to said stringers and providing at their rear ends elongated openings, a transversely-extending sectional bar having overlapping ends, a clamping-band arranged to hold said sections in different extended positions, the ends of said sections working through the openings provided by said bands and provided at top and bottom with attaching-plates, and links pivotally mounted between said plates at one end and to the stringers at the other ends, whereby the movement of said sections with respect to each other will simultaneously move the bar as a whole in a direction at right angles to the movement of extension.

823,922. **GARMENT-SUPPORTER.** CHARLES CHRYSLER, Los Angeles, Cal. Filed Nov. 7, 1905. Serial No. 286,253.

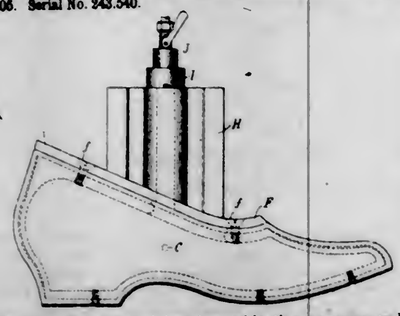


Claim.—1. In a garment-supporter, a retainer consisting of a plate having a protuberant portion and having points or spurs at the apex of said protuberant portion.

2. A garment-supporter comprising a plate having terminal slots and having the intermediate portion pressed outward and formed in its apex with an opening surrounded by a plurality of spurs or points.

3. In a garment-supporter, a plate having a protuberant portion provided at its apex with spurs and having a hook at one edge, the bill portion of said hook overhanging said protuberant portion and having outwardly-extended spurs.

823,923. **APPARATUS FOR MANUFACTURING RUBBER FOOTWEAR.** MAURICE C. CLARK, Providence, R. I., assignor to Marvel Rubber Company, a Corporation of Rhode Island. Filed Jan. 31, 1905. Serial No. 243,540.



Claim.—1. A last containing, in combination, an upper and a lower clamp and an inflatable member extending between said clamps.

2. A last containing a rigid lower pressing member, a rigid upper pressing member, a clamp adjacent to said upper pressing member and an inflatable member secured by said clamp.

3. A last containing an upper pressing member, a fluid passage through the same, a clamp adjacent to the same, an inflatable member secured to said clamp and a body portion whereby said inflatable member is held toward the sole.

4. A last containing, in combination, a body portion providing a fluid-chamber, an inflatable member surrounding said chamber and means provided on said body portion whereby said inflatable member is held above and below.

5. A last containing, in combination, a rigid body portion, an inflatable member extending around and beneath said body portion and a sole-plate secured to said body portion underneath said inflatable member.

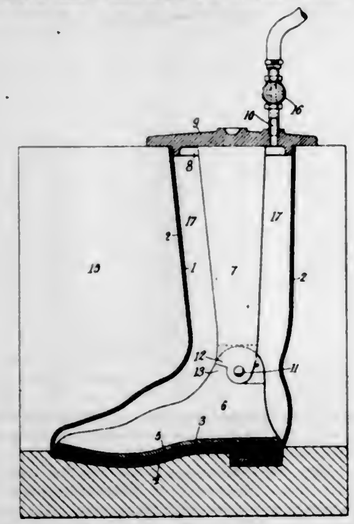
6. A last containing, in combination, a body portion, an inflatable member extending around and underneath said body portion, a sole-plate whereby said inflatable member is clamped to said body portion and a clamp whereby the upper edge of said inflatable portion is secured to said body portion.

7. In combination with the chambered body portion of a last, an upward extension adapted to form a holder for the same and containing a longitudinal perforation connecting with said chamber and an inflatable member secured to and extending around said body portion.

8. A last containing, in combination, a body portion A, a sole-plate E, a top plate F and a flexible casing clamped against said body portion by said plates.

9. A last containing, in combination, a hollow body portion A provided with openings B and C, a flexible covering surrounding said body portion outside of the openings C and means whereby said flexible covering is clamped to said body portion around said opening B.

823,924. **MANUFACTURE OF FOOTWEAR.** MAURICE C. CLARK, Providence, R. I., assignor to Marvel Rubber Company, a Corporation of Rhode Island. Filed Jan. 31, 1905. Serial No. 243,541.



Claim.—1. The improvement in the art of vulcanizing footwear, which consists in forming the shoe of material which has been previously partially vulcanized, applying unvulcanized material to the shoe so formed and then completing the vulcanization, while the shoe is under pressure between mold members and a last.

2. The improvement in the art of vulcanizing footwear, which consists in preliminarily vulcanizing a thinly-coated lining material forming a shoe from the material so treated, then applying thereto additional unvulcanized rubber compound, then completing the vulcanization, while the footwear is under pressure between mold members and a last.

3. The improvement in the art of vulcanizing footwear under inflating pressure, which consists in preliminarily vulcanizing the lining and completing the vulcanization while the lining is under

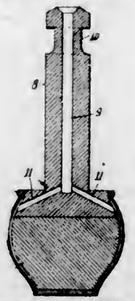
pressure of vulcanizing and the joint between the lining and sole is under mechanical pressure.

4. The improvement in the art of vulcanizing footwear under inflating pressure, which consists in preliminarily vulcanizing the lining and insole and completing the vulcanization while the joint between lining and insole is under mechanical pressure.

5. An improvement in the art of vulcanizing footwear under inflating pressure, which consists in preliminarily vulcanizing the material of such footwear, applying thereto an additional unvulcanized rubber compound and then completing the vulcanization while the major portion of the footwear is under inflation and a portion is under mechanical pressure.

6. An improvement in the art of vulcanizing footwear under inflating pressure, which consists in preliminarily partially vulcanizing the lining of the footwear, applying unvulcanized material thereto, and subjecting a portion of the footwear to mechanical pressure while the lining is under the pressure of inflation.

823,925. **MANUFACTURE OF RUBBER FOOTWEAR.** MAURICE C. CLARK, Providence, R. I., assignor to Marvel Rubber Company, a Corporation of Rhode Island. Filed Mar. 22, 1905. Serial No. 251,393.



Claim.—1. A last comprising a solid body portion over which is adapted to fit a boot or shoe, such last having a main channel extending therethrough and a branch channel communicating with and leading from the main channel, through which air may be passed to the space between the surface of the last and the interior of the boot or shoe.

2. A last comprising a solid body portion adapted to fit within the boot or shoe, an extension of said body portion having a main air-channel therein, and a second channel extending from the main channel through the body portion of the last whereby air may be introduced through the main channel and the second channel to the space between the last and the boot or shoe.

3. A last comprising a solid body portion provided with an extension having a main air-channel formed therein, and a second channel communicating directly with said main channel and extending therefrom through the solid portion of the body for conducting air from the air-channel to the space between the solid body portion and a boot or shoe surrounding the same.

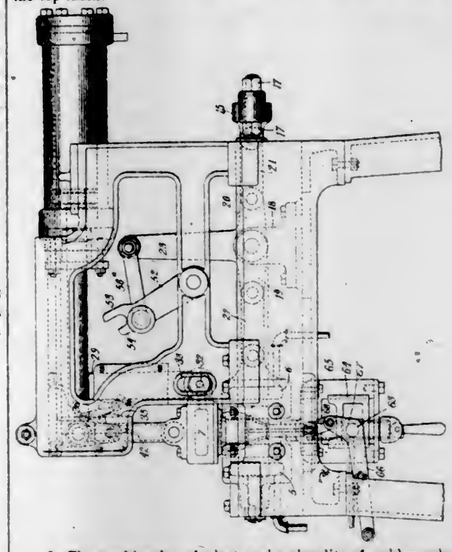
4. A last comprising a body portion, an extension therefor having a fluid-channel formed therein, and a plurality of diverging channels adapted to conduct the fluid from the first-mentioned fluid-channel to the space between the outer surface of the last and a boot or shoe surrounding the same.

5. A last comprising a solid body portion formed of two united sections, the upper section comprising a plate, an extension member connected to the plate and having a main channel therein, said channel having laterally-extending passage-ways connected therewith to conduct fluid from the main channel to a point outside the body portion.

6. A last comprising a solid body portion, and an extension member connected therewith, said extension member having a vertical channel therein for the passage-way of a fluid, and a plurality of inclined diverging channels connected to the first-mentioned channel and extending through the body portion of the last, whereby fluid may be conducted from the main channel to the space between the exterior of the last and a shoe on such last.

823,926. **MANUFACTURE OF FOOTWEAR.** MAURICE C. CLARK, Providence, R. I., assignor to Marvel Rubber Company, a Corporation of Rhode Island. Filed Mar. 29, 1905. Serial No. 252,666.

Claim.—1. The combination of a last, side molds, a top mold, and actuating means for said molds adapted to bring the side molds into contact with a shoe on the last at a relatively earlier time than the top mold.



2. The combination of a last, and a plurality of mold members, certain of which are movable into contact with a shoe on the last prior to certain others of the mold members.

3. The combination of a shoe-support, a plurality of oppositely-moving side molds, a top mold, means for actuating said top mold in driving or operating connection therewith, and power-transmitting means between the top mold and the side mold and operated by the movement of the means for actuating the top mold.

4. The combination of a shoe-support, a plurality of molds arranged adjacent to the support, and means for bringing certain of said molds into contact with the shoe on the support prior to certain other of the molds.

5. The combination with a last, a top or sole mold and side molds, means connected directly with and actuating the top mold, and power-transmitting means between the top mold and the side molds.

6. The combination of a last, a top or sole mold and side molds, a motor in direct driving engagement with the top mold for actuating the latter and a rocking power-transmitter between the top mold and the side molds, whereby the side molds are actuated from the motor driving the top mold.

7. The combination of a shoe-support, a mold therefor, mechanism for actuating said mold, means for directing the movement of said mold in approximately vertical plane a portion of its distance, and means for permitting said mold to rock or swing from said vertical plane.

8. The combination of a shoe-support, a mold, a motor for actuating said mold, means for directing said mold in its movement in an approximately vertical plane for a portion of the distance, and means for causing said mold to rock or swing from said vertical plane.

9. In combination with a shoe-molding machine of a top or sole mold therefor, a motor, a movable connection between said motor and the mold, and means for rocking said mold at the point where it is secured to the connection.

10. In combination with a shoe-molding machine, a top mold, a side mold, a motor, a connection between said motor and the top mold, and power transmitting mechanism interposed between the motor and the side mold, and adapted to be actuated by the movement of the motor to impart a reciprocating movement to said side mold.

11. The combination with a shoe-support, of a plurality of side molds, a motor, a top mold actuated directly by said motor and a rocking connection interposed between the motor and the side molds and adapted to be actuated by the movement of the motor for imparting a reciprocating motion to each of said molds to move the same toward and from each other.

12. The combination with a shoe-molding machine of an adjustable shoe-support, a top mold, a plurality of side molds, one arranged at each side of the shoe-support, a motor, a connection between the motor and the top mold, and mechanism movably mounted on the frame of the machine adapted to receive motion from the movement of the motor for moving the side molds toward and from each other.

13. The combination with a shoe-molding machine, of a shoe-support, a plurality of oppositely-disposed sliding side molds, a vertically-movable top mold, a hydraulic motor connected to said top mold for operating the same, and power-transmitting mechanism including a rocker-arm interposed between the motor and the side molds for transmitting movement to said side molds from the motor, whereby the side molds are closed at a relatively earlier period than the top mold.

14. The combination of a shoe-support, a top mold and side molds, a motor connected to and actuating said top mold, a rocking arm, and connections between said rocking arm and the side molds and between said rocking arm and the motor, for transmitting motion to said side molds simultaneously with the movement of the top mold.

15. The combination of a shoe-support, mechanism for moving said support vertically, means for shifting the support laterally, and a plurality of molds arranged adjacent to said support and adapted to be closed about said support.

16. The combination of an adjustable shoe-support, heated pressure-producing devices adapted to bear against a shoe upon the support, and means for moving certain of said devices into contact with said shoe at relatively different times.

17. The combination of a shoe-support, heated pressure-producing devices adapted to bear against a shoe upon the support, means for moving one of said devices in an approximately vertical path and then rocking such device out of said vertical path, and means for causing certain other of the devices to move toward and from the shoe in an approximately horizontal plane.

18. The combination of an adjustable shoe-support, heated pressure-producing devices adapted to bear against a shoe upon said support, means for moving certain of said devices toward and from each other and toward and from the shoe, and means for elevating and rocking certain other of the devices.

19. The combination of a shoe-support, a plurality of oppositely-moving molds, a motor, a rocking sole-mold actuated by said motor, a toggle mechanism, and means for transmitting power from the motor through the toggle mechanism to actuate said oppositely-moving rolls.

20. The combination of a shoe-support, a plurality of molds adapted to be moved toward and from said shoe-support, a rocker-arm, a connection between said rocket-arm and said molds, a motor, a rocking sole-mold connected to the motor, and means for imparting motion from the motor to the toggle-arm and thence through the connections to said molds.

21. The combination of a shoe-support, a plurality of sliding side molds, a rocking sole or top mold, a motor, a connection between the motor and top mold for actuating the latter, toggle mechanism connected to the side molds, and means for imparting motion from the motor through the toggle connection to the side molds to actuate the latter.

22. The combination of a shoe-support, a plurality of side molds, a top mold, a hydraulic motor connected to the top mold, means for transmitting motion from said motor to the side molds to move the latter in opposite directions, means for introducing an operating fluid to the motor, and a valve for controlling said fluid-introducing means.

23. The combination of a shoe-support, a plurality of hollow side molds adapted to be heated, a top mold also adapted to be heated, a hydraulic motor having a piston connected to the top mold, toggle mechanism interposed between the motor and connected to the side molds, means actuated by the movement of the piston for imparting motion to the toggle mechanism to move said side molds, and means for introducing an operating fluid to the motor.

24. The combination of a vertically and laterally adjustable shoe-support, a top mold, a motor comprising a casing and a piston moving therein, means for introducing an operating fluid to the motor, a link connection between the piston and the mold, means for guiding said mold in a vertical path in its movement, and means for swinging said mold out of said vertical path, at a certain period of its movement.

25. The combination with a shoe-molding machine, of a hollow shoe-support, adapted to have a pressure fluid introduced thereto, means for controlling the admission of the pressure fluid to and from the support, means for moving said support vertically, and means for shifting said support laterally.

26. The combination with a shoe-molding machine, of a hollow shoe-support adapted to have a pressure fluid introduced thereto, valve mechanism for controlling the introduction of such fluid-pressure, a sliding frame for moving said support vertically, and means for shifting said support laterally.

27. The combination of a shoe-support, a plurality of pressure-producing devices adapted to be moved into and out of contact with a shoe upon said support, a hydraulic motor comprising a cylinder and a piston moving therein, a connection between one of said pressure-producing devices and the piston, and means for introducing an operating fluid to the cylinder comprising a valve-chamber, a supply-pipe leading into said chamber, induction-pipes leading from said chamber to opposite ends of the cylinder, an exhaust-pipe leading from said valve-chamber, and a four-way valve within the chamber.

28. The combination of a hollow, adjustable shoe-support, a plurality of molds each provided with a heating-chamber, a hydraulic motor for actuating all of said molds, and means for bringing certain of said molds into contact with a shoe upon the support at relatively earlier times than certain other of said molds.

29. In a shoe-molding machine the combination of a shoe-support, and a rocking sole-mold adapted to be moved into and out of contact with the shoe on the support.

30. In a machine for molding footwear, in combination, a plurality of upper-forming mold-parts, an upper-forming last-surface and means whereby those portions of said last-surface lasting the upper adjacent to the line of division between said mold parts are advanced after the substantial closing of said mold parts.

31. In a machine for molding footwear, in combination, a plurality of upper-forming mold parts, an upper-forming last-surface complemental thereto, a rest whereby said last-surface is supported to withhold the upper from the line of separation between said mold parts while the same are closing, means for closing said mold parts and a last-surface-locating means whereby those portions of the last-surface adjacent to the line of division between said mold parts are advanced.

32. The combination with a frame and a shoe-last, of a plurality of molds, means for closing certain of said molds about a shoe on the last at a relatively earlier period than certain other of the molds, and means for checking the movement of the molds first closed while the movement of the mold member last in closing is continued.

33. The combination with a rigid last-surface, of a plurality of oppositely-moving mold members, means for bringing said mold members to a stationary, closed position adjacent to the last, and means acting upon the last for advancing the same to its final position within the closed mold members.

34. In a machine of the class described the combination with the frame and a shoe-support thereon, of a sole-mold, and means for imparting movement to the sole-mold, such means comprising a sliding member, and means connected to the sole-mold and actuated by the sliding member.

35. The combination with the frame and the shoe-support thereon, a motor, a sole-mold, a member connected to the sole-mold and actuated by the motor, a second member arranged adjacent to the first member, and connected to the side molds, and means for transmitting power from the first to the second member whereby all of said molds may be actuated.

36. The combination with the frame and the work-support thereon, of side molds and the sole-mold, a motor, power-transmission means between the motor and all of the molds whereby said molds may be operated from the motor, and means for checking the movement of the side molds and permitting the continuation of movement of the sole-mold after the movement of the side molds has ceased.

37. The combination with the frame and the work-support thereon, of side molds and a sole-mold, means for actuating all of said molds simultaneously, and means for checking the movement of the side molds while the movement of the sole-mold continues.

38. In combination, rigid mold parts, a rigid last-surface part, means whereby the mold parts are advanced, means whereby a portion of the surface of the last opposed to said mold parts is held back from final position during the closing of the mold parts, and means whereby said portion of the last-surface is given its final advance toward said mold parts after the closing of the mold parts.

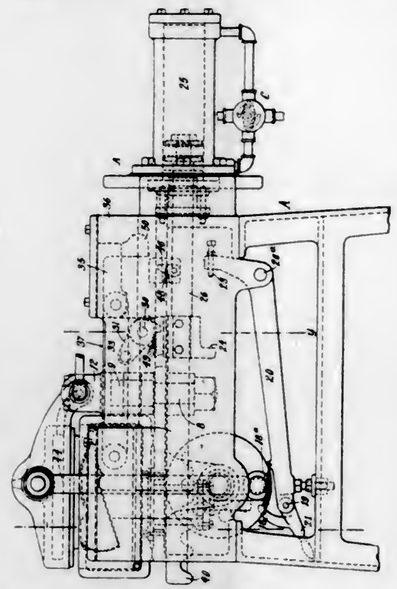
39. The combination with the side molds, of a rigid-surface shoe-support held out of final position when the side molds are closed, and means for moving the support into final position toward the side molds.

40. The combination with a mold member, of a rigid shoe-support held out of contact with the mold member when the latter is stationary and in its closed position, and means for advancing the shoe-support into contact and into final position relative to the mold member.

41. The combination with the side molds, of a last composed of inflexible material interposed between the same and held out of final molding position when the side molds are closed, and means for applying pressure to the last to advance the same toward and into final molding position relative to the closed molds.

823,927. MACHINE FOR MANUFACTURING FOOTWEAR.

MAURICE C. CLARK, Providence, R. I., assignor to Marvel Rubber Company, a Corporation of Rhode Island. Filed Oct. 18, 1905. Serial No. 283,199.



Claim.—1. In a machine of the class described the combination with a frame, of a last carried thereby, a support, and side molds, and a top mold hinged to said support.

2. In a machine of the class described the combination with a frame, of a last carried thereby, a support, a plurality of molds hinged to said support, means for swinging certain of said molds to and from the last, and means for moving certain other of the molds vertically relative to the last.

3 The combination with the frame, of a last, a support mounted on the frame, oppositely-moving side molds hinged to said support, a sole-mold also hinged to the support, and means for moving all of said molds toward and from the last.

4. The combination with the frame, and a last, of a forked post supported by the frame, and a mold movably connected to the forked portion of the post and adapted to be moved into and out of contact with a shoe on the last.

5. The combination with a frame, of a shoe-last, a support, oppositely-moving side molds, and a sole-mold movably connected to said support, and means for closing certain of said molds about a shoe upon the last at a relatively earlier time than certain other of the molds.

6. The combination with the frame, of a last, a supporting-post, oppositely-moving side molds and a sole-mold hinged to said supporting-post, and means for closing the side molds about a shoe upon the last at relatively earlier times than the sole-mold.

7. In a machine of the class described the combination with a frame, of a shoe-support, a forked post, laterally-moving molds connected to said post and a vertically-moving mold connected to the forked portion of the post.

8. In a machine of the class described the combination with a frame and a shoe-support, of side molds and a top mold, a sliding cross-head, a motor for moving the same, a second sliding cross-head adjacent to the first-mentioned cross-head, means for imparting movement from the first-mentioned cross-head to the second, power-transmitting means between the first cross-head and the top mold, and power-transmitting means between the second cross-head and the side molds.

9. In a machine of the class described the combination with a frame, of a shoe-support thereon, a mold, and means for imparting movement to the mold comprising a reciprocating element, a rack connected thereto, a rotary member operated by said rack, and an eccentric-rod connecting the rotary member with the mold.

10. In a machine of the class described the combination with the frame and the shoe-support thereon, of a sole-mold, a motor, a reciprocating member operated by the motor, power-transmission means between the sole-mold and the reciprocating member whereby movement is imparted to such sole-mold, a plurality of oppositely-moving side molds, a reciprocating member operatively connected to said oppositely-moving side molds, and power-transmission means between the sole-mold-reciprocating member and the side-mold-reciprocating member whereby motion may be imparted from the sole-mold-reciprocating member to the side-mold-reciprocating member.

11. In a machine of the class described, the combination with the frame and a shoe-support thereon, of a sole-mold, a motor, a reciprocating member operated by the motor, power-transmission means between the sole-mold and the reciprocating member whereby movement is imparted to such sole-mold, a plurality of oppositely-moving side molds, a reciprocating member operatively connected to said oppositely-moving side molds, power-transmitting means between the first reciprocating member and the second reciprocating member whereby motion is imparted from the first reciprocating member to the second reciprocating member, and means for disengaging the last-mentioned power-transmitting means whereby the first-mentioned member may continue its movement forward while the second member remains stationary.

12. The combination with the frame and a shoe-support thereon, of a top mold and side molds, a reciprocating member, power-transmitting means connecting the reciprocating member with the top mold whereby movement is imparted to the latter, a second reciprocating member connected with the side molds, means for imparting movement from the first reciprocating member to the second reciprocating member to operate the side molds, means for disengaging the power-transmitting means between the two reciprocating members to permit the side molds to remain stationary while the top mold continues its movement, and means for opening the side molds with the retractive or opening movement of the top mold.

13. The combination with a frame and a shoe-support thereon, of a sole-mold and side mold, a motor, a reciprocating member connected to said motor, means interposed between the reciprocating member and the sole-mold for closing the sole-mold with a forward movement of the reciprocating member, a second reciprocating member connected to the side molds, means for imparting movement from the first reciprocating member to the second reciprocating member to close the side molds, and means for opening the side molds with the retractive movement of the first-mentioned reciprocating member.

14. The combination with the frame and a shoe-support thereon, of a plurality of oppositely-moving side molds, a reciprocating member, flexible connections between the reciprocating member and the side molds, a motor, and means interposed between the motor and the reciprocating member for imparting movement to the latter to open and close the side molds.

15. In a machine of the class described, a post, a last carried by one end of the post, and a cushion arranged beneath the opposite end of the post for cushioning the movement of the latter.

16. In a machine of the class described, a chamber, a supporting-post moving therein, a last carried by the upper end of said post, and means adjacent to the lower end of the post for cushioning the latter.

17. In a machine of the class described, a chamber, a post mounted to move therein and having a portion projected beyond the chamber, a last carried by that portion of the post outside the chamber, means for sustaining the post in an elevated position, and means for cushioning the post when depressed.

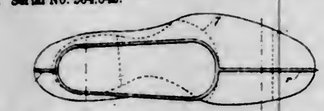
18. In a machine of the class described a shoe-support, means for raising and lowering the same, means for cushioning said support, a mold member adapted to depress said support against the cushion, and a motor for operating the mold member.

19. In a machine of the class described the combination with the molds and a shoe-support, of means adapted to sustain said support at a certain point of elevation, and a mold for depressing said support below such point of elevation against the action of the sustaining means.

20. In a machine of the class described the combination with a shoe-support, of resilient means adapted to sustain said support at a certain point of elevation, and a mold member for depressing said support below such point against the action of the resilient means.

21. In a machine of the class described the combination with side molds, and a shoe-support, of a sole-mold for forcing said shoe-support and its shoe into its final position in the side molds.

823,928. **PROCESS FOR MANUFACTURE OF VULCANIZED FOOTWEAR.** MAURICE C. CLARK, Providence, R. I., assignor to Marvel Rubber Company, a Corporation of Rhode Island. Filed Oct. 28, 1905. Serial No. 284,342.



Claim.—1. The process of manufacturing a molded vulcanized article of footwear which consists in vulcanizing the same and during such vulcanization applying pressure to the article in such manner that the compound of the upper is pressed beyond the edge of the sole by the side molds and down onto the outer surface of the sole by the sole-mold.

2. The process of manufacturing a molded vulcanized article of footwear, which consists of vulcanizing the same and then pressing the compound of the upper around and over the edge of the sole in toward the center of such sole.

3. The process of manufacturing a molded vulcanized article of footwear containing a lining of textile material which consists in applying to the lining a coating of rubber compound, then partially vulcanizing the coating, then applying thereto an exterior coating of rubber compound and vulcanizing the same while under substantially rigid pressure between the last and the mold.

4. The process of manufacturing a molded vulcanized article of footwear containing a lining of textile material, which consists in applying the initial pressure of the mold to the sides of the upper succeeded by pressure upon the top thereof.

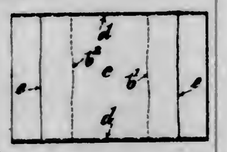
5. The process of manufacturing a molded vulcanized article of footwear which consists in closing the sides of a mold upon said article while in partially-inserted position and subsequently forcing the article home to its final position.

6. The process of manufacturing a molded vulcanized article of footwear containing a lining of textile material which consists in partially vulcanizing the lining, applying thereto an exterior rubber compound and vulcanizing the same while under substantially rigid pressure upon the upper directed toward the sole.

7. The process of manufacturing a molded vulcanized article of footwear containing a lining of textile material which consists in vulcanizing the same and applying substantially rigid pressure to cause the material to flow toward and beyond the lower corner of the sole and then applying pressure to press the material into the sole.

8. The process of manufacturing a molded vulcanized article of footwear containing a lining of textile material turned in on top of the sole, which consists in vulcanizing the same and applying substantially rigid pressure to cause the compound of the upper to be pressed on top of and down around the edge of the sole.

823,929. **SLIP OR CASE FOR PILLOWS, BOLSTERS, OR CUSHIONS.** FREDERICK COAKLEY, Holywood, Ireland. Filed Jan. 10, 1906. Serial No. 295,414.

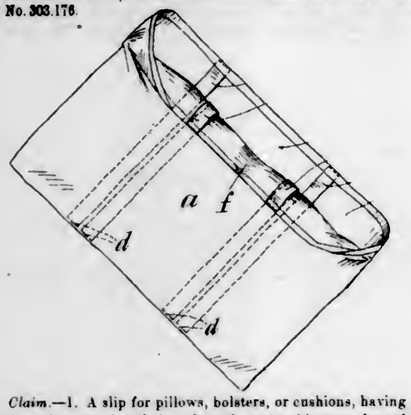


Claim.—1. Slips or cases for pillows, bolsters, or cushions made with an opening *b* in one side only thereof and intermediate the ends thereof for the insertion of the pillow, bolster, or cushion, said opening being covered by means of a flap or piece *c* secured at opposite ends to the body of the slip.

2. Slips or cases for pillows, bolsters, or cushions made with a rectangular opening in one side intermediate its ends, said opening being covered over by means of a rectangular flap or piece *c* which is secured at two of its sides only to the body of the slip or case and overlapping said opening.

3. In a device of the character described, the combination of a case having closed ends and sides, one of said sides having an opening therein and a flap or piece secured only at opposite sides to said open side and covering the opening therein, the unattached sides of said flap overlapping said opening.

823,930. **SLIP FOR PILLOWS, BOLSTERS, AND CUSHIONS.** FREDERICK COAKLEY, Holywood, Ireland. Filed Feb. 27, 1906. Serial No. 303,176.



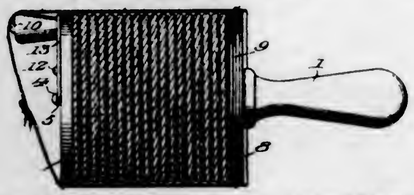
Claim.—1. A slip for pillows, bolsters, or cushions, having internal bands secured at their ends to the top and bottom thereof for the purpose of retaining the pillow, bolster, or cushion in place when inserted in the slip, substantially as described.

2. The combination with a case for pillows, bolsters, or cushions of internal bands secured to the case at their ends, said bands engaging opposite sides of the pillow and secured at their ends to the top and bottom of the case, substantially as described.

3. The combination with a case for pillows, bolsters, or cushions of two internal bands secured at their ends to the top and bottom of the case one adapted to pass over the pillow or cushion and the other under said pillow or cushion, substantially as described.

4. The combination of a case for pillows having an open end, of two internal bands secured on opposite sides of said open end and also at the other end of said case, one of said bands being adapted to pass over the pillow and the other under said pillow.

823,931. **CLOTHES-LINE REEL.** WILLIAM J. CONNELL, Huntington, W. Va. Filed Apr. 3, 1905. Serial No. 253,512.



Claim.—In a clothes-line reel, a handle, a shaft carried thereby, a reel rotatively mounted on the shaft and comprising a body portion and end heads, one of the heads being provided with a marginal groove, means for removably securing the reel upon the shaft, a flexible cover for the reel, a spring clamping-ring for detachably securing the cover in position upon the reel, said ring being adapted to fit within the groove, the cover having an open outer end, and a running-string for normally closing said outer end of the cover, the latter being adapted to be thrown backward to permit of access being readily had to the line.

823,932. **DEVICE FOR MEASURING LIQUIDS.** DANIEL CORCORAN, Launceston, Tasmania, Australia. Filed June 5, 1905. Serial No. 263,876.

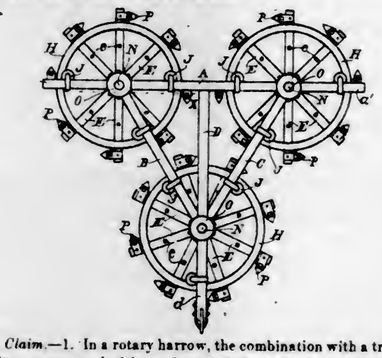
Claim.—1. An improved device for measuring liquids, comprising a graduated tube, a gimbal-ring mounted in the upper portion thereof and provided with a bracket and clamping-ring, and a funnel at the lower end of said tube fitted with a discharge-cock.



2. An improved device for measuring liquids, comprising a graduated transparent tube having a detachable funnel at its lower end provided with a cock and recesses formed in the sides of its upper end, a bracket at its upper end having a gimbal-ring with pivots therefor, a vertical shank on said bracket, a clamping-ring on said shank lined with india-rubber and formed in two parts hinged together, and a closing-ring on said shank, substantially as set forth.

3. In an improved device for measuring liquids, a glass tube having a tapering end provided with studs, a detachable funnel provided with a discharge-cock and having bayonet-slots adapted to engage the said studs, and india-rubber packing between said funnel and said tapered end substantially as set forth.

823,933. **ROTARY HARROW.** CHARLES J. DAVIS, Lansing, Mich. Filed Oct. 14, 1905. Serial No. 282,804.

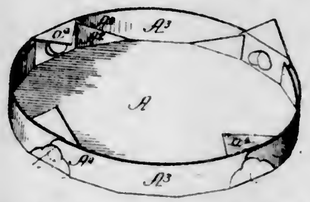


Claim.—1. In a rotary harrow, the combination with a triangular frame composed of frame-bars and the ends of two of said bars being arranged to project beyond the angles of the triangular frame, of rotary elements, center pins passing through the angles of said triangular frame and through the center of the said rotary elements, circular tracks borne by the said rotary elements, and wheels secured to the said frame and arranged to engage the said circular tracks, each of the said projecting ends of the frame-bars having secured thereto outside of the triangular frame one of the said wheels, and pivoted teeth attached to said rotary elements and adapted to drag upon one side and to catch the ground upon the other side of the said rotary elements whereby they are rotated, substantially as described.

2. In a rotary harrow, the combination with a triangular frame composed of frame-bars and the ends of two of said bars being arranged to project beyond the angles of the triangular frame, of rotary elements, center pins passing through the angles of said triangular frame and through the center of the said rotary elements, circular tracks having horizontal flanges borne by the said rotary elements, and spool-wheels secured to the said frame and arranged to engage the said circular tracks, each of the said projecting ends of the frame-bars having secured thereto outside of the triangular frame one of the said spool-wheels, and pivoted teeth attached to said rotary elements and adapted to drag upon one side and to catch the ground upon the other side of the said rotary elements whereby they are rotated, substantially as described.

823,934. **PAPER TRAY.** FRANK B. DAVIDSON, Marseilles, Ill., assignor to Howe and Davidson Company, East Orange, N. J., a Corporation of New Jersey. Filed Aug. 22, 1904. Serial No. 221,677.

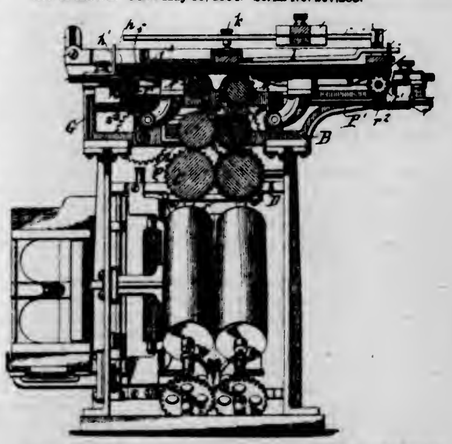
Claim.—1. A tray of substantially circular outline made of a single square sheet and comprising a flat bottom and four sets of marginal flaps, all of which are folded upwardly from the bottom at right angles thereto on folding-lines of equal length which are equidistant from the center of the bottom and at right angles to radial lines thereof, each set embracing a central flap located at one corner of the sheet, intermediate flaps adjacent to said central flap at opposite sides thereof, and exterior flaps, each of which is located at the center of one side of the sheet, and is provided with lateral straight extensions, which in the flat sheet extend outside of said intermediate flaps, and which in the completed tray are arranged in overlapping relation with the intermediate flaps and the central flap and the ends of which are secured to and joined by said central flap, so as to form a substantially continuous rim extending entirely around the said bottom.



2. A tray of substantially circular outline made of a single square sheet and comprising a flat bottom and four sets of marginal flaps all of which are folded upwardly from the bottom at right angles thereto on folding-lines of equal length which are equidistant from the center of the bottom and at right angles to radial lines thereof, each set embracing a central flap located at one corner of the sheet, intermediate flaps adjacent to said central flaps at either side thereof, and exterior flaps, each of which is located at the center of one side of the sheet and is provided with lateral straight extensions which in the flat sheet extend outside of said intermediate flaps, and which in the completed tray are arranged in overlapping relation with the intermediate flaps and the central flap, the ends of said straight extensions on the exterior flaps and the central flap being provided with slits and tongues by which said extensions may be interlocked with said central flaps, to constitute a substantially continuous annular rim extending entirely around said bottom.

3. A blank for a tray which is substantially square in form and is provided with four sets of marginal flaps separated from the central part or body of the blank by score-lines of equal length arranged at equal distances from the center of the blank and at right angles to radial lines of the blank, each set of flaps comprising a central flap located at one corner of the blank, intermediate flaps adjacent to and at opposite sides of said central flap, and exterior flaps each of which is located at the center of one of the straight sides of the blank and is provided with oppositely-projecting lateral extensions located outside of the said intermediate flaps and separated from the said intermediate flaps by outwardly-deflected lines of severance adapted to give considerable width to the narrower ends of said intermediate flaps.

823,935. **SHEET-SEPARATING APPARATUS.** ALBERT B. DICK, Chicago, Ill., assignor to A. B. Dick Company, Chicago, Ill., a Corporation of Illinois. Filed May 10, 1904. Serial No. 207,235.



Claim.—1. In sheet-separating apparatus, the combination with a bed adapted to receive and support a pile of sheets in a sub-

stantially horizontal plane, of an opening in said bed, a sheet-separating device located in operative relation to said opening and coacting with the under side of said pile to buckle a sheet and feed the same downwardly therefrom, the buckled portion in advance, and a retarding roll or rolls on one side of said device, substantially as set forth.

2. In sheet-separating apparatus, the combination with a bed adapted to receive and support a pile of sheets in substantially the same plane, of an opening in said bed nearer to one end thereof than to the other, a sheet-separating device located in operative relation to said opening and coacting with the under side of said pile to buckle a sheet and feed the same downwardly therefrom, the buckled portion in advance, and a retarding roll or rolls on one side of said sheet-separating device, substantially as set forth.

3. In sheet-separating apparatus, the combination with a bed adapted to receive a pile of sheets, of an opening in said bed, a sheet-separating device located in operative relation to said opening, and a retarding roll or rolls on one side of said device and operating in openings in said bed, substantially as set forth.

4. In sheet-separating apparatus, the combination with a bed adapted to receive a pile of sheets, of an opening in said bed, a rotary sheet-separating device located in operative relation to said opening, and a retarding roll or rolls on one side of said device and operating in openings in said bed, substantially as set forth.

5. In sheet-separating apparatus, the combination with a bed adapted to receive a pile of sheets and provided with an opening nearer to one end of said bed than to the other, of a sheet-separating device located in operative relation to said opening, and a rotary retarding roll or rolls on one side of said device and operating in openings in said bed, substantially as set forth.

6. In sheet-separating apparatus, the combination with a bed adapted to receive a pile of sheets and provided with an opening, of a sheet-separating device located in operative relation to said opening, and a retarding roll or rolls on both sides of said device, substantially as set forth.

7. In sheet-separating apparatus, the combination with a bed adapted to receive a pile of sheets and provided with an opening, of a rotary sheet-separating device located in operative relation to said opening, and a retarding roll or rolls on both sides of said device, substantially as set forth.

8. In sheet-separating apparatus, the combination with a bed adapted to receive a pile of sheets and provided with an opening, of a sheet-separating device located in operative relation to said opening, and a retarding roll or rolls on both sides of said device and operating in openings in said bed, substantially as set forth.

9. In sheet-separating apparatus, the combination with a bed adapted to receive a pile of sheets and provided with an opening, of a rotary sheet-separating device located in operative relation to said opening, and a retarding roll or rolls on both sides of said device and operating in openings in said bed, substantially as set forth.

10. In sheet-separating apparatus, the combination with a bed adapted to receive a sheet pile, of a separating device, and a hinged presser-plate coacting with said sheet pile, the hinge thereof being vertically adjustable, substantially as set forth.

11. In sheet-separating apparatus, the combination with a bed adapted to receive a sheet pile and to support the same immovably as a hole, of a sheet-separating device operating in a fixed position relatively to said bed, a presser-plate, and an adjustable weight carried by said presser-plate and having a clamping device, said presser-plate and weight coacting with the upper surface of said sheet pile, substantially as set forth.

12. In sheet-separating apparatus, the combination with a bed adapted to support a sheet pile in a substantially horizontal plane, a sheet-separating device adapted to buckle and pass a sheet downwardly from said pile, the buckled portion in advance, and sheet-retarding mechanism operating in substantially the same plane as said device, of means for applying pressure upon said sheet pile, substantially as set forth.

13. In sheet-separating apparatus, the combination with a bed adapted to support a sheet pile in a substantially horizontal plane, a sheet-separating device adapted to buckle and pass a sheet downwardly from said pile, and sheet-retarding mechanism operating in substantially the same plane as said device, of means for applying variable pressure upon said sheet pile, substantially as set forth.

14. In sheet-separating apparatus, the combination of a bed adapted to support a sheet pile, a sheet-separating device underlying a pile on said support and adapted to successively buckle the sheets of said pile and pass them therefrom, and sheet-retarding mechanism also underlying said pile and coacting by frictional contact first with the lowermost sheet of said pile as the same is acted upon by said sheet-separating device and then with the next adjacent sheet while the movement of the sheet first named is being completed by said device, substantially as set forth.

15. In sheet-separating apparatus, the combination with a bed, of a sheet-separating device, retarding-rolls on either side thereof and means for operating the same in a direction away from said separating device, and means for exerting downward pressure upon a sheet pile placed on said bed, substantially as set forth.

16. In sheet-separating apparatus, the combination with a bed, of a sheet-separating device, retarding-rolls on either side thereof and means for operating the same in a direction away from said separating device, a pressure device mounted above said bed and adapted to coact with the sheet pile thereon, and means for varying the degree of pressure of said device, substantially as set forth.

17. In sheet-separating apparatus, the combination with a stationary bed, of guides thereon for centering a sheet pile placed on said bed, and a separating device operating in a substantially fixed position and constantly in the same direction and located nearer to one end of said bed than to the other, said separating device coacting with the under side of said sheet pile to buckle and separate a sheet therefrom and to feed such sheet, the buckled portion thereof in advance, substantially as set forth.

18. In sheet-separating apparatus, the combination with a stationary bed, of guides thereon, and a separator-roll operating in a substantially fixed position and in one direction only through an opening in said bed and coacting with the under side of a sheet pile upon said bed to buckle and separate a sheet therefrom and to feed the same, the buckled portion in advance, substantially as set forth.

19. In sheet-separating apparatus, the combination with a bed provided with guides and having an opening, of a separator-roll and an idler-roll operating through said opening and coacting with a sheet pile arranged on said bed to buckle and separate a sheet therefrom and to feed the same, the buckled portion in advance, substantially as set forth.

20. In a sheet-separating apparatus, the combination with a bed adapted to support a sheet pile in a plane parallel with said bed, of a rotary sheet-separating device operating in one direction only and in a substantially fixed position to buckle the lowermost sheets of said pile successively, and means subjacent to said device for coaction with the buckled portion of sheets passed to said means by said device, substantially as set forth.

21. In a sheet-separating apparatus, the combination with a bed adapted to support a sheet pile and provided with an opening, of a separator-roll in operative relation to said opening, and movable sheet-retarding mechanism coacting with the under side of said pile and operating in unison with said separator-roll, substantially as set forth.

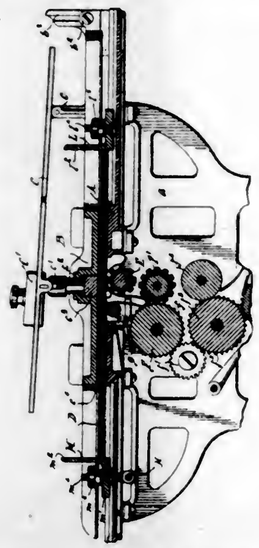
22. In a sheet-separating apparatus, the combination with a bed adapted to support a sheet pile, of a separator-roll coacting with the under side of said sheet pile, and movable sheet-retarding mechanism operating in unison with said separator-roll, said mechanism and said roll underlying said pile and coacting with the under side thereof through openings in said bed, substantially as set forth.

823,936. SHEET-SEPARATING APPARATUS. ALBERT B. DICK, Lake Forest, Ill., assignor to A. B. Dick Company, Chicago, Ill., a Corporation of Illinois. Filed July 6, 1905. Serial No. 268,452.

Claim.—1. In sheet-separating apparatus, the combination of a support for a sheet pile, a movable separator and a part parallel thereto coacting with a pile of sheets on said support intermediate the edges of said sheets, means for operating said separator to buckle the sheets successively between it and said part and pass said sheets in buckled form between them, and means for adjusting said part relatively to said separator, substantially as set forth.

2. In sheet-separating apparatus, the combination of a support for a sheet pile, a rotatable separator and a pivoted roller mounted in an opening in said support and coacting with the under side of a pile on said support intermediate of the edges thereof, means for operating said separator to buckle the sheets successively between it and said roller and pass said sheets in buckled form between them, and means for adjusting said roller relatively to said separator, substantially as set forth.

3. In sheet-separating apparatus, the combination of a support for a sheet pile, a rotatable separator and an idler-roll mounted in an opening in said support and coacting with the under side of a sheet pile on said support intermediate of the edges thereof, means for operating said separator to buckle the sheets successively between it and said roll and pass said sheets in buckled form between them, movably-mounted bearings for said roll, an adjusting device, connections between the same and said bearings and means for operating said device, substantially as set forth.



4. In sheet-separating apparatus, the combination with means for supporting a sheet pile, and a separator-roll coacting with one side thereof, of an idler-roll parallel with said separator-roll and mounted in movable bearings, a shaft and means for rotating the same, and a connection between said shaft and the bearings of said idler-roll, substantially as set forth.

5. In sheet-separating apparatus, the combination with a bed having an opening intermediate of its ends and adapted to receive and support a sheet pile, of a pressure device overlying said bed and adapted to coact with said sheet pile, a separator-roll and an idler-roll operating in the opening in said bed and coacting with the under side of said sheet pile to pass a sheet downwardly therefrom between said separator-roll and said idler-roll, movable supports for said idler-roll, a shaft-support adjacent to said bed and having means for operating the same, cranks mounted upon said shaft, and connecting-arms intermediate of said cranks and said movable supports, substantially as set forth.

6. In sheet-separating apparatus, the combination of a support for a sheet pile having slots therein and graduations adjacent to said slots, gages movable in said slots, means for securing said gages in any adjusted position, a rotatable separator and a pivoted roller mounted in an opening in said support and coacting with the under side of a pile on said support intermediate of the edges thereof, means for operating said separator to buckle the sheets successively between it and said roller and pass said sheets in buckled form between them, and means for adjusting said roller relatively to said separator, substantially as set forth.

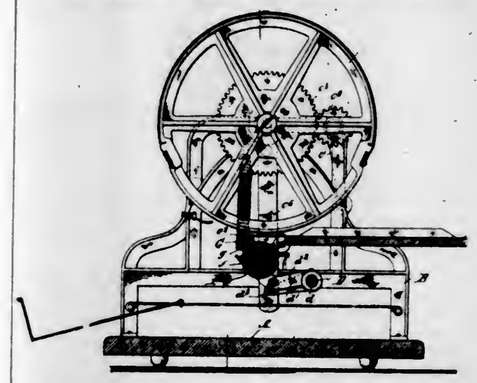
823,937. DUPLICATING APPARATUS. ALBERT B. DICK, Lake Forest, Ill., assignor to A. B. Dick Company, Chicago, Ill., a Corporation of Illinois. Filed Jan. 15, 1906. Serial No. 296,177.

Claim.—1. In duplicating apparatus, the combination with a drum and an underlying pressure-roller pivotedly mounted in movable arms, of a paper-stop supported on said arms and movable relatively thereto, substantially as set forth.

2. In duplicating apparatus, the combination with a drum and an underlying pressure-roller pivotally mounted in movable arms, of a paper-stop pivoted to said arms and movable to operative and inoperative positions, substantially as set forth.

3. In duplicating apparatus, the combination with a drum and an underlying pressure-roller mounted upon hinged arms, of a paper-stop movably carried by said arms, and a connection between said paper-stop and a fixed part of the apparatus, substantially as set forth.

4. In duplicating apparatus, the combination with a drum and an underlying pressure-roller mounted upon hinged arms, of a paper-stop pivotally mounted upon said arms, and a link pivotally connected at one end to said paper-stop and pivotally connected at the other end to a fixed part of the apparatus, substantially as set forth.



5. In duplicating apparatus, the combination with a drum, of a rock-shaft, arms carried by said rock-shaft, a pressure-roller journaled in said arms, a paper-stop comprising a bar arranged in a plane parallel with the axis of said roller and supported by brackets pivotally connected with said arms, and a link movably connected with one of said brackets and with a fixed part of the apparatus, substantially as set forth.

6. In duplicating apparatus, the combination with a drum, of a rock-shaft, arms carried by said rock-shaft, a pressure-roller journaled in said arms, a paper-stop comprising a bar arranged in a plane parallel with the axis of said roller and supported adjacent to its ends by brackets pivotally connected with said arms, and a link pivotally connected at one end to one of said brackets at a point displaced from the longitudinal axis of the bracket and at its other end to a fixed part of the apparatus, substantially as set forth.

823,938. WHEEL. MATTHEW DIXON, Long Island City, N. Y. Filed July 29, 1905. Serial No. 271,733.



Claim.—1. A wheel provided with a series of cushion-springs located upon the felly and surrounded by a tire composed of a spirally-wound metal wire, and a locking device, all combined, substantially as set forth; whereby the tire will be supported upon the springs and prevented from turning about the wheel.

2. A wheel provided with a series of cushion-springs located upon the felly and surrounded by a tire composed of a spirally-wound metal wire inclosing a resilient substance, and a locking device, all combined substantially as set forth; whereby the tire will be supported upon the springs and prevented from turning about the wheel.

3. A wheel provided with a series of cushion-springs located upon the felly and surrounded by a tire composed of a spirally-wound metal wire inclosing a solid but resilient substance, all substantially as set forth.

4. A wheel provided with a felly with a circumferentially-grooved face and having sockets extending inwardly from its outer face, cushion-springs composed of a rubber core and an inclosing spiral metal spring seated in said sockets and extending outward beyond the face of the felly, and a tire composed of a spirally-wound wire with a core of fiber, said tire being mounted in the groove of the felly and bearing upon the exposed end of said cushions, all substantially as set forth.

823,939. ROLLER FOR SKATES. OTIS W. EVERETT, Worcester, Mass., assignor to The Samuel Winslow Skate Co., a Corporation of Massachusetts. Filed June 5, 1905. Serial No. 263,712.
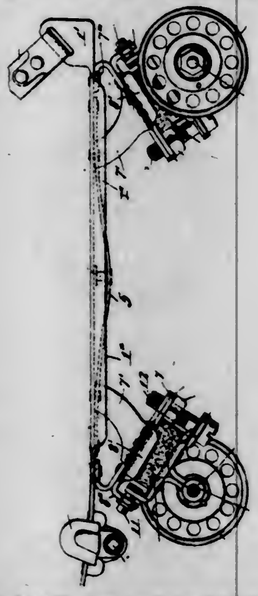


Claim.—1. A metal roller or wheel having a flat tread, and comprising a metal tire or rim having on each edge an inwardly-extending annular lip or flange, two ball-cup holders, each having an annular lip or flange extending at right angles to the main portion thereof and of a width a little less than one-half the width of the rim, and fitting tightly within the rim, and each having a central hub portion, and a ball-cup fitting within each central hub portion and secured therein.

2. A metal roller or wheel having a flat tread, and consisting of a metal tire or rim, two ball-cup holders, each having an annular lip or flange extending at right angles to the main portion and of a width a little less than one-half the width of the rim, and extending within the rim and secured therein by the turned-over edges of the rim, and each having a central hub portion, and two ball-cups, each extending within the central hub portion of a ball-cup holder, and secured therein.

3. A metal roller or wheel having a flat tread, and consisting of a metal tire or rim, two ball-cup holders, each having an annular lip or flange thereon extending at right angles to the main portion, and extending within said rim, and secured therein by the turned-over edges of the rim, and each ball-cup holder having a hub portion, and two ball-cups, each extending within a hub portion, and secured therein by a portion of the hub extending into a notch on the edge of the ball-cup.

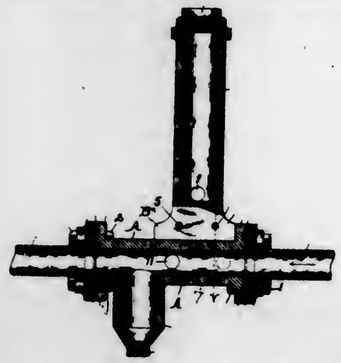
823,940. ROLLER-SKATE. OTIS W. EVERETT, Worcester, Mass., assignor to The Samuel Winslow Skate Mfg. Company, a Corporation of Massachusetts. Filed Jan. 26, 1906. Serial No. 297,937.



Claim.—1. In a roller-skate, a roller-truck adapted to be secured to the under side of the foot-plate, comprising a metal hanger or bracket having attaching ends, a plate secured to the under side of said hanger or bracket, and having an opening therein for a pivot-stud, and for an adjusting-screw, and a second plate or roller carrier having a stud thereon adapted to enter the opening in the first-mentioned plate, and a hole therein to receive the adjusting-screw, and also having a bearing thereon for the axle of the rollers, a yielding block or cushion extending between said two plates, and a screw or bolt for adjusting the relative position of said plates, to regulate the action of said cushion.

2. In a roller-skate, a roller-truck adapted to be secured to the under side of the foot-plate, comprising a metal hanger or bracket having attaching ends, a plate having downwardly-extending edges intermediate its ends, secured to the under side of said hanger or bracket, and having an opening therein for a pivot-stud, and for an adjusting-screw, and a second plate having a stud thereon adapted to enter the opening in the first-mentioned plate, and a hole therein to receive the adjusting-screw, and also having a bearing thereon for the axle of the rollers, a yielding block or cushion extending between said two plates, and a screw or bolt for adjusting the relative position of said plates, to regulate the action of said cushion.

823,941. CHEMICAL-INJECTOR FOR STEAM-BOILERS. ROBERT H. FETTA, Richmond, Ind. Filed Aug. 11, 1905. Serial No. 273,713.



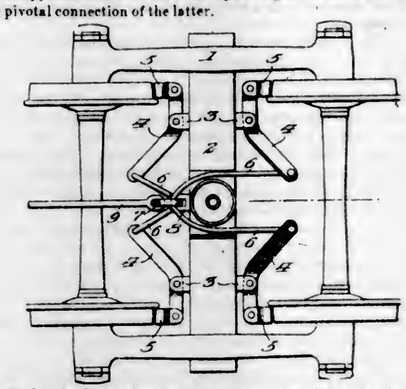
Claim.—1. In a feed-water purifier for steam-boilers, the combination with the feed-water pipe, of a vertically-elongated chamber relatively small in horizontal section, a stick of solidified chemical compost held in vertical position in said chamber, an air-tight closure for the upper end of the chamber, separate inlet and outlet ducts both opening at the bottom of said chamber and communicating with the feed-water pipe below the level of the chamber and at different points in the length of the pipe to maintain a flow through the bottom portion only of the chamber, whereby the compost in the upper portion of the chamber will be held above the water-level and remain unacted on until the lower portion is dissolved; substantially as described.

2. In a feed-water purifier for steam-boilers, the combination with the feed-water pipe, of a vertically-elongated chamber relatively small in horizontal section for a stick of solidified chemical compost, and located above the feed-water pipe, an air-tight closure for the upper end of the chamber, inlet and outlet ducts both opening into the chamber at the bottom and on opposite sides thereof and extending down and entering the feed-water pipe at different points in the length of the latter to maintain a flow through the bottom portion only of the chamber; substantially as described.

3. A fitting adapted to be inserted in and form part of a feed-water pipe for a steam-boiler and having two vertically-arranged chambers at different points in its length, one on the upper and the other on the under side of the fitting, the chamber on the under side of the fitting being nearest the end next the boiler and opening directly into the fitting to form a sediment-trap and the chamber on the upper side of the fitting having inlet and outlet ducts both opening into the bottom of the chamber and on opposite sides thereof and extending down and entering the fitting at different points in its length but at points in advance of the lower chamber whereby sediment from the upper chamber will be caught in the lower chamber; substantially as described.

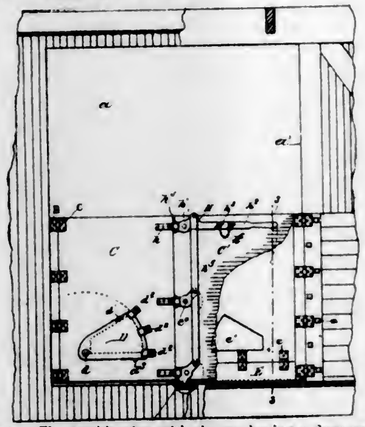
823,942. BRAKE MECHANISM. EDWARD O. FLICHINGER, Massillon, Ohio. Filed Nov. 11, 1905. Serial No. 286,868.

Claim.—1. In a brake mechanism, the combination with a truck having a bolster, of a pair of brake-levers disposed upon each side of the bolster, each set of levers carrying brake-shoes at one end and having convergently-arranged opposite ends extending outwardly from the bolster, an operating-lever fulcrumed upon one side of the bolster, and links connecting the convergently-arranged ends of the opposite sets of levers to the operating-lever above and below the pivotal connection of the latter.



2. In a brake mechanism, the combination of a car-truck having a bolster, fulcrum-blocks on opposite sides of the bolster, bell-crank brake-levers fulcrumed to said blocks, each set of levers carrying brake-shoes at their outer ends and having their inner ends convergently arranged and extending outwardly from the bolster, one set of levers having its converging ends extending upwardly at an angle above the plane of the bolster, an operating-lever fulcrumed upon one side of the bolster, and links pivotally connecting the convergent ends of the brake-levers to the operating-lever above and below the pivotal connection of the latter, one set of links extending across the bolster.

823,943. GRAIN-DOOR. WILSON S. GILLELAND, Newkirk, Okla., assignor of nine-sixteenths to E. M. Markel, Des Moines, Iowa. Filed Nov. 17, 1905. Serial No. 287,804.

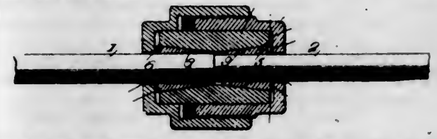


Claim.—The combination with the car having a door-opening provided with a sill, of doors hinged to the sides of the opening, a plurality of catches on one of the doors, a plurality of rock-levers pivoted to the other door, said levers having their outer ends provided with flanges for engaging the catches, the inner end of one of said levers being extended to form a handle, and a bar connecting the inner ends of said levers whereby to constrain them to move in unison, and one of said levers being provided with an integral lug for directly engaging the sill when the flanges are engaged with the catches, whereby to prevent movement of the doors with respect to the sill.

823,944. SHAFT-COUPLING. HUBERT C. HART, Unionville, Conn. Filed Sept. 23, 1905. Serial No. 279,822.

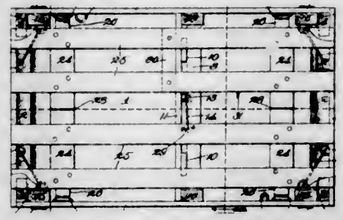
Claim.—1. In a shaft-coupling, the combination with a collar and means coöperating therewith to hold the ends of shafts, means for forcing the coöperating means to engage the shafts and locking the same in position and antifriction devices intermediate the forcing means and the coöperating means.

2. In a shaft-coupling, the combination with a pair of split sleeves, of an element having tapered seats to receive the sleeves, a binding element to simultaneously act on the outer ends of the two sleeves to force the latter into their seats in line with the connected shafts, and antifriction devices, interposed between the binding element and the sleeves.



3. In a shaft-coupling, the combination with a collar formed with an opening, tapering in two opposite directions, of two tapering split sleeves fitting in the opening, a binding element formed in two sections, each section being threaded and engaging each other to draw the sections together, each section having an integral annular shoulder to engage the outer ends of the split sleeves to force the same together in alinement with the shafts being coupled, when the two sections of the binding element are screwed together.

823,945. FOLDING POULTRY-CRATE. GEORGE B. HENRY and ALEXANDER MARSH, Gerster, Mo. Filed July 6, 1905. Serial No. 268,423.



Claim.—1. A poultry-crate, consisting of a bottom, end walls hinged to the bottom to fold inwardly upon the upper side of the same, side walls hinged to the bottom to fold outwardly and up against the under side of the bottom, staples projecting inwardly from the end and side walls near their ends, diagonally opposite hooks permanently hinged to the contiguous staples of the end walls and detachably engaging the contiguous staples of the side walls, diagonally opposite hooks permanently hinged to the other pair of staples of the side walls and detachably engaging the other pair of staples of the end walls, a partition hinged to the bottom a top wall for closing the upper side of the crate, said top wall consisting of two sections hinged at their outer edges to the upper parts of the side walls and adapted to fold down upon the end walls, plates secured to and projecting from one of the top wall-sections under the other, a staple depending from the overlying top wall-section, and a hook pivotally secured on the side of the partition and arranged to engage said staple to secure said top wall-section down upon the plates of the other section and upon the end walls.

2. A poultry-crate, comprising a bottom, end walls adapted to stand upright on the bottom and hinged thereto to fold down upon the upper side of the latter, a partition adapted to stand upon the bottom and hinged thereto to fold down upon the latter, side walls adapted to stand upon the bottom and hinged thereto to fold outwardly and up against the under side of the same, means to secure the side and end walls detachably together when occupying their upright positions, a top wall consisting of a pair of sections hinged at their outer edges to the upper parts of the side walls and adapted to fold down upon the end walls and partition plates secured to one of the top wall-sections and underlying the other when resting upon said side walls and partition, a cross-bar secured to the top wall-section and adapted to engage against the side of the partition at the side toward which it folds, bars secured rigidly to the inner sides of the side walls to engage against the opposite side of the partition whereby the partition will be held rigidly upright by said side bars and the said cross-bar, and a staple-and-hook connection between the partition and the overlying top wall-section.

3. In a poultry-crate, a bottom, side walls hinged thereto to fold outwardly and up against the under side of the bottom and consisting of end bars and connecting-slats, and top wall-sections hinged at their outer sides to the upper parts of the side walls inward of the end bars of the latter and consisting of cross-bars and connecting-slats, the former being adapted to fold against the inner side of the side

walls after the latter have been swung outwardly, and turn-buttons carried by and at the inner sides of the end bars of the side walls and adapted when the top wall-sections are folded against the side walls to engage the normally upper sides of the cross-bars of said top wall-sections.

4. In a poultry-crate, a bottom, end walls hinged to the bottom to fold down upon the upper side of the same and a partition hinged to the bottom to fold down upon the upper side of the same, and below one of the end walls, and a hook-and-staple connection for securing said partition and overlying end wall in the relation described, and a hook-and-staple connection for securing the other end wall to the bottom.

5. A crate comprising a bottom, end walls hinged thereto, side walls also hinged to the bottom, each of said walls having a hook at one end and a staple at the opposite end, each hook engaging the staple at the contiguous end of the abutting wall when the walls are raised, top wall-sections hinged to the side walls and arranged to overlap at their inner edges, a central partition hinged to the bottom, a staple on said partition arranged to be engaged by a hook on one of the end walls when the crate is folded, and a hook carried by said staple and arranged to engage the end wall when the crate is folded and to engage one of the top wall-sections when the crate is adjusted for use.

6. A foldable coop or crate comprising a bottom having transverse cleats on its upper side at its center and near its ends, ends hinged to the bottom to fold down upon the same and consisting of posts and slats connecting the posts and arranged to have the posts at the ends of the end transverse cleats and the lowermost slats upon the bottom and outward of said cleats when the ends are upright, a central transverse partition hinged to the bottom and arranged to have its posts against the central transverse cleat when upright, sides hinged to the bottom to fold under the same and consisting of slats and posts arranged to have the posts fit between and against the posts of the opposite ends when the sides are upright, means on the sides and ends for connecting them in their upright positions, top members hinged to the free edges of the sides and arranged to have their ends rest on the upper edges of the foldable ends when the crate is not folded and to lie against the sides beneath the bottom when the crate is folded, a cross-bar on one of the top members arranged to bear against the central partition at the side opposite the central transverse cleat, means for holding the top members together and down upon the ends and the partition, and turn-buttons on the end posts of the sides arranged to engage the end bars of the top members when the crate is folded.

823,946. **INHALER AND RESPIRATOR.** ELWIN K. HILL, Valparaiso, Ind., assignor to Spear-Marshall Co., Chicago, Ill., a Corporation of Delaware. Filed Nov. 23, 1905. Serial No. 288,793.



Claim.—1. A device of the character described, comprising a combined mouth and nose piece having an inlet and an outlet, a valvular means for alternately closing and opening said inlet and outlet, a receptacle connected to said combined mouth and nose piece and provided with air-inlets, a filtering medium arranged in operative relation with respect to said air-inlet, a medicament-containing pad mounted in said receptacle, a resistance-wire extending through said pad, electrical connections between said wire and a source of electrical energy for heating the wire, thereby vaporizing the medicament when a circuit is formed, a support for said combined mouth and nose piece, and a circuit making and breaking means carried by said support.

2. An inhaler comprising a pad containing a medicament, a resistance-wire carried thereby and adapted when heated to vaporize the medicament, and means for heating the wire.

3. An inhaler comprising electrical-circuit connections having as a part thereof a resistance-wire, means containing a medicament surrounding the wire, said wire when the circuit is formed, adapted to be heated, thereby vaporizing the medicament, and a circuit making and breaking means interposed in said circuit connections.

4. An inhaler comprising electrical-circuit connections having as a part thereof a resistance-wire, means containing a medicament surrounding the wire, said wire when the circuit is formed adapted to be heated, thereby vaporizing the medicament, a circuit making and breaking means interposed in said circuit connections, and a filtering medium arranged in operative relation with respect to the means containing the medicament.

5. A device of the character described, comprising a combined mouth and nose piece having an inlet and a plurality of outlets, a valve-casing connected thereto and provided with an inlet and a plurality of outlets, a valve for closing the inlet, a seat for said valve, a valve for closing the outlets, a series of radially-extending arms arranged in said casing and constituting means for limiting the movement of the inlet-valve in one direction and constituting a seat for the outlet-valve, said valves movable in the same direction during the act of inhalation and exhalation, a receptacle coupled to said valve-casing and provided with a series of air-inlets, means constituting the filter arranged in operative relation with respect to said air-inlets, and means adapted to contain a medicament arranged in said receptacle.

6. A device of the character described, comprising a combined mouth and nose piece having an inlet and a plurality of outlets, a valve-casing connected thereto and provided with an inlet and a plurality of outlets, a valve for closing the inlet, a seat for said valve, a valve for closing the outlets, a series of radially-extending arms arranged in said casing and constituting means for limiting the movement of the inlet-valve in one direction and constituting a seat for the outlet-valve, said valves movable in the same direction during the act of inhalation and exhalation, a receptacle coupled to said valve-casing and provided with a series of air-inlets, means constituting the filter arranged in operative relation with respect to said air-inlets, means adapted to contain a medicament arranged in said receptacle, and supporting means for said combined mouth and nose piece.

7. A device of the character described, comprising a combined mouth and nose piece having an inlet and a plurality of outlets, a valve-casing connected thereto and provided with an inlet and a plurality of outlets, a valve for closing the inlet, a seat for said valve, a valve for closing the outlets, a series of radially-extending arms arranged in said casing and constituting means for limiting the movement of the inlet-valve in one direction and constituting a seat for the outlet-valve, said valves movable in the same direction during the act of inhalation and exhalation, a receptacle coupled to said valve-casing and provided with a series of air-inlets, means constituting a filter arranged in operative relation with respect to said air-inlets, means containing a medicament arranged in said casing and mounted in suitable relation with respect to the inlet in the valve-casing, and an electrical means for vaporizing the medicament.

8. A device of the character described, comprising a combined mouth and nose piece having an inlet and a plurality of outlets, a valve-casing connected thereto and provided with an inlet and a plurality of outlets, a valve for closing the inlet, a seat for said valve, a valve for closing the outlets, a series of radially-extending arms arranged in said casing and constituting means for limiting the movement of the inlet-valve in one direction and constituting a seat for the outlet-valve, said valves movable in the same direction during the act of inhalation and exhalation, a receptacle coupled to said valve-casing and provided with a series of air-inlets, means constituting a filter arranged in operative relation with respect to said air-inlets, means containing a medicament arranged in said casing and mounted in suitable relation with respect to the inlet in the valve-casing, a resistance-wire carried by said means containing the medicament and adapted when heated to vaporize the medicament, electrical connections between said wire and a source of electrical energy, and a circuit making and breaking means interposed in said electrical connections.

9. A device of the character described, comprising a combined mouth and nose piece having an inlet and a plurality of outlets, a valve-casing connected thereto and provided with an inlet and a plurality of outlets, a valve for closing the inlet, a seat for said valve, a valve for closing the outlets, a series of radially-extending arms arranged in said casing and constituting means for limiting the movement of the inlet-valve in one direction and constituting a seat for the outlet-valve, said valves movable in the same direction during the act of inhalation and exhalation, a receptacle coupled to said valve-casing and provided with a series of air-inlets, means constituting the filter arranged in operative relation with respect to said air-inlets, means containing a medicament arranged in said casing and mounted in suitable relation with respect to the inlet in the valve-casing, a resistance-wire carried thereby and adapted when heated to vaporize the medicament, and means detachably connected with said wire for heating the same.

10. A device of the character described, comprising a combined mouth and nose piece having an inlet and a plurality of outlets, a valve-casing connected thereto and provided with an inlet and a plurality of outlets, a valve for closing the inlet, a seat for said valve, a valve for closing the outlets, a series of radially-extending arms arranged in said casing and constituting means for limiting the movement of the inlet-valve in one direction and constituting a seat for the outlet-valve, said valves movable in the same direction during the act of inhalation and exhalation, a receptacle coupled to said valve-casing and provided with a series of air-inlets, means constituting a filter arranged in operative relation with respect to said air-inlets, means containing a medicament arranged in said casing and mounted in suitable relation with respect to the inlet in the valve-casing, a resistance wire carried by said means containing the medicament and adapted when heated to vaporize the medicament, electrical connections between said wire and a source of electrical energy, a circuit making and breaking means interposed in said electrical connections, the source of electrical energy, supporting means for said source of electrical energy and a support for said combined mouth and nose piece interposed between the latter and the source of electrical energy.

11. An inhaler comprising a removable pad containing a medicament, a resistance-wire carried thereby and adapted when heated to vaporize the medicament, and means detachably connected with said wire for heating the same.

12. An inhaler comprising electrical circuit connections having as a part thereof a removable resistance-coil, means containing a medicament surrounding the wire, said wire when the circuit is formed adapted to be heated, thereby vaporizing the medicament, and a circuit making and breaking means interposed in the said connections.

13. An inhaler comprising a removable and replaceable means containing a medicament, circuit-forming connections detachably connected with said medicament-containing means, and a circuit making and breaking means interposed in said connections.

14. A device of the character described, comprising a combined mouth and nose piece having a centrally-disposed inlet and a concentrically-arranged series of outlets surrounding said inlet, and reciprocatory valves moving together in both directions and adapted to alternately close the inlet and outlets during the act of inhalation and exhalation.

16. An inhaler comprising a combined mouth and nose piece having one end provided with an inlet surrounded by a series of outlets, a flat disk-shaped valve for opening and closing the inlet, and a flat ring arranged in operative relation with respect to said outlets and constituting an outlet-valve for opening and closing the outlets.

17. A device of the character described, comprising a combined mouth and nose piece having an inlet and an outlet and reciprocatory valves moving together in both directions and adapted to alternately close the inlet and outlet during the act of inhalation and exhalation, a receptacle connected with said mouth and nose piece and containing a medicament, and electrical means for vaporizing said medicament.

18. An inhaler comprising a combined mouth and nose piece having the forward end thereof provided with an inlet and a series of outlets surrounding the inlet, a valve-casing connected to the forward end of said combined mouth and nose piece and provided with a centrally-arranged inlet and a series of outlets surrounding said inlet, the inlet and outlets of the valve-casing position in operative relation with respect to the inlet and outlets of the combined mouth and nose piece, a valve for opening and closing said inlets, and a valve for opening and closing said outlets.

19. An inhaler comprising a combined mouth and nose piece having the forward end thereof provided with an inlet and a series of outlets surrounding the inlet, a valve-casing connected to the forward end of said combined mouth and nose piece and provided with a centrally-arranged inlet and a series of outlets surrounding said inlet, the inlet and outlets of the valve-casing position in operative relation with respect to the inlet and outlets of the combined mouth and nose piece, a valve for opening and closing said outlets, a receptacle connected and communicating with said valve-casing and provided with a filtering medium and a plurality of inlets, and means interposed between the valve-casing and receptacle and adapted to separate the outgoing air from the incoming air when the inhaler is used.

20. An inhaler comprising a removable pad containing a medicament, and means for heating said pad.

21. A device of the class referred to, comprising a medium for carrying a medicament and a resistance-wire in circuit with a source of electrical supply for heating said medium and for volatilizing said medicament.

22 An inhaler comprising a combined mouth and nose piece having an inlet and an outlet, a valve-casing suitably connected thereto, a cup-shaped member mounted in said valve-casing and provided with an opening arranged in operative relation with respect to said inlet, said valve-casing provided with an outlet arranged in operative relation with respect to the outlet in the combined mouth and nose piece, a valve mounted in said cup-shaped member for opening and closing said inlet, a series of supporting-arms mounted in said cup-shaped member and constituting a valve-seat, and a valve carried by said arm and adapted to open and close said outlet.

23. An inhaler comprising a combined mouth and nose piece having an inlet and an outlet, a valve-casing suitably connected thereto, a cup-shaped member mounted in said valve-casing and provided with an opening arranged in operative relation with respect to said inlet, said valve-casing provided with an outlet arranged in operative relation with respect to the outlet in the combined mouth and nose piece, a valve mounted in said cup-shaped member for opening and closing said inlet, a series of supporting-arms mounted in said cup-shaped member and constituting a valve-seat, a valve carried by said arm and adapted to open and close said outlet, a receptacle containing a medicament and having a plurality of inlets, means for connecting the receptacle to the valve-casing and a filtering medium mounted in said receptacle.

24. An inhaler comprising a combined mouth and nose piece provided with an inlet and an outlet, a valve-casing suitably connected thereto, a cup-shaped member mounted in said valve-casing and provided with an opening arranged in operative relation with respect to said inlet, said valve-casing provided with an outlet arranged in operative relation with respect to the outlet in the combined mouth and nose piece, a valve mounted in said cup-shaped member for opening and closing said inlet, a series of supporting-arms mounted in said cup-shaped member and constituting a valve-seat, a valve carried by said arm and adapted to open and close said outlet, a receptacle containing a medicament and having a plurality of inlets, means for connecting the receptacles to the valve-casing, a filtering medium mounted in said receptacle, and means for separating the outgoing air from the incoming air when the inhaler is used.

823,947. **TOY RAILWAY AND TELEGRAPH-POLE.** EDWARD R. IVES, Bridgeport, Conn., assignor to The Ives Manufacturing Corporation, Bridgeport, Conn., a Corporation of Connecticut. Filed Mar. 12, 1906. Serial No. 305,456.

Claim.—1. The combination with a toy railway-track, of a base-plate for attachment to the track, and a pole secured to the top side of the outer end of the plate with means for the attachment of wires.

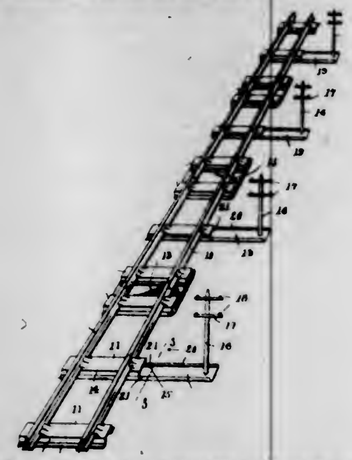
2. The combination with a toy railway-track, of a base-plate with means to engage a sleeper of the track and extend outward therefrom, and a pole mounted upon the outer end of the plate and bearing cross-arms for the attachment of wires.

3. The combination with a toy railway-track, having flanged sleepers, of an elongated attachable base-plate having ways to engage such flanges and adapted to extend out beyond the end of sleeper, and a pole secured to the top side of such outer end of the plate for the attachment of wires.

4. The combination with a toy railway-track including rails and sleepers, of a base-plate having ways to engage a sleeper and containing a socket upon its outer end, a pole seated in the socket and extended upward from the plate and bearing cross-arms for the attaching of wires.

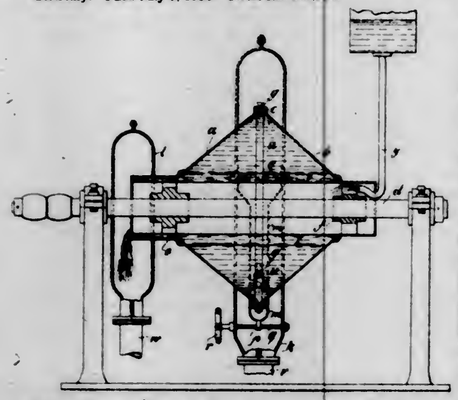
5. The combination with a miniature railway-track including rails and sleepers, of a base-plate with means for attachment to the

track and constructed to extend outward therefrom, and a pole detachably connected to the top side of the base-plate



6. The combination with a miniature railway-track including rails and sleepers, of a base-plate having ways to engage the edges of a sleeper, stops intermediate the ways to determine the position of the plates with relation to the sleeper and a pole bearing arms attached to said plate.

823,948. CENTRIFUGAL MACHINE. FERDINAND KARRL, Berlin, Germany. Filed July 9, 1904. Serial No. 215,831.

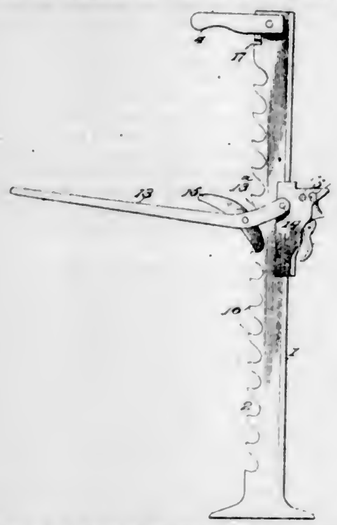


Claim.—1. Centrifugal apparatus mounted upon a horizontal shaft, and more particularly adapted for starch manufacture characterized by two hollow conical halves *a*, *b* fitted together at an oblique angle and fixed on the solid driving-shaft *d* by means of two perforated hubs *e*, *f* of different diameters of which the hub *f* serves for the supply of the material to be treated, while the other hub *e* surrounded by a hollow ring *l* serves for the discharge of the separated water substantially as described.

2. In a centrifugal apparatus, a horizontal shaft, hollow conical shells fitted together at an oblique angle, perforated hubs of different diameters for securing said shells to said shaft, one of said hubs serving for the supply of the material to be treated and the other serving for the discharge, slides for controlling the discharge, automatic means for opening and closing the same and means for receiving the discharged material.

3. In a centrifugal apparatus, the combination of hollow conical shells fitted together at an angle and mounted on a shaft, a discharge-opening from said shaft adjacent said shaft, discharge-openings at the periphery of said shells, slides for controlling said peripheral openings, a casing surrounding said shells and in which the same rotate, a casing surrounding said first-mentioned opening and means for automatically controlling said peripheral openings whereby the same are opened and closed during the rotation of the shells.

823,949. LIFTING-JACK. WILLIAM F. KIDD, PETER KIDD, and LEWIS KIDD, Bloomfield, Ind. Filed Jan. 24, 1906. Serial No. 297,681.



Claim.—1. A device of the character described, comprising a standard, a runner mounted to slide on said standard and provided with a gripping-block designed to bite against one face of the standard to maintain the runner at different elevations, an actuating-lever pivotally connected to said runner, and a pawl connected to said lever, the standard being provided on one face with ratchet-teeth designed for engagement with said pawl.

2. A device of the character described, comprising a standard provided along one edge with ratchet-teeth, a lifting-bracket or runner mounted to slide on said standard and provided with a toothed gripping-block designed to bite against the standard, an actuating-lever provided with a forked end embracing the toothed edge of the standard and pivotally connected to said runner, and a pawl eccentrically mounted between its ends in the fork of said lever and designed for engagement with said teeth.

3. A device of the character described, comprising a standard T-shaped in cross-section, and having one of its edges provided with ratchet-teeth, a lifting-bracket or runner provided with inturned flanges taking around said standard and slidably connecting the runner to the standard, a toothed gripping-block carried by said runner and designed for engagement with the rear face of the standard, means for disengaging said toothed block from the standard, an actuating-lever provided with a fork embracing the toothed edge of the standard and pivotally connected to the runner, and a pawl eccentrically mounted between its ends in the fork of the lever and designed to be rocked by gravity into engagement with the teeth below the lever whereby it will act as a fulcrum for the lever in lifting the runner, as and for the purpose set forth.

4. A device of the character described, comprising a standard T-shaped in cross-section and provided on one edge with ratchet-teeth, a lifting-bracket or runner provided with inturned flanges engaging side edges of the standard and slidably mounting the runner thereon, the runner being also provided with oppositely-extending trunnions and a hollow chamber, a dog slidably mounted in said chamber and provided with a toothed gripping-block for engagement with the rear face of the standard, a hand-lever connected to said dog and having a cam-surface designed for engagement with the runner and arranged to draw the dog downward so as to remove its gripping-block from engagement with the standard, a spring designed to press the dog toward the standard, an actuating-lever having a fork embracing the toothed edge of the standard and pivotally connected to the runner, and a gravity-pawl eccentrically pivoted between its ends to the lever and projecting below the same and designed for engagement with the teeth below the lever whereby it will act as a fulcrum for the lever, as and for the purpose set forth.

823,950. FLOOR OF ARTIFICIAL STONE. PAUL LANGGUTH, Charlottenburg, Germany. Filed Oct. 14, 1905. Serial No. 282,842.

Claim.—1. A flooring comprising a foundation, a thin separating-sheet resting on the said foundation and provided with interruptions, a superposed layer of elastic concrete adhering to the said foundation only where in direct contact with its surface at the said interruptions, and a top layer of hard surface material.



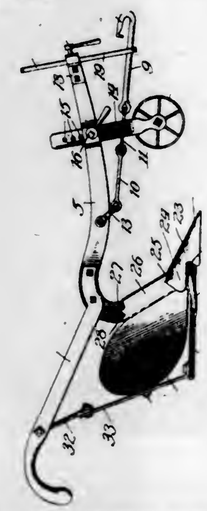
2. Jointless floor of artificial stone consisting of three layers lying on a concrete foundation of which one is continuous artificial stone, another is an equally continuous elastic intermediate layer of cork concrete and another is a frequently-interrupted layer of isolating-paper which lies directly on the foundation and which allows the intermediate layer to join with the concrete foundation in those intervals which occur in it.

3. Jointless floor of artificial stone consisting of three layers lying on a concrete foundation of which one is continuous artificial stone, another is an equally continuous elastic intermediate layer of cork concrete and another is a layer of isolating-paper which lies directly on the foundation forming a continuous layer in which interruptions of optional form occur at intervals.

4. Jointless floor of artificial stone consisting of three layers lying on a concrete foundation of which one is continuous artificial stone, another is an equally continuous elastic intermediate layer of cork concrete and another is a layer of isolating-paper which lies directly on the foundation and which consists of separate sheets of optional form which are not joined to one another.

5. Jointless floor of artificial stone consisting of three layers lying on a concrete foundation of which one is a continuous artificial stone, another is an equally continuous elastic intermediate layer of cork concrete and another is a layer of isolating-paper which lies directly on the foundation and which consists of separate strips with intervening interruptions left free between them.

823,951. PLOW. LUDWIG A. LOHRKE, Chicago, Ill. Filed Mar. 8, 1906. Serial No. 304,864.

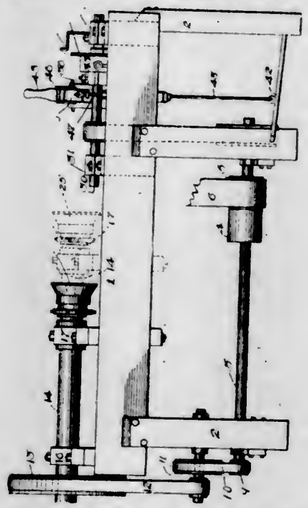


Claim.—1. In a plow of the character described, the combination with the beam, of a toe in which its shin portion terminates, a heel secured to said toe, a shield fastened on the beam to cover said shin portion, moldboards hingedly connected with said shield, means for securing the moldboards in adjusted position, a share secured on said toe, a draft device flexibly connected with the beam adjacent to the share, a ground-wheel-carrying frame adjustably supported on the beam in advance of the point of attachment of said device, and a draft-regulating bar adjustably supported on the forward end of the beam and carrying the forward part of said draft device.

2. In a plow of the character described, the combination with the beam, of a toe in which its shin portion terminates, a shield separably fastened on the beam to cover said shin portion, moldboards hingedly and detachably connected with said shield, a back bar rising from said heel and connected with the plow-handles, a stud projecting from said back bar, perforated links extending from the moldboards to engage at their openings with said stud, means for fastening said links on said stud, a share secured on said toe, a draft device flexibly connected with the beam adjacent to the share, a ground-wheel-carrying frame adjustably supported on the beam in advance of the point of attachment of said device, and a draft-regulating bar adjustably supported on the forward end of the beam and carrying the forward part of said draft device.

3. In a plow of the character described, the combination with the beam, of a toe in which its shin portion terminates, a heel secured to said toe, a shield fastened on the beam to cover said shin portion, moldboards hingedly connected with said shield and provided with means for securing them in adjusted position, a share removably secured on said toe and provided with rearwardly-extending wing-sections, a cutting device comprising cutter-blades flanged at their inner ends and bolted through the flanges to opposite sides of the beam to extend outwardly therefrom beneath said wing-sections, which shield the blade-fastening bolts, a draft device flexibly connected with the beam adjacent to the share, a ground-wheel-carrying frame adjustably supported on the beam in advance of the point of attachment of said device, and a draft-regulating bar adjustably supported on the forward end of the beam and carrying the forward part of said draft device.

823,952. WOODWORKING-MACHINE. EMMETT W. LUCAS, Fayetteville, Ark. Filed Feb. 11, 1905. Serial No. 245,249.



Claim.—1. In a machine of the character described, the combination with a revoluble chuck adapted to hold one end of a yoke-stock, of a pivoted lever having a stop to support the other end of said stock, a second lever pivoted above the first and adapted to form with the first lever and its stop a bearing for the stock, a gage to adjust the free end of the stock, an arbor carrying a cutter-head, means to depress said levers to bring the stock in contact with the knives of the cutter-head, and means to rotate said chuck and arbor.

2. In a machine of the character described, the combination with a tubular spindle carrying a chuck adapted to hold one end of the yoke-stock, of a pivoted lever having a stop to support the other end of said stock, a second lever pivoted above the first and adapted to form with the first lever and its stop a bearing for the stock, an arbor carrying a cutter-head, means to depress said levers to bring the stock in contact with the knives of the cutter-heads, a stop to limit the downward movement of said lever and means to rotate said chuck and arbor.

3. In a machine of the character described, the combination with a revoluble chuck adapted to hold one end of a yoke-stock, of a pivoted lever having a stop to support the other end of said stock, a second lever pivoted above the first and adapted to form with the first lever and its stop a bearing for the stock, an arbor carrying a cutter-head, means to depress said levers to bring the stock in contact with the knives of the cutter-head, and means to rotate said chuck and arbor.

4. In a machine of the character described, the combination with a revoluble chuck adapted to hold one end of a yoke-stock, of a pivoted lever having a stop to support the other end of said stock, a second lever pivoted above the first and adapted to form with the first lever and its stop a bearing for the stock, an arbor carrying a cutter-head and a saw, means to depress said levers to bring the stock in contact with the knives of the cutter-head and with the saw, and means to rotate said chuck and arbor.

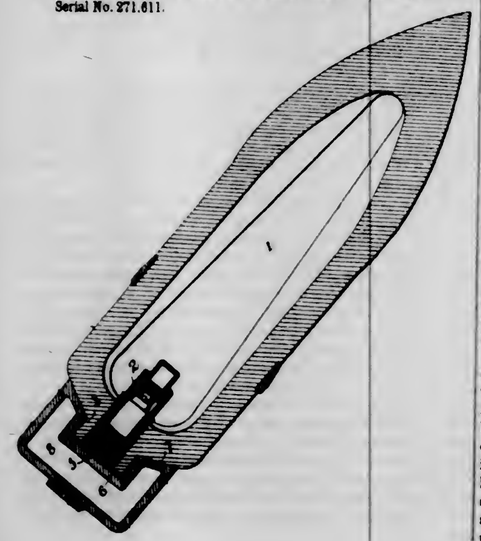
5. In a machine of the character described, the combination with a revoluble chuck adapted to hold one end of a yoke-stock, of a pivoted lever having a stop to support the other end of said stock, a second lever pivoted above the first and adapted to form with the first lever and its stop a bearing for the stock, an arbor carrying a cutter-head, means to depress said levers to bring the stock in contact with the knives of the cutter-head, a stop to limit the downward movement of said lever, a gage to adjust the free end of the stop, and means to rotate said chuck and arbor.

6. In a machine of the character described, the combination with a revoluble chuck adapted to hold one end of a yoke-stock, of a pivoted lever having a stop to support the other end of said stock, a second lever pivoted above the first and adapted to form with the first lever and its stop a bearing for the stock, an arbor carrying a cutter-head, a treadle attached to the free end of said first-mentioned lever to depress said lever to bring the stock into contact with the knives of the cutter-head, a stop to limit the downward movement of said lever, and means to rotate the chuck and arbor.

7. In a machine of the character described, the combination with a revoluble chuck adapted to hold one end of a yoke-stock, of a pivoted lever having a stop to support the other end of said stock, a second lever pivoted above the first and adapted to form with the first lever and its stop a bearing for the stock, a gage to adjust the free end of the stock, an arbor carrying a cutter-head, a treadle attached to the free end of said first-mentioned lever to depress said lever to bring the stock into contact with the knives of the cutter-head, a stop to limit the downward movement of said lever, and means to rotate said chuck and arbor.

8. In a machine of the character described, the combination with a tubular spindle carrying a chuck adapted to hold one end of a yoke-stock, of a pivoted lever having a stop to support the other end of said stock, a second lever pivoted above the first and adapted to form with the first lever and its stop a bearing for the stock, an arbor carrying a cutter-head, a treadle attached to the free end of said first-mentioned lever to depress said lever to bring the stock into contact with the knives of the cutter-head, a stop to limit the downward movement of said lever, and means to rotate said chuck and arbor.

823,953. PROJECTILE. JOHN F. MEIGS and EMIL A. GATHMANN, South Bethlehem, Pa., assignors to Bethlehem Steel Company South Bethlehem, Pa., a Corporation of Pennsylvania. Filed July 28, 1905. Serial No. 271,611.



Claim.—1. The combination with a projectile having a rearwardly-extending boss, of a tracer device having a chamber for tracer material, and means for securing said tracer device to said boss.

2. The combination with a projectile having a rearwardly-extending boss, of a fuse seated in said boss, and a tracer device having a threaded engagement with the boss and being fitted to the rear shoulder of the projectile to form a gas-check.

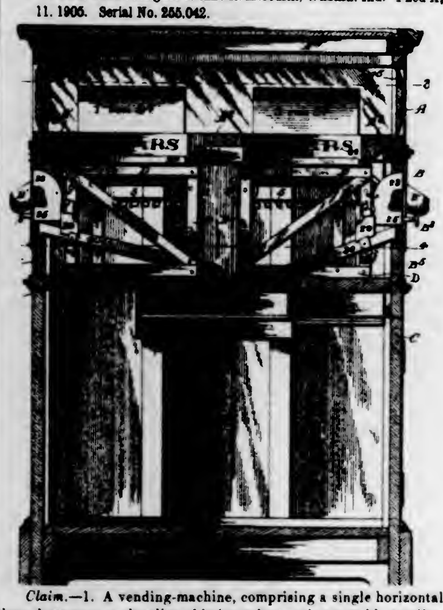
3. The combination with a projectile having a fuse centrally arranged in its rear end, of a tracer device having a threaded engagement with the rear end of the projectile and having a wall extending across the rear of the fuse, said casing having an opening for the discharge of tracer material and serving as a gas-check and reinforce for the fuse.

4. The combination with a projectile having a rearwardly-extending threaded boss, of a tracer device comprising a hollow casing having a threaded recess engaging said boss.

5. The combination with a projectile having its rear end externally threaded and having a fuse seated in said rear end, of an internally-threaded device engaging the external thread of the projectile and extending over and forming a gas-check for the fuse.

6. The combination with a projectile having at its rear end a rearwardly-extending externally-threaded boss, and having a fuse seated in an opening in said boss, of an internally-threaded device engaging said threaded boss and forming a gas-check for the fuse.

823,954. CIGAR-VENDING MACHINE. GEORGE W. MEREDITH, Wichita, Kans., assignor to Milo R. Meredith, Wabash, Ind. Filed Apr. 11, 1905. Serial No. 255,042.



Claim.—1. A vending-machine, comprising a single horizontal glass show-case, a plurality of independent and removable vending units arranged in a horizontal plane below the show-case, a set of plates connecting the tops of the vending units and forming therewith a false bottom for the show-case upon which the bottomless boxes of articles held for sale are seated, each vending unit having at one end an individualized discharging mechanism operable from the exterior of the case.

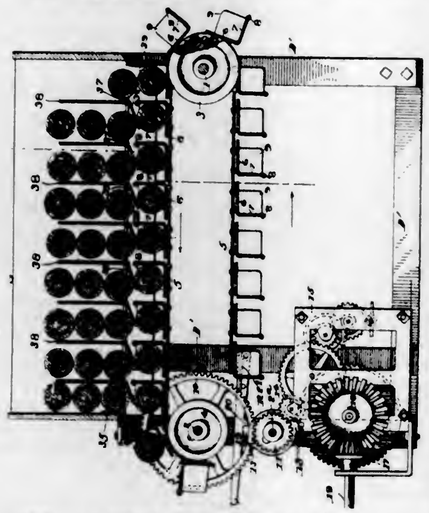
2. A vending-machine, comprising a single horizontal glass show-case, a series of independent and removable vending units arranged in a horizontal plane below the show-case, a set of plates connecting the tops of the vending units and forming therewith a false bottom for the show-case upon which the bottomless boxes of articles held for sale are seated, each vending unit having at one end an individualized discharging mechanism, a cabinet inclosure for the lower portion of the machine, said cabinet inclosure having in its side a horizontal door hinged about a horizontal axis and arranged at the level of the vending units and extending past the series of units.

3. A vending-machine, comprising a single horizontal glass show-case, a series of independent and removable vending units arranged in a horizontal plane below the show-case, a set of plates connecting the tops of the vending units and forming therewith a false bottom for the show-case upon which the bottomless boxes of articles held for sale are seated, each vending unit having at one end an individualized discharging mechanism, a cabinet inclosure for the lower portion of the machine, said cabinet inclosure having in its side a horizontal door hinged about a horizontal axis and arranged at the level of the vending units and extending past the series of units and said door being equipped with a separate operating-handle and external receiving-trough for each vending unit.

4. A vending-machine, comprising a single horizontal glass show-case, a plurality of independent and removable vending units arranged in a horizontal plane below the show-case, a set of plates connecting the tops of the vending units and forming therewith a false bottom for the show-case upon which the bottomless boxes of articles held for sale are seated, each vending unit having at one end an individualized discharging mechanism, and a cabinet inclosure having a common horizontal floor below the units.

5. A vending-machine, comprising a single horizontal glass show-case, a plurality of independent and removable vending units arranged in a horizontal plane below the show-case, a set of plates connecting the tops of the vending units and forming therewith a false bottom for the show-case upon which the bottomless boxes of articles held for sale are seated, each vending unit having at one end an individualized discharging mechanism, a cabinet inclosure having a horizontal common floor below the units, and a closet below the units-floor extending the full horizontal dimensions of the cabinet and provided with a door.

823,955. CIGAR-VENDING MACHINE. GEORGE W. MEREDITH, Wichita, Kans., assignor to Milo R. Meredith, Wabash, Ind. Filed Dec. 7, 1905. Serial No. 290,728.



Claim.—1. A vending-machine, comprising a framework, an endless belt carrying cells, actuating devices for the cell-belt, a series of stationary partition-blades arranged parallel to each other above the cell-belt transversely thereto and fixed at their lower edges rigidly to the framework, means for holding the articles between the partition-blades in vertical tiers, and means for feeding the rearmost tier beneath the superposed tiers in front of it.

2. A vending-machine, comprising a framework, an endless belt carrying cells, actuating devices for the cell-belt, a series of stationary partition-blades arranged parallel to each other above the cell-belt transversely thereto and fixed at their lower ends rigidly to the framework, leaves hinged at the lower edges of the partition-blades and arranged to hold the superposed articles and allow them to drop successively, as described.

3. A vending-machine, comprising a framework, an endless belt carrying cells, actuating devices for the cell-belt, a series of parallel horizontal rods extending across and attached at their ends to the frame above the cell-belt, a series of upwardly-projecting and parallel partition-blades attached at their lower edges to the horizontal rods, and a series of pivoted leaves hinged to said rods and arranged to form automatically-dropping false bottoms, as described.

4. A vending-machine, comprising a framework, an endless belt carrying cells, said cells being formed of flat plates having right-angular wings with rounded and stiffened outer edges, stationary upwardly-projecting partition-blades fixed to the framework, and means for moving the cell-belt under the partition-blades.

5. A vending-machine, comprising a framework, an endless belt carrying cells, said cells having end extensions, parallel horizontal guides arranged in the framework to receive the cell extensions, a series of parallel upwardly-projecting partition-blades fixed in stationary position above the cell-belt and extending down close to the edges of the cells, as held up to true alinement by the guides.

6. A vending-machine, comprising a framework, an endless cell-belt, stationary partition-blades arranged above the cell-belt and projecting upwardly from the framework and adapted to enter the articles held for sale in their original packing-box, and means for actuating the belt.

7. A vending-machine, comprising a framework, an endless cell-belt, stationary partition-blades arranged above the cell-belt and projecting upwardly from the framework and adapted to enter the articles held for sale in the original packing-box, means for locking said box against displacement, and means for actuating the belt.

8. A vending-machine, comprising a framework, an endless cell-belt, stationary partition-blades arranged above the cell-belt and projecting upwardly from the framework and adapted to enter the articles held for sale in the original packing-box, means for locking said box both against horizontal and vertical displacement, and means for actuating the belt.

9. A vending-machine, comprising a framework, an endless cell-belt, actuating devices for the same, stationary partition-blades projecting upwardly from the framework and adapted to enter the articles held for sale in the original packing-box, stationary vertical abutment-flanges arranged on top of the framework for the packing-box to abut against, and pivoted dogs having sharpened teeth adapted to enter the material of the box and hold it against the abutment-flanges.

10. A vending-machine, comprising a framework, an endless cell-belt, actuating devices for the same, stationary abutments projecting upwardly from the framework, and toothed dogs pivoted to the frame-work to swing horizontally and constructed as elastic bars to be sprung up and be put under downward stress to hold the box down on the framework.

11. A vending-machine, comprising an endless belt having cells forming carriers, a driving-axle with sprocket-wheels distending the belt, a gear-wheel fixed rigidly on the sprocket-axle, a second gear-wheel meshing with the first-named gear-wheel, the two gears being arranged with a multiple ratio of teeth to advance the belt a predetermined but variable number of cells and a motor with starting and stopping mechanism.

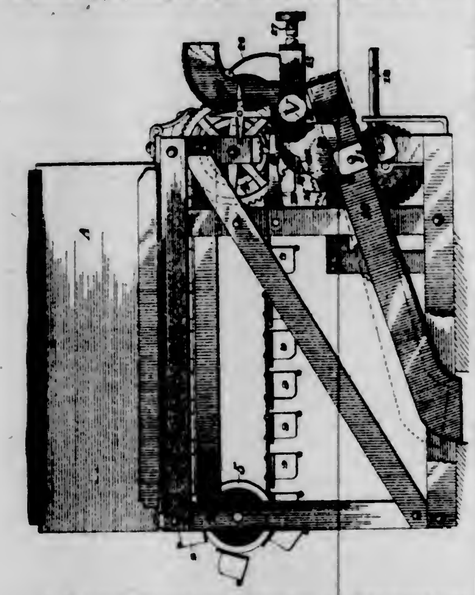
12. A vending-machine, comprising an endless belt having cells forming carriers, a driving-axle with sprocket-wheels distending the belt, a gear-wheel fixed rigidly on the sprocket-axle, a second gear-wheel meshing with the first-named gear-wheel and having teeth whose number is a multiple of the number in the first-named gear, a disk with stop-teeth correlated in number to the gear-wheels and cells of the belt, a detent for the toothed disk and a motor mechanism substantially as described.

823,956. COIN-CONTROLLED VENDING DEVICE. GEORGE W. MEREDITH, Wichita, Kans., assignor to Milo R. Meredith, Wabash, Ind. Original application filed Apr. 11, 1905, Serial No. 255,042. Divided and this application filed Feb. 23, 1906. Serial No. 302,592.

Claim.—1. In a coin-controlled vending-machine, the combination with the carrying-cells and a motor for actuating the same; of a tripping device consisting of a gear-wheel having a ratchet-tooth, a pivoted detent-arm arranged in the plane of and engaging said ratchet-tooth and having a laterally-projecting end, a coin-chute arranged parallel to the detent-arm and passing beneath said laterally-projecting end and a plunger arranged in the coin-chute and adapted to force the coin up against said laterally-projecting end of the detent and lift the same away from the ratchet-tooth.

2. In a coin-controlled vending-machine, the combination with the carrying-cells and a motor for actuating the same; of a tripping device consisting of a gear-wheel having a ratchet-tooth, a pivoted detent-arm arranged in the plane of and engaging said ratchet-tooth

and having a laterally-projecting end, a coin-chute arranged parallel to the detent-arm and passing beneath said laterally-projecting end and having in its bottom a discharge-opening for improper coins said opening also forming a seat for a proper coin and a spring-plunger arranged to force a proper coin up out of said seat and against the laterally-projecting end of the detent-arm to lift the same.



3. In a coin-controlled vending-machine, the combination with the carrying-cells and a motor for actuating the same; of a tripping device consisting of a gear-wheel having a ratchet-tooth, a pivoted detent-arm arranged in the plane of and engaging said ratchet-tooth and having a laterally-projecting end, a coin-chute arranged parallel to the detent-arm and passing beneath said laterally-projecting end and having a spring-plunger for advancing the coin beneath said bent end of the detent, and a coin-trough pivoted beneath the discharge end of the coin-chute to permit adjustment of its discharge end.

4. In a coin-controlled vending-machine, the combination with the discharging devices, the coin-chute and the coin-controlled starting devices; of a coin-trough leading from the coin-chute and pivoted at its upper end below the coin-chute to permit the lower end of the trough to be adjusted as described.

823,957. **NECK-YOKE.** JEREMIAH MILLER, Chicago, Ill. Filed July 30, 1905. Serial No. 271,271.



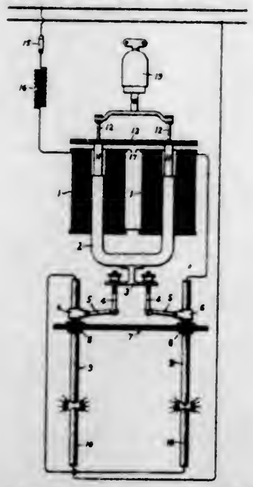
Claim.—1. In a neck-yoke, a yoke-body having a fixed center piece provided with a pendent lug whose greatest thickness is in parallel relation with the yoke-body, and a coöperating sleeve fixed on the vehicle-pole, and having its projecting free end vertically slotted to receive the said lug and form a locked engagement therewith, as described.

2. The combination of a neck-yoke having a fixed pendent lug whose greater thickness is in parallel relation to the yoke-body, and a coöperating sleeve adapted to be fixed on the free end of the vehicle-pole and provided at its forward end with a longitudinal slot adapted to receive and holdingly engage the said lug when the neck-yoke is in its normal position for use, as described.

3. In a neck-yoke a yoke-body, a two-part center piece fixed to the yoke-body and provided with a pendent-lug whose minimum thickness is at right angles to the yoke-body, and a sleeve fixed on the free end of the vehicle-pole, and having a longitudinal slot in its forward end adapted to admit the said lug in one position thereof, but to prevent its disengagement when in its normal holding engagement.

4. The combination of a sleeve rigidly mounted upon the forward end of a vehicle-pole and having at its free end a semispherical head vertically slotted and adapted to receive a pendent lug therein; a neck-yoke provided at its center with a rigidly-attached pendent lug, having its greater thickness parallel with the neck-yoke body and adapted when the yoke-body is parallel with the said vehicle-pole to enter the slotted head of said sleeve and form a locking engagement therewith when the neck-yoke is in its normal position for use.

823,958. **ELECTRIC-ARC LAMP.** EDWIN J. MURPHY, Rugby, England, assignor to General Electric Company, a Corporation of New York. Filed Sept. 9, 1904. Serial No. 223,843.



Claim.—1. A twin-arc lamp having a plurality of movable electrodes, an electromagnetic winding and a core or armature therefor for positioning the movable electrodes, and a member made of magnetic material adapted to be acted upon magnetically by said winding to arrest the movement of the electrode-positioning mechanism when in a definite position.

2. A twin-arc lamp having a plurality of movable electrodes, a solenoidal coil and an armature coöperating therewith for positioning the electrodes, and an auxiliary armature movably mounted in proximity to said armature and adapted to be actuated by the flux of said coil to arrest the movement of said armature when the latter has reached a definite position.

3. An arc-lamp having a movable electrode, two solenoid-coils and a U-shaped core coöperating therewith for positioning the electrode, and an auxiliary armature mounted in proximity to the legs of said core and adapted when attracted to arrest the movement of the core when the latter has reached a definite position.

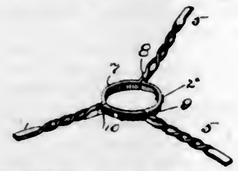
4. An arc-lamp having a movable electrode, a pair of solenoids and a U-shaped core therefor for positioning the electrode, and an auxiliary armature adapted to bridge the ends of the legs of said U-shaped core and to impinge on the ends of the solenoids.

5. In an arc-lamp, two solenoid-coils, a U-shaped core, the legs of which extend through said coils, guide-pins in the ends of said legs, and a plate of magnetic material loosely mounted on said pins and adapted to bridge the ends of the legs of said core.

6. In an arc-lamp, two solenoid-coils, a U-shaped core, the legs of which extend within the coils, extensions on the ends of said legs of material which is less permeable than that of the core, guide-pins in the ends of said extensions, and a plate of magnetic material loosely mounted on said pins and adapted to bridge the ends of said extensions.

823,959. **HANGER FOR SMOKE-BELLS.** SIDWELL S. MYERS, Swissvale, Pa. Filed Apr. 2, 1906. Serial No. 309,336.

Claim.—1. In a hanger or attachment, the combination with the standard or stem of a chandelier, of curved arms, the ends of said arms being curved and recessed to fit together to form a band to surround said standard or stem, hook-shaped supporters slidably mounted upon the opposite ends of said arms, means to fix said supporters relative to said arms, and means to secure the curved ends of said arms together around said stem or standard, substantially as described.



2. A hanger embodying radially-disposed curved arms, the ends of said arms being curved and recessed to fit together to form a band or ring, hook-shaped supporters adjustably mounted upon the opposite ends of said arms, and means to secure the curved ends of said arms together to form a band or ring, substantially as described.

3. A hanger comprising radially-disposed arms, the inner ends of which are curved and recessed to adapt them to fit together to form a ring, means for securing the curved ends together, and supporters adjustably secured to the outer ends of said arms.

4. A hanger comprising a plurality of radially-disposed arms, the inner ends of which are curved and recessed to adapt them to fit together to form a band or ring, means for securing the curved arms together, and supports at the outer ends of said arms.

823,960. **MINING APPARATUS.** ALEXANDER MCDOUGALL, Duluth, Minn. Filed Jan. 31, 1905. Serial No. 243,582.



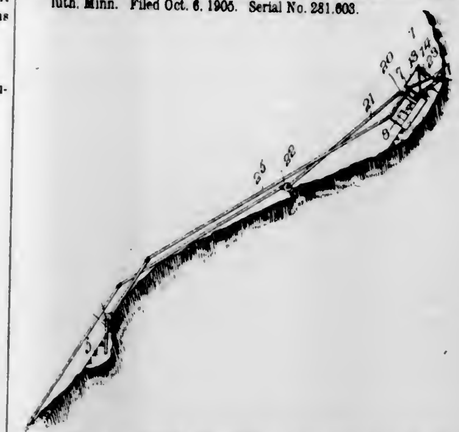
Claim.—1. A mining apparatus comprising a mine having water therein, a scow floating therein, a suction-pump carried by the scow, a pipe leading from the pump into the water, a partly-flexible pipe leading from the pump to the dump, a reservoir receiving the water from said dump, a pipe in communication with the reservoir and the pump on the scow and adapted to operate the pump, and a pump adjacent the pit and adapted to draw the water from the mine and discharge it into the reservoir.

2. A mining apparatus comprising a mine having water therein, a scow floating therein, a suction-pump on said scow, a motor carried by the scow for operating said pump, a suction-pipe communicating with the pump and extending into the water below the scow, a flexible pipe communicating with the pump on the scow and communicating with two or more relay-pumps between the scow and the dump, a reservoir located near the mine and the dump, a canal conveying the water from the dump to the reservoir, a pipe leading from the reservoir and discharging water to the motor on the scow for operating the same, the exhaust-water loosening the sand and ore, a pump adjacent the water in the mine and adapted to force the water from the mine to the reservoir for keeping the water in the mine a determined depth.

3. A mining apparatus comprising a mine having water therein, a scow floated by said water, a pump upon said scow for drawing the said ore and gravel from the mine, a number of relay-pumps, each receiving the water, ore and sand from the adjacent pump, and carrying the same to the dump, a reservoir adjacent said dump and adapted to receive the water therefrom, a water-supply for said reservoir, a pipe leading from the reservoir and adapted to operate the pump carried by the scow, and a pump for forcing a portion of the water directly from the mine back to the reservoir.

4. A mining apparatus, comprising a mine having water therein, a scow within said mine, a suction-pump mounted on said scow, a motor carried by the scow for operating the pump, a water-supply for said mine and adapted to operate said pump and loosen the ore within the mine, and a pump for forcing a portion of the water directly from the mine, whereby the water in the mine is kept at a certain depth so that the suction-pump carried by the scow may work from the bottom of the mine.

823,961. **MINING APPARATUS.** ALEXANDER MCDOUGALL, Duluth, Minn. Filed Oct. 6, 1905. Serial No. 281,603.



Claim.—1. A mining apparatus, comprising a scow having a suction-pipe extending below the same, a rotary breaker adjacent the end of said pipe, a water-reservoir adjacent the scow, a pipe leading from the water-reservoir adjacent the end of the suction-pipe, and a pipe leading from the suction pump to a dump.

2. A mining apparatus, comprising a scow having a suction-pipe extending below the same, a suction-head carried by the end of said pipe, a rotary breaker carried by the suction-head, a water-reservoir adjacent the scow and a pipe leading from the reservoir and discharging water adjacent said breaker.

3. A mining apparatus, comprising a scow, a suction-pump thereon, a suction-pipe carried by the pump and extending downward over one end of the scow, a discharge-pipe extending from the pump, a suction-head carried by the end of the suction-pipe, a rotary breaker carried by the suction-head and a water-supply pipe discharging adjacent the rotary breaker.

4. A mining apparatus, comprising a scow, a suction-pump thereon, a suction-pipe carried by the pump and extending downward over one end of the scow, a discharge-pipe extending from the pump, a rotary cutter carried by the lower end of the suction-pipe, a water-supply pipe discharging water adjacent the rotary breaker, a derrick carried by the scow, and a block-and-tackle connection between the derrick and the flexible pipe and the water-supply pipe.

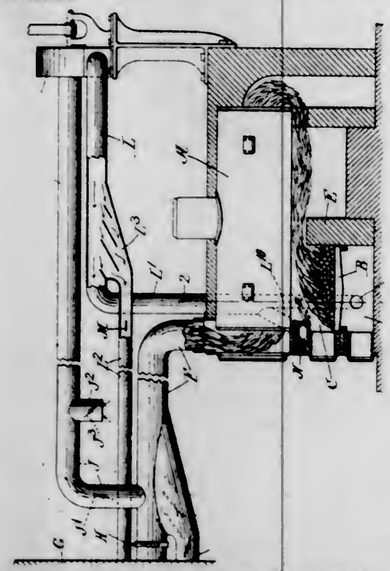
5. A mining apparatus, comprising a scow, means for holding the scow in any desired position, a suction-pump carried by the scow, a flexible pipe extending from the pump below the scow, a rotary breaker carried by the end of said flexible pipe, a pipe discharging water adjacent the said rotary breaker, a pipe leading from the pump to the top of the mine and pumps arranged in tandem in said pipe-line.

6. A mining apparatus, comprising a scow, means for holding the scow in any desired position, a suction-pump carried by the scow, a flexible pipe extending from the pump below the scow, a rotary breaker carried by the end of said flexible pipe, a pipe discharging water adjacent the said rotary breaker, a pipe leading from the pump to the top of the mine and pumps arranged in said pipe-line in tandem between the scow and the top of the mine at specified distances.

7. A mining apparatus, comprising a scow, means for holding the scow in any desired position, a suction-pump carried by the scow, a flexible pipe extending from the pump below the scow, a suction-head carried by the outer end of said flexible pipe, a rotary breaker carried by the outer end of said head, a water-supply pipe discharging water adjacent the said rotary cutter, a derrick carried by the scow, a block-and-tackle connection between said supply and flexible pipes and the derrick for raising the same, a discharge-pipe connected to the pump and extending to the top of the mine, and pumps arranged in tandem in said discharge-pipe.

8. A mining apparatus, comprising a scow, a suction-pump upon said scow, a discharge-pipe leading from the scow to a dump outside the mine, pumps arranged in tandem in said discharge-pipe, a reservoir adjacent the dump and adapted to receive the water from the dump, a suction-head carried by the suction-pipe below the scow, a rotary breaker carried by the outer end of said head, a motor carried by the scow for operating the pump and the breaker, a pump adjacent the reservoir and having a pipe leading into the mine adjacent the breaker, a derrick carried by the scow, and a block-and-tackle connection between the water-supply pipe and the suction-pipe and the end of the derrick.

823,962. **FURNACE.** JOHN P. MCLEOD, Chicago, Ill., assignor of one-half to Herman F. Voshardt, Chicago, Ill. Filed Sept. 16, 1905. Serial No. 278,695.



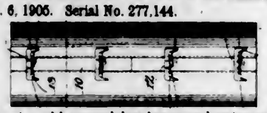
Claim.—1. In a furnace, in combination with the fire-box, smoke pipe and stack, a cut-off or damper in the smoke-pipe; an exhaust device and pipe connecting its intake with the smoke-pipe back of the damper having an air-inlet and means for regulating the same; a discharge-pipe from the exhaust device leading to the fire-box; a heavy-gas trap in the smoke-pipe back of the damper and a discharge connection from the trap leading past the damper for final discharge into the stack; a heavy-gas trap in the discharge-pipe from the exhaust device and a branch pipe leading from the trap having connection for discharge beyond the smoke-pipe damper into the stack.

2. In a furnace, in combination with a passage by which the smoke is conducted on its way to the stack, a damper in such passage; connections leading from such passage back of the damper for conducting the gases back to the fire-box; a heavy-gas trap located at the lower side of a substantially horizontal portion of such passage back of the damper, said trap comprising at its upper part baffle-plates trending obliquely onward and downward into the trap-space, and a discharge connection leading from the trap beyond the baffle-plates past the smoke-pipe damper for final discharge into the stack.

3. In a furnace, in combination with a passage by which the smoke is conducted on its way to the stack, a damper in such passage; a heavy-gas trap located at the lower side of a substantially horizontal portion of such passage back of the damper, said trap comprising at its upper part baffle-plates trending obliquely onward and downward into the trap-space, and a discharge connection leading from the trap beyond the baffle-plates past the smoke-pipe damper for final discharge into the stack; an exhaust device and a pipe connecting its intake with said horizontal portion of the smoke-pipe at the upper side thereof back of the damper, and a discharge-pipe from said exhaust device leading to the fire-box.

4. In a furnace, in combination with a passage by which the smoke is conducted on its way to the stack, a smoke cut-off or damper in the smoke-pipe; an exhaust device; a pipe connecting its intake with the smoke-pipe back of the damper and having an air-inlet and means for regulating the same; a discharge-pipe from the exhaust device leading to the fire-box having a substantially horizontal portion and a heavy-gas trap located at the lower side of said substantially horizontal portion, said trap comprising at its upper part baffle-plates trending obliquely onward and downward into the trap-space, and a discharge connection leading from the lower side of the trap past the smoke-pipe damper for final discharge into the stack.

823,963. **CEMENT-MOLD.** WILLARD F. MCNAMIRE, Mendon, Ohio. Filed Sept. 6, 1905. Serial No. 277,144.



Claim.—1. A mold comprising inner and outer split expansible shells provided with locking-pins, a spacing member interposed between the shells, a sectional slide connecting the adjacent longitudinal edges of the outer shell, a continuous slide connecting the longitudinal edges of the inner shell, and locking members secured to the slides and engaging the locking-pins for retaining the shells in engagement with the spacing member.

2. A mold comprising inner and outer split shells spaced apart and having their adjacent longitudinal edges provided with locking-pins, slides connecting the longitudinal edges of said shells, transverse bars rigidly secured to one of the slides and provided with wedge-shaped lugs for engagement with the locking-pins on the outer shell, and locking members pivoted to the connecting-slide of the inner shell and provided with oppositely-extending inclined lugs adapted to engage the pins on said inner shell.

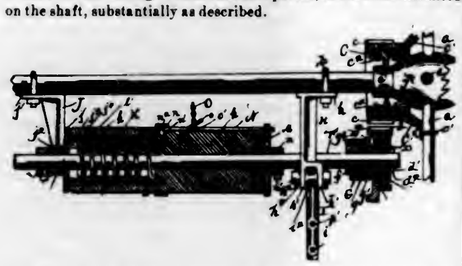
3. A mold comprising inner and outer split shells spaced apart and having their adjacent longitudinal edges provided with locking-pins, slides connecting the longitudinal edges of said shells, locking-bars secured to the slide of the outer shell, and adapted to engage the pins on said outer shell, locking members pivoted to the slide of the inner shell and provided with oppositely-extending inclined lugs adapted to engage the pins on the inner shells, and finger-pieces secured to the pivoted locking member for operating the same.

4. A mold comprising inner and outer split shells spaced apart and having their longitudinal edges provided with locking-pins, a detachable partition interposed between said shells, slides connecting the longitudinal edges of the shells, locking-bars rigidly secured to the connecting-slide of the outer shell and adapted to engage the pins on said shell, locking members pivoted to the slide of the inner shell and provided with oppositely-extending inclined lugs adapted to engage the pins on said inner shell, extensions formed on the locking members for limiting the tilting movement of the same, and finger-pieces for operating said members.

823,964. **HORSE-HITCHING DEVICE.** JOHN B. PLATO, Denver, Colo. Filed June 21, 1905. Serial No. 266,277.

Claim.—1. In a horse-hitching device, the combination of a toothed rim attached to the wheel-spokes, a toothed wheel adapted to be brought into engagement with the toothed rim, a toothed eccentric segment adjacent to and in frictional engagement with the toothed wheel and adapted to be brought into engagement with the toothed rim, a rising-and-falling shaft carrying the toothed wheel and the toothed segment, and a drum mounted on the shaft, substantially as described.

2. In a horse-hitching device, the combination of a toothed rim attached to the wheel-spokes, a toothed wheel adapted to be brought into engagement with the toothed rim, a toothed eccentric segment adjacent to and in frictional engagement with the toothed wheel and adapted to be brought into engagement with the toothed rim, a rising-and-falling shaft carrying the toothed wheel and the toothed segment, a bracket attached to the axle, an arm pivotally mounted in the bracket and supporting the shaft, a second bracket attached to the axle and through which the shaft passes, and a drum mounted on the shaft, substantially as described.



3. In a horse-hitching device, the combination of a toothed rim attached to the wheel-spokes, a toothed wheel adapted to be brought into engagement with the toothed rim, a toothed eccentric segment adjacent to and in frictional engagement with the toothed wheel and adapted to be brought into engagement with the toothed rim, a rising-and-falling shaft carrying the toothed wheel and the toothed segment, a bracket attached to the axle, an arm pivotally mounted in the bracket and supporting the shaft, a second bracket attached to the axle and through which the shaft passes, a drum mounted on the shaft, a spring within the drum and connected at one end to the drum and at the other end to a fixed point for returning the drum to normal position, substantially as described.

4. In a horse-hitching device, the combination of a toothed rim attached to the wheel-spokes, a toothed wheel adapted to be brought into engagement with the toothed rim, a toothed eccentric segment adjacent to and in frictional engagement with the toothed wheel and adapted to be brought into engagement with the toothed rim, a rising-and-falling shaft carrying the toothed wheel and the toothed segment, a bracket attached to the axle, an arm pivotally mounted in the bracket and supporting the shaft, a second bracket attached to the axle and through which the shaft passes, a drum mounted on the shaft, a pull-rod for the pivotally-mounted arm, and a spring connection between the pull-rod and the arm, substantially as described.

5. In a horse-hitching device, the combination of a shaft having a rising-and-falling movement, driving means on the shaft adapted to be driven from the vehicle-wheels, an arm pivotally mounted and supporting the shaft, a winding-drum on the shaft, a pull-rod for the pivotally-mounted arm, and a yieldable connection between the pull-rod and the arm, substantially as described.

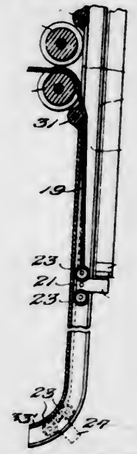
6. In a horse-hitching device, the combination of a toothed rim attached to the wheel-spokes, a toothed wheel adapted to be brought into engagement with the toothed rim, a toothed eccentric segment adjacent to and in frictional engagement with the toothed wheel and adapted to be brought into engagement with the toothed rim, a rising-and-falling shaft carrying the toothed wheel and the toothed segment, a drum mounted on the shaft, and a flexible connection attached to the drum and winding on and unwinding from the drum and adapted for attachment to the reins, substantially as described.

7. In a horse-hitching device, the combination of a toothed driver attached direct to the spokes of a wheel, a shaft suspended from the axle and having a rising-and-falling movement at one end, a toothed eccentric segment attached to the rising-and-falling end of the shaft for engagement with the toothed driver, a drum mounted on the shaft and a spring within the drum for reversing the revolution of the drum, substantially as described.

8. In a horse-hitching device, the combination of a toothed driver attached direct to the spokes of a wheel, a shaft suspended from the axle by a reversible bracket and arm and having a rising-and-falling movement at one end, a toothed wheel on the rising-and-falling end of the shaft, a toothed eccentric segment on the rising-and-falling end of the shaft, a collar on the shaft, a spring carried by the collar and holding the eccentric segment in frictional engagement with the toothed wheel, a winding-drum mounted on the shaft, and a spring within the winding-drum, substantially as described.

9. In a horse-hitching device, the combination of a driver, a shaft suspended from the axle and having a rising-and-falling movement at one end, a reversible arm carrying the shaft, driving means for the shaft actuated from the driver, and a pull connected with the reversible arm, substantially as described.

823,965. **SAFETY-DOOR FOR ELEVATORS.** JESSE M. PORTER, Cuyahoga Falls, Ohio. Filed July 15, 1905. Serial No. 269,805.



Claim.—1. In a device of the class described and in combination with an elevator-car and its shaft, a horizontally-movable door adapted to move automatically to position for closing the latter, a guide sustained within the shaft, a contact member arranged for travel in the guide, and a traction element connected with said member and engaged with the door, said contact member being operable by the car for exerting traction on the element to open the door.

2. In a device of the class described and in combination with an elevator-car and its shaft, of a horizontally-movable door adapted to move automatically to position for closing the latter, a traction element connected with the door, a vertical guide sustained within the shaft, a contact member connected with the element and movable vertically in the guide, and means carried by the car for engaging the contact member to exert traction upon the element to open the door.

3. In a device of the class described and in combination with an elevator-car and its shaft, of a horizontally-movable door for closing the latter, a traction element connected with the door, a vertical guide sustained within the shaft, and a contact member arranged for movement vertically in the guide and connected with the element, said contact member being operable by the car for exerting traction on the element for opening the door.

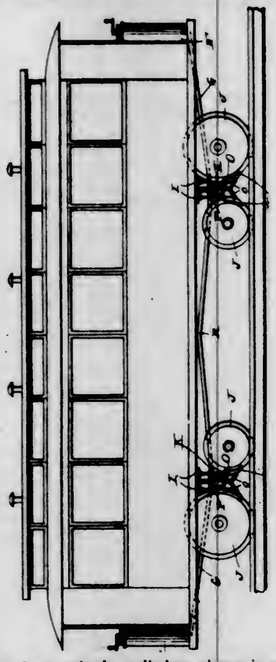
4. In a device of the class described and in combination with an elevator-car and its shaft, of a horizontally-movable door for closing the latter, a traction element connected with the door, a vertical guide sustained in the shaft and having a curved portion, and a contact member connected with the element and arranged for vertical movement in the guide, said member being operable by the car for exerting traction on the element to open the door and being movable through the curved portion of the guide out of the path of movement of the car.

5. In a device of the class described and in combination with an elevator-car and its shaft, of a horizontally-movable door for closing the latter, a traction element connected with the door, a vertical guide sustained in the shaft, a contact member movably sustained by the guide for vertical movement and connected with the element, and an arm carried by the car and having an engaging portion adapted for engaging and operating the contact member to exert traction on the element for opening the door.

6. In a device of the class described and in combination with an elevator-car and its shaft, of guides extended transversely of the shaft and arranged at an inclination relatively to the horizontal, a door slidably disposed in the guides and adapted to move automatically by gravity to closed position, vertical guides sustained within the shaft, carriages arranged for travel respectively in the vertical guides and having projecting contact portions, traction elements connected with the outer end of the door and with the carriages, arms fixed to and projecting above and below the car, said arms having terminal contact members adapted to act upon the projecting por-

tions of the carriages for operating the latter to exert traction on the elements and open the door.

823,966. **BRAKE-ACTUATING DEVICE.** JOHN POST, Philadelphia, Pa. Filed Feb. 12, 1906. Serial No. 300,796.



Claim.—1. In a car-brake, cylinders, pistons in said cylinders, the brake-shoes operatively connected with said pistons, a pipe connected with a source of steam, controller-valves, tubular connections between said valves and the steam-pipe, tubular connections between said valves and the cylinders, all of said pipes and tubular connections arranged so as to drain to said cylinders, and means to drain said cylinders, substantially as shown and described.

2. In a car-brake, cylinders, pistons in said cylinders, coil-springs in said cylinders bearing against said pistons, the brake-shoes operatively connected with said pistons, a steam-pipe, controller-valves, tubular connections between said valves and the steam-pipe, tubular connections between said valves and the cylinders, all of said pipes and tubular connections arranged so as to drain to said cylinders, and means to drain said cylinders, substantially as shown and described.

3. In a car-brake, cylinders, pistons in said cylinders, the brake-shoes operatively connected with said pistons, a steam-pipe, controller-valves, tubular connections between said valves and the steam-pipe, tubular connections between said valves and cylinders, and drain-valves in said pistons to relieve the cylinders and connecting-pipes of water of condensation, substantially as shown and described.

4. In a car-brake, cylinders, pistons in said cylinders, the brake-shoes operatively connected with said pistons, a steam-pipe, controller-valves, tubular connections between said valves and the steam-pipe, tubular connections between said valves and cylinders, said tubular connections arranged to drain into said cylinders, valves in said pistons, and springs to actuate said valves when steam is cut off from said cylinders to drain the tubular connections and cylinders of water of condensation, substantially as shown and described.

5. In a car-brake, cylinders, pistons in said cylinders, coil-springs in said cylinders bearing against said pistons, the brake-shoes operatively connected with said pistons, a steam-pipe, controller-valves, tubular connections between said valves and the steam-pipe, tubular connections between the valves and the cylinders, and drain-valves in said pistons to relieve said cylinders and tubular connections of water of condensation, substantially as shown and described.

6. In a car-brake, cylinders, pistons in said cylinders, coil-springs in said cylinders bearing against said pistons, the brake-shoes operatively connected with said pistons, a steam-pipe, controller-valves, tubular connections between said valves and the steam-pipe, tubular connections between the valves and the cylinders, said tubular connections arranged to drain into said cylinders, valves in said pistons, and springs to actuate said valves to open them when the supply of steam is cut off from said cylinders, substantially as shown and described.

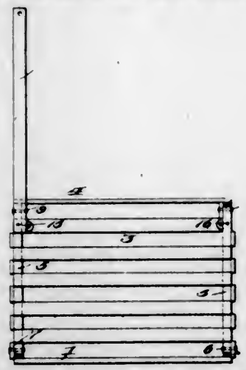
7. In a car-brake, cylinders, pistons in said cylinders, coil-springs in said cylinders bearing against said pistons, a piston-rod secured to each piston, brake-shoes, arms connecting said brake-shoes and piston-rods, transverse pipes connecting said cylinders in pairs and arranged to drain into said cylinders, a pipe connecting said transverse pipes and arranged to drain thereinto, controller-valves, pipes connecting said controller-valves and transverse pipes and arranged to drain thereinto, a valve in each piston, a coil-spring to lift each valve, and a pipe connected with each controller-valve and a source of steam-supply, substantially as shown and described.

8. In combination with a railway-car having a platform at each end, cylinders, pistons in said cylinders, the brake-shoes operatively connected with said pistons, a pipe connected with a source of steam, a controller-valve mounted on each platform, tubular connections between said valves and the steam-pipe, and tubular connections between said valves and the cylinders, substantially as shown and described.

9. In combination with a railway-car having a platform at each end, cylinders, pistons in said cylinders, the brake-shoes operatively connected with said pistons, a pipe connected with a source of steam, a controller-valve mounted on each platform, tubular connections between said valves and the steam-pipe, tubular connections between said valves and the cylinders, and means to drain said pipes, cylinders and tubular connections, substantially as shown and described.

10. In combination with a railway-car having a platform at each end, cylinders, piston in said cylinders, the brake-shoes operatively connected with said pistons, a pipe connected with a source of steam, a controller-valve mounted on each platform, tubular connections between said valves and steam-pipe, tubular connections between said valves and the cylinders, and spring-actuated drain-valves in said pistons to drain the cylinders, pipes and tubular connections, substantially as shown and described.

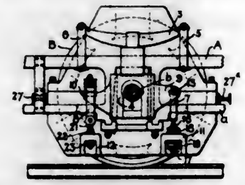
823,967. **COLLAPSIBLE BOX OR CRATE.** WALTER B. PRICE, New Orleans, La. Filed Sept. 13, 1905. Serial No. 278,302.



Claim.—In a collapsible crate, a bottom, an interfoldable side and end wall, guides provided on one of said walls, a locking element removably arranged in the guides and designed for engagement with the other wall to fix the walls in set-up relation, a movable section carried by the second wall and adapted to bear at one terminal of the element for maintaining the same in place, and means for fixing the section against movement.

823,968. **ELECTRIC LOCOMOTIVE.** EDWARD D. PRIEST, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Jan. 23, 1905. Serial No. 242,999.

Claim.—1. In an electric locomotive, a locomotive-frame, a driving-axle, a motor-armature mounted upon and supported by said axle, a bearing member between the locomotive-frame and axle, and a motor-frame suspended from said bearing member.



2. In an electric locomotive, a locomotive-frame, a driving-axle, a motor-armature mounted upon and supported by said axle, a bearing member between the locomotive-frame and axle, and a motor-frame adjustably suspended from said bearing member.

3. In an electric locomotive, a locomotive-frame, a driving-axle, a motor-armature mounted upon said axle, a bearing member between the locomotive-frame and axle, a motor-frame, and suspending means for said motor-frame supported by said bearing member and connected to said motor-frame at a point or points below the center of gravity thereof.

4. In an electric locomotive, a locomotive-frame, a driving-axle, a motor-armature mounted upon said axle, a bearing member arranged between the axle and the locomotive-frame, a motor-frame, and suspending means for said motor-frame supported upon said bearing member and engaging with the motor-frame adjacent the lower end thereof.

5. In an electric locomotive, a locomotive-frame, a driving-axle, a motor-armature mounted upon and supported by said axle, a bearing member arranged between the locomotive-frame and axle, a motor-frame, and a flexible connection between said motor-frame and said bearing member

6. In an electric locomotive, a driving-axle, a motor-armature supported thereon, a motor-frame surrounding or partially surrounding said armature, and a flexible connection between said axle and said motor-frame.

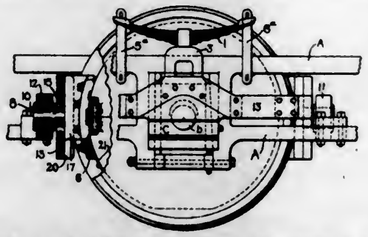
7. In an electric locomotive, a driving-axle, a motor-armature mounted thereon, a motor-frame, a bearing member arranged upon said axle, and a plurality of hangers flexibly connecting the motor-frame to said bearing member.

8. In an electric locomotive, a driving-axle, a motor-armature mounted thereon, a motor-frame, a bearing member arranged upon said axle, a plurality of hangers flexibly connecting the motor-frame to said bearing member, and means for adjusting said frame relatively to said bearing member.

9. In an electric locomotive, a frame, a driving-axle, a motor-armature mounted upon said axle, a bearing member arranged between the frame and axle, a motor-frame, and a plurality of hangers secured to the said bearing member and to the motor-frame at points below the center of gravity thereof.

10. In an electric locomotive, a locomotive-frame, a driving-axle, a motor-armature mounted upon said axle, a motor-frame yieldingly supported from said axle, and stops carried by the locomotive-frame for limiting the movement of the motor-frame upon the axle.

823,969. **ELECTRIC LOCOMOTIVE.** EDWARD D. PRIEST, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Jan. 23, 1905. Serial No. 243,000.



Claim.—1. In an electric locomotive, a driving-axle, a motor-armature mounted upon said axle, a locomotive-framework yieldingly supported upon said axle, a motor-frame having a pole-face or pole-faces carried by said framework, and means connected with the axle for causing said pole-face to be maintained in parallelism with the armature during the relative bodily movements of the axle and locomotive-framework.

2. In an electric locomotive, a driving-axle, a motor-armature mounted upon said axle, a locomotive-framework yieldingly supported upon said axle, a motor-frame having a pole-face or pole-faces carried by said framework, and means for tilting said motor-frame to keep the pole face or faces in parallelism with the armature when the axle is tilted relatively to the locomotive-framework.

3. In an electric locomotive, a driving-axle, a bearing member arranged thereon, a locomotive-framework yieldingly supported upon said bearing member, a motor-armature mounted upon said axle, a motor-frame having a pole-face or pole-faces mounted upon said locomotive-framework, and means carried by said bearing member for moving said motor-frame.

4. In an electric locomotive, a driving-axle, a locomotive-framework flexibly supported upon said driving-axle, a motor-armature mounted upon said axle, a motor-frame pivotally supported upon said locomotive-framework, and means for oscillating said motor-frame about its pivot.

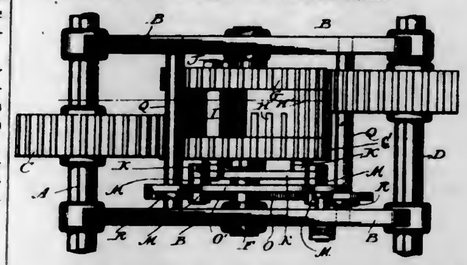
5. In an electric locomotive, a driving-axle, a locomotive-framework flexibly supported upon said axle, a motor-armature mounted upon said axle, a motor-frame pivoted to said locomotive-framework, and means carried by the axle for oscillating the motor-frame about its pivot.

6. In an electric locomotive, a driving-axle, a plurality of bearing members mounted thereon, a locomotive-framework flexibly supported upon said bearing members, a motor-frame pivoted to said locomotive-framework, and means carried by said bearing members for oscillating said motor-frame.

7. In an electric locomotive, a driving-axle, axle-boxes mounted thereon, a locomotive-framework movably supported upon said axle-boxes, a motor-armature mounted upon said axle, a motor-frame movably supported upon said locomotive-frame, and a yoke carried by said axle-boxes and operatively connected to said motor-frame for moving the same.

8. In an electric locomotive, a driving-axle, a locomotive-framework flexibly supported upon said axle, a motor-armature mounted upon said axle, a motor-frame supported upon said locomotive-framework, and means for maintaining a definite angular relation between the axle and motor-frame.

823,970. **VARIABLE-SPEED MECHANISM.** ARNOLD W. PUPER, New York, N. Y. Filed Aug. 3, 1905. Serial No. 272,450.



Claim.—1. In mechanism of the class stated the combination of a motor-shaft and a driven shaft, a gear upon the motor-shaft, another gear upon the driven shaft, speed-differentiating gears interposed between them and which are adapted to movement independent of each other, with one part of which the motor-gear meshes and with another and independently-movable part of which the driven gear meshes, mechanism brought into action by the resistance of the load to the push of the power, whereby the intermediate gears shift position relative to each other, and means to regulate and control such shift of position.

2. In mechanism of the class stated, the combination of a motor-shaft and a driven shaft, a gear upon the motor-shaft, another gear upon the driven shaft, variable-speed gears interposed between said motor and driven gears, and which are adapted to adjustment relative to each other with one part of which the motor-gear meshes and with another and independently-movable part the driven gear meshes, means to regulate and control said adjustment and mechanism brought into action by the resistance of the load to the push of the power, whereby the speed of the driven gear may be made coincident with that of the motor-gear or differentiated therefrom.

3. In mechanism of the class stated the combination of a motor-

shaft and a driven shaft, a gear upon the motor-shaft, another gear upon the driven shaft, a shaft interposed between them, two pairs of independently-movable speed-differentiating gears supported upon said interposed shaft, with one of each pair of which the motor-gear meshes and with the other of each pair the driven gear meshes, devices connected with both pairs of intermediate gears whereby the movement of either will be transmitted to the other, and a controller to regulate and control the degree of movement.

4. In mechanism of the class stated the combination of a motor-shaft and a driven shaft, a gear upon the motor-shaft, another gear upon the driven shaft, a shaft interposed between them, two pairs of independently-movable speed-differentiating gears supported upon said interposed shaft, with one of each pair of which the motor-gear meshes and with the other of each pair the driven gear meshes, devices connected with both pairs of intermediate gears whereby the movement of either will be transmitted to the other, and an adjustable controller adapted to secure uniform as well as differential speed between the motor-gear and the driven gear.

5. In mechanism of the class stated the combination of a motor-shaft and a driven shaft, a gear upon the motor-shaft, another gear upon the driven shaft, a shaft interposed between them, two pairs of independently-movable speed-differentiating gears supported upon said interposed shaft, with one of each pair of which the motor-gear intermittently meshes and with the other of each pair the driven gear intermittently meshes and means connected with the two pairs of interposed gears whereby the movement of each is transmitted to the other and means to regulate and control the degree of movement.

6. In mechanism of the class stated the combination of a motor-shaft and a driven shaft, a gear upon the motor-shaft, another gear upon the driven shaft, a shaft interposed between them, independently-movable speed-differentiating gears supported upon said interposed shaft, with which the motor-gear and the driven gear intermittently intermesh, devices connecting the independently-movable intermediate gears and means engaging with said connecting devices whereby the independent movement of the intermediate gears is controlled and regulated.

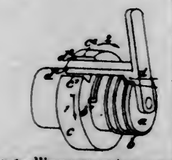
7. In mechanism of the class stated the combination of a motor-shaft and a driven shaft, a gear upon the motor-shaft, another gear upon the driven shaft, speed-differentiating gears interposed between them with part of which the motor-gear engages and with the other part of which the driven gear engages and means whereby the movement of the two parts of the intermediate gears is transmitted from each to the other.

8. In mechanism of the class stated the combination of a motor-shaft and a driven shaft, a gear upon the motor-shaft, another gear upon the driven shaft, speed-differentiating gears interposed between them the cogs on which are partly broken away or intermitted, and with a part only of which intermediate gears the motor-gear engages and with another part only the driven gear engages.

9. In mechanism of the class stated the combination of a motor-shaft and a driven shaft, a gear upon the motor-shaft, another gear upon the driven shaft, two or more speed-differentiating gears, adapted to independent movement relative to each other together with simultaneous and coincident rotary movement, interposed between them, the cogs on which are partly broken away or intermitted and with a part only of which intermediate gears the motor-gear engages and with another part only the driven gear engages and means whereby the movement of each of the intermediate gears may be transmitted to the other.

10. In mechanism of the class stated the combination of a motor-shaft and a driven shaft, a gear upon the motor-shaft, another gear upon the driven shaft, concentric speed-differentiating gears interposed between them and means coacting with the interposed gears whereby the speed is differentiated by the traverse of said means along a combined radial and concentric path during each revolution.

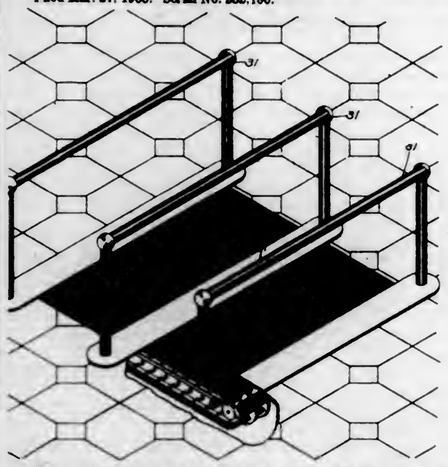
823,971. **IRREVERSIBLE CONTROLLING APPARATUS.** LÉON E. RÉMONDY, Vincennes, France. Filed Dec. 11, 1905. Serial No. 291,283.



Claim.—1. A controlling apparatus comprising a rotatable controlling member, a receiving member mounted to rotate concentrically with the controlling member, a fixed drum, and a spring wound spirally on said drum and normally gripping said drum, substantially as described.

2. A controlling apparatus comprising a drum, a spring wound spirally thereon and adapted to normally grip said drum, a controlling member, a sleeve provided with a recess, said controlling member mounted in said recess, substantially as described.

823,972. **DOOR-MAT.** WILLIAM C. RICHARDSON, Mystic, Conn. Filed Mar. 27, 1906. Serial No. 308,180.



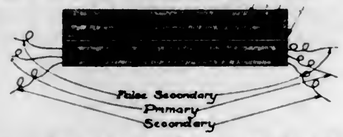
Claim.—1. A door-mat, comprising a series of flat brushes pivoted end to end to form an endless belt; means for moving said brushes parallel to the surface of supports for supporting the feet of a person walking upon said brushes; and said supports.

2. A door-mat comprising a series of endless chains having brush-surfaces on their outer faces; means for moving said brushes; means for supporting the feet of a person walking upon said brushes; and means for automatically cleaning said brushes.

3. A door-mat comprising a series of endless chains having flat brush-surfaces on their outer faces; means for supporting and moving said brushes in a vertical plane; and means for automatically cleaning said movable brushes mounted to contact therewith.

4. In a door-mat having movable cleaning-surfaces comprised of a series of movable brushes; a series of supports adjacent each series of brushes; two series of revolving brushes for cleaning said movable brushes; means for moving all said brushes; and a receptacle for holding the dirt.

823,973. **INDUCTION-COIL.** STANISLAUS H. SAUVE, Spokane, Wash., assignor of forty-nine one-hundredths to Jacob H. Robbins, Spokane, Wash. Filed May 23, 1905. Serial No. 261,836.



Claim.—1. In an induction-coil a disconnected wiring forming part thereof for increasing the undulating current and the electromotive force.

2. An induction-coil having a false secondary or tertiary wire disconnected from the other wires of the coil.

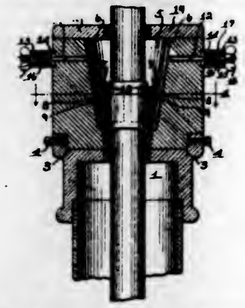
3. An induction-coil having, in combination with the primary winding, two separate and distinct secondary windings, one of which is disconnected.

4. An improved induction-coil comprising a plurality of wirings, an independent wiring and means coacting with the latter for increasing the inductivity of the coil.

5. An induction-coil having a false secondary wire, the extreme ends of which are disconnected.

6. An induction-coil having three separate and distinct wires or coils capable of being used interchangeably, one of the wires having its extreme ends disconnected when of the remaining wires one is connected with the line-wire and the other with the battery.

823,974. **WELL-TUBE SAFETY-CATCH.** WILLIAM A. SHAW, North Clarendon, Pa., assignor of one-half to Cornelius W. Titus, Warren, Pa. Filed Mar. 5, 1906. Serial No. 304,338.

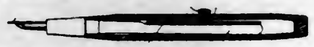


Claim.—1. A safety-catch for well-tubes comprising a body portion having a tapering bore, wedge-shaped catch-blocks having curved, toothed, engaging faces, means to hold said catch-blocks in sliding engagement with the tapering walls of said bore, supporting pins or rods arranged in said body, means to project the inner ends of said pins or rods into the path of movement of said blocks, and means whereby said pins may be held in retracted position, substantially as described.

2. A safety-catch for well-tubes comprising a body portion having a tapering bore, wedge-shaped catch-blocks having curved, toothed, engaging faces, means to hold said blocks in sliding engagement with the tapering walls of said bore, spring projected supporting-pins having their inner ends projecting into the path of said catch-blocks, heads arranged on the outer ends of said pins, and means engaged by said heads to hold said pins in a retracted position, substantially as described.

3. A safety-catch for well-tubes comprising a body portion having a tapered bore, alined holes and a reduced lower end to engage the upper end of a wall-casing, set-screws to hold said body on said casing, wedge-shaped catch-blocks arranged in said bore, means to retain said blocks in sliding engagement with the tapering walls of the bore, tubular plugs arranged on the outer wall of said body and provided with notches or recesses, supporting-pins slidably mounted in said plugs and in said alined holes, springs to normally project said pins inwardly to support said catch-blocks in an operative position, heads formed on the outer ends of said pins, said heads being adapted to engage the ends of said plugs when in retracted position and to engage said notches or recesses in said plugs when in a projected position, a cap-plate arranged on the upper end of the body, and means to secure said cap-plate in place, substantially as described.

823,975. **DEVICE FOR FILLING FOUNTAIN-PENS.** HARRY B. SMITH, Janesville, Wis. Filed Aug. 7, 1905. Serial No. 273,073.

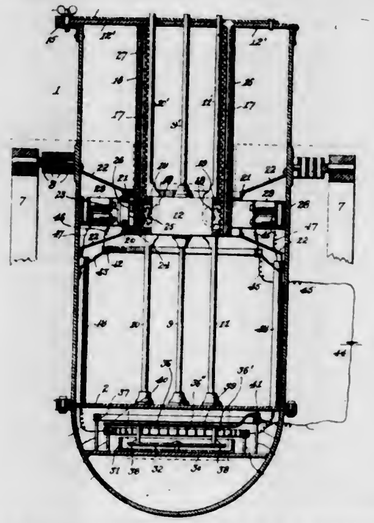


Claim.—In a fountain-pen, the combination with a handle inclosing a laterally-compressible ink-reservoir and provided with a pen-point and a lateral opening, a compressible strip located within the handle and having a threaded stem projected through the said lateral opening thereof, and a pressure-knob mounted upon the projecting end of the stem to serve as a clamp-nut, or an adjustable stop and finger-piece according to the position of the knob with reference to the handle, threaded stem and compression-strip.

823,976. **SHIP'S COURSE-RECORDER.** FRED O. TIBBETTS, Pontiac, Ill. Filed May 17, 1905. Serial No. 260,862.

Claim.—1. A ship's course-recorder, comprising a compass, an electric motor, means controlled by the compass for shifting the polar line of the motor in accordance with the variations of the course of the ship, and a chronographic recorder the marker of which is carried by the movable part of the motor, substantially as described.

2. A ship's course-recorder, comprising an electric motor, a chronographic recorder the marker of which is carried by the movable part of the motor, and a compass the needle of which carries the brush bearing upon the commutator of the electric motor, substantially as described.



3. A ship's course-recorder, comprising a chronographic recording-cylinder having axial movement by its own weight, a marker movable circumferentially with reference to the cylinder, and a compass the needle of which controls the movement of the marker, substantially as described.

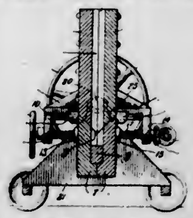
4. A ship's course-recorder comprising a movable chart-carrier, a magnetic body carrying a marking implement adapted to move over said chart, a series of electromagnets in operative relation to said magnetic body, a compass-needle, and means controlled by the same for energizing said magnets in the order of the varying indications of said compass-needle, substantially as described.

5. A ship's course-recorder comprising a vertical chronographic cylinder axially movable by its own weight, a marking implement adapted to revolve around the cylinder, a compass-needle and means controlled by the same for moving the marking implement in accordance with the varying indications of said needle, substantially as described.

6. A ship's course-recorder comprising a cylindrical axially-movable chart, a marking implement adapted to move circumferentially around the chart, a compass-needle and means for moving the marking implement in accordance with the variations of the indications of the needle, substantially as described.

7. A ship's course-recorder comprising a compass, an electric motor and a source of current for the same, the commutator of the motor having a number of segments equal to half the number of the points of the compass, a commutator-brush carried by the compass-needle for shifting the polar line of the motor in accordance with the varying indications of the needle, and a chronographic recorder, the marker of which is carried by the movable part of the motor, substantially as described.

823,977. **MOLD FOR CASTING ANODE-PLATES.** RICHARD TRUSWELL, Trail, Canada. Filed Oct. 9, 1905. Serial No. 281,950.



Claim.—1. In a mold of the class described; the combination with a portion composed of two recessed pieces secured together to

form a mold to cast that portion of the plate having a uniform width and thickness, of two laterally and oppositely movable members contiguous thereto and recessed that when together they will form a mold to complete the irregularly-formed head portion of the plate, means for forming a close joint between the plate-forming and head-forming portions of the mold, brackets outwardly projecting from the plate-forming portion having V-guides on which corresponding V-shaped guides of the head-forming portions are oppositely slidable, bearings at the ends of the brackets in which are rotatable screws having right and left hand threads at the opposite ends, nuts corresponding to the screw-threads which nuts are removably secured to the head-forming portions of the mold, means for simultaneously rotating the screws to advance and retire the head-forming portions, trunnions for sustaining the mold in a frame or carriage provided with wheels, means for reversing the position of the mold on the trunnions, and a gate through which metal may be poured into the mold.

2. In a mold of the class described, the combination of a main body portion having a chamber to form the main portion of the plate, a head portion forming a continuation of the main body portion, and separable therefrom, said head portion comprising a pair of sections engaging one another, a plurality of reversely-threaded screws passing through said head-sections for moving said head-sections toward or from each other and toward or from the central vertical plane of the mold, means for simultaneously operating all of said reversely-threaded screws to move the head-sections toward or from each other while maintaining their parallel relation, a carriage in which said mold is mounted and means for turning the mold on a horizontal axis to invert the same, said head-sections having a tongue-and-groove connection with the main body portion of the mold, substantially as shown and described.

823,978. OIL-CUP. HENRY C. VAUGHN, Jefferson City, Mo., assignor of one-half to Louis N. Barton, Jefferson City, Mo. Filed May 19, 1905. Serial No. 261,228.



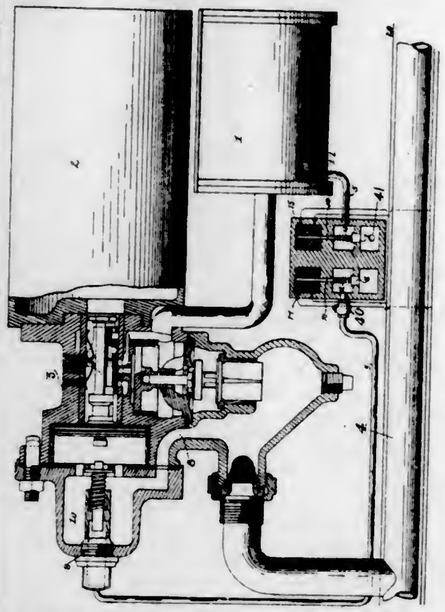
Claim.—A lubricator comprising a base, a cylindrical body supported on the base, a feed-tube within and in communication with said body, a feed-channel in the base and in communication with the bore of the feed-tube, an automatically-operable valve within said channel, the wall of said feed-channel being formed with a valve-seat below the valve, and a feed-screw having threaded connection with the walls of the channel arranged to coöperate with said valve-seat, said feed-screw being formed with a longitudinal groove.

823,979. AUTOMATIC AIR-BRAKE. FRIEDRICH J. R. WAGNER, Berlin, Germany, assignor, by mesne assignments, to General Electric Company, a Corporation of New York. Filed Dec. 9, 1899. Serial No. 739,792.

Claim.—1. In an air-brake system, the combination with a brake-cylinder, a train-pipe, a pneumatically-actuated valve responsive to variations of pressure in the train-pipe and adapted to control the pressure in the brake-cylinder, a manually-operated valve for controlling the train-pipe pressure, electrically-controlled means for connecting the brake-cylinder to train-line or to atmosphere independently of said pneumatically-actuated valve, and switching mechanism for controlling said means.

2. In an "automatic" air-brake system, in combination with the train-pipe, engineer's valve, triple valve, and brake-cylinder, electrically-controlled means for connecting brake-cylinder to train-line or to atmosphere independently of the triple valve, and switching mechanism associated with the motorman's valve for controlling said means.

3. In an air-brake system, the combination with a brake-cylinder and a train-pipe, of a pneumatic valve interposed between said train-pipe and said brake-cylinder to cause the operation of the piston therein, a source of fluid under pressure, an engineer's valve interposed between said source and said train-pipe whereby said engineer's valve is adapted to effect the operation of the pneumatic valve, electric valve mechanism associated with the brake-cylinder and the train-pipe, said electric valve mechanism being adapted to effect the actuation of the pneumatic valve, switch mechanism for controlling the electric valve mechanism, and means whereby said electric valve mechanism is adapted to control the flow of fluid into and out of the said braking-cylinder when the train-pipe is disconnected from the source of supply by the aforesaid engineer's valve, substantially as described.



4. In combination, a brake-cylinder, a triple valve, a train-pipe, an engineer's valve, electromagnetic valve mechanism adapted to connect the brake-cylinder either with the train-pipe or the atmosphere, means for controlling the operation of said electromagnetic valve mechanism, and means whereby said eletromagnetic valve mechanism is adapted to effect the operation of the triple valve whereby to apply the brakes, substantially as described.

5. In combination, a brake-cylinder, a triple valve, a train-pipe, an engineer's valve, a source of fluid-supply, electromagnetic valve mechanism adapted to effect the operation of the triple valve, a switch-handle associated with the engineer's valve for controlling the electromagnetic valve mechanism, and means associated with said engineer's valve whereby the electromagnetic valve mechanism is adapted to connect brake-cylinder to the train-pipe or to atmosphere independently of said triple valve when the train-pipe is disconnected from the source of fluid-supply, substantially as described.

6. The combination with a brake-cylinder, of a source of fluid-supply for actuating the piston therein, electric valve mechanism for controlling the flow of fluid into said cylinder and exhausting the same therefrom, said valve mechanism comprising two valves, a valve-chamber associated with each valve, two additional chambers, one in association with each valve, each valve being adapted to effect communication between its valve-chamber and one of said additional chambers, a communicating duct leading from the valve-chamber of one valve to the additional chamber of the other valve, and electric means for operating said valves, substantially as described.

7. In an air-brake system, the combination with a brake-cylinder, of a source of fluid-supply, electric valve mechanism disposed between said fluid-supply and said brake-cylinder for controlling the operation of the piston therein, a rotatably-mounted switch-handle for actuating said valve mechanism, contact-bars adapted to be electrically interconnected by said handle, said handle being pivotally mounted upon its rotatable support, and means whereby said handle is adapted to close circuit through said contact-bars in some angular positions without being pivotally actuated, substantially as described.

8. An air-brake system comprising pneumatic and electric controlling means each operative independently both to apply and to release the brakes, and means whereby the electric controlling means can control the pneumatic controlling means.

9. An air-brake system comprising two different sets of controlling means each operative independently both to apply and to release the brakes, and connections whereby one of said controlling means can cause the operation of the other.

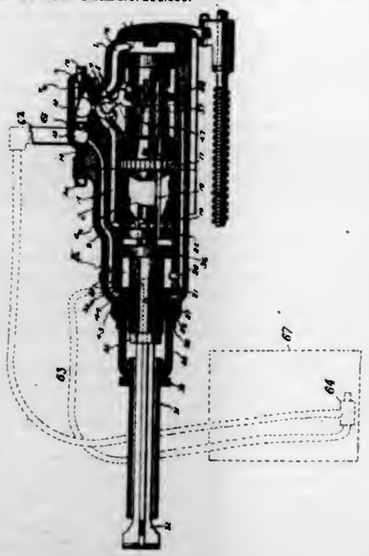
10. An air-brake system comprising a series of braking devices on different cars, pneumatic and electric controlling means by which said braking devices can be controlled from the engine either pneumatically or electrically both to apply and to release the brakes, and connections whereby the pneumatic controlling means can be effected at the different cars by the electric controlling means.

11. In an air-brake system, a manually-operated valve controlling the brakes, a handle therefor, a contact movably connected to said handle, a contact-strip adjacent to said handle and adapted to be engaged by the removable contact, said contact-strip having portions depressed out of the path of movement of the movable contact and other portions lying in said path, and electrically-operated brake-controlling means connected in circuit with said contacts.

12. In an air-brake system, a manually-operated valve controlling the brakes, a handle therefor, a contact yieldingly and movably connected to said handle, a contact-strip secured adjacent to said handle and adapted to be engaged by the movable contact, said contact-strip having raised and depressed portions, the raised portions lying in the normal path of movement of said movable contact and the depressed portions out of said path, means for moving the movable contact out of its normal path into contact with the depressed portions of said fixed contact, and electrically-operated brake-controlling means connected in circuit with said contacts.

13. In an air-brake system, a manually-operated valve controlling the brakes, a handle therefor, a lever pivoted to said handle, a contact secured to said lever, contact-strips secured to the valve-casing and adapted to be electrically connected by the lever-contact, said strips having raised and depressed portions, the raised portions lying in the normal path of movement of the lever-contact and the depressed portions out of said path, a spring for holding said lever-contact in its normal path for engagement with the raised portions of said strips and allowing it to be moved into engagement with the depressed portions, and electrically-operated brake-controlling means connected in circuit with said contact.

823,980. ROCK-DRILLING MACHINE. CASSIUS M. WALKER, Pueblo, Colo., assignor to The Walker-Moore Rock Drill Manufacturing and Supply Company, Pueblo, Colo., a Corporation of Colorado. Filed Nov. 28, 1904. Serial No. 234,608.



Claim.—1. In a rock-drilling machine, the combination with a cylinder, a drill, a cleaning-tube surrounding the drill, a hammer, and ports supplying pressure thereto, of a valve controlling said ports, and an exhaust-port provided with means for throttling the same and means for conducting the exhaust to the tube, substantially as set forth.

2. In a rock-drilling machine, the combination with a cylinder, a chuck for holding a drill, a cleaning-tube surrounding a drill, a hammer, and ports supplying pressure thereto, of a valve controlling said ports, a main exhaust-port exhausting to the air, means for throttling the same, a second exhaust-port, and connections for conducting the exhaust to the cleaning-tube to clean the hole formed by the drill, substantially as described.

3. In a rock-drilling machine, the combination with a cylinder, a chuck for a drill, a cleaning-tube surrounding the drill, a hammer, and ports supplying pressure thereto, of a valve controlling said ports, a main exhaust-port exhausting to the air, means for throttling the same, a second exhaust-port connected to supply exhaust fluid to the cleaning-tube, and means for also supplying water to said connection, substantially as described.

4. In a rock-drilling machine, the combination with a cylinder, and a piston-hammer reciprocating therein and provided with a spiral groove, of a chuck and drill connected therewith, a ratchet mounted to turn in the cylinder and surrounding the hammer, pawls supported by the cylinder and engaging the ratchet, and a projection on the ratchet entering the groove in the hammer to turn the latter, substantially as described.

5. In a rock-drilling machine, the combination with a cylinder, and a piston-hammer mounted therein, of a chuck also mounted in the cylinder, a ratchet and connections for rotating the hammer thereby, keys carried by the chuck, and keyways in the hammer for rotating the chuck, substantially as described.

6. In a rock-drilling machine, the combination with a cylinder, of a piston-hammer and a chuck mounted therein, a ratchet, connections between the ratchet and hammer for rotating the latter, a sectional bushing mounted in the cylinder, and ribs connecting the hammer and chuck and extending between the bushings, substantially as described.

7. In a rock-drilling machine, the combination with a cylinder having a piston-hammer and a chuck mounted therein, and inlet and exhaust ports, of a tool mounted in the chuck, a cleaning-tube enveloping the tool, and a cylinder-head provided with channels connecting with the exhaust-port whereby exhaust fluid may be supplied to the cleaning-tube during the drilling operations, substantially as described.

8. In a rock-drilling machine, the combination with a cylinder, a hammer and a chuck mounted therein, and inlet and exhaust ports, of a tool mounted in the chuck, a cleaning-tube enveloping the tool, and means including control-valves for supplying either live or exhaust pressure fluid as desired to the cleaning-tube, substantially as described.

9. In a rock-drilling machine, the combination with a cylinder and with the head thereof, of a cylinder connected detachably to said head and provided with a packing-box at the outer end, a cleaning-tube extending through said box and flanged at the inner end, and a cutting-tool extending through the cleaning-tube, with means for operating said tool, substantially as set forth.

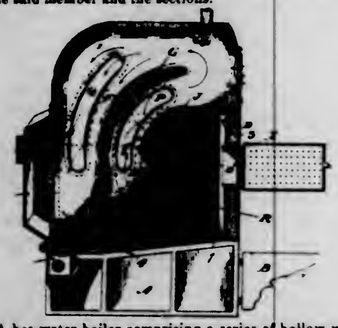
10. The combination of a casing, a piston-hammer and a piston-chuck movable therein, a ratchet surrounding the hammer, means for rotating said ratchet, a clutch connected to rotate with the ratchet by keys secured to the clutch and extending into the hammer, and means for turning the chuck with the clutch, substantially as described.

11. The combination of the casing, piston-hammer, piston-chuck, means for supplying fluid under pressure to reciprocate the hammer, an exhaust, means for throttling the exhaust, a cleaning-tube, a valve-controlled channel and ports whereby the exhaust may be conducted to said tube, and a valve-controlled channel and ports whereby the live pressure may be conducted to the cleaning-tube, substantially as set forth.

823,981. HOT-WATER BOILER. JAY B. WALKER, Peoria, Ill., assignor to Handbury Heater Company, Peoria, Ill. Filed Feb. 6, 1905. Serial No. 244,394.

Claim.—1. A hot-water boiler comprising a series of hollow water-containing sections mounted side by side and adapted for intercommunication of water, end members for forming the side of the fire-space and a hollow water-containing member at the front of the sections and having the fire-door therein.

2. A hot-water boiler comprising a series of hollow water-containing sections mounted side by side and adapted for inter communication of water, end members for forming the inclosing ends of the fire-space, a hollow detachable water-containing member at the front of the sections having the fire-door therein and water connections between the said member and the sections.



3. A hot-water boiler comprising a series of hollow water-containing sections mounted side by side and arranged for intercommunication with one another, the end sections inclosing and forming the side of the fire-space, and a hollow water-containing member detachably secured in front of the sections, the same extending the full height of the fire-space and having the fire-door therein, said member having water connection with the said sections, substantially as set forth.

4. A hot-water boiler comprising a series of adjoining and communicating hollow water-containing sections, each pair thereof having a single upwardly and then downwardly extending smoke-passage curved in the arc of a circle as shown, the sections being undercut to form the fire-space, the end sections constituting the inclosing members of the fire-space, a hollow water-containing member removably secured at the front of the apparatus and extending from the upper projecting front of the sections to the bottom of the fire-space and entirely closing the front of said fire-space as shown and having the fire-door therein and members for permitting water communication of the front member with the sections.

5. A hot-water boiler comprising a series of hollow water-containing sections adjoining and communicating, the same being undercut to form the fire-space, the end sections forming the inclosing walls of said fire-space, a front water member extending from the top front extension of the sections to the bottom of the fire-space and entirely inclosing the latter space, the said sections being cut out to receive the top of the said front member, said latter member having the fire-door opening therein, pipes for connecting the front member with the sections, and means for permitting intercommunication of all of the sections substantially as set forth.

6. A hot-water heater comprising a series of intermediate separable, hollow, inverted substantially L-shaped water-containing members each having a depression in each side, a flange following the contour of the outer edge of each said section at each side thereof for creating the said depressions, a flange dividing each depression into two portions, said flange being formed in a continuous curve in an upward and downward direction as shown, said flange extending toward the bottom of the section, there being a recess in the surrounding flange forward of the dividing-flange substantially as shown, there also being a recess in the back of the said surrounding flange behind the dividing-flange, there also being a hole through the sections at each side of the dividing-flange, an opening in the forward portion of the surrounding flange opposite the upper termination of the said dividing-flange, a hollow water-containing section at each side of the intermediate sections to form the ends of the boiler, said end sections forming the inclosure for the fire-space, and corrugations within the fire-space as shown and for the purposes set forth means for interconnecting all of the sections for intercommunication of water, and a front hollow water-containing member inclosing the fire-space in front thereof, the same extending the full height of the said space and having the fire-door opening therein, there being means also for connecting such member by water connections with the sections substantially as described.

7. A hot-water heater comprising a series of intermediate separable, hollow inverted-L-shaped water-containing members each having a depression in each side, a flange following the contour of the outer edge of each said section at each side thereof for creating the said depressions, a flange dividing each depression into two portions, said flange being formed in a continuous curve in an upward and downward direction as shown, said flange extending toward the bottom of the section, there being a recess in the surrounding flange forward of the dividing-flange substantially as shown, there also being a recess in the back of the said surrounding flange behind the dividing-flange, there also being a hole through the sections at each side of the dividing-flange, an opening in the forward portion of the said surrounding flange opposite the upper termination of the said dividing-flange, a hollow water-containing section at each side of the intermediate sections to form the ends of the boiler and the inclosing members for the fire-space, and corrugations within the fire-space as shown and for the purposes set forth, means for interconnecting all of the sections for intercommunication of water, and a front hollow water-containing member in the front of the sections and having the fire-door opening therein, and means for connecting the front member with the sections for intercommunication of water.

823,982. **SHEET-PILING.** GUY WEBSTER, York, Pa. Filed Jan. 27, 1906. Serial No. 298,223.



Claim.—1. The combination of the successive bars of a section of sheet-piling, with joint-closers and adjustable tightening devices for the latter, substantially as specified.

2. The combination of the successive bars of a section of sheet-piling, said bars having projecting edge flanges, with joint-closers having flanges overlapping those of the bars, and adjustable tightening devices for said joint-closers, substantially as specified.

3. The combination of the successive bars of a section of sheet-piling, said bars having flanges with beveled faces, joint-closers having flanges overlapping those of the bars, and beveled to correspond therewith, and adjustable tightening devices for said joint-closers, substantially as specified.

4. The combination of the successive bars of a section of sheet-piling, with joint-closers having spacing-pieces projecting therefrom and between the bars, and adjustable tightening devices for said joint-closers, substantially as specified.

5. The combination of the successive bars of a section of sheet-piling, with joint-closers having spacing-pieces projecting therefrom and between the bars, and adjustable tightening devices for said joint-closers, said tightening devices also having spacing-pieces projecting between the bars, substantially as specified.

6. The combination of the successive bars of a section of sheet-piling, with joint-closers and adjustable tightening devices therefor having as elements bolts with pinions thereon, and a vertical rack engaging said pinions, substantially as specified.

7. The combination of the successive bars of a section of sheet-piling, with joint-closers and adjustable tightening devices therefor having as elements, a bolt engaging the joint-closer, and a nut forming part of a yoke or bar which bears upon the opposite face of the bars of the piling, substantially as specified.

823,983. **COMBINED STOCK AND FREIGHT CAR.** EVERETT WYATT, Fort Worth, Tex. Filed Oct. 11, 1905. Serial No. 282,295.

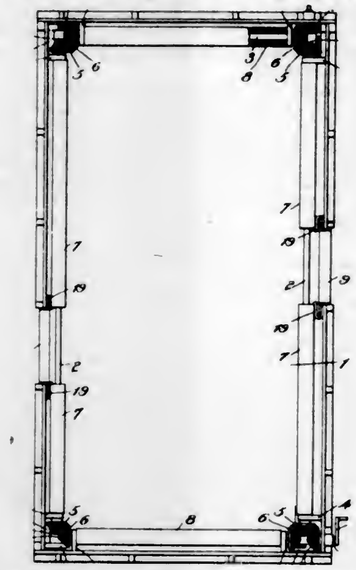
Claim.—1. A stock-car having permanent side and end walls and a permanent floor, a temporary floor movable vertically therein and means for lowering said floor and means for simultaneously forming temporary side and end walls.

2. In a stock-car provided with a permanent floor and side and end walls, means for converting said car into a freight-car comprising a temporary floor movable vertically therein, side and end walls capable of being rolled up or unrolled attached to said temporary floor, and means for rolling up or unrolling said side and end walls and simultaneously elevating said temporary floor or lowering said floor.

3. In a stock-car provided with permanent end and side walls, and a permanent floor; a temporary floor, rollable sheets attached to said floor and capable of forming side and end walls for said car, and means for rolling or unrolling said sheets whereby said temporary floor is elevated or lowered.

4. In a stock-car provided with a permanent floor and end and side walls; a temporary floor, sheets attached to said floor and capable of forming end and side walls, roller-shafts engaged by said sheets, and gearing for operating said shafts.

5. In a stock-car provided with a permanent floor and end and side walls; a temporary floor, sheets attached to said floor and capable of forming end and side walls, roller-shafts engaged by said sheets, guides for said sheets, and gearing for operating said shafts.



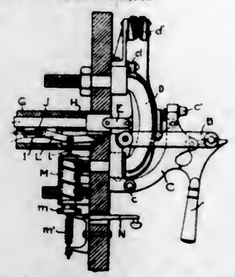
6. In a stock-car provided with a permanent floor and end and side walls; a temporary floor, sheets attached to said floor and capable of forming end and side walls, roller-shafts engaged by said sheets, spring-actuated roller sheet-metal doors coöperating with said sheets, and gearing for actuating said roller-shafts.

7. In a stock-car provided with a permanent floor and end and side walls; a temporary floor, sheets attached to said floor and capable of forming end and side walls, roller-shafts engaged by said sheets, spring-actuated roller sheet-metal doors coöperating with said sheets, guides for said sheets and doors, and gearing for actuating said shafts.

8. In a stock-car provided with a permanent floor and end and side walls; a temporary floor, rollable sheets attached to said floor and capable of forming end and side walls for said car, spring-actuated roller sheet-metal doors coöperating with said sheets, and means for rolling or unrolling said sheets whereby said temporary floor is elevated or lowered.

9. In a stock-car provided with a permanent floor and end and side walls; roller-shafts, gearing mounted on said shafts for rotating the same, and rollable sheets attached to said shafts for forming temporary side and end walls within said car and flush with said permanent end and side walls.

823,984. **LOCKING AND TRIPPING DEVICE FOR SWITCHES.** HARRY M. ACLY, Pittsfield, Mass., assignor to Stanley Electric Manufacturing Company, Pittsfield, Mass., a Corporation of New Jersey. Filed Nov. 17, 1904. Serial No. 233,082.



Claim.—1. In a locking and tripping device, in combination with a movable member and means tending to move said member, an independently-movable locking-piece adapted to lock said member by frictional engagement therewith, said member and locking-piece being so arranged that the pressure of said moving means on said member produces said engagement, an electromagnet, and operative connections between said magnet and said locking-piece whereby said locking-piece is moved from locking position.

2. In a locking and tripping device, in combination with a movable member and means tending to move said member, an independently-movable locking-piece frictionally engaging said member and adapted to be moved by the movement of said member to bind said member in position, and electromagnetic means for releasing the locking-piece.

3. In a locking and tripping device, in combination with a movable member and means tending to move said member, an independently-movable locking-piece engaging said member and adapted to be moved by the movement of said member to bind said member in position by frictional engagement, and electromagnetic means for releasing the locking-piece.

4. In a locking and tripping device, in combination with a movable member and means tending to move said member, a surface inclined to said member, a friction-roller arranged between said member and said surface, means for holding said roller normally in contact with said member and said surface, the tendency of said member to move under the pressure of said moving means being in a direction to increase the pressure on said roller, an electromagnet, and operative connections between said magnet and said roller.

5. In a locking and tripping device, in combination with a movable member and means tending to move said member, a surface inclined to said member, a friction-roller arranged between said member and said surface, means for holding said roller normally in contact with said member and said surface, the tendency of said member to move under the pressure of said moving means being in a direction to increase the pressure on said roller, a toggle-joint adapted to move said roller out of engagement with said members, and an electromagnet acting upon said toggle-joint.

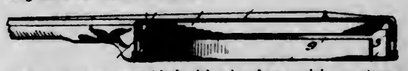
6. In combination, a switch member, a longitudinally-reciprocating rod secured thereto, a spring tending to open said switch, a surface inclined to said rod, a friction-roller mounted between said rod and said surface, the tendency to movement of said rod under the pressure of said spring being in a direction to wedge said roller between said rod and inclined surface, an electromagnet, and operative connections between said roller and said magnet.

7. In combination, a switch member, a longitudinally-reciprocating rod secured thereto, a spring tending to open said switch, a surface inclined to said rod, a friction-roller mounted between said rod and said surface, the tendency to movement of said rod under the pressure of said spring being in a direction to wedge said roller between said rod and inclined surface, a spring-pressed follower normally maintaining said roller in engagement with said rod and said inclined surface, an electromagnet, and operative connections between said electromagnet and said roller.

8. In combination, a switch member, a longitudinally-reciprocating rod secured thereto, a spring tending to open said switch, a surface inclined to said rod, a friction-roller mounted between said rod and said surface, the tendency to movement of said rod under the pressure of said spring being in a direction to wedge said roller between said rod and inclined surface, a toggle-joint loosely engaging said roller, and an electromagnet acting upon said toggle-joint.

9. In a locking and tripping device, in combination with a longitudinally-movable rod and a spring tending to move said rod, a guide bearing against one surface of said rod, a friction-roller bearing against the opposite surface of said rod, a surface inclined to said rod and adapted to support said roller, and an electromagnet operatively connected to said roller.

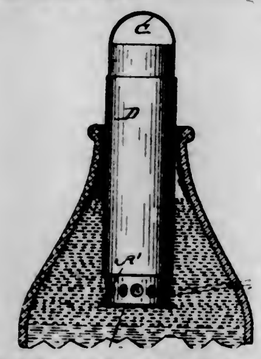
823,985. **BANJO.** FREDERICK J. BACON, Hartford, Conn. Filed Aug. 22, 1905. Serial No. 275,319.



Claim.—A banjo provided with a head comprising an inner annular rim, an outer annular rim spaced therefrom, a bottom connecting portion between the said two rims and provided with sound-outlet openings formed therethrough, the aforesaid parts constituting a sound-chamber, a metallic band secured to said outer rim and having an inner metallic flange extending toward the inner rim, but spaced therefrom and with its edge out of contact with any part, whereby it may freely vibrate, said flange extending also downwardly toward the openings in the connecting portion between the two rims whereby it will direct the sound emanating from the metallic flange down

through the said openings in the bottom of the sound-chamber, and a membrane stretched over said band.

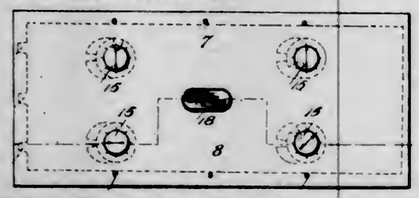
823,986. CREAM-REMOVER. ELI S. BARTRAM, Selma, Ala. Filed Nov. 10, 1905. Serial No. 286,755.



Claim.—1. A device of the kind described comprising a tube closed at its lower end and having a plurality of perforations adjacent the lower end of the tube, an annular exterior flange carried by the lower end portion of the tube, and a non-perforated sleeve sliding upon the tube and adapted to rest upon said flange.

2. A device of the kind described comprising a tube having a plurality of circumferentially-arranged perforations adjacent its lower end and closed at its lower end, a handle portion at the upper end of the tube, an exterior flange at the lower end of the tube and a non-perforate sleeve of less length than the tube, the said sleeve sliding upon the tube and closing all perforations of the tube when its lower end is resting upon the flange.

823,987. LOCK. BERNT O. BERNTSEN, Port Richmond, N. Y. Filed Nov. 17, 1904. Serial No. 233,201.



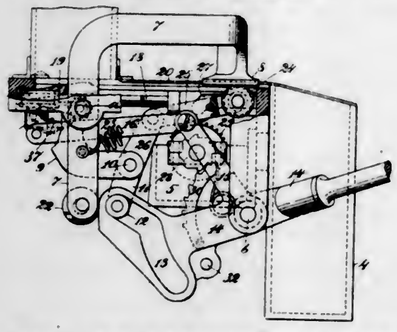
Claim.—1. The combination with a receptacle provided with an inturned flange, of a combined lock and cover for the receptacle comprising a cover-plate resting upon the upper edge of the receptacle to support the lock in applied position, a bottom plate smaller than the cover-plate and provided with upturned flanges to which the cover-plate is secured, a movable plate mounted between the cover and bottom plates, means for operating the movable plate to bring it into engagement with the under side of said flange, and means for locking the movable plate in engagement with the under side of said flange.

2. The combination with a receptacle provided with inturned flanges, of a combined lock and cover therefor comprising a cover-plate adapted to rest upon said flanges, a bottom plate provided with upturned flanges to which the cover-plate is secured, said bottom plate being smaller than the cover-plate and adapted to be brought into engagement with the under surface of one of the flanges of the casing, a movable plate mounted between the cover and bottom plates, means for operating the movable plate to move it into engagement with the under surface of the other flange of said casing, and means for locking the movable plate in engagement with the last-named flange.

3. A lock comprising a casing, having a bottom plate formed with upwardly-projecting side flanges, a sliding plate disposed upon the bottom plate and adapted to be guided in its movement by said flanges, said sliding plate having a plurality of elongated slots therein, each formed with a projection adjacent to one end, a disk located in each of said slots and having a notch in the periphery thereof to receive the adjacent projection, a cover-plate secured upon the flanges of the bottom plate and having a slot therein, a knob having a spindle projecting through the slot in the cover-plate and being fastened to the sliding plate, a plurality of knobs each having a spindle extending through the cover-plate into one of the tumbler-disks, and a downward extension upon the sliding plate, said downward extension lying in the same plane with the bottom plate and being formed with teeth or projections.

4. The combination with a receptacle provided with a flange, of a lock for the receptacle comprising a cover-plate adapted to support the lock in applied position, a bottom plate secured to the cover-plate and spaced therefrom, a movable plate mounted between the cover-plate and bottom plates, means for operating the movable plate to bring it into engagement with the under side of said flange, and means for locking the movable plate in engagement with the under side of said flange.

823,988. MACHINE FOR ADDRESSING ENVELOPS AND THE LIKE. JACOB J. BRAUN, New York, N. Y., assignor to Edwin D. Belknap. Filed Aug. 8, 1905. Serial No. 273,225.



Claim.—1. A machine for the purpose specified, having an ink-fountain and fountain-roller, an inking-roller, cams which support the journals of said inking-roller, a frame in which said roller is carried, means for feeding stencil-cards into position to be inked by said roller, a movable platen, a lever carrying said platen, a rock-shaft having an arm coupled to the frame carrying the inking-roller and another arm carrying a stud-roller, an operating-arm, having a cam-slot engaged by said stud-roller for rocking said shaft, and having also a cam for operatively actuating the platen, and a spring for retracting the platen.

2. A machine for the purpose specified, having an ink-fountain and fountain-roller, said roller being provided on one journal with a ratchet-wheel and on the other journal with a spur-wheel, an operating-lever provided with a spring-pawl engaging said ratchet-wheel, a reciprocating frame, an inking-roller carried by said frame and adapted to be moved into and out of contact with the fountain-roller by reciprocation of said frame, a spur-wheel on the journal of the inking-roller, adapted to gear with the spur-wheel carried by the fountain-roller, a reciprocating platen, and means for feeding stencil-cards to a position under said platen.

3. A machine for the purpose specified, having reciprocating devices for feeding a stencil-card to the stenciling position, a reciprocating platen, means for inking the stencil-card, and means for intermitting the feed of the stencil-cards in order to effect a plurality of stencilings from a single card, said means comprising automatic mechaniam for lowering the feeding device into an inoperative plane.

4. In a machine for the purpose specified, the combination with a reciprocating platen, and means for applying ink to the stencil-card, of means for feeding the cards to the stenciling-point, said means comprising a reciprocating bar, a pusher for the card, mounted pivotally on said bar, a shaft 33, rotatively mounted in bearings on said bar, a supporting-cam 34 on said shaft under said pusher, a ratchet-wheel 35 on said shaft, and an adjustable pawl 37, adapted to engage said ratchet-wheel when set for operation.

5. In a machine for the purpose specified, the combination with a reciprocating platen, a reciprocating roller below said platen for applying ink to the stencil-card, and means for feeding the cards to the stenciling-point, consisting of a pusher carried by a reciprocating bar, of a device for intermitting the feeding of the cards, said device consisting of automatic means for lowering the pusher into an inoperative plane and raising it into the operative plane, alternately, as set forth.

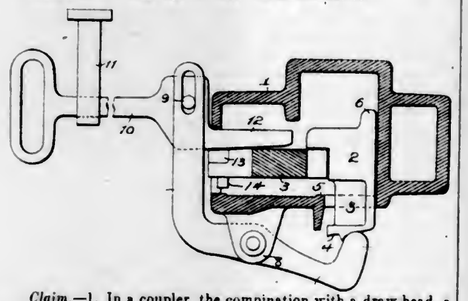
823,989. TACKLE-BLOCK. ARTHUR P. BROWN, Bradley, Me. Filed Feb. 28, 1906. Serial No. 303,510.



Claim.—1. A tackle-block having a suspending member provided with a projecting engaging hook.

2. A tackle-block having a suspending-hook provided with a rearwardly-projecting auxiliary engaging hook.

823,990. AUTOMATIC CAR-COUPLING. SAMUEL P. BUSH, Columbus, Ohio. Filed Apr. 17, 1906. Serial No. 312,178.



Claim.—1. In a coupler, the comoination with a draw-head, a swinging knuckle therein, and a lock, of a lever to move the lock to unlocked position, and a device constructed to move the lever to unlock the knuckle when the device is moved in one direction and to force the knuckle open when moved in the other direction.

2. In a coupler, the combination with a draw-head, a swinging knuckle therein, and a lock, of a lever outside the draw-head and constructed to move the lock to unlocking or lock-set position, and a bar constructed to operate the lever and also throw the knuckle open.

3. In a coupler, the combination with a draw-head, a swinging knuckle therein, and a lock, of a lever fulcrumed between its ends outside the draw-head and constructed to engage the lock to throw it to open or lock-set position, and a bar connected with the lever to operate the same, and projecting into the draw-head and constructed to engage the knuckle to throw it open.

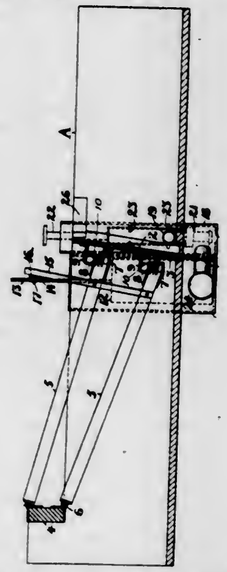
4. In a coupler, the combination with a coupler draw-head, a swinging knuckle therein, and a locking-block in the head, of a lever fulcrumed between its ends to the outside of the draw-head and constructed to be moved through an opening in the bottom of the draw-head to lift the lock to its open or lock-set position, a bar having slot-and-pin connection with the lever, and a tongue on the lever projecting into the draw-head and adapted to engage the knuckle to throw it open when the bar is moved longitudinally.

5. In a coupler, the combination with a draw-head, a swinging knuckle therein, and a locking-block in the draw-head, of means for moving the block to its open or lock-set position, and other means for operating the first-mentioned means and then directly engaging the knuckle to throw it open.

6. In a coupler, the combination with a draw-head, a swinging knuckle, and a locking-block in the draw-head, of a lever fulcrumed to the outside of the draw-head and adapted to engage the locking-block through an opening in the bottom of the draw-head to move the lock to its open or lock-set position, a bar having slot-and-pin connection with the lever, a tongue on the bar projecting into the draw-head and adapted when drawn outward to fall into a notch or recess in the knuckle so that when the bar is forced inward it will throw the knuckle open.

7. In a coupler, the combination with a draw-head, and a swinging knuckle, of a lock constructed to be set or retained in an unlocked position by means within the draw-head when raised to a given point, a lever pivotally secured to the draw-head and adapted to lift the lock to an unlocked position, and an operating-bar attached to the lever and projecting into the draw-head, adapted to operate the lever to raise the lock when moved in one direction and to move the knuckle to open position when moved in the reverse direction.

823,991. WATER-GATE. ADONIRAM J. COLLAR, Yreka, Cal. Filed Aug. 24, 1905. Serial No. 275,602.



Claim.—1. A gate provided with suitable seats, means for moving said gate horizontally to free it from its seats and then vertically to open the gate, said means including radius rods pivotally connected to the gate and fulcrumed at one side of the latter.

2. The combination with a conduit of a gate seating therein, said gate slightly inclined downward in the direction of current-flow, and means for giving said gate first a limited horizontal movement in the direction of water thrust and then a transverse movement to open the gate, said means including radius-rods pivotally connected with the gate and having their fulcra at one side of and above the center of the gate.

3. The combination with a conduit of a gate seating therein, radial members pivotally connected with the gate and fulcrumed at one side thereof, and means for operating said members to open the gate.

4. The combination with a conduit of a gate seating therein, radial members pivotally connected with the gate and fulcrumed at one side thereof, and hydraulic means connected with a conduit to operate said members to open the gate.

5. The combination with a conduit of a gate seating therein, radial members pivotally connected with the gate and fulcrumed at one side thereof, said pivotal connections between said members and the gate permitting of a limited oscillatory movement of the members and a corresponding but non-oscillatory movement of the gate.

6. The combination in a conduit of a gate seating therein, radial members fulcrumed at one side of the gate and roller-bearing, and pivotal connections between said members and the gate.

7. The combination with a conduit of a gate seating therein, radial members fulcrumed at one side of the gate, and rollers interposed between the ends of said members and the gate, and means on the gate and members to support said rollers.

8. The combination with a conduit of a gate seating therein, radial members fulcrumed at one side of the gate and pivotally connected with the latter, said pivotal connections including rollers in-

terposed between the ends of said members and the gate and having a limited movement independent of said members.

9. The combination with a conduit of a gate seating therein, radial members fulcrumed at one side of the gate and pivotally connected with the latter, said pivotal connections including rollers interposed between the ends of said members and the gate and having a limited movement independent of said gate.

10. The combination with a conduit, of a gate seating therein, and means to open said gate, said means including a radius member fulcrumed at one side of the gate and having a beveled end proximate to the gate, and means for supporting said roller on the gate and on said beveled end to permit movement of the roller across said beveled end.

11. The combination with a conduit of a gate seating therein, and means for operating said gate, said means including upper and lower radial members fulcrumed at one side of the gate and above the horizontal center thereof, and having pivotal connections respectively near the top and bottom of the gate.

12. The combination with a conduit of a gate seating therein, and means for operating said gate, said means including upper and lower radial members fulcrumed at one side of the gate and above the horizontal center thereof, said members having pivotal connections with the gate respectively near the top and bottom of the gate, and means for turning said members on their fulcra.

13. The combination with a conduit of a gate seating therein, and means for operating said gate, said means including upper and lower radial members pivoted at one side of the gate and above the horizontal center thereof, and pivoted to the gate respectively near the top and bottom of the gate, and hydraulically-operated connections with the restrained fluid in the conduit for operating said members.

14. The combination with a conduit of a gate seating therein, and means to operate said gate, said means including radial members pivotally connected with the gate, a receptacle, a float in said receptacle, connections between the float and said radial members, and means for charging and discharging said receptacle to reciprocate the float.

15. The combination with a conduit of a gate seating therein, radial members connected with the gate, receptacles on opposite sides of the gate, floats in said receptacles, connections between the floats and the radial members, and means for charging and discharging said receptacles to reciprocate the floats and open or close the gate.

16. The combination with a conduit of a gate seating therein, radial members pivotally connected with the gate, receptacles on either side of the gate, floats in the receptacle, adjustable connections between the floats and the members, and valve-controlled connections between the conduit and the receptacles to charge and to discharge the latter.

17. The combination with a conduit of a gate seating therein, radial members connecting with the gate, receptacles on either side of the gate, floats in said receptacles, stems on said floats, adjustable connections between said stems and the radial members, and connections between the conduit and the receptacles to operate the gate automatically.

18. The combination with a conduit of a gate seating therein, radial members pivotally connected with the gate, receptacles on either side of the gate, floats in said receptacles, a tank connected with the receptacles and with the conduit, said tank having an outlet and a valve operating to control both the inlet and outlet of said tank.

19. The combination of a gate having inclined seats, radial members fulcrumed at one side of the gate and above the horizontal center thereof, and hydraulically-operated means for oscillating said members to open and close the gate.

20. The combination with a conduit, of a gate seating therein, and means to open said gate, said means including a radius member fulcrumed to one side of the gate and having a beveled end proximate to the gate, a roller interposed between said beveled end and the gate, means for supporting said roller on the gate and on said beveled end to permit movement of the roller across said beveled end, and hydraulically-operated connections between said member and the restrained fluid in the conduit.

823,992. EMERGENCY-BRAKE. FRED B. COREY, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Mar. 21, 1903. Serial No. 148,908.

Claim.—1. In combination, a controller having a shaft and an operating-handle, a power-actuated brake, a brake-controlling device, a member loosely mounted on said shaft for operating said brake-controlling device to cause the brakes to be applied, means for actuating said member, means for locking said member to said shaft, said latter means being arranged to unlock said member from the shaft when the controller-handle is released, and means for moving said member on said shaft to release the brake-controlling device.



2. In combination, a controller having a shaft and an operating-handle, a brake actuated by fluid-pressure, a valve for controlling said brake, a member loosely mounted on said shaft for operating said valve to cause the brakes to be applied, means for actuating said member, means for locking said member to said shaft, said latter means being arranged to unlock the said member from the shaft when the controller-handle is released, and means for moving the said member on said shaft to release the valve.

3. In combination, a controller having a shaft and an operating-handle, a brake actuated by fluid-pressure, a valve for controlling said brake, a member loosely mounted on said shaft for operating said valve to cause the brakes to be applied, a spring to actuate said member, means for locking said member to the shaft, said means being arranged to unlock the member from the shaft when the controller-handle is released, and means arranged to engage with said member when in its valve-operating position for moving said member on the shaft to release the valve.

4. In combination, a controlling-handle having a shaft operatively connected thereto, a brake actuated by fluid-pressure, a valve for controlling the operation of said brake, a sleeve loosely mounted on said shaft, means carried by said sleeve for operating said valve to apply the brake, actuating means for said sleeve, means for locking said sleeve to the shaft, said latter means being arranged to unlock the sleeve from the shaft when the controller-handle is released, and means for moving said sleeve into valve-releasing position.

5. In combination, a controlling-handle having a shaft operatively connected thereto, a fluid-pressure brake, a brake-controlling valve, a sleeve loosely mounted on said shaft and arranged to normally coöperate with said valve to apply the brake, actuating means for said sleeve, means for locking said sleeve to the shaft for movement therewith, said latter means being arranged to unlock the sleeve from the shaft when the controller-handle is released, and means for moving said sleeve into brake-releasing position.

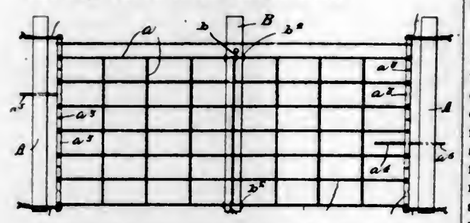
6. In combination, a controlling-handle, a brake actuated by fluid-pressure, a valve controlling the operation of said brake, a sleeve loosely mounted on a shaft operatively connected with the handle, means for locking said sleeve to said shaft, means carried by said sleeve for operating said valve to apply the brake when said locking means is released, and means for holding said sleeve in position to prevent it from actuating said valve when said locking means is released.

7. In combination, a motor-controller, a handle for operating said controller, a brake actuated by fluid-pressure, a valve controlling the operation of said brake, a sleeve loosely mounted on the controller-shaft, means operated from the controller-handle for locking said sleeve to said shaft, means carried by said sleeve for operating said valve to apply the brake when said locking means is released, means for moving said sleeve into a position to operate said valve to release the brake, and means for holding said sleeve in the last-mentioned position so as to allow said locking means to be released without causing the brake to be applied.

8. In combination, a motor-controller, a handle for operating said controller, a brake actuated by fluid-pressure, a valve for controlling the operation of said brake, a sleeve mounted on the controller-shaft, means operated from the controller-handle for locking said sleeve to the controller-shaft, means carried by said sleeve for causing said valve to operate to apply the brake when the controller-handle is released, and rods extending through the controller-casing for operating said sleeve to cause said brake to be released and for locking said sleeve in a position so that the controller-handle can be released without causing the brake to be applied.

9. In combination, a controller having a shaft and an operating-handle, a power-actuated brake, a brake-controlling device, a member loosely mounted on said shaft for operating said brake-controlling device to cause the brakes to be applied, means for actuating said member, means for locking said member to said shaft, said latter means being arranged to unlock said member from the shaft when the controller-handle is released, and a device for moving said member on said shaft to release the brake-controlling means, the arrangement being such that the means for locking said member to the shaft is made inoperative to again perform its locking function until said latter device is operated to move the said member into brake-releasing position.

823,993. PORTABLE WIRE FENCE. JOHN M. CRAWFORD, Crawford, Oreg. Filed Oct. 25, 1905. Serial No. 284,362.



Claim.—1. A portable wire fence, comprising two upright anchor-posts supported at a distance apart, two upright rollers disposed between the posts and carrying therebetween wire fencing permanently secured to and engaging the rollers, only; said rollers being removably connected with the posts, whereby they may be freely disengaged from the posts and, at the same time, carry with them the wire fencing secured thereto, without first removing the wires, or causing the wire fencing to become disengaged from the rollers to which it is secured.

2. A portable wire fence, comprising two upright anchor-posts supported at a distance apart, two upright rollers disposed between the posts and carrying therebetween wire fencing stapled to and permanently engaging the rollers, only; said rollers being removably connected with the posts, whereby they may freely be disengaged from the posts and, at the same time, carry with them the wire fencing secured thereto, without first removing the wires, or causing the wire fencing to become disengaged from the rollers to which it is secured.

3. A portable wire fence, comprising two upright anchor-posts supported at a distance apart, two upright rollers disposed between the posts and carrying therebetween wire fencing permanently secured to and engaging the rollers, only; said rollers being removably connected with the posts, whereby they may be freely disengaged from the posts and, at the same time, carry with them the wire fencing secured thereto, without first removing the wires, or causing the wire fencing to become disengaged from the rollers to which it is secured; and an auxiliary post disposed intermediate the said two posts and constructed to assist in supporting the wire fencing.

4. A portable wire fence, comprising two upright an hor-posts supported at a distance apart, two upright rollers disposed between the posts and carrying therebetween wire fencing permanently secured to and engaging the rollers, only; said rollers and posts being connected by removable loops, whereby the rollers may be free y disengaged from the posts and, at the same time, carry with them the wire fencing secured thereto, without first removing the wires, or causing the wire fencing to become disengaged from the rollers to which it is secured.

5. A portable wire fence, comprising two upright anchor-posts supported at a distance apart, two upright rollers disposed between the posts and carrying therebetween wire fencing permanently secured to and engaging the rollers, only; said rollers being removably connected with the posts, whereby they may be freely disengaged from the posts and, at the same time, carry with them the wire fencing secured thereto, without first removing the wires, or causing the wire fencing to become disengaged from the rollers to which it is secured; and means coöperating with the rollers for tightening the wire fencing and taking up slack thereof.

6. A portable wire fence, comprising two upright anchor-posts supported at a distance apart, two upright, transversely-perforated rollers disposed between the posts and carrying therebetween wire fencing permanently secured to and engaging the rollers, only; said rollers being removably connected with the posts, whereby they may be freely disengaged from the posts and, at the same time, carry with them the wire fencing secured thereto, without first removing the wires, or causing the wire fencing to become disengaged from the rollers to which it is secured; and bars engaging the transverse perforations of the rollers for tightening and taking up slack of the wire fencing.

7. A portable wire fence, comprising two upright anchor-posts supported at a distance apart, two upright, transversely-perforated rollers disposed between the posts and carrying therebetween wire fencing permanently secured to and engaging the rollers, only; said rollers and posts being connected by removable loops, whereby the rollers may be freely disengaged from the posts and, at the same time, carry with them the wire fencing secured thereto, without first removing the wires, or causing the wire fencing to become disengaged from the rollers to which it is secured; and bars engaging the perforations of the rollers for tightening and taking up slack of the wire fencing.

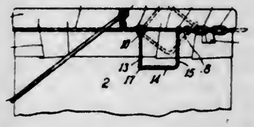
8. A portable wire fence, comprising two upright anchor-posts supported at a distance apart, two upright rollers disposed between the posts and carrying therebetween wire fencing permanently secured to and engaging the rollers, only; said rollers being removably connected with the posts, whereby they may be freely disengaged from the posts and, at the same time, carry with them the wire fencing secured thereto, without first removing the wires, or causing the wire fencing to become disengaged from the rollers to which it is secured; means coöperating with the rollers for tightening and taking up slack of the wire fencing; and means for temporarily holding the wire fencing in any adjusted or tightened position.

9. A portable wire fence, comprising two upright anchor-posts supported at a distance apart, two upright, transversely-perforated rollers disposed between the posts and carrying therebetween wire fencing permanently secured to and engaging the rollers, only; said rollers being connected with the posts by removable loops, whereby the rollers may be freely disengaged from the posts and, at the same time, carry with them the wire fencing secured thereto, without first removing the wires, or causing the wire fencing to become disengaged from the rollers to which it is secured; bars engaging the openings of the rollers for tightening and taking up slack of the wire fencing; and means for holding the wire fencing in any such adjusted or tightened position.

10. A portable wire fence, comprising two upright anchor-posts supported at a distance apart, two upright rollers disposed between the posts and carrying therebetween wire fencing permanently secured to and engaging the rollers, only; said rollers being connected with the posts by removable loops passing around the posts and the rollers, whereby the rollers may be freely disengaged from the posts and, at the same time, carry with them the wire fencing secured thereto, without first removing the wires, or causing the wire fencing to become disengaged from the rollers to which it is secured.

11. A portable wire fence, comprising two upright anchor-posts supported at a distance apart, two upright rollers disposed between the posts and carrying therebetween wire fencing permanently secured to and engaging the rollers, only; said rollers being removably connected with the posts, whereby they may be freely disengaged from the posts and, at the same time, carry with them the wire fencing secured thereto, without first removing the wires, or causing the wire fencing to become disengaged from the rollers to which it is secured.

823,994. CLASPING-BAND. SEVERIN M. DANIELSEN, Escanaba, Mich. Filed Mar. 7, 1906. Serial No. 304,668.



Claim.—A band, having a series of links at one end and a hook at the other end adapted to engage one of the links, in combination with a sliding buckle forming part of the band, having one side thereof in the line of tension when the band is taut, and slidable sidewise out of the line of tension to relax the band.

823,995. FIRE-GRATE ATTACHMENT. CHRISTIAN DIETERLE, Cannstatt, Germany. Filed Mar. 6, 1901. Serial No. 50,063.

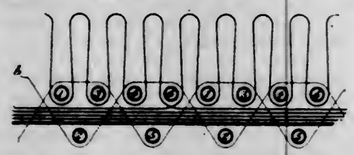


Claim.—1. In a device of the character described, the combination with the grate-bars, of a plurality of substantially parallel verti-

cally-disposed plates arranged upon and at each side of the grate at an angle to the direction of the draft over said grate, each of said plates having a broad upper portion resting upon and extending above the surface of the grate and a relatively narrow lower portion extending below the grate-surface and between the grate-bars, the upper edge of said plates being inclined toward the central portion of the grate, projections carried by the plates and serving to space the same apart, said plates provided with holes fitted to receive tie-rods and being otherwise imperforate, tie-rods passing through the holes in the plates, and securing-nuts thereon.

2. In a device of the character described, the combination with the grate-bars, of a plurality of substantially parallel vertically-disposed plates arranged upon the grate at an angle to the direction of the draft over said grate, each of said plates having a broad upper portion resting upon and extending above the surface of the grate and a relatively narrow lower portion extending below the grate-surface and between the grate-bars, the upper edge of said plates being inclined toward the central portion of the grate, projections carried by the plates on each side thereof, the corresponding projections on adjacent plates coinciding and serving to space the plates apart, said plates provided with holes fitted to receive tie-rods and being otherwise imperforate, tie-rods passing through the series of plates, and securing-nuts thereon.

823,996. **WOVEN PILE FABRIC.** THOMAS B. DORNAN, Philadelphia, Pa. Filed Aug. 16, 1905. Serial No. 274,372.



Claim.—1. A pile fabric comprising weft-threads and binder warp-threads and pile-forming figuring warp-threads, the weft-threads being arranged in two plies with a greater number of weft-threads in the upper ply than in the lower ply, and the pile-forming figuring warp-threads forming a pile bound by each weft-thread in the upper ply only of the fabric with a separate pile-loop for each upper-ply weft-thread.

2. A pile-fabric comprising weft-threads and binder warp-threads and pile-forming figuring warp-threads, the weft-threads being arranged in two plies and successively bound by binder warp-threads in loops each including three weft-threads, two weft-threads in the upper ply and one weft-thread in the lower ply, and the pile-forming figuring warp-threads forming a pile bound by each weft-thread in the upper ply only of the fabric with a separate pile-loop for each upper-ply weft-thread.

3. A pile fabric comprising weft-threads and binder warp-threads and pile-forming figuring warp-threads and having an upper and a lower ply, the weft-threads being successively bound by binder warp-threads in loops each including a plurality of weft-threads in the upper ply and a weft-thread in the lower ply, and additional binder warp-threads binding together the weft-threads of the upper and lower plies.

4. A pile fabric comprising weft-threads and binder warp-threads and pile-forming figuring warp-threads, and having an upper and a lower ply with a greater number of weft-threads in the upper ply than in the lower ply, the weft-threads being successively bound by binder warp-threads in loops each including a greater number of weft-threads in the upper ply than in the lower ply, and additional binder warp-threads binding together weft-threads of the upper and lower plies.

5. A pile fabric comprising weft-threads and binder warp-threads and pile-forming figuring warp-threads and having an upper and a lower ply, the weft-threads being successively bound by binder warp-threads in loops each including three weft-threads, two weft-threads in the upper ply and one weft-thread in the lower ply, and additional binder warp-threads binding together weft-threads of the upper and lower plies.

6. A pile fabric comprising weft-threads and binder warp-threads and pile-forming figuring warp-threads, the weft-threads being arranged in two plies with twice as many weft-threads in the upper ply as in the lower ply, and the pile-forming figuring warp-threads forming a pile bound by each weft-thread in the upper ply only of the fabric with a separate pile-loop for each upper-ply weft-thread.

7. A pile fabric comprising weft-threads and binder warp-threads and pile-forming figuring warp-threads, the weft-threads being arranged in two plies in sets of six weft-threads each, the pile-forming figuring warp-threads forming a pile bound by each weft-thread in the upper ply only of the fabric with a separate pile-loop for each upper-ply weft-thread.

8. A pile fabric comprising weft-threads and binder warp-threads and pile-forming figuring warp-threads and having an upper ply and a lower ply, the weft-threads being successively bound by binder warp-threads in loops each including a plurality of weft-threads in the upper ply and a weft-thread in the lower ply, and the pile-forming figuring warp-threads forming a pile bound by each weft-thread in the upper ply only of the fabric with a separate pile-loop for each upper-ply weft-thread, and additional binder warp-threads binding together weft-threads of the upper and lower plies.

9. A pile fabric comprising weft-threads and binder warp-threads and pile-forming figuring warp-threads and having an upper and a lower ply, the weft-threads being successively bound by binder warp-threads in loops each including three weft-threads, two weft-threads in the upper ply and one weft-thread in the lower ply, and the pile-forming figuring warp-threads forming a pile bound by each weft-thread in the upper ply only of the fabric with a separate pile-loop for each upper-ply weft-thread, and additional binder warp-threads binding together weft-threads of the upper and lower plies.
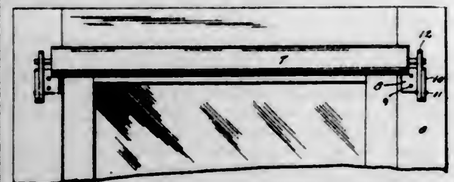
10. A pile fabric comprising weft-threads and binder warp-threads and pile-forming figuring warp-threads and having an upper and a lower ply, the weft-threads being successively bound by binder warp-threads in loops each including three weft-threads, two weft-threads in the upper ply and one weft-thread in the lower ply, and the pile-forming figuring warp-threads forming a pile bound by each weft-thread in the upper ply only of the fabric with a separate pile-loop for each upper-ply weft-thread, and additional binder warp-threads binding together weft-threads of the upper and lower plies.

11. A pile fabric comprising weft-threads and binder warp-threads and pile-forming figuring warp-threads and having an upper and a lower ply, the weft-threads being successively bound by binder warp-threads in loops each including three weft-threads, two weft-threads in the upper ply and one weft-thread in the lower ply, and additional binder warp-threads passing over one of the upper-ply weft-threads and under the lower-ply weft-threads in each group of three weft-threads.

12. A pile fabric comprising weft-threads and binder warp-threads and pile-forming figuring warp-threads and having an upper and a lower ply, the weft-threads being successively bound by binder warp-threads in loops each including three weft-threads, two weft-threads in the upper ply and one weft-thread in the lower ply, and the pile-forming figuring warp-threads forming a pile bound by each weft-thread in the upper ply only of the fabric with a separate pile-loop for each upper-ply weft-thread, and additional binder warp-threads passing over one of the upper-ply weft-threads and under the lower-ply weft-threads in each group of three weft-threads.

13. A pile fabric comprising weft-threads and binder warp-threads and pile-forming figuring warp-threads, the weft-threads being arranged in two plies in sets of six weft-threads each, four in the upper ply and two in the lower ply, and being successively bound by binder warp-threads in loops each including three weft-threads and the pile-forming figuring warp-threads forming a pile bound by each weft-thread in the upper ply only of the fabric with a separate pile-loop for each upper-ply weft-thread, and additional binder warp-threads passing over one of the upper-ply weft-threads and under the lower-ply weft-thread in each group of three weft-threads.

823,997. **SHADE-ROLLER BRACKET.** HARRY S. DUNBAR, Cleveland, Ohio. Filed Oct. 20, 1905. Serial No. 283,611.



Claim.—A shade-roller bracket comprising a horizontally-extending supporting-arm having a projecting stop, and a plate pivoted at its inner end to the outer end of the arm and having in its free end an opening to receive the roller-spindle, and constructed to swing below or above the arm and to strike the stop when swung up.

823,998. **RAILWAY SIGNAL-TORPEDO.** FRANK DUTCHER, Versailles, and PHILIP PETER, Pittsburg, Pa. Filed Dec. 28, 1904. Serial No. 238,651.



Claim.—1. An improved device of the character described comprising a several-part case made of fiber, and a strengthening and holding ring for the edge thereof to strengthen and hold the parts of the case together.

2. An improved device of the character described, comprising a fibrous case composed of telescoping members, and a holding, strengthening and resisting ring for the edge of the case.

3. An improved device of the character described, comprising a fibrous case and a fibrous ring surrounding the edge of the case for the purpose described.

4. An improved device of the character described, comprising a fibrous case and a band surrounding the edge of the case for the purpose described, the band being of a width substantially equal to the thickness of the case.

5. An improved device of the character described, comprising a fibrous case and a fibrous band of a width substantially equal to the thickness of the case and surrounding the edge thereof for the purpose described.

6. An improved device of the character described, comprising a case composed of flanged telescoped members, and a fibrous band of a width substantially equal to the thickness of the telescoped members surrounding the edge of the outer member for the purpose described.

7. An improved device of the character described, comprising a case having an edge, a rail-engaging strap passed across the case and across its edge, and a ring surrounding the edge of the case, and embracing the rail-engaging member.

8. An improved device of the character described, comprising a case having an edge, a ring passing around the edge of the case, and a rail-engaging member connected with the ring.

9. An improved device of the character described, comprising a case having an edge, a rail-engaging member, and a ring passing around the edge of the box and clamping the rail-engaging member between the ring and the case.

10. A device of the character described, comprising a several-part fibrous case having an edge, a rail-engaging member and a fibrous ring surrounding the edge of the case uniting the rail-engaging member to the case and strengthening and holding the parts of the fibrous case to proper position.

11. A waterproof fibrous device of the character described, comprising two telescoped cup-shaped members, the inner side of the flange of the outer member provided with a coat of waterproof compound, whereby the telescoping of the parts form a circumferential waterproof ridge at the inner edge of the flange of the inner member.

12. An improved device of the character described, comprising an explosive case, a lead-rail-attaching device connected with the case, and a fibrous band surrounding the edge of the case which will provide a cushion for, and prevent acute bends of the lead strap when it is wrapped around the case.

823,999. **GUN-SIGHT.** CARROLL O. ECKLEY, New York, N. Y. Filed May 24, 1905. Serial No. 262,047.



Claim.—1. The combination with a barrel or other appropriate part of a firearm provided with a longitudinal groove, of a gun-sight adapted to fit into and be retained in said groove and means for holding the sight in place comprising a hinged lock secured to the barrel and adapted to abut against the sight when in position.

2. The combination with a barrel or other appropriate part of a firearm provided with a longitudinal dovetail groove, of a gun-sight provided with a base adapted to fit into and be retained in said groove and means for holding the sight in place comprising a hinged lock secured to the barrel and adapted to abut against the sight when in position.

3. The combination with a firearm, of a removable shoe, a removable sight adapted to be secured on said shoe and locking means carried by the shoe and acting against the end of the sight for holding the sight in place thereon.

4. The combination with a firearm, of a removable shoe, a removable sight adapted to be secured on said shoe and means for holding the sight in place thereon comprising a dovetail groove in the shoe and a corresponding dovetail base for the sight and a movable locking-piece carried by the shoe.

5. The combination with a firearm, of a removable shoe, a removable sight adapted to be secured on said shoe and means for holding the sight in place thereon comprising a dovetail groove in the shoe and a corresponding dovetail base for the sight in combination with a lock-lever adapted to abut against the sight to prevent its longitudinal movement.

6. The combination with a firearm having a barrel provided with a transverse dovetailed groove on its upper surface, of a shoe adapted to fit in said groove and a sight adapted to be removably secured to said shoe by means of a longitudinal groove in the shoe and a base on the sight adapted to fit into said groove and a pivoted locking device carried by and removable with the shoe.

7. The combination with a firearm, of a removable shoe provided with an abutment and a longitudinal groove, a gun-sight provided with a base adapted to fit in said groove and rest against said abutment and means comprising a movable opposing abutment for locking the sight against movement away from said shoe-abutment.

8. The combination with a firearm, of a removable shoe provided with an abutment and a longitudinal groove, a gun-sight provided with a base adapted to fit in said groove and rest against said abutment and means for locking the sight against movement away from said abutment comprising a hinged lever adapted to be swung snugly against the opposite end of the sight.

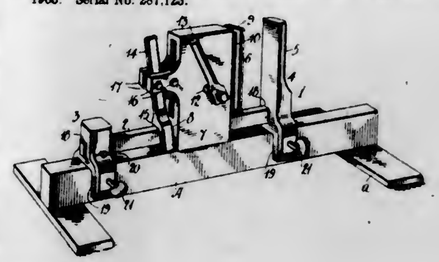
9. The combination with a firearm provided with an upper longitudinal groove along its barrel, of a reversible gun-sight provided with two bases at an angle to each other, each base provided with a flange adapted to fit into and engage with said groove.

10. The combination with a firearm provided with an upper longitudinal groove along its barrel, of a reversible gun-sight provided with two bases at an angle to each other, each base provided with a flange adapted to fit into and engage with said groove, and means for locking the sight in place after adjustment.

11. The combination with a firearm provided with an upper longitudinal groove along its barrel, of a reversible gun-sight provided with two bases at an angle to each other, each base provided with a flange adapted to fit into and engage with said groove and means for locking the sight in place after adjustment comprising a hinged lock-lever adapted to be swung snugly against the base of the sight.

12. The combination with a firearm provided with an upper longitudinal groove along its barrel, of a reversible gun-sight provided with two bases at an angle to each other, each base provided with a flange adapted to fit into and engage with said groove and means for locking the sight in place after adjustment on one side and an abutment preventing its displacement on the other side.

824,000. **VISE.** JOHN K. ELMER, Greeley, Colo. Filed Nov. 13, 1905. Serial No. 287,123.



Claim.—1. A portable vise comprising a bar, clamps upon said bar, a stationary jaw, a frame slidable upon said bar, means for securing said frame in an adjusted position and an adjustable jaw in said frame.

2. A portable vise comprising a bar, clamps adjacent to the ends thereof, a stationary jaw, a frame slidable upon said bar, a locking-lever slidable upon said bar and loosely engaged with said frame, and a movable jaw in said frame.

3. A portable vise comprising a bar, an attaching means upon said bar, a stationary jaw, a frame slidable upon said bar, a locking-lever slidable upon said bar and loosely engaged with said frame, a sliding jaw in said frame, and an eccentric for operating said sliding jaw.

4. A portable vise comprising a bar, of clamps at the ends thereof having forked portions, set-screws in said forked portions, a stationary jaw formed upon one of said clamps, a frame slidable upon said bar, means for locking said frame in an adjusted position upon said bar and an adjustable jaw in said frame.

5. A portable vise comprising a bar, of clamps at the ends thereof having forked portions, set-screws in said forked portions, a stationary jaw formed upon one of said clamps, a frame slidable upon said bar, a slotted lever slidable upon said bar and having one of its ends loosely connected to said frame, a slidable jaw in said frame and an eccentric for operating said sliding jaw, substantially as described.

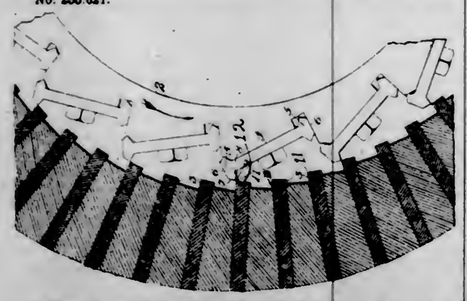
824,001. **WEATHER-STRIP.** WILLIAM H. RITTER, Marietta, Ohio. Filed June 25, 1904. Serial No. 214,174.



Claim.—1. A weather-strip constructed of resilient material bent longitudinally to form two straight longitudinal flanges of regular form, which present smooth flat faces to the surfaces against which the strip is to be applied, said flanges being arranged at an angle to each other, which angle is less than ninety degrees and more than forty-five degrees, one of the flanges forming an attachment-flange secured rigidly in place, and the strip being so arranged that the contacting of the engaging surface with the loose flange tends to widen the angle between the flanges against the effort of the strip to maintain its normal angle.

2. The combination with a frame or casing, of a weather-strip constructed of resilient material, and composed of two longitudinal flanges arranged at an acute angle to each other, one of the flanges being secured flat against the frame or casing and arranged against the free edge of the door or window when the latter is closed, and the other flange being movable and extending outward from the frame or casing and arranged to be automatically bent backward to a position at right angles to the attached flange by a door or window in closing, the said movable flange engaging one of the side faces of the door or window when the latter is closed.

824,002. **CYLINDER-KNIFE FOR COTTON-SEED HULLERS.** MICHAEL W. FARRITY, Memphis, Tenn. Filed Apr. 14, 1905. Serial No. 255,631.



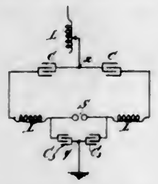
Claim.—1. As a new article of manufacture for use in seed-hullers comprising a concave having a plurality of approximately radial knives, the cutting edges of which are formed by faces approximately at right angles to each other and a cylinder carrying a plurality of knives reversibly seated thereon in positions oblique to the radius of the cylinder; cylinder-knives each comprising a web having formed along one side a pair of oppositely-presented cutting edges, each of which edges is formed by two faces approximately at right angles to each other and bearing such position relatively to the web that when the knife is in place and the cutting edge is nearest the cutting edge of the concave knife, the corresponding edge-forming faces of the respective knives are substantially parallel.

2. In a seed-huller having a concave provided with a plurality of approximately radial knives, the edges of which are formed by faces approximately radial and tangential and a cylinder formed with a plurality of knife-seats with knives mounted thereon at an angle to the tangent; a cylinder-knife constructed with a straight web or body with longitudinal cutting-heads along the respective sides thereof, each head being formed with two inner straight faces inclined to the plane of the web and two outer faces inclined to the plane of the web and intersecting the inner inclined faces to form cutting edges located in the extreme thickness of the knives but within the extreme breadth thereof; the intersecting inclined faces being at such an angle to each other and to the web, that when the knife is seated upon the cylinder, the inner inclined face will be substantially radial to the cylinder while the outer inclined face is within the tangent to the cylinder at the cutting edge.

3. A knife for that type of seed-hullers employing a concave with approximately radial knives and a cylinder with knives mounted thereon at an angle to the radius; said knife comprising a straight web or body with a pair of longitudinal cutting-heads extending along its respective sides and each formed with an outer face perpendicular to the plane of the web, outer inclined faces intersecting the said perpendicular face, and straight inner inclined faces extending from the straight surfaces of the web, and intersecting the outer inclined faces and forming therewith cutting edges which are located at extremities of the extreme thickness of the knife, but within the extreme breadth thereof, and the angles of the outer and inner inclined faces relative to the web being such that when the knife is in place, the inner inclined face is substantially radial to the cylinder, while the outer inclined face lies within a tangent to the cylinder at the cutting edge of the knife.

4. A cylinder-knife for seed-hullers of concave and cylinder type comprising a straight thin web or body portion having integral cutting-heads along its respective sides constructed each with an outer face perpendicular to the plane of the web, a pair of outer faces inclined at an angle to said perpendicular face and to the plane of the web and a pair of inner faces inclined to the plane of the web and extending from the straight plane portion of the web to the outer inclined faces and forming with the latter cutting edges that are at the extremities of the greatest thickness of the blade but within the extremities of the breadth thereof; the outer and inner inclined faces which form said cutting edges being within a right angle to each other.

824,003. **WIRELESS-TELEGRAPH SYSTEM.** LEE DE FOREST, New York, N. Y. Filed Feb. 20, 1906. Serial No. 302,009.



Claim.—1. In a wireless-telegraph system, an antenna system, an oscillating circuit connected thereto and so constructed and arranged that the two paths from the top of the antenna to earth are equal in natural period, an element having relatively high dissipative resistance associated with said circuit and means for eliminating the effect of said element on the persistency of said circuit.

2. In a wireless-telegraph system, an antenna system, an oscillating circuit connected thereto and so constructed and arranged that the two paths from the top of the antenna to earth are equal in natural period, an element having relatively high dissipative resistance associated with said circuit and an auxiliary shunt-path containing a capacity connected around said element.

3. In a wireless-telegraph system, an antenna system, an oscillating circuit connected thereto and so constructed and arranged that the two paths from the top of the antenna to earth are equal in natural period, an element having relatively high dissipative resistance associated with said circuit and an auxiliary shunt-path containing a capacity and an inductance connected around said element.

4. In a wireless-telegraph transmitting system, an antenna system, an oscillating system connected thereto and so constructed and arranged that the two paths from the top of the antenna to earth are equal in natural period, a spark-gap associated with said circuit and means for eliminating the effect of said spark-gap on the persistency of said circuit.

5. In a wireless-telegraph transmitting system, an antenna system, an oscillating system connected thereto and so constructed and arranged that the two paths from the top of the antenna to earth are equal in natural period, a spark-gap associated with said circuit and an auxiliary shunt-path containing a capacity connected across said spark-gap.

6. In a wireless-telegraph transmitting system, an antenna system, an oscillating system connected thereto and so constructed and arranged that the two paths from the top of the antenna to earth are equal in natural period, a spark-gap associated with said circuit and an auxiliary shunt-path containing a capacity and an inductance connected across said spark-gap.

7. In a wireless-telegraph receiving system, an antenna system and a closed oscillating circuit connected thereto and so constructed and arranged that the two paths from the top of the antenna to earth are equal in natural period.

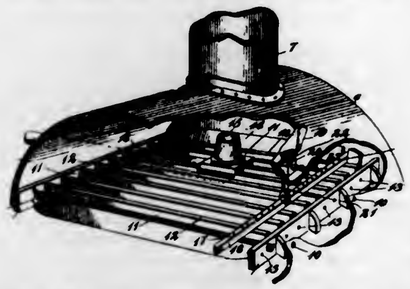
8. In a wireless-telegraph receiving system an antenna system, a closed, persistently-oscillating circuit connected thereto and a circuit containing an oscillation-responder connected across the sides of said oscillating circuit.

9. In a wireless-telegraph receiving system, an antenna system, a closed oscillating circuit connected thereto and so constructed and arranged that the two paths from the top of said antenna to earth are equal in natural period, an oscillation-responder associated with said circuit and means for eliminating the effect of said responder on the persistency of said circuit.

10. In a wireless-telegraph receiving system, an antenna system, a closed oscillating circuit connected thereto and so constructed and arranged that the two paths from the top of said antenna to earth are equal in natural period, an oscillation-responder associated with said circuit and an auxiliary shunt-path containing a capacity connected across said responder.

11. In a wireless-telegraph receiving system, an antenna system, a closed oscillating circuit connected thereto and so constructed and arranged that the two paths from the top of said antenna to earth are equal in natural period, an oscillation-responder associated with said circuit and an auxiliary shunt-path containing a capacity and an inductance connected across said responder.

824,004. **SPARK-ARRESTER.** ORATUS S. FRENCH and JOHN W. MILLER, Fremont, Ohio. Filed Dec. 19, 1905. Serial No. 292,416.



Claim.—The combination with a boiler having an upright exhaust-nozzle in the smoke-box thereof, of a spark-arrester comprising supporting-bars secured to the boiler-shell on opposite sides thereof and extending horizontally along the same, a set of plates pivoted at their ends in the supporting-bars and extending horizontally entirely across the smoke-passage in the boiler under and around the mouth of the nozzle which extends upwardly between the plates, a shifting bar extending lengthwise of the boiler across and above the plates and connected thereto, and means to shift the bar, to adjust the plates.

824,005. **CHECK-LOOP.** WILLIAM W. GLECKNER, Canton, Pa. Filed Feb. 1, 1906. Serial No. 299,040.



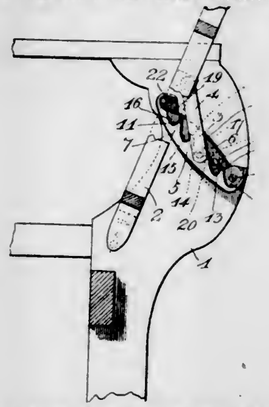
Claim.—1. A device of the character described, comprising an eye, and a loop formed by a strip of flexible material slit longitudinally between apertures in its ends to permit of the insertion of said eye in said eye in said apertures, substantially as described.

2. A device of the character described, comprising an eye, a loop formed by a strip of flexible material slit longitudinally between apertures in its ends to permit of the insertion of said eye in said apertures, and means for retaining said eye in said apertures.

3. A device of the character described, comprising an eye, a loop formed by a strip of flexible material slit longitudinally between apertures in its ends to permit of the insertion of said eye in said apertures, and a band surrounding said loop for retaining said eye in said apertures.

4. A check-loop comprising a ring and a loop of leather formed with apertures adjacent to its ends to receive said ring and with a longitudinal slit between said apertures to permit of the insertion of said ring into said apertures, and a band surrounding said loop to retain said ring in said apertures, substantially as shown and described.

824,006. **ADJUSTABLE CHAIR-BACK.** MICHAEL F. GLENNON, Medina, N. Y. Filed Nov. 27, 1905. Serial No. 289,330.



Claim.—1. A ratchet of the character described comprising a body having upon its inner face a recess or groove and upon its outer face a plurality of teeth having seats between them, and a guard comprising a spring-plate having a projecting tongue to enter the recess in the inner face of said ratchet-body and having its free end normally closing the seat or recess formed by the uppermost tooth of said ratchet.

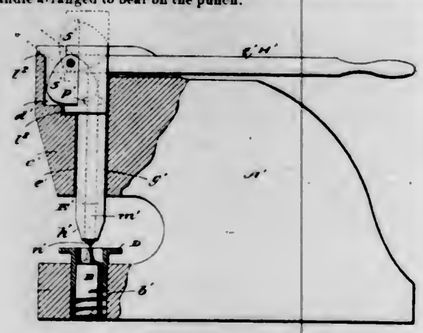
2. The combination with a support, of a ratchet having a body formed in its inner face with a recess or groove and on its outer face with a series of teeth having seats between them, a spring-guard having a tongue to enter the recess or groove in the inner face of said ratchet-body, and a fastening device passed through said ratchet-body and the tongue of said guard to secure said parts upon said support.

824,007. **RIVETING DEVICE.** WALTER T. GORDON, Juniper, Oreg. Filed Jan. 17, 1905. Serial No. 241,464.

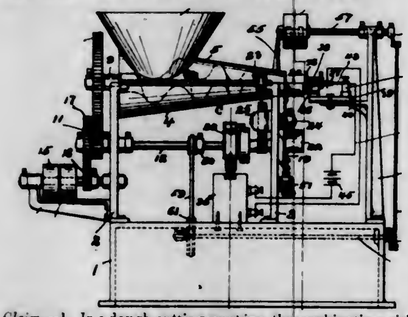
Claim.—1. In a riveting device, the combination of a main frame comprising a work-support and an overhanging arm, a lower riveting member, an upper riveting member comprising a tubular portion having an exteriorly-tapered lower end, and a punch disposed in and movable independently of the tubular portion, and a lever having a head arranged to directly engage and depress the tubular member and a handle arranged to directly engage and depress the punch.

2. In a riveting device, the combination of a main frame comprising a work-support and an overhanging arm, a lower riveting member, an upper riveting member comprising a tubular portion having a diametrical opening in its upper part and an opening in its upper end and a punch disposed in and movable independently of the

tubular portion and having an enlargement arranged to bear on the lower wall of the first-mentioned opening in the tubular portion, and a lever mounted in the overhanging arm and having a head at one side of the upper part of the punch to engage the tubular portion, and a handle arranged to bear on the punch.



824,008. DOUGH-CUTTING MACHINE. GEORGE E. GOWDY, New Haven, Conn. Filed Feb. 21, 1905. Serial No. 246,691.



Claim.—1. In a dough-cutting machine, the combination with a casing having a chamber therein terminating at its outer end in a discharge-opening; of a cutter-head mounted adjacent to said discharge-opening, and having an opening therethrough designed to be brought into register with said discharge-opening; and a cup secured to said cutter-head and forming an extension of the aforesaid chamber when the opening in said cutter-head is in register with said discharge-opening.

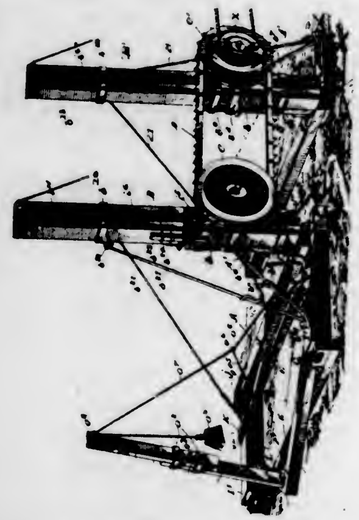
2. In a dough-cutting machine, the combination with a casing having a chamber therein terminating at one end in a discharge-opening; of a conveyer operative therein; a cutter-head rotatably mounted adjacent to said discharge-opening with its axis substantially parallel therewith and having a plurality of openings therethrough; of cups secured to said cutter-head concentric with said openings; and means for imparting an intermittent rotary movement to said cutter-head.

3. In a dough-cutting machine, the combination with a casing having a chamber therein terminating at one end in a discharge-opening; a cutter mounted so as to pass said discharge-opening during its movement; clutch mechanism for imparting movement to said cutter; electric means for actuating said clutch mechanism, said electric means having a fixed contact-point and a movable contact-point, said movable contact-point being actuated by the dough projecting from said discharge-opening.

4. In a dough-cutting machine, the combination with a casing having a chamber therein terminating at one end in a discharge-opening; of a cutter-head rotatable adjacent to said discharge-opening; electrically-actuated means for imparting an intermittent rotary movement to said cutter-head having a fixed contact-point and a movable contact-point, said movable contact-point being actuated by the dough passing through said discharge-opening.

5. In a dough-cutting machine, the combination with a casing having a chamber therein terminating at one end in a discharge-opening; of a cutter-head rotatable adjacent to said discharge-opening and driven from a continuously-rotating shaft by friction mechanism; means for actuating said friction mechanism, comprising an electric clutch, a fixed contact-point and a movable contact-point, said movable contact-point being actuated by the dough passing through said discharge-opening.

824,009. SAWING-MACHINE. SIMON J. GRAY and JOHN HORNING, Oakland, Cal. Filed Apr. 29, 1905. Serial No. 258,102.



Claim.—1. In a machine of the class described, a frame comprising two detached portions each provided with a bed-plate, a frame slidably mounted upon one of the bed-plates and movable toward and from the opposite frame portion, means for yieldingly restraining the movement of the sliding frame in one direction, a standard-support adjustably mounted upon the sliding frame, means for locking the support in any desired adjustment with relation to the sliding frame, extensible braces connecting the support and sliding frame, a second standard-support hinged upon the bed-plate of the other detached portion, extensible braces connecting the support and bed-plate, grooved standards comprising upper and lower sections and slidably mounted upon their respective supports, means for locking the standards to their supports, friction-hinges connecting the upper and lower sections of the standards, means for tensioning the hinges, extensible braces connecting the upper sections of the standards to the sliding frames and the bed-plates respectively, slides having tongues operating in the grooves of the standards, means for moving the slides, bearings on the slides, cross-pins journaled in the bearings, means for locking the cross-pins to the bearings, stud-shafts rigid with the cross-pins, grooved pulleys journaled on the stud-shafts, an endless saw running in the grooves and connecting the detached portions of the frame, and means for actuating the pulleys.

2. In a machine of the class described, a frame comprising two detached portions, each provided with a bed-plate, a frame slidably mounted upon one of the bed-plates and movable toward and from the opposite frame portion, a standard-support pivotally mounted on the sliding frame, means for locking the support in any desired adjustment relative to the sliding frame, a second standard-support mounted upon the bed-plate of the other detached portion, standards comprising upper and lower sections slidably mounted upon their respective supports and having undercut grooves, friction-hinges connecting the standard-sections, extensible braces connecting the upper sections to the bed-plates respectively, slides having tongues coacting with the grooves in the standards, means for moving the slides, bearings on the slides, cross-pins journaled in the bearings, stud-shafts rigid with the cross-pins, pulleys journaled on the stud-shafts and provided with peripheral grooves, an endless saw running in the grooves and connecting the detached portions, and means on one of the frames for adjusting one of the pulleys whereby to tension the saw.

3. In a machine of the class described, a frame comprising two detached portions each provided with a bed-plate, a frame slidably mounted on one of the bed-plates, standards pivotally mounted on the sliding frame, means for varying the inclination of the standards, a second standard mounted on the other bed-plate, slides movably mounted on the standards, stud-shafts journaled on the slides, means for locking the stud-shafts to the slides, pulleys journaled on the stud-shafts, an endless saw running on the pulleys, means for actuating the pulleys and means on one of the detached portions for adjusting one of the pulleys whereby to tension the saw.

4. In a sawing-machine, a frame comprising two detached portions each provided with a bed-plate, standards mounted on the bed plates, means for varying the inclination of the standards to the bed-plate, slides movably mounted on the standards, means for moving the slides, pulleys journaled on the slides, means for varying the inclination of the pulleys to the slides, an endless saw running over the pulleys and connecting the detached portions of the frame, and means on one of the bed-plates for adjusting one of the pulleys whereby to tension the saw.

5. In a sawing-machine, a frame comprising two detached portions each provided with a bed-plate, standards movably mounted on the bed-plates, means for locking the standards in any desired adjustment to the bed-plates, slides movably mounted on the standards, pulleys journaled on the slides, means for varying the inclination of the pulleys to the slides, an endless saw running on the pulleys and connecting the detached portion of the frame, and means for actuating the pulleys.

6. A sawing-machine comprising two detached portions each provided with a bed-plate, standards comprising hinged sections movably mounted on the bed-plates, slides movably mounted on the standards, stud-shafts journaled in the slides, means for locking the stud-shafts to the slides, pulleys journaled on the stud-shafts, an endless saw running on the pulleys and means for adjusting one of the pulleys whereby to tension the saw.

7. A sawing-machine comprising two detached portions each provided with a bed-plate, standards comprising hinged sections mounted on the bed-plates, means for varying the inclination of the standards to the bed-plates, slides movably mounted on the standards, stud-shafts journaled on the slides, pulleys on the stud-shafts, an endless saw on the pulleys, and means for adjusting one of the pulleys whereby to tension the saw.

8. A sawing-machine comprising two separate and independent portions, each provided with a bed-plate, standards mounted on the bed-plates, slides movably mounted on the standards, stud-shafts pivoted to the slides, means for fixing the stud-shafts with respect to the slides, pulleys journaled in the stud-shafts, an endless saw on the pulleys and connecting said detached portions, and means adjusting one of the pulleys whereby to tension the saw.

9. A sawing-machine, comprising two separate and independent portions, each provided with a bed-plate, standards mounted on the bed-plate, pulleys journaled in the standards, an endless saw running on the pulleys, and a counterbalance acting on one of said pulleys for tensioning the saw.

10. A sawing-machine comprising two separate and independent portions each provided with a bed-plate, standards mounted on the bed-plates, pulleys journaled on the standards, an endless saw running on the pulleys, and means for adjusting one of the pulleys whereby to tension the saw.

11. A sawing-machine comprising two separate and independent portions, pulleys mounted on each of said portions, an endless saw running on the pulleys, and means for adjusting one of the pulleys whereby to tension the saw.

12. A sawing-machine comprising two separate and independent portions, means on the detached portions for supporting and carrying an endless saw, and means for adjusting one of said supporting means whereby to tension the saw.

13. In a machine of the character described, a frame comprising two separate and independent portions, a flexible endless saw connecting said detached portions, and means for actuating the saw.

14. In a machine of the character described, a frame comprising two detached portions for supporting an endless saw, means on one of the detached portions for tensioning the saw comprising a bed-plate, a frame slidably mounted thereon and movable toward and from the opposite portion, an extensible brace stepped in the bed-plate, and a counterpoised connection between the sliding frame and the extensible brace.

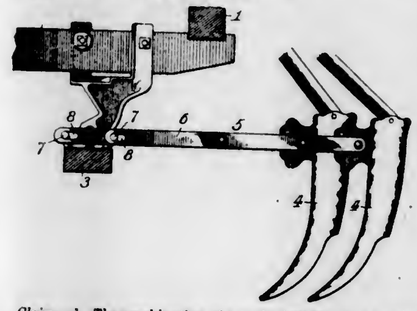
15. A sawing-machine comprising two detached portions for supporting an endless saw, means on one of the detached portions for tensioning the saw comprising a bed-plate, a frame slidably mounted on the bed-plate and movable toward and from the opposite detached portion, an adjustable brace removably secured to the bed-plate, means for locking the brace in the desired adjustment, and a counterpoised connection between the sliding frame and the adjustable brace.

16. In a sawing-machine a frame comprising two detached portions, a standard mounted upon each of the detached portions, extensible braces connecting the standards to the respective portions of the frame and comprising each a plurality of sections, eyes on the engaging ends of the sections for engaging the adjacent section, means for locking the sections in the desired positions of adjustment, and an endless saw supported by the standards.

17. In a sawing-machine a frame comprising two detached portions, slides movably mounted on the detached portions, bearings on the slides, cross-pins journaled in the bearings, and means for locking the cross-pins to the bearings, stud-shafts rigid with the cross-pins, and an endless saw supported by the stud-shafts.

18. In a machine of the character described, a frame comprising two detached portions, a saw-supporting standard mounted upon each of the detached portions, comprising a plurality of sections, friction-hinges connecting the sections, means for tensioning the hinge, and an endless saw supported on the stud-shafts.

824,010. GRAIN-DRILL. PHILIP M. GUNDLACH, Belleville, Ill. Filed Dec. 8, 1905. Serial No. 290,918.



Claim.—1. The combination of a grain-drill frame, a drag-rail, a series of seed-depositing means, a series of drag-bars connecting the series of seed-depositing means to the drag-rail, and an attachment for the drag-bars to the drag-rail affording lateral horizontal movement to the seed-depositing means, substantially as set forth.

2. The combination of a grain-drill frame, a drag-rail, a series of seed-depositing means, a series of drag-bars connecting the series of seed-depositing means to the drag-rail, and an attachment for the drag-bars to the drag-rail affording lateral horizontal movement to the seed-depositing means, the same comprising attaching-staples on the drag-rail and elongated eyes in the forward ends of the drag-bars, substantially as set forth.

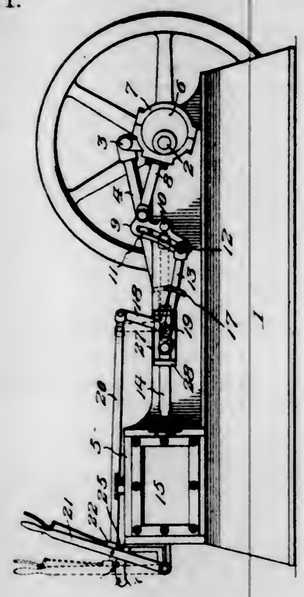
3. The combination of a grain-drill frame, a drag-rail, a series of seed-depositing flukes, a series of drag-bars connecting said flukes to the drag-rail, and an attachment for the drag-bars to the drag-rail affording lateral horizontal movement to the flukes, substantially as set forth.

4. The combination of a grain-drill frame, a drag-rail, a series of seed-depositing flukes, a series of drag-bars connecting said flukes to the drag-rail, and an attachment for the drag-bars to the drag-rail affording lateral horizontal movement to the flukes, the same comprising attaching-staples on the drag-rail and elongated eyes in the forward ends of the drag-bars, substantially as set forth.

824,011. VALVE-GEAR FOR ENGINES. JOSEPH HANSER, Manheim, Tex. Filed June 7, 1905. Serial No. 264,185.

Claim.—The combination with an engine and its frame, of a movable valve-stem adapted for operating a valve to admit steam to the engine-cylinder, a bracket attached to the frame and having spaced perforated ears to receive and guide the valve-stem, a connecting-rod pivoted to the latter, a bell-crank lever pivoted on the frame and having a laterally-extending perforated ear through which the rod operates and by which the same is guided in its movements, an eccentric-rod operated by the engine-shaft, operative connections between the eccentric and connecting rod, said connections including a pivoted rocking member having an arcuate slot in which one end of the connecting-rod is movably connected, and an operating-lever connected with the bell-crank lever for operating the same to shift the pivot of the connecting-rod within the slotted rocking member.

824,011.



824,012. COMPOSITION OF PLASTER. CHARLES R. HARRIS and CHRISTOPHER C. BARRICK, Los Angeles, Cal. Filed June 2, 1903. Serial No. 159,809.

Claim.—1. A dry powder for plaster, consisting of clay in the proportion of from seven hundred to one thousand pounds, calcined plaster in the proportion of from three hundred to nine hundred pounds, cement in the proportion of from one hundred and fifty to four hundred pounds and fiber in the proportion substantially as specified.

2. A dry powder for plaster, consisting of clay in the proportion of from seven hundred to one thousand pounds, calcined plaster in the proportion of from three hundred to nine hundred pounds, cement in the proportion of from one hundred and fifty to four hundred pounds, fiber in the proportion substantially as specified and a retarder.

3. A dry powder for plaster, consisting of clay in the proportion of from seven hundred to one thousand pounds, calcined plaster in the proportion of from three hundred to nine hundred pounds, and cement in the proportion of from one hundred and fifty to four hundred pounds.

824,013. SCRUBBING-SPONGE. FRANK S. HARRISON, Peoria, Ill. Filed Apr. 12, 1905. Serial No. 255,093.

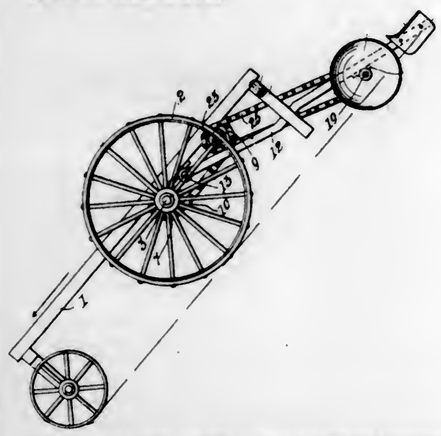


Claim.—1. As a new article of manufacture, a scrubbing-sponge comprising a body composed of curled hair, and a binder of shrinkable material comprising a cord wrapped transversely and lontudinally of the body for holding same in a compact form.

2. As a new article of manufacture, a scrubbing-sponge comprising a body of stringy material held compact and compressed by a binder of shrinkable material in the form of a cord wrapped tautly on the body to be out of reach of friction on the rubbing-surfaces of the body.

3. As a new article of manufacture a scrubbing-sponge comprising a rubbing-body composed of curled hair wadded into a block of substantially rectangular form, each face of which has a rubbing-surface, and a shrinkable binder in the form of a cord wrapped longitudinally and transversely of the body with the longitudinal and transverse wraps of said binder-cord intertwisted at the points of crossing, said binder-cord being wrapped tightly on the body so as to be out of reach of friction on the rubbing-surfaces of the body.

824,014. PLOW. ROWLAND R. HAYWARD, Owings Mills, Md. Filed Apr. 5, 1905. Serial No. 253,925.



Claim.—1. In a plow, a frame, a rotary driving-shaft supported by the frame, a series of independent vibratory arms carrying disks, means whereby each disk is rotated independently of the others from the driving-shaft, each vibratory arm having a guide, and a spring within the guide, whereby the said disk is forced in contact with the soil, substantially as specified.

2. In a plow, a frame, a rotary driving-shaft supported by the frame, a series of independent vibratory arms carrying disks, the said arms being laterally adjustable one with another whereby the distance between the disks may be increased or diminished, and guides for the said vibratory arms which are adjustable to suit any change in position of the said arms, substantially as specified.

3. In a plow, a series of vibratory arms carrying disks with means to rotate the said disks independently of each other combined with spring-supporting, and spring-actuating devices, the latter serving to force the disks in contact with the soil, substantially as specified.

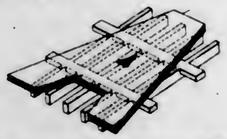
4. In a plow, a driving-shaft, and a series of independent vibratory arms carrying disks and provided with moldboards situated in the rear of the disks, combined with means to rotate the said disks from the driving-shaft, substantially as specified.

824,015. THERMO-ELECTRIC COUPLE. HARRY E. HEATH, Lynn, Mass., assignor to General Electric Company, a Corporation of New York. Filed Aug. 7, 1905. Serial No. 273,216.

Claim.—1. A thermo-electric couple one member of which is constructed of a body of silicon.

2. A thermo-electric couple one member of which is constructed of a body of cast silicon.

824,016. POSTER AND COLOR PRINTING. CHARLES S. HERRMANCE, San Francisco, Cal. Filed Apr. 27, 1903. Renewed Aug. 29, 1905. Serial No. 276,323.



Claim.—1. An improved device for color-printing consisting of a porous absorbent form interposed between the ink-container and the surface to be printed, and means including plates with a transverse wrapping of absorbent material for transmitting the ink through the absorbent form.

2. A device for color-printing consisting of a porous absorbent form or printing-surface, an ink-containing receptacle, plates positioned in the container, and absorbent strands or surfaces wound transversely about the plates and dipping into the ink-receptacle and contacting with the under surface of the absorbent form whereby the ink is transmitted through said form to the printing-surface.

3. A device for multicolor-printing consisting of a plurality of receptacles containing different-colored inks and disposed contiguous to each other, a form or printing-surface made of felt or equivalent absorbent material and disposed above the ink-receptacles, plates in the container and provided with passages for the inks, and absorbent strands or the like wound about the plates and dipping into the ink-receptacles and having their upper portions contacting with the lower surface of the form.

4. A device for color-printing consisting of an ink-receptacle, plates supported on edge within said receptacle having fibers, strands or the like wound about the plates whereby the ink is conveyed to the upper edges of the plates by capilliary attraction, and a form or printing-surface adapted to rest upon said plates, said form consisting of a felt or equivalent absorbent material through which the ink is transmissible.

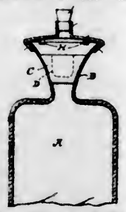
5. The combination of an ink-container; absorbent strands dipping into the ink-container and having their upper portions exposed at the top of the container; and separate and independent forms of absorbent material lying flatwise upon the exposed portions of the strands.

824,017. LOCKING-SCREW. FREDERICK J. HERDLE, Chicago, Ill. Filed Jan. 2, 1904. Serial No. 187,526.



Claim.—In a locking wood-screw, in combination, a wood-screw having a longitudinal groove in its side extending from and through its head toward its point, said screw having a slot in its head for the reception of a driver, the upper end of said longitudinal groove opening into said slot, and the bottom of said groove at its lower end turning out abruptly; and a locking-nail of greater length than said groove and having a point adapted to be bent by impingement upon the lower end wall of said groove, whereby when said nail is driven into said groove the point of the nail will be forced into the surrounding wood and thus lock said screw against withdrawal, said nail having a head adapted to lie within the slot in the head of the screw.

824,018. NON-REFILLABLE BOTTLE. GEORGE R. HOWEY, Philadelphia, Pa. Filed Oct. 19, 1905. Serial No. 283,364.



Claim.—1. In combination with a bottle, a neck formed therewith, said neck being flared upward and outward, a cap, the sides of which are crimped under the flared edges of the neck, a tube formed with the cap serving as an outlet for the contents of the bottle and adapted to receive a cork for closing the bottle, a valve having a recess formed in its upper side, said valve adapted to fit the inner walls of the flared neck to prevent the passage of liquid to the bottle, and lugs projecting outward from the under surface of the cap so as to prevent the valve from obstructing the outward flow of the contents of the bottle, as specified.

2. In combination with the flared neck of a bottle, a valve adapted to fit the inner walls of said neck, said valve having a recess formed therein, a cap fitted to the mouth of said neck and having its sides crimped under the flared edge of the neck so as to secure it in place, said cap having a tube projecting upward therefrom for the outward flow of the liquid, as specified.

824,019. TRACK-TORPEDO. WILTON D. JACKSON, Philadelphia, Pa., assignor to Frank Dutcher, Versailles, Pa. Filed Dec. 26, 1903.

Claim.—1. As a new article of manufacture, a non-metallic track-torpedo, having a filling of detonating material, means for securing said torpedo to the head of a rail, and means encircling the body of said torpedo for retaining said securing means thereto.



2. As a new article of manufacture, a track-torpedo comprising a casing of paper having a filling of detonating material exploding under pressure, means for securing said torpedo to the head of a rail, and means encircling the body of said torpedo for retaining said securing means thereto.

3. As a new article of manufacture, a track-torpedo of tubular shape, having a filling of detonating material exploding under pressure, means for securing it to the head of a rail, and means encircling the body of the torpedo for retaining said securing means thereto.

4. As a new article of manufacture, a track-torpedo comprising a tube of waterproof material, detonating material exploding under pressure disposed within said tube, securing means for the ends of the tube, means for holding the torpedo to the rail, and means encircling the body of the torpedo for retaining said securing means thereto.

5. As a new article of manufacture, a track-torpedo comprising a waterproof tube having detonating material within the same, plugs for preventing the escape of such detonating material, a secondary tube also of waterproof material encircling the main tube, and a strip of material for securing the torpedo to the head of the rail confined by said secondary tube.

6. As a new article of manufacture, a track-torpedo consisting of a body of waterproof paper carrying a detonating substance exploding under pressure, means for confining said detonating material within the waterproof envelop, a secondary waterproof envelop inclosing the first, and a metallic strip for securing the torpedo to the rail, said strip being confined to the torpedo by the secondary envelop.

7. As a new article of manufacture, a track-torpedo consisting of a tube of waterproof paper carrying a detonating substance exploding under pressure, wooden plugs fitting the ends of said tube, a secondary paper tube encircling the main tube, and a strip of lead for securing said torpedo to the rail, said lead being confined to the torpedo by the secondary tube.

8. As a new article of manufacture, a non-metallic track-torpedo having a filling of detonating material, metallic means for securing said torpedo to the head of a rail, and a non-metallic means passing around the body of the torpedo and retaining said securing means thereto.

9. A non-metallic track-torpedo having a rail-engaging strap disposed on its under side, and means completely encircling the body of the torpedo to retain the rail-engaging strap in place.

824,020. TRACK-TORPEDO. WILTON D. JACKSON, Philadelphia, Pa., assignor to Frank Dutcher, Versailles, Pa. Filed Apr. 21, 1905. Serial No. 256,718.



Claim.—1. As a new article of manufacture, a track-torpedo comprising a casing of paper having a filling of detonating material exploding under pressure, means for securing said torpedo to the head of a rail, and a cord passing around the body of said torpedo and serving to hold the securing means thereto.

2. As a new article of manufacture, a non-metallic track-torpedo having a filling of detonating material, means for securing said torpedo to the head of a rail, means passing around the body of said torpedo for retaining the securing means thereto, and a coating of plastic material for confining the securing means and the retainer for the latter.

3. As a new article of manufacture, a non-metallic track-torpedo having a filling of detonating material, means for securing said torpedo to the head of a rail, means passing around the body of said torpedo for retaining the securing means thereto, and a coating of

waterproof material for confining the securing means and the retainer for the latter to the torpedo.

4. As a new article of manufacture, a non-metallic track-torpedo having a filling of detonating material, means for securing said torpedo to the head of a rail, and a plastic coating for the body of said torpedo for retaining said securing means thereto.

5. As a new article of manufacture, a track-torpedo comprising a casing of paper having a filling of detonating material exploding under pressure, means for securing said torpedo to the head of a rail, a cord passing around the body of said torpedo and serving to hold the securing means thereto, and means for holding said cord against displacement.

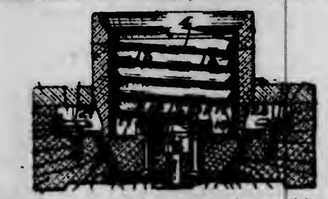
6. As a new article of manufacture, a non-metallic track-torpedo comprising a circular several-part case made of fibrous material, and fibrous means passing diametrically around the case to hold the parts of the same together.

7. As a new article of manufacture, a track-torpedo comprising a fibrous case composed of circular telescoping members, and retaining means passing diametrically around the same and serving to hold them together.

8. As a new article of manufacture, a track-torpedo comprising in combination, a fibrous case composed of circular telescoping members, a strap for securing it to the head of a rail, and retaining means passing diametrically around the parts of the structure and serving to hold them together.

9. As a new article of manufacture, a track-torpedo comprising a circular casing, a rail-engaging strap passed across the casing and disposed on one face only of the same, and means completely surrounding the case diametrically and embracing the rail-engaging member.

824,021. **RECEPTACLE FOR ELECTRIC LAMPS.** PAUL H. JARENIO, Newark, N. J. Filed May 4, 1904. Serial No. 206,275.



Claim.—1. An electric-lamp receptacle comprising a base and an upwardly-projecting receiving and holding portion all of insulating material integral with said base, a metal screw-socket in said holding portion, metal connections for making electrical contact, said connections being all of them arranged and concealed directly in the body of said receptacle to protect them against moisture and accidental contact, and cover-plates upon said body and at the sides of said holding portion arranged to cover some of said connections, substantially as and for the purposes set forth.

2. An electric-lamp receptacle comprising a base and an upwardly-projecting receiving and holding portion all of insulating material integral with said base, a metal screw-socket in said holding portion, metal connections for making electrical contact, said connections being all of them arranged and concealed directly in the body of said receptacle, an insulating compound arranged over the exposed portions of said connections to conceal said connections and protect them against moisture and accidental contact, and cover-plates upon said body and at the sides of said holding portion arranged to cover some of said connections, substantially as and for the purposes set forth.

3. An electric-lamp receptacle comprising a base and an upwardly-projecting receiving and holding portion all of insulating material integral with said base, and the said base being provided in its lower surface with receiving-depressions, a metal screw-socket in said holding portion, a metal connecting-strip in each receiving-depression, metal connections for making electrical contact with said strips, said connections being all of them arranged and concealed directly in the body of said receptacle, and cover-plates upon said body and at the sides of said holding portion arranged to cover some of said connections, substantially as and for the purposes set forth.

4. An electric-lamp receptacle comprising a base and an upwardly-projecting receiving and holding portion all of insulating material integral with said base, and the said base being provided in its lower surface with receiving-depressions, a metal screw-socket in said holding portion, a metal connecting-strip in each receiving-depression, metal terminal plates, a projection extending from each terminal plate, a split or bifurcated end portion on each projection secured to a connecting-strip, all arranged and concealed directly in the body of said receptacle, and cover-plates upon said body and at the sides of said holding portion arranged to cover some of said connections, substantially as and for the purposes set forth.

5. An electric-lamp receptacle comprising a base and an upwardly-projecting receiving and holding portion all of insulating material integral with said base, and the said base being provided in its lower surface with receiving-depressions, a metal screw-socket in the said holding portion, a metal connecting-strip in each receiving-depression, metal terminal plates, a projection extending from each terminal plate, a split or bifurcated end portion on each projection secured to a connecting-strip, all arranged and concealed directly in the body of said receptacle, and cover-plates upon said body and at the sides of said holding portion arranged to cover some of said connections, substantially as and for the purposes set forth.

6. An electric-lamp receptacle comprising a base and an upwardly-projecting receiving and holding portion all of insulating material integral with said base, and the said base being provided in its lower surface with receiving-depressions, a metal screw-socket in the said holding portion, a metal connecting-strip in each receiving-depression, metal terminal plates, a projection extending from each terminal plate, a split or bifurcated end portion on each projection secured to a connecting-strip, said connections being all of them arranged and concealed directly in the body of said receptacle, an insulating compound arranged over said connecting-strips and the exposed portions of the connected parts to conceal and protect the same against moisture and accidental contact, and cover-plates upon said body and at the sides of said holding portion arranged to cover some of said connections, substantially as and for the purposes set forth.

7. An electric-lamp receptacle comprising a base and an upwardly-projecting receiving and holding portion for the reception of a lamp, said base and holding portion being integrally connected and made of insulating material, a center contact in said holding portion, and an insulating-wall integrally connected with said base and extending about the center contact to provide a barrier between the points of opposite polarity when in electric circuit, substantially as and for the purposes set forth.

8. In an electric-lamp receptacle, a base and an upwardly-projecting receiving and holding portion for the reception of a lamp, said base and holding portion being integrally connected and made of insulating material, of a ring-shaped projection integrally connected with and extending upwardly from the said base into said holding portion, the said ring-shaped projection being provided with an annular recess, and a center contact arranged in the said recess of said ring-shaped projection, and said projection forming an insulating-wall around the said center contact, substantially as and for the purposes set forth.

9. In an electric-lamp receptacle, a base and an upwardly-projecting receiving and holding portion for the reception of a lamp, said base and holding portion being integrally connected and made of insulating material, of a ring-shaped projection integrally connected with and extending upwardly from the said base into said holding portion, the said ring-shaped projection being provided with an annular recess, and a center contact arranged in the said recess of said ring-shaped projection, said projection forming an insulating-wall around the said center contact, and the said base and said ring-shaped projection being provided with a fastening-screw-receiving means, substantially as and for the purposes set forth.

10. In an electric-lamp receptacle, the combination, with a base and an upwardly-projecting receiving and holding portion for the reception of a lamp, both the said base and holding portion being integrally connected and made of an insulating material, the said base being provided with receiving-depressions, a metal connecting-strip in each depression, a pair of terminal plates, a projection connected with each terminal plate, and a split end portion on each projection connected with a connecting-strip, said connecting-strips and terminal plates being all of them concealed in said base, and a cover-plate detachably arranged over each receiving-depression, substantially as and for the purposes set forth.

11. In an electric-lamp receptacle, the combination, with a base and an upwardly-projecting receiving and holding portion for the reception of a lamp, both the said base and holding portion being integrally connected and made of an insulating material, the said base being provided with receiving-depressions, a metal connecting-strip

in each depression, a pair of terminal plates, a projection connected with each terminal plate, a split end portion on each projection connected with a connecting-strip, and a solder for securing each split portion to its connecting-strip, said connecting-strips and terminal plates being all of them concealed in said base, and a cover-plate detachably arranged over each receiving-depression, substantially as and for the purposes set forth.

12. In an electric-lamp receptacle, the combination, with a base and an upwardly-projecting receiving and holding portion for the reception of a lamp, both the said base and holding portion being integrally connected and made of an insulating material, the said base being provided with receiving-depressions, a metal connecting-strip in each depression, a pair of terminal plates, a projection connected with each terminal plate, a split end portion on each projection connected with a connecting-strip, a solder for securing each split portion to its connecting-strip, and an insulating compound arranged over said connecting-strips and the exposed portions of the connected parts to conceal and protect the same against moisture and accidental contact, said connecting-strips and terminal plates being all of them concealed in said base, and a cover-plate detachably arranged over each receiving-depression, substantially as and for the purposes set forth.

13. An electric-lamp receptacle comprising a base and a holding portion for the reception of a lamp, both the said base and holding portion being made of an insulating material, the said base being provided with a pair of receiving-depressions in its lower surface, said base being also provided with a pair of pockets, and with a connecting-duct between each pocket and a receiving-depression, a cover arranged over each pocket, a metal connecting-strip in each receiving-depression, a terminal plate and binding-screw in each pocket with which a lead-wire extending through the pocket can be connected, a projection connected with each terminal plate, each projection extending through a duct to one of said depressions, and a split end portion on each projection connected with a connecting-strip, substantially as and for the purposes set forth.

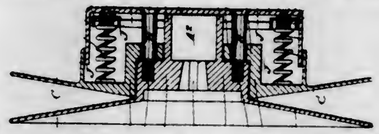
14. An electric-lamp receptacle comprising a base and a holding portion for the reception of a lamp, both the said base and holding portion being made of an insulating material, the said base being provided with a pair of receiving-depressions in its lower surface, said base being also provided with a pair of pockets, and with a connecting-duct between each pocket and a receiving-depression, a cover arranged over each pocket, a metal connecting-strip in each receiving-depression, a terminal plate and binding-screw in each pocket with which a lead-wire extending through the pocket can be connected, a projection connected with each terminal plate, each projection extending through a duct to one of said depressions, a split end portion on each projection connected with a connecting-strip, and a solder for securing each split end portion to its connecting-strip, substantially as and for the purposes set forth.

15. An electric-lamp receptacle comprising a base and a holding portion for the reception of a lamp, both the said base and holding portion being made of an insulating material, the said base being provided with a pair of receiving-depressions in its lower surface, said base being also provided with a pair of pockets, and with a connecting-duct between each pocket and a receiving-depression, a cover arranged over each pocket, a metal connecting-strip in each receiving-depression, a terminal plate and binding-screw in each pocket with which a lead-wire extending through the pocket can be connected, a projection connected with each terminal plate, each projection extending through a duct to one of said depressions, a split end portion on each projection connected with a connecting-strip, and an insulating compound arranged over said connecting-strips and the exposed portions of the connected parts to conceal and protect the same against moisture and accidental contact, substantially as and for the purposes set forth.

16. An electric-lamp receptacle comprising a base and a holding portion, both made from insulating material, a metal lamp-socket in said holding portion, said metal socket having a central opening, an annular projection extending from said base through the said central opening in said socket and into the said holding portion, said projection being provided with an annular recess, a center contact in said recess, said annular projection extending above the said center contact to provide an insulating-wall, a pair of fastening screws in said base and attached to said center contact, the said base being also provided with a pair of receiving-depressions, a connecting-strip in each depression, one of said connecting-strips making contact with one of said screws, the said base being further provided with a pair of pockets and a connecting-duct between each pocket and a receiving-depression, a terminal plate in each pocket, and a projection connected with each terminal plate extending through a connecting-duct and having its free end connected with a connecting-strip, substantially as and for the purposes set forth.

17. An electric-lamp receptacle comprising a base and a holding portion, both made from insulating material, a metal lamp-socket in said holding portion, said metal socket having a central opening, an annular projection extending from said base through the said central opening in said socket and into the said holding portion, said projection being provided with an annular recess, a center contact in said recess, said annular projection extending above the said center contact to provide an insulating-wall, a pair of fastening-screws in said base and attached to said center contact, the said base being also provided with a pair of receiving-depressions, a connecting-strip in each depression, one of said connecting-strips making contact with one of said screws, the said base being further provided with a pair of pockets and a connecting-duct between each pocket and a receiving-depression, a terminal plate in each pocket, and a projection connected with each terminal plate extending through a connecting-duct and into a receiving-depression, and a split portion forming fingers at the free end of each projection, said fingers being secured to a connecting-strip, substantially as and for the purposes set forth.

824,022. **EXPANSIBLE PULLEY.** EDWIN E. JAMES, Melbourne, Victoria, Australia. Filed Nov. 20, 1905. Serial No. 288,271.



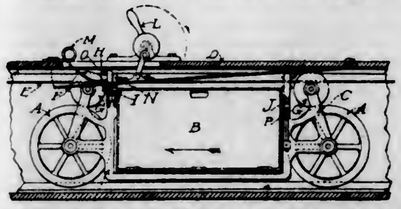
Claim.—In an expansible pulley, a beveled disk provided with a boss and an extension from the boss, an oppositely-bereled disk recessed to slide upon the boss and provided with an annular collar, a cover fitted within said collar and secured to said boss, and a series of springs within said cover connected to a ring at one end and bearing at their opposite ends against the inner wall of one of the beveled disks, substantially as described.

824,023. **CIGAR-CUTTING PAPER-KNIFE.** HENRY H. JAMES, New York, N. Y. Filed Jan. 15, 1903. Serial No. 139,101.



Claim.—A cigar-cutting paper-knife comprising a solid body composed of a single piece of metal having a longitudinal recess near one end, and an extended handle tapering outwardly at the opposite end; a finger pivoted in said recess having a notch in its forward end, a pressure-surface near said end, a cigar-end cutter mounted on said finger, a spring to hold said finger outwardly, and a spring-catch at one end of the recess to engage said finger when closed, said pressure-surface and spring-catch being disposed in position to be actuated by the holder's thumb; a side aperture connecting with said recess whereat to enter a cigar end to be cut, and an exit-opening provided below the cutter.

824,024. **PACKAGE OR MAIL DESPATCHING SYSTEM.** AXEL F. JOHNSON, New York, N. Y. Filed Aug. 21, 1905. Serial No. 275,063.



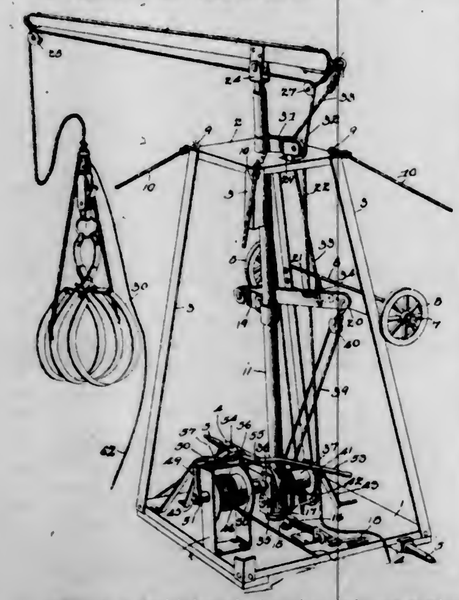
Claim.—1. In a transportation system, the combination of a horizontal duct or conduit, the sides or shell of which is closed on all sides for distances intervening between stations, bottom and top guide-rails, moving cables within the duct, cars or carriers mounted

on, or guided by said rails within the duct, a mechanism mounted on the car or carrier for clasping the moving cable and remaining clasped to same when it is desired that the car or carrier shall be in motion, a hand-operated mechanism for releasing the cable from the clasp and arresting the motion of the car or carrier automatically at regular stations or intervals without arresting the motion of the cable; said mechanism when reversely operated being adapted to simultaneously release the carrier and allow the clasp to engage the cable, and guides mounted on the car or carrier to prevent the cable from being in contact with any other part of the car or mechanism when the car or carrier is not in motion.

2. In a system of transportation, the combination of a duct or conduit, closed on all sides except at stations, placed under the surface of the ground in horizontal position; single guide-rails mounted on the inner side of the duct at bottom and top for each separate track or passage for cars or carriers, a moving cable within the duct or conduit for each track or passage mounted on or guided within the duct by mechanism forming part of the cars or carriers, cars or carriers with two wheels, one on each end of car and adapted to run on a lower guide-rail, guide-sheaves mounted on upper portion of car or carrier in contact with the upper guide-rail, a device mounted on the car for clasping the moving cable so as to bring the car into motion when desired, a device for arresting or stopping the movement of the car or carrier automatically at stations or regular intervals so arranged that the car or carrier may be allowed to continue in motion and pass the station or arresting device if so desired.

3. In a transportation system the combination for the purpose of transporting or despatching in a duct or conduit under the surface of the ground, mail or other matters, of a car or carrier mounted on two wheels located on the longitudinal axis of the car, a receptacle for mail or other matters mounted on the car, or forming a part of car, and arranged for opening or closing when desired, guide-sheaves mounted on the upper portion of the car-frame for maintaining the car or carrier in proper mounted position, a device mounted on the car securing the car or carrier to a movable cable when desired that the car or carrier shall be in motion, an arresting device mounted on or near the shell of the duct and adapted to disengage the car from the cable, and an additional device adapted to be engaged by said arresting device to cause the movement of the carrier to be discontinued at a station.

824,025. **HOISTING APPARATUS.** JOHN W. JOHNSON, Trenton, Mo. Filed Dec. 1, 1905. Serial No. 289,844.



Claim.—1. A derrick-frame having a base and a cap member, suitably spaced and connected, said cap member being provided with a segmental slot, a mast swiveled upon the base and extending through the cap member concentric with the segmental slot, a lifting-beam fulcrumed upon the mast, a hoisting-lever fulcrumed upon a bracket extending from the mast, a member connecting the lifting-beam with the hoisting-lever and extending through the segmental slot in the cap member, guiding means for said connecting member supported by the mast in alinement with the segmental slot, and means for operating the hoisting-lever.

2. A mast or upright, a lifting-beam supported at the top of the mast, a hoisting-lever pivoted upon a bracket extending from the mast, and a load-carrying member guided over pulleys supported at the ends of the lifting-beam and connected adjustably with the hoisting-lever.

3. A mast or upright, a lifting-beam supported at the top of the mast, a hoisting-lever connected with the mast, a clip connected with the hoisting-lever and having a cam-lever, and a load-carrying flexible element guided over guide members at the ends of the hoisting-beam and adjustably secured in the clip upon the hoisting-lever by means of the cam-lever.

4. In a hoisting apparatus, a mast or upright, a lifting-beam pivoted at the top of the mast, a hoisting-lever connected with the mast, and a flexible load-carrying element connected adjustably with the hoisting-lever and guided adjacent to the lifting-beam.

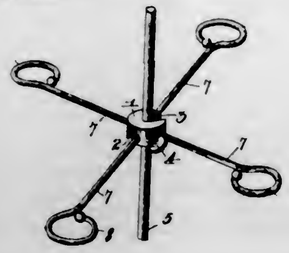
5. In a hoisting apparatus, a mast or upright, a lifting-beam pivoted at the top of the mast, a hoisting-lever connected with the mast, a flexible element connecting the beam and the hoisting-lever, and a flexible load-carrying element connected adjustably with the hoisting-lever and guided adjacent to the lifting-beam.

6. In a hoisting apparatus, a frame including a suitably-connected base and cap member, the latter provided with a segmental slot, a mast swiveled in the base and cap member and provided with radially-extending arms below and above said cap member, a lifting-beam pivoted at the top of the mast, a hoisting-lever pivoted upon the arm below the cap member, a guide-pulley upon the arm above the cap member, a flexible member connecting the lifting-beam and the hoisting-lever and guided over said pulley and through the segmental slot in the cap member, and a flexible load-carrying element connected adjustably with the hoisting-lever and guided adjacent to the lifting-beam.

7. In a hoisting apparatus, a frame, a mast or upright swiveled to said frame, means for locking said mast against oscillation, a lifting-beam at the top of the mast, a hoisting-lever connected with the mast, a flexible connection between the hoisting-lever and the lifting-beam, a frame supported near the lower end of the mast, a winding-drum supported in said frame, means for securing said winding-drum against reverse rotation, a yoke or bail connected with the frame of the winding-drum, a pulley connected with the hoisting-lever, and a hoisting-rope guided over said pulley and having one end made fast to the yoke or bail and the other end made fast to and wound upon the drum.

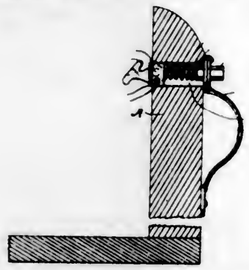
8. In a hoisting apparatus, a frame including a slotted cap member, a mast or upright swiveled in the frame and extending through and above the cap member, a lifting-beam pivoted at the top of the mast, a hoisting-lever connected with the mast below the cap member, a flexible connection between the hoisting-lever and the lifting-beam guided through the slot in the cap member, a frame connected with the mast, a hoisting-drum supported in the frame, a yoke or bail connected with the latter, a pulley connected with the hoisting-lever, a hoisting-rope guided over said pulley and having one end connected with the yoke or bail and the other end connected with and wound upon the hoisting-drum, and a flexible load-carrying member connected adjustably with the hoisting-lever and guided through the slot in the cap member and adjacent to the lifting-beam.

824,026. **UNIVERSAL SUPPORTING-CLAMP.** HORACE D. JONES, Cincinnati, Ohio. Filed Nov. 14, 1904. Renewed May 22, 1906. Serial No. 318,228.



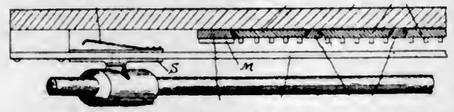
Claim.—A universal supporting-clamp of the character described, consisting of a block having formed therein grooves or channels whereby the same may be applied to a suitable support in a horizontal or vertical position, a set-screw to hold said block in position on said support, and radially-projecting bracket-arms adapted to be screwed into engagement with said clamping-block, substantially as and for the purposes described.

824,027. **SPRING-LATCH.** MINER S. KEELER, Grand Rapids, Mich. Filed May 22, 1905. Serial No. 261,624.



Claim.—The combination with a support having an opening therethrough, of a guide-plate secured at the inner part of said opening and provided with parallel vertically-disposed wings extending longitudinally with respect to said opening, a flat catch having a head at its outer extremity located between the wings and eccentrically fulcrumed at its lower portion, the rear extremity of the catch being in the form of a hook with an upwardly-projecting catch-terminal, the upper forward portion of the head having a circular socket therein located directly over the pivotal means for the said head, a push-pin having a circular head at its rear end loosely and directly engaging the said socket, the said push-pin having its outer extremity screw-threaded and provided with an intermediate shoulder, a spring surrounding the push-pin between the shoulder and the adjacent outer edges of the wings and operating to normally force the said pin outwardly, a tubular cap adjustably applied to the outer screw-threaded extremity of the push-pin, the outer surface of the cap having a polygonal contour, and a handle attached to the support and carrying a plate with an opening therein having a contour corresponding to that of the cap and through which the latter has movement, the plate forming part of the handle being held at the upper extremity of the latter.

824,028. **TELEGRAPHIC SENDING DEVICE.** ISIDOR KITSEE, Philadelphia, Pa. Filed Jan. 27, 1903. Serial No. 140,718.



Claim.—1. In telegraphy, a sending instrument consisting of stationary members and movable members, the stationary members provided with characters designating words or sentences and the movable members provided with characters designating numerals, and a switching arrangement adapted to make electrical contact with said characters in combination with means whereby through the movements of said switching arrangement in one direction the line-circuit is made and through the movement of said switching arrangement in the opposite direction the line-circuit is broken.

2. In telegraphy, a sending instrument, said sending instrument consisting of stationary members having upon their faces contact portions of predetermined and definite character, movable members between said stationary members, said movable members also having upon their faces contact portions of predetermined and definite character, said movable members provided with means to adjust their position as to the stationary members and a contact device adapted to traverse the region of said contacts and establish a circuit therewith said contact device provided with means whereby its circuit with the line is established through the movement in one direction and is broken through the movement in the opposite direction.

3. In telegraphy, a sending device consisting of one or more stationary members provided on their faces with contact portions, one or more movable members between each of said stationary members, each of said movable members provided on its face with contact portions designating the numerals 0 to 9 inclusive, means to adjust their positions as to the stationary members and means to contact said portions and establish a circuit therewith.

4. In telegraphy, a sending instrument comprising a member provided with one contact-line of predetermined and definite character on its surface, and a second member provided on its surface with a series of contact-lines, each of said contact-lines representing a numeral, the numeral of one line differing from the numeral of the other lines, and means to adjust the relative positions between said two members in a manner so that the one contact-line of the one member should be in alinement with the contact-line of the second member representing the desired numeral, and means to traverse the region of said contact-lines now in alinement and establish a circuit therewith.

5. In a telegraphic sending device, a traveling contact consisting of an arm or lever pivotally secured at one end and provided with means at the other end to convert its rotary motion into a linear motion, thereby making contact with contact-points arranged in a straight or linear position and an automatic movable switch adapted to make contact with the line of transmission at the movement of the traveling contact in one direction and adapted to break said contact at the movement of the traveling contact in the opposite direction.

6. In a telegraphic sending device, the combination of a plurality of stationary members having upon their faces contact portions of predetermined and definite character, movable members inserted between said stationary members, and having also upon their faces contact portions of predetermined and definite character, and a movable arm arranged to traverse the region of said contact portions and establish a circuit therewith.

7. A telegraphic sender embracing the following instrumentalities: a supporting-base, a series of stationary members on said base, provided each with raised characters, a series of movable members between said stationary members, provided each with a series of lines of raised characters, means to hold said movable members in one position, means to bring said movable members in a second position, means to secure said members in said second position, and means to electrically connect one or the other of said raised portions with an electric circuit.

8. In a telegraphic sender, a series of movable members, each of said movable members provided with a series of lines of raised characters, each of said lines designating a numeral of different value.

9. As a means to transmit the notice of starting a car, an automatic telegraphic sender embracing the following instrumentalities: a stationary member provided with contact portions designating the word "car" and movable members in proximity thereto designating the number of said car; a stationary member provided with contact portions designating the word "conductor" and movable members in proximity thereto designating his number; a stationary member provided with contact portions designating the word "run" and movable members designating the number of same, and a traveling contact adapted to make circuit through said contacts.

10. In an automatic signaling device adapted to convey intelligence of a predetermined character, a support, a series of elements, the raised contact portions of which are normally in the path of travel of a traveling contact, a second series of elements, the raised contact portions of which are normally out of the path of said traveling contact, means to bring one or the other of said raised portions in the path of travel, means to secure the same in said position, and a traveling contact adapted to automatically traverse the region of said portions and make circuit through the same.

11. An automatic signaling device adapted to convey intelligence of a predetermined character consisting of a series of independent conductors, each of said conductors provided with raised portions designating predetermined letters, numbers or words, a support for said conductors, adjusting means for said conductors, a traveling contact adapted to make circuit through said raised portions and automatic means to electrically connect and disconnect said traveling means from the remaining circuit.

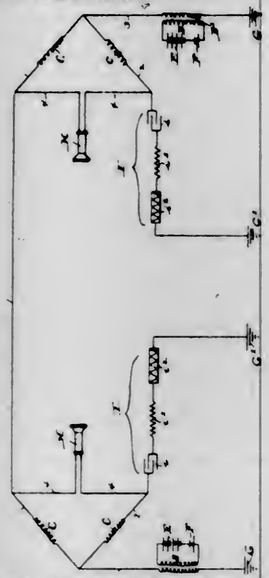
824,029. **TRANSMITTING-KEY FOR TELEGRAPHIC CIRCUITS.** ISIDOR KITSEE, Philadelphia, Pa., assignor of one-half to William J. Latta, Philadelphia, Pa. Filed Mar. 25, 1904. Serial No. 200,353.

Claim.—In combination with a telegraphic transmitting-key a step-by-step movement adapted to change the polarity of the transmitting-key, said step-by-step movement actuated by electromag-

netic means, the circuit of said electromagnetic means containing also a source of current and connected with one terminal to the movable lever of said key, and with the other terminal to the back stop of said key, the step-by-step movement adapted to be actuated when said key is in its open position and adapted to be made stationary when the key is in its closed position.



824,030. **TELEPHONY.** ISIDOR KITSEE, Philadelphia, Pa. Filed July 23, 1904. Serial No. 217,834.



Claim.—1. In a system of telephonic transmission, two stations connected together through a single conductor, each station provided with transmitting and receiving instruments, the transmitting instrument consisting of a microphonic transmitter, a source of current and an inductorium, one part of said inductorium locally connected to said source and transmitter and one part of said inductorium connected to the ground and to the line with the interposition of two branches of substantially equal resistance, the telephonic receiver overbridging said branches, one terminal of said branches connected to the line proper and one terminal of said branches connected to devices adapted to duplicate the electrical conditions of said line, said devices also grounded.

2. A telephonic system comprising a line connecting two stations with each other, each station organized as follows: two arms of a bridge, one arm connected to the line proper and the other arm connected to an artificial line of, electrically considered, about the same value as the main line, each arm of the bridge provided with a resistance, the receiver connected across the bridge-arms, the junction of said bridge-arms connected to the secondary of an inductorium, the primary of said inductorium connected locally to a transmitter and source of current.

3. As a means to overcome the inductive noise of the ground on a telephonic line of transmission, two conducting branches connected to the line and ground respectively, a telephonic receiver, said receiver overbridging said branches, and a telephonic transmitter connected to the junction of said branches and ground.

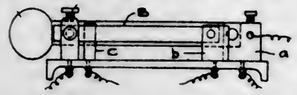
4. In telephony, a line of transmission connecting together two stations more or less remote from each other, one or both of said stations provided with a telephonic transmitter connected at one terminal to the junction of two wires of substantially equal resistance, a receiver overbridging said branches and resistances connecting one terminal of said receiver to the ground.

5. A system of telephonic communication embracing two stations connected together through a conducting-line, each station embracing a microphonic transmitter, a source of current and an inductorium, the secondary of said inductorium connected with one terminal to the ground and with the other terminal to the junction of two circuit branches, each station also provided with a telephonic receiver overbridging said branches and means to produce an artificial line.

6. A telephonic system comprising two stations connected together to a line of transmission, each station embracing two bridge-arms, a telephonic receiver across said bridge-arms and a telephonic transmitter operatively related to the junction of said bridge-arms.

7. In combination with a one-line telephonic circuit grounded at two stations more or less remote from each other, a bridge connected with one terminal of one arm to the line and with one terminal of the second arm to the ground; the free ends of said two arms connected with the interposition of the secondary of an inductorium to the ground, and a telephonic receiver overspanning the arms of said bridge.

824,031. **TELEGRAPHIC TRANSMITTING-KEY.** ISIDOR KITSEE, Philadelphia, Pa., assignor of one-half to William J. Latta, Philadelphia, Pa. Filed Feb. 11, 1905. Serial No. 245,221.



Claim.—1. In combination with a line of transmission, a transmitting-key embracing a main lever connected to said line, a contact-lever, on each side of said main lever connected each through stationary contacts with the ground, stationary contacts connected to sources of current and means whereby through the movement of the main lever, the line is connected to one or the other of said sources.

2. A transmitting-key embracing a support, a main lever, means to connect said main lever to an outside circuit, said main lever provided with contacting points on each side, a contact-lever on each side of said main lever, a stationary contact for each of said contact-levers, one of said stationary contacts connected with one of said contact-levers, the second of said stationary contacts provided with means to connect the same to an outside circuit; the second of said contact-levers connected to the main lever, a binding-post on each side of said movable levers, each of said binding-posts provided with means to connect the same to an outside circuit.

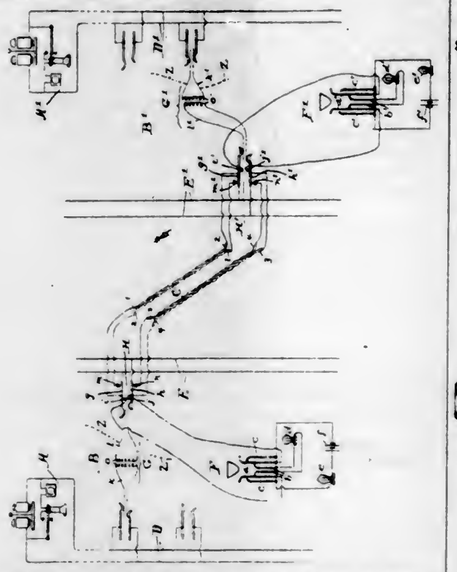
3. In combination with a line of transmission, a transmitting-key provided with means to connect said line, when in normal position, to the ground and provided with means to break said ground and connect said line with one pole of a source of current if moved to the right and with an opposite pole of a source of current if moved to the left.

4. A telegraphic transmitting-key provided with a movable lever, stationary contacts, and movable conductors interposed between said lever and said contacts, said movable conductors normally in electrical contact with each other, and with the movable lever, and adapted to be brought out of contact with each other through the movement of said lever.

824,032. **TELEPHONY.** ISIDOR KITSEE, Philadelphia, Pa. Filed Apr. 10, 1905. Serial No. 254,770.

Claim.—1. In combination with two outlying stations connected each through an all-metallic circuit with an exchange, the exchanges more or less remote from each other, a line of transmission connecting inductively said exchanges with each other, said line of transmission consisting of two pairs of wires, the two wires of each of said pairs twisted in intimate relation with each other, and means at each exchange to connect the outlying station with said line of transmission.

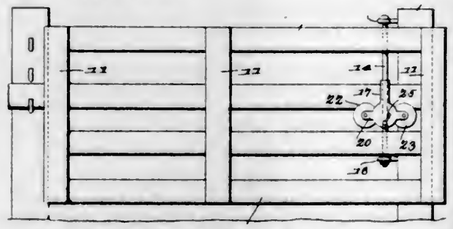
2. In combination, two exchanges, each exchange provided with the terminals of a series of outlying stations centering therein each with an all-metallic line, two switchboards for each of said exchanges, one of said switchboards connected to said all-metallic lines, a line of transmission comprising two pairs of wires the wires of each pair in inductive relation as to each other, the terminals of both pairs connected at one end in one exchange to the second of said switchboards and with the other end at the second exchange with the second switchboard therein, means at each exchange to produce an all-metallic line of said two pairs, said means embracing an annunciating device, means at each exchange to break connection with said first means and make connection with a second means including a source of current, and means at each exchange to connect the line of transmission to an outlying circuit, said means adapted to change the connection of the transmitting-line at both exchanges so as to convert the former metallic lines into a line inductively connecting one exchange with a second exchange.



3. In combination with two exchanges wherein all-metallic lines center, a line of transmission inductively connecting both exchanges with each other, means at each exchange to convert said line into a straight metallic line including annunciating devices and means to connect said line with one or the other of the metallic lines of the outlying stations, said means reconverting the line of transmission into a line inductively connecting both exchanges with each other.

4. In combination three lines of transmission, two of said lines comprising an all-metallic circuit, the third of said lines comprising two pairs of conductors, the wires of each pair inductively related to each other, and means to connect one wire of each pair to one of said circuits, and the remaining wire of each pair to the second of said circuits.

824,033. **COMBINED HINGE AND SUPPORT FOR EDGEWISE-MOVABLE GATES.** FRANK E. KNAPP, Quincy, Mich. Filed Oct. 6, 1904. Serial No. 227,433.

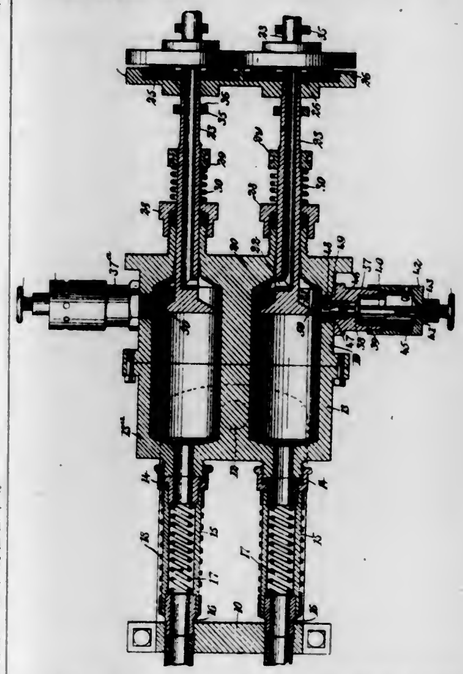


Claim.—1. A gate-hinge mechanism comprising a rod, means for supporting said rod rotatively upon the hinge-post, a bracket having spaced extensions for slidably engaging said rod, means carried by said bracket for movably supporting a gate, and means for adjustably clamping said bracket to said rod.

2. A gate-hinge mechanism comprising a rod, means for supporting said rod spaced from the hinge-post, a bracket disposed in advance of said rod and spaced therefrom and provided with extensions for slidably engaging said rod, means carried by said bracket for movably supporting one of the horizontal members of a gate between the bracket and rod, and means for adjustably clamping said bracket to said rod.

3. A gate-hinge mechanism comprising a rod, means for supporting said rod rotatively upon the hinge-post, a bracket for slidably engaging said rod, and provided with oppositely-projecting extensions, spaced rollers carried by said extensions for bearing beneath one of the horizontal members of the gate, and means for clamping said bracket adjustably to said rod.

824,034. **AUTOMATIC AIR-BRAKE AND STEAM COUPLING.** OLIVER E. LEIB, and EUGENE B. WITTE, Trenton N. J. Filed Aug. 11, 1905. Serial No. 273,794.



Claim.—1. In an air-brake coupler, the combination of a cylinder having a valve-seat, a guide resiliently mounted upon the cylinder, a valve for said seat in the cylinder, said valve having a passage, a tube for supporting said valve and communicating with said passage, said tube engaging said guide, and a cup upon the tube having a yielding surface for forming an air-tight joint.

2. In an air-brake coupler, the combination of a cylinder, means for pivotally supporting it, a valve in the cylinder, a tube for supporting said valve, said tube communicating with the interior of the cylinder when the valve is open, a collar adjustably mounted on the tube, a spring located between the collar and the spring for forcing the tube in such a direction as to close the valve, and movable means for guiding the tube.

3. In an air-brake coupler, the combination of a cylinder, means for pivotally mounting the cylinder upon a car, a tubular connection between the cylinder and an air-brake system upon a car, a pair of coiled springs one inside of said connection and the other upon the outside of the connection, for normally holding said cylinder in a certain position upon the car, a valve in the cylinder, and means for automatically closing the valve when the car is separated from an adjacent car.

4. An air-brake coupler, comprising a tube, a cup thereon having a yielding surface for forming a tight joint with a companion cup, resilient means for forcing the tube longitudinally in a direction toward the cup, and a valve on the tube having a passage to the interior of the tube, in combination with a cylinder having a valve-seat for said valve, means for supporting the tube, and means for permitting the escape of air from the cylinder when the valve is forced to its seat.

5. An air-brake coupler comprising a cylinder, a valve for controlling the passage of air therethrough, means for closing said valve, and means adapted to be engaged by the valve for permitting the escape of air when the valve is closed.

6. An air-brake coupler comprising a cylinder, a valve for con-

trolling the passage of air therethrough, means for closing said valve, and means adapted to be engaged by the valve for permitting the escape of air when the valve is closed; said means comprising a casing connected with said cylinder and having a valve-seat, a valve for said seat, means for normally forcing the valve to its seat, and a lever disposed in the part of the first-mentioned valve.

7. An air-brake coupler, comprising a cylinder having a movable valve, means for closing said valve, a lever located in position to be engaged by said valve when closed, a casing on the cylinder, a valve in the casing, and means for holding said valve in closed position, said lever being adapted to engage said means and render it inoperative.

8. An air-brake system, comprising a cylinder, a movable valve therein, a casing connected with said cylinder, a valve in the casing for allowing the escape of air from the cylinder, a spring for forcing said valve to its seat, said spring being of such strength that the normal air-pressure within the car will overcome it, a stationary lug, a movable catch connected with the valve in the casing, and means for disengaging the catch from the lug when the first-mentioned valve is moved to its seat.

9. An air-brake system, comprising a casing having a valve-seat, a cap for the casing having passages to the open air, a valve for said seat, a valve-stem, a spring for forcing the valve to its seat, an adjustable plug for controlling the spring, a catch pivotally mounted upon the valve-stem, a stationary lug, a spring for forcing the catch into engagement with the lug, and a lever pivoted on the lug and adapted to engage the catch to disengage the latter from the lug.

10. An air-brake system comprising a casing having a valve-seat, a cap for the casing having passages to the open air, a valve for said seat, a valve-stem, means for forcing the valve to its seat, an adjustable plug for controlling said means, a catch mounted upon the valve-stem, a lug, means for forcing the catch into engagement with the lug, and means on the lug adapted to engage the catch to disengage the latter from the lug.

11. An air-brake system, comprising a cylinder, a movable valve therein, a casing connected with said cylinder, a valve in the casing for allowing the escape of air from the cylinder, and a spring for forcing said valve to its seat, said spring being of such strength that the normal air-pressure within the car will overcome it.

12. An air-brake coupler, comprising a cylinder, a valve for controlling the passage of air therethrough, means for controlling said valve, and means adapted to be engaged by the valve for permitting the escape of air when the valve is closed, said means comprising a casing connected with said cylinder and having a valve-seat, a valve for said seat, and means disposed in the path of the first-mentioned valve for operating said last-mentioned valve.

13. An air-brake coupler, comprising a tube, resilient means for forcing the tube longitudinally and a valve on the tube, the tube having a passage to its interior, in combination with a cylinder having a valve-seat for said valve, means for supporting the tube, and means for permitting the escape of air from the cylinder when the valve is forced to its seat.

14. An air-brake coupler, comprising a cylinder, means for pivotally mounting the cylinder upon a car, a flexible connection between the cylinder and an air-brake system upon the car, and a pair of coil-springs, one inside of said connection and the other upon the outside thereof for normallly holding said cylinder in a certain position upon the car.

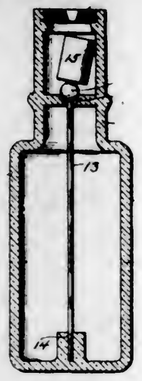
15. An air-brake coupler, comprising a cylinder, a valve in the cylinder, a tube for supporting said valve, said tube communicating with the interior of the cylinder when the valve is opened, a collar adjustably mounted on the tube, and a spring for forcing the tube in such direction as to close the valve.

16. An air-brake coupler, comprising a cylinder having a valve-seat, a guide resiliently mounted upon the cylinder, a valve for said seat, and a tube for supporting said valve, said tube engaging said guide.

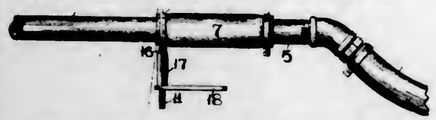
17. An automatic air-coupler having three cylinders each provided with a valve-seat, a guide resiliently mounted upon the cylinders, a valve in each cylinder for the valve-seats, each of said valves having a passage, a tube for supporting each valve and communicating with the passage, said tubes engaging said guide, and connections from the three cylinders for conducting air from an air-brake system, air from an air signal system, and steam into the three cylinders respectively.

824,035. **NON-REFILLABLE BOTTLE.** MICHAEL LOFTUS, Chicago, Ill. Filed Sept. 5, 1905. Serial No. 277,040.

Claim.—A bottle having a guide-socket in the bottom and a valve-seat in the neck, a valve-ball fitting the seat and having a stem extending into the socket and movable therein to guide the ball to its seat, and a weight comprising a loose movable piece of material partially filling the space in the neck above the ball.



824,036. **EMERGENCY ANGLE-COCK.** WILLIAM H. MADDOX, East St. Louis, Ill. Filed Aug. 7, 1905. Serial No. 273,119.

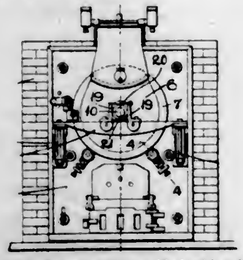


Claim.—1. The combination with the train-pipe and train-hose of an air-brake system, of a tubular connection detachably fitted to the train-hose, a tubular connection detachably secured to the first-mentioned tubular connection, and an adjustable clamp for securing the second tubular connection to the train-pipe; substantially as specified.

2. An emergency angle-cock, comprising a tubular section adapted to be fitted onto the train-hose of an air-brake system, a tubular section detachably secured to the first-mentioned tubular section, and an adjustable clamp for securing the end of the second tubular section to the train-pipe of the air-brake system; substantially as specified.

3. The combination with the train-pipe and train-hose of an air-brake system, of a tubular connection detachably fitted to the train-hose, a flexible tubular section detachably secured to the first-mentioned tubular connection, and an adjustable clamp arranged to secure the end of the flexible section to the broken end of the train-pipe; substantially as specified.

824,037. **COFFEE-ROASTER.** JOHN S. MILLER, St. Louis, Mo. Filed Mar. 6, 1906. Serial No. 304,545.



Claim.—1. In a coffee-roaster, provided with a horizontally-arranged shaft and a cylinder carried thereby, of a bearing supporting the forward end of said shaft, and arranged to move longitudinally following the expansion and contraction of said shaft; substantially as specified.

2. In a coffee-roaster, constructed with a longitudinally-extending shaft and a cylinder carried thereby, a journal-box in which the forward end of the shaft is supported, and a roller supporting said journal-box; substantially as specified.

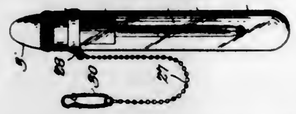
3. In a coffee-roaster, constructed with a longitudinally-arranged cylinder, a head normally closing the forward end of said cylinder, a flange integral with the edge of said head, and rollers carried by the front wall of the roaster on which rollers said flange engages, and which support said head; substantially as specified.

4. In a coffee-roaster, constructed with a longitudinally-extending shaft and a cylinder carried thereby, a head normally closing the front end of the cylinder through which head passes the shaft, a flange integral with the edge of the head, plates adjustably mounted on the front of the roaster, and rollers journaled on the upper ends of said plate, which rollers are engaged by the edge of the flange; substantially as specified.

5. In a coffee-roaster, constructed with a longitudinally-extending cylinder, a rotating head normally closing the forward end of said cylinder, and means whereby said head is adjustably held in position within the cylinder independently therefrom; substantially as specified.

6. A coffee-roaster, constructed with a longitudinally-extending shaft, a cylinder carried thereby, a head normally closing the forward end of said cylinder, means whereby said head is held in position independent of the cylinder, and a longitudinally-moving journal-box supported in front of the head and supporting the forward end of the shaft; substantially as specified.

824,038. **CLINICAL-THERMOMETER CASE.** JOHN F. MYERS, Sodus, N. Y. Filed Mar. 24, 1902. Serial No. 99,790.



Claim.—1. A theremometer-case comprising a body, a resilient closure projecting thereinto and having a bore for the reception of the thermometer, said closure having an inward-extending portion forming a valve and being further provided with a flange bearing upon the mouth of the body, and means for clamping the flange against the mouth.

2. A thermometer-case comprising a body portion having a plug-like closure provided with a bore and having a constricted portion constituting a valve, and being further provided with a flange to engage the mouth of the body, a member provided with means to clamp the flange against the said mouth, and a cap or closure carried by the member.

3. The combination with a thermometer-case, of a closure provided with an orifice and forming a valve, said closure bearing against the mouth of the case, a ring surrounding the upper end of the body and having a fastening device flexibly connected therewith, and a head for securing the closure and ring in fixed position against the case.

4. A thermometer-case comprising a body provided at its upper portion with threads, a resilient closure forming a valve and bearing against the mouth of the body, a head engaging the threads of the body and serving to clamp the closure thereagainst, and a cap detachably connected to the upper portion of said head.

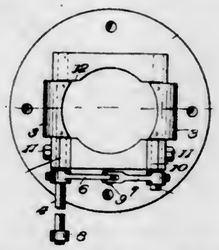
5. A thermometer-case comprising a body provided at its upper portion with threads, a resilient closure forming a valve, and bearing against the mouth of the body, a head engaging the threads of the body and operating to clamp the closure thereagainst, and a knob secured to the upper end of the thermometer, substantially as specified.

6. A clinical thermometer, comprising a casing for containing an antiseptic solution and provided with a head screwed on the upper end of the casing, a closure held on the upper edge of the casing and engaged by an annular shoulder on the head to securely hold the closure in position, the latter having an opening for the passage of the thermometer, and a cap having a connection with the head and to which the upper end of the thermometer is secured, as set forth.

824,039. **NOZZLE FOR LOCOMOTIVES.** HANS O. OLSON, Two Harbors, Minn. Filed June 29, 1905. Serial No. 267,643.

Claim.—1. A nozzle comprising a casing having recesses in the opposite inner faces thereof, wings or shafts pivotally mounted within the recesses and having concaved inner faces, and caps secured to the upper end of said wings.

2. A nozzle comprising a casing having recesses in the opposite inner faces thereof, wings pivotally mounted within said recesses and having concaved inner faces, and caps secured to the upper ends of said wings and having concaved inner edges to correspond with concaved faces of the wings.



3. A nozzle comprising a casing, having recesses in the opposite inner faces thereof, wings pivotally mounted within the said recesses and having their opposite ends flush with the upper end of the casing, and caps secured to the upper ends of said wings and extending over the upper end of the casing.

4. A nozzle, comprising a casing having recesses in the opposite inner faces thereof, wings pivotally mounted within the said recesses and having their upper ends flush with the upper end of the casing, and caps secured to the upper ends of said wings and extending over the upper end of the casing, and having concaved inner edges to correspond with the concaved faces of the wings.

5. A nozzle, comprising a casing, having a round central bore through the same, the outer and inner faces of said bore having oppositely-arranged recesses, wings pivotally mounted within the lower end of said recesses, and extending up flush with the upper end of the casing, caps carried by said wings and closing said recesses, the pivots of said wings extending through the casing at one side, links rigidly connected to said pivots and pivotally connected together, a lever for operating one of said pivots whereby both pivots are operated and both wings are swung inward or outward, thus increasing or decreasing the size of the opening of the nozzle.

6. A nozzle, comprising a casing having recesses in the inner face thereof, wings or shafts pivotally mounted within the inner ends of said recesses and having concaved inner faces, and curved caps removably carried by the upper free ends of the wings on the outside of the casing and closing the upper end of said recesses.

7. A nozzle, comprising a casing having recesses in the opposite inner faces thereof, shafts mounted within the inner ends of said recesses and of a diameter greater than the depth of the recesses and having a curved cut-away portion corresponding to that of the inner face of the casing, and means for oscillating said shafts together.

8. A nozzle, comprising a casing having recesses in the opposite inner faces thereof, shafts mounted within the inner end of the said recesses and having upwardly-extending wings, caps removably supported by the upper ends of said wings, and removable blocks carried by one side of the casing above the shafts, whereby the shafts and wings may be readily removed.

9. A nozzle, comprising a casing, and shafts mounted in said casing and having curved cut-away portions corresponding to that of the inner face of the casing.

10. A nozzle, comprising a casing, and shafts mounted in the casing extending longitudinally across the casing and having curved cut-away portions corresponding to that of the inner face of the casing.

11. A nozzle, comprising a casing having semicircular recesses in the opposite inner faces thereof, and shafts mounted within the said recesses and having a curved cut-away portion corresponding to that of the inner face of the casing.

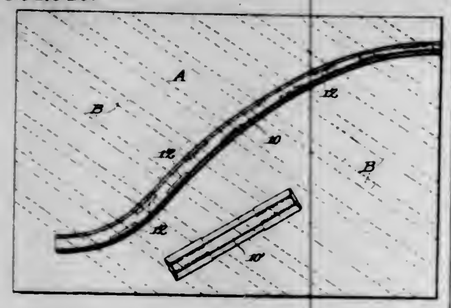
824,040. **SOUNDING-BOARD BRIDGE.** NATHANIEL M. ONG, York, Pa. Filed Nov. 13, 1905. Serial No. 287,116.

Claim.—1. In a pianoforte, a sounding-board, and a bridge, the latter having a continuous longitudinal channel formed in its lower face and being further provided with spaced feet for attachment to the sound-board.

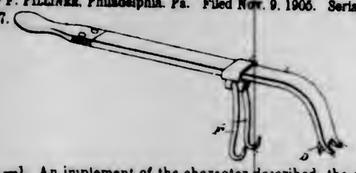
2. A sounding-board, and a bridge, said bridge having staggered attaching-feet.

3. A sounding-board bridge having staggered attaching-feet arranged at gradually-decreasing distances from the treble to the bass end of the bridge.

824,040.



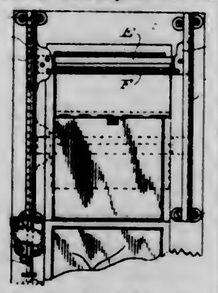
824,041. IMPLEMENT FOR PUTTING ON PNEUMATIC TIRES. PHILIP F. PILLINER. Philadelphia, Pa. Filed Nov. 9, 1905. Serial No. 286,517.



Claim.—1. An implement of the character described, the combination of a bar, spaced prongs on one end of the bar, an additional prong on the bar intermediate the spaced prongs adjacent the base thereof and extending at approximately right angles thereto, a clip embracing the bar intermediate its length and a double hook pivotally held by the clip.

2. An implement of the character described, the combination of a bar, spaced prongs on one end of the bar an additional prong on the bar intermediate the spaced prongs adjacent the base thereof, and extending at approximately right angles thereto, a clip embracing the bar intermediate its length, and a double hook pivotally held by the clip, said double hook engaging the clip in such a manner as to hold the clip against displacement from the bar.

824,042. WINDOW-CURTAIN SUPPORT. WILLIAM P. POWELL, Grand Rapids, Mich. Filed July 15, 1905. Serial No. 269,538.

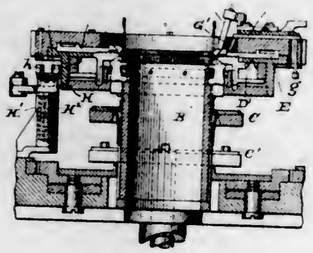


Claim.—1. In an adjustable window-curtain support, a tube secured, vertically, to one window-casing and slotted at one side, a smooth, straight rod extending through said tube longitudinally, a clamp pivoted to the casing below the tube and to one side of the rod, said rod passing through apertures in, and supported by said clamps, a head projecting from said rod through the slot in the tube, a bar secured in said head and extending across the window, a head on the opposite end of the bar, and a grooved supporting-tube receiving said head.

2. In an adjustable window-curtain support, guiding-tubes secured to the window-casings, a smooth, straight rod in one of said tubes, a clamp below said tube and pivoted to one side thereof and having apertures to engage the rod, a head secured to said rod and extending through a slot in the tube, a bar secured to said head, a head on the opposite end of the bar, and an antifriction-roller in said head to engage the second guiding-tube.

3. In an adjustable window-curtain support, a slotted tube secured to one window-casing, a vertically-adjustable rod in said tube, a clamp pivoted to one side thereof and having apertures to engage said rod, a head on said rod and extending through the slot in the tube, a bar adjustably supported in said head, a slotted support for the opposite end of the bar, and a curtain-roller attached to said bar.

824,043. KNITTING-MACHINE. JOHN P. SHEPPARD, GEORGE B. SHEPPARD, and ARTHUR J. MANKIN, Salem, N. J.; said George B. Sheppard and Mankin assignors to said John P. Sheppard. Filed Apr. 26, 1905. Serial No. 257,424.



Claim.—1. In a knitting-machine of the class described, the combination of a needle-cylinder, reciprocating needles therefor, a series of sinkers arranged annularly about said needle-head, cam mechanism for reciprocating the sinkers, means for producing tuck-stitches upon certain of the needles, sinker-pads greatly less in number than the series of sinkers distributed between certain of the sinkers so as to act only upon a portion of the needles to produce open-work, means for moving the sinker-pads into position to close the beards of the needles when descending, and means for feeding the yarn to the needles.

2. In a knitting-machine of the class described, the combination of a needle-cylinder, reciprocating needles therefor, a series of sinkers arranged annularly about said needle-head, cam mechanism for reciprocating the sinkers, means for producing tuck-stitches upon certain of the needles, sinker-pads greatly less in number than the series of sinkers distributed between certain of the sinkers so as to act only upon a portion of the needles to produce open-work, rotating cam means for moving the sinker-pads into position to close the beards of the needles when descending, pattern mechanism for moving the sinker-pad-operating cam into or out of operative position with respect to the sinker-pads whereby they may be operated only at certain times, and means for feeding the yarn to the needles.

3. In a knitting-machine of the class described, the combination of reciprocating beard-needles, with sinkers and sinker-pads, cam means for moving the sinker-pads into position for closing the beards of the needles as they are drawn down, pattern mechanism for controlling the time of action of the cam means for moving the sinker-pads, consisting of a pattern-chain, a lever operated by the chain, a cam-frame operated by the lever, and a connection operated by the cam-frame for moving the cam means which operates the sinker-pads, and means to feed yarn to the needles prior to their descent.

4. In a knitting-machine, a needle-cylinder, a series of vertically-reciprocating beard-needles in said cylinder, means for producing tuck-stitches upon the needles, sinkers for the needles, cam-pads between a portion of the sinkers each having an upwardly-extending shoulder and adapted to produce open-work, rotating cam devices acting upon the upwardly-extending shoulders to insure the pads being moved into the path of the beards of the descending needles, and a thread-guide to deliver thread to the needles, the position of the rotating cam being such that it operates the pads to close the beards at the time the needles would otherwise take the thread under their beards.

5. In a knitting-machine a reciprocating sinker combined with a cam-pad on its side to press in the beard of the needle and adjustably held upon and wholly supported by the sinker whereby it may be shifted toward or from the end of the sinker.

6. In a knitting-machine a sinker E having a transverse guide E^3, combined with a sinker-pad fitted over the top of the sinker-bar and having downwardly-extending sides provided with slotted portions E^4 to receive the guide E^3 and one or more cam portions *e*.

7. In a machine of the character described, beard-needles and a needle-cylinder for supporting them in a circle, means to reciprocate the needles, sinkers having sinker-pads for closing the beards of the needles, a rotating frame above the sinkers, and an adjustable cam carried thereby adapted to operate upon the sinker-pads to move them into position to close the beards of the needles as they descend.

8. In a machine of the character described, beard-needles and a needle-cylinder for supporting them in a circle, means to reciprocate the needles, sinkers arranged about the needles, sinker-pads for closing the beards of the needles arranged between a portion of the sinkers, a rotating frame above the sinkers, an adjustable cam carried thereby adapted to operate upon the sinker-pads to move them into position to close the beards of the needles as they descend, and pattern mechanism for controlling the adjustable cam for putting it into and out of operative position with respect to the sinker-pads.

9. In a machine of the class described, a series of reciprocating beard-needles arranged in a circle, combined with a series of radiating sinkers annularly arranged and having their ends extending between the needles, means for producing tuck-stitches upon the needles, a series of cam-pads greatly less in number than the number of sinkers and distributed at intervals between the sinkers so as to act only upon a portion of the needles to close their beards when the needles are drawn down to produce open-work, rotating cam devices to reciprocate the sinkers, and independent pattern-controlled rotating cam devices having an axis concentric with the circle of needles for operating the cam-pads at predetermined times.

10. In a machine of the class described, a circular row of beard-needles arranged in two sets one set having blind needles arranged at intervals among the ordinary needles, and the other set having ordinary needles, combined with sinkers for the needles, sinker-pads for a portion of the sinkers of the set of ordinary needles whereby the needles acted on thereby shall temporarily perform the function of blind needles and means for putting said pads into and out of operation at stated intervals.

11. In a knitting-machine of the class described, the combination of a series of beard-needles arranged in a circle, cam mechanism for reciprocating the needles, means for producing tuck-stitches upon the needles, sinkers arranged about the needles, a series of cam-pads greatly less in number than the sinkers supported by and movable independently of the sinkers and arranged in a plane about the outside of the needles to close the beards thereof and produce open-work, a traveling cam for moving the cam-pads into position for closing the beards of the needles as said needles are drawn down independently of the normal operation of the sinkers, and means to feed the yarn to the needles.

12. In a knitting-machine of the class described, the combination of a needle-cylinder having a series of reciprocating beard-needles, a series of sinkers arranged annularly about the needle-cylinder, an annular ring having cams for operating the sinkers, cam-pads arranged between and supported directly by a portion of the sinkers and having upward extensions projecting above the sinkers between the needle-cylinder and annular ring, cam devices for operating upon the extensions of the cam-pads for moving them into position for closing the beards of the needles when they are drawn down for making open-work, pattern mechanism for controlling the time of action of the cam devices which move the cam-pads, and means to feed yarn to the needles.

13. In a knitting-machine, a sinker combined with a sinker-pad formed of a U-shaped metal piece or saddle fitting over the upper edge of the sinker and forming a cam *e* at its forward end and an upward extension above the sinker.

14. A sinker for a bearded-needle knitting-machine having sinker-pads arranged upon opposite sides near its end to act as cams to close the beards of the adjacent needles, said pads being supported by and adjustable on the sinker whereby they are movable toward or from the end of the sinker.

15. A sinker for a bearded-needle knitting-machine having sinker-pads arranged near its end and upon opposite sides adapted to close the beards of needles upon each side of the sinker, and shoulders upwardly extending above the sinker by which to operate the pads.

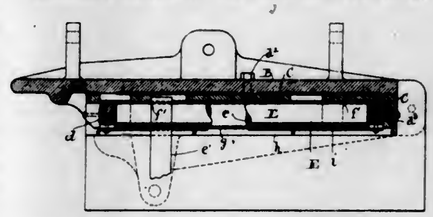
16. In a knitting-machine the combination of a needle-cylinder; two sets of needles therefor for respectively knitting the front of the stocking and the back, heel, sole and toe of the stocking each set comprising approximately one-half the needles; means for reciprocating the two sets of needles alternately; sinkers for said needles arranged in a circle about the needle-cylinder; means for operating the sinkers; means for producing tuck-stitches upon the needles; pads arranged between a portion only of sinkers of the half of the needles which are intended to knit the back, heel, sole and toe of the stocking for closing the beards of certain of the needles when drawn down so as to prevent them knitting and thereby produce open-work; pattern-controlled means for throwing said pads into operating position; and a thread-guide to feed a thread to the needles.

17. In a knitting-machine of the class described, a needle-cylinder, two sets of bearded needles for said cylinder, means for reciprocating said sets of needles alternately, means for feeding a thread to the needles, sinkers for assisting in ordinary or regular knitting, means for producing tuck-stitches upon the needles, means for producing open-work upon a portion of the needles, and pattern-controlled mechanism for controlling the time of action of the means for producing open-work upon the needles whereby lace-work effects may be formed in the knitted fabric at those parts only where desired.

18. In a machine of the class described, namely one having a needle-cylinder, two sets of bearded needles therefor arranged in a circle, means for reciprocating said sets alternately, means for knitting a heel and a toe upon one set of the needles, means for producing plain stitches upon all of the needles, and means for producing tuck-stitches upon a portion of the needles of each set, in combination with means for rendering other of the needles than those upon which tuck-stitches are made of either or both sets of needles inoperative so as to make open-work separately or associated with the tuck-stitches, and pattern mechanism for controlling the time of action of the means which render the needles inoperative when producing open-work.

19. In a machine of the class described, namely one having a needle-cylinder, two sets of bearded needles therefor arranged in a circle, means for reciprocating said sets alternately, means for knitting a heel and a toe upon one set of the needles, means for producing plain stiches upon all of the needles, and means for producing tuck-stitches upon a portion of the needles of each set, in combination with means for rendering other of the heel and toe needles than those upon which tuck-stitches are made inoperative so as to make open-work separately or associated with the tuck-stitches, and pattern mechanism for controlling the time of action of the means which render the needles inoperative when producing open-work.

824,044. MACHINE FOR PERFORATING PAPER. EDWARD SOUTHWORTH, Portland, Me. Filed July 3, 1905. Serial No. 268,041.



Claim.—1. In a machine for perforating paper, the combination of a series of perforating-punches, a corresponding die-plate, a guide-plate above said die-plate through which said punches pass, a vertically-movable punch-holding frame carrying said series of punches, a cam-shaft journaled within said frames and operating to raise and lower said frame and means for rotating said shaft.

2. In a machine for perforating paper, the combination of a series of perforating-punches, a corresponding die-plate, a guide-plate above said die-plate through which said punches pass, a vertically-movable punch-holding frame to which the upper ends of said punches are secured having therein a horizontal slot, a cam-shaft journaled within said frame having a gear-tooth fitting said slot and means for rotating said shaft.

3. In a machine for perforating paper, the combination of a series of perforating-punches having heads on their upper ends, a corresponding die-plate, a guide-plate above the die-plate through which said punches pass, a vertically-movable punch-holding frame having a lower bar through which the upper ends of said punches pass, a face-plate on said frame having an edge or shoulder for resisting the upward thrust of said punches and having a horizontal slot or groove, a cam-shaft journaled within said frame and having a tooth or projection fitting said slot to impart motion to said frame and means for rotating said shaft.

4. In a machine for perforating paper, the combination of a series of perforating-punches, a corresponding die-plate, a guide-plate above said die-plate through which said punches pass, a vertically-movable punch-holding frame to which the upper ends of the punches are secured, a cam-shaft journaled parallel with and adjacent to said frame, said cam-shaft and said frame having interlocking

projections whereby the rotation of said shaft moves said frame vertically.

824,045. **CARPET FABRIC.** CHARLES C. STEWART, Philadelphia, Pa., assignor of one-half to Archibald T. James, Philadelphia, Pa. Filed Mar. 8, 1905. Serial No. 249,127.



Claim.—1. In a carpet fabric, the combination with binding warp-threads, upper and lower weft-threads, backing or stuffer warps, pile and cushioning-warps arranged between said stuffer-warps and said pile, of means for separating said cushioning-warps and stuffer-warps.

2. In a carpet fabric, the combination with binding warp-threads, upper and lower weft-threads, backing or stuffer warps, pile and cushioning-warps arranged between said stuffer-warps and said pile, of means running between said cushioning-warps and stuffer-warps for separating said stuffer-warps and cushioning-warps.

3. In a carpet fabric, the combination with binding warp-threads, upper and lower weft-threads, backing or stuffer warps, pile and cushioning-warps arranged between said stuffer-warps and said pile, of means for separating said cushioning-warps and said stuffer-warps and for retaining each in a separate plane.

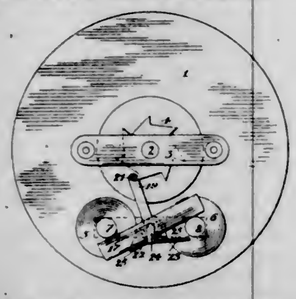
4. In a carpet fabric, the combination with binding warp-threads, upper and lower weft-threads, backing or stuffer warps, pile and cushioning-warps arranged between said stuffer-warps and said pile, of means for preventing the cushioning-warps from entering the plane of the stuffer-warps.

5. In a carpet fabric, the combination with binding warp-threads, upper and lower weft-threads, backing or stuffer warps, pile and cushioning-warps arranged between said stuffer-warps and said pile, of an additional weft-thread arranged between said stuffer-warps and cushioning-warps.

6. In a carpet fabric, the combination with binding warp-threads, upper and lower weft-threads, backing or stuffer warps, pile and cushioning-warps arranged between said stuffer-warps and said pile, of an additional weft-thread run below said cushioning-warps and above said stuffer-warps.

7. In a carpet fabric, the combination with binding warp-threads, upper and lower weft-threads, backing or stuffer warps, pile and cushioning-warps arranged between said stuffer-warps and said pile, of additional weft-threads run through between said stuffer-warps and cushioning-warps and back below said backing-warps beside the lower weft-threads.

824,046. **ELECTROMAGNET.** CHARLES F. A. STURTS, San Francisco, Cal. Filed Apr. 28, 1905. Serial No. 257,878.



Claim.—1. In an electromagnet, the combination with the spools and the pole piece or base upon which they are mounted, of a hollow standard on said base, an adjustable rod journaled in said standard and an armature carried by said rod.

2. In an electromagnet, the combination with the spools and the pole piece or base upon which they are mounted, of a hollow standard on said base, an adjustable rod journaled in said standard and an armature carried by said rod, and means for adjusting said rod in said standard.

3. In an electromagnet the combination with the spools and the pole piece or base upon which they are mounted, of a hollow standard on said base, an adjustable rod journaled in said standard and an armature carried by said rod, and a screw entering said standard and adapted to bear upon said rod.

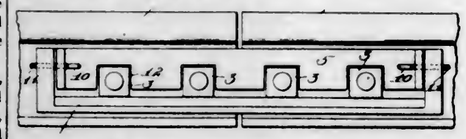
4. In an electromagnet, the combination with the spools and the pole piece or base upon which they are mounted, of a hollow standard on said base, a rod journaled in said standard, an armature carried by said rod, and a coiled spring connecting said standard and said rod.

5. In an electromagnet, the combination with the spools and the pole piece or base upon which they are mounted, of a hollow standard on said base, an adjustable rod journaled in said base, a coiled spring connecting the rod to the base, and an armature carried by said rod, substantially as described.

6. In an electromagnet, the combination with the magnet-spools of an intermediate hollow standard or bearing, a rod journaled therein and projecting beyond it, an armature carried by said rod, and a three-branched bracket having one branch secured to said standard, the other branches of which are respectively stops for the opposite ends of the armature.

7. In an electromagnet, the combination with the spools and the pole piece or base upon which they are mounted, of a hollow standard on said base, an adjustable rod journaled in said standard, an armature carried by said rod, and an arm of thin elastic material having one end connected to said adjustable rod for transmitting power derived from the movement of the armature.

824,047. **NUT-LOCK.** JAMES T. TAYLOR, Fort Worth, Tex. Filed Feb. 12, 1906. Serial No. 300,762.



Claim.—1. The combination with a railroad-rail joint, and bolts and nuts therefor, of a fish-plate having outwardly-projecting end shoulders, a locking-plate having openings therein to fit over the nuts and angular terminals to snugly bear against the inner portions of the shoulders of the fish-plate, and removable keys inserted through the angular terminals of the locking-plate and the shoulders of the fish-plate.

2. In a nut-lock, the combination with abutting rail ends, and bolts and nuts, of a fish-plate having outwardly-projecting angular shoulders at opposite ends thereof with openings extending transversely therethrough, a locking-plate having slots therein to engage the nuts and also provided with angular terminals which are fitted closely against the inner sides of the shoulders, the angular terminals of the locking-plate having openings extending transversely therethrough coinciding with the openings of the shoulders of the fish-plate, and spring-keys inserted through the coinciding openings at the ends of the two platea, the heads of the keys being disposed inwardly against the angular terminals of the locking-plate and the ends thereof spread apart adjacent to the outer surfaces of the shoulders of the fish-plate.

824,048. **INSULATED COIL FOR ELECTRICAL APPARATUS AND PROCESS OF MAKING THE SAME.** ELIHU THOMSON, Swampscott, Mass., assignor to General Electric Company, a Corporation of New York. Filed Sept. 11, 1903. Serial No. 172,739.



Claim.—1. A coil for electrical apparatus, consisting of an edgewise-wound flat conductor whose convolutions are insulated from each other and cemented together by a compound of silicious matter and silicate of soda.

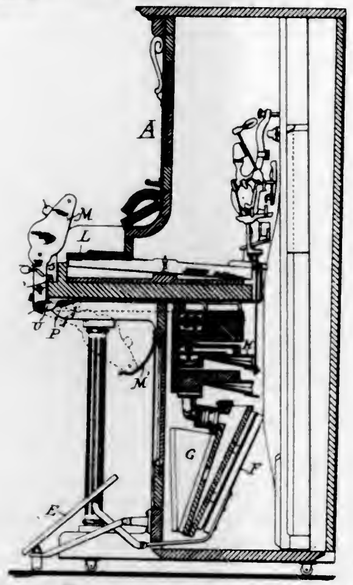
2. A coil for electrical apparatus, consisting of an edgewise-wound flat conductor whose convolutions are insulated and cemented by a compound of kaolin and silicate of soda.

3. A coil for electrical apparatus, consisting of an edgewise-wound flat conductor whose convolutions are insulated and cemented by a vitrified compound of kaolin and silicate of soda.

4. The process of making a coil for electrical apparatus, which consists in winding edgewise a flat metallic conductor, covering it with a liquid compound of kaolin and silicate of soda, closing the coil together, and heating it to vitrify the compound.

5. The process of making a coil for electrical apparatus which consists in winding a flat metallic conductor edgewise into an open helix, immersing it in a liquid compound of silicious matter and silicate of soda, closing the helix and heating it to vitrify the compound.

824,049. **MECHANICAL MUSICAL APPARATUS.** EDWIN S. VOTEY, New York, N. Y., assignor to The Aeolian Company, New York, N. Y., a Corporation of New York. Filed June 22, 1903. Serial No. 162,506.



Claim.—1. The combination of actuating mechanism of a musical instrument and the bellows and action-casing thereof, a tracker, operating connections leading from the tracker to said mechanism, and a movable support on which the tracker is mounted independently of the bellows and action-casing and which permits its movement to and from playing position above the keys to and from non-operative position below the keys, for substantially the purposes set forth.

2. The combination of pneumatic actuating mechanism of a musical instrument and the bellows and action-casing thereof, a tracker, pneumatic connections leading from the tracker to said mechanism, a take-up roll, operating connections leading from the said roll, a motor for actuating said connections and a movable support which carries the said tracker and take-up roll, and which is mounted independently of the bellows and action-casing to permit its movement between a playing position and a non-operative position, for substantially the purposes set forth.

3. The combination of pneumatic actuating mechanism of a musical instrument and the bellows and action-casing thereof, a tracker, pneumatic connections leading from the tracker to said mechanism, for the respective notes, music and take-up rolls, and a movable support on which the tracker, music and take-up rolls are mounted independently of the bellows and action-casing to permit movement from playing position to non-operative position, substantially as set forth.

4. In combination with a keyboard musical instrument having a casing, a tracker-board upon the said instrument and mounted to move in a plane transverse of its longitudinal axis and pneumatically-actuated mechanism connected therewith and controlled thereby for playing said instrument and secured within said casing, for substantially the purposes set forth.

5. In combination with a keyboard musical instrument, a tracker-board pivotally mounted upon a fixed portion of said instrument, and pneumatically-actuated mechanism connected therewith and controlled thereby and mounted in said casing for playing the said instrument, for substantially the purposes set forth.

6. In combination with a keyboard musical instrument having a casing, a tracker-board pivotally mounted upon a fixed portion of said instrument, and pneumatically-actuated mechanism connected therewith and controlled thereby and mounted in said casing for playing said instrument, the connections for mechanically actuating the music-sheet being arranged upon the said pivotal mounting, for substantially the purposes set forth.

7. In combination with a keyboard musical instrument having a casing, pneumatically-actuated mechanical means mounted in said casing for playing the instrument, and a tracker-board pivotally mounted on a fixed portion of instrument independently of said playing means, for substantially the purposes set forth.

8. In combination with a keyboard musical instrument having a casing and pneumatically-actuated mechanical means mounted in said casing for playing the instrument, a movable roll for actuating the controlling sheet or member, and a support upon which said roll is mounted independently of said pneumatically-actuated playing means, said support being adjustably secured to the casing of the instrument and movable to and from its operative position, for substantially the purposes set forth.

9. The combination in a musical instrument of a casing, pneumatic actuating mechanism for said instrument mounted in said casing, a tracker, pneumatic connection leading from the tracker to said mechanism for the respective notes, a music-roll and a movable support pivoted on a fixed portion of said instrument on which the tracker and music-roll are mounted independently of said pneumatic actuating mechanism to permit movement from playing position to non-operative position, substantially as set forth.

10. The combination in a musical instrument of a casing, pneumatic actuating mechanism for said instrument mounted in said casing, a tracker, pneumatic connections leading from the tracker to said mechanism for the respective notes, a take-up roll and a movable support pivoted on a fixed portion of said instrument on which the tracker and take-up rolls are mounted independently of said pneumatic actuating mechanism to permit movement from playing position to non-operative position, substantially as set forth.

11. The combination in a musical instrument of a casing, pneumatic actuating mechanism for said instrument mounted in said casing, a suitable tracker, pneumatic connections comprising flexible tubes leading from the tracker to said mechanism for the respective notes, a music-roll, and a movable support pivoted on a fixed portion of said instrument on which the music-roll is mounted independently of said pneumatic actuating mechanism to permit its movement from playing position to non-operative position, substantially as set forth.

12. The combination in a musical instrument of a casing, pneumatic actuating mechanism for said instrument mounted in said casing, a suitable tracker, pneumatic connections comprising flexible tubes leading from the tracker to said mechanism for the respective notes, a take-up roll, and a movable support pivoted on a fixed portion of said instrument on which the take-up roll is mounted independently of said pneumatic actuating mechanism to permit its movement from playing position to non-operative position, substantially as set forth.

13. The combination in a musical instrument of a casing, pneumatic actuating mechanism for said instrument mounted in said casing, a tracker, operating connections comprising flexible tubes leading from the tracker to said mechanism for the respective notes, and a swinging support pivoted on a fixed portion of said instrument on which the tracker is mounted independently of said pneumatic actuating mechanism to permit its movement from playing position to non-operative position, substantially as set forth.

14. The combination in a musical instrument of a casing, pneumatic actuating mechanism for said instrument mounted in said casing, a tracker, pneumatic connections leading from the tracker to said mechanism for the respective notes, a movable support pivoted on a fixed portion of said instrument on which the tracker is mounted independently of said pneumatic actuating mechanism to permit its movement from playing position to non-operative position, music and take-up rolls, driving mechanism for the music and take-up rolls, and means for controlling the driving mechanism for reversal in the playing position of the tracker, substantially as set forth.

15. The combination in a musical instrument of a casing, pneumatic actuating mechanism for said instrument mounted in said casing, a tracker, pneumatic connections leading from the tracker to said mechanism for the respective notes, a movable support pivoted on a fixed portion of said instrument on which the tracker is mounted independently of said pneumatic actuating mechanism to permit its

movement from playing position to non-operative position, music and take-up rolls, driving mechanism for the music and take-up rolls, said driving mechanism comprising shafts for the music and take-up rolls, sprocket mechanism for turning said shafts, and a reversing-lever for effectuating the rotation of either of said shafts from said sprocket mechanism, substantially as set forth.

16. The combination of the keyboard of a musical instrument, actuating mechanism and bellows and operating-pneumatics thereof, a tracker, operating connections leading from the tracker to said mechanism, for the respective notes, and a swinging support on which the tracker is mounted to permit its movement relative to the bellows and operating-pneumatics of the said actuating mechanism and upwardly in front of the keyboard or downwardly below the same, substantially as set forth.

17. The combination of the keyboard of a musical instrument, actuating mechanism and bellows and operating-pneumatics thereof, a tracker, operating connections leading from the tracker to said mechanism, for the respective notes, music and take-up rolls for moving a music-sheet across said tracker, and a swinging support on which the tracker is mounted to permit its movement relative to the bellows and operating-pneumatics of the said actuating mechanism and upwardly in front of the keyboard, or downwardly below the same, substantially as set forth.

18. The combination of a keyboard of a musical instrument, actuating mechanism and the bellows and wind-chest thereof, a tracker, operating connections leading from the tracker to said mechanism for the respective notes, a movable support pivoted to a fixed portion of the instrument below said keyboard and music and take-up rolls mounted on said support, for moving a music-sheet across the tracker, said support being adapted to be moved up in front of the keyboard, or down below the same independently of and without disturbing the bellows and wind-chest of the said actuating mechanism, substantially as set forth.

19. The combination with a suitable means of support, and an action-case and bellows secured to said support, of an automatic playing attachment hinged to the support in position to be swung up over the keyboard of a piano into playing position and down and backwardly underneath the key-bed independently of said action-case and bellows.

20. The combination with supporting means fixed to a piano beneath its key-bed, of bellows, wind-chest, action-case and key-operating apparatus secured to said supporting means and an automatic playing attachment hinged to said support in position to be swung up over the keyboard of the piano into playing position and down underneath the key-bed out of playing position independently of said action-case and bellows.

21. In combination, in apparatus for playing keyboard musical instruments, a casing and a keyboard for the instrument, a pneumatic action-case mounted in said casing, a tracker-board pivotally mounted on a fixed portion of the instrument below the keyboard independently of said action-case and provided with flexible connections extending therefrom to said action-case to permit the swinging movement of the tracker-board relative thereto.

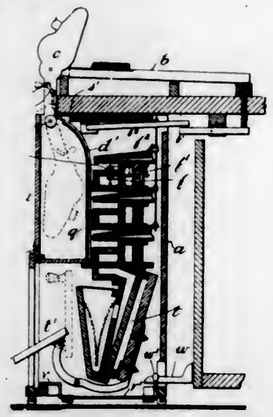
22. In a mechanically-operated keyboard instrument, a bellows and action-casing for the operating mechanism secured to the body of the instrument, and a moving portion including a tracker and sheet-moving mechanism mounted on the instrument independently of said bellows and action-casing for movement into and out of operative position.

23. In a mechanically-operated keyboard instrument, a bellows and action-casing for the operating mechanism secured to the body of the instrument, and a moving portion including a tracker and sheet-moving mechanism mounted on the instrument independently of said bellows and action-casing for movement into operative position above the keys of the instrument and out of such operative position.

824,050. **PORTABLE PLAYER FOR MUSICAL INSTRUMENTS.** EDWIN S. VOTEY, New York, N. Y., assignor to The Aeolian Company, New York, N. Y., a Corporation of New York. Filed June 23, 1903. Serial No. 162,506.

Claim.—1. The combination of the keyboard of a musical instrument, a case separate from the instrument and located under the keyboard, actuating mechanism connected with that of the instrument, a tracker, operating connections leading from the tracker to said mechanism, for the respective notes, and a swinging support on the case on which the tracker is mounted to permit its movement upwardly in front of the keyboard or downwardly below the same, substantially as set forth.

2. The combination of the keyboard of a musical instrument, a case separate from the instrument and located under the keyboard, actuating mechanism connected with that of the instrument, a tracker, operating connections leading from the tracker to said mechanism, for the respective notes, music and take-up rolls for moving a music-sheet across said tracker, and a swinging support on the case on which the tracker is mounted to permit its movement upwardly in front of the keyboard, or downwardly below the same, substantially as set forth.



3. The combination of a keyboard of a musical instrument, a case separate from the instrument and located under the keyboard, actuating mechanism connected with that of the instrument, a tracker, operating connections leading from the tracker to said mechanism, for the respective notes, a movable support on said case, and music and take-up rolls mounted on said support for moving a music-sheet across the tracker, said support being adapted to be moved up in front of the keyboard, or down below the same, substantially as set forth.

4. The combination of a keyboard of a musical instrument, of a case below the keyboard provided with a recess in front, actuating mechanism located in the case and connected with that of the instrument, a tracker, operating connections leading from the tracker to said mechanism, for the respective notes, and a movable support on said case on which the tracker is mounted, said support being movable upwardly in front of the keyboard or downwardly into the said recess, for permitting mechanical and manual playing, respectively, substantially as set forth.

5. The combination of a keyboard of a musical instrument, of a case below the keyboard provided with a recess in front, actuating mechanism located in the case and connected with that of the instrument, a tracker, operating connections leading from the tracker to said mechanism, for the respective notes, a take-up roll, and a movable support on said case on which the take-up roll is mounted, said support being movable upwardly in front of the keyboard or down into the said recess, for permitting mechanical and manual playing, respectively, substantially as set forth.

6. The combination of a keyboard of a musical instrument, of a case below the keyboard provided with a recess in front, actuating mechanism located in the case and connected with that of the instrument, a tracker, operating connections leading from the tracker to said mechanism, for the respective notes, a movable support on said case on which the music-roll is mounted, said support being movable upwardly in front of the keyboard or down into the said recess, for permitting mechanical and manual playing, respectively, substantially as set forth.

7. In a portable player for musical instruments, the combination of a case detachable from and applicable to such an instrument provided with a front recess and in which the operative parts of the player are contained, and a support for a tracker, music-roll and take-up pivoted at the top of the case and movable into said recess, substantially as set forth.

8. In a portable player for musical instruments, the combination of a case detachable from and applicable to such an instrument provided with a front recess and in which the operative parts of the player are contained, and a support for a take-up roll pivoted at the top of the case and movable into said recess, substantially as set forth.

9. The combination with the keyboard and pedals of a manually-played musical instrument, of a portable case located under the keyboard, actuating mechanism in the case and connected with that of the instrument, a tracker, operating connections leading from the tracker to said mechanism, for the respective notes, a movable support on said case on which the tracker is mounted to permit its movement in front of the keyboard or down into the case, and extension-pedals located at the front of the said case and connected with the main pedals of the instrument, substantially for the purposes set forth.

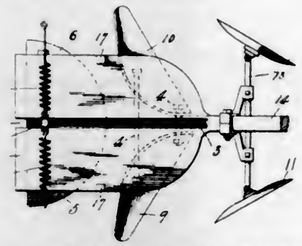
10. A mechanical player for keyboard musical instruments adapted to be positioned beneath the keyboard of such instrument and integrally removable from such position, having means for carrying and operating a controlling music-sheet, and a support on which said sheet-carrying means is movably mounted to occupy alternatively an operative position above such keyboard, or a non-operative position beneath such keyboard.

11. A mechanical player for keyboard musical instruments including a casing adapted to be positioned beneath the keyboard of such instrument and integrally removable from such position, power supplying means for winding a music-sheet in said casing, means carrying rotatable rolls for said music-sheet, and a support on which said roll-carrying means is movably mounted to occupy alternatively an operative position above such keyboard, or a non-operative position beneath such keyboard.

12. A mechanical player for keyboard musical instruments including a casing adapted to be positioned beneath the keyboard of such instrument and integrally removable from such position, a movable front portion on said casing, power-supplying means for winding a music-sheet in said casing, means carrying rotatable rolls for such music-sheets, and a support on which said roll-carrying means is movably mounted to occupy alternatively an operative position above said keyboard, or a non-operative position beneath said keyboard and behind said front portion.

13. In combination with a musical instrument having a keyboard extending forwardly of its lower front portion and a plurality of means beneath said keyboard for separately operating its sound-producing devices, a mechanical player adapted to be positioned beneath said keyboard and integrally removable from said position, having means for cooperating with said first-named means to sound said instrument means for carrying and operating a controlling music-sheet, and a support on which said sheet-carrying means is movably mounted to occupy alternatively an operative position above said keyboard, or a non-operative position beneath said keyboard.

824,051. **BEET-TOPPER.** JAMES F. WILLSON, Deuel, Colo., assignor of two-thirds to I. G. Aker and Frank W. Buckley, Deuel, Colo. Filed June 24, 1905. Serial No. 266,826.



Claim.—1. In a beet-topper, a weighted gage member and a topping-knife mounted upon a vertical knife, said vertical knife being adapted to be rigidly and adjustably secured to the gage-plate, said plates and knives being capable of free vertical movement.

2. A beet-topper comprising a gage member, a vertical knife carried thereby and adapted to cut into the beet, and knives carried by said vertical knife adapted to top the beet.

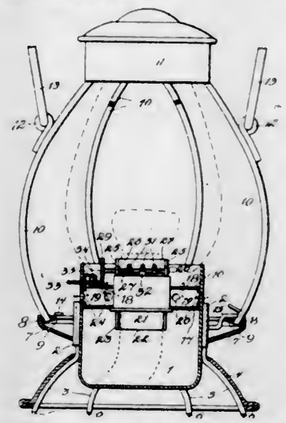
3. A beet-topper comprising a gage member, a vertical knife carried thereby, adapted to cut into the beet and approximately horizontal knives adapted to top the beet.

4. A beet-topper comprising a gage member, a vertical knife carried thereby adapted to cut into the upper part of the beet, knives carried by said vertical knife adapted to top the beet, and means located ahead of the topping-knives for removing the leaves.

5. A beet-topper comprising a gage member, a vertical knife adjustably secured thereto adapted to cut into the beet, crown-cutting knives secured to said vertical knife, and leaf-severing knives located ahead of said crown-cutting knives adapted to throw the severed leaves out of the path of said knives.

6. A beet-topper comprising a weighted gage member, a vertical knife adjustably secured thereto adapted to cut into the upper part of the beet, crown-cutting knives secured to said vertical knife adjacent its lower edge, leaf-severing knives secured to said gage member ahead of said crown-cutting knife adapted to throw the severed leaves out of the path of said knives and cutting-disks located ahead of said leaf-cutting knives for the purposes hereinbefore set forth.

824,052. **SIGNAL-LANTERN.** WILLIAM A. WRIGHT, Masonville, N. J., assignor of one-half to A. J. Lamborn, Philadelphia, Pa. Filed Jan. 21, 1905. Serial No. 242,101.



Claim.—1. A lantern comprising a body, a base, legs secured on the inner face thereof and projecting above and below the same, and sleeves slidably and detachably connecting the projecting upper ends of said legs to said body.

2. In a lantern, a cup, disks arranged therein, said cup and one of said disks formed with air-ports, a wick-tube passing through the disks, a housing on the upper disk, a gear arranged therein projecting therethrough and through the said cup, a shaft for said gear having a bearing in said housing and said upper disk, and a wick-regulating means operated by said gear.

3. A lantern comprising a globe-guard, an oil-cup, a plurality of sleeves thereon, a base, projections on said base removably received in said sleeves, and a rim secured to said oil-cup about said sleeves for receiving the globe-guard.

4. In combination with the oil-cup of a lantern, of two disks spaced to form an air-chamber in said oil-cup, a cup passing through the disks, a wick-tube arranged in the cup and spaced therefrom forming a filling-space for said oil-cup, and wick-regulating means mounted above said cup and on the side of said wick-tube.

824,053. **SIGNAL-LANTERN.** WILLIAM A. WRIGHT, Masonville, N. J., assignor of one-half to A. J. Lamborn, Philadelphia, Pa. Filed Jan. 21, 1905. Serial No. 242,102.

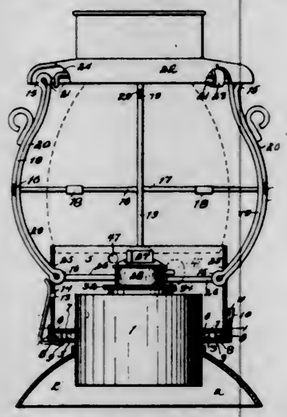
Claim.—1. In a lantern, a frame comprising sections, each section formed of a single piece of wire doubled to form vertical members and the ends being bent on opposite sides thereof and joined to the adjacent end of the adjacent section.

2. In a lantern, a frame comprising sections, each section formed of a single piece of wire bent to form a vertical member, the ends of each section being bent at right angles to said vertical member on opposite sides thereof and joined to the corresponding end of the adjacent section.

3. In a lantern, a frame comprising a wire bent to form vertical members, the ends of each of said vertical members being bent substantially at right angles thereto to form a medial ring.

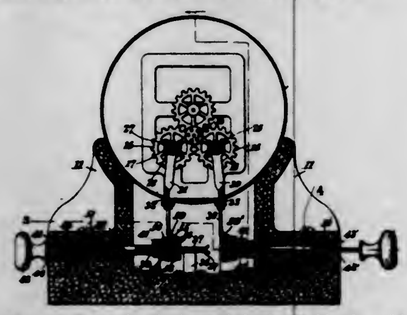
4. In a lantern, a frame comprising a wire bent to form an inner vertical member, the upper end of said wire being bent downwardly and at right angles to the vertical member on one side thereof, and the lower end being bent upwardly and at right angles to the vertical member on the opposite side thereof.

5. In a lantern, an oil-cup, a rim surrounding the same, a peripheral upturned perforated flange thereon, a cup formed with a concentric opening permitting it to be slipped over said oil-cup, said cup fitting within the said upturned flange and being perforated, said cup being spaced from said rim thereby forming an air-chamber therebetween.



6. In a lantern, an oil-cup provided with a slot, a screw-ring on said oil-cup, a burner, a wick-tube, a screw-collar loosely carried by and rotatable on the burner for engagement with the screw-ring, said wick being arranged within said slot.

824,054. ELECTRIC TIME-SWITCH. ANTHONY B. ZIERLEYN, Grand Rapids, Mich. Filed Dec. 1, 1905. Serial No. 289,341.

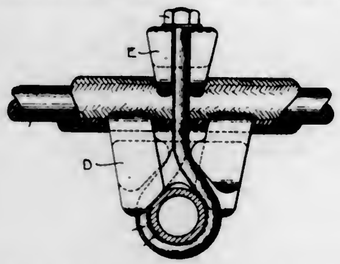


Claim.—1. In an electric time-switch, the combination with a time-train, of a pair of independently-adjustable timing devices receiving motion therefrom, independently-operable circuit-controlling members, one of which is movable to close the circuit, and the other to break the same, springs tending to operate said members, levers under the control of the timing devices, said levers normally holding the circuit-closing members from movement, and a central contact member with which both of said circuit-closing members engage to close the circuit.

2. In an electric time-switch, the combination with a base, of a pair of spaced metallic plates, switch-blades forming circuit terminals and arranged by engagement with said plates to close the circuit, blocks carrying said blades, metallic stems secured to the blades and provided with knobs or handles for manual adjustment, springs acting on said stems and tending to move the blocks, spring-actuated catches carried by said blocks, a pair of pivotally-mounted levers engaging with the catches, and independently-adjustable timing devices controlling the movement of said levers.

3. In an electric time-switch, the combination with a base and brackets, of a clock mechanism supported by the brackets, a pair of metallic plates arranged between the brackets, circuit-closing blades arranged to engage between the plates, the base having webs or flanges for guiding said blades, metallic stems carrying the blades, metallic plates arranged between the base and bracket members, and arranged to form sockets for the stems, springs acting on said stems and tending to move the blades, spring-actuated catches carried by the block, a pair of levers pivoted to the clock-train and arranged to engage the catches, springs tending to actuate said levers, timing-cams for controlling the movement of the levers, and an adjustable arbor having a collar for timing the operation of each cam.

824,055. INSULATOR. HARRY M. ACLY, Pittsfield, Mass., assignor to Stanley Electric Manufacturing Company, Pittsfield, Mass., a Corporation of New Jersey. Filed Nov. 12, 1904. Serial No. 232,464.



Claim.—1. In an insulator, a U-shaped bolt having its base bent out of the plane of the U to engage a support lying in the plane of the U, two detachable insulating-blocks having lateral grooves adapted to be engaged by the legs of said U-shaped bolt, and clamping means at the ends of said bolt.

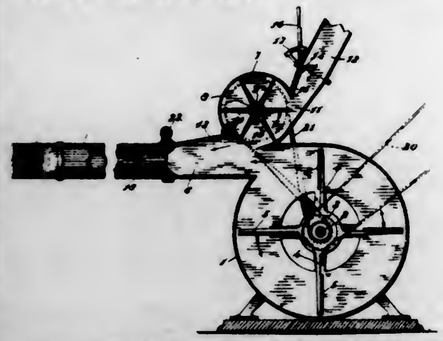
2. In an insulator, a U-shaped bolt having its base bent to form a loop in a plane at an angle to the plane of the U, two detachable insulating-blocks having lateral grooves adapted to be engaged by the legs of said bolt, and clamping means at the ends of said bolt.

3. In an insulator, a U-shaped bolt having its base bent out of the plane of the U to engage a support, an insulating-block having lateral grooves adapted to slide on the legs of said bolt and having a groove on its under surface adapted to engage said support, a second insulating-block also having lateral grooves, and clamping means at the ends of said bolt engaging said second block.

4. In an insulator, a U-shaped bolt having its base bent to form a loop in a plane at an angle to the plane of the U, an insulating-block provided with lateral grooves adapted to be engaged by said bolt and having grooves on its lower and upper surfaces at right angles to each other adapted respectively to engage a support and to receive a conductor, a second insulating-block having lateral grooves and a groove on its lower surface adapted to engage the conductor, and clamping means at the ends of the bolt engaging said second block.

5. In an insulator, a U-shaped bolt having its base bent out of the plane of the U to engage a support lying in the plane of the U, two detachable insulating-blocks having lateral grooves adapted to be engaged by the legs of said bolt and having V-shaped grooves on their adjacent surfaces, and clamping means at the end of said bolt.

824,056. PNEUMATIC GRAIN-CONVEYER. JAMES M. AKERS, Gays, Ill., assignor to Mattoon Grain Conveyor Company, Mattoon, Ill. Filed May 4, 1905. Serial No. 258,846.

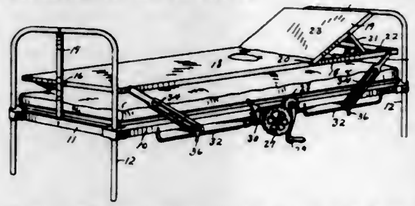


Claim.—1. In a pneumatic conveyer, a fan-casing having a discharge-spout, an auxiliary casing constituting a feeder-casing located above and communicating with the discharge-spout, a feed-spout communicating with the feeder-casing, and a paddle-wheel

supported for rotation within, and having wings or paddles extending to the walls of said feeder-casing to prevent the passage of material between said wings and the walls of the casing.

2. In a pneumatic conveyer, a fan-casing having a discharge-spout, an auxiliary casing constituting a feeder-casing located adjacent to and communicating with a discharge-spout, a paddle-wheel supported for rotation within the auxiliary casing, a feed-spout connected with the latter, a valve or damper in the feed-spout, and means for operating said valve or damper and for securing it at various adjustments.

824,057. INVALID-BED. WILLIAM H. ARMSTRONG, JAMES M. PUGH, and ROBERT W. MAGEE, Indianapolis, Ind., assignors to Wm. H. Armstrong & Company, Indianapolis, Ind., a Corporation of Indiana. Filed Jan. 23, 1905. Serial No. 242,275.

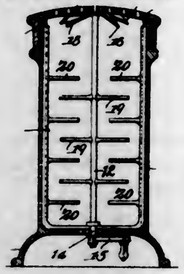


Claim.—1. The combination with a bedstead, of a frame to which sheeting is secured, a supporting-bar pivoted at the upper end to said frame at each side near the end thereof, longitudinally-extending guideways connected with the side rails of said bedstead, rods extending under the bedstead and loosely through said guideways with the ends protruding and pivotally mounted in connection with the lower ends of said supporting-bars, and means for moving said rods simultaneously toward the ends of the bedstead.

2. The combination with a bedstead, of a frame to which sheeting is secured, a slotted supporting-bar pivoted at the upper end to said frame at each side near the end thereof, longitudinally-extending guideways connected with the side rails of the bedstead, rods extending through the bedstead and loosely through said guideways with the ends protruding through the lower ends of said supporting-bars, means for moving said rods simultaneously toward the end of the bedstead, one end of each of said rods being threaded, clamping-tubes on said rods and a clamping-nut mounted on the threaded end of each rod for clamping the lower ends of said supporting-bars against the clamping-tubes.

3. The combination with a bedstead, of a frame to which sheeting is secured, a supporting-bar pivoted at the upper end to said frame at each side near the end thereof, longitudinally-extending guideways connected with the side rails of the bedstead, rods extending under the bedstead and loosely through said guideways with the ends protruding and pivotally mounted in connection with the lower ends of said supporting-bars, means for moving said rods simultaneously toward the ends of the bedstead, a shaft mounted under the bedstead about midway thereof transversely, means for actuating the same, a gear-wheel on each shaft near each end thereof, and a push-rod pivotally connected with each of said rods near each side of the bed that are provided with loops at their other ends surrounding the gears on said shaft, each loop having a rack for engaging the teeth of said gears on said shaft whereby said push-bars are moved horizontally in opposite directions toward the ends of the bed by the actuation of said shaft.

824,058. CONDIMENT-HOLDER. WILLIAM J. BAIN, Pierce City, Mo. Filed Oct. 20, 1905. Serial No. 283,684.



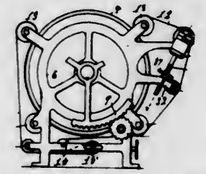
Claim.—1. A condiment-holder comprising a receptacle, a beater mounted to rotate therein, a removable device mounted within the receptacle, and inwardly-directed arms upon said device and adapted to coöperate with the beater.

2. A condiment-holder comprising a grooved receptacle, having a closure, a series of rotatable beater-arms within the receptacle, means movable therewith for scraping material from the closure and forcing it therethrough, a rod detachably seated in the grooves and arms extending from the rod into the receptacle and coöperating with the rotatable beater-arms.

3. A condiment-holder comprising a receptacle having grooves therein, a rod removably seated in the grooves, converging arms upon the rod and a beater mounted to rotate within the receptacle to coöperate with the arms.

4. A condiment-holder comprising a receptacle having grooves in the wall thereof, a rod removably seated in the grooves, arms extending from the rod, and a beater mounted to rotate in the receptacle and to coöperate with the arms.

824,059. AUTOMATIC GUIDE FOR ENDLESS APRONS. ALBERT BESS, Hamilton, Ohio. Original application filed Jan. 21, 1905. Serial No. 242,056. Divided and this application filed Sept. 7, 1905. Serial No. 277,298.



Claim.—1. The combination of a pivotally-supported housing, a roll thereon, a longitudinally-movable roll, and means actuated thereby to change the angle of the housing on the pivot.
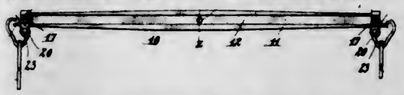
2. The combination of a pivotally-supported housing, a roll journaled thereon, a roll movable longitudinally and journaled in fixed bearings, and screw mechanism automatically engaged and actuated intermittently thereby to change the angle of the housing on the pivot.

3. The combination of a housing pivotally supported at a fixed point, a roll journaled thereon, a roll journaled and longitudinally movable in fixed bearings, and screw-reversing mechanism adapted to be automatically engaged and actuated thereby to move the housing in opposite directions on the pivot.

4. The combination of a housing movable on a pivot and provided with an adjustable socket in one end portion, a screw, and a spherical nut adjustably threaded thereon and movable within the socket.

5. The combination of an endless apron, a supporting-roll therefor responding longitudinally to the lateral movements of the apron, a pivotally-supported housing, a guide-roll thereon in contact with the apron, a screw arranged to move the housing, and reversing mechanism therefor arranged to be automatically engaged and disengaged by the longitudinal movements and actuated by the rotative movement of said roll.

824,060. WHIFFLETREE. PETER BLONDELL, Tonawanda, N. Y., assignor to The Blondell Steel Company, Buffalo, N. Y., a Corporation of Arizona Territory. Filed Oct. 29, 1904. Serial No. 230,592.



Claim.—1. A whiffletree formed of metal and consisting of a bar having longitudinal flanges connected by a web of equal width throughout its length, one of said flanges being gradually reduced in thickness toward opposite ends.

2. A whiffletree formed of metal and consisting of a bar having tapering longitudinal flanges connected by an intermediate web of equal width throughout its length.

3. A whiffletree formed of metal and comprising a bar tapering toward opposite ends and whose cross-section is in the form of an I-beam, the longitudinal flanges of the bar being gradually reduced toward opposite ends.

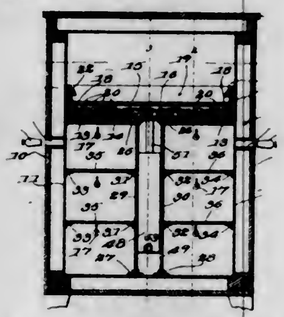
4. A whiffletree formed of metal and consisting of longitudinal

flanges and a web connecting said flanges, one of said flanges being longer than the other to form end extensions for coöperation with suitable coupling-hooks.

5. A whiffletree whose cross-section is that of an I-beam, and a clip at each end of the bar fitting around the flanges of the same and having a pair of forwardly-extending ears for the reception of suitable coupling-hooks.

6. A whiffletree consisting of a bar having opposite longitudinal flanges and a web connecting said flanges, one of said flanges being longer than the other to form end extensions and the web having tapering continuations at opposite ends to strengthen said end extensions.

824,061. **REFRIGERATOR.** LIBBIE BORDEN, Spokane, Wash. Filed July 10, 1905. Serial No. 268,985.



Claim.—1. In a refrigerator, an inclosing casing having a closure at its upper end and interior supporting-cleats spaced below the closure and an opening in one of its side walls below said cleats, said casing provided with spaced guides upon its floor, a receptacle for filtering material supported upon said cleats and provided with spaced guide members upon its lower face in vertical alinement with the guide members in the floor of said casing, a tray for the ice bearing upon said receptacle and discharging the water resulting from the melting ice into the same, spaced plates extending between said receptacle and the floor of said casing and slidably engaging said guide members, a water-receiver disposed between said plates for receiving the filtered water from said receptacle, a closure for the central portion of said side-wall opening and bearing against said plates, and doors swinging from said casing and closing against said central closure member.

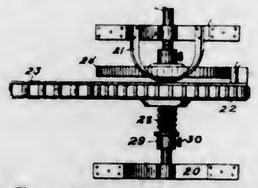
2. In a refrigerator, an inclosing casing having a closure at its upper end and an opening in one of its side walls, a receptacle for filtering material detachably supported within said casing and spaced below said upper end and removable through the same, a tray for the ice bearing upon said receptacle and discharging the water resulting from the melting ice into the same, spaced plates extending between the bottom of said receptacle and the floor of the casing, a water-receiver disposed between said plates for receiving the filtered water from said receptacle, a detachable closure for the central portion of said side-wall opening and bearing against said plates, and doors swinging from said casing and closing against said central closure member.

3. In a refrigerator, an inclosing casing having a closure at its upper end and an opening in one of its side walls, a receptacle for filtering material detachably supported within said casing and spaced below said upper end and with a discharge-pipe depending therefrom, a tray for the ice bearing upon said receptacle and discharging the water resulting from the melting ice into the same, spaced plates extending between the bottom of said receptacle and the floor of the casing, a water-receiver disposed between said plates for receiving the filtered water from said receptacle, a detachable closure for the central portion of said side-wall opening and bearing against said plates, and doors swinging from said casing and closing against said central closure member.

4. In a refrigerator, an inclosing casing having a closure at its upper end and with an opening in one of its side walls, a receptacle for filtering material detachably supported within said casing and spaced below said upper end and with a discharge-pipe depending therefrom, a tray for the ice bearing upon said receptacle and discharging the water from the melting ice into the same, spaced plates extending between the bottom of said receptacle and the floor of the casing, a water-receiver disposed between said plates for receiving the filtered water from said receptacle and coupled to said discharge-pipe, and with a threaded aperture in its outer side, a detachable closure for the central portion of said side-wall opening and bearing against said plates and with an aperture in alinement with said threaded aperture, a draw-off faucet having a threaded terminal for engaging said threaded aperture through the aperture in said central closure member, and doors swinging from said casing and closing against said central closure member at opposite sides of said faucet.

5. In a refrigerator, an inclosing casing having an opening in one of its side walls, a receptacle for filtering material supported within said casing above said opening, a tray for the ice above said filter-receptacle and discharging the water resulting from the melted ice into the filtering material, spaced plates extending between the bottom of said receptacle and the floor of the casing, a water-receiver disposed between said plates for receiving the filtered water from said receptacle, a detachable closure for the central portion of said side-wall opening, and doors swinging from said casing and closing against said central closure member.

824,062. **CLUTCH MECHANISM FOR DISPLAY DEVICES.** JOSEPH W. BRAGGTAD, Huron, S. D. Filed Aug. 22, 1905. Serial No. 275,248.



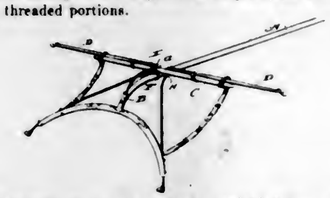
Claim.—1. The combination with a drive-shaft, of a drive-wheel rigidly mounted upon said shaft and formed with a clutch-face, a power-transmission wheel formed with a clutch-face corresponding to the clutch-face upon said drive-wheel, said power-transmission wheel being movable in the direction of the length of the said shaft, brackets for supporting said shaft and an extension carried by one of said brackets, an extension carried by said power-transmission wheel adapted to engage said first-named extension at regular intervals during the rotary movement of said transmission-wheel, whereby to disengage said transmission-wheel from said drive-wheel and means for returning said power-transmission wheel into engagement with said drive-wheel after each disengagement therefrom.

2. A power-transmission gearing embodying in combination with a drive-shaft, a drive-wheel rigidly mounted upon said shaft and formed with a clutch-face, a power-transmission wheel loosely mounted upon said shaft, power-transmission means connected to said power-transmission wheel, said power-transmission wheel being formed with a clutch-face corresponding to the clutch-face on said drive-wheel, means for supporting said shaft, a cam-faced member carried by said supporting means, a cam-faced extension carried by said power-transmission wheel adapted to engage said cam-faced member at intervals during the rotatory movement of said wheel whereby to disengage the same from the drive-wheel and a spring for returning said power-transmission wheel into engagement with the drive-wheel after each disengagement thereof.

3. A power-transmission gearing embodying in combination with a drive-shaft, a drive-wheel rigidly mounted upon said shaft and being formed with a clutch-face, a power-transmission wheel loosely mounted upon said drive-shaft, said power-transmission wheel being formed with a corresponding clutch-face whereby to engage said drive-wheel, brackets for supporting said shaft, an arc-shaped arm carried by one of said brackets, a cam-faced extension carried by said transmission-wheel adapted to engage said arc-shaped arm at regular intervals during the rotatory movement of said transmission-wheel whereby to disengage the same from the drive-wheel, and adjustable means for returning said power-transmission wheel into engagement with the drive-wheel after each disengagement thereof.

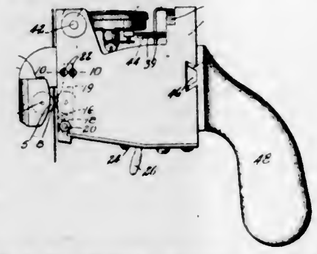
824,063. **COUPLING FOR DOUBLETREES AND SWINGLETREES.** LOUIS BUSE, Dallas City, Ill. Filed Nov. 7, 1905. Serial No. 286,196.

Claim.—1. The combination of a support, a swinging tree, a pivot-bolt extending vertically through and connecting the support and the tree, opposed wear-plates interposed between the support and the tree and having central apertures receiving the pivot-bolt and apertured lugs extending beyond the support and the tree, respectively; one of said wear-plates also having a central portion journaled in the other wear-plate, a yoke straddling the support and having integral arms which terminate in threaded portions extending through the apertured lugs of the adjacent wear-plate, nuts mounted on said threaded portions, a yoke straddling the tree and having integral arms which terminate in threaded portions extending through the apertured lugs of the adjacent wear-plate, and nuts mounted on said threaded portions.



2. The combination of a support, a swinging tree, a pivot-bolt extending vertically through and connecting the support and the tree, opposed wear-plates interposed between the support and the tree and having central apertures receiving the pivot-bolt and apertured lugs extending beyond the support and the tree, respectively; one of said wear-plates also having a central portion journaled in the other wear-plate, a yoke straddling the support and having integral arms which terminate in threaded portions extending through the apertured lugs of the adjacent wear-plate, nuts mounted on said threaded portions, a yoke straddling the tree and having a raised flange on its upper side, around the pivot-bolt and also having integral arms which terminate in threaded portions extending through the apertured lugs of the adjacent wear-plate, nuts mounted on said threaded portions, a major yoke disposed at right angles to the tree and the support and having a recess in the under side of its top receiving the raised flange of the upper yoke and an aperture in said top receiving the pivot-bolt and also having diverging, apertured legs, and transverse bolts extending through and connecting said apertured legs and the support.

824,064. **WIRE-GAGE.** JOHN G. CALLAN, Lynn, Mass., assignor to General Electric Company, a Corporation of New York. Filed Dec. 31, 1904. Serial No. 239,067.



Claim.—1. In a portable gage, the combination of a main frame having an arm projecting therefrom, a stationary roll journaled in said arm and projecting beyond both sides thereof, a transversely-movable roll normally spring-pressed toward said stationary roll, and means for indicating the extent of separation of said rolls.

2. In a portable gage, the combination of a main frame having an arm projecting therefrom, a stationary roll journaled in said arm and projecting beyond both sides thereof, a transversely-movable roll, a pivoted frame mounted on said main frame and carrying said movable roll, a spring acting upon said pivoted frame tending to move said rolls together, and means for indicating the extent of separation of said rolls.

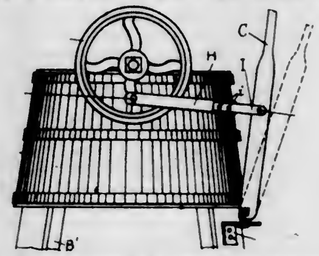
3. In a portable gage, the combination of a main frame having an arm projecting therefrom, a stationary roll journaled in said arm, a transversely-movable roll, a pivoted frame in which said movable roll is journaled, bearing-blocks for said pivoted frame, means for independently adjusting said blocks, and means for indicating the extent of separation of said rolls.

4. In a portable gage, the combination of a main frame having a handle at one end and an arm at the other, a stationary roll journaled in said arm, a transversely-movable roll to coöperate therewith, a pivoted frame in which said movable roll is journaled, a spring acting on said pivoted frame to move said movable roll toward said stationary roll, a trigger arranged to retract said spring, and means to indicate the extent of separation of said rolls.

5. In a portable gage, the combination of a main frame, a stationary roll journaled therein, a spring-pressed pivoted frame mounted on said main frame, a movable roll journaled in said pivoted frame, a biased pointer pivoted in proximity to said pivoted frame and provided with an adjustable arm normally resting at one end upon said pivoted frame, and means for retracting said frame.

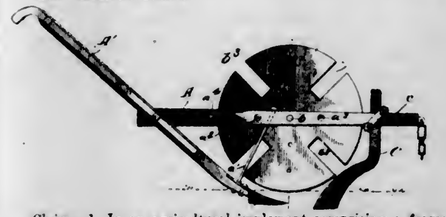
6. In a portable gage, the combination of a frame having an arm extending therefrom provided with a chambered end portion projecting beyond the sides of the arm, a roll journaled in said end portion, a transversely-movable roll normally pressed toward the other roll, and means for indicating the extent of separation of said rolls.

824,065. **ATTACHMENT FOR WASHING-MACHINES.** CHARLES A. COLBY, St. Joseph, Mo. Filed Aug. 14, 1905. Serial No. 274,102.



Claim.—In an attachment for a washing-machine provided with a fly-wheel, a supporting-arm rigidly attached on the lower part of the machine, an L-shape rod near the outer end of said arm, a vertical lever its lower end carried pivotally on said rod, a reversing-arm, a crank-pin on said wheel carrying the inner end of said pitman, the duplicate plates rigidly fastened on the outer end of said pitman, the outer ends of said plates having pivotal connection with said lever, and the washers, nuts, bolts and pin-fastenings substantially as shown and described.

824,066. **COMBINED COTTON SCRAPER, BLOCKER, AND CULTIVATOR.** WILLIAM R. COX, Waldron, Ark. Filed Aug. 19, 1905. Serial No. 274,916.



Claim.—1. In an agricultural implement comprising a frame and a radially-recessed blocker-wheel mounted to rotate in said frame, and adjustable means mounted in said frame, to limit the transverse movement of said wheel.

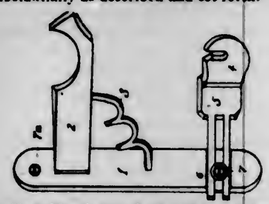
2. In a cotton scraper, blocker and cultivator, the combination with a frame, of vertically-disposed front right and left scrapers secured to said frame, a radially-recessed blocker-wheel, adjustable means mounted in said frame at each side of the wheel for preventing transverse motion of said wheel, and right and left cultivator-blades secured to said frame to the rear of said blocker-wheel.

3. In a cotton-scraper, blocker and cultivator, the combination with a frame, of vertically-disposed front right and left scrapers secured to said frame, a radially-recessed blocker-wheel, and a horizontally-disposed cleaner or scraper in the rear of the blocker-wheel and adjacent thereto.

824,067. **ADJUSTABLE WINDOW SHADE AND CURTAIN BRACKET.** ADAM DENNIS, Findlay, Ohio. Filed Aug. 11, 1905. Serial No. 273,704.

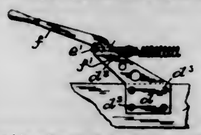
Claim.—1. The combination and arrangement of the parts constituting the adjustable window shade and curtain bracket, and consisting of a back having a rectangular groove near its lower end, a

horizontal extending arm near its upper end, a circular recess near the outer end and a brace supporting said arm, an adjustable slide having one forked end consisting of two rectangular tines adapted to engage with a clamping-screw in said rectangular groove, and a shade-fixture attached at right angles to the other end of said adjustable slide, substantially as described and set forth.



2. In an adjustable window shade and curtain bracket, the combination with a back having a rectangular groove, of a horizontal extending arm with brace-support and circular recess near its outer end, an adjustable slide having one forked end consisting of two rectangular tines, a clamping-screw and washer engaging therewith in said rectangular groove, a shade-fixture attached at right angles to the other end of said adjustable slide, substantially as described and set forth.

824,068. BED. JASPER L. DODGE, Providence, R. I., assignor of one-third to John Q. Bradish and one-third to Stanley P. Bradish, Providence, R. I. Filed Sept. 11, 1905. Serial No. 277,924.



Claim.—In combination with the side rails of a bed, a bracket secured adjacent each end of each rail and each embodying a hook-shaped upper end with an aperture disposed to the rear of said upper end and below the same, an elastic bed-bottom having bars attached to its ends with elongated apertures formed adjacent the ends of the bars and being of greater length than the width of said hook-shaped bracket ends, to permit a wrench to be received in said elongated apertures and to engage in the bracket-aperture to enable said bars to become engaged over said hook-shaped ends.

824,069. NON-CORROSIVE AND ANTIFOULING PAINT OR COMPOSITION. FRANCIS B. DUNNETT, London, England, assignor to Humidine, Limited, London, England, a Corporation of Great Britain and Ireland. Filed Oct. 23, 1905. Serial No. 284,023.

Claim.—1. A non-corrosive and antifouling paint or composition comprising petrolatum, asphaltum, wood-tar, and a coloring-matter.

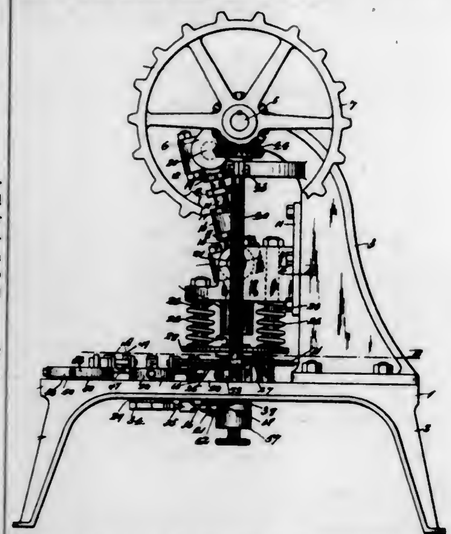
2. The herein-described non-corrosive and antifouling paint or composition consisting of petrolatum eighty parts, asphaltum ten parts, wood-tar seven parts, and a poisonous pigment or coloring-matter three parts.

3. The process herein described for producing a non-corrosive and antifouling paint from petrolatum which consists in melting petrolatum and adding thereto asphaltum and Stockholm tar, boiling these ingredients together and when sufficiently cold so as to prevent volatilization, adding poisonous coloring-matter substantially as described.

824,070. GLASS-MOLDING MACHINE. HARRY A. DWYER, Marion, Ind. Filed Feb. 2, 1906. Serial No. 299,075.

Claim.—1. In a glass-molding machine, the combination with a supporting-table, a journal situated at right angles to and projecting above the trued horizontal surface of said table, an arm extending radially and horizontally therefrom, a journal retaining and clamping nut, a mold-carrier yieldingly connected to said radial arm and a mold eccentrically pivoted to said mold-carrier and resting on said table, of a die or rammer situated vertically over the center of the path of said mold, and means for continuously reciprocating said die or rammer and for revolving said arm at regular and equal intervals to move said mold along equal portions of its circular path.

2. In a glass-molding machine, the combination with a rigid supporting-table, a journal situated at right angles to and projecting above the surface thereof, an arm extending radially therefrom and a mold eccentrically pivoted to said arm and resting on said table, of a die or rammer situated vertically over the path of said mold, a yielding table situated directly under the said die to support the mold to yieldingly resist the pressure of said die and means for reciprocating said die or rammer and for intermittently revolving said arm to move said mold into position under and from said die.



3. In a glass-molding machine, the combination with a rigid supporting-table, a journal situated at right angles to and projecting above the surface thereof, an arm extending radially therefrom and a mold eccentrically pivoted to said arm and resting on said table, of a die or rammer situated at one side of said journal and vertically over a point in the path of said mold, a yielding table situated directly under the said die to support the mold and to resist the pressure of the said die and means for continuously reciprocating said die or rammer and for intermittently revolving said arm to move said mold into position under and from said die.

4. In a glass-molding machine, the combination with a rigid supporting-table, a journal situated centrally of, at right angles to and projecting above the surface thereof, an arm extending radially therefrom, and a mold eccentrically pivoted to said arm and resting on said table, said table provided with a yielding-table-receiving opening and a dumping-opening situated in the path of said mold on the diametrically opposite side of said journal, a mold-supporting table yieldingly supported in said mold-supporting-table opening, of a reciprocating cross-head, cross-head guides and a die or rammer yieldingly connected to said cross-head and situated directly over said mold-supporting yielding table and means for continuously reciprocating said cross-head and for revolving said arm at regular intervals to move or traverse said mold along equal portions of its circular path.

5. In a glass-molding machine, the combination with a rigid supporting-table, a journal situated centrally of, at right angles to and projecting above the surface thereof, an arm extending radially therefrom, and a mold eccentrically pivoted to said arm and resting on said table, said table provided with a yielding-table-receiving opening and a dumping-opening situated in the path of said mold on the diametrically opposite side of said journal, a mold-supporting yielding table situated in said yielding-table-receiving opening, of a reciprocating cross-head, cross-head guides, and a die or rammer yieldingly connected to said cross-head and situated directly over said mold-supporting yielding table, and means for continuously reciprocating said cross-head, a spider-operating ratchet-wheel, a pawl, and means for operating said pawl to move said arm at regular intervals to move or traverse said mold along equal portions of its circular path.

6. In a glass-molding machine, the combination with a rigid supporting-table, a journal situated centrally of, at right angles to, and projecting above the surface thereof, a spider comprising a central portion and a series of equally-spaced radially-extending arms,

said spider secured on said journal to revolve therewith, mold-carrying arms or stems removably secured to said radial arms to play in a vertical direction, a mold eccentrically pivoted to each of said mold-carrying arms or stems and resting on the surface of said supporting-table, said table provided with a yielding-table-receiving opening and a mold-dumping opening situated in the path of said molds on the diametrically opposite side of said journal, a mold-supporting yielding table situated in said yielding-table-receiving opening, of a reciprocating cross-head, vertically-extending cross-head guides, a die-carrying plate yieldingly connected to said cross-head, a die or rammer removably secured to said plate and situated centrally over said mold-supporting yielding table, a spider-operating ratchet-wheel, a pawl, and means for operating said pawl to move said arm at regular intervals to move or traverse said mold along equal portions of its circular path.

7. In a glass-molding machine, the combination with a rigid supporting-table, a journal situated centrally of, at right angles to, and projecting above the surface thereof, a spider comprising a central portion and a series of equally-spaced radially-extending arms, said spider secured on said journal to revolve therewith, mold-carrying arms or stems removably secured to said radial arms to play in a vertical direction, a mold eccentrically pivoted to each of said mold-carrying arms or stems and resting on the surface of said supporting-table, said table provided with a yielding-table-receiving opening and a mold-dumping opening situated in the path of said molds on diametrically opposite sides of said journal, a mold-supporting yielding table situated in said yielding-table-receiving opening, means for dividing and equalizing the supply of glass to each of said molds, of a reciprocating cross-head, vertically-extending cross-head guides, a die-carrying plate yieldingly connected to said cross-head, a die or rammer removably secured to said plate and situated centrally over said mold-supporting yielding table, a spider-operating ratchet-wheel, a pawl, and means for operating said pawl to move said arm at regular intervals to move or traverse said mold along equal portions of its circular path.

8. In a glass-molding machine, the combination with a rigid supporting-table, a journal situated centrally of, at right angles to, and projecting above the surface thereof, a spider comprising a central portion and a series of equally-spaced radially-extending arms, said spider secured on said journal to revolve therewith, mold-carrying arms or stems removably secured to said radial arms to play in a vertical direction, a mold eccentrically pivoted to each of said mold-carrying arms or stems and resting on the surface of said supporting-table, said table provided with a yielding mold-supporting-table opening and a mold-dumping opening situated in the path of said molds on the diametrically opposite side of said journal, a mold-supporting yielding table situated in said yielding mold-supporting-table opening, a shearing means comprising a fixed shear or knife situated to extend horizontally over the last of the series of empty molds or the mold next preceding in position to that mold situated under the die and a shear pivoted adjacent to said fixed shear, means for yieldingly operating said pivotal shear to sever the glass and for positively opening said shear, of a reciprocating cross-head, vertically-extending cross-head guides, a die-carrying plate yieldingly connected to said cross-head, a die or rammer removably secured to said plate and situated centrally over said mold-supporting yielding table, a spider-operating ratchet-wheel, a pawl, and means for operating said pawl to move said arm at regular intervals to move or traverse said mold along equal portions of its circular path.

9. In a glass-molding machine, the combination with a rigid supporting-table, a journal situated centrally of, at right angles to, and projecting above the surface thereof, a spider comprising a central portion and a series of equally-spaced radially-extending arms, vertically-extending lugs on said arms provided with mold-carrying arm or stem receiving openings, mold-carrying arms or stems removably secured in said lug-openings to play vertically therein, said spider secured on said journal to revolve therewith, a spider-clamping nut situated on said spider-journal whereby the play of said spider is regulated, a mold eccentrically pivoted to each of said mold-carrying arms or stems and resting on the surface of said supporting-table, said table provided with a yielding mold-supporting-table opening and a mold-dumping opening situated in the path of said molds on the diametrically opposite side of said journal, a mold-supporting yielding table situated in said yielding mold-supporting-table opening, a shearing means comprising a fixed shear or knife situated to extend horizontally over the last of the series of empty molds or the mold next preceding in position to that mold situated under the die and a shear pivoted adjacent to said fixed shear, means for yieldingly operating said pivotal shear to sever the glass and for positively opening said shear, of a reciprocating cross-head, vertically-extending cross-head guides, a die-carrying plate yieldingly connected to said cross-head, a die or rammer removably secured to said plate and situated centrally over said mold-supporting yielding table, a spider-operating ratchet-wheel, a pawl, and means for operating said pawl to move said arm at regular intervals to move or traverse said mold along equal portions of its circular path.

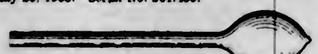
10. In a glass-molding machine, the combination with a rigid supporting-table, a spider-carrying journal situated centrally of, at right angles to, and projecting above the surface thereof, a spider comprising a central portion and a series of equally-spaced radially-extending arms, vertically-extending lugs on said arms provided with mold-carrying arm or stem receiving openings, mold-carrying arms or stems removably secured in said lug-openings to play vertically therein, said spider secured on said journal to revolve therewith, a spider-clamping nut situated on said spider-journal whereby the play of said spider is regulated, a mold eccentrically pivoted to each of said mold-carrying arms or stems and resting on the surface of said supporting-table, said table provided with a yielding mold-supporting-table opening, and a mold-dumping opening situated in the path of said molds on the diametrically opposite side of said journal, a mold-supporting yielding table situated in said yielding mold-supporting-table opening, a shearing means comprising a fixed shear or knife situated to extend horizontally over the last of the series of empty molds or the mold next preceding in position to that mold situated under the die and a shear pivoted adjacent to said fixed shear, means for yieldingly operating said pivotal shear to sever the glass and for positively opening said shear, of a reciprocating cross-head vertically-extending cross-head guides, a die-carrying plate yieldingly connected to said cross-head, a die or rammer removably secured to said plate and situated centrally over said mold-supporting yielding table, a spider-operating ratchet-wheel, a pawl, and means for operating said pawl to move said arm at regular intervals to move or traverse said mold along equal portions of its circular path.

11. In a glass-molding machine, the combination with a rigid supporting-table, a spider-carrying journal situated centrally of, at right angles to and projecting above the surface thereof, a spider comprising a central portion and a series of equally-spaced radially-extending arms, said spider secured on said journal to revolve therewith, a spider-clamping nut situated on said spider-journal whereby the play of said spider is regulated, vertically-extending lugs on said arms provided with mold-carrying arm or stem receiving openings, mold-carrying arms or stems removably secured in said lug-openings to play vertically therein, crooked mold-receiving ends on the outer ends of said stems, molds eccentrically pivoted in said crooked ends and resting on the surface of said supporting-table, said table provided with a yielding mold-supporting-table opening and a mold-dumping opening situated in the path of said molds on the diametrically opposite side of said journal, a mold-supporting yielding table situated in said yielding mold-supporting-table opening, a shearing means comprising a fixed shear or knife situated to extend horizontally over the last of the series of empty molds or the mold next preceding in position to that mold situated under the die and a shear pivoted adjacent to said fixed shear, a spring for closing said shear, a vertically-extending cam-shaft, a cam on said shaft for positively operating said pivotal shear to open, and means for yieldingly operating said pivotal shear to sever the glass and for positively opening said shear, of an overhead horizontally-extending crank-shaft, a vertically-reciprocating cross-head, a cross-head connecting-rod, vertically-extending cross-head guides, a die-carrying plate yieldingly connected to said cross-head, a die or rammer removably secured to said plate, and situated centrally over said mold-supporting yielding table, a spider-operating ratchet-wheel, a pawl and means for operating said pawl to move said arm at regular intervals to move or traverse said mold along equal portions of its circular path.

12. In a glass-molding machine, the combination with a rigid supporting-table, a spider-carrying journal situated centrally of, at right angles to and projecting above the surface thereof, a spider comprising a central portion and a series of equally-spaced radially-extending arms, said spider secured on said journal to revolve therewith, a spider-clamping nut situated on said spider-journal whereby the play of said spider is regulated, vertically-extending lugs on said arms provided with mold-carrying arm or stem receiving openings, mold-carrying arms or stems removably secured in said lug-openings to play vertically therein, crooked mold-receiving ends on the outer ends of said stems, mold eccentrically pivoted in said crooked ends and resting on the surface of said supporting-table, said table provided with a yielding mold-supporting-table opening and a mold-dumping opening situated in the path of said mold on the diametric-

ally opposite side of said journal, a mold-supporting yielding table situated in said yielding mold-supporting-table opening, a table-supporting coil-spring, an inclosing spring-sleeve, and means for adjusting the tension of said spring, a shearing means comprising a fixed shear or knife situated to extend horizontally over the last of the series of empty molds of the mold next preceding in position to that mold situated under the die and a shear pivoted adjacent to said fixed shear, a spring for closing said shear, a vertically-extending cam-shaft, a cam on said shaft for positively operating said pivotal shear to open, and means for yieldingly operating said pivotal shear to sever the glass and for positively opening said shear, of an overhead horizontally-extending crank-shaft, a vertically-reciprocating cross-head, an extensible cross-head-connecting rod, vertically-extending cross-head guides, a die-carrying plate, vertically-extending die-plate-guiding stems, coil-springs surrounding said stems and situated between the bottom end of said cross-head and said die-carrying plate, means for adjusting the tension of said springs, a die or rammer removably secured to said plate and situated centrally over said mold-supporting yielding table, a spider-operating ratchet-wheel, a pawl, and means for operating said pawl to move said arm at regular intervals to move or traverse said mold along equal portions of its circular path.

824,071. **RUBBER BALLOON-BAG.** HENRY B. FABER and HARRY E. SEAL, New York, N. Y., assignors to Rubber Balloon Company of America, Newark, N. J., a Corporation of New York. Original application filed Feb. 4, 1904, Serial No. 192,007. Divided and this application filed May 20, 1905. Serial No. 261,456.



Claim.—A seamless rubber balloon-bag, having an egg-shaped body with a tapering extension on the bottom and adapted to be inflated to spherical form.

824,072. **BRACELET.** THEODORE W. FOSTER, Providence, R. I. Filed Jan. 6, 1906. Serial No. 294,933.

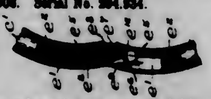


Claim.—1. In a hinged bracelet, a concealed hinge comprising a member having a solid body portion from the end of which extends a central arm having an end in the concave face of which is a groove forming at one end a stop-shoulder, and a member having a solid body portion from which extend two side arms supporting a cross-bar having on its convex face a stamped-up stop-teat adapted to enter the groove and engage with the stop-shoulder in the first member to limit the opening movement of the hinge.

2. A concealed bracelet-hinge comprising a member e having a solid body portion e' from the end e^3 of which extends a central arm e^4 having an end e^5 in the concave face of which is a groove e^6 forming at one end a stop-shoulder e^7, and a member g having a solid body portion g' from which extend two side arms g^2 g^3 supporting a cross-bar g^4 on the convex face of which is a stamped-up stop-teat g^5 adapted to enter the groove e^6 and engage with the stop-shoulder e^7 to limit the opening movement of the hinge.

3. The combination with a tubular half b having the end b' and a tubular half c having the end c' of a bracelet, of a concealed hinge d composed of the members e and g, the member e having a solid body portion e' from the end e^3 of which extends a central arm e^4 having an end e^5 in the concave face of which is a groove e^6 forming at one end a stop-shoulder e^7 all formed integral, and the member g having a solid body portion g' from which extend two side arms g^2 g^3 supporting a cross-bar g^4 on the convex face of which is a stamped-up stop-teat g^5 adapted to enter the groove e^6 and engage with the stop-shoulder e^7 to limit the opening movement of the hinge, all formed integral.

824,073. **BRACELET.** THEODORE W. FOSTER, Providence, R. I. Filed Jan. 6, 1906. Serial No. 294,934.

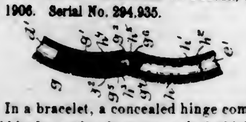


Claim.—1. In a bracelet, a concealed hinge comprising two identical interlocking members each member having a solid end from which extends a rigid arm cut away to form an arm having on its inner face a groove, a lip, a raised and a depressed portion intermediate the groove and the lip, and a spring side arm parallel with the central arm and forming an intermediate space, as described.

2. A concealed bracelet-hinge comprising two identical interlocking members e' e' each member e' e' having a solid end e^3 from which extends a rigid arm e^3 cut away at e^4 to form an arm e^5 having on its inner face a groove e^6, a lip e^7, the inner end of which forms a stop-shoulder e^8, a raised portion e^9 and a depressed portion e^{10} intermediate the groove e^6 and the lip e^7, and a spring side arm e^{11} extending from the end e^3 parallel with the arm e^5, as described.

3. The combination with a tubular half c having the end c' and a tubular half d having the end d' of a bracelet, of a concealed hinge e composed of two identical interlocking members e' e' each member e' e' having a solid end e^3 from which extends a rigid arm e^3 cut away at e^4 to form an arm e^5 having on its inner face a groove e^6, a lip e^7 the inner end of which forms a stop-shoulder e^8, a raised portion e^9 and a depressed portion e^{10} intermediate the groove e^6 and the lip e^7, and a spring side arm e^{11} extending from the end e^3 parallel with the arm e^5, as described.

824,074. **BRACELET.** THEODORE W. FOSTER, Providence, R. I. Filed Jan. 6, 1906. Serial No. 294,935.



Claim.—1. In a bracelet, a concealed hinge comprising a member having a solid body portion from one end of which extends a central arm having a curved portion merging into a hook-shaped end, the inner concave face and the outer convex face of the curved portion being struck from a center which is concentric with the center on which the hinge opens, and a tubular member having a hollow body portion, an open end, a closed end in which is a rectangular opening into which the central arm of the solid hinge member extends, and a stop-pin which extends across the inner concave face of the central arm on the solid member and is secured in the tubular member.

2. A concealed bracelet-hinge comprising a member g having a solid body portion g' from one end of which extends a central arm g^2 having a curved portion g^3 merging into a hook-shaped end g^4, the inner concave face g^3 and the outer convex face g^4 of the curved portion g^3 being struck from a center which is concentric with the center on which the hinge opens, and a tubular member h having a hollow body portion h', an open end h^2, a closed end h^3 in which is a rectangular opening h^4 formed by the side edges h^5 h^6, the edge h^7 and the edge h^8, a stop-pin h^9 which extends across the inner concave face of the central arm g^2 and is secured in the tubular member h.

3. The combination with a tubular half d having the end d' and a tubular half e having the end e' of a bracelet, of a concealed hinge f composed of the members g and h, the member g having a solid body portion g' from one end of which extends a central arm g^2, having a curved portion g^3 merging into a hook-shaped end g^4, the inner concave face g^3 and the outer convex face g^4 of the curved portion g^3 being struck from a center which is concentric with the center on which the hinge opens, and the tubular member h having a hollow body portion h', an open end h^2, a closed end h^3 in which is a rectangular opening h^4 formed by the side edges h^5 h^6, the edge h^7 and the edge h^8, a stop-pin h^9 which extends across the inner concave face g^3 of the central arm g^2 and is secured in the tubular member h, and means for securing the members g and h of the hinge in the ends d' and e' of the bracelet, as described.

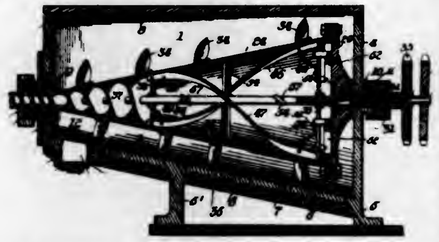
824,075. **ICE-CREAM FREEZER.** HENRY J. GERNER, Vandergrift, Pa. Filed July 2, 1904. Serial No. 215,068.

Claim.—1. In a freezing-machine, the combination with a tub adapted to contain a freezing agent, and means for removing said freezing agent from said tub, of a cone-shaped freezing-can rotatably mounted on a horizontal axis in said tub, a plurality of agitators mounted upon said freezing-can, a rotary dasher arranged within said can, means for rotating said dasher, and a plurality of agitators carried by said dasher.

2. In a freezing-machine, the combination of a rotary can, an independently-rotative shaft arranged in said can, spirally-shaped scrapers carried by said shaft, and flat radial blades also carried by the shaft and angularly adjustable thereon.

3. In a freezing-machine, the combination with a tub and a can mounted therein, of curved agitating-blades arranged in rows on the exterior of the can, the curvature of the blades of one row being reverse to the curvature of the blades of the adjacent row.

4. In a freezing-machine, the combination of a tub, a can rotatably mounted within said tub, agitating-blades secured to the exterior of the can, a shaft arranged within the can and rotatable independently thereof, spiral scrapers carried by said shaft and agitating-blades carried by said shaft, said blades being detached from said scrapers, and means for adjusting the angle of said blades and for fixing them in their adjusted positions.



5. In a freezing-machine, the combination with a tub having an inclined bottom, of a revoluble cone-shaped can, reversely-curved agitating-blades carried by said can and adapted to propel a freezing agent backward and forward in the tub, a rotary shaft arranged within the can, and a spiral conveyer carried by said shaft, and adapted to propel the freezing cream toward the smaller end of the can.

6. The combination with a tub for freezing-machines, of a cone-shaped can rotatably mounted within said tub, a plurality of curved blades secured upon said can, one or more of said blades being arranged at a different angle to the other blades.

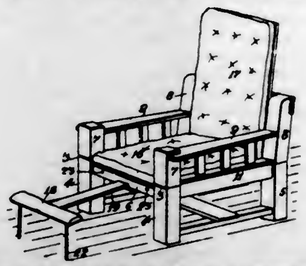
7. In a cooling-machine, the combination with a tub adapted to contain a freezing agent, said tub having an opening formed therein, means for closing said opening, a cone-shaped freezing-can rotatably mounted on a horizontal axis in said tub, means carried by said can to agitate said freezing agent, a dasher-shaft arranged within said can, and agitators mounted upon said shaft rotatable on their longitudinal axis, and means for securing said agitators at any angle to which they may be adjusted.

8. In a cooling-machine, the combination with a tub adapted to contain a cooling agent, said tub having an opening formed therein, means for closing said opening, of a cone-shaped can rotatably mounted within said tub, and a plurality of agitating-blades carried by said can, a dasher-shaft mounted in said can, a plurality of blades secured upon said shaft, and means for adjusting said blades by turning them on their longitudinal axis and means for securing the blades in adjusted position.

9. In combination with a tub, a freezing-can, a rotary shaft mounted in said can, radial arms carried by said shaft, scrapers mounted on said radial arms and adapted to scrape the sides of the can, springs carried by said arms, and scrapers carried by said springs adapted to scrape the end of the can.

10. In a freezing-machine, the combination with the tub, and a cone-shaped can rotatably mounted in said tub, of a revoluble shaft mounted in said can, slotted arms carried by said shaft, scrapers seated in the slots in said arms and movable therein, and spring-clips secured to said arms and engaging the scrapers.

824,076. **CONVERTIBLE FURNITURE.** DONEY H. GOODRICH, Berkeley, Cal. Filed June 20, 1905. Serial No. 267,634.

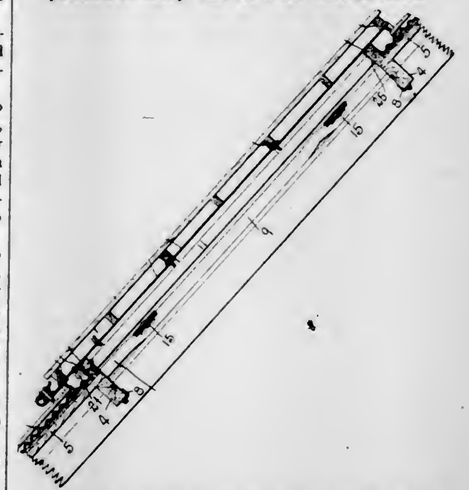


Claim.—1. In an article of furniture, a supporting-frame embodying the legs and seat portion of a chair, and a second frame hinged thereto and adapted to rest thereon and embodying the arms and back of said chair, the second frame being adapted to swing forward to a level with the first frame, so that its back forms legs of a couch and its arms form the side rails of said couch and an extension pivoted in the back of said chair and adapted to be against said back when the same is in the form of a chair and to be swung out at an angle thereto when in the form of a couch.

2. The combination with two hinged frames convertible from a chair to a couch and vice versa, of an open back, which when converted forms an open foot or front for the couch, and a cushioned part normally fitting said open back and forming upholstery for the rear of the chair, and for the front of the couch after conversion; said cushioned part being pivoted to the back, and adapted after the conversion to a couch to be swung to a position level with and forming an extension at the foot of said couch.

3. The leg-frame and the back-frame hinged together and adapted to be folded to form a chair and extended to form a couch, the pivoted and cushioned extension 25 hinged in and to the back-frame, and the head-rest 15 hinged in and to the leg-frame: all constructed and arranged so that when said frames are extended the said part 25 can be swung to a position level with and beyond the foot of the said extended frames, and the said part 15 can be swung to a position beyond the head of the said extended frames.

824,077. **CAR-ROOF DOOR.** JULIUS C. HERRMANN, St. Louis, Mo., assignor to American Car & Foundry Company, St. Louis, Mo., a Corporation of New Jersey. Filed Feb. 1, 1906. Serial No. 298,996.



Claim.—1. A box-car provided with a roof having an opening therein, a closure for said opening, said closure extending beyond all sides of said opening when in operative position, guides carried by the roof for said closure to travel on, and vertical rollers interposed between said closure and said guides; substantially as described.

2. A box-car provided with a roof having an opening therein, a closure for said opening, longitudinally-extending guides for said closure, rollers interposed between said closure and said guides, and inclined surfaces on said guides adjacent to the rollers when the closure is in operative position whereby said closure will be raised to provide for a clearance of underlying parts when it is moved into inoperative position; substantially as described.

3. A car having a roof provided with an opening, a closure for said opening, rollers for supporting said closure, longitudinally-extending guides coöperating with said rollers, inclined surfaces on said guides and horizontally-disposed rollers on the under side of the closure for preventing wedging thereof and keeping it in proper alinement; substantially as described.

4. A box-car having a roof provided with an opening, a door slidingly mounted on the roof for closing said opening, a projecting member on said door, and a cross-ridge provided with a socket which coöperates with the projecting member on the door when it is in operative position to prevent the door from being displaced; substantially as described.

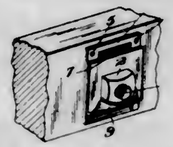
5. A car provided with an approximately peaked roof having an opening therein, ridges projecting above said roof around said

opening, a door covering said opening and projecting beyond said ridges, rollers for supporting said door, a projecting member at one end of said door for engaging a coöperating stationary member, and a coöperating hasp and eye at the opposite end of the door to enable it to be locked in position; substantially as described.

6. A car having a roof provided with an opening, carlines extending from side to side of the car at the ends of said opening, cross-ridges connected to said carlines and projecting above the surface of the roof, tracks at the sides of said opening, a door closing said opening and normally resting on said cross-ridges, and rollers carried by said door; substantially as described.

7. A car provided with a roof having an opening therein, cross-ridges located at the ends of said opening and projecting above the roof, a door closing said opening and provided with strengthening devices on its underneath side, openings in one of said cross-ridges to provide a clearance for said strengthening devices, and means connected to the door for closing the openings in the cross-ridge when the door is closed; substantially as described.

824,078. **NUT-LOCK.** NOAH HOWELL, Baxter, Ark., assignor of one-half to J. H. Freeman, Baxter, Ark. Filed Aug. 9, 1905. Serial No. 273,429.



Claim.—1. In a nut-lock, the combination of a bolt, a nut coöperating therewith, an inner washer member provided with an opening, means for preventing said inner washer from turning an outer washer having a tongue which passes through the opening in the inner washer, said outer washer being also provided with an elongated bolt-receiving opening, and means for securing an interlocking connection between the outer washer and the nut.

2. In a nut-lock, the combination of a bolt, a nut coöperating therewith, an inner washer provided with an opening, means for preventing the inner washer from turning, an outer washer having a tongue which passes through the opening in the inner washer and fits against the inner face of said washer, said outer washer being also provided with an elongated bolt-receiving opening, and means for securing an interlocking connection between the outer washer and the nut.

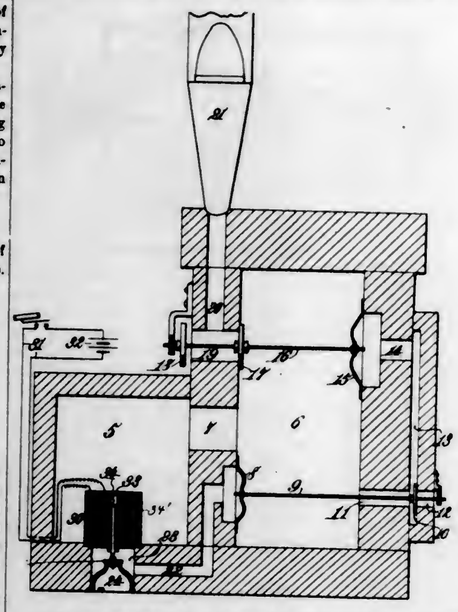
3. In a nut-lock, the combination of a bolt, a nut coöperating therewith, an inner washer provided with an opening, means for preventing the inner washer from turning, an outer washer having a tongue, which passes through the opening in the inner washer and fits against the inner face of said washer, said outer washer being also provided with an elongated bolt-receiving opening, and a tongue projecting from the outer washer member and bent outwardly against a side of the nut.

824,079. **ELECTRIC ORGAN-ACTION.** CARL J. LANDIN, Boston, Mass. Application filed June 3, 1904. Renewed Mar. 16, 1906. Serial No. 306,384.

Claim.—1. In an organ-action, a solenoid, a tube inclosed by the solenoid and projecting beyond one end of the same, a tubular core for the solenoid, arranged to move in said tube, a duplex valve operable by said core and adapted to be seated by the core, when the solenoid is energized, against the projecting end of said tube, means for directing a blast of air through the tube and core, and a separate part against which the valve is adapted to be automatically seated when the solenoid is deënergized.

2. In an organ-action, a solenoid, a soft iron casing surrounding the solenoid, a tube inclosed by the solenoid and projecting beyond one end of the same, a tubular core in the solenoid, arranged to move in the tube, a duplex valve operable by said core and adapted to be seated by the core, when the solenoid is energized, against the projecting end of said tube, means for directing a blast of air through the tube and core, and a separate part against which the valve is adapted to be automatically seated when the solenoid is deënergized.

3. In an organ-action, a solenoid, a tube inclosed by the solenoid and projecting beyond one end of the same, a tubular core for the solenoid, arranged to move in the tube and having a projecting portion, a duplex valve connected with the projecting portion of the core at a point beyond the body thereof, said valve being adapted to be seated by the core when the solenoid is energized, against the projecting end of said tube, means for directing a blast of air through the tube and core, and a separate part against which the valve is adapted to be automatically seated when the solenoid is deënergized.



4. In an organ-action, a solenoid having a passage entirely through the same, a tubular core for the solenoid, arranged for movement in the passage, a duplex valve operable by the core and adapted to be seated by the movement of the core, when the solenoid is energized, against one end of the passage, means for directing a blast of air through the passage and core from the opposite end of said passage, and a separate part against which the valve is adapted to be automatically seated when the solenoid is deënergized.

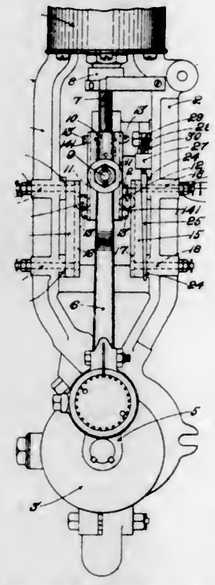
5. In an organ-action, a solenoid, a tube inclosed by the solenoid and projecting beyond one end of the same, a tubular core for the solenoid, arranged to move in the tube, a duplex valve operable by the core and adapted to be seated by said core, when the solenoid is energized, against the projecting end of said tube, an air-chamber in which the soleniod is mounted, the air from the chamber being adapted to enter that end of said tube opposite that against which the said valve seats, a chamber adapted to communicate with the tube, a nipple in the chamber, adapted to communicate with the atmosphere, and against which the valve is adapted to be automatically seated when the solenoid is deënergized, and a windway opening into said chamber.

6. In an organ-action, an air-chamber, a second air-chamber in direct communication with the first air-chamber, an organ-pipe adapted to communicate with the second air-chamber and with the atmosphere, a windway opening into the second chamber and into the atmosphere, a valve for controlling the flow of air through said windway, a diaphragm arranged for operation by an air-blast through said windway, valve mechanism controlled by the diaphragm and adapted to put the organ-pipe into communication with either the second chamber or with the atmosphere, a second windway adapted to communicate with the first chamber or with the atmosphere, a diaphragm adapted to be operated by a blast of air through the last-mentioned windway and adapted to control the first-mentioned valve, a solenoid in the first chamber, having a tube extending through and beyond the same, a tubular core for the solenoid, a duplex valve arranged to be moved against the projecting end of the tube by the core on the energization of the solenoid to thereby put the second windway into communication with the atmosphere, and to be moved away from said tube on the deënergization of the solenoid, to put said second windway into communication with the first chamber, and a part in communication with the second windway and atmosphere and against which the valve is automatically seated when the solenoid is deënergized.

7. In an organ-action, a solenoid having a central opening therethrough, a tubular core movably disposed in the said opening, a valve operative by the said core and adapted to close the opening of the solenoid at one end of the latter, and means for directing a blast of air through the core and opening of the solenoid.

8. In an organ-action, a solenoid having a tube inclosed thereby and forming a conduit means therethrough, a tubular core movably disposed in the solenoid-tube, a duplex valve operative by said core and adapted to be seated by the movement of the latter against one extremity of the solenoid-tube, means for directing a blast of air through the tube and core, and a separate part against which the valve is automatically seated when the solenoid is deënergized.

824,080. **CROSS-HEAD GUIDE.** WILLIAM B. MASON, Boston, Mass., assignor to The Mason Regulator Company, Boston, Mass., a Corporation of Maine. Original application filed Dec. 28, 1903, Serial No. 186,784. Divided and this application filed Jan. 16, 1905. Serial No. 241,322.



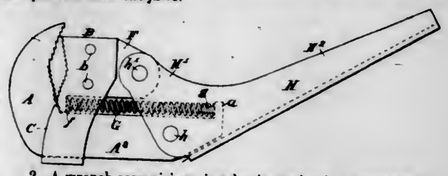
Claim.—1. The improved ball-bearing cross-head guides for a steam-engine comprising essentially a wedge-shaped guide grooved in the shape of a ball and tapering toward one end, bearing-surfaces upon the frame of the machine, and a wedge between the said grooved guide and the said bearing-surfaces and movable longitudinally with relation thereto.

2. The improved adjustable ball-bearing cross-head guides for an engine, comprising essentially a wedge-shaped grooved guide, bearing-surfaces upon the frame of the machine, supporting means for the said wedge-shaped guide, and a wedge tapering toward one end between the said guide and the said bearing-surfaces, said wedge having slots therein to admit the supporting means for the said guide.

3. The improved ball-bearing cross-head comprising essentially a wedge-shaped grooved guide, supporting means therefor, one or more bearing-surfaces upon the frame of the machine, a wedge tapering toward one end between the said guide and the said bearing-surfaces, and actuating means therefor moving the said wedge longitudinally with relation to the grooved guide and the bearing-surface.

824,081. **WRENCH.** HENRY L. REYNOLDS, Seattle, Wash., assignor to Bullard Automatic Wrench Company, Los Angeles, Cal., a Corporation of California. Filed July 31, 1905. Serial No. 272,096.

Claim.—1. A wrench comprising a jaw having a shank, a complementary jaw lying alongside the shank and having a clip embracing and adapted to slide upon said shank, a handle pivoted to said shank and complementary jaw, and a spring lying alongside of and between said shank and the complementary jaw and engaging said parts to close the jaws.



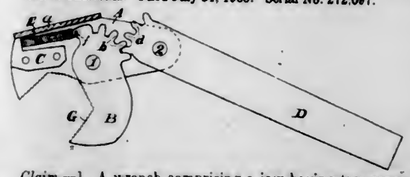
2. A wrench comprising a jaw having a shank, a complementary jaw lying alongside said jaw and having a clip embracing and adapted to slide upon said shank, a handle having two separated webs adapted to lie on opposite sides of and pivotally connected with said shank and complementary jaw, and a spring extending lengthwise the shank and between said shank and complementary jaw and between the two sides of said clip and handle-webs and acting to close said jaw.

3. A wrench comprising a jaw having a shank extending at right angles thereto, a complementary jaw having a clip embracing and adapted to slide upon said shank, a handle comprising two separated webs joined by a connecting-web along one side edge and having two transversely-separated pivots at its inner end connected respectively with said shank and complementary jaw, and a jaw-closing helical spring extending lengthwise the shank and lying between the sides of the handle and of the clip and between said shank and complementary jaw and at opposite ends respectively engaging said shank and complementary jaw.

4. A wrench comprising a jaw having a shank, a complementary jaw having a clip embracing and adapted to slide on said shank, said complementary jaw being cut away between the clips next the shank to form a spring-receiving chamber opening rearwardly, a handle comprising two separated webs having two transversely-separated pivots at one end connected respectively with said shank and complementary jaw, said shank having a spring-supporting projection between said handle-webs, and a coiled spring engaging said projection by one end and with its other end in the chamber between the clip and engaging the complementary jaw.

5. A wrench comprising a jaw having a shank, a pivot near the outer end of the shank and a side projection rearwardly of said pivot and toward the same side of the shank as the jaw-face, a complementary jaw comprising a block and a clip surrounding the shank and sliding thereon, said block having sliding engagement with the shank near the toothed edge and being cut away back thereof to form a spring-receiving pocket within the clip and between the shank and complementary jaw, a handle having two transversely-placed pivots near one end engaging respectively with the shank and the complementary jaw, and a coiled spring engaging by one end with the side projection at the rear of the shank and with its other end in the spring-receiving pocket of the complementary jaw.

824,082. **WRENCH.** HENRY L. REYNOLDS, Seattle, Wash., assignor to Bullard Automatic Wrench Company, Los Angeles, Cal., a Corporation of California. Filed July 31, 1905. Serial No. 272,097.



Claim.—1. A wrench comprising a jaw having two separated plate members and two pivots, a complementary jaw journaled upon one of said pivots between said plates and having a toothed segment, a handle journaled upon the other pivot between said plates and having a toothed segment engaging said toothed segment upon the jaw and a spring lying between said plate members and acting upon said jaws to close them.

2. A wrench comprising a jaw having two separated plate members and two pivots, a complementary jaw journaled upon one of said pivots between said plates and having a toothed segment, a handle journaled upon the other pivot between said plates and having a toothed segment engaging said toothed segment upon the jaw and a spring acting between said jaws to close them together.

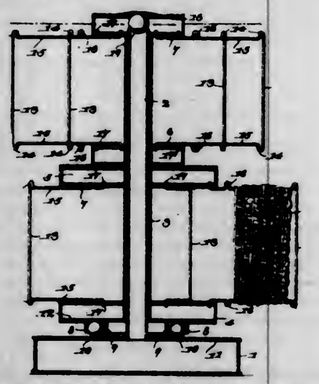
3. A wrench comprising a jaw consisting of two separated plate members and an integral connecting-web along their back edges, a complementary jaw pivoted to and between said plate members, and having a toothed segment, and a handle-lever also pivoted to and between said plate members and having a toothed segment engaging the said toothed segment of the jaw.

4. A wrench comprising a jaw having two separated plate members connected by a web along their back edges, a complementary jaw pivoted to and between said plate members, and having a toothed segment, a handle-lever also pivoted to and between said plate members and having a toothed segment engaging the said toothed segment of the jaw, and a spring lying between said plate members at the back and engaging both jaws to close them.

5. A wrench comprising a jaw having two separated plate members connected at their back and having two pivots, a jaw journaled between said plates upon one of said pivots and provided with a toothed segment on its inner end, the outer end of said jaw being adapted when closed to swing between the two plates constituting the other jaw, a handle journaled between said plates on the other pivot and having a toothed segment meshing with the toothed segment of the other jaw, and a spring lying between said plates at the back and engaging both jaws to close them.

6. A wrench comprising a jaw having two separated plate members connected by a web at their back edges, a filler-block secured between said plates at their outer portions and forming a spring-retaining socket along the connecting-web, a jaw pivoted between said plate members, a spring lying in said socket and engaging said last-mentioned jaw, and a handle-lever pivoted between the rear portions of said plate members, said handle-lever and the pivoted jaw being connected to swing together.

824,083. **DISPLAY-RACK.** JAMES W. ROACH, Stroud, Okla., assignor of one-half to Charles E. Hildebrand, Stroud, Okla. Filed June 15, 1905. Serial No. 265,329.

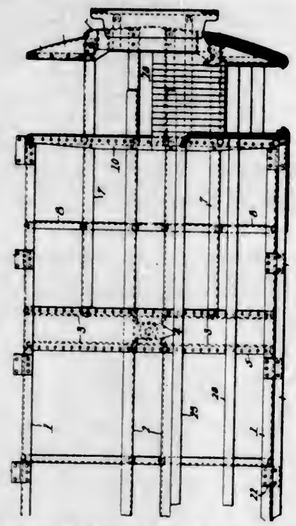


Claim.—A display-rack comprising a base, a standard carried thereby, sleeves mounted upon the standard, disks secured to the sleeves, arms detachably connected with the disks, antifriction-bearings interposed between the lower disk and the base, and a ball carried by the standard and engaging the uppermost disk to keep the sections of the rack spaced apart.

824,084. **METALLIC UNDERFRAME FOR PASSENGER-CARS.** ARNOLD STUCKI, Allegheny, Pa., assignor to Standard Steel Car Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed Oct. 24, 1902. Serial No. 128,045.

Claim.—1. A metallic underframe, comprising center, side and auxiliary sills connected together transversely, and end sills composed of flanged diaphragms interposed between the various longitudinal sills and secured to them, and provided with top and bottom cover-plates united therewith, the center and auxiliary sills projecting beyond the end sills and adapted to receive a vestibule.

2. A metallic underframe, comprising center, side and auxiliary sills connected together transversely, end sills composed of flanged diaphragms interposed between the various longitudinal sills and secured to them and provided with top and bottom cover-plates united therewith, the center and auxiliary sills projecting beyond the end sills, and face-plates each having front walls provided with inclined ends, a recess to receive the coupling, and top and bottom flanges.

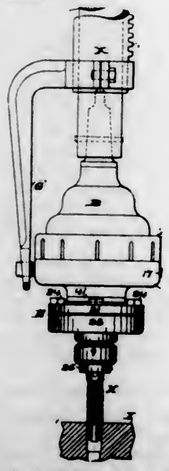


3. A face-plate 12, of pressed steel, having a vertical wall 14 tapering rearwardly and from below upwardly toward its outer ends, a protruding central portion 16 recessed beneath at 17 and having a top flange 19 and a bottom flange 20, and adapted to receive the coupling, the center and auxiliary sills, the vestibule front wall and the steps of a passenger-car.

4. A metallic underframe for cars, comprising center sills, side sills, bolsters, and end sills, framed together, the side sills extending above the level of the center sills and bolsters, and provided with wooden stringers near their upper edges to receive the side framing of the car.

5. A metallic underframe for cars, comprising side sills, center sills, connecting-bolsters, and auxiliary longitudinal sills extending from the bolster outwardly beyond the end sills, and end sills framed in between the longitudinal sills, and a face-plate connected directly to the auxiliary sills and spliced to the center sills.

824,085. **CHUCK.** PHILIP THOMAS, New York, N. Y., assignor of one-half to William Schwanhausser, Brooklyn, N. Y. Filed Jan. 23, 1904. Serial No. 190,273.



Claim.—1. In a chuck, the combination with a tool-driving spindle, of a driver movable on the spindle toward and from the work, a clutch for connecting the driver to the spindle for direct driving of the latter and operated by the movement of the driver on the spindle to clutch and unclutch the driver and spindle, an internal gear actuated by the driver, a gear on the spindle, one or more pinions between the internal gear and spindle-gear, a support for said pinions rotating with the tool and driver when the parts are clutched, and means controlled by the movement of the driver on the spindle for holding the pinion-support stationary when the driver and spindle are unclutched.

2. In a chuck, the combination with a tool-driving spindle, of a driver movable on the spindle toward and from the work, a clutch for connecting the driver to the spindle for direct driving of the latter and operated by the movement of the driver on the spindle to clutch and unclutch the driver and spindle, an internal gear carried by the driver, a gear on the spindle, one or more pinions between the internal gear and spindle-gear, a pinion-support connected to the driver and moving toward and from the work therewith, a stop carried by the pinion-support, and a cam on the spindle controlling the stop to stop the pinion-support when the driver is moved into position for unclutching the driver and spindle and release the pinion-support when the parts are clutched.

3. The combination with the chuck-body having the driver B and the pinion-support C connected together to permit the driver B to rotate independently of the support C, of internal gear 14 on the driver B, pinion or pinions 15 carried by the support C, tool-holder spindle F within the chuck-body on which said body has a limited movement toward and from the work, gear 16 on the spindle F meshing with pinions 15, a clutch for connecting the spindle F to the driver B, controlled by the movement of the driver B toward and from the work, and means controlled by the movement of the driver on the spindle for holding the pinion-support C against rotation when the driver and spindle are unclutched and releasing it when the parts are clutched, substantially as described.

4. The combination with the chuck-body having the driver B and the pinion-support C connected together to permit the driver B to rotate independently of the support C, of internal gear 14 on the driver B, pinion or pinions 15 carried by the support C, tool-holder spindle F within the chuck-body on which said body has a limited movement toward and from the work, gears 16 on the spindle F meshing with pinions 15, a clutch for connecting the spindle F to the driver B, controlled by the movement of the driver B toward and from the work, stop 17 carried by the support C and adapted to engage a stationary stop when advanced, and means for advancing and retracting the stop by the clutching and unclutching movement, substantially as described.

5. The combination with the chuck-body having the driver B and the pinion-support C connected therewith to permit the driver B to rotate independently of the support C, of internal gear 14 on the driver B, pinion or pinions 15 carried by the support C, tool-holder spindle F within the chuck-body on which said body has a limited movement toward and from the work, gear 16 on the spindle F meshing with pinions 15, a clutch for connecting the spindle F to the driver B controlled by the movement of the driver B toward and from the work, stop 17 carried by the tool-support, spring 18 and a cam-surface on the tool-spindle for advancing and retracting the stop, and fixed stop 19 engaging the stop 17 when advanced, substantially as described.

6. The combination with the chuck-body parts B, C, of the holding-collar D, an internal gear and pinions carried by the respective parts B, C, tool-spindle F within the body B, C, gear 16 movable on said spindle, said spindle and body being movable relatively to each other for clutching and unclutching, clutch members 12, 13 carried by the part B and the tool-spindle, and a stop brought into action by the unclutching movement for holding the part C stationary when the clutch members are disengaged, substantially as described.

7. In a tool-holder the combination of a rotary case and a sleeve movable axially one with relation to the other and provided with gears and with clutch members adapted to be engaged and disengaged by the axial movement of one part relative to the other, an independently-rotatable ring carrying a pinion in mesh with said gears, a stationary part and means operated by the endwise movement of one part of the holder relative to the other for locking said ring to and releasing it from said stationary part, substantially as described.

8. In a tool-holder the combination of an internally-toothed case, provided with a clutch member and an externally-toothed sleeve movable axially in said case and provided with a clutch member adapted to be engaged with and disengaged from that in said case by the axial movement of one part with relation to the other, a stationary member, a ring interposed between said case and sleeve and carrying one or more pinions in mesh with the gear-teeth thereof and provided with one or more dogs operated by the endwise movement of said sleeve to lock said ring to and release it from said stationary member, substantially as described.

DESIGNS.

38,087. **BADGE.** DALLETH Z. MERCHANT, Portsmouth, Va. Filed Mar. 23, 1906. Serial No. 307,725. Term of patent 3½ years.



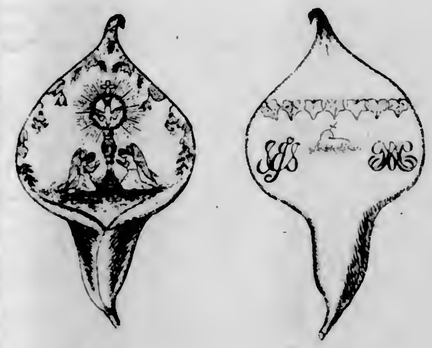
Claim.—The ornamental design for a badge as shown.

38,088. **FLAG.** THOMAS K. STURDEVANT, Wilkes-Barre, Pa. Filed May 1, 1906. Serial No. 314,720. Term of patent 3½ years.



Claim.—The ornamental design for a flag, as shown.

38,089. **BURSE.** MARY A. PHILBIN, Pittston, Pa. Filed Feb. 12, 1906. Serial No. 300,806. Term of patent 14 years.



Claim.—The ornamental design for a burse as shown and described.

38,090. **BACK OF BRUSHES.** WILLIAM C. CODMAN, Providence, R. I., assignor to Gorham Manufacturing Company, Providence, R. I., a Corporation. Filed May 16, 1906. Serial No. 317,250. Term of patent 14 years.

38,090.



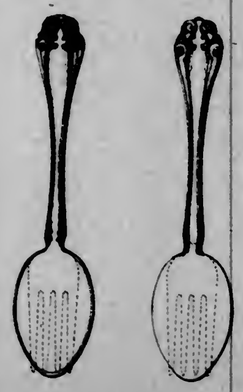
Claim.—The ornamental design for the back of a brush, as shown.

38,091. BACK OF BRUSHES. WILLIAM C. CORMAN, Providence, R. I., assignor to Gorham Manufacturing Company, Providence, R. I., a Corporation. Filed May 16, 1906. Serial No. 317,251. Term of patent 14 years.



Claim.—The ornamental design for the back of a brush, as shown.

38,092. HANDLE OF SPOONS, FORKS, OR SIMILAR ARTICLES. SIDNEY A. KELLER, New York, N. Y., assignor to R. Blackinton & Co., North Attleboro, Mass., a Firm. Filed May 16, 1906. Serial No. 317,249. Term of patent 7 years.



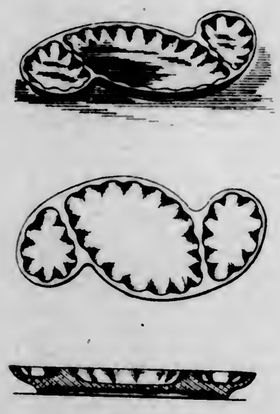
Claim.—The ornamental design for the handle of a spoon, fork or similar article, as shown.

38,093. TEAPOT OR SIMILAR ARTICLE. MURRAY B. LEETE, Wallingford, Conn., assignor to R. Wallace & Sons Mfg. Co., Wallingford, Conn., a Corporation. Filed May 9, 1906. Serial No. 316,041. Term of patent 14 years.



Claim.—The ornamental design for a teapot or similar article, as shown.

38,094. DISH. LIZZIE BARKER CRITZ, West Point, Miss. Filed May 5, 1906. Serial No. 315,452. Term of patent 7 years.



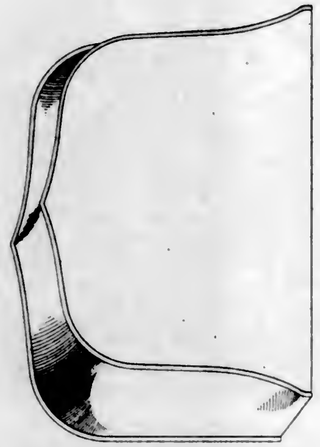
Claim.—The ornamental design for a dish, as shown in the drawings.

38,095. RUBBER BINDING. CHARLES EDGAR KNAPP, New York, N. Y. Filed Apr. 20, 1906. Serial No. 312,981. Term of patent 14 years.



Claim.—The ornamental design for rubber binding, as shown.

38,096. DASH FOR AUTOMOBILES. ALBERT E. SCHAAF and HENRY G. FISKE, Toledo, Ohio. Filed Mar. 13, 1906. Serial No. 305,917. Term of patent 7 years.



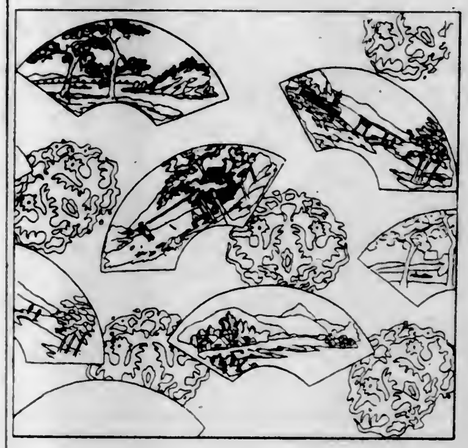
Claim.—The ornamental design for a dash for automobiles, as shown.

38,097. TEXTILE FABRIC. EMMA WORCESTER DOUGHTY, Ramapo, N. Y., assignor to Cheney Brothers, South Manchester, Conn., a Corporation of Connecticut. Filed May 15, 1906. Serial No. 317,005. Term of patent 3½ years.



Claim.—The ornamental design for a textile fabric, as shown.

38,098. TEXTILE FABRIC. EMMA WORCESTER DOUGHTY, Ramapo, N. Y., assignor to Cheney Brothers, South Manchester, Conn., a Corporation of Connecticut. Filed May 15, 1906. Serial No. 317,006. Term of patent 3½ years.



Claim.—The ornamental design for a textile fabric, as shown.

38,099. TEXTILE FABRIC. EMMA WORCESTER DOUGHTY, Ramapo, N. Y., assignor to Cheney Brothers, South Manchester, Conn., a Corporation of Connecticut. Filed May 15, 1906. Serial No. 317,007. Term of patent 3½ years.



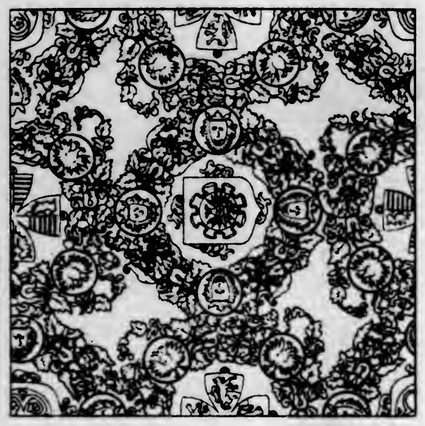
Claim.—The ornamental design for a textile fabric, as shown.

38,100. TEXTILE FABRIC. EMMA WORCESTER DOUGHTY, Ramapo, N. Y., assignor to Cheney Brothers, South Manchester, Conn., a Corporation of Connecticut. Filed May 15, 1906. Serial No. 317,008. Term of patent 3½ years.



Claim.—The ornamental design for a textile fabric, as shown.

38,101. TEXTILE FABRIC. EMMA WORCESTER DOUGHTY, Ramapo, N. Y., assignor to Cheney Brothers, South Manchester, Conn., a Corporation of Connecticut. Filed May 15, 1906. Serial No. 317,009. Term of patent 3½ years.



Claim.—The ornamental design for a textile fabric, as shown.

TRADE-MARKS

PUBLISHED JUNE 19, 1906.

The following trade-marks have been adjudged entitled to registration under the act of February 20, 1905, and are published in compliance with section 6 of said act. Said section provides:

"Any person who believes he would be damaged by the registration of a mark may oppose the same by filing notice of opposition, stating the grounds therefor, in the Patent Office within thirty days after the publication of the mark sought to be registered, which said notice of opposition shall be verified by the person filing the same before one of the officers mentioned in section two of this act. If no notice of opposition is filed within said time the Commissioner shall issue a certificate of registration therefor, as hereinafter provided for."

Marks which are stated to have been "Used ten years" are registrable under the last proviso of section 5 of said act, which is as follows:

"And provided further, That nothing herein shall prevent the registration of any mark used by the applicant or his predecessors, or by those from whom title to the mark is derived, in commerce with foreign nations or among the several States, or with Indian tribes, which was in actual and exclusive use as a trade-mark of the applicant or his predecessors from whom he derived title for ten years next preceding the passage of this act."

Section 14 of said act provides for the following fee:

"On filing notice of opposition to the registration of a trade-mark, ten dollars."

SER. No. 98. WHEAT-FLOUR. DICKSON MILL & GRAIN CO., Scranton, Pa. Filed Apr. 1, 1905. Used ten years.

SNOW WHITE

The words SNOW WHITE.

SER. No. 125. COATS, VESTS, TROUSERS, AND OVERCOATS. STROUSE & BROS., Baltimore, Md. Filed Apr. 1, 1905.



The monogram S & B, in which the B is superimposed upon the S and the character & inclosed in the upper portion of the B.

SER. No. 126. COATS, VESTS, TROUSERS, AND OVERCOATS. STROUSE & BROS., Baltimore, Md. Filed Apr. 1, 1905.



The representation of the Washington monument at Baltimore, which consists of a base surmounted with a column with a figure on top.

SER. No. 153. WHISKY. CAHN, BELT & CO., Baltimore, Md. Filed Apr. 1, 1905. Used ten years.

BELT

The word-symbol BELT.

SER. No. 525. LEAD-PENCILS. EDWARD G. SOLTMANN, New York, N. Y. Filed Apr. 6, 1905.

"CANARY"

The word "CANARY" inclosed in quotation-marks.

SER. No. 526. LEAD-PENCILS. EDWARD G. SOLTMANN, New York, N. Y. Filed Apr. 6, 1905.

"ATLAS,"

The word "ATLAS" inclosed in quotation-marks.

SER. No. 527. BLUE-PRINT PAPER. EDWARD G. SOLTMANN, New York, N. Y. Filed Apr. 6, 1905.

"CONGRESS"

The word "CONGRESS" printed with quotation-marks.

SER. No. 528. LEAD-PENCILS. EDWARD G. SOLTMANN, New York, N. Y. Filed Apr. 6, 1905.

"CRESCENT"

The word "CRESCENT" printed with quotation-marks.

SER. No. 529. LEAD-PENCILS. EDWARD G. SOLTMANN, New York, N. Y. Filed Apr. 6, 1905.

"CORONET"

The word CORONET inclosed in quotation-marks.

SER. No. 530. BLACK AND COLORED PENCILS OR CRAYONS. EDWARD G. SOLTMANN, New York, N. Y. Filed Apr. 6, 1905.

"EMPEROR"

The word "EMPEROR" inclosed in quotation-marks.

SER. No. 532. LEAD-PENCILS. EDWARD G. SOLTMANN, New York, N. Y. Filed Apr. 6, 1905.

"GRIFFIN"

The word "GRIFFIN" inclosed in quotation-marks.

SER. No. 535. BLACK AND COLORED PENCILS OR CRAYONS. EDWARD G. SOLTMANN, New York, N. Y. Filed Apr. 6, 1905.

"HERCULES"

The word "HERCULES," printed with quotation-marks.

SER. No. 541. BLUE-PRINT CLOTH. EDWARD G. SOLTMANN, New York, N. Y. Filed Apr. 6, 1905.

"VICTORIA"

The word VICTORIA, printed with quotation-marks.

SER. No. 708. BUTTER. STERLING BUTTER COMPANY, Aurora, Ill. Filed Apr. 7, 1905.

SER. No. 708.



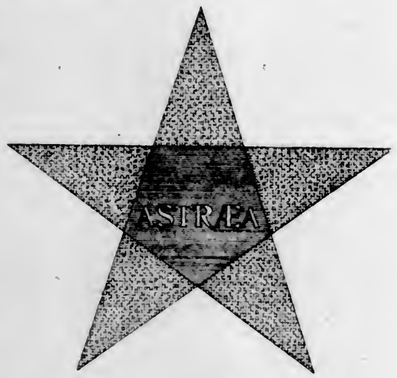
The character commonly used to indicate the pound or unit of the English monetary system.

SER. No. 982. LINEN, BOND, LEDGER, AND FINE WRITING PAPERS. WORTHY PAPER CO., Mittineague, Mass. Filed Apr. 10, 1905. Used ten years.

£ Sterling

The symbol £ used in England to indicate the pound sterling, associated with the word "STERLING."

SER. No. 1,154. OLIVE-OIL. JAMES A. MCCAFFREY & SONS, Philadelphia, Pa. Filed Apr. 11, 1905.



The representation of a five-pointed star, having therein a pentagonal field of contrasting color and having thereon the word ASTRÆA.

SER. No. 1,344. MALT TONIC. INDEPENDENT BREWING ASS'N, Chicago, Ill. Filed Apr. 13, 1905.

PRIMA TONIC

The words "PRIMA TONIC."

SER. No. 1,747. WHEAT-FLOUR. F. G. STRITMORE & CO., Norristown, Pa. Filed Apr. 15, 1905.



A circular figure and a pair of bands extending transversely across the field within said figure, the upper band having a central, narrow upwardly-projected portion inclosing an approximately circular field.

SER. No. 2,018. AUTOMATIC PIANO-PLAYERS. AUTOPIANO COMPANY, New York, N. Y. Filed Apr. 17, 1905.

TRIUMPH

The word "TRIUMPH."

SER. No. 2,323. WATCH-DIALS AND WATCH-MOVEMENTS. RODE WATCH CO., New York, N. Y. Filed Apr. 20, 1905.

CHRONOSENTRY.

The arbitrary word "CHRONOSENTRY."

SER. No. 2,284. ROTARY WASHING-MACHINES. H. F. BRAMMER MANUFACTURING COMPANY, Davenport, Iowa. Filed Apr. 19, 1905.

O.K.

The letters and periods "O. K."

SER. No. 2,471. LEVER WASHING-MACHINES. H. F. BRAMMER MANUFACTURING COMPANY, Davenport, Iowa. Filed Apr. 20, 1905.

O C

The letters "O" and "C" on either side of a representation of a human eye.

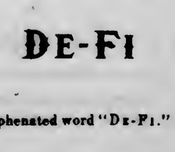
SER. No. 2,521. LIQUID COMPOUND USED AS A SUBSTITUTE FOR A COURT-PLASTER WHICH HAS MEDICINAL PROPERTIES. THE DOUGLAS MANUFACTURING COMPANY, Newark, N. J. Filed Apr. 20, 1905.

NEW-SKIN

The compound word NEW-SKIN.

SER. No. 3,242. SALTED, SMOKED, FRESH, AND CANNED FISH, EXCEPT CANNED LOBSTERS, CANNED MACKEREL, CANNED CLAMS, CANNED CLAM-CHOWDER, AND CANNED SALMON. REED AND GARAGE, Gloucester, Mass. Filed Apr. 27, 1905.

"STAR"



The representation of a star, associated with the word STAR inclosed in quotation-marks.

SER. No. 3,470. GELATINOUS COMPOUNDS USED AS ADHESIVE FOR BINDING PADS, BOOKS, PERIODICALS, &c. C. P. WALLEY, New York, N. Y. Filed Apr. 28, 1905.

GLUEINE

The arbitrary word, GLUEINE.

SER. No. 3,567. PAPER CARTONS. THE REYNOLDS "AERTITE" CARTON CO., Dayton, Ohio. Filed Apr. 29, 1905.

AERTITE

The word AERTITE printed upon a diamond-shaped background of contrasting color, with the letters arranged so as to fill out the space and to conform to the diamond outline.

SER. No. 4,052. TYPEWRITER-RIBBONS. DE-FI MANUFACTURING CO., New York, N. Y. Filed May 2, 1905.

DE-FI

The arbitrary hyphenated word "DE-FI."

SER. No. 4,120. WHISKY. BERGREEN BROS. & MARX, Birmingham, Ala. Filed May 3, 1906.

Wrightwood

The word "WRIGHTWOOD" in fanciful script type.

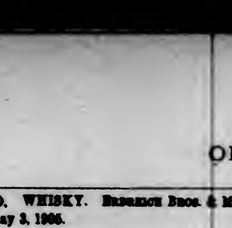
SER. No. 4,489. WHISKY. LOUIS LAZARUS, Lynchburg, Va. Filed May 6, 1906. Used ten years.

ALBEMARLE

The word ALBEMARLE.

SER. No. 4,609. BAKING-POWDER. THE J. P. DIETER CO., Chicago, Ill. Filed May 8, 1906.

CROWN



The word CROWN and the representation of a crown surmounted by an eagle.

SER. No. 4,612. FERTILIZERS. MAYER FERTILIZER & JUNK COMPANY, St. Louis, Mo. Filed May 8, 1906.



The letters A B M and the pictorial representation of an anchor.

SER. No. 4,753. PRESERVED AND CANDIED PINEAPPLES. SIPE AND SIPE, New York, N. Y. Filed May 8, 1906.

SER. No. 4,753.

RAMUDO

The word "RAMUDO."

SER. No. 4,790. ANCHORS. THE THOMAS LAUGHLIN COMPANY, Portland, Me. Filed May 9, 1905. Used ten years.

DIRIGO

The word DIRIGO.

SER. No. 4,889. HEADACHE REMEDIES. NAPOLEON LODOR, Richmond, Va. Filed May 10, 1905.



The representation of a baggage-check, together with the word "CHECK" thereon.

SER. No. 4,936. BEARING METAL. LANE LACY, Richmond, Va. Filed May 10, 1905.

DAISY

The word "DAISY."

SER. No. 5,016. MACHINERY-GREASES AND LUBRICATING-OILS. COLUMBIA REFINING CO., New York, N. Y. Filed May 11, 1905. Used ten years.



The arbitrary word COLUMBIA associated with the representation of the mythical figure known as Columbia.

SER. No. 5,017. CANNED VEGETABLES. UTICA CANNING COMPANY, Utica, N. Y. Filed May 11, 1905. Used ten years.

SER. No. 5,017.



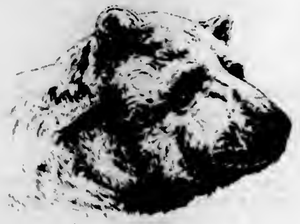
The words FORT SCHUYLER BRAND and a representation of Fort Schuyler.

SER. No. 5,185. CHAMPAGNE. EMPIRE STATE WINE CO., Penn Yan, N. Y. Filed May 11, 1905. Used ten years.

STATE SEAL

The words "STATE SEAL."

SER. No. 5,254. COTTON SHIRTINGS, DUCKS, OSNABURGS, DENIMS, AND CANTON-FLANNEL. MASSACHUSETTS COTTON MILLS, Lowell, Mass. Filed May 11, 1905.



The representation of the head of a bear.

SER. No. 5,276. ALMOND-MEAL, FACIAL CREAM, BEAUTY-LOTION, CLEANSING-CREAM, COLD-CREAM, AND SKIN-LOTIONS. EMILY A. TWIST, New York, N. Y. Filed May 11, 1905.



An elliptical panel formed of stems and pink-buds embracing a conventional trellis and flanked by conventional representations of pinks and pink-buds extending on either side slightly above the panel. In the lower part of the panel is the word TWIST in script.

SER. No. 5,756. OPERA-GLASSES. MERRY OPTICAL COMPANY, Kansas City, Mo. Filed May 15, 1905.

DENISE

The word DENISE.

SER. No. 5,757. OPERA-GLASSES. MERRY OPTICAL COMPANY, Kansas City, Mo. Filed May 15, 1905.

BADERE

The fanciful word, BADERE.

SER. No. 5,762. SPECTACLE AND EYEGLASS FRAMES, MOUNTINGS, AND LENSES. MERRY OPTICAL COMPANY, Kansas City, Mo. Filed May 15, 1905.



The representation of a diamond-shaped figure.

SER. No. 6,350. BACON. LOUIS STUTZ AND SONS, New York, N. Y. Filed May 20, 1905.



Two crossed pinks with a scroll of streamers flowing therefrom, associated with the words "LOUIS STUTZ & SONS PINK OF PERFECTION SUGAR CURED BACON."

SER. No. 6,361. WHISKY. FREDERICK C. RENNEKAMPFF, Pittsburg, Pa. Filed May 23, 1905.

SER. No. 6,361.



The representation of a five-pointed star, having thereon a circular panel containing a representation of a white five-pointed star.

SER. No. 6,393. EXTRACTS FOR MAKING BEVERAGES WHEN DILUTED WITH WATER. EDWARD THOMAS WILLS, Boston, Mass. Filed May 23, 1905.



The word JAPRI.

SER. No. 6,492. LAUNDRY SOAP. WILLIAM WALTER & Co., St. Louis, Mo. Filed May 24, 1905. Used ten years.

ALLRIGHT

The word "ALLRIGHT."

SER. No. 6,637. WHISKY. AUGUST BARTHOLD, Buffalo, N. Y. Filed May 25, 1905. Used ten years.

GOLD COIN

The words "GOLD COIN."

SER. No. 6,646. CHROME-TANNED, GLAZED, AND DULL-FINISH HORSEHIDES AND COLTSKINS. BENJAMIN D. EISENDRATH, Racine, Wis. Filed May 25, 1905.

ARISTO

The word ARISTO.

SER. No. 6,660. WHISKY. BLUTHENTHAL & HEILBRONNER, Memphis, Tenn. Filed day 25, 1905. Used ten years.



The words, JOHN HOPKINS, on a fanciful panel crossing a circular figure, bearing the words, BLUTHENTHAL & BROS., PURE COPPER DISTILLED OLD RYE.

SER. No. 6,838. PEARLS, DIAMONDS, AND OTHER PRECIOUS AND SEMIPRECIOUS STONES MOUNTED AND UNMOUNTED. F. W. DROSTEN JEWELRY COMPANY, St. Louis, Mo. Filed May 27, 1905.



The pictorial representation of a fleur-de-lis with the word DROSTEN printed on a scroll extending across the lower portion thereof and with the words ST. LOUIS above the scroll. Below the fleur-de-lis are the words THE DIAMOND CENTER OF THE LOUISIANA PURCHASE.

SER. No. 6,850. HATS AND CAPS. DUNLAP & Co., New York, N. Y. Filed May 29, 1905.



A stag's head within a Maltese cross.

SER. No. 6,973. WHISKY. THE WM. BERGENTHAL Co., Milwaukee, Wis. Filed May 29, 1905. Used ten years.

MOHAWK

The word MOHAWK.

SER. No. 7,004. WHISKY. R. M. ROSE Co., Atlanta, Ga. Filed May 29, 1905.



The words "THE WHISKEY OF OUR FOREFATHERS" and a design showing a man in Colonial costume holding a whisky-glass in his hand. At his left hand is a table on which stands a bottle and in the background is a chair, mantel, mantel ornaments, &c., and a stalk of corn with leaves, ears, and tassel.

SER. No. 7,049. TALKING-MACHINES AND PARTS THEREOF. EMILE DEGRANDCHAMPS ET CIE., Paris, France. Filed May 29, 1905.

DESPA

The word DESPA.

SER. No. 7,193. LEATHER SHOES. THE AINSWORTH SHOE Co., Toledo, Ohio. Filed May 29, 1905.



A circular panel crossed by a scroll surmounted by a ribbon, the head of a lion and the word "SHOE" appearing on the circular panel, the word "THE" on the ribbon and the word "LAWSON" on the scroll.

SER. No. 7,305. SELF-RISING FLOUR. THE H-O (HORNBY'S OATMEAL) COMPANY, New York, N. Y. Filed June 3, 1905.

Presto

The word PRESTO.

SER. No. 7,306. ROLLED OATS. THE H-O (HORNBY'S OATMEAL) COMPANY, New York, N. Y. Filed June 3, 1905.

PIONEER

The word PIONEER.

SER. No. 7,307. FLOURS AND SELF-RISING FLOURS MADE FROM ONE OR MORE OF THE CEREALS WHEAT, CORN, RICE, AND BUCKWHEAT, FLAKED WHEAT, GRANULATED WHEAT, COOKED AND ROLLED OATS, HOMINY, FARINA, TAPIOCA, CORN-STARCH, CORNMEAL, AND PEARL BARLEY. THE H-O (HORNBY'S OATMEAL) COMPANY, New York, N. Y. Filed June 3, 1905. Used ten years.



The representation of a steaming pot, the figure of a man holding in one hand a ladle and having the other hand uplifted as if in astonishment, the figure of a boy holding a bowl, and the words "I WANT SOME MORE" OLIVER TWIST.

SER. No. 7,309. COOKED AND FLAKED WHEAT. THE H-O (HORNBY'S OATMEAL) COMPANY, New York, N. Y. Filed June 3, 1905.

Gust-o

The word GUST-O.

SER. No. 7,810. COOKED AND FLAKED WHEAT. THE H-O (HORSBY'S OATMEAL) COMPANY, New York, N. Y. Filed June 3, 1905.

Vigor

The word VIGOR.

SER. No. 7,360. COOKED AND FLAKED WHEAT. THE "FORCE" FOOD COMPANY, New York, N. Y. Filed June 3, 1905.



The figure of the fanciful character Sunny Jim, the words "SUN-NY JIM" being associated therewith.

SER. No. 7,419. AUTOMOBILE OIL-LAMPS. GENERAL AUTOMOBILE SUPPLY COMPANY, New York, N. Y. Filed June 5, 1905.

GENERAL

The word GENERAL.

SER. No. 7,449. HEALING PINE-OIL. MARION W. SAVAGE, Minneapolis, Minn. Filed June 5, 1905. Used ten years.

INTERNATIONAL

The word "INTERNATIONAL."

SER. No. 7,515. MEDICINAL VEGETABLE-OIL TO ERADICATE ITCH AND VERMIN COMMON TO CATTLE AND OTHER ANIMALS AND POULTRY. EDWARD RYAN, Roe Heights, S. D. Filed June 2, 1905.

SER. No. 7,515.

Edward his X mark Ryan

The applicant's name "EDWARD RYAN" in the particular and distinctive style shown in the drawing, that is to say, in script, with a cross and the words "HIS MARK" between the words "EDWARD" and "RYAN."

SER. No. 7,544. LEATHER PURSES AND SATCHELS. A. & E. LEATHER GOODS CO., New York, N. Y. Filed June 6, 1905.

Æ

The diphthong Æ in a circle.

SER. No. 7,619. ANTIZYMOTIC REMEDY. WILLIAM C. HAMILTON, Topeka, Kans. Filed June 7, 1905.



The representation of a fever-octopus comprising a body portion with tentacles radiating therefrom, with the words "TYPHOID" "REMITTENT," "CHOLERA INFANTUM" "SCARLET," "BILIOUS," "MALARIAL," "YELLOW" and "MOUNTAIN" arranged between the tentacles, the word "FEVER" printed on the body, and the words "HAMILTON'S ANTI-ZYMOTIC" printed across the tentacles.

SER. No. 7,711. WHISKY. GEORGE COHN, Louisville, Ky. Filed June 8, 1905.

OLD HOLLY

The words "OLD HOLLY" partly surrounded by a wreath of holly fastened at the bottom by a ribbon bow.

SER. No. 7,748. MEDICINE ADAPTED TO PURIFY THE BLOOD; ALSO FOR ALL KIDNEY AND LIVER COMPLAINTS, COSTIVENESS, COLDS, AND HEADACHES. FLORIAN JOSEPH SCHMIDT, Chicago, Ill. Filed June 9, 1905.

SER. No. 7,748.

F. JOSEPH SCHMIDT'S
GERMAN HERB TEA

The photograph of applicant, associated with the words, F. JOSEPH SCHMIDT'S GERMAN HERB TEA.

SER. No. 7,787. LEATHER BOOTS AND SHOES AND LEATHER USED IN THEIR MANUFACTURE. RICE & HUTCHINS INCORPORATED, Boston, Mass., assignor to Rice and Hutchins Incorporated, a Corporation of Maine. Filed June 10, 1905.

The words, MARK OF MERIT.

SER. No. 7,887. SOUND-RECORDS. AMERICAN RECORD CO., New York, N. Y. Filed June 6, 1905.



The representation of a talking-machine to which an Indian in sitting posture and smoking a pipe is shown as listening, and having a sound-record disk in his hand. Sound-record disks are shown as scattered at the base of the picture, and over the talking-machine appears the legend "MUSIC HATH CHARMS."

SER. No. 7,944. MEN'S AND BOYS' OUTER AND DRESS SHIRTS AND BLOUSES. RICE, STIX DRY GOODS COMPANY, St. Louis, Mo. Filed June 12, 1905. Used ten years.

Premium

The word PREMIUM.

SER. No. 8,069. LEAD-PENCILS. L & C. HARDTMUTH, Vienna and Budweis, Austro-Hungary, and London, England. Filed June 14, 1905.

KOH-I-NOOR

The arbitrarily-selected word KOH-I-NOOR.

SER. No. 8,071. DIURETIC, LAXATIVE, DIAPHORETIC, AND TONIC MEDICINE. ADA B. BRADLEY, San Francisco, Cal. Filed June 14, 1905.

SER. No. 8,071.

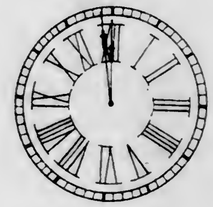
A circle with an arrow transversely across its center, and the letters R R above the arrow within the circle, and the letter C below.

SER. No. 8,122. LUBRICATING-OILS AND LUBRICATING-OIL COMPOSITIONS. NEW YORK & NEW JERSEY LUBRICANT CO., New York, N. Y. Filed June 14, 1905.



The words "NON-FLUID OIL" in the foreground extending across the background consisting of the pictorial representation of a sprocket-wheel and its shaft.

SER. No. 8,168. PREPARED GELATIN. WHITMAN GROCERY COMPANY, Orange, Mass. Filed June 15, 1905.



The representation of the dial of a clock indicating one minute of twelve.

SER. No. 8,181. WHISKY. MEYER MARX CO., Birmingham, Ala. Filed June 15, 1905.

SPOT CASH

The words, SPOT CASH.

SER. No. 8,226. WHISKY. BENJAMIN J. KOHLMAN, Mobile, Ala. Filed June 15, 1905.

Golden Feather

The words GOLDEN FEATHER.

SER. No. 8,227. WHISKY. BENJAMIN J. KOHLMAN, Mobile, Ala. Filed June 15, 1905.

SER. No. 8,227.



The words, MARECHAL NEIL below which is a picture representing a rose, the whole inclosed in a square outline crossed by a panel.

SER. No. 8,244. WHISKY. OLD KENTUCKY DISTILLERY, Louisville, Ky. Filed June 15, 1905.



The monogram O K D within an outline of a shield.

SER. No. 8,308. HAMS. E. GODEL AND SONS, Peoria, Ill. Filed June 16, 1905.

GLOBE

The word GLOBE.

SER. No. 8,427. HORSE-CLIPPERS AND SHEEP-SHEARS. CHICAGO FLEXIBLE SHAFT COMPANY, Chicago, Ill. Filed June 17, 1905. Used ten years.

CHICAGO

The word CHICAGO.

SER. No. 8,453. WHISKY. ROSENFIELD BROS. & CO., Chicago, Ill. Filed June 19, 1905. Used ten years.

BRIGHTWOOD

The word BRIGHTWOOD.

SER. No. 8,500. WHISKY. JOSEPH DEBAR, Cincinnati, Ohio. Filed June 19, 1905. Used ten years.



The word COLINGWOOD beneath which is the word COLINGWOOD in a diamond-shaped figure.

SER. No. 8,501. RUM. HENRY R. MYERS, Covington, Ky. Filed June 19, 1905. Used ten years.

FULTON

The word FULTON.

SER. No. 8,502. TONIC. HENRY R. MYERS, Covington, Ky. Filed June 19, 1905.

Alphat

The word ALPHAT.

SER. No. 8,739. WHISKY. FRANK MURPHY & CO., Chillicothe, Ohio. Filed June 21, 1905.



The words, LAFAYETTE CLUB, in white letters on a green scroll background, and the design of a globe and stars and the crescent moon on which is seated a woman and another woman floating near, inclosed in concentric circles.

SER. No. 8,833. CHEWING-TOBACCO. BUTLER-BUTLER (INCORPORATED,) New York, N. Y. Filed June 23, 1905.

John Anderson & Co's
SOLACE.

The word SOLACE, and associated therewith is the name JOHN ANDERSON & CO'S and the facsimile signature of John Anderson & Co.

SER. No. 8,935. WHISKY. MILTON L. EPPSTEIN, Fort Worth, Tex. Filed June 24, 1905.

RUBAIYAT
Omar Khayyam.

The words "RUBAIYAT OF OMAR KHAYYAM."

SER. No. 8,956. GIN. KAUFMANN BROS. & CO., Toledo, Ohio. Filed June 24, 1905.



The words HOLLY TREE and the representation of a holly-tree.

SER. No. 8,970. WHISKY. THE SOL RAUH & SONS CO., Dayton, Ohio. Filed June 24, 1905. Used ten years.

TEMPLETON

The word TEMPLETON.

SER. No. 9,125. WHISKY. OSCAR H. KIEFER, Los Angeles, Cal. Filed June 26, 1905. Used ten years.



The word "WHITEHALL" and a picture showing an old white Colonial house with a dome on the top and a driveway extending from the front with trees on either side.

SER. No. 9,132. CANNED FRUITS AND VEGETABLES. J. F. HUMPHREYS & CO., Bloomington, Ill. Filed June 26, 1905.



The arbitrarily-selected words WISH BONE and a representation of a broken wishbone with a ribbon or streamer tied to it.

SER. No. 9,375. HAIR-RESTORATIVES. S. R. VAN DUKER, New York, N. Y. Filed June 29, 1905. Used ten years.



A representation of a heraldic shield ornamented with fleurs-de-lis and a chevron bearing a fleur-de-lis and surmounted by a griffin's head issuing from a heraldic roll with a scroll above bearing the name MRS. S. A. ALLEN'S and two doves with wreaths partly inclosing the shield and from which is suspended an ornamental panel, and between the wreaths and panel are the words ZYLO BALSAMUM.

SER. No. 9,418. CORDIALS. COLBURN, BIRKS & CO., Peoria, Ill. Filed June 30, 1905. Used ten years.



The words VAN WINKLE'S, beneath which is a picture of a monk wearing cap and gown holding in his right hand a glass and in his left hand a bottle, on a scroll design and embellished with leaves and blossoms.

SER. No. 9,445. BISCUITS. HUNTLEY & PALMERS, LTD., Reading, England. Filed June 30, 1905.



A representation of a garter and buckle, the garter bearing the words "HUNTLEY & PALMERS READING BISCUITS."

SER. No. 9,662. RAZORS. HENRIE CLAUSS, Fremont, Ohio. Filed July 3, 1905.

SER. No. 9,662.

SIMPLEX

The word SIMPLEX.

SER. No. 9,711. WHISKY. HARRIS, JOHNSON & CO., Cincinnati, Ohio. Filed July 3, 1905.

SOUTHERN QUEEN

The words "SOUTHERN QUEEN" above a picture, showing the head and shoulders of a woman in profile, with a low-necked dress and holding a bunch of flowers in her hand.

SER. No. 9,975. VETERINARY REMEDY FOR LUMP JAW. FRED J. HEINE, El Reno, Okla. Filed July 10, 1905.

U.L.C.



The letters U. L. C. associated with the representation of the head of a bovine suffering from lump jaw.

SER. No. 10,028. NATURAL MINERAL WATERS. AUGUST SCHULTES, Budapest, Hungary. Filed July 11, 1905. Used ten years.

SALVATOR

The arbitrary word "SALVATOR."

SER. No. 10,044. WHISKY. CHICAGO DISTILLING CO., Chicago, Ill. Filed July 11, 1905.

White City

The words "WHITE CITY" inclosed in parallel lines forming an angle at the top in the center.

SER. No. 10,105. HARNESS AND SKIRTING LEATHER. WILLIAM FLACCUS OAK LEATHER CO., Pittsburg, Pa. Filed July 11, 1905. Used ten years.



The representation of a branch of an oak-tree, surrounded by concentric circles and arranged on a serrated seal, with the words, VIRGINIA OAK HARNESS LEATHER—WARRANTED PURE BARK TANNED, AND GUARANTEED ABSOLUTELY FREE FROM ALL WEIGHTING MATERIALS, and the representation of three acorns arranged within the circles.

SER. No. 10,174. MEDICAL PREPARATION FOR THE CURE OF HEADACHE AND NEURALGIA. KOHLER MANUFACTURING CO., Baltimore, Md. Filed July 12, 1905. Used ten years.

DR. KOHLER'S ANTIDOTE.

The words DR. KOHLER'S ANTIDOTE.

SER. No. 10,248. CHEESE MADE FROM COW'S MILK FROM WHICH A SMALL PERCENTAGE OF CREAM HAS BEEN EXTRACTED OR TO WHICH A PERCENTAGE OF CREAM HAS BEEN ADDED. J. R. THOMAS' SONS, Youngstown, Ohio. Filed July 13, 1905.

ROYAL

The word ROYAL.

SER. No. 10,263. HAIR-BRUSHES, CLOTHING-BRUSHES, HAT-BRUSHES, AND BONNET-BRUSHES. JAMES E. BLAKE COMPANY, Attleboro, Mass. Filed July 13, 1905.

SterlinE

The word STERLINE, the first and last letters of the word being capitals.

SER. No. 10,438. COAL. THE W. J. HAMILTON COAL CO., Columbus, Ohio. Filed July 17, 1905.

SOLAR

The fanciful word SOLAR.

SER. No. 10,439. COAL. THE W. J. HAMILTON COAL CO., Columbus, Ohio. Filed July 17, 1905.

20th CENTURY

The symbol 20TH CENTURY.

SER. No. 10,440. COAL. THE W. J. HAMILTON COAL CO., Columbus, Ohio. Filed July 17, 1905.

BLACK NANCY

The words BLACK NANCY.

SER. No. 10,572. SPECIFIC FOR TREATMENT OF THE LIVER. BENJAMIN S. READ, Bryan, Tex. Filed July 19, 1905. Used ten years.

READ'S

BLACK CAPSULES

The words "READ'S BLACK CAPSULES."

SER. No. 10,580. CANDY. NEW ENGLAND CONFECTIONERY CO., Portland, Me., and Boston, Mass. Filed July 3, 1905.

Necco SWEETS

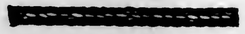
The words "NECCO SWEETS."

SER. No. 10,586. PAPER AND CLOTH COATED WITH ABRASIVE MATERIAL, SUCH AS FLINT, SAND, AND EMERY. HERMAN BEHR & CO., New York, N. Y. Filed July 20, 1905.

EMPIRE

The word EMPIRE.

SER. No. 10,600. NATURAL OR UNCOLORED BRAIDED COTTON CORDS. SAMSON CORDAGE WORKS, Boston, Mass. Filed July 20, 1905. Used ten years.



Yellow spots spirally disposed around the surface of a braided cord.

SER. No. 10,788. COFFEE. HUMPHREY COFFEE & TEA CO., New York, N. Y. Filed July 25, 1905.

SER. No. 10,788.

BOSTON GOLDEN

The words "BOSTON GOLDEN."

SER. No. 10,985. SOAP. COLGATE & CO., New York, N. Y. Filed July 28, 1905. Used ten years.

OCTAGON

The word OCTAGON.

SER. No. 11,235. KNIT STOCKINGS, KNIT SOCKS, KNIT UNDERSHIRTS, AND KNIT UNDERDRAWERS. ERNSTTHAL & POHLY, New York, N. Y. Filed Aug. 3, 1905.

BLACK RABBIT

The representation of a rabbit associated with the words BLACK RABBIT.

SER. No. 11,316. COLORED PIGMENTS USED FOR PAINT. VANE-CALVERT PAINT CO., St. Louis, Mo. Filed Aug. 7, 1905. Used ten years.

WHITE LEAD AND COLOR GRINDERS BEST PUREST ST. LOUIS

The representation of a seal, inclosing a fouled anchor, and the words "WHITE LEAD AND COLOR GRINDERS BEST PUREST ST LOUIS."

SER. No. 11,934. SIGNS AND MORE ESPECIALLY ADVERTISING-SIGNS AND ADVERTISING WINDOW DISPLAY-CARDS. ARNOLD BINGER, New York, N. Y. Filed Aug. 23, 1905. Used ten years.

Binger Signs,

The words BINGER SIGNS.

SER. No. 11,987. PREPARED FOOD AND COMPOUNDS FOR USE AS AND FOR ADMIXTURE WITH FOOD FOR STOCK. THE MOLASSINE COMPANY, LD., London, England. Filed Aug. 25, 1905.

SER. NO. 11,987.

MOLASSINE.

The word MOLASSINE.

SER. NO. 12,312. TONIC BEVERAGES AND SYRUPS THEREFOR. JOHN A. SELBY, Oakland, Cal. Filed Sept. 7, 1905.

MALTO-HOPO

The hyphenated word MALTO-HOPO.

SER. NO. 12,374. PERIODICALLY-ISSUED MAGAZINE. THE A. D. PORTER COMPANY, New York, N. Y. Filed Sept. 8, 1905. Used ten years.

GOOD READING

The words, GOOD READING, arranged horizontally one above the other, the initial letter of the first word being directly over the initial of the second word, which latter word terminates to the right beyond the end of such first word, said words being inclosed within a heavy rectangular border having rounded corners, and having inclosed therewithin adjacent the end of the word READING three horizontally-arranged ornamental scroll-like designs.

SER. NO. 12,481. CARBONATED TONIC BEVERAGE. THE RED ROCK CO., Jacksonville, Fla. Filed Sept. 11, 1905.



The word "DOAP," inclosed by a panel-like figure of ornamental design.

SER. NO. 12,630. GARTERS. COMMON SENSE GARTER CO., Malone, N. Y. Filed Sept. 15, 1905.

Common Sense

The words COMMON SENSE.

SER. NO. 12,677. WHISKY. P. DUGGERY & CO., Boston, Mass. Filed Sept. 18, 1905.

SER. NO. 12,677.

Tournament



The word "TOURNAMENT," associated with the representation of two knights riding in a tournament, inclosed in an oval-shaped design. The letters "T" of the word TOURNAMENT are displayed on a fanciful shield design.

SER. NO. 12,803. INSECTICIDE. CHARLES A. HENDERSON, Anderson, Ind. Filed Sept. 20, 1905.



The representation of a devil carrying a pitchfork, with bugs impaled on the tines thereof, and the words GIVE EM, and the letters H. E. L. across his chest, and H. E. L. arranged beneath the devil.

SER. NO. 12,968. CORSETS. HARRY TATTON SYKES, London, England. Filed Sept. 25, 1905.

KRUTOID

The invented word KRUTOID.

SER. NO. 13,088. REMEDIES FOR NERVOUS DISORDERS. ONORATO BATTISTA, Naples, Italy. Filed Sept. 27, 1905.

ISCHIROGENO

Onorato Battista

NAPOLI

The word "ISCHIROGENO," the facsimile of the firm-name "ONORATO BATTISTA" and the word "NAPOLI."

SER. NO. 18,100. LEAD-PENCILS. EDWARD G. SOLTMANN, New York, N. Y. Filed Sept. 26, 1905.

SER. NO. 13,100.

"ORIOLE"

The word "ORIOLE" inclosed in quotation-marks.

SER. NO. 13,253. DOLLS. STRAWBRIDGE & CLOTHIER, Philadelphia, Pa. Filed Oct. 3, 1905.

Baby Helen

The outline of a pennant within which are the words BABY HELEN in script, the last stroke of the "N" being returned beneath the words.

SER. NO. 13,367. KNITTED STOCKINGS. JOSEPH A. PARKER, Portsmouth, Va. Filed Oct. 6, 1905.



The representation of a pointer dog on point, standing upon a bar or line resting on top of the letters forming the word "GOOD," the whole being partially inclosed by two stockings one on either side folded at right angles near the middle.

SER. NO. 13,368. KNITTED STOCKINGS. JOSEPH A. PARKER, Portsmouth, Va. Filed Oct. 6, 1905.



The representation of a pointer dog on point and standing upon a stocking and associated with which representation is the word "DOGONGOOD" arranged in arcuate form above the dog.

SER. NO. 13,415. COMPOUND IN POWDER FORM SOLUBLE IN WATER AND USED TO SOFTEN THE SAME AND INCREASE ITS CLEANSING PROPERTIES. ALOIS THUNER, Detroit, Mich. Filed Oct. 7, 1905.

SOAPASIDE

The coined word SOAPASIDE.

SER. NO. 13,568. WHEAT-FLOUR. THE REA-PATTERSON MILLING COMPANY, Coffeyville, Kans. Filed Oct. 13, 1905.



The word "GOLD" on an ornamental band extending diagonally across the representation of a shield and a bunch of wheat-heads projecting above the same.

SER. NO. 13,908. PILLS FOR LIVER AND KIDNEY DISEASES. CHARLES B. MUMFORD, Kansas City, Mo. Filed Oct. 24, 1905. Used ten years.



The words "MUMFORD'S UNITED STATES NAVY" and the representation of a battleship under full headway.

SER. NO. 13,964. OVERCOAT-COLLARS. HOFFMAN AND MURPHY, Chicago, Ill. Filed Oct. 26, 1905.



The word "PROTECTOR" and the representation of a shield surrounded by a wreath.

SER. No. 14,086. BRANDY. CALIFORNIA WINE ASSOCIATION, San Francisco, Cal. Filed Oct. 30, 1905.



The design of a boat on water, with a pair of oars and a sail, ornamented with grape-vines, and a streamer flies from the top of the mast, and on the prow of the boat stands a Bacchus-like figure with a wine-glass in one hand, and the other hand resting on the head of a bear, with a circular arch in the background.

SER. No. 14,088. WINE. CALIFORNIA WINE ASSOCIATION, San Francisco, Cal. Filed Oct. 30, 1905.



The design of a boat on the water with a pair of oars and a sail ornamented with grape-vines. A streamer flies from the top of the mast and on the prow of the boat stands a Bacchus-like figure with a wineglass in one hand and the other hand resting on the head of a bear, with a circular arch in the background.

SER. No. 14,080. LAGER-BEER. THE CONNECTICUT BREWERIES COMPANY, Bridgeport, Conn. Filed Oct. 30, 1905.



A disk bearing the letters "B B" inclosed within concentric circles between which appears the name "THE CONNECTICUT BREWERIES CO."

SER. No. 14,420. SHEETINGS. UNION COTTON MILLS, Union, S. C. Filed Nov. 8, 1905.



The words "AHEAD OF ALL" below a picture consisting of a brass band preceded by a number of boys marching, led by one boy playing a fife-like instrument, a wall in the background containing posters.

SER. No. 14,609. ELECTRICAL BURGLAR-ALARMS. AMERICAN BANK PROTECTION COMPANY, Minneapolis, Minn. Filed Nov. 14, 1905.



The representation of a perforated testudinated shield and the letters A B P Co.

SER. No. 14,661. PILL FOR USE AS AN ANTISEPTIC, TONIC, DIGESTIVE, AND BLOOD-PURIFIER. POTTER DRUG & CHEMICAL CORPORATION, Boston, Mass. Filed Nov. 15, 1905.

Cuticura

The word-symbol CUTICURA.

SER. No. 14,813. RUGS IN THE NATURE OF CARPETS. T. F. FIRTH & SONS LIMITED, Brighouse, England. Filed Nov. 20, 1905.



The representation of a stag's head resting on a crest-roll.

SER. No. 14,855. ROOFING-SLATES. THE OLD BANGOR SLATE COMPANY, Bethlehem and Bangor, Pa. Filed Nov. 20, 1905. Used ten years.



The words "OLD BANGOR" and a serrated disk representing a seal.

SER. No. 14,992. LADIES' LEATHER SHOES. THE WOLF BROTHERS AND COMPANY, Cincinnati, Ohio. Filed Nov. 25, 1905.

SER. No. 14,992.



A rectangular panel bearing the name, MARY STUART, and a coat of arms comprising a shield bearing a lion rampant, surmounted by a helmeted cuirass and a crown supporting the figure of a crowned woman carrying scepters in her outstretched hands. To the left and right of the shield appear upright standards bearing banners, on one of which appears a St. Andrews cross and on the other a lion. At the respective sides of the shield are crowned rampant unicorns and beneath the shield is a wreath carrying a centrally-arranged medallion and beneath the wreath is a scroll bearing the motto, NEMO ME IMPUNE LACESSIT.

SER. No. 15,057. ASPHALT FOR WATERPROOFING MATERIAL, ASPHALT FOR PAVEMENT, ASPHALT FOR ROOFING MATERIAL, AND ASPHALT FOR FLOORING AND SIDEWALKS. THE SICILIAN ASPHALT PAVING CO., New York, N. Y. Filed Nov. 29, 1905. Used ten years.

SICILIAN

The word SICILIAN.

SER. No. 15,072. BEER. CLINTON BREWING CO., Clinton, Iowa. Filed Nov. 29, 1905.



The word POINTER having a paraph thereunder, also and in connection therewith the representation of a dog of the breed commonly known as "pointer."

SER. No. 15,077. CANNED SHRIMP AND SIMILAR SHELL-FISH. THE PASS PACKING CO., Pass Christian, Miss. Filed Nov. 29, 1905.



The word UBATA set in heavy-face type and having a paraph extending backwardly under the three final letters.

SER. No. 15,089. SHEETINGS, SHIRTINGS, DRILLINGS, DUCKS, OSNABURGS, DENIMS, CANTON-FLANNEL, AND COTTON PIECE GOODS. YORK MANUFACTURING CO., Saco, Me. Filed Nov. 29, 1905. Used ten years.

SER. No. 15,089.

YORK

The arbitrarily-selected word YORK.

SER. No. 15,171. WATCHES AND CLOCKS. TIFFANY & CO., New York, N. Y. Filed Dec. 4, 1905. Used ten years.

TIFFANY & Co

The word, character, and abbreviation TIFFANY & CO.

SER. No. 15,500. OINTMENT. LEWIS BROS., Jordan, N. Y. Filed Dec. 18, 1905.



The representation of the head and face of a man laughing, in a circle, and head and neck of a horse apparently laughing, in a circle, with a horizontal line connecting the two circles, and above said circles, the words "THE LANGWORTHY SPAVIN CURE," and below said circles the words "THE CURE THAT CURES."

SER. No. 15,663. LEATHER SHOES. PETERS SHOE COMPANY, St. Louis, Mo. Filed Dec. 26, 1905.



The words PETERS SQUARE DEAL, printed in a rectangular space, inclosed by a border line.

SER. No. 15,734. COFFEE. BALDWIN EMIL ENGE, Oberlössnitz, Saxony, Germany. Filed Dec. 28, 1905.

Kaffeeol

The arbitrary word-symbol "KAFFEEOL."

SER. No. 15,880. DERIVATIVES OF CINCHONA ALKALOIDS. VEREINIGTE CHININFABRIKEN ZIMMER & CO. GES. MIT BESCHRÄNKTER HAFTUNG, Frankfort-on-the-Main, Germany. Filed Jan. 4, 1906.

EUCHININ

The arbitrary or fanciful word EUCHININ.

SER. No. 15,857. PATENT-LEATHER. KEYSTONE LEATHER CO., Philadelphia, Pa. Filed Jan. 3, 1906.



The word "STERLING" above a winged wheel with the word "KID" below, and the representation of a goat's head above the word STERLING, the whole being in a keystone.

SER. No. 16,090. NON-ALCOHOLIC EXTRACT AND SYRUP FOR THE MAKING OF BEVERAGES. PEEK BEVERAGE COMPANY, Birmingham, Ala. Filed Jan. 10, 1906.

Rye-Ola

The arbitrary word RYE-OLA.

SER. No. 16,153. BRANDY. JOHN S. DRAPER, Cincinnati, Ohio. Filed Jan. 12, 1906.

El Capitan,

The words EL CAPITAN.

SER. No. 16,159. FEATHER DUSTERS. GUSTAVE KOCH, New York, N. Y. Filed Jan. 12, 1906.



The representation of a duster associated with the arbitrary word GEMDUSTER arranged in a semicircle above it, all inclosed in an ornamental frame.

SER. No. 16,213. LEATHER BELTING. J. E. RHOADS & SONS, Philadelphia, Pa., and Wilmington, Del. Filed Jan. 16, 1906. Used ten years.

TANNATE

The word TANNATE.

SER. No. 16,214. LEATHER BELTING. J. E. RHOADS & SONS, Philadelphia, Pa., and Wilmington, Del. Filed Jan. 16, 1906.



The representation of a pair of hands pulling against the opposite ends of a link.

SER. No. 16,260. CANDIES OF ALL KINDS, INCLUDING CHOCOLATE CANDIES. JOHN GOVATOS, Wilmington, Del. Filed Jan. 17, 1906.



A representation of the head of a woman with a band in her hair bearing a star, a scarf extending from the band downward and around her neck.

SER. No. 16,308. NON-INTOXICATING CARBONATED HEALTH-GIVING TONIC BEVERAGE. THE A. R. CHAMPNEY CO., Elyria, Ohio. Filed Jan. 19, 1906.

LIQUID FORCE

The words "LIQUID FORCE."

SER. No. 16,361. FACE-BRICK, FIRE-BRICK, AND TERRA-COTTA. THE FEDERAL CLAY PRODUCT CO., Mineral City, Ohio. Filed Jan. 20, 1906.

SPARTA

The word SPARTA.

SER. No. 16,385. WRITING-PAPER AND ENVELOPS. H. S. CROCKER COMPANY, San Francisco, Cal. Filed Jan. 22, 1906.

Wenlock

The word WENLOCK.

SER. No. 16,456. CORSETS. GEORGE CHANDLER, Boston, Mass. Filed Jan. 24, 1906.

ATHENIA

The word ATHENIA.

SER. No. 16,528. GUNPOWDER. CURTIS'S & HARVEY, LIMITED, London, England. Filed Jan. 26, 1906.



A circular label in the center of which is the device of a diamond with a spot in the middle surrounded by the words, DIAMOND GUNPOWDER and two circular lines between which and the two circular lines forming the edge of the label are the words, CURTIS'S & HARVEY HOUNSLOW.

SER. No. 16,551. COTTON SATEENS. THE BRADFORD DYERS' ASSOCIATION, LIMITED, Bradford, England. Filed Jan. 26, 1906.



The representation of a bird's nest containing eggs.

SER. No. 16,553. COTTON YARNS. SHAW, JARDINE & CO., LIMITED, Manchester, England. Filed Jan. 26, 1906.



An oblong panel containing in the middle a shield with a St. Andrew's cross and three jewels surmounted by a crest resting on a heraldic roll representing a human hand holding a jewel and a ribbon beneath the shield bearing the motto EX VIRTUTE HONOS. At the top of the label is the name SHAW, JARDINE & CO. and at the foot the words BUTLER ST. MILLS, MANCHESTER.

SER. No. 16,554. COTTON YARNS. MCCONNEL & CO., LIMITED, Manchester, England. Filed Jan. 26, 1906.

SER. No. 16,554.



The representation of a stag's head on a heraldic scroll having between the antlers a bale or package with the letters D X thereon. Around this is an ornamental oval border, between the lines of which appear the name and address of the company, "MCCONNEL AND CO. LIMITED. MANCHESTER." Outside the oval is a rectangle with ornamental device in each corner.

SER. No. 16,585. PHOTOGRAPHS. FRANCIS J. LARACY, Kearney, N. J. Filed Jan. 29, 1906.

4
Emperors of Music
4

The numerals 4 and the words "EMPERORS OF MUSIC."

SER. No. 16,599. SHELLAC-VARNISH. JAMES B. DAY & CO., Chicago, Ill. Filed Jan. 29, 1906.

ROC
SHELLAC

The words ROC SHELLAC.

SER. No. 16,615. BLOTTING-PAPER. DISTRICT OF COLUMBIA PAPER MFG. CO., Washington, D. C. Filed Jan. 30, 1906.

CONGRESS
BLOTTING.

The words CONGRESS BLOTTING.

SER. No. 16,617. BLOTTING-PAPER. DISTRICT OF COLUMBIA PAPER MFG. CO., Washington, D. C. Filed Jan. 30, 1906.

SER. No. 16,617.

EXECUTIVE BLOTTING.

The words EXECUTIVE BLOTTING.

SER. No. 16,659. LEATHER SHOES FOR LADIES, MEN, AND CHILDREN. A. J. BATES CO., Webster, Mass. Filed Feb. 1, 1906.

Royal Crest

The words ROYAL CREST.

SER. No. 16,662. STOMACH BITTERS. TH. LAPPE, (a Firm,) Neu-Dietendorf, Germany. Filed Feb. 1, 1906.

Aechter AROMATIQUE Feinster Magen-Liqueur

TH. LAPPE Alleiniger Inhaber der Firma: J. Lappe Apothekenbesitzer in NEUDIETENDORF.

Merseburg 1865. Wittenberg 1869. Sydney 1879. Halle a. S. 1881. Porto Allegre 1881 Silb. Medaille. Amsterdam 1883. Antwerpen 1885. London 1891. Gotha 1893. Chicago 1893.

A group of six medals surrounded by a scroll. Within a space formed by four of the medals is a monogram of the letters T J L. Above the group of medals is the word Aechter having a scroll as a background and below this the words AROMATIQUE FEINSTER MAGEN-LIQUEUR. Below the group of medals is the word VON surmounting the name TH. LAPPE, which is printed in fancy shaded type. Below are the words ALLEINIGER INHABER DER FIRMA: J. LAPPE APOTHEKENBESITZER IN NEUDIETENDORF. MERSEBURG 1865. WITTENBERG 1869. SYDNEY 1879. HALLE A. S. 1881. PORTO ALLEGRE 1881 SILB. MEDAILLE. AMSTERDAM 1883. ANTWERPEN 1885. LONDON 1891. GOTHA 1893. CHICAGO 1893.

SER. No. 16,693. WHISKY. JAMES F. O'TOOLE, Baltimore, Md. Filed Feb. 2, 1906. Used ten years.

SER. No. 16,698.

GOLDEN GATE WINE CO'S CELERY RYE

The arbitrary words CELERY RYE, associated with the name GOLDEN GATE WINE CO'S.

SER. No. 16,739. GILDING-TOOLS PROVIDED WITH MEANS FOR HOLDING A PACKAGE-ROLL OF METALLIC LEAF FROM WHICH THE METALLIC LEAF IS TO BE TRANSFERRED TO THE SURFACE WHICH IS TO BE DECORATED. W. H. COE MANUFACTURING COMPANY, Providence, R. I. Filed Feb. 5, 1906. Used ten years.

COE'S

The word COE'S.

SER. No. 16,741. TOOTH-POWDERS. JORDAN MARSH COMPANY, Boston, Mass. Filed Feb. 5, 1906. Used ten years.

LATOUR

The word "LATOUR." Beneath said word is the picture of a shield having thereon the representation of three towers of a castle, said shield being surmounted by the representation of a crown, said word "LATOUR" being also placed beneath the representation of the shield.

SER. No. 17,023. MARINE GLUE. SIMMON & ELTING, New York, N. Y. Filed Feb. 14, 1906.

SHAPLEY'S MARINE GLUE

The representation of a dumb-bell inclosing the words SHAPLEY'S MARINE GLUE, the first letter, S, and the last letter, E, being enlarged.

SER. No. 17,065. MEDICINAL AND ADHESIVE PLASTERS. J. ELLWOOD LEE COMPANY, Conshohocken, Pa. Filed Feb. 16, 1906.

Jelco

The word "JELCO."

SER. No. 17,097. CANNED FRUITS AND VEGETABLES. SEATTLE PURE FOOD CO., INC., Seattle, Wash. Filed Feb. 16, 1906.

SER. No. 17,097.

TOTEM POLE

A representation of a totem pole associated with the words "TOTEM POLE."

SER. No. 17,109. COOKING STOVES AND RANGES, EXCEPT GAS-STOVES AND RADIATORS. JAMES GRAHAM MANUFACTURING CO., San Francisco, Cal. Filed Feb. 16, 1906.

IMPERIAL

The word IMPERIAL.

SER. No. 17,145. NATURAL LITHIA SPRING-WATER. LOUIS M. PARK, Minneapolis, Minn. Filed Feb. 17, 1906.

Hiawatha

The word "HIAWATHA," the representation of a waterfall and a nude female figure standing in the spray of the fall with uplifted arms.

SER. No. 17,154. LIQUID EXTRACT FOR PRESERVING MEATS. ALFRED ANDRESEN & CO., Minneapolis, Minn. Filed Feb. 17, 1906.

SMOKINE

The word SMOKINE.

SER. No. 17,176. WHEAT-FLOUR. NEVADA MILLING CO., Nevada, Mo. Filed Feb. 19, 1906.

ROYAL BOB

The words ROYAL BOB, printed in a curved line immediately above the pictorial representation of a quail standing in the foreground of a wheat-field, which pictorial representation is inclosed by a circular border-line.

SER. No. 17,183. OINTMENTS AND SALVES. J. W. COLE & CO., Black River Falls, Wis. Filed Feb. 19, 1906.

Calphenol

The arbitrarily-selected word "CALPHENOL."

SER. No. 17,226. REMEDIES FOR DISEASES OF THE MUCOUS MEMBRANE OF THE EYES AND NOSE. ALBERT W. PECK, Traverse City, Mich. Filed Feb. 21, 1906.

CURES EYE BRIGHT CURES

The words "EYE BRIGHT" and the representation of a human eye placed upon a plain diamond figure and superimposed upon a rectangular background, said background being in solid color. The word "CURES" is disposed in each of the narrow corners or points of the diamond-shaped figure, and the words "TIRED," "RED," "INFLAMED," and "GRANULATED" are disposed, respectively, in the upper and lower corners of the rectangular background.

SER. No. 17,230. POLISH FOR STOVES AND STOVEPIPES, RANGES, FURNACES, BOILERS, AND ENGINES. ANGO L. PRESCOTT, New York, N. Y. Filed Feb. 21, 1906.

The representation or picture of a bulldog, associated with the representation of a box.

SER. No. 17,284. SCOTCH WHISKY. GREENLEES BROTHERS, London, England. Filed Feb. 21, 1906.



An ornamental rustic panel bearing the word "CLAYMORE," a monogram of the letters "B W," and the words "HIGHLAND MALT WHISKY, BRUCE, WALLACE & CO., SOLE PROPRIETORS."

SER. No. 17,282. COATS, VESTS, AND TROUSERS. HERTZFELDER BROS., Philadelphia, Pa. Filed Feb. 23, 1906.



The representation of a globe divided in one-half with a man walking therethrough having the words "GO THROUGH THE WORLD WELL DRESSED" arranged in proximity thereto.

SER. No. 17,301. PREPARED STOCK FOOD. IDEAL STOCK FOOD CO., Cynthiana, Ind. Filed Feb. 23, 1906.



The representation of a hog with the background bounded by an elliptical line. The word "IDEAL" is placed above the representation of a hog in plain letters and in a curved line. Beneath the picture of the hog and inclosed within the same boundary line are placed the words and number IDEAL PERFECTION 25015. To the left of the word "IDEAL" is a representation of a horse in a background bounded by a circular line, and to the right of said word there is the representation of a cow in a background bounded by a circular line. Under the representation of said animals and within the outlines of a scroll are the words "STOCK FOOD FOR HORSES, CATTLE, SHEEP AND HOGS." A shield-shaped scroll-like figure forms the background for said representations of said animals and the words "IDEAL STOCK FOOD."

SER. No. 17,306. CANDY. JOSEPH GEORGES ARCAND, New York, N. Y. Filed Feb. 23, 1906.

POP-O-NUT

The hyphenated word POP-O-NUT.

SER. No. 17,357. KNITTED STOCKINGS. HECHT, HIRSCHLER CO., Norfolk, Va. Filed Feb. 26, 1906.

No-Mo-Hole

The hyphenated word NO-MO-HOLE.

SER. No. 17,369. ATOMIZERS AND POWDER-BLOWERS. THE DEVILBISS MANUFACTURING COMPANY, Toledo, Ohio. Filed Feb. 26, 1906. Used ten years.

DeVILBISS

The word DEVILBISS.

SER. No. 17,379. LIME, BOTH CRUDE AND REFINED, CAUSTIC AND HYDRATED. HARPERS FERRY LIME COMPANY, Millville, W. Va. Filed Feb. 27, 1906.

WHITE DIAMOND

The arbitrary words "WHITE DIAMOND."

SER. No. 17,412. KNIT HOSIERY, KNIT UNDERWEAR, KNIT SWEATERS, AND KNIT GLOVES. DALSHEIMER BROTHERS, New York, N. Y. Filed Feb. 28, 1906.



The word ROSETTA, accompanied by the representation of a red rose.

SER. No. 17,403. READY-MIXED PAINTS. W. W. LAWRENCE & COMPANY, Pittsburg, Pa. Filed Feb. 28, 1906. Used ten years.



The words "THE BEST PAINT" and the representation of a paint-can bearing thereon the words "THE LAWRENCE PAINTS READY MIXED W. W. LAWRENCE & CO. PITTSBURGH," and a central panel bearing a circular figure.

SER. No. 17,456. MANUFACTURED PLUG, TWIST, AND CUT TOBACCOS. ZIMMER & CO., INC., Petersburg, Va. Filed Mar. 1, 1906.



The name, RED FUNNEL, and a representation of a central portion of a steamship showing the funnel thereof printed in red.

SER. No. 17,464. JAMS, JELLIES, PRESERVES, AND PICKLES. ELLEN H. NORTH, Geneseo, N. Y. Filed Mar. 2, 1906. Used ten years.

SER. No. 17,464.

GENESEO JAM KITCHEN.

The words "GENESEO JAM KITCHEN."

SER. No. 17,467. COFFEE. JAMES K. BOWEN, Allentown, Pa. Filed Mar. 2, 1906.

QUICK SNAP

The words "QUICK SNAP."

SER. No. 17,477. WHISKY. BENJAMIN W. LE COMPTE, Galveston, Tex. Filed Mar. 3, 1906.

BUSY DAY

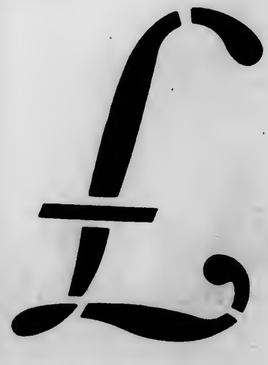
The words "BUSY DAY" and a monogram of the letters "B. D."

SER. No. 17,485. CANNED VEGETABLES. E. S. DINGLEY COMPANY, Farmington, Me. Filed Mar. 3, 1906. Used ten years.

Superbs

The word "SUPERB."

SER. No. 17,526. ILLUMINATING-OILS AND LUBRICATING OILS AND GREASES. STERLING OIL COMPANY, Emlenton, Pa. Filed Mar. 5, 1906.



The pound-sterling sign (£)

SER. No. 17,591. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 6, 1906. Used ten years.

RICHMOND

The word RICHMOND.

SER. No. 17,631. SURFACE-COATED PAPERS, ENAMELED PAPERS, OR PAPERS THAT HAVE A COATING OF CLAY AND GLUE OR OTHER MATERIALS ON ONE OR BOTH SIDES. DILL & COLLINS CO., Philadelphia, Pa. Filed Mar. 7, 1906.



The letter "D" inclosed by a diamond-shaped figure.

SER. No. 17,632. WRAPPING-PAPER. DILL & COLLINS CO., Philadelphia, Pa. Filed Mar. 7, 1906.



The letter "D" inclosed by a diamond-shaped figure.

SER. No. 17,649. CANNED FRUITS, VEGETABLES, JELLIES, FRUIT-BUTTER, AND FRUIT-JAMS. ERIE PRESERVING COMPANY, Brant and Buffalo, N. Y. Filed Mar. 8, 1906. Used ten years.

ERIE

The word "ERIE."

SER. No. 17,664. CHEWING-GUM. THE GROVE CO., Salem, Ohio. Filed Mar. 8, 1906.

AUTO

The word "AUTO."

SER. No. 17,680. CLEAR HAVANA CIGARS. J. W. GEBHART, Spokane, Wash. Filed Mar. 8, 1906.

LA FAVORENCIA

The words LA FAVORENCIA.

SER. No. 17,686. CHEMICAL PREPARATION WHICH ACTS AS A BLEACHER, DEODORIZER, DISINFECTANT, AND GERMICIDE. AMÉDÉE CASTAING, New York, N. Y. Filed Mar. 9, 1906.

CHLOROZONE

The word CHLOROZONE.

SER. No. 17,688. LINEN COLLARS. SCHEIN & LASDAY, Pittsburg, Pa. Filed Mar. 9, 1906.



A rectangular field bearing the words "IRON BRAND" and the representation of a manufacturing plant including blast-furnaces.

SER. No. 17,708. FLUID SOAP. R. HUDNUT'S PHARMACY, New York, N. Y. Filed Mar. 10, 1906.



A generally vase-like figure bordered by a design of tulips and lilacs and encircling the words "LIQUID GREEN SOAP."

SER. No. 17,733. GOLF-BALLS. THE KEMPSHALL MANUFACTURING COMPANY, New York, N. Y. Filed Mar. 10, 1906.

FLYER

The word "FLYER."

SER. No. 17,759. PORTABLE TANKS FOR CONTAINING A FIRE-EXTINGUISHING CHEMICAL. HARRY H. CHARLES, Quincy, Ill. Filed Mar. 12, 1906.

SER. No. 17,759.

EUREKA

The word EUREKA.

SER. No. 17,766. DEVICE FOR PREVENTING SELF-SCRATCHING, SUCKING THE FINGERS, &c. ROBERT M. CLARK, Boston, Mass. Filed Mar. 12, 1906.



The hyphenated word, HAND-I-HOLD. Associated with this are the words "BABE MIT" together with the representation of two sleeves reversely arranged with round knobs on the ends thereof.

SER. No. 17,912. TEA. CHASE & SANBORN, Boston, Mass. Filed Mar. 15, 1906. Used ten years.

ORLOFF

The word "ORLOFF" in block Roman capital letters inclosed by a double-line border.

SER. No. 17,916. GAS-ENGINES. WHITE LILY WASHER COMPANY, Davenport, Iowa. Filed Mar. 15, 1906.



The words "WHITE LILY" associated with the representation of a pond-lily, leaves, buds and blossoms represented as floating upon the water.

SER. No. 17,921. FERTILIZERS. RASIN-MONUMENTAL COMPANY OF ANNE ARUNDEL COUNTY, Baltimore, Md. Filed Mar. 15, 1906.

MONUMENTAL

The word "MONUMENTAL."

SER. No. 17,939. HOSIERY. PARAMOUNT KNITTING CO., Chicago, Ill. Filed Mar. 16, 1906.

Samson

The word "SAMSON."

SER. No. 17,924. FERTILIZERS. RASIN-MONUMENTAL COMPANY OF ANNE ARUNDEL COUNTY, Baltimore, Md. Filed Mar. 15, 1906.



The representation of the Washington monument in the city of Baltimore, Maryland. This is surrounded by a circular border on which are shown the words "MONUMENTAL FERTILIZERS."

SER. No. 17,950. UNDERSHIRTS AND DRAWERS MADE OF LINEN WOVEN CLOTH. EARL & WILSON, Troy, N. Y. Filed Mar. 16, 1906.

BARNEY McGLYNN

The words BARNEY McGLYNN.

SER. No. 17,956. OFFICE PARTITIONS MADE OF ORNAMENTAL PANEL GLASS WORK, POSTS, RAILS, AND BALUSTERS. MOUNT & ROBERTSON, New York, N. Y. Filed Mar. 16, 1906.

Made by the Mile
Sold by the Foot.

The phrase "MADE BY THE MILE SOLD BY THE FOOT."

SER. No. 17,996. TABLE-WATERS. JACOB RIES, Shakopee, Minn. Filed Mar. 19, 1906.



The monogram of the letters J and R inclosed by concentric circles.

SER. No. 18,001. SOAP. FELS & COMPANY, Philadelphia, Pa. Filed Mar. 19, 1906. Used ten years.

SER. No. 18,001.

FELS-NAPTHA

The words "FELS-NAPTHA."

SER. No. 18,072. DOOR-SPRINGS. THE COLUMBIAN HDW. CO., Cleveland, Ohio. Filed Mar. 21, 1906.

STAR

The word "STAR."

SER. No. 18,085. KETCHUP PACKAGED IN BOTTLES. CURTICE BROTHERS COMPANY, Rochester, N. Y. Filed Mar. 21, 1906. Used ten years.

CURTICE BROTHERS CO.

The words "CURTICE BROTHERS CO."

SER. No. 18,089. PLATINUM. ROBERT R. GRAF, Baltimore, Md. Filed Mar. 21, 1906.

AMERICAN GRAFTONIA PLATINUM

The words AMERICAN GRAFTONIA PLATINUM.

SER. No. 18,091. INSECTICIDES. WILLIAM PETERMAN, New York, N. Y. Filed Mar. 21, 1906. Used ten years.

PETERMAN'S ROACH FOOD

The words "PETERMAN'S ROACH FOOD."

SER. No. 18,105. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 23, 1906. Used ten years.

WANDO PHOSPHATE CO'S

The words and abbreviation WANDO PHOSPHATE CO'S.

SER. No. 18,138. INSECTICIDES. WILLIAM PETERMAN, New York, N. Y. Filed Mar. 22, 1906. Used ten years.

PETERMAN'S DISCOVERY

The words "PETERMAN'S DISCOVERY."

SER. No. 18,148. FERMENTED MILK. DR. DADIRRIAN & SONS' CO., New York, N. Y. Filed Mar. 22, 1906.

ZOOLAK

The word ZOOLAK.

SER. No. 18,154. FLAVORING EXTRACT. JOHN Z. DAVIDSON, Baltimore, Md. Filed Mar. 22, 1906.

GLYSYROL

The word GLYSYROL.

SER. No. 18,185. BURNERS AND TIPS FOR ILLUMINATING-GAS. AMERICAN LAVA COMPANY, Chattanooga, Tenn. Filed Mar. 23, 1906.

ALCO

The word "ALCO."

SER. No. 18,197. SILKS AND SILK-MIXTURE TEXTILES. SILK TEXTILE WATER-PROOFING CO., New York, N. Y. Filed Mar. 23, 1906.

FREEOSPOT

The word FREEOSPOT.

SER. No. 18,286. MEDICATED SOAP. DR. CHARLES CO., New York, N. Y. Filed Mar. 27, 1906.



The portrait or facial representation of Dr. Alphonse Charles (now deceased) inclosed within an oval border, with the words "DR. CHARLES HEALING SOAP" arranged to the right-hand side of, and partially beneath said portrait, and the whole inclosed within an ornamental rectangular border.

SER. No. 18,323. INVERTED GAS-LAMPS AND THE PARTS THEREOF. MANHATTAN SCREW & STAMPING WORKS, New York, N. Y. Filed Mar. 28, 1906.

WIZARD

The word "WIZARD."

SER. No. 18,377. CONFECTIONERY FLAVORING AND COLORING MATERIALS. PURITAN DRUG COMPANY, Boston, Mass. Filed Mar. 30, 1906.

KANDY KIT

The words KANDY KIT.

SER. No. 18,400. GAME APPARATUS. THE HOME GAME CO., Buffalo, N. Y. Filed Mar. 31, 1906.

THE SHADOW CIRCUS

The words THE SHADOW CIRCUS.

SER. No. 18,402. BEER. CONSUMERS BREWING COMPANY, St. Louis, Mo. Filed Mar. 31, 1906.

Dandy

The word DANDY.

SER. No. 18,409. BISCUITS. CEREAL LAXATIVE CO., San Francisco, Cal. Filed Mar. 31, 1906.

No-meds

The fanciful word NO-MEDS.

SER. No. 18,456. BLEACHED AND UNBLEACHED TEXTILE FABRICS. EVAN J. FRASER-CAMPBELL, New York, N. Y. Filed Apr. 3, 1906.

SER. No. 18,456.



The representation of a Chinese policeman holding a straight club under his right arm and wearing a loosely-buttoned coat, together with a belt.

SER. No. 18,463. OLIVE-OIL. HAUSELT & LUNESCHLOSS, New York, N. Y. Filed Apr. 3, 1906.



The word "BERI," which is displayed in plain type within a crescent-shaped border and printed over the words "OLIVE OIL" in lighter color and larger type.

SER. No. 18,521. BONE-CUTTING FORCEPS. THE DEVILBISS MFG. CO., Toledo, Ohio. Filed Apr. 5, 1906. Used ten years.

DeVILBISS

The name DEVILBISS.

SER. No. 18,522. TREPHINES. THE DEVILBISS MFG. CO., Toledo, Ohio. Filed Apr. 5, 1906. Used ten years.

DeVILBISS

The name DEVILBISS.

SER. No. 18,523. SPECULA. THE DE VILBISS MFG. CO., Toledo, Ohio. Filed Apr. 5, 1906. Used ten years.

SER. No. 18,523.

DeVILBISS

The name DE VILBISS.

SER. No. 18,557. SOAPS FOR TOILET, LAUNDRY, AND HOUSEHOLD USE; ALSO SOAP POWDERS. COLGATE & CO., New York, N. Y. Filed Apr. 6, 1906. Used ten years.

COLGATE & CO.

The words "COLGATE & CO."

SER. No. 18,572. CAKE AND PIE TINS. THE REPUBLIC METALWARE COMPANY, Buffalo, N. Y. Filed Apr. 6, 1906.

CLEAN CUT CAKE TINS

The words CLEAN CUT, associated with the words CAKE TINS.

SER. No. 18,591. LEATHER BOOTS AND SHOES. BEASLEY HARWOOD SHOE CO., INC., Lynchburg, Va. Filed Apr. 7, 1906.



The word REPUTATION, printed in the distinctive style shown, and before which appears the representation of a dagger vertically arranged in front of, and diametrically of a wreath, with the hilt directly above the wreath, and the blade extending below it, and tied to it with a ribbon adjacent the point.

SER. No. 18,597. LEATHER BOOTS, SHOES, AND SLIPPERS. THE PRESTON B. KEITH SHOE CO., Brockton, Mass. Filed Apr. 7, 1906.



The figure of a man seated upon a rock associated with the words "THE PARK."

SER. No. 18,618. PICKLED OR CORNED BEEF. SWIFT AND COMPANY, Chicago, Ill. Filed Apr. 9, 1906.

RED WING

The words RED WING.

SER. No. 18,633. RUBBER HEELS. THOMPSON-EHLERS COMPANY, Chicago, Ill. Filed Apr. 9, 1906.

VICTOR

The word VICTOR.

SER. No. 18,636. POLISHING-BRUSHES AND DAUBERS FOR SHOE-POLISH. AMERICAN CHEMICAL MANUFACTURING & MINING COMPANY, Rochester, N. Y. Filed Apr. 9, 1906.

SHINOLA

The word "SHINOLA."

SER. No. 18,642. TOMATO KETCHUP. DONAHUE BROTHERS, Troy, N. Y. Filed Apr. 9, 1906.

CENTURY

The word "CENTURY."

SER. No. 18,646. SAUSAGES. BOHE & BROTHER, New York, N. Y. Filed Apr. 9, 1906.



The words "LA CORONA" associated with the representation of a crown.

SER. No. 18,664. SUBSTITUTE FOR SHELLAC. EMIL CALMAN & Co., New York, N. Y. Filed Apr. 10, 1906.

IM-LAC

The name "IM-LAC."

SER. No. 18,701. WOMEN'S LEATHER SHOES. BEASLEY HARWOOD SHOE CO INC., Lynchburg, Va. Filed Apr. 11, 1906.



The words NEWPORT GIRL, and the representation of a young woman dressed in outing costume, seated at ease with crossed limbs in a Morris chair, by the side of a table, on which is resting a book and an electric table-lamp having a dome-shaped shade, the woman being engaged in looking at a shoe which she is holding out in her right hand, and a shoe-carton resting on the floor at the opposite side of the chair from the table, with its cover partly off and containing a single shoe.

SER. No. 18,704. SEMIPASTE PAINT. THE H B DAVIS COMPANY, Baltimore, Md. Filed Apr. 11, 1906.

2-4-1

The hyphenated numerals 2-4-1.

SER. No. 18,712. PREPARED PAINTS. BASS-HUETER PAINT CO., San Francisco, Cal. Filed Apr. 12, 1906.



The coined word "FLINTO."

SER. No. 18,728. BREAD. FRANK WIEDEMANN, Sebastopol, Cal. Filed Apr. 12, 1906.

SER. No. 18,728.



The words "FIG BREAD," associated with a fig branch bearing fig-fruit.

SER. No. 18,732. WHITE LEAD. JAMES JACOBS, Troy, N. Y. Filed Apr. 12, 1906.

ARCHITECT

The word "ARCHITECT."

SER. No. 18,733. CIGARS. STRATFORD TOBACCO COMPANY, New York, N. Y. Filed Apr. 12, 1906.

BONO DE CUBA

The words BONO DE CUBA.

SER. No. 18,752. SOAPS FOR TOILET, LAUNDRY, AND HOUSEHOLD USE, ALSO SOAP POWDERS. COLGATE & CO., New York, N. Y. Filed Apr. 13, 1906.

ROBINIA

The word ROBINIA.

SER. No. 18,753. SOAPS FOR TOILET, LAUNDRY, AND HOUSEHOLD USE, ALSO SOAP POWDERS. COLGATE & CO., New York, N. Y. Filed Apr. 13, 1906.

CARNIVAL VIOLETS

The words CARNIVAL VIOLETS.

SER. No. 18,754. SOAPS FOR TOILET, LAUNDRY, AND HOUSEHOLD USE, ALSO SOAP POWDERS. COLGATE & CO., New York, N. Y. Filed Apr. 13, 1906.

SER. No. 18,754.

CRADLE

The word CRADLE.

SER. No. 18,778. WATCHES AND WATCH PARTS. THE HAMPDEN WATCH CO., Canton, Ohio. Filed Apr. 13, 1906.

Upper Ten

The words UPPER TEN.

SER. No. 18,779. CANDY. THE GEORGE BLOEMER & SON CO., Baltimore, Md. Filed Apr. 13, 1906.

GILT EDGE

The words GILT EDGE.

SER. No. 18,782. MONTHLY TRADE-JOURNAL. BENJ. LILLARD, New York, N. Y. Filed Apr. 13, 1906.

PRACTICAL DRUGGIST PHARMACEUTICAL REVIEW OF REVIEWS

The words, PRACTICAL DRUGGIST AND PHARMACEUTICAL REVIEW OF REVIEWS, and the representation of a druggist's mortar from the top of which projects the handle of a pestle and the feathery end of a quill pen, the point of which projects from the bottom of the mortar; the word, AND, being shown upon said mortar.

SER. No. 18,792. LEATHER BOOTS AND SHOES. BEASLEY HARWOOD SHOE CO INC Lynchburg, Va. Filed Apr. 14, 1906.

SHOES SATISFY

The representation of a rectangular frame, in the middle of the upper side of which are the letters H and B arranged in monogram, and within which, at each side, respectively, of the monogram, appear the words, "SHOE" and "Co's." and directly below the monogram and said words, the words, "SHOES SATISFY."

SER. No. 18,793. LEATHER BOOTS AND SHOES. BEASLEY HARWOOD SHOE CO INC Lynchburg, Va. Filed Apr. 14, 1906.

SER. No. 18,793.



Virginius

The word VIRGINIUS, in connection with a representation of Virginius clad in a coat of mail with a helmet on his head and holding a short, pointed sword in his right hand in fighting attitude, and holding a shoe on his left arm.

SER. No. 18,795. WOMEN'S LEATHER SHOES. BEASLEY HARWOOD SHOE CO INC., Lynchburg, Va. Filed Apr. 14, 1906.



Simplicity

The word SIMPLICITY and the representation of a young woman in sitting posture holding a bunch of violets to her nose with her right hand, and a fan down at her side in her left hand. The representation of several single violets also appear at each side of the woman's head.

SER. No. 18,794. CHILDREN'S LEATHER AND CANVAS SHOES. BEASLEY HARWOOD SHOE CO INC., Lynchburg, Va. Filed Apr. 14, 1906.

SER. No. 18,794.



OUR WISHBONE SHOE

The words OUR WISHBONE SHOE, printed in letters representing wishbones and parts of wishbones, in connection with the representation of a little boy and girl standing facing each other and in the act of breaking a wishbone into two pieces by pulling on the sections thereof.

SER. No. 18,797. TUBULAR LAMPS AND LANTERNS AND PARTS THEREOF. R. E. DIETZ COMPANY, New York, N. Y. Filed Apr. 14, 1906.

PIONEER

The word "PIONEER."

SER. No. 18,825. KALSOMINE. MANHATTAN COLOR WORKS, New York, N. Y. Filed Apr. 16, 1906.

FRES-KO-KOTE

The hyphenated word FRES-KO-KOTE.

SER. No. 18,826. COLD WATER PAINTS AND KALSOMINES. MANHATTAN COLOR WORKS, New York, N. Y. Filed Apr. 16, 1906.

TEM-PO-RA

The hyphenated word TEM-PO-RA.

SER. No. 18,844. MAGAZINE OR PERIODICAL. THE CULTIVATOR PUBLISHING COMPANY, Atlanta, Ga. Filed Apr. 16, 1906.

THE SOUTHERN CULTIVATOR AND DIXIE FARMER

The words THE SOUTHERN CULTIVATOR AND DIXIE FARMER.

SER. No. 18,849. WRAPPING-PAPER. UNITED PAPER COMPANY, Atlanta, Ga. Filed Apr. 16, 1906.

UNITED



D VEGETABLE.

The representation of a tomato, associated with the words UNITED and VEGETABLE and the letter D.

SER. No. 18,856. CIRCULAR, BAND, HAND, AND CROSSCUT SAWS. JOSHUA OLDHAM & SONS, Brooklyn, N. Y. Filed Apr. 16, 1906. Used ten years.

The Oldham Saws

The words, THE OLDHAM SAWS.

SER. No. 18,864. COTTON PIECE GOODS. MASSACHUSETTS COTTON MILLS, Lowell, Mass. Filed Apr. 17, 1906. Used ten years.

STILL WATER

The words STILL WATER.

SER. No. 18,900. PRESS-BOARD. E. W. MURPHY & COMPANY, Hudson, N. Y. Filed Apr. 18, 1906.

EUREKA

The word EUREKA.

SER. No. 18,913. BISCUITS, BREAD, CAKES, CRACKERS, FLAKES, WAFERS, AND SNAPS. MOUNTAIN CITY MILL CO., Chattanooga, Tenn. Filed Apr. 19, 1906.

CAFÉ

The word "CAFÉ."

SER. No. 18,914. BISCUITS, BREAD, CAKES, CRACKERS, FLAKES, WAFERS, SNAPS, AND ANIMAL CAKES AND CRACKERS. MOUNTAIN CITY MILL CO., Chattanooga, Tenn. Filed Apr. 19, 1906.

Lookout

The word "LOOKOUT."

SER. No. 18,915. BISCUITS, BREAD, CAKES, CRACKERS, FLAKES, WAFERS, SNAPS, AND ANIMAL CAKES AND CRACKERS. MOUNTAIN CITY MILL CO., Chattanooga, Tenn. Filed Apr. 19, 1906.

GEORGIA BELLE

The words GEORGIA BELLE.

SER. No. 18,916. BISCUITS, BREAD, CAKES, CRACKERS, FLAKES, WAFERS, SNAPS, AND ANIMAL CAKES AND CRACKERS. MOUNTAIN CITY MILL CO., Chattanooga, Tenn. Filed Apr. 19, 1906.

CHIC

The word "CHIC."

SER. No. 18,928. SLEEVE-IRONING BOARDS. NORMAN A. BROWN, New York, N. Y. Filed Apr. 19, 1906.

CRESCENT SLEEVE BOARD



The words "CRESCENT SLEEVE BOARD" together with the representation of a crescent.

SER. No. 18,940. VARNISHES, JAPANS, AND COLORS IN JAPAN, ENAMEL, AND SHELLAC. SENOUR MANUFACTURING CO., Chicago, Ill. Filed Apr. 20, 1906. Used ten years.

SENOUR'S

The word SENOUR'S.

SER. No. 19,002. REVOLVERS, PISTOLS, RIFLES, AND SHOTGUNS. HARRINGTON & RICHARDSON ARMS CO., Worcester, Mass. Filed Apr. 23, 1906. Used ten years.

SER. No. 19,002.

Police Automatic.

The words "POLICE AUTOMATIC."

SER. No. 19,004. REVOLVERS, PISTOLS, RIFLES, AND SHOTGUNS. HARRINGTON & RICHARDSON ARMS CO., Worcester, Mass. Filed Apr. 23, 1906. Used ten years.

H.&R.

"H. & R."

SER. No. 19,069. WOVEN AND NETTED WIRE. THE NEW JERSEY WIRE CLOTH CO., Trenton, N. J. Filed Apr. 25, 1906. Used ten years.

JERSEY

The word JERSEY.

SER. No. 19,156. CRACKERS. CENTURY BISCUIT COMPANY, Indianapolis, Ind. Filed Apr. 28, 1906.

FAWN

The word "FAWN."

SER. No. 19,190. VARNISH AND HARD OIL FINISH. SPOKANE PAINT & OIL CO., Spokane, Wash. Filed Apr. 30, 1906.

SPARALAC

The word SPARALAC within a diamond-shape border.

SER. No. 19,208. SILK, DUCK, AND LEATHER BELTS. LEO I. MEINHARD COMPANY, New York, N. Y. Filed Apr. 30, 1906.



A rectangular panel bearing the words, THE ADELE RITCHIE BELT, the words, ADELE RITCHIE, being a facsimile signature. The said panel having in its upper border an oval-shaped band bearing the letters A R.

SER. No. 19,214. CALCIMINE. ACME WHITE LEAD & COLOR WORKS, Detroit, Mich. Filed May 1, 1906.

KAL-SOM

The word KAL-SOM.

SER. No. 19,261. BEER. PITTSBURGH BREWING COMPANY, Pittsburg, Pa. Filed May 3, 1906.

Tech

The word "TECH."

SER. No. 19,272. SAUSAGES. JOHN P. SQUIRE & COMPANY, Jersey City, N. J. Filed May 3, 1906. Used ten years.

Arlington

The word ARLINGTON.

SER. No. 19,273. STEEL RODS, BARS, BLOOMS, BILLETS, BLOCKS, PLATES, SHEETS, SLABS, STRIPS, AND FORGINGS. CRUCIBLE STEEL COMPANY OF AMERICA, Pittsburg, Pa. Filed May 3, 1906.

ONYX

The word ONYX.

SER. No. 19,283. CANTALOUPES. A. F. YOUNG & CO., New York, N. Y.; Pittsburg, Pa., and Boston, Mass. Filed May 4, 1906.

EDEN GEM

The words EDEN GEM.

SER. No. 19,284. BUTTER. OSCAR A. EASTLACK, Camden, N. J. Filed May 4, 1906. Used ten years.

THERE IS NOTHING ELSE MADE AS FINE AS

XXXX

IT IS PERFECTION ITSELF.

The words "THERE IS NOTHING ELSE MADE AS FINE AS" arranged above the four Roman figures "XXXX" beneath which are the words "IT IS PERFECTION ITSELF."

SER. No. 19,331. WHEAT-FLOUR. JOHN A. COLE MILLING COMPANY, Rochester, Minn. Filed May 7, 1906. Used ten years.



The capital letter A crossed by a panel on which appears the symbol No. 1 HARD.

SER. No. 19,332. CURED FISH, DRIED AND SALTED. CUNNINGHAM & THOMPSON, Gloucester, Mass. Filed May 7, 1906.

OPAL

The word OPAL.

SER. No. 19,333. CURED FISH, DRIED AND SALTED. CUNNINGHAM & THOMPSON, Gloucester, Mass. Filed May 7, 1906.

LION

The word LION.

Ser. No. 19,398. MIXED PAINT. MARINE PAINT CORPORATION, Norfolk, Va. Filed May 9, 1906.

MARPACO

The coined word "MARPACO."

Ser. No. 19,519. CHEWING-GUM. CONTINENTAL VENDING COMPANY, Rochester, N. Y. Filed May 14, 1906.

DI-GESTO

The fanciful and hyphenated word DI-GESTO.

PRINTED AND LITHOGRAPHED BY
SACKETT & WILHELMS
LITHOGRAPHING & PRINTING CO.
NEW YORK

TRADE-MARKS

REGISTERED JUNE 19, 1906.

53,945. METAL-POLISH. AYLING BROS., Chicago, Ill.
The letters and character "B-K." Used ten years.
Filed April 28, 1905. Serial No. 3,431. PUBLISHED APRIL 24, 1906.

53,946. MEDICINAL SOAP. BARCLAY & BARCLAY, New York, N. Y.
A rectangular panel bearing four smaller rectangular panels and two circular panels, the name "NEW YORK" appearing within the circular panels and the words "REUTERS SOAP. NEW YORK PRICE 25 CENTS" appearing in one of the rectangular panels, and the words "NONE GENUINE WITHOUT THE SIGNATURE OF JOHN REUTER M. D. NEW YORK" appearing in another panel, and words descriptive of the goods and its uses appearing in the remaining panels. Used ten years.
Filed May 13, 1905. Serial No. 5,493. PUBLISHED APRIL 24, 1906.

53,947. MEDICINAL SOAP. BARCLAY & BARCLAY, New York, N. Y.
A facsimile of the signature of John Reuter, M. D., deceased.
Filed May 13, 1905. Serial No. 5,494. PUBLISHED APRIL 24, 1906.

53,948. VARNISH, JAPAN, DRIERS, AND LIQUID FILLERS. BOSTON VARNISH COMPANY, Everett, Mass.
The word "DRYOL."
Filed March 19, 1906. Serial No. 18,005. PUBLISHED APRIL 24, 1906.

53,949. MINERAL COLORING-MATTER FOR MORTAR AND BRICKS. CHATTANOOGA PAINT CO., Chattanooga, Tenn.
The word "ECLIPSE" and the representation of a red Maltese cross, the word "ECLIPSE" extending across the same.
Filed June 6, 1905. Serial No. 7,528. PUBLISHED APRIL 24, 1906.

53,950. VARNISH-STAINS. THE DAVID B. CROCKETT COMPANY, Bridgeport, Conn.
The arbitrarily-selected words "OPAL-GLOSS."
Filed March 19, 1906. Serial No. 18,026. PUBLISHED APRIL 24, 1906.

53,951. SHINGLE-STAINS. DEXTER BROTHERS CO., Boston, Mass.
The representation of a human hand with the palm thereof in an outstretched position and the index-finger pointing upward, the other three fingers being bent down upon the palm and the thumb extending upwardly and outwardly. Diagonally disposed across and behind this representation of the hand is arranged the word "DEXTER" within two parallel lines or panels, the letters "DEX" being arranged to the upper left-hand side of the hand and the letters "TER" upon the lower right-hand side thereof, forming the word "DEXTER."
Filed March 3, 1906. Serial No. 17,480. PUBLISHED APRIL 24, 1906.

53,952. TOILET AND LAUNDRY SOAP. THE ERICKA MFG. CO. INCORPORATED, Springfield, Mass.
The word "ERICKA."
Filed March 6, 1906. Serial No. 17,608. PUBLISHED APRIL 24, 1906.

53,953. LAUNDRY SOAPS. JOHN B. MATHIS, Detroit, Tex.
The words "ARKANA POUCH."
Filed February 28, 1906. Serial No. 17,408. PUBLISHED APRIL 24, 1906.

53,954. COAL. ANDREW K. MCKEE, Philadelphia, Pa.
The words "HOT COAL" and the representation of flames shooting from said words.
Filed February 17, 1906. Serial No. 17,140. PUBLISHED APRIL 24, 1906.

53,955. VARNISHES. MURPHY VARNISH COMPANY, Newark, N. J.
The words "MURPHY VARNISH COMPANY." Used ten years.
Filed March 10, 1906. Serial No. 17,719. PUBLISHED APRIL 24, 1906.

53,956. PRIMING, COATING, AND PREPARING MATERIAL FOR VARNISHES. MURPHY VARNISH COMPANY, Newark, N. J.
The word "MURPHY." Used ten years.
Filed March 10, 1906. Serial No. 17,720. PUBLISHED APRIL 24, 1906.

53,957. STAINS. NASHVILLE CHEMICAL COMPANY, Nashville, Tenn.
The word "PICKLEWOOD."
Filed March 5, 1906. Serial No. 17,519. PUBLISHED APRIL 24, 1906.

53,958. SOAP. NATIONAL SOAP CO., Detroit, Mich.
The hyphenated word "LIN-OIL-JEL."
Filed March 5, 1906. Serial No. 17,523. PUBLISHED APRIL 24, 1906.

53,959. FERTILIZERS. RASIN-MONUMENTAL COMPANY OF ANNE ARUNDLE COUNTY, Baltimore, Md.
The word "RASIN'S." Used ten years.
Filed March 15, 1906. Serial No. 17,920. PUBLISHED APRIL 24, 1906.

53,960. SOAP. SIEGEL, COOPER & CO., Chicago, Ill.
The word "MILFORD." Used ten years.
Filed May 11, 1905. Serial No. 5,177. PUBLISHED APRIL 24, 1906.

53,961. PRESERVATIVE PAINT FOR THE BOTTOMS OF SHIPS AND BOATS. TARR & WONSON, LIMITED, Gloucester, Mass.
The word "RACING." Used ten years.
Filed April 28, 1905. Serial No. 3,416. PUBLISHED APRIL 24, 1906.

53,962. PRESERVATIVE PAINT FOR THE BOTTOMS OF VESSELS AND BOATS. TARR & WONSON, LIMITED, Gloucester, Mass.
The representation of a sailing vessel at sea. Used ten years.
Filed April 28, 1905. Serial No. 3,418. PUBLISHED APRIL 24, 1906.

53,963. CHEROOTS. THREEFOOT BROS. & CO., Meridian, Miss.
The words "RED ROSE CHEROOTS" arranged above the representation of a red rose, across the stem and leaves of which appear our firm name and address and at each side of which appears a conventional figure bearing the characters "3 FOR 5 CTS.," and the figure "3" in connection with the representation of a human foot.
Filed June 5, 1905. Serial No. 7,442. PUBLISHED APRIL 24, 1906.

53,964. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn.
The words, character, and abbreviation "NORFOLK & CAROLINA CHEMICAL CO'S." Used ten years.
Filed March 6, 1906. Serial No. 17,571. PUBLISHED APRIL 24, 1906.

53,965. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn.
The words and abbreviations "JAS. G. TINSLEY & CO'S." Used ten years.
Filed March 6, 1906. Serial No. 17,580. PUBLISHED APRIL 24, 1906.

53,966. CIGARS. WILLIAMS & BRENCKLE CIGAR MANUFACTURING CO., Milwaukee, Wis.
The words "GRAND AVENUE," accompanied by a prospective view of a portion of Grand avenue, at Milwaukee, Wis. Used ten years.
Filed October 11, 1905. Serial No. 13,488. PUBLISHED MARCH 27, 1906.

53,967. BOLT AND NUT MAKING MACHINERY. THE ACME MACHINERY CO., Cleveland, Ohio.
The word-symbol "ACME."
Filed July 28, 1905. Serial No. 10,978. PUBLISHED APRIL 24, 1906.

53,968. TOBACCO-PIPES, CIGAR AND CIGARETTE TUBES. ADOLPH FRANKAU & CO. LTD., London, England.
The letters "B B B" and a parallelogram inclosing them.
Filed June 15, 1905. Serial No. 8,250. PUBLISHED APRIL 24, 1906.

53,969. POROUS PLASTERS. ALLCOCK MANUFACTURING CO., New York, N. Y.
The designation "ALLCOCK'S." Used ten years.
Filed June 27, 1905. Serial No. 9,253. PUBLISHED APRIL 24, 1906.

53,970. COMBINED TYPE-WRITING AND ADDING MACHINES. THE ARITHMOGRAPH COMPANY, Chicago, Ill.
The word "ARITHMOGRAPH" and the date "1904" arranged in the space between two concentric circles, while in the inner circle are arranged the signs "+," "—," and "×."
Filed December 1, 1905. Serial No. 15,120. PUBLISHED APRIL 24, 1906.

53,971. HAIR AND SKIN TONIC. BARCLAY & BARCLAY, New York, N. Y.
The words "O TRICOFERO DE BARRY" and the pictorial representation of the head and bust of a woman, the face being shown in three-quarter view and the hair flowing.
Filed May 13, 1905. Serial No. 5,495. PUBLISHED APRIL 24, 1906.

53,972. GEARS. BENJAMIN ATHA & COMPANY, Newark, N. J.
The word "TITAN."
Filed March 19, 1906. Serial No. 18,035. PUBLISHED APRIL 24, 1906.

53,973. ROCK-CRUSHERS. CLIMAX ROAD MACHINE CO., Marathon, N. Y.
The word "CLIMAX." Used ten years.
Filed March 15, 1906. Serial No. 17,907. PUBLISHED APRIL 24, 1906.

53,974. MEDICINAL PLASTER. WILLIAM C. DEVOLLD, Red Lodge, Mont.
The word "POULTICINE."
Filed February 6, 1906. Serial No. 16,794. PUBLISHED APRIL 24, 1906.

53,975. EXPLOSIVE-ENGINES. THE FOOS GAS ENGINE COMPANY, Springfield, Ohio.
The word "FOOS." Used ten years.
Filed March 19, 1906. Serial No. 18,022. PUBLISHED APRIL 24, 1906.

53,976. LIQUID, SEMILIQUID, GRANULAR, AND CAKE SOAP FOR TOILET USE. GEO. A. SCHMIDT CO., Chicago, Ill.
The arbitrary words "A HAPPY HOME MAKER."
Filed October 30, 1905. Serial No. 14,101. PUBLISHED APRIL 24, 1906.

53,977. UNMANUFACTURED IRON TERNES IN SHEET FORM. GRIFFITHS CHARCOAL IRON MILLS, Washington, Pa.
The words "GRIFFITHS' CHARCOAL BLOOM." Used ten years.
Filed November 28, 1905. Serial No. 15,056. PUBLISHED APRIL 24, 1906.

53,978. HAVANA CIGARS. HAVANA COMMERCIAL COMPANY, Jersey City, N. J., and New York, N. Y.
The words "LA FLOR DE YNCLAN DE F. YNCLAN, HABANA" within a double ellipse, the words "LA FLOR DE YNCLAN" being within the upper half of the border of the ellipse, the words "DE F. YNCLAN" being within the inner ellipse, and the word "HABANA" being within the lower half of the ellipse. Used ten years.
Filed August 8, 1905. Serial No. 11,424. PUBLISHED APRIL 24, 1906.

53,979. SHOTGUNS, RIFLES, PISTOLS, AND PARTS THEREOF. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill.
The coined word "HIBSPEBAR."
Filed October 21, 1905. Serial No. 13,839. PUBLISHED APRIL 24, 1906.

53,980. LIQUIDS FOR USE IN SHARPENING EDGED INSTRUMENTS. ERNEST HUNOLD, Providence, R. I.
The word "HONAR" inclosed in quotation-marks.
Filed July 22, 1905. Serial No. 10,708. PUBLISHED APRIL 24, 1906.

53,981. WHITE LEAD. JOHN T. LEWIS & BROS. CO., Philadelphia, Pa.
The words and abbreviations "WESTERN WHITE LEAD CO. PHILAD'A." Used ten years.
Filed September 20, 1905. Serial No. 12,825. PUBLISHED APRIL 24, 1906.

53,982. WHITE LEAD. JOHN T. LEWIS & BROS. CO., Philadelphia, Pa.
The words and abbreviations "PHILAD'A LEAD WORKS, PHILAD'A." Used ten years.
Filed September 20, 1905. Serial No. 12,826. PUBLISHED APRIL 24, 1906.

53,983. WHITE LEAD AND OXIDS OF LEAD. NATIONAL LEAD COMPANY, Jersey City, N. J., and New York, N. Y.
A crescent printed in red, associated with the words and abbreviations "SOUTHERN COMPANY ST. LOUIS & CHICAGO."
Filed July 27, 1905. Serial No. 10,871. PUBLISHED APRIL 24, 1906.

53,984. WHITE LEAD AND OXIDS OF LEAD. NATIONAL LEAD COMPANY, Jersey City, N. J., and New York, N. Y.
The words "COLLIER COMPANY." Used ten years.
Filed July 27, 1905. Serial No. 10,872. PUBLISHED APRIL 24, 1906.

53,985. WHITE LEAD AND OXIDS OF LEAD. NATIONAL LEAD & OIL CO. OF PA., Pittsburg, Pa.
The words and abbreviations "FAHNESTOCK, HASLETT & SCHWARTZ PITTSBURGH, PA." Used ten years.
Filed September 25, 1905. Serial No. 12,994. PUBLISHED APRIL 24, 1906.

53,986. HORSE AND MULE SHOES. PHOENIX HORSE SHOE CO., Chicago, Ill.
The fanciful figure or design of a letter "W" or double "V," one of which is partially superimposed upon the other, forming substantially the letter "W." Used ten years.
Filed July 17, 1905. Serial No. 10,492. PUBLISHED APRIL 24, 1906.

53,987. LUBRICATING-OIL. THE SINGER MANUFACTURING COMPANY, New York, N. Y.
The word "SINGER." Used ten years.
Filed October 25, 1905. Serial No. 13,929. PUBLISHED APRIL 24, 1906.

53,988. STATIONARY STEAM-ENGINES. SOUTHERN ENGINE & BOILER WORKS, Jackson, Tenn.
A diamond-shaped figure bearing the word "SOUTHERN" and the name and place of business of the applicant and the date of incorporation, as follows: "SOUTHERN ENGINE & BOILER WORKS, INCORPORATED 1884. JACKSON, TENN., U. S. A."
Filed July 22, 1905. Serial No. 10,717. PUBLISHED APRIL 24, 1906.

53,989. SPECTACLES AND EYEGLASSES AND PARTS THEREOF. SOUTHERN OPTICAL COMPANY, Knoxville, Tenn.
The letters "S. O. Co."
Filed March 15, 1906. Serial No. 17,908. PUBLISHED APRIL 24, 1906.

53,990. FEED-WATER HEATERS. STEWART HEATER CO., Buffalo, N. Y.
The representation of a shield with the words "THE OTIS TUBULAR HEATER & LIME EXTRACTOR. STEWART HEATER CO. BUFFALO, N. Y." appearing thereon. Used ten years.
Filed September 30, 1905. Serial No. 13,158. PUBLISHED APRIL 24, 1906.

53,991. SHOVELS, SCOOPS, AND SPADES. ST. LOUIS SHOVEL CO., St. Louis, Mo.
The representation of a snake coiled in the form of the figure 8 and the words "SOCKET TAPER STRAP ST. LOUIS SHOVEL CO.," all inclosed by an ornamental rectangular dotted border.
Filed August 16, 1905. Serial No. 11,704. PUBLISHED APRIL 24, 1906.

53,992. NOSE-GUARDS FOR EYEGLASSES. THE W. H. REISNER MANUFACTURING CO., Hagerstown, Md.
The word "TARGET" and the representation of a target.
Filed March 19, 1906. Serial No. 18,017. PUBLISHED APRIL 24, 1906.

53,993. TORPEDO-FIREWORKS. EDWARD H. WAGNER, New York, N. Y.
The words "SON OF A GUN."
Filed July 17, 1905. Serial No. 10,429. PUBLISHED APRIL 24, 1906.

53,994. SHOTGUNS AND RIFLES. WINCHESTER REPEATING ARMS CO., New Haven, Conn.
The word "WINCHESTER." Used ten years.
Filed July 3, 1905. Serial No. 9,669. PUBLISHED APRIL 24, 1906.

53,995. CLOTHES-WRINGERS. THE AMERICAN WRINGER COMPANY, New York, N. Y.
The word "UNIVERSAL."
Filed October 14, 1905. Serial No. 13,633. PUBLISHED APRIL 24, 1906.

53,996. SHOE-POLISH OR LEATHER-DRESSING. AYLING BROS., Chicago, Ill.
A rectangular green panel having in its lower center portion a red triangular figure and the word "RADIANT" on the panel following the lines of the triangular figure, the letter "I" appearing directly above the apex of the triangular figure. Used ten years.
Filed April 28, 1905. Serial No. 3,432. PUBLISHED APRIL 24, 1906.

53,997. COAL-TAR PAINT. BARRETT MANUFACTURING COMPANY, New York, N. Y.
The letter "B" upon a diamond-shaped background. Used ten years.
Filed January 6, 1906. Serial No. 15,965. PUBLISHED APRIL 24, 1906.

53,998. SOAP OF PASTE-LIKE CONSISTENCY. HAVILAH ANSON BLAKESLEE, Hartford, Conn.
The word "SKAT."
Filed October 6, 1905. Serial No. 13,394. PUBLISHED APRIL 24, 1906.

53,999. SILK THREADS AND CORDS. THE BRAINERD & ARMSTRONG COMPANY, New London, Conn.
The words "ROMAN FLOSS." Used ten years.
Filed November 23, 1905. Serial No. 14,931. PUBLISHED APRIL 24, 1906.

54,000. LADIES' HATS. CAROLYN & CO., New York, N. Y.
The name "CAROLYN" in the handwriting of Carolyn Turner, sole member of the firm.
Filed November 1, 1905. Serial No. 14,160. PUBLISHED APRIL 24, 1906.

54,001. VARNISHES, STAINS, JAPANS, AND SURFACERS. CHICAGO VARNISH CO., Chicago, Ill.
The arbitrarily-selected word "NONPAREIL." Used ten years.
Filed April 14, 1905. Serial No. 1,502. PUBLISHED APRIL 24, 1906.

54,002. SOAPS FOR TOILET, LAUNDRY, AND HOUSEHOLD USE. COLGATE & CO., New York, N. Y.
The word "COLGATE'S." Used ten years.
Filed December 21, 1905. Serial No. 15,565. PUBLISHED APRIL 24, 1906.

54,003. STEEL. CRUCIBLE STEEL COMPANY OF AMERICA, Pittsburg, Pa.
The word "PARAGON." Used ten years.
Filed May 13, 1905. Serial No. 5,518. PUBLISHED APRIL 24, 1906.

54,004. LUBRICATING-OIL. FISKE BROTHERS REFINING CO., New York, N. Y.
The word "SPRAYOLEUM."
Filed January 30, 1906. Serial No. 16,628. PUBLISHED APRIL 24, 1906.

54,005. ASPHALT MASTIC. GABRIEL & SCHALL, New York, N. Y.
The words "BRUNSWICK GERMANY," in connection with the letters and character "G. & S." inclosed in a circular figure. Used ten years.
Filed April 1, 1905. Serial No. 200. PUBLISHED APRIL 24, 1906.

54,006. ROOF-PAINTS. EDWIN W. GRAFTON, Washington, D. C.
A circular panel bearing a representation of a cat and two rectangular panels extending from each side of the circular panel, one of which bears the hyphenated word "GRAF-TONIC."
Filed January 30, 1906. Serial No. 16,620. PUBLISHED APRIL 24, 1906.

54,007. HAVANA CIGARS. HAVANA COMMERCIAL COMPANY, Jersey City, N. J., and New York, N. Y.
The words and abbreviations "LA ROSA AROMATICA DE A. LOPEZ Y CA." and "HABANA" surrounded by a border. Used ten years.
Filed February 27, 1906. Serial No. 17,378. PUBLISHED APRIL 24, 1906.

54,008. COCOA AND CHOCOLATE. HAWLEY & HOOPS New York, N. Y.
A monogram of the letters and numeral "A. No. 1." Used ten years.
Filed June 24, 1905. Serial No. 8,999. PUBLISHED APRIL 24, 1906.

54,009. WIRE FENCES AND COMBINATION WOOD AND WIRE FENCES. THE HODGE FENCE & LUMBER CO., LTD, Lake Charles, La.
The word "HODGE." Used ten years.
Filed November 14, 1905. Serial No. 14,635. PUBLISHED APRIL 24, 1906.

54,010. WOOD-FINISH. EDWIN JOHNSON, Pittsburg, Pa.
The hyphenated word "WASH-UP."
Filed September 20, 1905. Serial No. 12,799. PUBLISHED APRIL 24, 1906.

54,011. CAPS OR PRIMERS FOR BLASTING PURPOSES. THE METALLIC CAP MANUFACTURING CO'Y, New York, N. Y.
The representation of a Maltese cross, across one of the arms of which are the words "GOLD CROSS." Above the cross are the words "GOLD MEDAL" arranged in a curve, and below the cross is the symbol "XXXX." Used ten years.
Filed April 13, 1905. Serial No. 1,351. PUBLISHED APRIL 24, 1906.

54,012. CAPS OR PRIMERS FOR BLASTING PURPOSES. THE METALLIC CAP MANUFACTURING CO'Y, New York, N. Y.
The representation of a Maltese cross, across one of the arms of which are the words "SILVER CROSS." Above the cross are the words "SILVER MEDAL" arranged in a curve, and below the cross is the symbol "XXXX." Used ten years.
Filed April 13, 1905. Serial No. 1,353. PUBLISHED APRIL 24, 1906.

54,013. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill.
The word "PICNIC." Used ten years.
Filed July 13, 1905. Serial No. 10,219. PUBLISHED APRIL 24, 1906.

54,014. SHOE-LACES. THE NARROW FABRIC CO., Wyomissing, Pa.
The arbitrary word "FASHOND" appearing in fancy script form with a paraph simulating the pointed end of a shoe-lace.
Filed March 26, 1906. Serial No. 18,281. PUBLISHED APRIL 24, 1906.

54,015. WHITE LEAD. NATIONAL LEAD COMPANY, Jersey City, N. J., and New York, N. Y.
A representation of a fractured corroding pot printed in red containing sheets of corroded lead, associated with the words and abbreviations "MCBIRNEY & JOHNSTON CO. CHICAGO, ILL." Used ten years.
Filed July 27, 1905. Serial No. 10,870. PUBLISHED APRIL 24, 1906.

54,016. WHITE LEAD AND OXIDS OF LEAD. NATIONAL LEAD & OIL CO. OF PA., Pittsburg, Pa.
The words and abbreviations "BEYMER, BAUMAN & CO. PITTSBURGH." Used ten years.
Filed September 25, 1905. Serial No. 12,991. PUBLISHED APRIL 24, 1906.

54,017. WHITE LEAD AND OXIDS OF LEAD. NATIONAL LEAD & OIL CO. OF PA., Pittsburg, Pa.
The words and abbreviations "M. B. SUYDAM & CO. PITTSBURGH." Used ten years.
Filed September 25, 1905. Serial No. 12,997. PUBLISHED APRIL 24, 1906.

54,018. OXIDS OF LEAD. NATIONAL LEAD & OIL CO. OF PA., Pittsburg, Pa.
The words and abbreviations "BENDER & ALLDRED, PITTSBURG, PENNA." Used ten years.
Filed September 25, 1905. Serial No. 12,998. PUBLISHED APRIL 24, 1906.

54,019. STEEL. PARK STEEL COMPANY, Pittsburg, Pa.
The word "CORONA." Used ten years.
Filed May 13, 1905. Serial No. 5,476. PUBLISHED APRIL 24, 1906.

54,020. POLISHING PREPARATIONS FOR GLASS OR BRIGHT METAL. THE PELLUCIDE COMPANY, San Francisco, Cal.
A circular panel bearing the representation of a railroad-track entering a tunnel, with a pair of eyeglasses suspended over the tunnel and the word "PELLUCIDE" appearing on the track. The words "KEEPS GLASS CLEAR," "WITH," "WITHOUT," "NO FOG," "NO MIST," and "NO OBSTRUCTION TO THE SIGHT" also appear on the panel.
Filed February 2, 1906. Serial No. 16,700. PUBLISHED APRIL 24, 1906.

54,021. OILSTONES, WATERSTONES, WHETSTONES, HONES, AND GRINDSTONES. THE SCRANTON WHETSTONE AND ABRASIVE WHEEL CO., Scranton, Pa.
The words "RED CLOUD" and the representation of the head of an Indian appearing on the representation of a keystone, which is superimposed on a serrated seal.
Filed November 3, 1905. Serial No. 14,231. PUBLISHED APRIL 24, 1906.

54,022. PANAMA HATS. JACOB J. SEEDS & CO., Philadelphia, Pa.
The words "THE PERFECT PANAMA," the monogram of the letters "J J S C," the character "&" preceding said monogram and the letter "O" succeeding the same, and the representation of a striped field, on which said monogram, character, and letter are placed, and a buckled strap inclosing said field.
Filed October 17, 1905. Serial No. 13,704. PUBLISHED APRIL 24, 1906.

54,023. NEEDLES FOR SEWING BY HAND AND BY MACHINE. THE SINGER MANUFACTURING COMPANY, New York, N. Y.
The word "SINGER." Used ten years.
Filed October 25, 1905. Serial No. 13,923. PUBLISHED APRIL 24, 1906.

54,024. DUMB-WAITERS. JOHN GEORGE SPEIDEL, Reading, Pa.
The word "COLUMBIA" with a paraph beneath the word formed by a continuation of the first letter "C." Used ten years.
Filed April 22, 1905. Serial No. 2,702. PUBLISHED APRIL 24, 1906.

54,025. ILLUMINATING-OILS. STANDARD OIL CO. OF NEW YORK, New York, N. Y.
The representation of an arrow, upon the shaft of which the Japanese characters "SHO-RI," meaning victory, are shown, and which is crossed by a double-headed arrow or spear.
Filed July 1, 1905. Serial No. 10,123. PUBLISHED APRIL 24, 1906.

54,026. FOUNDRY-FACINGS. THE UNITED STATES GRAPHITE COMPANY, Saginaw, Mich.
The word "RAMONA."
Filed February 23, 1906. Serial No. 17,240. PUBLISHED APRIL 24, 1906.

54,027. SMOKING-TOBACCO AND CIGARETTES. VICTOR TALKING MACHINE CO., Camden, N. J.
The picture of a dog in the act of listening to a sound-reproducing machine.
Filed June 27, 1905. Serial No. 9,275. PUBLISHED APRIL 24, 1906.

54,028. CHOCOLATES AND OTHER BONBONS. THE WALTER M. LOWNEY COMPANY, Boston, Mass.
The words "NAME ON EVERY PIECE" inclosed in quotation-marks. Used ten years.
Filed July 20, 1905. Serial No. 10,613. PUBLISHED APRIL 24, 1906.

54,029. BASE-BALL GLOVES AND MITTS. A. G. SPALDING & BROTHERS, New York, N. Y.
The arbitrarily-coined word "SCOOP."
Filed December 4, 1905. Serial No. 15,189. PUBLISHED APRIL 24, 1906.

54,030. WATER-BAGS. THE ADAM APPELL COMPANY, Portland, Oreg.
The representation of an apple bearing the name "APPELLS," associated with the words "SOUTH AMERICAN WATER BAG."
Filed January 13, 1906. Serial No. 16,166. PUBLISHED APRIL 24, 1906.

54,031. WATER-BAGS. THE ADAM APPELL COMPANY, Portland, Oreg.
The representation of an apple bearing the name "APPELLS," associated with the words "SOUTH AMERICAN WATER BAG."
Filed January 13, 1906. Serial No. 16,167. PUBLISHED APRIL 24, 1906.

54,032. WHISKY. BIGBIE BROS. & CO., Lynchburg, Va.
The words "NATURAL BRIDGE." Used ten years.
Filed October 7, 1905. Serial No. 13,398. PUBLISHED APRIL 24, 1906.

54,033. CHEWING-GUM. ROBERT A. BRACHVOGEL, Chicago, Ill.
The words "NIX-E WON'T TELL."
Filed March 3, 1906. Serial No. 17,482. PUBLISHED APRIL 24, 1906.

54,034. CARBON-PAPER. THE CARTER'S INK COMPANY, Boston, Mass., and New York, N. Y.
The word "CARTER'S." Used ten years.
Filed May 26, 1905. Serial No. 6,697. PUBLISHED APRIL 24, 1906.

54,035. REMEDY FOR IMPOVERISHED BLOOD AND NERVES. ISAIE CROTEAU, Providence, R. I.
The representation of a chair and a key with the capital letter "O" arranged between them, all arranged in a horizontal line and separated from one another by hyphens.
Filed November 25, 1905. Serial No. 14,998. PUBLISHED APRIL 24, 1906.

54,036. LEATHER PURSES AND HAND-BAGS. GORHAM MFG. CO., Providence, R. I.
The word "GORHAM." Used ten years.
Filed March 7, 1906. Serial No. 17,629. PUBLISHED APRIL 24, 1906.

54,037. LEATHER SHOES. HAMILTON-BROWN SHOE COMPANY, St. Louis, Mo.
The words "HIGHLAND CALF" inclosed in a representation of a belt on which are printed the words "HAMILTON-BROWN SHOE CO."
Filed January 17, 1906. Serial No. 16,247. PUBLISHED APRIL 24, 1906.

54,038. MEN'S AND BOYS' LEATHER SHOES. HAMILTON-BROWN SHOE COMPANY, St. Louis, Mo.
The words "COUNTRY CLUB" inclosed in a representation of a belt on which are printed the words "HAMILTON-BROWN SHOE CO."
Filed January 17, 1906. Serial No. 16,248. PUBLISHED APRIL 24, 1906.

54,039. VARIOUS KINDS OF CHOCOLATES AND BONBONS. HENRY HEIDE, New York, N. Y.
The word "HEIDE'S." Used ten years.
Filed February 10, 1906. Serial No. 16,887. PUBLISHED APRIL 24, 1906.

54,040. WINDMILLS. THE HELLER-ALLER CO., Napoleon, Ohio.
The word "BAKER." Used ten years.
Filed February 19, 1906. Serial No. 17,174. PUBLISHED APRIL 24, 1906.

54,041. CHOCOLATE, COCOA, AND PREPARATIONS THEREOF. MILTON S. HERSHEY, Derry Church, Pa.
The word "HERSHEY'S." Used ten years.
Filed February 8, 1906. Serial No. 16,827. PUBLISHED APRIL 24, 1906.

54,042. KITCHEN UTENSILS MADE OF TIN. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill.
The letters "O V B" with a panel extending across the same, upon which appear the words "OUR VERY BEST." Used ten years.
Filed October 21, 1905. Serial No. 13,850. PUBLISHED APRIL 24, 1906.

54,043. WATERPROOF HATS AND CAPS. HIRSH BROTHERS, New Haven, Conn.
The word "ANT I WET" upon the representation of a seal, the letter "I" of the word occupying a circle in the central portion of the seal.
Filed December 16, 1905. Serial No. 15,460. PUBLISHED APRIL 24, 1906.

54,044. ANTISEPTIC DRESSING. WILLIAM G. HUGHES COMPANY, Los Angeles, Cal.
The hyphenated word "PICEA-LINI."
Filed February 20, 1906. Serial No. 17,212. PUBLISHED APRIL 24, 1906.

54,045. CERTAIN NAMED SEATS AND TANKS. EDGAR M. JORALEMON, Newark, N. J.
The word "CELLUVARNO."
Filed February 7, 1906. Serial No. 16,814. PUBLISHED APRIL 24, 1906.

54,046. ROLL-PAPER HOLDERS AND CUTTERS. THE NATIONAL CANDY MOLD AND MANUFACTURING COMPANY, Dayton, Ohio.
The word "GEM." Used ten years.
Filed December 4, 1905. Serial No. 15,176. PUBLISHED APRIL 24, 1906.

54,047. BURIAL-CASKETS, COFFINS, AND FIXTURES THEREFOR. NATIONAL CASKET CO., New York, N. Y.
The words "NATIONAL CASKET CO." Used ten years.
Filed February 20, 1906. Serial No. 17,199. PUBLISHED APRIL 24, 1906.

54,048. CERTAIN NAMED CHEMICAL PREPARATION. NATIONAL COAL TAR COMPANY, Boston, Mass.
The word "CARBONOL."
Filed January 8, 1906. Serial No. 16,028. PUBLISHED APRIL 24, 1906.

54,049. WHISKY. JOSEPH F. SINNOTT, Philadelphia, Pa.
The word "RECORD," in conjunction with the words "GIBSON'S RYE WHISKEY" and a representation of a distillery, associated with the words "MOORE & SINNOTT, PROPRIETORS & SUCCESSORS TO JOHN GIBSON'S SON & CO., GIBSONTON MILLS, MONONGAHELA RIVER, PA." To the left of the picture of the distillery is a shield-shaped figure containing the following wording: "PRINCIPAL OFFICES 234 SOUTH FRONT STREET, PHILA.," and to the right of the said picture of the distillery is another shield-shaped figure containing the following wording: "AGENCIES NEW YORK, BOSTON, NEW ORLEANS, SAN FRANCISCO."
Filed October 13, 1905. Serial No. 13,579. PUBLISHED APRIL 24, 1906.

54,050. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn.
The words and character "ALLISON & ADDISON'S." Used ten years.
Filed March 6, 1906. Serial No. 17,551. PUBLISHED APRIL 24, 1906.

54,051. RAT, VERMIN, AND INSECT DESTROYER OR EXTERMINATOR. EPHRAIM S. WELLS, Jersey City, N. J.
The words "ROUGH ON RATS."
Filed February 10, 1906. Serial No. 16,903. PUBLISHED APRIL 24, 1906.

54,052. SHEEP, CALF, GOAT, AND KID LEATHER. A. B. CLARK CO., New York, N. Y.
The representation of a twin tree, one half showing oak-leaves, with the word "OAK" thereon, and the other half spruce branches and leaves, with the word "SPRUCE" thereon, associated with the words "OAK SPRUCE" appearing above the tree.
Filed October 25, 1905. Serial No. 13,916. PUBLISHED APRIL 24, 1906.

54,053. SHEEP, GOAT, CALF, AND KID LEATHER. A. B. CLARK CO., New York, N. Y.
The representation of a plurality of shipping-tags arranged one above the other and upon one of which tags appear the words "BLUE TAG LINE."
Filed October 25, 1905. Serial No. 13,919. PUBLISHED APRIL 24, 1906.

54,054. INDIA-RUBBER OR GUTTA-PERCHA TOBACCO-POUCHES. ADOLPH FRANKAU & CO. LTD., London, England.
The designation "DIANA."
Filed June 15, 1905. Serial No. 8,249. PUBLISHED APRIL 24, 1906.

54,055. BROOMS AND BRUSHES. JAMES S. BARRON & CO., New York, N. Y.
The representation of a bear, associated with the word "ON."
Filed April 10, 1905. Serial No. 985. PUBLISHED APRIL 24, 1906.

54,056. MEDICAL PREPARATIONS FOR CERTAIN NAMED DISEASES. DOCTOR BLOSSER COMPANY, Atlanta, Ga.
The name "DR. BLOSSER'S." Used ten years.
Filed May 27, 1905. Serial No. 6,843. PUBLISHED APRIL 24, 1906.

54,057. FERTILIZERS. GEORGIA CHEMICAL WORKS, Augusta, Ga.
The word "CARDINAL."
Filed March 15, 1906. Serial No. 17,876. PUBLISHED APRIL 24, 1906.

54,058. REMEDY FOR COUGHS AND COLDS. OTTO CLETUS BAUMANN GROM, New York, N. Y.
The hyphenated syllables "O-SEE-BEE-GEE."
Filed June 8, 1905. Serial No 7,626. PUBLISHED APRIL 24, 1906.

54,059. AXES, HATCHETS, AND ADZES. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill.
The word "REV-O-NOC" and the letters, character, and abbreviation "H. S. B. & Co."
Filed October 13, 1905. Serial No. 13,583. PUBLISHED APRIL 24, 1906.

54,060. KNIVES AND RAZORS. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill.
The letters "O V B" with a panel extending across the same, upon which appear the words "OUR VERY BEST." Used ten years.
Filed October 21, 1905. Serial No. 13,853. PUBLISHED APRIL 24, 1906.

54,061. AXES, HATCHETS, AND ADZES. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill.
The coined word "HIBSPEBAR."
Filed October 21, 1905. Serial No. 13,854. PUBLISHED APRIL 24, 1906.

54,062. WRENCHES AND VISES. J. H. WILLIAMS & CO., New York, N. Y.
The word "AGRIPPA."
Filed June 30, 1905. Serial No. 9,533. PUBLISHED APRIL 24, 1906.

54,063. COMPOUND USED AS A TONIC AND FLAVORING. BENJAMIN F. MINER, Montague, Mass.
The word "VANILLO" above a pictorial illustration of a percolator, a jar containing liquid, and a bundle of vanilla-beans inclosed within a border.
Filed April 28, 1905. Serial No. 3,449. PUBLISHED APRIL 24, 1906.

54,064. FIELD-SEEDS. WILLIAM H. MOREHOUSE, Toledo, Ohio.
The word "CRESCENT" and the representation of a crescent having the letter "M" thereon.
Filed May 13, 1905. Serial No. 5,598. PUBLISHED APRIL 24, 1906.

54,065. OINTMENTS. WILLIAM B. SMITH, New London, Conn.
The portrait of applicant and the letters "S C," associated with the words "SMITH'S SURE CURE OINTMENT."
Filed June 14, 1905. Serial No. 8,127. PUBLISHED APRIL 24, 1906.

54,066. BENT-WOOD FURNITURE. THONET BROTHERS, Vienna, Austria-Hungary.
A panel having a background of interlaced parallel lines simulating canework, the outlines of the panel being surrounded by curved approximately parallel lines. In the center of the panel are spaces bearing the words "THONET" and "WIEN," and at the ends of the panel are ovals bearing a monogram of the letters "T G."
Filed October 5, 1905. Serial No. 13,326. PUBLISHED APRIL 24, 1906.

54,067 FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn.
The words and abbreviation "DURHAM FERTILIZER CO'S." Used ten years.

Filed March 15, 1906. Serial No. 17,839. PUBLISHED APRIL 24, 1906.

54,068. WHISKY. THE WEIDEMAN COMPANY, Cleveland, Ohio.
The words "OLD FRANKFORT."
Filed April 26, 1905. Serial No. 3,047. PUBLISHED JUNE 13, 1905.

54,069. TAPS, DIES, AND SCREW-PLATES. WELLS BROTHERS COMPANY, Greenfield, Mass.
The words "LITTLE GIANT." Used ten years.
Filed July 14, 1905. Serial No. 10,332. PUBLISHED APRIL 24, 1906.

54,070 ENAMELED-STEEL KITCHEN UTENSILS. WELLS & NELLEGAR COMPANY, Chicago, Ill.
The representation of a red keystone having a white panel extending horizontally thereacross and the words "CRYSTAL WHITE WARE" appearing on the keystone.
Filed May 25, 1905. Serial No. 6,642. PUBLISHED APRIL 24, 1906.

54,071. CULINARY KNIVES. THE WILKINSON SHEAR & CUTLERY CO., Reading, Pa.
The word "WILCUT" and the letters, character, and abbreviation "W. S. & C. Co." inclosed in an ornamental border of scroll-work.
Filed September 1, 1905. Serial No. 12,150. PUBLISHED APRIL 24, 1906.

54,072. TYPE-WRITER RIBBONS. THE CARTER'S INK COMPANY, Boston, Mass., and New York, N. Y.
The word "IDEAL."
Filed November 18, 1905. Serial No. 14,792. PUBLISHED APRIL 24, 1906.

54,073. SALVE FOR THE TREATMENT OF SORE EYES. THE E. E. SUTHERLAND MEDICINE CO., Paducah, Ky.
The representation of a human eye, above which is the representation of an eagle with outstretched wings.
Filed April 14, 1905. Serial No. 1,460. PUBLISHED APRIL 24, 1906.

54,074. SHEET-MUSIC AND MUSIC-BOOKS. LEO FEIST, New York, N. Y.
The letters "L. F." inclosed within a wreath. In the drawing the wreath is represented as composed of two branches, one of oak-leaves and the other of holly leaves and berries, tied with a ribbon.
Filed November 27, 1905. Serial No. 15,030. PUBLISHED APRIL 24, 1906.

54,075. LEATHER BOOTS, SHOES, AND SLIPPERS. GEO. G. SNOW CO., Brockton, Mass.
The word "SNOW" inclosed in quotation-marks, the said word being written in the peculiar and distinctive style in which the founder of our business, George G. Snow, wrote his name. Used ten years.
Filed November 9, 1905. Serial No. 14,457. PUBLISHED APRIL 24, 1906.

54,076. PIANOS. GOETZ AND CO., Brooklyn, N. Y.
A monogram composed of the letters "G C & O."
Filed December 26, 1905. Serial No. 15,653. PUBLISHED APRIL 24, 1906.

54,077. UMBRELLAS AND PARASOLS. GORHAM MFG. CO., Providence, R. I.
The word "GORHAM." Used ten years.
Filed November 15, 1905. Serial No. 14,665. PUBLISHED APRIL 24, 1906.

54,078. CERTAIN NAMED MEDICINES. FRANCIS X. HART, New York, N. Y.
The word-symbol "ANTI-AUTO-TOX."
Filed December 15, 1905. Serial No. 15,450. PUBLISHED APRIL 24, 1906.

54,079. BASE-BALLS, FOOT-BALLS, AND TENNIS-BALLS. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill.
The representation of a rooster with the word "CRUSO" appearing across the body thereof.
Filed December 14, 1905. Serial No. 15,415. PUBLISHED APRIL 24 1906.

54,080. LEATHER AND CANVAS BOOTS AND SHOES. HIRSH BROTHERS, New Haven, Conn.
The word "ANT I WET" upon the representation of a seal, the letter "I" of the word occupying a circle in the central portion of the seal.

Filed December 16, 1905. Serial No. 15,461. PUBLISHED APRIL 24, 1906.

54,081. RUBBER PACKING, GASKETS, DISKS, RINGS, AND WASHERS. ALFRED B. JENKINS, New York, N. Y., and Boston, Mass.
The arbitrary word "JENKINS." Used ten years.
Filed November 27, 1905. Serial No. 15,012. PUBLISHED APRIL 24, 1906.

54,082. WINES OF ALL KINDS. A. DE LUZE & FILS, Bordeaux, France.
A groundwork on which is supported a quartered shield surmounted by a helmet, with a leopard couchant on one side of the shield and a leopard rampant on the other side of the shield, together with scrollwork above the same, the shield being quartered and displaying extended wings on the first and fourth fields and a chevron above a fleur-de-lis on the second and third fields with the words "A. DE LUZE & FILS, BORDEAUX."
Filed June 5, 1905. Serial No. 7,489. PUBLISHED APRIL 24, 1906.

54,083. WATCH-MOVEMENTS. LOUIS MANHEIMER & BROS., Chicago, Ill.
The words "LOCOMOTIVE SPECIAL."
Filed November 17, 1905. Serial No. 14,766. PUBLISHED APRIL 24, 1906.

54,084. MEDICINAL TONIC FOR WOMEN. THE PARKER BLAKE CO. LTD., New Orleans, La.
The word "CREOLE," associated with the bust picture of a young woman, the same presenting a nearly full face or front view, the hair being shown parted and falling upon the shoulders on each side of the neck, and an ornamental band passing over the top of the head and having a flower attached on one side.
Filed December 15, 1905. Serial No. 15,433. PUBLISHED APRIL 24, 1906.

54,085. REMEDIES FOR CERTAIN NAMED DISEASES. HARRY DAVID RUCKER, La Fayette, Ind.
The words "KORAK WONDER."
Filed January 2, 1906. Serial No. 15,813. PUBLISHED APRIL 24, 1906.

54,086. MEN'S LEATHER BOOTS AND SHOES. SMITH-BRISCOE SHOE COMPANY, Lynchburg, Va.
The fanciful bust picture of a young man in business dress, said picture being arranged above the lower end portion of an upwardly-inclined panel, upon which appears the word "BILTRITE" printed in the distinctive style shown and below the upper end portion of which appears the word "SHOE" printed on a horizontal line in letters having their tops inclined correspondingly to the panel.
Filed November 17, 1905. Serial No. 14,768. PUBLISHED APRIL 24, 1906.

54,087. MEDICAMENT. VEREINIGTE CHININFABRIKEN ZIMMER & CO., GES. MIT BESCHRÄNKTER HAFTUNG, Frankfort-on-the-Main, Germany.
The arbitrary or fanciful word "VALIDOL."
Filed January 4, 1906. Serial No. 15,881. PUBLISHED APRIL 24, 1906.

54,088. DERIVATIVES OF CINCHONA ALKALOIDS. VEREINIGTE CHININFABRIKEN ZIMMER & CO., GES. MIT BESCHRÄNKTER HAFTUNG, Frankfort-on-the-Main, Germany.
The arbitrary or fanciful word "EUQUININE."
Filed January 4, 1906. Serial No. 15,882. PUBLISHED APRIL 24, 1906.

54,089. PORTLAND CEMENT. WESTERN STATES PORTLAND CEMENT COMPANY, Independence, Kans.
The representation of a running horse with a cowboy astride throwing a lasso, the same being arranged within a circle.
Filed February 19, 1906. Serial No. 17,177. PUBLISHED APRIL 24, 1906.

54,090. POLISH FOR CLEANING AND POLISHING RUSSET AND TAN-COLORED SHOES. WHITTEMORE BRO'S. AND CO., Cambridge, Mass.
The words "WHITTEMORE'S STAR."
Filed July 20, 1905. Serial No. 11,527. PUBLISHED APRIL 24, 1906.

54,091. BASE-BALL BATS. CHARLES P. YOUNG, York, Pa.
The word "PNEUMATICO."
Filed January 13, 1906. Serial No. 16,178. PUBLISHED APRIL 24, 1906.

54,092. LEATHER-DRESSING. ALFRED ANDRESEN & CO., Minneapolis, Minn.
A circular panel having thereon a representation of an ice-floe with the sun in the background, with a whale resting on the ice-floe and the words "WHALE AMBER" appearing on the side of the whale.
Filed March 6, 1906. Serial No. 17,683. PUBLISHED APRIL 24, 1906.

54,093. PILLS. ALLCOCK MANUFACTURING CO., New York, N. Y.
The designation "BRANDRETH." Used ten years.
Filed June 27, 1905. Serial No. 9,257. PUBLISHED APRIL 24, 1906.

54,094. MANUFACTURED COLORS FOR PRINTING AND DYEING. AMERICAN DYEWOOD CO., Philadelphia, Pa.
The word "TETRANIL."
Filed May 12, 1905. Serial No. 5,325. PUBLISHED APRIL 24, 1906.

54,095. LINIMENTS. FREDERICK AYER, Boston, Mass.
The words "FERNOLINE BALSAM."
Filed July 6, 1905. Serial No. 9,851. PUBLISHED APRIL 24, 1906.

54,096. HAIR AND SKIN TONIC. BARCLAY & BARCLAY, New York, N. Y.
The word "TRICOFÈRO," associated with which is the representation of a female figure standing in an ornamental panel, at one side of which is the pictorial representation of water with ships thereon, and at the other side is the representation of a railway, on which a train of cars is shown; also, in connection with the pictorial matter is the representation of clouds, doves, and scrolls.
Filed May 13, 1905. Serial No. 5,496. PUBLISHED APRIL 24, 1906.

54,097. BEERS. BEADLESTON & WOERZ, New York, N. Y.
The word "IMPERIAL."
Filed April 19, 1905. Serial No. 2,266. PUBLISHED MARCH 27, 1906.

54,098. SHOES MADE WHOLLY OR IN PART OF LEATHER. THE C. M. CLAPP CO., Buffalo, N. Y.
The word "FELEZIA."
Filed January 6, 1906. Serial No. 15,958. PUBLISHED APRIL 24, 1906.

54,099. HEADACHE REMEDY. C. S. A. CHEMICAL CO., Portsmouth, Va.
The letters "C. S. A." having a paraph therebeneath The words "CELERY-SEDATIVE-APERIENT" appear on the paraph.
Filed October 6, 1905. Serial No. 13,356. PUBLISHED APRIL 24, 1906.

54,100. MEDICINAL PREPARATION FOR EXTERNAL AND INTERNAL USE. DAVIS AND LAWRENCE CO., New York, N. Y.
The word "PAINKILLER." Used ten years.
Filed April 14, 1905. Serial No. 1,448. PUBLISHED APRIL 24, 1906.

54,101. WRAPPING-PAPER. THE DAYTON PAPER NOVELTY CO., Dayton, Ohio.
The representation of a disk, substantially in the center of which there is a picture of a maple-leaf. The words "SILVER LEAF" are printed above the leaf, and the word "FIBER" is written below the leaf.
Filed January 8, 1906. Serial No. 15,991. PUBLISHED APRIL 24 1906.

54,102. OVERCOATS AND SUITS. FRIEND BROS. CLO. CO., Milwaukee, Wis.
A representation of a shield diagonally crossed by a band having the words "ALMA MATER" thereon, the shield having thereon representations of a foot-ball, a pipe, a mortar-board cap, a tennis-racket, and a base-ball bat and a golf-stick crossed.
Filed October 2, 1905. Serial No. 13,213. PUBLISHED APRIL 24, 1906.

54,103. CERTAIN NAMED VEHICLES. GENDRON WHEEL CO., Toledo, Ohio.
The word "PIONEER."
Filed January 19, 1906. Serial No. 16,319. PUBLISHED APRIL 24, 1906.

54,104. CIGARS. JULIUS G. HANSEN, Reading, Pa.
The words "ISLAND OF CUBA" and the outline map of the Island of Cuba, with the words "ISLA DE CUBA" inclosed within said outline map. Used ten years.

Filed July 27, 1905. Serial No. 10,924. PUBLISHED APRIL 24, 1906.

54,105. RUGS. THE HARTFORD CARPET CORPORATION, Thompsonville, Conn., and New York, N. Y.
The words "SAXONY RUGS." Used ten years.
Filed October 19, 1905. Serial No. 13,745. PUBLISHED APRIL 24, 1906.

54,106. AXES, HATCHETS, AND ADZES. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill.
The letters "O V B" with a panel extending across the same, upon which appear the words "OUR VERY BEST." Used ten years.
Filed October 21, 1905. Serial No. 13,855. PUBLISHED APRIL 24, 1906.

54,107. AXES, HATCHETS, AND ADZES. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill.
A representation of a rooster with the word "CRUSO" appearing across the body thereof.
Filed February 17, 1906. Serial No. 17,151. PUBLISHED APRIL 24, 1906.

54,108. CERTAIN NAMED CHEMICAL PREPARATION. CHARLES L. HOWE, Boston, Mass.
The words "RED DRAGON."
Filed January 20, 1906. Serial No. 16,350. PUBLISHED APRIL 24, 1906.

54,109. LAXATIVE FOR THE HUMAN SYSTEM. MICHAEL HAYES JOHNSTON, Galesburg, Ill.
The word "LAXSENNAS."
Filed October 5, 1905. Serial No. 13,325. PUBLISHED APRIL 24, 1906.

54,110. PREPARATIONS FOR THE CLEANSING AND PRESERVATION OF THE TEETH AND OF THE MOUTH. K. K. LANDESPRIV. MILLY-KERZEN-, SEIFEN-UND GLYCERIN-FABRIK, VON F. A. SARG'S SOHN & CO., Vienna and Liesing, Austria-Hungary.
The representation of the head of a smiling woman looking over her shoulder and wearing a broad-brimmed hat, the strings of which hang down in front and on the brim of which appears the word "KALODONT" in capital letters arranged semicircularly, the words "SCHÖNHEIT DER ZÄHNE" extending across the base of the neck and the left shoulder of the woman.
Filed August 4, 1905. Serial No. 11,241. PUBLISHED APRIL 24, 1906.

54,111. LEATHER BOOTS, SHOES, AND SLIPPERS. M. D. WELLS CO., Chicago, Ill.
The word "ARBUTUS."
Filed July 31, 1905. Serial No. 11,079. PUBLISHED APRIL 24, 1906.

54,112. WAGONS. MOLINE WAGON COMPANY, Moline, Ill.
The words "THE NEW MOLINE." Used ten years.
Filed March 24, 1906. Serial No. 18,245. PUBLISHED APRIL 24, 1906.

54,113. CHAMPAGNE-WINE. G. H. MUMM & CO., Rheims, France.
The arbitrarily-selected words "CORDON ROUGE."
Filed February 16, 1906. Serial No. 17,089. PUBLISHED APRIL 24, 1906.

54,114. HOMEOPATHIC MEDICAL PREPARATIONS FOR THE PREVENTION AND CURE OF DISEASES. MUNYON'S HOMOEOPATHIC HOME REMEDY CO., Philadelphia, Pa.
The words "MUNYON'S HOMOEOPATHIC HOME REMEDIES," a panel on which said words are placed, and an ornamental border inclosing said panel. Used ten years.
Filed September 14, 1905. Serial No. 12,562. PUBLISHED APRIL 24, 1906.

54,115. CASTOR-OIL. NATIONAL LEAD COMPANY, Jersey City, N. J., and New York, N. Y.
The words and abbreviations "COLLIER CO. ST. LOUIS." Used ten years.
Filed November 8, 1905. Serial No. 14,415. PUBLISHED APRIL 24, 1906.

54,116. MALT WINE. NEW ENGLAND BREWING COMPANY, Boston, Mass.
The name and words "HAFFENREFFER & CO. MALT WINE," printed in script. Used ten years.
Filed September 28, 1905. Serial No. 13,119. PUBLISHED APRIL 24, 1906.

54,117. WHISKY. P. J. BOWLIN LIQUOR Co., St. Paul, Minn.
The words "WHITE ROSE."
Filed June 21, 1905. Serial No. 8,626. PUBLISHED SEPTEMBER 19, 1905.

54,118. FEVER CURES. PAMALINE MALARIAL REMEDY COMPANY, New York, N. Y.
The word-symbol "PAMALINE" displayed on an ornamental shield.
Filed February 5, 1906. Serial No. 16,757. PUBLISHED APRIL 24, 1906.

54,119. HOLLOW SILVERWARE. REED & BARTON CORPORATION, Taunton, Mass.
The compound word "GOLDYN-BRONZ."
Filed January 11, 1906. Serial No. 16,121. PUBLISHED APRIL 24, 1906.

54,120. CREAM OF TARTAR. ROYAL BAKING POWDER COMPANY, New York, N. Y.
The word "ROYAL." Used ten years.
Filed August 22, 1905. Serial No. 11,906. PUBLISHED APRIL 24, 1906.

54,121. ALE. SUFFOLK BREWING COMPANY, Boston, Mass.
The words "STANLEY'S MEDALLION ALE" and a tablet bearing in relief the figure of a dragon in the form of the letter S with the words "AKROS BRAND" on the dragon.
Filed September 28, 1905. Serial No. 13,112. PUBLISHED APRIL 24, 1906.

54,122. EFFERVESCENT POWDER FOR MAKING APERIENT MINERAL WATER. CHARLES J. THATCHER, Easton, Pa.
The word "FOR-DINE."
Filed October 21, 1905. Serial No. 13,807. PUBLISHED APRIL 24, 1906.

54,123. WHISKY. TUCKER & MCCORMACK, Memphis, Tenn.
The words "THE NATION'S PRIDE."
Filed July 11, 1905. Serial No. 10,041. PUBLISHED APRIL 24, 1906.

54,124. ANTISEPTIC NON-FATTY AND SOLUBLE LUBRICATING-JELLY. VAN HORN & SAWTELL, New York, N. Y.
The arbitrary letters "K-Y" connected by a hyphen.
Filed December 13, 1905. Serial No. 15,387. PUBLISHED APRIL 24, 1906.

54,125. PROPRIETARY REMEDIES. P. F. & J. A. WELLENBERGER, Brooklyn, N. Y.
The arbitrary word "BESTFRIEND."
Filed November 3, 1905. Serial No. 14,240. PUBLISHED APRIL 24, 1906.

54,126. REMEDIES FOR BRONCHIAL AFFECTIONS. JOSEPH WERTHEIM, Meerane, Germany.
The word-symbol "GLANDULEN."
Filed September 18, 1905. Serial No. 12,756. PUBLISHED APRIL 24, 1906.

54,127. SHADE-CLOTHS AND COTTON PIECE GOODS. AMORY, BROWNE & Co., Boston, Mass., and New York, N. Y.
A wheel with a wing attached thereto.
Filed January 15, 1906. Serial No. 16,195. PUBLISHED APRIL 24, 1906.

54,128. LAGER-BEER. BRADLESTON & WOERZ, New York, N. Y.
The representation of a tiger's head inclosed in an oval border. Used ten years.
Filed April 19, 1905. Serial No. 2,269. PUBLISHED APRIL 24, 1906.

54,129. FILES AND RASPS. CARVER FILE COMPANY, Philadelphia, Pa.
The word "DELTA."
Filed December 8, 1905. Serial No. 15,273. PUBLISHED APRIL 24, 1906.

54,130. CANNED FRUITS AND VEGETABLES. THE CAZENOVIA CANNING Co., Cazenovia, N. Y.
The word "PIER."
Filed September 7, 1905. Serial No. 12,361. PUBLISHED APRIL 24, 1906.

54,131. CANNED FRUITS AND CANNED VEGETABLES. THE CAZENOVIA CANNING Co., Cazenovia, N. Y.
The word "SEMINARY."
Filed September 7, 1905. Serial No. 12,362. PUBLISHED APRIL 24, 1906.

54,132. CANNED FRUITS AND VEGETABLES. THE CAZENOVIA CANNING Co., Cazenovia, N. Y.
The word "OWAHGENA."
Filed September 7, 1905. Serial No. 12,363. PUBLISHED APRIL 24 1906.

54,133. CANNED FRUITS AND VEGETABLES. THE CAZENOVIA CANNING Co., Cazenovia, N. Y.
The words "VALLEY BRAND."
Filed September 7, 1905. Serial No. 12,365. PUBLISHED APRIL 24, 1906.

54,134. LEATHER BOOTS AND SHOES. CLAPP & TAPLEY, Danvers, Mass.
The words and letters "THE C. & T. SHOE."
Filed July 21, 1905. Serial No. 10,669. PUBLISHED APRIL 24 1906.

54,135. PRINTING AND WRITING PAPER. DILL & COLLINS Co., Philadelphia, Pa.
The letter "D" inclosed by a diamond-shaped figure.
Filed July 20, 1905. Serial No. 10,608. PUBLISHED APRIL 24, 1906.

53,136. CANNED CORN AND CANNED SUCCOTASH. H. F. WEBB COMPANY, Portland, Me.
The word-symbol "WINTER'S LUXURY." Used ten years.
Filed May 26, 1905. Serial No. 6,694. PUBLISHED APRIL 24, 1906.

54,137. CANNED CORN AND CANNED SUCCOTASH. H. F. WEBB COMPANY, Portland, Me.
The word-symbol "PLEASANT MOUNTAIN." Used ten years.
Filed May 26, 1905. Serial No. 6,695. PUBLISHED APRIL 24, 1906.

54,138. MEN'S LEATHER SHOES. HAMILTON-BROWN SHOE COMPANY, St. Louis, Mo.
The word "HOPE" inclosed in the representation of a belt on which are printed the words "HAMILTON-BROWN SHOE CO."
Filed January 17, 1906. Serial No. 16,242. PUBLISHED APRIL 24, 1906.

54,139. MEN'S LEATHER SHOES. HAMILTON-BROWN SHOE COMPANY, St. Louis, Mo.
The word "LOVE" inclosed in a representation of a belt on which are printed the words "HAMILTON-BROWN SHOE CO."
Filed January 17, 1906. Serial No. 16,243. PUBLISHED APRIL 24, 1906.

54,140. MEN'S LEATHER SHOES. HAMILTON-BROWN SHOE COMPANY, St. Louis, Mo.
The word "FAITH" inclosed in a representation of a belt on which are printed the words "HAMILTON-BROWN SHOE CO."
Filed January 17, 1906. Serial No. 16,244. PUBLISHED APRIL 24, 1906.

54,141. FOOT-BALLS, BASE-BALLS, AND TENNIS-BALLS. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill.
The word "AJAX" and the representation of the bust of Ajax wearing a helmet and holding in one hand a Grecian sword, all surrounded by an annular strap bearing the name "HIBBARD SPENCER BARTLETT & Co."
Filed February 5, 1906. Serial No. 16,764. PUBLISHED APRIL 24, 1906.

54,142. DRESS-SHIELDS. I. B. KLEINERT RUBBER COMPANY, New York, N. Y.
The word "ONANDOFF."
Filed April 29, 1905. Serial No. 3,663. PUBLISHED APRIL 24, 1906.

54,143. WHISKY. JOHN MCGLINN, Philadelphia, Pa.
The letters "L. A. W.," accompanied by a drawing which represents a man and a woman in cycling costume, the woman standing erect, one hand resting on the handle-bar of a bicycle, the other outstretched, holding a glass. The man has one arm resting upon a table, and in his other hand he holds a bottle tilted toward the glass in the woman's hand. In the background is a fence. On either side of the picture is a wing projecting from and apparently attached to a circle inclosed in a rectangular design.
Filed June 26, 1905. Serial No. 9,105. PUBLISHED APRIL 24, 1906.

54,144. WHISKY. MEYER MARX Co., Birmingham, Ala.
The word "ZU ZU," under which, surrounded by a scroll, is the figure of a clown.
Filed June 15, 1905. Serial No. 8,182. PUBLISHED APRIL 24, 1906.

54,145. WHISKY. MORRIN-POWERS MERC. Co., Kansas City, Mo.
The words "FAIRMOUNT CLUB."
Filed June 24, 1905. Serial No. 8,958. PUBLISHED APRIL 24, 1906.

54,146. CERTAIN NAMED CANNED GOODS. SACO VALLEY CANNING COMPANY, Portland, Me.
The word "CONQUEROR." Used ten years.
Filed May 17, 1905. Serial No. 5,877. PUBLISHED APRIL 24, 1906.

54,147. CANNED CORN AND CANNED SUCCOTASH. SACO VALLEY CANNING COMPANY, Portland, Me.
The word or word-symbol "YANKEE." Used ten years.
Filed May 17, 1905. Serial No. 5,878. PUBLISHED APRIL 24, 1906.

54,148. CERTAIN NAMED CANNED GOODS. SACO VALLEY CANNING COMPANY, Portland, Me.
The word-symbol "FALMOUTH." Used ten years.
Filed May 17, 1905. Serial No. 5,879. PUBLISHED APRIL 24, 1906.

54,149. BLANKETS, COMFORTABLES, AND SPREADS. SMITH, HOGG & Co., New York, N. Y.
The representation of two folded blankets placed one across the other.
Filed May 11, 1905. Serial No. 5,272. PUBLISHED APRIL 24, 1906.

54,150. MEDICINAL TONIC OR CORDIAL. UDOLPHO WOLFE Co., New York, N. Y.
An oblong diamond shaded with horizontal lines, upon which rests the cross of Malta pendent from an ornamental bar, upon which are the words "DIAMOND CROSS." Underneath the foregoing is a two-wheeled chariot drawn by three lions at full speed occupied by a crowned female figure holding in her right hand a spear and in her left hand a bottle.
Filed June 20, 1905. Serial No. 8,615. PUBLISHED APRIL 24, 1906.

54,151. MEDICINAL TONIC OR CORDIAL. UDOLPHO WOLFE Co., New York, N. Y.
The letters and characters "W. A. S." in white on a blue diamond-shaped ground, which is superimposed upon a ground of straight parallel lines, the whole being inclosed by a straight-line border.
Filed June 20, 1905. Serial No. 8,616. PUBLISHED APRIL 24, 1906.

54,152. WHISKY. WILMERDING-LOEWE Co., San Francisco, Cal.
The name "KELLOGG'S." Used ten years.
Filed June 30, 1905. Serial No. 9,507. PUBLISHED APRIL 24, 1906.

54,153. COTTON PIECE GOODS. YORK MANUFACTURING Co., Saco, Me.
The word and abbreviations "YORK M'F'G Co." Used ten years.
Filed May 11, 1905. Serial No. 5,269. PUBLISHED APRIL 24, 1906.

54,154. MECHANICAL PIANO-PLAYERS. THE AEOLIAN COMPANY, New York, N. Y.
The word "THEMODIST."
Filed February 23, 1906. Serial No. 17,305. PUBLISHED APRIL 24, 1906.

54,155. CEREAL FOODS MADE FROM OATS. THE AMERICAN CEREAL COMPANY, Akron and Ravenna, Ohio; Chicago, Ill., and Cedar Rapids, Iowa.
The word "BUCKEYE." Used ten years.
Filed May 15, 1905. Serial No. 3,613. PUBLISHED APRIL 24, 1906.

54,156. SAW-SETS, SAW-POINTERS, AND SAW-GAGES. GUSTAF Y. ANDERSON, Chicago, Ill.
The words "HANDY ANDY."
Filed March 23, 1906. Serial No. 18,178. PUBLISHED APRIL 24, 1906.

54,157. CANNED FISH, CANNED LOBSTERS, CANNED CLAMS, AND CANNED CLAM-CHOWDER. HARTLEY C. BAXTER, Brunswick, Me.
The words "BEST RESERVE." Used ten years.
Filed June 16, 1905. Serial No. 8,340. PUBLISHED APRIL 24, 1906.

54,158. PILLS. JOSEPH BEECHAM, St. Helens, England.
Two concentric circles inclosing in the upper portion the words "BEECHAM'S PATENT PILLS. PRICE ...., SOLD BY THE PROPRIETOR, ST. HELENS." Used ten years.
Filed January 26, 1906. Serial No. 16,525. PUBLISHED APRIL 24 1906.

54,159. COFFEE EXTRACT. THE CAFOLIN Co. LTD., London, England.
The word "CAFOLIN."
Filed June 30, 1905. Serial No. 9,520. PUBLISHED APRIL 24, 1906.

54,160. DYE FOR HAIR AND WHISKERS. THE CHARLES N. CRITTENTON COMPANY, New York, N. Y.
The words "HILL'S INSTANTANEOUS HAIR AND WHISKER DYE," with the side view of the bust of a man in the act of dressing his whiskers. Used ten years.
Filed February 9, 1906. Serial No. 16,850. PUBLISHED APRIL 24, 1906.

54,161. COMFORTS. THE CHAS. A. MAISH Co., Cincinnati, Ohio.
A rectangular dark background, on the left half of which is displayed a square pad of white cotton showing the laminated effect on the sides and a thin coverlet on top. On the right of the cotton pad are displayed the words "MAISH LAMINATED COTTON DOWN COMFORT."
Filed March 6, 1906. Serial No. 17,621. PUBLISHED APRIL 24, 1906.

54,162. TIME-REGISTERS. DEY TIME REGISTER Co., Syracuse, N. Y.
The word "DEY." Used ten years.
Filed February 16, 1906. Serial No. 17,080. PUBLISHED APRIL 24, 1906.

54,163. TIME-REGISTERS. DEY TIME REGISTER Co., Syracuse, N. Y.
The word "DRUM." Used ten years.
Filed February 16, 1906. Serial No. 17,081. PUBLISHED APRIL 24, 1906.

54,164. TIME-REGISTERS. DEY TIME REGISTER Co., Syracuse, N. Y.
The word "DRUMDIAL." Used ten years.
Filed February 16, 1906. Serial No. 17,082. PUBLISHED APRIL 24, 1906.

54,165. TIME-REGISTERS. DEY TIME REGISTER Co., Syracuse, N. Y.
The word "DIAL." Used ten years.
Filed February 16, 1906. Serial No. 17,083. PUBLISHED APRIL 24, 1906.

54,166. LEATHER BOOTS AND SHOES. ENDICOTT-JOHNSON COMPANY, Boston, Mass.
The words "BAR OF QUALITY."
Filed July 22, 1905. Serial No. 10,709. PUBLISHED APRIL 24, 1906.

54,167. CANNED OYSTERS. GIBBS PRESERVING COMPANY OF BALTIMORE CITY, Baltimore, Md.
A pictorial representation of a bull's head. Used ten years.
Filed November 9, 1905. Serial No. 14,454. PUBLISHED APRIL 24, 1906.

54,168. SHOES AND SLIPPERS MANUFACTURED FROM LEATHER. HANAN-MATHEWSON COMPANY, Cleveland, Ohio.
The bust picture of an American Indian wearing a feathered head-dress, surrounding which are two encircling sprays to form a wreath, and beneath all is a curved panel bearing the word "WAUKON."
Filed February 6, 1906. Serial No. 16,781. PUBLISHED APRIL 24, 1906.

54,169. COTTON PIECE GOODS. INDIAN HEAD MILLS OF ALABAMA, Cordova, Ala.
The pictorial representation of an Indian baby in an Indian cradle or baby-pack on a ground covered with vegetation, wigwams and Indians appearing in the background, associated with the word "SOPOSA."
Filed March 8, 1906. Serial No. 17,666. PUBLISHED APRIL 24, 1906.

54,170. WHISKY. JOSSELSON BROS. & Co., Louisville, Ky.
The words "AMICK SPRING."

Filed January 23, 1906. Serial No. 16,420. PUBLISHED APRIL 24, 1906.

54,171. KNIVES AND RAZORS. EWALD KRUSIUS, New York, N. Y.

The letters "K B," associated with the word "EXTRA."

Filed March 22, 1906. Serial No. 18,166. PUBLISHED APRIL 24, 1906.

54,172. CUT-GLASS ARTICLES. THE LIBBEY GLASS COMPANY, Toledo, Ohio.

The word "LIBBEY." Used ten years.

Filed February 20, 1906. Serial No. 17,208. PUBLISHED APRIL 24, 1906.

54,173. LAUNDRY STARCH. OSWEGO MAIZE PRODUCTS Co., Oswego, N. Y.

The word "VELVET."

Filed August 21, 1905. Serial No. 11,880. PUBLISHED APRIL 24, 1906.

54,174. ORGANS. THE PACKARD COMPANY, Fort Wayne, Ind.

The word "PACKARD." Used ten years.

Filed March 6, 1906. Serial No. 17,610. PUBLISHED APRIL 24, 1906.

54,175. VEGETABLE-SAUCE. FREDERICK FOSTER PLANK, Petaluma, Cal.

A rectangular panel having a blue border and diagonally-arranged red bars crossing the same in the center of the panel, said panel having thereon the words "PLANK'S CALIFORNIA VEGETABLE SAUCE. PREPARED BY F. F. PLANK, PETALUMA, CAL."

Filed October 6, 1905. Serial No. 13,391. PUBLISHED APRIL 24, 1906.

54,176. CANNED LOBSTERS, CANNED MACKEREL, CANNED CLAMS, AND CANNED CLAM-CHOWDER. PORTLAND PACKING COMPANY, Portland, Me.

The word "STAR." Used ten years.

Filed June 27, 1905. Serial No. 9,185. PUBLISHED JANUARY 30, 1906.

54,177. TOMATO TONIC AND BEVERAGE. THE RAIMER-HEINLY Co., Danville, Ill.

The words "TOMATO TONER," accompanied by a picture representing a chef and a design of a seal bearing a woman's head with a helmet thereon, all arranged on a black rectangular background.

Filed April 28, 1905. Serial No. 3,392. PUBLISHED APRIL 24, 1906.

54,178. WOVEN COTTON PIECE GOODS. J. S. REEVES & Co., Nashville, Tenn.

The words "OLD HICKORY."

Filed March 12, 1906. Serial No. 17,747. PUBLISHED APRIL 24, 1906.

54,179. WATCHES AND PARTS THEREOF. ADOLPHE SCHWOB, New York, N. Y.

The monogram of letters "V W C."

Filed July 12, 1905. Serial No. 10,172. PUBLISHED APRIL 24, 1906.

54,180. JAMS, JELLIES, AND PRESERVES. SIEGEL, COOPER & Co., Chicago, Ill.

The word "HAZEL" and a design showing a hazel-leaf and hazel-nuts.

Filed May 13, 1905. Serial No. 5,427. PUBLISHED APRIL 24, 1906.

54,181. COLLARETTES AND CHAINS. JOHN J. SOMMER, North Attleboro, Mass.

The representation of two Japanese characters or word-symbols meaning "GOOD LUCK."

Filed February 1, 1906. Serial No. 16,660. PUBLISHED APRIL 24, 1906.

54,182. CERTAIN NAMED CURED MEATS. THOMAS STOKES & SON, New York, N. Y.

The word "DUTCHESS."

Filed April 18, 1905. Serial No. 2,127. PUBLISHED APRIL 24, 1906.

54,183. JAMS, JELLIES, MARMALADES, PRESERVED AND CONSERVED FRUITS. SUNLIT FRUIT COMPANY, San Francisco, Cal.

The arbitrary word "SUNLIT."

Filed October 12, 1905. Serial No. 13,537. PUBLISHED APRIL 24, 1906.

54,184. WHEAT-FLOUR. THE SWEET SPRINGS MILLING COMPANY, Sweet Springs, Mo.

The words "GENUINE VIGORAL" and, inclosed in a garter, which bears the words and character "HEALTH & STRENGTH," the representation of a man lifting a weight, upon which are the word, figures, and abbreviation "200 LBS. WEIGHT."

Filed September 2, 1905. Serial No. 12,189. PUBLISHED APRIL 24, 1906.

54,185. LEATHER-WELTED BOOTS AND SHOES. UNITED SHOE MACHINERY COMPANY, Boston, Mass.

The words "GOODYEAR WELT." Used ten years.

Filed August 4, 1905. Serial No. 11,258. PUBLISHED APRIL 24, 1906.

54,186. SILVER-PLATED FLAT WARE, HOLLOW WARE, AND TABLEWARE. WM. A. ROGERS LTD., New York, N. Y.

The words "BUSTER BROWN."

Filed March 1, 1906. Serial No. 17,439. PUBLISHED APRIL 24, 1906.

54,187. CANNED, BOTTLED, OR PRESERVED FRUITS AND VEGETABLES. WILSON GROCERY COMPANY, Peoria, Ill.

The words "ANCHOR BRAND" and a representation of an anchor lying on the seashore.

Filed May 8, 1905. Serial No. 4,647. PUBLISHED APRIL 24, 1906.

54,188. CANNED LOBSTER. H. C. BAXTER & BRO., Brunswick, Me.

The word "MONOPOLE."

Filed October 5, 1905. Serial No. 13,320. PUBLISHED APRIL 24, 1906.

54,189. CANNED SALMON. FIDALGO ISLAND PACKING CO., Anacortes, Wash.

A representation of a human arm clothed in a sleeve and attached cuff, holding in its hand a conventional representation of a scepter terminated by a Maltese cross, such arm and scepter being inclosed in a rhombus or diamond-shaped border, associated with the words "GOLDEN SCEPTER BRAND."

Filed September 25, 1905. Serial No. 12,986. PUBLISHED APRIL 24, 1906.

54,190. CANNED SALMON. FIDALGO ISLAND PACKING CO., Anacortes, Wash.

The representation of a spray of the heather-bell plant, associated with the words "HEATHER-BELL."

Filed September 25, 1905. Serial No. 12,989. PUBLISHED APRIL 24, 1906.

54,191. CANNED CORN AND CANNED SUCCOTASH. H. F. WEBB COMPANY, Portland, Me.

The word or word-symbol "WHITE CROSS."

Filed May 26, 1905. Serial No. 6,690. PUBLISHED APRIL 24, 1906.

54,192. HOSIERY. JAMES JAMISON, New York, N. Y.

A central figure representing a boy waving his hat, and across the lower portion of the figure the word "TEDDY" is produced. This figure occupies a central panel, and in four side panels four other figures of boys are individually produced represented as engaged in various sports.

Filed June 13, 1905. Serial No. 8,053. PUBLISHED APRIL 24, 1906.

54,193. WHISKY. KAMP DISTILLING CO., St. Louis, Mo.

The words "MOSS RUN."

Filed June 26, 1905. Serial No. 9,028. PUBLISHED APRIL 24, 1906.

54,194. LIQUID PAINT. ALBERT SAMUEL LALIBERTE, Williamstown, Mass.

Concentric diamond-shaped figures with the word "POSTO" on the outer figure and the words "THE WOOD POSTO PRESERVATIVE" on the inner figure.

Filed February 12, 1906. Serial No. 16,961. PUBLISHED APRIL 24, 1906.

54,195. WHISKY. WM. LANAHAN & SON, Baltimore, Md.

The representation of a man upon horseback clad in hunter's garb and with his hat held in an uplifted hand.

Filed February 21, 1906. Serial No. 17,235. PUBLISHED APRIL 24, 1906.

54,196. ALE. NEW ENGLAND BREWING COMPANY, Boston, Mass.

An oval-shaped panel bearing in its center the letter "B" printed in blue and having thereon the name "HAFFENREFFER & CO. BOYLSTON BREWERY" and surrounded by ornamental panels bearing the same name and the words "BOYLSTON SPARKLING ALE, BOTTLED AT THE BREWERY BOSTON."

Filed September 28, 1905. Serial No. 13,117. PUBLISHED APRIL 24 1906.

54,197. BAKING-POWDER. SCHWABACHER BROS. & Co., INC., Seattle, Wash.

The word "WESTOVER" and the representation of a horse standing in a field with a house and trees in the background surrounded by a border of two concentric circles.

Filed September 25, 1905. Serial No. 12,961. PUBLISHED APRIL 24, 1906.

54,198. TEAS. ARBUCKLE BROS., New York, N. Y.; Pittsburg, Pa., and Chicago, Ill.

The word "DRINKSOME."

Filed February 2, 1906. Serial No. 16,687. PUBLISHED APRIL 24, 1906.

54,199. SALT. CRYSTALINE SALT COMPANY, Boston, Mass.

The word "CRYSTALINE." Used ten years.

Filed July 17, 1905. Serial No. 10,454. PUBLISHED APRIL 24, 1906.

54,200 COFFEE. THE DOLAN MERCANTILE Co., Atchison, Kans.

The word "ELK."

Filed August 1, 1905. Serial No. 11,099. PUBLISHED MARCH 13, 1906.

54,201. MOLASSES. THE EASTERN REFINING Co., New York, N. Y.

The letters and abbreviation "E. R. Co," associated with the representation of a crescent.

Filed May 15, 1905. Serial No. 5,622. PUBLISHED APRIL 24, 1906.

54,202. PISTON-ROD AND VALVE PACKING. THE GARLOCK PACKING Co., Palmyra, N. Y.

A diamond-shaped figure with the word "GARLOCK" inclosed therein.

Filed May 6, 1905. Serial No. 4,487. PUBLISHED APRIL 24, 1906.

54,203. WHEAT-FLOUR. GOLDEN EAGLE TEA CO. INC., Wilmington, Del.

The words "KING OF ALL," associated with a picture representing a knight in armor striding a running steed, also in armor, the knight holding a shield in front of him with one hand, and in the other hand a spear is carried in position for charging.

Filed January 25, 1906. Serial No. 16,511. PUBLISHED APRIL 24, 1906.

54,204. CERTAIN NAMED BRUSHES. GRAND RAPIDS BRUSH Co., Grand Rapids, Mich.

The letters "G. R."

Filed May 15, 1905. Serial No. 5,736. PUBLISHED AUGUST 22, 1905.

54,205. PICKLED LIMES. GRIGGS, COOPER & COMPANY, St. Paul, Minn.

The word "HOME" and the representation of a house of cottage style.

Filed March 28, 1906. Serial No. 18,303. PUBLISHED APRIL 24, 1906.

54,206. HORSE-RADISH CREAM. GRIGGS, COOPER & COMPANY, St. Paul, Minn.

The word "HOME" and the representation of a house of cottage style.

Filed March 28, 1906. Serial No. 18,304. PUBLISHED APRIL 24, 1906.

54,207. CAPERS. GRIGGS, COOPER & COMPANY, St. Paul, Minn.

The word "HOME."

Filed March 28, 1906. Serial No. 18,305. PUBLISHED APRIL 24, 1906.

54,208. PEANUT-BUTTER. HENRY HEIDE, New York, N. Y.

The representation of a red diamond and the letters "P P B" arranged within the same.

Filed February 10, 1906. Serial No. 16,888. PUBLISHED LAPRI 24, 1906.

54,209. RUBBER PACKING, RUBBER GASKETS, RUBBER DISKS, RUBBER RINGS, AND RUBBER WASHERS. ALFRED B. JENKINS, New York, N. Y., and Boston, Mass.

The word "JENKINS" inclosed within a diamond space or border. Used ten years.

Filed November 27, 1905. Serial No. 15,013. PUBLISHED APRIL 24, 1906.

54,210. WHEAT-FLOUR. RANDOLPH MILLING COMPANY, Baldwin, Ill.

The word "ELITE" printed in a curved line in the center of a circular border and associated with the words "RANDOLPH MILLING Co. 98 LBS. SPECIAL HIGH PATENT BALDWIN, ILL."

Filed February 2, 1906. Serial No. 16,702. PUBLISHED APRIL 24, 1906.

54,211. COTTON DAMASK. ROSEMARY MANUFACTURING COMPANY, Roanoke Rapids, N. C.

The number "500."

Filed October 19, 1905. Serial No. 13,767. PUBLISHED APRIL 24, 1906.

54,212. SALT. PETER J. L. SEARING, New York, N. Y.

A conventional representation of the White House and the hyphenated word "WHITE-HOUSE."

Filed November 13, 1905. Serial No. 14,529. PUBLISHED APRIL 24, 1906.

54,213. SHEETINGS, SHIRTINGS, AND DRILLS. ROBERT A. SUFFERN, New York, N. Y.

The fanciful representation of a winged zebra in a flying position.

Filed November 23, 1905. Serial No. 14,925. PUBLISHED APRIL 24, 1906.

54,214. SHEETINGS, SHIRTINGS, AND DRILLS. ROBERT A. SUFFERN, New York, N. Y.

The words "FLYING ZEBRA."

Filed March 6, 1906. Serial No. 17,617. PUBLISHED APRIL 24, 1906.

54,215. ROUND AND FLAT LEATHER BELTING. TROY BELTING AND SUPPLY COMPANY, Troy, N. Y.

The word "FRICTIONITE."

Filed October 28, 1905. Serial No. 14,018. PUBLISHED APRIL 24, 1906.

54,216. FOOD PREPARATION OF BONE-MARROW AND MALT. VIROL, LIMITED, London, England.

The word "VIROL."

Filed January 26, 1906. Serial No. 16,550. PUBLISHED APRIL 24, 1906.

54,217. SPICED SEASONINGS. THE WILLIAM G. BELL COMPANY, Boston, Mass.

The representation of a turkey. Used ten years.

Filed February 17, 1906. Serial No. 17,117. PUBLISHED APRIL 24, 1906.

54,218. SPICED SEASONINGS. THE WILLIAM G. BELL COMPANY, Boston, Mass.

The representation of a bell. Used ten years.

Filed February 17, 1906. Serial No. 17,118. PUBLISHED APRIL 24, 1906.

54,219. SPICED SEASONINGS. THE WILLIAM G. BELL COMPANY, Boston, Mass.

The word "BELL'S." Used ten years.

Filed February 17, 1906. Serial No. 17,120. PUBLISHED APRIL 24, 1906.

54,220. BLEACHED AND UNBLEACHED SHIRTINGS AND SHEETINGS, CAMBRICS, AND LONG-CLOTH. GRINNELL WILLIS & Co., New York, N. Y.

The representation of a bell, its clapper, the bell-support, and the bell-ringing device.

Filed November 17, 1905. Serial No. 14,743. PUBLISHED APRIL 24, 1906.

54,221. VARNISHES. CHASE, ROBERTS & COMPANY, Dobb's Ferry and Long Island City, N. Y.

The arbitrarily-selected word "OZONE."

Filed April 15, 1905. Serial No. 1,710. PUBLISHED APRIL 24, 1906.

54,222. WHITE LEAD. NATIONAL LEAD COMPANY, Jersey City, N. J., and New York, N. Y.

The words and abbreviations "ATLANTIC-ROBERT COLGATE & Co." Used ten years.

Filed August 18, 1905. Serial No. 11,811. PUBLISHED APRIL 24, 1906.

54,223. PAPER BAGS. THE UNION BAG & PAPER COMPANY, New York, N. Y.

The word "ALLIGATOR."

Filed March 10, 1906. Serial No. 17,726. PUBLISHED APRIL 24, 1906.

LABELS

REGISTERED JUNE 19, 1906.

12,937.—*Title:* "CONSTELLATION." (For Cigars.) SCHMIDT & Co., New York, N. Y. Filed May 26, 1906.

12,938.—*Title:* "EL GENIO." (For Cigars.) MENENDEZ BROS. & VERPLANCK, Tampa, Fla. Filed May 26, 1906.

12,939.—*Title:* "FLAG ROCK." (For Ginger-Ale.) CLIFTON FORGE BOTTLING WORKS, Clifton Forge, Va. Filed March 8, 1906.

12,940.—*Title:* "SENATOR ANDREAS." (For Whisky.) GEO. ANDREAS & Co., St. Louis, Mo. Filed May 14, 1906.

12,941.—*Title:* "U-WANT-IT." (For Butter.) BURGE D. CATLIN, Buffalo, N. Y. Filed May 26, 1906.

12,942.—*Title:* "THE KOOKIZER." (For a Fireless Cooker and Icer Combined.) MARY L. PALMER, Chicago, Ill. Filed May 23, 1906.

12,943.—*Title:* "DARN-NIT." (For Hosiery, Toe Caps or Shields Therefor.) E. S. WILMARTH and C. H. BOYNTON, Chicago, Ill. Filed March 1, 1906.

12,944.—*Title:* "POCKET KNIFE BLADE, GRINDERS, AND FINISHERS UNION LABEL." (For Pocket-Knives.) F. A. DIDSBURY, Bridgeport, Conn. Filed February 16, 1906.

12,945.—*Title:* "DIAMOND RED." (For Paint.) THE DIAMOND RED PAINT CO., Chicago, Ill. Filed May 24, 1906.

PRINTS

REGISTERED JUNE 19, 1906.

1,700.—*Title:* "BURK'S BUTTERNUT BONELESS BREAKFAST BACON." (For Bacon.) LOUIS BURK, Philadelphia, Pa. Filed May 14, 1906.

1,701.—*Title:* "CREAM OF WHEAT FOR HOT WEATHER." (For a Food Preparation.) CREAM OF WHEAT COMPANY, Minneapolis, Minn. Filed April 16, 1906.

1,702.—*Title:* "TOP OF THE MORNING." (For a Food Preparation.) CREAM OF WHEAT COMPANY, Minneapolis, Minn. Filed April 16, 1906.

1,703.—*Title:* "A SURE SIGN OF GOOD EATING." (For a Food Preparation.) CREAM OF WHEAT COMPANY, Minneapolis, Minn. Filed April 16, 1906.

1,704.—*Title:* "THE JOY MAKER." (For a Food Preparation.) CREAM OF WHEAT COMPANY, Minneapolis, Minn. Filed April 16, 1906.

1,705.—*Title:* "HAPPY DISPOSITIONS." (For a Food Preparation.) CREAM OF WHEAT COMPANY, Minneapolis, Minn. Filed May 25, 1906.

1,706.—*Title:* "LEMP EXTRA PALE." (For Beer.) WM. J. LEMP BREWING CO., St. Louis, Mo. Filed May 24, 1906.

1,707.—*Title:* "WE CAN'T IMPROVE OUR SOAP OR BOX EITHER." (For Soap-Holders.) CHARLES OWENS, Chattanooga, Tenn. Filed May 24, 1906.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

BLISS *v.* MCELROY.

Decided March 19, 1906.

1. INTERFERENCE—REDUCTION TO PRACTICE—EXPERIMENTAL TEST.

Where a device was never used for its intended purpose of lighting a car, but for the purpose of experiment was tested in the basement of a building and after the test was laid aside and another system of lighting put into use, *Held* that such conduct naturally tends to discredit the allegation that the test of the invention was a success.

2. SAME—SAME—PRESUMPTION FROM INACTIVITY—EXCUSES.

Where a device was tested and laid aside and an attempt to rebut the presumption that the test was unsuccessful is made by showing that the party was dependent upon his father and it was necessary to devote his attention to inventions which would make better financial returns, and it appears that other applications were filed and no effort was made to secure the adoption and use practically of the present invention, *Held* that the showing is insufficient.

3. SAME—TESTIMONY.

Where the testimony of the witnesses on the part of Bliss was given long after the event and is by no means satisfactory, *Held* that priority should be awarded to McElroy.

APPEAL from Examiners-in-Chief.

AUTOMATIC ELECTRIC REGULATOR.

Messrs. Jones & Addington and *Mr. Edwin V. H. Tower, Jr.*, for Bliss.

Messrs. Ward & Cameron and *Mr. Edward M. Bentley* for McElroy.

ALLEN, *Commissioner:*

This is an appeal from the decision of the Examiners-in-Chief affirming the decision of the Examiner of Interferences awarding priority of invention to McElroy upon an issue including eight claims relating to automatic electric regulators.

McElroy has a patent granted February 17, 1903, upon an application filed September 9, 1901. Bliss's application was filed September 10, 1904, one year and seven months after the issue of McElroy's patent and three years after McElroy's filing date. The relations of the parties are therefore such as to place the burden upon Bliss of proving his case beyond a reasonable doubt. Bliss admits this as to all counts save counts 1 and 8, and as to these counts contends that he is not required to prove his case beyond a reasonable doubt, but only by a preponderance of evidence. He urges that the subject-matter of claims 1 and 8 was disclosed in a prior application filed by him on February 26, 1902, which application was copending with his present application and with the application on which McElroy's patent issued.

The same evidence is presented by Bliss as to all counts, and it is believed that it is no more sufficient as to counts 1 and 8 than as to the remaining counts. His very long delay in asserting claim to the invention discredits his allegations of a successful test of the invention and makes it necessary to resolve against him any doubt in the matter.

McElroy has taken no testimony and relies upon his filing date, September 9, 1901. Bliss alleges conception, disclosure, and reduction to practice early in 1897. His alleged reduction to practice consisted in a test of "Bliss Apparatus Exhibit No. 3."

This device was never used for the purpose of lighting a car, but for the purpose of experiment was tested in the basement of a building. It seems to have been laid aside after the test, and Bliss devoted his attention to other inventions. He made and put into use another car-lighting system and filed many applications relating to other inventions. Such conduct naturally tends to discredit his allegation that his test of this invention was a success. To rebut the presumption thus raised, Bliss seeks to show that he was dependent upon his father and that it was necessary for him to devote his attention to inventions which would make better financial returns. As pointed out by the Examiner of Interferences, however, he was financially able to file an application upon this invention and apparently made no effort to induce any company to adopt and use practically the present invention. In other words, he voluntarily laid it aside for several years.

To overcome the presumption thus raised the evidence should be clear and convincing. In addition to his own testimony Bliss produces the testimony of Rooney, Berresford, and his brother, John L. Bliss. Their testimony was given long after the event and is by no means satisfactory. It is clearly insufficient to invalidate a patent regularly issued. It is insufficient to prove priority even as to claims 1 and 8, even if McElroy's patent is not to be regarded as regularly issued as to those claims.

The decision of the Examiners-in-Chief awarding priority of invention to McElroy is affirmed.

LOWRY AND COWLEY *v.* SPOON.

Decided May 16, 1906.

1. INTERFERENCE — TESTIMONY — OPERATIVENESS OF SENIOR PARTY'S DEVICE.

Where the junior party failed to overcome the filing date of the senior party's application and was called upon to show cause why judgment should not be rendered against him and thereupon files a motion for leave to take testimony relative to the operativeness of the senior party's device, *Held* that permission

to take testimony should be granted, provided a *prima facie* case of inoperativeness is made out and a satisfactory showing is presented that the proposed evidence is of a proper character.

2. SAME—INOPERATIVENESS—MOTION TO TAKE TESTIMONY—JURISDICTION.

Where a motion for leave to take testimony to show that the device of the senior party to an interference is inoperative is filed, *Held* that whether the testimony may be taken should be determined in the first instance by the Examiner of Interferences.

ON PETITION.

APPARATUS FOR FIBROUS AND OTHER MATERIALS.

Mr. Oliver R. Mitchell and *Mr. A. V. Cushman* for Lowry and Cowley.

Mr. Cyrus Kehr for Spoon.

ALLEN, *Commissioner:*

This is a petition by Lowry and Cowley from the action of the Examiner of Interferences dismissing their motion for leave to take testimony relative to the question of operativeness of the press disclosed by Spoon's application.

It appears that Lowry and Cowley failed in their preliminary statement to overcome the filing date of the Spoon application and were called upon to show cause why judgment should not be rendered against them on the record. A motion to dissolve was then brought by Lowry and Cowley alleging, among other reasons, that Spoon had no right to make the claims of the issue, as he does not show or describe an operative device. The motion for dissolution was denied by the Primary Examiner as to counts 1 and 2 and granted as to count 3, as this count contained matter not disclosed by Spoon. While this motion was still pending, the present motion for leave to take testimony relative to the operativeness of Spoon's device was brought. This motion was dismissed by the Examiner of Interferences for want of jurisdiction of the subject-matter thereof. From this action of the Examiner of Interferences the present petition is taken. The Examiner of Interferences states as a ground for dismissing the motion that his authority in patent cases—

is limited under the present practice of this Office, to the determination of the question of priority of invention between two or more parties claiming the same patentable invention and in so far as he has control of the matter of taking testimony, it is testimony relating to priority of invention.

If the testimony relative to the operativeness of Spoon's device, should such testimony be authorized and taken, is to be considered by the Primary Examiner in deciding whether the interference should be dissolved, as has been permitted in certain instances in the past, the Examiner of Interferences should not have jurisdiction of this motion. If, however, the testimony, in case it is taken, is to be considered as a basis for judgment upon priority of invention, the motion should be decided by the Examiner of Interferences.

The court of appeals has indicated in recent cases that the question of a party's right to make the claim of the issue of an interference should, under certain conditions, be considered at the final hearing. (*Allen, Commissioner of Patents*, v. *The United States of America, ex rel. George A. Lowry and Planters Compress Company*, 116 O. G., 2253; *Podlesak and Podlesak* v. *McInnerney*, 120 O. G., 2127.) In my decision of *Miel* v. *Young* (120 O. G., 1350) it was stated that an opponent's right to make claims might be questioned upon appeal upon priority of invention provided a holding of right on the part of one party to make claims operates to deny a patent to another party who, if such holding be in error, is the first inventor. The question of operativeness is equivalent to the question of right to make claims so far as the procedure under consideration here is concerned.

I am of the opinion that testimony upon the operativeness of the device disclosed by the senior party should be accepted and considered in determining who is the prior inventor in this case, provided a *prima facie* case of inoperativeness is made out and a satisfactory showing is presented that the proposed evidence is of a character to justify opening the case for taking testimony.

Whether testimony may be taken in this case should be determined in the first instance by the Examiner of Interferences.

The petition is granted.

BROWNE *v.* STROUD.

Decided May 21, 1906.

1. INTERFERENCE—MOTION TO DISSOLVE—AFFIDAVITS.

Consideration of affidavits on motion to dissolve an interference is not a right which parties are entitled to demand.

2. SAME—SAME—SAME.

Ex parte affidavits are not equivalent to testimony, and the Office is not bound to give effect thereto in determining patentability.

3. SAME—SAME—SAME.

All proper rules for the exclusion of voluminous and multitudinous affidavits should be applied strictly.

4. SAME—SAME—SAME.

Where affidavits are filed by any of the parties which are not in answer to affidavits filed by opponents, they must ordinarily, under established practice, be served upon the opponents at least five days before the date of hearing. Affidavits in rebuttal may then be filed by opponents; but such affidavits should ordinarily be served before the day of the hearing. Ordinarily, further affidavits should not be necessary, and such further affidavits should not in any case be admitted except upon a satisfactory showing excusing the delay or justifying the admission of surrebuttal evidence.

5. SAME—SAME—SAME.

The conclusion of the Primary Examiner upon the character of an affidavit as basis for its admission or exclusion will only be set aside in cases of clear error, and extensive affidavits will not be studied upon appeal to determine whether proper or improper unless the matters urged upon the appeal have been fully urged before the Primary Examiner and the supposed errors in his decision are clearly pointed out on appeal.

6. SAME—SAME—SAME.

When a party may not appeal from the decision on the motion, he may not appeal from a determination upon the admissibility of affidavits. The determination in such cases will only be reviewed upon a petition making out an apparent case of abuse of discretion.

7. SAME—OPERATIVENESS OF OPPONENT'S DEVICE—TESTIMONY.

If in answer to an order to show cause why judgment should not be rendered on the record a party makes out a *prima facie* case of inoperativeness in his opponent's device which does not extend to his own and proposes to take testimony in support of his position, so far as is now known he will be authorized to do so, provided a satisfactory showing is made that the proposed testimony is of a character to justify such action.

ON PETITION.

TELEPHONE SYSTEM.

Mr. Charles Neave and *Messrs. Mauro, Cameron, Lewis & Massie* for Browne.

Mr. George L. Cragg and *Messrs. Bacon & Milans* for Stroud.

ALLEN, *Commissioner:*

This is a petition by Browne for rehearing of his appeals filed March 10, 1906, and March 13, 1906, from decisions

of the Primary Examiner regarding the admission and exclusion of certain affidavits presented upon a motion for dissolution. This petition also asks for reconsideration of Browne's petition of April 3, 1906, for the admission of a certain affidavit.

The case came before the Primary Examiner upon motion by Browne for dissolution on the ground that Stroud has no right to make the claims in issue because of alleged inoperativeness of the structure illustrated and described in Stroud's application. Upon February 12, 1906, Browne filed affidavits attacking the operativeness of Stroud's device. Upon February 15, 1906, Stroud filed affidavits. On February 20, 1906, Browne filed another affidavit. On February 21, 1906, Stroud filed more affidavits. A hearing was had upon the motion on February 23, 1906. On March 2, 1906, Browne filed more affidavits. Stroud thereupon filed a petition with the Primary Examiner that the affidavits filed by Browne on March 2, 1906, be not considered. The Primary Examiner granted the petition, and Browne appealed from this action. Browne also brought a petition before the Primary Examiner requesting that the affidavits filed by Stroud upon February 21, 1906, be excluded from consideration. The Primary Examiner denied this petition, and Browne also appealed from this action. After the hearing upon these appeals, but before decision thereon, Browne presented a petition before me requesting that still another affidavit which accompanied the petition be transmitted to the Primary Examiner for consideration in connection with the motion for dissolution. On May 2, 1906, I affirmed the decision of the Primary Examiner in the case of each appeal and denied the petition to admit the additional affidavit. It is in view of these decisions that the present petition for rehearing and reconsideration has been filed.

The present petition discloses no good reason why it should be granted. It does disclose, on the other hand, that Browne is in error in several respects in his conception of his rights and of the proper practice in the matter of filing affidavits upon motions for dissolution.

Consideration of affidavits upon motion to dissolve is not a right which parties are entitled to demand. The rights of parties upon such motions extend no further than is expressly provided by the rules of practice. The court of appeals pointed out in the case of *Allen, Commissioner of Patents*, v. *The United States of America, ex rel. George A. Lowry and Planters Compress Company*, (116 O. G., 2253,) that—

The Commissioner of Patents under the authority given to regulate the proceedings in the Patent Office, is clothed with power to regulate all the interlocutory proceedings in interference cases by rules not inconsistent with law. If he deems it wise to provide, after the interference has once been declared, for remanding the interference to the Primary Examiner for the purpose of an interlocutory hearing and determination of a motion to dissolve it for any reason which he considers may be in the interest of the public or the parties, we take it that he has full power to do so, and that he may also provide that such motions may or may not in some or all respects be reviewed by the appellate tribunals of the Patent Office and in so doing he is not thereby depriving any party of any statutory right to have all questions passed upon at final hearing, and on appeals therefrom, which are necessary for a correct determination of the question of priority, which is the sole question for which interferences are declared.

I find nothing in the decision of that court in the later case of *Podlesak and Podlesak* v. *McInnerney*, (120 O. G., 2127,) to which the petitioner refers, which is contrary to the conclusions expressed in the earlier case. On the contrary, it is believed that the later case simply carries forward the suggestions made in the earlier case, that questions of the rights of parties to make claims should be considered in the final determination of priority and upon appeal from such determination when the holding upon the right to make the claim will affect the correctness of the conclusion upon priority.

Ex parte affidavits such as have been filed in this case are not the equivalent of testimony, and the Office is not bound to give effect to the same in determining questions of patentability, even though they are received. It is doubtful whether such affidavits serve any useful purpose in contested cases, whereas it is certain that their consideration is a great burden upon the Office and upon the parties when they are filed in such volume as in the present case. It will not be held here that such affidavits should not be accepted and considered when of a proper character and when filed under proper conditions, as neither this petition nor the appeals to which it refers call for decision upon this point. It is pertinent here, however, to state that all proper rules for the exclusion of such affidavits will be applied strictly.

Where affidavits are filed by any of the parties which are not in answer to affidavits filed by opponents, they must ordinarily, under established practice, be served upon the opponents at least five days before the date of hearing. Affidavits in rebuttal may then be filed by opponents; but such affidavits should ordinarily be served before the day of the hearing. Ordinarily, further affidavits should not be necessary, and such further affidavits should not in any case be admitted except upon a satisfactory showing excusing the delay or justifying the admission of surrebuttal evidence. The conclusion of the Primary Examiner upon the character of an affidavit as basis for its admission or exclusion will not be set aside except in cases of clear error. Affidavits as extensive as those presented here will not be studied upon appeal to determine whether proper or improper unless the matters urged upon the appeal have been fully urged before the Primary Examiner and the supposed errors in his decision are clearly pointed out on appeal. When, as is the position of the petitioner here, a party may not appeal from the decision on the motion, he may not appeal from a determination upon the admissibility of affidavits. The determination in such cases will only be reviewed upon a petition making out an apparent case of abuse of discretion.

From the foregoing it is believed to be apparent that the petitioner has had all the consideration upon his appeals and prior petition to which he is entitled.

It is noted that the following statement appears in the present petition:

If we were to have an opportunity hereafter to introduce these matters by deposition, it would not be of much importance to secure the admission of such affidavits. * * *

It has been pointed out in recent decisions to which the petitioner refers that the question of a party's right to make claims may be considered in connection with the decision upon priority where the determination of such question may affect the correctness of that decision. The petitioner states that—

* * * it is not the present practice to set times for taking testimony where, aside from his right to make the claims in issue, no other question is involved.

No reason is seen why the consideration of the question of right to make claims as a basis for decision upon priority should be materially different where no other question is

involved from what it is where other questions are involved. It is true that times for taking testimony are not fixed as a matter of course where the allegation in a preliminary statement fails to antedate the filing date of an opponent; but if in answer to the usual order issued in such cases a party makes out a *prima facie* case of inoperativeness in his opponent's device which does not extend to his own and proposes to take testimony in support of his position, so far as is now known he will be authorized to do so, provided a satisfactory showing is made that the proposed testimony is of a character to justify such action.

The petition is denied.

AMENDED RULES OF PRACTICE.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., June 12, 1906.

Rules 46, 109, 114, 122, 124, 130, 141, and 162 of the Rules of Practice of the United States Patent Office, revised edition of February 28, 1905, reprinted September 1, 1905, have been amended to read as follows:

46. The applicant, if the inventor, must make oath or affirmation that he does verily believe himself to be the original and first inventor or discoverer of the art, machine, manufacture, composition, or improvement for which he solicits a patent; that he does not know and does not believe that the same was ever before known or used, and shall state of what country he is a citizen and where he resides, and whether he is a sole or a joint inventor of the invention claimed in his application. In every original application the applicant must distinctly state under oath that the invention has not been patented to himself or to others with his knowledge or consent in this or any foreign country for more than two years prior to his application, or on an application for a patent filed in any foreign country by himself or his legal representatives or assigns more than twelve months prior to his application. If any application for patent has been filed in any foreign country by the applicant in this country, or by his legal representatives or assigns, prior to his application in this country, he shall state the country or countries in which such application has been filed, giving the date of such application, and shall also state that no application has been filed in any other country or countries than those mentioned, and if no application for patent has been filed in any foreign country, he shall so state; that to the best of his knowledge and belief the invention has not been in public use or on sale in the United States, nor described in any printed publication or patent in this or in any foreign country, for more than two years prior to his application in this country. This oath must be subscribed to by the affiant.

The Commissioner may require an additional oath in cases where the applications have not been filed in the Patent Office within a reasonable time after the execution of the original oath.

109. When an application is involved in an interference in part and shows and describes, without claiming a patentable invention claimed by another party thereto, the applicant may, at any time within thirty days after the preliminary statements (referred to in Rule 110) of the parties have been received and approved, on motion duly made, as provided in Rule 153, file an amendment of his application duly claiming such invention, and on the admission of such amendment the invention shall be included in the interference. Such motion must be accompanied by the proposed amendment, and when in proper form will be transmitted by the Examiner of Interferences to the Primary Examiner for his determination. In case the amendment shall be admitted, the Primary Examiner will redeclare the interference, prepare new notices, and forward the papers and files to the Examiner of Interferences, who will proceed in accordance with Rule 103. Amendments to the specification will not be received during the pendency of an interference without the consent of the Commissioner, except as provided herein, and in Rules 106 and 107.

114. If the junior party to an interference, or if any party thereto other than the senior party, fails to file a statement, or if his statement fails to overcome the *prima facie* case made by the respective dates of application, such party will be notified by the Examiner of Interferences that judgment upon the record will be rendered against him at the expiration of thirty days, unless cause is shown why such action should not be taken. Within this period any of the motions permitted by the rules may be brought. Motions brought after judgment on the record has been rendered will not be entertained unless sufficient reasons appear for the delay.

122. Motions to dissolve an interference (1) upon the ground that there has been such informality in declaring the same as will preclude a proper determination of the question of priority of invention, or (2) which deny the patentability of an applicant's claim, or (3) which deny his right to make the claim, or (4) which allege that counts of the issue have different meanings in the cases of different parties, should, if possible, be made not later than the thirtieth day after the statements of the parties have been received and approved. Such motions, and all motions of a similar character, should be accompanied by a motion to transmit the same to the Primary Examiner, and such motion to transmit should be noticed for hearing upon a day certain before the Examiner of Interferences. When in proper form the motion presented will be transmitted by the Examiner of Interferences, with the files and papers, to the proper Primary Examiner for his determination, who will thereupon fix a day certain when the said motion will be heard before him upon the merits, and give notice thereof to all the parties. If a stay of proceedings be desired, a motion therefor should accompany the motion for transmission.

When the motion has been decided by the Primary Examiner the files and papers, with his decision, will be sent at once to the docket clerk.

Motions to shift the burden of proof should be made before, and will be determined by, the Examiner of Interferences. No appeal from the decision on such motions will be entertained, but the matter may be reviewed on appeal from the final decision upon the question of priority of invention.

124. Where, on motion for dissolution, the Primary Examiner renders an adverse decision upon the merits of a party's case, as when he holds that the issue is not patentable or that a party has no right to make a claim or that the counts of the issue have different meanings in the cases of different parties, he shall at once reject such claims as may be affected and shall set a time for reconsideration; after reconsideration, if he adheres to his original conclusion, he will make the previous rejection final and fix a limit of appeal. The appeal must go to the Examiners-in-Chief in the first instance and will be heard *inter partes*. If the appeal is not taken within the time fixed, it will not be entertained except by permission of the Commissioner.

No appeal will be permitted from a decision rendered upon motion for dissolution affirming the patentability of a claim or the applicant's right to make the same or the identity of meaning of counts in the cases of different parties.

Appeals may be taken directly to the Commissioner, except in the cases provided for in the preceding portions of this rule, from decisions on such motions as, in his judgment, should be appealable.

130. Where the patentability of a claim to an opponent is material to the right of a party to a patent, said party may urge the non-patentability of the claim to his opponent at final hearing before the Examiner of Interferences as a basis for the decision upon priority of invention, and upon appeals from such decision. A party shall not be entitled to take such step, however, unless he has duly presented and prosecuted a motion under Rule 122 for dissolution upon the ground in question, or shows good reason why such a motion was not presented and prosecuted.

141. Affidavits received after the case has been appealed will not be admitted without remanding the application to the Primary Examiner for reconsideration, but the appellate tribunals may in their discretion refuse to remand the case and proceed with the same without consideration of the affidavits.

162. Thirty-one or more printed copies of the testimony must be furnished, five for the use of this Office, one for each of the opposing parties, and twenty-five for the Court of Appeals of the District of Columbia, should appeal be taken. If no appeal is taken, the twenty-five copies will be returned to the party filing them. The preliminary statement required by Rule 110 must be printed as a part of the record. These copies must be filed not less than ten days before the day of hearing. They will be of the same size, both page and print, as the Rules of Practice, with the names of the witnesses at the top of the pages over their testimony, and will contain indexes with the names of all witnesses and reference to the pages where copies of papers and documents introduced as exhibits are shown.

When it shall appear, on motion duly made and by satisfactory proof, that a party, by reason of poverty, is unable to print his testimony, the printing may be dispensed with; but in such cases type-written copies must be furnished—one for the Office and one for each adverse party. Printing of the testimony cannot be dispensed with upon the stipulation of the parties.

F. I. ALLEN,
Commissioner.

AMENDED TRADE-MARK RULES.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., June 13, 1906.

The rules of the Patent Office relating to the registration of trade-marks, revised edition of December 1, 1905, have been amended, to take effect July 2, 1906, as follows:

Rule 17 is canceled, and the following is substituted therefor:

17. Except as provided by section 2 of the act of May 4, 1906, no trade-mark will be registered to an applicant residing or located in a foreign country unless such country, by treaty, convention, or law, affords similar privileges to the citizens of the United States, nor unless the trade-mark has been registered by the applicant in the foreign country in which he resides or is located, nor until such applicant has filed in this Office a certified copy of the certificate of registration of his trade-mark in the country where he resides or is located. Such certified copy must be duly authenticated by the certificate of a diplomatic or consular officer of the United States. In such cases, it is not necessary to state, in the application, that the trade-mark has been used in commerce with the United States or among the several States thereof.

The following is inserted as Rule 18:

18. The owner of a trade-mark, residing or located in a foreign country, who shall have a manufacturing establishment within the territory of the United States, may register a trade-mark used on the products of such establishment upon complying with the provisions of the act of February 20, 1905, as prescribed for owners of trade-marks domiciled within the territory of the United States.

Present Rule 18 is renumbered as 19 and amended to read as follows:

19. No trade-mark will be registered to an owner domiciled within the territory of the United States unless it shall be made to appear that the same is used as such by said owner in commerce among the several States, or between the United States and some foreign nation or Indian tribe; no trade-mark, except as provided by section 2 of the act of May 4, 1906, will be registered to an owner residing in or located in a foreign country unless said country, by treaty, convention, or law, affords similar privileges to the citizens of the United States; no trade-mark will be registered which consists of or comprises immoral or scandalous matter, or which consists of or comprises the flag or coat-of-arms or other insignia of the United States, or any simulation thereof, or of any State or municipality, or of any foreign nation, or which is identical with a registered or known trade-mark owned and in use by another, and appropriated to merchandise of the same descriptive properties, or which so nearly resembles a registered or known trade-mark owned and in use by another, and appropriated to merchandise of the same descriptive properties, as to be likely to cause confusion or mistake in the mind of the public, or to deceive purchasers; or which consists merely in the name of an individual, firm, corporation, or association, not written, printed, impressed, or woven in some particular or distinctive manner or in asso-

ciation with a portrait of the individual, or merely in words or devices which are descriptive of the goods with which they are used, or of the character or quality of such goods, or merely a geographical name or term; no portrait of a living individual will be registered as a trade-mark, except by the consent of such individual, evidenced by an instrument in writing; and no trade-mark will be registered which is used in unlawful business, or upon any article injurious in itself, or which has been used with the design of deceiving the public in the purchase of merchandise, or which has been abandoned.

Present Rules 19 and 20 are renumbered as 20 and 21.

Present Rule 21 is renumbered as 22, and paragraphs (*b*) and (*c*) thereof are amended to read as follows:

(*b*) A statement specifying the name, domicile, location, and citizenship of the party applying; the class of merchandise, and the particular description of goods comprised in such class, to which the trade-mark is appropriated; a description of the trade-mark itself only when needed to express colors not shown in the drawing; and a statement of the mode in which the same is applied and affixed to the goods, and of the length of time during which the trade-mark has been used, and, if the applicant be a corporation or association, it must be set forth under the laws of what State or nation organized.

(*c*) A declaration complying with section 2 of the act of February 20, 1905.

Present Rule 22 is renumbered as 23.

Present Rule 23 is renumbered as 24 and amended to read as follows:

24. The name of the applicant will appear in the certificate of registration precisely as it is signed to the statement of the application, and, therefore, the signature to the statement must be the correct signature of the applicant, and the name of the applicant, wherever it appears in the papers of the application, will be made to agree with the name as signed to the statement.

Present Rules 24 to 28, inclusive, are renumbered as 25 to 29.

The following is inserted as Rule 30:

30. A trade-mark may, at the option of the applicant, be registered on a single application, for any or all goods comprised in a single class of merchandise, provided the particular description of goods be stated, and provided that the mark has been actually used upon all of the goods specified.

Present Rule 29 is renumbered as 31 and amended to read as follows:

31. The application must be accompanied by a written declaration, verified by the applicant, or by a member of the firm, or by an officer of the corporation or association applying, to the effect that he believes himself, or the firm, corporation, or association in whose behalf he makes the declaration, to be the owner of the trade-mark sought to be registered, and that no other person, firm, corporation, or association, to the best of his knowledge and belief, has the right to use the trade-mark, either in the identical form or any such near resemblance thereto as might be calculated to deceive; that such trade-mark is used in commerce among the several States, or with foreign nations, or with Indian tribes; that the drawing truly represents the trade-mark sought to be registered; that the specimens (or facsimiles) show the mark as actually used upon the goods; and that the facts set forth in the statement are true.

Present Rule 30 is renumbered as 32.

Present Rule 31 is renumbered as 33 and amended to read as follows:

33. If the applicant resides or is located in a foreign country, the declaration required, unless the application is presented under the provisions of section 2 of the act of May 4, 1906, shall also set forth that the trade-mark has been registered by the applicant, or that an application for the registration thereof has been filed by him in the foreign country in which he resides or is located, and shall give the date of such registration, or of the application therefor, as the case may be. In such cases it shall not be necessary to state that the mark has been used in commerce with the United States or among the States thereof.

If the application is presented under the provisions of said section 2 of the act of May 4, 1906, the declaration, in addition to the requirement of Rule 31, must state that the applicant has a manufacturing establishment within the territory of the United States and that the goods upon which the trade-mark is used are the product of such establishment.

Present Rules 32 to 73, inclusive, are renumbered as 34 to 75.

F. I. ALLEN,
Commissioner.

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[BY AUTHORITY OF CONGRESS.]

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Maryland	5	9	West Virginia	2	.....
Massachusetts	35	45	Wisconsin	13	8
Michigan	22	9	Wyoming	.....	.....
Minnesota	7	12	U. S. Army	.....	.....
Mississippi	1	.....	U. S. Navy	.....	.....
Missouri	19	21			
Montana	1	.....	Total to citizens of the United States	556	527
Nebraska	6	2			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina	.....	.....	Netherlands	1	.....
Austria-Hungary	2	.....	Newfoundland	.....	.....
Belgium	.....	2	New South Wales	.....	.....
Brazil	.....	.....	New Zealand	1	.....
British West Indies	.....	.....	Norway	.....	.....
Canada	8	.....	Persia	.....	.....
Cape Colony	.....	.....	Queensland	.....	.....
Chile	.....	.....	Roumania	.....	.....
China	.....	.....	Russia	1	.....
Costa Rica	.....	.....	San Salvador	.....	.....
Cuba	.....	.....	Scotland	1	1
Denmark	.....	.....	South Africa	.....	.....
Ecuador	.....	.....	Spain	.....	.....
England	17	18	Sweden	1	2
France	9	9	Switzerland	3	4
Germany	20	13	Transvaal, South Africa	.....	.....
Guatemala	.....	.....	Victoria	1	.....
Ireland	.....	.....	Western Australia	.....	.....
Italy	.....	.....			
Japan	.....	.....			
Mexico	.....	.....	Total to citizens of foreign countries	65	49
Natal	.....	.....			

Notice.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., June 16, 1906.

Such hearings of appeals and petitions to the Commissioner of Patents will be given during July and August as are rendered necessary by the number of such appeals and petitions.

F. I. ALLEN,
Commissioner.

Changes in Classification.

(ORDER No 1,669.)

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., June 21, 1906.

The following changes in the classification of patents are hereby directed, to take effect this day:

In Division I, class 55, Harrows and Diggers, establish subclass—

Shovels—
151. Fire.

In Division III, class 22, Metal-Founding, establish subclass and definition as follows:

Patterns—
163.5. Coatings.

163.5. PATTERNS, COATINGS. Materials and compositions for coating a pattern to prevent it from sticking to the sand of the mold.

In Division V, class 56, Harvesters, establish the following subclasses:

Harvesters—
Cane—
Stalk-cutters—
133. Strippers,
132. Toppers,
Corn—
130. Cutting apparatus,

Harvesters—
Corn—
131. Toppers,
134. Broom-corn—
135. Tablers,
Mowers—
136. Cutter-bar alinement.

F. I. ALLEN,
Commissioner.

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business June 19, 1906.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
308	XV. Bread, Pastry, and Confections, Making, Coating, Laminated Sheets and Fabrics, Fuel, Glass, Hydraulic Lime and Cement, Paper-Making, Paving, and Plastics.	June 9	Apr. 9	473
322	XXXVI. Curtains, Shades, and Screens, Drafting, Driers, Measuring Instruments, and Wind-Wheels.	June 6	May 21	268
179	XX. Artificial Limbs, Builders' Hardware, Dentistry, Locks and Latches, Safes, Undertaking.	June 6	Oct. 18	544
303	XVII. Linotyping, Printing, Matrix-Making, Nut and Bolt Locks.	June 5	Mar. 28	328
244	XXXV. Baggage, Buckles, Buttons, and Clasps, Card, Picture, and Sign Exhibiting, Deposit and Collection Receptacles, Package and Article Carriers, Packing and Storing Vessels, Photography.	June 5	Mar. 21	643
128	II. Bee Culture, Dairy, Label-Affixers, Paper Files and Binders, Presses, Store-Service, Tobacco, etc.	June 4	Mar. 15	328
154	XI. Boot and Shoe Making, Boots, Shoes, and Leggings, Button, Eyelet, and Rivet Setting, Leather Manufacturing, Nailing and Stapling, Check-Controlled Apparatus, Whips and Whip Apparatus.	June 4	Mar. 5	379
148	XXXII. Carbonating Beverages, Dispensing Beverages, Dispensing-Cans, Metallic Shipping and Storing Vessels, Packaging Liquids, Paper Receptacles, Refrigeration, Wooden Receptacles.	June 4	Jan. 29	704
332	X. Carriages and Wagons.....	June 2	Jan. 5	1055
304	XXXIV. Railways, Railway-Brakes, Rolling-Stock.	May 29	Apr. 14	340
137	VIII. Beds, Chairs, Furniture, Kitchen and Table Articles. Store Furniture.	May 29	Feb. 15	681
330	XIII. Arms, Projectiles, and Explosive Charges, Making, Metal-Working, Needle and Pin Making.	May 29	Nov. 24	640
172	XXXI. Alcohol, Charcoal and Coke, Distillation, Gas, Heating and Illuminating, Hides, Skins, and Leather, Liquid Coating Compositions, Oils, Fats, and Glue, Water Purification.	May 28	Apr. 17	262
147	XXIX. Coopering, Roofs, Wheelwright-Machines, Wooden Buildings, Wood-Sawing, Wood-Turning, Woodworking-Tools.	May 28	Jan. 23	508
133	XXII. Air-Guns, Ammunition and Explosive Devices, Boats and Buoys, Catapults and Targets, Firearms, Marine Propulsion, Ordnance, Ships.	May 28	Jan. 9	321
379	XXIII. Acoustics, Coin-Handling, Horology, Recorders, Registers, Optics, Signals, Time Controlling Mechanism.	May 28	Dec. 13	779
122	XIX. Stoves and Furnaces and Steam-Boiler Furnaces.	May 26	Nov. 25	725
175	III. Annealing and Tempering, Coating with Metal, Electrochemistry, Metal-Founding, Metallurgy, Shaping Fluid Metal.	May 25	Apr. 16	370
327	XVIII. Steam-Engineering, etc ...	May 25	Feb. 10	426
107	XXXVII. Electricity, Conductors, Lighting, Special Apparatus.	May 25	Sept. 27	894
378	XXXVIII. Artesian and Oil Wells, Bottles and Jars, Care of Live Stock, Fishing and Trapping, Stationery, Stone-Working.	May 24	Apr. 16	348
144	XXIV. Apparel, Apparel Apparatus, Sewing-Machines, Surgery, Toilet.	May 24	Jan. 13	579

Applications Under Examination—Continued.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
321	I. Tillage, etc., Fences, and Railway Draft Appliances.	May 23	May 21	289
152	XXX. Fluid-Pressure Regulators, Lamps and Gas-Fittings, Type-Writing Machines.	May 23	Nov. 18	671
324	XII. Elevators, Journal-Boxes, Lubricators, Machine Elements, Pulleys and Shafting.	May 21	Apr. 5	462
312	VII. Velocipedes, Clutches, Fire-Escapes, Games and Toys, Ladders, Mechanical Motors, and Paper Manufactures.	May 19	Jan. 8	474
164	XXXIII. Canes, Canopies, Cutlery, Domestic Cooking Vessels, Electricity, Medical and Surgical, Electric Signaling, Fireproof Buildings, Harness, Masonry, Tents, and Umbrellas.	May 18	Jan. 18	696
318	VI. Bleaching and Dyeing, Chemicals, Explosives, Fertilizers, Medicines, Preserving, Sugar and Salt.	May 17	Feb. 16	435
105	XXVI. Electricity, Generation, Electric Heaters, Electric Railways, Motive Power.	May 16	Oct. 19	692
307	XIV. Cutting and Punching Sheets and Bars, Farriery, Metal-Bending, Metal-Ornamenting, Metal Personal Wear, Making, Sheet-Metal Ware, Making, Tools, Wire-Working.	May 8	Jan. 18	350
232	IV. Bridges, Conveyers, Cranes and Derricks, Excavating, Hoisting, Hydraulic Engineering, Loading and Unloading, and Towers.	May 4	May 9	450
167	V. Fine Arts, Bookbinding, Harvesters, Jewelry, and Music.	May 4	Feb. 19	498
109	XVI. Telegraphy and Telephony..	Apr. 30	Mar. 10	428
142	IX. Baths and Closets, Fire-Extinguishers, Hydraulic Motors, Pumps, Sewerage, and Water Distribution.	Apr. 30	Oct. 2	1219
315	XXV. Butchering, Mills, Threshing, and Vegetable Cutters and Crushers.	Apr. 23	Jan. 10	582
375	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, Washing Apparatus.	Apr. 23	Dec. 1	883
382	XXVIII. Air and Gas Engines, Air and Gas Pumps, Pneumatics.	Apr. 18	Aug. 20	1365
112	XXI. Textiles, Carding, Knitting, Spinning, Weaving, etc.	Mar. 26	Oct. 2	774
	Total number of applications awaiting action			21,813
159	TRADE-MARKS, DESIGNS, LABELS AND PRINTS.			
	Trade-Marks.....	June 13	Mar. 19	1676
	Designs.....	June 12	May 23	42
	Labels and Prints.....	.....	June 15	6

Interference Notice.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., June 8, 1906.

Straus, Glaser & Company, their assigns or legal representatives, take notice:

An interference having been declared by this Office between the application of I. L. Pearl & Company, of Johnson, Vt., for registration of a trade-mark and a trade-mark registered to Straus, Glaser & Company, of 248 and 250 Monroe street, Chicago, Ill., and the notice of said declaration mailed by the Patent Office in the usual manner to the said Straus, Glaser & Company having been returned undelivered, notice is hereby given to the said Straus, Glaser & Company, their assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents, in order that the notices of declaration heretofore sent by and returned to the Office may be forwarded to them.

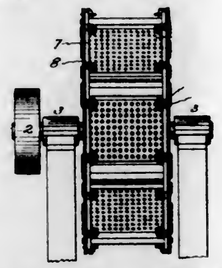
This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN,
Commissioner.

PATENTS

GRANTED JUNE 26, 1906.

824,086. **MACHINE FOR MAKING LEATHER-BOARD.** EDWIN D. ALVORD and HARRY R. KNOX, Hartford, Conn. Filed Dec. 9, 1905. Serial No. 291,114.



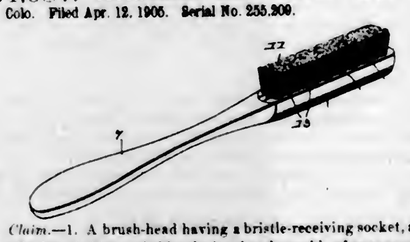
Claim.—1. A machine for making board from pulp having a horizontal shaft, a frame supported by the shaft, perforated beds free to move in and out on the frame, perforated heads adjustably held outside of the beds, and molds with perforated bottoms and covers located between the beds and the heads, substantially as specified.

2. A machine for making board from pulp having a horizontal shaft, a radial frame supported by the shaft, a circumferential frame fastened to the radial frame, perforated beds loosely supported by and movable in and out on the radial frame, perforated heads adjustably supported by the circumferential frame, and molds with perforated bottoms and covers located between the beds and the heads, substantially as specified.

3. A machine for making board from pulp having a horizontal shaft, a radial frame supported by the shaft, a circumferential frame fastened to the radial frame, perforated beds movable in and out on the radial frame, perforated heads movable in and out on the radial frame, and hand-wheels and screws for supporting and adjusting the heads, substantially as specified.

4. A machine for making board from pulp having a horizontal shaft, radiating irons carried by the shaft, circumferential irons connected with the outer ends of the radial irons, plates securing the radial irons and the circumferential irons, beds movable in and out and guided by the edges of the plates, heads movable in and out and guided by the edges of the plates, hand-wheels and screws for holding and adjusting the heads, and molds with perforated bottoms and covers located between the beds and the heads, substantially as specified.

824,087. **TOOTH-BRUSH.** SOLON E. BABCOCK, Plateau City, Colo. Filed Apr. 12, 1905. Serial No. 255,209.



Claim.—1. A brush-head having a bristle-receiving socket, and a handle detachably carried by the head and capable of engagement sidewise across the open side of the socket to retain bristles therein.

2. A brush-head having a bristle-receiving socket, a handle having a fulcrum connection with the head at one end of the socket and capable of being swung sidewise into the socket to clamp bristles therein, and means other than the fulcrum connection to hold the handle against the head.

3. A brush comprising a head, a handle having a fulcrum connection with the head, bristles held between the head and the handle, and means other than the fulcrum connection for connecting the handle to the head to clamp the bristles between the head and the handle.

4. A brush comprising a head having a bristle-receiving socket which is provided in its outer end with an opening and in its inner end with a slot, a handle having a stem to engage the terminal opening of the socket as a fulcrum-bearing and capable of being pressed down against the bristles to force the latter into the socket, the slot serving to receive the inner end of the stem when the handle is fitted in place, and means other than the engagement of the stem with the head to connect the handle with the head.

5. A brush comprising a head having a socket which is provided in its outer end with a threaded opening and in its inner end with a longitudinal slot, a handle having a stem which is threaded at its front end for engagement with the threaded opening, the slot of the head receiving the inner end of the stem when the handle is fitted in place, said handle being rotatable to engage and disengage the threaded portion of the stem with the threads of the opening, and means at the end opposite the threaded opening for connecting the handle and the head.

6. A brush having a head provided with a longitudinal socket, the outer end of the socket being provided with a threaded opening, the inner end of the head being provided with a conical projection having a longitudinal slot intersecting the open side of the socket, bristles carried within the socket, and a handle having a stem to engage the bristles and retain the same in the socket, the outer end of the stem being threaded for engagement with the threaded opening of the head and the inner end portion of the stem being received within the slot when the handle is in position, the inner end of the handle having a conical socket to receive the conical projection of the head and said handle being rotatable to engage and disengage its threaded end with the threads of the opening in the head.

7. A brush comprising a head having a longitudinal socket, one end of the socket being provided with a threaded opening and the other end having a longitudinal slot, a handle having a stem to engage the slot and the socket and provided with a threaded terminal for detachable engagement with the threaded opening of the head, and means at the slotted end of the socket for connecting the handle and the head.

8. A brush comprising a head having a longitudinal socket which is provided in one end with a threaded opening, the other end of the head being provided with a conical extension having a longitudinal slot intersecting the open side of the socket, and a handle having a terminal socket to receive the conical projection of the head and provided with a longitudinal stem extending forwardly from the center of the socket to engage the slot and socket of the head, the outer end of the stem being threaded to detachably connect the threaded opening of the head.

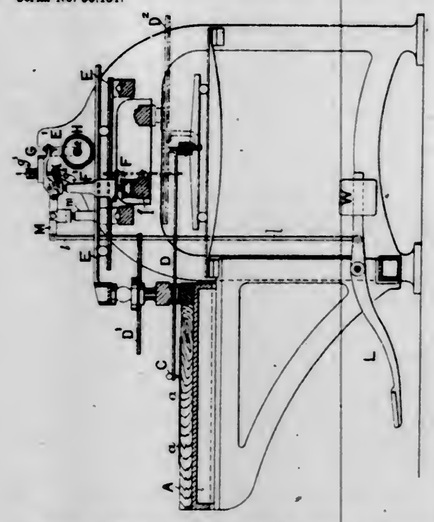
9. A brush comprising a head having a socket, a stack of bristles folded intermediate of its ends with its folded portion introduced into the socket and the free ends of the bristles projected externally of the head into position for use, projections within the socket and entering between the bristles to separate and loosen the outer free ends thereof, and means to hold the bristles in the socket.

10. A brush comprising a head having a socket provided with internal projections and a seat at one end of the socket, a stack of bristles folded intermediate of its ends with the folded portion introduced into the socket, a handle having a stem engaged with the seat and the folded portion of the bristles to hold the latter in the socket, and means other than the engagement of the stem with the seat to connect the handle with the head.

11. As a new article of manufacture, a set of brush-bristles arranged in a pack and connected longitudinally at a point substantially midway between the ends of the pack, the pack capable of being folded along the line of connection between the bristles.

12. As a new article of manufacture, a set of brush-bristles disposed in a pack and connected by a row of stitches disposed substantially midway between the ends of the pack, the pack capable of being folded along the line of connection between the bristles.

824,088. APPARATUS FOR PRODUCING LITERATURE FOR THE BLIND. JOHN BARR, Dinting, England. Filed Mar. 6, 1901. Serial No. 50,131.



Claim.—1. In a pantograph engraving-machine, the combination with the work-table A, the pointer C moving over same, the slotted guides D, D', D², the movable slides E and rotatable disks E' and shaft *e* of a plate *a* formed with Braille points placed upon the table A, and a Braille roller H provided with indents h upon which the paper to be marked is placed, mounted upon the shaft *e* and rotated by the movable slides E, and punches G to indent the paper, substantially as described.

2. In a pantograph engraving-machine the combination with the punches G, punch-lever *g*, moving bed F and movable slides E, disks E' rotated thereby and means for actuating the same, of a Braille roller H provided with indents h mounted upon and rotated by the movable slides E and disks E', and Braille plate placed upon the operating-table A, substantially as described.

3. In a pantograph engraving-machine the combination with the punches G, punch-levers *g*, brackets F' movable bed F, movable slides E and disks E' thereon and means for actuating the same, of a Braille roller H provided with indents h mounted upon the shaft *e* and rotated by the disks E', substantially as described.

4. In a pantograph engraving-machine, the combination with the punches G, punch-levers *g* moving bed F and movable slides E and means for actuating the same, of an indented Braille roller H, mounted upon and rotated by the movable slides E, and divided into a number of sections or lengths each the length of a sheet of Braille writing-paper, substantially as described.

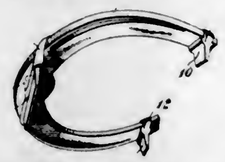
824,089. ATTACHMENT FOR VEHICLES. JAMES E. BLAKE, Cornell, Ill., assignor of one-half to N. M. Southwick, Streator, Ill. Filed Nov. 16, 1905. Serial No. 287,737.



Claim.—1. The combination with a vehicle-body having a longitudinally-slotted guide-plate thereon provided with retaining-flanges and an ear adjacent one end of the plate; of a side-board, a T-shaped strip secured thereto and extending into and detachably mounted within the slotted plate, bolts adjustably connected and pivoted to the strip, and a cam-lever mounted between the bolts and adapted to engage the ear.

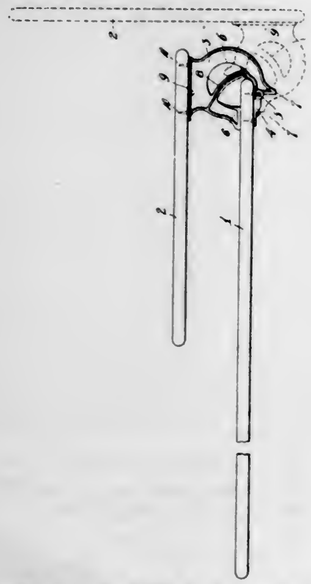
2. A combined cleat and lock for side-boards of vehicles comprising a longitudinally-slotted guide-plate having retaining-flanges and an ear, a T-shaped strip detachably and slidably mounted within the guide-plate and adapted to be secured to a side-board, lugs pivoted to the strip and extending from opposite sides thereof, bolts adjustably connected to the lugs, and a cam-lever pivoted between the bolts and adapted to engage the ear to lock the strip within the guide-plate.

824,090. HORSESHOE-CALK AND FASTENER. BERT BOGEAR and JAMES O. TOMPKINS, Marengo, Iowa. Filed Apr. 17, 1906. Serial No. 312,247.



Claim.—A horseshoe having threaded apertures at the toe and heel portions and calks having threaded studs for engaging said apertures and with laterally-extending arms opposite said studs and adapted to be bent around the portion of the body of the shoe adjacent to the calk and its stud and reinforcing the same.

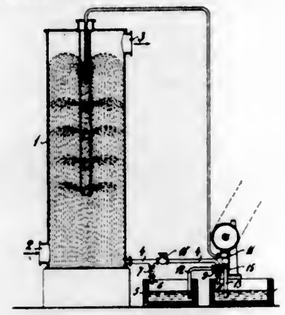
824,091. IRONING-BOARD. WILLIAM BREMER, Cedar Falls, Iowa, assignor to Harris & Cole Brothers, Cedar Falls, Iowa, a Corporation of Iowa. Filed Aug. 25, 1905. Serial No. 275,754.



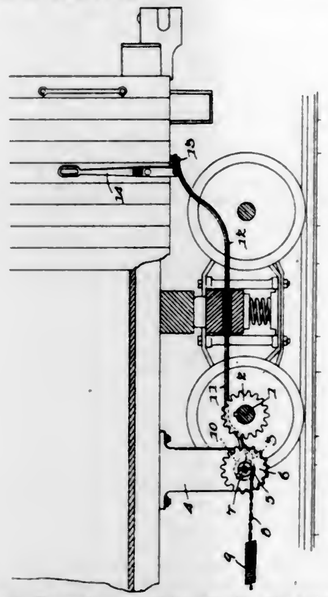
Claim.—The combination with a main ironing-board and an auxiliary ironing-board, of an approximately C-shaped bracket rigidly secured to the latter and having one prong pivotally attached to a bearing on the under surface of one end of the latter, the other prong thereof terminating in a foot which is engageable with the upper surface of the main ironing-board, substantially as described.

824,092. PROCESS OF EXTRACTING AMMONIA FROM GASES. RUDOLPH BRUNCK, Dortmund, Germany. Filed Nov. 18, 1904. Serial No. 233,337.

Claim.—The herein-described process for the extraction of ammonia from gases evolved in the dry-distillation process which consists in washing the raw hot gases with concentrated acid in a scrubber, regulating the absorption of the ammonia so that the solution formed does not become oversaturated, withdrawing from the scrubber the hot solution and cooling the same, substantially as and for the purpose stated.



824,093. CAR-BRAKE. PATRICK W. CLARK, Superior, Nebr. Filed Feb. 26, 1906. Serial No. 303,029.

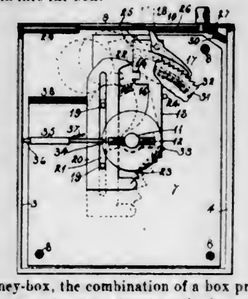


Claim.—1. The combination with a rotatable axle, and a power-transmitting device rotatable therewith; of hangers having curved slots therein, a shaft rotatable mounted within said slots and adapted to slide therein, a power-transmitting device rotatable with the shaft, a brake-chain secured to and adapted to be held upon the shaft, and means for moving both ends of the shaft in unison to shift the power-transmitting device on said shaft into operative relation with the device on the axle.

2. The combination with a car-axle and a power-transmitt ng device rotatable therewith, of slotted hangers, and shaft rotatably and slidably mounted within the hangers, a power-transmitting device rotatable with the shaft, a brake-chain secured to and adapted to be wound upon the shaft, a yoke loosely mounted upon the shaft, a manually-operated lever, and connections between the lever and yoke for shifting the power-transmitting devices into operative relation.

824,094. MONEY-BOX. WILLARD E. CLEVELAND, Oregon, Ill. Filed Apr. 17, 1905. Serial No. 256,074.

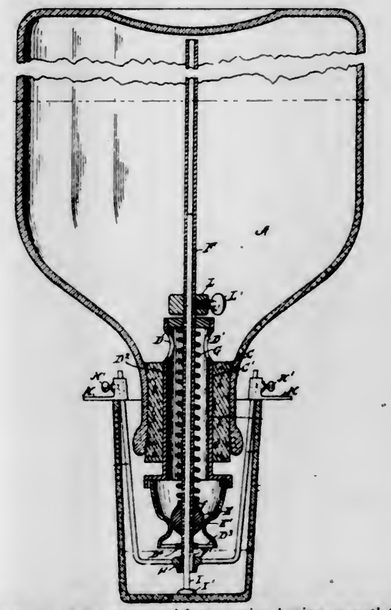
Claim.—1. In a money-box, the combination of a box proper, a door to the box having an opening, a registering-wheel provided with indicating-numerals, an opening through the top of the box, a slide covering the opening, a dog for moving the registering-wheel, and held out of engagement with the wheel when the slide is open, and means for moving the dog to partially rotate the wheel upon the insertion of a coin into the box.



2. In a money-box, the combination of a box proper, a door to the box having an opening, a registering-wheel provided with indicating-numerals, an opening through the top of the box, a slide covering the opening, a tumbler provided with a series of edge notches, a locking-plate with which the tumbler engages, said locking-plate capable of a bodily movement to present it before any one of the notches of the tumbler, and a dog connection between the tumbler and registering-wheel, the slide in its open position holding the dog out of engagement with the wheel.

3. In a money-box, the combination of a box proper, a door to the box having an opening, a registering-wheel provided with indicating-numerals, an opening through the top of the box, a slide covering the opening, a tumbler provided with a series of edge notches, a locking-plate with which the tumbler engages, said locking-plate capable of a bodily movement to present it before any one of the notches of the tumbler, a dog connection between the tumbler and registering-wheel, and a spring connection between the tumbler and locking-plate, the slide in its open position holding the dog out of engagement with the wheel.

824,095. FLUID-MEASURING FAUCET. GEORGE K. COOKE, New York, N. Y. Filed Mar. 18, 1905. Serial No. 250,730.



Claim.—1. A faucet comprising a casing having an outlet, a valve within said casing, means whereby said valve may be operated, adjustable means connected with said valve for gaging the depth of said outlet in a receptacle when the latter is used in conjunction with the faucet.

2. A faucet comprising a casing provined with an outlet, a valve located in said casing and controlling the outlet, adjustable means coöperative with said valve whereby a predetermined quantity of fluid may be discharged therethrough when used with a receptacle of predetermined capacity and thereafter no further fluid will be discharged whether the valve remains open or closed, until after the receptacle into which the fluid is drawn is removed, and whereby the removal of said receptacle will allow the valve to close.

3. A faucet comprising a casing, a tube, a valve within said casing mounted on said tube, said tube extending from the lower end of said casing through said valve and projecting above the same and means for moving said tube relative to said casing; substantially as described.

4. A faucet comprising a casing, a valve in said casing, a tube passing through said valve and means whereby said valve and tube may be moved relative to said casing; substantially as described.

5. A faucet comprising a casing, a tube, a valve mounted on said tube, said valve being controlled by means of said tube, means for normally holding said valve closed, and means adjustably connected to said tube whereby said tube may be moved by a cup or receptacle.

6. A faucet comprising a casing having a conduit therein, a valve controlling said conduit, a tube supported in said casing and adapted to operate said valve when moved relative to said casing, a rod, and means for adjusting said rod relative to said tube.

7. A faucet comprising a casing having a conduit in said casing, a tube which extends through said casing, a valve mounted thereon and adapted to be operated thereby, means for limiting the movement of said tube and upwardly-extending gage-rods connected to said tube; substantially as described.

8. A faucet comprising a casing having a conduit therein, a tube extending through said casing, a valve controlled by said tube, a rod adapted to slide in said tube and project below the same and means for holding said rod to said tube; substantially as described.

9. A faucet comprising a casing having a conduit therein, a valve controlling said conduit, a tube extending through said valve and casing and adapted to control the movement of said valve, a cork or similar packing surrounding said casing and adapted to form a tight joint between said casing and any receptacle for the purpose of uniting said casing to said receptacle; substantially as described.

10. A faucet comprising a casing having a bell-shaped outlet, a valve controlling said outlet, a tube extending through said casing whereby air may be conducted through said tube; substantially as described.

11. A faucet comprising a valve, a casing having an outlet of enlarged area relative to said valve, means whereby said valve may be operated and means for controlling the depth of the outlet in a receptacle, said means comprising upwardly-extending members adapted to engage with a fluid-receptacle and the movement of which serves to operate said valve; substantially as described.

12. A faucet comprising a casing adapted to be held in a fluid-reservoir, and provided with a bell-shaped outlet, a valve located directly above said outlet, a tube extending through said casing adapted to convey air therethrough and means for operating said valve; substantially as described.

13. A faucet comprising a casing provided with an outlet, a valve controlling said outlet, a tube extending through said casing adapted to convey air therethrough, means for operating said valve and means for adjusting the depth of the outlet in the receptacle in which the fluid is drawn; substantially as described.

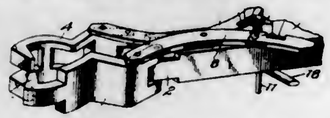
14. A faucet comprising a casing provided with an outlet, a valve in said casing, a tube passing through said valve, means whereby said valve and tube may be moved relative to said casing, and means for limiting the depth of said outlet in a receptacle and thereby gaging the amount of fluid dispensed.

824,096. **DENTAL ARTICULATOR.** WALTER W. CRAYE, Camden, N. J. Filed Apr. 2, 1906. Serial No. 309,509.



Claim.—The combination, in a dental articulator, of the upper and lower jaws having hinged connection at their inner ends, said upper jaw consisting of two parts, with the guide-ridge and groove connection between said parts, which permits of their being moved relatively to each other only in the direction governed by the guideg ridge and groove; and means for clamping the two parts together.

824,097. **CAR-COUPLING.** LANDIS G. DANIELS and WILLIAM B. KIRKPATRICK, High Spire, Pa. Filed Feb. 23, 1906. Serial No. 302,586.



Claim.—1. The herein-described car-coupler comprising a draw-bar; locking-arms pivotally secured to one end thereof, knuckles carried by the outer ends of said arms, controlling-arms for said locking-arms, a rod extending through said draw-bar, a controlling member upon the upper end thereof and connected to the controlling-arms, a controlling-lever secured to said rod, a housing for said draw-bar, and means carried thereby to engage the lever and operate the locking-arms.

2. A car-coupler of the class described comprising a draw-bar, locking-arms pivotally secured thereto, controlling-levers for said arms, a controlling member operatively connected to said levers, a rod carrying said controlling member, and means connected to the lower end of said rod whereby said rod and controlling member may be manually operated to operate the locking-arms.

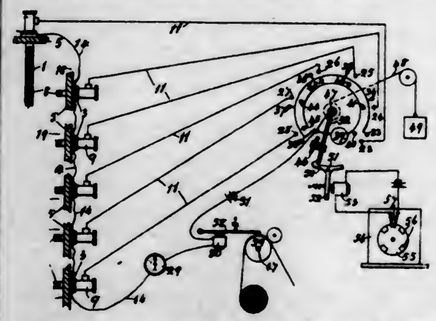
3. A car-coupler of the class described comprising the combination with a draw-bar having locking-arms at one end thereof and means to operate said locking-arms; of a housing for said draw-bar and arms, supporting-rods secured to the car-body and extending through one end of the housing, and springs around said rods between the housing and car-body.

4. In a car-coupler, the combination with the body of a car; of a draw-bar therefor, means carried at one end of said draw-bar to interlock the same with the adjoining draw-bar, a housing for said draw-bar, supporting-rods secured to the car-body and extending through openings in one end of said housing, springs disposed around said rods and between the car-body and housing and means carried by the housing to operate said interlocking means.

5. In a car-coupler, the combination with a draw-bar having interlocking members at one end; of a housing for said draw-bar and interlocking members, and means carried by said housing to automatically operate said locking members.

6. A car-coupler having interlocking members at one end, levers to operate said interlocking members, a controlling member secured to said levers, a rod to control said member, a housing for said draw-bar, a latch carried by said housing, a projection on said latch, a lever secured to said rod, and means carried by the draw-bar to disengage said latch from said lever.

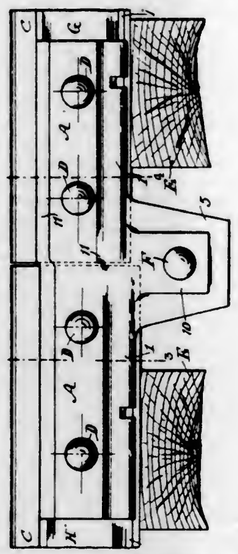
824,098. **WATER-LEVEL INDICATOR.** JOHN T. DAWES, Liverpool, England. Filed June 23, 1905. Serial No. 266,663.



Claim.—1. A water-level indicator consisting of an electric conducting-wire partly inclosed in insulating material packed fluid-tight in a casing secured in the shell of the water-container adapted to expose the wire in the interior of the container the inner end of the casing extending over the exposed part of the wire and being slotted, a source of electricity, an indicator, connecting line-wires, and a switch, substantially as described.

2. A water-level indicator consisting of an electric conducting-wire partly inclosed in insulating material packed fluid-tight in a casing secured in the shell of the water-container adapted to expose the wire in the interior of the container, a cover attached to the casing and surrounding the outer terminal of the wire and having an opening therein for the line-wire, a cap on the cover secured by a locking device, a source of electricity, an indicator, connecting line-wires, and a switch, substantially as described.

824,099. **RAILROAD-RAIL JOINT.** SELDEN S. DERMER, New Castle, Del. Filed Oct. 5, 1905. Serial No. 281,468.



Claim.—1. In a rail-joint, the combination with rail-sections of oppositely-located longitudinal plates engaging the upper surfaces of the rail-base flanges and each having a centrally-located tongue extending obliquely inwardly and downwardly from the edges of said rail-base flanges, an integrally-formed shelf extending inwardly from the base of each tongue for supporting contact with the lower surface of said rail-section bases, and means for clamping the plates to the rail-sections and for connecting the tongues to each other, substantially as shown and described.

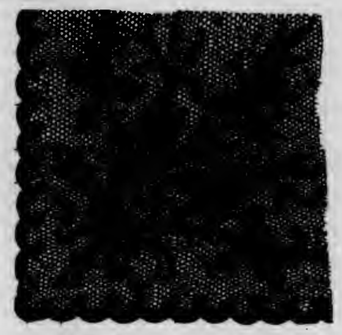
2. A fish-plate having a downwardly and outwardly extended flange for contact with the upper surface of a rail-base flange, a tongue extended obliquely downwardly and inwardly therefrom, an integrally-formed shelf extending inwardly from the base of said tongue for supporting contact with the lower surface of a rail-base flange, said plate and tongue being provided with bolt-holes, substantially as shown and described.

3. In a compromise rail-joint, the combination with rail-sections of different proportions, of oppositely-located plates each having a portion formed with surfaces to engage the larger rail end and an offset or reduced portion having surfaces to engage the smaller rail end, a tongue downwardly extending from the junction of said portions on each plate and formed with a step-shelf to present surfaces in different planes to support the foot of said rail ends respectively, and means for clamping said plates to the rail-sections and for connecting the tongues, substantially as shown and described.

824,100. **TULLE OR NET EMBROIDERY.** JEAN DIEM-BEUTLER, Bruggen, Switzerland. Filed Dec. 17, 1904. Serial No. 237,316.

Claim.—In embroidered network the construction comprising in combination a network background, a pattern formed with permanent transparent pigment free from fatty constituents, spread over parts of said network, and embroidery on said network placed so as to form an edging to said pattern.

824,100.



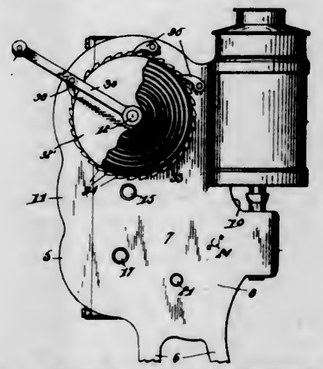
824,101. **LANTERN-HOLDER.** JOHN G. DITTMER, Burt, Iowa. Filed Apr. 5, 1906. Serial No. 310,106.



Claim.—1. The combination with a vehicle-pole, of an arm disposed against the pole and having an offset portion for the reception of the eye of a yoke, a brace-rod connected with the offset portion and with the arm, a ring engaged with the pole and with the arm between the brace-rod and the offset portion, said arm having its forward end turned upwardly for the reception of a lamp-carrying bracket, said arm having a laterally-extending finger at its rearward end, and a spring-latch secured to the pole and engaged with the finger to hold the arm against removal from the pole.

2. The combination with a vehicle-pole, of a spring-latch secured thereto at its under side, an arm having a finger at its rearward end engaged with the latch, said arm extending forwardly beyond the pole and having its forward end portion turned upwardly for engagement in a lamp-carrying bracket, said arm having a downwardly-offset portion between its upwardly-turned end and its finger, and a ring engaged with the arm forwardly of the offset portion and with the pole.

824,102. **DRIVING MECHANISM.** DE FOREST L. DRIVER and CHAUNCY I. MANSMITH, Burt, Iowa. Filed Aug. 17, 1905. Serial No. 274,582.



Claim.—A mechanism of the class described comprising a revoluble shaft, a circular casing revolubly mounted upon the shaft, a coil-spring within the casing, said spring being secured at its inner end to the shaft and at its outer end to the casing, said casing having peripheral ratchet-teeth, dogs located adjacent to the casing and lying in engagement with the ratchet-teeth, said teeth and dogs being arranged for coöperation to hold the casing against rotation under

the action of the spring, an arm pivoted upon the power-shaft outwardly of the casing, and a dog pivoted to the arm and arranged for engagement of the ratchet-teeth to revolve the casing against the action of the spring to energize the latter.

824,103. ALLOY. WILBUR B. DRIVER, East Orange, N. J. Filed Sept. 7, 1905. Serial No. 277,362.

Claim.—1. A new composition of matter containing copper and nickel with from five per cent. to ten per cent. (5%–10%) of manganese and being essentially free from iron or other foreign substances.

2. A new composition of matter consisting of an alloy containing copper and manganese with twenty per cent. of nickel.

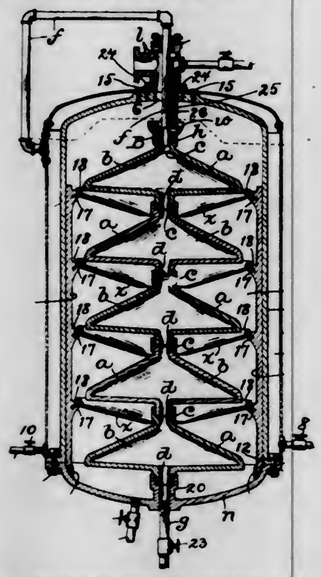
3. A new composition of matter consisting of an alloy containing copper and nickel with five per cent. of manganese.

4. A new composition of matter consisting of an alloy containing manganese and nickel with seventy-five per cent. of copper.

5. An electrical resistance consisting of an alloy containing seventy-five parts of copper and twenty parts of nickel with five parts of manganese.

6. A new composition of matter consisting of an alloy containing copper and manganese with from ten per cent. to thirty per cent. (10%–30%) of nickel.

824,104. APPARATUS FOR SEPARATING NAPHTHA, &c., FROM OIL OR OTHER LIQUIDS. EUGENE R. EDSON, Cleveland, Ohio. Filed Nov. 7, 1902. Serial No. 130,473.



Claim.—1. Evaporating apparatus comprising a tank having a vapor-outlet; a heating-drum or heater arranged within the chamber of the tank and consisting of externally-conical interiorly-chambered sections arranged at suitable intervals vertically, with the interior chambers of adjacent drum-sections in open relation with each other; means for conducting liquid from the lower end of the upper of adjacent drum-sections onto the upper end of the lower of the said sections; a pipe communicating with the interior chamber of the lowermost drum-section; means for draining from the tank any liquid descending or flowing from the lowermost drum-section; an elbow secured to the top of the tank and forming an extension of the aforesaid outlet; a heating-jacket surrounding the tank; and a pipe communicating with the chamber of the heating-jacket and discharging into the interior chamber of the uppermost drum-section and extending from the drum upwardly through the aforesaid elbow.

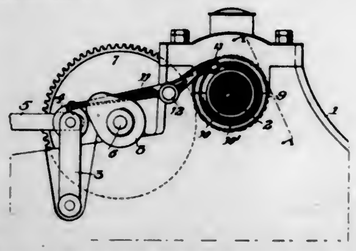
2. Evaporating apparatus comprising a tank provided, at the top and centrally, with a vapor-outlet; a heating-drum or heater arranged within the chamber of the tank and consisting of externally-conical interiorly-chambered sections arranged at suitable intervals vertically, with the interior chambers of adjacent drum-sections in open relation with each other; a basin arranged centrally of the top of and supported from the uppermost drum-section; means for conducting a liquid into the said basin; means for conducting liquid from the lower end of the upper of the adjacent drum-sections onto the upper end of the lower of the said sections; a pipe communicating with the lowermost drum-section; means for draining the interior chambers of the drum-sections; a heating-jacket surrounding the tank, and a pipe communicating at one end with the chamber of the uppermost drum-section centrally of the latter and extending from the drum or heater upwardly through the aforesaid basin and through the aforesaid vapor-outlet, which pipe communicates, at its opposite end, with the chamber of the jacket.

3. Evaporating apparatus comprising a basin; means for draining the basin; an upright jacketed tank-section resting upon and secured to the basin and provided at the top with a vapor-outlet; a heating-drum or heater supported from the said basin and arranged within the chamber of the aforesaid tank-section and consisting of exteriorly-conical sections arranged at suitable intervals vertically, with the interior chambers of adjacent drum-sections in open relation with each other; means for supplying a heating agent to the interior of the drum or heater, and a funnel arranged to conduct liquid from the lower end of the adjacent drum-sections to the upper end of the lower of the said sections, which funnel is supported independently of the aforesaid tank-section.

4. In apparatus of the character indicated, a tank having a vapor-outlet; a heating-drum arranged within the chamber of the tank and consisting of separable externally-conical sections arranged at suitable intervals vertically; means for heating the drum; means for conducting liquid onto the uppermost drum-section; a funnel arranged to conduct liquid from the lower end of the upper of adjacent drum-sections onto the upper end of the lower of the said sections; means for draining from the tank any liquid descending or flowing from the lowermost drum-section; an elbow secured to the top of the tank and forming an extension of the aforesaid vapor-outlet, which elbow has a tubular passage-way forming member discharging downwardly; a basin arranged at the top of the uppermost drum-section in position to receive the discharge from the said tubular member, and a liquid-conducting pipe having a valve and discharging into the passage-way formed by the said tubular member.

5. In apparatus of the character indicated, a tank having a vapor-outlet; a heating-drum or heater arranged within the chamber of the tank and consisting of separable externally-conical interiorly-chambered sections arranged at suitable intervals vertically, with the interior chambers of adjacent drum-sections in open relation with each other; means for conducting a heating agent into the interior of the drum; means for conducting liquid from the lower end of the upper of adjacent drum-sections onto the upper end of the lower of the said sections; a valved drain-pipe communicating with the interior chamber of the lowermost drum-section; means for draining from the tank any liquid descending or flowing from the lowermost drum-section; an elbow secured to the top of the tank and forming an extension of the aforesaid outlet; a heating-jacket surrounding the tank; means for conducting fluid into the chamber of the jacket and a pipe communicating with the chamber of the heating-jacket and discharging into the interior chamber of the uppermost drum-section and extending from the drum upwardly through the aforesaid elbow.

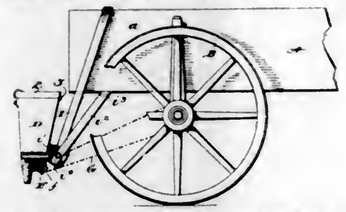
824,105. SPEED-REGULATING MECHANISM FOR GAS-ENGINES. GEORGE H. ELLIS, Chicago, Ill., assignor to International Harvester Company, a Corporation of New Jersey. Filed July 10, 1905. Serial No. 268,927.



Claim.—1. In a speed-controlling mechanism for gas-engines, in combination, a longitudinally-movable cone-sleeve, a valve-controlling bar, and a pivotally-mounted detent-lever provided with a sleeve-engaging roller on the end thereof, the pivotal axis of said lever paralleling and the pivotal axis of said roller intersecting the longitudinal axis of said cone-sleeve.

2. In a speed-controlling mechanism for gas-engines, in combination, a longitudinally-movable cone-sleeve, a valve-controlling bar, a pivotally-mounted detent-lever actuated by said cone-sleeve for locking against movement the said valve-controlling rod, the pivotal axis of said lever extending parallel with the longitudinal axis of said cone-sleeve, and a sleeve-engaging roller mounted on the said lever, the axis thereof extending parallel with the contacting element of the cone-sleeves.

824,106. SEEDING ATTACHMENT. WILLIAM FETZER, Middletown, Ohio. Filed Dec. 22, 1905. Serial No. 293,794.



Claim.—1. In combination with a wagon, a seeding attachment including an elongated hopper, and detachable means including downwardly and rearwardly extending brackets secured to the wagon and underlying the hopper for supporting said hopper at the rear of the wagon, and in a low position relative to the wagon-body.

2. In combination with a wagon, a seeding attachment including an elongated hopper, and detachable means for supporting said hopper at the rear of the wagon, and in a low position relative to the wagon-body, said supporting means including downwardly and rearwardly extending brackets secured to the wagon and to the hopper, and each of said brackets including a part underlying the hopper and an auxiliary brace running from the hopper to the wagon.

3. In combination with a wagon, a seeding attachment including an elongated hopper, and means for supporting said hopper at the rear of the wagon, and in a low position relative to the wagon-body, said supporting means including downwardly and rearwardly extending brackets secured to the wagon and to the hopper, and each of said brackets including a part underlying the hopper, an auxiliary brace running from the hopper to the wagon, and a part abutting the rear surface of the hopper.

4. A seeding attachment of the character described, including an elongated hopper, and detachable means for supporting said hopper at the rear of a wagon and in a low position relative to the wagon-body, said supporting means including downwardly and rearwardly extending brackets adapted to be secured to the wagon and to the hopper, and each of said brackets including a part adapted to underlie the hopper, and a brace adapted to extend from the hopper to the wagon.

5. A seeding attachment of the character described, including an elongated hopper, and detachable means for supporting said hopper at the rear of a wagon and in a low position relative to the wagon-body, said supporting means including downwardly and rearwardly extending brackets adapted to be secured to the wagon and to the hopper, and each of said brackets including a part adapted to underlie the hopper, an arm adapted to extend from the hopper to the wagon, and a brace adapted to extend from the hopper to the wagon.

6. A seeding attachment of the character described, including an elongated hopper, and detachable means for supporting said hopper at the rear of a wagon and in a low position relative to the wagon-body, said supporting means including downwardly and rearwardly extending brackets adapted to be secured to the wagon and to the hopper, and each of said brackets including a part adapted to underlie the hopper, an arm adapted to extend from the hopper to the wagon, and a brace adapted to extend from the hopper to the wagon, said brace having an offset portion adapted to underlie the wagon-body, and means for securing said offset portions to the wagon-body.

7. A seeding attachment of the character described, including an elongated hopper, and detachable means for supporting said hopper at the rear of a wagon and in a low position relative to the wagon-body, said supporting means including downwardly and rearwardly extending brackets secured to the wagon and to the hopper, and each of said brackets including a part underlying the hopper, an auxiliary brace running from the hopper to the wagon, and a part abutting the rear surface of the hopper.

8. A seeding attachment of the character described, including an elongated hopper, and detachable means for supporting said hopper at the rear of a wagon and in a low position relative to the wagon-body, said supporting means including downwardly and rearwardly extending brackets adapted to be secured to the wagon and to the hopper, and each of said brackets including a part adapted to underlie the hopper, an arm having a hook at its upper end adapted to extend from the hopper to the wagon, and a brace adapted to extend from the hopper to the wagon said brace having an offset portion adapted to underlie the wagon-body.

9. A seeding attachment of the character described, including an elongated hopper, and detachable means for supporting said hopper at the rear of a wagon and in a low position relative to the wagon-body, said supporting means including downwardly and rearwardly extending brackets adapted to be secured to the wagon and to the hopper, and each of said brackets including a part adapted to underlie the hopper, an arm having a hook at its upper end adapted to extend from the hopper to the wagon, and a brace adapted to extend from the hopper to the wagon said brace having an offset portion adapted to underlie the wagon-body, and means for securing said offset portions to the wagon-body.

10. An attachment of the character described, comprising a seeding device including an elongated hopper, and means for securing the same to the body of an ordinary wagon whereby the hopper will be projected rearwardly from the end of said body to permit the ends of the hopper to extend laterally beyond the sides of the wagon including brackets, parts of which underlie said hopper.

11. In combination with an ordinary wagon-body, an attachment of the character described, comprising a seeding device including an elongated hopper, and means engaging said body for suspending the same from said wagon-body in a position outwardly beyond the end of said body including brackets, parts of which underlie said hopper.

12. In combination with an ordinary wagon-body, an attachment of the character described, comprising a seeding device including an elongated hopper, means engaging said body for suspending the same from said wagon-body in a position outwardly beyond the end of said body including brackets, parts of which underlie said hopper, and means for operating the seeding mechanism from one of the wagon-wheels.

13. In combination with an ordinary wagon-body, an attachment of the character described, comprising a seeding device including an elongated hopper, and means engaging said body for suspending the same from said wagon-body in a position outwardly beyond the ends of said body including brackets, parts of which underlie said hopper whereby the ends of the hopper project laterally beyond the sides of the body.

14. In combination with an ordinary wagon-body, an attachment of the character described, comprising a seeding device including an elongated hopper, means engaging said body for suspending the same from said wagon-body in a position outwardly beyond the end of said body including brackets, parts of which underlie said hopper, whereby the ends of the hopper project laterally beyond the sides of the body, and means for operating the seeding mechanism from one of the wagon-wheels.

15. In combination with an ordinary wagon-body, a seeding attachment including an elongated hopper, and means for securing the same to the body in a position outwardly beyond the end of said body including brackets, parts of which underlie said hopper whereby it projects laterally beyond the sides of said body and occupies an operating plane below the plane of the body.

16. In combination with an ordinary wagon-body, a seeding attachment including an elongated hopper, means for securing the same to the body whereby it is suspended in a position outwardly beyond the end of said body and projects laterally beyond the sides of said body and occupies an operating plane below the plane of the body including brackets, parts of which underlie said hopper, and means for operating the seeding mechanism from one of the wagon-wheels.

17. An attachment of the character described, comprising a seeding device including an elongated hopper, and detachable means formed to engage and be supported from an ordinary wagon-body for supporting the attachment from the end of said body and in a position beyond the rear wheels of the wagon including brackets, parts of which underlie said hopper.

18. An attachment of the character described, comprising a seeding device including an elongated hopper, and means including

brackets having hooks formed to engage over vertically-disposed parts of an ordinary wagon-body for supporting the attachment in a position in rear of said body.

19. In combination with an ordinary wagon-body, a seeding attachment including an elongated hopper, and detachable means formed to engage and depend from the wagon-body whereby the hopper will occupy an operating plane below the plane of the body and in rear of the wheels thereof including brackets, parts of which underlie said hopper.

20. In combination with an ordinary wagon-body, a seeding attachment including an elongated hopper, and detachable means formed to engage and be supported from the rear end of said body whereby the attachment will project outwardly in rear of the wheels and laterally beyond the sides of the body including brackets, parts of which underlie said hopper.

21. In combination with an ordinary wagon, a seeding attachment including an elongated hopper projecting laterally beyond the sides of the wagon, and means for detachably supporting said hopper at a point in rear of the wagon, said means being formed to engage and be supported from the wagon-body including brackets, parts of which underlie said hopper.

22. In combination with an ordinary wagon, a seeding attachment including an elongated hopper, and means for detachably supporting said hopper, in a position beyond the rear end of the wagon, and in a low position relative to the wagon-body, said means being formed to engage and be supported from the wagon-body including brackets, parts of which underlie said hopper.

23. In combination with an ordinary wagon-body, an attachment of the character described including an elongated hopper, and means for supporting said hopper in a position beyond the rear end of said wagon and with its discharge in close proximity to the ground including brackets, parts of which underlie said hopper.

24. In combination with an ordinary wagon-body, an attachment of the character described, including an elongated hopper, and means for detachably supporting said hopper in a position beyond the rear end of said wagon and with its discharge in close proximity to the ground including brackets, parts of which underlie said hopper.

25. In combination with an ordinary wagon, an attachment of the character described including an elongated hopper, means for supporting the same in a position in rear of the end of said wagon and in close proximity to the end wall of the body thereof including brackets, parts of which underlie said hopper.

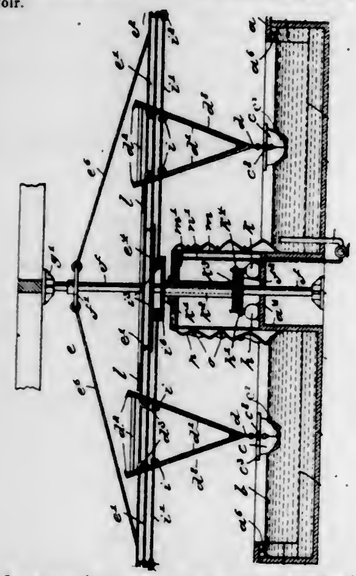
26. In combination with an ordinary wagon, an attachment of the character described including an elongated hopper, means for supporting the same in a position in rear of the end of said wagon, and with the inner wall of the hopper in approximately the same vertical plane as the end wall of the body thereof including brackets, parts of which underlie said hopper.

824,107. **AQUATIC AMUSEMENT APPARATUS.** ROBERT A. FOWDEN, Philadelphia, Pa. Filed Feb. 3, 1905. Serial No. 243,933.

Claim.—1. In an aquatic amusement apparatus, a reservoir adapted to contain a body of water, buoyant bodies located in said body of water, a shaft arranged in said reservoir, a framework carried by said shaft and held by the same a certain distance above said body of water, means slidably arranged on said framework and extending downward to said body of water to engage said buoyant bodies and to move the same through said body of water in a circular path and laterally therein.

2. In an aquatic amusement apparatus, a reservoir adapted to contain a body of water, buoyant bodies located therein, a shaft arranged in said reservoir, a framework carried by said shaft and held by the same a certain distance above said body of water, means carried by said framework and extending downward to said body of water to engage said buoyant bodies at opposite ends so as to prevent sinking of the same in said body of water when overloaded, means for rotating said shaft and framework to move by said extending means said buoyant bodies in a substantially circular path in said body of water and means for shifting said extending means on said framework to move said bodies laterally in said water.

3. In an aquatic amusement apparatus, a reservoir adapted to contain a body of water, buoyant bodies located therein, a shaft arranged in said reservoir, a framework carried by said shaft and held by the same a certain distance above said body of water, means carried by said framework and extending downward to said body of water to engage said buoyant bodies at opposite ends so as to prevent sinking of the same by limiting the downward movement of said bodies in the water, means adapted to rotate said shaft and framework to move by said extending means said buoyant bodies in a substantially circular path in the water of said reservoir, and means to independently actuate said extending means radially on said framework so as to move by the same said buoyant bodies laterally in the water of said reservoir.



4. In an aquatic amusement apparatus, a reservoir adapted to contain a body of water, boats adapted to be placed therein, a landing-platform surrounding said reservoir, a shaft arranged in said reservoir, a framework carried by said shaft, brackets carried by said framework and adapted to connect the same with said boats, a movable cable connected with each of said brackets and adapted when actuated to shift the same laterally and radially with respect to said shaft on said framework so as to move said boats toward and away from said landing-platform, and means adapted to actuate said cable.

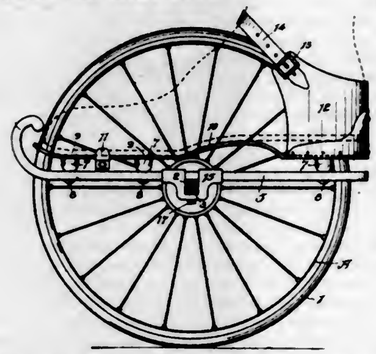
5. In an aquatic amusement apparatus, a reservoir adapted to contain a body of water, boats adapted to be placed therein, a landing-place for the same surrounding said reservoir, a shaft arranged in said reservoir, a framework carried by said shaft, brackets carried by said framework and adapted to connect the same with said boats, a cable connected with each of said brackets, a driving mechanism for each of said cables carried by said framework, means adapted to rotate said shaft and framework to move said boats in the reservoir in a substantially circular path by said brackets, means adapted to independeatly actuate said driving mechanism and by the same said cables to move said boats during their movement laterally and radially with respect to said shaft toward and away from said landing-place, and means adapted to couple and uncouple the driving mechanism for said cables so as to prevent shifting of certain of said boats.

6. In an aquatic amusement apparatus, a reservoir adapted to contain a body of water, boats adapted to be placed therein, a shaft, a revolving framework carried by said shaft, brackets slidably arranged on said framework and having rods, means connected with each of said boats and adapted to loosely engage said rods, and means arranged on said rods adapted to rigidly clamp the boats thereto by engaging the connecting means thereof.

7. In an aquatic amusement apparatus, a reservoir adapted to contain a body of water, boats adapted to be placed therein, a shaft arranged in said reservoir, a framework carried by said shaft, brackets carried by said framework and adapted to connect the same with said boats, means adapted to rotate said shaft and framework so as to move said boats in a substantially circular path by said brackets, in combination with means arranged in said reservoir adapted to resist free movement of the water, when set in motion by said boats.

8. In an aquatic amusement apparatus, a reservoir adapted to contain a body of water, boats adapted to be placed therein, a shaft arranged in said reservoir, a framework carried by said shaft, brackets carried by said framework and adapted to connect the same with said boats, means adapted to rotate said shaft and framework to move said boats in a substantially circular path by said brackets in said reservoir, in combination with strips secured to the bottom and sides of said reservoir and radially disposed with respect to said shaft to resist free movement of the water, when set in motion by said boats.

824,108. **ROLLER-SKATE.** WILLIAM S. FULTON, Omaha, Nebr. Filed Feb. 4, 1905. Serial No. 244,091.

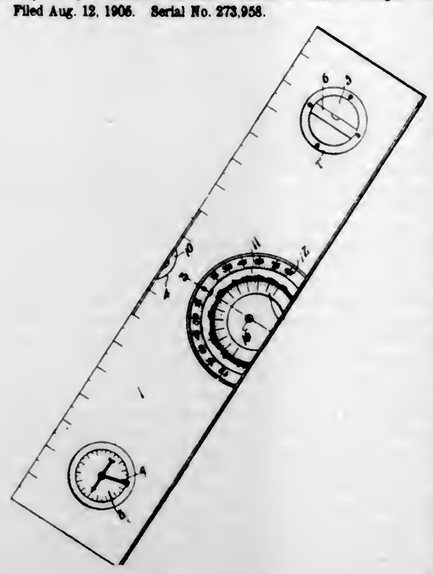


Claim.—1. A roller-skate, comprising an axle, two wheels mounted upon said axle and adapted to rotate parallel to one another, two intermediate bars secured to said axle by means of screw-clamps and said bars having their forward ends curled upwardly to prevent their catching on the ground, substantially as described.

2. A roller-skate, comprising an axle and the wheels mounted upon the ends thereof, two intermediate bars secured to said axle, a foot-plate supported intermediate the wheels by means of the supporting-bars which have their forward ends curled upwardly to prevent their catching on the ground and the approximately U-shaped screw-clamps for adjustably securing the supporting-bars upon the axle, substantially as described.

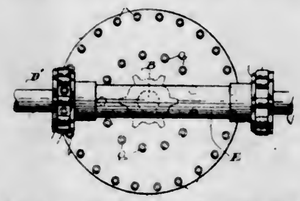
3. A roller-skate, comprising an axle, two wheels mounted upon said axle and adapted to rotate parallel to one another, two intermediate bars secured to said axle by means of screw-clamps and said bars having their forward ends curled upwardly to prevent their catching on the ground, and said bars coacting with rubber washers which are securely held by means of pins between said bars and the foot-plate to form a resilient support for said foot-plate, substantially as shown and described.

824,109. **SPIRIT-LEVEL.** ALLEN T. GIBSON, Hodges, Tex. Filed Aug. 12, 1905. Serial No. 273,958.



Claim.—A spirit-level comprising a stock having a segmental opening in the body thereof, the edges of the opening being beveled, an arcuate bubble-tube fitting within the opening, retaining-plates applied to the beveled edges of the opening and engaging the tube, a segmental block within the opening and engaging the inner periphery of the tube, the arcuate edges of the block being beveled, retaining-plates applied to the beveled edges of the block and engaging the tube, and an edge strip secured to the stock and extending across the opening to hold the tube and the block therein.

824,110. **ROLLER-TOOTH VARIABLE DRIVING-GEAR.** WILLIAM E. GOLDEN, Detroit, Mich. Filed Aug. 19, 1905. Serial No. 274,825.



Claim.—1. In a variable drive-gear, the combination of a driving and a driven gear-wheel revoluble in planes at right angles to each other and having intermeshing conoidal roller-teeth and means for shifting the driving gear-wheel axially in either direction, the driving gear-wheel having its roller-teeth wholly supported by individual shrouds forming open intervals between the rollers through which the roller-teeth of the driven gear are adapted to pass in and out of mesh with those of the driving-gear in shifting the same.

2. In a variable drive-gear, the combination of a driving and a driven gear-wheel revoluble in planes at right angles to each other and having intermeshing conoidal roller-teeth and means for axially shifting the driving gear-wheel in either direction, said driving gear-wheel having its roller-teeth journaled upon pins secured at opposite ends in individual shrouds forming open intervals between the rollers.

3. In a variable drive-gear, the combination of a driving and a driven gear-wheel revoluble in planes at right angles to each other and having intermeshing conoidal roller-teeth and means for axially shifting the driving gear-wheel, the latter having its roller-teeth carried between individual shrouds separated by open spaces through which the roller-teeth of the driven gear may pass out of mesh with those of the driven gear in either direction.

4. In a variable drive-gear, the combination with a driving and a driven shaft journaled at right angles to each other, of a crown-wheel on the driven shaft having an inner and outer series of conoidal roller-teeth, and a shifting pinion on the drive-shaft having a series of conoidal roller-teeth adapted to intermesh with either series of teeth on the crown-wheel, the said shifting pinion having its roller-teeth wholly supported by individual shrouds forming open spaces between the rollers through which the roller-teeth of the crown-wheel are adapted to pass in shifting the pinion.

5. In a variable drive-gear, the combination with a driving and a driven shaft journaled at right angles to each other, of a crown-wheel on the driven shaft having two concentric series of conoidal roller-teeth, of two shifting pinions carried by the drive-shaft each having a series of conoidal roller-teeth adapted to intermesh with the roller-teeth of the crown-wheel and transmit motion thereto in opposite directions respectively, said pinions having their roller-teeth wholly supported by individual shrouds forming open intervals between them through which the roller-teeth of the crown-wheel are adapted to slide in and out of engagement with the pinions in shifting the same.

6. In a variable drive-gear, the combination with a driving and a driven shaft journaled at right angles to each other, of a crown-wheel having an inner and outer series of conoidal roller-teeth and a shifting pinion carried by the drive-shaft and adapted to intermesh with either series of roller-teeth on the crown-wheel said pinion having conoidal roller-teeth supported between two annular series of individual shrouds forming open intervals between the roller-teeth, the extremities of the shrouds at the small end of the rollers being beveled off in conformity with the shape of the rollers.

824,111. **PROCESS FOR MAKING TEETH.** HARRY A. GOLLOBIN, Newark, N. J. Filed Sept. 28, 1905. Serial No. 280,400.

Claim.—1. The herein-described process of making false teeth, which consists in making a body portion, casting a duplicate of the same in metal, covering said metal duplicate with sheet-gold, melting out the casting and applying the sheet-metal covering to the tooth.



2. The herein-described process of dentistry platework, which consists in applying to the body portion of a false tooth a suitable handle, obtaining a metal casting of said tooth and handle, applying to the said casting of the tooth a gold covering, melting out the casting and applying the covering to the body portion of the tooth.

824,112. **BOILER-CLEANING COMPOUND.** JACOB R. GREENE, Jr., Washington, Pa., assignor, by direct and mesne assignments, of one sixth to Eugene Vesie and one-third to John Winsor, Washington, Pa., and one-sixth to Charles R. Ballard, Midway, Pa. Filed June 8, 1906. Serial No. 264,360.

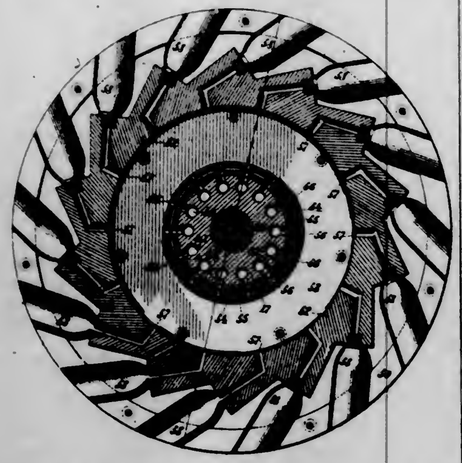
Claim.—1. A composition for preventing and removing incrustations in boilers, having coffee as its principal ingredient, and also containing balsam-weed.

2. A composition for preventing and removing incrustations in boilers consisting of coffee, balsam-weed, and pulverized graphite.

3. A composition for preventing and removing incrustations in boilers, consisting of coffee, balsam-weed, yarrow, and pulverized graphite.

4. A composition for preventing and removing incrustations in boilers, consisting of green coffee, balsam-weed, yarrow and graphite, in substantially the proportions specified.

824,113. **TURBINE-ENGINE.** JOHN A. GROSHON, New York, N. Y. Filed June 25, 1904. Serial No. 214,117.



Claim.—1. The turbine-engine comprising an exterior casing forming the chambers 13, 22, the shaft extending through said casing and chambers, the hub on said shaft containing the series of longitudinal passages and transverse ports for the steam, a balancing-piston 34 on said hub within said chamber 22 and separated by a space from the inlets to said passages, an inlet for steam to said space wherein it may act against said balancing-piston, and a rotary member on said hub within said chamber 13 to receive the steam from said passages and ports, said piston 34 closely fitting within the outer portion of the chamber 22 and having at its outer face a packing-ring 35 in engagement with the adjacent inner end wall of said chamber 22; substantially as set forth.

2. The turbine-engine comprising the exterior casing subdivided into chambers, the shaft extending through said casing and chambers, a right-hand rotary driving member on said shaft in one of said chambers, a left-hand rotary driving member on said shaft in the other of said chambers, suitable exhausts from said chambers, inlets for steam to said rotary members, and balancing-pistons connected with said rotary members and exterior thereto and between which and said rotary members the steam is admitted; substantially as set forth.

3. The turbine-engine comprising the exterior casing forming adjacent chambers 13, 22, the shaft extending through said chambers, a rotary driving member on said shaft in said chamber 13, a suitable exhaust from said chamber, an inlet for steam leading to said rotary member, and a balancing-piston 34 connected with said rotary member and exterior thereto and between which and said rotary member the steam is admitted, said balancing-piston 34 closely fitting within the outer portion of said chamber 22 and having at its outer face a packing-ring 35 in engagement with the adjacent inner end wall of said chamber 22; substantially as set forth.

4. The turbine-engine comprising the exterior casing subdivided into chambers, the shaft extending through said casing and chambers, hubs keyed on said shaft within said chambers and having inlet-passages and ports for the steam, a right-hand rotary driving member having a hub keyed on one of said hubs and containing inlets in communication with the ports thereof, a left-hand rotary driving member keyed on the other one of said shaft-hubs and containing inlets in communication with the ports thereof, suitable exhausts from said chambers, and suitable means for applying steam to the passages in said shaft-hubs; substantially as set forth.

5. The turbine-engine comprising the exterior casing forming a chamber, the shaft extending through said chamber, a hub fastened on said shaft within said chamber and having a series of longitudinal passages and transverse ports for the steam, a rotary driving member having a hub fastened on said shaft-hub and containing inlets in communication with the ports thereof, and means for supplying steam to said passages at the end thereof; substantially as set forth.

6. The turbine-engine comprising the shaft and rotary driving member therefor, said member comprising the side disks, the annular flange between said disks and therewith forming a steam-chamber, the outlet-ports in said flange, the discharge-nozzles carried by said rotary member in communication with said ports, and means for supplying the steam to said chamber; substantially as set forth.

7. The turbine-engine comprising the shaft and rotary driving member therefor, said member comprising the side disks, the annular flange between said disks and therewith forming a steam-chamber, the outlet-ports in said flange, the discharge-nozzles carried by said rotary member in communication with said ports, the hub on said shaft and upon which said rotary member is mounted, and means for supplying the steam through said hub and to said chamber; substantially as set forth.

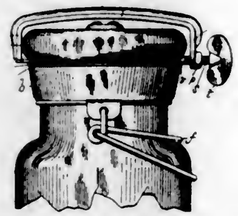
8. The turbine-engine comprising the shaft and rotary driving member therefor, said member comprising the side disks, the annular flange between said disks and therewith forming a steam-chamber, the outlet-ports in said flange, the discharge-nozzles carried by said rotary member in communication with said ports, the hub on said shaft and upon which said rotary member is mounted, and the passages and ports in said hub and communicating with said chamber for supplying the steam thereto; substantially as set forth.

9. The turbine-engine comprising the shaft and rotary driving member therefor, said member comprising the side disks, the annular flange between said disks and therewith forming a steam-chamber, the outlet-ports in said flange, the discharge-nozzles carried by said rotary member in communication with said ports, the hubs on said disks, the hub of one disk extending through the other disk and receiving the hub thereof, and means for supplying the steam to said chamber; substantially as set forth.

10. The turbine-engine comprising the exterior casing subdivided into chambers, the shaft extending through said casing and chambers, a right-hand rotary driving member on said shaft in one of said chambers, a left-hand rotary driving member on said shaft in the other of said chambers, said rotary members each comprising the side disks, the annular flange between said disks and therewith forming a steam-chamber, the outlet-ports in said flange, and the discharge-nozzles carried by said rotary member in communication with said ports; substantially as set forth.

11. The turbine-engine comprising the exterior casing subdivided into chambers, the shaft extending through said casing and chambers, hubs on said shaft within said chambers and having passages and ports for the steam, a right-hand rotary driving member on one of said hubs and in communication with the ports thereof, a left-hand rotary driving member on the other one of said hubs and in communication with the ports thereof, suitable exhausts from said chambers, and suitable means for supplying steam to the passages of said hubs, said rotary members each comprising the side disks, the annular flange between said disks and therewith forming a steam-chamber, the outlet-ports in said flange, and the discharge-nozzles carried by said rotary member in communication with said ports; substantially as set forth.

824,114. **JAR-OPENER.** HENRY M. HARTSHORN, Malden, Mass. Filed Nov. 1, 1905. Serial No. 285,395.



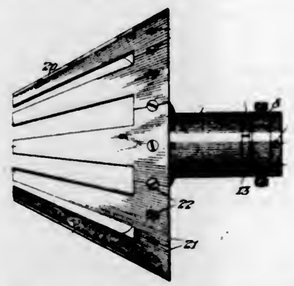
Claim.—1. In a jar-opener, a bar or frame, means for holding the opener in working position on the jar, and a screw supported by said bar or frame in position to be driven between the cover and the mouth of the jar for the purpose of lifting that side of the cover.

2. In a jar-opener, a bar or frame, means for holding the opener in working position on the jar, and a screw tapered at its inner end and supported by said bar or frame in position to allow its tapered end to be driven between the cover and mouth of the jar for the purpose of lifting that side of the cover.

3. In a jar-opener, a bar or frame adapted to extend from one side of the cover of the jar to the other, a lip adapted to extend from said bar or frame between the outer portion of the edge of the cover and the jar for the purpose of holding the opener in working position, and a screw cone-shaped at its inner end and supported by said bar or frame in position to allow its conical end to be driven between the cover and the mouth of the jar for the purpose of lifting that side of the cover.

4. In a jar-opener, a bar adapted to extend from one side of the jar to the other, arms extending from the opposite ends of said bar on opposite edges of the cover, means extending from one of said arms into engagement with the bar whereby the jar is held in working position thereon, and a screw supported in engagement with the other arm in position to allow its inner end to be forced between the cover and the neck of the jar for the purpose of lifting that side of the cover.

824,115. **SPEEDER-CONE.** JOHN HEARTTAGEN, Allentown, Pa. Filed June 14, 1905. Serial No. 265,117.



Claim.—1. In a speeder-cone, the combination with the hub having a ring of a conical rim comprising a plurality of independently-detachable fingers, their inner ends having heads detachably secured to the periphery of said ring and their outer ends being free and spaced apart, substantially as described.

2. In a speeder-cone, the combination with the hub having a ring and laterally-projecting seats, of a conical rim comprising a plurality of fingers their inner ends being detachably secured to said ring and having depending lugs engaging said seats and their outer ends being free and spaced apart, substantially as described.

3. In a speeder-cone, the combination, with the hub having a ring, of a conical rim comprising a plurality of independently-detachable fingers, the inner ends having laterally-projecting portions contacting with each other and being secured to said ring and their outer ends being free and spaced apart, substantially as described.

824,116. **PROCESS OF OBTAINING GUM FROM VEGETABLE MATTER.** EDUARD HEBER, New York, N. Y. Filed Mar. 3, 1906. Serial No. 304,069.

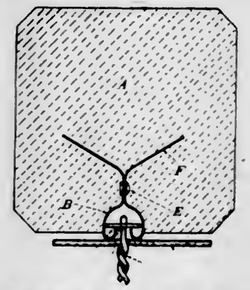
Claim.—1. A process for obtaining caoutchouc, gutta-percha or chicle from the gum-yielding members of the plant kingdom which consists in heating the disintegrated wood at ordinary or high pressure with soap solution.

2. Method for obtaining caoutchouc, gutta-percha or chicle from the gum-yielding members of the plant kingdom which consists in heating the disintegrated wood with soap solution to which has been added certain solvents for gums such as benzol, toluol, xylol, resin-oil and the like.

3. The process of obtaining vegetable gum from vegetable matter which consists in heating disintegrated vegetable matter in a soap solution both being contained in a suitable retort.

4. The process of obtaining gum from vegetable matter, which consists in heating vegetable matter in a soap solution in a suitable retort until the gum contained in the vegetable matter is dissolved or emulsified and then separating the other constituents from the gum and precipitating the gum.

824,117. **FENCE-POST.** ROBERT S. HILTNER, Lincoln, Nebr. Filed Feb. 14, 1906. Serial No. 300,987.



Claim.—1. In a device of the character described, a molded member of cementitious material, a channeled member embedded therein, and adjustable clamping devices in the channel, substantially as described.

2. A post of cementitious material, a sheet-metal channel embedded therein, and adjustable clamping devices in the channel, substantially as described.

3. A post of cementitious material, and a sheet-metal channel embedded therein, substantially as described.

4. A post of cementitious material, a sheet-metal channel embedded therein, of substantially U shape, and having lips to form a runway, and adjustable clamping devices in said runway, substantially as described.

5. A post of cementitious material and a channel embedded therein, comprising two strips of metal, attached together near the middle longitudinal line, and having diverging wings at one side, and formed into U shape at the other side, substantially as described.

6. A post of cementitious material, a channel embedded therein, and a clamp in the channel, comprising a bridge plate or bar and a clamping member attached to the bridge, substantially as described.

7. A channel-bar, substantially U shape on one side, having inwardly-turned lips to form a runway, and on the opposite side, having diverging wings; and adjustable wire-clamping devices in said runway, substantially as described.

8. A post having a channeled portion, a wire-clamping device within the channel, comprising a bar engaging the sides of the channel, and a scroll-shaped member pivotally connected to the bar and having means at one extremity for engaging one side of the channel.

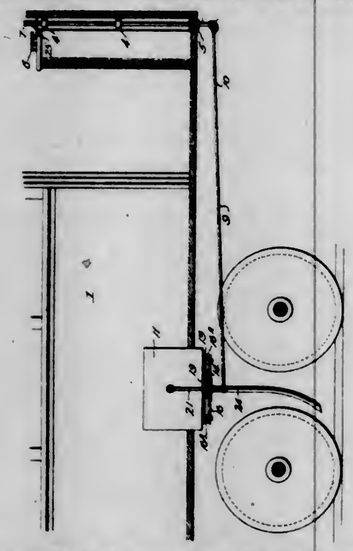
9. A post having a channeled portion, a clamping device within the channel, comprising a bar engaging the sides of the channel, a member attached to the bar and adapted to swing about the same as a pivot to engage a line-wire of the fence, and a means on the member for engaging one side of the channel.

10. A post having a channel portion, and a wire-clamping device therein, comprising a bar, a bent wire member connected thereto and adapted to be intertwined at the ends around the line-wire of the fence to clamp same against face of the channel-bar, substantially as described.

11. A means for securing a wire to a channeled member, comprising a pivoted rod and scroll-shaped member attached thereto, the free end of which is laterally turned, substantially as described.

12. A fastener comprising a rod, a scroll-shaped member connected thereto, and a means on the member adapting it to be held in clamping position, substantially as described.

824,118. **TRACK-SANDING DEVICE FOR STREET-RAILWAY CARS.** DENIS HOGAN, Denver, Colo., assignor of one-half to Joseph Schwarz, Denver, Colo. Filed Mar. 23, 1906. Serial No. 307,647.



Claim.—1. In sanding device for street-car tracks, the combination with the car and its current-supply switch-lever, of sand-holding boxes arranged on said car, having valve-controlled discharge-apertures operatively arranged in the bottom of said car, a motorman's operating-lever operatively arranged on said car, means for connecting said lever to said valves to open and close the same, and a flexible connection between said current-switch and said lever whereby a current-reversing movement of said switch operates said lever to open said sand-box valves.

2. In a sanding device for street-car tracks, the combination with the car's current-supply switch, of the sand-boxes arranged in operative relation to the track between the wheels, valves arranged in the bottom of said sand-boxes, sand-distributing tubes extending from said boxes to close to said tracks, a valve-operating lever arranged on said car in reach of a motorman, and means for connecting said lever to said switch-lever so that an operative reversing movement of said switch opens said valves.

3. In a sanding device for street-car tracks, the combination with the car and its current-supply switch, of a rod rotatably mounted in said car adjacent to said switch, a hand-operating lever secured to said rod, sand-boxes connected to said car to discharge sand on said track, discharge-valves on said sand-boxes operatively connected to said rod, a chain arranged to operatively connect said levers together in such a manner that an operative current-reversing movement of said switch-lever will open said sand-box valves.

4. In a sanding device for car-tracks, the combination with the car and the switch-lever, of the hand-operating lever, the lever-rod pivotally mounted on said car, the cross-arm at the lower end of said rod, the sand-boxes on said car, the swinging valves connected to said sand-boxes, the rods connecting said valves with said operating hand-lever, and the chain connecting said sand-box operating-lever and said switch-lever operatively together so that an operative movement of said switch-lever to reverse said current will open the valves of said sand-boxes.

5. In a sanding device for street-railway tracks, the combination with the car, its trucks and wheels, and the current-switch, of sand-boxes arranged in the car between and over the wheels of the truck, having sand-discharge apertures in the bottom of said boxes, a plate-valve arranged to swing over said discharge-apertures, having a discharge-aperture therein, a sand-stirrer in said sand-boxes, an operative rod and lever on said car, a cross-arm at the lower end of said operating-lever, rods extending from the opposite ends of said cross-arm to said plate-valves, rods connected to said valves and lever-operating rods for operating said stirrers, and a chain connecting said switch-lever with said valves operating-rod's lever arranged to permit an operative current-reversing movement of said switch-lever to open said sand-box valves and operate said sand-box stirrers, said levers and chains being arranged to permit said sand-box valves to be operated by their operating-lever independent of said current-switch lever, as specified.

6. In a sanding device for street-car tracks, the combination with the tracks, the car, the wheeled truck, and the current-connecting switch operatively arranged on said car of a pair of sand-boxes secured to said car between the wheels of said truck having sand-discharge apertures in the bottoms of said boxes, a discharge-tube connecting with the discharge-aperture of each box, and arranged to convey the sand to said track, a valve pivotally secured to each of said boxes and arranged to control said discharge-apertures of each sand-box, a lever on said valve, a plate below said valve arranged to hold it in operative relation to said discharge-aperture, an oscillating shaft extending into each of said sand-boxes, a blade depending from said shaft over said discharge-aperture, a rock-arm pivotally secured to said valve-lever of each sand-box, and secured at one end to said oscillating shafts, a rod pivotally connected at one end to the opposite end of each of said rock-arms, an operating-rod and lever mounted on said car adjacent to said switch-lever, a cross-arm on the lower end of said operating-lever pivotally connected at its opposite ends to the opposite ends of said rods, and a chain secured at one end to the end of said operating-rod's lever, and at its opposite end to the end of said switch-lever, and arranged and adapted so that when said switch-lever is moved to reverse the actuating electric current, the chain will draw and move the operating-lever and rods to open the valves of said sand-boxes and thereby discharge sand onto said track.

7. In a sanding apparatus for street-railway cars, the combination with the track and the car, having an electric-current connecting switch-operating lever, of the sand-boxes on said car provided with a sand-discharge aperture and with sand-discharging tubes, the valve-plate secured to the bottom of said sand-boxes, the plate secured below said first-named plate with a valve-space between them, the oscillating valve pivotally secured to said sand-boxes between said plates to control said boxes' discharge-apertures, and means for operating said valves in conjunction with the current-reversing movements of said switch-lever, and also independently of it, as specified.

8. In a sanding apparatus for street-railway cars, the combination with the switch-lever of the sand-boxes, the oscillating valves, and stirrers connected thereto, the operating-rods and rock-arms and cross-arms, the operating-rod connected to said cross-arm, the head-operating lever connected to said operating-rod, and the chain connecting said operating-lever and switch-lever together, as specified.

9. In a sanding apparatus for street-railway cars, the combination of the switch-lever with the sand-boxes, the valves, the sand-stirrers, the operating-rods, the hand-operating lever, a flexible connection between said switch-lever and said valve-operating lever arranged to permit said valve to be opened or closed independently of said switch-lever, and also arranged to permit a current-reversing movement of said switch-lever to operate said valve-lever and open said valves, as specified.

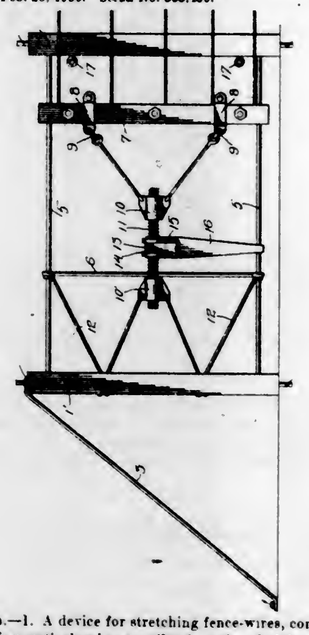
824,119. **COOKING UTENSIL.** EDWARD C. HOWLAND, New Milford, Conn. Filed Mar. 16, 1905. Serial No. 250,341.



Claim.—1. An attachment for cooking utensils consisting of an imperforate base formed in sections detachably connected together, said sections formed with peripheral downwardly-extending flanges and a tubular extension formed in sections connected with the respective sections of the base-plate said tube open at both ends.

2. An attachment for cooking utensils, consisting of a base formed in two semicircular sections having interlocking edges and detachably connected together, said base-sections having downwardly-extending peripheral flanges, a tubular extension connected with the center of said base and open at the top and bottom.

824,120. **WIRE-STRETCHER.** JESSE A. HOYT, Hastings, Iowa. Filed Feb. 28, 1906. Serial No. 303,436.



Claim.—1. A device for stretching fence-wires, consisting of a frame having vertical end posts, pikes in each end of the said posts to adapt said posts to be secured in the ground in vertical position, and to render them reversible, rods connecting the upper and lower ends of said posts, a vertical clamp-bar adapted to slide horizontally on said rods, means for operating the clamp-bar to engage the ends of the fence-wires, and means for actuating the clamp-bar to stretch the fence-wires which it holds.

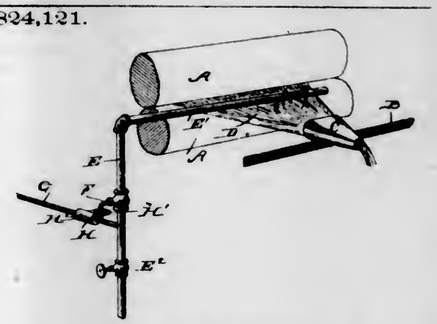
2. A device for stretching fence-wires, consisting of a frame having vertical end posts, pikes in each end of said posts to adapt them to be secured in the ground in vertical position and to render them reversible, rods connecting the upper and lower ends of said posts, a vertical two-part clamp-bar adapted to slide horizontally on said rods, means for operating said clamp-bar to engage the ends of the fence-wires therebetween, a rod connected with said clamp-bar and provided with right and left hand screw-threaded ends, nuts engaging the threaded ends of said rod for travel thereon, a nut fixed on said rod, and a lever fulcrumed on said rod and having a dog pivoted thereon to engage said fixed nut to turn the same and move the first-mentioned nuts and clamp-bar.

824,121. **DEVICE FOR TREATING WOOL.** THOMAS F. JOHNSON, Camden, N. J. Filed Mar. 27, 1906. Serial No. 253,326.

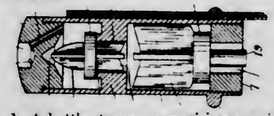
Claim.—1. In combination with a funnel adapted to receive wool from a gill-box, means for discharging water on the wool between the gill-box and the funnel, and means for automatically cutting off the supply of water on stoppage of the gill-box.

2. The combination with a funnel adapted to receive a wool sliver from a gill-box, a water-supply pipe having a vertical portion and a horizontal, perforated portion extending above the sliver between the gill-box and the funnel, a valve and valve-lever adapted to control the supply of water, a rod adapted to be moved longitudinally when the gill-box is started and stopped, and a sleeve on the said rod having a slotted, projecting plate in engagement with the valve-lever, said sleeve being adjustable, as and for the purpose set forth.

824,121.



824,122. **BOTTLE-STOPPER.** HARRY B. JONES, Chicago, Ill., assignor of one-half to Evan O. Jones, Racine, Wis. Filed Apr. 21, 1905. Serial No. 256,715.



Claim.—1. A bottle-stopper, comprising a main tubular body portion having an open lower end and provided exteriorly, at or near its lower end with a shoulder, and interiorly with a valve-seat, a top closure or cover, said closure or cover provided with an outlet passage or passages, and an internal valve mechanism, said valve mechanism adapted, when the bottle is in a normal upright position, to seat itself on the valve-seat and thereby close the passage through the main body portion, but, when the bottle is tilted, adapted to move away from the valve-seat and thereby open the passage through the main body portion.

2. The combination with a bottle, of a stopper inserted in the neck of the bottle and of less transverse area than the said neck, the said stopper comprising a main tubular body portion having an open lower end, and provided exteriorly, at or near its lower end, with a shoulder, and interiorly with a valve-seat, a top closure or cover, said closure or cover provided with an outlet passage or passages, an internal valve mechanism, said valve mechanism adapted, when the bottle is in a normal upright position, to seat itself on the valve-seat and thereby close the passage through the main body portion, but, when the bottle is tilted, adapted to move away from the valve-seat, and open the passage through the main body portion, and an adhesive filling between the bottle-neck and the stopper and extending to the external shoulder at or near the lower end of the main body portion, the said shoulder forming a seat for the lower end of the adhesive filling.

3. A bottle-stopper, comprising a main tubular body portion having a bottom piece with an opening therethrough, a top closure or cover, said closure or cover provided with an outlet passage or passages, and a valve within the body portion for regulating the opening through the bottom piece, said valve adapted, when the bottle is in a normal upright position, to seat itself on top of the bottom piece, and thereby close the opening through said bottom piece, but, when the bottle is tilted, adapted to move away from the bottom piece and uncover the opening thereof, the said valve having a stem depending from its under side and entering the opening in the bottom piece, and also having guiding-wings extending upwardly from its upper side and freely but closely fitting the interior of the body portion.

4. A bottle-stopper, comprising a main tubular body portion having an open lower end and an internal partition having an opening therethrough, a top closure or cover, said closure or cover provided with an outlet passage or passages, and also provided on its under side with a recess, and a valve within the body portion and adapted, when the bottle is in a normal upright position, to seat itself on the upper side of the internal partition and thereby close the opening through said partition, but, when the bottle is tilted, adapted to move away from the partition and uncover the opening thereof, the said valve having wings depending from its under side and freely but closely fitting the wall of the opening of the partition, and also having wings extending upwardly from its upper side to and into the recess on the under side of the top piece.

5. A bottle-stopper, comprising a main tubular body portion having an open lower end and an interior valve-seat, a top closure or

cover, said closure or cover provided in its top with a recess having a passage or passages extending downwardly therefrom in a divergent line, or in divergent lines, and through the bottom of the top closure or cover, and an internal downwardly-closing valve mechanism, said valve mechanism adapted, when the bottle is in a normal upright position, to seat itself on the valve-seat and thereby close the passage through the body portion, but, when the bottle is tilted, adapted to move away from the valve-seat and open the passage through the body portion.

6. The combination of a bottle, a stopper inserted in the neck of the bottle and of less transverse area than said neck, the said stopper comprising a main tubular body portion having an open lower end and provided interiorly with a valve-seat, a top closure or cover, said closure or cover provided with an outlet passage or passages, and internal downwardly-closing valve mechanism said valve mechanism adapted, when the bottle is in a normal upright position, to seat itself on the valve-seat and thereby close the passage through the main body portion, but, when the bottle is tilted, adapted to move away from the valve-seat and thereby open the passage through the main body portion, and an adhesive filling between the bottle-neck and the stopper.

7. The combination of a bottle, a stopper inserted in the neck of the bottle and of less transverse area than said neck, the said stopper comprising a main tubular body portion having an open lower end and provided interiorly with a valve-seat, a top closure or cover, said closure or cover provided with an outlet passage or passages, and internal downwardly-closing valve mechanism said valve mechanism adapted, when the bottle is in a normal upright position, to seat itself on the valve-seat and thereby close the passage through the main body portion, but, when the bottle is tilted, adapted to move away from the valve-seat and thereby open the passage through the main body portion, an adhesive filling between the bottle-neck and the stopper, and a vent-tube open at opposite ends and secured to and extending downwardly from the stopper to extend into the bottle for a desired distance, the upper portion of said tube being surrounded by the adhesive filling, and its upper open end communicating with the external air.

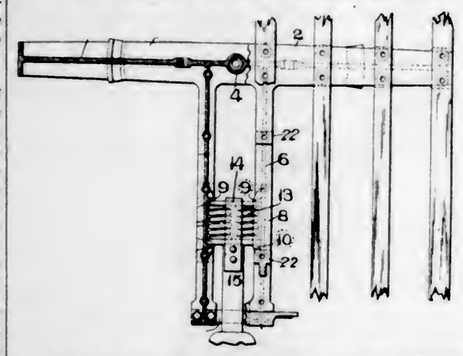
8. The combination with a bottle, of a stopper inserted and secured in the neck thereof, said stopper comprising a main tubular body portion having an open lower end and provided interiorly with a valve-seat, a top closure or cover, said closure or cover provided with an outlet passage or passages, internal downwardly-closing valve mechanism said valve mechanism adapted, when the bottle is in a normal upright position, to seat itself on the valve-seat and thereby close the passage through the main body portion, but, when the bottle is tilted, adapted to move away from the valve-seat, and thereby open the passage through the main body portion, and a vent-tube open at its opposite ends and secured to the exterior of the stopper, the upper open end thereof communicating with the external air, and the lower end thereof being cut off diagonally, and extending such a distance below the stopper as to rest on the bottom of the bottle.

824,123. **GARDENING-TOOL.** DARWIN L. KENT, Leslie, Mich. Filed Aug. 25, 1905. Serial No. 275,711.



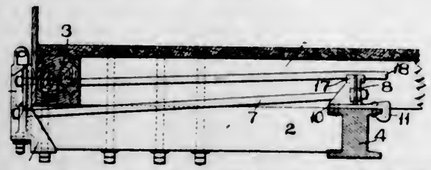
Claim.—In a tool of the class described a handle, a bearing-head fixed to the handle and having an intermediate concavo-convex contour, the concavity being at the inner side, the said bearing-head also having a shoulder on the same side as the concavity and at a distance from the latter, a blade, a bearing-head, having a single angular terminal projection disposed against and immovably secured to the intermediate portion of one side of the blade, the bearing-head attached to the blade being also formed with an intermediate concavo-convex portion to operate with the concavo-convex portion of the bearing-head of the handle, the angular terminal projection of the bearing-head of the blade and the shoulder of the bearing-head of the handle having such width as to flushly receive the terminals respectively of the bearing-head of the handle and the bearing-head of the blade, and a clamping-screw centrally engaging the concavo-convex portions of the bearing-heads.

824,124. **COMBINATION CAST-STEEL TRANSOM, DRAFT-SILL, AND DEAD-WOOD.** PATRICK M. KILROY, Pine Bluff, Ark., assignor of one-third to Thomas E. Adams and one-third to John E. Brown, Pine Bluff, Ark. Filed Sept. 20, 1905. Serial No. 279,279.



Claim.—A single casting comprising a body-bolster of I-beam form having a king-bolt opening, parallel draft-sills integral with the body-bolster and on the respective sides of the opening, and dead-wood blocks carried by said draft-sills and exending above said sills, in combination with an end sill resting on the upper edges of the draft-sills in the rear of the dead-wood blocks; substantially as described.

824,125. **COMBINATION TRUSS-ROD STAND AND ANCHOR-BRACKET.** PATRICK M. KILROY, Pine Bluff, Ark., assignor of one-third to Thomas E. Adams and one-third to John E. Brown, Pine Bluff, Ark. Filed Sept. 20, 1905. Serial No. 279,280.



Claim.—1. A device of the class described comprising a casting having an upstanding standard supported thereby, which standard is provided with an opening for a tie-rod, webs connecting one side of the standard and the top of the base, the said opening being between said webs, and a hook-shaped terminal remote from the webs and for engagement with one of the side edges of the top of a bolster; substantially as described.

2. In a device of the class described, a base having a portion adapted to engage a flanged part of the bolster, a standard having a perforation for the reception of a stay-rod, and a truss-rod-receiving seat in the upper end of the standard; substantially as described.

3. The combination with a base, of an upstanding standard carried by the base, spaced webs connected to one side of the standard and to the top of the base, said standard having an opening for a tie-rod, and a truss-rod-receiving seat in the upper end of the standard; substantially as described.

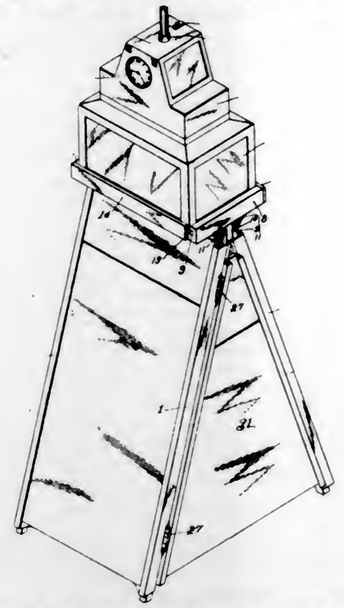
4. In a device of the class described comprising a base, a flanged standard carried by the base and having an opening for a tie-rod, a depending hook-shaped part for engaging with a flanged part of the bolster, and a truss-rod-receiving seat in the upper end of the standard; substantially as described.

5. A device of the class described comprising a casting having an upstanding standard supported thereby, which standard is provided with an opening for a tie-rod, webs connecting one side of the standard and the top of the base, the said opening being between said webs, a hook-shaped terminal remote from the webs and for engagement with one of the side edges of the top of a bolster, and a truss-rod-receiving seat in the upper end of the standard; substantially as described.

6. In a car, the combination with a bolster, draft-sills and end sills, of a dead-wood casting adjacent the end sill, an anchor-bracket engaging the bolster and having a standard provided with an opening, and a rod projecting through the dead-wood casting and through the opening in the standard; substantially as described.

7. In a car, the combination with a bolster, draft-sills, and end sill, of a dead-wood casting adjacent the end sill and having seats for the reception of the ends of the draft-sill, a bracket carried by the bolster, a rod passing through the dead-wood casting and bracket, and a truss-rod extending from car end to car end and passing over and supported by the upper end of the bracket; substantially as described.

824,126. **ADVERTISING DISPLAY-STAND.** WILLIAM T. LITTLE, Kansas City, Mo. Filed Nov. 25, 1904. Serial No. 234,247.



Claim.—1. In a folding advertising-bulletin display-stand of the character described, inclined supporting-standards, cross-bars hinged to the standards and adapted to support a sanitary receptacle between the standards, said standards adapted to support a showcase and removable bulletin-boards; substantially as described.

2. In a collapsible advertising display-stand of the character described supporting-standards, cross-beams pivotally secured thereto, said standards and cross-beams adapted to receive and support a sanitary receptacle and a showcase and means for securing the display-stand to a sidewalk; substantially as described.

824,127. **DUST-GUARD FOR JOURNAL-BOXES.** GEORGE L. MANSFIELD, Chicago, Ill. Filed July 6, 1905. Serial No. 268,328.



Claim.—1. A dust-guard comprising, in combination, a plurality of box-like incasing members, together containing a normally non-circular opening, a plurality of incased members, movable within the incasing members and together containing a normally non-circular opening, means pressing said members toward a common center and means whereby the outward movement of the incased members is communicated to the incasing members, and vice versa, substantially as described.

2. A dust-guard comprising, in combination, a plurality of sections together containing a journal-opening and composing a distensible body, and a flexible strip of greater length than the combined edges of said body, when the latter is collapsed, said strip being attached to certain of said edges and being of greater width, substantially as described.

3. In a dust-guard, a pair of incasing sections, together containing a journal-opening, in combination with a pair of incased sections containing a corresponding opening and arranged at right angles to the incasing sections, and means within the incasing sections for imparting the outward movement of the incasing section to the contained sections to distend the same, substantially as described.

4. In a dust-guard, suitably-guided separable incasing sections and suitable incased sections together containing a journal-opening, in combination with an edging-strip of flexible material inclosing or encircling said incasing sections, having fullness to permit movement thereof and also limiting such movement, substantially as described.

5. In a dust-guard, incasing sections, containing a journal-opening and each comprising side plates and a mid-bar, in combination with guide bars or parts attached to said side plates whereby said sections are movably alined, incased sections arranged between the sides of the incasing sections, at right angles to said incasing sections, and containing a journal-opening, springs connecting the incasing sections and concealed beneath said guide-bars, and engaging and connecting means operating angularly with relation to the axes of movement of said members for communicating the movement of the incasing sections to the incased sections and means for simultaneously pressing all of the sections upon a journal, substantially as described.

6. In a dust-guard, box-like incasing sections formed of side plates and mid-bars and guide-bars connecting the same, the latter serving to slidably connect said incasing sections, springs arranged within the incasing sections, incased sections arranged at right angles to the incasing sections, said sections together containing a journal-opening and being normally collapsed by said springs, means limiting the distension of the sections, and means arranged within the incasing sections and whereby the movement of either pair of sections in either direction is communicated to the other pair, substantially as described.

7. A dust-guard for journal-boxes, comprising, in combination, box-like incasing members, other members contained therein, said members together containing a normally non-circular journal-opening, springs pressing said members toward a common center, and means operatively interposed between said incasing and incased members, and adapted to cause the corresponding movement of all of said members when the members of either set are moved toward or away from said center, substantially as described.

8. A dust-guard comprising, in combination, four members, together containing a normally non-circular opening, and means operatively interposed between said members, causing the same to coact upon angles of forty-five degrees to their axes of movement, substantially as described.

9. A dust-guard comprising, in combination, four members, together containing a normally non-circular opening, means operatively interposed between said members causing the same to coact upon angles of forty-five degrees to their axes of movement, and springs connecting two of said members and pressing all thereof toward a common center, substantially as described.

10. A dust-guard comprising, in combination, two box-like incasing members, together forming a rectangular plate and containing a normally non-circular opening, two other members incased therein and containing a like opening, one of the pairs of members having slots occupying angles of substantially forty-five degrees to the edges of said incasing members, and the other pair of members having pins occupying said slots, as and for the purpose specified.

11. A dust-guard comprising a plurality of sections together containing a normally non-circular opening, in combination with means operatively interposed between said members and whereby the same are adapted to open simultaneously and to close simultaneously to enlarge and contract said opening, respectively, substantially as described.

12. A dust-guard comprising, in combination, two abutting sections, another pair of abutting sections arranged at right angles thereto, said sections together containing a normally non-circular opening, means pressing said sections toward a common center, and means operatively interposed between the pairs of sections and whereby said pairs are caused to coact upon angles of substantially forty-five degrees to the lines of abutment, substanially as described.

824,128. **AUTOMATIC FIRE-EXTINGUISHER.** HERMAN W. MARTIN, Ilion, N. Y. Filed Nov. 3, 1904. Serial No. 231,234.

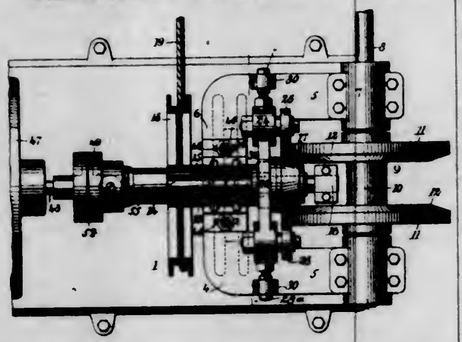


Claim.—1. In an automatic fire-extinguisher, the combination with a tubular base having a water-passage, a transparent sight-tube seated in the passage, a stopper seated on the sight-tube including a soft-metal washer seating on the sight-tube an imperforate disk seating on said washer a spring operated to unseat the stopper, and a detent for the stopper including a fusible element.

2. In a fire-extinguisher, the combination with a base having a water-passage, a transparent sight-tube having one end seated in said passage, a perforated washer seated on the other end of the sight-tube, an imperforate disk seated on the washer, a spring-washer seated on the disk, a cap bearing on the spring-washer and on the center of the imperforate disk, and means including a fusible element for holding the stopper in place.

3. In a fire-extinguisher of the class described, a stopper-cap having a central boss on its inner side, an imperforate disk arranged within the cap and bearing against said boss, and an annular spring-washer arranged between the cap and the disk and bearing against the outer edge of the disk.

824,129. **ELEVATOR DRIVING MECHANISM.** VOLNEY W. MASON, Providence, R. I. Filed June 29, 1905. Serial No. 267,518.



Claim.—1. In mechanism of the class described in combination, a driving-shaft, a pinion carried thereby, a driven shaft disposed substantially at right angles to said driving-shaft, a reversing-wheel slidably carried by said driven shaft and having disks adapted to engage said pinion, a shipping-pulley rotatably mounted on said driving-shaft and a cross-head actuated by said shipping-pulley and engaging said reversing-wheel, said cross-head affording means for sliding said reversing-wheel to engage said pinion.

2. In mechanism of the class described in combination, a driving-shaft, a pinion carried thereby, a driven shaft disposed substantially at right angles to said driving-shaft, a reversing-wheel slidably mounted on said driven shaft and having disks which may engage said pinion, a shipping-wheel rotatably mounted on said driving-shaft, a cross-head having a fixed pivotal support, an eccentric actuated by said shipping-wheel and controlling said cross-head, means carried by said cross-head for engaging said reversing-wheel, and a brake-shoe carried by said cross-head which may engage said reversing-wheel.

3. In mechanism of the class described in combination, a driving-shaft, a pinion carried thereby, a driven shaft disposed substantially at right angles to said driving-shaft, a reversing-wheel slidably mounted upon said driven shaft and having disks adapted to engage opposite sides of said pinion, a cross-head engaging said reversing-wheel to shift the same longitudinally to or from said pinion, and a brake carried by said cross-head and adapted to engage said reversing-wheel.

4. In mechanism of the class described, in combination, a driven shaft, a reversing-wheel slidably mounted thereupon and adapted to drive the same, said reversing-wheel having a pair of disks, a pinion located therebetween and adapted to drive said disks in either direction, a cross-head, means carried thereby for engaging said disk, an eccentric adapted to move said cross-head, and a brake carried by said cross-head and which may engage said wheel.

5. In mechanism of the class described, in combination, a driven shaft, a reversing-wheel slidably carried thereby and comprising a pair of disks, a pinion mounted between said disks and adapted to drive either of the same, a cross-head, rollers carried thereby engaging the faces of said disks, an eccentric-sheave carrying said cross-head, means for rotatably mounting said sheave, and a brake attached to said cross-head and having shoes adjacent to the faces of said disks.

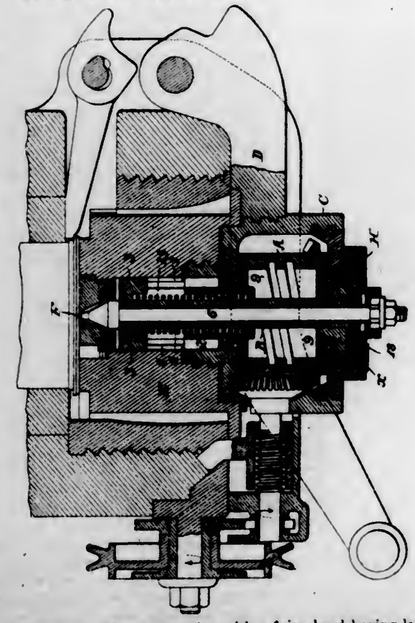
6. In mechanism of the class described, in combination, a shipping-pulley, a sleeve rigid therewith, a driving-shaft passing loosely through said sleeve, a pinion carried by said driving-shaft, a driven shaft, a reversing-wheel slidably mounted on said driven shaft and having disks which may engage said pinion, an eccentric carried on said sleeve, a cross-head actuated by said eccentric and having means for engaging said reversing-wheel, and a brake attached to said cross-head and lying adjacent to the face of said reversing-wheel.

7. In mechanism of the class described, in combination, a frame, a driven shaft rotatably mounted therein, a reversing-wheel slidably mounted on said shaft and having disks, a cross-head, a shaft passing through said cross-head, a pinion carried thereby and adapted to drive either of said disks, means for guiding said head upon said frame, a sleeve carrying an eccentric rotatably mounted in said cross-head, and a brake actuated by the said cross-head and adapted to engage said reversing-wheel.

8. In mechanism of the class described, in combination, a frame, a reversing-wheel mounted thereon a pinion coöperating therewith to drive the same in either direction, a cross-head affording means for reversing the movement, and a brake pivotally mounted on said frame and attached to said cross-head, said brake having shoes adapted to engage said reversing-wheel.

9. In mechanism of the class described in combination, a frame, a driven shaft rotatably mounted thereon, a driving-shaft, a pinion carried thereby, a reversing-wheel slidably mounted on said driven shaft and having disks adapted to engage said pinion, an eccentric rotatably mounted, a cross-head controlled by said eccentric, pivoted to said frame and engaging said reversing-wheel, means for guiding said cross-head on said frame, and a shoe carried by said cross-head adapted to touch said reversing-wheel.

824,130. **FIRING MECHANISM OF GUNS.** JOHN F. MEIGS and HERMAN G. JAKOBSSON, South Bethlehem, Pa., assignors to Bethlehem Steel Company, South Bethlehem, Pa., a Corporation of Pennsylvania. Filed July 12, 1905. Serial No. 269,351.



Claim.—1. The combination with a firing-head having lateral arms, of a rotatable cam having spiral faces engaged by said arms, and each making a complete rotation, and longitudinal grooves intersecting said faces, the said grooves and arms relatively proportioned to permit the forward passage of the arms only when opposite the grooves at their rear ends, substantially as set forth.

2. The combination with a firing-head having lateral arms of different widths, of a rotatable cam-cylinder having spiral cam-faces, and longitudinal grooves of different widths, intersecting said faces, and arranged to permit the forward passage of the arms only when the parts are in firing position, substantially as set forth.

3. The combination with the firing-head of a gun having arms extending laterally therefrom in the same plane and of different widths, of a rotating cam having spiral cam-faces, and longitudinal grooves from which said spiral faces start at the forward end and at which they terminate at the rear end, said grooves of different widths corresponding to the widths of the said arms, substantially as set forth.

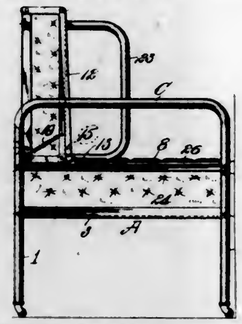
4. The combination with the carrier, breech-block, firing-head, means for turning and cam for retracting the firing-head, of a cross-bar at the rear of the firing-head, and projections upon the carrier at the rear thereof arranged to limit the forward movement of the cross-bor and firing-head after the latter has been turned from firing position, substantially as set forth.

5. The combination with the carrier, breech-block, firing-head, means for turning and cam for retracting the firing-head, of a cross-bar on the firing-head at the rear of the carrier, and projections on the carrier at the rear having inclined ends arranged to carry back the firing-head and to limit the forward movement of the cross-bar and firing-head after the latter has been turned from firing position, substantially as set forth.

6. The combination with the sliding firing-head having lateral arms, a rotatable cam with faces for engaging said arms and retracting said head, and with grooves adapted to be traversed by the arms on moving forward, of a cross-bar at the rear end of the firing-head, and projections arranged to limit the forward movement of the cross-bar and firing-head when the latter has been turned from firing position, substantially as set forth.

7. The combination with the sliding firing-head having lateral arms, a rotatable cam with faces for engaging said arms and retracting said head, and with grooves adapted to be traversed by the arms on moving forward, of a cross-bar at the rear end of the firing-head, and projections having inclined ends arranged to carry back the firing-head and to limit the forward movement of the cross-bar and firing-head when the latter has been turned from firing position, substantially as set forth.

824,131. **DAVENPORT-BED.** GEORGE A. MELLON, St. Louis, Mo. Filed Dec. 20, 1905. Serial No. 292,578.



Claim.—1. In a folding bed of the character described, the combination of a stationary section having a pair of leg members, a movable section, and a single pair of connecting-bars having pivotal connection with said stationary section and movable section; said connecting-bars being arranged to be moved into positions that will cause them to rest on and be supported by said stationary section while said movable section is being swung into a position in horizontal alinement with said stationary section, substantially as set forth.

2. In a folding bed of the character described, the combination of a stationary section having a pair of leg members, a movable section, a single pair of connecting-bars uniting said movable section to said leg members to permit swinging action of the movable section, and stops for providing engagement between said movable section and said leg members to restrict the rearward movement of said movable section when it is in folded position, substantially as set forth.

3. In a folding bed of the character described, the combination of a stationary section having a pair of leg members, a movable section, a single pair of connecting-bars uniting said movable section to said leg members to permit swinging action of the movable section, and stops projecting from said leg members for restricting the rearward movement of said movable section when it is moved into folded position, substantially as set forth.

4. In a folding bed of the character described, the combination of a stationary section having a pair of leg members with forward and rear legs, a movable section, connecting-bars having pivotal connection with said stationary and said movable sections, and stops projecting from said forward legs arranged to support said connecting-bars when the movable section is in unfolded position, substantially as set forth.

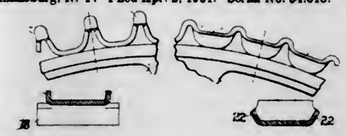
5. In a folding bed of the character described, the combination of a stationary section, a main mattress supported by said section, a supplemental mattress-section swingingly connected to said main section, a movable bed-section, a mattress carried by said movable bed-section and adapted to be moved into horizontal alinement with said stationary-section main mattress, and a sheet having connection with said stationary-section main mattress and said movable-section mattress; said sheet consisting of a plurality of sections adjustably united to each other, substantially as set forth.

6. In a folding bed of the character described, the combination of a stationary bed-section, a movable bed-section, a single pair of connecting-bars having pivotal connection with said bed-sections, and stops arranged to furnish bearings by which said connecting-bars are supported adjacent to their ends connected to said movable section when said movable section is moved into a position in horizontal alinement with said stationary section.

7. In a folding bed of the character described, the combination of a stationary bed-section, a movable bed-section, connecting-bars having pivotal connection with said stationary section and pivoted to said movable section adjacent to its edge farthest removed from said stationary section, and a stop carried by said connecting-bar against which said movable section is arranged to bear, substantially as set forth.

8. In a folding bed of the character described, the combination of a stationary bed section, a movable bed-section, connecting-bars having pivotal connection with said stationary section and pivoted to said movable section adjacent to its edge farthest removed from said stationary section, and stops for causing engagement between said movable sections and said connecting-bars when the parts are in folded positions, substantially as set forth.

824,132. **DETACHABLE TEETH FOR GEAR-WHEELS.** FRANK L. MORSE, Trumansburg, N. Y., assignor to Morse Chain Company, Trumansburg, N. Y. Filed Apr. 2, 1901. Serial No. 54,018.



Claim.—1. An article of manufacture comprising a flexible band of sprocket-teeth having lateral extensions on each side from the base of said teeth, said lateral extensions forming plain flat base pieces or flanges adapted to be bent around and secured to the periphery of a wheel.

2. An article of manufacture comprising a flat flexible metal strip having a line of hollow gear-teeth formed through the center thereof, and plain flat base pieces or flanges extending laterally from the base of said teeth.

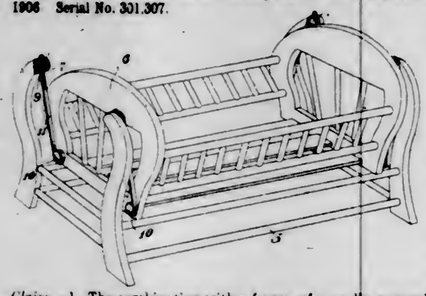
3. An article of manufacture comprising a flexible band of sprocket-teeth provided with guide-pieces along the edges of the line of gear-teeth, whereby lateral movement of a drive-chain on said teeth is prevented.

4. An article of manufacture comprising a metal strip having a line of gear-teeth formed thereon, the teeth being provided at their ends with projecting guide-pieces for a power-chain.

5. The combination with a wheel or pulley, of a flexible metal strip having a line of gear-teeth formed thereon, base pieces or flanges extending laterally from the base of said teeth and detachably secured to the periphery of said wheel.

6. An article of manufacture comprising a flexible band of sprocket-teeth adapted to be placed around and secured to the periphery of a wheel, and guides along the sides of the line of teeth for preventing lateral displacement of a power-chain.

824,133. CRADLE. SUMNER L. MORSE, Athol, Mass. Filed Feb. 15, 1906. Serial No. 301,307.



Claim.—1. The combination with a frame, of a cradle suspended from the frame, and resilient hangers connecting the cradle and frame, respectively, and having their opposite ends curved laterally and rigidly secured thereto, said hangers being free to expand and contract at points adjacent their fixed ends.

2. The combination with a frame, of a cradle suspended from the frame, supporting members carried by the frame and cradle, respectively, and resilient hangers secured to the supporting members and having their opposite ends free to expand and contract at points adjacent their fixed ends.

3. The combination with a frame, of a cradle suspended from the frame, supporting members secured to the frame and cradle, respectively, and resilient hangers having their opposite ends curved laterally and their terminals rigidly secured to the supporting members.

4. The combination with a frame, of a cradle suspended from the frame, supporting members secured to the frame and cradle, respectively, and provided with circular heads, and hangers having their opposite ends embracing the periphery of the heads of the supporting members and secured to the latter.

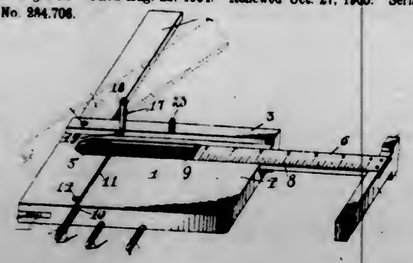
5. The combination with a frame, of a cradle suspended from the frame, supporting members secured to the cradle and frame, respectively, hangers having their ends curved laterally for attachment to the supporting members and provided with openings, and pins passing through said openings and engaging the supporting members.

6. The combination with a frame, of a cradle suspended from the frame, supporting members secured to the frame and cradle, respectively, resilient hangers secured to the supporting members and having their opposite ends curved laterally and free to expand and contract at points adjacent their fixed ends, and means carried by the supporting members for limiting the expansible movement of the hangers.

7. The combination with a frame, of a cradle suspended from the frame, supporting members carried by the frame and cradle, respectively, and resilient hangers having their opposite ends curved laterally in the same direction and secured to the supporting members, said hangers being free to expand and contract at points adjacent their fixed ends.

8. The combination with a frame, of a cradle suspended from the frame, supporting members secured to the frame and cradle, respectively, and provided with circular heads having reduced extensions, resilient hangers having their opposite ends encircling the heads of the supporting members and rigidly attached thereto, and headed pins passing through openings in the hangers and engaging the supporting members for limiting the expansible movement of the hangers.

824,134. MORTISE OR HINGE GAGE. GEORGE D. MCLEOD, Chicago, Ill. Filed Aug. 22, 1904. Renewed Oct. 27, 1905. Serial No. 284,706.



Claim.—1. A gage of the character described, comprising a body, point-carrying rods adjustably mounted in said body in directions at right angles to each other, and a member upon said body adjustable in a direction at right angles to the directions of adjustment of said point-carrying rods, substantially as described.

2. A gage of the class described, comprising a body, a longitudinally-adjustable member slidably mounted in said body, marking-rods slidably mounted in said body in directions at right angles to each other and to the said longitudinally-adjustable member, and means for securing said rods in an adjusted position, substantially as described.

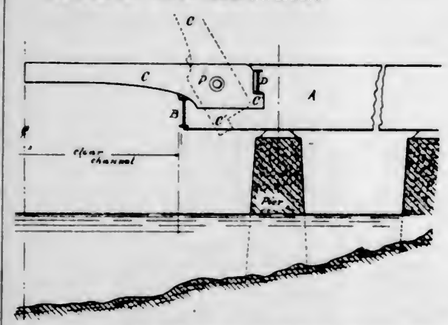
3. A gage of the class described, comprising a body having a longitudinal rib, a longitudinal groove and transverse bores extending at right angles to each other, point-carrying rods slidably mounted and adjustably secured in said bores, a longitudinally-adjustable slide mounted in said groove, and provided with a transverse head, and a blade within said body extending at right angles thereto to permit the device to be used as a square, substantially as described.

4. A gage of the class described, comprising a body having a longitudinal rib along one edge, a longitudinal groove in one of its faces and transverse bores extending at right angles to each other, point-carrying rods slidably mounted and adjustably secured in said bores, a longitudinally-adjustable slide mounted in said groove and provided with a transverse head, and an angularly-adjustable blade within said body.

5. A gage of the class described, comprising a body formed with a bore and a slot communicating with said bore, a rod slidably mounted in said bore, a marking-pin upon said rod and extending through said slot, and a set-screw in said body formed with a tapered portion adapted to engage said rod to hold the same against movement, substantially as described.

6. A gage of the class described, comprising a body formed with a transverse recess in one end, indicating devices adjustably mounted upon said body, a blade projecting into said recess and formed with a notch in one end and an angularly-disposed slot adjacent to said notch, a pin in said recess adapted to be engaged by said notch, and a set-screw in said body projecting through said slot to hold said blade in said recess and to secure the same in an adjusted position, substantially as described.

824,135. BASCULE-BRIDGE. RALPH E. NEWTON, Milwaukee, Wis. Filed Nov. 5, 1904. Serial No. 231,596.



Claim.—1. A bascule-bridge comprising a substantially horizontal approach-span, a bascule or tilting arm or span pivotally mounted directly on the approach-span near the outer end thereof, a support carried by said approach-span and located outside of or beyond the pivots to engage said bascule, and a stop carried by said approach-span on that side of the pivotal point of the bascule opposite said support, the stop adapted to engage the inner or counterweighted end of said bascule.

2. A bascule-bridge comprising an approach-span, the span comprising longitudinal girders, a bascule-leaf permanently pivoted on the approach-span and between the girders near the outer ends thereof, cross-girders extending between the longitudinal girders on opposite sides of the pivotal point of the bascule, the forward girder supporting the downward stress of the bascule, a rearward extension of the bascule adapted to take under the rear girder when the bascule is in its lowered position to relieve the pivotal point of the bascule of downward stress, the girders operating to entirely relieve the pivotal point of the bascule of strain, save from dead-weight.

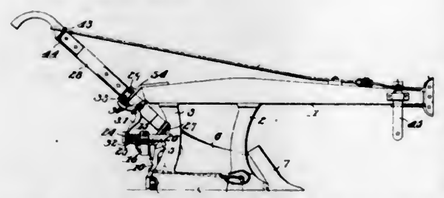
3. A bascule-bridge comprising an approach-span, a bascule-leaf pivotally secured near one end of the approach-span, supports carried by the approach-span and located in front of and behind the pivotal point of the bascule, the bascule adapted to bear against the supports when in lowered position to relieve the pivotal point of stress, the pivotal point of the bascule and the supports being localized near the forward end of the approach-span, and a pier for supporting the approach-span, said pier adapted to be located independently of the clustered supports.

4. A bridge comprising an approach-span, a bascule, one end of which is pivoted adjacent the forward end of the span, a stop carried by the span in rear of the pivotal point of the bascule, a second stop carried by the span in front of the pivotal point of the bascule, the bascule when in lowered position adapted to engage both stops whereby the upward and downward stresses are removed from the pivotal point of the bascule, and means for supporting the span.

5. In a bridge, the combination with a span having a cut-away portion, of a bascule the rear end of which is fixedly pivoted in said cut-away portion, an approximately horizontal abutment carried by the span and projecting over its cut-away portion and a rearwardly-extending nose carried by the bascule and adapted to take under the abutment to relieve the pivotal support of the bascule of strain.

6. A bridge comprising a span, piers supporting the same, the span projecting in advance of the piers and being cut away at its forward end, a bascule, the rear end of which is received in the space formed by the cut-away portion of the span, a fixed pivot passing through the bascule and means for supporting the bascule on both sides of its pivotal point and in advance of the piers to relieve the pivot of strain.

824,136. PLOW. FRANKLIN H. NICHOLS, Chetek, Wis. Filed Dec. 19, 1905. Serial No. 292,453.



Claim.—1. A plow having a swiveled moldboard, means for supporting the same in operative position, a pair of handles disposed upon an oblique pivot, and means for securing said handles in operative position.

2. In a plow, a swiveled moldboard movable from a right-hand to a left-hand position, and vice versa, in combination with a pair of handles suitably connected and supported upon a single pivot and movable from a right-hand to a left-hand position, and vice versa.

3. A plow-beam, a frame connected with the same and including a pair of standards, a landside and a rearward-extending bracket, an obliquely-disposed pin connecting said bracket with the rear standard from which it extends, a pair of handle members pivoted upon said pin, and means for retaining said handles in adjusted position.

4. In a plow, a beam, a frame connected therewith and including front and rear standards, a landside and a bracket extending rearwardly from the rear standard, a reversible moldboard including a share and a brace connected pivotally with the front and rear ends of the landside, a bracket connected with the brace, a casing connected pivotally with the bracket extending from the rear standard, a slide in said casing having a head pivotally connected with the bracket upon the moldboard-brace, and a spring-actuated latch-lever connected with the casing and adapted to engage the head of the slide movable in said casing.

5. A plow-beam, a frame connected with said beam and having a rearwardly-extending bracket, a moldboard connected pivotally with said frame, a casing pivoted upon the bracket, a slide movable in said casing and having pivotal connection with the moldboard, a latch-lever pivoted upon the casing and adapted to engage the slide, an obliquely-disposed pin connecting the bracket with the frame from which it extends, handles pivoted upon said pin, a cross-bar connecting said handles and having recesses therein, a lever pivoted upon the plow-beam and having a pin adapted to engage the recesses in the cross-brace the opposite end of said lever being extended in the path of the latch-lever and connected loosely with the latter, and a single spring operating to hold the two latch-levers in locking position.

824,137. RECEPTACLE OR HOLDER FOR COMPOSITIONS IN STICK FORM. GEORGE J. ORANGE, Manchester, England. Filed Oct. 21, 1905. Serial No. 283,744.



Claim.—1. The combination with a receptacle having an open bottom and an interior longitudinally-disposed rib, of an adjustable bottom provided with an opening, the edges of which engage said rib for sliding thereon when free from weight and for biting the rod when bearing the weight of the contact of the receptacle.

2. The combination with a receptacle having an open bottom and provided with an interior longitudinally-disposed rib, of an adjustable bottom having faces for engaging said rib and guiding the said bottom in its movement of adjustment when the plane of said bottom is substantially transverse to its direction of movement and for engaging said rib when the adjustable bottom assumes a position at an angle to such transverse position.

3. The combination with a receptacle, of a longitudinally-disposed guide member therein, an adjustable bottom within said receptacle and having faces embracing said guide member, and a stick of composition secured to said adjustable bottom, the weight of the stick upon said bottom normally causing said faces to engage and lock with the guide member.

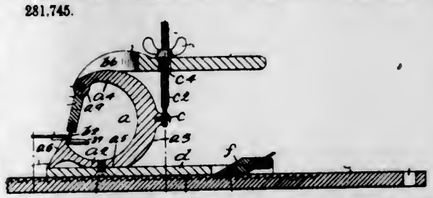
824,138. COMBINED WHETSTONE, BLOTTER, AND PAPER-WEIGHT. EDWIN B. PIKE, Pike, N. H. Filed Nov. 6, 1905. Serial No. 285,985.



Claim.—1. The combination, with a pad of superimposed flat blotting-sheets, a fastener passing through the superimposed blotting-sheets, a stiff cover secured on top of said blotting-pad, and a combined whetstone, weight and handle secured upon said stiff cover, substantially as described.

2. The combination, with a whetstone and a stiff cover secured to the under side thereof, of a screw fitted to the whetstone and a blotting-pad having a nut fixed thereon into which the screw is fitted detachably, substantially as described.

824,139. CLUTCH FOR LEATHER-STRETCHING MACHINES. EZRA L. POST, Wallingford, Conn. Filed Oct. 7, 1905. Serial No. 281,745.



Claim.—1. A clutch for use in connection with leather-stretching machines, said clutch comprising a body portion segmental in vertical longitudinal section, the bottom portion thereof being provided with a forwardly-directed stationary jaw having an upwardly-directed transverse lip member, and with a top forwardly-directed arm having a transverse head to which is pivoted a movable jaw having a downwardly-directed lip member which bears when in operation on the back portion of the upwardly-directed lip member of the stationary jaw, said movable jaw being provided with a central pivot member which bears on the head of said arm and the opposite ends thereof being vertically movable, substantially as shown and described.

2. A clutch for use in connection with leather-stretching machines, said clutch comprising a body portion segmental in vertical longitudinal section, the bottom portion thereof being provided with a forwardly-directed stationary jaw having an upwardly-directed transverse lip member, and with a top forwardly-directed arm having a transverse head to which is pivoted a movable jaw having a downwardly-directed lip member which bears when in operation on the back portion of the upwardly-directed lip member of the station-

ary jaw, said movable jaw being provided with a central pivot member which bears on the head of said arm and the opposite ends thereof being vertically movable, and provided with a backwardly-directed yoke-arm, substantially as shown and described.

3. A clutch for use in connection with leather-stretching machines, said clutch comprising a body portion segmental in vertical longitudinal section, the bottom portion thereof being provided with a forwardly-directed stationary jaw having an upwardly-directed transverse lip member, and with a top forwardly-directed arm having a transverse head to which is pivoted a movable jaw having a downwardly-directed lip member which bears when in operation on the back portion of the upwardly-directed lip member of the stationary jaw, said movable jaw being provided with a central pivot member which bears on the head of said arm and the opposite ends thereof being vertically movable, and provided with a backwardly-directed yoke-arm, and a rod pivoted to the back of the body portion of the clutch and adapted to swing in a transverse vertical plane, said rod being provided at its free end with a thumb-nut, and said arm with a transverse recess adapted to receive said rod, substantially as shown and described.

4. A clutch of the class described, comprising a body portion consisting of a base, and a back provided with a forwardly-directed arm, the base being provided with a forwardly-directed jaw having a transverse upwardly-directed lip, a movable jaw pivoted to the head of said arm and provided with a downwardly-directed transverse lip which bears when in use on the back of the upwardly-directed lip of the stationary jaw, said movable jaw being provided with a backwardly-directed arm, and a rod pivoted to the back of the body portion of the clutch and adapted to swing in a transverse vertical plane, said arm being also provided with a transverse recess adapted to receive said rod, and said rod with a thumb-nut, substantially as shown and described.

5. A clutch of the class described, comprising a body portion consisting of a base, and a back provided with an upwardly and forwardly directed arm, said base being provided with a forwardly-directed stationary jaw, and a movable jaw pivoted in the head of said arm, said jaw being provided with a backwardly-directed yoke-arm, and devices operating in connection with said arm for holding said jaw in operative position, comprising a rod pivoted to the back of the body portion of the clutch and adapted to swing in a vertical transverse plane, said rod being provided with a thumb-nut at its free end and said arm with a transverse recess adapted to receive said rod, substantially as shown and described.

6. A clutch of the class described, comprising a body portion composed of a base, and a back having a forwardly-directed arm, said base being provided with a forwardly-directed stationary jaw, and a movable jaw pivoted to the head of said arm and operating in connection with the stationary jaw, said movable jaw being provided centrally with a pivot member which bears on said head and the opposite ends of said jaw being movable in a vertical plane, substantially as shown and described.

7. A clutch of the class described, comprising a body portion composed of a base, and a back having a forwardly-directed arm, said base being provided with a forwardly-directed stationary jaw, and a movable jaw pivoted to the head of said arm and operating in connection with the stationary jaw, said movable jaw being provided centrally with a pivot member which bears on said head and the opposite ends of said jaw being movable in a vertical plane, said movable jaw being also provided with a backwardly-directed arm, substantially as shown and described.

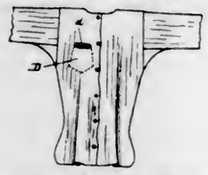
8. A clutch of the class described, comprising a body portion composed of a base, and a back having a forwardly-directed arm, said base being provided with a forwardly-directed stationary jaw, and a movable jaw pivoted to the head of said arm and operating in connection with the stationary jaw, said movable jaw being provided centrally with a pivot member which bears on said head and the opposite ends of said jaw being movable in a vertical plane, said movable jaw being also provided with a backwardly-directed arm, and devices operating in connection with said arm to hold the movable jaw in operative position, substantially as shown and described.

9. A clutch of the class described, comprising a body portion which is segmental in vertical and longitudinal section and comprises a base and a back the opposite sides of which are curved inwardly and upwardly to form a forwardly-directed arm, said base being provided with a forwardly-directed stationary jaw, and a movable jaw pivoted in the forwardly-directed head of said arm and provided with a backwardly-directed arm by which it may be manipulated, the opposite ends of the movable jaw being also vertically movable, substantially as shown and described.

10. A clutch of the class described, comprising a base portion provided with a stationary transverse jaw and an upwardly and forwardly directed arm provided with a pivoted jaw, said pivoted jaw being provided with a backwardly-directed arm, and a device pivoted to the upwardly-directed part of the base and operating in connection with said backwardly-directed arm to hold the pivoted jaw in operative position, substantially as shown and described.

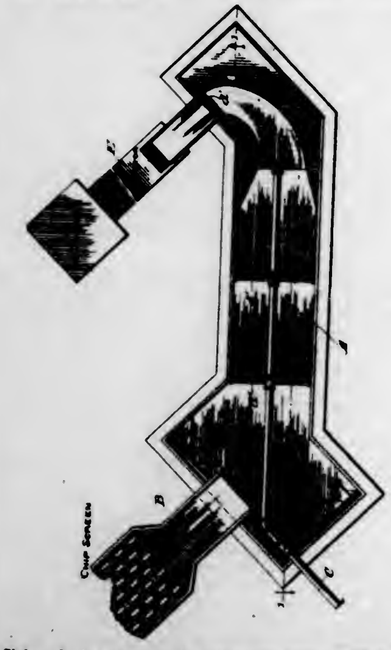
11. A clutch of the class described, comprising a base portion having a transverse stationary jaw and provided rearwardly of said stationary jaw with an upwardly-directed member having a forwardly-directed arm, a movable jaw pivoted to said arm and operating in connection with the stationary jaw and provided with a backwardly-directed arm, and a device pivoted to the upwardly-directed member of the base portion and operating in connection with said backwardly-directed arm for holding the movable jaw in operative position, substantially as shown and described.

824,140. **UNDERGARMENT.** CHARLES A. POWELL, Whitesboro, N. Y. Filed Feb. 18, 1905. Serial No. 246,226.



Claim.—A garment comprising the blank cut from a single piece and forming the shoulder and front and rear body portions of the garment, the chest portion of the blank being of greater width than the corresponding back portion, the longitudinal edges of the blank on curved lines bulging out at the chest portion and correspondingly concaving at the back portion, said edges of the front and back portion being united by vertical side seams to form a loose fullness at the breast or chest portion of the garment, substantially as described.

824,141. **APPARATUS FOR SORTING CHIPS.** HOWARD POWERS, Lincoln, N. H., assignor of four-fifths to Jolbert Construction Company, Berlin, N. H., a Corporation of New Hampshire. Filed June 7, 1905. Serial No. 264,108.



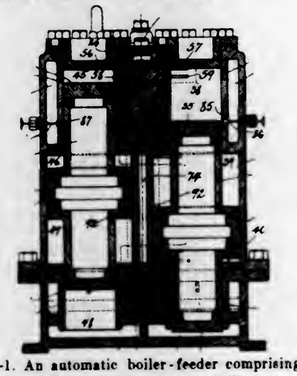
Claim.—1. An apparatus for separating chips, comprising a receptacle for a body of water, and a series of jet-pipes arranged near the water-level but above the level of the same and having their orifices all faced in one direction for progressively feeding the chips along the surface of the water.

2. An apparatus for separating chips, comprising a receptacle for a moving body of water, made deep at one end to retain the heavy sinkable pieces and having a shallow spillway at the other end, and jet-pipes arranged above the level of the spillway and having their orifices all faced in one direction for producing a current along the surface.

3. An apparatus for separating chips, comprising a tank, a spillway at the upper level of the tank, a water-supply pipe having a plurality of branches with valves, one of said branches serving to supply the tank for maintaining the spillway, and the other branches having jet-pipes arranged above the level of the spillway and having their orifices all faced in one direction to maintain a surface current toward the spillway.

4. An apparatus for separating chips, comprising a tank, a spillway at the upper level of the tank inclining downwardly and outwardly, a water-supply pipe having jet-pipes located above the level of the spillway for maintaining a surface current toward the spillway, and one or more jet-pipes located on the spillway to keep it from clogging.

824,142. **AUTOMATIC BOILER-PUMP.** SIDNEY A. REEVE, Worcester, Mass., assignor to Charles F. Brown, trustee, Reading, Mass. Filed Feb. 15, 1905. Serial No. 245,654.



Claim.—1. An automatic boiler-feeder comprising a boiler, connected motor and pump pistons substantially pressure-balanced against each other, a second motor-piston working by the exhaust-steam from the first motor-piston, and a water-line connection from the boiler to the motor.

2. An automatic boiler-feeder comprising a boiler, and a compound motor steam-pump supplying the same and having a steam connection to the boiler at the water-line, the relative areas of the motor and pump pistons being such that the boiler-pressure is substantially balanced when the motor is filled with water.

3. An automatic boiler-feeder comprising a boiler, and a pump apparatus for feeding the same having a steam connection with the boiler at the water-line and high and low pressure motor-pistons and a pump-piston, the latter of the same area as the high-pressure motor-piston.

4. An automatic boiler-feeder comprising a boiler, a pump-piston for supplying feed-water thereto, high-pressure and low-pressure motor-pistons in direct-acting relation to said pump-piston and both operating in the same direction, automatic valve mechanism intermediate between said motor-pistons, and a pipe connection from the water-line of the boiler to supply the high-pressure piston.

5. An automatic boiler-feeder comprising a single-acting pump and a motor directly connected thereto and having a single-acting high-pressure piston and a double-acting low-pressure piston

6. An automatic boiler-feeder comprising a compound motor and pump comprising a single piston structure having formed thereon a pump-piston or plunger, a high-pressure piston and a low-pressure piston, and means whereby steam is admitted to and exhausted from one side of the high-pressure piston and both sides of the low-pressure piston.

7. An automatic boiler-feeder comprising a boiler, a combined pump and motor including a single-acting pump supplying feed-water to said boiler and a motor operated from the water-line level of the boiler and including a single-acting high-pressure cylinder and piston, and a double-acting low-pressure cylinder and piston, the motor and pump pistons forming a single structure.

8. An automatic boiler-feeder comprising a boiler, a combined pump and motor including a single-acting pump supplying feed-water to said boiler and a motor operated from the water-line level of the boiler and including a single-acting high-pressure cylinder and piston, and a double-acting low-pressure cylinder and piston, the motor and pump pistons forming a single structure, said pump-piston having substantially the same area as the high-pressure motor-piston.

9. An automatic boiler-feeder comprising a boiler, and a duplex pumping apparatus for supplying feed-water thereto and having a motor-supply connection with the boiler at the water-line, said apparatus comprising alternately-operating piston structures including high-pressure motor and pump pistons of substantially equal areas, low-pressure motor-pistons, and valve mechanisms for the motors, each of which is operated by the piston structure of the other motor.

10. An automatic boiler-feeder comprising a duplex pumping apparatus comprising alternately-operating motors and pumps, each motor and pump having a single-acting high-pressure motor-piston, a single-acting pump-piston, and double-acting low-pressure motor-piston all in one piston structure, and valve mechanisms for said motors each operated by the piston structure of the other motor.

11. An automatic boiler-feeder comprising a pair of combined motors and pumps each having high and low pressure motor-pistons and pump-pistons forming the alternately-operating piston structures, valve mechanisms for the motors each operated by the piston structure of the other motor, receivers interposed between the high and low pressure cylinders, and a casing forming the cylinders and receivers and entirely inclosing the working parts.

12. An automatic boiler-feeder comprising high and low pressure motor cylinders and pistons, a pump-piston operated by said motor-pistons, means controlled by movement of the high-pressure piston for admitting live steam to the low-pressure piston at the termination of the working stroke of the high-pressure piston, and a device for rendering said means operative or inoperative at will, during the operation of the remaining parts.

13. An automatic boiler-feeder comprising a pump, a low-pressure piston operating the same, a cylinder therefor, a receiver antecedent to the said cylinder, a high-pressure piston and cylinder, a port connecting the high-pressure cylinder with the receiver and uncovered by the high-pressure piston at the end of its stroke, and means for adjusting the aperture of said port.

14. An automatic boiler-feed comprising high and low pressure motor cylinders and pistons, a pump-piston operated by said motor-pistons, means whereby the low-pressure cylinder receives live motive fluid, a boiler supplied by the pump, and a connection from the water-line level thereof to the pump-motor.

15. An automatic boiler-feeder comprising a duplex pumping apparatus including two alternately-operating combined motors and pumps each controlling the steam distribution of the other, each motor having high and low pressure cylinders and an intermediate receiver, pistons in said cylinders, and ports connecting each high-pressure cylinder with the receiver of the other motor and controlled by the piston in said cylinder.

16. An automatic boiler-feeder comprising a boiler, a compound motor and pump apparatus for supplying feed-water thereto, and having a motive connection with the water-line level of the boiler, said motor having high and low pressure cylinders with ports for the admission and exhaust of motive fluid, automatic valve mechanism for controlling said ports, and additional provisions for automatically draining one or more of said cylinders.

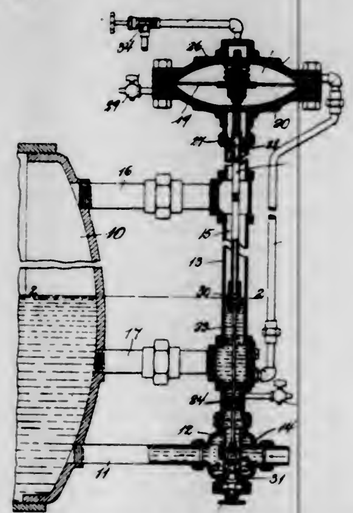
17. An automatic boiler-feeder comprising a boiler, a pump supplying the same with feed-water, a motor for operating said pump having a single-acting high-pressure cylinder, a double-acting low-pressure cylinder, and a drainage-port from that end of said low-pressure cylinder which receives the second part of the exhaust from the high-pressure cylinder, said port controlled by the low-pressure piston.

18. An automatic boiler-feeder comprising a boiler, a feed-water pump therefor, a motor to operate said pump having a supply connection from the water-line level of the boiler and including a motor-cylinder having an admission-port, and an exhaust-port covered by the piston before the end of its stroke, whereby cushion-steam is entrapped, and means for draining the cushion-space after the exhaust-port is covered.

19. An automatic boiler-feeder comprising a boiler, a pump to supply the same with feed-water, and a motor to operate said pump, supplied from the water-line level of the boiler, said pump having an

upwardly-acting piston, a cylinder therefor having an exhaust-port covered by the piston at the lower end of its stroke, and a drainage-port leading from the said cylinder below the exhaust-port.

824,143. LIQUID-LEVEL APPARATUS. SIDNEY A. REEVE, Worcester, and EDWARD P. NOYES, Winchester, Mass., assignors to Charles F. Brown, trustee, Reading, Mass. Filed Oct. 11, 1905. Serial No. 282,286.



Claim.—1. The combination with a vessel adapted to contain a body of liquid and an elastic fluid under pressure, of a movable member operated by differences in pressure of said elastic fluid for performing a useful function with respect to said vessel, a chamber on one side of said member constantly open to the upper space of said vessel, and a chamber on the opposite side of said member having an elastic-fluid inlet from said vessel subject to the liquid-level therein.

2. The combination with a vessel adapted to contain a body of liquid and an elastic fluid under pressure, of a movable diaphragm above the liquid-line for performing a useful function with respect to said vessel, a chamber on one side of said diaphragm having a free connection with the upper space of said vessel, and a chamber on the opposite side of said diaphragm connected with said vessel at the intended liquid-line, whereby the elastic fluid alternately enters and is shut off from the latter chamber by the liquid in said vessel.

3. The combination with a vessel adapted to contain a body of liquid and an elastic fluid under pressure, of a member operated by differences of pressure of said elastic fluid thereon for performing a useful function with respect to said vessel, a chamber on one side of said member having an elastic-fluid inlet from said vessel subject to the liquid-level therein, and a leakage-outlet from said chamber for reducing the pressure in the latter and causing movement of said member when said inlet is covered by the liquid.

4. The combination with a vessel adapted to contain a body of liquid and an elastic fluid under pressure, of a member operated by differences of pressure of said elastic fluid thereon for performing a useful function with respect to said vessel, a chamber on one side of said member having an elastic-fluid inlet from said vessel subject to the liquid-level therein, and a leakage-outlet from said chamber smaller in size than said inlet for reducing the pressure in the latter and causing movement of said member when said inlet is covered by the liquid.

5. The combination with a vessel adapted to contain a body of liquid and an elastic fluid under pressure, of a differential member located above the liquid-line for performing a useful function with respect to said vessel, chambers on opposite sides of said member one of which is connected with the upper space of said vessel, the other having an inlet from said vessel at the intended liquid-line, and a leakage-outlet from the latter chamber.

6. In a liquid-level controller, the combination of a differentially-controlled movable member, a chamber on one side thereof having a leakage-exit and an inlet subject to the liquid-level in the controlled vessel, a chamber on the opposite side of said member subject to the pressure in said vessel, and means to adjust the size of said exit.

7. In a liquid-level apparatus, the combination of a vessel for containing a liquid whose level varies and an elastic pressure-fluid, a device for performing a useful function with respect to said vessel and having a plurality of positions of equilibrium, means subject to the liquid-level for subjecting said device to a force which destroys its equilibrium, and means operated by the movement of said device to a new position of equilibrium for neutralizing the influence of said force.

8. In liquid-level apparatus, the combination of a pressure vessel having liquid and elastic-fluid contents, a device controlled by the liquid-level and operated by differences of elastic-fluid pressure produced by variation in said level, for performing a useful function in connection with said vessel, and means controlled by said device for establishing equilibrium of the fluid-pressures acting thereon, at a plurality of different liquid-levels.

9. In a liquid-level controller, the combination of a pressure vessel, a chamber having an inlet from said vessel subject to the liquid-level therein, and means controlled by the pressure in said chamber for limiting the amount of variation of said pressure.

10. In a liquid-level controller, the combination of a pressure vessel, a chamber having a pressure connection with said vessel and provided with movable pressure-varying means, and means controlled by the pressure in said chamber for limiting the movement of said means.

11. In a liquid-level controller, the combination of a pressure vessel, a chamber having an inlet from said vessel at the intended normal liquid-line, and means operated by the difference in elastic-fluid pressure between said chamber and the vessel for varying the height of said inlet.

12. In a liquid-level controller, the combination of a pressure vessel, chambers above the normal liquid-level in said vessel, one of which has a pressure connection with the vessel above said level, a movable partition separating said chambers, and a dip-tube carried by said partition connecting the interior of said vessel with the other of said chambers.

13. In a liquid-level controller, the combination of two chambers, an interposed movable member subject differentially to the pressures in said chambers, a feed-valve connected with said member, and externally-exposed means for adjusting said valve with respect to said member.

14. In a liquid-level controller, the combination of a casing having two diaphragm-chambers, a movable diaphragm separating said chambers, a feed-valve attached to the diaphragm and having a threaded adjustment for varying its distance from the diaphragm, and a rotary valve-adjuster mounted on the casing and connected for joint rotation and for relative longitudinal sliding movement with said valve, whereby the latter may be longitudinally adjusted with respect to the diaphragm.

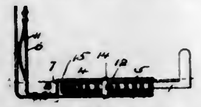
15. The combination with a vessel adapted to contain a body of liquid and an elastic fluid under pressure, of a differentially-operated member above the liquid-line, and a chamber on the upper side thereof having an inlet from said vessel subject to the liquid-level and a separate drainage-outlet leading to the liquid-space of said vessel.

16. The combination with a vessel adapted to contain a body of liquid and an elastic fluid under pressure, of a differentially-operated member above the liquid-line, a chamber on one side thereof having an inlet from said vessel subject to the liquid-level therein and carried by said member, and a stationary drainage-conduit leading from said chamber to the liquid-space of said vessel.

17. In a liquid-level controller, the combination of a casing having in one portion a differential member adapted to be located above the liquid-line of a vessel and in a distant portion a liquid-controlling valve adapted to be located below said line, an operating connection between said member and valve, chambers on opposite sides of said member for receiving an elastic-fluid pressure from said vessel, and a conduit connection extending from one of said chambers to the intended liquid-line in the direction of said valve and adapted to have its inlet alternately covered and uncovered by the liquid.

18. In a liquid-level controller the combination of a casing having at different heights a differential member and a valve-chamber, a liquid-controlling valve in the valve-chamber, conduit connections extending from said casing at different heights for connection with the steam and water spaces of a boiler or similar vessel, elastic-fluid-pressure chambers on opposite sides of said member, one of which has an inlet at the intended water-line between said member and valve and the other a boiler-inlet above said line, a partition separating the intermediate portion of the casing from said valve-chamber, and an operating connection between said member and valve traversing said partition and fitted for hydraulic packing therein by the boiler-water.

824,144. BOOK-MARK AND PAGE-HOLDER. ELMER L. REYNOLDS, Seattle, Wash., assignor of one-half to William R. Sutter, Seattle, Wash. Filed July 19, 1905. Serial No. 270,390.



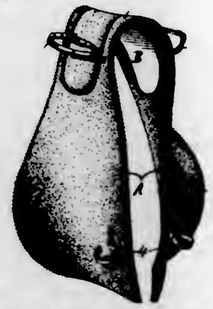
Claim.—1. A device of the character described, comprising an upper and a lower body portion, an integral, right-angled extension formed upon each of said body portions, a flat spring carried by one of said extensions, a shaft provided with shouldered end portions positioned between said body portions, a revoluble, flanged member positioned upon said shaft, a spring connecting said shaft and revoluble flanged member, and an angular finger secured to said flanged member.

2. A device of the character described, comprising parallel body portions, a flanged, revoluble member interposed between said body portions, an angular extension projecting from said revoluble member, and clamping means integral with said body portions.

3. A device of the character described, comprising an upper and a lower member, each of said members provided with a substantially circular, flat body portion, said upper body portion provided with an extended portion, an integral, right-angled extension formed upon said extended portion, said lower body portion provided with an extension, an integral, right-angled extension formed upon said extension, said right-angled extensions curved transversely, a flat spring interposed between said right-angled extensions and secured to one of the same, a shaft provided with reduced ends producing shouldered portions interposed between said body portions, a disk provided with an annular flange movably mounted upon said shaft between said body portions, a coiled spring fixedly secured at one end to said shaft and at its opposite end to said disk, and an angular finger secured to the flanged portion of said disk.

4. A device of the character described, comprising parallel, stationary body portions, each body portion provided with a substantially right-angled extension, a yielding member interposed between said extensions, a shouldered shaft positioned between said body portions, finger-carrying means mounted upon said shaft, and flexible means connecting said shaft and finger-carrying means.

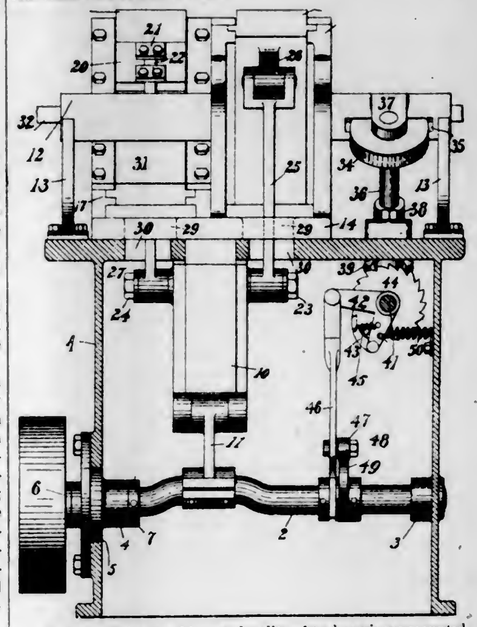
824,145. PAD FOR HORSE-COLLARS. GEORGE A. REYNOLDS, Lestershire, N. Y., assignor to The Faatz-Reynolds Felting Company, Lestershire, N. Y., a Corporation of New York. Filed Dec. 5, 1904. Serial No. 235,500.



Claim.—A sweat-pad made of one continuous piece of absorbent material having a comparatively narrow arched neck portion and widened ends and a reinforcement of leather stitched at its marginal edges to the inner face of the neck portion.

824,146. CARVING-MACHINE. FRANCIS H. RICHARDS, Hartford, Conn. Filed July 17, 1902. Serial No. 115,920.

Claim.—1. In a carving-machine, a plurality of tool-carriages reciprocatable in laterally-displaced non-coincident parallel lines transversely of one another, a cross-head reciprocatable on the line bisecting the angle made by and equidistant from said tool-carriages, connecting-rods connecting said cross-head with said tool-carriages, a crank mounted in the line of reciprocation of said cross-head, and adapted to carry the tools on said carriages to a common line defining the limits of travel of the tool, and a connecting-rod connecting said crank with said cross-head.



2. In a carving-machine, a plurality of tool-carriages mounted to reciprocate in laterally-displaced non-coincident planes transversely of one another past the crossing-points of their paths, a tool on each carriage, and means for reciprocating said carriages to carry said tools to a common line defining the limits of travel of the tools.

3. In a carving-machine, a plurality of carriages mounted to reciprocate in laterally-displaced non-coincident planes transversely of one another past the crossing-points of their paths, a knife on each carriage, and means for synchronously reciprocating said carriages to carry said knives to a common line defining the limits of travel thereof.

4. In a carving-machine, a plurality of tool-carriages mounted to reciprocate in laterally-displaced non-coincident lines transversely of one another past the crossing-points of their paths to carry their tools to a common line defining their inner limit of travel, and a stock-guide disposed in the angle formed by said carriages and parallel to the faces of each of said carriages.

5. In a carving-machine, a plurality of tool-carriages mounted to reciprocate in laterally-displaced non-coincident parallel lines transversely of one another, a cross-head reciprocatable on the line bisecting the angle formed by said carriages and equidistant from said carriages and below the intersection of the paths of said carriages, connecting-rods connecting said cross-head with the under side of each of said carriages, a crank mounted in the line of reciprocation of said cross-head and a connecting-rod connecting said crank and said cross-head.

6. In a carving-machine, a plurality of tool-carriages mounted to reciprocate in laterally-displaced non-coincident parallel planes transversely of one another past the crossing-points of their paths, a stock-guide disposed in the angle formed by said carriages and parallel to the respective faces of which said carriages are adapted to reciprocate, and tools mounted upon the faces of said carriages to meet a common line lying parallel to and within the angle of said stock-guide at the lower extremes of the movements of said carriages.

7. In a carving-machine, a plurality of tool-carriages mounted to reciprocate in laterally-displaced non-coincident parallel planes transversely of one another, a stock-guide disposed in the angle formed by said carriages and parallel to the faces of each of said carriages, a cross-head reciprocatable below and equidistantly from said carriages on a line bisecting the angle made by said carriages, connecting-rods connecting said cross-head with said carriages, a driv-

ing-shaft mounted parallel to said stock-guide and intersecting the line bisecting the angle of said carriages, a crank in said driving-shaft in line with said cross-head and a connecting-rod connecting said crank and cross-head.

8. In a carving-machine, the combination of a plurality of tool-carriages mounted to reciprocate transversely of one another in paths equally inclined from the vertical, and in adjacent planes, a knife mounted on each carriage, stock-feeding means operable transversely of the lines of travel of said carriages, a cross-head reciprocatable vertically in line with the point of crossing of the paths of travel of said carriages, connecting-rods connecting said cross-head with said carriages, a driving-shaft mounted in the same plane with and perpendicular to the path of said cross-head, a crank in said driving-shaft in line with said cross-head for carrying the tools on said carriages when connected, to a common line defining the limits of travel of the knives, and a connecting-rod connecting said crank and said cross-head.

9. In a carving-machine, the combination of a plurality of tool-carriages mounted to reciprocate in laterally-displaced non-coincident parallel lines transversely of one another in paths equally inclined from the vertical, a cross-head reciprocatable vertically in line with the point of crossing of the paths of said carriages and midway between said carriages, connecting-rods connecting said cross-head with said carriages, a driving-shaft mounted in the same plane with and perpendicular to the path of said cross-head, a crank in said driving-shaft in line with said cross-head, and a connecting-rod connecting said crank and said cross-head.

10. In a carving-machine, the combination of a plurality of tool-carriages mounted to reciprocate transversely of one another, a stock-guide disposed in the angle formed by said carriages, and parallel to the faces of each of said carriages, tools mounted upon the faces of said carriages to meet a common line lying within the angle of said stock-guide at the lower extremes of the movements of said carriages, a cross-head reciprocatable below said carriages on a line bisecting the angle made by said carriages, and connecting-rods connecting said cross-head with the under side of said carriages at points beneath said tools.

11. In a carving-machine, the combination of a plurality of tool-carriages mounted to reciprocate in laterally-displaced non-coincident parallel lines transversely of one another, a stock-guide disposed in the angle formed by said carriages and parallel to the faces of each of said carriages, tools mounted upon the faces of said carriages to meet a common line lying within the angle of said stock-guide at the lower extremes of the movements of said carriages, a cross-head reciprocatable below said carriages on a line bisecting the angle made by said carriages and midway between said carriages, and connecting-rods connecting said cross-head with the under sides of said carriages at points beneath said tools.

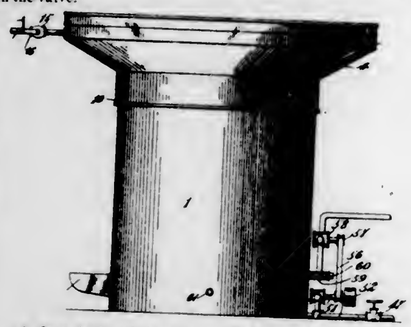
12. In a carving-machine, the combination of a plurality of tools mounted to reciprocate in laterally-displaced non-coincident parallel lines transversely of one another, a stock-guide disposed in the angle formed by said carriages, a cross-head reciprocatable on a line bisecting the angle formed by said carriages, connecting-rods connecting said cross-head and said carriages, a driving-shaft, a crank on said shaft, a connecting-rod connecting said crank and said cross-head and an intermittent stock-feed operatively connected with said driving-shaft to feed stock a distance equal to the distance between the centers of said tools measured along said stock-guide or a factor of said distance while said tools are traversing that half of their paths farthest from the said stock-guide.

824,147. **CREAM PASTEURIZER AND COOLER.** HUBERT N. RIVARD, Montreal, Canada, assignor to La Compagnie de Laiterie St. Laurent, Montreal, Canada, a Corporation of Canada. Filed Mar. 28, 1906. Serial No. 308,387.

Claim.—1. In a device of the character described, a drum having an inclined double bottom, a continuous helical wall disposed in the drum, spouts disposed through the double bottom, said bottom being provided with an upwardly-extending flange and provided with a downwardly-extending flange of greater width than the length of said spouts, and means for applying heat to the double bottom.

2. In a device of the character described, a pasteurizing-drum comprising a receptacle having an inclined double bottom provided with discharge-openings, a continuous helical flange carried by the bottom, a perforated pipe disposed between the members of the double bottom, a feed-pipe leading to the perforated pipe, and means for regulating heat applied through the perforated pipe.

3. In a device of the character described, a pasteurizing-drum comprising a receptacle having an inclined double bottom provided with discharge-openings, a continuous helical flange carried by the bottom, a perforated pipe disposed between the members of the double bottom, a feed-pipe leading to the perforated pipe, a valve on the feed-pipe, a handle on the valve, a pipe leading from the double bottom, an open-ended casing carried by the latter pipe and provided with a discharge-opening, a float disposed in the casing, a rod connected to the float, and a connection between the rod and the handle on the valve.



4. In a device of the character described, a pasteurizing-drum comprising a receptacle having an inclined double bottom provided with discharge-openings, a continuous helical flange carried by the bottom, a perforated pipe disposed between the members of the double bottom, a feed-pipe leading to the perforated pipe, a valve on the feed-pipe, a handle on the valve, a pipe leading from the double bottom, an open-ended casing carried by the latter pipe and provided with a discharge-opening, a float disposed in the casing, a rod connected to the float, and provided with a screw-threaded end, a lever connected at one end to the rod, a fulcrum for the lever secured on the casing, and a rod adjustably secured to the opposite end of the lever and to the handle of the valve.

5. In a device of the character described, a supporting-casing, a pasteurizing-drum carried thereby and provided with discharge-openings, a rotatable corrugated casing disposed below the pasteurizer and provided with outer downwardly-inclined flanges and provided with an inner upwardly-inclined perforated flange and provided with a horizontal upper flange, a second casing disposed within the movable casing, braces connecting the two latter casings, a bearing for the second casing, and means for applying a liquid-cooling medium to the casings.

6. In a device of the character described, a supporting-casing, a pasteurizing-drum carried thereby and provided with discharge-openings, a rotatable corrugated casing disposed below the pasteurizer and provided with outer downwardly-inclined flanges and provided with an inner upwardly-inclined perforated flange and provided with a horizontal upper flange, a second casing disposed within the movable casing, braces connecting the two latter casings and provided with a conical cover and a central bearing and provided with inclined downwardly-extending flanges, and a shaft carried by the supporting-casing and inserted in the bearing.

7. In a device of the character described, a supporting-casing, a pasteurizing-drum provided with staggered discharge-spouts and carried by the casing, a plurality of rotatable casings disposed within the supporting-casing and provided with flanges, a trough disposed below the flanges, and means for applying a liquid-cooling medium to both rotatable casings.

8. In a device of the character described, a supporting-casing, a pasteurizing-drum provided with staggered discharge-spouts and carried by the casing, a plurality of rotatable casings disposed within the supporting-casing and provided with flanges, a trough disposed below the flanges, a pump connected with the trough, a clean-out valve on the connection between the pump and the trough, and means for applying a liquid-cooling medium to both rotatable casings.

9. In a device of the character described, a supporting-casing, a pasteurizing-drum disposed on the casing, a pair of rotatable, connected casings disposed within the supporting-casing, a feed-pipe leading from the lower part of the supporting-casing, a valve on the feed-pipe, a pipe leading from the feed-pipe back to the casing, a pump on the latter pipe, a strainer on the latter pipe, and a plurality of perforated pipes connected to the feed-pipe and extending upward inside and outside of the rotatable casings.

10. In a device of the character described, a supporting-casing, a pasteurizing-drum thereon, a pair of rotatable casings disposed within the supporting-casing, an ice-receiving trough projecting from the supporting-casing, means for applying a liquid-cooling medium to the casing, a cream-receiving trough supported adjacent the rotatable casings, and means for removing cream from the trough.

11. In a device of the character described, a supporting-casing, a pasteurizing-drum thereon, a pair of rotatable casings disposed within the supporting-casing, an ice-receiving trough projecting from the supporting-casing, means for applying a liquid-cooling medium to the casing, a cream-receiving trough supported adjacent the rotatable casings, and means for removing cream from the trough comprising a pipe leading to the cream-trough, a pump connected to the pipe, means for driving the pump, and a clean-out on the pipe.

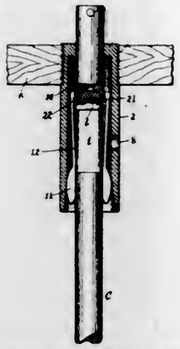
12. In a device of the character described, a supporting-casing, a pasteurizing-drum thereon, a pair of rotatable casings disposed within the supporting-casing, an ice-receiving trough projecting from the supporting-casing, means for applying a liquid-cooling medium in the casing, an overflow-pipe connected to the bottom of the supporting-casing, a cream-receiving trough supported adjacent the rotatable casings, and means for removing cream from the trough.

824,148. **POCKET-KNIFE.** ALBERT S. ROBERTS, Hillsboro, Ill. Filed Aug. 31, 1905. Serial No. 276,566.



Claim.—A knife comprising a handle formed with a pair of spaced longitudinal sides united at their ends, a back-spring disposed within the space between the sides of the handle and having rigid connection with said sides, blades pivotally mounted between the sides of the handle and occupying the same longitudinal plane as said back-spring, said back-spring comprising a body having bifurcated ends, the furcations serving as spring-fingers and being in the same plane with one another and with said blades, said blades engaging said spring-fingers when in their open position and forcing said fingers toward the longitudinal axis of said back-spring.

824,149. **CUE-HOLDER.** ROBERT U. RUDDELL, Hartford, Conn., and WILLIAM RUDDELL, New York, N. Y. Filed Dec. 16, 1903. Serial No. 185,337.



Claim.—1. A cue-tensioning holder provided with means for suspending the holder from a support and embodying a chuck which is provided with expansible means for clamping a cue, said means being operated by the insertion of the cue into the chuck, and means for normally opening said chuck.

2. A cue-tensioning holder provided with means for suspending the holder and embodying a chuck which is provided with expansible means for clamping a cue and is movable in the direction of its longitudinal axis relatively to said holder, said holder also embodying fixed means for supporting said chuck and for closing the same on the movement of said chuck in the direction of its longitudinal axis.

3. A cue-tensioning holder provided with means for suspending the holder and embodying a chuck which is provided with expansible means for clamping a cue and is movable in the direction of its longitudinal axis relatively to said holder, said holder also embodying fixed means for supporting said chuck and for closing the same on the movement of said chuck in the direction of its longitudinal axis, and means for normally opening said chuck.

4. A cue-tensioning holder provided with means for suspending the holder and embodying a chuck which is provided with expansible means for clamping a cue and is movable in the direction of its longitudinal axis relatively to said holder, said chuck having gripping-walls which are clear of the cue during all relative longitudinal movement of said parts in either direction.

5. A cue-tensioning holder provided with means for suspending the holder and embodying a chuck which is provided with expansible means for gripping the cue at a point near the tip thereof and is movable in the direction of its longitudinal axis relatively to said support, said chuck having gripping-walls which are clear of the cue during all relative longitudinal movement of said parts in either direction.

6. A cue holding and releasing device provided with means for suspending the device and embodying a chuck-support, an actuator, and a chuck provided with expansible means for clamping a cue, said means including walls which form with the coacting walls of the chuck-support an angle less than the wedging-angle, said means having an initial cue-releasing and opening movement controlled by the withdrawal of the cue and also having a main opening movement controlled by said actuator.

7. A cue holding and releasing device provided with means for suspending the device and embodying a chuck-support, an actuator, and a spring-armed chuck for clamping a cue, said chuck having walls which form with the coacting walls of the chuck-support an angle less than the wedging-angle, said means having an initial cue-releasing and opening movement controlled by the withdrawal of the cue and also having a main opening movement controlled by said actuator.

8. A cue holding and releasing device provided with means for suspending the device and embodying a chuck-support, a releasing-spring, and a chuck provided with expansible means for clamping a cue, said means including walls which form with the coacting walls of the chuck-support an angle less than the wedging-angle, said means having an initial cue-releasing and opening movement controlled by the withdrawal of the cue and also having a main opening movement controlled by said releasing-spring.

9. A cue holding and releasing device provided with means for suspending the device and embodying a chuck-support, an actuator, and a chuck provided with means for clamping and releasing a cue, said means including gripping-walls which are clear of the cue during all relative longitudinal movement of said parts in either direction, the clamping movement of said means being controlled by the insertion of the cue in the chuck, the initial portion of the cue-releasing and opening movement being controlled by the withdrawal of the cue and the main opening movement being controlled by said actuator.

10. A cue holding and releasing device provided with means for suspending the device and embodying a chuck-support, a releasing-spring, and a chuck provided with means for clamping and releasing a cue, said means including gripping-walls which are clear of the cue during all relative longitudinal movement of said parts in either direction, the clamping movement of said means being controlled by the insertion of the cue in the chuck and controlling the tensioning of said spring, the initial portion of the cue-releasing and opening movement being controlled by the withdrawal of the cue and the main opening movement being controlled by said spring.

11. A cue holding and releasing device provided with means for suspending the device and embodying a bored chuck-support, a chuck-releasing actuator, and a chuck mounted to work in the bore of said support and provided with expansible means for clamping and releasing a cue said means including gripping-walls which are clear of the cue during all relative longitudinal movement of said parts in either direction and having a working stroke and a closing movement controlled conjointly by the insertion of a cue and by the walls of said bore and also having a return stroke and a cue-releasing movement the initial portion of which is controlled by the withdrawal of the cue and the remainder of which is controlled by said actuator.

12. A cue holding and releasing device provided with means for suspending the device and embodying a tubular chuck-support, a chuck-releasing spring within said tubular support, and an expansible cue-engaging chuck mounted in said support and formed with cam-faces coacting with the inner wall of said support and having a working stroke and a closing movement controlled conjointly by the insertion of a cue and the inner wall of said support and also having a return stroke and a cue-releasing movement the initial portion of each of which is controlled by the initial movement of withdrawal of the cue and the remainder of which is controlled by said spring, said

chuck also having gripping-walls which are clear of the cue during all relative longitudinal movement of said parts in either direction.

13. A cue-tensioning holder provided with means for suspending the holder and embodying a chuck provided with expansible means for clamping a cue and is movable in the direction of its longitudinal axis relatively to said holder, said chuck having closing and opening movements controlled respectively by the insertion and removal of the cue, and having gripping-walls which are clear of the cue during all relative longitudinal movement of said parts in either direction, and a cushioning device in said chuck for receiving and cushioning the blow of the leather tip of the cue.

14. A cue-tensioning holder provided with means for suspending the holder and embodying a chuck-support and an expansible chuck having coacting faces one of which is tapering and one of which is convex in the direction of the longitudinal axis of the chuck.

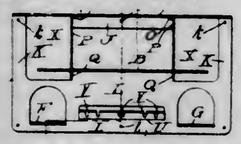
15. A cue-tensioning holder provided with means for suspending the holder and embodying a chuck-support and an expansible chuck having coacting faces one of which is tapering and one of which is convex in the direction of the longitudinal axis of the chuck, the point at which such faces make contact being substantially at the longitudinal center of the chuck-jaws.

16. A cue-tensioning holder provided with means for suspending the holder and embodying a chuck-support and an expansible chuck having coacting chuck-closing faces said chuck having rigid chuck-jaws movably connected with the body of the chuck to maintain their gripping-walls in parallelism with the chuck-axis when in engagement with the cue for cues of different diameters.

17. A cue-tensioning holder provided with means for suspending the holder and embodying a chuck-support and an expansible chuck having coacting chuck-closing faces said chuck having rigid chuck-jaws secured to spring-arms and movable to maintain their gripping-walls in parallelism with the chuck-axis when in engagement with the cue for cues of different diameters.

18. A cue-tensioning holder provided with means for suspending the holder and embodying a chuck-support and an expansible chuck having coacting faces one of which is tapering and one of which is convex in the direction of the longitudinal axis of the chuck, said chuck having rigid chuck-jaws movably connected with the body of the chuck to maintain their gripping-walls in parallelism with the chuck-axis when in engagement with the cue for cues of different diameters.

824,150. WALL-BRACKET. ALBERT DE SAINT CHAMAS, Chicago, Ill. Filed May 11, 1905. Serial No. 259,962.



Claim.—1. A device of the class described having a back, a shelf joining the top of the back through a horizontal bend, brackets located below the shelf and joining the back through vertical bends, a second shelf located below the first shelf and joining the back through a horizontal bend, brackets supporting the second shelf and joining the back through vertical bends, and means connecting the supporting-brackets of the two shelves, substantially as described.

2. A device of the class described having a back, a shelf joining the top of the back through a horizontal bend, a second shelf below the first shelf joining the back through a horizontal bend, brackets supporting the shelves and joining the back through vertical bends, and braces connecting the brackets, substantially as described.

3. A device of the class described having a back, a shelf joining the top of the back through a horizontal bend, a second shelf below the first shelf joining the back through a horizontal bend, brackets supporting the shelves and joining the back through vertical bends, and braces connecting the brackets, the lower shelf being notched to receive the braces and the back having an opening resulting from the displacement of the material of which the lower shelf, the brackets and the braces are formed, substantially as described.

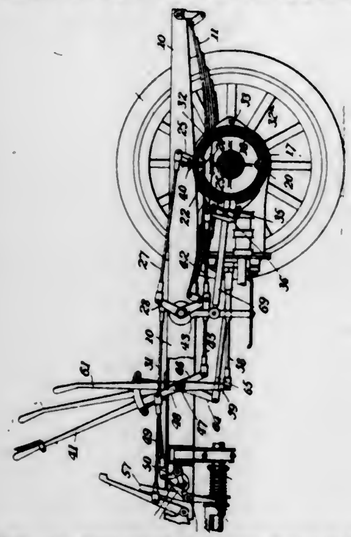
4. A device of the class described having a back, a shelf joining the top of the back through a horizontal bend, a second shelf below the first shelf joining the back through a horizontal bend, and brackets supporting the shelves and joining the back through vertical bends, the back having below the top shelf an opening resulting from the displacement of the material of which the lower shelf and brackets are formed, thus reducing the back to a horizontal strip above the said opening to which the top shelf and its brackets are joined, two vertical side strips to which the upper shelf is joined and a horizontal portion connecting the lower ends of said side strips, substantially as described.

5. A device of the class described having a back, a shelf joining the back through a horizontal bend, brackets supporting the shelf and joining the back through vertical bends, braces extending upward from said brackets and means through which the upper ends of said braces are connected to the back, the back having an opening resulting from the displacement of the material of which the shelf, the brackets, the braces and the connecting means are formed, substantially as described.

6. A device of the class described having a back, a shelf joining the back through a horizontal bend, brackets supporting the shelf and joining the back through vertical bends, and a brush-rack joining the back through a horizontal bend, all of said parts being formed of a single blank, substantially as described.

7. A device of the class described having a back, a plurality of shelves joining the back through bends, brackets supported by the back and in turn supporting the shelves, supports for tumblers, &c., joining the back through a bend, substantially as described.

824,151. MOTOR-VEHICLE BRAKE. CHARLES SCHMIDT, Detroit, Mich., assignor to Packard Motor Car Company, Detroit, Mich., a Corporation of West Virginia. Filed Feb. 4, 1905. Serial No. 244,202.



Claim.—In a motor-vehicle, the combination with the fixed rear-axle casing, the rear-axle sections rotating in said casing and the wheels connected to said sections and provided with inner and outer braking-surfaces, of brackets 16 integral with said rear-axle casing, inner and outer brakes supported by each of said brackets, springs supported by said brackets for raising both the inner and outer brake-shoes from the braking-surfaces of the wheel, studs upon said brackets for carrying said inner and outer brake-shoes, and means for applying said inner and outer brake-shoes independently.

824,152. CAKE OF SOAP. JOHN SCHWECHLER, Philadelphia, Pa., assignor, by mesne assignments, to Hygienic Soap Granulator Company, a Corporation of New Jersey. Filed May 3, 1901. Serial No. 58,568.

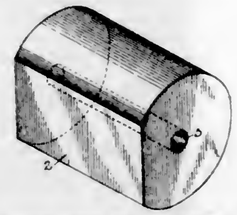
Claim.—1. As a new article of manufacture, a cake of soap having a curved side and a flat side, and an opening extending longitudinally through the central portion thereof.

2. As a new article of manufacture, a cake of soap, portions of which are comprised by curved and flat surfaces, and an opening extending longitudinally through the central portion of the same.

3. As a new article of manufacture, a bar or cake of soap substantially cylindrical in shape, but having a flat side and a circular bore extending longitudinally from end to end therethrough.

4. As a new article of manufacture, a cylindrically-shaped bar

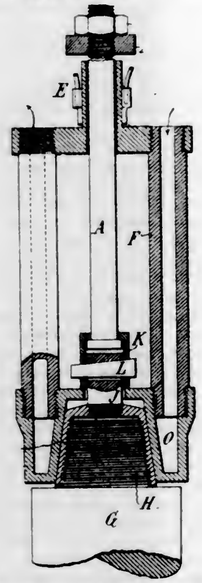
or cake of soap of greater length than diameter, and having a flat side and a bore extending longitudinally through the bar and open from end to end.



5. A cake of soap adapted for use in a soap-dispensing machine having a central opening therein provided for the use of a spindle operating a cutter, a portion of said cake being shaped to engage a retaining member to hold the cake in position during the process of cutting.

6. As a new article of manufacture, a cake of soap adapted for use in a machine which dispenses the same in fine particles and having an opening extending longitudinally therethrough, said cake being also provided with a portion adapted to be engaged by a cooperating portion of the machine whereby the soap is maintained in operative position during the operation of the machine.

824,153. CARBON-HOLDER FOR ELECTRIC FURNACES. GEORGE O. SEWARD, Holcombs Rock, Va., assignor to The Willson Aluminum Company, New York, N. Y., a Corporation of New York. Filed May 3, 1904. Serial No. 206,250.



Claim.—1. The combination with an electrode of a metallic bushing B and a surrounding member, said bushing screwed on the head of the electrode and electrically connected with the line-wire and having a tapered face for making a good electrical contact with such surrounding member.

2. The combination with an electrode, of a metallic tapered bushing B screwed on the head of the same, and a ring connected with the line-wire and having a tapered socket into which said bushing fits and makes close contact.

3. The bushing B adapted to be connected with a suspending-rod, having a screw-thread for connection with an electrode and having a tapered surface for making a good electrical contact with a surrounding member.

4. The combination with an electrode, of a bushing on the same, a support, and a ring independent of said support, connected with the line-wire and in electrical contact with said bushing.

5. The combination with an electrode, of a suspending-rod, a ring connected with the line-wire and surrounding said electrode, and a guide for said ring surrounding said rod.

6. The combination with a ring adapted for connection with an electrode, of a support for the electrode, a guide for the ring, and connecting members between the ring and the guide, the ring being adapted for connection with the line-wire independently of said support.

7. The combination with a ring C having a passage for the circulation of water, said ring being adapted for electrical connection with the line-wire and with an electrode, of a guide D, and hollow connecting members F between the ring and guide and for communicating with said passage.

8. The combination of an electrode and a heavy connecting device supported by said electrode and adapted by the weight of said device to make an intimate contact therewith.

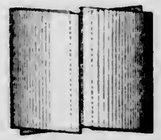
9. The combination of an electrode, a contact member thereon having a tapered surface, and a heavy-connecting device supported by said contact member and adapted by the weight of said device to make an intimate contact therewith.

10. The combination with an electrode of a contact member fastened on the head thereof, an upwardly-projecting rod J on said member, a suspending-rod having a ring K, and a coupling-pin L passing through said rod J and ring K.

11. The combination with an electrode, of a bushing thereon, a suspending-rod attached to said bushing and supporting the same and the electrode, and a connecting device supported by said bushing and electrically connected thereto and to the line independently of the suspending-rod.

12. The combination with an electrode, of a bushing screwed on the head of the electrode and having a tapered surface, a suspending-rod attached to said bushing and supporting the same and the electrode, and a ring having a tapered surface by which it is supported upon said bushing, and connected thereto and to the line.

824,154. CAKE OF SOAP. GEORGE F. SHAVER, New York, N. Y., assignor to Hygienic Soap Granulator Company, a Corporation of New Jersey. Filed Sept. 9, 1905. Serial No. 277,771.



Claim.—1. A cake of soap adapted for use in a soap-shaving machine, having a portion thereof adapted without deformation detachably to interlock with a corresponding portion of a second cake to retain the cake in position during the process of cutting.

2. A cake of soap adapted for use in a soap-shaving machine, having an end thereof adapted without deformation detachably to interlock with an end of a second cake to retain the cake in position during the process of cutting.

3. A cake of soap adapted for use in a soap-shaving machine, having opposite ends thereof adapted detachably to interlock with an end of a second cake to retain the cake in position during the process of cutting.

4. A cake of soap adapted for use in a soap-shaving machine, having opposite ends thereof interchangeably adapted to interlock with either end of a second cake to retain the cake in position during the process of cutting.

5. A cake of soap adapted for use in a soap-shaving machine, having an abutting wall formed at one end thereof and adapted to engage a corresponding wall on an end of a second cake to retain the cake in position during the process of cutting, said cakes being freely separable.

6. A cake of soap adapted for use in a soap-shaving machine, having a plurality of abutting walls formed at one end thereof and adapted to engage corresponding walls on a second cake to retain the cake in position during the process of cutting, said cakes being freely separable.

7. A cake of soap adapted for use in a soap-shaving machine, having a radially-extending wall adapted to engage a corresponding wall on a second cake to retain the cake in position during the process of cutting.

8. A cake of soap adapted for use in a soap-shaving machine, having a plurality of radially-extending walls adapted to engage cor-

responding walls on a second cake to retain the cake in position during the process of cutting.

9. A cake of soap adapted for use in a soap-shaving machine, having a radially-extending wall at each end of said cake reversibly adapted to engage a corresponding wall on the second cake to retain the cake in position during the process of cutting.

10. A cake of soap adapted for use in a soap-shaving machine, having a plurality of surfaces separated by an abutting wall and adapted to interlock with corresponding surfaces of a second cake to retain the cake in position during the process of cutting, said cakes being freely separable.

11. A cake of soap adapted for use in a soap-shaving machine, having a plurality of angular surfaces separated by an abutting wall adapted to interlock with corresponding surfaces of a second cake to retain the cake in position during the process of cutting, said cakes being freely separable.

12. A cake of soap adapted for use in a soap-shaving machine, having a plurality of surfaces separated by radially-extending walls adapted to interlock with corresponding surfaces of a second cake to retain the cake in position during the process of cutting.

13. A cake of soap adapted for use in a soap-shaving machine, having a plurality of surfaces at opposite ends of said cake of soap, said surfaces being separated by a wall and adapted to reversibly interlock with corresponding surfaces of a second cake to retain the cake in position during the process of cutting.

14. A cake of soap adapted for use in a soap-shaving machine, having a central opening therein providing for the use of a spindle operating the cutter, a portion of said cake being adapted to engage a retaining member of said machine and a portion thereof adapted to interlock with a corresponding portion of a second cake of soap to hold the cake in position during the process of cutting.

15. A cake of soap adapted for use in a soap-shaving machine, having a central opening therein providing for the use of a spindle operating a cutter, a recess at one side thereof adapted to engage a retaining member to hold the cake in position during the process of cutting.

16. A cylindrical cake of soap adapted for use in a soap-shaving machine, having a central opening therein providing for the use of a spindle operating a cutter, a recess at one side thereof adapted to engage a retaining member to hold the cake in position during the process of cutting.

17. A cake of soap adapted for use in a soap-shaving machine, having a central opening therein providing for the use of a spindle operating a cutter, a slot or keyway at one side thereof adapted to engage a spline to hold the cake in position during the process of cutting.

18. A cake of soap adapted for use in a soap-dispensing machine having means adapted without deformation detachably to engage a second cake to prevent relative movement between the cakes during the operation of the machine.

19. A cake of soap adapted for use in a soap-dispensing machine provided with a projection adapted to engage with a second cake to prevent relative movement between the cakes during the operation of the machine, said cakes being freely connectible and separable.

20. A cake of soap adapted for use in a dispensing-machine provided with an irregularity on one surface thereof adapted to interfit with a corresponding irregularity upon the surface of a second cake to prevent relative movement between the cakes during the operation of the machine, said cakes being freely connectible and separable.

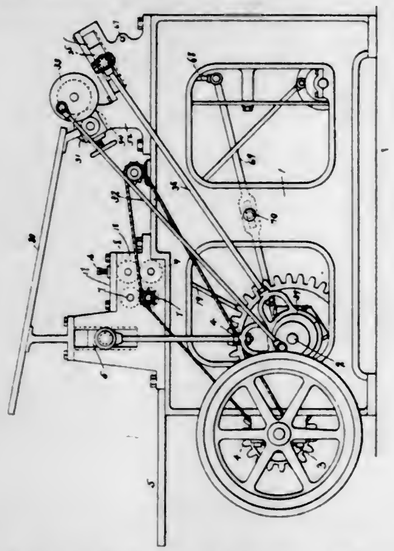
21. A cake of soap adapted for use in a dispensing-machine provided with a plurality of independent abutments adapted detachably to engage with corresponding abutments upon a second cake during the operation of the machine.

22. A cake of soap adapted for use in a dispensing-machine having a depression in the surface thereof adapted to be engaged by a projection upon a second cake to prevent relative movement between said cakes during the operation of the machine, said cakes being freely connectible and separable.

23. A cake of soap adapted for use in a soap-dispensing machine provided with a plurality of abutments joined by inclined surfaces, said abutments being adapted detachably to engage with corresponding abutments upon a second cake during the operation of the machine, said cakes being freely connectible and separable.

824,155. **MACHINE FOR MAKING CELL-CASES.** WILLIAM B. SMITH, Urbana, Ohio, assignor of one-half to Wendell H. Baker, Levi J. Baker, and Lettie Baker, all of Urbana, Ohio. Filed June 19, 1905. Serial No. 265,971.

Claim.—1. In a cell-case machine, the combination, with means for forming, feeding and holding in upright position a plurality of longitudinal strips, of means for feeding forward a web of material from which the transverse strips are formed and engaging the same with the longitudinal strips, the forward-feeding and engaging movement being in a plane inclined to the vertical, said plane being the plane of said material, substantially as described.



2. In a cell-case machine, the combination, with means for forming, feeding and holding in upright position a plurality of longitudinal strips, of means for forming and feeding transverse strips and engaging them with the longitudinal strips, the engaging movement being in a plane inclined to the vertical, said plane being the plane of said material, substantially as described.

3. In a cell-case machine, the combination, with means for forming, feeding and holding in upright position a plurality of longitudinal strips, of means for forming and feeding transverse strips and engaging them with the longitudinal strips, the feeding and engaging movements being in a plane inclined to the vertical, said plane being the plane of said material, substantially as described.

4. In a cell-case machine, the combination, with means for forming, feeding and holding in upright position a plurality of longitudinal strips, of means for intermittently feeding downward a web of material, means for punching and severing therefrom transverse strips, means for frictionally holding the severed strip in position above the longitudinal strips, and means for positively forcing said strip into engagement with the longitudinal strip while so held, substantially as described.

5. In a cell-case machine, the combination, with means for forming, feeding and holding in upright position a plurality of longitudinal strips, of means for intermittently feeding downward a web of material, means for punching and severing therefrom transverse strips, means for frictionally holding the severed strip in inclined position above the longitudinal strips, and means for positively forcing said strip into engagement with the longitudinal strips while so held, said engaging movement being in the plane of inclination of the strips, substantially as described.

6. In a cell-case machine, the combination, with means for forming, feeding and holding in upright position a plurality of longitudinal strips, of spring-actuated guiding and holding plates located immediately above said longitudinal strips, means for feeding a web of material between said plates and for forming and severing therefrom a transverse strip, and means for pushing the severed strip downward between said plates and engaging it with the longitudinal strips, substantially as described.

7. In a cell-case machine, the combination, with means for forming, feeding and holding in upright position a plurality of longitudinal strips, of spring-actuated guiding and holding plates located immediately above said longitudinal strips, means for feeding a web of material between said plates and for forming and severing therefrom a transverse strip, and means for pushing the severed strip downward between said plates and engaging it with the longitudinal strips, said last-mentioned means comprising a push-bar adapted to engage the upper edge of the transverse strip and moving first downwardly and then upwardly between the plates, substantially as described.

8. In a cell-case machine, the combination, with means for forming, feeding and holding in upright position a plurality of longitudinal strips, of spring-actuated guiding and holding plates located immediately above said longitudinal strips, means for feeding a web of material between said plates and for forming and severing therefrom a transverse strip, and means for pushing the severed strip downward between said plates and engaging it with the longitudinal strips, said last-mentioned means comprising a push-bar adapted to engage the upper edge of the transverse strip and moving first downwardly and then upwardly between the plates, there being a plurality of superposed holding-plates located on one side of the path of said push-bar, substantially as described.

9. In a cell-case machine, the combination, with spring-actuated guiding and holding plates, and a reciprocating push-bar located above said plates at the beginning of its stroke, of means for feeding a web of material between said plates at one side of the push-bar, a reciprocating cross-head carrying a knife to sever a transverse strip from said web, a frame member carrying a ledger-blade coöperating with said knife, and a spring-actuated thrust-bar arranged adjacent to said ledger-blade in the path of said knife, yielding before the advance of the same during the severing of the strip, and serving to move the upper edge of the strip into the path of the push-bar when the knife recedes, substantially as described.

824,156. **DINNER-PAIL.** ARTHUR J. SMITH, Hazleton, Pa. Filed July 25, 1904. Serial No. 218,158.

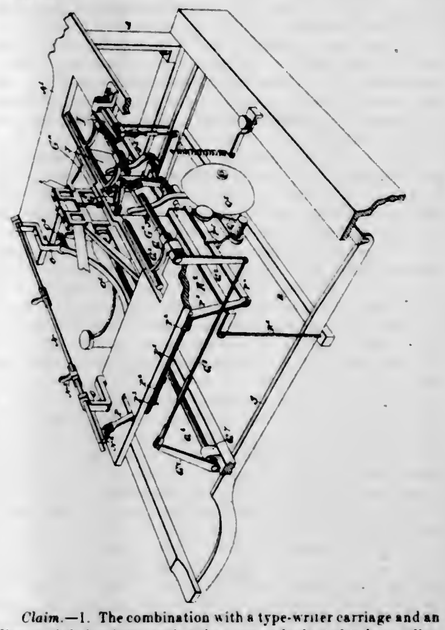
Claim.—1. A dinner-pail, comprising a substantially rectangular body provided with two compartments, one opening through the top and front of the body and the other opening through the top only thereof, a leaf member hinged at the bottom of the body to cover the open side of the first-named compartment, a horizontal hinged cover arranged to overlie the open tops of both compartments and being provided with a depending flange arranged to clasp the upper edge of said leaf member to hold the same closed, and means for securing said cover in closed position, substantially as described.

2. A dinner-pail, comprising an oblong body divided vertically and transversely into two compartments, one opening through the top and front of the body and the other opening through the top only, a leaf member hinged at the bottom of the body to cover the open front of the first-named compartment, a horizontal cover hinged to the back of the body and common to the open tops of both compartments and being provided along its front edge with a depending flange arranged to clasp at one side the upper edge of said leaf member to hold the same closed and at the other side the front of the body to effect a tight joint for the adjacent compartment, and means for securing said cover in closed position, substantially as described.

3. A dinner-pail, comprising an oblong body provided internally with a transverse vertical division-wall forming two compartments, the body being entirely open at top and in front at one side of said division-wall, a leaf member hinged at the bottom of the body and proportioned to fit and cover the opening in the front of the body, a cover hinged at the back of the body to overlie the entire top thereof and being provided along its front edge with a depending flange for clasping at one side the front of the body and at the other side the upper edge of said leaf member, and means for securing said cover in closed position, whereby the latter is retained in closed position, substantially as described.

4. A dinner-pail, comprising an oblong body provided internally with a transverse vertical division-wall forming two compartments, the body being entirely open at top and in front at one side of said division-wall, a plurality of superposed slides and a liquid-containing vessel disposed within the compartment open at top and front, a leaf member hinged at the bottom of the body and proportioned to fit and cover the opening in the front thereof and being provided along its front edge with a depending flange for clasping at one side the front of the body and at the other side the upper edge of said leaf member, a hasp upon said cover, and a coöperating staple on the front of the pail-body, substantially as described.

824,157. **TYPE-WRITING MACHINE.** GEORGE H. SMITH, Cedar Rapids, Iowa, assignor to Union Typewriter Company, Jersey City, N. J., a Corporation of New Jersey. Filed Aug. 27, 1900. Serial No. 28,142.



Claim.—1. The combination with a type-writer carriage and an adjacent slide-bar intercepting the same and adapted to have a limited longitudinal movement that is effected by the carriage, of a rock-shaft having an arm in engagement with said slide-bar, a spring to restore said shaft to normal position, a depending arm at the other end of said shaft, a bell-hammer and bell, and connections between said bell-hammer and said depending arm whereby the longitudinal movement of the bar effects a ringing of the bell.

2. In a type-writing machine, the combination of a carriage, a stop carried thereby, a bar carried at the front of the framing of the machine and mounted to have two motions, an adjustable stop carried by said bar and extending normally in the path of the carriage-stop, the position of said bar and stop being such that the stop is at all times accessible to the operator in order that it may be readily adjusted along said bar, hand-operated means for moving said bar so as to move the stop thereon out of the path of said carriage-stop, an alarm, and means actuated by another motion of said bar due to the engagement of the carriage-stop with said adjustable stop for sounding said alarm.

3. In a type-writing machine, the combination of a carriage, a stop carried thereby, a bar carried at the front of the framing of the machine and mounted to have two motions, an adjustable stop carried by said bar and extending normally in the path of the carriage-stop so as to arrest the movement of the carriage in one direction, the position of said bar and stop being such that the stop is at all times accessible to the operator in order that it may be readily adjusted along said bar, means which permit said stops to move past one another when the carriage is moving in an opposite direction, hand-operated means for moving said bar so as to move the stop thereon out of the path of the carriage-stop, and an alarm operated by another movement of said bar.

4. In a type-writing machine, the combination of a carriage, a stop or stops carried thereby, a bar carried at the front of the framing of the machine and mounted for two motions, an adjustable margin-stop and an adjustable line-stop carried by said bar and extend-

ing normally in the path of said carriage stop or stops, the position of said bar and stops being such that the stops are at all times accessible to the operator in order that they may be readily adjusted along said bar, hand-operated means carried by the framing of the machine for swinging said bar so as to simultaneously move both of said margin and line stops out of the path of the carriage-stop, and means operated by another motion of said bar for sounding an alarm.

5. In a type-writing machine, the combination of a carriage, a stop or stops carried thereby, a bar carried at the front of the framing of the machine and mounted to have two motions, an adjustable margin-stop and an adjustable line-stop carried by said bar and extending normally in the path of the carriage stop or stops, the position of said stops and bar being such that the stops are at all times accessible to the operator in order that they may be adjusted along said bar, hand-operated means carried by the framing of the machine for moving said bar so as to simultaneously move the margin and line stops out of the path of the carriage stop or stops, means for permitting the carriage stop or stops to move past each of said adjustable stops in one direction, and means operated by another motion of said bar for sounding an alarm.

6. In a type-writing machine, the combination of a carriage, a stop carried thereby, a bar carried at the front of the framing of the machine, an adjustable margin-stop and an adjustable line-stop carried by said bar and extending normally in the path of the carriage-stop, the position of said stops and bar being such that the stop is at all times accessible to the operator in order that it may be readily adjusted along said bar, hand-operated means carried by the framing of the machine for swinging said bar so as to simultaneously move the margin and line stops out of the path of the carriage-stop, means for permitting the carriage-stop to move past each of said other stops in one direction, and means controlled by a motion of said bar for sounding an alarm when the carriage approaches the end of a line as determined by said line-stop.

7. In a type-writing machine, the combination of a carriage, a stop carried thereby, a swinging and longitudinally-movable bar, a stop on said bar which normally projects into the path of the carriage-stop, hand-operated means carried by the frame of the machine for swinging said bar to move the stop thereon out of the path of the carriage-stop and means carried by the framing of the machine and controlled by the longitudinal movement of the bar for sounding an alarm when an end of a line is approached.

8. In a type-writing machine, the combination of a carriage, a stop carried thereby, a swinging and longitudinally-movable bar at the front of the machine, a stop on said bar which normally projects into the path of the carriage-stops, hand-operated means carried by the frame at the front of the machine for swinging said bar to move the stop thereon out of the path of the carriage-stop and means controlled by the longitudinal movement of the bar for sounding an alarm when an end of a line is approached.

9. In a type-writing machine, the combination of a carriage, a stop carried thereby, a swinging and longitudinally-movable bar at the front of the machine, an adjustable line-stop and an adjustable margin-stop on said bar which normally projects into the path of the carriage-stop, hand-operated means carried by the frame at the front of the machine for swinging said bar to move the stops thereon out of the path of the carriage-stop and means controlled by the longitudinal movement of the bar for sounding an alarm when an end of a line is approached.

10. In a type-writing machine, the combination of a carriage, a stop carried thereby, a swinging longitudinally-movable bar at the front of the machine, an adjustable line-stop and adjustable margin-stop on said bar which normally projects into the path of the carriage-stop, hand-operated means carried by the frame at the front of the machine for swinging said bar to move the stops thereon out of the path of the carriage-stop, means controlled by the longitudinal movement of the bar for sounding an alarm when an end of a line is approached and means for permitting said carriage-stop to pass each of the other stops in one direction

11. In a type-writing machine, the combination of a carriage, a stop carried thereby, a movable bar carried by the frame at the front of the machine, an adjustable stop on said bar which is normally in the path of the carriage-stop, the position of said stop and bar being such that the stop is at all times accessible to the operator in order that it may be readily adjusted along said bar, means independent of the carriage for moving said bar so as to move the stop thereon out of the path of the carriage-stop, and means operated by another movement of the bar for sounding an alarm.

12. In a type-writing machine, the combination of a carriage, a stop carried thereby, a movable spring-restored bar carried by the frame at the front of the machine, an adjustable stop on said bar which is normally in the path of the carriage-stop, the position of the stop and bar being such that thestop is at all times accessible to the operator in order that it may be readily adjusted along said bar, means independent of the carriage for moving said bar so as to move the stop thereon out of the path of the carriage-stop and means controlled by another motion of said bar for sounding an alarm when an end of a line is approached.

13. In a type-writing machine, the combination of a carriage, a stop carried thereby, a movable rack-bar carried by the frame at the front of the machine, end portions of said rack-bar having oppositely-disposed teeth for retaining the stops carried by said bar in the adjusted position, an adjustable stop on each end portion of said rack-bar and which coöperates therewith to afford a free movement of each stop in one direction and to normally prevent a movement thereof in an opposite direction, which stops are normally in the path of the carriage-stop, means on the framework for moving said bar so as to simultaneously move both of said stops thereon out of the path of the carriage-stop, and means operated by another motion of said bar for sounding an alarm.

14. In a type-writing machine, the combination of a carriage, a stop carried thereby, a movable rack-bar carried by the frame at the front of the machine, adjustable stops on said rack-bar, which stops normally project into the path of the carriage-stops, the position of the stops and bar being such that the stop is at all times accessible to the operator in order that it may be readily adjusted along said bar, a pawl carried by each stop and adapted to engage teeth on the rack-bar to maintain the stops thereon in the adjusted position, means at the front of the machine and arranged on the framework for moving the said stops on the bar out of the path of the carriage-stop, and means operated by a motion of said bar for sounding an alarm.

15. In a type-writing machine, the combination of a carriage, a stop carried thereby, a movable rack-bar carried by the frame at the front of the machine, end portions of said rack-bar having oppositely-disposed teeth, an adjustable stop on each end portion of said rack-bar which stops normally project into the path of the carriage-stop, a pawl carried by each stop on the rack-bar and adapted to engage with the coöperating teeth thereof to maintain each of the stops thereon against movement in one direction, the position of said stops and bar being such that the stop is at all times accessible to the operator in order that it may be readily adjusted along said bar, means at the front of the machine and on the framework for moving the said stops on the bar out of the path of the carriage-stop, and means operated by a motion of said bar for sounding an alarm.

16. In a type-writing machine, the combination of a carriage, a stop on the carriage, a movable bar carried by the frame of the machine at the front thereof, an adjustable line-stop and an adjustable margin-stop carried by said bar and projecting normally into the path of the carriage-stop, the position of said stops and bar being such that the stop is at all times accessible to the operator in order that it may be readily adjusted, a hand-operated key at the front of the machine which is connected to said bar to move the stops thereon out of the path of said carriage-stop, independent means for permitting the carriage-stop to move freely past the margin-stop at all times in the movement of the carriage from right to left and independent means for permitting the carriage-stop to move freely past the line-stop at all times in the movement of the carriage from left to right, and means operated by a motion of said bar for sounding an alarm.

17. In a type-writing machine, the combination of a carriage, a stop on the carriage, a movable spring-restored bar carried by the frame of the machine at the front thereof, an adjustable line-stop slide and an adjustable margin-stop slide carried by said bar, and a pivoted spring-pressed stop carried by each of said slides and projecting normally into the path of the carriage-stop and a hand-operated key at the front of the machine which is connected to and adapted to move said bar so as to move the stops thereon out of the path of the carriage-stop.

18. In a type-writing machine, the combination of a carriage, a stop on the carriage, a swinging and longitudinally-movable spring-restored bar carried by the frame of the machine at the front thereof, an adjustable line-stop slide and an adjustable margin-top slide carried by said bar, a pivoted spring-pressed stop carried by each of said slides and projecting normally into the path of the carriage-stop, a hand-operated key at the front of the machine which is connected to and adapted to move said bar so as to move the stops thereon out of the path of carriage-stop, and means controlled by the longitudinal movement of said bar for sounding an alarm as an end of a line is approached.

19. In a type-writing machine, the combination of a carriage, a stop on said carriage, a swinging spring-restored frame pivoted to the frame of the machine at the front thereof, a bar which is carried by said swinging frame and moves longitudinally independently thereof, a margin and line stop carried by the bar and projecting normally in the path of the carriage-stop, a finger-piece carried by said swinging frame and extending in front of the machine for swinging it, whereby the margin and line stops may be simultaneously thrown out of the path of the carriage-stop and means controlled by the longitudinal movement of the bar for sounding an alarm as the carriage approaches an end of the line.

20. In a type-writing machine, the combination of a carriage, a stop on said carriage, a frame movably mounted on the frame of the machine, a bar movably mounted in said movable frame, a stop carried by said bar and projecting normally in the path of the carriage-stop, and hand-operated means for moving said movable frame to move the said stop out of the path of the carriage-stop.

21. In a type-writing machine, the combination of a carriage, a stop on said carriage, a frame movably mounted on the frame of the machine, a longitudinally-movable bar carried by said movable frame, a stop carried by said bar and projecting normally in the path of the carriage-stop, and hand-operated means for moving said movable frame to throw the stop carried thereby out of the path of the carriage-stop.

22. In a type-writing machine, the combination of a carriage, a stop on said carriage, a frame movably mounted on the frame of the machine, a bar movably mounted on said movable frame, a stop carried by said bar and projecting normally in the path of the carriage-stop, and adapted when moved by said carriage-stop in one direction to move said bar, but to yield without moving said bar to permit the carriage-stop to pass it freely in the other direction, and hand-operated means for moving said movable frame to throw said stop out of the path of the carriage-stop.

824,158. **MULTICOLOROUS WOVEN FABRIC.** JAN SZCZEPANIK, Vienna, Austria-Hungary, assignor to Société des Inventions Jan. Szczepanik & Cie., Vienna, Austria-Hungary, a Firm. Filed Oct. 11, 1901. Serial No. 78,381.

Claim.—1. A colored fabric in which the threads in one direction are of the primary colors only and transverse white, to produce designs simulating natural colors, substantially as described.

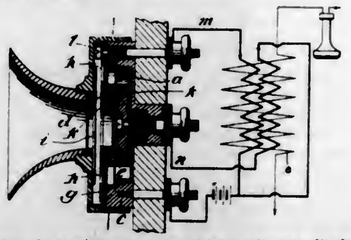
2. A colored fabric in which the threads in one direction are of primary colors only, together with transverse white threads to produce high light and black threads to produce shadows, substantially as described.

3. A colored fabric in which the warp-threads are arranged in sets of three, each thread of a set being of a different primary color, and white weft-threads to produce designs simulating natural colors.

4. A colored fabric in which the warp-threads are arranged in sets of three, each thread of a set being of a different primary color, and weft-threads of white to produce high lights and black to produce shadows, substantially as described.

5. A multicolored fabric having continuous threads in one direction of primary colors and transverse threads, the primary-colored threads being arranged above the transverse thread to place the colors in juxtaposition to produce the designs in colors simulating natural color effects, including the mixed colors.

824,159. **MICROPHONE.** FRANZ TREYER, Zurich, Switzerland, assignor to Johann Caspar Ryf, Zurich, Switzerland. Filed Oct. 3, 1905. Serial No. 281,115.



Claim.—1. A microphone comprising a vibratory diaphragm, a ring and a disk between which said diaphragm is arranged, an insulated support for said ring provided with antivibratory perforations, and loose contact material interposed between the diaphragm and said ring and disk.

2. A microphone comprising a vibratory diaphragm, two conducting members between which said diaphragm is mounted, loose contact material between the diaphragm and said conducting members, and a support on which the conducting member nearest to the speaking end of the microphone is mounted, said support being provided with antivibratory perforations.

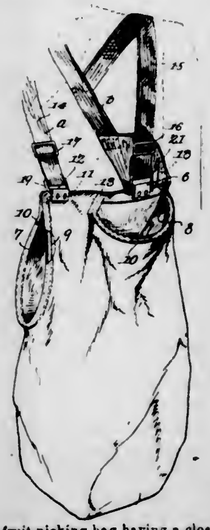
3. A microphone comprising a vibratory diaphragm, two conducting members between which said diaphragm is arranged, said members being provided with recesses on their opposing faces, loose contact material located within said recesses and engaging the diaphragm, and a support for that conducting member which is nearest the speaking end of the microphone, said support being provided with antivibratory perforations.

4. A microphone comprising a vibratory diaphragm, a disk-like conducting member on one side of said diaphragm, a centrally-apertured conducting member on the other side of the diaphragm so that the sound-waves may reach the central portion of the diaphragm through said opening of the conducting member, and loose contact material between the diaphragm and said conducting members.

5. A microphone comprising a vibratory diaphragm, a ring-like conducting member located on the sound-receiving side of the diaphragm and so arranged that the sound-waves passing through the aperture of the said conducting member will reach the central portion of the diaphragm directly, another conducting member located on the other side of the diaphragm, and loose contact material located between the diaphragm and the conducting members at a greater distance from the center of the diaphragm than the outer portion of said opening in one of the conducting members.

6. A microphone comprising a vibratory diaphragm, a conducting member located on the sound-receiving side of the diaphragm and provided with a central aperture through which the sound-waves may reach the adjacent central portion of the diaphragm directly, and loose contact material located between the diaphragm and said conducting member at a greater distance from the center of the diaphragm than the outer portion of said opening.

824,160. **FRUIT-PICKING BAG.** JAMES UTTERBACK, Honeoye Falls, N. Y., assignor of one-half to Forrest H. Utterback, Honeoye Falls, N. Y. Filed Nov. 14, 1905. Serial No. 287,306.



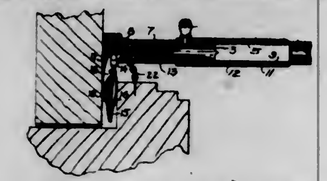
Claim.—1. A fruit-picking bag having a closed top and a pair of mouths one of which is disposed at the front and the other at one side of the bag.

2. A fruit-picking bag having a closed top, an open bottom and means for closing the same, and a pair of mouths one of which is disposed in front and the other at one side of the bag.

3. A fruit-picking bag having a pair of mouths arranged one in front and one at the side of the upper portion thereof, and means for holding the mouths open and permitting them to yield to pressure.

4. A fruit-picking bag having a closed top, a pair of mouths one of which is disposed at the side and the other at the front of the upper portion thereof, keepers combined with the upper portion of the bag, and suspenders secured to the keepers.

824,161. **DETONATING BURGLAR-ALARM.** LAWRENCE W. WADE, Tacoma, Wash. Filed Nov. 25, 1904. Serial No. 234,230.



Claim.—1. In a detonating burglar-alarm, a tube having a slot therein adapted to admit a cartridge into said tube, and means adapted to close said slot when the alarm is set.

2. In a detonating burglar-alarm, a tube having a slot therein adapted to admit a cartridge into said tube, and means sliding on said tube adapted to close said slot when the alarm is set.

3. In a detonating burglar-alarm, a tube having a slot therein adapted to admit a cartridge into said tube, means for firing the cartridge, and means secured to said firing means and adapted to close said slot when the alarm is set.

4. In a detonating burglar-alarm, a tube having a slot therein adapted to admit a cartridge into said tube, means sliding into said tube for firing the cartridge, and means secured to said firing means and adapted to slide on said tube and to close said slot when the alarm is set.

5. In a detonating burglar-alarm, a main tube having a slot therein adapted to admit a cartridge into said tube, and an outer tube sliding on said main tube and having a slot therein adapted to register with the slot in said main tube to admit a cartridge therethrough when the alarm is not set but being out of register therewith when the alarm is set.

6. In a detonating burglar-alarm, a main tube having a slot therein adapted to admit a cartridge into said tube, means for firing the cartridge, and an outer tube secured to said firing means and having a slot therein adapted to register with the slot in said main tube to admit a cartridge therethrough when the alarm is not set but being out of register therewith when the alarm is set.

7. In a detonating burglar-alarm, supporting means adapted to be inserted between two adjacent bodies and extending from therebetween, a separate firing-tube having a lateral extension adapted to engage and be held by said supporting means, and a trigger mechanism within said lateral extension and engaging and being held by said supporting means and being adapted to be released by a slackening of said supporting means.

8. In a detonating burglar-alarm, a U-shaped supporting-spring adapted to be inserted between two adjacent bodies and extending from therebetween, a separate firing-tube having a lateral extension adapted to engage between and be held by the legs of said supporting-spring, and a trigger mechanism within said lateral extension and engaging and being held between the legs of said supporting-spring and being adapted to be released by the slackening of the pressure of said legs.

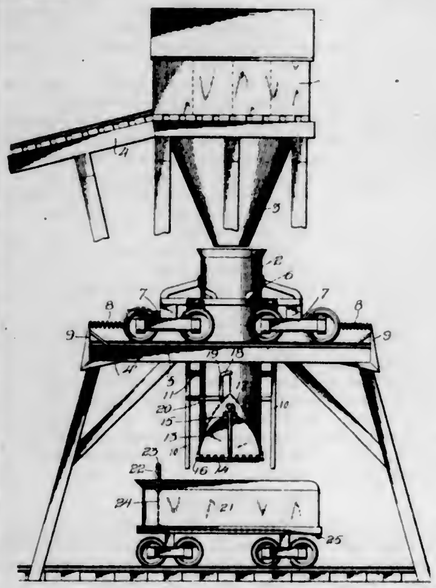
9. In a detonating burglar-alarm, a main tube containing a cartridge and spring-actuated means for firing the same, and an outer tube sliding on said main tube and extending beyond the end thereof when the cartridge is fired.

824,162. **LOADING APPARATUS.** CLARENCE M. WATSON, Wadsworth, Ohio. Filed Aug. 3, 1904. Serial No. 219,338.

Claim.—1. The combination with a framework, of a housing arranged upon the framework, a chute arranged beneath the housing, a support arranged beneath the chute, trucks arranged for movement upon said support, a receiver extending beneath the support, means connected with the receiver and the trucks for supporting the former, doors hingedly connected to the lower end of the receiver, and means for opening and closing the doors automatically.

2. The combination with a framework, of a housing arranged upon the framework, a chute arranged beneath the housing, a receiver supported beneath the chute, said receiver being capable of a bodily movement, doors connected to the lower end of the receiver, and means for opening and closing said doors automatically.

3. The combination with a framework, of a housing arranged upon the framework, a chute arranged beneath the housing, a receiver supported beneath the chute in direct alinement with the latter, said receiver being capable of a bodily movement, doors arranged at the lower end of the receiver, and means for opening and closing said doors.



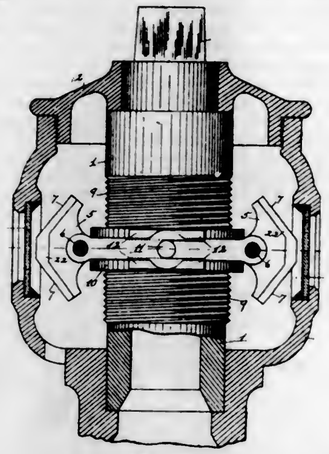
4. The combination with a framework, of a housing arranged upon the framework, a chute arranged beneath the housing, a support arranged beneath the chute, trucks arranged for movement upon said support, a receiver arranged beneath the chute, a connection between the receiver and the said trucks, a standard mounted at each end of said support, a flexible connection between each truck and each standard, trip-arms associated with the receiver, doors located at the lower end of the receiver, connections between the trip-arms and the doors, and means for tripping said arms to open and close said doors automatically.

5. The combination with a framework, of a housing arranged upon the framework, said housing having an inclined track leading thereto, a chute arranged beneath the housing, a receiver arranged beneath the chute, said receiver being mounted to permit of a bodily movement thereof, trip-arms associated with the receiver, doors located at the lower end of the receiver, and connections between the doors and the trip-arms, whereby the former may be opened and closed automatically.

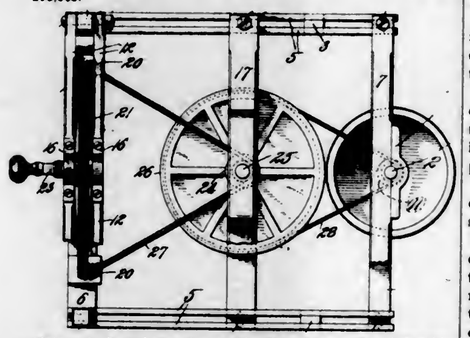
6. The combination with a framework, of a housing arranged upon the framework, said housing having an inclined track leading thereto, a chute arranged beneath the housing, a receiver supported beneath the chute, doors located at the lower end of the chute, trip-arms associated with the receiver, connections between the said trip-arms and the said doors, a tender, and means arranged with relation to the tender for contact with the trip-arms for opening the doors of the receiver automatically.

824,163. **VALVE-INDICATOR.** EDWIN H. WHITNEY, Waterford, N. Y., assignor to Eddy Valve Company, Waterford, N. Y. Filed Mar. 13, 1903. Serial No. 97,851.

Claim.—In a valve-indicator, the combination with a rotary valve-operating screw-threaded spindle; and a trunnion-nut thereon; of a stationary case inclosing said spindle and having oppositely-disposed apertured walls; a pair of indicating members separately pivotally mounted upon the case upon opposite sides of said spindle with their axes at right angles thereto and between said spindle and the respective apertured case-walls, and having slotted pivotal connection with the trunnions on said nut, said members having similarly-located surfaces bearing characters indicating the same position of the valve and movable by oscillation of said members, both in the same direction to and from a position opposite the respective apertures in the neighboring case-wall, substantially as described.



824,164. **CHURN.** JOHN W. WILLSON, Granite City, Ill., assignor of one-half to Elias Mott, Granite City, Ill. Filed Dec. 4, 1905. Serial No. 290,063.



Claim.—1. In a churn, the combination of supporting-legs, side bars supported by said legs, an agitator-supporting bar adjustably secured to said side bars, means for holding said bar in adjusted positions, an agitator supported by said adjustable bar, and gearing for driving said agitator, substantially as set forth.

2. In a churn, the combination of supporting-legs, horizontal side bars supported by said legs, forward horizontal cross-bars adjustably secured to said side bars, an agitator rotatably mounted in said cross-bars, rear horizontal cross-bars adjustably secured to said side bars, a pulley journaled in said rear cross-bars, a belt leading from said pulley to said agitator, and means for driving said pulley, substantially as set forth.

3. In a churn, the combination of supporting-legs, horizontal side bars supported by said legs, forward horizontal cross-bars adjustably secured to said side bars, an agitator rotatably mounted in said cross-bars, rear horizontal cross-bars adjustably secured to said side bars, a pulley journaled in said rear cross-bars, a belt leading from said pulley to said agitator, a second pulley fixed to said first-named pulley, vertically-adjustable bars secured to a pair of said posts, a pulley journaled in said last-named bars, and a belt connecting the two last-named pulleys, substantially as set forth.

824,165. **MAGAZINE-GUN.** PERCY W. WIBEWELL, Boston, Mass. Filed Dec. 1, 1905. Serial No. 289,779.

Claim.—1. A magazine-gun provided with a magazine extended forwardly of the breech of the gun and having its delivery end movably mounted and turned toward the muzzle of the gun whereby said delivery end may be moved into and out of line with the barrel.

2. In a breech-loading gun, a movably-mounted magazine extending forwardly of the breech and having its delivery end turned toward the muzzle of the gun, a movable breech-block, and means to move the delivery end of the magazine into line with the barrel when the breech-block is withdrawn.



3. In a gun, a movable breech-block, a magazine pivoted to the barrel forwardly of the breech-block and having its delivery end turned toward the muzzle of the gun, and means to move the delivery end of said magazine into line with the barrel when the breech-block is withdrawn.

4. In a gun, a movable breech-block, a movably-mounted magazine extending forwardly of the breech-block and having its delivery end situated to be brought into alinement with the barrel, and means to guide the magazine in its movement.

5. In a gun, a magazine pivoted near its outer end to the barrel of the gun, a spring acting normally to move the curved end of the magazine into position that a cartridge may be delivered therefrom into the barrel, and a breech-block to move the magazine in an opposite direction.

6. In a gun, a pivoted magazine, a spring to sustain the inner end of said magazine, and a breech-block tapered at its end to move said magazine in opposition to said spring.

7. In a gun, a magazine made as a tube pivoted near its front end to the barrel of the gun, and having its rear end turned forwardly toward the muzzle of the gun, means to move the free end of the magazine with its delivery end in line with the bore in the barrel of the gun, and a spring in said magazine to force the endmost cartridge of the magazine into the bore of the barrel.

8. In a gun, a barrel, a movable breech-block, a magazine pivoted to the barrel forwardly of the breech-block and having its delivery end curved toward the muzzle of the gun and automatically-operative means to move the magazine into position to deliver a cartridge to the barrel when the breech-block is withdrawn.

9. In a gun, a barrel, a movable breech-block, a magazine having its delivery end movable into and out of position to deliver a cartridge to the barrel, the movement of the magazine being controlled by the breech-block, and automatically-operative means to move the magazine into position when the breech-block is withdrawn.

10. In a gun, a barrel, a movable breech-block, a magazine pivoted on the barrel and having its delivery end curved toward the muzzle of the gun, and automatically-operative means to move the magazine into position to deliver a cartridge to the barrel when the breech-block is withdrawn.

824,166. **REVERSING-VALVE.** HENRY AIKEN, Pittsburg, Pa. Filed Apr. 21, 1904. Serial No. 204,211.

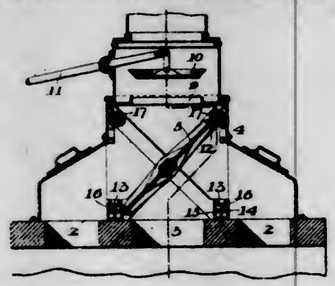
Claim.—1. A butterfly reversing-valve having a shiftable gravitating seat arranged to rest yieldingly upon and seal the edge of the valve and guides for the said seat; substantially as described.

2. A butterfly reversing-valve having two automatically-shiftable loosely-gravitating seats arranged to rest upon one edge of the valve, and two stationary seats arranged to engage the opposite edge of the valve and guides upon which the seats move in shifting; substantially as described.

3. The combination with a butterfly reversing-valve, of a seat therefor, formed by a loose, gravitating, roller, arranged to be moved by the valve in seating; substantially as described.

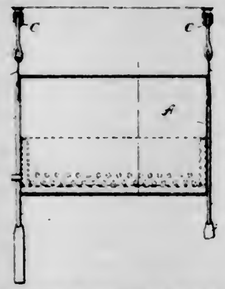
4. A butterfly reversing-valve having a shifting roller-seat, the

roller constituting such seat being arranged to be moved by contact with the edge of the valve in seating; substantially as described.



5. A reversing butterfly-valve having upper opposite rollers loosely mounted in the casing, the valve having convex upper edges arranged to shift the rollers which rest thereon by gravity when the valve is in closed position; substantially as described.

824,167. **APPARATUS FOR MAKING SOAP.** THEOPHILUS W. ALEXANDER and EDWARD F. HOLSTEEN, Burlington, Iowa. Filed Nov. 15, 1905. Serial No. 287,406.



Claim.—1. The combination with a soap-mold of a steaming-jacket having vertical inner and outer side walls connected near the top and bottom thereof, the space between which is empty and extends around the sides of the steaming-jacket forming a steam-chamber, said inner walls being perforated and covering snugly the sides of said soap-mold when in steaming position.

2. In an apparatus for making soap, the combination of a supporting-platform formed with open slots at its sides; a frame mounted thereon; rods having cross-bars pivotally secured thereto, said rods engaging in the slots in said platform and said cross-bars lying across said frame at its top; and locking means for said cross-bars, said locking means comprising rods which engage in the slots in said platform and are provided with cam-levers pivoted thereto.

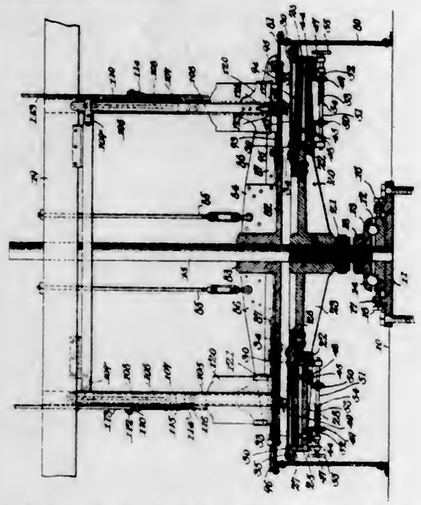
3. In an apparatus for making soap, the combination of a mold-frame and a support therefor formed with open slots in its sides, with means for locking said mold-frame upon said support, said means comprising coöperating rods hinged together, one member of each rod engaging in a slot in said support and the other members interlocking with each other across said mold-frame.

4. In an apparatus for making soap, the combination of a mold-frame and a support therefor with means for locking said mold-frame upon said support, said means comprising a pair of coöperating jointed rods, one member of each rod engaging said support and the other members interlocking with each other, one of said other members being formed with a cam-lug.

5. In an apparatus for making soap, the combination of a mold-frame; a support therefor slotted to receive locking means; and said locking means comprising coöperating jointed rods, one member of each rod engaging in the slots in said support and the other members interlocking with each other across the top of said mold-frame.

824,168. **SHINGLE-MACHINE.** DAVID F. BAKER, Dundee, Oreg. Filed Sept. 15, 1905. Serial No. 278,040.

Claim.—1. The combination with a block-feeding means, of a revoluble cutter-head, a plurality of cutting-blades carried thereby, a frame carried by the cutter-head at a point between each two blades, screws connected to the frame, and serving to effect vertical adjustment thereof, bevel-gears carried by the screws, a shaft having a pair of bevel-gears intermeshing with the gears of the screws, one of the gears of the shaft being loosely mounted to permit independent adjustment of one or other of said screws, and a block-supporting plate carried by said frame.



2. The combination with a block-feeding means, of a revoluble cutter-head, a plurality of cutting-blades carried thereby, an adjusting-plate carried by the cutter-head and forming a support for the block, said plate having a recessed end portion adjacent to the blade, and a segment arranged within the recess and adjustable to a position parallel with the edge of the cutting-blade.

3. The combination with a block-feeding means, of a cutter-head, a cutting-blade carried thereby, a vertically-adjustable frame carried by the cutter-head, a plate mounted on said frame and adjustable in the direction of its length toward and from the cutter-blade, said plate having a curved recess at the end nearest the blade, a segment arranged within the recess, and means for adjusting said segment to present the edge thereof into parallel relation with the edge of the cutting-blade.

4. The combination with a block-feeding means, of a revoluble cutter-head, a casing extending over the same and having an opening for the passage of the block, and a door movable over the opening and serving as a means for supporting the block during the preliminary adjustment of the latter and its attachment to the feeding means.

5. The combination with a cutter-head, of a slidable plate extending over the cutter-head and provided with a guide for adjusting the position of the block to be cut, and a block-feeding means, the plate being movable from under the block to permit the passage of the latter into contact with the cutter-head.

6. The combination with a cutter-head, of a casing having an opening for the passage of a block to be cut, a door movable over said opening, said door having a block-centering guide, and a feeding means arranged to engage with the block and force the latter through the opening after movement of the door to open position.

7. The combination with a cutter-head, of a casing having an opening for the passage of a block, a block-backing bar arranged below the casing, means for vertically adjusting the bar, and arms extending forwardly of the bar and secured to the casing.

8. The combination with a cutter-head, of a casing having an opening for the passage of a block, a backing-bar arranged below the casing, arms extending from the opposite ends of said bar and secured to the casing, a pair of brackets carried by the casing, screws extending from the upper ends of the bar through openings in the casing, and brackets, and nuts arranged on the screws at points between the casing and brackets, and serving to adjust said backing-bar.

9. The combination with a revoluble cutter-head, of a casing including a central disk having ribs radiating from the center of rotation of the cutter-head, extension-ribs secured to the radiating ribs, angle-bars secured to said extension-ribs, segmental plates secured to the angle-bars and provided with openings for the passage of blocks to be cut, and a cylindrical casing, the upper portion of which is connected to the segments; one of said segments, together with its attached portion of the cylindrical casing, being pivotally mounted and free to swing outward to expose the cutter-head.

10. The combination with a revoluble cutter-head, of a casing arranged above the cutter-head and having an opening for the passage of a block to be cut, a standard carried by the casing, a presser-bar guided by the standard, an adjustable stop carried by the bar and arranged to engage the standard, a slotted presser-foot carried by the bar, a block adjustable in the slot and having projecting spurs, a lever pivoted to said adjustable block and provided with an auxiliary tooth or spur, a cylinder, a piston therein, a piston-rod connected to the presser-bar, a fluid-pressure-supply pipe, and a valve arranged therein and serving to control the flow of the fluid to both ends of the cylinder.

824,169. **METALLIC CAR-ROOF.** ARGYLE CAMPBELL, Chicago, Ill., assignor to Enterprise Railway Equipment Company, Chicago, Ill., a Corporation of Illinois. Filed Oct. 30, 1905. Serial No. 285,082.



Claim.—1. In a metallic car, in combination with the sides and ends of the car; a plurality of carlines extending crosswise of the car between the sides, a flanged metallic ridge-pole running lengthwise of the car resting upon said carlines, metallic roof-plates extending from end to end of the car secured to said flanges of the ridge-pole and extending over the upper edges of the sides of the car, and an angular cover-plate secured over said roof-plates to said ridge-pole.

2. In a metallic car, in combination with the sides and ends of the car; a plurality of carlines extending crosswise of the car between the sides, a flanged metallic ridge-pole running lengthwise of the car resting upon said carlines, metallic roof-plates extending from end to end of the car secured to said flanges of the ridge-pole and extending over the upper edges of the sides of the car, an angular cover-plate secured over said roof-plates to said ridge-pole, and supporting members intermediate between the ridge-pole and the upper edges of the sides of the car resting upon the carlines and supporting the roof-plates.

3. In a device of the class described, in combination with the sides, ends and carlines of a car; a U-shaped ridge-pole resting upon said carlines with the base of the U adjacent to the carlines, flanges upon the upper edges of said U-shaped ridge-pole extending angularly therefrom toward the upper edges of the sides of the car, continuous metallic roof-plates resting upon each flange of the ridge-pole and the adjacent upper edge of the side of the car, an angular cover-plate over the edges of said roof-plates on said ridge-pole, and means for securing said cover-plate, the central edges of said roof-plates and the flanges of said ridge-pole together.

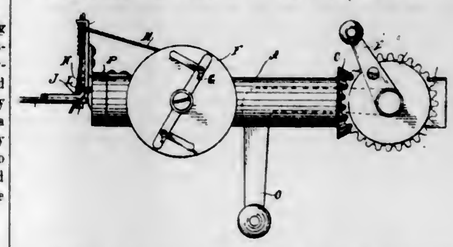
824,170. **METALLIC CAR-ROOF.** ARGYLE CAMPBELL, Chicago, Ill., assignor to Enterprise Railway Equipment Company, Chicago, Ill., a Corporation of Illinois. Filed Oct. 30, 1905. Serial No. 285,084.



Claim.—1. In a car, in combination with the sides and ends of a car; a ridge-pole in the form of an inverted U extending from end to end of the car, there being flanges upon the lower edges of the sides of said U, rafters or half-carlines resting upon said flanges on opposite sides of the ridge-pole, means for securing the inner ends of said rafters to said ridge-pole and means for securing the outer ends of said rafters to the sides of the car.

2. In a car, in combination with the sides and ends of a car; a central ridge-pole extending from end to end of the car, the same being in the form of an inverted U and having flanges extending from its lower edges, rafters or half-carlines resting upon the flanges of said ridge-pole rigidly connected to said ridge-pole and to the sides of the car, and roof-plates extending from end to end of the car and from the middle of the roof to the side thereof resting upon said ridge-pole and carlines, a cover-plate over the joint between said plates upon the ridge-pole, and means for securing said cover-plate and roof plates in position.

824,171. **WIRE-WRAPPING MACHINE.** ALEXANDER G. CRAMPLIN, Grand Rapids, Mich., assignor of one-half to Frank A. Smith, Grand Rapids, Mich. Filed Mar. 15, 1905. Serial No. 250,292.



Claim.—1. In a wire-wrapping device, a central wire-contacting core, a revoluble shell surrounding such core, both core and shell provided with a longitudinal wire-receiving slot extending the entire length of the device, means for revolving the shell upon the core, means carried by the shell for supplying wrapping material and for leading the same to the wire, a pressure-foot carried by the revoluble shell, parallel with the wire, for preventing the material from winding upon itself, and a projection carried by the pressure-foot extending transversely to the wire and making contact with the wrapping material at a point behind the point of applying the wrapping material to the wire, whereby the wrapping material is wound spirally upon the wire and the device is automatically fed along the wire.

2. In a wire-wrapping device, a central wire-contacting core, a revoluble shell surrounding such core, both core and shell provided with a longitudinal wire-receiving slot, means for revolving the shell upon the core, means carried by the shell for supplying wrapping material and for leading the same to the wire, a pressure-foot carried by the revoluble shell, parallel with the wire, for preventing the material from winding upon itself, and a projection carried by the pressure-foot extending transversely to the wire and making contact with the wrapping material at a point behind the point of applying the wrapping material to the wire, whereby the wrapping material is wound spirally upon the wire and the device is automatically fed along the wire.

3. In a wire-wrapping device, a central wire-contacting core having at one end an annular enlargement forming a retaining-shoulder, and having at the other end a projection forming a threaded bolt, a removable and revoluble shell surrounding said core, a retaining-nut upon such bolt projection, said shell provided with a longitudinal wire-receiving slot extending from one side approximately to the center of core, shell and nut, means for revolving the shell upon the core, means carried by the revoluble shell for supplying wrapping material, and means for guiding the wrapping material to the wire.

4. In a wire-wrapping device, a central wire-contacting core, a revoluble shell surrounding such core, both core and shell provided with a longitudinal wire-receiving slot extending the entire length of the device, means for revolving the shell upon the core, means carried by the shell for supplying wrapping material and for leading the same to the wire, a spring-actuated pressure-foot carried by the revoluble shell, resting upon the material which has been wound and extending over the point of winding, and a projection carried by the pressure-foot transverse to the wire, making contact with the wrapping material which has been wound and automatically feeding the device along the wire.

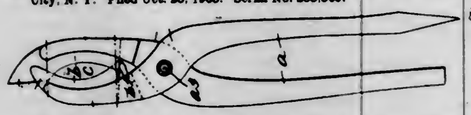
5. In a wire-wrapping device, a central wire-contacting core, a revoluble shell surrounding such core, both core and shell provided with a longitudinal wire-receiving slot extending the entire length of the device, means for revolving the shell upon the core, a reel-support carried by such revoluble shell, opposing reels mounted upon opposite ends of such support carrying each a separate supply of wire-wrapping material and counterbalancing each other, means for leading the wrapping material to the wire, a pressure-foot carried by the revoluble shell and parallel to the wire, and means whereby the winding of the wrapping material automatically feeds the device along the wire.

6. In a wire-wrapping device, a central wire-contacting core, a revoluble shell surrounding such core, both core and shell provided with a longitudinal wire-receiving slot extending the entire length of the device, means for revolving the shell upon the core, means carried by the shell for supplying wrapping material, a plate carried by the revoluble shell and provided with an eye for receiving and leading the wrapping material, means for adjusting such plate upon the

shell to and from the wire, and means whereby the winding of the wrapping material automatically feeds the device along the wire.

7. In a wire-wrapping device, a central wire-contacting core, a revoluble shell surrounding such core, both core and shell provided with a longitudinal wire-receiving slot extending the entire length of the device, means for revolving the shell upon the core, means carried by the shell for supplying wrapping material, a plate carried by the revoluble shell and provided with an eye for receiving and leading the wrapping material, a spring-actuated pressure-foot slidably attached to said plate, an eye in said pressure-foot for leading the wrapping material, and a projection making constant edge contact with the coil of material wrapped upon the wire, whereby said material is spirally wound and the device is automatically fed along the wire.

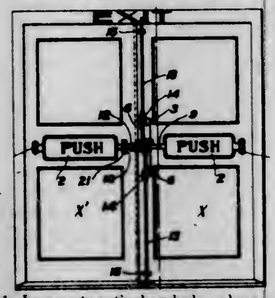
824,172. INSULATION-CUTTER. WILFRID CHAUSSÉ, Long Island City, N. Y. Filed Oct. 20, 1905. Serial No. 283,569.



Claim.—1. A device of the class described, comprising a pair of handle members having crossed and pivotally-connected shanks, said shanks being provided with elongated jaws, and blades secured in said jaws, the cutting edges of said blades being longitudinally concave so as to form heel and toe portions which interlock when said blades are forced together, substantially as shown and described.

2. A device of the class described, comprising a pair of handle members having crossed and pivotally-connected shanks, said shanks being provided with elongated jaws, and blades secured in said jaws, the cutting edges of said blades being longitudinally concave so as to form heel and toe portions which interlock when said blades are forced together, one of said blades being provided at its toe end with a projecting member, substantially as shown and described.

824,173. EMERGENCY EXIT-DOOR LOCK. HUGH E. CLARK, Rochester, N. Y. Filed Dec. 9, 1905. Serial No. 291,162.



Claim.—1. In an automatic door-lock, a door; a horizontally-movable part, hinged to the door; a guide-plate on said door, having a horizontal slot for the free end of said horizontally-movable part; an operating-lever pivotally supported upon said door, having a slot spanning the free end of said horizontally-movable part; a bolt on said door adapted to be operated by said lever; a socket in the door-casing adapted to be engaged by said bolt; and automatic means upon said door for locking said horizontally-movable part when at the inner end of the horizontal slot in said guide-plate, whereby said bolt is locked in its retracted position.

2. In an automatic door-lock, a door; a horizontally-movable part, hinged to the door; a guide-plate on said door, having a horizontal slot for the free end of said horizontally-movable part; an operating-lever pivotally supported upon said door, having a slot spanning the free end of said horizontally-movable part; a bolt on said door adapted to be operated by said lever; a socket in the door-casing adapted to be engaged by said bolt; and a latch pivoted upon the door and adapted to engage said horizontally-movable part when at the inner end of the horizontal slot in said guide-plate.

3. In an automatic door-lock, a pair of swinging, meeting doors; a plate hinged to each door, each plate being adapted to move horizontally to and from its door, and one of said plates having a projecting rod, and the other a socket adapted to contain the end of said rod when said doors are closed together; a guide-plate upon that door that carries the rod, having a horizontal slot for said rod; an operating-lever upon the same door, adapted to be engaged by said rod; a bolt on said door, adapted to be operated by said lever; and a socket in the door-casing, adapted to be engaged by said bolt.

4. In an automatic door-lock, a pair of swinging, meeting doors; a plate hinged to each door, each plate being adapted to move horizontally to and from its door, and one of said plates having a projecting rod, and the other a socket open on its outer side so as to receive said rod when the rod-carrying door is closed after the other door; a guide-plate upon that door that carries the rod, having a horizontal slot for said rod; an operating-lever upon the same door, adapted to be engaged by said rod; a bolt on said door, adapted to be operated by said lever; and a socket in the door-casing, adapted to be engaged by said bolt.

824,174. HAND-PROTECTING DEVICE. ROBERT M. CLARK and FANNIE E. CLARK, Newton, Mass. Filed July 14, 1905. Serial No. 269,581.



Claim.—1. A device or hand-guard of the character specified comprising a hollow shell of some light, stiff material forming inside the same a chamber in which the hand is adapted to be contained and have freedom of movement in any part or portion thereof and a hole or opening in said guard for admitting the hand.

2. A device or hand-guard of the character specified comprising a hollow shell of some light, stiff material, forming inside the same a chamber of relatively large capacity in which the hand is adapted to be contained and have freedom of movement in any part or portion thereof, a hole or opening in said guard for admitting the hand, and perforations or openings also therein through which air may enter the guard and freely circulate inside the same.

3. A device or hand-guard of the character specified comprising a hollow shell of some thin, hard material, forming inside the same a chamber in which the hand is adapted to be contained, and means by which said guard may be secured to the sleeve of the wearer.

4. A device or hand-guard of the character specified comprising a hollow shell of some thin, hard material, forming inside the same a chamber in which the hand is adapted to be contained, a hole or opening in said guard for admitting the hand, and a cuff of cloth or other flexible material secured to said guard about the hole or opening therein by means of which cuff the guard may be secured to the sleeve of the wearer.

824,175. MAIL-BAG CRANE. JAMES COLE, Superior, Wis. Filed May 26, 1905. Serial No. 262,393.

Claim.—1. A mail-bag crane comprising a post, bag-holding arms projecting laterally therefrom, means for automatically withdrawing said arms when the bag is disengaged therefrom, and means for reversing the direction in which said arms project, whereby they may be alternatively used in connection with trains traveling on adjacent tracks.

2. In a mail-bag crane, a base, a vertical post revolubly secured in said base, a foot on said post arranged within a chamber in said base, and a supporting member for said foot having a bearing of limited area therefor, and an adjacent incline for rotating said post when disengaged from said bearing.

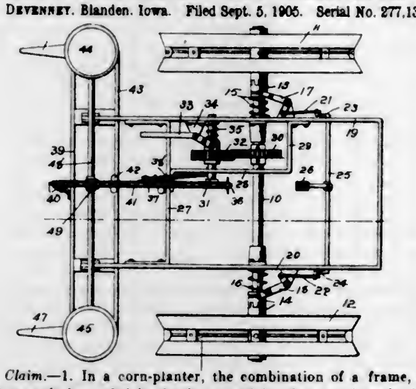
3. In a mail-bag crane, the combination of a chambered base, a vertical post revolubly secured in said base, a foot for said post within the chamber in the base and having a narrow under face, and a support for said foot within said chamber comprising upwardly-tapering lugs having a limited flattened area at their upper ends for supporting the narrow under face of said foot, whereby the descent of said foot when disengaged from said flattened area will cause a partial rotation of the post.

4. A mail-bag crane comprising a revoluble post, a foot at the lower end thereof, a support for said foot having an inclined face for causing a partial rotation of the foot and post, a base in which said post is journaled, a lever pivotally connected to said post, and an annular flange on said base forming a fulcrum for said lever in different points of rotary adjustment about the axis of said post.

5. A mail-bag crane comprising the base B, the vertical post journaled therein, the foot C at the lower end of said post, and the coöperating cam-supporting member D, the annular flange *h* at the upper end of said base and the lever G pivoted to said post and fulcrumed upon said flange, substantially as and for the purpose set forth.



824,176. CORN-PLANTER. JOHN F. DEVENNEY and NEAL P. DEVENNEY, Blanden, Iowa. Filed Sept. 5, 1905. Serial No. 277,132.



Claim.—1. In a corn-planter, the combination of a frame, a shaft or axle journaled in the frame and bearing traction-wheels, dropping mechanism, a forked lever connected with the dropping mechanism, a shaft bearing a sprocket-wheel, a second sprocket-wheel, a sprocket-belt arranged on said sprocket-wheels and having lugs for actuating the forked lever, a gear-wheel mounted on the shaft or axle, a gear-wheel feathered on the shaft bearing the sprocket-wheel, a spring normally holding the latter gear-wheel in mesh with the first-mentioned gear-wheel, and means for moving the second-mentioned gear-wheel out of mesh with the first-mentioned gear-wheel.

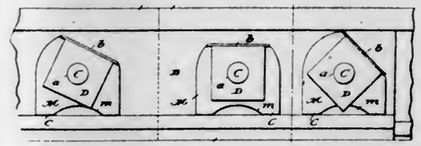
2. In a corn-planter, the combination of a frame, a shaft or axle journaled in the frame and bearing traction-wheels, dropping mechanism, a forked lever connected with the dropping mechanism, a shaft bearing a sprocket-wheel, a second sprocket-wheel, a sprocket-belt arranged on said sprocket-wheels and having lugs for actuating the forked lever, a gear-wheel, a gear-wheel feathered on the shaft bearing the sprocket-wheel, a spring normally holding the latter gear-wheel in mesh with the first-mentioned gear-wheel, means for moving the second-mentioned gear-wheel out of mesh with the first-mentioned gear-wheel, an arm pivotally connected to the frame and bearing a sprocket-idler arranged to engage the sprocket-belt, and a spring operating on said arm to hold the idler against the sprocket-belt.

3. In a corn-planter, the combination of a frame, a driving shaft or axle, traction-wheels thereon, sliding means on the driving shaft or axle for maintaining the traction-wheels rigidly thereto, a foot-lever for operating the said sliding means, a gear on the driving shaft or axle, an auxiliary shaft bearing a sprocket-wheel, a second sprocket-wheel, dropping mechanism, a forked lever connected with said dropping mechanism, a sprocket-belt arranged on the sprocket-wheels and having lugs for actuating the forked lever, a gear-wheel feathered on the auxiliary shaft, a spring normally holding said gear-wheel in mesh with the gear-wheel on the driving shaft or axle, and means for moving the gear-wheel on the auxiliary shaft out of mesh with the other gear-wheel.

4. In a corn-planter, the combination of a frame, traction-wheels, a dropping mechanism, a forked lever connected therewith, a belt having means at intervals for actuating the forked lever, a driving connection intermediate the traction-wheels and the belt, means for separating said driving connection from the traction-wheels, and means for separating the belt from the driving connection.

5. In a corn-planter, the combination of a frame, traction-wheels, a dropping mechanism, a forked lever connected therewith, a belt having means at intervals for actuating the forked lever, a driving connection intermediate the traction-wheels and the belt, means for separating said driving connection from the traction-wheels, means for separating the belt from the driving connection, an arm pivoted to the frame and bearing an idler-wheel arranged in engagement with the belt, and a spring operating on the arm to hold the idler-wheel against the belt.

824,177. NUT-LOCK. JAMES W. GILBERT, Birmingham, Ala. Filed June 2, 1905. Serial No. 263,452.



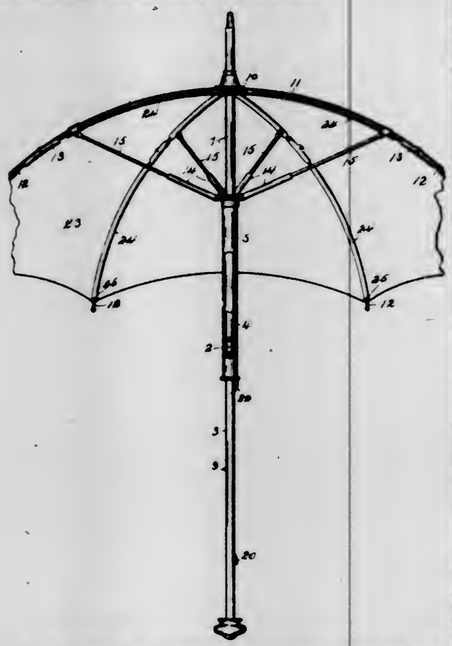
Claim.—In a nut-lock, the combination of a T-rail, a fish-plate arranged against the web and between the base and the head of the rail, and having a base-flange, a bolt extending through the web of the rail and the fish-plate, a nut-locking washer of the bendable type having a central aperture receiving the bolt, an upper portion the edge of which describes a semicircle, a lower portion the lower edge of which is horizontal and bears against the flange of the fish-plate, and a recess *m* in said lower edge and arranged concentric with the said upper edge; the said washer corresponding in height to the distance between the upper side of the flange of the fish-plate and the upper edge of said fish-plate, and a nut turned up on the bolt and against the washer; the said nut being of such a size that the distance between opposite corners thereof corresponds approximately to the distance between the upper side of the flange of the fish-plate and the upper edge of said plate.

824,178. UMBRELLA. PRIOR M. GUIOU and JAMES R. GUIOU, Kansas City, Mo., assignors of one-third to Thomas J. Stephens, Kansas City, Mo. Filed May 27, 1904. Serial No. 210,028.

Claim.—1. In an umbrella, the combination with a rod comprising a plurality of members hinged to each other at adjacent ends so as to be folded, of a locking device slidably mounted on the rod and adapted to be moved thereon so as to embrace the rod at each side of the hinged connection when the rod is extended, and a runner slidably mounted on the rod and encircling and movable longitudinally upon said locking device and provided with means for engaging and sliding said locking device lengthwise on the rod in either direction.

2. In an umbrella, the combination with a rod comprising a plurality of members hinged to each other at adjacent ends so as to be folded, of a sleeve slidably mounted on the rod and movable thereon to and from a position in which it will embrace the rod at each side

of the hinged connection when the rod is extended, and a runner slidably mounted on the rod and encircling and movable lengthwise upon the sleeve and provided with means for engaging and sliding said sleeve lengthwise on the rod in either direction.



3. In an umbrella, the combination with a rod comprising a plurality of members hinged to each other at adjacent ends so as to be folded, of a sleeve slidable lengthwise on the rod and movable to and from a position in which it will embrace the rod at both sides of the hinged connection, means for limiting the downward movement of the sleeve to stop the sleeve in a position covering said hinged ends of said members, and a runner slidable lengthwise on the rod and having a yielding arm for engaging and moving the sleeve in one direction and against said limiting means, and provided with means for engaging and sliding the sleeve lengthwise in the other direction.

4. In an umbrella, the combination with a rod comprising a plurality of members hinged at their adjacent ends, one member being provided with an abutment, of a sleeve slidable lengthwise on the rod and disposed when moved against said abutment so as to cover said hinged ends, and a tubular runner slidable lengthwise on said sleeve and on said rod and provided with yielding means for engaging and moving the sleeve to a position covering said hinged ends of said members and having means for moving the sleeve in the opposite direction.

5. In an umbrella, the combination with a rod comprising a plurality of members hinged at their adjacent ends one member having mounted thereon an abutment, of a sleeve slidable lengthwise on the rod and movable against and from said abutment, and when positioned against said abutment covering said hinged ends of said members, and also slidable to a position uncovering said hinged ends, and a tubular runner slidably mounted on said sleeve and said rod, and provided with a resilient releasable device for engaging and sliding the sleeve against said abutment when the runner is properly moved in one direction, the runner being provided with means for engaging and sliding the sleeve in the opposite direction when the runner is so moved.

6. In an umbrella, the combination with a rod comprising a plurality of members hinged together at adjacent ends, of a plurality of foldable ribs hinged to one of said members, a locking device slidable on the rod and movable to and from a position covering said hinged ends of said members, a runner slidable on said rod and provided with resilient arms for engaging and sliding said locking device lengthwise of the rod in one direction and provided with means for sliding the locking device in the opposite direction, and a plurality of stretchers pivotally connected to said runner and to said ribs.

7. In an umbrella, the combination with a rod comprising a plurality of members hinged together at their adjacent ends, of a plurality of foldable ribs hinged to one of said members, a sleeve slidably mounted on the rod and movable to and from a position covering the hinged ends of the said members, a tubular runner slidable lengthwise on the sleeve and on the rod and provided with yielding arms for sliding the sleeve in one direction, and having means for sliding the sleeve in the opposite direction, and a plurality of stretchers pivotally connected to the runner and to said ribs.

8. In an umbrella, the combination with a rod comprising a plurality of members hinged together at their adjacent ends and having on one member a notch and on one of the other members an abutment, of a plurality of foldable ribs hinged to said notch, a sleeve slidable on the rod between the notch and the abutment and when moved to a position against the abutment covering said hinged ends of said members, and uncovering said ends when moved against the notch, a tubular runner slidable on the sleeve and rod, and provided with yielding arms for engaging and sliding the sleeve against the abutment and having means for moving the sleeve in the opposite direction, and a plurality of stretchers hinged to said runner and to said ribs.

9. In an umbrella, the combination with a rod comprising a plurality of members hinged together at their adjacent ends, of a plurality of foldable ribs pivotally connected to one of said members, a sleeve slidable on said rod to and from a position covering the hinged ends of said members, a tubular runner slidable on the rod and encircling and slidable on the sleeve and provided with yielding means for sliding the sleeve in one direction and having means for engaging and sliding the sleeve in the opposite direction, a plurality of stretchers comprising each two members longitudinally movable with respect to each other, said stretcher members being pivotally connected respectively to the runner and to said foldable ribs, and a plurality of springs for normally forcing the outer stretcher members outwardly.

10. In an umbrella, the combination with a rod comprising a plurality of members hinged together at their adjacent ends, of a locking device for releasably locking said members in the extended position, a runner slidable lengthwise on said members, movable relative to and provided with yielding arms for engaging and moving said locking device to a position in which said members will be held extended, a plurality of foldable ribs connected to and movable relative to one of said members, and a plurality of stretchers connected to the runner and to the foldable ribs.

11. In an umbrella, the combination with a rod comprising a plurality of members hinged together at their adjacent ends, of a locking device for releasably locking said members in the extended position, a runner slidable lengthwise on said members, movable relative to and having yielding arms for engaging and moving said locking device to a position in which the locking device will hold said members extended, a plurality of foldable ribs pivoted to one of said members, and a plurality of lengthwise-extensible stretchers, provided with resilient means for normally extending said stretchers, the stretchers being connected respectively to the foldable ribs and the runner.

12. In an umbrella, the combination with a rod comprising a plurality of members hinged together at their adjacent ends, of a locking device for releasably locking said members in the extended position, a runner slidable on said members and controlling said locking device, a plurality of foldable ribs pivoted to one of said members, a plurality of stretchers comprising each two sections, one a tubular section pivoted at its inner end to the runner, the other section being longitudinally movable in the tubular section, and pivoted to an adjacent rib, and a plurality of springs disposed one in each tubular section and normally forcing outwardly the other section.

13. In an umbrella, the combination with the rod comprising a plurality of members hinged together at their adjacent ends, of means for releasably locking said members in the extended position, a runner longitudinally slidable on said members and controlling said locking means, a plurality of ribs each comprising two sections the inner of which is pivoted to the upper staff member, the two sections being hinged together, and a plurality of stretchers comprising each an inner tubular section and an outer section movable lengthwise therein, the inner section being pivoted to the runner, and the outer section being pivoted to the inner section of the adjacent rib, and a plurality of coil-springs mounted one within each inner section of the stretcher and bearing upon and normally forcing the adjacent outer section of the stretcher lengthwise outwardly.

14. In an umbrella, the combination with a rod, of a runner movable lengthwise thereon, a plurality of ribs comprising each two sections hinged together, the inner section being pivoted to the rod, and a plurality of stretchers each comprising a tubular inner section pivoted to the runner, an outer section pivoted to the inner section of the adjacent rib and slidable in the tubular inner section, and a coil-spring mounted in each tubular stretcher-section and normally forcing the outer stretcher-section outwardly in the tubular inner section.

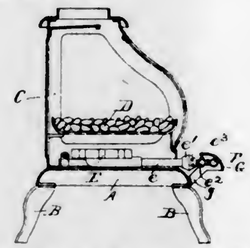
15. In an umbrella, the combination with a rod comprising a plurality of members hinged at their adjacent ends, one member having mounted thereon an abutment, of a sleeve slidable on the rod to and from said abutment and when positioned against the abutment covering the hinged ends of said members, a tubular runner slidably mounted on the sleeve and on the rod and provided with yielding means for engaging and sliding the sleeve against said abutment when the runner is moved in one direction, the runner having means for engaging and sliding the sleeve in the opposite direction when the runner is so moved, a plurality of foldable ribs pivoted to one of said members of the rod, a plurality of stretchers comprising each two sections, one a tubular section pivoted at its inner end to the runner, the other section being slidable longitudinally in the tubular section and pivoted to an adjacent rib, and a plurality of springs disposed one in each tubular section and normaly forcing outwardly the other section.

824,179. SNAP-HOOK. JOHN J. HAYES, Middletown, Conn. Filed Oct. 3, 1905. Serial No. 281,130.



Claim.—A snap-hook having a body with an eye at one end and a hook at the other end, a tongue movable longitudinally and transversely in the body, a spring thrusting the tongue forwardly, a spring thrusting the tongue outwardly, said tongue having a locking-shoulder that engages the front edge of the body when the tongue is forward, and a button by means of which the tongue may be pressed inwardly and drawn backwardly, substantially as specified.

824,180. GAS-STOVE. CHARLES H. HOFFSTETTER, Erie, Pa. Filed Aug. 15, 1905. Serial No. 274,313.



Claim.—1. In a gas-stove, the combination with the stove-body, a foot-rest arranged along the front of and supported by the body, a plurality of burners, a manifold arranged under and protected by the foot-rest, and connections between the manifold and the burners.

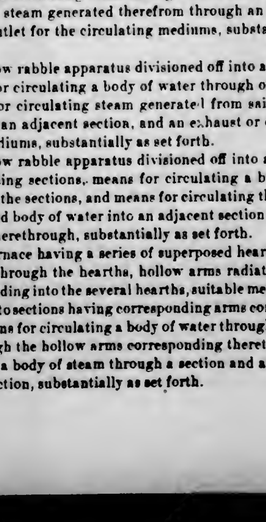
2. In a gas-stove, the combination with the stove-body, a foot-rest arranged along the front of and supported by the body, a plurality of burners, a manifold arranged under and protected by the foot-rest, connections between the manifold and the burners, valves in said connections, stems for said valves being between the body of the stove and the foot-rest.

3. In a gas-stove, the combination of the stove-body; the bracket *g* secured to the stove-body; a foot-rest G secured to the bracket; a manifold arranged under the foot-rest and secured in place between the brackt or arm *g* and the foot-rest as these parts are assembled.

4. In a stove, the combination of the stove-body; a plurality of burners arranged in the body; the bracket *g* secured to the body and extending therefrom and having the pocket g^3 therein; manifold F arranged in said pocket extending along the front of the stove; connections from the manifold with said burners; a foot-rest arranged over the manifold and acting with the brackets 4 securing the manifold in place; means for securing the foot-rest to the bracket.

5. In a gas-stove, the combination of the inclosed stove-body, a plurality of burners E, E, arranged in the body, pipes *e'*, *e'*, extending from the burners to the front of the body of the stove, mixers *e e*, connected with said pipes, and arranged outside the body, valves e^1, e^2, a manifold connected with said valves and extending along the front of the stove-body, a foot-rest G arranged over the manifold and secured to the body of the stove, the stems e^1, e^2 of the valves extending upwardly between the foot-rest and the body of the stove.

824,181. ROASTING-FURNACE. FRANK KLEPETKO, New York, N. Y. Filed Nov. 17, 1905. Serial No. 287,860.



Claim.—1. In a rabble apparatus, a hollow shaft and hollow arms therefor, means for circulating a liquid cooling medium through a section of the shaft and corresponding portion of the arms, and a vapor of such liquid through the remaining portions of the shaft and arms, substantially as set forth.

2. In a rabble apparatus, a hollow shaft and hollow arms therefor, means for circulating a body of water through a section of the shaft and corresponding portion of the arms, means for circulating steam generated therefrom through another section of the shaft and portion of the arms, and inlet means and outlet means for the circulating mediums, substantially as set forth.

3. In a furnace, a hollow rabble apparatus divided into distinct sections, means for circulating water through a portion of the sections, and steam generated therefrom through another portion, substantially as set forth.

4. In a furnace, a hollow rabble apparatus divided into distinct sections, means for establishing intercommunication between the several sections, means for circulating water through a portion of the sections and means for conducting the steam generated from said water into the remaining sections and circulating the same therethrough, substantially as set forth.

5. A hollow rabble apparatus divisioned off into a series of sections, means for circulating water through one of the sections, means for circulating steam generated therefrom through an adjacent section, and an outlet for the circulating mediums, substantially as set forth.

6. A hollow rabble apparatus divisioned off into a series of sections, means for circulating a body of water through one of the sections, means for circulating steam generated from said circulating body, through an adjacent section, and an exhaust or outlet for the circulating mediums, substantially as set forth.

7. A hollow rabble apparatus divisioned off into a series of intercommunicating sections, means for circulating a body of water through one of the sections, and means for circulating the steam generated from said body of water into an adjacent section and circulating the same therethrough, substantially as set forth.

8. In a furnace having a series of superposed hearths, a hollow shaft passing through the hearths, hollow arms radiating from the shaft and extending into the several hearths, suitable means for dividing the shaft into sections having corresponding arms communicating therewith, means for circulating a body of water through a given section and through the hollow arms corresponding thereto, and means for circulating a body of steam through a section and arms adjacent to the water-section, substantially as set forth.

9. In a furnace having a series of superposed hearths, a hollow shaft passing through the hearths, hollow arms radiating from the shaft and extending into the several hearths, means for dividing the shaft into intercommunicating sections having corresponding arms communicating therewith, means for circulating a body of water through an intermediate section and its arms, and means for conducting the steam generated from said body of water, into an adjacent section and its arms and circulating said steam therethrough, substantially as set forth.

10. In a rabble apparatus, a hollow shaft, series of hollow arms disposed along and radiating from the walls thereof, suitable partitions dividing off the shaft and arms into independent intercommunicating sections, means for circulating a body of water through the central section and its arms, and means for conducting the steam generated from said water into the sections and arms on either side of the middle section, and circulating said steam therethrough, substantially as set forth.

11. In a rabble apparatus, a hollow shaft and hollow arms therefor, the shaft being divided off into a central section closed at the bottom for retaining a body of water, and adjacent sections adapted to receive the steam generated from said body of water, and means for circulating the water and steam through their respective sections of the shaft and their corresponding arms, substantially as set forth.

12. In a rabble apparatus, a hollow shaft and hollow arms therefor, the shaft being divided off into a central section closed at the bottom for retaining a body of water, and adjacent sections on either side of the central section, pipes for conducting the steam out of said central section to the adjacent sections, and means for circulating the water and steam through their respective sections of the shaft and their corresponding arms, substantially as set forth.

13. In a furnace, a hollow rabble apparatus having distinct cooling mediums circulating through distinct portions of the apparatus; inlet means for said mediums, and a common outlet means, substantially as set forth.

14. In a furnace, a hollow rabble apparatus and means for circulating water through the hotter portions thereof, and steam through the comparatively cooler portions, substantially as set forth.

824,182. STAKE-PIN. FRANK KNOFF, Chicago, Ill., assignor of one-half to Charles H. Tryon, Chicago, Ill. Filed Sept. 30, 1905. Serial No. 280,539.

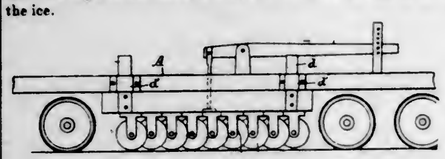


Claim.—1. A stake-pin provided with laterally and downwardly extending prongs near the top, arranged to be driven into the ground.

2. A stake-pin comprising a pin having a threaded part near the top and a plain stem above said part, a nut screwed on said threaded part and having laterally-exteading arms, and a swiveled ring mounted on the stem.

824,183. TRACK-CLEARER. WILLIAM B. KNOWLTON, Portland, Me. Filed Feb. 20, 1905. Serial No. 246,462.

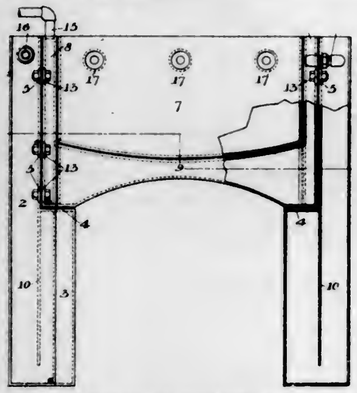
Claim.—1. In a track-clearer for removing ice, the combination of a car or other vehicle provided with a series of pivoted disks set at an acute angle to the line of motion of the car and adapted to roll on the ice.



2. In a track-clearer for removing ice, the combination of a car or other vehicle provided with a series of pivoted disks with thickened centers and sharpened edges set at an acute angle to the line of motion of the car and adapted to roll on the ice.

3. In a track-clearer for removing ice the combination of a car or other vehicle, a beam beneath said car, means for raising and lowering said beam and a series of disks pivoted on the under side of said beam and set at an acute angle with the line of motion of the car and adapted to roll on the ice.

824,184. WATER-COOLED DOOR-FRAME FOR FURNACES. LUTHER L. KNOX, Pittsburg, Pa., assignor of one-fourth to Mont Murray and one-fourth to H. B. Weiskopf, Pittsburg, Pa. Filed May 23, 1904. Serial No. 209,198.



Claim.—1. A water-cooled door-frame having hollow water-cooled legs with closed lower ends, a removable water-cooled lintel detachably secured between the legs and water-circulating connections between the lintel and the legs whereby said legs connect through the lintel; substantially as described.

2. A door-frame having a hollow top portion with hollow depending legs, a hollow lintel extending across the top of the opening between the legs, and connections for circulating water through the lintel and the door-frame; substantially as described.

3. A water-cooled door-frame having depending hollow legs with closed lower ends, at least one of said legs having a baffle arranged to give a return pass to the water, and a removable hollow lintel secured to the frame and having connections arranged to circulate the water from one leg through said lintel to the other leg; substantially as described.

4. A door-frame having a hollow transverse top portion and hollow depending legs, a hollow lintel extending across the openiog below the upper part of the frame, and water connections between the lintel and the frame to provide circulation through both of said parts; substantially as described.

5. A door-frame having a hollow water-cooled lintel with a curved or inclined roof to prevent the formation of a steam-pocket therein; substantially as described

6. A door-frame having a removable hollow lintel with a curved or inclined roof and open-topped side legs, and means for circulating water therethrough; substantially as described.

7. A hollow water-cooled door-frame and a hollow removable lintel having hollow side legs forming a part thereof, said parts being secured together by forwardly-projecting lugs; substantially as described.

8. A hollow water-cooled door-frame with an open top, and a hollow water-cooled lintel removably secured thereto, having open-topped side legs; substantially as described.

9. A hollow water-cooled door-frame with an open top, and a hollow water-cooled lintel removably secured thereto having open-topped side legs, and water connections between the door and lintel to provide for a continuous water circulation through both parts; substantially as described.

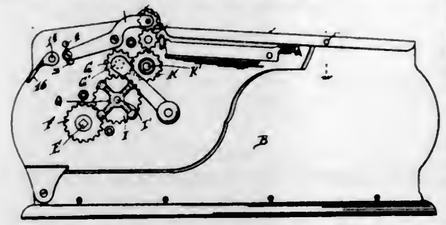
10. A hollow water-cooled door-frame having an open top, and a hollow water-cooled lintel removably secured at the upper part of the frame-opening; substantially as described.

11. A hollow water-cooled door-frame having hollow legs with longitudinal inner baffles projecting from the wall, whereby the water contacts with the walls of the legs in both the up and down portion of the circuit; substantially as described.

12. A hollow water-cooled door-frame having hollow legs with vertically-extending baffles therein said baffles being integral with and projecting from the walls to cause the water to contact with said walls in both the up and down pass; substantially as described.

13. A hollow water-cooled door-frame having hollow legs with vertically-extending baffles therein, a removable hollow lintel, and water connections between the inner parts of the frame-legs, the lintel, and the hollow frame-body; substantially as described.

824,185. AUTOGRAPHIC REGISTER. ALBERT KRAUTH, Hamilton, Ohio. Filed Aug. 21, 1905. Serial No. 275,045.



Claim.—1. In an autographic register, a writing-table, a pair of delivery-rolls, a series of strips of paper adapted to be fed over the writing-table and between the delivery-rolls, a record-roll, one of said strips of paper secured to said record-roll, transmission-gearing for said record-roll, transmission-gearing for said delivery-rolls, main transmission-gearing interposed between the transmission-gearing of the record-roll and delivery-rolls respectively, and means for throwing into driving engagement the main transmission-gearing with either the record-roll transmission-gearing or the delivery-rolls transmission-gearing, substantially as described.

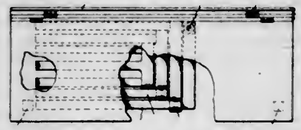
2. In an automatic register, a writing-table, a record-roll, a record-strip of paper adapted to be fed over said table upon said record-roll, transmission mechanism adapted to be brought into driving engagement with said record-roll, delivery-rolls held in tensional contact with each other, between which said record-strip is fed, one or more strips of paper additional to the record-strip adapted to be fed over the writing-table and between the delivery-rolls, and means for throwing said transmission mechanism out of driving engagement with said record-roll and into driving engagement with said delivery-roll, substantially as described.

3. In an autographic register, a writing-table, a record-roll, a record-strip of paper adapted to be fed over said table upon said record-roll, transmission mechanism adapted to be brought into driving engagement with said record-roll, delivery-rolls held in tensional contact with each other, between which said record-strip is fed, one or more strips of paper additional to the record-strip adapted to be fed over the writing-table and between the delivery-rolls, means for throwing said transmission mechanism out of driving engagement with said record-roll and into driving engagement with said delivery roll, and means for locking said transmission mechanism in its respective driving positions, substantially as described.

4. In an autographic register, a writing-table, a pair of delivery-rolls held in tensional contact with each other, a series of strips of paper adapted to be fed over the writing-table and between the delivery-rolls, a record-roll detachably supported, one of said strips of paper secured to said record-roll, transmission-gearing for said record-roll, transmission-gearing for said delivery-rolls, main transmission mechanism, and means for throwing into driving engagement the main transmission mechanism with either the record-roll transmission-gearing or the delivery-rolls transmission-gearing, substantially as described.

5. In an autographic register, a writing-table, a record-roll, a record-strip of paper adapted to be fed over said table upon said record-roll, transmission mechanism adapted to be brought into driving engagement with said record-roll, delivery-rolls held in tensional contact with each other, means for separating said delivery-rolls, said record-strip adapted to be fed between said delivery-rolls, one or more strips of paper additional to the record-strip, adapted to be fed over the writiug-table and between the delivery-rolls, and means for throwing said transmission mechanism out of driving engagement with said record-roll and into driving engagement with said delivery-rolls, substantially as described.

824,186. FOLDING EXTENSION-TABLE. CATHERINE M. LANGHORNE, Plainfield, N. J. Filed Nov. 9, 1905. Serial No. 286,475.

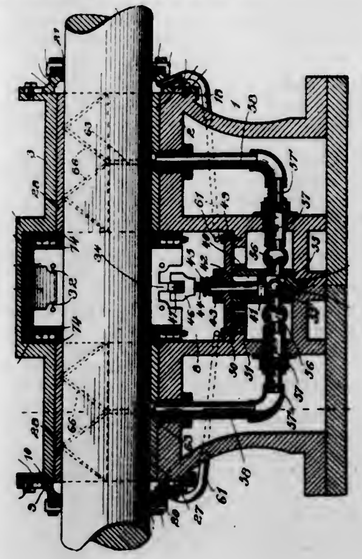


Claim.—1. In an extension-table, the combination with a fixed top and legs fixed thereto, of folding leaves hinged together and to said top, and longitudinally-telescoping leaf-supports adapted to be extended in line and support said leaves, two legs attached to and supporting each of said leaf-supports, the inner leaf-support having pivotal attachment with one of its legs, which leg is rigidly fixed to and adapted to also support the fixed top, whereby the set of leaf-supports may be turned lengthwise of the fixed top and be stowed beneath the same.

2. In an extension-table, the combination with a fixed top and legs fixed thereto, of folding leaves hinged together and to said top and telescoping leaf-supports provided with legs and pivotally connected to one of the legs fixed to said top, whereby the set of leaf-supports may be turned lengthwise of the fixed top to stow beneath the same.

3. In an extension-table, the combination with a fixed top and legs fixed thereto, of folding leaves hinged together and to said top, and longitudinally-telescoping leaf-supports adapted to be extended in line and support said leaves, two legs attached to and supporting each of said leaf-supports, and the inner leaf-support having pivotal attachment to the said fixed top, whereby the set of leaf-supports may be turned lengthwise of the fixed top and be stowed beneath the same.

824,187. LUBRICATING DEVICE. WILLIAM B. LOWE, Marietta, Ga. Filed Dec. 19, 1904. Serial No. 237,519.



Claim.—1. In a lubricating device, the combination with a journal-box provided with an oil-chamber, of an eccentric element secured to the shaft in said journal-box, and constructed to take up the thrust on said shaft a cylinder and piston within said oil-chamber in said journal-box, said piston being arranged so as to be actuated by said eccentric element on said shaft, feed-oilways associated with said piston and arranged to lead oil from said cylinder to the lining of said journal-box, said lining being provided with oil-grooves arranged to receive oil from said feed-oilways, a stuffing-box provided with means for receiving the oil from said oil-grooves and return-oilways leading from said stuffing-box to said oil-chamber, substantially as described.

2. In a lubricating device, the combination with a journal-box provided with an oil-chamber, of a cylinder and piston located in said oil-chamber, means on the shaft in said journal-box arranged to actuate said piston, and to take up the thrust on the shaft, feed-oilways associated with said piston and arranged to lead oil from said cylinder to the lining of said journal-box, said lining being provided with oil-grooves arranged to receive oil from said feed-oilways, a stuffing-box on said journal-box provided with means for receiving the oil from said oil-grooves, return-oilways leading from said stuffing-box to said oil-chamber, and a filter arranged in said oil-chamber and disposed intermediate the entrance of the oil into said oil-chamber and the entrance of the oil into said cylinder, substantially as set forth.

3. In a lubricating device, the combination with a journal-box provided with an oil-chamber, of feed-oilways leading from said oil-chamber to the lining of said journal-box, means actuated by the shaft in said journal-box for forcing the oil from said oil-chamber into said feed-oilways, said feed-oilways entering said lining of the journal-box at a point under the shaft, said lining being provided with oil-grooves arranged to receive the oil from said feed-oilways and to lead the oil parallel to the axis of the shaft and to the upper portion of said lining above the shaft, and means for returning the oil from said lining to the said oil-chamber, substantially as set forth.

4. In a lubricating device, the combination with a journal-box provided with a lining, of means for forcing oil to said lining at a point below the shaft in said journal-box, said lining being provided with oil-grooves parallel to the axis of the shaft to receive the oil entering said lining, and provided with an oil-groove at right angles to the axis of the shaft, and provided with oblique oil-grooves, substantially as described.

5. In a lubricating device, the combination with a journal-box, of an oil-chamber located centrally in said box, a cylinder and piston arranged to force oil from said oil-chamber to the lining of said journal-box, an element secured to shaft constructed to actuate said piston and to take up the thrust on said shaft, substantially as described.

6. In a lubricating device, the combination with a journal-box, of an oil-chamber located within the journal-box and between the ends thereof, a cylinder and piston within said oil-chamber, means on said shaft for actuating said piston and means leading from said oil-chamber for leading the oil to the lining of said journal-box on each side of the said oil-chamber, substantially as described.

824,188. **REMOVABLE CAR FOR RAILWAYS, &c.** PHILIP J. MITTEN, Milwaukee, Wis., assignor of one-half to Edgar E. Warner, Milwaukee, Wis. Filed Sept. 25, 1905. Serial No. 279,932.

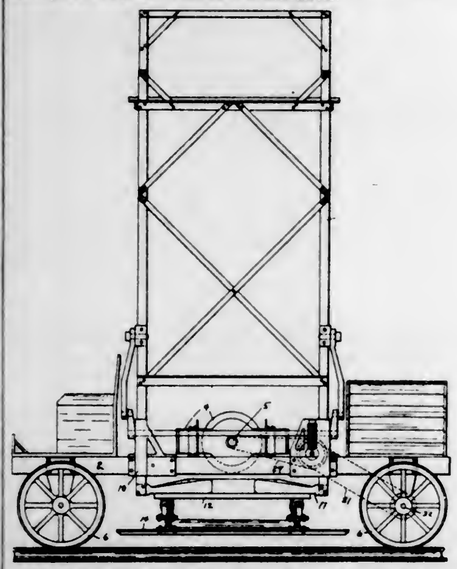
Claim.—1. In a vehicle of the described class, the combination with the vehicle-frame, of standards mounted in suitable guides thereon and adapted to be raised and lowered in said guides; a turn-table carried by said standards below the vehicle-frame; a support connected with said turn-table and adapted to receive the weight of the vehicle; and means for actuating said standards to raise and lower the support and to lift the vehicle from said support when the latter is lowered.

2. The combination with a vehicle, of a support carried thereby, means for depressing said support and lifting the vehicle therefrom and means for rotating the vehicle, when lifted, upon said support.

3. The combination with a motor-driven vehicle, of a turn-table carried by the vehicle underneath the main frame thereof; a track-engaging frame normally supported by the turn-table; means for depressing the track-engaging frame into contact with the track-rails; said means being adapted to also lift said vehicle and support the same from the turn-table together with motion-transmitting connections adapted to actuate the lifting means from the vehicle-motor.

4. The combination with a motor-driven vehicle, of a driving clutch member; motion-transmitting connections adapted to engage and drive the vehicle from said clutch member; a turn-table carried by the vehicle; devices for raising and lowering said turn-table; and means for actuating said devices from said driving clutch member.

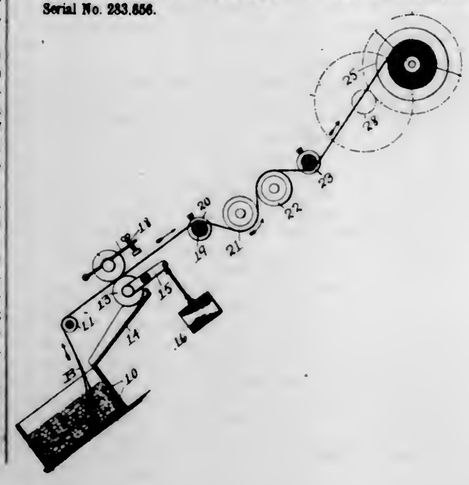
5. The combination with a motor-driven vehicle, of a vertically-movable turn-table carried thereby; a track-engaging frame normally supported by the turn-table; standards movably connecting the turn-table with the vehicle-frame; a crank-shaft provided with crank-arms having link connection with said standards; and means for actuating said crank-shaft from the vehicle-motor.



6. The combination with a vehicle, of a set of standards mounted in suitable guides on the vehicle-frame and adapted to be raised and lowered; a turn-table ring connected with the lower ends of said standards; a track-engaging frame means for supporting the same from the standards and rollers mounted upon the track-engaging frame and arranged to permit the rotation of the turn-table ring thereon; together with means for raising and lowering said standards.

7. In apparatus of the described class, the combination with a support, of a set of rollers mounted thereon; a turn-table ring adapted to rotate on said rollers; and brackets loosely connecting the support with turn-table, whereby both may be lifted together.

824,189. **TEXTILE BELTING AND METHOD OF PREPARING AND TREATING THE SAME.** GEORGE D. MOORE, Worcester, Mass., assignor to Multiple Woven Hose & Rubber Co., New York, N. Y., a Corporation of New York. Filed Aug. 6, 1900. Renewed Oct. 20, 1905. Serial No. 283,656.



Claim.—1. As an article of manufacture, a material for belting or other purposes having a textile body consisting of a number of superimposed plies permeated throughout with rosin-oil.

2. As an article of manufacture, a material for belting or other purposes comprising a textile body permeated throughout with rosin-oil and an oxidizing or drying oil.

3. As an article of manufacture, a material for belting or other purposes having a textile body consisting of a number of superimposed plies, the fibers of which are stretched and permeated throughout with rosin-oil.

4. As an article of manufacture, a material for belting or other purposes having a textile body, the fibers of which are stretched and permeated throughout with rosin-oil and an oxidizing or drying oil.

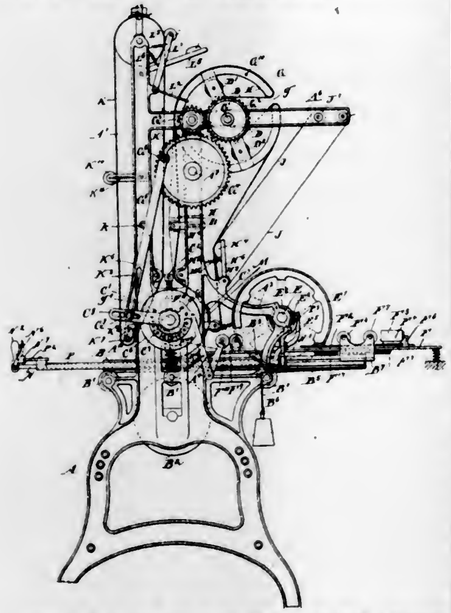
5. The method of preparing textile belting which consists in permeating the same throughout with rosin-oil and an oxidizing or drying oil.

6. The method of preparing textile belting which consists in wetting the same, stretching the same while wet, drying the same under tension to stretch and set the fibers and then permeating the same throughout with a dressing for increasing its adhesive properties.

7. The method of preparing textile belting which consists in wetting the same, stretching the same while wet, drying the same under tension and stretching and setting the fibers and then permeating the same throughout with rosin-oil.

8. The method of preparing textile belting which consists in wetting the same, stretching the same while wet, drying the same under tension and stretching and setting the fibers and then permeating the same throughout with rosin-oil and an oxidizing or drying oil.

824,190. **PRINTING-MACHINE.** STEPHEN L. MORGAN, Rutherford, N. J. Filed May 11, 1905. Serial No. 259,872.



Claim.—1. In a machine of the character set forth, a printing-surface, a wiping-surface therefor in the form of a flexible strip, means for moving said strip in one direction in contact with said printing-surface, and means for returning said strip by moving it in the opposite direction into position for a succeeding wiping operation by the soiled portion of said strip.

2. In a machine of the character set forth, a printing-surface, a wiping-surface therefor in the form of a flexible strip, means for moving said strip in one direction in contact with said printing-surface, and means for returning said strip by moving it in the opposite direction into position for a succeeding wiping operation by the soiled portion of said strip, means for guiding said strip and presenting it to said printing-surface, and means for controlling the tension of said strip.

3. In a machine of the character set forth, a printing-surface, a wiping-surface therefor in the form of a flexible strip, means for moving said strip in one direction in contact with said printing-surface and means for returning said strip by moving it in the opposite direction into position for a succeeding wiping operation by the soiled portion of said strip, means for guiding said strip and presenting it to said printing-surface, and a cleaning-surface yieldingly presented to the soiled face of such strip during the movement of the latter.

4. In a machine of the character set forth, a printing-surface, a wiping-surface therefor in the form of a flexible strip, means for moving said strip in one direction in contact with said printing-surface and means for returning said strip by moving it in the opposite direction into position for a succeeding wiping operation by the soiled portion of said strip, and means for letting off a portion of said strip at one end and taking it up at the other.

5. In a machine of the character set forth, a printing-surface, a wiping-surface therefor in the form of a flexible strip, means for moving said strip in one direction in contact with said printing-surface and means for returning said strip by moving it in the opposite direction into position for a succeeding wiping operation by the soiled portion of said strip, and means for automatically letting off a portion of said strip at one end and taking it up at the other.

6. In a machine of the character set forth, a printing-surface, a wiping-surface therefor in the form of a flexible strip, means for moving said strip in one direction in contact with said printing-surface and means for returning said strip by moving it in the opposite direction into position for a succeeding wiping operation by the soiled portion of said strip, and means for automatically letting off a portion of said strip at one end and taking it up at the other after each wiping operation.

7. In a machine of the character set forth, a printing-surface, a wiping-surface therefor in the form of a flexible strip, means for moving said strip in one direction in contact with said printing-surface and means for returning said strip by moving it in the opposite direction into position for a succeeding wiping operation by the soiled portion of said strip while out of contact with said printing-surface.

8. In a machine of the character set forth, a printing-surface, a wiping-surface therefor in the form of a flexible strip, means for moving said strip in one direction in contact with said printing-surface and means for returning said strip by moving it in the opposite direction into position for a succeeding wiping operation by the soiled portion of said strip while out of contact with said printing-surface, and means for automatically letting off a portion of said strip at one end and taking it up at the other during such return movement.

9. In a machine of the character set forth, a printing-surface, a wiping-surface therefor in the form of a weak flexible strip, means for moving said strip in one direction in contact with said printing-surface and for returning said strip by moving it in the opposite direction, and a strong flexible belt moving with and supporting said strip.

10. In a machine of the character set forth, a printing-surface, a wiping-surface therefor in the form of a flexible strip, a carrier to which the ends of said strip are secured, and means for moving said carrier alternately in opposite directions.

11. In a machine of the character set forth, a printing-surface, a wiping-surface therefor in the form of a flexible strip, a cylindrical carrier to which the ends of said strip are secured, and means for oscillating said carrier, whereby said strip is moved alternately in opposite directions.

12. In a machine of the character set forth, a printing-surface, a wiping-surface therefor in the form of a flexible strip, a carrier, rolls mounted therein on which the ends of said strip are wound, means for moving said carrier alternately in opposite directions, and means actuated by such movement for automatically taking up a portion of said strip on one of said rolls and letting off a portion from the other of said rolls.

13. In a machine of the character set forth, a printing-surface, a wiping-surface therefor in the form of a flexible strip, a cylindrical carrier, rolls mounted therein on which the ends of said strip are wound, means for oscillating said carrier and thereby moving said strip in opposite directions, and means actuated by such oscillatory movements for automatically taking up a portion of said strip on one of said rolls and letting off a portion from the other of said rolls.

14. In a machine of the character set forth, a printing-surface, a wiping-surface therefor in the form of a flexible strip, a cylindrical carrier, rolls mounted therein on which the ends of said strip are wound, a belt having its ends secured to said carrier and serving as a support for said strip, means for oscillating said carrier on its axis and thereby moving said belt with its strip alternately in opposite

directions, and means for automatically taking up a portion of said strip on one of said rolls and letting off a portion from the other of said rolls.

15. In a machine of the character set forth, a printing-surface, a wiping-surface therefor in the form of a flexible strip, means for moving said strip in one direction in contact with said printing-surface and for returning said strip by moving it in the opposite direction, means for guiding said strip and presenting it to said printing-surface, and a cleaning-surface held in yielding contact with the solid face of said strip.

16. In a machine of the character set forth, a printing-surface, a wiping-surface therefor in the form of a flexible strip, means for moving said strip in one direction in contact with said printing-surface and for returning said strip by moving it in the opposite direction, means for guiding said strip and presenting it to said printing-surface, a cleaning-surface in the form of a flexible ribbon held in yielding contact with the soiled face of said strip, and means for moving said ribbon to present fresh surfaces of the latter to said strip.

17. In a machine of the character set forth, a printing-surface, a wiping-surface therefor in the form of a flexible strip, means for moving said strip in one direction in contact with said printing-surface and for returning said strip by moving it in the opposite direction, means for guiding said strip and presenting it to said printing-surface, a cleaning-surface in the form of a flexible ribbon held in yielding contact with the soiled face of said strip, take-up and let-off rolls for said ribbon, and means for automatically actuating said rolls to shift said ribbon at intervals to present fresh surfaces of said ribbon to said strip.

18. In a machine of the character set forth, a printing-surface in the form of a flexible strip, a carrier, rolls mounted therein on which the ends of said strip are wound, means for moving said carrier alternately in opposite directions, means actuated by such movements for automatically taking up a portion of said strip on one of said rolls and letting off a portion from the other of said rolls, a cleaning-surface in the form of a flexible ribbon held in yielding contact with the soiled face of said strip, take-up and let-off rolls for said ribbon, and means automatically actuated by the movements of said carrier for letting off and taking up a portion of said ribbon at intervals to present fresh surfaces of said ribbon to said strip.

19. In a machine of the character set forth, a D-roller, a curved printing-surface thereon, a wiping-surface in the form of a flexible strip, means for moving said strip in the direction opposite to the movement of said printing-surface, and for returning said strip by moving it in the opposite direction during the period in which the cut-away portion of said roller is presented to said strip and the tension of the latter thereby lessened.

20. In a machine of the character set forth, a polishing-belt, guide-rollers therefor, a swinging roller arranged to contact at one end of its motion with a supply of whiting or analogous material, and at the other with said belt, and means for inducing the movements of said swinging roller.

21. In a machine of the character set forth, a polishing-belt, guide-rollers therefor, a yielding platform carrying a supply of whiting or analogous material, a swinging roller arranged to contact at one end of its motion with said whiting, and at the other with said belt, and means as a pad for distributing the whiting thus received upon the surface of said belt.

22. In a machine of the character set forth, a printing-roller, a polishing-belt, a driving-roller therefor, a swinging frame adjacent to said printing-roller, guide-rollers for said belt in said frame, and pivots on such frame whereby the latter may be tilted to allow access to said impression-roller.

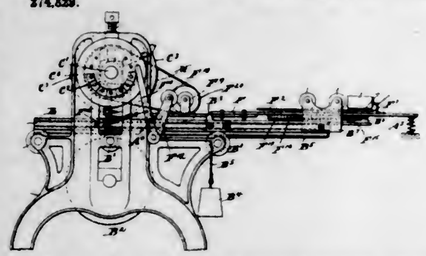
23. In a machine of the character set forth, a polishing-belt, a driving-roller therefor, a yielding platform carrying a supply of whiting or analogous material, a swinging roller arranged to contact at one end of its motion with said whiting, and at the other with a portion of said belt in contact with said driving-roller, and a weighted pad lying upon said belt and supported by said driving-roller.

24. In a machine of the character set forth, a printing-roller, a curved printing-surface thereon, a horizontally-disposed reciprocating plank, a horizontally-disposed ink-distributing mechanism operated by the reciprocations of said plank, an ink-roller carried by said plank and arranged to supply ink to said curved printing-surface, a wiping mechanism located above said plank and printing-roller arranged to contact with said curved printing-surface, and a vertically-disposed polishing mechanism in front of said printing-roller and arranged to contact with said curved printing-surface.

25. In a machine of the character set forth, a printing-roller and shaft therefor, a plank beneath said printing-roller, arranged to be moved in one direction by the frictional contact between a printing-surface and a surface to be printed upon, carried by said printing-roller and plank, an adjustable friction-surface on said plank, and a flange on said shaft adapted to engage said frictional surface at the termination of such impression and complete the movement of said plank in the same direction, and means for returning said plank.

824,191. INKING MECHANISM FOR PRINTING-PRESSES.

STEPHEN L. MORGAN, Rutherford, N. J. Filed Aug. 19, 1905. Serial No. 274,829.



Claim.—1. In a machine of the character set forth, a printing-roller and a reciprocating plank, ink-plates supported independently of said plank and above the latter, and distributing-rollers arranged to traverse said plates and carried by said plank.

2. In a machine of the character set forth, a printing-roller and a reciprocating plank, ink-plates supported above said plank, distributing-rollers arranged to traverse said plates and carried by said plank, and an oscillating roller actuated by the revolutions of said printing-roller, arranged to receive ink from said distributing-rollers and deliver it to said printing-roller.

3. In a machine of the character set forth, a reciprocating plank, a bar extending longitudinally of and above said plank, an ink-plate carried on said bar, means for revolving said ink-plate by the reciprocations of said plank, a distributing-roller carried by said plank and arranged to traverse said ink-plate, a relatively stationary revolving roller receiving ink from said distributing-roller, and a moving roller arranged to contact alternately with said revolving roller and a printing-surface.

4. In a machine of the character set forth, a printing-roller, a reciprocating plank, a bar extending longitudinally of and above said plank, a yielding support for said bar, and an ink-plate carried on said bar, distributing-rollers carried by said plank and arranged to traverse said ink-plate, and means for delivering ink from said distributing-rollers to a printing-surface on said printing-roller.

5. In a plate-printing machine, a printing-roller adapted to carry plate-printing surfaces of different widths, an ink-plate and means for supplying ink thereto, a long distributing-roller and a short distributing-roller arranged to traverse said ink-plate, and a roller adapted to receive ink from said short roller and deliver it to the printing-surface, said short roller having a length corresponding to the width of said printing-surface, whereby the ink required for such printing-surface will be received thereon in a narrow strip.

6. In a plate-printing machine, a printing-roller adapted to carry plate-printing surfaces of different widths, a reciprocating plank, an ink-plate and means for supplying ink thereto, a long distributing-roller and a short distributing-roller carried by said plank and arranged to traverse said ink-plate, a long relatively stationary revolving roller arranged to receive ink from said short roller, and a long oscillating roller arranged to receive ink from said revolving roller and transfer it to the printing-surface, the said short roller having a length corresponding to the width of such printing-surface, whereby those portions of said revolving roller and oscillating roller corresponding to the zone of contact of said short roller will be built up by the accumulation of ink thereon, and the deposition of ink on such printing-surface restricted to a narrow strip proportionate to the length of said short roller.

7. A reciprocating plank, a D-roller, a stationary bar arranged longitudinally of said plank, an ink-plate on said bar, and distributing-rollers carried by said plank and arranged to coact with said ink-plate.

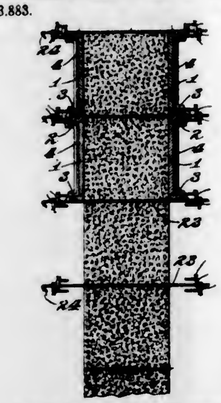
8. A reciprocating plank, a D-roller, a stationary bar arranged longitudinally of and above said plank, an ink-plate carried by said bar, means actuated by said plank for rotating said plate, and ink-distributing rollers carried by said plank and arranged to coact with said ink-plate.

9. A reciprocating plank, a D-roller, a stationary bar arranged longitudinally of and above said means for yieldingly plank, supporting said bar, an ink-plate carried by said bar, means actuated by said plank for rotating said plate, and ink-distributing rollers carried by said plank and arranged to coact with said ink-plate.

10. A reciprocating plank, a D-roller, a stationary bar arranged longitudinally of and above said plank, an ink-plate carried by said bar, means actuated by said plank for rotating said plate, an ink-fountain carried by said bar and having a fountain-roller actuated by the rotation of said plate, and ink-distributing rollers carried by said plank and arranged to coact with said ink-plate.

824,192. MOLD FOR CONCRETE-WALL CONSTRUCTION.

BERNHARD A. MUELLER, East St. Louis, Ill. Filed Dec. 30, 1905. Serial No. 293,883.



Claim.—1. A mold for concrete-wall construction comprising a plurality of interchangeable horizontal sections, each of said sections comprising a plate provided with flanges at its upper and lower edges, and a plurality of vertical braces secured to said plate at regular intervals and each having a projection at one end and a corresponding seat at the other end, whereby the sections may be interlocked with each other.

2. A mold for concrete-wall construction comprising a plurality of interchangeable sections, each of said sections comprising a plate provided with flanges at its upper and lower edges, end braces and intermediate braces secured to said plate, the ends of said intermediate braces being twice as wide as the ends of said end braces, each of said braces having a projection at one end and a corresponding seat at the other end, whereby the sections may be interlocked with each other.

3. A mold for concrete-wall construction comprising tiers of interchangeable sections, each of said sections comprising a plate flanged at its upper and lower edges and a plurality of braces secured to said plate at regular intervals and each having a projection at one end and a corresponding seat at the other end, whereby the sections in each tier may be interlocked with each other, tie-rods extending from one tier to the other, and clamps adjustably mounted upon the outer ends of said tie-rods and arranged to bear upon adjacent sections of the mold.

4. A mold for concrete-wall construction comprising tiers of interchangeable sections, each of said sections comprising a plate flanged at its upper and lower edges and a plurality of braces secured to said plate at regular intervals and each having a projection at one end and a corresponding seat at the other end, whereby the sections in each tier may be interlocked with each other, tie-rods extending from one tier to the other, and clamps adjustably mounted upon the outer ends of said tie-rods and arranged to bear upon adjacent sections of the mold, each of said clamps comprising an L-shaped member and a set-screw.

5. A mold for concrete-wall construction comprising tiers of interchangeable sections, each of said sections comprising a plate flanged at its upper and lower edges and a plurality of braces secured to said plate at regular intervals and each having a projection at one end and a corresponding seat at the other end, whereby the sections in each tier may be interlocked with each other, tie-rods extending from one tier to the other, and clamps adjustably mounted upon the outer ends of said tie-rods and arranged to bear upon adjacent sections of the mold, each of said clamps comprising an L-shaped member, a collar and a set-screw on said collar.

6. A mold for concrete-wall construction comprising tiers of interchangeable sections, each of said tiers comprising plates, and braces secured to said plates and interlocking with each other, tie-rods extending from one of said tiers to the other, and a pair of clamps secured to each outer end of each of said tie-rods and having arms extending substantially parallel to said tie-rods, one of the clamps of each pair of clamps having a longer arm than the other, and each of said clamps bearing upon one of the adjacent sections of said mold.

7. A mold for concrete-wall construction comprising tiers of interchangeable sections, each of said tiers comprising a plurality of flanged plates, and braces secured to said plates and interlocking with each other, the meeting portions of said braces being provided with corresponding grooves, tie-bars extending through the holes formed by said grooves and from one of said tiers to the other and clamps secured to the outer ends of said tie-rods and bearing upon adjacent sections of said tiers.

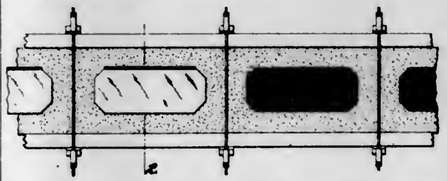
8. A brace for a concrete-mold comprising a body terminating at one end in a toe and provided at the other end with a seat adapted to receive the toe of a similar brace in alinement therewith.

9. A brace for a concrete-mold comprising a body terminating at one end in a substantially wedge-shaped toe and provided at the other end with a seat adapted to receive the toe of a similar brace.

10. A mold for a concrete-wall construction comprising a plurality of flanged plates and braces secured to said plates and so interlocking with each other as to resist the tilting of said plates.

824,193. CORE FOR CONCRETE-WALL CONSTRUCTIONS.

BERNHARD A. MUELLER, East St. Louis, Ill. Filed Feb. 19, 1906. Serial No. 301,764.



Claim.—1. A core for a hollow-wall construction having side and end walls hinged together at a point interiorly offset from their planes, substantially as described.

2. A core for hollow-wall construction having side and end walls hinged together at a point interiorly offset from their planes, and hinges at said ends, substantially as described.

3. A core for hollow-wall construction having side and end walls hinged together at a point interiorly offset from their planes and one or more struts for holding said side and end walls in position, substantially as described.

4. A core for hollow-wall construction having side and end walls hinged together at points interiorly offset from their planes and one or more struts for holding said side and end walls in position, substantially as described.

5. A core for hollow-wall construction having side and end walls hinged together at points interiorly offset from their planes and one or more struts for holding said side and end walls in position, said struts being made in two parts connected together by a hinge to permit the same to be folded until parallel with the side walls of said core, substantially as described.

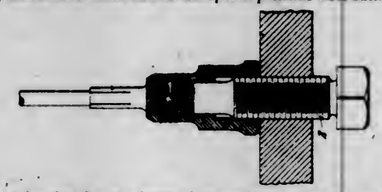
6. A core for hollow-wall construction having side and end walls hinged together at a point interiorly offset from their planes and one or more struts for holding said side and end walls in position and a top for said core hinged along one side and having a channel along its opposite side to engage the wall of said core, substantially as described.

7. A core for hollow-wall construction having side and end walls hinged together at a point interiorly offset from their planes, one or more struts for holding said side and end walls in position, said struts being made of two parts and connected together by a hinge to permit said strut to be folded, a top for said core hinged along one side and having a channel along its opposite side to engage the wall of said core, substantially as described.

824,194. BEARING FOR ELECTRICAL MEASURING INSTRUMENTS.

WALTER B. MCCOY, New York, N. Y., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed Apr. 18, 1903. Serial No. 153,340.

Claim.—1. A bearing for electrical measuring instruments comprising two jewels each of which has a concave bearing-surface of single, uniform curvature and an interposed polished steel ball.

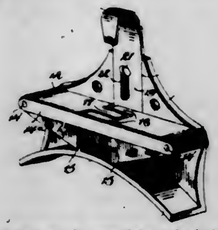


2. A bearing for an electrical measuring instrument shaft or spindle comprising two jewels having opposing concave bearing-surfaces of single, uniform curvature and an interposed polished steel ball the radius of curvature of which is less than that of said bearing-surfaces.

3. A bearing for an electrical measuring instrument shaft or spindle comprising an adjustable stud provided with a jewel having a concave bearing-surface of single, uniform curvature, a jewel mounted in the end of the shaft or spindle and having a concave bearing-surface of single, uniform curvature and a polished steel ball interposed between said bearing-surfaces and having a radius of curvature that is less than that of said surfaces.

4. The combination with a rotatable shaft or spindle provided with a jewel having a concave bearing-surface of single, uniform curvature, of an adjustable stud provided with a jewel having a concave bearing-surface of single, uniform curvature and a ball interposed between said bearing-surfaces the radius of curvature of which is less than that of said bearing-surfaces.

824,195. GATE-LATCH. NEAL A. MCPHAIL, Cass City, Mich., assignor to Orrin K. Janes, Cass City, Mich. Filed Oct. 13, 1904. Serial No. 228,986.



Claim.—1. A gate-latch comprising a body having a guideway, locking-dogs pivoted at their outer ends, said dogs having spaced depending shoulders that rest upon the guideway and being furthermore provided with longitudinally-disposed overlapping fingers at their inner ends that permit the movement of either dog independently of the other, and an actuating device movably mounted on the body and including a projecting portion disposed transversely of the guideway and fingers and coacting with the latter for raising both dogs.

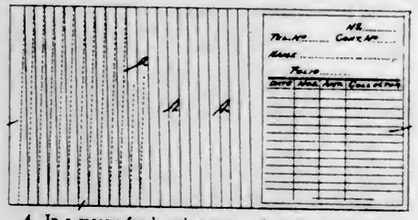
2. A gate-latch comprising a body having an outstanding guide-flange and an upright recess in its outer side, dogs pivoted at their outer ends to the outer sides of the body above the flange, said dogs having depending shoulders spaced apart and resting upon the flange, being furthermore provided with overlapping fingers at their inner ends, and an actuating device comprising a plate slidably mounted in the recess, said plate having an outstanding projection at its lower end that is located beneath the fingers, and an overhanging finger-hook at its upper end.

824,196. MEANS FOR KEEPING RECORDS OF COIN-REGISTER TAPES. WILLIAM G. NAGEL, Toledo, Ohio, assignor to The United States Coin-Register Company, a Corporation of Ohio. Filed Sept. 13, 1905. Serial No. 278,907.

Claim.—1. In a means for keeping a record of the severed sections of coin-register tapes, a card having a continuous spiral-like pathway for the tape indicated thereon.

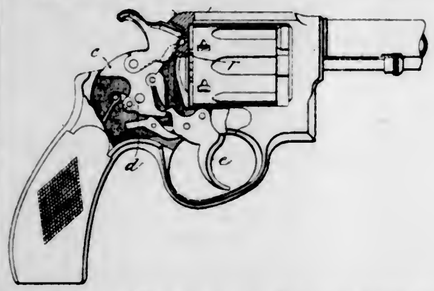
2. In a means for keeping a record of the severed sections of coin-register tapes, a card having a pathway for the tape indicated on both of its faces and continuous throughout.

3. In a means for keeping a record of the severed sections of coin-register tapes, a card provided with a series of columns on both of its faces, the said columns being slightly inclined and registering at the ends so as to provide a continuous spiral-like pathway for the tape.



4. In a means for keeping a record of the severed sections of coin-register tapes, a card having a continuous pathway for the tape indicated thereon, and a sticker for securing the tape-sections, having a gummed back to adhesively secure the same to the card and having the face thereof gummed at the ends to secure the severed ends of the tape-sections thereto, the face of said sticker being ungummed between the ends adapted to receive the ends of the tape-sections to permit the entry thereon of suitable identifying data, substantially as described.

824,197. FIREARM. ELMER E. NEAL, Springfield, Mass., assignor to Smith & Wesson, Springfield, Mass., a Firm. Filed Mar. 5, 1906. Serial No. 304,253.



Claim.—1. In a firearm, the combination with a hammer and a rebounding mechanism therefor, of a member covering the exposed portion of the hammer and movable in the direction of the movement of the latter toward and in contact with the seat of the hammer on the frame.

2. In a firearm, the combination with a hammer and a rebounding mechanism therefor, of a cap substantially covering the exposed portion of the hammer and movable relative thereto rearwardly into cocking engagement with the hammer and forwardly into contact with the frame of the arm.

3. In a firearm, the combination with a hammer and a rebounding mechanism therefor, of a cap pivotally supported on the hammer in overlapping relation to the exposed portion thereof and movable relative thereto rearwardly into cocking engagement with the hammer, and forwardly into contact with the frame of the arm.

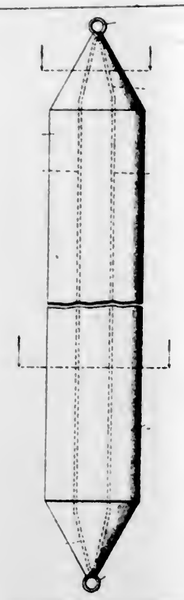
4. In a firearm, in combination with a rebounding mechanism, a hammer consisting of two parts, viz., the hammer proper and a cap pivotally supported thereon in overlapping relation to the exposed part of the hammer and constituting a part of the latter, said cap having a swinging movement relative to the hammer rearwardly into cocking engagement therewith, and forwardly to a position beyond the face of the hammer.

824,198. WINDOW-SASH WEIGHT. DANIEL W. NORTON, Vincennes, Ind. Filed Mar. 12, 1906. Serial No. 305,513.

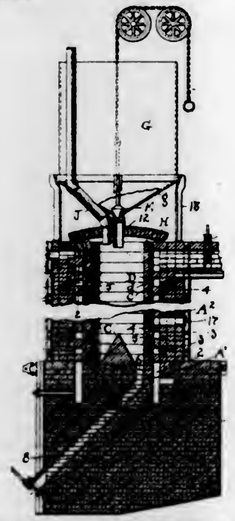
Claim.—1. A weight for window-sashes and the like, comprising a body and a wire bar or rod, formed into a loop, said loop being provided with an eye or ring at each end, said loop being embedded in the body with the eyes or rings exposed.

2. A weight for window-sashes and the like, comprising a body and a wire, bar, or rod, formed into a loop the sides of which are separated and at the central portion of the loop extend substantially parallel to each other, the sides of the loop coming together at the ends, eyes or rings formed in the loop at the ends, said loop being embedded in the body portion with the eyes or rings exposed.

824,198.



824,199. CARBON-CALCINING FURNACE. PHILIP P. NUNGESSER, Cleveland, Ohio, assignor to The Nungesser Electric Battery Co., Cleveland, Ohio, a Corporation of Ohio. Filed Sept. 18, 1905. Serial No. 278,956.



Claim.—1. A carbon-calcining furnace having a wall with a lining of interlocked tiles, an outer wall and tiles built therein bearing against the wall of the retort at intervals, and ties about said outer wall binding the same around and holding said walls together, a passage for combustion being provided between said walls.

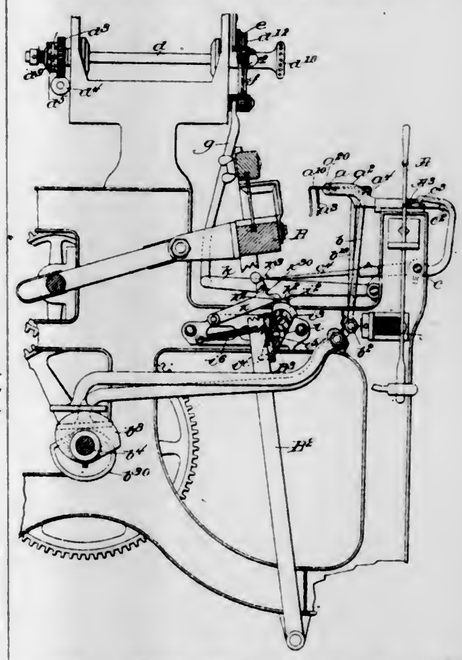
2. A carbon-calcining furnace having a circular outer wall, in combination with vertically-disposed rails at intervals about said wall and spring-metal tie-rods bent to a radius greater than the radius of said wall and engaged through said rails and locking the same together against said wall.

3. An upright carbon-calcining furnace having a cone centrally on the bottom thereof and a space between the base of the cone and the wall of the retort, and a plurality of outlets for the material open to said space, said outlets running together at their bottom.

4. A vertically-disposed carbon-calcining furnace and a base therefor having an annular combustion-channel about the same, a cone centrally in the bottom of said retort and outlet-passages about said cone extending down through said base.

5. An upright carbon-calcining furnace of tubular form, a cone centrally in the bottom thereof of less width at its base than the bottom of the retort, a series of outlet-passages disposed at intervals about said cone and a discharge-channel to which said passages converge.

824,200. PATTERN-RESETTING MECHANISM FOR LOOMS. HERBERT W. OWEN, Dover, N. H., assignor of one-half to Charles H Fish, Dover, N. H. Filed Nov. 27, 1903. Serial No. 182,841.



Claim.—1. In a loom provided with a stop-motion controlled by the filling-thread, and a pattern-carrier, the combination with the lay; of resetting mechanism for the pattern-carrier; and means actuated by the stop-motion for connecting the lay with said resetting mechanism to operate the same.

2. In a loom, a filling-fork; pattern mechanism; a resetting device for said pattern mechanism; the lay; and means coöperating with the said filling-fork for causing the lay to operate said resetting device.

3. In a loom, the combination with a lay; of two filling-forks, one located adjacent to each end of the lay; separate devices for engaging said filling-forks; a stop-motion; a device under the control of either filling-fork for operating such stop-motion; and means whereby the device for operating one fork engages the same prior to the disengagement of the other fork by the other device.

4. In a loom having a lay, a stop-motion; a filling-fork opposite each end of the lay; a device coöperating with either filling-fork to operate said stop-motion; and a pattern-resetting mechanism operated in response to the operation of the stop-motion.

5. In a loom provided with a stop-motion controlled by the filling-thread, and a pattern-carrier, the combination with the stop-motion-actuating member; of a retaining-latch operated in response to the operation of said member; an actuating device normally held by said latch in a position in which it will not operate; a pattern-resetting device controlled by said member when operated; and means for operating said member when released by the latch, as set forth.

6. In a loom, the combination with a pattern-carrier; of a ratchet mounted on said pattern-carrier; a pawl to operate said ratchet; the lay; actuating mechanism for said pawl operated by the lay; a stop-motion-actuating member; and means operated by

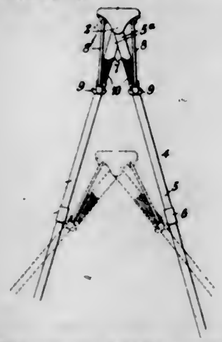
said member for connecting the lay and the actuating mechanism for said pawl.

7. In a loom, the combination with a pattern-carrier; of a ratchet mounted on said pattern-carrier; a pawl to operate said ratchet; a lever to operate said pawl; the lay-sword; an actuating device for said lever to be operated by said lay-sword; a retaining-latch normally holding said actuating device in a position in which it will not be operated by said lay-sword; a stop-motion-actuating member; and means operated in response to the operation of said stop-motion-actuating member for releasing said latch, substantially as described.

8. The combination with the lay-sword provided with an engaging projection; of an actuating-cam to be operated by the engagement therewith of said projection; a pattern-resetting device operated by said cam; a pivotally-supported latch coöperating with said cam to hold the same normally out of the path of the projection on the lay-sword; an engaging member pivotally connected with said latch; a pivotally-supported lever to engage said engaging member, the arcs of movement of said member and said pivotally-supported lever being divergent; a stop-motion; and means operated in response to the operation of said stop-motion for operating said pivotally-supported lever, substantially as described.

9. In a loom, the combination with a pattern-resetting device; of an actuator therefor; an operating device for said actuator, movable with the lay; a filling-fork; and means operated by said filling-fork for causing the coöperation of said operating device and said actuator.

824,201. **TROLLEY FOR RAILWAY-VEHICLES.** JOHN D. PATON, Edgewood Park, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed June 28, 1905. Serial No. 267,468.



Claim.—1. The combination with a contact-shoe and a pair of supporting-frames pivoted thereto and diverging downwardly therefrom, of a pair of links depending from the ends of the shoe at each side thereof and having a sliding connection with the corresponding frame, and springs tending to oppose upward movement of said links.

2. The combination with a contact-shoe and two pairs of supporting-rods pivoted thereto and diverging downwardly therefrom, of two pairs of links the upper ends of which are pivoted to said shoe and the lower ends of which have collars that are mounted to slide upon the supporting-rods, and springs interposed between said collars and shoulders on the rods.

3. The combination with a contact-shoe and two supporting-frames pivotally connected to said shoe upon a single axis, of two pairs of bow-links pivotally connected to the shoe and having sliding connections with the supporting-frames, and springs tending to prevent upward movement of said links.

4. The combination with a contact-shoe having downwardly-curved outer ends and two pairs of supporting-rods pivoted to said shoe and diverging downwardly therefrom, of two pairs of U-shaped links that are pivotally connected to the shoe and project outwardly adjacent to the curved ends thereof, collars movably mounted upon the supporting-rods and attached to the lower ends of the links, and springs interposed between the collars and shoulders on the supporting-rods.

5. The combination with a contact-shoe and two downwardly-diverging frames upon which said shoe is pivotally supported, of a pair of curved links interposed between each end of the shoe and the frames and springs acting in opposition to said links.

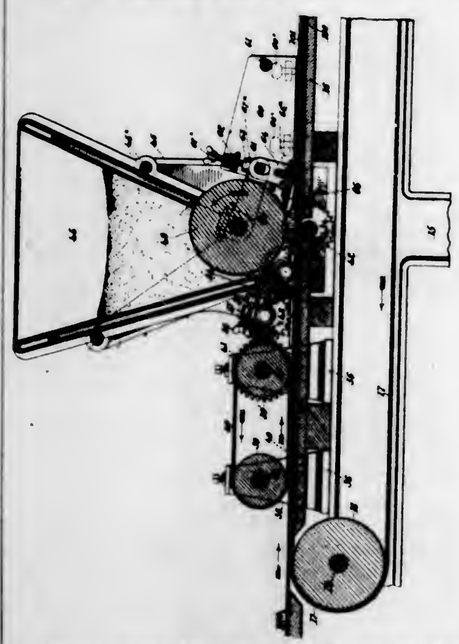
6. The combination with a contact-shoe and two diverging frames to which the shoe is pivoted, of links having sliding connection with the frames and pivotal connection with the contact-shoe and springs coöperating with said links to hold the upper surface of the shoe substantially horizontal.

7. The combination with a contact-shoe and a supporting structure upon which the shoe is pivotally mounted, of links having a pivotal connection with the shoe and a sliding connection with the supporting structure and springs coöperating with said links.

8. The combination with a contact-shoe having a broad contact-surface and a supporting structure upon which the shoe is pivotally mounted, of two pairs of links that connect the sides of the shoe with the supporting structure and springs that oppose movement of said links.

9. The combination with a contact-shoe and a supporting-frame upon which said shoe is pivotally mounted, of links having sliding connections with said frame and pivotal connections with the sides of the shoe, and springs that oppose movement of said links.

824,202. **SUGAR-WAFER MACHINE.** FRANK M. PETERS, Chicago, Ill. Filed July 29, 1905. Serial No. 271,836.



Claim.—1. In a machine of the character described, the combination with a support for wafer-sheets, of a paste-receptacle having an outlet therein, means for effecting the discharge of the paste in proper quantities from said receptacle, and means for transferring the discharged paste in a cohesive mass to the wafer-sheets, substantially as specified.

2. In a machine of the character described, the combination with a support for wafer-sheets, of a paste-receptacle having an outlet therein, means for conducting the paste from said outlet, and means for transferring the paste in a cohesive mass from said conducting means to the wafer-sheets, substantially as specified.

3. In a machine of the character described, the combination with a support for wafer-sheets, of a paste-receptacle having an outlet therein, means for effecting the discharge of the paste in proper quantities from said receptacle, and means for transferring the discharged paste in a cohesive mass from said discharging means to the wafer-sheets, substantially as specified.

4. In a machine of the character described, the combination with a support for wafer-sheets, of a paste-receptacle having an outlet therein, a conducting device arranged therein for conveying the paste from said receptacle, and means for removing the paste from said conducting device in a cohesive mass and transferring the same to the wafer-sheets, substantially as specified.

5. In a machine of the character described, the combination with a support for wafer-sheets, of a paste-receptacle having an outlet therein, a device arranged therein for conveying the paste from said receptacle, means for controlling the quantity of paste delivered to said device, and means for removing the paste from said device in a cohesive mass and transferring and spreading the same upon the wafer-sheets upon said support, substantially as specified.

6. In a machine of the character described, the combination with a support for wafer-sheets, of a paste-receptacle having an outlet therein, a roller arranged in said outlet, means for controlling the supply of paste conveyed by said roller, and means for removing the paste in a cohesive mass from said roller, substantially as specified.

7. In a machine of the character described, the combination with a support for wafer-sheets, of a paste-receptacle having an outlet therein, a roller arranged in said outlet, means for controlling the supply of paste conveyed by said roller, and means for removing the same in a cohesive mass from said roller to the wafer-sheets, and spreading the same thereon, substantially as specified.

8. In a machine of the character described, a paste-receptacle, a roller for conducting the paste therefrom in the form of a sheet coating the roller, a support for the wafer-sheets below said roller, and means for stripping the coating in a cohesive mass from said roller directly over said wafer-sheets, substantially as specified.

9. In a machine of the character described, a paste-receptacle, a roller for conducting the paste therefrom in the form of a sheet coating the roller, a support for the wafer-sheets below said roller, means for stripping the coating in a cohesive mass from said roller directly over said wafer-sheets, and means for spreading the material stripped from the roller upon said wafer-sheets, substantially as specified.

10. In a machine of the character described, a paste-receptacle, a roller for conducting the paste therefrom in the form of a sheet coating the roller, a support for the wafer-sheets below said roller, and a blade serving at one edge to strip the coating from said roller, directly over the wafer-sheets, and at its other edge to spread the stripped material upon said wafer-sheets, substantially as specified.

11. In a machine of the character described, the combination with a support for wafer-sheets, of a paste-receptacle having an opening in the base thereof, a roller arranged in said opening, means arranged at one side of said roller for controlling the supply of paste delivered thereto, and means arranged at the opposite side of said roller for removing the paste from said roller in a cohesive mass to the wafer-sheets and spreading the same thereon, substantially as specified.

12. In a machine of the character described, the combination with a support, for wafer-sheets, of a paste-receptacle having an opening in the base thereof, a roller arranged partly within and partly without said paste-receptacle, means arranged adjacent to the projecting portion of said roller at one side thereof for controlling the delivery of paste to said roller, and means arranged at the opposite side of the projecting portion of said roller for removing the paste therefrom in a cohesive mass and transferring the same to the wafer-sheets, substantially as specified.

13. In a machine of the character described, the combination with a support for wafer-sheets, of a paste-receptacle having an opening in the base thereof, a roller arranged partly within and partly without said paste-receptacle, means arranged adjacent to the projecting portion of said roller at one side thereof for controlling the delivery of paste to said roller, and means arranged at the opposite side of the projecting portion of said roller for removing the paste therefrom in a cohesive mass and transferring and spreading the same upon the wafer-sheets, substantially as specified.

14. In a machine of the character described, the combination with a support for wafer-sheets, means for actuating said support, a paste-receptacle supported above said support having an opening in the base thereof, a roller arranged partly within and partly without said receptacle for conducting the paste from said receptacle, means for actuating said roller, a blade supported adjacent to one side of said roller, means for adjusting said blade, a blade supported adjacent the opposite side of said roller for removing the paste from said roller in a cohesive mass, and means for vertically and horizontally adjusting said blade, substantially as specified.

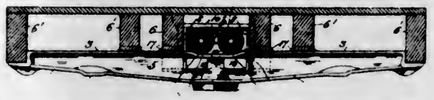
15. In a machine of the character described, the combination with a traveling support for wafer-sheets and means for actuating said support, of a paste-receptacle supported above said traveling support, an opening in said receptacle arranged transversely of said traveling support, a roller supported below said paste-receptacle and extending into the opening in the base thereof, means for rotating said roller, means for controlling the delivery of paste to said roller, and means for removing the paste therefrom in a cohesive mass and spreading the same upon the wafer-sheets, substantially as specified.

16. In a machine of the character described, the combination with a traveling support for wafer-sheets, and means for actuating said support, of a paste-receptacle mounted above said traveling support, an opening in the base of said receptacle arranged transversely of said traveling support, a roller supported below said paste-receptacle and extending into and conforming partly to the opening therein, a controlling device arranged upon the under side of said paste-receptacle at one side of the roller, means for adjusting said device toward and from said roller, a device arranged below said paste-receptacle and adapted for contact at one edge with the side of the roller opposite to the controlling device, and at its other edge with the wafer-sheet and the paste thereon whereby to spread the paste upon said wafer-sheets, and means for actuating said device to regulate the thickness of the paste spread upon the wafer-sheets, substantially as specified.

17. In a machine of the character described, the combination with an endless band for wafer-sheets, means for actuating said endless band, brackets arranged at each side of said endless band, a paste-receptacle mounted in said brackets having an opening in its base arranged transversely of said endless band, a roller mounted in said brackets below said paste-receptacle conforming to and extending into the opening in the base thereof, a blade movably secured to the under side of said paste-receptacle at one side of the roller, means for adjusting said blade toward and from said roller, a blade adjustably arranged at the opposite side of said roller having its inner edge in contact with said roller, and its outer edge adapted for vertical adjustment, and means for adjusting said blade, substantially as specified.

18. In a machine of the character described, the combination with an endless band for wafer-sheets, means for actuating said endless band, brackets arranged at each side of said endless band, a paste-receptacle mounted in said brackets having an opening in its base arranged transversely of said endless band, a roller mounted in said brackets below said paste-receptacle conforming to and extending into the opening in the base thereof, a blade arranged upon the under side of said paste-receptacle at one side of the roller, adjusting-screws provided upon said receptacle in engagement with said blade whereby to move said blade toward and from said roller, a frame arranged at the opposite side of said roller, adjusting-screws thereon for adjusting said frame, a blade mounted in said frame having its inner edge in contact with said roller, and its outer edges adapted to spread the paste upon the wafer-sheets, and an adjusting-screw arranged in said frame adapted for adjusting the outer edge of said blade, substantially as specified.

824,203. **COMBINED CAR-BODY BOLSTER AND DRAW-BAR SPRING-POCKET.** HARRY M. PFLAGER, St. Louis, Mo., assignor to Transom Draft-Gear Company, St. Louis, Mo., a Corporation of Delaware. Filed Apr. 28, 1906. Serial No. 314,169.



Claim.—1. A car-body bolster of the class described, having a pocket projecting upward therefrom at its middle portion and integral therewith, the said pocket being adapted internally to form a housing for suitable draft-gear, substantially as described and for the purpose set forth.

2. The combination with the longitudinal sills of a car-under frame, of a body-bolster composed of suitable metal and fixed to the said sills, a pocket projecting upward from the bolster at its middle portion and adapted internally to form a housing for suitable draft-gear, the said housing being in central horizontal alinement with the draw-bar and coupler of the said gear, substantially as described and for the purpose set forth.

3. The combination with the longitudinal sills of a car-under-frame, of a body-bolster composed of suitable metal integral throughout and fixed to the said sills, a pocket projecting upward from and integral with the top member of the bolster at its middle portion, and adapted internally to form a housing for suitable draft-gear, the said housing being in central horizontal alinement with the draw-bar and coupler of the said gear, substantially as described.

4. The combination with the longitudinal sills of a car-under-frame, of a body-bolster composed of suitable metal and fixed to the said sills, a pocket projecting upward from the bolster at its middle portion and adapted internally to form a housing for suitable draft-gear, the said housing being in central horizontal alinement with the

draw-bar and coupler of the said gear, and ribs projecting from the top of the bolster and adapted to engage in the said sills, substantially as described and for the purpose set forth.

5. The combination with the longitudinal sills of a car-underframe, of a body-bolster composed of suitable metal and fixed to the said sills, a pocket projecting upward from the bolster at its middle portion and adapted to bear at its sides against the middle longitudinal sills, and ribs projecting from the said sides for engaging the said middle sills, the said pocket being adapted internally to form a housing for the springs of suitable draft-gear, substantially as described and for the purpose set forth.

824,204. **CONCRETE-MIXING MACHINE.** WILLIAM H. PHILLIPS, Columbus, Ohio. Filed Mar. 30, 1905. Serial No. 253,937.



Claim.—1. In a machine for mixing building materials, the combination with feeding means, of a mixing-drum formed with a delivery-spout and arranged in communication with the feeding means, means for imparting motion to the drum, and a removable mixing-body fitting snugly within the drum and normally revolving therewith, but arranged to be moved independently thereof to scrape the inner periphery of the drum.

2. In a machine for mixing building materials, the combination with feeding means, of a revolving mixing-drum arranged in juxtaposition to the feeding means and having communication therewith, and a removable mixing-body fitting snugly within the drum having inclined mixing-blades contacting with the inner periphery of the said drum.

3. In a mixing-machine, the combination with feeding means, of a revolving mixing-drum arranged adjacent to the feeding means having a flaring spout and an independent removable mixing-body having a flared end so as to fit snugly within the spout and the drum.

4. In a machine for mixing building materials, the combination with feeding means and a revolving drum associated with the feeding means and having communication therewith, of a mixing-body arranged in the drum and comprising a cage of smaller diameter than the drum and provided with mixing devices extending between its outer surface and the inner periphery of the drum, the said mixing-body adapted to normally turn with the drum, but being independent thereof and removably disposed therein.

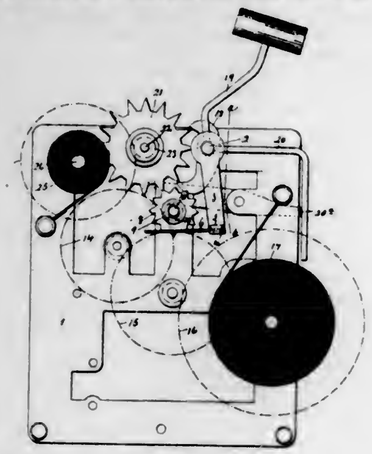
5. In a machine for mixing building materials, the combination with feeding means, of a mixing-drum formed with a delivery-spout and arranged in communication with the feeding means, means for imparting motion to the drum and a removable mixing-body, consisting of a loose cage in the drum and inclined mixing-blades in the drum extending into the spout fitting the inner peripheries of both drum and spout snugly, but arranged to move independently thereof to scrape their inner peripheries.

6. In a machine for mixing building materials, the combination with feeding means, of a revoluble mixing-drum arranged in juxtaposition to the feeding means and having communication therewith, and a removable mixing-body consisting of a loose cage in the drum and inclined mixing-blades in the drum extending into the spout contacting with their inner peripheries.

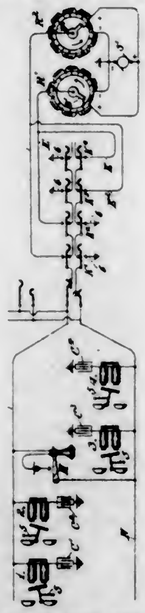
824,205. **INTERMITTENT-ALARM CLOCK.** WILSON E. PORTER, New Haven, Conn., assignor to New Haven Clock Co., New Haven, Conn., a Corporation. Filed Jan. 8, 1906. Serial No. 295,065.

Claim.—1. In an intermittent-alarm clock, the combination with the time and alarm trains thereof, of an alarm-wheel driven by the time-train, and a vibrating spring connected with the alarm-train and engaging with the teeth of the said wheel which it tends to revolve in the direction in which the wheel is revolved by the time-train.

2. In an intermittent-alarm clock, the combination with the time and alarm trains thereof, of an arm depending from the verge-arbor of the alarm-train, a flexible spring secured to the said arm and formed with a longitudinal slot, and an alarm-wheel driven by the time-train and having its teeth entered into the seat of the said spring which, as it turns, releases the said spring which then vibrates as the alarm sounds until it reëngages with another tooth of the wheel.



824,206. **SELECTIVE SYSTEM.** SYLVANUS A. REED, New York, N. Y. Filed Jan. 23, 1905. Serial No. 242,311.



Claim.—1. A signaling system, comprising a circuit and two oppositely-biased electromagnetic annunciators connected in multiple relation therein and each in series with a condenser, in combination with a means of impressing current upon said circuit to charge and discharge the condenser-surfaces abruptly and gradually, the current in the annunciators due to the abrupt charging or discharging being effectual to overcome the bias tension thereof and that due to the gradual charging or discharging being ineffectual for that purpose, and means for reversing the direction through the annunciators of the current due to the abrupt charging or discharging.

2. In a selective system, a circuit including two oppositely-biased electromagnets and a translating device interrupting the conductive continuity of said circuit, in combination with means for selectively impressing current on the circuit through said translating device to produce in the electromagnets an alternating current where-of the currents of opposite polarity are relatively differentiated in motor effect, and means for selectively causing the current of one polarity to be superior and the other to be inferior to the bias tension of any electromagnet.

3. In a selective system, a circuit including signal-receiving annunciator mechanism arranged to be selectively operated by currents of relatively opposite direction and provided with yielding means opposing such operation, and a condenser or condensers in series with said mechanism, in combination with means for charging and discharging the condensers to produce in said mechanism relatively differentiated currents of alternately-opposite direction and means for selectively causing the current of one direction to be superior and the other to be inferior, in motor effect, to the tension of said yielding means.

4. In a selective system, a circuit including two polarized electromagnets, oppositely biased with respect to current of one direction, condensers in series relation therewith and means for impressing current upon said circuit adapted to change the difference of potential between opposed condenser-surfaces at a rate of change predetermined to correspond to a strength of current in said electromagnets which is ineffectual to overcome the tensions of their respective biases.

5. In a selective system, a circuit including two polarized electromagnetic annunciators oppositely biased with respect to current of one direction, condensers in series relation therewith and means for impressing current upon the circuit adapted and controlled to change the difference of potential between opposed condenser-surfaces at rates of change predetermined to correspond to a strength of current in said annunciators which is alternately effectual and ineffectual to overcome the bias tensions thereof.

6. A selective system comprising a source of current, signal-receiving annunciator mechanism arranged to be selectively operated by currents of opposite direction and provided with yielding means opposing such operation and condenser-surfaces in series relation with said mechanism, in combination with switching mechanism controlling the current from said source to produce a change of definite polarity upon either of the opposed condenser-surfaces and means for establishing or relensing such charge at a rate that will correspond to current in the said mechanism of insufficient strength to overcome the tension of the said yielding means.

7. In a selective telephone signaling system, two oppositely-biased polarized telephone-ringers and a source of current with connections for operating the same, comprising a translating device in series with each ringer adapted for translating the current energy of the said source into alternating currents for said ringers, in combination with means controlling the current energy supplied to said devices for causing either the plus or minus currents effected thereby to be inferior in strength to the bias tensions of said ringers.

8. A selective telephone signaling system, comprising a line conductor, a pair of oppositely-biased telephone-annunciators in multiple branches therefrom to another conductor or ground, condensers in said branches in series with the annunciators and means for impressing current upon the circuit adapted to change the difference of potential between the opposed condenser-surfaces at a rate of change predetermined to correspond to a strength of current in said annunciators which is alternately effectual and ineffectual to overcome the bias tension of either of them.

9. A selective telephone signaling system comprising two line conductors with open-circuit subscriber's apparatus bridged thereacross, a pair of polarized oppositely-biased annunciators legged from each conductor to a common conductor or ground, condensers in said legs in series with the annunciators, and a source of current, in combination with means for establishing or removing a difference of potential between the opposed condenser-surfaces of either line conductor at such rate as will correspond to a strength of current in the annunciators insufficient to overcome the tension of their respective biases.

10. A selective system comprising a source of current and a rheostat connected between the poles thereof, annunciator mechanism arranged to be operated by currents of either polarity and provided with yielding means opposing such operation, condenser-surfaces in series relation to said mechanism and adapted to be connected in multiple relation to said rheostat, in combination with means for relatively shifting the point of communication between one of the opposed condenser-surfaces and said rheostat to control the rate of change of the difference of potential between the said opposed condenser-surfaces.

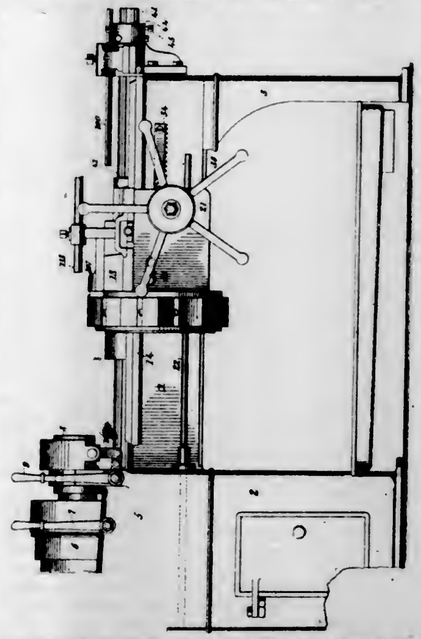
11. A selective system comprising a source of current and a rheostat of ring form connected between the poles thereof, two polarized and oppositely-biased annunciators provided with condensers in series therewith, in combination with connections between the opposed condenser-surfaces respectively to one pole of the source of current and to a contact engaging said rheostat, the said contact and rheostat being adapted for relative rotation whereby a difference of potential between the condenser-surfaces may be abruptly established and gradually removed or vice versa.

12. In a selective system, a ring-form rheostat and relatively rotary contact-brush engaging the successive contacts thereof and passing abruptly from one end of the same to the other, a source of current with its opposite poles connected respectively to the opposite ends of said rheotsat, and two polarized oppositely-biased annunciators in series with condensers connected with said rheostat and brush and capable of selective operation by the impulses produced thereby.

13. In a selective system, a pair of oppositely-biased polarized annunciators, and condensers in series relation therewith, in combination with means to operate said annunciators involving a potential gradient with contacts in connection with successive points thereon, and suitable connections between the above-mentioned parts whereby the plus or minus currents from said condensers may be respectively caused to be inferior to the bias tensions of said annunciators.

14. The method of selectively operating either of two oppositely-biased ringers in a condenser broken circuit, which consists in impressing current on said circuit to chage the potential difference in the condensers thereof at a rate of change appropriate to produce a cumulative current of sufficient motor effect in said ringers to overcome their bias tension, and at a rate of change corresponding to a current of opposite direction therein insufficient to overcome such tension, alternately, and controlling said impressed current to cause the currents of either direction in said ringers to be superior in motor effect to the bias tension thereof.

824,207. **LATHE.** CHARLES G. RICHARDSON, Springfield, Vt., assignor, by mesne assignments, to Massey Machine Company, a Corporation of New York. Filed Mar. 14, 1903. Serial No. 147,826.



Claim.—1. In a lathe, a turret, a sliding carriage for the same, a mechanism for rotating the turret which comprises two members, one of which is movable to engage it with or disengage it from the other, a turret-locking device, a rod slidably mounted on the lathe and connected with said movable member, a pin carried by the sliding carriage, and movable into and out of the path of a part carried by the rod, and means movable in connection with the turret-locking device to actuate said pin.

2. In a lathe, a turret, a sliding carriage for the same, a mechanism for rotating the turret which comprises two members, one of which is movable to engage it with or disengage it from the other, a turret-locking device, a rod slidably mounted on the lathe and connected with said movable member, a pin carried by the sliding carriage, and movable into and out of the path of a part carried by the rod, and a lever that engages both the turret-locking devices and said pin.

3. In a lathe, a turret, a sliding carriage for the same, a mechanism for rotating the turret which comprises two members, one of which is movable to engage it with or disengage it from the other, a turret-locking device, a rod slidably mounted on the lathe and connected with said movable member, a pin carried by the sliding carriage, and movable into and out of the path of a part carried by the rod, a lever coacting at one point with the turret-locking device and at another point with said pin, a latch for said lever, and a part on the turret to actuate said latch.

4. In a lathe, a turret, mechanism for rotating the same comprising coacting members that are temporarily inoperative one on the other at a certain point in the rotation of one of such members, and means for driving one of said members whereby it may impart motion to the other, a clutch for connecting and disconnecting said driving means with a source of motion, a turret-locking device, means for controlling the operation of the turret-locking device to lock the turret, and means for causing the unclutching of said driving means when said temporary inoperativeness of said rotating members occurs.

5. In a lathe, a turret, intermittently-acting gears for rotating the turret, means for driving one of said gears to transmit motion to the other, a friction-gear for driving the one of said gears that actuates its fellow, a turret-locking device, means for controlling the operation of the turret-locking device to lock the turret, and means for causing the separation of the parts of the friction-gear when said intermittently-acting gears become inactive.

6. In a lathe, a turret, a carriage therefor, intermittently-acting gears for revolving the turret that are temporarily disconnected at a certain point in the rotation of one of such gears, whereby movement of the turret therefrom ceases, means for driving one of said gears, a clutch for connecting and disconnecting said driving means and a source of power, a part on the carriage for operating said clutch in one direction, a turret-locking device and means to actuate the turret-locking device and means to actuate said clutch in the other direction when the cessation of the movement of the turret by said intermittently-acting gears occurs.

7. In a lathe, a turret, a friction-gear for rotating the same means controlled by said turret for separating the parts of said friction-gear when said turret shall have reached a predetermined position in its rotation, and a part on the turret to operate said means for separating the parts of the friction-gear.

8. In a lathe, a turret, a movable carriage therefor, feed mechanism for said carriage, a friction-gear for rotating said turret, a projection on said carriage constructed to be set by said turret when said turret shall have reached a predetermined position in its rotation a part on the turret to operate said projection and means for separating the parts of said friction-gear by the action of said projection set as aforesaid when the movement of said carriage by said feed mechanism shall bring said projection into operative relation to said separating means.

9. In a lathe, a carriage, an annular tool-carrying turret supported on said carriage and surrounding the lathe-bed, friction-gearing for intermittently rotating said turret means controlled by said turret for separating said friction-gearing after each intermittent partial rotation of said turret, and a part on the turret to operate said separating means.

10. In a lathe, a carriage, a turret supported on said carriage, mechanism for rotating the turret intermittently, a locking device movable into and out of engagement with the turret, a slide, a relatively stationary part for actuating said slide, means acted upon by said slide to move the locking device out of engagement with the turret, and means for starting the turret-rotating mechanism also actuated by said slide.

11. In a lathe, a turret, a movable carriage therefor, means for rotating the turret, means for controlling the movement of the turret-rotating means, a part movably mounted on the carriage so that it may be moved into and out of coöperation with said arresting means and a part relative to which the carriage moves to actuate said movable part to change its position relative to said controlling means.

12. In a lathe, a carriage, a turret supported on said carriage, an in and out adjustable projection on the rear side of said turret, a bell-crank lever 102 pivoted on said carriage and adapted to be tilted by said projection, a bell-crank lever 90 pivoted on said carriage and engaging with said lever 102, a vertically-moving pin 111 in said carriage controlled by said lever 102 in combination with mechanism for intermittently rotating said turret and means for arresting said mechanism controlled by said pin 111.

13. In a lathe, a carriage, a turret supported on said carriage, and an in and out adjustable projection on the rear side of said turret, a bell-crank lever 102 pivoted on said carriage and adpted to be tilted by said projection, a bell-crank lever 90 pivoted on said carriage and engaging with said lever 102, a vertically-moving pin 111 on said carriage controlled by said lever 102, in combination with a longitudinally-movable rod 72 supported on said lathe and provided with a collar 82 adapted to be engaged by said pin 111, a friction-gear 69, 70 controlled by said rod and gearing for intermittently transmitting rotary movement from said friction-gear to said turret.

14. In a lathe, a carriage, a turret supported thereon, an actuating-shaft 41 for said turret in combination with the friction-gears 69, 70, means for rotating gear 70, intermediate gearing including a Geneva pinion 80 interposed between said gear 69 and shaft 41, and means controlled by said carriage for separating said friction-gears; the said means being timed to operate during temporary stoppage of rotary movement of said turret due to said Geneva pinion.

15. In a lathe, a turret, a carriage for the turret, a shaft whose axis lies parallel with the direction of the travel of the carriage, gearing between said shaft and the turret to transmit power from the shaft to the turret to revolve the turret, feed mechanism for the carriage, a part mounted on and moving with the carriage for controlling the operation of the feed mechanism, and means mounted on the shaft to coact with said part on the carriage.

16. In a lathe, a turret, a carriage for the turret, a shaft extending longitudinally of the lathe, gearing between the shaft and the turret, feed mechanism for the carriage comprising two gears, one of which is movable into and out of engagement with the other, means for holding the movable gear in mesh with the other, a lever mounted on the carriage for latching said holding means, and parts carried by said shaft which coact with said lever.

17. In a lathe, a turret, a shaft for rotating said turret, over which the turret is slidable, a stop device or devices carried by said shaft and not projecting beyond the surface thereof, and mechanism actuated by said stop device, or devices.

18. In a lathe, a turret, a shaft for rotating said turret, the turret being slidable over the shaft, and a series of stop-rods contained in grooves in said shaft, and mechanism that is controlled by said stop-rods.

19. In a lathe, a turret, a shaft for rotating said turret passing through the same with its axis parallel to the turret-axis, a carriage on which the turret is mounted that is slidable lengthwise on said shaft, stop-rods contained in grooves in said shaft, and feed mechanism for the carriage controlled by said stop-rods.

20. In a lathe, the combination of a carriage, a turret having gear-teeth, a shaft over which the turret is slidable, adjustable notched rods in grooves in said shaft, a pinion on said shaft meshing with the turret gear-teeth, mechanism actuated by the turret for controlling the rotation of said shaft, a lever pivoted on the carriage, having an arm adapted to coöperate with each of the notched rods, a feed mechanism for the carriage, and mechanism controlled by said lever for arresting the movement of the carriage-feed mechanism.

21. In a lathe the combination of a carriage, an annular tool-carrying turret having internal gear-teeth and supported on said carriage and surrounding the lathe-bed, an intermittently-rotary shaft 41 having longitudinal recesses, adjustable notched rods 43 in said recess, pinion 62 on said shaft engaging with said turret gear-teeth, mechanism actuated by said turret for controlling said intermittent rotation of said shaft 41, bell-crank lever 47 pivoted on said carriage having one arm bearing against said rod 43 and adapted to enter the notch in said rod, a feed mechanism for said carriage, and mechanism controlled by the other arm of lever 47 for arresting the movement of said carriage-feed mechanism.

22. In a lathe, a carriage, a turret thereon, a shaft having longitudinal grooves corresponding in number to the number of tools carried by the turret, over which the turret is slidable, means for intermittently rotating said shaft and imparting said rotation to the turret, a stop-rod in each of said grooves, a lever pivoted to the carriage having an arm to coöperate with each of said rods, a feed mechanism for moving the carriage and means governed by said lever for arresting the motion of said feed mechanism.

23. In a lathe, a carriage, a polygonal annular turret adapted to carry tools on its sides and supported on said carriage and surrounding the lathe-bed, a shaft having longitudinal recesses corresponding in number to the sides of said turret, means for intermittently rotating said shaft and imparting said rotation to said turret, notched rods corresponding in number to the tool-carrying sides of said turret disposed in said recesses and longitudinally adjustable therein, a bell-crank lever pivoted on said carriage and having one arm adapted to bear upon one of said rods and to enter the notch therein, a feed mechanism for moving said carriage and means governed by said lever for arresting the motion of said feed mechanism during the dwell in the rotation of said shaft.

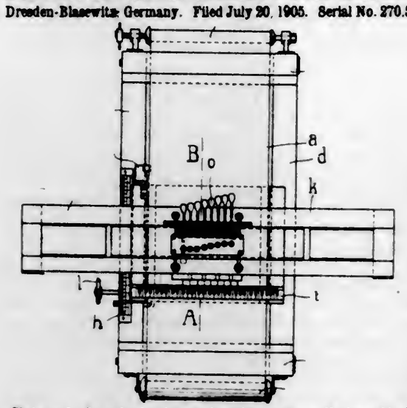
24. In a lathe, a carriage, an annular tool-carrying turret supported on said carriage and surrounding the lathe-bed, a longitudinally-recessed shaft, means for rotating said shaft and for imparting said rotation to said turret, a notched rod disposed in a shaft-recess and longitudinally adjustable therein, a bell-crank lever pivoted on said carriage having one arm adapted to bear upon said rod and enter the notch therein, mechanism for moving said carriage and means governed by said lever for arresting the motion of said feed mechanism.

25. In a lathe, a stock or rod carrying chuck, a carriage, a turret on the carriage, and a stock stop or gage on the carriage, apart from the turret, and situated so that the turret-tools are between the work and said stock-stop when said stock-stop is being used.

26. In a lathe, a stock or rod carrying chuck, a carriage, a turret on the carriage, adjustable feed-stops to the tools, a stock stop or gage on the carriage, the longitudinal operative position of said stock stop or gage together with the adjustment of one of the tools being determined by the setting of the feed-stop to said tool, the location of said tool being between the work and stock-stop when said stock-stop is being used, said stock stop or gage being situated so that it is in operative position when the carriage ceases its movement by the action of the one of said feed-stops with reference to which the longitudinal operative position of the stock stop or gage is determined.

27. In a lathe, a stock or rod carrying chuck, a carriage, a turret on the carriage having its axis parallel with the direction of travel of the carriage toward and from the chuck, feed-stops to the turret-tools and a stock stop or gage on the carriage apart from the turret, and situated thereon, so that the turret-tool is between the work and the stock-stop, when said stock-stop is being used.

824,208. **DEVICE FOR PERFORATING MUSIC-ROLLS FOR SELF-PLAYING PIANO ATTACHMENTS.** ADOLF ROTHERMUNDT, Dresden-Blasewitz, Germany. Filed July 20, 1905. Serial No. 270,585.



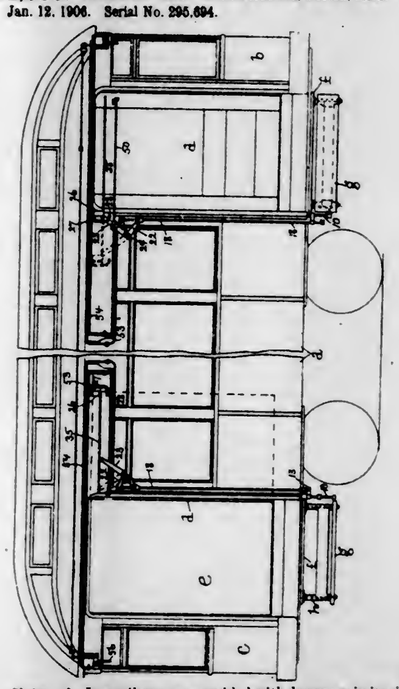
Claim.—1. In a device for perforating music-rolls for self-playing piano attachments, the combination of a pedestal, a frame traveling on said pedestal, means for traveling said frame, rollers and clamping devices for the music-band at either end of said traveling frame, a graduated scale on said frame, an indicator and a blind keyboard on said pedestal, a carriage traveling on said pedestal rectangularly to and above said traveling frame, sets of punches of varying cutting lengths and actuating means therefor on said carriage, and a corresponding number of fingers on said carriage and traveling over said blind keyboard, the various parts being constructed, arranged and coöperating substantially as and for the purpose set forth.

2. In a device of the character described, a sheet-carriage, a blind keyboard thereon, a punch-carriage, punches on the punch-carriage, and means for bringing one of the punches into line with a selected key of the blind keyboard to perforate the sheet.

3. In a device of the character described, a reciprocating carriage, a blind keyboard thereon, a punch-carriage movable transversely of the sheet-carriage, punches thereon, and means for bringing a selected punch into a relative position to a selected key of the keyboard for perforating the sheet of the sheet-carriage.

4. In a device of the character described, a reciprocating sheet-carriage, a blind keyboard thereon, a punch-carriage movable transversely of the sheet-carriage, punches of different punching area on the punch-carriage, means for bringing a selected punch into a relative position to a selected key of the keyboard for perforating the sheet contained in the carriage, means for moving the sheet and sheet-carriage simultaneously, and means for moving the sheet independently of the sheet-carriage.

824,209. **RAILWAY-CAR.** MYRON ROUNDS, Boston, Mass. Filed Jan. 12, 1906. Serial No. 295,694.



Claim.—1. In a railway-car provided with doorways in its sides, doors coöperating with said doorways to open and close the same, steps leading to said doorways and pivoted to be folded into a substantially upright position and to be lowered into a substantially horizontal position, power-operated means for moving said doors into their opened and closed positions, and mechanism actuated by said doors for automatically moving said steps into their folded and lowered positions, substantially as described.

2. In a railway-car provided with doorways in its sides, doors coöperating with said doorways to open and close the same, steps leading to said doorways and pivoted to be folded into a substantially upright position and to be lowered into a substantially horizontal position, power-operated means for moving said doors into their opened and closed positions, mechanism actuated by said doors for automatically moving said steps into their folded and lowered positions, and means to prevent the steps being folded up while the doors are in their open positions, substantially as described.

3. In a railway-car provided with a doorway, a door coöperating with said doorway, a step leading from said doorway and movable into an operative and inoperative position with relation to said doorway, power-operated means for moving said door into its opened and closed positions, and mechanism for automatically moving said step into its operative and inoperative positions, said mechanism being actuated by said power-operated means, substantially as described.

4. In a railway-car provided with a doorway, a sliding door coöperating with said doorway, a step leading from said doorway and movable into an operative and inoperative position with relation to

said doorway, mechanism for operatively connecting said door with said step, said mechanism having provision for permitting the door to slide in opposite directions for a portion of its travel without effecting movement of said step, substantially as described.

5. In a railway-car provided with a doorway, a door coöperating with said doorway, a step leading from said doorway and movable into an operative and inoperative position with relation to said doorway, and mechanism actuated by said door for operating said step, said mechanism having provision for permitting the door to be moved for a portion of its travel without effecting movement of said step, substantially as described.

6. In a railway-car provided with a doorway, a door coöperating with said doorway, a step leading from said doorway and movable into an operative and inoperative position with relation to said doorway, mechanism connected with said step, and an actuating device for said mechanism movable with said door and adapted to be engaged with and disengaged from said mechanism during the travel of the door, substantially as described.

7. In a railway-car provided with a doorway, a door coöperating with said doorway, a step leading from said doorway and movable into an operative and inoperative position with relation to said doorway, mechanism connected with said step, an actuating device for said mechanism movable with said door and adapted to be engaged with and disengaged from said mechanism during the travel of the door, and means coöperating with said mechanism when disengaged from said actuating device to prevent said step being moved into its inoperative position, substantially as described.

8. In a railway-car provided with a platform and with a doorway leading from said platform, a step located below said platform within the sides of the car, a sliding door coöperating with said doorway, and a cover for the open space above said step attached to the door to slide therewith, substantially as described.

9. In a railway-car provided with a platform and with a doorway leading from said platform, a step located below said platform within the sides of the car, a sliding door coöperating with said doorway, a cover for the open space above said step attached to the door to slide therewith, and means attached to said cover for holding said door against lateral movement when in its closed position, substantially as described.

10. In a railway-car provided with a vestibule at its end having a doorway in its side, a sliding door coöperating with said doorway, a step leading from said doorway and pivoted to permit it to be moved into an operative and inoperative position, a lever operatively connected with said step and sliding door to turn said step on its pivot when said door is slid into its opened and closed positions, substantially as described.

11. In a railway-car provided with a doorway, a step leading from said doorway and pivoted to be moved into its operative and inoperative positions, a sliding door coöperating with said doorway, a lever carried by the car near said step and operatively connected with the latter, a second lever carried by the car near the upper end of the doorway, and means to connect said levers, substantially as described.

12. In a railway-car provided with a doorway, a step leading from said doorway and pivoted to be moved into its operative and inoperative positions, a sliding door coöperating with said doorway, a lever carried by the car near said step and operatively connected with the latter, a second lever carried by the car near the upper end of the doorway, and means to connect said levers, and power-operated means for moving said door and levers, substantially as described.

824,210. **BOTTLE.** RUDOLPH SAUER, Minneapolis, Minn. Filed Aug. 23, 1905. Serial No. 275,396.

Claim.—1. A bottle comprising a body with a hole at one side adapted to be corked and sealed, and a neck solid in its top and having two opposite side openings, and suitable means for closing said side openings, said openings in the neck forming ducts extending on a slant out and downward from the regular inner canal of the neck.

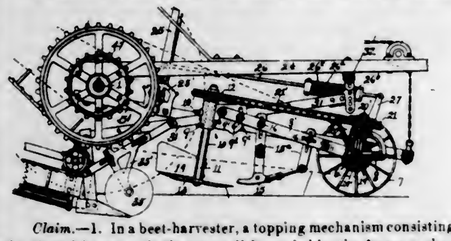
2. A bottle comprising a body with a hole at one side adapted to be corked and sealed, and a neck solid in its top and having two opposite side openings, and suitable means for closing said side openings, said openings in the neck forming ducts extending on a slant out and downward from the regular inner canal of the neck, and the annular shoulder 11 below said openings to form a recess for the purposes set forth.

3. A bottle comprising in combination, a body with a hole at one side adapted to be closed and sealed, a neck with a head solid in its top and having two opposite out and downwardly-slanting side openings communicating with the interior of the bottle-neck, and an elastic cap adapted to be forced downward upon the head and keep said side openings closed.



4. A bottle comprising in combination, a body with a hole at one side adapted to be closed and sealed, a neck with a head solid in its top and having two opposite out and downwardly-slanting side openings communicating with the interior of the bottle-neck, the shoulder 11 at the base of said head, and an elastic cap adapted to be forced snugly downward over said head and to engage with its edges below said shoulder.

824,211. **BEET-HARVESTER.** NORMAN B. SEBRING and WALTER A. SEBRING, Blissfield, Mich. Filed Dec. 15, 1905. Serial No. 291,862.



Claim.—1. In a beet-harvester, a topping mechanism consisting of a pivotal frame, a single rotary disk carried by the frame, a shoe adjustably carried by the frame in advance of the disk for riding on the beet-tops and automatically controlling the position of the disk to uniformly top the beets, said shoe being curved in cross-section to conform to the curve described by the disk due to its inclination from a horizontal plane, and means for driving the disk.

2. In a beet-harvester, a topping mechanism consisting of a pivotal trailer-frame, a single rotary cutting-disk adjustably carried by the frame, a shoe carried by the frame in advance of the cutting-disk for riding on the beet-tops and automatically controlling the position of the disk to uniformly top the beets, said shoe being bowed in cross-section and its rear edge uniformly spaced throughout its width from the contiguous edge of the disk, and means for rotating the disk.

3. In a beet-harvester, a topping mechanism consisting of a pivotal trailer-frame, a rotary cutting-disk carried by the frame, a shoe adjustably carried by the frame in advance of the cutting-disk for gaging the cut of the disk, said shoe having its rear edge disposed in close proximity to the cutting edge of the disk and concaved to approximately conform to an arc of the disk's circumference, and means for driving the disk.

4. In a beet-harvester, a topping mechanism comprising a pivotal frame, a cutting-disk carried by the frame, said disk having its rim annularly flattened and disposed at an oblique angle to its axis, means carried by the frame for gaging the cut of the disk, and mechanism for driving the disk.

5. In a beet-harvester, a topping mechanism comprising a pivotal frame, a cutting-disk carried by the frame and having its axis disposed obliquely to a horizontal plane, said disk having its cutting edge flattened for a portion of its radial depth and disposed at an oblique angle to its axis with its forward edge in substantially a horizontal plane, means carried by the frame for gaging the cut of the disk, and means for driving the disk.

6. In a beet-harvester, the combination with the main vehicle-frame, of a supplemental frame pivoted at its rear to said main frame and extending forwardly under said frame and having a wheeled support at its free end, a trailer-frame carried by the supplemental frame, topping mechanism carried by the trailer-frame, and means for elevating the supplemental and trailer frames to inoperative position.

7. In combination, a main vehicle-frame, a supplemental frame and a trailer-frame, the supplemental frame being pivoted at one end to the main frame and the trailer-frame being pivoted to the free end of the supplemental frame and carrying topping mechanism, means for adjusting the trailer-frame relative to the supplemental frame, and means for imparting an oscillation to the supplemental frame relative to the vehicle-frame, substantially as described.

8. In combination, a vehicle-frame, a supplemental frame having one end pivoted thereto and its free end provided with a wheeled support, a frame trailing from the free end of the supplemental frame, topping mechanism carried by the trailer-frame, and means for raising the supplemental and trailer frames to inoperative positions under the vehicle-frame, substantially as described.

9. The combination with a vehicle-frame of a supplemental frame pivoted to and extending forwardly from the main axle of the vehicle-frame, a frame trailing from the free end of the supplemental frame, topping mechanism carried by the trailer-frame, connection between the vehicle and supplemental frames for raising and lowering the latter, and means for adjusting the trailer-frame relative to the supplemental frame.

10. In a beet-harvester, the combination with the pivotally-mounted topping mechanism, of a rock-shaft fixed to the frame of such mechanism at its axis, a crank-arm on said shaft, an operating-lever, and connection between the crank-arm and lever yieldable in one direction of stress whereby the frame may be both elevated and yieldingly depressed.

11. In a machine of the class described, the combination of a frame having one end in pivotal connection with the machine-frame, topping mechanism having its frame pivotally attached to the first-mentioned frame adjacent its free end, and means for elevating the free end of the first-mentioned frame to inoperative position.

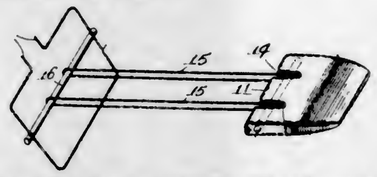
12. In a machine of the class described, the combination of a frame having one end pivotally attached to the machine-frame and its other end provided with supporting-wheels, a trailer-frame pivotally attached to the first-mentioned frame, a rotary cutting-disk and a cut-gaging member carried by the trailer-frame, mechanism for driving the cutting-disks, means for elevating the free end of the first-mentioned frame, and means for applying a yielding downward pressure to the trailer-frame, substantially as described.

13. In a machine of the class described, the combination of a frame having one end pivotally mounted to the machine-frame and its other end provided with supporting-wheels, a yoke pivoted to the frame and having a rearwardly-extending arm, a cutting-disk and a cut-gaging member carried by the yoke-arm, and mechanism for driving the disk.

14. In a beet-harvester, the combination with a cutting-disk disposed at an angle to a horizontal plane, of a gage-shoe which is curved in cross-section to conform to the curve described by the disk due to its inclination.

15. In a beet-harvester, the combination with a single cutting-disk, of a gage-shoe therefor having its rear edge uniformly spaced throughout its width from the contiguous edge of the disk.

824,212. **FORMER FOR TUBULAR FABRICS.** CHARLES C. SHEPARD, Worcester, Mass., assignor to Multiple Woven Hose & Rubber Company, Worcester, Mass., a Corporation of New York. Filed Aug. 19, 1904. Serial No. 221,331.



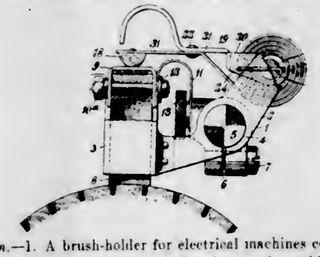
Claim.—1. In a loom, the combination of the lathe, warps arranged to weave a tubular fabric, a block inside the tube being woven, and a lost-motion connection between the lathe and block, whereby the block will remain stationary during the greater part of the swinging movement of the lathe and will be forced forward a short distance into the fabric during the last part of the forward movement of the lathe, and will be drawn back a short distance out of the fabric during the last part of the return movement of the lathe.

2. In a loom, the combination of the lathe, the warps arranged to weave a tubular fabric, a block inside the tube being woven having a chiseled front edge and inwardly-tapering sides, rods extending back from the block through the reed of the lathe, means for swinging said rod up and down to avoid the shuttle, said parts coöperating to form a lost-motion connection with the lathe, whereby the block remains stationary during the greater part of the swinging motion of the lathe, and is driven into the tube during the last part of the beating-up motion of the lathe and is drawn back by the engagement of the lathe with stops on the wires during the last part of the return motion of the lathe.

3. In a loom, the combination of the lathe, the warps arranged to weave a tubular fabric, a block inside of the tube being woven, wire loops fitting into slots in the block and pivoted to a cross-pin therein, and a cross-pin connecting the other ends of the wire loops, said cross-pin having its ends engaging a guide-frame which incloses the warps.

4. In a loom, the combination of the lathe, the warps arranged to weave a tubular fabric, a wooden block located in the tube being woven, said block having a substantially chiseled-shaped forward edge, the wire loops fitting into slots in the rear edge of the block and mounted on a cross pin, the cross-pin connecting the other end of said wire loops, and a guide-frame for the last-named cross-pin, said guide-frame being formed by a single piece of wire and having an opening or gap permitting piecing of the warp-threads.

824,213. **BRUSH-HOLDER FOR ELECTRICAL MACHINES.** ROBERT SIEGFRIED and NORMAN W. STORER, Pittsburg, Pa., assignors to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed Feb. 12, 1904. Serial No. 193,355.



Claim.—1. A brush-holder for electrical machines comprising a frame, a brush loosely supported therein, a rod provided with a plurality of transverse holes rotatably mounted in bearings in said frame, one of which has a transverse hole, a spring having one end attached to said rod and its other end resting upon the brush, a steadying-arm loosely supported by said rod and rigidly attached to said spring and a locking-pin that may be removably inserted in the hole in the bearing and in either of the holes in the rod to lock the rod to the frame in each position to which it is rotatively adjusted.

2. In a brush-holder, the combination with a frame having a socket and a brush having a sliding fit in said socket, of a spiral spring having one end supported by said frame and having its other end resting upon said brush and a steadying-arm rigidly fastened to the spring and having one end pivotally attached to the frame.

3. In a brush-holder, the combination with a frame and a brush mounted to slide therein, of a spring, one end of which rests upon said brush and the other end of which is attached to said frame, and a steadying-arm rigidly fastened to said spring and pivotally attached to the frame.

4. In a brush-holder, the combination with a frame and a brush loosely supported therein, of a rod rotatably mounted in bearings in said frame, one of which has a transverse hole, said rod being provided with a thumb-wrench and with a plurality of transverse holes each of which may be caused to register with the hole in the bearing, a spring having one end attached to said rod and its other end resting upon the brush, a pivoted steadying-arm attached to said spring and a removable locking-pin adapted to be inserted in either of the holes in the rod and in the hole in the frame.

5. In a brush-holder, the combination with a frame and a brush loosely mounted therein, of a rod rotatably mounted in the frame, a spiral spring having one end attached to said rod and the other end resting upon the brush, and a steadying-arm connecting said rod with an intermediate point in the spring.

6. In a brush-holder, the combination with a frame and a brush

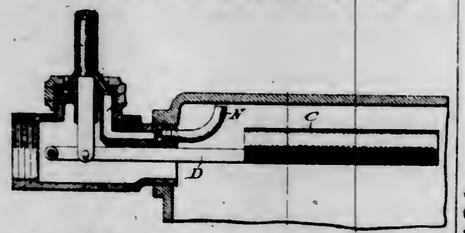
loosely mounted therein, of a rod journaled in said frame, a removable locking device between the rod and the frame, a spiral spring one end of which is fastened to said rod and the other end of which rests upon the brush and a steadying-arm having one end loosely mounted upon said rod and rigidly fastened to the spring between the rod and the brush.

7. In a brush-holder, the combination with a frame and a brush loosely mounted therein, of a rod journaled in said frame, a removable locking device between the rod and the frame, a spring having one end attached to the rod and having a block at its other end that rests upon the brush and a steadying-arm for the spring.

8. In a brush-holder, the combination with a frame comprising a casting and a sheet-metal socket for the brush, of a rotatable rod mounted in the casting, a removable locking device between the rod and the casting, a spiral spring attached to one end of the rod and a steadying-arm loosely mounted upon the rod and rigidly fastened to the free end of the spring.

9. In a brush-holder, the combination with a frame comprising a casting and a rolled-metal socket, of a brush loosely mounted in said socket, a rod rotatably mounted in the casting, a removable locking device between the rod and the casting, a spiral spring surrounding and fastened to said rod and having a projecting end provided with a block to rest upon the brush and a steadying-arm loosely connected at one end to said rod and rigidly fastened to the projecting portion of the spring.

824,214. **SAFETY ATTACHMENT FOR BOILERS.** THOMAS SMALL, Camden, N. J. Filed Feb. 15, 1905. Serial No. 245,695.



Claim.—1. A hot-water boiler, a hot-water-conveying branch connected therewith and adapted to have attached to it, a pipe leading to a place of service, a valve, a casing for said valve, separate means in said branch forming a communication between the boiler and said valve-casing, and means in the boiler connected with said valve automatically operating to open the latter when the valve falls, said valve-casing and branch being independent of each other.

2. A hot-water boiler, a hot-water-conveying branch connected therewith and adapted to have attached to it, a pipe leading to a place of service, a valve, a casing for said valve, separate means in said branch forming a communication between the boiler and said valve-casing, a float in said boiler, and a lever carrying said float and entering said branch and being connected with said valve, said valve-casing and branch being independent of each other.

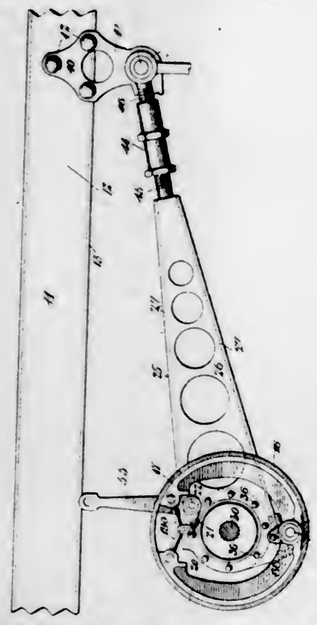
3. In a boiler, an outlet therefor, a bore in said outlet independent of the same, a pipe connected with said bore and having its inlet end in said boiler, a valve, a communication between said bore and the casing of said valve, and means in the boiler connected with said valve adapted to automatically open the latter when the water lowers.

4. In a boiler, an outlet, a tubular neck thereon, a bore in said outlet in communication with said neck, a valve, a port intermediate of said neck and the casing of said valve, an upwardly-deflected pipe in the boiler connected with said bore, and means in the boiler connected with said valve automatically operating to open the latter when the water falls.

824,215. **BRAKE-RIGGING FOR SELF-PROPELLED VEHICLES.** CHARLES O. SNYDER, New York, N. Y. Filed May 9, 1905. Serial No. 259,607.

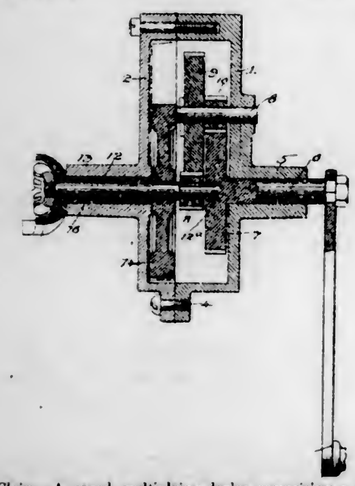
Claim.—1. In a brake-rigging, a rotating brake-drum, a radius-rod attached to the vehicle and extending into proximity to said drum, a shoe pivoted to said radius-rod and extending annularly around said drum, a lever also pivoted to said radius-rod, and having a link connection with said shoe, and means for imparting tension to said lever.

2. In a brake-rigging, a rotating drum, a radius-rod attached to the vehicle-body and extending into proximity to said drum, a pair of brake-shoes pivoted to said radius-rod and extending peripherally around the drum in opposite directions, and a lever also pivoted to said radius-rod and having a pair of link connections to the respective shoes.



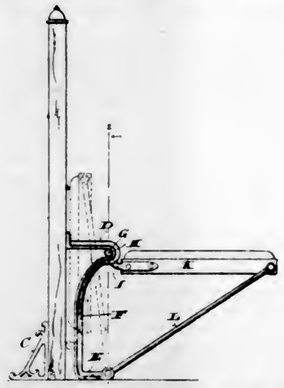
3. In a brake-rigging, a rotating drum fixed to the vehicle wheel, a radius-rod attached to a portion of the vehicle-body and extending into proximity to said drum, said radius-rod being formed of a pair of diverging truss members having an intermediate web with perforations or openings therein, a lever pivoted within said radius-rod, a brake-shoe having a link connection to said lever, and means for pivotally connecting said brake-shoe to said radius-rod.

824,216. **SPEED-MULTIPLYING POWER-TRANSMITTING DEVICE.** JOHN K. STEWART, Chicago, Ill. Filed Aug. 3, 1905. Serial No. 272,471.



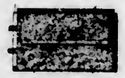
Claim.—A speed-multiplying device comprising a two-part housing and a gear-train completely inclosed therein, the initial and final shafts of the train being coaxial and protruding from opposite sides of the housing, the parting plane of the two members of the housing being transverse to all the shafts, one of said members having a threaded boss projecting from the edge of the housing in a plane transverse to the shafts, for mounting the housing on a threaded stem or standard.

824,217. **SUPPORT FOR SWING-SEATS, SHELVES, &c.** CHARLES H. TESCH, Milwaukee, Wis. Filed July 6, 1905. Serial No. 268,386.



Claim.—The combination of standards having upper rearwardly-extending horizontal portions and forward partly curvilinear vertical track portions, a support, arms attachable to the support and provided with lateral lugs, track-opposing antifriction roller-sleeves on the lugs, and braces pivotally attachable at their ends to said standards and support.

824,218. **PROCESS FOR MAKING DENTAL DEVICES.** STANLEY TOWLE, Fall River, Mass. Filed Nov. 10, 1905. Serial No. 286,658.



Claim.—The method of forming artificial substitutes for missing teeth or parts thereof, which consists in preparing a core having the shape of the tooth or part thereof to be supplied, forming a mold to correspond to said core, and forming in said mold by heat and pressure a celluloid device having the shape of the tooth or part thereof to be supplied.

824,219. **NUT-LOCK.** FRANCK S. DI VITO and ANTHONY MEYN, New Orleans, La. Filed Feb. 17, 1906. Serial No. 301,667.

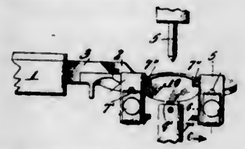


Claim.—In a nut-lock, the combination of a bolt, a nut mounted thereon and having an exteriorly-threaded inner part and an outer plain and tapered part and also having one or more longitudinal slits, a washer surrounding said parts of the nut and having interior threads arranged to engage the threaded part of the nut and a taper bore arranged to engage the taper part of the nut and also having notches in its end, and a taper key arranged in the slit of the nut and seated in one of the notches of the washer and having its end turned against the end of the washer.

824,220. **LENS-DRILLING MACHINE.** EDGAR T. WAITE, Southbridge, Mass., assignor to American Optical Company, Southbridge, Mass., a Corporation of Massachusetts. Filed Nov. 16, 1905. Serial No. 287,617.

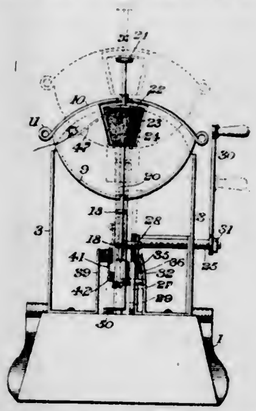
Claim.—1. In a lens-drilling machine, the combination with lens-holding jaws or supports, of plates attached to said jaws, and having pins or projections thereon for one end of a lens, said pins extending in two different horizontal planes, and means for holding said plates on said jaws.

2. In a lens-drilling machine, the combination with lens-holding jaws or supports movable toward and away from each other, and having vertically-extending projections on their ends, of plates adjustably attached to said projections to be moved in a vertical plane, and having supports thereon for one end of a lens, said supports extending in two different horizontal planes.



3. In a lens-drilling machine, the combination with lens-holding jaws or supports, of plates attached to said jaws and having pins or projections thereon for one end of a lens, said pins extending in two different horizontal planes, and means for yieldingly holding said plates on said jaws.

824,221. **MATCH BOX AND LIGHTER.** EMIL WALDER, Philadelphia, Pa. Filed Aug. 18, 1905. Serial No. 274,728.



Claim.—1. In a match box and lighter, a movable receiver, the top of which is open, a stationary match-support, whose top is normally at the top of said receiver, a movable clamp adapted to overhang one end of said match-support and a resilient device on said receiver from which said clamp depends.

2. In a match-lighter, a receiver, a match-support normally above the receiver, means for raising the receiver, a clamp adapted to secure a match upon the support on the downward movement of the receiver, and means movable with the receiver for igniting the match.

3. In a match-lighter, a match-support, a receiver surrounding the support and movable past the same, an igniter secured to the receiver and means for continuously raising said receiver and igniter and interruptedly lowering the same.

4. In a match-lighter, a match-support, a receiver, an igniter movable past the support, means for raising the igniter, and means for interrupting the downward movement of the same.

5. In a match-lighter, a match-support, an igniter, an arm adapted to raise said igniter, a stop adapted to prevent the igniter from following the arm during a portion of the downward movement of the latter and means on said arm for releasing the stop.

6. In a match-lighter, a match-support, an igniter movable past the support, a carriage for said igniter, a laterally-movable stop for said carriage, an arm engaging with said carriage to raise the same and to permit the lowering of the carriage and means on the arm for disengaging said stop.

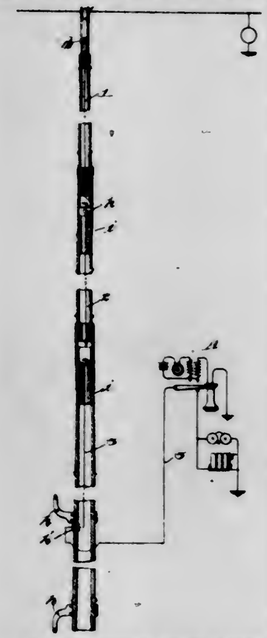
7. In a match-lighter, a movable match-receiver a match-support, an igniter connected with said receiver and movable with respect to the support and means for turning the igniter, the mounting of said igniter being resilient, whereby said igniter yields automatically laterally when engaged by the head of a match.

8. In a match-lighter, a match-receiver, a match support and igniter connected with said receiver, and movable with reference to said support, a handled rod connected with said igniter, whereby it may be rotated, the top of said receiver having a slot, the same freely

receiving a portion of said rod, the latter being resilient, whereby said portion is laterally movable in said slot.

9. In a match-lighter, a match-support, a carriage movable along said support, an igniter attached to said carriage, a stop for said carriage, means for releasing said stop and resilient means for increasing the speed of the carriage when released.

824,222. LINE-CONNECTING DEVICE. JOSEPH H. WARREN, Chicago, Ill., assignor to Western Electric Company, Chicago, Ill., a Corporation of Illinois. Filed June 18, 1904. Serial No. 213,087.



Claim.—1. In a line-connecting device, in combination a hollow pole comprising a number of removable sections, conductors within said sections, a clip carried by the top section adapted to make electrical connection with an overhead wire, said clip being connected with the conductor within the top section, and metal ferrules for uniting said sections and connecting said conductors.

2. In a line-connecting device, in combination a hollow bamboo pole comprising a number of removable sections, a clip carried by one of said sections adapted to grasp and make electrical connection with an overhead wire, a conductor extending from said clip through said section, metal ferrules adapted to unite said sections to form bayonet-joints, and conductors extending through the other sections, the conductor of the bottom section passing through an opening therein, said conductors being connected by the ferrules when said sections are joined, and cleats carried by the bottom section upon which the conductor thereof may be wound.

3. In a line-connecting device, in combination a pole comprising a number of removable sections, means for uniting said sections, a clip carried by one of said sections, said clip comprising a body portion secured to said section, a hook carried thereby adapted to engage a conducting-wire, a tongue carried by the body portion of said clip adapted to maintain said wire in firm contact with said hook, said tongue being roughened and bent inward at its sides to form a curved surface, whereby the wire is cleaned and injury to the wire prevented, and a conductor connected with said clip.

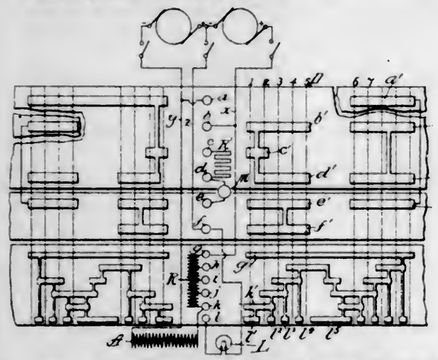
4. A line-connecting device consisting of a pole, the diameter whereof increases from a minimum at the top to a maximum at the base, said pole comprising a number of separate lengths or sections removably fitted together by ferrules and sockets, each ferrule and socket having a diameter different from the remaining ferrules and sockets, a clip carried by the upper section of the pole adapted to engage a wire, a conductor connected with said clip and a tube within one of the larger sockets, said tube being of a diameter adapted to fit the ferrule of an upper section, said tube and socket being concentrically disposed; whereby said larger section may be coupled with sections of different sizes.

5. In a line-connecting device, the combination with a pole, of a clip carried by said pole adapted to make connection with a conducting-wire, a conductor connected with said clip, and cleats carried by said pole upon which a portion of said conductor may be wound, each cleat comprising an open ring h' fitting upon said section, arms h^3 h^3 formed by the ends of said ring, and means for fastening said arms together to close said ring and secure the cleat rigidly in place upon the pole.

6. In a line-connecting device, the combination with a pole, of a clip carried by said pole adapted to make connection with a conducting-wire, a conductor connected with said clip, and cleats carried by said pole upon which a portion of said conducting-wire may be wound, each cleat comprising an open ring h' fitting upon said section, arms h^3 h^3 formed by the ends of said ring, a metal piece h^3 placed between said arms, and means for securing said arms and metal piece together, whereby the cleat is held rigidly in place upon the pole.

7. In a line-connecting device, in combination a hollow pole comprising top and bottom and intermediate sections, conductors within said sections, a clip carried at the upper end of the top section adapted to make electrical connection with an overhead wire, said clip being connected with the conductor within its section, metal ferrules carried at the lower ends of said upper and intermediate sections, each of said ferrules having L-shaped slots therein, metal sockets carried upon the upper ends of said intermediate and bottom sections, said sockets having transverse bars therein adapted when the sections are joined to enter the L-shaped slots of said ferrules and lock said sections, each socket having an opening in the base thereof through which foreign matter may escape, said sockets and ferrules when united connecting said conductors.

824,223. WARNING-SIGNAL FOR ELECTRIC-MOTOR CONTROLLERS. WILLIAM H. WARREN, Brooklyn, N. Y., assignor to Western Electric Company, Chicago, Ill., a Corporation of Illinois. Filed Oct. 25, 1905. Serial No. 284,295.



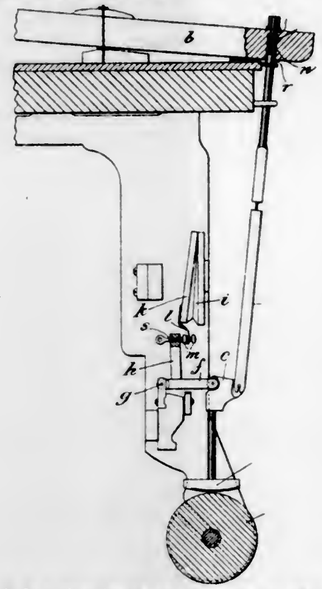
Claim.—1. The combination with the switching mechanism of a motor-controller, of a circuit including a signal for indicating safe and unsafe positions of the controller mechanism, and additional switching mechanism, which moves with each movement of the controller, to control the signal-circuit.

2. In a controller for electric motors, the combination with a motor-circuit, of a normally open circuit including a signal, a contact-finger to which one terminal of the signal is connected, and a series of contact-blocks on the controller-drum, adapted to engage with said finger when the controller is in improper running positions, and thereby to close the signal-circuit.

3. In a controller for electric motors, the combination with the motor-circuit, of a normally open shunt-circuit including a signal, a series of contact-blocks on the controller-drum located in positions intermediate the proper running positions of the controller, a finger connected to one terminal of the signal and adapted to engage said contact-blocks to close the signal-circuit when the controller mechaniam is in an unsafe position.

4. In a controller for electric motors, the combination with a controller-drum having a series of main contact-blocks thereon, of a series of fingers adapted to engage said blocks for controlling the motor-circuit, a normally open shunt-circuit including a signal, an auxiliary contact-finger to which one terminal of the signal is connected, and a series of auxiliary contact-blocks on the controller-drum so located as to engage the auxiliary finger when the controller mechanism is in unsafe position and thereby to close the signal-circuit.

824,224. PIANO. GEORGE W. WESER, New York, N. Y. Filed Sept. 20, 1904. Serial No. 225,178.



Claim.—1. In a piano having an attachment for playing the same, the combination with a key, a striker-rod for the rear end of the key, and means to operate the striker-rod, of a spring inclosed in the rear end of the key and interposed between the striker-rod and the key, substantially as described.

2. In a piano having an attachment for playing the same, the combination with a key, a striker-rod for the rear end of the key and means to operate the striker-rod, of a relatively weak spring inclosed in the rear end of the key and interposed between the striker-rod and the key, substantially as described.

3. In a piano having an attachment for playing the same, the combination with a key, a striker-rod for the rear end of the key, and means to operate the striker-rod, of a coil-spring in the end of the key, and a plunger interposed between the spring and the striker-rod against which the striker-rod normally bears, substantially as described.

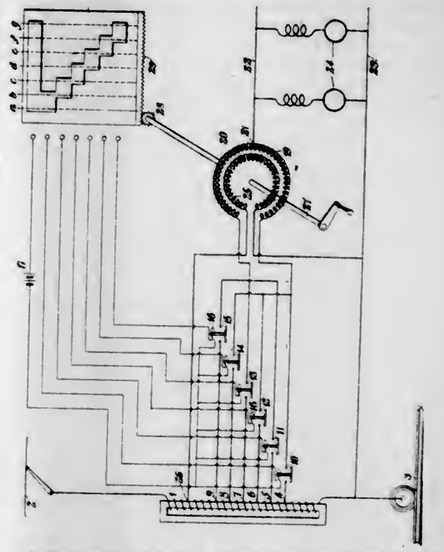
4. In a piano having an attachment for playing the same, the combination with a key, a striker-rod for the rear end of the key, and means to operate the striker-rod, of a coil-spring in the end of the key, and a plunger of hard felt interposed between the spring and the striker-rod against which the striker-rod normally bears, substantially as described.

5. A piano provided with a relief in the rear end of each key, said relief comprising a spring inclosed within a recess in the rear end of each key, and a felt plunger in the mouth of said recess, substantially as described.

824,225. VOLTAGE-REGULATOR. RAGNAR WIKANDER, Edgewood Park, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed June 19, 1905. Serial No. 265,983.

Claim.—1. The combination with a distributing-circuit and a transformer-winding having leads extending from several points therein, of a voltage-regulator having windings the inductive relations of which are variable, and means for successively connecting the respective terminals of one of the regulator-windings to consecutive leads from the transformer-winding.

2. The combination with a distributing-circuit and a transformer-winding having leads extending from several points therein, of a voltage-regulator having windings the inductive relations of which are variable, and means for successively connecting the respective terminals of one of the regulator-windings to consecutive leads from the transformer-winding, a point intermediate the terminals of the regulator-winding being connected to the distributing-circuit.



3. The combination with a distributing-circuit and a transformer-winding having leads extending from several points therein, of a voltage-regulator having windings the inductive relations of which are variable, and means for successively connecting the respective terminals of one of the regulator-windings to consecutive leads from the transformer-winding, changes in the connections of the regulator-winding with the transformer occurring only when the voltage of the distributing-circuit is less than or exceeds the voltage that may be derived from the next successive lead by half the difference of potential between consecutive leads.

4. The combination with a distributing-circuit and a transformer-winding having leads from several points therein, of a voltage-regulator having primary and secondary windings the inductive relations of which are variable and means for successively connecting the respective terminals of the secondary winding of the regulator to consecutive leads from the transformer-winding.

5. The combination with a distributing-circuit and a transformer-winding having leads from several points therein, of a voltage-regulator having primary and secondary windings the inductive relations of which are variable and means for successively connecting the respective terminals of the secondary winding of the regulator to consecutive leads from the transformer-winding, a point intermediate the terminals of the secondary winding being connected to the distributing-circuit.

6. The combination with a distributing-circuit and a transformer-winding having leads from several points therein, of a voltage-regulator having primary and secondary windings the inductive relations of which are variable and means for successively connecting the respective terminals of the secondary winding of the regulator to consecutive leads from the transformer-winding, a point intermediate the terminals of the secondary winding being connected to the distributing-circuit and changes in the connections of the regulator-winding to the transformer-leads occurring only when the voltage of the distributing-circuit is less than or exceeds the voltage that may be derived from the next successive lead by half the difference of potential between consecutive leads.

7. The combination with a distributing-circuit and a plurality of leads extending from a source of multivoltage, a voltage-regulator having windings the inductive relations of which are variable, and means for successively connecting the respective terminals of one of the regulator-windings to consecutive leads.

8. The combination with a distributing-circuit and a plurality of leads extending from a source of multivoltage, a voltage-regulator having windings the inductive relations of which are variable, and means for successively connecting the respective terminals of one of

the regulator-windings to consecutive leads, a point intermediate the terminals of the regulator-winding being connected to the distributing-circuit.

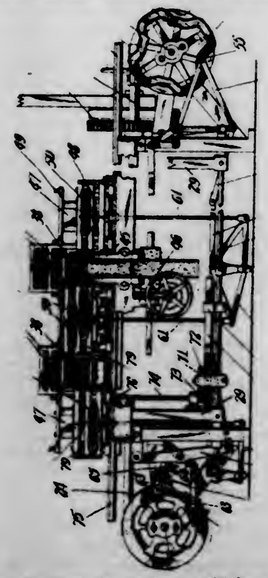
9. The combination with a distributing-circuit and a plurality of leads extending from a source of multivoltage, a voltage-regulator having windings the inductive relations of which are variable, and means for successively connecting the respective terminals of one of the regulator-windings to consecutive leads, changes in the connection of the regulator-winding with the leads occurring only when the voltage of the distributing-circuit is less than or exceeds the voltage that may be derived from the next successive lead by half the difference of potential between consecutive leads.

10. The combination with a distributing-circuit and a transformer-winding having leads extending from several points therein, of a voltage-regulator having a primary winding and a plurality of secondary windings arranged in parallel relation, means for connecting the secondary windings respectively between successive terminals, an inductive winding, connections between the same and points intermediate the terminals of the secondary windings, and circuit connections to the inductive winding at such points that the ampere-turns in the winding on both sides thereof shall be equal.

11. The combination with a distributing-circuit and a transformer-winding having leads extending from several points therein, of a voltage-regulator having a primary winding, a plurality of secondary windings arranged in parallel relation, means for connecting the secondary windings respectively between adjacent sets of successive transformer-leads, an inductive winding, connections between the same and approximately the middle points of the secondary windings, and circuit connections to the inductive winding at approximately its middle point.

12. The combination with a distributing-circuit and a plurality of leads from a source of multivoltage, of a voltage-regulator having a primary winding and a plurality of secondary windings arranged in parallel relation, means for connecting the secondary windings respectively between adjacent sets of successive leads, an inductive winding, connections between the same and points intermediate the terminals of the secondary windings, and a circuit connection to the inductive winding at a point intermediate its terminals.

824,226. **LOOM FOR WEAVING TUBULAR FABRICS.** CLINTON ALVORD, Worcester, Mass., assignor, by mesne assignments, to Multiple Woven Hose & Rubber Co., New York, N. Y., a Corporation of New York. Filed Jan. 3, 1904. Serial No. 186,258.



Claim.—1. In a loom for weaving a multiple concentric tubular fabric, means for separating a flat warp into a number of plies twice the number of concentric tubes to be woven, and means for weaving a filling in the outside plies to form the outside tube and a filling in the inclosed plies to form a tube included in the outside tube.

2. In a loom for weaving a double tubular fabric, means for separating a flat warp into four plies, and means for weaving a filling in the two outside plies to form the outside tube and a filling in the two inclosed plies to form a tube included in the outside tube.

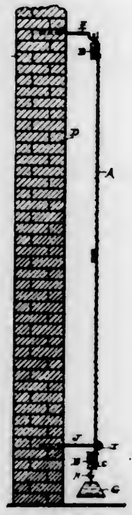
3. In a loom for weaving a multiple concentric tubular fabric, means for separating a warp into a number of plies twice the number of concentric tubes to be woven, means for operating a shuttle back and forth in the outside plies to form the outside tube, and means for operating another shuttle back and forth in the inclosed plies to form a tube included in the outside tube.

4. In a loom for weaving a double concentric tubular fabric, means for separating a warp into four plies, means for moving a shuttle in one direction through the top ply and back through the lower ply to form the outside tube, and means for moving a shuttle in one direction through the second ply and back through the third ply to form a tube included in the outside tube.

5. In a loom for weaving a multiple concentric tubular fabric, means for separating a flat warp into a number of plies twice the number of concentric tubes to be woven, a positive motion for moving a shuttle back and forth in the outside plies to form the outside tube, and a positive motion for moving another shuttle back and forth in the inclosed plies to form a tube included in the outside tube.

6. In a loom for weaving a multiple concentric tubular fabric, means for separating a flat warp into a number of plies twice the number of concentric tubes to be woven, means for weaving a filling in the outside plies to form the outside tube and a filling in the inclosed plies to form a tube included in the outside tube, and means for binding the plies together.

824,227. **TRELLIS.** GERHARD D. BASSE, Milwaukee, Wis. Filed Dec. 16, 1905. Serial No. 291,971.



Claim.—1. The combination of a vine-supporting trellis, means for suspending the trellis from a wall, a plurality of weights and means for suspending said weights from the lower end of said trellis.

2. A trellis comprising a central flexible wire portion, rigid bars connected with the respective ends of said wire portion, a plurality of suspension-hooks for connecting the upper bar of said trellis with a supporting-wall, a plurality of weights and means for connecting said weights with the lower bar of said trellis, substantially as set forth.

3. The combination of a building-wall provided with a plurality of suspension-hooks a vine-supporting trellis comprising a central flexible wire portion, a horizontal bar affixed to the upper edge of said wire portion, a plurality of hooks affixed to said upper bar and adapted to engage the hooks which are connected with the wall, a horizontal bar affixed to the lower edge of said screen and a plurality of weights suspended from said lower horizontal bar.

4. The combination of a building-wall provided with a plurality of suspension-hooks a vine-supporting trellis comprising a central flexible wire portion and a plurality of horizontal bars, one of said bars being affixed at its upper edge and one at its lower edge and an additional bar or bars interposed between its upper and lower edge, a plurality of suspension-hooks attached to the upper horizontal bar and adapted to engage upon the suspension-hooks which are affixed to the wall, a plurality of weights suspended from the lower horizontal bar, a plurality of hooks affixed to the wall near the lower edge of said screen and a transverse rod connected with said lower hooks in front of said screen and adapted to prevent the same from swinging, all substantially as and for the purpose specified.

824,228. **FAUCET-BUNG.** DILLON BEEBE, Newark, N. J. Filed June 14, 1905. Serial No. 265,193.



Claim.—1. In a faucet-bung, a body portion chambered at its outer end to receive a faucet and having at its inner end a valve-seat with ports leading therefrom to the said chamber, a valve upon said seat thickest at its center and having its surface away from the valve-seat beveled from the extremity of said center backwardly toward the edges of the valve, said valve having a central perforation enlarged at its end away from the valve-seat, and a valve-stem projecting through the valve-seat into said perforation of the valve, one end of said stem lying in the said chamber of the bung-body and the other end terminating in the said enlargement of the valve perforation.

2. In a faucet-bung, a body portion chambered at its outer end to receive a faucet and having at its inner end a valve-seat with ports leading therefrom to the said chamber, a valve upon said seat thickest at its center and having its surface away from the valve-seat beveled from the extremity of said center backwardly toward the edges of the valve, said valve having a central perforation enlarged at its end away from the valve-seat, a valve-stem projecting through the valve-seat into said perforation of the valve, one end of said stem lying in the chamber of the bung-body and the other end terminating in the said enlargement of the valve perforation, and a plug filling the mouth of said enlargement outside said stem flush with the surface of the valve.

3. In a faucet-bung, a body portion chambered at its outer end to receive a faucet and having at its inner end a centrally-hollowed valve-seat with ports leading therefrom to the said chamber, a lenticular valve in said seat having its surface away from said valve-seat beveled from the extremity of its center backwardly toward the edges of the valve, said valve having a central perforation enlarged at its end away from the valve-seat, and a valve-stem projecting through the valve-seat into said perforation of the valve, one end of said stem lying in the said chamber of the bung-body and the other end terminating in the said enlargement of the valve perforation.

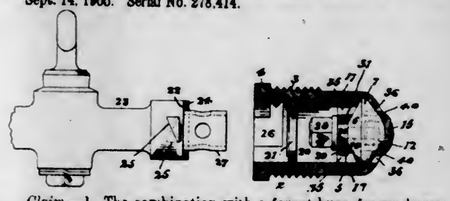
4. In a faucet-bung, a body portion chambered at its outer end to receive a faucet and having at its inner end a centrally-hollowed valve-seat with ports leading therefrom to the said chamber, a lenticular valve in said seat having its surface away from said valve-seat beveled from the extremity of its center backwardly toward the edges of the valve, said valve having a central perforation enlarged at its end away from the valve-seat, a valve-stem projecting through the valve-seat into said perforation of the valve, one end of said stem lying in the said chamber of the bung-body and the other end terminating in the said enlargement of the valve perforation, and a plug filling the mouth of said enlargement outside said stem flush with the surface of the valve.

5. In a faucet-bung, a body portion chambered at one end to receive a faucet and having at its other end a centrally-hollowed valve-seat and ports connecting said valve-seat and chamber, a lenticular valve upon said seat having ports, an end piece covering and inclosing said valve and forming therewith a ground joint, said end piece being rigidly fixed to the body portion and having ports, and means for turning said valve to bring its ports into and out of registration with those of the body portion and end piece.

6. In a faucet-bung, the body portion chambered at one end to receive a faucet and having at its other end a valve-seat with ports leading thereto from the chamber, a valve-stem projecting through said last-mentioned end of the body portion, a valve upon said stem having ports and opposite ground faces one of which forms an impervious jointure with the said valve-seat of the body portion, and an end piece interiorly ground to fit the other face of said valve and being connected to the body portion to form a fixed part thereof, said end piece covering and inclosing said valve and stem and having ports in alinement with those of the body portion.

7. In a faucet-bung, a body portion chambered at one end to receive a faucet and having at the other end a valve-seat with ports opening therethrough, an end piece adapted to be permanently secured to the last-mentioned end of the body portion and forming at its interior or side next the body portion a valve-seat with ports therein, a valve between said body portion and end piece forming ground joints with the said valve-seats of said parts, and means for turning said valve.

824,229. **FAUCET-BUNG.** DILLON BEEBE, Newark, N. J. Filed Sept. 14, 1906. Serial No. 278,414.



Claim.—1. The combination with a faucet-bung for packages, having a body portion providing a valve-seat, a valve for said seat, said valve and valve-seat having ports adapted to be brought into or turned out of registration with each other and one of which is adapted to be always exposed to the interior of the package, of a projection extending into said inwardly-exposed port from the part having the other port.

2. In a faucet-bung, the combination with a body portion providing a valve-seat, a valve for said seat, a faucet for turning said valve, and coöperating means upon said body portion and faucet for limiting movement of the valve, said valve and valve-seat having ports adapted to be brought into or turned out of registration with each other and one of which is adapted to be always exposed to the interior of the package, of a projection extending into said inwardly-exposed port from the part having the other port.

3. In a faucet-bung, the combination of an inner valve-seat with ports adapted to open into the package, of a rotatable valve for said seat having ports adapted to register with those of the seat, and projections extending from said valve into the ports of the seat.

4. The combination with a faucet-bung having at its extremity adapted to enter the package a valve-seat and rotary valve for said seat, said valve and valve-seat having ports adapted to be turned into or out of registration with each other, of a projection extending into the port of the innermost of said parts from the other part and thereby adapted to be always exposed to the interior of the package.

5. In a faucet-bung, the combination with an inner end portion adapted to be exposed to the interior of the package, and an adjacent outer portion, one of which portions is adapted to be turned with respect to the other and both having ports adapted to register, of pins upon the outer portion extending into the ports of the inner end portion.

6. In a faucet-bung, the combination with an inner end portion adapted to be exposed to the interior of the package, an adjacent outer portion, and means for giving one of said portions a limited rotary movement with respect to the other, said portions having ports adapted to register or be turned out of registration, of pins upon said outer portion projecting into the ports of said inner end portion.

7. In a faucet-bung, the combination with an inner end portion adapted to be exposed to the interior of the package, and an adjacent rotary outer portion having ports adapted to be alternately covered and exposed by said inner end portion, of projections upon the said rotary portion adapted to be always exposed by said inner end portion.

8. In a faucet-bung, the combination of a body portion, a rotary valve having ports therein and forming a ground joint with said body portion, an inner end portion adjacent to said valve and adapted to alternately cover and expose the said ports thereof, and projections upon the inner side of said valve adapted to be always exposed.

9. In a faucet-bung, the combination of a body portion, a rotary valve seated against said body portion, both said body and valve having ports adapted to register or be turned out of alinement, an end piece covering the inner side of the valve and having ports to register therewith, and projections upon said valve extending into said ports of the end piece.

824,230. **CURTAIN-ROLLER CAP.** JAMES M. BERRY, Detroit, Mich. Filed May 4, 1905. Serial No. 258,811.

Claim.—1. The combination with a curtain-roller, having a notched extension C at its hollow end, an integral cap therefor comprising a cylindrical body portion, a disk or end plate, and an inwardly-extending notched wall forming an annular chamber around the disk, into which the extension C of the roller projects, the notches on said extension C fitting the notches in the wall.



2. A cap for a curtain-roller comprising a cylindrical body, a disk or end plate, and a connecting-wall between the two forming an annular chamber around the disk, the oppositely-arranged notched or indented portions in the connecting-wall, and the pawls pivoted at these points to the end plate.

3. In a cap for curtain-fixtures, the cylindrical body portion, the end plate or disk, and apertured depressed ribs connected by an annular depressed portion in the plane of said ribs, for the purpose described.

4. In a cap for curtain-fixtures, the cylindrical body portion, the end plate or disk, and trough-shaped apertured ribs struck from the end plate or disk, for the purpose described.

5. The combination of a curtain-roller of substantially uniform external diameter recessed at one end and provided with a tapered annular wall surrounding said recess, of an integral sheet-metal cap comprising a cylindrical body portion, an end plate below the body-top, and an inclined wall connecting the two and forming in connection with the body a tapered annular chamber adapted to receive and frictionally engage with the tapered end of the roller.

6. In a curtain-roller, the combination with a sheet-metal cap comprising a cylindrical body, a depressed disk or end plate and an inclined wall connecting the two and forming with the body portion a tapered annular chamber, of a roller of uniform external diameter having a depressed circular portion at one end surrounded by a tapered annular rim adapted to fit said chamber and frictionally held therein.

824,231. **SADDLE ATTACHMENT FOR HARNESS.** JACOB BLOEDEL, Kansas City, Kans. Filed Aug. 3, 1904. Serial No. 219,904.



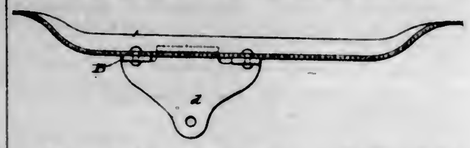
Claim.—1. The combination with a suitable saddle, of rocking levers pivoted on each side of said saddle, means carried by said levers for supporting the shafts of a vehicle, and a connection between said levers.

2. In combination with a suitable saddle, bell-crank levers, comprising pairs of Y-shaped plates joined at their extremities by pins pivoted in said saddle, means carried by the outer members of said levers for carrying the shafts of a vehicle, and means connecting the inner members of said levers.

3. In combination with a suitable saddle, bell-crank levers pivoted on said saddle, rein-rings, having perforated bases, carried by said saddle, straps carried by the outer members of said levers and extending through the perforations in said bases and joined to form a continuous connection between said levers, means on said straps for carrying the shafts of a vehicle, and a strap secured to and joining the inner members of said levers.

824,232. **SEAT-SPIDER.** HARRY W. DOLBEE, Port Washington, Wis. Filed Apr. 24, 1905. Serial No. 256,167.

Claim.—1. A seat-spider comprising primarily-independent parallel-rolled metal T-arms, a spreader supporting the arms, spreader-lips lapping horizontal portions of the arms, and rivets engaging the spreader and edge notches of the spider-arms to hold the latter in snug engagement with recesses under the spreader-lips.

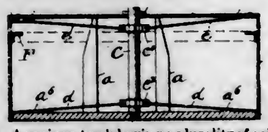


2. A seat-spider comprising a spreader, parallel primarily-independent T-arms the horizontal portions of which rest flat upon the spreader, and fastening devices in connection with said spreader opposing the edges of said horizontal portions of said arms.

3. A seat-spider comprising a spreader, parallel primarily-independent T-arms having the vertical portions of each of less length than the horizontal portion thereof that rests flat upon the spreader, and fastening devices in connection with said spreader in opposition to the edges of said horizontal portions of said arms.

4. A seat-spider comprising a spreader, parallel primarily-independent T-arms the horizontal portions of which rest flat upon the spreader, and rivets that engage the spreader, oppose edges of said horizontal portions of the arms and are headed on the same.

824,233. **SAVINGS-BANK.** EBENEZER CRAPPER, Akron, Ohio. Filed Aug. 24, 1905. Serial No. 275,569.



Claim.—1. A savings-bank having a plurality of coin-receptacles and openings thereinto, a locking-bolt for the bank, and a plurality of members for different receptacles adapted to engage and lock said locking-bolt.

2. A savings-bank having individual receptacles for coins of different denominations, mechanism adapted to hold the bank closed, and a locking member for said mechanism extending into each receptacle.

3. A savings-bank having a plurality of coin-receptacles and individual openings thereinto, a single locking-bolt for the bank, and a spring-arm for each receptacle adapted to engage and lock said bolt.

4. In a savings-bank, the combination of a plurality of receptacles, a locking-bolt for holding the bank together, notches on said bolt and a spring for each receptacle adapted to engage such notches and lock the bolt, or be released therefrom when the receptacles are filled.

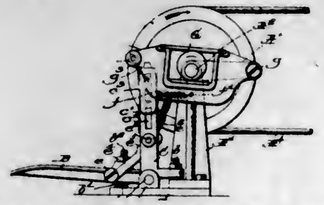
5. In a savings-bank, the combination of a plurality of receptacles, a locking-bolt for holding the bank together, notches formed around said bolt, and a pair of springs for each receptacle located respectively at the top and bottom of the receptacle and adapted to engage such notches and lock the bolt or be released therefrom when the receptacles are filled.

6. In a savings-bank, the combination of a plurality of receptacles within the bank having inner walls inclining backwardly, there being an entrance-opening into each receptacle through the outer wall, and a guard mechanism within the bank beneath the entrance-openings.

7. In a savings-bank, the combination of a base provided with upwardly-extending partitions, a cover fitting over said base and forming a side wall and top for the bank, there being openings through said side wall for the admission of coins to the various receptacles, a locking-bolt for holding the cover to the base, and spring members within the receptacles for locking said bolt.

8. In a savings-bank, the combination of a base providing a plurality of partial chambers of different sizes to receive different coins, a cover fitting over said base and forming a side wall and top for the bank, there being openings through said side wall for the admission of coins to the various receptacles, a central locking-bolt for holding the cover to the base, and a ring carried by the base and having inwardly-projecting spring-arms extending across the receptacles and adapted to engage in notches carried by the bolt.

824,234. **POWER-TRANSMITTING MECHANISM.** CHARLES A. DAHL, Boston, Mass., assignor to The Reece Buttonhole Machine Company, Boston, Mass., a Corporation of Maine. Filed Dec. 15, 1905. Serial No. 291,806.



Claim.—1. In apparatus of the class described, a continuously-moving actuator, a bodily-movable member, a slide carried by and movable on the bodily-movable member, said slide being connected to the device to be operated, and means to move said member bodily to put the slide into position to be actuated by the actuator.

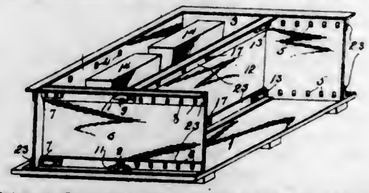
2. In a device of the class described, a continuously-moving actuator, a bodily-movable member, a slide slidably mounted thereon and connected to the device to be operated, means tending normally to hold said member in a position in which the slide is not actuated by said actuator, and manually-controlled means to move the member into a position in which the slide is actuated by the actuator.

3. In a device of the class described, a continuously-moving actuator, a pivoted arm, a slide carried by the arm and slidably mounted thereon, said slide being connected to the device to be operated, and a manually-controlled means to swing said arm into a position in which the slide is actuated by the actuator.

4. In a device of the class described, a continuously-moving actuator, a lever continuously operated thereby, a swinging arm, a slide carried by and slidably mounted thereon, means acting normally to retain said arm in its inoperative position, and a manually-controlled device to turn said arm in its operative position to bring the slide into position to be actuated by the lever.

5. In apparatus of the class described, an arm having a projection, a slide mounted thereon and having a projection, a catch coacting normally with the projection of said arm to retain the latter with its slide in its inoperative position, means to move said catch and said arm that the arm may be put into its operative position, and means to thereafter move said slide, the latter in its movement releasing said catch.

824,235. **MOLD FOR MAKING ARTIFICIAL STONE.** NELSON L. DAMON, Carthage, Mo. Filed June 26, 1905. Serial No. 267,016.



Claim.—1. In a mold, the combination with a right-angled member two arms of which form respectively one end and one side of the mold one arm having two longitudinally-arranged rows of perforations, one row being disposed above the other, the other arm having two holes disposed one above the other, of an end member provided at one end with two hooks adapted to be inserted in said two holes and having two rows of holes arranged one row above the other, a side member provided at one end with two hooks adapted to engage respectively the holes in the upper and lower rows of the right-angled member and provided at the other end with two projections adapted to be inserted respectively in the holes of the upper and lower rows of the end member, and releasable means for locking the side and end members together.

2. In a mold, the combination with a right-angled member, the two arms of which form respectively one end and one side of the mold, one arm having two longitudinally-arranged rows of holes disposed one row above the other, the other arm having two holes disposed one above the other, of an end member having two hooks adapted to enter said two holes and provided with two rows of holes disposed one row above the other, a side member having at one end two hooks adapted to enter respectively the holes in the two rows of the right-angled member and provided at its other end with two projections adapted to enter respectively the holes in the upper and lower rows in the end member, each projection having a notch, and two wedges adapted to be inserted respectively in the notches of said projections, and disposed upon the outer side of the end member.

3. In a mold, the combination with a right-angled member, two arms of which form respectively one end and one side of the mold, each arm having two longitudinally-arranged rows of holes disposed one row above the other, an end member having two hooks for engaging respectively the holes in the upper and lower rows of the side arm and provided with two longitudinally-arranged rows of holes disposed one row above the other, a side member having two hooks for engaging the holes in the upper and lower rows respectively of the end arm and provided with two projections adapted to enter respectively the holes in the upper and lower rows of the end member, and two wedges adapted to be mounted respectively between the projections of the side member and the outer side of the end member.

4. In a mold, the combination with a right-angled member, the two arms of which form respectively one end and one side of the mold, of an end member hinged at one end to the side arm, a side member hinged at one end to the end arm and provided with means for releasably engaging the end arm, and a vertical dividing-plate adjustable toward and from the end arm and provided with means for being secured at its ends to the side arm and side member respectively.

5. In a mold, the combination with a right-angled member, the two arms of which form respectively one end and one side of the mold, each arm having two holes disposed one above the other, of an end member having two hooks for engaging respectively the holes in one arm, said end member having two holes disposed one above the other, a side member having two hooks for engaging respectively the holes in the end arm and provided with two projections for insertion through the holes in the end member, two keys for engaging respectively said two projections and the outer side of the end member, and a vertical dividing-plate adjustable toward and from the end arm and provided at its ends with means for being secured to the side arm and side member respectively.

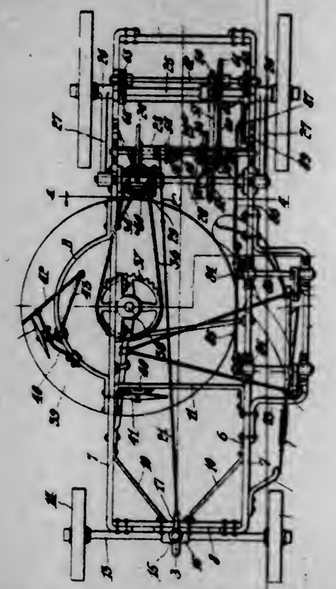
6. In a mold, the combination with a right-angled member, the two arms of which form respectively one end and one side of the mold, the end arm having two holes disposed one above the other, and the side arm having two rows of holes disposed longitudinally one above the other, of an end member having two hooks for engaging respectively the holes in the upper and lower rows of the side arm, the end member having two holes disposed one above the other, a side member having two hooks for engaging the holes in the end arm and provided with two longitudinally-arranged rows of holes disposed one row above the other and having also two projections for insertion through the holes in the end member, two keys for engaging respectively said projections and the outer side of the end member, and a vertical dividing-plate having four projections disposed two at each end, the projections on the dividing-plate being adapted to enter respectively the holes in the upper and lower rows of the side arm and side member.

7. In a mold, the combination with a right-angled member, the two arms of which form respectivley, one end and one side of the mold, the end arm having two longitudinally-arranged rows of holes disposed one row above the other, the side arm having two rows of holes arranged longitudinally one row above the other, of an end member having at one end two hooks for engaging respectively the holes in the upper and lower rows in the side arm and having also two rows of holes disposed longitudinally one row above the other, a side member having at one end two hooks for insertion respectively in the holes in the upper and lower rows of the end arm, and having at its other end two projections for insertion respectively through the holes in the upper and lower rows of the end member, two locking-keys for engaging respectively said two projections and the outer side of the end member, and a horizontal plate for supporting said members.

8. In a mold, the combination with a right-angled member, two arms of which form respectively one end and one side of the mold, each arm having two longitudinally-arranged rows of holes disposed one row above the other, of an end plate having at one end two hooks for engaging the holes of the upper and lower rows in the side arm, the end plate having two longitudinally-arranged rows of holes disposed one row above the other, a side member having two hooks for insertion in the holes of the upper and lower rows of the end arm and provided also with two end projections and having a transverse notch, said end projections being adapted to enter the holes in the upper and lower rows of the end member, and two wedge-form keys

mounted on the outer side of the end member in the notches respectively of the said two projections.

824,286. ROAD-GRADER. ANDREW L. DONOVAN, Griswold, Canada. Filed Feb. 15, 1905. Serial No. 245,880.



Claim.—1. In a road-grader, a supporting-frame having a supplemental lateral extension, a plow pivotally mounted in said lateral extension, a rotatable disk held in coöperative position with relation to said plow, means for rotating said disk, and scrapers carried by the frame adapted to bear against the upper face of said disk.

2. In a road-grading machine, a supporting-frame, a plow pivotally connected therewith, a rotatable disk, means for rotating said disk, rollers bearing against the upper face of said disk, a scraper bearing upon said disk, supporting-wheels, and means for raising and lowering said supporting-frame with relation to the wheels.

3. In a road-grading machine, a frame, supporting-wheels adjustably connected with said frame, a supplemental frame extending laterally from the main supporting-frame, a plow pivotally mounted in said supplemental frame, a rotatable disk carried by the main frame, and a scraper adapted to bear upon the upper face of said disk.

4. In a road-grading machine, a supporting-frame, a vertical shaft carried thereby, a rotatable disk mounted on said shaft, a laterally-extending supplemental frame, a plow supported by said supplemental frame, an oppositely-projecting supplemental frame, and a scraper supported by said last-mentioned supplemental frame.

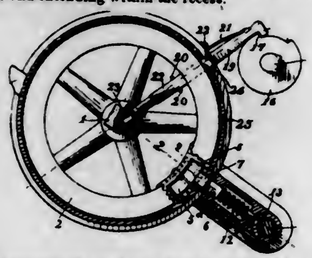
5. In a road-grading machine, a supporting-frame, wheel-carrying arms pivotally connected with said frame, segments connected with said arms, pinions meshing with said segments, and means for rotating said pinions.

6. In a road-grading machine, a supporting-frame, wheel-carrying arms pivotally connected with said frame, segments connected with said arms, a transversely-extending shaft carried by said frame, pinions on said shaft adapted to mesh with said segments, a sprocket-wheel on said shaft, a second shaft forwardly thereof, a sprocket-wheel and a hand-wheel on said second shaft, a sprocket-chain connecting with sprocket-wheels, and means for locking said hand-wheel.

824,287. CONTROLLER FOR ELECTRIC MOTORS. HENRY B. DUNCAN, Grand Rapids, Mich. Filed Jan. 20, 1906. Serial No. 297,031.

Claim.—1. In combination with the operating-shaft of a rheostat, a wheel rotative on the shaft, a bolt slidable in the wheel and engaging an opening in the shaft, reversing mechanism, a wheel attached thereto, a slide operated by the wheel, and means for detachably connecting the slide and bolt.

2. The combination of an operating-shaft for a rheostat having an opening in its side, a wheel rotative on the shaft, a case surrounding the wheel and having an opening opposite the wheel, a bolt radially slidable in the wheel and alternately engaging the openings in the case, and the shaft, a radially-movable slide beneath the wheel and detachably connected to the bolt, a spring engaging the slide, a reverser, a wheel on the reverser-post and having a recess, and a lug on the slide and extending within the recess.



3. In combination with the operating-shaft of a rheostat, a wheel mounted on the same and rotative therewith, detents projecting downward from the wheel at intervals and pivoted thereto, a pawl beneath the wheel and pivoted intermediate its ends and also having its respective ends projecting alternately within the path of the detents, said pawl having a length substantially equal to the space between the detents.

4. In combination with the operating-shaft of a rheostat, a wheel attached thereto and having spaced-apart recesses in its under side, each recess being substantially vertical at one side, detents pivoted at their upper ends adjacent to the vertical sides of the recesses, a pawl beneath the wheel and intermediately pivoted, and also having its end alternately projecting within the path of the detents.

5. In combination with the operating-shaft of a rheostat, a wheel mounted thereon and rotative therewith, pivoted detents attached to the wheel, a pawl beneath the wheel and pivoted intermediate its ends and also having upturned ends alternately projecting within the path of the detents, a slide adapted to support one end of the pawl, and means for manually withdrawing the slide from engagement with the pawl.

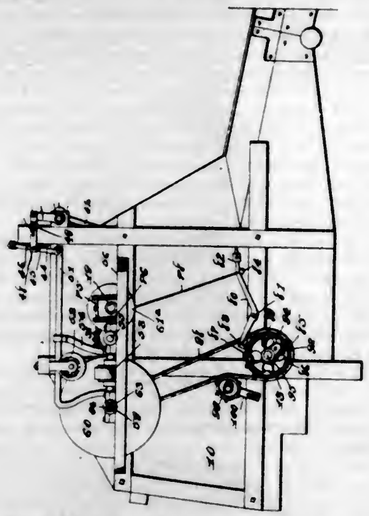
6. In combination with the operating-shaft of a rheostat, a wheel rotative therewith, detents projecting downward from the wheel and pivotally attached thereto, a pawl beneath the wheel and pivoted intermediate its end, and also having upturned ends alternately projecting within the path of the detents, a longitudinally-movable slide projecting beneath one end of the pawl, a spring engaging the slide, a bell-crank lever attached to the slide to withdraw the same from beneath the pawl and a manually-operated plunger connected to the lever.

7. In combination with the operating-shaft of a rheostat, a reverser, a wheel mounted on the rheostat-shaft, a radially-movable bolt in the wheel and engaging an opening in the shaft, a wheel on the reverser-shaft, a slide operated by said wheel and detachably connected to the bolt, detents on the first-named wheel, a pawl beneath the same pivoted intermediate its ends, and also having upwardly-projecting ends alternately engaging the detents, a slide to support one end of the pawl, and manually-operated means for moving the slide out of engagement with the pawl.

824,288. BAND-CUTTER AND FEEDER. SAMUEL DUNKELBERGER, Newton, Kans. Filed Oct. 11, 1902. Serial No. 126,950.

Claim.—1. In a band-cutter and feeder, the combination with a driving-shaft, of a separate driven shaft, friction-disks carried by the shafts and disposed in overlapping relation, one of said disks being movable toward and from the other, a yielding pressure device for urging the movable disk toward said other disk, a longitudinally-movable support located transversely of the shafts and having a swinging movement on its longitudinal axis, a friction-wheel journaled on the support and swinging therewith, being interposed between and having frictional engagement with the disks, said wheel having its axis disposed in angular relation to the axes of the disks and being urged into frictional engagement with one of the disks by pressure against it of the spring-pressed movable disk, a conveyer driven from the driven shaft, and means located over the conveyer for moving the friction-wheel toward and away from the axes of the shafts.

2. In a band-cutter and feeder, the combination with a suitable frame, of a bracket secured to one side of the frame, substantially parallel shafts arranged between and journaled upon the bracket and frame, friction-disks carried by the shafts, means for driving one of said shafts, a conveyer having a connection with the other shaft, a longitudinally-movable supporting-rod arranged in a plane between the disks and carrying a depending journal, a friction-wheel mounted on the journal and having frictional engagements with the disks, a rock-shaft journaled over the conveyer and having a crank-arm, adjustable connections between the crank-arm and supporting-rod, and depending arms secured to the rock-shaft and disposed over the conveyer.



3. In a band-cutter and feeder, the combination with a conveyer, of means for driving the conveyer, speed-varying mechanism interposed between the driving means and the conveyer and connected therewith for securing the continuous movement of the conveyer at varying rates of speed, a movable actuating device for operating the speed-varying mechanism, located over the conveyer and having a connection with said mechanism, said device comprising depending spaced arms located over the conveyer in advance of its rear end and in the path of movement of abnormal amounts of grain carried thereby, and band-cutting mechanism including gyratory knife-bars carrying knives, certain of said knives operating between the arms downwardly in advance thereof and beneath the lower ends, of said arms and others having gyratory paths of movement in rear of the lower ends of the arms and directly adjacent to the rear end of the conveyer.

4. In a band-cutter and feeder, the combination with a conveyer, of means for driving the conveyer, speed-varying mechanism interposed between the driving means and the conveyer and connected therewith for securing a continuous movement of the conveyer at varying rates of speed, a movable actuating device for operating the speed-varying mechanism, located over the conveyer and having a connection with said mechanism, said device comprising a rock-shaft having a connection with the speed-varying means, spaced depending rearwardly-curved arms having their lower ends spaced above the conveyer in advance of its rear end, a crank-shaft journaled above the lower ends of the arms, and gyratory knife-bars connected with the crank-shaft and having depending cutter-blades, certain of said blades operating between the arms downwardly in advance of the same and beneath the lower ends of said arms in proximity to the conveyer, and others operating over the rear end of the conveyer entirely in rear of the arms.

5. In a band-cutter and feeder, the combination with a bed comprising an upwardly-inclined front portion and a downwardly-inclined rear portion forming an apex, of an endless conveyer-apron movable over the downwardly and upwardly inclined portions, means for driving the conveyer including speed-varying mechanism, a float suspended above the conveyer and connected with the speed-varying mechanism, said float including downwardly and rearwardly inclined spaced arms extending over the apex of the bed, the lower ends of said arms being disposed above the downwardly-inclined portion of the bed contiguous to its upper end, and band-cutting mechanism supported above the lower ends of the float-arms and including cutters that move between the arms downwardly in advance of the same and rearwardly at the lower ends of said arms, said cutters extending over the apex of the bed and coöperating with both the upwardly and downwardly inclined portions thereof.

6. In a band-cutter and feeder, the combination with a crank-shaft, of a driving-shaft geared to the crank-shaft, a driven shaft disposed alongside the driving-shaft, a conveyer including a shaft, a connection between the driven shaft and conveyer including a clutch, a speed-governor carried by the crank-shaft for effecting the operation of the clutch, overlapping friction-disks carried respectively by the driving and driven shafts, a friction-wheel interposed between and in frictional engagement with the adjacent faces of the disks, said wheel being movable toward and from the axes of movement of the disks, means for effecting the movement of said friction-wheel including a plurality of depending float-arms disposed over the conveyer, and band-cutting mechanism including gyratory cutter-bars secured to the crank-shaft and having knives operating through the spaces between and also below the depending arms.

7. In a band-cutter and feeder, the combination with a crank-shaft, of bearing-boxes journaled on the crank-shaft, a bracket fixed to each bearing-box and having spaced depending arms provided with longitudinal slots, a pair of knife-bars for each bracket extending transversely of the arms, and bolts passing through the bars and through the slots in the arms for adjustably connecting the knife-bars with the bearing-boxes.

8. In a band-cutter and feeder, the combination with a conveyer-belt having an upwardly-inclined front portion and a downwardly-inclined rear portion, of a threshing-cylinder located in rear of, below, and spaced from the said downwardly-inclined portion, a rotary retarding device journaled between the said downwardly-inclined portion of the belt and the threshing-cylinder in spaced relation thereto and in substantial alinement therewith, and gyratory band-cutting means operating over the conveyer-belt and the retarder and having its rear portion inclined downwardly to correspond substantially to the path of travel of the material over the rear portion of the belt and retarder, the front portion of said gyratory band-cutting means being set at an inclination and operating over the upwardly-inclined front portion of the conveyer-belt.

9. In a band-cutter and feeder, the combination with a machine-frame, of a conveyer-platform extended upwardly and rearwardly and then downwardly and rearwardly, a conveyer traveling over said platform, a shaft above the platform having a number of crank-arms thereon extended in different directions, a bearing-box on each crank-arm, a bracket having slotted sides fixed to the under surface of each pair of blocks, a pair of knife-bars for each pair of brackets extended longitudinally of the machine-frame, their forward end portions being substantially horizontal and their rear ends inclined downwardly and rearwardly substantially parallel with the downwardly and rearwardly inclined portion of the platform, bolts passing through the bars and through the slots in the brackets for adjustably connecting the knife-bars with the bearing-blocks, one or more knife-blades at the forward end of each knife-bar, said blades having smooth front edges substantially at right angles to the knife-bar and sharpened rear edges inclined downwardly and forwardly from the knife-bar, a knife-blade on each knife-bar at a point substantially above the highest part of the platform, said knife having its edges tapered toward each other and both edges being sharpened, one or more knives on the downwardly and rearwardly inclined portion of each knife-bar having smooth front edges inclined downwardly and forwardly, and hangers for supporting the rear ends of each pair of knife-bars.

10. In a band-cutter and feeder, the combination with a threshing-cylinder, of a conveyer having a downwardly-inclined rear end that is located in advance of the upper portion of the cylinder, a shaft for operating the conveyer, a driving-shaft, means for transmitting motion from the driving-shaft to the conveyer-shaft, a speed-governor for varying the speed of the conveyer-shaft with respect to that of the driving-shaft while both are in motion, a rotary retarder located between the conveyer and cylinder, below the rear end of said conveyer and in advance of the upper portion of the cylinder, said retarder comprising a shaft extending transversely of the machine and rotating in the same direction as the conveyer, said shaft having a number of outwardly-projecting arms receiving the material from the conveyer and delivering it to the cylinder, means for operatively connecting the retarder with the conveyer, and gyratory cutter-bars extending over the conveyer and retarder.

11. In a band-cutter and feeder, the combination with a driving-shaft, of a conveyer, a shaft for operating the conveyer, a float above the conveyer, a friction-wheel operatively connected with the

conveyer-shaft, a small friction-wheel in engagement with the aforesaid friction-wheel and operatively connected with the driving-shaft, and means controlled by the float for moving the small friction-wheel to and from the central portion of the large friction-wheel for varying the speed of the conveyer-shaft relative to that of the driving-shaft while both are in motion, a retarder beneath the discharge end of the conveyer comprising a shaft extending transversely of the machine and rotating in the same direction as the conveyer, said shaft having a number of outwardly-projecting arms, and means for operatively connecting the retarder with the conveyer.

12. In a band-cutter and feeder, the combination with a threshing cylinder and concave, of a band-cutter and feeder-frame located at some distance above the concave, a curved board detachably connected to the concave at one end and detachably connected with the feeder-frame, a flexible strip at its other end, an endless conveyer on the band-cutter and feeder-frame, said conveyer having cross-pieces which during their return movement engage said flexible strip, a stationary cross-piece above the lower portion of the conveyer, and a flexible strip thereon extending downwardly to engage the upper surface of the lower portion of the conveyer directly above the first-mentioned flexible strip.

13. In a band-cutter and feeder, the combination with a conveyer, of driving and driven shafts, a connection between the driven shaft and the conveyer, friction-disks carried by the shafts, a friction-wheel movable between and in frictional engagement with the disks, a movable support for the friction-wheel, said driving and driven shafts being in the line of movement of the support, a roller-bearing for the support, and a movable float located over the conveyer and having connections with the friction-wheel support.

14. In a band-cutter and feeder, the combination with a threshing-cylinder, of a feeder-bed arranged in advance of the cylinder and having a downwardly-inclined rear end, a conveyer-apron movable over the bed, a revoluble retarding device interposed between the rear end of the bed and the cylinder and having teeth located in proximity to the teeth of said cylinder, gyratory cutter-bars having downwardly-inclined rear portions that extend over the downwardly-inclined portion of the bed and over the retarder, and cutter-blades secured to the bars.

15. In a band-cutter and feeder, the combination with a crank-shaft, of bearing-blocks journaled on the crank-shaft, a bracket having slotted sides fixed to the under side of each bearing-block, a pair of knife-bars for each bracket, and bolts passing through the bars and through the slots in the bracket for adjustably connecting the knife-bars with the bearing-blocks.

16. In a band-cutter and feeder, the combination with a bed provided with a front upwardly-inclined portion and a rear downwardly-inclined portion, forming at their adjacent ends an apex, of a conveyer-belt movable over said bed, crank-arms arranged substantially over the apex of said bed, links pivotally supported in rear of the crank-arms, continuous rigid cutter-bars having connections with the crank-arms and links, said bars having intermediate bends disposed above the apex of the bed, and cutter-blades secured to the bars, the lower ends of said blades being located in lines substantially parallel with the inclination of the bed.

17. In a band-cutter and feeder, the combination with a bed provided with a front upwardly-inclined portion and a rear downwardly-inclined portion, forming at their adjacent ends an apex, of a conveyer-belt movable over the upwardly and downwardly inclined portions of the bed, crank-arms arranged substantially over the apex of said bed, links pivotally supported in rear of the crank-arms, continuous rigid cutter-bars having connections with the crank-arms and links, said bars having intermediate bends at the crank-arms and disposed above the apex of the bed, and cutter-blades rigidly secured directly to the bars and located on opposite sides of the apex, the lower ends of said blades being located in lines substantially parallel with the inclination of the bed, and the blades in rear of the apex having cutting edges.

18. In a band-cutter and feeder, the combination with a conveyer-belt, of a threshing-cylinder, a concave located in rear of and spaced from the belt, said cylinder having teeth, downwardly-extending grain-directing means bridging the space between the rear end of the conveyer and the concave, a rotary retarding device journaled between the belt and threshing-cylinder and having rotary teeth, said rotary teeth coacting directly with the teeth of the cylinder at the rear side of the retarder and delivering the material from the conveyer-belt to the cylinder, and said retarder being disposed above the horizontal plane of the center of the cylinder and wholly above the grain-directing means, and gyratory band-cutting means having knives operating over the rear portion of the belt and over the retarder.

824,239. CAR-COUPLING. JAMES FARLOW, Anderson, Ind., assignor of one-half to James Manley, Anderson, Ind. Filed Sept. 7, 1905. Serial No. 277,339.

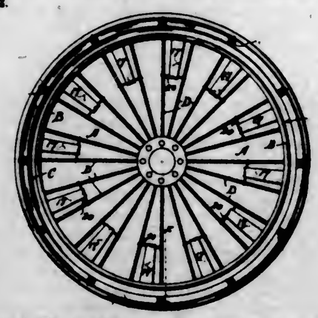


Claim.—1. A car-coupler with a draw-head and a shank constructed in two parts divided longitudinally between the jaws of the draw-head and with one of the jaws upon each of said parts and with studs extending laterally one from each of said divided parts, means for detachably uniting said parts, draw-rods movably coupled to said studs, and means for connecting said rods to the body of the car.

2. In a car-coupler, a supporting-frame having a longitudinal guide-channel, a draw-head and its shank divided longitudinally into two parts with one of the jaws in each part and with laterally-extending studs slidably disposed in said channels, a buffer-spring between said shank and frame, draw-rods movably coupled to said lateral studs and extending rearwardly of said frame, and relief-springs engaging said rods and bearing against said frame.

3. In a coupler, a supporting-frame having spaced side members provided with longitudinal guide-channels opening inwardly and with closed outer sides, a draw-head and draw-bar movable within said frame and provided with lateral studs bearing in said channels, draw-rods disposed between said frame members and draw-bar and with eyes engaging said studs, and relief-springs engaging said rods and bearing against said frame.

824,240. SUPPLEMENTAL TIRE FOR VEHICLE-WHEELS. CHARLES H. GOODMAN, Bucyrus, Ohio. Filed Mar. 30, 1906. Serial No. 308,432.



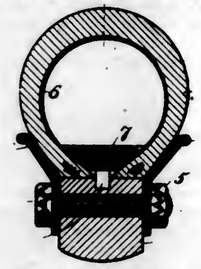
Claim.—1. The combination with a wheel having a permanent tire, of a supplemental tire removably fitting the permanent tire and comprising two bands one curved transversely to fit the curvature of the permanent tire at one side of the vertical center thereof, and the other having a centrally-located flange and oppositely-extending sides, means connecting the curved band with the other band at one side of the flange portion of the latter, and clamp members hinged to the other side of said band and extending inward and attachable to a fixed part of the wheel.

2. The combination with a wheel having a permanent tire, of a supplemental flanged tire removably fitting the permanent tire said flanged tire comprising a band fitting over the permanent tire and having a flange and a tread portion at one side thereof, said flange and tread portion adapted to fit a railroad-rail, a curved band fixed to the first-named band and adapted to fit substantially a side portion of the permanent tire at one side of the vertical center thereof, braces connecting the curved band with the tread portion of the other band, and movable clamp members at the opposite side of the vertical center of the tire adapted to detachably connect that side of the band with a fixed part of the wheel whereby the supplemental tire is removably retained in place on the permanent tire.

3. A supplemental tire attachable to the permanent tire of a wheel and comprising a metallic band adapted to circumscribe the tire said band having a projecting flange and a tread portion transverse thereto, and having a rigid curved member adapted to fit substantially a side portion of the permanent tire, and hinged clamp members connecting with the side of the flanged band opposite to the curved band and adapted to detachably hold the supplemental tire in place on the permanent tire.

4. A supplemental tire attachable to the permanent tire of a wheel and comprising a metallic band adapted to circumscribe the tire said band having a projecting flange and a tread portion transverse thereto, and having a rigid curved member adapted to fit substantially a side portion of the permanent tire, and means connecting with the side of the flanged band opposite to the curved band and adapted to detachably hold the supplemental tire in place on the permanent tire, said means comprising clamp members having their outer ends hingedly connected to the band, and means at the inner ends of the members adapted to detachably connect the same to the spokes of the wheel.

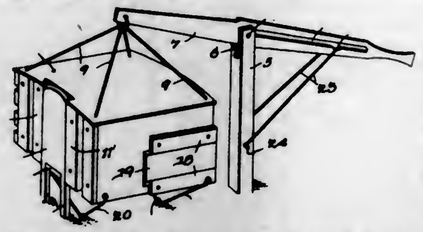
824,241. VEHICLE-WHEEL. WILLIAM H. GREER, Akron, Ohio, assignor of one-half to George H. Conrad, Coventry township, Summit county, Ohio. Filed Oct. 6, 1905. Serial No. 281,656.



Claim.—1. A vehicle-wheel comprising a rim forming a seat for a tire, keys arranged at suitable intervals on the periphery of said rim, detachable side flanges constituting in connection with said rim a channel, a detachable tire mounted on said rim and having side bands or edges, a ring having outwardly-inclined side faces mounted on said rim between said side bands or edges, and further provided with notches extending transversely throughout its inner face for engagement with the keys and when said ring is slid laterally onto said rim said keys will engage in the notches, thereby locking said ring against circumferential movement.

2. A vehicle-wheel comprising a rim forming a seat for a tire and having a recess, detachable side flanges constituting a channel in connection with said rim, a detachable tire mounted on said rim and having side bands or edges, a ring having inverted frusto-conically-shaped cross-sectional configuration mounted on said rim between said side bands or edges, said ring having a groove extending transversely throughout the width thereof and at its inner face, and a lug mounted in the recess in the rim for engagement with the groove in the ring and when the latter is slid laterally onto said rim, said lug will engage in said groove and lock said ring against circumferential movement.

824,242. CHICKEN-COOP. CHARLES A. HARP, King, Tex. Filed Apr. 2, 1906. Serial No. 309,496.



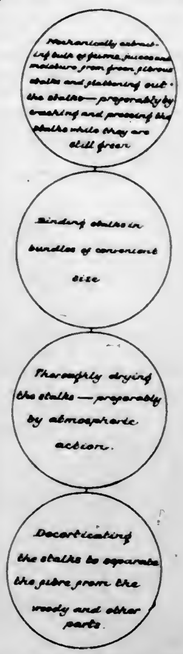
Claim.—1. In a device of the class described, a standard, a lever pivoted to the standard, a cage supported from the lever and movable to elevated position above the surface of the ground, means for locking the cage in elevated position, and a flexible connection between each corner of the cage and the ground for preventing lateral movement of said cage when in elevated position.

2. In a device of the class described, a standard, a lever pivoted to the standard and having its long end provided with a longitudinal slot one wall of which is formed with a locking-recess, a coop suspended from the short end of the lever, and movable to elevated position above the surface of the ground, a flexible connection between the coop and the ground, and a locking-bail pivoted to the standard and having its free end slidably mounted in the slot for engagement with the locking-recess.

3. In a device of the class described, a standard, a lever pivotally mounted on the standard and having a locking-recess formed in the long end thereof, a coop suspended from the short end of the lever and movable to elevated position above the surface of the ground, a partition disposed within the coop and defining a nest-receiving compartment, an opening formed in the coop and communicating with the nest-receiving compartment, a closure for said opening, stay-wires secured to the ground and connected to the corners of the coop, and a locking-bail pivoted to the standard and adapted to engage the locking-recess.

4. In a device of the class described, a standard having one end thereof bifurcated, a lever pivotally mounted on the bifurcated end of the standard and having its long arm provided with an elongated slot, one wall of which is formed with a locking-recess, a coop suspended from the short end of the lever and movable to elevated position above the surface of the ground when the long end of the lever is depressed, stay-wires anchored to the ground and secured to the corners of the coop for preventing lateral movement of said coop when in elevated position, and a locking-bail pivoted to the standard and slidably mounted in the slot for engagement with the locking-recess for supporting the coop in elevated position.

824,243. PROCESS OF TREATING FIBROUS STALKS. WALTER J. HOLLIER, New Orleans, La. Filed June 5, 1905. Serial No. 263,888. Substituted for abandoned application filed May 7, 1902, Serial No. 106,343.



Claim.—1. The herein-described process of separating the fiber of hemp, ramie and jute from stalks containing the same, consisting in mechanically extracting the bulk of the gums, juices and moisture from the stalks while they are still green, then thoroughly drying the stalks, and finally decorticating the stalks to separate the fiber from the woody and other parts.

2. The herein-described process of separating the fiber of hemp, ramie and jute from stalks containing the same, consisting in mechanically extracting the bulk of the gums, juices and moisture from the stalks by crushing and pressing the same while they are still green, then thoroughly drying the stalks and finally decorticating the stalks to separate the fiber from the woody and other parts.

3. The herein-described process of separating the fiber of hemp, ramie and jute from stalks containing the same, consisting in mechanically extracting the bulk of the gums, juices and moisture from

the stalks by crushing and pressing the same while they are still green, then thoroughly drying the stalks by atmospheric action, and finally decorticating the stalks to separate the fiber from the woody and other parts.

4. The herein-described process of separating the fiber of hemp, ramie and jute from stalks containing the same, consisting in mechanically extracting the bulk of the gums, juices and moisture from the stalks by crushing and pressing the same while they are still green, binding the stalks in bundles, thoroughly drying the stalks and finally decorticating the stalks to separate the fiber from the woody and other parts.

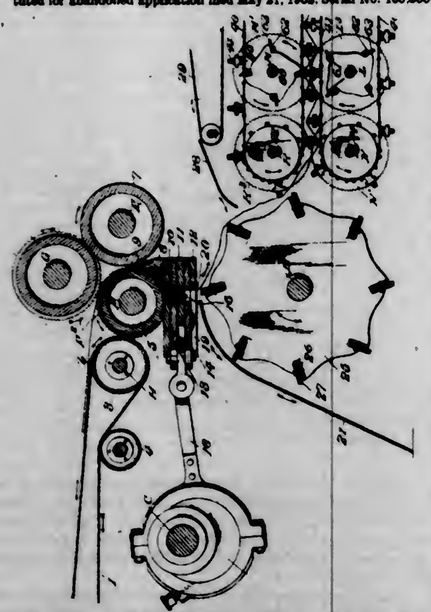
5. The herein-described process of treating the stalks of hemp, ramie and jute, consisting in applying mechanical pressure to the stalks while they are still green, thereby flattening out the stalks and extracting the bulk of the gums, juices and moisture therefrom, and then thoroughly drying the stalks.

6. The herein-described process of treating the stalks of hemp, ramie and jute, consisting in applying mechanical pressure to the stalks while they are still green, thereby flattening out the stalks and extracting the bulk of the gums, juices and moisture therefrom, then thoroughly drying the stalks, and finally decorticating the stalks to separate the fiber from the woody and other parts.

7. The herein-described process of treating the stalks of hemp, ramie and jute, consisting in applying mechanical pressure to the stalks while they are still green, thereby flattening out the stalks and extracting the bulk of the gums, juices and moisture therefrom, and then thoroughly drying the stalks by atmospheric action.

8. The herein-described process of treating the stalks of hemp, ramie and jute, consisting in applying mechanical pressure to the stalks while they are still green, thereby flattening out the stalks and extracting the bulk of the gums, juices and moisture therefrom, binding the stalks in bundles, thoroughly drying the stalks, and finally decorticating the stalks to separate the fiber from the woody and other parts.

824,244. DECORTICATING-MACHINE. WALTER J. HOLLIER, New Orleans, La. Filed June 15, 1905. Serial No. 265,450. Substituted for abandoned application filed May 21, 1903. Serial No. 158,335.



Claim.—1. In a decorticating-machine, a brake comprising a plurality of superposed slotted plates arranged in two relatively movable groups the plates of one group alternating with those of the other, the lowermost plate being cut away at one side of the slot to permit escape of part of the stalks acted upon, and means for imparting relative movement to the plates of the brake to open and close the continuous passage formed by the slot therein.

2. In a decorticating-machine, the combination with a brake composed of a plurality of superposed slotted plates relatively movable to open and close the continuous passage formed by the slots, the lowermost plate being cut away at one side of its slot, of means for actuating the plates, and a shield projecting upwardly beneath the space formed by cutting away the lower plate and acting to deflect to one side parts of the material removed from the fiber at this point.

3. In a decorticating-machine, the combination with a brake composed of a plurality of superposed slotted plates relatively movable to open and close the continuous passages formed by the slots, the lowermost plate being cut away at one side of its slot, of means for actuating the plates, a rotary beater-drum having blades thereon and located beneath the brake, and a shield extending upwardly about one side of the drum and beneath the space formed by cutting away the lower plate and acting to deflect to one side parts of the material removed from the fiber at this point.

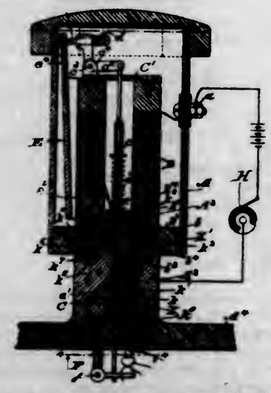
4. In a decorticating-machine, two endless movable carriers having transverse projecting ribs thereon, the ribs on one side of one carrier projecting into the space between the ribs on the opposing side of the other carrier and stretching the fibrous material in a zig-zag line, a scraper acting upon the fibrous material while it is stretched over the ribs on the carrier, and means for feeding the fibrous material between the carriers.

5. In a decorticating-machine, two endless movable carriers having transverse projecting ribs thereon, the ribs on one side of one carrier projecting into the space between the ribs on the opposing side of the other carrier and stretching the fibrous material in a zig-zag line, a rotary scraper acting upon the fibrous material while it is stretched over the ribs on the carriers, and means for feeding the fibrous material between the carriers.

6. In a decorticating-machine, two endless movable carriers having transverse projecting ribs thereon, the ribs on one side of one carrier projecting into the space between the ribs on the opposing side of the other carrier and stretching the fibrous material in a zig-zag line, two rotary scrapers one acting in conjunction with the ribs on each carrier, and means for feeding the fibrous material to the carriers.

7. In a decorticating-machine, crushing feed-rollers, a brake to which the material passes from said rollers, a beater-drum acting on the fibrous material after it leaves the brake, two endless movable carriers to which the fibrous material is delivered from the drum said carriers having transverse projecting ribs thereon the ribs on one side of one carrier projecting into the space between the ribs on the opposing side of the other carrier and stretching the fibrous material in a zigzag line, and two rotary scrapers one acting in conjunction with the ribs on each carrier.

824,245. SPARKING IGNITER. CHARLES M. HUNT, Cleveland, Ohio, assignor of two-thirds to Webster F. Traves, Cleveland, Ohio. Filed June 24, 1904. Serial No. 213,960.

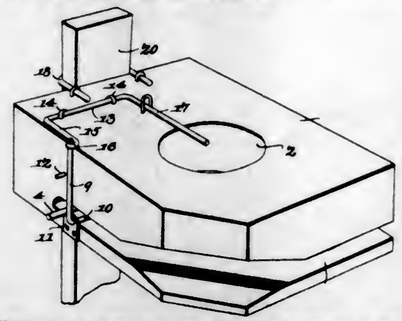


Claim.—1. In a sparking igniter, the combination of a casing; a core; an armature; a plug connecting the core and the cylinder-head; a contact-electrode secured to said plug and insulated therefrom; circuit connections; a rod carrying a second contact-electrode; means connecting said rod and one end of said armature; and a spring intermediate of said core and the other end of said armature and constructed to bear against the lateral edges of the latter, said spring thus centering the armature relatively to the core and holding the same normally out of contact with said core.

2. In a sparking igniter, the combination of a casing; a core; an armature; a plug connecting the core and a cylinder-head; a contact-electrode secured to said plug; circuit connections; a two-piece rod carrying a second contact-electrode; and three independent groups of means for adjusting the force with which the armature is held out of contact with the core, comprising, first, an adjustable spring intermediate of said armature and core; secondly, a pin having threaded engagement with the armature and connected to said rod; and thirdly, means for adjusting one piece of said rod within the other piece thus making the rod's length capable of being varied.

3. In a sparking igniter, the combination of a casing; a core; an armature; a plug connecting the core and a cylinder-head; a contact-electrode secured to said plug; circuit connections; a rod comprising two pieces one adjustable with the other, thus making the rod's length capable of being varied; a second contact-electrode carried by said rod; a rocker-arm pivoted to the core and connected to said rod; a pin threaded into the armature and connecting the latter with said rocker-arm; a spring upon said rod and adapted to bear against one piece of the same to hold the armature out of contact with the core; and a second spring passing around the core, and provided with two bent ends adapted to bear against the lateral edges of the armature, said second spring thus centering the latter relatively to the core and holding the same normally out of contact with the core.

824,246. ANIMAL-TRAP. GEORGE A. JONES, University Place, Nebr. Filed Feb. 27, 1906. Serial No. 303,233.



Claim.—1. An animal-trap comprising a body, having an opening therethrough, and provided with a slot intersecting the opening transversely thereof, a spring-jaw working in the slot across the opening, means for holding the jaw under tension, and a trigger associated with said means to release the same and located across the opening.

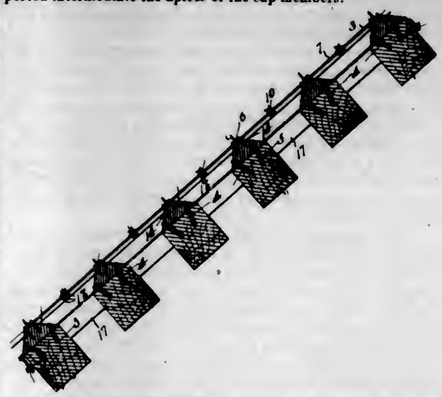
2. An animal-trap comprising a body having a passage therethrough and provided with a slot intersecting the passage, a spring-jaw working in the slot and across the passage with the other end of the jaw projecting through the slot, a movable keeper carried upon the exterior of the body for engagement with the free end of the jaw to hold it under tension, a swinging latch for engagement with the keeper, and a trigger associated with the latch and disposed across the passage.

3. An animal-trap comprising a body having a passage therethrough and provided with a slot intersecting the passage at substantially right angles thereto, a spring-jaw working in the slot across the passage, a rock-bar mounted in the slot and provided with a crank-arm working upon the exterior of the body and constituting a keeper to engage the free end of the jaw, and another rock-bar mounted upon the exterior of the body and provided with a crank-arm having a hook to engage the keeper and also provided with a trigger-arm disposed across the passage.

4. An animal-trap having a passage piercing the top and bottom thereof, a spring-jaw working across the passage, a movable keeper to hold the jaw under tension, a trigger associated with the keeper, upper and lower loops carried by and projecting beyond the body, and a downwardly-tapered anchoring-stake to be driven through the loops and into the ground.

824,247. CATTLE-GUARD. ELISHA R. KING, Brin, Texas. Filed Nov. 8, 1905. Renewed May 24, 1906. Serial No. 318,566.

Claim.—1. A railroad cattle-guard including a plurality of cross-ties, cap members of triangular cross-section supported upon said ties and having upwardly-extending spikes, and barbed rods supported intermediate the apices of the cap members.



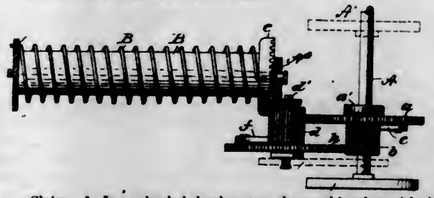
2. A cattle-guard including a plurality of cross-ties, cap members of triangular cross-section supported upon said ties and having upwardly-extending spikes said cap members being provided at intervals with notches, longitudinal rods seated in said notches, and barbed rods connected with and supported by the longitudinal rods intermediate the apices of the cap members.

3. A cattle-guard including a plurality of cap members triangular in cross-section, and supporting means for said cap members; in combination with longitudinal supporting-rods resting upon and connected with the cap members and having flattened portions intermediate the apices of the latter, and transverse barbed rods having flattened portions engaging the flattened portions of the supporting-rods; and means for connecting the barbed rods with the supporting-rods.

4. In a cattle-guard, a plurality of cap members, triangular in cross-section, and provided with notches in their upper edges; in combination with rods seated in said notches, eyebolts upon the terminal ties for the reception of the ends of the rods, nuts upon the ends of the rods, and means for securing said rods in the seats of the intermediate caps.

5. In a cattle-guard, a plurality of rail-supporting ties, brace members spacing said ties apart beneath the rails, cap members triangular in cross-section supported upon the ties between the rails and adjacent to the outer sides of the latter said caps having notches in their upper edges, longitudinal rods seated in said notches and secured upon the terminal ties, and barbed rods connected with and supported by said longitudinal rods intermediate the apices of the cap members.

824,248. SPRING-MOTOR. HARRY T. KINGSBURY, Keene, N. H. Filed Mar. 18, 1904. Serial No. 198,814.



Claim.—1. In a wheeled, keyless toy, the combination with the axle and ground-wheels, of a quick-winding motor, comprising a spring, permanently-meshed gearing connecting said axle and spring and including a large loose gear on the axle, a clutch mechanism connecting the said large loose gear to the axle for rotation therewith in one direction to wind the spring, a large transmission-gear operatively connected with and driven from the spring in its unwinding movement, and a small gear on the axle in permanent mesh with said large transmission-gear; substantially as described

2. In a wheeled, keyless toy, the combination with the axle and ground-wheels, of a quick-winding motor, comprising a spring, permanently-meshed gearing connecting said axle and spring and in-

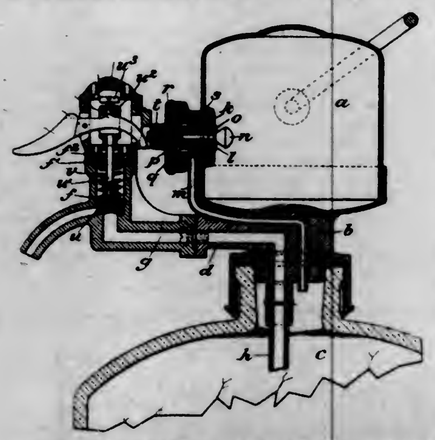
cluding a large loose gear on the axle, a one-way clutch mechanism connecting said large gear to the axle for rotation therewith in one direction to wind the spring, a large transmission-gear operatively connected with and driven from the said spring in its unwinding movement, and a small gear on the said axle in permanent mesh with said large transmission-gear; substantially as set forth.

3. In a wheeled, keyless toy, the combination with the axle and ground-wheels, of a quick-winding motor comprising a spring, a gear connected to one end of said spring, a short shaft having a fixed pinion meshing with said gear, a large winding-gear loose on the axle and meshing permanently with said fixed gear, a one-way clutch device connecting said winding-gear and axle, a large transmission-gear loose on said short shaft, a one-way clutch device connecting said transmission-gear with said short shaft, and a fixed pinion on the axle and in permanent mesh with said transmission-gear; substantially as set forth.

4. The combination in a keyless, wheeled toy, with the vehicle-axle and the ground-wheels, of a motor comprising a spring, a gear-wheel connected therewith, a large loose winding-gear on the axle, a small fixed pinion also on the axle, a pawl on the large gear and engaging said pinion, a small intermediate pinion in permanent mesh with the first-named gear-wheel and also in permanent mesh with the said large winding-gear, and a large loose transmitting-gear in permanent mesh with the fixed pinion on the axle and having a pawl engaging the said intermediate gear-wheel, substantially as set forth.

5. The combination with the axle and its ground-wheels, of a motor comprising a drum at an angle to the axle, a crown-wheel on the end of the drum, a helical spring on the drum and connected at one end to a fixed part and at its other end connected with the drum, a large loose winding-gear on the axle, a pawl-and-ratchet mechanism connecting the two, a fixed pinion on said axle, a small intermediate pinion connecting the said large winding-gear and the crown-wheel, and a large loose transmitting-gear engaging the pinion on the axle and having a pawl engaging the said intermediate pinion.

824,249. **SIPHON FOR DISPENSING LIQUIDS.** ARTHUR KLEINFELDT, Hoboken, N. J. Filed June 29, 1905. Serial No. 267,507.



Claim.—1. The combination of a liquid-receptacle, an outlet therefor, a gas-receiver connected therewith, a valve to control the passage of gas from the receiver into the receptacle, a valve to control the outlet, means to operate both of said valves simultaneously to admit gas to the receptacle as the liquid escapes therefrom, and independent means to open the outlet-valve to its full extent independently of the gas-valve, substantially as described.

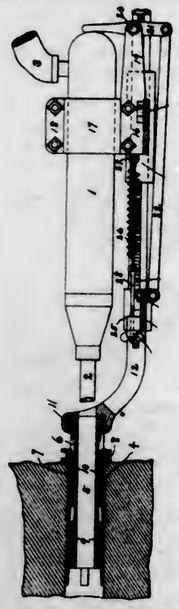
2. The combination of a liquid-receptacle, an outlet therefor, a gas-receiver connected therewith, a valve to control the passage of gas from the receiver into the receptacle, a valve to control the outlet, an operating-lever to act upon both of said valves simultaneously, the outlet-valve having a loose connection with said lever, and means to operate the outlet-valve without moving the lever to open the gas-valve, substantially as described.

3. The combination of a liquid-receptacle, an outlet therefor, a gas-receiver connected therewith, a valve to control the passage of gas from the receiver into the receptacle, a valve to control the outlet, said outlet-valve having a slotted head, an operating-lever adapted to operate the gas-valve and engaged loosely by said slotted head to operate the outlet-valve and means coöperating with the lever and said slotted head to operate the outlet-valve without moving the lever to open the gas-valve, substantially as described.

4. The combination of a liquid-receptacle, an outlet therefor, a gas-receiver connected therewith, a valve to control the passage of gas from the receiver into the receptacle, a valve to control the outlet, said valve having a slotted head, a lever adapted to operate the gas-valve and engaging the slotted head loosely to open the outlet-valve and an implement adapted to be inserted between the lever and the head of the outlet-valve to open the latter without moving the former, substantially as described.

5. The combination of a liquid-receptacle, an outlet therefor, a gas-receiver connected therewith, a valve to control the passage of gas from the receiver into the receptacle, a tap-valve shell or body, an outlet-valve mounted therein and having a stem provided with an adjusting-screw, an operating-lever mounted in said shell or body to coöperate with the outlet-valve through said screw, and a key-cap engaging said valve shell or body and covering said adjusting-screw, substantially as described.

824,250. **PNEUMATIC-TOOL HOLDER.** AMBROSE B. KNAPP, Seattle, Wash. Filed Nov. 27, 1905. Serial No. 289,283.



Claim.—1. In a tool-holder, the combination of a sleeve having a square hole and dovetail slots, longitudinally-extending engaging members mounted in said slots and provided with teeth on their outer sides and a plurality of inclines on their inner sides, said sleeves having inclines corresponding thereto, a spring-ring adapted to hold said engaging means in position, a tool-holder comprising parallel rods secured to one end of said sleeve, and a tool-carrier slidably mounted on said rods.

2. In a tool-holder, the combination of a sleeve having longitudinal slots, engaging means slidably mounted in said slots and provided with inclines adapted to engage corresponding inclines on said sleeve, means to hold said engaging means in operative position, a tool-holder carried by one end of said sleeve, and a tool adjustably mounted on said holder.

3. In a tool-holder, the combination of a sleeve having dovetail grooves, adjustable engaging members mounted therein, parallel rods secured to said sleeve, a carriage mounted on said rods, and a tool secured to said carriage.

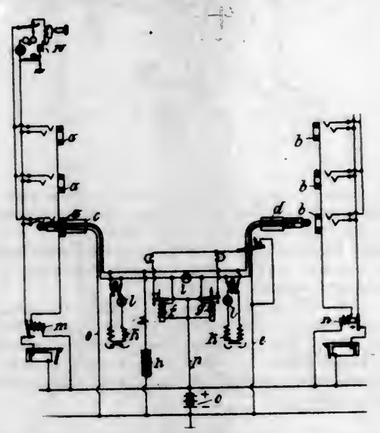
4. In a tool-holder, the combination of a sleeve, slidable toothed and outwardly-movable engaging members mounted thereon, means to connect said engaging members and a tool-carrier secured to one end of said sleeve.

5. In a tool-holder, the combination of a sleeve having a square hole, engaging members mounted thereon, and a tool-carrier mounted on said sleeve, the corners of said square hole providing passages through which the waste from the operation of the tool may be discharged out along the round shank of a tool having the same diameter as the hole, substantially as described.

6. In a tool-holder, the combination of a sleeve having a square hole, and means to hold said sleeve firmly in position, the corners of said square hole providing passages through which the waste from the operation of the tool may be discharged along the round shank of a tool having the same diameter as the hole, substantially as described.

7. In a tool-holder, the combination of a sleeve having a square hole to permit the passage of a drill-rod, and adjustable means to hold said sleeve firmly in position, the corners of said square hole providing passages through which the waste from the operation of the tool may be discharged out along the round shank of a tool having the same diameter as the hole, substantially as described.

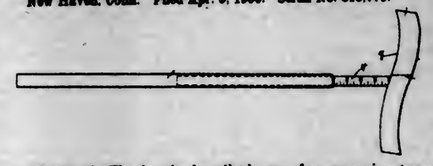
824,251. **TELEPHONE SYSTEM WITH CENTRALLY-ARRANGED MICROPHONE-BATTERY.** GUSTAV P. LAMBERT, Charlottenburg, Germany. Filed Feb. 14, 1903. Serial No. 94,069.



Claim.—1. In a telephone system, in combination, a central microphone-battery, a plurality of pairs of jack-springs connected to each subscriber's line and in parallel to one pole of the central microphone-battery, test rings or sleeves corresponding to each pair of jack-springs and connected in parallel to the same pole of the said central battery, a plug for the plurality of test-sleeves of each subscriber's line and provided with a cord having three strands or conductors, two of which are capable of connecting respectively with each pair of jack-springs, the third conductor being connected to the other pole of the central battery and to earth, testing-telephones bridged across the two other cord conductors, induction-coils connected to one pole of the central battery and in parallel to one of the last-mentioned cord conductors, a polarization-battery bridging the said induction-coils and a polarization-battery in one branch of the said testing-telephone circuits.

2. In a telephone system, in combination, a central microphone-battery, a plurality of pairs of jack-springs connected to each subscriber's line and in parallel to one pole of the central microphone-battery, test rings or sleeves corresponding to each pair of jack-springs and connected in parallel to the same pole of the said central battery, a plug for the plurality of test-sleeves of each subscriber's line and provided with a cord having three strands or conductors, two of which are capable of connecting respectively with each pair of jack-springs, the third conductor being connected to the other pole of the central battery and to earth, resistance-coils in the conductors connecting the test-sleeves and the central battery, testing-telephones bridged across the two other cord conductors, induction-coils connected to one pole of the central battery and in parallel to one of the last-mentioned cord conductors, a polarization-battery bridging the said induction-coils and a polarization-battery in one branch of the said testing-telephone circuits.

824,252. **GAGE FOR MEASURING TROUSERS.** WALTER LEGG, New Haven, Conn. Filed Apr. 9, 1906. Serial No. 310,770.



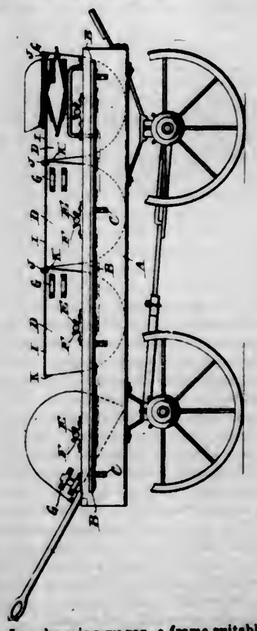
Claim.—1. The herein-described gage for measuring trousers comprising a case, a rod movable with relation thereto, a pattern fixed to the outer end of said rod and formed with a curved edge corresponding to the curvature of the bottom of a pair of trousers, substantially as described.

2. The herein-described gage for measuring trousers comprising a tubular case, a rod arranged therein, a pattern fixed to the outer end of said rod and having its outer edge curved corresponding to the form of the bottom of a pair of trousers, substantially as described.

3. The herein-described gage for measuring trousers comprising a tubular case formed with a longitudinal slot in one side, a rod arranged in said case and adapted to slide therein, a pattern fixed to the outer end of said rod said pattern formed with a curved outer edge corresponding to the curvature of the bottom of a pair of trousers, substantially as described.

4. The herein-described gage for measuring trousers comprising a tubular case formed with a longitudinal slot in one side, a rod arranged in said case and adapted to slide therein, a pattern fixed to the outer end of said rod said pattern formed with a curved outer edge corresponding to the curvature of the bottom of a pair of trousers, and a curved inner edge parallel with the outer edge, substantially as described.

824,253. **DUMPING-WAGON.** HERBERT S. LONG, Marion, Ohio. Filed Mar. 31, 1904. Serial No. 200,960.



Claim.—1. In a dumping-wagon, a frame suitably mounted on a wagon running-gear, and a multiplicity of semicylindrical tanks journaled on the sides of said frame, the journals on said tanks being toward the rear of the center of said tanks, substantially as shown and described.

2. In a dumping-wagon, a frame suitably mounted on a wagon running-gear, a multiplicity of tanks journaled on said frame, a roller journaled on each tank, a curtain of any suitable fabric se-

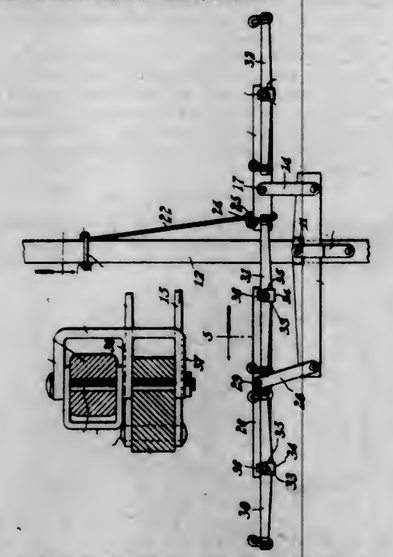
cured to said roller and adapted to be rolled thereupon, and means to actuate said roller, substantially as shown and described.

3. In a dumping-wagon, a frame suitably mounted on a wagon running-gear and having its end at the front of the wagon higher than at the rear end, and a multiplicity of tanks journaled on said frame, substantially as shown and described.

4. In a dumping-wagon, a frame suitably mounted on a wagon running-gear and having its end at the front of the wagon higher than at the rear end, and a multiplicity of semicylindrical tanks journaled on said frame, substantially as shown and described.

5. In a wagon-loading apparatus, a frame suitably mounted on a wagon running-gear and having its end at the front of the wagon higher than at the rear end, a multiplicity of tanks journaled on said frame, a frame adapted to be mounted at each side of said tanks having an upright, a flat runway and brackets to rest against the inside of the tank, a skid extending from the rear of the frame to the ground, sheaves suitably journaled on the wagon, a cable passing over the sheaves and adapted to be attached to a suitable load, and means to actuate said cable to draw said load up said skid and along the runway-boards aforesaid, substantially as shown and described.

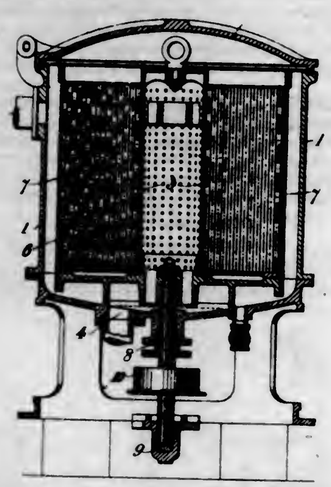
824,254. **DRAFT-EQUALIZER.** WILLIAM F. MAAS, Missouri, Iowa. Filed Nov. 10, 1905. Serial No. 286,730.



Claim.—1. A draft-equalizer comprising a draft-tongue, an equalizer-beam disposed upon said tongue and pivoted thereto nearer one end than the other, a relatively short evener-bar and a relatively long evener-bar disposed upon opposite sides of said tongue, spaced straps bearing upon opposite sides of said equalizer-beam at its shorter end and pivoted thereto and likewise bearing upon opposite sides of said shorter evener-bar and pivoted thereto nearer one end than the other, spaced straps bearing upon opposite sides of said equalizer-beam at its longer end and pivoted thereto and likewise bearing upon opposite sides of said longer evener-bar and pivoted centrally thereof, a clip having means for adjustable connection to said draft-tongue, a rod movably connected between said clip and the shorter end of said shorter evener-bar, pivot-bolts extending vertically through said longer evener-bar at the ends and likewise through the shorter evener-bar at the longer end and extending above and below the same, swingletrees swinging upon said pivot-bolts above said evener-bars, and clevises having spaced branches engaging said pivot-bolts above said swingletrees and below said evener-bars.

2. In a draft-equalizer, equalizer-bars, means for movably connecting said bars to the draft appliances of the structure to be moved, pivot-bolts extending through said bars, a clevis member consisting of a vertical bar having branches extending laterally from the ends and at an intermediate point thereof and engaging the pivot-bolt, the intermediate and lower branches bearing above and below the beam and the upper branch spaced above the beam, a swingletree swinging from said bolt between said upper branch and intermediate branch, and a U-shaped clip engaging the bolt between the upper branch and intermediate branch.

824,255. **PROCESS OF MERCERIZING.** WILLIAM MATHER, JULIUS HÜBNER, and WILLIAM J. POPE, Manchester, England. Filed Mar. 3, 1905. Serial No. 248,063.



Claim.—1. The herein-described process of mercerizing which consists in first steaming and wetting the material while under constrictive pressure between pervious but inextensible and non-absorbent surfaces and subsequently causing the mercerizing liquid to pass through it while still held between such surfaces, and finally washing out the mercerizing liquid.

2. The herein-described process of mercerizing which consists in rolling the material to be treated together with an alternating layer of pervious but inextensible and non-absorbent material to form a roll, which is first subjected to a steaming and wetting process after which the mercerizing liquors are caused to pass therethrough and the roll finally washed.

824,256. **ATTACHMENT FOR PLATEN PRINTING-PRESSES.** WALTER MAYER, Madison, Wis. Filed July 28, 1905. Serial No. 271,629.



Claim.—1. A guide comprising a spring-clip consisting of integral overlapping members spaced apart throughout their lengths, one of said members having an aperture adjacent its free end, and a lug upon the other member normally seated within the aperture.

2. A guide consisting of a spring-clip formed of two substantially parallel portions, one of said portions having a reduced free end and an aperture adjacent said end and the other portion having a curved end, and a lug adjacent said curved end and normally seated within the aperture.

3. The combination with a tympan-sheet having a slit therein; of a guide within the slit and consisting of connected spring portions extending upon opposite faces of the sheet, one of said portions being provided with an aperture therein, and a lug upon the other portion projecting through the sheet and seated within the aperture.

4. The combination with a tympan-sheet; of a guide thereon comprising oppositely-disposed connected spring members upon opposite sides of the sheet, one of said members having an aperture therein, and a lug upon the other member registering with the aperture and engaging the tympan-sheet.

5. A guide of the character described comprising integral overlapping spring portions, one of said portions having an aperture therein, a lug upon the other portion normally seated within the aperture, said last-mentioned portion having retaining devices integral therewith, and an adjustable stop-pin extending through the guide and held by the retaining portions.

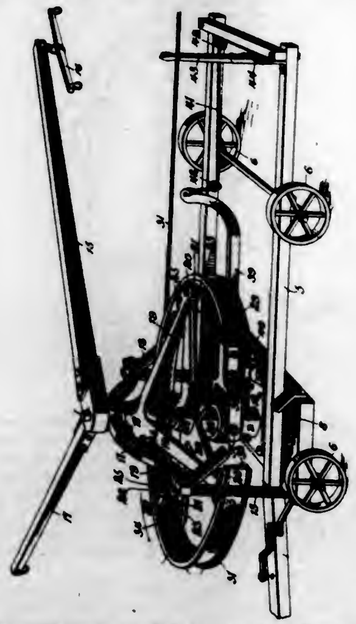
824,257. **HOOK AND EYE.** ALBERT H. MICHAELIS, Freeport, Ill. Filed Dec. 15, 1905. Serial No. 291,896.



Claim.—1. The combination with a hook-and-eye member having a pair of loops at the rear end thereof, of a sheet-metal piece thereunder having tongues at opposite sides bent over the loops of said members, and also having depending prongs.

2. The combination with a hook-and-eye member having loops at the rear end thereof, of a sheet-metal piece thereunder having tongues extending up through the loops and bent over the same, to attach said piece to the member, and also having depending prongs.

824,258. **HOISTING APPARATUS.** WILSON W. MILLER, Newton, Kans. Filed Aug. 26, 1905. Serial No. 275,942.



Claim.—1. In apparatus of the character described, the combination with a rotatable driving member, of a rotatable driven member, one of said members having inclined shoes, the other having a corresponding inclined angular friction-surface disposed concentrically to the axis of rotation of the members and against which the shoes frictionally engage, means for effecting a relative movement of the members to cause the engagement of the shoes and inclined surface and form a friction connection between the members, and means for effecting the separation of said members.

2. In apparatus of the character described, the combination with a rotatable driving member including a shaft having radiating arms and shoes carried by the same, of a rotatable driven member loosely journaled on the shaft and including a drum having an annular shoe-engaged surface, a spring interposed between the members for normally holding the same separated, and means for effecting the relative movement of the members to cause the engagement of the shoes and annular surface of the drum.

3. In apparatus of the character described, the combination with a support, of an upright shaft journaled thereon, a sweep secured to the shaft, a spider secured to the shaft and including radiating arms having shoes at their outer ends, a drum loosely journaled on the shaft and slidable thereon, said drum having an annular wall movable into and out of engagement with the shoes, means for sliding the drum upon the shaft to cause the engagement of the annular wall with the shoes, and means for urging the drum out of such engagement.

4. In apparatus of the character described, the combination with a base-frame, of a yoke mounted thereon, an upright shaft journaled in the frame and yoke, a sweep fixed to the upper end of the shaft, a spider secured to the shaft beneath the yoke and having radiating arms provided with shoes, a drum comprising a hub rotatably and slidably mounted on the shaft beneath the spider, radiating arms carried by the drum, an annular wall carried by the outer ends of the arms and having an inner surface arranged to be engaged by the shoes, a spring interposed between the spider and frame for holding the latter in a lower position, and means engaging the hub of the drum for elevating said drum and causing the engagement of the surface with the shoes.

5. In apparatus of the character described, the combination with relatively rotatable members movable toward and from each other, of a shoe carried by one of the members and movable into and out of engagement with the other member upon the relative movement of said members, said shoe being adjustable upon the member carrying it, and means for holding the shoe in adjusted position.

6. In apparatus of the character described, the combination with relatively rotatable members movable toward and from each other, of a shoe carried by one of the members and movable into and out of engagement with the other member upon the relative movement of said members, said shoe being adjustable upon the member carrying it, and means for adjusting the shoe toward and from the axis of rotation of the member and holding said shoe in different adjusted positions.

7. In apparatus of the character described, the combination with relatively rotatable members, one of said members including a shoe having a head, the other member having a frictional surface, a shoe-block slidably mounted on the head and arranged to contact with the frictional surface, an adjusting-screw engaging the head and block for moving said block, and a clamping-screw engaging the head and block to hold the block in adjusted position.

8. In apparatus of the character described, the combination with relatively rotatable members, one of said members having an annular friction-surface and teeth disposed adjacent to and at one side of the surface, the other having a shoe provided with a friction-surface that coöperates with the surface of the first-mentioned member and having teeth at one side of its friction-surface that in like manner coöperate with the teeth thereof, of means for effecting the movement of the members to engage the coöperating surfaces and teeth.

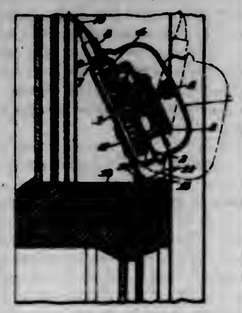
9. In apparatus of the character described, the combination with a rotatable driving member having radiating arms provided with shoes, said shoes each having a frictional engaging surface on one side and teeth on another side, of a drum having a friction-surface and teeth at one side of the surface and in angular relation thereto the surfaces and teeth of the shoes respectively coöperating with those of the drum, and means for moving the drum to effect the engagement of the coöperating surfaces and teeth.

10. In apparatus of the character described, the combination with a base-frame, of a yoke supported thereby and above the same, an upright shaft journaled in the base-frame and yoke, a sweep fixed to the upper end of the shaft, a spider secured to the shaft beneath the yoke and having radiating arms, shoes secured to the outer ends of the arms and having outer curved friction-surfaces and teeth on their under sides, a drum comprising a hub loosely and slidably mounted on the shaft, radiating arms carried by the hub, an annular wall mounted on the outer ends of the arms and having an upright frictional surface with which the outer faces of the shoes coöperate, said drum being furthermore provided with an inwardly-extending flange having teeth with which the teeth of the shoes coöperate, a spring interposed between the spider and hub for separating the same, a collar mounted on the shaft beneath the drum-hub, and a lever coöperating with the collar for moving the same upon the shaft to carry the drum into coöperation with the shoes.

824,259. **BURGLAR-ALARM.** JOHN O. MORRIS, New York, N. Y., assignor to The Norfolk Novelty Corporation, Norfolk, Va., a Corporation of Virginia. Filed July 31, 1905. Serial No. 272,094.

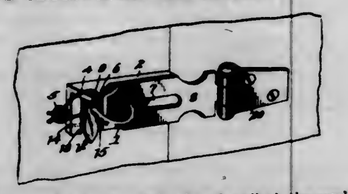
Claim.—1. The herein-described bell burglar-alarm, consisting of a casing, sounding mechanism capable of producing a sustained alarm and normally inactive motor mechanism for controlling the sounding mechanism arranged in said casing, a movable trip-pin projecting radially from the casing and connected with the motor mechanism, and means for pivotally attaching the casing in position for use, said attaching means being arranged at a point diametrically opposite the trip-pin and consisting of a member connected to the back or body of the bell, and a member provided with means for

attachment to the meeting-rail of a window-sash, hinged to the first-named member, and extending forwardly beneath the bell, substantially as and for the purpose described.



2. The herein-described bell burglar-alarm, consisting of a casing, sounding mechanism capable of producing a sustained alarm and normally inactive mechanism for controlling the sounding mechanism arranged in said casing, a movable trip-pin projecting radially from the casing and connected with the motor mechanism, a tongue struck up from the material of the casing and an attaching-plate pivotally connected to said tongue and extending forwardly beneath the bell for the purpose described.

824,260. HASP-FASTENER. SAMUEL J. MCCLUNG, Fayette, W. Va. Filed Nov. 14, 1905. Serial No. 287,264.



Claim.—1. In a device of the class described, the combination with a hasp, of a staple-plate provided with a projecting keeper, a pivoted staple mounted on the staple-plate for engaging the hasp and adapted to have its free end arranged contiguous to the keeper, and a catch arranged at one side of the keeper in the path of the movement of the staple and adapted to engage the free end of the staple to hold the same against the keeper.

2. In a device of the class described, the combination with a hasp, of a staple-plate provided with a projecting keeper, a pivoted staple mounted on the staple-plate for engaging the hasp and adapted to have its free end arranged contiguous to the keeper, and a catch spaced from the keeper and provided at its engaging end with a recess arranged to receive the free end of the staple, whereby the same is held contiguous to the keeper.

3. In a device of the class described, the combination of a staple-plate provided at one side with a projecting keeper, a staple pivotally mounted at one end on the said plate, the free end of the staple being arranged to swing against the keeper, and a transversely-disposed catch having a depressible end engaging the free end of the staple for holding the same against the keeper.

4. The combination with a staple-plate, a staple pivotally mounted at one end on the staple-plate, a fixed keeper arranged in the path of movement of the free end of the staple, and a catch movable into and out of the path of movement of the free end of the staple and arranged in spaced relation with the keeper for maintaining the free end of the staple against the said keeper.

5. In a device of the class described, the combination of a staple-plate, a staple pivotally mounted at one end on the said plate and provided at its free end with a projection, a fixed keeper arranged in the path of movement of the free end of the staple and provided with a projecting flange arranged to interlock with the projection of the staple, and means for holding the projection of the staple in engagement with the flange of the keeper.

6. In a device of the class described, the combination of a staple-plate, a staple pivoted at one end to the plate, a fixed keeper arranged in the path of movement of the staple, said staple and keeper being provided with means for receiving a seal, and a catch also located in the path of movement of the free end of the staple and arranged in spaced relation with the keeper for holding the staple in engagement with the keeper.

7. In a device of the class described, the combination of a staple pivoted at one end, a fixed keeper arranged in the path of movement of the free end of the staple, means for interlocking the free end of the staple with the keeper, and separate means for maintaining the staple in such interlocked relation.

8. In a device of the class described, the combination of a keeper, a staple pivoted at one end, the free end of the staple being arranged to swing contiguous to the keeper, and a catch movable into and out of the path of movement of the free end of the staple and arranged in spaced relation with the keeper for holding the free end of the staple against the keeper.

824,261. HOOD OR SHIELD FOR LOCOMOTIVE-CAB WINDOWS. EDWIN W. PAYNE, Crewe, Va. Filed Oct. 16, 1905. Serial No. 283,080.



Claim.—1. The combination with a support having an opening formed therein, of a shield secured to one side of the support and movable through the opening to operative position on the opposite side thereof, and means for locking the shield in operative position.

2. The combination with a support having an opening formed therein, of a shield secured to one side of the support and movable through the opening to operative position on the opposite side thereof, and locking members carried by the shield and adapted to engage the adjacent walls of the support.

3. The combination with a support having an opening formed therein, of a shield pivoted to one side of the support and having its free end movable through the opening to operative position on the opposite side of the support, and locking members slidably mounted on the shield and adapted to engage the adjacent walls of the support.

4. The combination with a support having an opening formed therein, of a shield pivoted to one side of the support and having its free end movable through the opening to operative position on the opposite side of the support, means slidably mounted on the shield and adapted to engage the support for locking the shield in operative position, and means for locking said shield in inoperative position.

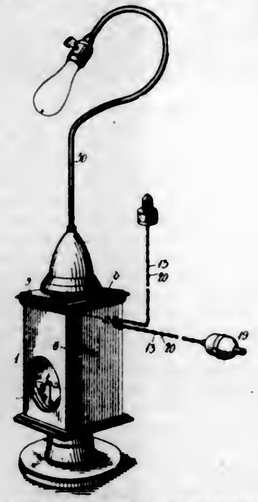
5. The combination with a support having an opening formed therein, of a shield secured to one side of the support and having its free end movable through the opening to operative position on the opposite side of the support and provided with a terminal flange, and locking members provided with corresponding flanges slidably mounted on the shield and adapted to engage the adjacent walls of the support.

6. The combination with a support having an opening formed therein, of a shield pivoted to one side of the support and having its free end movable through the opening to operative position on the opposite side of the support, guide-flanges carried by the shield, and locking members provided with longitudinal ribs for slidable engagement with the guide-flanges, said ribs being adapted to engage the adjacent walls of the support for locking the shield in operative position.

7. The combination with a support having an opening formed therein, of a shield pivoted to one side of the support and having its free end movable through the opening to operative position on the opposite side of the support and provided with a terminal upwardly-extending flange, locking-plates slidably mounted on the shield and provided with corresponding flanges adapted to embrace and engage the flange on the shield, and finger-pieces carried by the locking-plates for moving said plates laterally into engagement with the adjacent walls of the support.

8. The combination with an engine-cab having a window, of a shield pivoted to the interior walls of the cab above the window and having its free end movable through said window to operable position outside the cab, locking members slidably mounted on the shield and adapted to engage the exterior walls of the cab for locking the shield in operative position, and means for supporting said shield in elevated position within the cab.

824,262. ELECTRIC TIME-SIGNAL. JOHN M. POWELL, Potecasi, N. C. Filed Aug. 31, 1905. Serial No. 276,583.



Claim.—1. In combination with a time mechansim having an alarm apparatus, a key to wind the alarm apparatus and having a drum free to rotate thereon, said key being further provided with means to lock the drum thereto; an electric switch, and a flexible element to operate said switch, said flexible element being connected to said drum.

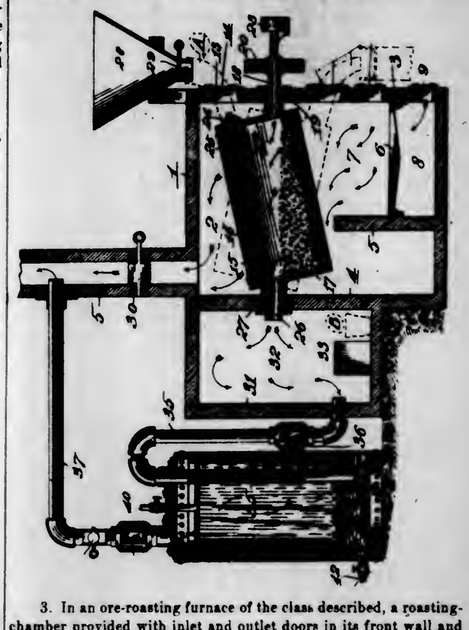
2. In combination with an electric switch having a movable arm and a spring to move said arm in one direction, a drum mounted for revolution, a flexible element connecting said drum to said switch-arm, a drum revoluble with the first-mentioned drum, a flexible element connected thereto and wound thereon in the reverse direction to the first-mentioned flexible element, and a time mechanism having a movable element to which said last-mentioned flexible element is connected, for the purpose set forth.

3. The herein-described electric signaling apparatus, comprising a time mechanism having a winding-key provided with a drum, a switch connected to a light-circuit in open shunt and including a pivoted arm, a spring to move said arm in one direction, a drum 36 mounted for revolution, a flexible element connecting said drum to that of the winding-key, a drum 38 revoluble with and adjustable on the drum 36, and a flexible element connecting said drum 38 to the switch-arm, the flexible element being reversely wound on the drums 36, 38, substantially as described.

824,263. ORE-ROASTING FURNACE. CHARLES H. RIDER, St. Louis, Mo. Filed Aug. 9, 1905. Serial No. 273,401.

Claim.—1. In an ore-roasting furnace of the class described, a roasting-chamber provided with inlet and outlet doors in one wall, an obliquely-disposed cylindrical retort arranged for rotation in the chamber, heads fixed in said retort in one of which heads is formed an opening so located as to coincide with the openings in the wall of the chamber, and a plate normally closing said opening; substantially as specified.

2. In an ore-roasting furnace of the class described, a roasting-chamber provided with inlet and outlet doors in one wall, an obliquely-disposed cylindrical retort arranged for rotation in the chamber, heads fixed in said retort in one of which heads is formed an opening so located as to coincide with the openings in the wall of the chamber, a plate normally closing said opening, a dust-chamber separate from the roasting-chamber into which the draft from the retort discharges, a condenser, and a tubular connection from the dust-chamber to the condenser; substantially as specified.



3. In an ore-roasting furnace of the class described, a roasting-chamber provided with inlet and outlet doors in its front wall and with a stack leading upwardly from its rear end, an obliquely-disposed cylindrical retort arranged for rotation in the chamber, there being an opening in one end of the retort so located as to coincide with the openings in the front wall of the chamber, a plate normally closing said opening, a dust-chamber separate from the main chamber into which the draft from the retort discharges, a condenser, a tubular connection from the dust-chamber to the condenser, and a tubular connection from the condenser to the stack; substantially as specified.

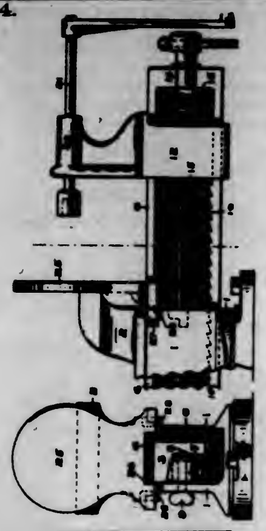
4. In an ore-roasting furnace of the class described, a roasting-chamber provided with inlet and outlet doors in one wall, a retort arranged for rotation in the chamber, there being an opening in one end of the retort so located as to coincide with the openings in the wall of the chamber, a plate normally closing said openings, a feed-hopper arranged above the chamber over one of the openings in the wall thereof, and a discharge-chute arranged beneath the opposite opening in the wall; substantially as specified.

824,264. COMBINATION-TOOL. JOHN B. RUNNER, Indianapolis, Ind., assignor, by direct and mesne assignments, to The Hoosier Jack and Combination Tool Company, Indianapolis, Ind., a Corporation of Indiana. Filed Jan. 10, 1905. Renewed Dec. 14, 1905. Serial No. 291,787.

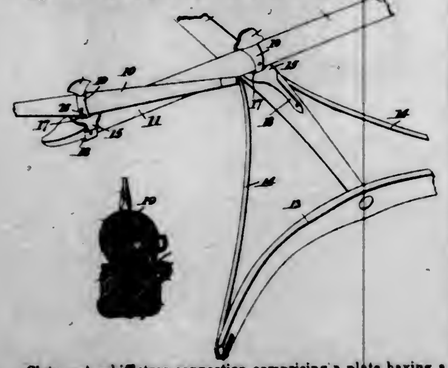
Claim.—1. A combination-tool comprising a housing provided with an aperture, a channeled rack-bar engaging said aperture, an integral wall formed in the forward end of said channeled rack-bar to provide a head for said bar, a notch in said head, a movable jaw on said channeled rack-bar, and a rotatable and removable means engaging both the notch and the head of said channeled bar and the movable jaw, to move said jaw independently of said channeled rack-bar.

2. A combination-tool comprising a housing provided with an aperture, a rack-bar engaging said aperture, means on the housing to limit the movement of said rack-bar, a jaw movably mounted on the rack-bar, means rotatably mounted on the rack-bar to move the jaw independently of said bar, and a slot in the rack-bar to receive the rotatable means.

824,264.



824,265. WHIFFLETREE CONNECTION. JOHN I. SHAW, Novinger, Mo. Filed Sept. 6, 1905. Serial No. 277,154.



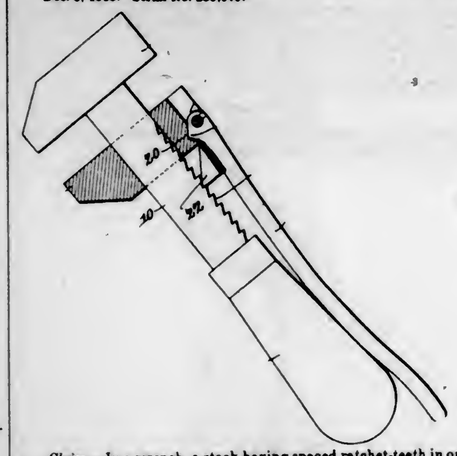
Claim.—A whiffletree connection comprising a plate having a pivot-opening therein and a slot concentric with the opening, a whiffletree, a pivot extending through the pivot-opening and the whiffletree, a strip embracing and secured to the whiffletree and terminating in a hook slidably mounted in the slot, a wear-plate secured to the whiffletree and bearing upon the slotted plate, said wear-plate having a lip projecting from one edge thereof and beyond the whiffletree, the end of the lip being convex and beveled, and a substantially crescent-shaped keeper secured upon the slotted plate and extending beyond the edges thereof, one edge of the keeper being concave and beveled to overlap the beveled end of the lip.

824,266. PICTURE-EXHIBITOR. JESSE J. TOOD, Wichita, Kans., assignor of one-half to Walter Morris, Wichita, Kans. Filed May 16, 1905. Serial No. 260,714.



Claim.—The combination with a box having lenses in one wall, of rollers supported to turn, means for turning the rollers, a flexible picture-strip secured to and adapted to be wound from one to the other and constructed to display its pictures, said box having a slot to receive and support mounted pictures, and movable drawers in said box.

824,267. WRENCH. JAMES W. B. TURK, Poteau, Ind. Ter. Filed Dec. 3, 1905. Serial No. 290,979.



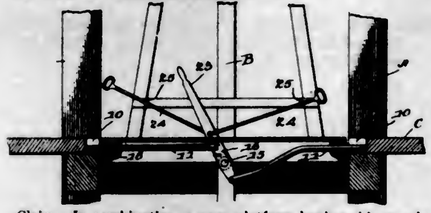
Claim.—In a wrench, a stock having spaced ratchet-teeth in one edge and a stationary jaw at one end, a movable jaw slidable upon said stock and having spaced ears with transverse apertures, said ears having inwardly-extending shoulders with the inner ends concentric to said apertures and a recess in the movable jaw between said ears and extending into the cavity formed by said shoulders, a pin extending through said apertures, a lever-arm pivoted upon said pin and with its head bearing against said shoulders and with a lug extending therefrom for bearing in said recess when the lever is in closed position and a pawl upon said lever for engaging said ratchet-teeth one at a time.

824,268. BUNSEN BURNER FOR LIQUID HYDROCARBONS. PHILIPP ULMANN, Frankfort-on-the-Main, Germany, assignor to The Firm of Kinley-Licht & Apparatebau Gesellschaft, M.B.H., Frankfort-on-the-Main, Germany. Filed Apr. 27, 1905. Serial No. 257,632.



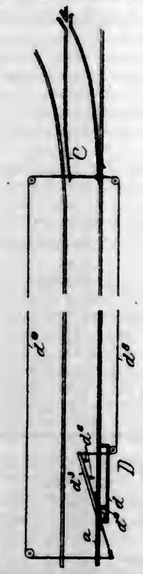
Claim.—A hydrocarbon-burner comprising a burner-head, a vaporizing-tube, a superheating-tube having a downwardly-projecting nozzle, the body of which is close to and slightly above the plane of the burner-head and lower edge of the flame, the lower end of said nozzle entirely free and the mouth thereof below said lower edge of the flame, and a flaring-mouthed mixing-tube independent of and beneath the nozzle communicating with the burner-head, whereby the collection of condensates in the nozzle is avoided.

824,269. MINE-CAGE. FRANK N. WILSON, Cripple Creek, Colo., assignor of one-half to George D. Kilborn, Cripple Creek, Colo. Filed Feb. 19, 1906. Serial No. 301,577.



Claim.—In combination, a cage-platform having side or edge members provided with guiding-openings, a rock-shaft journaled below the platform, a pair of levers secured to the rock-shaft, and each having arms projecting in opposite directions from the shaft, longitudinally-movable chair members having their inner ends pivotally connected to said arms, and the outer ends extending through the guiding-openings, a lever secured to the shaft and extending up through an opening in the platform, a torsion-spring arranged on the rock-shaft and tending to turn the same to effect withdrawal of the chair members, and a pair of handled rods guided by the cage and extending from the lever to points adjacent the opposite sides of said cage, substantially as specified.

824,270. ALARM-SIGNAL. ROBERT J. ZORGE, Chicago, Ill., assignor to Zorge Safety Railway Equipment Company, Chicago, Ill., a Corporation of Illinois. Filed Sept. 5, 1905. Serial No. 276,982.



Claim.—1. The combination with a switch-point, of a detonating device connected with and controlled by the switch-point and having a member occupying an elevated position adapted to be struck by a passing train when the switch-point is open, said device having firing means, for the purpose set forth.

2. The combination with a switch-point, of a detonating device having a movable member controlled from the switch-point, and a striking member movably connected with said first-named member and automatically moved to the firing position when said first-named movable member is raised, for the purpose set forth.

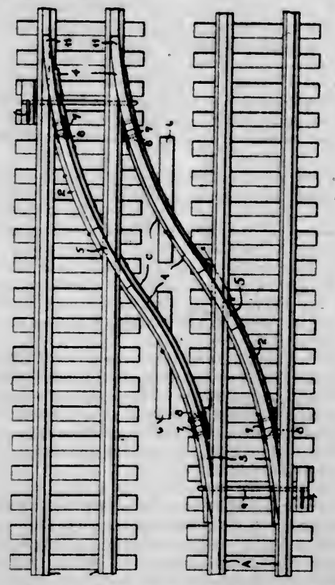
3. The combination with a switch-point, of a member serving to receive an explosive body, and a spring-raised pivoted member controlled from the switch-point and equipped with a pivoted firing member.

4. In a device of the character set forth the combination of a chamber equipped with a plurality of sockets, a member pivotally connected therewith and equipped with a plurality of foldable firing members, and controlling means for said pivoted member, for the purpose set forth.

5. The combination with a switch-point, of a lever connected therewith and actuated in two directions thereby, and a detonating device having a striking member preparatorily set by the movement of said lever, for the purpose set forth.

6. The combination with a switch-point, of a lever connected therewith and actuated in two directions thereby, and a detonating device having a pivoted member equipped with a foldable striking member, and a spring-held catch retracted by said lever, when the latter is struck, thereby setting said pivoted member in position to be struck, for the purpose set forth.

824,271. PORTABLE RAILWAY CROSSOVER-SWITCH. JOHN B. ALDRICH and ARBIA L. ALDRICH, Endicott, N. Y. Filed Apr. 9, 1906. Serial No. 310,829.



Claim.—1. An emergency crossover railway-switch comprising track-sections of greater height than ordinary railroad-rails so that the heads of said track-sections are higher than those of ordinary rails, switch-points for the ends of said sections having their upper sides inclined for the purpose set forth, and crossover-sections recessed in and detachably connected to the opposing ends of the first-mentioned sections where the latter are approximate to the inner track-rails and bearing on the heads of said inner track-rails, substantially as described.

2. In a switch of the class described, switch-rail sections having recesses at their opposing ends and their upper sides, in combination with crossover-sections fitted in said recessed ends of said switch-sections and having depending members bearing on opposite sides of the webs of said switch-sections, substantially as described.

3. In an emergency crossover railway-switch, the combination of switch-rail sections having their heads removed for suitable distances from their inner ends to form recesses and having their webs at said ends widened to form shoulders spaced from the heads at the recessed ends of said sections, in combination with crossover-sections to bear on said webs and overlapping said recessed sections, said crossover-sections having depending members bearing on opposite sides of the webs of said switch-sections and against the shoulders formed on said webs, substantially as described.

824,272. BEDSTEAD-HOLDING ATTACHMENT FOR FURNITURE. TOBY ABRAHAMS, Brookhaven, Miss. Filed Aug. 1, 1905. Serial No. 272,520.



Claim.—1. A protector for provision-safes, articles of furniture and the like, of approximately bell form provided at one end with an inner trough to receive an insecticide and having a centrally-disposed opening at the other end surrounded by a band and adapted to receive the leg or other support to which the protector may be fitted.

2. A protector comprising a body approximately bell form constructed of rigid material, having an inner trough at one end and a central opening at the opposite end, and having a flexible or elastic connection surrounding said opening and projected in line therefrom to serve as securing means for attaching the device to the support to which it may be fitted and to hold it in normal position.

3. A protector of the character described provided at its lower end with an inner trough to receive an insecticide and having a centrally-disposed opening at its upper end, and a flexible or elastic band or collar surrounding said opening and extended therefrom and serving as attaching means and an automatic readjuster to maintain the protector in normal position.

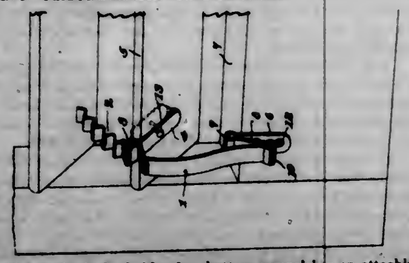
4. A protector of the character set forth having a centrally-disposed opening at one end, and a flexible collar passed through said opening and having an outer flange to underlap the protector and form a support therefor, said flexible collar constituting attaching means for securing the protector to a leg or other support.

5. A protector of the character specified having an opening to receive the leg or support of the article to which the protector may be applied, said protector having a flexible collar projected therefrom in line with said opening and terminating in an outer bead or reinforcement.

6. In combination, a protector of approximately bell form having an inner trough at one end and an opening at the opposite end to receive a support, and a flexible band inserted in the opening of the protector and provided at one end with an outer flange to underlap the portion of the protector bordering upon the opening thereof and form a support for said protector, and having an outer bead or reinforcement at its opposite end.

7. The herein-described protector for the purposes set forth, the same comprising a body of approximately bell form having an inner trough at its lower end to receive an insecticide and having a centrally-disposed opening at its upper end and a flexible band passed through the opening of the protector and having an outer flange at its lower end to underlap and form a support for the protector, and having an outer rib or reinforcement at its upper end.

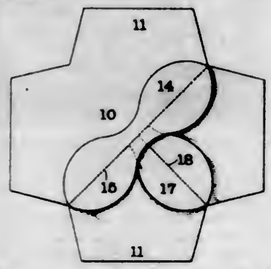
824,273. WINDOW-BLIND-SLAT FASTENER. CHARLES P. AUSBAND, Charlotte, N. C., assignor of one-half to Adam Fisher, Charlotte, N. C. Filed June 24, 1905. Serial No. 266,841.



Claim.—1. A slat-holder for shutters comprising an attaching member, a spring-leaf having its upper end connected to the upper end of the attaching member with its free end inclined downwardly and away therefrom, and a slat engaging spring-arm carried by the lower free end of the leaf and bowed upwardly therefrom across the top of the attaching member.

2. A slat-holder for shutters consisting of a flat spring-metal bar having one end formed into an attaching element with the adjacent portion of the bar folded back across the attaching element and forming a spring-leaf, and the other end portion of the bar being folded back across the outer side of the spring-leaf and projecting beyond the fold between the leaf and the attaching member and bowed across said fold to form a slat-engaging member.

824,274. HAT. JOHN BAUER, St. Louis, Mo., assignor to William Clarkson & Sons, St. Louis, Mo., a Copartnership. Filed Oct. 26, 1905. Serial No. 284,459.



Claim.—1. A biretta formed from an approximately cruciform blank, the projecting portions of which are bent down and secured together at their adjacent edges, and the ornamental wing portions on the top formed by the body of the blank.

2. The combination with the body portion of a biretta formed of a single piece of material, of an upwardly-extending wing therefor comprising a single piece of material of symmetrical form, means along the axis of symmetry of said wing for fastening said wing to said body, and means for fastening together the free edges of said wing.

3. The combination with the body portion of a biretta formed of a single piece of material, of an upwardly-projecting wing therefor formed of a single piece of material, fastening means for joining said wing to said body portion, a second upwardly-projecting wing for said body and formed of a single piece of material, means for fastening said second wing to said body portion, and means for fastening the inner end of said second wing to the middle portion of the said first-named wing.

4. A biretta formed from an approximately cruciform blank, the projecting portions of which are bent down and secured together at their adjacent edges and the ornamental wing formed of a single strip secured longitudinally between its edges to the top formed by the body of the blank, folded upon itself and having its two portions secured together.

5. A blank for birettas comprising a single approximately cruciform piece and a strip of suitable shape secured at its central longitudinal line upon the body portion of the blank.

6. A blank for birettas comprising a single approximately cruciform piece, a strip of suitable shape secured at its central longitudinal line upon the body portion of the blank and a second like strip of half the length of the first strip and secured in like manner between its edges at right angles to the first-named strip.

824,275. TOOL-HOLDER. BURR BANNISTER, Kalamazoo, Mich. Filed Oct. 20, 1905. Serial No. 283,058.

Claim.—1. The combination of a frame; a bearing-shoe for said frame, formed of a block of fibrous material, said block having a cavity in its bearing-face and an oil-hole extending inwardly from said cavity; a tool-holder consisting of an inner member having a transverse tool-opening therethrough and having a threaded portion at one end; a support on said frame through which the threaded end of said inner member is arranged; an outer member having a transverse tool-opening therethrough, sleeved upon said member, arranged to rest against the support for said inner member; and a clamping-nut for said inner member, for the purpose specified.

2. The combination of a frame; a bearing-shoe for said frame formed of a block of fibrous material, said block having a cavity in its bearing-face; a tool-holder consisting of an inner member having a transverse tool-opening therethrough and having a threaded portion at one end; a support on said frame through which the threaded end of said inner member is arranged; an outer member, having a transverse tool-opening therethrough, sleeved upon said inner member, arranged to rest against the support for said inner member; and a clamping-nut for said inner member, for the purpose specified.

3. The combination of a frame; a bearing-shoe for said frame formed of a block of fibrous material; a tool-holder consisting of an inner member having a transverse tool-opening therethrough and having a threaded portion at one end; a support on said frame through which the threaded end of said inner member is arranged; an outer member, having a transverse tool-opening therethrough, sleeved upon said inner member, arranged to rest against the support for said inner member; and a clamping-nut for said inner member, for the purpose specified.

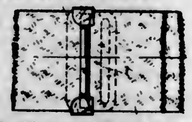
4. The combination of a frame; a bearing-shoe therefor of fibrous material; a tool-holder consisting of a clamping member having a tool-opening therethrough and having a threaded portion; a clamping-nut for said member; a support on said frame through which the threaded portion of said member is arranged; and a clamping member to which said first member is relatively adjustable, for the purpose specified.

5. The combination of a frame; a bearing-shoe therefor of fibrous material; a tool-holder consisting of an adjustable clamping member, having a tool-opening therethrough; and a member to which said first member is relatively adjustable, coacting therewith in clamping a tool, for the purpose specified.

6. The combination of a frame; a bearing-shoe therefor of fibrous material, having a cavity in its bearing-face; and a tool-holder on said frame, for the purpose specified.

7. The combination with a frame, of a shoe therefor of fibrous material, and a tool rest or holder carried by said frame, for the purpose specified.

824,276. BUCKLE. CHARLES A. BREWER, Noroton Heights, Conn. Filed Nov. 24, 1905. Serial No. 288,236.

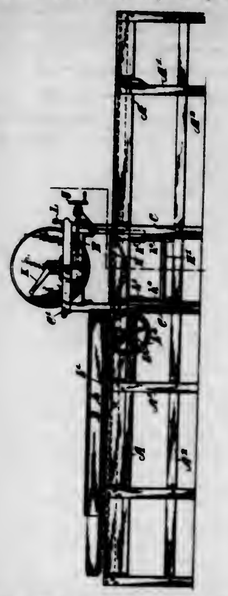


Claim.—1. A buckle comprising a body consisting of a plate having a slot for the attachment of a web and sockets at the ends of the plate formed from the metal thereof said sockets being widest at the bottom and tapering inward and upward and having bottoms and also having a slot between each bottom and the plate for the passage of the web, and a roller whose ends lie loosely in the sockets and which is adapted when drawn upward against the tapering walls of the sockets to clamp the web between itself and the inner face of the plate.

2. A buckle comprising a body consisting of a plate and sockets at the ends of the plate formed from the metal thereof, said sockets being widest at the bottom and tapering inward and upward and having bottoms and also having a slot between each bottom and the plate for the passage of the web, and a roller whose ends are knurled and which lies loosely in the sockets in which it is retained by the bottoms, substantially as described, for the purpose specified.

824,277. MACHINE FOR ORNAMENTING WOOD. WILLIAM H. BROADWAY, Little Rock, Ark. Filed Mar. 13, 1905. Serial No. 249,831.

Claim.—1. In a machine of the character described, the combination of a main frame, an auxiliary frame disposed substantially midway of the length of the main frame, a table mounted upon the main frame, means for reciprocating the table on the main frame past the auxiliary frame and to opposite sides thereof, a printing-roller mounted on the auxiliary frame above the path of movement of the table, a fluid-tank normally disposed below the path of movement of the table to permit the table to pass between it and the printing-roller, and means for raising the tank across the path of movement of the table to immerse the surface of the printing-roller therein.



2. In a machine of the character described, the combination of a main frame having tracks thereon, a table mounted upon said tracks, means for reciprocating the table, an auxiliary frame disposed substantially midway of the length of the main frame, a printing-roller carried by said auxiliary frame and disposed above the path of movement of the table, a fluid-tank normally disposed below the printing-roller and path of movement of said table, and means for moving said tank vertically to immerse the peripheral surface thereof in said tank.

3. In a machine of the character described, the combination of a main frame, an auxiliary frame disposed substantially midway of the length of the main frame, a table mounted upon the main frame, means for reciprocating the table on the main frame past the auxiliary frame and to opposite sides thereof, a printing-roller mounted on the auxiliary frame above the path of movement of the table, means for vertically moving said printing-roller, a fluid-tank normally disposed below the path of movement of the table to permit the table to pass between it and the printing-roller, and means for raising the tank across the path of movement of the table to immerse the surface of the printing-roller therein.

4. In a machine of the character described, the combination of a main frame, a table movable longitudinally thereof, a printing-roller disposed above the path of movement of said table, a fluid-tank normally below the path of movement of the table, means for raising and lowering the tank to immerse the peripheral surface of the roller therein, and devices for rotating said roller when its periphery is in the tank.

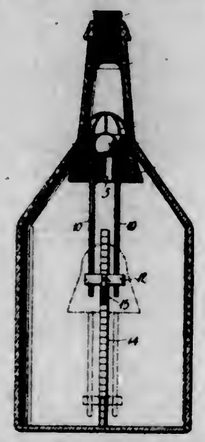
5. In a machine of the character described, the combination of a main frame, a table movable longitudinally thereof, a printing-roller disposed above the path of movement of said table, a fluid-tank normally below the path of movement of the table, means for raising and lowering the tank to immerse the peripheral surface of the roller therein, a drying device for bearing against the periphery of the roller, and devices for rotating said roller when its periphery is in the tank.

6. In a machine of the character described, the combination of a main frame, a table movable longitudinally thereof, a printing-roller

disposed above the path of movement of said table, a fluid-tank normally below the path of movement of the table, means for raising and lowering the tank to immerse the peripheral surface of the roller therein, a drying device comprising a frame hinged to the main frame and having an engaging edge adapted to bear upon the periphery of the roller, and devices for rotating said roller when its periphery is in the tank.

7. In a machine of the character described, the combination of a main frame, a table movable longitudinally thereof, a printing-roller disposed above the path of movement of the table, a fluid-tank normally below the path of movement of the table, a lever, connections between said lever and tank for raising and lowering the tank across the path of movement of the table, and means for guiding the tank during its raising and lowering movements.

824,278. NON-REFILLABLE BOTTLE. JOSEPH BRUNETTE, Rochester, N. Y. Filed Oct. 16, 1905. Serial No. 282,960.



Claim.—1. In a device of the character described, the combination with an apertured, floating stopper adapted to be engaged with the neck of the bottle, of a valve adapted to close the aperture in said stopper, means to hold the valve on said stopper, and means to hold the stopper in place in the neck of the bottle after the fluid has been removed therefrom, substantially as described.

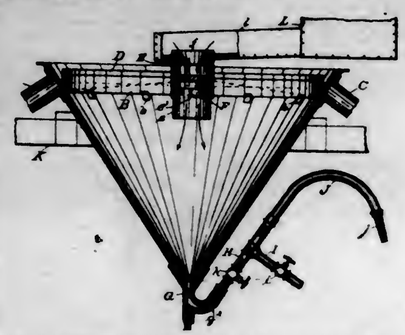
2. In a device of the character described, the combination with an apertured, floating stopper, adapted to be engaged with the neck of the bottle, of a gravity-valve adapted to be seated on the upper end of said stopper, a cage to retain the valve on the stopper, and an adjustable, automatically-operating locking mechanism to hold the stopper in the neck of the bottle after the latter has been emptied, substantially as described.

3. In a device of the character described, the combination with an apertured, floating stopper, adapted to be engaged with the neck of the bottle, of a gravity-valve adapted to be seated on the upper end of said stopper, a cage to retain the valve on the stopper, a ratchet-bar arranged in the bottle to rest on the bottom thereof, an apertured block slidably mounted on said ratchet-bar, a spring-pawl carried by said block and means to adjustably connect the stopper with said block, substantially as described.

4. A bottle having formed on its neck an inwardly-projecting, annular shoulder, an apertured, floating stopper adapted to be engaged with the neck of the bottle, a valve-seat formed in the upper end of said stopper, a spherical valve to engage said seat, a cage to retain said valve on the stopper, a vertically-disposed ratchet-bar arranged in the bottle to rest on the bottom thereof, an apertured block slidably mounted on said ratchet-bar, a spring-pawl carried by said block to engage the teeth on said ratchet-bar, and threaded rods secured to the stopper and adapted to work through threaded apertures in said block, thereby adjustably connecting said stopper and block, substantially as described.

824,279. SETTLING-TANK. JOHN M. CALLOW, Salt Lake City, Utah. Filed July 14, 1906. Serial No. 266,618.

Claim.—1. A settling-tank, a vertical feeder thereon comprising a telescopic tube, a funnel in said tube and a float in said tube beneath said funnel as herein set forth.



2. A settling-tank, a tubular feeder thereon attached to a launder, a funnel in said feeder and a disk float in said feeder beneath said funnel for the purpose specified.

3. A settling-tank, a vertically-adjustable feeder thereon, attached to a launder, a funnel in said feeder and a float in said feeder beneath said funnel for the purpose stated.

4. In a settling device, a funnel-form tank, a ring placed interiorly of said tank and forming with the wall of the tank a channel therein, said channel provided with outlets and a bottom inclining toward said outlets, a band of flexible material supported upon said ring and means for tightening or loosening said band whereby said band may be variably adjusted at different portions of the circumference of the ring to secure a perfectly level overflow, as described.

824,280. FERTILIZER. WILLIAM B. CHISOLM, Charleston, S. C. Filed Sept. 19, 1904. Serial No. 225,103.

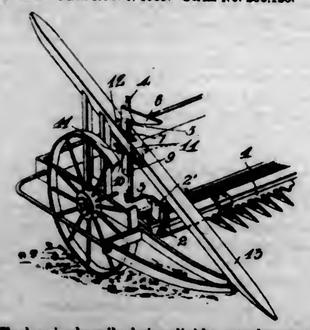
Claim.—A fertilizer, having as a constituent part, a ground mixture in the form of a substantially impalpable powder of phosphate and sulfur; substantially as described.

824,281. METHOD OF MAKING FERTILIZING MATERIAL. WILLIAM B. CHISOLM, Charleston, S. C. Filed Sept. 19, 1904. Serial No. 225,103.

Claim.—1. The method of preparing a substantially impalpable powder for use in fertilizers, which consists in mixing and grinding sulfur together with phosphate rock, or phosphatic material; substantially as described.

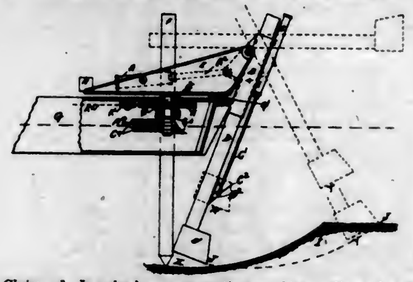
2. The process of grinding sulfur to a substantially impalpable powder and simultaneously effecting its intimate homogeneous admixture with phosphate rock, or phosphatic material, which consists in first roughly crushing the sulfur and phosphate rock, or phosphatic material, before grinding, and then subjecting them together to the grinding operation; substantially as described.

824,282. VINE-DIVIDER ATTACHMENT. HERSCHEL CLINER, Chillicothe, Ohio. Filed Nov. 6, 1905. Serial No. 286,120.



Claim.—The herein-described vine-divider attachment for mowing-machines consisting of a crank-shaft, a sickle-bar, said crank-shaft being operatively connected to said sickle-bar, a vertically-disposed cutter-bar connected to said crank-shaft at one end, a divider-board provided with a slot, a guide through which said vertically-disposed bar operates, fingers formed on said guide, the upper finger being extended to form a guard, said cutter-bar and guide extending through the slot in the divider-board, cross-bars, and brackets for holding said guide in place within the slot in said divider-board, substantially as described.

824,283. DREDGING AND EXCAVATING MACHINE. BARTON H. COFFEY, Boston, Mass. Filed Oct. 7, 1905. Serial No. 281,717.

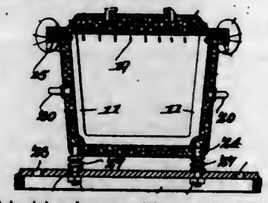


Claim.—1. In a dredge or excavating-machine, a dipper-handle adapted to drive a dipper, rotatable about a horizontal and vertical axis, longitudinally movable at right angles to the horizontal axis; and means to rotate and move same, for the purposes set forth.

2. In a dredge or excavating-machine, a guide rotatable about a horizontal and vertical axis, a dipper-handle longitudinally movable upon said guide; and means to rotate the guide and move the dipper-handle, for the purpose set forth.

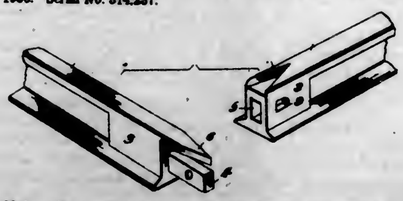
3. In a dredge or excavating-machine, a housing rotatable about a vertical axis, a guide rotatable upon said housing about a horizontal axis, a dipper-handle longitudinally movable upon the guide; and means to rotate the housing and guide and move the dipper-handle, for the purpose set forth.

824,284. CASKET. THOMAS F. COMBS, Crawfordville, Ga. Filed Apr. 5, 1906. Serial No. 310,110.



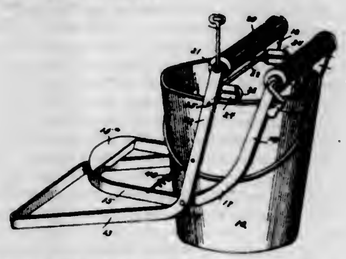
Claim.—A burial-casket comprising a molded body formed with integral reinforcing-ribs in the corners, bolts embedded in the corners of the body and supported by said ribs and depending from the body, a base disposed beneath said body and spaced therefrom and through which said bolts extend, springs between said body and base and surrounding said bolts, and clamp-nuts upon said bolts and bearing beneath said base.

824,285. RAIL-JOINT. HENRY L. COOK, Greencastle, Ind., assignor of one-half to Chas. D. Mitchell, Greencastle, Ind. Filed Apr. 28, 1906. Serial No. 314,237.



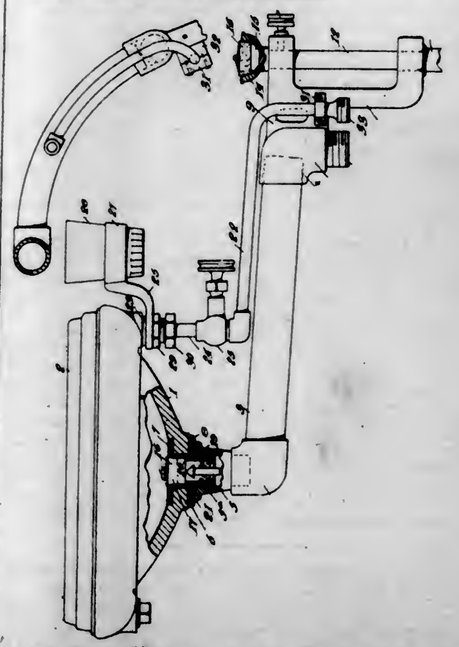
Claim.—In a rail-joint, the combination of two abutting rail ends, the webs of the rail ends being enlarged at the joint so as to correspond in thickness to the width of the tread, a tenon of approximately rectangular formation projecting from the web portion of one of the rail ends and fitting in a corresponding recess in the web portion of the opposite rail end, a V-shaped tongue projecting from the head of one of the rail ends and spaced from the before-mentioned tenon, the head of the opposite rail-section being formed with a V-shaped depression for the reception of the tongue, and a bolt passing through corresponding openings in the sides of the before-mentioned recess in the web of one of the rail-sections into which a tenon fits, and also through an opening in the tenon which registers with the corresponding openings when the two ends of the rails are brought together, the said corresponding openings being elongated to permit of the expansion and contraction of the rails.

824,286. MOP-WRINGER. JOHN V. COOK, Chicago, Ill. Filed May 17, 1905. Serial No. 260,819.



Claim.—A mop-wringer comprising a pair of levers pivoted together and carrying rollers at the ends, and a rod secured to one of the levers and extending across and resting on the pail and having lateral projections at the ends of the said rollers, said projections being provided with rollers.

824,287. FLUSHING CUSPIDOR. JOHN W. COOPER, Boston, Mass. Filed Aug. 17, 1905. Serial No. 274,618.

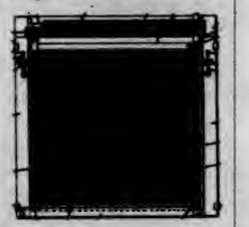


Claim.—1. In a flushing cuspidor having a bowl and provided with a suitable waste-passage leading from said bowl, a swinging bracket to support the bowl, and a pintle for said bracket having a socket adapted to receive a plug by which the waste-passage aforesaid may be closed.

2. In means of the class described, the combination of a swinging bracket, a horizontal waste-pipe attached thereto at one end, a bowl connected at its bottom with the other end of the waste-pipe and supported by the bracket, a water-supply passage being provided for the bowl and extending from the bracket horizontally of the waste-pipe, said water-supply passage having its horizontal portion terminating at a point between the ends of the waste-pipe and having a vertical portion projecting upwardly from said terminal and forming a brace for the bowl, attaching means securing the vertical portion of the water-supply pipe to the upper portion of the bowl, a tumbler-supporting arm provided at its lower end with an opening through which the vertical portion of the water-supply passage passes, the attaching means of said vertical portion of the water-supply pipe engaging and holding the tumbler-supporting arm in position, and a valve in the length of the vertical portion of the water-supply passage.

3. In a device of the class described, the combination of a swinging bracket, a rigid arm extending horizontally from the bracket and attached at one end thereto, a laterally-projecting supporting member at the other end of the supporting-arm, a vertical supporting member carried by the arm adjacent the point of attachment thereof to the bracket, a waste-pipe passing through the vertical and laterally-projecting supporting members of the horizontal arm aforesaid, a bowl having the bottom thereof connected with the outer end of the waste-pipe, a water-supply pipe extending horizontally of the supporting-arm and connected at its outer end with the upper portion of the bowl aforesaid, and detachable clamp means secured to the bracket for attaching the adjacent end portion of the water-supply pipe thereto.

824,288. **WINDOW-SCREEN.** ALEXANDER J. DAWSON, Prairie du Rocher, Ill., assignor of one-half to Thomas J. Conner, Prairie du Rocher, Ill. Filed Aug. 7, 1905. Serial No. 273,106.



Claim.—1. In a window-screen, a series of rectangular frames, wire-screen sections secured to each frame, connections whereby said frames are held together and adapted to be adjusted vertically and laterally, and locking-fingers carried by the lower pair of frames and adapted to engage with the upper pair of frames; substantially as specified.

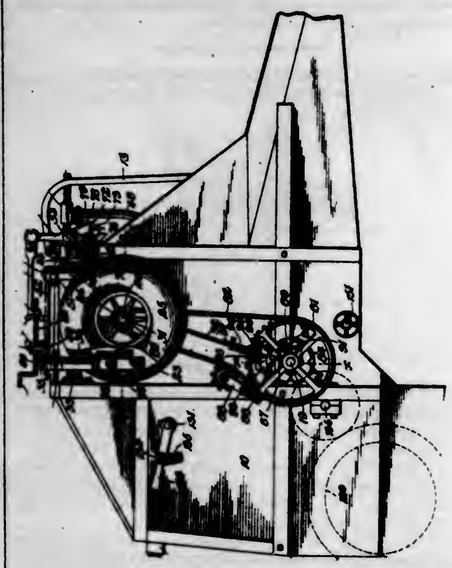
2. In a window screen, a series of rectangular frames, wire-screen sections carried by said frames, means whereby the frames are held together and permitted to slide vertically and horizontally, there being teeth formed on the inner faces of the side rails of the upper pair of frames, and locking-fingers carried by the side rails of the lower frames for engaging said teeth; substantially as specified.

3. In a window-screen, a pair of rectangular frames, wire-screen sections carried by said frames, there being notches formed in the faces of the side rails of said frames, means whereby said frames are held to move laterally relative one another, a second pair of frames, wire-screen sections carried thereby, means whereby said second pair of frames are held to move laterally relative one another, means whereby the second pair of frames move vertically relative the first pair of frames, and locking-fingers carried by the side rails of the second pair of frames and adapted to engage in the notches formed in the side rails of the first pair of frames; substantially as specified.

824,289. **BAND-CUTTER AND FEEDER.** SAMUEL DUNKELBERGER, Newton, Kans. Filed Mar. 17, 1904. Serial No. 198,005.

Claim.—1. In a band-cutter and feeder, the combination with a conveyer, of means for controlling the movement of the conveyer including a rock-shaft carrying a guide that is disposed transversely of said rock-shaft, actuating mechanism for the rock-shaft comprising straw-engaging means adjustably movable on the guide toward and from the rock-shaft, and means for securing the straw-engaging means against its adjustable movement.

2. In a band-cutter and feeder, the combination with a conveyer, of means for controlling the movement of the conveyer including a rock-shaft, a guide-rod rigidly extending therefrom, straw-engaging means adjustably movable on said guide-rod toward and from the rock-shaft, and means for securing the straw-engaging means against such adjustable movement.



3. In a band-cutter and feeder, the combination with a conveyer, of band-cutters operating over the conveyer, mechanism for driving the conveyer at variable rates of speed, and means for effecting the movement of the said speed-varying mechanism, said means including a straw-actuated device movably suspended over the conveyer and having the band-cutters operating therethrough and in advance thereof, said device being adjustable bodily toward and from the front end of the conveyer and the front limit of movement of the said band-cutters.

4. In a band-cutter and feeder, the combination with a conveyer, of gyratory band-cutters operating over the conveyer and having fixed paths of movement, mechanism for driving the conveyer at variable rates of speed, and means for effecting the variation of the said speed-varying mechanism, said means including a movable support located over the conveyer and connected to the speed-varying mechanism, and a straw-actuated device secured to the support, said device being bodily adjustable toward and from the support to vary its position with respect to the front limit of movement of the band-cutters, said cutters operating through the said device and in advance thereof.

5. In a band-cutter and feeder, the combination with a conveyer, of band-cutting mechanism, and means for controlling the movement of the conveyer including a rock-shaft located over said conveyer, and straw-engaging means adjustably suspended from the rock-shaft and movable toward and from the axis of movement thereof, said means being disposed over the conveyer and swinging toward and from said conveyer with said rock-shaft as an axis of the swinging movement.

6. In a band-cutter and feeder, the combination with a conveyer, of means for controlling the movement of the conveyer, said means including a rock-shaft, swinging float-arms adjustably suspended from the rock-shaft, the axis of the swinging movement of said arms being coincident with the axis of the rock-shaft, said arms being movable toward and from the rock-shaft, and means for moving the arms toward and from the rock-shaft.

7. In a band-cutter and feeder, the combination with a conveyer, of means for controlling the movement of the conveyer, said means including a rock-shaft having projecting guides, boxes slidably mounted on the guides, a cross-bar connecting the boxes, and float-arms secured to the cross-bar and suspended therefrom over the conveyer.

8. In a band-cutter and feeder, the combination with a conveyer, of means for controlling the movement of the conveyer, said means including a rock-shaft having projecting guides, boxes slidably mounted on the guides, a cross-bar connecting the boxes, float-arms secured to the cross-bar and suspended therefrom over the conveyer, and means connecting the cross-bar and rock-shaft for relatively moving the same.

9. In a band-cutter and feeder, the combination with an endless conveyer-apron, of means for controlling the movement of the conveyer-apron, said means including a rock-shaft journaled thereover, guides secured to the rock-shaft, a cross-bar slidably supported on the guides, an adjusting-screw connecting the cross-bar and rock-shaft, depending rearwardly-extending float-arms secured to the rock-shaft, and gyratory band-cutters operating between and in advance of the arms.

10. In a band-cutter and feeder, the combination with threshing mechanism, of a conveyer, a rotary retarding device disposed between the conveyer and threshing mechanism and located wholly in rear of the conveyer, said retarder comprising a shaft having projecting fingers, a guard interposed between the shaft and threshing mechanism and permitting the passage of the fingers, a support for the guard located in rear of the same and in rear of the lower portion of the retarder, the upper portion of the guard extending over the shaft and being spaced from said support, and spaced connections secured to the lower portion of the guard below said retarder-shaft, said connections being spaced from the upper end of the guard to form an exit for the straw in rear of the retarder.

11. In a band-cutter and feeder, the combination with threshing mechanism, of a conveyer, a rotary retarding device disposed between the conveyer and threshing mechanism and comprising a shaft having projecting fingers, a guard interposed between the shaft and threshing mechanism and comprising spaced plates permitting the passage of the fingers therebetween, said plates having terminal hooks at their upper ends that engage over the shaft, and a support for the guard located on the opposite side of the shaft to said guard and having spaced connections with the plates, said connections extending below the guard.

12. In a band-cutter and feeder, the combination with a conveyer, of a revoluble retarding device located in rear of the conveyer and having projecting fingers, a supporting-bar extending longitudinally of the retarding device, guard-plates extending between the fingers, and brackets connecting the plates and the supporting-bar.

13. In a band-cutter and feeder, the combination with a conveyer, of a revoluble retarding device located in rear of the conveyer and comprising a shaft carrying radially-disposed retarding-fingers, a channel-bar disposed longitudinally of the shaft, a plurality of guard-plates extending beneath the shaft and having hooked portions at their upper ends that engage over the same between the fingers, and separate brackets connecting the channel-bar and the lower ends of the guard-plates.

14. In a band-cutter and feeder, the combination with a threshing-cylinder, of a conveyer having its rear end spaced therefrom, a rotary retarding device located between the conveyer and cylinder, and spaced rearwardly-projecting stationary teeth supported beneath the retarder and having their rear ends directly adjacent to the cylinder.

15. In a band-cutter and feeder, the combination with a conveyer, of a revoluble retarding device located in rear of the conveyer, a guard extending over the retarder, supporting means for the guard, and rearwardly-projecting teeth disposed below the retarder and securing the guard to the supporting means.

16. In a band-cutter and feeder, the combination with a conveyer, of a retarder-shaft disposed in rear of the conveyer and having radially-disposed fingers, a guard comprising plates that extend between the fingers, brackets having their lower ends disposed contiguous to the lower ends of the plates, and rearwardly-projecting teeth arranged at the lower ends of the plates and comprising means for securing said plates to the brackets.

17. In a band-cutter and feeder, the combination with threshing mechanism, of a feeding-conveyer therefor, driving means for the conveyer including a clutch having a movable element, a detent for operating the movable element of the clutch to stop the conveyer, and means for holding said detent in active position with respect to the movable element when the threshing mechanism is below a predetermined speed, said means comprising a shaft, a loose member, another member fixed to the shaft, a jaw carried by the fixed member and having a friction-roller that is movable into and out of engagement with the loose member, and a connection between the said loose member and the operating means for the clutch element.

18. In a band-cutter and feeder, the combination with threshing mechanism, of a feeding-conveyer therefor, driving means for the conveyer including a clutch having a movable element, a detent for operating the movable element of the clutch to stop the conveyer, means for holding said detent in active position with relation to the movable element when the threshing mechanism is below a predetermined speed, said means comprising a shaft driven from the threshing mechanism, a member loosely mounted on the shaft and having a bearing-surface, another member fixed to the shaft adjacent to the loose member, a jaw pivoted upon the fixed member, a roller journaled on the free end of the jaw and movable into and out of engagement with the bearing-surface of the loose member, and a spring bearing against the roller for resisting the movement thereof.

19. In a band-cutter and feeder, the combination with threshing mechanism, of a feeding-conveyer therefor, driving means for the conveyer including a clutch having a movable element, a detent-rod movable into and out of the path of movement of said movable element for operating the same to stop the conveyer, and means for moving the rod into said path of movement when the threshing mechanism is below a predetermined speed, said means comprising a shaft driven from the threshing mechanism, a member loosely journaled on the shaft and having a connection with the detent-rod, said loose member also having an annular flange, another member fixed to the shaft, oppositely-disposed jaws pivoted to the fixed member, a yoke connecting the jaws, rollers journaled on the free ends of the jaws and movable into and out of engagement with the flange of the loose member, and coiled springs bearing against the rollers for resisting the movement of the same when in engagement with said flange.

20. In a band-cutter and feeder, the combination with a driving-shaft operating in one direction, means for driving the shaft, of a conveyer-shaft operating in an opposite direction, a disk loosely journaled on one shaft and having an operative connection with the other shaft, another disk fixed to the shaft carrying the loose disk, a friction-wheel located between the disks and capable of a swinging movement on an axis transversely of its axis of rotation to move its periphery toward and from the peripheries of the disks, a conveyer operated by the conveyer-shaft, and a straw-actuated float movably located over the conveyer and having a connection with the friction-wheel.

21. In a band-cutter and feeder, the combination with a driving-shaft operating in one direction, of a conveyer-shaft operating in an opposite direction, means for actuating the driving-shaft, a friction-disk fixed to the driving-shaft, another disk loosely journaled on said shaft and having a geared connection with the conveyer-shaft, a friction-wheel located between the disks and capable of a swinging movement on an axis transversely of its axis of rotation to move its periphery toward and from the peripheries of the disks, a conveyer-belt passing about the conveyer-shaft and driven thereby, and a straw-actuated float movably located over the conveyer-belt and actuated by an abnormal amount of grain thereon, said float having a connection with the friction-wheel for swinging the same.

22. In a band-cutter and feeder, the combination with a driving-shaft, of a conveyer-shaft, a friction-disk secured to the driving-shaft, a loosely-journaled friction-disk having a hub, gear connections between the hub and the conveyer-shaft, a friction-wheel interposed between the disks and having peripheral engagements with both, said friction-wheel being capable of oscillation on an axis transversely of its axis of rotation, a conveyer driven by the conveyer-shaft, and a straw-actuated float movably located over the conveyer and having a connection with the friction-wheel to oscillate the same.

23. In a band-cutter and feeder, the combination with a driving-shaft, of a conveyer-shaft, a friction-disk secured to the driving-shaft, another friction-disk loosely journaled on the driving-shaft and having a hub, a sprocket-wheel carried by the hub and located between the disks, a sprocket-chain connection with said sprocket-wheel and the conveyer-shaft, a conveyer operated by the conveyer-shaft, a straw-actuated float movably located over the conveyer, a friction-wheel having a peripheral engagement with the disks and located between the same, said wheel having a swinging movement transversely of its axis of rotation and having an operative connection with the float.

24. In a band-cutter and feeder, the combination with a suitable frame, of a conveyer, means for driving the same including speed-varying mechanism, said mechanism having rock-stems, the movement of which stems changes the speed of the mechanism, supports for said stems carried by the frame, a connection between the stems, friction-wheels carried by the stems, a straw-actuated float movably located over the conveyer, and an extensible connection between the float and stem, said connection being adjustable toward and from one of the stems for varying the amount of movement of said stems upon a predetermined movement of the float.

25. In a band-cutter and feeder, the combination with a con-

veyer, of means for driving the same including speed-varying mechanism, said mechanism having rock-stems, the movement of which stems varies the speed of said mechanism, journal-supports for the rock-stems, friction-wheels carried by the stems, said stems being provided with oppositely-extending arms, a connection between the arms, another arm carried by one of the stems, a straw-actuated float movably located over the conveyor, and a link having a connection with the last-mentioned arm and adjustable thereon toward and from the stem to vary the movement of the stems with respect to the movement of the float.

26. In a band-cutter and feeder, the combination with a machine-frame, of a conveyer, means for driving the same including speed-varying mechanism, said mechanism having rock-stems, the movement of which stems varies the speed of the mechanism, journal-sleeves for the rock-stems mounted on the frame, a connection between the stems, an arm carried by one of the stems and having a longitudinally-disposed slot, friction-wheels carried by the rock-stems, a swinging straw-actuated float located over the conveyer, an extensible link connected to the float, and an adjustable connection between the link and arm, said connection being adjustable in the slot thereof and varying the movement of the arm with respect to the movement of the float.

27. In a band-cutter and feeder, the combination with a threshing-cylinder, of a conveyer therefor having its rear portion spaced from the cylinder, a rotary retarder located in the space between the conveyer and cylinder, gyratory cutter-bars located and operating over the rear portion of the conveyer, the retarder and the cylinder, a rock-shaft journaled over the cutter-bars, and deflector-tines depending from the rock-shaft and extending rearwardly and downwardly between the cutter-bars and over the retarder and cylinder.

28. In a band-cutter and feeder, the combination with a casing, of a threshing-cylinder, a conveyer for feeding material to the threshing-cylinder, means for varying the speed of the conveyer, said means including a float having depending spaced arms, a deflector comprising a rock-shaft journaled transversely in the casing, and having downwardly-extending spaced tines, the lower ends of which are located adjacent to the cylinder, means for securing the rock-shaft against movement and in different positions, gyratory knife-bars operating between the tines and the float-bars and having depending cutter-blades, a crank-shaft connected with the knife-bars and located between the float-arms and tines, and suspending-links connected to the rear ends of the knife-bars in rear of the tines.

29. In a band-cutter and feeder, the combination with a conveyer, of a driving-shaft, driving and driven elements mounted on the shaft, connections between the said elements for effecting the relative variable movements thereof, means for moving the connections to vary the relative movements of the driving and driven elements, connections between the driven element and conveyer including a clutch, and means mounted on the driving-shaft for effecting the movement of the clutch.

30. In a band-cutter and feeder, the combination with a conveyer, of a driving-shaft, driving and driven elements mounted on the shaft, said driving element being fixed to the shaft, the driven element being loose thereon, connections between said elements for effecting the relative variable movement thereof, connections between the driven element and the conveyer, including a clutch, a device for operating the clutch, and a centrifugal governor mounted on the shaft and connected to the device for operating said clutch.

31. In a band-cutter and feeder, the combination with a conveyer, of a driving-shaft, a driving element fixed upon the shaft, a driven element, means interposed between the elements for effecting the relative variable movement thereof, connections between the driven elements and the conveyer including a clutch, and a governor for operating the clutch, said governor including elements mounted on and operated by the said driving element.

32. In a band-cutter and feeder, the combination with a conveyer, of a driving-shaft, a driving element fixed upon the shaft, a driven element, means interposed between the elements for effecting the relative variable movement thereof, connections between the driven element and the conveyer including a clutch, and a governor for operating the clutch, said governor including centrifugal arms mounted on and rotatable with the driving element.

33. In a band-cutter and feeder, the combination with a conveyer, of a driving-shaft, a driving element secured to the shaft, a driven element revolubly mounted on the shaft at one side of the driving element, means interposed between the elements for moving the same at variable speeds, connections between the driven element and the conveyer including a clutch, a governor element loosely mounted on the shaft on the side of the driving element opposite the loosely-mounted driven element, centrifugally-operated means carried by the driving element and coacting with the loose governor element, and means operated by the said loose governor element for actuating the clutch.

34. In a band-cutter and feeder, the combination with a conveyer, of a threshing-cylinder located in rear of the same, a rotary retarder located between the conveyer and threshing-cylinder, and a deflector-frame comprising a cross-bar, a plurality of guard-plates that coact with the retarder, and braces connecting the guard-plates and cross-bar, said braces having shanks that are curved upwardly toward the rotary retarder.

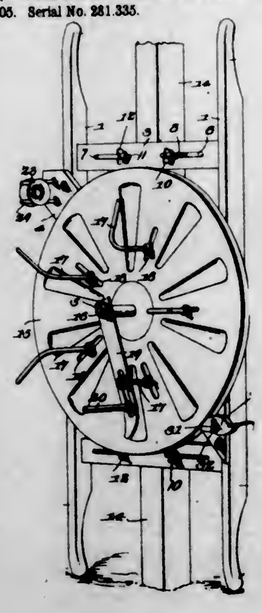
35. In a band-cutter, and feeder, the combination with a conveyer, of a threshing-cylinder, a rotary retarder having radially-disposed fingers located between the conveyer and threshing-cylinder, a plurality of guard-plates having hooked upper ends engaging over the retarder, the spaces between the plates being of sufficient width to permit the passage of the fingers, and braces connected to the lower ends of the plate beneath the retarder, said braces being narrower than the plates.

36. In a band-cutter and feeder, the combination with a conveyer, of means for controlling the movement of the conveyer including a swinging support, a cross-bar swinging with the support and adjustable upon the same toward and from its axis of movement, and a grain-actuated float suspended from the cross-bar and adjustable with the same, said float being located over the conveyer and actuated by an abnormal amount of grain carried thereon.

37. In a band-cutter and feeder, the combination with a conveyer, of a driving-shaft, a friction-disk tight upon the shaft, a friction-disk loose upon the shaft, a friction-wheel interposed between the disks, a float located over the conveyer and having connections with the friction-wheel, a conveyer-shaft, connections between the loose disk and conveyer-shaft including a clutch, and a speed-governor including an actuating device for the clutch mounted on the shaft and means for engaging and moving the actuating device, said means being carried by the fixed friction-disk.

38. In a band-cutter and feeder, the combination with a conveyer, of a driving-shaft, a friction-disk tight on the shaft, a friction-disk loose on the shaft, a friction-wheel interposed between the disks, a float located over the conveyer and having connections with the friction-wheel, a conveyer-shaft, a clutch mounted on the shaft and including a sprocket-wheel loose thereon, a chain connecting said sprocket-wheel and loose friction-disk, and a speed-governor including an actuating device for the clutch mounted on the shaft, and centrifugally-operated arms coacting with the actuating device and carried by the fixed disk.

824,290. WIRE-REEL. WALTER E. EICHHOFF, Cairo, Ill. Filed Oct. 4, 1905. Serial No. 281,335.



Claim.—1. A device of the class described comprising spaced side bars, terminal cross-bars connecting the same, a brace-bar extending between the side bars and located between the cross-bars, a reel-seat carried by the middle of the brace-bar, a wire-guide carried by one end of the brace-bar, and a reel-engaging brake carried by the other end of the brace-bar.

2. A device of the class described comprising spaced side bars, terminal cross-bars connecting the same, a brace-bar connecting the side bars and located between the cross-bars, a reel-seat carried by the middle of the brace-bar, a wire-guide carried by one end of the brace-bar, a reel-engaging brake carried by the other end of the brace-bar, and means carried by the cross-bars for securing the device in an upright position to a support.

3. A device of the class described comprising a pair of spaced side bars, a brace-bar connecting the side bars, a reel-seat carried by a portion of the brace-bar, a wire-guide at one side of the reel-seat, and a reel-engaging brake located at the opposite side of the seat.

4. A device of the class described comprising spaced side bars terminating in handles, terminal cross-bars connecting the side bars at the inner ends of the handles and provided with longitudinal slots, bolts adjustable in the slots and provided with clamping-nuts, chains carried by certain of the bolts, hooks provided upon the other bolts for engagement by the chains, a brace-bar extending between the side bars and located between the cross-bars, a reel-seat carried by the middle of the brace-bar, a wire-guide carried by one end of the brace-bar, and a reel-engaging brake carried by the other end of the brace-bar.

824,291. AUTOMATIC TELEPHONE-KEY. ERNEST A. FALLER and OSCAR A. DANIELSON, New York, N. Y. Filed Oct. 6, 1904. Serial No. 227,437.



Claim.—1. The combination with a telephone-connecting plug, of a plug-socket switch adapted to operate on removing the plug from its socket, and an electromagnet for releasing the switch when operated.

2. In an automatic switch, the combination with a spring-controlled switch-lever, of a detent pivoted thereto, a plurality of contact-springs adapted to be operated by said detent, and an electromagnet to disengage said detent from said contact-springs.

3. An apparatus for telephone-switchboards, comprising a connecting-plug, a seat wherein the plug is adapted to rest when not in use, a switch-contact, means coöperating with said seat and operative upon the removal of said plug from said seat to vary the electrical condition of said contact but non-operative by the return of the plug to its seat to alter the electrical condition of said contact.

4. An apparatus for telephone-switchboards, comprising a connecting-plug, a seat wherein the plug is adapted to rest when not in use, a switch-contact, means coöperating with said seat and operative upon the removal of said plug from said seat to vary the electrical condition of said contact, and electromagnetic means to release said contact-operating means.

5. An apparatus for telephone-switchboards, comprising a connecting-plug, a seat wherein the plug is adapted to rest when not in use, switch-contacts, means coöperating with said seat and operative upon the removal of said plug from said seat to vary the electrical condition of said contacts but non-operative by the return of the plug to its seat to alter the electrical condition of said contact, and electromagnetic means to release said contact-operating means.

6. A plurality of switch-contacts, spring-operated means not forming a part of said contacts to shift certain of said contacts, electromagnetic means to release said spring-operated means, and gravity-operated means to restore the spring-operated means to its normal position.

7. A plurality of switch spring-contacts, spring-operated means not forming a part of said contacts to shift certain of said contacts, electromagnetic means to release said spring-operated means, and gravity-operated means to restore the spring-operated means to its normal position.

8. A pivoted lever, yielding means exerting a force tending to rotate said lever on its pivot, a detent pivoted to said lever, a switch-contact arranged for movement by said detent when said lever is moved in one direction only, an electromagnet to release said detent, and means to restore said detent to its initial position.

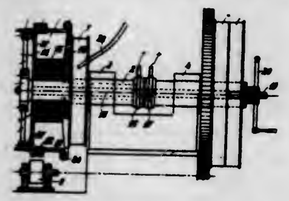
9. A pivoted bell-crank lever, yielding means exerting a force tending to rotate said lever on its pivot, a detent pivoted to one of the arms of said lever, a switch-contact arranged for operation by said detent when the arms of said lever are moved in one direction only, and an electromagnet to release said detent.

10. A pivoted bell-crank lever, yielding means exerting a force tending to rotate said lever on its pivot, a detent pivoted to one of the arms of said lever, a switch-contact arranged for operation by said detent when the arms of said lever are moved in one direction only, an electromagnet to release said detent, and means operating by gravity to return said detent to its initial position without altering the electrical condition of said contact.

11. An apparatus for telephone-switchboards, comprising a connecting-plug, a bell-crank lever one arm of which forms a seat wherein said plug is adapted to rest when not in use, a detent pivoted to the other lever-arm, a yielding device exerting a force normally tending to raise the seat-arm and operative to move in one direction both lever-arms upon the removal of said plug from its seat, a plurality of switch-contacts adapted to be operated automatically by said detent when said plug is removed from said seat and non-operative by said detent when said plug is returned to said seat, and an electromagnet to release said detent.

12. An apparatus for telephone-switchboards, comprising a connecting-plug, a bell-crank lever one arm of which forms a seat wherein said plug is adapted to rest when not in use, a detent pivoted to the other lever-arm, a spring exerting a force tending normally to raise the seat-arm and operative to move in one direction both lever-arms upon the removal of said plug from said seat, a plurality of switch spring-contacts, a body carried thereby and adapted to be engaged by said detent to move said contacts in one direction when said plug is removed from said seat and non-operative to move said contacts by the return of said plug to its seat, and an electromagnet to release said detent.

824,292. REEL FOR STRAP-IRON, &c. FERDINAND GERHARD, Völklingen-on-the-Saar, Germany, assignor to Anton Schopf, Völklingen-on-the-Saar, Prussia, Germany. Filed Sept. 27, 1905. Serial No. 280,377.



Claim.—1. In a reel for band or strap iron and the like, the combination with the winding-wheel, of means for magnetizing the wheel whereby when the wheel is magnetized the band is attracted and held while being wound upon the wheel, substantially as described.

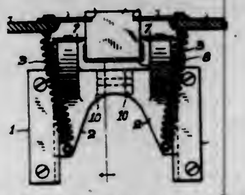
2. In a machine of the character described, a winding-wheel comprising two arm systems, and means for magnetizing the arm systems, the arms of said systems being arranged alternately and oppositely magnetized, substantially as described.

3. In a machine of the character described, a winding-wheel comprising two arm systems, adjustable supports mounted on the wheel, and means for magnetizing the wheel, the arms of said systems being arranged alternately and oppositely magnetized, substantially as described.

4. In a machine of the character described, the combination with a shaft, of a winding-wheel of magnetic material mounted on the shaft, means for magnetizing the wheel, a series of adjustable supports mounted on the wheel, and means for adjusting the radial distance of the supports with relation to the shaft to permit the material wound thereon to be removed, substantially as described.

5. In a machine of the character described, the combination with a hollow shaft, of a winding-wheel mounted thereon comprising two oppositely-magnetized arm systems, the arms of said systems being alternately arranged, a series of supports mounted on one of the arm systems, a rod extending through the shaft, connections between the rod and adjustable supports, and means for adjusting the rod in the shaft, substantially as described.

824,293. APPLIANCE FOR STRIPPING PASTEBOARD BOXES FROM HOT FORMING-DIES. JONATHAN COMFORT, Bridgeport, Conn., assignor to The Compressed Paper Box Company, Bridgeport, Conn., a Corporation of Connecticut. Filed Feb. 8, 1906. Serial No. 300,181.



Claim.—1. In combination with a forming-die around which pasteboard boxes are formed, a vertically-movable frame having side portions extending upwardly on opposite sides of said die, and a stripper secured to each of said upwardly-extending side portions and disposed to project in close proximity to the opposite sides of said forming-die and normally at intermediate points between the top and bottom faces of said die.

2. In combination with a forming-die around which pasteboard boxes are formed, a vertically-slidable frame carrying a pair of spaced strippers operating on opposite sides of said die, and means for sustaining said frame so that said strippers will normally be retained at points above the top edges of the box being formed.

3. In combination with a forming-die, around which pasteboard boxes are formed, a spring-pressed frame having strippers arranged to normally extend on opposite sides of said die and above the top edges of the pasteboard box, and means for operating said frame downwardly.

4. In combination with a forming-die around which pasteboard boxes are formed, a pair of ways, a frame sliding in said ways and having upwardly-projecting side portions extending on opposite sides of said die, a stripper secured to each of said side portions, springs secured to said frame and the bed of the machine, and means connected to said frame for operating the same downwardly.

5. In combination with a die around which pasteboard boxes are formed, a stripping-frame operating on opposite sides of said die, means for sustaining the strippers of said frame at points above the top of the box being formed, and means for depressing said frame to release said box from the die.

6. In combination with a die around which pasteboard boxes are formed, depressible stripping means having inwardly-extending parts to engage the top portion of said box and to actuate said box out of engagement with said die.

824,294. LAUNDRY BLUE. ROBERT G. GRISWOLD and WILLIAM T. DONOVAN, Quincy, Mass. Filed Aug. 22, 1905. Serial No. 275,296.

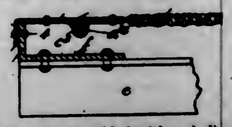
Claim.—1. An effervescent laundry bluing including calcium hypochlorite and a disinfecting agent.

2. An effervescent laundry bluing including calcium hypochlorite and carbolic acid.

3. An effervescent laundry-bluing tablet consisting of anilin-blue, sodium bicarbonate, tartaric acid, calcium hypochlorite, carbolic acid, and a binder.

4. An effervescent laundry-bluing tablet consisting of the following ingredients in substantially the proportions specified by weight anilin-blue one hundred and ninety-two parts, sodium bicarbonate seventy-four parts, tartaric acid one hundred and fourteen parts, carbolic acid twelve parts, calcium hypochlorite ten to twelve parts and saccharin, glucose or dextrin two to four parts.

824,295. BED-SPRING. FRANKLIN L. GROVE, New York, N. Y. Filed Mar. 13, 1905. Serial No. 249,783.



Claim.—A bed-spring provided with end clips or binders composed of sheet metal folded longitudinally and centrally to form top and bottom members between which the ends of the bed-spring are secured, the bottom members of said clips or binders being bent downwardly to form grooves, and the ends of the bed-spring being compressed and formed into rolls which are placed in said grooves, and the top and bottom members of said clips or binders being secured together at the opposite sides of said grooves, and the outer edges or folded portions of the clips or binders being bent downwardly to form depending flanges having bolt-holes formed therein, substantially as shown and described.

824,296. BRUSH-HOLDER. CHARLES A. HARRIS, Brattleboro, Vt. Filed Mar. 8, 1906. Serial No. 304,971.



Claim.—1. A brush-suspending and cup-sealing plate of yielding material having a central opening adapting it to fit with a grip upon the brush-handle, and having a stiffening-ring the central opening of which is of greater diameter than the opening in the plate to form a yielding inner portion of said plate, the ring having a diameter less than the diameter of the plate to form a yielding marginal portion, whereby the plate has a yielding sealing function around its central opening upon the handle and around its circumference upon the cup-walls.

2. A brush-suspending and cup-sealing plate of yielding material having a central opening, and supplemented by a metal weighting-ring having a central opening of greater diameter than the opening in said plate, the diameter of the ring being less than that of the plate, to allow the marginal portions of said plate to have seating and sealing functions upon the walls of the brush-handle and of the cup.

824,297. BIN. GEORGE W. HOPKINS and ALBERT B. CANFIELD, Guthrie, Okla.; said Canfield assignor to said Hopkins. Filed Feb. 11, 1905. Serial No. 245,203.



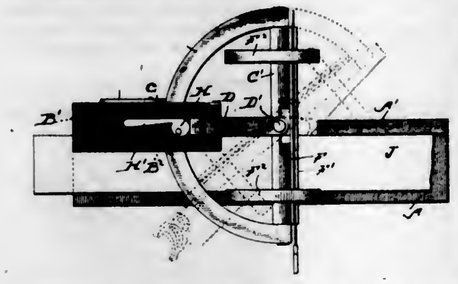
Claim.—1. A portable bin consisting of a foraminous body portion having a discharge-opening through which the contents of the bin are laterally discharged in its lower portion, metallic reinforcing-bands embracing the upper and lower ends of said body portion, legs secured to the bands which reinforce and extend below the body portion, a bottom portion closing the lower end of the body portion and sloping toward the discharge-opening in the latter, a flexible spout communicating with said discharge-opening, and means for securing the discharge end of said spout above the discharge-opening, substantially as described.

2. A bin open at its upper end and provided with a lateral discharge-opening at its lower end, a spout flexible throughout its entire length secured to the bin and communicating with the opening therein, an inclined bottom portion closing the lower end of the bin and having its depressed portion flush with the bottom of the discharge-opening, and a spring-hook for holding the free end of the spout above the discharge-opening.

3. A bin open at its upper end and provided with a lateral discharge-opening at its lower end, a flexible spout secured to the bin and communicating with the opening therein, an inclined bottom portion closing the lower end of the bin and having its depressed portion flush with the bottom of the discharge-opening, a reinforcing-plate secured to the bin, and a spring-hook secured to said plate for holding the free end of the spout above the discharge-opening.

4. A portable bin consisting of a cylindrical portion composed of woven wire having a lateral discharge-opening at its lower end, metallic bands encircling the ends of said bin, an inclined bottom portion closing the lower end of the bin, supporting-legs secured to said bin and extending a suitable distance below its inclined bottom portion, a reinforcing-plate secured to the lower portion of the bin and provided with an opening registering with the discharge-opening, a flexible spout communicating with the opening and the plate, and a hook secured to the upper portion of the plate for holding the free end of spout above the discharge-opening.

824,298. MITER-BOX. JAMES N. HOUSE, Jackson, Mich., assignor of one-third to G. E. Wallace and one-third to Wm. Sparks, Jackson, Mich. Filed June 22, 1905. Serial No. 266,419.



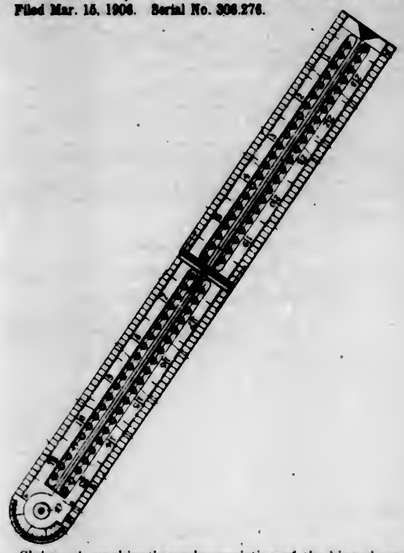
Claim.—1. In a device of the kind described, a block having curved slots at substantially right angles to each other, arcs working through said slots, cross-pieces rotatably carried between the ends of the arcs, said cross-pieces being pivoted at their point of intersection and a saw-guide carried by one of said cross-pieces.

2. A device of the kind described comprising an arc, working in a horizontal plane, a second arc working within the first-mentioned arc and at right angles to the same, cross-pieces rotatably carried between the ends of said arcs, and pivoted together at their point of intersection, and a saw-guide carried by the cross-piece of the horizontal arc.

3. A miter-box, comprising a detachable block, a movable horizontal arc carried by the block, a rotatable cross-piece connecting the ends of the arc, a vertically-working arc carried by the block, a rotatable cross-piece connecting the ends of the last-mentioned arc, a pivot-pin connecting the cross-pieces at their point of intersection, and a saw-guide carried by a cross-piece connecting the ends of the horizontal arc.

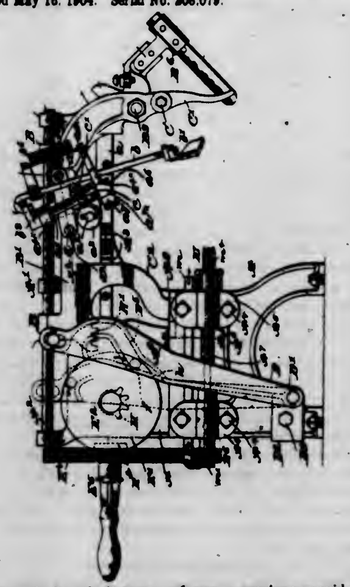
4. A device of the kind described comprising a block having a curved horizontal slot formed therein and a curved vertical slot, arcs working through said slots, respectively, cross-pieces rotatably connected to the ends of the said arcs, and pivoted to each other at their point of intersection, means for locking the arcs in their adjusted positions, and a saw-guide consisting of the vertical member carried by the cross-piece connecting the ends of the horizontal arc, and a parallel member supported by spring-loops carried by the said cross-pieces, as and for the purpose set forth.

824,299. COMBINATION-RULE. JAMES E. HUEY, Charlotte, N. C., assignor of one-half to Welcome C. Lovejoy, Charlotte, N. C. Filed Mar. 15, 1906. Serial No. 306,276.



Claim.—A combination-rule consisting of the hinged members provided with spaced tapering pencil perforations and guides, a perforated disk joint, a joint-plate having an opening therein adapted to register with any of the perforations in said disk, a locking-pin on one of the hinged members of the rule, and an eyelet-pintle serving also as a fulcrum-point, for the purposes described.

824,300. PARER FOR APPLES AND OTHER FRUIT. DAVID F. HUNT, Antrim, N. H., assignor to Goodell Company, Antrim, N. H. Filed May 16, 1904. Serial No. 208,079.

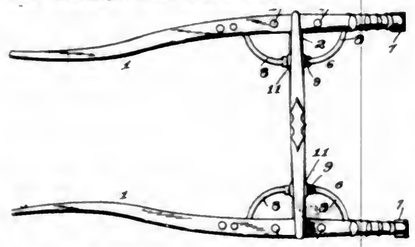


Claim.—1. In a fruit-parer, a frame, a carriage provided with depending teeth and having a turn-table provided with a paring-knife, a radius-bar pivoted at one end to said frame and loosely connected to the carriage at its other end, a rotating wheel provided with a stud to set upon said radius-bar and move it and the carriage outwardly after each paring operation, said radius-bar having a cam

portion situated to be engaged by said stud after the carriage has been moved outwardly, whereby the continued rotation of the wheel starts the carriage inwardly, said cam portion being so shaped that this inward movement of the carriage continues until the blade pares the apple to about the middle of its length, and a mutilated gear positioned to engage the teeth of the carriage and continue its movement after the stud has left the cam portion on the radius-bar.

2. In an apple-parer, a carriage, means to move it outwardly and then backwardly for part of its stroke, a stand pivoted on said carriage and having bearings, a rock-shaft having a turn-table and mounted loosely in said bearings, said stand having a wedge-shaped projection, combined with a clamping-bar with which said wedge coacts as the stand is moved about its pivot to maintain the stand and its rock-shaft in vertical position.

824,301. **SHAFT FOR VEHICLES.** FRANK H. JACOBS, Sigourney, Iowa. Filed Aug. 8, 1905. Serial No. 273,257.



Claim.—1. In combination, a pair of shafts, a cross-bar between said shafts, T-irons comprising a head and an extension projecting from the central portion of the head, the heads of the T-irons being secured to the shafts and the extensions secured to the cross-bar, and brace-bars secured at opposite ends to the shafts and having intermediate laterally-curved portions attached to the cross-bar.

2. In combination, a pair of shafts, a cross-bar between said shafts, T-irons comprising a head and an extension projecting from the central portion of the head, the heads of the T-irons being secured to the shafts and the extensions secured to the cross-bar, and brace-bars connected at opposite ends with the shafts and connected at intermediate portions with the cross-bar, the rear end portions of the brace-bars being extended to the rear extremities of the shafts and provided with shaft-eyes.

3. In combination, a pair of shafts, a cross-bar between said shafts, T-irons comprising a head and an extension projecting from the central portion of the head, the heads of the T-irons being secured to the shafts and the extensions secured to the cross-bar, brace-bars secured at opposite ends to the shafts, and yokes connecting the central portions of the brace-bars with the cross-bar.

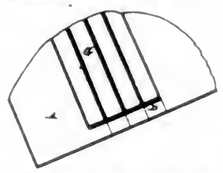
4. In combination, a pair of shafts, a cross-bar between said shafts, T-irons comprising a head and an extension projecting from the central portion of the head, the heads of the T-irons being secured to the shafts and the extensions secured to the cross-bar, brace-bars secured at opposite ends to the shafts, and yokes connecting the central portions of the brace-bars with the cross-bar and clamping the extensions of the T-irons to the said cross-bar.

5. In combination, a pair of shafts, a cross-bar between the shafts, T-irons comprising a head and an extension projecting from the central portion of the head, the heads of the T-irons being secured to the under sides of the shafts, the extensions thereof being secured to the under side of the cross-bar, brace-bars having opposite ends thereof attached to the shafts and having the intermediate portions thereof extended laterally beneath the cross-bar, and yokes receiving opposite end portions of the cross-bar and passing through the laterally-curved portions of the brace-bars to connect said curved portions with the cross-bar, said yokes clamping the extensions of the T-irons to the cross-bar, the rear extremities of the brace-bars being extended to the rear extremities of the shafts and formed with shaft-eyes.

824,302. **METHOD OF MAKING SHEET-METAL ELBOWS.** WILLIAM H. KLAUER, Dubuque, Iowa. Filed Sept. 19, 1905. Serial No. 279,208.

Claim.—1. The method of forming plaited sheet-metal elbows, which consists in removing portions of the edges of a blank, folding or plaiting the blank, uniting the unremoved edges of the blank, and then forming the united blank into an elbow.

2. The method of forming plaited sheet-metal elbows, which consists in cutting out rectangular recesses from the opposite edges of the blank, plaiting or folding the blank, uniting and locking the uncut edges of the blank, and then forming it into an elbow.



3. The method of forming plaited sheet-metal elbows, which consists in cutting out a recess in different planes in the opposite edges of a blank, plaiting or folding the blank, uniting the uncut edges of the blank, and then forming the blank into an elbow.

4. The method of forming plaited sheet-metal elbows, which consists in cutting out rectangular recesses with rounded inner corners from the opposite edges of a blank, plaiting or folding the blank, uniting and locking the uncut edges of the blank, and then forming the blank into an elbow.

5. The method of manufacturing plaited sheet-metal elbows, which consists in cutting irregular recesses from the edges of a blank, plaiting or folding the blank, uniting and locking the unremoved edges of the blank, and then forming it into an elbow.

6. The method of forming plaited sheet-metal elbows, which consists in removing portions of the opposite edges of a blank, plaiting or folding the blank with each fold of three thicknesses of metal one thickness of which projects beyond the edge of the other two and leaving the opposite edges of the blank with only one thickness of metal, uniting the unremoved edges of the blank, and then forming it into an elbow.

7. The method of manufacturing plaited sheet-metal elbows, which consists in removing portions of the opposite longitudinal edges of a blank, plaiting or folding the blank and leaving a continuous edge of one thickness along the opposite edges of the blank, locking the unremoved edges of the blank, and forming the locked blank into an elbow.

824,303. **CATTLE-GUARD.** JACOB M. LEE, San Antonio, Tex. Filed Oct. 2, 1905. Serial No. 280,965.



Claim.—1. In a cattle-guard, inclined sheets of material disposed transversely of the track, and rollers rotatably mounted adjacent the sheets.

2. In a cattle-guard sheets of material disposed transversely of the track and inclined to the horizontal, and rollers rotatably mounted adjacent the sheets.

3. In a cattle-guard, sheets of material disposed with their planes transverse to the track and inclined to the horizontal, and rollers rotatably mounted adjacent the upper extremities of the inclined portions of the sheets.

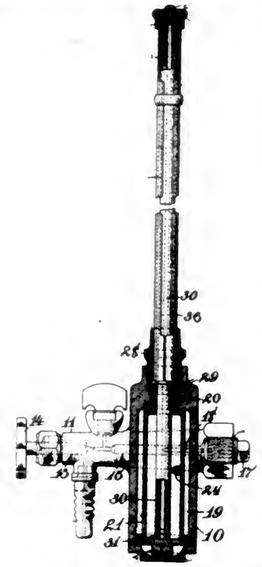
4. A cattle-guard comprising frame-pieces, inclined sheets of material mounted rigidly between the frame-pieces, and rollers mounted between and journaled in the frame-pieces.

5. A cattle-guard comprising frame-pieces extending longitudinally of the track, inclined sheets of material secured rigidly between the frame-pieces and with their planes transversely of the track, and rollers mounted between and journaled in the frame-pieces and disposed adjacent to the tops of the inclined portions of the sheets.

6. A cattle-guard comprising frame-pieces extending longitudinally of the track, sheets of material secured between the frame-pieces and forming conduits between the ties, inclined sections connected with the conduits and with their planes transversely of the track, and rollers rotatably mounted adjacent the tops of the inclined portions of the sheets and journaled between the frame-pieces.

7. A cattle-guard comprising frame-pieces extending longitudinally of the track, sheets of material secured between the frame-pieces and forming conduits between the ties, horizontal sections extending transversely of the frame-pieces and disposed above the conduits, inclined sections connecting the conduits and the horizontal sections, rollers rotatably mounted between and journaled in the frame-pieces and above the horizontal sections and adjacent the tops of the inclined sections, and means for detachably securing the device to the ties.

824,304. **MERCURY-COLUMN.** JAMES MACMAHON, Irvington, and FREDERICK WESLER, Newark, N. J. Filed Apr. 3, 1906. Serial No. 309,697.



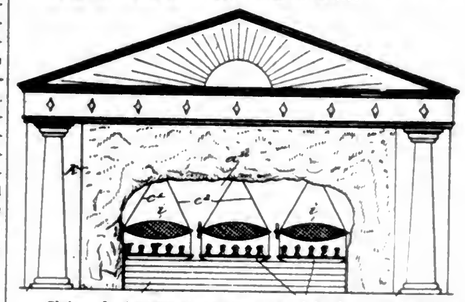
Claim.—1. In a device of the kind described, comprising a casing having an air-tight closure embracing a tube, said tube projecting into the casing, a sleeve surrounding the tube, a cap on the outer end of the tube, and a screw-threaded cap turning on the first-mentioned cap and secured to the end of the sleeve.

2. In a device of the kind described, a casing having means of attachment to an air-supply, means for attachment to a pipe system, ducts connecting the air-supply to the means for attachment for a pipe system, a chamber in the casing, a bottle secured to the casing inside the chamber, a tube projecting into the bottle and emerging from the casing, means for closing the outer end of the tube, an inclined duct connecting the chamber with means of communication between the air-supply and the pipe-connecting means, and a tip arranged in the bottle intermediate of its ends, said tip projecting inside the bottle and having a perforation therein, said tip also having its end pointed.

3. In a device of the kind described, a bottle having means on one end for attachment to a casing, and a tip arranged in the bottle, said tip having a perforation, said perforation being smaller at its inner end, said tip also having its inner end conical.

4. A device of the kind described, comprising a casing having a cap on one end, a bottle within the casing and secured to the top of the casing, a tube having one end in the bottle, and emerging from the casing, an inwardly-projecting perforated tip in the wall of the bottle intermediate of its ends, and means on the bottom of the bottle for turning it.

824,305. **AMUSEMENT APPARATUS.** JOSEPH H. MAGUIRE, Wayne, Pa. Filed Mar. 5, 1906. Serial No. 304,199.



Claim.—1. An amusement apparatus of the character described, comprising a building, an elevated trackway having a slot, means for covering said trackway to conceal the same to the slot, a car adapted to travel over said trackway and having hoisting means and both shielded by said trackway, a cable suspended from said hoisting means and passing through said slot, and means for carrying persons connected with said cable and held suspended thereby beneath said trackway.

2. An amusement apparatus of the character described, comprising a building, an elevated trackway having a slot, means for covering said trackway to conceal the same to the slot, a car adapted to travel over said trackway and having hoisting means, both shielded by said trackway, a cable suspended from said hoisting means and passing through said slot, means for carrying persons connected with said cable and held suspended by the same beneath the trackway, said hoisting means arranged to raise and lower said cable and by the same, said carrying means.

3. An amusement apparatus of the character described, comprising a building, an elevated trackway having a slot, a car adapted to travel over said trackway, means connected with said car, and adapted to propel the same along said trackway, hoisting means disconnected from said propelling means arranged on the car, means connected with said hoisting means for actuating the same, a cable connected with said hoisting means and passing through said slot, and means for carrying persons connected with said cable and held suspended by the same and said hoisting means beneath said trackway and said car-propelling means, said hoisting means and said cable arranged to independently raise, lower and move said carrying means, within said building.

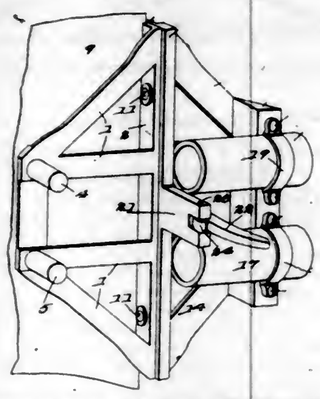
4. An amusement apparatus of the character described, comprising a building, an elevated trackway having a slot, a car adapted to travel over said trackway, means connected with said car and adapted to propel the same along said trackway, hoisting means disconnected from said propelling means arranged on said car, means connected with said hoisting means for actuating the same, a cable connected with said hoisting means and passing through said slot, means for covering said trackway to the slot and shielding the car and propelling and hoisting means thereof, and means for carrying persons connected with said cable and held suspended by the same beneath said trackway, said car-propelling means, hoisting means and cable arranged to independently raise, lower and move said carrying means, within said building.

824,306. **LOCK-SETTING IMPLEMENT.** BENJAMIN K. MEANS, Blairsville, Pa. Filed June 10, 1905. Serial No. 264,742.

Claim.—1. A device of the class described comprising a main frame provided with bore-centering spurs adapted to engage one side of the work, an auxiliary frame slidably mounted on the main frame for engagement with the adjacent edge of the work, a tool-receiving guide carried by the auxiliary frame, and means for securing said auxiliary frame in adjusted position.

2. A device of the class described comprising a main frame adapted to engage one side of the work, an auxiliary frame adjustable laterally on the main frame and provided with a lug for engagement with the adjacent edge of the work, a tool-receiving guide secured to the auxiliary frame, and a clamping member carried by the lug.

3. A device of the class described comprising a main frame provided with bore-centering spurs adapted to engage one side of the work, lugs extending laterally from the frame on the opposite side thereof and disposed in alinement with said lugs, an auxiliary frame slidably mounted on the main frame for engagement with the adjacent edge of the work, tool-receiving guides carried by the auxiliary frame, and means for securing the auxiliary frame in adjusted position.



4. A device of the class described comprising a main frame adapted to engage one side of the work and provided with spaced laterally-extending lugs, an auxiliary frame slidably mounted on the main frame for engagement with the adjacent edge of the work, tool-receiving guides carried by the auxiliary frame and disposed in horizontal alinement with the laterally-extending lugs, and means for securing the auxiliary frame in adjusted position.

5. A device of the class described comprising a main frame provided with bore-centering spurs adapted to engage one side of the work, an auxiliary frame mounted for sliding movement on the main frame and provided with a laterally-extending lip for engagement with the adjacent edge of the work, tool-receiving guides carried by the auxiliary frame, and means for securing the auxiliary frame in adjusted position.

6. A device of the class described comprising a main frame adapted to engage one side of the work, and provided at one end thereof with a laterally-extending flange, an auxiliary frame slidably mounted on the flange for engagement with the adjacent edge of the work and having transverse slots formed therein, tool-receiving guides carried by the auxiliary frame, and bolts passing through the slots in the auxiliary frame and engaging the flange on the main frame for securing the auxiliary frame in adjusted position.

7. A device of the class described comprising a main frame adapted to engage one side of the work, an auxiliary frame slidably mounted on the main frame and provided with a laterally-extending lug, a tool-receiving guide carried by the auxiliary frame, and a lever pivotally supported on the lug and provided with a cam-face for engagement with the adjacent edge of the work.

8. A device of the class described comprising a main frame adapted to engage one side of the work, an auxiliary frame slidably mounted on the main frame for engagement with the adjacent edge of the work, longitudinally-adjustable tool-receiving guides carried by the auxiliary frame, and means for securing the auxiliary frame in adjusted position.

9. A device of the class described comprising a main frame adapted to engage one side of the work, an auxiliary frame mounted for lateral movement on the main frame and adapted to engage the adjacent edge of the work, guides carried by the auxiliary frame, and tool-receiving tubes slidably mounted on the guides.

10. A device of the class described comprising a main frame adapted to engage one side of the work, an auxiliary frame mounted for lateral movement on the main frame and adapted to engage the adjacent edge of the work, a bar secured to the auxiliary frame and provided with seating recesses, guides carried by said auxiliary frame, and tool-receiving tubes seated in said recesses and slidably mounted on the guides.

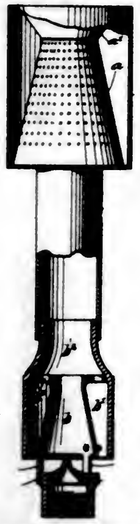
11. A device of the class described, comprising a substantially plane frame, a straight work-engaging lip carried by the frame intermediate the sides, a plurality of cylindrical bore-engaging lugs outstanding from the frame and on a line parallel with the lip, a plurality of bore-centering spurs, disposed axially to the lugs, a plurality of auger-guides mounted upon the frame and adjustable longitudinally, clips for securing the guides at a desired adjustment and a latch disposed to clamp the implement upon the work.

824,307. TARGET-STICKER. AUSTIN MOUNT, Erie, Pa., assignor of one-fourth to Clarence Johnson, Erie, Pa. Filed Sept. 11, 1905. Serial No. 277,946.



Claim.—A target-sticker gummed on both sides, and having its sides provided with distinguishing-coloring, corresponding to those on the target, whereby one kind of sticker furnishes all that is necessary for supplying the variety of colors for the different parts of the said target.

824,308. GAS-BURNER. HENRY W. O'DOWD, New York, N. Y. Filed Sept. 10, 1902. Renewed Dec. 6, 1904. Serial No. 235,744.

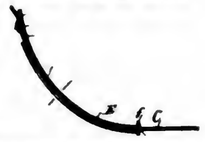


Claim.—1. In a burner the combination of a gas-supply chamber, an air-admitting device above the lower part of the gas-supply pipe or chamber, a mixing device arranged above the gas-supply pipe or chamber and also above the air-admitting device, and having a lower compartment to receive gas and air together, and having also an upper compartment upwardly contracted to cause proper commingling of the gas and air with a transverse annular perforated partition for distributing commingled gas and air around the upper compartment as it enters from the lower compartment, said upper compartment being furthermore provided with means for admitting into it a supply of air additional to the air entering into it with gas in a commingled state, a commingling tube or conduit larger in transverse area than that of the discharge end of the upper compartment of the mixing device and arranged above the entire mixing device, and serving to receive the commingled gas and air and the additional air, and a distributer surmounting said commingling tube or conduit-substantially as set forth.

2. The combination with a gas-supply pipe and a distributer, of an inner air-chamber supported over the end of the pipe to receive gas therefrom and having air-inlet openings at its lower end, and an enlarged perforated upper end, an outer air-chamber supported by the inner air-chamber and having air-inlet openings at its lower end, and said perforated upper end of the inner chamber forming a perforated upper wall for the outer air-chamber, a mixing-chamber above and communicating with said air-chambers, and a tube connecting the mixing-chamber and distributer, substantially as set forth.

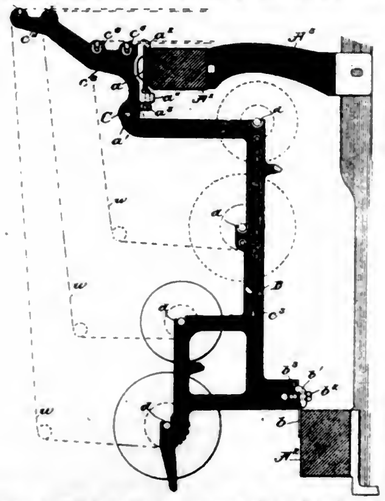
3. The combination with a gas-supply pipe and a distributer, of an inner air-chamber supported on the end of the gas-supply pipe to receive gas therefrom, and having air-inlet openings at its lower end and a perforated plate at its upper end, an outer air-chamber supported on said perforated plate and surrounding the inner air-chamber, said plate forming a perforated upper wall for the said outer chamber and the latter having air-inlet openings at its lower end, a mixing-chamber supported above and communicating with said air-chambers, and a tube connecting said mixing-chamber and distributer, substantially as set forth.

824,309. SLIDE-BRACELET. EDWARD F. PRESBREY, Providence, R. I., assignor to Hamilton & Hamilton, Jr., Providence, R. I., Copartners. Filed Apr. 18, 1905. Serial No. 256,310.



Claim.—In a slide-bracelet, the combination of the hollow members of the bracelet, with the flexible slide-strips, each secured at its outer end to the end of a bracelet member, and provided at its opposite inner end with the struck-up engaging depression, and with the struck-up elevation, with the curved guides, secured within the cavity of the bracelet member, and each provided, with a struck-up elevation, adapted to engage with the depression of the guided flexible slide-strip, and also provided with the slot adapted to receive the stop elevation which serves to limit the outward and inward movement of the flexible slide-strip, substantially as described.

824,310. WARP SUPPORTING AND GUIDING MEANS. OTTO W. SCHAUM, Philadelphia, Pa. Filed Sept. 20, 1905. Serial No. 279,372.



Claim.—1. In a loom, the combination of a back rack comprising a series of back-rack sections, a guide-roll support connected to each of said back-rack sections and movable therewith and means for adjusting the back-rack sections and their connected roll-supports transversely of the loom.

2. In a loom, the combination of a back rack comprising a series of back-rack sections, a guide-roll support connected to each of said back-rack sections and movable therewith, said guide-roll supports being offset, and means for adjusting the back-rack sections and their connected roll-supports transversely of the loom.

3. In a loom, the combination of a back rack comprising a series of back-rack sections, a guide-roll support connected to each of said back-rack sections and movable therewith, said back-rack sections and guide-roll supports being offset as described, and means for adjusting the back-rack sections, and their connected roll-supports transversely of the loom.

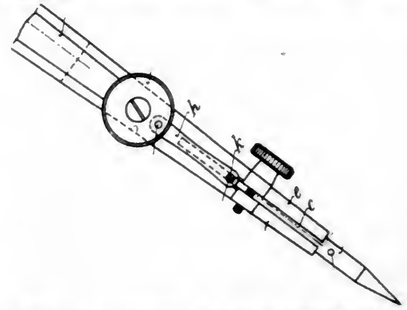
4. In a loom, the combination of a back rack comprising a series of back-rack sections having bearings for spools or beams, at each side thereof, adjacent back-rack sections being reversely offset, a guide-roll support connected to each of said back-rack sections and movable therewith, and means for independently adjusting the back-rack sections and their connected roll-supports transversely of the loom.

5. In a loom, the combination of a back rack comprising a series of back-rack sections having bearings for spools or beams, at each side thereof, adjacent back-rack sections being reversely offset, a guide-roll support connected to each of said back-rack sections and movable therewith, said guide-roll supports being reversely offset and provided with guide-roll bearings and means for independently adjusting the back-rack sections and their connected roll-supports transversely of the loom.

6. In a loom, a back rack comprising a series of back-rack sections having bearings on their opposite sides for spools or beams, said sections being offset to provide for overlapping of the spool or beam ends between successive back-rack sections, a guide-roll support connected to each of said back-rack sections, adjacent supports being reversely offset to provide for overlapping the ends of the guide-rolls between successive sections and means for supporting the back-rack sections and connected roll-supports.

7. In a loom, a back-rack section and a guide-roll support connected together to be movable in unison, and means for adjustably supporting the back-rack section and guide-roll support from the loom-frame.

824,311. ADJUSTING DEVICE IN COMPASSES. GEORG SCHOENNER, Nuremberg, Germany. Filed Sept. 26, 1905. Serial No. 280,221.



Claim.—1. In compasses, the combination with a compass-leg the free end of which is longitudinally hollowed and slitted to form two elastic wings, of a needle-point longitudinally movable in the cavity of said compass-leg, a pin on said compass-leg, a crank-disk mounted to turn on said pin and provided with a crank-pin, a connecting-rod the one end of which is mounted to rock on said crank-pin, a pin connecting the other end of said connecting-rod with said needle-point, said pin being secured to one of said parts and a screw adapted to press the two wings of said compass-leg on said needle-point.

2. In compasses, the combination with a compass-leg the free end of which is longitudinally hollowed and slitted to form two elastic wings, of a needle-point longitudinally movable in the cavity of said compass-leg and having a pin which is guided in the slit, a screw screw and on said compass-leg, a crank-disk mounted to turn on said provided with a crank-pin, a connecting-rod connected with said crank-disk by means of its crank-pin and with said needle-point by means of the pin on said point, and a screw adapted to press the two wings of said compass-leg on said needle-point.

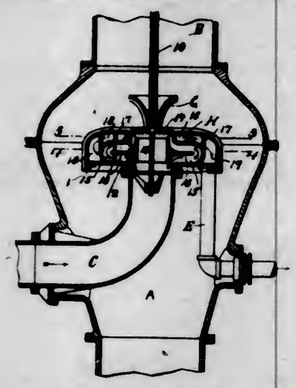
3. In compasses, the combination with a compass-leg the free end of which is longitudinally hollowed and slitted to form two elastic wings, of a needle-point longitudinally movable in the cavity of said compass-leg, a screw on said compass-leg, a crank-disk mounted to turn on said screw and provided with a crank-pin, a connecting-rod the one end of which is connected with said crank-disk by means of its crank-pin, means for detachably connecting the other end of the rod to the needle-point, and a screw adapted to press the two wings of said compass-leg on said needle-point.

4. In compasses, the combination with a compass-leg the free end of which is longitudinally bored and slitted to form two elastic wings, of a needle-point longitudinally movable in the bore of said compass-leg, a pin on said compass-leg, a crank-disk mounted to turn on said pin and provided with a crank-pin, a connecting-rod the one end of which is mounted to rock on said crank-pin, a pin con-

necting the other end of said connecting-rod with said needle-point, said pin being secured to one of said parts and a screw adapted to press the two wings of said compass-leg on said needle-point.

5. In compasses, the combination with a compass-leg the free end of which is longitudinally bored and slitted to form two elastic wings, of a needle-point longitudinally movable in the bore of said compass-leg and having a pin which is guided in the slit, a screw on said compass-leg, a crank-disk mounted to turn on said screw and provided with a crank-pin, a connecting-rod connected with said crank-disk by means of its crank-pin and with said needle-point by means of the pin on said point, and a screw adapted to press the two wings of said compass-leg on said needle-point.

824,312. CONDENSER. WILLIAM SCHWANHAUSSER, New York, N. Y., assignor to Henry R. Worthington, New York, N. Y., a Corporation of New Jersey. Filed Aug. 17, 1903. Serial No. 169,743.



Claim.—1. The combination with a condensing-chamber, of an air-cooler therein consisting of a horizontally-arranged casing provided with an air-inlet on its lower side and with an air-outlet, means for delivering water over the top of the air-cooler, and partitions in the casing dividing the space below the cooled top wall into air-passages connecting the air inlet and outlet.

2. The combination with a condensing-chamber, of an air-cooler therein consisting of a horizontally-arranged casing provided with an air-inlet on its lower side and with an air-outlet, partitions in the casing dividing the space within its top and side walls into air-passages connecting the air inlet and outlet, and means for applying cooling-water on the opposite side walls of said air-passages.

3. The combination with a condensing-chamber and its condensing-water pipe and spraying devices, of an air-cooler consisting of a horizontal casing arranged centrally of the condenser-chamber and beneath the condensing-water spray and provided with an air-inlet on its lower side and with an air-outlet, partitions in the casing dividing the space within the cooled walls of the casing into air-passages connecting the inlet and outlet.

4. The combination with a condensing-chamber and its condensing-water pipe and spraying devices, of an air-cooler within the condensing-chamber consisting of a casing positioned to receive the condensing-water spray and provided with an air-inlet on its lower side and with an air-outlet, air-passages within the casing connecting the air inlet and outlet and adapted to conduct the air through the air-cooler in contact with the walls cooled by the spray, and water-passages in the casing for conducting the condensing water along the inner walls of the air-passages.

5. The combination with the condensing-chamber A and its condensing-water pipe C extending upward centrally of the chamber, of the air-cooler consisting of the horizontally-arranged casing H mounted on the condenser-water pipe and having air-inlet 12 on its lower side, air-outlet 19, and air-passages 18 within the casing connecting the inlet and outlet, a condensing-water passage through the air-cooler, and means for spraying water from said water-passage over the air-cooler.

6. The combination with the condensing-chamber A and its condensing-water pipe C extending upward centrally of the chamber, of the air-cooler consisting of the horizontally-arranged casing H mounted on the condensing-water pipe and having air-inlet 12, air-outlet 19, and air-passages 18 within the casing connecting the inlet and outlet, and water-passages through the air-cooler arranged to apply condensing water to the inner walls of the air-passages 18, and means for spraying the condensing water over the air-cooler.

7. The combination with the condensing-chamber A and its condensing-water pipe C extending upward centrally of the chamber, of the air-cooler H mounted on the condensing-water pipe and having air-inlet 12, air-outlet 19, and air-passages 18 connecting the inlet and outlet, condensing-water passage 13 through the air-cooler, means for spraying water over the air-cooler, means for adjusting the amount of water passing through the passage 13, and water-passages through the air-cooler for applying condensing water to the inner walls of the air-passages and arranged to permit the passage of water to the spraying devices when the passage 13 is closed.

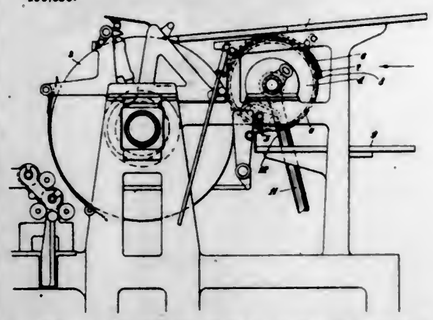
8. Air-cooler H having a top hood and an air-inlet from below and an air-outlet, air-passages 18 connecting the inlet and outlet arranged to secure a long travel of the air in the cooler within the hood and central water-passage 13 through the cooler.

9. Air-cooler H having a top hood and an air-inlet from below and an air-outlet, air-passages 18 connecting the inlet and outlet arranged to secure a long travel of the air in the cooler within the hood and water-passages through the cooler arranged to circulate water along the inner walls of the air-passages.

10. An air-cooler for condensers consisting of a casing adapted to be mounted centrally on a condensing-water pipe and provided with partitions dividing the space within the top and side walls of the casing into tortuous air-passages connecting an air inlet and outlet the outer walls of which are formed by the top and side walls of the casing, and a central water-passage through the cooler, the top of the cooler being formed to provide a spray-pipe.

11. An air-cooler for condensers consisting of a casing in the form of a hood or bell with partitions dividing the space inside the cooler into air-passages next the outer wall or hood of the cooler and water-passages along the inner walls of the air-passages.

824,313. PAPER TRANSMITTING AND CONTROLLING DEVICE. WALTER SCOTT, Plainfield, N. J. Filed Jan. 25, 1904. Serial No. 190,630.



Claim.—1. The combination with a cylinder, of sheet-carrying means on the same, means for exerting an air-pressure from within the cylinder on the same so as to keep that surface of the sheet which is adjacent to the cylinder out of contact with the same as it travels around with the said cylinder, a delivery-table on which the sheet is adapted to fall when the sheet-carrying means release the same, and means for confining the sheet adjacent to the cylinder during a portion of its travel only so that the air-pressure can blow the sheet down on the feed-table when the said sheet is released by the sheet-carrying means.

2. The combination with a cylinder, of sheet-carrying means on the same, means for exerting an air-pressure from within the cylinder upon the sheet so as to keep that surface of the sheet which is adjacent to the said cylinder out of contact with the same as it travels around with the said cylinder, and a stationary and circumferential guide adjacent to the said cylinder.

3. The combination with a cylinder, of sheet-carrying means on the same, means for exerting an air-pressure from within the cylinder on the same so as to keep that surface of the sheet which is adjacent to the cylinder out of contact with the same as it travels around with the said cylinder, a delivery-table on which the sheet is adapted to fall when the sheet-carrying means release the same, and a stationary and circumferential guide adjacent to the said cylinder extending only part of the way around the said cylinder so that the air-pressure can blow the sheet down on the delivery-table when the said sheet is released by the sheet-carrying means.

4. The combination with a cylinder, of sheet-carrying means on the same, means for keeping that surface of the sheet which is adjacent to the said cylinder out of contact with the same as it travels around with the said cylinder, a stationary and circumferential guide adjacent to the said cylinder extending only part of the way around the said cylinder so as to allow the sheet to drop on the delivery-table, and a delivery-table on which the sheet is adapted to fall when the sheet-carrying means release the same.

5. The combination with an impression or other cylinder, of a second cylinder adapted to receive the sheet from the said impression or other cylinder with the printed surface adjacent to the second cylinder, a delivery-table, means for keeping the printed surface of the sheet out of contact with the cylinder as it travels around with the same, and for delivering the said sheet with its printed side up on the said table, and a stationary and circumferential guide adjacent to the said cylinder extending only part of the way around the said cylinder so as to allow the sheet to drop on the delivery-table.

6. The combination with an impression or other cylinder, of a second cylinder adapted to receive the sheet from the said impression or other cylinder with the printed surface adjacent to the said second cylinder, a delivery-table, means for exerting an air-pressure from within the cylinder so as to keep that surface of the sheet which is adjacent to the said cylinder out of contact with the same as it travels around with the said cylinder, and a stationary and circumferential guide adjacent to the said cylinder extending only part of the way around the said cylinder so that the air-pressure can blow the sheet down on the delivery-table when the said sheet is released by the sheet-carrying means.

7. The combination with a cylinder, of sheet-carrying means on the same, means for exerting an air-pressure from within the cylinder upon the sheet so as to hold that side of the sheet which is adjacent to the cylinder out of contact with the same, and means for confining the sheet adjacent to the cylinder extending a variably-predetermined length around the cylinder.

8. The combination with a cylinder, of sheet-carrying means on the same, means for exerting air-pressure against substantially the entire surface of the sheet so as to keep the body thereof out of contact with the cylinder as it travels around with the same.

9. The combination with a cylinder, of sheet-carrying means on the same, means for exerting air-pressure against substantially the entire surface of the sheet so as to keep the body thereof out of contact with the cylinder as it travels around with the same, and means for confining the sheet adjacent to the cylinder.

10. The combination with a cylinder, of sheet-carrying means on the same, and means for exerting an air-pressure from within the cylinder against substantially the entire surface of the sheet so as to keep the body thereof out of contact with the cylinder as it travels around with the same.

11. The combination with a cylinder, of sheet-carrying means on the same, means for exerting an air-pressure from within the cylinder against substantially the entire surface of the sheet so as to keep the body thereof out of contact with the cylinder as it travels around with the same, and means for confining the sheet adjacent to the cylinder.

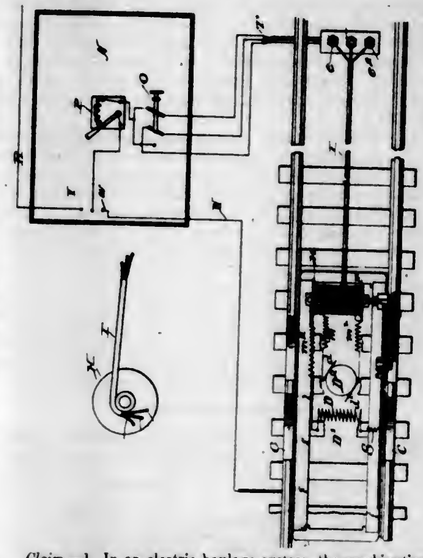
12. The combination with a cylinder, of sheet-carrying means on the same, a delivery-table, and means for exerting air-pressure against substantially the entire surface of the sheet so as to keep the body thereof out of contact with the cylinder as it travels around with the said cylinder and for assisting in delivering the sheet to the delivery table.

13. The combination with a cylinder, of sheet-carrying means on the same, a delivery-table, means for exerting air-pressure against substantially the entire surface of the sheet so as to keep the body thereof out of contact with the cylinder as it travels around with the said cylinder and for assisting in delivering the sheet to the delivery-table, and means for confining the sheet adjacent to the cylinder.

14. The combination with a cylinder, of sheet-carrying means on the same, a delivery-table, and means for exerting air-pressure from within the cylinder against substantially the entire surface of the sheet so as to keep the body thereof out of contact with the cylinder as it travels around with the said cylinder and for assisting in delivering the sheet to the delivery-table.

15. The combination with a cylinder, of sheet-carrying means on the same, a delivery-table, means for exerting air-pressure from within the cylinder against substantially the entire surface of the sheet so as to keep the body thereof out of contact with the cylinder as it travels around with the said cylinder and for assisting in delivering the sheet to the delivery-table, and means for confining the sheet adjacent to the cylinder.

824,314. ELECTRIC LOCOMOTIVE AND MEANS FOR CONTROLLING THE SAME. FRANK L. SESSIONS, Columbus, Ohio, assignor to Joseph A. Jeffrey, Columbus, Ohio. Filed Aug. 6, 1903. Serial No. 168,530.



Claim.—1. In an electric haulage system, the combination of the car, the motor for propelling the car having a reversible rotary member, a set of flexible electric conductor-sections, a reel on the car for winding up and paying out the said flexible conductor-sections, a stationary device at a point remote from the car for reversing the electric current passing through more or less of the flexible conductor-sections and through one element of the motor, substantially as set forth.

2. In an electric haulage system, the combination of the car, the motor on the car having a field-magnet element and a reversible armature element geared to the car-wheels, the winding mechanism, three flexible conductor-sections adapted to be simultaneously wound up and paid out by the said winding mechanism, one of said conductors being electrically connected with the terminals of one element of the motor and the other two being respectively connected with the terminals of the other element, a stationary controller at a point distant from the said car for controlling the current through all of the said three flexible sections, and a stationary reversing mechanism at said point for reversing the terminals of the two aforesaid flexible conductor-sections on the winding mechanism connected to the terminals of one element of the motor, substantially as set forth.

3. In an electric haulage system, the combination of the car, the motor for propelling the car, having a reversible rotary member, a stationary electric conductor for supplying current, a plurality of flexible conductors adapted to conduct the current from said stationary conductor to the motor on the car, means for cutting said stationary conductor out or in, means for establishing a short circuit through the motor, and a reversing means for reversing the reversible member of the motor, all of said electric circuit-controlling means being arranged at a fixed point remote from the car, and means for paying out and winding up said flexible conductors as the car moves from and toward said fixed point respectively, substantially as set forth.

4. In an electric haulage system, the combination of the car, the motor on the car having a reversible rotary member, a stationary conductor for supplying current to the motor, a cut-out for said conductor, means for establishing a short circuit through the motor arranged at a point remote from said car and having a circuit through the rotary motor element, and a circuit through the stationary motor element, and means in the circuit through one of the elements for reversing its terminals, substantially as set forth.

5. In an electric haulage system, the combination of the car, the motor on the car, the stationary conductor, the switch remote from the car for cutting said conductor out or in, the controller remote from the car, and means remote from the car for establishing a short

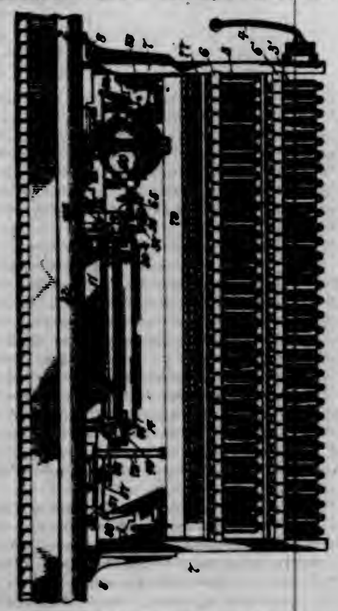
circuit through the controller and through the motor when the said supply-conductor is cut out, substantially as set forth.

6. In an electric haulage system, the combination of the car, the motor on the car, the branch conductor for conveying electric current from the main conductor to the motor, said branch conductor including a controller and a current-reversing mechanism, both arranged at a point remote from the car and stationary relative thereto, a current-return conductor-section on the other side of the motor, and means for connecting the conductors of the said two sections to form a short circuit through the controller and the motor, substantially as set forth.

7. In an electric haulage system, the combination of the car, the motor for propelling the car, a set of flexible electric conductor-sections, electrically connected with said motor, a reel on the car for winding up and paying out the said flexible conductor-sections, and a stationary device arranged at a point remote from said car for reversing the current passing through certain of said flexible conductor-sections to cause the reversal of direction of rotation of the motor.

8. In an electric haulage system, the combination of the car, the electric motor for propelling the car, a series of flexible electric conductor-sections electrically connected to the said motor, a reel for winding up and paying out the said flexible conductor-sections, and a stationary device at a point remote from the car for reversing the electric current passing through certain of said conductor-sections to cause the reversal in direction of rotation of the motor.

824,315. **SELF-PLAYING MUSICAL INSTRUMENT.** HAROLD W. SHONNARD, New York, N. Y. Filed May 2, 1903. Serial No. 155,596.



Claim.—1. In a self-playing musical instrument, a key, an adjusting-lever under the key, a motive device supporting said lever between its ends, a transmitting means between one end of said lever and said key and means adapted to act upon the opposite end of said lever to raise and lower said end.

2. In a self-playing musical instrument, a key an adjusting-lever under the key, a magnet, a rocking armature over said magnet the end of which armature supports said adjusting-lever between its ends, a lifting-rod between one end of said lever and the inner end of said key and means for raising and lowering the opposite end of said lever.

3. In a self-playing musical instrument, a row of magnets and armatures, a row of adjusting-levers over said armatures, transmitting means operated by movement of said adjusting-levers, a common bar to which said levers are pivoted and means available to a performer for raising and lowering said bar.

4. In a self-playing musical instrument, an expression device operating by movement up or down and an operating-lever pivoted over said device and bearing thereon; in combination with means accessible to a performer for tilting said lever to control the position of said expression device.

5. In a self-playing musical instrument, a row of motive devices for the keys, an expression device extending parallel to said motive devices and adapted to operate by moving nearer to or farther from said motive devices, a spring at each end of said expression device for its support and a separate lever at each end thereof for separately operating each its own end of said expression device.

6. In a self-playing musical instrument, an expression device operating by movement up or down, a spring for supporting said device, a pivoted lever bearing on said device and adapted to push downward upon it when tilted in one direction, a device for manually operating said lever and means for securing said last device in any desired position for adjusting said expression device.

7. In a self-playing musical instrument, an expression device, two levers for separate movement of the two ends thereof, a separate handle for operating each lever and a separate spring at each end of the expression device tending to support said ends.

8. In a self-playing keyed musical instrument, two rows of motive devices one above the other, a lifting-rod connecting each motive device in the upper row directly with certain of the keys of the instrument, lifting-rods extending from the other keys down to the level of the upper row of motive devices and between them, and an extension-rod from each motive device in the lower row joining each to one of the last-named set of lifting-rods; substantially as described.

9. A self-playing musical instrument having a keyboard, a music-sheet, a sliding support for the same, means for controlling the speed of movement of said sheet, an extensible swinging lever for adjusting said means, a second sliding support under said keyboard to which said lever is attached movable independently of said first-named sliding support and an indicator on said second sliding support over which the end of said swinging lever moves, whereby the indicator and lever can be brought into view at will while the music-sheet support is out of sight, substantially as described.

10. In an electric self-playing musical instrument, a contact-finger support, a comb-carriage within it, a spring holding said comb-carriage against a straight edge on said support, a pivoted lever over said comb the end of which is accessible to a performer, a connection between said lever and comb-carriage for sliding the latter along said straight edge.

11. In an electric self-playing instrument, an insulating-pivot and a series of conducting contact-fingers all supported in common side by side on said pivot.

12. In the comb of an electric self-playing musical instrument, a series of parallel insulating-partitions, a pivot of insulating material threading said partitions and a contact-finger between each two partitions, all of said fingers being pivoted in common side by side on said pivot.

13. In an electric self-playing musical instrument, an insulating-pivot and a series of conducting contact-fingers side by side each having an open notch near one end fitting over said common pivot.

14. In an electric self-playing musical instrument, a series of conducting-fingers pivoted side by side, terminals in front of said fingers and connecting-wires between said terminals and fingers connected to the fingers near their rear ends.

15. In an electric self-playing musical instrument, a common insulating-pivot, a series of conducting-fingers removably pivoted side by side on said pivot, an insulating-platform in front of said fingers, removable terminals in said platform and connecting-wires between said fingers and terminals.

16. In an electric self-playing musical instrument, a music-drawer adapted to slide from a position behind the operating position to one in front of the operating position, an offset on said drawer movable inward and outward thereon and a fixed stop in the path of movement of said offset when extended outward, so placed as to strike the same and stop the drawer in its operative position.

17. In an electric self-playing musical instrument, a music-drawer adapted to slide from a position behind the operating position to one in front of the operating position, a socket for one end of the permanent music-roller adapted to be pressed outward when said roller is in place, a spring tending to press the socket inward and a fixed stop so placed as to strike the socket when extended, and stop the drawer in its operative position.

18. In an electric self-playing musical instrument, a row of operating-magnets, each magnet being set obliquely to the direction of the row as a whole, armatures also set obliquely to the direction of the row in the same sense and means for transmitting power from said armatures to operate the instrument.

19. In an electric self-playing musical instrument, a row of operating-magnets, each magnet being set obliquely to the direction of the row as a whole, armatures also set obliquely in the same sense but inclined less than their respective magnets and means for transmitting power from said armatures to operate the instrument.

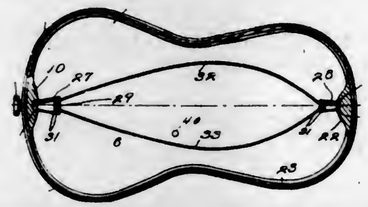
20. In a self-playing musical instrument, a key, an adjusting-lever under the key, a motive device engaging said lever between its ends, a transmitting means between one end of said lever and said key, and means adapted to act upon the opposite end of said lever to raise and lower said end.

21. In a self-playing musical instrument, an expression device operating by movement up or down, a spring for supporting said device, a pivoted lever adapted to push one end of said device downward when tilted in one direction, and means accessible to a performer for tilting said lever.

22. In a device for automatically playing keyed musical instruments, a prime mover for each key, a pivoted lever operated by said prime mover and forming part of the transmission system between the same and said key and a controller movable during the playing operation for rapidly changing the position of said lever so that it occupies a different position with respect to the prime mover when said prime mover ceases to operate.

23. In a device for automatically playing keyed musical instruments, a motive device for each key, a pivoted lever engaging said motive device and forming part of the transmission system between the same and said key and a normally movable controller for rapidly changing the normal distance between the operative end of said pivoted lever and its appropriate key, substantially as described.

824,316. **STRINGED MUSICAL INSTRUMENT.** LEWIS C. SMITH, New York, N. Y., assignor of one-half to Herman H. Petersen, New York, N. Y. Filed Feb. 4, 1906. Renewed May 26, 1906. Serial No. 318,923.



Claim.—1. A stringed musical instrument comprising a body including a top, a bottom, a connecting-wall, and reinforcing-strips let into the top and the bottom respectively and the adjacent portion of the wall, said strips having their inner faces concaved and flush with the inner faces of the portions into which said strips are let whereby all transverse vertical sections through the body of the instrument are free from interior angles.

2. A stringed musical instrument comprising a body including a top, a bottom, a wall connecting the top and bottom, reinforcing-blocks secured against the inner face of the wall at opposite ends of the body, a neck secured to the body, string-attaching devices carried by the body and neck, and a pair of sounding-bars supported by and between the reinforcing-blocks.

3. A stringed musical instrument comprising a body including a top, a bottom, a wall connecting the top and bottom, reinforcing-blocks secured against the inner face of the wall at opposite ends of the body, a neck secured to the body, string-attaching devices carried by the body and neck, a hollow support carried by each reinforcing-block, and sounding-bars supported by and between the hollow supports.

4. A musical instrument comprising a hollow body, a neck, string-attaching devices carried by the body and neck, a hollow support within the body at each end thereof, and sounding-bars supported by and between the hollow supports, said bars being tapered from one end to the other thereof and bowed away from each other.

5. A musical instrument comprising a hollow body, a neck, string-attaching devices carried by the body and neck, reinforcing-blocks secured against the inner face of the body at opposite ends thereof, hollow closed supports carried by the reinforcing-blocks and sounding-bars supported by and between the hollow supports.

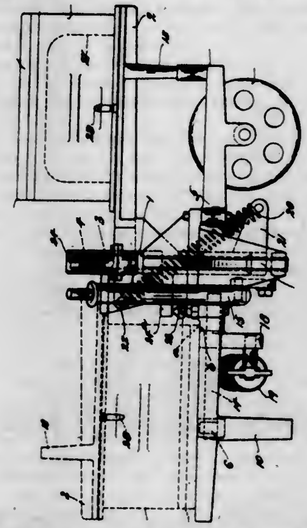
6. A stringed musical instrument comprising a body including a top, a bottom, a wall connecting the top and bottom, reinforcing-blocks secured against the inner face of the wall at opposite ends of the body, a neck secured to the body, string-attaching devices carried by the body and neck, and a pair of sounding-bars supported by and between the reinforcing-blocks, said bars being bowed laterally and in the direction of the top, away from each other.

7. A stringed musical instrument comprising a body including a top, a bottom, a wall connecting the top and bottom, reinforcing-blocks secured against the inner face of the wall at opposite ends of the body, string-attaching devices carried by the body and neck, a bridge supporting the strings, a base-bar on the inner side of the top part of the body, a sound-post and a pair of sounding-bars supported by and between the reinforcing-blocks.

8. A stringed musical instrument comprising a body including a top, a bottom, a wall connecting the top and bottom, reinforcing-blocks secured against the inner face of the wall at opposite ends of the body, a neck secured to the body, string-attaching devices carried by the body and neck, a bridge supporting the strings, a base-bar on the inner side of the top part of the body, a sound-post, and a pair of sounding-bars supported by and between the reinforcing-blocks.

9. A stringed musical instrument comprising a body including a top, a bottom, a wall connecting the top and bottom, reinforcing-blocks secured against the inner face of the wall at opposite ends of the body, a neck secured to the body, string-attaching devices carried by the body and neck, a bridge supporting the strings, a hollow support carried by each reinforcing-block, a sound-post, and sounding-bars supported by and between the hollow supports.

824,317. **MOLDING-MACHINE.** HARRIS TABOR, Elizabeth, N. J., assignor to Tabor Manufacturing Company, Philadelphia, Pa., a Corporation of New Jersey. Filed Jan. 15, 1906. Serial No. 296,018.



Claim.—1. A molding-machine comprising a movable frame, a flask-carrier hinged to said frame, and devices for permitting said frame to move automatically during the turning movement of the carrier to suit flasks of varying depth, substantially as described.

2. In a molding-machine flask-receiving means and a marginally-hinged carrier between which flasks are positioned for drawing patterns, and means for permitting the hinge part or fulcrum of the carrier to automatically move during the turning movement of the carrier whereby flasks of different depths are properly positioned between the receiving means and the carrier, substantially as described.

3. A molding-machine comprising a slidable frame, a carrier marginally hinged to said frame, and standards upon which the movable frame freely slides automatically during the turning movement of the carrier, substantially as described.

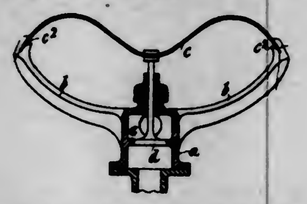
4. In a molding-machine flask-receiving means, an automatically-movable frame, and a carrier marginally hinged to said frame and between which and said receiving means flasks are positioned for drawing patterns, substantially as described.

5. A molding-machine comprising a generally rectangular bed provided with upright standards, an automatically-movable frame

slidably connected with said standards, a carrier marginally hinged to the sliding frame, and stops for positioning the carrier in respect to the frame, substantially as described.

6. In a molding-machine the combination of a movable frame, means for elevating it, a carrier marginally hinged to said frame, and stops for holding the carrier at right angles to the direction of motion of the frame, substantially as described.

824,318. SPRING. THOMAS THORP, Whitefield, England. Filed Dec. 12, 1905. Serial No. 291,660.



Claim.—1. The combination with two fixed abutments of a spring-blade the distance between the ends of which is greater than that between the abutments and which is confined by said abutments and means for connecting the object to be acted on by the spring to the center thereof whereby said spring will be deflected to a curvature lying between the curvature of maximum pressure and the neutral curvature substantially as and for the purpose set forth.

2. The combination with two fixed abutments of a flat spring-blade of greater length than the distance between said abutments which is confined by said abutments so as to assume a convex shape and means for connecting the object to be acted on by the spring to the center thereof whereby said spring will be deflected at its center and assume a corrugated curvature lying between the curvatures of maximum pressure in either direction substantially as and for the purpose set forth.

3. The combination with two fixed abutments of a spring-blade the ends of which are farther apart than said abutments and are confined by them, which blade is deflected at its center until it has assumed a corrugated curvature lying between the curvatures of maximum pressure in either direction, and an object to be acted upon by said spring-rod said article being connected to the center of the spring.

824,319. MEAT-TENDERER. JAMES H. TOLES and DAVID B. HOSTETTER, Rochdale, Ind. Filed Sept. 23, 1905. Serial No. 280,513.



Claim.—A meat-tenderer, comprising a frame, having fixed standards rising from the opposite edges thereof and forming bearings, a serrated plate mounted upon said frame, a roller with serrated circumference journaled in bearings in said standards and adapted to intermesh with the serrations of said plate, a bearing member hinged to each of said standards, the latter having elongated slots formed therein with recesses in the inclined ends of said slots, a bolt passing through each of said slots, and having each a head with oppositely-disposed wings engaging said recesses, the threaded end of each bolt passing through a slot in the free end of one of said hinged bearing members, and a nut engaging each bolt and bearing against said member to hold the same in locked relation, as set forth.

824,320. PROCESS FOR REFINING AND CLEANSING COFFEE. NILS J. H. WESTMANN, Malmoe, Sweden. Filed Dec. 9, 1904. Serial No. 236,231.

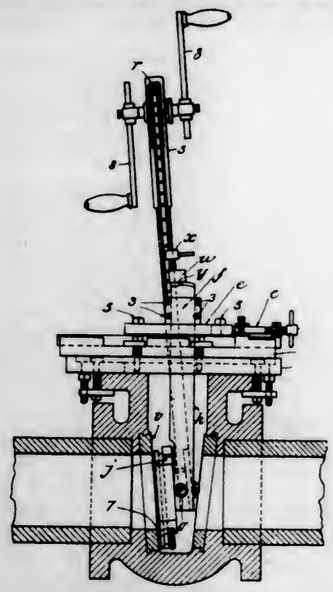


Claim.—1. The process of treating coffee, which consists in subjecting the coffee to the action of magnetism.

2. A process of treating coffee, consisting in producing a magnetic field and passing the coffee through said field.

3. A process of refining and cleansing coffee, consisting in producing a powerful magnetic field, passing the coffee through said field and agitating the coffee during its passage through said field.

824,321. VALVE-RESEATING MACHINE. THOMAS B. WILLIAMS, Orange, Mass., assignor to The Leavitt Machine Company, Orange, Mass., a Corporation. Filed Apr. 28, 1905. Serial No. 257,846.



Claim.—1. The combination in a valve-reseating mechanism of an adjustable bed-plate having an opening therethrough, a rigid support for a cutter-head mounted on the bed-plate and depending therefrom; a cutter-head carried on the inner end of said support below the bed-plate and angularly adjustable thereon on an axis at right angles to the support, said cutter-head being also rotatable on another axis at right angles to the first, together with means to swing the cutter-head, and means to rotate it.

2. In a valve-reseating mechanism, a rotatable cutter-head and a rigid arm to extend into a valve on which the cutter-head is rotatably supported on an axis at right angles to said arm; a supporting-framework for the cutter-head and rigid arm, and having an opening therein and adapted to be secured to the valve-casing whereby the arm is adapted to extend into the valve-casing; means to adjust said rigid arm toward and from the face of the valve-seat, and means to adjust said cutter-head on an axis at right angles to the plane of the adjusting movement of the arm.

3. In a valve-reseating mechanism, a rotatable cutter-head and a rotatably-adjustable rigid arm to extend into a valve on which the cutter-head is rotatably supported on an axis at right angles to said arm; a supporting-framework for the cutter-head and rigid arm, and having an opening therein and adapted to be secured to the valve-casing whereby the arm is adapted to extend into the valve-casing; means to adjust the arm toward and from the face of the valve-seat, and means to adjust said cutter-head on an axis at right angles to the plane of the adjusting movement of the arm.

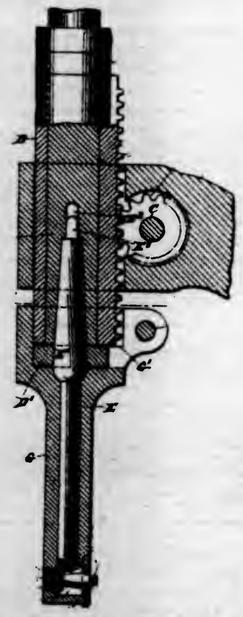
4. In a valve-reseating mechanism, a bed-plate having an opening therethrough and adapted to be secured to the valve-casing, a block, a cutter-head carried thereby, an arm extending through the opening in the bed-plate and into the valve-casing and on which arm the block is rotatably mounted whereby the cutter-head may be brought into proper relation with the valve-seat.

5. In a valve-reseating mechanism, a bed-plate slidable toward and from the surface to be operated on, an annular support rotatably adjustable on said bed-plate, an arm rigidly mounted in said annular support and extending through the latter and through an opening in the bed-plate into the valve-body, a rotatable cutter-head carried on the inner end of the arm and mounted on the latter to have a rocking movement on one axis relative to the surface to be operated on, and opposite to the latter.

6. In a valve-reseating mechanism, a bed-plate having an opening therethrough, a rotatable cutter-head, a block, supporting-arms in which the block is pivotally mounted, said cutter-head being rotatably supported on the block, an adjusting-arm secured to the block and extending through the opening in the bed-plate whereby the cutter-head may be brought into parallelism with the valve-seat to be operated upon, and means for locking the same in the adjusted position.

7. In a valve-reseating mechanism, a bed-plate having an opening therethrough and adapted to be secured to the casing, a cutter-head, an arm passing through the bed-plate on which the cutter-head is rotatably mounted on a horizontal axis, said arm being angularly adjustable, and means for locking the same in the adjusted position.

824,322. ROTARY TOOL. ELIAS R. WILNER, New York, N. Y., and LEON SUSSMAN, Bayonne, N. J. Filed Oct. 22, 1904. Serial No. 229,543.



Claim.—1. In a drill-press, an adjustable head comprising a sleeve having a rack and a spindle-coupling rotatable in said sleeve, a casing having means for connecting it to said head and provided with a guide arranged to engage said rack to prevent the casing from turning relatively to the head, and an operating-shaft coaxial with the casing and operatively connected with the spindle-coupling of the head.

2. In a drill-press, an adjustable head comprising a sleeve having a rack and a spindle-coupling rotatable in said sleeve, a casing comprising an upper section adapted for attachment to the head, a lower section adjustable relatively to the upper section lengthwise of the head, said upper section having a guide arranged to engage said rack to prevent the casing from turning relatively to the head, and a tool-operating shaft journaled in said lower section and adapted for driving connection with the spindle-coupling of the head.

3. In a drill-press, an adjustable head comprising a sleeve having a rack and a spindle-coupling rotatable in said sleeve, a casing having means for connecting it to said head and provided with a guide arranged to engage said rack to prevent the casing from turning relatively to the head, and an operating-shaft operatively connected with the spindle-coupling of the head.

4. In a drill-press, an adjustable head comprising a sleeve having a rack and a spindle-coupling rotatable in said sleeve, a casing comprising an upper section adapted for attachment to the head and a lower section adjustable relatively to the upper section lengthwise of the head, said upper section having a guide arranged to engage said rack to prevent the casing from turning relatively to the head.

824,323. LACE-CABINET. JAMES R. WILSON, Lawson, Mo. Filed May 31, 1905. Serial No. 263,186.



Claim.—1. A display-cabinet provided with a slot for the passage of the material, a closure arranged wholly on the exterior of the cabinet and hinged at one edge to one side of the slot and closing over the same, said closure being arranged to engage and clamp the material, and a spring connected with the closure at an intermediate point and concealed by the same.

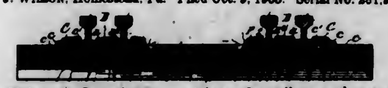
2. A display-cabinet provided with a slot for the passage of the material and having an opening, a spring mounted in the opening, and an exteriorly-arranged movable closure connected with the spring and normally covering the slot and the opening and arranged to engage and clamp the material.

3. A display-cabinet having a slot for the passage of the material and provided with an opening, an exteriorly-arranged hinged closure or door covering the slot and the opening, a spring arranged in the opening and connected with the door or closure, and a button or plate connected with the spring and covering the inner end of the opening.

4. A display-cabinet having a slot for the passage of the material and provided above the same with an opening, ears located above the opening, a door or closure hinged at its upper portion to the ears and provided with a lower rounded edge arranged at the bottom of the slot for engaging the material, and a spring mounted in the opening and connected with the door or closure for holding the same in engagement with the material.

5. A display-cabinet provided with a slot for the passage of the material, and a closure consisting of a flat plate or piece arranged wholly on the exterior of the cabinet, and hinged at one edge to one side of the slot and closing over the same, the opposite edge of the closure being rounded and cooperating with the cabinet at the adjacent side of the slot to form a clamp for engaging the material.

824,324. SLEEPER OR STRINGER FOR RAILWAYS. WALTER J. WILSON, Homestead, Pa. Filed Oct. 9, 1905. Serial No. 281,993.



Claim.—1. In a sleeper or stringer for railways, the combination of a beam arched transversely, clamping members having opposing jaws engaging the base-flanges of the rails and the under side of the top of the beam, respectively, and a locking-key passed transversely through the beam and adapted to hold the clamping members in place.

2. In a sleeper or stringer for railways, the combination, of a beam arched transversely, clamping members having opposing jaws engaging the base-flanges of the rails and the under side of the top of the arched beam respectively, and horizontally-disposed wedge-shaped locking-keys passed transversely through the beam and engaging the clamping members.

3. In a sleeper or stringer for railways, the combination of a beam arched transversely, a clamping member engaging one edge of the base-flange of the rail, a second clamping member having opposing jaws engaging the other edge of the base-flange of the rail and the under side of the top of the beam, respectively and provided with a groove or channel, and a wedge-shaped locking-key engaging the

beam and the clamping member last mentioned in the groove or channel thereof.

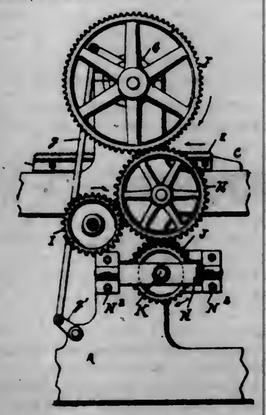
4. In a sleeper or stringer for railways, the combination with a beam arched transversely and provided with openings in the top and sides thereof, of a clamping member engaging the base-flange of the rail at one edge thereof, a second clamping member having an upwardly-inclined jaw engaging the other edge of the base-flange and having a portion depending below the top of the beam through the opening therein said depending portion having a jaw engaging the under side of the top of the beam, and a horizontally-disposed wedge-shaped locking-key engaging the openings in the sides of the beam and bearing against the latter clamping member to clamp the rail tightly between the clamping members.

5. In a sleeper or stringer for railways, the combination with a beam arched transversely and provided with openings in the top and sides thereof, of a clamping member engaging the base-flange of the rail at one edge thereof, a second clamping member engaging the other edge of the base-flange and having a portion depending through the top and provided with a jaw bearing against the under side of the latter, said depending portion also having a channel or groove, and a horizontally-disposed wedge-shaped locking-key engaging the openings in the sides of the beam and the groove or channel in the clamping member, substantially as shown and for the purpose set forth.

6. In a sleeper or stringer for railways, the combination with a beam arched transversely and provided with openings in the top and sides thereof, of a clamping member comprising a block having the pair of beam-engaging jaws c c and opposite jaws c' and c^2; a second clamping member having upper and lower jaws at one side, the upper one of which engages the rail, and a groove or channel at the other side, the latter being on a line with the openings in the sides of the beam, and a horizontally-disposed wedge-shaped locking-key engaging said openings and the groove or channel in the clamping member last mentioned.

7. In a sleeper or stringer for railways, the combination with an arched beam having openings in the top and sides thereof, of the clamping member C having companion jaws at opposite sides thereof adapted to engage the rail and top of the beam, the clamping member D having the rail and beam engaging jaws, and the clamping member F also having rail and beam engaging jaws; together with the horizontally-disposed wedge-shaped locking-keys E passed transversely through the beam to engage the clamping members D and F and clamp them tightly against the rail, as herein shown and described.

824,325. **REGISTERING MECHANISM FOR PRINTING-PRESSES.** HENRY A. W. WOOD, New York, N. Y., assignor to The Campbell Printing Press & Manufacturing Company, New York, N. Y., a Corporation of New York. Filed Oct. 19, 1893. Renewed Aug. 30, 1905. Serial No. 276,430.

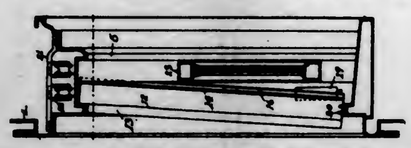


Claim.—1. In a multirevolution cylinder-press, the combination of the impression-cylinder and the reciprocating bed, gearing for reciprocating said bed so that the same will have a constant or even speed during the impression period, gearing for continuously and positively rotating the impression-cylinder in one direction at a constant speed, means for raising and lowering the impression-cylinder, a registering-gear rigidly connected to turn with the impression-cylinder, and a coöperating registering-rack rigidly secured to the bed, the mesh of the teeth of the registering-gear and the rack being less than the vertical movement of the impression-cylinder, whereby the said gear and rack will be thrown out of mesh simply by virtue of the vertical movement of said impression-cylinder, and whereby when said impression-cylinder is down, it will be driven both by means of its driving-gear and by means of the registering mechanism.

2. In a multirevolution printing-press, the combination of the impression-cylinder and the reciprocating bed, mechanism for reciprocating said bed, gearing for continuously and positively rotating the impression-cylinder in one direction at a constant speed, consisting of a cylinder-gear rigidly secured to turn with the impression-cylinder and a coöperating gear for driving the same, means for raising and lowering the impression-cylinder, a registering-gear connected to turn with the impression-cylinder, and a coöperating registering-rack rigidly secured to the bed, the mesh of the teeth of the registering-gear and the registering-rack being less than the mesh of the teeth of the cylinder-gear and its driving-gear, whereby when said cylinder is performing the printing operation, it will be positively turned both by said gears and by the registering-gear and the rack, and when it is not performing the operation of printing, it will be driven only by said gears, the mesh of the teeth of the registering-gear and the rack being less than the vertical movement of the impression-cylinder.

3. In a multirevolution cylinder-press, the combination of the impression-cylinder and coacting bed, said bed carrying a rack, a driving-pinion engaging said rack, gearing positively connecting said pinion with the impression-cylinder so arranged that the bed will be reciprocated forward and backward and at a constant or even speed during the printing period and the impression-cylinder rotated continuously in one direction at a constant speed, means for raising and lowering the impression-cylinder, a registering-gear rigidly connected to turn with the impression-cylinder, and a coöperating registering-rack rigidly secured to the bed, the mesh of the teeth of these parts being less than the vertical movement of the impression-cylinder, whereby the said gear and rack will be thrown out of mesh simply by the vertical movement of said impression-cylinder, and whereby when said impression-cylinder is down it will be turned or rotated both by its gearing and by the registering mechanism.

824,326. **METALLIC WINDOW FRAME AND SASH.** WILLIAM B. YEAGER, Reading, Pa. Filed Dec. 11, 1905. Serial No. 291,252.



Claim.—In a metallic window a frame with inside and outside trim formed integral therewith and an opening near the lower end thereof on either side, grooves formed in said frame by bending the metal on itself, a parting-strip adapted to engage said grooves by having both its edges enter said grooves and to cover said openings, in combination with sash having open edges and grooves formed therein by bending the ends of the metal parallel with itself, stripe having angled ends adapted to close said openings by engaging said grooves with their angled ends, a groove formed along the inner edge of the sash by bending the metal on itself and a glass-holding strip formed with a projecting edge adapted to enter said groove and bolts securing said strip to the sash.

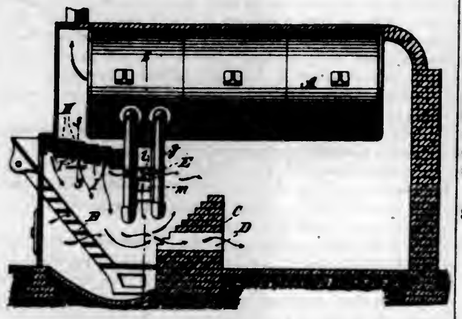
824,327. **SMOKE-CONSUMING FURNACE.** ROBERT ZEILLER, Munich, Germany. Filed May 8, 1905. Serial No. 259,963.

Claim.—1. In a smoke-consuming furnace, a depending baffler provided with channels running through the same from front to rear, each channel being provided with separate removable closing means.

2. In a smoke-consuming furnace, a depending baffler provided with channels running through the same from front to rear, and plugs of fire-resisting material for closing each of said channels.

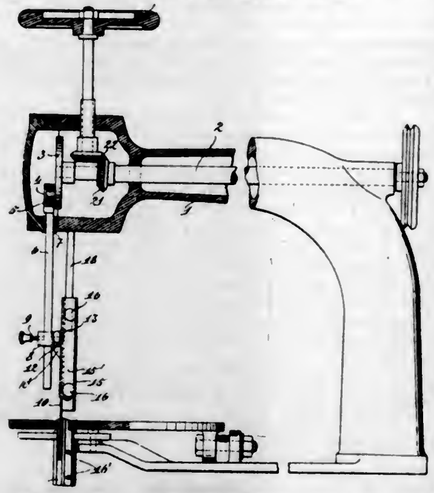
3. In a smoke-consuming furnace, a depending baffler provided with channels running through the same from front to rear, and frangible plugs of fire-resisting material for closing each of said channels.

4. In a smoke-consuming furnace, a depending baffler so arranged as to force the products of combustion to pass below the same, and a fire-bridge arranged in the rear of said baffler and provided with channels D for drawing products of combustion from the lower part of the fire-box.



5. In a smoke-consuming furnace, the combination with a baffler depending into the fire-box and provided with channels running from front to rear, of a tube or tubes arranged in front of the baffler provided with downward-extending openings, said tubes being connected with the outside of the furnace to permit the introduction of oxidizing or combustible material.

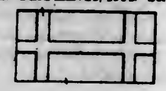
824,328. **SAWING-MACHINE.** DIKRAN ALEMIAN, Vienna, Austria-Hungary. Filed Dec. 6, 1904. Serial No. 235,723.



Claim.—1. A sawing-machine comprising saw-blades having projections at their upper ends and on the same edge as the teeth, a reciprocating rod, adjustable clamps thereon engaging said projection and guides having adjustable grooves therein for guiding said blades on the rear and on the sides.

2. A sawing-machine comprising saw-blades having projections at their upper ends and on the same edge as the teeth, a reciprocating rod, adjustable clamps thereon engaging said projection, an upper guide having adjustable grooves for guiding said saw-blades above the work-piece and a lower guide having adjustable grooves for guiding said saw-blades at their free ends below the work-piece, substantially as described.

824,329. **INTERLOCKING BRICK.** FRANKLIN P. ALLEN and JAMES M. SCHOFIELD, Stockton, Cal.; said Allen assignor to said Schofield, Stockton, Cal. Filed Mar. 21, 1904. Serial No. 199,167.



Claim.—1. The combination with a brick, having intersecting depressions extending from edge to edge of the brick on both sides thereof, of a key shaped to correspond to and fitting the depressions on the side of the brick, and projecting above the side thereof to engage the corresponding depressions on an adjacent brick.

2. In a building construction, the combination of a plurality of bricks, each brick being formed with depressions on both sides extending longitudinally of the brick from end to end thereof, and with a plurality of depressions on both sides extending transversely of the brick from edge to edge thereof, and keys conforming in shape to said longitudinal and said transverse depressions, said keys being of such thickness that they will extend into the depressions on two adjacent bricks.

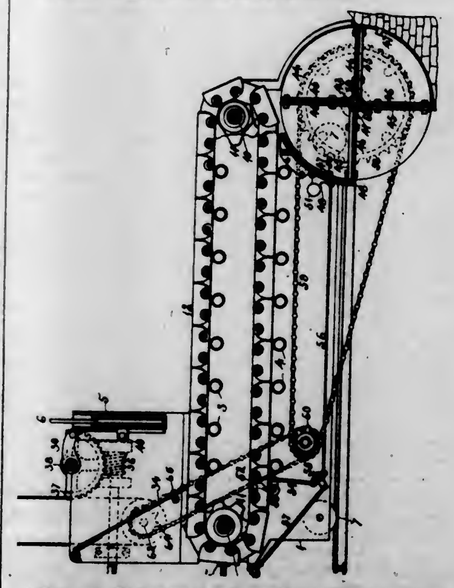
824,330. **DEVICE FOR FASTENING CABINET-HARDWARE.** CHARLES S. BARNARD, Bridgeport, Conn., assignor to The Burns, Silver and Company, Bridgeport, Conn., a Corporation of Connecticut. Filed Aug. 18, 1905. Serial No. 274,713.



Claim.—1. A device of the character described comprising a sheet-metal plate uniform in thickness at all points of its area and having a central opening to receive a bolt, and formed with a polygonal recess in one face surrounding the opening and having integral spurs projecting from the opposite face for the purpose described, the wall of the opening and the margin of the recess being continuous or unbroken, and the spurs being located outside the margin of the recess and opening to leave the continuity thereof uninterrupted.

2. The combination with a bolt having a polygonal head, of a sheet-metal plate uniform in thickness at all points of its area and having a central opening to receive the bolt, and formed with a polygonal recess in one face surrounding the opening and having integral spurs projecting from the opposite face for the purpose described, the wall of the opening and the margin of the recess being continuous or unbroken, and the spurs being located outside the margin of the recess and opening to leave the continuity thereof uninterrupted.

824,331. **CHAIN GRATE.** JOSEPH P. BARNES, Rockford, Ill., assignor to W. F. & John Barnes Company, Rockford, Ill., a Corporation of Illinois. Filed Nov. 16, 1903. Serial No. 181,454.



Claim.—1. The combination of a movable endless grate, a rotatable drum formed with receptacles, walls inclosing the drum on two

opposite sides leaving a section of the drum communicating with the fire-chamber and another section communicating with the ash-pit, and adjustable passage-ways through the drum forming a communication between the ash-pit and fire-chamber.

2. The combination of a movable endless grate, a rotatable drum formed with receptacles and located at the discharge end of the grate, a latch holding the drum at rest, connections between the latch and grate for releasing the latch, and frictional devices for rotating the drum.

3. The combination of a movable endless grate, a rotatable drum formed with receptacles and located at the discharge end of the grate, a latch holding the drum at rest, connections between the latch and grate for releasing the latch, a hand-lever for releasing the latch and means for rotating the drum.

4. The combination of a movable endless grate, a movable surface receiving ashes from the grate, means for moving the surface, a latch for holding the surface at rest and connections between the latch and grate for releasing the latch.

824,332. **GARMENT-CLASP.** HENRY H. BARNUM, Leonia, N. J. Filed Dec. 30, 1903. Serial No. 187,152.



Claim.—1. A garment-clasp comprising a loop and a tongue, the tongue being made of flexible material and having a relatively flat anchor of flexible material, said tongue and loop being connected so as to be normally parallel when in inoperative position, the anchor being of such proportions as to permit it to pass entirely through the loop, substantially as and for the purpose set forth.

2. A garment-clasp comprising a loop and a tongue, the tongue being made of flexible material and having a relatively flat anchor, said tongue and loop being connected so as to be normally parallel when in inoperative position, the anchor being composed of flexible material having a yielding surface and being of such proportions as to permit it to pass entirely through the loop, substantially as and for the purpose set forth.

3. A garment-clasp comprising a loop provided with an opening larger at its upper than at its lower portion and a tongue made of flexible material connected therewith so as to be normally parallel therewith when in inoperative position, the tongue having a relatively flat anchor, which anchor is composed of flexible material having a yielding surface and is of such proportions as to permit it to pass entirely through the loop, substantially as and for the purpose set forth.

4. A garment-clasp comprising a loop and a tongue so connected as to be normally parallel when in inoperative position, the tongue being made of flexible material and having an anchor at its end, which anchor has indentations at its point of meeting with the tongue and is of such proportions as to permit it to pass entirely through the loop; substantially as and for the purpose set forth.

5. A garment-clasp comprising a loop and a tongue so connected as to be normally parallel when in inoperative position, the tongue being made of flexible material and having a relatively flat anchor which is composed of flexible material and has indentations at its point of meeting with the tongue and is of such proportions as to permit it to pass entirely through the loop, substantially as and for the purpose set forth.

6. A garment-clasp comprising a loop of flexible material and a tongue so connected therewith as to be normally parallel therewith when in inoperative position, the tongue being made of flexible material and having a relatively flat anchor composed of flexible material and of such proportions as to permit it to pass entirely through the loop, substantially as and for the purpose set forth.

7. A garment-clasp comprising a loop of flexible material and a tongue so connected therewith as to be normally parallel therewith when in inoperative position, the tongue being made of flexible material and having a relatively flat anchor composed of flexible material having a yielding surface, the anchor being of such proportions as to permit it to pass entirely through the loop, substantially as and for the purpose set forth.

8. A garment-clasp comprising a loop of flexible material provided with an opening larger at its upper than at its lower portion and a tongue so connected therewith as to be normally parallel therewith when in inoperative position, the tongue being made of flexible material and having a relatively flat anchor, which anchor is composed of flexible material and is of such proportions as to permit it to pass entirely through the loop, substantially as and for the purpose set forth.

9. A garment-clasp comprising a loop of flexible material provided with an opening larger at its upper than at its lower portion and a tongue so connected therewith as to be normally parallel therewith when in inoperative position, the tongue being made of flexible material and having a relatively flat anchor, which anchor is composed of flexible material having a yielding surface and is of such proportions as to permit it to pass entirely through the loop, substantially as and for the purpose set forth.

10. A garment-clasp comprising a loop and a tapering tongue of flexible material so connected as to be normally parallel when in inoperative position, the tongue having at its narrower end a relatively flat anchor composed of material having a yielding surface and of such proportions as to permit it to pass entirely through the loop, substantially as and for the purpose set forth.

11. A garment-clasp comprising a loop provided with an opening larger at its upper than at its lower portion and a tapering tongue of flexible material so connected therewith as to be normally parallel therewith when in inoperative position, said tongue having at its narrower end a relatively flat anchor, which anchor is composed of material having a yielding surface and is of such proportions as to enable it to pass entirely through the loop, substantially as and for the purpose set forth.

12. A garment-clasp comprising a loop and a tapering tongue of flexible material so connected therewith as to be normally parallel therewith when in inoperative position, said tongue having at its narrower end a relatively flat anchor composed of flexible material having a yielding surface, the anchor being of such proportions as to permit it to pass entirely through the loop, substantially as and for the purpose set forth.

13. A garment-clasp comprising a loop and a tongue of flexible material so connected therewith as to be normally parallel therewith when in inoperative position, said tongue having an anchor of such proportions as to permit it to pass entirely through a loop, that portion of the tongue where it meets the anchor being more flexible than the body of the tongue.

14. A garment-clasp comprising a loop and a tapering tongue of flexible material so connected therewith as to be normally parallel therewith when in inoperative position, said tongue having at its narrower end an anchor of such proportions as to permit it to pass entirely through the loop, that portion of the tongue where it meets the anchor being more flexible than the body of the tongue.

15. A garment-clasp comprising a flexible loop, a tongue, normally parallel to said loop and made of flexible material, having a relatively flat anchor of flexible material, said tongue and loop being connected, the anchor being of such proportions as to permit it to pass entirely through the loop, and said clasp being provided with means adjacent the connected ends of the tongue and loop whereby it may be connected with a suspending-strap, substantially as described.

824,333. **DEVICE FOR FASTENING CABINET-HARDWARE.** EDGAR W. BASSICK, Bridgeport, Conn., assignor to The Burns, Silver and Company, Bridgeport, Conn., a Corporation of Connecticut. Filed Aug. 16, 1905. Serial No. 274,410.

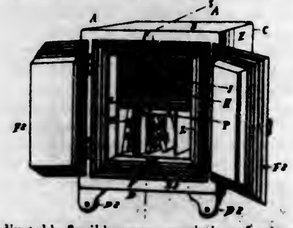


Claim.—The combination with a screw having a head flat on the under side and having wings projecting from its side adjacent to the head, of a flat plate having an opening for the screw and slots to engage said wings and provided with an integral arm having a lug adapted to be driven into woodwork.

824,334. **FLEXIBLE DOOR AND SHUTTER AND CERTAIN CONNECTIONS THEREFOR.** JACOB BAUM, Cincinnati, Ohio. Filed Dec. 21, 1903. Serial No. 186,048.

Claim.—1. An adjustable flexible screen consisting of pairs of barrels or cylinders, each pair consisting of a cylinder J^3 and a cylinder J^4, united by a curved intermediate portion, the inner end of each cylinder being separate from the cylinder itself, and adapted to be interlocked with the adjacent cylinder of a similar link, substantially as and for the purposes specified.

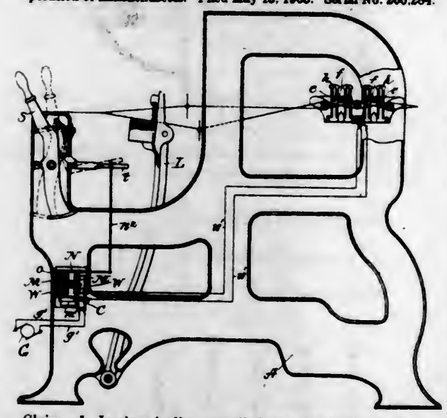
2. An adjustable flexible screen consisting of pairs of barrels or cylinders, each pair consisting of two cylinders united by a curved intermediate portion, the inner end of each cylinder being separate from the cylinder itself, and bent inward, each cylinder adapted to be interlocked with the adjacent cylinder of a similar link, substantially as and for the purposes specified.



3. An adjustable flexible screen consisting of pairs of barrels or cylinders, each pair consisting of a cylinder J^3 and a cylinder J^4, united by a curved intermediate portion, the inner ends of the cylinders being separate from the cylinders themselves, and adapted to be interlocked with the adjacent barrel of a similar link, the lower cylinder J^4 of the screen being provided with a handle P having eyes P^1, P^2, located within said cylinder, and the rod P^3 passing through said cylinder, and held in position within the screen, substantially as and for the purposes specified.

4. In an adjustable flexible screen, a link consisting of two barrels or cylinders, one J^3 and the other J^4, united at J^5, the one cylinder beginning where the other ends, the inner end of each cylinder being free, cylinders of adjacent links being capable of being joined together, substantially as and for the purposes specified.

824,335. **STOP MECHANISM FOR LOOMS.** JOHN W. BRIDGE, Methuen, Mass., assignor to Arlington Mills, Lawrence, Mass., a Corporation of Massachusetts. Filed May 13, 1905. Serial No. 260,284.



Claim.—1. In electrically-controlled stop mechanism for looms, a shunt-circuit from the electrical source, for each loom to be controlled, a magnet in each shunt-circuit, and an armature for each magnet, which is connected with and controls the operative relation of the parts of the stop mechanism of its loom.

2. In electrically-controlled stop mechanism for looms, a series of magnets connected in multiple with the electrical source, one magnet of the series for each loom to be controlled, and an armature for each magnet connected with and adapted to control the operative relation of one part of the stop mechanism to the other, in that loom.

3. In electrically-controlled stop mechanism for looms, a shunt-circuit from the electrical source, for each loom, a magnet in each shunt-circuit, an armature for each magnet which retains the parts of the stop mechanism out of operative relation, while its circuit is closed, and a cut-out in each shunt-circuit which is controlled by warp-stop mechanism in the loom.

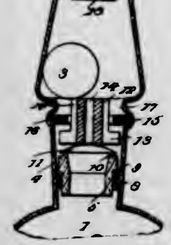
4. In electrically-controlled stop mechanism for looms, a shunt-circuit from the electrical source, for each loom, a magnet in each shunt-circuit, an armature for each magnet which is connected with and controls an operative part of the stop mechanism, a cut-out in each of said shunt-circuits, a series of warp-supported drop-bars, a second magnet for each loom in a normally open circuit, which is closed by the fall of a drop-bar, and an armature for the second magnet which operates the cut-out in the shunt-circuit of the stop mechanism control-magnet of the loom.

5. In electrically-controlled stop mechanism for looms, provided with warp-supported drop-bars and main circuit-conductors, an electromagnet and armature therefor the respective poles of which magnet are connected with a contact-rod of the warp-supported drop-bars, one directly and the other through a main electric conductor, another magnet in circuit with the main conductors, one pole connected directly with one conductor and the other pole with the other conductor through a contact carried by the armature of the magnet in the drop-bar circuit.

6. In electrically-controlled stop mechanism for looms, provided with main current-conductors and warp-supported drop-bars, a magnet normally in circuit with the main current-conductors, an armature for the magnet which retains the parts of the stop mechanism out of operative relation, while the circuit is closed, a second magnet in shunt-circuit connected directly with one contact-rod of the warp-supported drop-bars and indirectly through a main conductor with another contact-rod, and an armature for the second magnet which carries a cut-out for the circuit of the first magnet.

7. In a stop mechanism for looms provided with main current-conductors and warp-controlled detecters, a magnet normally in closed circuit with main current-conductors, an armature for the magnet which controls the operative relation of the parts of the stop mechanism of the loom, a second magnet one pole of which is in circuit with one contact-rod of the warp-controlled detectors, and the other pole with another contact-rod through a main conductor, a cut-out for the circuit of the first magnet, and an armature for the second magnet which carries and operates the cut-out.

824,336. **NON-REFILLABLE BOTTLE.** PETER A. BROCK, Jersey City, N. J., assignor to Standard Bottle Company, a Corporation of New Jersey. Filed Feb. 20, 1906. Serial No. 302,083.



Claim.—1. In a bottle or like receptacle having a neck provided with a valve-seat, a valve located in the neck thereof and adapted to close downward upon the seat, a float-piece coöperating with said valve and adapted to be buoyed upward upon inverting the bottle and immersing the same in a liquid to hold the valve seated and prevent passage of the liquid thereby into the bottle, and retaining means coöperating with the float-piece to prevent outward displacement thereof when the bottle is inverted.

2. In a bottle or like necked receptacle having a groove upon the inner side of the neck some distance from the inner end thereof, a valve and coöperating seat located within the inner end of the neck below the inner groove thereof, a float-piece adapted to be buoyed upward to hold the valve seated upon inverting the bottle and immersing the same in a liquid, and retaining means coöperating with the float-piece and inner groove of the neck to prevent displacement of the float-piece when the bottle is inverted.

3. In a bottle or like necked receptacle having a groove upon the inner side of the neck some distance from the inner end thereof, a valve and coöperating seat located within the inner end of the neck below the inner groove thereof, a float-piece adapted to be buoyed upward to hold the valve seated upon inverting the bottle and immersing the same in a liquid, said float-piece having an outer flange

and provided in its sides with grooves or channels, and a retainer sprung into the grooved portion of the neck and overhanging the flange of the float-piece to prevent displacement of the latter upon inverting the bottle.

4. In a bottle or like receptacle having a neck provided intermediate of its ends with a tapered portion forming a chamber whose inner walls incline, a valve and seat therefor arranged within the inner end portion of the neck, a ball-weight located in the tapered chambered portion of the neck and normally exerting a pressure to hold the valve seated when the bottle is in an upright position or tilted from such upright position, to a point below the horizontal, valve-retaining means arranged within the neck between the valve and the ball-weight and a guard secured within the outer end of the neck to prevent tampering with the ball-weight or valve mechanism.

5. In a bottle or like receptacle having a neck provided with a valve-seat, a valve located in the neck thereof and adapted to close down upon the seat, a float-piece coöperating with said valve, and retaining means for preventing displacement of the said valve and float-piece.

6. In a bottle or like receptacle having a neck provided with a valve-seat, a valve located in the neck thereof and adapted to close down upon the seat, a float-piece coöperating with said valve, and retaining means for limiting the movement of the float-piece and valve.

7. In a bottle or like receptacle having a neck provided with a valve-seat, a valve located in the neck thereof and adapted to close down upon the seat, a float-piece coöperating with said valve, and retaining means for limiting the movement of the float-piece and valve and preventing their displacement.

8. In a bottle or like receptacle provided with a neck having a valve-seat, the combination of a downwardly-closing valve, a float-piece, a weight adapted to insure the continuous seating of the valve in all positions of the bottle from the vertical to a point of tilting beyond the horizontal, and means for limiting the outward movement of said float-piece and arranged intermediate of the weight and said valve.

9. In a bottle or like receptacle provided with a valve-seat, the combination of a valve arranged to close downward upon said seat, a float-piece having its inner end provided with an outer flange, retaining means for limiting the outward movement of the float-piece by coöperating with the flanged end thereof, and a ball-weight adapted to coöperate with the float-piece to insure the continued seating of the valve in all positions of the bottle from the vertical to the point of tilting beyond the horizontal.

10. In a bottle or like receptacle provided with a valve-seat, the combination of a downwardly-closing valve having a tilting edge, a float-piece for transmitting pressure to the valve and adapted to limit its tilting movement, retaining means for the float-piece, and a ball-weight adapted to insure a continued seating of the valve through the float-piece in all positions of the bottle from the vertical to a point of tilting beyond the horizontal.

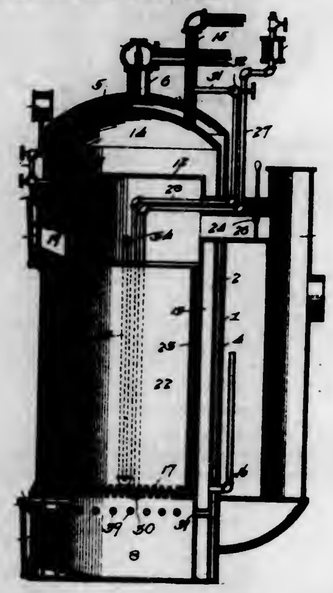
824,337. GAS-GENERATING FURNACE. CHARLES A. BUSSELL, Newburyport, Mass. Filed July 10, 1905. Serial No. 269,050.

Claim.—1. In a gas-generating furnace, a furnace-body having a steam-generating chamber, an interior fire-chamber provided with a bottom fuel-grate and having gas-escape ports below the grate, an oil-feed pipe extending through the fire-chamber and having a delivery-port beneath the grate, and a steam-feed pipe arranged to deliver steam under pressure into the fire-chamber above the fire-bed therein.

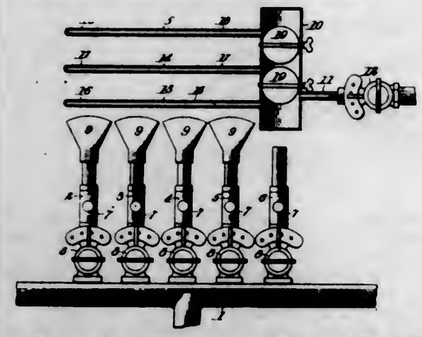
2. In a gas-generating furnace, the furnace-body having a steam-generating chamber, a fire-chamber, and a mixing-chamber below the fuel-grate of the fire-chamber, said mixing-chamber having gas-escape ports, means for discharging oil in gaseous form beneath the grate, and means for passing steam under pressure downward through the fired fuel and through the grate into the mixing-chamber.

3. In a gas-generating furnace, a furnace-body having an enveloping gas-jacket provided with an outlet connection, an interior fire-chamber spaced from the jacket to provide an intervening water-jacket opening at the top into a steam-chamber, said furnace-body being further provided below the grate with a mixing-chamber having ports communicating with said jacket, an oil-pipe arranged to discharge oil-gas into the mixing-chamber, and a steam-pipe in communication with the steam-chamber and also with the fire-chamber above the fire-line in the latter.

4. In a gas-generating furnace, the furnace-body having inner and outer spaced casing-walls inclosing therebetween a gas-circulating jacket having an outlet connection at the top, an interior fire-chamber having gas-tight closures and spaced from the inner casing-wall to provide an intervening water-jacket communicating at the top of the steam-chamber and having a steam-outlet connection, said furnace-body being further provided below the grate-line with a combined ash-pit and mixing-chamber having gas-tight closures and also having gas-ports in communication with said gas-circulating jacket, an oil-feed pipe arranged to discharge oil-gas into said ash-pit and mixing-chamber, and a steam-feed pipe arranged to deliver steam in the fire-chamber above the fire.



824,338. GAS HEATING APPARATUS. AUGUSTUS C. CAREY, Boston, Mass. Filed May 23, 1903. Serial No. 158,363.



Claim.—1. In an apparatus for producing heat, the combination of a tank or vessel and a water-supply therefor, a burner for heating said tank, a tube projecting from and communicating with the steam-space of said tank and provided with a series of openings, and a series of burners of increasing heating power arranged in proximity to said tube to heat the same to a gradually-increasing temperature from the tank toward its end, whereby the steam as it enters and progresses through the tube is successively decomposed, highly heated and expanded and dissociated, and then expelled from said tube into the flames of the burners.

2. In an apparatus for producing heat, the combination of a tank or vessel and a water-supply therefor, a burner for heating the same to produce steam therein, a series of perforated tubes projecting from and communicating with the steam-space of said tank and arranged one above the other in a substantially vertical plane, and a series of burners of successively-increasing heating power arranged in proximity to the lowermost of said tubes and adapted to heat the said tubes to a gradually-increasing temperature from the tank toward their ends, substantially as and for the purpose described.

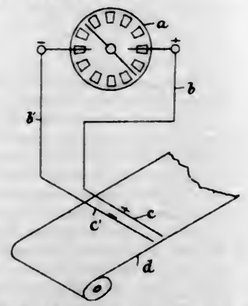
3. In an apparatus for producing heat, the combination of a tank and a water-supply therefor, a burner for heating said tank to produce steam therein, a perforated tube projecting from and communicating with the steam-space of said tank, a series of burners of increasing heating power arranged in proximity to and in line with said tube to heat the same to a gradually-increasing temperature from the tank toward its end, a fuel-supply for said burners, means for controlling the supply of water to said tank, and means for regulating the heating power of said burners.

4. In an apparatus for producing heat, the combination of a tank and a water-supply therefor, a burner for heating said tank to produce steam therein, a perforated tube projecting from and communicating with the steam-space of said tank, a series of burners arranged in proximity to and in line with said tube to heat the same to a gradually-increasing temperature from the tank toward its end, a supply for said burners, and indexed stop-cocks for controlling and regulating the supply to said tank and burners.

5. In an apparatus for producing heat, the combination of a tank or vessel, a water-supply therefor, a burner for heating said tank to produce steam therein, a series of perforated tubes projecting from and communicating with the steam-space of said tank and arranged one above the other in a substantially vertical plane, a series of burners arranged in proximity to and in line with the lowermost tube and adapted to heat the tubes, and means for cutting out one or more of said tubes from communication with the steam-space of said tank.

6. In an apparatus for producing heat, the combination of a tank or vessel, a water-supply therefor, a burner for heating said tank for producing steam therein, a series of perforated tubes projecting from and communicating with the steam-space of said tank and arranged one above the other in a substantially vertical plane, a series of burners arranged in proximity to and in line with the lowermost tube and adapted to heat the tubes, and a series of movable diaphragms arranged in said tank between the entrances to said tubes, whereby the steam may be cut off from one or more of said tubes.

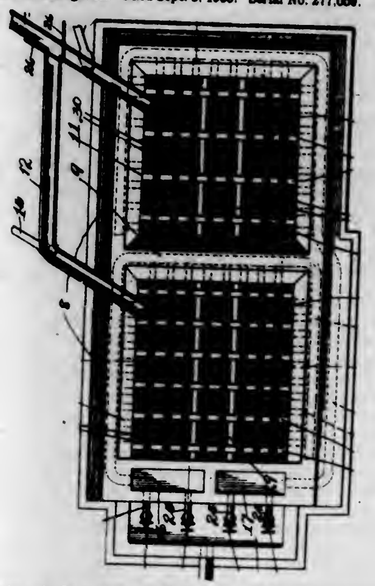
824,339. PROCESS OF REMOVING STATIC ELECTRICITY. WILLIAM H. CHAPMAN, Portland, Me., assignor to Chapman Electric Neutralizer Company, Portland, Me., a Corporation of Maine. Filed Nov. 7, 1904. Serial No. 231,686.



Claim.—1. The herein-described process of neutralizing static electricity on a given surface by charging a pair of conductors presenting small surfaces or projecting points to the air, one with a charge of positive and the other with a charge of negative electricity of high voltage and constant polarity and located so that a given point on the surface to be treated may be brought within the range of convective discharge of both conductors at the same time and sufficiently far apart to maintain opposing charges and bringing the surface to be neutralized simultaneously within the active influence of both conductors.

2. The herein-described process of neutralizing static electricity on a given surface by charging a pair of wires, one with a charge of positive and the other with a charge of negative electricity of high voltage and constant polarity and located so that a given point on the surface to be treated may be brought within the range of convective discharge of both wires at the same time and sufficiently far apart to maintain opposing charges and bringing the surface to be neutralized simultaneously within the active influence of both wires.

824,340. SLAG-GRANULATING APPARATUS. EUGENE B. CLARK, Chicago, Ill. Filed Sept. 5, 1905. Serial No. 277,059.



Claim.—1. In a slag-granulating apparatus, the combination with a tank, and means for feeding mixed slag and water thereto, of means for regulating the height of water in said tank during the granulating operation, a filter-bed in said tank, means for preventing the water in said tank from falling below a minimum fixed level above said filter-bed, and means for discharging the water in said tank down to said level through said filter-bed, substantially as described.

2. In a slag-granulating apparatus, the combination with a tank and means for feeding mixed slag and water thereto, of a chamber adjacent to said tank, a filter-bed in the bottom of said tank, passages connecting the lower part of said tank with the lower part of said chamber, and discharge-pipes opening out of said chamber at different heights, the lowest of said discharge-pipes being above the top of said filter-bed.

3. In a slag-granulating apparatus, the combination with a tank, and means for feeding mixed slag and water thereto, of a chamber adjacent to said tank and of substantially the same height therewith, connections between said tank and said chamber, a filter-bed in the bottom of said tank, and discharge-pipes from said chamber at different heights, the lowest of such discharge-pipes being located a short distance above the top of the filter-bed, substantially as described.

4. In a slag-granulating apparatus, the combination with a tank, and means for feeding mixed slag and water thereto, of a chamber adjacent to said tank and of substantially the same height therewith, connections between said tank and said chamber, a filter-bed in the bottom of said tank, discharge-pipes from said chamber at different heights the lowest of such discharge-pipes being located a short distance above the top of the filter-bed, and an external chamber into which said pipes discharge, substantially as described.

824,341. BOTTLE-STOPPER. AUGUST W. CORDES, New York, N. Y. Filed Dec. 13, 1905. Serial No. 291,546.



Claim.—1. A stopper comprising a cap having depending fingers and a clamping-ring embracing said fingers and having parts

coöperating with the cap whereby the ring will move axially when rotated with respect to the cap in combination with a bottle having a shoulder with which said fingers are caused to engage by the axial movement of the ring.

2. A stopper comprising a cap having depending fingers with exterior and interior cam-surfaces, and a clamping-ring having parts coöperating with the cap and adapting it to move axially when rotated and to engage said exterior cam-surfaces.

3. A stopper comprising a cap having depending fingers with interior cam-surfaces adapted to engage a bead upon a bottle, a clamping-ring having parts coöperating with the cap whereby the ring will when rotated move downward upon the fingers to engage them in locked relation with the bottle.

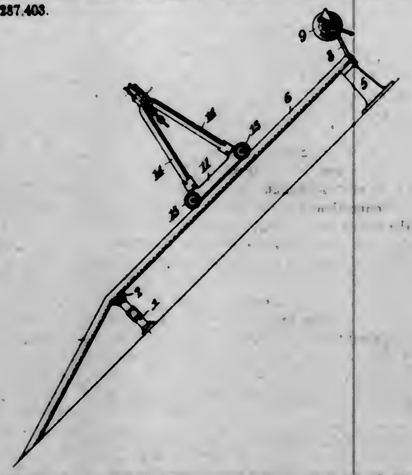
4. A stopper comprising a cap having depending fingers with exterior and interior cam-surfaces, and a clamping-ring having a lower peripheral edge engaging said exterior cam-surfaces, and having cam-inclines on its upper edge adapted to engage with the cap whereby it is forced axially into clamping relation when turned.

5. A stopper comprising a cap having depending fingers with exterior and interior cam-surfaces, and a clamping-ring having inclines on its upper edge adapted to engage with the cap and having a beaded central portion adapted to be forced downward upon said exterior cam-surfaces by a circumferential movement of the ring with respect to the cap.

6. A bottle or jar having an annular exterior shoulder near its mouth in combination with a stopper comprising a cap having depending fingers and having a plurality of lugs or projections on its exterior surface, and a clamping-ring having inclines adapted to engage said lugs or projections to force the ring axially and move the fingers inward to engage said shoulder on the bottle.

7. A stopper comprising a cap having depending fingers embossed with strengthening protuberances, and having exterior and interior cam-surfaces, and a beaded clamping-ring having cam-inclines coöperating with the cap by which it is forced axially when turned so as to engage the exterior cam-surfaces and force the fingers inward.

824,342. **PORTABLE TRAVELING CRANE.** GEORGE R. CULLINGWORTH, Mount Vernon, N. Y. Filed Nov. 15, 1905. Serial No. 287,403.



Claim.—1. A portable crane comprising a pair of channel-beams adapted to receive the wheels of an automobile, carriages having flanged rollers guided by the outside flanges of said beams, and a crane supported from said carriages.

2. A portable crane comprising a pair of guiding-beams, inclined ways or guides therefor, a windlass, and a traveling crane moving on said guiding-beams and arranged to move over an automobile placed on said beams.

3. A portable crane comprising a base, a pair of uprights, a pair of guiding-beams supported between said base and said uprights, inclined ways for said beams, and a traveling crane arranged to move on said beams, said crane being capable of movement past a vehicle resting upon said beams.

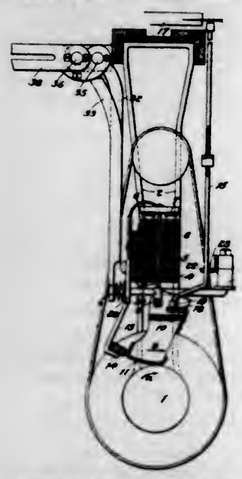
4. The combination of two channel-beams, a portion of which are bent to form an inclined way, a crane thereon, suitable supports for the channel-beams, and a windlass, said crane being capable of movement past a vehicle resting on said beams.

5. In a portable crane, a base, a pair of uprights formed of gas-pipe, a cross-brace of gas-pipe, pipe-couplings for connecting said parts, a pair of channel-irons resting on said base and uprights, inclined ways or guides therefor, and a traveling crane having flanged rollers moving on the flanges of said channel-beams.

6. In a portable crane, a pair of channel-beams, a pair of carriages having flanged rollers guided to move on the flanges of said beams, lugs on said carriages, a pair of inclined struts bolted to said lugs, a beam connecting said struts, and a hoisting-tackle depending from said beam.

7. In a portable crane, a base, a pair of uprights formed of gas-pipe, channel-beams connecting said parts, inclined ways or guides for said channel-beams, a pair of carriages having flanged rollers moving on the flanges of said beams, inclined struts supported by said carriages, a trolley-beam connecting said struts, and a hoisting-tackle depending from said trolley-beam.

824,343. **EXPRESSION MECHANISM FOR MECHANICALLY-OPERATED MUSICAL INSTRUMENTS.** GEORGE H. DAVIS, West Orange, N. J. Filed Jan. 30, 1904. Serial No. 191,387.



Claim.—1. A piano having an expression-controlling device for varying the action of the piano-hammers, said device embodying a flexible bar arranged transversely with respect to the piano-strings, and an operating element having a connection with said bar for flexing the latter intermediate its ends, for the purpose specified.

2. A piano having expression-controlling means for varying the action of the sound-producing devices, said means embodying a flexible bar arranged transversely with respect to the piano-strings, and a manually-operable element having a connection with said bar at a point intermediate its ends, whereby the bar may be flexed at the will of the operator for the purpose specified.

3. A piano having expression-controlling means for varying the action of the sound-producing device, said means comprising flexibly-connected bar-sections arranged end to end and situated transversely with respect to the piano-strings, and a manually-operable element having a connection with the adjacent ends of the bar-sections for flexing the latter of said ends, for the purpose specified.

4. A piano-playing attachment having an expression-controlling device for varying the action of the piano-hammers, said device embodying a flexible bar arranged transversely with respect to the hammer-actuating devices, and a manually-controlled lever having an operative connection with the bar at a point intermediate its ends, substantially as and for the purpose specified.

5. A piano-playing attachment, having means for actuating the piano-hammers, and an expression-controlling device for varying to different extents the action of adjacent hammers, said device comprising a flexible bar arranged transversely with respect to the hammer-actuating means, and an operating element having a connection with said bar for flexing the latter intermediate its ends.

6. A piano-playing attachment, having expression-controlling means for varying the action of the sound-producing devices, said means embodying two connected bar-sections arranged end to end and extending transversely with respect to the said devices, a manually-controlled operating element having a connection with the said bar-sections at the connected ends thereof, and two other manually-controlled operating elements, one having a connection with the free end of one of the bar-sections and the other having a connection with the free end of the other bar-section.

7. In music-playing mechanism, an actuating element, a blade-spring carried thereby and having a fixed and a free end, a striker-rod for actuating a sound-producing device, having its lower end resting upon and movable over the face of said spring, and means for moving said lower end of the striker-rod to and from the fixed end of the spring.

8. In music-playing mechanism, a pivoted actuating device, a blade-spring carried by said device and having a fixed and a free end, a striker-rod having its lower end supported upon and movable over the face of said spring, and means for shifting the position of the said end of said rod relatively to the fixed end of the spring.

9. In music-playing mechanism, a rotary drum, a pivoted friction-shoe, means controlled by a perforated music-sheet for moving said shoe into and out of contact with the drum, a blade-spring having a fixed and a free end carried by said shoe, a striker-rod resting at one end upon said spring, and means for moving the said end of the striker-rod back and forth over the spring, for the purpose specified.

10. In music-playing mechanism, an actuating device having a grooved way, a spring-blade located in said groove, a striker-rod having one end resting upon said spring, and means for moving the rod back and forth over the spring for the purpose specified.

11. In music-playing mechanism, a rotary drum, a pivoted friction-shoe having a grooved upper end, means for throwing the shoe into and out of contact with the drum, a striker-rod having one end movable back and forth in said groove and means for moving said rod as described for the purpose set forth.

12. In music-playing mechanism, a rotary drum, a pivoted friction-shoe having a grooved way in its upper end, a blade-spring located in said groove above the bottom thereof, a striker-rod resting at one end upon said spring, and means for moving the said end of the rod back and forth over the spring for the purpose specified.

13. In a music-playing attachment, the combination with a rotary drum, of a friction-shoe adapted to be brought into and out of contact with the drum, and means operated by the shoe for actuating a sound-producing device, the lower end of said means resting upon and movable relatively to the shoe to vary the force of the blow imparted to the sound-producing device.

14. In a music-playing attachment, the combination with a rotary drum, of a friction-shoe adapted to be brought into and out of contact with the drum, and a striker-rod actuated by the shoe for operating a sound-producing device of the musical instrument, the lower end of said striker-rod resting upon and movable relatively to the shoe to vary the force of the blow upon the sound-producing device.

15. In a music-playing attachment, the combination with a rotary drum, of a friction-shoe adapted to be brought into and out of contact with the drum, a striker-rod actuated by the shoe for operating a sound-producing device of the musical instrument, the lower end of said striker-rod resting upon and movable relatively to the shoe to vary the force of the blow upon the sound-producing device and means for shifting the said end of the striker-rod.

16. In a music-playing attachment, the combination with a rotary drum, of a pivoted friction-shoe adapted to be thrown into and out of contact with the drum, and a striker-rod actuated by the shoe, the lower end of said rod supported by and shiftable toward and from the pivotal point of the shoe for the purpose specified.

17. In a music-playing attachment, the combination with a rotary drum, of a pivoted friction-shoe adapted to be thrown into and out of contact with the drum, a striker-rod actuated by said shoe and having a movable contact therewith at its lower end, and means for moving the said end of the striker-rod toward and from the pivotal point of the shoe.

18. In a music-playing attachment, the combination with a rotary drum, of a pivoted friction-shoe adapted to be thrown into and out of contact with the drum, a striker-rod having one end disconnected from but movable over the shoe toward and from the pivotal point thereof, and means for moving the said striker-rod.

19. In a music-playing attachment, the combination with a rotary drum, of a pivoted friction-shoe arranged to be thrown into and out of contact with the drum, the upper end of said shoe being channeled, a striker-rod having its lower end disposed within the channel in the shoe, and means for moving the striker-rod toward and from the pivotal point of the shoe.

20. In a musical instrument, the combination with the sound-producing devices, of a sectional bar arranged transversely with respect to said devices and connected to control the action thereof, and a manually-operable lever having operative connections with two adjacent ends of the bar-sections, whereby the position of rest of said ends may be simultaneously shifted to cause the bar-sections to co-operate with the sound-producing devices, to produce tone effects graduated in tone volume from the middle of the keyboard toward the treble and the bass.

21. In a music-playing attachment, the combination with a rotary drum, of a series of pivotal friction-shoes adapted to be thrown into and out of contact with the drum, a bodily-movable bar or support, a series of striker-rods resting at their lower ends upon and operable from the shoes and each passing through an aperture in said support, and means for bodily moving the support to bring the said lower ends of the striker-rods to and from the pivotal points of the shoes

22. In an automatically-operated piano, the combination with the sound-producing devices, of means for varying the action of a series of said devices in the middle range of the piano, the extent of the action differing progressively on the different devices of the series both toward the treble and the base, and a manually-operable controlling device for actuating said means.

23. In music-playing mechanism, a plurality of actuating elements, a flexible bar, a series of striker-rods operable by said elements and each having a connection with said bar, and means for flexing the bar to shift the position of rest of some of said striker-rods relatively to others.

24. In music-playing mechanism, a plurality of actuating elements, a flexible bar, a series of striker-rods operable by said elements and each having a connection with said bar, and means for flexing the bar at a point intermediate its ends whereby to shift the position of rest of some of said striker-rods relatively to others.

25. In music-playing mechanism, a plurality of actuating elements, a bar comprising hinged sections arranged end to end, a series of striker-rods operable by said elements and each having a connection with said bar, and means for moving one section of the bar independent of the other.

26. In music-playing mechanism, a plurality of actuating elements, a bar comprising hinged sections arranged end to end, a series of striker-rods operable by said elements, and each having a connection with said bar, and means for moving the adjacent hinged ends of said bar-sections toward and from the actuating elements.

27. In music-playing mechanism, a plurality of actuating elements, a bar comprising hinged sections, a series of striker-rods operable by said elements and each passing through an aperture in said bar, and means for moving one section of the bar independently of the other.

28. In music-playing mechanism, a plurality of actuating elements, a bar comprising hinged sections, a series of striker-rods operable by said elements and each passing through an aperture in said bar, and means for moving one section of the bar independently of and at an angle to the other.

29. In music-playing mechanism, a plurality of actuating elements, a bar comprising hinged sections, a series of striker-rods operable by said elements and each passing through an aperture in said bar, and means for moving the inner hinged ends of said bar-sections to and from the actuating elements.

30. In music-playing mechanism, the combination with a rotary drum, of a series of friction-shoes adapted to be thrown into and out of contact with said drum, a bar comprising independently-movable hinged sections arranged end to end, a series of striker-rods operable by the shoes and each passing through an aperture in said bar, and means for moving one section of the bar independently of the other to change the position of the striker-rods passing through said section relatively to the shoes.

31. In music-playing mechanism, the combination with a rotary drum, of a series of friction-shoes adapted to be thrown into and out of contact with the drum, a sectional bar, a series of striker-rods operable by the shoes and each passing through an aperture in the said sectional bar, separate rock-shafts having independent connections with said sections of the bar, and means for rocking one of said shafts independent of the others to move a section of the bar and the striker-rods carried thereby relatively to the shoes.

32. In music-playing mechanism, the combination with a rotary drum, of a series of pivoted friction-shoes adapted to be thrown into and out of contact with said drum, a bodily-movable bar, a series

of striker-rods operable by and having their lower ends in contact with the shoes and each passing through an aperture in said bar, and means for moving one end of the bar and the lower end of the striker-rods toward or from the pivoted points of the shoes.

33. In music-playing mechanism the combination with a rotary drum, of a series of pivoted friction-shoes adapted to be thrown into and out of contact with the drum, a bodily-movable bar, a series of striker-rods operable by and having their lower ends in contact with the shoes and each passing through an aperture in said bar and means under the control of the operator for moving either end of the bar to shift the position of the lower ends of the striker-rods relatively to the pivotal point of the shoes.

34. In music-playing mechanism, the combination with a rotary drum, of a series of pivoted friction-shoes adapted to be thrown into and out of contact with the drum, a bodily-movable bar, a series of striker-rods operable by and having their lower ends in contact with the shoes and each passing through an aperture in said bar, rock-shafts having connections with said bar and means for rocking said shafts to move the bar and the lower ends of the striker-rods toward and from the pivotal point of the shoes.

35. A musical instrument having a keyboard, a plurality of actuating elements, a series of strikers operated thereby, a sectional bar having a connection with said strikers whereby the latter may be moved relatively to the actuating elements, and separate extensible arms, each having connection with the bar-sections, said arms being attached to the under side of the keyboard in such manner that they may be drawn out beyond the forward edge of the keyboard and may be pushed back under the same

36. In combination with a piano having a music-playing attachment, comprising a plurality of actuating elements, a series of strikers operated thereby and adapted to actuate the keys of the piano, a sectional bar having a connection with said strikers whereby the latter may be moved relatively to the actuating elements, separate extensible arms each having a connection with the bar, a key bearing a suitable character as described, on the outer end of each arm, said arms being slidably mounted under the keyboard of the piano in such manner that they may be drawn out to expose the keys or pushed back under the keyboard.

37. In music-playing mechanism, the combination with a plurality of actuating elements, of a series of strikers operated thereby, a sectional bar having a connection with said strikers whereby the latter may be moved relatively to the actuating elements, separate arms for operating the bar-sections, a device for simultaneously actuating all of said arms, and means under the control of the performer for operating said device.

38. In music-playing mechanism, the combination with a plurality of actuating elements, of a series of strikers operated thereby, a sectional bar having a connection with said strikers whereby the latter may be moved relatively to the actuating elements, separate arms having connections with the bar-sections, a device for simultaneously moving all said arms, and means under the control of the operator for actuating said device to depress and elevate the arms to different extents.

39. In music-playing mechanism, the combination with the sound-producing devices, of an expression-controlling means to vary to different extents the action of the individual devices, said means comprising a flexible bar arranged parallel to the sound-producing devices, and a manually-operable controlling device having an operative connection with said bar and when operated flexing the bar intermediate its ends.

40. A piano having a self-playing attachment, for actuating the piano-hammers, and an expression-controlling device for varying to different extents the action of adjacent hammers, said device comprising a flexible bar arranged transversely with respect to the piano-strings and normally parallel with their plane, separate levers for actuating different portions of said flexible bar, and means under the control of the performer for engaging and depressing all of said levers simultaneously whereby to move the bar bodily.

41. A piano having a self-playing attachment, and an expression-controlling device for varying the action of the piano-hammers, said device embodying a flexible bar arranged transversely with respect to the piano-strings, separate manually-controlled operating devices each having a connection with said flexible bar at a different point whereby the bar may be flexed, and a manually-operable element for actuating the said separate operating devices in unison whereby to move the flexible bar bodily in parallel planes.

42. The combination with the sound-producing elements of a musical instrument, of separate operating devices for varying the action of some of said elements independent of others, a rocker-arm overhanging all of said operating devices, and means under the control of the performer for rocking said arm to cause the latter to engage and simultaneously actuate all of said operating devices.

43. In automatic music-playing mechanism, the combination with the sound-producing devices, of two alined bar-sections connected to control the action of said devices, two rocker-arms each having a connection with the outer end of a bar-section, a third rocker-arm having a connection with the adjacent ends of the bar-sections, and a separate extensible lever having a connection with each arm, said levers being under the control of the performer.

44. The combination with the sound-producing devices of a musical instrument, of two alined bar-sections connected to control the action of said devices, two rocker-arms each having a connection with the outer ends of the bar-sections, a third rocker-arm having a connection with the adjacent ends of the bar-sections, and separate means under the control of the performer for independently actuating said rocker-arms.

45. Expression-controlling mechanism of the character described, comprising a flexible bar, separate manually-operable devices connected respectively to opposite ends of said bar and a third similar device operatively connected to the bar at a point intermediate its ends, for the purpose specified.

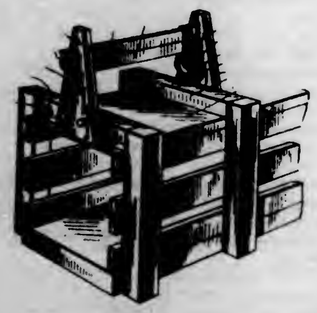
46. Expression-controlling mechanism of the character described, comprising flexibly-connected bar-sections arranged end to end, a separate manually-operable device having a connection with the free end of each bar-section, and a similar device operatively connected to the flexibly-united ends of the bar-sections.

47. Expression-controlling mechanism of the character described, comprising two pivotally-supported bar-sections arranged end to end and hinged together, a manually-operable device operatively connected to the adjacent hinged ends of the bar-sections whereby the latter may be swung on their pivots, and a similar device operably connected to the free end of each bar-section.

48. In combination with a piano, means coöperating with the sound-producing devices to produce different effects in the tone volume of individual adjacent devices throughout the whole range thereof, or separately in the bass, middle or treble ranges, and three depressible finger-keys operatively connected at different points to said means and representing respectively the bass, middle and treble ranges, said finger-keys being located at the front of the piano-keyboard and arranged closely adjacent to each other.

49. An automatically-operated piano having a keyboard, and the sound-producing devices, and an expression-controlling means to vary to different extents the action of the individual devices, said means comprising a flexible bar arranged parallel to the sound-producing devices, a plurality of arms pivoted to the under side of the piano-keyboard and having operative connections with said bar and when operated flexing the bar intermediate its ends, and a manually-operable extension member slidably connected to each arm, the arrangement being such that the free ends of the said extension members may be drawn out beyond the forward edge of the keyboard and may be pushed back under the same.

824,344. **EXTENSION-ARM FOR SCALES.** PHILIP J. DURBIN, Patton, Pa. Filed Feb. 7, 1906. Serial No. 299,951.



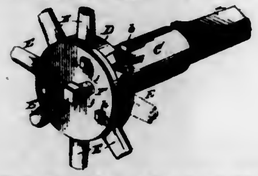
Claim.—1. In combination with a press-top, standards rising therefrom, a bar connecting said standards, an extension-arm adapted to have a longitudinal movement upon the upper edge of said bar and guided through a slot in one of said standards, as set forth.

2. In combination with a press-top, standards rising therefrom, a bar connecting said standards, an extension-arm adapted to have a longitudinal movement upon the upper edge of said bar and guided through a slot in one of said standards, bracket-arms secured to the inner end of said arm and projecting, one upon each side of said bar, and serving as guides, and means for holding said arm in contact with the upper edge of said bar, as set forth.

3. In combination with a press-top, standards rising therefrom, a bar connecting said standards, an extension-arm adapted to have a longitudinal movement upon the upper edge of said bar and guided through a slot in one of said standards, bracket-arms secured to the inner end of said arm and projecting, one upon each side of said bar, and serving as guides, and an antifriction-wheel carried by said bracket-arms and adapted to bear against the under edge of said bar, as set forth.

4. In combination with a press-top, standards rising therefrom, a bar connecting said standards, an extension-arm adapted to have a longitudinal movement upon the upper edge of said bar and guided through a slot in one of said standards, bracket-arms secured to the inner end of said arm and projecting, one upon each side of said bar, and serving as guides, an antifriction-wheel carried by said bracket-arms and adapted to bear against the under edge of said bar, said antifriction-wheel and bracket-arms adapted to contact against said standards to limit the throw of said arms in opposite directions, as set forth.

824,345. **VEHICLE-HUB.** MILO A. ELLIOTT, Waterville, Me. Filed Dec. 20, 1905. Serial No. 293,565.



Claim.—1. A vehicle-hub having radial sockets and spokes seated therein, a screw-threaded socket in the end of the hub, and a clamping-plate having a screw-threaded nipple to engage the screw-threaded socket, and a boss upon the outer side of the plate, said nipple and boss being integral with the plate, substantially as and for the purpose set forth.

2. An axle having a spindle with circumferential groove therein, a hub with sleeve located upon the spindle and a set-screw passing through the sleeve and engaging the groove in the spindle and an opening through the sleeve for lubricant, and a clamping-plate to hold the spokes between it and the hub and having a screw-nipple and a boss upon its opposite sides and integral with the plate as and for the purpose specified.

824,346. **TWIST-DRILL.** PERCY W. FAWCETT, Sheffield, England. Filed May 2, 1905. Serial No. 258,530.



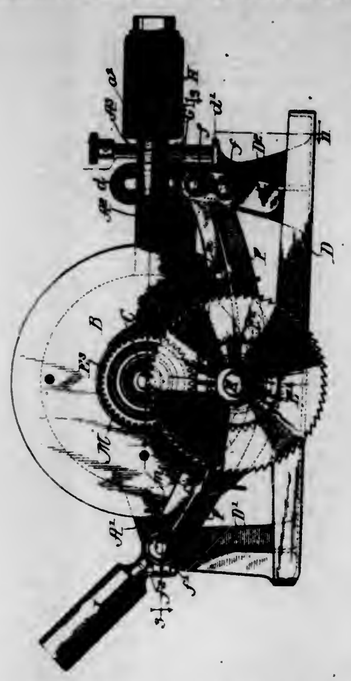
Claim.—A twist-drill with tapering shank, having the central portion of the shank reduced in diameter, as hereinbefore described and shown.

824,347. **MOTOR-DRIVEN TOOL.** NATHAN W. FLETCHER, Chicago Heights, Ill., assignor to Turbine Motor Tool Company, Chicago, Ill., a Corporation of Illinois. Filed Jan. 3, 1905. Serial No. 239,470.

Claim.—1. A portable tool comprising a base-plate provided with two standards, a turbine-motor, a rigid frame formed in part by the non-rotative part of said motor, said frame being pivoted to one of said standards and having adjustable connection with the other standard, and a tool-arbor which is driven by the motor and is mounted on said frame between said standards.

2. A portable tool comprising a base-plate provided with two standards, a turbine-motor, the non-rotative part of which is provided with oppositely-extending arms, one of which is pivoted to one of said standards and the other adjustably secured to the other standard, a bracket attached at its ends to the said non-rotative part of the motor and extending outside of the rotative part or wheel thereof, and a tool-arbor mounted in said bracket between the standards.

3. A portable tool comprising a base-plate provided with two standards, a turbine-motor, the non-rotative part of which is provided with oppositely-extending arms, a pivot-pin rigidly attached to one of said arms and adapted to turn in one of the standards, means for adjustably securing the other of said arms to the other standard, a bracket which extends across the non-rotative part of the motor outside of the rotative member thereof, said bracket being rigidly attached at one end to said pivot-pin and at its opposite end to the adjacent arm on the non-rotative part of the motor, and a tool-arbor mounted in said bracket between the ends of the same.



4. A portable tool comprising a base-plate provided with two standards, a turbine-motor, a rigid frame formed in part by the non-rotative part of said motor, said frame being pivoted to one of said standards and having adjustable connection with the other standard and embracing a bracket which extends outside of the rotative member of the motor, a tool-arbor mounted on said bracket between said standards and intermeshing gear-wheels on the rotative members of the motor and the adjacent end of said arbor.

5. A portable tool comprising a base-plate provided with two standards, a turbine-motor, the non-rotative part of which is provided with a lateral arm which is pivoted to one of said standards and with a second arm adjustably secured to the other standard, a bracket attached at its ends to the arms on said non-rotative part of the motor and extending outside of the rotative member thereof, a tool-arbor mounted in said bracket, and intermeshing gear-wheels on said rotative member and the adjacent end of the arbor.

6. A portable tool comprising a base-plate provided with two standards, a turbine-motor, the non-rotative part of which is provided with oppositely-extending lateral arms, one of which arms is pivotally connected with one of the standards and the other is adjustably secured to the other standard, a bracket which extends across the non-rotative part of the motor outside of the rotative member thereof, said bracket being attached at its ends to the arms on the non-rotative part of the motor, said bracket being provided with a transverse, integral bearing-sleeve, and a tool-arbor extending through and having bearing in said sleeve.

7. A portable tool comprising a base-plate provided with two standards, a turbine-motor, the non-rotative part of which is provided with oppositely-extending arms, one of which arms is pivotally connected with one of the standards and the other is adjustably secured to the other standard, a bracket which extends across the non-rotative part of the motor outside of the rotative member thereof, said bracket being attached at its opposite end to the arms on the non-rotative part of the motor, said bracket being provided with a

transverse, integral bearing-sleeve, a tool-arbor mounted in said sleeve, and intermeshing gear-wheels on the said arbor and on the rotative member of the motor.

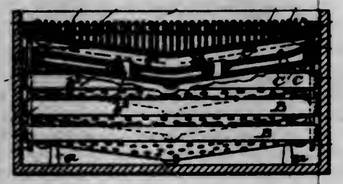
8. A portable tool comprising a base-plate provided with two standards, a turbine-motor, a rigid frame formed in part by the non-rotative part of said motor, said frame embracing a bracket which extends outside of the rotative member of the motor and being provided with a rigidly-attached spindle which extends therefrom toward the bracket, and the rotative member of the motor having a central integral bearing-sleeve which surrounds and has bearing in said spindle, a tool-arbor which is mounted on said bracket between its ends and intermeshing gear-wheels mounted one on the inner end of said arbor and the other on the adjacent end of said sleeve on the rotative part of the motor.

9. A portable tool embracing a base-plate, a motor and tool-arbor mounted on said base-plate, and a guide-bar located at one side of the base-plate and above or inside of the plane of the bearing-face of the base-plate and provided with an inwardly-facing guiding-surface and at its ends with two supporting-arms for connecting it with said base-plate, said arms and the base-plate being provided with interlocking means by which the guide-bar may be detachably secured to the base-plate.

10. A portable tool embracing a base-plate, a motor and a tool-arbor mounted on said base-plate, a guide-bar provided at its ends with two supporting-arms provided at their ends with open sockets, studs on the ends of the base-plate for engagement with said sockets and a spring-actuated bolt on the base-plate adapted for engagement with one of said arms.

11. A portable tool embracing a base-plate, a motor and tool-arbor mounted on said base-plate, a guide-bar provided at its ends with supporting-arms, said arms being provided at their ends with open sockets and the base-plate being provided at its ends with studs for engagement with said sockets, one of said arms being provided with a stud and the adjacent end of the base-plate with a groove to engage said sted, and the other arm being provided with a bolt-receiving socket and the adjacent end of said base-plate with a spring-actuated bolt adapted to engage said bolt-receiving socket.

824,348. **STORAGE BATTERY.** GEORGE A. FORD, Cleveland, Ohio. Filed July 20, 1904. Serial No. 217,344.



Claim.—1. An element for a storage battery consisting of a plate member having a series of spaced vanes, and an auxiliary plate member provided with fins projecting into the spaces between said vanes.

2. An element for a storage battery consisting of a plate member having vanes cut therefrom and twisted out of the plane thereof, and an auxiliary plate member provided with fins which project into the spaces between said vanes.

3. An element for a storage battery consisting of a plate portion having a central web tapering from the outleading end toward the opposite end, and vanes provided between said tapering web and the edges of the plate member.

4. An element for a storage battery consisting of a plate portion stamped out with a supporting edge, a central longitudinal web tapering from the outleading end to the opposite end of the plate, and spaced vanes bent from the plate portion and extending from said web to the edges of the plate.

5. An electrode member for a storage battery consisting of a comparatively long narrow central web and laterally-projecting fins free at their outer ends, said fins continuing substantially in the plane of the web except that they are turned on edge combined with another member having openings to receive said fins, and a disk adapted to carry said members.

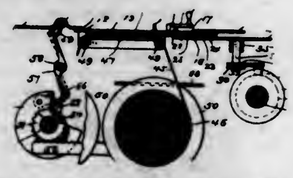
6. The combination, with a storage battery element, of a supporting-pan therefor having an opening through it and a tubular member rising around such opening, the element being flanged downwardly around the tubular member whereby it is supported out of contact with the pan.

7. In a storage battery, the combination of a supporting-pan of non-conducting material, with a conductor-plate upon said pan having suitable spaced vanes, and an auxiliary conductor-plate provided with fins extending between said vanes.

8. In a storage battery, the combination of a supporting pan or tray, of non-conducting material, an electrode-plate within said pan having a central web with vanes between it and the edges of said plate said vanes lying at an angle to the plane of said plate, an auxiliary electrode-plate having a web coextensive with said other web, and provided with fins extending between said vanes.

9. In a storage battery, the combination of a supporting-pan or tray of non-conducting material, an electrode-plate within said pan having a central tapering web, with vanes between it and the edges of said plate said vanes lying at an angle to the plane of said plate, and an auxiliary electrode-plate having a tapering web coextensive with said other tapering web and provided with fins extending between said vanes.

824,349. **SHUTTER-LOCKING MECHANISM FOR VOTING-MACHINES.** WILLIAM I. T. FOSDICK, Bridgeport, Conn., assignor to Triumph Voting Machine Company, Pittsfield, Mass., a Corporation of New Jersey. Filed Sept. 18, 1905. Serial No. 278,961.



Claim.—1. A mechanism of the character described comprising a shutter, a chain, an independent-voting member, means for locking the shutter and chain and means connecting the shutter, chain and voting member adapted to tighten the chain and release the shutter when said voting member is in voting position, and when the shutter is returned to the non-voting position to lock the shutter and slacken the chain.

2. In a mechanism of the character described, the combination with a shutter, a bell-crank lever and engaging means on said shutter and bell-crank lever, of a chain pivotally connected to the bell-crank lever, means for locking the chain, an independent-voting member and connections intermediate said member and the bell-crank lever substantially as described, for the purpose specified.

3. In a mechanism of the character described, the combination with a shutter having a locking-pin, a chain, and a bell-crank lever to which the chain is pivoted and which is provided with a locking-notch and a cam, of an independent-voting member, connections intermediate said member and the bell-crank lever and locking mechanism for the chain, said parts being so constructed and arranged that when the voting member is operated the shutter is released and the chain locked and when the parts are in their normal position the shutter is locked and the chain released.

4. In a mechanism of the character described the combination with a shutter having a locking-pin, a bell-crank lever having a locking-notch and a cam adapted to be engaged by said pin and an independent-voting member to which the bell-crank lever is connected by intermediate parts, of a chain pivotally connected to the bell-crank lever and locking mechanism for the chain, substantially as described, for the purpose specified.

5. In a mechanism of the character described the combination with a shutter, a bell-crank lever and engaging means on said shutter and bell-crank lever, of a chain pivoted to said bell-crank lever, locking mechanism therefor, an independent-voting member and a shaft therefor having at its inner end an arm to which the bell-crank lever is pivoted.

6. In a mechanism of the character described the combination with a shutter having a locking-pin and a bell-crank lever having a cam and a locking-notch, of an independent-voting member, a shaft therefor having at its inner end an arm to which the bell-crank lever is pivoted and means for moving the shutter when opened to the closed position substantially as described, for the purpose specified.

7. In a mechanism of the character described the combination with an independent-voting sheet and actuating mechanism therefor normally inoperative to feed said sheet, of a shutter, an independent-voting member and connections intermediate the shutter and the voting member for locking the shutter at the closed position, and mechanism intermediate the shutter and the sheet-actuating mechanism whereby the latter is made operative by the opening of the shutter.

8. In a mechanism of the character described the combination with an independent-voting sheet, a receiving-roller upon which it is adapted to be wound and actuating mechanism for said receiving-roller normally inoperative to feed said sheet, of a shutter, an independent-voting member and connections for locking the shutter at the closed position, an oscillatory shaft having a pin extending therefrom which is adapted to be engaged by the rear end of the shutter when the latter is moved to the open position, mechanism intermediate said shaft and the sheet-actuating mechanism whereby the latter is made operative through the oscillation of the shaft when the shutter is opened and mechanism for returning the parts to their normal position and making the shutter-operating mechanism inoperative.

9. In a mechanism of the character described the combination with an independent-voting sheet, a receiving-roller upon which it is adapted to be wound, a ratchet fixed to said roller, a driving-pinion and disk loose on said roller and a pawl on the disk adapted to engage the ratchet but normally out of engagement therewith and having a pin extending therefrom, of an oscillatory lever adapted to engage the pin and place the pawl in engagement with the ratchet, an oscillatory shaft having an arm adapted to engage the other arm of the lever and a pin extending therefrom and a shutter which engages the pin when moved to the open position, oscillates the shaft and the lever and places the pawl in engagement with the ratchet so that the receiving-roller will be actuated by the driving-pinion.

10. In a mechanism of the character described, the combination with an independent-voting sheet, a receiving-roller upon which it is adapted to be wound, an oscillatory shaft having an arm 59 and a pin extending therefrom and a shutter adapted to engage the pin to oscillate the shaft, of a ratchet fixed to the receiving-roller shaft, a driving-pinion and disk fixed to each other but loose on the receiving-roller, a pawl carried by the disk and adapted to engage the ratchet but normally disengaged and having a pin extending therefrom, an oscillatory lever, one arm of which engages the pin and the other arm is engaged by arm 59, whereby when the shutter is opened the shaft is oscillated and the pawl placed in engagement with the ratchet, mechanism for driving the pinion and mechanism for returning the parts to their normal position.

824,350. **SHUTTER-LOCKING MECHANISM FOR VOTING-MACHINES.** WILLIAM I. T. FOSDICK, Bridgeport, Conn., assignor to Triumph Voting Machine Company, Pittsfield, Mass., a Corporation of New Jersey. Filed Sept. 18, 1905. Serial No. 278,962.



Claim.—1. In a mechanism of the character described, the combination with a sliding shutter having engaging means, a link and a latch for locking said link when moved inward, of a bell-crank lever to which said link is pivoted and which is provided with means for engagement by the shutter, substantially as described, for the purpose specified.

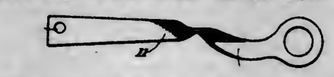
2. In an independent-voting mechanism the combination with a sliding shutter having a locking-pin, a link and means for locking said link when drawn inward, of a bell-crank lever to which said link is pivoted and which is provided with a downwardly-inclined oblique slot, the parts being so constructed and arranged that when the shutter is opened the locking-pin will ride up the lower wall of the slot in the bell-crank lever and will oscillate said lever and draw the link inward, and when the shutter is returned to the closed position the locking-pin will ride down the upper wall of the slot and will return said lever to its normal position and move the link outward.

3. In an independent-voting mechanism the combination with a sliding shutter having a forwardly-extending arm with a locking-pin and a link, of a bell-crank lever to which said lever is pivoted and which is provided with a downwardly-inclined oblique slot adapted to be engaged by the locking-pin, substantially as described, for the purpose specified.

4. In an independent-voting mechanism, the combination with a sliding shutter and a link, of a bell-crank lever to which said link is pivoted and engaging means on the shutter and bell-crank lever acting to oscillate said lever in both directions and reciprocate the link.

5. In an independent-voting mechanism the combination with a sliding shutter and a link, of a bell-crank lever to which said link is pivoted, engaging means on the shutter and bell-crank lever, for the purpose set forth, and stop-pins for limiting the oscillation of the lever in either direction.

824,351. **TELEPHONE SWITCH-HOOK.** WILLIAM A. FISHER, Chicago, Ill., assignor of one-half to McMeen & Miller, Chicago, Ill., a Copartnership. Filed Nov. 6, 1905. Serial No. 285,961.



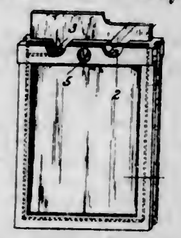
Claim.—1. As a part for the manufacture of telephone apparatus, a switch-hook formed of one piece of sheet metal cut to shape and bent into final form by twists of approximately ninety degrees each, substantially as described.

2. As a part for the manufacture of telephone apparatus, a switch-hook formed of one piece of sheet metal cut to shape and bent into final form by twists of approximately ninety degrees each, substantially as described.

3. As a part for the manufacture of telephone apparatus, a switch-hook formed of one piece of sheet metal cut to shape and bent into final form by twists in the arm of the blank, and in the branches of the blank, substantially as described.

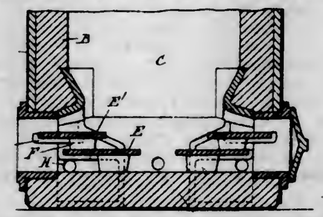
4. As a part for the manufacture of telephone apparatus, a switch-hook formed of one piece of sheet metal cut to shape and formed at one end into a hook by twisting or bending separately the two branches of the form, substantially as described.

824,352. **PHOTOGRAPHIC-PLATE HOLDER.** GUSTAV GEIGER, Munich, Germany. Filed Oct. 24, 1905. Serial No. 284,212.



Claim.—A photographic-plate holder having a pair of notches cut entirely through its upper edge and slides for said holder, each having a cut-away portion registering with one of the notches.

824,353. **GAS-PRODUCER.** HEINRICH GERDES, Berlin, Germany, assignor to American Suction Gas Producer Company, Lansing, Mich., a Corporation of Michigan. Filed July 31, 1905. Serial No. 272,056.



Claim.—1. In a gas-producer the combination with a casing forming a fuel-chamber therein and a hearth extending beneath said chamber, of standards resting upon said hearth on opposite sides of said casing, guide-flanges on said standards, and horizontal plates having their ends resting on said guide-flanges and extending transversely of said casing, for the purpose described.

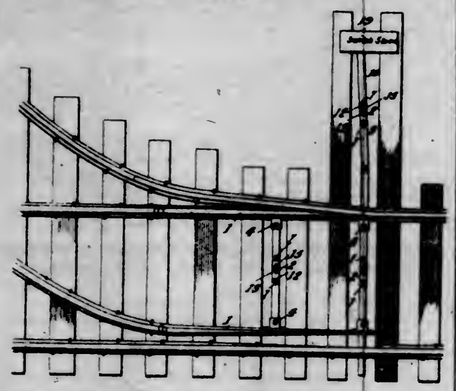
2. In a gas-producer the combination with a casing forming a fuel-chamber therein and a hearth extending beneath said chamber, of standards resting upon said hearth on opposite sides of said casing, guide-flanges on said standards, of a series of horizontal plates having their ends resting on said guide-flanges and extending transversely of said casing on opposite sides of the center thereof, for the purpose described.

3. A gas-producer comprising a casing containing a fuel-chamber and a hearth extending beneath the same, of standards resting upon said hearth on opposite sides of said casing, guide-flanges on said standards, and oppositely-arranged series of transversely-extending horizontal plates arranged in different planes above said hearth and upon opposite sides of the center thereof and having

their ends resting upon said guide-flanges, whereby the fuel within the chamber is afforded a stepped support with laterally-extending air-inlet passages between the steps.

4. In a gas-producer, the combination with a casing containing a fuel-chamber and a hearth extending beneath the same, of the horizontally-arranged plates E and E' each provided with a central depending supporting-lug F near its inner edge, said plates being arranged in steps from the center to the side of the fuel-chamber.

824,354. SWITCH-ADJUSTER. JOHN F. GREEN, Piedmont, Ohio. Filed Oct. 21, 1905. Serial No. 283,263.



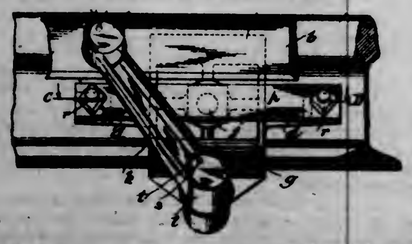
Claim.—1. In a device of the character described, the combination with the switch tongues or points of bars secured to the same at one end and provided with overlapping adjacent angular ends one of which is provided with an elongated slot, an adjusting-screw secured to said bars to adjust the same toward and away from each other, and a locking-bolt secured in said overlapped ends and received in said slot, as and for the purpose set forth.

2. A switch-adjusting device comprising two bars or members provided with overlapped ends, one of which is provided with an elongated slot, a locking-bolt designed to clamp said ends together and received in said slot, and means for adjusting said members longitudinally with respect to each other.

3. A switch-adjusting device comprising two bars provided with angular overlapped ends, an adjusting-screw working in the laterals of said ends, and a locking-bolt designed to clamp said ends in adjusted position.

4. A switch-adjusting device comprising two bars or members provided with angular ends overlapped at their extremities and one of said overlapped ends being provided with a threaded aperture and the other with an elongated slot, an adjusting-screw provided with right and left hand threads mounted in the laterals of said ends, and a locking-bolt working through the aperture and slot of the overlapped extremities and designed to clamp the same together, the end of said slot being designed to abut against said bolt to limit the outward longitudinal movement of the members with respect to each other.

824,355. CLIP FOR DETECTOR-BARS. JAMES T. HANRAY, New York, N. Y. Filed Apr. 19, 1904. Serial No. 203,887.



Claim.—1. In an apparatus of the character described a detector-bar, a bracket, a link pivoted on said bar and supported in said bracket and means inside the link for holding the same against outward thrust.

2. In an apparatus of the character described a detector-bar, a bracket, a link pivoted on said bar and supported in said bracket, a loop on the inside of the link and a strap adapted to pass through said loop to hold the link against outward thrust.

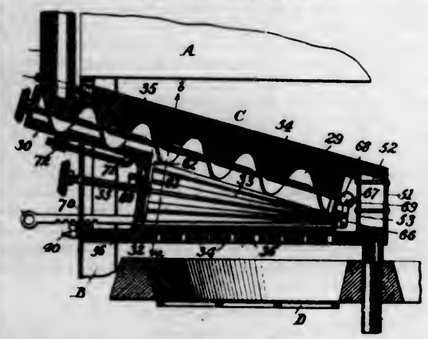
3. In an apparatus of the character described, a detector-bar, a bracket, a pin resting loosely in the bracket and a link pivoted on the detector-bar and adapted to rest loosely over the pin in the bracket.

4. In an apparatus of the character described a detector-bar, a bracket, a socket in the bracket, a pin resting loosely in the socket and a link pivoted on the detector-bar and having a socket adapted to rest loosely over the pin in the bracket.

5. In an apparatus of the character described a detector-bar, a bracket, a socket in the bracket adapted to form an oil-cup, a pin resting loosely in said socket adapted to rotate therein and a link pivoted on said pin.

6. In an apparatus of the character described a detector-bar, a bracket, a socket in the bracket closed at one end and adapted to form an oil-cup, a pin resting loosely in said socket adapted to rotate therein and a link loosely pivoted on said pin.

824,356. FUEL-FEEDING DEVICE. ERNO HARCHARICK, Wilkes-Barre, Pa. Filed Aug. 9, 1904. Serial No. 220,113.



Claim.—1. In a furnace, the combination with a rotatable grate, of a conveyer adapted to move fuel radially of said grate, and a rotatable cone arranged to carry fuel between said conveyer and grate, substantially as described.

2. In a furnace, the combination with a rotatable grate, of a conveyer adapted to move fuel radially of said grate, a fluted feeder arranged to carry fuel between the conveyer and grate, and a water-jacket surrounding said conveyer and feeder, substantially as described.

3. In a furnace, the combination with a rotatable grate, of a conveyer adapted to move fuel radially of the grate, a rotatable cone arranged between and adapted to deliver fuel from the conveyer to the grate, and a water-jacket extending about said conveyer and cone, substantially as described.

4. In a furnace, the combination with a rotatable grate, of a conveyer adapted to move fuel radially of the grate, and a fluted cone mounted to rotate between the conveyer and grate and to carry fuel from the conveyer to the grate, substantially as described.

5. The combination with a grate, of a stoker extending thereover and a water-jacket surrounding said stoker having openings through which fuel is fed to the grate, substantially as described.

6. In a furnace, the combination with a grate, of a conveyer adapted to move fuel toward the center of the grate, a water-jacket arranged above the grate into which said conveyer extends, said jacket having a plurality of passages through which fuel may pass to the grate, and a feeder arranged between and adapted to carry fuel from the conveyer to said passages in the water-jacket, substantially as described.

7. In a furnace, the combination with a rotatable grate, of a water-jacket extending radially of said grate and open at its outer end, said jacket having formed in its lower wall passages through which fuel may pass to the grate, and a stoker adapted to be removably inserted in said jacket through the outer end thereof and comprising means for conducting fuel from outside of said jacket to the fuel-passages in the lower side thereof, substantially as described.

8. In a furnace, the combination with a rotatable grate, of a casing supported above the grate, a water-jacket inclosing the inner end of said casing and provided with passages through which fuel can pass to the grate, means for conveying fuel through said casing to said passages, and means arranged at the axis of the grate for supplying water to the water-jacket, substantially as described.

9. In a furnace, the combination with a grate, of a water-jacket arranged above said grate, and having formed in its lower side passages for conducting fuel to the grate, a casing adapted to be removably supported within said water-jacket, and having passages communicating with the fuel-passages in said jacket, and means within said casing for conveying fuel from the outer end thereof to said fuel-passages, substantially as described.

10. The combination with a stoker having its parts so joined as to form a unit, of a water-jacket inclosing the stoker, said stoker as a unit being detachably supported within said water-jacket, substantially as described.

11. The combination with a water-jacket having longitudinally-extending brackets on its interior, of a stoker inclosed by said water-jacket and having longitudinally-extending projections resting upon said brackets.

12. In a furnace, the combination with a grate, of a conveyer adapted to positively move fuel toward the center of said grate, a feeder mounted to rotate between and convey fuel from said conveyer to the grate, an apertured plate between the feeder and grate, and means for varying the distance between the feeder and the apertured plate, substantially as described.

13. In a furnace, the combination with a grate, of a conveyer adapted to move fuel toward the center of the grate, a feeder mounted to rotate between and carry fuel from the conveyer to the grate, an apertured plate between the feeder and grate, and means for independently adjusting either end of the apertured plate relative to the feeder, substantially as described.

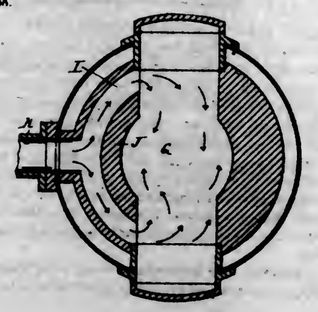
14. In a furnace, the combination with a grate, of a conveyer adapted to move fuel toward the center of the grate, a feeder mounted to rotate between and carry fuel from the conveyer to the grate, an apertured plate adjustably supported between the grate and feeder, and means extending beyond one end of the feeder for independently adjusting either end of said plate relatively to the feeder, substantially as described.

824,357. ÆTH-OXY-PHENYL-CAMPHORYL IMID AND PROCESS OF MAKING SAME. ARNOLD H. C. HEITMANN and ERIK C. CLEMMENSEN, Detroit, Mich., assignors to Parke, Davis & Company, Detroit, Mich., a Corporation of Michigan. Filed Aug. 14, 1905. Serial No. 274,158. (Specimens.)

Claim.—1. The herein-described substance, the same being a condensation product of camphoric acid and amido-phenetol, which is characterized by antipyretic and analgesic properties; in its pure form it appears in silky needles, melting at a temperature of 119° centigrade, is colorless, odorless, tasteless, insoluble in cold water, slightly soluble in warm water, readily soluble in hot diluted alcohol, and very readily in organic solvents, such as alcohol, ether, chloroform, acetone, benzol, petroleum ether; is insoluble in acid or alkali solutions and is not decomposed therein.

2. The process of forming camphoryl-alkyl-oxy-phenyl amids, which consists in condensing two substances respectively containing the camphoryl and the alkyl-oxy-phenyl radical and one of said substances being an amin, the condensation being effected by heat and in the presence of a solvent of high boiling-point.

824,358. SUCTION GAS-PRODUCER. EUGENE HIGGINS, Lansing, Mich., assignor to American Suction Gas Producer Company, Lansing, Mich., a Corporation of Michigan. Filed Aug. 5, 1905. Serial No. 272,858.

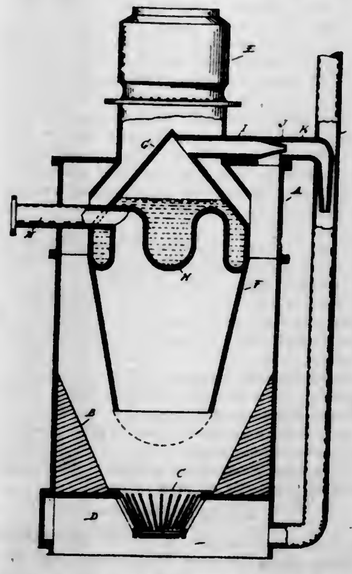


Claim.—1. In a suction gas-producer, a casing containing a combustion-chamber, a grate in the lower part of said chamber and an ash-pit chamber extending diametrically across said casing beneath said grate, said casing having a horizontal air-inlet passage and a horizontal segmental air-passage connecting with the opposite ends of said ash-pit chamber and connecting with said inlet-passage, for the purpose described.

2. In a suction gas-producer, a casing containing a combustion-chamber, a grate of basket form and an ash-pit chamber having a central portion surrounding said grate and diametrically opposite extensions to the wall of the casing, said casing having a horizontal air-inlet passage and a horizontal semi-annular air-passage centrally connected with said inlet and discharging into the opposite extensions of said ash-pit chamber, for the purpose described.

3. In a suction gas-producer, a casing having a fire-lining inclosing a combustion-chamber and a grate for supporting the fuel within said chamber, said casing having an ash-pit chamber below said grate extending laterally at diametrically opposite points through said lining to the wall of said casing, and a segmental baffle-plate forming a portion of the supporting-wall for said lining and forming a semi-annular air-passage around the central portion of said ash-pit chamber, said air-passage having outlet at its end into said ash-pit extensions and having a central inlet.

824,359. GAS-PRODUCER. ROBERT HILPRECHT, Lansing, Mich., assignor to American Suction Gas Producer Company, Lansing, Mich., a Corporation of Michigan. Filed June 17, 1905. Serial No. 265,778.



Claim.—1. A suction gas-producer comprising an outer casing, an inner casing open at its lower end and spaced from said outer casing to form an annular fuel-chamber therebetween, a grate beneath the opening of said inner casing, a vaporizer within said inner casing, a fuel-hopper above said vaporizer, and a suction-conduit connected with the gas-chamber within said inner casing.

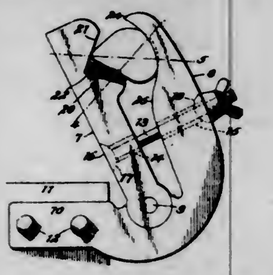
2. In a suction gas-producer the combination with a grate, of a superposed suction-hood tapered toward both ends and a fuel-hopper upon the upper end of said hood, for the purpose described.

3. In a suction gas-producer, the combination with a grate, of a superposed suction-hood tapered at both ends, a casing surrounding said hood and tapering toward said grate, and a fuel-hopper upon the hood the space between said hood and casing forming a fuel-magazine from which the fuel is centrally fed between the hood and grate to maintain a layer of uniform thickness.

4. In a suction gas-producer, the combination with a grate, a superposed suction-hood, a casing surrounding said hood, a vaporizer in said hood, and a fuel-hopper upon said vaporizer, for the purpose described.

5. In a suction gas-producer, the combination with a grate, of a superposed suction-hood tapered at both ends, a casing surrounding said hood and tapering to said grate, and a vaporizer within said hood.

824,860. VISE. JOHN HORNBY, New York, N. Y., assignor to The Button Machinery Company, New York, N. Y., a Corporation of New York. Filed Feb. 17, 1906. Serial No. 301,681.



Claim.—1. A pair of vise-jaws, one of which is provided with a transverse V-shaped recess on its face, one wall of said recess having a wedge shape and the other wall thereof being grooved, the second jaw being constructed to coöperate therewith.

2. A pair of vise-jaws, one of which is provided with a transverse V-shaped recess on its face, one wall of said recess having a wedge shape and the other wall thereof being grooved, the second jaw being provided with a longitudinally-curved recess in its face.

3. A pair of vise-jaws, one of which is provided with a transverse V-shaped recess on its face, one wall of said recess having a wedge shape and the other wall thereof being grooved, the second jaw being provided with a transversely-curved recess in its face.

4. A pair of vise-jaws, one of which is provided with a transverse V-shaped recess in its face, one wall of said recess having a wedge shape and the other wall thereof being grooved, the second jaw being provided with a longitudinally and transversely curved recess in its face.

5. A pair of vise-jaws, one of which is provided with a longitudinally-curved and transversely-grooved recess in its face, the other jaw being constructed to coöperate therewith.

6. A pair of vise-jaws, one of which is provided with a longitudinally-curved and transversely-grooved recess in its face, the other jaw being provided with a transverse V-shaped recess in its face.

7. A pair of vise-jaws, one of which is provided with a longitudinally-curved and transversely-grooved recess in its face, the other jaw being provided with a transverse V-shaped recess in its face, one wall of which recess is longitudinally wedge-shaped.

8. A pair of vise-jaws, one of which is provided with a longitudinally-curved and transversely-grooved recess in its face, the other jaw being provided with a transverse V-shaped recess in its face, one wall of which recess is longitudinally grooved.

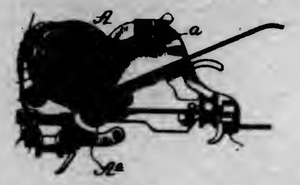
824,861. CARBURETED-AIR BURNER FOR HEATING, COOKING, &c. OSCAR M. HUDSON, Toronto, Canada. Filed Nov. 13, 1906. Serial No. 293,236.



Claim.—1. In a burner for carbureted air the combination of a stem provided with a chamber for a retarding and distributing medium; a head secured thereto; three gauze diaphragms secured therein; an apertured distributer of refractory material immediately superimposed on the uppermost diaphragm; and an outer wall forming an external annular passage-way and having a communication with the interior of the burner, substantially as described.

2. In a burner for carbureted air the combination of a stem provided with a chamber for a retarding and distributing medium; a head secured thereto; a mixing and discharging medium secured therein; an apertured distributer of refractory material immediately superimposed on the retarding media; and an outer wall forming an external annular passage-way and having a communication with the interior of the burner.

824,862. PAPER-GUIDE FOR TYPE-WRITING MACHINES. HENRY M. INGERSOLL, Woodstock, Ill., assignor to The Oliver Typewriter Company, Chicago, Ill., a Corporation of Illinois. Filed June 8, 1904. Renewed Jan. 4, 1906. Serial No. 294,858.



Claim.—1. The combination with a paper-carriage, platen, a longitudinal paper-guide pivotally connected at its ends with the carriage-frame and springs pressing the swinging margin of the guide toward the platen, of an arm affixed to the carriage-frame and engaging the paper-guide at a point opposite its pivotal axis and between the ends of said guide to prevent the central part of the latter from flexing or bending outwardly.

2. The combination with a paper-carriage, platen, a longitudinal paper-guide pivotally connected at its ends with the carriage-frame to afford movement of one margin of the guide toward and from the platen, and springs acting on the ends of the guides to hold the guide as a whole adjacent to the platen and also to yieldingly press the swinging margin thereof toward the platen, of a yielding or spring arm mounted on the carriage-frame and engaging the guide at a point opposite its pivotal axis and between the ends of said guide to hold the central part of the latter from bending or flexing outwardly.

3. The combination with a paper-carriage, platen, a longitudinal paper-guide pivotally connected at its ends with the carriage-frame and springs pressing the swinging margin of the guide toward the platen, of an arm affixed to the carriage-frame and engaging the guide at a point opposite its pivotal axis and between the ends of said guide to prevent the central part of the latter from flexing or bending outwardly, said arm being so attached to the guide as to also prevent the same from bending or flexing upwardly.

4. The combination with a paper-carriage, platen, a longitudinal paper-guide pivotally connected at its ends with the carriage-frame to afford movement of one margin of the guide toward and from the platen, and springs acting on the ends of the guides to hold the guide as a whole adjacent to the platen and also to yieldingly press the swinging margin thereof toward the platen, of a yielding or spring arm mounted on the carriage-frame and having interlocking engagement with the guide between the ends of the latter to hold it from both outward and upward flexure.

5. The combination with a paper-carriage, a platen and a longitudinal paper-guide which is connected at its ends with the carriage-frame, of a yielding or spring arm attached at its lower end to the carriage-frame, and provided at its upper end with a hook which engages the central part of the guide in a manner to prevent the same from rising.

6. The combination with a paper-carriage, a platen, upper and lower presser-rollers at one side of the platen, a frame movable toward and from the platen in which the shafts of said presser-rollers are rotatively mounted, and a guide-plate located between said presser-rollers and connected at its ends with said presser-roller frame, of a bolding-arm attached to the carriage-frame and connected with the guide intermediate the ends of the latter to prevent the central part of said guide from bending outwardly and rising.

824,863. FIREPROOF FLOOR CONSTRUCTION. ANDREW JORDAN, Carnegie, Pa. Filed Nov. 21, 1905. Serial No. 288,470.

Claim.—1. A fireproof floor construction comprising flanged girders, composition blocks recessed upon their upper surfaces and adapted to receive one of the flanges of a girder, a reinforcing-rod incorporated in said block and bent to form a loop which extends through the bottom of the recess in the block, a key-plate passing through said loop and engaging one of the flanges of the girder, a cement filling to said recess over said locking-plate and about the girder, composition blocks resting upon said block which is secured to the girder, and cement floor-slabs having shoulders formed in the under surface thereof to engage the outer faces of said cement blocks, as set forth.

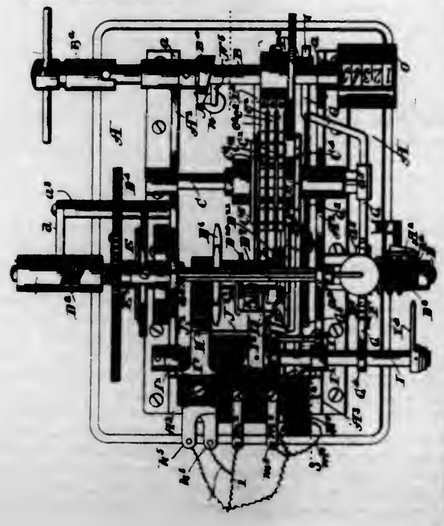
2. A fireproof floor construction comprising flanged girders, composition blocks recessed upon their upper surfaces and adapted to receive one of the flanges of a girder, a reinforcing-rod incorporated in said block and bent to form a loop which extends through the bottom of the recess in the block, a key-plate passing through said loop and engaging one of the flanges of the girder, a cement filling to said recess over said locking-plate and about the girder, composition blocks resting upon said block which is secured to the girder, cement floor-slabs having shoulders formed in the under surface thereof to engage the outer faces of said cement blocks, the opposite edges of said composition blocks having inclined edges, and reinforced ceiling-slabs having angled ends adapted to rest upon the inclined edges of said blocks, as set forth.



3. A fireproof floor construction comprising flanged girders, composition blocks recessed upon their upper surfaces and adapted to receive one of the flanges of a girder, a reinforcing-rod incorporated in said block and bent to form a loop which extends through the bottom of the recess in the block, longitudinal reinforcing-bars in said block engaged by said rod which is bent to form a loop, a locking-plate passing through said loop and its inner end resting upon the flange of the girder, a plate resting upon the bottom of the recess of said block and supporting the outer end of said locking-plate, a cement filling for said recess, cement blocks resting upon said filling and composition block and in contact with the opposite faces of the web of the girder, floor-slabs of cement having shoulders upon the under surfaces thereof adapted to engage the opposite faces of said cement blocks, and reinforced ceiling-slabs having angled ends resting upon the angled edges of said composition block, as set forth.

4. A fireproof construction for flooring comprising flanged girders, composition blocks recessed upon their upper faces, reinforcing-rods running parallel to each other in said block, an angled reinforcing-rod bent to form a loop which extends through the bottom of the recess in the block, the ends of said rod which is bent to form a loop being hook-shaped adapted to engage one of said parallel rods, a locking-plate extending through said loop and its inner end resting upon one of the flanges of the girder; a support for the outer end of said locking-plate, a cement filling for said recess, cement blocks resting upon said filling and the composition block, and having each its inner face in contact with the web of a girder, floor-slabs of composition having shoulders upon their under surfaces engaging said cement blocks, and reinforced ceiling-slabs having angled ends adapted to rest against the inclined edges of said composition blocks, as set forth.

824,864. ELECTRICAL RECORDING APPARATUS. JAMES A. KENNY and CHESTER H. THORDARSON, Chicago, Ill. Filed Feb. 24, 1903. Serial No. 144,727.



Claim.—1. A registering device upon which individual registrations are severally set up and from which they are collectively transmitted, comprising a plurality of denomination counting members which are given a step-by-step advance movement as the registrations are set up, and means for transmitting the registrations from said device as the counting members are restored to zero, so constructed that each counting member produces during its retrograde movement a number of recording impulses representing a multiple or multiples of the denomination to which the counting member is appropriated.

2. A registering device upon which individual registrations are severally set up and from which they are collectively transmitted, comprising a plurality of denomination counting members which are given a step-by-step advance movement as the registrations are set up, means for transmitting the registrations from said device as the counting members are restored to zero, so constructed that each counting member produces in its retrograde movement a number of recording impulses representing a multiple or multiples of the denomination to which the counting member is appropriated, and means whereby the impulses produced by each counting member are of different duration from those produced by the other counting member or members.

3. A registering device upon which individual registrations are severally set up and from which they are collectively transmitted, comprising a plurality of denomination counting members which are given a step-by-step advance movement as the registrations are set up and means for transmitting from said device the registrations so set up on said counting members as the counting members are restored to zero, the parts being so constructed that each counting member acts in its retrograde movement to produce only a number of recording impulses equal to the number of steps required to return the same to zero, regardless of the number of advance movements which it has made while the temporary registrations are being set up.

4. A registering device upon which individual registrations are severally set up and from which they are collectively transmitted, comprising a plurality of counting members appropriated to different denominations, the member appropriated to the lowest denomination being advanced step by step as the registrations are set up and the member of the next higher denomination being advanced a step at the completion of each cycle of movement of said lowest denomination member, and means for transmitting the registrations from the device as the counting members are restored to zero and so constructed that each counting member acts in its retrograde movement to produce only a number of recording impulses equal to the number of steps required to return it to zero, regardless of the number of advance movements which it has made while the registrations are being set up.

5. A registering device upon which individual registrations are severally set up and from which they are collectively transmitted, comprising a plurality of denomination counting mechanisms which are given a step-by-step movement as the registrations are set up, and an electric make-and-break device which is operated to send out recording impulses as the counting mechanisms are restored to zero, and means so operating that each counting mechanism produces in its retrograde movement a number of impulses representing a multiple or multiples of the denomination to which the counting mechanism is appropriated.

6. A registering device upon which individual registrations are severally set up and from which they are collectively transmitted, comprising a plurality of denomination members which are given a step-by-step movement as the registrations are set up, and an electric make-and-break device which is operated to send out recording impulses as the counting members are restored to zero, so constructed that each counting member acts in its retrograde movement to produce only a number of recording impulses equal to the number of steps required to restore it to zero, regardless of the number of advance rotations which it has made while the temporary registrations were being set up.

7. An apparatus for the purpose set forth comprising a registering device located at an outlying station upon which registrations are adapted to be severally made, an electrically-actuated recording device located at a central station, electrical connections between said registering and recording devices, so operating that records transmitted to the central recording device are designated by differentiated characters, the characters of the several kinds being appropriated to the several denominations composing the number representing the record produced at the central device.

8. An apparatus for the purpose set forth comprising a register-

ing device located at an outlying station and upon which registrations are adapted to be severally made, an electrically-actuated recording device located at a central station, electrical connection between said registering and recording devices, and means so operating that the registrations transmitted to the central recording device are designated by differentiated characters, the characters of each kind being appropriated to a particular denomination and of a number representing a multiple or multiples of each denomination.

9. An apparatus for the purpose set forth comprising a registering device located at an outlying station upon which registrations are severally set up and from which they are collectively transmitted, a recording device located at a central station, electrical connections between said registering and recording devices, said registering device comprising a plurality of denomination counting members which are given a step-by-step advance movement as the registrations are set up and means for electrically transmitting the registrations to the central device as the counting members are restored to zero, and so constructed that each counting member produces at the central recording device in its retrograde movement a number of record characters representing a multiple or multiples of the denomination to which the counting member is appropriated.

10. A registering device upon which individual records are severally set up and from which they are collectively transmitted, comprising a plurality of toothed denomination-wheels which are advanced step by step as the registrations are set up, a toothed wheel adapted to mesh with said denomination-wheels and to be advanced thereby, a restoring-spring for said toothed wheel, means for shifting the toothed wheel into mesh successively with the denomination-wheels, beginning with the lowest denomination, as the registrations are set up, means for shifting the toothed wheel backwardly into mesh with denomination-wheels as the latter are restored to zero, and an electrical transmitting device operated by said toothed wheel during the restoring movement thereof.

11. A registering device upon which individual registrations are severally set up and from which they are collectively transmitted, comprising a plurality of toothed denomination-wheels, which are advanced step by step as the registrations are set up, a toothed wheel adapted to mesh with said denomination-wheels and to be advanced thereby, a restoring-spring for said toothed wheel, means for shifting the toothed wheel into mesh successively with the denomination-wheels, beginning with the lowest denomination and just before each wheel completes its rotation as the records are being set up, means for shifting said toothed wheel backwardly into mesh with said denomination-wheels, said shifting occurring at the time the wheels are severally restored to zero, and an electrical transmitting device operated by said toothed wheel during the restoring movement thereof.

12. A registering device upon which individual registrations are severally set up and from which they are collectively transmitted, comprising a plurality of toothed denomination-wheels which are advanced step by step as the registrations are set up, a toothed wheel adapted to mesh with said denomination-wheels and adapted to be advanced thereby, a restoring-spring for said toothed wheel, means for shifting the toothed wheel into mesh successively with the denomination-wheels, beginning with the lowest denomination, as the records are set up, means for shifting the toothed wheel backwardly into mesh with the denomination-wheels as the latter are returned to zero, a star-wheel movable with said toothed wheel, an electrical transmitting device operated by said star-wheel, and means operated by said denomination-wheels for controlling the recording movements of said toothed wheel.

13. A registering device upon which individual registrations are severally set up and from which they are collectively transmitted, comprising a plurality of toothed denomination-wheels which are advanced step by step as the registrations are set up, a toothed wheel adapted to mesh with said denomination-wheels and adapted to be advanced thereby, a restoring-spring for said toothed wheel, means for shifting the toothed wheel into mesh successively with the denomination-wheels, beginning with the lowest denomination, as the registrations are set up, means for shifting the toothed wheel backwardly into mesh with the denomination-wheels as the latter are restored to zero, a star-wheel which partakes of the rotative and shifting movement of the toothed wheel, an electrical make-and-break device operated by said star-wheel, means operated by said denomination-wheels in their retrograde movement for controlling the recording movements of said toothed wheel, and contact-pieces on said make-and-break device equal in number to that of the denomination-wheels and adapted for contact by the teeth of the star-wheel, and made of varying lengths, said star-wheel being shifted from one contact-piece to the other as the toothed wheel is shifted from one denomination-wheel to the other.

14. A registering device upon which individual registrations are severally set up and from which they are collectively transmitted, comprising a counting mechanism which is advanced step by step as the registrations are set up and restored as the registrations are transmitted therefrom, and means for transmitting the records from the device comprising a star-wheel which is rotated during the retrograde movement of the counting mechanism, a make-and-break device operated by the star-wheel, laterally-separated contact-pieces on said make-and-break device, appropriated each to a separate denomination and with which the teeth of the star-wheel have contact, and means for shifting the star-wheel laterally during its retrograde movement to bring it successively into line with the contact-pieces.

15. A registering device upon which individual registrations are severally set up as they are made and from which they are collectively transmitted, comprising a plurality of toothed denomination-wheels which are advanced step by step as the registrations are set up, a toothed wheel adapted to mesh with said denomination-wheels and to be advanced thereby, a restoring-spring for said toothed wheel, means for shifting said toothed wheel into mesh successively with said denomination-wheels, beginning with the lowest denomination, as the registrations are set up, stops acting to temporarily prevent the shifting of said toothed wheel backwardly, said stops being controlled by parts on the denomination-wheels which operate to release the toothed wheel when such denomination-wheels are returned to their zero or starting positions, and an electrical transmitting device operated by the toothed wheel during the restoring movement thereof.

16. A registering device upon which individual registrations are severally set up and from which they are collectively transmitted, comprising a plurality of denomination-wheels which are advanced step by step as the registrations are set up, a toothed wheel adapted to mesh with said denomination-wheels and to be angularly advanced thereby, means for restoring said toothed wheel, means for shifting said toothed wheel laterally into successive engagement with the denomination-wheels, beginning with the lowest denomination, as the registrations are set up, means for shifting the toothed wheel backwardly into mesh with said denomination-wheels during the restoring movement thereof, stop-levers associated one with each denomination-wheel and operated at the first advanced step of the denomination-wheel to swing a part thereof into the path of a part carried by said toothed wheel, the parts being so constructed that in the restoring movement of the denomination-wheels the lever associated with each wheel is actuated to move the lever out of the path of said part movable with the toothed wheel when the denomination-wheel reaches zero, and an electrical transmitting device operated by said toothed wheel during the restoring movement thereof.

17. A registering device upon which individual registrations are severally set up and from which they are collectively transmitted, comprising a plurality of denomination-wheels, which are advanced step by step as the registrations are set up, a toothed wheel which meshes with said denomination-wheels and which is angularly advanced thereby, means for moving said toothed wheel laterally into mesh with the several denomination-wheels, beginning with the lowest denomination, as the records are set up, a lever associated with each denomination-wheel, projections on each denomination-wheel adapted to engage its lever and to throw a part of said lever into the path of an arm carried by said toothed wheel to temporarily prevent retraction of said toothed wheel, means operating to laterally shift said toothed wheel backwardly into mesh with the several denomination-wheels during the restoring movement thereof, means acting to throw said stop-levers out of the path of the arm moving with said toothed wheel at the time the denomination-wheel associated therewith is returned to zero, and an electrical transmitting device operated by said toothed wheel during its retrograde movement.

18. A registering device upon which individual registrations are set up and from which they are collectively transmitted, comprising a plurality of counting members which are advanced step by step as the registrations are set up, a toothed wheel adapted to mesh severally with said counting members and to be advanced thereby, a restoring-spring for said toothed wheel, means for successively shifting said toothed wheel laterally into engagement and holding it in mesh with the counting members as the registrations are set up, comprising a spring acting laterally against said wheel, a shiftable spring-pressed abutment against which the wheel is held by the spring during the cycle of movement of each counting member as the wheel meshes therewith, and permitting the wheel to shift at the end

of such cycle of movement to the counting member of the next higher denomination, means coöperating with said spring-pressed abutment for laterally retracting said toothed wheel, stops for controlling the lateral retractive movement of the toothed wheel to hold the same in mesh with each counting member during its angular restoring movement, and a transmitting device operated by said toothed wheel.

19. A registering device upon which individual registrations are set up and from which they are collectively transmitted, comprising a plurality of counting members which are advanced step by step as the registrations are set up, a toothed wheel adapted to mesh severally with said counting members and to be advanced thereby, a restoring-spring for said toothed wheel, means for successively shifting said toothed wheel laterally into engagement and holding it in mesh with the counting members as the registrations are set up, comprising a spring acting laterally against said wheel, a spring-pressed, endwise-movable shaft parallel with the axis of rotation of said toothed wheel, an arm on said shaft which engages a part laterally movable with said toothed wheel, means whereby the rotation of the toothed wheel constantly shifts said shaft endwise, means acting to arrest the toothed wheel in mesh with each counting member during a complete cycle thereof, the arm of the endwise-movable shaft during such time moving away from said part laterally movable with the toothed wheel, means acting to shift laterally the toothed wheel at the end of each cycle of the counting member with which it is in mesh into mesh with the counting member of the next higher denomination, said toothed wheel being arrested by said arm of the shaft in line with such next higher counting member, means for laterally retracting said toothed wheel during the angular restoring movement thereof into mesh successively with the counting members, and a transmitting device operated by said toothed wheel during its restoring movement.

20. A registering device upon which individual registrations are set up and from which they are collectively transmitted, comprising a plurality of counting members which are advanced step by step as the registrations are set up, a toothed wheel adapted to mesh severally with said counting members and to be advanced thereby, a restoring-spring for said toothed wheel, means for successively shifting said toothed wheel laterally into engagement and holding it in mesh with the counting members as the registrations are set up, comprising a spring acting laterally against said wheel, an endwise-movable, spring-pressed shaft which moves constantly endwise in the direction toward which the toothed wheel is shifted as the records are set up, an arm on the shaft which engages a part which is shiftable laterally with said toothed wheel, a laterally-facing cam which rotates with said toothed wheel, a part on said endwise-movable shaft which engages said cam, stops controlling the lateral retractive movement of the toothed wheel to hold the same properly in mesh with the counting members, and a transmitting device operated by the said toothed wheel during its restoring movement.

21. A registering device upon which individual registrations are set up and from which they are collectively transmitted, comprising a plurality of toothed counting-wheels which are advanced step by step as the registrations are set up, a toothed wheel adapted to mesh severally with said counting-wheels, a rotative shaft with which said toothed wheel rotates and on which it shifts laterally so as to mesh with the counting-wheels, an endwise-movable, spring-pressed shaft parallel with said toothed wheel-shaft, said latter shaft being provided with a screw-thread, an arm or projection on the endwise-movable shaft adapted to engage said screw-thread, whereby the latter shaft is moved endwise as the other shaft is rotated, a spring for shifting the toothed wheel successively into engagement with the counting-wheels as the registrations are set up, an arm on the endwise-movable shaft which engages a part laterally movable with said toothed wheel, and against which said part is pressed by said spring, a laterally-facing cam rotative with said toothed wheel having a pitch like that of the screw-thread of the toothed wheel-shaft, a part on the endwise-movable shaft which engages said cam whereby the toothed wheel is held in mesh severally with the counting-wheels, notwithstanding the endwise movement of said endwise-shiftable shaft, means for laterally restoring said toothed wheel, means acting to arrest said wheel in mesh with the counting-wheels while said toothed wheel is angularly restored, and a transmitting device operated by said toothed wheel during its angular restoring movement.

22. A registering device upon which individual registrations are set up and from which they are collectively transmitted, comprising a plurality of toothed counting-wheels which are advanced step by step as the registrations are set up, a rotary shaft parallel with the axis of rotation of said wheels, a laterally-shiftable, toothed wheel non-rotative on said shaft adapted to mesh severally with the counting-wheels as the registrations are set up, a spring for angularly restoring said shaft, an endwise-shiftable, spring-pressed shaft parallel with and movable toward and from the rotative shaft, a spring for laterally shifting the toothed wheel into mesh successively with the counting-wheels, an arm on said endwise-shiftable shaft which engages a part laterally shiftable with the toothed wheel, and which acts as a stop to arrest the toothed wheel in mesh with each counting-wheel, an arm on said shiftable shaft adapted to engage a screw-thread on said rotative shaft, whereby rotation of the latter shaft imparts endwise movement to the other shaft, a laterally-facing cam movable with the toothed wheel, a projection on the endwise-movable shaft adapted to engage said cam and acting against said lateral shifting spring of the toothed wheel during the rotation of the counting-wheel with which the toothed wheel is in mesh and constructed to permit the toothed wheel to shift at the completion of such rotation to the counting-wheel of the next higher denomination, means for swinging the endwise-shiftable shaft toward the rotative shaft to bring the arm thereon into engagement with the screw on said rotative shaft and to bring said projection into line with said cam, a notched wheel on said rotative shaft, a detent-arm adapted to be thrown into engagement with said wheel when the endwise-movable shaft is swung toward the other shaft, means for locking the parts in these positions and adapted to be released when the registrations set up are to be transmitted, and means for transmitting the set-up registrations from the device during the restoring movements of the parts.

23. An apparatus for the purpose set forth comprising a registering device located at an outlying station upon which individual registrations are severally set up and from which they are collectively transmitted, a recording device located at a central station, and electrical connections between said outlying and central recording devices, said registering device comprising a plurality of denomination counting members which are given a step-by-step advance movement as the records are set up, means acting during the retrograde movement of each counting member, to send out to the central recording device a number of recording impulses equal to the number of steps required to return said member to zero, and means for producing at the central recording device record characters from each denomination member which are differentiated from the record characters of the other member or members.

24. An apparatus for the purpose set forth comprising a registering device located at an outlying station upon which individual registrations are severally set up and from which they are collectively transmitted, a recording device located at a central station, and electrical connections between said registering and recording devices, said registering device comprising a counting mechanism which is advanced step by step as records are set up and which is restored to transmit the records therefrom, the transmitting mechanism embracing a make-and-break device and a star-wheel for operating the same, laterally-separated contact-pieces on the make-and-break device appropriated each to a separate denomination and with which the teeth of the star-wheel have contact in the rotation of said wheel, and means for laterally shifting the star-wheel during its rotary movement to bring it successively into line with the several contact-pieces.

25. An apparatus for the purpose set forth comprising a registering device upon which individual registrations are severally set up and from which they are collectively transmitted, a recording device located at a central station, and electrical connections between said registering and recording devices which are set in operation to transfer the registrations from the registering device to the recording device, and a safety device included in the circuit between the registering and recording devices and controlling the starting of the registering device, said safety device being operated by a current of a character different from that of the operating-circuit.

26. An apparatus for the purpose set forth, comprising a registering device upon which individual registrations are severally set up and from which they are collectively transmitted, a recording device located at a central station, an operating-circuit connecting said registering and recording devices over which the registrations are transmitted to the recording device, a source of continuous current for operating said recording device, a safety device controlling the starting of the registering device, and a source of pulsating current for operating said safety device.

27. An apparatus for the purpose set forth, comprising a registering device upon which individual registrations are set up and from which they are collectively transmitted, a recording device located at a central station, an operating-circuit connecting said registering and recording devices over which said registrations are transmitted to

the recording device, said operating-circuit embracing a starting-circuit at the registering device which is normally open and a safety device bridged between the wires of the operating-circuit between said registering and recording devices and operating to close said starting-circuit, said safety device being operated by a current different in character from that of the operating-circuit.

28. An apparatus for the purpose set forth comprising a registering device upon which individual registrations are severally set up and from which they are collectively transmitted, a recording device located at a central station, an operating-circuit connecting said registering and recording devices over which the registrations are transmitted to the recording device, said operating-circuit embracing a starting-circuit at the registering device which is normally open, a source of continuous current included in said operating-circuit for operating said registering device to transmit registrations from the registering device to the recording device and there translate them into a graphic record, a safety device in said circuit for controlling the starting of the registering device, means for producing in said operating-circuit a pulsating current for operating the safety device to close the starting-circuit, and means for switching the pulsating current from said circuit when the starting-circuit is closed and for closing the recording devices to the source of continuous current.

29. The combination with an operating-circuit, a source of continuous current in said circuit and an electrically-actuated device also included in said circuit and operated by a continuous current, and means for closing said circuit, of a safety device included in said circuit for controlling the operation of said electrically-actuated device and a source of pulsating current for operating said safety device.

30. In a telephone-recorder, a registering device, comprising counting members of different denominations, means for stepping forward the units-counting member as the registrations are made, associated means operating in a like manner the counting members of higher denominations from the units-counting member, a recording device and means for transmitting the registrations, so constructed that as each counting member is retracted it transmits to the recording device a number of impulses, representing a multiple or multiples of the denomination to which it is appropriated.

31. In an electrical recorder, means for registering thereon by unit tallies, associated means for registering definite groups of unit tallies in units of higher denominations, means for taking a reading of the accumulated tallies in groups of units, one group for each denomination, transmitting mechanism constructed to translate the tallies of the several groups in impulses of varying duration and an electric circuit over which the reading is sent by the transmitting device.

32. The combination with a registering device comprising a plurality of interacting counting members appropriated severally to different denominations, and a recording device, of means for transmitting registrations from said counting members to the recording device including means operating to transmit from the several counting members differentiated characters, the characters of each kind being appropriated to a single counting member.

824,365. **DUMPING-CAR.** DANIEL KING, Pinkney, Tenn. Filed Sept. 7, 1905. Serial No. 277,393.

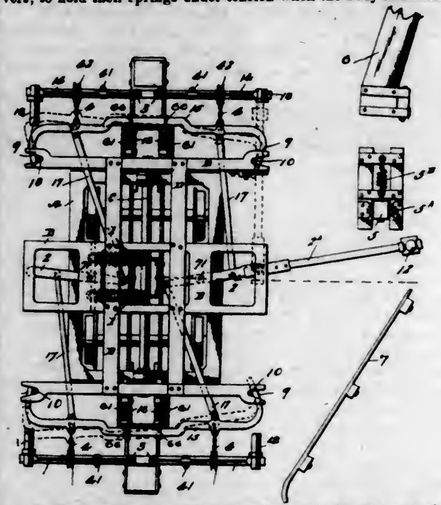
Claim.—1. A dumping-car provided with a spring interposed between the body and truck and held under tension when the car is in horizontal position, means for holding the car-body horizontal, and means for releasing the body so that the spring may dump the same.

2. The combination with a car-body and supporting-truck, of a spring interposed between the body and truck, means for holding the body horizontal and the spring under tension, means for holding a side door closed, and means for releasing the body and door, whereby the spring effects the tipping of the body and the opening of the door.

3. In a dumping-car, the combination with the car-body, of body-locking levers at the ends thereof, door-levers on which the door-pintles rest, springs connecting the ends of the door-levers to the body, and chains connecting the door-levers to the body-locking levers, whereby the release of the body-locking levers releases the tension on the springs connected to the door-levers.

4. In a dumping-car, the combination with the car-body, of door-levers pivoted to said body, doors supported by said levers, and a spring connecting one arm of each of the door-levers to the body, and serving to lift the doors when permitted to operate on the door-levers.

5. In a dumping-car, the combination of a car-body and locking-levers therefor, a pair of door-levers at each end of the car-body, springs connected to the inner ends of these levers and to the car-body, doors supported to the outer ends of said door-levers, and body-locking levers connected by flexible connections to the door-levers, to hold their springs under tension when the body is locked.



6. The combination with a dumping-car body, of a swinging door supported on door-levers, body-locking levers by which the body is held in horizontal position, and door-catches also engaged by said body-locking levers.

7. The combination with a dumping-car truck and body-locking levers extending transversely of said body, door-levers at each end of the body and having pivots at each side which become alternately the fulcrum of said levers, doors having pintles extending into notches in the door-levers and also into notches in the body, springs connected to the body and to the door-levers, and flexible connections from the door-levers to the body-locking levers, whereby the latter may be depressed and the doors left supported by the body, as set forth.

8. The combination with a car-truck and dumping-body, and an interposed spring, of a lever connected to the body, and an incline adjacent to the car-track, whereby the car-body may be brought to horizontal position and the spring placed under tension as the train moves past the incline.

9. The combination with a car-truck and dumping-body, and a spring acting to dump the body, of means for holding the body in horizontal position, and means alongside the track whereby the car-body may be released and permitted to be dumped by the spring.

10. The combination with a car-truck and car-body, and a spring acting to dump said body, of detents acting to hold the body in horizontal position, a hinged lever which may be extended at the side of the car and act to release said detents by engaging an obstruction, and an incline at the side of the track by which said hinged lever is turned in as the car moves.

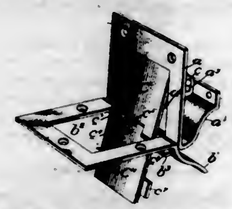
11. The combination with a car truck and body, of a spring acting to dump the body when free to do so, a swinging door on said body, levers on which said door may swing, and springs connected to the door-levers and body to support the doors when swung open.

824,366. **DAUBER.** GEORGE B. KRAG, Rochester, N. Y., assignor to Monroe Novelty Company, Rochester, N. Y., a Corporation of New York. Filed Dec. 27, 1905. Serial No. 293,460.



Claim.—A dauber, comprising a head, a sheepskin daubing-surface and a felt pad constituting a flexible connection between them; substantially as shown and described.

824,367. **FLUSH-BUTT HINGE.** AMHERST G. LAMB, Torrington, Conn., assignor to Excelsior Needle Co., Torrington, Conn., a Corporation of Connecticut. Filed Mar. 20, 1905. Serial No. 251,057.



Claim.—1. A hinge comprising a pair of leaves having registering openings, a connecting-plate slidingly hinged at its outer edge to the under side of the movable leaf to close the opening therein and hinged at its inner edge to the adjacent edge of the stationary leaf, a second swinging plate closing the opening in the stationary leaf and means for actuating the said swinging plate from the said connecting-plate.

2. A hinge comprising a pair of leaves having registering openings, a connecting-plate closing the opening in the movable leaf, a swinging plate forming a hinged extension of the connecting-plate to close the opening in the stationary leaf when the two leaves are horizontally alined, a sliding connection between the under side of the movable leaf and the outer end of the connecting-plate and a pintle connecting the connecting-plate and its hinged extension, to the under side of the fixed leaf adjacent to the abutting edges of the two leaves, and means for actuating said hinged extension.

3. A hinge comprising a pair of leaves having registering openings, a connecting-plate slidingly connected at its outer end to the under side of the movable leaf and filling the opening therein when the two leaves are alined; the inner end of the said connecting-plate being hinged to the under side of the adjacent edge of the stationary leaf, a swinging extension actuated from the hinged end of the said connecting-plate to close the opening in the stationary leaf, and a stop on the said extension to engage the under side of the stationary leaf.

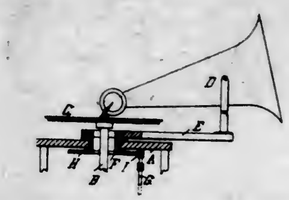
4. A hinge comprising a pair of leaves having rectangular registering openings and each having a flange shaped correspondingly to fit each other and the edges of the parts to which they are to be attached, a connecting-plate slidingly connected at its outer edge with the under side of the movable leaf and filling the opening therein, the opposite edge of the connecting-plate being hinged to the adjacent portion of the stationary leaf and there provided with a hinged extension filling the opening in said stationary leaf and means for actuating the said extension from the connecting-plate.

5. A hinge comprising two leaves each having a flange correspondingly shaped and each having a rectangular opening, a connecting-plate filling the opening in the movable leaf when the two leaves are horizontally alined, slidingly hinged at its outer end to the under side of the movable leaf, and pivotally hinged at its opposite end to the under side of the adjacent flanged edge of the stationary leaf and there provided with a tongue, a swinging extension-plate to close the opening in the stationary leaf and having a recess engaged by said tongue.

6. A hinge comprising a flanged stationary leaf having a rectangular opening and knuckles in the angle of the under side, a flanged movable leaf also having a rectangular opening and provided with elongated knuckles on its under side at the rear end of its opening, a connecting-plate slidingly connected at its rear end with said elongated knuckles, and having knuckles on the under side of its opposite end registering with the knuckles on the stationary leaf, a pintle passed through said last-mentioned knuckles, a second plate hinged on said pintle and forming an extension of said connecting-plate, a tongue-and-slot connection between the connecting-plate and said hinged extension to throw the latter up into the opening in the stationary leaf and allow it to drop therefrom when the movable leaf is swung down upon the stationary leaf.

7. A hinge comprising a pair of flanged leaves having rectangular openings, elongated knuckles on the lower side of the movable leaf, the rear edge of the opening being beveled, a guide-tongue projecting under said beveled surface, the said stationary leaf having knuckles in its angle, a connecting-plate having a pintle in the knuckles of the hinged leaf, a hinged extension on said latter plate and provided with a stop to engage the under side of the stationary leaf, and a tongue on the connecting-plate engaging a recess in the hinged extension.

824,368. **TALKING-MACHINE WITH ROTATABLE HORN.** FRITZ LOCHMANN and WILLIAM LOCHMANN, Soulenroda, Germany, assignors to Original Musikwerke Paul Lochmann Gesellschaft mit Beschränkter Haftung, Leipsic, Germany, a Firm. Filed Apr. 27, 1904. Serial No. 208,041.



Claim.—1. A talking-machine comprising a rotatable horn-carrier mounted centrally with respect to the machine.

2. A talking-machine comprising a horn-carrier rotatable about the driving-axle of the machine.

3. A talking-machine comprising a housing, a horn, a holder and a driving-axle, said holder being rotatable about the driving-axle of the machine to enable the horn to be directed toward various points without disturbing the housing.

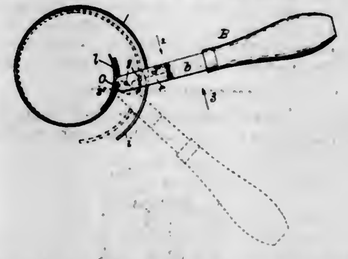
4. A talking-machine comprising a housing or cabinet, a horn, a holder or carrier for the horn, and a driving-axle releasably geared to the holder for rotating or adjusting the direction of the same without disturbing the housing.

5. The combination with a disk graphophone, of a horn-support adjustable circumferentially in respect to the disk.

6. The combination with a disk graphophone, of a horn-support rotatable around the disk.

7. The combination with a disk graphophone, of a rotatable horn-support concentrically journaled in respect to the axis of the disk.

824,369. **FRUIT-JAR WRENCH.** EDWIN W. MACAULEY, Rochester, N. Y. Filed Aug. 3, 1905. Serial No. 272,544.



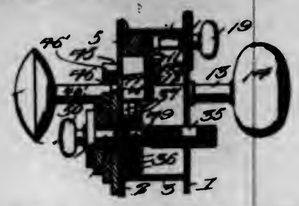
Claim.—1. A wrench consisting of a handle with bifurcated portion, a block rigidly held in the bifurcation thereof, an elastic band having one end held on the handle upon one side of said block and the other end freely movable upon the opposite side of said block, the free end of said band being provided with a plurality of perforations, and means on the block cooperating therewith, said free end being movable between the walls of the bifurcated portion of the handle and a shoe carried by the inner face of said band at its inner end.

2. A wrench for turning the covers of fruit-jars, comprising a handle and a band to engage the cover of the jar, and a block within the bifurcation of said handle forming a bearing for said band, said band being secured near one end to the handle, and having its opposite end freely movable through an opening in, and controlled by the handle, and an elastic shoe on the band tapered from the center toward each end and made springy to engage the cover.

3. A wrench for turning the covers of fruit-jars, comprising a handle and a band to engage the cover of the jar, said band being secured near one end to the handle, and having its opposite end controlled by the handle, and a shoe on the band to engage the cover, said shoe being thinner at its ends than at the middle and having the nature of a spring.

4. A device such as described, comprising a handle and a band carried by the handle, a concave shoe with tapered ends on the band, said shoe being elastic and its concavity of a radius less than that of the cover of the fruit-jar.

824,370. **LOCK.** PETRO MAGARÒ, No. 3, Steelton, Pa., assignor of one-third to Salvatori Maguro and Nicola Grandcolo, Harrisburg, Pa. Filed Jan. 10, 1905. Serial No. 240,621.



Claim.—1. In a lock, a casing, a sliding bolt therein, a latch engaging said bolt, a shaft mounted in the casing, slotted disks on the shaft adapted to engage the latch, said shaft being formed in sections, and means carried by one of the sections bearing against a second section and a disk to hold the disks against undue longitudinal movement on the shaft.

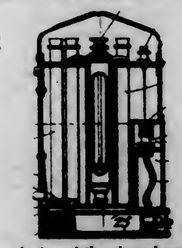
2. In a lock, a casing, a sliding bolt therein, a latch engaging said bolt, a shaft mounted in the casing, slotted disks on the shaft, adapted to engage the latch, said shaft being formed in sections, and yielding means carried by one of the sections bearing against a second section and a disk to hold said disks against undue longitudinal movement on the shaft.

3. In a lock, a casing, a sliding bolt therein, a latch engaging said bolt, a shaft mounted in the casing, slotted disks on the shaft adapted to engage the latch, said shaft being in sections threaded one within the other.

4. In a lock, a casing, a sliding bolt therein, a latch engaging the bolt, a shaft extending within the casing, slotted disks on the shaft, one of said disks being held against independent rotary movement thereon, the remainder of the disks being loosely mounted on the shaft, sleeves on the loosely-mounted disks extending beyond the casing, dial-plates secured to the sleeves, and a dial-plate mounted on the shaft, the notches of the disks being engaged by the latch of the bolt.

5. In a lock, a casing, a sliding bolt therein, a latch normally engaging the bolt, said latch being provided with arms, guiding-lugs for the latch, rods carried by the arms engaging the guiding-lugs, and springs embracing the rods and bearing against the guiding-lugs and the arms of the latch to hold the latch in its normal position.

824,371. **HYPODERMIC-SYRINGE CASE.** HENRY C. MICHIE, Jr., Charlottesville, Va. Filed Aug. 16, 1905. Serial No. 274,415.



Claim.—1. In a device of the class described a case provided with a cover and a heating device normally housed in the case and designed to be positioned for heating a liquid contained in the cover when in open position.

2. In a device of the class described a case provided with a cover adapted for movement to open position, a heating device normally housed in the case and means for moving the device to a position beneath the cover when in open position.

3. In a device of the class described a case, a cover connected therewith and adapted for movement to open position, a heating device normally housed in the case, means for automatically moving the device to a position beneath the cover when in open position and means for limiting the movement of the device.

4. In a device of the class described a case provided with a movable cover constituting a container, the bottom of the latter being depressed at its center, a heating device normally housed in the casing and movable to a position beneath the container and means for limiting the movement of the device whereby the latter will be positioned centrally beneath the depressed bottom of the container.

5. In a device of the class described a case provided with a movable cover constituting a container, a heater normally housed in the case, a spring for automatically moving the heater to a position beneath the container and means for limiting the outward movement of the heater.

6. In a device of the class described a case provided with a movable cover constituting a container, said case having a compartment, a heater normally housed in the compartment and movable to active position beneath the container, a spring for automatically moving the heater to active position, means for limiting such movement of the heater and means for locking the latter in normal position within the casing.

824,372. **TRACE-FASTENER.** HANS P. MONSERUD, Waubay, S. D. Filed Dec. 31, 1904. Serial No. 239,064.



Claim.—A trace-fastener consisting of a main member securable at the end of a whiffletree and two smaller members projecting outward from the main member, one of said smaller members receiving the eye of the trace and the other being curved so as to engage the outer side of the trace to prevent its accidental disengagement, said main member consisting of a socket serving also as a ferrule on the end of the whiffletree.

824,373. **FIREPROOF SAFE.** MOSES MOSLER, New York, N. Y., assignor to The Mosler Safe Company, Hamilton, Ohio. Filed Nov. 17, 1905. Serial No. 287,735.



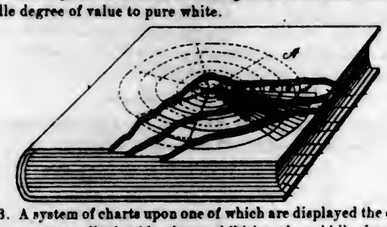
Claim.—1. In a fireproof safe, the combination, substantially as set forth, of a casing, a door-jamb portion therefor, an inner metallic box or lining joining the door-jamb portion, a dry filler disposed exterior to the lining, and a wet filler disposed exterior to the dry filler and between it and the casing.

2. In a fireproof safe, the combination, substantially as set forth, of a casing, a door-jamb portion therefor, an inward extension therefrom, an inner metallic box or lining joining the inward extension of the door-jamb portion, a dry filler disposed exterior to the lining and the inner extension of the door-jamb portion, and a wet filler disposed exterior to the dry filler and between it and the casing.

824,374. **COLOR CHART OR SCALE.** ALBERT H. MUNSELL, Brookline, Mass. Filed June 5, 1905. Serial No. 263,778.

Claim.—1. A color chart upon which are displayed the colors of the spectrum, all of said colors having the same degree of value or luminosity.

2. A system of charts upon one of which are displayed the colors of the spectrum all of said colors exhibiting the middle degree of value between white and black, and upon each of the others of which are displayed the colors of the spectrum in a common degree of value, and which together exhibit a uniform gradation of value from said middle degree of value to pure white.



3. A system of charts upon one of which are displayed the colors of the spectrum all of said colors exhibiting the middle degree of value between white and black, and upon each of the others of which are displayed the colors of the spectrum in a common degree of value and which together exhibit a unifrom gradation of value from said middle degree of value to black.

4. A system of charts upon one of which are displayed the colors of the spectrum, all of said colors exhibiting the middle degree of value between white and black, and upon each of the others of which are displayed the colors of the spectrum in a common degree of value and which together exhibit a uniform gradation of value from white to black.

5. A system of charts upon one of which are displayed the colors of the spectrum all of said colors exhibiting the middle degree of value between white and black, and upon each of the others of which are displayed the colors of the spectrum in a common degree of value, and which together exhibit a uniform gradation of value from white to black, and the several degrees of hue, value and chroma being indicated respectively by symbols displayed thereon and constituting a system of notation for said charts.

6. A color chart consisting of a circle divided into sectors of equal area, each sector having one of the colors of the spectrum described thereon, all of said colors being of the same value and each color being displayed in its greatest degree of chroma at the circumference of the circle and graded regularly in chroma toward the center to a neutral gray.

7. A color chart consisting of a circle divided into sectors of equal area, each sector having one of the colors of the spectrum described thereon, all of said colors being of the same value and each color being displayed in its greatest degree of chroma at the circumference of the circle and graded regularly in chroma toward the center to a neutral gray, each of said colors being divided into its degrees of hue by radial lines and into degrees of chroma by concentric rings.

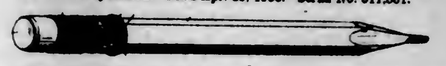
8. A pack or series of color charts bound together, each having thereon colors of the same value but of various hues and degrees of strength, each chart exhibiting a different degree of value from the others, the chart at the center of the pack bearing a medium value, the charts on one side thereof being of a lighter value, and those upon the other being of darker value.

9. A pack or series of color charts bound together, each having thereon colors of the same value but of various degrees of hue and degrees of strength, each chart having a different color value from the others, the chart at the center of the pack having a medium value, the charts on one side thereof being of lighter and those upon the other being of darker value, and the charts of lighter values graded regularly toward white from the center to the surface, and those of darker values graded regularly toward black from the center to the opposite surface.

10. A pack or series of color charts bound together, each having thereon colors of the same value but of various degrees of hue and degrees of strength, each chart having a different color value from the others, the chart at the center of the pack having a medium value, the charts on one side thereof being of lighter and those upon the other being of darker value, and the charts of lighter values graded regularly toward white from the center to the surface, and those of darker values graded regularly toward black from the center to the opposite surface, all of said charts and the divisions and degrees thereon bearing symbols to identify and express the same.

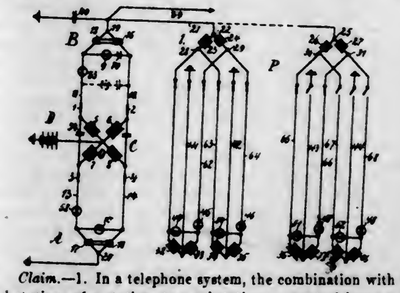
11. A color chart having displayed thereon one of the colors of the spectrum in a common degree of hue and in various degrees of value and chroma, the middle degree of value between white and black being located midway of the chart and the lighter and darker values being arranged on opposite sides of said middle value and graded uniformly in value thereon.

824,375. **ERASER-TIP FOR LEAD-PENCILS, PENHOLDERS, PENCIL-POINT PROTECTORS, AND THE LIKE.** FRANK MCINTYRE, New York, N. Y., assignor to Eagle Pencil Company, New York, N. Y., a Corporation. Filed Apr. 13, 1906. Serial No. 311,581.



Claim.—A metallic eraser-tip consisting of a sheet-metal tube containing erasive material, and circumferentially slotted as described, the opposite edges of the slots being connected at intervals by strips integral with the body of the tube, and a metallic ferrule of color contrasting with the body of the tip, inserted within, and constituting a close-fitting lining for, the slotted portion of the outer tube, as and for the purposes hereinbefore set forth.

824,376. **TELEPHONE SYSTEM.** WILHELM OHNESORGE, Wilmersdorf, near Berlin, Germany. Filed Feb. 9, 1906. Serial No. 300,313.



Claim.—1. In a telephone system, the combination with a central station, of a station, two substations, a central battery at the central station and having its one pole earthed, a circuit connecting the other pole of the central battery at the central station with the station and forming the four arms of a Wheatstone's bridge, two pairs of resistances at the central station and at the station in the four bridge-arms, a microphone at the station in the one bridge-arm before the two resistances, a telephone at the station in the bridge of the circuit, two circuits connecting the station with the two substations and forming each the four arms of a Wheatstone's bridge, two resistances at the station in bridge-arms common to the two circuits, a line connecting the four resistances at the station, two pairs of resistances at the two substations in the respective bridge-arms, two microphones at the two substations in the bridge-arms before the resistances, two telephones at the substations in the bridges of the circuits, and two lines connecting the two pairs of resistances at the substations with the earth.

2. In a telephone system, the combination with a central station, of a station, a plurality of pairs of substations, a central battery at the central station and having its one pole earthed, a circuit connecting the other pole of the central battery at the central station with the station and forming the four arms of a Wheatstone's bridge, two pairs of resistances at the central station and at the station in the four bridge-arms, a microphone at the station in the one bridge-arm before the two resistances, a telephone at the station in the bridge of the circuit, a plurality of pairs of circuits connecting the station with the plurality of pairs of substations and forming each the four arms of a Wheatstone's bridge, a plurality of pairs of resistances at the station in bridge-arms common to the pairs of circuits, connections between the resistances at the station, a plurality of pairs of resistances of which each pair is at either substation in the respective bridge-arms, a plurality of microphones of which each is at either substation in the bridge-arms before the resistances, a plurality of telephones of which each is at either substation in the bridge of the circuit, and a plurality of lines connecting the pairs of resistances at the substations with the earth.

3. In a telephone system, the combination with a central station, of a station, two substations, a central battery at the central station and having its one pole earthed, two resistances joined to the other pole of the central battery, two resistances joined to a point of union at the station, two branch lines connecting the four resistances at the central station and at the station, a microphone in one of the two branch lines at the station, a telephone in a bridge between the two branch lines at the station, a line connecting the point of union at the station with the earth and containing a condenser, another point of union at the station, a single line connecting the two

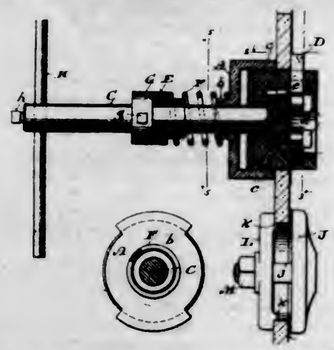
points of union at the station, two branch resistances joined to the other point of union, two points of union at the two substations, two pairs of resistances joined to the two points of union at the two substations, two branch lines connecting the one branch resistance at the station with two resistances at the two substations, two microphones in these two branch lines at the two substations, two other branch lines connecting the other branch resistances at the station with the other two resistances at the two substations, two telephones in bridges between the branch lines at the two substations, and two lines connecting the two points of union at the two substations with the earth.

4. In a telephone system, the combination with a central station, of a station, a plurality of pairs of substations, a central battery at the central station and having its one pole earthed, two resistances joined to the other pole of the central battery, two resistances joined to a first point of union at the station, two branch lines connecting the four resistances at the central station and at the station, a microphone in one of the two branch lines at the station, a telephone in a bridge between the two branch lines at the station, a line connecting the first point of union at the station with the earth and containing a condenser, a plurality of points of union at the station, connections between the first point of union and the plurality of points of union, a plurality of pairs of resistances joined to the plurality of points of union, a plurality of points of union each at either substation, a plurality of pairs of resistances joined to the plurality of points of union at the substations, a plurality of branch lines between the plurality of pairs of resistances at the station and the plurality of pairs of resistances at the substations and so disposed, that for every pair of substations two branch lines connect the one resistance of the respective pair at the station with two resistances at the two substations and two other branch lines connect the other resistance at the station with the other two resistances at the two substations, a plurality of microphones at the substations and each inserted in one of the two branch lines thereat, a plurality of telephones at the substations and each inserted in a bridge between the two branch lines, and a plurality of lines connecting the plurality of points of union at the subtations with the earth.

5. In a telephone system, the combination with a central station, of a station, two substations, a central battery at the central station and having its one pole earthed, two resistances joined to the other pole of the central battery, two resistances joined to a point of union at the station, two branch lines connecting the four resistances at the central station and at the station, a microphone in one of the two branch lines at the station, a telephone in a bridge between the two branch lines at the station, a line connecting the point of union at the station with the earth, two additional resistances connected with the two branch lines before the telephone at the station and with a common point, another point of union at the station, a single line connecting the common point with the other point of union, a line connecting the single line with the earth and containing a condenser, two branch resistances joined to the other point of union, two points of union at the two subtations, two pairs of resistances joined to the two points of union at the two substations, two branch lines connecting the one branch resistance at the station with two resistances at the two substations, two microphones in these two branch lines at the two substations, two other branch lines connecting the other branch resistance at the station with the other two resistances at the two substations, two telephones in bridges between the branch lines at the two substations, and two lines connecting the two points of union at the two substations with the earth.

6. In a telephone system, the combination with a central station, of a station, a plurality of pairs of substations, a central battery at the central station and having its one pole earthed, two resistances joined to the other pole of the central battery, two resistances joined to a first point of union at the station, two branch lines connecting the four resistances at the central station and at the station, a microphone in one of the two branch lines at the station, a telephone in a bridge between the two branch lines at the station, a line connecting the first point of union at the station with the earth, two additional resistances connected with the two branch lines before the telephone at the station and with a common point, a plurality of points of union at the station, connections between the common point and the plurality of points of union, a line connecting the connections with the earth and containing a condenser, a plurality of pairs of resistances joined to the plurality of points of union, a plurality of points of union each at either substation, a plurality of pairs of resistances joined to the plurality of points of union at the substations, a plurality of branch lines connecting the plurality of pairs of resistances at the station with the plurality of pairs of resistances at the substations and so disposed, that for every pair of substations two branch lines connect the one resistance of the respective pair at the station with two resistances at the two substations and two other branch lines connect the other resistance at the station with the other two resistances at the two substations, a plurality of microphones at the substations and each inserted in one of the two branch lines thereat, a plurality of telephones at the substations and each inserted in a bridge between the two branch lines, and a plurality of lines connecting the plurality of points of union at the subtations with the earth.

824,877. GASKET-REMOVING TOOL. JOHN H. OPTENBERG, Sheboygan, Wis. Filed Mar. 12, 1906. Serial No. 305,443.



Claim.—1. A tool comprising a hub, a recessed block loose in the hub, a turning spindle extending through the block and hub, cutters in pivotal connection with the spindle and guided in tangential openings of an adjacent wall portion of said block, means limiting independent rotary movement of said spindle in either direction, and a spring arranged to resist thrust of the aforesaid block and spindle from normal position.

2. A tool comprising a hub, a recessed block loose in the hub, a turning spindle extending through the block and hub, cutters in pivotal connection with the spindle and guided in tangential openings of an adjacent wall portion of said block, means limiting independent rotary movement of said spindle in either direction, a spring arranged to resist thrust of said block and spindle from normal position, and means for tensioning the spring.

3. A tool comprising a hub, a recessed block loose in the hub, a turning spindle extending through the block and hub, cutters in pivotal connection with an inner head of the spindle and guided in tangential openings of an adjacent wall portion of the block, a stop in connection with said block engaging a circumferential notch in the periphery of the spindle-head, and a spring arranged to resist thrust of the aforesaid block and spindle from normal position.

4. A tool comprising a hub, a recessed block loose in the hub, a turning spindle extending through the block and hub, a sleeve and set-collar on the spindle, a spiral spring between the hub and sleeve, cutters in pivotal connection with said spindle and guided in tangential openings of an adjacent wall portion of said block, and means limiting independent rotary movement of the aforesaid spindle in either direction.

5. A tool comprising a hub, a recessed block loose in the hub, a spindle extending through the block and hub, a handle in adjustable connection with the spindle transversely of the same, cutters in pivotal connection with said spindle and guided in tangential openings of an adjacent wall portion of said block, means limiting independent rotary movement of the aforesaid spindle in either direction, and a spring arranged to resist thrust of the block and spindle from normal position.

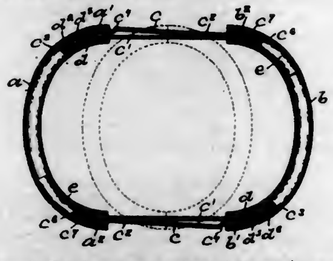
824,878. UMBRELLA. DAVID L. CROCER, Kansas City, Mo., assignor of one-half to E. Terry Brigham and E. F. Jones, Kansas City, Mo. Filed Sept. 14, 1903. Serial No. 173,093.

Claim.—An umbrella having its cover dished at its lower margin between contiguous ribs, and provided externally with a bead extending substantially parallel with the plane of the lower ends of the ribs and near but not below any point of its dished edges; said bead being flexible and bearing the same relation to the cover when the umbrella is open or closed.

824,878.



824,879. BRACELET. EDGAR A. PHILLIPS, Providence, R. I., assignor to Hamilton & Hamilton, Jr., Providence, R. I., a Firm. Filed Feb. 5, 1906. Serial No. 299,598.



Claim.—1. In a bracelet, a pair of rigid tubular members, a flexible connecting-link *c* to telescope into said members consisting of a strip of thin metal shaped to form a comparatively wide body portion *c'* from one end of which extends a long narrow spring-tongue c^3 bent over the body portion *c'* forming a looped end c^3 and having a bend c^4 forming a snap member adjacent the looped end c^3 and a beveled end c^5, a short spring-tongue c^7 on the end c^6 of the body portion *c'* having a beveled end c^8 and bent over the body portion into a position to lap over the beveled end c^5 on the long tongue c^3, as described.

2. In a bracelet, a pair of rigid tubular members, a connecting-link fastening member *d* to telescope into said members constructed of sheet metal shaped to form a body portion *d'* having the rolled-over side edges d^2 d^2 merging into the side arms d^3 d^3, which extend over the body portion forming a thin space d^4 and a central slot d^5, a hook-shaped central tongue d^6 on the end of the body portion, and a plate d^7 having the wide opening d^8 merging into the narrow central opening d^9 secured to the opposite end of the body portion in a position for the opening d^8 to coincide with the space d^4 and for the opening d^9 to coincide with the slot d^5, as described.

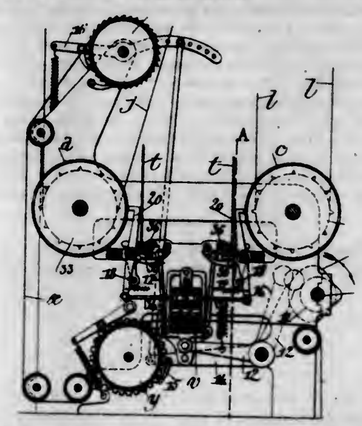
3. The combination with the tubular halves *a* and *b* of a bracelet, of the flexible connecting-links *c c* adapted to telescope into the halves *a* and *b*, the connecting-link fastening members *d d* for fastening one end of the connecting-links *c c* in the ends of the halves *a* and *b* and the connecting-link guide members *e e* adapted to be secured in the coinciding ends of the halves *a* and *b* and guide the connecting-links *c c* in the halves in opening and closing the bracelet, as described.

4. A bracelet composed of a pair of rigid tubular members, a member formed of a tube and a plate at one end thereof secured in an end of each of said members, said plate having a wide opening merging into a narrow central opening, and connecting-links telescoping in said members and extending through said openings of said plates.

5. A bracelet formed of two rigid tubular members, connecting-links telescoping in said members, said links comprising a body portion turned over at one end to form a short tongue and at the opposite end being turned over to form a long tongue the free end of which is confined by said short tongue, and means for securing and limiting the draw of said links with relation to said members.

6. A bracelet formed of two rigid tubular members, connecting-links telescoping in said members, a fastening member having a slotted end through which one end of said link passes, and a guide member having a like end through which the opposite end of said link passes.

824,880. READER OR MACHINE FOR PERFORATING PAPER TO BE USED WITH THE JACQUARDS IN AUTOMATIC EMBROIDERY-MACHINES. FRÉDÉRIC PITTARD, Lyon, France, assignor to Société Anonyme de Broderie Automatique, Lyon, France. Filed Feb. 21, 1905. Serial No. 246,774.

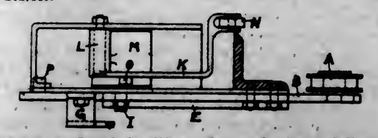


Claim.—1. In an apparatus for automatically perforating paper used in the working of a jacquard employed in automatic embroidery-machines, a reader composed of a finger capable of receiving simultaneously a vertical motion and a horizontal motion so as to follow the contour of the design, two perforated cylinders, connections for transmitting the horizontal movement of the finger to one cylinder and the vertical movement to the other cylinder, fingers adapted to enter the perforations in the cylinders, one finger at a time in a cylinder, punches, and means operated by the finger which enters the perforation to cause the corresponding punch to act.

2. In an apparatus for automatically perforating paper used in the working of a jacquard employed in automatic embroidery-machines, a reader composed of a finger capable of receiving simultaneously a vertical motion and a horizontal motion so as to follow the contour of the design, two perforated cylinders, connections for transmitting the horizontal movement of the finger to one cylinder and the vertical movement to the other cylinder, fingers adapted to enter the perforations in the cylinders, one finger at a time in a cylinder, punches, and means operated by the finger which enters the perforation to cause the corresponding punch to act and means for operating some of the punches by hand-controlled means from the reader.

3. In an apparatus for automatically perforating paper used in the working of a jacquard employed in automatic embroidery-machines, a reader composed of a finger capable of receiving simultaneously a vertical and a horizontal movement, two perforated cylinders, connections for transmitting to one cylinder the vertical movement of the finger and the horizontal movement to the other cylinder, fingers adapted to enter the perforations in the cylinders, one finger at a time in a cylinder, punches, means for feeding the paper past said punches, means for operating the punches means operated by the finger which enters the perforation in the cylinder to cause the corresponding punch to act on the paper, means for causing the fingers to leave the perforations, means for rectifying the position of the cylinders, a shaft and cams thereon for operating the paper-feeding means, the punch-operating means, the finger-removing means and the rectifying means.

824,881. SAFETY-GATE FOR HOISTS. DIXON POWNER and THOMAS C. THOMPSON, Leeds, England. Filed May 26, 1905. Serial No. 262,447.



Claim.—1. In a hoist, lift, or elevator having a sliding gate a roller thereon and closing-cams on the cage for engaging said roller, the combination of a sliding bar on the gate and means for arresting the movement of said bar when the cage is not opposite the gate, said

locking means being rendered inoperative by the cage as it moves into a position opposite the gate.

2. In a hoist, lift or elevator having a sliding gate, a roller thereon and gate-closing cams on the cage adapted to engage a roller on the gate, the combination of a sliding bar on the gate, a projection on said bar, a weighted and pivoted lever, one end of which normally projects into the path of the cage and a projection on said lever normally projecting into the path of the projection on the sliding bar, substantially as and for the purpose hereinbefore set forth.

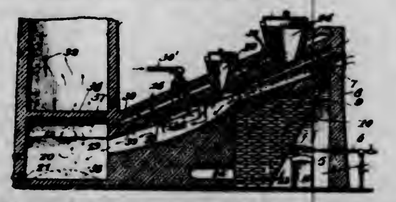
3. In a hoist, lift or elevator having a sliding gate, a roller thereon and gate-closing cams on the cage adapted to engage a roller on the gate, the combination of a sliding bar on the gate, a guide for the same fitted with bearing-rollers, a weighted and pivoted lever one end of which normally projects into the path of the cage and the other end of which normally projects into the path of the sliding bar, substantially as and for the purpose hereinbefore set forth.

824,382. **COMBINED BOLT AND NUT-LOCK.** OTTO H. QUITMAN, Jr., Newark, N. J. Filed Jan. 26, 1906. Serial No. 297,726.



Claim.—In a combined bolt and nut-lock, a bolt comprising a main shank having a screw portion, a head, an angular member forming a part of said main shank, a second shank extending from said angular member, said second shank being provided with a screw portion, the arrangement of the screw-threads upon said screw portions being respectively left and right handed, a washer or disk provided with an angularly-formed opening arranged upon said angular member, and a nut upon the screw portion of said second shank adapted to be screwed against said washer or disk, said nut being formed with a chamber, and having an outer nut-shaped part for a wrench, and a knurled member which serves as a finger-piece, substantially as and for the purposes set forth.

824,383. **SMELTING-FURNACE.** JOHN D. RIVARD, Los Angeles, Cal. Filed Dec. 2, 1904. Serial No. 235,245.



Claim.—1. In a smelting-furnace an inclined chamber; means to supply the products of combustion into the higher end thereof; means to feed ore into higher end of said chamber; and means to supply blasts of downwardly-directed hot gas into said inclined chamber.

2. In a smelting-furnace an inclined chamber; means to supply products of combustion into the higher end thereof; means to feed ore into said higher end of said inclined chamber; means to feed a material to produce a carbon monoxid in said chamber below the ore-feed; and means to supply downwardly-directed hot blasts of gas in said inclined chamber.

3. In a smelting-furnace an inclined chamber; a stack at the bottom thereof into which said inclined chamber opens; means to feed ore into the top portion of said inclined chamber; means to supply heated blasts of gas directed toward the bottom of said inclined chamber; a combustion-chamber below the higher end of said inclined chamber and communicating with said higher end; and injector-burners in said combustion-chamber.

4. In a smelting-furnace; an inclined chamber; a combustion-chamber below the higher end of said inclined chamber and having the throat thereof opening into the higher end of said inclined chamber; means to supply ore into the higher end of said inclined chamber; a stack at the lower end of said inclined chamber; a crucible in the bottom of said stack, and means to supply downwardly-directed blasts of hot gas into said inclined chamber upon the ore passing therethrough.

5. In a smelting-furnace an inclined chamber; a combustion-chamber below the higher end of said inclined chamber and having the throat thereof opening into the higher end of said inclined chamber; means to supply ore into the higher end of said inclined chamber; a stack at the lower end of said inclined chamber; a crucible in the bottom of said stack; a covering for said crucible; means to supply material to produce a carbon monoxid between the ore-feed and the stack into said inclined chamber.

6. In a smelting-furnace an inclined chamber, a combustion-chamber below the higher end of said inclined chamber and having the throat thereof opening into the upper end of said inclined chamber; means to supply ore into the upper end of said inclined chamber; a stack at the lower end of said inclined chamber; a directing-chamber in the bottom of said stack, said directing-chamber having ports in the bottom of the side walls thereof opening into the stack; a crucible in said directing-chamber; a reheating-chamber in the top wall of said inclined chamber having a plurality of ports establishing communication between said chambers, a blower; a pipe connecting said reheating-chamber with said blower; and a pipe connecting said blower with said stack.

7. In a smelting-furnace an inclined chamber; a combustion-chamber below the higher end of said inclined chamber and having the throat thereof opening into the higher end of said inclined chamber; means to supply ore into the higher end of said inclined chamber; a stack at the lower end of said inclined chamber; a directing-chamber in the bottom of said stack, said directing-chamber having ports in the bottom of the side walls thereof opening into the stack; a crucible in said directing-chamber; a reheating-chamber in the top wall of said inclined chamber having a plurality of ports establishing communication between said chambers; a blower; a pipe connecting said reheating-chamber with said blower; a pipe connecting said blower with said stack; and means to supply material to produce a carbon monoxid into said inclined chamber between the ore-feed and stack.

8. In a smelting-furnace an inclined chamber; a combustion-chamber below the higher end of said inclined chamber and communicating therewith at the higher end of said inclined chamber; a centrally-disposed baffle-wall in the rear portion of said combustion-chamber; means to supply liquid hydrocarbon fuel into said combustion-chamber; a stack at the lower end of said inclined chamber; means to feed ore into the higher end of said inclined chamber; and a crucible within said stack into which said inclined chamber opens.

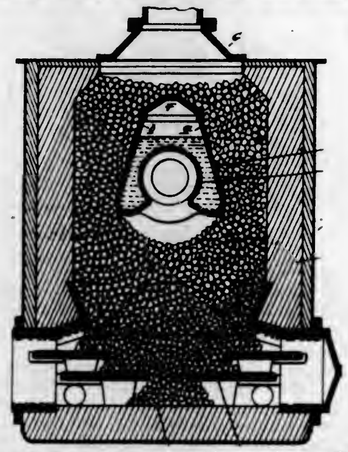
9. In a smelting-furnace an inclined chamber; a combustion-chamber below the higher end of said inclined chamber and communicating with said higher end; a centrally-disposed checker-work baffle-wall in the rear portion of said combustion-chamber; means to supply liquid hydrocarbon fuel into said combustion-chamber; means to supply air into the rear portion of said combustion-chamber on each side of said baffle-wall; a stack at the lower end of said inclined chamber; means to feed ore into the higher end of said inclined chamber; a directing-chamber in the bottom of said stack and having ports through the side walls thereof at the bottom opening into said stack; a crucible within said directing-chamber; and means to feed material to produce a carbon monoxid into said inclined chamber between the stack and the ore-feed.

10. In a smelting-furnace an inclined chamber; a combustion-chamber below the higher end of said inclined chamber and communicating with said higher end; a centrally-disposed checker-work baffle-wall in the rear portion of said combustion-chamber; means to supply liquid hydrocarbon fuel into said combustion-chamber; means to supply air into the rear portion of said combustion-chamber on each side of said baffle-wall; a stack at the lower end of said inclined chamber; means to feed ore into the higher end of said inclined chamber; means to feed material to produce carbon monoxid into said inclined chamber between the stack and the ore feed; means to supply a plurality of blasts of gas upon the ore passing through said inclined chamber; a directing-chamber in the bottom of said stack, said directing-chamber having ports in the bottom of the side walls thereof opening into the stack; and a crucible in said directing-chamber.

11. In a smelting-furnace an inclined chamber; a combustion-chamber below the higher end of said inclined chamber and communicating with said higher end of said inclined chamber; a centrally-disposed checker-work baffle-wall in the rear portion of said combustion-chamber; means to supply air into the rear portion of said combustion-chamber at each side of said baffle-wall; means to supply liquid hydrocarbon fuel into said combustion-chamber; means to feed ore into the higher end of said inclined chamber; means to feed a material to produce a carbon monoxid into said inclined chamber below the ore-feed; a reheating-chamber in the top wall of said inclined chamber and having a plurality of ports establishing communication between said chambers; a blower; a pipe connecting said reheating-chamber with said blower; a stack at the lower end of said inclined chamber; a directing-chamber in said stack said chamber having ports in the bottom of side walls thereof opening into said stack; a pipe connecting said stack with said blower; and a crucible within said directing-chamber.

12. In a smelting-furnace an inclined chamber; a stack at the bottom thereof into which said inclined chamber opens; a crucible in the bottom of said stack; a directing-chamber extending over said crucible into which said inclined chamber opens, said directing-chamber having ports in the side walls thereof near the bottom of the crucible, and there being a passage between the walls of the crucible and between the side walls of the stack whereby the products of combustion are compelled to pass downwardly at the sides of the crucible on their passage to the stack.

824,384. **GAS-PRODUCER.** ERICH SANDNER, Lansing, Mich., assignor to American Suction Gas Producer Company, Lansing, Mich., a Corporation of Michigan. Filed July 31, 1905. Serial No. 272,079.



Claim.—1. A gas-producer comprising a casing constituting a fuel-chamber through which a current of air is drawn and a hollow member extending across the fuel-chamber within said casing constituting an eduction-conduit for the generated gas, the walls of said conduit being hollow and forming a water-chamber in which vapor is generated and commingled with the air drawn through the casing.

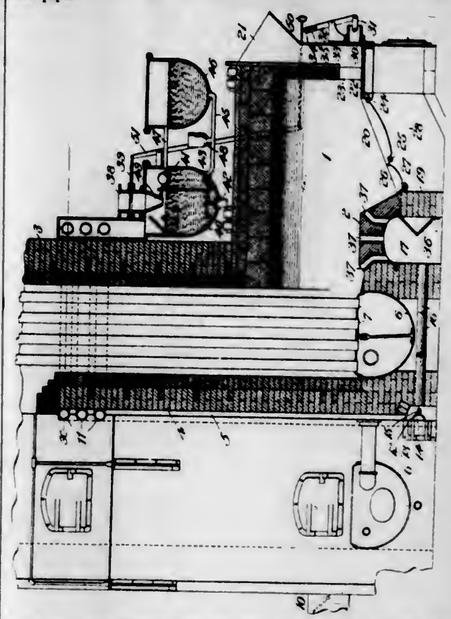
2. A gas-producer comprising a casing forming a fuel-chamber, a hollow member passing transversely across said casing and the fuel-chamber therein, the outer walls of said member being of inverted-V-shaped cross-section and the inner wall of cylindrical cross section, the space between said walls forming a water-chamber and said inner wall constituting an eduction-conduit through which the generated gases are drawn, whereby the vaporization will vary with the variation of the gas generated.

3. In a gas-producer, the combination with a casing forming a fuel-chamber, of the generator E therein having the oppositely-inclined and upwardly-tapering walls *a*, *b*, the inner cylindrical wall *c* forming a gas-eduction conduit and opening centrally downward into the mass of fuel and the detachable cap F at the top of said vaporizer, substantially as and for the purpose described.

824,385. **FURNACE.** JOHN F. SENTER, Birmingham, Ala., assignor of one-half to The Walsh and Weidner Boiler Company, Chattanooga, Tenn., a Corporation of Tennessee. Filed Sept. 18, 1905. Serial No. 279,007.

Claim.—1. In combination with a vertical boiler-casing divided into compartments by a hollow partition-wall, a transverse chamber at the bottom of said partition, a steam-pipe therein, a plurality of pipes leading therefrom, a plurality of jet-nozzles for discharging steam into said pipes, ports to admit air or gas near the top of said hollow partition, a fire-box, a hollow ported bridge-wall therefor to which said pipes lead, and means to protect said pipes from the direct action of the flames.

2. The combination with a furnace-casing and a separate fire-box communicating therewith, of a vertical hollow partition-wall having an enlarged chamber at the bottom thereof, ports for the admission of air or gas at the top of said wall, a hollow bridge-wall parallel to said partition-wall, a set of pipes to carry the preheated air or gas from said enlarged chamber to said bridge-wall, and a multi-ported steam-pipe in said chamber to force the circulation through said pipes.



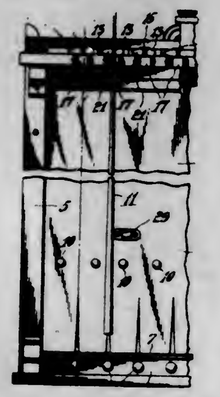
3. The combination with a vertical boiler-casing, having a hollow partition-wall therein, of a Dutch oven opening into said casing, a hollow bridge-wall over which the products of combustion flow from said oven, a drum seated behind said bridge-wall, air-pipes connecting said hollow partition and bridge-walls and disposed below said drum, and ports to admit air or gas to said hollow partition-wall and discharge it through said bridge-wall into said Dutch oven.

4. The combination with a furnace-casing divided into two compartments by a vertical partition over which the products of combustion flow, a Dutch oven opening near the bottom of one compartment, a hollow bridge-wall at the inner end of said oven, a drum mounted between said wall and partition, pipes to connect the hollow chambers in said wall and partition which are protected by said drum, ports to admit air or gas to the chamber in said partition, a multiported steam-pipe to force said air or gas into said pipes, and ports to discharge said air or gas into said oven, substantially as described.

5. In a furnace for burning solid or gaseous fuel, the combination with a vertical boiler-casing, a fire-box opening into said casing and provided with a grate and fuel-charging doors, a hollow wall between said fire-box and casing, a hollow deflector-wall in said casing, a normally open port or ports leading from the interior of said deflector-wall without said boiler-casing, a gas-supply pipe or pipes, means to connect said pipes and ports, a chamber at the bottom of said deflector-wall, a steam-jet pipe therein, a plurality of pipes disposed out of contact with the flames, which lead from said chamber to said hollow wall between the fire-box and casing, and ports in said latter wall which discharge the gases into said fire-box.

6. The combination with a boiler-furnace having a vertical hollow partition-wall therein, of gas-pipes entering the upper end of said wall, a steam-pipe entering the lower part of said wall, a fire-box without the boiler-casing provided with grate-bars and fuel-charging doors, a bridge-wall for said fire-box disposed parallel to said partition-wall and provided with a chamber, pipes leading from the partition-wall to said chamber in the bridge-wall, steam-jets to force the gas admitted to said partition-wall into said chamber in the bridge-wall, an angular plate in said chamber against which the gases are discharged, and a plurality of ports leading from said chamber, substantially as described.

824,386. CUE-RACK. LUDGER SEVIGNY, Sherbrooke, Canada. Filed June 30, 1905. Serial No. 267,707.



Claim.—1. In a cue-rack, a supporting-frame, clamping members carried by the frame, a spring arranged to actuate one of the clamping members, and a pivoted member adapted to overcome the action of the spring.

2. In a cue-rack, a supporting-frame, clamping members carried by the frame, a spring arranged to actuate one of the clamping members, a lever pivoted to the frame and abutting against said actuated clamping member, a flexible member secured to the lever, and a handle attached to the flexible member.

3. In a cue-rack, a supporting-frame, clamping members carried by the frame, a spring adapted to actuate one of the clamping members, a pivoted lever arranged to abut against one end of the actuated clamping member, a flexible member secured to the lever, a handle secured to the flexible member, and a guide for the flexible member comprising a bracket supported by the frame and a rotatable roller adapted to receive the flexible member.

4. In a cue-rack a supporting-frame, an upper shelf thereon provided with recesses therein and provided with rounded edges adjacent the recesses, clamping members carried by the shelf one of which is provided with an extension, beyond said rounded edges, and means for actuating and releasing the clamping members.

824,387. REFRIGERATOR. STEPHEN A. SEWALL and LESLIE H. ABBEE, Denver, Colo. Filed Feb. 18, 1905. Serial No. 246,315.



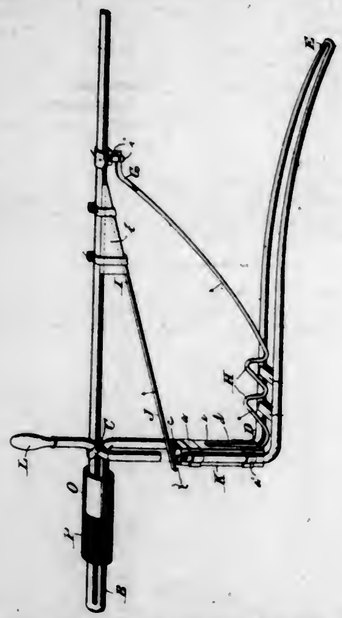
Claim.—1. A refrigerator comprising a cylindrical casing having an ice and a provision compartment, the latter being provided with superposed series of lugs, circular rails removably supported on said lugs and circular shelves having wheels adapted to be presented in operative relation to said rails.

2. A refrigerator comprising a cylindrical casing having an ice and a provision compartment, circular rails mounted to be vertically adjustable within the latter and shelves having wheels adapted to be presented in operative relation to said rails.

3. A refrigerator comprising a casing having an ice and a provision compartment, rails mounted to be vertically adjustable within the latter and shelves having wheels adapted to be presented in operative relation to said rails.

824,388. MAIL-POUCH CATCHER. JOHN R. SAYER, Kansas City, Kans. Filed July 28, 1905. Serial No. 270,208.

Claim.—1. The combination in a mail-bag-catching device of a supporting-rod, the material in said supporting-rod, being continued and projected as a double catcher-arm, as heretofore set forth and described.



2. The combination in a mail-bag-catching device of a supporting-rod, a double catcher-arm, said arm being a continuation of the supporting-rod and an adjustable lever attached to the supporting-rod by a band and a stirrup.

3. The combination in a mail-bag-catching device of a supporting-rod, a double catcher-arm, said arm being a continuation of the supporting-rod, an adjustable lever attached to said supporting-rod by a band and a stirrup, and a boxing rigidly attached to said catcher-arm at right angles to said supporting-rod.

4. The combination in a mail-bag-catching device of a supporting-rod, a double catcher-arm, said arm being a continuation of the supporting-rod an adjustable lever attached to the supporting-rod by a band and a stirrup, a triangular cast pocket attached to said supporting-rod, a leaf-spring set in said pocket.

5. The combination in a mail-bag-catching device, of a supporting-rod, and an adjustable lever attached at one end to said supporting-rod, the other end slidably connected to a double catcher-arm, by boxing rigidly attached to said arm, a plate fixed on slidable end of said lever, said plate carrying an antifriction-roller.

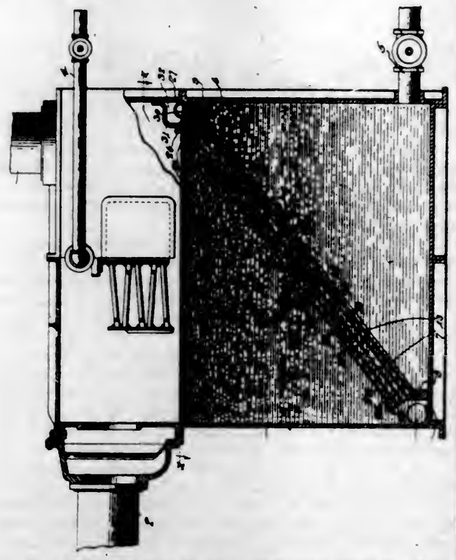
6. The combination in a mail-bag-catching device of a supporting-rod, a double catcher-arm, said arm being a continuation of the supporting-rod, an adjustable lever attached to the supporting-rod, a boxing for the support and guidance of said lever, a leaf-spring, and an eccentric device coöperating with said spring.

824,389. FILTER FOR FEED-WATER HEATERS. OMAN L. STUMP, Marion, Ohio, assignor of one-third to John Reddenbaugh and one-third to Edwin D. Packard, Marion, Ohio. Original application filed Aug. 19, 1904, Serial No. 221,348. Divided and this application filed Sept. 9, 1905. Serial No. 277,695.

Claim.—1. In combination with a feed-water heater having a steam-space above and a filtering-chamber below, a filtering-bed extending across the filtering-chamber of the heater in an inclined position and composed of a plurality of separated sheets of filtering fabric of successively-increasing fineness toward the under side of the bed, through all of which sheets the water successively passes, substantially as described.

2. In combination with a feed-water heater having a steam-space above and a filtering-chamber below, an inclined filtering-bed for the filtering-chamber thereof, comprising a supporting-grate, a sheet of fabric resting thereon, and a superposed grate having unobstructed channels on its under side extending in the direction of inclination of the bed, substantially as described.

3. In combination with a feed-water heater having a steam-space above and a filtering-chamber below, an inclined filtering-bed for the filtering-chamber thereof, comprising a supporting-grate, and alternate sheets of filtering fabric and spacing and retaining grates superposed thereon and on each other, said spacing-grates having unobstructed channels on their under sides extending in the direction of inclination of the bed, substantially as described.



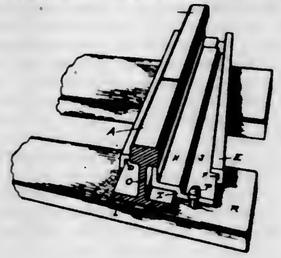
4. A feed-water heater having a steam-space above and a filtering-chamber below, and a sediment-chamber provided with a sediment-outlet at the bottom thereof, a wash-water chamber at the top of said filtering-chamber, and a filtering-bed extending in an inclined position across the filtering-chamber from the water-line to the sediment-chamber, said filtering-bed being composed of alternately-superposed grates and sheets of filtering fabric, the grates being provided on their under sides, above the fabric, with unobstructed channels extending continuously in the direction of inclination of the bed, substantially as described.

5. In combination with a feed-water heater having a steam-space above and a filtering-chamber below, having partitions at the water-line and bottom, and wash-water and sediment chambers adjacent thereto respectively, angle-bars extending between said partitions, and a filtering-bed supported on said partitions and angle-bars and composed of alternately-superposed sheets of filtering material and grates, the grates being provided on their under sides, above the sheets, with unobstructed channels extending in the direction of inclination of the bed, substantially as described.

6. In combination with a feed-water heater having a steam-space above and a filtering-chamber below, said filtering-chamber having fixed supports therein, a removable filter-bed composed of alternate grates and sheets of filtering fabric, each grate composed of a plurality of relatively small sections, tie-bars extending over the uppermost grate, and threaded studs extending through the grates and provided with nuts to secure the tie-bars, substantially as described.

824,390. RAIL-JOINT. WILLIAM R. THOMAS, Watertown, Wis. Filed Mar. 6, 1905. Serial No. 248,496.

Claim.—In a railway-rail joint of the class described, the combination with the meeting ends of two railway-rails, the webs of which are provided with a plurality of transverse apertures, of an integrally-formed fish-plate and base-plate and an integrally-formed fish-plate and wedge, the vertical portions of said integrally-formed fish-plate and base-plate being provided with a plurality of horizontal projections adapted to enter the apertures of the rails and terminate flush with the opposite side of the rail-webs through which said apertures are formed, the horizontal portions of the base-plate being provided with a vertical recessed flange formed at an angle to the longitudinal center of the rails, whereby an angular space is left between said recessed flange and the vertical edge of the rails for the reception of the horizontal portion of said integrally-formed fish-plate and wedge, said integrally-formed fish-plate and wedge being adapted when driven home between said recessed flange and the railway-rails to securely clamp such parts together, and means for holding said integrally-formed fish-plate and wedge in place between said vertical recessed flange, comprising a spike rigidly fixed at one end to one of the rail-supporting ties, its protruding end being adapted to bear directly against the protruding end of said integrally-formed wedge and fish-plate, all substantially as and for the purpose specified.



824,391. TOILET-POWDER RECEPTACLE. PATRICK A. TOOMEY, Chicago, Ill. Filed Apr. 8, 1905. Serial No. 254,584.



Claim.—1. A receptacle for toilet powder provided in its wall with a discharge-opening surrounded by a sharp seat located at the inner surface of said wall and a spring-pressed outwardly-tapered closure, the conical surface of which presses against said sharp seat to close said opening, and the smaller, outer end of which projects outside of the outer face of said wall.

2. A receptacle for toilet powder provided in its wall with a discharge-opening and a spring-pressed closure within the receptacle closing outwardly against said seat, said seat and closure being formed to meet along a sharply-defined line, the wall containing said discharge-opening being depressed or concave on its outer face and said closure extending outwardly beyond the depressed face of said wall.

3. The new article of manufacture comprising an elongated tubular toilet-powder receptacle closed at one end and provided at its other end with a removable tubular extension constituting a lid or cover and provided in its end wall with a discharge-opening, a closure for closing said opening and an expansively-acting closing-spring within said extension interposed between the closure and an abutment carried by the extension and serving to hold the closure normally against its seat while permitting the closure to be yieldingly forced from its seat.

4. The new article of manufacture comprising an elongated tubular toilet-powder receptacle closed at one end and provided at its other end with a removable tubular extension constituting a lid or cover and provided in its end wall with a discharge-opening surrounded by a seat, an inwardly-opening closure within the extension engaging said seat, said seat and closure meeting along a sharply-defined line, an expansively-acting closing-spring within said extension and an interior shoulder carried by the extension between which and the closure said spring is interposed.

824,392. LOCK. HARRY P. TOWNSEND, New Britain, Conn., assignor to The Corbin Cabinet Lock Company, New Britain, Conn., a Corporation of Connecticut. Filed Apr. 6, 1904. Serial No. 201,862.



Claim.—1. In a lock, in combination, a lock-case, a sliding plate located within said case and having laterally-extending lugs forming lateral guides and depthwise-extending lugs on opposite edges of the plate forming depthwise guides, a bolt operatively connected with said plate, and means for operating the bolt.

2. In a lock, in combination, a lock-case, a catch-plate located within the case and having means for engagement of a hasp, a bolt mounted on the catch-plate, a spring, means coacting with said spring to obstruct free movement of both the bolt and catch-plate and to move the catch into operative position, and means for operating the bolt.

3. In a lock, in combination, a lock-case, a sliding plate located within the case and having lugs projecting from opposite edges to engage the wall of the case and guide the movement of the plate therein, and depthwise-extending lugs formed upon opposite edges of the plate, and means for causing sliding movement of the plate.

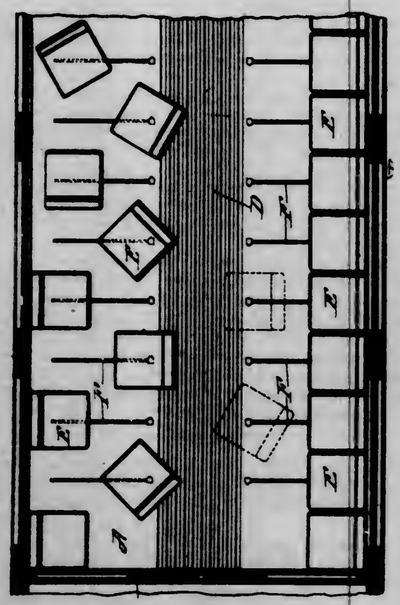
4. In a lock, in combination, a lock-case, a plate mounted to slide in the case, a lug located on the plate, a bolt mounted on the plate and having a spring-recess, a shoulder facing said recess and a cam projection operating in connection with a stop from the case, the stop, a bent spring with its bent portion located in said recess one arm resting against said lug and the other against said shoulder, and means for operating the bolt.

5. In a lock, in combination, a catch-plate located within the lock-case and having means for engagement with a hasp, a sliding bolt mounted on the catch-plate and having a cam projection acting upon a stop on the wall of the case, the stop, and a single spring forcing the bolt in engagement with said stop and holding the catch-plate in operative position, and means for operating the bolt.

6. In a lock, in combination, a lock-case, a sliding plate located within the case and having depthwise-extending lugs forming depthwise guides, a sliding bolt mounted on the catch-plate and guided between said lugs, a single spring acting upon both the bolt and the catch-plate, and means coacting with said spring to prevent free movement of the bolt and to hold the catch-plate in operative position.

7. In a lock, in combination, a lock-case, a catch-plate located within the case, a bolt mounted on the catch-plate, a spring secured to the bolt and bodily movable therewith and operatively acting upon both the bolt and the catch-plate, and means for operating the bolt

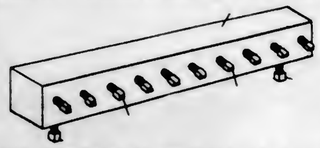
824,393. **PASSENGER-CAR.** HENRY F. VOGEL, St. Louis, Mo., assignor to St. Louis Car Company, St. Louis, Mo., a Corporation. Filed Feb. 8, 1906. Serial No. 300,063.



Claim.—1. A car having a side wall and a floor, the latter of which is provided with a guideway extending transversely of the floor, and means whereby said seat is restricted in its movement over said floor, whereby it may be placed in alinement with another seat adjacent to said wall and withdrawn from said wall to place it in a position removed from said other seat, substantially as set forth.

2. A car having a side wall and a floor, a guideway-track in said floor extending transversely of the car and at an angle to said side wall, and a revolubie seat having a post movably fitted to said track, substantially as set forth.

824,394. **MECHANICAL IMPLEMENT.** CHARLES F. P. WARNER, Providence, R. I. Filed Jan. 29, 1906. Serial No. 298,325.



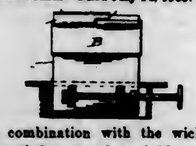
Claim.—1. A device of the character described, comprising a body portion, a plurality of adjustable retaining-screws threaded therein at close intervals, said screws being adapted to be turned outward and extended from said body to engage and hold by pressure the work to be operated upon.

2. A device of the character described, comprising a body portion, a plurality of adjustable retaining-screws threaded therein at close intervals, said screws being downwardly inclined and adapted to be turned outward and extended from said body to engage and carry the work to its seat and hold the same by pressure to be operated upon.

3. A device of the character described, comprising a body portion, a plurality of adjustable retaining-screws threaded therein at close intervals, said screws being downwardly inclined and adapted to be turned outward and extended from said body to engage and hold by pressure the work to be operated upon, and vertically-adjustable means in said body on which the same is supported.

4. A device of the character described, comprising a body portion, a plurality of adjustable retaining-screws threaded therein at close intervals, said screws being set at an angle to the rear face of the body and inclining slightly downward therefrom, and said screws being adapted to be turned and extended outward from said body so that the heads of the same will engage and hold by pressure the work to be operated upon, and a plurality of supporting-screws threaded into the under side of said body by the rotation of which said body may be adjusted vertically.

824,395. **FLAME-REGULATOR FOR LAMP-BURNERS.** HENRY R. WHITE, Brainerd, Minn. Filed July 14, 1905. Serial No. 269,673.



Claim.—1. In combination with the wick-tube of a lamp-burner, a plate secured thereto and revolubly and slidably mounted thereon to regulate the extent of flame area of the wick, substantially as shown and described.

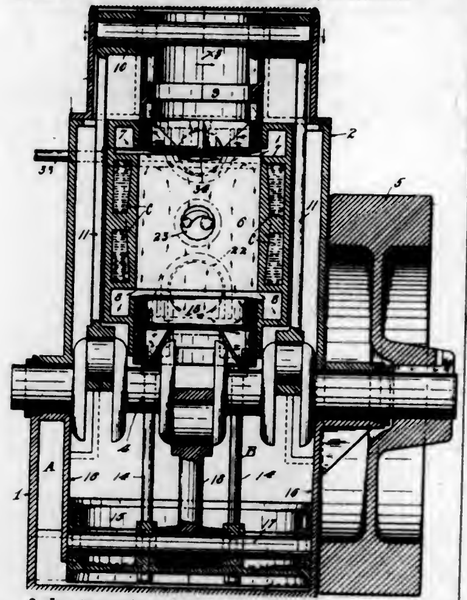
2. In combination with the wick-tube of a lamp-burner, a tubular bearing secured thereto, and a plate having a journal mounted in said bearing, said plate being adapted to rotate in said bearing to rest on said wick-tube and to swing clear thereof and also slide on said wick-tube, as and for the purpose described.

3. In combination with the wick-tube of a lamp-burner, a plate secured thereto, a tubular bearing integral with said plate, and a plate having a journal adapted to fit into said bearing, said plate being adapted to be rotated in said bearing to rest on said wick-tube and be slid lengthwise of the tube and also to be swung clear of the top of the wick-tube, as and for the purpose described.

824,396. **EXPLOSIVE-ENGINE.** ELLIS J. WOOLF, Minneapolis, Minn., assignor to Woolf Valve Gear Co., Minneapolis, Minn., a Corporation of Minnesota. Filed May 5, 1904. Serial No. 206,463.

Claim.—1. In a two-cycle explosive-engine, the combination with an explosion-cylinder and a charging-valve controlling the admission of the explosive mixture thereto, of a differential piston encircling the crank-shaft, the smaller member of which differential piston works in said explosive-cylinder, and controls the exhaust-port, and the larger member of which works in a charging-cylinder on the opposite side of the crank-shaft, and is connected thereto, substantially as described.

2. In a two-cycle explosive-engine, the combination of a pair of opposing pistons working in a common explosion-cylinder, one controlling the exhaust-port and the other the admission-port of said cylinder, and one of which pistons encircles the crank-shaft, and which two opposing pistons are connected to opposing cranks from opposite sides of the crank-shaft, substantially as described.



3. In a two-cycle explosive-engine, the combination of a pair of opposing pistons working in a common explosion-cylinder, one controlling the exhaust-port and the other the admission-port of said cylinder, and one of which pistons is differential and encircles the crank-shaft, and which two opposing pistons are connected to opposing cranks from opposite sides of the crank-shaft, substantially as described.

4. In a two-cycle explosive-engine, the combination of a pair of opposing pistons working in a common explosion-cylinder, one controlling the exhaust-port and the other the admission-port of said cylinder, one of which pistons is differential and encircles the crank-shaft, which two opposing pistons are connected to opposing cranks from opposite sides of the crank-shaft, and which pistons divide space outside the explosion-cylinder into two chambers, one of which serves as the compression-chamber and the other of which serves as a lubricating-chamber, substantially as described.

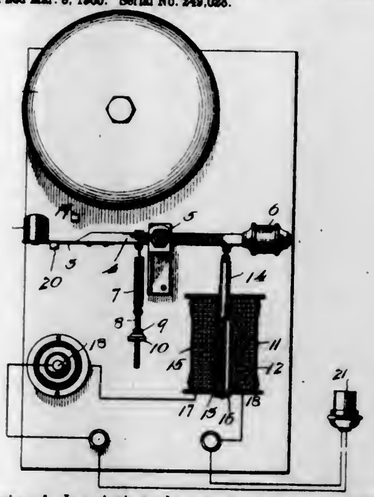
5. In a two-cycle explosive-engine, the combination of a pair of opposing pistons working in a common explosion-cylinder, controlling, one the exhaust-port and the other the admission-port, of said cylinder, one of which pistons is differential and encircles the crank-shaft, which two opposing pistons are connected to opposing cranks from opposite sides of the crank-shaft, and which pistons divide space outside the explosion-cylinder into a compression-chamber and lubricating-chamber, the contents of which lubricating-chamber are subject to the action of the cranks and the pistons for effecting the distribution of the lubricating-oil to all the working parts of the engine, substantially as described.

6. In a two-cycle explosive-engine, the combination of a pair of opposing pistons working in a common explosion-cylinder, controlling, one the exhaust-port and the other the admission-port of said cylinder, one of which pistons is differential and encircles the crank-shaft, which two opposing pistons are connected to opposing cranks from opposite sides of the crank-shaft, and which pistons divide space outside the explosion-cylinder into two chambers, one of which serves as the compression-chamber having a charging-passage leading to the admission-port of the explosion-cylinder, and which compression-chamber is provided with an inlet-valve for the explosive mixture, substantially as described.

7. In a two-cycle explosive-engine, the combination of a pair of opposing pistons working in a common explosion-cylinder, controlling, one the exhaust-port and the other the admission-port, of said cylinder, one of which pistons is differential and encircles the crank-shaft, which two opposing pistons are connected to opposing cranks from opposite sides of the crank-shaft, and which pistons divide space outside the explosion-cylinder into two chambers, one of which serves as a compression-chamber having a charging-passage leading to the admission-port of the explosion-cylinder, an inlet-valve for the explosive mixture at the compressing end of said charging-passage, and an air-admission valve at the outer end of said charging-passage, all for coöperation, substantially as described.

8. In a two-cycle explosive-engine, the combination of a pair of opposing pistons working in a common explosion-cylinder, controlling one the exhaust-port and the other the admission-port of said cylinder, one of which pistons is differential and encircles the crank-shaft, which two opposing pistons are connected to opposing cranks from opposite sides of the crank-shaft and which pistons divide space outside the explosion-cylinder into two chambers, one of which serves as a compression-chamber having a charging-passage leading to the admission-port of the explosion-cylinder, an inlet-valve for the explosive mixture at the compressing end of said charging-passage, an air-admission valve at the outer end of said charging-passage and a governing-valve located in said charging-passage directly inward of said mixture-inlet valve, and operative to throttle either the mixture-inlet or said charging-passage, at will, all for coöperation substantially as described.

824,397. **ELECTRIC GONG.** WILLIAM F. WORD, Helena, Mont. Filed Mar. 8, 1905. Serial No. 249,026.



Claim.—1. In a single-stroke gong, a counterbalanced pivoted arm carrying a spring-hammer, a spring supporting said hammer, and secured to said pivoted arm, a stop adapted to contact with the spring in its upward movement causing the spring to continue its upward movement and furnish the desired signal, a stop below the spring and adjacent to the hammer to deaden the vibratory action of said spring, and a solenoid to actuate the hammer, substantially as described.

2. A device of the character described, comprising a gong, a pivoted hammer, a spring portion supporting said hammer, a stop located in the path of said spring portion, and at a distance from the gong so as to require the spring to bend in striking the gong, a stop below the spring adapted to contact therewith and adjacent to the hammer, said stop serving to deaden the vibratory action of said spring.

3. In a device of the character described, a counterbalanced pivoted arm, a gong, a hammer-head carried by a thin spring-plate, said plate being secured to the pivoted arm, stops at the opposite sides of the said spring-plate, means for laterally adjusting the pivoted arm, a flexibly-suspended core for actuating the hammer, and means substantially as described for limiting the movement of the core with respect to the hollow electromagnet.

4. In a device of the character described, a gong, a counterbalanced pivoted arm, a spring secured to one end of said arm stops located in the path of the spring, a hammer on said spring, a hollow electromagnet, a soft-metal core flexibly suspended from the pivoted

arm and extending into the hollow magnet, a non-magnetic rod extending from the soft-metal core into said magnet and provided with a non-magnetic washer at its lower end, and means for energizing the magnet and actuating the hammer, substantially as described.

5. In an electric gong, a pivoted arm, means for laterally adjusting said pivoted arm a gong, a spring secured to the end of said arm, a hammer secured to said spring, a stop in the path of movement of said spring to throw the hammer away from said gong after contact therewith, and serving to insure contact with the gong when said spring strikes said stop.

824,398. **PROCESS OF PRODUCING OXYGEN COMPOUNDS OF TIN.** CHARLES H. ACKER, Niagara Falls, N. Y., assignor to Acker Process Company, a Corporation of New Jersey. Filed June 22, 1905. Serial No. 266,390.

Claim.—1. The herein-described method of producing oxygen compounds of tin, which consists in reacting with a hypochlorite upon a chlorid of tin, substantially as described.

2. The herein-described method of producing dioxid of tin, which consists in reacting with a hypochlorite upon a chlorid of tin, thereby precipitating the hydrated oxid of tin, and calcining said hydrated oxid, substantially as described.

3. The herein-described method of producing oxygen compounds of tin, which consists in reacting with a hypochlorite upon stannic chlorid, substantially as described.

4. The herein-described method of producing oxygen compounds of tin, which consists in reacting with calcium hypochlorite upon a chlorid of tin, substantially as described.

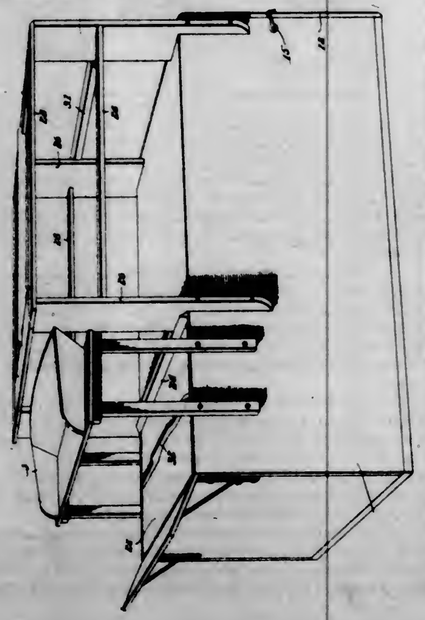
5. The herein-described method of producing oxygen compounds of tin, which consists in reacting with calcium hypochlorite upon stannic chlorid, substantially as described.

6. The herein-described method of producing oxygen compounds of tin, which consists in reacting with a solution of calcium hypochlorite upon a chlorid of tin, substantially as described.

7. The herein-described method of producing oxygen compounds of tin, which consists in reacting with a solution of calcium hypochlorite upon stannic chlorid, substantially as described.

8. The herein-described method of producing oxygen compounds of tin and strong chlorin, which consists in reacting with a hypochlorite upon a chlorid of tin, thereby precipitating a hydrated oxid of tin and liberating chlorin, and withdrawing said chlorin without substantial admixture of air, substantially as described.

824,399. **MILK AND CREAM VEHICLE.** CLARENCE E. AUSTIN, Marcus, Iowa. Filed June 13, 1905. Serial No. 264,923.



Claim.—1. A vehicle-brake comprising braking devices on the wheel-hubs, a lever positioned substantially midway between the hubs for operating said braking devices and with which it is indirectly connected, a foot-lever located in the vehicle above the first said lever, and a rigid rod connecting the levers, its ends connected directly thereto, there being universal connections between the rod ends and the levers for permitting universal movement, the rod occupying a substantially vertical position at all times, the lower end of the rod moving in the arc of a circle with the lower lever by the swinging of the axle on which the said lower lever is carried, the upper end of the rod occupying a fixed position relative to its lower end and the axle.

2. A vehicle-brake comprising braking devices for the wheels, a lever positioned substantially midway of the length of the axle and indirectly connected with the said braking devices, said lever projecting rearward substantially in a horizontal direction, and adapted by a raising movement to set the brakes, the end of the lever describing the arc of a circle by the swinging of the axle on which it is carried, a rigid rod connected to the rear end of the lever by a connection allowing free movement of the two relatively in any direction, a foot-lever in the vehicle above the first-described lever, the rod having direct connection with said foot-lever also by a loose joint substantially as shown, the rod at its lower end following the movements of the lever on the axle, and the upper end of said rod remaining stationary relative to the said lower end but adapted to turn on the foot-lever.

3. The combination with the front axle of a vehicle, of braking means for the wheels thereof, a lever carried on the axle and having indirect connection with the said braking means, its end projecting rearward of the axle, a foot-lever in the vehicle above the axle, a rod positively connecting each lever, there being a universal connection between said rod and the levers, substantially as shown, the lever on the axle describing an arc of a circle when swinging with the axle, the lower end of the rod being carried therewith, the upper end remaining stationary relative to the said swinging lower end, there being means for adjusting the rod for length for the purposes indicated

4. In a vehicle-brake, the combination of the front wheels of the vehicle, means for engaging the said wheels for braking purposes, a lever for operating the said means, said lever stationed substantially midway between the wheels and extending rearward in substantially a horizontal direction, a foot-lever within the vehicle adapted to pivot in a vertical plane and having an extension below and rearward of its pivot, a rigid rod adjustable for length, one end having a swivel connection with the foot-lever extension and adapted only for vertical movement with the said foot-lever except a swiveling one, the opposite end of the rod having swiveled connection with the horizontal rearwardly-extending lever to swing in a horizontal plane with such lever in the arc of a circle, said rod being entirely free of restraining means between its engaged ends.

5. The combination of the axle and front wheels of a vehicle, a braking device for engaging each wheel, a member connecting each said braking device, a lever on the member for operating both devices, a foot-lever in the vehicle, a member directly connected to each lever in a positive manner for connecting such levers, the connected end of the lever within the vehicle being located above the connected end of the lever on the axle substantially as shown, the connections between the levers consisting of ball-and-socket joints permitting free universal movement of said levers and the member as the latter follows the movements of the lever due to the horizontal swing of the axle on its pivot.

6. In a friction-brake of the character described, friction-drums on the front wheels of the vehicle, a rock-shaft extending from hub to hub, a friction-band carried at each end of the shaft for engaging the drums, an arm on the shaft at substantially the middle of the length thereof, a foot-lever within reach of the driver, the lever and arm being located at substantially the point of pivotal connection between the front axle and vehicle-body and an adjustable rigid connection between the arm and lever, there being a ball-and-socket connection between the connection, the arm, and the lever for the purposes described.

7. In a friction-brake, a friction member adapted to be clamped upon the hub of the ground-wheel, a friction-band for gripping the same, clamping members by which the friction member is carried, means between the said clamping member and friction member for adjusting the former upon the hub and other means for clamping the several said members together and to the said hub.

8. In a friction-brake, a friction-ring, a band for engaging its outer surface, a series of clamping members within said ring, means between the members and the ring for adjusting the former for the purposes explained, and means for clamping the several members upon the wheel-hub after adjustment.

9. In a friction-brake, a friction member having a groove in its periphery, a flexible band, a series of fiber members carried by the band for frictionally engaging the groove, a series of separately-adjustable members within the friction member, means for adjusting the members toward the hub, and other means on the adjustable members for clamping all of them upon the hub to sustain the friction member in fixed position.

10. In a friction-brake, an annular friction member, a flexible band surrounding it, a series of fiber members affixed to the band for engaging the friction member, a series of clamping members within the said friction member, threaded members engaging each member and socketed in the friction member, a turn of said threaded member moving the clamping member only and bolts connecting the adjacent ends of the several clamping members for drawing them together upon the wheel-hub substantially as described.

11. In a brake of the character described, a friction-drum consisting of a ring having a V-shaped groove in its outer periphery, adjustable clamping means for firmly securing the ring to the hub of a wheel, comprising a series of adjusting-screws, a member for each screw adjustable by the latter toward or away from the wheel-hub, devices for connecting all the said members after they are clamped upon the hub, and a friction-band for engaging the V-shaped groove of the drum.

12. In a friction-brake, an annular member having a friction-surface and a friction-band therefor, devices within the member for engaging the wheel-hub, and means between the member and the devices for adjusting the latter toward or away from the hub.

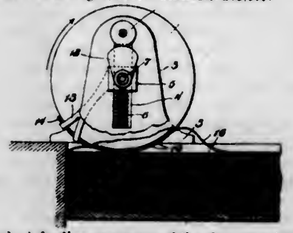
13. In a friction-brake, an annular member having a friction-surface and a friction-band therefor, devices within the member for clamping the wheel-hub, means between the member and the device for adjusting the latter to the hub, and means for clamping the several devices as a unit after being adjusted to the hub.

14. A brake consisting of clamping members for grasping the hub of a wheel, an annular member carried thereby, devices between the clamping members and the annular member for adjusting the former to and from the hub, the clamping members and the annular member being rigid relatively when clamped to the hub, and a friction-band for engaging the said annular member.

15. In a vehicle-brake the combination of the front wheel and axle, friction-bands for the wheel-hubs, a rod for connecting and operating the bands, a foot-lever in the vehicle, and a connection between the lever and the friction-band-operating rod, there being a ball-and-socket connection for the same for permitting universal movement for the purposes stated.

16. In a vehicle-brake, the combination of the front wheels and axle, a friction member secured to the hub of each wheel, a friction-band surrounding the member and adapted to frictionally engage the same, a rod connecting both bands for operating them simultaneously, a foot-lever within the vehicle, a ball on the end thereof, a substantially vertical rod having a socket at one end for inclosing the ball, the opposite end of the rod having indirect connection with the rod that operates the brake-bands.

824,401. **PAPER-FEEDING APPARATUS.** MAX BAUMGARTNER, Chicago, Ill. Filed Aug. 7, 1905. Serial No. 273,079.



Claim.—1. A feeding apparatus of the character described comprising a rotatable suction device, a resilient support therefor, and means for moving the device vertically during a portion of the rotation thereof to tension the support.

2. The combination with a rotatable suction device, and means for reciprocating the same vertically during the rotation thereof; of a paper-detaching blade adjacent and movable vertically with the suction device.

3. An apparatus of the character described comprising a rotatable suction device, means for automatically reciprocating said device vertically during the rotation thereof, and a vertically-movable separating-blade adjacent the suction device.

4. In an apparatus of the character described the combination with a resiliently-supported drum having an apertured portion, said drum constituting a suction device; of means rotatable with the drum for imparting vertical movement thereto in one direction during its rotation and tensioning the support.

5. In an apparatus of the character described the combination with a resiliently-supported drum having an apertured portion, said drum constituting a suction device; of means rotatable with the drum for imparting vertical movement thereto during its rotation, and a paper-detaching device adjacent and movable vertically with the drum, said device constituting a closure for the apertures.

6. The combination with an apertured rotatable drum; of a tubular shaft therefor, resiliently-supported bearings for the shaft, a fixed device and means rotatable with the shaft for contacting with said device and automatically moving said shaft vertically during its rotation.

7. The combination with an apertured rotatable drum, a tubular shaft therefor and resiliently-supported bearings for the shaft, of a fixed device, means rotatable with the shaft for contacting with said device and automatically moving said shaft vertically during the rotation thereof, and a paper-detaching device connected to, and movable vertically with, the bearings.

8. The combination with standards; of a tubular shaft resiliently supported within the standards, an apertured drum rotatable with the shaft, said shaft communicating with the drum through an aperture therein, an eccentric rotatable with the shaft, and means upon one of the standards adapted to be contacted by the eccentric during its rotation.

9. The combination with standards; of a tubular shaft resiliently supported within the standards, an apertured drum rotatable with the shaft, said shaft communicating with the drum through an aperture therein, an eccentric rotatable with the shaft, means upon one of the standards adapted to be contacted by the eccentric during its rotation, and a paper-detaching device connected to, and movable vertically with, the shaft and drum.

824,402. **HOG-CATCHING DEVICE.** OSCAR H. BETZ and GEORGE E. HOLLIDAY, Rock Rapids, Iowa. Filed Mar. 17, 1906. Serial No. 306,656.



Claim.—1. In a device of the character described, the combination of a handle, a nose-piece at one end of the handle, a cross-piece secured to the handle, and a loop pivotally connected to the cross-piece and having a swinging movement, the said loop coöperating with the nose-piece to form a clamp.

2. In a device of the character described, the combination of a handle, a nose-piece at one end of the handle, a cross-piece adjustably mounted upon the handle, and a loop pivotally connected to the cross-piece and having a swinging movement, the said loop coöperating with the nose-piece to form a clamp.

3. In a device of the character described, the combination of a handle, a nose-piece at one end of the handle, a cross-piece adjustably mounted upon the handle, a loop pivotally connected to the cross-piece and having a swinging movement, the said loop coöperating with the nose-piece to form a clamp, and means for holding the loop normally at an angle to the handle.

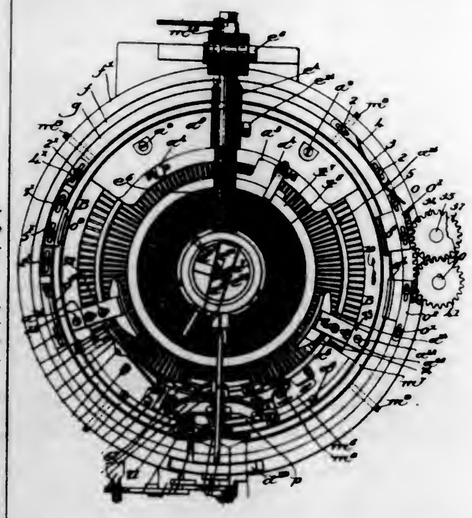
4. In a device of the character described, the combination of a handle, a nose-piece at one end of the handle, a cross-piece adjustably mounted upon the handle, a loop pivotally connected to the cross-piece and having a swinging movement, the said loop coöperating with the nose-piece to form a clamp, and a spring-arm loosely connected to the loop and normally holding the same at an angle to the handle.

5. In a device of the character described, the combination of a handle, a nose-piece at one end of the handle, a cross-bar slidably mounted upon the handle, a loop pivotally connected to the cross-bar and coöperating with the nose-piece to form a clamp, a spring-arm connecting the cross-bar and the loop and holding the latter normally at an angle to the handle, a rack on the handle, and a catch upon the cross-bar engaging with the rack by means of which the cross-bar can be locked in a fixed position.

824,403. **KNITTING-MACHINE.** MORITZ BOAS, St. Hyacinthe, Canada. Filed Nov. 29, 1897. Serial No. 660,106.

Claim.—1. A circular-knitting machine containing the following instrumentalities, viz: a needle-bed to contain needles; a thread-guide; a cam-ring, means to revolve it to actuate the needles for circular knitting, means to impart to said cam-ring a uniform length of stroke during reciprocating knitting; thread-guide-actuating means between said cam-ring and said thread-guide; and devices to automatically control said thread-guide-actuating means when reciprocating knitting is being done, to leave said thread-guide at rest in a variable position with relation to the needles used in reciprocating knitting, the ends of the successive reciprocating strokes of the cam-ring maintaining the thread carried by the thread-guide without slack in order that said thread may be supplied immediately to the needles when the said thread-guide is started at each succeeding reciprocating stroke.

2. A circular-knitting machine containing the following instrumentalities, viz: a needle-bed to contain needles, a cam-ring having cams to actuate said needles, means to revolve said cam-ring that it may actuate said needles for circular knitting, and means to uniformly reciprocate said cam-ring for reciprocating knitting, a circularly-moving thread-guide, means to support said thread-guide centrally with relation to the circle of needles, thread-guide-actuating means carried by said cam-ring, and devices to move said thread-guide-actuating means in unison with said cam-ring to feed the needles with thread during circular knitting, and actuating means also operating said thread-guide for a part of each stroke during reciprocating knitting, said actuating means being arrested at different points of its stroke automatically during each reciprocating stroke of the cam-ring of uniform length, to thereby leave said thread-guide at rest over different needles of the series of needles varying in number during narrowing and widening, in order that the thread carried by said thread-guide may be in position to start without slack at the next reciprocating course, and be delivered only to the needles to be used in said course.



3. In a circular-knitting machine, the combination with a needle-cylinder and needles therein, a thread-guide formed as a cylinder having an open passage-way therethrough for the thread said cylinder having an attached shield and latch-guard, and an arm to support said thread-guide centrally with relation to the circular series of needles, substantially as described.

4. In a circular-knitting machine, a thread-guide made as an open cylinder having at its lower end a latch-guard and shield, said open cylinder being provided with thread-sustaining means to receive and guide the thread through the cylinder and deliver it to the needles.

5. In a circular-knitting machine, the following instrumentalities, viz: a conical needle-bed to contain a series of needles, a cam-ring to actuate said needles, a thread-guide made as an open cylinder having at its lower end a latch-guard, thread-sustaining means located within said thread-guide and delivering the thread at the exterior of the latch-guard portion thereof, and means independent of the cam-ring to support the shank of said thread-guide loosely above the center of motion of the cam-ring.

6. In a circular-knitting machine the following instrumentalities, viz: a thread-guide made as an open cylinder having a passage from its interior to its outer side, said cylinder having an attached latch-guard, combined with a supporting-arm pivoted on a fixed part of the frame and adapted to be turned up away from the needle-bed so as to uncover the needles, substantially as described.

7. In a circular-knitting machine, a thread-guide formed as a cylinder and having a passage-way therethrough, a latch-guard disposed at the lower end of the cylinder, and an arm adjustable in length supporting said cylinder to thereby enable the thread-guide to be centered accurately with relation to the series of needles.

8. In a circular-knitting machine the following instrumentalities, viz: a conical needle-bed to contain a series of needles, a cam-ring having cams for reciprocating said needles, a thread-guide disposed centrally above said needle-bed and having an open central passage-way and provided at its lower edge with a projecting surface to sustain the thread being fed to the needles, means to loosely and rotatably support the thread-guide above the needle-bed, two

engaging projections extended from the thread-guide and separated by a horizontal space to give lost motion, a lever carried by the cam-cylinder and means to cause said lever to engage one of said projections to thereby move the thread-guide during circular knitting and to alternately engage each of the said projections and move the thread-guide during a portion of the movement of the cam-cylinder during reciprocating knitting.

9. A needle-bed adapted to contain a series of needles, a cam-ring having cams to actuate said needles, an open centered thread-guide provided at its lower end with a thread-supporting surface, a device to sustain said thread-guide loosely centrally above the series of needles, and means between said cam-ring and said thread-guide to actuate the latter, the thread-guide at all times sustaining the thread and delivering it directly to the needle the hook of which is covered by the thread-supporting surface of the thread-guide, whereby the thread in the thread-guide is at all times prevented from contacting with any of the stationary parts of the machine.

10. In a knitting-machine, a thread-guide support located centrally above the series of circular needles, and a combined thread-guide and latch-opener made as a cylinder open at its center throughout and provided with a passage-way from its center to its outer side above the lower end of the thread-guide, whereby the thread is delivered to the needles from the upper side of the latch-opening portion of the thread-guide.

11. In a circular-knitting machine the following instrumentalities, viz: a needle-bed to contain a series of needles, a cam-ring having a series of cams to actuate said needles, a rotatable thread-guide mounted centrally with relation to said needle-bed and above the said bed, a clamping-ring to receive the shank of said thread-guide, and means to close said ring about and hold said thread-guide frictionally, and means between said cam-ring and said thread-guide to move the latter with the cam-ring, substantially as described.

12. In a circular-knitting machine, a conical needle-bed to contain a series of needles, a cam-ring to actuate said needles, a thread-guide mounted loosely and centrally above said needle-bed and presenting at its lower end a cone-shaped latch-guard, said thread-guide receiving the thread in its open end and delivering it externally above the lower end of said latch-guard, and connecting devices between said cam-ring and thread-guide to move the latter from the cam-ring.

13. In a circular-knitting machine, a conical needle-bed to contain a series of needles, a cam-ring having cams to reciprocate said needles, a thread-guide formed as an open cylinder and located centrally above the said needle-bed, an adjustable supporting-arm for said thread-guide, said thread-guide having projecting arms, means to support said thread-guide, a lever interposed between the cam-ring and said thread-guide, and means to automatically move said lever during reciprocating knitting to engage and disengage the arms extending from said thread-guide to thereby move said thread-guide during a portion of the travel of the cam-ring during its reciprocating motion and to then leave said thread-guide at rest until on the return stroke of the cam-ring when said lever is again made effective to move the thread-guide.

14. In a circular-knitting machine the following instrumentalities, viz: a needle-bed containing a series of needles, a cam-ring containing cams to reciprocate said needles; a thread-guide support; a thread-guide arranged in said support centrally over the needle-bed and provided with two arms located in different horizontal planes, a lever moving in unison with said cam-ring, and means to actuate said lever at different periods in the movement of said cam-ring during reciprocating knitting, whereby said lever in one direction of its movement will engage one of the arms of said thread-guide and move it for the desired distance and then retires from said arm leaving the thread-guide at rest, said lever in the return movement of the cam-ring meeting the other of the said arms thereby reversing the movement of the thread-guide and moving it for the desired distance, when the said lever is released from the second of said arms, again leaving the thread-guide at rest, as and for the purpose set forth.

15. In a circular-knitting machine the following instrumentalities, viz: a needle-bed to contain needles, a cam-ring having cams to actuate said needles, a thread-guide support; a rotatable thread-guide mounted in said support, a thread-guide-actuating lever mounted on and movable with said cam-ring, means to hold said thread-guide-actuating means in position to effect the rotation of the thread-guide in unison with the cam-ring during circular knitting, and means under the control of a pattern-surface to automatically partially move the thread-guide-actuating means preparatory to commencing reciprocating knitting, a pattern-surface, and means under its control to thereafter automatically move said thread-guide-actuating means to effect the alternate release and engagement of said thread-guide at different periods of the reciprocating stroke of the machine in narrowing and widening, whereby the thread-guide may be stopped with its thread-delivery immediately above the endmost needle to receive thread at the next reciprocating stroke of the machine in widening or narrowing, substantially as described.

16. In a circular-knitting machine, a cam-ring having knitting-cams provided with movable points or switches directed toward each other, said points or switches having studs extending outwardly through the cam-lock of said cam-ring, a sliding plate to receive said studs, said plate also having a stud, a toe-lever having toes extended therefrom in opposite directions, said toes being set out of line one with the other, said lever being mounted on a stud of said cam-lock and having an arm provided with a slot to receive the stud of said plate, means to maintain the said toe-cam in an elevated position during circular knitting, means to depress said toe-cam preparatory to reciprocating knitting to thereby place its toes in operative position, two rings having cam-lugs, and means to move said rings whereby said lugs may actuate said toe-cam sooner or later during successive strokes of reciprocating knitting, substantially as described.

17. In a needle-bed to contain a series of needles, a cam-ring provided with movable points or switches and adapted to actuate said needles; a circularly-movable thread-guide; means to support said thread-guide centrally above and with relation to said needle-bed, a toe-cam carried by the cam-lock of said cam-ring, a thread-guide-moving device carried also by said cam-lock, two rings, each having two lugs to actuate the toes of the toe-cam, and said rings having other lugs to operate the thread-carrier-actuating devices, and means to reciprocate said rings simultaneously in opposite directions whereby said toe-cam may be actuated to move the points or switches of the knitting-cams at the proper period, as described, to insure the taking from the non-knitting groove of those needles only which are to be used at the next stroke of reciprocating knitting for narrowing or widening, and also to effect the disengagement of the thread-carrier-actuating devices from the thread-carrier to leave the thread-carrier at rest with its thread immediately above and in position to be again supplied without slack to the first needle of the needles to be used at the next reciprocating course, substantially as described.

18. In a knitting-machine, a bed-plate, a needle-bed supported therein to contain a series of needles, a cam-ring to actuate said needles, a thread-guide, means to support it loosely centrally above said needles, a connection between said cam-ring and said thread-guide to impart motion thereof, two toothed rings surrounding said needle-bed and provided with suitable actuating cam-lugs, the teeth of said rings being exposed through said bed-plate, combined with a shaft having a narrow pinion engaging one of said toothed rings, a broad pinion engaging the other of said toothed rings, a shaft carrying said broad pinion, and a pinion intermediate said broad pinion and on the shaft carrying said narrow pinion, whereby the broad pinion is adapted to actuate one of said rings in one direction, and through the intermediate pinion and said narrow pinion actuate the other of said rings in an opposite direction, substantially as described.

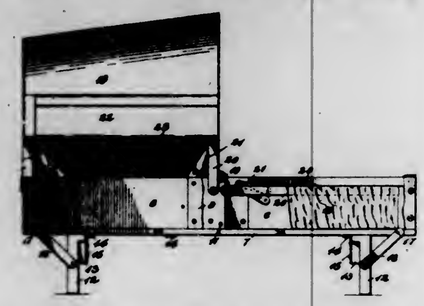
19. In a circular-knitting machine, a thread-guide made as an open cylinder having a thread-passage from its interior to its outer side, said cylinder having an attached latch-guard, combined with an arm to support said thread-guide centrally with relation to the needles, said supporting-arm being horizontally adjustable, and means to vertically adjust said thread-guide to thereby adapt it to needle-beds of different sizes.

20. In a circular-knitting machine the following instrumentalities, viz: a thread-guide made as an open cylinder having a thread-passage from its interior to its outer side, said cylinder having an attached latch-guard, combined with an arm to support said thread-guide centrally with relation to the circular series of needles being used, and means to vertically adjust said thread-guide to thereby adapt it to needle-beds of different sizes, substantially as described.

21. In a knitting-machine, a cam-ring composed of a narrow ring having an attached cam-lock provided with cams to actuate the needles, and with an attached balancing-plate, and a second ring connected to said narrow ring near the ends of said cam-lock and extended from one to the other end of said cam-lock, substantially as described.

22. In a knitting-machine, the cam-ring having guard-cams, connected therewith and located above the delivery end of the knitting-grooves, said cam-ring having a detachable cam-lock provided with the knitting-cams and points or switches to call all or any number of needles into operation in the non-knitting groove, said cam-lock being detachable from said ring independently of said guard-cams, substantially as described.

824,404. COMBINED FOLDING BED AND TABLE. JOSEPH L. BOISVERT, Kankakee, Ill. Filed Mar. 5, 1906. Serial No. 304,239.

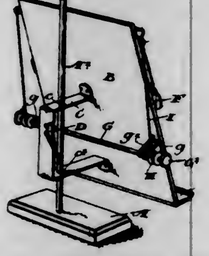


Claim.—1. A combined folding bed and table, comprising two box-sections hinged together, a detachable end piece on each section, adapted to form a closure therefor, means to attach both of the end pieces to the bottom of one of the sections, to form legs for the device when used as a table, and means to attach each end piece to the bottom of one of the sections, to form legs when the device is used as a bed.

2. A combined folding bed and table, comprising two box-sections hinged together, one of the sections having two sets of sockets in the bottom thereof and the other section having one set of sockets in the bottom thereof, and a detachable end piece on each section, having lugs engageable in the sockets, so that both pieces may be attached as legs to the bottom of one box-section, or one piece may be attached to each section.

3. A folding bed comprising two box-sections hinged together, a pair of bows pivoted at their ends to the sides of each section, and foldable within the same, and flexible fabric stretched over the bows.

824,405. COPY-HOLDER. ALEXANDER BROWN, Ottawa, Canada. Filed Feb. 20, 1905. Serial No. 246,560.



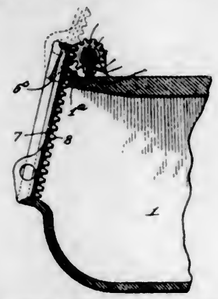
Claim.—I. In a copy-holder, the combination with the base having an upwardly-extending rod, of a rest, a bracket secured to the back of the rest, and through which the rod extends and an exposed spring secured to the back of the bracket and having the free end arranged to have a normal pressure upon the rod as and for the purpose specified.

2. In a copy-holder, the combination with a rest suitably supported and eyes carried by the upper end of the same, of a liner, a winding-spindle, journal-brackets for the spindle having open ends, springs holding the spindle in place in the brackets, spools and knobs on the spindle and cords connecting the spools to the liner as and for the purpose specified.

3. In a copy-holder, the combination with a rest, of a book-supporting bar extending across the top of the rest and bent at the ends to form eyes to receive a winding-cord and turned into the edges of the rest as and for the purpose specified and a winding-cord passing through said eyes.

4. In combination in a copy-holder, a standard, an inclined board, a two-armed bracket mounted on said board, one arm of which is longer than the other, the said arms being connected at the rear by a vertical portion and having openings for the standard to pass through and friction means for holding the bracket to the standard, substantially as described.

824,406. JOURNAL-BOX. HARRY C. BUNOUP, Chicago, Ill. Filed June 20, 1905. Serial No. 266,097.



Claim.—1. In a journal-box, the combination with the box, of a lid, and a pinion actuated by the movement of said lid.

2. In a journal-box, the combination with the box, of a lid, a rack upon said lid, and a pinion mounted upon said box.

3. In a journal-box, the combination with the box, of a lid longitudinally slidable with respect thereto throughout its opening movement, and a spring acting upon said lid, said spring being energized by an opening movement of the lid and tending to close the same.

4. In a journal-box, the combination with a box having a pinion mounted thereon, of a lid provided with a rack, and a spring acting upon said pinion.

5. In a journal-box, the combination with the box, of a lid longitudinally slidable with respect thereto throughout its opening movement, said lid and said box being each provided with tapered portions whereby the lid when closed is caused to tightly engage the end of said box, and a spring said spring being energized by an opening movement of the lid and tending to close the same.

6. In a journal-box, the combination with the box, of a lid slidingly mounted thereon, said lid and said box being provided with means whereby the lid is caused to tightly engage the box when closed, a rack mounted on said lid, a pinion mounted on said box, and a spring adapted to be actuated by said pinion.

7. In a journal-box, the combination with the box, of a lid, a rack, a pinion meshing with said rack, and a spring adapted to be actuated by an opening movement of said lid.

8. In a journal-box, the combination with a box having channels or guideways, of a lid slidingly mounted in said guideways, a rack mounted upon said lid, a pinion mounted upon said box, and a spring adapted to be actuated by said pinion.

9. In a journal-box, the combination with the box, of a lid longitudinally slidable with respect thereto, and a torsion-spring adapted to be actuated by said lid.

10. In a journal-box, the combination with the box, of a lid longitudinally slidable with respect thereto, said lid and said box being provided with means whereby the lid is caused to tightly engage the box when closed, and a torsion-spring adapted to be actuated by said lid.

11. In a journal-box, the combination with the box, of a lid longitudinally slidable with respect thereto throughout its opening movement, there being means upon the box adapted to support the lid in an open position, and a spring energized by the opening movement of the lid and tending to close the same.

12. In a journal-box, the combination with the box, of a lid therefor longitudinally slidable with respect thereto throughout its opening movement, there being means upon the box adapted to support the lid in an open position, and a spring energized by the opening movement of the lid and tending to close the same, said lid and box being each provided with tapered portions whereby the lid when closed is caused to tightly engage the end of said box.

824,407. CAR-WHEEL. SAMUEL P. BUSH, Columbus, Ohio. Filed Dec. 2, 1904. Serial No. 235,230.

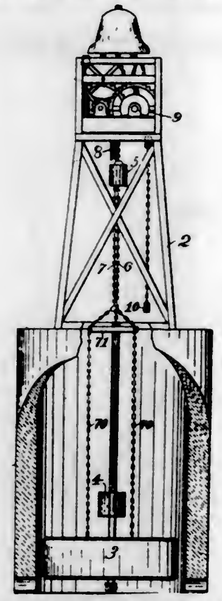


Claim.—1. A cast-metal wheel having a metal shrink-piece embedded therein and completely enveloped at every point by the metal of the casting.

2. A cast-metal wheel having an annular metal shrink-piece embedded in the tread portion thereof and completely enveloped at every point by the metal of the casting.

3. A cast-metal wheel having embedded in its tread and hub portions, annular metal shrink-pieces, each of said shrink-pieces being completely enveloped at every point by the metal of the casting.

824,408. TIDE-POWER SIGNALING APPARATUS. ENOS B. CADE, Seattle, Wash. Filed Mar. 1, 1905. Serial No. 247,959.



Claim.—1. In an apparatus of the type set forth, the combination with a rotatably-supported bell, a striker immovable with the bell, a motor actuated by variations of water-level, means for actuating said striker from said motor, and means operated by said motor to rotate said bell.

2. In an apparatus of the type set forth, a bell, a centrally-pivoted member, a ball carried thereby, alternately-operated levers connected to the one end of said pivoted member, one of said levers being capable of raising the one end of said pivoted member and the other lever of lowering the same end of said pivoted member.

3. In an apparatus of the type set forth, a bell, a tiltable ball-race, a ball therein, a motor, means operated thereby for alternately raising and lowering one end of said ball-race, and means for rotating said bell during the tilting of said ball-race.

4. In an apparatus of the type set forth, a bell, a tiltable ball-race, a motor-wheel, a pair of links connected to the same end of said ball-race, and a pair of levers connected with said motor-wheel, each link being connected to one of said levers, and means whereby said ball-race is tilted in opposite directions by said links and levers.

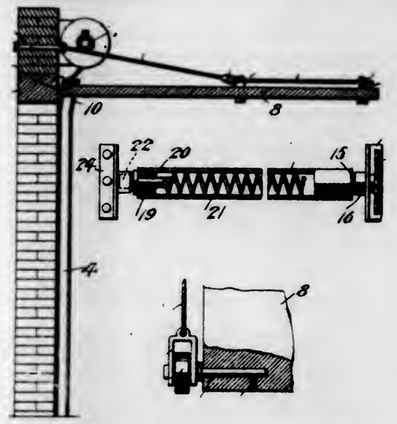
5. In a device of the type set forth, a bell, a motor means, means carried thereby for intermittently rotating said bell, a pin-wheel, a pair of levers alternately raised thereby, a ball-race, a bell-striking ball carried thereby, and means connected with said levers for alternately raising and lowering the same end of said ball-race.

6. In a device of the type set forth, a bell, a motor means, a tiltable ball-race, a ball for striking said bell, a lever pivoted at its rear, a link connected to the front end thereof and to one end of said ball-race, a second lever pivoted centrally, a link connected to the rear end thereof and to the same end of the ball-race as the other link, said levers having their front ends raised alternately by said motor means.

824,409. INSECTICIDE. PATRICK A. CADOGAN, Boston, Mass. Filed Jan. 24, 1906. Serial No. 297,536.

Claim.—An insecticide consisting of tincture of larkspur one ounce, oil of cedar two ounces, camphor one-half ounce, and spirits of turpentine twelve ounces, for the purpose described.

824,410. SHUTTER. JOHN CAHILL, Norfolk, Va. Filed May 9, 1905. Serial No. 259,571.



Claim.—1. In a door or like closure, a wall or like structure having a doorway, a door slidably and pivotally connected at one end at the sides of the doorway, elevating and supporting means carried by the wall and attached to the slidably and pivotally connected end of the door, and means connected to the wall and to the center and outer end of the door to support the outer end of the door when in an open position, such means being adapted to exert a tension between the center connection and outer end of the door to straighten and stiffen the said outer end of the door and hold it from sagging.

2. A shutter, means for pivotally mounting and guiding one end of the shutter, counteracting supporting means attached to said guided end, stay-rods for supporting the shutter when in open position, and truss-rods connected to the outer end of the shutter and to the stay-rods in a manner to be placed under tension to prevent sagging of the outer end of the shutter, substantially as described.

3. A shutter, means for pivotally mounting and guiding one end of the shutter, counteracting supporting means attached to the guided end, stay-rods pivotally connected to the shutter and adapted to support the same in open position, truss-rods connected at their outer ends to the outer ends of the shutter, and crank connections between the outer ends of the stay-rods and the inner ends of the truss-rods whereby when the shutter swings to open position the truss-rods will be placed under tension to straighten out the outer end of the shutter and hold it from sagging, substantially as described.

4. A shutter, means for pivotally and slidably mounting one end of the shutter, elevating and supporting means attached to the guided end, a stay element pivotally connected with the shutter at or near the center thereof, and a truss member connected with said stay element and the outer edge of the shutter and placed under tension when the shutter is opened to stay and prevent sagging of the outer end of the shutter.

5. In a door or like closure, a wall or like structure having a doorway, a door slidably and pivotally connected at one end at the sides of the doorway, elevating and supporting means carried by the wall and attached to the slidably and pivotally connected end of the door, a stay pivotally connected to the wall and to the center of the door, and means connected to said stay and to the outer end of the door in such manner as to straighten out and stiffen the outer end of the door when the door moves to a fully-open position.

6. In a door or like closure, the combination of a door-frame, vertical guides at the sides thereof, a shutter pivotally and slidably mounted at one end in said guides, counteracting supporting means attached to the guided end of the shutter, and a stay connecting the door-frame with the outer end of the door for supporting the door when in an open position, the upper ends of the guides being inclined in a direction away from the door-frame and toward the outer end of the door when the latter is open to throw the guided end of the door outward from the door-frame as the door swings to a full-open position, substantially as described.

7. In a shutter or like closure, the combination of a support, vertical guides secured thereto and provided with outwardly-inclined upper ends, a shutter pivotally and slidably mounted at one end in the guides, counteracting elevating means attached to the guided

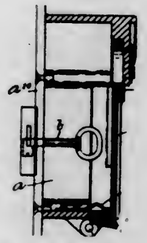
end of the shutter, means for supporting the shutter in open position, and means coacting with said supporting means to place the outer end of the shutter under tension, thus straightening it out and preventing the same from sagging.

8. In a shutter or like closure, the combination of a support, guides attached thereto and provided with outwardly-inclined upper ends, a shutter or closure pivotally and slidably mounted at one end in said guides, counteracting elevating means attached to the guided end of the shutter, a support for the shutter when in opened position, and a truss member connected to the outer end of the shutter and to said support in a manner to be placed under tension to prevent sagging of the outer end of the shutter, substantially as described

9. A shutter, means for pivotally mounting and guiding one end of the shutter, counteracting supporting and elevating means attached to the guided end, means for supporting the outer end of the shutter, said means including a truss element automatically placed under tension when the shutter moves to open position to prevent sagging of the outer end of the shutter, and means operative upon the guided end of the shutter to project the latter outward and intensify the truss tension.

10. In a shutter or like closure, the combination of a support, vertical guides secured thereto, means for pivotally and slidably mounting the shutter at one end in said guides, counteracting elevating and supporting means attached to the guided end of the shutter, a stay-rod pivotally connected with the support and central portion of the shutter to support the latter in open position, and a truss-rod connected with the outer end of the shutter and pivoted to the stay-rod in a manner to be placed under tension to prevent sagging of the outer end of the shutter, said stay-rod being adapted to fold substantially parallel with the shutter when the latter is closed.

824,411. **GUARD FOR DOOR-KEYS OF FIRE-ALARM BOXES AND FOR OTHER THINGS.** FREDERICK W. COLE, Newton, Mass., assignor to The Gamewell Fire-Alarm Telegraph Company, New York, N. Y., a Corporation of New York. Filed Feb. 8, 1906. Serial No. 300,064.



Claim.—1. A guard consisting of a self-opening door having a glass plate, and means, engaging said plate, for holding said door closed, substantially as described.

2. A guard consisting of a door having a glass-plate, a spring for opening said door, and means, engaging said plate, for holding said door closed, substantially as described.

3. A guard consisting of a door having a glass plate, and constructed and arranged to open by gravity, and means, engaging said plate, for holding said door closed, substantially as described.

4. A guard consisting of a door pivoted at its lower end and having a glass plate, and means, engaging said plate, for holding the door closed, substantially as described.

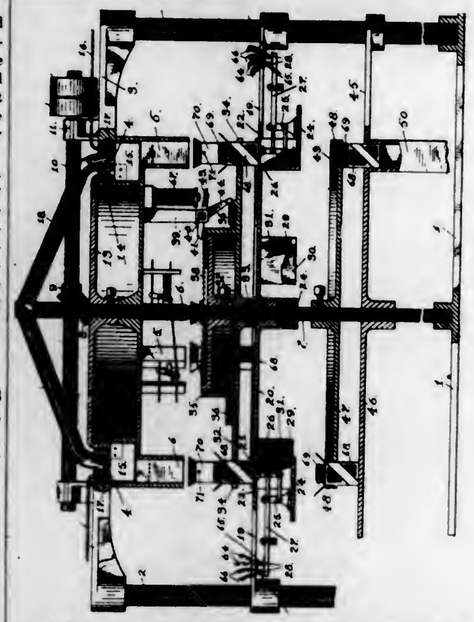
5. A guard consisting of a door comprising a frame having guideways at its opposite sides, and a lug at its lower end, a glass plate supported by said frame, and means for engaging said plate for holding the door closed, substantially as described.

6. A guard consisting of a self-opening door having a glass plate, and a projection, which engages said plate and holds the door closed, substantially as described.

7. A guard consisting of a self-opening door having a glass plate, and a movable projection, which engages said plate and holds the door closed, said projection being movable into and out of engagement with the plate, substantially as described.

824,412. **FRUIT WEIGHING AND PACKING MACHINE.** CARY S. COX, Fresno, Cal., assignor of three-fifths to J. B. Inderrieden Co., Chicago, Ill., a Corporation of Illinois. Filed Oct. 3, 1905. Serial No. 281,147.

Claim.—1. In a weighing and packing machine, the combination of a main filling-spout, controlling means in connection therewith to define and deliver a partial charge to the carton, means for supplying the material to said spout, a complementary filling-spout following the main spout, a controlling means in said complementary spout, means for transferring to said complementary spout the excess of material supplied to the main spout, means for advancing the carton from the main to the complementary spout, means for weighing the carton as it receives its complement of material, and means called into action by the weight of the filled carton for operating the controlling means of both spouts.



2. In a weighing and packing machine, the combination of a main filling-spout, controlling means in connection therewith to define and deliver a partial charge to the carton, means for supplying the material to said spout, a complementary filling-spout following the main spout, a controlling means in said complementary spout, a traveling scraper traversing the entrances to both spouts and adapted to transfer to the complementary spout the excess of material supplied to the main spout, means for advancing the carton from the main to the complementary spout, means for weighing the carton as it receives its complement of material, and means called into action by the weight of the filled carton for operating the controlling means of both spouts.

3. In a weighing and packing machine, the combination of a main filling-spout, controlling means in connection therewith, to define and deliver a partial charge to the carton, means for supplying the material to said spout, a complementary filling-spout following the main spout, a controlling means in said complementary spout, means for transferring to said complementary spout the excess of material supplied to the main spout, means for advancing the carton from the main to the complementary spout, means for weighing the carton as it receives its complement of material, and means called into action by the weight of the filled carton for operating the controlling means of both spouts consisting of an electric circuit controlled by the weighing means, an electromagnet in said circuit, an armature, and connections from said armature to said spout-controlling means.

4. In a weighing and packing machine, the combination of a main filling-spout, controlling means in connection therewith to define and deliver a partial charge to the carton, means for supplying the material to said spout, a complementary filling-spout following the main spout, a controlling means in said complementary spout, a traveling scraper traversing the entrances to both spouts and adapted to transfer to the complementary spout the excess of material supplied to the main spout, means for advancing the carton from the main to the complementary spout, means for weighing the carton as

it receives its complement of material, and means called into action by the weight of the filled carton for operating the controlling means of both spouts, consisting of an electric circuit controlled by the weighing means, an electromagnet in said circuit, an armature, and connections from said armature to said spout-controlling means.

5. In a weighing and packing machine, the combination of a filling-spout, a charge-controlling means in connection therewith, means for carrying the carton under said spout, means for weighing it as it receives its charge, and means called into action by the weight of the charged carton for operating both the spout-controlling means, and the carton-carrying means, consisting of an electric circuit controlled by the weighing means, an electromagnet in said circuit, an armature, and connections from said armature to the spout-controlling means, a second electric circuit controlled by the weighing means, an electromagnet in said second circuit, an armature, and a pawl-and-ratchet driving mechanism controlled by said armature.

6. In a weighing and packing machine, the combination of a main filling-spout, controlling means in connection therewith to define and deliver a partial charge to the carton, means for supplying the material to said spout, a complementary filling-spout following the main spout, a controlling means in said complementary spout, means for transferring to said complementary spout the excess of material supplied to the main spout, means for advancing the carton from the main to the complementary spout, means for weighing the carton as it receives its complement of material, and means called into action by the weight of the filled carton for operating the controlling means of both spouts, and for operating the carton-advancing means.

7. In a weighing and packing machine, the combination of a main filling-spout, controlling means in connection therewith to define and deliver a partial charge to the carton, means for supplying the material to said spout, a complementary filling-spout following the main spout, a controlling means in said complementary spout, a traveling scraper traversing the entrances to both spouts and adapted to transfer to the complementary spout the excess of material supplied to the main spout, means for advancing the carton from the main to the complementary spout, means for weighing the carton as it receives its complement of material, and means called into action by the weight of the filled carton for operating the controlling means of both spouts and for operating the carton-advancing means.

8. In a weighing and packing machine, the combination of a main filling-spout, controlling means in connection therewith to define and deliver a partial charge to the carton, means for supplying the material to said spout, a complementary filling-spout following the main spout, a controlling means in said complementary spout, means for transferring to said complementary spout the excess of material supplied to the main spout, means for advancing the carton from the main to the complementary spout, means for weighing the carton as it receives its complement of material, and means called into action by the weight of the filled carton for operating the controlling means of both spouts, and for operating the carton-advancing means consisting of an electric circuit controlled by the weighing means, an electromagnet in said circuit, an armature, and connections from said armature to the spout-controlling means, a second electric circuit controlled by the weighing means, an electromagnet in said second circuit, an armature, and a pawl-and-ratchet driving mechanism controlled by said armature.

9. In a weighing and packing machine, the combination of a main filling-spout, controlling means in connection therewith to define and deliver a partial charge to the carton, means for supplying the material to said spout, a complementary filling-spout following the main spout, a controlling means in said complementary spout, a traveling scraper traversing the entrances to both spouts and adapted to transfer to the complementary spout the excess of material supplied to the main spout, means for advancing the carton from the main to the complementary spout, means for weighing the carton as it receives its complement of material, and means called into action by the weight of the filled carton for operating the controlling means of both spouts and for operating the carton-advancing means, consisting of an electric circuit controlled by the weighing means, an electromagnet in said circuit, an armature, and connections from said armature to the spout-controlling means, a second electric circuit controlled by the weighing means, an electromagnet in said second circuit, an armature, and a pawl-and-ratchet driving mechanism controlled by said armature.

10. In a weighing and packing machine, the combination of a plurality of filling-spouts, charge-controlling means in connection with each spout simultaneously, means for weighing each carton under its own spout, means called into action separately by the weight of the filled cartons for operating the controlling means of each spout, and other means called into action only upon the joint operation of all the separate weight-controlled means for effecting the operation of the carton-advancing means.

11. In a weighing and packing machine, the combination of a plurality of filling-spouts, charge-controlling means in connection with each spout, means for advancing a carton under each spout simultaneously, means for weighing each carton under its own spout, a plurality of electric circuits, each controlled by one of the weighing means, an electromagnet in each circuit, an armature for each magnet and connections from said armature to the spout-controlling means, and a general electric circuit controlled by the joint operation of all the weighing means, an electromagnet in said general circuit, an armature for said magnet, and a pawl-and-ratchet driving mechanism controlled by said armature, for operating the carton-advancing means.

12. In a weighing and packing machine, the combination of a plurality of main filling-spouts, a charge-controlling means for each main spout, means for supplying the material to each of said main spouts, a plurality of complementary spouts, a controlling means for each of said last-named spouts, means for transferring to each of said complementary spouts the excess of material supplied to its main spout, means for advancing the cartons under each main spout, and its complementary spout successively, means for weighing each carton under its complementary spout, means called into action separately by the weight of the filled cartons for operating the controlling means of all the spouts, and means called into action only upon the joint operation of all the separate weight-controlled means, for effecting the operation of the carton-advancing means.

13. In a weighing and packing machine, the combination of a plurality of main filling-spouts, a charge-controlling means for each main spout, means for supplying the material to each of said main spouts, a plurality of complementary spouts, a controlling means for each of said last-named spouts, means for transferring to each of said complementary spouts the excess of material supplied to its main spout, means for advancing the cartons under each main spout, and its complementary spout successively, means for weighing each carton under its complementary spout, a plurality of electric circuits, each controlled by one of the weighing means, an electromagnet in each circuit, an armature for each magnet and connections from said armatures to the spout-controlling means, and a general electric circuit controlled by the joint operation of all the weighing means, an electromagnet in said general circuit, an armature for said magnet and a pawl-and-ratchet driving mechansim controlled by said armature, for operating the carton-advancing means.

14. In a weighing and packing machine, the combination of a rotatable carrier to advance the cartons to be filled, means for filling said cartons, a continuously-rotating annular ratchet, an annular ratchet on the carrier concentric with the continuously-rotating ratchet, and having teeth directed oppositely to the teeth of said rotating ratchet, an actuating-pawl, mounted to slide in a line parallel to a tangent to said ratchets and adapted to traverse the teeth of both ratchets, whereby it is bound between them, and by its lineal travel withdraws from its engagement, and means called into action by the weight of the filled cartons for controlling said actuating-pawl.

15. In a weighing and packng machine, the combination of a rotatable carrier to advance the cartons to be filled, means for filling said cartons, a continuously-rotating annular ratchet, an annular ratchet on the carrier concentric with the continuously-rotating ratchet, and having teeth directed oppositely to the teeth of said rotating ratchet, an actuating-pawl, mounted to slide in a line parallel to a tangent to said ratchets and adapted to traverse the teeth of both ratchets, whereby it is bound between them, and by its lineal travel withdraws from its engagement, means called into action by the weight of the filled cartons for controlling said actuating-pawl, a retaining-ratchet on said rotatable carrier, and a retaining-pawl controlled in its engagement with the retaining-ratchet by the means controlling the actuating-pawl.

16. In a weighing and packing machine, the combination of a main filling-spout, a complementary filling-spout following the main spout, means for supplying the material to the main spout, a traveling scraper traversing the entrances to both spouts, and adapted to transfer to the complementary spout the excess of material supplied to the main spout, and means for applying moisture to said traveling scraper.

17. In a weighing and packing machine, means for advancing the carton and its independent filling-funnel fitted thereto, means for dropping them when the carton is filled, and means for suddenly

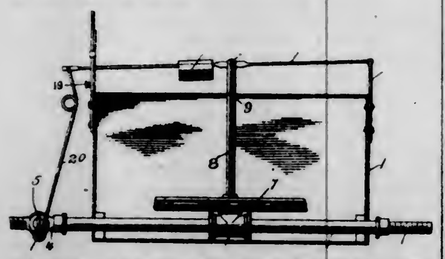
arresting the falling filling-funnel, whereby the carton is jarred free of the funnel.

18. In a weighing and packing machine, a table upon which the carton with its filling-funnel is supported, said table having a drop-hole in the path of travel of the carton, a carrier engaging the carton to advance it, whereby it drops when it reaches the hole in the table, and means on the filling-funnel for arresting said funnel in its fall, and suspending it from the carrier, whereby the filled carton is jarred free of the suspended funnel.

19. In a weighing and packing machine, a table upon which the carton with its filling-funnel is supported, said table having a drop-hole in the path of the travel of the carton, a carrier engaging the carton to advance it, whereby it drops when it reaches the hole in the table, means on the filling-funnel for arresting said funnel in its fall, and suspending it from the carrier, whereby the filled carton is jarred free of the suspended funnel, and a means on the table engaged by the advancing suspended funnel for freeing said funnel from its supports.

20. In a weighing and packing machine, a table upon which the carton with its filling-funnel is supported, said table having a drop-hole in the path of travel of the carton, a carrier engaging the carton to advance it, whereby it drops when it reaches the hole in the table, means on the filling-funnel for arresting said funnel in its fall, and suspending it from the carrier, whereby the filled carton is jarred free of the suspended funnel, means on the table engaged by the advancing suspended funnel for freeing said funnel from its supports, an underlying table to receive the falling carton, and a rotating carrier to convey it to its destination.

824,413. **GAS-REGULATOR.** GEORGE E. CROOKSHANK, Indiana, Pa., assignor of one-half to Kate Crookshank, Indiana, Pa. Filed Mar. 20, 1906. Serial No. 306,956.



Claim.—1. In a gas-regulator, the combination with a gas-supply pipe, and a valve carried by said pipe, of a casing surrounding a portion of said pipe in close proximity to said valve, a bellows mounted within said casing and connecting with said pipe, a standard carried by said bellows and protruding through the top of said casing, a rod pivotally mounted upon the top of said casing and connecting with said standard, a resilient rod connecting the end of the first-named rod with the plug of said valve to partially rotate said plug when said rod is raised and lowered by said bellows, means to regulate the movement of said bellows, and means to limit the movement of the first-mentioned rod, substantially as described.

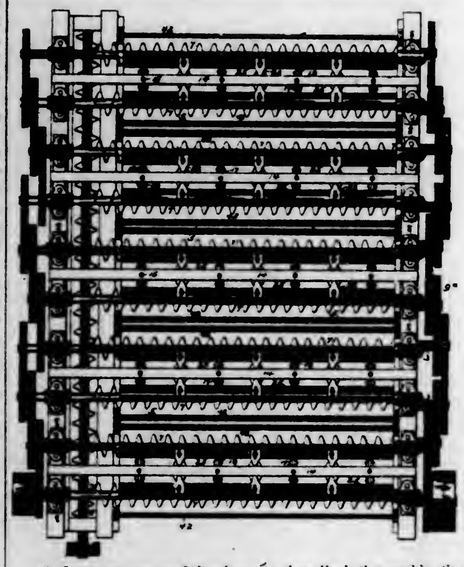
2. In a gas-regulator, the combination with a gas-supply pipe and a valve carried by said pipe, of a casing surrounding a portion of said pipe, and a bellows mounted within said casing and connecting with said pipe, a rod mounted upon the top of said casing and connecting with said bellows, a resilient rod connecting the first-mentioned rod with said valve, to operate said valve when the first-mentioned rod is raised and lowered by said bellows, substantially as described.

824,414. **ROLLER COTTON-GIN.** WILLIAM L. CROWSON, Jackson, Tenn., assignor of one-fourth to John M. Braun, one-fourth to Joseph E. Braun, and one-fourth to Roman Braun, Memphis, Tenn. Filed Sept. 15, 1905. Serial No. 278,636.

Claim.—1. In an apparatus of the character described, the combination with a pair of rollers, of doctor-knives for the rollers, means for exerting spring-pressure on both of said knives, and means for simultaneously adjusting the spring-pressure of both of said knives.

2. In an apparatus of the character described, the combination with a pair of rollers, of doctor-knives for the rollers, a coiled spring pressing both knives against the rolls, and a bolt and nut regulating the tension of the coiled spring.

3. In an apparatus of the character described, the combination with a roller, of a screw conveyer and beater for moving the seed longitudinally of the roller, and a doctor-knife against the roller.



4. In an apparatus of the character described, the combination with a roller, of a doctor-knife against the roller, a curved adjustable plate against the knife and a screw conveyer above and parallel with the roller.

5. In an apparatus of the character described, the combination of a pair of rollers and a frame between them, of doctor-knives supported in the frame and bearing against the rollers, a spring pressing both doctor-knives against their rollers, and screw conveyers or beaters above and parallel with the rollers and means for adjusting the screw conveyers or beaters toward or away from the rollers.

6. In an apparatus of the character described, the combination of a series of pairs of rollers, of doctor-knives for the rollers, means between the pairs of rollers for pressing the doctor-knives against the rollers and regulating the pressure, screw conveyers or beaters above the rollers and parallel therewith, movable boxing carrying the bearings for the several pairs of screw conveyers or beaters, and screws for adjusting said bearings to exactly position the screw conveyers or beaters with relation to the rollers.

7. In an apparatus of the character described, the combination with rollers, and doctor-knives against the rollers, of slotted brackets, and curved plates adjustably secured to the slotted brackets and engaging the cutter-knives to hold the seed and trash out of the compartment for cotton.

8. In an apparatus of the character described, the combination with a roller, a doctor-knife against the roller and a curved plate against the knife, of a plate at the opposite side of the roller engaging the same and forming, with the curved plate, a compartment to hold the seed and trash out of the cotton compartment or flue.

9. In an apparatus of the chracter described, the combination of a series of pairs of ginning-roller mechanisms, and a suction-flue below all of said rollers, of partitions between the pairs of rollers, projecting down into the suction-flue and preventing the suction from interfering with the operation of the rollers.

10. In an apparatus of the character described, the combination of several rollers and means for feeding seed-cotton at one end of all the rollers, of a trough at the other end of the rollers to receive the seed and a conveyer in said trough to move the seed therethrough.

11. In an apparatus of the character described, the combination with a series of rollers, of a distributer-box across one end of all of the rollers, sprocket-wheels at the ends of the box, endless chains around the wheels, cross-bars connecting the chains at intervals, and pins on said cross-bars.

12. In an apparatus of the character described, the combination with a series of rollers, and a distributer-box across one end of all the rollers and having openings above the same, of a conveyer in the box to convey the cotton to the openings, screw conveyers or beaters above the rollers, and toothed wheels between the screw conveyers or beaters and the holes in the box.

13. In an apparatus of the character described, the combination with a series of rollers, a box across one end of all of the rollers, and a conveyer in the box to move the cotton to the several rollers, of toothed wheels above the rollers to force the cotton down onto the rollers, and ratchet and pawl mechanism for driving the toothed wheels.

14. In an apparatus of the character described, the combination with a series of rollers and toothed feed-wheels for the rollers, of ratchet-wheels connected to turn the feed-wheels, a reciprocating bar, pawls on the bar engaging the ratchet-wheels, a lever to reciprocate the bar, a crank-shaft and a pitman connecting the crank-shaft and lever.

824,415. **WEDGE.** HARRY E. DENISON and HENRY H. BLAKE, Auburn, N. Y. Filed Oct. 3, 1904. Serial No. 227,054.



Claim.—1. A wedge, including a head portion, prongs associated therewith, one of the prongs provided with an enlargement having shoulders and inclined portions, and the other prongs each having a shoulder and an inclined portion for coöperation with the aforesaid shoulders and inclined portions.

2. A wedge, including a head portion, a prong arranged at each end of the head portion, and another prong associated with the head portion and arranged intermediate the end prongs and terminating short of the latter, the prongs being provided with shoulders and inclined portions, the shoulders and inclined portions coöperating with each other for creating a binding effect upon the material passed between them.

3. A wedge, including a head portion, prongs associated therewith, the intermediate prong terminating short of the outer prongs and provided with an enlargement having shoulders and inclined portions, the outer prongs having shoulders and inclined portions for coöperation with the inclined portions and shoulders of the intermediate prong.

4. A wedge, including a head portion and prongs associated therewith, the intermediate prong terminating short of the outer prongs and provided with an enlargement at its lower extremity, the enlargement having inclined portions and oppositely-disposed shoulders, the outer prongs each having a portion of its inner face inclined and its lower end provided with a shoulder, the shoulders of the outer prongs coöperating with the inclined portions of the enlargement of the intermediate prong and the shoulders of the latter coöperating with the inclined portions of the outer prongs.

5. A wedge, including a head portion and prongs associated therewith, the intermediate prong terminating short of the outer prongs and provided with an enlargement at its lower extremity, the enlargement having inclined portions and oppositely-disposed shoulders, the outer prongs each having a portion of its inner face inclined above the aforesaid shoulders, the lower ends of the outer prongs being provided with a shoulder arranged opposite the inclined portions of the said enlargement.

824,416. **ATTACHMENT FOR ADDING-MACHINES.** CYRUS C. EARNEST, Riceville, Iowa. Filed Aug. 1, 1905. Serial No. 272,226.

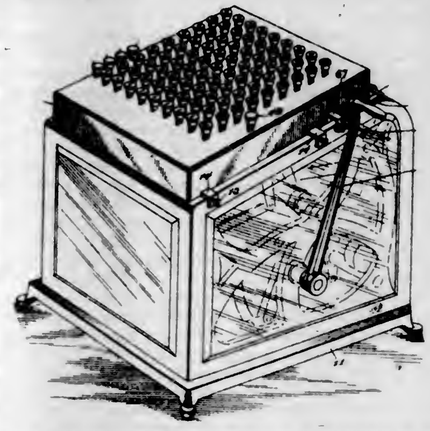
Claim.—1. The combination with a series of keys; of mechanism for automatically selecting in said series the complement of any of said keys when actuated.

2. The combination with a series of keys; of actuating means, and mechanism for automatically selecting in said series the complement of any of said keys and placing it in operative relation with the actuating means.

3. The combination with a series of depressible keys; of an actuating device, and mechanism for automatically placing the complement of a depressed key in operative relation with the actuating device.

4. The combination with a series of depressible keys; of an actuating device, and mechanism for automatically placing the complement of any key, when depressed, into operative relation with the actuating device.

5. The combination with a series of depressible keys; of an actuating device, mechanism for automatically placing the complement of a depressed key into operative relation with the actuating device, and mechanism for returning said first-mentioned mechanism to its initial position.



6. The combination with series of keys; of mechanism for automatically selecting in each series the complement of any depressed key in the same series.

7. The combination with a series of keys; of mechanism for automatically selecting in said series the complement of any of said keys when depressed, and mechanism for returning the selective mechanism to its initial position.

8. The combination with series of keys; of separate mechanism for automatically selecting in each series the complement of any key in the same series, and mechanism for returning the selective mechanisms to their initial positions.

9. The combination with series of keys; of mechanism for automatically selecting in each series the complement of any of said keys, and a lock for holding said selective mechanism upon the completion of its selection.

10. The combination with a series of keys; of mechanism for automatically selecting in said series the complement of any of said keys, a lock for holding said mechanism upon the completion of its selection, and mechanism for releasing the selective mechanism and returning it to its initial position.

11. The combination with a series of keys; of a selective device for said series, means upon the keys for limiting the movement of the selective device, and means upon the selective device for automatically registering with the complement of the key limiting the movement of the device.

12. The combination with a series of keys; of a slide for said series, means upon each key for independently limiting the movement of the slide, and means upon the slide for automatically selecting the complement of the key limiting the movement of said device.

13. The combination with a series of keys; of a spring-controlled selective device, means operated by the depression of any key for limiting the movement of the selective device, and means upon said selective device for automatically registering with the complement of the depressed key.

14. The combination with a series of keys; of a spring-controlled slide, means adapted, when a key is depressed, to limit the movement of the slide in one direction, and means upon said slide for automatically selecting the complement of the depressed key.

15. The combination with a series of keys; of a spring-controlled slide, means for limiting the movement of said slide when any one of the keys is depressed, means upon the slide for automatically selecting the complement of the depressed key, and an actuating device for depressing the slide and the selected complement.

16. The combination with series of keys; of a spring-controlled selective device for each series, means operated by the depression of any key for limiting the movement of its selective device in one direction, means upon each selective device for automatically selecting the complement in the same series with a depressed key, and means for simultaneously returning the selective devices to their initial positions.

17. The combination with series of keys; of a spring-controlled selective device for each series, means operated by the depression of any key for limiting the movement of its selective device in one direction, means upon each selective device for automatically selecting

the complement in the same series with a depressed key, means for simultaneously returning the selective devices to their initial positions, and means for automatically locking the selective devices when returned.

18. The combination with series of keys; of a selective device for each series, means operated by the depression of any key for limiting the movement of its selective device, means upon each selective device for automatically registering with the complement of the depressed key, an actuating device for simultaneously depressing the selective devices and the complement engaged thereby, and means for resetting the selective devices in their initial positions.

19. The combination with a series of keys; of a selective device, means operated by the depression of a key for limiting the movement of the selective device, means upon said selective device for automatically registering with the complement of the depressed key, means for depressing the selective device and the complement registering therewith, and a locking device for holding the selective device prior and subsequent to its adjustment.

20. The combination with a series of keys; of a selective device, means operated by the depression of a key for limiting the movement of the selective device, means upon said selective device for automatically registering with the complement of the depressed key, means for depressing the selective device and the complement registering therewith, a locking device for holding the selective device prior and subsequent to its adjustment, and mechanism for automatically "resetting" the selective device subsequent to its adjustment.

21. The combination with a series of keys; of a selective device, means operated by the depression of a key for limiting the movement of the selective device, means upon said selective device for automatically registering with the complement of the depressed key, means for depressing the selective device and the complement registering therewith, a locking device for holding the selective device prior and subsequent to its adjustment, mechanism for automatically "resetting" the selective device subsequent to its adjustment, and means actuated by said mechanism for unlocking the selective device during the "resetting" operation.

22. The combination with a series of keys; of a selective device, means operated by the depression of a key for limiting the movement of the selective device, means upon said selective device for automatically registering with the complement of the depressed key, means for depressing the selective device and the complement registering therewith, a locking device for holding the selective device prior and subsequent to its adjustment, mechanism for automatically "resetting" the selective device subsequent to its adjustment, and manually-operated means for unlocking the selective device.

23. The combination with a series of keys; of a selective device, means operated by the depression of a key for limiting the movement of the selective device, means upon said selective device for automatically registering with the complement of the depressed key, means for depressing the selective device and the complement registering therewith, a locking device for holding the selective device prior and subsequent to its adjustment, mechanism for automatically "resetting" the selective device subsequent to its adjustment, means actuated by said mechanism for unlocking the selective device during the "resetting" operation, and manually-operated means for unlocking the selective device prior to the selective operation.

24. The combination with a series of keys; of actuating means, means for automatically selecting in said series the complement of any of said keys and coupling it with the actuating means, and mechanism operated by the actuating means adapted to prevent the actuation of the platen and the recording of the operation of an adding-machine.

25. The combination with a series of keys; of a selective device, means operated by the depression of a key for limiting the movement of the selective device, means upon the selective device for automatically registering with the complement of a depressed key, means for actuating the selective device to depress the complement alining therewith, means for manually returning the selective device to its initial position, a key actuated by said means, and mechanism operated by said means adapted to prevent the actuation of the platen and the recording of the operations of an adding-machine.

26. The combination with a depressible carriage and a key for acutating the same; of a series of keys adjacent the carriage, a selective device mounted within the carriage, means actuated by the depression of any key for limiting the movement of the selective device, and means upon the selective device for automatically registering with, and adapted to bear upon, the complement of the depressed key.

27. The combination with a resiliently-supported depressible carriage and a key for actuating the same; of a series of keys adjacent the carriage, means movably mounted within the carriage for automatically selecting in said series the complement of any of said keys.

28. The combination with a resiliently-supported carriage and means for manually depressing the same; of a series of keys adjacent the carriage, means movably mounted within the carriage for automatically selecting in said series the complement of any of said keys, and manually-operated means upon the carriage for returning the selective means to its initial position.

29. The combination with a resiliently-supported carriage, guides therefor, and means for manually depressing the carriage; of series of keys adjacent the carriage, slides mounted within the carriage and adjacent the series of keys, means operated by the depression of any key for limiting the movement of the slide of its series, means upon the slide for automatically registering with the complement of the depressed key, said means being adapted to bear upon and actuate the complement when the carriage is depressed.

30. The combination with a resiliently-supported carriage, guides therefor, and means for manually depressing the carriage; of series of keys adjacent the carriage, slides mounted within the carriage and adjacent the series of keys, means operated by the depression of any key for limiting the movement of the slide of its series, means upon the slide for automatically registering with the complement of the depressed key, said means being adapted to bear upon and actuate the complement when the carriage is depressed, a "resetting" device mounted within the carriage for returning the slides to their initial position, and means upon the carriage for manually actuating the "resetting" device.

31. The combination with a resiliently-supported carriage and means for manually actuating the same; of series of keys adjacent the carriage, spring-controlled slides mounted within the carriage and adjacent the series of keys, means operated by the depression of any key for limiting the movement of the slide of said series, means upon each slide for automatically alining with the complement of the depressed key, said means adapted to depress said complement when the carriage is actuated, means upon the carriage for automatically locking the slides in adjusted position, and a manually-operated unlocking device upon the carriage.

32. The combination with a resiliently-supported carriage and means for manually actuating the same; of series of keys adjacent the carriage, spring-controlled slides mounted within the carriage and adjacent the series of keys, means operated by the depression of any key for limiting the movement of the slide of said series, means upon each slide for automatically alining with the complement of the depressed key, said means adapted to depress said complement when the carrriage is actuated, means upon the carriage for automatically locking the slides in adjusted position, a manually-operated unlocking device upon the carriage, and means upon the carriage for automatically unlocking and "resetting" the slides.

33. The combination with an adding-machine having a rotatable platen and a dog for actuating the platen; of a series of keys upon said machine, a selective device for said series, means operated by the depression of a key for limiting the movement of the selective device, means upon the selective device for automatically registering with the complement of the depressed key, means for manually depressing the selective device and the complement alining therewith, a shield overlapping the platen, a dog-lifting device, mechanism actuated by said means for automatically operating the shield and dog-lifting device, and a lock for holding said shield and device in the position to which they are adjusted.

34. The combination with an adding-machine having a rotatable platen and a dog for actuating the platen, and an actuating-lever; of a series of keys upon said machine, a selective device for said series, means operated by the depression of a key for limiting the movement of the selective device, means upon the selective device for automatically registering with the complement of the depressed key, means for manually depressing the selective device and the complement alining therewith, a shield overlapping the platen, a dog-lifting device, mechanism actuated by said means for automatically operating the shield and dog-lifting device, a lock for holding said shield and device in the position to which they are adjusted, and means operated by the actuating-lever for unlocking said shield and dog.

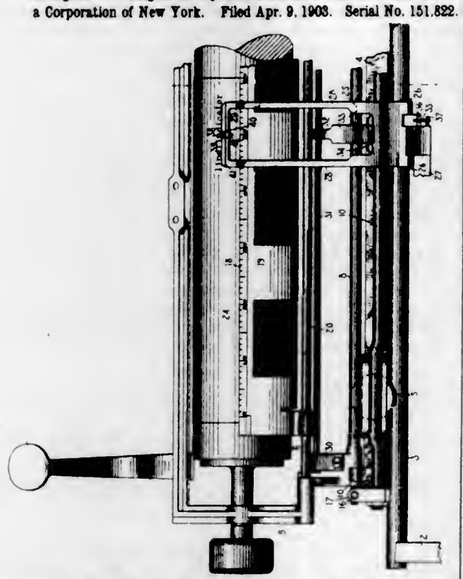
35. An attachment for adding-machine comprising a casing; keys therein adapted to be supported by and to actuate the corresponding keys of an adding-machine, means within the casing for automatically selecting the complement of any key depressed, and manually-operated means within said casing for actuating the selected complement.

824,417. LATCH. HELMER H. ENGERRTSON, Albee, S. D. Filed Aug. 10, 1905. Serial No. 273,584.

Claim.—A latch comprising a receiving member and a plate for engagement by the receiving member, the receiving member comprising a fixed member having a hole and a recess therein, a pivoted member provided with spaced lugs one of said lugs being adapted for engagement in the recess of the fixed member to limit the inward movement of the said plate, and a spring arranged in the hole of the fixed member and engaged with the pivoted member to hold said members normally in engagement



824,418. TYPE-WRITING MACHINE. WILLIAM C. FARNUM, Arlington, Vt., assignor to Wyckoff, Seamans & Benedict, Ilion, N. Y., a Corporation of New York. Filed Apr. 9, 1903. Serial No. 151,822.



Claim.—1. In a type-writing machine, the combination with a hinged platen-carrier and a platen that swings therewith, of a spring-pressed indicator contiguous to the platen and adapted, during one stage of the movement of the platen to expose the printing-point, to be pressed by its spring-pressure from the platen and at another stage to be pressed by its spring-pressure toward the platen, substantially as described.

2. In a type-writing machine, the combination with a hinged platen-carrier, of an indicator pivoted contiguous to the platen, a spring, and means for automatically applying the pressure of the spring for pressing the indicator from the platen when it is in printing position and during the first stage of its movement to expose the printing-point, and for automatically pressing the pointer toward and against the platen during the latter stage of and at the end of said upward movement, substantially as described.

3. In a type-writing machine, the combination with a hinged platen-carrier, of a pointer pivoted contiguous thereto and a double-acting spring operating to press the pointer in different directions at different stages of the upward movement of the platen to expose the printing-point, substantially as described.

4. In a type-writing machine, an indicator pivotally arranged contiguous to the hinged platen-carrier, a connection between the platen and the indicator whereby the indicator is raised as the platen is swung upward to expose the printing-point, and a double-acting spring tending to press the indicator away from and toward the platen at different stages of the upward movement.

5. In a type-writing machine, the combination with a hinged platen-carrier, of a pivoted spring-pressed pointer adapted to be pressed by its spring into contact with the platen when the latter has been raised to expose the writing, and to be pressed by the spring-pressure thereof from the platen as it is lowered to printing position.

6. In a type-writing machine, the combination with a shiftable platen-carrier, of a combined printing-point and printing-line indicator that is carried by a fixed portion of the machine and which is adapted to indicate the printing-point and the printing-line on the platen in both of its shift positions.

7. In a type-writing machine, the combination with a hinged and shiftable platen-carrier, of an indicator pivoted contiguous thereto to a fixed portion of the machine and adapted to indicate the printing-point and printing-line when the platen is swung upward to expose the writing from either of its shift positions.

8. In a type-writing machine, the combination with a swinging and shiftable platen-carrier, of a combined line and printing-point indicator carried by a fixed portion of the machine and adapted to indicate both the printing-point and the printing-line on the platen in either of its shift positions, the movement of the indicator being controlled by the swinging movement of the platen-carrier.

9. In a type-writing machine, the combination with a hinged, swinging and shiftable platen-carrier, of an indicator, pivoted contiguous thereto on a fixed portion of the machine and adapted to automatically indicate the printing-point and the printing-line when the platen is swung upward to expose the writing from either of its shift positions.

10. In a type-writing machine, the combination with a hinged and shiftable platen-carrier, of an indicator, pivoted contiguous thereto, a loose connection with the platen-carrier and a double-acting spring coöperating with the indicator so that the indicator is held from contact with the platen until the latter nears the end of its upward swing to expose the printing-point, and then to be pressed against the platen to indicate the printing-point and the printing-line.

11. In a type-writing machine, the combination with a hinged and swinging platen-carrier, of an automatically-actuated combined printing-point and printing-line indicator pivoted to a fixed portion of the machine and adapted to indicate the printing-line and the printing-point on the platen and on the platen-scale simultaneously.

12. In a type-writing machine, the combination with a hinged or swinging and shiftable platen-carrier, of an automatically-actuated indicator connected to a fixed portion of the machine and adapted to indicate simultaneously the printing-line and the printing-point on both the platen and the platen-scale when the platen is in either of its shifted positions.

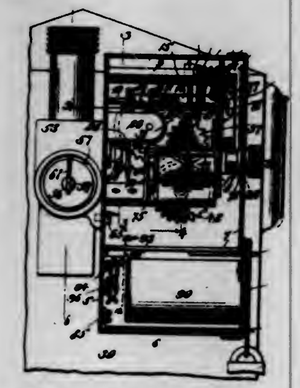
13. In a type-writing machine, the combination with a swinging and shiftable platen-carrier, an automatically-actuated spring-pressed indicator that is connected to a fixed portion of the machine, an index on the indicator that registers with the printing-point when the platen is in either shifted position, a printing-line index on the indicator that indicates the printing-line when the platen is in one of its shifted positions and another printing-line index on the indicator that registers with the printing-line when the platen is in its other shifted position.

14. In a type-writing machine, the combination with a swinging and shiftable platen-carrier, an automatically-actuated indicator that is connected to a fixed portion of the machine, an index on the indicator that registers with the printing-point when the platen is in either shifted position, a printing-line index on the indicator that indicates the printing-line when the platen is in one of its shifted positions, another printing-line index on the indicator that registers with the printing-line when the platen is in its other shifted position, and a printing-point index on the indicator that registers with the platen-scale, so as to afford a simultaneous indication of the printing-point on the platen, a corresponding indication on the platen-scale and an indication of the printing-line in either shifted position of the platen.

15. In a type-writing machine, the combination with a swinging and shiftable platen-carrier, an automatically-actuated indicator that is connected to a fixed portion of the machine, an index on the indicator that registers with the printing-point when the platen is in either shifted position, a printing-line index on the indicator that indicates the printing-line when the platen is in one of its shifted positions, another printing-line index on the indicator that registers with the printing-line when the platen is in its other shifted position, and a double-acting spring that presses the indicator toward the platen when it is swung back and presses it away from the platen when the latter is swung down.

16. In a type-writing machine having a series of upper and lower case types and a platen, one shiftable relatively to the other for upper and lower case printing, the combination of a combined printing-point and printing-line indicator which is carried by a fixed portion of the machine and which is adapted to indicate the printing-point and printing-line in both case-shift positions.

824,419. **PREPAYMENT ATTACHMENT FOR GAS-METERS.** RUDOLPH L. FRIEDHEIM, New York, N. Y. Filed Oct. 1, 1903. Serial No. 175,264.



Claim.—1. In a prepayment attachment for gas-meters, the combination of a coin-operated member mounted to turn, means for preventing said member from turning in one direction, a valve-operating member arranged to be shifted by the turning of the coin-operated member in one direction, and a friction connection between said members to cause the coin-operated member to turn idly after the valve-operating member has been shifted to the end of its travel.

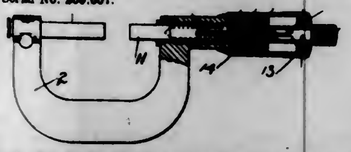
2. In a prepayment attachment for gas-meters, the combination of a casing open at one side, a slotted partition-wall within said casing, forming two compartments and having a vertical extension to close one of said compartments, an interlocking connection between said extension and the adjoining wall of the casing, means to lock the opposite edge of said partition-wall to the casing, said means being accessible from the inside of the open compartment, a cover to close said open compartment and means to lock said cover.

3. In a prepayment attachment for gas-meters, a casing containing the coin-operated mechanism, a valve-chamber adjacent to said casing, a winged screw-cap adjacent to the wall of said casing for normally closing said valve-chamber, and a screw or pin extending from the inside of said casing and through the wall thereof, and projecting between two wings of said screw-cap.

4. In a prepayment attachment for gas-meters, the combination with coin-operated mechanism, of a casing containing the coin-operated mechanism, a valve connected with said mechanism, a valve-chamber adjacent to said casing and inclosing said valve, a screw-cap adjacent to the wall of said casing, and formed with a guide for the stem of said valve, and arranged to close said valve-chamber, and a screw or pin extending from the inside of said casing and through the wall thereof, and abutting against said cap to lock the same.

5. In a prepayment attachment for gas-meters, the combination of a valve, a coin-operated star-wheel connected with said valve to open the same, means for holding said star-wheel in its normal position, an indicating-gear operated by said star-wheel, and a brake engaging said indicating-gear.

824,420. **MICROMETER-GAGE.** CARL A. FISK, Providence, R. I., assignor of one-half to Walfrid Person, Providence, R. I. Filed May 26, 1904. Serial No. 209,607.



Claim.—1. A micrometer-gage comprising a fixed internally-threaded barrel, a spindle working in said barrel and having its body provided with an external-threaded portion, said threaded portion being normally contracted to hold the same out of engagement with the threads of said barrel, and means for expanding said contracted portion, whereby the threads thereof will engage the threads of said barrel.

2. A micrometer-gage comprising a fixed tubular barrel provided with an internal thread, a spindle working in said barrel and provided with an integral, normally contracted portion also provided with a thread, and means within said spindle for expanding said contracted portion, whereby the threads of the spindle are caused to engage the threads of the barrel.

3. A micrometer-gage comprising a fixed tubular barrel provided with an internal thread, a spindle working therein and having longitudinal normally contracted ribs integral therewith, said ribs being exteriorly threaded, and means for expanding said ribs, whereby the threads thereof are caused to engage the threads of the barrel.

4. In a device of the character described, a spindle having longitudinal spring-ribs, a screw-thread made on said ribs and a rotatable cam held within said spindle for expanding said ribs.

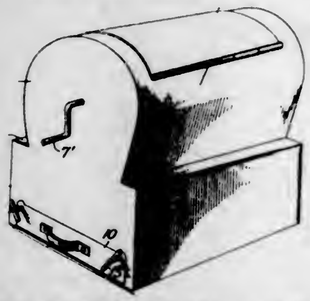
5. In a device of the character described, a spindle having a hollow center portion, slots through said spindle forming longitudinal ribs thereon, a screw-thread made on said ribs, a rotatable cam-bar supported in said hollow center for expanding said ribs.

6. In a device of the character described, an internally-threaded barrel, a spindle having longitudinal spring-ribs, a screw-thread made on said ribs and a rotatable cam-bar held within said spindle for expanding said ribs so that the screw-thread thereon will engage the internal-threaded barrel.

7. In a device of the character described, an internally-threaded barrel, a spindle having a hollow center portion, slots through said spindle forming longitudinal ribs thereon, a screw-thread made on said ribs, a rotatable cam-bar supported in said hollow center for expanding said ribs, causing the screw-thread thereon to engage the internally-threaded portion of the barrel and means for limiting the rotation of said cam-bar in relation to said spindle.

8. A micrometer-gage comprising a fixed internally-threaded barrel, a spindle working in said barrel and having its body provided with an external-threaded portion, said threaded portion being normally contracted to hold the same out of engagement with the threads of said barrel, means for expanding said contracted portion, whereby the threads thereof will engage the threads of said barrel, and means for taking up the wear upon said threads.

824,421. **SIFTING DEVICE.** ABRAHAM A. GALLOWAY, Crystalrun, N. Y. Filed Oct. 17, 1905. Serial No. 283,182.



Claim.—1. A sifting device comprising a casing including an ash-chamber and a sifting-chamber, an ash-drawer arranged to be positioned within the ash-chamber, said chamber being formed with an opening approximating the sectional area of the drawer to permit the entrance of the drawer, doors having hinged connection with the drawer, and means connected with the doors and operative from beyond the end of the drawer, whereby to permit opening and closing of said doors when the drawer is within the ash-chamber.

2. A sifting device comprising a casing including an ash-chamber, and a sifting-chamber, an ash-drawer arranged to be positioned within the ash-chamber, said chamber being formed with an opening approximating the sectional area of the drawer to permit the entrance of the drawer, doors having hinged connection with the drawer, and means connected with the doors and operative from beyond the end of the drawer, said doors being pivotally supported between the side edges and the longitudinal center of the drawer, whereby said doors incline outwardly and upwardly from the drawer when in open position.

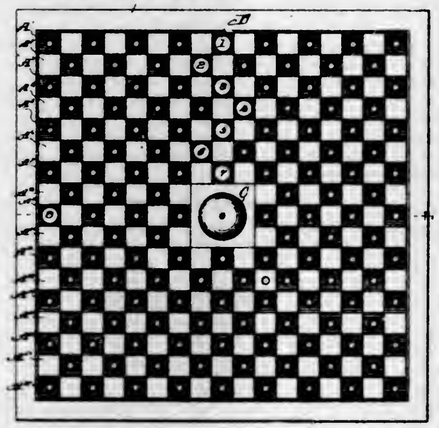
3. A sifting deivce comprising a casing including an ash-receptacle and a sifting-receptacle in open communication therewith, the edges of the ash-receptacle being provided with inwardly-extending side flanges at the junction with the sifting-receptacle, a sifting device within the sifting-receptacle, a drawer adapted to be inserted within the lower portion of the ash-receptacle, and doors hinged to the side edges of the drawer, said doors being adapted to be turned upon their connection with the drawer to position their free edges beneath the flanges of the ash-receptacle beyond the inner edges thereof, the hinge connection of the doors with the drawer being located inward from the side edge of the drawer, and handles connected to the doors and extending beyond the forward face of the drawer, whereby to permit manipulation of the doors when the drawer is in closed position.

824,422. **CASTER.** JAMES M. HARPER, Chicago, Ill., assignor to Harper Supply Co., Chicago, Ill., a Corporation of Illinois. Filed Dec. 15, 1902. Serial No. 135,187.



Claim.—A frame for stove-casters and the like, formed with an inverted-cup shape central portion, the rim of which is cut away to form a pair of vertical extensions in angular and separated relation, and said vertical portion having a vertical post arranged in from the margin of said central portion and midway of the vertical extensions in a manner which adapts the device to receive either a stove-leg or a bottom rim of an ordinary range, substantially as set forth.

824,423. **GAME-BOARD.** EDMUND E. HILE, Chicago, Ill. Filed June 5, 1905. Serial No. 263,699.

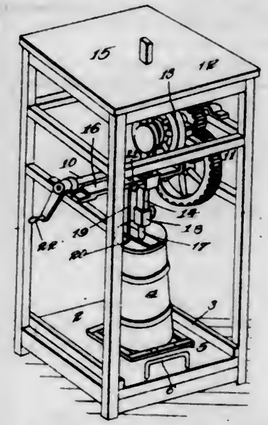


Claim.—1. The combination with a game-board, of an electric indicator, a circuit for said indicator, a conductor at the center of said board, a conductor extending around said board, leads connecting said circuit to each of said conductors, a plurality of separate contacts fixed to said board intermediate of said conductors, and movable men carrying contacts adapted to be placed upon said board in positions to electrically connect said contacts and thereby close said circuit.

2. A combination with a game-board having spaces marked thereon, of contacts fixed to said board extending from one space to the adjacent spaces, movable men adapted to be located on said spaces, a contact carried by each of said men adapted to electrically connect the contacts extending from the space on which the man is placed, and an electric indicating device the circuit of which is closed by a predetermined arrangement of men on the board.

3. The combination with a game-board, of a bell mounted thereon, an electromagnet for operating said bell, a circuit for said magnet, separate contacts fixed to said board and movable men carrying contacts adapted to be placed on said board in position to connect adjacent contacts and close said circuits.

824,424. **CHURN-OPERATING MECHANISM.** JOSEPH L. HOYLE, Lotha, N. C. Filed Mar. 10, 1906. Serial No. 305,494.



Claim.—1. In operating mechanism for churns, the combination of a stand or support, dasher-operating mechanism arranged on said support, the support being provided at its lower portion with spaced guides, a bottom adapted to carry the churn and slidably mounted in the guides aforesaid, stops attached to the under side of the bottom and adapted to abut with the stand or support to limit the outward movement of the bottom, and a dog pivoted to the support or stand and arranged to engage a recess in the top of the bottom to prevent movement of the latter when so engaged.

2. In operating mechanism for churns, the combination of a stand or support, a horizontally-arranged guide-bar attached to the support, a pitman mounted for vertical movement on said guide-bar, a churn-cover-holding device consisting of a vertical rod mounted on the guide-bar, a set-screw applied to the guide-bar to hold the rod at a desired adjustment, and a curved arm at the lower end of the rod to bear against the cover in the manner specified.

3. In operating mechanism for churns, the combination of a stand or support including a vertically-reciprocating pitman, means for actuating said pitman, a guide-bar for guiding the pitman in its movement, a cover-holding device for preventing displacement of the cover of the churn and comprising a vertical rod passing through the guide-bar, means for adjusting said rod, and an arm extending from the lower end of the rod to bear against the cover of the churn for the purpose specified.

824,425. **GOVERNOR FOR FLUID-PRESSURE MOTORS.** CHARLES H. JOHNSON, Chicago Heights, Ill. Filed July 24, 1902. Serial



Claim.—1. In a governor for fluids, the combination with a chamber having a tapered interior wall, a cylindrical chamber communicating with said first chamber, a piston-valve having a head located within said first chamber and forming a passage-way for the fluid between the periphery thereof and the tapered wall of the chamber, a radial flange on the opposite end of said valve located within and closely engaging the interior wall of said cylindrical chamber, and a spring normally maintaining the valve in position to afford a maximum passage-way for the fluid.

2. The combination with a conduit leading from a source of motive fluid to an engine, of a governor located in said conduit comprising a chamber having a tapered interior wall of circular cross-section and a piston-valve located within said chamber and forming a passage-way for fluid-pressure between the periphery thereof and the tapered wall of the chamber, one surface of said valve being exposed to pressure flowing from the source thereof and the other surface being exposed to pressure flowing to the engine and a spring normally maintaining said valve in position to afford a maximum passage-way for the fluid.

3. In a fluid-governor, the combination with a chamber having

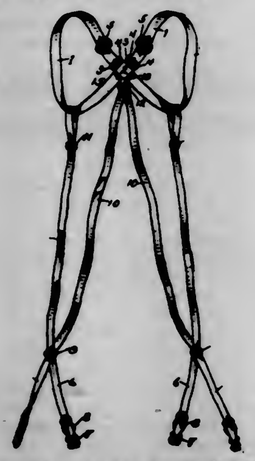
a tapered interior wall, of a cylindrical chamber communicating with said first chamber, an annular shoulder formed between said chambers, a piston-valve having a head located within said first chamber and forming a passage-way for fluid-pressure between the periphery thereof and the tapered wall of the chamber, a radial flange on the opposite end of said valve located within and closely engaging the interior wall of said cylindrical chamber, said head being of a diameter slightly greater than the diameter of said shoulder and having a passage-way extending longitudinally therethrough, and a spring normally maintaining the valve in position to afford a maximum passage-way for the fluid.

4. The combination with a conduit leading from a source of motive fluid to an engine, of a governor located in said conduit comprising a chamber having a valve-seat therein and a piston-valve located within said chamber and forming a passage-way for fluid-pressure between the periphery thereof and the interior wall of the chamber, one surface of said valve being exposed to pressure flowing from the source thereof and the other surface being exposed to pressure flowing to said engine, said piston-valve having a passage therethrough for the flow of fluid-pressure when the passage-way around the periphery of the valve is closed by the engagement of the valve with the seat in the chamber, and a spring normally maintaining the valve in position,to afford a maximum passage-way through the fluid-pressure.

5. In a governor for a fluid-operated engine, the combination with a chamber having an interior tapered wall of circular cross-section, of a piston-valve located within said chamber and forming a passage-way for fluid-pressure between the periphery thereof and the tapered wall of the chamber, and a conical spring the apex of which extends into a recess in said piston-valve and the base of which engages a fixed support on the side of the valve toward the engine, whereby when the pressure on the surface of the valve toward the engine is less than the pressure on the surface thereof toward the motive-fluid supply the passage-way around the valve will be reduced.

6. The combination with a conduit leading from a source of motive fluid to a point where the fluid is used, of a governor located in said conduit comprising a chamber having a tapered interior wall of circular cross-section, a piston-valve located within said chamber and forming a passage-way for fluid-pressure between the periphery thereof and the tapered wall of the chamber, one surface of said valve being exposed to pressure flowing from the source thereof and the other surface being exposed to pressure flowing to the point of use, and a spring normally maintaining the valve in position to afford a maximum passage-way for the fluid-pressure whereby when the pressure on the surface of the valve toward the point of use is less than the pressure on the surface thereof toward the motive-fluid supply the passage-way around the valve will be reduced.

824,426. **HOSE-SUPPORTER.** EDWARD JOHNSON, Cincinnati, Ohio. Filed Aug. 26, 1905. Serial No. 275,838.



Claim.—1. In a hose-supporter, straps to brace the shoulders, with bands to support the stockings loops thereon loosely engaging the brace-straps under the arm portion, whereby the stocking-supports may adjust themselves in position under the arms, said supports being also suspended from the central portion of said brace-straps.

2. In a hose-supporter, straps to brace the shoulders and a continuous band with its ends looped loosely over the shoulder-straps under the arm portion and a loop on the central portion of the shoulder-braces through which the continuous band passes, with supporting devices for the stockings secured to said band.

3. In a hose-supporter, the combination with a "figure-8" shoulder-brace, of a hose-support consisting of a continuous band with its ends looped loosely over the shoulder-straps under the arm portion, and a loop on the central portion of the shoulder-braces through which the continuous band passes, with supporting devices for the stocking secured to said band.

4. In a hose-supporter, straps to brace the shoulders and a continuous band with its ends looped loosely over the shoulder-straps under the arm portion and a loop on the central portion of the shoulder-braces through which the continuous band passes, with supporting devices for the stockings and loop for securing same to said band.

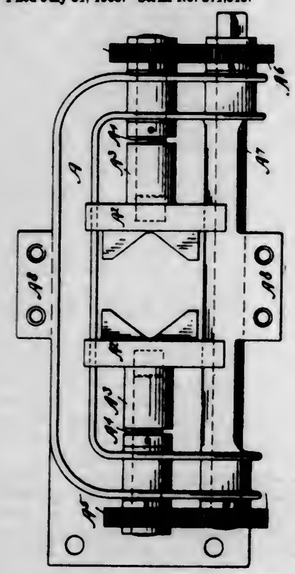
5. In a hose-supporter, the combination with a "figure-8" shoulder-brace, of a hose-support consisting of a continuous band with its ends looped loosely over the shoulder-straps under the arm portion, and a loop on the central portion of the shoulder-braces through which the continuous band passes, with supporting devices for the stocking and loop for securing same to said band.

824,427. **CURTAIN-FIXTURE.** IDA B. LANPING, Allegheny, Pa. Filed Feb. 9, 1905. Serial No. 244,925.



Claim.—As a new article of manufacture, a curtain-fixture comprising a horizontally-extending flat metallic bar having its ends extending at right angles, brackets formed integral with said ends and pierced to receive fastening means, and hooks having screw-threaded shanks screwing into the bar and extending from the rear face of the bar and inner faces of the angular ends with their free ends turned downwardly and inwardly toward the bar and toward said angular ends respectively.

824,428. **DIE-STOCK.** THOMAS R. LEIGHTON, East Cleveland, Ohio. Filed July 31, 1905. Serial No. 271,918.



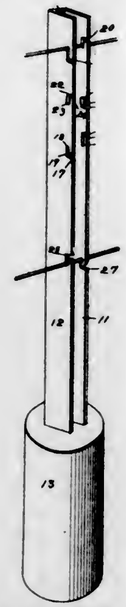
Claim.—1. A stock carrying a plurality of cutters disposed so that their individual tendency to bend the pipe will be counteracted and means for simultaneously feeding said cutters into the pipe, said feeding means being adapted to be rendered effective upon relative rotation between the stock and the pipe by contact with a part rotatively independent of said stock.

2. A vise-frame, a stock carrying a plurality of cutters so disposed that they mutually counteract each other's thrust, and means on the stock adapted to feed the cutters simultaneously, said means rendered effective upon the relative rotation of the stock and vise.

3. A vise-frame, a stock carrying a plurality of cutters disposed to mutually oppose the individual thrusts, and means on the stock adapted to feed and retract said cutters, said feeding and retracting means being effective upon relative rotation between the vise and stock.

4. A vise-frame, a stock carrying a plurality of cutters disposed to center the pipe by their thrusts, centering means adapted to maintain the stock in a definite position relative to the vise-frame, and means for effecting simultaneous and equal movement of the cutters, said moving means being rendered effective by relative rotation between the stock and vise.

824,429. **FENCE-POST.** JAY LUDWICK, Grand Rapids, Mich., assignor of one-third to Geo. H. Broesamle, Kalamazoo, Mich., and one-third to Ray A. Ludwick, Leslie, Mich. Filed Jan. 23, 1905. Serial No. 242,240.



Claim.—In a fence, runners, in combination with a post comprising a metal body portion, of U shape in horizontal section, having pairs of oppositely-disposed L-shaped slots in the edges of its sides receiving the runners; the point of one slot in one side being lower than the point of the coöperating slot in the other side, and the point of the next upper slot in the first-mentioned side being higher than the point of the coöperating slot in the said other side, whereby that portion of one runner which is intermediate the sides of the post is caused to decline in one direction and the corresponding portion of the other runner is caused to decline in the opposite direction.

824,430. **SIGNAL APPARATUS.** FREDERICK MUSCHENHEIM, New York, N. Y. Filed Apr. 2, 1906. Serial No. 309,556.

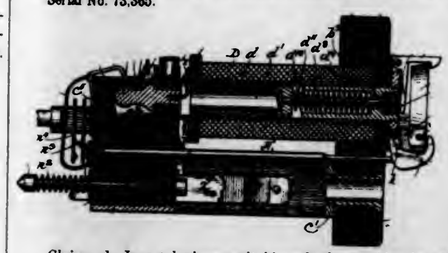
Claim.—1. In a signaling system for hotels, a socket in a hall on the exterior of a room, an electric-light bulb adapted to removably engage the same, and an annunciator in circuit with the socket, substantially as specified.

2. In a signaling system for hotels, a series of rooms ranged along a hall, a series of sockets having flared mouths and fitted along the hall, one near the door of each of the rooms, an electric-light bulb adapted to engage said sockets, and an annunciator in circuit with the sockets, substantially as specified.



3. In a signaling system for hotels, a socket in a hall on the exterior of a room, a first electric-light bulb adapted to removably engage the same, an annunciator having a second electric-light bulb in circuit with the socket, and means for lighting the second bulb by the introduction of the first bulb into the socket, substantially as specified.

824,431. **TELEPHONE-SWITCHBOARD.** WILLIAM E. MCCORMICK, Chicago, Ill., assignor to International Telephone Manufacturing Company, Chicago, Ill., a Corporation of Illinois. Filed Aug. 26, 1901. Serial No. 73,365.



Claim.—1. In a telephone-switchboard, the combination with a frame, having contacts normally included in the line-circuit, of an electromagnet having a sleeve and a tip electrically connected with its coil and engaging the contacts when the electromagnet is in place on the frame.

2. In a telephone-switchboard, the combination with a frame, consisting of a front plate having an opening and of a block having a socket, and line-contacts in the socket, of an electromagnet having a sleeve and a tip electrically connected with its coil and adapted to enter said socket and engage with said contacts.

3. In a telephone-switchboard, the combination with a frame, consisting of a front plate having an opening and of a block having a socket, and spring-pressed line-contacts in the socket, of an electromagnet having a sleeve and a tip electrically connected with its coil and adapted to electrically connect with said contacts when the sleeve and tip enter the socket.

4. In a telephone-switchboard, the combination with a frame, consisting of a front plate having an opening and a block having a socket provided with openings in its wall, plates on the block in electrical connection with the subscriber's line and having spring-pressed contacts in said openings, of an electromagnet having a sleeve and a tip at its rear in electrical connection with its coil and adapted to enter said socket to engage said contacts.

5. In a telephone-switchboard, the combination with a frame, consisting of a front plate having an opening and of a block having a socket provided with openings in its top, plates on the block in electrical connection with the subscriber's line and having spring-contacts in said openings, of an electromagnet having a sleeve and a tip at its rear in electrical connection with its coil and engaging said contacts when the electromagnet is in position, said tip having a neck to receive one of the spring-contacts.

6. In a telephone-switchboard, the combination with a frame, consisting of a front plate having a shouldered opening and of a block having a socket provided with openings, of an electromagnet having a front spool adapted to said shouldered opening, a core provided with a sleeve, a plug in the sleeve, a tip on the plug having a neck, said tip and sleeve being in electrical connection with the magnet-coil, a spring-contact engaging the neck to prevent the accidental displacement thereof, and a second spring-contact engaging the sleeve, said contacts being included in the subscriber's line.

7. In a telephone-switchboard, the combination with a frame, consisting of a front plate B having a shouldered opening b^3 and of a block C having a socket c^3 and openings c^3 and c^4, of an electromagnet D, having a front spool adapted to said shouldered opening, a

core *d* provided with a rear sleeve d^4, a plug in the sleeve, a tip d^5 in the plug having a neck, said tip and sleeve electrically connected with the electromagnet-coil, a line-plate c^3 having a spring c^4 provided with a contact c^7 in the opening c^5, and a second line-plate c^6 having a spring-lug c^8 in the opening c^4, said contact and lug being in electrical connection with the tip and sleeve respectively.

8. In a telephone-switchboard, the combination with an electromagnet having a spring-pressed armature and a plunger moving with the armature, of a hinged drop supported on the front of the electromagnet, and a hinged latch having a portion thereof located in the path of and actuated by the plunger to release the drop.

9. In a telephone-switchboard, the combination with an electromagnet having a hollow core, a spring-pressed armature sliding therein and provided with a plunger moving with the armature, of a removably-mounted drop, and a pivoted latch having a tailpiece which projects into the path of and is actuated by the plunger to release the drop.

10. In a telephone-switchboard, the combination with an electromagnet having a hollow core, a spring-pressed armature sliding in the core, a sleeve adapted to the core, and a plunger moving with the armature and passing through the sleeve, of a drop-case mounted on the sleeve and having a pivoted annunciator, and a latch engaging the annunciator and having a tailpiece located in the path of and engaged by the plunger, when the armature is attracted by the electromagnet, to release the annunciator.

11. In a telephone-switchboard, the combination with an electromagnet having a hollow core, a spring-pressed armature sliding in the core, a plunger moving with the armature, and a sleeve removably fitting the free end of the core, of a drop-case having a screw connection with the sleeve and carrying a pivoted drop, and a latch having a tail located in the path of the plunger and engaged by the latter to release the drop.

12. In a telephone-switchboard, the combination with an electromagnet having a hollow core, an armature sliding therein, a sleeve removably fitting within the core, and a spring-pressed plunger moving with the armature and passing through the sleeve, and of a drop-case on the sleeve, a drop pivoted on the case, and a latch for the drop in the path of the plunger.

13. In a telephone-switchboard, the combination with an electromagnet having a hollow core, an armature sliding therein, a sleeve removably fitting the core, a spring-retracted plunger on the armature passing through the sleeve, of a drop-case having a screw connection with the sleeve, a drop pivoted on the case, and a latch engaged by the plunger upon the movement of the armature to release the drop.

14. In a telephone-switchboard, the combination with an electromagnet having a hollow core, an armature sliding therein, a sleeve removably adapted to the core, a spring-retracted plunger on the armature passing through the sleeve, of a drop-case having a screw connection with the sleeve, a drop pivoted on the case, and a latch normally engaging the drop and having a tailpiece in the path of the plunger.

15. In a telephone-switchboard, the combination with a jack, a drop, and an electromagnetic latch device for said drop, of an arm below and adapted to engage the front face of the drop and to be depressed thereby into the path of a plug, and a plug adapted to engage the arm to restore the drop as it is inserted in the jack.

16. In a telephone-switchboard, the combination with a jack, a drop, and an electromagnetic latch device for said drop, of an arm pivoted above the jack and normally out of the path of a plug, a hook on the arm adapted to coact with the drop to move the arm into the path of a plug when the drop falls and to restore the drop when the arm rises, and a plug adapted to raise the arm as it is inserted in the jack.

17. In a telephone-switchboard, the combination with a jack, a drop, and an electromagnetic latch device for said drop, of an arm pivoted intermediate the drop and jack and normally out of the path of the plug, a hook on the arm to coöperate with the drop, a cam on the arm in the path of the plug when the arm is down, and a plug to engage the cam to restore the drop.

18. In a telephone-switchboard, the combination with a jack, a drop, and an electromagnetic latch device for said drop, of an arm pivoted between the drop and jack normally above the path of a plug and adapted to be depressed into said path by the drop, a hook on the arm to restore the drop when the arm is raised, and a cam on the arm to coöperate with a plug to raise the arm to restore the drop.

19. In a telephone-switchboard, the combination with a jack, and an electromagnet having an armature, of a drop pivotally mounted on the electromagnet, a latch for the drop controlled by the armature, an arm mounted on the electromagnet and adapted to restore the drop, and a plug adapted to move the arm as it enters the jack.

20. In a telephone-switchboard, the combination with a jack, and an electromagnet having a sliding armature, of a drop pivotally mounted on the electromagnet, a latch for the drop carried by the electromagnet and controlled by the armature, an arm adapted to restore the drop and having a cam adapted to enter the path of a plug when the drop falls, and a plug adapted to coact with the cam to raise the arm as it enters the jack.

21. In a telephone-switchboard, the combination with a jack, and an electromagnet having an armature, of a drop-case mounted on the electromagnet, a drop pivoted on the case, a latch for the drop pivoted on the case and controlled by the armature, a lever or arm pivoted on the case below the drop and having a projection engaging with the drop, a cam on the arm, and a plug which when the drop is in signaling position engages the cam as it enters the jack.

22. In a telephone-switchboard, the combination with a frame carrying an electromagnetic drop device at its front, terminals of a normally open night-bell circuit on the rear of the frame, a rod, and a drop-restoring arm actuated by the drop when the latter falls to move the rod and close said circuit through said terminals.

23. In a telephone-switchboard, the combination with a frame carrying an electromagnetic drop device at its front, of spring-terminals of a normally open night-bell circuit on the rear of the frame, and a rod normally held by one of said terminals in position to be moved by the drop to close the circuit through said terminals as the drop falls.

24. In a telephone-switchboard, the combination with a frame, an electromagnetic drop device supported therein, and a drop-restoring arm, of terminals of a normally open night-bell circuit comprising inverted-J-shaped spring-strips having their short ends overlapping but normally separated, and a rod in contact with one of said terminals and extending into the path of the restoring-arm, whereby when the drop falls the restoring-arm is pressed against the rod so that the latter is retracted to close the circuit through said spring-strips.

25. In a telephone-switchboard, the combination with a frame, an electromagnetic drop device carried thereby, and a drop-restoring arm, of terminals n^3 and n^4 of a night-bell circuit normally out of contact, and a rod N normally held by one of said terminals in the path of the restoring-arm and adapted to be retracted by the latter when the drop falls.

26. In a telephone-switchboard, the combination with a frame and an electromagnetic drop device supported thereon, of spring-strips constituting normally separated terminals of a night-bell circuit, connections between the drop device and terminals whereby electrical connection is established between said terminals when the drop falls, frame-contacts comprising rods mounted in the frame and passing through said terminals, and springs adapted to project said rods rearwardly.

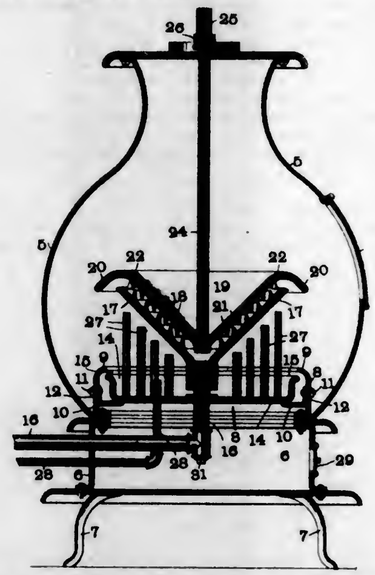
27. In a telephone-switchboard, the combination with a board or cabinet having suitable contacts normally included in an open night-bell circuit, of a frame supporting the electromagnetic drop device, terminals on the frame adapted to be closed by the operation of the drop device, and frame-contacts in electrical connection with said terminals and comprising spring-pressed rods adapted to contact with said board-contacts when the frame is assembled in position on the board.

28. In a telephone-switchboard, the combination with a board or cabinet having contacts of a night-bell circuit, of a frame adapted to be mounted on said board, an electromagnetic signal device on said frame, terminals adapted to be placed in electrical connection by the operation of the signal device, and frame-contacts in electrical connection with said terminals and comprising headed rods mounted on said frame and coil-springs on the rods between the heads and frame.

824,432. **HYDROCARBON-BURNER.** FRED L. MCGAHAN and EDWARD O. FLAGER, St. Louis, Mo., assignors to National Light, Heat & Power Company, a Corporation of Missouri. Filed Aug. 2, 1902. Renewed Dec. 18, 1905. Serial No. 292,156.

Claim.—1. The combination with a hollow burner, of a cap for said burner, means for feeding liquid hydrocarbon between said cap and burner, means for retarding the flow of fuel between said cap and burner, means for deflecting the flame from said burner downwardly around the sides thereof, and an outlet-pipe leading from the space between said cap and burner for the passage of gas.

2. The combination with a hollow burner, of a cap for said burner, means for feeding liquid hydrocarbon between said cap and burner, means for retarding the flow of fuel between said cap and burner, means for deflecting the flame from said burner downwardly around the sides thereof, and an outlet-pipe carrying said cap and forming a passage for gas from said burner.



3. The combination with a hollow burner in the form of an inverted cone, of a cap projecting into said burner, means for feeding liquid hydrocarbon between said cap and burner, means for retarding the flow of fuel between said cap and burner, means for heating the lower face of said burner, and an outlet-pipe leading from the space between said cap and burner for the passage of gas.

4. The combination with a hollow burner in the form of an inverted cone, of a cap projecting into said burner, means for feeding liquid hydrocarbon between said cap and burner, means for retarding the flow of fuel between said cap and burner, means for heating the lower face of said burner, and an outlet-pipe carrying said cap and forming a passage for gas from said burner.

5. The combination with a hollow burner, of a cap on said burner, a slidingly-mounted pipe carrying said cap, and means for feeding liquid hydrocarbon between said cap and burner.

6. The combination with a hollow burner, of a cap in said burner, projections on the inner face of said burner, and projections on the outer face of said cap extending between the projections on said burner.

7. The combination with a hollow burner, of a cap in said burner, annular projections on the inner face of said burner, annular projections on the outer face of said cap extending between the projections on said burner, and means for feeding liquid hydrocarbon between said cap and burner.

8. The combination with a hollow burner, of a cap in said burner, said cap being provided with an overturned flange for deflecting the gases downwardly at all sides of said burner, means for feeding liquid hydrocarbon between said cap and burner, an oil-pan below said burner, and air-tubes leading through said oil-pan.

9. The combination with a hollow burner, of a cap in said burner, means for feeding liquid hydrocarbon between said cap and burner, an air-deflector below said burner, an oil-pan within said air-deflector, and means for adjusting the height of said oil-pan relative to said burner.

10. The combination with a hollow burner, of a cap on said burner, means for feeding oil between said burner and cap, an air-deflector below said burner, adjustable brackets carried by said air-deflector, and an oil-pan carried on said adjustable brackets.

11. The combination with a hollow burner in the form of an inverted cone, of a cap in said burner, means for feeding liquid hydrocarbon between said cap and burner, an oil-pan below said burner, air-pipes of varying length passing through said oil-pan and terminating adjacent to said burner, and an air-deflector surrounding said burner.

12. The combination with a hollow burner, of a cap in said burner, projections on the inner face of said burner, projections on the outer face of said cap extending between the projections on said burner, an outwardly-extending air-deflector carried by said cap, means for feeding liquid hydrocarbon between said cap and burner, an oil-pan below said burner and provided with air-passages, an air-deflector surrounding said oil-pan, and means for adjusting the distance between said burner and oil-pan.

824,433. **CORE-MAKING MACHINE.** JOHN S. NICHOLSON, Los Angeles, Cal. Filed May 31, 1905. Serial No. 263,178.

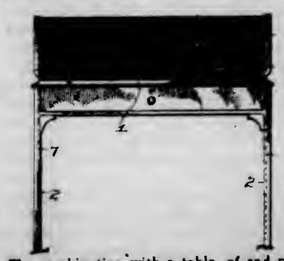


Claim.—1. In a core-making machine the combination with the frame of a revoluble main shaft carrying a core-forming screw on its inner end; a vertically-rotated spur-gear keyed on said shaft and meshing with a horizontally-rotated spur-gear having a central opening therein and carrying an agitator K detachably connected therewith; feeder-rods L adjustably secured on the agitator and projecting downwardly into a core-forming chamber and adapted upon the operating of the machine to rotate and agitate the core-forming material.

2. In a core-making machine of the character herein described the herein-described studs Q mounted on the frame and projecting upwardly therefrom into the cylindrical chamber G'' down which the core-forming material is fed the studs being disposed adjacent to the walls of said chamber.

3. A machine for making cores comprising a horizontally-rotating shaft mounted in the frame of the machine and carrying on its inner end a core-forming screw; a miter-gear keyed on said shaft and meshing with a horizontally-rotating miter-gear having a central longitudinal opening therethrough, adapted when in place in the machine to form a passage-way from the hopper to the core-forming chamber; a hopper disposed above said horizontally-rotating gear and having its discharge-opening concentric with the opening in the gear, and means driven by said horizontally-rotating gear to agitate the core-making material substantially as herein shown and described.

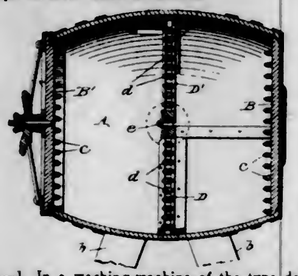
824,434. **ROLLER-TOP DESK AND TYPE-WRITER STAND.** WILLIAM H. O'KEEFE, Lockport, N. Y. Filed Apr. 13, 1905. Serial No. 255,290.



Claim.—The combination with a table, of end pieces hinged thereto and adapted when turned down to rest flush with the upper surface of the table, communicating slots in said table and end extensions, brackets secured to the table within the slots, a brace piv-

oted to each bracket and normally resting in the slots in the table and end pieces when the latter are horizontal, a bracket in the slots of each end piece, locking means on the braces for engaging the brackets in end pieces when the latter are turned up, and springs for holding said braces in engagement with the locking means on the brackets.

824,435. **WASHING-MACHINE.** JOHN S. PARRISH, Shadwell, Va. Filed Apr. 17, 1905. Serial No. 256,114.



Claim.—1. In a washing-machine of the type described, the combination of a support, a barrel-like casing pivotally mounted thereon about midway its length, one of the heads of this casing being removably fastened in place and both heads being provided on their inner sides with rubbing devices, a central partition in the casing constructed of two semicircular sections, one being stationary and the other being hinged to this stationary section, and both sections consisting of spaced bars, said hinged section being adapted to swing toward the removable head, and means for locking the hinged section in place, for the purpose set forth.

2. In a washing-machine of the type set forth, the combination of a support, a cylindrical casing mounted thereon upon trunnions attached to the interior of the casing about midway its length, one of the heads of the casing being removably fastened in place and both the heads being provided with rubbing projections on their inner faces, a central partition in the casing provided with numerous water-passages and rubbing projections on its opposite faces, a part of this partition being movable toward the removable head, and means for locking this movable section in place.

3. In combination with a rotatable casing, the casing being substantially cylindrical and the axis of rotation transversely through the center thereof about midway the length of the casing, said casing being provided with under walls or heads one of which is removable, and a partition extending across the interior of the casing approximately in line with its axis of rotation, this partition consisting of numerous slats or bars having water-passages between them, a part of the section being movably held in place, whereby access may be had to the clothes-chamber on the opposite side of the partition from the removable head, substantially as set forth.

824,436. **EXHIBITION AND AMUSEMENT APPARATUS.** MAX E. PESTER. Glen Cove, N. Y. Filed Apr. 14, 1906. Serial No. 311,660.

Claim.—1. The combination of a tower, an inclined runway extending from near the top of the tower to a body of water, an escalator adapted to convey the boat from the body of water to near the foot of the tower, a boat and an elevator in the tower.

2. The combination of a tower, an inclined runway extending from near the top of the tower to a body of water a waterway extending from the body of water to near the foot of the tower, an elevator in the tower, a boat and means to transfer the boat from the waterway to the elevator.

3. The combination of a tower, an inclined runway extending from near the top of the tower to a body of water, a waterway extending from the body of water to near the foot of the tower, an escalator for conveying the boat through the waterway, an elevator in the tower, a boat and means to transfer the boat from the escalator to the elevator.

4. The combination of a tower, an inclined runway having a wavy or irregular surface contour extending from near the top of the tower to a body of water, a waterway extending from the body of water to near the foot of the tower, an elevator in the tower, a boat and means to transfer the boat from the waterway to the elevator.

5. The combination of a tower, an inclined runway having an irregular or wavy surface contour extending from near the top of the tower to a body of water, a waterway extending from the body of waters to near the foot of the tower, an elevator in the tower, a boat, and means to propel it through the waterway and from it to and upon the elevator.

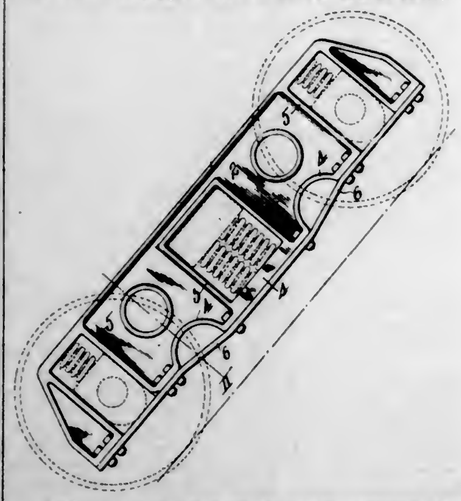


6. The combination of a tower, an elevator in the tower, a body of water, a waterway extending from the body of water to near the elevator, a boat and means to mechanically transfer the boat and its passengers from the waterway to and onto the elevator.

7. The combination of a tower, an inclined runway extending from near the top of the tower to a body of water, a ledge on the top of the tower provided with rollers and overhanging the upper end of the runway, an elevator provided with rollers adapted to elevate a boat from a lower level to the level of the ledge.

8. The combination of a tower having therein an elevator provided with rollers, a waterway through which a boat and its load may approach the foot of the tower and an inclined runway provided with rollers extending from the end of the waterway to the elevator.

824,437. **SIDE FRAME FOR RAILWAY-CAR TRUCKS.** OSWALD S. PULLIAM. Pittsburg, Pa. Filed Jan. 19, 1906. Serial No. 296,775.



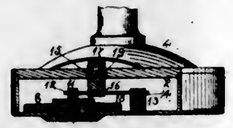
Claim.—1. A side frame proper for car-trucks consisting of an integral casting having axle-box pockets open at their lower ends,

and a rolled-metal reinforcing-bar secured to the bottom of said casting and extending continuously from end to end thereof and across the open ends of said pockets, substantially as set forth.

2. The combination with a pair of cast-metal side frames, of reinforcing-bars secured to said frames and forming parts thereof; and tie-bars connecting said frames and having their ends held between said frames and said reinforcing-bars, substantially as set forth.

3. The combination with a pair of cast-metal side frames, of reinforcing-bars secured to said frames and forming parts thereof, and tie-bars connecting said frames and having their ends held between said frames and said reinforcing-bars; said reinforcing-bars terminating in lips engaging said side frames, substantially as set forth.

824,438. **FISH-LINE REEL.** HARRY H. RICHARDSON, Beaver Falls, Pa., assignor to American Company, Rockford, Ill., a Corporation of Illinois. Filed Feb. 23, 1905. Serial No. 246,986.



Claim.—1. A fish-line reel comprising two heads, a spool located between the heads and supported thereby, a screw supported by one of the heads, a connection between the head and screw whereby the screw is held against rotation, a friction-surface, and means for imparting a lengthwise movement to the screw to move the friction-surface and apply friction to the spool.

2. A fish-line reel comprising two heads, one of the heads having an opening, a spool located between the heads and supported thereby, a screw supported by one of the heads, a connection between the head and screw whereby the screw is held against rotation, a friction-surface and a disk located within one of the heads having a portion extending through the opening in the head and having an engagement with the screw by means of which a lengthwise movement is imparted to the screw to move the friction-surface and apply friction to the spool.

3. A fish-line reel comprising two heads, a spool supported by the heads, a movable disk, a screw having an engagement with the disk and provided with a transverse hole, a rod located in the hole and held stationary, a friction-surface, the movement of the disk imparting a lengthwise movement to the screw to move the friction-surface and apply frictional contact to the spool.

4. A fish-line reel comprising two heads, a spool supported by the heads, a rod, a stud, a screw held against rotation by the rod connected with the screw and also connected to the stud, a friction-surface and means for imparting a lengthwise movement to the screw to move the friction-surface and apply frictional contact to the spool.

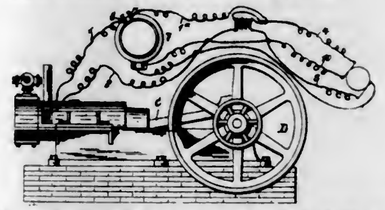
5. A fish-line reel comprising two heads, a spool supported by the heads, a rotatable disk, a screw having an engagement with the disk, a frictional brake adapted to engage the spool, a rod having one end held stationary independent of the disk, means for connecting said rod with said screw and said brake.

6. A fish-line reel comprising two heads, a spool supported by the heads, a rotatable disk, a screw having an engagement with the disk and provided with a transverse hole, a frictional brake having a transverse hole, and a rod located in the transverse holes having one end held stationary independent of the disk, the frictional brake adapted to engage the spool.

7. A fish-line reel comprising two heads, a spool supported by the heads, a rotatable disk, a screw having an engagement with the disk and provided with a transverse hole, a stud supported by the casing and having a transverse hole, a frictional brake having a transverse hole, and a rod located in the three transverse holes, the frictional brake adapted to engage the spool.

824,439. **AUTOMATIC SAFETY CUT-OUT.** ROBERT RICHARDSON. Allegheny, Pa. Filed Aug. 25, 1905. Serial No. 275,724.

Claim.—1. An automatic safety device for electrical systems for engines embodying in combination with the engine, the electric combustion-controlling devices mounted therein, and the generator, an automatic cut-out, said combustion devices being included in circuit with said generator, said cut-out being arranged in a circuit with said generator which is independent of said first-named circuit, one of the wires of said combustion-controlling device leading into said cut-out, and terminating in a contact member, said wire being broken in said cut-out to form a second wire extending from said cut-out to said generator, said second wire being formed with a contact member in said cut-out, a switch mounted in said cut-out and adapted to normally close the circuit between said wires of said combustion-controlling device, electrically-operated devices for maintaining said switch in its normal position, and electrical means for operating said devices to release said switch whereby to regulate the circuit of said combustion-controlling devices, to stop the operation of the same said means being in the independent circuit, with the generator and being designed to operate when the current of said generator shall have exceeded a predetermined degree of voltage, and means for adjusting the tension of said switch-holding devices with relation to the degree of voltage in the current passing through said electrical means for actuating said switch-holding devices.



2. An automatic safety device for gas-engine igniter systems embodying a cut-out arranged in the igniter-circuit, said igniter-circuit being broken in said cut-out and being fed from batteries in circuit with a generator, said cut-out being in a direct and independent circuit with said generator, a switch mounted in said cut-out and adapted to normally close said igniter-circuit leading thereinto, electrically-controlled devices for retaining said switch in closed position with relation to said igniter-circuit, and electrical means in the direct circuit of the generator above referred to and adapted to actuate said switch-holding devices whereby to release said switch and break said igniter-circuit, said electrical means being adapted to actuate said switch-holding devices when the current therein exceeds a predetermined degree of voltage.

3. An automatic safety cut-out for electric circuits of gas-engine igniter systems, fed from batteries in circuit with a generator, embodying a housing, one of the wires of said igniter-circuit passing into said housing and being broken therein, contact members arranged upon the ends of the broken portions of said wire within said housing, a switch arranged within said housing and adapted to normally close the igniter-circuit by contact with said contact members first mentioned, movable devices for maintaiuing said switch in its normal position for closing the said circuit, an electromagnet arranged in said housing and connected with said generator by a circuit independent of said igniter-circuit, said magnet being adapted to actuate said switch-holding devices when the voltage of the current passing therethrough exceeds a predetermined amount, and means for regulating the tension of said devices with relation to the degree of voltage of the current in said electromagnet.

4. An automatic safety device for gas-engine igniter systems, embodying a cut-out arranged in the igniter-circuit, said igniter-circuit being broken in said cut-out and being fed from batteries in circuit with a generator, said cut-out being in direct and independent circuit with said generator, a switch mounted in said cut-out and adapted to close said igniter-circuit leading thereinto, electrically-controlled devices for retaining said switch in closed position with relation to said igniter-circuit, and electrical means in the direct circuit with the generator above referred to and adapted to actuate said switch-holding devices whereby to release said switch and break said igniter-circuit, said electrical means being adapted to actuate said switch-holding devices when the current therein exceeds a predetermined degree of voltage, and means for regulating the tension of said switch-holding devices with relation to the degree of voltage in said electrical means for actuating said devices.

5. An automatic safety cut-out for circuits of gas-engine igniter systems, embodying a housing, said igniter-circuit passing into said housing and being broken therein, electric contact members carried upon the ends of the broken wires of said igniter-circuit and insulated from said housing, a movable switch mounted in said housing and adapted to normally close said igniter-circuit, devices for maintaining said switch in its closed position with relation to said igniter-circuit, an electromagnet in the independent circuit with said generator from said igniter-circuit, said electromagnet being designed to actuate said switch-holding devices to release said switch and break

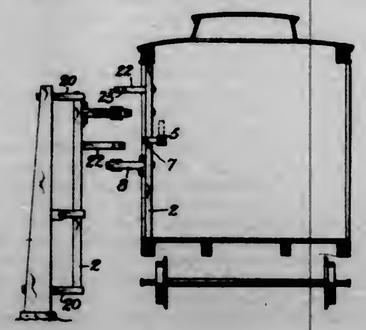
said circuit when the voltage of the current passing therethrough shall have exceeded a predetermined degree, means for moving said switch when released by said switch-holding devices to break contact with said contact members first mentioned, and means for adjusting the tension of said switch-holding devices with relation to the degree of voltage in the current passing through said electromagnet so that said magnet shall actuate said switch-holding devices when the voltage of the current therein shall be able to overcome the predetermined degree of tension thereof.

6. An automatic safety cut-out for circuits of gas-engine igniter systems, embodying a housing, one of the wires of said igniter-circuit passing into said housing and being broken therein, contact members arranged upon the ends of the broken portions of said wire, a switch adapted to normally close the circuit by contact with said first-named contact members, movable electromagnetically-operated devices for maintaining said switch in its closed position with relation to said igniter-circuit, an electromagnet in an independent circuit with said igniter-circuit, said magnet being adapted to actuate said switch-holding devices whereby to release the switch and break the igniter-circuit when the voltage in the current passing through the magnet shall have exceeded a predetermined degree, means for moving said switch when released by said switch-holding devices out of contact with said first-named contact members, and a resistance-coil arranged in direct circuit with said generator and said electromagnet, and means for regulating the tension of said switch-holding devices with relation to said magnet, to correspond to the degree of voltage at which said magnet is designed to operate said switch-holding devices to release said switch.

7. An automatic safety cut-out for electric igniter-circuits of gas-engine systems embodying a housing, one of the wires of said igniter-circuit passing into said housing and being broken therein, the ends of the broken portions of said wire being provided with stationary contact members, a movable contact member journaled in bearings in said housing, means for holding said contact member in position to close said igniter-circuit, and electrical means in circuit with the generator from which said igniter system is fed adapted to actuate said movable contact member when the degree of voltage of the current passing through said electrical actuating means shall have exceeded a predetermined amount, and means for adjusting said electrical actuating means to actuate said movable contact member at a predetermined degree of voltage.

8. An automatic safety cut-out for electric igniter-circuits of gas-engine systems embodying a housing, a pair of binding-posts arranged upon said housing, one of the wires of said igniter-circuit being broken and having the ends of the broken portions connected to said binding-posts, stationary contact members carried by said binding-posts within said housing, a movable contact member, normally in contact with said stationary members, means for retaining said movable contact member in position to close said igniter-circuit, an electromagnet in an independent circuit with the generator from which said igniter-circuit is fed, said electromagnet being designed to actuate said devices for holding said contact members whereby to release the latter and break the circuit, said magnet being adapted to actuate said movable-member holding devices when the voltage of the current therein shall exceed a predetermined degree, and means for adjusting the degree of tension of said devices for retaining said movable contact member to correspond to the strength of said electromagnet at a predetermined degree of voltage.

824,440. **MAIL-CATCHING DEVICE.** JOHN RYAN, New York, N. Y. Filed Nov. 7, 1905. Serial No. 286,947.



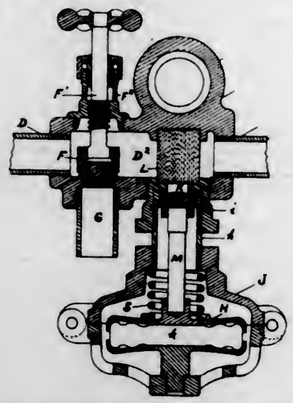
Claim.—1. A mail-bag-catching device comprising a support, a pair of jaws, means for closing said jaws and a spring mounted on the outer end of each of said jaws.

2. A mail-bag-catching device comprising a support, a stationary jaw, a movable jaw, means for forcing said movable jaw toward said stationary jaw, and a spring mounted on the outer end of each of said jaws.

3. A mail-bag-catching device comprising a rotary support, a lateral arm on said support, a stationary jaw on said arm, a pivotally-mounted jaw on said arm, means for forcing said jaws together and a spring on the outer end of each of said jaws.

4. A mail-bag-catching device comprising a vertical rotary support, angular in cross-section, a lateral arm on said support, a stationary jaw on said lateral arm, a pivoted jaw on said lateral arm, each of said jaws having its inner face recessed and its outer end beveled, means for forcing said pivotal jaw toward said stationary jaw, a spring mounted on the beveled face of each jaw, a rotary bar adjacent to said vertical support, a pair of parallel arms on said rotary bar adapted to engage the opposite sides of said support to prevent rotation thereof, a second lateral arm on said support and means on said second lateral arm to hold a mail-bag.

824,441. **AUTOMATIC STEAM-TRAP.** RICHMOND P. SCALES and JAMES F. MCELROY, Albany, N. Y., assignors to Consolidated Car Heating Company, Albany, N. Y., a Corporation of West Virginia. Filed Apr. 24, 1902. Serial No. 104,567.



Claim.—1. In a heating apparatus, a fitting; a steam-pipe passing through said fitting; drip-pipes connected with a chamber within said fitting; a valve arranged to open and close a port in said chamber in said fitting; a thermostatic cell arranged to operate said valve; a means for mounting said valve and its attachments in connection with said fitting in such a manner that they may be removed therefrom without interfering with or disturbing other portions of said fitting.

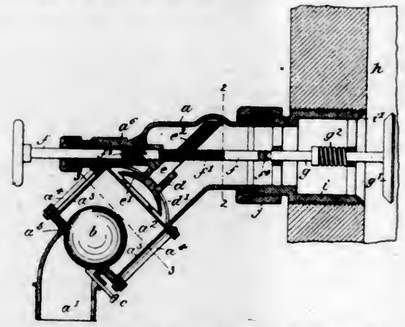
2. In a heating apparatus, a fitting; a collar arranged on said fitting; a steam-pipe passing through said collar; drip-pipes connected with a chamber in said fitting; a valve in said chamber in said fitting; a thermostatic cell arranged to operate said valve; a means for removably connecting said thermostatically-operated valve; a blow-off pipe in contact with said fitting; a valve to control said blow-off pipe.

3. In a car-heating system, a steam-pipe connecting by branch to the car-heaters, a fitting permanently mounted directly on the trunk part of the steam-pipe and provided with a chamber having drip connection with the car-heaters, a trap in metallic heating connection with the fitting whereby its drip connections are warmed from the steam-pipe and comprising a valve controlling the drip-outlet, a thermostatic device controlling the valve, a casing structure supporting and inclosing said device and valve, and a means for mounting said trap on the fitting in such manner as to permit its removal as a unit without disturbing the other parts.

4. In a heating system, the combination of the fitting E formed with a chamber and a collar, a steam-pipe mounted in said collar, drip-pipes connected with said fitting and entering the chamber, and a trap removably attached to said fitting and comprising the tubular member i screw-threaded into the fitting and having a valve-seat, a

thermostat-casing J, a short pipe h screwing into the member i and casing J, a thermostatic cell in said casing, a valve K coöperating with the valve-seat, and a stem M connecting the thermostatic cell and the valve.

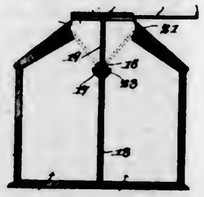
824,442. **STOP-VALVE.** GEORGE SCHLEMMER, New York, N. Y. Filed Aug. 8, 1905. Serial No. 273,235.



Claim.—1. A stop-valve provided with a valve-chamber, an inclosed floatable valve, a holder adapted to engage the same, an outlet-valve, a spindle adapted to operate the same, and means for operatively connecting the spindle to the holder, substantially as specified.

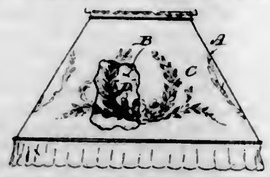
2. A stop-valve provided with a valve-chamber, an inclosed floatable valve, a holder adapted to engage the same and having a toothed stem, a grooved spindle engaging said stem, and an outlet-valve adapted to be operated by the spindle, substantially as specified.

824,443. **CONDIMENT-HOLDER.** PETER J. A. SCHNOOR, Holstein, Iowa. Filed Dec. 29, 1905. Serial No. 293,797.



Claim.—A condiment-holder comprising a casing having a top converging toward its center provided with a central discharge-opening, opposite walls of the opening being concaved to form shoulders, a partition disposed within the casing and alining with the longitudinal center of the opening but terminating short thereof, said partition forming oppositely-disposed compartments communicating with the opening and said partition provided with a longitudinally-grooved free edge, a cross-bar centrally disposed within and extending transversely of the outer end of the opening, a deflector-plate having a tubular extension at one edge rotatably mounted within the groove in the partition, means for swinging said deflector against either of the shoulders, and a removable apertured slide mounted upon the top of the casing and across the opening.

824,444. **ORNAMENTAL MATERIAL.** JOSEPH SCHUREK, Milwaukee, Wis. Filed Aug. 7, 1905. Serial No. 272,978.



Claim.—1. An ornamental material comprising a backing or body-sheet, a design of natural flora arranged on the body-sheet, and a retaining-sheet of thin transparent substance adhesively secured to said body-sheet over the flora and pressed in place to retain this flora in a series of separate raised cells, whereby it has an embossed effect upon the aforesaid body-sheet.

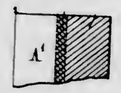
2. An ornamental material comprising a body-sheet of translucent substance, a design of natural flora arranged thereon, and a retaining-sheet of thin transparent substance adhesively secured to said body-sheet over the flora and pressed in place to retain this flora in separate raised cells, whereby it has an embossed effect upon the aforesaid body-sheet.

824,445. **MOLD USED IN THE MANUFACTURE OF SHORT-BREAD AND SIMILAR CAKE.** SIMON SCOTT, Wellington, New Zealand. Filed July 2, 1904. Serial No. 215,136.



Claim.—For the purpose indicated in combination, a mold having cells each provided with a hole for the escape of air a rim forming a border to the mold and having a knife-edge, a back upon which the mold is mounted, ears extending from and raised above the back of the mold for attaching the mold to the back and for providing an air-space between and extending throughout the length and width of the mold and back, substantially as set forth.

824,446. **PIPE OR HOSE AND PROCESS OF MANUFACTURING THE SAME.** PARASCHEVA SECHIARI, Paris, France, assignor to La Société Civile d'Études de L'Indechirable Grimeon, Lyon-Villeurbanne, France. Filed Jan. 16, 1906. Serial No. 296,249. (Specimens.)



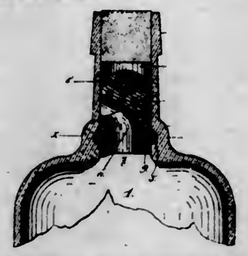
Claim.—1. A pipe or hose made from a fabric the weft-threads of which are biased with respect to the warp-threads, said fabric being covered upon its inner and outer surfaces with sheets of demineralized cork fixed to the fabric by means of vulcanized india-rubber cement.

2. A pipe or hose composed of a number of plies of textile fabric, the inner and outer plies being covered with sheets of demineralized cork, said sheets being fixed to said plies, and the joints of the hose being formed, by vulcanized india-rubber cement.

3. The process of manufacturing pipes or hose, which consists in applying cork sheets to a fabric in such a manner that said sheets will cover the inner and outer surfaces of the hose when wound, said sheets being applied to the fabric by means of india-rubber cement, then winding the fabric upon a mandrel of the required diameter and joining the edges of the fabric by means of india-rubber cement, and then vulcanizing the hose thus formed.

4. The process of manufacturing pipes or hose, which consists in applying cork sheets to a textile fabric in such a manner that when said fabric is formed into a plurality of plies said sheets will cover only the inner and outer surfaces of the same, winding said fabric upon a mandrel of the required size, joining the edges of the fabric by means of india-rubber cement, and finally vulcanizing said cement.

824,447. **BOTTLE.** WILLIAM F. SMART, Pittsburg, Pa. Filed Apr. 18, 1906. Serial No. 312,359.

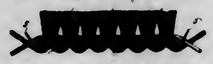


Claim.—1. The combination with a bottle having a neck portion, of an annular enlargement carried by said neck portion and having an interior horizontally-arranged annular groove formed therein, a

stopper or closure adapted to fit within said neck portion, said stopper or closure having an exterior horizontally-disposed annular groove formed adjacent its lower end adapted to register with the groove of said enlargement, said stopper or closure having a by-path formed therein normally closed by the neck of said bottle, a cork adapted to fit in the neck of said bottle over said stopper or closure, and means mounted within the groove of said stopper or closure to retain the same within the neck portion of said bottle, substantially as described.

2. The combination with a bottle having a neck portion, of a stopper or closure adapted to fit in said neck portion, said stopper or closure having an angular by-path formed therein, a cork adapted to fit in said neck portion above said stopper or closure, and means to retain said stopper or closure within said neck portion, said bottle-neck being weakened to adapt it to be easily broken, substantially as described.

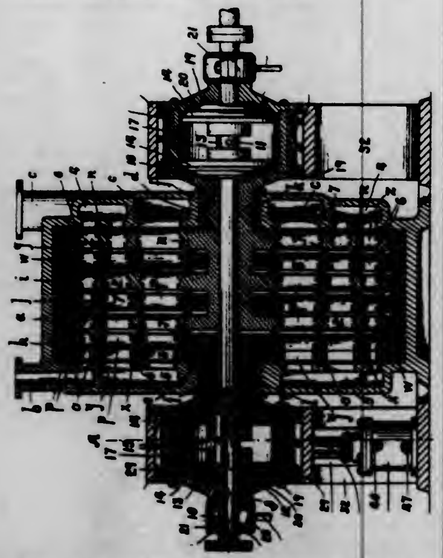
824,448. **WOVEN FABRIC.** WILLIAM T. SMITH, Philadelphia, Pa. Filed Mar. 17, 1906. Serial No. 256,617.



Claim.—1. A woven fabric in which are combined a backing fabric composed of interwoven warp and weft threads, a pile-face consisting of weft-threads of one-sided chenille and binding warp-threads passing over said chenille weft-threads and under and between successive backing weft-threads, whereby the bights or loops at the back of the chenille-face weft-threads are drawn down between successive weft-threads of the backing so as to be visible on the back of the fabric substantially as specified.

2. A woven fabric in which are combined a backing fabric composed of interwoven warp and weft threads, a pile-face consisting of weft-threads of one-sided chenille and binding warp-threads passing over said chenille weft-threads and under and between successive backing weft-threads, whereby the bights or loops at the back of the chenille-face weft-threads are drawn down between successive weft-threads of the backing so as to be visible on the back of the fabric, the binding warp-threads being finer than the backing warp-threads, and each binding warp-thread being disposed closely alongside of a backing warp-thread so as to be protected from wear thereby, substantially as specified.

824,449. **TURBINE-ENGINE.** CHARLES J. STUART, Montreal, Canada. Filed Oct. 20, 1905. Serial No. 283,664.



Claim.—1. In a turbine-engine, the combination with the casing having a suitable inlet and exhaust and bearings centrally disposed in the heads thereof, of a pair of turbines journaled in the aforesaid bearings and having the inner termini of their hubs coadjacent within the casing and their blade-carrying disks alternately arranged respectively, a rotatable shaft having a direct bearing on said hubs and extending therethrough, and clutches having one of their members rigid with the outer ends of said hubs and their other member mounted on said shaft, as and for the purpose specified.

2. In a turbine-engine, the combination with the casing having a suitable inlet and exhaust and bearings centrally disposed in the heads thereof, of a turbine having a plurality of disks rigidly secured to the hub thereof, said disks having blades interposed radially, and a turbine having disks alternating with the aforesaid disks and blades set in the opposite direction and supported from a hub extending into proximity with the aforesaid hub at its inner end, a shaft having a direct bearing on said hubs at their inner and outer ends, and clutches adjoining the outer ends of said hubs, as and for the purpose specified.

3. In a turbine-engine, the combination with the casing having a suitable inlet and exhaust and bearings centrally disposed in the heads thereof, of a pair of turbines journaled in the aforesaid bearings and having the inner ends of their hubs terminating coadjacent within the casing, and disks extending from said hubs alternately arranged, said disks having blades interposed radially, and set in opposite directions in said turbines respectively and forming a plurality of fluid-passages flaring from a narrow inlet to a comparatively wide outlet adjacent to the shaft, a shaft extending through said hubs, and suitable clutch mechanism, as and for the purpose specified.

4. In a turbine-engine, the combination with the casing having a suitable inlet and exhaust and bearings centrally disposed in the heads thereof, of a pair of turbines journaled in the aforesaid bearings and having the inner termini of their hubs coadjacent within the casing and a plurality of disks extending radially from one of said hubs and a plurality of disks arranged alternately with the aforesaid disks and extending from a drum carried by a disk rigid with the other hub, said disks having blades interposed at intervals radially, forming a continuous fluid-passage from the circumference inwardly, a shaft extending through said hubs, and clutch members mounted on said shaft coacting with clutch members rigid with the outer ends of said hubs, as and for the purpose specified.

5. In a turbine-engine, the combination with the casing having a suitable inlet and exhaust and bearings centrally disposed in the heads thereof, of a pair of turbines journaled in the aforesaid bearings, a shaft extending through the hubs of said turbines, revoluble cylinders having their inner heads rigid with the outer end of said hubs and rigid inner surfaces to their heads, pairs of disks slidably arranged on said shaft within said cylinder and rotating therewith and having rigid outer surfaces, means for feeding fluid to said cylinders, and means for holding one of said cylinders stationary, as and for the purpose specified.

6. In a turbine-engine, the combination with the casing having a suitable inlet and exhaust and bearings centrally disposed in the heads thereof, of a pair of turbines journaled in the aforesaid bearings, a shaft extending through the hubs of said turbines and having fluid-chambers therewithin at the ends thereof and inlets and outlets to said chamber, a pair of cylinders rigid with the outer ends of said hubs respectively and having ridged inner surfaces to their heads, a pair of disks in each of said cylinders having ridged outer surfaces corresponding to the aforesaid inner surfaces of the cylinders and keyed to said shaft and sliding laterally thereon, and fluid-boxes having inlets and encircling the inlets to said chambers, as and for the purpose specified.

7. In a turbine-engine, the combination with the casing having a suitable inlet and exhaust and bearings centrally disposed in the heads thereof, of a pair of turbines journaled in the aforesaid bearings, a shaft extending through the hubs of said turbines and hollowed from each end and plugs closing the ends and forming chambers within said shaft having suitable inlets and outlets, fluid-boxes having inlets and immediately adjoining said cylinders and surrounding the inlet to said chambers, a pair of disks keyed to said shaft within each of said cylinders and sliding freely along on said keys and means for gripping one of said cylinders and holding the same stationary, as and for the purpose specified.

8. In a turbine-engine, the combination with the casing having a suitable inlet and exhaust and bearings centrally disposed in the heads thereof, of a pair of turbines journaled in the aforesaid bearings, a shaft extending through the hubs of said turbines, having hollowed ends and plugs in said ends forming chambers having inlets and outlets, a pair of cylinders inclosing the outlets from said chambers and having ridged inner surfaces to their heads, disks in each of said cylinders each having a ridged surface meeting the aforesaid ridged surfaces, fluid-boxes surrounding the inlets to said chambers and having inlets thereto, hinged straps encircling said cylinders, and means for tightening or loosening said straps around said cylinders, as and for the purpose specified.

9. In a turbine-engine, the combination with the casing having a suitable inlet and exhaust and bearings centrally disposed in the heads thereof, of a pair of turbines journaled in the aforesaid bearings, a shaft having chambers formed therewithin at the ends thereof and suitable inlets and outlets, a pair of revoluble cylinders having ridged inner surfaces to their heads, a pair of disks in each of said cylinders having ridged outer surfaces, split traps hinged and having corrugations on the outer surfaces thereof, circular frames supported from bases and having recesses in their inner walls corresponding to the aforesaid corrugations in the straps, and fluid-cylinders on said bases having pistons connected by suitable rods to one of the halves of each of said straps, as and for the purpose specified.

10. In a turbine-engine, the combination with the casing having a suitable inlet and exhaust and bearings centrally disposed in the heads thereof, of a pair of turbines journaled in the aforesaid bearings, a shaft extending through the hubs of said turbines having chambers formed therewithin at the ends thereof and suitable inlets and outlets thereto, a plurality of cylinders rigid with the outer ends of said hubs having ridged inner surfaces, a pair of disks in each of said cylinders having ridged outer surfaces corresponding to the aforesaid inner surfaces and keyed to said shaft and having a limited sliding motion thereon, hinged straps encircling said cylinders, circular frames supporting said straps, vertically-arranged cylinders having suitable inlets and exhausts, and a rigid connection to the lower half of each of said straps, pistons operating therein and rods therefrom pivotally connected to the upper half of each of the said straps, and boxes surrounding and inlets to the chambers in the said shaft and having inlets thereto, as and for the purpose specified.

11. In a device of the class described, in combination, a casing, a turbine journaled therein, a shaft extending through said casing and turbine, a revoluble cylinder rigidly connected with said turbine and having corrugated inner surfaces to its heads, a pair of pistons operating in said cylinder and keyed on said shaft having a free lateral motion thereon, means for introducing fluid to said cylinder between said pistons, and means for arresting the rotation of said cylinder, as and for the purpose specified.

12. In a device of the class described, in combination, a casing having a suitable inlet and exhaust, a turbine suitably journaled in said casing, a shaft extending through said casing and turbine, a revoluble cylinder rigidly connected with said turbine and having corrugated inner surfaces to its heads and air-vents therethrough, a pair of pistons operating in said cylinder having corrugated surfaces corresponding to the aforesaid corrugated surfaces, means for introducing fluid between said pistons, a split strap hinged encircling said cylinder and having a corrugated periphery, a circular frame supported from a suitable base and having recesses in the inner wall thereof corresponding to the corrugations of the strap and encircling the latter, a cylinder supported on the said base and having a rigid connection with the lower half of said strap, a piston operating in said cylinder and a rod therefrom pivotally connected to the upper half of said strap, as and for the purpose specified.

13. In a device of the class described, in combination, a casing having suitable inlets and exhausts, a turbine journaled in said casing, a shaft, hollowed from the end thereof forming a chamber having suitable inlets and outlets, and extending through said turbine and casing, a revoluble cylinder, having rigid connection with said turbine, ridged inner surfaces to its heads and mounted on said shaft and inclosing the aforesaid outlets, a pair of disks having correspondingly-ridged surfaces and slidably arranged on said shaft within said cylinder and rotatable with said shaft, a fluid-box having a suitable inlet and encircling said shaft and inclosing the aforesaid inlets and having glands in the walls thereof, a circular frame surrounding said cylinder having recesses in the inner wall thereof and supported from a suitable base, a hinged strap having corrugations corresponding to the said recesses and encircling said cylinder, a vertically-arranged cylinder resting on the aforesaid base having rigid connection with the lower half of said strap and suitable inlets and exhausts, a piston operating therein, and a rod therefrom pivotally connected to the upper half of said strap, as and for the purpose specified.

14. In a device of the class described, in combination, a casing having a suitable inlet and exhaust, a turbine journaled in said casing, a shaft having annular projections and extending through said turbine and casing, a fluid-controlled clutch mechanism mounted on said shaft and connected with said turbine, a stationary box encircling said shaft having a suitable inlet and connections with said fluid-controlled clutch mechanism, and glands formed in slots in the walls of said box having baffle-rings with inturned flanges encircling said shaft in the interstices between annular projections from said shaft and the walls of the slots in which said glands are formed, as and for the purpose specified.

15. In a device of the class described, in combination, a casing having a suitable inlet and exhaust, a shaft, a turbine journaled in said casing, having a hub, a plurality of rings rigid with said hub, a plurality of curved blades of gradually-varying length beginning from the outermost blades inwardly, and extending from said rings to an intermediate plurality of rings, a plurality of curved blades extending from said intermediate rings and gradually varying in length, beginning from the outermost blades at the other side of the casing, and extending to a second intermediate plurality of rings, a plurality of curved blades extending from the latter rings and varying in length beginning from the other side of the casing, and extending to the outermost rings, said blades forming a fluid-passage, having a narrow inlet and gradually flaring in the passage along through the varyous sets of blades to a wide exhaust near the shaft, as and for the purpose specified.

16. In a device of the class described, in combination, a casing having suitable inlet and exhaust and connecting ports, a shaft, a turbine having a hub journaled in said casing, rings extending from said hub and rigid therewith, blades extending from said rings, rings connected to the outer end of said blades, blades extending from the latter rings and connected to rings at their outer ends, and blades extending outwardly from the last-named rings and secured to the outermost rings, and annular slots in the sides of all of said rings and in the sides of the casing adjacent to said rings, and baffle-rings introduced in said annular slots, as and for the purpose specified.

17. In a device of the class described, in combination, a casing having suitable inlet and exhaust and connecting ports, a turbine having a hub journaled in said casing, a plurality of rings rigid with said hub having dovetailed slots at their outer ends, a plurality of rings having annular dovetailed slots, blades having dovetailed tongues fitting into the said dovetailed slots, wedges having inturned flanges filling in said dovetailed slots between said dovetailed tongues, said blades and said rings being arranged radially to form a fluid-passage gradually flaring from the inlet adjacent to the circumference to the exhaust adjacent to the hub, baffle-rings introduced in annular slots in the sides of said rings and casing between the fluid-passages, and a shaft through said turbine and casing, as and for the purpose specified.

18. In a device of the class described, in combination a casing having a suitable inlet and exhaust, a pair of turbines formed of hubs having their inner terminal coadjacent within the casing and rings having annular dovetailed slots and curved blades having dovetailed tongues joining said rings and forming disks arranged alternately and supported from said hubs, said disks having wedges filling in the annular slots between the tongues of the blades, and annular slots in the side of the rings, and baffle-rings in said annular slots, a shaft extending through said hubs, and clutch mechanism connected to said turbine and shaft, as and for the purpose specified.

19. In a device of the class described, in combination, a casing having a suitable inlet and exhaust, a turbine journaled in said casing and formed of a plurality of rings having annular dovetail slots, and a plurality of curved blades having dovetail tongues at each end thereof fitting into said dovetail slots, and removable wedges intervening between said tongues in said slots, as and for the purpose specified.

20. In a device of the class described, in combination, a casing having a suitable inlet and exhaust, a turbine journaled in said casing and formed of a plurality of rings having annular dovetail slots, and a plurality of curved blades having dovetail tongues at each end thereof fitting into said dovetail slots, and orifices through said tongues, and removable wedges intervening between said tongues in said slots having inturned flanges, and teats thereon corresponding to said orifices, as and for the purpose specified.

824,450. **STETHOSCOPE.** THEODOR W. TALLQVIST, Helsingfors, Russia. Filed Oct. 7, 1905. Serial No. 281,818.

Claim.—1. In a stethoscope a tube, a center piece secured to said tube two hinged pieces secured to said center piece and adapted to fold back over said tube, said center piece and hinged pieces forming the usual disk of the stethoscope means for locking said hinged pieces in their outward position.

2. In a stethoscope a tube, a center piece rotatably mounted on one end of said tube, two hinged pieces secured to said center piece and adapted to fold back over said tube, said center piece and hinged pieces forming the usual disk of the stethoscope, side projections on said tubes abutting against said disk, means for permitting a partial rotation of said side projections relative to said disk.



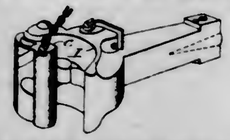
3. In a stethoscope a tube means for removably holding a thermometer within said tube, said means comprising a pin located across said tube and a hand-released spring device situated at one end of said tube, a folding disk secured to said tube and means for locking said folding disk in its open position.

4. In a stethoscope, a tube the usual disk at one end of said tube, a center part and two hinged pieces comprising said disk means for permitting rotation of said disk relative to said tube, and means in one position of said disk for holding said hinge-pieces flush with said center piece.

5. In a stethoscope a tube, the usual disk at one end of said tube, hinged pieces comprised in said disk, means for turning said hinged pieces back upon said tube, means for rotating said disk relative to said tube, projections on said tube, one hinge on each of said hinged pieces out of the path of said projections and one hinge on each of said hinged pieces in the path of said projections for the purpose described.

6. In a stethoscope a tube, a second small tube inserted and held in said first tube, an annular flange on said second tube, a disk comprising a center and two side hinged pieces said center piece taking over and rotatable on said flange, projections on said tube, stops on said disk substantially as and for the purpose described.

824,451. **EMERGENCY KNUCKLE-SLEEVE.** WILLIAM F. TAYLOR, Superior, Wis. Filed Mar. 17, 1905. Serial No. 250,682.



Claim.—1. A knuckle-sleeve having a square or flat portion and an extended curved portion, and a horizontal top or flap extended from or connected with the flat portion, but separate and distinct from the curved portion, substantially as and for the purpose specified.

2. A knuckle-sleeve having a square or flat portion and an extended curved portion, the flat portion being thicker than the curved portion, and a horizontal top or flap extended from or connected with the flat portion, but separate and distinct from the curved portion; substantially as and for the purpose specified.

3. A knuckle-sleeve having a square or flat portion and an extended curved portion, and a horizontal top or flap extended from or connected with the flat portion, but separate and distinct from the curved portion, and a loop attached to the top portion of the top with chain attached to loop, the other end of chain being provided with hook; substantially as and for the purpose specified.

4. A knuckle-sleeve having a curved portion with a top or flap extended from or connected with the sleeve horizontally at its upper end where the sleeve fits onto the interior side of the knuckle.

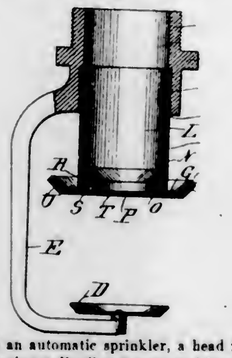
824,452. **SAFETY ELEVATOR DEVICE.** JOHN TAYLOR, JAMES A. MCMILLEN, and THOMAS C. B. MILBERY, Castle Shannon, Pa. Filed Nov. 24, 1905. Serial No. 288,867.



Claim.—1. In an elevator safety device, the combination with the frames of a mine-shaft and a cage or hoist mounted between said frames, of brackets carried by said cage, shafts journaled in said brackets, segment-shaped crank-arms carried by said shafts, cables connected to said arms and to the hoisting-cable of said cage, gripping-eccentrics carried by the ends of said shafts, said eccentrics consisting of serrated disks and an intermediate filling of rubber extending beyond the edges of the disks and means carried by said shafts to move said eccentrics into engagement with the frames of said mine-shafts, when the hoisting-cable of said cage breaks, substantially as described.

2. In an elevator safety device, the combination with the frames of the elevator-shaft and a cage suspended between said frames, of shafts mounted on said cage and extending across the same from side to side, segment-shaped arms carried by said shafts, cables connected to said arms and to the hoisting-cable of the cage, a gripping-eccentric carried on each end of each shaft, each eccentric being composed of two toothed disks and an intermediate filling of rubber extending beyond the edges of the disks, the teeth on the disks and the rubber filling being adapted to simultaneously engage the frames, a spiral spring surrounding each shaft and having one end connected to the cage and the other end connected to the segment-shaped arm, said springs being adapted to rotate the shaft when the tension of the hoisting-cable is relaxed.

824,453. **AUTOMATIC SPRINKLER.** EVERETT L. THOMPSON, Brooklyn, N. Y. Filed Sept. 2, 1902. Renewed Dec. 1, 1905. Serial No. 289,783.



Claim.—1. In an automatic sprinkler, a head for connection with a distributing-pipe, a distributer supported from said head, an open nozzle removably secured in said head in line with said distributer, said nozzle being provided with the flaring flange adjacent its open end, said nozzle comprising a liner secured within the same and provided with an internal shoulder to form an annular pocket, a cap provided with a flared flange releasably secured to said nozzle by a fusible joint, an impervious seal within said pocket to prevent the access of water to said fusible joint and a diaphragm to maintain said seal in position.

2. In an automatic sprinkler, an open nozzle provided with a flared flange adjacent its open end, a cap provided with a flared flange secured by a fusible joint to said nozzle, said nozzle being constructed to form a pocket adjacent said fusible joint, an impervious seal in said pocket and a diaphragm to maintain said seal in position.

3. In an automatic sprinkler, a nozzle, a cap releasably secured to said nozzle by a fusible joint and a releasable impervious seal within said nozzle, said nozzle providing an open unobstructed passage of full area on the release of said cap.

4. In an automatic sprinkler, an open nozzle, a cap releasably secured upon said nozzle by a fusible joint, a releasable impervious seal within said nozzle adjacent said fusible joint and means to maintain said seal in position.

5. In an automatic sprinkler, an open nozzle, a cap secured upon said nozzle by a fusible joint and a releasable impervious seal within said nozzle adjacent said fusible joint.

6. In an automatic sprinkler, a nozzle, a cap secured to said nozzle by thermally-operated releasing means and a releasable impervious seal within said nozzle, said nozzle providing an open unobstructed passage of full area on the release of said cap.

7. In an automatic sprinkler, an open nozzle provided with a flange adjacent the open end of the same, a cap releasably secured upon said nozzle by the fusible joint, a releasable impervious seal within said nozzle adjacent said fusible joint and means to maintain said seal in position, said means being releasable upon the release of said fusible joint to provide an open unobstructed passage through said nozzle.

8. In an automatic sprinkler, an open nozzle, a cap releasably secured upon said nozzle by the fusible joint, a releasable impervious seal within said nozzle adjacent said fusible joint and means to maintain said seal in position, said means being releasable to provide an open unobstructed passage through said nozzle on the release of said cap.

9. In an automatic sprinkler, an open nozzle, a cap secured upon said nozzle by a fusible joint and a fusible impervious seal within said nozzle adjacent said fusible joint to prevent the contact of water with said fusible joint and to provide an open unobstructed passage through said nozzle on the release of said fusible joint.

10. In an automatic sprinkler, an open nozzle, a cap secured upon said nozzle by a fusible joint, and a releasable wax seal within said nozzle adjacent said fusible joint to prevent the access of fluid thereto.

11. In an automatic sprinkler, a nozzle, a cap releasably secured upon said nozzle, and a fusible wax seal to prevent the presence of fluid adjacent said cap.

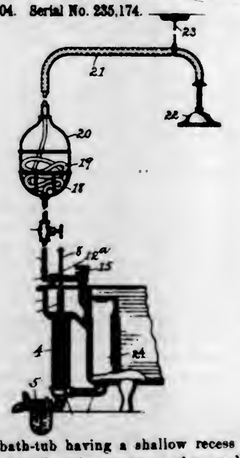
12. In an automatic sprinkler, a nozzle, a cap releasably secured upon said nozzle, a releasable impervious seal to prevent the presence of fluid adjacent said cap and means to maintain said seal in position, said means being releasable upon the release of said cap.

13. In an automatic sprinkler, a nozzle, a cap releasably secured upon said nozzle by a fusible joint and a fusible wax seal to prevent the presence of fluid adjacent said fusible joint, said seal being releasable upon the release of said cap.

14. In an automatic sprinkler, a nozzle, a cap secured upon said nozzle by a fusible joint and a releasable fusible impervious seal to prevent the presence of fluid adjacent said fusible joint.

15. In an automatic sprinkler, a nozzle, a thermally-releasable cap secured thereto and a fusible seal to prevent the presence of fluid adjacent the juncture between said cap and said nozzle.

824,454. **BATH-TUB.** WILLIAM VANDERMAN, Willimantic, Conn. Filed Dec. 2, 1904. Serial No. 235,174.



Claim.—1. A bath-tub having a shallow recess extending a short distance of the length of the upper part of one wall which is extended outwardly beyond the wall of the body of the tub to form said recess that opens upwardly and into the interior of the tub near the top, tub-supply pipes located without the boundary of the main portion of the interior of the tub but within the outer boundary of the entire tub, an overflow through the bottom of said recess, an overflow-pipe extending therefrom, a waste-outlet from said tub, a valve controlling said outlet, and a valve-rod extending from the valve through said overflow-pipe.

2. A bath-tub having a shallow recess extending a short distance along the length of the upper part of one wall of the tub, which is extended outwardly beyond the wall of the body of the tub to form said recess that opens upwardly and into the tub near the top, tub-supply pipes extending through an overhanging part of the tub and over and across said recess for supplying water to the tub, faucets for controlling said supply, an overflow through the bottom of said recess, an overflow-pipe extending therefrom, a waste-outlet from said tub, a valve located in the overflow-pipe and controlling said waste, and a valve-rod extending from the valve through the overflow-pipe.

3. A bath-tub having a shallow recess extending a short distance along the upper part of one wall of the tub which is extended outwardly beyond the wall of the body of the tub to form said recess that opens upwardly and into the interior of the tub near the upper part thereof, a second recess formed in said wall and below the first-mentioned recess and opening upwardly thereinto, tub-supply pipes located appurtenant to said recesses and delivering thereinto, an overflow through the bottom of said shallow recess, and an overflow-pipe extending therefrom.

4. A bath-tub having a shallow recess extending a short distance along the upper part of one wall thereof, that is extended outwardly beyond the wall of the body of the tub to form said recess that opens upwardly and into the tub near the upper part thereof, a second recess located in said wall below the first-mentioned recess and opening upwardly thereinto, a waste-outlet from the bottom of said last-mentioned recess, an overflow-opening through the bottom of said shallow recess, an overflow-pipe extending therefrom, a valve located in the overflow-pipe to control the waste-outlet, and a valve-rod extending from the valve upwardly through the overflow-pipe.

5. A bath-tub having a shallow recess extending a short distance along the upper part of one wall of the tub that is extended outwardly beyond the wall of the tub to form said recess that opens upwardly and into the interior of the tub near the top of said wall, a second recess extending from the shallow recess downward and formed in said wall, a waste-outlet from the bottom of said recess, an overflow through the bottom of the shallow recess, an overflow-pipe extending therefrom, a valve located in the overflow-pipe to control the waste-outlet, a valve-rod extending from the valve through the overflow-pipe, and tub-supply pipes extending through an overhanging part of the tub at a side of said recess and projecting over and conducting thereinto.

6. A bath-tub having an overhanging portion extending from the upper part of one end thereof, with a rib extending about the edge of the tub and toward the interior forming trays at opposite sides of said overhanging part, a recess opening out of the tub between said trays and with its bottom located below said trays, a shower-delivery pipe supported in brackets on the upper edge of and extending and conforming to the shape of said recess, and brackets for supporting said pipe.

7. A bath-tub having a shallow recess extending a short distance along the upper part of one wall that is extended outwardly beyond the wall of the body of the tub to form said recess that opens upwardly and into the interior of the tub near the top, tub-supply pipes for conducting the water into said recess, a shower-delivery pipe extending about the edge and conforming to the shape of said recess, a stand-pipe mounted on the shower-delivery pipe, a basket secured to the upper end of the stand-pipe, and a flexible pipe connected to the stand-pipe within said basket.

8. A bath-tub having a shallow recess extending for a short distance along the upper part of one wall that is extended outwardly beyond the wall of the tub to form said recess that opens upwardly and into the interior of the tub near the top thereof, overflow-openings through the bottom of said recess, an overflow-pipe extending from the bottom of the recess, a valve located in the overflow-pipe, a sleeve mounted in the bottom of the recess and having a lengthwise groove, and a valve-stem projecting from the valve upward through said sleeve and having a spline to engage within the groove and rest on the upper edge of the sleeve.

9. A bath-tub having a recess extending from the central upper portion of one end thereof, an overhanging part from the end of the tub located on each side of said recess, a rib extending about the upper edge of the overhanging parts and along said recess forming a tray on each of said overhanging parts located above the bottom of the recess, a shower-delivery pipe extending about the upper edge of the recess, a stand-pipe secured to the central back portion of said delivery-pipe, a shower connected with said stand-pipe, and means for supporting a curtain on said stand-pipe.

10. A bath-tub having a recess extending from the upper central portion of one end thereof, overhanging parts from one end of the tub located on opposite sides of said recess, a rib extending about the outer edge of said overhanging parts and of said recess forming trays within the overhanging parts above the bottom of the recess, a shower-delivery pipe extending about the upper edge of said recess within said rib, a stand-pipe extending from the central back portion of the delivery-pipe, a valve in the stand-pipe with its spindle projecting toward the tub, a ring for a curtain extending about the upper portion of the stand-pipe and behind the same, and a shower connected with the stand-pipe.

11. A bath-tub having a shallow recess extending a short dis-

tance along the upper part of one wall that is extended outwardly beyond the wall of the tub to form said recess that opens upwardly and into the interior of the tub near the top, the bottom of said recess being located substantially in a horizontal plane, an overflow-outlet from the bottom of the recess, a waste-outlet from the bottom of the tub, both of said outlets opening directly downward, and means for controlling the flow through the waste-outlet.

12. A bath-tub having a shallow recess extending a short distance along the upper part of one wall that is extended outwardly beyond the wall of the tub to form said recess that opens upwardly and into the interior of the tub near the upper part thereof, hot and cold water faucets located at each side of said recess, pipe connections with said faucets united at said recess and having a discharge into said recess and to a stand-pipe, and a stand-pipe communicating with said pipe connection.

13. A bath-tub having a recess in one wall thereof, hot and cold water faucets located on each side of said recess, conducting-pipes from said faucets extending across and united at said recess with the discharge thereinto, an overflow in the bottom of said recess, a second recess opening from the first, a waste-outlet in the bottom of the second recess, and a waste-valve admitting the overflow and controlling the outlet from the waste-outlet.

14. A bath-tub having a recess, faucets located at each side of said recess, an overflow in the bottom of the recess, a pipe removably connected with the overflow and extending therefrom, a waste-outlet through the bottom of the tub, a pipe removably connected therewith and extended to join the pipe from the overflow, and means for closing the waste-outlet.

15. A bath-tub having a shallow recess extending a short distance along the upper part of one wall that is extended outwardly beyond the wall of the tub to form said recess that opens upward and to the interior of the tub near the upper part thereof, hot and cold water faucets located at each side of said recess, pipes extending from said faucets and united at the recess with a discharge thereinto, a stand-pipe connection extending therefrom, a valve for controlling the supply to the tub, and a valve for controlling the supply to the stand-pipe.

16. A bath-tub having a recess, faucets located at each side of said recess, supply-pipes extending from the faucets across and united at the recess with the discharge thereinto, conducting-pipes from said faucets extending around the edge of the recess and communicating with a stand-pipe, a valve for controlling the discharge into the recess, and a valve for controlling the discharge into the stand-pipe.

17. A bath-tub having a shallow recess extending a short distance along the upper part of one wall thereof that opens outwardly beyond the wall of the tub to form said recess that opens upwardly and into the interior of the tub near the upper part thereof, faucets located at each side of said recess, an overflow through the bottom of said recess, a waste-outlet through the bottom of the tub, an overflow-pipe extending from the overflow-opening, and a waste-pipe extending from the waste-outlet, said pipes being united, a valve-seat located at the point of connection of said pipes, a valve for said seat, and a valve-rod extending upward through the overflow-pipe.

18. A bath-tub having a short section of the upper part of one wall extending outwardly beyond the wall of the body of the tub so as to form a small shallow recess beyond the wall of the body of the tub, which recess opens its full extent upwardly and also opens its full extent into the tub, a waste-outlet through the bottom of the tub, an overflow through the bottom of said recess, an overflow-pipe leading from said overflow, a valve located in the overflow-pipe to control the waste-outlet, a valve-rod extending upward from said valve through the overflow-pipe and opening, and means for supplying water to the tub.

19. A bath-tub having a short section offset from the upper part of one wall extending outwardly beyond the wall of the body of the tub so as to form a small shallow recess beyond the wall of the body of the tub, which recess opens its full extent upwardly and also opens its full extent into the hub, a fitting located appurtenant to said recess, but without the boundary of the inside of the tub, a conducting-pipe to deliver water from the fitting into the tub, an overflow-opening through the bottom of the recess, an overflow-pipe extending from said opening, a waste-outlet through the bottom of the tub, a valve located in the overflow-pipe to control said waste-outlet, and a valve-rod extending upward from said valve through the overflow-pipe and opening.

20. A bath-tub having a short section of the upper part of one wall extended outwardly beyond the wall of the body of the tub so as to form a small shallow recess beyond the wall of the body of the tub, which recess opens its full extent upwardly and also opens its full extent into the tub, an overflow-opening through the bottom of the recess, an overflow-pipe extending from said opening, a waste-outlet from the bottom of the tub, a valve located in the overflow-pipe to control said waste-outlet, a rod extending upward from said valve through the overflow-pipe and opening, a fitting located appurtenant to said recess for delivering water into the tub, a shower stand-pipe connected with said fitting, and shower apparatus connected with said stand-pipe.

21. In a bath-tub, a recess offset from the upper edge of one end of the tub, a supply-fitting located appurtenant to said recess and outside of the boundaries of the inside of the tub for delivering water to the latter, a waste-outlet through the bottom of the tub, an overflow-opening through the bottom of said recess, an overflow-pipe extending from said opening, a valve located in the overflow-pipe to control the waste-outlet, a rod extending upward from said valve through the overflow-pipe and opening, a stand-pipe connected with the supply-fitting, and shower apparatus connected with said stand-pipe.

22. A bath-tub having a shallow recess extending a short distance along the upper part of one wall that is extended outwardly beyond the wall of the tub to form said recess that opens upwardly and into the interior of the tub near the top providing a main part and a recessed part to the tub, hot and cold water faucets located at each side of said recess, and pipe connections extending from said faucets and united at the recess and having a discharge-outlet thereinto, all of said faucets and pipe connections being located entirely without the boundary of the main portion of the tub.

23. A bath-tub having a shallow recess extending a short distance along the upper part of one wall that is extended outwardly beyond the wall of the tub to form said recess that opens upwardly and into the interior of the tub near the top, the bottom of said recess being located substantially in a horizontal plane, an overflow-outlet from the bottom of the recess, a waste-outlet from the bottom of the tub, both of said outlets opening directly downward, and a stopper for the waste-outlet.

24. A bath-tub having a short section of the upper part of one wall extended outwardly beyond the wall of the body of the tub so as to form a small shallow recess beyond the wall of the body of the tub which recess opens its full extent upwardly and also opens its full extent into the tub, a fitting to deliver water to said recess, cocks so arranged in the fitting and relatively to the recess that the handles may be freely manipulated and the interior of the tub be unobstructed by the handles or the bibs, a waste-outlet through the bottom of the tub, and a stopper for controlling the waste-outlet, substantially as specified.

25. A bath-tub having a short section of the upper part of one wall extended outwardly beyond the wall of the body of the tub so as to form a small shallow recess beyond the wall of the body of the tub, which recess opens its full extent upwardly and also its full extent into the tub, an overflow-outlet through the bottom of the recess, a fitting to deliver water to said recess, cocks so arranged in the fitting and relatively to the recess that the handles may be freely manipulated and the interior of the tub be unobstructed by the handles or the bibs, a waste-outlet through the bottom of the tub, and a stopper for controlling the waste-outlet, substantially as specified.

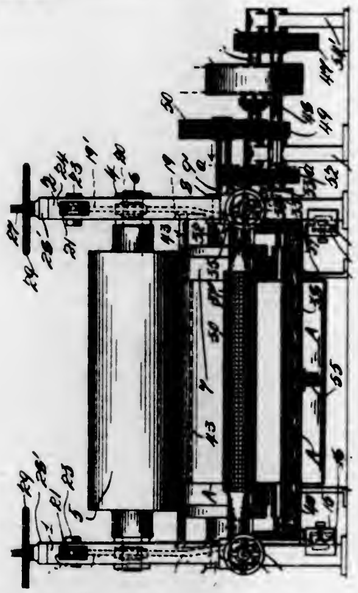
26. A bath-tub having a short section of the upper part of one wall extended outwardly beyond the wall of the body of the tub so as to form a small shallow recess beyond the wall of the body of the tub, which recess opens its full extent upwardly and also opens its full extent into the tub, a fitting to deliver water to said recess, cocks so arranged in the fitting relatively to the recess that the handles may be freely manipulated and the interior of the tub be unobstructed by the handles or the bibs, a waste-outlet through the bottom of the tub, a stopper for controlling the waste-outlet, and toilet-receptacles formed in the rim each side of the recess and adapted to drain into the tub, substantially as specified.

27. A bath-tub having a short section of the upper part of one wall extended outwardly beyond the wall of the body of the tub so as to form a small shallow recess beyond the wall of the body of the tub, which recess opens its full extent upwardly and opens its full extent into the tub, a fitting to deliver water to said recess, cocks so arranged in the fitting relatively to the recess that the handles may be freely manipulated and the interior of the tub be unobstructed by the handles or the bibs, a shower connected with the fitting, a waste-outlet through the bottom of the tub, and a stopper for controlling the waste-outlet, substantially as specified.

28. A bath-tub having the upper part of a short section extended outwardly beyond the wall of the body of the tub so as to form a recess that opens upwardly also to the interior of the tub near the top, a fitting to deliver water to said recess, cocks in the fitting, an overflow-outlet in the bottom of the recess, a waste-opening through the bottom of the tub, a stopper for controlling the waste-outlet and a trap with which the waste and overflow communicate, substantially as specified.

29. A bath-tub having a short section of the upper part of one wall extended outwardly beyond the wall of the body of the tub so as to form a small shallow recess beyond the wall of the body of the tub, which recess opens its full extent upwardly and also opens its full extent into the tub, the front portion of the bottom wall of said recess slanting downwardly to the wall of the tub, a fitting to deliver water to said recess, cocks so arranged in the fitting and relatively to the recess that the handles may be freely manipulated and the interior of the tub be unobstructed by the handles or the bibs, a waste-outlet through the bottom of the tub, and a stopper for controlling the waste-outlet, substantially as specified.

824,455. TRACING-CLOTH MANGLE. WILLIAM B. WAECHTER, Garfield, N. J., assignor to American Tracing Cloth Company, New York, N. Y., a Corporation of New York. Filed Feb. 6, 1906. Serial No. 299,789.



Claim.—1. A mangling-machine, composed of a plurality of rolls, an adjustable mangling-roll having a roughened periphery adapted to bear against one of said rolls, means for passing fabric covered with a sizing material between said mangling-roll and the roll coacting therewith, and means for adjusting the pressure upon said rolls.

2. In a mangling-machine, the combination of a material-roll and a pressure-roll, with means for leveling said rolls, a lever provided with an adjustable weight adapted to exert pressure upon said upper roll, means for passing a fabric covered with a sizing material through said rolls, means for forcing the sizing material into the weave of said fabric as said fabric passes to said pressure-rolls.

3. In a mangling-machine, the combination of material and pressure rolls, with means for leveling the same, a weighted lever adapted to exert pressure upon said material-roll, means for passing a fabric covered with a sizing material between said rolls, a mangling-roll having a roughened surface adapted to bear against said material-roll and said fabric, and means for exerting pressure upon said mangling-roll.

4. A mangling-machine having a material and a pressure roll, an adjustable mangling-roll provided with a roughened surface in contact with said material-roll, means for rotating said material-roll, means for rotating said mangling-roll faster than the material-roll, whereby the periphery of the mangling-roll will slip upon the periphery of the material-roll, and means for passing a fabric covered with sizing between said mangling and material rolls.

5. In a mangling-machine, the combination of a material-roll and a pressure-roll, a weighted lever adapted to exert pressure upon the material-roll, an adjustable mangling-roll having a roughened surface in contact with the material-roll, means for rotating the same, means for rotating the mangling-roll faster than the material-roll, whereby the periphery of the mangiing-roll will slip upon the periphery of the material-roll, and means for passing fabric covered with sizing between said mangling and material rolls.

6. In a mangling-machine, the combination of a material-roll and a pressure-roll adapted to receive between their contacting surfaces fabric covered with sizing, means for rotating said roll, means for leveling the same, means for varying the contacting pressure of said rolls, and a mangling device adapted to bear against said material-roll and said fabric, said mangling device adapted for a sliding contact therewith, together with means for varying the pressure of said mangling device.

7. In a mangling-machine, the combination of a material-roll and a pressure-roll adapted to receive between their contacting surfaces fabric covered with sizing, means for rotating said rolls, means for leveling the same, means for varying the contacting pressure of said rolls, a mangling device adapted to bear against said material-roll and said fabric, the mangling device being adapted for a rotary movement faster than the movement of said material-roll, and means for varying the pressure of said mangling device.

8. In a mangling-machine, the combination of a material-roll and a pressure-roll in contact therewith, means for varying the pressure of said pressure-roll, an adjustable mangling-roll, having a roughened periphery in contact with said material-roll, means adapted to rotate the material-roll and the mangling-roll simultaneously but at different peripheral speeds, and means for adjusting said mangling-roll.

9. In a mangling-machine, the combination of a material-roll and a pressure-roll adapted to receive fabric between their surfaces, means for varying the pressure of the pressure-roll, an adjustable mangling-roll having a roughened periphery adapted to bear against said material-roll and said fabric, means for adjusting the mangling-roll, a reservoir under the material-roll adapted to contain sizing material, a roll in said reservoir partially submerged in the sizing material, said roll adapted to keep the fabric submerged in said sizing material as the fabric is fed to the mangling-roll, and means for rotating the material and mangling rolls simultaneously but at different peripheral speeds.

10. In a mangling-machine, the combination of a material-roll and a pressure-roll adapted to receive fabric between their surfaces, means for varying the pressure of the pressure-roll, an adjustable mangling-roll, having a roughened periphery adapted to bear against said material-roll and the fabric, means for adjusting the mangling-roll, a reservoir under the material-roll adapted to contain sizing material, a roll within the reservoir partially submerged in the sizing material, said roll adapted to keep the fabric submerged in the sizing material as said fabric is fed to the mangling, material and pressure rolls, means for rotating said material and mangling rolls simultaneously but at different peripheral speeds, and means for raising the pressure-roll from the material-roll, said means adapted to hold the pressure-roll in a raised position.

824,456. GARMENT. JEANNE WALTER, Philadelphia, Pa. Filed Oct. 20, 1905. Serial No. 283,607.

Claim.—1. As an article of manufacture, an integral seamless therapeutic undergarment of the form of a shirt or drawers composed of soft rubber, shaped to the respective portion of the body of the wearer and adapted to completely inclose said portion, whereby evaporation of the perspiration of the body and admission of air to the latter are prevented, and means for closing said garment.

2. As an article of manufacture, an integral seamless therapeutic undergarment of the form of a shirt or drawers, composed of soft rubber shaped to the respective portion of the body and adapted to completely envelop said portion, whereby evaporation of the perspiration of the body and admission of air to the latter are prevented and means for adjustably closing said garment.

3. An integral seamless therapeutic undergarment of the form of a shirt or drawers composed of soft rubber shaped to the respective portion of the body of the wearer and adapted to envelop said portion, reinforces at the places of the fastening of the garment, means for preventing contact of said reinforces with said body and means for adjustably closing said garment.

824,456.



824,457. LOADING APPARATUS. HENRY T. WASHBURN and SELDEN G. WASHBURN, Goodwin, S. D. Filed Aug. 7, 1905. Serial No. 273,042.



Claim.—1. An apparatus for loading manure and the like in the field, comprising a vehicle into which the material is loaded, means for hoisting the loaded vehicle to a suitable height, and a receiver into which the material is dumped from the vehicle, the said vehicle having hinged dropping-sections, an automatic locking device for retaining the sections in closed position, and means for automatically moving the locking device to release the sections when the vehicle reaches the desired height.

2. In an apparatus for loading manure and the like, a vehicle into which the material is loaded and means for hoisting the vehicle to a suitable height, the said vehicle having dropping-sections, an automatic device for retaining the sections in position when closed, and automatic means for releasing the sections when the vehicle reaches the desired height.

3. In an apparatus for loading manure and the like, a vehicle into which the material is loaded and from which it is discharged, and means for hoisting the loaded vehicle to a suitable height, the said vehicle having hinged dropping-sections, an automatic device for retaining the sections in position when closed, means for releasing the sections when the vehicle reaches the desired height, and means for carrying the said sections to closed position.

4. An apparatus for loading manure and the like in the field, comprising a vehicle into which the manure is loaded, means for hoisting the loaded vehicle to a suitable height, and a receiver into which the manure is dumped form the vehicle, the latter embodying hinged dropping-sections, one having a member normally lying against and extending beyond the under side of the other, and a spring-controlled locking device for the two sections constructed of a plate having a notch therein, and a lever having a notch and a hook, said notches receiving an end of said member.

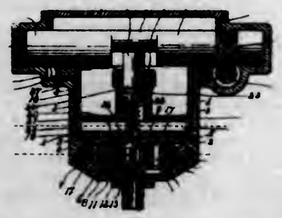
5. An apparatus for loading manure and the like, comprising a vehicle into which the manure is loaded, means for hoisting the loaded vehicle to a suitable height, a receiver into which the manure is dumped from the vehicle, the latter being constructed with hinged dropping-sections, automatic devices for retaining the sections in closed position to hold the load thereon, means operating to release the sections on the vehicle reaching such height, and means for carrying said sections to closed position to be again locked therein.

6. An apparatus for loading manure and the like, comprising a vehicle into which the manure is loaded, means for hoisting the loaded vehicle to a suitable height, a receiver into which the manure is dumped from the vehicle, the latter being constructed with hinged dropping-sections, automatic devices for retaining the sections in closed position to hold the load thereon, means operating to release the sections on the vehicle reaching such height, means for carrying said sections to closed position to be again locked therein, embodying a cable attached to one of the sections, a guide and a double pulley on the vehicle, around one part of which pulley the cable extends, and another pulley on the other of the sections also around which said cable extends, thence around the other part of said double pulley and through said guide.

7. An apparatus for loading manure and the like in the field, comprising a vehicle into which the material is loaded, means for hoisting the loaded vehicle to a suitable height, the said means including parallel inclined ways, and a receiver supported beneath the upper part of the inclined ways, and into which the material is dumped from the vehicle, the said vehicle being provided with hinged dropping-sections, a device for retaining the sections in closed position, and means for automatically releasing said sections, when the vehicle reaches the upper end of the inclined ways, to permit the sections to drop.

8. An apparatus for loading manure and the like in the field, comprising a vehicle, means for delivering the material to the vehicle, means for hoisting the loaded vehicle to a suitable height, and a receiver at such height into which the material is dumped from the vehicle, said vehicle having hinged dropping-sections, means for automatically locking the sections in position when closed, means for releasing the sections when the vehicle reaches the dumping position, and means for carrying the sections to closed position after the material is dumped.

824,458. MECHANICAL LUBRICATOR. GEORGE R. WELCH, Detroit, Mich. Filed Nov. 18, 1905. Serial No. 287,927.



Claim.—1. In an oiler, the combination of a casing formed with a chamber having an intake and a discharge opening, a rotatable member in said chamber provided with an oil-chamber having openings adapted to register with the openings in the casing, a cylinder carried by said member in communication with the oil-chamber, a piston in said cylinder, and means for rotating said member and actuating the piston.

2. In an oiler, the combination of a casing formed with a chamber having an intake and a discharge opening, a rotatable member in said chamber provided with an oil-chamber having openings adapted to register with the openings in the casing, a cylinder formed integral with said member at its axis, and communicating with the oil-chamber, a piston in said cylinder, means engaging the piston to operate the same, and means for rotating said member.

3. In an oiler, the combination of a casing formed with a circular chamber having an intake and discharge openings in its bottom, a rotatable member adapted to fit closely within said chamber in contact with its bottom and provided with an oil-chamber having openings in its bottom to register with the intake and discharge openings as said member is turned, a cylinder carried by said rotatable member, a piston in said cylinder, and means for actuating the piston and rotating the said member.

4. In an oiler, the combination of a casing formed with a circular chamber having discharge-passages leading from its bottom and a recess in the lower end of the casing formed with a valve-seat at its inner end and connected with said chamber by a passage, a valve fitting within said recess and provided with longitudinal grooves in its side, a spring to hold the valve to its seat; a rotatable member within the chamber engaging the bottom thereof to close the passages and having openings to register therewith as the member is turned, a cylinder carried by said member, a piston in said cylinder, and means for rotating said member and actuating the piston.

5. In an oiler, the combination of a casing formed with a circular chamber having an intake and a discharge-passage in its bottom, a rotatable member fitting within said chamber and formed with an oil-chamber the bottom of which engages the bottom of the chamber in the casing to close said passages and is provided with openings to register with said passages as said member is turned, a cylinder in the axis of said member opening into the oil-chamber, a piston in said cylinder, a shaft mounted in bearings in the casing, an eccentric on said shaft to engage and operate the piston and means for rotating said member and shaft.

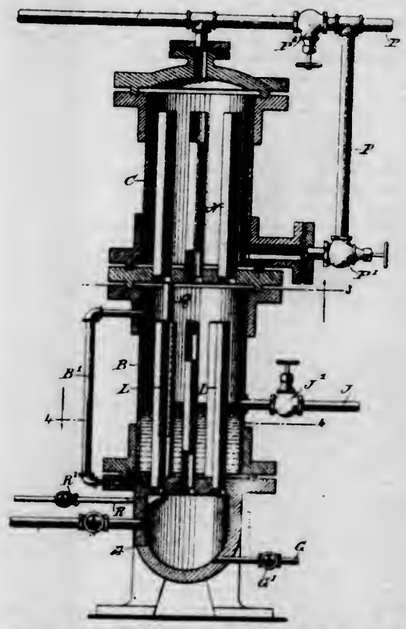
6. In an oiler, the combination of a casing formed with a circular chamber and two concentric series of openings in the bottom of said chamber, the openings of one series being spaced intermediate those of the other series, a rotary member to fit within said chamber and having an oil-chamber the bottom of which contacts the bottom of said chamber in the casing to close said openings in the casing and is provided with two holes arranged in radial alinement to register with the two series of openings, a cylinder on said member opening into the axis of said oil-chamber, a piston in said cylinder, a shaft extending diametrically across the casing and mounted in bearings therein, an eccentric on said shaft to engage and actuate the piston, and means for turning said shaft and rotary member in timed relation to each other.

7. In an oiler, the combination of a casing formed with a circular chamber, an oil-supply chamber, inlet-passage connecting the said chambers, outlet-passages leading from said circular chamber, and an axial passage connecting the circular chamber and oil-supply chamber, a rotary member adapted to fit closely in said circular chamber to close the passages and formed with an oil-chamber having openings adapted to register with said passages; a check-valve in the axial passage leading from the circular chamber into the oil-supply chamber; a cylinder carried by the said rotary member and communicating with the oil-chamber thereon; a piston in said cylinders; and means for rotating said member and actuating said piston in timed relation to each other.

8. In an oiler, the combination of a casing formed with a downwardly-extending cylindrical portion forming a circular chamber and an enlarged circular upper end, the lower end being formed with an intake and a series of discharge-passages communicating with said chamber; a rotary member formed with a cylindrical portion to fit within said chamber and a closed end contacting the bottom of the chamber and provided with openings to register with the passages; a partition in the lower end of said member to form an oil-chamber therein; a cylinder formed integral with said partition at its axis and open at its lower end into said oil-chamber; a piston in said cylinder; a flange on the upper edge of said member provided with gear-teeth; a transverse shaft mounted in bearings in the upper part of the casing; an eccentric on said shaft to operate the piston; and means engaging said gear-teeth and said shaft to actuate both.

9. In an oiler, the combination of a casing having a downwardly-extending cylindrical lower end forming a circular chamber and provided with a socket extending inward from its lower end formed with a valve-seat at its inner end, an annular chamber surrounding the socket, an external chamber, an axial passage connecting the socket with the internal chamber, a series of openings connecting the annular chamber and internal chamber and a series of discharge-passages opening from the bottom of the internal chamber; a valve having longitudinal grooves in its side within said socket; a chambered disk screwed into the external chamber and provided with a downwardly-extending nipple; a coiled spring interposed between the valve and said disk; a rotatable member fitting within said internal chamber of the casing and provided with an oil-chamber in its lower end having openings in its bottom to register with the openings and passages in the casing; a cylinder formed integral with said member and extending upward at the axis of the oil-chamber thereof; a piston in said chamber; a stuffing-box on the upper end of said cylinder; a coiled spring engaging the lower end of the piston to actuate the same in one direction; a shaft mounted in bearings in the casing; an eccentric on the shaft to engage and actuate the piston in opposite direction; an outwardly-extending flange on the rotary member having gear-teeth; a worm-gear on the shaft; and a worm to engage said gear and gear-teeth.

824,459. REGENERATING AND PURIFYING OF AMMONIA. LOUIS WERLIN, Elsmere, Del. Filed June 29, 1904. Serial No. 214,648.



Claim.—1. The method herein described of purifying the refrigerant gas used in refrigerating-machines, consisting in compressing the gas, condensing one portion, expanding a portion of that condensed to obtain the cooling effect, evaporating the remaining portion of that condensed, by the heat of condensation of the remaining portion of the warm compressed gas, purifying the vapors thus produced, by the action of the cold exhaust gas from the expansion device, mixing the cold exhaust-gas and the purified vapors, and recompressing the same.

2. The method herein described of purifying the refrigerant gas used in the refrigerating-machines, consisting in compressing the gas, condensing a portion of the gas, subjecting the liquid refrigerant to the remaining portion of the compressed gas, to vaporize the same and to condense the compressed gas, expanding a portion of the condensed gas to cool the same, subjecting the gases from the liquid refrigerant to the action of the cold spent gases, whereby the less volatile impurities of the refrigerant gases will be condensed, mixing the spent gases with the gases from the liquid refrigerant, and compressing the mixed gases.

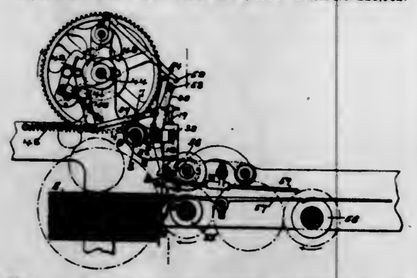
3. The method herein described of purifying the refrigerant gas used in refrigerating-machines, consisting in subjecting the liquid

refrigerant to the action of compressed gas to vaporize the liquid refrigerant and to condense the compressed gas, expanding a portion of the condensed gas to cool the same, subjecting the gases from the liquid refrigerant to the action of the cold spent gases, whereby the less volatile impurities of the refrigerant gases will be condensed, mixing the spent gases with the liquid refrigerant gases, and compressing the mixed gases.

4. The method herein described of purifying the refrigerant gas used in refrigerating-machines, consisting in vaporizing the liquid refrigerant, condensing compressed gas, expanding a portion of the condensed gas to cool the same, subjecting the gases from the liquid refrigerant to the action of the cold spent gases whereby to condense the less volatile impurities contained in the refrigerant gases and to separate the liquid matter from the spent gases and free said liquid matter of any ammonia, mixing the purified gases and vapors, and compressing the mixture.

5. The method herein described of purifying the refrigerant gas used in refrigerating-machines, consisting in vaporizing the liquid refrigerant, subjecting the gases from the liquid refrigerant to the action of cold spent gases, whereby to condense the less volatile impurities contained in the refrigerant gases and to separate the liquid matter from the spent gases and free said liquid matter of ammonia, and mixing the purified gases and the vapors of the liquid refrigerant.

824,460. **DETECTING MECHANISM.** GEORGE R. WILLIAMS, New York, N. Y., assignor to H. C. Fuller Company, New York, N. Y., a Corporation of New York. Filed Oct. 3, 1904. Serial No. 226,912.



Claim.—1. In a detecting mechanism, the combination with a stop mechanism, of a detector, means for giving the detector a sweeping movement over the material-path, said detector being constructed to have its movement interrupted by the presence in the material-path of a predetermined thickness of material, and means whereby the interruption in the movement of the detector controls the operation of the stop mechanism, substantially as described.

2. In a detecting mechanism, the combination with a stop mechanism, of a detector, an abutment stationary with respect to the passing material coöperating with the detector and lying on the opposite side of the material-path, means for giving the detector a sweeping movement over the path of the material, said detector being constructed to have its movement varied by the presence in the path of the material of a predetermined thickness of material, and means whereby the variation in the movement of the detector controls the operation of the stop mechanism, substantially as described.

3. In a detecting mechanism, the combination with a stop mechanism, of a detector, means for giving the detector a sweeping movement over the path of the material, said detector being arranged to have its movement checked by the presence in the material-path of a predetermined thickness of material, and means whereby the checking of the detector movement controls the operation of the stopping mechanism, substantially as described.

4. In a detecting mechanism, the combination with a stop mechanism, of a detector, an abutment stationary with respect to the path of the material coöperating with the detector and lying on the opposite side of the material-path, means for giving the detector a sweeping movement over the material-path, said detector being constructed to have its movement checked by the presence in the material-path of a predetermined thickness of material, and means whereby the variation in the movement of the detector controls the operation of the stop mechanism, substantially as described.

5. In a detecting mechanism, the combination with a stop mechanism, of a detector, means for oscillating the detector over the path of the material and tangentially to said path, said detector being constructed to have its oscillating movement interrupted by the presence in the path of the material of a predetermined thickness of material, and means whereby interruption in the oscillating movement of the detector controls the operation of the stop mechanism, substantially as described.

6. In a detecting mechanism, the combination with a stop mechanism, of a detector, an abutment stationary with respect to the passing material coöperating with the detector and lying on the opposite side of the material-path, means for oscillating the detector over the path of the material and tangentially to said path, said detector being constructed to have its oscillating movement varied by the presence in the path of the material of a predetermined thickness of material, and means whereby variation in the oscillating movement of the detector controls the operation of the stop mechanism, substantially as described

7. In a detecting mechanism, the combination with a stop mechanism, of a detector, means for giving the detector a sweeping movement over the path of the material, said detector being arranged to have its movement varied by the presence in the material-path of a predetermined thickness of material, operating connections for the stop mechanism, positioning devices for said connections, and means including a controller for operating said positioning devices, said controller moving with the detector, substantially as described.

8. In a detecting mechanism, the combination with a stop mechanism, of a detector, an abutment stationary with respect to the passing material coöperating with said detector and lying on the opposite side of the material-path, means for giving the detector a sweeping movement over the material-path, said detector being arranged to have its movement varied by the presence in the material-path of a predetermined thickness of material, operating connections for the stop mechanism, positioning devices for said connections, and means including a controller for operating said devices said controller moving with the detector, substantially as described.

9. In a detecting mechanism, the combination with a stop mechanism, of a detector, means for oscillating the detector over the path of the material and tangentially to said path, said detector being arranged to have its movement varied by the presence in the material-path of a predetermined thickness of material, operating connections for the stop mechanism, positioning devices for said connections, and means including a controller for operating said positioning devices, said controller moving with the detector, substantially as described.

10. In a detecting mechanism, the combination with a stop mechanism, of a detector, an abutment stationary with respect to the passing material coöperating with said detector and lying on the opposite side of the material-path, means for oscillating the detector over the material-path and tangentially to said path, said detector being arranged to have its movement varied by the presence in the material-path of a predetermined thickness of material, operating connections for the stop mechanism, positioning devices for said connections, and means including a controller for operating said positioning devices, said controller moving with the detector, substantially as described.

11. In a detecting mechanism, the combination with a stop mechanism, of operating connections therefor, positioning devices for said connections, a detector, means for giving the detector a sweeping movement over the material-path, said detector being constructed to have its movement interrupted by the presence in the material-path of a predetermined thickness of material, and means whereby the detector controls the operation of the positioning devices, substantially as described.

12. In a detecting mechanism, the combination with a stop mechanism, of operating connections therefor, positioning devices for said connections, a detector, an abutment stationary with respect to the passing material coöperating with said detector and lying on the opposite side of the path of the material, means for giving the detector a sweeping movement over the material-path, said detector being constructed to have its movement varied by the presence in the material-path of a predetermined thickness of material, and means whereby the detector controls the operation of the positioning devices, substantially as described.

13. In a detecting mechanism, the combination with stopping devices, of an actuator therefor, connections between the actuator and the stopping devices, positioning devices for said connections, a detector, means for giving the detector a sweeping movement over the path of the material, and means including a controller moving with the detector for operating the positioning devices, substantially as described.

14. In a detecting mechanism, the combination with stopping devices, of an actuator therefor, connections between the actuator and the stopping devices, positioning devices for said connections, a detector, means for oscillating the detector over the path of the material and tangentially thereto, and means including a controller oscillating with the detector for operating the positioning devices, substantially as described.

15. In a detecting mechanism, the combination with stopping devices, of an actuator therefor, connections between the actuator and the stopping devices, positioning devices for said connections, a detector, means for oscillating the detector over the path of the material and tangentially thereto, an abutment stationary with respect to the passing material coöperating with said detector and lying on the opposite side of the path of the material, and means including a controller oscillating with the detector for operating the positioning devices, substantially as described.

16. In a detecting mechanism, the combination with stopping devices, of a detector comprising two detecting members, a support on which both members are mounted and along which they are adjustable toward and away from each other, an operating member common to both detecting members, connections between each detecting member and the common operating member, an actuator for the stopping devices, connections intermediate the actuator and the stopping devices, and means whereby the common operating member controls said connections, substantially as described.

17. In a detecting mechanism, the combination with stopping devices, of a detector comprising two detecting members, an abutment stationary with respect to the passing material coöperating with said members, a support on which said detecting members are mounted and along which they are adjustable, a common operating member, connections between each of the detecting members and the operating member, and means whereby the operating member control the action of the stopping devices, substantially as described.

18. In a detecting mechanism, the combination with stopping devices, of a detector including two detecting members, a support on which both members are mounted and along which they are adjustable, an operating-shaft common to both detecting members, adjustable connections between said shaft and the detecting members, an actuator for the stopping devices, connections intermediate the actuator and the stopping devices, and means whereby the common operating-shaft controls the connections between the actuator and the stopping devices, substantially as described.

19. In a detecting mechanism, the combination with stopping devices, of a detector including two detecting members, a two-part abutment, the parts of said abutment coöperating with said detecting members, a support on which the detecting members and the abutment are mounted, the detecting members and the parts of the abutment being adjustable toward and away from each other along the support, an operating member common to both detecting members, connections between said common operating member and the detecting members, and means whereby the common operating member controls the stopping devices, substantially as described.

20. In a detecting mechanism, the combination with stopping devices, of a detector including two detecting members, a two-part abutment, the parts of said abutment coöperating with said detecting members, a support on which the detecting members and the abutment are mounted, the detecting members and the parts of the abutment being adjustable toward and away from each other along the support, an operating-shaft common to both detecting members, connections between said common operating-shaft and the detecting members, and means whereby the common operating-shaft controls the stopping devices, substantially as described.

21. In a detecting mechanism, the combination with stopping devices, of a detector including two detecting members, means for giving said detecting members sweeping movements over the material-path, said members being arranged so that either of them may have its movement interrupted by the presence in the material-path of a predetermined thickness of material, means for adjusting the detecting members with respect to each other, and means whereby interruption in the movement of either detecting member controls the operation of the stopping devices, substantially as described.

22. In a detecting mechanism, the combination with stopping devices, of a detector including two detecting members, means for moving the detecting members over the material-path, each of said members being arranged to have its movement varied by the presence in the material-path of a predetermined thickness of material, means for adjusting the detecting members with respect to each other, a two-part abutment, the parts of the abutment coöperating with the detecting members, means for adjusting the parts of the abutment with respect to each other, and means whereby a variation in the movement of either detecting member controls the operation of the stopping devices, substantially as described.

23. In a detecting mechanism, the combination with stopping devices, of a detector including two detecting members, means for giving the detector members a sweeping movement over the material, each of said members being arranged to have its movements varied by the presence in the material-path of a predetermined thickness of material, means for adjusting the detecting members with respect to each other, a two-part abutment, the parts of the abutment coöperating with the detecting members, means for adjusting the parts of the abutment with respect to each other, and means whereby a variation in the movement of either detecting member controls the operation of the stopping devices.

24. In a detecting mechanism, the combination with stopping devices, of a detector including two detecting members, means for moving the detecting members over the material-path, each of said members being arranged to have its movement varied by the presence in the material-path of a predetermined thickness of material, means for adjusting the detecting members with respect to each other, a two-part abutment, the parts of the abutment coöperating with the detecting members, means for adjusting the parts of the abutment with respect to each other, and means whereby a variation in the movement of either detecting member controls the operation of the stopping devices, substantially as described.

25. In a detecting mechanism, the combination with stopping devices, of a detector including two detecting members, a two-part abutment, the parts of the abutment coöperating with the detecting members, a support on which the detecting members and abutment are mounted and along which they are adjustable, a controller moving with each detecting member, a common operating member, means whereby a connection may be established between either detecting member and the common operating member, and means whereby the common operating member controls the operation of the stopping devices, substantially as described.

26. In a detecting mechanism, the combination with stopping devices, of a detector including two detecting members, means for giving the detecting members a sweeping movement over the material-path, a two-part abutment, the parts of the abutment coöperating with the detecting members, a support on which the detecting members and abutment are mounted and along which they are adjustable, a controller moving with each detecting member, a common operating member, means whereby a connection may be established between either detecting member and the common operating member, and means whereby the common operating member controls the operation of the stopping devices, substantially as described.

27. In a detecting mechanism, the combination with stopping devices, of a detector, means for giving the detector a sweeping movement over the material-path, a controller moving with the detector, an operating member, means for moving said member, means whereby the movement of the operating member controls the operation of the stopping devices, and means whereby a variation in the movement of the detector varies the movement of the operating member, substantially as described.

28. In a detecting mechanism, the combination with stopping devices, of a detector, means for giving the detector a sweeping movement over the material-path, a controller moving with the detector, an operating-shaft, means for moving the shaft, means whereby the movement of the shaft controls the operation of the stopping devices, and means whereby a variation in the movement of the detector varies the movement of the shaft, substantially as described.

29. In a detecting mechanism, the combination with stopping devices, of an actuating mechanism therefor, a shaft, means whereby the shaft controls the operation of the actuating mechanism, a detector, means for giving the detector a sweeping movement over the material-path, said detector being arranged to have its movement varied by the presence in the material-path of a predetermined thickness of material, and means whereby a variation in the movement of the detector varies the movement of the shaft and controls the operation of the actuating mechanism, substantially as described.

30. In a detecting mechanism, the combination with stopping devices, of an actuating mechanism therefor, normally operative connections between the actuating mechanism and the stopping devices, means for breaking said connections, a detector in the path of the material, and means whereby the presence in said path of a predetermined amount of material prevents the breaking means from operating, substantially as described.

31. In a detecting mechanism, the combination with stopping devices, of an actuator-arm, means for moving the arm, connections intermediate the arm and the stopping devices, means for preventing the engagement of the arm and the connections, a detector, means for moving the detector over the path of the material, the detector be-

ing constructed to have its movement varied by the presence in its path of a predetermined amount of material, and means whereby the variation in the movement of the detector controls the operation of the preventing means, substantially as described.

32. In a detecting mechanism, the combination with stopping devices, of an actuator-arm, means for moving the arm, connections intermediate the arm and the stopping devices, means for preventing the engagement of the arm and the connections, a detector, means for giving the detector a sweeping movement over the material-path, the detector being constructed to have its movement varied by the presence in its path of a predetermined amount of material, and means whereby the variation in the movement of the detector controls the operation of the preventing means, substantially as described.

33. In a detecting mechanism, the combination with stopping devices, of an actuator-arm, connections intermediate the arm and the stopping devices, a shaft, a positioning-arm on the shaft, a detector, means for moving the detector over the material-path, said detector being constructed to have its movement varied by the presence in its path of a predetermined amount of material, a controller moving with the detector, and means for establishing a connection between the shaft and the controller, whereby the variation in the movement of the controller varies the movement of the shaft, substantially as described.

34. In a detecting mechanism, the combination with stopping devices, of a detector, means for oscillating the detector over the path of the material and tangentially thereto, said detector being constructed to have its movement varied by the presence in its path of a predetermined amount of material, a controller moving with the detector, a shaft, means for moving the shaft, means for establishing a connection between the shaft and the controller, whereby a variation in the movement of the controller varies the movement of the shaft, and devices controlled by the movement of the shaft for controlling the operation of the stopping devices, substantially as described.

35. In a detecting mechanism, the combination with stopping devices, of a detector, an abutment stationary with respect to the passing material coöperating with the detector, means for oscillating the detector over the path of the material and tangentially thereto, said detector being constructed to have its movement varied by the presence in its path of a predetermined amount of material, a controller moving with the detector, a shaft, means for moving the shaft, means for establishing a connection between the shaft and the controller, whereby a variation in the movement of the controller varies the movement of the shaft, and devices controlled by the movement of the shaft for controlling the operation of the stopping devices, substantially as described.

36. In a detecting mechanism, the combination with stopping devices, of a detector, means for oscillating the detector over the material-path and tangentially thereto, said detector being constructed to have its movement varied by the presence in its path of a predetermined thickness of material, an abutment coöperating with the detector, a controller moving with the detector, a moving operating member, means for establishing a connection between the moving member and the controller whereby a variation in the movement of the detector varies the movement of the member, and means whereby the variation in the movement of the member controls the movement of the stopping devices, substantially as described.

37. In a detecting mechanism, the combination with stopping devices, of a detector, means for oscillating the detector over the material-path and tangentially thereto, said detector being constructed to have its movement varied by the presence in its path of a predetermined thickness of material, an abutment coöperating with the detector, a controller moving with the detector, an operating-shaft, an arm on the shaft, said arm being arranged to be engaged by the controller when the movement of the detector is varied, whereby the variation in the movement of the detector is communicated to the shaft, and means whereby variation in the movement of the shaft controls the operation of the stopping devices, substantially as described.

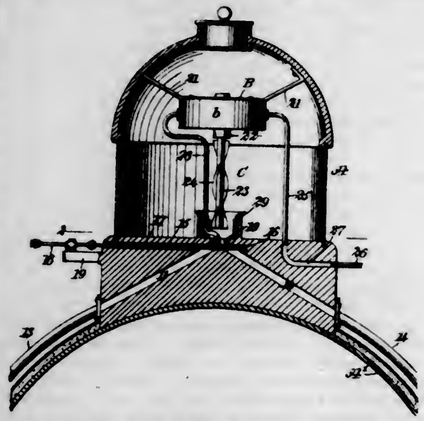
38. In a detecting mechanism, the combination with stopping devices, of a detector, means for oscillating the detector over the material-path, said detector being constructed to have its movement varied by the presence in its path of a predetermined thickness of material, an abutment coöperating with the detector, a controller moving with the detector, an operating-shaft, an arm on the shaft arranged to be engaged by the controller when its movement is varied, an actuating device, connections intermediate the actuating device and the stopping device, and a positioning-arm carried by the shaft, substantially as described.

39. In a detecting mechanism, the combination with stopping devices, of a detector, means for oscillating the detector over the material-path and tangentially thereto, said detector being constructed to have its movement varied by the presence in its path of a predetermined thickness of material, an abutment coöperating with the detector, a controller moving with the detector, an operating-shaft, an arm on the shaft arranged to be engaged by the controller when its movement is varied, an actuating device, connections intermediate the actuating device and the stopping device, and a positioning-arm carried by the shaft, substantially as described.

40. In a detecting mechanism, the combination with stopping devices, of a support, a two-part abutment mounted on the support, the parts of the abutment being adjustable thereon, a detector including oscillating detecting members with which the abutment coöperates, springs for oscillating the detecting members over the material-path, the springs being so proportioned that the presence of a predetermined amount of material in the path will vary the movement of the detecting members, controllers moving with the detecting members, an operating-shaft, arms on the shaft one for each controller, said arms being arranged to be engaged by the controllers when the movement of the detector is varied, an actuating mechanism, connections intermediate the actuating mechanism and the stopping devices, and a positioning-arm carried by the operating-shaft and controlling said connections, substantially as described.

41. In a detecting mechanism, the combination with stopping devices, of a support, a two-part abutment mounted on the support and stationary with respect to the travel of the material, the parts of the abutment being adjustable on said support, a detector including oscillating members with which the abutment coöperates, springs for oscillating the detecting members over the material-path, the springs being so proportioned that the presence of a predetermined amount of material in the path will vary the movement of the detecting members, controllers moving with the detecting members, an operating-shaft, arms on the shaft one for each controller, said arms being arranged to be engaged by the controllers when the movement of the detector is varied, an actuating mechanism, connections intermediate the actuating mechanism and the stopping devices, and a positioning-arm carried by the operating-shaft and controlling said connections, substantially as described.

824,461. TRACK-SANDING DEVICE. ALBERT G. ZAMEL, Chicago, Ill. Filed Mar. 30, 1906. Serial No. 308,837.

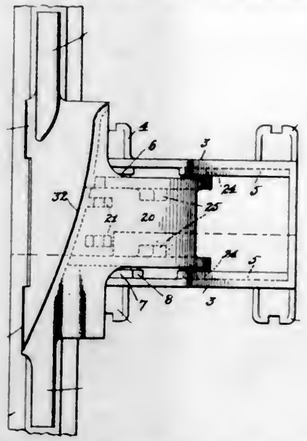


Claim.—1. In a track-sanding device, a sand-box and an air-motor supported therein, means for supplying air to the motor, an agitating device located over the outlet of the sand-box, a driving connection between the said motor and the agitating device, and an exhaust-conductor led from the motor to the outlet of the sand-box and coöperating with the agitating device.

2. In a track-sanding device, the combination with the sand-box having a central outlet-opening and diverging outlet-channels connected with the said outlet-opening, of an air-motor, supports for the same within the sand-box, means for supplying air to the motor and exhausting air therefrom, and an agitating device, consisting of a perpendicular rod attached to the drive-shaft of the motor, and fins extending exteriorly from the said rod, the said agitating device being located over the outlet of the sand-box.

3. In a track-sanding device, the combination with a sand-box having an outlet-opening at the central portion of its bottom, diverging outlet-channels connected with said opening, and an exteriorly-operated valve for controlling the outlet-opening and the outlet-channels where they connect with said opening, of an air-motor suspended within the dome of the sand-box, a vertical shaft extending down from the drive-shaft of the motor over the outlet-opening, spiral fins exteriorly located on the said shaft, a collar surrounding the said outlet-opening for the sand-box, into which the lower end of the said shaft from the motor extends, and an exhaust-pipe extending from the said motor to the outlet-opening, terminating at a point above the controlling-valve for the opening, as described.

824,462. DERAILER. EDWIN H. ALLFREE and WILLIAM H. ENGLAND, Chicago, Ill. Filed Apr. 14, 1906. Serial No. 311,638.



Claim.—1. A derailer comprising a base having a guideway at one end and a bearing at the other end, a bell-crank pivotally supported in said bearing, a movable derailing-section having one end sliding in the guideway of the base and its other or derailing end pivotally connected to an arm of the bell-crank whereby on the oscillation of the bell-crank one end of the derailing-section is moved back and forth in the guideway while the other or derailing end is raised or lowered and moved from or returned to the base.

2. A derailer comprising a base having opposite guideways at one end and a bearing at the other end, a bell-crank pivotally supported in said bearing, a movable derailing-section having one end sliding in said guideways of the base and its other or derailing end pivotally connected to an arm of the bell-crank whereby on the oscillation of the bell-crank one end of the derailing-section is moved back and forth in the guideways while the other or derailing end is raised or lowered and moved from or returned to the base.

3. A derailer comprising a base having a guideway at one end and bearings at the other end, a bell-crank pivotally supported in said bearings, means on said bell-crank for locking the same in said bearings, a movable derailing-section having one end sliding in the guideway of the base and its other or derailing end pivotally connected to an arm of the bell-crank whereby on the oscillation of the bell-crank one end of the derailing-section is moved back and forth in the guideway while the other or derailing end is raised or lowered and moved from or returned to the base.

4. A derailer comprising a base having opposite guideways at one end and bearings at the other end, a stop on the inner end of each of the guideways, a bell-crank pivotally supported in said bearings and having lugs adapted to abut against the stops in the guideways in the raised position of the bell-crank, a movable derailing-section having one end sliding in the guideways of the base and its other or derailing end pivotally connected to an arm of the bell-crank whereby on the oscillation of the bell-crank one end of the derailing-section is moved back and forth in the guideways while the other or derailing end is raised or lowered and moved from or returned to the base.

5. A derailer comprising a base situated to one side of a rail and having opposite guideways in the end away from the rail and bearings at the end nearest the rail, a bell-crank pivotally supported in said bearings, a movable derailing-section having at one end lugs engaging the guideways in the base and its other or derailing end pivotally connected to an arm of the bell-crank whereby in the oscillation of the bell-crank one end of the derailing-section is moved back and forth in the guideways of the base while the other or derailing end is raised or lowered and moved to or from engagement with the rail.

6. A derailer comprising a base situated to one side of a rail and having opposite guideways in the end away from the rail and bearings at the end nearest the rail, a bell-crank pivotally supported in said bearing and having locking-lugs on one of its arms, a movable derailing-section having at one end lugs engaging the guideways in the base and its other or derailing end pivotally connected to an arm of the bell-crank, and provided with a projection adapted to engage the locking-lugs of the bell-crank whereby in the oscillation of the bell-crank one end of the derailing-section is moved back and forth in the guideways of the base while the other or derailing end is raised or lowered and locked in or out of engagement with the rail.

7. A derailer comprising a base situated to one side of a rail and having guideways in the end away from the rail and bearings at the end nearest the rail, a bell-crank adapted to be locked and pivotally supported in said bearings, a movable derailing-section having at one end lugs engaging the guideways in the base and its other or derailing end pivotally connected to an arm of the bell-crank whereby in the oscillation of the bell-crank one end of the derailing-section is moved back and forth in the guideways of the base while the other or derailing end is raised or lowered and moved to or from engagement with the rail.

8. A derailer comprising a base situated to one side of a rail and having guideways in the end away from the rail and bearings and retaining-slots at the end nearest the rail, a bell-crank pivotally supported in said bearings, a movable derailing-section having at one end lugs engaging the guideways in the base and its other or derailing end pivotally connected to an arm of the bell-crank and projections adapted to be seated in the retaining-slots whereby in the oscillation of the bell-crank one end of the derailing-section is moved back and forth in the guideways while the other or derailing end is raised or lowered and moved into and out of engagement with the retaining slots or rail.

9. A derailer comprising a base situated to one side of a rail and having a guideway in the end away from the rail and a journal-bearing at the end nearest the rail, a movable derailing-section having one end engaging the guideway in the base, and means supported in the bearing for engaging the other or derailing end of the movable derailing-section for moving the end away from the rail of the derailing-section back and forth in the guideway of the base while the other or derailing end is raised or lowered and moved to or from engagement with the rail.

10. A derailer comprising a base situated to one side of a rail and having opposite guideways in the end away from the rail and opposite journal-bearings at the end nearest the rail, a movable derailing-section having one end engaging the guideways in the base, and means supported in the bearings for engaging the other or derailing end of the movable derailing-section for moving the end away from the rail of the derailing-section back and forth in the guideways of the base while the other or derailing end is raised or lowered and moved to or from engagement with the rail.

11. A derailer comprising a base having a guideway at one end and a journal-bearing at the other end, a movable derailing-section having one end sliding in the guideway of the base, and operating means supported in said bearing engaging the other or derailing end of the movable derailing-section for moving one end of the same back and forth in the guideway while the other or derailing end is raised or lowered and moved from or returned to the base.

12. A derailer comprising a base having a guideway at one end and a bearing at the other end, a movable derailing-section having one end sliding in the guideway of the base, operating means supported in said bearing engaging the other or derailing end of the movable derailing-section for moving one end of the same back and forth in the guideway while the other or derailing end is raised or lowered and moved from or returned to the base, and self-interlocking devices connected to the derailing-section and operating means.

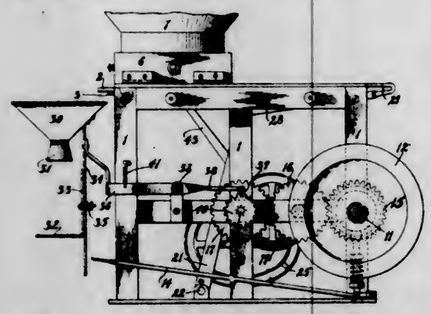
13. A derailer comprising a base having a guideway at one end and a bearing at the other end, a bell-crank pivotally supported in said bearing, a movable derailing-section having one end sliding in the guideway of the base and its other or derailing end pivotally connected to an arm of the bell-crank, self-interlocking devices connected to the bell-crank and movable derailing-section whereby on the oscillation of the bell-crank one end of the derailing-section is moved

back and forth in the guideway while the other or derailing end is raised and locked or returned to the base.

14. A derailer comprising a base having opposite guideways at one end and a bearing at the other end, a bell-crank pivotally supported in said bearing, a movable derailing-section having one end sliding in said guideways of the base and its other or derailing end pivotally connected to an arm of the bell-crank, self-interlocking devices connected to the bell-crank, base and movable derailing-section whereby on the oscillation of the bell-crank one end of the derailing-section is moved back and forth in the guideways while the other or derailing end is raised and locked or returned to the base.

15. A derailer comprising a base having a guideway at one end and bearings at the other end, a bell-crank pivotally supported in said bearings, means on said bell-crank for removably locking the same in said bearings, a movable derailing-section having one end sliding in the guideway of the base and its other or derailing end pivotally connected to an arm of the bell-crank, self-interlocking devices connected to the bell-crank, base and movable derailing-section whereby on the oscillation of the bell-crank one end of the derailing-section is moved back and forth in the guideway while the other or derailing end is raised and locked or returned to the base.

824,463. **TABLET COUNTING AND FILLING MACHINE.** JOHN W. AYERS and ALBERT M. AYERS. New York, N. Y. Filed Sept. 29, 1904. Serial No. 226,522.



Claim.—1. An article-reservoir, a top plate forming the bottom of the reservoir and having holes for receiving the articles therein, a bottom plate and means for moving the plates forward to a predetermined point, then moving the bottom plate rearward to release the articles and finally moving the top plate rearward to receive a new supply.

2. An article-reservoir, a top plate forming the bottom of the reservoir and having holes therein for receiving the articles, a bottom plate and means for imparting short reciprocatory movements to the top plate, then moving the plates forward to a predetermined point, then moving the bottom plate rearward to release the articles in the top plate and finally moving the top plate rearward to receive a new supply.

3. An article-reservoir, a top plate forming the bottom of the reservoir and having a plurality of transverse rows of holes for receiving the articles therein, a bottom plate and means for moving the top and bottom plates forward to a predetermined point, then moving the bottom plate rearward to successively uncover the rows of holes in the top plate to release the articles therefrom and finally moving the top plate rearward to receive a new supply.

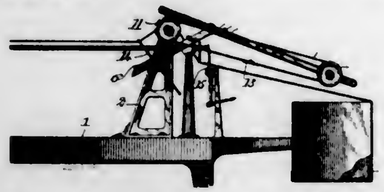
4. An article-reservoir, a top plate forming the bottom of the reservoir and having holes for receiving the articles therein, a bottom plate, rocking levers connected to the plates, a cam-shaft and cams thereon engaging the levers for moving the plates relatively to each other to deliver the articles at a predetermined point.

5. An article-reservoir, a top plate forming the bottom of the reservoir and having holes for receiving the articles therein, a bottom plate, rocking levers connected to the plates, a cam-shaft, a cam thereon engaging the top-plate lever and shaped to impart short reciprocatory movements to the lever and thereby the top plate and a cam engaging the bottom-plate lever, both of said cams being arranged to move the plates relatively to each other for delivering the articles at a predetermined point.

6. An article-reservoir, a top plate forming the bottom of the reservoir and having holes for receiving articles therein, a bottom plate, means for moving the plates relatively to each other for releasing the articles at a predetermined point and a reciprocating brush located within the reservoir in position to engage the surface of the top plate.

7. In an article counting and filling machine, an article-reservoir, an article-delivery hopper, a top plate forming the bottom of the reservoir and having holes for receiving the articles therein, a bottom plate, means for moving the plates forward to bring the holes in the top plate over the delivery-hopper, moving the bottom plate rearward to permit the articles to fall from the holes in the top plate into the hopper and finally moving the top plate rearward into position to receive a new supply of articles.

824,464. **MEASURING ATTACHMENT FOR PAPER-BOX MACHINES.** ARTHUR BELL. New York, N. Y. Filed Feb. 21, 1906. Serial No. 302,220.



Claim.—1. In connection with a paper-box-covering machine, a cover-measuring attachment comprising a roller, a pulley carried by the roller, an adjustable rod, a pulley mounted on the rod, and an adjustable belt engaging with the pulleys.

2. In connection with a paper-box-covering machine, standards on the forward end thereof, a roller having bearings in said standards, the said roller consisting of a plurality of detachable sections, a pulley mounted on the roller, an arm extended from one of the standards, a rod adjustable on said arm, a pointer on the rod, a pulley on said rod, and an adjustable belt engaging with the pulleys.

3. In connection with a paper-box-covering machine, standards mounted on the forward end thereof, a rod having bearings on said standards, roller members detachably connected to said rod and spaced apart, the said members being chambered or hollow at the ends, an arm connected to one of the standards, a rod having adjustable connection with said arm, a pulley on the rod, a pulley on the first-named rod, a band connection between the two pulleys, and a pointer on said rod.

824,465. **METALLIC SUPPORT FOR ARTIFICIAL TEETH.** DAVID N. BOOTH. New York, N. Y. Filed Dec. 27, 1904. Serial No. 238,402.



Claim.—1. A support for a detachable flat-back artificial tooth having pins projecting therefrom, comprising a gib having holes therein corresponding in position and substantial concentricity with that of the pins in the tooth and of appreciably greater diameter than that of said pins, means surrounding and engaging the said pins and filling the said openings in the gib to secure the gib to the tooth and a backing adapted to receive said gib and in which the same is to be secured.

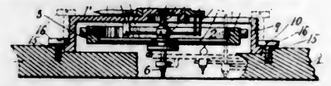
2. A support for a detachable flat-back artificial tooth having pins projecting therefrom comprising a gib having opposite engaging edges and having conical holes therein corresponding in positions and substantial concentricity with the positions of the pins in the tooth and of appreciably greater diameter than that of said pins and means surrounding and engaging the said pins and filling the said conical openings in the gib to secure the gib to the tooth and a backing adapted to engage said edges.

3. A support for a detachable flat-back artificial tooth having pins projecting therefrom comprising a gib having its opposite edges oppositely beveled and having conical holes therein corresponding in positions with the positions of the pins in the tooth and of greater diameter than that of said pins, means surrounding and engaging the said pins and filling the said conical openings in the gib to secure the gib to the tooth, and a backing adapted to receive the said gib and in which the same is to be secured.

4. A support for artificial teeth comprising a gib having its opposite edges oppositely beveled, means for securing said gib to the back of a long-pin flat-back tooth and a backing having a dovetail recess adapted to receive said gib and provided with a beveled lower edge to accommodate the bite.

5. A support for artificial teeth comprising a gib having its opposite edges oppositely beveled and its lower end also beveled, means for securing the said gib to the back of the flat-back long-pin tooth, and a backing having a dovetail recess whose lower portion is beveled to correspond to the bevel of the lower end of the gib, the said backing being also provided with a beveled lower edge to accommodate the bite.

824,466. **WATCH-REGULATOR.** JOSEPH BRUN, Chaux-de-Fonds, Switzerland. Filed Apr. 18, 1904. Serial No. 203,822.



Claim.—1. A balance including an arbor and a spring, a stud to which the end of the spring is attached, inclosing means for the balance, said means serving as a bearing for said arbor and also as an adjustable support for said stud.

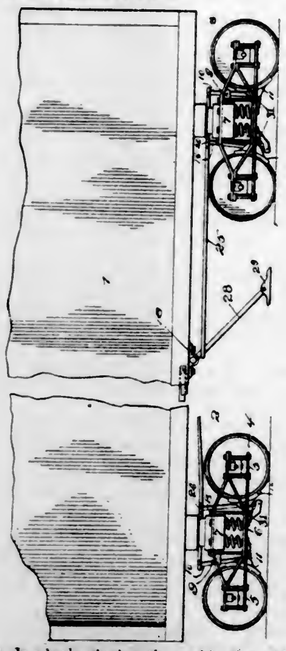
2. A balance and hair-spring, a stud to which said hair-spring is attached, a rotatable part having its axis central with the axis of the arbor of the balance and forming a bearing therefor, the said rotatable part having attached thereto the hair-spring stud, and provided with means whereby the said part may be moved and set so as to adjust the hair-spring stud.

3. A rotative balance-bridge constructed with a cylindrical wall, a central part having an arbor bearing and supported upon the wall, and a hair-spring stud.

4. A rotative balance-bridge constructed with a cylindrical wall having a securing-flange, a central part having an arbor-bearing, and a hair-spring stud, and supported upon the wall.

5. A rotative balance-bridge constructed with a cylindrical wall having a securing-flange, a central part having an arbor-bearing, and a hair-spring stud, a stationary part having a recess for the flange and means for securing the balance-bridge by its flange to the stationary part.

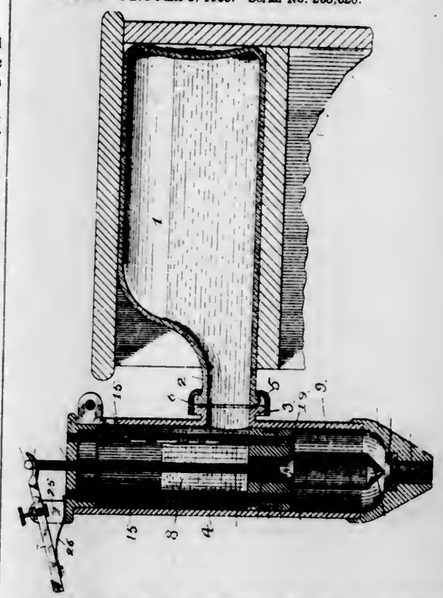
824,467. **CAR-BRAKE.** HENRY B. BURKE, Windber, Pa. Filed Feb. 20, 1906. Serial No. 302,056.



Claim.—1. In a brake-rigging, the combination with a car supported by trucks, said trucks embodying arch-frames and bolsters, of brackets carried by said frames and said bolsters, bars fulcrumed in said brackets, brake-shoes carried by the lower ends of said bars, draw-rods connected to the upper ends of said bars, a rock-shaft carried by said car, outwardly-extending arms carried by said rock-shaft and connecting with said draw-rods, brake-shoes connected to some of said arms and adapted to engage the treads of rails, substantially as described.

2. A brake-rigging embodying fulcrumed bars, brake-shoes carried by the lower ends of said bars, draw-rods connected to the upper ends of said bars, a rock-shaft connected to said draw-rods and adapted to move said brake-shoes in unison, depending arms carried by said rock-shaft, brake-shoes carried by said arms and adapted to engage the track, substantially as described.

824,468. **SYRUP-DISPENSING JAR.** ELIAS J. CALLEY. San Francisco, Cal. Filed June 3, 1905. Serial No. 263,628.



Claim.—1. In a device of the character described, receiving and measuring chambers formed of a hollow casing divided by a removable partition inserted thereinto, a packing interposed between the edge of the partition and the inner surface of the tubular casing, an outlet from the measuring-chamber, a communicating passage in the partition leading from the receiving-chamber to the measuring-chamber and a valve device for alternately closing and opening the said outlet and communicating passage.

2. In a device of the character described, receiving and measuring chambers formed of a hollow casing divided by a removable partition inserted thereinto, a detachable cap at one end of the casing carrying said partition and by which the latter may be inserted into or withdrawn from the casing, an outlet from the measuring-chamber, and a valve in said measuring-chamber adapted by its movement in opposite directions to alternately open and close the outlet from the measuring-chamber and the communicating passage between said chamber and the receiving-chamber.

3. In a device of the character described, receiving and measuring chambers formed of a hollow casing divided by a removable partition inserted thereinto, a detachable cap at one end of the casing carrying said partition and whereby the latter may be inserted into or withdrawn from the casing, the connection means therebetween including a vent-tube opening to the measuring-chamber and to the exterior of the casing, an outlet from the measuring-chamber, and a valve in said measuring-chamber adapted by its movement in opposite directions to alternately open and close the outlet from the measuring-chamber and the communicating passage between said chamber and the receiving-chamber.

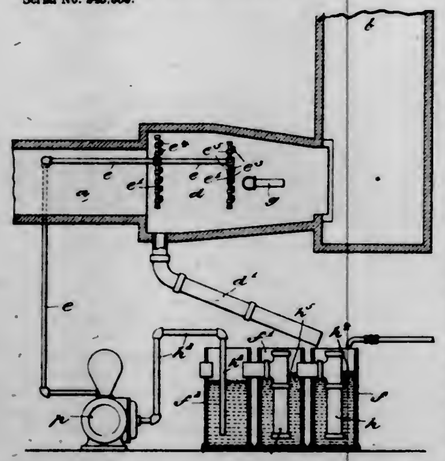
4. In a device of the character described, receiving and measuring chambers formed of a hollow casing divided by a removable partition inserted thereinto, a detachable cap at one end of the casing carrying said partition, an outlet from the measuring-chamber, and

a valve in said measuring-chamber adapted by its movement in opposite directions to alternately open and close the outlet from the measuring-chamber and the communicating passage between said chamber and the receiving-chamber and means for operating said valve mounted upon and removable with said cap.

5. In a device of the character described, receiving and measuring chambers formed of a hollow casing divided by a removable partition inserted thereinto, a detachable cap at one end of the casing carrying said partition, the connecting means therebetween including a vent-tube opening to the measuring-chamber and to the exterior of the casing, an outlet from the measuring-chamber, and a valve in said measuring-chamber adapted by its movement in opposite directions to alternately open and close the outlet from the measuring-chamber and the communicating passage between said chamber and the receiving-chamber and means for operating said valve mounted upon and removable with said cap.

6. In a device of the character described, receiving and measuring chambers formed of a hollow casing divided by a removable partition therein, a cap at the upper end of the casing, a detachable cap at the lower end of the casing having a valve-seat surrounding an outlet therethrough, a passage in the partition connecting the receiving and measuring chambers, a valve device in the measuring-chamber adapted to alternately open and close the said passage in the partition and the outlet in the lower cap, and means mounted in the upper cap for actuating said valve device.

824,469. APPARATUS FOR PURIFYING SMOKE. WILLIAM CLINE, Lancaster, Pa., assignor of one-third to John F. Brimmer and one-third to William Fuhrman, Lancaster, Pa. Filed Feb. 1, 1905. Serial No. 243,659.



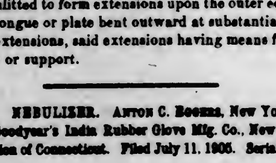
Claim.—1. In an apparatus of the character described, a flue leading from a furnace, a chimney or stack and a flue-chamber connecting the flue directly with the stack, said flue-chamber having inlet and outlet openings, respectively from the flue and to the stack, of an area in cross-section coequal with the cross-sectional area of said flue, in combination with a sprayer located within the flue-chamber beyond the inlet from the flue and arranged to vaporize a liquid in a direction corresponding with the plane in which the smoke enters from the flue and traverses said flue-chamber.

2. In an apparatus of the character described, a flue leading from a furnace, a chimney or stack, and a flue-chamber connecting the flue directly with the stack; in combination with a sprayer located in the flue-chamber beyond the inlet from the flue and arranged to vaporize a liquid in a direction corresponding with the plane in which the smoke enters from the flue and traverses the flue-chamber and a means for exhausting steam within the flue-chamber, intermediate of the inlet and outlet ends of said chamber.

3. In an apparatus of the character described, a flue leading from the furnace, a chimney or stack, a horizontally-arranged chamber connecting the flue directly with said stack, a liquid-supply pipe entering the flue-chamber, a sprayer-pipe carried by the liquid-supply pipe and arranged to spray the liquid in front of the inlet from the flue into said flue-chamber and in a direction corresponding with the plane in which the smoke enters and traverses said flue-chamber, in combination with a means for draining the flue-chamber of spent liquid collecting therein, a series of settling-tanks for separating the drained liquid from its impurities and a means for forcing the purified spent liquid to the vaporizing means in said flue-chamber.

4. In an apparatus of the character described, a flue-chamber, a sprayer arranged to spray the products of combustion traversing said flue-chamber and to collect the impurities therein, a drain-pipe for carrying off the impure spent liquid from said chamber, a series of settling-tanks into one of which said drain-pipe discharges, an overflow-pipe in each tank arranged to discharge the liquid from the base of one tank in series to the top of the next tank in series, a pipe arranged to draw off the liquid from the last tank in series and a pump arranged to force the water from said pipe to the sprayer in the flue-chamber.

824,470. BUILDING CONSTRUCTION. GEORGE H. DYER, San Francisco, Cal. Filed Oct. 20, 1905. Serial No. 283,561.



Claim.—1. A support for concrete in building construction, said support comprising mold-forms, beams against which said forms rest, plates having portions extending upon each side of and straddling the beam, and hangers embracing the beam and having their extremities detachably engaging the extensions of the plates whereby the beams and forms are held in place.

2. In a building construction, forms for the support of concrete, beams by which said forms are held in place, plates having members interposed between the beams and the forms, said plates having bent portions which straddle the beams, and hangers extending opposite to the bent portions of the plates and embracing the beams, and having their extremities detachably engaging the bent extensions of said plates.

3. In a concrete building construction, supporting girders or beams, forms disposed with relation thereto to receive a filling of concrete or plastic material which will set and harden, means for supporting said forms, said means consisting of beams, substantially U-shaped hangers within the bights of which the beams are held, plates having flanges resting upon the girders, said plates having downturned extensions which straddle the beam, and said hangers having their free ends detachably engaging said extensions.

4. In a concrete construction for building, girders or beams, forms supported in relation thereto to receive a filling of concrete or plastic material which will set or harden, plates bent to rest upon the girder, flanges having downturned extensions upon each side, beam-supports for the mold-forms upon each side of which supports the extensions of the plates project, hangers, and means for engaging the hangers with said extensions, the bights of the hangers extending beneath the beams and serving to lock said beams in position against the girders.

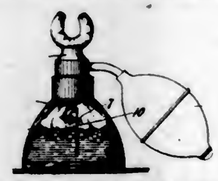
5. In a concrete building construction, beams or girders, forms fitted with relation thereto to receive a filling of concrete or plastic material which will set and harden, means for supporting said forms, said means consisting of beams, plates bent to engage the filling-supports, having extensions upon each side of the beams, and intermediate tongues projecting upon the surface of the beams, hangers, the bights of which pass beneath the beams, and hooks by which said hangers engage with the plates.

6. In concrete and like building construction, forms and beam-supports for the concrete, hangers by which the beam-supports are held with relation to the forms, and bent plates having extensions upon each side of the beams and intermediate plates or tongues projecting along the edges of the beams, substantially as described.

7. An article of manufacture consisting of a plate bent at approximately right angles with one portion forming a support, the other portion slitted to form extensions upon the outer edges, and an intermediate tongue or plate bent outward at substantially right angles with the extensions, said extensions having means for engaging with a hanger or support.

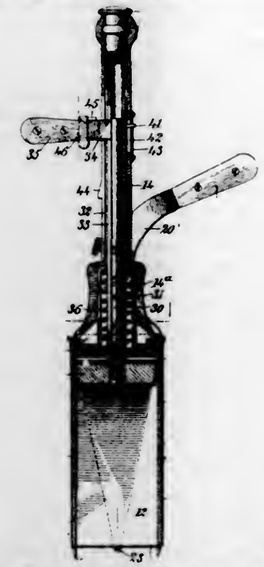
824,471. NEBULISER. ANTON C. BOEHME, New York, N. Y., assignor to Goodyear's India Rubber Glove Mfg. Co., New York, N. Y., a Corporation of Connecticut. Filed July 11, 1905. Serial No. 269,905.

Claim.—1. In a nebulizer, the combination, with a liquid-receptacle, of an air-tube extending downwardly through the mouth of said receptacle and provided at its lower end with a laterally-extending arm, said air-tube being provided with a lateral discharge-opening above said arm, and a suction-tube carried by said arm and adjustable vertically with respect to said discharge-opening.



2. In a nebulizer, the combination of a liquid-receptacle, an air-tube extending downwardly through the mouth thereof and provided with a laterally-extending arm or aveb having a vertical threaded opening offset from alinement with the bore of said air-tube, the latter being provided above said arm with a lateral discharge-opening, and a vertically-disposed suction-tube provided with exterior screw-threads engaging those of said threaded opening, said suction-tube extending above said arm and into coöperative relation with said discharge-opening.

824,472. BUTTER-CUTTER. GOTTFRID ERICSON, New York, N. Y. Filed Mar. 10, 1906. Serial No. 305,244.



Claim.—1. A butter-cutter adapted to be introduced into a mass of butter to separate a part thereof, a cutting-wire, means for moving said wire across the butter-cutter for the purpose specified, and means independent of the moving means for holding the wire in central position.

2. A butter-cutter adapted to be introduced into a mass of butter to separate a part therefrom, a cutting-wire, means for mounting said wire to move across the butter-cutter for the purpose specified, and catches for releasably holding said cutting-wire in central position.

3. A butter-cutter adapted to be introduced into a mass of butter to separate a part therefrom, a cutting-wire, means for mounting said wire to move across the butter-cutter for the purpose specified, catches for releasably holding the said cutting-wire in central position, and means for removably holding a second cutting-wire across the first cutting-wire.

4. A butter-cutter having a cutting-wire, swinging arms mounting the same, and releasable catches for holding said arms in a central position.

5. A butter-cutter having opposite side cutting-walls, side arms arranged at the sides of the cutting-walls, a cutting-wire held by said side arms, means for releasably holding the arms in a central position, a clamp releasably connected with the device, and a second cutting-wire held by the clamp across the first-named wire.

6. A butter-cutter having cutting-walls, a plunger, an operating rod therefor, a tubular stop adapted to engage the plunger, and means for adjusting the position of the stop.

7. A butter-cutter having cutting-walls, a plunger, an operating-rod therefor, a tubular stop adapted to engage the plunger, and means for adjusting the position of the stop, said means comprising a screw member engaged with the tubular stop.

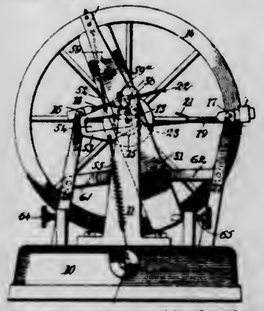
8. A butter-cutter comprising cutting-walls, a tubular handle, a follower, an operating-rod attached to the follower and extending into the handle, a tubular stop embracing the operating-rod and located in the handle, the stop being adapted to be engaged by the follower, and a threaded sleeve engaged with said tubular stop and having a portion exposed at the end of the handle.

824,473. DISH SCRAPER AND CLEANER. JOHN T. FOSKETT, Chicago, Ill. Filed Jan. 8, 1906. Serial No. 295,157.



Claim.—In a device of the kind described, a scraper-pad, companion plates clamping said pad on either side and presenting a less area, said plates being provided with socket-recesses, and a handle provided with a bifurcated end, the prongs of which engage said socket-recesses in securing the handle in place.

824,474. PYROMOTOR. WILLIAM W. FRENCH, Fort Branch, Ind. Filed July 1, 1905. Serial No. 267,868.



Claim.—1. In a pyromotor, the combination of expansion-strips pivotally mounted to swing bodily and together, means for alternately heating the expansion-strips, a member connected with said expansion-strips and on which the force of the expansion and contraction of said strips is exerted, the said member tending to careen slightly in consequence of said expansion and contraction, and an arm rigidly connected at one end with said member and engaging at its other end a stationary device on which the arm is adapted to move, to cause the expansion-strips to swing bodily, and mechanism driven by the swinging movement of the expansion-strips.

2. In a pyromotor, the combination of a driven member, expansion-strips pivotally mounted to swing bodily and together, means for alternately heating the expansion-strips, a rocking member connected with said expansion-strips and on which the force of the ex-

pansion and contraction of said strips is exerted, a motor-arm connected with said rocking member, a stationary member engaged by the motor-arm, whereby the strain exerted on said rocking member causes the motor-arm to move on the said stationary member and the expansion-strips to swing bodily on their pivot, and mechanism connected with the expansion-strips and with the member to be driven.

3. In a pyromotor, the combination of expansion-strips, means for alternately heating said strips, a member connected with said expansion-strips and tending to careen angularly in relation thereto when acted upon by the expansion and contraction of said strips, a motor-arm connected with said member and provided with a slot, a stationary pin mounted within said slot, and mechanism connected with said expansion-strips and driven thereby for the purpose of propelling movable parts.

4. In a pyromotor, the combination of a frame, a revoluble driven member mounted thereon, a rocking lever provided with mechanism for causing said member to rotate, expansion-strips mounted to swing bodily and adapted to become elongated in consequence of heat and to contract when cooled, means for alternately subjecting the expansion-strips to heat, means for causing said expansion-strips to swing bodily when heated, and mechanism connecting said expansion-strips with said rocking lever.

5. The combination of a frame, a shaft mounted therein, a wheel mounted loosely upon the shaft, rocking levers each provided with mechanism engaging said wheel alternately to cause the same to rotate, a beam carried by the shaft and mounted to swing bodily, the said beam being provided with expansion-strips, means for alternately heating the expansion-strips, means for causing said beam to swing bodily when the expansion-strips are heated, and links connecting the said beam with the rocking levers.

6. In a pyromotor, the combination of springs mounted to oscillate, a block connected thereto and provided with bearing portions, another block provided with a knife-edge engaging said bearing portions, expansion-strips connected with said last-mentioned block and with said springs so as to force said last-mentioned block tightly against said bearing portions, means for alternately heating the expansion-strips, a motor-arm connected with said last-mentioned block and adapted to move to divers angles relatively to said springs, a stationary member engaged by said motor-arm to permit said arm to shift itself into different angular positions thereby causing the springs and the parts carried thereby to oscillate, and mechanism connected with said springs for translating motion therefrom to the mechanism to be driven.

7. In a pyromotor, the combination of a driven member, a swinging beam provided with expansion-strips, means for heating the said strips, the strips being alternately subjected to heat, means for causing the beam to oscillate through the expansion of the strips, means for actuating the driven member from the swinging beam, and means for adjusting the swing of said beam.

8. In a pyromotor, the combination of a supporting-frame, expansion-strips mounted to oscillate in the frame, means for heating the expansion-strips, the said strips being alternately subjected to the heat, a rocking member connected with the expansion-strips, a motor-arm connected with the rocking member, a stationary member engaged by said motor-arm and forming a resistance to said arm, to permit the arm to swing under the action of the expansion-strips, and thereby impart a swinging movement to said expansion-strips, means for adjusting said stationary member to regulate the swing of said motor-arm, a driven member mounted in the supporting-frame, and a driving connection between the expansion-strips and said driven member.

9. In a pyromotor, the combination of a beam, a source of heat, the beam being provided with expansion-strips and mounted to swing bodily whereby the expansion-strips may be alternately subjected to the action of the heat, means for causing the beam to swing when the expansion-strips are heated, and mechanism driven by the swinging movement of said beam.

10. In a pyromotor, the combination of a beam, a source of heat, the beam being provided with expansion-strips and mounted to swing bodily whereby the expansion-strips may be alternately subjected to the action of the heat, mechanism for causing the beam to swing when the expansion-strips are heated, rocking levers connected with said beam and actuated by the movements thereof, a shaft, a fly-wheel mounted loosely on the shaft, a ratchet-wheel secured to the hub of the fly-wheel, and ratchet mechanism connected with said rocking levers and with said ratchet-wheel for conveying motion to the latter and the fly-wheel.

11. In a pyromotor, the combination of a frame provided with standards, a shaft mounted in the standards, a swinging beam comprising leaf-springs mounted loosely upon said shaft, blocks connecting the ends of said springs together, the block connecting the upper ends of said springs being provided with notches, expansion-strips connected at their lower ends with the block at the lower ends of the springs, and a rocking member connected with the upper portion of said expansion-strips and provided with a bearing-surface engaging the notches in the said upper block, said expansion-strips being rendered tight by said springs, a motor-arm connected at its upper end with said rocking member and adapted to move to different angles, a stationary pin engaged by the lower portion of said arm and against which the arm is adapted to press, means for alternately heating the expansion-strips to cause strain on the rocking member, thereby causing the swinging beam to oscillate, and mechanism driven by the movement of the swinging beam.

12. In a pyromotor, the combination of a swinging member provided with expansion-strips, means for applying heat directly to said strips alternately, means by which the swinging member is caused to oscillate through the expansion of the strips, a driven member, mechanism connected with said swinging member for transmitting motion to said driven member, and an off-center spring connected with said swinging member.

13. In a pyromotor, the combination with a revoluble driven member, a swinging member provided with expansion-strips for absorbing and radiating heat, a source of heat for heating said expansion-strips, means by which the swinging member is caused to oscillate through the expansion of the strips, the said strips being exposed alternately to the action of the heat by the swinging of said member, an off-center spring connected with said swinging member for causing the same to dwell momentarily in its extreme position, and mechanism connected with said swinging member for actuating said driven member.

14. A pyromotor, comprising expansion-strips mounted to oscillate, means for alternately heating the strips, a rocking member connected with the expansion-strips and on which the force derived from the expansion and contraction of said strips is exerted, means for utilizing the power exerted on the said rocking member to cause the expansion-strips to oscillate, and mechanism driven by the oscillation of said expansion-strips.

15. A pyromotor, comprising a wheel mounted to turn, expansion-strips mounted to oscillate, means for alternately heating the strips, a member connected with the expansion-strips and on which the force derived from the expansion and contraction of said strips is exerted, means for utilizing the strain exerted on the said member to cause the expansion-strips to oscillate, and means for driving the said wheel by the oscillating movement of the expansion-strips.

16. A pyromotor comprising expansion-strips, heating means to which the strips are alternately subjected, a shaft on which the strips are mounted to oscillate, a member connected with the expansion-strips and on which the force derived from the expansion and contraction of said strips is exerted, means connected with said member by which the force exerted on the latter is caused to oscillate the expansion-strips, means for varying the length of stroke of the oscillating strips, and mechanism driven by the oscillating movement of said expansion-strips.

17. A pyromotor comprising a frame, a shaft on which the frame is mounted to oscillate, expansion-strips carried by said frame, heating means to which the expansion-strips are alternately subjected, a rocking member connected with the expansion-strips and on which the force derived from the expansion and contraction of said strips is exerted, an arm connected with said rocking member, a pin engaged by said arm, the said pin being adjustable toward and from the said shaft, to vary the length of stroke of the oscillating frame, and mechanism driven by the movement of said frame.

18. In a pyromotor, expansion-strips, a shaft on which said strips are mounted to oscillate, a rocking block connected with the upper ends of said expansion-strips and on which the force derived from the expansion and contraction of said strips is exerted, a motor-arm connected at its upper end with said rocking block, a stationary member located adjacent to the said shaft, and engaged by the lower end of said motor-arm, the said motor-arm remaining constantly in contact with the said stationary member, the said arm being adapted to move to different angular positions and the said rocking block careening slightly at each oscillation of the said expansion-strips, means for subjecting the expansion-strips alternately to heat, whereby the strain on the rocking block causes the expansion-strips to oscillate, and means for transmitting motion from the said oscillating strips.

19. In a pyromotor, a shaft, a frame mounted to oscillate on the shaft and provided with expansion-strips, a rocking block connected with the upper ends of said expansion-strips, a motor-arm connected at its upper end with said rocking block, and having a slot in its lower end, a pin engaged by the slotted end of said motor-arm, the said pin being in vertical alinement with the shaft and adjustable toward and from the same, a source of heat to which the expansion-strips are alternately subjected, thereby causing the frame to oscillate, and mechanism driven by the oscillation of said frame.

20. A pyromotor comprising heating means, expansion-strips mounted to swing bodily, whereby the strips may be alternately subjected to the action of the heat, means for causing the expansion-strips to swing bodily when heated, and mechanism driven by the swinging movement of said strips.

21. In a pyromotor, the combination of a driven member, a device mounted to swing bodily and having members adapted to become elongated when heated, means for heating the said members alternately, means for causing the said device to swing bodily through the expansion and contraction of said members, and means for actuating the driven member from said device.

22. A pyromotor, comprising heating means, a device mounted to oscillate and having portions expanding when heated and adapted to be alternately subjected to the action of the heat, means for utilizing the force exerted by the expansion and contraction of said portions to cause the device to oscillate, and means for transmitting power from the said oscillating device.

23. In a pyromotor, heating means, a device mounted to oscillate bodily in a vertical plane above said heating means and having members adapted to be alternately subjected, by the oscillation of the device, to the action of the heat, the said members being adapted to become elongated when exposed to the heat and to contract when removed from exposure to the heat, a rocking block connected with the members of said device and on which the force of the expansion and contraction of said members is exerted, means connected with the rocking block for utilizing the power exerted thereon to cause the said device to oscillate, and means for transmitting motion from the oscillating device.

824,475. **COMPOSITION OF MATTER.** HUGO FRIEDMANN, Charlottenburg, Germany. Filed Nov. 15, 1905. Serial No. 287,520.

Claim.—1. The herein-described composition of matter to be used as an addition to printing-inks, or compounds which may afterward be converted, as by grinding and mixing, into such inks, consisting of resin, mineral oil, glycerin, and varnish.

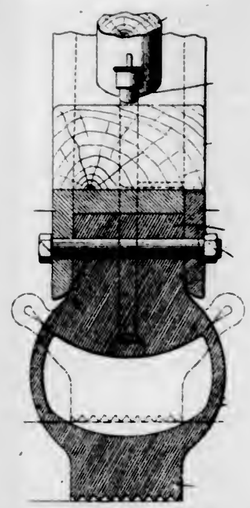
2. The herein-described composition of matter to be used as an addition to printing-inks, or compounds which may afterward be converted, as by grinding and mixing, into such inks, consisting of about one hundred to one hundred and sixty parts of a resin, such as gum-dammar, twenty-five to eighty parts of a mineral oil, such as petroleum, two hundred and ninety to four hundred and thirty parts of glycerin, and one hundred and twenty to two hundred and sixty parts of a varnish, such as linseed-oil varnish.

824,476. **WHEEL-TIRE.** THOMAS FURLONG, St. Louis, Mo. Filed Oct. 2, 1905. Serial No. 280,993.

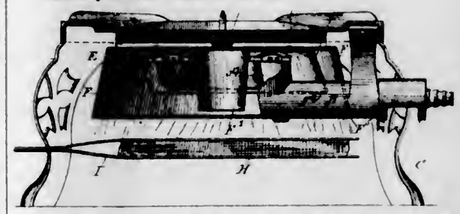
Claim.—1. An inflatable tire comprising a solid base portion having a flat face which bears upon the face of the rim of the wheel upon which the tire is placed, a solid tread portion having a flat outer face and being of approximately rectangular shape in cross-section, and comparatively thin side walls connecting the base and tread portions, the inner face of the base portion being convex and the inner face of the tread portion being concave so that when the tire is deflated the tread portion will rest squarely upon the base portion and thus produce practically a solid tire of rectangular shape in cross-section; substantially as described.

2. In a wheel, the combination with a flat metallic rim having a straight flange and a removable coöperating flange, of an inflatable tire having a solid base portion of approximately rectangular shape in cross-section which rests on the flat face of the wheel-rim and is confined between the flanges thereof, said base portion being of greater depth than the height of said flanges, a solid rectangular-shaped tread portion of approximately the same width as the base portion, and walls of comparatively thin material connecting the base and tread portions, the inner face of the base portion being convex and the inner face of the tread portion being concave so that when the tire is deflated the tread portion will rest squarely upon the base portion and all liability of the flanges of the rim of the wheel damaging the connecting walls of the tire will be obviated; substantially as described.

824,476.



824,477. **GAS-BROILER.** HENRY GANDAR, New York, N. Y. Filed July 15, 1905. Serial No. 269,869.



Claim.—1. A broiler attachment for gas-stoves having a ring-shaped burner, comprising a deflector formed of an inverted cup adapted to rest on the burner and provided with a central depending core extending in the opening of the burner, and an annular flange depending from the cup between the rim thereof and the said core.

2. A broiler attachment for gas-stoves having a ring-shaped burner, comprising a deflector formed of an inverted cup adapted to rest on the burner and provided with a central depending core extending in the opening of the burner, and an annular flange depending from the cup between the rim thereof and the said core, the lower edge of the flange being notched and terminating above the lower edge of the rim of the cup.

3. A broiler attachment for gas-stoves having a ring-shaped burner, comprising a deflector formed of an inverted cup adapted to rest on the burner and provided with a central depending core extending in the opening of the burner, and an annular flange depending from the cup between the rim thereof and the said core, the said rim and flange having registering cut-out portions for the passage of the supply-pipe of the burner.

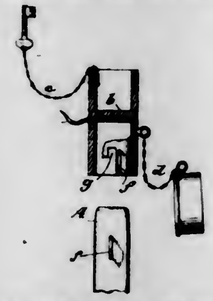
4. A broiler attachment for gas-stoves having a ring-shaped burner, comprising a deflector formed of an inverted cup having a narrow inwardly-extending flange at the lower edge of its rim, the said cup being adapted to rest on the burner and provided with a central depending core extending in the opening of the burner, and an annular flange depending from the cup between the rim thereof and the said core, the lower edge of the flange being notched and terminating above the lower edge of the rim of the cup, and the said flange extending downwardly and outwardly.

5. A broiler attachment for gas-stoves having a ring-shaped burner, comprising a deflector formed of an inverted cup having an inwardly-extending flange at the lower edge of its rim, the said cup being adapted to rest on the burner and provided with a central depending core arranged to extend in the opening of the burner, and an annular flange depending from the cup between the rim thereof and the said core.

6. A broiler attachment for gas-stoves having a ring-shaped burner, comprising a deflector formed of an inverted cup having an

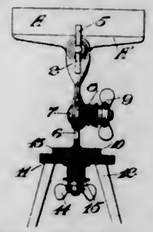
inwardly-extending flange at the lower edge of its rim, the cup being adapted to rest on the burner and provided with a central depending core extending in the opening of the burner, and an annular flange depending from the cup between the rim thereof and the said core, the said rim and flange having registering cut-out portions for the passage of the supply-pipe of the burner.

824,478. WATCHMAN'S OUTFIT FOR TEMPORARY ROUTES. GUY M. GEST, Cincinnati, Ohio. Filed Dec. 5, 1904. Serial No. 235,489.



Claim.—In a watchman's outfit for temporary or changeable routes and in which keys are used, a key-box horizontally divided to form endwise-open, upper and lower parts, the upper part intended to receive the key and the lower part fitted for mounting upon the upper end of a stake, whereby the box is supported, means for detachably connecting this latter to such stake and a hook-shaped arm A projecting from the outside of the box as shown and for the purpose described.

824,479. DITCHING-LEVEL. OSCAR HALVORSEN, Modesto, Cal. Filed Mar. 8, 1906. Serial No. 304,860.



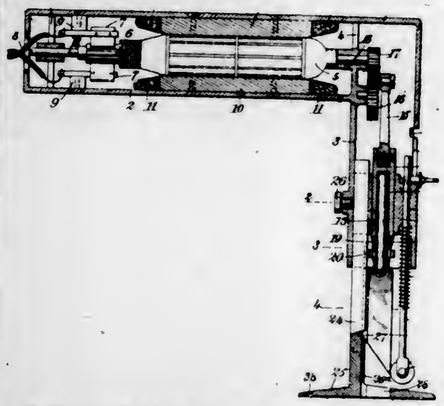
Claim.—1. In a leveling apparatus, a tripod or support having a flat perforated head, a vertically-disposed plate having a head fitting and turnable upon the tripod-head, a bolt extending therefrom through the head having a nut upon the lower end, a spiral spring disposed between the nut and the bottom of the tripod-head and a plurality of transversely-disposed turnable joints carried by the plate, and means for securing the level at the upper end thereof.

2. In a leveling apparatus, a tripod having a flat perforated head, a plate extending upward therefrom, having a screw-threaded bolt extension passing through the plate, a head resting upon the top of the plate and a spring and tension regulating means whereby the plate is turnably supported on a vertical axis, a pair of plates having the upper and lower ends at right angles, the lower ends of which clasp the upper end of the first-named plate, a screw-threaded bolt extending through the plates, a spring and tension adjusting means whereby the plates are clamped with a yielding pressure, and a support and level turnably carried upon the upper ends of said plates.

3. In a leveling apparatus, a tripod having a head, a plate having a shank extending through said head, an adjustable yielding pressure device whereby the plate is turnable about its vertical axis, a pair of plates yieldingly clamped to and turnable upon the upper end of the first-named plate, a level-supporting clamp connected with the upper ends of the pairs of plates and standing at right angles with the lower connection, and a yielding adjustable pressure device whereby said plates are clamped together.

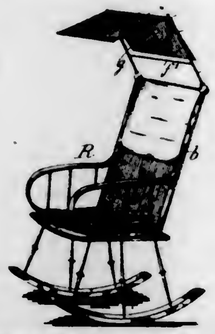
824,480. MOTOR-TOOL HOLDER. CHARLES B. HASTINGS, New York, N. Y. Filed Mar. 28, 1906. Serial No. 308,474.

Claim.—1. A motor-tool holder having a tubular casing, presenting a horizontal arm and a substantially vertical leg, a motor mounted in said arm, a post slidably mounted in said leg, means for clamping said leg to said post in different positions, a chuck adapted to carry a tool, means for guiding said chuck in said leg, and means for driving said chuck from said motor.



2. In a motor-tool holder, in combination, a tubular casing having a substantially horizontal arm and a substantially vertical leg, a motor mounted in said arm, a post slidably mounted in said leg, means for clamping said leg to said post at different heights, a chuck, a tool mounted in said chuck, means for guiding said tool on said post, and means for driving said chuck from said motor.

824,481. FANNING ATTACHMENT FOR ROCKING-CHAIRS. BRUNO HEINERICI, Mariner Harbor, N. Y. Filed Oct. 20, 1905. Serial No. 283,568.



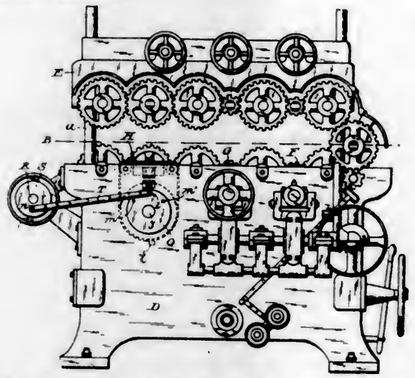
Claim.—1. In a fanning attachment for rocking-chairs, a fan comprising a shaft, a frame constituted by easily-bent rods attached to said shaft, and a covering for said frame forming in conjunction therewith a plurality of wings which may be adjusted to different angles to each other by bending the frame-rods.

2. The combination, with a rocking-chair, of a forwardly and upwardly inclined frame applied to the back thereof and embodying parallel side rods, a transverse brace connecting said rods intermediately of the length of the same, a shaft journaled in and extending between the upper ends of said side rods, angularly-related rectangular wings mounted on said shaft and of substantially the same area as the rectangular space bounded by said side rods and the brace and shaft, and a counterweighted rod applied to one end of said shaft.

824,482. SANDPAPERING-MACHINE. HENRY F. HOLTMANN, Indianapolis, Ind. Filed Aug. 12, 1905. Serial No. 273,868.

Claim.—1. A sandpapering-machine including a table having a yielding surface, guide-rolls at opposite sides of the table, a sand-belt extending across the surface of the table and the guide-rolls, and means for imparting reciprocatory movements to the sand-belt on the table.

2. A sandpapering-machine including a yielding table, guide-rolls at opposite sides of the table, a sand-belt extending across the table and the guide-rolls, a rotative drum to which the sand-belt is connected, and means for moving the drum rotatively forward and backward alternately.



3. A sandpapering-machine including a table, guide-rolls at opposite sides of the table, a sand-belt extending across the table and the guide-rolls, means for imparting reciprocatory movements to the sand-belt on the table, and means for shifting portions of the sand-belt from the table and advancing other portions of the sand-belt onto the table.

4. A sandpapering-machine including a table comprising an adjustable foundation having thereon a yielding substance on which are a plurality of elastic metallic plates removably supported, guide-rolls at opposite sides of the table, a sand-belt extending across the table on the plates and across the guide-rolls, and means for imparting reciprocatory movements to the sand-belt on the table.

5. A sandpapering-machine including a table, guide-rolls at opposite sides of the table, a drum mounted rotatively below the table and provided with a wrist-pin connected operatively therewith, a sand-belt attached to the drum and extending about the guide-rolls and across the table, a rotative shaft provided with a crank-pin, a connecting-rod connected to the crank-pin and also to the wrist-pin, and means for driving the rotative shaft.

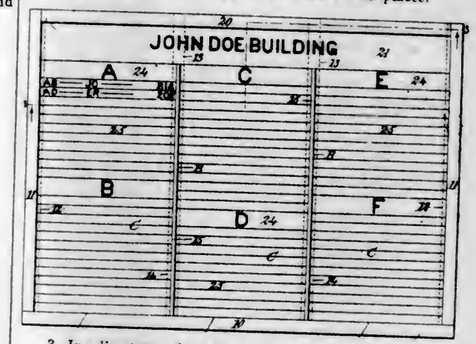
6. A sandpapering-machine including a table, guide-rolls at opposite sides of the table, a drum provided with a supporting-shaft and mounted below the table, a sand-belt connected to the drum and extending over the guide-rolls and across the table, a pair of disks secured to the supporting-shaft and having each a plurality of wrist-pin holes therein, wrist-pins insertible into either of the wrist-pin holes, a rotative shaft provided with a pair of crank-pins, and connecting-rods connected with the crank-pins and also with the wrist-pins.

7. A sandpapering-machine including a frame, a feed-table, feed-rolls, a sand-roll, a table supported in an opening in the feed-table between a pair of feed-rolls, guide-rolls mounted at opposite sides of the table, a drum mounted in the frame below the table, a sand-belt connected to the drum and extending about the guide-rolls and across the table, and means for imparting forward and backward movements alternately to the drum.

824,483. DIRECTORY DEVICE. CHARLES A. JOHNSON, Malden, Mass. Filed Dec. 7, 1905. Serial No. 290,807.

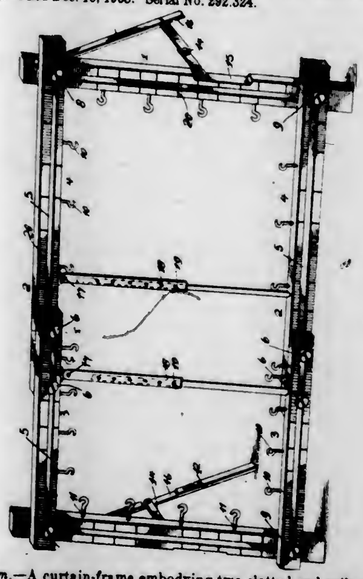
Claim.—1. In a directory device, a frame having opposing combined guide and division bars dividing the frame into one or more columns, name-slats arranged to fit one on the other in the column or columns formed by the guide and division bars, said slats being independent of each other and capable of assuming diagonal positions in the columns they occupy, and a sliding section for the frame, having guided movement on its members and adapted for locking the slats in place and permitting the removal or adjustment of the slats.

2. A directory, consisting of a frame having a sliding upper section and a series of combined guide and division bars extending upward from the lower member of the frame, dividing the frame into series of columns, said bars being T-shaped in cross-section, guide-flanges located at the inner side faces of the side members of the frame, and name-slats arranged to fit one upon the other in the columns formed by the said guide and division bars, the ends of the slats receiving the head portions of the said bars or receiving the flanges of the side bars of the frame, the uppermost section of the frame when in closed position locking the said slats in their places.



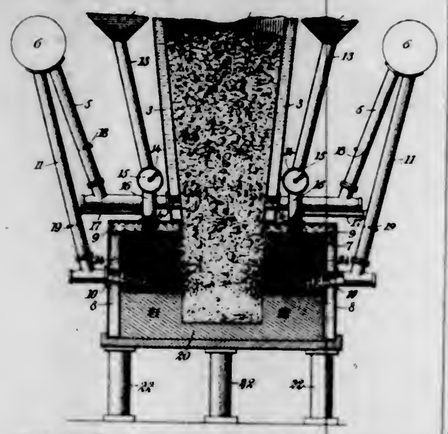
3. In a directory, a frame comprising a bottom bar and side bars, the side bars being provided with guide-flanges at their inner side edges, intermediate combined guide and division bars T-shaped in cross-section from their bottom portions to a point near the top, the top portions being flat, the web portions of the bars facing to the front, the edges of the head-sections being in alinement with the guide-flanges of the side bars of the frame, an upper section of the frame having sliding movement upon the upper portion of the combined guide and division bars and having guided movement on the upper portions of the side flanges of the frame, a series of initial slats and of name-slats, having grooves in their ends adapted to receive either a side guide-flange or a head portion of a combined guide and division bar, said slats being arranged in columns defined by the said guide and division bar, one slat resting upon another, all of the slats being held in said position by the upper sliding section of the frame engaging with the uppermost slat, as described.

824,484. CURTAIN-FRAME. FRANKLIN A. JUSTICE, Pittsburg, Pa. Filed Dec. 18, 1905. Serial No. 292,324.



Claim.—A curtain-frame embodying two slotted end rails, two sectional side rails adjustably connected to said end rails, legs pivotally connected to said end rails, toggle-levers pivotally connecting said legs and said end rails, telescopic braces pivotally connected to one of said side rails, the free ends of said braces being adapted to bear against the other side rail, inwardly-extending revoluble hooks carried by all the rails, means for adjusting said side rails, and means for adjusting said braces.

824,485. **BLAST-FURNACE.** WILLIAM KEMP, Tucson, Ariz., assignor of one-half to Merrill P. Freeman, Tucson, Ariz. Filed June 30, 1905. Serial No. 267,741.



Claim.—1. The combination of an ore-feeding chamber, a conveyer for supplying fuel to a point adjacent thereto, an air-pipe connected with said fuel-chamber at the point of entry of said fuel into said chamber so as to maintain said fuel at a lower temperature until after actually entering said fuel-chamber, and means for supplying a draft through said air-pipe sufficient to prevent combustion of the fuel before entering said chamber.

2. In a furnace, the combination of an ore-feeding chamber, means for supplying air directly thereto for the purpose of burning out sulfurous components contained within the ores, a fuel-chamber independent of said ore-feeding chamber, means for supplying fuel to said fuel-chamber, and mechanism for supplying an air-blast to the fuel while in transit to said fuel-chamber and also for supplying air to said fuel-chamber.

3. In a furnace, the combination of an ore-feeding chamber, a horizontally-disposed wall located adjacent to the bottom of said ore-feeding chamber and of greater width than the same, vertically-disposed walls supporting said horizontally-disposed walls, means for feeding solid fuel through said horizontally-disposed walls, and a twyer for supplying an indraft of air to said fuel, said indraft being so arranged as to follow said fuel into said fuel-chamber, thereby preventing premature combustion of the fuel.

4. In a furnace, the combination of an ore-feeding chamber, a horizontally-disposed wall located adjacent to the bottom thereof and of greater width than the same, vertically-disposed walls supporting said horizontally-disposed walls, means for feeding solid fuel through said horizontally-disposed walls, and means for cooling said solid fuel as thus fed through said horizontally-disposed walls.

5 In a furnace, the combination of an ore-feeding chamber having its lower end open, a smelting-chamber communicating with said lower end and provided with portions serving as fuel-chambers, said smelting-chamber being further provided with comparatively thick walls serving as bottoms for said fuel-chambers, and with a space intermediate of said thick walls serving as a metal-well, mechanism for supplying solid fuel into said fuel-chambers immediately over said walls, and cooling devices for maintaining the temperature of said solid fuel comparatively low until said fuel enters said fuel-chamber.

6. In a furnace, the combination of an ore-feeding chamber, a fuel-chamber disposed adjacent to the lower end of said ore-feeding chamber and of greater width than the same, means for supplying coal directly into said fuel-chamber, and mechanism for maintaining said coal at a low temperature until actually delivered within said fuel-chamber.

7. In a furnace, the combination of an ore-feeding chamber, a horizontally-disposed wall located adjacent to the bottom thereof and of greater width than said ore-feeding chamber, vertically-disposed walls supporting said horizontally-disposed wall, means for feeding solid fuel through said horizontally-disposed wall, and twyers connected with said vertically-disposed walls for supplying air therethrough.

8. In a furnace, the combination of an ore-feeding chamber, fuel-chambers disposed at the lower ends thereof and spaced apart by a distance approximating the width of the lower end of said ore-feeding chamber, mechanism for feeding coal directly into said fuel-chambers, and means for supplying air to said coal while in transit to said fuel-chambers, thereby preventing premature combustion.

9. The combination with a furnace having a smelting-chamber and a contracted feed-chamber opening through the upper wall of the smelting-chamber, of a fuel-feed conduit extending into the upper wall of the smelting-chamber beside the feed-chamber, twyers delivering to the smelting-chamber, and pipes connecting the twyers and conduit.

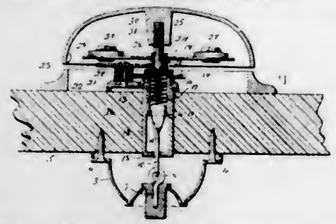
10. The combination of a smelting-chamber a plurality of branch conduits opening thereinto, means for supplying solid fuel to said branch conduits, twyers connected directly to said smelting-chamber, and branch pipes extending from said twyers to said branch conduits.

11. In a furnace, the combination of a smelting-chamber, twyers for delivering air thereinto, a conduit for feeding coal to said furnace, branch conduits connected with said conduit and opening directly into said smelting-chamber, spiral feed-screws mounted within said first-mentioned conduit and adapted to distribute said coal through said branch conduits, and separate pipes connected with said twyers and with said branch conduits.

12. The combination of a smelting-chamber, a main fuel-feeding conduit, a substantially horizontal conduit leading from said main conduit, branch conduits connecting said horizontal conduit with said smelting-chamber, a conveyer operating in said horizontal conduit, means for applying air continuously to said smelting-chamber below said conduits, and pipes for supplying air directly to said branch conduits.

13. The combination of a smelting-chamber, a twyer delivering thereto, a fuel-feeding conduit, a spiral conveyer mounted within said conduit, a pipe connecting the twyer and the conduit between the conveyer and the smelting-chamber, and means for feeding an uninterrupted supply of air through said twyer to said smelting-chamber.

824,486. **PUSH-BUTTON BELL.** JOSIAH R. KIDNEY, East Hampton, Conn. Filed Oct. 9, 1905. Serial No. 281,917.

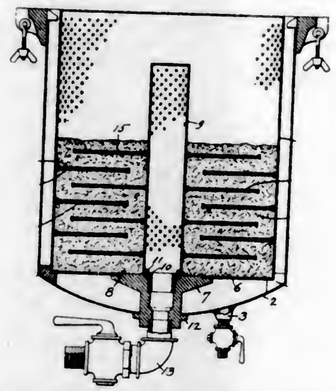


Claim.—1. In a bell, the combination with the frame thereof, of a housing rigidly secured at one end thereto and formed at its opposite end with a narrow slot, a rotary hub located within the said housing which forms a bearing for it and having at one end a narrow slot, an operating-bar passing through the narrow slot in the said housing and having a spiral passing through the said slot in the hub and turning the hub in either direction within the said housing, a push-button for operating the said bar in one direction, a spring located within the said hub for operating the said bar in the other direction, a gong connected with the said frame, a striker-carrier, and means for transmitting the rotary movement of the said hub to the said carrier.

2. In a bell, the combination with a frame having a cross-bar located in its plane, of a tubular housing fixed to the said cross-bar and extending in one direction therefrom, a threaded post connected with the cross-bar and extending in the other direction therefrom in line with the said housing, a gong applied to the said post, a striker-carrier mounted upon the post and revolving concentrically with the said frame and gong, a rotary hub located within the housing and formed with a narrow slot, an operating-bar formed with a spiral which enters the said slot and operates to turn the said hub in either direction within the said housing, and gearing between the hub and striker-carrier.

3. In a bell, the combination with a frame having a cross-bar, of a housing secured to the said bar, a plate secured to the said bar, a threaded post carried by the said plate and located in line with the housing but extending in the opposite direction therefrom, a gong mounted upon the post, a striker-carrier swiveled upon the post and revolving concentrically with the gong, a rotary hub located within the housing and formed with a narrow slot, an operating-bar having a spiral entering the said slot and rotating the said hub within the said housing, a push-button for operating the bar in one direction, a spring for operating the bar in the opposite direction, and gearing between the hub and rotary striker.

824,487. **FILTER.** WILLIAM B. KLEIN, Chicago, Ill. Filed Aug. 2, 1905. Serial No. 272,331.



Claim.—1. An imperforate filter-plate having a surface thereof provided with discontinuous rounded projections, there being discontinuous rounded recesses in the body of said plate intermediate of said projections, substantially as specified.

2. An imperforate filter-plate having its opposite sides provided with discontinuous rounded projections, there being discontinuous rounded recesses in the body of said plate intermediate of said recesses, substantially as specified.

3. An imperforate sheet-metal filter-plate having the body bent outwardly on each side thereof to form discontinuous rounded projections on one side and corresponding rounded recesses on the other side, the projections and recesses on one side being staggered with respect to those on the other side, substantially as specified.

4. A conducting element for filters comprising in combination a plate having its opposite faces provided with projections extending to one edge of said plate and terminating short of the opposite edge thereof, leaving the plate plain adjacent the latter edge, a screen on each side of said plate having each of its opposite edges provided with a clamping-ring, the ring at one edge bearing against the projections at one edge of said plate and the ring at the opposite edge bearing against the plain portion of said plate, substantially as specified.

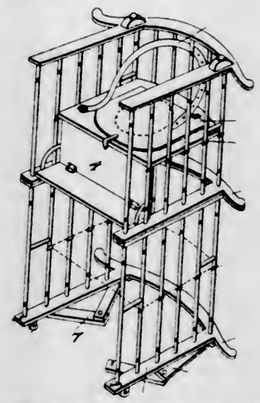
5. A conducting element for filters comprising in combination an imperforate plate having its opposite faces provided with discontinuous projections and recesses intermediate said projections, said projections and recesses extending to one edge of said plate and terminating short of the opposite edge thereof, leaving the plate plain adjacent the latter edge, a screen on each side of said plate, having each of its opposite edges provided with a clamping-ring, the ring at one edge bearing against the projections at one edge of said plate and the ring at the opposite edge bearing against the plain portion of said plate, substantially as specified.

6. In a filter, the combination of an outer casing, a crib or kettle within said casing having perforated side walls, a discharge-outlet from said casing, a central perforated tube within said crib or casing communicating with said outlet, a series of corrugated annular plates projecting within said casing from said crib or kettle and each having a plain or uncorrugated inner edge portion, annular screens above and below said plates, said screens having clamping-rings around the edges thereof, the inner rings corresponding to and adapted to engage the plain or uncorrugated edge portions of the plates, filtering material in said crib or kettle intermediate the outer wall and the central perforated tube and intermediate said screens, and means for conducting the filtered liquid to the central perforated tube, substantially as specified.

7. In a filter, the combination of an outer casing, a crib or kettle within said casing having perforated side walls, a discharge-outlet from said casing, a central perforated tube within said crib or casing and communicating with said outlet, a series of corrugated annular plates within said crib or casing and surrounding said tube, each of said plates having a plain or uncorrugated outer edge portion, annular screens above and below said plates, said screens having clamping-rings around the edges thereof, the outer rings corresponding to and adapted to engage the plain or uncorrugated edge portions of the plates, suitable filtering material in said crib or kettle intermediate the outer wall and central perforated tube and intermediate said screens, and means for distributing the liquid from the crib or kettle to the filtering material, substantially as specified.

8. In a filter, the combination of an outer casing, a crib or kettle within said casing having perforated side walls, a discharge-outlet from said casing, a central perforated tube within said crib or casing and communicating with said outlet, a series of corrugated annular plates within said crib or casing and communicating with said outlet, each of said plates having a plain or uncorrugated outer edge portion, a series of corrugated annular plates projecting within said casing from said crib or kettle and each having a plain or uncorrugated inner edge portion, annular screens above and below said plates, said screens having clamping-rings around the edges thereof corresponding to the plain or uncorrugated edge portions of the plates, and suitable filtering material in said crib or kettle intermediate the outer wall and central perforated tube and intermediate said screens, substantially as specified.

824,488. **COMBINATION CHILD'S BED AND CHAIR.** CHARLES A. KOENIG and JOHN A. VALLEE, San Francisco, Cal. Filed June 5, 1905. Serial No. 263,779.



Claim.—1. A device consisting of rectangular frames each open at one side and having open ends, hinges at the meeting ends of the sections, rockers upon the frames opposite to the hinges, movable means for partially closing the open ends of the frames, and a hammock having means engaging the frames whereby said hammock is extended and supported.

2. A device consisting of rectangular frames with connecting-hinges at one end said frames each having one side and both ends open, rockers fixed transversely upon the sides opposite to the hinges, a hammock and means for attaching and suspending it between the sides, and movable closures and braces fitted to opposite ends of the structure and adapted to partially close the open ends.

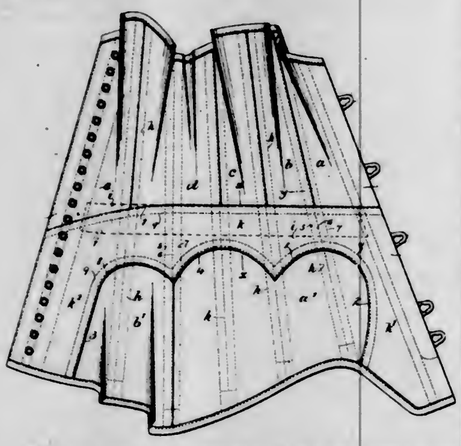
3. A device consisting of rectangular frames hinged together at their meeting ends and foldable to lie upon one side or to stand upon end said frames each open on one side and having both ends open, a seat fitting between the sides, and means intermediate of the open ends of the frames, for securing the seat at different elevations between the sides.

4. A device comprising rectangular frames hinged together at their meeting ends and foldable to lie upon one side or to stand, upon end said frames each open at one side and both ends, a seat fitting between the sides, means for securing the seat at different elevations and positions between the sides, and a flexible strap or band attached to the frame so as to be secured about the body of the occupant of the seat.

824,489. **APPAREL-CORSET.** DANIEL KOPS, New York, N. Y. Filed Jan. 29, 1906. Serial No. 298,459.

Claim.—1. An apparel-corset, comprising a fabric body, bone-pockets and bones, a strap of webbing at the waist-line on the under side extending from front to back, a surface-strip of fabric overlying

the fabric body at the waist portion and also extending from front to back, and the ends of which strip extend down at the front over the front steels and also at the back eyelet portion to the lower edge of the corset.



2. An apparel-corset, comprising a fabric body, bone-pockets and bones, a strap of webbing at the waist-line on the under side extending from front to back, a surface-strip of fabric overlying the fabric body at the waist portion and also extending from front to back, and the ends of which strip extend down at the front over the front steels and also at the back eyelet portion to the lower edge of the corset and the inner edges of which strip curve at the angles into the lower edge of the strip so as to produce an arched conformation over the hips.

3. An apparel-corset, comprising a fabric body of open-woven material, bone-pockets and bones secured thereto and extending from the lower to the upper edges, a surface-strip of overlying close-woven fabric at the waist portion, the ends of which extend down at the front overlying the front steels and also extending down at the back eyelet portion to the lower edge of the corset.

4. An apparel-corset, comprising a fabric body of open-woven material, bone-pockets and bones secured thereto and extending from the lower to the upper edges, a surface-strip of overlying close-woven fabric at the waist portion, the ends of which extend down at the front overlying the front steels and also extending down at the back eyelet portion to the lower edge of the corset, and the inner edges of which strip at the angles are curved so as to produce an arched conformation of said strip over the hips.

5. An apparel-corset, comprising a fabric body of open-woven material, bone-pockets and bones connected thereto between the top and bottom edges, a strap of webbing at the waist-line on the under side extending from the front to the back, a surface strip of overlying close-woven fabric at the waist portion, the ends of which extend down at the front over the front steels and also at the back eyelet portion to the lower edge of the corset and the inner edges of which strip curve at the angles into the lower edge of the strip.

6. An apparel-corset, comprising a single-ply body of open-woven material having sections *a*, *b*, *c*, *d* and *e* in the portion above the waist and the secctions *a'* and *b'* in the portion below the waist, bone-pockets and bones therein secured to the under surface of the said material, a strap of webbing at the waist-line on the under side extending from front to back and passing under the bone-pockets and bones, a surface strip of overlying close-woven fabric at the waist portion and on the opposite side of the corset to the said strap, the ends of which strip extend down at the front over the front steels and also at the back eyelet portion to the lower edge of the corset and the inner edges of which strip curve at the angles into the lower edge of the strip.

7. An apparel-corset, comprising a fabric body, bone-pockets and bones and a surface strip of fabric overlying the fabric body and extending from the front to the back and placed at a predetermined position for a long, medium or short waist figure and the ends of which strip extend down at the front over the front steels and also at the back eyelet portion to the lower edge of the corset.

8. An apparel-corset comprising a fabric body having sections *a*, *b*, *c*, *d* and *e* in the portion above the waist and the sections *a'* and *b'* in the portion below the waist, bone-pockets and bones and a surface strip of fabric overlying the fabric body and extending from the front to the back and placed at a predetermined position for a long, medium or short waist figure and the ends of which strip extend down at the front over the front steels and also at the back eyelet portion to the lower edge of the corset.

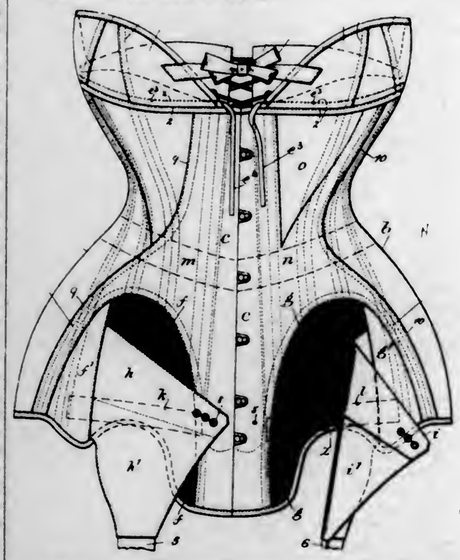
9. An apparel-corset, comprising a single-ply fabric body, bone-pockets and bones, a strap of webbing at the waist-line on the under side extending from front to back, a surface strip of heavier fabric overlying the fabric body at the waist portion and also extending from front to back, and the ends of which strip extend down at the front over the front steels and also at the back eyelet portion to the lower edge of the corset.

10. An apparel-corset, comprising a single-ply fabric body, bone-pockets and bones, a strap of webbing at the waist-line on the under side extending from front to back, a surface strip of heavier fabric overlying the fabric body at the waist portion and also extending from front to back, and the ends of which strip extend down at the front over the front steels and also at the back eyelet portion to the lower edge of the corset and the inner edges of which strip curve at the angles into the lower edge of the strip so as to produce an arched conformation over the hips.

11. An apparel-corset, comprising a single-ply fabric body of open-woven material, bone-pockets and bones secured thereto and extending from the lower to the upper edges, a surface strip of heavier overlying close-woven fabric at the waist portion, the ends of which extend down at the front overlying the front steels and also extending down at the back eyelet portion to the lower edge of the corset.

12. An apparel-corset, comprising a single-ply fabric body of open-woven material, bone-pockets and bones secured thereto and extending from the lower to the upper edges, a surface strip of heavier overlying close-woven fabric at the waist portion, the ends of which extend down at the front overlying the front steel and also extending down at the back eyelet portion to the lower edge of the corset, and the inner edges of which strip at the angles are curved so as to produce an arched conformation of said strip over the hips.

824,490. APPAREL-CORSET. DANIEL KOPS, New York, N. Y. Filed Feb. 1, 1906. Serial No. 298,913.



Claim.—1. An apparel-corset provided at the front with concavo-convex boned extensions from near the front steels to the under-arm portions which are tapering and the lower edges of which are secured to the corset appreciably below the top edge of the corset so that the portion of the corset above said sewed line of union materially assists in the configuration assumed by each extension.

2. An apparel-corset provided at the front with concavo-convex extensions from near the front steels to the under-arm portions which are tapering and the lower edges of which are secured to the corset appreciably below the top edge of the corset so that the portion of the corset above said sewed line of union materially assists in the configuration assumed by each extension and diverging bones secured to said extensions upon the under surface for stiffening the said extensions in the performance of their functions.

3. In an apparel-corset, the combination with the fabric sections thereof, of semicircular gores located entirely in the lower front portions adjacent to the steels, composed of open-woven flexible material and straps of webbing secured upon the under surface of said gores and at the lower edges thereof.

4. In an apparel-corset, the combination with the fabric sections thereof, of semicircular gores in the lower front portions adjacent to the steels, composed of open-woven flexible material and straps of webbing secured upon the under surface of said gores and at the lower edges thereof and said gores provided with incut lower edges, the said straps coinciding with the innermost portion, said edges serving to prevent the lower edge of the gores from yielding, compelling the open-woven material of the gores above the same to yield.

5. In an apparel-corset, the combination with the fabric sections thereof, of semicircular gores located entirely in the lower front portions adjacent to the steels, composed of open-woven flexible material and straps of webbing secured upon the under surface of said gores and at the lower edges thereof and tapering inclined straps having skirt extensions and hose-supporter straps connected thereto sewed to the corset and extending over the lower portions of said gores.

6. In an apparel-corset, the combination with the fabric sections of a corset and gores located entirely at the lower front portions adjacent to the front steels, of main front fabric sections extending vertically of the steels between the top and bottom edges and curved prolongations of said sections extending away from the front steels and encircling said gores with the outer edges of the prolongations curved and merging with the outer edges of said main sections at the upper portions.

7. An apparel-corset provided at the front with concavo-convex boned extensions from near the front steels to the under-arm portions which are tapering and the lower edges of which are secured near the top edge of the corset, pockets formed at the lines of connection of the extensions and corset and a draw-string in each pocket.

8. An apparel-corset provided at the front with concavo-convex boned extensions from near the front steels to the under-arm portions which are tapering and the lower edges of which are secured appreciably below the top edge of the corset and in a tapering relation thereto, pockets formed at the lines of connection of the extensions and corset and a draw-string in each pocket.

9. An apparel-corset including in each half a series of fabric sections in the back and under-arm portions that trend forward from the lower back and hip portions as they extend upward toward the front portion of the corset and boned extensions of concavo-convex form secured near the upper edge of the corset and extending from near the front steels to the under-arm portions and to which a support is imparted by said forwardly-extending sections.

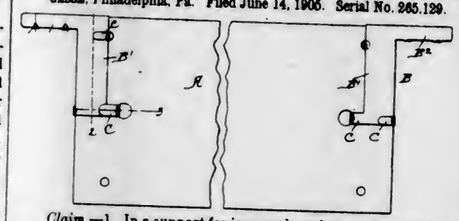
10. An apparel-corset including in each half a series of fabric sections in the back and under-arm portions that trend forward from the lower back and hip portions as they extend upward toward the front portion of the corset and yielding gores in the lower front portions of the corset adjacent to the front steels and tapering inclined straps coacting with said gores and which parts the said forwardly-extending sections tend to hold down to place.

11. An apparel-corset including in each half a series of fabric sections in the back and under-arm portions that trend forward from the lower back and hip portions as they extend upward toward the front portion of the corset, boned extensions of concavo-convex form secured near the upper edge of the corset and extending from near the front steels to the under-arm portions and to which a support is imparted by said forwardly-extending sections, yielding gores in the lower front portions of the corset adjacent to the front steels and tapering inclined straps coacting with said gores and which parts the said forwardly-extending sections tend to hold down to place.

12. An apparel-corset provided at the front with concavo-convex boned extensions from near the front steels to the under-arm portions which are tapering and the lower edges of which are secured to the corset appreciably below the top edge of the corset so that the portion of the corset above said sewed line of union materially assists in the configuration assumed by each extension and means for adjustably connecting the adjacent edges near and above the front steels.

13. An apparel-corset provided at the front with concavo-convex boned extensions from near the front steels to the under-arm portions which are tapering and the lower edges of which are secured near the top edge of the corset, pockets formed at the lines of connection of the extensions and corset, a draw-string in each pocket and means for adjustably connecting the adjacent edges near and above the front steels.

824,491. SUPPORT FOR JACQUARD-CARDS. ARTHUR J. LAGASSE, Philadelphia, Pa. Filed June 14, 1905. Serial No. 265,129.



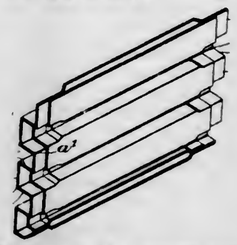
Claim.—1. In a support for jacquard-cards, a sheet-metal blank applied to each end of the card, said blank provided with a horizontal extension extending outward from the end of the card parallel with the upper edge thereof, a vertical portion formed upon the support, the outer edge of the vertical portion being flush with and extending parallel with the outer edge of the card, and means for securing said vertical portion to the card, as specified.

2. A support for jacquard-cards consisting of a sheet-metal T-shape blank, said blank adapted to be folded through the center of the horizontal leg thereof, the two vertical leaves after being folded adapted to straddle the upper edge of the card, and the outer edge of the vertical portions coming flush with the outer end of the cards, and means for securing the vertical leaves to the card, as specified.

3. A support for jacquard-cards consisting of a sheet-metal T-shape blank, said blank adapted to be folded through the center of the horizontal leg thereof, the two vertical leaves after being folded adapted to straddle the upper edge of the card, and the outer edge of the vertical portions coming flush with the outer end of the cards, means for removably securing the vertical leaves of the support to the card, as specified.

4. As a new article of manufacture, a support for jacquard-cards consisting of a T-shape blank of sheet material, said blank adapted to be folded through the center of the horizontal portion thereof, the two leaves of the vertical portion thus formed straddling the upper edge of the card so that one edge of the vertical portion will be flush with the outer end of the card, extension-strips formed at the edges of the leaves of the vertical portion adapted to pass through the lace and peg holes of the card and bent over upon the opposite leaf, and points formed upon the edges of the leaves of the horizontal portion adapted to be bent over the opposite leaves, as and for the purpose specified.

824,492. COOLER. D MCRA LIVINGSTON, New York, N. Y. Filed Nov. 25, 1905. Serial No. 289,051.

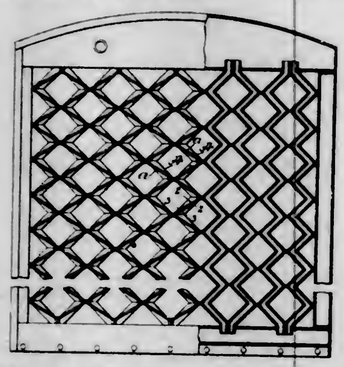


Claim.—1. A cooler or like apparatus having pairs of walls forming conduits affording a circuitous passage for the fluid to be cooled, one of said walls having at both side edges return-bends or hooked portions engaging outwardly-projecting plain portions formed on opposite sides of the companion wall, the side edges of the wall on which the hooks are formed being slit between said hooks.

2. A cooler composed of separate corrugated plates assembled in pairs and producing conduits affording circuitous passages for the fluid to be cooled, one of said plates having on its two side edges return-bends or hooked portions, and the companion plate having out-

wardly-disposed plain portions at both edges engaged by the hooks of the companion plate, the side edges of the plate formed with hooks being slit at the angles between the hooked portions.

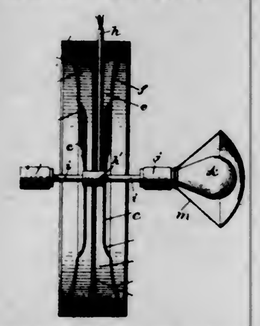
824,493. COOLER. D. McRA LIVINGSTON, New York, N. Y. Filed Nov. 25, 1905. Serial No. 289,052.



Claim.—1. A cooler or like apparatus having conduits formed with bends to produce circuitous passages, each conduit being composed of a pair of plates joined at the side edges on lines diagonal to the median line of the conduit.

2. A cooler or like apparatus formed of conduits arranged to present a diamond pattern, each conduit being formed of corrugated plates, the plates forming a conduit being connected with each other at the side edges on lines that are disposed in each bend of the conduit diagonal to the median line of the conduit, the joints of adjacent conduits contacting with each other at the angles.

824,494. ELECTRIC SIGN. GEORGE R. MACOMBER, Baltimore, Md. Filed Dec. 22, 1905. Serial No. 292,884.

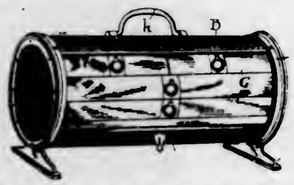


Claim.—A sign having a circular wall; a flat wall back within said circular wall; letters or other characters placed radially within said circular wall and also inclined—the inner ends being depressed, and each letter or character curved from top to bottom, the uppermost letters or characters having the greatest curvature and those on either side proceeding downward having a gradually-decreasing curvature and the lowermost having the least curvature; a lamp supported at the center but in front of the sign, and a reflector covering the lamp to throw the light equally on all the letters or characters.

824,495. TOOL-BOX. FRANK G. MARBACH, Medina, Ohio. Filed Dec. 6, 1905. Serial No. 290,576.

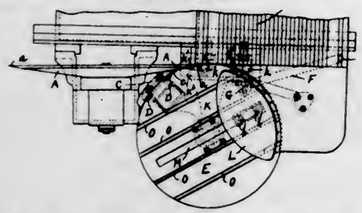
Claim.—1. A tool-case having a sheet-metal body, cast-metal ends having flanges at right angles to each other on their inside and the said body secured at its ends within the inner of said flanges, sheet-metal end plates secured to the outer of said flanges and wooden heads fixed to the inside thereof in the ends of said body, drawers slidably mounted on said heads and a door over the front of said drawers, said cast-metal ends having straight bottom rests to support the case.

2. A tool-case consisting of a sheet-metal cylindrical body, and supports of ring shape for said body, heads eccentrically secured in said end supports within the ends of said body, end plates fixed at their edges to said end supports and carrying said heads, said heads spaced from the ends of said body around their bottom, and a rotary sliding door having its ends confined in the space between said heads and said body.



3. As a new article of manufacture, a tool-case comprising a sheet-metal cylindrical body, ring-shaped end supports to which said body is secured and having bottom rests to stand upon, eccentrically-mounted heads in separate pieces rigidly secured within the ends of said body, whereby said heads are spaced from the bottom of said body, and a door substantially semicylindrical in cross-section adapted to slide between said heads and said body at its bottom.

824,496. ATTACHMENT FOR MEAT CUTTING OR SLICING MACHINES. FREDERICK W. MARGETTS, East Dulwich, England. Filed Feb. 5, 1906. Serial No. 299,461.



Claim.—1. In meat cutting or slicing machines of the character described, the combination therewith of a curved guide-piece fixed near to the cutting edge of the rotating cutter, and a movable curved guide traveling in a circular path and operated by suitable mechanism connected to the reciprocating table which carries the meat to and from the rotating cutter, substantially as and for the purpose hereinbefore described.

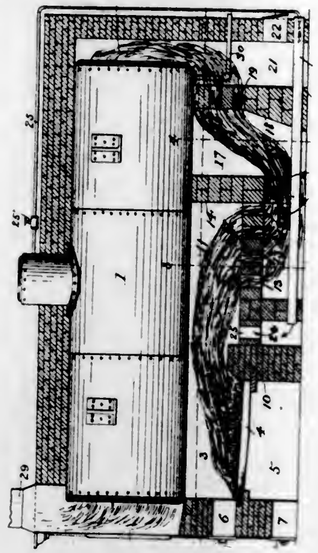
2. An attachment for meat cutting or slicing machines of the character described, comprising an upright and curved guide-piece fixed with its leading edge in rear of the edge of the rotating cutter, and a movable curved guide mounted to slide in a diametral slot in a horizontally-rotating table connected to the reciprocating table of the machine so as to make a partial forward and backward revolution as when the reciprocating table travels forward and backward, substantially as described and for the purpose stated.

3. An attachment for meat cutting or slicing machines of the character described, comprising an upright and curved guide-piece fixed with its leading edge in rear of the edge of the rotating cutter, a horizontally-rotating table having a diametral slot therein, and mounted on a center of motion beneath its plane, means for connecting said horizontally-rotating table to the reciprocating table of the machine, so that it will make a partial forward and backward revolution as when the reciprocating table travels forward and backward, and a movable upright and curved guide slidably mounted in said diametral slot in the horizontally-rotating table, substantially as and for the purpose hereinbefore described.

824,497. SMOKE-CONSUMING FURNACE. CYRUS G. MARK, Robesonia, Pa. Filed Nov. 27, 1905. Serial No. 289,217.

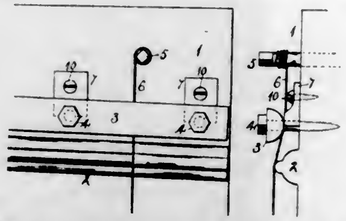
Claim.—1. In a smoke-consuming furnace, a boiler, a secondary combustion-chamber, a supplemental combustion-chamber below the secondary chamber, means of communication between the two chambers consisting of a perforated wall adapted to become highly heated and neutralize the carbonic oxid, an imperforate wall of masonry forming the rear end of the combustion-chamber and extending to the boiler, and means for supplying air to the secondary combustion-chamber through the bottom at the front end thereof adjacent to the bridge-wall.

2. In a smoke-consuming furnace, a boiler, a furnace, a secondary combustion-chamber, a supplemental combustion-chamber under the secondary combustion-chamber, an additional combustion-chamber in rear of both of said chambers, means of communication between the lower part of the secondary chamber and the upper part of the supplemental chamber consisting of a perforated wall adapted to be brought to a state of incandescence, an imperforate wall of masonry extending to the boiler and forming the rear end of the secondary combustion-chamber, and an air-chamber intermediate the furnace and the secondary combustion-chamber provided with openings in the top thereof communicating with said secondary combustion-chamber.



3. In a smoke-consuming furnace, a boiler, a furnace, a secondary combustion-chamber, a supplemental combustion-chamber under the secondary combustion-chamber, an additional combustion-chamber in rear of both of said chambers, means of communication between the lower part of the secondary chamber and the upper part of the supplemental chamber consisting of a perforated wall adapted to be brought to a state of incandescence, an imperforate wall of masonry extending to the boiler and forming the rear end of the secondary combustion-chamber, an air-chamber intermediate the furnace and the secondary combustion-chamber provided with openings in the top thereof communicating with said secondary combustion-chamber, and an air-supply pipe extending from the rear end of the structure, through the supplemental combustion-chamber and heated by the gases therein, and discharging into the air-chamber.

824,498. PRESSER-BAR FOR PIANOS. JOSEPH E. MATTHEWS and JOHN W. MATTHEWS, Oregon, Ill. Filed July 6, 1905. Serial No. 268,567.



Claim.—In a piano, the combination of a pin-plank, a presser-bar, screws connecting the presser-bar with the pin-plank, supports connected to the pin-plank by screws and located between the presser-bar and pins and resting against the screws connecting the presser-bar to the pin-plank.

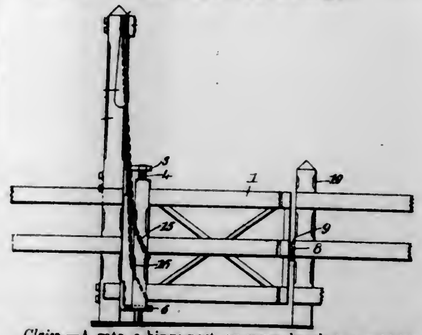
824,499. WRENCH. PETER MATUSAK and GEORGE SLAINE, Greensburg, Pa. Filed Jan. 2, 1906. Serial No. 294,143.



Claim.—1. In a wrench, the combination with a ratchet-toothed shank, and a fixed head or jaw carried by said shank, of a jaw slidably mounted upon said shank, an enlargement carried by the lower end of said jaw and having a spring-receiving recess and a gripping-block recess formed therein, a toothed gripping-block mounted in its respective recess, a screw-threaded stem carried by said gripping-block and extending through said enlargement, a coiled spring mounted in its respective recess and surrounding said screw-threaded stem, and a knurled button having a screw-threaded opening extending through its center from end to end of the button screwing upon the outer end of said stem and bearing against the outer surface of the sliding jaw, substantially as described.

2. In a wrench, the combination with a shank, having a fixed head and inclined ratchet-teeth on one edge, of a sliding jaw mounted on the shank, and formed with a recess adjacent the toothed edge of the shank, a gripping-block having inclined ratchet-teeth on one surface, said gripping-block being mounted in the recess in the sliding jaw, a screw-threaded stem rigidly mounted in said block and extending through an opening in the wall of the sliding jaw, a knurled button mounted on said screw-threaded stem and a spring disposed in said recess and bearing against said block and impelling ths same against the shank.

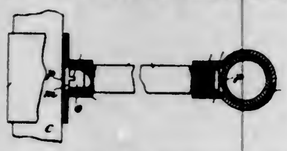
824,500. GATE. GEORGE A. MOCK and JOHN MENDENHALL, Granada, Colo. Filed Apr. 6, 1906. Serial No. 310,292.



Claim.—A gate, a hinge-post, an upper bracket on said hinge-post having an opening, a bracket at the lower portion of the hinge-

post having an angular opening, a rear upright on the gate having a lug at its upper end for engaging in the opening of the first-named bracket, the lower end of said upright having a lug for engaging in the lower bracket, and also having an angular portion for engaging in said bracket, and means for elevating the gate and swinging it to open or closed position.

824,501. **TUBULAR-METAL STRUCTURE.** EDMOND MOLLOY, Philadelphia, Pa. Filed July 3, 1902. Serial No. 114,262.



Claim.—1. As a new article of manufacture, a staff provided with oppositely-threaded ends, and plugs connected with said staff for rotation therewith.

2. As a new article of manufacture, a staff provided with plugs, the ends of the staff being provided exteriorly with right and left screw-threads, adapted to be screwed into T's, substantially as described.

3. As a new article of manufacture, a staff provided with plugs having tapering ends, the ends of the staff being provided exteriorly with right and left screw-threads, adapted to be screwed into T's, substantially as described.

4. As a new article of manufacture, a staff provided with plugs having tapering ends, the ends of the staff being provided exteriorly with right and left screw-threads; T's screwed onto the ends of the staff, extending through the long arms of the T's, whereby when the staff is turned, the plugs will be forced into the pipe-irons, *c*, making all the parts practically integral, substantially as described.

5. The combination of a staff having its ends threaded respectively with right and left hand screw-threads, T's on the ends thereof and members extending through the long arms of the T's, concentric therewith, whereby when the staff is turned, the ends thereof are forced into contact with the said members, thus forming a rigid integral structure.

6. A skeleton frame consisting of substantially parallel pipes connected to each other by stems between each pair of pipes, the ends of each stem binding against said pipes.

7. A skeleton frame having three sides consisting of three substantially parallel pipes held stayed and secured to each other by stems between each pair of pipes; those between one pair on one side alternating with those of another pair on the second side, and those between the pair on the second side alternating with those of another pair on the third side, substantially as described.

8. A skeleton frame having three or more sides, consisting of substantially parallel pipes, held stayed and secured to each other by stems between each pair of pipes, those between one pair on one side alternating in position with those of a pair on the second side, those between the pair on the second side alternating with those of a pair on the third side, and those between the pair on each additional side alternating with those of a pair on the next side, substantially as described.

9. A skeleton frame consisting of three substantially parallel pipes, a series of the herein-described stems in succession alternately staying and securing one pipe to a second pipe, the second pipe to a third pipe, the third pipe to the first pipe, substantially as described.

10. A metal structure, triangular in cross-section, comprising three members lengthwise of the structure, each of said members being provided at suitable points in its length with T-pieces, transverse members connecting the T-pieces and adapted to extend therein and form contact with the lengthwise members in such manner as to form a rigid integral structure.

11. A coupling, substantially of T shape, for securing a beam to a post, consisting of two members pivoted at their rear ends, the drop portion extending from said members on the opposite side from the hinge, the upper portion of said extension being cut away; suitable slots in said extension for the purpose specified, and means for clamping the said members together, substantially opposite their hinged portion.

12. A coupling substantially of T shape, for securing a beam to a post, consisting of two members pivoted at their rear ends, the drop portion extending from said members on the opposite side from the hinge, the upper portion of said extension being cut away, and means for clamping the said members together substantially opposite their hinged portion.

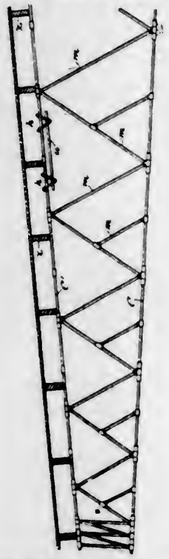
13. A coupling, substantially of T shape, composed of two members pivoted together, the drop portion of each being threaded both interiorly and exteriorly.

14. As a new article of manufacture, a staff provided with oppositely-threaded ends, and plugs having interlocking engagement with said staff.

15. The combination of two runners, sleeves thereon, and a single member coöperating with said sleeves and said runners and exerting thrust on the runners.

16. The combination of two runners, sleeves thereon, and a single member screwed into said sleeves and gripping each runner between one sleeve and the said member.

824,502. **FRAME STRUCTURE.** EDMOND MOLLOY, Philadelphia, Pa. Filed June 5, 1903. Serial No. 160,275.



Claim.—1. A frame structure having runners, tension members connecting said runners in pairs, each tension member being adapted to exert pressure on opposite sides of each runner, and stems held by said tension members.

2. A frame structure having runners arranegd in pairs, tension members connecting the runners of each pair, each tension meruber being adapted to exert pressure on opposite sides of each runner, and stems between said tension members of the respective pairs of runners.

3. A frame structure having runners, tension members connecting said runners and binding them in pairs, each tension member being adapted to exert pressure on opposite sides of each runner, and diagonal stems fitted to the tension members.

4. In a frame structure longitudinal runners, tension members located between each pair of runners, and means whereby the members are effective in placing tension simultaneously on adjacent runners, or relaxing tension thereon, when said members are adjusted.

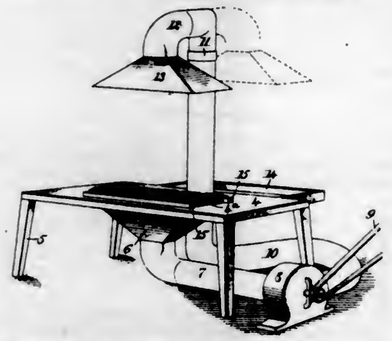
5. A frame structure having runners, a group of tension members connecting the runners in pairs, and stems fitted to said tension members.

6. In a frame structure, runners arranged in pairs, tension members between the runners of each pair each of which is adapted to exert endwise thrust thereon, and stems connecting said tension members.

7. In a frame structure, pairs of runners, tension members arranged in groups between each pair of runners, and stems connecting certain tension members of each group of the respective pairs of runners.

8. In a frame structure, longitudinal runners, T-pieces on said runners, and tension members screwed into the T-pieces and exerting endwise thrust on the runners.

824,503. **PNEUMATIC BRUSH-FILLING MACHINE.** JOHN MORRISON, Jr., Troy, N. Y. Filed Apr. 6, 1905. Serial No. 254,237.



Claim.—1. In a brush-filling machine, the combination of a die provided with apertures for holding tufts of bristles, a bristle-shield provided with clamps engaging said die, said bristle-shield being supported by said clamps so as to depend from said die, and means for showering bristles upon said die.

2. The combination of a die provided with bristle-holes, a bristle-shield connected with said die and spaced therefrom, said bristle-shield being supported by clamps engaging said die directly, and a screen provided with a portion engaging said die and with members for holding said screen in a predetermined position relatively to said die.

3. The combination of a die to be filled with bristles, a screen spaced apart from said die and stationary in relation thereto, and pneumatic mechanism for showering loose bristles continuously upon said screen.

4. The combination of a receptacle, means for mounting a die thereover, a screen provided with members engaging said die so as to support said screen, a pneumatic conduit connected with said die, a blower connected with said pneumatic conduit, another pneumatic conduit connected with said blower, and means connected with said last-mentioned pneumatic conduit for continuously showering loose bristles upon said screen.

5. The combination of a plurality of stationary dies separated by air-spaces, and pneumatic mechanism for forcibly showering loose bristles upon said dies.

6. In a brush-filling machine, the combination of a die, a bristle-shield connected with said die but spaced apart therefrom, so as to permit an escape of air through said die, and pneumatic mechanism for showering loose bristles continuously upon said die.

7. In a brush-filling machine, the combination of a die, a stationary screen mounted thereover, and pneumatic mechanism for continuously showering loose bristles upon said screen.

8. In a brush-filling machine, the combination of a plurality of dies provided with bristle-holes and separated by air-spaces, and pneumatic mechanism for drawing air and bristles through said dies and also through said air-spaces.

9. In a brush-filling machine, the combination of a die, a stationary screen mounted thereover, a pneumatic conduit connected with said die, a blower connected with said pneumatic conduit, and a second conduit connected with said pneumatic conduit and terminating in the open air for the purpose of showering loose bristles upon said screen and die.

10. The combination of a die to be filled with bristles, a screen spaced apart from said die and stationary in relation thereto, pneumatic mechanism provided with a conduit terminating in the open air at a point disposed adjacent to said die, and means for forcing air through said conduit relatively to said die.

11. The combination of a die provided with bristle-holes, a bristle-shield disposed adjacent to said die, and a screen connected with said die for guiding bristles thereinto.

824,504. **BOTTLE-CLOSURE.** WILLIAM J. MUELLER, Salamanca, N. Y. Filed Nov. 28, 1905. Serial No. 289,447.

Claim.—1. In combination with a receptacle, a closure therefor having a discharge-aperture, a valve for said aperture, means for normally holding said valve in place, and a weight for automatically moving said valve whereby when said receptacle is inverted outflow of contents is permitted, said weight being provided with longitudinally-disposed grooves for passage of said contents.



2. In combination with a receptacle, a closure therefor having a discharge-aperture, a valve for said aperture, means for normally holding said valve in place, means for automatically moving said valve whereby when said receptacle is inverted outflow of contents is permitted, and means whereby said outflow is prevented when said valve is withdrawn and said receptacle is inverted.

3. In combination with a receptacle, a closure therefor having a discharge-aperture, a valve for said aperture, means for normally holding said valve in place, a weight for automatically moving said valve whereby when said receptacle is inverted outflow of contents is permitted, and means on said weight whereby said outflow is prevented when said valve is removed and said receptacle is inverted.

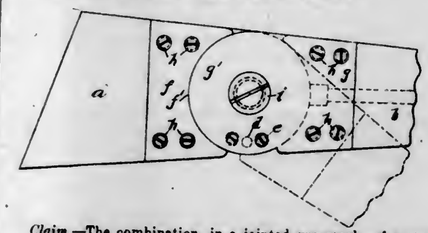
4. In combination with a receptacle, a closure therefor having a discharge-aperture, a valve for said aperture, means for normally holding said valve in place, a weight for automatically moving said valve whereby when said receptacle is inverted outflow of contents is permitted, and a projection on said weight whereby said aperture is closed when said valve is removed and said receptacle is inverted.

5. In combination with a receptacle, means for closing said receptacle comprising a closure portion and a stopper portion fitted in said closure portion, said closure portion having a discharge-aperture therein, a valve arranged to seat in said aperture, and said stopper portion having an aperture therein into which said valve projects, and resilient means in said stopper portion whereby said valve is normally kept seated in said discharge-aperture.

6. In combination with a receptacle, means for closing said receptacle comprising a closure portion and a stopper portion fitted in said closure portion, said closure portion having a discharge-aperture therein, a valve arranged to seat in said aperture, and said stopper portion having an aperture therein into which said valve projects, and resilient means associated with said stopper portion and engaging the part of the valve projecting therein whereby said valve is normally kept seated in said discharge-aperture.

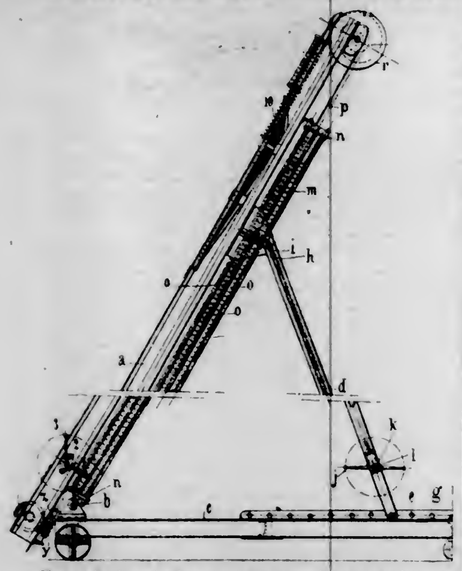
7. In combination with a receptacle having a choked neck, a closure therefor comprising a closure portion provided with a discharge-aperture, and a stopper portion fitted in said closure portion provided with an aperture, a valve for said discharge-aperture and projecting into the opening in said stopper portion, means in said stopper portion for holding said valve in place, a weight in said neck below said closure for moving said valve whereby outflow of contents of the receptacle is permitted, and means on said weight whereby said discharge-aperture is closed when said valve is withdrawn and said receptacle is inverted.

824,505. **JOINTED GUN-STOCK.** HOMER W. MUNSON, Williamsburg, Mass. Filed June 3, 1905. Serial No. 263,509.



Claim.—The combination, in a jointed gun-stock, of a stock-butt *a* having a joint-section *a'* of reduced thickness, said section *a'* being provided with a central pivot-opening and with adjusting-openings *d* adjacent its edge, a fore-stock *b* having a section *b'* of reduced thickness, plates *g* mounted on section *b'* and shaped to overlap a portion of section *a'* and having a central opening therethrough and in registry with the central opening in the section *a'* and having an opening *d'* to register with the openings *d* in the section *a'*, a pivot-pin in the central openings, and an adjusting-pin for the adjusting-openings, and a plate *f* secured to the section *a'*, substantially as shown.

824,506. THROWING OR PROJECTING APPARATUS. GUSTAVE OBIOLS, Paris, France. Filed Oct. 17, 1905. Serial No. 283,174.



Claim.—1. A projecting apparatus comprising a member constituting a guide, a cross-bar guided on said member, springs connected to said cross-bar, cables attached to said springs and movable to compress the same, a winch for operating said cables, and a locking device between said cables and said cross-bar.

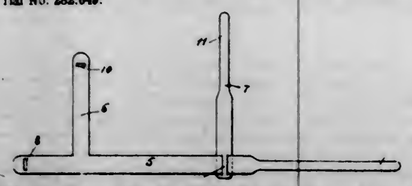
2. The combination, with the spring-actuated cross-bar *t* having the pin 4 projecting therefrom, of the pivoted arms 7, 7′ having the jaws 5, 5′ intended to embrace said pin 4, the traction device for said arms, and the fixed stops 9 for causing the opening of said jaws 5, 5′ and their disengagement from the pin 4.

3. In a projecting apparatus, the combination, with a jib, of a carriage-supporting cross-bar guided therealong, means for projecting said bar in upward direction, and springs arranged at the upper end of said jib and designed to limit the upward movement of said cross-bar.

4. In a projecting apparatus, the combination with the springs, and the cross-bar actuated thereby, of the cable and pulley device for energizing said springs, said device embodying the spiral wheels *q* to secure the uniform action of said springs throughout the length of their movement.

5. In a projecting apparatus the combination with a jib, of helical springs extending parallel thereto and fixed at one end, cables passing through the central openings of said springs and connected to the free ends thereof, a projecting device connected to said cables, means for moving said device against the action of said springs and thereby energizing the latter, and means for automatically releasing said device from said means.

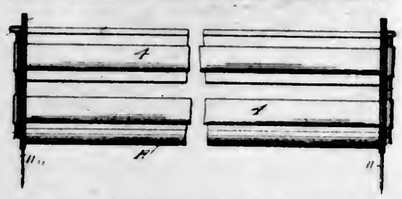
824,507. BINDER FOR BOTTLE-STOPPERS AND THE LIKE. FRANK T. ROBINSON, Chicago, Ill., assignor of one-half to Dan E. Reed and one-half to Frank W. Moser, Chicago, Ill. Filed Oct. 13, 1905. Serial No. 282,649.



Claim.—1. As an improved article of manufacture, a binder for bottle-stoppers and the like consisting of a strap having integral therewith a lateral extension and provided with means to attach its end portions together around the neck of the vessel, and a member movably mounted on the strap and adapted to engage the upper portion of the lateral extension, substantially as described.

2. As an improved article of manufacture, a strap having in one of its ends an opening and its other end reduced to fit in said opening and provided with an integral lateral extension having an opening near its free end, and a member movably mounted at one of its ends on the strap and having its other end reduced to fit in the opening of the lateral extension, substantially as described.

824,508. WATER AND FEED TROUGH FOR FOWLS. MARSHALL C. ROGERS, Woodland, Cal., assignor of one-half to William C. Rogers, Woodland, Cal. Filed July 3, 1905. Serial No. 268,088.



Claim.—1. The combination with a feed or drinking trough, of a supply-hopper located above the trough, closed ends between the trough and hopper, and flexible containing-holders disposed between the trough and hopper and separated to allow the fowl or animal to insert its head with a rubbing contact against the holders.

2. A device for applying sanitary and vermin-destroying substances, said device comprising a feed or drinking trough and superposed cover, flexible reticulated holders containing the substance to be applied, and means by which said holders are stretched substantially parallel between the trough and hopper and with interspaces between the holders.

3. A device for applying sanitary or vermin-destroying material to fowls and the like, said device comprising a feed or drinking trough, a superposed cover, reticulated or absorbent pads stretched substantially parallel between the trough and hopper and with interspaces between the pads, and means by which the pads may be stretched to any desired tension.

4. In a device for applying sanitary or vermin-destroying materials, a feed or drinking trough, absorbent pads with means for stretching them to form open channels between them.

5. In a device for applying sanitary or vermin-destroying materials, a feed or drinking trough, absorbent pads with means for stretching them to form open channels between, and an exterior covering of non-absorbent material.

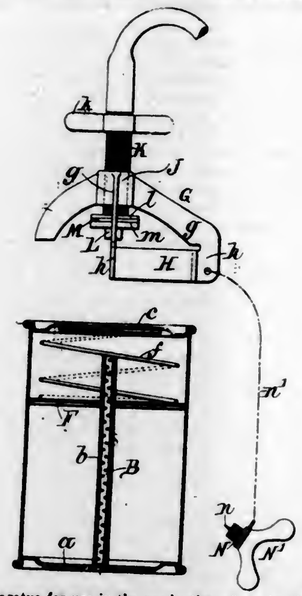
6. In a device for applying sanitary or vermin-destroying materials, a feed or drinking trough with a protective cover, absorbent pads stretched in parallel lines with interspaces, and pins and sockets whereby the cover is removably attached to the trough.

7. In a device for applying sanitary or vermin-destroying materials, a feed or drinking trough with a protective cover, a plurality of absorbent pads with interspaces, turnable pins or rollers upon which the pads are coiled, turnable handles therefor, and locking engagements for said handles.

824,509. APPARATUS FOR THE GENERATION OF ACETYLENE GAS. AUGUSTUS ROSENBERG, London, England. Filed Aug. 23, 1905. Serial No. 276,057.

Claim.—1. A tubulure attachment for a container adapted to serve both for the transport and storage of a solid reagent and as a gas-generator, consisting of a screw-threaded tube provided with a cutter or piercer adapted to establish communication between the container and the tube and means for insuring a tight joint between the end of the tube and the top of the container, and a support for the tube provided with a central screw-threaded aperture for the passage of said tube and adapted to be applied to the container so as to form an abutment for the screw on said tube, substantially as specified.

2. The combination with a vessel adapted to serve both for the transport or storage of a solid reagent and as a gas-generator, of a screw-threaded tube provided with a cutter or piercer adapted to establish communication between the container and the tube, a support for the tube provided with a central screw-threaded aperture for the passage of said tube and adapted to be applied to the container so as to form an abutment for the screw on said tube and a screw-plug for closing the outer end of the tubulure attachment provided with a point to constitute an instrument for piercing a hole in the bottom of the container within the area of the foraminous tube as specified.



3. Apparatus for use in the production of gas by the reaction occurring between a solid and a liquid reagent, consisting in the combination of a canister provided with a bead or flange on its upper extremity; a tubulure attachment for carrying off the gas generated, consisting of a screw-threaded tube provided with a cutter or piercer adapted to establish communication between the container and the tube; a dome-shaped cover having a screw-threaded aperture for the passage of the tubulure attachment; lugs adapted to engage beneath the beading on the canister, and a lip or flange beyond the radius of said lugs; a flanged container for the liquid reagent completely inclosing the canister; and means for securing the dome-shaped cover on the top of the container substantially as specified.

4. An apparatus for generating gas, comprising a vessel, a canister in the vessel and having a flange at its upper end, a cover adapted to be secured to the vessel and provided with a central threaded opening and with hooked lugs on its under side for engaging the flange of the canister, a threaded tube in the opening of the cover, and provided at its upper end with means for turning it, said tube being provided at its lower end with a cutter, and above the cutter and adjacent thereto with a flange faced with compressible material.

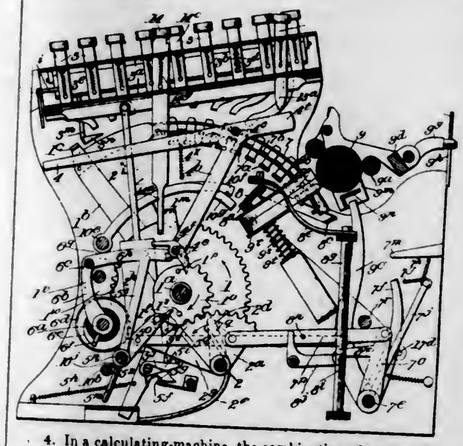
5. A tubulure attachment for a gas-generating apparatus comprising an externally-threaded tube provided with a handle at its upper end and at its lower end with a cutter and above the cutter and adjacent thereto a flange, the flange being loosely mounted on the tube and faced with compressible material, and a support for the tube, said support being provided with a threaded opening in which the screw works and with hooked projections for engaging the flange of a vessel.

824,510. CALCULATING-MACHINE. GEORGE E. SCHUMAN, Louisville, Ky. Filed Aug. 23, 1905. Serial No. 275,373.

Claim.—1. In a calculating-machine, the combination of a registering-wheel, an actuating-lever pivoted beside said wheel and swinging on an arc concentric therewith, a spring for moving said lever in one direction, a more powerful spring for returning said lever to normal position, a hand-lever for overcoming the more powerful spring, and means on said lever for engaging the wheel, substantially as described.

2. In combination a series of registering-wheels, a vibrating lever pivoted beside each wheel, opposite dogs carried by said levers adapted to engage the adjacent registering-wheels and means for throwing either set of dogs into operation, keys and connections for limiting the registering movements of the levers, means for returning the levers to normal position, and computing mechanism actuated by said registering-wheels, substantially as described.

3. In a calculating-machine, the combination of a series of registering-wheels on one shaft, an actuating-lever pivoted beside each wheel and swinging on an arc concentric therewith, springs for moving said levers in one direction, a more powerful spring for returning said levers to normal position, a hand-lever for overcoming the more powerful spring, and means on said levers for engaging the wheels, substantially as described.



4. In a calculating-machine, the combination of a series of registering-wheels on one shaft, an actuating-lever pivoted beside each wheel and swinging on an arc concentric therewith, a spring for moving said lever in one direction, a more powerful spring for returning said levers to normal position, a hand-lever for overcoming the more powerful spring, and means on said levers for engaging the wheels; with key-controlled devices for arresting the registering movements of said levers, and means for carrying over from one wheel to the next higher, substantially as described.

5. In combination with registering-wheels, a vibrating lever pivoted beside each wheel and swinging on an arc concentric therewith, devices on said lever adapted to engage the wheel when the lever moves in one direction, keys and connections for limiting the operative movements of said levers; springs for moving said levers in one direction, a more powerful spring-actuated device for returning the levers to normal position, and a hand-lever for overcoming the more powerful spring.

6. In combination with registering-wheels loosely mounted on a common shaft, a spring-actuated lever pivoted beside each registering-wheel and swinging on an arc concentric therewith, dogs on said levers adapted to engage the adjacent registering-wheels, a pusher on said shaft adapted to return the levers to normal position and tension their springs, a rock-shaft, gearing between the rock-shaft and the pusher-shaft, a spring for moving said rock-shaft in one direction, and a hand-lever for moving it in the opposite direction, substantially as described.

7. In combination with registering-wheels, levers beside the wheels, dogs on said levers swinging on arcs concentric with the wheels, and adapted to operate them, and means for vibrating said levers; with a series of key-stems for limiting the operative movement of each lever, catch-plates beside each row of stems adapted to hold down depressed keys until the registering mechanism has operated; means for simultaneously moving all said catch-plates to release the keys, and means, operated by the registering mechanism whereby said release is not effected until after the registering mechanism has operated, substantially as described.

8. In combination with registering-wheels, vibrating levers beside the wheels, dogs on said levers swinging on arcs concentric with the wheels, and adapted to operate them, and means for vibrating said levers; with a series of key-stems for limiting the operative movement of each lever, swinging catch-plates beside each row of stems adapted to hold down depressed keys until the registering mechanism has operated, a sliding bar for simultaneously moving all of said catch-plates to release the keys, and means, operated by the registering mechanism, whereby said release is effected after the registering mechanism has operated, substantially as described.

9. In combination, a series of rows of key-stems, a swinging catch-plate for each row of stems adapted to lock them in depressed position, a bar adjacent the ends of said catch-plates, and means on

said bar adapted to engage the catch-plates and swing them away from the stems; with registering-wheels, their actuating-levers adapted to engage the stems of depressed keys, means for returning the levers to normal position, and means operated by said levers for actuating said bar so as to release the keys after the registration is effected.

10. The combination of a set of registering-wheels, their actuating-levers, a set of key-stems for limiting the operative movements of said levers, and means for resetting said levers; with catch-plates for locking the key-stems in depressed positions, a bar provided with pins adapted to engage said catch-plates and disengage them from the stems, and a vibrating lever and connections for operating said bar from and by the said actuating-levers, substantially as described.

11. In combination with a registering-wheel, an actuating-lever pivoted beside the wheel and swinging on an arc concentric therewith, the keys, and the key-stem catch-plate; of a lever-detainer attached to said catch-plate and adapted to prevent the forward movement of the lever until the catch-plate is swung to one side by the depression of a key-stem, a spring for throwing the lever in one direction when released, a more powerful spring for returning it, and means for overcoming the more powerful spring.

12. In combination, a series of registering-wheels, their actuating-levers pivoted beside the wheels and swinging on an arc concentric therewith, keys limiting the movement of each lever, and a key-stem catch-plate for each row of keys; with a lever-detainer attached to each catch-plate and adapted to prevent the forward movement of the related lever until the catch-plate is swung to one side by the depression of a key-stem, a spring for throwing each lever in one direction when released, a more powerful spring for returning it, and means for overcoming the more powerful spring.

13. In combination with adjacent registering-wheels, and means for operating said wheels; of levers hung beside said wheels and swinging on arcs concentric therewith, dogs on said levers adapted to engage the adjacent wheels, a catch-plate adapted to lock the levers in one position, a spring for throwing each lever in one direction when released, a more powerful spring for returning it, and means for overcoming the more powerful spring, trips adapted to be operated by said wheels at every tenth tooth, so as to release the catch of the lever of higher denomination, and means for vibrating said lever whereby the carry-over is effected, substantially as described.

14. In combination with adjacent toothed registering-wheels provided with pins at every tenth tooth, and means for operating said wheels; of levers hung beside said wheels and swinging on arcs concentric therewith, dogs on said levers adapted to engage the adjacent wheel, a catch-plate adapted to lock the levers in one position, trips adapted to be operated by said wheels at every tenth tooth, so as to release the catch of the lever of higher denomination, a spring for operating the released lever, a more powerful spring for returning said lever to normal position, and means for overcoming the more powerful spring, substantially as described.

15. In combination with a set of registering-wheels having a multiple of ten teeth on their periphery, pins on each wheel adjacent every tenth tooth, a swinging lever beside each wheel and swinging on arcs concentric therewith, a pawl thereon in normal engagement with the wheels, a spring-actuated catch-plate for locking said levers in inoperative position, a trip on each lever adapted to be operated by the pin on the wheel, and to release the catch of the adjacent lever of higher denomination, a spring for operating the released lever, a more powerful spring for returning said lever to normal position, and means for overcoming the more powerful spring, substantially as described.

16. In a calculating-machine, the combination of registering mechanism; with means for indicating the last "item" registered, and means for throwing the "item-registering" mechanism into mesh with the registering mechanism during the registering of an item, and for disengaging it from said registering mechanism and resetting it to zero before the registering of the next item.

17. In a calculating-machine, the combination with the registering-wheels; of numeral-disks adapted to indicate the last "item" registered, and means for throwing the disks into mesh with the registering-wheels during the registering of an item, and for disengaging them from said registering-wheels and resetting them to zero before the registering of the next item.

18. In combination with registering-wheels, and mechanism for operating them; of item-indicating disks provided with pinions and mounted on a movable support, means for normally holding said numeral-disks at "0" position when out of mesh with the registering-wheels; means for moving said disks into mesh with the registering-wheels before the latter are operated to register an item; means for holding said disks in mesh with the wheels after they have operated, so that the item registered can be read therefrom, and means for returning the disks to zero, before the next operative movement of the registering-wheels, substantially as and for the purpose described.

19. In combination with movable type-carriers of different denominations and type-hammers adapted to actuate the type at the printing-point; of a movable slide adjacent the hammers adapted to contact with the displaced type-carrier of highest denomination and arrest the slide in position to lock the hammers of type-carriers of higher denomination, means for automatically throwing said slide into operative position after the type-carriers have reached their printing positions, but before the printing operation, and means for returning the slide to inoperative position after the printing operation, substantially as described.

20. The combination of registering-wheels, type-carriers of different denominations controlled by said wheels, type-hammers adapted to engage the type at the printing-point, and means for cocking said hammers; with a device for locking the hammers of all carriers of higher denomination whose registering-wheels are not actuated; means controlled by the hammer-cocking devices for releasing said locking device before the hammers are released; means for withdrawing the locking device out of the way after the printing operation, and means for holding the locking device in retracted position until the hammers are ready for the next printing operation, substantially as described.

21. In combination, the registering-wheels, their actuating-levers, longitudinally-movable type-carriers of different denominations attached to said levers, and oscillating type-hammers adapted to actuate the type at the printing-point; with a sliding locking-plate adjacent the hammers, a finger on said plate adapted to contact with the displaced type-carriers of highest denomination, and arrest the slide in position to lock the hammers of any undisplaced type-carriers of higher denomination, a spring for automatically throwing said slide into operative position after the type-carriers have reached their printing positions, but before the printing operation, and means for returning the slide to inoperative position after the printing operation, substantially as described.

22. In combination, the registering-wheels, their vibrating actuating-levers, the curved type-carriers of different denominations attached to said levers, oscillating type-hammers adapted to engage the type at the printing-point, and means for cocking said hammers; with a slide for locking the hammers of all carriers of higher denomination whose registering-wheels are not actuated; means controlled by the hammer-cocking devices for releasing said locking-plate before the hammers are released; means for withdrawing the slide out of the way after the printing operation, and means for locking the slide in retracted position until the hammers are cocked for the next printing operation, substantially as described.

23. In a calculating-machine, the combination of a registering-wheel, a key-controlled lever, a pair of dogs mounted on said lever, means for normally holding one dog in engagement with the registering-wheel, and means for throwing said dog out of engagement when the other dog is thrown into engagement, substantially as described.

24. In a calculating-machine, the combination of a plurality of registering-wheels, a key-controlled lever for each wheel, a pair of dogs mounted on each lever, means for normally holding one dog in engagement with the adjacent registering-wheel, and means for throwing said dog out of engagement when the other dog is thrown into engagement, and a computing train of disks actuated by said wheels, substantially as described.

25. In combination, a series of registering-wheels loosely mounted on a common shaft, a vibrating lever beside each wheel, opposite dogs carried by said levers adapted to be engaged with the adjacent registering-wheel, means for holding one set of the dogs normally out of operation, keys and connections for limiting the registering movements of the levers, and means for returning the levers to normal position, substantially as described.

26. In combination with a set of registering-wheels having a multiple of ten teeth on their periphery, pins on each wheel adjacent every tenth tooth, a swinging lever beside each wheel, a pawl thereon in engagement with the wheels, a spring-actuated catch-plate for locking said levers in inoperative position, a trip on each lever, adapted to be operated by the pin on the wheel, and to release the catch of the adjacent lever of higher denomination, a spring for retracting the lever when released; means for returning said lever to normal position, whereby the carry-over is effected, and means for throwing the dogs out of operative position when it is desired to take the total.

27. In combination with registering-wheels, and vibrating levers for actuating said wheels pivoted beside the wheels and swinging on arcs concentric therewith; of a total-key and connections whereby when the total-key is depressed the levers are permitted to turn the wheels until brought to "zero" position, substantially as described.

28. In combination, registering-wheels, vibrating levers for actuating said wheels pivoted beside the wheels and swinging on arcs concentric therewith; and a total-key and connections whereby when the total-key is depressed the levers are permitted to turn the wheels until brought to "zero" position; with type-carriers attached to said levers, and mechanism for taking an impression from the type to print the total before the total-key is released, substantially as described.

29. In combination with registering-wheels, vibrating levers for actuating said wheels, pawls carried by said levers adapted to operate the wheels in either direction, type-carriers controlled by said levers, and mechanism for taking an impression from the type after the registering-wheels have come to rest; of a total-key and connections for disengaging one set of dogs from the wheel and throwing the other dogs into engagement therewith, mechanism for simultaneously releasing the levers, and means whereby the printing mechanism is operated to print the total while the said total-key is depressed.

30. In combination, registering-wheels, vibrating levers for actuating said wheels, pawls carried by said levers adapted to operate the wheels in one direction, other pawls carried by said levers adapted to engage the wheels and move them in the reverse direction, type-carriers connected to and actuated by said levers, and mechanism for taking an impression from the type after the levers have made their inward stroke; with a total-key and connections for disengaging the first dogs from the pawls and throwing the reverse dogs into engagement therewith, mechanism for simultaneously releasing the levers, and means whereby the printing mechanism is operated to print the total while the said total-key is depressed.

31. In combination, registering-wheels, vibrating levers for actuating said wheels pivoted beside the wheels and swinging on arcs concentric therewith, springs for throwing the levers in one direction, a more powerful spring for returning the levers to normal position, and a hand-lever for overcoming the more powerful spring; with a total-key and connections whereby when the total-key is depressed the levers are permitted to turn the wheels in the reverse direction until brought to "zero" position, substantially as described.

32. In combination, registering-wheels, vibrating levers for actuating said wheels pivoted beside the wheels and swinging on arcs concentric therewith, springs for throwing the levers in one direction, a more powerful spring for returning the levers to normal position, and a hand-lever for overcoming the more powerful spring; with a total-key and connections whereby when the total-key is depressed the levers are permitted to turn the wheels in the reverse direction until brought to "zero" position; type-carriers attached to said levers, and mechanism for taking an impression from the type to print the total before the total-key is released, substantially as described.

33. In combination, registering-wheels, vibrating levers for actuating said wheels pivoted beside the wheels and swinging on arcs concentric therewith, movable type-carriers controlled by said wheels, and a printing mechanism for taking an impression from the type on said carriers when the wheels come to rest; with a total-key and connections whereby when said key is depressed, the registering-wheels are permitted to move back to "zero" position, and the total is printed, substantially as described.

34. In combination, registering-wheels, vibrating levers actuating said wheels, an item-indicator normally meshed with said wheels, movable type-carriers controlled by said wheels, and a printing mechanism for taking an impression from the type on said carriers when the wheels come to rest; with a total-key and connections whereby when said key is depressed the item-indicator is thrown out of mesh with the registering-wheels, the latter are permitted to move back to "zero" position, and the total is printed, substantially as described.

35. In combination with registering-wheels, vibrating levers for operating said wheels pivoted beside the wheels and swinging on arcs concentric therewith, type-carriers attached to said levers, mechanism for taking impressions from type on said carrier at each operation of the registering mechanism, and a total-key and connections whereby upon the depression of said key the total may be printed and the registering mechanism reset to "zero" at the will of the operator.

36. In combination, registering mechanism, type-carriers controlled thereby, and mechanism for taking an impression from the type; with a total-key and connections whereby when said key is depressed the total may be printed on the record in a distinctive color, and mechanism whereby at the next following printing operation a significant character indicating that the machine had been cleared, will be printed on the record simultaneously with the item recorded, substantially as described.

37. In combination, registering-wheels, vibrating levers for operating said wheels, type-carriers attached to said levers, mechanism for taking impressions from type on said carrier at each operation of the registering mechanism, and a total-key and connections whereby upon the depression of said key the total may be printed; with mechanism whereby at the next succeeding printing operation a significant character, indicating that the machine had been cleared, will be printed on the record simultaneously with the item recorded, substantially as described.

38. In combination, registering-wheels, vibrating levers for actuating said wheels pivoted beside the wheels and swinging on arcs concentric therewith, movable type-carriers controlled by said wheels, and a printing mechanism for taking an impression from the type on said carriers when the wheels come to rest; with a total-key and connections whereby when said key is depressed, the registering-wheels are permitted to move back to "zero" position, and the total is printed, and mechanism whereby at the next printing operation of the machine a significant character will be printed on the record indicating that the machine had been previously "cleared."

39. The combination of registering-wheels, their actuating-levers pivoted beside the wheels and swinging on arcs concentric therewith, type-carriers attached to said levers, and key-controlled means for varying the throw of said levers; type-hammers adapted to engage the type at the printing-point, a spring for actuating each hammer, means for cocking the hammers prior to the printing operation, and means for tripping said hammers at the proper time; with a "total" indicator printing-lever beside the type-hammers, mechanism whereby said lever is cocked by the hammer-cocking means, means for normally keeping the total-indicator from effective operation, and a total-key and connections whereby said total-indicator is permitted to become active, substantially as set forth.

40. The combination of registering-wheels, a vibrating lever beside each wheel, dogs on said levers swinging on arcs concentric with the wheels and adapted to move the wheels in one direction; a series of numbered key-stems for limiting the movement of each lever, a swinging catch-plate beside each row of stems adapted to engage and retain any depressed key-stem until another stem is depressed, means whereby after the registering mechanism has been operated, all said catch-plates are simultaneously disengaged from the stems, and means for returning the levers to normal position.

41. In a calculating-machine, the combination with the registering-wheels, of means adapted to indicate the last "item" registered, comprising a set of numeral-disks, means for turning said disks by and from the registering-wheels on recording an item, and means for resetting the said disks to "zero" before the registering of the next succeeding item, substantially as described.

42. The combination of registering-wheels, vibrating levers for actuating said wheels, type-carriers attached to the upper ends of said levers, and key-controlled means for limiting the throw of said levers; with vibrating type-hammers 7^a adapted to engage the type opposite the printing-point, a spring for actuating each hammer, a pivoted push-plate 7^g for cocking the hammers, means for tripping said push-plate to release the hammers at the proper time, and a slide 8 for locking the hammers of the levers of higher denomination which have not been released by key action, substantially as described.

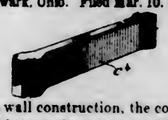
43. The combination of the registering-wheels, vibrating levers and connections for operating said wheels, key-controlled mechanism for variously limiting the recording movements of the levers, type-carriers attached to said levers, a platen, a series of vibrating type-hammers, springs for operating said hammers to make an impression; a push-plate 7^g for cocking the hammers preparatory to the printing operation, and means for tripping said hammers at the proper moment; a spring-actuated slide 8 for locking the hammers of levers of higher denomination unless the said levers have been released, and means for returning the slide and hammers to normal position after each operation, substantially as described.

44. The combination of the registering-wheels, vibrating levers and connections for operating said wheels, and key-controlled mechanism for variously limiting the recording movements of the levers; with curved type-carriers attached to said levers, a series of separately-movable type mounted on each carrier, a platen, a series of vibrating type-hammers 7^a, springs for operating said hammers to

make an impression; an oscillating pusher-plate 7^c, means for causing said plate to cock the hammers preparatory to the printing operation, means for tripping said plate so as to release the hammers at the proper moment; and means for returning the push-plate and hammers to normal position after each operation, substantially as described.

45. The combination of registering-wheels, actuating-levers pivoted beside the wheels, type-carriers 7 attached to said levers, and key-controlled means for varying the throw of said levers; type-hammers 7^d adapted to engage the type at the printing-point, a spring for actuating each hammer, a plate 7^g for cocking the hammers prior to the printing operation, and means for tripping said hammers at the proper time; with a "total-indicator" printing-lever beside the type-hammers, mechanism whereby said lever is cocked by the hammer-cocking means; means for normally keeping the total-indicator from effective operation, and a total-key and connections whereby said total-indicator is permitted to become active, substantially as set forth.

824,511. **WALL CONSTRUCTION.** JAMES N. SMYTHE and WALTER S. AYRES, Newark, Ohio. Filed Mar. 10, 1905. Serial No. 249,387.



Claim.—1. In a wall construction, the combination of a plurality of parallel supporting members, a series of blocks engaging therewith, each block being provided with a depression for receiving a portion of a supporting member, and with a groove adjacent to said depression, and a fastening member comprising a triangular piece of sheet metal adapted to be mounted in said groove.

2. In a wall construction, the combination of a series of supporting members, a plurality of blocks each having grooves, and fastening devices each consisting of a sheet of metal bent into a V shape and provided with a sharpened point; said fastening devices being located with their apexes in said grooves and engaging the supporting members.

3. A building-block having two projections near each end on opposite sides, each projection having a groove.

4. A wall comprising blocks and fastening device for each block, each, consisting of a sheet of metal bent into V shape, and provided with a sharpened point.

824,512. **FEATHER DUSTER.** JAMES E. SNEVELY, San Francisco, Cal. Filed Aug. 23, 1905. Serial No. 275,391.



Claim.—1. A feather-duster head of soft wood, having an enlarged end surrounded by grooves, in which feathers are secured, the central portion of the body being cut away, the smaller end being bored and supplied with an internal screw-threaded metallic lining in position to receive the threaded handle.

2. A feather-duster head of wood and having feathers secured near one end thereof, a stiff sleeve over the secured ends of the feathers, and a metallic ferrule surrounding the end of said stiff sleeve, all combined.

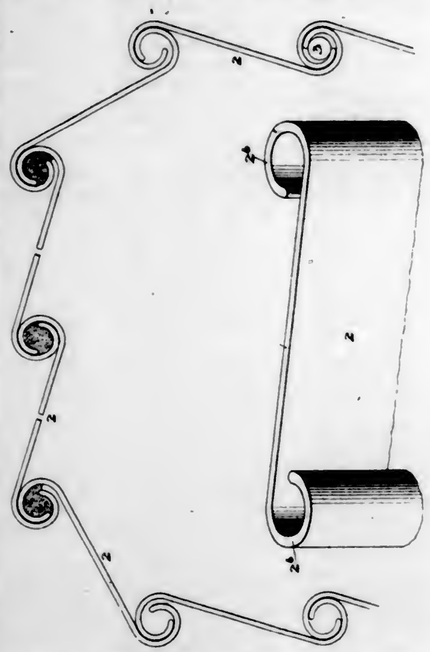
3. A wooden head for a feather duster having an axial bore, a threaded metallic bushing or handle-socket in said bore, a metallic ferrule surrounding that part of the wooden head in which the bushing is inclosed, and means for securing feathers to the end of the head remote from said ferrule, all combined.

4. A hollow head for a feather duster having means for attachment of feathers at one end, said head being bored at the opposite end and provided with a screw-threaded metallic bushing, a metallic ferrule outside the head and crimped to said bushing, and a threaded handle to enter the bushing.

5. In a feather duster, a grooved head, feathers resting in the groove, binding-wires compressing the quills into the groove, and an inturned ferrule covering the wires, all combined.

6. The combination with a grooved wooden duster-head, of feathers resting in said groove, retaining-wires and an inturned ferrule covering the same, and a stiff sleeve surrounding the head and extending over said inturned ferrule.

824,513. **METAL SHEET-PILING.** RICHARD H. STEVENS, Munhall, Pa. Filed Dec. 4, 1905. Serial No. 290,057.



Claim.—1. An interlocking metal sheet-pile having a web and reversely-curved edge portions adapted to interlock with the curved edges of similar piles; substantially as described.

2. In metal sheet-piling a shape having a straight web portion and curved edge portions the edges being separated from the web by grooves; substantially as described.

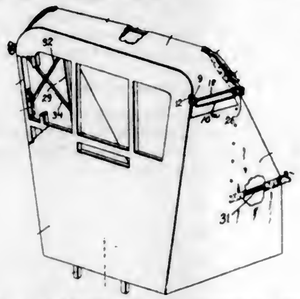
824,514. **FRUIT-RECEPTACLE.** VIRGIL E. STINE, Clearfield, Pa. Filed Dec. 1, 1905. Serial No. 289,935.



Claim.—1. The improved fruit-receptacle comprising the bag proper formed of a front and a narrower back portion whose upper end is narrowed thus forming obtuse angles, and having an extended flap with fastening for closing the discharge end of the bag, a rigid hoop distending the bag-mouth, whose inner side is flat and the outer convex corresponding to the relation of the flexible back and front of the bag proper, and supporting shoulder-straps crossing on the back and having end fastenings for securing them above and adjacent to the vertices of the angles of the bag, and to the back member of the bag-hoop, as shown and described.

2. An improved fruit-receptacle comprising a bag proper having a distended front and relatively narrower back, both contracted at the top, and shoulder-straps attached to the back above and adjacent to its obtuse angles, as described.

824,515. **STORM-FRONT FOR VEHICLES.** CLINTON M. STONE, Connersville, Ind., assignor of one-third to Frederic I. Barrows, trustee, and one-third to Frederic I. Barrows, Connersville, Ind. Filed Oct. 23, 1905. Serial No. 283,922.



Claim.—1. In a storm-front, the combination, substantially as set forth, of a front wall provided with openings, legs disposed to the rear of the front wall and having their upper ends secured thereto, bows forming the means for securing the legs to the front wall and having their rear members secured to said legs and their front members provided with a vertical series of bolt-holes for bolts to serve in securing them to the front wall, and adjustable connections extending rearwardly from the upper portion of the side margins of the front wall and adapted to engage the top props of a vehicle-top.

2. In a storm-front, the combination, substantially as set forth, of a front wall provided with openings, legs disposed to the rear of the front wall and having their upper ends secured thereto, adjustable connections extending rearwardly from the upper portion of the side margins of the front wall and adapted to engage the top props of a vehicle-top, and lower side frame members of said front wall having their upper ends flexibly connected with the remaining portions of said front wall, and fastening devices for securing said lower frame members in adjusted position.

3. In a storm-front, the combination substantially as set forth, of a front wall provided with openings, legs disposed to the rear of the front wall and having their upper ends secured thereto, adjustable connections extending rearwardly from the upper portion of the side margins of the front wall and adapted to engage the top props of a vehicle-top, and lower side frame members of said front wall having their upper ends hinged to the remaining portion of said front wall, and fastening devices for scuring said lower frame members ir adjusted position.

4. In a storm-front, the combination, substantially as set forth, of a front wall provided with openings, legs disposed to the rear of the front wall and having their upper ends secured thereto, adjustable connections extending rearwardly from the upper portion of the side margins of the front wall and adapted to engage the top props of a vehicle-top, and lower side frame members of said front wall having their upper ends flexibly connected with the remaining portions of said front wall, and slotted links and clamp-screws for securing said lower frame members in adjusted position relative to the remaining portions of the front wall.

5. In a storm-front, the combination, substantially as set forth, of a front wall provided with openings, means for securing the same to a vehicle, a flexible roof portion having its front edge secured to the top of said front wall, straps and buckles at the ends of the rear edge of said roof portion, and hooks at the extremities of said straps adapted to engage the front props of a vehicle-top.

6. In a storm-front, the combination, substantially as set forth, of a front wall provided with openings, means for securing the same to a vehicle, a flexible roof portion having its front edge secured to the top of said front wall, straps and buckles at the ends of the rear edge of said roof portion, hooks at the extremities of said straps adapted to engage the front props of a vehicle-top, and a metallic ribbon secured to the rear edge of said roof portion and having its ends connected with said straps.

7. In a storm-front, the combination, substantially as set forth, of a front wall provided with openings, means for securing the same to a vehicle, a flexible roof portion having its front edge secured to the top of said front wall, straps and buckles at the ends of the rear edge of said roof portion, hooks at the extremities of said straps adapted to engage the front props of a vehicle-top, and a metallic ribbon inclosed within a hem at the rear edge of said roof portion and having its ends secured to said straps.

8. In a storm-front, the combination, substantially as set forth, of a front wall, means for securing the same to a vehicle, a roof portion attached thereto and adapted to coöperate with the roof of a vehicle-top, side walls having their front edges secured to said front wall, hooks secured to the rear edges of the side walls and adapted to engage the front bows of a vehicle-top, and springs upon said side walls extending from said hooks forwardly and secured to an intermediate portion of the side walls.

9. In a storm-front, the combination, substantially as set forth, of a front wall, means for securing the same to a vehicle, a roof portion attached thereto and adapted to coöperate with the roof of a vehicle-top, side walls having their front edges secured to said front wall, hooks secured to the rear edges of the side walls and adapted to engage the front bows of a vehicle-top, stiffening-strips secured to said side walls at an intermediate portion of their width and extending from their tops downwardly, and springs extending from said hooks to the lower extremities of said stiffening-strips.

10. In a storm-front, the combination, substantially as set forth, of a front wall, means for securing the same to a vehicle, a roof portion attached thereto and adapted to coöperate with the roof of a vehicle-top, side walls having their front edges secured to said front wall, hooks secured to the rear edges of the side walls and adapted to engage the front bows of a vehicle-top, stiffening-strips secured to said side walls at an intermediate portion of their width and extending from their tops downwardly, springs extending from said hooks to the lower extremities of said stiffening-strips, and a pair of diagonal braces pivoted at their intersections and secured to the forward portion of each side wall between the front wall and the stiffening-strips, the upper ends of these braces being pivoted to and their lower ends having sliding connection with the front wall and stiffening-strips.

11. In a storm-front, the combination, substantially as set forth, of a front wall, means for securing the same to a vehicle, a roof portion attached thereto and adapted to coöperate with the roof of a vehicle-top, side walls having their front edges secured to said front wall, hooks secured to the rear edges of the side walls and adapted to engage the front bows of a vehicle-top, stiffening-strips secured to said side walls at an intermediate portion of their width and extending from their tops downwardly, springs extending from said hooks to the lower extremities of said stiffening-strips, guide-loops upon said front wall and stiffening-strips, and diagonal braces pivoted at their intersections and having their upper ends pivoted to the front wall and stiffening-strips and having their lower ends sliding in said guide-loops and provided with pins to prevent their displacement from the guide-loops.

12. In a storm-front, the combination, substantially as set forth, of a front wall, means for securing the same to a vehicle, a roof portion attached thereto and adapted to coöperate with the roof of a vehicle-top, side walls having their front edges secured to said front wall, hooks secured to the rear edges of the side walls and adapted to engage the front bows of a vehicle-top, stiffening-strips secured to said side walls and extending partially down the same, springs extending from the lower extremities of said stiffening-strips to said hooks, guide-loops upon said stiffening-strips and front wall, diagonal braces pivoted at their intersections and having their upper ends secured to the front wall and stiffening-strips and having their lower ends engaging said guide-loops and having projecting pins to prevent their displacement from the guide-loops.

824,516. **ADVERTISING DEVICE.** ADOLPH SUESSKIND, New York, N. Y. Filed Dec. 12, 1905. Serial No. 291,405.



Claim.—1. In an advertising device the combination of a support having means for removably mounting it, and having a socket with a holder having a tongue for engaging said socket, and an advertising-plate removably supported on the holder.

2. In an advertising device the combination of a support having

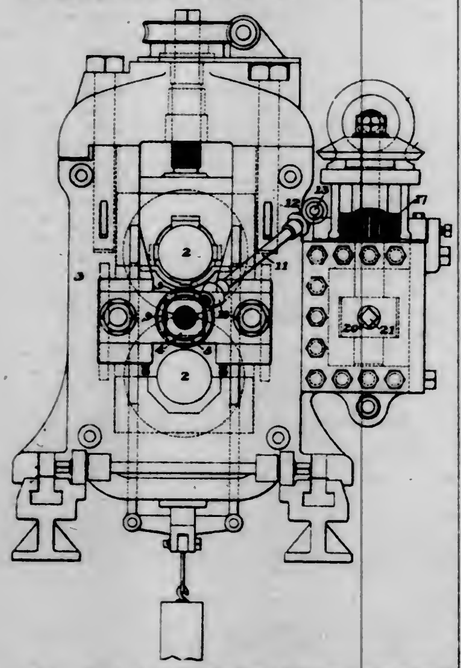
a socket at the upper end thereof, a holder having a tongue extending downwardly from the upper portion of the rear side and entering said socket and having flanges, and an advertising plate of the general shape as the holder and removably held by said flanges on the holder

824,517. FLY-TRAP. WILLIAM B. THOMPSON, Tecumseh, Nebr. Filed Dec. 8, 1904. Serial No. 235,987.



Claim.—The herein-described fly-trap consisting of the elongated body portion open at both ends and having one of its sides provided with upper and lower inlet-plates extending from the top and bottom of the body portion toward each other and deflected inwardly and terminating at their inner free edges in close proximity forming a longitudinally-extending inlet-opening, and end sections closed at their outer ends and conforming in cross-section to that of the body portion and fitting telescopically at their inner ends to the ends of the body portion, all substantially as and for the purpose set forth.

824,518. UNIVERSAL MILL. PETER M. WEBER, Homestead, Pa. Filed Mar. 5, 1902. Serial No. 96,801.



Claim.—1. A universal mill having horizontal rolls, vertical frictionally-driven rolls located centrally thereof, positively-driven vertical rolls arranged in line with the pass, and mechanism for driving the horizontal rolls and the positively-driven vertical rolls; substantially as described.

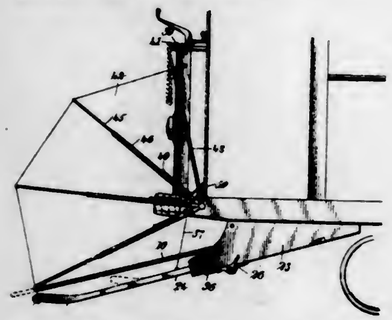
2. A universal mill having horizontal rolls, vertical frictionally-driven rolls located centrally thereof, an outer pair of vertical rolls slightly nearer together than the frictionally-driven rolls, and connections for driving the horizontal rolls and the outer vertical rolls; substantially as described.

3. A rolling-mill having horizontal positively-driven rolls and vertical frictionally-driven rolls, the axes of all the rolls lying in the same vertical plane, and two pairs of vertical positively-driven rolls, one pair on each side of and in line with the pass of the four rolls; substantially as described.

4. A rolling-mill having horizontal positively-driven rolls, a pair of vertical frictionally-driven rolls, the axes of said rolls lying in the same vertical plane, a pair of vertical positively-driven rolls in line with the pass of the four rolls, and mechanism for adjusting all the vertical rolls, substantially as described.

5. A universal mill, having horizontal positively-driven rolls, a vertical frictionally-driven roll having its axis in the plane passing vertically through the axes of the horizontal rolls, a pair of positively-driven vertical rolls, and connections for driving said positively-driven vertical rolls independent of the horizontal rolls; substantially as described.

824,519. CAR-FENDER. MATHIAS WICK, New York, N. Y., assignor, by direct and mesne assignments, of one-third to Eugene Kienle, New York, N. Y., and one-third to Julius A. Zibell, Tappan, N. Y. Filed Aug. 5, 1905. Serial No. 272,850.



Claim.—1. In a car-fender, the combination of a movable platform, a shaft connected with the platform, means for turning the shaft in a direction to move the platform outwardly, a ratchet-wheel on the shaft, a pivoted lever having a tooth for engaging the ratchet-wheel, an oscillatable shaft connected with said lever, the shaft being provided with a projection, and means for engaging said projection and turning the shaft to disengage the tooth on the lever from the ratchet-wheel.

2. A car-fender, comprising a movable platform, a rack connected therewith, a pinion meshing with the rack, a shaft on which the pinion is mounted, means connected with the shaft for turning it in a direction to force the platform outwardly, a ratchet-wheel on the shaft, a lever having a tooth for engaging said ratchet-wheel, a shaft connected with said lever and having a projection, and means for engaging said projection and turning the shaft to disengage the tooth on the lever from the ratchet-wheel.

3. In a car-fender, the combination of a reciprocable frame, a reciprocable platform, resilient means for forcing the platform outwardly and downwardly, a rack connected with the platform, a pinion meshing with the rack, a shaft carrying said pinion, a ratchet-wheel on said shaft, an arm having a tooth for engaging the ratchet-wheel and locking the shaft and the rack in fixed position, and a second arm having a projection adapted to be engaged by said frame for disengaging the projection and the first arm from said shaft.

4. A car-fender, comprising a movable platform, springs for forcing the platform into operative position, a rack fixedly secured to said platform, a pinion meshing with said rack, a shaft on which the pinion is mounted, a spring connected with said shaft for turning it in a direction to force the platform outwardly, a ratchet-wheel on the shaft, a pivoted lever having a tooth for engaging said ratchet-wheel, a spring for normally keeping said tooth in engagement with the ratchet-wheel, an oscillatable shaft connected with said lever, a projection on said shaft, and means for engaging said projection and turning the shaft to disengage the projection on the lever from the ratchet-wheel.

5. A car-fender, comprising a movable platform having longitudinal rods with downwardly-extending ends, the platform being provided with passages through which the forward ends of said rods extend.

6. A car-fender having a movable platform provided with vertically-movable longitudinal rods with downwardly-curved ends extending through and beyond the forward end thereof, the platform being provided with passages for the rods, and means for normally keeping the ends of said rods in a position near the bottom of the platform.

7. A car-fender having a movable platform provided with longitudinal rods extending through and beyond the forward end thereof,

and springs for normally keeping the ends of said rods in a position near the bottom of the platform.

8. In a car-fender, the combination of a frame, a platform movably mounted thereon and having notches, and a spring mounted on the frame and adapted to engage said notches to hold the platform in extended position.

9. In a car-fender, the combination of a frame, a platform movably mounted thereon, said platform having notches in its sides, a spring mounted on the frame and adapted to engage said notches to hold the platform in extended position, and means extending through the walls of said frame for disengaging the spring from said notches.

10. In a car-fender, the combination of a movable platform having a rack thereon, a pinion for engaging said rack, means for locking the pinion against rotation, a guard, and means connected with said platform for releasing the guard from a stationary position.

11. In a car-fender, the combination of a movable platform, means for holding said platform in inoperative position, means for releasing the platform, a guard movable toward and from the platform, means for holding the guard in inoperative position, and means connected with the platform for releasing the guard when the platform is moved to operative position.

12. In a car-fender, the combination of a movable platform, means for moving it outwardly, means for locking it in retracted position, a guard movable toward and from the platform, means for extending the guard, means for locking the guard in retracted position, and means operable by the movement of the platform for releasing the guard from locked position; said last-named means comprising a pivoted convex plate adapted to engage the guard, an arm pivoted on an axis at an angle to that on which the plate is pivoted, and a flexible connection joining said arm and the platform.

13. A car-fender comprising a guard having a series of movably-mounted frames, means for swinging said frames about an axis, and means for lengthening said frames as they swing from a vertical to a horizontal position.

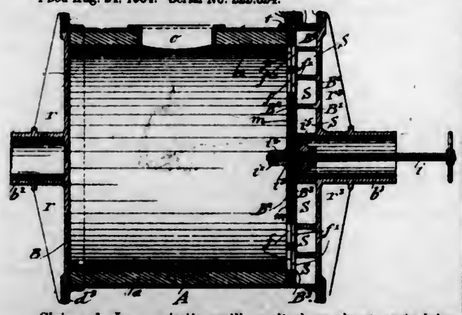
14. A car-fender, comprising a guard made up of a series of pivoted frames, means for lengthening said frames as they swing from a vertical to a horizontal position, and means for shortening them when they swing downwardly from a horizontal position.

15. A car-fender comprising a guard consisting of a series of pivoted frames, certain of said frames comprising a pair of bars telescopically connected together, and a spring in the outer telescoping bar for forcing the inner bar in an outward direction.

16. A car-fender comprising a guard consisting of a series of pivoted frames, certain of said frames comprising a pair of bars telescopically connected together, a spring in the outer telescoping bar for forcing the inner bar in an outward direction, and means for connecting the inner bar with the stationary portion of the device for preventing the springs from acting beyond a certain point and for retracting the inner bar when the frames move beyond a certain point.

17. A guard comprising a hollow rod, a spring therein, a rod movably mounted in the hollow rod and engaging said spring, said hollow rod having a slit through which a portion of the other rod projects, and means for connecting the projecting portion of the second rod to a stationary part of the device.

824,520. GRINDING-MILL. MAX F. ABBÉ, New York, N. Y. Filed Aug. 24, 1904. Serial No. 222,094.



Claim.—1. In a grinding-mill, a discharge-head embodying two plates one of which is shiftable with respect to the other, and a spring acting on said shiftable plate and normally holding the same in discharging position only.

2. In a grinding-mill, a discharge-head constituted by a fixed plate having openings therein and a plate angularly shiftable with respect to said fixed plate and provided with openings adapted to register with the openings thereof, and a spring acting upon said shiftable plate in the plane thereof to maintain the same in discharging position.

3. A grinding-mill provided with a discharge-head embodying a fixed plate and a shiftable plate coöperating therewith, means for locking said shiftable plate in non-discharging or closed position, and self-acting means for returning said head to discharging position upon the release of said locking means.

4. A grinding-mill provided with a discharge-head embodying a fixed plate and the shiftable plate coöperating therewith, means for frictionally interlocking said plates, and means releasable by said locking means for shifting said shiftable plate to discharging position.

5. In a grinding-mill, the combination with a fixed discharge-plate, of a discharge-plate shiftable with respect to the first, means for shifting said shiftable plate to non-discharging position, separate means for locking the same in such position, and self-acting means for shifting said plate to discharging position upon the release of said locking means.

6. In a grinding-mill, a discharge-head comprising a fixed plate and a plate angularly shiftable with respect to the same, means for moving the shiftable plate to non-discharging position, means for locking the same in such position, and a spring releasable by said locking means to shift said plate to discharging position.

7. In a grinding-mill, a discharge-head comprising a fixd discharge-plate, a shiftable discharge-plate, means to yieldingly hold the latter in discharging position, and means to shift said head to non-discharging position in opposition to said first-named means.

8. A grinding-mill including in its construction a fixed discharge-plate, a shiftable discharge-plate, a spring acting upon said plate in the plane thereof for normally maintaining the same in discharging position, and means for shifting said head to non-discharging position, in opposition to said spring.

9. A grinding-mill including in its construction a fixed discharge-plate, a shiftable discharge-plate, a spring for normally maintaining the latter in discharging position, means for shifting said last-named plate in opposition to said spring, and means releasable during the rotation of the mill for interlocking said plates.

10. A grinding-mill having a fixed head provided with a hollow trunnion, an interior discharge-head comprising discharge-plates one of which is shiftable with respect to the other, and means extending through said trunnion for interlocking said plates.

11. A grinding-mill having a fixed head provided with a hollow trunnion, an exterior discharge-head comprising discharge-plates one of which is shiftable with respect to the other, and means for interlocking said plates embodying a spindle extending through said trunnion and having an exteriorly-disposed hand-wheel mounted thereon.

12. A grinding-mill one of the heads of which is provided with an inwardly-disposed spiral discharge-passage and with a hollow trunnion into which said passage leads, an interior discharge-head comprising coöperating plates, and means extending through said trunnion for interlocking said plates, said means compriaing a deflecting member disposed within said trunnion at the inner end thereof.

13. A grinding-mill including in its construction a discharge-head comprising discharge-plates one of which is angularly shiftable with respect to the other, means disposed centrally of said plates for interlocking the same, and means acting upon the periphery of said shiftable head for shifting the same to discharging position upon the release of said locking means.

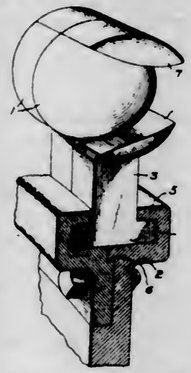
14. In a grinding-mill, the combination, with a rotary drum having a fixed discharge-plate provided with discharge-openings, a shiftable discharge-plate adjacent to said fixed plate and having openings adapted to be placed in or out of register with the openings thereof, continually-acting means for normally holding said shiftable plate in discharging position, means for shifting the same to closed position in opposition to said first-named means, and means to frictionally interlock or release said plates during the rotation of the drum.

15. In a grinding-mill, in combination, a drum having a fixed discharge-plate provided with discharging-openings, a shiftable discharge-plate adjacent said fixed plate and provided with openings adapted to register with the openings thereof, a lug extending from said shiftable head, a spring engaging said lug and disposed in the plane of said plate, and means for engaging the opposite side of said

lug and shifting said plate to closed position, and means for interlocking said plates.

16. In combination, a drum having a fixed discharge-plate provided with discharge-openings, said drum being provided with a transverse slot adjacent to said plate, a shiftable discharge-plate having discharge-openings adapted to register with said first-named openings, a lug on said shiftable head extending through the slot in said drum, a casing on the drum extending over said slot, a spring in said casing bearing against one side of said lug, a hand-screw for engaging the opposite side thereof, and means releasable during the rotation of said drum for interlocking said discharge-plates.

824,521. BUCKET FOR ELASTIC-FLUID TURBINES. KARL AHLQUIST, Rugby, England, assignor to General Electric Company, a Corporation of New York. Filed Nov. 28, 1905. Serial No. 289,452.



Claim.—1. In a turbine, the combination of a support, individual cup-shaped buckets carried thereby, and diverging distance-pieces between the buckets which are so shaped and positioned as to form with the buckets a gradually-expanding fluid-passage.

2. In a turbine, the combination of a support, a plurality of independent cup-shaped buckets carried thereby, and distance-pieces formed integral with the buckets, which are provided with convex end surfaces arranged to fit the concave surface of the adjacent bucket.

3. In a turbine, the combination of a support, a plurality of independent cup-shaped buckets, a shank for each bucket that is secured to the support, a distance-piece carried by the back of each bucket and arranged to fit the concave surface of the adjacent bucket, and a second distance-piece carried by the shank of each bucket that also fits the concave surface of the adjacent bucket.

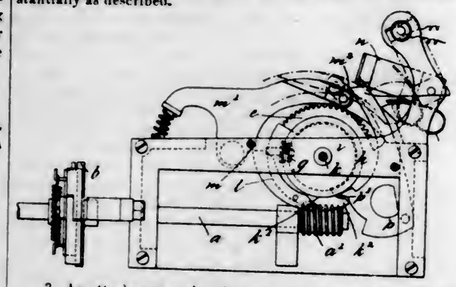
4. In a turbine, the combination of a support, a plurality of independent cup-shaped buckets, a shank for each bucket, so positioned with respect to the body of the bucket that the entrance-angle of the bucket is greater than the exit-angle, and pieces between the buckets which serve to space the buckets apart and are so shaped as to form a part of the expanding passage for the fluid.

5. In a turbine, the combination of a support, a plurality of cup-shaped buckets carried thereby, shanks for the buckets, a shoulder between the support and the shanks for securing the buckets in place, and diverging distance-pieces carried by each bucket, and arranged to fit the concave surface of the adjacent bucket.

824,522. COIN-FREED ELECTRIC METER. JAMES ALLAN, Chiselhurst Common, England. Filed Sept. 14, 1904. Serial No. 224,357.

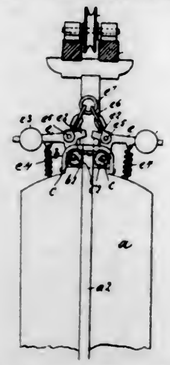
Claim.—1. An attachment to electric meters for regulating the supply of current thereto by prepayment, comprising a setting-spindle, means controlled by the insertion of a coin enabling the spindle to be rotated, a differential spur-and-pinion gear, gearing respectively with the setting-spindle and the meter to be controlled, a pivoted tripping-shoe moving with the pinion of the differential gear, an electric switch and a lever actuated by the tripping-shoe to close the switch when the setting-spindle is rotated; substantially as described.

2. An attachment to electric-current meters for regulating the supply of current thereto by prepayment, comprising a setting-spindle, means controlled by the insertion of a coin enabling the spindle to be rotated, differential spur-and-pinion gear gearing with the setting-spindle and the meter to be controlled, an electric switch, a lever cooperating therewith and normally urged by a spring to hold said switch open, a pivoted shoe moving with the pinion of the differential gear and adapted to displace the said lever and close the switch, and a detent adapted to hold the said lever in its displaced position, substantially as described.



3. An attachment to electric meters for regulating the supply of current thereto, comprising a setting-spindle, means controlled by the insertion of a coin enabling the spindle to be rotated, differential gear including a pinion connecting the said spindle with the meter to be controlled, a carrier supporting the differential pinion, a shoe pivoted on said carrier, a spring-urged lever adapted to be displaced by said shoe, a switch adapted to be closed by the displacement of said lever, a detent adapted to hold the said lever in its displaced position and to be tripped by the pinion-carrier to enable the spring-lever to open the switch when the pinion is returned to the starting position; substantially as described.

824,523. SAFETY APPARATUS FOR ELEVATORS. JOSE G. BABIO, New York, N. Y. Filed Feb. 26, 1906. Serial No. 302,871.

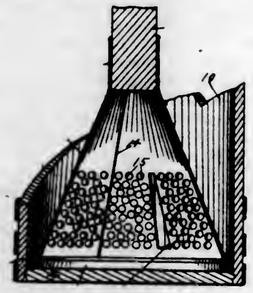


Claim.—1. In a safety apparatus for elevator-cars, parallel shafts mounted transversely of the top of the car and provided at their ends with brakes adapted to operate in connection with vertical guides at the opposite sides of the car, crank-levers arranged transversely of said shafts and one arm of each of which is secured to one of said shafts and the other arms of which project in opposite directions, said crank-levers being provided with inwardly-directed members which are adapted to abut when the car is in operation, means whereby the hoisting-cable may be connected with both of said crank-levers over their connection with said shafts, and means for depressing the arms of said levers which are not connected with said shafts, substantially as shown and described.

2. In a safety apparatus for elevator-cars, parallel shafts mounted transversely of the top of the car and provided at their ends with brakes adapted to operate in connection with vertical guides at the opposite sides of the car, crank-levers arranged transversely of said shafts and one arm of each of which is secured to one of said shafts and the other arms of which project in opposite directions, said crank-levers being provided with inwardly-directed members which are adapted to abut when the car is in operation, means whereby the hoisting-cable may be connected with both of said crank-levers over their connection with said shafts, and means for depressing the arms of said levers which are not connected with said shafts, comprising tensional springs which connect said arms with the top of the car, substantially as shown and described.

3. A safety-brake for elevator-cars, comprising vertical guides between which the car moves, parallel shafts mounted transversely of the top of the car and provided at their ends with brakes normally held out of contact with said guides, crank-levers arranged over said shafts and transversely thereof, and one arm of each of which is secured to one of said shafts and the other arms of which project in opposite directions, said crank-levers being provided with members which abut when the car is in operation, a hoisting apparatus connected with said crank-levers over their connection with said shafts, and means for depressing the arms of said levers which are not connected with said shafts and turning said shafts so as to operate the brakes when the hoisting apparatus breaks, substantially as shown and described.

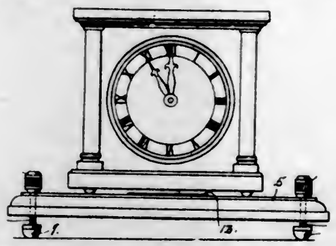
824,524. CHURN-DASHER. HENRY A. BIERLEY, Portsmouth, Ohio. Filed Feb. 23, 1906. Serial No. 302,619.



Claim.—1. A churn-dasher with its lower portion hollow and flaring, the wall of said flaring portion being perforated and being open at the lower end and inclined, and outwardly-extending wings secured to the wall of said hollow portion that are inclined from a vertical line substantially as shown.

2. A churn-dasher with its lower portion hollow and flaring, the wall of said flaring portion being perforated, and the lower end being open with an annular downwardly-extending cutter.

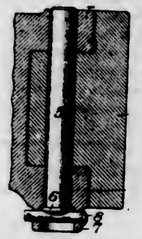
824,525. LEVELING DEVICE FOR CLOCKS AND SIMILAR INSTRUMENTS. OSCAR L. BONNEY, Denver, Colo. Filed Sept. 5, 1905. Serial No. 276,935.



Claim.—1. The combination with the base of a clock or similar instrument, of a nut embedded in the base in a manner to prevent rotation, a screw threaded in the nut and protruding both above and below the base, and a key having an unthreaded opening, applied to the upper threaded extremity of the screw and slidable freely on the threaded portion thereof, but connected therewith to cause the two parts to rotate in unison, the threaded portion of the screw extending above the clock-base and the key being located at all times entirely above the said base.

2. The combination with the base of a clock or similar instrument, of a nut embedded in each corner of the base in a manner to prevent rotation, a screw threaded in the nut and protruding both above and below the base, and a milled key having an unthreaded opening, applied to the upper threaded extremity of the screw and slidable freely on the threaded portion thereof, but connected therewith to cause the two parts to rotate in unison, the key of each screw being located at all times entirely above the clock-base.

824,526. PIVOT-PIN SUPPORT FOR COUPLINGS. WALTER E. COFFIN, Cleveland, Ohio, assignor to The National Malleable Castings Company, Cleveland, Ohio, a Corporation of Ohio. Filed Jan. 25, 1906. Serial No. 297,738.



Claim.—1. A car-coupler having a pivot-pin insertible in the coupler from below, said coupler having a hollow lug at its base in which the head of the pin fits, and a sliding bolt which passes through bolt-holes in the walls of the lug beneath the pin and supports the pin.

2. A car-coupler having a pivot-pin provided with a head and insertible in the coupler from below, said coupler having a hollow lug at its base in which the head of the piece fits, and a retaining device for said piece, said device comprising an ordinary bolt slid through bolt-holes in the walls of said lug below the pin and supporting the same; substantially as described.

3. A car-coupler having a pivot-pin provided with a head and insertible in the coupler from below, said coupler having a hollow lug at its base in which the head of the pin fits, a bolt which passes through the walls of the lug and supports the pin, and means beneath the pin engaging the head of the pin to prevent it from turning.

4. A car-coupler having a pivot-pin provided with a head and insertible in the coupler from below, said coupler having a hollow lug at its base in which the head of the pin fits, and a bolt beneath the pin which passes through the walls of the lug and forms a rest for the pin-head, said head and bolt being interfitted to prevent the pin from turning.

824,527. VALVE. WILLIAM COLINA, Waterbury, Conn., assignor, by mesne assignments, to Welsbach Light Company, Gloucester City, N. J., a Corporation of New Jersey. Filed Mar. 14, 1906. Serial No. 306,004.



Claim.—1. A valve having a cam slot or hole and an endwise-movable screw having an inner cam coacting with the walls of the said slot or hole, and arranged to move the valve in either direction by endwise movement of the screw; substantially as described.

2. A valve having a carrier provided with an inclined slot or hole, and a rotary and endwise-movable screw having a cam-shaped end lying within the slot or hole, the axis of the screw being at an angle to the direction of the slot or hole; substantially as described.

3. In a gas-burner, a needle-valve having a carrier-block, an inclined slot or hole in the block, and a rotary and endwise-movable screw extending through the wall of the valve-casing and having a cam-shaped end resting within the slot or hole; substantially as described.

4. In a gas-burner, a needle-valve having a carrier-block, an inclined slot or hole in the block, a rotary and endwise-movable screw extending through the wall of the valve-casing and having a cam-shaped end resting within the slot or hole, and mechanism for limiting the movement of the carrier-block; substantially as described.

5. In a gas-burner, a needle-valve having a sliding carrier, with an inclined slot or hole, and an endwise-movable screw extending through a screw-threaded hole in the casing and having a circular cam-shaped end arranged to bear upon the walls of the slot or hole; substantially as described.

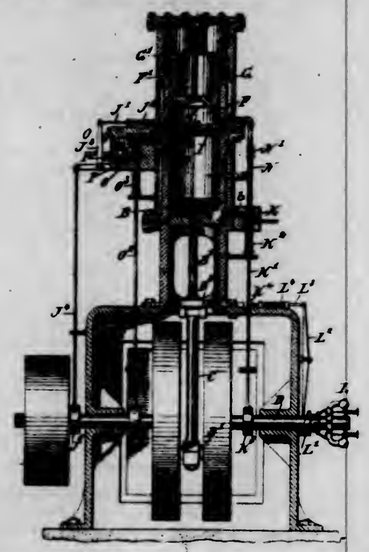
6. In a gas-burner, a needle-valve having a sliding carrier, with an inclined slot or hole, an endwise or movable screw extending through a screw-threaded hole in the casing, and having a circular cam-shaped end arranged to bear upon the walls of the slot or hole,

and a spiral spring surrounding the external portion of the screw; substantially as described.

7. In a gas-burner, a needle-valve having a sliding block-carrier with an inclined hole extending therethrough, and a rotary and endwise-movable screw extending through a screw-threaded hole in the casing and provided with a globular or ball-shaped end lying in the hole, the axis of the screw being at an angle to the direction of the hole; substantially as described.

8. In a gas-burner, a needle-valve, a needle-valve carrier having a cam-slot, and an endwise-movable actuator having a cam arranged to force the needle-carrier positively in both directions; substantially as described.

824,528. EXPLOSION-ENGINE. HARVEY D. DIBBLE, Mystic, S. D. Filed Feb. 2, 1905. Serial No. 243,233.



Claim.—1. An explosion-engine comprising a main shaft, a working cylinder, a piston therein connected with the main shaft, an auxiliary cylinder, a piston in the said auxiliary cylinder and air-cushioned, a partition separating the said cylinders and having a connecting-port, a valve controlling the said port and periodically actuated from the said main shaft, an admission-valve for the compression end of the said working cylinder, and a connection between the compression end of the working cylinder and the said auxiliary cylinder.

2. An explosion-engine comprising a main shaft, a working cylinder, a piston therein connected with the main shaft, an auxiliary cylinder, a piston in the said auxiliary cylinder and air-cushioned, a partition separating the said cylinders and having a connecting-port, a valve controlling the said port and periodically actuated from the said main shaft, an admission-valve for the compression end of the said working cylinder, a connection between the compression end of the working cylinder and the said auxiliary cylinder, and means for periodically actuating the said admission-valve from the said main shaft.

3. An explosion-engine comprising a main shaft, a working cylinder, a piston therein connected with the main shaft, an auxiliary cylinder, a piston in the said auxiliary cylinder and air-cushioned, a partition separating the said cylinders and having a connecting-port, a valve controlling the said port and periodically actuated from the said main shaft, an admission-valve for the compression end of the said working cylinder, a connection between the compression end of the working cylinder and the said auxiliary cylinder, and means for periodically actuating the said admission-valve from the said main shaft, the said means including a governor on the main shaft and a locking device controlled from the governor, for holding the admission-valve open a length of time corresponding to the speed of the main shaft.

4. An explosion-engine comprising a main shaft, a working cylinder, a piston therein connected with the main shaft, an auxiliary cylinder, a piston therein and having portions passed through the body and interlocked, and means other than the body for positively actuating the slips in both directions.



4. In a casing-spear, the combination of a hollow body, slips mounted thereon and having portions passed through the body and interlocked, and means movable longitudinally within the body and adapted for coöperation with said slips to effect positive movement thereof either upon the upstroke or the down stroke of said movable means.

5. In a casing-spear, the combination of a hollow body, slips mounted thereon and having portions passed transversely through the body and interlocked, and means longitudinally movable with respect to the body and having portions extended across the path of the interlocked portions of the slips to positively actuate the latter in both directions.

6. In a casing-spear, the combination of a hollow body, slips mounted thereon and having portions passed transversely through said body and interlocked, and means longitudinally movable within the body and having portions extended upon opposite sides of the interlocked portions of said slips and joined above and below the latter to make positive engagement therewith for actuating the slips in either direction.

7. In a casing-spear, the combination of a hollow body, slips mounted thereon, and movable weights within the body for actuating the slips.

8. In a casing-spear, the combination of a hollow body, slips mounted thereon, and weights in said body and operating at opposite ends of the slips for actuation thereof.

9. In a casing-spear, the combination of a hollow body, slips mounted thereon, a member movably mounted within the body, and weights carried by the movable member and operating at opposite ends of the slips as specified.

10. In a casing-spear, the combination of a hollow body, slips mounted thereon, and actuating member movably mounted within the body and comprising spaced bars, and weights at the upper and lower ends of the bars and operating at opposite ends of the slips.

11. In a casing-spear, the combination of a body, and slips mounted thereon and having positive interlocking connection one with the other, said connection admitting of the slips having relative lateral movement without permitting their longitudinal displacement.

12. In a casing-spear, the combination of a body, slips mounted thereon and having a positive interlocking connection to prevent longitudinal displacement while admitting of relative lateral movement, and a spring connection between the slips.

13. In a casing-spear, the combination of a body, slips mounted thereon and having an interlocking connection to prevent longitudinal displacement, a spring-actuated device normally drawing the slips together, and means for actuating said slips.

14. In a casing-spear, the combination of a hollow body, slips mounted thereon and having portions extended transversely through said body and interlocked, an actuating-bar slidably mounted in the body for operating said slips, and a spring connection normally drawing the slips together.

15. In a casing-spear, the combination of a hollow body, slips mounted thereon and having portions extended transversely through the body and interlocked, a pin passed transversely through the interlocked portions of the slips, and springs mounted upon the end portions of said pin and coöperating therewith and with said slips to normally press the latter together.

16. In a casing-spear, the combination with the body and oppositely-disposed slips, and means coöperating with the slips to close the space formed between them to exclude entrance of foreign matter.

17. In a casing-spear, the combination of a body, oppositely-disposed slips having inwardly-extended web portions spaced apart when the spear is in operation, means closing the sides of the space formed between said web portions, and a strip extended over the webs of the slips to close the space formed between them for exclusion of foreign matter.

18. In a casing-spear, the combination of a body, coöperating slips, a hammer-bar for conjoint operation with said slips, said hammer-bar having a cross-bar and a funnel-shaped end, the latter provided with oppsitely-inclined guides to give proper direction to a grapple when entering said funnel-shaped end to make positive connection with the cross-bar of the hammer-bar.

19. In a casing-spear, coöperating slips for sustaining the lifting pull, retaining or safety slips, and means actuated by the pulling-slips to move the retaining-slips in an opposite direction thereto to cause them to sustain the spear in the event of the pulling-pipe parting.

20. In a casing-spear, the combination of coöperating slips for sustaining the pulling force, means for setting said slips, retaining or safety slips, and means for positively transmitting motion from the pulling-slips to said safety-slips in an opposite direction for setting the latter simultaneously with movement of the pulling-slips when thrown into operation.

21. In a casing-spear, the combination of a body, provided with oppositely-disposed inclines, oppositely-arranged sets of slips slidably mounted on said inclines, means for positively moving one set of slips, and intermediate connections for transmitting motion from the initially-moved slips to the other set of slips.

22. In a casing-spear, the combination of a body, oppositely-disposed slips, means for imparting movement to one set of slips, and connections for transmitting movement from the first to the second set of slips and embodying a yielding connection to admit of the two sets of slips having a varying movement.

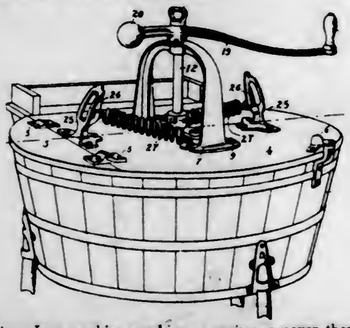
23. In a casing-spear, the combination of oppositely-disposed slips, bars arranged to move in opposite directions, each of the bars having a portion extended into the path of corresponding slips of the different sets, and means between the bars for transmitting motion from one to the other in inverse direction.

24. In a casing-spear, the combination of a body, oppositely-disposed sets of slips, bars arranged to operate in reverse order and having portions extended into the path of corresponding slips of the different sets, a tappet yieldably connected with one of the bars to admit of the different slips having a varying movement, and means for transmitting motion from one bar to the other.

25. In combination, a body, oppositely-disposed sets of slips, toothed bars or racks mounted for reverse movement and having portions extended into the path of corresponding slips, a pinion for transmitting motion from one bar to the other, and a spring coöperating with said pinion.

26. In combination, a body provided with oppositely-inclined portions, slips mounted upon said inclined portions, oppositely-disposed toothed bars or racks, a spring-actuated pinion for transmitting motion from one toothed bar or rack to the other, and a tappet yieldably connected with one of the bars to admit of a variation in the movement of corresponding slips of the different sets.

824,529. WASHING-MACHINE. CONRAD DIETZ, Cincinnati, Ohio. Filed Feb. 12, 1904. Serial No. 193,221.



Claim.—In a washing-machine, a casing, a cover thereto, a mechanism connected to said cover capable of oscillation both rotatively and vertically, a spring-holder mounted upon said mechanism and adapted to oscillate therewith, spring-supports each having a loop elongated in a direction parallel to the line of vertical oscillation of said mechanism, and a spring connecting the spring-holder with each loop, each adapted to slide vertically in one of said elongated loops, as and for the purposes specified.

824,530. CASING-SPEAR. FRANK N. DONALDSON, Jewett, Ohio. Filed Mar. 18, 1905. Serial No. 250,945.

Claim.—1. In a casing-spear, the combination of a hollow body, slips mounted thereon and having portions passed through the body, interlocked and freely operable therein, and means other than the body for actuating the slips.

2. In a casing-spear, the combination of a hollow body, slips mounted thereon and having portions passed through the body and interlocked, and means operating within the body for positively actuating the slips.

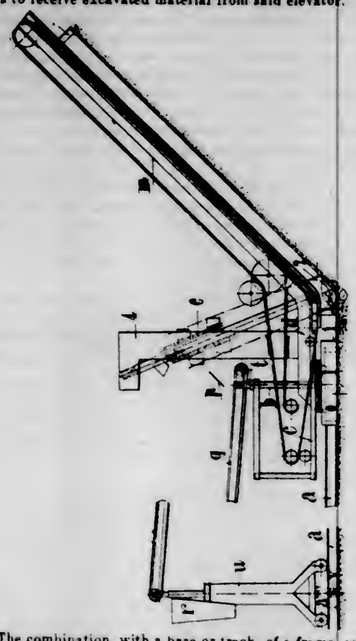
3. In a casing-spear, the combination of a hollow body, slips

824,531. EXCAVATING-MACHINE. ALFRED J. DUCELLIER, Paris, France. Filed Nov. 8, 1904. Serial No. 231,917.

Claim.—1. In an excavating apparatus, the combination of parallel girders forming a base or track, a superposed frame bearing on said girders, excavating mechanism carried by said frame, means for raising said frame from said base, means for advancing the same relatively to said base, and means for likewise advancing said base after the seating of said frame.

2. In an excavating apparatus, a frame, a mast or shaft mounted thereon, a platform supported on said mast, a tool-carrying jib carried by said platform, mechanism on said platform for operating the tools on said jib, a bucket elevator carried by said jib adjacent said platform, and a conveyer supported at one end on said mast adjacent said elevator.

3. In an excavating apparatus, a frame, means for supporting the same, an upright mast swiveled on said frame, means for rotating said mast, a platform carried by said mast, a tool-carrying jib mounted on said platform, a bucket elevator carried by said jib adjacent said platform, and a conveyer supported on said mast and so disposed as to receive excavated material from said elevator.



4. The combination, with a base or track, of a frame, an excavating mechanism carried thereby and embodying an upright mast, a horizontally-disposed conveyer supported at one end on the upper end of said mast, and a support movable on said base or track at the rear of said frame and upon which the opposite end of said conveyer is mounted.

5. The combination, with the excavating mechanism, of a track for guiding the same, a support or standard mounted on said track and movable thereon, a conveyer extending between said excavating mechanism and said standard, and means carried by the latter for deflecting the excavated material to either side of the same.

6. The combination, with a jib embodying parallel girders, of flanges carried by said girders, rollers movable on said flanges, a scraper carried by said rollers, a chain connected to said scraper, and means for driving said chain.

7. In an excavating apparatus, a jib constituted by parallel girders having inwardly and outwardly extending longitudinally-disposed flanges, a scraper guided on the inner flanges a similar scraper guided on the outer flanges, and means for driving said scrapers.

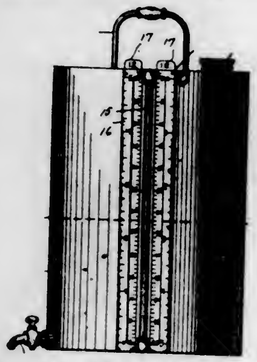
8. In an excavating apparatus, the combination, with an upwardly-inclined jib, of a longitudinally-disposed track carried thereby at its under portion, a scraper mounted on said track at either end thereof, and means for driving said scrapers toward each other.

9. In an excavating apparatus, the combination of an upwardly-inclined jib having a horizontal base portion, tools movable longitudinally of said jib at the lower side thereof, means for operating said tools, a bucket elevator the frame of which is carried by said jib and which extends through the same, and means for raising and lowering said bucket elevator in its frame.

10. In an excavating apparatus, the combination of parallel girders countersunk in the earth, girders superposed on said first-named girders and constituting a base, a frame carried by said upper girders, excavating mechanism carried by said frame, and means for shifting the upper girders constituting the base transversely of said countersunk girders.

824,532. **PRICE AND MEASURE INDICATOR FOR VESSELS.** HENRY F. DUNN, Anderson, Ind., assignor to S. F. Bowser and Company, (Inc.,) Fort Wayne, Ind., a Corporation of Indiana. Filed Dec. 24, 1904. Serial No. 238,238.

Claim.—1. The combination with a portable vessel, of a transparent gage-tube extending from the bottom to the top thereof and externally viaible, and a scale on the vessel at each side of the gage, both scales being price-scales, one being numbered from the top downward and the other from the bottom upward.

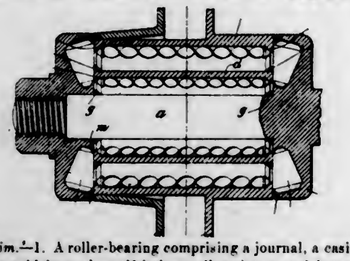


2. The combination with a portable vessel, of a transparent gage-tube extending from the bottom to the top thereof and externally visible, two scales secured to the vessel on each side of said gage, making four scales in all, two of said scales being weight-scales and two price-scales, and one of each sort of scales being numbered from the top downward and the other from the bottom upward.

3. The combination with a vessel, of a hollow vertically-disposed transparent gage in communication with the lower end of the vessel, and two scales on each side of said gage, the scales on one side of said gage having numerals numbered from the bottom upward, the numerals on one of said scales indicating the quantity of the contents of the vessel, and the other indicating the money value thereof, and the numerals on the other two scales being numbered from the top downward, the numerals on one of said scales indicating the quantity of the contents of the vessel that has been discharged, and the other indicating the money value thereof.

4. The combination with a vessel, of a hollow vertically-disposed transparent gage in communication with the lower end of the vessel, a guideway secured to the vessel beside said gage that is cut away on one vertical side thereof, and a scale marked on the portion of the guideway that is not cut away, and a scale-strip insertible in said guideway provided with a scale that is visible through the cut-away portion of the guideway.

824,533. **ROLLER-BEARING.** THOMAS A. EDWARDS, Boston, Mass. Filed June 1, 1903. Renewed Dec. 6, 1905. Serial No. 290,604.



Claim.—1. A roller-bearing comprising a journal, a casing surrounding said journal, antifriction-rollers interposed between the journal and casing, and spiral separators each bearing simultaneously on the inner surface of the casing, and the peripheries of two adjacent rollers.

2. A roller-bearing comprising a journal, a casing surrounding said journal, a plurality of sets of antifriction-rollers interposed between said casing and journal, a sleeve interposed between said casing and journal and separating said sets of rollers, and means carried by the casing, sleeve and journal coöperating to prevent endwise displacement of said rollers.

3. A roller-bearing comprising a journal, a casing surrounding said journal, a plurality of sets of antifriction-rollers interposed between said casing and journal, a sleeve interposed between said casing and journal and separating said sets of rollers, said casing and sleeve being provided with end flanges, and collars mounted on said sleeve and journal, the ends of said rollers bearing against said flanges and collars.

4. A roller-bearing comprising a journal, a casing surrounding the journal, a loose sleeve interposed between the journal and casing, said sleeve and casing having inwardly-projecting beveled flanges at their ends, an outer set of antifriction-rollers interposed between the casing and sleeve and having beveled ends engaged with the beveled flanges on the casing, and an inner set of antifriction-rollers interposed between the sleeve and journal and having beveled ends engaged with the beveled flanges of the sleeve, said flanges preventing endwise displacement of the rollers relatively to the casing and sleeve.

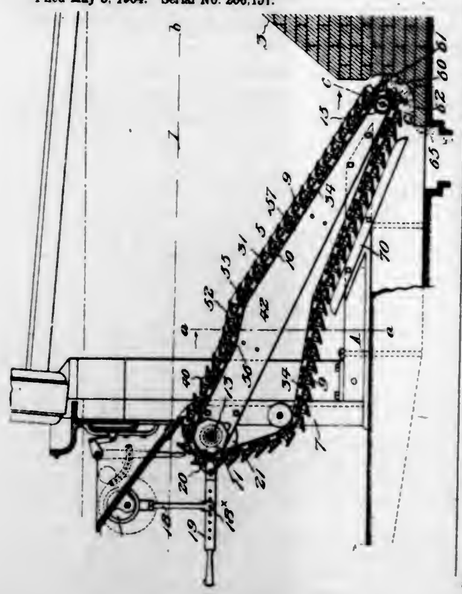
5. A roller-bearing comprising a journal, a casing surrounding the journal, a loose sleeve interposed between the journal and casing, said sleeve and casing having inwardly-projecting beveled flanges at their ends, an outer set of antifriction-rollers interposed between the casing and sleeve and having beveled ends engaged with the beveled flanges on the casing, an inner set of antifriction-rollers interposed between the sleeve and journal and having beveled ends engaged with the beveled flanges of the sleeve, and beveled rings mounted loosely on the journal and sleeve and engaging the beveled ends of the two sets of rollers.

6. A roller-bearing comprising a rotating and a non-rotating part having opposed surfaces separated by a roller-receiving space, rollers inserted in said space and bearing simultaneously against said surfaces, and spiral separators each bearing simultaneously on one of said surfaces and on the peripheries of two adjacent rollers.

7. A roller-bearing comprising a journal, a casing surrounding said journal, a plurality of sets of antifriction-rollers interposed between said casing and journal, a sleeve interposed between said casing and journal and separating said sets of rollers, separators interposed between the rollers of each set, and means carried by the casing, sleeve and journal adapted to prevent endwise displacement of said rollers and separators.

8. A roller-bearing comprising a journal, a casing surrounding said journal, a plurality of sets of antifriction-rollers interposed between said casing and journal, a sleeve interposed between said casing and journal and separating said sets of rollers, a set of spiral separators interposed between the rollers of each set and bearing against the inner portions of said casing and sleeve, respectively, and means for holding said rollers and separators in position.

824,534. **FURNACE-GRATE.** EMIL EINFELDT, Davenport, Iowa, assignor to Bettendorf Metal Wheel Company, a Corporation of Iowa. Filed May 3, 1904. Serial No. 206,151.



Claim.—1. In combination with a furnace-chamber, traveling grate-bars therein, and means for guiding said grate-bars, first at a downward inclination in a straight line for a portion of their rearward travel, then at a relative slope upward with reference to their first movement toward the horizontal, and finally at a downward inclination in a straight line for the remainder of their travel, substantially as described.

2. In combination with a furnace-chamber, traveling grate-bars therein, and means for guiding said bars first at a downward inclination in a straight line for about one-third the distance of the length of the grate, then for a short distance at a relative slope approaching the horizontal, and upward with reference to their first movement and finally at a downward inclination in a straight line for the remainder of their rearward travel.

3. In combination with a furnace, an endless chain grate therein comprising connected grate-bars each formed on its inner side with a convex longitudinal web or rib, means for supporting the front of the grate, and a guide-drum at the rear over which the grate-bars pass, said drum having its surface concave to receive the ribs of the bars whereby the latter in their passage around the drum are given firm support and effectively guided.

4. In a furnace, the combination of a plurality of traveling grates arranged side by side with a space between adjacent grates, said space being greatly less in width than the width of the individual grates, and said grates forming conjointly an extended practically continuous moving fuel-supporting bed, and a narrow stationary grate bridging the space between the movable grates.

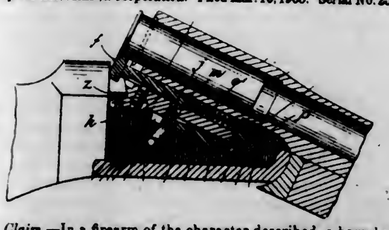
5. In a furnace, the combination with a plurality of movable grates arranged side by side, of guiding-plates extending longitudinally between said movable grates and giving guiding support to the same, and a stationary grate secured to said guiding-plates and bridging, the space between the movable grates, said stationary grates being greatly less in width than the width of the individual grates.

6. The combination with a plurality of traveling grates arranged with a space between them, and adapted to support the bed of fuel and advance the same as a continuous mass, of a fixed grate situated in the space between the movable grates and of a relative width which, while bridging the space between the movable grates, will not afford sufficient resistance to the movement of the fuel-bed to interfere with the advance of the same as a continuous mass; whereby the movable grates are enabled to conjointly support and advance a fuel-bed of great width.

7. In a traveling grate, the combination with a supporting-chain comprising a series of jointed links formed with sockets in their upper sides and with openings extending downwardly through the links and forming continuations of the sockets, of a series of grate-bars having on their inner sides depending lugs to enter the sockets in the links, said grate-bars and lugs being formed with openings extending entirely through them in line with the downwardly-extending openings in the links, and through-bolts extending through said openings in the grate-bars, lugs and links and serving to connect the bars detachably with the links.

8. In combination with a furnace-chamber provided at its front with vertical supporting piers or columns, a boiler sustained at the front by the said columns, a plurality of traveling grates situated within the furnace-chamber and extending through the front of the same and between the supporting-piers, and relatively narrow fixed grates bridging the space between the movable grates in rear of the supporting-piers; whereby the movable grates are enabled to advance, as a continuous mass, a fuel-bed of great width.

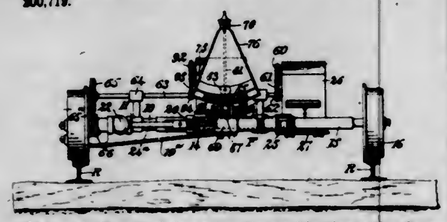
824,535. **EJECTOR MECHANISM.** EDWARD H. ELDER, Chicopee Falls, Mass., assignor to The J. Stevens Arms & Tool Company, Chicopee Falls, Mass., a Corporation. Filed Mar. 16, 1905. Serial No. 250,036.



Claim.—In a firearm of the character described, a barrel pivotally supported in the forward end of the frame, an ejector, a lug c on

the lower side of the barrel, a longitudinal slot therein, a latch-lever *b* pivoted in the said lug and slightly below and in rear of the pivot supporting the barrel, a longitudinal hole extending through said lug close to the under side of the barrel, an ejector-stem *c* located in the hole in the lug, said pivoted latch-lever having an upturned part *r* extending across the forward end of the longitudinal hole in the lug, a compression-spring *c'* located between the end of the upturned part of the ejector-lever and the end of the ejector-stem, the ejector-stem having a sliding movement in its seat, a part *s* integral with the latch-lever and extending forward and below the pivot for the barrel and adapted to engage the forward end of the frame when the barrel is tilted, a notch in the under side of said ejector-stem and normally engaged by the forward end of the latch-lever, a depending T-shaped lever *t* pivoted to the rear end of the latch-lever and occupying a chambered portion of the frame, shoulders above said T-shaped lever whereby when the barrel is tipped downward the forwardly-extended part of the latch-lever engages the frame, and the latch-lever is released from the ejector-stem allowing the same to be moved by the compression-spring, and the said shoulders are engaged by said T-shaped lever.

824,536. **AUTOMATIC TRACK-INSPECTOR.** THADDEUS ELLIS and GEORGE H. PURVIS, Lester, Wash. Filed Mar. 30, 1904. Serial No. 200,719.



Claim.—1. In a track-inspector, the combination with a frame adapted to operate upon the rails, of two casings mounted thereon, gage-indicating and level-indicating mechanism carried by the frame, record mechanism associated with each indicating mechanism and being separately situated within the casings, and independent means for adjusting each casing upon the frame.

2. The combination with a wheeled frame adapted to operate upon a track, of means for indicating the level and gage of the track, such means comprising wheel-carrying axle-arms, a sleeve connecting adjacent ends of said arms, one of said arms being laterally movable in the sleeve, measuring means for indicating the amount of movement of the arm in the sleeve, measuring means for indicating the level of the track, independent means for producing a record of the movement of each measuring means, each of said means being separately movable upon the frame, and means for independently fixing the position of the record-producing means.

3. In a track-inspector, the combination with a sectional wheeled frame, a sleeve connecting adjacent end portions of the sections, said sections having lateral movement relative to each other, a spring situated in the sleeve and bearing against the sections to force them relatively outward, a support carried by said sleeve, a standard mounted upon the support, measuring means for indicating the level of the track carried by the said standard, gage-measuring means carried by the sleeve and one of the frame-sections, independent means for producing a record of the movement of the measuring means, each of said means being separately movable upon the frame, and means for independently fixing the position of the record-producing means.

4. In a track-inspector, the combination with a frame adapted to operate upon the rails, of gage-indicating mechanism, level-indicating mechanism, a stylus operated by each of said mechanisms, independent members adapted to support record-receiving members with which the styli may separately coact, and means for varying the position of each of the indicating mechanisms upon the frame whereby their normal readings may be independently adjusted.

5. The combination with an indicating member carrying a stylus, of a roll adapted to supply a ribbon with which the stylus may coact, a receiving-roll for said ribbon, a driving-roll with which the ribbon may contact, a platen having a stem and against which the ribbon may be pressed by the stylus, a socket in which the platen-stem operates, and a spring exerting its force upon the platen.

6. The combination with an indicating member carrying a stylus, of a roll adapted to supply a ribbon with which the stylus may coact, a receiving-roll for said ribbon, a platen having a stem and against which the ribbon may be pressed by the stylus, a socket in which the platen-stem operates, and a spring situated within the socket and acting upon the stem.

7. In a track-inspector, the combination with a frame adapted to operate upon the rails, of gage-indicating mechanism, level-indicating mechanism, a stylus operable by each of said mechanisms, and means for varying the position of each of the indicating mechanisms upon the frame whereby their normal readings may be independently adjusted.

8. In a track-inspector, the combination with a frame adapted to operate upon the rails, of gage-indicating mechanism, level-indicating mechanism, a stylus operable by each of said mechanisms, a roll situated adjacent to each stylus, a wheel rotatable by contact with the rails, and gearing connecting each roll with said wheel.

9. In a track-inspector, the combination with a frame adapted to operate upon the rails, of gage-indicating mechanism, level-indicating mechanism, a stylus operable by each of said mechanisms, an independently-movable roll situated adjacent to each stylus, a wheel rotatable by contact with the rails, a shaft journaled in the frame and rotatable by said wheel, and gearing connecting each roll with the shaft.

10. The combination with an indicating member carrying a stylus, of a supply-roll, a receiving-roll, a driving-roll, a platen having a stem, a socket in which the platen-stem operates, and a spring exerting its force upon the platen.

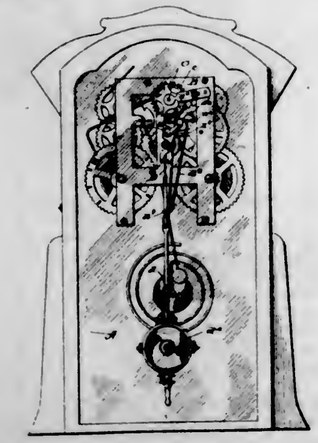
11. The combination with an indicating member carrying a stylus, of a supply-roll, a receiving-roll, a platen having a stem, a socket in which the platen-stem operates, and a spring situated within the socket and acting upon the stem.

12. In a track-inspector, the combination with a frame adapted to operate upon the rails, of track-indicating mechanism movable by the frame, a stylus carried by the indicating member, a roll adapted to receive a supply-ribbon with which the stylus may coact, a receiving-roll for said ribbon, and a yieldable driving-roll with which the ribbon may contact.

13. In a track-inspector, the combination with a frame adapted to operate upon the rails, of track-indicating mechanism movable by the frame, a stylus carried by the indicating member, a roll adapted to receive a supply-ribbon with which the stylus may coact, a receiving-roll for said ribbon, a driving-roll with which the ribbon may contact, a platen having a stem and against which the ribbon may be pressed by the stylus, a socket in which the platen-stem operates, and a spring exerting its force upon the platen.

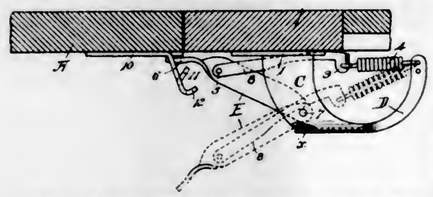
14. In a track-inspector, the combination with a frame adapted to operate upon the rails, of track-indicating mechanism, a stylus carried by the indicating mechanism, means for supplying a ribbon with which the stylus may coact, a casing for inclosing the stylus and ribbon-supplying means, said casing being provided with an opening, and a closure for the opening having a bearing in which the ribbon-supplying means is journaled.

824,537. **CLOCK.** ALBERT D. GARY, Lavonia, Ga., assignor of one-half to Henry Hoyt Chandler, Lavonia, Ga. Filed June 29, 1905. Serial No. 267,540.



Claim.—The combination with the clock-train having an escapement shaft and wheel, of a plate having a laterally-extending arm, a pallet for engaging the escapement-wheel mounted on the arm, a pendulum mounted to swing upon the plate, a connection between the pallet and the pendulum, said plate being provided with a bearing for engaging the escapement-shaft and a slot leading therefrom to permit removal and attachment of the plate, and a rod secured to the plate and extending therebelow whereby to swing the plate.

824,538. **DOOR-CLOSER.** WILLIAM L. GIERSDORF, Council Bluffs, Iowa. Filed Apr. 10, 1905. Serial No. 254,637.

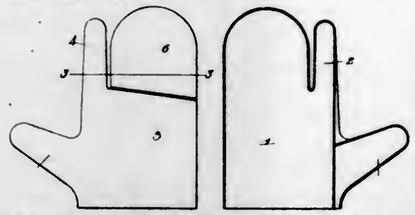


Claim.—In a door-closer, the combination of a U-shaped saddle, a closing lever-arm having a lip, and pivotally held within said U-shaped saddle, a strap pivotally secured to said closing lever-arm, a coiled spring secured to the depending lip or ear of said strap, the opposite end thereof being secured to the curved arm or brace of aforesaid U-shaped saddle, the curved back of said U-shaped saddle providing a stop to limit the backward movement of the aforesaid closing lever-arm, a plate bent in the shape of an obtuse angle and provided with two lips for actuating the aforesaid closing lever-arm, the parts arranged and operating substantially as and for the purpose set forth.

824,539. **PROCESS OF MAKING AN INTERNAL REMEDY.** RICHARD GRIESE, Berlin, Germany. Filed May 25, 1905. Serial No. 262,253.

Claim.—The herein-described process of producing from metaiodinorthooxyquinolin-sulfonic acid an internal remedy capable of being assimilated and carried into the blood circulation which consists in mixing bicarbonate of soda with a small proportion of oil of peppermint, and incorporating said mixture with metaiodinorthooxyquinolin-sulfonic acid.

824,540. **MITTEN.** JAMES GULICK, Norwich, N. Y. Filed Jan. 15, 1906. Serial No. 296,197.



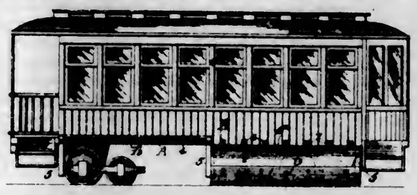
Claim.—The herein-described mitten consisting of a back-forming piece having an integral index-finger back, a separate thumb-piece, a palm-piece, having an integral index-finger front and an integral thumb front, and a separate inner finger-piece, the latter being secured to the palm-piece by a transverse inclined seam, the back piece, and the palm-piece being united by a seam, as described.

824,541. **CAR-FENDER.** CHARLES HAGER and THOMAS D. FINLEY, New York, N. Y. Filed Apr. 10, 1906. Serial No. 310,927.

Claim.—1. A car provided with a side fender which is hinged to the body thereof and hangs normally pendent outside of the wheels, an arm pendent from the car, the fender being in contact therewith, and means for securing the fender to said arm, substantially as described.

2. The combination, with a car having pendent arms or brackets arranged along its sides, of side fenders which are supported in contact with the outer sides of the brackets, and means for securing them detachably to the latter, substantially as described.

3. The combination, with the car-body having pendent rigid arms or brackets arranged along its sides exterior to the wheels, of fenders which are hinged to the body of the car, the same being adapted to be lowered into contact with the brackets, and means for locking them to the brackets, substantially as described.

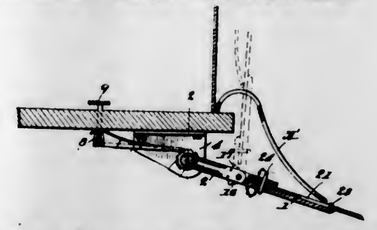


4. The combination, with the car-body, of fenders which are hinged to the same and hang outside the wheels and are made in two longitudinal parts adapted to fold on each other, and rigid arms or brackets which are pendent from the car and so arranged that the ends of the fenders rest in contact therewith, and devices attached to the lower fender-section or foldable part and adapted to engage the brackets detachably for holding them in the normal position, substantially as described.

5. The combination, with the car-body, of a fender hinged thereto and hanging normally outside of the wheels, rigid arms or brackets attached to and pendent from the car-body, the fenders bearing normally on the same, and means for locking or securing the fender to the brackets, the same consisting of rods which are slidable in keepers attached to the fender, and a rotatable hub which is operatively connected with the inner ends of the rods, and springs for holding the rods normally extended or in locking position, substantially as described.

6. The improved side fender for cars, comprising two longitudinal sections, each formed of sheet metal, and hinged together at their meeting edges, substantially as described.

824,542. **CAR-FENDER.** CHARLES HAGER and THOMAS D. FINLEY, New York, N. Y. Filed Apr. 10, 1906. Serial No. 310,928.



Claim.—1. The combination, with the car-platform of a fender comprising a fender proper, a rotatable shaft or rail and hangers therefor attached to the under side of the platform, arms extending forward from the shaft and connected with the fender, plate-springs secured at their forward ends to the shaft, their rear ends bearing against the under side of the platform thus tending to rotate the shaft and raise the fender, ratchets on the shaft, pivoted pawls engaging the same, springs engaging with the pawls and tending to hold them engaged with the ratchets, and a push-rod extending through the platform into position for manual operation, substantially as described.

2. The combination, with the car-platform, of a fender and supports therefor, a rotatable shaft with which such supports are connected, springs tending to rotate the shaft backward and thus raise the fender, ratchet-and-pawl mechanism for locking the shaft against the tension of the springs, and means under manual control for releasing the pawls, substantially as described.

3. The combination, with the car-platform of a fender and supports therefor, a rotatable shaft with which said supports are connected, springs tending to elevate the fender, means for locking the shaft against the tension of the springs, a device under manual control for disengaging such means, and an automatic stop for limiting the upward movement of the fender, substantially as described.

4. The combination, with the car-platform of a fender and supports therefor, a rotatable shaft with which such supports are rigidly connected, hangers in which the shaft is journaled, the same being provided with arc-slots and the shaft with pins adapted to work in

such slots, springs tending to rotate the shaft and raise the fender, means for locking the fender in the lowered position, and a releasing device under manual control, the rotation of the shaft and the consequent elevation of the fender being thus automatically stopped at the required point, substantially as described.

5. The combination, with a car-platform and a rotatable shaft journaled beneath the same and having forwardly-extending arms for supporting the fender, means tending to rotate the shaft and raise the fender, ratchets applied to the shaft, pivoted pawls engaging the ratchets, springs connecting the rear ends of the pawls with the platform and tending to hold the front ends of the pawls depressed and engaged with the ratchets while leaving them free to slide over the latter when the fender is lowered, a push-rod connecting with the rear ends of the pawls and extending above the platform so that the pawls may be manually released at will, and stops for limiting the upward movement of the fender when thus released, the same comprising pins projecting from the ends of the shaft and entering the slots in the adjacent journal-supports, substantially as described.

6. The combination, with the car-platform, of a fender and supports therefor, a rotatable shaft with which the supports are rigidly connected, means under the control of the gripman for rotating the shaft for lowering the fender to the emergency position, springs attached to the shaft and extending rearward and tending to rotate the shaft and raise the fender, pawls and ratchets for holding the shaft locked in any position to which it may be rotated in lowering the fender, and means under manual control for releasing the pawls and thereby allowing the springs to restore the shaft and fender to the normal elevated position, substantially as described.

7. The combination, with the car-platform and the fender, of the fender-supports comprising arms extending forward and supplemental arms pivoted thereto and to which the fender is directly attached, and means for locking said supplemental arms in the extended position, substantially as described.

8. The combination, with the car-platform, the fender and supports therefor comprising arms extending forward from beneath the platform and supplemental arms pivoted thereto and provided with shoulders in rear of the pivot, of spring-actuated dogs pivoted to the said arms and adapted to alternately engage the shoulder for locking the fender-supports in the extended or elevated position, substantially as described.

9. The combination of the car-platform, a fender and a rotatable shaft journaled beneath the platform and having arms extended forward and bifurcated at their outer ends, dogs pivoted in the bifurcations, and a spring applied to the polygonal shanks thereof for holding them in either the locking or unlocked position, a fender, and supports therefor which are pivoted in the forks of said arms adjacent to the dogs, the latter being adapted to engage the adjacent end of the supports for locking them in the manner described.

10. The combination, with a car-platform, a rotatable shaft journaled beneath the same and having forwardly-extended arms, fender-supports comprising arms pivoted to the first-named ones, and means for locking them in the required positions, substantially as set forth.

11. The combination, with the car-platform, of fender-supports extending from beneath the same and comprising bifurcated arms whose lower members are provided with headed pins, removable pins passing through holes in the base portions of the supports, and the fender proper having keyhole-slots adapted to receive the headed pins of said supports and to slide thereon, and also with holes adapted to receive the removable pins, the fender when applied to the supports sliding in the bifurcations or notches of the same, substantially as described.

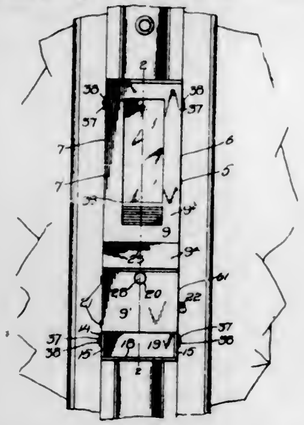
12. The combination, with the car-platform of fender-supports comprising a rotatable shaft, arms extending forward therefrom, fender-supports comprising bifurcated arms pivoted to the first-named arms and provided with fixed headed pins and with removable pins, the fender proper having keyhole-slots, and holes adapted to receive the respective pins whereby it is adapted for convenient attachment to and detachment from the support, substantially as described.

13. The improved car-fender comprising a metal plate which is reticulated, and a reticulated supplemental metal portion hinged thereto, substantially as described.

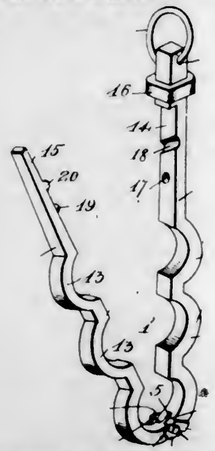
14. An improved car-fender comprising a reticulated sheet-steel plate, substantially as described.

324,543. COIN-OPERATED MECHANISM. WILLIAM A. HICKEY and JOSEPH BROWN, St. Paul, Minn. Filed Jan. 7, 1905. Serial No. 240,676.

Claim.—A mechanism of the class described comprising a casing, a horizontal partition in the casing, a slide disposed upon the partition for movement thereover, longitudinally-slotted tubes disposed at opposite sides of the slide, helical springs within the tubes, a rod carried by the slide and engaged at its end portions slidably in the slots of the tubes, said rod resting against the springs, said springs being arranged to hold the slide at one limit of its movement, said slide having a coin-receiving slot therein and being arranged for movement against the action of the springs to bring a coin in the slot into engagement with an article disposed upon the plates and for further movement to disengage said article from the plates and to move the coin beyond the horizontal partition to permit of passage of the coin downwardly through the coin-slot.



824,544. PIPE-HANGER. GEORGE HOSSBOE, New Castle, Pa. Filed Dec. 4, 1905. Serial No. 290,374.

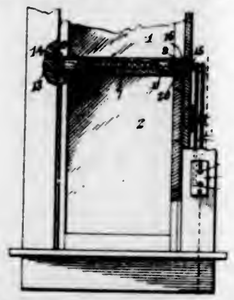


Claim.—1. A hanger of the character described, comprising two pivotally-connected members having recesses or half-sockets in their opposing faces and longitudinally-tapered portions at their free ends, one of said members being provided with a recess adapted to receive the free end of the other and said members being provided with a coacting stud and socket, and a locking-slide upon the tapered portions of said members.

2. A hanger of the character described, comprising two pivotally-connected members having recesses or half-sockets in their opposing faces and longitudinally-tapered portions at their free ends, one of said members being provided with a recess adapted to receive the free end of the other and said members being further provided with a coacting transversely-extending, angularly-disposed rib, and a similarly shaped and arranged groove, and a locking-slide upon the tapered portions of said members.

3. A hanger of the character described comprising two members 2 3 having in their opposing faces, semicircular sockets or jaws, said member 3 having its lower end formed with a reduced tongue to enter the bifurcated lower end of the member 2, a pivot-bolt passed through said bifurcated end and tongue, the upper portions of said members being tapered upwardly and the member 2 having in its inner face a recess to receive the upper portion of the member 3, said member 2 having a socket and a groove and said member 3 having a stud and a rib to coact respectively with the socket and groove of the member 2, and a locking slide or sleeve upon the tapered upper portions of said members, and means for supporting said hanger.

824,545. AUTOMATIC SASH-LOCK. MAX L. HUBERMANN, Santa Margarita, Cal. Filed May 24, 1905. Serial No. 261,983.



Claim.—1. In a sash-fastener, the combination with a sash, of a locking-rod mounted on and extending across the sash for engaging a window-frame at one side thereof, means for automatically retracting the locking-rod, and locking mechanism located at the opposite side of the window and provided with means for engaging the sash and for also engaging the rod to move the same to its extended position.

2. In a sash-fastener, the combination with a sash, of a locking-rod mounted on and extending across the sash for engaging a window-frame at one side thereof, means for automatically retracting the locking-rod, and locking mechanism located at the opposite side of the window and provided with means for engaging the sash and for also engaging the rod to move the same to its extended position, said means being also arranged to engage the sash independently of the rod to control the movement of the former.

3. In a sash-fastener, the combination with a sash, of a locking-rod extending across the sash for engaging the window at one side, a spring for automatically retracting the rod, and locking mechanism located at the opposite side of the window and embodying a bolt arranged to engage the locking-rod and the sash and a spring for actuating the bolt, the spring of the bolt being stronger than the spring of the locking-rod, whereby the bolt is adapted to automatically move the locking-rod to its engaging position.

4. In a sash-fastener, the combination with a sash, of a locking-rod extending across the sash for engaging the window at one side, a spring for automatically retracting the rod, and locking mechanism located at the opposite side of the window and embodying a bolt arranged to engage the locking-rod and the sash, a spring for actuating the bolt, the spring of the bolt being stronger than the spring of the locking-rod, whereby the bolt is adapted to automatically move the locking-rod to its engaging position, and operating mechanism connected with the bolt for withdrawing the same.

5. In a sash-fastener, the combination with a sash, of a spring-actuated locking-rod extending across the sash and arranged to engage one side of a window, and locking mechanism located at the opposite side of the window and embodying a spring-actuated bolt arranged to engage the locking-rod and the sash, an operating-lever fulcrumed at an intermediate point and connected at one arm with the bolt, and a push-rod arranged to actuate the other arm of the lever.

6. In a sash-fastener, the combination with a window-frame, and a sash, of a locking device carried by the sash for engaging one side of the window-frame, and locking mechanism located at the opposite side of the window-frame and provided with means for operating the said locking device.

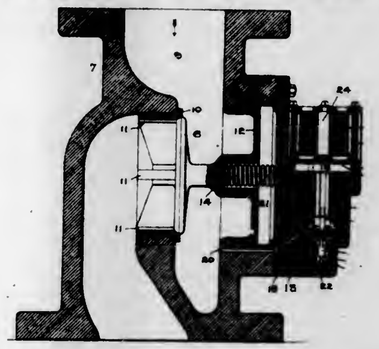
7. In a sash-fastener, the combination of a sash, a locking-rod extending across the sash for engaging one side of a window-casing, and locking mechanism located at the opposite side of the window and embodying a bolt arranged to engage the sash and the locking-rod, an upright lever, a push-rod fulcrumed at an intermediate point for actuating the lower arm of the lever, and a bell-crank connection between the upper arm of the lever and the bolt.

8. In a sash-fastener, the combination with a sash, of a locking device mounted on the sash for engaging a window frame or casing at one side thereof, means for automatically throwing such locking devices out of engagement with the window frame or casing, and locking mechanism located at the opposite side of the window frame or casing and provided with means for engaging the sash and for also actuating the said locking device to move the same to its engaging position.

9. The combination with a window-frame, and a sash, of a locking device carried by the sash for engaging one side of the window-frame, said locking device being provided with means for automatically moving it out of engagement with the window-frame, and locking mechanism mounted on the window-frame at the opposite side thereof and provided with means for moving the locking device into engagement with the window-frame.

10. The combination with a window-frame, and a sash, of a locking device carried by the sash and arranged to engage one side of the window-frame, said locking device being provided with means for automatically moving it out of engagement with the window-frame, locking mechanism mounted on the window-frame at the opposite side thereof and provided with means for moving the locking device into engagement with the window-frame, an upright lever fulcrumed at an intermediate point and having one arm connected at one end with the locking mechanism, and a push-rod for actuating the other arm of the lever.

824,546. GOVERNING MECHANISM FOR TURBINES. OSCAR JUNGGREN, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Aug. 26, 1902. Serial No. 121,110.



Claim.—1. In an elastic-fluid turbine, the combination of a bucket-wheel, a plurality of nozzles arranged to discharge motive fluid thereto, separate valves for the nozzles, individual secondary valves for controlling the nozzle-valves, a governor, and means under the control of the governor for successively actuating the secondary valves.

2. In an elastic-fluid turbine, the combination of a bucket-wheel, a number of closely-associated nozzle-sections delivering fluid to the wheel, intermediate buckets located between the wheel-buckets, nozzle-controlling valves each having an open and a closed position but no intermediate, individual secondary means controlling the nozzle-valves, a governor, and mechanism under the control of the governor for successively actuating the secondary means.

3. In a turbine, the combination of a wheel, a plurality of individual expanding nozzle-openings, separately-actuated valves for positively opening and closing the openings, thereby changing the volume delivered without varying the velocity, the said valves having no intermediate position, a secondary device for actuating each of the valves, and a governor for successively moving the devices into and out of operation.

4. In a turbine, the combination of a bucket-wheel, a stationary sectional intermediate, a plurality of nozzle-openings delivering fluid to the wheel and to the intermediate, separately-actuated valves for opening and closing the nozzle-openings, a separate secondary means for actuating each valve, each of said secondary means being independent in its action of every other means, and a device respon-

sive to speed changes which regulates the action of the secondary means, substantially as described.

5. In a governing system, the combination of a turbine-wheel, a plurality of expanding nozzles therefor, an electrically-controlled valve for each nozzle acting to vary the total volume of fluid delivered to the wheel without affecting its velocity.

6. In a turbine, the combination of a plurality of nozzle-openings formed in a single structure, valves for the nozzles which are attached to said structure and have an opening and a closed position but no intermediate, electrically-controlled means for regulating the valves, and a revolving element which is acted upon by the fluid from the nozzles.

7. In a turbine, the combination of a revolving wheel, intermediates which cover a section of the wheel, a number of nozzles delivering fluid to the wheel and to the intermediates, valves which have only an open and a closed position for definitely cutting the nozzles into and out of service, and electrical means for regulating the valves.

8. In a turbine, the combination of a wheel, a plurality of expanding nozzles which convert the pressure of the steam into velocity and deliver it with the velocity unimpaired to the wheel, separate valves for the nozzles, magnets for regulating the action of the valves, a governor, and contacts acted upon by the governor for opening and closing the circuits of the magnets.

9. In a turbine, the combination of a wheel, a plurality of nozzles which convert the pressure of the steam into velocity and deliver it with the velocity unimpaired to the wheel, electrically-controlled valves for cutting the nozzles into and out of service, each valve having two definite positions, and a device responsive to speed variations for varying the circuit connections of the valves.

10. In a turbine, the combination of a bucket-wheel, a plurality of nozzles which are closely associated and convert the pressure of the motive fluid into velocity and deliver it with a velocity unimpaired to the wheel, valves regulating the nozzles which have an open and a closed position but no intermediate, secondary valves controlling the nozzle-valves which are independent of each other in their action, a governor that is responsive to speed variations, and means under the control of the governor for successively cutting the secondary valves into and out of service.

11. In a turbine, the combination of a wheel having rows of vanes or buckets, segmental intermediate vanes or buckets between the rows of wheel-vanes, a casing for the wheel, a plurality of nozzles arranged in groups for imparting velocity to the motive fluid and delivering it to the wheel at substantially the pressure of the casing, and electrically-controlled valves for the nozzles which definitely put the nozzles into or out of service, whereby the total volume of fluid delivered to the vanes can be varied at will without impairing its velocity.

12. In a turbine, the combination of a bucket-wheel, a number of nozzles distributed at different points around the wheel, each nozzle comprising a number of closely-associated discharge-passages, nozzle-valves, secondary valves controlling the nozzle-valves, an automatic regulator, and means under the control of the regulator progressively acting on the secondary valves, one after the other, to cut the nozzle-sections into and out of service.

13. In a turbine, the combination of a wheel, having circular rows of buckets, intermediate buckets situated between the rows of wheel-buckets and arranged to cover a portion only of the wheel, a nozzle arranged in segmental form and situated in line with the intermediate bucket, the said nozzle comprising a plurality of closely-associated passages whereby the fluid therefrom is discharged in a solid stream, valves for the passages, pistons for operating them, independent secondary valves for controlling the pistons, and means for successively operating the secondary valves.

14. In a turbine, the combination of a fluid-admitting valve, a motive device for opening the valve when steam is admitted to the turbine, a magnet for causing said valve to close, and a governor which controls the magnet.

15. In a turbine, the combination of a plurality of nozzles, valves for definitely opening and closing the nozzles, motors for definitely moving the valves to an open or closed position, magnets arranged to permit the valves to close when they are deënergized, and a governor for controlling the magnets.

16. In a turbine, the combination of a plurality of nozzles, a separate valve for each nozzle, a fluid-motor for actuating each valve, a valve for governing the admission of fluid to each motor, a magnet for governing each valve, which is arranged to admit fluid to the motor whenever its circuit is interrupted and a governor which controls the motor-valves.

17. In a turbine, the combination of a number of nozzles, a number of nozzle-valves, a motor for each nozzle-valve, motor-governing valves, a separate magnet for operating each of the motor-valves, and a regulator which is common to the magnets.

18. In a turbine, the combination of a number of nozzles each acting to convert fluid-pressure into velocity, motors which tend to place the nozzles in service as soon as fluid is admitted to the turbine, and an electrically-actuated device which controls the action of the motors.

19. A turbine having a plurality of individual fluid-admitting nozzles, each nozzle having an open and a closed position, but no intermediate, with electrically-actuated means for definitely opening or closing the nozzles.

20. In combination, a turbine having an automatic valve, a speed-governor acting on the valve, and means causing the valve to close whenever the operative relation between the governor and valve is disturbed.

21. In a turbine, the combination of a number of nozzles, valves for the nozzles, magnets for controlling the valves, a contact device capable of simultaneously energizing all of the magnets at full load, and means for automatically actuating the contact device to cut them out of circuit one by one as the load decreases.

22. In a turbine, the combination of a number of nozzles, electrically-actuated valves for the nozzles which are operated in pairs, and a governor for cutting the valves into and out of service.

23. In a stage-turbine, the combination of nozzle-valves in the first stage, a number of nozzle-valves in lower pressure stage, valve-controlling mechanism, electrical connections extending between the mechanism of the stages whereby the sets of valves are caused to act simultaneously, and a governor which controls their action.

24. In combination, a turbine, a sectionalized nozzle, a plurality of separately-actuated valves for regulating the admission of fluid to the turbine, magnets for the valves, a contact-cylinder which controls the magnets, and a governor for actuating the cylinder.

25. In combination, a turbine, a plurality of electromagnetically-actuated valves, a contact-cylinder which is capable of simultaneously energizing all of the magnets and cutting them out step by step, and a governor which is driven by the turbine for moving the cylinder.

26. In combination, a turbine, a plurality of electromagnetically-actuated valves for regulating the turbine, a governor for regulating the valves, and an auxiliary device acting under abnormal conditions, which renders the magnet inoperative.

27. In combination, a turbine, a plurality of electromagnetically-actuated valves, a speed-governor for regulating the normal action of the valves, and a device acted upon by the governor which cuts the magnets out of circuit under certain conditions.

28. In a turbine, the combination of a rotating element, a plurality of valves delivering fluid thereto, magnets controlling the valves, a contact device, conductors connected in multiple to the magnets, and a governor acting on the device in a manner to include more or less of the conductors in the circuit.

29. In a turbine, the combination of a rotating element, a plurality of valves delivering fluid thereto, magnets controlling the valves, which are connected in multiple, and a contact device for simultaneously deënergizing the magnets.

30 In a turbine, the combination of a rotating element, a plurality of valves delivering fluid thereto, magnets controlling the valves, which are connected in multiple, a contact device capable of simultaneously energizing the magnets, and a second contact device capable of deënergizing the magnets irrespective of the position of the first contact device.

31. In combination, a turbine, magnets for governing the admission of fluid thereto, and a contact-cylinder arranged to include the magnets in circuit simultaneously, and cut them out in a step-by-step manner.

32. In a turbine, the combination of a sectionalized nozzle, a valve-chamber opening into each of the sections, and separately-actuated valves in said chambers for controlling the admission of fluid to the nozzle-sections.

33. In a turbine, the combination of a nozzle having a plurality of working passages formed therein, a valve-chamber opening into each of the passages, separately-actuated valves situated in the chambers, and a steam-chest with which the chambers all communicate.

34. In an elastic-fluid turbine, a governor, a plurality of inlet-nozzles, an independent valve controlling each nozzle, and valves controlled by the governor for regulating the action of the independent nozzle-valves.

35. In an elastic-fluid turbine, the combination of a plurality of inlet-nozzles, a separately-actuated valve for controlling each nozzle, and a second set of valves controlled by the speed of the turbine for regulating the action of said nozzle-valves.

36. In an elastic-fluid turbine, the combination of a plurality of inlet-nozzles, an independent valve controlling each nozzle, auxiliary valves which control the nozzle-valves, and a contact device for controlling the action of the auxiliary valves.

37. In a steam or gas turbine, a plurality of inlet-nozzles, an independent valve controlling each nozzle, actuated by motive fluid, and valves controlled by the speed of the turbine to admit motive fluid to, and cut it off from, said turbine, substantially as described.

38. In combination, a bucket-wheel, nozzles, a plurality of independent valves for regulating the admission of fluid thereto, a governor for regulating the valves, and an auxiliary device acting under abnormal conditions for rendering the valves inoperative.

39. In combination, a bucket-wheel, nozzles, a plurality of individual valves for regulating the discharge of fluid therefrom, a governor, means under the control of the governor for controlling the valves, and a device responsive to abnormal conditions for rendering said means inoperative and causing the valves to close.

40. In an elastic-fluid turbine, the combination of nozzle-sections for discharging motive fluid, a bucket-wheel situated in front of the nozzle-sections, means for cutting the sections into and out of service, a separate motor for each of the means, a secondary controlling device for each of the motors, and a governor that acts on all of the secondary devices and successively renders them active and inactive.

41. In an elastic-fluid turbine, the combination of a bucket-wheel, a nozzle arranged to discharge motive fluid against the wheel, the nozzle being composed of a plurality of closely-associated sections which discharge the fluid as a solid stream or column, a separately-actuated controlling means for each section, which has an open and a closed position but no intermediate, an automatic governor, and mechanism between all of the controlling means and the governor acting to cut the end section into and out of service whereby the continuity of the intermediate portion of the fluid stream or column is preserved at all times.

42. In an elastic-fluid turbine, the combination of a bucket-wheel, a plurality of groups of nozzles, each group comprising a plurality of closely-associated nozzle-sections which discharge the motive fluid in the form of a solid stream or column, an automatic governor, an independent valve for controlling each section of each group, and connecting means between each valve and the governor whereby the end sections of the several groups are cut into or out of service successively and the continuity of the several streams or columns is preserved.

43. In an elastic-fluid turbine, a plurality of nozzles, a valve in each nozzle, a speed-governor, and electromagnetic means controlled thereby for opening or closing said valves progressively according to variations in the load.

44. In an elastic-fluid turbine, a series of fluid-actuated valves controlling the supply of fluid to the turbine, a series of passages for the valve-actuating fluid, and a governor-controlled valve for each passage.

45. In an elastic-fluid turbine, an induction-nozzle, a fluid-actuated valve therefor, a passage for the valve-actuating fluid, and an electrically-operated governor-controlled valve therein.

46. In an elastic-fluid turbine, a series of supply-valves, and independent governor-controlled devices which control a fluid-relay power to actuate said supply-valves.

47. In a turbine, an induction-nozzle delivering fluid-pressure against a rotating element, a fluid-actuated valve therefor, a passage for the valve-actuating fluid, a valve therein, and a governor-controlled motor to actuate said latter valve.

48. A turbine which is divided into stages of expansion and is provided with wheel-buckets and fluid-discharging devices for each stage, in combination with valves admitting fluid to the turbine, a means responsive to load conditions for successively operating the admission-valves, and successively operating stage-valves controlling the passage of motive fluid from one stage to another.

49. A turbine which is divided into stages of expansion and is provided with wheel-buckets and fluid-discharging devices for each stage, in combination with valves admitting fluid to the turbine, valves controlling the passage of motive fluid from one stage to another, and a speed-responsive means causing the admission and stage valves to open and close successively to vary the volume of fluid passing through the turbine as the load changes.

50. A turbine which is divided into stages of expansion and is provided with wheel-buckets and fluid-discharging devices for each stage, in combination with valves admitting fluid to the turbine, a speed-governor for controlling the action of the admission-valves, and fluid-actuated stage-valves for controlling the passage of motive fluid.

51. A turbine which is divided into stages of expansion and is provided with wheel-buckets and fluid-discharging devices, in combination with valves admitting fluid to the turbine, a speed-governor for controlling the operation of the valves, stage-valves controlling the passage of motive fluid from one stage to another, and fluid-actuated motors for actuating the valves.

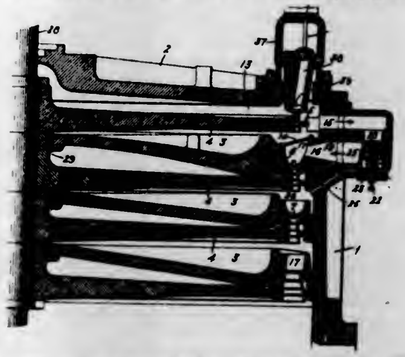
52. An elastic-fluid turbine comprising movable buckets and fluid-discharging devices, in combination with valves regulating the passage of fluid through the devices, electromagnets for operating the valves, and means modifying the circuit relations of the magnets to open and close the valves in accordance with load changes, said means being so constructed as to permit a valve to open and close to admit a pulsatory supply of fluid to a discharging device.

53. An elastic-fluid turbine comprising movable buckets and fluid-discharging devices, in combination with valves regulating the passage of fluid through the devices, electromagnets for controlling the operation of the valves, a contact means for modifying the circuit relations of the magnets in a manner to cause the valves to open and close in accordance with load changes, said means being so constructed as to permit a valve at the critical point of regulation to open and close to admit a pulsatory supply of fluid to a discharging device, and a load-responsive device acting on the contact device.

54. An elastic-fluid turbine having movable buckets and a nozzle comprising a plurality of closely-associated passages arranged to discharge motive fluid in an unbroken column to the buckets, in combination with valves for the passages having an open and a closed position but no intermediate, and a means responsive to load changes for opening and closing the valves as the load changes, said means being so constructed as to permit a valve at one end of the column to open and close and admit a pulsatory supply of motive fluid to a discharging device for the purpose described.

55. An elastic-fluid turbine having movable buckets and a plurality of fluid-discharging devices, in combination with valves for the devices which have an open and a closed position, motors for actuating the valves, a separate and independently-acting regulator for each motor, and a load-responsive means which is common to the regulators and causes them to act successively to vary the number of valves in service, said means being so constructed as to permit movement of one of the regulators in a manner to cause a valve at the critical point of regulation to open and close and admit a pulsatory supply of fluid to a discharging device for the purpose described.

824,547. REGULATING MECHANISM FOR TURBINES. OSCAR JUNGGREN, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Apr. 6, 1904. Serial No. 201,850.



Claim.—1. In an elastic-fluid turbine operating by stage expansion, means controlling the supply of fluid to the first stage, and individual automatic stage-pressure-controlled valves located at different points around the turbine for supplying fluid to the succeeding stage or stages.

2. In an elastic-fluid turbine operating by stage expansion, valves controlling the supply of fluid to the first stage, and a series of valves controlling the supply of fluid to a succeeding stage which are automatically operated by relatively different variations in the preceding stage-pressure.

3. In an elastic-fluid turbine operating by stage expansion, indi-

vidual and successively-operating valves controlling the supply of fluid to the first stage, and automatic stage-pressure-controlled valves admitting fluid to the succeeding stage or stages.

4. In an elastic-fluid turbine operating by stage expansion, means controlling the admission of fluid to the first stage, passages disposed around the turbine for delivering the fluid to a succeeding stage, and valves which are automatically and successively opened or closed under the control of the preceding stage-pressure.

5. In a turbine operating by stage expansion, a plurality of passages for discharging fluid-pressure from a stage, and successively-acting valves under the control of a stage-pressure which regulate the volume of fluid exhausted from said stage.

6. In an elastic-fluid turbine operating by stage expansion, independently and successively acting valves controlling the supply of fluid to the first stage, valves between the stage-compartments adapted to maintain stage-pressures therein, which are automatically actuated by the pressure in the stage which they control acting against a substantially constant resistance tending to move said valves in opposition to said stage-pressure.

7. In an elastic-fluid turbine, operated by stage expansion, the combination of a plurality of separately-actuated valves controlling the supply of fluid to the first stage, a speed-responsive device, and automatic stage-pressure-controlled valves supplying fluid to the succeeding stage or stages.

8. In an elastic-fluid turbine operated by stage expansion, the combination of a plurality of valves controlling the supply of fluid to the turbine, a speed-responsive device for regulating the action of the valves, and a series of individual valves controlling the supply of fluid to a succeeding stage, which are automatically operated by variations in the preceding stage-pressure.

9. In an elastic-fluid turbine operated by stage expansion, the combination of a plurality of individual and separately-actuated valves, a speed-responsive device for controlling the valves, and automatic stage-pressure-controlled valves admitting fluid to a succeeding stage or stages.

10. In an elastic-fluid turbine operated by stage expansion, the combination of a plurality of separately-actuated valves controlling the admission of fluid to the first stage, a speed-responsive device acting on said valves to regulate them, and passages delivering fluid to a succeeding stage, which are automatically and successively opened under the control of the pressure in the preceding stage.

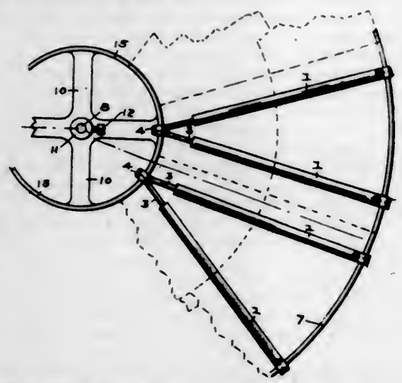
11. In an elastic-fluid turbine operated by stage expansion, the combination of individual valves controlling the supply of fluid to the first stage, a speed-responsive device for operating the valves one after the other in predetermined sequence, and valves between the stage or wheel compartments adapted to maintain predetermined pressure therein, said valves being subjected to the pressure of fluid within the stage and also to a substantially constant resistance tending to move said valves in opposition to the stage-pressure.

12. A turbine of the multistage type, in combination with a valve mechanism responding to speed changes for increasing and decreasing the amount of motive fluid admitted to the turbine, stage nozzles or devices, and successively-operating stage-valves which open and permit more fluid to flow through the stage nozzles or devices when the amount of fluid admitted to the turbine by the governed valve mechanism increases and close one after the other and cut out stage nozzles or devices as the amount of fluid admitted by the governed valve mechanism decreases.

824,548. **EXTENSIBLE DOME FORM FOR CEMENT CISTERNS.** FRANCIS R. KEMER, Indianapolis, Ind., assignor of two-thirds to William J. Thissell and Edward H. Ehrensperger, Indianapolis, Ind. Filed Sept. 23, 1905. Serial No. 279,843.

Claim.—1. In a dome form for cisterns, a plurality of supporting members telescoped together, hooks formed in the ends of said members, stationary supporting means engaging the hooks in the outer ends of the supporting members, an adjustable supporting means engaging the hooks in the inner ends of said members, and an upright support to engage the adjustable supporting means.

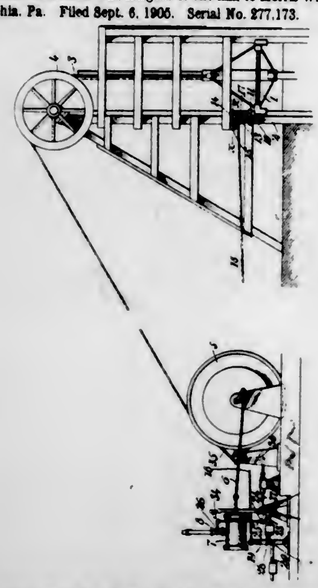
2. In a dome form for cisterns, a plurality of supporting members forming the primary sections of the supporting-frame, secondary supporting members forming a part of said frame and telescoping with the primary members, hooks formed in the inner ends of the primary members, an adjustable means engaging said hooks and adapted to support said ends of the primary members, an upright support engaging the adjustable means, means permitting adjustment of the adjustable means on the upright, and the cistern-casing engaging the hooks on the outer ends of the supporting-frame and adapted to support the outer end thereof.



3. In a dome form for cisterns, a plurality of V-shaped members forming the primary sections of the supporting-frame, secondary members telescoping with the primary members, hooks formed in the ends of both the primary and secondary members, fixed and adjustable supporting means engaging said hooks, an upright support engaging the adjustable supporting means, and means carried by said adjustable supporting means to permit the latter to be adjusted.

4. In a dome form for cisterns, a plurality of V-shaped members forming the primary sections of the supporting-frame, secondary members telescoping with the primary members, hooks formed in the ends of both the primary and secondary members, the cistern-casing engaging the outer hooks and adapted to support the outer ends of the frame, a supporting annular ring, an annular shoulder formed on said ring and adapted to engage the hooks formed on the primary members of the supporting-frame, an upright support engaging the ring, and means on said ring to permit its adjustment on said upright.

824,549. **AUTOMATIC STOP FOR HOISTS.** FRANCIS H. KOHLBRAKER, Nanticoke, Pa., assignor of one-half to Morris Williams, Philadelphia, Pa. Filed Sept. 6, 1905. Serial No. 277,173.



Claim.—1. In a stop mechanism for a hoisting device, a trip-lever adapted to be engaged by the hoisting-cage, a lever having link connection with the trip-lever, a trigger having detachable connection with said last-named lever, and a flexible connection between said trigger and the valve-controlling mechanism.

2. In a hoisting apparatus, a cage and a motor therefor, means controlled by the cage for causing a closing of the motor-valve, and manually-operated means for closing said valve without disturbing the elements controlled by the cage.

3. In a hoisting apparatus comprising a cage, a motor therefor, an inlet-controlling valve for the motor, a shaft having connection with said valve, means for holding said shaft in normal position, devices adapted to be actuated by the cage for releasing said holding devices, a sleeve on said shaft and in which the shaft may turn, a lever secured to the shaft, and means for placing the shaft and sleeve in locked position.

4. A hoisting apparatus comprising a cage, a motor therefor, a valve for controlling the inlet of motive agent to the motor, a shaft, a connection between said shaft and said valve, a device for holding the shaft in normal position, means actuated by the cage for releasing the said holding device, a sleeve through which the sleeve loosely passes, a lever extended rigidly from the shaft, a locking device carried by the lever for engaging with said sleeve, and a drum-brake operated by a movement of the shaft.

5. A hoisting apparatus comprising a cage, a motor, an inlet-controlling valve for the motor, a shaft, weighted arms extended outward from said shaft, a connection between the shaft and the valve, a sleeve through which the sleeve loosely passes, a lever secured to said shaft, means carried by the lever for interlocking with the sleeve, an arm extended from the sleeve, a vertically-swinging support with which said last-named arm is designed to engage, a weight for moving said support in one direction, devices adapted to be actuated by the cage, and a cable connection between said devices and said support.

6. In a hoisting apparatus, a cage, a motor therefor, a valve for controlling the inlet to the motor, a shaft arranged adjacent to the motor, a connection between said shaft and valve, weighed arms extended outward from the shaft, a sleeve through which the sleeve loosely passes, means for interlocking the sleeve and shaft, a lever extended from the shaft and rigidly connected thereto, a weighted arm extended outward from the sleeve, a vertically-extended swinging supporting-bar, a roller on said bar with which the last-named arm is designed to engage, a weight for moving the said supporting-bar in one direction, a trip-lever adapted to be engaged by the hoist-cage, a trigger adapted to be released by a movement of said trip-lever, and a cable connection between said trigger and said swinging support.

824,550. **FRAME FOR MOTOR-VEHICLES.** LÉON LAKERGES, Issy-les-Moulineaux, France. Filed July 6, 1905. Serial No. 268,504.



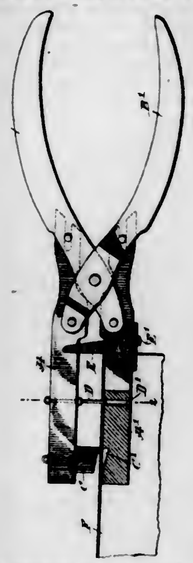
Claim.—A sill for motor-car frames, comprising interconnected bars of U-shaped cross-section one of which is seated within the other, one of the side flanges of one of said bars being lapped about the corresponding flange of the other bar and riveted thereto.

824,551. **CUTTING AND PUNCHING TOOL.** ADELORE J. LEVIS, Houghton, Mich. Filed Oct. 10, 1905. Serial No. 282,116.

Claim.—1. A cutting and punching tool comprising a pair of members, and means for moving the members parallel toward and from each other, one of the members carrying a cutter and a punch, the punch being arranged behind the cutter, and of greater length, whereby to form a gage for the cutter, and the other member having a recess and an aperture for cooperating with the cutter and the punch, respectively.

2. A cutting and punching tool comprising a pair of members, and means for moving the members parallel toward and from each other, one of the members carrying a cutter and a punch and the other member having a recess opposite the cutter and an aperture opposite the punch, the said cutter having a triangular cross-section and a bottom inclined longitudinally and upwardly from the apex to the base.

3. A cutting and punching tool comprising a pair of members, and means for moving the members parallel toward and from each other, one of the members carrying a cutter and a punch and the other member having a recess opposite the cutter and an aperture opposite the punch, the said cutter having a triangular cross-section and a bottom inclined upwardly and longitudinally from the apex to the base and the said punch having its bottom inclined transversely.



4. A cutting and punching tool comprising a pair of members, and means for moving the members parallel toward and from each other, one of the members carrying a cutter and a punch and the other member having a recess opposite the cutter and an aperture opposite the punch, the said cutter having a triangular cross-section and a bottom inclined longitudinally and upwardly from the apex to the base, the said recess corresponding in shape to the said cutter and the bottom of the recess being inclined upwardly from the base to the apex.

5. A cutting and punching tool, comprising a pair of members, and means for moving the members parallel toward and from each other, a cutting device and a punching device arranged in longitudinal alinement between said members and connected therewith, the rear device being arranged to act as a gage for the front device.

824,552. **TOBACCO-CARTRIDGE.** JOHN O. LICEY, River Styx, Ohio. Filed Jan. 30, 1905. Serial No. 243,286.

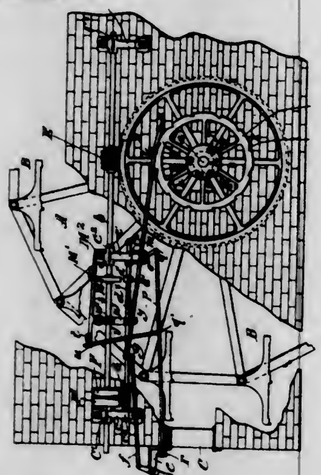


Claim.—1. The herein-described tobacco-cartridge for use for smoking in a pipe and of a size and shape to adapt it to fit in and fill a pipe, and comprising the filler of tobacco, and wrapper of leaf-tobacco completely incasing and covering the sides and ends of the filler and having its edges gathered together at one end of the cartridge at the center thereof and secured to form a fuse projecting from said end of the cartridge.

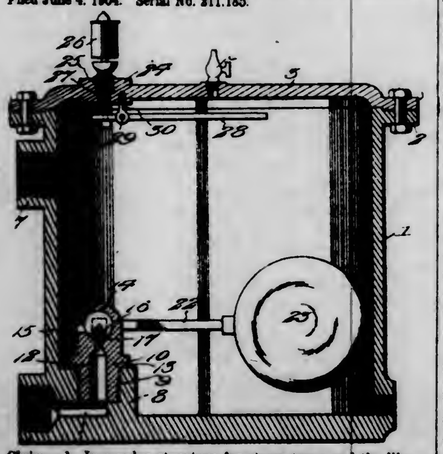
2. The herein-described tobacco-cartridge for use for smoking in a pipe and of a size and shape to adapt it to fit in and fill a pipe, and comprising the filler of tobacco, and wrapper of leaf-tobacco completely incasing and covering the sides and ends of the filler and having its edges gathered together at one end of the cartridge at the center thereof and secured to form a fuse projecting from said end of the cartridge, said cartridge having an opening extending longitudinally therethrough and also extending through said fuse.

824,553. **STOP MECHANISM FOR BAKERS' OVENS.** JOHN J. LINDEN, New York, N. Y. Filed Jan. 23, 1906. Serial No. 297,267.

Claim.—A stop mechanism for bakers' ovens which consists of an oven-reel, a wheel to turn said reel, tap-bolts extending from the hub of said wheel, and a shaft carrying said wheel, a ratchet-wheel loose upon said shaft, a hub-plate for said ratchet-wheel having concentric slots to receive said tap-bolts, whereby the ratchet-wheel may be adjusted circularly with relation to said wheel and connected thereto as adjusted, a belt-shifting rod normally held in engagement with said ratchet-wheel and operated thereby at predetermined intervals, and means whereby braking action is applied when the power is shut off, together with means for reapplying the power and removing the braking action.



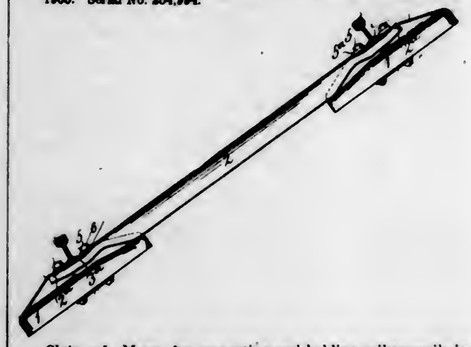
824,554. STEAM-TRAP. JOHN T. LINDSTROM, Allentown, Pa. Filed June 4, 1904. Serial No. 211,185.



Claim.—1. In a valve structure for steam-traps and the like, a casing, a valve-seat therein having a cylindrical chamber, a valve in said chamber comprising disk-shaped members and a substantially triangular body portion connecting said disk-shaped members, a float, and a stem-lever having a bifurcated end connected with said disk members of the valve.

2. In a valve structure for steam-traps and the like, a casing having an outlet and an internal boss formed with a threaded socket and a discharge-passage leading therefrom to the outlet, a valve-seat screwed into said socket and formed with a shoulder bearing against the upper side of the boss, and also formed at its upper end with a cylindrical chamber provided in its sides with bearing-openings and having a lateral inlet, the seat being further formed with a vertical passage leading from said chamber to the discharge-passage, a valve mounted within said chamber and comprising disk-shaped members, an intermediate triangular body portion, and squared extremities beyond the disk-shaped members, said disk-shaped members being journaled in and closing the bearing-openings in the ends of the chamber and mounting the valve therein for oscillatory movement, a lever-stem provided with a forked end, the arms of said forked end being apertured to receive the square extremities of the valve, and a float secured to said lever-stem.

824,555. MEANS FOR SUPPORTING AND HOLDING RAILWAY-RAILS. HARRY LIVESEY, London, England. Filed Apr. 11, 1905. Serial No. 254,994.



Claim.—1. Means for supporting and holding railway-rails in position for use, comprising a transverse pair of blocks, a rigid transverse member of channeled section connecting said blocks and adapted to form a double chair, and holding-down or fastening means adapted to hold the rails to be supported upon the end portions of said transverse member.

2. Means for supporting and holding railway-rails in position for use, comprising a pair of blocks, a rigid transverse member of inverted-U section extending across and bearing upon and engaging with said blocks, and holding-down or fastening means adapted to extend through the end portions of said transverse member and engage said blocks and to hold the rails in position upon the said end portions of the transverse member.

3. Means for supporting and holding railway-rails in position for use, comprising a transverse pair of blocks, a rigid transverse member or double chair of metal resting upon said blocks but of less dimension in the direction of the track than the bottom of said blocks, and holding-down or fastening means extending through the end portions of said transverse member into said blocks and connected thereto and adapted to hold rails upon the end portions of said transverse member.

4. Means for supporting and holding railway-rails in position for use, comprising transverse pairs of blocks having their base portions of greater bearing-area than their upper portions, rigid transverse members or double chairs resting upon and fitting the upper reduced portions of the blocks in a fore-and-aft direction, and means adapted to hold rails in place upon the end portions of said transverse members and to hold each pair of blocks, the corresponding double chair, and the rails firmly together.

5. Means for supporting and holding railway-rails in position for use, comprising transverse pairs of blocks having their upper portions of less dimensions in a fore-and-aft direction than their lower portions, rigid transverse members or double chairs each having its end portions of channel-section and fitting over and resting upon the reduced upper ends of a pair of blocks, and means adapted to hold rails in place upon the end portions of said transverse members and to hold each pair of blocks, the corresponding double chair and the rails firmly together.

6. Means for supporting and holding railway-rails in position for use, comprising transversely-arranged pairs of blocks of molded concrete or like material, rigid transverse members or double chairs formed of metal and each having its end portions resting upon and fitting the upper portions of a pair of such blocks, and means adapted to hold rails in place upon the end portions of the double chairs and to hold each pair of blocks, the corresponding double chair and the rails firmly together.

7. Means for supporting and holding railway-rails in position for use, comprising transversely-arranged pairs of blocks formed of concrete or like material molded to shape and each formed with a recessed upper surface, rigid transverse members or double chairs of channel-section and each having its end portions adapted to rest upon and fit the recessed upper surfaces of a pair of blocks and hold them at the required distance apart, the said transverse members being also recessed at each end where they fit one of the said blocks to receive the foot of a rail and thus to assist in holding the rails at the required distance apart, and means adapted to hold the rails in place upon the end portions of the double chairs and to hold each pair of blocks, the corresponding double chair and the rails firmly together.

8. Means for supporting and holding railway-rails in position for use, comprising transversely-arranged pairs of blocks formed of concrete or like material molded to shape and each formed with a recessed upper surface, rigid transverse members or double chairs of channel-section and each having its end portions adapted to rest upon and fit the recessed upper surfaces of a pair of blocks and hold them in place both in a longitudinal direction and in a transverse direction the said transverse members being also recessed at each end where they fit one of the said blocks to receive the foot of a rail and thus to assist in holding the rails at the required distance apart, and means adapted to hold the rails in place upon the end portions of the double chairs and to hold each pair of blocks, the corresponding double chair and the rails firmly together.

9. Means for supporting and holding railway-rails in position for use, comprising transversely-arranged pairs of blocks each of which is recessed at its upper end, rigid transverse members or double chairs formed of metal each having its end portions shaped to rest upon and fit the recessed upper end portions of a pair of blocks and to support a pair of rails in a canted position, and means adapted to hold rails in place upon the end portions of the double chairs and to hold each pair of blocks, the corresponding double chair and the rails firmly together.

10. The combination of transverse pairs of blocks, rigid transverse members or double chairs each made of inverted-U section throughout its length and resting upon and connecting a pair of blocks, a pair of rails resting upon the end portions of the transverse members or double chairs, and holding-down or fastening means adapted to hold the rails, transverse members and blocks firmly together.

11. The combination of transverse pairs of blocks, rigid transverse members or double chairs each resting upon and connecting a pair of blocks and formed of channeled metal, a pair of rails resting upon the end portions of the transverse members or double chairs, and holding-down or fastening means adapted to hold the rails, transverse members and blocks firmly together.

12. The combination of transverse pairs of blocks having their base portions of greater bearing-area than their upper portions, rigid transverse members or double chairs resting upon and fitting the upper reduced portions of the blocks in a fore-and-aft direction, rails resting upon the end portions of said double chairs, and holding-down means adapted to hold each pair of blocks, double chair, and rails firmly together.

13. The combination of transverse pairs of blocks having their upper portions of less dimensions in a fore-and-aft direction than their lower portions, rigid transverse members or double chairs each having its end portions of channel-section and fitting over and resting upon the reduced upper ends of a pair of blocks, rails resting upon the end portions of said double chairs, and means for holding the rails, chairs and blocks firmly together.

14. The combination of transversely-arranged pairs of blocks each of which is recessed at its upper end, rigid transverse members or double chairs formed of metal each having its end portions shaped to rest upon and fit the recessed upper end portions of a pair of blocks and to support a pair of rails in a canted position, rails resting upon the end portions of said double chairs, and means adapted to hold the rails in place and connect them and the double chairs and blocks firmly together.

15. The combination of a transverse pair of blocks formed of concrete or like material molded to shape with reduced upper ends each formed with a longitudinal recess, a rigid transverse member or double chair formed of metal of channel-section and having its end portions bent and shaped to fit the recessed upper ends of the pair of blocks, a pair of rails resting upon the end portions of said double chair, bolts extending upwardly through said blocks and the end portions of said double chair, metal clamps on the upper ends of said blocks and engaging the feet of said rails, and means for holding down said clamps.

16. A railway-rail-supporting block formed with a reduced upper portion having therein a longitudinal recess the bottom of which comprises a central or intermediate portion and outwardly-inclined side portions.

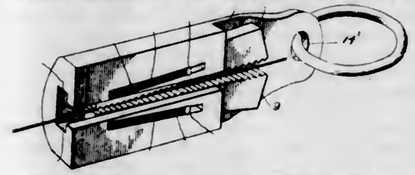
17. A railway-rail-supporting block formed with its upper portion made of less dimensions in a fore-and-aft direction than its base portion and with a longitudinal recess the central portion of the bottom of which is inclined transversely and the end portions of which are inclined to said central portion.

18. For supporting railway-rails, a rigid transverse connecting member of metal adapted to form a double chair and the end portions of which are of channel-section at the under side and are adapted to overlap and fit the front and rear sides of a pair of supporting-blocks with which it is to be used, and the intermediate portion of which is also of channel-section and of greater depth than the end portions, substantially as described and shown.

19. For supporting railway-rails, a rigid transverse metal connecting member of channel-section from end to end, its end portions being made of greater width but less depth than its intermediate portion and adapted to overlap and fit the front and rear sides of a pair of supporting-blocks with which it is to be used.

20. For supporting railway-rails, a rigid transverse metal connecting member of channel-section from end to end, its end portions being made of greater width but less depth than its intermediate portion and adapted to overlap and fit the front and rear sides of a pair of supporting-blocks with which it is to be used, and inclined or canted at the parts where rails are to rest thereon.

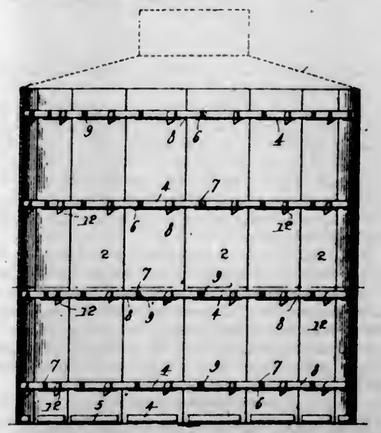
824,556. WIRE-STRETCHER. ISAAC B. LOWRY and FRANK L. ARTERS, Montpelier, Ind. Filed Dec. 28, 1904. Serial No. 238,615.



Claim.—1. A wire-grip comprising a plate provided with slots, jaws mounted upon said plate, pins carried by said jaws and engaged through said slots, and springs mounted in said slots in engagement with said pins for normally holding the said jaws out of engagement with each other.

2. A wire-grip comprising a plate having recessed guides formed thereon, one of the walls of each of said guides being provided with a longitudinal slot, the said slots being converged longitudinally toward each other and lying in the same plane as the adjacent wall of its respective recess, jaws mounted in said recessed guides, pins carried by said jaws and engaged through said slots, and springs engaged in said slots and in engagement with said pins for normally holding said jaws out of engagement with each other.

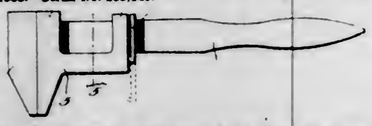
824,557. MOLD. WILLIAM H. LUCAS, Newark, Ohio. Filed Feb. 26, 1906. Serial No. 303,142.



Claim.—The herein-described mold having the separable overlapping side sections, provided on one side with transversely-dis-

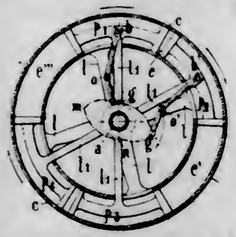
posed angle-metal braces, each having a vertical web and a horizontal, laterally-extending web, said horizontal webs having longitudinal slits in their opposing ends and the corner portions partly separated by said slits, upturned to form vertical guides, and each of said horizontal webs being also provided with a vertical opening near one end, and latches detachably connecting said braces, and hence said side sections, each of said latches lying between the guides and vertical flanges, pivoted at one end to the vertical flange of one of the braces and having its other end provided with a depending, stepped, hook portion to engage the vertical opening in the horizontal flange of the next adjacent brace.

824,558. **WRENCH.** LEWIS MAIER, Grand Ledge, Mich. Filed Oct. 17, 1906. Serial No. 283,140.



Claim.—In a wrench, a shank provided with teeth and carrying a fixed jaw, a relatively movable jaw mounted on the shank and having a rearwardly-projecting arm carrying a collar embracing the shank, a rotary locking-screw terminally journaled in the movable jaw and collar at a point between the arm and shank, said screw being provided with teeth adapted for engagement with those on the shank and having a smooth portion designed for non-engagement with the shank, an operating-arm fixed upon the rear end of the locking-screw for rotating the same to engaging or non-engaging positions, and a finger formed upon the operating-arm for frictional engagement with the upper edges of the shank to hold the screw in normal position with its threads engaged with those on the shank, said arm being disposed in a plane at one side of the shank and adapted to normally lie in contact with the adjacent side face of the latter.

824,559. **ROTARY EXPLOSIVE-ENGINE.** HENRI L. MAILLARD, Paris, France. Filed Mar. 16, 1904. Serial No. 198,220.



Claim.—1. In an engine of the class described, the combination, with a fixed shaft, of a circular tubular rim on said shaft, a plurality of sets of oppositely-reciprocating pistons in said rim, oscillatory levers fulcrumed to a part connected to said rim, the levers being pivoted to said pistons, and means on said shaft for oscillating said levers, whereby continuous rotary movement is imparted to said rim by the movement of said pistons.

2. In an engine of the class described, the combination, with a fixed shaft, of a sleeve rotatable on said shaft, arms radiating from said sleeve, a circular tubular rim carried by said arms, a plurality of sets of oppositely-reciprocating pistons in said rim, oscillatory levers fulcrumed to said rim-carrying arms and pivoted at their ends to said pistons, and means on said shaft for oscillating said levers in order to impart a continuous rotary movement to said rim by the reciprocation of said pistons.

3. In an engine of the class described, the combination, with a fixed shaft, of a circular tubular rim rotatable on said shaft, a plurality of sets of oppositely-reciprocating pistons in said rim, oscillatory levers fulcrumed to a part connected to said rim, the levers being pivoted at one end and to said pistons, and a fixed cam on said shaft for engaging the opposite ends of said levers and operable to impart a continuous rotary movement to said rim when said pistons are actuated.

824,560. **GAME DEVICE.** RALPH D. MARTIN, Tampa, Fla. Filed June 3, 1906. Serial No. 321,552.

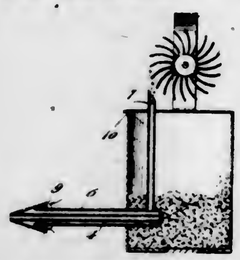
Claim.—1. In a game device, a base, a mast mounted thereon and provided with apertures to receive pegs, a ball, and a flexible connection between the ball and the mast.



2. In a game device, a base, a mast mounted thereon, tapering in direction of its upper end and divided into sections having predetermined designations, a string attached to the upper end of the mast, and a weight carried by the said string.

3. In a game device, a base having apertures therein to receive score-pegs, said base being constructed of two cross-pieces notched to fit one to the other, a mast secured to the base, tapering in direction of its upper end, which mast is divided into variously-colored sections having predetermined designations and a longitudinal series of apertures, pegs having shoulders formed thereon, which pegs are adapted to enter the apertures in the mast, a string attached at one end to the upper portion of the mast, and a weight secured to the free end of said string.

824,561. **TRICK DEVICE.** GEORGE L. MASCHIN, Westfield, Mass. Filed May 6, 1905. Serial No. 259,163.

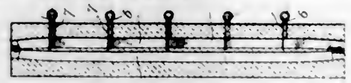


Claim.—1. A trick device comprising a receptacle containing pulverulent or mobile material, a fan-wheel journaled at the top of the receptacle, a vertical tube arranged in the receptacle and having its upper end passing through the top thereof and terminating at a point whereby it is adapted to deliver a blast against the fan-wheel, and two hollow stems leading through a side of the receptacle to the interior thereof, one surrounding the other, the outermost stem being provided with a vertical opening adjacent to its inner end and establishing communication between the vertical tube and said outer stem, the innermost end of the outer stem being partly closed so as to form an opening receiving the inner extremity of the inner stem which is open to the interior of the receptacle, the inner stem being provided with a mouthpiece at its outer end, the receptacle having an opening at its upper portion and facing toward the mouthpiece to permit of egress of the pulverulent material in the receptacle, the top of the receptacle being projected or extended a short distance beyond the adjacent side to overlap and conceal the opening provided in the receptacle for egress of the material contained therein.

2. A trick device comprising a receptacle containing pulverulent or mobile material, a fan-wheel journaled above the top of the receptacle, inner and outer hollow stems leading through a side of the receptacle, the inner stem being open at its innermost extremity and in direct communication with the interior of the receptacle, the inner extremity of the outer stem being closed about the inner stem to connect the inner ends of the two stems, a tube extending vertically from the outer stem and in communication therewith, said tube passing through the top of the receptacle so as to direct a blast against the fan-wheel, and a mouthpiece at the outer extremities of the inner and outer stems and permitting of blowing through either of said stems, the receptacle being provided with an opening facing toward the mouthpiece for the purpose specified.

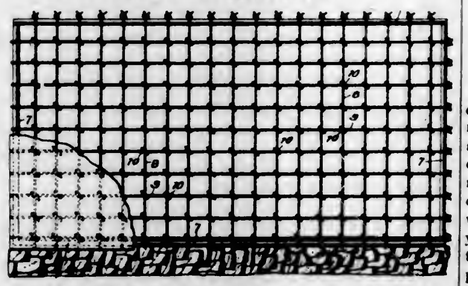
3. In a trick device, the combination of a receptacle containing pulverulent or mobile material and having a top permanently applied thereto, a fan-wheel journaled to and above the top of the receptacle, inner and outer hollow stems leading through a side of the receptacle, the inner stem being open at its innermost end to establish direct communication with the interior of said receptacle, the outer stem being closed and connected with the inner stem at the inner extremities of the two stems, a mouthpiece applied at the outer extremities of the stems to admit of blowing through either of them, and a tube communicating at its lower end and permanently attached to the outer stem adjacent to its inner extremity, said tube projecting vertically from the stems aforesaid and passing through the top of the receptacle and permanently attached to said top so as to direct a blast against the fan-wheel, the receptacle being provided with an outlet-opening at its upper portion and facing toward the mouthpiece of the stems for the purpose specified.

824,562. **FENCE-POST.** ISAAC N. MILLER, Somerset, Ind. Filed Nov. 1, 1905. Serial No. 285,412.



Claim.—A fence-post comprising a body portion of hardened plastic material, a pair of oppositely-facing V-shaped metallic reinforcing members embedded therein, the said members being connected together at their top and bottom, and curved outwardly from each other intermediate their ends, and means secured to one of said reinforcing members and having its inner portion bent to conform to the face of said reinforcing member and its outer portion extending beyond one side of the body portion, and means attached to said outer portion for retaining a line-wire in place thereon.

824,563. **WALL STRUCTURE.** LIBERTY MILLET, Hagerman, Idaho. Filed Apr. 12, 1905. Serial No. 255,217.



Claim.—1. In a structure of the class described, the combination with spaced supporting-webs, each of said webs being formed of crossed wires, of ties extending across the space between and directly connecting the webs, said ties each having their ends secured to the wires of both webs at their crossing-points, and cementitious material covering the webs.

2. In a structure of the class described, the combination with spaced supporting-webs formed of crossed wires, of ties connecting the webs and secured to the wires thereof at their crossing-points, and a cementitious wall-body filling the space between the webs, the meshes, and covering the outer faces of said webs.

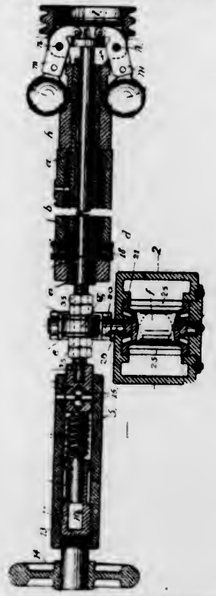
3. In a structure of the class described, the combination with spaced meshed supporting-webs formed of crossed wires, of tie-wires bridging the space between the webs and having their terminals wrapped about the wires of said webs at their points of crossing, and cementitious material covering the webs.

4. In a structure of the class described, the combination with a supporting-frame, of crossed wires extending about the frame and secured thereto, forming spaced meshed webs, and a cementitious wall-body covering the webs.

5. In a structure of the class described, the combination with a supporting-frame comprising angularly-disposed bars or rods, of crossed wires extending about the opposite bars or rods forming spaced open-meshed webs, tie-wires bridging the space between the webs and having their terminals wrapped about the wires at their points of crossing, and a solid cementitious wall-body filling the space between the webs and covering the outer faces of said webs.

6. In a structure of the class described, the combination with a supporting-frame including spaced bars or rods, of wires extending continuously around the spaced bars or rods forming spaced webs, and cementitious material covering the webs.

824,564. **GOVERNOR FOR ENGINES.** PETER MOERDIECK, San Francisco, Cal., assignor to Standard Gas Engine Company, San Francisco, Cal., a Corporation. Filed Mar. 25, 1903. Serial No. 149,479.

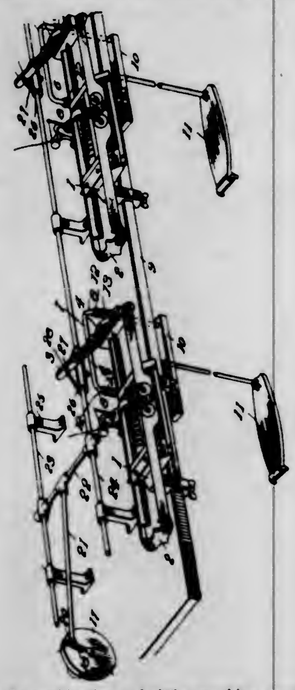


Claim.—1. The combination, with a rotary valve, of a governor comprising a hollow shaft, a fixed sleeve in which the shaft is fitted to revolve, a pulley-carrying head on the end of the shaft for rotating it, a rod rotatable with and also movable longitudinally in the shaft, centrifugal, ball-carrying arms pivotally attached to the pulley-carrying head and having their inner ends arranged to bear against the end of the rod, a coupling connecting the stem of the valve directly with the rod, consisting of an arm fast on the stem of the valve, a yoke pivotally attached to the arm and having an elongated aperture through which the rod passes, the rod being provided with threaded portions on opposite sides of the yoke, adjustable nuts on said threaded portions adapted to clamp the yoke between them and thereby positively connect the said parts together, a bearing-block for the end of the rod beyond the yoke in which the rod is fitted to rotate and an adjustable thrust-block behind the said bearing and means for regulating the pressure thereof against the bearing-block consisting of a coiled spring, a longitudinally-movable follower behind the spring, and means for adjusting said follower to vary the resistance of the spring.

2. In an engine-governor the combination with a rotary valve of a governor having a hollow revoluble shaft in a fixed bearing, and provided with a pulley-carrying head, centrifugal, ball-carrying arms on the head, a rod within the hollow shaft and movable longitudinally therein, one end of said rod being in contact with the end of

the centrifugal arms, means positively connecting the rod with the stem of the valve consisting of an arm fast on the stem and a yoke pivotally attached to the arm and secured on the rod at a point within its end and an adjustable thrust-block adapted to take the endwise pressure of the rod and by its adjustment to vary the resistance to the force exerted by the centrifugal arms against the opposite end of the rod.

824,565. **POWER MECHANISM FOR KNITTING-MACHINES.** THOMAS F. MORRIS, Waterford, N. Y. Filed Oct. 19, 1905. Serial No. 283,495.



Claim.—1. In combination, a knitting-machine, power mechanism, a latch for connecting the power mechanism and the knitting mechanism, means for normally holding the latch in an inoperative position, and manually-operating means for operating the latch to connect the power mechanism and the knitting-machine, said operating means being manually held in position during the time the power mechanism and the knitting-machine are connected.

2. In combination, a knitting-machine having a carriage adapted to be reciprocated in a straight line, power mechanism including a constantly-reciprocating element operable in a given path, a latch for connecting the constantly-reciprocating element and the knitting-machine while the element is reciprocating in its given path, and a manually-controlled disengaging device for disengaging the reciprocating element from the knitting-machine, without altering the movement or the operative path of travel of said element.

3. In combination, a knitting-machine having a carriage adapted to be reciprocated in a straight line, power mechanism including a constantly-reciprocating element operable in a given path, a latch for connecting the constantly-reciprocating element and the knitting machine while the element is reciprocating in its given path, and means for disengaging the latch to stop the knitting-machine.

4. In combination a knitting-machine, a power mechanism formed with opposite inclined surfaces and a seat between the same, a latch on the knitting-machine which engages one of the inclined surfaces and drops into the seat, and manually-operated means for disengaging the latch from the seat.

5. In combination, a knitting-machine, a reciprocating power mechanism including a reciprocating element formed with a seat, a pivoted latch carried by the knitting-machine, said latch normally engaging the seat, and manually-operated means for disengaging the latch from the power mechanism.

6. In combination, a series of knitting-machines, a constantly-operated power mechanism, a latch between each knitting-machine and the power mechanism, means normally holding the latch of each knitting-machine in contact with the power mechanism, and manually-operated means for disengaging the latch from the power mechanism.

7. In combination, a knitting-machine, power mechanism including a reciprocating element having oppositely-inclined surfaces and a seat formed between the same, means for changing the throw of the reciprocating element, a spring-pressed latch carried by the knitting-machine and normally engaging the seat, and a manually-controlled disengaging device for disengaging the latch from the seat.

8. In combination, a knitting-machine having a carriage adapted to be reciprocated in a straight line, power mechanisms including a constantly-reciprocating element operable in a given path and provided with a latch-seat, a latch carried by the carriage to coöperate with the latch-seat, and means mounted independently of the power mechanism and the knitting-machine to engage the latch while in the seat to disconnect the knitting-machine from the power mechanism.

9. In combination, a knitting-machine having a reciprocating carriage, power mechanism including a reciprocating element carrying a lug formed with a seat, a latch pivoted on the carriage and engaging the seat, and an independently-mounted disengaging device for disengaging the latch from the seat.

10. In combination, a knitting-machine, power mechanism adjacent the knitting-machine, comprising a reciprocating rod formed with a seat, a link connected to the rod, and means for imparting motion to the crank, a latch engaging the seat to impart motion to the knitting-machine, and an independently-controlled latch-disengaging device to disengage the latch from the seat to stop the knitting-machine.

11. In combination, a knitting-machine, power mechanism adjacent the knitting-machine, comprising a reciprocating rod formed with a seat and two oppositely-inclined surfaces adjacent the seat, a link connected to the rod, a crank connected to the link, and means imparting motion to the crank, a latch engaging the seat to impart motion to the knitting-machine, and an independently-controlled latch-disengaging device to disengage the latch from the seat to stop the knitting-machine.

12. In combination, a knitting-machine, power mechanism having a reciprocating rod bearing an adjustable collar which is formed with a seat and two oppositely-inclined surfaces, a latch connected to the knitting-machine and normally engaging the seat, and an independently-controlled disengaging device to disengage the latch from the seat.

13. In combination, a knitting-machine, power mechanism having a reciprocating rod which bears a collar formed with a seat and two oppositely-inclined surfaces, a latch pivotally connected to the knitting-machine and normally in engagement with the seat, being guided thereto by one of the inclined surfaces, a disengaging device having a bar as long as the greatest throw of the reciprocating bar, springs for normally causing the disengaging-bar to contact with the latch, and means for manually withdrawing the disengaging device out of contact with the latch.

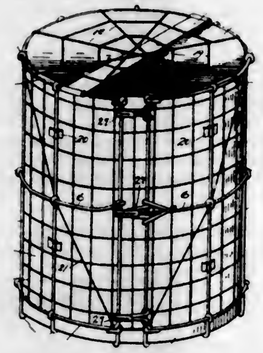
14. In combination, a knitting-machine having a reciprocating carriage, power mechanism including a crank and reciprocating element connected to the crank, means adjustably connecting the reciprocating element to the crrank to alter the throw of the former, a latch connecting the reciprocating carriage and the reciprocating element, and manually-controlled means for disengaging the latch to disconnect the power from the knitting-machine.

15. In combination, a knitting-machine, a connecting device carried by the knitting-machine, power mechanism formed with means which coöperates with the connecting device, and means mounted independently of the knitting-machine to engage the connecting device with the coöperating means on the power mechanism to disconnect the power from the knitting-machine.

824,566. **SHIPPING-CRATE.** JAMES F. MOSS, Palmyra, Va. Filed Nov. 20, 1905. Serial No. 288,145.

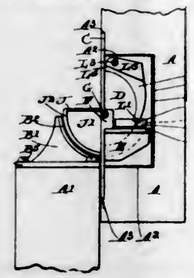
Claim.—1. A shipping-crate consisting of vertical stay-rods, hoops or bands secured to the rods, a lining secured to the rods by clips, removable top and bottom to the crate, and wire network encircling the lining.

2. A shipping-crate comprising vertical stay-rods, hoops or bands secured to the rods, a lining secured to the rods by clips, removable top and bottom to the crate, a wire network encircling the lining, hooks carried by one of the stay-rods to engage the adjacent stay-rod, and diagonal braces secured between the hoops.



3. In a shipping-crate, the combination with vertical stay-rods, hoops or bands secured to the rods, a lining secured to the rods by clips, removable top and bottom to the crate, diametrical braces across the top of the crate, a wire network surrounding the lining, hooks carried by one of the stay-rods to engage the adjacent stay-rods, and diagonal braces secured between the hoops.

824,567. **SELF-ACTING WINDOW-LOCK.** JOHN I. MOSS, Abbotsford, Victoria, Australia. Filed Sept. 18, 1905. Serial No. 279,036.



Claim.—1. In a device of the character described, the combination with an upper and a lower sash, of a bearing carried by the lower sash, a vertical, rectangular plate carried by the upper sash, an integral cheek formed upon said plate, said cheek provided with an aperture, a guide integral with said plate, a shoulder formed on said guide, a lug provided with an aperture, extending from said plate, a pin supported by the apertured portion of said plate and lug, said plate provided with an elongated slot, a substantially semicircular disk secured to said pin, and being capable of radial movement between said cheek and guide, said disk having its outer end lightened and provided with a strengthening-rib, a weight formed upon the inner portion of said disk, and a stop formed upon the top of said inner portion of the disk, the disk being capable of movement within the elongated slotted portion of said plate for engaging the bearing carried by said lower sash.

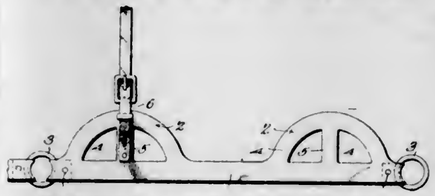
2. The combination with an upper and a lower sash, of a bearing provided with a curved bearing-surface, carried by said lower sash, a semicircular disk pivotally mounted upon said upper sash and normally engaging the bearing-surface of said bearing, said disk provided with a weighted, inner end, and a weighted pawl carried by said upper sash and normally engaging said disk and being capable of securing said disk in a stationary position.

3. In a device of the character described, the combination with an upper and a lower sash, of a disk pivotally mounted upon said upper sash, a stop formed upon the inner portion of said disk, said disk provided with a notched, inner portion, a pawl pivotally mounted within said upper sash, said pawl being of greater width at its upper end and converging throughout its length toward its lower end, the lower end of said pawl normally engaging the notched portion of said disk for holding said disk in a locked position and in the path of movement of said lower sash.

4. In a device of the character described, the combination with an upper and a lower sash, of a locking member pivotally mounted upon said upper sash, a pawl pivotally mounted upon said upper sash and normally engaging said locking member for securing the same in a locked position, said pawl being of greatest width at its upper end and converging throughout its length toward its lower end, and a weight formed upon the upper end of said pawl.

5. In a device of the character described, the combination with an upper and a lower sash, of a disk pivotally mounted upon said upper sash, said disk provided with a weight and a stop formed upon its inner end, a curved pawl tapering throughout its length from one end to its opposite end, said pawl pivotally mounted upon said upper sash, and a weight formed upon said pawl, the pawl being adapted to engage the inner end of said disk for normally holding said disk in a locked position and in the path of movement of the lower sash.

824,568. **HARNESS BREECHING-BRACE.** WILLIAM E. MURRAY Geyserville, Cal. Filed Apr. 13, 1904. Serial No. 203,014.



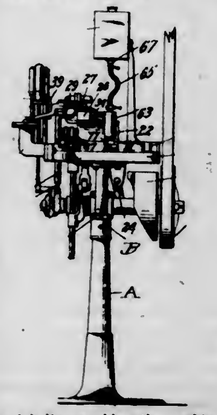
Claim.—1. A breeching having integral hip-strap stays provided with intermediate strips or bars to form a means of attachment to the hip-strap loops.

2. A breeching having integral hip-strap stays provided with intermediate strips or bars to form a means of attachment to the hip-strap loops, and terminal extensions to form a means of attachment to the breeching-rings.

3. As a new article of manufacture, a brace for repairing breechings comprising a body, a hip-strap stay, and a strip or bar to form a means of attachment to the hip-strap loop, all the parts being integral.

4. A breeching comprising a body, stays at each end thereof, the stays being each composed of three sections passing from the body of the breeching at different points and running into each other at their upper ends, said breeching body and stays being formed of an integral piece of leather cut into the specified form, hip-straps, means for connecting the hip-straps with the stays, holdback-straps and means for connecting the holdback-straps respectively to the ends of the breeching.

824,569. **BOTTLE-LABELING MACHINE.** NELSON MUSLAR, Worcester, Mass., assignor, by mesne assignments, to Standard Labeling Machine Company, Boston, Mass., a Corporation of Massachusetts. Filed Oct. 22, 1903. Serial No. 178,090.



Claim.—1. In a labeling-machine, the combination of a hollow picker having an outlet in its label-engaging face, means for laterally moving the picker whereby the labels may be picked up and delivered to the point of application to the bottle, positively-operated

regulable devices for forcing a predetermined quantity of paste out through the outlet in the picker-face after each delivery operation, for the purpose set forth.

2. In a labeling-machine, the combination of a label-applying device, pickers provided with holes in the faces thereof which engage the labels, a forcing device, means for operating the pickers to take labels from a pile and carry the same to the label-applying device, and means for operating the forcing device to cause gum or paste to exude from the pickers each time they engage a label.

3. In a labeling-machine, the combination of a label-applying device, pickers provided with holes in the faces thereof which engage the labels, a forcing device, means for operating the pickers to take labels from a pile and carry the same to a label-applying device, and means for operating the forcing device to cause gum or paste to exude from the pickers as they are on their return stroke from the label-applying device to the pile of labels.

4. In a labeling-machine, the combination of a label-applying device, means for operating the same, pickers provided with holes in the faces thereof, which engage the labels, a forcing device for the paste connected to the pickers, and connections for operating the forcing device from the means which operates the label-applying device so that gum or paste will be caused to exude from the pickers only as the label-applying device is operated.

5. In a labeling-machine, the combination of a label-applying device, means for operating the same, pickers for engaging and carrying forward the labels, a paste-reservoir, a connection from the same to the pickers, a forcing device for the paste included in said connection, and means for operating the forcing device.

6. In a labeling-machine, the combination of label-supporting mechanism, label-applying mechanism, a reciprocating block, hollow pickers carried thereby and moving between said label-supporting mechanism and label-applying mechanism and having fine holes in the faces thereof which engage the labels, a forcing device for the gum or paste and means for operating the forcing device.

7. In a labeling-machine, the combination of label-supporting mechanism, label-applying mechanism, a block, hollow brackets pivoted thereto, interchangeable hollow pickers secured to said brackets and having holes in the faces thereof which engage the labels, a forcing device for the gum or paste connected to said brackets, and means for reciprocating said block between said label-supporting mechanism and label-applying mechanism.

8. In a labeling-machine, the combination of label-supporting mechanism, label-applying mechanism, a block, pickers carried thereby and having holes in the faces thereof which engage the labels, a forcing device for the paste connected to said pickers and carried by said block, means for moving said block to move the pickers between the label-supporting mechanism and label-applying mechanism, and means for operating the forcing device from said movement.

9. In a labeling-machine, the combination of pickers having holes in their label-engaging faces, means for laterally moving the pickers from the pile of labels to the point of application and back again, and positively-operated regulable pumping means for forcing the paste through the holes in the picker-faces after each delivery of a label, substantially as set forth.

10. In a labeling-machine, the combination of a reciprocating block carrying pickers, a pump for the paste or gum connected thereto, a valve in said pump, and means for operating the valve and pump from the reciprocating movement of the block.

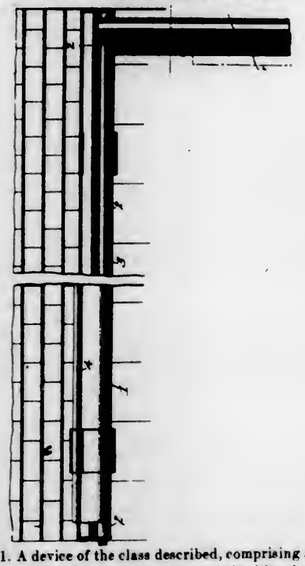
11. In a labeling-machine, the combination of label-supporting mechanism, label-applying mechanism, pickers having holes in the faces thereof which engage the labels, means for reciprocating the pickers between the label-supporting mechanism and label-applying mechanism, a forcing device for supplying paste or gum to the pickers, means for reciprocating the pickers and operating the forcing device, and a starting or tripping mechanism operated by the insertion of the bottle.

12. In a labeling-machine, the combination of label-supporting mechanism, label-applying mechanism, pickers having holes in the faces thereof which engage the labels, a forcing device for supplying gum or paste to the pickers, means for reciprocating the pickers, means for lifting labels into contact with the pickers, means for operating the forcing device, and a starting and stopping mechanism operated by the insertion of the bottle and arranged to start the machine in operation, so that it will go through the proper cycle to apply the label to said bottle and stop the machine in readiness and position for the next operation.

13. In a labeling-machine, the combination of label-applying mechanism, pickers, means for operating the label-applying mechanism and the pickers consisting of a continuously-revolving shaft carrying one member of a clutch-section, a loose clutch-section connected to operate the parts, a spring-pressed rod for engaging said loose clutch-section, a lever for engaging said rod, connections therefrom arranged in position to be engaged by the bottle, and a cam on the clutch-section for restoring the rod to normal position.

14. In a labeling-machine, the combination of label-applying mechanism, pickers, a forcing device connected to the pickers, and means for operating the label-applying mechanism and reciprocating the pickers and forcing device, consisting of a continuously-revolving shaft, a clutch-section thereon, a loose clutch-section, connections extending therefrom in position to be operated by the insertion of the bottle, connections from said loose clutch-section to the label-applying mechanism, and a cam connected to turn with said loose clutch-section to reciprocate said pickers and forcing device.

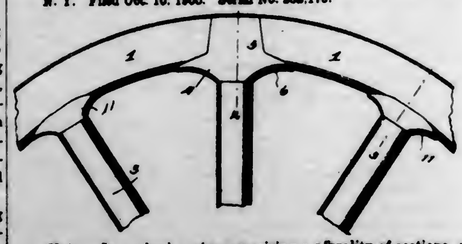
824,570. **EAVES-TROUGH.** JAMES F. MYERS and ALBERT ZIESENISS, Rifle, Colo. Filed Jan. 22, 1906. Serial No. 297,284.



Claim.—1. A device of the class described, comprising an eaves-trough constructed of sheet metal and provided with a lower wall spaced from the eaves-trough to form a lower heating-chamber and connected with the eaves-trough at the front or outer edge by an integral bead, a rain-spout piercing the said lower wall and the bottom of the eaves-trough, and a heating pipe or conduit for the rain-spout communicating with the heating-chamber.

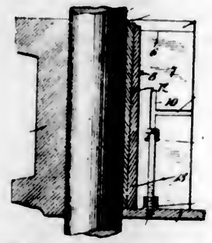
2. In a device of the class described, an eaves-trough provided at the bottom with a heating-chamber, and consisting of a single piece of sheet metal folded longitudinally at an intermediate point and bent thereat to provide a front bead, the portions of the sheet metal at opposite sides of the bead being curved inward from the said bead to form the bottom of the trough and the bottom of the heating-chamber, and the longitudinal edges of the sheet metal being secured together at the inner side of the trough.

824,571. **VEHICLE-WHEEL.** JAMES R. MCALISTER, Hallesboro, N. Y. Filed Oct. 10, 1905. Serial No. 282,178.



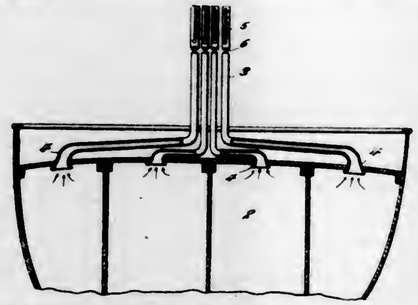
Claim.—In a wheel, a rim comprising a plurality of sections, a wedge-shaped coupling-block seated between the adjacent ends of the sections and having bearing portions designed to overlap the ends and bear on the inner face of the sections, said coupling being provided with a socket or seat and having an opening intersecting said seat, a spoke provided with a tenon fitted in the socket, and a dowel-pin entered through the opening and engaged with the ends of the rim-sections.

824,572. **TAPPET FOR STAMPING-MILLS.** WALLACE MCDONALD, Grass Valley, Cal. Filed Apr. 20, 1905. Serial No. 256,576.



Claim.—In combination with a stamp-rod, a tappet thereon, having a radial opening to receive said rod and extending to one side of the tappet, the latter being further provided in the sides of said opening with longitudinal grooves and transverse clearance-grooves communicating therewith and having recesses at the ends of said opening, a gib in said opening, bearing against one side of said rod, a wedge in guides with which the sides of the opening are provided, said wedge and gib being reversely tapered and in contact with each other, a face-plate in the recess at one end of the tappet and bearing against one end of the wedge, a cross-bar having its ends in the grooves in the sides of the opening, and a screw connecting said cross-bar to said face-plate, substantially as described.

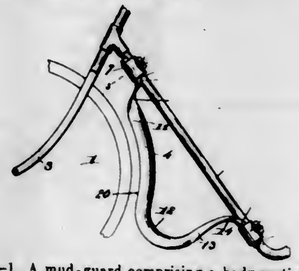
824,573. **MEANS FOR PROTECTING SHIPS FROM FIRE.** HAYWOOD W. MCKINNE, Kingston, N. C. Filed June 8, 1905. Serial No. 264,331.



Claim.—1. The combination of a compartment, a tube of approximately uniform cross-section leading upwardly from the top of the compartment so that the warmer and lighter air therein will ascend freely through the tube, said tube having a series of openings near its outer end, an outwardly-flaring receiving member at the lower end of said tube, inwardly-extending flanges at the outer end of said tube, a second tube fitting within the outer end of the first-mentioned tube and held in position by the inwardly-extending flanges, a column of expansible liquid within the second tube, and means for causing said expansible liquid to indicate when the temperature of the air within the first-mentioned tube reaches a critical point.

2. The combination of a compartment, a tube of approximately uniform cross-section leading upwardly from the top of the compartment so that the warmer and lighter air therein will ascend freely through the tube, said tube having a series of openings near its outer end, an outwardly-flaring receiving member at the lower end of said tube, inwardly-extending flanges at the outer end of said tube, a second tube fitting within the outer end of the first-mentioned tube and held in position by the inwardly-extending flanges, a column of expansible liquid within the second tube, a piston fitting within the second tube and operated by the expansible liquid, a bell, and means for ringing the bell when the piston has reached a predetermined position.

824,574. **MUD-GUARD.** RICHARD NEWMAN, Washington, D. C. Filed June 17, 1905. Serial No. 265,776.

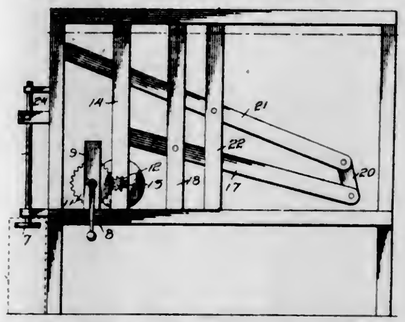


Claim.—1. A mud-guard comprising a body portion concavo-convex in cross-section and provided with reduced ends of concavo-convex formation in cross-section, the concavo-convex faces of the ends of the guard being disposed opposite to the concavo-convex formation of the body portion.

2. The combination with a bicycle, of a mud-guard comprising a body portion curved transversely into a concavo-convex shape on a radius such that it will lie with its concaved face parallel with the transverse curvature of the bicycle-tire, said body portion having its end portions reversely bent into transversely concavo-convex shape and receiving a portion of the frame of the bicycle, said body portion being curved longitudinally and lying parallel to the periphery of the tire.

3. The combination with a bicycle including wheels and a frame, of a mud-guard having a body portion concavo-convex in cross-section, said body portion having an integral end portion of concavo-convex formation in cross-section, said end portion being disposed with a portion of the frame in its concavity, and a fastening-clamp engaged with said end and the frame.

824,575. **CHURNING-MACHINE.** ALEXANDER OVERBAY, Walnut Cove, N. C. Filed Feb. 23, 1906. Serial No. 303,562.



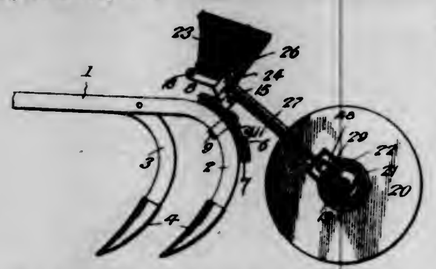
Claim.—1. In a dasher-churn, the combination with the frame and its uprights, and oscillating levers fulcrumed at different points on the uprights, links connecting the levers at their ends at different distances from their fulcrums, a crank, a toothed wheel, a pinion and its crank for imparting an initial movement to the levers, the dasher being adapted to have a vertical movement, and means connecting one end of the oscillating levers with the dasher.

2. In a dasher-churn, the combination with the frame and its uprights, levers fulcrumed at different points on the uprights, and links connecting the levers at different distances from their fulcrums, a crank, a toothed wheel, a pinion and its crank for imparting the initial movement to the levers, and a churn-dasher, a slide, guides for the slide, and a link connecting the slide with the latter and the levers.

824,576. **PLANTER.** PINKNEY OWEN, Boonshill, Tenn. Filed Apr. 14, 1906. Serial No. 311,729.

Claim.—1. A device of the character described comprising a frame, a ground-wheel for supporting the rear of the frame, means for pivotally supporting the forward end of the frame upon an implement, said means being provided with a seed-chute, a hopper upon the frame, a seed-discharge device for discharging seed therefrom

into said chute, and drive mechanism operated by the wheel for actuating said discharge device.

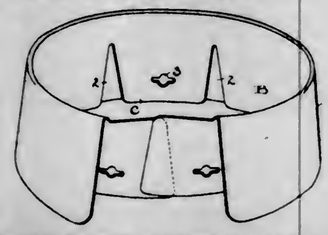


2. A device of the character described comprising a frame, a supporting-wheel carried thereby, an attachment for pivotally mounting said frame upon an implement, said attachment having a seed-receiving cup and a chute communicating therewith, a seed-discharge device upon the frame, a hopper carried by the frame and having an outlet-passage controlled by said discharge device, and drive mechanism operated py the wheel for actuating said discharge device.

3. A device of the character described comprising an attaching member having a seed-chute, a frame pivotally supported at its forward end upon said attaching member, a ground-wheel mounted upon the rear end of the frame, a hopper upon the forward end of the frame, a rotary seed-discharge device controlling the feed of seed from the hopper to the chute drive-gearing actuated by the wheel for operating said discharge device, and means for throwing said drive-gearing into and out of operation.

4. A device of the character described comprising an attaching member having a seed-chute, a frame pivotally supported at its forward end upon said attaching member, a ground-wheel mounted upon the rear end of the frame and carrying a drive-gear, a hopper upon the forward end of the frame, a rotary seed-discharge device controlling the feed of seed from the hopper to the chute, a shaft for operating said seed-discharge device, a pinion slidably mounted on the shaft to be thrown into and out of engagement with the drive-wheel, and means supported by the frame for throwing said pinion into and out of gear.

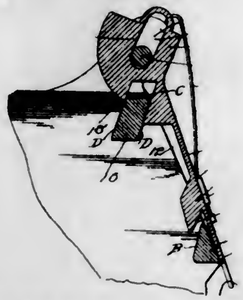
824,577. SHIRT-COLLAR. FREDERICK W. PARSONS, Cleveland, Ohio. Filed Mar. 6, 1905. Serial No. 248,419.



Claim.—As a new article of manufacture, a lay down collar having a neckband provided with two cut-out portions at its rear forming open recesses extending from the lower edge thereof upward approximately half the depth of said band, said recesses having their greatest width at the bottom and converging upward, and a tongue integral with the band between said recesses and provided with a buttonhole, whereby said recesses provide room to enable the fingers to be freely introduced to press the tongue inwardly independently of the remainder of the collar during buttoning and unbuttoning, said band having a continuous uncut surface from said recesses to the ends thereof.

824,578. JOURNAL-BOX. JAMES S. PATTEN, Baltimore, Md., assignor to Baltimore Journal Box Company, Baltimore City, a Corporation of Maryland. Filed Dec. 10, 1904. Serial No. 236,228.

Claim.—1. In a device of the class described, the combination with a body having an opening therein, of a lid for the opening, said body portion having a projection upon its upper face, a bolt arranged in the projection and extending beyond the sides thereof, said lid having wings provided with passages in which the bolt is pivotally engaged, said passages being elongated transversely in one direction to permit of sliding movement of the wings upon the bolt, said body portion having lugs upon its side faces adjacent to the upper faces thereof, and having other lugs upon its side faces adjacent to the lower edge of the opening, said lid having lugs adjacent to the free edge thereof arranged for engagement with the second-named lugs to hold the lid against pivotal movement, said lid also having lugs adjacent to the wings and provided with recesses arranged for the reception of the first-named lugs, said lugs of the lid being arranged for movement into and out of engagement with the lugs of the body portion when the lid is moved slidably upon the bolt, the recessed lugs having portions extending rearwardly of their recesses and rounded, and adapted to bear with their rounded portions against the upper faces of the first-named lugs when the lid is moved pivotally, to bring it into and out of position to permit of engagement of its lugs with those of the body portion.



2. In a device of the class described, the combination with a body portion having an opening in one of its faces, of a pivot-pin carried by the body portion, a lid for the opening provided with ears having elongated openings in which the pivot-pin is slidably and pivotally engaged, said lid being movable pivotally upon the pin into and out of operative position and being arranged for movement slidably upon the pin in a plane at an angle to the open face of the body portion, the slots of the ears extending outwardly and away from the open face of the body portion when the lid is in operative position, said pin lying in spaced relation to the outer ends of the slots when the lid is in closed position to prevent further movement of the lid upon the pin toward the body portion to compensate for wear, said lid and body portion having interlocking lugs arranged for movement into coöperative position to hold the lid against pivotal movement when it is moved slidably in the direction of the body portion.

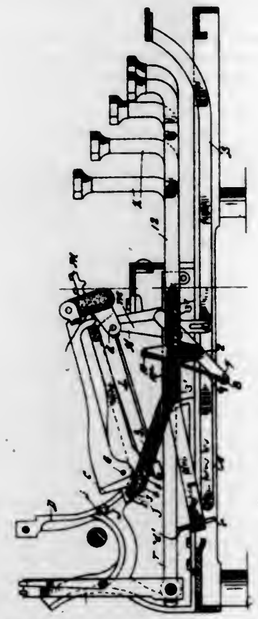
3. In a journal-box for cars, the combination with a body portion, of a lid pivotally and slidably connected with the body portion, said body portion having locking members, said lid having locking members movable therewith into locking engagement with the first-named members when the lid is slidably moved, certain of the locking members of the lid being disposed and arranged for coöperation with certain of the locking members of the body to hold the lid positively against sliding movement except at a certain predetermined point of its pivotal movement.

4. In a journal-box for cars, the combination with a body portion, of a lid pivotally and slidably connected with the body portion and having locking-lugs, said body portion having locking-lugs, the lugs of the lid being movable therewith into locking engagement with those of the body portion when the lid is slidably moved, certain of said lugs of the lid being disposed and arranged for engagement with the lugs of the body to hold the lid against sliding movement except at a certain predetermined point of its pivotal movement.

824,579. TYPE-WRITER. JOHN W. PAUL, Kittanning, Pa. Filed Nov. 1, 1901. Serial No. 80,736.

Claim.—1. In a type-writer the combination of a shifting type-frame provided with a plurality of type-bars pivoted near their inner ends in the arc of a vertical circle in said type-frame; a shift-key lever; and shifting mechanism arranged to hold the type-frame normally for either upper or lower case and to shift from either position upon the depression of the shift-key lever.

2. In a type-writer, the combination of a rocking type-frame provided with a plurality of type-bars pivoted near their inner ends in an arc lying approximately in a vertical plane; a shift-key lever, and shifting mechanism arranged to hold said rocking frame normally in position for either upper or lower case characters and for shifting from either position to the other upon the depression of the shift-key lever.



3. In a type-writer, the combination of a supporting-frame, a shifting type-frame having its outer ends supported by horizontally-arranged pivotal points whereby its inner end can be vertically shifted, by the swinging of the entire type-bar frame on said pivots a plurality of type-bars pivoted near their inner ends in the arc of a vertical circle, and a plurality of key-levers having their inner ends loosely supported by the said supporting-frame and operative connections having one end connected with the type-bars and their opposite ends operatively connected with the key-levers at points intermediate their ends, substantially as described.

4. In a type-writer the combination of a rocking type-bar frame; means for shifting said frame; a type-bar carried by said frame; a flexing connection having one end connected with the type-bar and the other with a fixed point, the axis of said rocking frame being arranged relatively to a joint of the flexing connection to permit of the movement of the rocking frame without the movement of the means for operating the flexing connection; and means for flexing said connection.

5. The combination of the platen; a rocking frame in a plane below the platen pivoted toward the front of the machine and extending rearwardly and carrying or comprising a segmental type-bar support or type-bar frame arranged to swing with the rocking frame, and a segmental back-stop or buffer for the type-bars; type-bars pivotally mounted and normally extending toward the front of the machine and lying against or upon said back-stop or buffer; keys carried independently of said rocking frame; means for actuating the type-bars on the depression of a key; means for rocking said frame on its pivot for the purpose set forth.

6. In a type-writer the combination of a pivoted type-bar frame; the type-bar carried by said frame; a flexing connection having one end attached to said type-bar and the other to a fixed point, the point of flexure of said connection being concentric to the pivot of the frame; and means for actuating said flexing connection.

7. In a type-writer, the combination of the platen; a type-bar frame arranged below the platen; a pivot for said frame arranged toward the front of the machine; type-bars arranged in said frame in a substantially normally horizontal position; flexing connections for operating said type-bars, one end of each of said connections being attached to said type-bar and the other to a fixed point, the point of flexure being concentric to the pivot of the frame; and means for flexing said connections.

8. A type-writer comprising a supporting-frame, a type-bar frame provided at its outer end with horizontally-arranged pivotal points supported by the supporting-frame, means for shifting the inner free end of the type-frame vertically, a plurality of upwardly-arranged levers pivotally supported by the supporting-frame, connections between the upper free ends of the said levers and the inner ends of the type-bars, and a plurality of key-levers having their inner ends supported in a horizontal plane by the said supporting-frame, and operatively connected with the said upwardly-arranged levers, substantially as described.

9. In a type-writer, the combination of a supporting-frame, a type-frame pivoted at its outer end upon the supporting-frame, a plurality of type-bars pivoted near their inner ends in the arc of a vertical circle in the inner free end of the type-frame, means for moving the inner end of the type-frame vertically, a plurality of upwardly-extending levers located below the type-bars and pivotally supported by the supporting-frame at their lower ends, connections between the upper free ends of the vertically-arranged levers and the inner ends of the type-bars, and a plurality of key-levers having their inner ends loosely supported in a horizontal plane by the supporting-frame, and operative connections situated at points between the ends of the key-levers and the ends of the upwardly-extending levers, substantially as described.

10. A type-writer comprising a supporting-frame, a type-bar frame pivotally supported at its outer end by the supporting-frame and adapted to move vertically at its inner end, a plurality of type-bars pivoted near their inner ends in the arc of a vertical circle in the inner end of said type-frame, a plurality of upwardly-extending levers pivoted at their lower ends in a horizontal plane in said supporting-frame, connections between the upper free ends of the levers and the inner ends of the type-bars, and a plurality of key-levers loosely supported at their inner ends in a horizontal plane by the supporting-frame, and a cam-slot and pin connection between the key-levers and the vertically-arranged levers and located at points intermediate the ends of the said upwardly-extending levers and the key-levers, substantially as described.

11. In a type-writer the combination of a type-frame pivoted at one end, a plurality of type-bars pivoted near their inner ends in the arc of a vertical circle in the opposite end of said type-frame, a plurality of key-levers, plurality of upwardly-extending levers pivoted at their lower ends below the type-bars and independent of the type-frame, connections having one end connected with the inner end of the type-bars and their opposite ends connected with the upper free ends of the said upwardly-extending levers at points concentric with the pivotal points of the said type-frame, substantially as described.

12. In a type-writer, the combination of a type-frame pivoted at its outer end, a plurality of outwardly-extending type-bars pivotally supported near their inner ends in the arc of a vertical circle in the inner end of the said type-frame, and key-lever connections with the type-bars, the said connections hinged at a point concentric with the pivotal point of the type-frame, substantially as described.

13. In a type-writer, the combination of a vertically-shifting type-bar frame; a type-bar carried by said frame and arranged to strike a printing-point on the front face of the platen; a key-lever operatively connected therewith; said platen; a shift-key lever and intermediate connections between said shift-key lever and type-bar frame, adapted to be shifted in respect to the key-lever, whereby a depression of the key-lever will cause either an up or down movement of the type-bar frame according to its normal position; substantially as described.

14. In a type-writer, the combination of a vertically-shifting type-frame, a plurality of type-bars carried thereby, key-levers operatively connected with the type-bars, a pivoted shift-lever having its free end operatively connected with the vertically-movable end of the type-frame, a shift-key lever, and a shifting connection between the shift-key lever and the shift-lever, whereby the point of connection can be moved to opposite sides of the pivotal point of the shift lever, substantially as and for the purpose described.

15. In a type-writer, the combination of a vertically-shifting type-frame, a plurality of type-bars carried thereby, key-levers operatively connected with the type-bars, a pivoted shift-lever having its free end operatively but movably connected with the type-bar frame, a shift-key lever, and a shifting connection between the shift-key lever and the shift-lever, arranged to shift the connection to opposite sides of the pivotal point of the shift-lever, substantially as and for the purpose described.

16. In a type-writer, the combination of a vertically-shifting type-frame carrying a plurality of type-bars, a plurality of key-levers operatively connected with the type-bars, a pivoted shift-lever having its free end operatively connected with the shifting type-frame, a shift-key lever, a shifting connection between the shift-key lever and the shift-lever and a member for shifting the said connection to

opposite sides of the pivotal point of the shift-lever, substantially as described.

17. In a type-writer, the combination of a vertically-shifting type-frame carrying a plurality of type-bars, a plurality of key-levers operatively connected with the type-bars, a pivoted shift-lever having its free end operatively connected with the shifting type-frame, a key-lever carrying a movable connecting means, and reversing-lever engaging the said movable connecting means for carrying it to opposite sides of the pivotal point of the shift-lever, the shift-lever constructed to engage the reversing-lever in its opposite positions, substantially as described.

18. In a type-writer, the combination of a vertically-shifting type-frame carrying a plurality of type-bars, a plurality of key-levers operatively connected therewith, a pivoted shift-lever having its free end operatively connected with the shifting type-frame, a shift-key lever, a pivoted reversing-lever, a shifting connecting means, the reversing-lever having a slot for engaging the shifting connecting means whereby the shifting connecting means can be carried to opposite sides of the pivotal point of the shift-lever, substantially as described.

19. In a type-writer, the combination of a vertically-shifting type-bar frame, a plurality of type-bars carried thereby, a plurality of type-bar keys operatively connected with the type-bars, a pivoted shift-lever having its free end operatively connected with the shifting type-frame, a shift-key lever, a connecting means adapted to be shifted to opposite sides of the pivotal point of the shift-lever and serving to operatively connect the shift-lever and the shift-key lever, and means for holding the shifted connecting means in its opposite positions, substantially as described.

20. In a type-writer, the combination of a vertically-shifting type-frame, a pivoted shift-lever having its free end operatively connected with the said shifting type-frame, a shift-key lever, a shifting connecting means adapted to operatively connect the shift-lever and the shift-key lever, means for shifting the connecting means to opposite sides of the pivotal point of the shift-lever and a spring-controlled means by which the connecting means can be shifted, substantially as described.

21. In a type-writer, the combination of a vertically-shifting type-frame, a pivoted shift-lever having its free end operatively connected with the type-frame, a movable connecting means adapted to be shifted to opposite sides of the pivotal point of the shift-lever, a reversing-lever for moving the said connecting means, and a spring adapted to hold the said reversing-lever in its shifted position, substantially as described.

22. In a type-writer the combination of a vertically-shifting type-bar frame, a pivoted shift-lever operatively connected with the said type-bar frame, a shift-key lever, one of said levers provided with a longitudinally-arranged slot, a movable connecting means adapted to be moved in the said slot to opposite sides of the pivotal point of the shift-lever, and means for moving and holding the connecting means in its shifted position, substantially as described.

23. In a type-writer, the combination of a vertically-shifting type-frame, a pivoted shift-lever operatively connected with the type-frame, a key-lever, one of said levers provided with a horizontally-arranged slot, a movable connecting means situated in said slot, and means for moving the connecting means in the slot to opposite sides of the pivotal point of the shift-lever, substantially as described.

24. In a type-writer, the combination of a shifting type-bar frame, a plurality of type-bars carried thereby, a plurality of type-bar key-levers operatively connected with the type-bars, pivoted shift-levers situated respectively at opposite sides of the said type-bar key-levers, a shift-key rigidly connected with the shift-lever situated at one side of the keyboard, and a shift-key lever operatively connected with the shift-lever at the opposite side of the keyboard through the medium of a shifting-fulcrum, substantially as and for the purpose described.

25. In a front-strike type-writing machine, the combination of a pivoted type-bar arranged below the platen, and normally lying toward the front of the machine; a flexing connection disposed below said type-bar, one end being connected with the type-bar and the opposite end secured to a point arranged in front of the type-bar pivot, said opposite end being arranged to swing about said fixed point with a movement entirely pivotal when said connection is flexed; a key; and means actuated by said key and applied to the flexing connection intermediate its ends for flexing it to actuate the type-bar, said means comprising a cam-actuating device for immediately operating the said flexing connection.

26. In a front-strike type-writing machine the combination of a pivoted type-bar arranged below the platen, and normally lying toward the front of the machine; a flexing connection disposed below said type-bar, one end being connected with the type-bar and the opposite end secured to a point arranged in front of the type-bar pivot, said opposite end being arranged to swing about said fixed point with a movement entirely pivotal when said connection is flexed; a key; and means actuated by said key and applied to the flexing connection intermediate its ends for flexing it to actuate the type-bar, said means comprising a cam-actuating device for immediately operating the said flexing connection, the distance between the point of flexure and the type-bar being greater than the distance between the point of flexure and the fixed point.

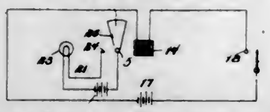
27. In a front-strike type-writing machine, the combination of a pivoted type-bar arranged below the platen, and normally lying toward the front of the machine; a flexing connection disposed below said type-bar, one end being connected with the type-bar and the opposite end secured to a point arranged in front of the type-bar pivot, said opposite end being arranged to swing about said fixed point with a movement entirely pivotal when said connection is flexed; a key; and means comprising a loose or slot connection with said flexing connection intermediate its ends and arranged to be actuated by said key.

28. In a writing-machine, the combination of a platen; type-bar segment; means for changing the relation between the segment and the platen; type-bars pivoted in the segment and normally lying toward the front of the machine; flexing connections located under the type-bars and connected thereto and also connected to a fixed point; a series of keys; the device actuated by said keys and having sliding, loose or slot connections with said flexing connections intermediate their ends.

29. In a type-writer, the combination of a normally approximately horizontally disposed type-bar M, having the projecting end *m*; the link L connected with said projection; the rock-lever M′ pivotally connected with the link L forming with said link a flexing connection and having the slot *m*′ intermediate the ends of said flexing connection; the key-lever K and pin *k* arranged to operate in the slot *m*′.

30. In a type-writer, the combination of a main frame; a rocking type-bar frame; a type-bar pivoted on said frame; a cylindrically-shaped platen on which said type-bar operates; a flexing connection having one end arranged to operate the type-bar and the other connected with the main frame with a fixed axis, the axis of said rocking frame being arranged relatively to a joint on the flexing connection to permit of the movement of the rocking frame independently of any means for operating the flexible connection and to swing the type-bar pivot in a direction approximating a tangent to the platen; means applied intermediately of the ends of the flexing connection for flexing said connection; and means for shifting said type-bar frame.

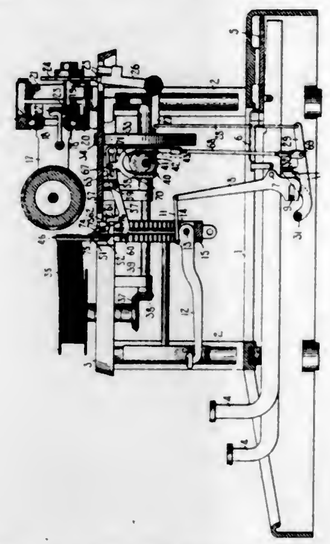
824,580. **SIGNALING DEVICE.** CHARLES C. PHILLIPS, Owensboro, Ky., assignor of one-half to James R. Tennelly, Owensboro, Ky. Filed Mar. 29, 1906. Serial No. 308,771.



Claim.—1. A signaling system of the type described comprising a normally open circuit including a lamp and a movable contact member for completing the circuit to light the lamp, a latch member arranged for holding the contact member in normal position with the circuit open, a second normally open circuit including a magnet adapted to be energized when the circuit is closed, an armature engaged with the latch member and operable by the magnet for moving the latter to releasing position and permitting the movable contact to close the first-named circuit, an automatically-operable track device for closing the second circuit, and means for returning the movable contact member to normal position.

2. A signaling system of the type described comprising a normally open circuit including a lamp and a contact-piece, a movable signaling-arm included in said circuit and having a contact portion adapted to connect with the contact-piece for completing the circuit to light the lamp, a latch member for holding said arm in normal position with the circuit open, a second circuit including a magnet adapted to be energized when the circuit is closed automatically, operable track devices for closing the second circuit, means operated by the magnet when energized for moving the latch member to release the signaling-arm and close the first-named circuit, and automatically-operable track devices for resetting the mechaniam and returning the signaling-arm to normal position.

824,581. **TYPE-WRITING MACHINE.** MORRIS W. POOL, New York, N. Y., assignor to The Monarch Typewriter Company, Syracuse, N. Y., a Corporation of New York. Filed Feb. 25, 1905. Serial No. 247,330.



Claim.—1. In a type-writing machine, the combination of printing-keys; a ribbon-vibrator adapted to be moved to the printing-point by the actuation of said keys; and means for automatically retaining said vibrator in printing position when thus moved thereto by the keys and for permitting return movement of said keys independently of the vibrator.

2. In a type-writing machine, the combination of printing-keys; a ribbon-vibrator adapted to be moved to the printing-point by the actuation of said keys; means for automatically retaining said vibrator in printing position when thus moved thereto by said keys; and means for automatically restoring said vibrator to normal position.

3. In a type-writing machine, the combination of a ribbon-vibrator; means for automatically moving said vibrator to printing position; means for automatically locking said vibrator in printing position; and means for automatically unlocking said vibrator.

4. In a type-writing machine, the combination of a ribbon-vibrator; means for automatically moving the ribbon-vibrator to and from the printing-point; and means, operating to maintain the ribbon-vibrator automatically against movement during a plurality of successive printing operations, said means being automatically brought into play.

5. In a type-writing machine, the combination of a ribbon; means for automatically vibrating the ribbon to cover the printing-point at each printing operation; and means automatically operated to retain the ribbon at the printing-point when thus moved thereto and to render said vibrating means inoperable on the ribbon during succeeding printing operations.

6. In a type-writing machine, the combination of a ribbon-vibrator; means for automatically actuating said vibrator at a printing operation; and automatic means adapted to maintain said vibrator quiescent during one or more succeeding printing operations, said means being automatically brought into play.

7. In a type-writing machine, the combination of a ribbon; means for normally maintaining the ribbon away from the printing-point; means for automatically moving the ribbon to cover the printing-point at a printing operation; and means for automatically maintaining the ribbon in position to cover the printing-point during one or more succeeding printing operations and to render said moving means inoperable on said ribbon.

8. In a type-writing machine, the combination of printing-keys; a ribbon-vibrator; means for actuating said vibrator operated by all the printing-keys; and automatic means for disconnecting said vibrator from said actuating means.

9. In a type-writing machine, the combination of printing-keys; a ribbon-vibrator; means for actuating said vibrator operated by all the printing-keys; and automatic means for operatively connecting said vibrator with and disconnecting it from said actuating means.

10. In a type-writing machine, the combination of a ribbon-vibrator; means for actuating said vibrator; and automatic means for disconnecting said vibrator from said actuating means, said vibrator being adjusted to cause the ribbon normally to uncover the printing-point when the vibrator is connected with its actuating means and to cover the printing-point when said vibrator is disconnected from its actuating means.

11. In a type-writing machine, the combination of a ribbon-vibrator; means for automatically moving said vibrator to the printing-point; means for automatically maintaining the vibrator at the printing-point; and means for automatically moving the vibrator from the printing-point independently of said first-named means.

12. In a type-writing machine, the combination of printing devices; finger-keys for actuating said devices; and a ribbon-vibrator adapted to be moved automatically to interpose the ribbon in the path of one of said printing devices at the depression of one of said finger-keys and to thereupon be caused automatically to remain fixed in the path of said printing devices during one or more next succeeding depressions of the finger-keys.

13. In a type-writing machine, the combination of a platen; printing-keys; a ribbon-vibrator; means for automatically moving the vibrator transversely of the platen when a printing-key is depressed; and means for automatically maintaining said vibrator motionless during the depression of one or more printing-keys next succeeding, said means being automatically brought into play.

14. In a type-writing machine, the combination of a ribbon-vibrator; actuating means connected with said vibrator and adapted to move it to the printing-point during the printing operation of the machine; and means for automatically maintaining said vibrator at the printing-point and for automatically disconnecting the vibrator from said actuating means.

15. In a type-writing machine, the combination of printing-keys; a ribbon-vibrator; connections between said vibrator and said printing-keys; and automatic means for rendering said connections inoperative to transmit motion from said printing-keys to said ribbon-vibrator.

16. In a type-writing machine, the combination of printing-keys; a ribbon-vibrator; connections between said printing-keys and said vibrator; and automatic means for moving one portion of said connection relatively to another so that one or more succeeding actuations of said printing-keys may be ineffective to transmit motion to said vibrator.

17. In a type-writing machine, the combination of a ribbon-vibrator; a part movable therewith and through which motion may be transmitted to said vibrator; and automatic means for effecting a change in the relation between said vibrator and said part and whereby said part is rendered inoperative on said vibrator.

18. In a type-writing machine, the combination of a ribbon-vibrator which normally maintains the ribbon away from the printing-point; printing-keys; means operable by the printing-keys to move the vibrator to the printing-point when a printing-key is operated; and means for automatically rendering said mechanism inoperative on the ribbon-vibrator when one or more succeeding printing-keys are operated.

19. In a type-writing machine, the combination of a ribbon-vibrator; means for moving said vibrator to the printing-point; and a latch adapted to maintain said vibrator at the printing-point, said latch operating automatically when the vibrator is moved to the printing-point.

20. In a type-writing machine, the combination of a ribbon-vibrator; means for moving said vibrator to the printing-point; a latch adapted to maintain said vibrator at the printing-point automatically; and means for automatically unlatching said latch.

21. In a type-writing machine, the combination of a ribbon-vibrator; means for moving said vibrator to the printing-point; a latch adapted to maintain said vibrator at the printing-point automatically; means for automatically unlatching said latch; and means for automatically restoring said vibrator to normal position.

22. In a type-writing machine, the combination of a ribbon-vibrator; an operating-lever adapted to move said vibrator to the printing-point; and means for maintaining said vibrator at the printing-point, said operating-lever being operable upon said means to cause the latter to release said ribbon-vibrator.

23. In a type-writing machine, the combination of a ribbon-vibrator; an operating-lever adapted to move said vibrator to the printing-point; means for maintaining said vibrator at the printing-point, said operating-lever being operable upon said means to cause the latter to release said ribbon-vibrator; and means for restoring said vibrator to normal position.

24. In a type-writing machine, the combination of a ribbon-vibrator; means for throwing said vibrator varying distances transversely of the printing-line; and means for automatically maintaining said vibrator in any of the positions to which it may be thrown.

25. In a type-writing machine, the combination of a ribbon-vibrator; an operating-lever therefor; a link for actuating said operating-lever; means for moving said link progressively longitudinally of said operating-lever whereby said lever is caused to throw said ribbon-vibrator different distances; and means for automatically maintaining said vibrator in any position to which it may be thrown.

26. In a type-writing machine, the combination of a ribbon-vibrator; an operating-lever therefor; a link for actuating said operating-lever; means for moving said link progressively longitudinally of said operating-lever whereby said lever is caused to throw said ribbon-vibrator different distances; and a latch adapted to lock said vibrator automatically in any poition to which it may be thrown.

27. In a type-writing machine, the combination of a ribbon-vibrator; an operating-lever therefor; a link for actuating said operating-lever; means for moving said link progressively longitudinally of said operating-lever whereby said lever is caused to throw said ribbon-vibrator different distances; and a latch adapted to lock said vibrator automatically in any position to which it may be thrown, said operating-lever being adapted to actuate said latch to release said ribbon-vibrator.

28. In a type-writing machine, the combination of a ribbon-vibrator; an operating-lever therefor; a link for actuating said operating-lever; means for moving said link progressively longitudinally of said operating-lever whereby said lever is caused to throw said ribbon-vibrator different distances; a latch adapted to lock said vibrator automatically in any position to which it may be thrown, said operating-lever being adapted to actuate said latch to release said ribbon-vibrator; and independent means for restoring said vibrator to normal position.

29. In a type-writing machine, the combination of a ribbon-vibrator formed with a plurality of depressions or corrugations; a latch; and means for throwing said vibrator to cause said latch to engage with any of said depressions and whereby to maintain said vibrator at the printing-point.

30. In a type-writing machine, the combination of a ribbon-vibrator formed with a plurality of depressions or corrugations; a latch; means for throwing said vibrator to cause said latch to engage with any of said depressions and thereby to maintain said vibrator at the printing-point; and means for unlocking said latch to release said vibrator.

31. In a type-writing machine, the combination of a ribbon-vibrator formed with a plurality of depressions; a latch; and an operating-lever adapted to throw said vibrator so as to cause said latch to engage with any one of the depressions in said vibrator, said lever being further adapted to unlock said latch and release said vibrator.

32. In a type-writing machine, the combination of a ribbon-vibrator formed with a plurality of depressions; a latch; an operating-lever adapted to throw said vibrator so as to cause said latch to engage with any one of the depressions in said vibrator, said lever being also adapted to unlock said latch and release said vibrator; and independent means for restoring said vibrator to normal position.

33. In a type-writing machine, the combination of a corrugated ribbon-vibrator; an operating-lever adapted to throw said vibrator different distances; a spring-pressed pivoted latch adapted to engage with the corrugations of said vibrator to maintain the latter at the printing-point; and a lip or hook on said lever adapted to unlock said latch and thereby to release said vibrator.

34. In a type-writing machine, the combination of a corrugated ribbon-vibrator; an operating-lever adapted to throw said vibrator different distances; a spring-pressed pivoted latch adapted to engage with the corrugations of said vibrator to maintain the latter at the printing-point; a lip or hook on said lever adapted to unlock said latch and release said vibrator; and a draw-spring adapted to restore said vibrator to normal position.

35. In a type-writing machine, the combination of a ribbon-vibrator; a lever operable on said vibrator to throw it to the printing-point; an automatically-actuated latch adapted to maintain said vibrator at the printing-point and disconnect it from said operating-lever; and means for unlocking said latch and reconnecting said vibrator with said operating-lever.

36. In a type-writing machine, the combination of a shouldered corrugated ribbon-vibrator; an operating-lever therefor provided with a hook which normally engages with the shoulders of said vibrator; a spring-pressed pivoted latch adapted to engage the corrugated portion of said ribbon-vibrator to maintain the latter at the printing-point when it is moved thereto by the operating-lever, the hook portion of said lever separating from the shouldered portion of the ribbon-vibrator when the vibrator is latched, said lever being further provided with a lip which is adapted to disconnect said latch from said vibrator; and a draw-spring adapted to reconnect the shouldered portion of said vibrator with the hook portion of said operating-lever.

37. In a type-writing machine, the combination of a ribbon-vibrator; printing-keys; means controlled by said keys for moving the ribbon-vibrator to printing position; means for retaining said vibrator at printing position during a part of the return stroke of a key; and means for feeding the ribbon longitudinally while thus retained in printing position.

38. In a type-writing machine, the combination of a ribbon-vibrator; printing-keys; means for moving said vibrator to printing position during the printing stroke of a key; means for temporarily holding said vibrator at printing position during a portion of the return stroke of said key; and means for restoring said vibrator to normal position after the key has completed its return stroke.

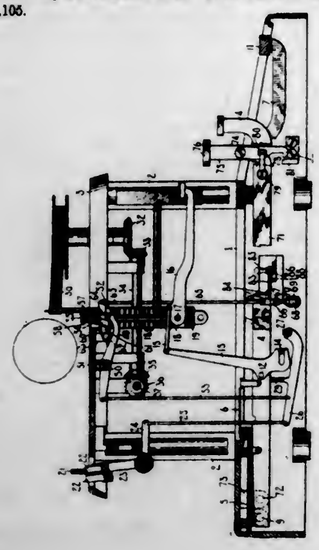
39. In a type-writing machine, the combination of a ribbon-vibrator; printing-keys; means for moving said vibrator to cover and uncover the printing-point at each operation of a printing-key when the keys are operated slowly; and means for preventing said vibrator from returning to normal position during a number of successive key operations when the keys are operated in rapid succession.

40. In a type-writing machine, the combination of a ribbon-vibrator; means for feeding the ribbon longitudinally; printing-keys; means enabling said printing-keys to control said vibrator; and means for taking said vibrator out of the control of said printing-keys without interfering with the ribbon-feeding means.

41. In a type-writing machine, the combination of a ribbon-vibrator; printing-keys; means controlled by said keys for moving the ribbon-vibrator to printing position; and means operative to retain said vibrator at printing position during a part only of the return stroke of the printing-keys when the printing-keys are operated slowly.

42. In a type-writing machine, the combination of a ribbon-vibrator; printing-keys; means enabling said printing-keys to control said vibrator; and means for automatically taking said vibrator out of the control of said printing-keys during the operation of said printing-keys.

824,582. TYPE-WRITING MACHINE. MORRIS W. POOL, New York, N. Y., assignor to The Monarch Typewriter Company, Syracuse, N. Y., a Corporation of New York. Filed Mar. 20, 1905. Serial No. 251,105.



Claim.—1. In a type-writing machine, the combination of printing-keys; a ribbon-vibrator adapted to be moved to the printing-point when said keys are actuated; means for automatically retaining said vibrator at the printing-point when moved thereto by said keys; and key-actuated means independent of the printing-keys for restoring said vibrator to normal position.

2. In a type-writing machine, the combination of a ribbon-vibrator; printing-keys adapted to automatically move said vibrator to the printing-point; means for automatically locking said vibrator at the printing-point when moved thereto by the printing-keys; and key-actuated means independent of said printing-keys for unlocking said vibrator.

3. In a type-writing machine, the combination of a ribbon-vibrator; means for automatically moving said vibrator to and from the printing-point; means adapted to maintain the ribbon-vibrator against movement as long as desired, said means being automatically brought into play; and key-actuated means adapted to release said vibrator at will from its position at the printing-point.

4. In a type-writing machine, the combination of a ribbon-vibrator; means for automatically actuating said vibrator at a printing operation; means adapted to maintain said vibrator quiescent during printing operations, said means being automatically brought into play; and key-actuated means adapted to release said vibrator at will from the control of said last-named means.

5. In a type-writing machine, the combination of a ribbon; means normally maintaining the ribbon away from the printing-point; printing-keys; means operated thereby for automatically moving the ribbon to cover the printing-point at printing operation; means automatically brought into play for maintaining the ribbon in position to cover the printing-point during printing operations and to render said moving means inoperable on said ribbon; and a separate key-actuated means for releasing said ribbon from its position at the printing-point.

6. In a type-writing machine, the combination of a ribbon-vibrator; printing-keys adapted to actuate said vibrator; automatic means for disconnecting said vibrator from said printing-keys; and separate key-operated means for reconnecting said vibrator with said finger-keys.

7. In a type-writing machine, the combination of a ribbon-vibrator; printing-keys adapted to actuate said vibrator; automatic means for disconnecting said vibrator from said printing-keys; and key-operated means independent of said printing-keys for reconnecting the latter with said vibrator, the vibrator being adjusted to cause the ribbon normally to uncover the printing-point when the vibrator is connected with the printing-keys and to cover the printing-point when the vibrator is disconnected from the printing-keys.

8. In a type-writing machine, the combination of a ribbon-vibrator; printing-keys adapted to move said vibrator to the printing-point; means for automatically maintaining the vibrator at the printing-point when so moved thereto; and separate key-actuated means for moving the vibrator from the printing-point independently of the printing-keys.

9. In a type-writing machine, the combination of printing devices, finger-keys for actuating said devices; a ribbon-vibrator adapted to be moved automatically by said finger-keys to interpose the ribbon in the path of said printing devices at the depression of said finger-keys and to thereupon be caused automatically to remain fixed in the path of said printing devices during succeeding depressions of the finger-keys; and separate key-actuated means for releasing said vibrator from its fixed position.

10. In a type-writing machine, the combination of printing-keys; a ribbon-vibrator; connections between said printing-keys and said vibrator; automatic means for moving one portion of said connections relatively to another so that succeeding depressions of said printing-keys may be ineffective to transmit motion to said vibrator; and key-actuated means independent of said printing-keys for reconnecting said printing-keys and said vibrator.

11. In a type-writing machine, the combination of a ribbon-vibrator; printing-keys adapted to move said vibrator to the printing-point; a detent adapted to maintain the vibrator at the printing-point automatically when said vibrator is moved thereto by the printing-keys; and separate key-actuated means for unlatching said detent.

12. In a type-writing machine, the combination of a ribbon-vibrator; printing-keys adapted to move said vibrator to the printing-point; a detent adapted to maintain the vibrator at the printing-point automatically when said vibrator is moved thereto by the printing-keys; separate key-actuated means for unlatching said detent; and means for automatically restoring said vibrator to normal position after the detent has been unlatched.

13. In a type-writing machine, the combination of a ribbon-vibrator; printing-keys; means controlled by said keys for moving the ribbon-vibrator to the printing-point; and means for retaining said vibrator at the printing-point during the entire return stroke of a key.

14. In a type-writing machine, the combination of a ribbon-vibrator; printing-keys; means for moving said vibrator to the printing-point during the printing stroke of a key; means for holding said vibrator at the printing-point during the entire return stroke of said printing-key; and means independent of said printing-key adapted to restore said vibrator to normal position.

15. In a type-writing machine, the combination of a ribbon-vibrator; a detent operating automatically to retain said vibrator at the printing-point; and a special key adapted to affect said detent to release said vibrator.

16. In a type-writing machine, the combination of a ribbon-vibrator; a detent operating automatically to retain said vibrator at the printing-point; and a spacing-lever adapted as it is depressed to affect said detent to release said vibrator.

17. In a type-writing machine, the combination of a ribbon-vibrator; a detent operating automatically to retain said vibrator at the printing-point; a special key adapted to affect said detent to release said vibrator; and a space-key adapted as it is depressed to affect said detent to release said vibrator.

18. In a type-writing machine, the combination of a ribbon-vibrator; a detent for retaining said vibrator at the printing-point; a special key adapted to affect said detent to release said vibrator; a space-key also adapted to affect said detent to release said vibrator; and means to render said space-key inoperable to affect said detent.

19. In a type-writing machine, the combination of a ribbon-vibrator; a detent adapted to retain said vibrator at the printing-point; a link adapted to disconnect said detent from said vibrator; a contact member on said link; a spacing-lever adapted to act on said contact member to affect said detent to release said vibrator; and means for rendering said spacing-lever inoperable on said detent.

20. In a type-writing machine, the combination of a ribbon-vibrator; a detent adapted to retain said vibrator at the printing-point; a link adapted to disconnect said detent from said vibrator; a contact member on said link; a spacing-lever adapted to act on said contact member to affect said detent to release said vibrator; and means for rotating said contact member to a position where the spacing-lever will be inoperative on it.

21. In a type-writing machine, the combination of a ribbon-vibrator; a detent adapted to retain said vibrator at the printing-point; a link adapted to release said detent; a contact member on said link; a spacing-lever adapted to act on said contact member; and a special key-lever also adapted to act on said contact member.

22. In a type-writing machine, the combination of a ribbon-vibrator; a detent adapted to retain said vibrator at the printing-point; a link adapted to release said detent; a contact member on said link; a spacing-lever adapted to act on said contact member to affect said detent to release said vibrator; a special key-lever also adapted to act on said contact member for the same purpose; and means for locking said special key-lever to render said detent inoperable on said vibrator during the operation of the machine.

23. In a type-writing machine, the combination of printing-keys; a spacing device; a ribbon-vibrator adapted to be moved to the printing-point when said printing-keys and said spacing device are actuated; a detent adapted to retain said vibrator at the printing-point; a link adapted to rotate said detent; said spacing device being adapted to actuate said link; a special key-lever also adapted to actuate said link; and means for locking said special key-lever, the locking of said special lever rendering said spacing device inoperable on said link.

24. In a type-writing machine, the combination of printing-keys; a ribbon-vibrator adapted to be moved to an unvarying position at the printing-point when said printing-keys are actuated; means for automatically retaining said vibrator at the printing-point, said vibrator being adapted to have its position altered in respect of the printing-point from the unvarying position to which said vibrator is thrown when the printing-types are actuated.

25. In a type-writing machine, the combination of printing-keys; a ribbon; a ribbon-vibrator adapted to be moved to an unvarying position at the printing-point when a printing-key is actuated; means for automatically retaining said vibrator at the printing-point so that the type-impressions will follow a straight path longitudinal of the ribbon; and means for changing the position of the vibrator while at the printing-point and maintaining said vibrator automatically in another position so that the types will strike below the first-described path

26. In a type-writing machine, the combination of printing-keys; a ribbon; a ribbon-vibrator adapted to be moved to the printing-point when the printing-keys are actuated; a detent automatically operated to retain the vibrator in an unvarying position at the printing-point when said vibrator is moved thereto during the operation of the machine; and hand-operated means for altering the position of the vibrator in respect of the printing-point, said detent being adapted to retain the vibrator in its altered position.

27. In a type-writing machine, the combination of printing-keys; a ribbon; a ribbon-vibrator adapted to be moved to the printing-point when the printing-keys are actuated; a detent automatically operating to retain the vibrator in an unvarying position at the printing-point when said vibrator is moved thereto during the operation of the machine; hand-operated means for altering the position of the vibrator in respect of the printing-point, said detent being adapted to retain the vibrator in its altered position; and independent key-actuated means for affecting said detent to release said vibrator.

28. In a type-writing machine, the combination of printing-keys; a ribbon; a ribbon-vibrator adapted to be moved to the printing-point when the printing-keys are actuated; a detent automatically operating to retain the vibrator at the printing-point; and means for rendering said detent inoperative.

29. In a type-writing machine, the combination of printing-keys; a ribbon; a ribbon-vibrator adapted to be moved to the printing-point when the printing-keys are actuated; a detent automatically operating to retain the vibrator at the printing-point; and means for moving said detent to and locking it in inoperative position.

30. In a type-writing machine, the combination of a shouldered ribbon-vibrator provided with notches or depressions; an operating-lever therefor provided with a hook which normally engages with the shoulders of said vibrator; a spring-pressed, pivoted latch adapted to engage one of the notches of said vibrator to maintain the latter at the printing-point when it is moved thereto by the operating-lever, the hook portion of said lever being adapted to separate from the shouldered portion of the ribbon-vibrator when the vibrator is latched; printing-keys adapted to actuate said operating-lever; separate key-actuated means adapted to release said vibrator from said latch; and a draw-spring adapted to reconnect the shouldered portion of said vibrator with the hook portion of said operating-lever.

31. In a type-writing machine, the combination of a shouldered ribbon-vibrator provided with two notches or depressions; an operating-lever therefor provided with a hook which normally engages with the shoulders of said vibrator; a spring-pressed, pivoted latch adapted to engage the upper notch of said vibrator to maintain the latter at the printing-point when it is moved thereto by the operating-lever, the hook portion of said lever being adapted to separate from the shouldered portion of the ribbon-vibrator when the vibrator is latched, said vibrator being adapted to be manually moved upward from the first position at which it is maintained by the latch until the lower notch will be engaged by said latch; separate key-actuated means adapted to release said vibrator from said latch; and a spring adapted to reconnect said vibrator with said operating-lever.

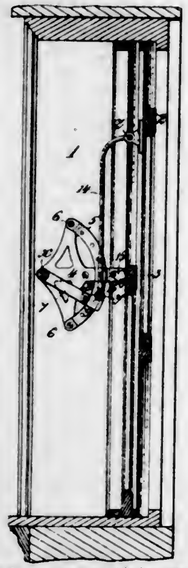
32. In a type-writing machine, the combination of a ribbon-vibrator; printing-keys; means controlled by said keys for moving said vibrator to the printing-point; and means automatically operative to retain said vibrator at the printing-point during the entire return stroke of a printing-key.

33. In a type-writing machine, the combination of a ribbon-carrier operative to be moved bodily by hand transversely of the printing-line to any of a plurality of predetermined positions; and means operating automatically to retain said carrier in each of said predetermined positions when said carrier is bodily moved thereto.

34. In a type-writing machine, the combination of a ribbon-carrier normally maintaining the ribbon away from the printing-line; printing-keys operative to move said carrier automatically to the printing-line, said carrier being operative to be moved bodily by hand from normal position transversely of the printing-line to any of a plurality of predetermined positions; and means operating automatically to retain said carrier in each of said predetermined positions when said carrier is bodily moved thereto whereby the ribbon may be used in any one of a plurality of straight paths.

824,583. **SASH OPERATING AND LOCKING DEVICE.** WILHELMINE R. RENARD, New York, N. Y. Filed Feb. 15, 1905. Serial No. 301,193.

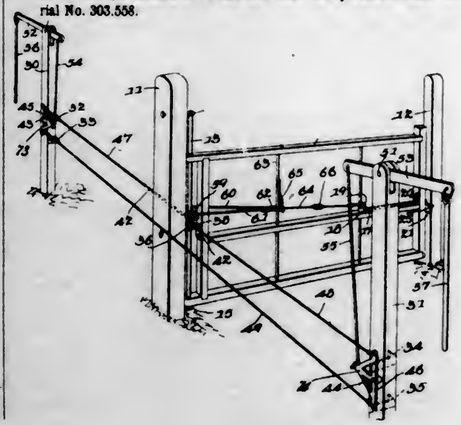
Claim.—1. A device for the purpose specified, comprising a bracket to be secured to the window-casing, a curved segment also to be fixed to the casing and provided with a plurality of bolt-sockets, a lever pivotally mounted on the bracket and provided with a keeper-slot engaging the said fixed segment and adapted to play over the latter, said lever being provided with a handle, a bolt to engage the sockets in the segment, and a spring push-pin for operating said bolt, and a coupling-rod for connecting the lever with the upper sash.



2. A device for the purpose specified, comprising a bracket and curved segment fixed to the window-casing, a lever mounted pivotally on the bracket and provided with means for locking it to the segment, a coupling-rod connecting the free end of the lever with the upper sash of the window, and means carried by the bracket for locking the lower sash.

3. In a device for the purpose specified, the combination with a bracket 4, mounted on the casing of the window, a curved segment 5, also secured to the casing and provided with a plurality of bolt-sockets 13, the lever 7 pivotally mounted at x on said bracket and provided at its free end with a keeper-slot s which engages the segment, and with a handle 8, a spring push-pin in said handle, an arm 11 carried by said push-pin, a bolt 12, carried by said arm and adapted to be moved by the push-pin into and out of engagement with the sockets in the segment, a rod 14, which couples the said lever with the upper sash, and means, carried by the bracket for locking the lower sash.

824,584. **GATE.** JOHN W. REYNOLDS, Frankfort, Ind., assignor to John W. Reynolds and Co., Frankfort, Ind. Filed Feb. 28, 1906. Serial No. 303,558.



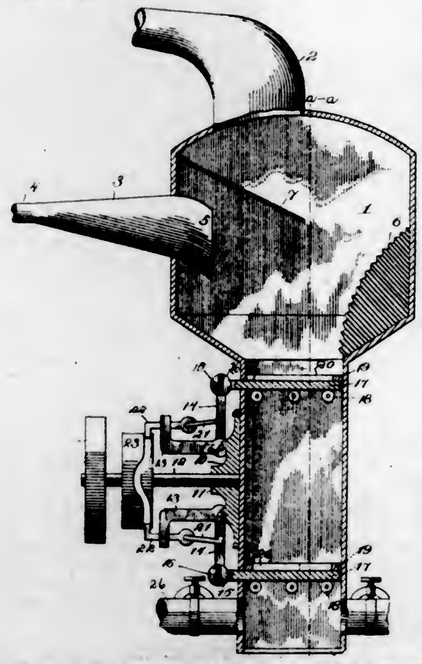
Claim.—1. The combination of a gate mounted to swing in both directions, posts spaced apart at opposite sides of the gate, arms pivoted to swing from said posts and provided with lateral extensions, connecting means between said arms at one side of their pivots, connecting means between said gate and said arms at the other side of their pivots, levers swinging upon said posts, and connecting means between said levers and the lateral projections of said arms.

2. In a gate, posts spaced apart at opposite sides of a gateway-opening, a shaft connected to one of said posts, a latch-keeper upon the other of said posts, a gate swinging upon said shaft, a latch element carried by said gate for detachable engagement with said keeper when the gate is closed, a drum rotatable on said shaft, rods connected between the opposite sides of said drum and said latch element, arms spaced apart and movably disposed at opposite sides of said gate, connecting means between said arms, and connecting means between said arms and said drum.

3. In a gate, posts spaced apart at opposite sides of a gateway-opening, a shaft connected to one of said posts, a latch-keeper upon the other of said posts adapted for vertical adjustment upon the same, a gate swinging upon said shaft and adjustable vertically thereon, a latch element carried by said gate for detachably engaging said keeper when the gate is closed, means for supporting said gate in its upper or lower position, arms spaced apart and movably disposed at opposite sides of the gate, connecting means between said arms, means for actuating said latch element, and connecting means between said lock-actuating means and said arms.

4. In a gate, posts spaced apart at opposite sides of a gateway-opening, a shaft connected to one of said posts, a latch-keeper upon the other of said posts, a gate swinging upon said shaft, a latch element carried by said gate for detachably engaging said keeper when the gate is closed, a drum rotatable on said shaft, a flexible element connected to said drum, rods connected between the opposite sides of said drum and said latch element, arms spaced apart and movably disposed at opposite sides of said gate, connecting means between said arms, and connecting means between said arms and said flexible element.

824,585. **PNEUMATIC GRAIN-MOVING APPARATUS.** JULIUS C. RIETH and JOHN H. CHAMBERLAIN, Chicago, Ill. Filed June 5, 1905. Serial No. 263,767.



Claim.—1. In a pneumatic grain-moving apparatus, a vacuum-chamber, having inlet and outlet pipe connection, the inlet-pipe being gradually enlarged toward its discharge end and curved downwardly, a rubber cushion within the chamber opposite the inlet-pipe, a chute communicating with the bottom of the chamber, diaphragms arranged transverse within the chute, there being substantially diamond-shaped openings in the diaphragms, slides mounted upon rollers beneath the diaphragms, means for alternately operating said slides, substantially as specified.

2. In a pneumatic grain-moving apparatus, a vacuum-chamber, having inlet and outlet pipe connections, the inlet-pipe being gradually enlarged toward its discharge end, a deflector arranged within the chamber above the inlet-pipe, a rubber cushion opposite the discharge end of the inlet-pipe, a chute communicating with the bottom of the chamber, diaphragms having substantially diamond-shaped openings, arranged transverse within the chute, transverse slides mounted upon rollers beneath the diaphragms, lever-arms operated by an eccentric wheel for alternately opening and closing the slides, substantially as specified.

3. In a pneumatic grain-moving apparatus, a vacuum-chamber, having an air-outlet in the top, an inlet-pipe in the wall of the chamber, the inlet-pipe being gradually enlarging toward its discharging end, the discharging end of the inlet-pipe projecting into the chamber and curved downward, a deflector in the chamber arranged above the inlet-pipe, a rubber cushion in the chamber arranged opposite the inlet-pipe, a chute communicating with the bottom of the chamber, transverse diaphragms having substantially diamond-shaped openings therein arranged within the chute, transverse slides mounted upon rollers beneath the diaphragms, lever-arms connected to the slides and operated by the eccentric wheel for alternately moving said slides in and out, means for opening or closing the bottom of the chute, and pipes communicating with the bottom of the chute, substantially as specified.

824,586. **CASK-SUPPORT.** GEORGE S. ROMINGER, Philadelphia, Pa., assignor to Girard Iron Works, Philadelphia, Pa., a Corporation of Pennsylvania. Filed May 6, 1904. Serial No. 206,710.



Claim.—1. As a new article of manufacture, a cask-support consisting of a standard having a supporting base portion and a spherically-formed upper end formed integral therewith, with a shoe adapted to engage a cask and provided with a socket for the reception of the spherical end of said standard, and a bolt connecting said shoe and said standard, said shoe having its upper surface recessed and having a cushion of relatively soft material in such recess, substantially as specified.

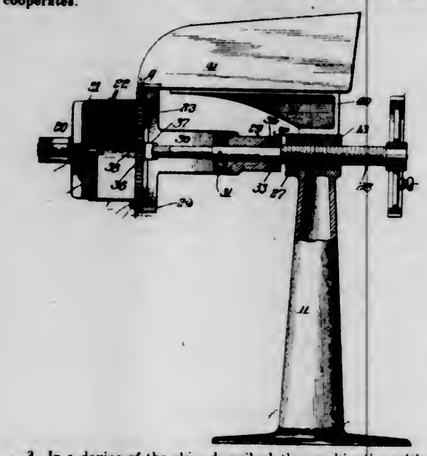
2. As a new article of manufacture, a cask-support consisting of a standard having a supporting base portion and a spherically-formed head portion, a shoe having a socket fitted to said head portion, said socket being provided with two elongated and diametrically-opposed slots, with a bolt passing through said slots in the shoe and said head portion of the standard, said bolt filling the channel for its reception in the head, substantially as specified.

3. As a new article of manufacture, a cask-support consisting of a standard having a supporting base portion and a spherically-formed head, a shoe having a socket fitting said head and provided with diametrically-opposed vertically-extending slots in said socket, a bolt passing through the head and said slots, washers for the bolt concaved to fit the outside surface of the socket, and a nut or nuts on the bolt for holding said parts in position, substantially as specified.

824,587. **VEGETABLE AND FAT CUTTING MACHINE.** CHARLES L. RUEBS and GEORGE WEISS, Chicago, Ill., assignors of one-third to Parke J. Keeney and John F. Volz, Chicago, Ill. Filed May 6, 1905. Serial No. 259,252.

Claim.—1. In a device of the class described, the combination with the supporting-frame carrying a stationary block, of a casing closed at one end by, and adapted to be forced over, said block, and provided with apertures in the other end of the casing, through which the material is forced to divide it, bearings carried by the frame upon which the casing moves, a threaded shaft moving with the casing, and a stationary nut carried by the frame, with which the shaft coöperates.

2. In a device of the class described, the combination with the supporting-frame carrying the stationary block, of a casing closed at one end by, and adapted to be forced over, said block, and having apertures in the other end thereof through which the material is forced to divide it, bearings upon which the casing is moved, carried by the frame, a rotary knife moving transversely of said apertures, a threaded shaft moving with the casing and carrying the knife on its end, and a stationary nut carried by the frame, with which said shaft coöperates.



3. In a device of the class described, the combination with the supporting-frame carrying the stationary block, of a casing closed at one end by, and adapted to be forced over, said block, and having apertures in the other end through which the material is forced to divide it, bearings for the casing carried by the frame, a threaded shaft rotating relative to the casing, but moving therewith, a fixed nut in the frame, with which the shaft coöperates, a gear-wheel on the shaft, and an elongated driving-pinion journaled on the frame meshing with the gear-wheel.

4. In a device of the class described, the combination with the supporting-frame carrying the stationary block, of a casing closed at one end by, and adapted to be forced over, said block, and provided with apertures in the other end through which the material is forced to divide it, bearings upon which the casing moves, carried by the frame, a threaded shaft rotating relative to the casing, but moving therewith, a fixed nut in the frame with which the shaft cooperates, a gear-wheel on the shaft, a handle on the gear-wheel, an elongated driving-pinion journaled on the frame and meshing with the gear-wheel, and a removable handle on the pinion.

5. In a device of the class described, the combination with the standard, of the bearing-rods carried thereby, the stationary block supported on the ends of said rods, the frame adapted to slide on the rods, a casing carried by the frame, and provided with apertures in one end thereof, and means to reciprocate the frame on the rods and thereby carry the casing over the block for the purpose described.

6. In a device of the class described, the combination with the standard, of the horizontal bearing-rods carried thereby, the stationary block on the outer ends of said rods, the frame adapted to slide on said rods, a casing carried by the frame, and provided with apertures in one end thereof, a stationary nut carried by the standard, a threaded shaft journaled in the sliding frame and coöperating with the nut, and means for rotating the shaft.

7. In a device of the class described, the combination with the standard, of the horizontal bearing-rods carried thereby, the stationary block on the outer ends of said rods, the frame adapted to slide on said rods, a casing carried by the frame, and provided with apertures in one end thereof, a stationary nut carried by the standard, a threaded shaft journaled in the sliding frame and coöperating with the nut, a gear-wheel on the shaft, and an elongated pinion journaled on one of the rods and meshing with said gear-wheel.

8. In a device of the class described, the combination with the standard, of the horizontal bearing-rods carried thereby, the stationary block on the outer ends of said rods, the frame adapted to slide on said rods, a casing carried by the frame, and provided with apertures in one end thereof, a stationary nut carried by the standard, a threaded shaft journaled in the sliding frame and coöperating with the nut, the gear-wheel on the end of the shaft, a handle on the gear-wheel, an elongated pinion on the adjacent end of one of said rods meshing with the gear-wheel, and a removable handle for the pinion.

9. In a device of the class described, the combination with the standard, of the horizontal bearing-rods carried thereby, the stationary block on the outer ends of said rods, the frame adapted to slide on said rods, a casing carried by the frame and having apertures in the inner end through which the material is adapted to be forced, a knife movable transversely of said apertures, means to traverse said knife across said apertured end of the casing, and means for reciptocating the frame on the rods.

10. In a device of the class described, the combination with the standard, of the horizontal bearing-rods carried thereby, the stationary block on said rods, the frame adapted to slide on said rods, the casing carried by the frame and having apertures in its inner end through which the material is adapted to be forced, a knife adapted to rotate transversely of said apertures, a stationary nut carried by the standard, and a threaded shaft journaled in the sliding frame and cooperating with the nut and carrying the rotary knife on its end adjacent the casing.

11. In a device of the class described, the combination with the supporting-frame carrying the casing having the apertures at one end thereof through which the material is forced to divide it and an opening in the side to receive the material, of the stationary block coöperating therewith, means for moving the casing over the block, and a receptacle located above the casing having its discharge end adjacent the casing when it is in position to be filled.

12. In a device of the class described, the combination with the supporting-frame carrying a casing having the apertures at one end thereof through which the material is forced to divide it and an opening in the upper side to receive the material, of a pair of doors hinged to the sides of said casing, adapted to close said aperture, the stationary block coöperating therewith, means for moving the casing over the block, and a receptacle located above the casing, having its discharge end adjacent the casing when it is in position to be filled.

13. In a device of the class described, the combination with the casing, of the channeled block adapted to close one end thereof, intersecting knives adapted to close the other end, means for moving the casing and block relatively to each other, a rotary knife adapted to shear transversely to the intersecting knives, a shaft outside of the casing carrying said rotary knife, and a dividing-plug between said knives to deflect the material from the axis of the shaft, said block being provided with a special recess to accommodate the plug.

14. In a device of the class described, the combination with the supporting-frame carrying the stationary channeled block, of a member adapted to be forced over said block and provided with apertures therein through which the material is forced to divide it, bearings carried by the frame upon which the member moves, and connections between the frame and member for forcing the latter over the block.

15. In a device of the class described, the combination with the supporting-frame carrying the stationary channeled block, of a member adapted to be forced over said block, a series of intersecting cutting-knives mounted in said member and forming apertures through which the material is forced to divide it, bearings carried by the frame upon which the member moves, and connections between the frame and member for forcing the latter over the block.

16. In a device of the class described, the combination of the supporting-frame carrying the stationary block, with a member adapted to be forced over said block and provided with apertures through which the material is forced to divide it, bearings carried by the frame upon which the member moves, a knife moving with said member, means for forcing the member over the block, and means for automatically moving the knife transversely to the apertures at intervals, for the purpose described.

17. In a device of the class described, the combination with a supporting-frame carrying the stationary channeled block, of a member adapted to be forced over said block, a series of intersecting knives secured in the member forming apertures through which the material is forced to divide it, bearings carried by the frame upon which the member moves, a shearing-knife moving with the member adjacent the intersecting knives and transversely of the apertures formed thereby, means for automatically moving the last-mentioned knife at intervals, for the purpose described, and means for forcing the member over the block.

824,588. AUTOMATIC WATERING-TROUGH FOR CATTLE AND HORSES. KARL RUGE and SIGMUND KATZENSTEIN, Charlottenburg, Germany. Filed Oct. 27, 1905. Serial No. 284,671.

Claim.—1. In a device of the class described the combination of a watering-trough, a gravity-acting closure normally closing said trough and adapted to be swung inwardly and outwardly to open the same, means locking said closure from movement in both directions, and means preventing said closure from being swung inwardly.



2. In a device of the class described the combination of a watering-trough, a closure adapted to be swung inwardly and outwardly to open said trough, weights normally maintaining said closure in a closed position, means locking said closure from movement in both directions, and means preventing said closure from being swung inwardly.

3. In a device of the class described the combination of a watering-trough, a gravity-acting closure normally closing said trough and adapted to be swung inwardly and outwardly to open the same, and means locking said closure from movement in both directions.

4. In a device of the class described the combination of a watering-trough, a closure adapted to be swung inwardly and outwardly to open said trough, weights maintaining said closure in a closed position, and means locking said closure from movement in both directions.

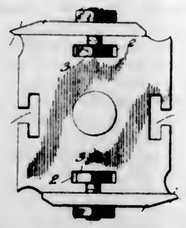
5. In a device of the class described the combination of a watering-trough, a closure adapted to be swung inwardly and outwardly to open said trough, weights maintaining said closure in a closed position, and means preventing said closure from being swung inwardly.

6. In a device of the class described the combination of a watering-trough, a closure therefor adapted to be swung inwardly and outwardly to open said trough, weights normally holding said closure in a closed position, trunnions for said closure, bearings for said trunnions, a bolt for one of said trunnions adapted to be thrown into locking engagement with the adjacent bearing thereof, a lug for said closure, and a sliding bolt provided with an offset portion adapted to be thrown out of and into alinement with said lug to lock and permit inward movement of said closure.

7. In a device of the class described the combination of a watering-trough, a closure for closing said trough which is adapted to be swung inwardly and outwardly to open the same, means locking said closure from movement in both directions, and means preventing said closure from being swung inwardly.

8. In a device of the class described the combination of a watering-trough, a closure for closing said trough which is adapted to be swung inwardly and outwardly to open the same, and means locking said closure from movement in both directions.

824,589. KNIFE FOR WOOD-PLANING MACHINES. JOHN W. RUTH, East Huntingdon Township, Westmoreland county, and DAVID HARDEN, Everson, Pa. Filed Jan. 24, 1906. Serial No. 297,676.

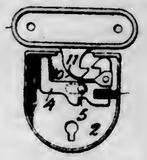


Claim.—1. As a new article of manufacture, a planing-knife having a cutting edge from which extends a flat beveled surface toward the top of the knife, and a convex face extending from the cutting edge to the base of said knife.

2. As a new article of manufacture, a planing-knife having a cutting edge from which extends a beveled surface toward the top of the knife, and a convex face extending from the cutting edge to the base of said knife.

3. A planer or molding-head knife having a cutting edge from which extends inwardly a convex edge face.

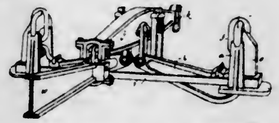
824,590. SUIT-CASE LOCK. CARMINE J. SALVIOLO, New York, N. Y. Filed Sept. 6, 1905. Serial No. 277,237.



Claim.—1. A lock of the type described comprising a casing, a hasp member adapted for entrance into the casing, a movable locking member disposed in the latter and designed for locking engagement with the hasp, a spring for moving the locking member to engaging position, a finger-piece for retracting the locking member from engagement with the hasp, one of said parts being provided with a shoulder, and a spring carried by the other of said parts and adapted for engagement with the shoulder to maintain the locking member in retracted position until the hasp member is withdrawn from the casing.

2. A suit-case lock comprising a rigid hasp member formed with a shoulder, a casing, a slidable locking member in the casing adapted to engage the hasp, a spring for advancing the locking member, a finger-piece for retracting the locking member, and a spring secured to the locking member and adapted to engage the shoulder of the hasp member to hold the locking member in retracted position until the hasp member is withdrawn from the casing.

824,591. RAILROAD-TRACK SCALE. WILLIS H. SARGENT, St. Johnsbury, Vt., assignor to The E. and T. Fairbanks and Company, St. Johnsbury, Vt., a Corporation of Vermont. Filed Jan. 14, 1905. Serial No. 241,105.



Claim.—1. In a railroad-track scale, the combination with the main lever with loop and link for hanging the same, of a support comprising posts having sockets in their upper ends, a cross-bar beveled off at each end to fit said sockets and having a shoulder adjacent the bevel; substantially as described.

2. In a railroad-track scale, the combination with the main lever with loop and link for hanging the same, of a support comprising posts having sockets in their upper ends, a cross-bar beveled off at each end to fit said sockets, and having a shoulder adjacent the bevel, and a removable shield as e having on its under side lugs to engage with the base-piece supporting the posts; substantially as described.

3. In a railroad-track scale, the combination with a main lever and extension-levers, and means for supporting the tip ends of said extension-levers, comprising a nose-iron horizontally adjustable on said lever, a pivot carried by said nose-iron and removable gibs of varying thicknesses for adjusting the vertical position of the pivot with respect to the lever; substantially as described.

824,592. JELLY-PRESS. MAX S. SCHAFER, Denver, Colo. Filed July 3, 1905. Renewed May 19, 1906. Serial No. 317,797.

Claim.—1. In a jelly-press, a frame, a pair of expressing-rollers, one of which is movable from the other to permit the insertion of a jelly-bag, means carried by the relatively stationary roller for engaging the bag, and means carried by the frame for engaging a second portion of the bag to hold the same open during filling.

2. In a jelly-press, the combination of a roller provided with means for engaging a jelly-bag, arms in which the roller is journaled, means for rotating the roller, arms hinged to said first-mentioned arms, and a second roller journaled in said hinged arms parallel with the first-mentioned roller.

3. In a jelly-press, the combination of a roller provided with means for engaging a jelly-bag, a pair of arms in which the roller is journaled, means for rotating the roller, a second pair of arms hinged to said first-mentioned arms, a second roller journaled in said hinged arms parallel with said first-mentioned roller, the hinge connection between the arms carrying the first-mentioned roller and those carrying the second roller being so arranged that when the latter arms are

in closed position the second roller will be near and in the plane of the other roller and when in open position the second roller will be out of the way so as to permit access to the first roller.

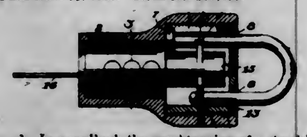


4. In a jelly-press, the combination of a roller provided with means for engaging a jelly-bag, a pair of arms in which the roller is journaled, means for rotating the roller, a second pair of arms hinged to said first-mentioned arms, a second roller journaled in said hinged arms parallel with said first-mentioned roller, the hinge connection between the arms carrying the first-mentioned roller and those carrying the second roller being so arranged that when the latter arms are in closed position the second roller will be near and in the plane of the other roller and when in open position the second roller will be out of the way so as to permit access to the first roller, and means for locking the hinged arms in closed position.

5. In a jelly-press, the combination of a base, an upright secured thereto, a U-shaped frame carried by the standard having its arms extending over the base, a roller journaled in the frame near the upright and provided with means for engaging a jelly-bag, hooks near the outer ends of the arms of the frame, arms carrying a second roller hinged to the frame near the first-mentioned roller, and means for rotating the first-mentioned roller.

6. In a jelly-press, the combination of a base, an upright secured thereto, a U-shaped frame carried by the standard and having its arms extending over the base, a roller journaled in the frame near the upright and provided with means for engaging a jelly-bag, hooks near the outer ends of the arms of the frame, arms carrying a second roller hinged to the frame near the first-mentioned roller, means for rotating the first-mentioned roller, and a ratchet and pawl for locking the roller.

824,593. **PADLOCK.** FREDERICK W. SCHROEDER, London, England. Filed Nov. 15, 1905. Serial No. 287,490.



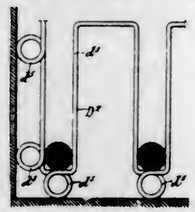
Claim.—1. In a padlock the combination of a shackle, a projection on the heel end of the shackle of a diameter greater than the diameter of the shackle, a relatively movable and concentrically-arranged shell and barrel, a removable hollow plug fixed in the end of the shell having openings adapted to receive the ends of the shackle and a longitudinal slot extending through the side of the plug whereby the shackle may be readily removed, substantially as described.

2. In a padlock the combination of a shackle, a removable plug, means for securing the plug in a fixed position, the plug being provided with openings adapted to receive the ends of the shackle and a longitudinal slot extending through the side of the plug whereby the shackle may be readily removed, substantially as described.

3. In a padlock the combination of a shackle, having a projection on the heel end of the shackle of a diameter greater than the diameter of the shackle, a relatively movable and concentrically-arranged shell and barrel, a removable hollow plug fixed in the end of the shell having openings in the end of the same adapted to receive the ends of the shackle, an exterior thread on the plug adapted to engage with a corresponding thread of the shell, a longitudinal slot extending through the side of the plug whereby the shackle may be readily removed, tumblers carried by the barrel and a ball-bearing intermediate the end of the barrel and the plug, substantially as described.

4. In a padlock, the combination of a shackle, a relatively movable and concentrically-arranged shell and barrel, locking means carried by one of the said members adapted to engage with the shackle, tumblers carried by the barrel, there being opposed recesses in the ends of the barrel and the casing constituting the seats of a ball-bearing; substantially as described.

824,594. **CONCRETE-STEEL CONSTRUCTION.** EDSON M. SCOFIELD, Philadelphia, Pa. Filed Aug. 1, 1904. Serial No. 219,146.



Claim.—1. A spacer consisting of a piece of bar material bent into a series of loops constituting supporting-legs lying adjacent to a single plane and also being of a form to constitute bar-seats, the latter being spaced to support reinforcing-bars at predetermined distances from each other, said loops being laterally displaced to one or the other side of said plane so as to lie at an angle to each other and cause the spacer as a whole to be supported in an upright position, substantially as described.

2. As a new article of manufacture a spacer consisting of a piece of bar material having bar-seats at predetermined distances from each other and bent into such form as to constitute a series of downwardly-extending supporting-legs, of which certain are bent into a loop or loops and constitute side-spacing means, substantially as described.

3. As a new article of manufacture, a spacer consisting of a piece of bar material bent as a whole into such form as to constitute a series of supporting-legs having bar-seats placed at definite distances apart for holding reinforcing-bars at predetermined distances from each other and above a form, alternate ones of said supporting-legs being displaced laterally into different planes to engage a supporting-surface at points in different lines so as to maintain the spacer in an upright position, substantially as described.

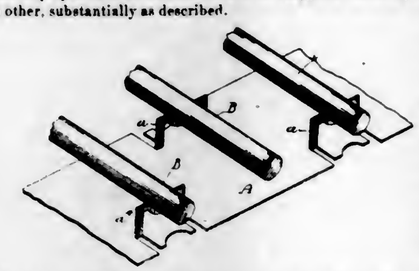
4. As a new article of manufacture, a spacer consisting of a piece of bar material bent to form a series of supporting-legs and provided with portions bent so as to receive and hold reinforcing-bars at predetermined distances above a form, there being portions of the bars extended in elongated loops beyond the legs, substantially as described.

5. The combination of a concrete beam, a concrete floor, two series of reinforcing-bars, of which one is in the beam, with a series of substantially vertical spacing-bars placed to also serve as reinforcing-bars and extending into the concrete between said two series of reinforcing-bars, the end portions of said spacing-bars being extended into the floor, and other portions of the bars being bent as a whole to form supporting-leg portions, substantially as described.

6. The combination of a concrete beam, a concrete structure extending at right angles thereto, a reinforcing bar or bars extending longitudinally through the beam, and a vertical spacing bar or bars placed to act as a reinforcing bar or bars in engagement with said first reinforcing bar or bars, said spacing bar or bars having an end portion or portions extended into the concrete structure at right angles to the beam, and other portions bent as a whole to form supporting-leg portions, substantially as described.

824,595. **SUPPORTING DEVICE FOR REINFORCING-BARS OF CONCRETE-STEEL CONSTRUCTION.** EDSON M. SCOFIELD, Philadelphia, Pa. Filed Oct. 21, 1904. Serial No. 229,484.

Claim.—1. As a new article of manufacture, a supporting device for reinforcing-bars, the same consisting of a relatively flat elongated piece of sheet material having cuts forming tongues, said tongues being bent upwardly and having their upper edges recessed for the receipt of reinforcing-bars, certain of said tongues being formed to project in different lines so as to be staggered relatively to each other, substantially as described.



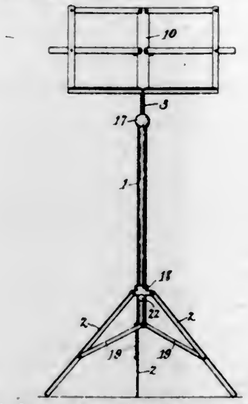
2. As a new article of manufacture, a supporting device for reinforcing-bars, the same consisting of a relatively flat elongated piece of sheet material having cuts forming tongues, said tongues being bent upwardly and having their upper edges recessed for the receipt of reinforcing-bars, there being openings through the tongues to permit the passage of concrete, &c., substantially as described.

3. The combination of a foundation of relatively yielding material, spacer on said foundation consisting of a piece or pieces of horizontally-placed sheet material having upwardly-projecting supports for holding reinforcing-bars at predetermined distances from the foundation and from each other, reinforcing-bars carried by said supports, and a body of concrete on the foundation surrounding said reinforcing-bars, substantially as described.

4. The combination of a body of concrete with reinforcing-bars and supporting devices for said bars, said devices consisting of relatively flat elongated pieces of sheet material each having a series of projecting tongues constructed with bar-seats in which said bars are carried, substantially as described.

5. The combination of a sheet-metal spacer having portions projecting at an angle to the remainder and constructed to support reinforcing-bars, said spacer having a substantially flat supporting-body provided with openings for the reception of plaster, with a series of reinforcing-bars supported on the upper ends of said projecting portions, and a body of concrete enveloping said bars and spacer, substantially as described.

824,596. **MUSIC-STAND.** JOHN A. SMITH, Philadelphia, Pa., assignor to Joanna B. Bishop and Andrew Paul, Philadelphia, Pa. Filed Mar. 8, 1905. Serial No. 248,997.



Claim.—1. In a music-stand and in combination, a supporting member, an adjustable member pivoted thereto, a music-rack carried by the adjustable member, and a spring-plate secured to the supporting member and bearing against the adjustable member to maintain the adjustable member in its position of adjustment.

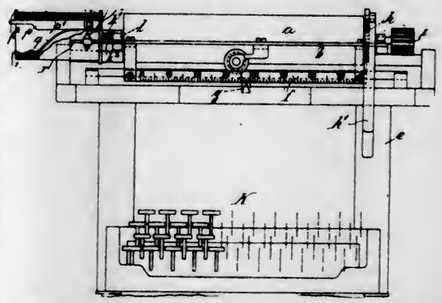
2. In a music-stand and in combination, a supporting member, an adjustable member pivoted thereto by means of a rivet: a spring bearing against said adjustable member and held in place by said rivet, means to prevent the spring turning with the adjustable member during the adjustment thereof, and a music-rack carried by the adjustable member.

3. In a music-stand and in combination, a tubular standard, supporting-legs therefor, a vertically-adjustable rod extending above and into said standard, flat springs within the standard and engaging the rod to maintain it in its position of adjustment, means to prevent up and down movement of the springs during the adjustment of the rod, and a music-rack carried by the rod.

4. In a music-stand and in combination, a tubular standard, supporting-legs therefor, a vertically-adjustable rod extending above and into said standard, flat springs provided with lateral projections and arranged within the standard and engaging the rod to maintain it in its position of adjustment, means to engage said projections to prevent up and down movement of the springs during the adjustment of the rod, and a music-rack carried by the rod.

5. In a music-stand and in combination, a tubular standard having vertical slots in the upper end thereof, supporting-legs for the standard, a vertically-adjustable rod extending above and into the standard, flat springs provided with lateral projections arranged within said slots, said springs being arranged within the standard and engaging the rod to maintain it in its position of adjustment, a cap fitted to the end of the standard to maintain the spring projections in the slots during the up and down adjustment of the rod, and a music-rack carried by the rod.

824,597. **TYPE-WRITING MACHINE.** RUDOLF VON SOTHEN, Berlin, Germany. Filed Jan. 3, 1905. Serial No. 239,482.



Claim.—1. In a type-writing machine, the combination with a platen, of a cylindrical pattern adjustably connected therewith, said pattern being provided with a visible copying-form, and comprising spacing-numerals to coöperate with the letter-spacing scale, an index-pointer coacting with said pattern and means for turning said pattern simultaneously with the platen.

2. In a type-writing machine, the combination with the platen, of a pattern movable therewith, said pattern having a visible surface, provided with a printed form comprising spacing-numerals, coöperating with the letter-spacing indicator and an index-pointer coacting with the pattern.

3. In a type-writing machine, the combination with the platen, of a pattern arranged on the platen and movable therewith, said pattern having a visible surface provided with a copying-form, comprising spacing-numerals coöperating with the letter-spacing indicator and an index-pointer coacting with the pattern.

4. In a type-writing machine, the combination with the platen, of a pattern-roller movable therewith and a pattern situated on said roller, said pattern having a visible surface provided with a copying-form comprising spacing-numerals coöperating with the letter-spacing indicator, and an index-pointer coacting with the pattern, and means for turning the pattern simultaneously with and independently from the platen of the type-writing machine.

5. In a type-writing machine, the combination with the platen, of a pattern-roller movable therewith, an exchangeable cylinder mounted on said pattern-roller, means for fixing the cylinder upon this roller, a pattern mounted on the exchangeable cylinder, said pattern having a visible surface provided with the copying-form comprising spacing-numerals coöperating with the letter-spacing indicator, an index-pointer coacting with the pattern, and means for turning the pattern-roller simultaneously with and independently from the platen of the type-writing machine.

6. In a type-writing machine, the combination with the platen, of a pattern-roller axially arranged to the platen and movable therewith, a pattern mounted on said pattern-roller, said pattern having a visible surface provided with a copying-form, comprising spacing-

numerals coöperating with the letter-spacing indicator and an index-pointer coacting with the pattern.

7. In a type-writing machine, the combination with the platen, of a pattern-roller detachably secured to the axle of the platen, a pattern carried by the pattern-roller, said pattern having a visible surface provided with a copying-form, comprising spacing-numerals coöperating with the letter-spacing indicator, an index-pointer coacting with the pattern, and means for turning the pattern-roller and the pattern simultaneously with the platen.

8. In a type-writing machine, the combination with the platen, of a pattern-roller detachably secured to the axle of the platen, a spiral pattern carried by the pattern-roller, said pattern having a visible surface provided with a copying-form, comprising spacing-numerals coöperating with the letter-spacing indicator, an index-pointer coacting with the pattern and means for turning the pattern-roller and the pattern simultaneously with the platen.

824,598. **WAIST-BELT.** WALTER C. SPITTLE, Olton, England. Filed Dec. 12, 1905. Serial No. 291,496.



Claim.—1. An expanding and self-adjusting waist-belt consisting of an endless band made up of an elastic or distensible portion and a longer inelastic portion whose returned extremities are attached respectively to the ends of the said elastic portion, a pair of loops or runner-fittings wherethrough the returned ends of the inelastic portion are passed, and claap or fastener fittings connected to the said loops, substantially as described.

2. An expanding and self-adjusting waist-belt consisting of an endless band made up of an elastic or distensible portion and a longer inelastic portion, the elastic part being attached at its middle to the middle of the inelastic part and at its ends to the respective turned extremities of the said inelastic part, a pair of loops or runner-fittings wherethrough the returned ends of the inelastic part and a pair of clasps or fastener-fittings connected to the said loops, substantially as described.

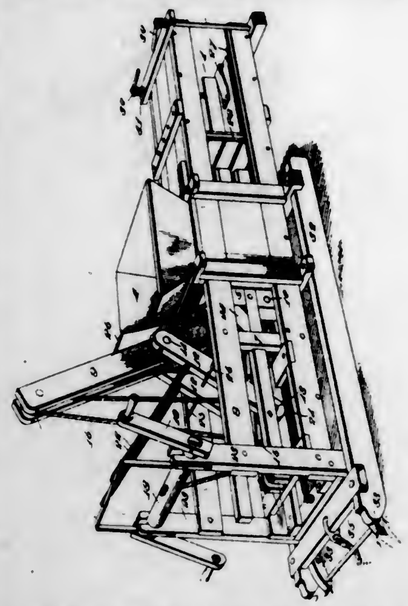
3. In an expanding and self-adjusting waist-belt; the combination with an endless band forming the back of the belt and consisting of an elastic portion and a longer inelastic portion, of a pair of loops or runner-fittings wherethrough the ends of the inelastic part of the loop respectively pass, and a pair of inextensible front portions attached respectively to the loop or runners and carrying the halves of the clasp or fastener, substantially as described.

824,599. **BALING-PRESS.** JOHN J. STOPPLE, Dallas, Tex. Filed Nov. 4, 1903. Serial No. 179,832.

Claim.—1. In a baling-press, the combination with a framework, a compression-chamber formed in said framework, a plunger operating in said compression-chamber, of links pivoted at their lower ends upon said framework, a lever pivoted at its lower end to said plunger and fulcrumed upon the upper ends of said links, a yoke carried by said framework above said links, springs connecting said yoke and links, each spring secured at one end to said yoke and at its opposite end to a link contiguous to the upper end thereof, the springs being spaced apart for permitting the lever to pass between the same when movement is imparted to said lever for actuating the plunger.

2. In a baling-press, the combination with a framework, a compression-chamber formed in said framework, a plunger operating in said chamber, of a pair of parallel links pivoted at their lower ends upon said framework, a lever pivotally connected at its lower end to said plunger and positioned between and pivotally connected to said links at their upper ends, an inverted, substantially U-shaped yoke carried by said frame, a pair of parallel springs connecting said yoke and links, each of said springs secured at its upper or outer end to said yoke and at its opposite end to a link and contiguous to said lever, the lever adapted to pass between said springs when movement is imparted thereto for actuating said plunger.

3. In a baling-press, the combination with a framework provided with parallel sled-runners, a compression-chamber formed in said framework, a plunger operating in said chamber, means for reciprocating said plunger within said chamber, of a downwardly-curved brake-pin pivotally mounted upon each of said sled-runners contiguous to the front end of the same, a horizontal rod connecting said brake-pins, a cable secured at one end to said framework and normally positioned under said rod intermediate said brake-pins, said cable adapted to lift said brake-pins out of or from engagement with the ground when said cable is drawn taut.



4. In a baling-press, the combination with a framework, a compression-chamber formed in said framework, a plunger operating in said compression-chamber, of links pivoted at their lower ends upon said framework, a lever pivoted at its lower end to said plunger and fulcrumed upon the upper ends of said links, a yoke carried by said framework above said links, springs connecting said yoke and links, each spring secured at one end to said yoke and at its opposite end to a link contiguous to the upper end thereof, power-conveying means engaging said lever and adjustable longitudinally of the lever for altering the degree of leverage, and means for supplying power to said power-conveying means from any of a plurality of sources, the springs being spaced apart for permitting the lever to pass between the same when movement is imparted to said lever for actuating the plunger.

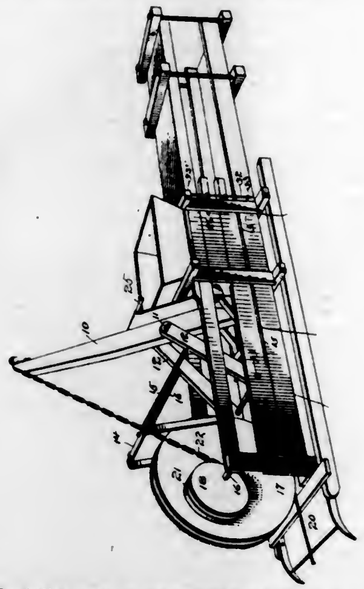
824,600. **BALING-PRESS.** JOHN J. STOPPLE, Dallas, Tex. Filed Dec. 23, 1904. Serial No. 238,125.

Claim.—1. In a baling-press, the combination with a compression-chamber and a plunger operating therein, the side walls of said compression-chamber being formed with longitudinal slots, of plates projecting laterally from said plunger through said slots, plates projecting rearwardly from said plunger, braces connected with said plunger and said last-mentioned plates, guiding means extending from said last-mentioned plates into said slots, and means for reciprocating said plunger.

2. In a baling-press, the combination with a compression-chamber and a plunger operating therein, the side walls of said chamber being slotted, of dogs pivoted in said slots, ears projecting from said dogs beyond the outer faces of the walls of said compression-chamber, springs engaging said ears for retaining said dogs in their normal position, and detent-noses projecting from said dogs into said compression-chamber.

3. In a baling-press, the combination with a compression-chamber and a plunger operating therein, of a pivotally-mounted dog arranged at each side of said compression-chamber, a spring-rod extending transversely through said dog for normally retaining the same in position, and a detent-nose projecting from said dog into the compression-chamber.

4. In a baling-press, the combination with a compression-chamber and a plunger operating therein, of a plurality of dogs pivotally mounted at each side of said chamber, a spring-rod extending through each of the dogs of each side of said chamber, means securing one end of each of said rods against movement, means retaining the other end of each of said rods against lateral play while permitting longitudinal movement thereof, and detent-noses carried by said dogs and extending into said compression-chamber.



5. In a baling-press, the combination with a compression-chamber and a plunger operating therein, of a dog pivoted at one side of said chamber, a spring-rod extending through said dog, means securing one end of said rod against movement, means retaining the other end of said rod against lateral play while permitting longitudinal movement thereof, and a detent extending from said dog into the compression-chamber.

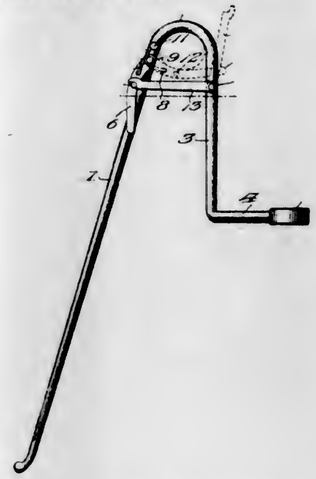
6. In a baling-press, the combination with a compression-chamber, a plunger operating therein, and a brace-plate arranged upon opposite sides of said compression-chamber, a slot being formed in the opposite sides of said compression-chamber, of a dog pivoted in each of said slots, an arm projecting from each of said dogs in position for normally engaging the respective brace-plate, a spring engaging each of said dogs for normally retaining the same with the arm in contact with said brace-plate, and a detent-nose extending from each of said dogs into said compression-chamber adapted to be compressed to one side against the pressure of said spring.

7. In a baling-press, the combination with a framework, a compression-chamber formed in said framework, a plunger operating in said compression-chamber, of a link pivoted upon said framework, a lever fulcrumed upon said link and pivotally connected near its lower end to said plunger, a wheel carried by said framework, an eccentric disk carried by said framework and fixed against independent, rotary movement with respect to said wheel, and flexible connecting means secured to said lever and to said eccentric disk at a point upon its periphery substantially central between the points of its greatest and less radii, said lever, link, and eccentric disk constituting progressive, double-lever means for actuating said plunger.

8. In a baling-press, the combination with a framework, a compression-chamber formed in said framework, a plunger operating in said compression-chamber, of links pivoted at their lower ends upon said framework, a lever fulcrumed upon the upper ends of said links, said lever pivotally connected near its lower end to said plunger, a shaft carried by said framework, a wheel fixed to said shaft, an eccentric disk fixed to said shaft, and flexible connecting means secured at one end to said lever and at its opposite end to said eccentric disk at a point substantially half-way between the point where the periphery of the eccentric approaches most nearly to the pivot of said eccentric and the point where the periphery of said eccentric lies farthest from the pivot thereof.

9. In a baling-press, the combination with a framework, a compression-chamber formed in said framework, a plunger operating in said compression-chamber, of a link pivoted at its lower end upon said framework, a lever pivotally mounted upon the upper end of said link, said lever pivotally connected near its lower end to said plunger, a shaft carried by said framework, a wheel fixed to said shaft, an eccentric disk fixed to said shaft, and connecting means secured to said lever and connected to said eccentric disk whereby the greatest amount of pressure is exerted upon the plunger when said plunger is near to the end of its compression-stroke, thus equalizing the power necessary to compress the charge of material from the beginning to the end, said lever, link, and eccentric disk constituting progressive, double-lever means for actuating said plunger.

824,601. **MAIL-CATCHER.** WILLIAM W. SYKES, Manchester, Va., assignor of one-half to Laurence Casselman, Richmond, Va. Filed Apr. 24, 1906. Serial No. 313,415.



Claim.—1. A mail-catcher comprising a base and a gathering-arm connected by a crook, in combination with a spring-actuated bag-clamp, and a trigger extending across the space between the base and gathering-arm, said trigger holding the clamp open and being arranged in the path of the bag, substantially as described.

2. A mail-catcher comprising an arm which is recurved to provide a bag-receiving space, in combination with a bag-clamp pivotally mounted on said arm, a spring for throwing the clamp across the bag-receiving space, and a trigger adapted to be disposed across the bag-receiving space, and to engage a shoulder on the clamp to hold the clamp open, substantially as described.

824,602. **COTTON-GIN.** HUGH J. TATE, Philadelphia, Pa., assignor of two-ninths to Stanley G. Miller, Philadelphia, Pa., two-ninths to Edwin Howard, Charlotte, N. C., and two-ninths to James A. Ferguson, Philadelphia, Pa. Filed July 13, 1905. Serial No. 270,203.

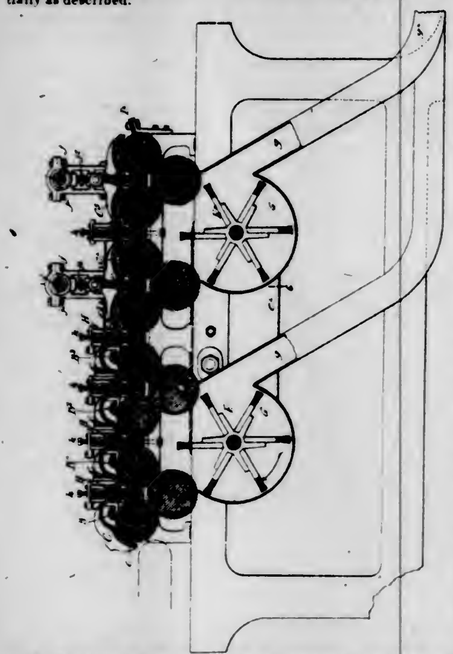
Claim.—1. The combination in a cotton-gin, of an abutment, an element arranged to pass under the abutment and provided with rows of teeth, the space between each row of teeth being such that the seeds cannot enter the spaces between said rows but will ride upon the teeth and against the abutment, substantially as described.

2. The combination in a cotton-gin, of a fixed abutment, a roll rotating in close proximty to the said abutment, and rows of teeth on said roll, the rows of teeth being so spaced that the seeds cannot enter the spaces between the teeth but will ride upon the teeth and against the abutment, substantially as described.

3. The combination in a cotton-gin, of a fixed abutment, a roll rotating in close proximity to the abutment, said roll having teeth thereon formed of flat blades spirally wound upon the roll, the space between the convolutions of the spiral being less than the width of the seeds so that the seeds will ride upon the teeth and against the abutment and travel longitudinally along the face of the abutment, substantially as described.

4. The combination in a cotton-gin, of an abutment of a given height so that the seeds will finally pass over the abutment, a ginning-roll having a series of teeth, said roll being mounted directly under the abutment so that the seeds will ride upon the teeth while the fiber is being removed from them and will finally pass over the abutment, substantially as described.

5. The combination in a cotton-gin, of a fixed abutment, a roll mounted in close proximity to the abutment, said roll having teeth made from a toothed strip wound spirally upon the roll, with a toothed doffer having its teeth wound spirally and the teeth of the doffer entering the spaces between the teeth of the adjoining roll, substantially as described.



6. The combination of a series of abutments, a ginning-roll mounted close to each abutment, each ginning-roll having a series of teeth, the spaces between the teeth being less in width than the seeds, means for driving the rolls so that as the cotton is fed to the first roll it will come in contact with the first abutment and the seed will ride over the abutment and come in contact with the second abutment and the second roll and so on, substantially as described.

7. The combination of a series of abutments, ginning-rolls mounted close to the abutments, each ginning-roll having a series of teeth, the spaces between the teeth being less in width than the seeds, means for driving the rolls so that as the cotton is fed to the first roll it will come in contact with the first abutment and the seed will ride over the abutment and come in contact with the second abutment and the second roll and so on, the teeth of the several rolls being spaced different distances apart, substantially as described.

8. The combination in a cotton-gin of two toothed rolls, a plate mounted between them, means for removing the cotton from these rolls, a guard mounted above the rolls, and means for moving the guard toward and from the rolls, substantially as described.

9. The combination in a cotton-gin of a pair of toothed rolls, means for removing cotton from the rolls, a plate mounted between the two rolls, a plate mounted over the rolls, guides for the latter plate, a shaft, eccentrics on the shaft, and eccentric-rods connected to the plate so that as the shaft revolves the plate will be moved toward and from the rolls, substantially as described.

10. The combination in a cotton-gin of a toothed roll, means for removing cotton from the roll, an abutment for the seeds, a guard-plate mounted over the rolls, and a ribbed sheet of yielding material set in the guard, substantially as described.

11. The combination of a toothed roll, means for moving the cotton from the said roll, an abutment against which the seeds rest, a guard mounted above the roll and abutment, a sheet of rubber mounted in a portion of the said guard in close proximity to the roll, said sheet of rubber having a roughened face, substantially as described.

12. The combination of a series of toothed rolls, an abutment above each roll, a guard above each roll and abutment, a plate mounted between the rolls, and a roller mounted above said plate and between the guards, and means for removing cotton from the toothed roll, substantially as described.

13. The combination of a series of toothed rolls, an abutment mounted above the rolls, guards mounted above the rolls and abutment, plates mounted between the rolls, rollers above the plates and between the guards, a doffing-roll for removing cotton from the toothed rolls, a second series of toothed rolls, doffing-rolls for removing cotton from the second series, guard-plates mounted above the said rolls, said guard-plates being arranged in pairs, means for moving the guard-plates toward and from the said rolls, and plates mounted between the said rolls and a plate at the rear of the machine for removing the seeds from the last roll, substantially as described.

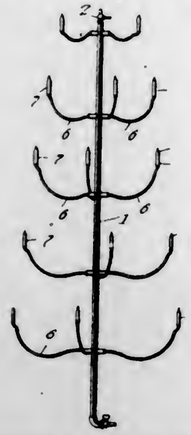
14. The combination in a cotton-gin of a series of toothed rolls, abutments mounted above the said rolls, doffing-rolls engaging the said toothed rolls, brushes arranged to remove the cotton from the doffing-rolls, a casing for the said brushes, and a pipe leading from the brushes, substantially as described.

15. The combination in a cotton-gin of an abutment, a toothed ginning-roll arranged under the abutment, a doffing-roll for said ginning-roll, means for feeding cotton to the gin, and means for collecting the seeds after the cotton has been removed therefrom, and a device for carrying the seeds transversely from the machine, substantially as described.

16. The combination in a cotton-gin of a toothed ginning-roll, and a toothed doffing-roll, greater in diameter than the ginning-roll, the teeth of the doffing-roll entering the space between the teeth of the ginning-roll, both rolls having the same axial speed but the surface speed of the doffing-roll being greater than the surface speed of the ginning-roll, substantially as described.

17. The combination in a cotton-gin of a ginning-roll having a toothed strip wound spirally thereon, a doffing-roll greater in diameter than the ginning-roll, and also having a toothed strip wound spirally thereon, but in a reverse direction to the strip of the ginning-roll, the toothed strip of the doffing-roll entering the spaces between the convolutions of the strip of the ginning-roll, both rolls having the same axial speed and the doffing-roll having a greater surface speed than the ginning-roll, substantially as described.

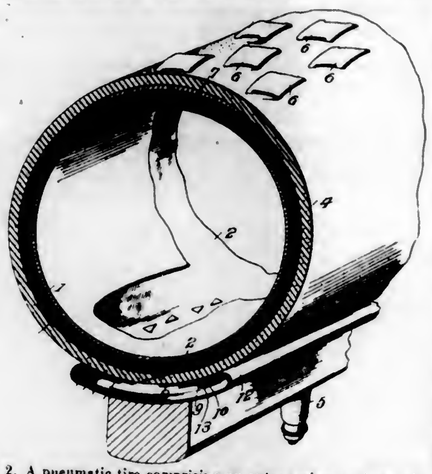
824,603. **CHRISTMAS-TREE ATTACHMENT.** ALBERT R. TREICHEL, St. Louis, Mo. Filed Feb. 17, 1906. Serial No. 301,610.



Claim.—An attachment for the purpose described comprising a main trunk-pipe, nipples radiating therefrom at different intervals along the length of said pipe, flexible branch tubes connected to said nipples and leading outward therefrom, and cylindrical sheaths mounted upon the outer extremities of said branch tubes and having their outer and inner ends contracted to fit the branch tubes, the latter being adapted to be bent to form supporting-shoulders for the sheaths, substantially as described.

824,604. **PNEUMATIC TIRE.** CHARLES R. TWITCHELL, Los Angeles, Cal., assignor of one-half to James M. Brennan, Los Angeles, Cal. Filed Sept. 26, 1905. Serial No. 280,089.

Claim.—1. A pneumatic tire comprising an outer casing, an inner air-tube, and a covering for the latter composed of wrappings of textile material helically wound thereon, said wrappings being wound in opposite directions and unsecured to the tube.



2. A pneumatic tire comprising an outer casing, an inner air-tube, and a covering for the latter composed of wrappings of textile material helically wound thereon, said wrappings being wound in opposite directions and unsecured to the tube and to each other.

3. A pneumatic tire comprising an outer casing of leather, an inner air-tube of rubber, and a covering for the latter composed of two wrappings of textile material helically wound thereon, said wrappings being wound in opposite directions and both unsecured to the tube.

4. A pneumatic tire comprising an outer casing of leather, an inner air-tube of rubber, and a covering for the latter composed of two wrappings of textile material helically wound thereon, said wrappings being wound in opposite directions and both unsecured to the tube and to each other.

5. A pneumatic tire comprising an outer casing of leather, an inner air-tube having a valve-housing, and a covering for the air-tube composed of two wrappings of textile material helically wound thereon and at their ends engaging said valve-housing, said wrappings being wound in opposite directions.

6. In a pneumatic tire, having an inner air-tube and an outer casing, an inclosure for such air-tube composed of two layers of textile material helically and loosely wound in opposite directions, such material forming no part of the tube or the casing.

824,605. **BELT.** JOHN M. VAN ORDEN, Cedargrove, N. J., assignor to Van Orden Corset Company, a Corporation of New Jersey. Filed July 18, 1905. Serial No. 270,194.

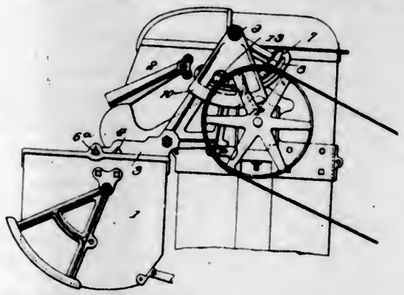


Claim.—1. The combination with a belt or similar garment of a lining of elastic material normally of less area than that of said belt, but capable of stretching to equal area therewith upon application to the body of the wearer, and to operate thereupon substantially in the manner and for the purpose set forth.

2. The combination with a belt or similar garment of a lining of elastic material normally of less area than that of said belt, but capable of stretching to be coextensive in area with that of said belt, when applied to the form of the wearer, and coöperating therewith when in place upon the body of the wearer to apply thereto a uniform pressure of the nature of a gentle, continuous massage or kneading, substantially in the manner and for the purpose set forth.

3. The combination with a belt or garment of the class described of a lining of elastic fabric cut to conform to the body of the wearer, and normally of less area than said belt, but arranged to stretch in coöperation therewith, substantially as described.

824,606. **GRAIN-WEIGHER.** EDWARD J. VRAALSTAD, Buffalo, N. Y., assignor of one-half to Buffalo Pitts Company, Buffalo, N. Y., a Corporation of New York. Filed Jan. 5, 1906. Serial No. 294,779.



Claim.—1. A steelyard having its short arm constructed and arranged to support a bucket suspended therefrom, and having its long arm extended angularly relative to such short arm, said long arm having at its outer upper end a vertically-disposed quadrant, a weight pivoted concentric to the axis of such quadrant, and means carried by such weight for engaging such quadrant and holding the weight in position thereon.

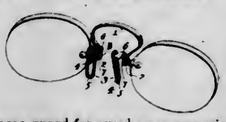
2. A steelyard having its long arm extended angularly relatively to its short arm, said long arm having at its outer end a quadrant formed with a concentric slot, a weight pivoted concentric to the axis of such quadrant, and a set-screw carried by such weight extended through said slot.

3. The combination with the frame, and the vertically-movable bucket, of the steelyard fulcrumed on such frame and having its short arm supporting one side of such bucket, a branch arm supporting the other side of the bucket, a weight pivotally secured to the long arm of said steelyard, and means for holding such weight in different positions relatively to the fulcrum of the steelyard.

4. The combination with the frame, and the vertically-movable bucket, of the steelyard fulcrumed on such frame and having its short arm supporting such bucket at one side thereof, a right-angular arm secured to the steelyard and also fulcrumed on said frame, said angular arm supporting such bucket at its other side, a weight pivotally secured to the long arm of said steelyard, and means for holding such weight in different positions relatively to the fulcrum of the steelyard.

5. The combination with the frame, and the vertically-movable bucket, of the steelyard fulcrumed on such frame and having its short arm supporting such bucket at one side thereof, a right-angular arm secured to the steelyard and also fulcrumed on said frame, said angular arm supporting such bucket at its other side, the long arm of the steelyard being angularly disposed relatively to its short arm and having a graduated quadrant, and an adjustable weight movable over said quadrant and pivoted concentrically to the axis thereof.

824,607. **EYEGLASS-MOUNTING.** CHARLES F. WALL, Philadelphia, Pa. Filed Feb. 9, 1906. Serial No. 300,292.



Claim.—1. A nose-guard for eyeglasses, comprising a gripping member, a shank connected to the rear edge of said gripping member at a point nearer the upper end thereof than the lower end, said shank projecting forwardly of the gripping member, and means for attaching said shank to a nose-piece.

2. A nose-guard for eyeglasses, comprising a gripping member, a shank connected to the rear edge of said gripping member at a point nearer the upper end thereof than the lower end, said shank projecting forwardly of the gripping member, and an attaching-ear arranged at the forward extremity of said shank for connecting the guard to a nose-piece.

3. A nose-guard for eyeglasses formed from a blank of sheet metal and including a gripping member, a shank connected to the rear edge of said member and projecting forwardly thereof, said shank being connected to the gripping member at a point nearer the

upper end thereof than the lower end, the front edge of said gripping member being free to permit the same yielding, and an attaching-ear formed at the forward extremity of said shank for connecting the guard to a nose-piece.

4. A nose-guard for eyeglasses formed from a blank of sheet metal and including a gripping member, a shank connected to the rear edge of said member and projecting forwardly thereof, said shank being connected to the gripping member at a point nearer the upper end thereof than the lower end, the front edge of said gripping member being free to permit the same yielding, and a downwardly-extending attaching-ear formed at the forward extremity of said shank for connecting the guard to a nose-piece.

5. In eyeglasses, the combination with a nose-piece, of a pair of nose-guards each of which comprises a gripping member, a shank connected to the rear edge of said gripping member and projecting forwardly thereof, said shank being connected to the gripping member at a point nearer the upper end thereof than the lower end, the front edges of said gripping members being free to permit the same yielding, and a downwardly-bent attaching-ear arranged at the forward extremity of each of said shanks for connecting the guards to the nose-piece.

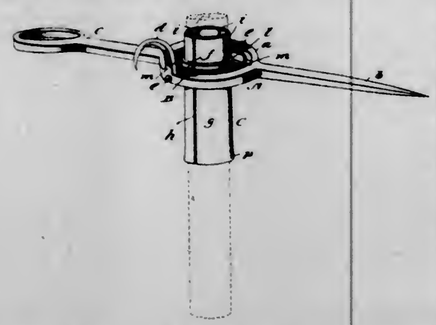
824,608. **STIFFENING-BLADE.** WILLIAM WEBSTER, London, Canada, assignor to Warren Featherbone Company, Three Oaks, Mich., a Corporation. Filed Oct. 5, 1903. Serial No. 175,826.



Claim.—1. A blade made up of quill fiber retained in a bundle by a tape folded around the same compressed and secured by a longitudinal row of stitches, the fibers being compacted and cemented together, as specified.

2. A blade made up of fiber retained in a bundle by a tape folded around the same compressed and secured by a longitudinal row of stitches.

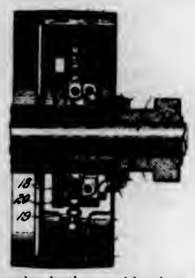
824,609. **MINER'S CANDLESTICK.** ELISHA L. WEED, Medford, Oreg., assignor of one-half to Milton M. Gault, Medford, Oreg. Filed Mar. 20, 1906. Serial No. 307,051.



Claim.—As an article of manufacture, a miner's candlestick made up of a body having an open portion, a ring pivoted at diametrically opposite points in said open portion of the body and arranged to swing in one direction, and a candle-holder arranged in the said ring and comprising a tube open at its lower and upper ends and tapered toward its upper end and split throughout its length and having slits in its upper portion extending downward from its upper end and also having said upper end turned slightly inward, and a split ring fixed on the tube and pivotally connected to the first-mentioned ring at points midway between the pivotal connections of said ring to the open portion of the body.

824,610. **FRICTION-CLUTCH.** HENRY L. WHITMAN, St. Louis, Mo. Filed June 24, 1905. Serial No. 266,773.

Claim.—1. In a friction-clutch, the combination of a driving-shaft, a pulley loosely mounted on said shaft, a sectional ring located interior of the rim of said pulley and consisting of movable members arranged to frictionally engage the pulley-rim, levers for moving said ring members, a slidable shift-collar, and a yoke surrounding said collar and having connection with said levers; said yoke having an interior diameter greater than the diameter of said collar and movable transversely to the axis of said shaft, substantially as set forth.



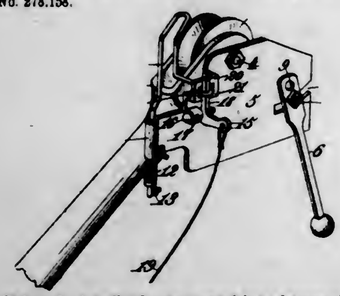
2. In a friction-clutch, the combination of a driving-shaft, a pulley loosely mounted on said shaft, a sectional ring located interior of the rim of said pulley and consisting of movable members arranged to frictionally engage the pulley-rim, levers for moving said ring members, a slidable shift-collar, a yoke fitted to said collar, and adjustment-rods connecting said levers to said yoke; said yoke having an interior diameter greater than the diameter of said collar and movable transversely to the axis of said shaft, substantially as set forth.

3. In a friction-clutch, the combination of a driving-shaft, a pulley loosely mounted on said shaft, a sectional ring located interior of the rim of said pulley and consisting of movable members arranged to frictionally engage the pulley-rim, levers for moving said ring members, a slidable shift-collar, a yoke surrounding said collar and having an interior diameter greater than the diameter of said collar and movable transversely to the axis of said shaft, oscillating blocks pivoted to said yoke and adjustment-rods fitted to said blocks and connected to said levers, substantially as set forth.

4. In a friction-clutch, the combination of a driving-shaft, a pulley loosely mounted on said shaft, a sectional ring within said pulley consisting of movable members to frictionally engage the pulley-rim, levers for moving said ring members, a slidable shift-collar, and a yoke surrounding said collar and having an interior diameter greater than the diameter of said collar and movable transversely to the axis of said shaft; said shift-collar being provided with ears whereby said yoke is held to said collar, substantially as set forth.

5. In a friction-clutch, the combination of a driving-shaft, a pulley loosely mounted on said shaft, a sectional ring within said pulley consisting of movable members to frictionally engage the pulley-rim, levers for moving said ring members, a slidable shift-collar, and a yoke fitted to said collar and movable transversely to the axis of said shaft; said collar being provided with guides arranged to operate in said yoke to direct its transverse movement.

824,611. **TROLLEY-KEEPER.** BENJAMIN C. BARTLEBAUGH, Benwood, W. Va., assignor of one-half to Joseph Mahood, Charles A. Barlow, and Paul Riedel, Benwood, W. Va. Filed Sept. 12, 1905. Serial No. 278,158.



Claim.—1. A trolley-keeper comprising a keeper-plate, an arm carried thereby and adapted to extend over the trolley-wire and to associate with the trolley-wheel, means for normally retaining said arm over the wire, means carried by said plate for shifting the arm and an adjustable weight carried by said plate.

2. A trolley-keeper comprising a counterbalanced keeper-plate adapted to be suspended from the shaft of the trolley-wheel, a spring-actuated keeper-arm carried by said plate and adapted to project over the trolley-wire and to extend in operative relation with respect to the trolley-wheel, and a bell-crank lever carried by said plate and adapted when operated to shift said arm from operative position.

3. A trolley-keeper comprising a counterbalanced keeper-plate, a keeper-arm carried by said plate and adapted to extend over the trolley-wire forwardly of the trolley-wheel and in a diagonal direction, a bell-crank lever for shifting the said arm from over the trolley-wire, and means for automatically returning said arm to its position over the trolley-wire.

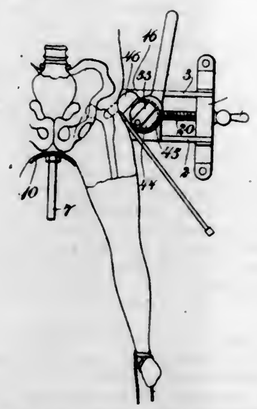
4. A trolley-keeper comprising a swinging plate, an adjustable weighted arm carried thereby, a keeper-arm carried by the plate and adapted to extend over said wire forwardly of the trolley-wheel, means for shifting the keeper-arm from over the trolley-wire, and means for automatically returning the arm to a position over the trolley-wire.

5. A trolley-keeper comprising a counterbalanced plate suspended from the shaft of the trolley-wheel, a spring-controlled keeper-arm having the lower end thereof carried by the forward end of said plate and extending over the trolley-wire forwardly of the trolley-wheel and in a diagonal manner, and a trigger mechanism carried on the outer face at the forward end of the plate and adapted to shift the said arm to inoperative position, said mechanism connected to the free end of said arm.

6. A trolley-keeper comprising a counterbalanced plate suspended from the shaft of the trolley-wheel, a spring-actuated keeper-arm extending over the trolley-wire forwardly of the trolley-wheel and in a diagonal manner, and having its lower end connected to the forward end of said plate and a trigger mechanism carried on the outer face at the forward end of the plate and adapted to shift the said arm to inoperative position, said mechanism connected to the free end of said arm.

7. A trolley-keeper comprising a keeper-plate, an arm carried thereby and adapted to extend over the trolley-wire and to associate with the trolley-wheel, means carried on the lower end of said arm, connected to said arm and to said plate for normally retaining said arm over the wire, a trigger mechanism carried on the outer face at the forward end of the plate and adapted to shift the arm to inoperative position, said mechanism connected to the free end of said arm and means for limiting the movement in one direction of the trigger mechanism.

824,612. **APPARATUS FOR REDUCING DISLOCATED JOINTS.** RALPH W. BARTLETT, North Brookfield, Mass. Filed Mar. 26, 1904. Serial No. 200,173.



Claim.—1. In a machine for reducing dislocated joints, a socket-bone support, and means for deflecting the dislocated end of the bone.

2. In a machine for reducing dislocated joints, a socket-bone support, means for applying traction, and means for deflecting the dislocated end of the bone.

3. In a machine for reducing dislocated joints, a socket-bone support, and means whereby the end of the dislocated bone may be given any desired movement of translation or position.

4. In a machine for reducing dislocated joints, means for straightening the tendons or other tissues about the socket and forcing the dislocated end of the bone into its socket, and means for varying the direction and intensity of the force exerted by said first-mentioned means.

5. In a machine for reducing dislocated joints, socket-bone-holding means, a tractor device and a deflector device arranged on a common axis.

6. In a machine for reducing dislocated joints, socket-bone-holding means, a support arranged in definite relation to said means, an eccentric carried by said support, a tractor-rod and connections between said rod and eccentric.

7. In a machine for reducing dislocated joints, socket-bone-holding means, a support arranged in definite relation to said means, an eccentric carried by said support, a deflector and connections between said deflector and eccentric.

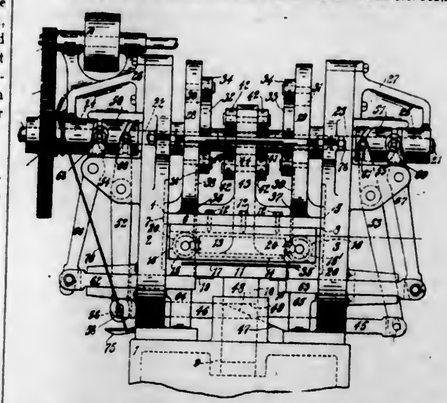
8. In a machine for reducing dislocated joints, a support, an eccentric carried thereby, an eccentric-strap arranged on said eccentric, and a deflector carried by said strap.

9. In a machine for reducing dislocated joints, a support, a spindle carried by said support, two eccentrics carried by said spindle as an axis, one over the other, a tractor-rod connected to one eccentric, a deflector connected to the other eccentric.

10. In a machine for reducing dislocated joints, socket-bone-holding means, a tractor device and a deflector device arranged upon a common axis, and provisions for controlling the direction and intensity of the forces applied thereby.

11. In a machine for reducing dislocated joints, a socket-bone support, and a movable bar or device for applying traction, whereby the member under traction can be given a movement of translation in any direction to change the position of the head of the bone with relation to its socket.

824,613. **MACHINE FOR FORMING SAFE-PLATES.** JACOB BAUM, Cincinnati, and FREDERICK J. NUTTING, Dayton, Ohio; said Nutting assignor to said Baum. Filed Feb. 27, 1906. Serial No. 303,256.



Claim.—1. In a machine for forming safe-plates, a platen, a roll-frame, rolls journaled in said roll-frame and means for reciprocating said roll-frame whereby said rolls are brought past said platen for the purposes specified.

2. In a machine for forming safe-plates, a platen, a roll-frame, rolls journaled in said roll-frame, additional rolls journaled in said roll-frame, flanges on said additional rolls, and means for reciprocating said roll-frame whereby said rolls are brought past said platen for the purposes specified.

3. In a machine for forming safe-plates, a platen, a roll-frame, rolls journaled in said roll-frame, additional rolls journaled in said roll-frame, flanges on said additional rolls, means for reciprocating said roll-frame and a blade on said platen adapted to coöperate with said rolls.

4. In a machine for forming safe-plates, a platen, a roll-frame, rolls journaled in said roll-frame, means for reciprocating said roll-frame and a blade on said platen adapted to coöperate with said rolls as and for the purposes specified.

5. In a machine for forming safe-plates, a platen, a roll-frame, rolls journaled in said roll-frame, means for reciprocating said roll-frame, a stripper slidably mounted adjacent said platen, means for reciprocating said platen, and means for reciprocating said stripper.

6. In a machine for forming safe-plates, a platen, blades on said platen, a roll-frame, rolls journaled in said roll-frame, means for reciprocating said roll-frame whereby said rolls are brought past said platen and said blades, a stripper slidably mounted adjacent said

platen, means for reciprocating said platen, means for reciprocating said stripper, a clamp slidably mounted in said roll-frame adapted to oppose said platen, and means for reciprocating said clamp.

7. In a machine for forming safe-plates, a platen, a roll-frame, rolls journaled in said roll-frame, an upright arm attached to said roll-frame, a shaft, projections on said upright arm and a cam on said shaft adapted to engage said projections.

8. In a machine for forming safe-plates, a platen, a roll-frame, rolls journaled in said roll-frame, upright arms attached to said roll-frame, projections on said upright arms, a shaft, cams on said shaft adapted to engage said projections and a blade on said platen adapted to coöperate with said rolls as and for the purposes specified.

9. In a machine for forming safe-plates, a platen, a roll-frame, rolls journaled in said roll-frame, means for reciprocating said roll-frame, strippers slidably mounted adjacent said platen, a shaft, a cam on said shaft, a lever pivoted to said stripper and a projection on said lever engaging said cam.

10. In a machine for forming safe-plates, a platen, a roll-frame, rolls journaled in said roll-frame, upright arms attached to said roll-frame, a shaft, projections on said arms, a cam on said shaft adapted to engage said projections, a stripper slidably mounted adjacent said platen, a wedge-bar slidably mounted adjacent to and adapted to reciprocate said platen, an additional cam on said shaft, a lever pivotally connected to said wedge-bar, a projection on said lever engaging said additional cam, a lever pivotally connected to said stripper, and a projection on said lever adapted to engage said additional cam.

11. In a machine for forming safe-plates, a platen, a roll-frame, rolls journaled in said roll-frame, a shaft, upwardly-extending arms attached to said roll-frame, projections on said arms, a cam on said shaft adapted to engage said projections, a clamp slidably mounted in said roll-frame adapted to oppose said platen, an upwardly-extending arm on said clamp, projections on said upwardly-extending arm, and an additional cam on said shaft adapted to engage said projections.

12. In a machine for forming safe-plates, a platen, a roll-frame, rolls journaled in said roll-frame, an upwardly-extending arm attached to said roll-frame, a shaft, a projection on said upwardly-extending arm, a cam on said shaft adapted to engage said projection, a wedge-bar slidably mounted adjacent to and adapted to reciprocate said platen, a lever pivotally connected to said wedge-bar, a projection on said lever, a cam on said shaft adapted to engage said projection, a stripper slidably mounted adjacent said platen, a lever pivotally connected to said stripper, a projection on said lever adapted to be engaged by said cam, a clamp adapted to oppose said platen, an upwardly-extending arm on said clamp, a projection on said upwardly-extending arm, and a cam on said shaft adapted to engage said projection.

13. In a machine for forming safe-plates, a platen, blades on said platen, a roll-frame, rolls journaled in said roll-frame, a shaft, an upwardly-extending arm attached to said roll-frame, a projection on said arm, a cam on said shaft adapted to engage said projection whereby said roll-frame is reciprocated to carry said rolls past said platen and said blades, a stripper slidably mounted adjacent said platen, a lever pivotally connected to said stripper, a projection on said lever, a cam mounted on said shaft adjacent said lever adapted to engage said projection, a clamp slidably mounted in said roll-frame adapted to oppose said platen, an upwardly-extending arm on said clamp, a projection on said arm, and a cam on said shaft adapted to engage said projection.

14. In a machine for forming safe-plates, a platen, blades on said platen, a roll-frame, rolls journaled in said roll-frame, a shaft, an upwardly-extending arm attached to said roll-frame, a projection on said arm, a cam on said shaft adapted to engage said projection and to reciprocate said roll-frame whereby said rolls are brought past said platen and said blades, a stripper slidably mounted adjacent said platen, a wedge-bar slidably mounted adjacent to and adapted to reciprocate said platen, a lever pivotally connected to said wedge-bar, a projection on said lever, a cam on said shaft adjacent said lever and adapted to engage said projection, a lever pivotally connected to said wedge-bar, a projection on said lever adapted to engage said cam, a clamp slidably mounted in said roll-frame adapted to oppose said platen, an upwardly-extending arm on said clamp, a projection on said upwardly-extending arm and a cam on said shaft adapted to engage said projection.

15. In a machine for forming safe-plates, a platen, a roll-frame, rolls journaled in said roll-frame, upright arms attached to said roll-frame, each of said arms having a slot adapted to receive a shaft and be moved vertically in relation thereto, a shaft, projections on said upright arms and cams on said shaft adapted to engage said projections.

16. In a machine for forming safe-plates, a platen, a roll-frame, rolls journaled in said roll-frame, upright arms attached to said roll-frame, a shaft, a clamp slidably mounted in said roll-frame and provided with an upright arm having a slot adapted to receive a shaft and be moved vertically in relation thereto, and means for reciprocating said clamp.

17. In a machine for forming safe-plates, a bed-plate, upright standards on said bed-plate, a roll-frame slidably mounted in said upright standards, a rectangular guideway in said bed-plate, a platen slidably mounted in said rectangular guideway, rolls journaled in said roll-frame, a shaft journaled in said upright standards, upwardly-extending arms attached to said roll-frame, projections on said upright arms, cams on said shaft adjacent to and adapted to engage said projections on said upright arms for the purposes specified.

18. In a machine for forming safe-plates, a bed-plate, upright standards on said bed-plate, a roll-frame slidably mounted in said upright standards, a guideway in said bed-plate, a platen slidably mounted in said guideway, rolls journaled in said roll-frame, blades on said platen, upwardly-extending arms attached to said roll-frame, projections on said upwardly-extending arms, a shaft, and a cam on said shaft adjacent to and adapted to engage said projections whereby said rolls are reciprocated to coöperate with said blades as and for the purposes specified.

19. In a machine for forming safe-plates, a bed-plate, upright standards on said bed-plate, a roll-frame slidably mounted in said upright standards, a guideway in said bed-plate, a platen slidably mounted in said guideway, rolls journaled in said roll-frame, upwardly-extending arms attached to said roll-frame, projections on said upwardly-extending arms, a shaft, cams on said shaft adjacent to and adapted to engage said projections, a clamp slidably mounted in said roll-frame adapted to oppose said platen, an upwardly-extending arm on said clamp, projections thereon and cams on said shaft adjacent to and adapted to engage said projections.

20. In a machine for forming safe-plates, a bed-plate, upright standards on said bed-plate, a roll-frame slidably mounted in said upright standards, a guideway in said bed-plate, a platen, a shank on said platen adapted to slide in said guideway, rolls journaled in said roll-frame, a shaft journaled in said upright standards, upwardly-extending arms attached to said roll-frame, projections thereon, cams on said shaft adjacent to and adapted to engage said projections, a clamp slidably mounted in said roll-frame adapted to oppose said platen, an upwardly-extending arm thereon, projections on said arm, and cams on said shaft adjacent to and adapted to engage said projections.

21. In a machine for forming safe-plates, a bed-plate, upright standards on said bed-plate, a roll-frame slidably mounted in said upright standards, a platen slidably mounted in said bed-plate, rolls journaled in said roll-frame, upwardly-extending arms attached to said roll-frame, projections on said upright arms, brackets on said upright standards, a shaft journaled in said upright standards and said brackets, cams on said shaft adjacent to and adapted to engage said brackets, blades on said platen, strippers slidably mounted in said upright standards adjacent to said platen, levers pivotally connected to said strippers, cams on said shaft adjacent said brackets, projections on said levers adapted to engage said cams, wedge-bars slidably mounted adjacent to and adapted to reciprocate said platen, arms pivotally connected to said wedge-bars, projections on said arms adapted to engage said cams adjacent said brackets, a clamp slidably mounted in said roll-frame adapted to oppose said platen, an upwardly-extending arm on said clamp, projections on said arm, and cams on said shaft adjacent to and adapted to engage said projections.

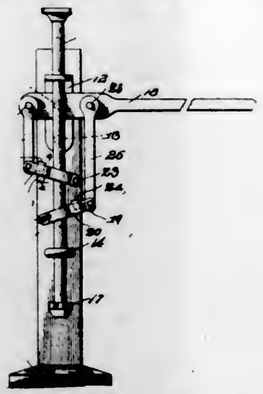
22. In a machine for forming safe-plates, a bed-plate, upright standards on said bed-plate, a slide mounted in said upright standards, a roll-frame detachably and interchangeably connected to said slide, a rectangular guideway in said bed-plate, a platen, a shank on said platen adapted to slide in said rectangular guideway and having a recess therein, rolls journaled in said roll-frame, additional rolls journaled in said roll-frame, flanges on said additional rolls, blades on said platen adjacent to and adapted to coöperate with said flanges on said additional rolls, brackets on said upright standards, a shaft journaled in said upright standards and said brackets, upwardly-extending arms on said slide, projections on said arms, cams on said shaft adjacent to and adapted to engage said projections, cams on said shaft adjacent said brackets, wedge-bars slidably mounted in said upright standards, adapted to engage within the recesses in said shank, additional brackets on said upright standards, levers pivotally connected to said wedge-bars and fulcrumed in said additional brackets, projections on said levers engaging the cams adjacent said brackets, strippers slidably mounted in said upright standards adjacent said platen, levers pivotally connected to said strippers and fulcrumed in said additional brackets, and projections on said levers engaging said cams adjacent said brackets.

23. In a machine for forming safe-plates, a bed-plate, upright standards on said bed-plate, a slide mounted in said upright standards, a roll-frame detachably and interchangeably connected to said slide, a rectangular guideway in said bed-plate, a platen, a shank on said platen adapted to slide in said rectangular guideway and having a recess therein, rolls journaled in said roll-frame, additional rolls journaled in said roll-frame, flanges on said additional rolls, blades on said platen adjacent to and adapted to coöperate with said flanges on said additional rolls, brackets on said upright standards, a shaft journaled in said upright standards and said brackets, upwardly-extending arms on said slide, projections on said arms, cams on said shaft adjacent to and adapted to engage said projections, a clamp slidably mounted in said slide adapted to oppose said platen, an upwardly-extending arm on said clamp, projections on said upwardly-extending arm, cams on said shaft adjacent to and adapted to engage said projections, cams on said shaft adjacent said brackets, wedge-bars slidably mounted in said upright standards and adapted to engage within the recess in said shank, additional brackets on said upright standards, arms pivotally connected to said wedge-bars and fulcrumed in said additional brackets, projections on said levers engaging said cams adjacent said brackets, strippers slidably mounted in said upright standards adjacent said platen, levers pivotally connected to said strippers and fulcrumed in said additional brackets, and projections on said levers engaging said cams adjacent said brackets.

24. In a machine for forming safe-plates, a platen, a roll-frame, rolls journaled in said roll-frame, means for reciprocating said roll-frame, a clamp slidably mounted in said roll-frame adapted to oppose said platen, and means for reciprocating said clamp.

25. In a machine for forming safe-plates, a platen, a roll-frame, rolls journaled in said roll-frame, means for reciprocating said roll-frame, means for reciprocating said platen, a stripper slidably mounted adjacent said platen, means for reciprocating said stripper, a clamp adapted to oppose said platen, and means for reciprocating said clamp.

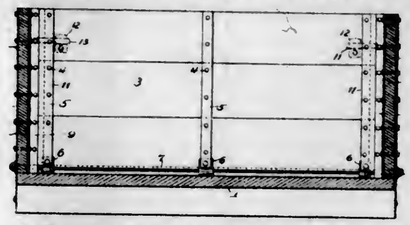
824,614. **LIFTING-JACK.** BYRON R. BEAVER, Ulysses, Nebr. Filed Feb. 26, 1906. Serial No. 303,025.



Claim.—In a device of the class described, a vertical standard, a plate secured by spaced transverse bolts to said standard and with a lateral extension having a vertical guide-aperture, one of said bolts extended to form a bearing-stud, a guide extending from said standard and having an aperture and spaced from said plate with its aperture in vertical alinement with the guide-aperture in the plate, a lifting-bar movable through said guide-apertures, a lever swinging upon said bearing-stud, links spaced apart and swinging from said lever at opposite sides of said stud, and clamping means carried by said links and adapted to alternately engage said bar.

824,615. **FREIGHT-CAR.** ANTON BECKER, Columbus, Ohio. Filed Feb. 7, 1906. Serial No. 299,990.

Claim.—1. The combination with a car-bottom and sides, and a rod passing through the sides in proximity to the bottom near an end of the car, of an end-gate, and castings secured to the bottom of the end-gate and provided with openings for the passage of said rod.



2. The combination with a car-bottom and sides, of a rod passing through the sides near an end of the car, an end-gate, and castings bifurcated to receive an edge of the gate and secured thereto and having openings for the passage of said rod.

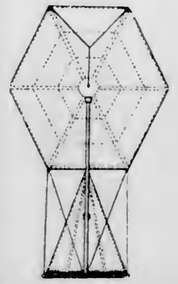
3. The combination with a car-bottom, and sides and an end-gate, of castings bifurcated to receive the lower edge of the end-gate and depending from the same and a rod passing through the sides of the car and said castings.

4. The combination with a car-bottom and sides, and an end-gate, of castings bifurcated to receive the lower edge of the end-gate, each casting having an opening therethrough and a curved lower face, and a rod passing through the sides of the car and through the openings in the castings.

5. The combination with a car-bottom and sides thereon, of gates hinged at their lower edges between the sides, angle-irons secured to the sides, timbers or furrings secured between the angle-irons, said timbers or furrings and the gate edges constructed to fit each other, and reinforcing-strips at opposite sides of the gate at its side edges.

6. The combination with a car-bottom and sides thereon, of hinged gates at the ends of the bottom, angle-irons secured to opposite sides of the sides at their ends, timbers or furrings secured between the angle-irons and shaped to fit the edges of the gates, hooks carried by the gates, and pivoted locking-pawls carried by the angle-irons to enter the hooks and secure the gates in upright position.

824,616. **TAILLESS KITE WHICH CAN BE TAKEN TO PIECES.** ALFRED J. BERGERON, Bordeaux, France. Filed Oct. 13, 1905. Serial No. 282,629.



Claim.—1. A kite of the character described consisting in the combination with a main supporting section or plane, of a second or directing section detachably supported by the main section, and a third or compensating section detachably supported by the said second section, all arranged in the manner and for the purpose specified.

2. A kite of the character described consisting in the combination with a main supporting section or plane having a depending rod, of a second or directing section having a rod provided with a socket into which socket the lower end of said depending rod fits, and a third or compensating section having a socket into which fits the lower end of the rod on the second section.

824,617. **EYEGLASSES.** EUGENE C. BERNHEIM, Newark, N. J. Filed Feb. 18, 1904. Renewed Mar. 8, 1906. Serial No. 304,901.

Claim.—1. An eyeglass consisting of the lenses, the nose-guards having the horizontal portions arranged on one side of the lens, the bow or bridge spring having the horizontal portions arranged on the other side of the lens, the intermediate bearing-plates, means for

connecting the nose-guards and bearing-plates and for securing the nose-guards and spring to the lenses, said bow or bridge spring being formed with coils or spring-loops of thinner material than the body of the spring.



2. An eyeglass consisting of the lenses, the bow or bridge spring arranged obliquely or at an incline to the lenses and having the coils or loops of thinner material than the body portion and terminating in the horizontal portions arranged in line with the horizontal ends, the nose-guards having the horizontal portion of the spring, the plates having the lips fitting against the edges of the lenses and located between the horizontal portions of the nose-guards and spring, and the fastenings for connecting the horizontal portions of the spring and nose-guards with the lens and the fastenings for connecting the intermediate plates with said horizontal portions of the spring and nose-guard.

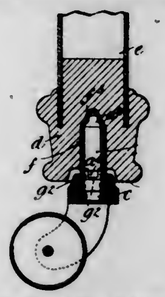
3. An eyeglass consisting of the lenses, the bow or bridge spring having its main or central portion arranged at an incline to the lenses and provided with the spring coils or loops of thinner material than the main portion thereof and terminating in the horizontal ends for attachment with the lenses, the nose-guards having the horizontal portions attached to the other side of the lenses and having the depending tapered end, the springs connected to the guards and carrying the egg-shaped nose-pads, and the intermediate bearing-plates fitting against the lenses and having a portion connected with the horizontal portion of the nose-guards and spring.

824,618. ALLOY. CHARLES H. BIRMINGHAM, Baltimore, Md. Filed Mar. 13, 1906. Serial No. 305,826.

Claim.—1. An alloy composed of silver, nickel, bismuth and gold. . .

2. An alloy composed of silver sixteen and one-half ounces, nickel four and one-fifth pounds, bismuth one-half ounce, and gold fifty-three pennyweights.

824,619. CASTER. THOMAS BOURNE and ALBERT E. BOURNE, Birmingham, England. Filed Oct. 20, 1905. Serial No. 283,657.



Claim.—1. A caster comprising a bridge-piece, a vertically-extending pintle carried thereby and provided with a reduced portion, and a socket for said pintle, said socket forming at one end a bearing for the pintle and at its other end provided with depending resilient protuberances adapted to engage the reduced portion of said pintle for retaining the pintle within the socket.

2. A caster comprising a bridge-piece, a vertically-extending pintle carried thereby and having a shank portion, a conoidal-shaped upper end and a portion of less diameter than said shank portion, and a socket for said pintle, said socket having its upper end conforming in contour to the conoidal-shaped upper end of the pintle, and said socket further provided at its lower end with a plurality of depending resilient protuberances adapted to engage said portion of reduced diameter of said pintle for retaining the pintle within the socket.

3. A caster comprising a bridge-piece having a countersunk portion in its upper face, a vertically-extending pintle carried by said bridge-piece and having a reduced portion partly surrounded by said countersunk portion in the bridge-piece, and a socket for said pintle, said socket having the upper end thereof forming a bearing for the upper end of the pintle and its lower end provided with resilient protuberances adapted to engage said reduced portion of the pintle for retaining the pintle within the socket.

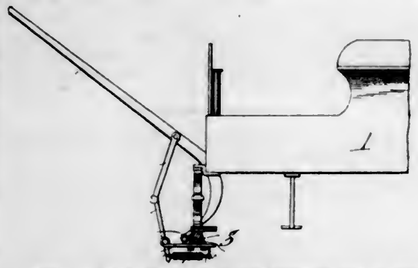
4. In a caster, the combination with a bridge-piece and a pintle carried thereby, said pintle having a reduced portion near its lower end, of a stationary shell adapted to receive said pintle and provided at its lower end with depending resilient protuberances adapted to engage the reduced portion of the pintle for retaining the pintle within the shell.

5. The combination with a foot member having a recess in its lower face and a socket, of resilient protuberances carried by said member and positioned within said recess, and a pintle extending in said socket and adapted to be engaged and connected by said protuberances to said member.

6. The combination with a foot member carrying a socket provided at one end with resilient protuberances, of a pintle having a reduced portion and extending in said socket, said pintle snugly fitting and abutting against one end of said socket and having its reduced portion exteriorly of the socket and adapted to be engaged by said protuberances for connecting the pintle to said socket.

7. The combination with a foot member having its lower surface provided with a recess, of a plurality of resilient protuberances carried by said member and positioned within said recess, said protuberances of such length as not to project below the lower surface of said foot member, a bridge-piece, a vertically-extending pintle carried thereby and provided with a reduced portion, said pintle extending in said member and having its reduced portion engaged by said protuberances, thereby connecting the pintle to said member.

824,620. THILL AND POLE SUPPORT. JAY C. BROCK and CARSNER J. BOOKER, Greenville, Ohio. Filed Nov. 28, 1905. Serial No. 289,520.



Claim.—1. In a device of the class described and in combination with a vehicle axle and thill, of a base member attached to the axle, a supporting-lever pivoted to the base and having a relatively movable section pivotally connected with the thill, and a normally contracted spring operatively engaged with the lever and base member for maintaining the parts in normal condition.

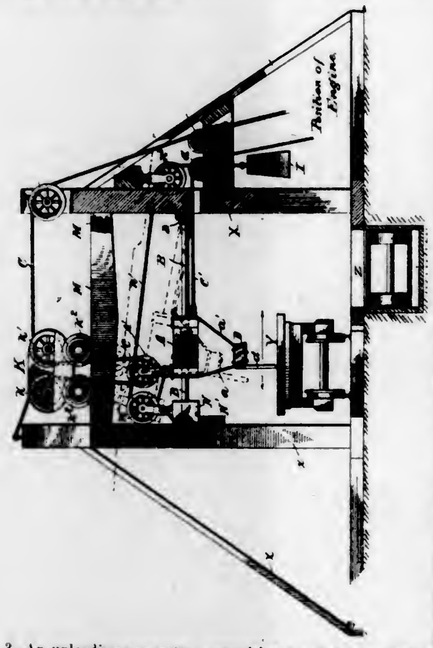
2. In a device of the class described and in combination with a vehicle axle and thill, of a base member adjustably connected with the axle, a supporting-lever pivoted to the base and having a relatively movable section pivotally connected with the thill, and a normally contracted spring operatively engaged with the lever and base member for maintaining the parts in normal condition.

3. In a device of the class described, and in combination with a vehicle axle and thill, of a base member adjustably connected with the axle and having an engaging portion, a supporting-lever pivotally connected with the base member and having an arm extended therethrough, said lever having a relatively movable section pivotally connected with the thill, and a spring engaged with the lever-arm and engaging member and serving to maintain the parts in normal condition with the thill raised.

824,621. CAR-UNLOADING APPARATUS. ALCIDE BUQUET and ALBERT CROCHET, Minerva, La. Filed Feb. 19, 1906. Serial No. 301,798.

Claim.—1. An unloading apparatus, comprising a supporting-framework, horizontal guide-rods hinged at one end to the framework and bearing a cross-head at the other, a rake-frame with subjacent rake sliding on the guide-rods, a pulley mounted on the cross-head of the guide-rod, a weight with cable attached thereto and passing around the pulley on the cross-head and attached to the rake-frame to draw the latter toward the cross-head, a cable for pulling the rake-frame away from the cross-head, and means for raising and lowering the rake-frame and its hinged guide-rods.

2. An unloading apparatus, comprising two braced uprights having a horizontal trolley-track at the top connecting the uprights, horizontal guide-rods hinged at one end to the upright frame below the trolley-track and bearing a cross-head at the other end, a rake frame with subjacent rake sliding on the guide-rods, a pulley mounted on the cross-head of the guide-rod, a weight with cable attached thereto and passing around the pulley on the cross-head and attached to the rake-frame to draw the latter toward the cross-head, a cable for pulling the rake-frame away from the cross-head, a trolley with two pulley-wheels mounted on the track above, a cable passing around the two pulley-wheels of the trolley and depending between them in a loop, and a pulley on the cross-head of the hinged guide-rods located in the loop of said cable.



3. An unloading apparatus, comprising two braced uprights having a horizontal trolley-track at the top connecting the two uprights, horizontal guide-rods hinged at one end to the upright frame below the trolley-track and bearing a cross-head at the other end, a rake-frame with subjacent rake sliding on the guide-rods, a pulley mounted on the cross-head of the guide-rods, a weight with cable attached thereto and passing around the pulley over the cross-head and attached to the rake-frame to draw the latter toward the cross-head, a cable for pulling the rake-frame away from the cross-head, a trolley with two pulley-wheels mounted to travel on the track above, a cable attached at one end to the main frame and passing around the two pulley-wheels of the trolley and depending between them in a loop, a pulley on the cross-head of the guide-rods sustained in the loop of said cable, and two windlasses mounted in a frame between an upright of the main frame and its inclined brace, one of said windlasses being arranged to receive the cable from the trolley and the other to receive the cable reciprocating the rake-frame.

824,622. CHILD'S CARRIAGE. SAMUEL D. BUTTERWORTH, Jr., Detroit, Mich., assignor of one-half to George H. Cummings, Detroit, Mich. Filed Apr. 24, 1905. Serial No. 257,041.

Claim.—1. In a child's carriage, the combination of a body-frame, wheel-carrying supports hinged thereto and adapted to fold thereunder, a seat-frame of complementary shape to the upper edge of the body-frame adapted when folded thereover to coöperate therewith in forming a receptacle, and a handle-bar telescopically connected to said seat-frame, substantially as described.

2. In a child's carriage, in combination with a body-frame, forked wheel-supports pivotally connected with the ends of the frame and adapted to fold thereunder, a top portion of complementary shape to the upper edge of said body-frame hinged thereto and adapted to fold thereover and to form therewith an inclosing receptacle, and a handle-bar provided with telescopic engagements with said portion, substantially as described.



3. In a child's carriage, the combination of a body-frame, a seat-frame pivoted at one end thereof adapted to fold forward and over the body-frame, independent forked supports for the wheels pivotally connected to the body-frame and adapted to fold thereinto, substantially as described.

4. In a child's carriage, in combination with a body-frame, a seat-frame pivotally connected thereto, handle-bars, a receptacle to telescopically receive said handle-bars in said seat-frame, the said carriage-body and seat-frame being adapted to fold to form a receptacle, substantially as described.

5. In a child's carriage, the combination of a body, wheels pivoted in arms, said arms being pivoted at one end of said body, and adapted to turn upward to bring said wheels within said body, a shaft pivoted at the other end of said body, and provided with offsets, wheels pivoted in arms secured to said shaft, said arms being adapted to turn up into said body with their attached wheels bringing said offsets beneath the wheels pivoted at the other end of said body, for the purpose described.

6. In a child's carriage, the combination of a body, wheels pivoted in arms, said arms being pivoted at one end of said body, and adapted to turn upward to bring said wheels within said body, a shaft pivoted at the other end of said body and provided with offsets, wheels pivoted in arms secured to said shaft, said arms being adapted to turn up into said body with their attached wheels bringing said offsets beneath the wheels pivoted at the other end of said body, and lugs for supporting said last-mentioned arms in their last-mentioned position.

7. In a child's carriage, the combination of a body, shafts pivoted at each end of said body, arms having wheels pivoted in their ends secured to each of said shafts, and offsets in said shafts, for the purpose described.

824,623. JIG OR ORE-CONCENTRATOR. ALONZO C. CAMPBELL, Asheville, N. C. Filed Sept. 19, 1903. Renewed Feb. 17, 1906. Serial No. 301,633.

Claim.—1. In a concentrator, a jig-box, overlapping riffles arranged therein, the series of riffles being inclined downward toward the outlet end of the box, and a wheel having rasping-surfaces for engaging with a part attached to the box.

2. In a concentrator, a jig-box, and overlapping riffles arranged therein, the said riffles having upward extensions at their outlet sides.

3. In a concentrator, a jig-box, overlapping and spaced riffles arranged therein, the series of riffles being inclined downward toward the outlet end of the box, and a loose covering for the box arranged over the riffles.

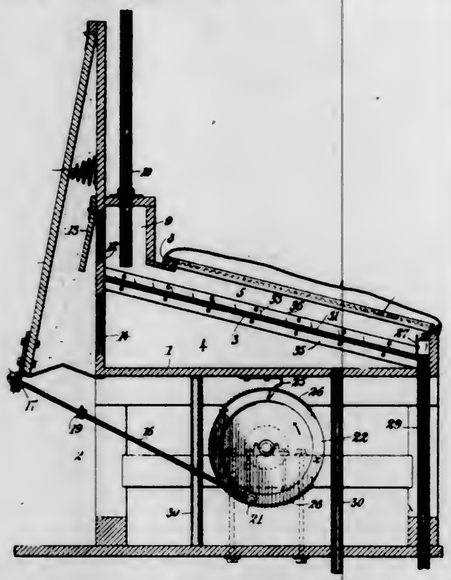
4. In a concentrator, a jig-box, overlapping riffles arranged therein, the said riffles having upturned extensions at their outlet sides, and a wheel having rasping-surfaces for engaging with a part attached to the box.

5. In a concentrator, a jig-box having an opening in the top provided with a flexible cover, a series of riffles arranged in the box, and a compressor having communication with the box above and below the riffles.

6. A concentrator, or washer, comprising a jig-box, a series of riffles arranged therein and overlapping, and flaps on the under edges of said riffles.

7. An ore-concentrator, comprising a jig-box, riffles arranged therein, a flexible cover for the box, a compressor having communication with the box above and below the riffles, a crank-wheel, and a rod connecting with said crank-wheel and having lost-motion connection with the movable part of the compressor.

8. A concentrator or washer comprising a jig-box, a series of riffles arranged therein, a flexible cover for the box, a compressor communicating with the box above and below the riffles, a valve for the upper opening or communication, a crank-wheel, and a rod having connection with said crank-wheel, and a lost-motion connection with the movable part of the compressor



9. A concentrator or washer comprising a jig-box, a series of riffles arranged therein at a downward inclination toward the outlet end of the box, a flexible cover above the riffles, a dam at the lower end of the riffles, a receiver for material passing over the dam, a discharge leading from said receiver, discharging devices leading from the box, and means for causing the circulation of air through the box.

10. In a concentrator, a jig-box, overlapping riffles arranged at a downward inclination therein and spaced apart, upward extensions on the discharge edges of said riffles, certain of said extensions having a greater height than the others, flaps on the lower edges of the riffles, and means for causing a circulation of air through the box.

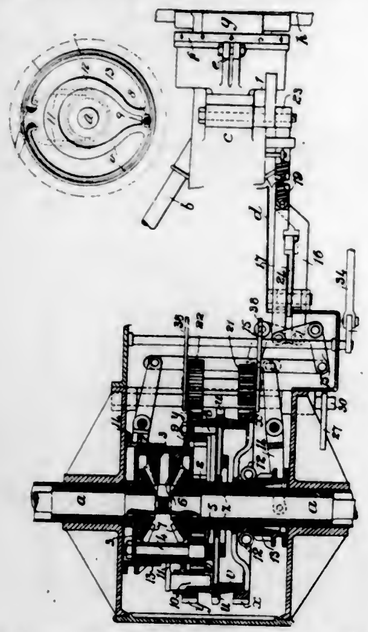
11. A concentrator comprising a jig-box, a series of riffles arranged therein, a compressor for causing a circulation of air through the box, a wheel for operating the said compressor at intervals, rasping devices on said wheel, and a spring-hook attached to the under side of the box for engaging with said rasping devices, the said wheel also serving as a balance-wheel.

12. A concentrator comprising a jig-box, a series of riffles arranged therein and forming the upper wall of the lower chamber in the box and the bottom wall of the upper chamber in the box, a feed-casing with which the upper end of the upper chamber communicates, a feed-pipe extended into said casing and terminating slightly above the riffles, a compressor for causing a circulation of air through the box, and means for operating said pneumatic.

824,624. CHANGE-SPEED AND REVERSING GEAR FOR AUTOMOBILES. JOHN H. CHAMBERS, London, England, and ROBERT M. CHAMBERS and CHARLES E. CHAMBERS, Belfast, Ireland. Filed May 10, 1905. Serial No. 259,825.

Claim.—1. A change-gear for automobiles comprising a freely-mounted driver, a single set of epicyclic gears consisting of a sun-pinion, planet-pinions and an annular wheel, the sun-pinion and the annular wheel also being freely mounted, clutches for connecting them to the driver, means for locking them and means for operating said clutches and locking means, substantially as and for the purpose hereinbefore set forth.

2. A change-speed gear for automobiles comprising a freely-mounted driver, a set of epicyclic gears consisting of a freely-mounted sun-pinion, planet-pinions and a freely-mounted annular wheel, a carrier for the planet-pinions, a balance-gear having a planet-pinion, said pinion being carried by the carrier, means for connecting the sun-wheel and annular wheel to the driver and means for locking them, substantially as and for the purpose hereinbefore set forth.



3. A change-speed gear for automobiles, comprising a freely-mounted driver, a set of epicyclic gears consisting of a freely-mounted sun-pinion and annular wheel and planet-pinions, a carrier for the planet-pinions, a driven axle to which said carrier is operatively connected, two spur-wheels respectively rigid with the sun-pinion and the annular wheel, clutches for connecting said spur-wheels with the driver, pawls adapted to lock said wheels, and means for operating said clutches and pawls, substantially as hereinbefore described and set forth.

4. A change-speed gear for automobiles, comprising a freely-mounted driver, a set of epicyclic gears consisting of a freely-mounted sun-pinion and annular wheel and planet-pinions, a carrier for said planet-pinions, a driven axle to which said carrier is operatively connected, two spur-wheels respectively rigid with the sun-pinion and the annular wheel, clutches for connecting said spur-wheels with the driver, pawls adapted to lock said wheels, a reversing-train adapted to operatively connect said spur-wheels, and means for operating said clutches, pawls and reversing-train, substantially as hereinbefore described and set forth.

5. A change-speed gear for automobiles, comprising a freely-mounted driver, a set of epicyclic gears consisting of a freely-mounted sun-pinion and annular wheel and planet-pinions, a carrier for said planet-pinions, a driven axle to which said carrier is operatively connected, two spur-wheels respectively rigid with the sun-pinion and the annular wheel, clutches for connecting said spur-wheels with the driver, pawls adapted to lock said wheels means for operating said clutches and pawls the means for operating the clutches comprising levers and sliding collars, pivoted clutch-forks therefor, draw-bars, links and levers connecting said forks to the draw-bars, a pedal for thrusting said bars in one direction to release the clutches and springs for returning said bars to engage the clutches.

6. A change-speed-gear for automobiles, comprising a freely-mounted driver a set of epicyclic gears, consisting of a freely-mounted sun-pinion and annular wheel and planet-pinions, a carrier for said planet-pinions, a driven axle to which said carrier is operatively connected, two spur-wheels respectively rigid with the sun-pinion and the annular wheel, clutches for connecting said spur-wheels with the driver, pawls adapted to lock said wheels means for operating said clutches and pawls, the means for operating the clutches comprising levers, and sliding collars, pivoted clutch-forks therefor, draw-bars, links and levers connecting said forks to the draw-bars, a pedal for thrusting said bars in one direction to release the clutches, springs for returning said bars to engage the clutches and means for operating the pawls comprising the pawl-shaft, a rocking lever and a draw-rod, substantially as hereinbefore described and set forth.

7. A change-speed gear for automobiles comprising a freely-mounted driver, a set of epicyclic gears consisting of a freely-mounted sun-pinion and annular wheel and planet-pinions, a carrier for the planet-pinions, a driven axle to which the carrier is operatively connected, two spur-wheels respectively rigid with the sun-pinion, and the annular wheel, clutches for connecting said spur-wheels with the driver, pawls adapted to lock said wheels, means for operating said clutches and pawls, the means for operating the clutches comprising levers and sliding collars, pivoted clutch-forks therefor, draw-bars links and levers connecting said forks to the draw-bars, a pedal for thrusting said bars in one direction to release the clutches, springs for returning said bars to engage the clutches and the means for operating the pawls comprising the pawl-shaft, a rocking lever and a draw-rod and means for selecting and detaining the draw-bars of the clutch-operating mechanism against the action of their springs, substantially as hereinbefore described and set forth.

8. A change-speed gear for automobiles, comprising a freely-mounted driver, a set of epicyclic gears consisting of a freely-mounted sun-pinion, and annular wheel and planet-pinions, a carrier for the planet-pinions, a driven axle with which the carrier is operatively connected, two spur-wheels respectively rigid with the sun-pinion and the annular wheel, clutches for connecting said spur-wheels with the driver, pawls adapted to lock said wheels, means for operating said clutches and pawls, the means for operating the clutches, comprising levers and sliding collars, pivoted clutch-forks therefor, draw-bars, links and levers, connecting said forks to the draw-bars, a pedal for thrusting said bars in one direction to release the clutches, springs for returning said bars to engage the clutches and means for operating the pawls comprising a pawl-shaft, a rocking-lever and a draw-rod and means for selecting and detaining the draw-bars of the clutch-operating mechanism against the action of their springs comprising a pivoted toothed quadrant linked to the locking-pawl rocking lever, and notches in the draw-bars, adapted to receive the teeth on the quadrant, substantially as hereinbefore described and set forth.

9. A change-gear for automobiles comprising a freely-mounted driver, a single set of epicyclic gears consisting of a sun-pinion, planet-pinions and an annular wheel, the sun-pinion and the annular wheel also being freely mounted, clutches for connecting them to the driver, means for locking them and means for operating said clutches and locking means, a case for inclosing the gear the forward end of which is split a clamping-bolt fitted on said end, a rotatable gland in said end, a casting screwed into said gland, the casting being in halves to embrace the motor-shaft and driving sprocket-pinion thereon, substantially as hereinbefore described and set forth.

10. A change-speed gear for automobiles, comprising a freely-mounted driver, a set of epicyclic gears consisting of a freely-mounted sun-pinion and annular wheel and planet-pinion, a carrier for said planet-pinion, a driven axle with which the carrier is operatively connected, two spur-wheels respectively rigid with the sun-pinion and the annular wheel, clutches for connecting said spur-wheels with the driver, pawls adapted to lock said wheels, a reversing-train adapted to operatively connect said spur-wheels, pivoted plates carrying said train a crank for rocking said plates, and a draw-rod therefor, substantially as hereinbefore described and set forth.

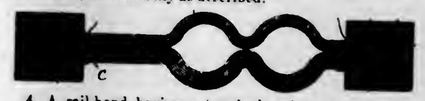
11. A change-speed gear for automobiles, comprising a freely-mounted driver, a set of epicyclic gears consisting of a freely-mounted sun-pinion and annular wheel and planet-pinions, a carrier for said planet-pinions, a driven axle with which the carrier is operatively connected, two spur-wheels, respectively rigid with the sun-pinion and the annular wheel, clutches for connecting said spur-wheels with the driver, pawls adapted to lock said wheels, a reversing-train adapted to operatively connect said spur-wheels, and means for operating said clutches, pawls and reversing-train, a pedal for controlling the clutch-operating means and two handles for controlling the means for operating the locking-pawls, substantially as hereinbefore described and set forth.

824,625. RAIL-BOND. JOHN P. CLARK, Ypsilanti, Mich. Filed Oct. 23, 1905. Serial No. 283,902.

Claim.—1. A rail-bond having a terminal provided with a piece of wire-cloth on its under side which is extended laterally beyond the sides of the terminals, substantially as described.

2. A rail-bond having a terminal provided with a piece of wire-cloth secured to its under side by solder which is extended laterally beyond the sides of the terminal, substantially as described.

3. A rail-bond having a terminal and a piece of wire-cloth wrapped around said terminal and extended laterally beyond the sides thereof, substantially as described.

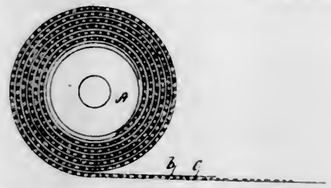


4. A rail-bond having a terminal and a piece of wire-cloth wrapped around said terminal and secured thereto by solder and extended laterally beyond the sides of the terminal, substantially as described.

5. A rail-bond having a terminal provided with a piece of wire-cloth on its under side which is extended beyond the sides of the terminal, the meshes of said wire-cloth being filled with solder, substantially as described.

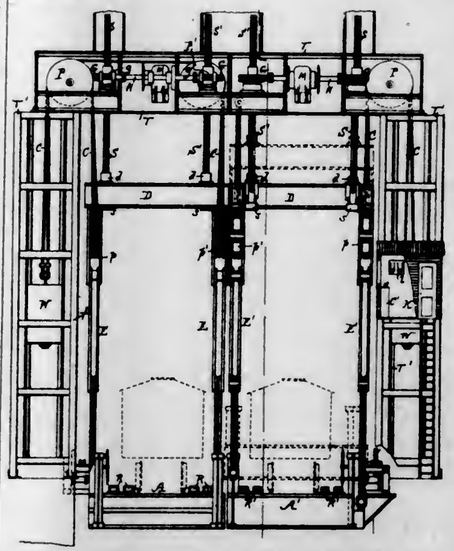
6. A rail-bond having a terminal provided with a lateral extension having numerous openings through it for the solder, substantially as described.

824,626. PACKAGE-ROLL OF METALLIC LEAF. WALTER H. COE, Providence, R. I. Filed Aug. 2, 1905. Serial No. 272,448.



Claim.—A package-roll of metallic leaf in which the fillet of metallic leaf is wound between two paper strips, from which the metallic leaf is adapted for ready removal for use when unwound from the roll.

824,627. FERRY-BRIDGE. NATHAN W. CONDICT, Jersey City, N. J., and JAMES B. FRENCH, Jamaica, N. Y. Filed Oct. 3, 1905. Serial No. 281,199.



Claim.—1. The combination of a ferry-bridge with a trestle, screw-rods to support the bridge with a slip connection, nuts fitted on the rods and carried by the trestle with rocking joints, and means to rotate one of said parts (nuts and rods) while the other is held from rotating.

2. The combination of a ferry-bridge with counterbalancing means, a trestle, screw-rods to support the bridge with a slip connection, nuts fitted on the rods and carried by the trestle with rocking

joints and means to rotate one of said parts (nuts and rods) while the other is held from rotating.

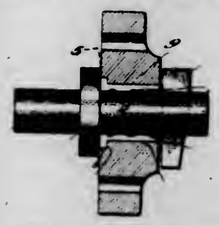
3. The combination of a ferry-bridge with a trestle, non-rotating screw-rods to support the bridge with a slip connection, nuts fitted on the rods and carried by the trestle with rocking joints and worm-gear means to rotate the nuts.

4. The combination of a ferry-bridge with a counterbalancing means, a trestle, non-rotating screw-rod, supporting the bridge with slip connections, nuts fitted on the screw-rods, and carried by the trestle with rocking joints and worm-gear means to rotate the nuts.

5. The combination of a ferry-bridge, with a trestle, non-rotating screw-rods to support the bridge with a slip connection, nuts fitted on the rods, worm-wheels mounted to turn in bearing in the trestle and supporting the nuts with a rocking connection.

6. The combination of a ferry-bridge with a trestle, non-rotating screw-rods to support the bridge with a slip connection, nuts fitted on the rods, worm-wheels mounted to turn in bearings in the trestle and having ball-joint supports for the nuts with toothed connections between the worm-wheels and nuts.

824,628. **SELF-LUBRICATING JOURNAL-BEARING.** JOHN B. CURTIS, New York, N. Y. Filed Oct. 21, 1905. Serial No. 283,311.



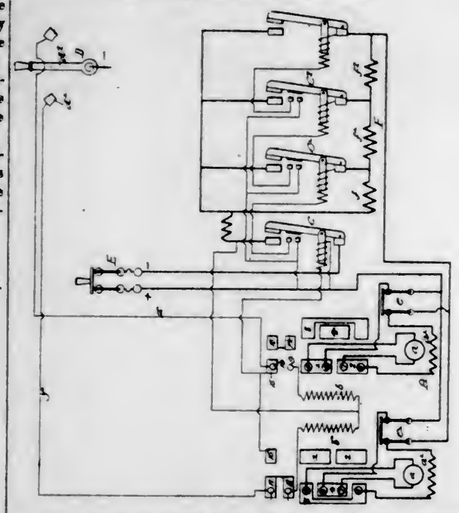
Claim.—In a self-lubricating journal-bearing for the bracing elements of derricks, the combination of a supporting-pin having two journal portions, one having an extension provided with a transverse tapered slot and the other being adapted to fit and turn within a receiving-opening in the derrick structure, there being an annular head on the pin between said journal portions, a bracing element mounted upon the first-named journal portion and formed with a bore for the passage of the same, the base of said bracing element being arranged to bear upon the contiguous face of the head, and the adjacent end of the bore being enlarged to provide a recess of angular form, a sectional bushing in the bore and about the coöperating journal portion of the pin, said bushing having one of its ends resting against the head and formed with an angular flange seated in said recess and coöperating with the walls of the recess to hold the bushing from rotation, and a tapered key fitted in the transverse tapered slot in said journal extension and holding the bracing element from movement on its journal portion away from the head, substantially as described.

824,629. **SYSTEM OF CONTROL FOR ELECTRIC MOTORS.** WILLIAM T. DEAN and RUDOLPH TSCHERTSCHER, Chicago, Ill., assignors to The Electric Controller and Supply Company, Cleveland, Ohio, a Corporation of Ohio. Filed Nov. 2, 1905. Serial No. 285,630.

Claim.—1. A system for controlling an electric motor or motors, consisting of a master-controller connected to the apparatus of the system by but two wires, a motor-reversing switch including main and auxiliary contacts governed by said controller, a motor-controlling switch or switches having an actuating coil or coils in circuit with certain of said auxiliary contacts, and means for preventing the current flowing to the auxiliary contacts until after the circuit of the main contacts has been completed at the reversing-switch, substantially as described.

2. A system for controlling an electric motor or motors, consisting of a two-point master-controller, motor-reversing mechanism governed thereby and connected to said master-controller by but two wires, a motor-controlling switch or switches, and means for preventing the actuation of said switch or switches until after the reversing-switch has operated, there being connections arranged to cause the main motor-current to be broken at a motor-controlling switch instead of at the reversing mechanism when the master-controller is moved to its "off" position, substantially as described.

3. A system for controlling an electric motor or motors, including a two-point master-controller, a reversing-switch having two operating-solenoids governed by said controller, and an electromagnetic motor-controlling switch, said reversing-switch including means so arranged that in one position thereof current will be supplied to one of the solenoids to move the switch to its other position and will subsequently be supplied to the coil of the electromagnetic switch, while in its other position current will flow directly to the coil of said motor-controlling switch, substantially as described.



4. A controlling system for an electric motor or motors, consisting of a master-switch connected to the apparatus of the system by but two conductors, a reversing-switch having two operating-coils governed by said master-switch, an electromagnetic motor-controlling switch, contacts operated by the reversing-switch and arranged to permit current to flow to the coil of the motor-controlling switch only after the reversing-switch has been brought to the position corresponding to that one of the master-switch contacts which is supplied with current, substantially as described.

5. A system for controlling an electric motor or motors, consisting of a two-point master-switch connected by but two wires to the apparatus of the system, a reversing-switch having two operating-coils governed by said master-switch, a series of electromagnetic motor-controlling switches, contacts operated by the reversing-switch and arranged to permit current from either of the contact-points of the master-switch to flow to the coil of the motor-controlling switch only after the reversing-switch has been brought to the position corresponding to that one of the master-switch contacts supplied with current, there being means whereby after the first motor-controlling switch is operated the remaining switches are caused to successively operate, substantially as described.

6. A two-point master-controller, motor-reversing mechanism including electromagnetic operating means governed by said master-controller, a motor-controlling switch or switches also governed by the master-controller, and means for automatically reducing the current-flow to the electromagnetic operating means of the reversing mechanism after the operation thereof, substantially as described.

7. A controlling system for an electric motor or motors, consisting of a master-controller, an electromagnetically-operated motor-reversing switch, an electromagnetic motor-controlling switch or switches, a switch in circuit with the coil of a motor-controlling switch, and a solenoid independent of the reversing-switch-operating means and of the motor-controlling switch or switches, for controlling the action of said coil-switch, said solenoid being connected to said master-switch, substantially as described.

8. A motor-controlling system, consisting of a reversing-switch having electromagnetic operating means, an electromagnetic motor-controlling switch or switches, a master-switch, a solenoid governed thereby, and two switches operated by said solenoid, one governing the flow of current to a motor-controlling switch, and the other permitting the current to flow to the electromagnetic means of the reversing-switch, substantially as described.

9. The combination in a motor-controlling system, of a reversing-switch having two actuating-coils, a master-switch having contacts for completing the circuit of either coil, a motor-controlling switch, and a connection between said coils and said switch, the connections of the system being such that when the motor-controlling switch is closed and the circuit of the master-switch is completed through one of its contacts, the two ends of the reversing-coil connected to another master-switch contact are connected to the same side of the current-supply circuit, substantially as described.

10. The combination in a motor-controlling system, of a reversing-switch having an actuating-coil, a master-switch having contacts for completing the circuit of said coil, a motor-controlling switch, and a connection between said coil and said switch, the connections of the system being such that when the motor-controlling switch is closed and the circuit of the master-switch is completed through one of its contacts, the two ends of the reversing-switch coil are connected through another master-switch contact to the same side of the current-supply circuit, substantially as described.

11. The combination in a motor-controlling system, of a reversing-switch having two actuating-coils, a master-switch having two contacts respectively connected to the ends of said coils, a motor-controlling switch, a motor-circuit having one end connected to one terminal of said motor-controlling switch and the other end connected to a supply-main, a connection from the second terminal of said motor-controlling switch, and a connection from the second ends of the reversing-switch coils to that terminal of the motor-controlling switch in connection with the motor-circuit, the master-switch being connected to the same side of the current-supply circuit as that to which the second terminal of the motor-controlling switch is connected, substantially as described.

12. A system for the control of an electric motor consisting of an electromagnetic relay-switch, a master-controller having but two wires connnecting it to the apparatus of the system, a reversing-switch, an electromagnetic motor-controlling switch, and connections arranged to cause opening of the motor-controlling switch before the reversing-switch can be made to change its position when the master-switch is operated from its "on" position, substantially as described.

13. A system for the control of electric motors consisting of the combination of a plurality of electromagnetic relay-switches, a master-controller having but two train-wires connecting it to the apparatus of the system, a reversing-switch, a motor-controlling switch or switches, connections between said apparatus, with means arranged to cause successive operation of the apparatus to prevent a too sudden reversal of the motor or motors, substantially as described.

14. The combination in a motor-controlling system of an electromagnetic relay switch or switches, with a master-controller connected to the apparatus of the system by but two train-wires, a reversing-switch, a series of electromagnetic motor-controlling switches, and connections between said apparatus arranged to cause successive operation of said motor-controlling switches, substantially as described.

15. A system for the control of electric motors consisting of a plurality of electromagnetic relay-switches, a master-controller connected to the apparatus of the system by but two train-wires, a reversing-switch, a series of electromagnetic motor-controlling switches, and connections between said apparatus including means for preventing operation of certain of the motor-controlling switches until the current in the motor-circuit has fallen to a predetermined amount, substantially as described.

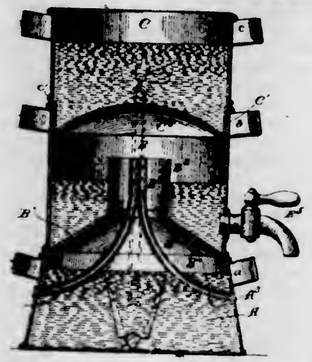
16. A system for the control of electric motors including a plurality of electromagnetic motor-controlling switches, a master-switch, and a switch connected to place either one of two of the motor-controlling switches out of cricuit while retaining the other of said two switches in circuit under the control of the master-switch, substantially as described.

17. A system for the control of electric motors including a plurality of electromagnetic motor-controlling switches, a bank of resistance whose insertion in the motor-circuit is controlled by said switches, a double-throw switch connected to two of the motor-controlling switches for placing either of the same in circuit, and a master-switch for controlling the operation of that one of said motor-controlling switches so placed in circuit, substantially as described.

18. A system for the control of electric motors including a plurality of electromagnetic motor-controlling switches, a switch having contacts connected to two of said motor-controlling switches whereby either of them may be placed in or removed from the motor-cricuit, said switch also including contacts respectively connected to the actuating-coils of said two motor-controlling switches, and a master-switch connected to said switch for governing the motor-controlling switches, substantially as described.

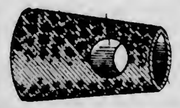
19. A system for the control of electric motors including a master-switch connected to the apparatus of the system by but two conductors, a reversing-switch having actuating means controlled by said master-switch, and a plurality of motor-controlling switches having actuating means controlled from the master-switch, one of said motor-controlling switches being provided with arc-rupturing means, the connections of the system being arranged to cause the motor-circuit to be first broken at the contacts of that motor-controlling switch having the arc-rupturing means, when the master-switch is thrown to its "off" position from any other position, substantially as described.

824,630. **APPARATUS FOR DISTILLING WATER.** CHARLES R. DUDLEY, Sykesville, Md. Filed Aug. 11, 1905. Serial No. 273,734.



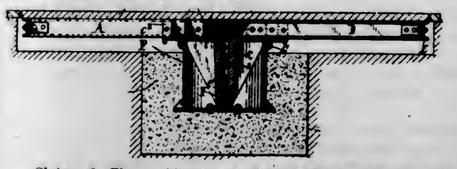
Claim.—A still for water consisting of a lower boiling-chamber, an intermediate steam-chamber fitted to the lower chamber and having an upwardly-sloping bottom, said bottom having a central opening and a vertical flange surrounding the same and forming an upwardly-projecting stack, an upper cold-water or condensing chamber having a dome-shape bottom and fitted to the top of the intermediate chamber, a plurality of aerating-tubes extending from the side walls of the boiling-chamber below the upper end thereof, whereby the lower ends may be immersed in the water in said boiling-chamber, and converging inwardly and upwardly through the center of the upwardly-projecting stack of the steam-chamber, said aerating-tubes being positioned to extend through the stack of the intermediate chamber and be surrounded by vapor arising from the boiling-chamber through said stack and adapted to discharge air within the body of vapor emitted from the upper end of the stack of the steam-chamber.

824,631. **COMBINATION STOPPER AND LIQUID-DROPPER.** JOHN L. DUNNOCK, Baltimore, Md. Filed Feb. 9, 1906. Serial No. 300,226.



Claim.—The combination of a stopper and a dropper, comprising an elastic conical stopper, hollow at its lower end portion and provided with outlets near the lower end portion through the side walls thereof and connecting with the hollow end portion, substantially as described and for the purpose as set forth.

824,632. **TURN-TABLE.** CHARLES K. ERNST, Buffalo, N. Y. Filed Apr. 30, 1906. Serial No. 314,377.



Claim.—1. The combination of a fixed hollow bearing-box having an open upper end provided with a circular race, a turn-table ar-

ranged above the bearing-box and having a center post depending into the bearing-box, antifriction supporting-bearings for the turn-table arranged between the same and the circular race at the upper end of the bearing-box, and a center bearing between the lower end of said center post and the lower portion of the bearing-box, substantially as set forth.

2. The combination of a fixed hollow metal bearing-box having an open upper end provided at its rim with a circular race, a turn-table arranged above the bearing-box and having a center post depending into said box, antifriction supporting-bearings for the turn-table arranged in said circular race and bearing against a circular face on the turn-table, and a center bearing for the turn-table consisting of a bearing member removably secured to the bottom of the bearing-box and provided with means for engaging the lower end of said center post, substantially as set forth.

3. The combination of a fixed hollow metal bearing-box having an open upper end provided with a circular race, a turn-table arranged above the bearing-box and having a center post depending into said box, braces for said center post also arranged within said bearing-box, antifriction supporting-bearings for the turn-table arranged between the same and said circular race at the upper end of the bearing-box, and a center bearing between the lower end of said center post and the lower portion of the bearing-box, substantially as set forth.

4. The combination of a fixed hollow bearing-box having an open upper end, a turn-table having a horizontal bearing-plate arranged above the bearing-box, a center post depending below said bearing-plate into the bearing-box, braces connecting said bearing-plate and the depending portion of the bearing-post and located within the bearing-box, antifriction-bearings arranged between the upper open end of the bearing-box and said bearing-plate, and a center bearing between the lower end of said center post and the lower portion of the bearing-box, substantially as set forth.

5. The combination of a fixed hollow bearing-box having an open upper end, a turn-table frame comprising a hub, and floor-supporting members secured to said hub, said hub consisting of a horizontal bearing-plate provided with upwardly-projecting parts to which the floor-supporting members are secured, and a center post which depends from said bearing-plate into the bearing-box, and braces connecting the center post and bearing-plate and located within the bearing-box, antifriction-bearings arranged between the open upper end of the bearing-box and said bearing-plate, and a center bearing between the lower end of said center post and the lower portion of the bearing-box, substantially as set forth.

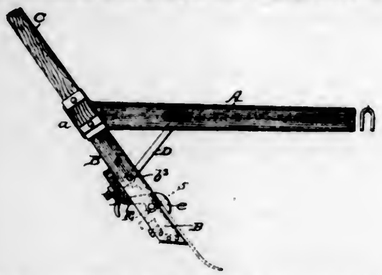
6. The combination of a fixed hollow bearing-box having an open upper end, a turn-table frame comprising a hub, radial floor-supporting members secured to said hub, and a rim connecting the outer ends of said floor-supporting members, said hub consisting of a horizontal bearing-plate and a center post depending from said bearing-plate into the box-bearing, parts extending upwardly from said bearing-plate to which the said radial floor-supporting members are secured, and braces connecting said center post and said bearing-plate and located within the bearing-box, antifriction-bearings arranged between the upper end of the bearing-box and said bearing-plate, and a center bearing between the lower end of said center post and the lower portion of the bearing-box, substantially as set forth.

7. The combination of a fixed hollow bearing-box having an open upper end provided with a circular race, a turn-table arranged above the bearing-box and having a center post depending into the bearing-box, antifriction supporting-bearings for the turn-table between the same and the circular race at the upper end of the bearing-box, antifriction retaining-bearings arranged between the upper end of the bearing-box and a depending portion of the turn-table, and a center bearing between the lower end of said center post and the lower portion of the bearing-box, substantially as set forth.

824,633. **PLOW-FRAME AND ATTACHMENT.** JOHN G. EVANS, Calhoun, S. C. Filed Mar. 28, 1906. Serial No. 308,458.

Claim.—1. The combination, with a plow beam and stock proper having a longitudinal slot and inwardly-projecting flanges, of a means for clamping plow points or shares, the same consisting of an obtuse-angle lever having a head for engaging the shares, lateral fulcrum-pins that bear against the said flanges, and a slotted shank, a brace connecting the beam and stock and extended beyond the latter, and a nut applied to the projecting portion which is suitably threaded, substantially as described.

2. The combination, with a plow-stock proper having inwardly-projecting flanges, of a share-clamping lever having lateral projections near its head and its upper end or shank provided with an opening, a screw-threaded rod projecting rearward from the stock, and a nut applied thereto for clamping the lever, as shown and described.



3. The combination, with a plow-stock proper formed of side bars which are spaced apart and provided with inward projections near the lower end, of a share-clamping lever having an obtuse angle and provided with lateral projections adapted to engage the said flanges and slide in contact therewith, the upper end of the lever having a lengthwise slot, a threaded projection on the stock which passes through said slot, and a hand-nut applied thereto, substantially as described.

4. The improved plow-frame comprising a plate-metal beam having in cross-section the form of an inverted U, a plow foot or stock proper formed of bars whose upper ends lie between the flanges or side portions of the beam, a transverse fastening connecting the parts, and a diagonal brace whose ends lie between the flanges of the beam and the bars of the stock and are secured thereto, substantially as described.

824,634. **POUCH.** UBERTO D. EZELL, Kimball, Tex. Filed Nov. 21, 1904. Serial No. 233,720.

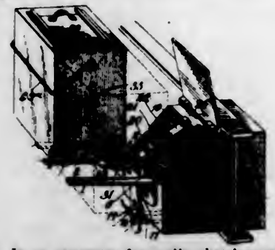


Claim.—1. A pouch adapted to be applied to the male organ, a ring adapted to be fitted around the cervix immediately above the corona, and posterior and anterior cords connecting the pouch and ring, the anterior cord being longer than the posterior cord to permit the application of the ring.

2. A pouch adapted to be applied to the male organ, an elastic ring adapted to be fitted around the cervix immediately above the corona, and posterior and anterior elastic cords connecting the pouch and ring, the nterior cord being longer than the posterior cord to permit the application of the ring.

3. A pouch adapted to be applied to the male organ, said pouch being reduced to provide a flaring entrance, an elastic ring adapted to be fitted around the cervix immediately above the corona, and posterior and anterior elastic cords connecting the pouch and ring, the anterior cord being longer than the posterior cord to permit the application of the ring.

824,635. **APPARATUS FOR COOLING HOT JOURNAL-BOXES.** DAVID H. FAIRBANKS, Jackson, Tenn. Filed July 17, 1905. Serial No. 269,990.



Claim.—1. In an apparatus for cooling hot journal-boxes, the combination with a journal-box, of a tank, and means for supporting the tank directly on the journal-box above the bottom thereof and at one side of the opening of the journal-box, the other side of the opening of the journal-box being exposed to afford access to the interior of the latter.

2. An apparatus for cooling hot journal-boxes, comprising a bracket provided with means for mounting it on a journal-box, said bracket having intermediate and side arms, and a tank provided with means for engaging the intermediate and either of the side arms, whereby the tank may be arranged at either side of a journal-box.

3. An apparatus for cooling hot journal-boxes, comprising a bracket having intermediate and side arms, and a tank provided with two sets of loops located respectively at an intermediate portion of the bottom of the tank and at one side of the same and adapted to fit on the intermediate arm and one of the side arms, and means for retaining the loops in engagement with the arms of the bracket.

4. An apparatus for cooling hot journal-boxes, comprising a supporting-bracket provided with means for detachably engaging the edge of a journal-box at the opening thereof, an adjustable brace extending from the bracket for engaging the journal-box to retain the bracket in engagement with the same, and a tank adapted to be supported by the bracket.

5. An apparatus of the class described, comprising a tank-supporting bracket provided with a hook for engaging a journal-box at the edge thereof, and an extensible brace extending from the bracket for locking the hook in engagement with the journal-box.

6. An apparatus for cooling hot journal-boxes, comprising a tank-supporting bracket provided with a hook for detachably engaging a jounral-box at the bottom of the opening thereof, and an extensible brace having a forked upper end arranged to engage the journal-box at the top of the opening to retain the hook in engagement with the journal-box.

7. An apparatus for cooling hot journal-boxes, comprising a tank-supporting bracket having a hook for engaging a journal-box at the bottom of the opening thereof, and a brace hinged to the bracket and provided with means for engaging the journal-box at the top of the opening.

8. An apparatus for cooling hot journal-boxes, comprising a tank-supporting bracket having means for detachably engaging a journal-box at the bottom of the opening thereof, and a brace hinged to the bracket and composed of extensible sections, said brace being provided with means for engaging the journal-box at the top of the opening thereof.

9. An apparatus for cooling hot journal-boxes, comprising a tank-supporting bracket having a fixed hook for engaging a journal-box, an adjustable hook mounted on the bracket for engaging the journal-box and adapted to be moved toward and from the other hook, and means for retaining the hooks in engagement with the journal-box.

10. An apparatus for cooling hot journal-boxes, comprising a tank-supporting bracket having means for engaging a journal-box, and a brace extending from the bottom of the bracket for engaging a portion of a truck.

11. An apparatus for cooling hot journal-boxes, comprising a tank-supporting bracket having means for engaging a journal-box, and a brace adjustably secured to the bottom portion of the bracket and having one end bent to form a shoulder for engaging a portion of a truck.

12. An apparatus for cooling hot journal-boxes, comprising a tank-supporting bracket provided at the top with horizontal tank-supporting arms and having a depending arm, means carried by the bracket for detachably engaging a journal-box, an upper brace for holding the bracket in engagement with a journal-box, and a lower brace extending from the depending arm of the bracket for engagement with a portion of a truck

13. An apparatus for cooling hot journal-boxes, comprising a bracket provided with means for detachably securing it to a journal-box, a tank mounted on the bracket and provided with a flexible discharge pipe or tube extending from the tank, and means carried by the tank for engaging the outer portion of the discharge pipe or tube when the apparatus is not in use.

14. In an apparatus for cooling hot journal-boxes, the combination with a journal-box, of a tank, a discharge-tube extending from the tank, and means for supporting the tank directly on the journal-box at one side of the center of the same and above the bottom of the journal-box with the tube in close proximity to the opening thereof, said discharge-tube being adapted to extend into the journal-box when the tank is at either side of the center of the same.

15. The combination with a journal-box having a cover, of a tank, and means for supporting the tank at one side of the journal-box and above the bottom thereof, said means engaging the wall of the opening of said box when the cover is open and being detachable therefrom.

824,636. **ARCH CONSTRUCTION.** ANDREW B. FOANS, New York, N. Y. Filed June 29, 1905. Serial No. 267,597.

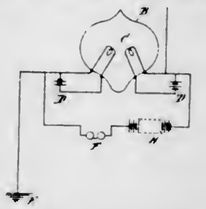


Claim.—1. The compressible separator of suitable material attached to a block or placed at the side of same, to separate the blocks and form joint, substantially as set forth and described.

2. An arch composed of blocks or slabs, hollow projecting metal cups or separators in the blocks to separate or space the same when assembled and filling for said spaces or separations.

3. An arch to span from beam to beam composed of blocks or slabs of fireproof material, cups or separators at the meeting faces of the blocks to space the same when assembled on a center forming the arch and form a uniform joint to insure strength and equal bearing, and filling for the spaces, said separators being made to permit compression of the joints by the weight of the arch upon the removal of the center.

824,637. **OSCILLATION-RESPONSIVE DEVICE.** LEE DE FOREST, New York, N. Y. Filed Jan. 18, 1906. Serial No. 296,615.



Claim.—1. An oscillation-responsive device comprising a receptacle inclosing a sensitive gaseous conducting medium containing a halogen salt.

2. An oscillation-responsive device comprising a receptacle inclosing a sensitive gaseous conducting medium containing a halogen salt and means for heating said medium.

3. An oscillation-responsive device comprising a receptacle inclosing a sensitive gaseous conducting medium containing a potassium salt.

4. An oscillation-responsive device comprising a receptacle inclosing a sensitive gaseous conducting medium containing a potassium salt and means for heating said medium.

5. An oscillation-responsive device comprising a receptacle inclosing a sensitive gaseous conducting medium containing a halogen salt and means for putting said medium in a condition of molecular activity.

6. An oscillation-responsive device comprising a receptacle inclosing a sensitive gaseous conducting medium containing a potassium salt and means for putting said medium in a condition of molecular activity.

7. An oscillation-responsive device comprising a partially-exhausted receptacle, two separated electrodes sealed in said receptacle and each forming part of a separate electric circuit, a separate source of electric current for each said circuit, and means whereby electrical oscillations may be impressed upon the gaseous medium intervening between said electrodes.

8. An oscillation-responsive device comprising a partially-exhausted receptacle containing two separated electrodes, a source of electromotive force associated with said electrodes, and means whereby a relatively small electric current is caused to flow normally in the circuit including said source of electromotive force, said electrodes and the gaseous medium intervening between the latter.

9. An oscillation-responsive device comprising a partially-exhausted receptacle containing two separated electrodes, a source of electromotive force associated with said electrodes, and electrical means for heating said electrodes whereby a relatively small electric current is caused to flow normally in the circuit including said

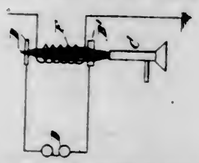
source of electromotive force, said electrodes and the gaseous medium intervening between the latter.

10. An oscillation-responsive device comprising a receptacle, two separated electrodes inclosed within said receptacle and each forming part of a separate electric circuit, a source of electric current associated with each said circuit, and means whereby electrical oscillations may be impressed upon the gaseous medium intervening between said electrodes.

11. An oscillation-responsive device comprising a receptacle inclosing a gaseous medium containing a substance the vapor of which is conducting, and electrical means for heating said medium.

12. An oscillation-responsive device comprising a receptacle inclosing a gaseous medium containing a halogen salt, two separated electrodes inclosed within said receptacle, and a source of electric current so associated with said electrodes as to render said gaseous medium sensitive to electrical oscillations.

824,638. OSCILLATION-RESPONSIVE DEVICE. LEE DE FOREST, New York, N. Y. Filed Jan. 20, 1906. Serial No. 296,932.



Claim.—1. An oscillation-responsive device, comprising a sensitive gaseous conducting medium and constituting a source of electromotive force.

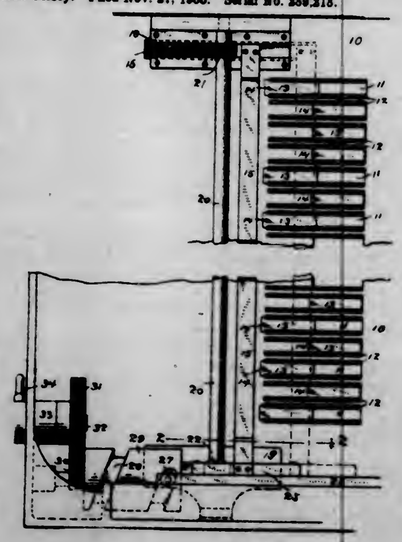
2. An oscillation-responsive device consisting of a flame-battery.

3. An oscillation-responsive device, comprising two separated electrodes and a source of gaseous combustion including said electrodes within its influence, said electrodes being so constituted as to develop an electromotive force under the action of said combustion.

4. An oscillation-responsive device, comprising a sensitive gaseous conducting medium, a solenoid surrounding the same and means for conveying the oscillations to be detected to said solenoid.

5. An oscillation-responsive device comprising a sensitive gaseous conducting medium, and means whereby the conductivity of said medium may be altered by electrical oscillations without passing the oscillations to be detected therethrough.

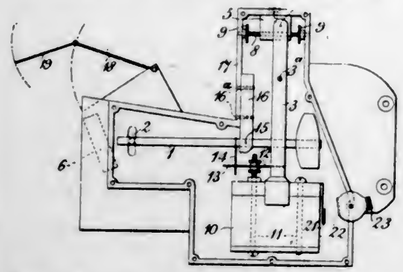
824,639. SHUTTER-CLOSING MECHANISM FOR VOTING-MACHINES. WILLIAM I. T. FOSDICK, Bridgeport, Conn., assignor to Triumph Voting Machine Company, Pittsfield, Mass., a Corporation of New Jersey. Filed Nov. 27, 1905. Serial No. 289,218.



Claim.—1. In a mechanism of the character described the combination with sliding shutters and a closing-bar adapted to engage said shutters, of upper and lower racks by which the closing-bar is carried, a vertical shaft, pinions on said shaft engaging the racks and means for oscillating said shaft to move opened shutters to the closed position and then return the closing-bar to its normal position.

2. In a mechanism of the character described, the combination with sliding shutters and a closing-bar adapted to engage said shutters, of racks 16 and 17 by which the closing-bar is carried, a vertical shaft, pinions on said shaft engaging the racks, a driving-bar, an operating-rack carried thereby, means for reciprocating the driving-bar and connections intermediate the operating-rack and rack 17, whereby the shaft is oscillated and the closing-bar reciprocated laterally.

824,640. ARTIFICIAL HORIZON. HENRY A. GADSDEN, Ravenscourt Park, England. Filed Oct. 5, 1905. Serial No. 281,473.



Claim.—1. In an artificial horizon, the combination of a normally horizontal balance-beam, a device carried thereby and adapted to serve as an artificial horizon, a normally vertical pendulum, and a connection between said pendulum and balance-beam which is capable of adjustment along said pendulum and toward and from the beam, as set forth.

2. In an artificial horizon, the combination of a normally horizontal balance-beam, a device carried thereby and adapted to serve as an artificial horizon, a normally vertical pendulum and a connection between said pendulum and balance-beam comprising a pair of parallel pins secured respectivly to said pendulum and to said beam and a plate adjustably secured to the one pin and having a hole through which the other pin freely projects, as set forth.

3. In an artificial horizon, the combination of a normally horizontal balance-beam, a device carried thereby and adapted to serve as an artificial horizon, a normally vertical pendulum and a connection between said pendulum and balance-beam comprising a downwardly-extending pin fixed to said beam, an upwardly-extending pin fixed to the pendulum, a plate formed with a hole through which said downwardly-extending pin freely projects, and means for adjustably securing said plate to said upwardly-extending pin, as set forth.

4. In an artificial horizon, the combination of a normally horizontal balance-beam, a device carried thereby and adapted to serve as an artificial horizon, a normally vertical pendulum and a connection between said pendulum and balance-beam comprising a downwardly-extending pin fixed to said beam, an upwardly-extending screw-threaded pin fixed to said pendulum, a plate formed with holes through which said pins respectively extend and nuts upon the upwardly-extending pin adapted to adjustably secure said plate in position thereon, as set forth.

5. In an artificial horizon, the combination of a normally horizontal balance-beam, a device carried thereby and adapted to serve as an artificial horizon, a normally vertical pendulum, a fixed pivot upon which the upper end of said pendulum is mounted, and a connection between said pendulum and balance-beam which is capable of adjustment along said pendulum and toward and from the beam, as set forth.

6. In an artificial horizon, the combination of a normally horizontal balance-beam, a device carried thereby and adapted to serve as an artificial horizon, a normally vertical pendulum comprising a weight and a pair of plates, a fixed block which is embraced by the upper ends of said plates, a pivot-pin connecting said plates to the fixed block, means for causing said plates to bear with more or less pressure against said block, and a connection between said pendulum and balance-beam, as set forth.

7. In an artificial horizon, the combination of a normally-horizontal balance-beam, a device carried thereby and adapted to serve as an artificial horizon, a normally vertical pendulum comprising a weight and a pair of plates, a fixed block which is embraced by the upper ends of said plates, a pivot-pin connecting said plates to the fixed block, a screw adapted to draw said plates together and a spring tending to spread them apart, and a connection between said pendulum and balance-beam, as set forth.

8. In an artificial horizon, the combination of a normally horizontal balance-beam, a laterally-projecting pin fixed thereto and having a slot therein whose upper and lower edges will just coincide with the highest and lowest points of the image of the sun, a wire which longitudinally bisects said slot so as to pass through the center of the sun's image when spanned by the slot, a normally vertical pendulum and a connection between said pendulum and said balance-beam, substantially as set forth.

9. In an artificial horizon, the combination of a normally horizontal, pivoted balance-beam, a normally vertical pendulum, a connection between said pendulum and said balance-beam, means for adjusting said connection, a device carried by said beam and adapted to serve as an artificial horizon, and a cover adapted to extend over and shield said device, substantially as set forth.

10. In an artificial horizon, the combination of a normally horizontal, pivoted balance-beam, a normally vertical pendulum, a connection between said pendulum and said balance-beam, means for adjusting said connection, a device carried by said beam and adapted to serve as an artificial horizon, and a cover adapted to extend over and shield said device and comprising a hinged laterally-extending plate, substantially as set forth.

11. In an artificial horizon, the combination of a normally horizontal, pivoted balance-beam, a normally vertical pendulum, a connection between said pendulum and said balance-beam, means for adjusting said connection, a device carried by said beam and adapted to serve as an artificial horizon, and a cover adapted to extend over and shield said device and comprising a hinged laterally-extending plate with a second plate movably connected thereto, substantially as set forth.

12. In an artificial horizon of the kind referred to the combination with an inclosing casing of a roof or cover adapted to extend over and shield the device serving as an artificial horizon and comprising a hinged laterally-extending plate with a second plate of translucent material and hinged to the front portion of the first-mentioned plate, as set forth.

13. In an artificial horizon, the combination of a normally horizontal balance-beam, a device carried thereby and adapted to serve as an artificial horizon, a normally vertical pendulum and a connection between said pendulum and balance-beam and means whereby said parts can be locked in an inoperative position, as set forth.

14. In an artificial horizon, the combination of a normally horizontal balance-beam, a device carried thereby and adapted to serve as an artificial horizon, a normally vertical pendulum and a connection between said pendulum and balance-beam, means whereby said parts can be locked in an inoperative position and external means for actuating said locking means as set forth.

15. In an artificial horizon, the combination of a normally horizontal balance-beam, a device carried thereby and adapted to serve as an artificial horizon, a normally vertical pendulum and a connection between said pendulum and balance-beam, a rearwardly-extending hook carried by said pendulum and a movable catch provided with external actuating means and adapted to engage said hook and lock said beam in an inoperative position, as set forth.

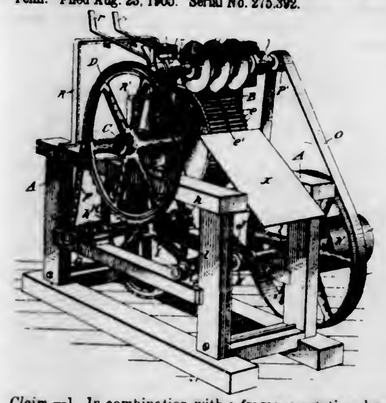
16. In an artificial horizon, the combination of a normally horizontal balance-beam, a device carried thereby and adapted to serve as an artificial horizon, a normally vertical pendulum, a connection between said pendulum and balance-beam which is capable of adjustment and an inclosing casing comprising a rigid frame to which are secured light cover-plates and brackets extending rearwardly from the rigid frame toward the pendulum and carrying the pivot of the balance-beam, as set forth.

17. In an artificial horizon, the combination of a normally horizontal balance-beam, a laterally-projecting pin fixed thereto and formed with a slot divided longitudinally by a central wire, a normally vertical pendulum, a connection between said pendulum and said balance-beam, a second pendulum and a needle carried thereby and adapted to swing in a plane at right angles to the first-mentioned pendulum and adapted, when the instrument is vertical, to bring the said needle into parallelism with the central wire of the slotted pin, as set forth.

18. In an artificial horizon, the combination of a normally horizontal balance-beam, a device carried thereby and adapted to serve as an artificial horizon, a normally vertical pendulum and a connection between said pendulum and balance-beam, means adapted to check agitation of said parts and means whereby said parts can be locked in an inoperative position, as set forth.

19. In an artificial horizon, the combination of a normally horizontal pivoted balance-beam, a device carried thereby and adapted to serve as an artificial horizon, a normally vertical pendulum, a connection between said pendulum and balance-beam, and means for adjusting said connection, substantially as set forth.

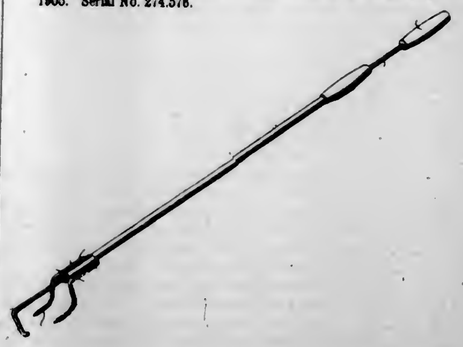
824,641. CUTTING-MACHINE. WALTER A. GARRIGUS, Chattanooga, Tenn., assignor of one-half to E. Waterhouse, Chattanooga, Tenn. Filed Aug. 23, 1905. Serial No. 275,392.



Claim.—1. In combination with a frame, a rotating drum provided with transverse grooves in its periphery, a shaft carrying cutters working alongside of the respective ends of said drum, means for delivering the articles to be cut to the grooves in said drum, means for rotating the drum and the cutters, and means for feeding the articles into the grooves of the drum, this means consisting of a table inclining downwardly toward the face of the drum, a pair of bars supported above said table and inclining in the same direction and terminating near the periphery of the drum, and devices for supporting these bars, these devices consisting of a pair of plates overlapped and adjustably clamped together, one of the plates being fastened to said bars and the other one being adjustably attached to a part of the frame of the machine, substantially as set forth.

2. In a machine of the class set forth, the combination of a grooved drum, rotary cutters, means for simultaneously rotating the drum and the cutters, and means for feeding the articles, consisting of a table inclining downwardly toward the drum, guard-bars and supporting devices therefor, these guard-bars lying above and parallel to the table and terminating near the periphery of the drum and the supporting devices for these guard-bars being vertically adjustable and extensible, whereby the guard-bars may be bodily adjusted toward the drum and also toward the table, substantially as set forth.

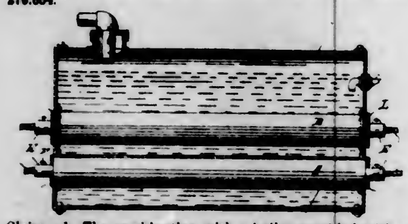
824,642. CLINKER-CATCHER. HARRY A. GIBBS, Princeton, Ill., assignor of one-half to Charles H. Gibbs, Princeton, Ill. Filed Aug. 17, 1905. Serial No. 274,576.



Claim.—1. A clinker-catcher comprising a poker embodying a rod having a grip at one end and a laterally-turned hook at the opposite end, a tube mounted and movable rotatably and slidably upon the rod, spaced fingers carried by the tube in opposed relation to the hook, and a grip upon the tube adjacent the grip of the poker.

2. A clinker-catcher comprising a poker embodying a rod having a grip at one end and a laterally-turned hook at the end opposite, a tube slidably mounted upon the poker, a grip carried by the tube adjacent the grip of the poker, a member provided with engaging fingers at the end of the tube opposite the grip, and a clip engaging and clamping the finger member upon the tube.

824,643. **ELECTRIC HEATING DEVICE.** INGEBRIGT GRETTUM and OSCAR L. YOUNG. Duluth, Minn. Filed Aug. 31, 1905. Serial No. 276,604.



Claim.—1. The combination with a boiler provided with suitable flues, of carbon conductors within said flues, insulating-tubes surrounding the conductors, covering-plates on the ends of the conductors, and terminal lugs having threaded ends engaging the conductors, and provided with longitudinal slots and set-screws to secure the wire therein, said lugs serving to secure the cover-plates in position.

2. In combination with a boiler having suitable flues therein, carbon conductors inclosed in insulating-tubes disposed within the flues, insulating-caps on the ends of the conductors making air-tight joint with the flues, lugs screwed in the ends of the conductors to secure the caps in place, said lugs having longitudinal openings and set-screws to secure the wire therein.

824,644. **PROCESS OF MANUFACTURING ZINC ALLOYS.** PAUL GÜBRS and ALBRECHT GÜBRS. Berlin, Germany. Filed June 11, 1903. Serial No. 161,108.

Claim.—1. The process of producing a zinc alloy, which consists in incorporating an alloy of aluminium-zinc-bismuth with zinc of any source.

2. The process of producing a zinc alloy, which consists in melting the zinc at the same time together with an aluminium-zinc-bismuth alloy.

824,645. **COUPLING DEVICE FOR AERIAL TRAMWAYS AND THE LIKE.** JOHN A. GYLLENBERG. Baker City, Oreg., assignor to Baker City Iron & Supply Co., Baker City, Oreg., a Corporation of Oregon. Filed Feb. 20, 1906. Serial No. 301,145.



Claim.—1. A device of the character described, comprising an anchor-core arranged to be inserted longitudinally in a cable, a wing carried by the core and disposed at an inclination thereto, said wing being arranged to be engaged between the strands of the cable and conform substantially to the coil thereof, and article-attaching means connected to the core independently of said wing.

2. A device of the character described, comprising an anchor-core arranged to be inserted longitudinally in a cable, a plurality of wings extending from the core and disposed at an inclination thereto, said wings being arranged to engage between the strands of the cable and conform substantially to the core thereof, and article-attaching means connected to one of the wings.

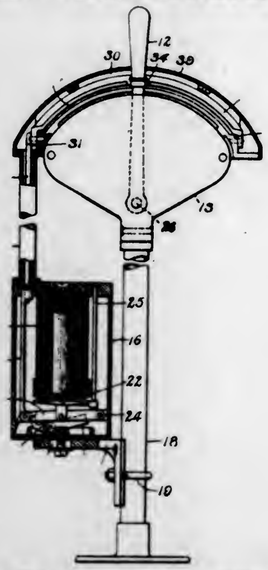
3. A device of the character described, comprising a head having a transversely-disposed core at one end that is arranged to be inserted longitudinally in a cable, said head having curved strand-receiving seats in its opposite faces and on opposite sides of the core, and article-attaching means carried by the head.

4. A device of the character described, comprising an article-attaching stem, a head located at one end of the stem and having a core extending transversely of said stem, and wing portions located on opposite sides of the core and disposed at an inclination thereto, said wing portions having cable-strand-receiving seats in their opposite sides, which seats are curved to conform substantially to the coil of the stranda.

5. A device of the character described, comprising a core having a wing portion projecting from one side, and article-attaching means connected to a different side of the core and being independent of said wing portion.

6. A device of the character described, comprising a head including a transversely-disposed core and wing portions projecting from one side of the core, and article-attaching means projecting from the opposite side of the core.

824,646. **ELEVATOR SAFETY MECHANISM.** GEORGE HAIL. Providence, R. I. Filed Sept. 6, 1904. Serial No. 223,316.



Claim.—1. The combination with an elevator-car, and a controlling device comprising a box with a pivoted controller, of a locking device for preventing the actuation of the controller, door-controlled means for actuating said locking device, and a protective guard for said locking device to prevent interference with the operation thereof.

2. The combination with an elevator-car and an oscillatory controller, of an electrical circuit, door-controlled switches in said circuit, a movable segmental locking member extending along the path of movement of said controller, and an electromagnet on said car and in said circuit, and adapted to move said locking member to lock said controller.

3. The combination with an elevator-car and an oscillatory controller having a lateral projection, of an electrical circuit, door-controlled switches in said circuit, a movable segmental locking member extending along the path of movement of said projection on the controller, and an electromagnet on said car and in said circuit and adapted to move said locking member to engage said projection.

4. The combination with an elevator-car and an oscillatory controller having a projection, of a door-controlled locking member for locking said projection, and an arc-like guard inclosing said member, said guard having a segmental slot in which said projection oscillates.

5. The combination with an elevator-car and a controller, of a locking device and door-controlled means for actuating said locking device to lock said controller, and guards or casings for said locking device and door-controlled means to protect them from external interference.

6. The combination with an elevator-car and an oscillatory controller, of a movable locking member for said controller, a door-controlled means for actuating said locking member, and means preventive of manual interference with said means and said locking member.

7. The combination with an elevator-car and an oscillatory controlling-lever, of a movable locking member for said lever, a door-controlled motor for actuating said locking member, connections between said motor and locking member, and means preventive of manual interference with said motor, said locking member, and said connections.

8. The combination with an elevator-car, and an oscillatory controller, of an arc-like or segmental locking member extending along the path of movement of said controller and pivoted at its ends to swing transversely of the plane of movement of said controller, and automatic means rendered active by the opening of a door for yieldingly moving said member into locking relation to said controller.

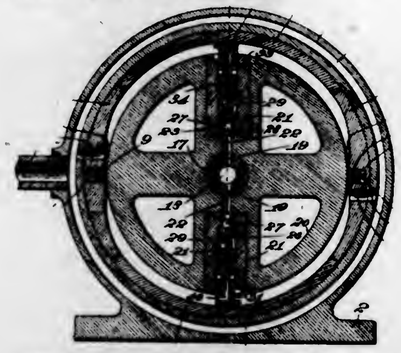
9. The combination with an elevator-car, and a controlling device comprising a box having a controller pivoted therein, of a segmental or arc-like locking member pivoted at its ends to said box and movable transversely to the path of movement of said lever, and automatic means connected to said member and rendered active by the opening of a door for yieldingly actuating said member to lock said controller.

10. The combination with an elevator-car, and a controlling device comprising a support, and a box having a controller pivoted therein, of a segmental or arc-like locking member pivoted at its ends to said box and movable transversely to the path of movement of said lever, and door-controlled means adjustably attached to said support and connected to said member for actuating it to lock said controller.

11. The combination with an elevator-car, and a controlling device comprising a standard, and a box having a controller pivoted therein, of a segmental or arc-like locking member pivoted at its ends to said box and movable transversely to the path of movement of said lever, a door-controlled magnet supported on said standard and having its armature operatively connected to said locking member to cause it to lock said controller.

12. An attachment for electric controlling mechanisms for elevators, comprising a segmental locking-bar adapted to be pivoted at its ends to swing transversely to the controller, and having a laterally-projecting finger, a casing having therein an electromagnet, an armature, and a pivoted lever, and connections between said finger and the free end of said pivoted lever, substantially as described.

824,647. **ROTARY ENGINE.** RICHARD W. HAMANN. St. Louis, Mo., assignor to Eugene J. Feiner, St. Louis, Mo. Filed Aug. 21, 1905. Renewed May 14, 1906. Serial No. 316,635.



Claim.—1. In a rotary engine, a cylindrical casing, wear-plates arranged on the interior thereof, there being abutments formed integral with certain of said wear-plates, a rotary piston-head arranged within the cylindrical casing, sliding valves carried by said piston-head, and spring-actuated governor-valves carried by the first-mentioned valves; substantially as specified.

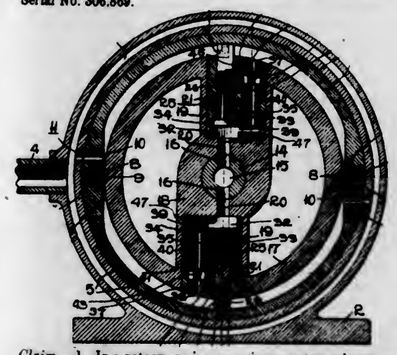
2. In a rotary engine, a casing in which is formed an annular chamber to receive the exhaust-steam, wear-plates arranged on the interior of the casing, there being abutments formed integral with certain of said plates, a rotary piston-head operating within the casing, sliding valves carried by the rotary piston-head, there being suitable apertures formed through the rotary piston-head and through the valves for admitting live steam to the interior of the casing, and spring-actuated governor-valves arranged to slide in the first-mentioned valves; substantially as specified.

3. In a rotary engine, a casing, a rotary piston arranged for operation therein, sliding valves carried by said piston-head, and governor-valves carried by the sliding valves; substantially as specified.

4. In a rotary engine, a cylindrical casing, a rotary piston arranged to operate in said casing, sliding valves carried by the rotary piston, governor-valves arranged in said sliding valves and adapted to be moved outwardly by centrifugal action, and springs arranged to resist the centrifugal action of the governor-valves; substantially as specified.

5. In a rotary engine, a casing, a hollow shaft extending transversely through the casing, a rotary piston fixed upon the hollow shaft, sliding valves arranged in the rotary piston, the outer ends of which bear against the inner face of the casing, there being ports leading from the hollow shaft to the inner ends of the sliding valves, and governor-valves arranged to move in the sliding valves and to cut off the passage of fluid-pressure therethrough; substantially as specified.

824,648. **ROTARY ENGINE.** RICHARD W. HAMANN. St. Louis, Mo., assignor to Eugene J. Feiner, St. Louis, Mo. Filed Mar. 19, 1906. Serial No. 306,869.



Claim.—1. In a rotary engine, a casing, a rotary piston arranged for operation therein, valve-housings detachably arranged in the piston, and a plurality of sliding valves arranged in each of said valve-housings; substantially as specified.

2. In a rotary engine, a casing, a rotary piston arranged for operation therein, valve-housings detachably arranged in the piston, sliding valves arranged in said valve-housings, and governor-valves independent of the sliding valves arranged in the valve-housings; substantially as specified.

3. In a rotary engine, a casing, a rotary piston arranged for operation therein, there being steam-inlet ports through the piston, governor-valves arranged to slide in the piston for controlling the passage of steam through the inlet-ports, and sliding valve-plugs operating independently of the governor-valves to cut off the supply of steam to said governor-valves; substantially as specified.

4. In a rotary engine, a casing, a rotary piston arranged for operation therein, there being steam-inlet ports through the rotary piston, governor-valves arranged to slide in the piston to control the passage of steam through the inlet-ports, valve-plugs arranged to slide in the piston and to close the ports leading to the governor-valves, and means whereby the valve-plugs are moved inwardly against the steam-pressure; substantially as specified.

5. In a rotary engine, a casing, a rotary piston arranged for operation therein, there being steam-inlet ports through the piston, valve-plugs arranged to slide in the piston and cut off the passage through the inlet-ports, means whereby said valve-plugs are moved inwardly against the steam-pressure; and spring-pressed governor-valves arranged to slide in the rotary piston, and constructed to control the passage of steam after the same has passed the valve-plugs; substantially as specified.

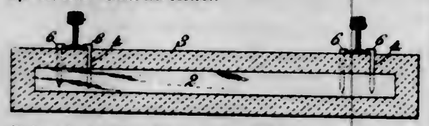
6. In a rotary engine, a casing, a rotary piston arranged for op-

eration therein, an integral web diametrically arranged in the piston, there being recesses formed in the ends of the web, valve-housings removably seated in said recesses, and steam-inlet-controlling valves arranged to slide in said valve-housings; substantially as specified.

7. In a rotary engine, a casing, a rotary piston arranged for operation therein, an integral web diametrically arranged in the piston, there being recesses formed in the ends of the web, valve-housings removably seated in said recesses, governor-valves sliding in the valve-housings, and valve-plugs arranged to slide in the valve-housings and to cut off the supply of steam to the governor-valves; substantially as specified.

8. In a rotary engine, a casing, a rotary piston arranged for operation therein, there being steam-inlet ports through the rotary piston, governor-valves arranged to slide in the rotary piston to control the passage of steam through the inlet-ports, springs for normally maintaining the governor-valves in open positions, valve-plugs arranged to slide in the piston and close the inlet-ports to the governor-valves, and sliding plates carried by the piston for moving the valve-plugs inwardly against the steam-pressure; substantially as specified.

824,649. **RAILWAY CROSS-TIE.** LUPEYER I. HART, Vanatta, Ohio, assignor of one-third to Willis M. Shipley, Vanatta, Ohio. Filed Apr. 25, 1906. Serial No. 313,607.

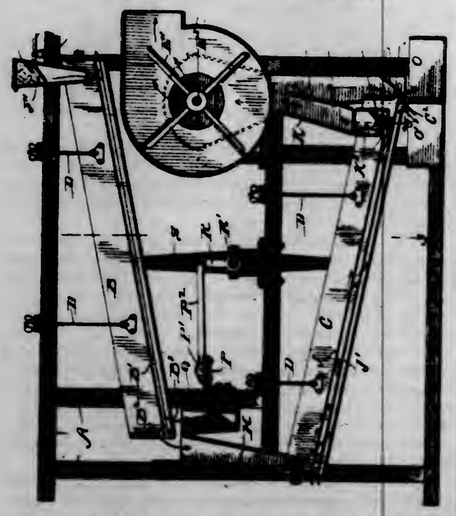


Claim.—1. A railroad-tie composed of a wooden core, and a cement body wholly surrounding the core, the latter extending practically the entire length of the tie.

2. A railroad-tie composed of wooden-core means, and a cement body wholly surrounding the wooden-core means.

3. A railroad-tie composed of wooden-core means, and a cement body wholly surrounding the wooden-core means, said cement body having spike-receiving holes.

824,650. **SIFTER, SEPARATOR, AND GRADER.** EDWIN HARTZELL, Wilkes-Barre, Pa., assignor of one-half to John P. Benning, Wilkes-Barre, Pa. Filed Feb. 18, 1905. Serial No. 246,282.

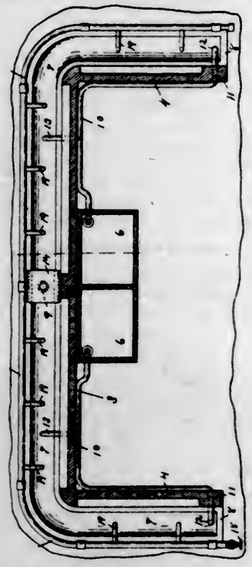


Claim.—1. A device of the kind described comprising downwardly and oppositely inclined boxes, a sieve in the upper box, a double sieve in the lower box, the said sieves in the lower box being arranged one above the other and the upper one terminating at its lower end short of the lower one, a discharge-chute between the two boxes, common means for rocking both boxes, a receptacle adapted to receive material passing through the lower sieve of the lower box, a receptacle receiving material from the said lower sieve, a fan-casing, a fan therein, a wind-trunk leading to said fan-casing and communicating at its lower end with the lower box adjacent the end of the upper sieve, and a second wind-trunk leading to the fan-casing and communicating at its lower end with the last-mentioned receptacle.

2. A device of the kind described comprising upper and lower oppositely-inclined boxes, means for oppositely rocking the boxes, a sieve in the upper box, a plurality of sieves in the lower box, discharge-chutes alining with the lower end of the upper box, one of said chutes discharging into the upper end of the lower box, the said lower box having openings at its lower end respectively above and below the bottom sieve, receptacles alining with said opening, discharge-chutes leading from the lower box adjacent its lower end from a point above the top sieve, wind-trunks extending upwardly respectively from the lower end portion of the lower box and from adjacent the said end, and means for creating an upward current of air through the said trunks.

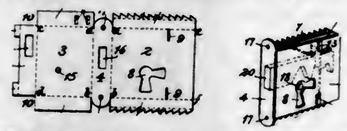
3. A device of the kind described comprising suspended boxes in vertical alinement, a discharge-chute between the boxes, sieves arranged longitudinally in the lower box and one above the other, said sieves being of different mesh, discharge-chutes arranged at the lower end of the said box adapted to convey material from the box from a point above the top sieve, the said box having an opening at the end adapted to discharge material from between the sieves, and an opening in the bottom, receptacles alining with said openings, a wind-trunk having valve-controlled branches one branch opening downwardly into the lower end of the said box above the top screen and the other branch having communication with the opening in the end of the box, a deflector-plate adjacent said end opening, and means for creating and maintaining a current of air upwardly through said trunks.

824,651. **CUSPIDOR ATTACHMENT FOR BARS.** JACOB F. HEIDT, Newark, N. J. Filed Aug. 20, 1904. Serial No. 221,469.



Claim.—The combination with a bar, of a trough extending along the base of said bar contiguous to its front or outer side and having raised side walls parallel thereto, a water-pipe inside the bar substantially parallel to said trough, tubular discharge-spouts leading horizontally from said pipe through the wall of the bar over the adjacent side wall of the trough, brackets extending upward from the front or outer side wall of said trough, a tubular foot-rail supported by said brackets and having holes tapped in its side next the said trough, and tubular spouts screwed into said holes and projecting over the trough, all said spouts being at substantially right angles to the length of the trough and having extremities directed downward toward the bottom of the trough and all arranged along the median line of the trough, the spouts on opposite sides of the trough alternating with each other in position longitudinally of the trough.

824,652. **LOCK.** JOHN HERSOG, Saginaw, Mich., assignor to Herzog Art Furniture Co., a Corporation of Michigan. Filed May 24, 1905. Serial No. 261,041.



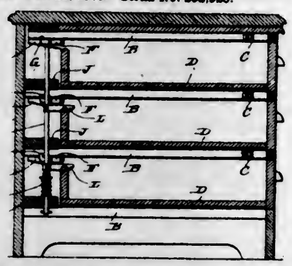
Claim.—1. A sheet-metal lock-case having its sides formed integral with its ends and having one side constructed to engage and be secured to the other side, the sides having their upper and lower edges bent inward and overlapping.

2. A sheet-metal lock-case having a front web provided with a bolt-slot, sides formed integral with the said web, a rear end formed integral with one side and engaging the other side and provided with a bolt-slot, and flanges on the sides forming the top and bottom of the case, one of the sides being provided with a keyhole-slot.

3. A sheet-metal lock-case having a front web provided with a slot for the lock-bolt, sides formed integral with the web, one of the sides having a vertical slit, a tongue or back formed integral with the other side and having a lug arranged to engage said vertical slit, the said back having a slot for the lock-bolt, and flanges on the sides extending inwardly and overlapping, the flanges on one of the sides being provided with teeth.

4. A blank for lock-cases having a central web provided with a longitudinally-disposed slot, leaves extending from the sides of the web, one of said leaves having serrated edges, provided with slits near said edges and having a keyhole-slot, and the other leaf having a pair of slots near the inner corner of one edge, having the outer corners of both edges cut away, having a slot near one cut-away portion, provided with lugs projecting from its end, and having a perforation in its main portion, said perforation occupying the same relative position as the keyhole-slot in the first-mentioned leaf.

824,653. **DESK-DRAWER.** STANISLAW C. HODELL, Herkimer, N. Y. Filed Dec. 23, 1905. Serial No. 293,928.

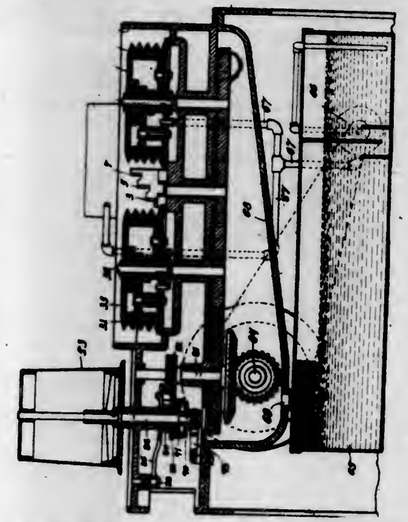


Claim.—In a desk, the combination of a vertically-disposed locking-bar mounted at the rear of the desk, drawers within the desk having rearward extensions provided with inclined under edges, the extension of the top drawer being arranged to bear upon the head of the locking-bar, latches secured on the inner sides of said extensions, and stops on the desk-frame at the front thereof in the path of said latches.

824,654. **WIRE-DRAWING MACHINE.** JAMES A. HORTON, Providence, R. I., assignor to Iroquois Machine Company, New York, N. Y., a Corporation of New York. Filed June 15, 1903. Serial No. 161,567.

Claim.—1. A wire-drawing machine comprising two tiers of independently rotatable wire-drawing drums, two series of dies facing in opposite directions coöperating therewith, and driving mechanism including two shafts or spindles, one for each tier, connections between each spindle and the drums of the corresponding tier whereby said drums are rotated at successively increasing rotative speeds, and connections between the spindles adapted to cause the rotation of the spindles at different speed ratios.

2. A wire-drawing machine comprising two tiers of annular wire-drawing drums each having an internal gear, fixed guides or supports for said drums, two driving-spindles one for each tier of drums, gearing connecting said spindles with the internal gears of the drums, said gearing having provisions for rotating the drums at successively increasing speeds, and gearing connecting the two spindles and having provisions for rotating one spindle faster than the other.



3. A wire-drawing machine comprising a tier of annular wire-drawing drums, fixed means for individually supporting said annular drums against the strain of the wire, and mechanism independent of the supporting means for driving said drums at different speeds.

4. A wire-drawing machine comprising a tier of annular wire-drawing drums, fixed means for individually supporting said annular drums against the strain of the wire, and mechanism independent of the supporting means for driving said drums, said driving mechanism having provisions for rotating the drums at different speeds.

5. A wire-drawing machine comprising a tier of annular wire-drawing drums, annular guides or supports therefor, mechanism for rotating said drums on their supports, and means for forcing a liquid lubricant into the interior of the supports for constantly lubricating the contacting-surfaces of the drums and support.

6. A wire-drawing machine comprising a tier of annular wire-drawing drums having internal gears, guides or supports for said drums, a driving shaft or spindle surrounded by the drums, and gearing connecting said spindle with the internal gears of the drums.

7. A wire-drawing machine comprising a tier of annular wire-drawing drums having internal gears, guides or supports for said drums, a driving shaft or spindle surrounded by the drums and having driving-gears of different diameters, and intermediate gears mounted on fixed supports and connecting the said driving-gears with the internal gears of the drums.

8. A wire-drawing machine comprising a tire of wire-drawing drums, means for rotating the same, and a non-rotating casing having guides or supports for the drums, and guards projecting outwardly from the peripheries of the drums.

9. A wire-drawing machine comprising a tire of annular wire-drawing drums each having an internal gear, a non-rotating casing having guides or supports for the drums, a driving-shaft common to all the drums having a tier of driving-gears of different diameters, and intermediate gears supported by said casing and connecting the driving-gears with the internal gears of the drums.

10. In a wire-drawing machine, a tier of wire-drawing drums adapted to act successively on the same wire and having internal gears, a shaft within said drums, having gears, and intermediate gears between the shaft-gears and the drum-gears, the ratios of the gearing being such that the several drums are driven at different rotative speeds.

11. In a wire-drawing machine, two fixed flanges or plates and a wire-drawing drum rotating between said plates.

12. A wire-drawing machine comprising a wire-drawing drum, a fixed casing having a support or guide for said drum and guards projecting outwardly above and below the drum, and means for rotating the drum.

13. In a wire-drawing machine, two wire-drawing drums in a tier, and a fixed guard projecting beyond the peripheries of said drums between the drums.

14. A wire-drawing machine comprising a drum having a carrying-seat and a fixed guard opposite the seat, wire-forwarding means circumferentially movable on said drum and resting on said seat, and means whereby the radial contraction of said wire-forwarding means forces the latter against said seat.

15. In a wire-drawing machine, a wire-drawing drum, wire-drawing means adapted to slip circumferentially thereon, the surface of said means where it rests on the surface of the drum being inclined to the axis of rotation of the drum, and a fixed guard adjacent said means at the larger diameter of said surface.

16. A wire-drawing drum having a recessed or grooved periphery, one side of the recess forming a seat or support, while another side forms a peripheral surface which is inclined to overhang said seat, said drum having also a series of loose segmental shoes bearing on said seat and having inclined backs bearing on the said inclined peripheral surface, and a fixed guard adjacent said shoes on the side opposite said seat.

17. A wire-drawing machine comprising a hollow drum having a liquor-channel connecting the exterior with its interior, wire-forwarding means on said drum arranged to be lubricated from said channel, and means to supply lubricating liquid to the interior of said drum.

18. A wire-drawing hollow drum, a liquor-channel connected with the interior thereof, an orifice communicating with the liquor-channel and extending to the exterior of the drum whereby the wire-forwarding surface of said drum is lubricated by liquor from its interior.

19. A wire-drawing drum having a recessed or grooved periphery one side of the recess forming a seat and another a peripheral surface, a series of loose segmental shoes bearing on said seat and surface, and ducts extending through said surface to admit a lubricant to the backs of the shoes.

20. In a wire-drawing machine, the combination with a drawing-drum, a die coöperating therewith and a loose delivering-reel, of a yielding take-up between the drum and reel which regulates the delivery of the wire from said reel.

21. In a continuous-wire-drawing machine, a plurality of drawing-drums, a series of dies, a storing-drum spindle having means for detachably receiving wire-storing drums of different diameters, and mechanism for operating said spindle at different predetermined speeds which give the same peripheral velocity to the drums.

22. In a continuous-wire-drawing machine, a die, a storing-drum spindle, a storing-drum thereon for pulling the wire through the die, a clutch to drive said spindle, and a die-holder having a direct operative connection with said clutch whereby the rotative movement of the drum causes the drag of the wire in the die to set and maintain the engagement of the clutch.

23. In a wire-drawing machine, a rotatable drum-holder having means for detachably receiving a storing-drum, a drawing-drum adjacent to the storing-drum, a die located between the drums, and means whereby the die may be adjusted to keep it on a common tangent to the two drums.

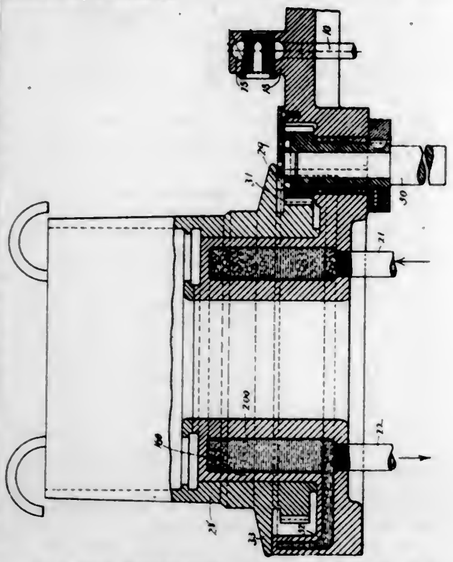
824,655. **WIRE-DRAWING MACHINE.** JAMES A. HORTON, Providence, R. I., assignor to Iroquois Machine Company, New York, N. Y., a Corporation of New York. Filed Apr. 7, 1905. Serial No. 254,333.

Claim.—1. In a wire-drawing machine, the combination of a body having a fluid-containing chamber one wall of which is composed of heat-absorbing material, with a separate wire-engaging member having a surface for engaging the wire and another surface in parallel juxtaposition to the external surface of the heat-absorbing wall of the said fluid-containing chamber, substantially as described.

2. In a wire-drawing machine, the combination of a body having a cooling-chamber one wall of which is circular in section, a separate member having a wire-engaging surface adapted to become heated by the friction of the wire, and another surface seated against the outer surface of the wall of the cooling-chamber, substantially as described.

3. In a wire-drawing machine, the combination of a body having a fluid-containing chamber one wall of which is composed of heat-absorbing material, with a separate wire-engaging member having a surface for engaging the wire and another substantially continuous extended surface in contact with the external surface of the heat-absorbing wall of the said fluid-containing chamber, substantially as described.

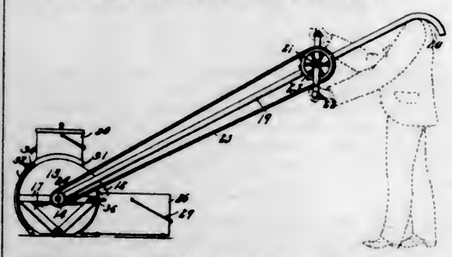
4. In a wire-drawing machine, the combination of a body having a fluid-containing chamber one wall of which is composed of heat-absorbing material, with a separate wire-engaging member having a surface for engaging the wire and another substantially continuous extended surface in contact with the external surface of the heat-absorbing wall of the said fluid-containing chamber, said heat-absorbing wall being composed of a relatively thin soft metal, substantially as described.



5. In a wire-drawing machine, a tier of drawing-drums on a substantially vertical axis, and pivoted fingers yieldingly pressed toward the wire-forwarding surfaces of the drums, whereby the dropping of a convolution of wire from one drum to another is prevented.

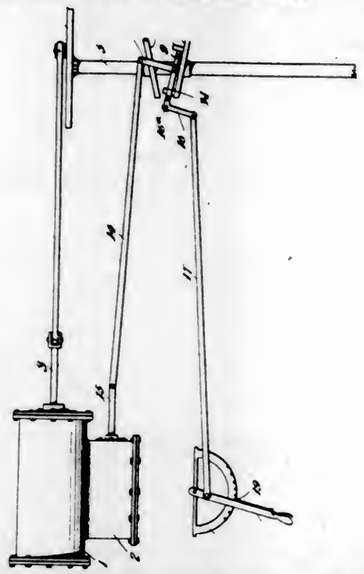
6. In a wire-drawing machine, a drum, a die, and a wire-clamp adjacent to the path of the wire passing from the drum to the die and adapted to engage and hold a portion of the wire during the operation of threading the leading end of the wire through the die, said clamp having its mouth directed toward the die, whereby it is adapted to deliver the wire toward the die.

824,656. **FLOOR-SCRUBBING MACHINE.** JOHN W. HOWE, Spangle, Wash. Filed Aug. 9, 1905. Serial No. 273,406.



Claim.—A device of the class described, comprising a housing having an opening in the bottom and a tangentially-disposed discharge-chute extending rearwardly therefrom, strengthening devices attached to the ends of said housing, a shaft journaled in said strengthening devices and extending through said housing, a brush carried by said shaft within said housing and operating through the aperture therein, spaced handles swinging from said shaft at opposite sides of said housing, means carried by said handles for operating said shaft and the brush mounted thereon, a receptacle disposed rearwardly of said housing and with one edge bearing beneath said chute, and means for detachably coupling the receptacle to the housing.

824,657. **REVERSIBLE VALVE-GEAR.** HARRY W. JONES, Battle Creek, Mich. Filed Dec. 19, 1905. Serial No. 292,509.



Claim.—1. The combination with an engine-cylinder, steam-chest, and shaft, of two obliquely-disposed disks secured on said shaft in spaced relation, a sleeve mounted on said shaft and provided with oblong openings whereby it may assume different oblique positions with respect to the shaft, a connection between said sleeve and the valve-stem, rollers carried by said sleeve and designed for frictional engagement with either of said disks, and means for moving said sleeve.

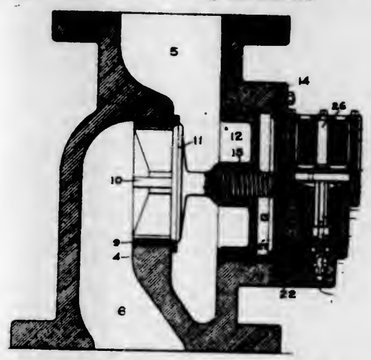
2. The combination with an engine-cylinder, shaft, and valve-rod designed to receive its reciprocation from said shaft of two obliquely-disposed disks mounted on said shaft in spaced relation, a sleeve loosely mounted between said disks and provided with oppositely-extending arms, rollers journaled on said arms and designed to be carried by said sleeve into engagement with either of said disks, a lever rigidly mounted on said sleeve and having a link connection with the valve-stem, and a hand-lever secured to said sleeve and designed to hold the same in different oblique positions with respect to the shaft with the rollers in engagement with their disks.

3. The combination with an engine-cylinder, steam-chest, shaft, and valve-stem, of two obliquely-disposed disks secured on said shaft in spaced relation, a sleeve mounted between said disks and provided with an oblong opening through which the shaft extends, said sleeve being provided with two oppositely-extending arms, rollers journaled on said arms, the said sleeve being provided with two other arms extending oppositely at right angles to the first-named arms, a lever attached at one end to one of said last-named arms and having a link connection with the valve-stem, a bell-crank lever having one arm bifurcated and secured to both of said last-named arms of the sleeve, and a hand-operated link-rod secured to the other arm of said bell-crank lever and designed to move and hold the sleeve in different oblique positions with respect to the shaft and with the rollers in engagement with either of the said oblique disks.

824,658. **GOVERNING-VALVE MECHANISM FOR TURBINES.** OSCAR JUNGGREN, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Original application filed Aug. 26, 1902. Serial No. 121,110. Divided and this application filed Apr. 29, 1903. Renewed Mar. 23, 1906. Serial No. 307,723.

Claim.—1. In combination, a casing having a valve mounted therein, a mass of magnetic material secured to the valve and located within the casing, a magnet having poles mounted on the outside of the casing, which acts on said mass, and a transversely-extending plate of non-magnetic material located between the ends of the magnet-poles and the mass which prevents the escape of fluid.

2. In combination, a valve, a casing therefor, a motor for actuating the valve, the valve and motor being entirely inclosed by the casing, a secondary valve for regulating the admission of fluid to the motor, a mass of magnetic material secured to the secondary valve and in contact with the motive fluid, and a magnet having pole-pieces situated on the outside of the casing and presenting the ends of the poles thereto, the flux or lines of force of which pass through the casing and act on the mass of magnetic material.



3. In combination, a valve-casing having a main chamber, a plurality of secondary chambers opening into the main chamber, separately-actuated valves located between the main and secondary chambers for cutting the secondary chambers into and out of service, and means for actuating the valves independently of each other.

4. In a valve, the combination of a casing, a main valve mounted therein, a piston and cylinder for opening and closing the valve, a detachable head which closes in the cylinder, a spring situated between the head and the piston, a double-acting secondary valve for creating a balanced or unbalanced condition as to pressures on the piston, seats situated at the ends of the secondary valve, a mass of magnetic material attached to the secondary valve and supported by the head, a plate of non-magnetic material which covers the said mass and prevents the escape of motive fluid, and a magnet having pole-pieces which present their ends to the plate so that the flux can pass through it to said mass.

5. In a valve, the combination of a casing, a valve mounted therein, a piston and a cylinder for moving the valve, a head for closing the cylinder which is provided with a projection or enlargement, a secondary valve-casing having a tubular extension which is mounted in the enlargement, a secondary valve, a seat formed on the extension for the secondary valve, an actuator for the valve which passes through the extension, and means for moving the actuator.

6. In a valve, the combination of a casing, a valve mounted therein, a piston and a cylinder for moving the valve, a means for closing in one end of the cylinder, a double-acting secondary valve mounted in said means, a valve-stem having an enlargement made of magnetic material at one end, a non-magnetic plate which covers the enlargement and prevents the escape of steam, an electromagnet resting on the plate, and pole-pieces for the magnet which present their ends to said plate and the enlargement.

7. In combination, a valve-casing containing a main chamber and a plurality of secondary chambers or passages, individual motor-operated valves located between the main and secondary chambers which control the passage of fluid from the main to the several secondary chambers or passages, relay or secondary valves for controlling the motor-operated valves, and means for operating the relay or secondary valves in any predetermined manner.

8. In combination, a valve-casing having a main chamber, a plurality of secondary chambers opening into the main chamber, separately-actuated valves located between the main and secondary chambers for cutting the latter into and out of communication with the main chamber, and magnets controlling the opening and closing of the valves, which are arranged to permit the valves to close when the continuity of their circuits is interrupted.

9. In combination, a valve-casing, a partition therein which divides the casing into main and secondary chambers, other partitions which divide the secondary chamber into a plurality of small individual chambers or passages, a number of separately-actuated valves located between the main and the small auxiliary chambers or passages for controlling the flow of fluid from one to the other, and means for controlling the valves.

10. In combination, a casing, partitions which divide the cas-

ing into main and secondary chambers, valves located between the main and secondary chambers, controlling the passage of fluid between them, pistons for actuating the valves, cylinders for the pistons, heads for the cylinders which are supported by the casing, and means for controlling the operation of the valves.

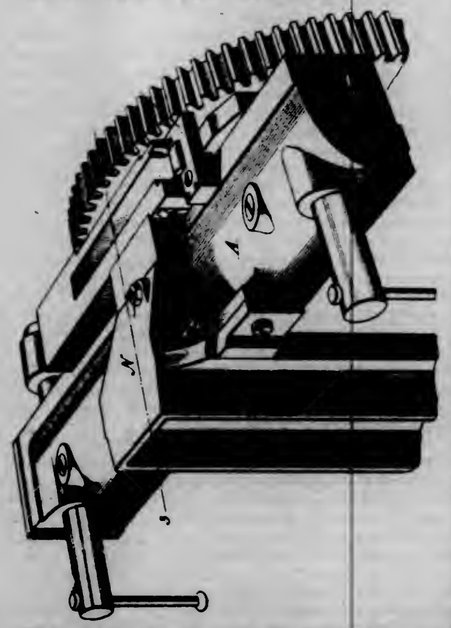
11. The combination of a casing, a main valve therein, a cylinder formed in one of the walls of the casing, a head for the cylinder, a piston guided by the cylinder and connected to the valve for actuating it, conduits for admitting fluid-pressure from the casing to the space between the piston and head and for exhausting it therefrom, a double-seated secondary valve in said head for controlling said conduits, and an actuator for the secondary valve.

12. The combination of a casing, a main valve therein, a motor for actuating the valve comprising a piston and cylinder, a chambered head for the cylinder which forms therewith a fluid-tight space behind the piston, conduits connecting the casing with the space behind the piston by way of the chamber in the head for admitting fluid-pressure to and exhausting it from said space, a secondary valve provided with conical seat-engaging ends for controlling said conduits and arranged in the chamber of the head to be removable therewith, and an actuator for the valve which is supported by the head and is removable therewith.

13. The combination of a valve-casing having a single admission-chamber and a plurality of discharge-chambers, valves corresponding in number to the discharge-chambers for controlling communication between them and the admission-chamber, an independent motor for each valve comprising a fluid-actuated piston and a cylinder therefor, a removable head for each cylinder, a fluid-controlling valve for each cylinder located in the head of the latter, and an electromagnet carried by and removable with each head for actuating the controlling-valve located within the same.

14. The combination of a casing, a main valve therein, a motor for actuating the valve comprising a piston and cylinder, a secondary mechanism for controlling the fluid-pressure acting on the piston, and a head for the cylinder which entirely supports the secondary mechanism and is removable therewith.

824,659. LINOTYPE-MACHINE. DAVID S. KENNEDY, Brooklyn, N. Y., assignor to Mergenthaler Linotype Company, a Corporation of New York. Filed Mar. 17, 1906. Serial No. 306,500.

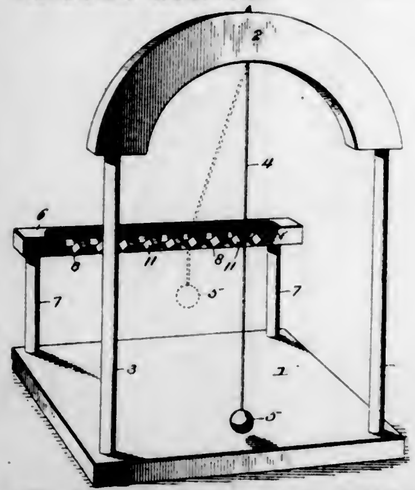


Claim.—1. As an improvement in Mergenthaler linotype-machines, the vertically-movable first elevator N, to sustain the matrix-line and a rigid support bearing against the rear arm or wall of the elevator to hold the same in position as the slug is withdrawn from the matrices.

2. As an improvement in Mergenthaler linotype-machines, in combination with the main frame and the vertically-movable C-shaped elevator, a stationary support to bear against and sustain the rear arm of the elevator when in the casting position, whereby the springing of the arm is prevented as the slug is separated from the matrices.

3. In a Mergenthaler linotype-machine, the combination of the frame A, the vertically-movable elevator N, and a rear arm or support B, secured to the main frame and extending rearward in position to engage and hold the rear arm or wall of the elevator.

824,660. GAME APPARATUS. JOHN F. KIDDER, Burlington, Vt. Filed Feb. 28, 1906. Serial No. 303,534.



Claim.—1. In a game apparatus, a support, a strand thereon having a projectile at its lower end, and a frame provided with a series of retaining devices disposed in the path of travel of the strand above the projectile to engage the strand intermediate of its opposite ends.

2. In a game apparatus, a support, a strand thereof having a projectile at its lower end, and a frame provided with a series of retaining devices disposed in the path of travel of the strand above the projectile to engage the strand intermediate of its opposite ends, said devices being arranged in parallelism to each other and in the same horizontal plane.

3. In a game apparatus, a support, a strand thereon provided with a weighted projectile at its lower end, and a frame provided with a series of slots therein having parallel walls terminating in enlarged recesses, said recesses being provided at opposite sides of said slots with inwardly-projecting portions to retain the strand in position.

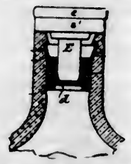
4. In a game apparatus, a support, a strand carried centrally of said support and provided with a projectile at its lower end, and a frame spaced from said support and provided with a series of retaining devices disposed in the path of travel of the strand above the projectile and extending to opposite sides of the point of support of said strand.

5. In a game apparatus, a support, a strand carried centrally of said support and provided with a projectile at its lower end, and a frame disposed in the path of travel of the strand above the projectile and provided with a series of parallel slots and recesses spaced from said support and extending at opposite sides of the central portion thereof.

6. In a game apparatus, a base, standards provided at the front thereof, a support extending between said standards, a strand carried by said support intermediate of said standards and provided with a weighted projectile at its lower end, a frame at the rear of said base and supported above the same in the path of travel of the strand above the projectile, and a series of retaining devices upon the face of said frame next said strand to be engaged thereby.

824,661. BOTTLE-CLOSURE. JAMES C. KINSEY, Philadelphia, Pa. Filed Mar. 29, 1906. Serial No. 307,109.

Claim.—1. The combination in a bottle having an internal annular groove in the neck thereof, a cork arranged to fit the neck and having an open center, an inner seal made in two parts, one part being flanged and closing the opening through the cork, the other part extending through the cork and having a flange arranged to enter the groove in the neck of the bottle, substantially as described

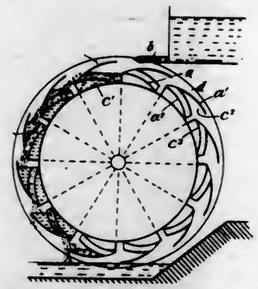


2. The combination in a bottle having an internal annular groove in the neck thereof, a cork arranged to fit the neck and having an open center, an inner seal made in two parts, one part closing the opening through the cork, the other part extending through the cork and having a flange arranged to enter the groove in the neck of the bottle, substantially as described,

3. A closure for the neck of a bottle consisting of a cork having an opening therein, an inner seal consisting of a metallic cap closing one end of the said opening and a portion fitting the balance of the opening and having a flat portion extending over the end of the cork, and a flange arranged to be forced in the groove in the neck, substantially as described.

4. The combination of a bottle, a cork, an inner seal in the cork, a plunger mounted in the bottle, and a removable spacing-disk on the plunger, substantially as described.

824,662. WATER-WHEEL. FRANK KIRCHBACH, Munich, Germany. Filed Feb. 16, 1904. Serial No. 193,778.



Claim.—1. A water-wheel having a series of buckets forming outer chambers adapted to receive the impact of the water discharged from the sluice and inner chambers adapted to receive the water from said outer chambers, and a passage between said chambers adapted to receive the overflow and to direct it into the next lower outer chambers of the series

2. A water-wheel provided with a series of buckets about its periphery, each bucket being provided with a canal dividing said bucket into an inner and an outer chamber and leading from its upper part through its outer wall to discharge the overflow of the bucket into the outer chamber of the next lower one.

3. A water-wheel provided with a series of buckets about its periphery, each bucket being provided with a canal extending over a part of its length and leading from its upper and inner portion through a portion of its outer wall at a point removed from its inner wall to discharge the overflow of the bucket into the next lower one.

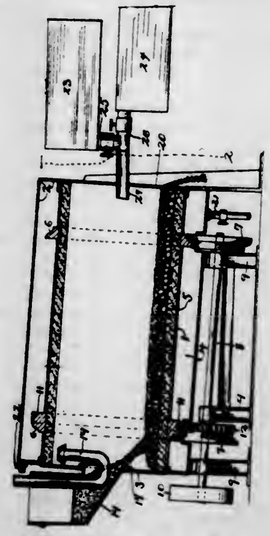
4. A water-wheel provided with a series of buckets about its periphery, each bucket being provided with a canal extending over a part of its length and leading from its upper and inner portion through its outer wall at a point removed from its inner wall, said canal having its discharge end curved inwardly to direct the overflow of the bucket into the next lower one.

5. A water-wheel provided with a series of buckets about its periphery, each bucket being provided with an overflow-canal leading from its upper and inner portion through its outer wall at a point removed from its inner wall, the outer wall of said bucket extending upward and beyond the inlet of said canal.

6. A water-wheel provided with a series of buckets about its periphery, each bucket being provided with an overflow-canal leading from its upper and inner portion through its outer wall at a point removed from its inner wall, and having its discharge end curved inwardly, the outer wall of said buckets being curved tangentially to the outer periphery of the wheel and extending upward beyond the inlet of said canal.

7. A water-wheel provided with a series of buckets about its periphery, each bucket being provided with an overflow-canal leading from its upper and inner portion through its outer wall at a point removed from its inner wall, the outer wall of said buckets extending upward and beyond the inlet of said canal, in combination with a water-supply sluice arranged to discharge water into said buckets in a direction substantially tangential to the periphery of the wheel and above the overflow-canals.

824,663. PROCESS FOR THE REDUCTION OF ORES. WILLIAM KOEHLER, Cleveland, Ohio. Filed Aug. 4, 1905. Serial No. 272,723.



Claim.—1. The process of treating ores which consists in subjecting them to the action of a halogen-acid gas in presence of an oxidizing agent.

2. The process of treating ores which consists in subjecting them to the action of a halogen-acid gas in presence of a gaseous oxidizing agent.

3. The process of treating ores which consists in subjecting them to the action of gaseous hydrochloric acid in presence of an oxidizing agent.

4. The process of treating ores which consists in subjecting them to the action of a gaseous mixture containing hydrochloric acid and an oxidizing agent.

5. The process of treating ores consisting in subjecting the ores to the action of a halogen-acid gas in the presence of nitric acid in a gaseous condition.

6. The process of treating ores consisting in subjecting the ores to the action of a halogen-acid gas in the presence of nitric acid in an anhydrous gaseous condition.

7. The process of treating ores consisting in subjecting the ores while heated to the action of a halogen-acid gas in the presence of nitric acid in a gaseous condition.

8. The process of treating ores consisting in subjecting the ores while heated to the action of a halogen-acid gas in the presence of nitric acid in an anhydrous gaseous condition.

9. The process of treating ores consisting in subjecting the ores to the action of an anhydrous halogen-acid gas in the presence of nitric acid in a gaseous condition.

10. The process of treating ores consisting in subjecting the ores to the action of an anhydrous halogen-acid gas in the presence of nitric acid in an anhydrous gaseous condition.

11. The process of treating ores consisting in subjecting the ores while heated to the action of an anhydrous halogen-acid gas in the presence of nitric acid in a gaseous condition.

12. The process of treating ores consisting in subjecting the ores while heated to the action of an anhydrous halogen-acid gas in the presence of nitric acid in an anhydrous gaseous condition.

13. The process of treating ores consisting in subjecting the ores to the action of hydrochloric-acid gas in the presence of nitric acid in a gaseous condition.

14. The process of treating ores consisting in subjecting the ores to the action of hydrochloric-acid gas in the presence of nitric acid in an anhydrous gaseous condition.

15. The process of treating ores consisting in subjecting the ores while heated to the action of hydrochloric-acid gas in the presence of nitric acid in a gaseous condition.

16. The process of treating ores consisting in subjecting the ores while heated to the action of hydrochloric-acid gas in the presence of nitric acid in an anhydrous gaseous condition.

17. The process of treating ores consisting in subjecting the ores to the action of anhydrous hydrochloric-acid gas in the presence of nitric acid in a gaseous condition.

18. The process of treating ores consisting in subjecting the ores to the action of anhydrous hydrochloric-acid gas in the presence of nitric acid in an anhydrous gaseous condition.

19. The process of treating ores consisting in subjecting the ores while heated to the action of anhydrous hydrochloric-acid gas in the presence of nitric acid in a gaseous condition.

20. The process of treating ores consisting in subjecting the ores while heated to the action of anhydrous hydrochloric-acid gas in the presence of nitric acid in an anhydrous gaseous condition.

21. The process of treating ores containing a metal and a metalloid which consists in subjecting the dry ore to the action of a halogen-acid gas.

22. The process of treating ores containing a metal and a metalloid which consists in subjecting the dry ore to the action of a halogen-acid gas in presence of an oxidizing agent.

23. The process of treating sulfid ores which consists in subjecting the dry ore to the action of a halogen-acid gas.

24. The process of treating sulfid ores which consists in subjecting the dry ore to the action of a halogen-acid gas in presence of an oxidizing agent.

824,664. **LIFE-PRESERVER.** GUSTAVE KRIEGER, Brooklyn, N. Y. Filed Nov. 23, 1905. Serial No. 288,763.



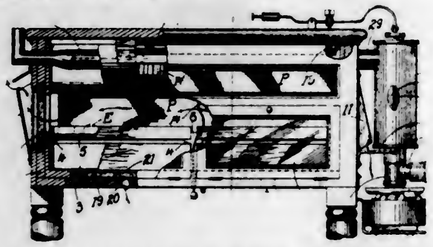
Claim.—A life-preserver comprising a flexible body of circular shape for receiving buoyant material, and having open terminals, fasteners for the respective terminals to close the same, loops spaced from each other and connected to the exterior of the said body and adjacent to said terminals, and straps having one end connected to said body intermediate the extremities thereof, each of said straps slidable through the respective loops and the other ends being free for fastening the body to the wearer.

824,665. **INCUBATOR.** CHRISTIAN A. LINDEMANN, St. Louis, Mo. Filed Feb. 14, 1906. Serial No. 301,045.

Claim.—1. An incubator comprising a suitable box or inclosure, means for supporting an egg-tray therein, a shield located above the tray, means for heating the air above the shield, means for admitting fresh air above the tray, the shield being spaced from the walls of the box to form passages for permitting a union between the heated air and the air above the egg-tray, substantially as set forth.

2. An incubator comprising a suitable box or inclosure, means for supporting an egg-tray therein, a shield located above the tray and forming contracted passages with the walls of the inclosure, heating-pipes disposed above the shield, and a series of feather panels for delivering fresh air above the trays, substantially as set forth.

3. An incubator comprising a suitable box or inclosure, means for supporting an egg-tray therein, a nursery-tray located beneath the egg-tray and accessible to the chicks hatched in said egg-tray, a curved shield disposed within the inclosure above the egg-tray, heating-pipes located above the shield, contracted passages between the shield and inclosure-walls for the flow of the heated air below the shield, a series of feather panels disposed in the inclosure-walls above the egg-tray, a feather-panel door below the nursery-tray, and a solid door having openings contiguous, and below the feather-panel door, substantially as set forth.



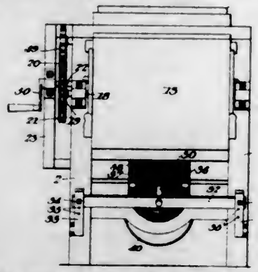
4. In an incubator a suitable inclosure, and a series of panels disposed along the walls thereof, and comprising each a frame, a netting of wire, and a filling of feathers, substantially as set forth.

5. An incubator having a series of feather panels for filtering the fresh air admitted thereto, substantially as set forth.

6. An incubator having a nursery-tray comprising a frame, a wire-netting bottom, and a canvas mat, substantially as set forth.

7. In an incubator, an inclosure or box having means of access to the interior thereof, a shade adapted to be drawn in the path of said means of access, and formations in the shade for the insertion of the hand whereby drafts of air are excluded from the interior of the inclosure, substantially as set forth.

824,666. **FANNING-MILL.** SWAN S. LOFBERG, Argyle, Minn. Filed July 10, 1905. Serial No. 269,025.



Claim.—In a machine of the class described, a shaking-shoe having an inclined plate and a hipped member one section of which cooperates with the inclined plate to form a constricted throat, in combination with a fan-casing, a downwardly and rearwardly inclined plate secured to the upper portion thereof and extending beneath the inclined plate of the shoe, and a flexible member connecting the hipped member of the shoe with the lower portion of the fan-casing.

824,667. **SASH-FASTENER.** GEORGE W. MILLER and GEORGE P. MILLER, Augusta, Me. Filed Sept. 11, 1905. Serial No. 277,967.

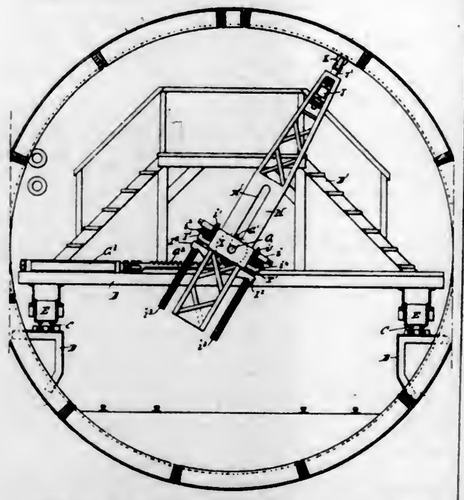


Claim.—1. A sash-fastener comprising a bracket having means for attachment to a window-sash and with a circular aperture provided with a radial recess communicating with the same, a rod having means for connection at one end to the upper jamb of a window and extending through the recess in said plate, a bearing rotative in said aperture and having a cam for engaging said rod and compressing it against the outer end of the recess, and a stop-plate carried by the lower end of said bearing and provided with a radial lug for bearing against the rod and limiting the movements of the bearing and cam.

2. A sash-fastener comprising a bracket having means for attachment to a window-sash and with a circular aperture provided with a radial recess communicating with the same, a rod having means for connection at one end to the upper jamb of a window and extending through the recess in said plate, a stop-pin disposed adjacent to said plate, a bearing rotative in said aperture and having a cam for engaging said rod and compressing it against the outer end of said recess, and a plate carried by the lower end of said bearing and provided with a radial lug terminating in a hook for engaging said stop-pin to limit the movement of the bearing and its cam.

3. A sash-fastener comprising a bracket having means for attachment to a window-sash and with a circular aperture provided with a radial recess communicating with the same, a rod having means for connection at one end to the upper jamb of a window and extending through the recess in said plate, a plate rotative in said bracket-aperture and provided with a cam-surface for bearing against said rod and with a radially-extending hook, and a stop-pin disposed in the path of the hook.

824,668. **CALKING APPARATUS FOR TUNNELS.** ERNEST W. MOIR, London, England, assignor to S. Pearson and Son, Inc., Long Island City, N. Y., a Corporation of New York. Filed Dec. 23, 1905. Serial No. 293,129.



Claim.—1. A calking apparatus for tunnels, comprising a stage, an arm carried thereby, and means carried by said arm for calking the seams between the tunnel-segments.

2. A calking apparatus for tunnels, comprising a stage, an arm carried thereby, and means carried by said arm for calking the seams between the tunnel-segments, in combination with means for moving the calking means circumferentially.

3. A calking apparatus for tunnels, comprising a stage, an arm carried thereby, and means carried by said arm for calking the seams between the tunnel-segments, in combination with means for moving the calking means longitudinally.

4. A calking apparatus for tunnels comprising a stage, an arm carried thereby, and a calking-tool at the end of said arm, in combination with means for exerting a constant pressure at the back of said tool.

5. A calking apparatus for tunnels comprising a stage, an arm carried thereby, and a calking-tool at the end of said arm, in combination with means for moving said tool in the direction of the length of the arm.

6. A calking apparatus for tunnels, comprising a stage, an arm carried thereby, means for revolving said arm, and means carried by the arm for calking the seams between the tunnel-segments.

7. A calking apparatus for tunnels, comprising a traveling stage, an arm carried thereby, means on said stage for revolving said arm, and means at the end of said arm for calking the seams between the tunnel-segments.

8. A calking apparatus for tunnels, comprising a stage, a revolving arm having its spindle mounted thereon, means for rotating said spindle, and a tool carried on the end of said arm for calking the seams between the tunnel-segments.

9. A calking apparatus for tunnels, comprising a stage, a revolving arm having its spindle mounted thereon, means for rotating said spinde, and a tool carried on the end of said arm for calking the seams between the tunnel-segments, in combination with means for moving said arm perpendicularly to said spindle.

10. A calking apparatus for tunnels, comprising a stage, a revolving arm having its spindle mounted thereon, means for rotating said spindle, and a tool carried on the end of said arm for calking the seams between the tunnel-segments, in combination with means for moving said tool in and out at the end of said arm.

11. A calking apparatus for tunnels, comprising a stage, a revolving arm, means carried by said arm for calking the seams between the tunnel-segments, said means comprising a cylinder having a piston, and a tool carried at the end of said piston.

12. A calking apparatus for tunnels, comprising a stage, a revolving arm, means carried by said arm for calking the seams between the tunnel-segments, said means comprising a cylinder having a piston under constant pressure, and a tool swiveled to the end of said piston.

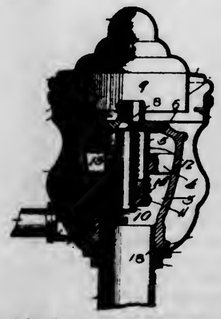
13. A calking apparatus for tunnels, comprising a stage, a revolving arm, means carried by said arm for calking the seams between the tunnel-segments, said means comprising a cylinder having a piston, and a tool carried thereby, and means whereby said tool may be moved in and out.

14. A calking apparatus for tunnels, comprising a stage, a revolving arm, means carried by said arm for calking the seams between the tunnel-segments, said means comprising a cylinder, having a piston, and a tool carried at the end of said piston, said tool having means to permit lateral play.

15. A calking apparatus for tunnels, comprising a stage, a revolving arm, means carried by said arm, for calking the seams between said tunnel-segments, said means comprising a cylinder having a piston, and a tool carried at the end of said piston, and having separate means to prevent lateral and longitudinal movement.

16. A calking apparatus for tunnels, comprising a stage, a revolving arm and means for revolving said arm, consisting of a hydraulic cylinder and rack, in combination with a calking-tool carried by said arm, and means for moving said tool longitudinally and circumferentially.

824,669. **JACKET OR HOOD FOR USE IN CONNECTION WITH THE EXHAUST-HEADS OF HOT-WATER URNS OF COFFEE APPARATUS.** ELIE J. MONBUSE, New York, N. Y. Filed July 7, 1905. Serial No. 268,679.



Claim.—1. A hood or jacket for the safety and vacuum valves of an urn of the character described, comprising a hollow body entirely surrounding said valves, formed in part by a removable top having on the inside thereof a depending flange which extends downwardly and surrounds the valves, so that the exhaust from the exhaust-valve will be projected within the flange, said top being further provided with a number of air-inlet openings for the purpose set forth, and an outlet-opening in the lower part of the hood or jacket for the passage of the water from said jacket or hood.

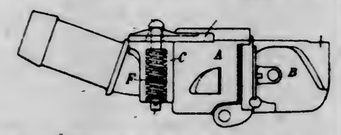
2. A hood or jacket for attachment to the safety and vacuum valves of an urn of the character described, comprising a hollow body entirely surrounding said valves and being formed in part of a removable top or cover formed with a dome raised considerably above the periphery of said cover and having a circular series of air-

inlet openings therein located near the periphery of said top or cover, said top or cover being further provided with a centrally-depending flange within the line of air-inlet openings, and surrounding the exhaust-valve, so that said valve will exhaust within said flange, and suitable outlet-openings to permit the water to pass out of the hood or jacket.

3. A hood or jacket for use in connection with the safety and vacuum valves of urns of the character described, comprising a hollow body entirely surrounding said valves and having air-inlet openings therein for the admission of air to the air-valve, and having an outlet-opening for the passage of water out of the hood or jacket, a flange in the top of the hood or jacket extending downwardly and surrounding said valves so that the exhaust from the exhaust-valve will be projected within the flange, substantially as and for the purpose set forth.

4. A hood or jacket for use in connection with safety vacuum-valves of urns of the character described, comprising a hollow body entirely surrounding said valves, and having air-inlet openings therein for the admission of air to the air-valve, and a flange in the top of the hood or jacket extending downwardly and surrounding said valves so that the exhaust from the exhaust-valve will be projected within the flange.

824,670. **HOSE-COUPLING.** JAMES F. MCELROY, Albany, N. Y., assignor to Consolidated Car Heating Company, Albany, N. Y., a Corporation of West Virginia. Filed Mar. 15, 1904. Serial No. 198,385.



Claim.—1. The combination with a train-hose coupler composed of two parts having rigid interlocking members which hold the parts in coupled position by a wedging action and are automatically disengaged by a longitudinal pull on said parts, of an automatically-releasing latch exerting its main pressure in a direction counter to the unlocking movement of said members for holding said members in interlocking engagement.

2. The combination with a straight-port coupler composed of complementary parts having a fulcrum off the axis of their ports and interlocking members automatically unlocked by a hinging movement of the parts about said fulcrum, of an automatically-disengaging spring-latch additional to the interlocking members, said latch so disposed as to exert its main pressure in a direction counter to the unlocking movement of the parts.

3. The combination with a hose-coupler having two complementary parts provided with interlocking members which connect and disconnect by a pivotal movement of said parts about an axis, of an additional spring-latch on one part adapted to engage the other and so disposed as to act thereon with a substantially unresolved yielding pressure counter to the unlocking movement of the parts so as to hold the interlocking members together.

4. The combination with a hose-coupler having two complementary parts connecting by a hinging movement about a fulcrum, of a forwardly-projecting wing, a locking member adapted to engage with a similar wing on the other coupler part, and a spring-latch in the path of the complementary wing exerting a substantially unresolved pressure toward said locking member in a direction tangent to a circle concentric with the fulcrum.

5. The combination with a hose-coupler having two complementary parts, of a semi-automatic latch on one part having a manually-imposed movement of engagement and disengagement with the complementary member in one path, and a separate automatic movement of disengagement therefrom in a different path.

6. The combination with a hose-coupler having two complementary parts, of a semiautomatic spring-latch on one part having a manually-imposed movement in one path to engage and disengage it with the complementary part, and a separate automatic movement in another path to disengage it when the parts uncouple, and a spring resisting the last said movement.

7. The combination with a two-part gravity-coupler having interlocking means automatically disengaging by a relative pivotal movement of the parts produced by a longitudinal pull thereon, of a semi-automatic spring-latch exerting pressure which tends to hold the interlocking means in engagement and mounted for two movements in different paths, one of which places it in or out of operative position, and the other of which permits the automatic uncoupling of the parts.

8. The combination with a hose-coupling composed of two interlocking parts having provision for automatic disengagement by a pull exerted thereon, of a pivoted automatic spring-latch mounted on one part and adapted to be turned into and out of a position overhanging the other part for resisting such disengagement.

9. The combination with a hose-coupler having two complementary parts, of a spring-latch pivoted on one part so as to swing on one axis to engage with the other part when both parts are in their engaging position and on another axis so as to automatically release when the parts are uncoupled.

10. The combination with a hose-coupler having two complementary parts each provided with a side wing overlapping and engaging with the other, of a spring-latch pivoted to one part and adapted to be turned into or out of a position overhanging the wing of the other part when the two parts are in engagement, and capable of yielding to permit the disengagement of the two parts.

11. The combination with a hose-coupler having two complementary parts, each provided with a side wing overlapping and engaging with the body portion of the other part, of a spring-latch pivoted to one part so as to be turned into and out of engagement with the wing of the other part but capable of yielding in the plane of its pivotal axis to permit the escape of the engaged wing when the parts are uncoupled.

12. The combination with a hose-coupler having two complementary parts each provided with a side wing to overlap and engage the other, of a latch engaging one part and loosely pivoted to the other part so as to move in one path into and out of engagement with the wing of the other part and in another path while in engagement therewith, and a spring for said latch adapted to yield to permit the disengagement of the two parts.

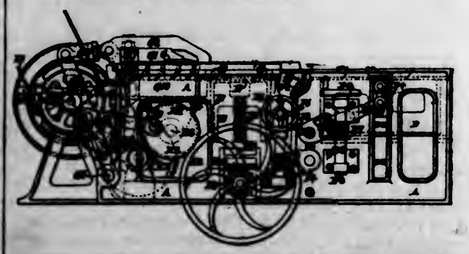
13. The combination with a coupler having two complementary parts each provided with a side wing to overlap and engage the other part, of a latch having an opening enlarged on its under side, a pin projecting through said opening and pivoting the latch to one part of the coupler, and a spring engaging said latch but adapted to yield to permit the disengagement of the two parts of the coupler.

14. The combination with a two-part hose-coupler having provision for automatic uncoupling, of a latch device on one of the coupler parts for engaging the other part and resisting such uncoupling, said device comprising an axially-movable pintle, a spring acting axially thereon, and a latch adapted to turn on said pintle into and out of operative position.

15. The combination with a two-part hose-coupler having provision for automatic uncoupling, of a latch device on one of the coupler parts for engaging the other part and resisting such uncoupling, said device comprising an axially-movable pintle, a spring acting axially thereon, a latch adapted to turn on said pintle into and out of operative position, and means for retaining the latch in a plurality of pivotal positions.

16. The combination with a coupler having two complementary parts each provided with a side wing to overlap and engage with the other part, of a detachable spring-latch holder on one part, and a spring-latch mounted on said holder and engaging the other part but adapted to yield to permit the disengagement of the two parts.

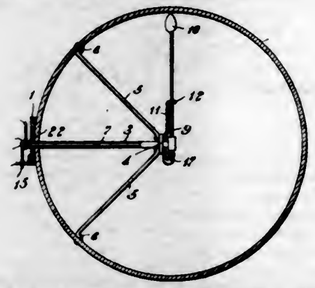
824,671. **MACHINE FOR HOLDING, CUTTING, AND ORNAMENTING THE EDGES OF BOOKS, PAPERS, OR CARDS.** GEORGE RITCHIE, North Mount Vernon, Scotland, assignor to Crawley Book Machinery Company, Newport, Ky., a Corporation of Kentucky. Filed June 29, 1904. Serial No. 214,643.



Claim.—1. In a machine of the type and for the purposes described; the combination of book-carrying frames, height-adjusting devices and cutting devices for operating upon books or other articles carried in the frames, substantially at one end of the machine; a burnishing device for operating on the said articles substantially at the other end; an upper and a lower set of frame-carrying rails forming communication between the cutting and burnishing devices; and means for transferring the frames from one set of rails to the other, as described.

2. In a machine of the type and for the purposes described, the combination of book-carrying frames, height-adjueting devices and cutting devices for operating upon books or other articles carried in the frames, a burnishing device for operating on said articles, an upper and lower set of frame-carrying rails forming communication between the cutting and burnishing devices, and means for transmitting th frames from one set of rails to the other.

824,672. **TANK-INDICATOR.** GEORGE W. ROBERTS, Lemoore, Cal. Filed Feb. 23, 1906. Serial No. 302,572.



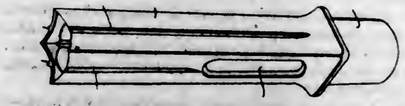
Claim.—1. A tank-indicator comprising a plate, a tube having one end rigidly secured to the plate, a second plate carried by the other end of the tube, braces connecting the plates, a shaft mounted in the tube and having its outer end provided with a pointer, a float-carrying arm rigid with the inner end of the shaft, and means for limiting the arcs of movement of the arm.

2. A tank-indicator comprising a plate, a tube having one end rigidly secured to the plate, a second plate carried by the other end of the tube, braces connecting the plates, a shaft mounted in the tube, and having its outer end provided with a pointer, means coacting with the outer end of the shaft to lock it against rotation when desired, and a float-carrying arm rigid with the inner end of the shaft.

3. A tank-indicator comprising a plate, a tube having one end rigidly secured to the plate, a second plate carried by the other end of the tube, braces connecting the plates, a shaft mounted in the tube, and having its outer end provided with a pointer, means coacting with the outer end of the shaft to lock it against rotation when desired, a float-carrying arm rigid with the inner end of the shaft, and means carried by the second plate to limit the movement of the arm.

4. The combination with a tank, of a plate disposed on the outer side thereof, a tube projecting through the tank and rigidly secured at its outer end to the plate, a second plate secured to the inner end of the shaft, brace-rods connecting the two plates, braces connecting the second-named plate and the tank, a shaft mounted in the tube and carrying a pointer, a float-carrying arm rigidly secured to the inner end of the shaft, means for limiting the arc of movement of the arm in both directions, means for locking the shaft against rotation, and means for preventing the shaft from having any longitudinal movement relatively to the tube.

824,673. **HOLLOW MORTISING-CHISEL.** BYRD C. ROCKWELL, Gifford, Ark. Filed Sept. 21, 1905. Serial No. 279,338.



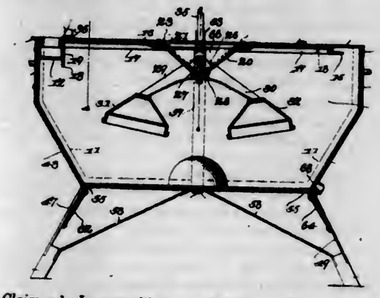
Claim.—1. A hollow mortising-chisel provided exteriorly with an air-channel-forming rib or fin.

2. A hollow mortising-chisel having one of its faces provided with an air-forming rib or fin that is approximately triangular in cross-section.

3. A hollow mortising-chisel provided exteriorly with a plurality of air-channel-forming ribs or fins.

4. A hollow mortising-chisel provided exteriorly with a combined air-channel forming and strengthening rib or fin.

824,674. **WASHING-MACHINE.** EDWARD RUE, Amboy, Minn. Filed June 30, 1905. Serial No. 267,237.



Claim.—1. In a washing-machine the combination with a receptacle formed of sheet metal and provided with L-shaped reinforcing members, a supporting-frame comprising spaced standards arranged in pairs and bearing against the ends of said receptacle between the reinforcing members and extending downwardly, foot members carried by the terminals of the standards, transverse bars connecting each pair of standards, stay members secured to the standards and transverse bars respectively, and brace members secured to the foot members and bearing beneath said receptacle.

2. In a washing-machine the combination with a receptacle formed of sheet metal and provided with L-shaped reinforcing members, a supporting-frame comprising standards arranged in pairs and bearing against the ends of said receptacle between the reinforcing members and extending downwardly, foot members carried by the terminals of said standards, transverse bars connecting each pair of standards, stay members secured to the standards and transverse bars respectively, a strap extending centrally beneath said receptacle and upwardly along its sides, and brace members connected to the foot members and engaging the strap.

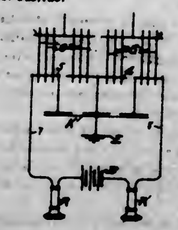
824,675. **CORK FABRIC AND PROCESS OF MAKING THE SAME.** PARASCHEVA SECHIARI, Paris, France, assignor to La Société Anonyme du Grimsou, Charenton, Seine, France. Filed Jan. 16, 1906. Serial No. 296,250.

Claim.—1. The process of manufacturing cork fabric, which consists in subjecting sheets of molecularly-transformed demineralized cork to a bath of benzin and pure para, then affixing said sheets to a suitable fabric by means of cement having an india-rubber base, and then vulcanizing the whole.

2. The process of manufacturing cork fabric, which consists in subjecting sheets of cork to a bath of benzin and pure para, in the proportion of one thousand grams of benzin to fifteen grams of para, drying said sheets, then affixing the same to a fabric by means of india-rubber cement, and finally vulcanizing the fabric so formed.

3. As an article of manufacture, a fabric consisting of sheets of india-rubber and sheets of molecularly-transformed demineralized cork, said sheets being cemented together and vulcanized.

824,676. **WIRELESS-TELEGRAPH SYSTEM.** HARRY SHOEMAKER, Philadelphia, Pa., assignor, by direct and mesne assignments, to Marie V. Gehring, Philadelphia, Pa., and International Wireless Telegraph Company, a Corporation of New Jersey. Filed Feb. 16, 1903. Serial No. 143,720.



Claim.—1. A plurality of wave-responsive devices connected in parallel with each other, with regard to the means subjecting them to the influence of received energy, and connected in series with each other with relation to a local circuit.

2. A plurality of wave-responsive devices, means for subjecting them independently to the influence of received energy, and a local circuit including said wave-responsive devices connected in series.

3. In a wireless signaling system, a receiving-circuit, a plurality of wave-responsive devices in parallel with each other in said receiving-circuit, and a local circuit including said wave-responsive devices connected in series with each other.

4. In a wireless signaling system, a plurality of independent receiving-circuits, a wave-responsive device included in each circuit, and a local circuit including said wave-responsive devices connected in series.

5. In a wireless signaling system, a plurality of independent receiving-circuits, a plurality of wave-responsive devices connected in parallel with each receiving-circuit, and a local circuit including said wave-responsive devices connected in series.

6. In a wireless signaling system, a receiving-circuit, a plurality of self-restoring wave-responsive devices connected in parallel with each other in said circuit, and a local circuit including said wave-responsive devices connected in series.

7. In a wireless signaling system, a receiving-circuit, a plurality of wave-responsive devices connected in parallel with each other, and subjected to the influence of said circuit, and a local circuit including said wave-responsive devices, connected in series.

8. In a wireless signaling system, an aerial conductor, a plurality of wave-responsive devices connected in parallel with each other when subjected to the influence of said aerial conductor, and a local circuit including said wave-responsive devices connected in series.

9. In a wireless signaling system, an aerial receiving-circuit, a plurality of wave-responsive devices connected in parallel subjected to the influence of said circuit, and a local circuit including said wave-responsive devices in series.

10. In a wireless signaling system, a receiving aerial conductor, a plurality of wave-responsive devices connected in parallel with each other and associated with said aerial conductor, and a local circuit including said wave-responsive devices connected in series with each other.

11. In a wireless signaling system, an aerial conductor, an earth connection, and a plurality of wave-responsive devices connected in parallel with each other and between said aerial conductor and earth connection, and a local circuit including said wave-responsive devices connected in series with each other.

12. In a wireless signaling system, an aerial conductor, an earth connection, a plurality of wave-responsive devices connected in parallel with each other and connected to separate condensers between said aerial conductor and earth connection, and a local circuit including said wave-responsive devices connected in series with each other.

13. In a wireless signaling system, an aerial conductor, an earth connection, a plurality of wave-responsive devices connected in parallel with each other between said aerial conductor and earth connection, a condenser in each branch circuit including a wave-responsive device, and a local circuit including said wave-responsive devices connected in series with each other.

14. In a wireless signaling system, a plurality of aerial conductors, a plurality of wave-responsive devices connected in parallel with each other and associated with each aerial conductor, and a local circuit including all said wave-responsive devices connected in series with each other.

15. In a wireless signaling system, a plurality of aerial conductors, a plurality of branch circuits associated with each aerial conductor and each including a wave-responsive device and condenser, and a local circuit including said wave-responsive devices connected in series with each other.

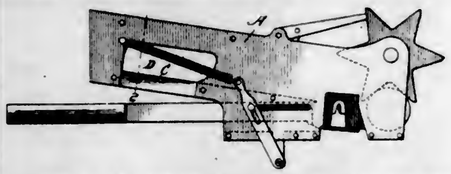
16. In a wireless signaling system, a plurality of independent aerial conductors, an earth connection, a plurality of wave-responsive devices associated with each aerial conductor, a condenser connected between each wave-responsive device and earth connection, and a local circuit including said wave-responsive devices connected in series with each other.

17. A wireless signal-receiving system comprising a plurality of wave-collectors, a single indicating mechanism and a plurality of wave-responsive devices in parallel for the passage of the signal-transmitting waves and in series in the circuit of the indicating mechanism.

18. A wireless signal-receiving system comprising a plurality of wave-collectors, and wave-responsive devices, a single indicating mechanism, and means for cumulating the effect of the signal-wave upon the different wave-responsive devices in the action upon the indicating mechanism.

19. A wireless signal-receiving system comprising a local circuit, an indicating mechanism therein, a plurality of wave-responsive devices in series in said local circuit, and a plurality of wave-collectors each acting upon one only of the wave-responsive devices.

824,677. COIN-CONTROLLED VENDING-MACHINE. JAMES L. SIMMONS, Washington, D. C., assignor to Washington Vending Machine Company, of the District of Columbia. Original application filed Apr. 9, 1904, Serial No. 202,383. Divided and this application filed Dec. 7, 1904. Serial No. 235,837.



Claim.—1. In a coin-controlled vending-machine a coin track or way having a knife-edge section over which a proper coin is adapted to travel, and a cast-out opening in a side wall of said way for ejecting from the machine improper coins, substantially as described.

2. In a coin-controlled vending-machine a coin track or way having a knife-edge section over which a proper coin is adapted to travel, and cast-out openings in both side walls of said way for ejecting from the machine improper coins, substantially as described.

3. In a coin-controlled vending-machine a coin track or way having a knife-edge section over which a proper coin is adapted to travel, a suitable guide for conducting such proper coin over said knife-edge section, and cast-out openings in the side walls of said way for ejecting from the machine improper coins, substantially as described.

824,678. TIE-PLATE. ADOLPH H. SMITH, Chicago, Ill., assignor to The Railroad Supply Company, Chicago, Ill., a Corporation of Illinois. Filed Feb. 14, 1906. Serial No. 300,948.



Claim.—1. A tie-plate having a series of parallel ribs on its under surface extending transversely with respect to the grain of the tie, and a second series of parallel ribs intersecting the ribs in the first series.

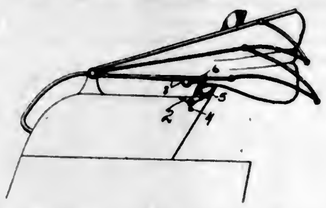
2. A tie-plate having one or more channels in its under surface extending longitudinally with respect to the rail and also having intersecting ribs on its under surface extending at an angle to the grain of the tie.

3. A tie-plate having one or more channels in its under surface extending longitudinally with respect to the rail, and having a series of parallel ribs on its under surface extending transversely to the grain of the tie, and a second series of parallel ribs intersecting the ribs in the first series.

4. A tie-plate having a plurality of parallel channels in its under surface extending longitudinally with respect to the base of the rail, the under surface of the plate intermediate of said channels having projections adapted to engage the surface of the tie.

5. A tie-plate having two parallel channels in its under surface extending longitudinally beneath the base of the rail, the under surface of the plate intermediate of said channels having intersecting ribs extending at an angle to the grain of the tie.

824,679. CARRIAGE-TOP STOP. WILLIAM L. SMITH, Cookville, Tex. Filed Dec. 1, 1905. Serial No. 289,915.



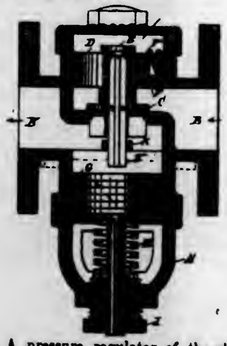
Claim.—1. A carriage-top stop, comprising a base having a socket for attachment to a fixed prop-stump, oppositely-placed springs upwardly projecting from the base, coiled on themselves and then projecting outwardly, eyes formed of the free ends of said springs, a cross-bar whose ends are adapted to be received through said eyes and supported therein, a cushioning-sleeve surrounding said cross-bar and held thereon, washers fitting over the ends of the said cross-bar between the ends of the said sleeve and the eyes, and end plates secured to the ends of the cross-bar and larger than the circumference of the said eyes.

2. A carriage-top stop comprising a base having a socket for attachment to a fixed prop-stump; oppositely-placed springs upwardly projecting from the base; coiled on themselves and projecting outwardly; eyes formed in the free ends of said springs; a cross-bar supported in the eyes; and a cushioning-sleeve surrounding said cross-bar and held thereon, substantially as described.

824,680. PROCESS FOR THE MANUFACTURE OF COKE BRIQUETS. LEENDERT L. D. ZUIDERHOEK, Amsterdam, Netherlands. Filed Sept. 6, 1904. Serial No. 223,496.

Claim.—The process, which consists in adding six parts of lime and two parts of Portland cement to one hundred parts of comminuted coke, then adding fifteen parts of water, mixing the mass intimately, allowing to set, and finally forming by pressure into briquets.

824,681. PRESSURE-REGULATOR. FRANK M. ASHLEY, Brooklyn, N. Y., assignor of one-half to Albert T. Scharps, New York, N. Y. Filed Feb. 19, 1902. Serial No. 94,727.



Claim.—1. A pressure-regulator of the character described comprising a casing presenting a cap-closed piston-chamber, a conduit formed in said casing and passing therethrough, a valve contained within the said casing and adapted to control said conduit, a piston disposed within the piston-chamber and adapted to control said valve, said piston being freely removable from said chamber when the casing-cap is detached; a second valve carried by said piston, and means coacting with the casing, piston and said second valve for opening the said conduit-valve when the pressure on the low-pressure side of said latter valve falls below the normal of that at which said regulator is set; substantially as set forth.

2. A pressure-regulator comprising a casing having a conduit for the fluid, a valve controlling said conduit, a piston having a passage controlling said valve, means for closing said passage and means for opening said passage when the pressure on the low-pressure side of said valve falls below the normal pressure at which the regulator is set, substantially as described.

3. A pressure-regulator of the character described comprising a casing, a fluid-conveying conduit formed therein and passing therethrough, a valve contained within the said casing for controlling said conduit, a movable element and means carried thereby at one side thereof for controlling the rapidity of the movement of the said element, and devices below said valve coacting with said means for operating the element upon a fall of fluid-pressure.

4. A pressure-regulator comprising a casing having a conduit for the fluid, a valve controlling said conduit, a piston located in the upper end of said casing which controls said valve, a vent-valve through which fluid may be released from the high-pressure side of the valve to the low-pressure side and means located at the lower end of the regulator for operating said vent-valve.

5. In a pressure-regulator, a casing having a conduit for fluid, said conduit being divided into a low-pressure side and a high-pressure side, a valve controlling said conduit, a piston fitted in the upper end of said casing, a cap closing the top of said casing above said piston forming thereby a closed chamber having a communicating passage between said low-pressure side and said high-pressure side for the fluid, a valve controlling said passage from said chamber to the low-pressure side of said casing, and means whereby said valve is opened when the reduced pressure falls below the normal pressure which the regulator is set to maintain.

6. In a pressure-regulator, a casing having a conduit for fluid, a main valve controlling said conduit, a piston controlling said valve said piston having a passage from the upper to the under side thereof, means for regulating the operative area of said passage, a chamber formed above said piston, a vent-valve located in said piston and controlling a passage leading directly from said chamber to the under side of the main valve and normally closing said passage, and means for opening said passage when the pressure falls below the normal pressure which the regulator is set to maintain.

7. In a fluid-pressure regulator of the character described, the combination with the casing having a fluid-conduit therein, of a main valve adapted to control the said conduit, a piston adapted to control the said valve, a passage for fluid located in said piston and extending from the high-pressure side to the low-pressure side of the said valve, a vent-valve controlling said passage for fluid, and a lower-pressure element adapted to be actuated by a fluid-pressure on one side thereof and having a reacting tension device, on the opposite side thereof, said element being adapted to open said vent-valve and said main valve when said element is subjected to a lower pressure on the fluid side than that exerted by the said device on the opposite of said element.

8. In a pressure-regulator, a casing having a conduit for the fluid, a main valve controlling said conduit, a piston in the upper end of said casing and a second piston in the lower end of said casing, a valve seated in the first-named piston and having a stem extending through same to said second-named piston, and means whereby when the reduced pressure falls below the pressure the regulator is set to maintain, the pistons will act to open the main valve and when the reduced pressure again rises to the normal pressure the said pistons will act to close said main valve.

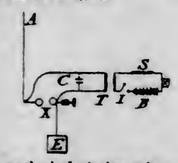
9. In a pressure-regulating valve of the character described, the combination with a cap-closed casing and fluid-conduit therein, of a valve adapted to control the said conduit, and a ported piston for controlling the said valve, devices for controlling the movement of the said piston upon pressure differentiation, and of instrumentalities for varying the effective area of said port the construction being such that upon the detachment of the casing-cap the piston and all the valves can be freely removed from said casing; substantially as described.

10. A reducing-valve comprising a casing with a conduit leading therethrough, a main valve controlling said conduit, said valve being controlled by a movable element located in the upper end of said casing and dividing said casing so that a closed chamber or recess is formed above said element, a passage for fluid leading from the high-pressure side of said conduit to said chamber and communicating therewith, a vent-valve controlling a passage leading from said chamber to the low-pressure side of said conduit, and means located below said main valve for operating said valve and said vent-valve.

11. A pressure-regulator comprising a casing having a conduit for fluid, a main valve controlling said conduit, a movable element located in the upper end of said casing for controlling said valve, a vent-valve, means for operating said vent-valve located in the lower end of said casing, said means being adapted to open the said main valve directly in case of failure of the said valve to open when the pressure falls below that at which the regulator is set to maintain.

12. In a pressure-regulator, the combination of a casing having a conduit for the fluid, a main valve controlling said conduit, a movable element located in the upper end of said casing which controls said valve, a vent-valve, means located in the lower end of said casing for operating said vent-valve, said means comprising a diaphragm and a piston located below said diaphragm, whereby, should the diaphragm break, the piston would hold the steam or fluid pressure from escaping and also prevent the tension device which operates said piston, from opening the vent or main valves; substantially as described.

824,682. METHOD OF PRACTICING WIRELESS TELEGRAPHY. ANDRÉ BLONDEL, Paris, France. Original application filed Dec. 3, 1900. Serial No. 38,539. Divided and this application filed Feb. 7, 1905. Serial No. 244,584.



Claim.—1. The method of wireless telegraphy which consists in producing at one or more transmitting-stations electromagnetic waves in groups of different predetermined frequencies and actuating at one or more receiving-stations signal-receiving instruments each selectively with one of the different transmitted group frequencies, substantially as described.

2. The method of wireless telegraphy consisting of producing electromagnetic waves at one or more transmitting-stations in groups of different predetermined frequencies electrically selecting the energies of the groups of different frequencies each separately and actuating signal-receiving devices, each by a different group frequency, substantially as described.

3. The method of wireless telegraphy which consists in producing electromagnetic waves at one or more transmitting-stations in groups of different predetermined frequencies, electrically selecting the energy corresponding to each group frequency separately, and selectively actuating by the energy corresponding to each selected group frequency a signal-receiving device, substantially as described.

4. The method of wireless telegraphy which consists in producing at one or more transmitting-stations electromagnetic waves of a predetermined frequency in groups of predetermined and different frequencies, electrically selecting at a receiving-station the energies of the transmitted waves of a selected frequency, selectively transferring the energies of the differently-timed groups of these waves each to a different circuit, and causing the energy groups to actuate or control signal-receiving devices, each at the rate of one of the selected groups, substantially as described.

5. The method of selectively receiving a wireless-telegraph message transmitted in the form of electromagnetic waves in code groups composed of groups of a predetermined frequency, which consists in mechanically selecting the group energies of the transmitted waves and actuating thereby a signal-receiving device in accordance with the code groups, substantially as described.

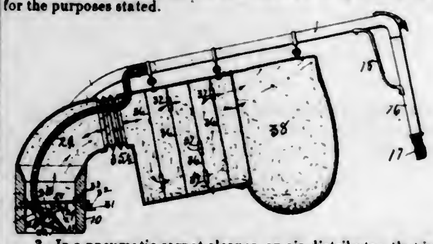
6. The method of receiving wireless-telegraph messages transmitted in the form of electromagnetic waves in groups of different frequencies, which consists in electrically and mechanically selecting the energies of the groups of different frequencies each separately and actuating signal-receiving devices each by and in accordance with a different group frequency.

7. The method of receiving a number of wireless-telegraph messages transmitted by electromagnetic waves of predetermined frequency in groups of a like number of different predetermined frequencies, which consists in electrically selecting the energies of the wave and group frequencies and mechanically selecting the energies of the different group frequencies each by a separate signal-receiving device, substantially as described.

824,683. PNEUMATIC CARPET-CLEANER. JOHN L. CHENOWETH, Chicago, Ill., assignor to Thomas G. Orwig, Des Moines, Iowa. Filed Jan. 2, 1903. Renewed Nov. 22, 1905. Serial No. 289,668.

Claim.—1. In a pneumatic carpet-cleaner, an open-bottomed case having vertical grooves in the inside faces of its ends and an air-distributer having fixed journals on its ends adapted to traverse said grooves to change the inclination of the air-distributer, combined to operate as set forth for the purposes stated.

2. In a pneumatic carpet-cleaner, an open-bottomed case having vertical grooves in the inside faces of its ends and an air-distributer having fixed journals on its ends adapted to traverse said grooves to change the inclination of the air-distributer and means for locking the air-distributer in a fixed position, combined to operate as set forth for the purposes stated.



3. In a pneumatic carpet-cleaner, an air-distributer, that is narrow at its bottom and open for ejecting air from its bottom and provided with journals on its ends for pivotally connecting it with a case and provided with fixed arms projecting upward from its ends, in combination with an open-bottomed case having grooves for bearings for said journals, for the purposes stated.

4. In a pneumatic carpet-cleaner, an air-distributer provided with journals on its ends and fixed arms projecting upward at its end portions, an open-bottomed case having grooves for bearings for said journals, a rotatable bar extended through the case and provided with stops projecting at right angles from the bar, and means for retaining said bar stationary to lock the pivoted air-distributer, arranged and combined to operate in the manner set forth, for the purposes stated.

5. In a pneumatic carpet-cleaner, an open-bottomed case having vertical slots in the inside faces of its ends and an air-distributer having fixed journals on its ends adapted to traverse said grooves to change the inclination of the air-distributer, a flexible tube connected with the upper and central portion of the air-distributer, a rigid tubular handle having branches at its lower end pivotally connected with the case and the upper end of the flexible tube connected with the lower end of the handle and means for admitting air in the free end of the rigid handle, combined to operate as set forth for the purposes stated.

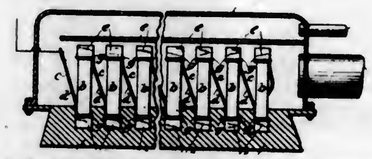
6. In a pneumatic carpet-cleaner, an open-bottomed case and an oscillating air-distributer adjustably connected with the inside faces of the ends of the case, a curved extension fixed to the top of the case and a receptacle for wind and dust detachably connected with the top of the extension, a flexible tube fixed to the air-distributer, a rigid tubular handle fixed to the upper end of the flexible tube and provided with forked branches pivoted to the case, arranged and combined to operate in the manner set forth for the purposes stated.

7. In a pneumatic carpet-cleaner, an open-bottomed case, a curved extension at the top of the case, a rigid tubular handle having forked branches at its lower end pivoted to the case, a valve for admitting air at the free end of the handle, a flexible tube fixed to the tubular rigid handle, and with an air-distributer, an air-distributer in the case, a receptacle for wind and dust detachably connected with the said extension and provided with partitions for separating the dust from the wind and gathering the dust in its bottom, arranged and combined to operate in the manner set forth, for the purposes stated.

8. A pneumatic carpet-cleaner, comprising an open-bottomed case having a curved fixed extension at its top, a vibratory air-distributer pivoted in the case, a rigid tubular handle having forked branches at its lower end pivotally connected with the case, and provided with a valve at its free end, a flexible tube fixed to the rigid tubular handle and to the air-distributer in the case and a receptacle for separating dust from air connected with the rigid handle and the extension at the top of the case, arranged and combined to operate in the manner set forth for the purposes stated.

824,684. THERMO-ELECTRIC BATTERY AND APPARATUS. GEORGE H. COVE, Roxbury, Mass., assignor, by direct and mesne assignments, of one-half to Charles M. Bunker and one-half to Frank B. Kimball, Boston, Mass. Filed Feb. 15, 1905. Serial No. 245,668.

Claim.—1. A thermo-electric battery and appurtenances, comprising a block of incombustible, non-conductive material, a plurality of pairs of elements of dissimilar metals having one end of each joined to the other and embedded in said block, the outer end of each said element being joined to a dissimilar adjoining element whereby a series of such elements is formed, means circulating air about the projecting ends of said elements, means whereby said blocks are subjected to continuous heat, a secondary battery and connections between the dissimilar terminal elements of said series and the opposite poles of said secondary battery.



2. A thermo-electric battery and appurtenances comprising a block of incombustible, non-conducting material, a plurality of pairs of elements each comprising respectively a connecting-strip having on opposite sides at each end of and integral therewith, a cup or cap, and a dissimilar metal element having one end thereof fitted into one of said cups or caps and in a similar cup or cap of an adjoining pair of elements whereby a series of such elements is formed, binding-wires about said cups or caps, one end of all of said elements being embedded in said block, terminal wires leading from dissimilar elements of said series, and means whereby said block is subjected to continuous heat.

3. A thermo-electric battery and appurtenances comprising a block of incombustible, non-conductive material, a plurality of pairs of elements of dissimilar metals having one end of each joined to the other and embedded in said block, the outer end of each of said element being joined to a dissimilar adjoining element whereby a series of such elements is formed, a housing or casing inclosing the projecting ends of said elements, an air-inlet to said casing or housing communicating with a source of cold-air supply, a discharge-pipe for said casing and means circulating air through said casing, said inlet and said discharge-pipe, means whereby said block is subjected to continuous heat, and terminal wires leading from dissimilar elements of said series.

4. A thermo-electric battery and appurtenances comprising a heater, a fire-pot and a flue therefor, a block of incombustible, non-conductive material disposed about said fire-pot, a plurality of pairs of elements of dissimilar metals having one end of each joined to the other and embedded in said block, the other end of each said element being joined to a dissimilar adjoining element whereby a series of such elements is formed, a casing or housing comprising two connecting passages one inclosing the projecting ends of said elements, an air-inlet in this passage communicating with a source of cooled air, a discharge establishing communication between the other passage and said flue, and terminals to two dissimilar elements of said series.

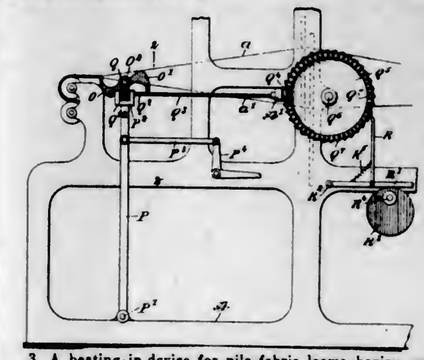
5. A thermo-electric battery and appurtenances comprising a block of incombustible, non-conductive material, a series of pairs of elements comprising a plurality of dissimilar metal elements, and a plurality of metal elements connecting said elements successively, said connecting elements all being dissimilar to said first-mentioned element and to the next adjoining connecting element, means whereby said block is subjected to continuous heat and terminals leading from dissimilar elements of said series.

6. A thermo-electric battery and appurtenances comprising a block of incombustible, non-conductive material, a series of pairs of elements comprising a plurality of elements formed of an alloy of antimony and zinc, and a plurality of elements connecting said antimony and zinc elements, said elements connecting said first-mentioned elements being alternately of copper and of an alloy of nickel, copper and zinc.

824,685. BEATING-IN DEVICE FOR LOOMS. JAMES K. DALKRANIAN, New York, N. Y., assignor to Nazar Costikyan, New York, N. Y. Original application filed Jan. 4, 1905. Serial No. 239,563. Divided and this application filed Feb. 26, 1905. Serial No. 247,744.

Claim.—1. A beater-in device comprising a shaft, means for intermittently rotating the said shaft, and sets of curved arms on the said shaft, each set of curved arms consisting of at least two arms extending diametrically opposite each other, and one of the said arms extending between adjacent sets of ground-warps.

2. A beater-in device comprising a shaft, means for intermittently rotating the said shaft, and sets of curved arms on the said shaft, each set of curved arms consisting of at least two arms extending diametrically opposite each other, and one of the said arms extending between adjacent sets of ground-warps and the other of the said arms being in engagement with the weft last beaten in during the time the beater-in is at rest.



3. A beating-in device for pile-fabric looms, having curved arms, and means for intermittently rotating the said arms, the end of an arm abutting against the fabric at the time the arms are at rest.

4. A pile-fabric loom provided with a rotating beating-in device, means for intermittently turning the said beating-in device, and means for imparting bodily movement to the said beating-in device in the direction of the length of the weave.

5. A beater-in for pile-fabric looms, comprising a shaft, means for intermittently rotating the said shaft, a plurality of curved arms on the said shaft, at least one of the said arms extending between adjacent sets of ground-warp threads, and means for bodily shifting the said shaft in the direction of the length of the weave.

6. A beating-in device for pile-fabric looms, comprising a shaft, means for intermittently rotating the said shaft, and a double arm of an approximately S shape secured at its middle on the said shaft.

824,686. INJECTING-NEEDLE. CHARLES T. DANIEL, Owensboro, Ky. Filed May 27, 1905. Serial No. 262,707.



Claim.—A needle for injecting a preservative salt solution into meats, the same comprising a barrel having an introducing-point closing the outer end of the bore thereof, said barrel being provided adjacent to said point with one or more lateral outlets, and an enlargement upon the barrel immediately adjoining said outlets, said enlargement having a beveled end located in close contiguity to the rear ends of the outlets to enter the opening or passage in the meat formed by the point and outlet end of the barrel, whereby said enlargement is adapted to serve the combined function of a finger-grip and a stopper to close the opening in the meat to prevent the escape of the injected solution, substantially as described.

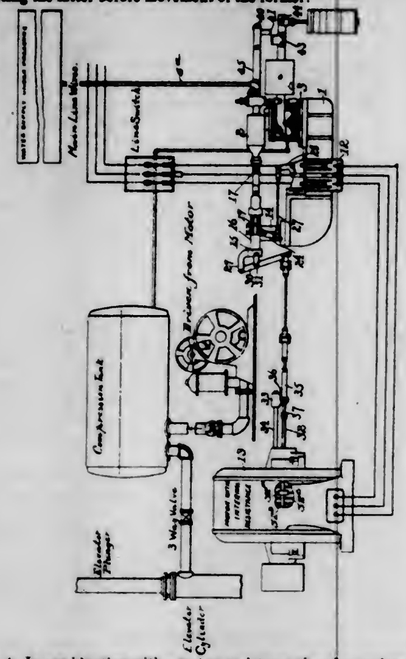
824,687. AUTOMATIC STARTER FOR MOTORS. ARTHUR W. DARBY, Holyoke, Mass. Filed Nov. 21, 1903. Serial No. 182,116.

Claim.—1. In combination with an electric motor for actuating a device to supply pressure to a tank, resistance for the motor, resistance-controlling mechanism, a mechanically-operated valve-operating device, a valve connected therewith, an actuator, a piston connected with the actuator and operated by fluid admitted by the valve, means for supplying pressure to the piston through the valve mechanism, a switch connected with the actuator to be operated before movement of the resistance mechanism, and connections between the actuator and resistance-operating mechanism.

2. In combination with an electric motor for actuating a device to supply pressure to a tank, resistance for the motor, resistance-controlling mechanism, a mechanically-controlled valve-operating device, a valve connected therewith, an actuator, a piston for operating the actuator, means for supplying pressure to the piston through said valve, a switch connected with the actuator to be operated before movement of the resistance-operating mechanism, and connections between said actuator and the resistance-operating mechanism.

3. In combination with an electric motor for actuating a device for supplying pressure to a tank, resistance for the motor, resistance-controlling mechanism, the tank, a valve-operating mechanism connected with the tank, a valve connected with the operating mechanism, an actuator, a piston connected with the actuator and actuated in both directions by the same source of supply, means for supplying

pressure through the valve to said piston, a switch, and connections between the resistance-operating mechanism and the switch for operating the latter before movement of the former.



4. In combination with a motor, resistance therefor, resistance-controlling mechanism, a switch for closing the circuit to the motor, a mechanical actuator, a mechanical motor therefor, connections between said actuator and resistance-operating mechanism, and connections between said actuator and the switch to operate the latter before movement of the resistance-operating mechanism.

5. In combination with an electric motor, resistance therefor, a movable member for controlling the resistance, a slide connected with the movable member, a switch, a lever connected with the switch, pawls located on the slide for throwing said lever in either direction, and means for operating the slide.

6. In combination with an electric motor, resistance therefor, a movable member for controlling the resistance, a slide connected with said movable member, a switch, a lever connected with the switch, a pawl for operating said lever in one direction, a series of pawls for operating the lever in the opposite direction, and means for operating the slide.

7. In combination with an electric motor, resistance therefor, a movable member for controlling the resistance, a slide connected with the movable member, a switch, a lever connected with the switch, and connections between the slide and switch and including a plural number of devices for insuring the throwing of the switch in one direction.

8. In combination with an electric motor, resistance therefor, a movable member to control the resistance, a slide connected with said movable member, current-controlling means, a lever connected with said controlling means, a pawl borne by the slide to operate the lever to admit current, a series of pawls borne by the slide to operate the lever to cut off the current, and means for operating the slide.

9. In combination with a mechanical device, an electric motor for driving the same, resistance for said motor, resistance-controlling mechanism, a switch for closing the circuit to the motor, an actuator to operate both the switch and resistance-controlling mechanism, and intermittently connected with the former, and means for operating said actuator to throw off the switch at any point from which the backward movement of the actuator shall begin.

10. In combination with an electric motor, resistance therefor, resistance-controlling mechanism, a switch for closing the circuit to the motor, an actuator, a mechanical motor therefor, means for operating the motor, connections between the actuator and resistance-controlling mechanism, and means for intermittently connecting the actuator with and to operate the switch.

11. In combination with a motor, resistance therefor, resistance-controlling mechanism, means for admitting current to said motor, including its resistance; and an actuator loosely connected with the resistance-controlling mechanism and with the current-admitting mechanism.

12. In combination with a motor, resistance therefor, resistance-controlling mechanism, means for admitting current to the motor, including its resistance, a slide loosely connected with the resistance-controlling mechanism and also with the current-admitting means, and means for operating the slide.

13. In combination with an electric motor, resistance therefor, resistance-controlling mechanism, a mechanical motor for imparting motion to the resistance-controlling mechanism, means for controlling the movement of the mechanical motor and including a pressure-chamber having a diaphragm and connected lever, means for actuating the diaphragm and connected lever, and means for moving said lever by force other than that exerted by the movement of the diaphragm.

14. In combination with an electric motor, resistance therefor, resistance-controlling mechanism, a mechanical motor, means for controlling the movements of the mechanical motor and including a pressure-chamber having a diaphragm and connected lever, and additional means for actuating said lever to control the movements of the mechanical motor.

15. In combination with an electric motor, resistance therefor, resistance-controlling mechanism, means for admitting current to said motor and its resistance, a mechanical motor for operating said admission means and including a piston, means for controlling the movements of the piston, and including a pressure-chamber, a diaphragm located therein, a lever connected with the diaphragm for operating the piston-controlling means, a yoke secured to the piston rod, and means borne by the yoke for operating said lever independently of the force exerted by the movement of the diaphragm.

16. In combination with an electric motor, resistance therefor, resistance-controlling mechanism, a mechanical motor for operating the resistance including a piston and a piston-rod, means for controlling the movement of the piston, and including a pressure-chamber, a diaphragm located in said chamber, and having a connected lever for operating the piston-controlling means, a yoke, and connections between the yoke and lever for raising the latter in the movement of the yoke in one direction.

17. A motor, resistance therefor, resistance-controlling mechanism, a motor-actuator, including a slide, means for operating the actuator, connections between said slide and the resistance-controlling mechanism, a switch for admitting current to the motor, a lever connected with the switch and provided with teeth, a series of pawls borne by the slide to engage one of the teeth on the lever, and a single pawl borne by the slide to engage another tooth on the lever.

18. A motor, resistance therefor, resistance-controlling mechanism, a motor-actuator including a slide, means for operating the actuator, a loose connection between the resistance-controlling mechanism and said slide, a switch for admitting current to the motor, a lever connected with the switch and having oppositely-disposed teeth, a series of pawls borne by the slide to engage one of the teeth borne on the lever, and a single pawl to engage another tooth on the lever.

19. A motor, resistance therefor, resistance-controlling mechanism, a motor-actuator including a slide, means for operating said actuator, a switch, a lever connected with the switch, and a series of pawls borne by the slide freely movable over said lever in one direction, one of which engages therewith in the movement of the slide in the opposite direction.

20. In combination with an electric motor, resistance therefor, resistance-controlling mechanism, means for admitting current to the motor, an actuator, means for operating the actuator and including a piston, means for controlling the movements of the piston, and including a pressure-chamber, a diaphragm located therein, a lever connected thereto for operating the piston-controlling means, a yoke secured to the piston-rod, and a latch borne by the yoke to engage the lever and lift it independent of the force exerted by pressure on the diaphragm.

824,688. **FOUNTAIN-BRUSH.** WILLIAM I. FERRIS, Stamford, Conn., assignor to L. E. Waterman Company, New York, N. Y., a Corporation of New York. Filed May 28, 1904. Serial No. 210,184.

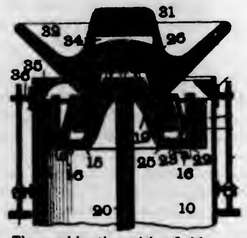
Claim.—1. In a fountain-brush, the combination of a reservoir closed except at one end, a nozzle extension of such open end, and a brush secured within said nozzle of such size and form relative to the size and form of the interior of said nozzle as to provide an air-passage and a capillary ink-passage between said brush and the interior of said nozzle, substantially as shown and described.



2. In a fountain-brush, the combination of a reservoir closed except at one end, a nozzle extension of such open end, and a brush secured within such nozzle at some point removed from its open end, said brush being of such size and form relative to the size and form of the interior of said nozzle as to provide an air-passage and a capillary ink-passage between said brush and the interior of said nozzle, substantially as shown and described.

3. In a fountain-brush, the combination of a reservoir closed except at one end, a nozzle extension of such open end, and a brush secured within such nozzle at some point removed from its open end, said brush being of such size and form relative to the size and form of the interior of said nozzle as to provide an air-passage and a capillary ink-passage between said brush and the interior of said nozzle and provide a capillary overflow-space within the nozzle at and near its open end, substantially as shown and described.

824,689. **FLUID-FUEL BURNER.** EDWARD G. FLAGER and FRED L. MCGAHAN, St. Louis, Mo., assignors to National Light, Heat & Power Company, a Corporation of Missouri. Filed Sept. 22, 1902. Renewed Dec. 18, 1905. Serial No. 292,157.



Claim.—1. The combination with a fluid-receptacle, of a projection carried thereby, a cap surrounding said projection, means for feeding fluid fuel between said projection and cap, an outwardly-projecting deflector carried by said cap, a set of vertical pipes passing through said receptacle, and a set of inwardly-inclined pipes passing through said receptacle.

2. The combination with a fuel-receptacle, of a projection carried thereby, a cap surrounding said projection, means for feeding fluid fuel between said projection and cap, an outwardly-projecting deflector carried by said cap, a filling of porous refractory material in said fuel-receptacle, a set of vertical pipes passing through said receptacle, and a set of inwardly-inclined pipes passing through said receptacle.

3. The combination with a fuel-receptacle, of a projection extending upwardly therefrom, a cap surrounding said projection, means for feeding fluid fuel between said projection and cap, an outwardly-extending deflector carried by said cap, air-pipes extending through said receptacle and terminating adjacent to said deflector, and an inwardly-projecting deflector surrounding said fuel-receptacle.

4. The combination with a fuel-receptacle, of a projection extending upwardly therefrom, a cap surrounding said projection, means for feeding fluid fuel between said projection and cap, an outwardly-extending deflector carried by said cap, an inwardly-projecting deflector surrounding said fuel-receptacle, and means for adjusting the distance between said fuel-receptacle and said latter deflector.

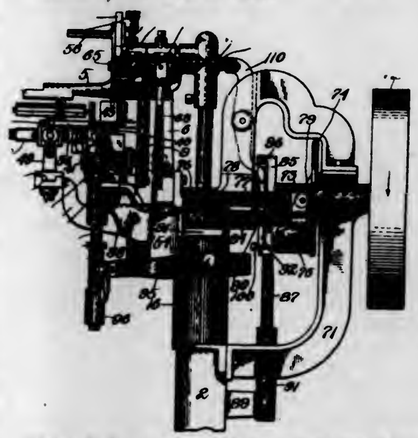
5. The combination with an air-flue, of a fuel-receptacle arranged in said flue to leave an air-passage between said parts, a projection in said receptacle, a cap surrounding said projection, means for feeding fluid fuel between said cap and projection, a deflector carried by said cap, a second deflector carried by said air-flue and extending over said fuel-receptacle, and means for adjusting the distance between said latter deflector and said receptacle.

6. The combination with an air-flue, of a fuel-receptacle arranged in said flue to leave an air-passage between said parts, a projection in said receptacle, a cap surrounding said projection, means for feeding fluid fuel between said cap and projection, a deflector carried by said cap, a second deflector carried in said air-flue and extending over said fuel-receptacle, and means for adjusting said latter deflector to control the flow of air between said flue and fuel-receptacle.

7. The combination with an air-flue, of a fuel-receptacle arranged in said flue to leave a passage between said parts, a projection in said receptacle, a cap surrounding said projection, means for feeding fluid fuel between said projection and cap, an outwardly-extending deflector carried by said cap, a ring in said air-flue above said fuel-receptacle and forming an air-deflector therefor, and means situated outside of said flue for adjusting said ring.

8. The combination with an air-flue, of a fuel-receptacle arranged therein to leave an air-passage between said parts, a projection in said receptacle, a cap surrounding said projection, means for feeding fluid fuel between said projection and cap, an outwardly-extending deflector removably carried by said cap, a filling of porous refractory material in said receptacle, a set of vertical air-pipes passing through said receptacle, a set of inwardly-inclined pipes passing through said receptacle, an air-deflector arranged in said flue above said fuel-receptacle, and means for adjusting said air-deflector.

824,690. **LABELING-MACHINE.** KING C. GILLETTE, Brookline, Mass., assignor to Louis W. Southgate, trustee, Worcester, Mass. Filed Jan. 10, 1903. Serial No. 138,531.



Claim.—1. In an apparatus of the character described, a glue-applying picker device comprising a stationary hollow head provided with a plurality of small perforations, in combination with stationary mechanical devices for positively feeding a predetermined quantity of glue into said head through covered devices after each label-applying operation, and means for moving a label-support to said picker device and away from the same.

2. In an apparatus of the character described, the combination of a glue-applying picker having numerous small perforations, of covered passages leading to said picker from a source of supply and stationary positively-actuated mechanical devices for causing a positive flow of a predetermined quantity of glue after each picking operation.

3. In a machine of the class described, the combination of a hollow glue-applying device or picker, a bottle-depressing device above the picker and means for depressing it, a laterally-movable label-support adapted to be brought under the picker and to be moved up to the same, and wiping mechanism adapted to be brought under the picker as the label-support is moved away therefrom.

4. In a machine of the character described, the combination of a pair of glue-applying heads or pickers and means for positively forcing a predetermined quantity of glue to said pickers after each applying operation, a label-support and means for raising it to the pickers, wiping devices, and means for laterally shifting the wiping devices under the pickers and simultaneously shifting the label-support away from the pickers.

5. In an apparatus of the character described, a glue-applying means comprising two pivotally-supported adjacent hollow heads each provided with a plurality of small perforations which, taken collectively, correspond substantially in size and shape to the end of a label, flexible covered passages leading to each of said heads from a source of supply, and means for forcing glue through said passages.

6. In an apparatus of the character described, the combination with a pair of adjacent glue-applying picking devices, said devices pivotally depending from their support and being made hollow, flexible covered passages for supplying glue to said devices, and a positively-actuated glue-pump for forcing a predetermined quantity of glue through said passages after each picking operation.

7. In an apparatus of the character described, the combination with a glue-applying device of a spring-depressed piston for positively forcing a quantity of glue into said device, and means for regulating the quantity of glue, by regulating the fall of the piston.

8. In an apparatus of the character described, the combination of a pair of pivotally-depending hollow glue-applying devices arranged side by side and adapted to normally swing toward each other, flexible passages connected thereto, a pump connected to said passages and provided with a spring-actuated piston, means for regulating the expelling stroke of this piston, and means for positively actuating the pump-piston after each label-applying operation.

9. In an apparatus of the class described, the combination of hollow pickers and means for positively forcing glue thereinto, an oscillating frame supported below the pickers and carrying a label-support and wiping devices, means for oscillating said frame to alternately bring the label-support and the wiping devices under the pickers, means for bringing the label-support and the pickers together, and means for actuating the glue-forcing devices after each label-applying operation.

10. In an apparatus of the character described, the combination with a glue-applying device, consisting of a pair of adjustable heads of covered passages leading thereto from a source of supply, a glue-pump through which said passages pass, and means for regulating the stroke of said pump.

11. In an apparatus of the character described, the combination with a pair of adjustable hollow heads provided with a plurality of small perforations, of covered passages leading to said heads from a supply of glue, a glue-pump through which said passages pass, and means for regulating the stroke of said pump.

12. In an apparatus of the character described, the combination of two adjacent hollow heads each provided with a plurality of small perforations which, taken collectively, substantially correspond in size and shape to the end of a label, covered passages leading to each of said heads from a source of supply, a glue-pump through which said passages pass, and means for regulating the stroke of said pump.

13. In an apparatus of the character described, the combination with a glue-applying device, of a glue-pump comprising a body portion containing a piston, inlet and outlet passages, means for actuating said piston, and positively-operated means for controlling said passages, the outlet-passage being connected with said glue-applying device.

14. In an apparatus of the character described, the combination with a glue-applying device, of a glue-pump comprising a body portion provided with inlet and outlet passages, means for controlling the same, a piston and means for actuating the same, and means for adjusting the stroke of said piston, said outlet-passage being connected with the glue-applying device

15. In an apparatus of the character described, the combination with a glue-applying device, of a glue-pump comprising a body portion provided with inlet and outlet passages, means for controlling the same, a spring-pressed piston, means for raising said piston in opposition to its spring, and an adjustable stop arranged to limit the stroke of said piston, said outlet-passage being connected with the glue-applying device.

16. In an apparatus of the character described, the combination of a standard, a sleeve movable with respect to the same, a cam-shaped track secured to said sleeve, a glue-applying device and a glue-pump carried by said standard and comprising a body portion provided with inlet and outlet passages, means for controlling the same, and a spring-pressed piston provided with a stem extending through said body portion and arranged to travel along said cam-shaped track, said outlet-passage being connected with the glue-applying device.

17. In an apparatus of the character described, the combination with a glue-applying device, of a glue-pump comprising a body portion provided with inlet and outlet passages, a piston and means for actuating the same, a valve-piece located within said body portion and provided with recesses arranged to register alternately with said inlet and outlet passages, and means for positively actuating said valve-piece, said outlet-passage being connected with the glue-applying device.

18. In an apparatus of the character described, the combination with a standard, a glue-applying device carried thereby and a sleeve movable with respect to said standard, of a glue-pump secured to said standard and comprising a body portion provided with inlet and outlet passages, the outlet-passage being connected with said glue-applying device, a valve-piece contained within said body portion and arranged to control said passages, a piston and means for actuating the same, a three-fingered block secured to said valve-piece, and fixed stops secured to said sleeve and located in the path of the fingers of said block, substantially as described.

19. In an apparatus of the character described, the combination of a standard, a sleeve movable with respect to the same, means for producing a relative lateral movement between said sleeve and standard, a glue-applying device, and means for supplying glue to said device comprising a pump consisting of a body portion provided with inlet and outlet passages, a piston, and means operated by the relative movement of said sleeve and standard for actuating said piston and controlling said inlet and outlet passages.

20. In a machine of the class described, the combination of a glue-applying device, a pump connected thereto and containing a spring-actuated piston, means for regulating the spring-actuated stroke of this piston, an oscillating frame carrying means for actuating said piston against the action of its spring, means for oscillating said frame, label-supporting and label-wiping devices carried by said oscillating frame and adapted to be alternately brought under the glue-applying device, and means for bringing the label-supporting devices and the glue-applying device together.

21. In an apparatus of the character described, a label-applying device comprising a pair of adjacent wipers adapted to permit the passage of a bottle between them, each of said wipers being composed of flexible, elastic material, in combination with a pair of laterally-slidable supplementary roller-wipers located beneath the main wipers.

22. In an apparatus of the character described, a label-applying device comprising two pairs of adjacent wipers arranged to permit the passage of a bottle between each pair, the upper pair of wipers being composed of strips of flexible and elastic material, and the lower pair of wipers being composed of spring-actuated rollers movable laterally with reference to each other, and a pair of glue-applying heads supported above and coincident with said wiper.

23. In an apparatus of the character described, a pair of uprights supported on the framework of the machine and laterally adjustable toward and from each other, parallel spring-actuated rollers journaled on horizontal axes and movable laterally toward and from each other, and flexible and elastic strips secured to said uprights above said rollers respectively, and a pair of glue-applying heads supported above and coincident with said strips.

24. In an apparatus of the character described, the combination of a supporting-head, two arms detachably pivoted thereto and provided respectively with a glue-applying device and with a passage leading thereto, two spring-actuated supplementary arms journaled respectively on the same axes as said detachable arms and connected to the latter, and also provided with passages forming continuations of the passages in the detachable arms, and flexible connections secured to the supplementary arms and communicating with the passages therein, and leading therefrom to a source of supply.

25. In an apparatus of the character described, the combination of two hollow heads each provided with a plurality of small perforations, said heads being movable toward and from each other and normally separated by about the length of a label, a glue-pump, flexible tubes leading from said pump to said heads respectively, means for applying a label to said heads, and means for applying it to a bottle.

26. In an apparatus of the character described, the combination with a supporting-head, of two arms detachably pivoted thereto and provided respectively with a glue-applying device, two spring-actuated supplementary arms journaled on the same axes as said detachable arms and connected to the latter, and flexible connections leading from said glue-applying devices to a source of supply.

27. In an apparatus of the character described, the combination of a standard, a sleeve mounted to oscillate thereon, a label-support comprising a vertically-movable plate carried by said sleeve, glue-applying heads carried by said standard, means for moving said label-support beneath and away from said heads, and means for raising said label-support when in the former position.

28. In an apparatus of the character described, the combination of a standard, glue-applying heads carried thereby and means for supplying glue thereto, a sleeve mounted to oscillate on said standard, a label-support and label-applying wipers carried by said sleeve, means for presenting said wipers and label-support alternately beneath the glue-applying heads, means for moving said label-support toward and away from said heads when beneath the same, and means for forcing a bottle between said heads and wipers.

29. In an apparatus of the character described, the combination with a label-gluing and label-applying devices bottle-depressing devices and means for operating the same, of a continuously-driven shaft, and means movable with the bottle-depressing devices adapted to be actuated by the introduction of a bottle for locking said shaft to said operating means.

30. In an apparatus of the character described, the combination of a standard and glue-applying means carried thereby, a sleeve mounted to oscillate on said standard, label-applying wipers and a label-support carried by said sleeve, and means for oscillating said sleeve comprising a shaft, means for driving the same, a cam carried by said shaft, a sliding rod arranged to be operated by said cam, and connections between said rod and sleeve.

31. In an apparatus of the character described, the combination with label-gluing and label-applying devices and means for operating the same, of a continuously-driven shaft, a sleeve loosely journaled thereon and provided with means for actuating said operating means, a clutch for locking said sleeve and shaft together comprising a toothed collar rigidly secured to said shaft, a stud projecting laterally from said sleeve, and means for separating said sleeve and collar, a lever arranged to press said sleeve toward said collar, and a sliding rod arranged to operate said lever and provided with an abutment adapted to be engaged by a bottle.

32. In an apparatus of the character described, the combination with a pair of glue-applying heads and a pair of wipers located adjacent to the same, of means for forcing a bottle between and past said heads and wipers, comprising a sliding rod carrying a presser-arm, a continuously-driven shaft and means for rotating the same, a clutch for connecting said shaft to said sliding rod, and means for operating said clutch comprising a rod movable with said presser-arm and carrying an abutment adapted to be engaged by a bottle.

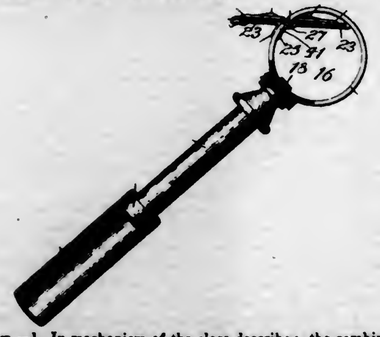
33. In a labeling-machine, the combination of pickers provided with fine holes in the faces thereof which engage the labels, and a positively-operated regulable forcing device for causing the paste or gum to exude from said openings, after each picking operation.

34. In a labeling-machine, the combination of pickers provided with fine holes in the faces thereof which engage the labels, means for causing the pickers to engage the labels, and a positively-operated regulable forcing device for causing the paste or gum to exude from the pickers, in a predetermined quantity after each picking operation.

35. In a labeling-machine, the combination of a label-applying device, means for operating the same, pickers, a forcing device for the paste connected to the pickers, and means for intermittingly operating the forcing device.

36. In a labeling-machine, the combination of pickers having holes in the faces thereof which engage the labels, a pump for supplying gum or paste thereto, means for adjusting the capactiy of the pump, and means for operating the pump.

824,691. **SAFETY-RAZOR.** DAVID E. GOE, Madison, Wis., assignor, by mesne assignments, of three-fifths to The Steel Products Company, Chicago, Ill., a Corporation of Illinois. Original application filed Dec. 16, 1904. Serial No. 237,096. Divided and this application filed Jan. 18, 1905. Serial No. 241,671.



Claim.—1. In mechanism of the class described, the combination of a blade-holder consisting of a tubular member having a slot running lengthwise thereof and a blade-table, on which the blade is adapted to rest, on one edge of the slot of said holder.

2. In mechanism of the class described the combination of a blade-holder consisting of a tubular member, having a slot running lengthwise thereof, and a blade-table, on which the blade is adapted to rest, slidably engaging one edge of said slot of said holder.

3. In mechanism of the class described, the combination of a tubular holder having a slot running lengthwise thereof, a blade-table, on one edge of said slot, having a notch or depression on its upper face, in which the other edge of said slot is adapted to fit.

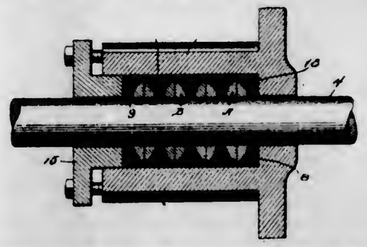
4. In mechanism of the class described, the combination of a tubular holder having a slot running lengthwise thereof, a blade-table slidably mounted on one edge of said slot and having a notch or depression in its upper face, in which the other edge of said slot is adapted to fit.

5. In mechanism of the class described, the combination of a blade-holder, consisting of a tubular member having a longitudinal slot running lengthwise thereof, a blade-table, on which the blade is adapted to rest, engaging one edge of the slot of said holder, a notch on the opposite side of said table under the opposite edge of said slot in the holder, and a razor-blade adapted to fit on said table, having a rib or corrugation on its surface, engaging said notch in the table, and engaged and held in place by the edge of the slot of the holder substantially as described.

6. In mechanism of the class described the combination of a blade-holder consisting of a tubular member, having a longitudinal slot therein in which the razor-blade is adapted to be slipped and held, a handle having a head engaging one side of the holder, a shank on the handle passing through the holder, and engaging the opposite side of the holder, and screw-threads at one point of contact of the shank and holder whereby rotating the handle in one direction compresses the holder to close its slot.

7. In mechanism of the class described, the combination of a blade-holder consisting of a tubular member having a longitudinal slot therein, in which a razor-blade is adapted to be slipped and held, a handle having a head bearing against one side of the holder, and a shank on the handle passing through the holder and engaging the opposite side thereof in screw-threads, whereby by rotating the handle the holder is compressed and the edges of the slot are drawn together.

824,692. **METALLIC PACKING.** STEPHEN T. HIATT, Akron, Ohio. Filed Sept. 25, 1905. Serial No. 280,009.



Claim.—1. A segmental, metallic packing-ring, the segments of said ring being connected by separate flexible devices.

2. A metallic packing-ring formed of segments having beveled ends and separate flexible connections between the segments.

3. A metallic packing-ring formed of segments having beveled ends, and soft-metal connecting devices permanently secured to and connecting the ends of the segments.

4. A metallic packing-ring formed of oppositely-disposed, similar contacting members, each member being formed of segments having their ends spaced apart, and flexible connections between said segments.

5. A metallic packing-ring formed of oppositely-disposed, similar contacting members, each member being formed of segments having their ends spaced apart, flexible connections between said segments, and means for holding the segment ends of one member out of register with the segment ends of the other member.

6. A metallic packing-ring formed of oppositely-disposed, similar contacting members, each member being formed of segments having their ends spaced apart, flexible connections between said segments and a metallic cap surrounding the members and holding them in contact.

7. A metallic packing-ring formed of oppositely-disposed, similar contacting members, each member being formed of segments having their ends spaced apart, flexible connections between said segments, and a soft-metal cap surrounding the members and holding

them together, said cap projecting between the segments of the members.

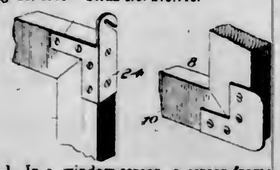
8. A metallic packing-ring formed of oppositely-disposed, similar, contacting members having convex outer faces, each member consisting of a plurality of segments having beveled ends, and soft-metal connections between the adjoining segments and immovably connected thereto.

9. The herein-described packing comprising a metallic ring formed of oppositely-disposed, similar members having convex outer faces, each member formed of a plurality of similar segments having beveled ends, and a soft-metal connection between the segments, a soft-metal cap surrounding the packing-ring and holding the members thereof together and flexible filling-rings at opposite sides of the packing-rings and bearing upon and adapted to receive the convex faces thereof and the cap thereon.

10. The combination with a stuffing-box having a movable element therein, of flexible filling-rings seated within the box and surrounding the element, said rings having their faces concaved, and a metallic packing-ring seated within the concavities and surrounding the element, said ring comprising oppositely-disposed, similar contacting members having convex outer faces, each member comprising similar segments having beveled ends spaced apart, soft-metal connecting devices permanently secured to the ends of the adjoining segments, and a soft-metal cap surrounding and fitting snugly upon the metallic packing-rings, said cap being seated within the cavities in the filling-rings.

11. The combination with a stuffing-box having a movable element therein, of flexible filling-rings seated within the box and surrounding the element, said rings having their faces concaved, a metallic packing-ring seated within the concavities and surrounding the element, said ring comprising oppositely-disposed, similar contacting members having convex outer faces, each member comprising similar segments having beveled ends spaced apart, soft-metal connecting devices permanently secured to the ends of adjoining segments, a soft-metal cap surrounding and fitting snugly upon the metallic packing-rings, said cap being seated within the cavities in the filling-rings, a cap projecting into the box, and means for forcing said cap into the box for compressing the filling-rings.

824,693. WINDOW-SCREEN. WILLIAM S. HOOD, Memphis, Tenn. Filed Aug. 25, 1905. Serial No. 275,710.



Claim.—1. In a window-screen, a screen-frame, corner-braces at the upper and lower corners thereof, each of the upper braces having an attaching device formed integral therewith, and each of the lower braces having a stop formed integral therewith, said stop projecting laterally beyond the screen-frame.

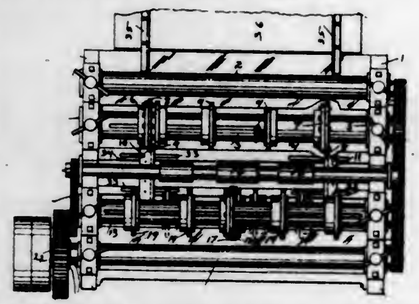
2. In a window-screen, a screen-frame, suspension devices carried at the upper portions thereof, corner-braces at the lower corners of said frame, each lower corner-brace having a stop formed integral therewith, said stop projecting outside the outer edge of the screen-frame.

824,694. METAL TRIMMING AND SLITTING MACHINE. WILLIAM W. IRWIN, Canton, Ohio, assignor to The Berger Manufacturing Company, Canton, Ohio, a Corporation of Ohio. Filed Feb. 7, 1906. Serial No. 299,941.

Claim.—1. In a machine of the class described, a frame, a series of shafts provided with trimming and slitting disks, flanges adjustably attached to the shafts, and the trimming and slitting disks formed in sections and connected to the adjustable flanges, substantially as and for the purpose specified.

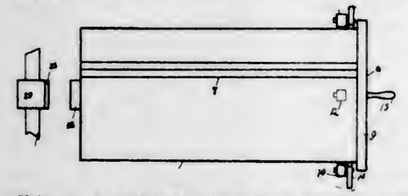
2. In a machine of the class described, the combination of a frame, a series of shafts journaled in the frame, means for imparting rotary motion to the shafts, cutting-disks formed in sections and connected to adjustable flanges mounted upon the shafts, grooved gages adapted to receive the sheets of metal and provided with antifriction-rollers, substantially as and for the purpose specified.

3. In a machine for trimming and slitting metal sheets, the combination of a frame, a series of shafts journaled in the frame, means for imparting rotary motion to the shafts, trimming-disks mounted upon the shafts, slitting-disks mounted upon shafts tandem to the shafts upon which the trimming-disks are mounted, and grooved gages located between the trimming-disk shafts and the slitting-disk shafts, substantially as and for the purpose specified.



4. In a machine for trimming and slitting metal sheets, the combination of a frame, feed-rollers journaled in the frame, shafts provided with trimming-disks, shafts provided with slitting-disks, grooved gages located between the trimming-disk shafts and the slitting-disk shafts, and the gages provided with bars located adjacent the trimming-disks and the slitting-disks formed in sections and the sections secured to adjustable collars, substantially as and for the purpose specified.

824,695. STENCILING-MACHINE. EDWARD F. KUNATH, Jersey City, N. J., assignor to Underwood Typewriter Company, New York, N. Y., a Corporation of New Jersey. Filed Feb. 12, 1906. Serial No. 300,692.



Claim.—1. A perforated cylinder for a stenciling-machine, open at one end and having at said end an exterior bearing, and having at the other end a centrally-located bearing.

2. In a stenciling-machine, the combination with a perforated cylinder having an open end and provided with an exterior tread upon said open end, of trundles upon which said tread turns, and a centrally-located bearing for the opposite end of the cylinder.

3. In a stenciling-machine, the combination with a perforated cylinder having an open end and provided with an exterior tread upon said open end, of trundles upon which said tread turns, and a centrally-located bearing for the opposite end of the cylinder; said trundles being so placed as to prevent the cylinder from rising, and said central bearing having a detachable part whereby the cylinder may be disconnected, said cylinder being also releasable by an endwise movement from said trundles.

4. A stenciling-machine comprising a perforated cylinder having an open end provided with an exterior flange to serve as a tread, a set of trundles upon which said tread runs and whereby it is held against lateral displacement in any direction, and a detachable centrally-located pivot whereby the other end of the cylinder is journaled, means being provided at said pivot for preventing endwise displacement of the cylinder, and the latter being disengageable by an endwise movement from said trundles.

5. A stenciling-machine comprising a perforated cylinder having one end open and provided at said end with an exterior tread, a set of trundles upon which said tread runs, a central hub provided upon the other end of the cylinder, a screw threaded into said hub, a bushing upon said screw and clamped thereby against said hub, and a bearing in which said bushing turns.

6. A stenciling-machine comprising a perforated cylinder having one end open and provided at said end with an exterior tread, a set of trundles upon which said tread runs, a central hub provided upon the other end of the cylinder, a screw threaded into said hub, a bushing upon said screw and clamped thereby against said hub, and a bearing in which said bushing turns, a spring-finger clamped between said bushing and said hub, a detent upon said finger, and a notched part upon the framework to be engaged by said detent.

7. In a stenciling-machine, a perforated stencil-cylinder open at one end and provided upon its exterior at said end with a bearing, a handle projecting from said end, and a central hub for mounting the opposite end of the cylinder.

8. In a stenciling-machine, a cylinder consisting of a curved plate of perforated sheet metal, a flange secured upon said cylinder at one end to serve as a bearing, an interior flange to which the other end of the perforated plate is secured, and a hub or arm cast upon said interior flange.

9. In a stenciling-machine, a cylinder consisting of a curved plate of perforated sheet metal, a flange secured upon said cylinder at one end to serve as a bearing, an interior flange to which the other end of the perforated plate is secured, and a hub or arm cast upon said interior flange, and a handle secured upon the end of said cylinder which is provided with said exterior flange.

10. A stenciling-machine comprising a framework having at one end an open framing provided with a set of trundles, and having at the other end a single centrally-located bearing and a perforated cylinder, one end of which runs within and upon said trundles, and the other end of which is provided with a hub which is journaled upon said single bearing.

11. An ink-screen for a stenciling-machine, said screen in the form of a perforated cylinder having a bearing fitted upon each end; one end of said cylinder being open, and the bearing upon the open end of the cylinder being in the form of an annular flange or open ring which constitutes a head for the cylinder, through which ink may conveniently be applied upon the interior wall of the screen.

12. An ink-screen for a stenciling-machine, said screen in the form of a perforated cylinder having means for securing an ink-blanket thereon, and having heads at its ends, said heads provided with bearing-surfaces for enabling the cylinder to revolve; one of said heads being in the form of an open ring around which the bearing-surface extends, said ring being of sufficiently large internal diameter to render it convenient to apply ink therethrough upon the interior surface of the ink-screen.

13. A stenciling-machine comprising, in combination, an ink-screen in the form of a perforated cylinder having heads, one of said heads in the form of an open ring of relatively large diameter to render it convenient to apply ink therethrough upon the interior surface of the ink-screen, and means for revolubly supporting said cylinder.

14. A stenciling-machine comprising, in combination, an ink-screen in the form of a perforated cylinder having means thereon for attaching an ink-pad thereto, said cylinder entirely open at one end for rendering it convenient to apply ink upon the interior of the screen, and means independent of the inking-surfaces of the screen, for revolubly supporting the same.

15. A stenciling-machine comprising, in combination, an ink-screen in the form of a perforated cylinder, said cylinder being open at its end for rendering it convenient to apply ink upon the entire interior ink-surface of the screen, a roll to press sheets against the cylinder, and means revolubly supporting said cylinder against the pressure of said roll.

16. A stenciling-machine comprising, in combination, an ink-screen in the form of a perforated cylinder, said cylinder being open at its end to render it convenient to apply ink upon the interior ink-surface of the screen, a roll to press sheets against the cylinder, and means detachably and revolubly supporting said cylinder, said supporting means comprising bearing-surfaces all of which are distinct from the inking-surfaces of said screen.

17. A stenciling-machine comprising, in combination, an ink-screen in the form of a perforated cylinder having heads, one end of the cylinder being open and the head at said open end being in the form of an open ring extending around the cylinder and having an exterior bearing-surface, and supports whereon said cylinder is revolubly mounted, said supports including means engaging said exterior bearing-surface.

18. In a stenciling-machine, the combination with an ink-screen in the form of a perforated cylinder, of means at the ends of the cylinder for revolubly supporting the same; one end of said cylinder being open, and said supporting means including trundles or rolls which engage the open end of the cylinder.

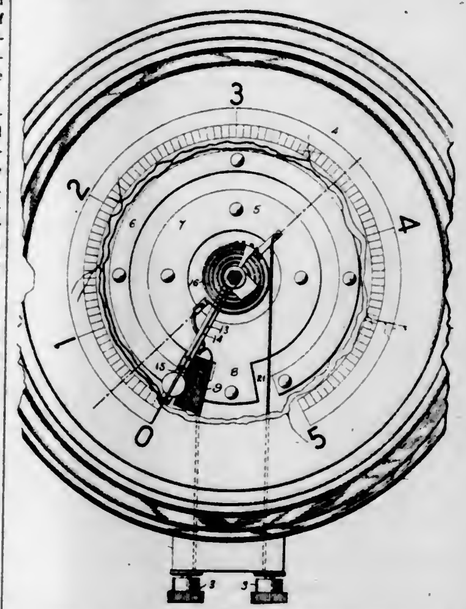
19. In a stenciling-machine, the combination with an ink-screen in the form of a perforated cylinder having one end open and provided with a handle at said open end, of means revolubly supporting said cylinder, said supporting means being so disposed as to permit the ready application of ink within the open end of said cylinder upon the interior walls thereof.

20. In a stenciling-machine, the combination with an ink-screen in the form of a perforated cylinder having one end open, of a framework having means revolubly supporting said cylinder, said supporting means including a bearing device which extends around the rim of the open end of the cylinder, and the latter being detachable from its supports.

21. In a stenciling-machine, the combination with an ink-screen in the form of a perforated cylinder having one end open, of means revolubly supporting said cylinder and including an open support for the open end of the cylinder, from which open support the cylinder may by endwise movement be withdrawn, said supporting means also including releasable means at the other end of the cylinder for preventing such endwise movement.

22. In a stenciling-machine, the combination with an ink-screen in the form of a perforated cylinder having an end open for convenient application of ink upon the interior ink-surface of the screen, said cylinder being provided with an annular tread member upon its open end, of a framework having means releasably supporting said cylinder for revolution, and including trundles or rolls for engaging said annular tread member; said cylinder being releasable by an endwise movement from said trundles or rolls, and releasable means being provided for preventing such endwise movement; and a roll for pressing sheets against the stencil upon the cylinder.

824,696. ALTERNATING-CURRENT ELECTRICAL MEASURING INSTRUMENT. EDWIN E. LEHR, Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Original application filed Nov. 21, 1903, Serial No. 182,166. Divided and this application filed June 24, 1904. Serial No. 214,068.



Claim.—1. An electrical measuring instrument comprising a magnetizable core having two approximately annular portions in one of which there is an air-gap, one being located within the other and the two being joined by means of a substantially radial portion, a stationary winding on said core and a movable coil surrounding the annular portion which is provided with the air-gap.

2. An electrical measuring instrument comprising a laminated magnetizable core composed of two approximately annular portions, one within the other, and joined by means of a substantially radial portion, a stationary winding on a portion of said core and a movable coil in series with said stationary winding and surrounding one of the annular portions of the core.

3. In an electrical measuring instrument, the combination with a magnetizable core comprising two approximately annular portions one of which has an air-gap, and a third substantially radial portion

joining said annular portions, of a movable coil surrounding the core portion having the air-gap.

4. In an electrical measuring instrument, the combination with a magnetizable core comprising two approximately annular, concentric portions one of which has an air-gap, and a substantially radial portion joining said annular portions, of a movable coil surrounding the core portion having the air-gap.

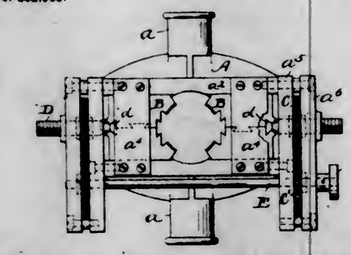
5. In an electrical measuring instrument, the combination with a core comprising two substantially concentric portions one of which has an air-gap, and a substantially radial portion, of a stationary coil mounted upon one of said portions and a movable coil surrounding the core portion having the air-gap and provided with an indicating device.

6. In an electrical measuring instrument, the combination with a core comprising two substantially annular, concentric portions one of which has an air-gap, and an approximately radial portion, of a stationary coil on said radial portion and a movable coil surrounding the core portion that is provided with the air-gap.

7. In an electrical measuring instrument, the combination with a core comprising two substantially annular, concentric portions one of which has an air-gap, and a substantially radial portion, of a stationary coil mounted upon one of said core portions, an indicating-coil surrounding the core portion having the air-gap and means for maintaining a series connection between said coils.

8. In an electrical measuring instrument, the combination with a core comprising two approximately concentric, annular portions, one of which has an air-gap, and a substantially radial portion, of a stationary coil mounted upon one of said core portions, a movable coil surrounding the core portion having the air-gap, means for supporting said coil, means for opposing the movement of said coil and maintaining a series connection between it and the stationary coil, and means for indicating the degree of movement of said movable coil.

824,697. SCREW-THREADING DIE. THOMAS R. LEIGHTON, East Cleveland, Ohio. Original application filed July 31, 1905. Serial No. 271,918. Divided and this application filed Oct. 16, 1905. Serial No. 282,905.



Claim.—1. A die composed of a pair of mated longitudinal sections, said sections being provided with mated undercut recesses at the end adapted to receive the head of a feeding-stem in such position as to receive the thrust of said head upon each section of the die.

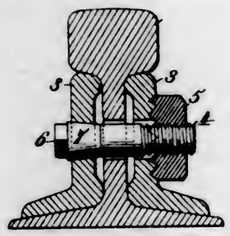
2. Means for cutting external screw-threads comprising a die composed of two longitudinal sections, and means for joining the sections so as to hold them against relative endwise movement, said joining means being positioned so as to be accessible upon removal of the face-plate of a die-stock whereby the sections may be separated and withdrawn from the die-stock, one at a time.

REISSUES.

12,497. RAIL-JOINT. HOSEA ALLEN, Oil City, Pa. Filed Mar. 24, 1906. Serial No. 307,926. Original No. 803,794, dated Oct. 24, 1905.

Claim.—1. The combination of a pair of abutting rails, fish-plates fitted against the rails, the latter and the fish-plates having registering perforations, bolts passing through the perforations and carrying nuts, the inner surfaces of the nuts being corrugated and the outer surface of the adjacent fish-plate being directly corrugated for engagement by the corrugated surfaces of the nuts.

2. The combination of a pair of abutting rails, fish-plates fitted to the rails, the latter and the fish-plates having registering perforations, bolts passing through the perforations and having threaded ends, and nuts fitted onto said threaded ends and to bear against one of the fish-plates, each bolt at the end thereof opposite that provided with the threaded surface, having a head for engagement by an operating implement and also having an inwardly-tapering surface between said head and the threaded portion, the said tapered surfaces being adapted to fit against the walls of the perforation in the fish-plate opposite that against which said nuts bear and the diameter of each head being less than the greater diameter of said tapered portion.



3. The combination of a pair of abutting rails, fish-plates fitted to the rails, the latter and the fish-plates having registering perforations, bolts passing through the perforations and having threaded ends, and nuts fitted onto said threaded ends and to bear against one of the fish-plates, each bolt, at the end thereof opposite that provided with the threaded surface, having a head for engagement by an operating implement and also having an inwardly-tapering surface between said head and the threaded portion, the said tapered surfaces being adapted to fit against the walls of the perforation in the fish-plate opposite that against which said nuts bear, said nuts and adjacent fish-plate having engaging roughened surfaces, the diameter of each bolt-head being less than the greatest diameter of the said tapered portion.

4. The combination of a pair of abutting rails, fish-plates fitted to the rails, the latter and the fish-plates having registering perforations, bolts passing through the perforations and having threaded ends, and nuts fitted onto said threaded ends and to bear against one of the fish-plates, each bolt, at the end thereof opposite that provided with the threaded surface, having a head for engagement by an operating implement and also having an inwardly-tapering surface between said head and the threaded portion, the said tapered surfaces being adapted to fit against the walls of the perforations in the fish-plate opposite that against which said nuts bear, said nuts and adjacent fish-plate having engaging corrugated surfaces, the diameter of each bolt-head being less than the greatest diameter of the said tapered portion.

5. The combination of a pair of abutting rails, fish-plates fitted to the rails, the latter and the fish-plates having registering perforations, bolts passing through the perforations and having threaded ends, and nuts fitted to said threaded ends, and bearing against one of the fish-plates, the ends of the bolts opposite the threaded ends having heads shaped for engagement by a wrench and tapered surfaces which taper inwardly from said heads toward the threaded ends, said tapered surfaces being adapted to fit solidly against the perforations in the fish-plate opposite the one against which said nuts bear, the diameter of each bolt-head being less than the greatest diameter of the said tapered portion.

6. The combination of a pair of abutting rails, fish-plates fitted against the rails, the latter and the fish-plates having registering perforations, bolts passing through the perforations and carrying nuts, the inner surfaces of the nuts and the outer surface of the adjacent fish-plate being directly corrugated, and the projecting portions of the corrugated surfaces of the nuts being adapted to enter and to be wedged in the channels of the corrugated surface of the fish-plate.

7. The combination of a pair of abutting rails, fish-plates fitted against the rails, the latter and the fish-plates having registering perforations, bolts passing through the perforations and carrying nuts, the inner surfaces of the nuts and the outer surface of the adjacent fish-plate being corrugated, the corrugations being angular in cross-section and blunt at their outer ends, whereby when the nuts engage the fish-plates the corrugated surfaces thereof will be wedged together.

8. The combination of abutting rails, a fish-plate against the rails and having corrugations extending across the joint between the same, bolts, the fish-plate and rails being perforated to receive the bolts, and nuts upon the bolts, having corrugated surfaces to engage the corrugated surface of the fish-plate.

9. A fish-plate for rails, having its outer surface directly and continuously corrugated.

10. A rail-joint involving a fish-plate and a bolt having a tapered portion, the fish-plate having an opening to receive said tapered portion, and the bolt having a head constructed to be engaged by a wrench to permit the turning of the bolt, the head being of a size to enter said opening.

11. The combination of abutting rails, a fish-plate against the rails, and a bolt, the fish-plate and rails having registering openings to receive the bolt, the latter being tapered to fit in a hole in one of the fish-plates, the other fish-plate being roughened, and a nut on the bolt, also roughened, to engage the other roughened surface, the bolt having a head adjacent the tapered portion thereof to enter the opening that receives such tapered portion.

12. A rail-joint involving a fish-plate, a bolt, and a nut on the bolt, the nut and the fish-plate having coöperative roughened surfaces, the bolt having a tapered portion and the joint having a bearing for the tapered portion, the bolt when turned serving to draw the roughened surface of the nut solidly against the roughened surface of the fish-plate.

13. A rail-joint involving a fish-plate, a bolt, and a nut on the bolt, the bolt having a tapered portion and the joint having a bearing for said tapered portion, the bolt when turned serving to draw its nut toward and into locking relation with the fish-plate.

14. A rail-joint involving a corrugated fish-plate, a bolt extending through the fish-plate, a nut carried by the bolt, the latter having a tapered portion, the joint having a bearing for said tapered portion, the nut being corrugated and the bolt when turned serving to draw the corrugations on the nut solidly into the corrugations of the fish-plate.

15. A rail-joint involving two fish-plates, a bolt extending through the fish-plates and having a tapered portion bearing against one of said fish-plates, and a nut on the bolt to coöperate with the other fish-plate, the bolt when turned serving to draw said nut toward said last-mentioned fish-plate.

16. A rail-joint involving two fish-plates having registering perforations, a bolt extending through the perforations and having a tapered portion to be wedged in the perforation of one of the fish-plates, and a nut carried by the bolt and coöperative with the other fish-plate, the bolt when turned serving to draw the said nut against the coöperating fish-plate.

17. A rail-joint involving two fish-plates having registering perforations, a bolt extending through the perforations and having a tapered portion to be wedged in the perforation of one of the fish-plates, and a nut carried by the bolt and coöperative with the other fish-plate, the latter and the nut having corrugated surfaces, the bolt when turned serving to draw the corrugations of the nut into the corrugations of the fish-plate.

18. A rail-joint involving a bolt and a nut, the bolt having a tapered portion and the joint having an opening in which said tapered portion is wedged when the bolt is turned and the joint having a part with which said nut is drawn into locking relation on such turning motion.

19. A rail-joint involving a bolt and a nut, the bolt having a tapered portion and the joint having an opening in which said tapered portion is wedged when the bolt is turned and the joint having a part with which the nut is drawn into wedge-locking relation on such turning motion.

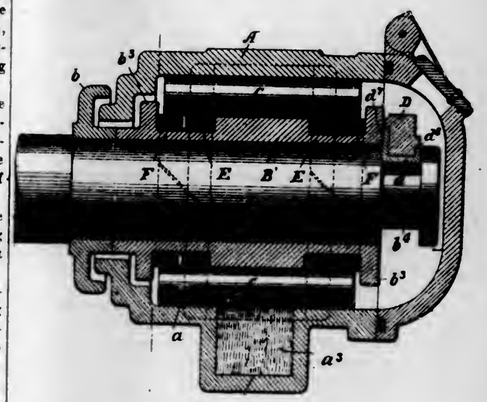
20. A rail-joint involving a fish-plate and a nut, one of the parts having a groove and the other having a projecting portion to enter said groove, and a bolt carrying the nut, said bolt when turned serving to wedge said projecting portion in said groove.

21. A rail-joint involving a fish-plate and a nut one of the parts having a groove and the other a projecting portion to be wedged in said groove, a bolt carrying the nut and provided with a tapered portion, the joint having an opening to receive said tapered portion, and said tapered portion when the bolt is turned being adapted to be wedged in said opening and at the same time to draw said projecting portion into wedge relation in said groove.

12,498. BEARING. BENJAMIN S. LAWSON, Brooklyn, N. Y., assignor, by direct and mesne assignments, of one-half to Asa L. Merrick and one-fourth to Andrew J. De Mott, Syracuse, N. Y. Filed Apr. 3, 1906. Serial No. 309,707. Original No. 628,479, dated July 11, 1899.

Claim.—1. In a roller-bearing, a casing formed with an internal annular bearing-face, an annular series of rollers cylindrical throughout, and a concentric sleeve encompassed by said series of rollers and having a roller-bearing surface of a less length than the rollers and midway between the ends thereof.

2. In a roller-bearing, a casing formed with an internal circular bearing-face, an axle concentric with said face, a sleeve loose on said axle and constituting a central cylindrical bearing less in length than that of the casing, and an annular series of cylindrical rollers of uniform diameter throughout their length arranged between said bearings, and collars on the sleeves arranged to limit the longitudinal movements of the rollers.



12,499. BATH-TUB SEAT. JOHN P. EUSTIS, Newtonville, Mass. Filed Mar. 31, 1906. Serial No. 309,232. Original No. 764,232, dated July 5, 1904.



Claim.—1. In a bath-tub seat, the combination of a seat-board, provided with a pair of tubular portions or hanger-receiving sockets at each end; and a hanger for each pair of tubular portions or sockets; the hangers being formed with arms which are inclined, one in relation to the other, and telescopically enter said tubular portions or sockets wherein the arms are partially out of contact with the inner walls of the tubular portions or sockets.

2. In a bath-tub seat, the combination of a seat-board; a hanger-bracket at each end thereof, adapted to be secured to the seat-board, and having, on the under side of the seat-board, a pair of hanger-receiving tubes; and a hanger for each bracket; the hangers being formed with arms which telescopically enter said tubes.

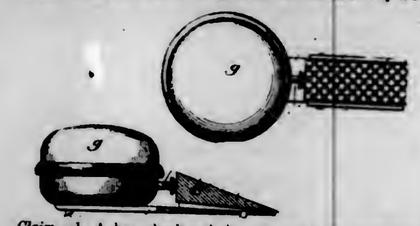
3. In a bath-tub seat, the combination of a seat-board; a hanger-bracket at each end thereof, adapted to be secured to the seat-board, and having, on the under side of the seat-board, a pair of hanger-receiving tubes; and a hanger for each bracket; the hangers being formed with arms which are inclined, one in relation with the other, and telescopically enter said tubes wherein the arms are partially out of contact with the inner walls of the tubes.

4. In a bath-tub seat, the combination of a seat-board; a hanger-bracket at each end thereof; fasteners for securing the brackets to the seat-board; and a hanger for each bracket; each bracket having on the under side of the seat-board a pair of hanger-receiving tubes; the hangers being formed with arms which telescopically enter said tubes.

5. In a bath-tub seat, the combination of a seat-board; a hanger-bracket at each end thereof; fasteninge for securing the brackets to the seat-board; and a hanger for each bracket; each bracket having a hooked end which laps over an end of the seat-board and also having, on the under side of the seat-board, a pair of hanger-receiving tubes; the hangers being formed with arms which are inclined, one in relation to the other, and telescopically enter said tubes wherein the arms are partially out of contact with the inner walls of the tubes.

6. As a new article of manufacture, the herein-described sheet-metal, bracket-forming blank having a hook-forming lobe at one of its ends, and a pair of tube-forming portions at a distance from said lobe and at opposite sides of the blank.

12,500. **BURGLAR-ALARM.** JAMES HASEB, New York, N. Y., assignor to Surety Alarm Company, a Corporation of Maine. Filed Apr. 4, 1906. Serial No. 309,941. Original No. 788,783, dated May 2, 1905.



Claim.—1. A door-check and alarm, comprising a base-plate, a wedge provided with an elongated slot therethrough, guides laterally disposed with respect to said wedge, a pin penetrating said slot and secured to said guides, an alarm, and a trigger therefor incapable of independently operating the said alarm and normally operative with respect thereto adapted to be operated by longitudinal movement of said wedge, substantially as described.

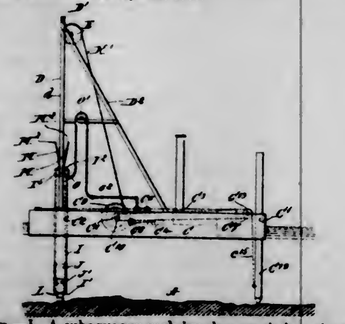
2. A door-check and alarm, comprising a base-plate, a wedge provided with a slot therethrough, guides laterally disposed with respect to said wedge, a pin penetrating said slot and secured to said guides, an alarm-bell, a trigger therefor incapable of independently operating the said alarm and normally operative with respect thereto adapted to be operated by longitudinal movement of said wedge, and means for maintaining the base-plate in an operative position, substantially as described.

3. A door-check and alarm, comprising a block having a flat under face and an inclined upper face, a base-plate having side wings to form guides for the block, means for loosely securing the block between said wings to permit relative longitudinal movement and an alarm-bell on the base-plate having its trigger in contact with said block, substantially as described.

4. A door-check and alarm, comprising a block having a flat under face and an inclined upper face, a base-plate having side wings inclined to conform to the shape of the block, said block having a transverse elongated slot therein, a pin passing through said slot and supported by the wings so as to permit relative movement of the block and an alarm-bell on the base-plate having its trigger in contact with the block, substantially as described.

5. A door-check and alarm, comprising a wedge-shaped block having a roughened inclined surface, a base-plate having side wings to form guides for said block, a transverse elongated slot through the block, a pin passing through said slot and supported by the guide-wings so as to permit relative longitudinal movement of the block, an alarm-bell on the plate having its trigger in contact with said block, and rearwardly-inclined spikes on the under surface of the base-plate, substantially as described.

12,501. **SUBAQUEOUS ROCK-BREAKER.** BARTON H. COFFEY, Elizabeth, N. J., assignor, by mesne assignments, to L. K. McClymonds, South Orange, N. J. Filed May 14, 1906. Serial No. 316,887. Original No. 657,515, dated Sept. 11, 1900.



Claim.—1. A subaqueous rock-breaker consisting of a tubular caisson closed at top and open at bottom, in combination with a heavily-weighted chisel vertically movable in the tubular caisson, means for elevating the chisel in and dropping it through the caisson and means for forcing compressed air into the caisson to maintain it substantially free from water.

2. A subaqueous rock-breaker consisting of a tubular caisson closed at top and open at bottom, in combination with a heavy weight and a chisel both vertically movable in the tubular caisson, means for elevating the weight in and dropping it through the caisson and means for forcing compressed air into the caisson to maintain it substantially free from water.

3. A subaqueous rock-breaker consisting of a tubular caisson closed at top, in combination with a rock-breaking chisel, a heavy chisel-operating weight vertically movable in the tubular caisson, means for elevating said weight in and dropping it through the caisson, whereby rock-breaking energy may be developed and transmitted through the chisel to the rock, and means for compressing air in the caisson to maintain it substantially free from water.

4. A subaqueous rock-breaker consisting of a tubular shell, a rock-breaking chisel, means for maintaining said tubular shell substantially free from water, a movable chisel-operating weight working within the portion of said tubular shell that is free from water, and mechanism for causing said chisel-operating weight to reciprocate, whereby the said weight will operate the said chisel and so cause rock-breaking energy to be transmitted through the chisel to the rock.

5. A subaqueous rock-breaker consisting of a tubular caisson closed at top and open at bottom and provided with longitudinal guides, as I^4, in combination with a weight as J, movable on the guide in the caisson and adapted to hold a rock-breaking chisel in its lower end, means for elevating the weight in and dropping it through the caisson and means for forcing compressed air into the caisson to maintain it substantially free from water.

6. A subaqueous rock-breaker having in combination a tubular caisson closed at top and open at bottom, a weight adapted to hold a chisel longitudinally movable in said caisson, means for raising and dropping said weight and means for connecting the weight and caisson together at will.

7. A subaqueous rock-breaker having in combination a staging having an opening therethrough, a tubular caisson closed at top and open at bottom passing through opening, a weight adapted to hold a chisel longitudinally movable in said caisson, means for raising and dropping said weight and a clamp adapted to secure the caisson to the staging arranged as described to have a capacity to rotate with the caisson.

8. A framing or derrick, as D D′, having guides, as D^4 in combination with a tubular caisson arranged to extend down into water beneath said derrick, a weight vertically movable in the caisson and adapted to hold a rock-breaking chisel, a rod, as K, extending through a stuffing-box in the top of the caisson and adapted to connect with the weight aforesaid to raise it, a cross-head, as K^2, moving in the guides D^4 and connected to the top of rod K, a cord connected to said cross-head and leading over a pulley on the derrick to a hoisting-drum and means, as hook-arms M M, for connecting the top of the caisson to the cross-head K^2.

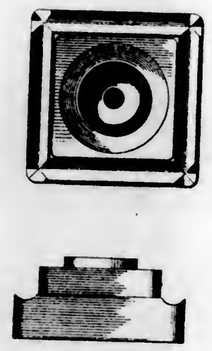
9. A framing or derrick, as D D′, having guides, as D^4, in combination with a tubular caisson arranged to extend down into water beneath said derrick, a weight vertically movable in the caisson and adapted to hold a rock-breaking chisel, a rod, as K, extending through a stuffing-box in the top of the caisson and adapted to connect with the weight aforesaid to raise it, a cross-head, as K^2, moving in the guides D^4 and connected to the top of rod K, a cord connected to said cross-head and leading over a pulley on the derrick to a hoisting-drum, means, as hook-arms M M, for connecting the top of the caisson to the cross-head K^2 and means, as clamp G, for holding the caisson in depressed position.

10. In a subaqueous rock-breaker, a tubular caisson closed at top and open at bottom in combination with a weight adapted to hold a chisel and longitudinally movable in said caisson, said weight having a catch-engaging device at its top, a catch situated in the caisson above the weight and also longitudinally movable therein, said catch being adapted to engage and hold the weight when forced against its top, means for moving the catch in the caisson and a catch-disengaging device situated at the top of the caisson and whereby the catch is made to disengage the weight when drawn upward to the disengaging device.

DESIGNS.

38,102. **INKSTAND.** CHARLES H. NUMAN, New York, N. Y. Filed Apr. 23, 1906. Serial No. 313,356. Term of patent 7 years.

38,102.



Claim.—The ornamental design for an inkstand, as shown.

38,103. **HANDLE FOR SPOONS, FORKS, OR SIMILAR ARTICLES.** HENRY W. HIRSCHFELD, Meriden, Conn., assignor to International Silver Company, Meriden, Conn., a Corporation of New Jersey. Filed May 18, 1906. Serial No. 317,642. Term of patent 7 years.



Claim.—The ornamental design for a handle for a spoon, fork or similar article, as shown.

38,104. **PLATE.** HERMANN EHRLICH, Fürth, Germany, assignor to The Ceramic Transfer Co., a Corporation of New York. Filed May 2, 1906. Serial No. 314,902. Term of patent 3½ years.



Claim.—The ornamental design for a plate, as shown.

38,105. **TRANSFER-SHEET.** FRANZ MARKERT, Altwasser, Germany, assignor to The Ceramic Transfer Co., a Corporation of New York. Filed May 2, 1906. Serial No. 314,903. Term of patent 3½ years.



Claim.—The ornamental design for a transfer-sheet as shown.

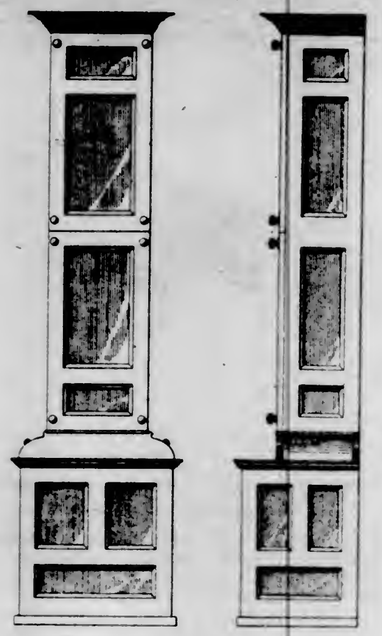
38,106. **HORN FOR TALKING-MACHINES.** HORACE SHEBLE, Philadelphia, Pa., assignor to Hawthorne and Sheble Manufacturing Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Jan. 9, 1905. Serial No. 240,361. Term of patent 7 years.



Claim.—The ornamental design for a horn for talking-machines, as shown.

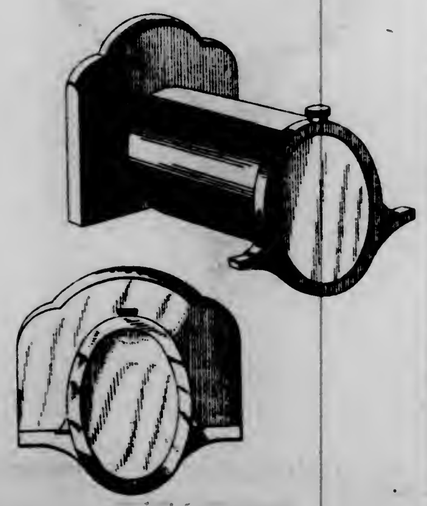
38,107. **HUMIDIFIER-CASING.** JOSEPH J. SMITH, New York, N. Y. Filed May 14, 1903. Serial No. 157,869. Term of patent 7 years.

38,107.



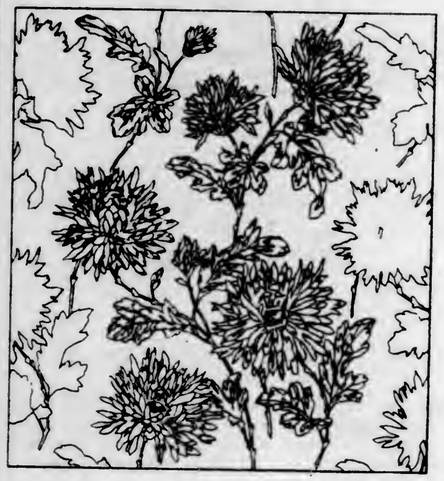
Claim.—The ornamental design for a humidifier-casing, as shown.

38,108. AUTOMOBILE-FRONT CASING. RALPH C. LEWIS, Boston, Mass. Filed Sept. 5, 1905. Serial No. 277,112. Term of patent 3½ years.



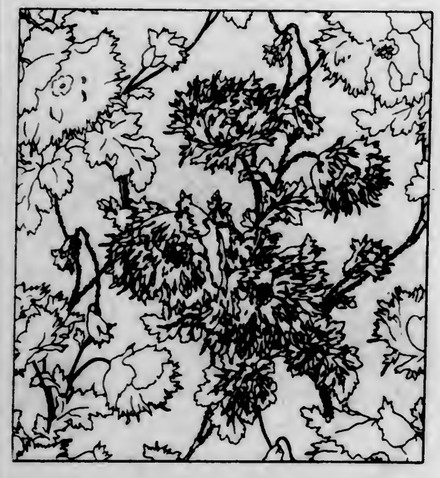
Claim.—The ornamental design for an automobile-front casing, as shown.

38,109. TEXTILE FABRIC. ALFRED FRANCIS PAPIN, Yonkers, N. Y., assignors to Cheney Brothers, South Manchester, Conn., a Corporation of Connecticut. Filed May 22, 1906. Serial No. 318,255. Term of patent 3½ years.



Claim.—The ornamental design for a textile fabric, as shown.

38,110. TEXTILE FABRIC. ALFRED FRANCIS PAPIN, Yonkers, N. Y., assignor to Cheney Brothers, South Manchester, Conn., a Corporation of Connecticut. Filed May 22, 1906. Serial No. 318,256. Term of patent 3½ years.



Claim.—The ornamental design for a textile fabric, as shown.

TRADE-MARKS

PUBLISHED JUNE 26, 1906.

The following trade-marks have been adjudged entitled to registration under the act of February 20, 1905, and are published in compliance with section 6 of said act. Said section provides:

"Any person who believes he would be damaged by the registration of a mark may oppose the same by filing notice of opposition, stating the grounds therefor, in the Patent Office within thirty days after the publication of the mark sought to be registered, which said notice of opposition shall be verified by the person filing the same before one of the officers mentioned in section two of this act. If no notice of opposition is filed within said time the Commissioner shall issue a certificate of registration therefor, as hereinafter provided for."

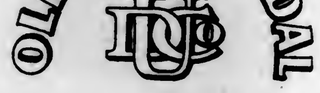
Marks which are stated to have been "Used ten years" are registrable under the last proviso of section 5 of said act, which is as follows:

"And provided further, That nothing herein shall prevent the registration of any mark used by the applicant or his predecessors, or by those from whom title to the mark is derived, in commerce with foreign nations or among the several States, or with Indian tribes, which was in actual and exclusive use as a trade-mark of the applicant or his predecessors from whom he derived title for ten years next preceding the passage of this act."

Section 14 of said act provides for the following fee:

"On filing notice of opposition to the registration of a trade-mark, ten dollars."

SER. NO. 122. WHISKY. THE UNION DISTILLING CO., Cincinnati, Ohio. Filed Apr. 1, 1905. Used ten years.



The words "OLD GOLD MEDAL" associated with a monogram composed of the letters U D Co.

SER. NO. 124. WHISKY. THE UNION DISTILLING CO., Cincinnati, Ohio. Filed Apr. 1, 1905.



The words LONE STAR.

SER. NO. 598. PAINTS FOR CARRIAGES AND RAILWAY-CARS. CHARLES A. WILLEY, New York, N. Y. Filed Apr. 6, 1905.



The words "WILLEY'S SUPERFINE ELECTRO RED" and large capital letter D in red.

SER. NO. 1,550. MALT TONIC OR EXTRACT. DUBUQUE BREWING & MALTING CO., Dubuque, Iowa. Filed Apr. 14, 1905.



The word VIMALT.

SER. NO. 1,755. SILVER TABLEWARE, HOLLOW WARE, AND FLAT WARE. ALVIN MFG. CO., New York, N. Y. Filed Apr. 15, 1905.



A central shield bearing the letter A, and to one side of which is a circular frame inclosing a bar and crescent, and to the other side of which is a circular frame inclosing or surrounding the head and feathered neck of a bird.

SER. NO. 1,995. EMBROIDERY, KNITTING, AND CROCHETING YARNS. DEXTER YARN COMPANY, Pawtucket, R. I. Filed Apr. 17, 1905.

SILKO

The word-symbol SILKO.

SER. NO. 2,784. PURE CANE-SUGAR GLOBULES, ABSORBENT SUGAR DISKS, AND REFINED SUGAR-OF-MILK TABLETS. FREDERICK BISCHOFF, New York, N. Y. Filed Apr. 24, 1905. Used ten years.

STANDARD BRAND

The words STANDARD BRAND.

SER. NO. 3,488. SHEETINGS AND SHIRTINGS. MONTMORENCY COTTON MILLS COY., Montmorency, Quebec, Canada. Filed Apr. 28, 1905.



The representation of a crown and the representation of the head, neck, and wings of a dragon issuant from the crown.

SER. NO. 3,795. WHISKY. SOL. BLOCK & GRIFF, Kansas City, Mo. Filed May 1, 1905. Used ten years.

MAC GREGOR'S

The word "Mac Gregor's."

SER. NO. 3,873. CIGARS AND CHEROOTS. THE B. SIEBENBERG, SIEBERT & CO., New York, N. Y. Filed May 1, 1905.

SER. NO. 3,873.



The word-symbol LA RECLAMA and the pictorial representation of the head and shoulders of a young woman with loose flowing hair and wearing a coat of mail, a shoulder-covering, and having upon her head a helmet surmounted by a spread eagle. Below the figure, on either side thereof, a medal appears, and in the background of the figure sections of a landscape appear.

SER. NO. 4,339. SELF-RAISING PREPARED FLOUR. RELIABLE FLOUR COMPANY, Boston, Mass. Filed May 5, 1905.



The picture of a sheaf of wheat associated with the word "RELIABLE."

SER. NO. 4,386. REMEDIES FOR FEVER IN PILL FORM. WILLIAM H. WOOD, Cairo, Ill. Filed May 5, 1905.



A log of wood with an ax stuck in the upper side, with the word WOOD'S FEVER PILLS across the side of the log.

SER. NO. 4,754. STOCK-FOOD. THE H. T. STOCK FOOD COMPANY, Cleveland, Ohio. Filed May 8, 1905.

H-T

The hyphenated letters "H-T."

SER. NO. 5,022. CANNED VEGETABLES. SAUQUOIT CANNING COMPANY, Utica, N. Y. Filed May 11, 1905.

SER. NO. 5,022.



The name SAUQUOIT and a picture of an Indian on a horse equipped with a rifle and saddle and blanket. The background is a stretch of sloping unbroken ground. This picture is inclosed in a gilt circle decorated with a tomahawk, two spears, and scroll-like ornamentation.

SER. NO. 5,091. CORSETS. KOPS BROS., New York, N. Y. Filed May 11, 1905.

AUTO-GARTER

The hyphenated word AUTO-GARTER.

SER. NO. 5,521. POCKET-KNIVES, RAZORS, AND MANICURE CUTTING IMPLEMENTS OF THE CHARACTER OF KNIVES. JOHN S. HOLLER & CO., New York, N. Y. Filed May 13, 1905



The representation of a tower.

SER. NO. 6,026. HATCHETS AND AXES. FLETCHER HARDWARE CO., Detroit, Mich. Filed May 18, 1905.



The representation of the head of a bull dog.

SER. NO. 6,164. TOOTH-POWDER. LAMBERT PHARMACAL COMPANY, St. Louis, Mo. Filed May 20, 1905.

LISTERINE

The word LISTERINE.

SER. NO. 6,338. LEATHER SHOES. PETERS SHOE CO., St. Louis, Mo. Filed May 22, 1905.

Peters
Kold Killer

The word "PETERS" and the words "KOLD KILLER."

SER. NO. 6,424. POTASH. A. MENDLESON'S SONS, Albany, N. Y. Filed May 23, 1905. Used ten years.

STANDARD BALLS

The words STANDARD BALL.

SER. NO. 7,066. SEPARATORS USED IN CONNECTION WITH STEAM AND HOT-WATER HEATING APPARATUS. DAVID MEIN NESBIT, London, England. Filed May 24, 1905.

NUDEEMEN

The word NUDEEMEN.

SER. NO. 7,282. REMEDIES FOR THE TREATMENT OF RHEUMATISM, GOUT, LUMBAGO, AND VARIOUS FORMS OF NEURALGIA. WM. H. GRIFFITH, New York, N. Y. Filed June 2, 1905.



A pictorial representation of the applicant within a fancy outline, together with a facsimile of applicant's signature followed by the abbreviation "PH. G."

SER. NO. 7,743. FIREPROOF INSULATION FOR FLOORS AND WALLS. MAGNE-SILICA COMPANY, Los Angeles, Cal. Filed June 9, 1905.

SIL-O-CEL

The hyphenated word SIL-O-CEL.

SER. No. 7,826. CONDENSED MILK. MICHIGAN CONDENSED MILK Co., Lansing, Mich., and New York, N. Y. Filed June 10, 1905. Used ten years.

STANDARD

CONDENSED MILK

The word "STANDARD," associated with the words "CONDENSED MILK," printed upon a dark ground or panel.

SER. No. 7,977. MIXED DRINK COMMONLY KNOWN AS "TOM AND JERRY." ADOLPHUS REINERT, New York, N. Y. Filed June 12, 1905.



The words "CHAVALLIER'S ROYAL TOM AND JERRY" which are printed in the center of a shield-shaped figure with the word "CHAVALLIER'S" arranged in a curved line above the words "ROYAL TOM AND JERRY," and above said words appears a small shield bearing a monogram formed by the letters "A R C Co." and above said shield is the representation of a crown, and to the left of said shield appears the representation of a lion, and to the right of said shield appears the representation of a unicorn.

SER. No. 7,986. CANDY. FREDRICK M. SWITZER, St. Louis, Mo. Filed June 12, 1905.

Yellow Jacket

The words YELLOW JACKET.

SER. No. 8,049. UNLINED LINEN FIRE-HOSE. CHARLES NUHRING, Cincinnati, Ohio. Filed June 13, 1905.

IXL

The letters "I X L."

SER. No. 8,060. REMEDIES FOR DISEASES OF THE LIVER, LUNGS, AND BOWELS, AND HEADACHE, IN SYRUP AND PILL FORM, AND HORSE, CATTLE, AND POULTRY POWDERS. VICTOR REMEDIES COMPANY, Frederick, Md. Filed June 13, 1905. Used ten years.

SER. No. 8,060.

VICTOR

The word "VICTOR."

SER. No. 8,624. WHISKY. P. J. BOWLIN LIQUOR Co., St. Paul, Minn. Filed June 21, 1905.



The words "CAPITOL CLUB," above which is a monogram composed of the letters "P J B L Co.

SER. No. 8,851. MIXED PAINTS, PAINTERS' COLORS, STAINS, AND OILS USED IN CONNECTION WITH THE SAME. THE SHERWIN-WILLIAMS Co., Cleveland, Ohio. Filed June 23, 1905.

COVER THE EARTH

The words COVER THE EARTH.

SER. No. 8,925. WHISKY. THE THEOBALD AND SON Co., Columbus, Ohio. Filed June 24, 1905. Used ten years.

THE OLD COON



The words THE OLD COON, below which is a picture representing a coon.

SER. No. 9,011. WHISKY. THE FRANKFORT DISTILLERY, Frankfort, Ky. Filed June 24, 1905.



A panel resembling the capital letter B bearing in its upper portion the words "FIRE COPPER SOUR MASH," across its central portion the name BAKER, and in its lower portion the words "SMALL GRAIN BOURBON" and the designation "45%."

SER. No. 9,131. CANNED FRUITS AND VEGETABLES. J. F. HUMPHREYS & Co., Bloomington, Ill. Filed June 26, 1905.



The arbitrarily-selected words "WEDDING RING" and a representation of a gold band upon a field of blue.

SER. No. 9,133. CANNED FRUITS AND VEGETABLES. J. F. HUMPHREYS & Co., Bloomington, Ill. Filed June 26, 1905.

Cost Mark



The arbitrarily-selected words "COST MARK" and a representation of two circles, one on each side, with a line drawn through the center of each circle, one circle blank and the other with the letters "C. O." above the line through the center of the circle and "S. T." below the line.

SER. No. 9,308. SOAP. THE WIEBEL SOAP COMPANY, Ironton, Ohio. Filed June 28, 1905. Used ten years.

CHINESE LAUNDRY

The words CHINESE LAUNDRY.

SER. No. 9,345. PLASTIC FLOORING AND COMPOSITION FOR MAKING THE SAME. WARREN BROTHERS COMPANY, Boston, Mass. Filed June 28, 1905.



The word PURITAN, arranged upon a Greek cross and having associated therewith the words SANITARY FLOORING.

SER. No. 9,357. ANVILS. PETER WRIGHT & SONS, Dudley, England. Filed June 28, 1905. Used ten years.

SER. No. 9,357.



The words "SOLID WROUGHT."

SER. No. 9,695. WHISKY. THE ULLMAN EINSTEIN Co., Cleveland, Ohio. Filed July 3, 1905. Used ten years.



The words "WEDDING MARCH," the first letters of the word WEDDING being ornamented by three bells and a bow of ribbon. Below this is a picture of the interior of a house. A bride and groom are leading the wedding march, the rest of the procession appearing in the background. The bride carries in her left hand a bouquet, and at her feet a rose is lying on the floor.

SER. No. 10,010. ALL KINDS OF FINE WRITING-PAPER. WORONOCO PAPER COMPANY, Woronoco, Mass. Filed July 11, 1905. Used ten years.

Woronoco

The word WORONOCO.

SER. No. 10,011. ALL KINDS OF FINE WRITING-PAPER. WORONOCO PAPER COMPANY, Woronoco, Mass. Filed July 11, 1905. Used ten years.

FAIRFIELD

The word FAIRFIELD.

SER. No. 10,089. WHISKY. JOHN SPENGLER, Kansas City, Mo. Filed July 11, 1905.

SER. No. 10,089.

HONEY DROP

The words "HONEY DROP

SER. No. 10,083. SARSAPARILLA, GINGER-ALE, LEMON-SODA, CREAM-SODA, ROOT-BEER, BIRCH-BEER, ORANGE-PHOSPHATE, RASPBERRY-SODA, CHAMPAGNE-CIDER, AND CREAM-CELERY. FRANK SEELY, New York, N. Y. Filed July 11, 1905. Used ten years.



The representation of a restaurant scene, in which a man is shown as standing behind the bar in the act of pouring out a liquid from a bottle into a glass, empty bottles and empty glasses appearing on the bar close at hand.

SER. No. 10,098. LEATHER BOOTS, SHOES, AND SLIPPERS, OF A SPECIAL GRADE, FORM, OR FASHION. M. D. WELLS CO., Chicago, Ill. Filed July 11, 1905. Used ten years.

Corn King

The arbitrary words "CORN KING."

SER. No. 10,100. LEATHER BOOTS, SHOES, AND SLIPPERS. M. D. WELLS CO., Chicago, Ill. Filed July 11, 1905.

Hobson's Choice

The arbitrary words "HOBSON'S CHOICE."

SER. No. 10,155. CORDIAL. CHARLES JACQUIN ET CIE., INC., New York, N. Y. Filed July 13, 1905.



The representation of a rectangular figure formed by an ornamental border and divided horizontally to form an upper and a lower panel. Within the upper panel appears a group of buildings with trees in the foreground, and at the sides of said group of buildings are displayed Latin crosses, said crosses being shown as of a red color and having rays diverging therefrom. Below said representations appear the name and title phrase CHARLES JACQUIN ET CIE. INC. LIQUEUR DE ST. AUGUSTINE, and below the same in the lower panel appear the signature and abbreviations CHARLES JACQUIN ET CIE., N. Y. INCORP.

SER. No. 10,269. VARNISHES, MIXED PAINTS, AND ENAMELS. VALENTINE & COMPANY, New York, N. Y. Filed July 13, 1905.

"LOS TOROS"



The words "LOS TOROS" inclosed in quotation-marks, in connection with a scene representing a bull fight and showing a bull and a matador in the act of fighting.

SER. No. 10,453. SCARF-PINS, STICK-PINS, BROOCHES, BRACELETS, CHAINS, CHARMS, AND SLEEVE AND SHIRT BUTTONS. PLAINVILLE STOCK COMPANY, Plainville, Mass. Filed July 17, 1905.

P S CO

The letters "P S Co."

SER. No. 10,457. PAINTS OF ALL KINDS, ENAMELS, STAINS, AND VARNISHES. ACME WHITE LEAD & COLOR WKS., Milwaukee Junction, Detroit, Mich. Filed July 17, 1905.



The words "ACME QUALITY," appearing upon a background of red.

SER. No. 10,536. MIXED PAINTS. HURLEY MANUFACTURING AND SUPPLY CO., St. Louis, Mo. Filed July 18, 1905.

GILSELGLOSS

The word GILSELGLOSS arranged within a geometrical figure with square ends, the sides being indented by curves.

SER. No. 10,544. SCISSORS. NEUMEYER & DIMOND, New York, N. Y. Filed July 18, 1905.

SPHINX



The representation of the sphinx, with one paw resting upon a vase, associated with the word "SPHINX."

SER. No. 10,630. IRISH WHISKY. JOHN POWER & SON, LTD., Dublin, Ireland. Filed July 20, 1905.

JOHN POWER & SON
DUBLIN

The autograph signature, JOHN POWER & SON, and the applicant's name and address.

SER. No. 10,858. LIME. ROCK PLASTER COMPANY OF NEW YORK AND NEW JERSEY, New York, N. Y. Filed July 11, 1905.

H.B.B.

The letters H. B. B.

SER. No. 11,008. CANNED FRUITS AND VEGETABLES. CAULK & MCCREADY, Baltimore, Md. Filed July 29, 1905.



The arbitrarily-selected words NAVY POINT associated with the pictorial representation of a battle-ship.

SER. No. 11,009. FRESH-SHUCKED OYSTERS. JOSEPH L. MCCREADY, Baltimore, Md. Filed July 29, 1905.

SER. No. 11,009.



The arbitrarily-selected words NAVY BRAND associated with a pictorial representation of a portion of a deck of a vessel showing a capstan and an anchor and the figure of a sailor.

SER. No. 11,012. TOILET LOTIONS. SYDNEY H. SMITH, Chicago, Ill. Filed July 29, 1905.

BORO-WYCH

The hyphenated word BORO-WYCH.

SER. No. 11,051. LIQUID MEDICINE PUT UP IN BOTTLES AS A REMEDY FOR LIVER AND BLOOD TROUBLES. R. M. CARLISLE, Macon, Ga. Filed July 31, 1905. Used ten years.

Dr. R. M. Carlisle's

L. & B.

The name DR. R. M. CARLISLE'S, and the letters and character L & B.

SER. No. 11,070. LEATHER BOOTS, SHOES, AND SLIPPERS. M. D. WELLS CO., Chicago, Ill. Filed July 31, 1905.

Motorman

The word MOTORMAN.

SER. No. 11,071. LEATHER BOOTS, SHOES, AND SLIPPERS. M. D. WELLS CO., Chicago, Ill. Filed July 31, 1905.

Rob Roy

The arbitrary words ROB ROY.

SER. No. 11,074. LEATHER BOOTS, SHOES, AND SLIPPERS. M. D. WELLS CO., Chicago, Ill. Filed July 31, 1905.

SER. No. 11,074.

Rough on Rocks.

The arbitrary words ROUGH ON ROCKS.

SER. No. 11,075. LEATHER BOOTS, SHOES, AND SLIPPERS. M. D. WELLS CO., Chicago, Ill. Filed July 31, 1905.

Stronghold

The arbitrary word STRONGHOLD.

SER. No. 11,078. LEATHER BOOTS, SHOES, AND SLIPPERS. M. D. WELLS CO., Chicago, Ill. Filed July 31, 1905. Used ten years.

Hero

The arbitrary word "HERO."

SER. No. 11,377. TABLETS AND WRITING-PADS. THE O. W. NOTTINGHAM CO., name changed to "New Century Tablet Company," Martinsville, Ind. Filed Aug. 7, 1905.



A scroll-like border inclosing a representation of a twig bearing a representation of a hornet's nest and the words "THE ORIGINAL PAPER MAKER" below said nest. The words NEW CENTURY appear on a panel at the upper part of the border.

SER. No. 11,438. SKIN FOOD AND MASSAGE CREAM. J. D. MCCANN CO., Hornellsville, N. Y. Filed Aug. 8, 1905.

HOKARA

The coined word HOKARD.

SER. No. 11,592. LEATHER BOOTS AND SHOES. GEO. F. DITTMANN BOOT & SHOE COMPANY, St. Louis, Mo. Filed Aug. 12, 1905.

MILADY

The word MILADY.

SER. No. 11,595. LEATHER BOOTS AND SHOES. GEO. F. DITTMANN BOOT & SHOE COMPANY, St. Louis, Mo. Filed Aug. 12, 1905.

UWANTA

The word "UWANTA."

SER. No. 11,596. LEATHER BOOTS AND SHOES. GEO. F. DITTMANN BOOT & SHOE COMPANY, St. Louis, Mo. Filed Aug. 12, 1905.

APOLLO

The word APOLLO.

SER. No. 11,597. LEATHER BOOTS AND SHOES. GEO. F. DITTMANN BOOT & SHOE COMPANY, St. Louis, Mo. Filed Aug. 12, 1905.

DIANA

The word DIANA.

SER. No. 11,598. LEATHER BOOTS AND SHOES. GEO. F. DITTMANN BOOT & SHOE COMPANY, St. Louis, Mo. Filed Aug. 12, 1905.

"Dazzler"

The word DAZZLER.

SER. No. 11,601. LEATHER BOOTS AND SHOES. GEO. F. DITTMANN BOOT & SHOE COMPANY, St. Louis, Mo. Filed Aug. 12, 1905.

O K

The letters "O K."

SER. No. 11,602. LEATHER BOOTS AND SHOES. GEO. F. DITTMANN BOOT & SHOE COMPANY, St. Louis, Mo. Filed Aug. 12, 1905.

MIKADO

The word MIKADO.

SER. No. 11,604. LEATHER BOOTS AND SHOES. GEO. F. DITTMANN BOOT & SHOE COMPANY, St. Louis, Mo. Filed Aug. 12, 1905.

HOT STUFF.

The words HOT STUFF.

SER. No. 11,605. LEATHER BOOTS AND SHOES. GEO. F. DITTMANN BOOT & SHOE COMPANY, St. Louis, Mo. Filed Aug. 12, 1905.

Winner

The word WINNER.

SER. No. 12,202. MACARONI. C. F. MUELLER CO., Jersey City, N. J. Filed Sept. 2, 1905.



The words FLAG BRAND inscribed upon the representation of a flag upon a spear-pointed flagstaff, appearing across a red disk.

SER. No. 12,226. WHISKY. THE FRANKFORT DISTILLERY, Frankfort, Ky. Filed Sept. 5, 1905.



The representation of the head of an elk, associated with the words "ELKHORN MILLS FORKS OF ELKHORN KENTUCKY," all inclosed in a circle.

SER. No. 12,251. WATER-GAGE GLASSES FOR BOILERS. JOSEPH TOMEY & SONS, LIMITED, Birmingham, England. Filed Sept. 5, 1905.



The representation of two crossed glass tubes with a weight suspended therefrom, and the letters "H S P" inclosed in concentric circles.

SER. No. 12,252. WHISKY. THE FRANKFORT DISTILLERY, Frankfort, Ky. Filed Sept. 5, 1905.



The words "OLD CAPITOL" and the representation of the former capitol building located at Frankfort, Kentucky.

SER. No. 12,254. WHISKY. THE FRANKFORT DISTILLERY, Frankfort, Ky. Filed Sept. 5, 1905.

KERRY PATCH

The words KERRY PATCH.

SER. No. 12,255. WHISKY. THE FRANKFORT DISTILLERY, Frankfort, Ky. Filed Sept. 5, 1905.



A representation of a "Woodpecker" sitting upon a stump with the word "OLD" above and "Woodpecker" below.

SER. No. 12,336. PERFUMES. ACTIEN-GESELLSCHAFT FÜR ANILIN-FABRIKATION, Berlin, Germany. Filed Sept. 7, 1905.

Irolène

The word IROLÈNE.

SER. No. 12,337. PERFUMES. ACTIEN-GESELLSCHAFT FÜR ANILIN-FABRIKATION, Berlin, Germany. Filed Sept. 7, 1905.

NARCÉOL

The word "NARCÉOL."

SER. No. 12,879. CHEMICALS USED FOR REDUCING, DISCHARGING, AND BLEACHING PURPOSES—FOR EXAMPLE, IN THE REDUCTION OR DISCHARGING OF DYESTUFFS AND THE LIKE. BADISCHE ANILIN- & SODA-FABRIK, Ludwigshafen-on-the-Rhine, Germany. Filed Sept. 8, 1905.

Rongalite

The word "RONGALITE."

SER. No. 12,478. HEATING-STOVES, FURNACES, RANGES, STEEL RANGES, AND COOKING-STOVES. FRED E. LEE and WM. G. HOWARD, Dowagiac, Mich., executors of the estate of Philo D. Beckwith, deceased. Filed Sept. 11, 1905. Used ten years.

ROUND OAK

The words ROUND OAK.

SER. No. 12,508. PERIODICAL MAGAZINES. DOUBLEDAY, PAGE & COMPANY, New York, N. Y. Filed Sept. 13, 1905.

Country Life in America

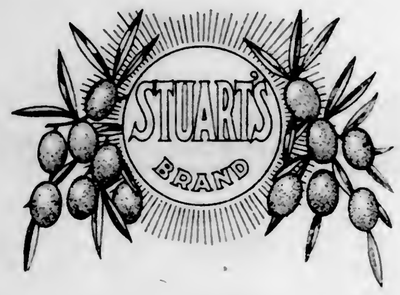
The name COUNTRY LIFE IN AMERICA.

SER. No. 12,787. WHEAT-FLOUR. THE BURRUS MILL & ELEVATOR COMPANY, Fort Worth, Tex. Filed Sept. 18, 1905.



Two intersecting curved lines between which is a full-length figure of a woman holding in her hands a bread-pan containing a loaf of bread, and a band extending diagonally across the figure upon which are the words "LIGHT CRUST."

SER. No. 12,910. OLIVE-OIL AND OLIVE-OIL BUTTER. A. V. STUART & CO., San Jose, Cal. Filed Sept. 22, 1905.



A representation of the sun having thereon the words "STUART'S BRAND, with an olive branch bearing olives on each side of the sun.

SER. No. 12,950. COLORED AND ORNAMENTED PAPER, (ADAPTED FOR USE AS WALL-PAPER, FANCY WRAPPERS, AND FOR COVERING AND LINING BOXES, &C.) METAXIN-FABRIK DR. LILIENFELD & DR. TEDESKO, Vienna, Austria. Filed Sept. 25, 1905.

METAXIN

The word "METAXIN."

SER. No. 13,408. CANNED FRUITS AND VEGETABLES. THOMAS KENSETT & CO., Baltimore, Md. Filed Oct. 7, 1905.



The words "LARK BRAND," and the representation of a lark perched upon a rock, with a background of shrubs and flowers.

SER. No. 13,502. CANNED OYSTERS, CANNED SHRIMP, CANNED LOBSTERS, CANNED CLAMS, AND CANNED CRABS. MARY J. BOYER, Baltimore, Md. Filed Oct. 11, 1905. Used ten years.

Boyer's Brand

The words BOYER'S BRAND.

SER. No. 13,608. MIXED FEED COMPOSED OF RICE, CORN, AND MOLASSES. LAWRENCE FEED CO. LTD., Crowley, La. Filed Oct. 14, 1905.

SER. No. 13,608.



The word "NUTRILINE" in duplicate and assembled in separate lines in intersecting bars in the form of a Greek cross and a design comprising heads representing a horse, a mule, a cow, and a hog disposed in the spaces formed by the cross and flanking in pairs the vertical bar and associated with the words "STEAM COOKED" supplementing the cross, the same being disposed upon the representation of a sack.

SER. No. 13,679. ALL KINDS OF COTTON THREAD. THE CLARK THREAD CO., Newark, N. J. Filed Oct. 17, 1905. Used ten years.



The name and words GEORGE A. CLARK SOLE AGENT.

SER. No. 13,751. WHEAT-FLOUR. BERNHARD STERN & SONS, Milwaukee, Wis. Filed Oct. 19, 1905.

Atlas

The word ATLAS.

SER. No. 13,889. PLAIN AND FANCY CANDIES. TACOMA BISCUIT & CANDY COMPANY, Tacoma, Wash. Filed Oct. 24, 1905.

Everybody's

The arbitrary word EVERYBODY'S in script letters with a long broad paraph extending under the word.

SER. No. 14,155. CHAMPAGNE-WINE. G. H. MUMM & CO., Reims, France. Filed Nov. 1, 1905. Used ten years.

G. H. Mumm & Co.

The words G. H. MUMM & CO.

SER. No. 14,173. BREAD, BUNS, DOUGHNUTS, CAKES, AND CRACKERS. SKILLMAN BREAD AND PIE COMPANY, Baltimore, Md. Filed Nov. 1, 1905.



The fanciful picture of a child inclosed within a circular ornamental border and associated with the hyphenated word, MITY-NICE.

SER. No. 14,213. CIGARS, STOGIES, AND ALL-TOBACCO CIGARETTES. REIMER REIMERS, Moline, Ill. Filed Nov. 2, 1905.



A representation of a cigar, crossed tobacco-leaves and the letters R. R. thereon.

SER. No. 14,348. BEER. PABST BREWING COMPANY, Milwaukee, Wis. Filed Nov. 4, 1905. Used ten years.



The representation of a conventionalized hop-leaf, the initial "B" on said hop-leaf, a red circular band surrounding the leaf, the name "PABST" on the upper part of the band, and the name "MILWAUKEE" on the lower part of the band.

SER. No. 14,596. KNIVES FOR MOWERS AND REAPERS. THE WHITMAN & BARNES MANUFACTURING COMPANY, Akron, Ohio. Filed Nov. 14, 1905.



A representation of a diamond-shaped figure with the letters and character "W" "&" "B" "Co" placed in the respective corners thereof.

SER. No. 14,542. LEATHER BOOTS AND SHOES. LYNCHBURG SHOE CO., Lynchburg, Va. Filed Nov. 13, 1905.



The words SOCIETY KING and the representation of a young man fashionably attired, holding a silk hat in one hand and a cane in the other.

SER. No. 14,582. CANDY. REBOLI SONS CO., Worcester, Mass. Filed Nov. 13, 1905.



The representation of three men, one carrying a tray upon which appears a peacock, and the others carrying covered dishes, with the name REBOLI, arranged between the men.

SER. No. 14,706. BLEACHED AND HALF-BLEACHED COTTON-PIECE GOODS. GRINNELL WILLIS & CO., New York, N. Y. Filed Nov. 16, 1905.



The words "THE SPIRIT OF OUR FOREFATHERS," associated with the representation of two old-fashioned guns in a crossed position.

SER. No. 14,800. SILVER AND SILVER-PLATED SPOONS, KNIVES, AND FORKS AND SPOONS, KNIVES, AND FORKS MADE OF METAL COMMERCIALLY KNOWN IN THE ART OF TABLEWARE-MAKING AS "WHITE METAL." QUAKER VALLEY MANUFACTURING COMPANY, Chicago, Ill. Filed Nov. 18, 1905.

CUEVEE

The word CUEVEE.

SER. No. 14,991. LADIES' LEATHER SHOES. THE WOLF BROTHERS AND COMPANY, Cincinnati, Ohio. Filed Nov. 25, 1905.

The American Girl.

The words "THE AMERICAN GIRL."

SER. No. 15,131. MONTHLY PERIODICAL. DAVID C. COOK PUBLISHING COMPANY, Elgin, Ill. Filed Dec. 1, 1905.

THE MOTHER'S MAGAZINE

The title THE MOTHER'S MAGAZINE.

SER. No. 15,282. REMEDY FOR COLDS, LA GRIPPE, INFLUENZA, BRONCHITIS, AND AS PREVENTIVE FOR PNEUMONIA, IN THE FORM OF COMPRESSED SUGAR-COATED TABLETS. THE HIGGINS CHEMICAL CO., Townsend, Mass. Filed Dec. 6, 1905.

ZERO

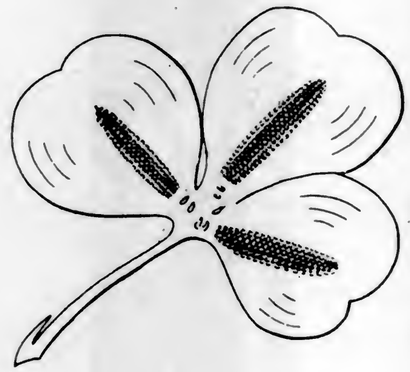
The word ZERO.

SER. No. 15,297. INSECT-POISON. THE P. M. FRANK DISINFECTING CO., New York, N. Y. Filed Dec. 9, 1905. Used ten years.



The words FRANK'S EXTERMINATING GAS.

SER. No. 15,317. CORNMEAL. SENECA MILL & ELEVATOR COMPANY, Seneca, Mo. Filed Dec. 9, 1905.



The representation of a three-leaved clover with a representation of an ear of corn appearing on each leaf.

SER. No. 15,351. WEEKLY MAGAZINE. MANUFACTURERS' RECORD PUBLISHING COMPANY, Baltimore, Md. Filed Dec. 12, 1905.

MANUFACTURERS' RECORD

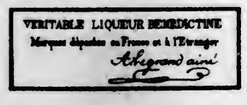
The words MANUFACTURERS' RECORD.

SER. No. 15,455. LEAD-PENCILS. A. W. FABER, Stein, Germany. Filed Dec. 16, 1905. Used ten years.

A. W. FABER.

The name A. W. FABER.

SER. No. 15,871. CORDIAL. SOCIÉTÉ ANONYME DE LA DISTILLERIE DE LA LIQUEUR BENEDICTINE DE L'ABBAYE DE FÉCAMP, Fecamp, France. Filed Jan. 4, 1906.



The words VÉRITABLE LIQUEUR BÉNÉDICTINE and the autograph signature "A. LEGRAND, AINÉ," with a pen flourish beneath the same, the whole surrounded by a plain rectangular border, the words "MARQUES DÉPOSÉES EN FRANCE ET À L'ETRANGER" appearing above the signature.

SER. No. 16,088. BRANDY. AMANDUS REPSOLD, San Francisco, Cal. Filed Jan. 8, 1906.



A monogram of the characters A R & Co disposed between two clusters of grapes and grape-leaves and the words "REPSOLD COONAC," the whole being surrounded by a grape-vine border having a grape-leaf at each corner.

SER. No. 16,118. LEATHER BOOTS AND SHOES FOR MEN AND WOMEN. THE COMMONWEALTH SHOE AND LEATHER COMPANY, Boston, Mass. Filed Jan. 11, 1906. Used ten years.

Bostonian

The word "BOSTONIAN."

SER. No. 16,262. STERLING AND SOLID SILVER HOLLOW WARE, STERLING AND SOLID SILVER FLAT WARE, AND STERLING AND SOLID SILVER TABLEWARE. ROCKFORD SILVER PLATE CO., Rockford, Ill. Filed Jan. 17, 1906. Used ten years.

ROCKFORD

The word "ROCKFORD."

SER. No. 16,424. PINEAPPLES. CARLOS RUIZ, Havana, Cuba. Filed Jan. 23, 1906.

RED SPANISH



The capital letter R inclosed within a triangle of broken lines, associated with the words RED SPANISH and HABANA.

SER. No. 16,442. REFINED PETROLEUM FOR ILLUMINATING PURPOSES. STANDARD OIL CO. OF NEW YORK, New York, N. Y. Filed July 1, 1905.

SER. No. 16,442.

PETROLITE

The word PETROLITE.

SER. No. 16,451. CHAMPAGNE. BLONDEAU, BERQUE & Co., Reims, France. Filed Jan. 24, 1906.



The words BLACK TOP, inclosed in an arc-shaped panel, the upper edge of which arc-shaped panel is continued to form a circle and incloses the words ERNEST-IRROY REIMS.

SER. No. 16,536. MEDICINE FOR THE CURE OF CONSUMPTION, TUBERCULOSIS, COUGHS, COLDS, AND OTHER DISEASES OF THE LUNGS AND BRONCHIAL TUBES. LUNG GERMINE CO., Jackson, Mich. Filed Jan. 26, 1906.



The pictorial representation of a crowned woman in a gown, and an anchor, the woman standing and having a crown upon her head bearing the monogram H W and holding a bottle in her right hand and a wreath in her left hand, the anchor being diposed at her feet and the words LUNG GERMINE appearing on the gown.

SER. No. 16,694. CANDIES AND BONBONS. ARTHUR H. POTTER, Cambridge, Mass. Filed Feb. 2, 1906.

"Lydian Brand"

An elliptical border inclosing two horizontal lines with the word "LYDIAN" above the upper line and the word "BRAND" above the lower line, the word "LYDIAN" being preceded by quotation-marks and the word "BRAND" followed by quotation-marks.

SER. No. 16,569. CHOCOLATES AND BONBONS. THE SPARROW COMPANY, Cambridge, Mass. Filed Jan. 27, 1906.



The fanciful representation of a lady wearing an ermine cloak and having her head surmounted by a crown.

SER. No. 16,724. PRINTED PICTORIAL MATTER IN THE NATURAL COLORS OF THE OBJECT OR OBJECTS REPRESENTED. WESTERN COLOR PRINT CO., San Francisco, Cal. Filed Feb. 3, 1906.

LUXOGRAPH

The coined word LUXOGRAPH.

SER. No. 16,845. SOAP IN WHICH IS INCLUDED PINE-TAR AS ONE OF ITS INGREDIENTS. THE CHARLES N. CRITTENTON COMPANY, New York, N. Y. Filed Feb. 9, 1906. Used ten years.



A panel bearing the words CONSTANTINE'S PERSIAN HEALING PINE TAR SOAP, and the name and portrait of A. A. Constantine, deceased.

SER. No. 16,881. SEWING-MACHINES AND THEIR PARTS AND ATTACHMENTS. WHEELER & WILSON MANUFACTURING COMPANY, Bridgeport, Conn. Filed Feb. 10, 1906. Used ten years.



The representation of a shield bearing a monogram of the characters "W & W" surrounded by a circular band having the inscription "WHEELER & WILSON M'F'G CO. BRIDGEPORT CONN. U. S. A."

SER. No. 16,882. SEWING-MACHINES AND THEIR PARTS AND ATTACHMENTS. WHEELER & WILSON MANUFACTURING COMPANY, Bridgeport, Conn. Filed Feb. 10, 1906. Used ten years.

Wheeler & Wilson Mf'g Co.

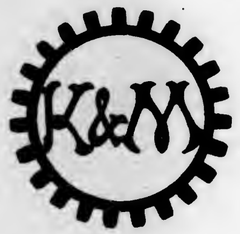
The name "WHEELER & WILSON M'F'G CO"

SER. No. 16,885. SEWING-MACHINES AND THEIR PARTS AND ATTACHMENTS. WHEELER & WILSON MANUFACTURING COMPANY, Bridgeport, Conn. Filed Feb. 10, 1906. Used ten years.



The letters and character "W. & W."

SER. No. 16,998. ELECTRIC ARC AND INCANDESCENT LAMPS. KÖRTING & MATHIESEN AKTIENGESELLSCHAFT, Leutzsch, Germany. Filed Feb. 14, 1906.



The letters K & M arranged within a toothed wheel.

SER. No. 17,087. CHAMPAGNE-WINE. G. H. MUMM & Co., Reims, France. Filed Feb. 16, 1906. Used ten years.

MUMM

The word MUMM.

SER. No. 17,088. CHAMPAGNE-WINE. G. H. MUMM & Co., Reims, France. Filed Feb. 16, 1906. Used ten years.

MUMM-REIMS

The words MUMM-REIMS.

SER. No. 17,158. WHISKY. THE ELLISON-HARVEY CO., Richmond, Va. Filed Feb. 17, 1906. Used ten years.

SER. No. 17,158.



The representation of a bull.

SER. No. 17,217. VEGETABLE GELATINE AND FINISHING SIZING. BLANDOLA COMPANY LIMITED, Whaley Bridge, near Stockport, England. Filed Feb. 17, 1906.

BLANDOLA

The word "BLANDOLA."

SER. No. 17,222. TOILET-POWDER FOR INFANTS AND ADULTS. MORGAN CHUBB, Brooklyn, N. Y. Filed Feb. 21, 1906.



The pictorial representation of a woman seated in a large arm-chair before a curtained window with a table on one hand and a cradle and bureau on the other and holding a nude child in her lap.

SER. No. 17,245. IRON IN BILLETS, PIGS, RODS, SHEETS, AND PLATES. B. M. JONES & CO INCOR, Boston, Mass. Filed Feb. 23 1906. Used ten years.

TAYLORS LEEDS

The words TAYLORS LEEDS.

SER. No. 17,329. RAT, MICE, AND ROACH PASTE. GEORGE S KIRKLEY, Baltimore, Md. Filed Feb. 24, 1906.

OLIVE

The word OLIVE.

SER. No. 17,373. CLOCKS AND WATCHES. THE WESTERN CLOCK MANUFACTURING COMPANY, La Salle, Ill. Filed Feb. 26, 1906.

SER. No. 17,373



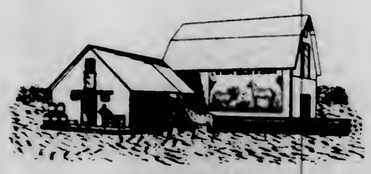
The letter W partially formed by the hands of a clock, and the representation of a clock, all inclosed in a diamond-shaped figure.

SER. No. 17,380. LIME, BOTH CRUDE AND REFINED, CAUSTIC AND HYDRATED. HARPERS FERRY LIME COMPANY, Millville, W.Va. Filed Feb. 27, 1906.



A series of concentrically-arranged diamond-shaped figures bearing the words WHITE DIAMOND.

SER. No. 17,479. MEDICATED STOCK FOODS. LEMUEL W. PASTE, Galion, Ohio. Filed Mar. 3, 1906.



GALION PREVENTATIVE STOCK FOOD

The representation of a storehouse and a barn with a fence beside the barn and a picture on the barn showing a horse and other farm animals; a horse, a man and a wagon standing beside the storehouse, with several boxes piled in front thereof; together with the words "GALION PREVENTATIVE STOCK FOOD."

SER. No. 17,491. MEDICAL COMPOUNDS FOR TREATING DISEASES OF THE SCALP. HEADSTREAM & DE FLOS, Mauston, Wis. Filed Mar. 3, 1906.

SER. No. 17,491.



The representation of a leaf of the manzanita bush and the words "THE ONLY" inscribed on said leaf.

SER. No. 17,495. MEN'S LEATHER SHOES. THE MURPHY SHOE CO., Portsmouth, Ohio. Filed Mar. 3, 1906.



A representation of a man in Continental uniform holding a sword in one hand and a staff bearing a streamer in the other, and standing beside a cannon. On the streamer appears the name "PAUL JONES," and below the same the words "SHOES THAT WEAR."

SER. No. 17,521. LOTION OR EXTERNAL REMEDY FOR ECZEMA AND OTHER KINDRED DISEASES. JOSEPH BLANCHARD, Minneapolis, Minn. Filed Mar. 5, 1906.



The representation of the naked bust of a man, and with the representation of spots on the face, breast and arms, indicating sores such as produced by eczema and kindred skin diseases.

SER. No. 17,614. PREPARATION FOR THE RELIEF AND CURE OF NASAL CATARRH, COLD IN THE HEAD, AND HAY-FEVER. ELLIS A. BILLINGSLEA, Fairmont, W. Va. Filed Mar. 6, 1906.



The representation of a crane.

SER. No. 17,578. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 6, 1906.



The words "RED CROSS" and the representation of a red Greek cross, the latter having marked thereon the figures and character "14%."

SER. No. 17,624. REMEDIES TO BE APPLIED TO THE SKIN AND GASTRO-PULMONARY MUCOUS MEMBRANE FOR GERMICIDAL PURPOSES AND TO PROMOTE THE FUNCTIONAL ACTIVITY OF GLANDS. CHARLES SHERMAN SMITH, Sutton Center Mass. Filed Mar. 6, 1906.



The representation of a roller bandage on the face of which is a mortar and pestle, a bottle, and the words "STANDARD HOSPITAL" distinctly printed diagonally between the bottle and the mortar and pestle.

SER. No. 17,633. TOOTH-CLEANING PASTE. ROBERT L. NEWELL, Union, Nebr. Filed Mar. 7, 1906.



The word "DENTA-BLEACH."

SER. No. 17,639. MARINE ANTICORROSIVE AND ANTIFOULING PAINT FOR VESSELS, KNOWN AND DESIGNATED AS "RAHTJEN'S COMPOSITION." RAHTJEN'S AMERICAN COMPOSITION COMPANY, New York, N. Y. Filed Mar. 8, 1906.



The representation of an open hand with the fingers upward.

SER. No. 17,648. SALVE. COVILLEA TRIDENTATA MFG. CO., Tempe, Ariz. Filed Mar. 8, 1906.

TRIDENTATA
OR GREASE-WOOD SALVE



The representation of a desert scene, a cactus-plant known as the *Covillea tridentata* or grease-wood appearing prominently in the foreground, together with the words TRIDENTATA OR GREASE-WOOD SALVE.

SER. No. 17,660. METAL-POLISH. SIGMUND N. GOLD, New York, N. Y. Filed Mar. 8, 1906.



The representation of a comet upon which is printed the word, COMET.

SER. No. 17,700. LEATHER, CANVAS, OR CLOTH SHOES. CHAMBERSBURG SHOE MFG. CO., Chambersburg, Pa. Filed Mar. 9, 1906



The representation of a shield and a circle within the same, quartered, the letter N within the circle, and an awl, a hammer, a foot, and a last in the quarters of the shield.

SER. No. 17,714. BLOOD-PURIFIERS, COUGH AND WORM SYRUP, AND LINIMENT. S. B. GOFF & SONS CO., Camden, N. J. Filed Mar. 10, 1906. Used ten years.

GOFF

The name GOFF.

SER. No. 17,716. DYSPEPSIA CURE. S. B. GOFF & SONS CO., Camden, N. J. Filed Mar. 10, 1906. Used ten years.

GOFF

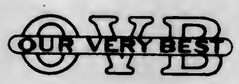
The name GOFF.

SER. No. 17,724. HAIR-RENEWERS. KINGSTON & KELLOGG. Waukesha, Wis. Filed Mar. 10, 1906.



The portrait of John H. Kingston within an oval field and surrounded by a circle containing the words ADA KINGSTON'S above the portrait and the words HAIR RENEWER below the portrait, and leaves disposed in the spaces between the words and the portrait.

SER. No. 17,741. GIMLET-BITS, AUGER-BITS, AND BRACES. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill. Filed Mar. 12, 1906. Used ten years.



The letters O V B with a panel extending across the same upon which appear the words OUR VERY BEST.

SER. No. 17,749. KNITTED UNDERWEAR AND HOSIERY. J. S. REEVES & Co., Nashville, Tenn. Filed Mar 12, 1906.

Hermitage

The word "HERMITAGE."

SER. No. 17,813. REMEDY AFFECTING THE STOMACH, LIVER, AND KIDNEYS, A CATARRH CURE, A TAPE-WORM REMEDY, A WORM REMEDY, A LINIMENT, AND A CATHARTIC. LEWIS ASHWORTH, Indianapolis, Ind. Filed Mar. 14, 1906.

TON-KA-WAY

The word TON-KA-WAY.

SER. No. 17,820. BITE-WAX. CROWN DENTAL LABORATORY, Chicago, Ill. Filed Mar. 14, 1906.



The representation of a crown.

SER. No. 17,823. PREPARATION OF UNCOOKED CEREALS PRESSED INTO A WAFER. FOSTER F. POTTER, New York, N. Y. Filed Mar. 14, 1906.

ZOETIC

The word ZOETIC.

SER. No. 17,832. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 15, 1906. Used ten years.

DURHAM



The word DURHAM and the representation of a bull.

SER. No. 17,844. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 15, 1906. Used ten years.

OLD DOMINION GUANO CO'S.

The words and abbreviation OLD DOMINION GUANO CO'S.

SER. No. 17,847. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 15, 1906.

GEORGIA STATE GRANGE

The words GEORGIA STATE GRANGE.

SER. No. 17,851. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 15, 1906. Used ten years.

CHICORA FERTILIZER CO'S

The words and abbreviation "CHICORA FERTILIZER CO'S."

SER. No. 17,874. FERTILIZERS. GEORGIA CHEMICAL WORKS, Augusta, Ga. Filed Mar. 15, 1906.

SER. No. 17,874

GEM

The word GEM.

SER. No. 17,877. FERTILIZERS. AMERICAN FERTILIZING COMPANY, Norfolk, Va. Filed Mar. 15, 1906. Used ten years.

STABLE MANURE SUBSTITUTE GUANO

The words STABLE MANURE SUBSTITUTE GUANO.

SER. No. 17,878. FERTILIZERS. AMERICAN FERTILIZING COMPANY, Norfolk, Va. Filed Mar. 15, 1906. Used ten years.

SEVEN PER CENT (7%) AMMONIA

The words, figure and characters "SEVEN PER CENT (7%) AMMONIA."

SER. No. 17,879. FERTILIZERS. AMERICAN FERTILIZING COMPANY, Norfolk, Va. Filed Mar. 15, 1906. Used ten years.

TEN PER CENT (10%) AMMONIA

The words, figures and characters "TEN PER CENT (10%) AMMONIA."

SER. No. 17,890. FERTILIZERS. BIRMINGHAM FERTILIZER COMPANY, Birmingham, Ala. Filed Mar. 15, 1906.

KEYSTONE



The word "KEYSTONE" and the representation of a keystone.

SER. No. 17,942. WHISKY. BACHTOLD & ACKERMANN, Walla Walla, Wash. Filed Mar. 16, 1906.



The words "WHITE CLOUD" and the monogram "B & A."

SER. No. 17,945. POISONOUS PREPARATION FOR EXTERMINATING ROACHES, BUGS, AND OTHER INSECTS. IRON CITY CHEMICAL CO., Pittsburg, Pa. Filed Mar. 16, 1906.

Bugine

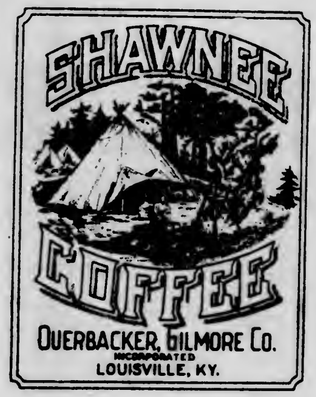
The word BUGINE.

SER. No. 17,980. SKIN-LOTIONS IN LIQUID AND PASTE FORM. AMERICAN PEROXIDE & CHEMICAL CO., New York, N. Y. Filed Mar. 17, 1906.

FLORAFOAM

The word FLORAFOAM.

SER. No. 18,019. COFFEE. QUERBACKER, GILMORE CO., Louisville, Ky. Filed Mar. 19, 1906.



A picture of a landscape or forest scene with a large tent in the foreground and other tents and trees in the background and with an Indian woman in front of the foreground tent kneeling at a stone and facing a kettle suspended from a tripod over a blazing fire. Above the picture is the word SHAWNEE arranged in a curved line, and below the picture are the words COFFEE, arranged in a curved line, and QUERBACKER, GILMORE CO., INCORPORATED LOUISVILLE, KY.

SER. No. 18,079. VISES AND PARTS OF VISES. THE COLUMBIAN HDW. CO., Cleveland, Ohio. Filed Mar. 21, 1906. Used ten years.

SER. No. 18,079.

TRENTON

The word TRENTON.

SER. No. 18,084. DANDRUFF CURE AND SCALP-INVIGORATOR. JOHN B. TATREAU, San Jose, Cal. Filed Mar. 21, 1906.

RO-ME-TA

The word RO-ME-TA.

SER. No. 18,085. REMEDY FOR CONSUMPTION. JOHN NIKERHAUS, Baltimore, Md. Filed Mar. 21, 1906.

H&N

The letters H & N.

SER. No. 18,109. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.: Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 22, 1906.

V. C. C. CO'S FRUIT & VINE

The letters, abbreviation, words and character "V. C. C. Co's FRUIT & VINE."

SER. No. 18,130. WHISKY. ADAM BAUM & SONS, Philadelphia, Pa. Filed Mar. 22, 1906.

Baumore

The word "BAUMORE."

SER. No. 18,144. BELT-FASTENERS FOR BELTS FOR DRIVING MACHINERY. CLARA S. EATON, New York, N. Y. Filed Mar. 23, 1906.

Crescent

The word CRESCENT.

SER. No. 18,141. HAIR AND SKIN TONICS. HUTCHINS PHARMACAL COMPANY, St. Louis, Mo. Filed Mar. 22, 1906.



The words HUTCHINS TONIC, and the monogram C H shown upon a dark-colored square having a white line extending around it near its outer edge, the words "HUTCHINS" and "TONIC" being shown upon a light background.

SER. No. 18,158. RAT, VERMIN, AND INSECT DESTROYER OR EXTERMINATOR. HENRY C. SPETZLER, Baltimore, Md. Filed Mar. 22, 1906.

OLIVE

The arbitrarily-employed word OLIVE.

SER. No. 18,182. REMEDY FOR HOG-CHOLERA AND KINDRED SWINE DISEASES. WILLIS E. VINCENT, Hutchinson, Kans. Filed Mar. 23, 1906.



The pictorial representation of a sunflower-bloom and two hogs arranged respectively at opposite sides of the bloom and facing in opposite directions, combined with the word VINCENT'S above the picture, and the alliteral expression "KANSAS KOLERA KURE" appearing within the field of the sunflower.

SER. No. 18,186. EYEWATER. FRANK MOSMAN JONES, Lockport, N. Y. Filed Mar. 23, 1906.



The words BLIND MAN'S FRIEND, and the representation of a youth leading a blind older person.

SER. No. 18,278. LAXATIVE MEDICINES. FREDERICK AUGUST LUTTIES, St. Louis, Mo. Filed Mar. 26, 1906.

COLA-LAX.

The word COLA-LAX.

SER. No. 18,270. NEWSPAPERS. CHARLES P. DAVIS, Agawam, Mass. Filed Mar. 26, 1906.

CURRENT EVENTS

The words "CURRENT EVENTS."

SER. No. 18,282. BRUSHES OF ALL KINDS FOR CLEANING AND TOILET PURPOSES. HENDEE WIRE BRUSH CO., Milwaukee, Wis. Filed Mar. 26, 1906. Used ten years.

HENDEE

The word HENDEE.

SER. No. 18,285. PREPARATION FOR SKIN AND FLESH FOOD. DR. CHARLES CO., New York, N. Y. Filed Mar. 27, 1906.



The portrait or facial representation of Dr. Alphonse Charles (now deceased) inclosed within a square ornamental border, with a similarly-shaped and ornamental border inclosing the words "DR. CHARLES FLESH FOOD."

SER. No. 18,287. FACE-POWDER. DR. CHARLES CO., New York, N. Y. Filed Mar. 27, 1906.



The portrait or facial representation of Dr. Alphonse Charles (now deceased) inclosed within a circular ornamental border, with the words "DR. CHARLES FACE POWDER" also inclosed within a similar circular ornamental border.

SER. No. 18,290. WEEKLY NEWSPAPERS. NORDSTJERNAN PUBLISHING CO., New York, N. Y. Filed Mar. 27, 1906.

NORDSTJERNAN.

The word "NORDSTJERNAN."

SER. No. 18,328. LAXATIVE PREPARATION. JAMES L. SPEIGHTS, Baltimore, Md. Filed Mar. 29, 1906.

Mo-Mo

The word Mo-Mo.

SER. No. 18,346. DRESS-SHIRTS. JOSEPH LOEWY, New York, N. Y. Filed Mar. 29, 1906.



The words "THE COMET" and the representation of a comet.

SER. No. 18,347. VIOLINS OF ALL KINDS, BOWS, STRINGS, PEGS, AND OTHER PARTS OF VIOLINS. BUEGFLEISEN & JACOBSON, New York, N. Y. Filed Mar. 29, 1906.

DURRO

The arbitrarily-selected word DURRO.

SER. No. 18,405. QUEBRACHO EXTRACT. A. KLIPSTEIN & COMPANY, New York, N. Y. Filed Mar. 31, 1906.

ARGAM

The word ARGAM.

SER. NO. 18,385. REMEDY FOR THE CURE OF ECZEMA, FRECKLES, HARD SKIN, BARBER'S ITCH, RINGWORM, TOE-ITCH, SWEATY FEET, SCURVY, AND ALL SKIN DISEASES, AND FOR THE CURE OF DANDRUFF. JAMES T. MANKIN, Mangum, Okla. Filed Mar. 31, 1906.



The bust portrait of the applicant, James T. Mankin.

SER. NO. 18,407. POISON FOR THE EXTERMINATION OF RATS AND MICE. WILLIAM PETERMAN, New York, N. Y. Filed Mar. 31 1906. Used ten years.

PETERMAN'S RATMOUSE FOOD

The words PETERMAN'S RATMOUSE FOOD.

SER. NO. 18,421. ROUND OR OBLONG PIECE OF CANDY ATTACHED TO A STICK. JOHN F. BIRKMEYER & SONS, Baltimore, Md. Filed Apr. 2, 1906. Used ten years.

ALL DAY SUCKER

The words ALL DAY SUCKER on a contrasting background.

SER. NO. 18,430. MONTHLY MAGAZINES. THE INLAND PRINTER COMPANY, Chicago, Ill. Filed Apr. 2, 1906.

the INLAND PRINTER

The words "THE INLAND PRINTER."

SER. NO. 18,539. CALICO PRINTS. PASSAIC PRINT WORKS, Passaic, N. J. Filed Apr. 5, 1906.

PASSAIC

The figure of a Greek cross upon which is shown the word PASSAIC, the whole surrounded by a circular border.

SER. NO. 18,550. LUMP-STARCH. SPRAGUE, WARNER & COMPANY, Chicago, Ill. Filed Apr. 5, 1906.

MONSOON

The arbitrarily-selected word "MONSOON."

SER. NO. 18,551. FISHING-REELS. ASHER KLEINMAN, New York, N. Y. Filed Apr. 5, 1906.



The letters A K so joined as to form a monogram.

SER. NO. 18,614. SMOKING-TOBACCO. THE J. F. ZAHM TOBACCO CO., Toledo, Ohio. Filed Apr. 9, 1906.

OLD COMFORT

The words OLD COMFORT.

SER. NO. 18,627. CALICO PRINTS. PASSAIC PRINT WORKS, Passaic, N. J. Filed Apr. 9, 1906. Used ten years.

PASSAIC

The word "PASSAIC."

SER. NO. 18,657. GINGER-ALE, SARSAPARILLA, AND OTHER SWEETENED AND FLAVORED NON-ALCOHOLIC CARBONATED BEVERAGES. EQUINOX COMPANY, Manchester, Vt. Filed Apr. 10, 1906. Used ten years.



A circular field containing the representation of a Maltese cross bearing the word EQUINOX in cross form and a smaller Maltese cross inclosed in concentric circles.

SER. NO. 18,676. WRITING-INK. YOSHI TAMAKI, San Francisco Cal. Filed Apr. 10, 1906.

PRESTO

The word PRESTO.

SER. NO. 18,683. COFFEE. C. F. BLANKE TEA & COFFEE CO., St. Louis, Mo. Filed Apr. 11, 1906. Used ten years.

EXPOSITION



The word EXPOSITION associated with the picture of an exposition building.

SER. NO. 18,687. LEATHER BELTING. BALTIMORE BELTING COMPANY, Baltimore, Md. Filed Apr. 11, 1906.



The representation of a tiger's head placed within a circle, the words "TIGER TAN LEATHER" above and bordering on without the circle, the words "THE STRONGEST IN THE WORLD" bordering on and below the circle, together with the words and abbreviations "BALTIMORE BELTING CO., SOLE MF'G'R'S." placed below them.

SER. NO. 18,688. LEATHER BELTING. BALTIMORE BELTING COMPANY, Baltimore, Md. Filed Apr. 11, 1906.

BALTOBELT.

The word BALTOBELT.

SER. NO. 18,708. MAGAZINES. COLONIAL PRESS, Boston, Mass. Filed Apr. 11, 1906.

SUBURBAN LIFE

The words "SUBURBAN LIFE."

SER. NO. 18,726. COFFEE. WEST SIDE ROASTING AND MILLING COMPANY, New York, N. Y. Filed Apr. 12, 1906.

DANDY CUP

The words "DANDY CUP."

SER. NO. 18,739. HAIR-CLOTH. GORDON BROTHERS, Philadelphia, Pa. Filed Apr. 12, 1906.



The pictorial representation of three horses' heads, commonly known as "PHARAOH'S HORSES," together with a monogram of the letters "G B" and the words "WARRANTED STRICTLY PURE HORSE HAIR," which are arranged in a circle surrounding the picture.

SER. NO. 18,812. YEAST IN SOLID FORM. VIENNA PRESSED YEAST COMPANY, New York, N. Y. Filed Apr. 14, 1906. Used ten years.

Pressed Yeast

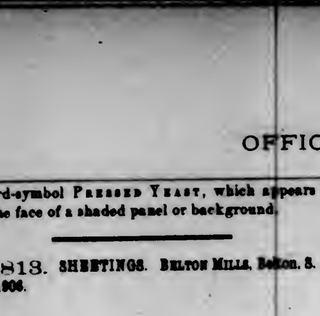
The word-symbol PRESSED YEAST, which appears in bold type across the face of a shaded panel or background.

SER. No. 18,813. SHEETINGS. BELTON MILLS, Belton, S. C. Filed Apr. 14, 1906.



The representation of a boy, girl and goat adjacent a tree, the boy holding a cup near the lips of the girl.

SER. No. 18,840. COFFEE IN THE BEAN. FREDERICK H. BEIMES, St. Louis, Mo. Filed Apr. 16 1906.



The words "EVERY DAY" surrounded by the representation of a horseshoe, all inclosed in a circular field.

SER. No. 18,881. DYED AND PRINTED ALL-WOOL AND COTTON-WARP PIECE GOODS AND DYED AND PRINTED COTTON-PIECE GOODS. PACIFIC MILLS, Lawrence, Mass. Filed Apr. 17, 1906. Used ten years.

PACIFIC MILLS

The words "PACIFIC MILLS."

SER. No. 18,910. MOPS, MOP-HEADS, AND MOP PARTS. MASSACHUSETTS ASSOCIATION FOR PROMOTING THE INTERESTS OF THE ADULT BLIND, Boston, Mass. Filed Apr. 18, 1906.

SER. No. 18,910.

WUNDERMOP

The word WUNDERMOP.

SER. No. 18,947. WEEKLY NEWSPAPER OF GENERAL INTEREST. WM. HY MAULE, Philadelphia, Pa. Filed Apr. 20, 1906. Used ten years.



The words THE PRACTICAL FARMER, the whole being inclosed within an ornamental border.

SER. No. 18,998. HYDROCARBON ILLUMINATING-OILS. THE KERREW-BRADLEY COMPANY, Boston, Mass. Filed Apr. 23, 1906. Used ten years.

MINERAL SPERM OIL

The words MINERAL SPERM OIL.

SER. No. 19,017. LEATHER BOOTS AND SHOES. FRED F. FIELD COMPANY, Brockton, Mass. Filed Apr. 23, 1906.

The words FRENZIED FASHION.

SER. No. 19,023. MAGAZINE OR PERIODICAL. THE W. F. T. BURRELL COMPANY, Aberdeen, S. D. Filed Apr. 23, 1906. Used ten years.

SER. No. 19,023.

THE DAKOTA FARMER

The words THE DAKOTA FARMER.

SER. No. 19,025. VINEGAR. THE M. A. GEDNEY PICKLING CO., Minneapolis, Minn. Filed Apr. 23, 1906.

AMBER CANE

The words AMBER CANE.

SER. No. 19,043. TOILET-PAPER. SCOTT PAPER CO., Philadelphia, Pa. Filed Apr. 25, 1906.



The words "HOM USE" on a ground surrounded by an ornamental border with the representation in the border below said words of a seal containing within a circle a roll of paper surcharged with the monogram S P Co and a wreath.

SER. No. 19,044. TOILET-PAPER. SCOTT PAPER CO., Philadelphia, Pa. Filed Apr. 25, 1906.



The word FINO with a seal below on a rectangle of radiating lines, said seal having within a circle a roll of paper surcharged with the monogram "S P Co" and a wreath, and the representation of two wings springing from said seal and embracing said word "FINO."

SER. No. 19,045. DRESS-SHIELDS. THE STORK COMPANY, Boston, Mass. Filed Apr. 25, 1906.



The word STORK associated with the representation of a stork.

SER. No. 19,056. PERIODICAL JOURNALS FOR INVESTORS, OPERATORS, AND SPECULATORS. THE CRITIC PUBLISHING COMPANY, Colorado Springs, Colo. Filed Apr. 25, 1906.

THE MINING INVESTOR.

The words or phrase "THE MINING INVESTOR."

SER. No. 19,066. TALKING-MACHINES AND PARTS THEREOF. VICTOR TALKING MACHINE COMPANY, Camden, N. J. Filed Apr. 25, 1906.

VICTOR

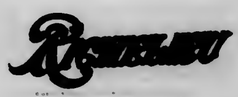
The word VICTOR.

SER. No. 19,070. TEA. SPRAGUE, WARNER & COMPANY, Chicago, Ill. Filed Apr. 25, 1906.



The selected word "HYDRANGEA" accompanied by the representation of a branch of the hydrangea-plant in bloom, together with leaves thereof.

SER. No. 19,071. HAM AND BACON. SPRAGUE, WARNER & COMPANY, Chicago, Ill. Filed Apr. 25, 1906.



The arbitrarily-selected word "RICHELIEU."

SER. No. 19,081. MAGAZINE OR PERIODICAL. RELIABLE POULTRY JOURNAL PUBLISHING CO., Quincy, Ill. Filed Apr. 26, 1906. Used ten years.

RELIABLE POULTRY JOURNAL

The words RELIABLE POULTRY JOURNAL.

SER. No. 19,114. COFFEE. REILY, TAYLOR & CO., LTD., New Orleans, La. Filed Apr. 27, 1906.

LUZIANNE

The word "LUZIANNE."

SER. No. 19,113. LEATHER BOOTS, SHOES, AND SLIPPERS PARKER HOLMES AND COMPANY, Boston, Mass. Filed Apr. 27, 1906.

Art Master

A representation of a wax-seal having thereon an impression composed of two concentric rings and having inside the inner ring a shield-shaped figure with diagonal intersecting bars thereon, each bar containing the words, ART MASTER, the middle letter "A" being common to the words on both bars. On top of the shield there are represented two shoes, the toes of the shoes being pointed toward each other. In conjunction with the representation of the seal, are the words ART MASTER in script.

SER. No. 19,143. WHEAT-FLOUR. CHARLES L. ANDERSON, Denver, Colo. Filed Apr. 28, 1906.

SER. No. 19,143.

FAIRY QUEEN



The words FAIRY QUEEN, and the representation of a fairy queen sitting on some filled sacks and holding aloft a fairy's wand.

SER. No. 19,147. SADDLES. ROBERT T. FRAZIER, Pueblo, Colo. Filed Apr. 28, 1906. Used ten years.

PUEBLO

The word PUEBLO.

SER. No. 19,180. SHOE POLISH OR BLACKING. PHILIPP BAUER CO., New York, N. Y. Filed Apr. 30, 1906.

Sondulin

The fanciful word "SONDULIN," which appears upon a blue panel above which appears a portion of a red disk from which rays of light radiate, the said matter appearing across a circular band or seal-like border.

SER. No. 19,183. WATCHES, WATCHCASES, AND WATCH-MOVEMENTS. THE KEYSTONE WATCH CASE CO., Philadelphia, Pa. Filed Apr. 30, 1906.

CARMEN

The word CARMEN.

SER. No. 19,191. CARAMELS. BLANKE-WENNEKER CANDY COMPANY, St. Louis, Mo. Filed Apr. 30, 1906.

SER. No. 19,191.

Nadja

The word NADJA.

SER. No. 19,197. WHEAT-FLOUR. THE NEW ERA MILLING COMPANY, Arkansas City, Kans. Filed Apr. 30, 1906.

OSO BLANCO



The words "OSO BLANCO" and the representation of a polar bear standing on an ice-floe.

SER. No. 19,224. STOVES, RANGES, AND FURNACES. THE PITTSBURGH HARDWARE & HOME SUPPLY COMPANY, Pittsburg, Pa. Filed May 2, 1906.



The representation of a shield having eagles and the words "IRON CITY" appearing thereon.

SER. No. 19,248. ROOFING, SHEATHING, WATERPROOFING, AND BUILDING FELT. BARRETT MANUFACTURING COMPANY, New York, N. Y. Filed May 2, 1906. Used ten years.

SER. No. 19,248.

DIAMOND

The word DIAMOND.

SER. No. 19,257. CANTALOUPES. A. F. YOUNG & CO., New York, N. Y. Filed May 3, 1906



The initials, "A," "F," Y," the character, "&," and the abbreviation "Co." distributed around the body of a star, and separated one from another by the five points of said star.

SER. No. 19,312. COFFEE. THE WOOLSON SPICE CO., Toledo, Ohio. Filed May 5, 1906.

SABO

The word SABO.

SER. No. 19,373. WIRE ROPE. BRODERICK & BASCOM ROPE CO., St. Louis, Mo. Filed May 8, 1906.



A yellow stripe of uniform width spirally disposed around the surface of wire rope.

SER. No. 19,383. COFFEE. NAVE-MCCORD MERCANTILE COMPANY, St. Joseph, Mo. Filed May 9, 1906.

FRONTIER

The word "FRONTIER."

SER. No. 19,384. COFFEE. NAVE McCORD MERCANTILE COMPANY, St. Joseph, Mo. Filed May 9, 1906.

GOOD CHEER

The words "GOOD CHEER."

SER. No. 19,550. WHISKY. THE UNION DIST'L'G CO., Cincinnati, Ohio. Filed May 15, 1906.



The words "OLD EAGLE" and the design of an eagle with three arrows in its claws.

SER. No. 19,585. ALE, PORTER, AND BROWN STOUT. D. G. YUENGLING & SON, Pottsville, Pa. Filed May 16, 1906.



The representation of an eagle with wings outstretched resting with one foot upon a rock and the other upon a keg bearing the letters and character "Y & S."

SER. No. 19,586. BEER. D. G. YUENGLING & SON, Pottsville, Pa. Filed May 16, 1906.



The representation of an eagle with wings outstretched resting with one foot upon a rock and the other upon a keg bearing the letters and character Y & S.

SER. No. 20,000. LEATHER-SHOES. SEAROOD SHOE CORP., St. Paul, Minn. Filed June 2, 1906.



The letters "R E - Z" arranged on a shaded background.

PHOTO-LITHOGRAPHED BY
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224 FOURTH AVENUE N.Y.
NEW YORK

TRADE-MARKS

REGISTERED JUNE 26, 1906.

54,224. SWEEPING COMPOUNDS. GEORGE E. CAVE, Chicago, Ill.
The word "DUST-TO-GO."
Filed December 22, 1905. Serial No. 15,594. PUBLISHED MAY 1, 1906.

54,225. COLLARS. CLUETT PEABODY & Co., Troy, N. Y.
The word "ALGONA."
Filed March 24, 1906. Serial No. 18,228. PUBLISHED MAY 1, 1906.

54,226. COLLARS. CLUETT PEABODY & Co., Troy, N. Y.
The word "LAKOTA." Used ten years.
Filed March 24, 1906. Serial No. 18,229. PUBLISHED MAY 1, 1906.

54,227. COLLARS. CLUETT PEABODY & Co., Troy, N. Y.
The word "CANTARA."
Filed March 24, 1906. Serial No. 18,230. PUBLISHED MAY 1, 1906.

54,228. COLLARS. CLUETT PEABODY & Co., Troy, N. Y.
The word "CINCO."
Filed March 24, 1906. Serial No. 18,231. PUBLISHED MAY 1, 1906.

54,229. COLLARS. CLUETT PEABODY & Co., Troy, N. Y.
The word "VALDORA."
Filed March 24, 1906. Serial No. 18,232. PUBLISHED MAY 1, 1906.

54,230. COLLARS. CLUETT PEABODY & Co., Troy, N. Y.
The word "AMOLEK."
Filed March 24, 1906. Serial No. 18,233. PUBLISHED MAY 1, 1906.

54,231. COLLARS. CLUETT PEABODY & Co., Troy, N. Y.
The word "HURLSTON." Used ten years.
Filed March 24, 1906. Serial No. 18,234. PUBLISHED MAY 1, 1906.

54,232. COLLARS. CLUETT PEABODY & Co., Troy, N. Y.
The word "CANTAB." Used ten years.
Filed March 24, 1906. Serial No. 18,235. PUBLISHED MAY 1, 1906.

54,233. COLLARS. CLUETT PEABODY & Co., Troy, N. Y.
The word "ANCOVER."
Filed March 24, 1906. Serial No. 18,236. PUBLISHED MAY 1, 1906.

54,234. UNDERWAISTS FOR WOMEN AND CHILDREN. THOMAS B. FITZPATRICK, Boston, Mass.
The letters "E Z," with which is associated the word "EASY," appearing between said letters.
Filed January 5, 1906. Serial No. 15,925. PUBLISHED MAY 1, 1906.

54,235. SUSPENSORY BANDAGES. JOHNSON & JOHNSON, New Brunswick, N. J.
The words "LONG LIFE." Used ten years.
Filed October 28, 1905. Serial No. 13,997. PUBLISHED MAY 1, 1906.

54,236. COTTON THREAD. JONAS BROOK & BROS., LIMITED, Meltham, England.
A collocation composed of two concentric circles separated so as to form a band, within which appear the words, letter, character, and abbreviation "J. BROOK & BROS., MELTHAM MILLS," leaving a circular central space, within which appear figures and letters indicating the length of the thread. Used ten years.
Filed October 17, 1905. Serial No. 13,698. PUBLISHED MAY 1, 1906.

54,237. COATS, VESTS, OVERCOATS, AND TROUSERS. SCHWAB CLOTHING CO., St. Louis, Mo.
A rectangular panel bearing the name "SCHWAB ST. LOUIS."
Filed December 18, 1905. Serial No. 15,476. PUBLISHED MAY 1, 1906.

54,238. LAWN-MOWERS. SUPPLEE HARDWARE COMPANY, Philadelphia, Pa.
The words "QUAKER CITY." Used ten years.
Filed October 21, 1905. Serial No. 13,819. PUBLISHED MAY 1, 1906.

54,239. WATCHES. WEBSTER C. HALL, Cleveland, Ohio.
The word "COMMERCIAL."
Filed September 2, 1905. Serial No. 12,176. PUBLISHED MAY 1, 1906.

54,240. GLASS-CUTTERS. WILLIAM L. BARRETT, Bristol, Conn.
The characters "I. X. L."
Filed December 12, 1905. Serial No. 15,357. PUBLISHED MAY 1, 1906.

54,241. PILLS. JOSEPH BEECHAM, St. Helens, England.
Two ellipses, between which are the name "BEECHAM" and address "ST. HELENS LANCASHIRE." At the lower end of the ellipses is a tassel. In the center portion of the mark are the words "PATENT PILLS." Used ten years.
Filed January 26, 1906. Serial No. 16,526. PUBLISHED MAY 1, 1906.

54,242. PILLS. JOSEPH BEECHAM, St. Helens, England.
The words "BEECHAM'S PILLS." Used ten years.
Filed January 26, 1906. Serial No. 16,527. PUBLISHED MAY 1, 1906.

54,243. RIBBONS. SAMUEL EISEMAN & COMPANY, New York, N. Y.
The word "RADIUM."
Filed December 29, 1905. Serial No. 15,757. PUBLISHED FEBRUARY 6, 1906.

54,244. SAWS. HENRY DISSTON & SONS, INCORPORATED, Philadelphia, Pa.
The letter "D."
Filed October 31, 1905. Serial No. 14,106. PUBLISHED MAY 1, 1906.

54,245. SAWS. HENRY DISSTON & SONS, INCORPORATED, Philadelphia, Pa.
The word "CENTENNIAL," in connection with the number "76" in quotation-marks.
Filed October 31, 1905. Serial No. 14,117. PUBLISHED MAY 1, 1906.

54,246. KNIVES AND RAZORS. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill.
The word "AJAX" and the representation of the bust of Ajax wearing a helmet and holding in one hand a Grecian sword, all surrounded by an annular strap bearing the name "HIBBARD SPENCER BARTLETT & Co."
Filed October 21, 1905. Serial No. 13,845. PUBLISHED MAY 1, 1906.

54,247. BICYCLES, TRICYCLES, VELOCIPEDES, AND PARTS THEREOF. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill.
The word "AJAX" and the representation of the bust of Ajax wearing a helmet and holding in one hand a Grecian sword, all surrounded by an annular strap bearing the name "HIBBARD SPENCER BARTLETT & Co."

Filed October 21, 1905. Serial No. 13,849. PUBLISHED MAY 1, 1906.

54,248. LEATHER SHOES. JAMES MEANS COMPANY, Kittery, Me.
The words "JAMES MEANS." Used ten years.
Filed August 19, 1905. Serial No. 11,793. PUBLISHED MAY 1, 1906.

54,249. SUSPENSORY BANDAGES. JOHNSON & JOHNSON, New Brunswick, N. J.
A representation of a red Greek cross. Used ten years.
Filed October 28, 1905. Serial No. 13,998. PUBLISHED MAY 1, 1906.

54,250. SOLDER. NATIONAL LEAD COMPANY, Jersey City, N. J., and New York, N. Y.
A representation of a lizard or chameleon.
Filed November 8, 1905. Serial No. 14,418. PUBLISHED MAY 1, 1906.

54,251. EDUCATIONAL BOOKS FOR RAILWAY EMPLOYEES. THE RAILWAY EDUCATIONAL ASSOCIATION, New York, N. Y.
The words "THE RAILWAY CORRESPONDENCE SCHOOL," associated with a view of a locomotive, a front view of which is contained within the letter "C" of the word "CORRESPONDENCE."
Filed August 19, 1905. Serial No. 11,805. PUBLISHED MAY 1, 1906.

54,252. VEGETABLE-FIBER ROPE, CORD, AND TWINE. RICHMOND ROCHESTER, New York, N. Y.
The word "NYCORD."
Filed November 23, 1905. Serial No. 14,921. PUBLISHED MAY 1, 1906.

54,253 WOVEN AND KNITTED UNDERWEAR. GEO. WM. SCHLICHTEN, New York, N. Y.
A steering-wheel upon which is a foul anchor at the center of concentric circles, the outer of which is of cable and the inner of which is shaded and between which appear the initials "C. T." and a star, and between the inner of which and the steering-wheel appear the letters "C C T T."
Filed January 10, 1906. Serial No. 16,087. PUBLISHED MAY 1, 1906.

54,254. LAWN-MOWERS. SUPPLEE HARDWARE COMPANY Philadelphia, Pa.
The words "GREAT AMERICAN." Used ten years.
Filed October 21, 1905. Serial No. 13,822. PUBLISHED MAY 1, 1906.

54,255. LAWN-MOWERS. SUPPLEE HARDWARE COMPANY, Philadelphia, Pa.
The word "CONTINENTAL." Used ten years.
Filed October 21, 1905. Serial No. 13,823. PUBLISHED MAY 1, 1906.

54,256. SHOE-PINCERS. FRANK W. WHITCHER, Boston, Mass.
The word "KNELL" inclosed in quotation-marks.
Filed December 14, 1905. Serial No. 15,417. PUBLISHED MAY 1, 1906.

54,257. GUARDS FOR MOWERS, BINDERS, HARVESTERS, AND HEADERS. THE WHITMAN & BARNES MANUFACTURING COMPANY, Akron, Ohio.
A representation of a diamond-shaped figure with the letters and character "W & B Co" placed in the respective corners thereof.
Filed November 14, 1905. Serial No. 14,592. PUBLISHED MAY 1, 1906.

54,258. LAWN-MOWERS. THE WHITMAN & BARNES MANUFACTURING COMPANY, Akron, Ohio.
A representation of a diamond-shaped figure with the letters and character "W & B Co" placed in the respective corners thereof.
Filed November 14, 1905. Serial No. 14,595. PUBLISHED MAY 1, 1906.

54,259. WRENCHES. THE WHITMAN & BARNES MANUFACTURING COMPANY, Akron, Ohio.
The words "RAILROAD SPECIAL."
Filed November 16, 1905. Serial No. 14,713. PUBLISHED MAY 1, 1906.

54,260. SPRING-COTTERS. THE WHITMAN & BARNES MANUFACTURING COMPANY, Akron, Ohio.
A representation of a diamond-shaped figure with the letters and character "W & B Co" placed in the respective corners thereof.
Filed November 16, 1905. Serial No. 14,715. PUBLISHED MAY 1, 1906.

54,261. BLEACHED, UNBLEACHED, DYED, AND PRINTED TEXTILE FABRICS. A. G. HYDE & SONS, New York, N. Y.
The word "HYDEGRADE."
Filed February 23, 1906. Serial No. 17,243. PUBLISHED MAY 1, 1906.

54,262. SOFT-RUBBER BULB AND FOUNTAIN SYRINGES. AMERICAN HARD RUBBER CO., New York, N. Y.
The word "CROWN."
Filed May 11, 1905. Serial No. 5,165. PUBLISHED MAY 1, 1906.

54,263. HAIR-DRESSING. J. B. CLÉMENT BALME, New York, N. Y.
The word "SOUPLINE."
Filed December 11, 1905. Serial No. 15,331. PUBLISHED MAY 1, 1906.

54,264. CORN AND BUNION PLASTERS. BAUER & BLACK, Chicago, Ill.
The phrase "MAKE HARD ROADS EASY."
Filed January 29, 1906. Serial No. 16,587. PUBLISHED MAY 1, 1906.

54,265. STATIONARY WASHBASINS. THE CAHILL IRON WORKS, Chattanooga, Tenn.
The words "SOUTHERN BEAUTY" and a pictorial representation of a lady standing before a washstand and a mirror.
Filed February 26, 1906. Serial No. 17,366. PUBLISHED MAY 1, 1906.

54,266. NON-ALCOHOLIC SOLUTIONS OF IRON-MANGANESE-PEPTONE. CHEMISCHE FABRIK HELFENBERG, A. G. VORM. E. DIETERICH, Halfenberg, Germany.
The word "BLUTAN."
Filed June 2, 1905. Serial No. 7,271. PUBLISHED MAY 1, 1906.

54,267. COLLARS. CLUETT PEABODY & CO., Troy, N. Y.
The word "BISCAY." Used ten years.
Filed March 24, 1906. Serial No. 18,221. PUBLISHED MAY 1, 1906.

54,268. COLLARS. CLUETT PEABODY & CO., Troy, N. Y.
The word "MEYRICK."
Filed March 24, 1906. Serial No. 18,222. PUBLISHED MAY 1, 1906.

54,269. COLLARS. CLUETT PEABODY & CO., Troy, N. Y.
The word "DONARA."
Filed March 24, 1906. Serial No. 18,223. PUBLISHED MAY 1, 1906.

54,270. COLLARS. CLUETT PEABODY & CO., Troy, N. Y.
The word "TABHURST." Used ten years.
Filed March 24, 1906. Serial No. 18,224. PUBLISHED MAY 1, 1906.

54,271. COLLARS. CLUETT PEABODY & CO., Troy, N. Y.
The word "BROCKLY."
Filed March 24, 1906. Serial No. 18,226. PUBLISHED MAY 1, 1906.

54,272. COLLARS. CLUETT PEABODY & CO., Troy, N. Y.
The word "TYBURN." Used ten years.
Filed March 24, 1906. Serial No. 18,227. PUBLISHED MAY 1, 1906.

54,273. FINGER-NAIL POLISH. DR. J. PARKER PRAY COMPANY, LIMITED, New York, N. Y.
The word "DIAMOND."
Filed May 13, 1905. Serial No. 5,533. PUBLISHED MAY 1, 1906.

54,274. ANALGESIC AND SEDATIVE. THE DR. MILES MEDICAL CO., Elkhart, Ind.
The words "ANTI-PAIN PILLS." Used ten years.
Filed April 28, 1905. Serial No. 3,427. PUBLISHED MAY 1, 1906.

54,275. SALVE FOR THE TREATMENT OF SORE EYES. THE E. E. SUTHERLAND MEDICINE CO., Paducah, Ky.
The arbitrary words "EAGLE EYE."
Filed April 21, 1905. Serial No. 2,631. PUBLISHED MAY 1, 1906.

54,276. OIL OF ORANGE, OIL OF BERGAMONT, AND OIL OF LEMON. GEORGE LUEDERS & CO., New York, N. Y.
The word "VERA."
Filed February 3, 1906. Serial No. 16,722. PUBLISHED MAY 1, 1906.

54,277. SHEET-MUSIC, MUSIC-INSTRUCTION BOOKS, AND OPERA-SCORES. GUS EDWARDS MUSIC PUBLISHING CO., New York, N. Y.
The representation of a sign-board upon which are represented a staff of musical notation on a scroll, a song-bird on a tree-bough, and the words "THE HOUSE MELODIOUS."
Filed November 3, 1905. Serial No. 14,252. PUBLISHED MAY 1, 1906.

54,278. HEATING AND COOKING APPLIANCES. H. ADLER COMPANY, Carnegie, Pa., and Kansas City, Mo.
The word "ACME."
Filed February 13, 1906. Serial No. 16,978. PUBLISHED MAY 1, 1906.

54,279. SHIRTS, COLLARS, AND CUFFS. HALL HARTWELL & CO., Troy, N. Y.
The words "PREMAKO SHRUNK."
Filed March 16, 1906. Serial No. 17,949. PUBLISHED MAY 1, 1906.

54,280. SAFES. HERRING-HALL-MARVIN SAFE COMPANY, Hamilton, Ohio, and New York, N. Y.
The word "SAFECRAFT."
Filed June 16, 1905. Serial No. 8,363. PUBLISHED MAY 1, 1906.

54,281. AUTOMOBILES. THE HOL-TAN COMPANY, New York, N. Y.
The word "FIAT."
Filed February 17, 1906. Serial No. 17,135. PUBLISHED MAY 1, 1906.

54,282. HAIR-BRUSHES. HENRY L. HUGHES, Chicago, Ill.
The word "IDEAL."
Filed June 26, 1905. Serial No. 9,048. PUBLISHED MAY 1, 1906.

54,283. REFRIGERATORS AND ICE-CHESTS. THE INDIANA MFG. COMPANY, Peru, Ind.
The words "NORTH STAR" and the representation of a star with the word "NORTH" appearing thereon.
Filed May 19, 1905. Serial No. 6,104. PUBLISHED MAY 1, 1906.

54,284. PERIODICAL. PAUL KRATZ, Louisville, Ky.
The name "BABY."
Filed February 26, 1906. Serial No. 17,372. PUBLISHED MAY 1, 1906.

54,285. LEATHER BOOTS AND SHOES. LYNCHBURG SHOE CO., Lynchburg, Va.
The words "RUNAWAY GIRL."
Filed November 13, 1905. Serial No. 14,546. PUBLISHED May 1, 1906.

54,286 MEDICINE FOR EPILEPSY. ANTHONY K. MANDIS, Washington, D. C.
A rectangular figure divided by a Greek cross, having its opposite arms equal, into four rectangular panels of equal size, said panels being blue in the label. In the horizontal arm of the cross appear the words "MEDICINE FOR EPILEPSY." Above the rectangular figure appears the word "TRISSELION." Below said figure are the words "ANTHONY K. MANDIS, WASHINGTON, D. C.;" also, in Greek characters the word "TRISSELION" and "ANTHONY K. MANDIS." On the right of the rectangular figure are the words "EPILEPSY MEDICINE" in Greek characters, and on the left of said figure are the words "EPILEPSY CURE," also in Greek characters.
Filed October 23, 1905. Serial No. 13,875. PUBLISHED MAY 1, 1906.

54,287. LEATHER BOOTS, SHOES, OXFORDS, SANDALS, AND SLIPPERS. MOORE-SHAFER SHOE MFG. CO., Brockport, N. Y.
The words "THE ULTRA."
Filed October 24, 1905. Serial No. 13,901. PUBLISHED MAY 1, 1906.

54,288. STENCIL-DUPLICATING MACHINES AND PARTS THEREOF. NEOSTYLE COMPANY, New York, N. Y.
The word "NEOSTYLE."
Filed May 18, 1905. Serial No. 5,927. PUBLISHED MAY 1, 1906.

54,289. LAMPS AND LANTERNS AND PARTS THEREOF. R. E. DIETZ COMPANY, New York, N. Y.
The word "MASTERPIECE."
Filed November 1, 1905. Serial No. 14,196. PUBLISHED MAY 1, 1906.

54,290. HOSIERY. RICE, STIX DRY GOODS COMPANY, St. Louis, Mo.
The word "LOUISE" and the pictorial representation of a woman attired in décolleté costume with flowing skirts descending a stairway. To her right appears a banister.
Filed April 2, 1906. Serial No. 18,427. PUBLISHED MAY 1, 1906.

54,291. HOSIERY. RICE, STIX DRY GOODS COMPANY, St. Louis, Mo.
The words "AMERICAN GENTLEMAN" and the pictorial representation of a young man attired in conventional street costume leaning against the corner of a box. His legs are crossed, the left arm akimbo and hand resting upon his side, his right hand raised, and a cigarette clasped between his fingers.
Filed April 2, 1906. Serial No. 18,428. PUBLISHED MAY 1, 1906.

54,292. LINIMENT. FRIEDRICH ADOLF RICHTER, Rudolstadt, Germany, and New York, N. Y.
The word "LOXOL."
Filed April 26, 1905. Serial No. 3,065. PUBLISHED MAY 1, 1906.

54,293 OINTMENT FOR THE COMPLEXION. JENNIE ROWELL, St. Louis, Mo.
The word "CLARIA."
Filed October 20, 1905. Serial No. 13,783. PUBLISHED MAY 1, 1906.

54,294. COPYING, INDELIBLE, AND WRITING INKS. S. S. STAFFORD, INC., New York, N. Y.
The word "STAFFORD'S." Used ten years.
Filed October 12, 1905. Serial No. 13,523. PUBLISHED MAY 1, 1906.

54,295. LINIMENT. EARL S. SLOAN, Boston, Mass.
A panel bearing the portrait of the applicant and facsimile signature and the words "SLOAN'S NERVE & BONE LINIMENT" and other words descriptive of the goods and the applicant's place of business. Used ten years.
Filed May 22, 1905. Serial No. 6,265. PUBLISHED MAY 1, 1906.

54,296. COTTON PIECE GOODS. TREMONT & SUFFOLK MILLS, Lowell, Mass.
The arbitrarily-selected word "CROYDON." Used ten years.
Filed May 10, 1905. Serial No. 4,966. PUBLISHED MAY 1, 1906.

54,297. PAPER BAGS. THE UNION BAG & PAPER COMPANY, New York, N. Y.
The arbitrary word "EMPIRE."
Filed February 14, 1906. Serial No. 17,011. PUBLISHED MAY 1, 1906.

54,298. MACHINES FOR EXHIBITING ADVERTISING AND DISPLAY MATTER. FLORENCE E. VAN DEUSEN, New York, N. Y.
The hyphenated word "PAY-U-GRAFT" arranged within a scroll.
Filed February 20, 1906. Serial No. 17,205. PUBLISHED MAY 1, 1906.

54,299. STEEL. S. & C. WARDLOW, New York, N. Y.
The word "WARDLOW'S." Used ten years.
Filed March 29, 1906. Serial No. 18,345. PUBLISHED MAY 1, 1906.

54,300. FEED-WATER HEATERS. WHEELER CONDENSER & ENGINEERING CO., New York, N. Y.
The word "WHEELER." Used ten years.
Filed February 23, 1906. Serial No. 17,298. PUBLISHED MAY 1, 1906.

54,301. COTTON PIECE GOODS. YORK MANUFACTURING CO., Saco, Me.
The words "MYSTIC RIVER," associated with a conventional scroll figure. Used ten years.
Filed May 11, 1905. Serial No. 5,268. PUBLISHED MAY 1, 1906.

54,302. MEDICINAL PLASTERS. ALLCOCK MANUFACTURING Co., New York, N. Y.

A facsimile signature of B. Brandreth, deceased. Used ten years.

Filed June 27, 1905. Serial No. 9,248. PUBLISHED MAY 1, 1906.

54,303. PILLS. ALLCOCK MANUFACTURING Co., New York, N. Y.

A collocation composed of two groups of words referring to the merits and uses of Brandreth's pills and Brandreth's vegetable universal pills within oval borders separated by a portrait of Benjamin Brandredth, over which appear the words "BRANDREDTH WORKS," "BRANDRETH'S PILLS," and below which are the facsimile signature "B. BRANDRETH" and statements concerning Benjamin Brandreth's pills, the whole inclosed in an ornamental border with ornamental panels in the corners of the border. Used ten years.

Filed June 27, 1905. Serial No. 9,254. PUBLISHED MAY 1, 1906.

54,304. SALVES, LINIMENTS, AND POROUS STRENGTHENING-PLASTERS. ELIZABETH DORT, Buffalo, N. Y.

The words "ST. DOMINIC'S," associated with the representation of a friar having the terrestrial globe for a background and holding a bottle in one hand and a cross in the other. Used ten years.

Filed June 13, 1905. Serial No. 8,015. PUBLISHED MAY 1, 1906.

54,305. SAWS. J. N. EBERLE & Co., Augsburg-Pfersee, Germany.

The word "FINIS."

Filed June 30, 1905. Serial No. 9,519. PUBLISHED MAY 1, 1906.

54,306. LEATHER SHOES. F. MAYER BOOT & SHOE Co. Milwaukee, Wis.

The word "HONORBILT."

Filed September 25, 1905. Serial No. 13,000. PUBLISHED MAY 1, 1906.

54,307. STEEL. HOWE, BROWN & Co. LTD., Pittsburg, Pa.

The word "HOWE'S." Used ten years.

Filed May 13, 1905. Serial No. 5,491. PUBLISHED MAY 1, 1906.

54,308. MEDICAL AND SURGICAL PLASTERS. JOHNSON & JOHNSON, New Brunswick, N. J.

The representation of a red Greek cross. Used ten years.

Filed October 17, 1905. Serial No. 13,666. PUBLISHED MAY 1, 1906.

54,309. CATHETERS, STOMACH-TUBES, AND BOUGIES. JOHNSON & JOHNSON, New Brunswick, N. J.

A representation of a red Greek cross. Used ten years.

Filed October 17, 1905. Serial No. 13,671. PUBLISHED MAY 1, 1906.

54,310. EXPLOSIVES. MASURITE EXPLOSIVE COMPANY, Masury, Ohio, and New York, N. Y.

The word "MASURITE."

Filed October 12, 1905. Serial No. 13,509. PUBLISHED MAY 1, 1906.

54,311. SHEETING. MINOT, HOOPER & Co., New York, N. Y.

The words "DWIGHT MAN'G. Co. CABOT" appear in three horizontal lines and beneath the same the letter "A," while below the whole are four rectangular figures standing side by side and just over a small scroll bearing the number "40." Used ten years.

Filed April 29, 1905. Serial No. 3,642. PUBLISHED MAY 1, 1906.

54,312. BOOTS, SHOES, AND SLIPPERS OF LEATHER OR TEXTILE MATERIAL, OR BOTH, AND SOLES THEREFOR. MORSE & ROGERS, New York, N. Y.

The word "LUCKY."

Filed June 27, 1905. Serial No. 9,159. PUBLISHED MAY 1, 1906.

54,313. RIDING AND WALKING PLOWS. PARLIN & ORENDORFF Co., Canton, Ill.

The expression "CANTON PLOWS." Used ten years.

Filed August 3, 1905. Serial No. 11,211. PUBLISHED MAY 1, 1906.

54,314. SHOVELS, SCOOPS, AND SPADES. ST. LOUIS SHOVEL Co., St. Louis, Mo.

The representation of a diamond with rays radiating therefrom and the words "SOLID BLACK DIAMOND SOCKET SHANK" inclosed within an ornamental border.

Filed August 16, 1905. Serial No. 11,702. PUBLISHED MAY 1, 1906.

54,315. MEN'S, WOMEN'S, AND CHILDREN'S LEATHER BOOTS AND SHOES. THOMAS G. PLANT COMPANY, Boston, Mass.

The word-symbol "QUEEN."

Filed May 8, 1905. Serial No. 4,621. PUBLISHED MAY 1, 1906.

54,316. SURFACE AND JET CONDENSERS. WHEELER CONDENSER & ENGINEERING Co., New York, N. Y

The word "WHEELER." Used ten years.

Filed February 21, 1906. Serial No. 17,232. PUBLISHED MAY 1, 1906.

54,317. LEATHER FOR BOOTS AND SHOES. A. C. LAWRENCE LEATHER Co., Boston, Mass.

The words "GUN METAL" arranged within a general lozenge-shaped figure with rectangular ends.

Filed June 10, 1905. Serial No. 7,807. PUBLISHED MAY 1, 1906.

54,318. REMEDY FOR CERTAIN NAMED DISEASES. ADA-LUR-IEM MEDICINE COMPANY, New York, N. Y.

The word "ADA-LUR-IEM," associated with the words "THE RESTORER OF LOST VITALITY."

Filed October 7, 1905. Serial No. 13,419. PUBLISHED MAY 1, 1906.

54,319. COTTON AND COTTON-AND-SILK PIECE GOODS. AUSTIN, POOR & Co., New York, N. Y.

A conventional representation of a fleur-de-lis and three stars, two above the fleur-de-lis and one below it, the whole being inclosed in a lenticular border.

Filed July 15, 1905. Serial No. 10,404. PUBLISHED MAY 1, 1906.

54,320. GUN AND BLASTING POWDER. WINSTON T. BANKS, Bonanza, Ark.

A portrait of W. T. Banks inclosed in an elliptical frame, on which appear the words "SMOKELESS FLAMELESS SAFETY WHITE POWDER," with the facsimile signature "W. T. BANKS" on a panel above the frame and the words "FOR GUN SHOOTING AND BLASTING PURPOSES" on a panel below said frame.

Filed September 1, 1905. Serial No. 12,157. PUBLISHED MAY 1, 1906.

54,321. WOOLEN AND WORSTED YARNS. R. BLANKENBURG & Co., Philadelphia, Pa.

The words "GOLDEN FLEECE."

Filed April 12, 1905. Serial No. 1,270. PUBLISHED MAY 1, 1906.

54,322. LIQUID PURGATIVE COMPOUNDS. CALIFORNIA FIG SYRUP Co., San Francisco, Cal.

The fancy word-symbol "CALAFIG."

Filed May 25, 1905. Serial No. 6,621. PUBLISHED MAY 1, 1906.

54,323. BOAS, MUFFS, AND CAPES MADE FROM OSTRICH-FEATHERS, AND OSTRICH-PLUMES. EDWIN CAWSTON, South Pasadena, Cal.

The representation of two ostriches in the act of running, the same being partly within and partly without a circle.

Filed September 5, 1905. Serial No. 12,227. PUBLISHED MAY 1, 1906.

54,324. DARNING-COTTON, CROCHET-COTTON, AND COTTON THREAD. THE CLARK MILE-END SPOOL COTTON Co., East Newark, N. J.

A representation of an elephant standing upon a heraldic roll. Used ten years.

Filed September 27, 1905. Serial No. 13,056. PUBLISHED MAY 1, 1906.

54,325. CERTAIN NAMED TOILET ARTICLES. J. C. DOWD & Co., New York, N. Y.

The word "EBONOID."

Filed May 12, 1905. Serial No. 5,356. PUBLISHED MAY 1, 1906.

54,326. CORN CURE. ELGIN CHEMICAL Co., Elgin, Ill.

The words "UNCLE SAM CORN CURE," accompanied by a full-length picture of a man wearing a stovepipe hat, a dress-suit coat, striped trousers, a light vest, a high collar, and having a goatee, such man holding in his left hand a placard with the words "UNCLE SAM CORN CURE" and a side view of the head and shoulders of a man having long hair and a goatee.

Filed January 5, 1906. Serial No. 15,937. PUBLISHED MAY 1, 1906.

54,327. RAZORS AND SAFETY-RAZOR BLADES. CARL FRIEDRICH ERN, Wald, Germany.

The representation of a crown over a similar or sword.

Filed July 25, 1905. Serial No. 10,773. PUBLISHED MAY 1, 1906.

54,328. TONIC FOR RHEUMATISM. FEENEY & PALLOTTO, Carnegie, Pa.

The word "SIRENN."

Filed October 12, 1905. Serial No. 13,521. PUBLISHED MAY 1, 1906.

54,329. LEATHER SHOES. LEWIS W. FRANKLIN, Boston, Mass.

A circular panel inclosing a shield having thereon stars and the words "FITS THE FOOT," and griffins upon each side of the shield, associated with the words "THE FRANKLIN SHOE."

Filed April 20, 1905. Serial No. 2,494. PUBLISHED MAY 1, 1906.

54,330. SLEEPING-GARMENTS. THE GOODWIN DURRELL Co., Boston, Mass.

The picture of a cupid going upstairs carrying a lighted candle, inclosed in an oval and having across the face of the picture, in a slightly-curved ascending line from left to right, the word "DREAMLAND" and having a scroll or ribbon at the bottom of the figure

Filed April 14, 1905. Serial No. 1,531. PUBLISHED MAY 1, 1906.

54,331. PLATED SILVERWARE. GORHAM MFG. Co., Providence, R. I.

The word "GORHAM." Used ten years.

Filed November 15, 1905. Serial No. 14,695. PUBLISHED MAY 1, 1906.

54,332. ANTISEPTIC COMPOUND. HYLIN & Co. FABRIKS AKTIEBOLAG, Stockholm, Sweden.

The fancy word "BARBOL."

Filed January 8, 1906. Serial No. 16,042. PUBLISHED MAY 1, 1906.

54,333. SIDE-CRANK STEAM-ENGINES. A. L. IDE & SONS, Springfield, Ill.

The word "IDEAL." Used ten years.

Filed April 24, 1905. Serial No. 2,873. PUBLISHED MAY 1, 1906.

54,334. CENTER-CRANK STEAM-ENGINES. A. L. IDE & SONS, Springfield, Ill.

The word "IDE." Used ten years.

Filed April 24, 1905. Serial No. 2,874. PUBLISHED MAY 1, 1906.

54,335. CASSIMERES. JAMES IRVING & SON, LIMITED, Chester, Pa.

The word "GLENSIDE."

Filed February 5, 1906. Serial No. 16,770. PUBLISHED MAY 1, 1906.

54,336. COTTON YARN, SEWING-COTTON, AND CROCHET-COTTON. JONAS BROOK & BROS., LIMITED, Meltham, England.

A representation of a rake. Used ten years.

Filed October 17, 1905. Serial No. 13,694. PUBLISHED MAY 1, 1906.

54,337. OINTMENTS. PAUL LEUSCHNER, Mount Clemens, Mich.

The word "MER-CU-TINE" inclosed in an oval-shaped border with rays proceeding from a dark spot in the top.

Filed January 24, 1906. Serial No. 16,455. PUBLISHED MAY 1, 1906.

54,338. MEASURING-TAPES. THE LUFKIN RULE Co., Saginaw, Mich.

The word "LUFKIN" arranged in the particular and distinctive manner shown in the drawing, with the lip of the letter "L" extended below the remaining letters of the word.

Filed October 2, 1905. Serial No. 13,209. PUBLISHED MAY 1, 1906.

54,339 MEDICATED STOCK AND POULTRY FOOD. MEDICURA FOOD Co., Indianapolis, Ind.

The word "MEDICURA."

Filed June 12, 1905. Serial No. 7,974. PUBLISHED MAY 1, 1906.

54,340. HOSE. NEW JERSEY CAR SPRING & RUBBER Co., Jersey City, N. J.

The word "SALVATOR."

Filed February 27, 1906. Serial No. 17,385. PUBLISHED MAY 1, 1906.

54,341. FERRUGINOUS PREPARATION. NICOLAY & Co., Zurich, Switzerland.

The word "HAEMATOGEN."

Filed August 24, 1905. Serial No. 11,976. PUBLISHED MAY 1, 1906.

54,342. BABBITT AND ANTIFRICTION BEARING METALS. PALMETTO METAL COMPANY, Chicago, Ill.

The arbitrarily-selected word "PALMETTO" written in block letters.

Filed January 18, 1906. Serial No. 16,291. PUBLISHED MAY 1, 1906.

54,343. INSECTICIDES. B. G. PRATT COMPANY, New York, N. Y.

The word "SCALECIDE."

Filed October 19, 1905. Serial No. 13,739. PUBLISHED MAY 1, 1906.

54,344. MECHANICAL ILLUSION APPARATUS. EDWARD RENTON, Trenton, N. J., assignor to Richard A. Boehlke, Philadelphia, Pa.

The word "CREO."

Filed September 27, 1905. Serial No. 13,083. PUBLISHED MAY 1, 1906.

54,345. ROPES, CORDS, TWINES, AND LINES. SILVER LAKE COMPANY, Boston, Mass.

The words "SILVER LAKE." Used ten years.

Filed April 26, 1905. Serial No. 3,168. PUBLISHED MAY 1, 1906.

54,346. SHOVELS, SCOOPS, AND SPADES. ST. LOUIS SHOVEL Co., St. Louis, Mo.

The representation of a shield having its border ornamented by dots and inclosing the words "MADE & WARRANTED BY THE ST. LOUIS SHOVEL Co. MANUFACTURERS OF SUPERIOR SHOVELS, SPADES & SCOOPS. ST. LOUIS, U. S. A."

Filed August 16, 1905. Serial No. 11,703. PUBLISHED MAY 1, 1906.

54,347. TORPEDO-FIREWORKS. EDWARD H. WAGNER, New York, N. Y.

The arbitrarily-selected word "CONDENSED" and the figure of Mercury, partially draped, with his garments waving, as in a breeze, mounted upon a bicycle, which is running over a bank of clouds, and represented as holding in his uplifted right hand a number of thunderbolts.

Filed July 17, 1905. Serial No. 10,430. PUBLISHED MAY 1, 1906.

54,348. NECKSCARFS. WEBER AND HEILBRONER, New York, N. Y.

The phrase "MEN WHO KNOW" inclosed in quotation-marks.

Filed July 26, 1905. Serial No. 10,791. PUBLISHED MAY 1, 1906.

54,349. COMBINED COIN AND PAPER PURSE OR A COIN-PURSE. CHESTER E. ALBRIGHT, Philadelphia, Pa.

The words "COMMON SENSE."

Filed February 17, 1906. Serial No. 17,157. PUBLISHED MAY 1, 1906.

54,350. HARD-RUBBER SYRINGES. AMERICAN HARD RUBBER Co., New York, N. Y.

The words "ROYAL EXCELSIOR."

Filed May 11, 1905. Serial No. 5,159. PUBLISHED MAY 1, 1906.

54,351. LEATHER SHOES. AUGUSTUS WRIGHT COMPANY, Petersburg, Va.

The words "FARMERS AND MECHANICS."

Filed December 16, 1905. Serial No. 15,470. PUBLISHED MAY 1, 1906.

54,352. HARNESS-LEATHER. CHAS. F. STIFEL COMPANY, Allegheny, Pa.

The word "PHOENIX."

Filed April 10, 1905. Serial No. 1,017. PUBLISHED MAY 1, 1906.

54,353. WATCHES, WATCH-MOVEMENTS, WATCH-CASES, AND WATCH PARTS. WILLIAM F. DOLL, New York, N. Y.

The word "DOLL." Used ten years.

Filed January 17, 1906. Serial No. 16,263. PUBLISHED MAY 1, 1906.

54,354. PENCILS. EBERHARD FABER, New York, N. Y.

The representation of a five-pointed star inclosed within diamond-shaped geometrical figure.

Filed January 3, 1906. Serial No. 15,850. PUBLISHED MAY 1, 1906.

54,355. ORNAMENTAL WATCH AND NECK CHAINS. ANNIE M. HALE and EDWIN E. HALE, North Attleboro, Mass., executors of Oscar M. Draper, deceased.

The word "NONPAREIL." Used ten years.

Filed February 23, 1906. Serial No. 17,302. PUBLISHED MAY 1, 1906.

54,356. RAZORS AND KNIVES. ADOLPH KASTOR & BROS., New York, N. Y.

The picture or representation of two swords, the blades of which are crossed.

Filed May 10, 1905. Serial No. 4,911. PUBLISHED MAY 1, 1906.

54,357. CASTOR-OIL. LAMAR & RANKIN DRUG COMPANY, Atlanta, Ga.

The word "CASTOR-MEL."

Filed November 2, 1905. Serial No. 14,220. PUBLISHED MAY 1, 1906.

54,358. MEDALS AND BADGES. CALVIN W. LITTLE, Montclair, N. J.

The words "LITTLE SYSTEM" arranged in oppositely-curved lines.

Filed August 26, 1905. Serial No. 12,013. PUBLISHED MAY 1, 1906.

54,359. SUPPLIES FOR MUSICAL INSTRUMENTS. LYON & HEALY, Chicago, Ill.

The figure of a swan in water carrying a winged infant on its back, the infant holding a mandolin in its hand in position for playing. The word "SIMPLEX" appears above the figure, the word "OUTFIT" below, and "MUSICAL" on one side and "SUPPLY" on the other side of the figure. Conventional ornamentations appear below the words "MUSICAL" and "SUPPLY." The entire design is inclosed in a rectangle.

Filed March 8, 1906. Serial No. 17,677. PUBLISHED MAY 1, 1906.

54,360. CERTAIN NAMED BOOTS, SHOES, AND SLIPPERS AND SOLES THEREFOR. MORSE & ROGERS, New York, N. Y.

The word "TUTTLE" printed in the particular and distinctive manner shown.

Filed June 27, 1905. Serial No. 9,158. PUBLISHED MAY 1, 1906.

54,361. STEEL. PARK STEEL COMPANY, Pittsburg, Pa.

The word "PARK'S." Used ten years.

Filed May 13, 1905. Serial No. 5,468. PUBLISHED MAY 1, 1906.

54,362. VETERINARY GALL-OINTMENTS, HEALING-POWDERS, AND LINIMENTS. CHARLES LEE REA, New York, N. Y.

The representation of a steer branded upon the haunch with what is known as an "open A-bar."

Filed November 21, 1905. Serial No. 14,863. PUBLISHED MAY 1 1906.

54,363. LEATHER BOOTS, SHOES, SLIPPERS, AND INSOLES. HERBERT H. ROOSA, Lincoln, Nebr.

The representation of a ribbon bow bearing the letters "W. C. T. U." arranged on a disk, with rays on said disk radiating from the knot of said bow.

Filed December 27, 1905. Serial No. 15,683. PUBLISHED MAY 1, 1906.

54,364. TOILET-PAPER. SCOTT PAPER CO., Philadelphia, Pa.

The arbitrary word-symbol "ZLECT" on a dark background with a fancy scroll border and the representation in one corner of a seal having on it a roll of toilet-paper in a circle charged with the monogram "S P Co" and a wreath.

Filed December 7, 1905. Serial No. 15,244. PUBLISHED MAY 1, 1906.

54,365. TOILET-PAPER. SCOTT PAPER CO., Philadelphia, Pa.

The arbitrary word-symbol "APOLLO" on a dark background having an irregular-striped border.

Filed December 7, 1905. Serial No. 15,245. PUBLISHED MAY 1, 1906.

54,366. TOILET-PAPER. SCOTT PAPER CO., Philadelphia, Pa.

The arbitrary word-symbol "NEWTEX" surrounded by a scroll border and in one corner the representation of a seal having in it a roll of toilet-paper in a circle charged with the monogram "S P Co" and a wreath.

Filed December 7, 1905. Serial No. 15,247. PUBLISHED MAY 1, 1906.

54,367. STEEL. SINGER, NIMICK & CO. INC., Pittsburg, Pa.

The word "SINGER'S." Used ten years.

Filed May 13, 1905. Serial No. 5,484. PUBLISHED MAY 1, 1906.

54,368. TALKING-MACHINE RECORDS. VICTOR TALKING MACHINE CO., Camden, N. J.

The words "RED SEAL."

Filed June 27, 1905. Serial No. 9,274. PUBLISHED MAY 1, 1906.

54,369. LEATHER BOOTS AND SHOES. WILLIAM EASTWOOD AND SON COMPANY, Rochester, N. Y.

The hyphenated word "NATURE-SHAPE."

Filed December 15, 1905. Serial No. 15,417. PUBLISHED MAY 1, 1906.

54,370. PASTRY WITH A FILLING OF CREAM OR ICES. ALBAGLI & AVAYON, Philadelphia, Pa.

A cornucopia surmounted by a device formed by two interlocked capital letters "A." Below the cornucopia or partly surrounding it is a semicircular wreath tied at the center with a bow, the knot of which is fashioned to represent a star and two crescents.

Filed January 31, 1906. Serial No. 16,643. PUBLISHED MAY 1, 1906.

54,371. GRAVITY-CREAMERS. JACOB S. BARTH, Indianapolis, Ind.

The word "CROWN."

Filed July 6, 1905. Serial No. 9,840. PUBLISHED MAY 1, 1906.

54,372. CANNED CORN. BURNHAM & MORRILL COMPANY, Portland, Me.

The word or word-symbol "PARIS." Used ten years.

Filed May 20, 1905. Serial No. 6,188. PUBLISHED MAY 1, 1906.

54,373. BREAD AND BISCUITS. CALLARD, STEWART & WATT, LTD., London, England.

The invented word "CASOID."

Filed January 3, 1906. Serial No. 15,851. PUBLISHED MAY 1, 1906.

54,374. SPICES AND MUSTARD. E. R. DURKEE & CO New York, N. Y.

The representation of a plate with crossed knife, fork, and spoon thereupon.

Filed May 2, 1905. Serial No. 3,982. PUBLISHED MAY 1, 1906.

54,375. CHEMICAL AND VEGETABLE SUBSTITUTE FOR EGG-WHITES. FROSTLENE MANUFACTURING COMPANY, Boston, Mass.

A circular panel inclosing a triangular-shaped figure, with the head of a man wearing a baker's cap arranged on said figure. On the circular panel are the words "ALBUMEN CREAM," and within the same are the words "IMPROVED FROSTINGS ICE CREAMS MERINGUES SHERBETS KISSES."

Filed June 24, 1905. Serial No. 8,962. PUBLISHED MAY 1, 1906.

54,376. PREPARED CEREAL BREAKFAST-FOODS. HYGIENIC FOOD CO., Battle Creek, Mich.

The hyphenated word "MAPL-FLAKE," associated with the representation of a maple-leaf.

Filed May 5, 1905. Serial No. 4,387. PUBLISHED MAY 1, 1906.

54,377. LARDS. THE J. & F. SCHROTH PACKING CO., Cincinnati, Ohio.

The word "FOUNTAIN" and a pictorial representation of a fountain comprising a statue supported upon a central column surrounded at the base by statues rising from a basin from which water discharges in streams into a larger basin or tank having statues located on the rim.

Filed January 3, 1906. Serial No. 15,844. PUBLISHED MAY 1, 1906.

54,378. DRIED FRUITS. L. OTZEN & CO. INC., San Francisco, Cal.

The words "BLOSSOM AND SUNSHINE."

Filed December 8, 1905. Serial No. 15,283. PUBLISHED MAY 1, 1906.

54,379. SUGAR AND MOLASSES. ROBERT C. MARTIN, Albemarle, La.

The words "ALBEMARLE PLANTATION." Used ten years.

Filed December 23, 1905. Serial No. 15,610. PUBLISHED MAY 1, 1906.

54,380. CONDENSED MILK. MICHIGAN CONDENSED MILK CO., Lansing, Mich., and New York, N. Y.

The arbitrarily-selected word "JERSEY," associated with the words "CONDENSED MILK" and with an oval panel in solid color with serrated edges, upon which are the words "ABSOLUTELY PURE." Used ten years.

Filed March 31, 1906. Serial No. 18,394. PUBLISHED MAY 1, 1906.

54,381. WHEAT-FLOUR. THE MOHNS-FRESE COMMERCIAL COMPANY, San Francisco, Cal.

The representation of a watch.

Filed November 14, 1905. Serial No. 14,589. PUBLISHED MAY 1, 1906.

54,382. WHEAT-FLOUR. THE MONARCH MILLING CO., Hutchinson Kans.

The representation of a medal upon which a representation of a sheaf of wheat is produced, crossed by streamers from a bow appearing at one edge of the medal, the word "PRIZE," which appears on a streamer, and the words "KELLY'S HIGH PATENT," and the representation of a star, which matter appears upon the medal around the picture of the sheaf.

Filed February 9, 1906. Serial No. 16,872. PUBLISHED MAY 1, 1906.

54,383. CONDENSED MILK. PACIFIC COAST CONDENSED MILK CO., Seattle, Wash.

The word-symbol "CARNATION."

Filed February 24, 1906. Serial No. 17,330. PUBLISHED MAY 1, 1906.

54,384. SYRUPS AND MOLASSES. PENICK & FORD LTD., Shreveport, La.

The letters, character, and word "P & F BRAND" upon a circular panel of contrasting color inclosed in concentric circles.

Filed May 12, 1905. Serial No. 5,322. PUBLISHED MAY 1, 1906.

54,385. SYRUP. PENICK & FORD LTD., Shreveport, La.

The coined word "CEROCANE."

Filed May 12, 1905. Serial No. 5,324. PUBLISHED MAY 1, 1906.

54,386. WHEAT-FLOUR. THE REA-PATTERSON MILLING COMPANY, Coffeyville, Kans.

A circular panel bearing the words "BLUE JAY" and the representation of a bluejay perched upon a twig and associated with the words "THE REA-PATTERSON MILLING CO. HIGHEST PATENT FULL PLANSIFTER SYSTEM COFFEYVILLE, KAS.," and the words "BLUE JAY HIGHEST PATENT" appearing below said panel.

Filed October 13, 1905. Serial No. 13,570. PUBLISHED MAY 1, 1906.

54,387. WHEAT-FLOUR. THE REA-PATTERSON MILLING COMPANY, Coffeyville, Kans.

The representation of the head of a little girl wearing a large hat and the word "JOY," with a flowering vine supporting butterflies and intertwined therewith and associated with the words "THE REA-PATTERSON MILLING CO., COFFEYVILLE, KAS."

Filed October 13, 1905. Serial No. 13,573. PUBLISHED MAY 1, 1906.

54,388. SELF-RISING FLOUR. EDWIN GILMORE RICHARDS, Sharon, Mass.

The word "RISE-O."

Filed July 24, 1905. Serial No. 10,764. PUBLISHED MAY 1, 1906.

54,389. TEA. S. S. PIERCE CO., Boston, Mass.

The words "QUEEN'S OWN BLEND" arranged in a scrollwork supported by two lions rampant, said lions resting upon a support carried by an oval panel on which is a picture of the late Queen Victoria, with a rectangular blank below, the whole inclosed in a rectangular border-line.

Filed November 28, 1905. Serial No. 15,052. PUBLISHED MAY 1, 1906.

54,390. BUTTER. SCOTT & COMPANY, Norfolk, Va.

The words "WILLOW FARM."

Filed February 19, 1906. Serial No. 17,181. PUBLISHED MAY 1, 1906.

54,391. COFFEE. WILLIAM E. SIBLEY, Freeport, Ill.

The words "PRIDE OF THE ORIENT."

Filed April 8, 1905. Serial No. 794. PUBLISHED MAY 1, 1906.

54,392. COFFEE. SPRAGUE, WARNER & COMPANY, Chicago, Ill.

The arbitrarily-selected word "RICHELIEU."

Filed July 3, 1905. Serial No. 9,791. PUBLISHED MAY 1, 1906.

54,393. SPICES AND MUSTARD. SPRAGUE, WARNER & COMPANY, Chicago, Ill.

The arbitrarily-selected word "RICHELIEU."

Filed July 3, 1905. Serial No. 9,797. PUBLISHED MAY 1, 1906.

54,394. CANNED FRUITS AND CANNED VEGETABLES. SPRAGUE, WARNER & COMPANY, Chicago, Ill.

The arbitrarily-selected word "FERNDELL."

Filed January 24, 1906. Serial No. 16,471. PUBLISHED MAY 1, 1906.

54,395. INFANTS' FOOD. HERBERT TAYLOR, Portsmouth, England.

The word "MALTICO" in plain block capitals printed in a horizontal line.

Filed July 24, 1905. Serial No. 10,763. PUBLISHED MAY 1, 1906.

54,396. WHEAT-FLOUR. THE TOPEKA MILLING COMPANY, Topeka, Kans.

The word "RALSTON." Used ten years.

Filed April 12, 1905. Serial No. 1,188. PUBLISHED MAY 1, 1906.

54,397. CONDENSED MILK. VERMONT CONDENSED MILK CO., Richmond, Vt., and New York, N. Y.

The arbitrarily-selected word "HERO."

Filed June 10, 1905. Serial No. 7,833. PUBLISHED MAY 1, 1906.

54,398. CONDENSED MILK. VERMONT CONDENSED MILK CO., Richmond, Vt., and New York, N. Y.

The arbitrarily-selected word "BRIDGE."

Filed June 10, 1905. Serial No. 7,836. PUBLISHED MAY 1, 1906.

54,399. CANNED FRUITS AND VEGETABLES. WAYNE COUNTY PRESERVING CO., Newark, N. Y.

The bust portrait of General Anthony Wayne in Continental costume. Used ten years.

Filed December 21, 1905. Serial No. 15,576. PUBLISHED MAY 1, 1906.

54,400. CANNED VEGETABLES AND CANNED FRUIT. ABBOTT GROCERY CO., Keene, N. H.

The picture of a mastiff's head, used in combination with the words "MASTIFF BRAND."

Filed August 18, 1905. Serial No. 11,750. PUBLISHED MAY 1, 1906.

54,401. CEREAL FOODS MADE FROM OATS. THE AMERICAN CEREAL COMPANY, Akron and Ravenna, Ohio; Chicago, Ill., and Cedar Rapids, Iowa.

The word "NUDAVENE."

Filed May 15, 1905. Serial No. 5,615. PUBLISHED MAY 1, 1906.

54,402. CANNED FRUITS. CALIFORNIA CANNERIES CO., San Francisco, Cal.

The words "BEAR BRAND."

Filed September 18, 1905. Serial No. 12,755. PUBLISHED MAY 1, 1906.

54,403. COFFEE. CHASE & SANBORN, Boston, Mass.

The words "SEAL BRAND." Used ten years.

Filed July 19, 1905. Serial No. 10,559. PUBLISHED MAY 1, 1906.

54,404. WHEAT-FLOUR. THE FALK MERCANTILE CO. LT., Boise, Idaho.

The representation of an inverted wreath of laurel-leaves having a bow of ribbon tied thereto, with the letters "F. M. Co." inclosed within, associated with the word "SILVERWREATH."

Filed February 20, 1906. Serial No. 17,213. PUBLISHED MAY 1, 1906.

54,405. CORDIAL. SOCIÉTÉ ANONYME DE LA DISTILLERIE DE LA LIQUEUR BÉNÉDICTINE DE L'ABBAYE DE FÉCAMP, Fécamp, France.

The words "LIQUOR ANTIQUORUM MONACHORUM BENEDICTINORUM ABBATIÆ FISCANENSIS" surrounded by a rectangular border composed of an inner portion formed of a series of semicircles with dotted centers and angles connecting their extremities and an outer portion formed of a plain rectangle with scalloped inner edges.

Filed January 4, 1906. Serial No. 15,872. PUBLISHED MAY 1, 1906.

54,406. CORDIAL. SOCIÉTÉ ANONYME DE LA DISTILLERIE DE LA LIQUEUR BÉNÉDICTINE DE L'ABBAYE DE FÉCAMP, Fécamp, France.

The coat-of-arms of the abbe of Fécamp, consisting of a shield with three abbots' hats surrounded at the sides and bottom by an abbot's stole. Above the shield are arranged an abbot's hat and crozier. A palm branch is arranged at each side of the shield, and the whole inclosed by a dotted or beaded circular border.

Filed January 4, 1906. Serial No. 15,877. PUBLISHED MAY 1, 1906.

54,407. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn.

The letters "V. C. C."

Filed March 22, 1906. Serial No. 18,111. PUBLISHED MAY 1, 1906.

54,408. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn.

The words and abbreviation "STONO PHOSPHATE CO's." Used ten years.

Filed March 22, 1906. Serial No. 18,104. PUBLISHED MAY 1, 1906.

54,409. ROOFING-PAINT. ASBESTOS MANUFACTURING AND ROOFING CO., St. Louis, Mo.

The words "EVER-TITE," the first and last letters of which words are the longest and the remaining letters forming said words being gradually shortened toward the hyphen between said words.

Filed September 11, 1905. Serial No. 12,465. PUBLISHED MAY 1, 1906.

54,410. CANNED FRUITS AND VEGETABLES. THE BOOTH PACKING COMPANY, Baltimore, Md.

The word "OVAL."

Filed October 21, 1905. Serial No. 13,798. PUBLISHED MAY 1, 1906.

54,411. FERTILIZERS. GEORGIA CHEMICAL WORKS, Augusta, Ga.

The word "MASTODON" and the representation of the skeleton of a mastodon. Used ten years.

Filed March 15, 1906. Serial No. 17,870. PUBLISHED MAY 1, 1906.

54,412. FERTILIZERS. GEORGIA CHEMICAL WORKS, Augusta, Ga.

The word "MASCOT." Used ten years.

Filed March 22, 1906. Serial No. 18,131. PUBLISHED MAY 1, 1906.

54,413. CLEANING AND POLISHING SOAP. MARSHALL CHEMICAL COMPANY, Marshall, Va.

The word "CARBONOLA."

Filed October 6, 1905. Serial No. 13,360. PUBLISHED MAY 1, 1906.

54,414. METALLIC PAINT IN DRY POWDER AND IN OIL. THE PRINCE M'F'G CO., New York, N. Y.

The representation of two circular bands arranged side by side, one bearing the words "PRINCE BROS' MINERAL BROWN" and the other the words "PRINCE'S METALLIC PAINT," and all associated with the words "A 'DOUBLE LABEL' IS OUR TRADE MARK," the words "DOUBLE LABEL" being inclosed in quotation-marks. Used ten years.

Filed August 15, 1905. Serial No. 11,670. PUBLISHED MAY 1, 1906.

54,415. SOAP FOR TOILET, LAUNDRY, AND GENERAL USE. THE PROCTER & GAMBLE CO., Ivorydale and Cincinnati, Ohio, and Kansas City, Kans.

The word "IVORY."

Filed August 21, 1905. Serial No. 11,861. PUBLISHED MAY 1, 1906.

54,416. CORDIAL. SOCIÉTÉ ANONYME DE LA DISTILLERI DE LA LIQUEUR BÉNÉDICTINE DE L'ABBAYE DE FÉCAMP, Fécamp, France.

The words "VERITABLE BENEDICTINE" with a small Latin cross between the same, with the representation of a star placed before and after said words, the whole appearing upon an arc-shaped band from which a streamer extends radially from the upper middle portion thereof.

Filed January 4, 1906. Serial No. 15,873. PUBLISHED MAY 1, 1906.

54,417. CORDIAL. SOCIÉTÉ ANONYME DE LA DISTILLERIE DE LA LIQUEUR BÉNÉDICTINE DE L'ABBAYE DE FÉCAMP, Fécamp, France.

A representation of the holy St. Benoit carrying an abbot's crozier, surrounded by a dotted or beaded circular border, within which are printed the words and letters "SIG. PRIOR. S SŒ TRINITATIS. CONG. S. MAVRI" and the letter and word "S. BENEDICTUS."

Filed January 4, 1906. Serial No. 15,874. PUBLISHED MAY 1, 1906.

54,418. CORDIAL. SOCIÉTÉ ANONYME DE LA DISTILLERIE DE LA LIQUEUR BÉNÉDICTINE DE L'ABBAYE DE FÉCAMP, Fécamp, France.

The word "BENEDICTINE" surrounded by a rectangular border composed of an inner portion formed of a series of semicircles with dotted centers and angles connecting their extremities and an outer portion formed of a plain rectangle with scalloped inner edges.

Filed January 4, 1906. Serial No. 15,876. PUBLISHED MAY 1, 1906.

54,419. WHISKY. JOSEPH F. SINNOTT, Philadelphia, Pa.

The words "MOORE & SINNOTT, SUCCESSORS TO JOHN GIBSON'S SON & CO. COPPER DISTILLED PURE RYE WHISKEY GIBSONTON MILLS PA" arranged in a circular design surrounded by an ornamental circular border. Used ten years.

Filed September 21, 1905. Serial No. 12,840. PUBLISHED MAY 1, 1906.

54,420. FRESCO-PAINTS. TOCH BROTHERS, New York, N. Y.

The representation of a palette bearing the letter "T" and inclosed within a wreath and an encircling band on which appear the words "MILO FRESCO COLORS."

Filed August 12, 1905. Serial No. 11,576. PUBLISHED MAY 1, 1906.

54,421. BAR-SOAP. THE WIEHLE SOAP COMPANY, Ironton, Ohio.

The word "SAFE." Used ten years.

Filed June 28, 1905. Serial No. 9,309. PUBLISHED MAY 1, 1906.

54,422. TEA. CHASE & SANBORN, Boston, Mass.

The words "BUFFALO CHOP" in a panel and a pictorial representation of a buffalo and the capital letters "C" and "S" and the character "&" between said letters. Used ten years.

Filed July 19, 1905. Serial No. 10,561. PUBLISHED MAY 1, 1906.

54,423. PREPARATIONS OF COCOA AND CHOCOLATE. THE CHAS. H. PHILLIPS CHEMICAL CO., New York, N. Y.

A monogram containing the letters of the word "PHILLIPS," said monogram being on a shield which is surrounded by a buckled strap. Used ten years.

Filed January 5, 1906. Serial No. 15,923. PUBLISHED MAY 1, 1906.

54,424. HOPS. CHAS. L. KIEWERT CO., Milwaukee, Wis.

The representation of a shield and key, the major portion of the stem of said key being beneath and hidden by the shield, thereby leaving the bow of the key and the bit of the key with small portions of the stem extending from said bow and bit, respectively, to the shield visible. Across the bow of the key is the name "KIEWERT," and the bit of the key contains the abbreviation "MIL."

Filed June 19, 1905. Serial No. 8,796. PUBLISHED MAY 1, 1906.

54,425. SOAP. THE CHARLES N. CRITTENTON COMPANY, New York, N. Y.

The words "A. A. CONSTANTINE'S PERSIAN HEALING PINE TAR SOAP." Used ten years.

Filed February 9, 1906. Serial No. 16,846. PUBLISHED MAY 1, 1906.

54,426. BUTTER. THE FOX RIVER BUTTER COMPANY, Aurora, Ill.

The representation of a circular disk surrounded by curved and radiating lines to represent the milling on a coin. Centrally of the said disk is a representation of a clover-leaf. Across the clover-leaf is a band or label on which appear the words "CLOVER HILL BUTTER." Above the figures last described, following the general outline of the circle, are the words "FOX RIVER BUTTER CO.," and below them, within the disk, are the words "AURORA, ILL."

Filed May 11, 1905. Serial No. 5,214. PUBLISHED MAY 1, 1906.

54,427. DRIED FRUITS. GEORGE FRANK, San Jose, Cal.

The word "SUNLIGHT."

Filed July 27, 1905. Serial No. 10,885. PUBLISHED JANUARY 16, 1906.

54,428. SPIRITS OF TURPENTINE. GEORGETOWN CHEMICAL WORKS, Georgetown, S. C.

The word "ALLPINE" on a background of three ovals.

Filed March 8, 1906. Serial No. 17,668. PUBLISHED MAY 1, 1906.

54,429. LAUNDRY SOAP. J. G. HAAS SOAP CO., St. Louis, Mo.

The words "WASH DAY" located on a panel, said panel being arranged diagonally across the pictorial representation of the globe. Used ten years.

Filed April 10, 1905. Serial No. 955. PUBLISHED MAY 1, 1906.

54,430. LAUNDRY SOAP. J. G. HAAS SOAP CO., St. Louis, Mo.

The words "LOG CABIN," and arranged to the left of said words appears a rustic scene consisting of a log cabin, to which is attached a clothes-line, and on said clothes-line appear clothes. In front of the log cabin appear two cakes of Log Cabin soap supporting a washtub, and a colored woman washing clothes, and to the left of said woman is a colored youth.

Filed April 10, 1905. Serial No. 961. PUBLISHED MAY 1, 1906.

54,431. BREAD. HENRY S. LEVY, Brooklyn, New York.

A dark seal with a white circular panel showing within two concentric circles bearing a star-shaped figure composed of two crossed triangles within which appears the name "LEVY" in Hebrew characters. In the annular space between the edge of the white panel and the concentric circles appears the name "H. S. LEVY," separated by printers' decorations from the numerals and words "78 GRAHAM AVE. B'KLYN."

Filed December 29, 1905. Serial No. 15,758. PUBLISHED MAY 1, 1906.

54,432. MARINE PAINT. HARRY LOUDERBOUGH, Jersey City, N. J.

A rectangular black panel upon which appears the representation of a board, one half of which is painted, the unpainted half showing the ravages of barnacles and vegetable growth.

Filed May 4, 1905. Serial No. 4,289. PUBLISHED MAY 1, 1906.

54,433. MARINE PAINT. HARRY LOUDERBOUGH, Jersey City, N. J.

The representation of an iron plate, one half of which is painted and the other half unpainted, the unpainted half showing barnacles and a vegetable growth attached thereto, the whole surrounded by a rectangular black border.

Filed May 4, 1905. Serial No. 4,290. PUBLISHED MAY 1, 1906.

54,434. FERTILIZERS. NAVASSA GUANO COMPANY OF WILMINGTON, Wilmington, N. C.

The words "WARLICK'S MIXTURE." Used ten years.

Filed March 15, 1906. Serial No. 17,857. PUBLISHED MAY 1, 1906.

54,435. ALE. NEW ENGLAND BREWING COMPANY, Boston, Mass.

An oval-shaped panel bearing in its center the letter "B" printed in red and having thereon the name "HAFFENREFFER & CO. BOYLSTON BREWERY" and surrounded by ornamental panels bearing the same name and the words "BOYLSTON BOSTON STOCK ALE BOTTLED AT THE BREWERY BOSTON."

Filed September 28, 1905. Serial No. 13,118. PUBLISHED MAY 1, 1906.

54,436. CANNED CORN AND CANNED SUCCOTASH. SACO VALLEY CANNING COMPANY, Portland, Me.

The word or word-symbol "ROYALTY." Used ten years.

Filed May 17, 1905. Serial No. 5,876. PUBLISHED MAY 1, 1906.

54,437. PORTLAND CEMENT. THOMAS MILLEN CO., Wayland, N. Y.

The word "WAYLAND" upon a panel and the representation of three thistle-blooms with accompanying leaves above the panel, the whole being inclosed in a circular border. Used ten years.

Filed May 1, 1905. Serial No. 3,891. PUBLISHED MAY 1, 1906

54,438. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn.

The representation of a plow, to which is hitched a horse. A plowman is shown walking behind the plow and grasping the handles thereof. Used ten years.

Filed March 15, 1906. Serial No. 17,853. PUBLISHED MAY 1, 1906.

54,439. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn.

The letters "B. P." Used ten years.

Filed March 22, 1906. Serial No. 18,103. PUBLISHED MAY 1, 1906.

54,440. BAR-SOAP. THE WIEHLE SOAP COMPANY, Ironton, Ohio.

The word "BANTY." Used ten years.

Filed June 28, 1905. Serial No. 9,307. PUBLISHED MAY 1, 1906.

54,441. SOAP. WILLIAM WALTKE & CO., St. Louis, Mo.

The pictorial representation of a portion of a locomotive, with rays of light projecting from the headlight of said locomotive, and above said pictorial representation appears the word "HEADLIGHT," and appearing in the rays of light from the headlight is the word "SOAP."

Filed May 24, 1905. Serial No. 6,497. PUBLISHED MAY 1, 1906.

54,442. CIGARETTES. BUTLER-BUTLER (INCORPORATED), New York, N. Y.

The words "EGYPTIENNE STRAIGHTS," below which is arranged the picture of an Assyrian bull standing upon a panel bearing imitation hieroglyphics.

Filed January 23, 1906. Serial No. 16,405. PUBLISHED MAY 1, 1906.

54,443. COTTON THREAD. THE CLARK MILE-END SPOOL COTTON CO., East Newark, N. J.

The name "JOHN CLARK JUNR. & CO'S." Used ten years.

Filed September 27, 1905. Serial No. 13,055. PUBLISHED MAY 1, 1906.

54,444. LIQUID ROOFING COMPOUNDS MADE FROM COAL-TAR PRODUCTS. EZEKIEL C. EVANS, Philadelphia, Pa.

An arbitrary symbol—namely, a crescent—within which or across the face of which are printed the words "CRESCENT COMPOUND."

Filed July 1, 1905. Serial No. 16,134. PUBLISHED MAY 1, 1906.

54,445. LONG-CUT TOBACCO FOR BOTH SMOKING AND CHEWING. HANSEN-SCHMITT CO., Milwaukee, Wis.

The numeral "8" crossed by the word "BROTHERS" within an annular border and ornamental scrolls at the sides of the border, which border contains the phrase "MILD SMOKE" in the upper section, the phrase "PLEASANT CHEW" in the lower section, and stars at the sides between the phrases, and associated with the foregoing are the words "EIGHT BROTHERS" above and the words "LONG CUT TOBACCO" below said border.

Filed February 26, 1906. Serial No. 17,364. PUBLISHED MAY 1, 1906.

54,446. BRANDY. JAS. HENNESSY & CO., Cognac, France.

A border design representing grape-vines in leaf and fruit, with the figures of a mailed arm wielding a battle-ax, and a heraldic roll below the arm incorporated in the upper part of the border, and the abbreviations, words, and character "JAS. HENNESSY & CO. COGNAC" arranged within the field.

Filed September 21, 1905. Serial No. 12,835. PUBLISHED MAY 1, 1906.

54,447. LEAF-TOBACCO, SMOKING AND CHEWING TOBACCO. INDEPENDENT TOBACCO MANUFACTURERS PROMOTING COMPANY, Chicago, Ill.

A representation of a tobacco-leaf bearing the letters "F. A. L. C." and a crossed pipe and cigar.

Filed December 30, 1905. Serial No. 15,790. PUBLISHED MAY 1, 1906.

54,448. WHISKY. MORRIS LANGE, Cincinnati, Ohio.

A monogram of the letters, abbreviation, and character "M L & Co" and the word "WATERFORD."

Filed June 16, 1905. Serial No. 8,312. PUBLISHED MAY 1, 1906.

54,449 WHISKY. J. & E. MAHONEY, Portsmouth, Va.

The name "J. MARTIN."

Filed June 30, 1905. Serial No. 9,430. PUBLISHED OCTOBER 31, 1905.

54,450. PURE RYE AND MALT WHISKIES. MEADVILLE, PENNSYLVANIA DISTILLING COMPANY, INC., Meadville, Pa.

The word "MEADVILLE" and the word "PURYO," the latter being superimposed across a heart-shaped figure, upon which latter is seated an allegorical figure having wings and holding a trumpet, and between the word "MEADVILLE" and the allegorical figure are the following words: "PURE RYE WHISKEY MEADVILLE, PENNSYLVANIA DISTILLING CO. INCORPORATED." Used ten years.

Filed May 8, 1905. Serial No. 4,639. PUBLISHED MAY 1, 1906.

54,451. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.

The symbol "No. 42." Used ten years.

Filed May 2, 1905. Serial No. 3,954. PUBLISHED MAY 1 1906.

54,452. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.

A rectangular design inclosed by a border conventionally indicating strips bound together. On each end of a central panel is a scroll with ribbon-like ends carrying a shield with an ermine-like surface displaying three fleurs-de-lis, the shield being surmounted by a crown extending to each end of the panel. At each corner of the panel is a spray of leaves and at each side a conventional wreath, scroll, and rosettes.

Filed May 5, 1905. Serial No. 4,311. PUBLISHED MAY 1, 1906.

54,453. WHISKY. THOMAS E. O'KEEFE, Oswego, N. Y.

The words "BEAVER RUN" above a monogram composed of the letters "T E O K." Used ten years.

Filed May 12, 1905. Serial No. 5,334. PUBLISHED MAY 1, 1906.

54,454. PULVERIZED GRAPHITE. THE UNITED STATES GRAPHITE COMPANY, Saginaw, Mich.

The inscription "205."

Filed February 23, 1906. Serial No. 17,230. PUBLISHED MAY 1, 1906.

54,455. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn.

The letters "V. C. C. Co's."

Filed March 15, 1906. Serial No. 17,830. PUBLISHED MAY 1, 1906.

54,456. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn.

The words "GOOD LUCK" and the representation of a horseshoe.

Filed March 15, 1906. Serial No. 17,838. PUBLISHED MAY 1, 1906.

54,457. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn.

A diamond-shaped figure in red.

Filed March 22, 1906. Serial No. 18,113. PUBLISHED MAY 1, 1906.

54,458. POCKET-KNIVES AND RAZORS. WESTER BROS., New York, N. Y.

The representation of an anchor having a star positioned on the shank thereof and an arrow passing through the star at its juncture with the anchor-shank. Used ten years.

Filed May 13, 1905. Serial No. 5,557. PUBLISHED MAY 1, 1906.

54,459. WINE. JULIUS WILE SONS & CO., New York, N. Y.

The words "LAGRANGE FRERES" and a fanciful coat-of-arms design showing a shield surmounted by a castellated crown and bearing a monogram of the letters "L F" and partly surrounded by fanciful scrollwork with grape-vines and bunches of grapes. Used ten years.

Filed July 11, 1905. Serial No. 10,067. PUBLISHED MAY 1, 1906.

54,460. WHISKY. WILLIAM H. LEE & CO., St. Louis, Mo.

The words "HIGH GRADE PURE COPPER DISTILLED MARYLAND RYE WHISKEY" and a monogram of the letters and character "W & L," all displayed on the representation of the head of a barrel. Used ten years.

Filed July 11, 1905. Serial No. 10,073. PUBLISHED MAY 1, 1906.

54,461. CHEWING-GUM. AMERICAN CHICLE CO., New York, N. Y.

The word "PRIMLEY'S." Used ten years.

Filed June 15, 1905. Serial No. 8,152. PUBLISHED MAY 8, 1906.

54,462. GLUE. AMERICAN GLUE CO., Boston, Mass.

The representation of a shield, the word "UNION" in the upper portion of the shield and the representation of a five-pointed star below a line dividing the shield into two unequal areas.

Filed December 1, 1905. Serial No. 15,104. PUBLISHED MAY 8, 1906.

54,463. CHEWING-GUM. BON-BON COMPANY, New York, N. Y.

The word "DENTYNE."

Filed November 11, 1905. Serial No. 14,508. PUBLISHED MAY 1, 1906.

54,464. CARBONATED TONIC BEVERAGE. BOONVILLE MINERAL SPRING CO., Utica, N. Y.

A rectangular panel upon which is shown the representation of a young girl in the act of catching water from a rivulet and a monogram of the letters and abbreviation "B M S Co," across which is a ribbon bearing the words "LITHIA POLARIS," and associated with the words and abbreviation "UTICA, N. Y. LE SECRET D'UNE VIE SANTE." Below appear the words and abbreviations "BIRCH BEER. A HEALTHFUL AND DELICIOUS BEVERAGE BOTTLED WITH 'LITHIA POLARIS' PURE SPRING WATER BOONVILLE MINERAL SPRING CO. BOONVILLE, N. Y."

Filed September 11, 1905. Serial No. 12,482. PUBLISHED MAY 1, 1906.

54,465. ROOT-BEER, ROOT-BEER EXTRACT, AND THE DRY INGREDIENTS FOR MAKING ROOT-BEER. THE CHARLES E. HIRES COMPANY, Philadelphia, Pa.

The word "HIRES." Used ten years.

Filed November 4, 1905. Serial No. 14,320. PUBLISHED MAY 1, 1906.

54,466. ARTIFICIAL FERTILIZERS. CLOVERINE FERTILIZER CO., Mount Pleasant, Tenn.

The words "CLOVERINE HONEST FERTILIZERS," appearing upon the sides of a triangular figure, associated with a representation of a clover-leaf.

Filled December 26, 1905. Serial No. 15,667. PUBLISHED MAY 8, 1906.

54,467. GLUE-CEMENT. LORRIN W. FERDINAND, Boston, Mass.

The words "20TH CENTURY."

Filed December 19, 1905. Serial No. 15,511. PUBLISHED MAY 1, 1906.

54,468. MIXED PAINTS. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill.

The word "REV-O-NOC" and the letters, character, and abbreviation "H. S. B. & Co."

Filed October 13, 1905. Serial No. 13,586. PUBLISHED MAY 8, 1906.

54,469. CANDY. HILLER CONFECTIONERY COMPANY, Canajoharie, N. Y.

The words "VASSAR KISSES" printed in script, one above the other, and the letter "V" having a horizontal open scroll lying above the letters "ASSAR," and within the field of which scroll appears the word "CREAM."

Filed October 7, 1905. Serial No. 13,410. PUBLISHED MAY 1, 1906.

54,470. WHEAT-FLOUR. LAWRENCEBURG ROLLER MILLS COMPANY, Boston, Mass.

The words "TOWN TALK" separated by a fancy frame containing a fleur-de-lis. Above are the words "BEST FANCY PATENT" beneath a curved border of fleurs-de-lis; below the central figure, above a curved border of fleurs-de-lis, the words and abbreviation "LAWRENCEBURG, IND.," and a diamond figure containing the words and abbreviation "LAWRENCEBURG ROLLER MILLS CO. PURITY AND QUALITY GUARANTEED."

Filed November 22, 1905. Serial No. 14,903. PUBLISHED MAY 1, 1906.

54,471. SMOKING OR CHEWING TOBACCO. NASHVILLE TOBACCO WORKS, Nashville, Tenn.

The words "THE OLD STATESMAN." Used ten years.

Filed September 14, 1905. Serial No. 12,558. PUBLISHED MAY 1, 1906.

54,472. SMOKING OR CHEWING TOBACCO. NASHVILLE TOBACCO WORKS, Nashville, Tenn.

The words "CREAM-NUT."

Filed September 14, 1905. Serial No. 12,559. PUBLISHED MAY 1, 1906.

54,473. SMOKING AND CHEWING TOBACCO. NASHVILLE TOBACCO WORKS, Nashville, Tenn.

The words "CURB STONE."

Filed September 14, 1905. Serial No. 12,560. PUBLISHED MAY 1, 1906.

54,474. SMOKING OR CHEWING TOBACCO. NASHVILLE TOBACCO WORKS, Nashville, Tenn.

The words "YELLOW TAG."

Filed September 14, 1905. Serial No. 12,561. PUBLISHED MAY 1, 1906.

54,475. RUBBER BOOTS, SHOES, AND GALOSHES. OSTASIATISCHE HANDELS-GESELLSCHAFT, Hamburg, Germany.

The representation of a porter carrying on his shoulders a yoke, to which, on both sides, several boxes are fastened by means of ropes, such representation being shown in a rectangular frame having scrollwork in the corners thereof.

Filed May 11, 1905. Serial No. 5,095. PUBLISHED MAY 1, 1906.

54,476. PORTLAND CEMENT. PACIFIC PORTLAND CEMENT CO., San Francisco, Cal.

The words "GOLDEN GATE" and a representation of the Golden Gate, with the sun in the background and ships in the foreground, surrounded by an annular band, on which appear the words "PACIFIC PORTLAND CEMENT CO. SAN FRANCISCO, CAL."

Filed December 14, 1905. Serial No. 15,498. PUBLISHED MAY 8, 1906.

54,477. PLASTERS AND PLASTIC COMPOUNDS. THE PARAGON PLASTER COMPANY, Syracuse, N. Y.

The letters "P W P" in monogram form surrounded by a wreath.

Filed October 6, 1905. Serial No. 13,365. PUBLISHED MAY 1, 1906.

54,478. CIGARS. CHARLES B. PERKINS, Boston, Mass.

The word-symbol "ELENA" and the pictorial representation of the head and bust of a handsome Spanish woman in evening dress and wearing in her hair a band surrounded by an ornamental border of harmonizing design, on either side of which appears ornamentation comprising fans, scrolls, tropical foliage, and various devices and the representation of a Spanish boy suspended in vines and playing upon a guitar.

Filed May 29, 1905. Serial No. 6,904. PUBLISHED MAY 8, 1906.

54,479. CIGARS. CHARLES B. PERKINS, Boston, Mass.

The words "LA ROSA DE SAN JUAN" and the representation of the head and shoulders of a young woman of the blond type wearing upon her head a red Gainsborough plumed hat and around her throat a necklace of jewels, the head being surrounded by a circular draped border of harmonizing design, together with scrolls and flowers, devices, and tropical foliage.

Filed May 29, 1905. Serial No. 6,906. PUBLISHED MAY 8, 1906.

54,480. CHOCOLATES AND COCOAS. RUSS-SUCHARD & CIE., Neuchâtel, Switzerland, assignors to Suchard Societe Anonyme.

The word "SUCHARD." Used ten years.

Filed June 1, 1905. Serial No. 7,147. PUBLISHED MAY 8, 1906.

54,481. MUCILAGE, PASTE, AND SEALING-WAX. S. S. STAFFORD INC., New York, N. Y.

The word "STAFFORD'S." Used ten years.

Filed December 18, 1905. Serial No. 15,483. PUBLISHED May 1, 1906.

54,482. METAL-POLISH. PHILIP H. SOLOMON, St. Louis, Mo.

The words "HELIOS THE CLEANSER OF METALS" displayed on a background representing clouds and auroral radiations.

Filed August 11, 1905. Serial No. 11,542. PUBLISHED MAY 1, 1906.

54,483. CIGARS. SAMUEL SPIEGEL. New York, N. Y.

The word "FLORADALE" and the bust picture of a young girl in fancy dress inclosed within an oval frame.

Filed September 18, 1905. Serial No. 12,775. PUBLISHED MAY 8, 1906.

54,484. CIGARETTES. HENRY P. STRAUSE, New York, N. Y.

The pictorial representation of a yacht scene. In the approximate center of the mark is the representation of a yacht floating in water more or less broken up in waves, and to the left of the yacht, in the distance, is seen another vessel. Above the yacht, in script type, are the words "YACHT SCENE," ending in a paraph. Encircling the figure just mentioned is the representation of an endless rope.

Filed July 13, 1905. Serial No. 10,278. PUBLISHED MAY 8, 1906.

54,485. VARNISH-HARDENERS. TOUSEY VARNISH CO., Chicago, Ill.

The word "ELASTI-HARD."

Filed November 3, 1905. Serial No. 14,255. PUBLISHED MAY 8, 1906.

54,486. CALCIMINE. THE TRIPOD PAINT CO., Atlanta, Ga.

The arbitrarily-selected fanciful word "DECO-MURA."

Filed December 30, 1905. Serial No. 15,779. PUBLISHED MAY 8, 1906.

54,487. HYDRAULIC CEMENT. UTICA HYDRAULIC CEMENT CO., Utica, Ill.

The word "UTICA." Used ten years.

Filed December 4, 1905. Serial No. 15,166. PUBLISHED MAY 8, 1906.

54,488. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn.

The words "BRIGHT LEAF." Used ten years.

Filed March 6, 1906. Serial No. 17,572. PUBLISHED MAY 8, 1906.

54,489. WOOLEN PIECE GOODS. THE BEEBE-WEBBER COMPANY, Holyoke, Mass.

The words "STARBECK MILLS" arranged between the lines of two concentric circles and associated with the word "QUALITY" in script type on a band and horizontally arranged within the inner circle, and arranged diagonally to the word "QUALITY" and back of the band is a representation of the Roman fasces.

Filed January 20, 1906. Serial No. 16,338. PUBLISHED MAY 8, 1906.

54,490. LADIES' SHIRT-WAISTS. THE BELLE WAIST CO., Boston, Mass.

The words "THE BELLE."

Filed March 8, 1906. Serial No. 17,656. PUBLISHED MAY 8, 1906.

54,491. SMOKING-TOBACCO. BLACKWELL'S DURHAM TOBACCO CO., New York, N. Y.

The word "DURHAM," accompanied by the representation of a bull. Used ten years.

Filed September 20, 1905. Serial No. 12,798. PUBLISHED MAY 8, 1906.

54,492. CANNED SUCCOTASH. BURNHAM & MORRILL COMPANY, Portland, Me.

The word or word-symbol "PARIS." Used ten years.

Filed May 20, 1905. Serial No. 6,189. PUBLISHED MAY 8, 1906.

54,493. CIGARETTES. BUTLER-BUTLER (INCORPORATED), New York, N. Y.

The word "UMBELONO."

Filed January 23, 1906. Serial No. 16,410. PUBLISHED MAY 8, 1906.

54,494. LADIES' SHIRT-WAISTS. EDWARD FAST, New York, N. Y.

The word "CORONET" within quotation-marks and arranged between the words "THE" and "SHIRT WAIST" and associated with a representation of a coronet or crown and a monogram composed of the letters "E F."

Filed February 14, 1906. Serial No. 17,027. PUBLISHED MAY 8, 1906.

54,495 BUTTER. H. C. CHRISTIANS Co., Johnson Creek, Wis.

The word "AYRSHIRE." Used ten years.

Filed June 3, 1905. Serial No. 7,349. PUBLISHED MAY 8, 1906.

54,496. HAVANA CIGARS. HAVANA COMMERCIAL COMPANY, Jersey City, N. J., and New York, N. Y.

The representation of a streamer with the words "PEDRO MURIAS Y CA" thereon and with the words "FABRICANTES DE TABACOS" and "HABANA" below said streamer. A representation of two crossed sprays is below the word "HABANA." Used ten years.

Filed March 1, 1906. Serial No. 17,442. PUBLISHED MAY 8, 1906.

54,497. CHOCOLATE, COCOA, AND CHOCOLATE PREPARATIONS. MILTON S. HERSHEY, Derry Church, Pa.

The representation of a portion of a vine bearing a broken cocoa-bean, with the head, arms, and shoulders of an infant projecting therefrom holding a cup in one hand.

Filed February 8, 1906. Serial No. 16,826. PUBLISHED MAY 8, 1906.

54,498. LADIES' DRESS-WAISTS. JUDA BROS., San Francisco, Cal.

The word "BEAUTY" and the letters "J. B." inclosed in rhomboidal outlines at each end of the word.

Filed February 3, 1906. Serial No. 16,723. PUBLISHED MAY 8, 1906.

54,499. SMOKING-TOBACCO, CHEWING-TOBACCO, AND TOBACCO USED FOR MAKING CIGARETTES. ALEXANDER A. KOHÁRY, Pittsburg, Pa.

The representation of a man on horseback holding in his left hand an upright spear and in his right hand a club, below which are the words "DUHAN KRALJEVIĆA MARKA," the whole inclosed in a rectangular border.

Filed February 6, 1906. Serial No. 16,789. PUBLISHED MAY 8, 1906.

54,500. CANDY. THE LIPPS-MURBACH CO. OF BALTIMORE CITY, Baltimore, Md.

The arbitrarily-selected words "SWISS BUTTER SOLFERENO," the word "SOLFERENO" being within quotation-marks.

Filed March 8, 1906. Serial No. 17,670. PUBLISHED MAY 8, 1906.

54,501. CANDIED POPCORN. WILLIAM J. MADDEN, New York, N. Y.

The letters "C. C. C." having periods placed therebetween.

Filed March 17, 1906. Serial No. 17,978. PUBLISHED MAY 8, 1906.

54,502. WHEAT-FLOUR. NEW LONDON MILLING COMPANY, New London, Minn.

The word "XCELSALL" arranged both horizontally and vertically in such a way that the letter "S" is common upon a white Greek cross on a blue field inclosed in an annular border of red.

Filed December 16, 1905. Serial No. 15,463. PUBLISHED MAY 8, 1906.

54,503. WHEAT-FLOUR. THE NORTHWESTERN CONSOLIDATED MILLING CO., Minneapolis, Minn.

The words "CHRISTIAN'S SUPERLATIVE." Used ten years.

Filed May 11, 1905. Serial No. 5,045. PUBLISHED MAY 8, 1906.

54,504. KID GLOVES. CHARLES PERRIN & CIE., Grenoble, France.

A winged star with rays radiating therefrom, a scroll below the star with the words "MONSTRANT ASTRA VIAM" on the same, and a monogram formed of the letters "P J" within the star.

Filed December 28, 1905. Serial No. 15,721. PUBLISHED MAY 8, 1906.

54,505. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn.

The words "PLANT SYSTEM."

Filed March 22, 1906. Serial No. 18,108. PUBLISHED MAY 8, 1906.

54,506. CHEWING-GUM. AMERICAN CHICLE CO., New York, N. Y.

The hyphenated word "KIS-ME."

Filed June 15, 1905. Serial No. 8,144. PUBLISHED MAY 1, 1906.

54,507. CIGARS. CARRERAS LIMITED, London, England.

The representation of the head of a black cat with a ribbon scroll beneath, all inclosed in a circle.

Filed June 1, 1905. Serial No. 7,154. PUBLISHED MAY 1, 1906.

54,508. CIGARS, CHEROOTS, AND CIGARETTES MADE OF CIGAR-TOBACCO. CAYEY-CAGUAS TOBACCO COMPANY, New York, N. Y., and Caguas, Porto Rico.

The word "ENDORSO."

Filed August 5, 1905. Serial No. 11,291. PUBLISHED MAY 1, 1906.

54,509. COAL. EDWIN J. CUMMINGS, Philadelphia, Pa.

A square-shaped figure in solid color.

Filed June 23, 1905. Serial No. 8,854. PUBLISHED MAY 1, 1906.

54,510. LARD. GOLDEN AND COMPANY, Washington, D. C.

The representation of the dome of the Capitol at Washington, D. C., beneath which are arranged the words "CAPITOL COMPOUND LARD."

Filed January 18, 1906. Serial No. 16,270. PUBLISHED MAY 8, 1906.

54,511. CARBONATED NON-INTOXICATING TONIC BEVERAGE. HEINZERLING & Co., Baltimore, Md.

A rectangular panel bearing the representation of a stag's head, the words "CLUB ALE" inclosed in quotation-marks, and words descriptive of the goods of applicants and of their place of business.

Filed July 18, 1905. Serial No. 10,505. PUBLISHED MAY 1, 1906.

54,512. CARBONATED NON-INTOXICATING TONIC BEVERAGE. HEINZERLING & Co., Baltimore, Md.

A rectangular panel bearing the representation of a stag's head and the words "KOLA CREAM" inclosed in quotation-marks. Words descriptive of the goods of the applicants and of their place of business also appear upon the panel.

Filed July 18, 1905. Serial No. 10,506. PUBLISHED MAY 1, 1906.

54,513. CANNED CORN AND CANNED SAUER-KRAUT. P. HOHENADEL, Jr., Janesville, Wis., and Rochelle, Ill.

The words "MAPLE LEAF."

Filed July 12, 1905. Serial No. 10,161. PUBLISHED MAY 8, 1906.

54,514. CANNED CORN AND CANNED SAUER-KRAUT. P. HOHENADEL, Jr., Janesville, Wis., and Rochelle, Ill.

The picture of a badger holding an ear of corn and surrounded by foliage, the whole being bordered by a panel.

Filed July 12, 1905. Serial No. 10,162. PUBLISHED MAY 8, 1906.

54,515. CENTRIFUGAL CREAM-SEPARATORS. INTERNATIONAL HARVESTER COMPANY OF AMERICA, Chicago, Ill.

The words "CREAM HARVESTER" appearing on a panel inclosed in an elliptical ornamental border.

Filed December 29, 1905. Serial No. 15,754. PUBLISHED MAY 8, 1906.

54,516. WHEAT-FLOUR. JOHN F. MEYER & SONS MILLING Co., St. Louis and Springfield, Mo.

The pictorial representation of a white crane standing in a marsh, which representation appears on a panel inclosed by a curved border-line, and above said representation appear the words "WHITE CRANE," and to the left of the said representation is printed the word "HIGH," and on the right hand of the representation is printed the word "PATENT," and below the representation appear the words and letters "JOHN F. MEYER & SONS, SPRINGFIELD, MO.," all of which words and pictorial representation are inclosed in a circular border-line. Used ten years.

Filed August 17, 1905. Serial No. 11,745. PUBLISHED MAY 8, 1906.

54,517. CEMENT-PLASTER. J. B. KING & Co., New York, N. Y.

The word "PURITAN."

Filed May 11, 1905. Serial No. 5,121. PUBLISHED MAY 1, 1906.

54,518. GUITARS AND ZITHERS. LYON & HEALY, Chicago, Ill.

The word "ARION."

Filed August 7, 1905. Serial No. 11,353. PUBLISHED MAY 8, 1906.

54,519. SUPPLY-PACKAGES FOR MUSICAL INSTRUMENTS. LYON & HEALY, Chicago, Ill.

The word "SIMPLEX."

Filed August 7, 1905. Serial No. 11,374. PUBLISHED MAY 8, 1906.

54,520. COFFEE. MERCHANTS COFFEE COMPANY OF NEW ORLEANS LTD., New Orleans, La.

The word "CUPID."

Filed June 21, 1905. Serial No. 8,697. PUBLISHED MAY 8, 1906.

54,521. MIXED PAINTS. THE PATTERSON SARGENT COMPANY, Cleveland, Ohio.

A yellow disk bearing the letters "B P S." Used ten years.

Filed September 18, 1905. Serial No. 12,772. PUBLISHED MAY 8, 1906.

54,522. CANDY. THE PEPPER COMPANY, Peabody, Mass.

The word "GIBRALTERS." Used ten years.

Filed May 15, 1905. Serial No. 5,763. PUBLISHED MAY 1, 1906.

54,523. CANNED FRUITS AND VEGETABLES. PLATT & COMPANY, Baltimore, Md.

The words "TIGER BRAND" and the representation of a tiger's head.

Filed October 5, 1905. Serial No. 13,340. PUBLISHED MAY 8, 1906.

54,524. CANDY. REYMER & BROTHERS, INCORPORATED, Pittsburg, Pa.

The word "REYMERS'" in characteristic script type, with a paraph extending from the letter "S" beneath the word, and the same being a simulation of the handwriting of Jacob S. Reymer, deceased. Used ten years.

Filed June 1, 1905. Serial No. 7,171. PUBLISHED MAY 1, 1906.

54,525 RUBBER BOOTS AND SHOES OF ALL KINDS. RICE & HUTCHINS, INCORPORATED, Boston, Mass., assignor to Rice and Hutchins, Incorporated, a Corporation of Maine.

The word "EDUCATOR."

Filed June 10, 1905. Serial No. 7,782. PUBLISHED MAY 8, 1906.

54,526. LEATHER BOOTS AND SHOES AND LEATHER USED IN THEIR MANUFACTURE. RICE & HUTCHINS, INCORPORATED, Boston, Mass., assignor to Rice and Hutchins, Incorporated, a Corporation of Maine.

The word "GRIPSOLE," with the representation of a man riding a bicycle.

Filed June 10, 1905. Serial No. 7,794. PUBLISHED MAY 8, 1906.

54,527. CHOCOLATE CANDIES, CHOCOLATE, AND PREPARATIONS OF CHOCOLATE AND COCOAS. RUSS-SUCHARD & CIE., Neuchâtel, Switzerland, assignors to Suchard Société Anonyme.

The word "MILKA."

Filed May 27, 1905, Serial No. 6,766. PUBLISHED MAY 1, 1906.

54,528. TEA. A. SCHILLING & Co., San Francisco, Cal.

The words "SCHILLING'S BEST." Used ten years.

Filed December 21, 1905. Serial No. 15,548. PUBLISHED MAY 8, 1906.

54,529. TEA. A. SCHILLING & Co., San Francisco, Cal.

The pictorial representation of a white Greek cross surrounded by a wreath of leaves and berries tied by a ribbon formed into a bow with scroll-like free ends. Used ten years.

Filed December 21, 1905. Serial No. 15,550. PUBLISHED MAY 8, 1906.

54,530. WATCHES AND PARTS THEREOF. ADOLPHE SCHWOB, New York, N. Y.

The name "TAVANNES WATCH Co." Used ten years.

Filed July 12, 1905. Serial No. 10,168. PUBLISHED MAY 8, 1906.

54,531. WATCHES AND PARTS THEREOF. ADOLPHE SCHWOB, New York, N. Y.

The words "BIJOU WATCH Co." Used ten years.

Filed July 12, 1905. Serial No. 10,170. PUBLISHED MAY 8, 1906.

54,532. CHEWING AND SMOKING TOBACCO. SMITH & SCOTT TOBACCO Co., Paducah, Ky.

The words "FORKED DEER," associated with the representation of the head of a deer.

Filed April 14, 1905. Serial No. 1,467. PUBLISHED MAY 1, 1906.

54,533. TURPENTINE. STANDARD OIL CO. OF NEW YORK, New York, N. Y.

A triangular figure bearing thereon the name, words, numbers, and abbreviations "PRATT'S TURPENTINE. STANDARD OIL CO., OF NEW YORK. 26 BROADWAY, N. Y." and a coat-of-arms comprising a human head and the numerals "1770" inclosed in a circle of stars and surmounted by an eagle, with rampant tigers on the respective sides of said circle and standing on a scroll on which appear the words "POUR PARVENIR A BONNE FOI." Used ten years.

Filed June 16, 1905. Serial No. 8,333. PUBLISHED MAY 8, 1906.

54,534. COATING FOR WALLS. TOCH BROTHERS, New York, N. Y.

The word "LOCKPORE."

Filed August 12, 1905. Serial No. 11,579. PUBLISHED MAY 8, 1906.

54,535. TALKING-MACHINE RECORDS. VICTOR TALKING MACHINE Co., Camden, N. J.

The word "VICTOR."

Filed June 27, 1905. Serial No. 9,270. PUBLISHED MAY 8, 1906.

54,536. TALKING-MACHINE RECORDS. VICTOR TALKING MACHINE Co., Camden, N. J.

The word "MONARCH."

Filed June 27, 1905. Serial No. 9,271. PUBLISHED MAY 8, 1906.

54,537. PORTLAND CEMENT. THE VULCANITE PORTLAND CEMENT Co., Philadelphia, Pa.

A Maltese cross inclosed in a circle, the cross bearing on its face the letter "V" and rays extending therefrom on a dark background in the form of a sunburst, and above the cross the words "VULCANITE PORTLAND CEMENT."

Filed July 25, 1905. Serial No. 10,777. PUBLISHED MAY 1, 1906.

54,538. PORTLAND CEMENT. THE WHITEHALL PORTLAND CEMENT Co., Cementon and Philadelphia, Pa.

The word "WHITEHALL," which is displayed on a circular red ground.

Filed April 8, 1905. Serial No. 841. PUBLISHED MAY 8, 1906.

54,539. LAUNDRY SOAP. WILLIAM WALTKE & Co., St. Louis, Mo.

The word "SWISS." Used ten years.

Filed May 24, 1905. Serial No. 6,493. PUBLISHED MAY 1, 1906.

54,540. COTTON SHEETING AND DRILLING. THE ABE STEIN Co., New York, N. Y.

The representation of an aboriginal carrying a spear and shield in the foreground of a desert scene showing a mound, a tree, and two huts, associated with the letters "M. K."

Filed May 11, 1905. Serial No. 5,108. PUBLISHED MAY 8, 1906.

54,541. CERTAIN NAMED CEREAL FOODS. THE AMERICAN CEREAL COMPANY, Akron and Ravenna, Ohio; Chicago, Ill., and Cedar Rapids, Iowa.

The word "QUAKER" and the pictorial representation of the figure of a man clothed in Quaker garb bearing in one hand a scroll with the word "PURE" appearing thereon.

Filed April 19, 1905. Serial No. 2,309. PUBLISHED MAY 8, 1906.

54,542. COATS, VESTS, TROUSERS, AND OVERCOATS. BROKAW BROS., New York, N. Y.

The word "BROKAW." Used ten years.

Filed October 12, 1905. Serial No. 13,524. PUBLISHED MAY 8, 1906.

54,543. LEAF-TOBACCO "IN THE HAND." J. M. BUCKNER, JR., & Co., Louisville, Ky.

The words "BLACK RAM" and a pictorial representation of the head of a ram.

Filed December 23, 1905. Serial No. 15,613. PUBLISHED MAY 1, 1906.

54,544. CIGARS, CHEROOTS, AND CIGARETTES MADE OF CIGAR-TOBACCO. CAYEY-CAGUAS TOBACCO COMPANY, New York, N. Y., and Caguas, Porto Rico.
The word "AMORIFÉ."
Filed August 5, 1905. Serial No. 11,290. PUBLISHED MAY 1, 1906.

54,545. CRACKERS, BISCUITS, AND CAKES. CRESCENT MACARONI & CRACKER CO., Davenport, Iowa.
A star and crescent, the star being placed partly within the crescent.
Filed August 16, 1905. Serial No. 11,701. PUBLISHED MAY 8, 1906.

54,546. SPICES AND MUSTARD. E. R. DURKEE & Co., New York, N. Y.
The representation of the heads, shoulders, and outstretched wings of three birds, the wings forming a triangular figure surrounded by two concentric circles.
Filed May 2, 1905. Serial No. 3,983. PUBLISHED MAY 8, 1906.

54,547. ROASTED COFFEE AND ROASTED AND GROUND COFFEE. THE ENTERPRISE COFFEE COMPANY OF BALTIMORE CITY, Baltimore, Md.
The representation of a gold star, associated with the words "GOLD STAR."
Filed May 3, 1905. Serial No. 4,097. PUBLISHED MAY 8, 1906.

54,548. CORSETS. FELLHEIMER AND COMPANY, New York, N. Y.
The representation of a ring and the word "RINGWAIST" on the ring.
Filed August 1, 1905. Serial No. 11,086. PUBLISHED MAY 8, 1906.

54,549. MACARONI AND SPAGHETTI. GENNERICH & VON BREMEN, New York, N. Y.
A representation in cherry-red color of a diamond composed of four bars intersecting each other and surrounded by a wreath.
Filed August 2, 1905. Serial No. 11,171. PUBLISHED MAY 8, 1906.

54,550. RUBBER HOSE. GORHAM RUBBER COMPANY, San Francisco, Cal.
The word "AMAZON."
Filed May 11, 1905. Serial No. 5,170. PUBLISHED JANUARY 9, 1906.

54,551. GINGER-ALE. HOLMES & BARBER, Valdosta, Ga.
The words "RED RACE" and the representation of an adult Indian in full feather head-dress having a blanket wrapped about him, in company with an Indian boy having a bow passing over one shoulder and holding a bottle in his hand.
Filed December 16, 1905. Serial No. 15,730. PUBLISHED MAY 1, 1906.

54,552. BAKING-POWDER. THE HOWELL MFG. CO., Hamilton, Ohio.
The words "AUNT JEMIMA'S BAKING POWDER" and the bust of a negress carrying a pan of biscuits. Used ten years.
Filed April 20, 1905. Serial No. 2,508. PUBLISHED MAY 8, 1906.

54,553. COTTON SHEETINGS AND DRILLS. KENZO IWAHARA, New York, N. Y.
A representation of a deer shown as lying down and a bald and bearded man reclining upon the deer, a small tree or shrub being shown in the background and a geometrical design beneath the deer, all displayed in the typical Chinese style.
Filed July 13, 1905. Serial No. 10,245. PUBLISHED MAY 8, 1906.

54,554. SALTED AND BONELESS FISH. J. W. BEARDSLEY'S SONS, New York, N. Y.
A rectangular panel having a red strip arranged centrally thereon and extending longitudinally thereof.
Filed October 7, 1905. Serial No. 13,414. PUBLISHED MAY 8, 1906.

54,555. DRESS-SHIELDS. THE KORA CO., New York, N. Y.
The word "KORA."
Filed April 21, 1905. Serial No. 2,633. PUBLISHED MAY 8, 1906.

54,556. BOLTED WOOLEN DRESS GOODS. JOHN LONKE, New York, N. Y.
The words "GOLD CAP BOARD."
Filed October 14, 1905. Serial No. 13,594. PUBLISHED MAY 8, 1906.

54,557. QUILTS. MARSHALL FIELD & COMPANY, Chicago, Ill.
The representation of a shield divided into an upper and lower field by a chevron, there being in the upper field, on either side of the apex of the chevron, a sheaf of wheat and in the lower field a single sheaf. The shield is surmounted by a crest comprising an old-fashioned spinning-wheel, and below the shield a scroll appears.
Filed December 4, 1905. Serial No. 15,159. PUBLISHED MAY 8, 1906.

54,558. COTTON PIECE GOODS. MASSACHUSETTS COTTON MILLS, Lowell, Mass.
The arbitrarily-selected word "WYANDOTTE." Used ten years.
Filed May 10, 1905. Serial No. 4,995. PUBLISHED MAY 8, 1906.

54,559. COTTON PIECE GOODS. MASSACHUSETTS COTTON MILLS, Lowell, Mass.
The letter "B" in gold color.
Filed May 11, 1905. Serial No. 5,249. PUBLISHED MAY 8, 1906.

54,560. BLEACHED, GRAY, PRINTED, AND FANCY DAMASKS. NEUSS HESSLEIN & Co., New York, N. Y.
The words "ROYAL TIGER" and the representation of a walking tiger.
Filed September 5, 1905. Serial No. 12,244. PUBLISHED MAY 8, 1906.

54,561. STERLING-SILVER WARE. R. WALLACE & SONS MFG. CO., Wallingford, Conn.
A stag's head, heraldic roll, and the letters "R W & S."
Filed April 27, 1905. Serial No. 3,254. PUBLISHED MAY 8, 1906.

54,562. CERTAIN NAMED DRESS FABRICS. OTTO SEYD, New York, N. Y.
The initial letters "O S" intertwined as a monogram.
Filed July 22, 1905. Serial No. 10,772. PUBLISHED MAY 8, 1906.

54,563. LAUNDRY STARCH. TROY LAUNDRY MACHINERY COMPANY LIMITED, Chicago, Ill.
The word "TROJAN."
Filed April 19, 1905. Serial No. 2,220. PUBLISHED MAY 8, 1906.

54,564. PIANOS. W. W. KIMBALL COMPANY, Chicago, Ill.
The word "KIMBALL." Used ten years.
Filed August 14, 1905. Serial No. 11,639. PUBLISHED MAY 8, 1906.

54,565. BLEACHED AND UNBLEACHED SHIRTINGS AND SHEETINGS, CAMBRICS, AND LONG-CLOTH. GRINNELL WILLIS & Co., New York, N. Y.
The representation of a spool from which some thread is unwound and looped so as to form the letter "W."
Filed November 17, 1905. Serial No. 14,742. PUBLISHED MAY 8, 1906.

54,566. INTERNAL REMEDY, BEING A DIURETIC MEDICINE. ACTIEN-GESELLSCHAFT FÜR ANILIN-FABRIKATION, Berlin, Germany.
The word "BARUTIN."
Filed September 7, 1905. Serial No. 12,340. PUBLISHED MAY 8, 1906.

54,567. BROOMS. AMERICAN BROOM & BRUSH CO., Amsterdam, N. Y.
The arbitrarily-selected word "METRIC."
Filed March 12, 1906. Serial No. 17,775. PUBLISHED MAY 8, 1906.

54,568. CERTAIN NAMED CEREAL FOODS. THE AMERICAN CEREAL COMPANY, Akron and Ravenna, Ohio; Chicago, Ill., and Cedar Rapids, Iowa.
The pictorial representation of the figure of a man clothed in Quaker garb bearing in one hand a scroll with the word "PURE" appearing thereon.
Filed April 19, 1905. Serial No. 2,310. PUBLISHED MAY 8, 1906.

54,569. TOMATO SAUCE. LGI BALBI & Co., New York, N. Y.
A panel bearing a representation of a woman holding on one arm a basket of tomatoes, and a large tomato lying on the ground to one side, and an ornamental panel bearing the words "ESIGERE LA VERA SCATOLA DEL GAIZO," to which the woman is pointing.

Filed November 7, 1905. Serial No. 14,387. PUBLISHED MAY 8, 1906.

54,570. TYPE-WRITER RIBBONS. THE CARTER'S INK COMPANY, Boston, Mass., and New York, N. Y.
The word "CARTER'S." Used ten years.
Filed March 15, 1906. Serial No. 17,891. PUBLISHED MAY 8, 1906.

54,571. CARBON-PAPER. THE CARTER'S INK COMPANY, Boston, Mass., and New York, N. Y.
The word "IDEAL."
Filed March 15, 1906. Serial No. 17,892. PUBLISHED MAY 8, 1906.

54,572. HOUSEHOLD AND COOKING UTENSILS MADE OF ENAMELED STEEL. THE CENTRAL STAMPING COMPANY, New York, N. Y.
The representation of a wheel having the word "STEELING" on the hub thereof and the words "THE CENTRAL STAMPING COMPANY" upon the felly.
Filed June 26, 1905. Serial No. 9,078. PUBLISHED MAY 8, 1906.

54,573. PEACH-TREES. MILTON E. FOWLER, Lindale, Tex.
The word "AUGBERT."
Filed March 12, 1906. Serial No. 17,769. PUBLISHED MAY 8, 1906.

54,574. GAS-BURNERS. H. ADLER COMPANY, Carnegie, Pa., and Kansas City, Mo.
The word "VICTOR."
Filed February 13, 1906. Serial No. 16,979. PUBLISHED MAY 8, 1906.

54,575. STAMPS FOR STAMPING TRADE-MARKS UPON TEXTILES. KAUMAGRAPH CO., New York, N. Y.
The word "KAUMAGRAPH."
Filed June 30, 1905. Serial No. 9,517. PUBLISHED MAY 8, 1906.

54,576. LAUNDRY STARCH. NEW ORLEANS COFFEE CO. LTD., New Orleans, La.
The words "WHITE RABBIT" and the representation of a white rabbit upon a shield, the upper and lower parts of the shield being of contrasting colors.
Filed October 9, 1905. Serial No. 13,453. PUBLISHED MAY 8, 1906.

54,577. SUGAR-CANE SYRUPS AND MOLASSES. PENICK & FORD LTD., Shreveport, La.
The facsimile signature "PENICK & FORD."
Filed May 12, 1905. Serial No. 5,323. PUBLISHED MAY 8, 1906.

54,578. LEATHER SHOES. PETERS SHOE CO., St. Louis, Mo.
The words "PETERS SPARKLER" printed in the center of a rectangular space surrounded by a border-line.
Filed April 12, 1905. Serial No. 1,296. PUBLISHED MAY 8, 1906.

54,579. PAPER-MAKERS' FELTINGS. JOSEPH PORRITT & SONS, Helmshore, England.
The representation of an arrow.
Filed July 1, 1905. Serial No. 9,595. PUBLISHED MAY 8, 1906.

54,580. DRIED FIGS. PROTOPAZZI BROTHERS, London, England.
The word "PROTOBEN."
Filed July 28, 1905. Serial No. 10,986. PUBLISHED MAY 8, 1906.

54,581. LEATHER BELTING. THE REPUBLIC BELTING & SUPPLY CO., Cleveland, Ohio.
The word "REPUBLIC."
Filed March 14, 1906. Serial No. 17,818. PUBLISHED MAY 8, 1906.

54,582. MUSIC-BOXES. FRIEDRICH ADOLF RICHTER, Rudolstadt, Germany, and New York, N. Y.
The word "IMPERATOR."
Filed December 20, 1905. Serial No. 15,537. PUBLISHED MAY 8, 1906.

54,583. ANTISEPTICS AND WASHES FOR THE MOUTH AND TEETH. FRIEDRICH ADOLPH SCHULZ, Leipsic, Germany.
The representation of two baby mermaids resting on a block floating on the water, a bottle of the preparation also floating on the water, a waterspout, and the word "DENSOS," the whole inclosed in a rectangle on a black background.
Filed January 29, 1906. Serial No. 16,605. PUBLISHED MAY 8, 1906.

54,584. POULTRY-FOODS. ALBERT EDWARD TATE, High Point, N. C.
The words "SUNNY SOUTH."
Filed July 13, 1905. Serial No. 10,265. PUBLISHED MAY 8, 1906.

54,585. GRASS-SEED AND FIELD-SEED. LUDWIG TEWELES, Milwaukee, Wis.
The words "BADGER BRAND" and the representation of a badger.
Filed April 10, 1905. Serial No. 1,001. PUBLISHED MAY 8, 1906.

54,586. INK-ERADICATORS. BERTHA R. THOMAS, New York, N. Y.
The word "INKOFF" displayed in the form of a cross, with the letter "K" forming the center thereof, being common to each word, and the syllables "IN" and "OFF" of the word being separated from the letter "K" by dashes.
Filed January 20, 1906. Serial No. 16,348. PUBLISHED MAY 8, 1906.

54,587. PREPARED FOOD, PRIMARILY FOR INFANTS AND INVALIDS. WELLS & RICHARDSON COMPANY, Burlington, Vt.
The words "CEREAL MILK" and the representation of the head of a cow partially inclosed in a wreath of ears and stalks of grain.
Filed September 9, 1905. Serial No. 12,427. PUBLISHED MAY 8, 1906.

54,588. PREPARED FOOD, PRIMARILY FOR INFANTS AND INVALIDS. WELLS & RICHARDSON COMPANY, Burlington, Vt.
The words "CEREAL MILK." Used ten years.
Filed September 9, 1905. Serial No. 12,428. PUBLISHED MAY 8, 1906.

54,589. MEDICINE FOR TREATMENT OF APPENDICITIS. CHARLES WESCHCKE, Springfield, Minn.
The representation of the human organ called the "appendix" inclosed within a circle.
Filed February 13, 1906. Serial No. 16,986. PUBLISHED MAY 8, 1906.

54,590. SALT. WILKINSON, GADDIS & Co., Newark, N. J.
The word "IDEAL."
Filed June 17, 1905. Serial No. 8,388. PUBLISHED MAY 8, 1906.

54,591. ROLLED OATS. WILKINSON, GADDIS & Co., Newark, N. J.
The word "IDEAL."
Filed June 17, 1905. Serial No. 8,393. PUBLISHED MAY 8, 1906.

54,592. MATTRESSES AND PILLOWS. CHITTENDEN EASTMAN CO., Burlington, Iowa.
The words "SQUARE BRAND." Used ten years.
Filed November 1, 1905. Serial No. 14,171. PUBLISHED MAY 8, 1906.

54,593. POWDERS FOR INDIGESTION AND KINDRED AFFECTIONS. C. V. CROSS, San Francisco, Cal.
The word "TYOGA."
Filed August 14, 1905. Serial No. 11,633. PUBLISHED MAY 8, 1906.

54,594. BEER. CURRAN AND JOYCE CO., Lawrence, Mass.
A heraldic device consisting of a two-headed eagle bearing a shield upon its breast, upon which shield is the letter "A," and surrounded by a wreath, one half of which is formed of blades of wheat and the other half of grape-vine, said halves being shown as tied together with ribbon, and the representation of two red Greek crosses, associated with the words "ANZER BRÄU."
Filed October 23, 1905. Serial No. 13,862. PUBLISHED MAY 8, 1906.

54,595. LEAD-PENCILS. A. W. FABER, Stein, Germany.
The letters "A. W. F."
Filed December 16, 1905. Serial No. 15,456. PUBLISHED MAY 8, 1906.

54,596. PHOTOGRAPHIC PAPERS. FARBENFABRIKEN OF ELBERFELD CO., New York, N. Y.
The word "AUTAN."

Filed December 18, 1905. Serial No. 15,501. PUBLISHED MAY 8, 1906.

54,597. LEATHER WRITING SETS AND WRITING-PADS AND LEATHER-BOUND BLOTTING PADS. GORHAM MF'G. CO., Providence, R. I.

The word "GORHAM." Used ten years.

Filed November 15, 1905. Serial No. 14,667. PUBLISHED MAY 8, 1906.

54,598. COUGH CURE. FRED L. GRAY, Montpelier, Vt.

The word "LIX-ALL."

Filed August 29, 1905. Serial No. 12,075. PUBLISHED MAY 8 1906.

54,599. CAPSULES. J. M. GROSVENOR & CO., Boston, Mass.

The word "KONSEALS." Used ten years.

Filed August 3, 1905. Serial No. 11,215. PUBLISHED MAY 8, 1906

54,600. CARBONATED NON-INTOXICATING TONIC BEVERAGE. HEINZERLING & CO., Baltimore, Md.

The representation of a stag's head.

Filed July 18, 1905. Serial No. 10,507. PUBLISHED MAY 8, 1906.

54,601. HOUSEHOLD UTENSILS MADE OF ENAMELED STEEL OR IRON WARE. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill.

The arbitrarily-selected word-symbol "CHRYSOLITE."

Filed October 21, 1905. Serial No. 13,843. PUBLISHED MAY 8, 1906.

54,602. BEER. THE HOSTER-COLUMBUS ASSOCIATED BREWERIES CO., Columbus, Ohio.

The name "BORN'S" in heavy shaded script with an underscoring mark.

Filed April 29, 1905. Serial No. 3,634. PUBLISHED MAY 8, 1906.

54,603. BEER. THE HOSTER-COLUMBUS ASSOCIATED BREWERIES CO., Columbus, Ohio.

The name "SCHLEE'S" in heavy shaded script with a bar beneath the name.

Filed April 29, 1905. Serial No. 3,635. PUBLISHED MAY 8 1906.

54,604. PRINTING AND LITHOGRAPHING INKS, PRINTING-INK VARNISHES, AND DRY COLORS. THE JAENECKE PRINTING INK CO., Newark, N. J.

The word "JAENECKE'S." Used ten years.

Filed October 20, 1905. Serial No. 13,781. PUBLISHED MAY 8, 1906.

54,605. PEACH BITTERS. HILARIUS KLAS, San Francisco, Cal.

A portrait of the applicant.

Filed September 12, 1905. Serial No. 12,501. PUBLISHED MAY 8, 1906.

54,606. WITHDRAWN.

54,607. REMEDY FOR SKIN DISEASES. JAMES P. MORRIS, Paris, Tex.

The word "BUR-IN," employed in connection with a human head having skin eruptions indicated thereon.

Filed July 18, 1905. Serial No. 10,636. PUBLISHED MAY 8, 1906.

54,608. SOLE-LEATHER. WM. F. MOSSER & CO., Boston, Mass.

The words "MOSSER SOLE LEATHER" inclosed in an oval-shaped border. Used ten years.

Filed October 14. 1905. Serial No. 13,598. PUBLISHED MAY 8, 1906.

54,609. CUT GLASS. RICHARD MURR, San Francisco, Cal.

The word "KOH-I-NOOR."

Filed March 15, 1906. Serial No. 17,903. PUBLISHED MAY 8, 1906.

54,610. CARBONATED TONIC BEVERAGE. JACOB RIES, Shakopee, Minn.

A rhomboidal panel upon which appears a disk bearing the words "JACOB RIES" above and "SHAKOPEE, MINN." below a monogram of the letters "J" and "R," said disk being associated with the words "ROCK SPRING."

Filed July 18, 1905. Serial No. 10,510. PUBLISHED MAY 8, 1906.

54,611. EARTHENWARE VESSELS. E. J. SAMSON & CO., Chicago, Ill.

The word "PAINTOGRAPHY."

Filed November 13, 1905. Serial No. 14,554. PUBLISHED MAY 8, 1906.

54,612. CERTAIN NAMED CHEMICALS. BRUNNER, MOND & CO., LIMITED, Northwich, England.

The invented word "VOLTOID."

Filed January 26, 1906. Serial No. 16,522. PUBLISHED MAY 8, 1906.

54,613. LEATHER BOOTS AND SHOES. CAMBLOR, MUNTANER & CO., San Juan, Porto Rico.

The representation of a devil, his head resting on his right arm, his left arm extended and holding a frame inclosing the words "EL DIABLO," and a triangle in the said frame, beneath it being the tail of the devil.

Filed March 8, 1906. Serial No. 17,654. PUBLISHED MAY 8, 1906.

54,614. MACHINE-OILS. E. R. DURKEE & CO., New York, N. Y.

The word "CHALLENGE."

Filed July 8, 1905. Serial No. 9,921. PUBLISHED JANUARY 2, 1906.

54,615. ANALGESICS. EL ZERNAC CO., New York, N. Y.

The letters "E L Z" surrounded by a circle.

Filed September 5, 1905. Serial No. 12,216. PUBLISHED JANUARY 2, 1906.

54,616. WINE. ISAAC GOLDOFT, El Paso, Tex.

The words "NATIVE SUN" and a picture of a sun with radiating lines, underneath which is a southern scene with a man carrying a basket of grapes or other fruit, with the representation of a vineyard behind him.

Filed May 3, 1905. Serial No. 4,136. PUBLISHED MAY 8, 1906.

54,617. REMEDY FOR PNEUMONIA. GOWAN MEDICAL CO., Durham, N. C.

The word "GOWAN" arranged in a diamond field, said name being a facsimile signature of the given name of Gowan Dusenbery, president of the corporation.

Filed June 27, 1905. Serial No. 9,278. PUBLISHED MAY 8, 1906.

54,618. MOUTH AND TOOTH WASH. H. K. MULFORD COMPANY, Philadelphia, Pa.

The hyphenated word "THYM-ALKA."

Filed July 17, 1905. Serial No. 10,481. PUBLISHED APRIL 3, 1906.

54,619. REMEDY FOR CERTAIN NAMED DISEASES. SARAH HOLDEN EVERETT HAYDEN, Bedford Springs, Mass.

The letters "H V C."

Filed June 17, 1905. Serial No. 8,414. PUBLISHED APRIL 3, 1906.

54,620. ANTISEPTIC AND EMOLLIENT MEDICINE. INEEDA-COFFIN COMPANY, Louisville, Ky.

A rectangular panel having thereon the word "INEEDARUB" and scroll ornamentation and inclosing a circular panel showing a nurse in the act of rubbing a bare leg of a patient.

Filed July 1, 1905. Serial No. 9,600. PUBLISHED MAY 8, 1906.

54,621. HEATING AND COOKING STOVES. JOLIET STOVE WORKS, Joliet, Ill.

The word "MOORE'S." Used ten years.

Filed March 29, 1906. Serial No. 18,349. PUBLISHED MAY 8, 1906.

54,622. OLIVE-OIL. THOMAS MARTINDALE & CO., Philadelphia, Pa.

The word "ROYAL."

Filed November 16, 1905. Serial No. 14,722. PUBLISHED MAY 8, 1906.

54,623. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.

The representation of an ace of spades having a dark center displaying a light scroll on each side and the figure of an elf standing on one leg, holding extended in his left hand a bauble. On the light border of the ace appear the words "CONSOLIDATED CARD COMPANY." Near the top is a horizontal panel extending under the apex of the ace, displaying the words "NEW YORK." A wreath of leaves and berries is shown surrounding the ace, and at the bottom a two-part ribbon-like scroll displays the word, abbreviation, and numeral "ELF No. 93." Used ten years.

Filed July 12, 1905. Serial No. 10,151. PUBLISHED MAY 8, 1906.

54,624. COCOANUT-BUTTER. OIL SEEDS COMPANY, New York, N. Y.

The hyphenated word "OS-CO."

Filed February 1, 1906. Serial No. 16,657. PUBLISHED MAY 8, 1906.

54,625. FLAVORING EXTRACTS. OKLAHOMA WHOLESALE GROCER CO., Oklahoma, Okla. Ter.

The word "QUAIL" and the picture of a quail inclosed in a circle, with grass in the background.

Filed January 23, 1906. Serial No. 16,417. PUBLISHED MAY 8, 1906.

54,626. SNAP-SWITCHES. THE PERKINS CORPORATION, Hartford, Conn.

The letter "P" with an arrow extending across the "P."

Filed April 2, 1906. Serial No. 18,431. PUBLISHED MAY 8, 1906.

54,627. WHEAT BREAKFAST-FOOD. PILLSBURY-WASHBURN FLOUR MILLS COMPANY LIMITED, Minneapolis, Minn.

A rectangular figure divided into four panels, on two of which are the representation of a pyramid and the words "PILLSBURY'S VITOS THE IDEAL WHEAT FOOD STERILIZED." On one of the other panels is the representation of a wheat-field with the sun in the background, a pyramid in the foreground, and the words "PILLSBURY'S VITOS MEAT OF THE WHEAT THE IDEAL WHEAT FOOD STERILIZED MADE FROM THE BEST NORTHWESTERN HARD WHEAT, PILLSBURY WASHBURN FLOUR MILLS CO. LTD., MINNEAPOLIS, MINN. U. S. A.," and on the other panel the representation of a wheat-field with the sun in the background and a triangle in the foreground, a partial view of the globe in a wheat-field, and the words "PILLSBURY'S VITOS THE IDEAL WHEAT FOOD STERILIZED PILLSBURY'S BEST XXXX MINNEAPOLIS, MINN. PILLSBURY'S DIETETIC GERMOS FLOUR MINNEAPOLIS, MINN. THE WORLD'S STANDARD BRANDS."

Filed December 23, 1905. Serial No. 15,620. PUBLISHED MAY 8, 1906.

54,628. TOMATO CATSUP, RELISH, AND CHILI SAUCE. EDWARD PRITCHARD, New York, N. Y.

The words "PRIDE OF THE FARM."

Filed March 23, 1906. Serial No. 18,184. PUBLISHED MAY 8, 1906.

54,629. PRESS-BOARD OR PRESS-PAPER. THE ROGERS PAPER MFG. CO. INC, South Manchester, Conn.

A rectangular panel bearing a representation of a fleur-de-lis and in its upper corners the representation of a shield having thereon the capital letter "R" and between the same the numerals "1832," associated with the words "SILK FINISHED."

Filed August 23, 1905. Serial No. 11,949. PUBLISHED MAY 8, 1906.

54,630. REMEDIES FOR CATARRH. CHARLES E. SCHINDLER, Coldwater, Ohio.

The hyphenated syllables "GEN-TO-NA."

Filed February 8, 1906. Serial No. 16,833. PUBLISHED MAY 8, 1906.

54,631. COMPOUNDS OF CHLORIDS AND FORMALDEHYDE. SHOEMAKER & BUSCH, Philadelphia, Pa.

A red star.

Filed April 1, 1905. Serial No. 20. PUBLISHED MAY 8, 1906.

54,632. TOILET POWDER. WALTHAM NOVELTY COMPANY, Waltham, Mass.

The hyphenated word "AB-SOR-BEN-TENE."

Filed July 3, 1905. Serial No. 9,744. PUBLISHED MAY 8, 1906.

54,633. HAIR-TONIC. WEINDORF & CO., Long Island City, N. Y.

A representation of an open razor, associated with the words "WEINDORF'S RAISER," the word "RAISER" appearing on the handle of the razor, being interlocked with the word "HAIR."

Filed April 13, 1905. Serial No. 1,391. PUBLISHED MAY 8, 1906.

54,634. BISCUITS, CRACKERS, AND CAKES. A. J. MEDLAR COMPANY, LIMITED, Philadelphia, Pa.

The representation of a circular figure appearing on a background of blue and the word "MEDLAR" in script with a wedge-shaped dash beneath within said figure.

Filed September 15, 1905. Serial No. 12,645. PUBLISHED MAY 8, 1906.

54,635. FLOURS AND MEALS. THE AMERICAN CEREAL COMPANY, Akron and Ravenna, Ohio; Chicago, Ill., and Cedar Rapids, Iowa.

The pictorial representation of the figure of a man clothed in Quaker garb bearing in one hand a scroll with the word "PURE" appearing thereon.

Filed November 16, 1905. Serial No. 14,718. PUBLISHED May 8, 1906.

54,636. TACKLE AND HOISTING BLOCKS AND SHEAVES FOR THE SAME. BOSTON AND LOCKPORT BLOCK COMPANY, Lockport, N. Y., and Boston, Mass.

The word "METALINE."

Filed April 6, 1906. Serial No. 18,573. PUBLISHED MAY 8, 1906.

54,637. HORSE-NAILS. THE CAPEWELL HORSE NAIL COMPANY, Hartford, Conn.

The representation of an alligator. Used ten years.

Filed March 24, 1906. Serial No. 18,251. PUBLISHED MAY 8, 1906.

54,638. FINISH-NAILS. ANDREW J. CHASE, Melrose, Mass.

The representation of a shield having thereon an eye placed between the letters "O" and "C," and the words "CHASE IMPROVED NAIL," with crossed nails behind the shield and a section of a nail shank and head above the shield.

Filed November 18, 1905. Serial No. 14,793. PUBLISHED MAY 8, 1906.

54,639. PIANOS. M. STEINERT & SONS CO., Boston, Mass.

The name "STEINERT & SONS." Used ten years.

Filed February 10, 1906. Serial No. 16,905. PUBLISHED MAY 8, 1906.

54,640. COAL. ALEXANDER Y. MALCOMSON, Detroit, Mich.

The representation of a sunburst or circle with lines radiating therefrom, with the words "HOTTER THAN SUNSHINE MALCOMSON'S COAL" within the sunburst or circle.

Filed October 28, 1905. Serial No. 14,026. PUBLISHED MAY 8, 1906.

54,641. HOSIERY. MARSHALL FIELD & COMPANY, Chicago, Ill.

The arbitrarily-selected words "OLD IRONSIDES."

Filed January 20, 1906. Serial No. 16,330. PUBLISHED MAY 8, 1906.

54,642. BEER. MINNEAPOLIS BREWING CO., Minneapolis, Minn.

The letter "M" on a central disk and surrounded by a bunch of hop-leaves, hop-buds, and barley-stalks, all inclosed in concentric circles.

Filed August 19, 1905. Serial No. 11,823. PUBLISHED MAY 8, 1906.

54,643. BEER. MINNEAPOLIS BREWING CO., Minneapolis, Minn.

The words "GOLDEN GRAIN BELT" upon a representation of a field of grain and inclosed in a diamond-shaped figure. Within said figure is shown the letter "M" on a circular central field of disk-like form surrounded by hop-leaves, hop-buds, and barley-stalks and inclosed in concentric circles.

Filed August 19, 1905. Serial No. 11,825. PUBLISHED MAY 8, 1906.

54,644. LAGER-BEER. THE PETER SCHOENHOFEN BREWING COMPANY, Chicago, Ill.

The word "SCHOENHOFENBRÄU" printed in a peculiar and distinctive style.

Filed September 18, 1905. Serial No. 12,748. PUBLISHED MAY 8, 1906.

54,645. IRON OR OTHER METAL HEADS OF GOLF-CLUBS. THOMAS STEWART, St. Andrews, Scotland.

The representation of a pipe for smoking tobacco.

Filed February 15, 1906. Serial No. 17,162. PUBLISHED MAY 8, 1906.

54,646. LADIES' WIRE HAT-FRAMES MADE WITHOUT TIE-WIRES. THE TOTEM MACHINE CO., New York, N. Y.

The word "NONTIE."

Filed November 8, 1905. Serial No. 15,217. PUBLISHED MAY 8, 1906.

54,647. PLUMBAGO (OR GRAPHITE) AXLE-GREASE. THE UNITED STATES GRAPHITE COMPANY, Saginaw, Mich.

The representation of the head and bust of a man in Mexican costume, associated with the word "MEXICAN." Used ten years.

Filed September 13, 1905. Serial No. 12,530. PUBLISHED MAY 8, 1906.

54,648. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn.

The words "CAROLINA GOLDEN BELT."

Filed March 6, 1906. Serial No. 17,575. PUBLISHED APRIL 16, 1906.

54,649. HOSIERY FOR BOTH LADIES AND GENTLEMEN. WAYNE KNITTING MILLS, Fort Wayne, Ind.

The words "WAYNE KNIT FLARE TOP HOSIERY" inclosed by scrollwork, foliage, and flowers.

Filed February 19, 1906. Serial No. 17,109. PUBLISHED MAY 8, 1906.

54,650. WHISKY. THE ALBERT M. GUGENHEIM CO., Cincinnati, Ohio.

The word "RYELAND."

Filed February 15, 1906. Serial No. 17,042. PUBLISHED MAY 8, 1906.

54,651. PEROXID OF HYDROGEN. AMERICAN PEROXIDE AND CHEMICAL CO., New York, N. Y.

The word "SOLOX."

Filed December 30, 1905. Serial No. 15,781. PUBLISHED MAY 8, 1906.

54,652. WHISKY. BROWN-FORMAN CO., Louisville, Ky.

The word "RUSSETT."

Filed April 17, 1905. Serial No. 1,829. PUBLISHED MAY 8, 1906.

54,653. PICTORIAL POST-CARDS, CONGRATULATORY CARDS, FANCY CARDS, AND POSTERS. CHROMOLITHOGRAPHISCHE KUNSTANSTALT PAUL FINKENRATH, GESELLSCHAFT MIT BESCHRÄNKTER HAFTUNG, Berlin, Germany.

The representation of two pairs of compasses intersecting each other and the alphabetical letters "P F B."

Filed January 3, 1906. Serial No. 15,852. PUBLISHED MAY 8, 1906.

54,654. COTTON THREAD OF ALL KINDS. THE CLARK THREAD CO., Newark, N. J.

The letters "O. N. T." Used ten years.

Filed October 17, 1905. Serial No. 13,677. PUBLISHED MAY 8, 1906.

54,655. CERTAIN NAMED MEDICAL COMPOUND. OLIVER P. G. CONLEY, Troup, Tex.

The representation of a skull and crossbones and the representation of a mosquito, associated with the numerals "77" and the words "MOSQUITOS TERROR."

Filed December 26, 1905. Serial No. 15,651. PUBLISHED MAY 8, 1906.

54,656. CASTOR-OIL. CH DELACRE & CIE., Brussels, Belgium.

The word "RICINILE," associated with the name "DELACRE," arranged within inwardly-extending scrolls forming a panel, below which are representations of branches of the castor-oil plant, the said branches being fancifully shown as pendent from the border or scrollwork immediately below the panel.

Filed December 1, 1905. Serial No. 15,123. PUBLISHED MAY 8, 1906.

54,657. REMEDY FOR CERTAIN NAMED DISEASES. EDWARD L. BALDWIN CO., San Francisco, Cal.

The representation of a seal bearing the monogram "E L B" inclosed within a circle and having thereon in circular form the name and abbreviations "EDWARD L. BALDWIN CO. S. F. CAL.," the representation of the seal being associated with a scroll containing the words "BALDWIN'S CELERY SODA."

Filed December 29, 1905. Serial No. 15,745. PUBLISHED MAY 8 1906.

54,658. CERESIN. ERNST SCHLIEMANN'S EXPORT CERESIN FABRIK GESELLSCHAFT M. B. HAFTUNG, Hamburg, Germany.

A design consisting of the representation of two conventional castles separated by a tower above an archway, all appearing above a crenelated wall resting upon an oblong panel containing three anchors, each intertwined with a letter "S," associated with the hyphenated words "CERESIN-CARNAUBIT" appearing above the design and arranged in the form of an arc.

Filed July 18, 1905. Serial No. 10,543. PUBLISHED MAY 8, 1906.

54,659. LOTION. EDGAR J. M. HART, New York, N. Y.

The word "ALLOFF."

Filed June 29, 1905. Serial No. 9,406. PUBLISHED MAY 8, 1906.

54,660. LIQUID LOTION OR EMULSION FOR THE SKIN. AURELIUS S. HINDS, Portland, Me.

The words "HONEY AND ALMOND CREAM." Used ten years.

Filed April 13, 1905. Serial No. 1,408. PUBLISHED MAY 8, 1906.

54,661. STEEL IN BARS, PLATES, RODS, AND WIRE. HOBSON HOUGHTON & CO. LTD., Sheffield, England.

The words "F. HOBSON WARRANTED" above the words "SHEFFIELD, CAST STEEL," the whole preceded by the letters "F. H." inclosed in an ellipse and followed by the quoted word "CHOICE," the letters "X X" inclosed in a circle, and the word "EXTRA." Used ten years.

Filed September 14, 1905. Serial No. 12,610. PUBLISHED MAY 8, 1906.

54,662. SHIRT-WAISTS AND SHIRT-WAIST SUITS. HOLZMAN MFG. CO., Baltimore, Md., and New York, N. Y.

The words "THE MARQUISE." The word "MARQUISE" in script is preceded by the article "THE" in plain type.

Filed January 8, 1906. Serial No. 16,056. PUBLISHED MAY 8, 1906.

54,663. DEPILATORY POWDERS. FERDINAND T. HOPKINS, New York, N. Y.

The name "T. FELIX GOURAUD, M. D.," associated with the representation of a pair of disks ornamented with scrollwork and connected by a bar, the name being displayed in white on said bar.

Filed June 1, 1905. Serial No. 7,170. PUBLISHED MAY 8, 1906.

54,664. SHIRTS, COLLARS, AND CUFFS. INTERNATIONAL SHIRT AND COLLAR COMPANY, Troy, N. Y.

The word "INTERNATIONAL." Used ten years.

Filed April 26, 1905. Serial No. 17,469. PUBLISHED MAY 8, 1906.

54,665. SEWING-COTTON ON SPOOLS OR REELS. JONAS BROOK & BROS., LIMITED, Meltham, England.

A collocation composed of two bands formed by concentric circles, the outer band bearing the words and figures "1851 LONDON 1862, 1855 PARIS 1867," the inner band bearing the words "EXHIBITION PRIZES" and the circular space within the inner band bearing figures indicating the length of the thread. Used ten years.

Filed October 17, 1905. Serial No. 13,695. PUBLISHED MAY 8, 1906.

54,666. COTTON THREAD. JONAS BROOK & BROS., LIMITED, Meltham, England.

A representation of a goat's head issuing from a heraldic roll. Used ten years.

Filed October 17, 1905. Serial No. 13,697. PUBLISHED MAY 8, 1906.

54,667. DRESSED-SKIN UNDERWEAR. THADDEUS C. JONES, St. Paul, Minn.

The representation of an arctic landscape surrounded by a circle. A chamois, a pole supporting a sign-board, and a hunter upon snow-shoes appear in the foreground. Upon the pole above the sign the letter "N" is shown and below the sign the word "POLE." The words "THAD. C. JONES BUCKSKIN UNDERWEAR" are displayed upon the sign-board.

Filed February 26, 1906. Serial No. 17,359. PUBLISHED MAY 8, 1906.

54,668. CARBON-PAPERS. JOHN R. KEATINGE, New York, N. Y.

A black diamond-shaped figure upon which appear the words "DIAMOND BRAND" and upon which is outlined a diamond-shaped figure divided into halves by a horizontal line, the upper half being equally divided by a vertical line and the lower half containing the letter "S."

Filed March 19, 1906. Serial No. 18,011. PUBLISHED MAY 8, 1906.

54,669. RAZORS AND POCKET, BUTCHER, AND TABLE KNIVES. KEITH, SIMMONS & CO., Nashville, Tenn.

A symbol comprising a disk from which extend, at equidistant points, four bell-shaped figures with concave sides and convex bases and intercepting two concentric rings, equal arcs or segments, which appear in the spaces between said figures and arranged between the words "KEEN" and "EDGE."

Filed September 7, 1905. Serial No. 12,304. PUBLISHED MAY 8, 1906.

54,670. PIANOS. KROEGER PIANO CO., New York, N. Y.

The word "KROEGER." Used ten years.

Filed September 13, 1905. Serial No. 12,520. PUBLISHED MAY 8, 1906.

54,671. MEDICINAL PILLS, TABLETS, AND CAPSULES. THE LABORATORY COMPANY, Leeds, England.

The word "VITALOIDS."

Filed May 24, 1905. Serial No. 6,542. PUBLISHED MAY 8, 1906.

54,672. CHEMICAL PREPARATIONS. LA-LO MANUFACTURING COMPANY, Boston, Mass.

The words "LA-LO SPRAY."

Filed February 9, 1906. Serial No. 16,867. PUBLISHED MAY 8, 1906.

54,673. REMEDIES FOR CERTAIN NAMED DISEASES. HARTLAND LAW, HERBERT E. LAW, San Francisco, Cal.

The word "VIAVI" inclosed in a rhomb or diamond shaped figure standing on one of its obtuse angles.

Filed October 10, 1905. Serial No. 13,478. PUBLISHED MAY 8, 1906.

54,674. KNITTED UNDERWEAR AND HOSIERY. MARSHALL FIELD & COMPANY, Chicago, Ill.

The representation of a shield divided by a chevron into an upper and a lower field, the shield being surmounted by a bar and having in its upper field, on either side of the apex of the chevron, a sheaf of wheat, and in the lower field also a sheaf of wheat centrally located in the field.

Filed December 4, 1905. Serial No. 15,158. PUBLISHED MAY 8, 1906.

54,675. CHLORID OF LIME. A. MENDLESON'S SONS, Albany, N. Y.

The word "ACME."

Filed May 23, 1905. Serial No. 6,423. PUBLISHED MAY 8, 1900.

54,676. WHISKY. ELY OPPENHEIMER, Cincinnati, Ohio.

The word "OLDFIELD."

Filed January 15, 1906. Serial No. 16,193. PUBLISHED MAY 8, 1906.

54,677. OUTERSHIRTS. THE PAUL E. WOLFF SHIRT COMPANY, St. Louis, Mo.

The pictorial representation of the head of a wolf, associated with the word "UNIQUE."

Filed December 1, 1905. Serial No. 15,112. PUBLISHED MAY 8, 1906.

54,678. OUTERSHIRTS. THE PAUL E. WOLFF SHIRT COMPANY, St. Louis, Mo.

The word "UNIQUE."

Filed December 1, 1905. Serial No. 15,113. PUBLISHED MAY 8, 1906.

54,679. COMPOUNDS FOR FILLING TEETH AND CURING TOOTHACHES. ABRAM E. PRATT, New York, N. Y.

The hyphenated word "HA-ZEL-ITE."

Filed December 13, 1905. Serial No. 15,392. PUBLISHED MAY 8, 1906.

54,680. SKIN-FOOD OR MASSAGE-CREAM. ERIE H. RICE, Jamestown, N. Y.

The word "BEETALL" above the representation of a vegetable beet.

Filed November 11, 1905. Serial No. 14,512. PUBLISHED MAY 8, 1906.

54,681. WHISKY. RICHARDSON BRUNSING CO., San Francisco, Cal.

The words "OAK RUN."

Filed June 21, 1905. Serial No. 8,734. PUBLISHED MAY 8, 1906.

54,682. PRESS-BOARD OR PRESS-PAPER. THE ROGERS PAPER MFG. CO. INC, South Manchester, Conn.

A rectangular panel bearing a representation of a fleur-de-lis and in its upper corners the representation of a shield having thereon the capital letter "R" and between the same the numerals "1832" and associated with the word, abbreviation, and figure "EXTRA No. 1."

Filed August 23, 1905. Serial No. 11,948. PUBLISHED MAY 8, 1906.

54,683. SOLE-LEATHER, CUT AND UNCUT. ALBERT F. SCHENKELBERGER, Boston, Mass.

An arbitrary symbol composed of three lines or bars arranged side by side. Used ten years.

Filed September 14, 1905. Serial No. 12,554. PUBLISHED MAY 8, 1906.

54,684. REMEDY FOR CHILLS AND FEVER. JAMES P. SMITH, Augusta, Ga.

The representation of a human hand in a clouded background with lightning flashes radiating therefrom and the words "SMITH'S ELECTRIC CHILL AND FEVER CURE."

Filed December 5, 1905. Serial No. 15,218. PUBLISHED MAY 8, 1906.

54,685. WHISKY. STRAUS GUNST & CO., Richmond, Va.

The words "POWHATAN CLUB."

Filed May 12, 1905. Serial No. 5,298. PUBLISHED MAY 8, 1906.

54,686. GIN. STRAUS GUNST & CO., Richmond, Va.

The word "TURKEY," under which is a picture of a turkey gobbler.

Filed May 12, 1905. Serial No. 5,300. PUBLISHED MAY 8, 1906.

54,687. SHIP-LOGS AND SOUNDING-MACHINES. THOMAS WALKER & SON LTD., Birmingham, England.

The word "TRIDENT."

Filed November 28, 1905. Serial No. 15,048. PUBLISHED MAY 8, 1906.

54,688. INDURATED FIBER WARE. UNITED INDURATED FIBRE CO. OF NEW JERSEY, Lockport, N. Y.

The word "FIBROTTA" flanked by quotation-marks. Used ten years.

Filed September 12, 1905. Serial No. 12,487. PUBLISHED MAY 8, 1906.

54,689. INDURATED FIBER WARE. UNITED INDURATED FIBRE CO. OF NEW JERSEY, Lockport, N. Y.

The representation of a fleur-de-lis. Used ten years.

Filed September 12, 1905. Serial No. 12,488. PUBLISHED MAY 8, 1906.

54,690. LINIMENT. WILLIAM P. WARD, New York, N. Y.

The words "MEXICAN MUSTANG LINIMENT." These words are arranged in prominent letters upon a band or circlet and which incloses, as in a frame, the representation of a female figure reclining beside a rock and holding a jar or vase from which issues a stream of water, which occupies and forms the foreground of the picture. In the background appears a volcano in a state of eruption. Across the face of the picture is written the signature "G. W. WESTBROOK CHEMIST." Beneath the words "MUSTANG LINIMENT" is a representation of a party of hunters lassoing wild horses. At each side of the central circle are circular panels, and the whole is inclosed in a rectangular border. Used ten years.

Filed June 8, 1905. Serial No. 7,622. PUBLISHED MAY 8, 1906.

54,691. PROPRIETARY MEDICINE. WILCOX & GODDING, Eaton Rapids, Mich.

The representation of a nude infant holding in its hands a bottle and spoon, seated in the clouds and partially surrounded by a crescent of stars, associated with the name and words "DR. W. DERBY'S CROUP MIXTURE."

Filed October 6, 1905. Serial No. 13,380. PUBLISHED MAY 8, 1906.

54,692. SILVER HOLLOW WARE, FLAT WARE, AND TABLEWARE. WILCOX & WAGONER COMPANY, New York, N. Y.

A circular wreath and upon it a conventional sword.

Filed August 26, 1905. Serial No. 12,042. PUBLISHED MAY 8, 1906.

54,693. SERUMS. PAUL YVON, Paris, France, assignor to Institut Pasteur, Paris, France, a Firm.

The letters "I. P.," being printed or painted in plain block type. Above and below the letters is a horizontal arrow, the upper one pointing to one side and the lower one to the other side. At each side of the letters is an upright line, these two lines, together with arrows, forming a rectangle inclosing the letters.

Filed January 16, 1906. Serial No. 16,217. PUBLISHED MAY 8, 1906.

54,694. MEN'S, WOMEN'S, AND CHILDREN'S HATS. YOUMANS, New York, N. Y.

The representation of a lion couchant upon an ornamental support, upon which there are arranged garlands of flowers and the representation of two crowns, one at either side of the figure of the lion, the lion being at the base of a border formed of two concentric circles and confining the word "YOUMANS," the said border being surmounted by a crown which forms the background of the letters "Y. D. D.," which are in turn surmounted by a scroll bearing the Latin motto "NULLI SECUNDUS."

Filed June 26, 1905. Serial No. 9,093. PUBLISHED MAY 8, 1906.

54,695. MEN'S, WOMEN'S, AND CHILDREN'S HATS. YOUMANS, New York, N. Y.

The name "YOUMANS." Used ten years.

Filed August 15, 1905. Serial No. 11,678. PUBLISHED MAY 8, 1906.

54,696. BLADES KNIVES AND RAZORS. A. BALDWIN & Co. LIMITED, New Orleans, La.

The representation of an arrow spanned by the capital letters "I C K," with the letters "UT" and "EEN" above and below the shaft of the arrow, which together form the sentence "I CUT KEEN." Used ten years.

Filed May 3, 1905. Serial No. 4,138. PUBLISHED MAY 8, 1906.

54,697. MACHINES FOR PRINTING ADDRESSES OR OTHER MATTER. ADDRESSOGRAPH COMPANY, Chicago, Ill.

The word "ADDRESSOGRAPH." Used ten years.

Filed April 17, 1905. Serial No. 2,022. PUBLISHED MAY 8, 1906.

54,698. SELTZOGENES AND ANALOGOUS VESSELS FOR AERATED LIQUIDS. AERATORS LIMITED, London, England.

The word "SPARKLOGENE."

Filed December 11, 1905. Serial No. 15,337. PUBLISHED MAY 8, 1906.

54,699. MATCHES. AKTIEBOLAGET SÖDERTELJE TÄNDSTICKSFABRIK, Södertelje, Sweden.

The representation of a ship under full sail, on each side of which are shown two medals. Above these are the words "SÄKERHETS-TÄNDSTICKOR" in curved line, the word "PARAFFINERADE," and the words "SÖDERTELJE TÄNDSTICKSFABRIKS" in the order named. Below the representation of the ship the words "TÄNDAS MOT LÅDANS PLÅN" are shown. Above the medals on the left appear the words "UTAN SVAFVEL" and below these medals "MOSKWA 1872." Above the medals on the right appear the words "OCH FOSFOR" and below "PARIS 1878." The whole mark is inclosed by a double-lined rectangle.

Filed January 18, 1906. Serial No. 16,276. PUBLISHED MAY 8, 1906.

54,700. SCISSORS AND SHEARS. HEINR. BÖKER & Co., Solingen, Germany.

The representation of a leafless tree. Used ten years.

Filed November 18, 1905. Serial No. 14,785. PUBLISHED MAY 8, 1906.

54,701. WALL-TIES. THE BRAUN MANUFACTURING Co., Pittsburg, Pa.

The words "WHALE BONE."

Filed September 27, 1905. Serial No. 13,074. PUBLISHED MAY 8, 1906.

54,702. LINEAL MEASURES OF ALL KINDS. C. BUBE, Hanover-Bothfeld, Germany.

The representation of a boy with open arms and the letters "C" and "B" under the arms.

Filed December 21, 1905. Serial No. 15,561. PUBLISHED MAY 8, 1906.

54,703. REPAIR-LINKS FOR LINK CHAINS. DIAMOND CHAIN & MANUFACTURING Co., Indianapolis, Ind.

The words "HEAR IT SNAP."

Filed January 13, 1906. Serial No. 16,188. PUBLISHED MAY 8, 1906.

54,704. TOOTH-PASTE. CHAS. M. DUNNE, Norwich, N. Y.

The word "THYM-A-TOL."

Filed August 21, 1905. Serial No. 11,876. PUBLISHED APRIL 10, 1906.

54,705. BACK-PEDALING COASTER-BRAKES AND PARTS THEREOF. ECLIPSE MACHINE Co., Elmira Heights, N. Y.

A representation of a crescent and an arrow arranged with the head and shaft projecting beyond the points of the crescent, together with the word "ECLIPSE" upon the crescent.

Filed February 20, 1906. Serial No. 17,204. PUBLISHED MAY 8, 1906.

54,706. PAPER FOR PROCESS PRINTING. EUGENE DIETZGEN Co., Chicago, Ill.

The word "RADIANT."

Filed February 7, 1906. Serial No. 16,817. PUBLISHED MAY 8, 1906.

54,707. LEATHER BOOTS, SHOES, AND SLIPPERS AND LEATHER THEREFOR. FRED F. FIELD Co., Brockton, Mass.

The word "SKREEMER."

Filed May 27, 1905. Serial No. 6,819. PUBLISHED MAY 8, 1906.

54,708. DRY MILK AND DRY-MILK PRODUCTS IN POWDER FORM. G. KAMMERMANN & Co. SCHWEIZERISCHE TROCKENMILCHGESELLSCHAFT, Glockenthal, Switzerland.

An ornamental panel bearing the representation of three stars with rays radiating therefrom and the words "THREE STAR SWISS DRY MILK G. KAMMERMANN & Co. SWISS DRY MILK Co. GLOCKENTHAL NEAR THOUNE (SWITZERLAND)."

Filed May 27, 1905. Serial No. 6,827. PUBLISHED MAY 8, 1906.

54,709. RUBBER BOOTS AND RUBBER SHOES. GOODYEAR RUBBER COMPANY, New York, N. Y.

The representation of a gold seal bearing the name of the applicant, "GOODYEAR RUBBER Co.," and the words and figures "GOLD SEAL 1872."

Filed May 23, 1905. Serial No. 6,394. PUBLISHED MAY 8, 1906.

54,710. SAFES. HERRING-HALL-MARVIN SAFE COMPANY, Hamilton, Ohio, and New York, N. Y.

The name "HERRING-HALL-MARVIN." Used ten years.

Filed February 14, 1906. Serial No. 16,995. PUBLISHED MAY 8, 1906.

54,711. CARRIAGES AND WAGONS. THE I. S. REMSON MFG. Co., Brooklyn, N. Y.

The name "REMSON" printed in a particular or distinctive style.

Filed December 7, 1905. Serial No. 15,255. PUBLISHED MAY 8, 1906.

54,712. MEDICINAL PLASTERS. J. ELLWOOD LEE COMPANY, Conshohocken, Pa.

The word "MACK'S." Used ten years.

Filed February 16, 1906. Serial No. 17,063. PUBLISHED MAY 8, 1906.

54,713. INKED PADS FOR TYPE-WRITERS. JOHN R. KEATINGE, New York, N. Y.

A black diamond-shaped figure upon which appear the words "DIAMOND BRAND" and upon which is outlined a diamond-shaped figure divided into halves by a horizontal line, the upper half being equally divided by a vertical line and the lower half containing the letter "S."

Filed March 19, 1906. Serial No. 18,010. PUBLISHED MAY 8, 1906.

54,714. BOILERS FOR HEATING PURPOSES. KELLOGG-MACKAY-CAMERON Co., Chicago, Ill.

The arbitrarily-selected word "AMERICAN" inclosed in a rectangular border. Used ten years.

Filed November 24, 1905. Serial No. 14,966. PUBLISHED MAY 8, 1906.

54,715. HAIR-PINS. GEORGE LITTLEFORD, Cincinnati, Ohio.

A representation of a twisted hair-pin having coiled about the limbs thereof the word "STAY-IN," said word being of script and formed of strands of hair.

Filed October 14, 1905. Serial No. 13,610. PUBLISHED MAY 8, 1906.

54,716. WHISKY. MILTON S. LOWENTHAL, Niagara Falls, N. Y.

The words "TRIGG PURE RYE," the word "PURE" being on a paraph of the word "TRIGG," and a monogram of the letters and abbreviation "T D Co" partially surrounded by a wreath tied with a streamer.

Filed August 30, 1905. Serial No. 12,090. PUBLISHED MAY 8, 1906.

54,717. ANTIFRICTION METALS OR ALLOYS. MAGNOLIA METAL COMPANY, New York, N. Y.

The word "MAGNOLIA." Used ten years.

Filed February 28, 1906. Serial No. 17,389. PUBLISHED MAY 8, 1906.

54,718. STEAM HOISTING, MINING, STATIONARY, AND DREDGING ENGINES. JOSEPH S. MUNDY, Newark, N. J.

The words "THE MUNDY." Used ten years.

Filed January 24, 1906. Serial No. 16,464. PUBLISHED MAY 8, 1906.

54,719. CONTAINERS FOR OYSTERS, CLAMS, FISH, AND OTHER SEA FOODS. NATIONAL OYSTER CARRIER COMPANY, Albuquerque, Ter. of N. Mex.

The word "SEALSHIPT." Said word is inclosed in a quadrilateral arranged with the vertices of two of its opposite angles in a vertical line. The figure is crossed by a vertical band and a substantially horizontal band, on the latter of which bands the word "SEALSHIPT" appears.

Filed January 22, 1906. Serial No. 16,392. PUBLISHED MAY 8, 1906.

54,720. COMIC SECTIONS OR PAGES OF NEWSPAPERS. THE NEW YORK HERALD COMPANY, New York, N. Y.

The words "BUSTER BROWN AND TIGE."

Filed January 8, 1906. Serial No. 16,043. PUBLISHED MAY 8, 1906.

54,721. FIBROUS AND TEXTILE ROPE AND TWINE. PLYMOUTH CORDAGE COMPANY, Plymouth, Mass.

The word "PLYMOUTH." Used ten years.

Filed March 22, 1906. Serial No. 18,143. PUBLISHED MAY 8, 1906.

54,722. AUTOMOBILE VEHICLES. REO CAR Co., Lansing, Mich.

The word "REO."

Filed January 11, 1906. Serial No. 16,120. PUBLISHED MAY 8, 1906.

54,723. WHISKY. CHARLES H. ROSS & Co., Baltimore, Md.

The word "MAJESTIC." Used ten years.

Filed November 22, 1905. Serial No. 14,900. PUBLISHED DECEMBER 26, 1905.

54,724. WHISKY. THOMAS J. RYAN, Nashville, Tenn.

The words "STRING WHISKEY," associated with the words "STRAIGHT AS A STRING."

Filed December 16, 1905. Serial No. 15,465. PUBLISHED MAY 8, 1906.

54,725. ELECTRIC SWITCHES, PUSH-BUTTONS, AND FITTINGS FOR ELECTRIC CIRCUITS AND LIGHTS. RALPH A. SCHOENBERG, New York, N. Y.

The word "SARCO" in white letters on a triangular field with the letters tapering from the base of the field to the point or apex. Above and extending along the top edge of the field is the word "ELECTRICAL" and in like manner at the bottom edge the word "SPECIALTIES."

Filed November 14, 1905. Serial No. 14,607. PUBLISHED MAY 8, 1906.

54,726. ATTACHMENT FOR CLOSET-SEATS. THE SPECIALTIES SALES Co., Chicago, Ill.

The words "THE BABICHAIR," the letters of the word "BABICHAIR" being of gradually-decreasing height at either side of the central letter "C," the general arrangement being in the form of a diamond with its greatest width located horizontally.

Filed May 6, 1905. Serial No. 4,548. PUBLISHED MAY 8, 1906.

54,727. PINCERS, NIPPERS, AND HOOF-TRIMMERS. WASHINGTON TOOL Co., Owatonna, Minn.

The letters "W T Co" arranged within a rhombus or diamond-shaped figure.

Filed September 1, 1905. Serial No. 12,156. PUBLISHED MAY 8, 1906.

54,728. LEATHER BOOTS AND SHOES. WHITE-DUNHAM SHOE Co., Brockton, Mass.

The words "TOP ROUND," associated with the outline of a terrestrial globe. Leaning against the globe is a ladder, climbing which are a number of winged figures carrying shoes, the figure on the top "round" or rung of the ladder holding its shoe over one of the poles of the globe.

Filed November 16, 1905. Serial No. 14,735. PUBLISHED MAY 8, 1906.

54,729. GUARD-PLATES FOR MOWERS, REAPERS, HARVESTERS, AND HEADERS. THE WHITMAN & BARNES MANUFACTURING COMPANY, Akron, Ohio.

A representation of a diamond-shaped figure with the letters and character "W & B Co" placed in the respective corners thereof.

Filed November 16, 1905. Serial No. 14,711. PUBLISHED MAY 8, 1906.

54,730. CHISELS AND PUNCHES. THE WHITMAN & BARNES MANUFACTURING COMPANY, Akron, Ohio.

A representation of a diamond-shaped figure with the letters and character "W & B Co" placed in the respective corners thereof.

Filed December 1, 1905. Serial No. 15,115. PUBLISHED MAY 8, 1906.

54,731. SILVER-PLATED FLAT WARE, HOLLOW WARE, AND TABLEWARE. WM. A. ROGERS LIMITED, New York, N. Y.

A pair of opposed braces. Arranged upon either side of the braces are the words "EXTRA" and "PLATE," and within the braces are the words "COIN SILVER." Used ten years.

Filed May 25, 1905. Serial No. 6,563. PUBLISHED MAY 8, 1906.

54,732. TRACK-BOLT NUTS. AMERICAN IRON & STEEL M'F'G. Co., Lebanon and Reading, Pa.

The word "IDEAL." Used ten years.

Filed May 23, 1905. Serial No. 6,364. PUBLISHED MAY 8, 1906.

54,733. GASOLENE-MOTORS AND MOTOR MACHINERY AND PARTS THEREOF. WILLIAM HENRY BARRETT, Southport, England.

The word "BARCAR."

Filed June 7, 1905. Serial No. 7,609. PUBLISHED MAY 8, 1906.

54,734. HAIR-PINS. S. BEAUMONT & FILS, Roubaix, France.

The arbitrary words "LE ZÉPHYR."

Filed August 4, 1905. Serial No. 11,252. PUBLISHED MAY 8, 1906.

54,735. WHISKY. CHARLES BRUML, Cleveland, Ohio.

The word "CAMDEN." Used ten years.

Filed June 19, 1905. Serial No. 8,554. PUBLISHED FEBRUARY 20, 1906.

54,736. GIN. CHICAGO DISTILLING Co., Chicago, Ill.

The word "TULIP" below a design representing a tulip.

Filed July 11, 1905. Serial No. 10,049. PUBLISHED NOVEMBER 7, 1905.

54,737. RAZORS. F. A. CLAUBERG & Co., New York, N. Y.

The word "MIKADO." Used ten years.

Filed August 11, 1905. Serial No. 11,537. PUBLISHED MAY 8, 1906.

54,738. WHISKY. CLOVER LEAF WINE Co., New York, N. Y., assignor to Jaros Importing and Distributing Co., New York, N. Y., a Corporation.

The word "TAMMANY," associated with the representation of a tiger.

Filed August 10, 1905. Serial No. 11,508. PUBLISHED MAY 8, 1906.

54,739. STEEL. CRUCIBLE STEEL COMPANY OF AMERICA, Pittsburg, Pa.

The word "ATHA." Used ten years.

Filed May 13, 1905. Serial No. 5,509. PUBLISHED MAY 8, 1906.

54,740. GASOLENE-ENGINES. DEERE & WEBBER Co., Minneapolis, Minn.

The word "REINDEER."

Filed February 28, 1906. Serial No. 17,406. PUBLISHED MAY 8, 1906.

54,741. SAWS OF ALL KINDS. E. C. ATKINS & COMPANY, Indianapolis, Ind.; New York, N. Y.; Memphis, Tenn.; Atlanta, Ga.; Minneapolis, Minn.; Portland, Oreg.; Seattle, Wash.; San Francisco, Cal.; Chicago, Ill., and Toronto, Canada.

The conventional mark or symbol usually known as a "diamond."

Filed June 15, 1905. Serial No. 8,280. PUBLISHED MAY 8 1906.

54,742. FAUCETS. E. STEBBINS MANUFACTURING COMPANY, Springfield, Mass.

The words "STEBBINS SPECIAL" arranged within an oblong or rectangular border, the word "STEBBINS" beginning with a high initial letter and terminating in a comparatively small letter and the word "SPECIAL" beginning with a small initial letter and ending with a letter of greater height than the initial. Used ten years.

Filed May 23, 1905. Serial No. 6,417. PUBLISHED MAY 8, 1906.

54,743. WAGONS. THE EAGLE WAGON WORKS, Auburn, N. Y.

The representation of an eagle with outspread wings carrying in its beak a streamer upon which is inscribed the legend "THE EAGLE WAGON WORKS." A smaller streamer is caught in the talons of the eagle. Below the right wing of the eagle and between the two streamers is the word "AUBURN," and below the left wing are the words "NEW YORK."

Filed July 26, 1905. Serial No. 10,849. PUBLISHED MAY 1906.

54,744. MEDICINAL PREPARATION. FERRY DRUG CO., San Francisco, Cal.

The hyphenated coined word "KA-TARO."

Filed December 29, 1905. Serial No. 15,753. PUBLISHED MAY 8, 1906.

54,745. CERTAIN NAMED AGRICULTURAL MACHINES. FETZER & COMPANY, Middletown, Ohio.

The word "PLYMOUTH." Used ten years.

Filed March 14, 1906. Serial No. 17,799. PUBLISHED MAY 8, 1906.

54,746. CERTAIN NAMED AGRICULTURAL MACHINES. FETZER & COMPANY, Middletown, Ohio.

The word "COLUMBIA." Used ten years.

Filed March 14, 1906. Serial No. 17,800. PUBLISHED MAY 8, 1906.

54,747. WHISKY. FOUR OAKS DISTILLING CO., Birmingham, Ala.

The words "ROYAL WORCESTER."

Filed March 1, 1906. Serial No. 17,440. PUBLISHED MAY 8, 1906.

54,748. STEEL IN BARS AND SHEETS. HAMMACHER, DELIUS & CO., New York, N. Y.

A sem circular figure bearing the word "GYSINGE" and forked arrows which are arranged radially to the figure.

Filed June 13, 1905. Serial No. 8,041. PUBLISHED MAY 8, 1906.

54,749. FLUID-METERS. HERSEY MANUFACTURING COMPANY, Boston, Mass.

The word "HERSEY." Used ten years.

Filed March 7, 1906. Serial No. 17,638. PUBLISHED MAY 8, 1906.

54,750. WHISKY. S. HIRSCH & CO., Kansas City, Mo.

The words "QUAKER MAID" and the bust representation of a maiden dressed in Quaker garb having on a bonnet and wearing a flower at her neck and with two braids of hair extending across her shoulders and down in front.

Filed December 21, 1905. Serial No. 15,552. PUBLISHED MAY 8, 1906.

54,751. WHISKY. EDWARD HIRSCHHORN, New York, N. Y.

The words "AUTO RYE" and the representation of a woman seated in an automobile runabout and holding a glass of whisky in her hand, a bottle being shown at the front of the automobile and a scroll waving therefrom, upon which appear the words "ALWAYS IN FRONT."

Filed May 13, 1905. Serial No. 5,549. PUBLISHED SEPTEMBER 12, 1905.

54,752. WHISKY. ELIAS HYMAN & SON, Cincinnati, Ohio.

The word "CUPID," below which is a picture of a cupid holding in its left hand a bow and in its right hand three arrows, the picture surrounded by an oval-shaped border.

Filed May 13, 1905. Serial No. 5,440. PUBLISHED MAY 8, 1906.

54,753. CERTAIN NAMED HOLDERS. J. P. EUSTIS MFG. CO., Portland, Me.

The words "THE BRASSCRAFTERS."

Filed April 10, 1905. Serial No. 1,024. PUBLISHED MAY 8, 1906.

54,754. CERTAIN NAMED CUTLERY. ANDREW J. JORDAN, St. Louis, Mo.

Three letters "A" followed by the numeral "1," the first "A" being a capital letter "A," followed by a capital letter "A" of smaller dimensions, which in turn is followed by a capital letter "A" of equal size with the first.

Filed April 17, 1905. Serial No. 1,911. PUBLISHED MAY 8, 1906.

54,755. ADJUSTABLE CORN-HUSKERS. F. D. KEES MANUFACTURING CO., Beatrice, Nebr.

The words "TWELVE-IN-ONE."

Filed March 16, 1906. Serial No. 17,958. PUBLISHED MAY 8, 1906.

54,756. BLACKBERRY CORDIAL. HENRY R. MYERS, Covington, Ky.

The word "FULTON." Used ten years.

Filed June 8, 1905. Serial No. 7,700. PUBLISHED MAY 8, 1906.

54,757. RAZORS. SMITH & HEMENWAY COMPANY, New York, N. Y.

The hyphenated word "RED-MAN."

Filed March 8, 1906. Serial No. 17,646. PUBLISHED MAY 8, 1906.

54,758. AUTOMOBILES. ST. LOUIS MOTOR CARRIAGE CO., St. Louis, Mo.

The words "THE SAINT LOUIS." Used ten years.

Filed July 3, 1905. Serial No. 9,788. PUBLISHED MAY 8, 1906.

54,759. MACHINE-NEEDLES. UNION SPECIAL MACHINE COMPANY, Chicago, Ill.

The words "UNION SPECIAL," associated with the words "MACHINE NEEDLES" arranged below it. Below the words "MACHINE NEEDLES" is a horizontal line, and in the space between this and a lower horizontal line are the words "NONE GENUINE WITHOUT OUR TRADE MARK 'UNION SPECIAL'" and the words "UNION SPECIAL MACHINE COMPANY." The whole mark is applied to a rectangular label containing border-lines, and at the bottom are the words "IN ORDERING RETURN EMPTY PACKAGE." Used ten years.

Filed March 19, 1906. Serial No. 18,018. PUBLISHED MAY 8, 1906.

54,760. HAND STICK FIREWORKS. EDW. H. WAGNER, New York, N. Y.

The words "THE BRILLIANT STAR STICKS." Used ten years.

Filed July 19, 1905. Serial No. 10,573. PUBLISHED MAY 8, 1906.

54,761. WHISKY. WEISS EICHOLD LIQUOR CO., Mobile, Ala.

The words "GOLDEN CREAM."

Filed May 12, 1905. Serial No. 5,307. PUBLISHED FEBRUARY 27, 1906.

54,762. ANTIFRICTION OR BEARING METALS. WILLIAM A. HARDY & SON'S CO., Fitchburg, Mass.

The name "HARDY'S." Used ten years.

Filed May 18, 1905. Serial No. 5,939. PUBLISHED MAY 8, 1906.

54,763. STERLING AND SOLID SILVER HOLLOW WARE, FLAT WARE, AND TABLEWARE. GORHAM MFG. CO., New York, N. Y.

The word "GORHAM." Used ten years.

Filed March 7, 1906. Serial No. 17,630. PUBLISHED MAY 8, 1906.

54,764. PERFUMES AND TOILET WATERS. LAZELL, DALLEY & CO., INCORPORATED, New York, N. Y.

The word "LAZELL'S." Used ten years.

Filed September 2, 1905. Serial No. 12,175. PUBLISHED MAY 8, 1906.

54,765. STEEL AND IRON IN BAR, ROD, RAIL, SHEET, AND WIRE. SEEBOHM & DIECKSTAHL LD., Sheffield, England.

The representation of an eagle with uplifted wings standing upon a globe. Used ten years.

Filed September 14, 1905. Serial No. 12,603. PUBLISHED MAY 8, 1906.

LABELS

REGISTERED JUNE 26, 1906.

12,946.—*Title:* "MAULT-AYLE." (For a Light Beer.) MARSHALL BOTTLING CO., Springfield, Ill. Filed April 25, 1906.

12,947.—*Title:* "A No. 1." (For Coffee.) A. & G. MEYER, Newburgh, N. Y. Filed May 18, 1906.

12,948.—*Title:* "LOWNEY'S MILK CHOCOLATE." (For Chocolate.) LOWNEY CHOCOLATE COMPANY, Mansfield, Mass. Filed June 6, 1906.

12,949.—*Title:* "HARVESTA." (For Prepared Cooked Wheat.) IGLEHEART BROTHERS, INC., Evansville, Ind. Filed May 18, 1906.

12,950.—*Title:* "HAWAIIAN PINEAPPLE (DICED)." (For Pineapple.) TROPIC FRUIT COMPANY, LIMITED, Wahiawa, Hawaii. Filed May 28, 1906.

12,951.—*Title:* "THE MEDINA COUNTY CREAMERY CO." (For Butter.) THE MEDINA COUNTY CREAMERY COMPANY, Cleveland, Ohio. Filed May 12, 1906.

12,952.—*Title:* "MOSQUITONE." (For a Liquid Solution.) THOMAS TABB JEFFRIES, Pine Beach, Va. Filed June 6, 1906.

12,953.—*Title:* "JEFFRIES' RELIABLE HEADACHE POWDERS." (For Medicine.) THOMAS TABB JEFFRIES, Pine Beach, Va. Filed June 6, 1906.

12,954.—*Title:* "JEFFRIES' NO. 1 COUGH MIXTURE." (For Medicine.) THOMAS TABB JEFFRIES, Pine Beach, Va. Filed June 6, 1906.

12,955.—*Title:* "LIQUOSEPTOL." (For Medicine.) THOMAS TABB JEFFRIES, Pine Beach, Va. Filed June 6, 1906.

12,956.—*Title:* "VIOLET TALC POWDER." (For Talc Powder.) COLGATE & CO., New York, N. Y. Filed June 2, 1906.

12,957.—*Title:* "MARTHAS DARZIE DLABANON." (For a Skin Preparation.) MARY J. BRANNON, Dayton, Ohio. Filed May 31, 1906.

12,958.—*Title:* "McGEE'S CORN CURE." (For Corn Cure.) THE STAR CHEMICAL CO., Louisville, Ky. Filed May 23, 1906.

12,959.—*Title:* "CUSHION CORN CURE." (For Corn Cure.) CLEMENS AMANN, Sidney, Ohio. Filed June 4, 1906.

12,960.—*Title:* "TIZ FOR TENDER FEET." (For Foot-Bath Tablets.) WALTER LUTHER DODGE, Chicago, Ill. Filed June 4, 1906.

12,961.—*Title:* "THEIFORM." (For a Medical Preparation for the Scalp and Hair.) ADA BLEW, New York, N. Y. Filed May 29, 1906.

12,962.—*Title:* "THE AETNA SELF-HEATING." (For Self-Heating Cans Containing Food.) THE AETNA SELF-HEATING FOOD COMPANY New York, N. Y. Filed May 22, 1906.

12,963.—*Title:* "SUBLIME." (For Linen Thread.) SOCIÉTÉ ANME. FILATURE & FILTERIES RÉUNIÉS, Alost, Belgium. Filed November 23, 1905.

12,964.—*Title:* "IRON-CLAD AND MEDICATED GLOVES." (For Gloves.) THE MOUND CITY DISHWASHER CO., St. Louis, Mo. Filed June 2, 1906.

12,965.—*Title:* "TENDERFOOT." (For Hosiery.) CARSON, PIRIE, SCOTT AND COMPANY, Chicago, Ill. Filed June 6, 1906.

12,966.—*Title:* "ITS MIGHTY EASY TO SPOT HILTON CLOTHES." (For Clothing.) THE HILTON CO., New York, N. Y. Filed June 6 1906.

12,967.—*Title:* "VICTOR VICTROLA." (For Talking-Machines and Parts Thereof.) VICTOR TALKING MACHINE COMPANY, Camden, N. J. Filed June 6, 1906.

12,968.—*Title:* "VICTOR AUXETOPHONE." (For Talking-Machines and Parts Thereof.) VICTOR TALKING MACHINE COMPANY, Camden, N. J. Filed June 6, 1906.

12,969.—*Title:* "VICTOR JUNIOR GRAMOPHONE." (For Talking-Machines and Parts Thereof.) VICTOR TALKING MACHINE COMPANY, Camden, N. J. Filed June 6, 1906.

12,970.—*Title:* "PURITY SEAMLESS NIPPLES NON-COLLAPSIBLE." (For Nipples.) AMERICAN LITHOGRAPHIC COMPANY, New York, N. Y. Filed May 29, 1906.

12,971.—*Title:* "TIN PAN COAL." (For Receptacles for Coal.) THE ST. LOUIS, ROCKY MOUNTAIN & PACIFIC CO., Raton, N. Mex. Ter. Filed June 5, 1906.

12,972.—*Title:* "KLONDYKE BLUE PLASTER BOARD." (For Plaster-Board.) WRIGHT, BARRETT & STILWELL CO., St. Paul, Minn. Filed May 31, 1906.

PRINTS

REGISTERED JUNE 26, 1906.

1,708.—*Title:* "THE MODEL FLOUR MILL." (For Flour.) WASHBURN-CROSBY COMPANY, Minneapolis, Minn. Filed May 31, 1906.

1,709.—*Title:* "GOOD MORNING." (For Puffed Rice.) THE AMERICAN CEREAL COMPANY, Chicago, Ill. Filed April 27, 1906.

1,710.—*Title:* "THE CONTINENTAL GARTER." (For Garters.) WILLIAM HEYMANN, New York, N. Y. Filed February 10, 1906.

1,711.—*Title:* "MEN'S APPAREL." (For Men's Apparel.) L. ADLER BROS. & CO., Rochester, N. Y. Filed June 4, 1906.

1,712.—*Title:* "THE 'KISMET' HOLDER." (For Glass and Bottle Holders.) ARDO HERING, New York, N. Y. Filed May 16, 1906.

1,713.—*Title:* "THE HANDICRAFT DOLL FURNITURE." (For Doll Furniture.) ALICE M. SPINNEY, Milwaukee, Wis. Filed May 25, 1906.

1,714.—*Title:* "NOODLES, MOONLIGHT, POCAHONTAS, COLONIAL GIRL, KNUCKLEDOWN, AND IN OLD MADRID BACKS, CONGRESS PLAYING CARDS." (For Playing-Cards.) THE UNITED STATES PLAYING CARD COMPANY, Cincinnati, Ohio. Filed June 5, 1906.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

EX PARTE R. STEINECKE COMPANY.

Decided April 10, 1906.

LABELS—REGISTRABILITY—SHIELDS OF COUNTRIES.

Held that a label upon which the shields of certain countries are shown will not be registered, for the reasons given in *ex parte Ball*, (98 O. G., 2366.)

ON APPEAL.

LABEL FOR CIGARS.

Messrs. Beeken & Spaulding for the applicants.

ALLEN, *Commissioner:*

This is an appeal from the action of the Examiner refusing to register a label.

The label contains the shields of the United States and Cuba, and the Examiner refused registration on this ground, citing *ex parte Ball* (98 O. G., 2366) and *ex parte The Brandsville Fruit Farm Company*, (103 O. G., 660.) The applicant urges that the use of the shields in his label affords no good reason why it should not be registered. He also denies the authority of the Office to refuse to register on that ground. The decision in the case of *ex parte Ball, supra*, is believed to be sound both in points of reason and authority.

The action of the Examiner is affirmed.

THE D. KELLY COMPANY *v.* THE THEOBALD & SON CO. *v.* JOSEPH STRIEBICH *v.* B. KUHL & CO. *v.* SIG. & SOL H. FREIBERG.

Decided April 11, 1906.

TRADE-MARK INTERFERENCE—INTERFERENCE IN FACT.

Held that the words "Mill Springs," "Mill Stream," "Mill View," and "Mill Brook" as trade-marks for whisky interfere.

APPEAL on motion.

TRADE-MARK FOR WHISKY.

Mr. Arthur E. Wallace for all parties.

ALLEN, *Commissioner:*

This is an appeal from the decision of the Examiner of Trade-Marks refusing to dissolve an interference.

Dissolution is sought on the ground that the marks do not interfere. The issue as stated in the redeclaration of the interference is the words "Mill Springs," or the words "Mill Stream," or the words "Mill View," or the words "Mill Brook," for whisky. The word "Mill" is of such importance to the mark in each case and the remaining word is so similar in meaning in the different cases that registration of any two of the marks would be likely to result in confusion or mistake in the mind of the public or to deceive purchasers. I am in no doubt upon this point in spite of the affidavits to the contrary which have been filed. The interference should therefore continue.

The decision of the Examiner is affirmed.

EX PARTE ROGERS & HAVARD.

Decided April 17, 1906.

TRADE-MARK—REGISTRABILITY.

Held that "Fineeting" is not registrable as a trade-mark for butcher-meat.

ON APPEAL.

TRADE-MARK FOR BUTCHER-MEAT.

Messrs. Dyrenforth, Dyrenforth & Lee for the appellants.

ALLEN, *Commissioner:*

This is an appeal from the action of the Examiner of Trade-Marks refusing to register the word "Fineeting" for butcher-meat.

The Examiner held that the word as pronounced is descriptive of a characteristic of the goods and that under such circumstances it is not made registrable by misspelling. The position taken by the Examiner is sound, and his action is affirmed.

EX PARTE AMBROSIA CHOCOLATE COMPANY.

Decided April 18, 1906.

LABELS—REGISTRABILITY—PRINTED TITLE.

Held that a mere title for goods printed in ordinary type with ordinary printers' ornamentation is not registrable as a label, since it is not an artistic production, required in its production no exercise of the creative powers of the mind, and displays no originality in design.

ON APPEAL.

LABEL FOR CHOCOLATE.

Mr. George Wetmore Colles for the applicant.

ALLEN, *Commissioner:*

This is an appeal from the action of the Examiner refusing to register a label.

The label is correctly described in the Examiner's statement as follows:

> The label is printed on yellow paper and comprises the words "Ambrosia Premium Manufactured by Ambrosia Chocolate Co. Milwaukee, Wis." and words descriptive of the quality of the goods and directions for the use thereof. All the words are in ordinary type, except the word "Ambrosia" in the name of the applicant, which is in a peculiar form of script with a flourish beneath. The words themselves are inclosed within a common style of printers' border.

It is not contended by the applicant that his label is an artistic production. He claims, however, that it should be registered as a result of intellectual labor. I am of the opinion that the applicant's label is not the result of intellectual labor in such a sense as will entitle it to registration. Its production required no exercise of the creative

DECISIONS

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EX PARTE R. STEINECKE COMPANY.

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LABELS—REGISTRABILITY—SHIELDS OF COUNTRIES.

Held that a label upon which the shields of certain countries are shown will not be registered, for the reasons given in *ex parte Ball*, (98 O. G., 2366.)

ON APPEAL.

LABEL FOR CIGARS.

Messrs. Beeken & Spaulding for the applicants.

ALLEN, *Commissioner:*

This is an appeal from the action of the Examiner refusing to register a label.

The label contains the shields of the United States and Cuba, and the Examiner refused registration on this ground, citing *ex parte Ball* (98 O. G., 2366) and *ex parte The Brandsville Fruit Farm Company*, (103 O. G., 660.) The applicant urges that the use of the shields in his label affords no good reason why it should not be registered. He also denies the authority of the Office to refuse to register on that ground. The decision in the case of *ex parte Ball, supra*, is believed to be sound both in points of reason and authority.

The action of the Examiner is affirmed.

THE D. KELLY COMPANY *v.* THE THEOBALD & SON CO. *v.* JOSEPH STRIEBICH *v.* B. KUHL & CO. *v.* SIG. & SOL H. FREIBERG.

Decided April 11, 1906.

TRADE-MARK INTERFERENCE—INTERFERENCE IN FACT.

Held that the words "Mill Springs," "Mill Stream," "Mill View," and "Mill Brook" as trade-marks for whisky interfere.

APPEAL on motion.

TRADE-MARK FOR WHISKY.

Mr. Arthur E. Wallace for all parties.

ALLEN, *Commissioner:*

This is an appeal from the decision of the Examiner of Trade-Marks refusing to dissolve an interference.

Dissolution is sought on the ground that the marks do not interfere. The issue as stated in the redeclaration of the interference is the words "Mill Springs," or the words "Mill Stream," or the words "Mill View," or the words "Mill Brook," for whisky. The word "Mill" is of such importance to the mark in each case and the remaining word is so similar in meaning in the different cases that registration of any two of the marks would be likely to result in confusion or mistake in the mind of the public or to deceive purchasers. I am in no doubt upon this point in spite of the affidavits to the contrary which have been filed. The interference should therefore continue.

The decision of the Examiner is affirmed.

EX PARTE ROGERS & HAVARD.

Decided April 17, 1906.

TRADE-MARK—REGISTRABILITY.

Held that "Fineeting" is not registrable as a trade-mark for butcher-meat.

ON APPEAL.

TRADE-MARK FOR BUTCHER-MEAT.

Messrs. Dyrenforth, Dyrenforth & Lee for the appellants.

ALLEN, *Commissioner:*

This is an appeal from the action of the Examiner of Trade-Marks refusing to register the word "Fineeting" for butcher-meat.

The Examiner held that the word as pronounced is descriptive of a characteristic of the goods and that under such circumstances it is not made registrable by misspelling. The position taken by the Examiner is sound, and his action is affirmed.

EX PARTE AMBROSIA CHOCOLATE COMPANY.

Decided April 18, 1906.

LABELS—REGISTRABILITY—PRINTED TITLE.

Held that a mere title for goods printed in ordinary type with ordinary printers' ornamentation is not registrable as a label, since it is not an artistic production, required in its production no exercise of the creative powers of the mind, and displays no originality in design.

ON APPEAL.

LABEL FOR CHOCOLATE.

Mr. George Wetmore Colles for the applicant.

ALLEN, *Commissioner:*

This is an appeal from the action of the Examiner refusing to register a label.

The label is correctly described in the Examiner's statement as follows:

The label is printed on yellow paper and comprises the words "Ambrosia Premium Manufactured by Ambrosia Chocolate Co. Milwaukee, Wis." and words descriptive of the quality of the goods and directions for the use thereof. All the words are in ordinary type, except the word "Ambrosia" in the name of the applicant, which is in a peculiar form of script with a flourish beneath. The words themselves are inclosed within a common style of printers' border.

It is not contended by the applicant that his label is an artistic production. He claims, however, that it should be registered as a result of intellectual labor. I am of the opinion that the applicant's label is not the result of intellectual labor in such a sense as will entitle it to registration. Its production required no exercise of the creative

powers of the mind, nor does it display any originality in design. A similar case was considered in *ex parte Baldwin* (C. D., 1902, p. 54) and the same conclusion reached.

The decision of the Examiner is affirmed.

NEWCOMB *v.* THOMSON.

Decided April 24, 1906.

1. INTERFERENCE—MOTIONS FOR DISSOLUTION—APPEALS.

Where action is taken by the Office upon motion to dissolve an interference from which an appeal may be taken in the interference and the opportunity for such appeal is neglected, an *ex parte* appeal thereafter upon the same matter will not be entertained.

2. SAME—DISSOLUTION—REINSTATEMENT.

Where an interference was dissolved for non-patentability of the issue and no appeal from that action was prosecuted in the interference, but an *ex parte* appeal was thereafter taken, upon which the claims in issue were found patentable, and the Examiner reinstated the interference, *Held* that the reinstatement of the interference should be set aside and also the decision on the appeal.

APPEAL on motion.

ART OF GENERATING STEAM OR VAPOR.

Messrs. Kenyon & Kenyon for Newcomb.

Mr. A. G. Davis and *Messrs. Lyons & Bissing* for Thomson.

ALLEN, *Commissioner:*

This is an appeal by Newcomb from a decision of the Examiner of Interferences denying his motion to vacate an order reinstating this interference.

This interference was originally declared January 13, 1903, between a patent to Newcomb and a divisional application of Thomson. A motion was made by Newcomb to dissolve the interference on the grounds that Thomson had no right to make the claims, that there was no interference in fact, and that there was irregularity in the declaration of the interference. The Primary Examiner granted the motion on all the grounds. An appeal was taken by Thomson to the Examiners-in-Chief upon the question of his right to make the claims and to the Commissioner upon the other questions. Action upon the appeal to the Commissioner was suspended, the appeal to the Examiners-in-Chief was subsequently withdrawn, and the interference was dissolved.

The Primary Examiner then took up the Thomson application for *ex parte* consideration and twice rejected the claims which had been involved in the issue on the ground stated in the decision granting the motion to dissolve. Thereupon Thomson took an appeal, *ex parte*, to the Examiners-in-Chief, who reversed the decision of the Primary Examiner. In view of this decision, holding that Thomson had a right to make the claims which had been involved in the interference, the Examiner of Interferences reinstated the interference and set times for taking testimony. Newcomb then made his motion to vacate the official action reinstating the interference, from the denial of which this appeal is brought.

I am of the opinion that the proceedings in the Thomson application since the withdrawal of the appeal to the Examiners-in-Chief in the interference were contrary to the evident spirit of the rules and that to sustain such proceedings would be in opposition to the requirements of good practice and to the interests of applicants generally. If parties can waive their rights of *inter partes* appeal in the interference and then proceed by *ex parte* appeals to try the same questions which they could have tried by the *inter partes* appeals, the provision of Rule 124 that appeals *shall* be heard *inter partes* is rendered ineffective. If the *inter partes* hearing upon appeal is to be escaped, the usefulness of motions for dissolution will be slight, except in those cases where parties voluntarily take the *inter partes* appeal. Why should motions be brought or even permitted if decisions granting them can be set aside upon appeal without opportunity for the moving parties to be heard, and presumably to a large extent without consideration of the arguments upon which the conclusions appealed from are based? It is no sufficient answer to say that if the decision of the Primary Examiner is reversed the motion may be brought again when the interference is reinstated or redeclared. If reinstated, a new motion brought and granted would presumably be followed by another *ex parte* appeal and another reversal of the decision. There would be no logical conclusion to such proceedings, and to permit them would be absurd. The practice of permitting motions for dissolution to be brought is believed to be good. If appeals upon these motions are to be permitted, the prosecution thereof must be *inter partes* to save the whole proceeding upon the motion from becoming farcical. The rules at present do provide for appeals, and it is not deemed expedient to change them in this respect at the present time.

The questions raised by these considerations are whether this Office must entertain an *ex parte* appeal where the right of *inter partes* appeal has been neglected and whether is must recognize as valid proceedings upon such *ex parte* appeal where, as in the present case, one has been taken and decided. I am of the opinion that such is not the case, and believe that the Office will act in accordance with sound principles and within its authority in refusing to consider *ex parte* appeals under the circumstances of the present case and in setting aside proceedings in connection with such appeals where they have been taken and decided. The strongest argument in support of the contrary opinion seems to lie in the contention that parties should not be put to the delay and expense of the *inter partes* appeal to each of the tribunals of the Patent Office when they cannot continue the course of appeal immediately to the court, but must return to the Primary Examiner and after all take the course of *ex parte* appeal to obtain the court's decision. It does not seem to me, however, that the delay and expense attending the full prosecution of the *inter partes* appeals is so great an evil as would be the ineffectiveness of motions for dissolution which would follow upon the practice which Thomson desires to inaugurate here.

As to the authority of the Office to refuse consideration to an *ex parte* appeal taken after neglect of the regular *inter partes* appeal and to set aside actions based upon such *ex parte* appeals where one has been received and a decision rendered little need be said. In the first place, insistence that the appeal be taken *inter partes* is not a denial of the right of appeal to the court of appeals. The Office, in view of the refusal of the court to receive appeals on motions, permits parties after the course of *inter partes* appeal has been exhausted to repeat the course *pro forma ex parte* in order that no rights shall be lost. To say that dismissal of the *ex parte* appeal where the party refuses to take the prescribed *inter partes* appeal is a denial is not true. The fact in such cases is that the applicant sacrifices his right by failure to conform to a manner of prosecuting the same prescribed by the Office. It is the right and duty of the Office to prescribe ways in which the rights of parties must be prosecuted, and in order to enforce its prescriptions enacted in the fulfilment of this duty the Office undoubtedly has authority to hold sacrificed rights which are not secured by prosecution in accordance with the practice laid down.

Applying these principles to the present case, it may be stated that Thomson had under the statute a right of appeal from any final holding against him upon the merits of his application. He has, however, no statutory right to *ex parte* consideration of the appeal or to take a year from the action against him in which to bring the same. In view of these facts the Office may properly require appeals from decisions on motions to be taken within reasonable times fixed in each case and to prescribe that such appeals shall be heard *inter partes*. To enforce its regulation regarding appeals upon motions, the Office, in view of the absence of statutory right of applicants to a year for action or to *ex parte* consideration, is justified in refusing to receive an appeal brought after the time fixed therefor in the decision on the motion has expired.

It is believed that this case appears in a different aspect when it is observed that the procedure contended for here fits as well with the wishes of one who merely desires to rid himself of *inter partes* consideration upon appeal as with the wishes of a party who is seeking to escape the delay and expense of a double course of appeal. The same decision must be made for both kinds of contestants, and it is more important to defeat the undesirable ends of parties of the latter class than to secure the desirable results sought by parties of the former class.

It is directed that the reinstatement of the interference be set aside and also the decision of the Examiners-in-Chief upon appeal. In view of the fact that the practice herein indicated does not appear to have been clearly set forth heretofore, the Examiners-in-Chief will rehear *inter partes* Thomson's appeal from the final re-rejection and decide the same upon *inter partes* consideration of the questions raised.

The decision of the Examiner of Interferences is reversed.

NEWCOMB *v.* THOMSON.

Decided May 16, 1906.

INTERFERENCE—MOTIONS FOR DISSOLUTION—APPEAL.

Where the Examiner finds on motion to dissolve an interference that the subject-matter in issue is not patentable, he should take such actions in the applications subsequent to his decision as will put them in condition for the statutory appeal, so that the appeals may be continued directly to the court of appeals without the necessity of a second course of appeal through the Patent Office.

APPEAL on motion.

ART OF GENERATING STEAM OR VAPOR.

Messrs. Kenyon & Kenyon for Newcomb.

Mr. A. G. Davis and *Messrs. Lyons & Bissing* for Thomson.

ALLEN, *Commissioner:*

The following decision is rendered to supplement my decision of April 24, 1906, in view of certain mistakes in the statements of facts which appear in said decision.

In that decision it is stated that after appeal by Thomson from the decision of the Primary Examiner granting Newcomb's motion for dissolution and withdrawal by Thomson of that appeal:

> The Primary Examiner then took up the Thomson application for *ex parte* consideration and twice rejected the claims which had been involved in the issue, on the ground stated in the decision granting the motion to dissolve. Thereupon Thomson took an appeal, *ex parte*, to the Examiners-in-Chief, who reversed the decision of the Primary Examiner. In view of this decision, holding that Thomson had a right to make the claims which had been involved in the interference, the Examiner of Interferences reinstated the interference and set times for taking testimony. Newcomb then made his motion to vacate the official action reinstating the interference, from the denial of which this appeal is brought.

The decision also refers in other places to rejection of claims and to *ex parte* appeal by Thomson to the Examiners-in-Chief. There was, in fact, however, no final rejection of claims in the application here involved and no *ex parte* appeal by Thomson in this application. Such proceedings were had in another application by Thomson upon related subject-matter, and the Examiner's action reinstating this interference was based upon those proceedings in the other application, as appears from the following proceedings had in Thomson's application here involved.

After Thomson's withdrawal of his *inter partes* appeal in this interference the Examiner in his action of November 3, 1904, in Thomson's application here involved rejected the claims which were included in the interference. The succeeding action in Thomson's application was a letter from the applicant stating as follows:

> In view of the decision of the Board of Examiners-in-Chief in the parent application, Serial No. 646,752, of which this is a division, and which decision was rendered on July 13th, 1905, it is requested that the rejection of this case as per Examiner's letter of November 3, 1904, be withdrawn; that the case be adjudged to be allowable and that the interference with Newcomb be redeclared.
>
> All the reasons stated by the Board of Examiners-in-Chief for the allowance of the claims in the parent case are applicable, word for word, to this case, as the Examiner will readily understand.

The Examiner thereupon wrote the following letter in the case:

> Response to letter filed July 20, 1905.
>
> In view of the decision of the Board of Examiners-in-Chief in the parent application No. 646,752 of which this is a division the ground taken in Office action of Nov. 3, 1904, has been reconsidered and the claims are now held to be allowable.
>
> The interference with Newcomb will be redeclared.

And the present interference was instituted as a redeclaration of the prior interference.

It was my intention in the decision to which this is a supplement to institute a practice by which parties must appeal *inter partes* and in a reasonable time where there has been a holding upon motion for dissolution against the merits of their cases, if they would appeal at all, and it was also my intention that the Examiner should take such action subsequent to his decision upon the motion as will put the cases in condition for the statutory appeal, so that appeal might be continued directly to the court of appeals without the necessity of a second course of appeal through the Patent Office. The mistakes of fact appearing in the prior decision involve no change in the principles involved therein. However, since there has been no final rejection and *ex parte* appeal therefrom by Thomson in his application here involved the paragraph of the prior decision next preceding the conclusion thereof does not apply to this case and is withdrawn. In the place thereof it is directed that the rejection dated November 3, 1904, in Thomson's application here involved be considered in full force and effect until the Examiner is convinced that the same was in error or until the same is overruled by an *inter partes* appeal. In order that the appeal may conform to that

provided by the statutes, the Examiner will fix a date for reconsideration of the rejection. The reconsideration should be *inter partes*, and if thereafter the Examiner is still of the opinion that the rejection is sound he should make the same final and fix a limit of appeal. It is not intended by this to hold that corresponding proceedings in another interference may not take the place of such proceedings in this interference.

The prior decision stands subject to the modifications stated herein.

DREVET MANUFACTURING COMPANY *v.* LIQUOZONE COMPANY.

Decided June 15, 1906.

1. TRADE-MARK OPPOSITION—DEMURRER—APPEAL.
   Held that there is no right of appeal from the decision of the Examiner of Interferences overruling a demurrer to the notice of opposition to the registration of a trade-mark.
2. SAME—SAME—SAME.
   No exception to the rule that there is no right of appeal from the decision of the Examiner of Interferences overruling a demurrer in trade-mark opposition will be made where the circumstances are not of such an unusual or extreme character as will justify extraordinary action.

ON PETITION.

TRADE-MARK FOR GERMICIDAL REMEDIES.

Messrs. Mason, Fenwick & Lawrence for The Drevet Manufacturing Company.

Messrs. Rector & Hibben and *Messrs. Bacon & Milans* for The Liquozone Company.

ALLEN, *Commissioner:*

This is a petition by The Liquozone Company praying that their appeal from the decision of the Examiner of Interferences overruling their demurrer be accepted and determined.

The petitioner is aware, it is stated, that the usual equity practice is such as to preclude an appeal from a decision overruling a demurrer, but contends that this practice should not be followed in the Patent Office. No good reason is found in support of this contention. The decision of the Examiner of Interferences affords in general sufficient basis upon which to require parties to proceed with the pleadings. The effects of the occasional errors which may stand uncorrected through denial of an appeal in these cases are not of sufficient importance to justify the burden upon the parties and the Patent Office of the many unfruitful appeals which would undoubtedly be taken if the practice permitted appeals.

The petitioner requests that if a general right of appeal in these cases is not recognized an exception be made in this case as an exercise of supervisory authority. The circumstances to which attention is called in support of this request are not of such an unusual or extreme character as would justify extraordinary action.

The petition is denied.

DECISIONS OF THE U. S. COURTS.

Court of Appeals of the District of Columbia.

ANDERSON *v.* WELLS.

Decided March 6, 1906.

1. INTERFERENCE — ORIGINALITY — DISCLOSURE TO OPPOSING PARTY.
   When a party claims an invention and also to have communicated that invention to another, who has applied mechanical work thereto and put such invention into practice, claiming the same as his own, the communication in order to be effectual must be shown to have been full and clear as to all the essential elements of the invention and such as was sufficient in itself to enable the party to whom the disclosure was made to give the invention practical form and effect without the exercise of invention on his part.
2. SAME—DILIGENCE.
   A. conceived the invention in July, 1902, and endeavored to make the same in his own shop and to have the same made by another in the latter part of the year, but failed on account of lack of proper machinery. In the early part of January, 1903, he applied to a company by which W., the opposing party, was employed and unsuccessfully endeavored to make some arrangements with them to manufacture the device. In April or May, 1903, he applied to another company, who made the device some months later. He filed his application December 14, 1903. W. entered the field in the latter part of January, 1903, after A.'s visit to his company, and filed his application March 27, 1903, on which a patent was granted May 26, 1903. *Held* that W. is entitled to the award of priority, as A. was not diligent.

Mr. Marcellus Bailey for Anderson.

Mr. John C. Dewey for Wells.

MCCOMAS, *J.:*

This is an appeal from a decision of the Commissioner of Patents. The parties to the interference are Joel C. Wells, appellee, who filed his application March 27, 1903, and to whom a patent was granted May 26, 1903, and James C. Anderson, appellant, who filed his application December 14, 1903.

The interference embraces four counts:

1. In rimless spectacles, means for attaching the temple at the outer edge of the lens, comprising a strap or loop, extending over the edge of the lens, and secured thereto by a screw, and a knob or projection on the inner side of said strap, with its outer edge substantially on a line with the outer edge of the strap, said knob having a slot therein to receive the end of the temple, and a stud or screw to pivotally secure the temple thereto, substantially as shown and described.
2. In rimless spectacles, the combination with the lens, of means for attaching the temple thereto, said means comprising a strap extending over the outer edge of the lens, and secured thereto, and a knob or projection on the inner side of said strap, the outer edge of said knob or projection being substantially in line with the outer edge of the strap, and said knob having a slot or recess therein to receive the end of the temple, and a stud or screw to pivotally secure the temple thereto, substantially as shown and described.
3. In rimless spectacles, the combination with the lens, of means for attaching the temple thereto, said means comprising a strap or loop extending over the outer edge of the lens, and secured thereto, and a knob or projection on the inner side of said strap, and at the outer edge thereof, and substantially in line with the outer edge of the strap, and within the outer edge of the lens, said knob having a slot or recess therein, to receive the end of the temple, and a stud or screw to pivotally secure the temple thereto, substantially as shown and described.
4. In rimless spectacles, the combination with the lens, of means for attaching the temple thereto, said means comprising a strap or loop, extending over the outer edge of the lens, and beyond the edge of the lens the thickness of the strap only, and secured to the lens, and a knob or projection upon the inner side of the strap, and at the outer edge of the strap, and substantially in line with the outer edge of the lens, said knob or projection having a slot or recess therein to receive the end of the temple, and a stud or screw to pivotally secure the temple thereto, substantially as shown and described.

The matters involved in these counts are well stated by the Examiner of Interferences, who, after saying, that it is an old device in rimless spectacles to have the projection to which are secured the temple-bows extending inwardly at right angles to the securing strap or loop, as shown in the patents to one Thomas and to one Fox; that in none of these patents does the projection stand in line with the outer edge of the strap and within the outer edge of the lens; that in Mansfield's patent the temple-support is shown to be within the outer edge of the lens; proceeds as follows:

The invention at issue involves an improvement in that construction of rimless spectacles which have a strap or loop extending over the outer end of the lens and secured thereto by a screw. The novel feature consists in locating the knob or projection to which the temple-bows are pivotally secured on the inner side of the strap, with its outer edge substantially on a line with the outer edge of said strap. To place the knob or projection of the patents to Thomas or Fox slightly inward so as to be flush with the lens would produce the invention in controversy. It is evident, therefore, that the invention is of an exceedingly limited character.

The Examiner of Interferences awarded priority of invention to Wells. On appeal, the Examiners-in-Chief reversed the decision of the Examiner of Interferences and awarded priority to Anderson. On appeal, the Commissioner of Patents reversed this decision and awarded priority of invention to Wells. From the Commissioner's decision, Anderson appealed to this court.

The appellant alleges that he conceived and disclosed the invention about July 1, 1902, and made a model showing the invention and subsequently engaged the services of a manufacturer and had several samples made endeavoring to attain great accuracy, and gave orders to the manufacturer of his invention in quantities, and being apprised of the granting of a patent for his invention to Wells, thereupon countermanded his order for the manufacture of the goods to await the determination of his right to the priority of invention. Anderson is an inventor to whom has been granted probably a hundred patents. He says his habit is to thoroughly demonstrate and practically complete his numerous inventions before applying for a patent.

Anderson had trouble with his glasses and went to an optician in Baltimore to procure a satisfactory pair and failing to get them, about July 1, 1902, conceived the idea of making glasses in accordance with the issue. He intended to construct short bows or "temples" in lieu of the long bows and adapt them conveniently for use on his own head. He sought to dispense with the lugs or projections extending outward in a line with the lenses and he attempted to change some of the rimless spectacles with long ear-bows, which he had purchased from the Baltimore optician, into the form he desired. He sought to have "the longitudinal projections removed and the lugs and hinge of the bows placed immediately behind the lugs which attach the bows to the lenses," and said he:

I called in my superintendent of the machinery department to make the necessary changes, explaining to him at the time fully my purposes and what I desired him to do.

Anderson asked him "if he could not cut off these lugs and solder them in the position desired leading directly back from the ends of the lenses." The brittle glass and the hard-metal bows and the lack of special facilities foiled his efforts. He called in H. C. Moberly, another employee, and Anderson adds—

explaining to him fully at the time my purpose not only of having the lugs brought back to a position in line with the end of the lens and leading backward, but my desire to lessen the obstruction to view by reason of this unnecessary chunk, as I termed it, extending in the line of vision.

Anderson testified that for some years he had an experimental shop at the works of the Murrill & Keiser Company of Baltimore; that his superintendent referred to was James Anderson, a mechanical engineer and draftsman, not related to the appellant, and that Harry C. Moberly was a machinist employed at the works of the Murrill & Keiser Company.

Anderson successively instructed these witnesses in the first instance to cut off the lug. That attempt was a failure. The superintendent Anderson says the idea was to cut it off, "the hinge part to be soldered to the back of the lug to come flush with the outer edge of the strap." But the witness found if that were done sufficient stock would not be left to hold the hinge together, and then the appellant, Anderson, asked the witness "if we could not bend it over sufficient to show his idea, what he was driving at," and when shown an exhibit containing all the elements of the issue, and being asked how a pair of spectacles such as Anderson wanted made in June, 1902, would compare in construction with the exhibit, the witness said "it would be the same as this sample in all respects." The superintendent fixes the time of these efforts about the middle of June, 1902. Harry C. Moberly, before mentioned, said that between the latter part of May and the middle of June he worked on a pair of rimless glasses under instructions from Anderson who asked him to bend the lug of a pair of rimless glasses with long bows which were given him "around in front of the glasses on a line with the outer edge." The witness tried to do this and he broke one of the lugs and next broke a pair of round-nose pliers which were exhibited. Moberly said:

Anderson wanted this lug here extending out, he wanted to bring it behind in line with the outer edge of the glasses—

and he identified the lug which he had broken and which he had first "started to cut off and then in bending broke off." The testimony of Moberly identifies the invention of the issue in this interference and proves in Anderson's behalf a conception of the invention of the issue about July, 1902.

In the early fall of that year Anderson applied to Martin A. Leese, an optician of Washington, D. C. Leese says Anderson said he had had difficulty in having his work done and he wanted Leese to make spectacles with a short-bow rimless frame.

He wanted me to reconstruct them and put the bows on the inside of the glass, but the machinery we have in our shop would not allow me to do the work just as he wished it.

Leese made several samples. Anderson told Leese that his samples were not fully up to his idea, and Leese then referred Anderson to the Standard Optical Company of Geneva, N. Y., and the American Optical Company of Southbridge, Mass., who could satisfy him.

When the first count of the issue was read to Leese he was asked how near it described the construction which Anderson desired him to make and he replied "that is about what he wanted me to do," and looking at Anderson's exhibit, which involved the elements of the issue, he said "it is the idea exactly," and later added that he had no difficulty in understanding "exactly what Mr. Anderson wished."

The testimony of Anderson and Moberly convinces us that what Anderson had in mind when he went to Leese was the production of a hinged joint containing a lug no part of which would project beyond the outer edge of the attaching-strap, and Leese, examining the glasses with the chunk which Moberly broke in the attempt to accomplish Anderson's design, said that to his best recollection "this is about what he (Anderson) had in there" and added that the glasses "have his idea of short bows and bear evidence of some one attempting to do what he wished me to do."

Anderson testifies that when he realized that Leese lacked the machinery to do what he wanted in the early part of January, 1903, he called at the office of the American Optical Company and there met Mr. George W. Wells, and one or both of his sons, one of whom is the appellee here. Anderson testifies that he exhibited to them a pair of short-bow rimmed glasses which were patented December 9, 1902, and explained the invention involved in this interference; that is—

that in using rimless glasses I so formed the bows at their juncture

with the block connection that it did away with the most part of the unsightly chunk in the line of vision and at the same time brought the bows of my particular construction into the proper position and alinement to member with the longitudinal recess leading into the cavity close back of the eye and in the temple.

Anderson adds that Leese referred him to this company and another as being well equipped for the manufacture of spectacle-rims, and his purpose in being there was to sell the invention or to arrange for the manufacture and marketing of it. The parties failed to make a satisfactory business arrangement and Anderson testifies that about April or May, 1903, he began correspondence with the Standard Optical Company about the manufacture of spectacles embodying the invention in interference here, and the invention of the issue, one pair of which, made by that company some months after that time, Anderson exhibited.

The appellant, Anderson's own account of the disclosure he made to George W. Wells does not seem to fully explain the invention. George W. Wells, the president of the American Optical Company, admits Anderson's visit but denies that during the interview Anderson said anything about any invention of his except his patented short-temple construction of December 9, 1902, and says to his best recollection neither of his sons were present. Joel C. Wells, the appellee, the son of George W. Wells, denies that he was present at the interview, which the appellant details. A letter of January 3, 1903, from George W. Wells, to the appellant, Anderson, relates to Anderson's patent just mentioned and is silent respecting the invention of the issue. The appellee absolutely denies that he had ever heard of Anderson's invention or that he had been told of any invention of Anderson similar to the invention in issue prior to March 27, 1903. It is at this point that the appellant, Anderson's case fails. He appears to us to be the first to have conceived the invention but he has failed to prove beyond a reasonable doubt that he made the disclosure to the appellee. Anderson is sure he did so. George W. Wells and Joel C. Wells, the appellee, absolutely deny any such disclosure by Anderson. Joel C. Wells is the patentee, who filed his application March 27, 1903, and the patent for this invention was granted to him May 26, 1903. Anderson filed his application for the same invention December 14, 1903.

The disclosure, to Wells, according to the appellant, Anderson's recollection, is not so full and clear as the principles of the patent law covering a case like this require.

The law upon the subject is well settled by repeated decisions of the Supreme Court of the United States. When a party claims an invention, and also to have communicated that invention to another, who has applied mechanical work thereto, and put such invention into practice, claiming the same as his own, the communication, in order to be effectual, must be shown to have been full and clear as to all the essential elements of the invention, and such as was sufficient in itself to enable the party to whom the disclosure was made to give the invention practical form and effect without the exercise of invention on his part. (*Sendelbach* v. *Gillette*, 22 App. D. C., 174.)

In the same case, speaking of the measure of proof necessary to sustain an inventor's claim of disclosure to another claimant, this court said:

The charge that the patentee fraudulently and surreptitiously obtained the patent for the invention which he well knew belonged to another can only be sustained by the clearest and most undoubted proof. (*Sendelbach* v. *Gillette*, *supra*, 181.)

In this instance we do not question the sincerity of the appellant. We are not satisfied that he made clear his invention. The preponderance of the evidence upon this point is in favor of the patentee.

This is a case of an interference between the applicant and the patentee, and the applicant, if he would prevail upon the grounds of disclosure, must prove such disclosure beyond a reasonable doubt, and here the appellant's case fails.

It appears that Anderson applied for and obtained two patents relating to spectacles; the one upon an application filed September 20, 1902, granted December 9, 1902, the other upon an application filed January 27, 1903, granted March 31, 1903. It is true the first patent related to short-bow spectacles generally and the second to what are known in the art as "nose-glasses," and it is also true that the Patent Office discourages including in one application more than one independent invention. It is at least unfortunate for the appellant that he did not file his application for the invention of the issue until December 14, 1903, seventeen months after he appears to have conceived the invention and then only after the Standard Optical Co., had called his attention to Wells's patent. However, the appellant's diligence might have been considered sufficient if he had satisfied this court beyond a reasonable doubt of his alleged disclosure to Wells, the patentee in this issue of interference.

The patentee, Wells, claims to have conceived the present invention in April, 1898. He gives no satisfactory reason for his neglect of his conception during nearly five years, for he admits that he did not take up the invention in the issue until the latter part of January, 1903. He explains that he then did so principally for two reasons; first, because, F. A. Hardy, of Chicago, about that time visited the American Optical Co.'s works, whereof the appellee was secretary, and Hardy's construction of "short regular-style end piece suggested the desirability of being prepared to supply an end piece better than the Mansfield;" second, "our sale of the Mansfield had not turned out to be sufficient to warrant our withholding an improvement if we had one." However, that may be, the testimony of Wells the patentee corroborated by that of witness L. E. Sibley and George W. Wells proves that in the latter part of January, 1903, a model of the invention in issue was made and the invention was reduced to practice at that time. On February 19, 1903, the appellee wrote to his attorney instructing him to apply for a patent and on March 27, 1903, the appellee's application was filed and on such application a patent was issued on May 26, 1903, for the invention in issue.

We conclude that because the appellant has failed to prove beyond a reasonable doubt the disclosure he claims to have made about the 1st of January, 1903, upon his visit to the American Optical Company, we must hold that Joel C. Wells, the appellee, is an independent and original inventor.

That Anderson was the first to conceive this invention seems quite probable. That Wells conceived it in 1898 is a proposition not strongly supported by the evidence. That Wells to whom the patent was granted, must upon all the proof in the case, be held to have been an original inventor of the matter in this issue, is a proposition not overcome by the proof of the appellant. That Anderson disclosed his invention to Wells, is not proved beyond a reasonable doubt. That Anderson scarce exercised reasonable diligence in reducing his invention to practice is the second defect in his case. It was his misfortune that he practically delayed until the early summer of 1903 to reduce the invention of the issue to practice and did not file his application for a patent until December 14, 1903, nearly a year and a half after his alleged conception of the patent and after his attention had been called to Wells's patent. It was in April or May, 1903, that Anderson began to correspond with the Standard Optical Company with the object of entering upon the manufacture of spectacles embodying the invention in issue here. It would appear that Anderson was more concerned with other things and that no adequate reason has been assigned for the delay and the appellant's lack of diligence in making application for the patent upon the invention at issue.

It appears that Anderson visited the office of this company early in January, 1903, and that later in the same month F. A. Hardy appeared, and the object of Hardy's visit was in some way to shorten the end pieces or lugs upon rimless spectacles, and this object was in a general direction of the invention in issue.

It is sufficient to say that the appellant's case does not prevail over the patent already issued to the appellee. After a careful examination of all the facts and circumstances in this record we are not justified in reversing the priority awarded by the Patent Office in favor of Joel C. Wells as an independent original inventor.

The clerk of this court will certify this opinion and the proceedings in this cause to the Commissioner of Patents according to law. Affirmed.

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ABANDONED EXPERIMENTS.

(See Interference, 6, 29, 30.)

ABANDONMENT OF APPLICATIONS.

1. LONG DELAY—COMPLETE SHOWING REQUIRED.
Where action on an application was delayed for nearly three years, the showing that the delay was unavoidable must be very complete and satisfactory. [*Ex parte* Ilgner, 1721.

2. DELAY NOT UNAVOIDABLE.
Where prior to the expiration of the time allowed for action the attorney notified the assignee that an amendment was required and neither the assignee nor the inventor took any action whatever until nearly seventeen months thereafter and no satisfactory reason is given for the delay, *Held* that the delay was not unavoidable. [Id.

3. DELAY AFTER ABANDONMENT WAS DISCOVERED.
A delay of more than one year after the discovery that the application was abandoned, for which no excuse is given, cannot be considered unavoidable. [Id.

4. RESPONSIVE ACTIONS.
Where claims are placed under final rejection and within the year following no appeal is filed nor any amendment or argument upon the merits presented and the communications filed are directed to traversing the propriety of the final rejection, *Held* that a petition filed one day before the year expired that the final rejection be withdrawn is not such an action as will save the application from abandonment. [*Ex parte* Thayer, 1724.

ACT OF FEBRUARY 20, 1905.

(See Trade-Marks, 1, 2, 3, 5, 6.)

AFFIDAVITS.

(See Interference, 12; Motion to Dissolve Interference, 17, 18; Patentability, 2; Public Use and Sale 1, 2; Trade-Marks, 5, 14.)

1. INTERFERENCE—MOTION TO DISSOLVE.
Ex parte affidavits are not equivalent to testimony, and the Office is not bound to give effect thereto in determining patentability. [Browne *v.* Stroud, 2688.

2. SAME—SAME.
All proper rules for the exclusion of voluminous and multitudinous affidavits should be applied strictly. [Id.

3. SAME—SAME.
Where affidavits are filed by any of the parties which are not in answer to affidavits filed by opponents, they must ordinarily, under established practice, be served upon the opponents at least five days before the date of hearing. Affidavits in rebuttal may then be filed by opponents; but such affidavits should ordinarily be served before the day of the hearing. Ordinarily, further affidavits should not be necessary, and such further affidavits should not in any case be admitted except upon a satisfactory showing excusing the delay or justifying the admission of surrebuttal evidence. [Id.

4. SAME—SAME.
The conclusion of the Primary Examiner upon the character of an affidavit as basis for its admission or exclusion will only be set aside in cases of clear error, and extensive affidavits will not be studied upon appeal to determine whether proper or improper unless the matters urged upon the appeal have been fully urged before the Primary Examiner and the supposed errors in his decision are clearly pointed out on appeal. [Id.

AGENTS.

(See Reduction to Practice, 4.)

AGREEMENT OF PARTIES IN INTERFERENCE.

(See Priority of Invention, 4, 5.)

ALLEGATIONS.

(See Interference, 29; Motion to Dissolve Interference, 1, 2, 3, 5, 6, 7, 9, 10, 11; Notice of Allowance; Oath.)

AMBIGUOUS TERMS.

(See Interference, 27.)

AMENDMENTS.

(See Abandonment of Applications, 2, 4; Drawings, 1, 2; Interference, 28; Rejection of Claims, 1, 4.)

CLAIMS RECOMMENDED BY EXAMINERS-IN-CHIEF REJECTED ON NEW REFERENCES.
Where claims which were recommended by the Examiners-in-Chief are rejected by the Primary Examiner on new references, the applicant is not entitled to amend the same or substitute new claims therefor. [*Ex parte* Myers, 351.

AMENDMENTS TO PRELIMINARY STATEMENTS.

(See Motion to Dissolve Interference, 11; Priority of Invention, 3, 4, 5.)

ANTICIPATION.

(See Motion to Dissolve Interference, 3; Trade-Marks, 10.)

APPEAL.

(See Affidavits, 4; Interference, 11, 17, 18, 19, 21, 26, 32, 33, 34; Limit of Appeal; Motion to Dissolve Interference, 4, 18; Priority of Invention, 1, 2; Trade-Marks, 18, 19.)

APPEAL FROM THE EXAMINERS-IN-CHIEF.

(See Interference, 17.)

APPEAL FROM FAVORABLE DECISION.

(See Patentability, 4.)

APPEAL TO THE COMMISSIONER OF PATENTS.

(See Interference. 12, 21.)

APPEAL TO THE EXAMINERS-IN-CHIEF.

(See Drawings, 1; Interference, 11; Priority of Invention, 2.)

APPLICATIONS.

(See Abandonment of Applications; Amendments; Division of Applications; Drawings; Forfeited Applications; Notice of Allowance; Oath; Rejection of Claims.)

1. DATE OF COMPLETING.
Where the preparation, execution, and filing of an application by an attorney were authorized by a power filed with the original papers and subsequently to the filing of the original papers new papers were filed duplicating the original papers, except that they were executed by the inventor, and the case was thereupon given number and date as a complete application, *Held* that a request that the earlier date be given as the filing date of the application in order to avoid the bar of a foreign patent cannot be granted. [*Ex parte* Sassin, 2064.

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Where claims are placed under final rejection and within the year following no appeal is filed nor any amendment or argument upon the merits presented and the communications filed are directed to traversing the propriety of the final rejection, *Held* that a petition filed one day before the year expired that the final rejection be withdrawn is not such an action as will save the application from abandonment.
[*Ex parte* Thayer, 1724.

ACT OF FEBRUARY 20, 1905.

(See Trade-Marks, 1, 2, 3, 5, 6.)

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Ex parte affidavits are not equivalent to testimony, and the Office is not bound to give effect thereto in determining patentability. [Browne *v.* Stroud, 2688.

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All proper rules for the exclusion of voluminous and multitudinous affidavits should be applied strictly. [Id.

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Where affidavits are filed by any of the parties which are not in answer to affidavits filed by opponents, they must ordinarily, under established practice, be served upon the opponents at least five days before the date of hearing. Affidavits in rebuttal may then be filed by opponents; but such affidavits should ordinarily be served before the day of the hearing. Ordinarily, further affidavits should not be necessary, and such further affidavits should not in any case be admitted except upon a satisfactory showing excusing the delay or justifying the admission of surrebuttal evidence. [Id.

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The conclusion of the Primary Examiner upon the character of an affidavit as basis for its admission or exclusion will only be set aside in cases of clear error, and extensive affidavits will not be studied upon appeal to determine whether proper or improper unless the matters urged upon the appeal have been fully urged before the Primary Examiner and the supposed errors in his decision are clearly pointed out on appeal.
[Id.

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(See Reduction to Practice, 4.)

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(See Priority of Invention, 4, 5.)

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(See Interference, 29; Motion to Dissolve Interference, 1, 2, 3, 5, 6, 7, 9, 10, 11; Notice of Allowance; Oath.)

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(See Interference, 27.)

AMENDMENTS.

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Where claims which were recommended by the Examiners-in-Chief are rejected by the Primary Examiner on new references, the applicant is not entitled to amend the same or substitute new claims therefor. [*Ex parte* Myers, 351.

AMENDMENTS TO PRELIMINARY STATEMENTS.

(See Motion to Dissolve Interference, 11; Priority of Invention, 3, 4, 5.)

ANTICIPATION.

(See Motion to Dissolve Interference, 3; Trade-Marks, 10.)

APPEAL.

(See Affidavits, 4; Interference, 11, 17, 18, 19, 21, 26, 32, 33, 34; Limit of Appeal; Motion to Dissolve Interference, 4, 18; Priority of Invention, 1, 2; Trade-Marks, 18, 19.)

APPEAL FROM THE EXAMINERS-IN-CHIEF.

(See Interference, 17.)

APPEAL FROM FAVORABLE DECISION.

(See Patentability, 4.)

APPEAL TO THE COMMISSIONER OF PATENTS.

(See Interference, 12, 21.)

APPEAL TO THE EXAMINERS-IN-CHIEF.

(See Drawings, 1; Interference, 11; Priority of Invention, 2.)

APPLICATIONS.

(See Abandonment of Applications; Amendments; Division of Applications; Drawings; Forfeited Applications; Notice of Allowance; Oath; Rejection of Claims.)

1. DATE OF COMPLETING.
Where the preparation, execution, and filing of an application by an attorney were authorized by a power filed with the original papers and subsequently to the filing of the original papers new papers were filed duplicating the original papers, except that they were executed by the inventor, and the case was thereupon given number and date as a complete application, *Held* that a request that the earlier date be given as the filing date of the application in order to avoid the bar of a foreign patent cannot be granted. [*Ex parte* Sasain, 2004.

2. DELAY IN FILING AFTER APPLICATION FOR PATENT IN OTHER COUNTRIES.
The period of one year after filing applications in other countries which is allowed by statute for filing applications in this country would seem to be sufficient for the preparation and deposit of an application here in the form required by the rules. *Held* that where parties fail to meet the plain requirements of the rules in the ample time allowed that the Office, had it the power to do so, should not relax the requirements of established practice in order to save the parties from the consequences of their delay. [Id.

APPLICATIONS AND REGISTRATIONS.

(See Trade-Marks, 10.)

ARGUMENT.

(See Interference, 12; Motion to Dissolve Interference, 5, 9; Public Use and Sale, 1; Rejection of Claims, 3.)

ASSIGNEES.

(See Abandonment of Applications, 2; Oath.)

ATTORNEYS.

(See Abandonment of Applications, 2; Applications, 1; Trade-Marks, 5.)

ATTORNEY-GENERAL.

(See Forfeited Applications.)

AUTHORITY OF THE COMMISSIONER OF PATENTS.

(See Division of Applications, 2, 5.)

BAR TO PATENT.

(See Applications, 1; Interference, 21, 22, 23; Public Use and Sale, 2.)

BAR TO REGISTRATION.

(See Trade-Marks, 15.)

BURDEN OF PROOF.

(See Division of Applications, 4.)

INTERFERENCE—NO INTERLOCUTORY APPEAL FROM DECISION OF EXAMINER OF INTERFERENCES.
From a refusal of the Examiner of Interferences to grant a motion to shift the burden of proof no appeal lies, (Rule 122;) but the question will be considered at final hearing on priority. [Hewitt v. Thomas v. Kruh v. Weintraub, 1045.

CANCELATION.

(See Trade-Marks, 6.)

CLAIMS.

(See Amendments; Interference, 18, 19, 20, 27, 28; Invention; Motion to Dissolve Interference, 2, 3, 6, 8, 12, 13, 14, 15; Rejection of Claims.)

CLASS OF MERCHANDISE.

(See Trade-Marks, 7.)

COAT-OF-ARMS.

(See Labels, 1; Trade-Marks, 1, 3, 4.)

COMMISSIONER OF PATENTS.

(See Division of Applications, 2, 5; Examiner of Interferences; Interference, 12, 21, 28; Priority of Invention, 4, 5.)

CONCEPTION OF INVENTION.

(See Diligence; Interference, 36; Priority of Invention, 6.)

CONSTRUCTION OF RULES.

(See Burden of Proof; Drawings, 3; Interference, 21; Motion to Dissolve Interference, 12, 13; Patentability, 4.)

CONSTRUCTION OF STATUTES.

(See Division of Applications, 1, 3; Trade-Marks, 1, 2, 3, 4, 5, 6.)

DATE OF FILING APPLICATIONS.

(See Applications, 1.)

DECISIONS OF THE PATENT OFFICE.

(See Interference, 12, 24.)

DELAY.

(See Abandonment of Applications; Interference, 26; Priority of Invention, 6.)

DELAY IN FILING APPEAL.

(See Limit of Appeal.)

DELAY IN FILING APPLICATION.

(See Applications, 2; Interference, 26; Oath.)

DEMURRER.

(See Trade-Marks, 18, 19.)

DESIGNS.

(See Trade-Marks, 12.)

DILIGENCE.

(See Interference, 14, 36; Priority of Invention, 6; Reduction to Practice, 2.)

1. COMMERCIAL ACTIVITY INSUFFICIENT.
Diligence in attempting to secure capital to engage in the manufacture of the device or to exploit the invention is not the diligence in reducing to practice required of the first to conceive, but the last to reduce to practice, in order to hold the field. [*Laas and Sponenburg v. Scott, 352.

2. PRIORITY OF INVENTION—LACK OF.
Held that Scott, although the first to conceive the invention, was the last to constructively reduce it to practice and was not exercising diligence in perfecting it when Laas and Sponenburg entered the field and that therefore Laas and Sponenburg are to be regarded as the first inventors. [*Id.

DISCLOSURE OF INVENTION.

(See Drawings, 2; Interference, 15, 16, 35; Priority of Invention, 1; Reduction to Practice, 1.)

DISCRETION.

(See Division of Applications, 4; Examiner of Interferences; Interference, 21; Motion to Dissolve Interference, 13.)

DISSOLUTION OF INTERFERENCES.

(See Interference, 9, 10, 33; Motion to Dissolve Interference.)

DIVISIONAL APPLICATIONS.

(See Interference, 9, 10.)

DIVISION OF APPLICATIONS.

1. CONSTITUTIONALITY OF SECTION 4886, REVISED STATUTES.
Where the constitutionality of section 4886, Revised Statutes, is attacked because it provides that inventions or discoveries may be either arts, machines, manufactures, or compositions of matter and because presumptively no two of these subjects are one invention, it is a sufficient answer to say that inventions have been thus distinguished continuously since 1793 and that the court of last resort has been called upon to consider, from one standpoint or another, this division of inventions and has frequently recognized the distinction between them without ever intimating that the legislative branch of the Government had exceeded its power in so classifying inventions. [**In re* Frasch, 1048.

2. STEINMETZ v. ALLEN—AUTHORITY.
Where it is urged that the Commissioner had no valid authority to require division between process and apparatus claims, *Held* that the ruling of the Supreme Court in *Steinmetz* v. *Allen* is the guiding authority in determining this question. [*Id.

3. SAME—CONSTRUED.
The decision of the Supreme Court in *Steinmetz* v. *Allen* interpreted to mean that a process and an apparatus, while presumptively independent inventions when considered in the light of section 4886, Revised Statutes, they nevertheless may be so connected in their design and operation as to constitute a unitary invention; that when constituting independent inventions they may not be claimed in one and the same application; that when so dependent as to constitute a unitary invention they may be claimed in one and the same application. [*Id.

4. INVOLVES EXERCISE OF DISCRETION—BURDEN ON APPLICANT.
The application of the rule concerning the requirement of division to a given case involved an exercise of judgment and discretion in every case. The facts of each case must be considered, with the burden upon the applicant who asserts that two statutory inventions are one unitary invention. [*Id.

5. REQUIREMENT VALID.
Held that the statute being constitutional and the Supreme Court having laid down the rule that not in all cases can claims for process and apparatus be joined in one application, it follows that the Commissioner in requiring division exercises a valid authority, and if correctly exercised no error is committed. [*Id.

DOCUMENTRY EVIDENCE.

(See Interference, 2, 3.)

DRAWINGS.

1. AMENDMENTS—NEW MATTER—APPEAL.
Where a proposed change in the drawings is offered and the Examiner rejects on the ground of new matter and the feature sought to be illustrated is a part of structure held to be inoperative, on which ground the application is also rejected, *Held* that the question is clearly one of merits and should be reviewed in the first instance by the Examiners-in-Chief. [*Ex parte* Nenninger, 1397.

2. APPLICATION.
Where a drawing was made by the Office in accordance with instructions given by an applicant and said drawing was accepted, signed, and filed as a part of his application, whereupon the Examiner objected to the drawing as not conforming to the original disclosure, *Held* that a new drawing should not be furnished by the Office without expense to the applicant. [*Ex parte* Rosenheim and Mombel, 1722.

3. TRANSFER FROM ONE APPLICATION TO ANOTHER.
A request that Rule 173 be changed to permit transfer generally of drawings from one application to another cannot be granted, as it is necessary to preserve the various parts of complete applications as records of the case in which they are originally filed. [*Ex parte* Reeve and Noyes, 2063.

EARLIER APPLICATION.

(See Motion to Dissolve Interference, 8; Reduction to Practice, 5.)

EMPLOYER AND EMPLOYEE.

1. ORIGINALITY—EVIDENCE—PRESUMPTIVE.
When the employer instructed the employee to stamp the article "Patent applied for," which he did without protest, *Held* that it was then, if at all, that the employee would naturally be expected to assert his claim of invention, and his failure to do so raises a strong presumption that the employer was the real inventor and that the present claim of the employee is a mere afterthought. [Larkin v. Richardson, 2390.

2. EMPLOYER SUGGESTING THE GENERAL PLAN IS THE INVENTOR.
Where R. suggested the main and predominating structural features of the invention and all that remained to be supplied were the details of the fastening means, *Held* that these details, if they called for anything more than the skill of the mechanic, are clearly merely ancillary features, brought about by the suggestion of the general plan or main structural features, and even in the absence of specific proof that they were suggested by R. they are to be regarded as his invention. [Id.

3. PRESUMPTION IN FAVOR OF INVENTOR OF BROAD IDEA.
Where the evidence is silent as to who suggested the specific details, the presumption is that the inventor of the broad idea also suggested the details. [Id.

ESTOPPEL.

(See Interference, 7.)

EVIDENCE.

(See Affidavits, 3; Interference, 2, 3, 4, 5, 23, 25; Motion for Leave to Take Testimony, 1; Motion to Dissolve Interference, 10, 11.)

EXAMINER OF INTERFERENCES.

(See Burden of Proof; Interference, 1, 4, 13, 21, 22; Motion for Leave to Take Testimony, 2; Motion to Dissolve Interference, 8; Patentability, 4; Trade-Marks, 18, 19.)

REHEARING—NO APPEAL FROM REFUSAL TO REHEAR.
The Commissioner will not control the discretion of the Examiner of Interferences upon the questions of rehearing and reconsideration.
[Hewitt v. Thomas v. Kruh v. Weintraub, 1045.

EXAMINERS-IN-CHIEF

(See Amendments; Interference, 4, 11, 12, 28; Patentability, 4.)

FINAL FEES.

(See Notice of Allowance.)

FIRST AND ORIGINAL INVENTOR.

(See Employer and Employee; Interference, 14, 15, 16, 25, 35; Reduction to Practice, 3.)

FOREIGN PATENTS.

(See Applications, 1.)

FORFEITED APPLICATIONS.

RENEWAL—SECOND RENEWAL REFUSED.
The practice of the Patent Office in refusing to entertain a second renewal application is founded upon opinions of the Attorney-General and will not be departed from until such opinions are withdrawn by the Attorney-General or overruled by the courts. [*Ex parte* Theodor and Carl Weil, 352.

FORMER DECISION CITED.

(See Division of Application, 2.)

FORMER DECISION CONSTRUED.

(See Division of Applications, 3.)

FORMER DECISION REFERRED TO.

(See Interference, 17; Labels, 1.)

HEARING.

(See Affidavits, 3; Interference, 1, 12.)

IDENTITY OF APPLICANT.

(See Trade-Marks, 8.)

INCOMPLETE APPLICATIONS.

(See Applications, 1.)

INDEFINITENESS.

(See Interference, 27; Motion to Dissolve Interference, 2, 3, 5, 7, 9.)

INOPERATIVE DEVICES.

(See Drawings, 1; Interference, 12; Motion for Leave to Take Testimony; Reduction to Practice, 5.)

INTERFERENCE—TESTIMONY.

If in answer to an order to show cause why judgment should not be rendered on the record a party makes out a *prima facie* case of inoperativeness in his opponent's device which does not extend to his own and proposes to take testimony in support of his position, so far as is now known he will be authorized to do so, provided a satisfactory showing is made that the proposed testimony is of a character to justify such action.
[Browne *v.* Stroud, 2688.

INTERFERENCE.

(See Affidavits; Burden of Proof; Diligence; Employer and Employee; Examiner of Interferences; Inoperative Devices; Limit of Appeal; Motion for Leave to Take Testimony; Motion to Dissolve Interference; Priority of Invention; Public Use and Sale; Reduction to Practice; Rehearing.)

1. MOTION TO REOPEN—JURISDICTION OF EXAMINER OF INTERFERENCES.

Where a motion is brought to restore the jurisdiction of the Examiner of Interferences for the purpose of considering a motion to reopen the interference after judgment against the moving party and after the limit of appeal has expired, *Held* that said party should have a hearing upon the question whether the showing made by him is sufficient to warrant reopening the case, and the jurisdiction of the Examiner of Interferences is therefore restored. [Lipscomb *v.* Pfeiffer, 351.

2. PROVING DATES—DOCUMENTS USED TO REFRESH MEMORY—NOT ADMISSIBLE IN EVIDENCE.

Where a witness testified positively to an alleged date and stated that he was able to fix the date by the daily work record of his company, *Held* that it was not necessary to offer the record in evidence and that the record was not admissible in evidence at all. The entry could only serve to refresh the memory of the witness and enable him to explain why he could fix the date with certainty, but that if counsel had been abundantly careful he would have had the book containing the entry produced and submitted to the inspection of his opponent.
[*Lass and Sponenburg *v.* Scott, 352.

3. SAME—SAME—PREFERABLE TO FIXING DATE BY SOME OCCURRENCE OR EVENT.

There is no reasonable difference between a statement made by a witness fixing a date by reference to an original paper or to a regular business entry in a book in the possession of a person within the jurisdiction and one fixing it by reference to something calculated to fix it in mind claimed to have happened to him or in the community about the same time. A statement of the former character would be preferable, in the interests of justice, for if untrue it would ordinarily furnish ample opportunity to completely discredit the witness. [*Id.

4. JURISDICTION—RESTORING TO EXAMINER OF INTERFERENCES TO CONSIDER MOTION TO REOPEN PROOFS.

On a motion to restore jurisdiction to the Examiner of Interferences of an interference, pending on appeal before the Examiners-in-Chief on the question of priority, for the consideration of a motion to reopen to admit newly-discovered evidence the only questions for consideration are whether the motion to reopen is in proper form and whether, so far as can be seen, without going into the merits of the motion, it is brought in good faith.
[Newell *v.* Clifford *v.* Rose, 730.

5. PRIORITY—REDUCTION TO PRACTICE—WHAT IS NOT.

Where the invention is the knuckle of a car-coupler and the evidence relied upon to establish reduction to practice showed the making of a knuckle consisting of a crude brass casting, which was broken when tested, and a knuckle consisting of a gray-iron casting, which was never actually tested, *Held* that the knuckles were made of metals not suitable for practical use, but were models, and that they did not prove a satisfactory reduction to practice. [*Gilman and Brown *v.* Hinson, 731.

6. SAME—SAME—ABANDONED EXPERIMENT.

Where the device was tested and broken during the test and the parts were destroyed or lost and nothing more was done on the invention until more than five years later, when an application was filed, but in the meantime an earlier device for the same purpose, patented by the same party, was placed on the market in large quantities, and it appears that an application for the later device was only filed after learning that his opponent was selling a similar device, *Held* that the conduct of the party indicates that the device was unsatisfactory and that what was done amounted to nothing more than an abandoned experiment.
[*Id.

7. SAME—SAME—EQUITABLE ESTOPPEL.

Where G. and B. slept on their rights and for more than five years failed to bring their invention to a complete and operative form, *Held* that by their laches they lost rights which for a long time they little valued and which they cannot now successfully assert. [*Id.

8. PRIOR USE—REDUCTION TO PRACTICE.

The rules of law as to what constitutes a "prior use" and what constitutes a "reduction to practice" are the same, and as there is not sufficient proof of reduction to practice so also there is not sufficient proof of "prior use." [*Id.

9. DISSOLUTION ON GROUND OF IRREGULARITY.

Where two interferences are declared, one between an application of S. and a divisional application of P. and the other between the same application of S. and the parent case of P., the fact that the issue involving the parent case could as well have been included in the interference involving the divisional application does not constitute such an irregularity as will prevent a proper determination of the question of priority.
[Phillips *v.* Sensenich, 1047.

10. TRANSFERRING ISSUE OF ONE INTERFERENCE TO ANOTHER—RE-FORMING INTERFERENCE.

Where P. has a divisional application involved in an interference with S., and the parent case is involved in another interference with the same application of S., and P. is desirous of transferring the issue involving the parent case to the other interference in order that he may prosecute to allowance the parent case on divisible subject-matter, this purpose cannot be accomplished by a dissolution of the interference involving the divisional application. The remedy is to re-form the interference.
[Id.

11. APPEAL—JURISDICTION TO REHEAR DENIED.

Where a petition is brought that jurisdiction be restored to the Examiners-in-Chief in order that they may rehear the appeal upon priority of invention and it does not appear that the Examiners-in-Chief desire to reconsider their decision, *Held* that they should not be required to do so.
[Duryea and White *v.* Rice, Jr., 1395.

12. REFERENCE UNDER RULE 126—CONFLICTING DECISIONS.

Where the Examiners-in-Chief upon appeal on priority call attention under Rule 126 to the fact that in their opinion the device of one of the parties is inoperative and the Primary Examiner, in the light of numerous affidavits and arguments by both parties, reaches the conclusion that the device is operative and the opposing party makes no attempt at the hearing before the Commissioner to point out any supposed errors in the Examiner's decision and no good reason appears for doubting the correctness of the conclusions stated therein, *Held* that these conclusions will be accepted as correct. [Id.

13. RESUMPTION OF PROCEEDINGS AFTER MOTION FOR DISSOLUTION.

The times fixed for taking testimony do not commence to run after suspension of proceedings for consideration of motions for dissolution until the cases are returned to the Examiner of Interferences and formal resumption of proceedings is noted.
[Hewitt *v.* Steinmetz, 1396.

14. ORIGINALITY—DILIGENCE.

Where the evidence shows that H. is not an original inventor, *Held* that the question of the diligence of D. is immaterial.
[*Henry *v.* Doble, 1398.

15. SAME.

Where plans and specifications submitted to the construction company with which H. was connected disclosed the invention and H. prepared a proposal to meet said requirements, *Held* that H. is not an original inventor. [*Id.

16. SAME—ADMISSION CONCLUSIVE.

If there could be any doubt that the invention of the issue was disclosed by certain specifications to the perception of H., who undertook the preparation of a proposal to meet their requirements, it is removed by his own admission under examination as a witness that they suggest the subject-matter of the interference. [*Id.

17. QUESTION OF PATENTABILITY NOT CONSIDERED ON APPEAL ON PRIORITY.

Held that the decision of the court in the case of *Podlesak and Podlesak* v. *McCluercy* (120 O. G., 2127) does not support the contention that the question of patentability should be considered upon the appeal upon priority of invention.
[Potter *v.* McIntosh, 1721.

18. MOTION TO DISSOLVE—INTERFERENCE IN FACT.

The term "interference in fact" as used in the Patent Office must be restricted in meaning to exclude questions of right to make claims in order to avoid confusion through the different courses of appeal permitted in the two cases. The question of interference in fact does not properly arise until it has been found or assumed that the parties have the right to make the claims under consideration, and when raised the question is one merely of identity or diversity in the meaning of those claims as they rightfully appear in the applications of the respective parties. [Warner *v.* Mead, 2061.

19. SAME—SAME—MOOT QUESTION.

Where the Primary Examiner denied the motion to dissolve the interference as to the ground of non-interference in fact, but granted it as to M.'s lack of right to make the claims, *Held* that since M. has acquiesced in the holding and the decision has become final the question of interference in fact is a moot one and entitled to no consideration on appeal. [Id.

20. SAME—SAME—RELATES TO SUBJECT-MATTER OF CLAIMS.

The decision of the Primary Examiner upon the question of interference in fact relates to the specific subjects covered by the claims instead of to the devices disclosed by the parties and has no force beyond the claims before him when the decision is rendered. [Id.

21. PRACTICE UNDER RULE 126—APPEAL FROM REFUSAL TO ACT.

The action of the Examiner of Interferences in refusing to call attention under Rule 126 to an alleged bar to the grant of a patent to the opposing party will not be reviewed on appeal to the Commissioner. The discretion of the Examiner of Interferences should not be controlled in this regard.
[Wert *v.* Borst and Groscop, 2062.

22. ALLEGED BAR—SUSPENSION OF PROCEEDINGS.

Interference proceedings will not be suspended after final hearing before the Examiner of Interferences on priority for the purpose of investigating the existence of intervening rights alleged to be shown by the testimony taken on priority as constituting a bar to the grant of the opposing party's reissue application. [Id.

23. SAME—PRIORITY SETTLED FIRST.

Where the evidence relating to priority of invention is before the Office and the question of a statutory bar is raised which applies to but one of two applications involved in the interference and which requires for its determination consideration of evidence, and possibly further taking of testimony, such determination should be postponed until priority of invention has been settled, at least so far as the same can be settled in this Office. [Id.

24. PATENT OFFICE DECISIONS UNIFORM—CONCLUSIONS NOT BINDING ON COURT.

Where the three Patent Office tribunals have been in accord, and consequently the case falls within the decisions of this court that, except in extraordinary cases, it will not disturb the findings of fact of the Patent Office, *Held* that this does not mean that the court is bound by the conclusions drawn from such facts unless convinced that such conclusions are correct.
[*O'Connell *v.* Schmidt, 2065.

25. ORIGINALITY—EVIDENCE.

Upon the question of originality of invention the surrounding circumstances and the conduct of the parties at the time are more convincing as evidence than specific claims made by them long afterward, and it is essential in weighing the specific testimony to have in mind the relations of the parties to each other and to the principal facts proved or admitted in the development of the interference. [Larkin *v.* Richardson, 2390.

26. APPEALS ON MOTION—DELAY BEYOND LIMIT OF APPEAL.

A delay of three and a half months in taking an appeal from a Primary Examiner's decision holding that there was no interference in fact cannot be excused on the ground that the opposing party is a patentee and that therefore the delay will not injure him. Parties are not excused from compliance with the requirements of good practice because in their opinions opponents are not thereby injured. [Howell *v.* Hess, 2393.

27. DIFFERENT INVENTIONS OF DIFFERENT PARTIES DEFINED BY SAME CLAIM—CLAIM INDEFINITE.

Where the same language is used by different parties to define different inventions, it is an unavoidable conclusion that they have not distinguished their inventions from each other. In such cases if the inventions are in fact different and each party has a right to make the claim the language of the claim must be ambiguous or indefinite and should be amended to clearly distinguish the inventions before the issue of patents thereon.
[Id.

28. SUPERVISORY AUTHORITY OF COMMISSIONER EXERCISED.

Where in an interference between a patent and an application upon the same claims the Primary Examiner has held that there is no interference in fact and the Examiners-in-Chief have held that the applicant has a right to make the claims and applicant has not appealed on the question of interference in fact, *Held* that under these circumstances the supervisory power of the Commissioner would be exercised to prevent the issue of a patent on the application without amendment to distinguish its claims from those of the patent or a determination that such amendment is unnecessary. [Id.

29. REDUCTION TO PRACTICE—EXPERIMENTAL TEST.

Where a device was never used for its intended purpose of lighting a car, but for the purpose of experiment was tested in the basement of a building and after the test was laid aside and another system of lighting put into use, *Held* that such conduct naturally tends to discredit the allegation that the test of the invention was a success. [Bliss *v.* McElroy, 2687.

30. SAME—PRESUMPTION FROM INACTIVITY—EXCUSES.

Where a device was tested and laid aside and an attempt to rebut the presumption that the test was unsuccessful is made by showing that the party was dependent upon his father and it was necessary to devote his attention to inventions which would make better financial returns, and it appears that other applications were filed and no effort was made to secure the adoption and use practically of the present invention, *Held* that the showing is insufficient. [Id.

31. TESTIMONY.

Where the testimony of the witnesses on the part of Bliss was given long after the event and is by no means satisfactory, *Held* that priority should be awarded to McElroy. [Id.

32. MOTIONS FOR DISSOLUTION—APPEALS.

Where action is taken by the Office upon motion to dissolve an interference from which an appeal may be taken in the interference and the opportunity for such appeal is neglected, an *ex parte* appeal thereafter upon the same matter will not be entertained. [Newcomb *v.* Thomson, 3012.

33. DISSOLUTION—REINSTATEMENT.

Where an interference was dissolved for non-patentability of the issue and no appeal from that action was prosecuted in the interference, but an *ex parte* appeal was thereafter taken, upon which the claims in issue were found patentable, and the Examiner reinstated the interference, *Held* that the reinstatement of the interference should be set aside and also the decision on the appeal. [Id.

34. MOTIONS FOR DISSOLUTION—APPEAL.

Where the Examiner finds on motion to dissolve an interference that the subject-matter in issue is not patentable, he should take such actions in the applications subsequent to his decision as will put them in condition for the statutory appeal, so that the appeals may be continued directly to the court of appeals without the necessity of a second course of appeal through the Patent Office. [Newcomb *v.* Thomson, 3013.

35. ORIGINALITY—DISCLOSURE TO OPPOSING PARTY.

When a party claims an invention and also to have communicated that invention to another, who has applied mechanical work thereto and put such invention into practice, claiming the same as his own, the communication in order to be effectual must be shown to have been full and clear as to all the essential elements of the invention and such as was sufficient in itself to enable the party to whom the disclosure was made to give the invention practical form and effect without the exercise of invention on his part. [*Anderson *v.* Wells, 3014.

36. DILIGENCE.

A. conceived the invention in July, 1902, and endeavored to make the same in his own shop and to have the same made by another in the latter part of the year, but failed on account of lack of proper machinery. In the early part of January, 1903, he applied to a company by which W., the opposing party, was employed and unsuccessfully endeavored to make some arrangements with them to manufacture the device. In April or May, 1903, he applied to another company, who made the device some months later. He filed his application December 14, 1903. W. entered the field in the latter part of January, 1903, after A.'s visit to his company, and filed his application March 27, 1903, on which a patent was granted May 26, 1903. *Held* that W. is entitled to the award of priority, as A. was not diligent.
[*Id.

INTERLOCUTORY APPEALS.

(See Burden of Proof.)

INTERNATIONAL CONVENTION.

(See Trade-Marks, 4.)

INTERVENING RIGHTS.

(See Interference, 22.)

INVENTION.

(See Interference, 35; Patentability; Reduction to Practice, 4.)

PATENTABILITY.

Where the general arrangement of the flues in a stove as defined in the claims is shown in one patent and the specific form and location of horizontal flues are shown in other patents, *Held* that the claims are without invention.
[*Ex parte* Clunies, 2389.

JUDGMENT.

(See Interference, 1; Motion for Leave to Take Testimony, 1.)

JUDGMENT ON THE RECORD.

(See Inoperative Devices.)

JURISDICTION.

(See Motion for Leave to Take Testimony, 2; Motion to Dissolve Interference, 8.)

JURISDICTION OF THE EXAMINER OF INTERFERENCES.

(See Interference, 1, 4.)

JURISDICTION OF THE EXAMINERS-IN-CHIEF.

(See Interference, 11.)

JURISDICTION OF THE PATENT OFFICE.

(See Notice of Allowance.)

LABELS.

1. REGISTRABILITY—SHIELDS OF COUNTRIES.
Held that a label upon which the shields of certain countries are shown will not be registered, for the reasons given in *ex parte Ball*, (98 O. G., 2366.)
[*Ex parte* R. Steinecke Company, 3011.

2. SAME—PRINTED TITLE.
Held that a mere title for goods printed in ordinary type with ordinary printers' ornamentation is not registrable as a label, since it is not an artistic production, required in its production no exercise of the creative powers of the mind, and displays no originality in design.
[*Ex parte* Ambrosia Chocolate Company, 3011.

LACHES.

(See Interference, 7.)

LIMIT OF APPEAL.

(See Interference, 1, 26; Motion to Dissolve Interference, 4.)

REHEARING.
A party is not justified in delaying the filing of his appeal beyond the limit fixed therefor because a request for rehearing has been made. [Felsing *v.* Nelson, 1722.

LIMIT OF TIME.

(See Interference, 13.)

MACHINES.

(See Motion to Dissolve Interference, 10, 11; Priority of Invention, 2; Trade-Marks, 12.)

MECHANICAL SKILL.

(See Employer and Employee, 2; Patentability, 1; Reduction to Practice, 5.)

MERITS OF THE CASE.

(See Drawings, 1.)

MODEL.

(See Interference, 5, 6; Reduction to Practice, 1, 3.)

MOOT QUESTION.

(See Interference, 19.)

MOTION FOR LEAVE TO TAKE TESTIMONY.

1. INTERFERENCE—OPERATIVENESS OF SENIOR PARTY'S DEVICE.
Where the junior party failed to overcome the filing date of the senior party's application and was called upon to show cause why judgment should not be rendered against him and thereupon files a motion for leave to take testimony relative to the operativeness of the senior party's device, *Held* that permission to take testimony should be granted provided a *prima facie* case of inoperativeness is made out and a satisfactory showing is presented that the proposed evidence is of a proper character.
[Lowry and Cowley *v.* Spoon, 2687.

2. SAME—SAME—JURISDICTION.
Where a motion for leave to take testimony to show that the device of the senior party to an interference is inoperative is filed, *Held* that whether the testimony may be taken should be determined in the first instance by the Examiner of Interferences. [Id.

MOTION TO DISSOLVE INTERFERENCE.

(See Affidavits; Inoperative Devices; Interference, 13, 18, 19, 32, 33, 34.)

1. INTERFERENCE—INTERFERENCE IN FACT—MOTION INDEFINITE.
A motion to dissolve on the ground of lack of interference in fact which alleges merely that there is no interference in fact as to either count, because they do not mean the same thing when read on the constructions of both parties, is not sufficiently definite, as it fails to specify the element or elements of the counts wherein the different meanings are supposed to reside, and should not be transmitted to the Primary Examiner.
[Miller *v.* Mann, 730.

2. RIGHT TO MAKE CLAIMS—INDEFINITENESS.
A motion to dissolve which alleges that the opposing party has no right to make the claims of the issue, five in number, because he does not show five specified combinations of elements, is objectionable on the ground of indefiniteness, where it is found that the five combinations specified are the same as the combinations of the claims in issue. The allegation amounts to nothing more than a statement that the opposing party has no right to make the claims of the issue.
[Latour *v.* Lundell, 1046.

3. PATENTABILITY OF ISSUE—INDEFINITENESS.
A motion to dissolve alleging non-patentability of the opposing party's claims in view of certain specified patents is not indefinite simply because the patents are early enough to anticipate the claims of both parties. The allegation that the patents anticipate the claims of the opposing party only will not prevent a holding by the Primary Examiner that they anticipate the claims of both parties. [Id.

4. INTERFERENCE—OBSERVANCE OF LIMIT OF APPEAL.
Where the decision of the Primary Examiner fully disposed of the motion and fixed a limit of appeal, but contained a statement which might raise a doubt as to the condition in which the case was left by the Examiner, *Held* that a party was not justified in assuming that he could ignore the limit of appeal fixed and obtain a rehearing or take appeals at later dates.
[Hewitt *v.* Steinmetz, 1395.

5. SAME—DEFINITENESS.
A motion to dissolve on the ground of non-interference in fact which alleges that no interference in fact exists, for the reason that certain specified elements of specified counts cannot be read on the constructions of both parties with the same meaning, is not open to the objection of indefiniteness. It is not necessary for the motion to state the grounds on which the allegations are based, as this is a matter of argument.
[Garcia *v.* Pons, 1396.

6. SAME—ALLEGED SUPERIOR CONSTRUCTION OF ONE PARTY.
Where interfering parties have different specific constructions, but the claims cover common features thereof, the fact that the device of one party is superior to that of another does not warrant a dissolution of the interference.
[Kolb *v.* Hemingway *v.* Curtis, 1397.

7. SAME—ALLEGATIONS TOO INDEFINITE.
A motion to dissolve on the ground of non-interference in fact which alleges that neither party should be permitted to secure claims broad enough to cover the other's construction is indefinite and should not be transmitted to the Primary Examiner. [Dickinson *v.* Hildreth, 1397.

8. SAME—EFFECTIVE DATE OF APPLICATION NOT A QUESTION OF RIGHT TO MAKE CLAIMS.
A motion to dissolve on the ground that the opposing party has no right to make the claims which raises the question whether such party is entitled to the date of the earlier one of two applications mentioned in the notice of interference should not be transmitted to the Primary Examiner, as the question raised is one to be determined by the Examiner of Interferences and not the Primary Examiner. [Id

9. SAME—DEFINITENESS.
Where a motion is brought to dissolve the interference on the ground of irregularity in the declaration, because the counts are not clear and definite, *Held* that the alleged indefiniteness must reside in certain portions of the counts or in certain words used and that the motion should point out wherein the supposed indefiniteness lies. The motion need not state the arguments, but should definitely set forth the points to be argued.
[Berrye, Kane, and Stengard *v.* Hildreth, 1722.

10. SAME—TRANSMISSION.
A motion to dissolve on the ground of non-interference in fact, which is founded upon the alleged character of a machine which the moving party believes the opposing party will rely upon in producing his evidence, should not be transmitted, even though the opposing party admits the substantial truth of the allegations respecting such machine. [Barr *v.* Bugg, 2061

11. SAME—MOTION TO REQUIRE AMENDED PRELIMINARY STATEMENT.
A motion by one party that the opposing party be required to file an amended preliminary statement based upon the alleged character of a machine which the moving party assumes will be relied upon by the opposing party in producing his evidence should not be granted. The sufficiency of the machine to establish a date of invention will be determined by the Office when it is introduced in evidence and in connection with the testimony which may be taken concerning it. [Id.

12. SAME—IRREGULARITY IN DECLARATION.
Where on a motion for dissolution on the ground of irregularity in declaration the irregularity is stated to consist in declaring a second interference on claims which one of the parties should have copied under Rule 109 in a prior interference if they wanted to contest the same, *Held* that the subject-matter for consideration is not properly presented under the head of irregularity in declaration. [Corey *v.* Eiseman and Misar, 2063.

13. SAME—NON-PATENTABILITY AND LACK OF RIGHT TO MAKE CLAIMS.
Objection that a second interference should not have been declared upon claims which one of the parties could have made under Rule 109 in a prior interference may be raised by a motion for dissolution based on the grounds designated in Rule 122 as non-patentability and lack of right to make claims. [Id.

14. SAME—TRANSMISSION.
Where matter is set forth in a motion for dissolution as a basis for one ground thereof which should only be considered in connection with another and different ground, *Held* that the motion is not in proper form and should not be transmitted. [Id.

15. SAME—SUBSEQUENT REJECTION OR MODIFICATION OF CLAIMS.
Where both parties to an interference have the same claims in their applications, *Held* that the interference should not be permanently dissolved except upon some ground which will form a basis for rejection or for requiring modification of the claims in the application of one of the parties. [Id.

16. TRANSMISSION.
Where a motion for dissolution is based on the grounds that the issue is not patentable to one of the parties because it has already been patented to him and that the issue is not patentable over the prior art and it is contended that the motion should not be transmitted because a decision might cast a cloud on the party's prior patent, *Held* that the reason is not sufficient and the motion should be transmitted. [Griffith *v.* Dodgson, 2064.

17. INTERFERENCE—AFFIDAVITS.
Consideration of affidavits on motion to dissolve an interference is not a right which parties are entitled to demand.
[Browne *v.* Stroud, 2688.

18. SAME—SAME.
When a party may not appeal from the decision on the motion, he may not appeal from a determination upon the admissibility of affidavits. The determination in such cases will only be reviewed upon a petition making out an apparent case of abuse of discretion. [Id.

MOTION TO REOPEN INTERFERENCE.

(See Interference, 1.)

MOTION TO REOPEN INTERFERENCE TO TAKE TESTIMONY.

(See Interference, 4.)

MOTION TO RESTORE JURISDICTION.

(See Interference, 4.)

NEWLY DISCOVERED EVIDENCE.

(See Interference, 4)

NEW MATTER.

(See Drawings 1.)

NEW REFERENCE.

(See Amendments, 1.)

NOTICE OF ALLOWANCE.

APPLICATION.
Where a showing is made that the notice of allowance of an application was not received, but it was not alleged that no notice was mailed, and the records indicate that it was mailed, *Held* that this Office has no jurisdiction to extend the time for payment of the final fee directly or indirectly, and a request that a new notice of allowance be sent cannot be granted.
[*Ex parte* Glafke, 351.

OATH.

LONG DELAY AFTER EXECUTION IN FILING APPLICATION.
Where the oath to an application is executed more than nineteen months prior to the filing of the application, a new oath cannot be waived on a mere allegation that differences have arisen between the inventor and assignee by reason of which the inventor refuses to execute another oath. Where there is such long delay, the requirement for a new oath can be waived only upon a showing of the most satisfactory character.
[*Ex parte* Hoschke, 1045.

OPINION OF THE ATTORNEY-GENERAL.

(See Forfeited Applications.)

OPPOSITION.

(See Trade-Marks, 5, 6, 18, 19.)

PATENTABILITY.

(See Affidavits; Interference, 17, 33, 34; Invention; Motion to Dissolve Interference, 3, 13, 16.)

1. CHANGE IN LOCATION OF ELEMENTS NOT INVENTION.
Held that the change in the relative location of the various elements of the apparatus is nothing more than would suggest itself to a skilled mechanic having in view the conditions and conveniences of the different places in which the construction and use of the apparatus may be desired.
[**In re* Garrett, 1047

2. OPINION AFFIDAVITS ENTITLED TO NO WEIGHT.
Where affidavits are filed containing general expressions of opinion in respect of the patentability of claims, *Held* that they are entitled to no weight. [*Id.

3. UTILITY DOES NOT ESTABLISH NOVELTY.
Where the want of patentable novelty is reasonably clear and not in doubt, *Held* that the fact, if established, that the apparatus claimed has displaced others generally by reason of its obvious superiority can have no weight. [*Id

4. REFERENCES UNDER RULE 126—DECISION OF EXAMINERS-IN-CHIEF NOT REVIEWABLE ON PETITION.
Where the Examiner of Interferences called attention, according to the provisions of Rule 126, that in his opinion the issue is not patentable and upon reference the Primary Examiner disagreed with the Examiner of Interferences, whereupon the question was referred to and decided by the Examiners-in-Chief, who affirmed the decision of the Primary Examiner, *Held* that no sufficient reason appears why the decision of the Examiners-in-Chief should be reviewed on petition.
[Munro *v.* Walker, 2062.

PATENTEE AND APPLICANT.

(See Interference, 26, 28.)

PETITION TO THE COMMISSIONER OF PATENTS.

(See Abandonment of Applications, 4; Patentability, 4.)

PRELIMINARY STATEMENT.

(See Priority of Invention, 3, 4, 5.)

PRIORITY OF ADOPTION AND USE.

(See Trade-Marks, 8.)

PRIORITY OF INVENTION.

(See Diligence, 2; Interference, 1, 2, 5, 9, 11, 12, 17, 22, 23, 31, 36.)

1. INTERFERENCE—RIGHT TO MAKE THE CLAIMS IN ISSUE CONSIDERED ON APPEAL.
Where a decision awarding priority of invention is based upon the date of constructive reduction to practice obtained by a party through filing his application in interference and upon appeal the opposing party attacks the sufficiency of the disclosure in the application to support a judgment upon the subject-matter of the issue, *Held* that the question raised by the attack is one properly considered in determining the question of priority. [Kilbourn *v.* Hirner, 729.

2. SAME—REMANDED TO PRIMARY EXAMINER TO CONSIDER QUESTION OF PARTY'S RIGHT TO MAKE THE CLAIMS OF THE ISSUE.
Where the question of a party's right to make the claims in issue is raised on appeal on priority and it is decided to entertain that question and the machines upon which the issue is drawn and those of the prior art are complex and intricate and their operation involved and no written opinion upon the question has been made by the Primary Examiner, *Held* that the interference will be remanded to the Primary Examiner, who will hear the parties and furnish his opinion as to the question raised, together with a statement of the reasons for his conclusions. [Id.

3. TESTIMONY IN CONTRAVENTION OF PRELIMINARY STATEMENT.
Where the junior party is limited by his preliminary statement to dates subsequent to the opposing party's record date, there is no good reason for examining the testimony of such junior party attempting to prove dates earlier than those set up in such preliminary statement where permission to amend the preliminary statement was asked and refused.
[*Fowler *v.* Boyce, 1726.

4. SAME—CONSENT OF COUNSEL TO CONSIDERATION.
Where leave to amend a preliminary statement is asked and refused by the Patent Office, testimony tending to establish dates earlier than those alleged cannot be considered on the question of priority, even with the consent of counsel, unless expressly approved by the Commissioner of Patents or his representatives. [*Id.

5. SAME—APPROVAL OF PATENT OFFICE.
Cases may often arise where the interest of the parties and the public will be best subserved by permitting dates earlier than those set forth in preliminary statements to be proved. It should, however, be done under the supervision of and with the approval of the Patent Office. [*Id.

6. INTERFERENCE—DILIGENCE.
Howell conceived the invention in the spring of 1900 and made a model in April, 1900, which he immediately showed to the typewriter-manufacturing company for whose use the improvement was primarily intended. He requested the company to adopt the invention, but they did not agree to do so. After this nothing was done by the inventor until December, 1900, except to call the attention of one of the company's officers during the summer of 1900 to the fact that nothing had been done with the invention. In the meantime, in September, 1900, Hess conceived the invention. *Held* that Howell was lacking in diligence.
[Howell *v.* Hess, 2393.

PRIOR PATENTS.

(See Motion to Dissolve Interference, 3, 16.)

PRIOR USE.

(See Interference, 8.)

PROCESS AND APPARATUS.

(See Division of Applications, 2, 3, 5.)

PROOFS.

(See Interference, 2, 4, 8; Reduction to practice, 1.)

PROPERTY RIGHTS.

(See Trade-Marks, 6.)

PUBLIC POLICY.

(See Trade-Marks, 4.)

PUBLIC USE AND SALE.

1. INSTITUTION OF PROCEEDINGS—ORDER UPON APPLICANT TO SHOW CAUSE.
Where an applicant is ordered to show cause why public-use proceedings should not be instituted against him and no showing is made save an argument that the depositions and affidavit filed do not so identify the complete invention of the claim as to make out a *prima facie* case of public use, *Held* that testimony will be taken in regard to the question of public use.
[*Ex parte* Aston, 730.

2. SAME—PRELIMINARY CONSIDERATION.
Where upon consideration of the affidavit and testimony referred to by the protestant it seems probable that the bar of public use of the invention exists, *Held* that it is not necessary to analyze that testimony to determine whether it is technically sufficient if true to prove public use. [Id.

3. SAME—NOTICE OF TAKING TESTIMONY BY PROTESTANT—NOTICE OF NAMES OF WITNESSES, TIMES WHEN AND PLACE WHERE EXAMINED.
Where it is ordered that testimony be taken in regard to the question of public use, *Held* that the protestant should promptly notify this Office of the names of the witnesses and the times when and place where they will be produced for examination.
[Id.

PUBLIC-USE PROCEEDINGS.

(See Public Use and Sale, 1.)

RECONSIDERATION.

(See Examiner of Interferences; Interference, 11.)

RECORD OF A CASE.

(See Drawings.)

REDUCTION TO PRACTICE.

(See Diligence; Interference, 5, 8, 29, 30; Priority of Invention, 1.)

1. INTERFERENCE.
Where a model was constructed that clearly disclosed the invention and would enable those skilled in the art to thoroughly understand it, in brief sufficient to enable the utilization of the invention so that had death removed the inventor before an application for patent had been filed the invention would have survived, *Held* that in the absence of any test it does not constitute an actual reduction to practice unless the invention belongs to that class of simple inventions which require no other proof of their practicability than the construction of a model.
[*O'Connell *v.* Schmidt, 2065.

2. SAME—DUE DILIGENCE—NO GENERAL RULE.
There is no hard and fast rule by which to determine the question of due diligence. In other words, there is no general rule of what constitutes due diligence, that being a question to be determined by all the facts and surrounding circumstances in the particular case. [*Id.

3. DEPENDS ON CIRCUMSTANCES.
Where O'Connell conceived and embodied the invention in a model which was almost a reduction to practice, and had it been connected up and tested would have been a reduction to practice, prior to the date when his rival conceived and constructively reduced to practice by filing his application, and where at the time his rival entered the field O'Connell was urging that the invention be accepted and patented, and although his application was not filed until a few days over five months after that of his rival the application was prepared and executed a month before filing, and where although O'Connell might have had his working model tested in the intervening time it would not, according to his witnesses, expert in the art, have given them any more knowledge of the invention, *Held* that there is no rule which under these circumstances requires an inventor to rush to the Patent Office in order to preserve his rights as the first inventor. [*Id.

4. UNAUTHORIZED AGENT.
Where an inventor designed an improvement primarily for the use of a certain type-writer-manufacturing company and unsuccessfully negotiated with them with respect to the adoption thereof and after negotiations were broken off the company reduced the invention to practice without the inventor's knowledge or assistance, *Held* that the act of the company did not inure to the benefit of the inventor, as there was no relation between them of principal and agent, created either expressly or by implication. [Howell *v.* Hess, 2393.

5. CONSTRUCTIVE—EARLIER APPLICATION.
An applicant will not be deprived of the benefit of a prior application as a constructive reduction to practice on the ground that a device made in accordance with such application would be inoperative where the defect is clearly one that could be obviated by any mechanic. [Id.

REFERENCE UNDER RULE 126.

(See Interference, 12, 21; Patentability, 4.)

REGISTRATION.

(See Labels; Trade-Marks, 10, 15, 17, 18.)

REHEARING.

(See Examiner of Interferences; Interference, 11; Limit of Appeal; Motion to Dissolve Interference, 4.)

SURPRISE.
Denial of a request for rehearing is no reason for surprise.
[Felsing *v.* Nelson, 1722.

REINSTATEMENT OF INTERFERENCE.

(See Interference, 33.)]

REISSUE.

(See Interference, 22.)

REJECTION OF CLAIMS.

(See Abandonment of Applications, 4; Motion to Dissolve Interference, 15.)

1. PRACTICE—FINAL.
Where a claim is presented a second time without material amendment and with no direct request for further explanation of the grounds for rejection, *Held* that the Examiner, adhering to his original opinion and having no new grounds for rejection to offer, may properly make his action final, even though it is but the second action in the case. [*Ex parte* Cox, 1045.

2. FINAL.
Where the prior Office actions clearly disclose the grounds on which each of the claims under final rejection stands rejected and the letter of final action contains a mere restatement at greater length of said grounds, *Held* that the final rejection was in order. [*Ex parte* Flindall, 1396.

3. SAME.
Where in response to the Office action rejecting the claims on the ground that the device is devoid of utility applicant presents an argument traversing the position taken by the Examiner, *Held* that the Examiner being of the opinion that his ground for rejection was well taken was correct in adhering to it and making it final. [*Ex parte* Loppentien, 1723.

4. AMENDMENT AFTER FINAL—CHANGES IN DESCRIPTION.
Where amendments to the description which do not touch the merits of the application, but present the invention more clearly, are presented after final rejection, *Held* that they may be entered without reopening the application for further consideration. [Id.

RENEWAL OF FORFEITED APPLICATIONS.

(See Forfeited Applications.)

REOPENING OF REJECTED CASES.

(See Amendments; Rejection of Claims, 4.)

RESPONSIVE ACTION BY APPLICANT.

(See Abandonment of Applications, 4; Responsive Action of Applicant, 4.)

SUPERVISORY AUTHORITY OF THE COMMISSIONER OF PATENTS.

(See Interference, 28.)

SUPREME COURT OF THE UNITED STATES.

(See Division of Applications, 2, 3, 5.)

SURPRISE.

(See Rehearing.)

SUSPENSION OF PROCEEDINGS.

(See Interference, 13, 22.)

TEN-YEARS CLAUSE.

(See Trade-Marks, 2, 3.)

TESTIMONY.

(See Affidavits, 1; Inoperative Devices; Interference, 13, 22, 23, 25, 31; Motion for Leave to Take Testimony; Motion to Dissolve Interference; 11; Priority of Invention, 3, 4, 5; Public Use and Sale.)

TESTS.

(See Interference, 5, 6, 29, 30; Reduction to Practice, 1, 3.)

TITLE.

(See Labels, 2.)

TRADE-MARKS.

1. SEAL OF STATE NOT REGISTRABLE—ACT FEBRUARY 20, 1905, CONSTRUED.
A trade-mark for whisky consisting of a pictorial representation of the arms and seal of the State of Maryland, with certain additions or variations, is not entitled to registration under the last proviso of the fifth section of the Trade-Mark Act of February 20, 1905, (33 Stat. L., 724, ch. 592,) as it simulates the arms and seal of the State of Maryland and violates the express provision of such section which prohibits the registration of any mark which "consists of or comprises the flag or coat-of-arms or other insignia of the United States or any simulation thereof or of any State." [**In re* Cahn, Belt & Company, 354.

2 ACT REFERS TO MARKS WHICH ARE NOT TECHNICAL TRADE-MARKS.
The last proviso of section 5 of the Trade-Mark Act of February 20, 1905, relating to the registration of marks which had been in actual and exclusive use for ten years, was intended to provide for the registration and protection of marks which were not technical trade-marks, but which had been actually used as trade-marks by the applicants or their predecessors from whom they derived title and in which the user had acquired property rights for more than ten years next preceding the passage of the act. [*Id.

3. USE OF SEAL OF A STATE CANNOT BE EXCLUSIVE.
A mark which simulates the arms or seal of the State of Maryland is not registrable under the last proviso of the fifth section of the Trade-Mark Act of February 20, 1905, providing for the registration of marks which had been in actual and exclusive use by the applicants for ten years next preceding the passage of the act, as the use was not *exclusive*. Applicants could never acquire such a property right in the seal or the coat-of-arms of the State of Maryland as to *exclude* the State from the use thereof. (*Gilman* v. *Hunnewell*, 122 Mass., 147; *Commonwealth* v. *Sherman Mfg. Company*, 75 N. E., 71.) [*Id.

4. USE IN TRADE OF PUBLIC INSIGNIA AGAINST PUBLIC POLICY.
That the use of the coat-of-arms of the United States or of the flag or of armorial bearings and decorations for purposes of trade is against public policy or order has been recognized by the legislatures of various States in acts prohibiting their use, in the International Convention for the Protection of Industrial Property, concluded at Paris March 20, 1883, and by the Commissioners of Patents in refusing registration to marks of this character, and it was in recognition of this public policy that Congress inserted the provision prohibiting the registration of such marks. [*Id.

5. OPPOSITION—VERIFICATION OF NOTICE—SECTION 6, TRADE-MARK ACT CONSTRUED.
Section 6 of the Trade-Mark Act of February 20, 1905, providing that the affidavit in support of the notice of opposition shall be made by the person who would be damaged by the registration, is not satisfied by the affidavit of the attorney or agent of such party. [*Martin *v.* Martin and Bowne Company, 734.

6. SAME—FAILURE TO OPPOSE DOES NOT DEPRIVE OWNER OF PROPERTY RIGHT.
Where the owner of a trade-mark is deprived of his right to oppose registration thereof by another by the enforcement of the letter of the statute, he is not thereby deprived of his right of property in the trade-mark. Aside from the usual remedies at law and in equity for the protection or recovery of property rights, he may possibly obtain a remedy through a declaration of interference under section 7 or by a cancelation under section 13. [*Id.

7. SAME—DESCRIPTIVE PROPERTIES.
Timothy-seed and clover-seed are goods of the same descriptive properties, so that the use of a mark by a party upon the former excludes the right of other parties to use the same mark upon the latter.
[Conklin and Son *v.* The Albert Dickinson Company, 1398.

8. INTERFERENCE—PRIORITY—IDENTITY OF APPLICANT.
Whether the party named in an application for registration is the real owner of the rights represented by that application will not be considered in connection with priority, as the question is one for *ex parte* determination by the Examiner of Trade-Marks after the question of priority has been finally settled. [Id

9. SAME—INTERFERENCE IN FACT.
The marks "Crystal Lake," "Crystal Run," "Crystal Glen," and "Crystal Spring" for whisky are so similar as to leave no room for doubt that they are likely to deceive purchasers, and an interference including them should not be dissolved.
[*Ex parte* Thayer, 1724.

10. ANTICIPATION.
Refusal of registration is proper when the applicant's mark and the mark of the reference show in common a king with elevated arm holding a glass of foaming beverage and each shows sprays of grain and hops and the marks differ principally in that the king is shown by the applicant at full length and mounted upon a keg, whereas in the registered mark there is a bust figure surrounded by certain inscriptions, and both marks are applied to beer. [*Ex parte* Young, 1724.

11. CHARACTER OF ALLEGED MARK.
An alleged mark for tubes which consists of flakes of mica applied to the outside of the tube, so as to give it a mottled appearance, is not proper subject-matter for registration as a trade-mark.
[*Ex parte* American Circular Loom Company, 1725.

12. SAME—MACHINES AND DESIGNS.
The restrictions upon the general right to make, use, and sell which are imposed by patents should not be extended by the recognition of machines or designs as trade-marks. [Id.

13. SAME—DISTINCT FROM THE GOODS.
Custom and reason require that a trade-mark shall have an existence so distinct from the goods to which it is applied that it will be readily recognized by the public and by purchasers as an arbitrary symbol adopted to authenticate origin. [Id.

14. INTERFERENCE IN FACT—AFFIDAVITS.
The words "Silveroid" and "Silverode" are so similar that an interference based thereon should continue, notwithstanding affidavits alleging that no confusion has resulted from the use of both marks.
[Philadelphia Watch Case Company *v.* The Dueber Watch Case Manufacturing Company *et al.*, 1725.

15. INTERFERENCE—BAR TO REGISTRATION.
Where applications for registration are involved in an interference proceeding and a registration of the same mark by another party is found which is prior in date to the dates of use alleged in the applications, constituting a *prima facie* bar against registration upon the applications, *Held* that these applications should not be continued in the interference until the apparent bar has been overcome by such proof as may be made in the *ex parte* prosecution of the applications. [Id.

16. SAME—INTERFERENCE IN FACT.
Held that the words "Mill Springs," "Mill Stream," "Mill View," and "Mill Brook" as trade-marks for whisky interfere.
[The D. Kelly Company *v.* The Theobald & Son Co. *et al.*, 3011.

17. REGISTRABILITY.
Held that "Fineeting" is not registrable as a trade-mark for butcher-meat. [*Ex parte* Rogers & Havard, 3011.

18. OPPOSITION—DEMURRER—APPEAL.
Held that there is no right of appeal from the decision of the Examiner of Interferences overruling a demurrer to the notice of opposition to the registration of a trade-mark.
Drevet Manufacturing Company *v.* Liquozone Company, 3014.

19. SAME—SAME.
No exception to the rule that there is no right of appeal from the decision of the Examiner of Interferences overruling a demurrer in trade-mark opposition will be made where the circumstances are not of such an unusual or extreme character as will justify extraordinary action. [Id.

TRANSFER OF ISSUE IN INTERFERENCE.

(See Interference, 10.)

TRANSMISSION OF MOTIONS.

(See Motion to Dissolve Interference, 1, 7, 8, 10, 14, 16.)

UTILITY.

(See Patentability, 2.)

WITNESSES.

(See Interference, 2, 3, 16, 31.)

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ALPHABETICAL LIST OF PATENTEES

FOR THE

MONTHS OF MAY AND JUNE, 1906.

[Claims and drawings of Designs do not appear in the Monthly Volumes. Separate indexes for Designs, Trade-Marks, Labels, Prints, and Disclaimers follow this.]

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
			Specification.	Drawing.	Volume.	Page.
A. B. Dick Company. (See Brasseur, Ernest J., assignor.)						
A. B. Dick Company. (See Carter, McIon J. D., assignor.)						
A. B. Dick Company. (See Dick, Albert B., assignor.)						
A. T. Hagen Co. (See Hagen, Arthur T., assignor.)						
Aarseth, Ole M., Echo, Minn. Mail-box	820,841	May 15	3688	786	122	940
"Abbé" Engineering Company. (See Mertens, Ludwig, assignor.)						
Abbé, Max F., New York, N. Y. Grinding-mill	824,520	June 26	4543	964–5	122	2879
Abbee, Leslie H. (See Sewall and Abbee.)						
Abbott, Benjamin J., Chicago, Ill., assignor to Union Horse Nail Company. Clutch mechanism	821,570	May 22	5173	1104	122	1326
Abbott, Charles H., Whittier, Cal. Fountain paint-brush	823,458	June 12	2464	520	122	2312
Abbott, G. L. (See Howarth, Melvin L., assignor.)						
Abbott, Twyman O., Seattle, Wash. Sleeping-car	819,196	May 1	321	68–9	122	80
Abbott, William W., Ingram, Pa. Shade-holder	820,164	May 8	2330	507	122	581
Abercrombie, George H., Poughkeepsie, N. Y. Furniture	822,904	June 12	1347	280	122	2069
Abizaid, Antonio, Douma, Syria, Turkey. Friction-slide for garment-supporters	821,011	May 22	4078	868	122	1087
Abraham, Gustav C., Flint, Mich. Truss	822,811	June 5	1148	236	122	1980
Abtmeyer, Theodore, Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company. Electrical measuring instrument	819,706	May 8	1329	288	122	359
Achershaug, Harry H. (See Andersen and Achershaug.)						
Acker, Charles E., Niagara Falls, N. Y., assignor to Acker Process Company. Producing oxygen compounds of tin	824,398	June 26	4287	.....	122	2822
Acker Process Company. (See Acker, Charles E., assignor.)						
Acly, Harry M., assignor to Stanley Electric Manufacturing Company, Pittsfield, Mass. Locking and tripping device for switches	823,984	June 19	3506	749	122	2599
Acly, Harry M., assignor to Stanley Electric Manufacturing Company, Pittsfield, Mass. Insulator	824,055	June 19	3635	773	122	2626
Acme Burial Vault Company. (See Okey, George B., assignor.)						
Actien Gesellschaft für Anilin Fabrikation. (See Kirchhoff and Kerkovius, assignors.)						
Adair, Charles E., assignor to Cyphers Incubator Company, Buffalo, N. Y. Incubator	821,324	May 22	4692	1000	122	1221
Adam, Otto, Dresden, Germany. Self-acting electrical rope-straining device	820,464	May 15	2918	634	122	771
Adams, Frank H., Topeka, Kans. Flue-rattler	822,035	May 29	6099	1299-1301	122	1591
Adams, Friederich O. (See Adams, Julius F. and F. O.)						
Adams, George, St. Louis, Mo. Traction attachment for automobile-wheels	820,691	May 15	3361	720	122	866
Adams, James L., Jr., Springfield, Ill. Electrical vibratory motor	820,753	May 15	3476	745–6	122	894
Adams, James L., Jr., Springfield, Ill. Compound spring	820,944	May 15	3905	833	122	988
Adams, John M. (See Adams, John Q. and J. M.)						
Adams, John Q. and J. M., Union, Ill.; said John Q. Adams assignor to said J. M. Adams. Currycomb	821,075	May 22	4210	895	122	1116
Adams, John U., New Orleans, La. Headwear	823,314	June 12	2208	460	122	2258
Adams, Joseph W., Pasadena, Cal. Hose-clamp	821,692	May 29	5441	1159	122	1441
Adams, Julius F. and F. O., Allegheny, Pa. Heating apparatus	821,971	May 29	5981	1274–5	122	1563
Adams, Julius F. and F. O., Allegheny, Pa. Heating-furnace	821,972	May 29	5983	1275	122	1563
Adams, Milton F., New York, N. Y., assignor to Electric Water Purifier Company. Liquid filter and purifier	823,019	June 12	1579	328	122	2122
Adams, Orly E., *et al.* (See Urban, Fredrick H., assignor.)						
Adams, Robert N. (See Hardy and Adams.)						
Adams, Thomas E., *et al.* (See Kilroy, Patrick M., assignor.)						
Adams, Thomas E., Cleveland, Ohio. Bearing for rock-drills	821,325	May 22	4693	1000	122	1221
Adams, Walter S. (See Brill and Adams.)						
Adams & Westlake Company. (See Newbold, Roger M., assignor.)						
Adams, William A., Winchester, Ky. Machine for cleaning fiber	821,571	May 22	5175	1105	122	1326
Adams, William L., South Portland, assignor to G. H. Griffen, Portland, and J. E. Fisher, South Portland, Me. Anchor	822,420	June 5	368	76	122	1806
	823,094	June 12	1741	358–9	122	2154
Adamson, Charles E., Muncie, Ind. Rotary copying-press						
Addressograph Company. (See Duncan, Joseph S., assignor.)						
Adshead, George H., London, England. Parcel-bundling machine	823,751	June 19	3050	645–6	122	2498
Aeolian Company. (See Heins, John W., assignor.)						
Aeolian Company. (See Kelly, George B., assignor.)						
Aeolian Company. (See Votey, Edwin S., assignor.)						
Aeolian Company. (See Young, Francis L., assignor.)						
Aermotor Company. (See Scholes, Daniel R., assignor.)						
Agin, Burroughs, and G. B. Thompson, Kansas City, Mo. Adjustable curtain-fixture	819,197	May 1	323	69	122	80
Ahlers, George F., Covington, Ky. Desiccated distillery-slop and making same	821,326	May 22	4695	.....	122	1221

Alphabetical list of patentees for May and June—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
			Spec.	Drg.	Vol.	Page.
Ahlm, Charles E. F., assignor to Cleveland Armature Works, Cleveland, Ohio. Lifting-magnet	822,095	May 29	6209	1324	122	1616
Ahlquist, Karl Rugby, England, assignor to General Electric Company. Bucket for elastic-fluid turbines	824,521	June 26	4545	965	122	2880
Ahr, Wilhelm, Berlin, Germany. Self-acting collapsing target	819,198	May 1	325	69	122	80
Ahrens Fire Engine Company. (See Shafer, William H., assignor.)						
Aichele, Christian, assignor to North Brothers Manufacturing Company, Philadelphia, Pa. Clamp for the cross-bars of ice-cream freezers	819,494	May 1	916	201	122	205
Aid, Frederick. (See Aid, George and F.)						
Aid, George and F., Gallatin, Mo. Neck-yoke center	823,575	June 19	2725	577	122	2428
Aigin, George H., Delaware, Ohio. Ironing-board	823,910	June 19	3357	715–16	122	2567
Aiken, Edward L., East Orange, assignor to New Jersey Patent Company, West Orange, N. J. Repeating attachment for phonographs	820,165	May 8	2332	506	122	581
Aiken, Henry, Pittsburg, Pa. Reversing-valve	824,166	June 26	3831	818	122	2727
Aisbitt, Matthew S., Los Angeles, Cal. Fender especially adapted for street-railway cars	819,967	May 8	1897	420	122	483
Aker, I. G., *et al.* (See Willson, James F., assignor.)						
Akers, James M., Gays, assignor to Mattoon Grain Conveyor Company, Mattoon, Ill. Pneumatic grain-conveyer	824,056	June 19	3635	774	122	2626
Akeson, Anders, assignor to Standard Gas & Heating Company, Worcester, Mass. Carbureter	823,382	June 12	2320	486	122	2281
Akridge, George H., Hartsfield, Ga. Sash holder and fastener	823,659	June 19	2894	612	122	2467
Aktiebolaget Separator. (See Ericsson, Anders J., assignor.)						
Aktiebolaget Separator. (See Ljungström, Birger, assignor.)						
Aktiebolaget Tidan. (See Esser, Fritz von, assignor.)						
Alarme, Louis, New York, N. Y. Antislipping device for horseshoes	823,497	June 19	2575	543	122	2397
Albany Chemical Company. (See Michaelis, Gustavus, assignor.)						
Albers, John B., Los Angeles, Cal. Metal-saving machine	820,614	May 15	3215	691–2	122	836
Albert, Eugen, Munich, Germany. Apparatus for backing up of electros	821,845	May 29	5743	1222	122	1511
Albrecht, Herman S., St. Louis, Mo. Fiber-reducing machine	821,447	May 22	4957	1053–4	122	1282
Albrecht, Herman S., St. Louis, Mo. Fiber-reducing machine	821,448	May 22	4960	1054–5	122	1282
Albree, Edward C., Swampscott, Mass. Card-index	821,602	May 29	5259	1121	122	1403
Albright, John B., Hamilton, Ohio. Switch-operating mechanism	819,835	May 8	1604	340	122	422
Albright, Preston K., Binghamton, N. Y. Knockdown sled	821,693	May 29	5443	1159	122	1441
Albro, Almon G., Corry, Pa. Horseshoe	821,973	May 29	5984	1275	122	1564
Alcorn, Robert L., assignor of one-half to J. T. Smith, Oneida, Tenn. Brake	821,211	May 22	4464	950	122	1171
Alderman, Charles S., St. Louis, Mo. Hose-nozzle	820,328	May 8	2638	575	122	651
Aldous, Nelson W., Toronto, Canada. Carpet-cutter and the like	820,692	May 15	3362	720	122	866
Aldrich, Alonzo, Beloit, Wis. Machine for trimming and slitting paper	823,250	June 12	2085	434	122	2233
Aldrich, Arbia L. (See Aldrich, John B. and A. L.)						
Aldrich, John B. and A. L., Endicott, N. Y. Portable railway crossover-switch	824,271	June 26	4036	864	122	2771
Alemian, Dikran, Vienna, Austria-Hungary. Sawing-machine	824,328	June 26	4139	886	122	2793
Alexander, Charles L., Charlotte, N. C. Dental handpiece	823,150	June 12	1855	383	122	2179
Alexander, James H., Fulwood, Ark. Hame-fastener	822,232	June 5	1	1	122	1729
Alexander, Paul, Charlottenburg, Germany. Dissolving and regenerating rubber	821,394	May 22	4854	.....	122	1259
Alexander, Solomon S., Syracuse, N. Y. Storm-collar	820,465	May 15	2920	634	122	771
Alexander, Theophilus W., and E. F. Holstein, Burlington, Iowa. Apparatus for making soap	824,167	June 26	3832	818	122	2728
Alexander, Tony, Brookhaven, Miss. Insecticide-holding attachment for furniture	824,272	June 26	4038	865	122	2772
Alexanderson, Ernst F. W., Schenectady, N. Y., assignor to General Electric Company. Protective means for alternating-current systems	819,627	May 1	1160	254	122	260
Alger, Joseph, Brockton, Mass. Box-covering machine	820,166	May 8	2336	508–9	122	582
Alkire, E. Y. (See Gerardy, Gabriel, assignor.)						
Allan, James, Chiselhurst Common, England. Coin-freed electric meter	824,522	June 26	4547	965	122	2880
Allan, William A., Morris, Canada. Rotary engine	823,020	June 12	1581	328	122	2122
Allard, Homer L. (See Shoecraft and Allard.)						
Allard, Louis J., Fall River, Mass. Sleigh-runner attachment for vehicle-wheels	821,974	May 29	5985	1276	122	1564
Allen, A. L., *et al.* (See McNeley, Martin M., assignor.)						
Allen, Albert A., Ortonville, Minn. Drafting instrument	819,495	May 1	917	201	122	205
Allen, Benjamin F., and G. R. Ford, St. Louis, Mo.; said Allen assignor to said Ford. Mirror attachment for gas-stove doors	821,846	May 29	5744	1223	122	1511
Allen, Carl L. (See Merryman and Allen.)						
Allen, Charles M. (See Baggaley and Allen.)						
Allen, Charles M. (See Baggaley, Allen, and Lindquist.)						
Allen, David H., Miamisburg, Ohio. Table	821,572	May 22	5177	1105	122	1327
Allen, Ernest B., Louisville, Ky. Air-supply apparatus for air-brakes	823,315	June 12	2210	461	122	2268
Allen, Franklin P., and J. M. Schofield, Stockton, Cal.; said Allen assignor to said Schofield. Interlocking brick	824,329	June 26	4140	886	122	2793
Allen, George W. (See Holmes and Allen.)						
Allen, Grafton C., Port Townsend, Wash. Non-refillable bottle	820,754	May 15	3482	746	122	896
Allen, Hosea, Oil City, Pa. Rail-joint. (Reissue)	12,497	June 26	4901	1042	122	2954
Allen, James B., Detroit, Mich. Trimming-knife and guide	819,034	May 1	1	1	122	3
Allen, James B., Detroit, Mich. Casting-box for linotype-machines	823,660	June 19	2895	612–13	122	2468
Allen, Nicholas C., Houghton, S. D. Harrow	820,279	May 8	2560	555–6	122	633
Allen, Oscar, Mount Morris, N. Y. Corn-husking machine	820,329	May 8	2639	576	122	651
Allen, Philip, Providence, R. I. Sprinkler-head	820,541	May 15	3091	665	122	809
Allen, Samuel L., Moorestown, N. J. Cultivator	819,536	May 8	1606	341	122	422
Allerbach, S. C. (See Dundas, Harry, assignor.)						
Alley, Eugene B., Watertown, and M. J. Souza, Cambridge, Mass. Paint and varnish brush cleaner	820,061	May 8	2166	472	122	546
Alliree, Edwin H., and W. H. England, Chicago, Ill. Derailer	824,462	June 26	4437	941–2	122	2855
Allfree, James B., Ironton, Ohio, and I. C. Hubbell, Chicago, Ill. Locomotive driving-wheel or the like	819,199	May 1	325	70	122	81
Allgood, Andrew C., Henderson, N. C. Separator attachment for ring-spinning machines	819,496	May 1	919	201	122	205
Allis-Chalmers Company. (See Harrison, John F., assignor.)						
Allison, James E., assignor to Dr. J. H. McLean Medicine Company, St. Louis, Mo. Display-case	821,573	May 22	5178	1105	122	1327
Allison, Kasper K., Alexandria, W. Va. Horseshoe-spreader	823,363	June 12	2323	457	122	2262
Allyn, William R. (See Kelly, Burt O., assignor.)						
Alma Button Company of Baltimore City. (See Kerngood, Herman, assignor.)						
Almy, Bradford, Ithaca, N. Y. Pocket safety-pin	822,335	June 5	221	45	122	1774
Alphandéry, Gaston J. E., Chaumont, France. Device for facilitating the removal of valves from valve-boxes of internal-combustion engines	821,149	May 22	4358	927	122	1149
Alquist, Peter. (See Emerick and Alquist.)						
Alsop, Henry, Chicago, Ill. Safety-bridge lock	820,843	May 15	3089	788	122	941

Alphabetical list of patentees for May and June—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Alston, John S., Atlantic City, N. J. Die	822,233	June 5	2	1	122	1729
Altemus, Clarence L., *et al.* (See Smith, James M., assignor.)						
Altham, George J., Swansea, Mass. Lubricating device for internal-combustion engines	821,915	May 29	5868	1248	122	1539
Alton, George H., Lynn, Mass., assignor to General Electric Company. Jewel grinding and polishing machine	819,628	May 1	1161	255	122	261
Alvord, Clinton, Worcester, Mass., assignor, by mesne assignments, to Multiple Woven Hose & Rubber Co., New York, N. Y. Loom for weaving tubular fabrics	824,226	June 26	3954	847–8	122	2754
Alvord, Edwin D., and H. R. Knox, Hartford, Conn. Machine for making leather-board	824,086	June 26	3687	785	122	2695
Amann, Joseph L., Chicago, Ill. Portable knockdown seat-back	823,199	June 12	1970	410	122	2207
Ambruster, Charles A. (See Smith, Louis, assignor.)						
American Bed Company. (See Smith, John G., assignor.)						
American Bridge Company. (See Weatherson, Christopher, assignor.)						
American Briquetting Co. (See Demetrak, Constantine, assignor.)						
American Can Company. (See Carnes, Edward W., assignor.)						
American Can Company. (See Hodgson, John G., assignor.)						
American Can Company. (See Leitch, Meredith, assignor.)						
American Car & Foundry Company. (See Herrmann, Julius C., assignor.)						
American Car & Foundry Company. (See Wolff, Herbert W., assignor.)						
American Chemical Eduction Company. (See Wurtz, Henry, assignor.)						
American Chemical Products Company. (See Kick, Emile F., assignor.)						
American Column Company. (See Tresidder, John J., assignor.)						
American Company. (See Richardson, Harry H., assignor.)						
American Cotton Separator Company. (See Patterson, Warren A., assignor.)						
American Cutlery Company. (See Gilfillan, Essington N., assignor.)						
American Farm Products Company. (See Monroe, Charles D., assignor.)						
American Foundry & Machine Company. (See Robinson, Hanson, assignor.)						
American Grain Purifier Constructing Company. (See Stuhr, David H., assignor.)						
American Graphophone Company. (See Godwin and Hoffman, assignors.)						
American Graphophone Company. (See Manwaring, George A., assignor.)						
American Hard Rubber Company. (See Kiel, William, assignor.)						
American Locomotive Company. (See Dalton, William, assignor.)						
American Locomotive Company. (See Player, John, assignor.)						
American Locomotive Equipment Co. (See Wade and Nicholson, assignors.)						
American Offset Company. (See Duncan and Potts, assignors.)						
American Optical Company. (See Waite, Edgar T., assignor)						
American Ozone Company. (See Otto, Marius, assignor.)						
American Ring Co. (See Palmer, Robert, assignor.)						
American Sanitary Works. (See Tilden, Bert O., assignor.) (Reissue.)						
American Sheet & Tin Plate Company. (See Bennett, Charles W., assignor.)						
American Sheet and Tin Plate Company. (See Steele, Lawrence C., assignor.)						
American Spindle Company. (See Potter, James C., assignor.)						
American Steam Gauge & Valve Manufacturing Company. (See Craig, Charles H., Jr., assignor.)						
American Steel Foundries. (See Janney, Robert E. L., assignor.)						
American Steel Package Company. (See Kruse, Alfred T., assignor.)						
American Steel & Wire Company of New Jersey. (See Oslund, Charles H., assignor.)						
American Suction Gas Producer Company. (See Gerdes, Heinrich, assignor.)						
American Suction Gas Producer Company. (See Higgins, Eugene, assignor.)						
American Suction Gas Producer Company. (See Hilprecht, Robert, assignor.)						
American Suction Gas Producer Company. (See Sandner, Erich, assignor.)						
American Switch and Signal Company. (See Skillman, Arthur D., assignor.)						
American Telegraphone Company. (See Poulsen, Valdemar, assignor.)						
American Telephone and Telegraph Company. (See Boyce, Charles L., assignor.)						
American Thread Company. (See Hardman, Peter, assignor.)						
American Tobacco Company. (See Coalter, William T., assignor.)						
American Tracing Cloth Company. (See Waechter, William B., assignor.)						
American Trust and Savings Bank, administrator. (See Penberthy, William.)						
American Type Founders Company. (See Benton, Linn B., assignor.)						
American Typographic Corporation. (See Richards, Francis H., assignor.)						
Americus Electro-Hermatic Company. (See Dion, Léon, assignor.)						
Amerling, Harmon B. (See Macartney, Edmund C., assignor.)						
Ames, Alden T., Galt, Cal. Clamp-guide for pump-rods	821,274	May 22	4586	976	122	1199
Ames, Azel, Jr., Cleveland, Ohio, and J. S. Hobson, Edgewood Park, assignors to Union Switch and Signal Company, Swissvale, Pa. Railway signaling system	821,916	May 29	5870	1248–9	122	1540
Amidon, Charles II., Buffalo, N. Y. Planing-machine	820,330	May 8	2640	576	122	651
Ammons, John B., Hazen, Ark. Baling-press	823,151	June 12	1857	383	122	2180
Anchor Implement Company. (See Wickham, Amos C., assignor.)						
Ancona, John F., Proctor, Vt. Concrete structure	822,499	June 5	523	106	122	1840
Andersen, Andrew M., and H. H. Achershaug, Chicago, Ill.; said Achershaug assignor to said Andersen. Burglar-alarm	821,918	May 29	5877	1250	122	1541
Andersen, Peter, Langdrāthof, Hadersleben, Germany. Milking apparatus	823,316	June 12	2214	461–2	122	2259
Anderson, Alfred, Chicago, Ill. Pneumatic action for pianos	821,917	May 29	5874	1249	122	1541
Anderson, Andrew M., *et al.* (See Stenstrom, John P., assignor.)						
Anderson, Charles. (See Mumm, Quimby, and Anderson.)						
Anderson, Charles O., assignor of one-half to A. T. Austin, Omaha, Nebr. Slack-adjuster	823,095	June 12	1743	359	122	2155
Anderson, Edward, *et al.* (See Larkin, Patrick H., assignor.)						
Anderson, Edward V., Pittsburg, assignor of two-thirds to C. E. Golden, Crafton, Pa. Steam-trap	819,497	May 1	921	202	122	206
Anderson, Ellis B., Demopolis, Ala. Cake-forming machine	822,568	June 5	671	137	122	1876
Anderson, Frank E., New York, N. Y. Mail-chute	821,275	May 22	4587	977	122	1199
Anderson, Frederick F., New York, N. Y. Time egg-boiler	820,034	May 8	2061	451	122	522
Anderson, Gustaf Y., Seattle, Wash. Saw-set	819,114	May 1	186	33	122	44
Anderson, Gustave E., Allegheny, Pa. Rotary engine	821,449	May 22	4961	1055–6	122	1282
Anderson, Henry O. (See Waller, John A., assignor.)						
Anderson, James, Harrodsburg, Ky. Trace	823,661	June 19	2896	613	122	2468
Anderson, John N., assignor to C. W. Hoffman, New York, N. Y. Reversing-switch	820,331	May 8	2643	576–7	122	652
Anderson, Joseph C., Cordova, Ala. Hinge	823,911	June 19	3358	716	122	2568
Anderson, Milton S., Manistee, Mich. Lock for cross-wires	819,966	May 8	1899	420	122	484
Anderson, Oliver L., Dallas, Tex. Folding crate	819,837	May 8	1606	341	122	423
Anderson, Sigurd E., *et al.* (See Kastner, John, Jr., assignor.)						
Anderson, William N., San Rafael, Cal. Folding furniture	819,969	May 8	1901	421	122	484
Anderson, Winfield S., Cincinnati, Ohio. Cupola	820,167	May 8	2339	509	122	583
Andrews, Alexander, Carbondale, Ill. Fluid-pressure regulator	821,574	May 22	5180	1106	122	1327
Andrews, Charles H., West Chester, Pa. Machine for eyeleting envelops, tags, or the like	823,021	June 12	1584	328–9	122	2123
Andrews, John K., Elgin, Ill. Lawn-vase	820,168	May 8	2341	509	122	583

Alphabetical list of patentees for May and June—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Andrews, Leonard, Hastings, England, assignor to Stanley Electric Manufacturing Company. Magnetic cut-out apparatus	822,234	June 5	3	1-2	122	1729
Angeletti, Joseph, Kenosha, Wis. Flexible window-screen	819,396	May 1	733	156	122	167
Angle, Harrison M., Newark, N. J. Savings-receptacle	819,115	May 1	167	33-4	122	44
Ank, Jacob P., assignor of one-half to W. A. Harper, Crawfordsville, Iowa. Rail-joint	819,035	May 1	2	1	122	3
Annable, Warren W., Grand Rapids, Mich. Trolley-stand	820,290	May 8	2561	556	122	633
Apgar, John T., New York, N. Y. Artificial leg	820,082	May 8	2170	472-3	122	546
Applegate, Albert W., assignor of one-half to C. F., A. F., and H. Eckert, Brawley, Cal. Irrigation-dam	820,332	May 8	2647	578	122	653
Appleton, David, West Kensington, England. Cooking apparatus	822,569	June 5	676	138	122	1876
Appleton Machine Company. (See Goodrick, Edward W., assignor.)						
Arco, Georg von, Berlin, Germany. Resonance-circuit	820,169	May 8	2342	509	122	584
Argall, Frank L., San Jose, Cal. Dental swaging apparatus	821,150	May 22	4359	927	122	1149
Argall, Philip, Denver, Colo. Suction-filter	822,812	June 5	1149	236-7	122	1980
Aristia, Juan L., Iquique, Chile. Merry-go-round	820,901	May 15	3822	815-16	122	969
Arlington Company. (See Stone, Wilbur M., assignor.)						
Arlington Mills. (See Bridge, John W., assignor.)						
Armintrout, Ira E., *et al.* (See Lindsay, Leroy J., assignor.)						
Armintrout, James E., *et al.* (See Lindsay, Leroy J., assignor.)						
Armor, James C., assignor to G. Westinghouse, Pittsburg, Pa. Thermal cut-out for electric circuits	822,336	June 5	222	46	122	1775
Armstrong, Ernest, *et al.* (See Tatnall, Walter G., assignor.)						
Armstrong, Preston, assignor of one-half to L. R. Byrne, Shelton, Wash. Animal-trap	819,838	May 8	1610	342	122	423
Armstrong, Wheeler B. (See Kemmerer and Armstrong.)						
Armstrong, William, St. Louis, Mo. Side attachment for awnings	823,096	June 12	1745	359	122	2156
Armstrong, William H., J. M. Pugh, and R. W. Magee, assignors to Wm. H. Armstrong & Company, Indianapolis, Ind. Invalid-bed	824,057	June 19	3637	774	122	2627
Arnavat, Luis, Tampa, Fla. Shovel	821,847	May 29	5745	1223	122	1511
Arno, Riccardo, Milan, Italy. Energy-meter for three-phase plants unsymmetrically loaded	820,755	May 15	3483	746-8	122	896
Arno, Riccardo, Milan, Italy. Alternating-current meter	820,756	May 15	3487	748	122	896
Arnold, Craig R., Philadelphia, Pa. Extracting metals from their ores	823,576	June 19	2727	577	122	2428
Arnold Magnetic Clutch Company. (See Cutler, Henry H., assignor.)						
Arnold Magnetic Clutch Company. (See Damon, George A., assignor.)						
Arnold, Oscar, Neustadt, Germany. Doll	820,843	May 15	3691	787	122	941
Arnold, William B., North Abington, Mass., assignor to Krentler-Arnold Hinge Last Company, Detroit, Mich. Jack-pin for hinged lasts	819,970	May 8	1902	421	122	484
Arnold, William H., and H. Smith, Thomasville, Ga. Railway	819,589	May 8	1611	342	122	424
Aron, Hermann, Charlottenburg, Germany. Electricity-meter for alternating currents	820,333	May 8	2648	578	122	653
Arquembourg, Henri. (See Grouvelle and Arquembourg.)						
Arters, Frank L. (See Lowry and Arters.)						
Arthurs, Samuel B., Brookville, Pa. Horse-trainer	821,395	May 22	4855	1030	122	1259
Artibee, Willfred J., assignor of one-half to C. H. Jones, Chazy, N. Y. Compound rotary engine	821,603	May 29	5260	1121	122	1403
Aschenbrenner, Albert. (See Burger and Aschenbrenner.)						
Ashland, James, Escanaba, Mich. Toggle-hook	820,383	May 15	2753	599	122	737
Ashley, Frank M., New York, N. Y. Cushion-tire	819,036	May 1	3	1-2	122	3
Ashley, Frank M., New York, N. Y. Clutch	821,212	May 22	4466	951	122	1171
Ashley, Frank M., New York, N. Y. Ink-well	822,905	June 12	1347	280	122	2069
Ashley, Frank M., New York, N. Y. Automatic inkstand	823,752	June 19	3052	646	122	2498
Ashley, Frank M., Brooklyn, assignor of one-half to A. T. Scharps, New York, N. Y. Pressure-regulator	824,661	June 26	4853	1035	122	2945
Askew, Charles B., Chicago, Ill. Printing-type	821,076	May 22	4211	895	122	1116
Askew, John, West Point, Miss. Belt	822,710	June 5	973	198	122	1943
Astarita, Joseph A., New York, N. Y. Bottle-stopper fastener	820,063	May 8	2172	473	122	547
Atcheson, Robert H., and J. H. Walsh, Chicopee, Mass. Rim and tire fastening for wheels	822,711	June 5	974	199	122	1943
Athey, Isaac H., Chicago, Ill., assignor to Dust Proof Furniture Company. File-cabinet	821,575	May 22	5181	1106	122	1328
Athey, Isaac H., Chicago, Ill., assignor to Dust Proof Furniture Company. Construction of drawers and the like	821,576	May 22	5183	1106-7	122	1328
Athey, Isaac H., Chicago, Ill., assignor to Dust Proof Furniture Company. Drop-front drawer for filing-cabinets	821,577	May 22	5185	1107	122	1328
Athey, Isaac H., Chicago, Ill., assignor to Dust Proof Furniture Company. Sheet-metal drawer and the like	821,578	May 22	5188	1107	122	1329
Atkinson, Clarence W., Jamestown, Colo. Drill-sharpener	822,906	June 12	1350	280	122	2069
Atlanta Utility Works. (See Winder, James C., assignor.)						
Aumitt, Frank D., Sugar Grove, Ill. Vehicle-loader	819,331	May 1	608	128	122	140
Audet, Adjutor N., *et al.* (See MacMillan, Clyde, assignor.)						
Auerbach, Joseph S., assignor to D. Auerbach & Sons, New York, N. Y. Display-box	820,542	May 15	3092	665	122	809
Auerbach & Sons, D. (See Auerbach, Joseph S., assignor.)						
Aultman & Taylor Machinery Company. (See Harrold, Amos, assignor.)						
Ause, Ole O., Waltham, Mass. Jewel-pin and pallet-stone setter	821,396	May 22	4857	1030	122	1259
Ausband, Charles P., assignor of one-half to A. Fisher, Charlotte, N. C. Window-blind-slat fastener	824,273	June 26	4039	865	122	2772
Austen, Edward W., Oswego, N. Y. Bottle	821,579	May 22	5189	1107	122	1329
Austin, A. T. (See Anderson, Charles O., assignor.)						
Austin, Albert W. (See Haynes and Martin, assignors.)						
Austin, Clarence E., Marcus, Iowa. Milk and cream vehicle	824,399	June 26	4288	914	122	2822
Austin, Herbert, assignor to Wolseley Tool and Motor Car Company, Limited, Birmingham, England. Valve and ignition mechanism for internal-combustion engines	819,116	May 1	169	34	122	44
Austral Window Balance Company. (See Knox, Alexander, assignor.)						
Auto-Manual Piano Action Company. (See Wuest, Philip, Jr., assignor.)						
Automatic Electric Company. (See Erickson, John, assignor.)						
Automatic Electric Company. (See Guttman, Harry J., assignor.)						
Automatic Electric Company. (See Martin, Talbot G., assignor.)						
Automatic Electric Company. (See Setter, Michael, assignor.)						
Automatic Game Table Company. (See Roberts, Samuel C., assignor.)						
Automatic Meter Co. (See Gallagher, Richard W., assignor.)						
Automatic Switch Company. (See Whittingham, George H., assignor.)						
Automatic Target Machine Company. (See Haas, George M., assignor.)						
Autopianist Co. (See Davis, Charles L., assignor.) (Reissue.)						
Avalgarde, Ingmer T. (See Pehrson, Jonas, assignor.)						
Averill, Elias M., Newaygo, Mich. Shipping-crate	819,117	May 1	171	34	122	45
Avery Manufacturing Company. (See Springer, William N., assignor.)						
Ayer, Charles H., F. J. Hole, and R. E. Olney, Mount Clemens, Mich. Adjustable mirror-support	820,466	May 15	2921	634	122	771

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Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Ayer, Melville C., Biddeford, Me. Lamp-burner	823,200	June 12	1971	410	122	2207
Ayers, Albert M. (See Ayers, John W. and A. M.)						
Ayers, John W. and A. M., New York, N. Y. Tablet counting and filling machine	824,463	June 26	4441	942-3	122	2856
Aynsley, Joseph. (See Ridgway, Aynsley, and Hancock.)						
Ayres, Walter S. (See Smythe and Ayres.)						
Babcock, Herbert F., Rifle, Colo. Bedstead	823,152	June 12	1859	384	122	2180
Babcock, Solon E., Plateau City, Colo. Tooth-brush	824,087	June 26	3688	785	122	2695
Babio, José G., New York, N. Y. Friction-clutch	823,753	June 19	3054	647	122	2499
Babio, José G., New York, N. Y. Safety apparatus for elevators	824,523	June 26	4548	966	122	2980
Bäckström, Petter, Minneapolis, Minn. Screw-cutting plate	820,334	May 8	2649	578	122	653
Backus, Henry N., Detroit, Mich. Hinge	821,012	May 22	4090	868-9	122	1087
Backus, John C., Smethport, Pa. Pin-setter for bowling-alleys	821,276	May 22	4588	977	122	1200
Bacon, Albert. (See Whitten, Weston, assignor.)						
Bacon, Earl C., Indianapolis, assignor to Flash Light Sign Company, Connersville, Ind. Electrical switch	822,036	May 29	6107	1301	122	1593
Bacon, Frederick J., Hartford, Conn. Banjo	823,965	June 19	3508	749	122	2509
Bacque, Louis H., Three Rivers, Canada. Gas-burner	821,694	May 29	5444	1160	122	1442
Badger, Arthur C. (See Badger, Daniel B. and A. C.)						
Badger, Daniel B., Winchester, and A. C. Badger, Boston, Mass. Fireproof window	821,975	May 29	5987	1276-7	122	1564
Badische Anilin & Soda Fabrik. (See Bally and Isler, assignors.)						
Badische Anilin & Soda Fabrik. (See Bernthsen, Heinrich A., assignor.)						
Badische Anilin & Soda Fabrik. (See Bosch, Carl, assignor.)						
Badische Anilin & Soda Fabrik. (See Holt, Henry S. A., assignor.)						
Badische Anilin & Soda Fabrik. (See Julius and Münch, assignors.)						
Badische Anilin & Soda Fabrik. (See Reinking, Karl, assignor.)						
Badische Anilin & Soda Fabrik. (See Wimmer, Robert, assignor.)						
Baehr, George, McKeesport, assignor to National Tube Company, Pittsburg, Pa. Automatic speed-increasing device	819,707	May 8	1331	288	122	359
Baerbalck, Hans, Hamilton, Ohio, assignor to Hamilton Machine Tool Company. Gearing	820,377	May 8	2732	595	122	671
Baggaley, Ralph, Pittsburg, Pa., and C. M. Allen, Lo Lo, Mont.; said Allen assignor to said Baggaley. Melting primary baths for dissolving ores	822,712	June 5	975	.....	122	1943
Baggaley, Ralph, Pittsburg, Pa., C. M. Allen, Lo Lo, Mont., and E. W. Lindquist, Chicago, Ill.; said Allen and Lindquist assignors to said Baggaley. Utilizing as fuel the volatile portions of sulfid ores	822,713	June 5	977	.....	122	1944
Bagnall, Edward, assignor to Zoffer Plate Glass Manufacturing Company, Pittsburg, Pa. Apparatus for grinding, smoothing, and polishing plate-glass	822,096	May 29	6210	1324-5	122	1616
Bailey, George H., San Francisco, Cal. Regulator for water-wheels	819,629	May 1	1165	255	122	261
Bailey, John W., New York, N. Y., assignor, by mesne assignments, to United Lead Company. Apparatus for making white lead	823,097	June 12	1746	359-60	122	2156
Bailey, Reginald, Winston Salem, N. C. Machine for dipping tobacco	820,335	May 8	2650	578	122	653
Bailey, Sarah L., Frankfort, Mich. Moisture-supply cap for mucilage-bottles	822,235	June 5	6	2	122	1730
Bailey, Theodorus S. (See Spear and Bailey.)						
Bain, William J., Pierce City, Mo. Condiment-holder	824,058	June 19	3639	774	122	2627
Baines, William, Crosby, England. Variable-speed gear	819,118	May 1	172	35	122	45
Baither, Otto, Griesheim, assignor to Chemische Fabrik Griesheim Electron, Frankfort-on-the-Main, Germany. Concentrating diluted nitric acid	819,262	May 1	450	.....	122	105
Baker City Iron & Supply Co. (See Gyllenberg, John A., assignor.)						
Baker, Clara A. (See Demarest, James G., assignor.)						
Baker, Clarence A., Phœnix Mills, N. Y. Cross-line buckle	821,976	May 29	5990	1277	122	1565
Baker, David. (See Neumann, Albrecht B., assignor.)						
Baker, David F., Dundee, Oreg. Shingle-machine	824,168	June 26	3834	818-19	122	2728
Baker, Enoch A., Willimansett, Mass. Apparatus for cleaning boiler-flues	822,813	June 5	1152	237	122	1981
Baker, Harry E., and H. E. Neavling, Portland, Me. Indicator for household use	822,815	June 5	1155	237	122	1981
Baker, Henry J., Chicago, Ill. Lock-nut	821,695	May 29	5445	1160	122	1442
Baker, John M. (See Coffman, Harry D., assignor.)						
Baker, John W., assignor of one-half to A. Morris, Adrian, Mich. Metal post	822,814	June 5	1154	237	122	1981
Baker, Levi J., *et al.* (See Sheperd, William B., assignor.)						
Baker, Lottie, *et al.* (See Sheperd, William B., assignor.)						
Baker, Rieman D., assignor of one-half to H. W. Woodmansee, Peoria, Ill. Vehicle-brake	824,400	June 26	4289	914-15	122	2822
Baker, Wendell H., *et al.* (See Sheperd, William B., assignor.)						
Baldwin, Barlow, assignor of six-tenths to E. S. Hinton and G. A. Hamlin, Chicago, Ill. Mercurial amalgamator	823,577	June 19	2729	577-8	122	2428
Baldwin Company. (See Lambert, Clayton A., assignor.)						
Baldwin, Frederic E., New York, N. Y. Acetylene-gas-generating lamp	821,580	May 22	5190	1108	122	1330
Baldwin, Rollin A., South Norwalk, Conn., assignor to Baldwin & Rowland Switch & Signal Company. Railway-signal	819,397	May 1	735	156	122	167
Baldwin & Rowland Switch & Signal Company. (See Baldwin, Rollin A., assignor.)						
Baldwin, Walter H., Chicago, Ill. Hoisting apparatus	820,844	May 15	3693	787-8	122	942
Balint, Johan, Chicago, Ill. Burglar-alarm	822,421	June 5	369	77	122	1806
Ball, Albert, assignor to Sullivan Machinery Company, Claremont, N. H. Support for drills or the like	823,662	June 19	2897	613	122	2468
Ball, Augustus A., Jr. (See Thomson and Ball.)						
Ball, Augustus A., Jr., Lynn, Mass., assignor, by mesne assignments, to General Electric Company. Vehicle-brake	822,236	June 5	7	3	122	1730
Ball Engine Company. (See Smith, John W., assignor.)						
Ball, Frederick O., Plainfield, N. J. Governor	822,907	June 12	1351	280	122	2070
Ball, Henry P., Schenectady, N. Y., assignor of one-half to S. Insull, Chicago, Ill. Machine for transferring patterns	819,263	May 1	452	95-6	122	106
Ball, Henry P., New York, N. Y., assignor to General Incandescent Arc Light Company, of New York. System and apparatus for operating electric switches	821,077	May 22	4213	896	122	1116
Ball, Irving J., Brock, Nebr. Cattle-guard for railways	823,498	June 19	2576	543	122	2397
Ballance, John, New York, N. Y. Combined phonograph and stereopticon	823,022	June 12	1591	329	122	2124
Ballard, Charles R., *et al.* (See Greene, Jacob R., Jr., assignor.)						
Ballard, Melzar L., Durango, Colo. Synchronizer	821,151	May 22	4361	927-8	122	1150
Ballard, Milton H., assignor to Tripp Fruit Wrapping Machine Company, Lynn, Mass. Feeding mechanism for oranges and other articles	820,084	May 8	2173	472-4	122	547
Ballard, Milton H., assignor to Tripp Fruit Wrapping Machine Company, Lynn, Mass. Feeding device for oranges and other articles	820,378	May 8	2734	596	122	671
Bally, Oscar, and M. H. Isler, Mannheim, assignors to Badische Anilin & Soda Fabrik, Ludwigshafen-on-the-Rhine, Germany. Anthracene dye and making same	820,379	May 8	2740	.....	122	673
Balsley, William E. N., Sherando, Va. Machine for placing and removing nuts upon rail-securing bolts	819,398	May 1	738	156	122	167
Baltimore Journal Box Company. (See Patten, James S., assignor.)						
Baltimore Journal Box Company of Baltimore City. (See Patten, James S., assignor.)						
Balzer, Andrew M., Des Moines, Iowa, assignor to Miracle Pressed Stone Company, Sioux Falls, S. D. Lifter for molded building-blocks	820,946	May 22	3921	836	122	1063

Alphabetical list of patentees for May and June—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Bamberger, Max, F. Böck, and F. Wanz, Vienna, Austria-Hungary. Apparatus for re-oxygenating exhaled air for respiration purposes	819,704	May 1	1316	286	122	296
Bancroft, Albert L. and G. H., Los Angeles, Cal. School desk and seat and other furniture	820,336	May 8	2653	579	122	654
Bancroft, George H. (See Bancroft, Albert L. and G. H.)						
Banks, John, assignor to William Clarkson & Son, St. Louis, Mo. Hat	824,274	June 26	4040	865	122	2772
Bankson, Severin B., assignor of one-half to E. Rolkin, San Francisco, Cal. Safety device for folding beds	819,666	May 1	1282	280	122	288
Bannatyne, Archibald, assignor to Bannatyne Watch Co., Waterbury, Conn. Wheel for clocks or watches	819,708	May 8	1334	289	122	360
Bannatyne Watch Co. (See Bannatyne, Archibald, assignor.)						
Bannister, Burr, Kalamazoo, Mich. Tool-holder	824,275	June 26	4041	865	122	2772
Barb, John M., Bellevue, Ohio. Curtain-pole	819,399	May 1	740	157	122	168
Barber Asphalt Paving Company. (See Kerns, William E., assignor.)						
Barber, Hiram, Chicago, Ill. Convertible screen and storm door	822,422	June 5	370	77	122	1806
Bardet, Georgette, St.-Leu-Taverny, France. Spring-wheel	823,384	June 12	2324	487	122	2282
Bardou, Eugène, L. Clerc, and B. Descouches, Paris, France. Protecting-cover for pneumatic tires	822,177	May 29	6377	1354	122	1654
Bareis, Karl. (See Kleinbach and Bareis.)						
Barenther, Ernest W. (See Woollen, Clinton A., assignor.)						
Barkelew, Charles S., assignor to Barkelew Electric Manufacturing Company, Middletown, Ohio. Electric switch	822,237	June 5	10	3	122	1731
Barkelew Electric Manufacturing Company. (See Barkelew, Charles S., assignor.)						
Barker, Enoch W., Woodstock, Ill. Book-support	820,170	May 8	2343	510	122	584
Barker, James, Philadelphia, Pa. Massage implement	819,498	May 1	923	203	122	206
Barker, Ralph E., Lynn, Mass., assignor to General Electric Company. Oscillating motor-fan	819,630	May 1	1167	256	122	262
Barker, Walter S., Cambridge, Mass. Garment	821,977	May 29	5991	1277	122	1565
Barkla, William, Spokane, Wash. Saw swage and shaper	823,754	June 19	3057	647–8	122	2499
Barlow, Ashbel P., St. Joseph, assignor to P. G. Kniebes, Benton Harbor, Mich. Surgical appliance	823,499	June 19	2577	543	122	2397
Barlow, Ashbel P., St. Joseph, assignor to P. G. Kniebes, Benton Harbor, Mich. Truss	823,500	June 19	2578	543	122	2397
Barlow, Charles A., *et al.* (See Bartlebaugh, Benjamin C., assignor.)						
Barlow, John W., assignor to Western Implement Manufacturing Co., Kansas City, Mo. Combined journal and lubricator	821,450	May 22	4064	1056	122	1283
Barnard, Charles S., assignor to Burns, Silver and Company, Bridgeport, Conn. Device for fastening cabinet-hardware	824,330	June 26	4141	886	122	2793
Barnard, Harry, Hamilton, Canada. Machine for printing roller wrapping-paper	819,709	May 8	1335	280	122	360
Barnard and Leas Manufacturing Company. (See Cornwall, John B., assignor.)						
Barnes, Charles, Zanesville, Ohio. Jar-closure	820,902	May 15	3824	816	122	970
Barnes, Edward A., Fort Wayne, Ind., assignor to General Electric Company. Anti-lubricant-throwing device	822,238	June 5	13	3–4	122	1731
Barnes, Frank G. (See Zimmerman and Burke, assignors.)						
Barnes, John S., and L. A. Rosier, Detroit, Mich. Filter	820,903	May 15	3825	816	122	970
Barnes, John W., Mount Gilead, Ohio. Fence-post	820,171	May 8	2344	510	122	584
Barnes, Joseph P., assignor to W. F. & John Barnes Company, Rockford, Ill. Gearing	823,201	June 12	1972	411	122	2208
Barnes, Joseph P., assignor to W. F. & John Barnes Company, Rockford, Ill. Chain-grate	824,331	June 26	4143	887	122	2793
Barnes, Joshua B., Springfield, Ill. Car-truck	820,337	May 8	2658	579	122	655
Barnes, Joshua B., Springfield, Ill. Car-truck bolster	820,338	May 8	2659	579–80	122	655
Barnes, Joshua B., Springfield, Ill. Car-bolster	822,908	June 12	1352	281	122	2070
Barnes, William M., Philadelphia, Pa. Device for adjusting the tension of traveling conveying-belts	819,710	May 8	1336	289	122	360
Barnett, John B., assignor to W. C. Forbess, W. Capps, and G. H. Clifford, Fort Worth, Tex. Merry-go-round	820,339	May 8	2660	580	122	656
Barnett, William J., New York, N. Y. Bowling-slipper	820,757	May 15	3490	748	122	897
Barnette, Edward J., Forest City, N. C. Pinless clothes-line	820,615	May 15	3218	692	122	837
Barns, George R., Buffalo, N. Y. Apparatus for promoting combustion	819,400	May 1	742	157	122	168
Barnstead, Robert P., Boston, Mass. Water-still	823,488	June 12	2545	536	122	2328
Barnum, Henry H., Leonia, N. J. Garment-clasp	824,332	June 26	4145	887	122	2794
Barr, John, Dinting, England. Apparatus for producing literature for the blind	824,088	June 26	3990	786	122	2696
Barraja-Fraenfelder, Joseph, Quincy, Mass., assignor to Electric Boat Company, Bayonne, N. J. Torpedo-expulsion valve	822,500	June 5	524	107	122	1841
Barrett, James G., Williamstown, Mass. Rail-holding means	820,085	May 8	2177	474	122	548
Barrett, L. J., *et al.* (See Barry and Shaughnessy, assignors.)						
Barrick, Christopher C. (See Harris and Barrick.)						
Barrow, Charles J. (See Grice and Barrow.)						
Barrows, Frederic I. (See Stone, Clinton M., assignor.)						
Barrows, Frederic I., trustee. (See Stone, Clinton M., assignor.)						
Barrus, George H., Brookline, Mass. Steam-boiler	821,327	May 22	4697	1000–1	122	1222
Barry, John, and M. L. Shaughnessy, Westphalia, assignors of one-half to L. J. Barrett and C. M. Elmore, Hoisington, Kans. Attachment for weighing-scales	820,947	May 22	3923	836	122	1053
Barstow, George E. (See Rietzel and Barstow.)						
Bartel, William P., Waltham, Mass., assignor to Judson L. Thomson M'f'g Company. Rivet	821,397	May 22	4861	1031	122	1260
Barteski, Emil A., assignor to E. A. Barteski Amusement Company, St. Louis, Mo. Coin-controlled apparatus	820,543	May 15	3093	665–7	122	800
Barth, Adolf. (See Weiss, Riccba, and Barth.)						
Bartholomew, Joseph P., Bristol, assignor to Stanley Rule & Level Company, New Britain, Conn. Ratchet mechanism for tools	822,714	June 5	979	199	122	1944
Bartholomew, M. D. (See Singler, Frank J., assignor.)						
Bartholomew, Ralph M., Reading Center, N. Y. Rural-mail-delivery apparatus	822,816	June 5	1157	238	122	1982
Bartlebaugh, Benjamin C., assignor of one-half to J. Mahood, C. A. Barlow, and P. Riedel, Benwood, W. Va. Trolley-keeper	824,611	June 26	4728	1006	122	2918
Bartlett, George H., Madison, Wis., assignor to International Harvester Company. Cutting apparatus for mowers	821,978	May 29	5992	1277	122	1565
Bartlett, Harry D., Chicago, Ill. Hand-operated tool	821,328	May 22	4699	1001	122	1222
Bartlett, Henry B., New York, N. Y., assignor to Mergenthaler Linotype Company. Linotype-machine (Reissue)	12,404	June 12	2564	540–1	122	2332
Bartlett, Ralph W., North Brookfield, Mass. Apparatus for reducing dislocated joints	824,612	June 26	4730	1007–8	122	2919
Barton, Louis N. (See Vaughn, Henry C., assignor.)						
Barton, Lyman G., Willsboro, assignor of one-half to A. A. Wheelock, Elizabethtown, N. Y. Obstetrical forceps	820,845	May 15	3694	788	122	942
Bartram, Eli S., Selma, Ala. Cream-remover	823,986	June 19	3508	749	122	2600
Bason, Frederick, Chicago, Ill. Track-sanding device	820,340	May 8	2662	580	122	656

Alphabetical list of patentees for May and June—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Basse, Gerhard D., Milwaukee, Wis. Trellis	824,227	June 26	3958	848	122	2754
Bassett, George M., *et al.* (See Goodwin, Lyman O., assignor.)						
Bassett, Joseph M., *et al.* (See Goodwin, Lyman O., assignor.)						
Bassick, Edgar W., assignor to Burns, Silver and Company, Bridgeport, Conn. Device for fastening cabinet-hardware	824,333	June 26	4147	888	122	2794
Batchelder, Mark D., Peoria, Ill. Advertising-sign	823,459	June 12	2464	521	122	2312
Bate, William S., Elizabeth, N. J. Valve-actuating mechanism for radiators	820,846	May 15	3696	788	122	942
Bateman, Earnest H., Baldur, Canada. Gage	819,499	May 1	925	203	122	207
Bates, Richard, Tamaqua, Pa. Hose-coupling	822,423	June 5	371	77	122	1806
Batt, John B., North Tonawanda, N. Y. Centering device for stop-cock boxes	820,616	May 15	3219	692	122	837
Bauer, Carl E., and F. L. Susemihl, Hammond, Ind., assignors to Simplex Railway Appliance Company, Chicago, Ill. Truck side bearing	820,172	May 8	2346	510–11	122	584
Bauer, Charles G., Brooklyn, N. Y. Rotary engine	820,544	May 15	3097	667	122	810
Bauer, Charles V., Louisville, Ky., assignor to Bauer Machine Company. Thread-controlling device for sewing-machines	822,337	June 5	224	46	122	1775
Bauer Machine Company (See Bauer, Charles V., assignor.)						
Baum, Edward, Knoxville, Tenn. Device for treating the nasal passages	820,948	May 22	3926	836	122	1054
Baum, Gustav, Breslau, Germany. Taxometer or fare-indicator	820,281	May 8	2563	556–7	122	634
Baum, Jacob, Cincinnati, Ohio. Flexible door and shutter and certain connections therefor	824,334	June 26	4148	888	122	2794
Baum, Jacob, Cincinnati, and F. J. Nutting, Dayton, Ohio; said Nutting assignor to said Baum. Machine for forming safe-plates	824,613	June 26	4734	1009	122	2919
Baumgartner, Max, Chicago, Ill. Paper-feeding apparatus	824,401	June 26	4293	915	122	2823
Baumsee, Saturn B. (See Citron, Saul, assignor.)						
Baxter, Berry A., Mansfield, Ohio. Manifolding account-book	823,755	June 19	3059	648	122	2499
Baxter, Berry A., Mansfield, Ohio. Manifolding account-book	823,756	June 19	3060	648	122	2500
Bay State Tool Company. (See Walden, Frederick E., assignor.)						
Bayles, Lewis C. (See Hellman and Bayles.)						
Bayley, Charles H., Boston, Mass., assignor to United Shoe Machinery Company, Paterson, N. J. Skiving-machine	823,578	June 19	2731	578–9	122	2429
Bayliss, Fred N., *et al.* (See Mosteller, Dosier H., assignor.)						
Bayliss, Ritley N., *et al.* (See Mosteller, Dosier H., assignor.)						
Bealm, Peter, Altoona, Pa. Lubricating apparatus for air-pumps	819,401	May 1	744	157–8	122	169
Beale, William F., Los Angeles, Cal. Step-ladder	820,467	May 15	2922	635	122	771
Beall, John W., Chicago, Ill. Securer for gates and doors	823,501	June 19	2579	544	122	2398
Beam, Calvin L., Rockwell City, Iowa. Bracket for shade-rollers	820,693	May 15	3362	721	122	866
Beane, Benjamin F., and R. P. Bennett, New Paris, Ohio. Fire-alarm system	821,581	May 22	5193	1108	122	1330
Bearry, Wash, Escatawpa, Ala. Log-hoist	823,502	June 19	2580	544	122	2398
Bearse, George C., Portland, Me. Fishing-rod	819,500	May 1	928	203	122	208
Beattie, James G., New York, assignor to Robert Gair Company, Brooklyn, N. Y. Machine for applying adhesives to paper, &c	820,096	May 8	2179	474–5	122	549
Beatty, John H., assignor of one-half to R. E. Stone, Amite City, La. Garter	820,390	May 8	2741	597	122	673
Beauchamp, Hilary J., Vossen, Canada. Single-delivery match-box	819,501	May 1	929	203	122	208
Beauford, Henry, Kansas City, Mo. Motor roller-skate	823,385	June 12	2325	487	122	2282
Beaver, Byron R., Ulysses, Nebr. Lifting-jack	824,614	June 26	4739	1009	122	2921
Beazley, John W. (See Keith, William M., assignor.)						
Bechman, Henry F., assignor to Duplex Printing Press Company, Battle Creek, Mich. Inking apparatus for printing-presses	823,098	June 12	1752	360–1	122	2158
Bechman, Henry F., assignor to Duplex Printing Press Company, Battle Creek, Mich. Means for fastening plates to cylinders	823,099	June 12	1754	361	122	2158
Beck, Charles W., assignor, by mesne assignments, to Electrolite Gas Lamp Company, New York, N. Y. Acetylene-gas generator	820,468	May 15	2923	635	122	772
Beck, John F., assignor of one-half to E. F. Hamm, Chicago, Ill. Electric motor and generator	819,971	May 8	1904	421–3	122	484
Becker, Anton, Columbus, Ohio. Freight-car	824,615	June 26	4740	1010	122	2921
Becker, Oscar, Berlin, Germany. Magazine film-holder	822,501	June 5	526	107–8	122	1841
Beckley, Joseph C., Dayton, Ohio. Water-tube boiler	821,329	May 22	4700	1001–2	122	1223
Beckwith, Grove R., and G. R. Lawrence, assignors to H. F. Williams, Minneapolis, Minn. Mop-wringer	819,687	May 1	1283	280	122	288
Becton, Millard F., Jersey City, N. J. Thermometer	821,848	May 29	5746	1223	122	1511
Bedford, Ebenezer S., assignor of one-half to J. R. Hunzicker, Grand Rapids, Mich. Insecticide-trap	820,341	May 8	2664	581	122	656
Bodford, Jefferson W., Jr., Omaha, Nebr. Adjustable back-brush for bath-tubs	819,200	May 1	328	70	122	81
Bedient, George H., assignor, by mesne assignments, of one-half to F. G. Hereford, Baltimore, Md. Metallic fabric	819,711	May 8	1338	290	122	361
Bedortha, Alfred C. and G. Q., Windsor, Conn. Treatment of tobacco	821,919	May 29	5878	1250	122	1541
Bedortha, Alfred C and G. Q., Windsor, Conn. Treatment of tobacco	822,239	June 5	18	4	122	1732
Bedortha, George Q. (See Bedortha, Alfred C. and G. Q.)						
Beebe, Dillon, Newark, N. J. Faucet-bung	824,228	June 26	3959	848	122	2755
Beebe, Dillon, Newark, N. J. Faucet-bung	824,229	June 26	3961	849	122	2755
Beeler, Samuel A., Washington, Pa. Rail-joint	819,502	May 1	930	204	122	208
Begierbeg, Oscar von, Brunswick, Ga. Horse-detacher	819,712	May 8	1339	290	122	361
Begole, Gordon W., assignor to Grand Rapids Saddlery Hardware Manufacturing Company, Limited, Grand Rapids, Mich. Terret for harness	821,604	May 29	5262	1122	122	1403
Béguelin, Numa, Solothurn, Switzerland. Stem-winding watch	819,713	May 8	1341	290	122	362
Béguelin, Numa, Solothurn, Switzerland. Stem-winding mechanism	819,714	May 8	1342	290	122	362
Béguelin, Numa, Solothurn, Switzerland. Stem-winding watch	823,503	June 19	2582	544	122	2398
Behrens, William H., Newark, N. J. Hat sizing, hardening, and starting machine	823,153	June 12	1861	384–5	122	2181
Belliveau, Cyril, Henderson, Minn. Gate	819,332	May 1	609	129	122	140
Belknap, Edwin D. (See Braun, Jacob J., assignor.)						
Belknap, Gardner A., Connecautville, Pa. Railway-tie	819,840	May 8	1612	342–3	122	424
Bell, Arthur, New York, N. Y. Measuring attachment for paper-box machines	824,464	June 26	4443	943	122	2856
Bell, Chester A., Forest Hills, Mass. Door-operating mechanism	820,949	May 22	3927	836–7	122	1055
Bell, James F., Minneapolis, Minn. Printing	819,841	May 8	1614	343	122	425
Bell, Milton W., New Orleans, La. Railway-joint	822,817	June 5	1162	239	122	1983
Bellamy, Albert, assignor of one-half to T. P. Kelly, A. Snelgrove, P. McQuaig, W. A. Matheson, and R. S. World, Fort William, Canada. Rail-chair	820,545	May 15	3101	667	122	811
Bellars, Charles H., Lyndhurst, N. J. Means for constructing concrete walls	821,277	May 22	4590	978	122	1200
Belledin, Victor E., Paris, France. Tire for vehicle-wheels	819,503	May 1	931	204	122	209
Bellefontaine Foundry & Machine Company. (See Turner, George E., assignor.)						
Bellens, Charles. (See Lents, Hugo, assignor.)						
Bellhouse, Edward L. W. (See Fawcett and Bellhouse.)						
Belmondo, Marius, Marseille, France. Self-releasing brake-handle for tram-cars, &c	819,402	May 1	746	158	122	169
Benbury, Walton W., Hertford, N. C. Swing	823,386	June 12	2327	487	122	2282
Bender, Frederick W., Crystallake, N. J. Shipping-crate	823,840	June 19	3225	682	122	2539
Bender, John, *et al.* (See Leichter, Edward, assignor.)						
Bender, Samuel, Shreveport, La. Fireplace	820,173	May 8	2347	511	122	585

Alphabetical list of patentees for May and June—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Benedict, Roy P., Syracuse, N. Y. Music-leaf turner	819,504	May 1	932	204	122	209
Beneke, Richard, Bromberg, Germany. Drum-mill	820,087	May 8	2183	475–6	122	549
Benicke, Georg, assignor of one-half to Erste Offenbacher Special-Fabrik für Schmirgelwaarenfabrikation Mayer & Schmidt, Offenbach-on-the-Main, Germany. Twist-drill-grinding apparatus	821,849	May 29	5747	1223–4	122	1511
Benjamin, Augustus J., deceased; M. A. Benjamin, Fredonia, N. Y., administratrix. Linotype-machine	820,546	May 15	3102	668	122	812
Benjamin, Mary A., administratrix. (See Benjamin, Augustus J.)						
Benjamin, Morris, Atlanta, Ga. Screen	821,777	May 29	5610	1195	122	1482
Benjamin, Walter R., Granite City, Ill. Air-gun	822,645	June 5	835	170	122	1912
Benner, Henry L., Philadelphia, Pa. Window-sash fastener	820,617	May 15	3220	692	122	837
Bennett, Charles W., Elwood, Ind., assignor to American Sheet & Tin Plate Company, New York, N. Y. Resquaring-shears	819,201	May 1	330	70–1	122	81
Bennett, Edward, assignor to G. Westinghouse, Pittsburg, Pa. Pyrometer	822,338	June 5	225	46	122	1775
Bennett, Edwin W., Springfield, Mass. Stopper expanding and extracting device	820,469	May 15	2928	635	122	773
Bennett, Frank W., Waterbury, Conn. Calculator	819,715	May 8	1343	291–2	122	362
Bennett, Roy P. (See Beane and Bennett.)						
Bennett, William H., Rochester, N. Y. Brush	821,078	May 22	4216	896	122	1117
Benning, John P. (See Hartzell, Edwin, assignor.)						
Benson, Arthur E., Agricultural College, Miss., assignor to Draper Company, Hopedale, Mass. Filling-detecting mechanism for looms	823,251	June 12	2089	434	122	2233
Benton, Linn B., New York, N. Y., assignor to American Type Founders Company, Jersey City, N. J. Matrix-trimming and similar machine	819,842	May 8	1614	343–4	122	425
Benz, Frederick, Sr., Haledon, assignor to Frank & Dugan, Paterson, N. J. Take-up mechanism for looms	822,818	June 5	1163	239	122	1983
Berea Novelty Company. (See Simpson, Robert D., assignor.)						
Berendes, Rudolph, assignor to Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany. Alkyloxyacetyl compound of pyrocatechinmonoethyl ether	822,339	June 5	227	.....	122	1775
Berger, Albert W., Canton, Ohio. Hook-and-eye fastening	820,904	May 15	3828	817	122	971
Berger Manufacturing Company. (See Ecker, Charles W., assignor.)						
Berger Manufacturing Company. (See Irwin, William W., assignor.)						
Berger Manufacturing Company. (See McKenzie, Angus, assignor.)						
Berger, Paul E., Chicago, Ill. Vending-machine	822,909	June 12	1353	281	122	2070
Bergeron, Alfred J., Bordeaux, France. Tailless kite which can be taken to pieces	824,616	June 26	4741	1010	122	2921
Bergesen, John, New York, N. Y. Oscillating-piston engine	821,398	May 22	4962	1031	122	1260
Berkey, Joseph S., Wellersville, Ohio. Corn-planting machine	821,451	May 22	4966	1056	122	1284
Berkowitz, Louis I., Boston, Mass. Meat-rack	820,618	May 15	3221	693	122	838
Bermingham, John C., Kansas City, Mo. Bed-lock for ink-table-distribution presses	820,758	May 15	3491	749	122	897
Bernard, John J., *et al.* (See McGhee, John W., assignor.)						
Bernhard, Morris, *et al.* (See Fawcett, William N., assignor.)						
Bernheim, Ernst. (See Hock and Bernheim.)						
Bernheim, Eugene C., Newark, N. J. Eyeglasses	824,617	June 26	4742	1010	122	2921
Bernthsen, Heinrich A., Mannheim, assignor to Badische Anilin & Soda Fabrik, Ludwigshafen-on-the-Rhine, Germany. Rhodamin dye and making same	821,452	May 22	4968	.....	122	1284
Berntsen, Bernt O., Port Richmond, N. Y. Lock	823,987	June 19	3509	750	122	2600
Berold, Frederick H., Jr., Cincinnati, Ohio. Knockdown paper box	822,037	May 29	6108	1301	122	1593
Berry, Arthur C., assignor of one-half to C. L. Berry, Hyannis, Mass. Pump	822,178	May 29	6378	1354–5	122	1654
Berry, Benjamin F., St. Louis, Mo., assignor to United Printing Machinery Company, Boston, Mass. Two-revolution cylinder printing-press	819,716	May 8	1349	292	122	363
Berry, Benjamin F., St. Louis, Mo., assignor to United Printing Machinery Company, Boston, Mass. Rotary printing-press	823,387	June 12	2328	488	122	2283
Berry, Charles L. (See Berry, Arthur C., assignor.)						
Berry, James M., Detroit, Mich. Curtain-roller cap	824,230	June 26	3963	849	122	2755
Berry, Milford F., Fay, N. Y. Hoisting-crane	821,399	May 22	4965	1031	122	1261
Bertolini, Vincent, assignor to F. A. Hardy & Co., Chicago, Ill. Lens-mounting	820,174	May 8	2348	511	122	585
Bess, Albert, Hamilton, Ohio. Automatic guide for endless aprons	824,059	June 19	3640	775	122	2627
Besser, Herman, Alpena, Mich. Culvert construction	820,342	May 8	2665	581	122	657
Besser, Herman, Alpena, Mich. Sewer and culvert mold	820,759	May 15	3493	749	122	898
Besser, Herman, Alpena, Mich. Tile-molding device	822,038	May 29	6109	1302	122	1593
Besser, Herman, Alpena, Mich. Molding device	822,039	May 29	6111	1302	122	1594
Besser, Herman, Alpena, Mich. Mold for hollow articles	822,040	May 29	6113	1303	122	1594
Best, John H., Galva, Ill. Pin-hook	823,317	June 12	2216	462	122	2260
Bethlehem Steel Company. (See Hughes and Stout, assignors.)						
Bethlehem Steel Company. (See Meigs and Gathmann, assignors.)						
Bethlehem Steel Company. (See Meigs and Jakobsson, assignors.)						
Bettendorf Metal Wheel Company. (See Einfeldt, Emil, assignor.)						
Betts, Anson G., Troy, N. Y. Smelting lead-sulfid ores	821,330	May 22	4702	.....	122	1223
Betz, Charles L., assignor to H. C. Fry, Rochester, Pa. Batch drying, heating, and feeding apparatus for glass-furnaces	823,757	June 19	3062	649	122	2500
Betz, Oscar H., and G. E. Holliday, Rock Rapids, Iowa. Hog-catching device	824,402	June 26	4295	915	122	2824
Beugler, Edwin F. (See Holmes and Beugler.)						
Bevan, William. (See Powell and Bevan.)						
Beyer, Friedrich, Siegmar, Germany. Device for cutting and setting bricks, &c.	821,453	May 22	4970	1057	122	1284
Beyland, Sidney A., assignor to Dean Electric Company, Elyria, Ohio. Bell-box	822,715	June 5	981	199	122	1944
Beyland, Sidney A., assignor to Dean Electric Company, Elyria, Ohio. Transmitter-support	823,579	June 19	2734	579	122	2429
Beyland, Sidney A., assignor to Dean Electric Company, Elyria, Ohio. Supporting-arm for telephone-transmitters	823,758	June 19	3064	649	122	2501
Bickel, Henry F., Plainfield, N. J., assignor to New York Air Brake Company. Air-brake apparatus	823,023	June 12	1592	329–30	122	2125
Bickford, Hiram H., Elmira, N. Y. Apparatus for tempering or hardening steel	820,619	May 15	3223	693	122	838
Bidwell, Marshall H., Kansas City, Kans. Deborning-gate	821,454	May 22	4972	1057	122	1285
Biele, August, New Haven, Mo. Insulator	823,912	June 19	3360	716	122	2568
Bierley, Henry A., Portsmouth, Ohio. Washing-machine	821,850	May 29	5749	1224	122	1512
Bierley, Henry A., Portsmouth, Ohio. Churn-dasher	824,324	June 26	4550	966	122	2881
Bigelow, Hayes, *et al.* (See Driver, Charles H., assignor.)						
Biggerstaff, James. (See De Pianque and Biggerstaff.)						
Biles, John W., assignor to himself, committee of C. H. Mantle, Louisville, Ky. Drier. (Reissue)	12,491	June 5	1336	277	122	2017
Billings, Frederick C., Rockford, Ill. Flange for piano-actions	822,716	June 5	983	200	122	1945
Billings, Frederick G., Milwaukee, Wis. Rail attachment for piano-actions	821,455	May 22	4975	1057	122	1285
Bingenheimer, Albert F., Milwaukee, Wis. Fish-hook	823,460	June 12	2466	521	122	2312
Bippart, Griscom & Osborn. (See Thaberath, John H., assignor.)						
Birch, Joseph R., St. Louis, Mo. Electric release for target-traps	819,505	May 1	934	204	122	209
Bird, Jacob W., assignor of one-half to E. G. Keeble, Townsend, Tenn. Motor-vehicle	820,905	May 15	3829	817	122	971
Bird, Reginald W., Boston, Mass., assignor to Flintkote Manufacturing Company, Rutherford, N. J. Roofing material	820,470	May 15	2929	635	122	773

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Birkin, Annie C., Nottingham, England. Wheel for road-vehicles	821,213	May 22	4467	951	122	1172
Birmingham, Charles H., Baltimore, Md. Alloy	824,618	June 26	4744	.....	122	2922
Birmingham Small Arms Company. (See Pougher, Charles F., assignor.)						
Bishop, Joanna B., *et al.* (See Smith, John A., assignor.)						
Bivins, Abraham, Denver, Colo. Presser-foot for sewing-machines	822,340	June 5	228	46	122	1776
Bixler, Ora L., Springfield, Ill. Curtain and shade support	820,547	May 15	3104	668	122	812
Bixler, Washington H., Easton, Pa. Bottle-indicator	819,972	May 8	1911	423	122	486
Bjorklund, Charles, Bowesmont, N. D. Gang-cultivator	821,979	May 29	5993	1278	122	1566
Black, Johnson A., and G. M. Brewer, Sylvia, Kans. Clothes-drier	822,341	June 5	229	47	122	1776
Black, William. (See Mowbray, Black, and Warriner.)						
Blackmore, Henry S., Mount Vernon, N. Y. Making hydrocarbon and combustible gas.	819,506	May 1	935	.....	122	209
Blackwell, Henry F., New York, N. Y. Gas-turbine-operating system	819,202	May 1	331	71–2	122	82
Blaisdell Filtration Company. (See Blaisdell, Hiram W., assignor.) (Reissue.)						
Blaisdell, Hiram W., assignor to Blaisdell Filtration Company, Los Angeles, Cal. Apparatus for cleaning filter-beds. (Reissue)	12,488	May 22	5253	1119–20	122	1345
Blake, Fredrick D., Chesterfield, S. C. Rotary engine	823,252	June 12	2090	435	122	2234
Blake, Henry H. (See Denison and Blake.)						
Blake, James E., Cornell, assignor of one-half to N. M. Southwick, Streator, Ill. Attachment for vehicles	824,089	June 26	3691	786	122	2696
Blake, Samuel H., Jersey City, N. J., and G. R. Davison, Pittsfield, Mass., assignors to General Incandescent Arc Light Company. Arc-lamp	822,240	June 5	19	4	122	1733
Blakely, Samuel, Grampian, Pa. Curtain-pole	819,507	May 1	936	205	122	209
Blaser, Peter J., Fostoria, Ohio. Buggy-boot and fastener	822,041	May 29	6115	1303	122	1595
Blatt, Peter, Allegheny, Pa. Dumping-wagon	823,253	June 12	2092	435–6	122	2234
Bleach & Caustic Process Company. (See Gabriel, George A., assignor.)						
Bleoo, John H., assignor to A. B. Levy, New York, N. Y. Valve for air-brake systems	820,760	May 15	3495	750	122	898
Blessing, John G., assignor to J. E. Cochran, Chicago, Ill. Weighing-scale	821,214	May 22	4469	951	122	1172
Blessing, John G., assignor to J. E. Cochran, Chicago, Ill. Weighing-scale	821,278	May 22	4592	978	122	1200
Blickley, Frank A., Philadelphia, Pa. Sash-balance	822,717	June 5	985	200	122	1945
Bliss, Anthony H., North Attleboro, Mass. Bracelet	823,024	June 12	1596	330	122	2125
Bloedel, Jacob, Kansas City, Kans. Saddle attachment for harness	824,231	June 26	3964	849	122	2756
Blonde, Joseph, Lenox Dale, Mass. Soap-bubble pipe	823,388	June 12	2330	488	122	2283
Blondel, André, Paris, France. Practicing wireless telegraphy	824,682	June 26	4856	1035–6	122	2946
Blondell, Peter, Tonawanda, assignor to Blondell Steel Company, Buffalo, N. Y. Whiffletree	824,060	June 19	3641	775	122	2627
Blondell Steel Company. (See Blondell, Peter, assignor.)						
Blood, Edwin J., Chicago, Ill. Cannon	821,331	May 22	4703	1002	122	1223
Bloom, Joseph L. (See Polatzik, William, assignor.)						
Bloom, Nicklas H., Nashua, Iowa. Riding attachment for agricultural implements	819,973	May 8	1912	423	122	486
Bloom, Nicklas H., Nashua, Iowa. Riding attachment for agricultural implements	821,980	May 29	5996	1278	122	1566
Bloomer, Charles T., Newark, N. Y. Paper vessel	822,910	June 12	1355	281–2	122	2071
Bloomer, Stephen H., Seattle, Wash. Grading and excavating machine	819,843	May 8	1618	344	122	426
Blue, Henry L., St. Elmo, Colo. Automatic car-coupling	823,154	June 12	1963	385	122	2181
Blume, William H. F., St. Louis, Mo. Vehicle-body	820,343	May 8	2666	581	122	657
Blunt, John F., Los Angeles, Cal. Means to sprinkle crude oil on dusty roads	821,152	May 22	4363	928	122	1150
Boas, Moritz, St. Hyacinthe, Canada. Knitting-machine	824,403	June 26	4296	916–17	122	2824
Böck, Friedrich. (See Bamberger, Böck, and Wanz.)						
Bode, Karl A., New York, N. Y. Medical instrument	820,950	May 22	3930	837	122	1055
Bodell, Allen W., Wilmette, Ill. Dish-washing machine	821,696	May 29	5447	1160–1	122	1442
Bodette, William, Toledo, Ohio. Dipper-tooth	820,906	May 15	3832	817	122	971
Bogear, Bert, and J. G. Tompkins, Marengo, Iowa. Horseshoe-calk and fastener	824,090	June 26	3692	787	122	2696
Bögelmann, Hermann, Crefeld, Germany. Bottle-stopper	821,456	May 22	4976	1058	122	1286
Bolleau, James W., assignor to L. C. Sherwood, Detroit, Mich. Ore-roaster	820,088	May 8	2184	476	122	550
Boilers and Engineering Company. (See Del Mar, Harry, assignor.)						
Boisard, Louis, Lyon, France. Cutting beveled teeth	823,025	June 12	1597	330–1	122	2126
Boisvert, Joseph L., Kankakee, Ill. Combined folding bed and table	824,404	June 26	4308	917	122	2826
Boldog, Daniel, assignor of one-half to J. Melega, New York, N. Y. Means for freeing horses from vehicles	820,381	May 8	2742	597	122	673
Boldt, Charles F., Detroit, Mich. Honing-machine	820,761	May 15	3499	750	122	899
Bolen, U. S., *et al.* (See Burkins, Eugene, assignor.)						
Bolens, Harry W., Port Washington, Wis. Chair-iron	820,620	May 15	3224	694	122	838
Bolens, Harry W., Port Washington, Wis. Seat-spider	824,232	June 26	3965	849	122	2756
Bollinger, Robert, Freeland, Md. Extension-bed	819,631	May 1	1169	256	122	262
Boman, Claes W., Brooklyn, assignor to Eagle Pencil Company, New York, N. Y. Penholder	820,907	May 15	3833	818	122	971
Bomeisler, Carl, New York, N. Y. Mirror	820,621	May 15	3225	694	122	839
Bomgardner, Joseph, Cleveland, Ohio. Horseshoe-sharpening device	822,229	May 29	6474	1374	122	1678
Bommer, Emil, New York, N. Y. Ball-bearing for spring-hinges	822,570	June 5	677	138	122	1877
Bommer, Emil, New York, N. Y. Spring-hinge	822,911	June 12	1357	282	122	2071
Bond, Lon A., assignor to Rubbertex Cloth and Paper Company, Logansport, Ind. Waterproof fabric	820,694	May 15	3364	721	122	866
Bond, Robert L., Orange, Va. Reversible hame	819,508	May 1	937	205	122	209
Bonfils, Frederick G., Denver, Colo. Aerial bicycle	823,100	June 12	1756	361–2	122	2158
Bonnar, Robert A., *et al.* (See Clegg, Thomas, assignor.)						
Bonnell, William A., Brooklyn, N. Y. Insulating appliance	821,920	May 29	5881	1250	122	1542
Bonney, Oscar L., Denver, Colo. Leveling device for clocks and similar instruments	824,525	June 26	4551	966–7	122	2881
Booker, Carsner J. (See Brock and Booker.)						
Booker, Daniel L., Girard, Ala. Wrench	823,155	June 12	1864	385	122	2181
Boone, Charles H. (See Hewes, James E., assignor.)						
Boorsem, Robert E., New York, N. Y. Ventilating system for mines, tunnels, or subways.	820,945	May 15	3907	833	122	969
Booth, David N., New York, N. Y. Metallic support for artificial teeth	824,465	June 26	4444	943	122	2856
Borden, Libbie, Spokane, Wash. Refrigerator	824,061	June 19	3642	775	122	2628
Borden's Condensed Milk Co. (See Motblau, August J., assignor.)						
Bories, Leon, San Francisco, Cal. Protective gate for moving pictures	823,913	June 19	3361	716	122	2568
Born, Charles. (See Christen, Orgeich, and Born.)						
Bornhoeft, Edward, New York, N. Y. Piano-pedal	820,622	May 15	3228	694	122	839
Borough Construction Company. (See Meem, James C., assignor.)						
Borsum, Louis, Plainfield, N. J. Reversible back for photographic cameras	823,759	June 19	3067	649–50	122	2501
Bosch, Carl, assignor to Badische Anilin & Soda Fabrik, Ludwigshafen-on-the-Rhine, Germany. Production of cyanogen compounds	821,457	May 22	4977	.....	122	1286
Boschen, William H., Richmond, Va. Trunk	819,974	May 8	1913	423	122	486
Boss, Martin P., San Francisco, Cal. Concentrator	822,912	June 12	1358	282–3	122	2071
Boss, Martin P., San Francisco, Cal. Crushing-mill	822,913	June 12	1362	283	122	2072
Boss, Martin P., San Francisco, Cal. Mortar for stamp-mills	822,914	June 12	1363	283	122	2072
Bottomley, James F., Wellsend-on-Tyne, and A. Paget, North Cray, England. Fusing silica and shaping the mass while plastic	822,424	June 5	372	77–8	122	1806

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Bottum, George W., Chicago, Ill. Toe-weight for horses	819,509	May 1	939	205	122	210
Bourgeois, Joseph R., *et al.* (See Fuller, Eugene, assignor.)						
Bourne, Albert E. (See Bourne, Thomas and A. E.)						
Bourne, George C., Worcester, Mass. Pistol-grip	822,646	June 5	838	171	122	1913
Bourne, Thomas and A. E., Birmingham, England. Caster	824,619	June 26	4744	1010	122	2922
Boutell Manufacturing Company. (See Boutell, William H., assignor.)						
Boutell, William H., assignor to Boutell Manufacturing Company, Rochester, N. Y. Fruit-slicer	820,762	May 15	3500	750–1	122	899
Bouton, Arthur A., assignor to Standard Sewing Machine Company, Cleveland, Ohio. Button-sewing mechanism	820,089	May 8	2186	476–7	122	550
Bovee, David W., Waterloo, Iowa. Furnace	819,632	May 1	1171	256–7	122	263
Bowditch, John F., Boston, Mass. Flat brush	822,571	June 5	679	138	122	1877
Bowen, Adna G., New York, N. Y. Paper-clip	819,717	May 8	1351	292	122	364
Bowen, George W., Ridley Park, Pa. Stockless anchor	822,097	May 29	6214	1325	122	1618
Bower, Clarence E., Denver, Colo. Self-feeder for baling-presses	822,915	June 12	1365	284	122	2073
Bowers, Charles E., Westminster, Md. Heating system	822,819	June 5	1164	239	122	1983
Bowers, Edward L., assignor to New Home Sewing Machine Company, Orange, Mass. Bobbin-case for sewing-machines	819,688	May 1	1285	280	122	288
Bowersock, Wilber E., Burlington, Iowa. Canceling-tool	822,179	May 29	6379	1355	122	1655
Bowes, Alpin M., Denver, Colo. Combined saw, square, and bevel	823,101	June 12	1758	362	122	2159
Bowes, George S. (See Culler, James B., assignor.)						
Bowles, Herbert B., *et al.* (See Smith, James M., assignor.)						
Bowling Ball Company. (See Lahr, Henry B., assignor.)						
Bowling, Clarence B., Detroit, Mich. Garment-fastener	821,851	May 29	5751	1224–5	122	1512
Bowman, Arthur M., Avalon, Pa. Barge	819,633	May 1	1174	257	122	263
Bowman, Benton S., assignor of one-half to S. S. Johnson, Millersburg, Pa. Safety car-truck axle	820,175	May 8	2350	512	122	585
Bowman, Newton K., North Lawrence, Ohio. Mine-gate	820,090	May 8	2190	477	122	551
Bowman, Newton K., North Lawrence, Ohio. Mine-gate	822,241	June 5	21	4–5	122	1733
Bowron, Charles E., Birmingham, Ala. Charging mechanism for cupola-furnaces	822,502	June 5	528	108–9	122	1842
Boyce, Charles L., Detroit, Mich., assignor to American Telephone and Telegraph Company. Telephone system	820,176	May 8	2351	512	122	586
Boyd, Edwin S., Norris City, Ill. Dumping car or wagon	822,820	June 5	1165	240	122	1983
Boyd, Frederic R. C. (See Callan and Boyd.)						
Boyd, James T., Indianapolis, Ind. Combined fracture-bed and invalid's chair	823,841	June 19	3226	682	122	2539
Boyd, Thomas S. (See Steel, Edgar S., assignor.)						
Boyd, William H. (See Tuthill and Boyd.)						
Boye, James H., assignor to Boye Needle Company, Chicago, Ill. Commodity-cabinet	823,202	June 12	1973	411	122	2208
Boye Needle Company. (See Boye, James H., assignor.)						
Boyenton, W. H. (See Butler, Neal A., assignor.)						
Boyer, Allen P., Goshen, Ind. Settee or chair	823,102	June 12	1759	362	122	2159
Boyer, Isaac H., Muncie, Ind. Steam-producer	822,718	June 5	986	200–1	122	1945
Boyer, Samuel, Colfax, Wash. Horse-collar attachment	822,242	June 5	23	5	122	1733
Boyle, George E. (See Swanson and Boyle.)						
Boyle, Robert S., Fort Branch, and W. G. Cleveland, Cynthiana, Ind. Ball-bearing electric trolley-wheel	821,400	May 22	4866	1032	122	1261
Boyle, William D., *et al.* (See Gabrielson, William, assignor.)						
Boynton, George H., Pittsfield, Mass. Means for cleaning the driving-belts of machinery	822,503	June 5	531	109	122	1842
Brabson, Frank. (See Strack, John, assignor.)						
Bracco, Guglielmo, Sr., Turin, Italy. Pelvical belt or band	819,975	May 8	1915	424	122	487
Bradford, McDuffie, Nocona, Tex. Syrup-pitcher	823,663	June 19	2899	613	122	2468
Bradish, John Q., *et al.* (See Dodge, Jasper L., assignor.)						
Bradish, Stanley P., *et al.* (See Dodge, Jasper L., assignor.)						
Bradley, John H. (See Wiggs, Jonathan N., assignor.)						
Bradley, Lynde, assignor to Compression Rheostat Company, Milwaukee, Wis. Electric-current controller	821,607	May 29	5450	1161–2	122	1443
Bradshaw, Charles T., Philadelphia, Pa. Telephone-call meter	822,719	June 5	989	201–2	122	1946
Bradshaw, William. (See Heftye, Birger, assignor.)						
Bradshaw, William M., Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company. Bearing for measuring instruments	822,425	June 5	376	78	122	1807
Brady, Patrick J. (See Cordrey and Brady.)						
Bragstad, Joseph W., Huron, S. D. Clutch mechanism for display devices	824,062	June 19	3644	776	122	2628
Brais, Frederick, and S. Nadeau, Cleveland, Ohio. Scriber	822,916	June 12	1372	285	122	2075
Brammer, Henry, St. Louis, Mo. Mechanical movement	819,333	May 1	611	129	122	140
Brammer, James, St. Louis, Mo. Support for pistons	820,695	May 15	3365	721	122	867
Bramwell, James C. (See Holritz, Edward A., assignor.)						
Bran, Friedrich. (See Haber, Van Oordt, and Bran.)						
Brand, George P., New York, N. Y. Pneumatic valve and seat	823,842	June 19	3229	683	122	2539
Brandenberger, Harry, Baltimore, Md. Show-window and show-case	823,203	June 12	1974	411	122	2208
Bransfield, Michael T., Chicago, Ill. Pacing device for horses	823,504	June 19	2582	544	122	2306
Brasseur, Ernest J., assignor to A. B. Dick Company, Chicago, Ill. Envelop-sealing apparatus	822,572	June 5	680	138–9	122	1877
Brauer, Otto M., Marshalltown, Iowa. Carbid-feeder	821,332	May 22	4707	1002–3	122	1224
Braun, Charles G. (See Meyer and Braun.)						
Braun, Jacob J., New York, N. Y., assignor to E. D. Belknap. Machine for addressing envelops and the like	823,968	June 19	3511	750–1	122	2600
Braun, John M., *et al.* (See Crowson, William L., assignor.)						
Braun, Joseph R., *et al.* (See Crowson, William L., assignor.)						
Braun, Roman, *et al.* (See Crowson, William L., assignor.)						
Brassell, John J., St. Louis, Mo. Folding bed	822,243	June 5	24	5	122	1734
Bredenberg, Alfred, Champlain, N. Y., assignor to Sheridan Iron Works and T. W. & C. B. Sheridan Company. Paper-cutting machine	819,718	May 8	1352	292–3	122	364
Bredenberg, Alfred, Champlain, N. Y., assignor to Sheridan Iron Works and T. W. & C. B. Sheridan Company. Embossing-press	821,079	May 22	4218	897	122	1117
Bredenberg, Alfred, Champlain, N. Y., assignor to Sheridan Iron Works and T. W. & C. B. Sheridan Company. Book-trimmer	821,080	May 22	4220	897–8	122	1118
Breese, Frank A., Forest Mills, Canada. Spinning and like machine	821,012	May 22	4081	869	122	1087
Brehm, Richard, Sheboygan, Wis. Cattle-stanchion	821,153	May 22	4364	928	122	1151
Breuer, William, assignor to Harris & Cole Brothers, Cedar Falls, Iowa. Ironing-board	824,091	June 26	3693	787	122	2906
Brennan, James M. (See Twitchell, Charles R., assignor.)						
Brennan, John J., assignor of one-half to T. J. Hines, Louisville, Ky. Still	822,573	June 5	684	139	122	1878
Brennan, John J., assignor of one-half to T. J. Hines, Louisville, Ky. Apparatus for distillation	822,574	June 5	685	139	122	1879
Brennan, Patrick H., Syracuse, N. Y. Carbureter	821,081	May 22	4224	898	122	1118

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Brennan, William J., *et al.* (See MacMillan, Clyde, assignor.)						
Brenzinger, Julius, assignor to Max Ams Machine Company, Mount Vernon, N. Y. Can-heading machine	819,264	May 1	458	96	122	106
Brenzinger, Julius, assignor to Max Ams Machine Company, New York, N. Y. Machine for lining can-covers	822,342	June 5	230	47–8	122	1776
Brenzinger, Julius, Mount Vernon, N. Y., assignor to Sanitary Can Machinery Company, Ellsworth, Me. Can-heading machine	821,605	May 29	5263	1122	122	1403
Brenzinger, Julius, Mount Vernon, N. Y., assignor to Sanitary Can Machinery Company, Ellsworth, Me. Can-heading machine	823,254	June 12	2095	436	122	2235
Brewer, Charles A., Norotom Heights, Conn. Buckle	824,276	June 26	4043	866	122	2773
Brewer, Edgar P., Spokane, Wash. Automobile	821,154	May 22	4365	928	122	1151
Brewer, Gipp M. (See Black and Brewer.)						
Brewer, William E. (See White and Wilcox, assignors.)						
Brewer, William T., assignor of one-half to J. D. MacTaggart, Syracuse, N. Y. Instrument for computing fractions	819,689	May 1	1288	281	122	289
Brewington, Henry S., Baltimore, Md. Bottle-closure	823,026	June 12	1600	331	122	2136
Brewington, Henry S., Baltimore, Md. Bottle-closure	823,027	June 12	1601	331	122	2136
Brickell, Harry S., Pittsburg, Pa. Safety device for doors and locks	820,696	May 15	3366	721	122	867
Brickley, John. (See Gable and Brickley.)						
Bridge, John W., Methuen, assignor to Arlington Mills, Lawrence, Mass. Stop mechanism for looms	824,335	June 26	4150	888–9	122	2795
Bridges, Charles W., Indianapolis, Ind. Cheese-cutter	819,510	May 1	941	205–6	122	210
Briede, Otto, Benrath, Germany. Manufacture of nuts	819,844	May 8	1619	345	122	426
Briede, Otto, Benrath, near Düsseldorf, Germany. Forging-machine	822,878	June 5	1280	264	122	2006
Briede, Otto, Benrath, near Düsseldorf, Germany. Rolling-mill	822,879	June 5	1284	265	122	2007
Briede, Otto, Benrath, near Düsseldorf, Germany. Rolling-mill for rolling seamless metal tubes	822,880	June 5	1287	265	122	2008
Brierley, Thomas, assignor of one-half to H. Heap, Blackpool, England. Folding seat applicable for outdoor use, theaters, and other purposes	820,344	May 8	2668	581–3	122	657
Briggs, Birdsall. (See Noble, Leonard E., assignor.)						
Briggs, James E., Waterloo, Iowa. Tilting platform	823,914	June 19	3362	717	122	2568
Brigham, F. Terry, *et al.* (See Osborn, David L., assignor.)						
Bright, William R., Norfolk, Va. Veneer-cutting machine	822,647	June 5	840	171	122	1913
Brill, John A. (See Curwen, Samuel M., assignor.)						
Brill, John A. (See Heulings, William H., Jr., assignor.)						
Brill, John A., and W. S. Adams, Philadelphia, Pa. Car-truck	821,279	May 22	4595	979–80	122	1201
Brillhart, Elmer L., Ludington, Mich. Land-marker	821,082	May 22	4226	898	122	1119
Brimmer, John F., *et al.* (See Cline, William, assignor.)						
Brinckle, Addington L., Philadelphia, Pa. Telephone-switch	821,981	May 29	5999	1279	122	1567
Brindle-Steere Company. (See Steere and Wardwell, assignors.)						
Brinkmann, Frederich A., Plumhill, Ill. Grain-measuring device	822,917	June 12	1373	285	122	2075
Brinly-Hardy Company. (See Brinly, John L., assignor.)						
Brinly, John L., assignor to Brinly-Hardy Company, Louisville, Ky. Plow-point	820,035	May 8	2064	451	122	522
Brinton, Joseph H. (See Hoffman, George A., assignor.)						
Brisbois, Odilon, assignor of one-half to Turner Brass Works, Chicago, Ill. Telephone toll-box	821,778	May 29	5611	1195–6	122	1482
Briscoe, Benjamin, Detroit, Mich. Radiator-disk	821,698	May 29	5456	1162	122	1445
Bristol, Warren H., Brooklyn, N. Y. Boy's side garter	822,180	May 29	6381	1355	122	1655
Bristol, William H., New York, N. Y. Pressure indicator and recorder	822,244	June 5	25	6	122	1734
Broadway, William H., Little Rock, Ark. Machine for ornamenting wood	824,277	June 26	4044	866	122	2773
Brock, Jay C., and C. J. Booker, Greenville, Ohio. Thill and pole support	824,620	June 26	4746	1011	122	2922
Brock, Matthias, Boston, Mass., assignor to United Shoe Machinery Company, Paterson, N. J. Lasting-machine	823,664	June 19	2900	614	122	2469
Brock, Peter A., Jersey City, N. J., assignor to Standard Bottle Company. Non-refillable bottle	824,336	June 26	4153	889	122	2795
Broderick, Michael C., and B. F. Siber, Massillon, Ohio. Railway-tie	821,014	May 22	4083	869	122	1088
Brosamle, Geo. H., *et al.* (See Ludwick, Jay, assignor.)						
Broga, William W., Springfield, Mass. Car-brake	819,203	May 1	339	73	122	83
Brogan, Edward N., Boundbrook, N. J. Roofing-lap	821,606	May 29	5265	1122	122	1404
Broman, John G., Chicago, Ill. Boiler-cleaner	822,575	June 5	687	140	122	1879
Bromar Limited. (See Findlay, James, assignor.)						
Brookbank, Edward R., Battle Creek, Mich. Sulky-cultivator	821,083	May 22	4228	899	122	1120
Brooks, Arthur A., and G. A. Watson, Liverpool, England. Magazine plate-holder	819,403	May 1	747	158	122	169
Brooks, Arthur A., and G. A. Watson, Liverpool, England. Light-proof envelop for sensitized plates	819,404	May 1	748	158	122	170
Brooks Corset Co. (See Brooks, William F., assignor.)						
Brooks, Edward J., East Orange, N. J. Coil-wire seal	822,576	June 5	689	140	122	1879
Brooks, Edward J., East Orange, N. J. Seal for boxes	822,577	June 5	690	140	122	1879
Brooks, Edward J., East Orange, N. J. Bung-tin driver	822,918	June 12	1375	286	122	2075
Brooks, Henry B., Montgomery, Ala. Stove	823,389	June 12	2331	488	122	2283
Brooks, John B., Birmingham, and J. Holt, Aston, England. Cycle-saddle	823,915	June 19	3363	717	122	2569
Brooks, John B., Birmingham, and J. Holt, Aston, England. Cycle-saddle	823,916	June 19	3365	718	122	2569
Brooks, Robert E., F. T. Newitt, and A. J. Smith, Buena Vista, Colo. Railway-brake adjuster	823,917	June 19	3366	718	122	2569
Brooks, William F., assignor to Brooks Corset Co., New Haven, Conn. Corset	819,405	May 1	749	159	122	170
Broomall, Edgar W., Rochester, N. Y. Vertical-shaft bearing	821,699	May 29	5457	1163	122	1445
Broomell, Albert P., York, Pa. Kiln	822,245	June 5	27	6	122	1734
Brossoit, James J., Salt Lake City, Utah. Die	820,763	May 15	3504	751	122	901
Brosseau, Harry, New York, N. Y. Pneumatic drill	820,345	May 8	2670	583–4	122	657
Brouyette, Charles D., assignor of one-half to M. A. Hunt & Co., Cincinnati, Ohio. Spring bed-bottom	820,091	May 8	2192	478	122	551
Brower, Bloomfield, New York, N. Y. Ink-well	821,852	May 29	5752	1225	122	1512
Brown, Alexander, Ottawa, Canada. Copy-holder	824,405	June 26	4309	917	122	2836
Brown, Alexander E., assignor to Brown Hoisting Machinery Company, Cleveland, Ohio. Closet for shops and other purposes	819,406	May 1	750	159	122	170
Brown, Alexander T. (See Lipe and Brown.)						
Brown, Alexander T., assignor to Brown-Lipe Gear Company, Syracuse, N. Y. Transmission-gear	819,334	May 1	612	129–30	122	141
Brown, Annie B., Franklin, Mass. Book-support	820,471	May 15	2931	636	122	773
Brown, Arthur P., Bradley, Me. Tackle-block	823,989	June 19	3513	751	122	2601
Brown, Benjamin A. (See Slider, William T., assignor.)						
Brown, Bert A., Bristol, Conn. Glazier's tool	820,092	May 8	2195	478	122	552
Brown, Carl E., Columbus, Ohio. Electrical piano-playing mechanism	822,881	June 5	1288	205	122	2008
Brown, Charles F., trustee. (See Reeve, Sidney A., assignor.)						
Brown, Charles F., trustee. (See Reeve and Noyes, assignors.)						
Brown, Elmer E. (See Sober and Brown.)						
Brown, Ernest S., Washington, D. C. Paper-lifting device for paper-rolls	823,318	June 12	2217	462	122	2280

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Brown, Flora R., Philadelphia, Pa. Bedstead	820,951	May 22	3031	837	122	1055
Brown, Francis C., New York, N. Y. Fountain-pen	819,719	May 8	1357	293	122	365
Brown, Francis J., Meadowvale, Canada. Ear-carriage device for horses	822,919	June 12	1376	286	122	2075
Brown, Hamilton E., Yonkers, N. Y. Emergency-chain for railways	819,265	May 1	460	97	122	107
Brown, Henry. (See Wheeler, Joseph, assignor.)						
Brown, Henry T., Wilkinsburg, Pa. Car-brake	823,255	June 12	2097	436	122	2235
Brown Hoisting Machinery Company. (See Brown, Alexander E., assignor.)						
Brown, Horace, Springfield, Mass. Tennis-racket	823,028	June 12	1602	331	122	2126
Brown, John E., *et al.* (See Kilroy, Patrick M., assignor.)						
Brown, John R., China Grove, N. C. Match-scratcher and advertising attachment	820,384	May 15	2754	599	122	737
Brown, John W., Hammond, Ill. Towel or dish-cloth holder	823,029	June 12	1603	332	122	2127
Brown, Joseph. (See Hickey and Brown.)						
Brown-Lipe Gear Company. (See Brown, Alexander T., assignor.)						
Brown, Peter, Greeley, Colo. Beet-topping machine	820,385	May 15	2756	599	122	738
Brown, Samuel M., Richland, Mich. Package for butter	823,030	June 12	1604	332	122	2127
Brown Straw Binder Company. (See Wanamaker and Miles, assignors.)						
Brown, Theophilus, assignor to Richardson Manufacturing Co., Worcester, Mass. Manure-spreader	821,779	May 29	5614	1196	122	1482
Brown, Thomas R., New York, N. Y., assignor to B. A. Hegeman, Jr., North Plainfield, N. J. Draw-bar-centering device for railway-cars	821,084	May 22	4231	900	122	1120
Brown, Thomas R., New York, N. Y., assignor to B. A. Hegeman, Jr., North Plainfield, N. J. Draw-bar-centering device for railway-cars	821,085	May 22	4232	900	122	1120
Brown, Washington I., Clinton, Me. Wagon	823,042	May 29	6117	1303	122	1595
Brown, William A., Oakland, Cal. Electrical water-heater	820,262	May 8	2567	557	122	634
Brown, William A., Chicago, Ill. Rotary engine	822,426	June 5	377	78-9	122	1807
Brown, William D., Indianapolis, Ind., and C. H. Campbell, Springfield, Ohio. Indicator for letter-cases	820,697	May 15	3368	722	122	867
Brown, William H., Toledo, Ohio. Draft-beam	819,235	May 1	615	130	122	142
Brown, William H., assignor to H. H. Franklin Manufacturing Company, Syracuse, N. Y. Printing-machine	820,472	May 15	2931	636	122	773
Brown, William H., assignor to Energy Elevator Company, Philadelphia, Pa. Hoisting apparatus	820,764	May 15	3505	752	122	901
Browne, George W., New York, N. Y. Soap-shaver	821,982	May 29	6000	1279	122	1567
Browne, Henry, Swampscott, Mass. Shoe	819,845	May 8	1621	345	122	426
Browning, Ell. (See Holloway and Browning.)						
Brownsville Glass Company. (See Harvey, George H., assignor.)						
Brubaker, John S., Sinnamahoning, Pa. Railway-tie	821,853	May 29	5755	1225	122	1513
Brubaker, Oliver E. J., Allegheny, Pa. Fixed ammunition	819,634	May 1	1176	257	122	264
Brühl, Paul. (See Riebe and Brühl.)						
Brummerhop, Diedrich, Boston, Mass. Non-refillable bottle	822,181	May 29	6383	1355	122	1655
Brun, Joseph, Chaux-de-Fonds, Switzerland. Watch-regulator	824,466	June 26	4446	943	122	2857
Brunck, Rudolph, Dortmund, Germany. Extracting ammonia from gases	824,092	June 26	3694	787	122	2696
Brunette, Joseph, Rochester, N. Y. Non-refillable bottle	824,278	June 26	4047	866	122	2774
Brunhoff Manufacturing Company. (See Walker, Edwin, assignor.) (Reissue.)						
Brunner, Leonard, *et al.* (See Green, John J., assignor.)						
Brunotte, Friedrich, Hamburg, Germany. Screen for sewage or the like	819,720	May 8	1358	293	122	365
Brunswick Refrigerating Company. (See Whitaker, Richard, assignor.)						
Bryan, Dempsey T., and O. Sadler, Rocky Mount, N. C. Clothes-line pin	820,177	May 8	2356	512	122	587
Bryant, Asa T. (See Newell and Bryant.)						
Bryce, Robert M., Chicago, Ill. Machine for molding, dividing, and shaping dough	820,386	May 15	2758	600	122	738
Bryson, David K., assignor to Bryson & Howe, Pittsburg, Pa. Cycle-pump	819,690	May 1	1294	281	122	291
Bryson & Howe. (See Bryson, David K., assignor.)						
Brzykcy, Antoni, Minneapolis, Minn. Window-bracket	821,983	May 29	6001	1279-80	122	1568
Buch, Royer S., Elizabethtown, Pa. Land-roller	819,721	May 8	1360	294	122	366
Buchanan, Benjamin G., Ashland, Wis. Securing device for shoe-laces	820,698	May 15	3372	722	122	868
Buchanan, Charles G., Brooklyn, N. Y. Crushing-machine	819,976	May 8	1917	424	122	487
Buchanan, Gilbert D., Saratoga, Wyo. Brake mechanism for vehicles	819,511	May 1	943	206	122	211
Buchanan, Judson, assignor to Chattanooga Plow Company, Chattanooga, Tenn. Canemill	819,037	May 1	6	2	122	4
Buchanan, Judson, assignor to Reversible Disc Plow & Implement Company, Chattanooga, Tenn. Plow	819,038	May 1	8	3	122	5
Buchanan, Rea, Peoria, Ill. Ice-cream dipper	820,473	May 15	2939	636	122	776
Buchanan, William C. K., Kansas City, Mo. Mandrel for dental engines	820,474	May 15	2941	637	122	776
Buchner, Albert, and E. P. McClure, Chicago, Ill. Journal-bearing	820,765	May 15	3508	752	122	901
Buckingham, George H., Los Angeles, Cal. Chicken-roost	819,204	May 1	345	74	122	84
Buckley, Frank W., *et al.* (See Willson, James F., assignor.)						
Buckley, Jeremiah F., D. C. Kline, and H. Singleton, assignors to Pritchard-Strong Company, Rochester, N. Y. Chuck	823,031	June 12	1605	332-3	122	2127
Buckley, Miles J., Waterbury, Conn. Couch	821,333	May 22	4709	1003	122	1225
Bucklin, Orson, Marietta, Minn. Combined end-gate and lifting-jack	821,458	May 22	4978	1058	122	1286
Bucy, Alexander W., Detroit, Mich. Skirt-supporter	819,119	May 1	175	36	122	45
Bucyrus Company. (See Ferris, Walter, assignor.)						
Bucyrus Company. (See Knox and Magie, assignors.)						
Buda Foundry & Manufacturing Company. (See Weston, William S., assignor.)						
Budd, Edward G., assignor to Hale-Kilburn Metal Company, Philadelphia, Pa. Carseat	823,256	June 12	2099	437	122	2235
Bueb, Julius, Dessau, Germany. Gas-producing apparatus	822,246	June 5	28	6-7	122	1735
Buerkle, August, Allegheny, Pa. Valve	820,178	May 8	2357	512	122	587
Buermann, August. (See Turton, Harry, assignor.)						
Buermann, August, Newark, N. J. Curber or controller for bridle-bits	822,504	June 5	533	109	122	1842
Buffalo Forge Company. (See Miller, Frank X., assignor.)						
Buffalo Leather Co. (See Smith, William R., assignor.)						
Buffalo Pitts Company. (See Vraalstad, Edward J., assignor.)						
Buffard, Blaise, Paris, France. Safety-inkstand	823,257	June 12	2101	437	122	2235
Buffington, Charles R., Fort Benton, Mont. Current-motor	823,665	June 19	2908	615	122	2470
Buhl, William, Minneapolis, Minn. Wrench	823,390	June 12	2332	489	122	2284
Bubles, William C., San Francisco, Cal., assignor, by mesne assignments, to Hermetic Closure Co., Chicago, Ill. Apparatus for applying liquid to covers of receptacles	823,391	June 12	2334	489	122	2284
Buhoup, Harry C., Chicago, Ill. Journal-box	824,406	June 26	4310	918	122	2826
Buhrer, Casper, Sandusky, Ohio. Metallic railway-tie and rail-fastening	819,846	May 8	1623	346	122	426
Buhrer, Casper, Sandusky, Ohio. Metallic railway-tie	819,977	May 8	1920	425	122	488
Bullard Automatic Wrench Company. (See Reynolds, Henry L., assignor.)						
Bullard, James H., Springfield, Mass. Insulator-pin	823,461	June 12	2467	521	122	2312
Bullard, Paul R., Waltham, Mass. Educational appliance	819,847	May 8	1625	346	122	427
Bullock, Lewis C., Milesburg, Pa. Ironing-table	823,580	June 19	2736	579-80	122	2430
Bulman, Elvah O., Grand Rapids, Mich. Pen and pencil holder	820,908	May 15	3834	818	122	972
Bulman, Elvah O., Grand Rapids, Mich. Twine-holder	821,015	May 22	4084	870	122	1088

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Bundy, Cyrus L., Scranton, Pa. Poultry-car	819,512	May 1	946	207	122	212
Bunker, Charles M., *et al.* (See Cove, George H., assignor.)						
Bunker, Marcellus, Woburn, Mass. Vehicle-wheel	819,039	May 1	9	3	122	5
Bunnell, Charles D., New York, N. Y. Amusement apparatus	820,346	May 8	2672	584	122	658
Bunsen, William M., Galesville, Wis. Nest	820,952	May 22	3932	837	122	1056
Buquet, Alcide, and A. Crochet, Minerva, La. Car-unloading apparatus	824,621	June 26	4747	1011	122	2922
Burch, Herbert A., Kalamazoo, Mich. Carburetor	820,036	May 8	2065	451	122	523
Burchardi, Bernhard T., and V. J. Wahlstrom, Brooklyn, N. Y. Clutch and counter-shaft mechanism	821,984	May 29	6002	1280	122	1568
Burckheimer, Marcus, *et al.* (See Fawcett, William N., assignor.)						
Burdette, Mims S., Greenville, S. C. Machine for making bands for spinning and twisting machines	819,848	May 8	1627	346-7	122	428
Burdick, Charles L., London, England. Coloring-machine	822,578	June 5	692	140-1	122	1880
Burg, Louis, Dallas City, Ill. Coupling for doubletrees and swingletrees	824,063	June 19	3646	776	122	2628
Burger, Frederick W., assignor to Fort Wayne Foundry and Machine Company, Fort Wayne, Ind. Furnace	819,849	May 8	1628	347	122	428
Burger, Reinhold, and A. Aschenbrenner, Berlin, Germany. Field or hunting flask	820,347	May 8	2673	584	122	658
Burgess, Andrew, Owego, N. Y. Automatic magazine-gun	821,921	May 29	5882	1250	122	1542
Burgess, Andrew, Owego, N. Y. Automatic gun	821,922	May 29	5885	1251	122	1542
Burgess, Andrew, Owego, N. Y. Automatic gun	822,851	June 5	1227	253	122	1995
Burke, Charles G., Brooklyn, N. Y., assignor of one-half to J. Q. A. Whittemore, Boston, Mass. Electric system of transmission	823,505	June 19	2583	545	122	2399
Burke, Charles G. and E. J., Brooklyn, N.Y., assignors of twenty-one thirtieths to J. Q. A. Whittemore, Boston, Mass. Electric system of transmission	822,579	June 5	697	141-2	122	1882
Burke, Edward J. (See Burke, Charles G. and E. J.)						
Burke, Henry B., Windber, Pa. Metallic tie and rail-fastener	822,720	June 5	991	202	122	1946
Burke, Henry B., Windber, Pa. Car-brake	824,467	June 26	4448	944	122	2857
Burke, Joseph. Victoria, Tex. Non-refillable bottle	820,548	May 15	3105	668	122	812
Burke, Morgan E. (See Zimmerman and Burke.)						
Burke, Thomas N., Chicago, Ill. Fire-extinguisher	821,780	May 29	5616	1197	122	1483
Burkins, Eugene, assignor of six-sevenths to J. W. McClellan, T. F. Erwin, B. Lavine, U. S. Bolen, G. M. Wright, and W. J. Rodgers, St. Louis, Mo. Milk-dipper	821,700	May 29	5458	1163	122	1446
Burnfield, David. Denver, Colo. Locomotive head and signal light	823,392	June 12	2336	490	122	2284
Burnop, Clara D. (See Simonds, Frank A., assignor.)						
Burns, John F., Allegheny, Pa. Curtain-pole	823,259	June 12	2103	438	122	2236
Burns, Silver and Company. (See Barnard, Charles S., assignor.)						
Burns, Silver and Company. (See Bassick, Edgar W., assignor.)						
Burroughs Adding Machine Company. (See Macauley, Alvan, assignor.)						
Burrough, Frank S., Zillah, Wash. Lock for water-gates	821,854	May 29	5757	1225	122	1513
Burrows, Frank M., Pittsburg, Pa. Eraser	823,918	June 19	3368	718	122	2570
Burrows, William R., Newark, N. J., assignor to General Electric Company. Vapor electric apparatus	820,348	May 8	2675	584	122	659
Burson, William W., Chicago, Ill. Pattern knitting-machine	819,407	May 1	752	160-1	122	170
Burton, Charles S., Oak Park, Ill. Expression-controlling device for musical instruments	822,098	May 29	6216	1325-6	122	1618
Burton, Charles S., Oak Park, Ill., assignor to Miracle Pressed Stone Company, Minneapolis, Minn. Building-block	820,387	May 15	2764	600	122	739
Burton, F. R. (See Pfeifer, John, assignor.)						
Burton, Joseph A., and E. H. Roy, assignors to Burton Mfg. Co., Nashville, Tenn. Parcel-carrying strap	823,258	June 12	2102	438	122	2236
Burton Mfg. Co. (See Burton and Roy, assignors.)						
Burton, Walter C., Fitchburg, Mass. Railway-signal	821,923	May 29	5887	1251	122	1543
Burwell, Amos E., Butler, Pa. Fruit-picker	821,855	May 29	5758	1236	122	1514
Busch, Fedor E., Chicago, Ill. Sash and door lock	822,505	June 5	534	110	122	1843
Buschow, Charles G., Westfield. N. Y. Condenser for tobacco-pipes	819,513	May 1	948	208	122	212
Busfield, James, Haverhill, Mass. Buffing-roll	819,722	May 8	1361	294	122	366
Bush, Harry E., assignor, by mesne assignments, of one-half to Western Patent Right and Investment Company, Seattle, Wash. Fence-wire twister	820,909	May 15	3835	818	122	972
Bush, Samuel P., Columb., Ohio. Automatic car-coupling	823,990	June 19	3514	751	122	2601
Bush, Samuel P., Columbus, Ohio. Car-wheel	824,407	June 26	4912	918	122	2826
Bushby, George G. (See Caswell, Richard H., assignor.)						
Bushong, Harry F., Kalamazoo, Mich. Leaf or sheet for temporary or loose-leaf binders	822,427	June 5	380	79	122	1808
Buskist, Charles J., New Albion, and J. W. Mutter, Wesley, N. Y. Making cheese	821,334	May 22	4711	.....	122	1225
Bussey, H. L., *et al.* (See Fears, John, assignor.)						
Butenschön, Heinrich, Hohenwestedt, Germany. Means for forming floats from logs of wood	820,699	May 15	3373	722	122	868
Butler, Herman H., Roscoe, N. Y. Thread-cutter for spools	822,821	June 5	1167	240	122	1984
Butler, Neal A., assignor of one-half to W. H. Boyenton, Hampton, Va. Signaling device	821,459	May 22	4980	1058	122	1287
Butler, William, Birkdale, England. Stand for photographic cameras, telescopes, and other scientific instruments	821,335	May 22	4712	1003-4	122	1225
Butler, William A., San Francisco, Cal. Continuous kiln	822,580	June 5	701	142	122	1882
Butt, Ernest O., New York, N. Y. Water-cooler	819,850	May 8	1629	347	122	428
Butterfield, George F., assignor to G. I. Butterfield, Boston, Mass. Shoe-sole vulcanizing and applying apparatus	821,336	May 22	4715	1004	122	1226
Butterfield, Grace I. (See Butterfield, George F., assignor.)						
Butterworth, Samuel D., Jr., assignor of one-half to G. H. Cummings, Detroit, Mich. Child's carriage	824,622	June 26	4748	1011-12	122	2923
Button Machinery Company. (See Hornby, John, assignor.)						
Buyten, Hermann, Düsseldorf, Germany. Compound wooden plate	823,843	June 19	3231	683	122	2540
Buzzell, Charles A., Newburyport, Mass. Gas-generating furnace	824,337	June 26	4156	889	122	2796
Byers, John F., deceased, Ravenna, Ohio; K. Byers, administratrix. Mechanism for connecting vehicle axles and bodies	820,179	May 8	2359	513	122	587
Byers, Kate, administratrix. (See Byers, John F.)						
Byrne, Lemuel R. (See Armstrong, Preston, assignor.)						
Byrnes, Clarence P., Sewickley, Pa. Bottle-cap	822,099	May 29	6219	1326	122	1619
C. B. Cottrell & Sons Company. (See Seymour, Ralph C., assignor.)						
C. H. Wheeler Manufacturing Company. (See Wheeler and Pratt, assignors.)						
Cables, Frank A. (See Lawton, Leonard, assignor.)						
Cade, Enos B., Seattle, Wash. Tide-power signaling apparatus	824,408	June 26	4313	918-19	122	2827
Cadogan, Patrick A., Boston, Mass. Insecticide	824,409	June 26	4315	.....	122	2827
Cadorette, Albert, and L. Laflamme, Lowell, Mass. Mitering and beveling machine	823,508	June 19	2587	545	122	2399
Cadwallader, Bassett, La Grange, Ill. Playing-cards	821,781	May 29	5618	1197	122	1483
Cadwallader, William Y., *et al.* (See Duff, Hugh Y. B., assignor.)						
Cagle, Carter M., assignor of one-half to L. C. Pruitt, Beckville, Tex. Rotary engine	822,343	June 5	234	49	122	1777
Cahill, Jermiah E., and C. F. Jenkins, Washington, D. C.; said Jenkins assignor to said Cahill. Motion-picture machine	819,514	May 1	950	208	122	212
Cahill, John, Norfolk, Va. Shutter	824,410	June 26	4315	919	122	2827

Alphabetical list of patentees for May and June—Continued.

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Cain, George E., *et al.* (See Nicewarner, Theodore G., assignor.)						
Cain, Napoleon B. (See McCathie and Cain.)						
Cain, Wesley R. (See McCathie and Cain.)						
Caldwell, Charles W. (See Caldwell, Edward P., assignor.)						
Caldwell, Edward P., Chicago, Ill., assignor to C. W. Caldwell, Waterloo, Iowa. Means for cooling engine and other cylinders	820,549	May 15	3106	669	122	812
Caldwell Manufacturing Company. (See Ralston, William A., assignor.)						
Caldwell, Yancey Q., Paris, Tenn. Padlock	823,919	June 19	3369	719	122	2570
Caley, Charles J., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn. Lock and latch	819,120	May 1	176	36	122	45
Calhoun, Laura A., Oceanpark, Cal. Bottle	820,093	May 8	2196	478	122	552
Calkins, Albert C., assignor to Calkins Company, Los Angeles, Cal. Furnace	819,700	May 1	1309	285	122	294
Calkins Company. (See Calkins, Albert C., assignor.)						
Callaghan, James W., Newark, N. J. Hydrant	822,920	June 12	1377	286–7	122	2076
Callan, John G., Lynn, Mass., assignor to General Electric Company. Packing for elastic-fluid turbines	819,635	May 1	1177	257	122	264
Callan, John G., Lynn, Mass., assignor to General Electric Company. Regulating mechanism for elastic-fluid turbines	820,911	May 15	3844	820	122	974
Callan, John G., Lynn, Mass., assignor to General Electric Company. Governing mechanism	820,912	May 15	3847	820–1	122	974
Callan, John G., Lynn, Mass., assignor to General Electric Company. Governing mechanism for fluid-actuated motors	820,913	May 15	3851	821	122	975
Callan, John G., Lynn, Mass., assignor to General Electric Company. Stop mechanism for elastic-fluid turbines	822,248	June 5	37	8	122	1737
Callan, John G., Lynn, Mass., assignor to General Electric Company. Wire-gage	824,064	June 19	3648	776–7	122	2629
Callan, John G., and B. H. Hamilton, Lynn, Mass., assignors to General Electric Company. Elastic-fluid turbine	822,247	June 5	31	7–8	122	1735
Callan, John G., and F. R. C. Boyd, Lynn, Mass., assignors to General Electric Company. Speed-governor for elastic-fluid turbines	820,910	May 15	3836	818–19	122	972
Callan, Michael H. (See Nidds, Edward, assignor.)						
Callanan, James T., assignor to Parkersburg Machine Company, Parkersburg, W. Va. Soft-metal wall-packer	823,700	June 19	3068	650	122	2501
Calley, Elias J., San Francisco, Cal. Syrup-dispensing jar	824,408	June 26	4449	944	122	2857
Callow, John M., Salt Lake City, Utah. Settling-tank	824,279	June 26	4048	867	122	2774
Campbell, Aaron F., Redfield, Ark. Bridge	822,581	June 5	703	142–3	122	1883
Campbell, Alonzo C., Asheville, N. C. Jig or ore-concentrator	824,623	June 26	4750	1012	122	2923
Campbell, Argyle, assignor to Enterprise Railway Equipment Company, Chicago, Ill. Metallic car-roof	824,169	June 26	3838	819	122	2729
Campbell, Argyle, assignor to Enterprise Railway Equipment Company, Chicago, Ill. Metallic car-roof	824,170	June 26	3839	820	122	2729
Campbell, Charles H. (See Brown and Campbell.)						
Campbell, Daniel, Fairville, Canada. Pan-rack	820,094	May 8	2197	478	122	553
Campbell, Frank G. (See Campbell, Loudoun and F. G.)						
Campbell, Isaac U., Erin, Tenn. Wire-tightener	823,666	June 19	2910	615	122	2470
Campbell, J. C., *et al.* (See Leichter, Edward, assignor.)						
Campbell, James H., Lakeport, N. H. Truss	822,822	June 5	1167	240	122	1984
Campbell, John J., and H. C. Johnson, assignors to T. W. Phillips Manufacturing Company, Butler, Pa. Clutch	823,260	June 12	2104	438	122	2237
Campbell, Loudoun and F. G., Washington, D. C. Fire-alarm box	820,700	May 15	3374	723	122	868
Campbell, Nicholas J., Newark, Ohio. Railway-tie	820,914	May 15	3856	821	122	976
Campbell Printing Press & Manufacturing Company. (See Wood, Henry A. W., assignor.)						
Canda, Charles A., Roselle, N. J. Clamping device for tappets, wheels, or shaft-couplings	820,037	May 8	2072	452	122	525
Canfield, Albert B. (See Hopkins and Canfield.)						
Canfield, Frank, assignor of one-half to W. H. Fenn, Denver, Colo. Vegetable-slicer	820,915	May 15	3857	822	122	977
Canfield, Frank, assignor of one-half to W. H. Fenn, Denver, Colo. Vegetable-slicer	821,016	May 22	4085	870	122	1089
Canham, John E., Sprague, Canada. Frogless railway-switch	821,086	May 22	4235	900	122	1121
Canman, Robert, New York, N. Y. Belt-coupling	821,215	May 22	4471	952	122	1172
Cantlebery, John C., and W. J. Edwards, Hillsville, Pa. Tooth for steam-shovels	819,723	May 8	1365	295	122	366
Cantwell, John B., Watertown, N. Y. Excavating-cutter						
Cappe, William, *et al.* (See Barnett, John B., assignor.)						
Capron, Marshall F., Detroit, Mich. Machine for assembling metallic links	821,782	May 29	5620	1197–8	122	1483
Card Printer Company. (See Moore, George A., assignor.)						
Cardell, Charles O. L. (See Dexter and Cardell.)						
Cardin, William A. (See Comer, Thomas D., assignor.)						
Cardwell, James R., Chicago, Ill. Draft-gear	819,266	May 1	462	97	122	107
Cardy, William A., Chelsea, Mass., assignor to Stokes and Smith Company, Philadelphia, Pa. Box-covering machine	823,032	June 12	1606	333	122	2127
Carey, Augustus C., Boston, Mass. Gas heating apparatus	824,338	June 26	4158	880	122	2796
Carl, Reinhold A., Elgin, Tex. Acetylene-gas generator	822,249	June 5	40	9	122	1738
Carleton, Oscar M., Somerville, assignor of one-half to A. Robart, Cambridge, Mass. Harness-support	823,761	June 19	3069	650	122	2502
Carlson, Frans O., New York, N. Y. Gas-burner	820,623	May 15	3228	694	122	839
Carlton, Thomas R., and J. D. Meadow, Sherman, Tex. Combination-tool	821,155	May 22	4366	929	122	1151
Carmical, Oliver L., Hapeville, Ga. Cotton-chopping machine	822,823	June 5	1169	241	122	1984
Carmichael, John P., Milwaukee, Wis. Attachment for natural teeth and forming the same	822,582	June 5	705	143	122	1884
Carnahan, Cyrus M., Sandy Lake, assignor to Fidelity Title and Trust Company, Pittsburg, Pa. Lock for car-doors	823,762	June 19	3071	651	122	2502
Carnegie Steel Company. (See Whigham, William, assignor.)						
Carnes, Edward W., Chicago, Ill., assignor to American Can Company, New York, N. Y. Sectional or compartment can	819,336	May 1	616	130	122	142
	821,156	May 22	4367	929	122	1151
Carne, Edmund B., New York, N. Y. Scenic frame						
Carpenter, A. H., *et al.* (See Matteson, Walter C., assignor.)						
Carpenter, A. Q., *et al.* (See Dust, Hugh Y. B., assignor.)						
Carpenter, Amos H., Stockton, Cal. Rotary engine	819,724	May 8	1366	296	122	367
Carpenter, Henry L., Minneapolis, Minn. Attachment for telephones	821,924	May 29	5888	1251–2	122	1543
Carr, Frank C., Simsbury, Conn. Hydraulic air-compressor	821,607	May 29	5296	1123	122	1404
Carr, John C., Burlington, Ind. Folding fire-stop	819,515	May 1	961	208	122	213
Carr, Robert T., Detroit, Mich. Game-board	823,807	June 19	2690	546	122	2360
Carrier, Courtland S., Omaha, Nebr. Chain-protector	819,705	May 1	1318	285	122	296
Carroll, Arthur V., Batavia, Ohio. Attachment for increasing the swing of lathes	821,608	May 29	5296	1123	122	1404
Carroll, Elbert L., Creston, Iowa. Combined snap-hook and buckle	821,884	May 29	5789	1226	122	1514
Carroll, Theron S., Wheeled Creek, Colo. Safety-pin	820,282	May 8	2744	597	122	673
Carson, Elmer. (See Wright and Carson.)						
Carson, Eric, Harlem, Ill. Violin	819,205	May 1	346	74	122	84
Carson, Robert N., San Francisco, Cal. Glove	823,204	June 12	1976	412	122	2208

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Carter, Clarence W., Minneapolis, assignor of one-third to E. Zimmerman, St. Paul, Minn. Cake-icing machine	820,388	May 15	2766	600–1	122	730
Carter, James F., *et al.* (See Fears, John, assignor.)						
Carter, John, Malden, assignor to Globe Optical Company, Boston, Mass. Holding and gripping pliers	819,121	May 1	177	36	122	46
Carter, John R., Augusta, Ky., assignor to E. H. Huenefeld, Cincinnati, Ohio. Hinge	822,648	June 5	841	171	122	1914
Carter, John R., Augusta, Ky., assignor to E. H. Huenefeld, Cincinnati, Ohio. Hinge	822,649	June 5	843	172	122	1914
Carter, McIon J. D., Hackney, London, England, assignor to A. B. Dick Company, Chicago, Ill. Duplicating apparatus	823,920	June 19	3372	719	122	2571
Carter, Taylor, Frankfort, Ky. Insulator	821,401	May 22	4868	1032	122	1262
Cartier, Cyrille, assignor of one-half to W. H. Williams, Woonsocket, R. I. Device for recutting valve-seats	820,550	May 15	3108	660	122	813
Cary Inventions Co. (See Cary, Lewis C., assignor.)						
Cary, Lewis C., Chicago, Ill., assignor to Cary Inventions Co. Automatic train-pipe coupling	819,408	May 1	756	161–2	122	171
Cary, Lewis C., Chicago, Ill., assignor to Cary Inventions Co. Car-coupling	822,344	June 5	236	49	122	1777
Case, Frank E., Schenectady, N. Y., assignor to General Electric Company. Controlling alternating-current motors	822,345	June 5	238	50	122	1778
Case, Thomas M., Sutherland, Mo. Fly-trap	820,389	May 15	2770	601	122	740
Casein Company of America. (See Dunham, Henry V., assignor.)						
Casey, Oden N. (See Schooley and Casey.)						
Caskey, Artley E., Parkersburg, W. Va. Railway cross-tie	819,725	May 8	1369	295	122	367
Caskey, David M., Jonesboro, Ark. Engineer's equalizing and discharge brake-valve	819,726	May 8	1370	295–6	122	368
Casper, Edward. (See Comba, Benvenuto, assignor.)						
Cassard, Hamilton. (See Miller, Andrew E., assignor.)						
Cassel, Edward H., Allentown, Pa. Folding table-seat	822,182	May 29	6385	1356	122	1656
Casselman, Laurence. (See Sykes, William W., assignor.)						
Caswell, Richard H., Vancouver, Canada, assignor to G. G. Bushby. Centrifugal swing	822,852	June 5	1231	254	122	1996
Castera, Charles, Sr. (See Castera, Charles J., Jr., assignor.)						
Castera, Charles J., Jr., assignor of one-half to C. Castera, Sr., Los Angeles, Cal. Checking or unchecking device	821,216	May 22	4472	952	122	1173
Castets, Louis, Dax, France. Apparatus for the extraction of tannin	823,508	June 19	2591	546	122	2400
Cates, Thomas L., *et al.* (See Kelly, Charles T., assignor.)						
Cather, Frank B., Grafton, W. Va. Hood for gas-jets	823,261	June 12	2106	437	122	2237
Cathon, Milo W. (See Chubb and Cathon.)						
Caton, Herschel, Kansas City, Mo. Perforating attachment for printing-presses	821,217	May 22	4473	952	122	1173
Caudle, Fifer, Shattuck, Okla. Ter. Drill	819,978	May 8	1922	425	122	488
Cavagnaro, John J., New York, N. Y. Machine for making watered silk	823,509	June 19	2595	547	122	2400
Cay, Chas. A., *et al.* (See Wever, La Fayette T., assignor.)						
Cay, J. D., *et al.* (See Wever, La Fayette T., assignor.)						
Chadderton, Frank W., Oldham, England. Machine for combing cotton, wool, &c	823,844	June 19	3231	683	122	2540
Challenge Machinery Company. (See Kyle, John, assignor.)						
Chamberlain, Arthur E. (See Epperson, Perrin, assignor.)						
Chamberlain, Edward G. (See Chamberlain, Philip W. and E. G.)						
Chamberlain, George E., St. Louis, Mo. Shaft-hanger	822,183	May 29	6386	1356	122	1656
Chamberlain, George E., St. Louis, Mo. Drier	822,185	May 29	6390	1357	122	1657
Chamberlain, George E., St. Louis, Mo., and J. J. Merrill, Chicago, Ill. Pump-regulating system	822,184	May 29	6388	1356–7	122	1656
Chamberlain, John H. (See Rieth and Chamberlain.)						
Chamberlain, Philip W. and E. G., Greytown, Nicaragua. Tool for cutting and fitting boiler-tubes	819,516	May 1	952	208–9	122	213
Chamberlin, Theron T., assignor of two-thirds to W. M. Lady and J. W. Roney, Chicago, Ill. Lunch-cabinet table	819,851	May 8	1631	347–8	122	429
Chamberlin, Clinton A., Detroit, Mich. Building-wall	819,979	May 8	1923	425–6	122	489
Chambers, Charles E. (See Chambers, John H., R. M., and C. E.)						
Chambers, J. D., *et al.* (See King, Phineas F., assignor.)						
Chambers, James A., trustee. (See Lubbers, John H., assignor.)						
Chambers, John H., London, England, R. M. and C. E. Chambers, Belfast, Ireland. Change-speed and reversing gear for automobiles	824,624	June 26	4753	1012–13	122	2924
Chambers, Robert M. (See Chambers, John H., R. M., and C. E.)						
Champeau, Louis. (See Schmidt and Champeau.)						
Champlin, Alexander G., assignor of one-half to F. A. Smith, Grand Rapids, Mich. Wire-wrapping machine	824,171	June 26	3841	820	122	2729
Chandler, George E., Taunton, Mass. Acetylene-gas generator	823,103	June 12	1760	362–3	122	2159
Chandler, George E., assignor to Mason Machine Works, Taunton, Mass. Electric warp stop-motion for looms	823,489	June 12	2546	536	122	2329
Chandler, Henry H. (See Gary, Albert D., assignor.)						
Chaney, John K., *et al.* (See Driver, Charles H., assignor.)						
Chapman Electric Neutralizer Company. (See Chapman, William H., assignor.)						
Chapman, Hemen C., Leamington, Canada. Corn-husker	819,122	May 1	179	37	122	46
Chapman, James W. (See Savage and Chapman.)						
Chapman, Jay D., and W. R. McAtee, Oil City, Pa. Rotary washer for vehicles	820,475	May 15	2942	637	122	776
Chapman, Penrose E., St. Louis, Mo. Elevator safety-alarm	822,186	May 29	6391	1357–8	122	1657
Chapman, William H., assignor to Chapman Electric Neutralizer Company, Portland, Me. Removing static electricity	824,339	June 26	4161	800	122	2797
Charles Holmes Machine Company. (See Holmes and Allen, assignors.)						
Charvat, Charles L., Peoria, Ill. Steam-tool	819,727	May 8	1372	296	122	368
Charvat, Charles L., Peoria, Ill. Boiler-tube cleaner	821,087	May 22	4236	901	122	1121
Chase, Arthur W., New York, N. Y. Roasting-furnace	823,393	June 12	2337	490–1	122	2285
Chase, Herbert C., assignor to Crescent Forgings Company, Oakmont, Pa. Universal coupling	822,853	June 5	1233	254	122	1997
Chater, William, Denver, Colo. Combined match receptacle and igniter	820,953	May 22	3934	838–9	122	1093
Chatfield, Irving G., Waterbury, Conn. Detachable adjustable stove-grate	822,921	June 12	1378	287	122	2076
Chattanooga Plow Company. (See Buchanan, Judson, assignor.)						
Chaudoir, Gustav, Jr., Vienna, Austria-Hungary. Copper alloy	820,954	May 22	3940		122	1057
Chauss, Wilfrid, Long Island City, N. Y. Insulation-cutter	824,172	June 26	3843	820	122	2730
Cheeseman, A. S. (See Coplantz, Cyrus, assignor.)						
Cheeseman, Roy E., La Fayette, Ind. Corn-planter	819,409	May 1	756	162	122	172
Chein, Julius, New York, N. Y. Toy	823,713	June 19	2694	682	122	2466
Chemische Fabrik Griesheim Electron. (See Baither, Otto, assignor.)						
Chenet, John E., Lutcher, La. Lifter	821,088	May 22	4236	901	122	1121
Cheney, George H., Rochester, N. Y. Driving, braking, and coasting mechanism	821,701	May 29	5460	1162–4	122	1446
Cheney, George M., Indianapolis, Ind. Concrete-bridge reinforcement	820,921	May 15	3868	824	122	979
Chesbrough, Horace H., Southpark, Wash. Time egg-boiler	821,857	May 29	5780	1236	122	1514
Chesnutt, John L., Chicago, Ill., assignor to T. G. Orwig, Des Moines, Iowa. Pneumatic carpet-cleaner	824,683	June 26	4982	1036	122	2946

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Chesterman, Albert W., Sparkhill, England. Cycle pedal-plate	820,095	May 8	2198	479	122	553
Chevalier, Charles G. (See Meyer and Chevalier.)						
Cheverfield, Oliver, Deer River, Minn. Log-loader	821,099	May 22	4239	901	122	1122
Chevolleau, Joseph A. S., Kingston, Jamaica. Parlor game	822,721	June 5	993	202	122	1947
Cheyne, Frederick H., assignor of one-half to G. E. Varney, Indianapolis, Ind. Combined fuse and switch	819,206	May 1	347	74	122	84
Chicago Car Seal & Manufacturing Company. (See Foote, Lewis A., assignor.)						
Chicago Grain Door Company. (See Mallory, James L., assignor.)						
Chicago Lubricator Company. (See Edwards, Frank W., assignor.)						
Chicago Pneumatic Tool Company. (See Meissner, Edward C., assignor.)						
Chicago Railway Equipment Company. (See Frost, Harry W., assignor.)						
Chicago Railway Equipment Company. (See Huntoon, Charles F., assignor.)						
Chigor, Amalie von, assignor to M. Kussner, New York, N. Y. Heater	820,096	May 8	2199	479	122	553
Childress, Hollis B., Granite, Okla. Ter. Pipe grapple or puller	823,667	June 19	2911	615	122	2470
Childs, Samuel S. and W., Jr., Bernardsville, N. J. Vehicle-wheel	819,337	May 1	618	130–1	122	142
Childs, William, Jr. (See Childs, Samuel S. and W., Jr.)						
Chisholm, John, Kalgoorlie, Western Australia, Australia. Sluice-discharge construction of filter-presses	822,100	May 29	6220	1326	122	1619
Chism, David E., Stafford Springs, Conn. Cash-carrier apparatus	820,955	May 22	3941	839–40	122	1057
Chisolm, William B., Charleston, S. C. Fertilizer	824,280	June 26	4050	.....	122	2774
Chisolm, William B., Charleston, S. C. Making fertilizing material	824,281	June 26	4051	.....	122	2774
Chrisco, Shelvey, assignor of one-half to J. W. Copeland, Cobalt, Mo. Vehicle-tongue support	821,218	May 22	4475	952	122	1173
Chrisman, Horace, Wilkinsburg, Pa., assignor to Pittsburg Meter Company. Meter for measuring liquids	822,428	June 5	381	79	122	1808
Christen, Joseph C., J. Orgeich, St. Louis, Mo., and C. Born, Charlestown, Mass.; said Orgeich and Born assignors to said Christen. Roller towel-rack	822,346	June 5	242	50	122	1779
Christensen, Niels A. (See McLain, David, assignor.)						
Christensen, Niels A., Milwaukee, Wis. Lubricating mechanism	821,582	May 22	5195	1108	122	1330
Christensen, Niels A., Milwaukee, Wis. Fluid-compressor	823,156	June 12	1865	385–6	122	2182
Christensen, Niels A., Milwaukee, Wis. Hose-coupling	823,510	June 19	2596	547	122	2401
Christiansen Hans L., assignor of two-thirds to H. Tidemand and O. W. Dahl, Boston, Mass. Pneumatic tire	821,858	May 29	5762	1227	122	1514
Christofferson, Colburn N., and J. F. Lindberg, Hibbing, Minn. Window-washer's platform	823,921	June 19	3374	720	122	2571
Christopher, Manual S., Survey, Fla. Swimming-glove	819,852	May 8	1633	348	122	429
Christy, James, Akron, Ohio. Vehicle-tire	822,583	June 5	707	143	122	1884
Chroninger, Leonard, Findlay, Ohio. Sucker-rod coupling	819,040	May 1	11	3	122	5
Chrysler, Charles, Los Angeles, Cal. Garment-supporter	823,922	June 19	3376	720	122	2572
Chubb, Jay, and M. W. Cathon, Helmick, Ohio; said Cathon assignor to said Chubb. Surveying instrument	820,551	May 15	3110	670	122	814
Chudleigh, Henry D. (See Skelton and Chudleigh.)						
Church, Albert E., assignor to Union Manufacturing Company, New Britain, Conn. Scroll-chuck	823,033	June 12	1609	333	122	2128
Church, Charles A., Peoria, Ill. Washing-machine	820,349	May 8	2676	585	122	659
Churchill, Theodore L., and W. B. Jones, Winsted, Conn. Spanner-wrench	821,280	May 22	4599	990	122	1202
Citron, Saul, assignor of one-third to S. B. Baumes, New York, N. Y. Life-preserver	822,882	June 5	1290	265	122	2008
Claflin, Adams D. (See Cummings, Henry H., assignor.)						
Clamond, Charles, Paris, France. Process of and apparatus for separating mixed gases	820,283	May 8	2568	557	122	635
Claridge, Arthur P., Baltimore, Md. Sign-support	819,338	May 1	620	131	122	143
Clark, Archibald C., Lillington, N. C. Back-support for seats	822,506	June 5	536	110	122	1843
Clark, Arthur J., assignor of one-half to R. H. Hamin, Seattle, Wash. Electric-controlled street or station indicator	822,429	June 5	382	79–80	122	1808
Clark, Charles M. (See Harding and Clark.)						
Clark, Edward L. C. (See Pell and Clark.)						
Clark, Eugene B., Chicago, Ill. Slag-granulating apparatus	824,340	June 26	4162	890–1	122	2797
Clark, Fannie E. (See Clark, Robert M. and F. E.)						
Clark, George P., assignor of one-half to E. M. Vynne, New York, N. Y. Rotary engine	822,347	June 5	244	51	122	1779
Clark, George H. L., Sterrett township, Allegheny county, Pa. Molding-press	819,517	May 1	955	209	122	213
Clark, Harry, St. Paul, Minn. Watch-holder	822,922	June 12	1380	287	122	2076
Clark, Henry F., Poughkeepsie, N. Y. Cartridge	819,518	May 1	956	209	122	214
Clark, Horace E., Atlanta, Ga. Broom-shield	822,507	June 5	537	110	122	1843
Clark, Hugh E., Rochester, N. Y. Emergency exit-door lock	824,173	June 26	3845	821	122	2730
Clark, James P., Dallas, Tex. Street-sweeping machine	819,728	May 8	1376	296–7	122	369
Clark, John P., Ypsilanti, Mich. Rail-bond	824,625	June 26	4756	1013	122	2925
Clark, Maurice C., Providence, R. I., assignor to Marvel Rubber Company. Apparatus for manufacturing rubber footwear	823,923	June 19	3377	720–1	122	2572
Clark, Maurice C., Providence, R. I., assignor to Marvel Rubber Company. Manufacture of footwear	823,924	June 19	3379	721	122	2572
Clark, Maurice C., Providence, R. I., assignor to Marvel Rubber Company. Manufacture of rubber footwear	823,925	June 19	3381	721	122	2573
Clark, Maurice C., Providence, R. I., assignor to Marvel Rubber Company. Manufacture of footwear	823,926	June 19	3382	722–3	122	2573
Clark, Maurice C., Providence, R. I., assignor to Marvel Rubber Company. Machine for manufacturing footwear	823,927	June 19	3388	723–4	122	2575
Clark, Maurice C., Providence, R. I., assignor to Marvel Rubber Company. Manufacture of vulcanized footwear	823,928	June 19	3392	724–5	122	2576
Clark, Melville, Chicago, Ill. Disappearing pedal for automatic pianos	821,460	May 22	4982	1058	122	1287
Clark, Patrick W., Superior, Nebr. Car-brake	824,093	June 26	3695	787–8	122	2697
Clark, Ralph A., Chelsea, Ind. Ter. Stalk-cutter	821,985	May 29	6004	1280	122	1568
Clark, Robert M. and F. E., Newton, Mass. Hand-protecting device	824,174	June 26	3846	821	122	2730
Clark, Walter G., New York, N. Y., assignor to Parker-Clark Electric Company, Jersey City, N. J. Composition of matter for electric conductors	821,017	May 22	4087	.....	122	1089
Clarke, Sidney E. (See Doebler, John F., Jr., assignor.)						
Clarkson & Son, William. (See Banks, John, assignor.)						
Claus, Emil A., Hartford, Conn. Gumming-machine	823,714	June 19	2985	632	122	2485
Clause, Henrie. (See Gibford, Edward B., assignor.)						
Cleal, Joseph P., assignor, by mesne assignments, to National Cash Register Company, Dayton, Ohio. Cash-register	822,824	June 5	1170	241–2	122	1984
Clease, Frederick M., London, England. Apparatus for promoting muscular or physical development	821,783	May 29	5622	1198	122	1484
Cleeland, John, St. Louis, Mo. Cable-reel turner	820,552	May 15	3112	670	122	814
Clegg, Thomas, assignor of two-thirds to A. McKinny and R. A. Bonnar, Winnipeg, Canada. Automatic air-brake controller	821,859	May 29	5763	1227	122	1515
Cleland, John W., Decatur, Ill. Inclinometer	819,339	May 1	621	131–2	122	143

Alphabetical list of patentees for May and June—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Clem, Nancy E., Enid, Okla. Ter. Pie-crimper and crust-cutter	820,553	May 15	3113	670	122	814
Clement, Edward E. (See Lattig, Goodrum, and Clement.)						
Clement, Edward E., Washington, D. C. Telephone-relay	823,763	June 19	3072	651	122	2502
Clemetsen Company. (See Vaaler, Jens, assignor.)						
Clemm, Adolf, Mannheim, Germany. Manufacture of chlorin	819,410	May 1	760	.....	122	172
Clemmensen, Erik C. (See Heitmann and Clemmensen.)						
Clerc, Louis. (See Bardou, Clerc, and Desouches.)						
Clery, Richard W., Maryborough, Ireland. Alarm-signal arrangement for use in connection with railways	823,668	June 19	2912	616	122	2470
Cleveland Armature Works. (See Ahlm, Charles E. F., assignor.)						
Cleveland, Charles C., Kern, Cal. Oil-burner	822,650	June 5	844	172	122	1914
Cleveland, Erastus L., assignor of one-half to R. L. Lamberton, Sistersville, W. Va. Jar of drilling-tools	820,180	May 8	2360	513	122	588
Cleveland Pneumatic Tool Company. (See Meyer, Ernest C., assignor.)						
Cleveland, Walter G. (See Boyle and Cleveland.)						
Cleveland, Willard E., Oregon, Ill. Money-box	824,094	June 26	3696	788	122	2697
Cleven, Joseph B., Lodi, Wis. Fence-post	819,729	May 8	1378	297	122	369
Clifford, G. H., *et al.* (See Barnett, John B., assignor.)						
Climer, Herschel, Chillicothe, Ohio. Vine-divider attachment	824,282	June 26	4052	867	122	2774
Cline, Benjamin F., Indianapolis, Ind. Window-sash fastener	821,337	May 22	4717	1004–5	122	1227
Cline, William, assignor of two-thirds to J. F. Brimmer and W. Fuhrman, Lancaster, Pa. Apparatus for purifying smoke	824,469	June 26	4451	944	122	2858
Clippinger, Harry C., *et al.* (See Selzer, Mitchell J., assignor.)						
Clippinger, Lonzo L., Pilchuck, Wash. Shoe-polishing device	822,825	June 5	1175	242	122	1986
Clonney, A. M., *et al.* (See Lee, George W., assignor.)						
Clonney, James G., *et al.* (See Lee, George W., assignor.)						
Closterman, Charles H., and G. J. Kuehnle, Cincinnati, Ohio. Bending-machine	823,394	June 12	2340	491–2	122	2285
Clough, John A., Spring Valley, Wis. Pencil-sharpener	819,123	May 1	182	37	122	47
Clow, Benjamin, Dalton, Mass. Swing	821,219	May 22	4476	953	122	1174
Clyde Iron Works. (See McGiffert, John R., assignor.)						
Coakley, Frederick, Holywood, Ireland. Slip or case for pillows bolsters, or cushions	823,929	June 19	3395	725	122	2576
Coakley, Frederick, Holywood, Ireland. Slip for pillows, bolsters, and cushions	823,930	June 19	3396	725	122	2576
Coalter, William T., Barton Heights, Va., assignor to American Tobacco Company, Newark, N. J. Cigarette-machine	819,730	May 8	1379	297–8	122	369
Coan, Abraham S. (See Hawn, Samuel L., assignor.)						
Coan, John, Kansas City, Mo., assignor of one-fifth to R. W. Coan, Gravity, Iowa. Tire-armor	822,651	June 5	846	172	122	1915
Coan, Roy W. (See Coan, John, assignor.)						
Cobb, Elmer M., assignor to W. B. Hay, Portland, Me. Stapling-machine	822,348	June 5	247	51	122	1780
Cobb, James H., Christchurch, New Zealand. Combined tobacco-plug holder and cutter	819,207	May 1	348	74	122	84
Cobb, William T., Lamonte, Mo. Barber's pole	822,923	June 12	1380	287	122	2076
Coburn, Susan G., Buffalo, N. Y. Laundry-bag	821,986	May 29	6005	1281	122	1569
Cochran, James S., Philadelphia, Pa., assignor of one-third to F. Taylor, Wilmington, Del. Cellulose	822,430	June 5	384	.....	122	1808
Cochran, James S., Philadelphia, Pa., assignor of one-third to F. Taylor, Wilmington, Del. Cellulose	822,883	June 5	1292	266	122	2009
Cochran, Joseph E. (See Blessing, John G., assignor.)						
Cochran, Joseph E., Chicago, Ill. Weighing-scale	821,220	May 22	4477	953	122	1174
Cochran, Joseph E., and O. L. Plumtree, Chicago, Ill.; said Plumtree assignor to said Cochran. Weighing-scale	821,221	May 22	4479	954	122	1174
Coe Brass Manufacturing Company. (See Wood, William A., assignor.)						
Coe, Edward P., *et al.* (See Green, John J., assignor.)						
Coe, James R., Ansonia, Conn., assignor, by mesne assignments, to Connecticut Mill Supply Company. Making spinning-rings	819,340	May 1	623	132	122	143
Coe, Walter H., Providence, R. I. Package-roll of metallic leaf	824,626	June 26	4757	1013	122	2925
Coffey, Barton H., Boston, Mass. Dredging and excavating machine	824,283	June 26	4053	867	122	2775
Coffey, Barton H., Elizabeth, assignor, by mesne assignments, to L. K. McClymonds, South Orange, N. J. Subaqueous rock-breaker. (Reissue)	12,501	June 26	4909	1043–4	122	2956
Coffin, Walter E., assignor to National Malleable Castings Company, Cleveland, Ohio. Pivot-pin support for couplings	824,526	June 26	4552	967	122	2881
Coffman, Harry D., assignor of one-half to J. M. Baker, Washington Court-House, Ohio. Shoe-ironing jack	821,018	May 22	4089	870	122	1089
Coffman, John I., *et al.* (See Stahl, George, assignor.)						
Coffman, William P., *et al.* (See Stahl, George, assignor.)						
Cohen, Patrick F., Newark, N. J. Belt punch and cutter	821,281	May 22	4600	980	122	1202
Cohn, Max M., San Francisco, Cal. Bookkeeping-machine	822,584	June 5	708	143–4	122	1884
Colt, Karl C. (See Colt, George H. and E. C.)						
Colt, George H. and E. C., Breckenridge, Mo. Cow-tail fastener	821,222	May 22	4481	954	122	1175
Colavecchio, Liagi, *et al.* (See Liaci, Cosmo, assignor.)						
Colbath, Monroe D., Hampden, Me. Air and gas mixing apparatus	819,124	May 1	183	38	122	47
Colbath, Monroe D., Hampden, Me. Carbureter	820,554	May 15	3114	671	122	814
Colborne, Oliver, Chicago, Ill. Pie-making machine	821,784	May 29	5623	1198–9	122	1484
Colborne, Oliver, and F. Deuerling, Chicago, Ill.; said Deuerling assignor to said Colborne. Pie-crust-rolling machine	821,860	May 29	5765	1227	122	1515
Colburn, Irving W., and E. Washburn, Franklin, Pa.; said Washburn assignor to said Colburn. Process and apparatus for drawing sheet-glass	821,786	May 29	5632	1200–1	122	1486
Colburn, Irving W., and E. Washburn, Franklin, Pa.; said Washburn assignor to said Colburn. Apparatus for drawing sheet-glass	823,581	June 19	2738	580	122	2430
Colburn, Irving W., E. Washburn, and C. W. Irwin, Franklin, Pa.; said Washburn and said Irwin assignors to said Colburn. Process and apparatus for drawing sheet-glass	821,785	May 29	5628	1199–1200	122	1486
Colburn, Thomas J., Argenta, Ark. Switch-throwing device	822,230	May 29	6475	1374	122	1678
Colby, Charles A., St. Joseph, Mo. Attachment for washing-machines	824,065	June 19	3650	777	122	2629
Coldwell-Gildard Company. (See Coldwell and Gildard, assignors.) (Reissue.)						
Coldwell, Joseph, and C. G. Gildard, South Swansea, Mass., assignors to Coldwell-Gildard Company. Stop-motion for looms. (Reissue)	12,481	May 15	3907	834	122	989
Coldwell, William H., Newburgh, N. Y. Lawn-mower	821,987	May 29	6006	1281	122	1569
Cole, Ernest C., assignor to Cole Manufacturing Company, Chicago, Ill. Cooking-stove	820,847	May 15	3697	789	122	943
Cole, Frederick W., Newton, Mass., assignor to Gamewell Fire-Alarm Telegraph Company, New York, N. Y. Guard for door-keys of fire-alarm boxes and for other things	824,411	June 26	4319	919	122	2826
Cole, J. H., *et al.* (See Sharts, Truman P., assignor.)						
Cole, James, Superior, Wis. Mail-bag crane	824,175	June 26	3847	821	122	2730
Cole Manufacturing Company. (See Cole, Ernest C., assignor.)						
Cole, Paul V. (See Miller and Cole.)						
Cole, Thomas A., assignor to Metallic Webbing & Manufacturing Company, Indianapolis, Ind. Furniture construction	820,766	May 15	3509	752	122	902

Alphabetical list of patentees for May and June—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Coleman, Clyde J., New York, N. Y. Railway-traffic-controlling apparatus	822,508	June 5	538	110	122	1843
Coleman, Clyde J., Rockaway, N. J., assignor to Hall Signal Company. Power device	820,701	May 15	3379	724	122	870
Coleman, Clyde J., Rockaway, N. J., assignor to C. Hubert, New York, N. Y. Safety-reservoir for explosive fluids	822,936	June 5	1177	242	122	1986
Coleman, George D., Boston, Mass. Applying antifouling coating to ships' bottoms	819,126	May 1	186	.....	122	48
Coleman, George D., Brookline, Mass. Structural preservative	823,205	June 12	1977	.....	122	2209
Coleman, James M., assignor of three-fourths to A. W. Stevenson, W. Sclater, Montreal, Canada, and C. E. Wade, Ambler, Pa. Vehicle	820,956	May 22	3951	841	122	1059
Coleman, John A. (See Leigh and Coleman.)						
Coleman, John F., Everett, Mass. Automatic scraping-machine	821,583	May 22	5196	1109	122	1331
Coleman, Patrick J., Bristol, Conn. Testing-plug for pipe-mains	821,223	May 22	4482	954	122	1175
Colina, William, Waterbury, Conn., assignor, by mesne assignments, to Welsbach Light Company, Gloucester City, N. J. Valve	824,527	June 26	4553	967	122	2881
Collapsible Toy Company. (See Stellner, William F., assignor.)						
Collar, Adoniram J., Yreka, Cal. Water-gate	820,097	May 8	2201	479	122	553
Collar, Adoniram J., Yreka, Cal. Water-gate	823,991	June 19	3516	752	122	2401
Collier, Frank P., Wilmette, Ill. Brake-shoe	822,924	June 12	1382	288	122	2077
Collier, Frank P., Wilmette, Ill. Brake-shoe	822,925	June 12	1383	288-9	122	2077
Collier, William E., assignor to Racine Boat Mfg. Co., Muskegon, Mich. Power transmission for explosive-motor-driven boats	821,925	May 29	5801	1252	122	1544
Collier, William H., Jackson, Tenn. Change-making cash-register	823,104	June 12	1763	363-5	122	2160
Collier, William H., Jackson, Tenn. Pressure-actuated valve-gear	823,105	June 12	1768	365	122	2161
Collins, Arthur T., Swarthmore, Pa. Drier	823,106	June 12	1771	366	122	2161
Collins, Arthur T., Swarthmore, Pa. Drier	823,262	June 12	2108	439	122	2237
Collins, Frank W. (See Skinner, Orson F., assignor.)						
Collins, James E., Danvers, assignor to United Shoe Machinery Company, Boston, Mass. Heel-nailing machine	823,582	June 19	2742	581	122	2431
Collins, Samuel E., Valparaiso, Ind. Floor and cabinet scraper	819,126	May 1	187	38	122	48
Collins, Timothy F. (See Corbishley, Wood, and Collins.)						
Collis, John, Des Moines, Iowa. Radiator supply-pipe and bracket	821,787	May 29	5638	1201	122	1487
Colloseus, Heinrich, Berlin, Germany. Apparatus for pulverizing blast-furnace slag	821,609	May 29	5209	1124	122	1405
Columbia Biscuit Company. (See Wetsel, Frederick L., assignor.)						
Columbian Enameling & Stamping Company. (See Nelson, Andrew W., assignor.)						
Colvin, Charles H., Birmingham, Ala., assignor to Colvin Manufacturing Company. Flushing apparatus	821,282	May 22	4601	980	122	1202
Colvin Manufacturing Company. (See Colvin, Charles H., assignor.)						
Colwell, Emma B., Medway, N. Y. Cleaning device	819,853	May 8	1633	348	122	429
Combe, Benvenuto, Turin, Italy, assignor to E. Casper, London, England. Recovery of copper from solutions containing it	820,555	May 15	3117	671	122	815
Combes, Augustus G. M., Rome, Ga. Cotton-harvester	823,034	June 12	1610	333	122	2129
Combe, Thomas F., Crawfordville, Ga. Casket	824,284	June 26	4055	868	122	2775
Combustion Utilities Company. (See Doherty, Henry L., assignor.)						
Combustion Utilities Company. (See Eldred, Byron E., assignor.)						
Combustion Utilities Company. (See Ellis, Carleton, assignor.)						
Comer, Charles F., and H. Lightcap, Michigan City, Ind. Railway-switch	823,764	June 19	3078	651	122	2505
Comer, Thomas D., assignor of one-half to W. A. Cardin, Norton, Va. Lunch-pail and lantern	820,390	May 15	2771	601	122	741
Compressed Paper Box Company. (See Godfrey, Jonathan, assignor.)						
Compression Rheostat Company. (See Bradley, Lynde, assignor.)						
Compton, Melvin D., assignor to F. Fuller, New York, N. Y. Acetylene-gas generator	819,960	May 8	1925	426	122	489
Comstock, James P., Tacoma, Wash. Sash-bar	819,854	May 8	1634	348-9	122	430
Comstock, John W. (See McKee, Thomas M., assignor.)						
Conch, John E., assignor of one-half to C. C. Dehart, Hazard, Ky. Drilling-machine	819,855	May 8	1637	349	122	430
Condict, Nathan W., Jersey City, N. J., and J. B. French, Jamaica, N. Y. Ferry-bridge	824,627	June 26	4758	1013	122	2925
Condlon, Edward J., Ballard, Wash. Submarine drag-bucket	819,636	May 1	1180	258	122	265
Condo, Joseph C., Alexandria, Ind. Furniture attachment	821,338	May 22	4718	1005	122	1227
Conger, Daniel W. (See Hartman, Noble W., assignor.)						
Congreve, Robert, Christchurch, New Zealand. Lock for vehicles	823,107	June 12	1773	366	122	2162
Conklin, William F., Leechburg, assignor to West Leechburg Steel Co., Pittsburg, Pa. Metal coiling and straightening apparatus	823,765	June 19	3080	652	122	2505
Conklin, William F., Leechburg, assignor to West Leechburg Steel Company, Pittsburg, Pa. Finishing and straightening flat metal strips	823,766	June 19	3084	652-3	122	2506
Conn, Byron O. (See Root and Conn.)						
Conn Company, C. G. (See Herr, William J., assignor.)						
Connecticut Mill Supply Company. (See Coe, James R., assignor.)						
Connell, Marguerite, New York, N. Y. Collar-supporter	820,767	May 15	3510	752	122	902
Connell, William J., Huntington, W. Va. Clothes-line reel	823,981	June 19	3397	726	122	2576
Connell, William J., and L. C. Lowe, Huntington, W. Va. Shade and curtain bracket	822,722	June 5	995	203	122	1947
Conner, George F., Port Huron, Mich. Beet-topper	820,391	May 15	2773	601-2	122	741
Conner, George F., Port Huron, Mich. Beet-harvesting machine	823,583	June 19	2744	581	122	2432
Conner, Merritt S., assignor to Western Electric Company, Chicago, Ill. Signaling system for telephone trunk-lines	820,350	May 8	2678	585	122	659
Conner, Thomas J. (See Dapron, Alexander J., assignor.)						
Connett, John, Sydney, New South Wales, Australia. Extensible shawl-strap bar	822,349	June 5	248	52	122	1780
Connor, Mary, Denver, Colo. Skirt-gage	821,788	May 29	5640	1201	122	1488
Conolly, John J., and J. Herron, Marquette, Mich. Locomotive exhaust mechanism	821,402	May 22	4860	1032-3	122	1262
Conover, William G., Philadelphia, Pa. Corn-husking machine	822,187	May 29	6304	1358	122	1658
Conrad, George H. (See Greer, William R., assignor.)						
Conrad, Robert, Berlin, Germany. Ball-bearing	821,461	May 22	4963	1060	122	1287
Conrad, Robert, Berlin, Germany. Ball-bearing	821,702	May 29	5468	1164	122	1448
Conrad, Robert, Berlin, Germany. Ball-bearing	821,703	May 29	5470	1164	122	1448
Conrad, Robert, Berlin, Germany. Ball-bearing	822,723	June 5	995	203	122	1947
Conrader, Randolph, Erie, Pa. Governor	821,157	May 22	4360	929	122	1152
Conrader, Randolph, Erie, Pa. Apparatus for separating liquids	821,339	May 22	4720	1005-7	122	1227
Conrader, Randolph, Erie, Pa. Relief device and attachment for compressors	822,945	June 19	3235	683-4	122	2540
Conrad, Charles W., West Chester, Pa. Combined ash sifter and bucket	823,395	June 12	2343	492	122	2286
Consolidated Car Heating Company. (See McElroy, James F., assignor.)						
Consolidated Car Heating Company. (See Scales and McElroy, assignors.)						
Consolidated Fire Alarm Company. (See Leibner, John M., assignor.)						
Consolidated Press and Tool Company. (See Wilde, Harry C. H., assignor.)						
Contemeyer, Peter, Seattle, Wash. Dumping vessel	819,691	May 1	1396	281	122	291
Continental Paper Bag Company. (See Stone, Wilbur M., assignor.)						
Conway, Franklin M., Orfordville, Minn. Stool	821,704	May 29	5471	1164	122	1448
Conway, William. (See Hitzeroth, Herman, assignor.)						
Conwell, James S., Anderson, Ind. Grain-separator	819,341	May 1	694	132	122	144
Cook, Burton H., New York, N. Y. Suspender	820,624	May 15	3230	605	122	840

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Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Cook, Edward A., Glatto, assignor of one-third to T. W. Patton, Bluefield, W. Va. Shoe-polishing compound	820,392	May 15	2775	.....	122	741
Cook, Emery L., assignor of one-half to C. D. Mitchell, Greencastle, Ind. Rail-joint	824,285	June 26	4056	868	122	2775
Cook, Eugene, assignor to Cook's Railway Appliance Co., Kalamazoo, Mich. Lifting-jack	822,350	June 5	249	52	122	1780
Cook Heater Company. (See Cook, Maurice A., assignor.)						
Cook, John V., Chicago, Ill. Mop-wringer	824,296	June 26	4057	868	122	2775
Cook, Judson, Philadelphia, Pa. Hair-pin	820,625	May 15	3232	695	122	840
Cook, Maurice A., assignor to Cook Heater Company, Peoria, Ill. Sectional boiler	821,705	May 29	5472	1165	122	1449
Cook, Theodore, *et al.* (See Lerch, Solomon W., assignor.)						
Cooke, George K., Jamaica, N. Y. Measuring-faucet	820,556	May 15	3119	671-2	122	816
Cooke, George K., New York, N. Y. Fluid-measuring faucet	824,095	June 26	3698	788	122	2697
Cooke, Warner B., Jenkintown, assignor to William Wharton, Jr., & Company, Incorporated, Philadelphia, Pa. Movable-point railway-crossing	819,820	May 1	987	210	122	214
Cooke, William A., Jr., New York, N. Y. Receptacle for letters or other papers	821,019	May 22	4090	871	122	1090
Cook's Railway Appliance Co. (See Cook, Eugene, assignor.)						
Coonan, William. (See O'Leary and Coonan.)						
Cooney, Luke, Jr., Chicago, Ill., assignor, by mesne assignments, to National Cash Register Company, Dayton, Ohio. Cash-register	823,511	June 19	2598	547-8	122	2401
Cooney, Luke, Jr., Chicago, Ill., assignor, by mesne assignments, to National Cash Register Company, Dayton, Ohio. Cash-register	823,767	June 19	3086	653-4	122	2506
Cooney, Thomas. (See Taylor, William H., assignor.)						
Cooper, Frank J., assignor to Ohio Steel Wheelbarrow Company, Toledo, Ohio. Wheelbarrow	819,856	May 8	1638	349	122	430
Cooper, James C. (See Cooper, William, assignor.)						
Cooper, John W., Boston, Mass. Flushing cuspidor	824,287	June 26	4057	869	122	2775
Cooper, William, assignor of one-half to J. C. Cooper, Chicago, Ill. Fishing-hook	823,319	June 12	2218	462	122	2260
Cooperamith, Rudolph. (See Kindel and Coopersmith.)						
Copcutt, Catherine L. (See Copcutt, Frederick W., assignor.)						
Copcutt, Frederick W., assignor of one-half to C. L. Copcutt, New York, N. Y. Twine holder and take-up	819,521	May 1	958	210	122	214
Copeland, James S., Hartford, Conn., assignor to Pope Manufacturing Company, Jersey City, N. J., and Hartford, Conn. Driving mechanism for bicycles, &c	820,038	May 8	2074	452	122	526
Copeland, James S., Hartford, Conn., assignor, by mesne assignments, to Pope Manufacturing Company, Jersey City, N. J. Driving mechanism for chainless bicycles	821,340	May 22	4737	1007	122	1234
Copeland, John W. (See Chrisco, Shelvey, assignor.)						
Copeland, Mary L. (See Gunn, James D., assignor.)						
Copeland, W. W., *et al.* (See Wheeler, George E., assignor.)						
Copland, Henry B. (See Shaw, William E., assignor.)						
Coplantz, Cyrus, assignor of one-half to A. S. Cheeseman, Joliet, Ill. Ladder	823,512	June 19	2603	549	122	2402
Copleston, Henry, Cincinnati, Ohio. Machine for forming pill-mass rolls	822,101	May 29	6221	1326	122	1619
Coppa, James F., Alberene, Va. Device for splitting stone	820,848	May 15	3699	789	122	943
Coppa, James F., Alberene, Va. Splitting stone	820,849	May 15	3700	789-90	122	943
Corbett, William, Smith's Falls, Canada. Window-sill	819,041	May 1	12	4	122	6
Corbin Cabinet Lock Company. (See Townsend, Harry P., assignor.)						
Corbin Screw Corporation. (See Glover, Charles, assignor.)						
Corbishley, John, J. H. Wood, and T. F. Collins, Fall River, Mass. Stop-motion for looms	822,585	June 5	716	144	122	1886
Corcoran, Daniel, Launceston, Tasmania, Australia. Device for measuring liquids	823,932	June 19	3398	726	122	2576
Corcoran, Thomas J., Cincinnati, Ohio. Vehicle-lamp	821,224	May 22	4483	955	122	1175
Cordes, August W., New York, N. Y. Bottle-stopper	824,341	June 26	4165	891	122	2797
Cordrey, John C., and P. J. Brady, Harvey, Ill. Brake-shoe	821,462	May 22	4985	1059	122	1288
Corell, Gaëtan M., New York, N. Y. Automatic insulator	822,043	May 29	6119	1303	122	1595
Corey, Daniel W., St. Louis, Mo., assignor to Union Special Sewing Machine Company, Chicago, Ill. Needle-lever bearing	822,884	June 5	1292	266	122	2009
Corey Estate Company. (See Pringle, Robert M., assignor.)						
Corey, Fred B., Schenectady, N. Y., assignor to General Electric Company. Emergency-brake	823,902	June 19	3520	752	122	2602
Corley, Andrew J., East Point, Ga. Rotary cutter	822,351	June 5	250	52	122	1781
Cornell, Matthew G., Jr., New York, N. Y. Stock and die	821,403	May 22	4871	1033	122	1263
Cornell, Samuel J. G., New York, N. Y. Hot-water regulator	823,157	June 12	1868	386	122	2182
Cornish, Harry B., Minneapolis, assignor of two-thirds to P. Peterson, Glenwood, Minn. Air-compressor	821,926	May 29	5806	1253	122	1544
Cornwall, John B., assignor to Barnard and Leas Manufacturing Company, Moline, Ill. Packing-machine	821,463	May 22	4986	1059	122	1288
Corsey, George M., Woodbury, N. J. Jar-holder	822,052	June 5	847	173	122	1915
Corwin, Elmer R., West Lafayette, and F. R. Parker, La Fayette, Ind.; said Corwin assignor to said Parker, Chicago, Ill. Telephone-transmitter	819,522	May 1	980	211	122	215
Coryell, William C., Youngstown, Ohio. Toy	822,188	May 29	6399	1350	122	1659
Cosgrave, Patrick H., Colorado City, Colo. Hot-water heater	822,854	June 5	1234	254	122	1997
Costa, Joseph S., Quincy, Mass. Cutting or dressing tool for marble, stone, &c	823,584	June 19	2746	582	122	2432
Costello, Henry O., Providence, R. I. Spinning-top	821,341	May 22	4739	1008	122	1235
Costikyan, Nazar. (See Dalkranian, James K., assignor.)						
Costikyan, Nazar. (See Sarafian, Hovcep, assignor.)						
Cothern, John K., Bowie, Tex. Convertible car	821,464	May 22	4988	1060	122	1288
Cotton, Alfred, Newark, N. J. Furnace-grate	823,715	June 19	2688	633	122	2486
Couch, Buel. (See Kneedler, Van Sickle, Couch, and Hanson.)						
Couch, Buel, *et al.* (See Kneedler, John D., assignor.)						
Couleru-Meuri, Charles, La Chaux-de-Fonds, Switzerland, assignor to Flory, Reingpach & Co., Colchester, England. Speed-indicator for vehicles, &c	820,916	May 15	3858	822	122	977
Coulter, Henry P., Philadelphia, Pa. Garment-supporter	820,393	May 15	2776	602	122	742
Coulter, Samuel L., Caldwell, Ohio. Mail-box	823,585	June 19	2747	582	122	2432
Coulter, William J., Lorain, Ohio. Ticket counting and canceling machine	821,465	May 22	4990	1060-1	122	1289
Courtinade, François, New York, N. Y. Means for promoting accurate shooting	820,181	May 8	2361	513	122	586
Cove, George H., Roxbury, assignor to C. M. Bunker and F. R. Kimball, Boston, Mass. Thermo-electric battery and apparatus	824,684	June 26	4964	1036	122	2946
Covert, James C., Watervliet, N. Y. Fire-escape	820,702	May 15	3382	724	122	870
Covert, James C., assignor to Covert Manufacturing Company, Watervliet, N. Y. Snap-hook	820,703	May 15	3383	724	122	870
Covert Manufacturing Company. (See Covert, James C., assignor.)						
Cowles, John T., Chicago, Ill. Bedclothes-holder	819,857	May 8	1639	349	122	431
Cox, Cary S., Fresno, Cal., assignor of three-fifths to J. B. Inderrieden Co., Chicago, Ill. Fruit weighing and packing machine	824,412	June 26	4321	920-1	122	2828
Cox, James D., Bridgeton, N. J. Bottle-making apparatus	821,610	May 29	5271	1124	122	1405
Cox, James J., Jackson, Mich. Cement-block machine	820,098	May 8	2304	479-80	122	554
Cox, William N., Montgomery, Ala., assignor to Mooney Development Co. Furnace draft apparatus	823,396	June 12	2344	492-3	122	2286

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Cox, William R., Waldron, Ark. Combined cotton scraper, blocker, and cultivator	824,066	June 19	3651	777	122	2629
Coxey, Jasper S., Aberdeen, Wash. Folding and extension car-step	822,102	May 29	6222	1327	122	1619
Craft, James F., Lincoln, Me. Self-secured bundle of flexible material	819,858	May 8	1641	350	122	431
Craft, James F., Lincoln, Me. Tool for fastening self-secured packages	819,859	May 8	1642	350	122	432
Craft, Owen B., Hawthorn, assignor of one-half to J. A. F. Hoy, Clarion, Pa. Spike-puller	821,404	May 22	4872	1033	122	1263
Craft, William E., assignor of one-fifth to W. H. Larmore, Anderson, Ind. Price-scale	823,397	June 12	2347	493	122	2287
Craig, Alexander M., assignor to Rome Saddlery Hardware Manufacturing Company, Rome, N. Y. Flexible metal hame-tug	823,158	June 12	1871	386	122	2183
Craig, Alexander M., assignor to Rome Saddlery Hardware Manufacturing Company, Rome, N. Y. Trace-carrier	823,159	June 12	1871	387	122	2183
Craig, Charles H., Jr., Wrentham, assignor to American Steam Gauge & Valve Manufacturing Company, Boston, Mass. Gage-testing apparatus	821,988	May 29	6010	1282	122	1570
Craig, John E. (See Hurt and Craig.)						
Cramer, Richard R., assignor of one-half to J. F. Knepper, Marion, Ind. Burial-casket	823,035	June 12	1612	334	122	2129
Cramer, Stuart W., Charlotte, N. C. Humidifying and ventilating apparatus	821,989	May 29	6012	1282	122	1570
Crane, Edward F., Newark, N. J. Reinforcing-bar for cementitious bodies	820,704	May 15	3385	724	122	871
Cranmer, Joseph C. H., Greenville, Mich. Horseshoe-calk	822,827	June 5	1183	243	122	1987
Crapper, Ebenezer, Akron, Ohio. Savings-bank	824,233	June 26	3966	850	122	2756
Crate, Walter W., Camden, N. J. Dental articulator	824,096	June 26	3700	788–9	122	2698
Crawford, Edward M., Cleveland, Ohio. Ball drapery	822,431	June 5	384	80	122	1808
Crawford, James, Boston, assignor to G. E. Nichols, Somerville, Mass. Pipe-hanger	823,108	June 12	1774	366	122	2162
Crawford, James B., and E. M. Sinclair, assignors to Union Gas Company, Sioux City, Iowa. Gas generator and mixer	819,731	May 8	1384	298	122	370
Crawford, James J., assignor to Eureka Briquette Company, Oakland, Cal. Briquet-press	823,263	June 12	2110	439–40	122	2238
Crawford, John M., Crawford, Oreg. Portable wire fence	823,993	June 19	3523	752	122	2603
Crawford, Lewellyn U., Kansas City, Mo. Knife	822,432	June 5	365	80	122	1809
Crawford, William O., Beaver Creek, Minn. Machine for loading shocks	822,653	June 5	848	173	122	1915
Crawley Book Machinery Company. (See Ritchie, George, assignor.)						
Creal, Ransom D., Singer, La. Railway-rail joint	819,732	May 8	1386	298	122	370
Creamery Package Mfg. Company. (See Valentine, Theodore L., assignor.)						
Crecelius, Theodore E., assignor, by mesne assignments, to Woodhouse Hardware Manufacturing Company, St. Louis, Mo. Combined hasp and hook	822,189	May 29	6402	1359	122	1660
Creevy, Edward F., Chicago, Ill. Trolley for electric railways	821,611	May 29	5272	1124–5	122	1406
Crehore, Albert C., Tarrytown, N. Y., and G. O. Squier, Washington, D. C., assignors to Crehore-Squier Intelligence Transmission Company, Cleveland, Ohio. Telegraph-transmitter	823,206	June 12	1978	412–13	122	2209
Crehore-Squier Intelligence Transmission Company. (See Crehore and Squier, assignors.)						
Creighton, Peter L., Harrisville, R. I. Weighing and sacking machine	819,860	May 8	1644	350	122	432
Crescent Forgings Company. (See Chase, Herbert C., assignor.)						
Crespin, Lucien, Paris, France. Manufacture of artificial silk	820,351	May 8	2681	585	122	660
Cress, Reuben W., Jessup, Ind. Railway-crossing	822,828	June 5	1184	243	122	1987
Cressman, Krauth H. (See Van Every, Gordon E., assignor.)						
Criqui, Charles A., Buffalo, N. Y. Door-releasing apparatus	819,208	May 1	349	75	122	84
Crisler, Joseph L., Perth, Kans. Harrow attachment for plows	819,733	May 8	1386	298–9	122	370
Crisler, Joseph L., Perth, Kans. Harrow attachment for plows	819,861	May 8	1645	351	122	432
Crisp, William N., Baltimore, Md. Trace-fastener	819,981	May 8	1927	426	122	490
Crist Valve Mfg. Co. (See Crist, William E., assignor.)						
Crist, William E., New York, assignor to Crist Valve Mfg. Co., Chittenango, N. Y. Gate-valve	819,411	May 1	761	162	122	172
	820,182	May 8	2363	513	122	588
Criste, James R., Braddock, Pa. Toy						
Crites, Joseph W., and J. J. Wine, assignors of one-half to C. L. Woods and J. W. Glass, Independence, Kans. Self-feeding match-box and cigar-cutter	823,036	June 12	1612	334	122	2129
Croasdale, John P., Berwyn, assignor to F. A. Freeman, Philadelphia, Pa. Garment-clasp	821,466	May 22	4992	1061	122	1290
	819,982	May 8	1928	426	122	490
Croasdale, Robert, Syracuse, N. Y. Split bushing						
Crochet, Albert. (See Buquet and Crochet.)						
Crocker, Eben C., Bridgeport, Conn., assignor, by mesne assignments, to H. A. Moses, Mittineague, Mass. Driving mechanism for paper-refining engines	823,109	June 12	1776	366	122	2162
Crocker, Eugene B., Pawtucket, R. I. Spool or reel	822,433	June 5	386	80	122	1809
Crocker, Frank L., Chicago, Ill. Flash-light screen	820,476	May 15	2943	637	122	777
Croft, Willard B., Medina, Ohio. Look-hinge	821,361	May 29	5766	1227	122	1516
Crompton & Knowles Loom Works. (See Lowe, Walter V., assignor.)						
Crompton & Knowles Loom Works. (See McGuiness, Benjamin F., assignor.)						
Crompton & Knowles Loom Works. (See Ryce, Eppa H., assignor.)						
Crompton & Knowles Loom Works. (See Walsh, Thomas P., assignor.)						
Cromwell, John C., assignor to Garrett-Cromwell Engineering Company, Cleveland, Ohio. Tilting furnace	823,669	June 19	2914	616	122	2471
	819,734	May 8	1388	299	122	371
Cross, Seth A., New York, N. Y. Brake-beam for railway-cars	822,434	June 5	389	81	122	1809
Cronkhita, James E., Hitchcock, Okla. Ter. Tongue-support						
Cronstedt, Elias. (See Furru, Ola O., assignor.)						
Crookshank, George E., assignor of one-half to K. Crookshank, Indiana, Pa. Gas-regulator	824,413	June 26	4327	921	122	2830
Crookshank, Kate. (See Crookshank, George E., assignor.)						
Cropper, John M., Blanchester, Ohio. Attachment for lamps	823,160	June 12	1872	387	122	2183
Crosby, Charles E. (See McFarland and Crosby.)						
Crosby, Jesse, *et al.* (See George, Edwin, assignor.)						
Crosin, John C., Philadelphia, Pa. Corn-shock binder	822,231	May 29	6476	1374	122	1678
Croskey, John H., assignor to Duquesne Glass Company, Pittsburg, Pa. Apparatus for manufacturing glass articles	820,477	May 15	2946	637–8	122	777
Croskey, John H., assignor to Duquesne Glass Company, Pittsburg, Pa. Apparatus for manufacturing glass articles	820,478	May 15	2948	638	122	778
Croskey, John H., assignor to Duquesne Glass Company, Pittsburg, Pa. Apparatus for manufacturing glass articles	820,479	May 15	2950	639	122	779
Cross, Benjamin S., Lima, assignor of one-half to W. E. Garling, Degraff, Ohio. Ironing-table	820,284	May 8	2671	558	122	635
	820,285	May 8	2672	558–9	122	635
Cross, James W., London, England. Oil-engine						
Crowe, Frederick C., assignor to Crowe Name Plate & Engraving Company, Chicago, Ill. Machine for making metal tags	820,183	May 8	2364	514	122	588
Crowe Name Plate & Engraving Company. (See Crowe, Frederick C., assignor.)						
Crowell, Guy E., Mason City, Iowa. Drive-gearing for manure-spreaders	823,846	June 19	3238	685	122	2541
Crowell, Warner R., Boston, Mass., and N. H. Varina, Aurora, Ill. Composition for filled brake-shoes and manufacture	820,705	May 15	3386	.....	122	871
Crowley, John F., assignor of three-fourths to M. Pauli, Milwaukee, Wis. Explosive-engine	820,626	May 15	3233	605–6	122	840

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Crowson, William L., Jackson, assignor of three-fourths to J. M., J. E., and R. Braun, Memphis, Tenn. Roller cotton-gin	824,414	June 26	4328	921–2	122	2830
Cruce, Lawrence W., Marion, Ky. Knife-sharpener support	819,735	May 8	1391	299	122	371
Cudd, Simeon S., Elzie, S. C. Combined fertilizer-distributer and cultivator	823,398	June 12	2348	493–4	122	2287
Cullin, Walter C. (See Fisher and Cullin.)						
Cullem, Aaron E., Pleasant Plains, Ark. Gate	823,037	June 12	1614	334	122	2129
Culler, James B., Belle Vernon, assignor of one-half to G. S. Bowes, Monessen, Pa. Valve	820,917	May 15	3861	822–3	122	978
Cullingworth, George R., Mount Vernon, N. Y. Portable traveling crane	824,342	June 26	4167	891	122	2798
Cullum, William E., *et al.* (See George, Edwin, assignor.)						
Cummings, Alexander, Los Angeles, Cal. Underreamer for mineral boring	819,042	May 1	13	4	122	6
Cummings, George H. (See Butterworth, Samuel D., Jr., assignor.)						
Cummings, Henry H., Malden, assignor to A. D. Claflin, Newton, Mass. Ticket-delivering machine	822,829	June 5	1185	243–4	122	1987
Cummings, Henry H., Malden, assignor to A. D. Claflin, Newton, Mass. Ticket stamping and delivering machine	822,855	June 5	1236	254–5	122	1997
Cummings, Henry H., assignor to A. D. Claflin, Newton, Mass. Ticket stamping and delivery machine	822,830	June 5	1188	244	122	1988
Cummings, Henry H., assignor to A. D. Claflin, Newton, Mass. Ticket stamping and delivery machine	822,856	June 5	1238	255	122	1998
Cummings, James N., Summerville, assignor of one-half to H. N. Horton, F. M. Schlapbach, and X. N. David, Cedartown, Ga. Engine	822,586	June 5	717	145	122	1887
Cummings, Matthew, Boston, Mass. Reverberatory furnace	819,043	May 1	15	4–5	122	6
Cummings, Robert A., Beaver, Pa. Metal-reinforced concrete column	822,587	June 5	719	145	122	1887
Cummings, Robert A., Beaver, Pa. Sinking and building concrete piles	822,588	June 5	721	145	122	1887
Cummings, Robert A., Beaver, Pa. Sinking concrete piles	822,589	June 5	723	146	122	1888
Cunniff, Michael T., Riverside, Cal. Solar water-heater	819,342	May 1	625	133	122	144
Curley, George. (See Smith, Enoch, assignor.)						
Currier, Walker F., Variety Mills, Va., assignor of one-eighth to National Soap Stone Co., New York, N. Y. Machine for sizing and cutting stone and other materials	822,724	June 5	998	203–4	122	1948
Curry, James H., Wilkinsburg, Pa. Bean-shooter	822,190	May 29	6402	1359	122	1660
Curtis, Asher, *et al.* (See Lorch, Solomon W., assignor.)						
Curtis, Charles G., New York, N. Y., assignor, by mesne assignments, to General Electric Company. Elastic-fluid turbine	821,706	May 29	5478	1166	122	1450
Curtis, John B., New York, N. Y. Self-lubricating journal-bearing	824,628	June 26	4760	1014	122	2926
Curtis, John T., Orrville, Ohio. Dust-pan	820,627	May 15	3236	606	122	841
Curwen, Samuel M., Haverford, assignor to J. A. Brill, Philadelphia, Pa. Body-bolster	819,736	May 8	1392	300	122	372
Cutler-Hammer Mfg. Co. (See Wiegand, Henry J., assignor.)						
Cutler, Henry H., Milwaukee, Wis. Electrical step-by-step controller	821,021	May 22	4097	872	122	1091
Cutler, Henry H., Milwaukee, Wis. Magnetic clutch	821,022	May 22	4102	872	122	1092
Cutler, Henry H., Milwaukee, Wis. Phase-splitter	821,023	May 22	4104	873	122	1093
Cutler, Henry H., assignor to Arnold Magnetic Clutch Company, Milwaukee, Wis. Magnetic clutch	821,020	May 22	4094	871–2	122	1090
Cutler, Joseph W., Rochester, N. Y. Mail-chute	820,394	May 15	2777	602	122	742
Cutler, Otis M., Wakefield, Mass., assignor to Fibered Leather Manufacturing Company. Leather-shredder	819,862	May 8	1648	351–2	122	433
Cutler, Otis M., Wakefield, Mass., assignor to Fibered Leather Manufacturing Company. Method of and apparatus for shredding leather	819,863	May 8	1649	352	122	433
Cypher, Henry. (See Klousmitzer, Frank, assignor.)						
Cyphers Incubator Company. (See Adair, Charles E., assignor.)						
D'Urso, Giovanni, New York, N. Y. Dumping-wagon	819,416	May 1	769	164–5	122	174
Dahl, Charles A., assignor to Reece Buttonhole Machine Company, Boston, Mass. Power-transmitting mechanism	824,234	June 26	3968	850	122	2757
Dahl, Christian, Gross Nustrup, and C. Lund, Porsgeil, Germany. Automatic disengaging device for the knife-gear of mowing-machines	821,612	May 29	5275	1125	122	1406
Dahl, John L., Weehawken, N. J. Rail-fastening device	821,467	May 22	4994	1062	122	1290
Dahl, Olaus A., Nash, N. D. Fastener for window-sash, doors, &c	821,090	May 22	4241	902	122	1122
Dahl, Ole W., *et al.* (See Christiansen, Hans L., assignor.)						
Dale, John H., assignor of two-thirds to F. Marsh, Newark, N. J., and R. R. Hoyt, New York, N. Y. Ice-breaking device	821,927	May 29	5898	1253–4	122	1545
Dalkranian, James K., assignor to N. Costikyan, New York, N. Y. Pile-fabric loom	822,103	May 29	6225	1327–8	122	1620
Dalkranian, James K., assignor to N. Costikyan, New York, N. Y. Beating-in device for looms	824,685	June 26	4866	1037	122	2947
Dalton, Philip J., Joliet, Ill., assignor, by mesne assignments, to Rail Joint Company. Apparatus for manufacturing fish-plates	822,509	June 5	552	111	122	1848
Dalton, William, Schenectady, assignor to American Locomotive Company, New York, N. Y. Electric-motor truck	823,490	June 12	2549	537	122	2329
Dalton, William, Schenectady, assignor to American Locomotive Company, New York, N. Y. Locomotive-truck	823,491	June 12	2551	537	122	2330
Dameron, John C., Weston, Ill. Barbed fence-wire	820,395	May 15	2778	603	122	742
Damhorst, Franz, A. Kemper, and E. Utke, Berlin, Germany. Powder for dusting patterns	820,099	May 8	2207	.....	122	555
Damians y Rovira, Alejandro, Barcelona, Spain. Gearing	823,462	June 12	2469	522	122	2313
Dammond, William H., Detroit, Mich. Safety system for operating railways	823,513	June 19	2608	549	122	2403
Damon, George A., Chicago, Ill., assignor to Arnold Magnetic Clutch Company, Milwaukee, Wis. Magnetic clutch	821,024	May 22	4107	873	122	1094
Damon, Nelson L., Carthage, Mo. Mold for making artificial stone	824,235	June 26	3970	850–1	122	2757
Dana, Joseph C., Modesto, Cal. Book-support	822,191	May 29	6403	1359	122	1661
Dana, Joseph C., Modesto, Cal. Writing-guide	822,192	May 29	6405	1360	122	1661
Dana, William H., assignor to L. Rauh, Dayton, Ohio. Voting-machine	819,662	May 1	1297	282	122	291
Danford, Tad, Boulder, Colo. Surf-actuated motor	820,286	May 8	2575	559	122	636
Daniel, Charles T., Owensboro, Ky. Injecting-needle	824,686	June 26	4868	1037	122	2947
Daniel, John J., Cambria, Wis. Apparatus for the distribution of whey or skimmed milk	823,514	June 19	2615	550	122	2404
Daniels, Fred H., Worcester, Mass. Rod-rolling mill	820,396	May 15	2779	603	122	742
Daniels, Landis O., and W. B. Kirkpatrick, High Spire, Pa. Car-coupling	824,097	June 26	3701	789	122	2698
Danielsen, Severin M., Escanaba, Mich. Clasping-band	823,994	June 19	3526	752	122	2603
Danielsen, Wilhelm G., Logan, Utah. Plow	819,737	May 8	1393	300	122	372
Danielson, Oscar A. (See Faller and Danielson.)						
Dann, Ernest G., Chicago, Ill. Closure for receptacles	820,480	May 15	2952	639	122	779
Dannert, Fritz, assignor to J. A. Hutmacher, Berlin, Germany. Making gas	821,928	May 29	5900	1254	122	1546
Dapron, Alexander J., assignor of one-half to T. J. Conner, Prairie du Rocher, Ill. Window-screen	824,268	June 26	4060	809	122	2770
Darby, Arthur W., Holyoke, Mass. Automatic starter for motors	824,667	June 26	4869	1037–8	122	2947
Dare, Lawrence E., New York, N. Y. Pipe	823,716	June 19	2991	633	122	2486
Dario, Roberti, Newark, N. J. Lock	821,283	May 22	4803	981	122	1202
Dashiell, Raymond G., Baltimore, Md. Toy	821,468	May 22	4995	1062	122	1290

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Daughtry, James O., Hugo, Ind. Ter. Cooler	821,469	May 22	4997	1062	122	1290
Daum, William T., Chicago, Ill. Wagon	820,850	May 15	3701	790	122	943
Daus, Adolph H., Chicago, Ill., assignor to Westinghouse Electric & Manufacturing Company. Electric-motor-control system	819,738	May 8	1395	300	121	372
Davenport, Birge W., Minneapolis, Minn. Merry-go-round	822,435	June 5	391	81	122	1810
Davenport, Eugene F., Melrose, Mass., assignor to United Shoe Machinery Company, Paterson, N. J. Skiving-machine	823,586	June 19	2748	582	122	2432
David Bradley Manufacturing Company. (See Paul, William L., assignor.)						
David, Simon L. (See Tibbett, George, assignor.)						
David, William L., *et al.* (See Sessions, George B., assignor.)						
David, X. N., *et al.* (See Cummings, James N., assignor.)						
Davidson, Frank B., Marseilles, Ill., assignor to Howe & Davidson Company, East Orange, N. J. Paper tray	823,847	June 19	3238	685	122	2541
Davidson, Frank B., Marseilles, Ill., assignor to Howe and Davidson Company, East Orange, N. J. Paper-roll adjustment	823,848	June 19	3240	686	122	2541
Davidson, Frank B., Marseilles, Ill., assignor to Howe and Davidson Company, East Orange, N. J. Paper-guide for presses	823,849	June 19	3242	686	122	2542
Davidson, Frank B., Marseilles, Ill., assignor to Howe and Davidson Company, East Orange, N. J. Paper tray	823,934	June 19	3400	727	122	2577
Davidson, Frank B., and J. Wesson, Marseilles, Ill., assignors to Howe and Davidson Company, East Orange, N. J. Means for dampening the score-lines of folding-box blanks	823,850	June 19	3245	687	122	2542
Davidson, John C., Columbus, Ohio. Wall construction	822,510	June 5	553	111	122	1848
Davidson, Samuel C., Belfast, Ireland. Centrifugal fan or pump	820,397	May 15	2782	603–4	122	743
Davidson, Samuel C., Belfast, Ireland. Centrifugal fan or pump	820,398	May 15	2786	605	122	743
Davidson, Samuel C., Belfast, Ireland. Inlet-opening or eye of centrifugal fans or pumps.	820,399	May 15	2790	606	122	744
Davies, Joseph B., Malvern, Victoria, Australia. Nail or screw for securing corrugated iron.	821,025	May 22	4110	874	122	1094
Davies, Mary A., Amsterdam, N. Y. Kettle-cleaner	822,026	June 12	1385	289	122	2077
Davies, Oswyn S., Castleton, England. Ornamenting pile fabrics	819,412	May 1	762	163	122	172
Davis, Charles J., Lansing, Mich. Rotary harrow	823,933	June 19	3399	726	122	2577
Davis, Charles L., Detroit, Mich., assignor, by mesne assignments, to Autopianist Co., Chicago, Ill. Mechanical musical instrument. (Reissue)	12,476	May 1	1321	287	122	297
Davis, Charley E., Aurora, Mo. Hay-press	822,511	June 5	555	112	122	1848
Davis, Edwin C. (See Ellis and Davis.)						
Davis, Emry. (See Gillespie, George C., assignor.)						
Davis, Francis G., assignor to H. H. Babcock Company, Watertown, N. Y. Whiffletree-coupling	820,918	May 15	3863	823	122	978
Davis, George H., West Orange, N. J. Expression mechanism for mechanically-operated musical instruments	824,343	June 26	4168	892	122	2796
Davis, Henry W., Provo, Utah. Shaft-support	823,320	June 12	2219	463	122	2260
Davis Locomotive Wheel Company. (See Westlake, Charles T., assignor.)						
Davis Locomotive Wheel Company. (See Westlake and Thomas, assignors.)						
Davis, Nathan H., Philadelphia, Pa. Steel-back brake-shoe	822,352	June 5	251	53	122	1781
Davis & Roesch Temperature Regulating Company. (See Roesch, Alfred, assignor.)						
Davis, William C., *et al.* (See Sharts, Truman P., assignor.)						
Davison, George R. (See Blake and Davison.)						
Daws, William R., Sheffield, England. Rotary engine	821,707	May 29	5480	1166–7	122	1451
Dawse, John T., Liverpool, England. Water-level indicator	824,098	June 26	3702	789	122	2698
Dawson, Clinton E. (See Williams, Harry S., assignor.)						
Dawson, George E., Clare, Mich. Bag-holder	821,929	May 29	5001	1254	122	1546
Dawson, James C., Webster Groves, Mo., assignor to Sieber & Trussell Manufacturing Company. Loose-leaf binder	822,654	June 5	850	173	122	1916
Day, Edwin S., and H. B. Hubbard, Bellingham, Wash. Attachment for linotype-machines	821,342	May 22	4740	1008	122	1235
Day, Elmer M., Detroit, Mich. Bath-tub	819,243	May 1	626	133	122	144
Day, Henry L., Minneapolis, Minn. Fuel-feeder	821,930	May 29	5002	1255–6	122	1546
Day, Maxwell W., Schenectady, N. Y., assignor to General Electric Company. Electric railway system	822,250	June 5	42	9	122	1738
Dayton Hydraulic Machinery Co. (See Meyers and Hildebrandt, assignors.)						
De Forest, Lee, New York, N. Y. Wireless-telegraph system	822,936	June 12	1402	294	122	2080
De Forest, Lee, New York, N. Y. Static valve for wireless-telegraph systems	823,402	June 12	2355	496	122	2289
De Forest, Lee, New York, N. Y. Wireless-telegraph system	824,003	June 19	3542	755–6	122	2606
De Forest, Lee, New York, N. Y. Oscillation-responsive device	824,637	June 26	4777	1018	122	2929
De Forest, Lee, New York, N. Y. Oscillation-responsive device	824,638	June 26	4780	1018	122	2930
De Goll, Louis, Baltimore, Md. Combined match and cigarette box	820,860	May 15	3717	792	122	947
De Grey, Gerald, assignor of one-half to A. W. Renninger, Philadelphia, Pa. Non-refillable bottle	823,116	June 12	1780	368	122	2165
De Haven, James, assignor of one-half to R. W. Higdon, Roanoke, Va. Non-refillable bottle	820,100	May 8	2208	480	122	555
De Jarnette, James F., Omaha, Nebr. Vehicle-wheel	819,244	May 1	627	133	122	144
De La Hunt, Reverdy C., Cedar Rapids, Iowa. Flush-tank siphon	822,512	June 5	556	112	122	1849
De La Vergne, Edward M. (See Sprever, George S., assignor.)						
De Laval Steam Turbine Company. (See Guy, Albert E., assignor.)						
De Leach, Alonzo A., Atlanta, Ga. Sawmill-dog	820,287	May 8	2577	559–60	122	636
De Mott, Andrew J., *et al.* (See Lawson, Benjamin S., assignor.) (Reissue.)						
De Planques, Louis R. R., and J. Biggerstaff, Yonkers, N. Y. Frame for winding armature-coils	823,265	June 12	2113	440	122	2239
De Rome, Louis, Alameda county, Cal. Bicycle attachment	823,161	June 12	1874	387	122	2184
De Selter, Tenney C. (See Sanders, Wilbur F., assignor.)						
De Soubeck, Julius T. assignor to Railroad Supply Company, Chicago, Ill. Tie-plate	821,343	May 22	4741	1008	122	1235
De Voe, Ernest S., Allenwood, N. J. Railway-tie	820,558	May 15	3125	672	122	817
De Voy, James F., Milwaukee, Wis. Trailing truck	820,400	May 15	2792	607	122	744
Deal, Jacob F., Tilton, Ga. Hand and foot power	819,523	May 1	965	211	122	216
Deal, Josiah J., Canton, Ohio. Combination-lock	820,557	May 15	3123	672	122	816
Dean Brothers Steam Pump Works. (See Dean, John C., assignor.)						
Dean, Cyrus S., Fort Erie, Canada, assignor of one-half to Sherwood Manufacturing Company, Buffalo, N. Y. Turner for flue-cleaner	821,613	May 29	5276	1125–6	122	1407
Dean, Cyrus S., Fort Erie, Canada, assignor to A. D. Jamieson, Buffalo, N. Y. Water-wheel	822,927	June 12	1386	289–90	122	2077
Dean Electric Company. (See Beyland, Sidney A., assignor.)						
Dean Electric Company. (See Dean, William W., assignor.)						
Dean Electric Company. (See Masson, Ray H., assignor.)						
Dean, George W., Fort Erie, Canada, assignor of one-half to Sherwood Manufacturing Company, Buffalo, N. Y. Tube-cleaner	821,614	May 29	5277	1126	122	1407
Dean, John C., assignor to Dean Brothers Steam-Pump Works, Indianapolis, Ind. Steam-pump	819,864	May 8	1651	353–3	122	434

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Dean, William C. (See Smith and Dean.)						
Dean, William R., McKeesport, Pa. Furniture	821,990	May 29	6014	1282	122	1571
Dean, William T., and R. Tschentscher, Chicago, Ill., assignors to Electric Controller and Supply Company, Cleveland, Ohio. System of control for electric motors	824,629	June 26	4761	1015	122	2926
Dean, William W., assignor to Kellogg Switchboard and Supply Company, Chicago, Ill. Telephone-transmitter	819,267	May 1	468	98	122	109
Dean, William W., assignor to Dean Electric Company, Elyria, Ohio. Telephone-transmitter	823,768	June 19	3089	654	122	2507
Deardurff, Jeremiah F., Fairfield, Iowa. Gable-door	823,587	June 19	2751	583	122	2433
Debragga, Joseph H. (See Evans, William F., assignor.)						
Decker, William W. K., *et al.* (See Driver, Charles H., assignor.)						
Deemer, Selden S., New Castle, Del. Railway-rail joint	824,099	June 26	3704	790	122	2699
Defiance Machine Works. (See Ensign, George A., assignor.)						
Dehart, Charles C. (See Conch, John E., assignor.)						
Delly, Jacob R., Philadelphia, Pa. Trolley	820,481	May 15	2954	640	122	779
Dels, Philip H., Washington, D. C. Pump	823,207	June 12	1985	413–14	122	2210
Deltsch Brothers. (See Slattery, William H., assignor.)						
Dejonge, Louis, Jr., New York, N. Y. Collapsible screen	820,769	May 15	3511	753	122	902
Dejonge, Louis, Jr., New York, N. Y. Folding crib	823,321	June 12	2220	463	122	2261
Del Mar, Harry, New York, N. Y., assignor to Boilers and Engineering Company, Jersey City, N. J. Water-tube boiler	822,857	June 5	1240	255	122	1998
Del Mar, Harry, New York, N. Y., assignor to Boilers and Engineering Company, Jersey City, N. J. Water-tube boiler	822,885	June 5	1293	266	122	2009
Del Mar, Harry, New York, N. Y., assignor to Boilers and Engineering Company, Jersey City, N. J. Water-tube boiler	823,264	June 12	2112	440	122	2238
Dela Mar, Joseph, New York, assignor of one-half to J. J. Nichols, Brooklyn, N. Y. Propeller for marine vessels	823,476	June 12	2505	526	122	2321
Delano, John F., New Bedford, Mass. Scraper	822,928	June 12	1388	290	122	2078
Delany, James H., Wilkinsburg, Pa. Oil-break device for electric switches and circuit-breakers	819,524	May 1	967	212	122	217
Delany, John F., Colona Station, Ill. Apparatus for separating and grading grain	823,322	June 12	2222	464	122	2261
Delaval Steam Turbine Company. (See Guy, Albert E., assignor.)						
Delf, William, Willesden, London, England. Collar stand or support	821,026	May 22	4111	874	122	1095
Dellwik, Carl, London, England, assignor to J. E. Goldschmid, Frankfort-on-the-Main, Germany. Nodulizing ores, &c.	822,929	June 12	1389	290	122	2078
Delude, Misael, North Brookfield, Mass. Machine for vending postage-stamps	823,769	June 19	3092	654–5	122	2507
Demarest, James G., West Hoboken, N. J., assignor to C. A. Baker, New York, N. Y. Hot-water heating system	821,991	May 29	6016	1283	122	1571
Demartini, Frank L., St. Louis, Mo. Extensible bracket	823,588	June 19	2752	583	122	2433
Demetrak, Constantine, assignor to American Briquetting Co., San Francisco, Cal. Briqueting-machine	820,289	May 8	2579	561	122	637
Dempster, John T. H., Schenectady, N. Y., assignor to General Electric Company. Electric lamp	821,470	May 22	4998	1063	122	1291
Deneen, Dennis, Glencoe, Minn. Gravity dust-collector	823,463	June 12	2471	522	122	2313
Denison, Francis N., Victoria, Canada. Tea strainer and infuser	823,670	June 19	2916	617	122	2471
Denison, Harry E., and H. H. Blake, Auburn, N. Y. Wedge	824,415	June 26	4331	922	122	2831
Denmead, John W. (See Palmer and Denmead.)						
Denmead, John W., Akron, Ohio, assignor to Diamond Match Company, New York, N. Y. Machine for making match-boxes	822,251	June 5	45	9–10	122	1739
Dennis, Adam, Findlay, Ohio. Adjustable window-shade and curtain-bracket	824,067	June 19	3651	777	122	2629
Dennis, Adolphus S., assignor, by mesne assignments, to National Adding Machine Company, Cleveland, Ohio. Combined number recording and adding machine	819,865	May 8	1653	353–5	122	434
Depew, George M., Canandaigua, N. Y. Hay-cap retainer	821,862	May 29	5767	1228	122	1516
Derdeyn, Roman, Vicksburg, Miss. Delinting-machine	820,957	May 22	3955	841–2	122	1060
Derr, Frank P., Baltimore, Md. Single-track railway	821,863	May 29	5768	1228	122	1516
Derryberry, Joseph M., Guymon, Okla. Ter. Post-hole auger	819,739	May 8	1396	301	122	373
Desouches, Bernard. (See Bardou, Clerc, and Desouches.)						
Desrosiers, Eugenie, *et al.* (See Desrosiers, Odilon, assignor.)						
Desrosiers, Odilon, Louisville, assignor to D. F. Reaulme, Montreal, and E. Desrosiers, Louisville, Canada. Self-closing paper-bag machine	822,252	June 5	46	11	122	1739
Determan, James, New York, N. Y. Tie-holder for shoes	819,413	May 1	763	163	122	217
Detrick, Jacob S., Baltimore, Md. Bracket	823,162	June 12	1875	387–8	122	2184
Detrick, Jacob S., Baltimore, Md. Headlight control for automobiles	823,163	June 12	1878	388	122	2185
Dettling, Jacob, *et al.* (See Seizer, Mitchell J., assignor.)						
Deuerling, Fred. (See Colborne and Deuerling.)						
Deutsch, William, Baltimore, Md. Key and knob clamp	820,919	May 15	3865	823	122	978
Deutsche Gasglühlicht-Aktiengesellschaft. (See Süssmann, Heinrich, assignor.)						
Devenney, John F. and N. P., Blanden, Iowa. Corn-planter	824,176	June 26	3849	821	122	2731
Devenney, Neal P. (See Devenney, John F. and N. P.)						
Dever, Vincent A., Philadelphia, Pa. Rain-alarm	819,525	May 1	968	212	122	217
Dewett, Charles H., and W. J. Griffiths, London, England. Locking device for screws and nuts	821,471	May 22	4999	1063	122	1291
Dexter, Talbot C., Pearl River, N. Y. Bundling-press	819,740	May 8	1399	301	122	373
Dexter, Talbot C., Pearl River, N. Y. Bundling-press	819,983	May 8	1931	427	122	490
Dexter, Talbot C., Pearl River, N. Y. Bundling-press	819,984	May 8	1937	428	122	492
Dexter, Talbot C., Pearl River, N. Y. Power-transmitting mechanism	820,920	May 15	3866	823–4	122	979
Dexter, Talbot C., Pearl River, N. Y. Power-transmitting mechanism	821,864	May 29	5769	1228–9	122	1516
Dexter, Talbot C., and C. O. L. Cardell, Pearl River, N. Y.; said Cardell assignor to said Dexter. Bundling-press	819,741	May 8	1400	301–2	122	373
Dezendorf, Edwin M., Brooklyn, N. Y. Machine for applying mortar to tiles	820,706	May 15	3387	725	122	872
Di Vito, Franck S., and A. Meyn, New Orleans, La. Nut-lock	824,219	June 26	3639	844	122	2751
Diamond Match Company. (See Denmead, John W., assignor.)						
Diamond Match Company. (See Palmer and Denmead, assignors.)						
Diamond Match Company. (See Reinhold, Frank J., assignor.)						
Dibble, Harvey D., Mystic, S. D. Explosion-engine	824,528	June 26	4554	968	122	2882
Dick, Albert B., assignor to A. B. Dick Company, Chicago, Ill. Sheet-separating apparatus	823,935	June 19	3403	727–8	122	2577
Dick, Albert B., Lake Forest, assignor to A. B. Dick Company, Chicago, Ill. Sheet-separating apparatus	823,936	June 19	3406	728	122	2578
Dick, Albert B., Lake Forest, assignor to A. B. Dick Company, Chicago, Ill. Duplicating apparatus	823,937	June 19	3409	728–9	122	2579
Dickinson, Joseph H., Cranford, N. J. Mechanical musical apparatus	819,985	May 8	1942	429	122	493
Diecks, Henry, Eastport, Me. Can-seaming machine	819,526	May 1	969	212–13	122	217
Diem-Beutler, Jean, Bruggen, Switzerland. Tulle or net embroidery	824,100	June 26	3706	790	122	2699
Diemer, William, assignor to Gendron Wheel Company, Toledo, Ohio. Spring for children's carriages	821,472	May 22	5002	1063	122	1291

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Diener, Kurt. (See Hepke and Diener.)						
Dieschar, August P., Pittsburg, Pa. Metal fence	819,637	May 1	1181	268	122	265
Dieterich, Albert E., Washington, D. C., assignor to E. E. Sager and F. E. Holt. Electric water-purifier	823,671	June 19	2917	617	122	2471
Dieterle, Christian, Cannstatt, Germany. Fire-grate attachment	823,995	June 19	3528	753	122	2603
Dieterle, Edward W., St. Louis, Mo. Water-heater	823,589	June 19	2753	583	122	2434
Dietz, Charles, Chicago, Ill. Car-coupling	821,789	May 29	5641	1201–2	122	1488
Dietz, Conrad, Cincinnati, Ohio. Washing-machine	824,529	June 26	4557	968	122	2882
Dikeman, Joseph S., Torrington, Conn. Automatic chain-feed drilling attachment	821,473	May 22	5003	1064	122	1292
Dilts Machine Works. (See Rust, Mortimer R., assignor.)						
Dilts, Robert A., Trade City, Pa. Whiffletree-hook	821,158	May 22	4370	930	122	1152
Dimitry, Ernest L., New Orleans, La. Non-refillable bottle	820,401	May 15	2794	607	122	744
Dings, Myron, Milwaukee, Wis. Magnetic separator	821,615	May 29	5280	1126	122	1407
Dinkel, George, Jersey City, N. J. Means for hanging and centralizing overdriven centrifugal machines	820,851	May 15	3702	790–1	122	943
Dion, Léon, assignor to Americus Electro-Hermatic Company, New York, N. Y. Apparatus for treating liquids	819,209	May 1	351	75	122	85
Dion, Léon, assignor to Americus Electro-Hermatic Company, New York, N. Y. Apparatus for treating liquids	820,482	May 15	2956	640	122	780
Dion, Léon, assignor to Americus Electro-Hermatic Company, New York, N. Y. Apparatus for separating metals and other substances from liquids	820,483	May 15	2960	640	122	780
Dion, Odey, Portland, Oreg. Saw-swage	820,402	May 15	2795	607–8	122	745
Dittmer, Charles H. (See Rogers and Dittmer.)						
Dittmer, John G., Burt, Iowa. Lantern-holder	824,101	June 26	3705	790–1	122	2699
Dixon, Matthew, Long Island City, N. Y. Wheel	823,938	June 19	3411	729	122	2579
Dixon, Robert M. (See Erb, Edmund M., assignor.)						
Dixon, Robert M., East Orange, N. J. Window	820,958	May 22	3957	842	122	1061
Doarnberger, John A., Roanoke, Va. Steam-boiler	823,399	June 12	2350	494–5	122	2287
Dobbs, Charles, and J. R. Pitman, Haskell, N. J., assignors to E. I. du Pont de Nemours Powder Company, Wilmington, Del. Machine for making comb-powder	821,865	May 29	5772	1229	122	1517
Dobbs, Charles, and J. R. Pitman, Haskell, N. J., assignors to E. I. du Pont de Nemours Powder Company, Wilmington, Del. Machine for making comb-powder	821,866	May 29	5775	1230	122	1517
Dobbs, Charles, and J. R. Pitman, Haskell, N. J., assignors to E. I. du Pont de Nemours Powder Company, Wilmington, Del. Machine for making grains or flakes of powder	823,672	June 19	2919	617–18	122	2472
Dobos, John, New York, N. Y. Car-fender	819,044	May 1	17	5	122	7
Dobson, John E., assignor to Michigan Machinery Manufacturing Company, Ypsilanti, Mich. Sheet-metal joint	819,866	May 8	1658	355	122	435
Dock, Herman, Philadelphia, Pa. Connection for machines and parts thereof	821,027	May 22	4113	874	122	1095
Dodds, Ethan I., Pullman, assignor to Pullman Company, Chicago, Ill. Car-truck	820,770	May 15	3512	753–4	122	902
Dodds, Ethan I., Pullman, assignor to Pullman Company, Chicago, Ill. Actuating mechanism for car-brakes	821,616	May 29	5282	1127	122	1408
Dodds, Ethan I., Pullman, assignor to Pullman Company, Chicago, Ill. Car-brake-operating mechanism	821,617	May 29	5284	1127	122	1409
Dodds, Ethan I., Pullman, assignor to Pullman Company, Chicago, Ill. Operating mechanism for car-brakes	821,618	May 29	5286	1128	122	1410
Dodds, Ethan I., Avalon, Pa., assignor to Pullman Company, Chicago, Ill. Car-door-operating mechanism	820,852	May 15	3707	791	122	945
Dodge Coal Storage Company. (See Mosby, Alfred D., assignor.)						
Dodge, Ezra S., Providence, R. I. Harness	822,831	June 5	1192	244	122	1989
Dodge, Jasper L., assignor of two-thirds to J. Q. and S. P. Bradish, Providence, R. I. Bed	824,068	June 19	3653	778	122	2630
Dodge, Sherman. (See Taylor, James E., assignor.)						
Doebler, John F., Jr., assignor to himself and S. E. Clarke, Hartford, Conn. Mop-holder for brooms	821,344	May 22	4743	1009	122	1235
Doern, George P., Chicago, Ill. Wantage-rod	819,210	May 1	354	76	122	85
Doerr, Robert C., Chicago, Ill. Railway-tie	823,208	June 12	1987	414	122	2210
Doffemyer, Charles E., *et al.* (See Roach, Ariand B., assignor.)						
Doffemyer, Charles E., *et al.* (See Roach and Hedge, assignors.)						
Doherty, Henry L., Madison, Wis. Burning cement clinker	820,484	May 15	2964	641	122	781
Doherty, Henry L., assignor to Combustion Utilities Company, New York, N. Y. Conducting combustion	819,127	May 1	188	38	122	48
Dolan, Christopher C., Lockport, N. Y. Fence-post	821,474	May 22	5005	1064	122	1292
Dolph, Charles L., Cadillac, Mich. Folding crate or box	823,515	June 19	2616	550	122	2405
Doman, Albert E., Elbridge, N. Y. Electric sparking device	819,268	May 1	473	98	122	110
Domestic Sewing Machine Company. (See Drysdale, David S., assignor.)						
Dommerque, Franz J., assignor to Kellogg Switchboard and Supply Company, Chicago, Ill. Distributing-board	822,500	June 5	725	146	122	1888
Donaldson, Benjamin K., New York, N. Y. Fishing-reel	822,436	June 5	392	82	122	1810
Donaldson, Frank N., Jewett, Ohio. Casing-spear	824,530	June 26	4558	969	122	2882
Donaldson, Jacob C. (See Jorgensen, Joachim C., assignor.)						
Donaldson, John E., Frankfort, Ind. Press	819,414	May 1	764	163	122	173
Donaldson, Percy, Baltimore, Md. Vent for receptacles	823,851	June 19	3247	687	122	2543
Donlevy, John P. L., London, England. Electrical transmitting and receiving apparatus	821,931	May 29	5904	1256	122	1547
Donnelly, William T., assignor to General Gas Appliance Company, New York, N. Y. Incandescent gas-fixture	822,353	June 5	252	53	122	1781
Donogh, Andrew L., Griswold, Canada. Road-grader	824,236	June 26	3973	851	122	2758
Donoghue, P. A., *et al.* (See Dunnell, Frederick W., assignor.)						
Donovan, William T. (See Griswold and Donovan.)						
Dorman, James F., East Tallassee, Ala. Saw-set	822,655	June 5	851	174	122	1916
Dorman, Thomas B., Philadelphia, Pa. Woven pile fabric	823,996	June 19	3529	753	122	2604
Dornbirer, James G., Cleveland, Ohio. Operating turbines	822,253	June 5	50	11	122	1739
Dorris, George P. (See Gadsey and Dorris.)						
Dorset, Marion, Washington, D. C. Manufacture of hog-cholera antitoxin	823,110	June 12	1777	.....	122	2163
Dorstrum, Benjamin, Bristol, R. I. Puzzle	819,345	May 1	628	134	122	145
Dorwaller, Joseph, West Bend, Iowa. Concrete-mixer	821,790	May 29	5643	1202	122	1489
Doty, Charles J. (See Eldredge and Doty.)						
Doty, Maria S., Chicago, Ill. Skirt-gage	819,867	May 8	1658	355	122	435
Doty, Walter G., assignor, by mesne assignments, to National Cash Register Company, Dayton, Ohio. Cash-register	823,516	June 19	2617	550	122	2405
Double, Edward, Los Angeles, Cal. Undercreaser	820,101	May 8	2209	480	122	555
Double-Friction Coil Clutch Company. (See Waugh, Edward H., assignor.)						
Dougan, James H., Kansas City, Mo. Hanger	820,771	May 15	3513	754	122	903
Dow, Daniel, *et al.* (See McGuire, John W., assignor.)						
Dow, Willard E., Braintree, Mass. Removable anvil-contact and bridge-support for electric vibrators	821,028	May 22	4114	874	122	1095

Alphabetical list of patentees for May and June—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Dow, Willard E., Braintree, Mass. Electric binding-post	821,029	May 22	4116	875	122	1096
Dowding, James F., Manchester, England. Milling-cutter	822,591	June 5	729	146–7	122	1889
Dowling, William, assignor to Mesker & Brother, St. Louis, Mo. Jail-bunk	822,592	June 5	730	147	122	1889
Downer, Murillo, Chicago, Ill. Vehicle	820,707	May 15	3386	725	122	872
Downie, Robert M. (See Smith, Downie, and Ransom.)						
Downs, Fred B., Warren, Ohio. Die-stock	819,868	May 8	1660	355–6	122	435
Downs, John P., assignor to North Electric Company, Cleveland, Ohio. Relay device	821,992	May 29	6017	1283	122	1572
Downs, John P., Boston, Mass., assignor to North Electric Company, Cleveland, Ohio. Relay device	822,193	May 29	6406	1360	122	1661
Doyle, Joseph, West Indianapolis, Ind. Piano-key	820,289	May 8	2582	562	122	638
Dozier, James C., Baton Rouge, La. Billiard-table leveling and holding device	821,225	May 22	4484	955	122	1176
Dr. J. H. McLean Medicine Company. (See Allison, James E., assignor.)						
Drain, James A. (See Liggett, Frank T., assignor.)						
Drake, Wilton E. (See Tibbals, Frank A., assignor.)						
Draper Company. (See Benson, Arthur E., assignor.)						
Draper Company. (See Draper, William F., assignor.)						
Draper Company. (See Draper and Metcalf, assignors.)						
Draper Company. (See Kelley, Herbert F., assignor.)						
Draper Company. (See Metcalf, Clarence E., assignor.)						
Draper Company. (See Northrop, Jonas, assignor.)						
Draper Company. (See Roper, Charles F., assignor.)						
Draper Company. (See Stimpson and Southwick, assignors.)						
Draper Company. (See Wood, Everett S., assignor.)						
Draper, George O., and C. E. Metcalf, assignors to Draper Company, Hopedale, Mass. Rotary ring-spinning apparatus	820,628	May 15	3237	696	122	841
Draper, George O., and C. E. Metcalf, assignors to Draper Company, Hopedale, Mass. Ring spinning or twisting apparatus	820,629	May 15	3239	696	122	842
Draper, William F. assignor to Draper Company, Hopedale, Mass. Warp-tensioning means for looms	819,742	May 8	1403	302	122	374
Drawe, Bernard M., assignor of one-third to R. Weigel, Sandusky, Ohio. Water-closet	823,770	June 19	3094	655	122	2508
Drier, Ezra N., Vancouver, Canada. Surgical arm-splint	821,619	May 29	5288	1128	122	1410
Driggs, Louis L., Sharon, Pa., and E. Wilkinson, Washington, D. C.; said Wilkinson assignor to said Driggs. Shell-fuse	823,852	June 19	3248	687–8	122	2543
Drinkwater, Edgar L., Chicago, Ill. Ink-bottle holder	822,725	June 5	999	204	122	1948
Driscoll, Richard F., assignor to Economist Gas Engine Co., San Francisco, Cal. Vapor-generator	819,211	May 1	356	76	122	85
Drissler, Frederick, New York, N. Y. Safety-lock for brooches, scarf-pins, and the like	823,517	June 19	2621	551	122	2406
Driver, Charles H., assignor of one-half to W. W. K. Decker, J. K. Chaney, and H. Bigelow, Tarpon Springs, Fla. Vehicle-axle	819,128	May 1	191	38	122	48
Driver, De Forest L., and C. I. Mansmith, Burt, Iowa. Driving mechanism	824,102	June 26	3706	791	122	2699
Driver, Wilbur B., East Orange, N. J. Alloy	824,103	June 26	3707	.....	122	2700
Drummond, Alexander B. (See Hildyard and Drummond.)						
Drysdale, David S., assignor to Domestic Sewing Machine Company, Newark, N. J. Tension device for sewing-machines	820,290	May 8	2583	563	122	638
Du Bes, George W., New Orleans, La. Flat-car standard	819,527	May 1	972	213	122	218
Du Bes, George W., New Orleans, La. Locking and releasing mechanism for standards of logging-cars. (Reissue)	12,482	May 15	3911	834–5	122	990
Du Bois, Caspar C., Noblesville, Ind. Gate	822,513	June 5	559	113	122	1849
Du Pont, Francis I., assignor to E. I. du Pont de Nemours Powder Company, Wilmington, Del. Fuse	821,883	May 29	5802	1236	122	1523
Dubois, Henry E., Grand Rapids, Mich. Controller for electric motors	824,237	June 26	3975	852	122	2758
Ducellier, Alfred J., Paris, France. Excavating-machine	824,531	June 26	4563	969–71	122	2883
Ducker, William M., New York, N. Y. Portable house	819,129	May 1	192	39	122	49
Dudley, Charles R. Sykesville, Md. Apparatus for distilling water	824,630	June 26	4767	1016	122	2927
Duer, Charles W., Chicago, Ill. Automobile	820,102	May 8	2213	481	122	556
Duff, Edward J. Liverpool, England. Recovering ammonia from gas	820,039	May 8	2076	452–3	122	526
Duff, Hugh Y. B., Allegheny, assignor to A. Q. Carpenter, J. Stuart, J. McCune, W. Y. Cadwallader, and G. B. Griffiths, Pittsburg, Pa. Gas apparatus	820,959	May 22	3961	842	122	1061
Duff, John T., Pittsburg, assignor of one-half to J. McNaugher, Allegheny, Pa. Grinding or polishing machine	822,656	June 5	854	174–5	122	1917
Duffield, Thomas C., Elmer, N. J. Bottle-mold	820,403	May 15	2797	608	122	745
Duffield, Thomas C., Elmer, N. J. Bottle-mold	820,404	May 15	2799	609–10	122	745
Duffy, Patrick J., Freedom, Pa. Stoker	820,184	May 8	2367	514–15	122	589
Dugins William F., Kew, Victoria, Australia. Tobacco-pipe	821,030	May 22	4117	875	122	1096
Duke, George W., Powder Springs, assignor of one-half to J. F. Dunton, Atlanta, Ga. Railway-tie plate	822,832	June 5	1193	245	122	1989
Dukesmith, Frank H., Meadville, Pa. Air-brake system	819,415	May 1	767	164	122	173
Dukesmith, Frank H., Meadville, Pa. Emergency cut-out cock for air-brakes	820,291	May 8	2584	563	122	638
Dulac, Adolphe. (See Martinet and Dulac.)						
Duloves, Louis. (See Petrich and Duloves.)						
Dunbar, Harry S., Cleveland, Ohio. Shade-roller bracket	823,997	June 19	3532	753	122	2604
Dunbar, James, Invercargill, New Zealand. Grip	820,292	May 8	2586	563	122	638
Duncan, Benjamin T. (See Macy and Duncan.)						
Duncan, Edward C., Jamaica Plain, Mass. Rotary engine	819,638	May 1	1182	258	122	266
Duncan, George S., and G. H. Potts, Edinburgh, Scotland, assignors to American Offset Company, New York, N. Y. Composition for preventing set-offs in printing	823,673	June 19	2921	.....	122	2473
Duncan, George S., and G. H. Potts, Edinburgh, Scotland, assignors to American Offset Company, New York, N. Y. Composition for preventing set-offs in printing	823,674	June 19	2923	.....	122	2473
Duncan, George S., and G. H. Potts, Edinburgh, Scotland, assignors to American Offset Company, New York, N. Y. Composition for preventing set-offs in printing	823,675	June 19	2924	.....	122	2473
Duncan, George S., and G. H. Potts, Edinburgh, Scotland, assignors to American Offset Company, New York, N. Y. Composition for preventing set-offs in printing	823,676	June 19	2924	.....	122	2473
Duncan, Joseph S., assignor to Addressograph Company, Chicago, Ill. Stencil-frame	822,354	June 5	253	53	122	1781
Duncan, William M., Alton, Ill. Molding-machine	821,791	May 29	5645	1202–3	122	1490
Dundas, Harry, assignor of one-half to S. C. Allerbach, Oil City, Pa. Dividers	820,352	May 8	2083	585	122	660
Dungan, George W., Shenandoah, Pa. Washing-machine	823,323	June 12	2224	464	122	2261
Dunham, Henry V., Bellows Falls, Vt., assignor to Casein Company of America. Casein solution and producing same	821,620	May 29	5290	.....	122	1410
Dunham, Lewis A., Kansas City, Mo., assignor, by mesne assignments, to International Separator Company, Chicago, Ill. Magnetic separator	823,402	June 12	2553	538	122	2330
Dunkelberger, Josiah C., Cheneyville, Ill. Power mechanism	821,226	May 22	4485	955	122	1176
Dunkelberger, Samuel, Newton, Kans. Band-cutter and feeder	824,238	June 26	3977	862–3	122	2758
Dunkelberger, Samuel, Newton, Kans. Band-cutter and feeder	824,239	June 26	4062	870–1	122	2778
Dunlap, John S., Chicago, Ill. Egg-beater	820,405	May 15	2802	610	122	746
Dunlap, Joseph F., New Brighton, Pa. Wall-tie	819,869	May 8	1661	356	122	435

Alphabetical list of patentees for May and June—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Dunlevy, D. W. (See Miller, Reuben, Jr., assignor.)						
Dunlop, Andrew G., Minneapolis, Minn. Harrow-tooth holder	823,324	June 12	2225	464	122	2262
Dunn, Charles, New York, N. Y. Penholder	821,993	May 29	6020	1283	122	1572
Dunn, Henry F., Anderson, assignor to S. F. Bowser and Company, (Inc.,) Fort Wayne, Ind. Price and measure indicator for vessels	824,532	June 26	4569	971	122	2884
Dunn, Herbert H., Dayton, Ohio. Cork-extractor	819,130	May 1	193	39	122	49
Dunn, Louis, assignor of one-half to J. Strawhorn, St. Paul, Minn. Operating device for slip-switches	822,657	June 5	856	175–6	122	1917
Dunn, Michael, Columbus, Ohio. Grinding apparatus	821,621	May 29	5290	1128–9	122	1411
Dunn, Theodore. (See Holt, Thomas C., assignor.)						
Dunnell, Frederick W., assignor of six-sevenths to P. A. Donoghue, J. J. Murphy, J. H. Emonds, H. M. Freyer, D. B. Rice, and C. B. Potter, Springfield, Mass. Composite block and making same	823,038	June 12	1615	.....	122	2130
Dunnett, Francis E., assignor to Humidine, Limited, London, England. Non-corrosive and antifouling paint or composition	824,069	June 19	3654	.....	122	2630
Dunnigan, James M. (See Hickey, Francis J., assignor.)						
Dunnock, John L., Baltimore, Md. Combination stopper and liquid-dropper	824,631	June 26	4768	1016	122	2927
Dunton, Junie F. (See Duke, George W., assignor.)						
Duplex Printing Press Company. (See Bechman, Henry F., assignor.)						
Duquesne Glass Company. (See Crosley, John H., assignor.)						
Durbin, Philip J., Patton, Pa. Extension-arm for scales	824,344	June 26	4175	892	122	2800
Durboraw, Charles L., assignor to M. Metzger, Baltimore, Md. Grip for shoe-polishing cloths	820,630	May 15	3240	697	122	842
Durfey, Elisha A., Penn Yan, N. Y. Oil-can holder	820,706	May 15	3391	726	122	873
Durkee, Carson, Vicksburg, Mich. Motor-vehicle	820,709	May 15	3393	726–7	122	873
Duryea, James F., Springfield, Mass. Friction-clutch	822,726	June 5	1000	204	122	1948
Duryea, James F., Springfield, Mass. Friction-clutch	822,727	June 5	1003	204–5	122	1949
Duryea, James F., Springfield, Mass. Friction-clutch	822,833	June 5	1194	245	122	1989
Dust Proof Furniture Company. (See Athey, Isaac H., assignor.)						
Dutcher, Frank. (See Jackson, Wilton D., assignor.)						
Dutcher, Frank, Versailles, and P. Peter, Pittsburg, Pa. Railway signal-torpedo	823,998	June 19	3533	754	122	2605
Duvall, Marcen M. (See Urbach, John T., assignor.)						
Dworzynski, Wincenty, Warsaw, Russia. Automatic electrical balance	821,475	May 22	5006	1064–5	122	1292
Dwyer, Daniel R., *et al.* (See Harrigan, Edward, assignor.)						
Dwyer, Harry A., Marion, Ind. Glass-molding machine	824,070	June 19	3655	778–9	122	2630
Dy Arman, George W., Indianapolis, Ind., assignor of one-half to J. Whitaker, Middleport, Ohio. Concrete-brick machine	821,031	May 22	4118	875–6	122	1096
Dyer, Frank P. (See Dyer, Samuel and F. P.)						
Dyer, George H., San Francisco, Cal. Building construction	824,470	June 26	4453	944	122	2858
Dyer, Samuel and F. P., Muncie, Ind. Boring-bar	819,743	May 8	1406	302	122	374
E. A. Barteski Amusement Company. (See Barteski, Emil A., assignor.)						
E. C. Fuller Company. (See Sturtevant, Charles A., assignor.)						
E. C. Fuller Company. (See Williams, George R., assignor.)						
E. I. du Pont de Nemours Powder Company. (See Dobbs and Pitman, assignors.)						
E. I. du Pont de Nemours Powder Company. (See Du Pont, Francis I., assignor.)						
E. and T. Fairbanks and Company. (See Hoepner, George, assignor.)						
E. and T. Fairbanks and Company. (See Sargent, Willis H., assignor.)						
Eager, Harry B., South Bend, Ind. Stovepipe-coupling	823,591	June 19	2756	584	122	2434
Eagle Pencil Company. (See Boman, Claes W., assignor.)						
Eagle Pencil Company. (See McIntyre, Frank, assignor.)						
Eagon, Harvey, New Comerstown, Ohio. Truss	820,853	May 15	3708	791	122	945
Earhart, Edwin S., Chickasha, Ind. Ter. Pocket-fastener	822,834	June 5	1197	245	122	1990
Earl, Lewis F., Philadelphia, Pa. Bodkin	822,728	June 5	1006	205	122	1950
Earley, John H., Philadelphia, Pa. Metallic pallet	822,194	May 29	6407	1360	122	1662
Earnist, Cyrus C., Riceville, Iowa. Attachment for adding-machines	824,416	June 26	4335	923	122	2831
Eastman, Adelbert L., Bridgeport, Conn., assignor of one-half to W. H. Locke, Jr., New York, N. Y. Acetylene-generator	820,103	May 8	2216	481	122	557
Eastman, George, assignor to Eastman Kodak Company, Rochester, N. Y. Photographic developing apparatus	822,437	June 5	394	82	122	1810
Eastman Kodak Company. (See Eastman, George, assignor.)						
Eastman Kodak Company. (See Gray, Harry L., assignor.)						
Eastman Kodak Company. (See McCurdy, Arthur W., assignor.)						
Eastman, Weston T., Rockland, Mass. Water-tube boiler	821,345	May 22	4744	1009	122	1236
Eaton, James M., Scranton, Pa. Railway signal device	822,195	May 29	6408	1360	122	1662
Eberhardt, Fred L. (See Eberhardt, Henry E. and F. L.)						
Eberhardt, Henry E. and F. L., assignors to Gould & Eberhardt, Newark, N. J. Metal-planing machine	821,932	May 29	5906	1256–7	122	1547
Eberle, Balthaser, Passaic, N. J. Blasting-powder	820,854	May 15	3709	.....	122	945
Ebie, Grover S., New York, N. Y. Electric indicator	823,164	June 12	1880	388–9	122	2186
Eckart, Edmund, New Rochelle, assignor to Gerstendorfer Bros., New York, N. Y. Spraying device	820,631	May 15	3241	697	122	842
Ecker, Charles W., assignor to Berger Manufacturing Company, Canton, Ohio. Metal window-sash	823,266	June 12	2115	441	122	2239
Eckert, Adolph F., *et al.* (See Applegate, Albert W., assignor.)						
Eckert, Charles F., *et al.* (See Applegate, Albert W., assignor.)						
Eckert, Henry, *et al.* (See Applegate, Albert W., assignor.)						
Eckley, Carroll O., New York, N. Y. Gun-sight	823,999	June 19	3535	754	122	2605
Economist Gas Engine Co. (See Driscoll, Richard F., assignor.)						
Eddy, Joshua R., and R. F. Hadley, assignors to said Eddy, P. S. and H. E. Smith, Sticker, W. Va. Casing-head for oil-wells	822,980	June 12	1390	291	122	2078
Eddy Valve Company. (See Whitney, E. H., assignor.)						
Edgar, Linden E., assignor to Link Belt Engineering Company, Philadelphia, Pa. Plate feeding and conveying apparatus	823,400	June 12	2353	495	122	2288
Edick, Charles S. (See Fromm and Edick.)						
Edison Storage Battery Company. (See Edison, Thomas A., assignor.)						
Edison, Thomas A., Llewellyn Park, N. J. Cleaning metallic surfaces	821,622	May 29	5293	1130	122	1411
Edison, Thomas A., Llewellyn Park, assignor to Edison Storage Battery Company, West Orange, N. J. Storage battery	821,082	May 22	4120	876	122	1097
Edison, Thomas A., Llewellyn Park, assignor to Edison Storage Battery Company, West Orange, N. J. Storage-battery-filling apparatus	821,623	May 29	5294	1130	122	1411
Edison, Thomas A., Llewellyn Park, assignor to Edison Storage Battery Company, West Orange, N. J. Gas-separator for storage batteries	821,624	May 29	5296	1130	122	1412
Edison, Thomas A., Llewellyn Park, assignor to Edison Storage Battery Company, West Orange, N. J. Treating alkaline storage batteries	821,625	May 29	5297	.....	122	1412
Edison, Thomas A., Llewellyn Park, assignor to Edison Storage Battery Company, West Orange, N. J. Making metallic films or flakes	821,626	May 29	5299	.....	122	1412

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Edison, Thomas A., Llewellyn Park, assignor to Edison Storage Battery Company, West Orange, N. J. Making metallic flakes or scales	821,627	May 29	5300	.....	122	1413
Edison, Thomas A., Llewellyn Park, assignor to Edison Storage Battery Company, West Orange, N. J. Making conducting-films	821,628	May 29	5301	.....	122	1413
Edmands, John W., Newton Center, Mass. Tool	820,185	May 8	2360	515	122	590
Edson, Eugene R., Cleveland, Ohio. Apparatus for separating naphtha, &c., from oil or other liquids	824,104	June 26	3708	791–2	122	2700
Edward, William S., Sault Ste. Marie, Mich. Winding-drum	821,708	May 29	5482	1167	122	1451
Edwards, Frank W., Logansport, Ind., assignor to Chicago Lubricator Company, Chicago, Ill. Sight-feed lubricator	819,693	May 1	1300	282–3	122	292
Edwards, Franklin T. (See Ross and Edwards.)						
Edwards, Joseph, New York, N. Y. Step-holder for cars	823,325	June 12	2227	464	122	2262
Edwards, Thomas A., Boston, Mass. Roller-bearing	824,533	June 26	4570	971–2	122	2884
Edwards, William J. (See Cantieberv and Edwards.)						
Edwin F. Smith Company. (See Smith, Edwin F., assignor.)						
Egan, Sara F., New York, N. Y. Hat-fastening	823,518	June 19	2622	551	122	2406
Egenolf, Gustave, New York, N. Y. Device for covering and protecting charged rails	820,186	May 8	2371	515	122	590
Egge, Frederick, Bridgeport, Conn. Gas-burner	823,165	June 12	1887	390	122	2187
Egge, Frederick, Bridgeport, Conn., assignor to National Blank Book Company, Holyoke, Mass. Loose-leaf binder	819,346	May 1	630	134	122	145
Eggers, Anton C., New York, N. Y. Combined toilet article	823,464	June 12	2473	522	122	2314
Eggers, Anton C., assignor to Goodyear's India Rubber Glove Mfg. Co., New York, N. Y. Nebulizer	824,471	June 26	4455	945	122	2858
Ehrenreich, James J., *et al.* (See McIntyre, Frank, assignor.)						
Ehrensperger, Edward H., *et al.* (See Keiser, Francis R., assignor.)						
Ehret, Michael, Philadelphia, Pa. Motor-car	822,104	May 29	6229	1328	122	1621
Eichhoff, Walter E., Cairo, Ill. Wire-reel	824,290	June 26	4072	871	122	2778
Eichhorn, Adolph G., St. Louis, Mo. Pad for gig-saddles and back-bands	823,590	June 19	2755	584	122	2434
Eickemeyer, Carl, Yonkers, N. Y. Gas-heater	823,267	June 12	2117	441	122	2239
Eickemeyer, Carl, Yonkers, N. Y., assignor to Turner Atherton & Co., Ltd., Stockport, England. Automatic hat-blocking machine	821,284	May 22	4605	981–2	122	1203
Elermann, Sophus A., assignor of one-half to J. C. Moore, Omaha, Nebr. Drill-chuck	819,744	May 8	1407	303	122	374
Eifel, Joseph, Chicago, Ill. Automatic cut-off for sound-reproducing machines	821,629	May 29	5303	1130–1	122	1413
Einfeldt, Emil, Davenport, Iowa, assignor to Bettendorf Metal Wheel Company. Furnace-grate	824,534	June 26	4573	972–3	122	2885
Einsele, George N., assignor to R. W. Newton and H. F. Jones, Chicago, Ill. Sight-feed for lubricators	820,922	May 15	3871	824	122	980
Eklund, John A., Verndale, Minn. Device for separating cockle from grain	822,105	May 29	6229	1328	122	1621
Ekrem, Harry, San Pedro, Cal. Car-fender	821,346	May 22	4746	1009	122	1236
Elder, Edward H., assignor to J. Stevens Arms & Tool Company, Chicopee Falls, Mass. Lock for fore-end of gun-stocks	822,886	June 5	1294	266	122	2009
Elder, Edward H., assignor to J. Stevens Arms & Tool Company, Chicopee Falls, Mass. Ejector mechanism	824,535	June 26	4576	973	122	2885
Eldred, Byron E., Brookline, Mass., assignor to Combustion Utilities Company, New York, N. Y. Application of heat in metallurgical and other furnaces	819,045	May 1	18	5	122	7
Eldred, Byron E., Bronxville, assignor to Combustion Utilities Company, New York, N. Y. Means for controlling gas velocity in reverberatory furnaces	819,046	May 1	21	5–6	122	7
Eldred, Byron E., Bronxville, assignor to Combustion Utilities Company, New York, N. Y. Blast-flame furnace	821,994	May 29	6022	1283	122	1573
Eldred, Byron E., assignor to Combustion Utilities Company, New York, N. Y. Producing gas	820,485	May 15	2966	641	122	781
Eldredge, Harry H., and C. J. Doty, Guthrie, Okla. Ter. Mutoscope	822,438	June 5	399	83	122	1811
Electric Boat Company. (See Barraja-Frauenfelder, Joseph, assignor.)						
Electric Boat Company. (See Griesbaber, Hugo E., assignor.)						
Electric Boat Company. (See Spear, Lawrence Y., assignor.)						
Electric Boat Company. (See Spear and Bailey, assignors.)						
Electric Controller and Supply Company. (See Dean and Tschentscher, assignors.)						
Electric Liquid Purifying and Filtering Company. (See Hinkson, Frank B., assignor.)						
Electric Specialty Co. (See Felt, Charles E., assignor.)						
Electric Specialty Co. (See Felt and Kimbark, assignors.)						
Electric Water Purifier Company. (See Adams, Milton F., assignor.)						
Electrical Devices Company. (See Titus, Joseph V. E., assignor.)						
Electrische Glühlampen-Fabrik "Watt," Scharf & Co. (See Schübel, Carl, assignor.)						
Electro Chemical & Development Company. (See Hartenstein, Herman L., assignor.)						
Electro Dental Manufacturing Company. (See Schramm, Adolph W., assignor.)						
Electrolite Gas Lamp Company. (See Beck, Charles W., assignor.)						
Elegar, Augustus M., Denver, Colo. Bath-tub cabinet	822,355	June 5	254	53	122	1781
Ellett, Joseph P. (See Green, George F., assignor.)						
Elling, Jens W. O., Christiania, Norway. Fractional-supply steam and gas turbine	821,347	May 22	4747	1010	122	1236
Elliott, Cypher C. and N. B., Gilman, Iowa. Chimney-flue thimble	821,933	May 29	5909	1257	122	1548
Elliott-Fisher Company. (See Laganke, Charles F., assignor.)						
Elliott-Fisher Company. (See Laganke and Smith, assignors.)						
Elliott-Fisher Company. (See Turley, Patrick H., assignor.)						
Elliott-Fisher Company. (See Twining, William A., assignor.)						
Elliott, James, Melville, N. Y. Terra-cotta-tile well	822,254	June 5	52	11	122	1740
Elliott, Milo A., Waterville, Me. Vehicle-hub	824,345	June 26	4176	893	122	2801
Elliott, Noyes B. (See Elliott, Cypher C. and N. B.)						
Elliott, Percy M., Chicago, Ill., assignor to Q & H Company. Door-hanger	821,630	May 29	5306	1131	122	1414
Elliott, Thaddious V., New York, N. Y. Oscillating valve for steam-engines	821,227	May 22	4486	956	122	1176
Ellis, Arthur N., San Bernardino, Cal. Pump for wells	819,986	May 8	1945	429	122	494
Ellis, Axel E., Boston, Mass. Tag	822,255	June 5	53	11	122	1740
Ellis, Carleton, White Plains, N. Y. Apparatus for burning lime	821,996	May 29	6025	1284	122	1574
Ellis, Carleton, assignor to Combustion Utilities Company, New York, N. Y. Gas producing and consuming apparatus	821,995	May 29	6024	1284	122	1573
Ellis, Frank L., assignor to United Engineering & Foundry Company, Pittsburg, Pa. Pipe crushing and shearing machine	823,326	June 12	2228	465	122	2262
Ellis, Frank P., Messer, Kans. Baling apparatus	821,405	May 22	4573	1034–5	122	1263
Ellis, George H., Chicago, Ill., assignor to International Harvester Company. Speed-regulating mechanism for gas-engines	824,105	June 26	3711	792	122	2700
Ellis, Peter, Wellington, New Zealand. Rotary motor	822,717	June 19	2902	633–4	122	2486
Ellis, Robert, Niagara Falls, N. Y. Combined button and pin fastener	822,720	June 5	1007	205	122	1950
Ellis, Thaddeus, and G. H. Purvis, Lester, Wash. Automatic track-inspector	824,536	June 26	4578	973–4	122	2886
Ellis, William F., Stamford, Conn., and E. C. Davis, New Brunswick, N. J., assignors to Universal Tire Company, New York, N. Y. Tire construction	822,420	June 5	400	82	122	1812
Ellison, Milton C., St. Paul, Minn. Filled-sack-sewing machine	822,931	June 12	1302	201–2	122	2078

Alphabetical list of patentees for May and June—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Ellrich, Robert C. (See Whitney and Ellrich.)						
Ellis, Frank B., Hutchinson, Minn. Valve-gear for explosive-engines	823,039	June 12	1616	334–5	122	2130
Elmer, John K., Greeley, Colo. Vise	824,000	June 19	3537	754–5	122	2605
Elmore, C. M., *et al.* (See Barry and Shaughnessy, assignors.)						
Elsenhans, Albert, Rüttenscheid, near Essen-on-the-Ruhr, Germany. Apparatus for purifying gas	820,772	May 15	3515	754	122	903
Eltonhead, Harry B. (See Leffingwell and Eltonhead.)						
Emberson, John, White Plains, N. Y. Scaffolding	822,658	June 5	857	176	122	1918
Embody, Charles L., Lincoln, Nebr. Flue-stopper	821,792	May 29	5647	1203	122	1490
Emerick, George S., Philadelphia, Pa. Pebble-mill	820,559	May 15	3127	672	122	817
Emerick, William H., Osawatomie, Kans., and P. Alquist, Memphis, Tenn. Car-body	819,047	May 1	23	6	122	8
Emerick, William H., Osawatomie, Kans., and P. Alquist, Memphis, Tenn. Car-frame	819,048	May 1	24	6	122	8
Emerson Electric Manufacturing Company. (See Meston, Charles R., assignor.)						
Emerson Manufacturing Company. (See Waterman, Lewis E., assignor.)						
Emert, William S., Peoria, Ill. Draft-equalizer	822,659	June 5	858	176	122	1918
Emmet, William L. R., Schenectady, N. Y., assignor to General Electric Company. Governing mechanism for turbines	822,256	June 5	54	12	122	1740
Emmet, William L. R., Schenectady, N. Y., assignor to General Electric Company. Elastic-fluid turbine	822,257	June 5	58	12–13	122	1741
Emmet, William L. R., Schenectady, N. Y., assignor to General Electric Company. Elastic-fluid turbine	822,258	June 5	62	13	122	1742
Emmet, William L. R., Schenectady, N. Y., assignor to General Electric Company. Power-generating apparatus	822,259	June 5	66	13	122	1743
Emmet, William L. R., Schenectady, N. Y., assignor to General Electric Company. Power-generating apparatus	822,260	June 5	68	14	122	1743
Emmet, William L. R., Schenectady, N. Y., assignor to General Electric Company. Power system	822,261	June 5	70	14	122	1744
Emmet, William L. R., Schenectady, N. Y., assignor to General Electric Company. Governing mechanism for elastic-fluid turbines	822,887	June 5	1296	267	122	2010
Emmons, Grosvenor B. (See Mills, Francis A., assignor.)						
Emonds, James H., *et al.* (See Dunnell, Frederick W., assignor.)						
Empire Machine Company. (See Wiemann, William P., assignor.)						
Endres, Edward S., *et al.* (See Hyden, Peter N., assignor.)						
Energy Elevator Company. (See Brown, William H., assignor.)						
Engebretson, Helmer H., Albee, S. D. Latch	824,417	June 26	4343	923	122	2832
Engel, Charles W., Pittsburg, Pa. Safety-pin	823,268	June 12	2118	442	122	2239
Engh, Samuel, Holcombe, Wis. Combined grain-tank and shelter-top	822,262	June 5	73	14–15	122	1744
Engineer Company. (See Quinn, John C., assignor.)						
England, William H. (See Allfree and England.)						
Ennis, Charles, assignor of one-half to F. L. Golding, Boston, Mass. Burner for gas-ranges	822,932	June 12	1395	292	122	2079
Enochs, Claude D., La Crosse, Wis., assignor to Western Electric Company, Chicago, Ill. Automatic exchange-selector	820,187	May 8	2372	515–16	122	590
Enos, Edward H., Salem, Mass. Game	821,476	May 22	5011	1065	122	1293
Enright, Michael, assignor of one-half to G. Silk, Norfolk, Va. Woodworking-tool	823,592	June 19	2757	584	122	2434
Ensign, George A., assignor to Defiance Machine Works, Defiance, Ohio. Planing-machine	819,528	May 1	976	213–14	122	219
Enterprise Railway Equipment Company. (See Campbell, Argyle, assignor.)						
Ephraim, Ferdinand, San Francisco, Cal. Vulcanized material and making the same	819,529	May 1	978		122	220
Epperson, Perrin, assignor to A. E. Chamberlain, Belt, Mont. Funnel	820,353	May 8	2684	586	122	660
Erb, Edmund M., Jersey City, assignor to R. M. Dixon, East Orange, N. J. Window	820,960	May 22	3963	843	122	1062
Erb, Edmund M., Jersey City, assignor to R. M. Dixon, East Orange, N. J. Car construction	820,961	May 22	3970	843	122	1064
Erb, Edmund M., Jersey City, assignor to R. M. Dixon, East Orange, N. J. Adjustable sash-balance	820,962	May 22	3972	844	122	1065
Erb, Edmund M., Jersey City, assignor to R. M. Dixon, East Orange, N. J. Window construction	821,228	May 22	4488	956	122	1176
Erickson, Andrew D., Williston, N. D. Photographic apparatus	823,465	June 12	2474	523	122	2314
Erickson, Enoch. (See Lee and Erickson.)						
Erickson, Herman C., Seattle, Wash. Machine for producing lath-bolts	820,855	May 15	3710	791	122	945
Erickson, John, assignor to Automatic Electric Company, Chicago, Ill. Electric bell	819,049	May 1	27	6	122	9
Erickson, John, assignor to Automatic Electric Company, Chicago, Ill. Indicating device for automatic telephone-switches	819,050	May 1	28	7	122	10
Erickson, John A., Malden, Mass. Sight-feed for lubricators	823,209	June 12	1988	414	122	2210
Ericson, Charles J., Salt Lake City, Utah. Combination-lock and support	819,131	May 1	193	39	122	49
Ericson, Gottfrid, New York, N. Y. Butter-cutter	824,472	June 26	4456	945	122	2859
Ericsson, Anders J., assignor to Aktiebolaget Separator, Stockholm, Sweden. Centrifugal machine	822,196	May 29	6410	1361	122	1662
Ernst, Carl, Rochester, N. Y. Drawer-support for filing-cases	823,771	June 19	3096	656	122	2508
Ernst, Charles K., Buffalo, N. Y. Turn-table	824,632	June 26	4769	1016	122	2927
Ernst, Henry, Chicago, Ill. Door-check	819,870	May 8	1662	356	122	436
Ernst, John H., New York, assignor to Silver & Company, Brooklyn, N. Y. Alcohol-burner	821,406	May 22	4880	1036	122	1265
Errick, Charles W., North Tonawanda, N. Y. Bicycle-saddle and spring therefor	822,660	June 5	860	176	122	1918
Erste Offenbacher Special-Fabrik für Schmirgelwaarenfabrikation Mayer & Schmidt. (See Benicke, Georg, assignor.)						
Ertzman, Emil B. (See Fatkin and Ertzman.)						
Erwin, Joseph. (See Porter and Erwin.)						
Erwin, Thos. F., *et al.* (See Burkins, Eugene, assignor.)						
Escbenbach, Anthony, Dayton, Ky. Feeding mechanism for presses and the like	822,661	June 5	861	177	122	1919
Esseu, Fritz von, Skövde, assignor to Aktiebolaget Tidan, Mariestad, Sweden. Boottree and the like	823,853	June 19	3252	688	122	2544
Etter, William H., Marietta, Ohio. Weather-strip	824,001	June 19	3539	755	122	2606
Ettinger, Josephine, Cortland, N. Y. Garment-supporting device	820,856	May 15	3712	792	122	946
Eureka Briquette Company. (See Crawford, James J., assignor.)						
Eustice, Daniel L., Galena, Ill. Machine for the manufacture of bands	819,639	May 1	1186	259	122	266
Eustis, John P., Newtonville, Mass. Bath-tub seat. (Reissue)	12,499	June 26	4906	1043	122	2955
Evans, Arthur B. (See Wichmann and Evans.)						
Evans, Frank A., Redwood Falls, Minn. Rotary filter	820,560	May 15	3127	673	122	817
Evans, Jeremiah Y., Philadelphia, Pa. Clutch	821,091	May 22	4242	902	122	1122
Evans, Jesse and M., Hamilton, Ohio. Tire-setter	822,933	June 12	1397	292	122	2079
Evans, John G., Calhoun, S. C. Flow-frame and attachment	824,633	June 26	4771	1017	122	2928
Evans, John H., *et al.* (See Evans, William, assignor.)						
Evans, Minor. (See Evans, Jesse and M.)						
Evans, Robert, *et al.* (See Evans, William, assignor.)						
Evans, William, Norfolk, Va. Surgical table	822,197	May 29	6411	1361	122	1662

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Evans, William, assignor to W., R., and J. H. Evans, Philadelphia, Pa. Hydraulic band-stripping machine	819,871	May 8	1664	356–8	122	436
Evans, William, assignor to W., R., and J. H. Evans, Philadelphia, Pa. Hydraulic machine for clamping plates in the manufacture of springs	819,872	May 8	1667	358	122	437
Evans, William F., assignor of one-half to J. H. Debragga, Evergreen, N. Y. Window-sash holder	822,934	June 12	1398	293	122	2079
Evens, Edward L., Malvern, South Australia, Australia. Game apparatus	819,132	May 1	195	40	122	49
Everett, Otis W., Worcester, Mass., assignor to Samuel Winslow Skate Co. Roller for skates	823,939	June 19	3412	729	122	2580
Everett, Otis W., Worcester, Mass., assignor to Samuel Winslow Skate Mfg. Company. Roller-skate	823,940	June 19	3413	729	122	2580
Everett, William R. (See Newton, Edwin J., assignor.)						
Everson, John Q. (See Young and Harvey, assignors.)						
Eves, Archie P., Akron, Ohio. Treating gum	821,934	May 29	5910	1257	122	1548
Ewen, Samuel G., Jr., Woonsocket, R. I. Animal-trap	822,835	June 5	1199	246	122	1990
Excelsior Needle Co. (See Lamb, Amherst G., assignor.)						
Exton, Joseph P., and J. M. Hahn, High Bridge, N. J. Dovetail for patterns	821,997	May 29	6027	1284	122	1574
Ezell, Uberto D., Kimball, Tex. Pouch	824,634	June 26	4773	1017	122	2928
F. A. Hardy & Co. (See Bertolini, Vincent, assignor.)						
Faatz-Reynolds Felting Company. (See Reynolds, George A., assignor.)						
Faber, Eberhard. (See Fleming, Clarence C., assignor.)						
Faber, Henry B., and H. E. Seal, New York, N. Y., assignors to Rubber Balloon Company of America, Newark, N. J. Rubber balloon-bag	824,071	June 19	3660	779	122	2632
Faherty, Michael W., Memphis, Tenn. Cylinder-knife for cotton-seed hullers	824,002	June 19	3540	755	122	2606
Fahrne, Peter J., Rochester, N. Y. Toy	822,198	May 29	6412	1361	122	1663
Fairbanks, David H., Jackson, Tenn. Apparatus for cooling hot journal-boxes	824,635	June 26	4773	1017	122	2928
Fairbanks, James G., and G. L. Sauer, Marion, Ohio. Excavator	822,935	June 12	1400	293	122	2080
Falconer, David, Utica, Mo. Snout-piercing tool	823,519	June 19	2623	551	122	2406
Falk, John, Dewitt, Iowa. Stock-fountain	822,440	June 5	402	83	122	1812
Faller, Ernest A., New York, N. Y. Visual-signal-receiving system	822,888	June 5	1299	267–8	122	2010
Faller, Ernest A., and O. A. Danielson, New York, N. Y. Automatic telephone-key	824,291	June 26	4073	871	122	2779
Fancher, Reuben, Crown Point, Ind. Securing photographs, name and record tablets to monuments and grave-markers	822,106	May 29	6231	1328	122	1621
Farbenfabriken of Elberfeld Co. (See Hofmann, Fritz, assignor.)						
Farbenfabriken vorm. Friedr. Bayer & Co. (See Berendes, Rudolph, assignor.)						
Farbwerke, vorm. Meister, Lucius & Brüning. (See Keil, Gustav, assignor.)						
Farbwerke, vorm. Meister, Lucius & Brüning. (See Oppermann, Erich, assignor.)						
Farbwerke, vorm. Meister, Lucius & Brüning. (See Schirmacher, Karl, assignor.)						
Farbwerke, vorm. Meister, Lucius & Brüning. (See Stolz and Reuter, assignors.)						
Farlow Draft Gear Company. (See Wright and Farlow, assignors.)						
Farlow, James, assignor of one-half to J. Manley, Anderson, Ind. Car-coupling	824,239	June 26	3985	853	122	2760
Farlow, John H. (See Wright and Farlow.)						
Farmer, Albert H., Devonport, New Zealand. Steam-valve	821,867	May 29	5776	1230–1	122	1518
Farnum, William C., Arlington, Vt., assignor to Wyckoff, Seamans & Benedict, Ilion, N. Y. Type-writing machine	824,418	June 26	4343	924	122	2833
Farrand, Hiram A., New York, N. Y. Apparatus for producing moving pictures	822,730	June 5	1006	205–6	122	1950
Farrar, Charles H., Lilly Dale, N. Y. Fruit and vegetable slicer and grater	820,857	May 15	3713	792	122	946
Fatkin, Edward S., and E. B. Ertzman, Pittsburg, Pa. Game apparatus	821,348	May 22	4748	1010	122	1236
Fatzinger, Edward F., Springfield, Ohio. Slat for endless aprons	820,632	May 15	3242	697	122	843
Faulds, John, Chicago, Ill., assignor to Middleby Oven Manufacturing Company. Bake-oven	819,417	May 1	771	165–6	122	174
Faust, Karl I., Cleveland, Ohio. Running-gear for baby-carriages	819,694	May 1	1301	283	122	292
Faust, Karl I., Cleveland, Ohio. Device for caring for infants	822,889	June 5	1304	268–9	122	2011
Fawcett, Percy W., Sheffield, England. Twist-drill	824,346	June 26	4177	903	122	2801
Fawcett, Percy W., and E. L. W. Bellhouse, Sheffield, England. Pneumatic tire	820,104	May 8	2218	482	122	558
Fawcett, William N., assignor of two-thirds to M. Bernhard and M. Burckheimer, New York, N. Y. Burglar-alarm	819,873	May 8	1670	359	122	438
Fay, Owen H., Chicago, Ill. Battery-plate	820,040	May 8	2079	453	122	527
Fears, John, assignor of two-thirds to J. F. Carter and H. L. Bussey, Timpson, Tex. Gate	821,793	May 29	5648	1203	122	1490
Fechtig, Albert C., New York, N. Y. Musical toy	819,051	May 1	31	7	122	10
Fecker, Gottlieb L. (See Swasey and Fecker.)						
Fedran, John, East Pittsburg, Pa. Combination furniture	821,349	May 22	4750	1010	122	1237
Feinblatt, Adolf, assignor of one-half to S. Jaegur, New York, N. Y. Machine for making leather straps and belts	823,269	June 12	2120	442	122	2239
Feiner, Eugene J. (See Hamann, Richard W., assignor.)						
Feister, Charles, Ardsley, N. Y. Ice-creeper	822,662	June 5	864	177	122	1919
Feldmann, Louis, Jr., St. Louis, Mo. Hanger for picture-frames	821,159	May 22	4371	930	122	1152
Felkin, Mario L., Winthrop, Mass. Illuminated sign	822,593	June 5	731	147	122	1899
Felsing, Samuel D., Crookston, Minn., assignor to Indiana Manufacturing Company, Indianapolis, Ind. Pneumatic stacker and stacker attachment for threshing-machines	821,584	May 22	5200	1110	122	1332
Felt, Charles E., assignor to Electric Specialty Co., Chicago, Ill. Car-axle gearing	821,631	May 29	5307	1132	122	1414
Felt, Charles E., and D. A. Kimbark, assignors to Electric Specialty Co., Chicago, Ill. Guide for coupling members	822,514	June 5	560	113	122	1850
Felton, William C., Mount Vernon, Ind. Tongs	823,466	June 12	2475	523	122	2314
Fenn, William B., Sheepshead Bay, N. Y. Machine for making fibrous packings	819,269	May 1	476	98–100	122	111
Fenn, William H. (See Canfield, Frank, assignor.)						
Fenton, Ephraim H., Kansas City, Mo. Machine for making mops	820,561	May 15	3129	673	122	818
Ferdinand, Anthony B., Wauwatosa, Wis. Guide-pulley	819,874	May 8	1672	359	122	438
Ferdinand, Anthony B., Milwaukee, Wis. Means for actuating signals	820,041	May 8	2080	453–4	122	527
Ferguson, James A., *et al.* (See Tate, Hugh J., assignor.)						
Ferguson, John A., Denver, Colo. Wall	822,594	June 5	733	148	122	1889
Ferguson, John W., Bloomfield, N. J. Brush	823,520	June 19	2624	551–2	122	2406
Ferguson, Nelson, Ben Avon, Pa. Snatch-block	821,407	May 22	4881	1036	122	1265
Fern, William H., Scranton, Pa. Safety device for elevators	819,052	May 1	34	7–8	122	11
Fernandez, Julius. (See Hayes and Fernandez.)						
Ferralnolo, Egidio, *et al.* (See Liaci, Cosmo, assignor.)						
Ferrell, Thomas J. (See Tonkin, John C., assignor.)						
Ferris, Thomas A., Waxahachie, Tex. Cabinet	821,350	May 22	4751	1010–11	122	1237
Ferris, Walter, assignor to Bucyrus Company, South Milwaukee, Wis. Rope-fastening for winding-drums	823,401	June 12	2354	495	122	2288
Ferris, William I., Stamford, Conn., assignor to L. E. Waterman Company, New York, N. Y. Fountain-brush	824,686	June 26	4873	1038	122	2948
Fersenheim, Rudolph L., New York, N. Y. Prepayment attachment for gas-meters	824,410	June 26	4347	924–5	122	2834
Fertick, Charles W., Baltimore, Md. Mortar-spreading machine	820,042	May 8	2082	454	122	527
Fetta, Robert H., Richmond, Ind. Chemical-injector for steam-boilers	823,941	June 19	3415	730	122	2580

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Fetters, Charles A., New York, N. Y., assignor to Sanitary Sectional Brush Company. Sectional brush with grooved block	822,836	June 5	1200	246	122	1991
Fetting, Frederick, Providence, R. I., assignor to Potter & Buffinton Company. Bracelet	820,963	May 22	3975	844	122	1065
Fetzer, James J., Columbiana, assignor to Herbrand Company, Fremont, Ohio. Safety-razor	819,640	May 1	1190	259	122	267
Fetzer, William, Middletown, Ohio. Seeding attachment	824,105	June 26	3712	792	122	2701
Fewson, Paul, Hamburg, Germany. Means for the protection of screw-nuts	821,265	May 22	4007	982	122	1203
Fibered Leather Manufacturing Company. (See Cutler, Otis M., assignor.)						
Fichter, Conrad, Syracuse, N. Y. Metallic shingle	822,199	May 29	6414	1361	122	1663
Fidelity Title and Trust Company. (See Carnahan, Cyrus M., assignor.)						
Fiedler, Julius, and F. Hrdlicska-Caesár, Vienna, Austria-Hungary. Flash-light apparatus	822,263	June 5	75	15	122	1745
Fielding, Howard H. (See Goff and Fielding.)						
Fielding, Philip H., New York, N. Y. Electrical receptacle	819,418	May 1	772	166	122	175
Figgatt, Catherine C., New York, N. Y. Collar-button	822,200	May 29	6415	1362	122	1663
Filer, Herbert A., Kensington, Md. Parlor base-ball apparatus	819,212	May 1	357	76	122	86
Filley, William S., Montpelier, Ohio. Dental-plate machine	819,641	May 1	1191	260	122	268
Findlay, James, Ilford, assignor to Bromar Limited, London, England. Base or support for photographic sensitive emulsions	822,107	May 29	6233	.....	122	1621
Finizie, Thomas D. (See Hager and Finizie.)						
Finkle, George S., East Greenbush, N. Y. Rail-fastening	821,408	May 22	4882	1037	122	1265
Finley, Fred B., Los Angeles, Cal. Ore-separator	822,515	June 5	563	113–14	122	1850
Finnegan, Frank J. (See Finnegan, Louis H. and F. J.)						
Finnegan, Louis H. and F. J., Minneapolis, Minn. Chocolate-cutter	820,633	May 15	3243	697	122	843
Finney, Herbert A., Crum Lynne, Pa. Game apparatus	819,530	May 1	978	214	122	220
Firestone, Joseph F., Columbus, Ohio. Truck	819,053	May 1	35	8	122	11
Fischer, William C., Huntington, assignor of one-half to M. Lachman, New York, N. Y. Caster-socket for metallic bedsteads	821,585	May 22	5206	1111	122	1333
Fish, Charles H. (See Owen, Herbert W., assignor.)						
Fish, Harry J. (See Turner, Samuel J., assignor.)						
Fisher, Adam. (See Ausband, Charles P., assignor.)						
Fisher, Charles A., Chicago, Ill. Mattress or cushion covering	820,634	May 15	3244	698	122	843
Fisher, Frank C., Cheltenham, Pa., and W. C. Culin, Camden, N. J. Mouthpiece for telephones	819,531	May 1	979	214	122	220
Fisher, George F., North Tonawanda, N. Y. Mortar-gage	823,593	June 19	2759	584	122	2435
Fisher, John E., *et al.* (See Adams, William L., assignor.)						
Fisher, Willis H., Mount Gilead, Ohio. Press for molding artificial stone or the like	819,054	May 1	36	8–9	122	12
Fisher, Willis H., Mount Gilead, Ohio. Mold-box	819,055	May 1	42	9	122	13
Fisk, Carl A., assignor of one-half to W. Person, Providence, R. I. Micrometer-gage	824,420	June 26	4350	925	122	2834
Fiske, Bradley A., U. S. Navy. Range-finder	822,201	May 29	6416	1362	122	1663
Fitch, Thomas W., Jr., Cleveland, assignor to Interstate Engineering Company, Bedford, Ohio. Track-brake	823,772	June 19	3099	656–7	122	2509
Fitzgibbons, Patrick F., Chattanooga, Tenn. Derrick	822,837	June 5	1202	246–7	122	1991
Fitzpatrick, Kerien, *et al.* (See Yoe, Philip, assignor.)						
Flager, Edward G. (See McGahan and Flager.)						
Flager, Edward G., and F. L. McGahan, St. Louis, Mo., assignors to National Light, Heat & Power Company. Fluid-fuel burner	824,689	June 26	4876	1038	122	2949
Flagg, Alvernis G., assignor of one-fourth to G. H. Kramer, Richmond, Ind. Stovepipe-coupling	822,202	May 29	6420	1363	122	1664
Flanagan, Denis, Clayton-le-Moors, England. Blindstitch sewing-machine	819,642	May 1	1193	260–1	122	268
Flanagan, Denis, Clayton-le-Moors, England. Cloth-feeding mechanism for sewing-machines	820,354	May 8	2685	586	122	661
Flanagan, Denis, Clayton-le-Moors, England. Sewing-machine reel-case	820,355	May 8	2686	587	122	661
Flaschberger, Ferdinand, Hoboken, and M. Gebhart, Jersey City, N. J. Window	822,516	June 5	565	114	122	1851
Flash Light Sign Company. (See Bacon, Earl C., assignor.)						
Flatau, Louis S., assignor to Republic Railway Appliance Co., St. Louis, Mo. Sheet-metal-working machine	819,643	May 1	1195	261–2	122	268
Flatau, Louis S., assignor, by mesne assignments, to Republic Railway Appliance Co., St. Louis, Mo. Sheet-metal-working machine	819,644	May 1	1197	263	122	269
Fleck, Michael. (See Hupfel, Adolph G., assignor.)						
Fleming, Alexander, Davenport, Iowa. Saw-set	819,745	May 8	1408	303	122	375
Fleming, Clarence C., Newark, N. J., assignor to E. Faber, New York, N. Y. Box for pencils	820,773	May 15	3517	754	122	903
Fleming, James A. J., Newport, Oreg. Wave-motor	822,203	May 29	6422	1363	122	1664
Fleming, Norman O., Mansfield, Ohio. Automatic water-gage	821,709	May 29	5483	1167	122	1451
Fleming, William B., South Pasadena, Cal. Roll for the accurate winding of a sheet of paper from one roll to another	822,517	June 5	567	114	122	1851
Flemming, Charles F., Washington, D. C. Car-stake	823,270	June 12	2123	443	122	2240
Fletcher, Mordecai H., Cincinnati, Ohio. Core	820,858	May 15	3714	792	122	946
Fletcher, Nathan W., Chicago Heights, assignor to Turbine Motor Tool Company, Chicago, Ill. Turbine-motor	823,210	June 12	1990	414–15	122	2211
Fletcher, Nathan W., Chicago Heights, assignor to Turbine Motor Tool Company, Chicago, Ill. Turbine-motor	823,211	June 12	1995	415–16	122	2212
Fletcher, Nathan W., Chicago Heights, assignor to Turbine Motor Tool Company, Chicago, Ill. Motor-driven tool	824,347	June 26	4178	803–4	122	2801
Fletcher, Stoughton A. (See Schaefer, Frank M., assignor.)						
Flickinger, Edward O., Massillon, Ohio. Brake mechanism	823,942	June 19	3418	730	122	2580
Flinchbaugh, Frederick T., York, Pa. Actuating-gear for traction-engines	821,477	May 22	5012	1065–6	122	1293
Flindall, John, Chicago, Ill. Apparatus for generating power	822,264	June 5	76	15–16	122	1745
Flint, Nathan E. (See Taylor and Flint.)						
Flintkote Manufacturing Company. (See Bird, Reginald W., assignor.)						
Flintkote Manufacturing Company. (See Overbury, Frederick C., assignor.)						
Flersheim & Son, S. (See Gardner, Marshall B., assignor.)						
Flory, Reisenbach & Co. (See Couleru-Meuri, Charles, assignor.)						
Flugan, James G., Sr., Lisbon, Ohio. Railway-frog	820,406	May 15	2803	610	122	746
Flinke, James M., Nankin, Ohio. Culvert-machine	822,838	June 5	1205	247	122	1991
Flyberg, Anders G., Braddock, Pa. Pipe-coupling	820,774	May 15	3518	755	122	903
Flynn, Peter H., New York, N. Y. Brille-bit	821,053	May 22	4122	876	122	1097
Foane, Andrew B., New York, N. Y. Arch construction	824,636	June 26	4776	1017–18	122	2929
Foltz, Edwin C., Louisville, Ky. Seed-separator	823,111	June 12	1779	367	122	2163
Fontosme, Eugène, Antwerp, Belgium. Acetylene-generator	823,677	June 19	2925	618–19	122	2473
Fontaine, Herman A., assignor of one-half to D. W. Kellogg, Auburn, N. Y. Horse-collar	822,204	May 29	6424	1364	122	1665
Food & Fiber Products Company. (See Manne, Albert G., assignor.)						
Foote, George T. S. (See Young, William B., assignor.)						
Foote, Lewis A., assignor to Chicago Car Seal & Manufacturing Company, Chicago, Ill. Seal	819,347	May 1	631	134	122	145

Alphabetical list of patentees for May and June—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Forbes, Alexander A., Duluth, Minn. Machine for making artificial stone	819,746	May 8	1409	303	122	375
Forbes, Thomas S., Glasgow, Scotland. Bayonet	822,441	June 5	403	83	122	1812
Forbess, W. C., *et al.* (See Barnett, John B., assignor.)						
Ford, Andrew F., Colfax, Wash. Rotary engine	819,747	May 8	1411	304	122	375
Ford, George A., Cleveland, Ohio. Storage battery	824,348	June 26	4181	894	122	2802
Ford, George H., New Haven, Conn. Buckle	820,710	May 15	3399	727	122	876
Ford, George R. (See Allen and Ford.)						
Forgrove Machinery Company. (See Grover, Frederick, assignor.)						
Forsberg, Carl J., Plainfield, assignor to Niles-Bement-Pond Company, Jersey City, N. J. Turret-lathe	821,351	May 22	4754	1011–12	122	1238
Forster, John, St. Helens, England. Apparatus for the manufacture of glass cylinders	821,478	May 22	5015	1066–7	122	1293
Fort Wayne Foundry and Machine Company. (See Burger, Frederick W., assignor.)						
Forter-Miller Engineering Company. (See Miller and Cole, assignors.)						
Fortier, Jean G. A., St. Paul, Minn. Card game	821,229	May 22	4495	957	122	1179
Fosdick, William I. T., Bridgeport, Conn., assignor to Triumph Voting Machine Company, Pittsfield, Mass. Shutter-locking mechanism for voting-machines	824,349	June 26	4183	895	122	2802
Fosdick, William I. T., Bridgeport, Conn., assignor to Triumph Voting Machine Company, Pittsfield, Mass. Shutter-locking mechanism for voting-machines	824,350	June 26	4187	895	122	2803
Fosdick, William I. T., Bridgeport, Conn., assignor to Triumph Voting Machine Company, Pittsfield, Mass. Shutter-closing mechanism for voting-machines	824,639	June 26	4781	1019	122	2930
Foskett, John T., Chicago, Ill. Dish scraper and cleaner	824,473	June 26	4458	945	122	2859
Foss, Paul, Chicago, Ill. Automatic blank-feed for can-body-making machines	821,998	May 29	6028	1284	122	1574
Foster, Aaron T., and M. L. Jones, Chillicothe, Ohio. Concrete-mold	820,188	May 8	2374	516	122	591
Foster, George D., assignor to John B. Foster and Brother, Newark, N. J. Siphon	822,356	June 5	256	54	122	1782
Foster, Leroy A., Lagrange, Ind. Key-fastener	820,293	May 8	2587	564	122	639
Foster, Samuel P., Dalton, Ga. Stirrup and hammock spring	822,731	June 5	1010	207	122	1950
Foster, Theodore W., Providence, R. I. Bracelet	824,072	June 19	3661	779	122	2632
Foster, Theodore W., Providence, R. I. Bracelet	824,073	June 19	3662	779	122	2632
Foster, Theodore W., Providence, R. I. Bracelet	824,074	June 19	3663	780	122	2632
Foulk, Horace M., Oshkosh, Wis. Buggy	819,133	May 1	196	40	122	49
Foveaux, Frank J., Alameda, Cal., assignor to Mutual Gas and Engineering Company. Controller for distribution of fluids in cities	821,160	May 22	4372	930	122	1152
Fowden, Robert A., Philadelphia, Pa. Aquatic amusement apparatus	824,107	June 26	3715	793–4	122	2702
Fowler, Adolphus L. (See Fowler, Edward, assignor.)						
Fowler, Alfred B., Boston, Mass., assignor to United Shoe Machinery Company, Paterson, N. J. Shuttle-actuating mechanism for sewing-machines	820,964	May 22	3976	844	122	1065
Fowler, Del Roy F., Melrose, Pa. Portable bath	821,230	May 22	4495	957	122	1179
Fowler, Edward, assignor of one-half to A. L. Fowler, Cedar Grove, Ga. Wheel disk plow	819,532	May 1	981	214–15	122	220
Fowler, Edward, assignor of one-half to O. T. and J. L. Simmons and B. V. Kell, Cedar Grove, Ga. Disk plow	819,533	May 1	983	215–16	122	221
Fowler, Edward, assignor of one-half to A. L. Fowler, O. T. and J. L. Simmons, and B. V. Kell, Cedar Grove, Ga. Bearing and scraper for disk plows	819,701	May 1	1310	285	122	294
Fowler, Frank. (See Spillman and Fowler.)						
Fox, Charles A., assignor of one-half to A. V. Taylor, Hanford, Cal. Orchard-plow	820,635	May 15	3245	698	122	843
Fox, Harry H., Duquesne Junction, Pa. Traction-increasing device for street-cars	821,352	May 22	4759	1012	122	1239
Fox, John W., East Huntingdon township, Westmoreland county, Pa. Stone-cutter's chisel	822,205	May 29	6425	1364	122	1665
Fox, Philo L., Bridgeport, Conn. Adjustable and separable square and miter	821,092	May 22	4244	903	122	1123
Fox, Philo L., Bridgeport, Conn. Adjustable and separable square and miter	821,093	May 22	4246	903	122	1123
Fox, Philo L., Bridgeport, Conn. Implement for laying out miters and octagons	821,094	May 22	4247	903	122	1123
Fox, William R., Grand Rapids, Mich. Ball retaining and locating device for type-writers	819,270	May 1	483	100	122	112
Fraas, Ferdinand, *et al.* (See Landau, John, assignor.)						
Framingham Chair Company. (See Ordway, Albert H., assignor.)						
Francis, Adolphus S., London, England. Incandescent gas burner and lamp	820,711	May 15	3401	727	122	876
Frank & Dugan. (See Benz, Frederick, Sr., assignor.)						
Frank, Henry C., New York, N. Y. Clasp	819,534	May 1	985	216	122	221
Franke, Emil, Astoria, N. Y. Polishing device	819,271	May 1	485	100	122	113
Franklin, Louis S., Buffalo, N. Y. Fire-escape	819,419	May 1	774	166	122	175
Franklin, Minnie. (See Jones, Minnie.)						
Franquist, Gustave E., New York, N. Y. Electric ignition apparatus	820,636	May 15	3246	698	122	844
Franzen, Nicklas, Dunbar, assignor to W. L. Munro, Pittsburg, Pa. Wire-glass machine	822,357	June 5	257	54	122	1782
Franzen, Nicklas, Dunbar, assignor to W. L. Munro, Pittsburg, Pa. Method of and machine for forming wire-glass	823,112	June 12	1780	367	122	2163
Franzmeier, Louis, Newton, Wis. Windrower	821,794	May 29	5649	1204	122	1490
Fraser, Ethelbert M., Yonkers, N. Y., assignor, by mesne assignments, to Fraser Hydraulic Compensator Company. Hydraulic elevator and other hydraulic apparatus	822,595	June 5	734	148–9	122	1800
Fraser Hydraulic Compensator Company. (See Fraser, Ethelbert M., assignor.)						
Frazee, Jackson F., San Francisco, Cal. Support for punching-bags	823,594	June 19	2761	585	122	2436
Frazee, Jackson F., San Francisco, Cal. Multiple ball-bearing support for punching-bags	823,595	June 19	2763	585	122	2436
Frazier, Charles, Bennington, Vt. Stereoscope	819,272	May 1	486	100	122	113
Frazier, George W., Allegheny, assignor to Pittsburgh Electrolytic Manufacturing Company, Pittsburg, Pa. Electrolytic ship-bottom cleaner	820,105	May 8	2219	482	122	558
Frazier, James M. (See McFarlane, James L., assignor.)						
Fred Adee Company. (See Sanger, John N., assignor.)						
Frederickson, Clayton R. (See Webb and Frederickson.)						
Fredrickson, Hans, Portland, Oreg. Shoe-fastener	822,206	May 29	6426	1365	122	1665
Freeman, Douglas E., assignor of one-half to C. K. Grable, Tampa, Fla. Index system	821,710	May 29	5485	1168	122	1452
Freeman, Frank A. (See Crossdale, John P., assignor.)						
Freeman, George B., Racine, Wis. Back for folding stools	823,596	June 19	2764	585	122	2436
Freeman, J. H. (See Howell, Noah, assignor.)						
Freeman, Merrill P. (See Kamp, William, assignor.)						
Freeman, William, New York, N. Y. Suspenders	820,562	May 15	3133	673	122	818
Frees, Benjamin M. (See Radell, Anthony H., assignor.)						
Freese, Frank G. (See O'Reilley and Freese.)						
Freimann, Henry, Fort Wadsworth, N. Y. Insect-trap	823,718	June 19	2994	634	122	2487
Freise, Heinrich, Bochum-Hamme, Germany. Dust-cart	822,266	June 5	79	16	122	1746
Freitas, Alvaro J. de, Lisbon, Portugal. Table of movable characters for the teaching and practicing of reading	822,937	June 12	1405	294	122	2080
French, Alfred W., Piqua, Ohio. Apparatus for reducing hot oil-cake	821,095	May 22	4248	904	122	1124
French, James B. (See Condict and French.)						
French, John R., Los Angeles, Cal. Automatic safety trolley-pole	823,040	June 12	1618	335	122	2130
French, Luke, and B. T. Reilly, Wilkes-Barre, Pa. Landing-net	823,113	June 12	1782	367	122	2163
French, Oratus S., and J. W. Miller, Fremont, Ohio. Spark-arrester	824,004	June 19	3645	756–7	122	2607
French, William W., Fort Branch, Ind. Pyromotor	824,474	June 26	4459	946	122	2859

Alphabetical list of patentees for May and June—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Freschl, Alfred, Chicago, Ill. Wheel	822,518	June 5	568	115	122	1851
Frey, Robert R., assignor to Grand Detour Plow Company, Dixon, Ill. Gang-plow draft-hitch	821,231	May 22	4496	957	122	1179
Freyer, Henry M., *et al.* (See Dunnell, Frederick W., assignor.)						
Fricke, William A., assignor of one-half to McMeen & Miller, Chicago, Ill. Telephone switch-book	824,351	June 26	4189	895	122	2803
Fricker, Anthony, Pittsburg, Pa. Speed-changing attachment for tachometers	819,695	May 1	1302	283	122	293
Friedemann, August, Waverly, Iowa. Harrow	819,748	May 8	1413	304	122	376
Friedlaender, Paul, Vienna, Austria-Hungary, assignor to Kalle and Company Aktiengesellschaft, Biebrich, Germany. Red sulfur dye and making same	819,348	May 1	633	.....	122	146
Friedley, Albert, assignor of one-half to H. F. Voshardt, Chicago, Ill. Metal shingle	820,294	May 8	2589	564	122	639
Friedly & Voshardt. (See McLeod, John P., assignor.)						
Friedmann, Hugo. Charlottenburg, Germany. Composition of matter	824,475	June 26	4464	.....	122	2861
Friedmann, Otto, *et al.* (See Gábriel, Stefan, assignor.)						
Friesbie, Harry J. (See Seyler, Edward J., assignor.)						
Frisby, Charles L., Council Bluffs, Iowa. Seed-corn separator	820,775	May 15	3520	755	122	904
Frish, Augustus M., Madison, Wis. Automatic railway-switch	822,358	June 5	260	54–5	122	1782
Frith, Julius. (See Speirs and Frith.)						
Fritsche, Max, Carlstadt, N. J., assignor to J. A. Kapp, New York, N. Y., and L. Heugstler, Weehawken, N. J. Bronzing-machine	822,108	May 29	6234	1329	122	1622
Frizzell, Charles E., Grandglaise, Ark. Fence	821,232	May 22	4498	957	122	1180
Frkovic, Frank A., assignor of one-fourth to J. H. Hawley, Galveston, Tex. Indicator for bottles	820,106	May 8	2221	482	122	559
Frölc, Albert, Bautzen, Germany. Motor-vehicle	823,719	June 19	2994	634	122	2487
Froggatt, William H., Jr., Philadelphia, Pa. Jig for drilling, reaming, and broaching	820,965	May 22	3981	845	122	1067
Fromm, Edward, and C. S. Edick, Eldora, Iowa. Hay-fork	819,535	May 1	986	216	122	221
Frost, Harry B., and A. B. Van Riper, Paterson, N. J. Combined swift and support therefor	821,999	May 29	6030	1285	122	1575
Frost, Harry W., Detroit, Mich., assignor to Chicago Railway Equipment Company, Chicago, Ill. Fulcrum for brake-beams	823,403	June 12	2359	496	122	2289
Fry, Henry C. (See Betz, Charles L., assignor.)						
Fry, Mason A., Seattle, Wash. Facilitating the removal of roots of stumps	822,839	June 5	1207	247	122	1992
Fuhrman, William, *et al.* (See Cline, William, assignor.)						
Fulford, James H. (See Sawyer and Fulford.)						
Fullenlove Elevator Company. (See Fullenlove, McClellan, assignor.)						
Fullenlove, McClellan, assignor to Fullenlove Elevator Company, Louisville, Ky. Elevator-brake	823,720	June 19	2997	635	122	2487
Fuller, Elam Q., and E. P. Johnston, Milan, Mich. Wind-wheel	823,404	June 12	2359	496	122	2289
Fuller, Eugene, assignor of three-fifths to J. R. Bourgeois, T. Robert, and R. Geoffroy, Arctic, R. I. Weight-actuated apparatus	823,521	June 19	2626	552	122	2407
Fuller, Frank. (See Compton, Melvin D., assignor.)						
Fuller, Harry, assignor to King Bridge Company, Cleveland, Ohio. End support for locomotive turn-tables	823,405	June 12	2361	497	122	2290
Fuller, William J., Leef, Wis. Hand-power stump-puller	821,479	May 22	5019	1068	122	1295
Fullerton, Robert S. (See Mead and Fullerton.)						
Fulton, Thomas A. and T. H., New York, N. Y. Amusement apparatus	821,409	May 22	4883	1037	122	1265
Fulton, Thomas H. (See Fulton, Thomas A. and T. H.)						
Fulton, William S., Omaha, Nebr. Roller-skate	824,108	June 26	3718	794	122	2703
Funk, Samuel W., Glendora, Cal. Tight and noiseless casement for swinging closures	821,353	May 22	4760	1012	122	1239
Furbish, Zachry T., assignor to North Brothers Manufacturing Company, Philadelphia, Pa. Shifter-lock for pawl-and-ratchet tools	819,536	May 1	990	217	122	223
Furlong, Thomas, St. Louis, Mo. Wheel-tire	824,476	June 26	4465	946	122	2861
Furlow, Howard L., Lancaster, Pa. Wireless umbrella-runner and upper notch	820,295	May 8	2590	564	122	639
Furru, Ole O., assignor of one-half to E. Cronstedt, St. Paul, Minn. Reversible power-transmission gear	819,213	May 1	358	76–7	122	86
Fuse Wire & Manufacturing Company. (See Hoffmann, Otto C., assignor.)						
Gabel, John C. (See Ramsden, James T., assignor.)						
Gable, Augustus D., and J. Brickley, Shenandoah, Pa. Safety device for elevators	820,637	May 15	3249	698-9	122	844
Gabriel, George A., assignor to Bleach & Caustic Process Company, New York, N. Y. Electrolytic cell	822,109	May 29	6236	1329	122	1622
Gabriel, John, New Orleans, La. Railway-rail joint	819,537	May 1	991	217	122	223
Gábriel, Stefan, Budapest, assignor of two-thirds to Leiner Brothers, Upjest, and O. Friedmann, Budapest, Austria-Hungary. Heating preserves	820,638	May 15	3250	699	122	844
Gabrielian, Avedis J., Jamaica Plain, Mass. Shoe	821,935	May 29	5912	1258	122	1548
Gabrielson, Andrew N., Mount Iron, Minn. Plane	820,639	May 15	3252	699	122	845
Gabrielson, Carl, Worcester, Mass., assignor to L. C. Smith and Bros. Typewriter Company, Syracuse, N. Y. Type-writing machine	822,938	June 12	1406	294	122	2081
Gabrielson, William, assignor of one-half to W. D. Boyle, E. and P. Lason, Kansas City, Mo. Animal or fish trap	820,640	May 15	3252	699	122	845
Gacon, Adrien, Montval, near Marly-le-Roy, France. Manufacture of artificial emery	820,859	May 15	4716	.....	122	946
Gadd, Luther H., *et al.* (See Smith, Henry R., assignor.)						
Gadsden, Henry A., Ravenscourt Park, England. Artificial horizon	824,640	June 26	4782	1019	122	2930
Gadsey, Edward B., and G. P. Dorris, St. Louis, Mo. Gear-controlling device for motor-vehicles	821,161	May 22	4374	931	122	1153
Gaghaidi, Raffaele, *et al.* (See Liaci, Cosmo, assignor.)						
Gagnon, Peter J., Jr. (See Gagnon, William J., assignor.)						
Gagnon, William J., Everett, assignor to P. J. Gagnon, Jr., West Everett, Mass. Terret	819,749	May 8	1415	305	122	376
Gaillot, Anne A., Paris, France. Syringe for subcutaneous or other injections	822,110	May 29	6239	1330	122	1623
Gaisman, Henry J., New York, N. Y. Suspenders	820,486	May 15	2968	641	122	781
Gaisman, Henry J., New York, N. Y. Combined suspenders and waist-belt	820,487	May 15	2970	641-2	122	782
Galbreath, John C. (See Housholder and Galbreath.)						
Gallagher, Richard W., assignor to Automatic Meter Co., San Francisco, Cal. Bill-delivery mechanism for meters	823,773	June 19	3103	657	122	2510
Gallagher, Thomas M., Old Orchard, assignor to Scullin-Gallagher Iron & Steel Company, St. Louis, Mo. Body-bolster. (Reissue)	12,486	May 22	5248	1119	122	1344
Galliac, Valery, assignor to Société Anonyme des Pneumatiques Cuir "Samson," Paris, France. Making armored tires	820,296	May 8	2592	564	122	640
Galloway, Abraham A., Crystalrun, N. Y. Sifting device	824,421	June 26	4352	926	122	2834
Gallup, Lloyd G., Walton, N. Y. Vehicle leaf-shoe	819,214	May 1	360	77	122	86
Gally, Robert A., Brooklyn, N. Y. Music-sheet and spool for self-playing musical apparatus	822,111	May 29	6241	1330	122	1623
Gamble, William Y., assignor to E. J. McQuire, New York, N. Y. Lining for combustion-furnaces	819,696	May 1	1304	.....	122	293
Gamber, John, and O. F. Hess, Washington, Pa. Infant's bed	823,371	June 12	2125	443	122	2240
Gamblin, André, Paris, France. Propelling ships	822,732	June 5	1011	207	122	1951

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Gamble, Joseph W., assignor to Harrison Safety Boiler Works, Philadelphia, Pa. Apparatus for purifying and regulating water	823,212	June 12	2000	417	122	2213
Gamblin, Henry B., Salem, Mo. Stock-feeder	822,442	June 5	404	84	122	1813
Gamewell Fire-Alarm Telegraph Company. (See Cole, Frederick W., assignor.)						
Gandar, Henry, New York, N. Y. Gas-broiler	824,477	June 26	4466	947	122	2861
Gannon, George E., Colorado City, Colo. Valve for corrosive liquids	823,493	June 12	2555	538	122	2330
Ganow, Jacob M., Pullman, Wash. Hay-stacker	821,711	May 29	5487	1168	122	1453
Gant, Oakley A., Oakman, Ala. Wire-coiling tool	821,162	May 22	4376	931	122	1153
Gant, William F., Reidsville, N. C. Magazine tack-hammer	823,041	June 12	1619	345	122	2130
Garber, Daniel A., Roanoke, Va. Poultry-carrier	819,056	May 1	43	9	122	13
Gard, Charles E., Ord, and J. W. Lynn, Omaha, Nebr. Amalgamator	820,189	May 8	2376	516	122	591
Garden, Charles T. and H., Macon, Ga. Tool for setting drawer-stops	823,721	June 19	2999	635	122	2487
Garden, Harry. (See Garden, Charles T. and H.)						
Gardner, George C., Chicago, Ill. Guiding means for drawers and the like	822,359	June 5	263	55	122	1783
Gardner, Kirtland C., assignor to United Engineering and Foundry Company, Pittsburg, Pa. Universal mill	819,538	May 1	992	217	122	223
Gardner, Marshall B., Aurora, assignor to S. Florsheim & Son, Chicago, Ill. Garment clasp or supporter	822,939	June 12	1407	295	122	2081
Gare, Thomas, New Brighton, England. Wooden-spoke wheel	820,923	May 15	3873	825	122	981
Garey, George G. (See Garey, John A., assignor.)						
Garey, John A., Tarkio, Mo., assignor of one-fourth to G. G. Garey, Indianapolis, Ind. Electric railway	820,407	May 15	2805	611	122	747
Garey, John A., Tarkio, Mo., assignor of one-fourth to G. G. Garey, Indianapolis, Ind. Electric railway	820,488	May 15	2973	642	122	783
Garisio, Theodore, South Bethlehem, Pa. Selvage attachment for looms	819,420	May 1	775	167	122	176
Garling, William E. (See Cross, Benjamin S., assignor.)						
Garlinghouse, Burton A., Jackson, Mich. Guard and tag-holder for hats	822,266	June 5	81	16	122	1746
Garllus, Bernt, Madison, Wis. Vaporizing device for internal-combustion engines	820,408	May 15	2806	611	122	747
Garner, Roy H., and K. T. Henley, Bay City, Ill. Churn	820,297	May 8	2593	565	122	640
Garrett-Cromwell Engineering Company. (See Cromwell, John C., assignor.)						
Garrett, Samuel H., West Philadelphia, Pa. Window-screen	819,750	May 8	1416	305	122	376
Garrigus, Louis E., Newark, N. J. Cigar-tip cutter	819,875	May 8	1673	359	122	438
Garrigus, Walter A., assignor of one-half to E. Waterhouse, Chattanooga, Tenn. Cutting-machine	824,641	June 26	4786	1020	122	2931
Garrity, George F., Scranton, Pa. Match-safe	823,854	June 19	3254	688	122	2545
Garroway, David C., Schenectady, N. Y., assignor to General Electric Company. Turbine	822,267	June 5	82	17	122	1747
Garry, Frank M., Bergen, N. Y. Fence-post	823,722	June 19	3000	635	122	2487
Garvin Cyanide Extraction Company. (See Garvin, Edward J., assignor.)						
Garvin, Edward J., assignor to Garvin Cyanide Extraction Company, Portland, Oreg. Apparatus for recovering precious metals	822,940	June 12	1409	295	122	2081
Gary, Albert D., assignor of one-half to H. H. Chandler, Lavonia, Ga. Clock	824,537	June 26	4581	974	122	2886
Gasparro, Bernard. (See Michele, Abruzzo, assignor.)						
Gastineau, John L., Alhambra, Cal. Rule-marker	823,406	June 12	2362	497	122	2290
Gathmann, Emil A. (See Meigs and Gathmann.)						
Gault, Milton M. (See Weed, Elisha L., assignor.)						
Gay, Edgar A., Rochester, N. Y. Furniture-hinge	820,776	May 15	3522	755	122	904
Gay, Joseph H. (See Quigley and Gay.)						
Gaylor, Leonard B., Stamford, Conn. Safety-razor	819,987	May 8	1947	430	122	494
Geare, Henry W., Brooklyn, N. Y. Pump-governor	822,519	June 5	570	115	122	1851
Gebauer, Theophil H., Cleveland, Ohio. Inhaling apparatus	821,354	May 22	4762	1012	122	1240
Gebhardt, Fredrich, Alliance, Ohio. Metallic truck for railway-cars	822,112	May 29	6248	1330–1	122	1625
Gebhart, Meinrad. (See Flaschberger and Gebhart.)						
Gedney, Albert G., New York, N. Y. Game-board	820,356	May 8	2687	587	122	661
Gee, Frank P. (See La Munyon and Gee.)						
Geen, James, Brooklyn, N. Y. Gas-meter	820,563	May 15	3134	674	122	819
Geer, Albert P., New London, Conn. Evaporating liquids	819,697	May 1	1304	284	122	293
Gecry, Charles H., Columbia, Mo. Whiffletree-hook	820,564	May 15	3135	674	122	819
Gegauf, Friedrich, Steckborn, Switzerland. Ornamental-stitching and embroidery machine	821,233	May 22	4499	958	122	1180
Gehring, Mario V., *et al.* (See Shoemaker, Harry, assignor.)						
Geiger, Gustav, Munich, Germany. Photographic-plate holder	824,352	June 26	4190	895	122	2803
Geisenhöner, Henry, Schenectady, N. Y., assignor to General Electric Company. Snap-switch	819,645	May 1	1199	264	122	269
Geisenhöner, Henry, Schenectady, N. Y., assignor to General Electric Company. Motor-starting rheostat	822,269	June 5	86	18	122	1747
Geisenhöner, Henry, and D. Miller, Schenectady, N. Y., assignors to General Electric Company. Steering-check for automobiles	822,268	June 5	84	17	122	1747
Gembler, Andrew H. (See Wise, Harry, assignor.)						
Gendron Wheel Company. (See Diemer, William, assignor.)						
General Chemical Company. (See Knietsch, Rudolf, assignor.)						
General Electric Company. (See Ahlquist, Karl, assignor.)						
General Electric Company. (See Alexanderson, Ernst F. W., assignor.)						
General Electric Company. (See Alton, George H., assignor.)						
General Electric Company. (See Ball, Augustus A., Jr., assignor.)						
General Electric Company. (See Barker, Ralph E. assignor.)						
General Electric Company. (See Barnes, Edward A., assignor.)						
General Electric Company. (See Burrows, William R., assignor.)						
General Electric Company. (See Callan, John G., assignor.)						
General Electric Company. (See Callan and Boyd, assignors.)						
General Electric Company. (See Callan and Hamilton, assignors.)						
General Electric Company. (See Case, Frank E., assignor.)						
General Electric Company. (See Corey, Fred B., assignor.)						
General Electric Company. (See Curtis, Charles G., assignor.)						
General Electric Company. (See Day, Maxwell W., assignor.)						
General Electric Company. (See Dempster, John T. H., assignor.)						
General Electric Company. (See Emmet, William L. R., assignor.)						
General Electric Company. (See Garroway, David C., assignor.)						
General Electric Company. (See Geisenhöner, Henry, assignor.)						
General Electric Company. (See Geisenhöner and Miller, assignors.)						
General Electric Company. (See Hall, John L., assignor.)						
General Electric Company. (See Härdén, Johannes, assignor.)						
General Electric Company. (See Heath, Harry E., assignor.)						
General Electric Company. (See Hill, George H., assignor.)						
General Electric Company. (See Hodsdon, Ernest D., assignor.)						
General Electric Company. (See Johnston, Thomas J., assignor.)						

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General Electric Company. (See Junggren, Oscar, assignor.)						
General Electric Company. (See Kanmacher, Sam H., assignor.)						
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General Electric Company. (See Krohn, Sigvald, assignor.)						
General Electric Company. (See La Cos, Joseph, assignor.)						
General Electric Company. (See Latour, Marius C. A. assignor.)						
General Electric Company. (See Linn, John B., assignor.						
General Electric Company. (See Milch, Maurice, assignor.)						
General Electric Company. (See Miller, David, assignor.)						
General Electric Company. (See Moody, Walter S., assignor.)						
General Electric Company. (See Murphy, Edwin J., assignor.)						
General Electric Company. (See Potter, William B., assignor.)						
General Electric Company. (See Priest, Edward D., assignor.)						
General Electric Company. (See Rogers, Robert H., assignor.)						
General Electric Company. (See Schwennker, Charles F., assignor.)						
General Electric Company. (See Steinmetz, Charles P., assignor.)						
General Electric Company. (See Stevens, George E., assignor.)						
General Electric Company. (See Stumpf, Johann, assignor.)						
General Electric Company. (See Taylor, John B. assignor.)						
General Electric Company. (See Thomson, Elihu, assignor.)						
General Electric Company. (See Thomson and Ball, assignors.)						
General Electric Company. (See Tornberg, Knut, assignor.)						
General Electric Company. (See Tournier, Julius C., assignor.)						
General Electric Company. (See Troy, Matthew O., assignor.)						
General Electric Company. (See Wagner, Friedrich J. R., assignor.)						
General Electric Company. (See Wood. Howard I., assignor.)						
General Electric Company. (See Wood, Montrayille M., assignor.)						
General Electric Company. (See Zell, Erland, assignor.)						
General Electric Company. (See Zimmer, Paul H., assignor.)						
General Fireproofing Company. (See White, Herbert E., assignor.)						
General Gas Appliance Company. (See Donnelly, William T., assignor.)						
General Incandescent Arc Light Company. (See Ball, Henry P., assignor.)						
General Incandescent Arc Light Company (See Blake and Davison, assignors.)						
General Manufacturing and Supply Company. (See McLewee, William S., assignor.)						
General Patent Promoting Company. (See Monroe, Orville V., assignor.)						
General Railway Signal Company. (See Salmon, Wilmer W., assignor.)						
General Railway Signal Company. (See Taylor, John D., assignor.)						
Geneva Furniture Mfg. Company. (See Seng, Julius T., assignor.)						
Geoffroy, Raymond, *et al.* (See Fuller, Eugene, assignor.)						
George, Edwin, assignor of two-sixths to W. E. Cullum and J. Crosby, Dickson, Tenn. Lock	822,000	May 29	6031	1285	122	1575
George Frost Company. (See Phelps, George H., assignor.)						
Gerard, Joseph, Gainesville, Tex. Train signaling system	823,114	June 12	1784	367–8	122	2164
Gerardy, Gabriel, Blackwell, Okla. Ter., assignor of one-half to E. Y. Alkire, Bendena, Kans. Disk-sharpener	821,096	May 22	4250	904	122	1124
Gerdau, Berthold, Düsseldorf, Germany. Hydraulic fly-press	819,988	May 8	1949	430	122	495
Gerdes, Heinrich, Berlin, Germany, assignor to American Suction Gas Producer Company, Lansing, Mich. Gas-producer	824,353	June 26	4191	896	122	2803
Gerhard, Ferdinand, assignor to A. Schopf, Völklingen-on-the-Saar, Prussia, Germany. Reel for strap-iron, &c	824,292	June 26	4076	872	122	2779
Gerhart, Paul C., St. Louis, Mo. Wagon-body	819,057	May 1	45	10	122	13
Geriach, George L., Harrison, Nebr. Dinner-pail	821,796	May 29	5650	1204	122	1491
Geriach, Oscar, Iola, Kans. Rotary kiln	821,355	May 22	4764	1013	122	1240
Gerner, Henry J., Vandergrift, Pa. Basket	820,107	May 8	2223	482	122	559
Gerner, Henry J., Vandergrift, Pa. Ice-cream freezer	824,075	June 19	3665	780	122	2632
Gerstendorfer Bros. (See Eckart, Edmund, assignor.)						
Gesellschaft für Drahtlose Telegraphie m. b. H. (See Rendahl, Ragnar H., assignor.)						
Gest, Guy M., Cincinnati, Ohio. Watchman's outfit for temporary routes	824,478	June 26	4467	947	122	2862
Geyer, Georg, Berlin, Germany. Water-motor for utilizing the ebb and flow of the tide	821,480	May 22	5020	1068	122	1295
Gheen, Frederick J., and A. Maucher, Philadelphia, Pa. Non-refillable bottle	820,966	May 22	3982	845	122	1067
Gianoli, Giuseppe, Milan, Italy. Charging silk	819,751	May 8	1419	.....	122	377
Gibbonsey, William K., Buffalo, N. Y., assignor to Pittsburgh Reduction Company, New Kensington, Pa. Current-regulator	821,936	May 29	5914	1258	122	1548
Gibbs, Charles H. (See Gibbs, Harry A., assignor.)						
Gibbs, George, New York, N. Y. Passenger-car frame	819,215	May 1	361	77–8	122	87
Gibbs, Harry A., assignor of one-half to C. H. Gibbs, Princeton, Ill. Clinker-catcher	824,642	June 26	4787	1020	122	2931
Gibford, Edward B., Adrian, Mich., assignor to H. Clauss, Fremont, Ohio. Stropping-machine	821,712	May 29	5488	1169	122	1453
Gibson, Allen T., Hodges, Tex. Spirit-level	824,109	June 26	3719	794	122	2703
Gibson, Arthur H., Easton, Pa., assignor to Ingersoll-Rand Company, New York, N. Y. Rock-drill	822,596	June 5	740	149	122	1890
Gibson, Arthur H., Easton, Pa., assignor to Ingersoll-Rand Company, New York, N. Y. Channeling-machine	822,597	June 5	741	149–50	122	1891
Gibson, Elsie P., San Francisco, Cal. Combined hook and box	823,213	June 12	2003	417	122	2213
Gibson, Lee W. (See McDonell, Alexander D., assignor.)						
Gierdorf, William L., Council Bluffs, Iowa. Door-closer	824,538	June 26	4582	974	122	2887
Gierth, William, and G. Latimer, Jr., Newark, N. J. Electric sign	823,774	June 19	3106	657	122	2511
Gifford, Hardinge G., London, England. Internal-combustion engine	820,712	May 15	3402	727	122	877
Gifford, Albert M., Mancelona, Mich. Screen	819,576	May 8	1675	359	122	438
Gilbert, Carl E., Foley, Minn. Paper-rack	819,989	May 8	1950	430	122	495
Gilbert, George H., Germantown, Pa. Seamless hosiery	822,800	June 5	1307	269	122	2011
Gilbert, George H., Germantown, Pa., assignor to Kilbourn Knitting Machine Company, New Brunswick, N. J. Seamless hosiery	822,044	May 29	6121	1304	122	1596
Gilbert, George H., Germantown, Pa., assignor to Kilbourn Knitting Machine Company, New Brunswick, N. J. Seamless hosiery	822,663	June 5	885	177	122	1919
Gilbert, James W., Birmingham, Ala. Nut-lock	824,177	June 26	3851	822	122	2731
Gilchrist, Raymond B., Newark, N. J. Bottle-holder	823,678	June 19	2927	619	122	2474
Gilchrist, Robert F., Lewisville, Idaho. Beet-sack	822,360	June 5	264	55–6	122	1783
Gildard, Christopher G. (See Coldwell and Gildard.) (Reissue.)						
Giles, D. C. (See La May, Arthur C., assignor.)						
Giles, Julian A., New York, N. Y. Connecting-rod	822,361	June 5	265	56	122	1784
Gillham, Eustagton N., assignor to American Cutlery Company, Chicago, Ill. Weighing-scale	823,679	June 19	2928	619	122	2474
Gilleland, Edgar B., *et al.* (See Gilleland, Wilson S., assignor.)						
Gilleland, Wilson S., Wichita, Kans., assignor to E. M. Markel, Sr., Des Moines, Iowa, and E. B. Gilleland, St. Louis, Mo. Stock-chute	820,409	May 15	2808	611–12	122	748

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Gilleland, Wilson S., Newkirk, Okla. Ter., assignor of nine-sixteenths to E. M. Markel, Des Moines, Iowa. Grain-door	823,943	June 19	3419	730	122	2581
Gillentine, William A., Goldthwaite, Tex. Cultivator	823,407	June 12	2363	498	122	2290
Gillespie, George C., assignor to E. Davis, New York, N. Y. Folding ruler	821,356	May 22	4766	1013–14	122	1240
Gillette, George W. (See Thomas and Gillette.)						
Gillette, King C., Brookline, assignor to L. W. Southgate, trustee, Worcester, Mass. Labeling-machine	824,690	June 26	4878	1039	122	2949
Gillette, Mott G. (See Parker, Charles C., assignor.)						
Gilman, Jonathan W. C., Boston, Mass. Copy-book	819,877	May 8	1676	360	122	439
Gilmore, Lyman, Jr., Colfax, Cal. Steam-motor	819,752	May 8	1419	305	122	377
Gilmore, William, Meridian, Miss. Universal excavating and grading machine	823,855	June 19	3254	689–90	122	2545
Gilroy, Frank J., Buffalo, N. Y. Heating fluids mechanically	823,856	June 19	3257	690	122	2546
Gilson, John E., assignor to Gilson Manufacturing Company, Port Washington, Wis. Chair-iron	821,034	May 22	4126	877	122	1097
Gilson Manufacturing Company. (See Gilson, John E., assignor.)						
Ginger, Lewis, Colorado Springs, Colo. Railway	821,796	May 29	5651	1204	122	1491
Gingras, Ernest P. (See Seguin and Gingras.)						
Gipson, William A. (See Meier and Gipson.)						
Girard Iron Works. (See Rominger, George S., assignor.)						
Girard, John, Thomaston, Conn. Device for wringing hot towels	822,733	June 5	1013	207	122	1951
Giraud, Emile, Paris, France. Insulator for high-tension lines	820,924	May 15	3873	825	122	981
Glackin, Edward J., Chicago, Ill. Sash-lock for windows	821,097	May 22	4251	905	122	1124
Glanzberg, Ernst H., assignor to F. Müller, München-Gladbach, Germany. Apparatus for lubricating the barrel-wheel bearings of barrel gig-mills	821,234	May 22	4503	959	122	1181
Glaser, Ludwig, Berlin, Germany. Ballast device for Nernst lamps	820,489	May 15	2975	642	122	783
Glasrud, Christian G., Sheyenne, N. D. Mechanical movement	822,941	June 12	1411	295	122	2082
Glass, John W., *et al.* (See Crites and Wine, assignors.)						
Glatz, Joseph, Brooklyn, N. Y. Manufacture of candle materials	819,646	May 1	1200	.....	122	269
Gleason, John L., Boston, Mass. Protector for insulators	820,641	May 15	3253	700	122	845
Gleckner, William W., Canton, Pa. Check-loop	824,005	June 19	3547	757	122	2607
Gledhill Wall Paper Co. (See Knight, Albert C., assignor.)						
Glenn, Coulter E. (See Glenn, Harvey S. and C. E.)						
Glenn, Harvey S. and C. E., New Kensington, Pa. Friction-clutch	823,467	June 12	2476	523	122	2314
Glennon, Michael F., Medina, N. Y. Adjustable chair-back	824,006	June 19	3548	757	122	2607
Globe Optical Company. (See Carter, John, assignor.)						
Globe-Wernicke Company. (See Keck, Christian, assignor.)						
Glocker, William H., assignor to H. W. Scott, Philadelphia, Pa. Fishing-reel	822,113	May 29	6249	1331	122	1626
Glover, Charles, assignor to Corbin Screw Corporation, New Britain, Conn. Ball-bearing cone	819,753	May 8	1421	306	122	377
Glover, William H., St. Louis, Mo. Wrench	823,166	June 12	1889	389	122	2188
Glowacki, Franz, Brooklyn, N. Y. Cooking and roasting stove	820,967	May 22	3983	845	122	1067
Gober, Charles H., assignor of one-half to R. Lawrence, Roff, Ind. Ter. Wagon-brake	821,357	May 22	4769	1014	122	1241
Goddard, Evander C., Peru, Ind. Rotary valve mechanism	823,214	June 12	2004	417	122	2213
Godfrey, Jonathan, assignor to Compressed Paper Box Company, Bridgeport, Conn. Appliance for stripping pasteboard boxes from hot forming-dies	824,293	June 26	4077	872	122	2780
Godwin, Harold, Hackensack, N. J., and A. Hoffman, New York, N. Y., assignors to American Graphophone Company, Bridgeport, Conn. Tablet for sound-records	819,058	May 1	46	10	122	14
Goe, David E., Madison, Wis., assignor, by mesne assignments, of three-fifths to Steel Products Company, Chicago, Ill. Safety-razor	824,691	June 26	4887	1040	122	2951
Goedeke, Fred W., *et al.* (See Kastner, John, Jr., assignor.)						
Goff, Albert T., Montooth borough, Pa. Machine for loading coal from the tipples into cars	820,565	May 15	3136	674–5	122	819
Goff, Frank C., and H. H. Fielding, Denver, Colo. Valve for heating or other systems where steam is employed	822,114	May 29	6252	1331	122	1626
Goff, Frederick K., and H. P. Simmons, East Providence, R. I. Tenpin	820,490	May 15	2976	643	122	784
Gogley, Samuel T., Cumberland, Md. Lifting-jack	819,539	May 1	993	218	122	224
Golden, Charles E. (See Anderson, Edward V., assignor.)						
Golden, William E., Detroit, Mich. Roller-tooth variable driving-gear	824,110	June 26	3721	795	122	2703
Golding, Frank L. (See Ennis, Charles, assignor.)						
Goldman, Sigmund L. (See Vogel, Otto, assignor.)						
Goldschmid, J. Eduard. (See Dellwik, Carl, assignor.)						
Goldschmidt, Firm of Th. (See Goldschmidt and Weber, assignors.)						
Goldschmidt, Karl, and J. Weber, assignors to Firm of Th. Goldschmidt, Essen-on-the-Ruhr, Germany. Detinning	822,115	May 29	6255	1332	122	1627
Goldsmith, Edwin M., Philadelphia, Pa. Clock	822,598	June 5	744	150–1	122	1892
Gollobin, Harry A., Newark, N. J. Making teeth	824,111	June 26	3722	795	122	2703
Goodale, Augustus M. (See McGraw and Goodale.)						
Goodell Company. (See Hunt, David F., assignor.)						
Goodman, Charles H., Bucyrus, Ohio. Supplemental tire for vehicle-wheels	824,240	June 26	3987	853	122	2760
Goodrich, Doney H., Berkeley, Cal. Convertible furniture	824,076	June 19	3668	780	122	2633
Goodrick, Edward W., assignor of one-half to Appleton Machine Company, Appleton, Wis. Pulp-screening machine	822,599	June 5	746	151–2	122	1892
Goodrum, Charles L. (See Lattig, Goodrum, and Clement.)						
Goodwin, Lyman O., assignor of one-half to J. M. and G. M. Bassett, Worcester, Mass. Self-lubricating loose pulley	821,632	May 29	5309	1133	122	1414
Goodwin, Oscar, Berlin Mills, assignor of one-half to J. H. Wight, Berlin, N. H. Kitchen-cabinet	821,481	May 22	5022	1068–9	122	1295
Goodwin, William B., Columbus, Ohio. Igniting device	822,942	June 12	1413	296	122	2082
Goodyear's India Rubber Glove Mfg. Co. (See Eggers, Anton C., assignor.)						
Gorden, James H., assignor of one-half to J. Patteson, Cooper, Tex. Telephone system	821,482	May 22	5024	1069–70	122	1296
Gordon, Alexander, Detroit, Mich. Cigar-bunching machine	820,968	May 22	3984	846	122	1067
Gordon, Fynis C., Asotin, Wash. Propeller	819,540	May 1	995	218	122	224
Gordon, John P., Columbus, Ohio. Tire-cover	823,680	June 19	2929	620	122	2474
Gordon, Walter T., Juniper, Oreg. Riveting device	824,007	June 19	3549	757–8	122	2607
Gore, Alfred H., Shelbyville, Ind. Switch-operating device	819,547	May 1	1201	264	122	270
Gorsuch, John W., La Junta, Colo. Spike-extractor	822,943	June 12	1415	296	122	2082
Goss, Charles E. (See Goss, George W. and C. E.)						
Goss, George W. and C. E., Baltimore, assignors to Roderick Lean Mfg. Co., Mansfield, Ohio. Cultivator	821,235	May 22	4504	959	122	1181
Gough, Edgar W., assignor to Stanley Instrument Company, Great Barrington, Mass. Circuit-breaker	821,586	May 22	5206	1111	122	1334
Gould & Eberhardt. (See Eberhardt, Henry E. and F. L., assignors.)						
Gould, George A., Davenport, Iowa. Mold for manufacturing bricks and artificial stone	820,298	May 8	2595	565	122	640
Gould, Herbert V., Eastport, Mich. Beet-topping machine	820,861	May 15	3718	793	122	947
Gourley, Thomas P., New York, N. Y. Fire-brick compound	822,600	June 5	749	.....	122	1893

Alphabetical list of patentees for May and June—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Gowdy, George E., New Haven, Conn. Dough-cutting machine	824,008	June 19	3551	758	122	2608
Gowen, Harry W., Halifax, N. C. Brush	820,299	May 8	2597	565	122	641
Grable, Charles K. (See Freeman, Douglas E., assignor.)						
Graf, Albert M., Carpenter, S. D. Milk-pail holder	822,362	June 5	267	56	122	1784
Graham, David T., St. Louis, Mo. Tumbler	821,483	May 22	5027	1070	122	1296
Graham, William S., assignor to Parlin & Orendorff Company, Canton, Ill. Combined riding and walking cultivator	820,043	May 8	2063	454–5	122	528
Gramm, Benjamin A., Chillicothe, Ohio. Clutch mechanism	819,821	May 1	777	167	122	176
Gramm, Benjamin A., Chillicothe, Ohio. Muffler	823,115	June 12	1788	368	122	2165
Gramm, Benjamin A., Chillicothe, Ohio. Controlling mechanism for automobiles	823,522	June 19	2631	553	122	2408
Grand Detour Plow Company. (See Frey, Robert R., assignor.)						
Grand Rapids Brush Company. (See Page and Vanderveld, assignors.)						
Grand Rapids Saddlery Hardware Manufacturing Company. (See Begole, Gordon W., assignor.)						
Grandonio, Nicola, *et al.* (See Magarò, Petro, No. 3, assignor.)						
Grannatt, Henry C., assignor of one-half to J. H. Waddingham, Los Angeles, Cal. Pulley	820,410	May 15	2810	612	122	748
Grant, Charles, Brooklyn, assignor of one-half to R. Plunkett, New York, N. Y. Engine-governor	821,286	May 22	4608	982–3	122	1203
Grantland, John W., Philadelphia, Pa. Flushometer	822,116	May 29	6257	1332	122	1628
Graves, Ed A., Randolph, N. Y. Air-brake	822,520	June 5	572	115	122	1852
Graves, George W., Rochester, N. Y. Gas-stove	821,633	May 29	5311	1133	122	1415
Grawert-Zeilin, Fritz H., New York, N. Y. Explosion-turbine	819,990	May 8	1951	430–2	122	496
Gray, Bertram P., Birmingham, England. Hoof-pad for horseshoes	820,108	May 8	2224	483	122	559
Gray, Charles F., assignor to Wheeler & Wilson Manufacturing Company, Bridgeport, Conn. Feeding mechanism for sewing-machines	821,587	May 22	5209	1111–12	122	1334
Gray, Charles F., Indianapolis, Ind., assignor to W. A. Knight, trustee, Cincinnati, Ohio. Canned-goods cooker	823,523	June 19	2632	553	122	2408
Gray, David E., New York, N. Y. Electric switch	820,491	May 15	2977	643	122	784
Gray, Emmet P., assignor to Gray Manufacturing Company of Detroit, Detroit, Mich. Muffler	820,566	May 15	3138	675	122	819
Gray, Emmet P., assignor to Gray Manufacturing Company of Detroit, Detroit, Mich. Whistle	821,358	May 22	4770	1014	122	1241
Gray, Emmet P., Cincinnati, Ohio, assignor to Gray Manufacturing Company of Detroit, Detroit, Mich. Differential-gear casing	823,524	June 19	2636	554	122	2409
Gray, George G. (See Sheets, George T., assignor.)						
Gray, Harry L., assignor to Eastman Kodak Company, Rochester, N. Y. Photographic-film cartridge	820,492	May 15	2978	643	122	784
Gray, James D., *et al.* (See Nicholls, Moses, assignor.)						
Gray, James H., San Francisco, Cal. Tumbler for bucket elevators	821,163	May 22	4377	931	122	1153
Gray, James H., San Francisco, Cal. Tumbler for bucket elevators	822,601	June 5	751	152	122	1893
Gray, Joseph A., Norwalk, Conn. Package-tie	819,648	May 1	1203	264	122	270
Gray Manufacturing Company of Detroit. (See Gray, Emmet P., assignor.)						
Gray, Robert H., *et al.* (See Shaffner, George, assignor.)						
Gray, Simon J., and J. Horning, Oakland, Cal. Sawing-machine	824,009	June 19	3553	759	122	2608
Greatsinger, Jacob L., Brooklyn, N. Y. Filter	821,937	May 29	5916	1258	122	1549
Green, Calvin R. and D. R., Rising Sun, Ind. Telephone system	823,215	June 12	2006	418	122	2214
Green, Charles E. and E., Cobleskill, N. Y; said E. Green assignor to said Charles E. Green. Stanchion	821,588	May 22	5210	1112	122	1334
Green, David R. (See Green, Calvin R. and D. R.)						
Green, Emory. (See Green, Charles E. and E.)						
Green, George F., Bazette, assignor of one-half to J. P. Ellett, Fort Worth, Tex. Folding crate	820,300	May 8	2597	565–6	122	641
Green, John F., Piedmont, Ohio. Switch-adjuster	824,354	June 26	4192	896	122	2804
Green, John J., Boonton, N. J., assignor to E. P. Coe and L. Brunner, New York, N. Y. Coin-actuated vending-machine	819,422	May 1	778	167–8	122	176
Green, Thomas, La Fayette, Ind. Car stake and load-binding device	819,216	May 1	363	79	122	87
Green, William F., Modesto, Cal. Dental-disk shield	823,167	June 12	1891	389	122	2188
Greenberg, Leon, New York, N. Y. Advertising device	822,734	June 5	1014	207	122	1951
Greene, George B., Courtland, Cal. Grinder for cultivator disks and tools	823,857	June 19	3259	690–1	122	2546
Greene, Jacob R., Jr., assignor of one-sixth to E. Vezie, one-third to J. Winsor, Washington, and one-sixth to C. R. Ballard, Midway, Pa. Boiler-cleaning compound	824,112	June 26	3723	.....	122	2704
Greenwald, Jacob O., Milwaukee, Wis. Credit-system apparatus	820,713	May 15	3404	728	122	877
Greer, William E., Akron, assignor of one-half to G. H. Conrad, Coventry township, Summit county, Ohio. Vehicle-wheel	824,241	June 26	3989	854	122	2761
Greevy, Jules. (See Greevy, Matthew J. and J.)						
Greevy, Matthew J. and J., Omaha, Nebr. Graphophone attachment	820,642	May 15	3255	700	122	845
Gregg, John H., and A. J. Williams, Warsaw, Pa. Envelop	821,484	May 22	5028	1071	122	1296
Gregory, Walter, Minneapolis, Minn. Means for operating gang-plows	819,423	May 1	781	168–9	122	177
Greig, Susan, and M. Mawson, Toronto, Canada. Skirt evener and measurer	820,567	May 15	3140	675	122	820
Greist, John M., deceased, New Haven, Conn.; M. F. W. and P. R. Greist, administrators, assignors to Greist Manufacturing Company. Belt-coupling	822,891	June 5	1308	270	122	2012
Greist, John M., deceased, New Haven, Conn.; M. F. W. and P. R. Greist, administrators, assignors to Greist Manufacturing Company. Sewing-machine ruffler	822,892	June 5	1309	270	122	2012
Greist Manufacturing Company. (See Greist, John M., assignor.)						
Greist, Mary F. W., *et al.*, administrators. (See Greist, John M.)						
Greist, P. Raymond, *et al.*, administrators. (See Greist, John M.)						
Greiwe, Heinrich, Barmstedt, Germany. Saw	820,969	May 22	3989	847	122	1069
Grettum, Ingebrigt, and O. L. Young, Duluth, Minn. Electric heating device	824,643	June 26	4788	1020	122	2932
Gribbin, James, Frankford, Pa. Fly-catcher	822,735	June 5	1015	208	122	1951
Grice, George, and C. J. Barrow, Birmingham, England. Cigar and cigarette holder	820,777	May 15	3524	755	122	904
Griese, Richard, Berlin, Germany. Making an internal remedy	824,539	June 26	4583	.....	122	2887
Griesbaber, Hugo E., Quincy, Mass., assignor to Electric Boat Company, Bayonne, N. J. Revolving torpedo-tube cap	820,925	May 15	3874	825	122	981
Griess, Justin, Jr. (See Kaltenbach and Griess.)						
Griesser, Wilhelm, Joplin, Mo., assignor to O. Koehn, New York, N. Y. Grain-drier	819,424	May 1	784	169–70	122	177
Griffen, George H., *et al.* (See Adams, William L., assignor.)						
Griffin, Clarence W. (See Spatz, John F., assignor.)						
Griffin, Henry W., New York, N. Y., assignor to Union Switch and Signal Company, Swissvale, Pa. Railway signaling system	820,411	May 15	2810	612–13	122	748
Griffin, Henry W., New York, N. Y., assignor to Union Switch and Signal Company, Swissvale, Pa. Railway signal system	820,412	May 15	2818	614	122	749
Griffin, Henry W., New York, N. Y., assignor to Union Switch and Signal Company, Swissvale, Pa. Railway signaling system	820,413	May 15	2822	614–15	122	750
Griffin, John W., Pawtucket, R. I. Automatic fire-alarm	821,096	May 22	4255	906	122	1125
Griffith, Edwin, and W. E. Logan, Washington, Iowa. Bedstead	822,117	May 29	6259	1332	122	1628

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Griffith, Robert, *et al.* (See Lundin, Oliver, assignor.)						
Griffiths, G. B., *et al.* (See Duff, Hugh Y. B., assignor.)						
Griffiths, Walter J. (See Dewett and Griffiths.)						
Grillon, Léon, Lausanne, Switzerland. Station-indicator	823,597	June 19	2765	585	122	2437
Grim, Charles G. (See Morrice and Grim.)						
Grimes, Howard, Newcomb, N. Y. Snow-plow	821,634	May 29	5312	1133–4	122	1415
Grimes, Thaddeus S., assignor to E. Van Winkle, Atlanta, Ga. Pneumatic cotton-elevator	823,858	June 19	3262	691	122	2547
Grimm, Gerhardt E., Philadelphia, Pa. Guard for the mouthpieces of telephone-transmitters	823,494	June 12	2556	538	122	2331
Grimme, Emanuel, Dittersbach, Germany. Armor for cycle-tires	821,868	May 29	5778	1231	122	1518
Grindy, Frederick, Fall River, Mass. Rocking stand	819,878	May 8	1679	360	122	439
Grismore, Oscar, McCook, Nebr. Spout for sifting-machines	823,117	June 12	1790	369	122	2165
Griswold, Robert G., and W. T. Donovan, Quincy, Mass. Laundry blue	824,294	June 26	4079	.....	122	2780
Groff, Franklin L., New York, N. Y. Bed-spring	824,295	June 26	4080	872	122	2780
Grösche, Friedrich, Ilmenau, Germany. Apparatus for shaking thermometers	823,859	June 19	3263	691	122	2547
Groshon, John A., New York, N. Y. Turbine-engine	824,113	June 26	3724	795–6	122	2704
Gross, August, and A. C. Horn, New York, N. Y.; said Gross assignor to said Horn. Waterproofing buildings, &c	822,602	June 5	752	152	122	1894
Grossman, Ignatz, New York, N. Y. Bed-bottom	822,443	June 5	405	84	122	1813
Grouvelle, Jules, and H. Arquembourg, Paris, France. Grating for facilitating the flow of fluids	822,736	June 5	1016	208	122	1952
Grover, Frederick, assignor to Forgrove Machinery Company, Limited, Leeds, England. Labeling and wrapping machine	822,118	May 29	6260	1333	122	1628
Groves, Hiram C., Woodward, Okla. Ter. Ore-separator	820,568	May 15	3141	676	122	820
Grubb, Julian H., *et al.* (See Schooley and Casey, assignors.)						
Gruenberg, Aaron, New York, N. Y. Cigar-marker	820,044	May 8	2085	455	122	528
Gruner, Julius, Tower, Minn. Calculating or computing machine	823,525	June 19	2637	554	122	2409
Guarantee Title and Trust Co., trustee. (See Van Horn, Charles B., assignor.)						
Gudex, Valentine A., Milwaukee, Wis. Dental vulcanizer	820,045	May 8	2087	455	122	528
Gührs, Albrecht. (See Gührs, Paul and A.)						
Gührs, Paul and A., Berlin, Germany. Manufacturing zinc alloys	824,644	June 26	4789	.....	122	2932
Guidinger, Joseph, Los Angeles, Cal. Perpetual calendar	823,723	June 19	3001	636	122	2488
Guiou, James R. (See Guiou, Prior M. and J. R.)						
Guiou, Prior M. and J. R., assignors of one-third to T. J. Stephens, Kansas City, Mo. Umbrella	824,178	June 26	3852	822	122	2731
Gulick, Charles L., Bridgeport, Conn. Percussion-fuse	823,681	June 19	2930	620	122	2474
Gulick, James, Norwich, N. Y. Mitten	824,540	June 26	4584	974	122	2887
Gulnick, Uriah. (See Lane and Gulnick.)						
Gumbel, Henry C., and N. E. Tyrrell, Kansas City, Mo. Stock-rack for platform-scales	819,879	May 8	1681	361	122	439
Gunderson, Walter N., Chicago, Ill. Tablet-holder	822,603	June 5	754	152	122	1894
Gundlach, Philip M., Belleville, Ill. Grain-drill	824,010	June 19	3557	759	122	2609
Gunn, James D., Thomasville, assignor of one-half to M. L. Copeland, Metcalf, Ga. Vine-cutter	819,880	May 8	1685	361	122	441
Gunn, John D., *et al.* (See Meyer, John J., assignor.)						
Gurney, Howard F., Jersey City, N. J. Electrically-driven pump	823,118	June 12	1793	369	122	2166
Gustaveson, Frank, Wabasha, Minn. Shoe	820,862	May 15	3719	793	122	947
Gutmann Actien Gesellschaft für Maschinenbau, Alfred. (See Zöller, Carl F. W., assignor.)						
Gutte, Moritz A., Reichenau, Germany. Machine for folding woven fabrics	819,991	May 8	1953	432	122	496
Guttman, Harry J., assignor to Automatic Electric Company, Chicago, Ill. Mouthpiece for telephone-transmitters	819,059	May 1	47	10	122	14
Guttman, Harry J., assignor to Automatic Electric Company, Chicago, Ill. Terminal strip	819,060	May 1	48	10	122	14
Guttman, Harry J., assignor to Automatic Electric Company, Chicago, Ill. Telephone switch-hook	819,061	May 1	49	11	122	15
Guy, Albert E., Trenton, N. J. Obturator for flexible shafts	820,780	May 15	3527	757	122	905
Guy, Albert E., Trenton, N. J., assignor to Delaval Steam Turbine Company, New York, N. Y. Rotary fluid-impelling device	819,273	May 1	487	101	122	113
Guy, Albert E., Trenton, N. J., assignor to De Laval Steam Turbine Company. Elastic-fluid turbine	820,714	May 15	3408	728	122	877
Guy, Albert E., Trenton, N. J., assignor to De Laval Steam Turbine Company, New York, N. Y. Pump	820,778	May 15	3524	756	122	905
Guy, Albert E., Trenton, N. J., assignor to De Laval Steam Turbine Company, New York, N. Y. Pumping apparatus	820,779	May 15	3525	756	122	905
Gyllenberg, John A., assignor to Baker City Iron & Supply Co., Baker City, Oreg. Coupling device for aerial tramways and the like	824,645	June 26	4790	1021	122	2932
Gyesler, Phillip, Cleveland, Ohio. Triple-gage, butt-gage, and tool holder	819,541	May 1	996	218	122	224
H. H. Babcock Company. (See Davis, Francis G., assignor.)						
H. H. Franklin Manufacturing Company. (See Brown, William H., assignor.)						
Haage, Gustavus A. (See Hollenbach, Haage, and Hollenbach.)						
Haagn, Ernst, Hanau-on-the-Main, assignor to Firm of W. C. Heraeus, Frankfort-on-the-Main, Germany. Electrically-heated hollow body	822,270	June 5	88	18	122	1748
Haas, George M., New York, N. Y., assignor to Automatic Target Machine Company. Target apparatus	820,569	May 15	3145	677	122	821
Haber, Fritz, G. Van Oordt, Karlsruhe, and F. Bran, Mannheim, Germany. Making beryllium hydroxid	822,444	June 5	406	.....	122	1813
Haberkorn, Theodore H., Fort Wayne, Ind. Valve-gear for engines	821,236	May 22	4508	960	122	1182
Hachenberg, Louis, New York, N. Y. Turbine-engine	823,526	June 19	2641	555	122	2409
Haddock, Margaret C., Bedford, Iowa. Baking-pan for pastry-crusts	823,216	June 12	2008	418	122	2214
Hadley, Richard F. (See Eddy and Hadley.)						
Haeberlein, Max, Niagara Falls, N. Y. Oil-brake for speed-governors	821,359	May 22	4771	1014–15	122	1242
Hafely, Alfred C., Brooklyn, N. Y. Solid back for books	823,168	June 12	1892	390	122	2189
Hagedorn, John H., Cleveland, Ohio. Combined couch or sofa and bed	823,327	June 12	2229	465	122	2263
Hagen, Arthur T., assignor to A. T. Hagen Co., Rochester, N. Y. Clothes-drier	822,604	June 5	755	153	122	1894
Hager, Charles, and T. D. Finizie, New York, N. Y. Car-fender	824,541	June 26	4585	975	122	2887
Hager, Charles, and T. D. Finizie, New York, N. Y. Car-fender	824,542	June 26	4587	975	122	2887
Hager, Harry, Chicago, Ill. Automatic weighing-scale	819,881	May 8	1686	361–2	122	441
Hague, James A., Robinson, Tex. Lint-cotton feeder	819,542	May 1	997	218–19	122	224
Hahl, Augustus L., Chicago, Ill. Synchronizing mechanism for timepieces	823,682	June 19	2932	620	122	2475
Hahn, Jesse M. (See Exton and Hahn.)						
Hahn, Paul T., Woodcliff, Weehawken, N. J. Printing device	823,042	June 12	1623	336	122	2131
Haight, James P., Hooperston, assignor to Sprague Canning Machinery Company, Chicago, Ill. Can-filling machine	819,274	May 1	488	101–2	122	114
Hall, George, Providence, R. I. Elevator safety mechanism	824,646	June 26	4791	1021	122	2932
Hale, Charles B., assignor of one-half to F. J. Henderson, Chicago, Ill. Guide-bracket for freight-car sliding doors	819,754	May 8	1422	306	122	377

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Hale, Cornelius E. (See Rooney, Henry F., assignor.)						
Hale, Earl A., Dayton, Ohio. Bag-holder	821,237	May 22	4514	960-1	122	1183
Hale, Joshua B., assignor, by mesne assignments, to Ring Paper Clip Company, Providence, R. I. Forming spring-clips	822,445	June 5	410	84	122	1814
Hale-Kilburn Metal Company. (See Budd, Edward G., assignor.)						
Hale, Lawrence F., Santa Anna, Tex. Folding box	820,301	May 8	2599	566	122	641
Hall, Alfred, Chicago, Ill. Fountain-pen	823,328	June 12	2232	466	122	2263
Hall, Hartwell & Company. (See Schoen, Paul E., assignor.)						
Hall, John L., Schenectady, N. Y., assignor to General Electric Company. Control system for search-light projectors	822,271	June 5	90	18-19	122	1748
Hall Mining and Smelting Company. (See Harris, Henry, assignor.)						
Hall, Peter P. G., Jr., Philadelphia, Pa. Relief for explosive-gas engines	821,410	May 22	4886	1037	122	1266
Hall, Peter P. G., Philadelphia, Pa. Oyster-dredging hoist	821,411	May 22	4887	1038	122	1266
Hall, Ralph L., and T. C. Martin, Oakland, Cal. Seam-ironing machine	819,698	May 1	1306	284	122	293
Hall, Samuel N., Houston, Tex. Well-drilling apparatus	822,272	June 5	92	19	122	1749
Hall, Seth M., Lockport, N. Y. Toy	820,863	May 15	3720	793	122	947
Hall Signal Company. (See Coleman, Clyde J., assignor.)						
Hall, William A. (See Story and Hall.)						
Hall, William N., Bangs, Tex. Locking device	819,275	May 1	490	102	122	114
Halladay, Lewis P., Streator, Ill. Go-cart	822,944	June 12	1415	296	122	2083
Halliday, John, Detroit, Mich. Cheese-cutter	820,302	May 8	2601	566-7	122	642
Halpin, Theodore D., Lapeer, Mich. Weeding-tool	823,272	June 12	2126	443	122	2241
Halpin, William J., assignor of one-half to S. C. St. John, Dunkirk, Ind. Cover for graves	823,043	June 12	1627	336	122	2132
Halvorsen, Oscar, Modesto, Cal. Ditching-level	824,479	June 26	4469	947	122	2862
Ham, James T., Mineral Wells, Tex. Churn-operator	819,649	May 1	1204	265	122	270
Hamachek, Frank, Kewaunee, Wis. Guard-finger for mowers or reapers	821,635	May 29	5314	1134	122	1416
Hamachek, Frank, Kewaunee, Wis. Attachment for cutting mechanism	821,636	May 29	5318	1134	122	1417
Hamann, Richard W., assignor to E. J. Feiner, St. Louis, Mo. Rotary engine	824,647	June 26	4794	1022	122	2933
Hamann, Richard W., assignor to E. J. Feiner, St. Louis, Mo. Rotary engine	824,648	June 26	4796	1022	122	2933
Hambay, James T., New York, N. Y. Clip for detector-bars	824,355	June 26	4193	896	122	2804
Hamilton, Brace H. (See Callan and Hamilton.)						
Hamilton, C. L., *et al.* (See Kitsee, Isidor, assignor.)						
Hamilton, Fred A., and W. A. Linker, Arlington, N. C. Fertilizer-distributer	821,485	May 22	5029	1071	122	1297
Hamilton, Fred A., and W. A. Linker, Arlington, N. C. Plow	821,486	May 22	5031	1071	122	1297
Hamilton & Hamilton, Jr. (See Phillips, Edgar A., assignor.)						
Hamilton & Hamilton, Jr. (See Presbrey, Edward F., assignor.)						
Hamilton, John T., Hartford City, Ind. Machine for the manufacture of sheet-glass	822,446	June 5	413	84-5	122	1814
Hamilton Machine Tool Company. (See Baerbalck, Hans, assignor.)						
Hamilton, W. F., *et al.* (See Kitsee, Isidor, assignor.)						
Hamlin, George A., *et al.* (See Baldwin, Barlow, assignor.)						
Hamm, Anton F. (See Hamm, Joseph and A. F.)						
Hamm, Edward F. (See Beck, John F., assignor.)						
Hamm, Joseph and A. F., New York, N. Y. Clothes-line fastener	820,715	May 15	3409	729	122	878
Hamm, Rheneldo H. (See Clark, Arthur J., assignor.)						
Hammack, Martin V., Jacksondale, Va. Cooking-range	821,487	May 22	5032	1071	122	1297
Hammar, Oscar F., Leechburg, Pa. Cigarette-roller	823,217	June 12	2009	418	122	2214
Hammer, Charles, assignor of one-third to C. H. Werner, New York, N. Y. Bottle-closure	821,488	May 22	5035	1072	122	1298
Hammer, Lee F., Stockton, Cal. Device for preventing the deceptive refilling of bottles	822,363	June 5	268	56	122	1784
Hammer, Lee F., Stockton, Cal. Device for preventing the deceptive refilling of bottles	822,364	June 5	269	57	122	1784
Hammersmith, Edward W., Congress Park, Ill. Means for delivering and catching mail-pouches	822,447	June 5	414	85	122	1814
Hammerstein, Oscar, New York, N. Y. Fire-extinguishing device	821,938	May 29	5918	1259	122	1549
Hammond, John F., Brewster, N. Y. Suspended electric dental motor	820,781	May 15	3529	757	122	906
Hammond, William R., Atlanta, Ga. Cigar and cigarette holder	820,570	May 15	3147	677	122	822
Hancock, Frederick. (See Ridgway, Aynsley, and Hancock.)						
Handbury Heater Company. (See Walker, Jay B., assignor.)						
Handy, James O., Pittsburg, Pa. Treating ores	821,637	May 29	5321	.....	122	1418
Hanes, George E., Gunnison, Colo. Appliance for railway-cars	820,782	May 15	3534	757	122	907
Hanes, W. M. (See Robinson, William H., assignor.)						
Hanger, James E., Washington, D. C. Chair	820,864	May 15	3721	793-4	122	947
Hanks Marshall W., assignor to G. Westinghouse, Pittsburg, Pa. Applying terminals to the glowers of electric lamps	822,365	June 5	270	57	122	1785
Hanley, Edward W., *et al.* (See Yoe, Philip, assignor.)						
Hanna, Elmer E., Chicago, Ill. Fluid-pressure riveting-machine	823,273	June 12	2127	444	122	2241
Hanna, Elmer E., Chicago, Ill. Fluid-pressure riveting-machine	823,274	June 12	2128	444	122	2241
Hannis, Charles M., Hudson, Mass. Rubber boot	822,366	June 5	271	57	122	1785
Hanrahan, Joseph F., Buffalo, N. Y. Drying-kiln	820,865	May 15	3722	794	122	948
Hansbrough, P. H. (See Keen, William N., assignor.)						
Hanscom, Adelbert P., Malden, Mass. Pneumatic drill	822,367	June 5	272	57	122	1785
Hansen, Gustaf L., Rockford, Ill. Measurement-indicator	820,303	May 8	2604	567	122	643
Hansen, Marius H., Chicago, Ill. Weighing-scale	821,035	May 22	4127	877	122	1098
Hanser, Joseph, Manheim, Tex. Valve-gear for engines	824,011	June 19	3558	760	122	2609
Hanson, Alexander, Chicago, Ill. Spring-stilt	822,448	June 5	416	85	122	1815
Hanson, Nelson T., *et al.* (See Kneedler, John D., assignor.)						
Hanson, Nelson T. (See Kneedler, Van Sickle, Couch, and Hanson.)						
Hanson, Paul, St. Paul, Minn. Mower	819,349	May 1	634	134-5	122	146
Hansson, Henrik F. (See Hansson, John H., assignor.)						
Hansson, John H., Sparrows Point, assignor to H. F. Hansson, Baltimore, Md. Floating dock	820,109	May 8	2225	483-4	122	559
Hanwell, Herbert W., Northampton, England. Lamp-pendant	820 414	May 15	2827	615	122	750
Haptonstall, Frank A., Covington, Va. Rail-joint	819,062	May 1	50	11	122	15
Harbaugh, George E., *et al.* (See Williams, Charle C., assignor.)						
Harcharick, Emro, Wilkes-Barre, Pa. Grate and fuel feeder	820,783	May 15	3536	758	122	908
Harcharick, Emro, Wilkes-Barre, Pa. Fuel-feeding device	824,356	June 26	4194	897	122	2804
Harcourt, George A., Toronto Junction, Canada. Oil-can	820,784	May 15	3537	758	122	908
Harden, David. (See Ruth and Harden.)						
Harden, George, Toledo, Ohio. Invalid-bed	822,119	May 29	6263	1333-4	122	1629
Hårdin, Johannes, Schenectady, N. Y., assignor to General Electric Company. Electric heater	819 650	May 1	1206	265	122	271
Hardesburg, Howard R., Saginaw, Mich. Sand and cavings pump	819.063	May 1	51	11	122	15
Hardie, Frank, New Orleans, La. Filter	823,527	June 19	2643	555	122	2410
Hardie, James G., Canton, N. Y. Paper-cutting machine	823,119	June 12	1796	369-70	122	2167
Hardie, Robert. (See Larsen and Hardie.)						
Harding, Henry M., New York, N. Y., and C. M. Clark, Summit, N. J. Multiple-unit control system	821,267	May 22	4610	983	122	1204
Hardman, Charles C., Mansfield, Ohio. Frog or crossing	819,992	May 8	1954	432-3	122	496

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drf'g.	Official Gazette. Vol.	Official Gazette. Page.
Hardman, Edgar B., Joppa, W. Va. Rail-joint	819,882	May 8	1688	362	122	442
Hardman, Peter, Willimantic, Conn., assignor to American Thread Company, Jersey City, N. J. Bobbin-shaft attachment for twister-fliers	819,134	May 1	196	40	122	50
Hardsocg, Martin, Ottumwa, Iowa. Pneumatic hammer	819,425	May 1	788	170	122	178
Hardy, Alfred R., and R. N. Adams, Dunedin, New Zealand. Sash mover and lock	820,415	May 15	2828	615-16	122	750
Hare, Will C. (See Mullins and Hare.)						
Harker, Hyrum S., assignor of one-half to J. Hulse, Murray, Utah. Plow	821,713	May 29	5489	1169	122	1453
Harless, Charles R., Dayton, Wash. Oil-can	819,217	May 1	365	79	122	88
Harlow, Lamech, Vancouver, Canada. Temperature-indicator and automatic fire-extinguisher for drying-kilns and the like	820,571	May 15	3148	677-8	122	822
Harold, Emma. (See Harold, James J., assignor.)						
Harold, James J., assignor, by mesne assignments, to E. Harold, Jersey City, N. J. Metal piling	820,304	May 8	2605	567	122	643
Harold, James J., assignor, by mesne assignments, to E. Harold, Jersey City, N. J. Metal piling	820,970	May 22	3990	847	122	1069
	824,242	June 26	3990	854	122	2761
Harp, Charles A., King, Tex. Chicken-coop	822,207	May 29	6427	1365	122	1666
Harper, Andrew J., Dalton, assignor of one-half to L. F. Shelton, Sr., Providence, Ky. Drag	820,643	May 15	3258	700	122	845
Harper, James M., assignor to Harper Supply Co., Chicago, Ill. Sad-iron	824,422	June 26	4353	926	122	2835
Harper, James M., assignor to Harper Supply Co., Chicago, Ill. Caster						
Harper Supply Co. (See Harper, James M., assignor.)						
Harper, W. A. (See Ank, Jacob P., assignor.)						
Harper, William D., Loco, Ind. Ter. Window-shade fixture	821,412	May 22	4889	1038	122	1266
Harr, Milton K., *et al.* (See Schauman, Bror M., assignor.)						
Harrigan, Edward, Everett, Wash., assignor of one-half to D. R. Dwyer, Washington, D. C., and E. E. Vernon, Seattle, Wash. Rotary engine	821,797	May 29	5652	1205	122	1491
Harrington, Frank, and C. L. Smith, assignors to Sigourney Tool Company, Hartford, Conn. Tool-feed for planing-machines	820,416	May 15	2830	616	122	751
Harrington, John J. (See Harrington, Michael J. and J. J.)						
Harrington, Michael J. and J. J., Laurium, Mich. Bottle-stopper	821,638	May 29	5326	1134	122	1418
Harris, Barnett W., Mattoon, Ill. Overhead railway	822,120	May 29	6265	1334	122	1629
Harris, Barnett W., Mattoon, Ill. Switch for overhead railways	822,121	May 29	6266	1334	122	1630
Harris, Charles A., Brattleboro, Vt. Brush-holder	824,296	June 26	4081	872	122	2780
Harris, Charles R., Los Angeles, Cal. Heater and duplex burner	819,426	May 1	791	170	122	179
Harris, Charles R., and C. C. Barrick, Los Angeles, Cal. Composition of plaster	824,012	June 19	3559	.....	122	2610
Harris Co., J. (See Harris, John, assignor.)						
Harris & Cole Brothers. (See Bremer, William, assignor.)						
Harris, Ernest C., Beckenham, England. Window-blind fitting	822,273	June 5	95	19	122	1749
Harris, Henry, assignor of one-third to Hall Mining and Smelting Company, Limited, Nelson, Canada. Distributing-box for molten material	819,651	May 1	1207	265	122	271
Harris, John, assignor to J. Harris Co., Cleveland, Ohio. Acetylene-gas burner	823,329	June 12	2233	466	122	2263
Harris, John B. (See Lee, Charles F., assignor.)						
Harris, John W., Pearsall, Tex. Combined pipe clamp and wrench	820,866	May 15	3724	795	122	948
Harris, Noah W., and G. W. Stocker, Woodland, Ill. Building construction	823,528	June 19	2645	556	122	2410
Harris, Richard E., New York, N. Y. Water-heater	821,939	May 29	5919	1259-60	122	1550
Harris, William F., South Bend, Ind. Self-locking seal	822,945	June 12	1418	297	122	2063
Harris, William J., Philadelphia, Pa. Horseshoe	822,737	June 5	1017	208	122	1952
Harrison, Amos, Chicago, Ill., assignor to Warren Webster and Company, Camden, N. J. Automatic relief-valve	821,798	May 29	5654	1205	122	1492
	824,013	June 19	3560	760	122	2610
Harrison, Frank S., Peoria, Ill. Scrubbing-sponge						
Harrison, Harry, Erdington, England. Means for repairing punctures in pneumatic tires	820,110	May 8	2227	484	122	560
	823,860	June 19	3264	692	122	2547
Harrison, Henry H., New York, N. Y. Copying device						
Harrison, John F., assignor to Allis-Chalmers Company, Milwaukee, Wis. Cushioning device for freely-gyrating mechanisms	822,893	June 5	1311	270	122	2012
Harrison, Lycurgus C., Stockwell, Ind. Suspended railway	821,799	May 29	5657	1206	122	1492
Harrison Safety Boiler Works. (See Gamble, Joseph W., assignor.)						
Harrison, Thomas S. (See Wanner, Martin, assignor.)						
Harrison, William. (See Menges, Albert C., assignor.)						
Harrisson, George A., La Fayette, Ind. Ladder or tower wagon	820,190	May 8	2378	516-17	122	592
Harrold, Amos, assignor to Aultman & Taylor Machinery Company, Mansfield, Ohio. Gearing	822,449	June 5	417	85	122	1815
	823,775	June 19	3107	658	122	2511
Harryman, Rupert E., Louisville, Ky. Sash-lock	821,639	May 29	5328	1135	122	1419
Hart, Alan J., Montreal, Canada. Fireman's signaling system						
Hart, B. Franklin, Jr., & Co. (See Hart, Benjamin F., Jr., assignor.)						
Hart, Benjamin F., Jr., Hoboken, N. J., assignor to B. F. Hart, Jr., & Co., New York, N. Y. Grate for steam-boilers and the like	820,785	May 15	3538	758	122	908
Hart, Eli S., Chicago, Ill., assignor, by mesne assignments, to National Dump Car Company. Dump-car	820,046	May 8	2089	456	122	529
	819,543	May 1	999	219-20	122	225
Hart, Hubert C., Unionville, Conn. Machine for making washers	823,944	June 19	3420	730	122	2581
Hart, Hubert C., Unionville, Conn. Shaft-coupling						
Hart, Luphfer I., assignor of one-third to W. M. Shipley, Vanatta, Ohio. Railway cross-tie	824,649	June 26	4798	1023	122	2934
Hartenstein, Herman L., Chicago, Ill., assignor, by mesne assignments, to Electro Chemical & Development Company, Pierre, S. D. Superbeating compound	819,218	May 1	366	.....	122	88
Hartenstein, Herman L., Chicago, Ill., assignor, by mesne assignments, to Electro Chemical & Development Company, Pierre, S. D. Manufacture of carbid	819,219	May 1	368	.....	122	88
Hartenstein, Herman L., Chicago, Ill., assignor, by mesne assignments, to Electro Chemical & Development Company, Pierre, S. D. Producing carbid	819,220	May 1	369	.....	122	88
Hartenstein, Herman L., Chicago, Ill., assignor, by mesne assignments, to Electro Chemical & Development Company Pierre, S. D. Production of carbid	819,221	May 1	370	.....	122	89
Hartenstein, Herman L., Chicago, Ill., assignor, by mesne assignments, to Electro Chemical & Development Company, Pierre, S. D. Manufacture of carbid	819,222	May 1	371	79	122	89
Hartenstein, Herman L., Chicago, Ill., assignor, by mesne assignments, to Electro Chemical & Development Company, Pierre, S. D. Lining for electric or other furnaces and preparing the same	819,223	May 1	375	.....	122	89
Hartenstein, Herman L., Chicago, Ill., assignor, by mesne assignments, to Electro Chemical & Development Company, Pierre S. D. Electric furnace	819.224	May 1	377	79-81	122	89
Hartford, Edward V., New York, N.Y., and A. W. Scheuber, Hoboken, N. J.; said Scheuber assignor to said Hartford. Spring-wheel	823 529	June 19	2646	556	122	2411
	819.427	May 1	792	171	122	179
Hartill-Law, William, Toronto, Canada. Car-axle	822,664	June 5	866	178	122	1920
Hartley, Robert H., Pittsburg, Pa. Coin-controlled punching-bag	823,776	June 19	3108	658-9	122	2512
Hartman, George, assignor of two-fifths to E. Wenning, Cincinnati, Ohio. Paper-bag machine	823,683	June 19	2934	621	122	2475
Hartman, Noble W., assignor of one-half to D. W. Conger, Toledo, Ohio. Elbow-forming machine						

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Hartshorn, Edmund F., Newark, assignor to Stewart Hartshorn Company, East Newark, N. J. Cord attachment for window-shades	819,064	May 1	52	11	122	15
Hartshorn, Henry M., Malden, Mass. Jar-opener	824,114	June 26	3728	796	122	2705
Hartson, William J. (See Methfessel and Hartson.) (Reissue.)						
Hartwig, Rudolf, assignor to F. Krupp Aktiengesellschaft, Essen-on-the-Ruhr, Germany. Cooling device for piston-rods	821,640	May 29	5329	1135	122	1419
Hartzell, Edwin, assignor of one-half to J. P. Benning, Wilkes-Barre, Pa. Sifter, separator, and grader	824,650	June 26	4799	1023	122	2934
Harvey, George H., Glenfield, assignor, by mesne assignments, of one-half to Brownsville Glass Company, Pittsburg, Pa. Apparatus for drawing articles from molten baths	820,971	May 22	3990	847	122	1069
Harvey, John N. (See Young and Harvey.)						
Harwell, Galveston, Cartersville, Ga. Nut-lock	819,225	May 1	384	81	122	91
Hassam, Walter E., assignor of one-half to C. K. Pevey, Worcester, Mass. Pavement and laying the same	819,652	May 1	1210	.....	122	272
Hassy, Alonzo F., New Orleans, La. Guarded caster	823,406	June 12	2364	498	122	2291
Hastings, Charles B., New York, N. Y. Motor-tool holder	824,480	June 26	4470	947	122	2862
Hastings, Reuben C. M., and T. Matheny, Athens, Ohio. Lock-out device for telephones	821,800	May 29	5660	1206–7	122	1493
Hatch, Kate, New York, N. Y. Bathing-corset	820 972	May 22	3993	848	122	1069
Hatcher, William G., Carrington, Mo. Reel-carrier	822,450	June 5	419	86	122	1816
Hathaway, Harold W., Dayton, Ohio. Form for concrete construction	821,860	May 29	5779	1231–2	122	1519
Hathorn, Henry W., Grinnell, Iowa. Tool-holder for lathes	822,122	May 29	6267	1334	122	1630
Hatton, William H., Lebanon, N. H. Apron	823 777	June 19	3112	659	122	2512
Hatzel, John C., and E. L. Morley, New York, N. Y. Electrical receptacle and plug	823,724	June 19	3003	636	122	2488
Hauser, Henry, New Haven, Conn. Repetition piano-action	821,288	May 22	4612	984	122	1204
Hawk, Charles F., Cleveland, Ohio. Piano-truck	822,274	June 5	96	20	122	1749
Hawke, George O., Greenfield, Ind. Toy motor-vehicle	819,653	May 1	1211	265	122	272
Hawkins, Elbert A., Rochester, N. Y. Blacking-guard	820,493	May 15	2979	643	122	784
Hawley, Joseph H. (See Erkovic, Frank A., assignor.)						
Hawn, Samuel L., assignor of one-half to A. S. Coan, Crisman, Colo. Saw-setting device	820,572	May 15	3150	678	122	822
Haws, William E., and G. W. Hill, New York, N. Y. Lacing	819,993	May 8	1956	433	122	497
Hay, William B. (See Cobb, Elmer M., assignor.)						
Hayden, Henry A., Jersey City, N. J. Duster	823,725	June 19	3006	636	122	2488
Hayden, Joel, Jr., Boston, Mass., assignor, by mesne assignments, to Hayden Machinery Company. Ring spinning and twisting apparatus	821,238	May 22	4515	961	122	1184
Hayden, Joel, Jr., Boston, Mass., assignor, by mesne assignments, to Hayden Machinery Company. Ring spinning and twisting apparatus	821,641	May 29	5331	1135	122	1419
Hayden Machinery Company. (See Hayden, Joel, Jr., assignor.)						
Hayes, John J., Middletown, Conn. Snap-hook	824,179	June 26	3855	822	122	2733
Hayes, William J., and J. Fernandez, Brooklyn, N. Y. Pipe	823,218	June 12	2010	419	122	2215
Haynes, Alonzo Jackson, and J. F. Martin, Albion; said Haynes assignor to A. W. Austin, Jackson, Mich. Wire article	820,716	May 15	3410	729	122	878
Hayward Company. (See Morris, Charles A., assignor.)						
Hayward, Rowland R., Owings Mills, Md. Plow	824,014	June 19	3561	760	122	2610
Haywood, George W. (See White and Haywood.)						
Hazard, William E., St. Louis, Mo. Cover for ironing-boards	823,169	June 12	1895	390	122	2189
Hazelton, Charles N., Morrison, Ill. Folding seat and step	820,973	May 22	3994	848	122	1069
Head, Edward F., Sault Ste. Marie, Canada. Stove attachment	821,589	May 22	5212	1112	122	1335
Head, Robert, New York, N. Y., assignor to E. Walker, Erie, Pa. Sound-reproducer	820,936	May 15	3876	826	122	982
Headson, Frank A., La Fayette, Ind. Pipe-wrench	819,428	May 1	793	171	122	179
Heap, Henry. (See Brierley, Thomas, assignor.)						
Hearn, James W., Murfreesboro, Tenn. Jack	821,239	May 22	4517	961	122	1184
Hearttagen, John, Allentown, Pa. Speeder-cone	824,115	June 26	3729	796	122	2705
Heath, Harry E., Lynn, Mass., assignor to General Electric Company. Flexible sheet resistance	819,654	May 1	1212	266	122	272
Heath, Harry E., Lynn, Mass., assignor to General Electric Company. Thermo-electric couple	824,015	June 19	3562	.....	122	2610
Heber, Eduard, New York, N. Y. Obtaining gum from vegetable matter	824,116	June 26	3730	.....	122	2705
Heberling, Ralph H., Wilmerding, assignor of one-half to M. L. Jennings, Pittsburg, Pa. Coat, hat, and umbrella lock	820,191	May 8	2381	517	122	593
Hebert, Madior D., Gloversville, N. Y. Waxed-thread sewing-machine	819,065	May 1	54	12	122	15
Hecker, Frederick H., Los Angeles, Cal. Sanitary syrup-receptacle for soda-water fountains (Reissue)	12,477	May 1	1326	287	122	298
Heckman, Noah L. (See Smith and Heckman.)						
Heer, Otto F. (See Gamber and Heer.)						
Heermance, Charles S., San Francisco, Cal. Poster and color printing	824,016	June 19	3563	760	122	2610
Heeter, William M., Callensburg, Pa. Buggy-spring	822,738	June 5	1019	209	122	1952
Heftye, Birger, Tula, assignor of one-half to W. Bradshaw, Vera Cruz, Mexico. Marine boiler	819,904	May 8	1958	433–4	122	497
Hegeman, Benjamin A., Jr. (See Brown, Thomas R., assignor.)						
Heggem, Charles O., assignor to Russell and Company, Massillon, Ohio. Traction-engine	819,226	May 1	385	81–2	122	91
Heidt, Jacob F., Newark, N. J. Cuspidor attachment for bars	824,651	June 26	4801	1024	122	2934
Heiland, George W., New York, N. Y. Smoke-machine	821,489	May 22	5037	1072	122	1298
Heinerici, Bruno, Mariner Harbor, N. Y. Fanning attachment for rocking-chairs	824,481	June 26	4471	948	122	2862
Heins, John W., Cranford, N. J., assignor to Aeolian Company, New York, N. Y. Music-sheet indicator	819,135	May 1	197	40–1	122	50
Heinze, John O., Jr., Lowell, Mass. Alternating-current motor	823,495	June 12	2558	539	122	2331
Heiser, Valentine, assignor of one-half to H. A. Weller, Orwigsburg, Pa. Clothes-prop	820,927	May 15	3877	826	122	982
Heitkamp, William C., Pleasant Ridge, Ohio. Smooth-bore rotating cannon	819,995	May 8	1960	434	122	497
Heitmann, Arnold H. C. and E. C. Clemmensen, assignors to Parke, Davis & Company, Detroit, Mich. Æth-oxy-phenyl-camphoryl imid and making same	824,357	June 26	4197	.....	122	2805
Helbig, Henry, Munich, Germany. Theater	821,164	May 22	4379	932	122	1154
Hellman, Henry, and L. C. Bayles, Johannesburg, Transvaal. Rock-drill	819,755	May 8	1423	306	122	377
Hellman, Henry, and L. C. Bayles, Johannesburg, Transvaal. Rock-drilling machine	819,756	May 8	1430	306	122	380
Helm, John, St. Louis, Mo. Excavating-machine	821,413	May 22	4890	1038–9	122	1267
Helmke, Herman, assignor to W. Conway, St. Louis, Mo. Roll-paper cutter	823,120	June 12	1803	371	122	2168
Helmond, William F., Hartford, Conn., assignor to Underwood Typewriter Company, New York, N. Y. Type-writing machine	821,036	May 22	4129	877	122	1098
Hemphill, Martin L., Rensselaer, Ind. Horseshoeing-stocks	819,429	May 1	794	171-2	122	179
Henderson, Fred J. (See Hale, Charles B., assignor.)						
Henderson, George W. (See McKinney and Henderson.)						
Henderson, James C., Los Angeles, Cal. Protective bottle	822,739	June 5	1020	209	122	1952
Henderson, John M., Aberdeen, Scotland. Appliance for lifting, moving, and depositing materials	823,861	June 19	3266	692–3	122	2548
Henderson, Joseph W., Butler, Pa. Foundry or casting plant. (Reissue)	12,495	June 12	2568	542	122	2333

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Henderson, Robert J., Philadelphia, Pa. Glazier's point	820,192	May 8	2383	517	122	593
Hendricks, Augustin, Grand Rapids, Mich. Caster attachment for adding-machine stands	823,468	June 12	2478	523	122	2315
Henke, Robert, Jr., New York, N. Y. Gold-leaf book	820,717	May 15	3411	729	122	878
Henkelman, Frederick. (See Kindig, Samuel C., assignor.)						
Henley, Kintchen T. (See Garner and Henley.)						
Henn, William A., assignor to Sanitary Manufacturing Company, Hamilton, Ohio. Hinge for closet-seats	823,275	June 12	2132	444	122	2242
Hennebeul, Otto J., Wilkes-Barre, Pa. Horseshoe-calk	821,414	May 22	4893	1040	122	1267
Hennebique, François, Paris, France. Wall for dams, barriers, protection-walls, and reservoir-walls, and the like	821,037	May 22	4130	877–8	122	1098
Hennen, Mathias, Minneapolis, Minn. Weatherproof paste	823,330	June 12	2237	.....	122	2265
Henninger, Bernhard, New York, N. Y. Scraper	822,605	June 5	757	153	122	1895
Henninger, Thomas C., Markham, Tex. Combined separator and bagging device for grain	820,867	May 15	3725	795	122	948
Henry, George B., and A. Marsh, Gerster, Mo. Folding poultry-crate	823,945	June 19	3421	731	122	2581
Henry R. Worthington. (See Nickel, Franz F., assignor.)						
Henry R. Worthington. (See Ray, Frederick, assignor.)						
Henry R. Worthington. (See Schwanhausser, William, assignor.)						
Henry, William, New Bedford, assignor to Stoddard, Haserick, Richards & Company, Boston, Mass. Stop-motion for silver lap-machines	821,590	May 22	5213	1112–13	122	1335
Henry, William K., assignor to P. & F. Corbin, New Britain, Conn. Door closer and check	821,714	May 29	5491	1169–70	122	1453
Hensel, Henry. (See Tolke and Hensel.)						
Hensel, William T. (See Tolke and Hensel.)						
Hensley, Hubert A., New Rochelle, N. Y. Calculating-machine	823,219	June 12	2011	419–20	122	2215
Henson John W., New York, N. Y. Curtain-looper	820,786	May 15	3541	759	122	909
Hepke, Alexander, and K. Diener, Berlin, Germany. Multiple fuse-plug	823,044	June 12	1628	337	122	2132
Heraeus, Firm of W. C. (See Haagn, Ernst, assignor.)						
Herbaczowski, Hermann. (See Vollmer and Herbaczowski.)						
Herbeck, Emil, Philadelphia, Pa. Display-chest for silverware, &c	823,778	June 19	3112	659	122	2512
Herbrand Company. (See Fetzer, James J., assignor.)						
Herdle, Frederick J., Chicago, Ill. Locking-screw	824,017	June 19	3564	761	122	2611
Hereford, Francis G. (See Bedient, George H., assignor.)						
Hérisson, Albert, Nimes, France. Friction-clutch	819,544	May 1	1002	220	122	225
Herman, John E., Sandusky, Ohio. Tooth-spreader	819,136	May 1	199	41	122	51
Herman, John E., Sandusky, Ohio. Dental matrix-retainer	819,137	May 1	200	41	122	51
Hermance, Frank O., Aberdeen, S. D. Storm-window and window-screen fastener	822,521	June 5	574	115	122	1852
Hermann, George, Chicago, Ill. Roundabout	820,111	May 8	2229	484	122	560
Hermetic Closure Co. (See Buhles, William C., assignor.)						
Hermon, Ezra, Winterset, Iowa. Automatic check-row corn-planter and marker	820,305	May 8	2606	567–8	122	643
Herr, Christian A., Osborn, Ohio. Box construction	820,417	May 15	2832	617	122	751
Herr, Henry C., Detroit, Mich. Machine for forming cylindrical packages	823,276	June 12	2132	445–6	122	2243
Herr, Homer A., Philadelphia, Pa. Automatic press	819,996	May 8	1961	434–5	122	497
Herr, William J., Grand Rapids, Mich., assignor to C. G. Conn Company, Elkhart, Ind. Device for bending tubing	819,545	May 1	1003	220	122	226
Herring-Hall-Marvin Safe Company. (See Holstein, Theodor H., assignor.)						
Herrmann, Daniel, Guttenburg, N. J. Oiler	822,045	May 29	6123	1304	122	1596
Herrmann, Julius C., assignor to American Car & Foundry Company, St. Louis, Mo. Car construction	821,490	May 22	5040	1073	122	1299
Herrmann, Julius C., assignor to American Car & Foundry Company, St. Louis, Mo. Car-door-operating mechanism	823,862	June 19	3268	693	122	2548
Herrmann, Julius C., assignor to American Car & Foundry Company, St. Louis, Mo. Car-door-operating mechanism	823,863	June 19	3269	693	122	2549
Herrmann, Julius C., assignor to American Car & Foundry Company, St. Louis, Mo. Car-roof door	824,077	June 19	3670	781	122	2633
Herrmann, Max. (See Lorenz, Ludwig, assignor.)						
Herrold, Hiram, Luther, Okla. Ter. Cotton-chopper	819,066	May 1	56	12–14	122	16
Herron, James S., Hunter, Okla. Ter. Automatic weigher	822,451	June 5	420	86	122	1816
Herron, John. (See Conolly and Herron.)						
Herschman, Paul R., Freeport, Ill., assignor to C. L. Klewert Company, Milwaukee, Wis. Composition of matter to be used as paint	822,946	June 12	1421	.....	122	2084
Herschman, Paul R., Freeport, Ill., assignor to C. L. Klewert Company, Milwaukee, Wis. Paint	822,947	June 12	1421	.....	122	2084
Herskovitz, Max, Chicago, Ill. Rotatable display device	821,240	May 22	4518	961–2	122	1184
Hervey, James J., Randsburg, Cal. Sectional cam	821,038	May 22	4134	878	122	1099
Herzig, Eduard, Union Hill, N. J. Needle-loom	819,138	May 1	201	41–2	122	51
Herzog Art Furniture Co. (See Herzog, John, assignor.)						
Herzog, Henry. (See Mullarkey, John F., assignor.)						
Herzog, John, assignor to Herzog Art Furniture Co., Saginaw, Mich. Drawer	822,123	May 29	6268	1335	122	1630
Herzog, John, Saginaw, Mich., assignor to Herzog Art Furniture Co. Lock	824,652	June 26	4803	1024	122	2935
Hess, Charles A. P., Paris, France. Sand-blast machine	821,415	May 22	4895	1040	122	1268
Hess, Edward B., New York, N. Y., assignor to Royal Typewriter Company, Hoboken, N. J. Writing-machine	822,208	May 29	6429	1365–6	122	1666
Hess, Edward B., New York, N. Y., assignor to Royal Typewriter Company, Hoboken, N. J. Writing-machine	822,858	June 5	1242	256	122	1998
Hess, Edward B., Brooklyn, N. Y., assignor, by mesne assignments, to Royal Typewriter Company, Hoboken, N. J. Writing-machine	823,121	June 12	1804	371	122	2168
Heugstler, Louis, *et al.* (See Fritsche, Max, assignor.)						
Heulings, William H., Jr., assignor to J. A. Brill, Philadelphia, Pa. Car-seat	819,757	May 8	1438	307	122	382
Heun, William M., McCook, Nebr. Rail-joint	820,573	May 15	3152	678	122	823
Heunsch, Rudolph C., Washington, D. C. Rotary engine	819,276	May 1	492	102–3	122	114
Heuston, Thomas W., assignor of one-half to L. D. Winters, Coffeyville, Kans. Vaginal irrigator	823,409	June 12	2365	498	122	2291
Hewes, James E., Plattsburg, N. Y., assignor of one-half to C. H. Boone, Baltimore, Md. Electric furnace	820,574	May 15	3153	679	122	823
Hewlett, Alfred M. (See Hewlett, Maddra J., assignor.)						
Hewlett, Alfred M. and M. J., Kewanee, Ill.; said M. J. Hewlett assignor to said Alfred M. Hewlett. Molding apparatus	819,883	May 8	1689	362–4	122	442
Hewlett, Maddra J. (See Hewlett, Alfred M. and M. J.)						
Hewlett, Maddra J., assignor to himself and A. M. Hewlett, Kewanee, Ill. Molding apparatus	823,530	June 19	2648	557–8	122	2411
Heyenza, Martin W., Hartsburg, Ill. Vehicle-axle	820,112	May 8	2229	484–5	122	560
Heywood Boot & Shoe Company. (See Legge, Lionel B., assignor.)						
Heywood, James, Manchester, England. Building-motion of slubbing, intermediate, and roving and like frames	823,531	June 19	2652	558	122	2412

Alphabetical list of patentees for May and June—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Hiatt, Stephen T., Akron, Ohio. Metallic packing	824,692	June 26	4889	1040	122	2951
Hickey, Francis J., assignor of one-half to J. M. Dunnigan, Sacramento, Cal. Steam-boiler	823,864	June 19	3271	693	122	2549
Hickey, William A., and J. Brown, St. Paul, Minn. Coin-operated mechanism	824,543	June 26	4590	976	122	2888
Hicks, James W., Everson, Pa. Switch-signal	823,726	June 19	3006	636-7	122	2489
Higbee, Harriet A., Worcester, Mass., assignor to H. D. Perky, Glencoe, Md. Grinding-machine	820,193	May 8	2384	518	122	593
Higbee, Harriet A., Worcester, Mass., assignor to H. D. Perky, Glencoe, Md. Grinding-mill	822,840	June 5	1208	248	122	1992
Higdon, John C., St. Louis, Mo. Automobile-wheel	822,665	June 5	868	178	122	1920
Higdon, Robert W. (See De Haven, James, assignor.)						
Higgins, Charles L., Montreal, Canada. Overshoe	823 331	June 12	2237	466	122	2265
Higgins, Eugene, assignor to American Suction Gas Producer Company, Lansing, Mich. Suction gas-producer	824,358	June 26	4198	897	122	2805
Higgins, Thomas, Johnstown, Pa. Shoestring-fastener	819,884	May 8	1608	364	122	444
Higgs, Isaac W., and H. Hoyoss, assignors, by mesne assignments, to Home Carbide Gas Company, Chicago, Ill. Valve for acetylene-gas generators	823,598	June 19	2767	586	122	2437
Higley Machine Company. (See Juengst, Charles A., assignor.)						
Hildebrand, Charles E. (See Roach, James W., assignor.)						
Hildebrand, Wilhelm, Gross Lichterfelde, near Berlin, Germany. Regulator for air-pumps	821,870	May 29	5783	1232	122	1519
Hildebrandt, Charles T. (See Meyers and Hildebrandt.)						
Hildreth, Edwin A., Harvard, Mass. Split or divided pulley	821,715	May 29	5493	1170	122	1454
Hildyard, William A., and A. B. Drummond, Crouch End, England. Door-closer and stop	823,532	June 19	2654	559	122	2412
Hile, Edmund E., Chicago, Ill. Game-board	824,423	June 26	4354	926	122	2835
Hill, Ebenezer, Norwalk, Conn. Air-compressor	819,655	May 1	1213	266	122	272
Hill, Ebenezer, Jr., Norwalk, Conn. Plug-cock	823,779	June 19	3114	659	122	2513
Hill, Elwin K., Valparaiso, Ind., assignor to Spear-Marshall Co., Chicago, Ill. Inhaler and respirator	823,946	June 19	3423	731-2	122	2582
Hill, Frank L., Cincinnati, Ohio. Necktie	821,289	May 22	4614	984	122	1205
Hill, George H., Schenectady, N. Y., assignor to General Electric Company. System of motor control	822,275	June 5	98	20	122	1750
Hill, George W. (See Haws and Hill.)						
Hill, John P., Seffner, Fla. Cultivator	822,124	May 29	6270	1335	122	1631
Hill, William F., St. Louis, Mo. Advertising-carton	822,841	June 5	1209	249	122	1992
Hillenberg, William E. (See Johnson, Jacob G., assignor.)						
Hilpert, Meier G., Pittsburg, Pa. Steel barge	820,974	May 22	3996	849-50	122	1070
Hilprecht, Robert, assignor to American Suction Gas Producer Company, Lansing, Mich. Gas-producer	824,359	June 26	4199	897	122	2805
Hiltner, Robert S., Lincoln, Nebr. Fence-post	824,117	June 26	3732	797	122	2705
Hinchliffe, William, Huntsville, Ala. Sash-lock	820,868	May 15	3727	795	122	949
Hinde, Louis J., Toledo, Ohio. Clutch-release means	823,496	June 12	2561	540	122	2332
Hindman, Carlos J., Marion, Iowa. Piano-stringing hammer	820,418	May 15	2833	617	122	751
Hines, Thomas J. (See Brennan, John J., assignor.)						
Hinkson, Frank B., New Castle, assignor to Electric Liquid Purifying and Filtering Company, Pittsburg, Pa. Water-purifier	820,113	May 8	2232	485	122	551
Hinkson, Frank B., New Castle, assignor to Electric Liquid Purifying and Filtering Company, Pittsburg, Pa. Filter	821,360	May 22	4773	1015	122	1242
Hinson, James A., deceased; M. Hinson, administratrix, assignor to National Car Coupler Company, Chicago, Ill. Emergency attachment for automatic car-couplings	820,644	May 15	3259	701	122	846
Hinson, Margaret, administratrix. (See Hinson, James A.)						
Hinton, Ewald S., *et al.* (See Baldwin, Barlow, assignor.)						
Hinton, William J., Danville, Ill. Trolley-finder	823,332	June 12	2239	467	122	2265
Hirlimann, Charles J., Fort Lee, N. J. Dry battery	820,047	May 8	2091	457	122	530
Hirsch, Abraham, Albert Lea, Minn. Universal pelt-stretcher	823,170	June 12	1896	391	122	2189
Hirsch, Edwin B. (See Skall, Max A., assignor.)						
Hirschberg, Solomon C. (See Schacht, Julius, assignor.)						
Hirsh, Fred, New York, N. Y. Clasp	823,277	June 12	2140	446	122	2244
Hirsohn, Isaac, New York, N. Y. Garbage-can	821,241	May 22	4519	962	122	1185
Hislop, David B., Aberdeen, Scotland. Cushioned pneumatic tire	821,871	May 29	5784	1232	122	1519
Hitner, Harry F., Wilkinsburg, assignor to Window Glass Machine Company, Pittsburg, Pa. Device for capping off glass cylinders	821,361	May 22	4774	1015	122	1242
Hitner, Harry F., assignor to Window Glass Machine Company, Pittsburg, Pa. Speed-controlling device for glass-blowing machines	822,452	June 5	422	86-7	122	1816
Hoagland, Ellery M., assignor of one-half to W. H. Kelly, San Francisco, Cal. Gate	822,368	June 5	277	58	122	1786
Hobart, Louis C., Southington, Conn. Lubricator for loose pulleys	822,046	May 29	6124	1304	122	1597
Hobbs, Francis M., Halesboro, Tex. Alarm	822,125	May 29	6272	1335	122	1632
Hobbs, George R. (See Jackson and Hobbs.)						
Hobson, John S. (See Ames and Hobson.)						
Hock, John A., and E. Bernheim, assignors to National Tube Company, Pittsburg, Pa. Pipe-threading machine	820,114	May 8	2233	485-6	122	561
Hodell, Stanislaw C., Herkimer, N. Y. Desk-drawer	824,653	June 26	4804	1024	122	2935
Hodge, Arthur J. (See Roach and Hodge.)						
Hodges, Clarence B. and F. W., Detroit, Mich. Gage-glass	821,872	May 29	5785	1232-3	122	1519
Hodges Fiber Carpet Company. (See Stevenson, William M., assignor.)						
Hodges, Frederick W. (See Hodges, Clarence B. and F. W.)						
Hodges, Frederick W., Detroit, Mich. Force-feed lubricator	820,419	May 15	2833	617	122	751
Hodges, Philip F., Collegeview, Nebr. Fly-fan	823,727	June 19	3008	637	122	2489
Hodges, Wilbur. (See Tatum, Henry, assignor.)						
Hodgson, John G., Maywood, Ill., assignor to American Can Company, New York, N. Y. Solder-edged-cap machine	820,357	May 8	2688	587-8	122	661
Hodgson, John G., Maywood, Ill., assignor to American Can Company, New York, N. Y. Machine for automatically applying molten solder to rims of can-caps	820,358	May 8	2693	588-9	122	663
Hodgson, John G., Maywood, Ill., assignor to American Can Company, New York, N. Y. Mechanism or apparatus for loading and counting cans	823,780	June 19	3115	660	122	2513
Hodgson, John G., Maywood, Ill., assignor to American Can Company, New York, N. Y. Can loading and counting machine	823,781	June 19	3117	660	122	2514
Hodsdon, Ernest D., Lynn, Mass., assignor, by mesne assignments, to General Electric Company. Pressure-regulating supply-valve	822,276	June 5	103	21	122	1750
Hodson, Charles E., Bourne, England. Lacing-hook	820,420	May 15	2836	617	122	752
Hodson, James, Liverpool, assignor to North British Eyelet Company, Limited, Mereford, England. Folding bedstead	822,369	June 5	279	58	122	1786
Hodson, James, Liverpool, assignor to North British Eyelet Company, Limited, Mereford, England. Hinge for folding furniture	822,894	June 5	1313	270	122	2013
Hoelzmann, Richard, Brooklyn, N. Y. Closure device for bottles and other vessels	819,130	May 1	203	42	122	51
Hoenigsberger, Harry L., Chicago, Ill. Lap-robe	823,469	June 12	2479	524	122	2315

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Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Hoepner, George, Sandwich, Ill., assignor to E. and T. Fairbanks and Company, St. Johnsbury, Vt. Attachment for automatic scales	823,599	June 19	2769	586	122	2438
Hoerle, Christian G., assignor to Union Hardware Company, Torrington, Conn. Roller-skate	823,333	June 12	2240	467	122	2265
Hoeschen, Henry A., Omaha, Nebr. Electric railway signaling device	821,801	May 29	5662	1207	122	1494
Hoff, Charles A., Blair, Nebr. Windmill-lubricator	823,410	June 12	2366	498	122	2291
Hoffert, Max, Cincinnati, Ohio. Feller-foot for sewing-machines	821,491	May 22	5040	1073	122	1299
Hoffheimer Soap Co. (See Little, Robert H., assignor.)						
Hoffman, August. (See Godwin and Hoffman.)						
Hoffman, Charles A., Minneapolis, Minn. Eyeglass-mounting	820,494	May 15	2981	644	122	785
Hoffman, Charles W. (See Anderson, John N., assignor.)						
Hoffman, George A., assignor to J. H. Brinton, Philadelphia, Pa. Tap-stock	820,194	May 8	2386	518	122	594
Hoffmann, Otto C., assignor to Fuse Wire & Manufacturing Company, Buffalo, N. Y. Electric fuse	821,873	May 29	5788	1233	122	1520
Hoffstetter, Charles H., Erie, Pa. Gas-stove	824,180	June 26	3856	823	122	2733
Hofmann, Fritz, Elberfeld, Germany, assignor to Farbenfabriken of Elberfeld Co., New York, N. Y. Pharmaceutical compound	822,370	June 5	281	.....	122	1787
Hofstad, Isak M., Wrangell, Alaska. Parallel-ruler	823,865	June 19	3272	694	122	2549
Hogan, Denis, assignor of one-half to J. Schwarz, Denver, Colo. Track-sanding device for street-railway cars	824,118	June 26	3733	797	122	2706
Hogan, William F., San Francisco, Cal. Oil-burner	823,866	June 19	3273	694	122	2550
Hohner, Hans, New York, N. Y. Harmonica	821,492	May 22	5041	1073	122	1299
Holcomb Automatic Engine Company. (See Holcomb, Clifford A., assignor.)						
Holcomb, Clifford A., Chicago, Ill., assignor to Holcomb Automatic Engine Company. Steam-engine	822,001	May 29	6032	1285-7	122	1575
Holdeman, Samuel R., Eskridge, Kans. Sash-lock	823,171	June 12	1897	391	122	2189
Holden, George, Merchantville, N. J., assignor to Merritt and Company. Window-screen	822,948	June 12	1422	297	122	2084
Holden, Liberty D., deceased, Glenville, Ohio; V. H. Holden, executrix. Door-indicator	823,782	June 19	3119	661	122	2514
Holden, Virginia H., executrix. (See Holden, Liberty D.)						
Holderfield, Eddy C. (See Holderfield, Joseph M. and E. C.)						
Holderfield, Joseph M. and E. C., Fogg, Tenn. Hay-press	819,546	May 1	1004	220	122	226
Holdred, Frank, assignor to E. K. Warren, Three Oaks, Mich. Quill-treating machine	823,122	June 12	1806	371-2	122	2169
Hole, Franklin J. (See Ayer, Hole, and Olney.)						
Holland, John, Cincinnati, Ohio. Fountain-pen	821,940	May 29	5922	1260	122	1551
Holle, Arthur, Munich, Germany. Metal cask	820,306	May 8	2607	558	122	643
Hollenbach, Isaac, G. A. Haage, and J. G. Hollenbach, Reading, Pa. Oil-burner	821,165	May 22	4380	932	122	1154
Hollenbach, John G. (See Hollenbach, Haage, and Hollenbach.)						
Hollick, Walter J., Manchester, England. Tramway-line and railway-line at level-crossings	822,606	June 5	758	153-4	122	1895
Holliday, George E. (See Betz and Holliday.)						
Hollier, Walter J., New Orleans, La. Treating fibrous stalks	824,243	June 26	3991	854	122	2761
Hollier, Walter J., New Orleans, La. Decorticating-machine	824,244	June 26	3993	854-5	122	2762
Hollopeter, William H., Fostoria, Ohio. Transmission-gear	822,453	June 5	424	87	122	1817
Holloway, Willis L., and E. Browning, West Branch, Iowa; said Holloway assignor to said Browning. Sled	823,684	June 19	2938	621	122	2476
Holm, John, New York, N. Y. Fire-extinguishing apparatus	822,842	June 5	1210	249-50	122	1992
Holman, William L., San Francisco, Cal. Braking apparatus	819,277	May 1	496	104	122	115
Holmen, Axle R., Columbus, Ohio. Apparatus for softening water	819,885	May 8	1699	364	122	444
Holmes, Britain. (See Holmes and Beugler.)						
Holmes, Britain, and E. F. Beugler, assignors to E. & B. Holmes Machinery Company, Buffalo, N. Y. Barrel-heater	821,591	May 22	5215	1113	122	1336
Holmes, Charles M. (See Ware and Holmes.)						
Holmes, Edward and B., and E. F. Beugler, Buffalo, N. Y. Machine for driving barrel-hoops	821,362	May 22	4775	1015-17	122	1243
Holmes, Edward C., Ludlow, Ky. Curtain for vestibule-cars	820,195	May 8	2386	519	122	594
Holmes Machinery Company, E. & B. (See Holmes and Beugler, assignors.)						
Holmes, Merton A., Newton, and G. W. Allen, East Bridgewater, Mass., assignors to Charles Holmes Machine Company, Portland, Me. Machine for scarfing leather	820,975	May 22	4003	850-1	122	1071
Holmes, Phineas, National Soldiers Home, Tenn. Railway construction	821,592	May 22	5217	1114	122	1336
Holmes, Thorwald, Chicago, Ill. Conveyer for restaurants	823,470	June 12	2480	524	122	2315
Holoch, George. (See Miller, John C., assignor.)						
Holritz, Edward A., assignor of one-half to J. C. Bramwell, St. Paul, Minn. Copy-holder for type-writers	821,099	May 22	4256	905	122	1126
Holsteen, Edward F. (See Alexander and Holsteen.)						
Holstein, Theodor H., Hamilton, Ohio, assignor to Herring-Hall-Marvin Safe Company, New York, N. Y. Safe, vault, &c	823,334	June 12	2241	467-8	122	2265
Holt, F. E., *et al.* (See Dieterich, Albert E., assignor.)						
Holt, Henry S. A., assignor to Badische Anilin & Soda Fabrik, Ludwigshafen-on-the-Rhine, Germany. Making indigo coloring-matter	820,869	May 15	3729	.....	122	949
Holt, John. (See Brooks and Holt.)						
Holt, Robert C. (See Stafford and Holt.)						
Holt, Thomas C., assignor of one-half to T. Dunn, Minneapolis, Minn. Concrete-block machine	821,642	May 29	5332	1135-6	122	1419
Holtmann, Henry F., Indianapolis, Ind. Sandpapering-machine	824,482	June 26	4472	948	122	2862
Holtum, Andrew, Clinton, Wis. Printing device	823,783	June 19	3120	661	122	2515
Home Carbide Gas Company. (See Higgs and Hoyoss, assignors.)						
Hon, Stanislaus J., South Bend, Ind. Artificial fuel and making same	820,196	May 8	2388	.....	122	594
Honeywell, William R., Toronto, Canada. Hot-air engine	820,495	May 15	2982	644	122	785
Hood, Frederic C., Brookline, Mass. Machine for washing rubber	821,716	May 29	5495	1170-1	122	1454
Hood, Frederic C., Brookline, Mass. Purifying rubber	821,717	May 29	5497	1171-2	122	1455
Hood, William S., Memphis, Tenn. Window-screen	824,693	June 26	4891	1040	122	2952
Hooker, Leslie E., *et al.* (See Lee, George W., assignor.)						
Hooker, Thomas, Syracuse, N. Y. Mechanical speed-indicator	821,804	May 29	5667	1208	122	1494
Hooker, William C., Abingdon, Ill. Animal-trap	821,802	May 29	5664	1207	122	1494
Hooper, Walter C., and P. Zucco, Baltimore, Md. Tubular concrete-metal construction	822,047	May 29	6126	1304	122	1597
Hooper, William J. (See Scheele, Walter T., assignor.)						
Hoosier Jack and Combination Tool Company. (See Runner, John B., assignor.)						
Hoover, Charles E. (See Lundin, Martin, assignor.)						
Höpflinger, Wilhelm, and E. Sachs, Schweinfurt, Germany. Ball-bearing	819 656	May 1	1216	266	122	273
Hopkins, Charles L., Allemands, La. Floor-set	822,126	May 29	6274	1336	122	1632
Hopkins, George W., and A. B. Canfield, Guthrie, Okla. Ter.; said Canfield assignor to said Hopkins. Bin	824,297	June 26	4082	873	122	2780
Hopler, Amos P., Bartley, N. J. Heater	822,607	June 5	759	154	122	1895
Hopper, Samuel E., Crafton, Pa. Combined boiler stand and coupling	822,843	June 5	1213	250	122	1993
Horinko, Leonard, New York, N. Y. Picture-hanging device	822,048	May 29	6127	1305	122	1597
Hornby, John, assignor to Button Machinery Company, New York, N. Y. Vise	824,360	June 26	4200	897	122	2806

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Horn, Aaron C. (See Gross and Horn.)						
Horn, James T. (See Russell, Isaac O., assignor.)						
Horner, William C., assignor to C. P. McDougall, Indianapolis, Ind. Sliding bin	823,784	June 19	3121	661	122	2515
Horner, William L. (See Moltrup and Horner.)						
Horning, John. (See Gray and Horning.)						
Hornsby, Henry T., and T. R. Weston, assignors to United Iron Works Company, Springfield, Mo. Brake-shoe	820,115	May 8	2235	486	122	561
Horr, Stephen, Woodstock, assignor to Oliver Typewriter Company, Chicago, Ill. Milling-tool	821,290	May 22	4615	984–5	122	1205
Horrell, Charles, Madison, Ill. Metallic tie	821,166	May 22	4381	932	122	1154
Horsley, Robert L., assignor to Worth Wire Works, Fort Worth, Tex. Fence-stay	820,870	May 15	3730	795	122	949
Horto Electric Company. (See Moon, Sampson W., assignor.)						
Horton, H. N., *et al.* (See Cummings, James N., assignor.)						
Horton, James. (See Randerson, William T., assignor.)						
Horton, James A., Providence, R. I., assignor to Iroquois Machine Company, New York, N. Y. Wire-drawing machine	824,654	June 26	4805	1024–5	122	2935
Horton, James A., Providence, R. I., assignor to Iroquois Machine Company, New York, N. Y. Wire-drawing machine	824,655	June 26	4810	1025–6	122	2936
Horwood, Edward H., Hoboken, N. J. Underwaist	823,867	June 19	3274	694	122	2550
Hoschke, William H., assignor of one-half to Pianova Company, New York, N. Y. Mechanical musical instrument	822,666	June 5	869	178–9	122	1920
Hossege, George, New Castle, Pa. Pipe-hanger	824,544	June 26	4592	976	122	2888
Hostetter, David B. (See Tolen and Hostetter.)						
Hotaling, Robert J., *et al.* (See McGhee, John W., assignor.)						
Hotchkiss, Cornelia B., Watertown, Conn. Lady's hat-hanger	822,277	June 5	105	21	122	1751
Hottinger, Heinrich, Zurich, Switzerland. Tapping device	822,608	June 5	761	154	122	1896
Hough, Frank F., Seattle, Wash. Display device	821,242	May 22	4521	962	122	1185
Houghton, Alexis C., Syracuse, N. Y. Benzoyl succinyl peroxid and making same	821,291	May 22	4617	.....	122	1205
House, Benjamin F., Eureka, Ill. Drinking-fountain	821,493	May 22	5042	1073	122	1299
House, James N., assignor of two-thirds to G. E. Wallace and W. Sparks, Jackson, Mich. Miter-box	824,298	June 26	4083	873	122	2781
Householder, Jacob, Big Chimney, and J. C. Galbreath, Charleston, W. Va. Car-coupling	820,871	May 15	3731	796	122	949
Houston, Leonard B., Mobile, Ala. Spring bed-bottom	823,600	June 19	2771	586–7	122	2438
Howard, Charles E., Paterson, N. J. Mat-cutting board	823,685	June 19	2939	621	122	2476
Howard, Donald B. (See Richardson, Robert L., assignor.)						
Howard, Edwin, *et al.* (See Tate, Hugh J., assignor.)						
Howard James H., Medford, Mass. Burglar-proof safe	819,430	May 1	801	172	122	180
Howard, Leslie E. (See Miller and Howard.)						
Howard, Norman, Yonkers, N. Y. Dulcet attachment for banjos	821,494	May 22	5043	1074	122	1299
Howarth, Melvin L., assignor of one-half to G. L. Abbott, Norman, Okla. Ter. Gate	820,787	May 15	3541	759	122	909
Howe, Charles J., *et al.* (See Sharts, Truman P., assignor.)						
Howe, Clarence H. (See Weddington, Robert L., assignor.)						
Howe & Davidson Company. (See Davidson, Frank B., assignor.)						
Howe and Davidson Company. (See Davidson and Wesson, assignors.)						
Howe and Davidson Company. (See Shotts, Harry P., assignor.)						
Howe, John W., Spangle, Wash. Floor-scrubbing machine	824,656	June 26	4813	1026	122	2936
Howe, Thomas J. (See La Bare and Howe.)						
Howe, Winthrop K., Buffalo, N. Y. Railway switching and signaling apparatus	821,495	May 22	5044	1074	122	1299
Howell, Noah, assignor of one-half to J. H. Freeman, Baxter, Ark. Nut-lock	824,078	June 19	3671	782	122	2634
Howey, George R., Philadelphia, Pa. Non-refillable bottle	824,018	June 19	3565	761	122	2611
Howland, Edward C., New Milford, Conn. Cooking utensil	824,119	June 26	3736	797	122	2706
Hoxie, Edmund, Everett, Mass. Pneumatic economizer and air-injector	823,278	June 12	2141	447	122	2244
Hoy, J. A. F. (See Craft, Owen B., assignor.)						
Hoyem, Dag, Brooklyn, N. Y. Automatic circuit-breaker	820,496	May 15	2985	644–5	122	786
Hoyer, John H., Corliss, Wis. Packing for shafts and rotary-valve stems	819,227	May 1	389	82	122	92
Hoyer, John H., Corliss, Wis. Piston-rod packing	821,100	May 22	4257	906	122	1126
Hoyle, Joseph L., Letha, N. C. Churn-operating mechanism	824,424	June 26	4356	927	122	2835
Hoyoos, Hokon. (See Higgs and Hoyoos.)						
Hoyt, Adrian H., Penacook, N. H., assignor to Whitney Electrical Instrument Company. Electrical measuring instrument	821,292	May 22	4618	985	122	1205
Hoyt, George, *et al.* (See King, Phineas F., assignor.)						
Hoyt, Jesse A., Hastings, Iowa. Wire-stretcher	824,120	June 26	3737	798	122	2707
Hoyt, Ralph R., *et al.* (See Dale, John H., assignor.)						
Hoyt, Will F., Dowagiac, Mich. Seedbox for grain-drills	822,002	May 29	6038	1287	122	1577
Hoyt, Worthington, *et al.* (See King, Phineas F., assignor.)						
Hrdlička-Csiszár, Ferdinand. (See Fiedler and Hrdlička-Csiszár.)						
Hubbard, Edward L., *et al.* (See Luckett, John P., assignor.)						
Hubbard, Frank B. (See Morse and Hubbard.)						
Hubbard, Harry B. (See Day and Hubbard.)						
Hubbard, Henry D., Avalon, Pa. Friction-clutch	822,454	June 5	426	87–8	122	1817
Hubbard, Hiram W., assignor of three-fifths to Logemann Brothers Company, Milwaukee, Wis. Concrete-mixer	820,928	May 15	3878	826	122	982
Hubbard, Hiram W., Milwaukee, Wis., assignor to Ogden Cushion Horse Shoe Co. Horseshoe	822,949	June 12	1425	297	122	2085
Hubbell Harvey, Bridgeport, Conn. Cartridge-fuse and fuse-block	819,657	May 1	1217	266	122	273
Hubbell, Ira C. (See Allbee and Hubbell.)						
Huber, Frederick C., and J. E. Manzel, Rosebank, N. Y Electric time-switch	822,003	May 29	6039	1287	122	1578
Huber, George W., Philadelphia, Pa. Combined alcohol lamp and boiler	822,859	June 5	1245	256	122	1999
Hubermann, Max L., Santa Margarita, Cal. Automatic sash-lock	824,545	June 26	4593	976	122	2889
Hubert-Brierre, Alfred M., Paris, France. Apparatus for covering the beds of billiard-tables	820,929	May 15	3881	827	122	983
Hubert-Brierre, Alfred M., Paris, France. Apparatus for covering the cushions of billiard-tables	820,930	May 15	3882	827	122	983
Hubert, Conrad. (See Coleman, Clyde J., assignor.)						
Hübner, Julius. (See Mather, Hübner, and Pope.)						
Hucks, William and William, Jr., London, England. Counting device	820,197	May 8	2389	519	122	594
Hudgens, Monroe, O'Conners, Tenn. Loader and unloader	821,243	May 22	4522	962–3	122	1185
Hudson, Oscar M., Toronto, Canada. Carbureted-air burner for heating, cooking, &c	824,361	June 26	4202	898	122	2806
Huenefeld, Ernst H. (See Carter, John R., assignor.)						
Huey, Charles M., assignor of two-thirds to W. F. Traves, Cleveland, Ohio. Sparking igniter	824,245	June 26	3998	855	122	2762
Huey, James E., assignor of one-half to W. C. Lovejoy, Charlotte, N. C. Combination-rule	824,299	June 26	4084	873	122	2781
Huey, James M., Ruston, La. Block signaling and safety system	819,278	May 1	497	104	122	115
Huffhines, James I., St. Louis, Mo. Attachment for threshing-machines	821,496	May 22	5046	1074	122	1300

Alphabetical list of patentees for May and June—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Huffman, James G., Decatur, assignor of one-half to E. M. Hybarger, Pana, Ill. Car-loader	819,279	May 1	499	104–5	122	115
Hufnagel, John G., Scranton, Pa. Noiseless steam water-heater	822,127	May 29	6275	1336	122	1632
Hug, Eugene F., Elgin, Oreg. Rope measuring and computing machine	819,758	May 8	1440	307	122	382
Hug, Eugene F., Elgin, Oreg. Electric-light bracket	823,533	June 19	2655	559	122	2412
Huggins, Robert T., Venters, S. C. Plow-beam	819,997	May 8	1978	436	122	504
Hughes, Edward W. M., Westminster, England. Manufacture of axle-boxes	822,128	May 29	6276	1336	122	1632
Hughes, Frederick G., and R. P. Stout, Bethlehem, assignors to Bethlehem Steel Company, South Bethlehem, Pa. Wheel-bearing	820,575	May 15	3155	679	122	824
Hughes Invention Co., J. R. (See Hughes, John R., assignor.)						
Hughes, James W., Camden, N. J. Body-rest for musical instruments	821,803	May 29	5665	1207–8	122	1494
Hughes, John R., assignor to J. R. Hughes Invention Co., Chama, N. Mex. Ter. Connecting device for wheel-fellies	820,788	May 15	3542	759	122	909
Hughes, John W., Quincy, Ill. Scale	823,728	June 19	3009	637	122	2489
Hughes, Thomas, East Somerville, Mass. Shaft-oiler	819,280	May 1	502	105	122	116
Hughes, Thomas, East Somerville, Mass. Axle-lubricator	819,281	May 1	502	106	122	116
Hugus, William C., *et al.* (See Nicholls, Moses, assignor.)						
Huising, Garrett H., assignor to Porter Safety Seal Company, Chicago, Ill. Car-seal	819,547	May 1	1006	221	122	226
Hultt, Charles C. (See Huitt, Richard and C. C.)						
Huitt, Richard and C. C., St. Louis, Mo. Door opening and closing apparatus	822,129	May 29	6277	1336	122	1632
Hulett, George H., assignor to Wellman-Seaver-Morgan Company, Cleveland, Ohio. Warehouse machinery for unloading ships	819,759	May 8	1441	308	122	383
Hulse, Edwin M., Columbus, Ohio. Upholstery	823,785	June 19	3122	661	122	2515
Hulse, Jesse. (See Harker, Hyrum S., assignor.)						
Hulsey, Charley M., Frost, Tex. Composition for killing grass	821,244	May 22	4524	.....	122	1186
Hume, Thomas J., New Rochelle, N. Y. Crib or bed	819,886	May 8	1701	365	122	445
Humidine, Limited. (See Dunnett, Francis E., assignor.)						
Hummel, James H., Mount Vernon, N. Y. Automatic ventilating apparatus	821,416	May 22	4896	1041	122	1268
Humphreys, Edwin W., Chicago, Ill. Window	819,760	May 8	1443	308–9	122	383
Humphreys, Fred, Stuart, Nebr. Draft-equalizer	823,172	June 12	1898	391	122	2190
Hunt & Co., M. A. (See Brouvette, Charles D., assignor.)	819,282	May 1	503	106	122	116
Hunt, David F., assignor to Goodell Company, Antrim, N. H. Parer for apples and other fruit	824,300	June 26	4085	873–4	122	2781
Hunt, William F., and R. J. Roberts, New York, N. Y. Hoisting apparatus	819,140	May 1	204	42	122	51
Hunter, Walter J., Pittsburg, Pa. Attachment for trunk-handles	823,173	June 12	1899	392	122	2190
Hunter, William, Kincardine, Canada. Metallic piling	819,067	May 1	61	14	122	17
Huntington, Arthur S. (See Huntington, Charles S. and A. S.)						
Huntington, Charles S. and A. S., Omaha, Nebr. Wrought-metal buckle	823,868	June 19	3276	694	122	2550
Huntington Curtain Pole Company. (See Reynolds, James H., assignor.)						
Huntley, Loring G., Des Moines, Iowa. Fastening device for wagon-nuts	821,497	May 22	5047	1075	122	1300
Huntoon, Charles F., assignor to Chicago Railway Equipment Company, Chicago, Ill. Brake-beam	823,601	June 19	2774	587	122	2438
Huntoon, Charles F., assignor to Chicago Railway Equipment Company, Chicago, Ill. Brake-beam	823,602	June 19	2775	587	122	2439
Huntoon, Charles F., assignor to Chicago Railway Equipment Company, Chicago, Ill. Brake-beam	823,603	June 19	2775	587	122	2439
Hunzicker, John R. (See Bedford, Ebenezer S., assignor.)						
Hupfel, Adolph G., assignor to M. Fleck, New York, N. Y. Stable-flooring	821,417	May 22	4899	1041	122	1268
Hurd, Benjamin, New York, N. Y. Machine for cutting cloth on the bias	819,431	May 1	903	172–3	122	181
Hurd, Israel T., Lansing, Mich. Wagon-wheel	823,335	June 12	2242	468	122	2256
Huribut, Frederick H., Alameda, and T. W. Munroe, San Francisco, Cal. Gas-engine	820,497	May 15	2987	645–6	122	786
Hurley, Frank M., Blissfield, Ohio. Mail receiving and delivery apparatus	821,941	May 29	5923	1260–1	122	1551
Hurt, William H., Fayette, Mo., and J. E. Craig, Cleveland, Tenn. Kitchen-cabinet	821,167	May 22	4383	932–3	122	1154
Hussey, John R., Indianapolis, Ind. Sliding-door construction	822,130	May 29	6278	1337	122	1633
Hussey, William P., assignor to Standard Dry Kiln Company, Indianapolis, Ind. Spacer and holder for heating-pipes	823,869	June 19	3277	695	122	2550
Hussong, Joseph, Camden, N. J. Dyeing-machine	822,844	June 5	1214	250–1	122	1993
Hutchings, Charles F., Bay City, Mich. Electrical-circuit breaker	820,421	May 15	2837	618	122	752
Hutchins, Arthur W., assignor to Measuring Appliance Company, Providence, R. I. Automatic dose-measuring bottle or vessel	820,576	May 15	3156	680	122	824
Hutchins, Frederick, Harlesden, England. Flexible toothed element	820,789	May 15	3544	760	122	910
Hutchinson, Charles W., Allendale, N. J. Sleeve-adjuster	823,534	June 19	2656	559	122	2413
Hutchinson, Robert H., assignor of one-half to J. D. Newton, New York, N. Y. Combined sponge and soap cake	821,245	May 22	4524	963	122	1186
Hutchinson, William F., assignor to Metals Manufacturing Company, Nyack, N. Y. Metallic sign	820,359	May 8	2697	589	122	664
Huther, Angus E., *et al.* (See Sears, George H., assignor.)						
Huther, Warren B., *et al.* (See Sears, George H., assignor.)						
Hutmacher, Julius A. (See Dannert, Fritz, assignor.)						
Hutton, Noah M., Chicago, Ill. Door-latch	823,786	June 19	3123	662	122	2515
Huxley, Charles E., assignor to H. J. Solon, Chicago, Ill. Broom	822,667	June 5	872	179	122	1921
Hyatt Roller Bearing Company. (See Lockwood, Charles S., assignor.)						
Hybarger, Edmund M. (See Huffman, James G., assignor.)						
Hyde, Hiram, Wentworth, Canada. Window	821,101	May 22	4258	906	122	1126
Hyden, Ida F., *et al.* (See Hyden, Peter N., assignor.)						
Hyden, Peter N., assignor to I. F. Hyden and E. S. Endrea, Chicago, Ill. Car-truck	820,718	May 15	3411	729–30	122	878
Hyder, Benjaman W., Rutherfordton, N. C. Protector for telegraph and telephone poles	822,131	May 29	6280	1337	122	1633
Hygienic Soap Granulator Company. (See Schwechler, John, assignor.)						
Hygienic Soap Granulator Company. (See Shaver, George F., assignor.)						
I. B. Kleinert Rubber Company. (See Kleinert, Isaac B., assignor.)						
Ickes, Carl, Chicago, Ill. Greenhouse	820,198	May 8	2390	519	122	594
Ihlder, John D., New York, N. Y., assignor to Otis Elevator Company, East Orange, N. J. Elevator-control system	820,498	May 15	2992	646	122	787
Ihlder, John D., New York, N. Y., assignor to Otis Elevator Company, East Orange, N. J. Electric-elevator-control system	820,499	May 15	3000	646	122	789
Ike, John, assignor to H. Z. Peters, Deadwood, S. D. Cyanid-tank gate	820,116	May 8	2237	486	122	562
Illinois Malleable Iron Company. (See Wayman, William O., assignor.)						
Illinois Steel Company. (See Mathias, Thomas H., assignor.)						
Indiana Manufacturing Company. (See Feising, Samuel D., assignor.)						
Industrial Engineering Company. (See Miller, Luther O., assignor.)						
Ingersoll, Emmet M., Woodstock, assignor to Oliver Typewriter Company, Chicago, Ill. Paper-guide for type-writing machines	824,362	June 26	4203	898	122	2806
Ingersoll-Rand Company. (See Gibson, Arthur H., assignor.)						
Ingersoll-Sergeant Drill Company. (See Taylor, Albert H., assignor.)						
Ingham, Mark, North Chelmsford, Mass. Jack or dresser spooling machine	822,278	June 5	105	21–2	122	1751

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Ingle, James, London, England. Branding-machine for casks, cases, and the like	821,039	May 22	4136	879	122	1099
Inman, John T. (See Inman, Roy W., assignor.)						
Inman, Orion D. W., Beloit, Wis. Staple-driving appliance	823,123	June 12	1808	372	122	2169
Inman, Roy W., assignor to J. T. Inman, Attleboro, Mass. Bracelet	820,645	May 15	3262	701	122	846
Insull, Samuel. (See Ball, Henry P., assignor.)						
International Cotton Seed Delinting Company. (See Ragsdale, William A., assignor.)						
International Harvester Company. (See Bartlett, George H., assignor.)						
International Harvester Company. (See Ellis, George H., assignor.)						
International Harvester Company. (See Livesay, Robert C., assignor.)						
International Harvester Company. (See Rand, Charles A. A., assignor.)						
International Railway Device Company. (See Wheaton, Francis O., assignor.)						
International Separator Company. (See Dunham, Lewis A., assignor.)						
International Separator Company. (See Snyder, Frederick T., assignor.)						
International Separator Company. (See Walt, Henry H., assignor.)						
International Telephone Manufacturing Company. (See McCormick, William E., assignor.)						
International Wireless Telegraph Company *et al.* (See Shoemaker, Harry, assignor.)						
Interstate Engineering Company. (See Fitch, Thomas W., Jr., assignor.)						
Iroquois Machine Company. (See Horton, James A., assignor.)						
Irwin, Clifton W. (See Colburn, Washburn, and Irwin.)						
Irwin William W., assignor to Berger Manufacturing Company, Canton, Ohio. Metal trimming and slitting machine	824,694	June 26	4893	1040–1	122	2952
Isaacs, Moses, and M. Pellar, New York, N. Y. Fabric-folding machine	819,548	May 1	1009	221	122	227
Isacke, Clarence E., New York, N. Y. Folding display-box	823,604	June 19	2776	588	122	2439
Isaman, Joshua A. (See Mitchell and Isaman.)						
Isler, Max H. (See Bally and Isler.)						
Ives, Edward R., assignor to Ives Manufacturing Corporation, Bridgeport, Conn. Toy railway and telegraph-pole	823,947	June 19	3429	732	122	2583
Ives, Hubert R., Montreal, Canada. Light-fixture	819,068	May 1	62	14	122	18
Ives Manufacturing Corporation. (See Ives, Edward R., assignor.)						
J. Stevens Arms & Tool Company. (See Elder, Edward H., assignor.)						
J. A. Fay & Egan Company. (See Thomas, John R., assignor.)						
J. B. Inderrieden Co. (See Cox, Cary S., assignor.)						
J. F. Parkhurst & Son Co. (See Parkhurst, Frederic H., assignor.)						
Jackson, Benjamin F., *et al.* (See Monroe, Simon E., assignor.)						
Jackson, Dugald C., Madison, Wis. Circuit connection for and method of operating alternating motors	823,220	June 12	2021	420–1	122	2217
Jackson, George M., Wickliffe, Ky. Fence-post	820,199	May 8	2391	520	122	595
Jackson, Henry C. (See Koots and Schirmer, assignors.)						
Jackson, Jesse, and G. R. Hobbs, Louisville, Ky. Knife for striking off brick	823,787	June 19	3124	662	122	2516
Jackson, John, Clinton, Iowa. Bracket for step-ladders and the like	821,498	May 22	5048	1075	122	1300
Jackson, Miles I., Kentland, Ind. Gate-latch	821,363	May 22	4782	1017	122	1244
Jackson, Sheldon E., assignor of one-half to E. B. Lee, Weston, Mich. Wire fence	819,141	May 1	206	42	122	52
Jackson, Wilton D., Philadelphia, assignor to F. Dutcher, Versailles, Pa. Track-torpedo	824,019	June 19	3566	761	122	2611
Jackson, Wilton D., Philadelphia, assignor to F. Dutcher, Versailles, Pa. Track-torpedo	824,020	June 19	3567	761	122	2611
Jacob, Frederick W., Amsterdam, Netherlands. Puzzle	822,740	June 5	1021	209	122	1952
Jacobs, Frank H., Sigourney, Iowa. Shaft for vehicles	824,301	June 26	4088	874	122	2782
Jacobs, Jacob, Brooklyn, N. Y. Illuminating-tile	820,200	May 8	2393	520	122	595
Jacobs, Robert F., Baltimore, assignor of one-half to C. F. Walther, Howardville, Md. Machine for cutting or shortening linotype-slugs	823,788	June 19	3125	662	122	2516
Jacobson, Charles F. (See Jacobson, Henry D. and C. F.)						
Jacobson, Henry D. and C. F., Atlantic, Iowa. Buckle	820,307	May 8	2608	568	122	644
Jacobus, David S., Jersey City, assignor to M. R. Jacobus, Ridgefield, N. J. Washing-box for photographic plates	820,646	May 15	3263	702	122	847
Jacobus, Martin R. (See Jacobus, David S., assignor.)						
Jaeger, Otto, Philadelphia, Pa. Show-case	819,432	May 1	805	173	122	181
Jaeger, Otto, Ogontz, Pa. Show or display case	821,499	May 22	5050	1075	122	1301
Jaehnig, Paul H., Newark, N. J. Receptacle for electric lamps	824,021	June 19	3569	762	122	2612
Jäger, Franz, Suhl, Germany. Rifle with hinged or tilting barrel	822,668	June 5	874	179	122	1921
Jahn, Leo C. (See Sweeney and Jahn.)						
Jakobsson, Herman G. (See Meigs and Jakobsson.)						
James, Archibald T. (See Stewart, Charles C., assignor.)						
James, Edwin E., Melbourne, Victoria, Australia. Expansible pulley	824 022	June 19	3575	762	122	2613
James, Henry H., New York, N. Y. Cigar-cutting paper-knife	824,023	June 19	3577	763	122	2613
James Reilly Repair and Supply Company. (See Parker, Levin S., assignor.)						
James, Willard C., Los Angeles, Cal. Combination tub, sink, and washbowl	821,805	May 29	5671	1208	122	1495
James, Willard C., Los Angeles, Cal. Water-service	822,950	June 12	1426	298	122	2085
James, Willard C., Los Angeles, Cal. Folding bed	823,045	June 12	1629	337	122	2132
Jamieson, Albert D. (See Dean, Cyrus S., assignor.)						
Janes, Orrin K. (See McPhail, Neal A., assignor.)						
Janitschek, John, Mount Vernon, N. Y. Mold for casting metals	821,718	May 29	5499	.....	122	1455
Janney, Robert E. L., Chicago, Ill., assignor to American Steel Foundries, New York, N. Y. Pivot-pin-retaining means for car-couplings	820,048	May 8	2093	457	122	530
Janssen, Joseph H., and F. T. Koester, Chicago, Ill. Long-distance level	819,350	May 1	638	136	122	146
Japp, Henry, New York, assignor to S. Pearson and Son, Inc., Long Island City, N. Y. Traveling hoist	820,872	May 15	3732	796	122	950
Jarvis, Harold, Buffalo, N. Y. Type-writing machine	819,998	May 8	1979	436	122	504
Jarvis, Harold, assignor to Jarvis Typewriter & Tabulator Company, Buffalo, N. Y. Tabulating mechanism for type-writing machines	819,433	May 1	806	173	122	181
Jarvis Typewriter & Tabulator Company. (See Jarvis, Harold, assignor.)						
Jasper, William, assignor of one-half to A. Wolf, New York, N. Y. Sewing-machine	820,873	May 15	3733	797	122	950
Jasqur, Sam. (See Fenblatt, Adolf, assignor.)						
Jeanneret, Harry G. (See Windecker, Samuel, assignor.)						
Jeffcott, Lewis B., New York, N. Y. Folding furniture-leg	822,049	May 29	6129	1305	122	1598
Jefferis, Richard W., Merchantville, N. J., assignor to Merritt and Company. Metallic door or panel for lockers	821,102	May 22	4259	906	122	1126
Jefferson, T. L. (See Williamson and Oldham, assignors.)						
Jeffery, Thomas B., Kenosha, Wis. Sparking-igniter-adjusting device for explosive-engines	819,283	May 1	504	106	122	117
Jeffrey, John S. Columbus, Ohio. Railway-signal	822,961	June 12	1429	298	122	2085
Jeffrey, Joseph A. (See Sessions, Frank L., assignor.)						
Jellison, John S., Boise, Idaho. Friction-clutch	820,874	May 15	3734	797	122	950
Jenkins, Charles F. (See Cahill and Jenkins.)						
Jenkins, Thomas R., Jr., Baltimore, Md. Rotary scrubbing-machine	822,060	May 29	6130	1305	122	1598
Jennings, Martin L. (See Heberling, Ralph H., assignor.)						
Jessel, Bernard L., Louisville, Ky. Rack	821,364	May 22	4784	1017	122	1244

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Jester, Thomas W., Bainbridge, Ga. Wrench	823,870	June 19	3278	695	122	2551
Jetter, William F., Philadelphia, Pa. Vegetable-parer	821,103	May 22	4260	906	122	1126
Jewell, William M., Chicago, Ill. Rotary explosive-engine	822,952	June 12	1430	298–9	122	2086
Jobe, George W., Indianapolis, Ind. Trolley-wheel	822,845	June 5	1216	251	122	1993
Joerissen, Carl A., Washington, D. C. Ribbon attachment for sight-writing type-writers	821,643	May 29	5334	1136	122	1420
Johansen, Hans, Chicago, Ill. Device for dressing band-saws	821,293	May 22	4621	985	122	1206
Johanson, Emil G., Rockford, Ill. Mechanical movement	823,046	June 12	1632	337–8	122	2133
John B. Foster and Brother. (See Foster, George D., assignor.)						
John F. McCanna Company. (See McCanna, John F., assignor.)						
John, Hugo, Ilversgehofen, near Erfurt, Germany. Apparatus for cutting girders	823,871	June 19	3280	695–6	122	2551
Johndro, Victor A., New Westminster, Canada. Rafter-gage	821,168	May 22	4385	933	122	1155
Johnsen, Toris N., Wilbur, Wash. Wagon-brake	820,875	May 15	3736	797	122	951
Johnson, Albert G., Chicago, Ill. Pan-lifter	820,577	May 15	3157	680	122	824
Johnson, Alfred B., Greenville, Tex. Combined cultivator, harrow, and planter	822,609	June 5	762	155	122	1896
Johnson, Alfred E., Denver, assignor to Johnson Furnace and Engineering Company, Colorado Springs, Colo. Furnace	819,228	May 1	390	82–3	122	92
Johnson, Alfred E., Denver, assignor to Johnson Furnace and Engineering Company, Colorado Springs, Colo. Water-cooled grate	821,500	May 22	5051	1075–6	122	1301
Johnson, Axel F., New York, N. Y. Package or mail despatching system	824,024	June 19	3578	763	122	2613
Johnson, Charles A., Malden, Mass. Directory device	824,483	June 26	4474	948	122	2963
Johnson, Charles E., Indianapolis, Ind. Station-indicator	821,294	May 22	4622	985–6	122	1206
Johnson, Charles H., Chicago Heights, Ill. Governor for fluid-pressure motors	824,425	June 26	4357	927	122	2835
Johnson, Christian A., Chicago, Ill. Book-cover	823,605	June 19	2777	588	122	2439
Johnson, Clarence. (See Mount, Austin, assignor.)						
Johnson Combined Pressing & Refinishing Co. (See Johnson, Fritz, assignor.)						
Johnson, Edward, Cincinnati, Ohio. Hose-supporter	824,426	June 26	4360	927	122	2836
Johnson, Ernest A., Brooklyn, N. Y. Car-fender	820,117	May 8	2238	487	122	562
Johnson, Francis T., Chicago, Ill. Drier	822,953	June 12	1436	299	122	2088
Johnson, Fritz, assignor to Johnson Combined Pressing & Refinishing Co., Racine, Wis. Flat-iron	819,761	May 8	1446	309	122	384
Johnson Furnace and Engineering Company. (See Johnson, Alfred E., assignor.)						
Johnson, Gustaf G., Wishaw, assignor to I. N. Rodkey, Spangler, Pa. Extension car-step	820,876	May 15	3737	798	122	951
Johnson, Hiram C. (See Campbell and Johnson.)						
Johnson, Jacob G., Ivanhoe, assignor of one-half to W. E. Hillenberg, Crockett Depot, Va. Railway mail catching and delivery means	823,535	June 19	2657	560	122	2413
Johnson, Jacob T., Philadelphia, Pa. Pulley	821,169	May 22	4387	933	122	1155
Johnson, James M., Durant, Ind. Ter. Scraper for vehicles	819,658	May 1	1218	267	122	273
Johnson, John W., Trenton, Mo. Hoisting apparatus	824,025	June 19	3579	763	122	2614
Johnson & Johnson. (See Simmons, Bert G., assignor.)						
Johnson & Johnson. (See Ude, Waldemar, assignor.)						
Johnson, Joseph S., assignor of one-half to H. M. Myers, Lodi, Ohio. Gate-latch	819,284	May 1	506	106	122	117
Johnson, Joseph S., assignor of one-half to H. M. Myers, Lodi, Ohio. Gate	820,201	May 8	2394	520	122	595
Johnson, Marquis H., assignor to J. F. Rosselli, Buffalo, N. Y. Voting-machine	820,790	May 15	3546	760–1	122	910
Johnson, Oliver J., Wheeling, W. Va. Can-end-soldering machine	821,644	May 29	5336	1137	122	1420
Johnson, Samuel S. (See Bowman, Benton S., assignor.)						
Johnson, Seaver A., Oroville, Cal. Cable-clutch	820,422	May 15	2838	618	122	752
Johnson, Simon C., and G. H. Miller, De Kalb, Ill. Car-replacer	822,669	June 5	874	180	122	1921
Johnson & Tallman. (See Tallman, Perry H., assignor.)						
Johnson, Theodore G., Kansas City, Mo. Adjustable mold	819,229	May 1	392	83	122	93
Johnson, Thomas C., assignor to Winchester Repeating Arms Co., New Haven, Conn. Tubular-magazine firearm	819,549	May 1	1012	221	122	228
Johnson, Thomas C., assignor to Winchester Repeating Arms Co., New Haven, Conn. Tubular-magazine firearm	819,550	May 1	1013	222	122	228
Johnson, Thomas C., assignor to Winchester Repeating Arms Co., New Haven, Conn. Wrought-metal fore-arm for guns	819,551	May 1	1014	222	122	229
Johnson, Thomas F., Camden, N. J. Device for treating wool	824,121	June 26	3739	798	122	2707
Johnson, Will R., Montfort, Wis. Pump-rod lifter	821,645	May 29	5340	1137	122	1421
Johnson, William H., Brandon, Vt., assignor of one-half to W. E. Kimball, Thompsonville, Conn. Mechanical detonating toy	821,942	May 29	5926	1261	122	155½
Johnston, Albert S., Los Angeles, Cal. Pneumatic surf-board	821,806	May 29	5673	1209	122	1496
Johnston, Edward A., Sterling, Ill. Wheel-fastener	819,434	May 1	808	174	122	182
Johnston, Elmer P. (See Fuller and Johnston.)						
Johnston, Francis G. D. (See Wilson and Johnston.)						
Johnston, Frank J., Sacramento, Cal. Amusement apparatus	820,118	May 8	2239	487	122	562
Johnston, John, St. Louis, Mo. Automatic envelop feeding, moistening, and sealing machine	821,501	May 22	5054	1076–7	122	1302
Johnston, John Q. A., Newburyport, Mass. Plow	820,202	May 8	2396	520–1	122	596
Johnston, Thomas J., Brooklyn, N. Y., assignor to General Electric Company. Lightning-arrester	822,610	June 5	763	155	122	1896
Jolbert Construction Company. (See Powers, Howard, assignor.)						
Jonas, Charles, assignor to Metallic Folding Bed Company, Chicago, Ill. Metallic folding bed	819,435	May 1	810	174	122	182
Jones, Abram H., Hartford City, Ind. Gas-generator	822,132	May 29	6281	1337–8	122	1633
Jones, Albert O., East Conneaut, assignor of one-half to B. Kennedy, Conneaut, Ohio. Clamp	819,887	May 8	1703	365	122	445
Jones, Albert O., East Conneaut, assignor of one-half to B. Kennedy, Conneaut, Ohio. Plane	819,888	May 8	1704	365–6	122	446
Jones, Alice, Dehesa, Cal. Form for trousers	820,203	May 8	2399	521	122	596
Jones, Clarence H. (See Artibee, Wilfred J., assignor.)						
Jones Cold Store Door Company of Washington County. (See Jones, Richard E., assignor.)						
Jones, Daniel W., Sacramento, Cal. Earth cutter and grader	823,872	June 19	3282	696–7	122	2551
Jones, E. F., *et al.* (See Osborn, David L., assignor.)						
Jones, Edward F. (See Jones, Gerry, assignor.)						
Jones, Evan O. (See Jones, Harry B., assignor.)						
Jones, Frederick B., Somerville, Mass., assignor to Warner Instrument Company, Beloit, Wis. Universally-adjustable clamp-bracket	819,285	May 1	508	107	122	118
Jones, George A., Ottawa, Kans. Milk-pail	822,051	May 29	6131	1308	122	1598
Jones, George A., University Place, Nebr. Animal-trap	824,246	June 26	3999	856	122	2763
Jones, George H., Philadelphia, Pa. Magnetic metal-collector for gear-casings	819,436	May 1	813	174	122	183
Jones, Gerry, assignor to E. F. Jones, Binghamton, N. Y. Platform-scale	822,455	June 5	429	88	122	1818
Jones, Harrison F., *et al.* (See Einsele, George N., assignor.)						
Jones, Harry B., Chicago, Ill., assignor of one-half to E. O. Jones, Racine, Wis. Bottle-stopper	824,122	June 26	3740	799	122	2707

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Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Jones, Harry W., Battle Creek, Mich. Reversible valve-gear	824,657	June 26	4814	1026–7	122	2937
Jones, Hiram, Ascot Vale, Victoria, Australia. Machine for crushing and amalgamating metalliferous ores	822,052	May 29	6133	1306	122	1598
Jones, Horace D., Cincinnati, Ohio. Universal supporting-clamp	824,026	June 19	3582	764	122	2614
Jones, Horatio T., assignor of one-half to J. P. Ludeman, Melbourne, Victoria, Australia. Piston	822,053	May 29	6135	1306	122	1599
Jones, James H., Chicago, Ill. Means for packing joints	819,437	May 1	814	175	122	183
Jones, John W., Council Bluffs, Iowa, assignor to J. W. West, Omaha, Nebr. Thill-coupling	819,552	May 1	1016	222	122	229
Jones, Marcenus J., Rochester, N. Y. Drug-mixer	819,999	May 8	1987	437	122	506
Jones, Martin L. (See Foster and Jones.)						
Jones, Minnie, (now by remarriage M. Franklin,) Denver, Colo. Drafting implement	819,438	May 1	816	175	122	183
Jones, Nathaniel M., Lincoln, Me. Apparatus for assorting pulp-wood chips	819,889	May 8	1705	366	122	446
Jones, Owen M., Chicago, Ill. Car-brake	822,522	June 5	575	116	122	1852
Jones, Phillp H., assignor of one-half to R. P. Woods, Lutcher, La. Poison-indicator	823,873	June 19	3285	697	122	2552
Jones, Richard E., Glen Olden, Pa., assignor to Jones Cold Store Door Company of Washington County. Refrigerator-door hinge	822,279	June 5	107	22	122	1751
Jones, Samuel A., Deshler, Ohio. Minnow-pail	821,040	May 22	4137	879	122	1099
Jones, Thomas A., Essendon, near Melbourne, Victoria, Australia. Wool-scouring machine	822,954	June 12	1440	300	122	2088
Jones, William B. (See Churchill and Jones.)						
Jones, William E., Macon, Mo. Scissors	822,456	June 5	432	88	122	1819
Jones, William J., Franklin, Ind. Grappling-tongs	823,411	June 12	2369	499	122	2291
Jones, William W., Moro, Tex. Shingle-gage	823,874	June 19	3286	697	122	2552
Jordahl, Anders, Carnegie, Pa. Fireproof floor construction	824,363	June 26	4205	898	122	2806
Jordan, Emma M., New York, N. Y. Corset-steel	820,500	May 15	3007	647	122	791
Jorgensen, Joachim C., assignor of one-half to J. C. Donaldson, Washington, D. C. Car-fender	820,204	May 8	2400	521	122	596
Jorgenson, John, San Francisco, Cal. Lock	823,174	June 12	1900	362	122	2190
Jorgenson, John, assignor of one-half to A. Quade, San Francisco, Cal. Lock	823,221	June 12	2025	421	122	2219
Jorgenson, John, assignor of one-half to A. Quade, San Francisco, Cal. Lock	823,222	June 12	2028	422	122	2220
Joseph, Theodore H., *et al.* (See McIntyre, Frank, assignor.)						
Joslin, Alexander D., Chicago, Ill. Conductor's check holding and cutting device	822,523	June 5	576	116	122	1853
Joyce, Asa A., *et al.* (See Smith, Henry R., assignor.)						
Judson L. Thomson M'f'g Company. (See Bartel, William P., assignor.)						
Juengst, Charles A., assignor to Higley Machine Company, Croton Falls, N. Y. Metal-sawing machine	822,670	June 5	878	180–1	122	1922
Julius, Paul, and E. Münch, assignors to Badische Anilin & Soda Fabrik, Ludwigshafen-on-the-Rhine, Germany. Green-blue sulfur dye and making same	820,501	May 15	3008	.....	122	791
Jungel, Michael, Chicago, Ill. Veneer-press	823,175	June 12	1904	392–3	122	2191
Junggren, Oscar, Schenectady, N. Y., assignor to General Electric Company. Governing mechanism for turbines	824,546	June 26	4595	977	122	2889
Junggren, Oscar, Schenectady, N. Y., assignor to General Electric Company. Regulating mechanism for turbines	824,547	June 26	4605	978	122	2891
Junggren, Oscar, Schenectady, N. Y., assignor to General Electric Company. Governing-valve mechanism for turbines	824,658	June 26	4815	1027	122	2937
Juno, Frank, Timken, Kans. Band-cutter and feeder	821,646	May 29	5341	1138	122	1421
Just, John A., Pulaski, assignor to Just Mining & Extraction Co., Syracuse, N. Y. Recovering precious metals	820,000	May 8	1989	.....	122	506
Just Mining & Extraction Co. (See Just, John A., assignor.)						
Justice, Franklin A., Pittsburg, Pa. Curtain-frame	824,484	June 26	4476	949	122	2863
Kaczander, Leopold, assignor to Nathan Manufacturing Company, New York, N. Y. Multiple drop-feed apparatus for liquids	823,223	June 12	2034	422–3	122	2222
Kaehl, Ferdinand, Berlin, Germany. Centrifugal machine	823,948	June 19	3430	732	122	2584
Kahn, Edward A., and R. A. Seigle, Indianapolis, Ind. Display device	823,536	June 19	2660	560	122	2413
Kaiser, Oliver B., Norwood, Ohio. Means for making artificial building-stone	822,524	June 5	577	116	122	1853
Kakao-Campagnie Theodor Reichardt Gesellschaft mit beschränkter Haftung. (See Neumann, Richard G., assignor.)						
Kalispell Manufacturing & Improvement Company. (See Schauer, John W., assignor.)						
Kalle and Company Aktiengesellschaft. (See Friedlaender, Paul, assignor.)						
Kaltenbach, Robert W., Bedford, and J. Griess, Jr., Cleveland, Ohio. Clam-shell bucket	823,412	June 12	2370	499	122	2292
Kaltenbach, Robert W., Bedford, and J. Griess, Jr., Cleveland, Ohio. Clam-shell bucket	823,413	June 12	2373	500	122	2293
Kamiske, Christian G., Milwaukee, Wis. Refrigerating apparatus	822,054	May 29	6136	1307	122	1599
Kamper, Charles J., and E. H. Schofield, Atlanta, Ga., assignors to said Kamper. Urn	821,365	May 22	4785	1017	122	1244
Kandó, Coloman de, Budapest, Austria-Hungary, assignor to Railway Electric Power Company. Automatically-regulated liquid rheostat operated by means of compressed air	821,418	May 22	4900	1041	122	1269
Kane, William, Philadelphia, Pa. Heating apparatus	823,686	June 19	2940	621	122	2476
Kanmacher, Sam H., Schenectady, N. Y., assignor to General Electric Company. Controller for electric circuits	820,877	May 15	3738	798	122	951
Kapp, Joseph A., *et al.* (See Fritsche, Max, assignor.)						
Karf, Francis, Holland, Mich. Spring-support	821,295	May 22	4628	986–7	122	1207
Kashian, Minas H., Amesbury, Mass. Trolley	821,719	May 29	5501	1172	122	1455
Kassel, Sigmund. (See König, Simon S., assignor.)						
Kastner, John, Jr., assignor of two-thirds to S. E. Anderson and F. W. Goedeke, Evansville, Ind. Dust-proof ink-well cover	823,875	June 19	3287	697	122	2553
Katee, Edmond J., Lincoln, Nebr. Safety guide-bracket for car-doors	823,047	June 12	1633	338	122	2133
Katz, Samuel, New York, N. Y. Safety gas-burner	820,647	May 15	3264	702	122	847
Katzenstein, Sigmund. (See Ruge and Katzenstein.)						
Katzinger, Edward, Chicago, Ill. Making pans	820,976	May 22	4007	851–2	122	1072
Katzinger, Edward, Chicago, Ill. Baking-pan	821,104	May 22	4261	907	122	1127
Kaufmann, Heinrich, College Point, N. Y. Quill or cop winding machine	823,789	June 19	3128	663	122	2516
Kavanagh, James A., New York, N. Y. Furnace	822,955	June 12	1441	300	122	2089
Keating, Robert M., assignor to R. M. Keating Motor Company, Middletown, Conn. Spark and valve controlling device for explosion-engines	822,525	June 5	579	116–17	122	1853
Keck, Christian, Crescent Springs, Ky., assignor to Globe-Wernicke Company, Cincinnati, Ohio. Temporary binder	820,049	May 8	2094	457	122	530
Keck, Christian, Crescent Springs, Ky., assignor to Globe-Wernicke Company, Cincinnati, Ohio. Swinging desk-shelf	820,050	May 8	2096	457–8	122	530
Keeble, Edward C. (See Bird, Jacob W., assignor.)						
Keefe, Eugene E., Bellows Falls, Vt. Track-sander and brake-shoe	819,762	May 8	1447	309–10	122	384
Keefer, William W., Pittsburg, and C. E. Ward, Banksville, Pa. Mine-car	822,671	June 5	885	181	122	1924
Keeler, Miner S., Grand Rapids, Mich. Spring-latch	824,027	June 19	3583	764	122	2615
Keen, William N., assignor of one-half to P. H. Hansbrough, Abita Springs, La. Nut-lock	823,876	June 19	3288	698	122	2553
Keene, Louis A., Waterman, Ill. Manure-spreader	819,659	May 1	1221	267	122	274

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Keeney, Parke J., *et al.* (See Ruehs and Weiss, assignors.)						
Kefauver, Joseph H., Middletown, Md. Dough-raiser	823,537	June 19	2661	560–1	122	2414
Keffler, Joseph, Malvern, Ohio. Screen	821,502	May 22	5058	1077	122	1302
Kegerreis, Michael, Lebanon, Pa. Bee-feeder	821,246	May 22	4526	963	122	1186
Kehoe, Thomas J., Fort Wayne, Ind. Friction-clutch	819,890	May 8	1708	366	122	446
Keighley, William B., Vineland, N. J. Apparatus for the manufacture of sheet-glass	820,205	May 8	2402	522	122	597
Keil, Gustav, assignor to Farbwerke, vorm. Meister, Lucius & Brüning, Höchst-on-the-Main, Germany. Making dialkylmalonyl ureas	822,672	June 5	887	.....	122	1925
Keim, John R. (See Smith, William H., assignor.)						
Keiser, Francis R., assignor of two-thirds to W. J. Thisselle and E. H. Ehrensperger, Indianapolis, Ind. Extensible dome form for cement cisterns	824,548	June 26	4609	978	122	2892
Keith, Alexander, Toronto, Canada. Mixing acetylene gas and air for heating purposes	823,538	June 19	2662	561	122	2414
Keith, Frank C. (See Spangle, Harry H., assignor.)						
Keith, Herbert D., Council Grove, Kans. Folding stair	819,553	May 1	1017	222	122	229
Keith, William M., assignor to J. W. Beazley, Shawnee, Okla. Ter. Refrigerator	821,503	May 22	5058	1077	122	1303
Kell, Byron V., *et al.* (See Fowler, Edward, assignor.)						
Kellam, Levi H., Sandwich, Ill. Manure-spreader	820,791	May 15	3560	761–2	122	912
Keller, Huldreich, Berlin, Germany, assignor to General Electric Company. Governing mechanism for prime movers	822,673	June 5	887	181–2	122	1925
Keller, Valentin, Milwaukee, Wis. Marble-shooter	819,891	May 8	1709	367	122	447
Kelley, Achiles. (See King, Elijah, assignor.)						
Kelley, Herbert F., Lewiston, Me., assignor to Draper Company, Hopedale, Mass. Thread-parting mechanism for looms	819,351	May 1	641	136	122	147
Kellogg, Alonzo C., Portage, Wis. Surgical implement	823,877	June 19	3289	698	122	2553
Kellogg, Dan W. (See Fonteine, Herman A., assignor.)						
Kellogg, Frederick R., administrator. (See Magney and Masterman.)						
Kellogg, Milo G., Chicago, Ill. Multiple switchboard for telephone-exchanges	820,360	May 8	2698	589	122	665
Kellogg, Milo G., assignor to Kellogg Switchboard and Supply Company, Chicago, Ill. Multiple switchboard for telephone-exchanges	821,807	May 29	5674	1209	122	1496
Kellogg, Milo G., assignor to Kellogg Switchboard and Supply Company, Chicago, Ill. Multiple switchboard for telephone-exchanges	822,611	June 5	765	155	122	1897
Kellogg Switchboard and Supply Company. (See Dean, William W., assignor.)						
Kellogg Switchboard and Supply Company. (See Dommerque, Franz J., assignor.)						
Kellogg Switchboard and Supply Company. (See Kellogg, Milo G., assignor.)						
Kellogg Switchboard and Supply Company. (See Lendl, John H., assignor.)						
Kellogg Switchboard and Supply Company. (See Taylor, William A., assignor.)						
Kellogg, William M., Pittsfield, Mass., assignor to Yankee Novelty Company. Knife-sharpener	823,279	June 12	2143	447	122	2244
Kelly, Burt O., Petroleum, assignor of one-half to W. R. Allyn, Poneto, Ind. Lubricator	823,729	June 19	3010	638	122	2490
Kelly, Charles T., assignor to D. M. Smallmon and T. L. Cates, Harriman, Tenn. Meat-sacking machine	822,956	June 12	1443	300	122	2089
Kelly, George B., Boston, Mass., assignor to Aeolian Company, New York, N. Y. Music-roll	822,280	June 5	108	22	122	1752
Kelly, John F., assignor to Thomas Maddock's Sons Company, Trenton, N. J. Water-closet bowl	820,051	May 8	2097	458	122	531
Kelly, John P., Watertown, N. Y., assignor to New York Air Brake Company. Air-brake	823,048	June 12	1634	338	122	2134
Kelly, Orlando G., Jackson, Mich. Rack for frying fried cakes	820,792	May 15	3569	762	122	915
Kelly, Thomas P., *et al.* (See Bellamy, Albert, assignor.)						
Kelly, William H. (See Hoagland, Ellery M., assignor.)						
Kelly, William H. (See Luckenbach, Harry, assignor.)						
Kelly, William H., Cheyenne, Wyo. Game apparatus	823,049	June 12	1638	338	122	2134
Keltner, George R., Covington, Okla. Ter. Wheat-shocker	819,554	May 1	1017	223	122	229
Kemmerer, George D., Wilkes-Barre, and W. B. Armstrong, Plymouth, Pa. Ticket-holder	823,050	June 12	1639	339	122	2134
Kemp, Arthur A. and W. B., Guymon, Okla. Ter. Wire-stretcher	820,578	May 15	3159	680	122	825
Kemp Hydro-Carbon Furnace Company. (See Kemp, William, assignor.)						
Kemp, William, Tucson, Ariz. Ter., assignor to Kemp Hydro-Carbon Furnace Company. Hydrocarbon-burner	821,419	May 22	4903	1042	122	1269
Kemp, William, assignor of one-half to M. P. Freeman, Tucson, Ariz. Ter. Blast-furnace	824,485	June 26	4478	949	122	2864
Kemp, William B. (See Kemp, Arthur A. and W. B.)						
Kemper, Arthur. (See Kemper, Robert E. and A.)						
Kemper, August. (See Damhorst Kemper, and Utke.)						
Kemper, Robert E. and A., Rensselaer, N. Y. Platen printing-press	819,069	May 1	63	14–17	122	18
Kemper, Robert E. and A., Rensselaer, N. Y. Automatic feeding device for sheets, cards, and envelops	821,601	May 22	5238	1117–18	122	1341
Kendall, George H., New York, N. Y. Plate-printing machine	823,878	June 19	3290	698–9	122	2553
Kendall, William M., Manchester, N. H. Tobacco-pipe cleaner	819,555	May 1	1021	223	122	230
Kendrick, Thomas, Caversham, New Zealand. Spring hand-truck	820,001	May 8	1993	437	122	506
Kenerson, Joseph E., Lynn, Mass. Broom-holder	819,070	May 1	71	17	122	19
Kenly, William K. (See Redding, Oliver C., assignor.)						
Kenna, Michael P., Dubuque, Iowa. Envelop-printing machine	819,763	May 8	1450	310	122	384
Kennedy, Ben. (See Jones, Albert O., assignor.)						
Kennedy, David S., Brooklyn, N. Y., assignor to Mergenthaler Linotype Company. Linotype-machine	824,659	June 26	4818	1027–8	122	2938
Kennedy, John W., Rochester, N. Y. Folding wardrobe-rack	822,133	May 29	6283	1338	122	1634
Kennedy, Julian, Pittsburg, Pa. Valve	821,943	May 29	5929	1261–2	122	1552
Kennedy, Patrick, New York, N. Y. Retarding device for electromagnets	821,501	May 22	5059	1078	122	1303
Kenny, James A., and C. H. Thordarson, Chicago, Ill. Electrical recording apparatus	824,364	June 26	4207	898–900	122	2807
Kent, Darwin L., Leslie, Mich. Gardening-tool	824,123	June 26	3742	799	122	2708
Kent, Perry E., Utica, N. Y., assignor to Mergenthaler Linotype Company. Linotype-machine	821,296	May 22	4630	987	122	1208
Kenton, Leonidas M., Ada, Ohio. Buckle	821,170	May 22	4388	933–4	122	1155
Kerkovius, Leo. (See Kirchhoff and Kerkovius.)						
Kerngood, Herman, Baltimore, Md., assignor to Alma Button Company of Baltimore City. Detachable button for gloves, &c	822,957	June 12	1444	301	122	2090
Kernochan, William, Brooklyn, N. Y. Carpet-fastener	820,502	May 15	3009	647	122	791
Kerns, William E., Fox Chase, assignor to Barber Asphalt Paving Company, Philadelphia, Pa. Apparatus for raising asphalt pavement	819,142	May 1	207	43	122	52
Kerr, Elisha R., Erin, Tenn. Cattle-guard	824,247	June 26	4000	856	122	2763
Kerr, George, Dallas, Oreg. Lamp-burner	821,171	May 22	4389	934	122	1156
Kerr, George, Dallas, Oreg. Lamp-extinguisher	822,457	June 5	433	88–9	122	1819
Kerr, George A., *et al.* (See Lilleros, Carl O., assignor.)						
Kerr Turbine Company. (See Moore, James L., assignor.)						
Kerridge, Isaac C., Corpus Christi, Tex. Cot-canopy	820,719	May 15	3416	730–1	122	879

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Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Kershner, William C. (See Paul and Kershner.)						
Kesselman, William H., Parkersburg, W. Va. Casing-bowl	820,206	May 8	2406	522	122	598
Ketcham, Cassius M., Carthage, Mo. Target-trap	822,741	June 5	1022	209–10	122	1953
Ketcham, Lincoln H., Corning, Ohio. Post-driving machine	819,764	May 8	1454	311	122	385
Ketterer, Percival C., New York, N. Y. Device for supporting wagons for painting	823,280	June 12	2144	447	122	2245
Key, Brewer W. (See Percival, Herbert E. assignor.)						
Keyes, James A., New York, N. Y. Packing-machine	823,051	June 12	1641	339–40	122	2135
Keystone Driller Company. (See Smith, Downie, and Ransom, assignors.)						
Kick, Emile F., New York, N. Y., assignor to American Chemical Products Company. Curing hides and skins	820,648	May 15	3266	.....	122	847
Kidd, George E., assignor of one-half to J. E. McLaughlin, Bloomfield, Ind. Device for handling corpses	821,720	May 29	5503	1172	122	1456
Kidd, Lewis. (See Kidd, William F., P., and L.)						
Kidd, Peter. (See Kidd, William F., P., and L.)						
Kidd, William F., P., and L., Bloomfield, Ind. Lifting-jack	823,949	June 19	3432	732–3	122	2584
Kidder, John F., Burlington, Vt. Game apparatus	824,660	June 26	4819	1028	122	2938
Kidney, Josiah R., East Hampton, Conn. Push-button bell	824,486	June 26	4490	949–50	122	2864
Kiefer, Karl, Cincinnati, Ohio. Candying cherries	819,286	May 1	511	107	122	118
Kiel, William, Butler, N. J., assignor to American Hard Rubber Company. Chemical vessel	819,765	May 8	1457	311	122	386
Kienle, Eugene, *et al.* (See Wick, Mathias, assignor.)						
Kiesel, William F., Jr., Altoona, Pa. Frame for railway-cars	823,790	June 19	3131	663–4	122	2517
Kiewert Company, Chas. L. (See Herschman, Paul R., assignor.)						
Kilborn, George D. (See Wilson, Frank N., assignor.)						
Kilbourn, Edward E., New Brunswick, N. J., assignor to Kilbourn Knitting Machine Company. Manufacture of seamless hosiery	821,944	May 29	5930	1262	122	1553
Kilbourn Knitting Machine Company. (See Gilbert, George H., assignor.)						
Kilbourn Knitting Machine Company. (See Kilbourn, Edward E., assignor.)						
Kilbourne and Jacobs Manufacturing Company. (See Stagg, Thomas H., assignor.)						
Killing, Ewald, Hagen, Germany. Rail-joint	821,420	May 22	4905	1042	122	1270
Kilroy, Patrick M., assignor of two-thirds to T. E. Adams and J. E. Brown, Pine Bluff, Ark. Combination cast-steel transom, draft-sill, and dead-wood	824,124	June 26	3744	799	122	2708
Kilroy, Patrick M., assignor of two-thirds to T. E. Adams and J. E. Brown, Pine Bluff, Ark. Combination truss-rod stand and anchor-bracket	824,125	June 26	3744	799	122	2708
Kimball, Frank R., *et al.* (See Cove, George H., assignor.)						
Kimball, Willard E. (See Johnson, William H., assignor.)						
Kimball, William C. (See Kimball, William H., assignor.)						
Kimball, William H., assignor of one-half to W. C. Kimball, Tallapoosa, Ga. Fence-post	820,207	May 8	2407	522	122	598
Kimbark, Daniel A. (See Felt and Kimbark.)						
Kimmet, Henry, St. Joseph, Mo. Plaster-board	820,793	May 15	3570	763	122	915
Kimsey, James C., Philadelphia, Pa. Bottle-closure	824,661	June 26	4821	1028	122	2938
Kincaid, Joseph G., Hiawatha, Kans. Washing-machine	822,371	June 5	282	58	122	1787
Kindel, Charles J., and R. Coopersmith, St. Louis, Mo. Davenport-bed	823,879	June 19	3295	699–700	122	2554
Kindig, Samuel C., assignor of seven-fifteenths to F. Henkelman, Baltimore, Md. Non-refillable bottle	819,892	May 8	1710	367	122	447
Kindig, Samuel C., assignor of one-half to F. Henkelman, Baltimore, Md. Closure for bottles, jars, &c.	822,995	June 5	1315	271	122	2013
Kindig, Samuel C., assignor of one-half to F. Henkelman, Baltimore, Md. Closure for bottles, jars, and similar vessels	823,124	June 12	1810	372	122	2169
Kindling, Gustav, Magdeburg, Germany. Automatic registering pool-table	823,687	June 19	2942	622	122	2476
King, Almer, Aurora, Ill. Mail-box	823,730	June 19	3012	638	122	2490
King, Alphonse, San Antonio, Tex. Nailless horseshoe	822,612	June 5	768	155–6	122	1897
King Bridge Company. (See Fuller, Harry, assignor.)						
King, Charles E., Washington, Kans. Action for stringed musical instruments	819,556	May 1	1022	224	122	230
King, Daniel, Pinkney, Tenn. Dumping-car	824,365	June 26	4223	900	122	2810
King, Elijah, Sams, assignor of one-fourth to A. Kelley, Pryse, Ky. Automatic car-coupling	821,505	May 22	5061	1078	122	1303
King, Hubert, New York, N. Y. Capsule-filler	820,720	May 15	3417	731	122	880
King, John B., Plymouth, England. Internal-combustion engine	819,557	May 1	1023	224	122	230
King, John H., Cincinnati, Ohio. Train-stopping apparatus	823,281	June 12	2145	448	122	2245
King Machine Tool Company. (See Muller, Edward A., assignor.)						
King Phineas P., Cleveland, Ohio, assignor of two-thirds to G. and W. Hoyt and J. D. Chambers. Cotton-gin	819,893	May 8	1711	367–8	122	447
Kingsbury, Harry T., Keene, N. H. Spring-motor	824,248	June 26	4002	856–7	122	2763
Kingsley, Burton E., Scranton, Pa. Elevator	820,208	May 8	2409	522–3	122	599
Kinley-Licht & Apparatebau Gesellschaft m. b. H. (See Ulmann, Philipp, assignor.)						
Kinnear, William R., New York, N. Y. Sheet-metal radiator	822,613	June 5	769	156	122	1897
Kinney, Ralph P., Cleveland, Ohio. Repair-plug for pneumatic tires	821,041	May 22	4138	879	122	1100
Kinyon, Alonzo G., and J. R. Saunders, Hornellsville, N. Y. Rotary engine	821,647	May 29	5343	1139	122	1422
Kirby, Frank E., *et al.* (See MacDougall, John, assignor.)						
Kirchbach, Frank, Munich, Germany. Water-wheel	824,662	June 26	4822	1029	122	2939
Kirchhoff, Richard, Gross-Lichterfelde, and L. Kerkovius, Friedenau, assignors to Actien Gesellschaft für Anilin Fabrikation, Berlin, Germany. Violet-color lake and making same	820,052	May 8	2098	.....	122	531
Kirk, Ernest, Niagara, N. D. Shock and bundle loader	822,134	May 29	6285	1338–9	122	1634
Kirkegaard, Georg, New York, N. Y. Bottle-closure	823,125	June 12	1811	373	122	2170
Kirkpatrick, William B. (See Daniels and Kirkpatrick.)						
Kirksey, John G., Carthage, Mo. Ore-concentrator	821,874	May 29	5790	1233–4	122	1520
Kitchell, Oscar, and C. W. Swanson, assignors to said Swanson, G. W. Powers, and S. W. Prince, Chicago, Ill. Dish-washing machine	821,105	May 22	4263	907	122	1127
Kitchen, Ernest B., White Post, Va. Mail-box signal	823,791	June 19	3134	664	122	2518
Kitchen, John G. A., and L. P. Perkins, Lancaster, England. Tube for radiating, cooling, and condensing apparatus	822,372	June 5	283	59	122	1787
Kitsee, Isidor, Philadelphia, Pa. Electric telegraphy	820,977	May 22	4010	852	122	1072
Kitsee, Isidor, Philadelphia, Pa. Electric telegraphy	821,506	May 22	5062	1078	122	1304
Kitsee, Isidor, Philadelphia, Pa. Electric telegraphy	823,176	June 12	1906	393	122	2192
Kitsee, Isidor, Philadelphia, Pa. Telegraphic sending device	824,028	June 19	3585	764	122	2615
Kitsee, Isidor, Philadelphia, Pa. Telephony	824,030	June 19	3591	765	122	2616
Kitsee, Isidor, Philadelphia, Pa. Telephony	824,032	June 19	3594	766	122	2616
Kitsee, Isidor, assignor of one-half to W. J. Latta, Philadelphia, Pa. Telegraphic transmitting device	821,043	May 22	4141	880	122	1100
Kitsee, Isidor, assignor of one-half to W. J. Latta, Philadelphia, Pa. Transmitting-key for telegraphic circuits	824,029	June 19	3588	765	122	2615
Kitsee, Isidor, assignor of one-half to W. J. Latta, Philadelphia, Pa. Telegraphic transmitting-key	824,031	June 19	3593	765	122	2616

Alphabetical list of patentees for May and June—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Kitsee, Isidor, Philadelphia, Pa., assignor of one-half to C. L. and W. F. Hamilton. Treating contact substances used for catalytic action	821,042	May 22	4139	880	122	1100
Kitt, Frederick T., Denver, Colo. Automatic electric circuit changer or switch	820,119	May 8	2240	487	122	563
Kitto, Walter, Barnes, London, England. Crushing or pulverizing apparatus	821,421	May 22	4905	1042	122	1270
Kjerner, Ragnar L., Yonkers, assignor of one-half to Standard Steam Specialty Company, New York, N. Y. Steam-separator	821,172	May 22	4391	934	122	1156
Klalber, Maximilian. (See Wilks and Klalber.)						
Klanke, George, New Bremen, Ohio. Leg for tables	822,281	June 5	110	23	122	1752
Klauer, William H., Dubuque, Iowa. Making sheet-metal elbows	824,302	June 26	4089	874–5	122	2782
Klaus, Caesar, Eureka, Ill. Automatic brake	819,287	May 1	511	107–8	122	118
Klein, Gustav, Leipsic, Germany. Sheet-feeding device for printing-machines	819,352	May 1	644	136	122	147
Klein, Fred J., New York, N. Y. Paper-clip	819,766	May 8	1456	312	122	386
Klein, Fred J., New York, N. Y. Paper-clip	820,361	May 8	2702	589	122	665
Klein, Joseph, Peru, assignor to Western Clock Manufacturing Company, La Salle, Ill. Barrel click-spring for timepieces	820,794	May 15	3571	763	122	915
Klein, Otto G., Barron, Wis. Wheel-holder	820,579	May 15	3160	680–1	122	825
Klein, William B., Chicago, Ill. Filter	824,487	June 26	4482	950	122	2865
Kleinbach, John, and K. Bareis, Spokane, Wash. Flushing attachment	820,795	May 15	3572	763	122	915
Kleinert, Isaac B., New York, N. Y., assignor to I. B. Kleinert Rubber Company. Hose-supporter loop	821,106	May 22	4265	908	122	1127
Kleinfeldt, Arthur, Hoboken, N. J. Siphon for dispensing liquids	824,249	June 26	4004	857	122	2764
Klepetko, Frank, New York, N. Y. Roasting-furnace	824,181	June 26	3857	823	122	2733
Kley, Gustav, Siegburg, Germany. Weighing apparatus	819,558	May 1	1025	225	122	231
Klinck, E. G. (See Seever, Elmer J., assignor.)						
Kline, Bert E., Sheldon, Ind. Wrench	823,177	June 12	1908	393	122	2192
Kline, David C. (See Buckley, Kline, and Singleton.)						
Kline, Samuel, Trenton, N. J. Head-rest	823,792	June 19	3135	665	122	2518
Kline, William H., Dunbar, Pa. Valve	821,507	May 22	5067	1079	122	1304
Klitzing, Philipp von. (See Mehlhorn and Klitzing.)						
Klotz, Adolph E., New York, N. Y. Fireproof partition	823,052	June 12	1643	340	122	2135
Klousnitzer, Frank, Herman, assignor of one-half to H. Cypher, Marwood, Pa. Rat-trap	821,366	May 22	4789	1018	122	1245
Knapp, Ambrose E., Seattle, Wash. Pneumatic tool-holder	824,250	June 26	4006	857–8	122	2764
Knapp, Frank E., Quincy, Mich. Combined hinge and support for edgewise-movable gates	824,033	June 19	3596	766	122	2617
Kneedler, John D., assignor of three-fifths to B. Couch and N. T. Hanson, Sioux City, Iowa. Securing means for track-rails	821,509	May 22	5070	1080	122	1305
Kneedler, John D., N. Van Sickle, B. Couch, and N. T. Hanson, Sioux City, Iowa. Device for bridging and uniting rails	821,508	May 22	5069	1079	122	1305
Kneedler, Miriam R., Philadelphia, Pa. Car-coupling	822,526	June 5	581	117	122	1854
Kneen, William, London, England. Tramway-point	822,055	May 29	6137	1307–8	122	1599
Knepper, Jacob F. (See Cramer, Richard R., assignor.)						
Kneuper, George M., New York, N. Y. Means for emptying receptacles	821,875	May 29	5792	1234	122	1521
Knickerbocker, Burton D., Chicago, Ill. Bath-brush with detachable handle	823,471	June 12	2482	524	122	2316
Kniebes, Peter G. (See Barlow, Ashbel P., assignor.)						
Knietsch, Rudolf, Ludwigshafen-on-the-Rhine, Germany, assignor, by mesne assignments, to General Chemical Company. Making sulfuric anhydrid	823,472	June 12	2483	524	122	2316
Knietsch, Rudolph, Lugwigshafen-on-the-Rhine, Germany, assignor, by mesne assignments, to General Chemical Company. Purifying burner-gases	822,373	June 5	284	59	122	1787
Kniffen, Le Grand, Chicago, Ill. Loading apparatus for wagons, &c.	822,614	June 5	770	156	122	1898
Knight, Albert C., Newark, N. J., assignor to Gledhill Wall Paper Co., New York, N. Y. Making illuminated wall-papers and the like	822,209	May 29	6434	.....	122	1668
Knight, Herbert L., assignor to Williams-Abbott Electric Company, Cleveland, Ohio. Transmitter-arm	823,336	June 12	2244	468	122	2266
Knight, Walter A., trustee. (See Gray, Charles F., assignor.)						
Knippenberg, Philip M., Oshkosh, Wis. Candle holder and stick	820,209	May 8	2412	523	122	599
Knittel, John, Allegheny, Pa. Dumping-car	821,808	May 29	5679	1209	122	1497
Knobel, Abraham, assignor to Rogers, Ridgeway and Faith, Louisville, Ky. Electric railway-gate	822,958	June 12	1445	301	122	2090
Knoff, Frank, assignor of one-half to C. H. Tryon, Chicago, Ill. Stake-pin	824,182	June 26	3860	823	122	2734
Knopf, Albert H., Oak Hall, assignor of one-half to C. M. McCurdy, Bellefonte, Pa. Rail-joint	822,896	June 5	1316	271	122	2014
Knopfe, Frederick W., St. Louis, Mo. Electric machine and system	820,649	May 15	3268	702–3	122	847
Knowlton, John A., Boston, Mass. Garment-fastener	819,767	May 8	1459	312	122	386
Knowlton, William E., Portland, Me. Track-clearer	824,183	June 26	3860	823	122	2734
Knox, Alexander, Brisbane, Queensland, Australia, assignor to Austral Window Balance Company. Balanced window	821,510	May 22	5072	1080	122	1305
Knox, Harry A., Springfield, Mass. Portable sawing-machine	822,056	May 29	6139	1308–9	122	1600
Knox, Harry R. (See Alvord and Knox.)						
Knox, Luther L., assignor of one-half to M. Murray and H. E. Weiskopf, Pittsburg, Pa. Water-cooled door-frame for furnaces	824,184	June 26	3861	824	122	2734
Knox, Samuel L. G., Milwaukee, and W. E. Magie, assignors to Bucyrus Company, South Milwaukee, Wis. Fair-lead for hoisting-cables	823,414	June 12	2376	500–1	122	2293
Knuppenburg, Ulysses G. (See Welchsel and Knuppenburg.)						
Koch, Alfred S., Lancaster, Pa. Calipers	820,796	May 15	3573	764	122	915
Koch, Rudolph C., New York, N. Y. Pliers	819,439	May 1	817	175–6	122	184
Koch, William E., Duvall, Ohio. Corn-harvester	823,880	June 19	3297	700	122	2555
Koehler, Alwin F., Joplin, Mo. Mortar and concrete mixing machine	820,580	May 15	3162	681	122	826
Koehler, William, Cleveland, Ohio. Reduction of ores	824,663	June 26	4824	1029	122	2939
Koehn, Olga. (See Griesser, Wilhelm, assignor.)						
Koelkebeck, Carl W. A., Cleveland, Ohio. Valve	822,846	June 5	1218	251	122	1994
Koeller, Henry *et al.* (See Lange, Fred, assignor.)						
Koenig, Charles A., and J. A. Vallee, San Francisco, Cal. Combination child's bed and chair	824,488	June 26	4485	950	122	2865
Koenig, Robert, New York, N. Y., assignor to Phenix Tube Company, Jersey City, N. J. Machine for rolling tubes	819,143	May 1	208	43–4	122	52
Koepp & Co., Rudolph. (See Weise, Rieche, and Barth, assignors.)						
Koester, Frederick T. (See Janssen and Koester.)						
Kohlbach, Curt, Leipsic, Germany. Bronzing apparatus	820,721	May 15	3419	731	122	880
Kohlbraker, Francis H., Nanticoke, assignor of one-half to M. Williams, Philadelphia, Pa. Automatic stop for hoists	824,549	June 26	4610	978–9	122	2892
Kohler, David S., Pittsburg, Pa. Bolt-retaining device	821,297	May 22	4633	988	122	1208
Köneman, William A., Chicago, Ill. Recovering rubber from rubber waste	823,053	June 12	1645	.....	122	2136
Köneman, William A., Chicago, Ill. Treating vulcanized-rubber waste	823,054	June 12	1648	.....	122	2136
König, Simon S., assignor to S. Kassel, Vienna, Austria-Hungary. Wafer-capsule machine	819,144	May 1	210	44	122	53
Koons, John H., Delphos, Ohio. Cupola	820,210	May 8	2413	523	122	600
Koons, Robert P., Lees Summit, Mo. Trousers-presser	820,878	May 15	3741	798	122	952

Alphabetical list of patentees for May and June—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Koots, Albert, and E. E. Schirmer, assignors of one-third to H. C. Jackson, Parkersburg, W. Va. Nut-lock	819,288	May 1	513	108	122	119
Koots, Albert, and E. E. Schirmer, assignors of one-third to H. C. Jackson, Parkersburg, W. Va. Nut-locking device	819,289	May 1	514	108	122	119
Kopf, Charles, Newark, N. J. Handle	821,648	May 29	5347	1139	122	1422
Koppel, Leo, Cologne, Germany. Stapling-machine	822,527	June 5	583	117	122	1855
Kops, Daniel, New York, N. Y. Apparel-corset	824,489	June 26	4486	951	122	2865
Kops, Daniel, New York, N. Y. Apparel-corset	824,490	June 26	4488	951	122	2866
Kortz, Conrad J. (See West and Kortz.)						
Kost, Victor, Chicago, Ill. Gas heating device	822,374	June 5	287	59	122	1788
Kovacs, Joseph, Newark, N. J. Eyeglasses	821,649	May 29	5348	1140	122	1423
Kraal, Evert, Holly, Colo. Subsoil-plow	822,847	June 5	1219	252	122	1994
Kramer, Allington H., Monte Vista, Colo. Rail-joint	820,308	May 8	2609	568	122	644
Kramer, Andrew A., Kansas City, Mo. Dipping-tank	821,809	May 29	5680	1210	122	1498
Kramer, George H. (See Flagg, Alvernis G., assignor.)						
Krampitz, Robert A. W., Valdez, Alaska. Cooking utensil	823,415	June 12	2379	501	122	2294
Krantz, Hubert, Brooklyn, N. Y. Electrical connection for switchboards	820,211	May 8	2414	524	122	600
Krause, Alfred. (See Schröder, Adolph, assignor.)						
Krauss, Hans G., Altoona, Pa. Green-malt-turning machine	819,145	May 1	212	45	122	53
Krauth, Albert, Hamilton, Ohio. Autographic register	824,185	June 26	3863	824	122	2735
Kreag, George B., assignor to Monroe Novelty Company, Rochester, N. Y. Dauber	824,366	June 26	4226	901	122	2810
Krebs, Arthur, assignor to Société Anonyme des Anciens Etablissements Panhard et Levassor, Paris, France. System of locking	822,057	May 29	6142	1309	122	1600
Kreinheder, William H. (See Steinbrenner and Mayer, assignors.)						
Kremer, Christoph, Berlin, Germany. Apparatus for the recovery of fats and the like from waste waters	823,688	June 19	2943	622	122	2477
Krengel, Ernest E., and W. G. McLennan, Nezperce, Idaho. Cold-axle setter	820,503	May 15	3010	647	122	791
Krentler-Arnold Hinge Last Company. (See Arnold, William B., assignor.)						
Kress, Willitts A., Arkansas City, Kans. Device for swinging hammocks	820,212	May 8	2415	524	122	600
Kreutz, Frank K., San Francisco, Cal. Filter	821,173	May 22	4392	935	122	1156
Kreutzkamp, Louis, Newark, N. J. Micrometer	821,721	May 29	5504	1172	122	1456
Kriebel, Hosea K., Philadelphia, Pa. Furnace for burning comminuted material	820,931	May 15	3883	828	122	983
Kriebel, Hosea K., Philadelphia, Pa. Furnace for burning comminuted material	820,932	May 15	3885	828	122	983
Krieger, Gustave, Brooklyn, N. Y. Life-preserver	824,664	June 26	4826	1029	122	2940
Krimmelbein, Leopold, Baltimore, Md., assignor to Westinghouse Air Brake Company, Pittsburg, Pa. Feed-control valve device for fluid-pressure brakes	820,650	May 15	3271	703	122	848
Kroeber, Thilo, assignor to Society of Chemical Industry in Basle, Basel, Switzerland. Diazo dye and making same	823,793	June 19	3136	.....	122	2518
Krofft, Marshall, Meredith, N. Y. Animal-trap	823,126	June 12	1812	373	122	2170
Krohn, Sigvald, Berlin, Germany, assignor to General Electric Company. System of motor control	822,282	June 5	111	23	122	1752
Kroll, Rudolph, Spearfish, S. D. Refrigerator	821,650	May 29	5349	1140	122	1423
Krom, Stephen R., Plainfield, N. J. Pulverizing-mill	823,127	June 12	1814	373–4	122	2170
Kronauer, Max, Paterson, N. J. Lock-bar pipe	822,004	May 29	6042	1288	122	1578
Krotz, Alvaro S., Springfield, Ohio. Controller for electric motors	820,504	May 15	3011	647–8	122	791
Krupp Aktiengesellschaft, Fried. (See Hartwig, Rudolf, assignor.)						
Krupp Aktiengesellschaft, Fried. (See Mothes, Georg, assignor.)						
Krupp Aktiengesellschaft, Fried. (See Vollmer and Herbaczowski, assignors.)						
Kruse, Alfred T., assignor to American Steel Package Company, Defiance, Ohio. Sheet-metal keg	819,768	May 8	1461	312	122	387
Kruse, Herman, Campbell, Minn. Clevis	821,511	May 22	5073	1080	122	1306
Kruyswijk, Jacob, Ryswijk, near The Hague, Netherlands. Transmission and distribution of electric power	823,055	June 12	1649	340–3	122	2136
Kudrle, Jaroslav. (See Svoboda and Kudrle.)						
Kuehnle, George J. (See Closterman and Kuehnle.)						
Kuhn, Robert B., Canton, Ohio. Spark-igniting plug	820,797	May 15	3574	764	122	916
Kummer, Jacob H., Uhrichsville, Ohio. Display-rack	819,230	May 1	394	83	122	83
Kunath, Edward F., Jersey City, N. J., assignor to Underwood Typewriter Company, New York, N. Y. Type-writing machine	820,505	May 15	3015	648–9	122	792
Kunath, Edward F., Jersey City, N. J., assignor to Underwood Typewriter Company, New York, N. Y. Stenciling-machine	824,695	June 26	4895	1041	122	2952
Kunz, Emil, Chicago, Ill. Heat-insulator	822,548	June 5	1220	252	122	1994
Kurella, Rudolph, Brooklyn, N. Y. Check attachment for pulleys and chocks	822,058	May 29	6144	1309–10	122	1601
Kusmer, Margaret. (See Chigor, Amalie von, assignor.)						
Kutz, Charles, Louisville, Ohio. Bridge	820,796	May 15	3575	764	122	916
Kützer, Adolf W., Stünz, near Leipsic, Germany. Rope-grip for suspended rope railways	821,174	May 22	4394	935	122	1157
Kyle, John, Newark, N. J., assignor to Challenge Machinery Company, Chicago, Ill. Printer's block	823,416	June 12	2380	501	122	2294
L. A. Thompson Scenic Railway Company. (See Sands, Walter E., assignor.)						
L. C. Smith and Bros. Typewriter Company. (See Gabrielson, Carl, assignor.)						
L. C. Smith & Bros. Typewriter Company. (See Peterson, Frans A., assignor.)						
L. E. Waterman Company. (See Ferris, William I., assignor.)						
L'Huillier, Henri, Paris, France. Apparatus for dyeing	820,654	May 15	3282	705	122	849
La Bare, Frank, assignor to Owatonna Manufacturing Co., Owatonna, Minn. Churn	819,290	May 1	516	108	122	119
La Bare, Frank, and T. J. Howe, assignors to Owatonna Manufacturing Co., Owatonna, Minn. Combined churn and butter-worker	822,674	June 5	802	182	122	1926
La Compagnie de Laiterie St. Laurent. (See Rivard, Hubert N., assignor.)						
La Coe, Joseph, Schenectady, N. Y., assignor to General Electric Company. Circuit-breaker	819,559	May 1	1026	225	122	231
La Londe, Moses, Indian Orchard, assignor of three-fourths to J. W. Superneaw and E. Patenaude, Springfield, Mass. Door check and stop	820,581	May 15	3163	681	122	826
La May, Arthur C., Rochester, assignor to D. C. Giles, Elmira, N. Y. Cheese-cutter	821,175	May 22	4395	935–6	122	1157
La Munyon, Herbert W., and F. P. Gee, Dumont, Colo. Door-check	822,742	June 5	1028	210	122	1954
La Pierre, Mederick T., Mount Vernon, N. Y. Trick-ball	819,804	May 8	1713	368	122	448
La Roche, Fredrick A., and M. C. Rypinski, New York, N. Y. Electrical measuring instrument	819,071	May 1	72	17	122	20
La Société Anonyme du Grimson. (See Sechiari, Parascheva, assignor.)						
La Société Civile d'Etudes de l'Indechirable Grimson. (See Sechiari, Parascheva, assignor.)						
Laas, Edward. (See Sponenburg, Hiram H., assignor.) (Reissue.)						
Labarre, George, New Orleans, La. Loose-leaf binder	820,799	May 15	3576	765	122	916
Labrecque, Napoleon. (See Leith, James assignor.)						
Lachman, Maurice. (See Fischer, William C., assignor.)						
Lackey, George A., Mount Vernon, N. Y., assignor to Warren Featherbone Company, Three Oaks, Mich. Girdle	822,283	June 5	114	23	122	1753

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Ladd, Sebie A., Duane, N. Y. Pad for horses	820,800	May 15	3578	765	122	916
Lady, Worthington M., *et al.* (See Chamberlain, Theron T., assignor.)						
Laflamme, Louis. (See Cadorette and Laflamme.)						
Laganke, Charles F., Cleveland, Ohio, assignor to Elliott-Fisher Company, New York, N. Y. Combined recording and calculating machine	820,881	May 15	3777	805–6	122	960
Laganke, Charles F., Harrisburg, Pa., assignor to Elliott-Fisher Company, New York, N. Y. Combined type-writing and calculating machine	820,882	May 15	3782	806–7	122	961
Laganke, Charles F., and J. A. Smith, Cleveland, Ohio, assignors to Elliott-Fisher Company, New York, N. Y. Combined calculating and type-writing machine	820,879	May 15	3742	799–802	122	952
Laganke, Charles F., and J. A. Smith, Cleveland, Ohio, assignors to Elliott-Fisher Company, New York, N. Y. Calculating-machine	820,880	May 15	3766	802–4	122	957
Lagasse, Arthur J., Philadelphia, Pa. Support for jacquard-cards	824,491	June 26	4491	951	122	2867
Lagerholm, Frithiof, Brooklyn, N. Y. Pencil-sharpener	822,375	June 5	290	59	122	1789
Lahaye, Josef, Aix-la-Chapelle, Germany. Adjustable drop-feed lubricator	819,440	May 1	819	176	122	184
Lahr, Henry B., assignor of one-half to Bowling Ball Company, New York, N. Y. Bowling-alley	822,959	June 12	1447	302	122	2090
Laird, John A. (See Nordensson, Carl O., assignor.)						
Laird, Wesley E., assignor to Stanley Electric Manufacturing Company, Pittsfield, Mass. Electrical measuring instrument	820,978	May 22	4012	852	122	1073
Laird, William H. (See Tropp, Bernhard, assignor.)						
Lake, Albert, Washington, D. C. Mold for artificial stone	819,769	May 8	1462	.....	122	387
Lamb, Amherst G., assignor to Excelsior Needle Co., Torrington, Conn. Flush-butt hinge	824,367	June 26	4226	901	122	2811
Lamb, Virgil, Cincinnati, Ohio. Making half-tone enlargements	820,053	May 8	2100	458	122	531
Lambert, Asher, Newark, N. J. Portable holster	823,417	June 12	2381	502	122	2294
Lambert, Clayton A., assignor to Baldwin Company, Cincinnati, Ohio. Piano-action	820,506	May 15	3018	649	122	793
Lambert, Gustaf P., Charlottenburg, Germany. Telephone system with centrally-arranged microphone-battery	824,251	June 26	4008	858	122	2765
Lamberton, Robert L. (See Cleveland, Erastus L., assignor.)						
Lamborn, A. J. (See Wright, William A., assignor.)						
Lamdry, John H., Moro, Oreg. Weeder	823,337	June 12	2246	468–9	122	2267
Lamme, Benjamin G., Pittsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company. System of electrical distribution	819,770	May 8	1464	313	122	387
Lamme, Benjamin G., Pittsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company. Induction-motor	821,044	May 22	4143	880	122	1101
Lamme, Benjamin G., Pittsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company. System of applying alternating-current electrical energy	822,376	June 5	292	60	122	1789
Lamping, Ida B., Allegheny, Pa. Curtain-fixture	824,427	June 26	4361	928	122	2836
Lamson, C. E. B. (See Martin, Arthur H., assignor.)						
Landau, Dewis, San Francisco, Cal. Head and filler for liquid-receptacles	823,282	June 12	2147	448	122	2245
Landau, John, New York, assignor to F. Fraas and G. C. Miller, Brooklyn, N. Y. Reclining-chair	822,059	May 29	6145	1310	122	1601
Landers, Frary and Clark. (See Smith, Charles F., assignor.)						
Landers, Frary and Clark. (See Walker, George, assignor.)						
Landers, Frary and Clark. (See Warner, Alonzo A., assignor.)						
Landgraf, Joseph and P. B., Chicago, Ill.; said Joseph Landgraf assignor to said P. B. Landgraf. Work-centering device for drill-presses, lathes, &c	821,651	May 29	5350	1140	122	1423
Landgraf, Philip B. (See Landgraf, Joseph and P. B.)						
Landin, Carl J., Boston, Mass. Electric organ-action	824,079	June 19	3673	782	122	2634
Landis, Abraham B., Waynesboro, Pa. Grinding-machine	820,801	May 15	3579	765–7	122	917
Landis, Ezra F., La Salle, N. Y. Trolley for overhead-trolley systems	820,423	May 15	2839	618–19	122	752
Landis, Frank F., Waynesboro, Pa. Conveyer	823,418	June 12	2383	503	122	2295
Landis, Israel L., Chicago, Ill. Concrete-mold	822,284	June 5	115	24	122	1753
Landis Machine Company. (See Pedersen, Christian, assignor.)						
Landré, Julius H. W., Fort Lee, assignor of one-fourth to B. Zinke, Hoboken, N. J. Coin-controlled delivery apparatus	819,291	May 1	517	109	122	120
Lane, James H., and U. Gulnick, Newark, N. J. Trolley-wheel guard	819,146	May 1	213	45	122	53
Lang, William H., New Orleans, La., assignor to Sanderson & Porter, New York, N. Y. Flash-board for dams	819,147	May 1	215	45–6	122	54
Lange, Fred. Oaklawn, assignor of two-thirds to H. Koeller and J. M. Weber, Chicago, Ill. Weeder	819,771	May 8	1465	313	122	387
Langford, Albert E. (See Smith, George C., assignor.)						
Langguth, Paul, Charlottenburg, Germany. Floor of artificial stone	823,950	June 19	3434	733	122	2584
Langhorne, Catherine M., Plainfield, N. J. Folding extension-table	824,186	June 26	3866	825	122	2735
Langstaff, Lewis G., New York, N. Y. Vehicle-wheel	822,615	June 5	774	157	122	1809
Langstaff, Lewis G., Brooklyn, N. Y. Vessel for dispensing liquids	823,283	June 12	2149	448	122	2246
Langston, Robert H., *et al.* (See Strange, William H., assignor.)						
Lanham, John W., Danville, Ill. Wrench	820,651	May 15	3276	704	122	849
Lansford, Isaac B., Crockett, Tex. Potato-cutter	821,652	May 29	5352	1140	122	1423
Larkin, Charles R., Nashville, Tenn. Railway cattle-gate	823,881	June 19	3299	701	122	2555
Larkin, Patrick H., Portsmouth, Va., assignor of two-thirds to E. Anderson, Washington, D. C., and R. T. Thorp, Norfolk, Va. Box	821,298	May 22	4635	988	122	1208
Larmore, W. H. (See Craft, William E., assignor.)						
Larsen, Andreo, Stirling Alta, Canada. Beet-cultivator	823,338	June 12	2248	469	122	2267
Larsen, Ivert, and R. Hardie, Chicago, Ill. Frictional power-transmission mechanism	823,178	June 12	1909	394–5	122	2192
Larson, Charles J., Argyle, Minn. Hay-rack	823,056	June 12	1656	343	122	2137
Lasher, Charles W., Davenport, Iowa. Pot-cover	819,441	May 1	820	176	122	184
Lason, Erick, *et al.* (See Gabrielson, William, assignor.)						
Lason, Pitt, *et al.* (See Gabrielson, William, assignor.)						
Latham, Woodville, New York, N. Y. Dough kneading and aerating roller	819,772	May 8	1466	313	122	388
Latimer, Frank, assignor of one-half to Taylor Iron and Steel Company, High Bridge, N. J. Car-wheel	819,292	May 1	519	109	122	120
Latimer, George, Jr. (See Gierth and Latimer.)						
Latimer, John M., Flushing, assignor to Consolidated Fire Alarm Company, New York, N. Y. Alarm system and apparatus	819,231	May 1	396	84	122	93
Latour, Marius C. A., Paris, France, assignor to General Electric Company. Producing a constant magnetization by means of alternating currents	819,560	May 1	1027	225	122	231
Latta, Emmit G. (See Moyer, Harvey A., assignor.)						
Latta, Emmit G. (See Moyer and Latta.)						
Latta, Emmit G., Friendship, assignor of one-half to H. A. Moyer, Syracuse, N. Y. Type-writing machine	819,353	May 1	650	137	122	148
Latta, Emmit G., Friendship assignor of one-half to H. A. Moyer, Syracuse, N. Y. Type-writing machine	819,773	May 8	1467	313–14	122	388
Latta, Emmit G., Friendship, assignor of one-half to H. A. Moyer, Syracuse, N. Y. Type-writing machine	821,107	May 22	4266	908	122	1128
Latta, Emmit G., Friendship, assignor of one-half to H. A. Moyer, Syracuse, N. Y. Line-spacing and carriage-releasing mechanism for type-writing machines	822,210	May 29	6435	1366	122	1668

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Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Latta, Joshua W., Buford, Wyo. Railway signal apparatus	823,179	June 12	1920	395	122	2196
Latta William J. (See Kitsee, Isidor, assignor.)						
Lattig, Jacob W., West Bethlehem, C. L. Goodrum, Philadelphia, Pa., and E. E. Clement, Washington, D. C. Telegraphic system	820,652	May 15	3277	704	122	849
Laubscher, Alexander, assignor to Wheeler & Wilson Manufacturing Company, Bridgeport, Conn. Machine for sewing sweat-bands in hats	819,442	May 1	821	176–7	122	184
Laubscher, Alexander, assignor to Wheeler & Wilson Manufacturing Company, Bridgeport, Conn. Machine for sewing sweat-bands in hats	822,135	May 29	6287	1339–40	122	1634
Laucher, Maurice, Jersey City, N. J. Time valve mechanism	820,582	May 15	3164	681	122	826
Lausterer, William J., Jamestown, assignor to U. S. Standard Voting Machine Company, Rochester, N. Y. Voting-machine	820,802	May 15	3585	767–8	122	918
Lauth, Bernard C., Pittsburg, Pa. Metallurgical furnace	823,757	June 12	1657	343	122	2137
Lauth, John C., Rochester, N. Y. Cap for pipes	821,876	May 29	5793	1234	122	1521
Laverty, Adam J., Athens, Ohio. Trolley-wire hanger	821,512	May 22	5074	1061	122	1306
Lavine, Bismarck, *et al.* (See Burkins, Eugene, assignor.)						
Lavoie, Alphonse J., Toronto, Canada. Air-compressor and the like	821,299	May 22	4635	988–9	122	1209
Lawler, James J., Winsted, assignor to Winsted Silk Company, West Winsted, Conn. Embroidery-silk holder	822,060	May 29	6148	1311	122	1602
Lawlor, Simeon C., Duluth, Minn. Mop-head and implement clamp	819,895	May 8	1714	368	122	448
Lawrence, George R. (See Beckwith and Lawrence.)						
Lawrence, Randolph. (See Gober, Charles H., assignor.)						
Lawrence, William H., and C. A. Schroyer, Chicago, Ill. Whip-guard for railways	819,354	May 1	654	137	122	149
Laws, William F., Governors Island, N. C. Tether	819,561	May 1	1029	225	122	232
Lawson, Benjamin S., Brooklyn, assignor of one-half to A. L. Merrick and one-fourth to A. J. De Mott, Syracuse, N. Y. Bearing. (Reissue)	12,498	June 26	4905	1042	122	2955
Lawton, Leonard, assignor of one-fourth to F. A. Cables, Carrollton, N. Y. Bottle-closure	822,960	June 12	1448	302	122	2090
Lay, Frank R., assignor of one-half to W. W. McCole, Greenfield, Ind. Sight-indicator for telephones	820,213	May 8	2416	524	122	601
Layne, Mahlon E., Houston, Tex. Wire-winding machine	820,507	May 15	3020	649–50	122	794
Layne, Mahlon E., Houston, Tex. Well mechanism	821,653	May 29	5353	1141	122	1424
Layton, Ellen, Savannah, Mo. Comb-cleaner	823,128	June 12	1819	374	122	2172
Lazareff, Mathias A., New York, N. Y. Electric railway	819,293	May 1	521	109	122	121
Lazear, Leroy C., Chicago, Ill. Folding wall-basin	819,562	May 1	1030	226	122	232
Lazerges, Léon, Issy-les-Moulineaux, France. Frame for motor-vehicles	824,550	June 26	4612	979	122	2893
Le Fevre, George A., Orangeburg, N. Y. Piling system	823,129	June 12	1820	374–5	122	2172
Le Mat, Raoul F., Washington, D. C. Base-ball glove or mitt	820,120	May 8	2242	488	122	563
Lea, Edward S., Trenton, N. J. Swivel-bearing	820,883	May 15	3785	807	122	961
Leaf, Florence M., Perry, Iowa. Pot-stirrer	822,528	June 5	586	118	122	1855
Leake, Edgar A., Lawrence, Mass. Trolley placer and guide	822,961	June 12	1450	302	122	2091
Learned, Frank A., Chicago, Ill. Awning	820,214	May 8	2418	525	122	601
Lease, Jesse A., Toledo, Ohio. Lifting-hook	822,807	June 5	1317	271	122	2014
Leavitt Machine Company. (See Williams, Thomas B., assignor.)						
Leavy, David D., Wabbaseka, Ark. Luggage-carrier	823,057	June 12	1658	343	122	2137
Leclair, Alexander, Montreal, Canada. Gaining-machine	821,654	May 29	5357	1142	122	1425
Lederer, Emil. (See Tonko, Max, assignor.)						
Lee, Charles F., assignor of one-half to J. B. Harris, Astoria, Ill. Manure-spreader	820,653	May 15	3279	704	122	849
Lee, Elle H., *et al.* (See Neff, Ira J., assignor.)						
Lee, Ephraim D. (See Jackson, Sheldon E., assignor.)						
Lee, Fred L., *et al.* (See Lee, George W., assignor.)						
Lee, George W., assignor to F. L. Lee, J. G. Clonney, L. E. Hooker, Binghamton, and A. M. Clonney, New York, N. Y. Making tubular articles	822,285	June 5	117	24	122	1754
Lee, Ivar J., and E. Erickson, Marathon, Iowa. Tank-heater	823,419	June 12	2385	503	122	2295
Lee, Jacob M., San Antonio, Tex. Cattle-guard	824,303	June 26	4091	875	122	2782
Lee, James H., Carbon Hill, Ala. Shoe	822,061	May 29	6149	1311	122	1602
Lee, Knute O. (See Slutz and Lee.)						
Lee, Walter O., New York, N. Y. Sleeping-garment or pajamas	819,232	May 1	400	84	122	94
Leech, Lucian B., assignor of one-half to E. Maldre, Smithfield, Pa. Rail-joint	823,180	June 12	1924	396	122	2196
Leeds, Morris E., and E. F. Northrup, assignors to Leeds & Northrup Company, Philadelphia, Pa. Potentiometer	819,355	May 1	655	137–8	122	150
Leeds & Northrup Company. (See Leeds and Northrup, assignors.)						
Lefebvre, Charles E., Pittsburg, Pa. Oil-filter	819,896	May 8	1715	368–9	122	448
Lefevre, Enoch S., Littlestown, Pa. Shape-retainer	819,774	May 8	1472	314	122	389
Leffel, John D., Johnstown, Pa. Plane	820,215	May 8	2419	525	122	602
Lefferts, John A., Elizabeth, N. J. Bath-tub	823,794	June 19	3138	665	122	2519
Leffingwell, Everett K., and H. B. Ellonhead, West Haven, Conn. Tube-compressor	820,216	May 8	2420	525	122	602
Legge, Lionel B., assignor to himself and Heywood Boot & Shoe Company, Worcester, Mass. Cutter-guard for shoe machinery	822,860	June 5	1246	256	122	2000
Lehman, Martin, *et al.* (See Sohlberg, Edmond W., assignor.)						
Lehmkuhl, William B., Cambridge, assignor of one-half to S. B. Shapleigh, Boston, Mass. Telephone-support	821,247	May 22	4527	963	122	1186
Lehr, Edwin E., Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company. Alternating-current electrical measuring instrument	824,696	June 26	4897	1041	122	2953
Leib, Oliver E., and E. B. Witte, Trenton, N. J. Automatic air-brake and steam-coupling	824,034	June 19	3597	766–7	122	2617
Leichter, Edward, Nevada City, Cal., assignor of one-half to J. Bender, Hamilton, Ohio, and J. C. Campbell, Nevada City, Cal. Rock-drill	823,059	June 12	1659	344	122	2138
Leidecker, Frank W., assignor to Leidecker Gauge Company, Marietta, Ohio. Gage-cock	820,424	May 15	2842	619	122	753
Leidecker Gauge Company. (See Leidecker, Frank W., assignor.)						
Leigh, George E., and J. A. Coleman, Mount Carroll, Ill. Display-frame	823,339	June 12	2250	469	122	2267
Leigh, Walter, New Haven, Conn. Gage for measuring trousers	824,252	June 26	4010	858	122	2765
Leighton, Thomas R., East Cleveland, Ohio. Die-stock	824,428	June 26	4362	928	122	2836
Leighton, Thomas R., East Cleveland, Ohio. Screw-threading die	824,697	June 26	4900	1042	122	2954
Leighton, Warren E., Lewiston, Me. Attachment for grading-machines	821,513	May 22	5076	1061	122	1306
Leiner Brothers *et al.* (See Gabriel, Stefan, assignor.)						
Leitch, Meredith, assignor to American Can Company, New York, N. Y. Apparatus for drying cans	823,731	June 19	3013	638–9	122	2490
Leith, James, assignor of one-half to N. Lebrecque, Sherbrook, Canada. Vehicle attachment	820,217	May 8	2421	525	122	602
Leland, Charles S., Mount Desert, Me. Putty knife and chisel	821,176	May 22	4399	936	122	1158
Lender, Charles D., Centralia, Ill. Computing cheese-cutter	823,689	June 19	2945	623	122	2477
Lendi, John H., assignor to Kellogg Switchboard and Supply Company, Chicago, Ill. Two-division telephone system	820,803	May 15	3589	769	122	919
Lennox, Talbot, Chicago, Ill. Grain-door for cars	822,458	June 5	435	89	122	1819
Lent, Leon B., Lewiston, N. Y. Steam-boiler	820,054	May 8	2101	456	122	531
Lents, Hugo, Berlin, Germany. Turbine-driven locomotive	823,130	June 12	1822	375–6	122	2172

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Lentz, Hugo, Berlin, Germany, assignor of one-half to C. Bellens, Neuilly-sur-Seine, France. Valve-gear for engines	822,136	May 29	6289	1340	122	1635
Leonard, Almanzo B., assignor of one-half to J. L. Stevens, Boone, Iowa. Eaves-trough hanger	822,459	June 5	436	89	122	1820
Leonard, John B., Memphis, Tenn. Antislippage dressing for belting	822,005	May 29	6043	.....	122	1578
Leonard, Sylvester S., Chicago, Ill. Vacuum device	823,795	June 19	3139	665	122	2519
Leonhardt, Frederick, Sheboygan, Wis. Sight-feed lubricator	820,508	May 15	3023	650	122	794
Lerch, Solomon W., assignor of two-fourths to A. Curtis and T. Cook, Manasquan, N. J. Paving or flag stone	823,473	June 12	2486	525	122	2317
Leschbrandt, Ehlar, Philadelphia, Pa. Talking-machine	821,045	May 22	4145	881	122	1101
Leslie, Alexander, Walkerville, Canada, assignor of one-half to G. E. Titcomb, Philadelphia, Pa. Vessel	821,514	May 22	5077	1061	122	1307
Leslie, Benjamin J., Chicago, Ill. Window	820,218	May 8	2422	526	122	602
Lesso, Ludovig S., New York, N. Y. Brush-bridle	822,377	June 5	293	60	122	1789
Leue, Georg, Berlin, Germany. Sack	821,177	May 22	4400	936	122	1158
Levake, Anson S., assignor of eighty-three one-hundredths to R. P. Thomas, Anacortes, H. F. Richter and C. W. Richie, Seattle, Wash. Rotary engine	822,378	June 5	295	60	122	1789
Levalley, Christopher W., Milwaukee, Wis. Chain	820,219	May 8	2426	526	122	603
Levalley, Christopher W., Milwaukee, Wis. Set-collar for shafts	820,220	May 8	2428	527	122	603
Levalley, Christopher W., Milwaukee, Wis. Chain	823,420	June 12	2386	503	122	2295
Leveritt, Paul D., Stone Mountain, Ga. Andiron	822,743	June 5	1030	211	122	1954
Levis, Adelore J., Houghton, Mich. Cutting and punching tool	824,551	June 26	4613	979	122	2893
Levy, Abraham B. (See Bleoo, John H., assignor.)						
Levy, Henry B., New York, N. Y. Fountain pen	819,294	May 1	523	110	122	121
Levy, Morris. (See Neihysel, Jacob, assignor.)						
Lewis, Charles A., Denver, Colo. Mechanical toy	823,882	June 19	3300	701	122	2556
Lewis, Edward B., Howardsville, Va. Desk	821,945	May 29	5931	1262	122	1553
Lewis, Harry A., Norristown, Pa. Stroke and power changing device	820,933	May 15	3886	828	122	964
Lewis, John S. (See Wagner and Lewis.)						
Lewis, William H. A., Evansville, Ind. Safety-seat	823,690	June 19	2947	623–4	122	2477
Leyes, Louis, City Island, N. Y. Pipe-cutter	823,796	June 19	3140	665–6	122	2519
Liaci, Cosmo, assignor of three-fourths to R. Gaghaidi, L. Colavecchio, and E. Ferrainolo, New Haven, Conn. Wrench	822,962	June 12	1451	302	122	2091
Libbe, John H. W., Toledo, Ohio. Excavator	820,055	May 8	2102	459	122	532
Libbe, John H. W., Toledo, Ohio. Excavating-dipper	822,529	June 5	587	118	122	1856
Libby, Charles T., Portland Me. Linotype-machine	822,286	June 5	118	24–5	122	1754
Licey, John O., River Styx, Ohio. Tobacco-cartridge	824,552	June 26	4614	979	122	2893
Lieber, Hugo, New York, N. Y. Radium surface	821,655	May 29	5361	1143	122	1425
Liedke, Willibald, and O. Rabenhorst, Charlottenburg, Germany. Incandescent spirit-lamp	820,002	May 8	1994	437	122	506
Lifvendahl, Axel F., Chicago, Ill. Door stop and holder	819,356	May 1	659	138	122	150
Liggett, Frank T., North Yakima, assignor of one-half to J. A. Drain, Olympia, Wash. Rotary valve for engines	823,883	June 19	3302	701–2	122	2556
Lightburne, James S. (See Rich, George W., assignor.)						
Lightcap, Harry. (See Comer and Lightcap.)						
Ligon, Joseph W., Greenville, S. C. Press-copying	823,691	June 19	2949	.....	122	2478
Lilliger, Frank, St. Joseph, Mo. Hook-lock	822,675	June 5	893	182	122	1926
Liljeros, Carl O., New York, N. Y., assignor of two-thirds to G. A. Kerr, Bloomfield, and L. Shanno, Englewood, N. J. Envelop-closing machine	822,616	June 5	775	157–8	122	1899
Lindberg, John F. (See Christofferson and Lindberg.)						
Linden, John J., New York, N. Y. Stop mechanism for bakers' ovens	824,553	June 26	4615	980	122	2893
Lindgren, Alexus C., Moline, Ill., assignor to Moline Plow Company. Valve mechanism for seed-planters	823,884	June 19	3305	703	122	2557
Lindgren, August, Moline, Ill., assignor to Moline Plow Company. Device for securing shovel-standards to cultivator-beams	823,340	June 12	2251	470	122	2268
Lindley, Lowell F., Chicago, Ill. Tiling	820,221	May 8	2429	527	122	604
Lindquist, Edward W. (See Baggaley, Allen, and Lindquist.)						
Lindsay, Calvin G., Lexington, Ill. Gate	823,692	June 19	2950	624	122	2478
Lindsay, Clarence A., New York, N. Y. Striking-bag or other fluid-receptacle	821,722	May 29	5505	1173	122	1456
Lindsay, David E., Etna, Pa. Rail and tie for railways	820,722	May 15	3420	732	122	881
Lindsay, Leroy J., assignor to J. E. and I. E. Armintrout, Seymour, Iowa. Marker for corn-planters	821,593	May 22	5219	1114	122	1337
Lindström, Gustaf A., Stamford, Conn. Door latch and lock	820,056	May 8	2108	459–60	122	503
Lindstrom, John T., Allentown, Pa. Steam-trap	824,554	June 26	4618	980–1	122	2894
Lineback, John B., assignor of one-half to R. S. Morris, Siloam Springs, Ark. Railway-signal	821,515	May 22	5078	1062	122	1307
Lingemann, Christian A., St. Louis, Mo. Incubator	824,665	June 26	4827	1029–30	122	2940
Link, Alvia L. (See Shilling and Link.)						
Link Belt Engineering Company. (See Edgar, Linden E., assignor.)						
Link, Oliver, St. Charles, assignor to St. Louis Car Roof Company, St. Louis, Mo. Car-roof	820,362	May 8	2703	590	122	665
Linker, William A. (See Hamilton and Linker.)						
Linn, John B., Schenectady, N. Y., assignor to General Electric Company. Electric-motor controller	819,563	May 1	1032	226	122	232
Linnig, Charles E., Peru, Ill. Protector for spectacles	822,137	May 29	6290	1340	122	1635
Linotype and Machinery. (See North, Thomas M., assignor.)						
Lipe, Charles E., and A. T. Brown, Syracuse, N. Y. Changeable gear	821,248	May 22	4529	964	122	1187
Lippincott, Frank T., Newark, Ohio. Stage-screw	820,655	May 15	3284	705	122	850
Lipshutz, Arthur, Chicago, Ill., assignor of one-half to H. W. Wolff, St. Louis, Mo. Cast-steel car-truck	822,676	June 5	894	183	122	1926
Lister, William, Chicago, Ill. Rotary engine	823,885	June 19	3307	703–4	122	2557
Liston, James C., Chatsworth, Ill. Land-marker	821,178	May 22	4401	937	122	1158
Lithgow, John M. (See Shoemaker and Lithgow.)						
Little, Alexander F., assignor to A. E. Little & Company, Lynn, Mass. Arch-supporter	822,138	May 29	6291	1340	122	1635
Little & Company, A. E. (See Little, Alexander E., assignor.)						
Little, George, *et al.* (See Rogers, George R., assignor.)						
Littl., Orton C., Menasha, Wis. Sliding shoe for furniture	822,963	June 12	1453	303	122	2091
Little, Robert H., assignor to Hoffheimer Soap Co., Chicago, Ill. Soap-feeding machine	821,300	May 22	4638	989	122	1209
Little, William T., Kansas City, Mo. Advertising display-stand	824,126	June 26	3746	800	122	2709
Livermore, Homer F., Brookline, Mass. Connecting-rod bearing-box	820,509	May 15	3024	650	122	795
Livesay, Robert C., Hamilton, Canada, assignor to International Harvester Company. Speed-changing mechanism for grain-drills	821,810	May 29	5682	1210	122	1498
Livesey, Harry, London, England. Means for supporting and holding railway-rails	824,555	June 26	4620	981–2	122	2894
Livingston, D. M., New York, N. Y. Internal-combustion engine	820,222	May 8	2430	527	122	604
Livingston, D. M., New York, N. Y. Cooling apparatus	821,422	May 22	4908	1043	122	1271

Alphabetical list of patentees for May and June—Continued.

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Livingston, D. McRa, New York, N. Y. Cooler	824,492	June 26	4492	952	122	2867
Livingston, D. McRa, New York, N. Y. Cooler	824,493	June 26	4493	952	122	2868
Livingston, Fred N., Ballard, Wash. Mechanical movement	823,341	June 12	2253	470	122	2268
Ljungström, Birger, assignor to Aktiebolaget Separator, Stockholm, Sweden. Liner for centrifugal liquid-separators	822,964	June 12	1455	303	122	2092
Llewellyn, David J., Wilmerding, Pa. Journal-bearing	823,693	June 19	2951	624	122	2478
Lloyd, Elmer L., *et al.* (See Neff, Ira J., assignor.)						
Lloyd, George, Gananoque, Canada. Coupling	822,744	June 5	1031	211	122	1955
Lochmann, Fritz and W., Zeulenroda, assignors to Original Musikwerke Paul Lochmann Gesellschaft mit beschränkter Haftung, Leipsic, Germany. Talking-machine with rotatable horn	824,368	June 26	4228	901	122	2811
Lochmann, William. (See Lochmann, Fritz and W.)						
Locke, Fred M., Victor, N. Y. Insulator	822,211	May 29	6438	1366	122	1669
Locke, William H., Jr. (See Eastman, Adelbert L., assignor.)						
Lockwood, Charles S., Newark, assignor to Hyatt Roller Bearing Company, Harrison, N. J. Roller-bearing	821,656	May 29	5364	1143	122	1426
"Locomobile" Company of America. (See Riker, Andrew L., assignor.)						
Lodge, William S., Albany, N. Y. Lady's undergarment	821,046	May 22	4148	881	122	1102
Loeb, Rudolf, Camden, N. J. Ornamental stitched fabric	823,421	June 12	2388	504	122	2296
Loew, Charles H., Lakewood, Ohio. Filter	823,181	June 12	1925	396–7	122	2197
Lofberg, Swan S., Argyle, Minn. Fanning-mill	824,666	June 26	4829	1030	122	2940
Lofstam, Nels, Detroit City, Minn. Self-locking harness-rack	819,233	May 1	401	85	122	95
Loftin, John A., Troy, N. C. Hasp-lock	821,657	May 29	5367	1144	122	1426
Loftus, Michael, Chicago, Ill. Non-refillable bottle	824,035	June 19	3600	767	122	2618
Logan, Eugene J., assignor to T. D. Miller, Baltimore, Md. Machine for cutting tubular bodies	823,422	June 12	2389	504–5	122	2296
Logan, Richard D., St. Louis, Mo. Sash-lock	820,223	May 8	2434	527	122	605
Logan, William E. (See Griffith and Logan.)						
Logemann Brothers Company. (See Hubbard, Hiram W., assignor.)						
Lohr, Solomon G., Washington township, Hamilton county, Ind. Corn-planter	822,617	June 5	778	158	122	1900
Lohrke, Ludwig A., Chicago, Ill. Plow	824,951	June 19	3435	733–4	122	2585
Loibl, Carl, Munich, Germany. Horseshoe-calk	823,423	June 12	2397	505	122	2298
Loiseleur, Henri, New York, N. Y. Merry skating-rink	822,677	June 5	897	183	122	1927
Lombard Governor Company. (See Warren, Henry E., assignor.)						
Long, Charles S., Aurora, Ill. Pallet	822,139	May 29	6292	1341	122	1635
Long, George A., Hartford, Conn. Muffler for telephone-transmitters	821,877	May 29	5794	1235	122	1521
Long, George S. (See Slyder, William J., assignor.)						
Long, Herbert S., Marion, Ohio. Dumping-wagon	824,253	June 26	4011	858–9	122	2765
Long Williard O., Mansfield, Ohio. Dumping-wagon	823,606	June 19	2778	588	122	2439
Longacre, Matthias R., Millerstown, Pa. Railway	822,745	June 5	1031	211	122	1955
Longuemare, Amélie A., F., and G., Paris, France; said F. and G. Longuemare assignors to said Amélie A. Longuemare. Carbureter for hydrocarbon-engines	820,583	May 15	3165	682	122	826
Longuemare, Fernand. (See Longuemare, Amélie A., F., and G.)						
Longuemare, Georges. (See Longuemare, Amélie A., F., and G.)						
Lonsdale, Clair H., Champaign, Ill. Button	819,897	May 8	1719	369	122	449
Lord, Arthur D., Chicago, Ill. Combined statement and envelop	821,723	May 29	5506	1173	122	1456
Lorenz, Franz R., Gumbinnen, Germany. Feeding and igniting mechanism for explosion-motors	819,148	May 1	217	46	122	54
Lorenz, Ludwig, assignor of one-half to M. Herrmann, Berlin, Germany. Lamp-burner	819,564	May 1	1037	227	122	233
Lorenz, Ludwig, assignor of one-half to M. Herrmann, Berlin, Germany. Lamp-burner	819,565	May 1	1038	227	122	234
Lorenz, William A., Hartford, Conn. Hermetic closure for receptacles	819,234	May 1	402	85	122	95
Lorenz, William A., Hartford, Conn. Hermetic closure for receptacles	819,235	May 1	405	85	122	95
Lorenz, William A., Hartford, Conn. Hermetic closure for receptacles	819,236	May 1	406	86	122	96
Lorenz, William A., Hartford, Conn. Hermetic closure for tumblers	819,237	May 1	408	86	122	96
Lorenz, William A., and J. Merritt, Hartford, Conn., assignors to Union Paper Bag Machine Company, Philadelphia, Pa. Paper-bag machine	822,618	June 5	780	158–9	122	1900
Lotzer, Joseph P., Kent, Minn. Tire-coupling	821,658	May 29	5368	1144	122	1426
Loudenslager, Edward. (See Meyers and Loudenslager.)						
Loughrey, Nellie D., Los Angeles, Cal. Stove	819,775	May 8	1473	314	122	389
Lovatt, Thomas W., and C. Purser, Wolverhampton, England. Woodworking mechanism	823,342	June 12	2255	470–1	122	2269
Lovejoy, Welcome C. (See Huey, James E., assignor.)						
Loveless, David H., assignor of three-fourths to W. G. and G. Taylor, Jr., and J. J. Loveless, Provo, Utah. Thill-support	823,424	June 12	2398	505	122	2298
Loveless, John J., *et al.* (See Loveless, David H., assignor.)						
Lovell, Frederick W., assignor to J. McMyler, Cleveland, Ohio. Hoisting mechanism	820,425	May 15	2843	619	122	753
Lovering, Charles H., Sidney, assignor of one-half to F. H. Lovering, Newton, Mont. Tilting gate	822,746	June 5	1033	212	122	1955
Lovering, Frank H. (See Lovering, Charles H., assignor.)						
Lovett, Thomas J., Chicago, Ill. Recovering copper and other values from certain ores	821,516	May 22	5080	1082	122	1307
Lowe, Leon P., San Francisco, Cal. Gas-washer	819,660	May 1	1225	268	122	275
Lowe, Leon P., San Francisco, Cal. Manufacturing gas	819,661	May 1	1226	268	122	275
Lowe, Leon P., San Francisco, Cal. Gas-making apparatus	819,662	May 1	1227	268	122	275
Lowe, Leon P., San Francisco, Cal. Coking and making gas	819,663	May 1	1229	268	122	276
Lowe, Leon P., San Francisco, Cal. Apparatus for separating residues from liquids	819,664	May 1	1230	269	122	276
Lowe, Leon P., San Francisco, Cal. Gas-holder	819,665	May 1	1231	269	122	276
Lowe, Leon P., San Francisco, Cal. Apparatus for generating gas	819,666	May 1	1231	269	122	276
Lowe, Leon P., San Francisco, Cal. Apparatus for making gas	821,594	May 22	5221	1114	122	1337
Lowe, Leon P., San Francisco, Cal. Coupling for glass tubes	822,530	June 5	588	118	122	1856
Lowe, Leon P., San Francisco, Cal. Manufacturing gas	822,531	June 5	589	118	122	1856
Lowe, Lloyd C. (See Connell and Lowe.)						
Lowe, Walter V., Worcester, Mass., assignor to Crompton & Knowles Loom Works. Woven pile fabric	820,003	May 8	1905	437	122	507
Lowe, William B., Marietta, Ga. Lubricating device	824,187	June 26	3867	825–6	122	2735
Lowry, George A., Chicago, Ill., assignor, by mesne assignments, to Planters Compress Company. Ginning cotton	821,423	May 22	4911	1043–4	122	1271
Lowry, Isaac B., and F. L. Arters, Montpelier, Ind. Wire-stretcher	824,556	June 26	4623	962	122	2895
Lubbers, John H., Allegheny, assignor to Window Glass Machine Company, Pittsburg, Pa. Apparatus for drawing glass sheets	821,724	May 29	5507	1173–4	122	1457
Lubbers, John H., Allegheny, assignor to Window Glass Machine Company, Pittsburg, Pa. Drawing glass cylinders	822,678	June 5	898	184	122	1927
Lubbers, John H., Allegheny, assignor to J. A. Chambers, trustee, Pittsburg, Pa. Drawing sheet-glass	822,212	May 29	6438	1367	122	1660
Lucas, Christian F., Atlanta, Ga. Trunk-fastener	823,343	June 12	2259	471	122	2270
Lucas, Emmett W., Fayetteville, Ark. Woodworking-machine	823,962	June 19	3437	734	122	2585

Alphabetical list of patentees for May and June—Continued.

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Lucas, William H., Newark, Ohio. Mold-top	820,224	May 8	2435	528	122	605
Lucas, William H., Newark, Ohio. Well-pit-mold frame	822,140	May 29	6293	1341	122	1636
Lucas, William H., Newark, Ohio. Mold	824,557	June 26	4624	962	122	2895
Luckenbach, Harry, assignor to W. H. Kelly, San Francisco, Cal. Sand-blast apparatus	822,379	June 5	296	61	122	1790
Luckett, John P., Baltimore, Md., assignor of two-thirds to E. L. Hubbard and R. M. Smith, Washington, D. C. Automatic faucet	819,566	May 1	1039	227	122	234
Lucy, Cornelius J., Washington, D. C. Paper-feeding device	820,804	May 15	3595	769	122	920
Ludeman, John P. (See Jones, Horatio T., assignor.)						
Ludwick, Jay, Grand Rapids, assignor of two-thirds to G. H. Broesamle, Kalamazoo, and R. A. Ludwick, Leslie, Mich. Fence-post	824,429	June 26	4364	929	122	2837
Ludwick, Ray A., *et al.* (See Ludwick, Jay, assignor.)						
Luitwieler, Samuel W., Los Angeles, Cal. Pump mechanism	819,295	May 1	525	110–11	122	121
Lumatta, Eemel, Savo, S. D. Shock-loading machine	819,776	May 8	1474	315	122	389
Lumière, Auguste and L., Lyon-Monplaisir, France. Photographic plate for color photography	822,532	June 5	590	119	122	1856
Lumière, Louis. (See Lumière, Auguste and L.)						
Lund, Christian. (See Dahl and Lund.)						
Lundell, Robert, New York, N. Y. Dynamo-electric machine	821,249	May 22	4531	964	122	1187
Lundin, Martin, Chattanooga, Tenn., assignor of one-third to C. E. Hoover, Kansas City, Mo. Disk plow	820,057	May 8	2112	460	122	534
Lundin, Oliver, Ollie, assignor of one-half to R. E. Lundin and R. Griffith, Brighton, Iowa. Wheel-hub	819,898	May 8	1719	369	122	449
Lundin, Robert E., *et al.* (See Lundin, Oliver, assignor.)						
Lundquist, Frank A., Chicago, Ill. Calling device for telephone-exchanges	822,965	June 12	1456	303–4	122	2092
Lundquist, Frank A., Chicago, Ill. Calling device for telephone-exchanges	822,966	June 12	1460	304	122	2093
Lung, Benjamin F., Johnstown, Pa. Rail-joint	819,14	May 1	221	47	122	55
Lupton, William J., Lockport, N. Y. Paper-slitter	823,797	June 19	3143	666	122	2520
Lurtey, Charles W., Little Rock, Ark. Combined scissors and pliers	821,659	May 29	5369	1144	122	1426
Luther, Henry R., Newton, Mass. Railway-switch	821,424	May 22	4914	1044	122	1272
Luther, Henry R., Newton, Mass. Safety railway-switch structure	823,732	June 19	3016	639	122	2491
Lutz, George A. (See Sibley and Lutz.)						
Lutz, Otto W., Petaluma, Cal. Incubator	823,182	June 12	1928	397	122	2197
Lux, Julius K., St. Louis, Mo. Controlling means for electric circuits. (Reissue)	12,490	May 29	6477	1375	122	1678
Lybeck, Nils A., Corning, Cal. Cool brooder	822,619	June 5	784	159	122	1901
Lyman, Dwight E., Hartford, Conn. Intermittent grip device	821,301	May 22	4640	989	122	1209
Lynch, Bartholomew J., Olyphant, Pa. Follower	822,849	June 5	1221	252	122	1995
Lynn, John W. (See Gard and Lynn.)						
Lyon, Fred C., Evanston, Ill. Adjustable headlight	821,047	May 22	4148	882	122	1102
Lyons, Augustus J., *et al.* (See Russ, John D., assignor.)						
Lyons, Charles H., Silver City, N. Mex. Ter. Bottle-closure	822,141	May 29	6294	1341	122	1636
Lyons, John H., Lyons, Oreg. Protector for tool-handles	822,006	May 29	6043	1288	122	1578
Ma Lone, Lillian O., New Brighton, Pa. Garment-supporter	823,284	June 12	2150	449	122	2246
Maas, William F., Massena, Iowa. Draft-equalizer	824,254	June 26	4012	859	122	2766
MacDavenport, Henry. (See Shrewsbury, Joseph E., assignor.)						
MacDonald, George S., Helena, Mont. Rotary engine	823,607	June 19	2782	589	122	2440
MacDonald, John A., Malden, assignor to F. L. Wells, Boston, Mass. Automatic railway-switch	819,296	May 1	526	111	122	122
MacDonald, Ralph L., Niagara Falls, N. Y. Lock	822,062	May 29	6150	1311	122	1602
MacDonald, Robert, Hope, R. I. Shoe-rack	819,777	May 8	1475	316	122	390
MacDougall, John, assignor to F. E. Kirby, Detroit, Mich., and W. W. Near, Montreal, Canada. Filter for purifying water	819,357	May 1	661	138–9	122	151
MacDougall, John, assignor to F. E. Kirby, Detroit, Mich., and W. W. Near, Montreal, Canada. Cleaning filters	819,358	May 1	663	139	122	152
MacMahon, James, Irvington, and F. Wesler, Newark, N. J. Mercury-column	824,304	June 26	4093	875	122	2783
MacMillan, Clyde, assignor to A. N. Audet and W. J. Brennan, Williamsport, Pa. Umbrella runner or notch	819,238	May 1	411	86	122	97
MacMillan, James A., assignor to W. M. Swan, Detroit, Mich. Fecal-analyzer	820,004	May 8	1996	438	122	507
MacNaughton, James, *et al.* (See Rossi, Auguste J., assignor.)						
MacTaggart, James D. (See Brewer, William T., assignor.)						
Macartney, Edmund C., assignor of one-half to H. B. Amerling, Philadelphia, Pa. Comb	823,131	June 12	1823	376	122	2173
Macauley, Alvan, St. Louis, Mo., assignor, by mesne assignments, to Burroughs Adding Machine Company, Detroit, Mich. Adding-machine	823,474	June 12	2487	525–6	122	2317
Macauley, Edwin W., Rochester, N. Y. Fruit-jar wrench	824,369	June 26	4229	902	122	2811
Macauley, Frank I., Alameda, Cal. Gripper for printing-presses	822,967	June 12	1462	305	122	2094
Macdonell, Allan G., Chevy Chase, Md. Amalgamator	821,106	May 22	4269	908–9	122	1128
Machlet, Adolph W., Elizabeth, N. J. Case-hardening apparatus	822,460	June 5	437	90	122	1820
Machlet, George, Jr., Elizabeth, N. J. Gas-burner	823,475	June 12	2503	526	122	2321
Mackay, Helen, Prince Albert, Canada. Flour-sifter	821,109	May 22	4272	909	122	1129
Mackin, Joseph F., Columbus, Ohio. Trolley-pole controller	820,584	May 15	3166	682	122	826
Mackintosh, Harry, Shipley, England. Jacquard for weaving-looms	819,567	May 1	1040	227–8	122	234
Mackintosh, John W. (See Stirckler, Frank B., assignor.)						
Macmillan, George. (See Ramage, Alexander G., assignor.)						
Macomber, Charles J. (See Schmid and Macomber.)						
Macomber, George R., Baltimore, Md. Electric sign	824,494	June 26	4494	952	122	2868
Macon, W. T., administrator, *et al.* (See Schweinler, Henry R., assignor.)						
Macy, Allison A., and B. T. Duncan, assignors of one-third to H. M. Roys, Wenatchee, Wash. Machine for nailing fruit-boxes	822,142	May 29	6295	1342	122	1636
Maddox, John W., Jamestown, N. Y. Rubbing and polishing machine	822,461	June 5	446	90–1	122	1822
Maddox, William H., East St. Louis, Ill. Emergency angle-cock	824,036	June 19	3601	767	122	2618
Magarò, Petro, No. 3, Steelton, assignor of one-third to S. Magaro and N. Grandonio, Harrisburg, Pa. Lock	824,370	June 26	4231	902	122	2812
Magaro, Salvatori, *et al.* (See Magarò, Petro, No. 3, assignor.)						
Magee, Robert W. (See Armstrong, Pugh, and Magee.)						
Magie, William E. (See Knox and Magie.)						
Magney, Joseph P., and W. H. Masterman deceased, (F. R. Kellogg, administrator,) assignors to National Engine Company, Los Angeles, Cal. Compound fluid-pressure motor	823,060	June 12	1661	344	122	2138
Maguin, Alfred, Charmes, France. Beet-washing machine	821,811	May 29	5684	1210–11	122	1499
Maguire, Joseph H., Wayne, Pa. Amusement apparatus	824,305	June 26	4094	875–6	122	2783
Mahn, Hermann, St. Louis, Mo. Clamp for holding plates of glass assembled	820,225	May 8	2436	528	122	606
Mahoney, Jeremiah L., Naugatuck, Conn. Die for making ornamented plastic articles	819,150	May 1	222	47	122	55
Mahood, Joseph, *et al.* (See Bartlebaugh, Benjamin C., assignor.)						
Maier, David. (See Schuster and Maier.)						
Maier, Lewis, Grand Ledge, Mich. Wrench	824,558	June 26	4625	963	122	2896

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Maillard, Henri L., Paris, France. Rotary explosive-engine	824,559	June 26	4626	983–4	122	2896
Maingot, Joseph N., Trinidad, British West Indies. Desk utensil	823,798	June 19	3151	666–7	122	2522
Malezieux, Jean B. D. M., Paris, France. Carburetor for explosive-engines	823,608	June 19	2783	589–90	122	2440
Mallett, Francis W., assignor to Spirella Company, Meadville, Pa. Machine for forming metallic stays for garments	820,510	May 15	3025	651–2	122	795
Mallory, James L., Evanston, assignor to Chicago Grain Door Company, Chicago, Ill. Car-door bracket	819,151	May 1	223	47	122	56
Malmborg, Ernst R., Chicago, Ill., assignor, by mesne assignments, to Time Marking Machine Company. Automatic marking and canceling machine	822,898	June 5	1319	271–4	122	2014
Malone, Ernest. (See Leech, Lucian B., assignor.)						
Malone, Joseph, Muscogee, Fla. Standard for lumber-cars, &c.	820,585	May 15	3168	682	122	827
Maloney, William M., Chipmonk, N. Y. Pump-piston and packing therefor	823,344	June 12	2260	472	122	2270
Mangels, William F., New York, N. Y. Amusement device	820,805	May 15	3598	770	122	921
Mankin, Arthur J. (See Sheppard and Mankin.)						
Manley, James. (See Farlow, James, assignor.)						
Mann, Alexander, Berkshire, Mich. Stack-cover	822,143	May 29	6298	1342	122	1637
Mann, Henry A., Albany, N. Y. Machine for dampening collars at the lines of their folding	820,426	May 15	2845	620	122	754
Mann, Howard E., Cleveland, Ohio. Plant for drawing, quenching, and conveying coke	819,899	May 8	1721	370	122	449
Manning, Bowman and Company. (See Savage, George E., assignor.)						
Manning, Bowman and Company. (See Savage and Chapman, assignors.)						
Manns, Albert G., assignor to Food & Fiber Products Company, Chicago, Ill. Food extract from cornstalks	820,806	May 15	3600		122	922
Mansfield, George L., Chicago, Ill. Dust-guard for journal-boxes	824,127	June 26	3747	800	122	2709
Mansmith, Chauncy I. (See Driver and Mansmith.)						
Manson, Ray H., assignor to Dean Electric Company, Elyria, Ohio. Relay	822,968	June 12	1464	305	122	2094
Manthey, Robert, Bridgeport, Conn. Watch	819,568	May 1	1042	228–9	122	234
Mantle, Charles H. (See Biles, John W., committee, assignor.) (Reissue.)						
Manville Company. (See Robinson, William A., assignor.)						
Manwaring, George A., Bayonne, N. J., assignor to American Graphophone Company, Bridgeport, Conn. Sound-record	819,072	May 1	74	18	122	20
Manzel Brothers. (See Manzel, Charles W., assignor.)						
Manzel Brothers Co. (See Manzel, Charles W., assignor.)						
Manzel, Charles W., assignor to Manzel Brothers, Buffalo, N. Y. Force-feed lubricator	820,979	May 22	4014	852–3	122	1073
Manzel, Charles W., Buffalo, N. Y., assignor, by mesne assignments, to Manzel Brothers Co. Lubricating system for locomotives	823,609	June 19	2785	590	122	2440
Manzel, John E. (See Huber and Manzel.)						
Marbach, Frank G., Medina, Ohio. Micrometer-calipers	820,807	May 15	3602	770	122	922
Marbach, Frank G., Medina, Ohio. Ratchet tap and nut wrench	823,610	June 19	2788	591	122	2441
Marbach, Frank G., Medina, Ohio. Tool-box	824,495	June 26	4496	953	122	2868
Marble, Charles A., Ottumwa, Iowa. Machine for computing interest	819,667	May 1	1233	269–71	122	277
March, George E., Muskegon Heights, assignor of one-half to L. G. Sweningston, Muskegon, Mich. Air-brake	822,747	June 5	1035	212	122	1955
Marchant, William C., Chicago, Ill. Switchboard	823,183	June 12	1930	397	122	2198
Marckwordt, Karl H. J., Guatemala, Guatemala. Calculator	820,226	May 8	2438	528	122	606
Marcum, Thomas W., Cairo, Ind. Ter. Plow	823,799	June 19	3152	667	122	2522
Mare, Frederic de, Brussels, Belgium. Ozone-ventilator	820,656	May 15	3285	705–6	122	850
Maret, Adela R., Lavonia, Ga. Cotton-chopper	823,132	June 12	1824	376	122	2173
Margetts, Frederick W., East Dulwich, England. Attachment for meat cutting or slicing machines	824,496	June 26	4497	953	122	2868
Maris, Jared, Sharonville, Ohio. Radiator	822,748	June 5	1036	212	122	1956
Mark, Cyrus G., Robesonia, Pa. Smoke-consuming furnace	824,497	June 26	4498	953–4	122	2868
Markel, E. M. (See Gilleland, Wilson S., assignor.)						
Markel, Ed M., Sr., *et al.* (See Gilleland, Wilson S., assignor.)						
Markland, Wyllis H., Altoona, Pa. Tongs	819,359	May 1	664	140	122	152
Markoe, John A., White Bear, Minn. Envelop-sealing machine	820,427	May 15	2847	620–1	122	754
Marks, Bennett D., Chicago, Ill. Design-roller	819,297	May 1	528	111–12	122	122
Marks, Leonard J., San Francisco, Cal. Mixing and combining device for gas-engines	819,239	May 1	413	87	122	97
Mariatt, George E., Allegheny, Pa. Line-counting attachment for key-controlled machines	822,144	May 29	6299	1342	122	1637
Marler, James W., East Bend, N. C. Hub-attaching device	823,425	June 12	2399	505	122	2298
Marlier, Eugene. (See Ranson, Georges, assignor.)						
Marriott, Hugh F., Parktown, Transvaal. Means for surveying bore-holes	821,048	May 22	4150	882–3	122	1102
Marsh, Alexander. (See Henry and Marsh.)						
Marsh, Elon A., assignor to F. G. O'Hara, Detroit, Mich. Supply-valve	822,749	June 5	1038	213	122	1956
Marsh, Frank, *et al.* (See Dale, John H., assignor.)						
Marsh, Wilbur W. (See Morgan, Thomas W., assignor.)						
Marshall, Alfred, Leicester, England. Press	821,517	May 22	5082	1082–3	122	1308
Marshall, Norman, Newton, Mass. Manufacture of rivets	820,586	May 15	3169	682	122	827
Marshall, Norman, Newton, Mass. Assembling apparatus	821,946	May 29	5933	1263–5	122	1553
Marshall, Norman, Newton, Mass. Incandescent-lamp socket	822,007	May 29	6045	1288	122	1578
Marshall, Norman, Newton, Mass. Assembling apparatus	822,213	May 29	6440	1368	122	1670
Marshall, Norman, Newton, Mass. Jig for assembling apparatus	822,214	May 29	6442	1368	122	1670
Martell, Gustav, Glauchan, Germany. Phosphorous compound and making same	820,587	May 15	3170		122	827
Marten, Albert S., East Orange, N. J. Horn-support	820,511	May 15	3031	652	122	796
Marten, Henry, Toledo, Ohio. Door-frame for cooling-rooms	820,657	May 15	3287	706	122	850
Martin, Arthur H., Buffalo, N. Y., assignor of one-half to C. E. B. Lamson, Toledo, Ohio. Attachment for type-writing machines	819,778	May 8	1476	316	122	390
Martin, Charles E. R., Newark, N. J. Golf-club	819,900	May 8	1723	370	122	450
Martin-Cooke, John A., Louisville, Ky. Automatically-adjustable drawing-pen	821,878	May 29	5796	1235	122	1522
Martin, Freeman T., Winchester, Ky. Corn-snapper and feed-cutter	819,569	May 1	1045	229–30	122	235
Martin, Harry T., Milwaukee, Wis. Hand-vise	823,611	June 19	2790	591	122	2442
Martin, Herman W., Ilion, N. Y. Automatic fire-extinguisher	824,128	June 26	3750	801	122	2710
Martin, Horace E., Athens, Ga. Vehicle-brake	822,750	June 5	1039	213	122	1957
Martin, John F. (See Haynes and Martin.)						
Martin, John S., and H. N. Stockton, Snohomish, Wash. Combined badge and watch-guard	822,969	June 12	1466	305	122	2094
Martin, Joseph W., Holyoke, Mass. Spinning-machine	819,298	May 1	530	112–13	122	123
Martin, Pennell W., Lake Eunice, Miss. Draft and steering gear for vehicles	822,145	May 29	6306	1342–3	122	1639
Martin, Ralph D., Tampa, Fla. Game device	824,560	June 26	4628	984	122	2896
Martin, Robert T. J., Elyria, Ohio. Pressed-metal seat	820,227	May 8	2439	528	122	606
Martin, Talbot G., assignor to Automatic Electric Company, Chicago, Ill. Means for charging storage batteries of telephone systems	819,073	May 1	75	18–19	122	20
Martin, Thomas C. (See Hall and Martin.)						
Martin, William B., Bloomington, Ill. Concrete-mixer	820,428	May 15	2849	621	122	755

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Martineau, Charles, and C. Prevost, Montreal, Canada. Water-trap	822,462	June 5	450	91	122	1823
Martinet, Romain, and A. Dulac, Grenoble, France. Apparatus for dyeing hides and skins	823,539	June 19	2664	561	122	2414
Marvel Rubber Company. (See Clark, Maurice C., assignor.)						
Mascall, Harry O., Johannesburg, Transvaal. Means for rendering bottles non-refillable	822,287	June 5	125	25	122	1756
Maschal, Charles S., Kingston, N. Y. Medicated pencil	819,901	May 8	1725	370	122	450
Maschin, George L., Westfield, Mass. Trick device	824,561	June 26	4630	984	122	2896
Maschmeyer, Charles H., Portland, Me. Handle	822,970	June 12	1467	306	122	2095
Maslin, Emile, and C. Theryc, assignors to Société Anonyme des Procedes Maslin & Theryc, Marseille, France. Regenerator or heat-exchanging apparatus	821,518	May 22	5086	1084	122	1309
Mason, Charles T., assignor to Sumter Telephone Manufacturing Company, Sumter, S. C. Telephone-receiver	823,061	June 12	1664	344	122	2139
Mason, Edward R., Chicago, Ill. Shoe-horn	821,049	May 22	4153	883	122	1103
Mason Machine Works. (See Chandler, George E., assignor.)						
Mason Regulator Company. (See Mason, William B. assignor.)						
Mason, Volney W., Providence, R. I. Elevator driving mechanism	824,129	June 26	3752	801	122	2710
Mason, William B., Boston, Mass., assignor to Mason Regulator Company, Saco, Me. Pressure-variating device	822,850	June 5	1223	253	122	1995
Mason, William B., assignor to Mason Regulator Company, Boston, Mass. Cross-head guide	824,080	June 19	3676	782	122	2635
Massey Machine Company. (See Richardson, Charles G., assignor.)						
Massie, Walter W., Providence, R. I. Condenser	820,363	May 8	2705	590	122	665
Massie, Walter W., assignor to Massie Wireless Telegraph Company, Providence, R. I. Oscillaphone	819,779	May 8	1479	316	122	391
Massie Wireless Telegraph Company. (See Massie, Walter W., assignor.)						
Masten, Abraham, Milan, and H. S. Masten, Detroit, Mich. Snow-plow	821,660	May 29	5370	1144–5	122	1426
Masten, Herbert S. (See Masten, Abraham and H. S.)						
Masterman, William H. (See Magney and Masterman.)						
Matheney, Otis, Chrisman, Ill. Compound tool	820,723	May 15	3422	732	122	881
Matheny, Thurston. (See Hastings and Matheny.)						
Mather, William, J. Hübner, and W. J. Pope, Manchester, England. Apparatus for mercerizing	821,812	May 29	5686	1211–12	122	1499
Mather, William, J. Hübner, and W. J. Pope, Manchester, England. Mercerizing	824,255	June 26	4014	859	122	2766
Mathes, John A., San Diego, Cal. Kerosene incandescent lamp	823,733	June 19	3017	639	122	2491
Mathes, John A., San Diego, Cal. Kerosene vapor-stove	823,734	June 19	3022	639	122	2492
Matheson, William A., *et al.* (See Bellamy, Albert, assignor.)						
Mathews, Henry B. (See Roberts and Mathews.)						
Mathias, Thomas H., Chicago, Ill., assignor to Illinois Steel Company. Rolling metal plates	823,345	June 12	2263	472	122	2271
Matlowsky, Zeelig, New York, N. Y. Reflector	819,570	May 1	1047	230	122	235
Matt, Jacob, Buffalo, N. Y. Washing-machine	819,152	May 1	225	48	122	56
Matteson, Edward J., *et al.* (See Matteson, Walter C., assignor.)						
Matteson, Walter C., assignor of two-thirds to E. J. Matteson and A. H. Carpenter, Stockton, Cal. Lock-nut	819,902	May 8	1726	371	122	450
Matthews, Elmer R., Hohman, Ohio. Valve-adjuster for oil-wells	822,971	June 12	1468	306	122	2095
Matthews, James H., Pittsburg, Pa. Form for cylinder-presses	823,062	June 12	1665	345	122	3139
Matthews, John W. (See Matthews, Joseph E. and J. W.)						
Matthews, Joseph E. and J. W., Oregon, Ill. Presser-bar for pianos	824,498	June 26	4500	954	122	2869
Mattoon Grain Conveyor Company. (See Akers, James M., assignor.)						
Matusak, Peter, and G. Slaine, Greensburg, Pa. Wrench	824,499	June 26	4500	954	122	2869
Maucher, Albert. (See Gheen and Maucher.)						
Mauck, Victor. (See West and Mauck.)						
Mauser, Alfons, Cologne, Germany. Cask, barrel, drum, and the like	820,228	May 8	2441	529	122	607
Mausner, Frederick, Philadelphia, Pa. Mattress	819,903	May 8	1728	371	122	450
Mawson, Mary. (See Greig and Mawson.)						
Max Ams Machine Company. (See Brenzinger, Julius, assignor.)						
Maxwell, Edward L., Mulberry, Fla. Pipe-flange	823,346	June 12	2264	472	122	2271
May, Charles, London, England. Apparatus for ascertaining the level of liquids	820,429	May 15	2851	621	122	755
May, Charles E. (See Oatway and May.)						
May, Elihu, Magee, Miss. Rein-holder	823,063	June 12	1666	345	122	2139
Mayer, Frederick C. (See Porter and Mayer.)						
Mayer, Godfried J. (See Steinbrenner and Mayer.)						
Mayer, Walter, Madison, Wis. Attachment for platen printing-presses	824,256	June 26	4015	859	122	2766
Mayer, Walter S., Philadelphia, assignor to A. E. Newton, Daylesford, and W. M. Scott, Philadelphia, Pa. Electrical switch	819,360	May 1	666	140–1	122	152
Mayes, Melvin L. (See Sweeney and Mayes.)						
Mayfield, Daniel D. and E. F., Thayer, Mo. Combined churn and ice-cream freezer	823,612	June 19	2791	591	122	2442
Mayfield, Ella F. (See Mayfield, Daniel D. and E. F.)						
Mayo, Frederick P., Boston, Mass. Pile-driver	822,620	June 5	786	160	122	1901
Mazaraki, Joseph de, Etterbeek, near Brussels, Belgium. Combined vehicle braking and starting device	822,679	June 5	900	184	122	1928
Mazzanovich, Anton L., New York, N. Y. Fender for street-cars	820,005	May 8	1998	438	122	507
McAfee, Claude M., Waco, Tex. Well-drilling machine	820,936	May 15	3894	830	122	986
McAlister, James R., Hallesboro, N. Y. Vehicle-wheel	824,571	June 26	4648	988	122	2900
McAslan, Norman, Neola, Iowa. Portable sawing-machine	819,703	May 1	1313	285	122	295
McAtee, William R. (See Chapman and McAtee.)						
McBean, John C. (See McDermott and McBean.)						
McBerty, Frank R., Evanston, assignor to Western Electric Company, Chicago, Ill. Inclosing case for telephone sets	822,464	June 5	452	91	122	1823
McCabe, William L., Seattle, Wash. Sling for hoisting apparatus	819,576	May 1	1058	232–3	122	238
McCain, Billy S., Knox county, Ind. Puzzle	821,182	May 22	4407	938	122	1160
McCall, Donald T., Jackson, Mich. Oval and round cardboard cutting machine	822,976	June 12	1478	308	122	2097
McCance, David, Lockport, N. Y. Polishing-machine	823,540	June 19	2666	562	122	2414
McCann, Joseph W., Washington, D. C. Dummy keyboard	823,683	June 19	3314	706	122	2558
McCanna, John F., assignor to John F. McCanna Company, Chicago, Ill. Lubricating-pump for locomotive-engines	822,684	June 5	908	186–7	122	1930
McCanna, John F., assignor to John F. McCanna Company, Chicago, Ill. Lubricating apparatus	822,685	June 5	920	187–8	122	1932
McCanna, John F., assignor to John F. McCanna Company, Chicago, Ill. Lubricator	822,900	June 5	1327	275	122	2016
McCarthy, John T., assignor of one-half to J. J. Riordon, Jr., Baltimore, Md. Vaginal syringe	823,069	June 12	1679	347	122	2142
McCarty, Peter F., Washington, D. C. Curtain-fixture	819,577	May 1	1060	233	122	238
McCathie, David M., W. R. and N. B. Cain, Port Jervis, N. Y., assignors to Momentum Regulator, Inc. Fire-escape	820,241	May 8	2472	535	122	612
McChesney, Jesse M., Honolulu, Hawaii. Clothes-pin	823,889	June 19	3316	706	122	2559

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McClave-Brooks Company. (See McClave, William, assignor.)						
McClave, William, Scranton, Pa., assignor to McClave-Brooks Company. Furnace air-feeding mechanism	819,669	May 1	1244	271–2	122	279
McClellan, J. W., *et al.* (See Burkins, Eugene, assignor.)						
McClung, Samuel J., Fayette, W. Va. Hasp-fastener	824,260	June 26	4021	861	122	2768
McClure, Elmer P. (See Buchner and McClure.)						
McClymonds, L. K. (See Coffey, Barton H., assignor.) (Reissue.)						
McCole, Walter W. (See Lay, Frank R., assignor.)						
McConway & Torley Company. (See McConway, William, Jr., assignor.)						
McConway, William, Jr., assignor to McConway & Torley Company, Pittsburg, Pa. Car-coupling	821,953	May 29	5948	1267	122	1556
McCormack, Harry S., Providence, R. I., assignor to Underwood Typewriter Company, New York, N. Y. Type-writing machine	819,785	May 8	1493	319–20	122	394
McCormack, Harry S., Providence, R. I., assignor to Underwood Typewriter Company, New York, N. Y. Type-writing machine	819,786	May 8	1502	320–1	122	397
McCormick, John, Northville, S. D. Portable derrick	821,954	May 29	5951	1267	122	1556
McCormick, Thomas, Somerville, Mass. Pneumatic concrete steel car-bumper	821,524	May 22	5097	1086	122	1311
McCormick, William E., assignor to International Telephone Manufacturing Company, Chicago, Ill. Telephone-switch	820,432	May 15	2855	622	122	756
McCormick, William E., assignor to International Telephone Manufacturing Company, Chicago, Ill. Telephone-switchboard	824,431	June 26	4367	929–30	122	2837
McCoy, Ernest K., assignor of one-half to J. C. Tyler, Portsmouth, Va. Sanding-tool	819,578	May 1	1062	233–4	122	239
McCoy, Walter E., New York, N. Y., assignor to Westinghouse Electric & Manufacturing Company. Bearing for electrical measuring instruments	824,194	June 26	3887	830	122	2739
McCready, Charles H., Neodesha, Kans. Machine for turning pipes and other articles	823,804	June 19	3159	668	122	2523
McCune, James L. (See Sober and Brown, assignors.)						
McCune, John, *et al.* (See Duff, Hugh Y. B., assignor.)						
McCurdy, Arthur W., Toronto, Canada, assignor to Eastman Kodak Company, Rochester, N. Y. Photographic developing apparatus	823,623	June 19	2814	597	122	2447
McCurdy, Arthur W., Baddeck, Canada, assignor to Eastman Kodak Company, Rochester, N. Y. Film-cartridge	823,624	June 19	2818	597	122	2447
McCurdy, Charles M. (See Knopf, Albert H., assignor.)						
McDermott, James, and J. C. McBean, Chicago, Ill. Soft-tread horseshoe	821,817	May 29	5694	1213	122	1501
McDiarmid, Donald G., Chicago, Ill. Vehicle-seat	820,008	May 8	2005	440	122	509
McDonald, Donald, Crystal, N. D. Belt-shifter	823,352	June 12	2276	476	122	2273
McDonald, Reynolds, St. Louis, Mo. Combined plumb-bob and rule	821,371	May 22	4797	1019	122	1247
McDonald, Wallace, Grass Valley, Cal. Tappet for stamping-mills	824,572	June 26	4049	989	122	2901
McDonell, Alexander D., assignor of one-half to L. W. Gibson, Medford, Wis. Logging-sled	821,728	May 29	5516	1176	122	1459
McDonough, James H., *et al.* (See Monroe, Simon E., assignor.)						
McDougall, Alexander, Duluth, Minn. Apparatus for moving and mining material of a granular and comminuted nature	821,372	May 22	4798	1019–20	122	1247
McDougall, Alexander, Duluth, Minn. Ore-cleaner	822,753	June 5	1043	214	122	1957
McDougall, Alexander, Duluth, Minn. Mining apparatus	823,960	June 19	3452	738	122	2589
McDougall, Alexander, Duluth, Minn. Mining apparatus	823,961	June 19	3455	738–9	122	2589
McDougall, Charles P. (See Horner, William C., assignor.)						
McEachren, John D., Galt, Canada. Steam-heater	819,911	May 8	1745	375	122	454
McElherron, Thomas J., Alton, Ill., assignor to Salem Glass Works, Salem, N. J. Apparatus for manufacturing glassware	822,623	June 5	793	161	122	1902
McElroy, James F. (See Scales and McElroy.)						
McElroy, James F., assignor to Consolidated Car Heating Company, Albany, N. Y. Engineer's valve	821,818	May 29	5694	1213–14	122	1501
McElroy, James F., assignor to Consolidated Car Heating Company, Albany, N. Y. Hose-coupling	824,670	June 26	4836	1032	122	2942
	823,070	June 12	1680	347	122	2142
McEntee, Thomas T., Steelton, Pa. Lock for window-sash	823,187	June 12	1935	399–400	122	2199
McFarland, Benjamin F., and C. E. Crosby, Indianapolis, Ind. Mechanical advertiser	823,737	June 19	3029	640	122	2493
McFarland, George W., Dayton, Ohio. Window-screen	820,433	May 15	2858	622	122	756
McFarlane, James L., assignor of one-half to J. M. Frazier, Georgetown, Ill. Vehicle-axle	820,242	May 8	2474	535	122	613
McFerson, Perry, Revere, Mo. Disk breaking-plow						
McGahan, Fred L. (See Flager and McGahan.)						
McGahan, Fred L., and E. G. Flager, St. Louis, Mo., assignors to National Light, Heat & Power Company. Hydrocarbon-burner	824,432	June 26	4372	930	122	2838
McGee, William J. (See Orr and McGee.)						
McGhee, John W., assignor of one-half to R. J. Hotaling and J. J. Bernard, St. Louis, Mo. Elevator-hatchway closure	823,479	June 12	2518	528	122	2324
	822,010	May 29	6047	1289	122	1579
McGiffert, John R., assignor to Clyde Iron Works, Duluth, Minn. Base for log-loaders	821,665	May 29	5376	1146	122	1428
McGinnis, Philip, London, Canada. Window						
McGinnity, Joseph P., New York, N. Y., and E. H. Winkler, Krebs, Ind. Ter. Combination-tool	820,814	May 15	3619	773	122	926
McGonagle, Arthur, East Orange, N. J. Relief-valve for heating systems	823,805	June 19	3160	668	122	2524
McGowan, John W., Cincinnati, Ohio. Bottle	821,114	May 22	4279	910	122	1130
McGranighan, Patrick, Granite, Va. Submarine filter	819,579	May 1	1063	234	122	239
McGrath, Patrick H., Wollaston, Mass. Hinge	822,686	June 5	925	188	122	1934
McGraw, William E., and A. M. Goodale, Denver, Colo. Puzzle	822,862	June 5	1249	257	122	2000
McGuinness, Benjamin F., Worcester, Mass., assignor to Crompton & Knowles Loom Works. Loom-shuttle binder holding device	819,912	May 8	1746	375–6	122	454
McGuire, Eugene J. (See Gambee, William Y., assignor.)						
McGuire, George H., Dahlonega, Ga. Cotton chopper and cultivator	820,886	May 15	3790	808–9	122	962
McGuire, John W., Joliette, N. D., assignor of one-half to G. F. Ogg, Minneapolis, Minn., and D. Dow, Grand Forks, N. D. Motor-plow	820,887	May 15	3793	809–10	122	963
McIntosh, Frederick F., *et al.* (See Russ, John D., assignor.)						
McIntyre, Frank, assignor to Eagle Pencil Company, New York, N. Y. Eraser-tip for lead-pencils, penholders, pencil-point protectors, and the like	824,375	June 26	4242	904	122	2813
McIntyre, Frank, assignor to T. H. Joseph and J. J. Ehrenreich, New York, N. Y. Electric-lamp-shade holder	822,219	May 29	6450	1370	122	1671
McKee, Thomas M., assignor of one-half to J. W. Comstock, Greenfield Ind. Extension-table	822,901	June 5	1330	275	122	2016
	823,890	June 19	3317	706	122	2559
McKeehen, Charles W., Richards, Okla. Ter. Stock-car	820,517	May 15	3043	655	122	799
McKelvey, William W. (See Sherman and McKelvey.)						
McKenna, Charles E., Albany, N. Y. Glass-protector for faucets	819,913	May 8	1749	376	122	454
McKenzie, Angus, assignor to Berger Manufacturing Company, Canton, Ohio. Connection for furniture-sections	823,225	June 12	2036	423	122	2222
McKenzie, William M., Wilkinsburg, Pa. Nut-tapping machine	824,573	June 26	4650	989	122	2901
McKinne, Haywood W., Kingston, N. C. Means for protecting ships from fire						

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McKinney, David F., *et al.* (See Roach, Arland B., assignor.)						
McKinney, David F., *et al.* (See Roach and Hodge, assignors.)						
McKinney, Dennis I., and G. W. Henderson, Fairmont, W. Va. Wire-working tool	819,504	May 1	546	116	122	126
McKinney, George B., Barry, Ill. Merry-go-round	819,580	May 1	1065	234	122	240
McKinny, Alexander, *et al.* (See Clegg, Thomas, assignor.)						
McKinsey, Noble S., and A. R. Nelson, Susanville, Cal. Selective telephone system	820,063	May 8	2122	462–3	122	536
McKinsey, Noble S., and A. R. Nelson, Susanville, Cal. Selective telephone	820,064	May 8	2129	464–5	122	538
McKnight, Charles K. (See Tarwater and McKnight.)						
McKnight, Thomas R., assignor to Western Wheeled Scraper Company, Aurora, Ill. Axle-skein and sand-collar	821,729	May 29	5518	1176–7	122	1459
McKnight, Thomas R., assignor to Western Wheeled Scraper Company, Aurora, Ill. Brake for dump-wagons	821,730	May 29	5520	1177	122	1460
McLain, David, assignor of one-half to N. A. Christensen, Milwaukee, Wis. Molding flask or box	820,591	May 15	3178	683	122	829
McLaughlin, John E. (See Kidd, George E., assignor.)						
McLaughlin, John K., Philadelphia, Pa. Water-heater	822,545	June 5	611	123	122	1861
McLellan, Harry R. (See Strickland, James L., assignor.)						
McLennan, William G. (See Krengel and McLennan.)						
McLeod, Alexander, Brisbane, Queensland, Australia. Tripod-stand for cameras	821,052	May 22	4158	884	122	1104
McLeod, George D., Chicago, Ill. Mortise or hinge gage	824,134	June 26	3762	803–4	122	2712
McLeod, Hugh, Hatfield, Mass. Pulley-crowning attachment for lathes	822,754	June 5	1044	214	122	1958
McLeod, John P., assignor to Friedly & Voshardt, Chicago, Ill. Drop-hammer	823,480	June 12	2520	528–9	122	2325
McLeod, John P., assignor of one-half to H. F. Voshardt, Chicago, Ill. Furnace	823,962	June 19	3457	739	122	2590
McLeran, Alvord M., assignor to Two-Edge Manufacturing Company, Kansas City, Mo. Sharpening-machine	822,070	May 29	6168	1315	122	1607
McLewee, Carrie H. (See McLewee, William S., assignor.)						
McLewee, William S., assignor to C. H. McLewee, Yardley, Pa. Folding bed	819,305	May 1	547	116	122	126
McLewee, William S., Yardley, Pa., assignor to General Manufacturing and Supply Company, Trenton, N. J. Gas-burner	822,465	June 5	453	92	122	1824
McLinden, James J., Waterbury, Conn. Can	820,592	May 15	3179	684	122	829
McMahan, Hugh J., Monessen, Pa., assignor to Westinghouse Electric & Manufacturing Company. Controller for synchronizing switches	819,787	May 8	1511	321	122	400
McManus, Charles E., New York, N. Y. Die for finishing bottle-caps	822,755	June 5	1046	214	122	1958
McManus, Frank, South Norfolk, Va. Clothes-line support	820,815	May 15	3622	773	122	926
McManus, John A., Philadelphia, Pa. Wave-motor	823,431	June 12	2413	508	122	2301
McMeen & Miller. (See Fricke, William A., assignor.)						
McMillen, James A. (See Taylor, McMillen, and Milbery.)						
McMurray, William, New York, N. Y., assignor to Williams Wire-Hinging Machine Company. Machine for feeding and driving staples	820,243	May 8	2475	535–7	122	613
McMurray, William, New York, N. Y., assignor to Williams Wire-Hinging Machine Company. Box-hinging machine	820,244	May 8	2486	537–8	122	617
McMurtry, Alden L., New York, N. Y. Speed-timing apparatus	820,123	May 8	2245	489	122	564
McMyler, John. (See Lovell, Frederick W., assignor.)						
McMyler, John, Cleveland, Ohio. Apron for car-dumping machines	820,434	May 15	2858	622	122	757
McNamara, Robert F., Rochester, N. Y. Vise	823,353	June 12	2277	476	122	2273
McNamire, Willard F., Mendon, Ohio. Cement-mold	823,963	June 19	3458	739	122	2590
McNaugher, Joseph. (See Duff, John T., assignor.)						
McNeil, Chester. (See Woodward and McNeil.)						
McNeill, Hugh J., Brandon, Canada. Device for shifting threshing-machine bodies	819,581	May 1	1066	235	122	240
McNeley, Martin M., assignor to A. L. Allen and M. J. Schermerhorn, Des Moines, Iowa. Apparatus for operating railway-switches	823,136	June 12	1830	377–8	122	2174
McNutt, William D., Upper Sandusky, Ohio. Vehicle-body	821,053	May 22	4159	884	122	1104
McPhail, Neal A., assignor to O. K. Janes, Cass City, Mich. Gate-latch	824,195	June 26	3888	830	122	2740
McPike, Curtis, Wabash, Ind. Card-index drawer	819,367	May 1	681	143	122	156
McQuaig, Peter, *et al.* (See Bellamy, Albert, assignor.)						
McQuarrie, James L., South Orange, N. J., assignor to Western Electric Company, Chicago, Ill. Signaling system for party telephone-lines	822,466	June 5	454	92	122	1824
McQuinn, James S., Newcastle, Ind. Molding-board	820,726	May 15	3430	734	122	882
McRae, Alexander, Pendleton, Oreg. Grain-separator	820,816	May 15	3623	773–4	122	927
Meach, Alonzo H., Blissfield, Mich. Penholder	822,008	May 29	6046	1288	122	1578
Mead, Charles B., and R. S. Fullerton, assignors of one-third to J. V. Murphy, East Palestine, Ohio. Car-brake	823,285	June 12	2152	449	122	2246
Meadow, James D. (See Carlton and Meadow.)						
Means, Benjamin K., Blairsville, Pa. Lock-setting implement	824,306	June 26	4096	876	122	2783
Mears, William, Cleveland, Ohio. Rail-joint	820,229	May 8	2443	529	122	607
Measuring Appliance Company. (See Hutchins, Arthur W., assignor.)						
Meehan, Patrick, Lowellville, Ohio. Gas-cleaner	821,425	May 22	4915	1044–5	122	1272
Meeker, William P., Newark, N. J. Tile-mold	823,184	June 12	1931	398	122	2198
Meem, James C., assignor of one-half to Borough Construction Company, Brooklyn, N. Y. Tunnel-roof shield	819,361	May 1	669	141	122	153
Meem, James C., assignor of two-thirds to Borough Construction Company, Brooklyn, N. Y. Apparatus for excavating tunnels	819,443	May 1	823	177	122	185
Megone, William B., Paddington, England. Motor road-vehicle	821,302	May 22	4646	989–90	122	1211
Mehlhorn, Alfred, Dietrichsdorf, and P. von Klitzing, Neumühlen, near Kiel, Germany. Floating dock	821,110	May 22	4273	909	122	1129
Meier, Frederrick W., and W. A. Gipson, Upper Sandusky, Ohio. Hood for forges	822,533	June 5	591	119	122	1856
Meigs, John F., and E. A. Gathmann, assignors to Bethlehem Steel Company, South Bethlehem, Pa. Centrifugal percussion-fuse for projectiles	819,668	May 1	1243	271	122	279
Meigs, John F., and E. A. Gathmann, assignors to Bethlehem Steel Company, South Bethlehem, Pa. Projectile	823,953	June 19	3439	734	122	2586
Meigs, John F., and H. G. Jakobsson, assignors to Bethlehem Steel Company, South Bethlehem, Pa. Firing mechanism of guns	824,130	June 26	3755	801–2	122	2710
Mellicke, Carl A., Hanley, Canada. Calculating-machine	823,426	June 12	2400	506	122	2299
Meisenburg, Johann. (See Thielmann and Meisenburg.)						
Meissner, Edward C., St. Louis, Mo., assignor, by mesne assignments, to Chicago Pneumatic Tool Company. Pneumatic hammer	822,146	May 29	6308	1343	122	1639
Meissner, Otto W., and W. Yost, assignors to Rodger Ballast Car Company, Chicago, Ill. Railway freight-car	820,058	May 8	2114	461	122	535
Meister, Albert R., and A. E. Wright, Sacramento, Cal. Whiffletree	821,179	May 22	4402	937	122	1158
Melega, Johann. (See Boldog, Daniel, assignor.)						
Mellberg, Victor, Newark, N. J. Capsule closing and printing machine	820,724	May 15	3422	732–3	122	881
Mellen, George E., Chicago, Ill. Swing	821,813	May 29	5688	1212	122	1500
Mellon, George A., St. Louis, Mo. Davenport-bed	820,808	May 15	3602	770–1	122	922
Mellon, George A., St. Louis, Mo. Spring bed-bottom	823,427	June 12	2405	506–7	122	2299
Mellon, George A., St. Louis, Mo. Davenport-bed	824,131	June 26	3757	802	122	2711
Melton, Ephraim B., Decatur, Tex. Preserving	821,947	May 29	5942		122	1554

Alphabetical list of patentees for May and June—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Mendenhall, John. (See Mock and Mendenhall.)						
Menges, Albert C., assignor to W. Harrison, Grand Rapids, Mich. Intake-valve for explosive-engines	820,230	May 8	2444	529	122	607
Menges, Albert C., assignor to W. Harrison, Grand Rapids, Mich. Valve-gear for explosive-engines	823,347	June 12	2266	473	122	2271
Merckens, August, Brooklyn, N. Y. Vending-machine	823,064	June 12	1668	345	122	2140
Meredith, George W., Wichita, Kans., assignor to M. R. Meredith, Wabash, Ind. Cigar-vending machine	823,954	June 19	3441	735	122	2586
Meredith, George W., Wichita, Kans., assignor to M. R. Meredith, Wabash, Ind. Cigar-vending machine	823,955	June 19	3443	736	122	2587
Meredith, George W., Wichita, Kans., assignor to M. R. Meredith, Wabash, Ind. Coin-controlled vending device	823,956	June 19	3447	736–7	122	2587
Meredith, Milo R. (See Meredith, George W., assignor.)						
Mergenthaler Linotype Company. (See Bartlett, Henry B., assignor.) (Reissue.)						
Mergenthaler Linotype Company. (See Kennedy, David S., assignor.)						
Mergenthaler Linotype Company. (See Kent, Perry E., assignor.)						
Merline, John P., Oconto, Wis. Holder	822,063	May 29	6152	1311	122	1602
Merrell, Irving S., assignor to Merrell-Soule Company, Syracuse, N. Y. Conveyer system	823,477	June 12	2506	527–8	122	2322
Merrell-Soule Company. (See Merrell, Irving S., assignor.)						
Merrell, Thomas J., Hindsboro, Ill. Barrel-roller machine	822,288	June 5	126	25	122	1756
Merriam, Henry P., New York, N. Y. Fuse for projectiles	822,299	June 5	126	25–6	122	1756
Merriam, Lyman W., Fitchburg, Mass. Machine for moistening and severing strips of gummed paper	820,512	May 15	3032	653	122	797
Merrick, Asa L., *et al.* (See Lawson, Benjamin S., assignor.) (Reissue.)						
Merrill, Charles W., Lead, S. D. Treating metal-bearing materials	820,430	May 15	2852	.....	122	755
Merrill, Charles W., Lead, S. D. Classifier	820,934	May 15	3887	829	122	984
Merrill, Edward W., Jr., New York, N. Y. Drop-hammer	821,303	May 22	4648	990	122	1211
Merrill, Joseph J. (See Chamberlain and Merrill.)						
Merriman, Edward B., Boston, Mass. Bridle attachment	820,658	May 15	3288	706	122	851
Merriman, George, Toledo, Ohio. Railway paving plant	819,904	May 8	1728	371–2	122	450
Merritt and Company. (See Holden, George, assignor.)						
Merritt and Company. (See Jefferis, Richard W., assignor.)						
Merritt, George W., San Francisco, Cal. Antiseptic telephone-mouthpiece attachment	821,948	May 29	5942	1265	122	1554
Merritt, Joseph. (See Lorenz and Merritt.)						
Merriweather, Frederick W., Kansas City, Mo. Bed-clamp	823,800	June 19	3153	667	122	2522
Merryman, Thomas J., and C. L. Allen, Lincoln, Nebr. Telephone	823,886	June 19	3310	705	122	2558
Merryweather, Charles A., Brooklyn, N. Y. Handle attachment for window-sashes	820,231	May 8	2446	530	122	607
Mertens, Ludwig, Charlottenburg, Germany, assignor to "Abbé" Engineering Company, New York, N. Y. Internal-combustion engine	823,286	June 12	2153	449	122	2246
Meaker & Brother. (See Dowling, William, assignor.)						
Messinger, Aaron. (See Messinger, Benjamin and A.)						
Messinger, Benjamin and A., Philadelphia, Pa. Horseshoe	820,232	May 8	2447	530	122	608
Meston, Charles R., assignor to Emerson Electric Manufacturing Company, St. Louis, Mo. Machine-operating mechanism	821,661	May 29	5371	1145	122	1427
Metal Sectional Furniture Company. (See Shoemaker, George A., assignor.)						
Metallic Folding Bed Company. (See Jonas, Charles, assignor.)						
Metallic Webbing & Manufacturing Company. (See Cole, Thomas A., assignor.)						
Metals Manufacturing Company. (See Hutchinson, William F., assignor.)						
Metcalf, Clarence E. (See Draper and Metcalf.)						
Metcalf, Clarence E., assignor to Draper Company, Hopedale, Mass. Ring spinning or twisting apparatus	820,659	May 15	3290	707	122	851
Methfessel, Charles F., and W. J. Hartson, assignors of one-third to F. H. Whitney, Milwaukee, Wis. Metallic cord-fastener. (Reissue)	12,492	June 5	1340	277	122	2019
Metzger, David, New York, N. Y. Twisting-machine	821,814	May 29	5690	1212	122	1500
Metzger Meyer. (See Durborow, Charles L., assignor.)						
Meyer, Ernest C., assignor to Cleveland Pneumatic Tool Company, Cleveland, Ohio. Engine	819,905	May 8	1730	372–3	122	451
Meyer, Frederick F., Pittsburg, Pa. Self-leveling table	822,680	June 5	902	184	122	1928
Meyer, George W., and C. G. Chevalier, Sparrows Point, Md. Portable liquid-fuel furnace	819,906	May 8	1737	373	122	452
Meyer, Gottfried, and C. G. Brann, Philadelphia, Pa. Fountain paint-brush	821,879	May 29	5797	1235	122	1522
Meyer John J., assignor of two-thirds to J. D. Gunn and J. A. Sharp, New York, N. Y. Adjustable clamp for pipes	821,426	May 22	4921	1045–6	122	1273
Meyer, Joseph A., and J. S. Satter, Rochester, N. Y. Door	823,065	June 12	1671	345–6	122	2140
Meyer, Maurice, Brooklyn, N. Y. Lacing for wearing-apparel	819,907	May 8	1738	374	122	453
Meyer, Max, Berlin, Germany. Apparatus for delivering acid and alkaline liquids in measured quantities	823,28.	June 12	2155	450	122	2247
Meyer, Ralph J., Grand Junction, Colo. Fly-screen	822,534	June 5	592	119	122	1857
Meyers, Charles H., and E. Loudenslager, Columbus, Ohio. Water-heating boiler	821,304	May 22	4649	990	122	1212
Meyers, Frederick, Chicago, Ill., and C. T. Hildebrandt, assignors to Dayton Hydraulic Machinery Co., Dayton, Ohio. Sewage-ejector	821,050	May 22	4154	883	122	1103
Meyn, Anthony. (See Di Vito and Meyn.)						
Meyrowitz, Emil B., New York, N. Y., assignor to Meyrowitz Manufacturing Company. Opera-glass	822,215	May 29	6443	1369	122	1670
Meyrowitz, Emil B., New York, N. Y., assignor to Meyrowitz Manufacturing Company. Eyeglass-holder	823,133	June 12	1825	377	122	2173
Meyrowitz Manufacturing Company. (See Meyrowitz, Emil B., assignor.)						
Mez, Gustav, Baden, Germany. Letter-file and the like	822,147	May 29	6318	1343	122	1642
Michael, Laselle A., trustee. (See Olmstead, Albert P., assignor.)						
Michaelis, Albert H., Freeport, Ill. Hook and eye	824,257	June 26	4016	860	122	2767
Michaelis, Gustavus, assignor to Albany Chemical Company, Albany, N. Y. Paint-remover	823,801	June 19	3154	.....	122	2522
Michele, Abruzzo, assignor of one-half to B. Gasparro, Pittsburg, Pa. Repeating firearm or rifle	819,153	May 1	227	48–9	122	56
Michie, Henry C., Jr., Charlottesville, Va. Hypodermic-syringe case	824,371	June 26	4234	903	122	2812
Michigan Machinery Manufacturing Company. (See Dobson, John E., assignor.)						
Michigan Wire Fence Company. (See Morse, John J., assignor.)						
Middleby Oven Manufacturing Company. (See Faulds, John, assignor.)						
Middleton, Robert A., Rexburg, Idaho. Carbureter for gasolene-engines	822,681	June 5	903	185	122	1929
Mieden, Adam, Seattle, Wash. Dumping-car	820,006	May 8	2000	438–9	122	508
Mighell, Louis J., Lake City, Iowa. Grain-door for cars	823,735	June 19	3026	640	122	2493
Mihills, Merrick A., Highland Park, Ill. Safety-razor	823,134	June 12	1827	377	122	2173
Milbery, Thomas C. B. (See Taylor, McMillen, and Milbery.)						
Milch, Maurice, Schenectady, N. Y., assignor to General Electric Company. Alternating-current-motor control	819,571	May 1	1048	230	122	235

Alphabetical list of patentees for May and June—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Milch, Maurice, Schenectady, N. Y., assignor to General Electric Company. Alternating-current motor and starting-switch	819,572	May 1	1050	230	122	236
Miles, Clarence B. (See Wanamaker and Miles.)						
Miles, Harriet, New York, N. Y., assignor to Nealon Company. Hose-supporter clasp	821,949	May 29	5944	1266	122	1554
Miles, Richard B., Indianapolis, Ind. Folding vehicle-top	820,059	May 8	2116	461	122	535
Milham, Harry K., Twickenham, England. Reversible or feathering screw-propeller	822,064	May 29	6153	1312	122	1603
Miller, Abraham, Newton, Iowa. Automatic fly-brush and door-closer	821,880	May 29	5798	1235	122	1522
Miller, Andrew E., assignor, by mesne assignments, to H. Cassard, Baltimore, Md. Broom-sewing machine	820,980	May 22	4017	853–5	122	1073
Miller, Ashbel A. (See Van Horn and Miller.)						
Miller, Charles A., Buffalo, N. Y. Game apparatus	821,111	May 22	4274	909	122	1129
Miller, Clara B. Sewaren, N. J. Dish-washing apparatus	821,250	May 22	4533	965	122	1188
Miller, D D, Wooster, Ohio. Door-hanger	823,066	June 12	1673	346	122	2140
Miller, David. (See Geisenhöner and Miller.)						
Miller, David, Schenectady, N. Y., assignor to General Electric Company. Starting-rheostat	822,290	June 5	134	26	122	1758
Miller, George C., *et al.* (See Landau, John, assignor.)						
Miller, George C. (See Ruhlman and Miller.)						
Miller, George H. (See Johnson and Miller.)						
Miller, George P. (See Miller, George W. and G. P.)						
Miller, George W. and G. P., Augusta, Me. Sash-fastener	824,667	June 26	4831	1030	122	2940
Miller, Gideon D., Springs, Pa. Superheater for boiler fire-boxes	821,662	May 29	5373	1145	122	1427
Miller, Henry C., Waterford, N. Y. Locating-gage for sewing-machines	822,535	June 5	593	119–20	122	1857
Miller, Herbert, Hudson, N. Y. Interchangeable and adjustable hand, band, and jig saw filing machine	819,573	May 1	1054	231	122	237
Miller, Ione, Bradford, Pa. Detachable button	820,588	May 15	3171	683	122	827
Miller, Isaac N., Somerset, Ind. Fence-post	824,562	June 26	4631	985	122	2897
Miller, Jeremiah, Chicago, Ill. Neck-yoke	823,957	June 19	3448	737	122	2586
Miller, John, Minneapolis, Minn., assignor to Winner Block Machine Company. Concrete-mixer	819,299	May 1	535	113	122	123
Miller, John A., Baltimore, Md., assignor to J. M. Thurston, trustee, Washington, D. C. Safety system for motor-propelled cars	823,478	June 12	2515	528	122	2323
Miller, John C. (See Rymill, Painter, and Miller.)						
Miller, John C., assignor of one-half to G. Holoch, Philadelphia, Pa. Combination shade-bracket and curtain-holder	819,362	May 1	671	141	122	153
Miller, John C., assignor to Miller Pasteurizing Machine Company, Canton, Ohio. Pasteurizer	820,981	May 22	4023	855–6	122	1074
Miller, John C., Oak Park, and L. E. Howard, La Grange, Ill., assignors to Simonds Manufacturing Company, Fitchburg, Mass. Grinding-machine	823,613	June 19	2792	591–2	122	2442
Miller, John S., St. Louis, Mo. Coffee-roaster	824,037	June 19	3602	767	122	2618
Miller, John W. (See French and Miller.)						
Miller, Lafayette, Saratoga Springs, N. Y. Whip-holder	821,427	May 22	4923	1046	122	1274
Miller, Lewis L., Despatch, N. Y. Cord and rope holder	819,363	May 1	672	142	122	154
Miller, Luther O., Middletown, assignor to Industrial Engineering Company, Columbus, Ohio. Conveyer	819,908	May 8	1741	374	122	453
Miller Pasteurizing Machine Company. (See Miller, John C., assignor.)						
Miller, Peter J., Mountaintop, Pa. Rail-joint	821,950	May 29	5945	1266	122	1555
Miller, Reuben, Jr., assignor of one-half to D. W. Dunlevy, Pittsburg, Pa. Air-valve for gas-engines	823,185	June 12	1933	398	122	2199
Miller, Robert E., Russellville, Ark. Thill-coupling	820,660	May 15	3292	707	122	852
Miller, Stanley G., *et al.* (See Tate, Hugh J., assignor.)						
Miller, Thomas D. (See Logan, Eugene J., assignor.)						
Miller, Thomas S, South Orange, N. J. Rope-drum	821,305	May 22	4650	991	122	1212
Miller, Wallace. (See Minerd, Charles A., assignor.)						
Miller, William R., Pittsburg, and P. V. Cole, Allegheny, assignors to Forter-Miller Engineering Company, Pittsburg, Pa. Continuous ingot-heating furnace	822,380	June 5	297	61	122	1790
Miller, Wilson W. Newton, Kans. Hoisting apparatus	824,258	June 26	4017	860	122	2767
Millet, Liberty, Hagerman, Idaho. Wall structure	824,563	June 26	4632	985	122	2897
Millet, Phillip A., and A. M. Powell, Worcester, Mass. Angle-sawing mechanism	822,291	June 5	135	26–7	122	1758
Mills, Charles, assignor to Saco & Pettee Machine Shops, Newton, Mass. Drawing-roll	820,982	May 22	4027	856	122	1076
Mills, Charles, Newton Upper Falls, Mass., assignor to W. C. Swift, Fitzwilliam, N. H. Lathe for turning axles	823,614	June 19	2796	592–3	122	2443
Mills, Charles S., Norwood, Mass. Exhaust-nozzle	822,216	May 29	6445	1369	122	1670
Mills, Francis A., Lawrence, assignor of one-half to G. B. Emmons, Methuen, Mass. Shuttle check and lock for looms	820,589	May 15	3172	683	122	828
Mills Francis A., Lawrence, assignor of one-half to G. B. Emmons, Methuen, Mass. Shuttle check and lock for looms	820,661	May 15	3293	707–8	122	852
Mills, Francis A., Lawrence, assignor of one-half to G. B. Emmons, Methuen, Mass. Shuttle-lock for looms	820,662	May 15	3301	708–9	122	854
Mills, Francis A., Lawrence, assignor of one-half to G. B. Emmons, Methuen, Mass. Shuttle-checking means for looms	820,663	May 15	3305	709	122	855
Mills, Francis A., Lawrence, assignor of one-half to G. B. Emmons, Methuen, Mass. Shuttle check and lock for looms	820,664	May 15	3308	709	122	856
Mills, George M., Jersey City, N. J. Molding device	822,536	June 5	598	120	122	1858
Mills, George R., Hudson, Mich. Wire-fence tie	822,202	June 5	137	27	122	1759
Mills, Isaac J., Macy, Ind. Wheat temperer and heater	819,240	May 1	415	87	122	97
Mills, John M., Tiskilwa, Ill. Curtain-fixture	822,009	May 29	6047	1289	122	1579
Millispaugh, H. L. (See Sisco, Henry C., assignor.)						
Miner, Montie B., Sampson, Oreg. Friction-set	823,802	June 19	3155	667	122	2522
Minerd, Charles A., assignor of one-half to W. Miller, Uniontown, Pa. Railway-tie	822,217	May 29	6447	1369	122	1671
Minerd, Robert W., Pittsburg, Kans. Miner's tool	819,154	May 1	229	49	122	57
Minnich, Mary M. (See Minnich, Simon B., assignor.)						
Minnich, Simon B., assignor to M. M. Minnich, Landisville, Pa. Tubular telescoping jack or press	820,983	May 22	4029	856	122	1076
Miracle Pressed Stone Company. (See Balzer, Andrew M., assignor.)						
Miracle Pressed Stone Company. (See Burton, Charles S., assignor.)						
Mitchell, Chas. D. (See Cook, Emery L., assignor.)						
Mitchell, Curran E., Fort Payne, Ala. Washing-machine	823,887	June 19	3312	705	122	2558
Mitchell, George H., North Yarmouth, Me. Vehicle-wheel	821,519	May 22	5088	1084	122	1309
Mitchell, George W., Lunenberg, Canada. Skirt, waist, and belt holder	822,148	May 29	6319	1344	122	1643
Mitchell, Gideon D. (See Oldham, Carrick P., assignor.)						
Mitchell, James D., Lakewood, Ohio. Truing device for valve-seats	821,367	May 22	4790	1018	122	1246
Mitchell, Thomas H., New York, N. Y. Combined scope and distance finder	822,751	June 5	1040	213	122	1957
Mitchell, Thomas J., Connellsville, Pa. Fluid-pressure cylinder	821,663	May 29	5374	1146	122	1427
Mitchell, William H., and J. A. Isaman, Aurora, Nebr. Gate	819,300	May 1	536	114	122	124

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Mitten, Philip J., assignor of one-half to E. E. Warner, Milwaukee, Wis. Removable car for railways, &c.	824,188	June 26	3870	826–7	122	2736
Mixson, Martha E., Burnsville, Ala. Animal-trap	823,736	June 19	3027	640	122	2493
Mock, George A., and J. Mendenhall, Granada, Colo. Gate	824,500	June 26	4501	954–5	122	2869
Modern Improvements Mfg. Co. (See Wilks and Klaiber, assignors.)						
Moeller, John. (See Moeller, Samuel and J.)						
Moeller, Samuel, Sebewaing, and J. Moeller, Bay Port, Mich. Wheel-support for plows	821,520	May 22	5089	1084	122	1309
Moffat, Walter A., Denver, Colo. Feed-water heater	822,972	June 12	1469	306	122	2095
Moffett Bearing Company. (See Perkins, Julius A., assignor.)						
Mohrdieck, Peter, assignor to Standard Gas Engine Company, San Francisco, Cal. Governor for engines	824,564	June 26	4633	965	122	2897
Moir, Ernest W., London, England, assignor to S. Pearson and Son, Inc., Long Island City, N. Y. Calking apparatus for tunnels	824,668	June 26	4832	1031	122	2941
Moline Plow Company. (See Lindgren, Alexus C., assignor.)						
Moline Plow Company. (See Lindgren, August, assignor.)						
Molloy, Edmond, Philadelphia, Pa. Construction of walls, floors, &c	821,368	May 22	4792	1018	122	1246
Molloy, Edmond, Philadelphia, Pa. Tubular-metal structure	824,501	June 26	4502	955	122	2870
Molloy, Edmond, Philadelphia, Pa. Frame structure	824,502	June 26	4504	955–6	122	2870
Moltrup, Stephen, Beaver Falls, Pa. Metallic post	821,725	May 29	5511	1174	122	1457
Moltrup, Stephen, and W. L. Horner, Beaver Falls, Pa. Printer's chase	821,726	May 29	5512	1175	122	1458
Momentum Regulator. (See McCathie and Cain, assignors.)						
Monaghan, John R., North Temiscamingue, Canada. Combined quilting-frame and curtain-stretcher	820,513	May 15	3035	653	122	797
Monahan, Joseph W. (See Monahan, Thomas H. and J. W.)						
Monahan, Thomas H. and J. W., Providence, R. I. Skid	822,621	June 5	790	161	122	1902
Monarch Typewriter Company. (See Hool, Morris W., assignor.)						
Monarch Typewriter Company. (See Seib, George A., assignor.)						
Monell, Ira F., Boulder, Colo. Ore-allurer	820,234	May 8	2449	530–1	122	608
Moncrief, George D., Memphis, Tenn. Window-screen	820,233	May 8	2448	530	122	608
Moneuse, Elie J., New York, N.Y. Jacket or hood for use in connection with the exhaust-heads of hot-water urns of coffee apparatus	824,669	June 26	4834	1032	122	2941
Monroe, Charles D., assignor to American Farm Products Company, Elgin, Ill. Apparatus for melting and purifying butter and fats	823,803	June 19	3157	668	122	2523
Monroe Novelty Company. (See Kreag, George B., assignor.)						
Monroe, Orville V., assignor to General Patent Promoting Company, Portland, Oreg. Gas-generating machine	819,074	May 1	79	19	122	21
Monroe, Simon E., assignor of two-thirds to B. F. Jackson, Boston, and J. H. McDonough, Chelsea, Mass. Hair-straightener	819,444	May 1	825	178	122	185
Monserud, Hans P., Waubay, S. D. Trace-fastener	824,372	June 26	4236	903	122	2812
Monson, August A., Grey Eagle, Minn. Automatic telephone system	822,973	June 12	1471	306–7	122	2096
Montague Compressed Air Company of Missouri. (See Obear, Bryan, assignor.)						
Monteagle, Robert C., New York, N. Y. Grate-bar	820,060	May 8	2118	462	122	535
Montgomery, John, Toronto, Canada. Cylinder knob-lock	823,348	June 12	2269	473–4	122	2272
Montross, Levi H., Camden, N. J. Burial-casket	819,301	May 1	537	114	122	124
Monville, Joseph, and M. Roberts, Hubbell, Mich. Steam-boiler furnace	822,537	June 5	598	120	122	1859
Moody, Arthur E. (See Moody, Percival D. and A. E.)						
Moody, Percival D. and A. E., New York, N. Y.; said Percival D. assignor to said A. E. Moody. Butter-tray machine	820,725	May 15	3426	733–4	122	882
Moody, Walter S., Schenectady, N. Y., assignor to General Electric Company. Operating a multiphase transformer having the windings for one phase inoperative	821,521	May 22	5090	1084	122	1309
Moody, Walter S., Schenectady, N. Y., assignor to General Electric Company. Transformer	822,293	June 5	138	27	122	1759
Moon, George R., Cleveland, Ohio. Oven	823,288	June 12	2156	450	122	2247
Moon, Sampson W., assignor to Horto Electric Company, Chicago, Ill. Electric massage and vibrator machine	821,180	May 22	4403	937	122	1158
Mooney Development Co. (See Cox, William N., assignor.)						
Moore. Aman, Portland, Colo. Apparatus for the combustion of pulverulent fuel	820,235	May 8	2452	531	122	608
Moore, Aman, Portland, Colo. Utilization of pulverulent fuel	820,236	May 8	2455	532	122	609
Moore, Daniel M., Newark, N.J., assignor to Moore Electrical Company, New York, N. Y. Vacuum-tube regulator	820,364	May 8	2706	590–1	122	666
Moore, Daniel M., Newark, N.J., assignor to Moore Electrical Company, New York, N. Y. Vacuum-tube regulator	820,365	May 8	2711	591	122	667
Moore Electrical Company. (See Moore, Daniel M., assignor.)						
Moore Francis B., Metamora, Ill. Ground-roller	822,752	June 5	1041	213	122	1957
Moore, George A., assignor to Card Printer Company, New York, N. Y. Coin-operated printing-machine	820,514	May 15	3037	653–4	122	798
Moore, George C., Revere, Mass. Woven fabric	820,515	May 15	3040	654	122	799
Moore, George D., Worcester, Mass., assignor to Multiple Woven Hose & Rubber Co., New York, N. Y. Textile belting and preparing and treating the same	824,189	June 26	3872	827	122	2736
Moore, Henry C., Altanta, Ga. Feed-water heater	820,665	May 15	3310	709–10	122	856
Moore, James F., New York, N. Y. Bottle	819,155	May 1	230	49	122	57
Moore, James L., assignor to Kerr Turbine Company, Wellsville, N. Y. Steam-turbine	821,051	May 22	4155	884	122	1103
Moore, John L., New York, N. Y. Electric-railway system	823,067	June 12	1674	346–7	122	2141
Moore, Joseph C. (See Elermann, Sophus A., assignor.)						
Moore, Louis S., Selma, Ala. Ash-pan for locomotives	819,364	May 1	673	142	122	154
Moore, Newton W., Windber, Pa. Ticket-case	819,574	May 1	1056	232	122	237
Moore, Thomas L., San Antonio, Tex. Railway signaling-lantern	823,615	June 19	2900	593	122	2444
Moore, William A., Canton, Mich. Bedstead	819,241	May 1	417	87–8	122	98
Moore, William J., Washington, D. C. Safety-razor	819,780	May 8	1480	316	122	391
Moore, William W., Lansing, Mich. Railway-gate	822,065	May 29	6150	1312	122	1604
Moorhead, Albert E., Oakland, Cal. Pneumatic cleansing apparatus	820,007	May 8	2002	439	122	508
Moos, Rainhold, Placerville, Cal. Shoe	822,381	June 5	299	62	122	1791
Moran, John, Chicago, Ill. Corn-turner	821,369	May 22	4793	1019	122	1246
Moran, Thomas J. (See Peetz, Gustav, assignor.)						
Morang Chemical Company. (See Morang, William F., assignor.)						
Morang, William F., assignor to Morang Chemical Company, Manchester, N. H. Composition of matter for softening and bleaching sole-leather	820,121	May 8	2244	.....	122	563
Morck, Emanuel, Frankfort-on-the-Main, Germany. Alternating-current meter on Ferraris principle	819,242	May 1	418	88	122	98
Morehead, James T. (See Roberts, Isaiah L., assignor.)						
Morehouse, David, St. Elmo, Ill. Lubricator for engine-valves	823,349	June 12	2271	474	122	2272
Morell, David, Cassel, Germany. Packing for rotary engines	823,428	June 12	2407	507	122	2300
Morford, Isaac N. Waynesville, Ill. Wire-fence machine	821,112	May 22	4277	910	122	1129
Morgan, Carlos, Castleton, N. Y. Pianissimo device	823,616	June 19	2801	593	122	2444
Morgan, Charles H., Worcester, Mass. Gas-producer	819,075	May 1	83	19	122	22

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Morgan Engineering Company. (See Taylor, Clarence L., assignor.)						
Morgan, Gwendolyn C. (See Morgan, Thomas S., assignor.)						
Morgan, James, New Bedford, Mass. Elevator-catch	822,538	June 5	600	121	122	1859
Morgan, Stephen L., Rutherford, N. J. Printing-machine	824,190	June 26	3874	827–8	122	2737
Morgan, Stephen L., Rutherford, N. J. Inking mechanism for printing-presses	824,191	June 26	3880	828	122	2738
Morgan, Thomas S., assignor to G. C. Morgan, Chicago, Ill. Steam-heating system	820,809	May 15	3605	771	122	923
Morgan, Thomas W., assignor to W. W. Marsh, Waterloo, Iowa. Driving mechanism for centrifugal liquid-separators	822,974	June 12	1476	307	122	2097
Morkert, Samuel, Querida, Colo. Combination-tool	822,066	May 29	6158	1313	122	1604
Morley, Edgar L. (See Hatzel and Morley.)						
Morrice, George, and C. G. Grim, Sonora, Cal. Power transmission	820,122	May 8	2244	488	122	563
Morrill, Hollis L., Monticello, Me. Ventilator	823,350	June 12	2272	474	122	2272
Morrill, Leon G., Norwood, Mass. Appliance for putting tires on the rims of vehicles	819,156	May 1	231	49	122	57
Morris, Arthur. (See Baker, John W., assignor.)						
Morris, Charles A., Bloomfield, N. J., assignor to Hayward Company, New York, N. Y. Hoisting and transferring apparatus	819,445	May 1	826	178	122	185
Morris, Edgar T., Elburn, Ill. Gate	820,516	May 15	3042	654	122	799
Morris, Emerson T., assignor of one-half to G. H. Morris, Derwent, Ohio. Stone-quarrying machine	823,351	June 12	2273	474–5	122	2272
Morris, George H. (See Morris, Emerson T., assignor.)						
Morris, Henry G., Philadelphia, Pa. Brick molding and pressing machine	819,781	May 8	1481	317	122	391
Morris, James, assignor to Streator Metal Stamping Company, Streator, Ill. Top-buggy	821,727	May 29	5513	1175	122	1458
Morris, James A., Atlanta, Ga. Spirometer	821,664	May 29	5375	1146	122	1428
Morris, John O., New York, N. Y., assignor to Norfolk Novelty Corporation, Norfolk, Va. Burglar-alarm	824,259	June 26	4019	860	122	2767
Morris, Robert S. (See Lineback, John B., assignor.)						
Morris, Thomas F., Waterford, N. Y. Power mechanism for knitting-machines	824,565	June 26	4636	985	122	2898
Morris, Walter. (See Todd, Jesse J., assignor.)						
Morrison, Andrew, Pittsburg, Pa. Metallic railway-tie	821,951	May 29	5946	1266	122	1555
Morrison, Donald H., *et al.* (See Woods, Thomas S., assignor.)						
Morrison, Florence A. (See Webster, John A., assignor.)						
Morrison, James M., Sioux City, Iowa. Explosive-engine	821,370	May 22	4796	1019	122	1247
Morrison John, Jr., Troy, N. Y. Pneumatic brush-filling machine	824,503	June 26	4507	956	122	2871
Morrison, John C., New York, N. Y. Button-fastener	822,539	June 5	600	121	122	1859
Morrison, John C., New York, N. Y. Hat-fastener	822,540	June 5	602	121	122	1859
Morrison, Lewis E., Newark, N. J. Sheet-manipulating mechanism for printing-presses	819,699	May 1	1307	284	122	294
Morrow, Alexander P., Elmira, N. Y. Back-pedaling brake	821,522	May 22	5092	1085	122	1310
Morse Chain Company. (See Morse, Frank L., assignor.)						
Morse, Frank L., assignor to Morse Chain Company, Trumansburg, N. Y. Detachable teeth for gear-wheels	824,132	June 26	3759	803	122	2711
Morse, Frank W., and F. B. Hubbard, Warren, Ohio. Hot-air engine	822,463	June 5	450	91	122	1823
Morse, John J., assignor to Michigan Wire Fence Company, Adrian, Mich. Tie for wire fencing	823,224	June 12	2035	423	122	2222
Morse, Rodolph F., Providence, R. I. Dispensing-can	822,622	June 5	791	161	122	1902
Morse, Sumner L., Athol, Mass. Cradle	824,133	June 26	3761	803	122	2712
Mortensen, Peter A., Sanford, Colo. Whistle	819,076	May 1	85	20	122	23
Mosby, Alfred D., Philadelphia, Pa., assignor to Dodge Coal Storage Company, Naugatuck, Conn. Hoisting-bucket	821,523	May 22	5095	1085–6	122	1310
Moser, Frank W., *et al.* (See Robinson, Frank T., assignor.)						
Moser, Fred J., Kane, Pa. Gas-well apparatus	820,237	May 8	2457	532	122	609
Moser, Joseph J., West Covington, Ky. Can-closure	823,429	June 12	2409	507	122	2300
Moser, Joseph J., West Covington, Ky. Can-closure	823,430	June 12	2411	507	122	2300
Moses, Horace A. (See Crocker, Eben C., assignor.)						
Mosher, George W., Newport, Ky. Mail-pouch-exchanging device	823,617	June 19	2803	594	122	2445
Mosher, Joseph, Grossdale, Ill. Harness-saddle	819,446	May 1	829	179	122	186
Mosler, Moses, New York, N. Y., assignor to Mosler Safe Company, Hamilton, Ohio. Fireproof safe	824,373	June 26	4237	903	122	2812
Mosler Safe Company. (See Mosler, Moses, assignor.)						
Mosley, James W., Bridgeport, Conn. Clamp for flexible tubes	823,068	June 12	1676	347	122	2141
Moss, Augustus L., Sandusky, Ohio. Explosion-turbine	820,238	May 8	2463	533	122	611
Moss, Augustus L., Sandusky, Ohio. Valve	820,239	May 8	2466	534	122	612
Moss, James F., Palmyra, Va. Shipping-crate	824,566	June 26	4638	986	122	2898
Moss, John L., Abbotsford, Victoria, Australia. Self-acting window-lock	824,567	June 26	4639	986	122	2899
Mosteller, Dosier H., assignor of one-half to R. N. and F. N. Baylies, Chicago, Ill. Ice-cream spoon	820,061	May 8	2119	462	122	536
Mothes, Georg, assignor to F. Krupp Aktiengesellschaft, Essen-on-the-Ruhr, Germany. Measuring device	819,243	May 1	420	88	122	98
Mott, Elias. (See Willson, John W., assignor.)						
Mottlau, August J., New York, N. Y., assignor to Borden's Condensed Milk Co. Dispensing device for receptacles	820,062	May 8	2120	462	122	536
Mount, Austin, assignor of one-fourth to C. Johnson, Erie, Pa. Device for holding target-stickers	821,113	May 22	4278	910	122	1130
Mount, Austin, assignor of one-fourth to C. Johnson, Erie, Pa. Target-sticker	824,307	June 26	4098	876	122	2784
Mowbray, Frank H., Glenburnie, W. Black, Wardsworth Common, and R. Warriner, Catford, England. Multicolor-printing press	819,157	May 1	232	50	122	58
Mowen, Daniel H., Myersville, Md. Wave-motor	822,067	May 29	6159	1313	122	1605
Mowrer, Martin L., Dayton, Ohio. Machine for hulling, degerminating, and hominying corn	823,186	June 12	1934	398–9	122	2199
Mowrey, Frank. (See Stewart and Mowrey.)						
Moxham, Arthur J., Wilmington, Del. Machine for crimping or bending the ends of cylinders formed of plastic or flexible material	822,068	May 29	6161	1313–14	122	1605
Moyer, Harvey A. (See Latta, Emmit G., assignor.)						
Moyer, Harvey A., Syracuse, N. Y. Type-writing machine	820,935	May 15	3888	829–30	122	984
Moyer, Harvey A., assignor of one-half to E. G. Latta, Syracuse, N. Y. Securing means for the hangers of type-writing machines	819,366	May 1	679	142–3	122	155
Moyer, Harvey A., and E. G. Latta, Syracuse, N. Y. Type-writing machine	819,365	May 1	675	142	122	154
Moyer, Harvey A., and E. G. Latta, Syracuse, N. Y. Type-writing machine	819,782	May 8	1483	318	122	392
Moylan, Lillian F., Detroit, Mich. Corset	819,447	May 1	831	179	122	186
Mudge, Henry H. (See Mudge, Marguerite D. and H. H.)						
Mudge, Marguerite D. and H. H., Bristol, R. I. Removable calk for horseshoes	822,541	June 5	604	122, 123	122	1860
Mueller, Bernhard A., East St. Louis, Ill. Mold for concrete-wall construction	824,192	June 26	3883	828–9	122	2739
Mueller, Bernhard A., East St. Louis, Ill. Core for concrete-wall constructions	824,193	June 26	3886	829	122	2739
Mueller Co., C. F. (See Mueller, Samuel, assignor.)						
Mueller, Gustav, Cleveland, Ohio. Box-lid holder	822,975	June 12	1477	307	122	2097
Mueller, Henry, Kilbourn, Wis. Mail-box and transmitter	822,204	June 5	140	27–8	122	1759

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Mueller, John, Elmhurst, Ill. Seesaw and roundabout	823,618	June 19	2805	594	122	2445
Mueller, Rudolph. (See Weny, Charles, assignor.)						
Mueller, Samuel, assignor to C. F. Mueller Co., Jersey City, N. J. Macaroni-sawing machine	822,218	May 29	6448	1369–70	122	1671
Mueller, William J., Salamanca, N. Y. Bottle-closure	824,504	June 26	4509	956	122	2871
Muffly, Sidney T., Philadelphia, Pa., assignor to Philadelphia Cyanide Process Company, Wilmington, Del., and Philadelphia, Pa. Extracting precious metals from their ores	820,810	May 15	3606	771	122	923
Muffly, Sidney T., Philadelphia, Pa., assignor to Philadelphia Cyanide Process Company, Wilmington, Del., and Philadelphia, Pa. Apparatus for extracting precious metals from their ores	820,811	May 15	3610	771	122	924
Muffly, Sidney T., Philadelphia, Pa., assignor to Philadelphia Cyanide Process Company, Wilmington, Del., and Philadelphia, Pa. Lixiviator	820,812	May 15	3614	772	122	925
Muffly, Sidney T., Philadelphia, Pa., assignor to Philadelphia Cyanide Process Company, Wilmington, Del., and Philadelphia, Pa. Condensing or dissolving gases and vapors	820,813	May 15	3616	772	122	925
Muffly, Sidney T., Philadelphia, Pa., assignor to Philadelphia Cyanide Process Company, Wilmington, Del., and Philadelphia, Pa. Apparatus for condensing gases	820,884	May 15	3786	807–8	122	962
Muir, John, Carluke, Scotland. Window-sash frame	820,885	May 15	3788	808	122	962
Muirheid, Silas B., St. Louis, Mo. Cotton-chopper	821,815	May 29	5691	1213	122	1500
Mullarkey, John F., West Toledo, assignor of one-half to H. Herzog, Toledo, Ohio. Non-refillable bottle	822,542	June 5	606	122	122	1860
Mullarkey, Michael J., Sharpsville, Ind. Fence-post	819,783	May 8	1491	319	122	393
Müller, Andreas C., Mögeltondern, Germany. Molding-machine for building-bricks	820,580	May 15	3177	683	122	829
Müller, Arthur, Berlin, Germany. Frame building	822,295	June 5	141	28–9	122	1760
Muller, Edward A., Madisonville, assignor to King Machine Tool Company, Cincinnati, Ohio. Belt-shifter	821,181	May 22	4405	937–8	122	1159
Müller, Frank X., assignor to Buffalo Forge Company, Buffalo, N. Y. Fan-blower	820,431	May 15	2853	621	122	755
Müller, Franz. (See Glanzberg, Ernst H., assignor.)						
Muller, George A., San Francisco, Cal. Baking apparatus	819,575	May 1	1057	232	122	238
Müller, Wilhelm, Peine, Germany. Coupling-sleeve holder for the rollers of rolling-mills	819,909	May 8	1743	375	122	454
Mullins, William H., and W. C. Hare, Salem, Ohio. Metallic boat	819,784	May 8	1492	319	122	393
Mulock, William R., Winnipeg, Canada. Railway freight-car	820,240	May 8	2468	534–5	122	612
Multi-Vending Company. (See Packard, John E., assignor.)						
Multiple Woven Hose & Rubber Co. (See Alvord, Clinton, assignor.)						
Multiple Woven Hose & Rubber Co. (See Moore, George D., assignor.)						
Multiple Woven Hose & Rubber Company. (See Shepard, Charles C., assignor.)						
Mumm, Charles C., E. C. Quimby, and C. Anderson, Minneapolis, Minn.; said Quimby and Anderson assignors to said Mumm. Case for duplicate sale-slips	822,899	June 5	1326	274	122	2015
Münch, Eduard. (See Julius and Münch.)						
Munch, Samuel, Fremont, Ohio. Pump-piston	819,077	May 1	86	20	122	23
Mundigler, Georg L., Milwaukee, Wis. Turbine	822,069	May 29	6164	1314–15	122	1606
Munro, William L. (See Franzen, Nicklas, assignor.)						
Munroe, Thomas W. (See Hurlbut and Munroe.)						
Munsell, Albert H., Brookline, Mass. Color chart or scale	824,374	June 26	4238	903–4	122	2812
Munsing, George D., New York, N. Y. Wheel-mount for vehicles	819,302	May 1	542	115	122	124
Munsing, George D., New York, N. Y. Wheel-mount for vehicles	819,303	May 1	545	115	122	125
Munson, Homer W., Williamsburg, Mass. Jointed gun-stock	824,505	June 26	4510	957	122	2871
Murphy, Colonel A., Chatfield, Minn. Trap	822,543	June 5	607	122	122	1860
Murphy, Edwin J., Rugby, England, assignor to General Electric Company. Electric-arc lamp	823,958	June 19	3449	737	122	2588
Murphy, Harold T., Springfield, Mass. Collar-button	823,135	June 12	1828	377	122	2174
Murphy, James, Kenosha, Wis. Bed-rail joint	822,682	June 5	905	185	122	1929
Murphy, James J., *et al.* (See Dunnell, Frederick W., assignor.)						
Murphy, James V. (See Mead and Fullerton, assignors.)						
Murphy, Jeremiah, Chicago, Ill. Locking-socket for electric lights	819,702	May 1	1312	285	122	295
Murphy, John. (See Thompson, Joseph H., assignor.)						
Murphy, John P., Portland, and N. W. Rancourt, Lewiston, Me. Lewis-bolt	821 952	May 29	5948	1267	122	1555
Murphy, Joseph F., Ennis, Tex. Steam-engine	822,544	June 5	609	122–3	122	1861
Murphy, Ottie T., Brooklyn, N. Y. Apparatus for heating liquids in casks	822,382	June 5	300	62	122	1791
Murray, Mont, *et al.* (See Knox, Luther L., assignor.)						
Murray, William E., Geyserville, Cal. Harness breeching-brace	824,568	June 26	4641	986	122	2899
Muschenheim, Frederick, New York, N. Y. Signal apparatus	824,430	June 26	4366	929	122	2837
Mushatt, William A., Brainerd, Minn. Stump-puller	822,861	June 5	1248	256–7	122	2000
Muslar, Nelson, Worcester, assignor, by mesne assignments, to Standard Labeling Machine Company, Boston, Mass. Bottle-labeling machine	824,569	June 26	4642	987–8	122	2899
Mutter, John W. (See Buskist and Mutter.)						
Mutual Gas and Engineering Company. (See Foveaux, Frank J., assignor.)						
Myers, Daniel F., New Hartford, N. Y. Mop-wringing machine	820,309	May 8	2610	569	122	644
Myers, Edward J., Chicago, Ill. Book-holder	819,910	May 8	1744	375	122	454
Myers, H. M. (See Johnson, Joseph S., assignor.)						
Myers, John F., Sodus, N. Y. Clinical-thermometer case	824,038	June 19	3604	768	122	2619
Myers Machine Works. (See Myers, William H., assignor.)						
Myers, Sirwell S., Swissvale, Pa. Hanger for smoke-bells	823,959	June 19	3451	737	122	2588
Myers, Stephen O., Mount Vernon, N. Y. Measuring-machine	822,683	June 5	906	185–6	122	1929
Myers, William H., assignor, by mesne assignments, to Myers Machine Works, Brooklyn, N. Y. Piston-packing	819,448	May 1	831	179	122	187
Mygatt, Otis A., New York, N. Y. Prismatic reflector	821,306	May 22	4654	991	122	1213
Mygatt, Otis A., New York, N. Y. Decorative shade-reflector for artificial lights	821,307	May 22	4655	992	122	1214
Mygatt, Otis A., New York, N. Y. Decorative glass shade	821,308	May 22	4658	992–3	122	1214
Mygatt, Otis A., New York, N. Y. Decorated shade-reflector	821,309	May 22	4661	993	122	1214
Mygatt, Otis A., New York, N. Y. Compound reflector for artificial lights	821,310	May 22	4662	993	122	1214
Mygatt, Otis A., New York, N. Y. Prismatic-glass reflector	821,311	May 22	4664	993	122	1214
Mygatt, Otis A., New York, N. Y. Composite electrical lamp and prismatic-glass reflector	823,619	June 19	2807	595	122	2446
Mygatt, Otis A., New York, N. Y. Illuminator	823,620	June 19	2808	595	122	2446
Mygatt, Otis A., New York, N. Y. Illuminator	823,621	June 19	2811	595–6	122	2446
Mygatt, Otis A., New York, N. Y. Composite shade for artificial lights	823,622	June 19	2814	596	122	2446
Myrick, Thomas W., Woonsocket, R. I. Pipe or tube cutter	821,816	May 29	5693	1213	122	1500
Myser, James F., and A. Ziesenis, Rifle, Colo. Eaves-trough	824,570	June 26	4647	988	122	2900
N. Stafford Company. (See Stafford, Nelson, assignor.)						
Nadeau, Stephen. (See Brais and Nadeau.)						
Nagel, William G., Toledo, Ohio, assignor to United States Coin Register Company. Means for keeping records of coin-register tapes	824,196	June 26	3889	830	122	2740
Nasser, James, New York, N. Y., assignor to Surety Alarm Company. Burglar-alarm. (Reissue)	12,500	June 26	4908	1043	122	2956

Alphabetical list of patentees for May and June—Continued.

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Nash, Carl E., Pasadena, Cal. Extension-table	821,955	May 29	5952	1268	122	1556
Nathan Manufacturing Company. (See Kaczander, Leopold, assignor.)						
National Adding Machine Company. (See Dennis, Adolphus S., assignor.)						
National Blank Book Company. (See Egge, Frederick, assignor.)						
National Bung Manufacturing Company. (See Pool, John G., assignor.)						
National Car Coupler Company. (See Hinson, James A., assignor.)						
National Cash Register Company. (See Cleal, Joseph P., assignor.)						
National Cash Register Company. (See Cooney, Luke, Jr., assignor.)						
National Cash Register Company. (See Doty, Walter G., assignor.)						
National Dump Car Company. (See Hart, Eli S., assignor.)						
National Dump Car Company. (See Otis, Spencer, assignor.)						
National Enameling & Stamping Company. (See Wagandt, Charles L., assignor.)						
National Engine Company. (See Magney and Masterman, assignors.)						
National Light, Heat & Power Company. (See Flager and McGahan, assignors.)						
National Light, Heat & Power Company. (See McGahan and Flager, assignors.)						
National Malleable Castings Company. (See Coffin, Walter E., assignor.)						
National Moving Window Display Company. (See Steinhauser, George R., assignor.)						
National Patent Holding Company. (See Otis, Spencer, assignor.)						
National Patent Lath and Manufacturing Company. (See O'Brien, John D., assignor.)						
National Soap Stone Co. (See Currier, Walker F., assignor.)						
National Sweeper Co. (See Ru Ton, Hiram W., assignor.)						
National Tool Company. (See Noll, Edward A., assignor.)						
National Tube Company. (See Baehr, George, assignor.)						
National Tube Company. (See Hock and Bernheim, assignors.)						
Navarro, Jose F. de, New York, N. Y. Locomotive-boiler	823,188	June 12	1938	400	122	2200
Neal, Elmer E., assignor to Smith & Wesson, Springfield, Mass. Firearm	824,197	June 26	3891	830	122	2740
Neal, James H., Boston, assignor of one-half to H. L. Wilson, Brookline, Mass. Computing attachment for type-writing machines	821,428	May 22	4924	1046–7	122	1274
Neal, Rufus, Indianapolis, Ind. Sash-lock	821,956	May 29	5954	1268	122	1557
Neale, Charles C., Minneapolis, Minn. Sealing device for weighing-scales	819,788	May 8	1516	322	122	402
Nealon Company. (See Miles, Harriet, assignor.)						
Near, William W., *et al.* (See MacDougall, John, assignor.)						
Neavling, Harry E. (See Baker and Neavling.)						
Needham, Frances M., Anderson, Ind. Flue-stopper	822,756	June 5	1049	215	122	1959
Neemes Bros. (See Neemes, Spencer, assignor.)						
Neemes, Spencer, assignor to Neemes Bros., Troy, N. Y. Grate	822,296	June 5	144	29–30	122	1760
Neff, Ira J., assignor of two-thirds to E. H. Lee and E. L. Lloyd, Elkhart, Ind. Burglar-alarm	819,914	May 8	1748	376	122	455
Neider, Fred A., Augusta, Ky. Carriage-curtain knob	819,158	May 1	237	50	122	59
Neihysel, Jacob, assignor of one-half to M. Levy, New Orleans, La. Mailing-envelop	821,666	May 29	5378	1147	122	1428
Neil, Moses H., *et al.* (See Schlared, Charles, assignor.)						
Neilson, James R., Union City, Tenn. Combined ratchet wrench and drill	822,687	June 5	927	188	122	1934
Nejedlo, František J., Vinohrady-Prague, assignor to J. Skall, Prague, Austria-Hungary. Apparatus for lowering coffins	820,593	May 15	3180	684	122	830
Nelson, Andrew W., assignor to Columbian Enameling & Stamping Company, Terre Haute, Ind. Kettle-cover fastening	823,071	June 12	1681	348	122	2142
Nelson, Anton R. (See McKinsey and Nelson.)						
Nelson, Charles, St. Louis, Mo. Ice-cream cabinet	819,789	May 8	1518	322	122	402
Nelson, Charles R., Chicago, Ill., assignor to Sieber & Trussell Manufacturing Company. Loose-leaf binder	819,368	May 1	683	143	122	156
Nelson, John, Peru, Ill. Polishing sheet metal	819,369	May 1	685	144	122	156
Nelson, Nels, New Haven, Conn. Spout-cap for oil-cans	822,624	June 5	795	162	122	1902
Nelson, Peter W., New York, N. Y. Game or amusement device	819,915	May 8	1750	376	122	455
Neste, Knut T., Madison township, Winneshiek county, Iowa. Currycomb	819,790	May 8	1519	322	122	402
Neste, Otto K., Madison township, Winneshiek county, Iowa. Post-hole digger	819,791	May 8	1520	323	122	403
Nettleton, Joseph N., Rockfall, Conn. Nippers	821,183	May 22	4406	938	122	1160
Neumann, Albrecht B., Joliet, Ill., assignor of one-half to D. Baker, Philadelphia, Pa. Distributer for blast-furnaces	820,065	May 8	2135	465	122	539
Neumann, Richard G., assignor to Kakao-Campagnie Theodor Reichardt Gesellschaft mit beschränkter Haftung, Wandsbek, near Hamburg, Germany. Concentrator for pulverulent materials	821,819	May 29	5696	1214	122	1501
Neville, Edmund, Dixon, Ill. Hay-rack	820,435	May 15	2880	623	122	757
New Haven Clock Co. (See Porter, Wilson E., assignor.)						
New Home Sewing Machine Company. (See Bowers, Edward L., assignor.)						
New Jersey Patent Company. (See Aiken, Edward L., assignor.)						
New Jersey Patent Company. (See Weber, Peter, assignor.)						
New York Air Brake Company. (See Bickel, Henry F., assignor.)						
New York Air Brake Company. (See Kelly, John P., assignor.)						
New York Lime Company. (See Shortt, Edward G., assignor.)						
New York Telephone Company. (See Turner, Maurice C., assignor.)						
Newbold, Roger M., Louisville, Ky., assignor to Adams & Westlake Company. Storage-battery jar	819,159	May 1	237	51	122	59
Newbold, Roger M., Louisville, Ky., assignor to Adams & Westlake Company. Pole-changer	819,160	May 1	238	51	122	59
Newcomb, Charles N., West Palmbeach, Fla. Suction-dredge	822,963	June 5	1250	257–8	122	2000
Newcomb, David L., San Diego, Cal. Ballot member for vote-registering machines	819,306	May 1	548	116	122	126
Newcomb, John G., Peoria, Ill. Collapsible heating device	819,916	May 8	1750	377	122	455
Newell, Harry D., and A. T. Bryant, Lawrence, Mass. Adjustable brush-carrier for web-coating machines	820,666	May 15	3311	710	122	857
Newitt, Frank T. (See Brooks, Newitt, and Smith.)						
Newlin, Nathan I., Indianapolis, and S. L. Newlin, Rockville, Ind. Folding umbrella	820,245	May 8	2494	538–9	122	619
Newlin, Stranda L. (See Newlin, Nathan I. and S. L.)						
Newman, Albert T., Greeley, Kans. Switchboard	821,251	May 22	4535	965	122	1188
Newman, Benjamin, Gateshead, England. Jim-crow, &c., for bending rails	819,161	May 1	240	51–2	122	60
Newman, Frederick J., assignor to Woods Motor Vehicle Company, Chicago, Ill. Vehicle	819,244	May 1	422	88–9	122	99
Newman, Herman F., Indianapolis, Ind. Distributing-nozzle	822,546	June 5	614	123	122	1862
Newman, Orris H., Pekin, Ill. Selective ringing and locking device	821,820	May 29	5698	1214	122	1502
Newman, Oscar H., Oracle, Ariz. Ter. Musical instrument	823,625	June 19	2819	598	122	2448
Newman, Richard, Washington, D. C. Mud-guard	824,574	June 26	4652	989	122	2901
Newton, A. Edward, *et al.* (See Mayer, Walter S., assignor.)						
Newton, Charles C., assignor to Newton Machine Tool Works, Incorporated, Philadelphia, Pa. Slotting-machine	823,354	June 12	2278	476	122	2273
Newton, Edwin J., assignor to W. R. Everett, Chicago, Ill. Bearing	822,297	June 5	147	30	122	1761
Newton, Joel W., assignor of one-half to G. T. Taylor, Elberton, Ga. Harrow	820,727	May 15	3430	735	122	883

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Newton, John D. (See Hutchinson, Robert H., assignor.)						
Newton Machine Tool Works. (See Newton, Charles C., assignor.)						
Newton, Ralph E., Milwaukee, Wis. Bascule-bridge	824,135	June 26	3764	804	122	2712
Newton, Reuben W., *et al.* (See Einsele, George N., assignor.)						
Newton, William G., assignor to Peck Brothers and Company, New Haven, Conn. Combination spray and shower attachment for bath-tubs	819,582	May 1	1068	235	122	240
Nicewarner, Theodore G., Belington, W. Va., assignor of three-fourths to G. E. Cain, W. W. Teter, and Ware & Viquesney. Apparatus for thawing ice from ice-cans	821,957	May 29	5955	1268–9	122	1557
Nicholas, Charles H., London, England. Means for uniting a pair of bicycles to form a quadricycle	822,688	June 5	930	189	122	1934
Nicholls, Moses, assignor to J. D. Gray, W. C. Hugus, and W. Webster, Ottumwa, Iowa. Attachment for squares	821,115	May 22	4280	910–11	122	1130
Nicholls, William T., Wellsburg, W. Va. Glass-pot furnace and pot and making the same	820,124	May 8	2249	489	122	564
Nichols, Franklin H., Chetek, Wis. Plow	824,136	June 26	3766	804	122	2713
Nichols, George E. (See Crawford, James, assignor.)						
Nichols, Jacob J. (See Dela Mar, Joseph, assignor.)						
Nichols, Lewis A., *et al.* (See Smith, Frank L., assignor.)						
Nichols, Robert F., Oakland, Cal. Window frame and sash	820,817	May 15	3627	774	122	927
Nicholson, John L. (See Wade and Nicholson.)						
Nicholson, John S., Los Angeles, Cal. Core-making machine	824,433	June 26	4374	930	122	2839
Nickel, Franz F., East Orange, N. J., assignor to H. R. Worthington, New York, N. Y. Compensating direct-acting engine	823,694	June 19	2952	624–5	122	2478
Nickerson, Alvinza V. (See Nickerson, Sherman H. and A. V.)						
Nickerson, Francis G. (See Nickerson, James H., assignor.)						
Nickerson, James H., Nelson, assignor to F. G. Nickerson, Winnipeg, Canada. Gun-sight	821,821	May 29	5702	1215	122	1502
Nickerson, Sherman H. and A. V., Canton, N. Y. Axle	822,298	June 5	153	31	122	1762
Nicodemus, Henry B., Allegheny, Pa. Gas and steam engine	821,373	May 22	4800	1020	122	1248
Nicolson, George W., Mojave, Cal. Excavator	822,547	June 5	615	124	122	1862
Nidds, Edward, New York, assignor of one-half to M. H. Callan, Brooklyn, N. Y. Lathing system	820,246	May 8	2496	539	122	619
Niece, William E., Sandy Lake, Pa. Dish-washing apparatus	820,594	May 15	3182	685	122	830
Niehoff, Ernest, Brooklyn, N. Y. Projectile	820,818	May 15	3628	775	122	928
Niehoff, Ernest, Brooklyn, N. Y. Valve attachment for torpedoes	820,888	May 15	3796	810	122	963
Niehoff, Ernest, Brooklyn, N. Y. Submarine boat	821,595	May 22	5223	1114	122	1338
Nielson, Henry, assignor to Osborn Manufacturing Company, Cleveland, Ohio. Rotary brush	822,757	June 5	1050	215	122	1959
Niemeyer, William H., Baltimore, Md. Excelsior-cutting machine	823,432	June 12	2414	508–9	122	2301
Niles-Bement-Pond Company. (See Forsberg, Carl J., assignor.)						
Niles-Bement-Pond Company. (See Wood, Augustus, assignor.)						
Nilsson, Axel W., New York, N. Y. Interlocking tile for floor or wall coverings. (Reissue)	12,483	May 15	3918	835	122	993
Nineteen Hundred Washer Co. (See Sheak, Andrew G., assignor.)						
Nineteen Hundred Washer Co. (See Wearne, Richard L., assignor.)						
Nishimoto, Kenzaemon, San Francisco, Cal. Automatic door opener and closer	819,583	May 1	1070	235–6	122	240
Nishimoto, Kenzaemon, San Francisco, Cal. Trousers holder and presser	823,891	June 19	3318	707	122	2559
Niswonger, Daniel R. (See Niswonger, Elmer E. and D. R.)						
Niswonger, Elmer E. and D. R., Dayton, Ohio. Assorting-receptacle for laundries	823,433	June 12	2417	509	122	2302
Noacre, Paul, Grand Rapids, Mich. Gage	819,370	May 1	686	144	122	157
Noble, Edward J., Hartford, assignor of one-half to J. F. Robinson, Glastonbury, Conn. Toy	820,819	May 15	3632	775	122	928
Noble, Leonard E., assignor of one-half to B. Briggs, Oakfield, N. Y. Oar	819,792	May 8	1522	323	122	403
Noel, John A., Washington, D. C. Inking apparatus for printing-presses	819,371	May 1	686	144	122	157
Noel, Stella. (See O'Kane, Bartholomew, assignor.)						
Nohr, Julius J., Yankton, S. D. Mail-delivery apparatus	819,162	May 1	241	52	122	60
Nolan, Cornelius J., Toledo, Ohio. Machine for blowing hollow glass articles	822,220	May 29	6454	1370–1	122	1672
Nolan, William P., Milton, Otago, New Zealand. Ticket-dater	821,731	May 29	5522	1177	122	1460
Nolen, Hilry B., Lamar, Wash. Weed-cutter	820,820	May 15	3634	775–6	122	929
Noll, Edward A., assignor to National Tool Company, Cleveland, Ohio. Chuck	822,977	June 12	1479	308	122	2097
Nollesche Werke, Firm of. (See Walther, Heinrich, assignor.)						
Nolting, Emil L., Elgin, Ill. Railway signal apparatus	822,625	June 5	796	162	122	1903
Nolting, Emil L., Elgin, Ill. Railway signal apparatus	822,626	June 5	799	162	122	1903
Nootbaar, Ernst, Dresden, Germany. Device for holding expanded umbrellas	821,822	May 29	5703	1215	122	1502
Nordemsson, Carl O., Scane, Sweden, assignor of one-half to J. A. Laird, St. Louis, Mo. Machine for cleaning gas	820,247	May 8	2498	540	122	619
Nordquist, Andrew O., Minneapolis, Minn. Floor-scraper	821,525	May 22	5098	1086	122	1311
Norem, Bernhard, and W. Sandberg, Chicago, Ill. Game apparatus	820,310	May 8	2611	569	122	644
Norfolk Novelty Corporation. (See Morris, John O., assignor.)						
Norman, Bernt A., Logan, Utah. Cold-storage building	819,245	May 1	424	89	122	99
Norman, Charles C., Abilene, Kans. Binder cross-tongue and truck attachment	821,054	May 22	4161	885	122	1104
Norris, Albert F. and C. H., Boston, Mass. Lifter-rod holder and guide	822,071	May 29	6170	1315	122	1608
Norris, Clifton H. (See Norris, Albert F. and C. H.)						
Norris, Henry M., assignor to Pickford Drill & Tool Company, Cincinnati, Ohio. Variable-speed mechanism	820,984	May 22	4031	856–7	122	1076
North British Eyelet Company. (See Hodson, James, assignor.)						
North Brothers Manufacturing Company. (See Aichele, Christian, assignor.)						
North Brothers Manufacturing Company. (See Furbish, Zachry T., assignor.)						
North Electric Company. (See Downs, John P., assignor.)						
North, Thomas M., assignor to Linotype and Machinery Limited, London, England. Printing-machine	819,307	May 1	551	117	122	127
Northrop, Jonas, assignor to Draper Company, Hopedale, Mass. Self-threading loom-shuttle	823,626	June 19	2821	598	122	2448
Northrop, Jonas, assignor to Draper Company, Hopedale, Mass. Hopper-actuating mechanism for automatic looms	823,627	June 19	2823	598	122	2449
Northrup, Edwin F. (See Leeds and Northrup.)						
Norton, Daniel W., Vincennes, Ind. Window-sash weight	824,198	June 26	3892	831	122	2740
Norton, Edwin, New York, N. Y. Doubler for sheet metal	821,667	May 29	5379	1147–8	122	1428
Norton, Orin, Edgartown, Mass. Quahog-rake	820,595	May 15	3185	685	122	830
Norwood, Frederic, Gloucester, Mass. Quick-acting wrench	823,541	June 19	2668	562	122	2415
Norwood, George, Winthrop, assignor of one-third to J. S. Richardson, Boston, Mass. Spool-holding box	820,596	May 15	3186	685	122	831
Norwood, James P., Chicago, Ill. Railway-signal	821,252	May 22	4536	965–6	122	1188
Noyes, Charles H., Decatur, Nebr. Wrench	819,246	May 1	425	89	122	100
Noyes, Edward P. (See Reeve and Noyes.)						
Noyes, Henry F., Waynesboro, Pa. Drill-press	819,372	May 1	689	145	122	157

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Noyes, John G. (See Pugsley, William S., assignor.)						
Nunamaker, Joseph M., Canton, Ohio. Baby-jumper	821,116	May 22	4281	911	122	1131
Nungesser Electric Battery Co. (See Nungesser, Philip P., assignor.)						
Nungesser, Philip P., assignor to Nungesser Electric Battery Co., Cleveland, Ohio. Friction-arbor	822,467	June 5	457	92	122	1825
Nungesser, Philip P., assignor to Nungesser Electric Battery Co., Cleveland, Ohio. Carbon-calcining furnace	824,199	June 26	3893	831	122	2741
Nussbaum, Joseph W., Whitestone, N. Y. Combination-vehicle	821,668	May 29	5381	1148	122	1429
Nutting, Frederick J. (See Baum and Nutting.)						
O'Brien, John D., St. Louis, Mo., assignor to National Patent Lath and Manufacturing Company. Machine for weaving sheet-lathing	823,628	June 19	2830	599	122	2450
O'Brien, Thomas H., Fond du Lac, Wis. Ticket or tag	821,526	May 22	5099	1086	122	1311
O'Byrne, William, assignor of one-fourth to M. Reichert, Port Chester, N. Y. Screen	821,429	May 22	4930	1048	122	1275
O'Connell, Richard, Joliet, Ill. Horseshoe	822,468	June 5	458	93	122	1825
O'Donnell, Alfred J., St. Louis, Mo. Stud or button	822,011	May 29	6049	1289	122	1579
O'Dowd, Henry W., New York, N. Y. Gas-burner	824,308	June 26	4099	877	122	2784
O'Hara, Frank G. (See Marsh, Elon A., assignor.)						
O'Hearn, Richard, Monterey, Ky. Metal-working device	820,937	May 15	3896	830–1	122	986
O'Hearn, William J. (See Shaler, Justin B., assignor.)						
O'Kane, Bartholomew, assignor of one-half to S. Noel, Cincinnati, Ohio. Aerial vessel	820,938	May 15	3897	831	122	986
O'Keefe, William H., Lockport, N. Y. Roller-top desk and type-writer stand	824,434	June 26	4376	930–1	122	2839
O'Keeffe, Patrick H., Ramornie, South Grafton, New South Wales, Australia. Preserving meat	822,548	June 5	619	.....	122	1863
O'Leary, William J., and W. Coonan, assignors to W. J. O'Leary & Company, Montreal, Canada. Electric switch	823,073	June 12	1684	348	122	2142
O'Malley, Thomas, McKeesport, Pa. Truss	820,728	May 15	3432	735	122	883
O'Neal, James S., Valdosta, Ga. Folding stanchion for lumber-cars	819,585	May 1	1079	237	122	243
O'Neill, William, Dohile, Rathkeale, Ireland. Saddle attachment	819,247	May 1	426	89	122	100
O'Reilley, Philip, and F. G. Freese, Philadelphia, Pa. Extension-tool	821,527	May 22	5100	1087	122	1312
O'Reilly, Richard, St. Louis, Mo. Postal cabinet	823,630	June 19	2836	600	122	2453
Oakes, Arthur J., Chanute, Kans. Time-controlled valve-actuating mechanism	821,184	May 22	4409	938–9	122	1160
Oatway, George H., and C. E. May, London, England. Fire-alarm	823,542	June 19	2669	562	122	2415
Obear, Bryan, assignor to Montague Compressed Air Company of Missouri, St. Louis, Mo. Air-compressor	822,689	June 5	932	189–90	122	1925
Obiols, Gustave, Paris, France. Throwing or projecting apparatus	824,506	June 26	4511	957	122	2872
Oddie, Philip F., London, England. Multiple-stage-reaction turbine	822,149	May 29	6320	1344	122	1643
Oehrle, Emanuel, Omaha, Nebr. Square and level	820,311	May 8	2613	569	122	645
Ofeldt, Ernest G., Brooklyn, N. Y. Feed-water regulator	819,078	May 1	88	20	122	24
Office Supply Company. (See Watters, William J., assignor.)						
Ogden Cushion Horse Shoe Co. (See Hubbard, Hiram W., assignor.)						
Ogden, John C., Tonopah, Nev. Subsoil-plow	821,958	May 29	5956	1269	122	1557
Ogg, George F., *et al.* (See McGuire, John W., assignor.)						
Ohio Steel Wheelbarrow Company. (See Cooper, Frank J., assignor.)						
Ohmer Fare Register Company. (See Ohmer, John F., assignor.)						
Ohmer, John F., Dayton, Ohio, assignor to Ohmer Fare Register Company, Rochester, N. Y. Ticket punch or perforator	819,917	May 8	1752	377	122	455
Ohnesorge, Wilhelm, Wilmersdorf, near Berlin, Germany. Telephone system	824,376	June 26	4243	904	122	2813
Oil Well Supply Company. (See Tonkin, John J., assignor.)						
Okey, George B., assignor to Acme Burial Vault Company, Indianapolis, Ind. Cement burial-vault	821,185	May 22	4412	939–40	122	1161
Okrassa, Roberto F. E., Antigua, Guatemala. Washing and scouring machine	823,434	June 12	2419	509–10	122	2302
Oldham, Alfred V. (See Williamson and Oldham.)						
Oldham, Carrick P., assignor of one-third to G. D. Mitchell, Newton, Kans. Sewing-machine tucker	823,072	June 12	1683	348	122	2142
Olds David E., Newark, N. J. Metal tie and rail fastener	823,629	June 19	2835	599–600	122	2452
Oliver Chilled Plow Works. (See Oliver, James, assignor.)						
Oliver, James, assignor to Oliver Chilled Plow Works, South Bend, Ind. Mold	822,978	June 12	1481	308	122	2098
Oliver Typewriter Company. (See Horr, Stephen, assignor.)						
Oliver Typewriter Company. (See Ingersoll, Emmet M., assignor.)						
Oliver Typewriter Company. (See Shepard, Frank P., assignor.)						
Oliver, Walton F., assignor to E. L. Thompson, Baldwinsville, Mass. Child's chair	822,383	June 5	302	62	122	1791
Olivier, Maurice G., assignor to Société Française de la Viscose, Paris, France. Self-fixing protective covering for bottles, jars, or other vessels	823,355	June 12	2280	477	122	2274
Olmstead, Albert P., Watervliet, assignor to L. A. Michael, trustee, Troy, N. Y. Ice-cream dipper	819,373	May 1	691	145	122	157
Olmsted, Albert H., Rochester, N. Y. Spool or reel	821,117	May 22	4282	911	122	1131
Olney, Ralph E. (See Ayer, Hole, and Olney.)						
Olsby, Carl H., Valley City, N. D. Artificial fish-bait	821,732	May 29	5523	1178	122	1460
Olsen, Tinius, Philadelphia, Pa. Testing-machine	819,584	May 1	1076	236–7	122	242
Olson, Hans O., Two Harbors, Minn. Nozzle for locomotives	824,039	June 19	3606	768	122	2619
Onderdonk, John R., Baltimore, Md. Metal brake-beam	822,072	May 29	6172	1316	122	1608
Ong, Nathaniel M., York, Pa. Sounding-board bridge	824,040	June 19	3608	768	122	2619
Opalla, Arthur, Chicago, Ill. Loose-leaf binder	820,248	May 8	2499	540	122	620
Opitz, Joseph, New York, N. Y., assignor to Western Electric Company, Chicago, Ill. Terminal-connector	822,469	June 5	460	93	122	1825
Oppermann, Erich, assignor to Farbwerke, vorm. Meister, Lucius & Brüning, Höchst-on-the-Main, Germany. Treating organic substances in presence of vanadium compounds	823,435	June 12	2420	.....	122	2302
Optenberg, John H., Sheboygan, Wis. Gasket-removing tool	824,377	June 26	4248	905	122	2814
Orange, George J., Manchester, England. Receptacle or holder for compositions in stick form	824,137	June 26	3768	804	122	2713
Ordway, Albert H., South Framingham, assignor to Framingham Chair Company, Framingham, Mass. Base-rocker	821,055	May 22	4162	885	122	1105
Organ, George E., Tomah, Wis. Attachment for barbers' chairs	819,248	May 1	426	90	122	100
Orgeich, Joseph. (See Christen, Orgeich, and Born.)						
Original Musikwerke Paul Lochmann Gesellschaft mit beschränkter Haftung. (See Lochmann, Fritz and W., assignors.)						
Orr, William B., and W. J. McGee, Montgomery, Ala. Lifting-jack and car-wheel holder	821,823	May 29	5704	1215	122	1503
Orteig, Jean, Phœnix, Ariz. Ter. Horse-detacher	819,306	May 1	552	118	122	127
Orwig, Thomas G. (See Chesnutt, John L., assignor.)						
Osborn, David L., assignor of one-half to E. T. Brigham and E. F. Jones, Kansas City, Mo. Umbrella	824,378	June 26	4249	905	122	2814
Osborn Manufacturing Company. (See Nielson, Henry, assignor.)						
Osius, Frederick C. C. T. A., Muskegon, Mich. Dental filling	819,249	May 1	427	90	122	100

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Oslund, Charles H., assignor to American Steel & Wire Company of New Jersey, Worcester, Mass. Compressor for rail-bonds	823,356	June 12	2280	477	122	2274
Ostberg, Alfred E. (See Willson and Ostberg.)						
Ostberg, Erick. (See Willson and Ostberg.)						
Osten, James H., assignor of two-thirds to R. G. Osten and J. Walker, White City, Kans. Road scraper and grader	822,902	June 5	1332	275–6	122	2017
Osten, Robert G., *et al.* (See Osten, James H., assignor.)						
Osterhout, Garret B., New York, N. Y. Single-trigger mechanism for guns	821,118	May 22	4284	911–13	122	1131
Otis Elevator Company. (See Ihlder, John D., assignor.)						
Otis, Spencer. Chicago, Ill., assignor to National Dump Car Company, Augusta, Me. Dump-car	821,528	May 22	5101	1087	122	1312
Otis, Spencer, Chicago, Ill., assignor to National Dump Car Company, Augusta, Me. Dump-car	823,631	June 19	2837	600	122	2453
Otis, Spencer, Chicago, Ill., assignor to National Patent Holding Company, Rapid City, S. D. Railway-car bolster	822,979	June 12	1482	309	122	2098
Otterstedt, Henry, North Bergen, N. J. Ventilating-sole	819,449	May 1	834	179	122	187
Otto, August, Jr., Sandwich, Ill. Corn-elevator	820,249	May 8	2502	540–1	122	620
Otto, Edward C. F., London, assignor of one-half to G. F. Richardson, Lee, England. Elastic tire for road-wheels	819,374	May 1	692	145–6	122	158
Otto, Marius, Paris, France, assignor to American Ozone Company, Niagara Falls, N. Y. Water-ozonizing apparatus	822,980	June 12	1483	309	122	2098
Overbay, Alexander, Walnut Cove, N. C. Churning-machine	824,575	June 26	4653	989–90	122	2901
Overbury, Frederick C., New York, N. Y., assignor to Flintkote Manufacturing Company, Rutherford, N. J. Waterproof fabric	819,450	May 1	835	180	122	187
Overfield, Martin J., Corydon, Ky. Stock-feeding device	823,806	June 19	3161	669	122	2524
Overholt, Edward H. (See Wenzelmann and Overholt.)						
Overholt, Elliott G., assignor to Selkirk Fence Company, Hamilton, Canada. Wire-fence lock	822,758	June 5	1052	215	122	1959
Owatonna Manufacturing Co. (See La Bare, Frank, assignor.)						
Owatonna Manufacturing Co. (See La Bare and Howe, assignors.)						
Owen, George A., Springfield, Mass. Slotting-machine	822,012	May 29	6050	1289–90	122	1579
Owen, Herbert W., assignor of one-half to C. H. Fish, Dover, N. H. Pattern-resetting mechanism for looms	824,200	June 26	3895	831–2	122	2741
Owen, Oscar L., assignor to Whitin Machine Works, Whitinsville, Mass. Doffer-comb motion	822,550	June 5	625	126	122	1864
Owen, Oscar L., Whitinsville, and E. H. Rooney, New Bedford, assignors to Whitin Machine Works, Whitinsville, Mass. Cotton-combing machine	822,549	June 5	621	124–5	122	1863
Owen, Pinkney, Boonshill, Tenn. Planter	824,576	June 26	4654	990	122	2901
Owen, Robert H., Wellington, New Zealand. Appliance for use in ascertaining distances or altitudes	820,597	May 15	3188	686	122	831
Oxnam, Thomas H., Los Angeles, Cal. Miter-gage	821,959	May 29	5958	1269	122	1558
Oyer, Peter P., Meadows, Ill. Grain dump and elevator	823,436	June 12	2422	510	122	2302
P. & F. Corbin. (See Henry, William K., assignor.)						
Pacific Surgical Manufacturing Company. (See Sweeney and Sylva, assignors.)						
Packard, Edwin D., *et al.* (See Stump, Oman L., assignor.)						
Packard, Elmer H., Omaha, Nebr. Radiator-valve	823,632	June 19	2838	601	122	2453
Packard, John E., Chicago, Ill., assignor to Multi-Vending Company. Vending-machine	823,633	June 19	2840	601	122	2454
Packard, John E., Chicago, Ill., assignor to Multi-Vending Company. Vending-machine	823,634	June 19	2843	602	122	2455
Packard Motor Car Company. (See Schmidt, Charles, assignor.)						
Packer, Jesse S., Salt Lake City, Utah. Sash-lock	823,543	June 19	2670	563	122	2415
Paddock, Gustavus A., Beaver Dam, Wis. Harvester-reel	820,667	May 15	3313	711	122	857
Paddock, Ira J., Percival, Iowa. Motor	819,586	May 1	1081	238	122	243
Page, Blin W., *et al.* (See Prescott, George E., assignor.)						
Page, David P., and A. Vanderveld, assignors to Grand Rapids Brush Company, Grand Rapids, Mich. Multiple boring-machine	819,587	May 1	1083	238	122	243
Page Woven Wire Fence Company. (See Snedeker, James W., assignor.)						
Paget, Arthur. (See Bottomley and Paget.)						
Paget, Emanuel B., London, England. Striking-bat for ball games	819,250	May 1	428	90	122	100
Pahlitzsch, Bruno, Berlin, Germany, assignor, by mesne assignments, to United States Envelope Company. Folding mechanism for envelop-machines	821,529	May 22	5103	1087–8	122	1312
Painter, William A. (See Rymill, Painter, and Miller.)						
Pakin Company. (See Paul, Andrew G., assignor.)						
Palmer, Charles H., and J. W. Denmead, Akron, Ohio, assignors to Diamond Match Company, New York, N. Y. Printing-press	819,375	May 1	694	147	122	158
Palmer, Robert, assignor to American Ring Co., Waterbury, Conn. Sash-curtain-rod bracket	819,588	May 1	1084	238	122	244
Pamp, Danne, Philadelphia, Pa. Collar or cuff button	820,729	May 15	3433	735	122	883
Pape, Hermann G., New York, N. Y. Telephone-transmitter or audiphone-receiver	822,470	June 5	461	93–4	122	1825
Pariso, Albert E. (See Perra, Arthur L., assignor.)						
Parke, Davis & Company. (See Heitmann and Clemmensen, assignors.)						
Parker, Charles C., Baltimore, Md., assignor of one-half to M. G. Gillette, Brooklyn, N. Y. Jar-closure	821,596	May 22	5225	1115	122	1338
Parker-Clark Electric Company. (See Clark, Walter G., assignor.)						
Parker-Clark Electric Company. (See Parker, Herschel C., assignor.)						
Parker, Erastus N., Springfield, Mass. Watch-hand remover	823,289	June 12	2158	450	122	2247
Parker, Frederick R. (See Corwin and Parker.)						
Parker, George F., and M. E. M. Whiting, Boston, Mass. Pattern-chart	823,738	June 19	3029	640–1	122	2493
Parker, Herschel C., New York, N. Y., assignor to Parker-Clark Electric Company, Jersey City, N. J. Incandescent electric lamp	821,056	May 22	4163	885	122	1105
Parker, John, Manchester, England. Means for transporting rabbit or poultry hutches or the like	823,544	June 19	2671	563	122	2415
Parker, Joseph N., Bedford City, Va. Calendar	822,690	June 5	934	190	122	1935
Parker, Levin S., assignor to James Reilly Repair and Supply Company, New York, N. Y. Dredge	821,669	May 29	5382	1148–9	122	1429
Parker, Levin S., assignor to James Reilly Repair and Supply Company, New York, N. Y. Dredge	821,670	May 29	5386	1149	122	1430
Parkersburg Machine Company. (See Callanan, James T., assignor.)						
Parkes, George W., Manchester, England. Driving-belt	823,892	June 19	3319	707	122	2559
Parkhurst, Frederic H., assignor to J. F. Parkhurst & Son Co., Bangor, Me. Wardrobe-trunk	822,384	June 5	304	62	122	1791
Parks Brothers and Rogers. (See Sylvester, Irving M., assignor.)						
Parks, Samuel R., Maxwellton, Ga. Square	821,374	May 22	4803	1020	122	1248
Parlin & Orendorff Company. (See Graham, William S., assignor.)						
Parrish, John S., Shadwell, Va. Washing-machine	824,435	June 26	4376	931	122	2840

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Parrish, Thomas K. (See Reams, Joseph A., assignor.)						
Parry, William, Crown Point, Ind. Portable burial-vault	823,893	June 19	3320	707	122	2559
Parry, William F. (See Roehr, Curt J., assignor.)						
Parsons, Charles A., and G. G. Stoney, Newcastle-upon-Tyne, England. Steam-turbine	822,150	May 29	6323	1345	122	1644
Parsons, Frederick W., Tarrytown, N. Y. Pneumatic-motor tool-stock	821,960	May 29	5959	1269–70	122	1558
Parsons, Frederick W., Cleveland, Ohio. Shirt-collar	824,577	June 26	4656	990	122	2902
Parvis, Lewis R., Matamora, Ind. Fan-blower	819,079	May 1	89	20	122	24
Pashley, Edwin, Pittsburg, Pa. Combined paper and book holder	822,691	June 5	935	191	122	1935
Passino, Franklin G., Memphis, Tenn. Holder or receptacle for labels, tickets, &c	823,357	June 12	2281	477	122	2274
Patenaude, Elzear, *et al.* (See La Londe, Moses, assignor.)						
Patent Button Company. (See White, Franklin R., assignor.)						
Paterson, Alexander, Wilkinsburg, Pa. Rolling sheets	819,589	May 1	1085	239	122	244
Paton, John D., Edgewood Park, Pa., assignor to Westinghouse Electric & Manufacturing Company. Trolley for railway-vehicles	824,201	June 26	3899	832	122	2742
Patten, James S., assignor to Baltimore Journal Box Company, Baltimore, Md. Journal-box and dust-guard	820,009	May 8	2006	440	122	510
Patten, James S., assignor to Baltimore Journal Box Company, Baltimore, Md. Concaved journal-box and dust-guard	822,759	June 5	1053	215–16	122	1959
Patten, James S., assignor to Baltimore Journal Box Company, Baltimore, Md. Convex journal-box and dust-guard	822,760	June 5	1054	216	122	1960
Patten, James S., assignor to Baltimore Journal Box Company, Baltimore, Md. Journal-box for cars	822,761	June 5	1056	216–17	122	1960
Patten, James S., assignor to Baltimore Journal Box Company, Baltimore, Md. Brass for journal-boxes	822,762	June 5	1058	217	122	1960
Patten, James S., Baltimore, Md., assignor to Baltimore Journal Box Company of Baltimore City. Journal-box	824,578	June 26	4656	991	122	2902
Patterson, Charles L., Detroit, assignor to J. B. Timberlake, Jackson, Mich. Garment-hanger	822,981	June 12	1485	309	122	2099
Patterson, Eugene A., Dunbar, Nebr. Pinch-bar	820,985	May 22	4033	857	122	1077
Patterson, Frederic N., Marianna, Ark. Shoe-protector	820,250	May 8	2503	541	122	620
Patterson, Thomas, Toronto Junction, Canada. Clamping-elbow for tubular farm-gates	820,436	May 15	2863	623	122	758
Patterson, Warren A., assignor to American Cotton Separator Company, St. Louis, Mo. Cotton-separator	822,864	June 5	1253	258–9	122	2001
Patterson, Warren A., assignor to American Cotton Separator Company, St. Louis, Mo. Separating cotton	822,903	June 5	1334	276	122	2017
Patteson, James. (See Gorden, James H., assignor.)						
Patton, Timothy W. (See Cook, Edward A., assignor.)						
Paul, Andrew, *et al.* (See Smith, John A., assignor.)						
Paul, Andrew G., Boston, Mass., assignor to Pakin Company. Heating system	823,074	June 12	1688	349	122	2143
Paul, George B., Clinton, Mo. Horseshoe	821,530	May 22	5106	1088	122	1313
Paul, John W., Kittanning, Pa. Type-writer	824,579	June 26	4659	991–2	122	2902
Paul, Robert J., and W. C. Kershner, Dayton, Ohio. Form for concrete-sewer construction	821,824	May 29	5705	1215–16	122	1503
Paul, William L., assignor to David Bradley Manufacturing Company, Bradley, Ill. Cultivator	821,119	May 22	4287	913	122	1132
Pauli, Marguerite. (See Crowley, John F., assignor.)						
Paulus, John, Afton, Iowa. Trough for feeding and watering stock	822,763	June 5	1059	217	122	1961
Pauly, Albert A., Youngstown, Ohio. Apparatus for forming artificial-stone building-blocks from concrete	822,013	May 29	6053	1290–1	122	1580
Paxton, Sherman H. (See Shigley and Paxton.)						
Payne, Edwin W., Crewe, Va. Hood or shield for locomotive-cab windows	824,261	June 26	4023	861	122	2768
Payne, John W., Elba, Va. Pruning implement	822,764	June 5	1060	218	122	1961
Payne, Marvin H. (See Payne, Thomas P., assignor.)						
Payne, Thomas P., assignor to M. H. Payne, New York, N. Y. Excavator	822,865	June 5	1257	259–60	122	2002
Pearce, David M., Union City, Tenn. Seed-planter	823,358	June 12	2283	477–8	122	2274
Pearce, Robert E., Erie, Pa. Cap for milk-jars and the like	822,471	June 5	465	94	122	1826
Pearce, William H., Oak Park, Ill. Tip-tank weighing-machine or meter	821,531	May 22	5107	1088	122	1313
Pearse, Thomas H. (See Smith, William R., assignor.)						
Pease, John F., and E. Schumacher, Darlington, England. Wheel	822,151	May 29	6324	1345	122	1644
Peck Brothers and Company. (See Newton, William G., assignor.)						
Peck, De Witt K., New Britain, Conn. Drilling-machine	821,825	May 29	5707	1216–17	122	1503
Peck, Duncan W., Syracuse, N. Y. Telegraph-pole	821,733	May 29	5524	1178	122	1460
Peck, Luke R., assignor of one-half to C. O. Thomas, Caro, Mich. Cement-tile machine	819,251	May 1	429	90	122	100
Peck, Philip C. (See Sheehy, James B., assignor.)						
Peck, Philip C., *et al.* (See Rossi, Auguste J., assignor.)						
Peck, Stow & Wilcox Company. (See Talmadge, Elmer W., assignor.)						
Peck, Stow & Wilcox Company. (See Whitney and Ellrich, assignors.)						
Peczenik, Charles E., London, England. Hand-camera	819,918	May 8	1754	377–8	122	456
Pedersen, Christian, assignor to Landis Machine Company, St. Louis, Mo. Sewing-machine	821,826	May 29	5709	1217–18	122	1504
Pedersen, Johannes T., assignor to Pedersen Manufacturing Company, New York, N. Y. Lubricator	820,821	May 15	3635	776–7	122	929
Pedersen Manufacturing Company. (See Pedersen, Johannes T., assignor.)						
Pedersen, Peder O., Copenhagen, Denmark. Mechanism for operating the recording and reproducing mechanisms of telegraphones	819,670	May 1	1246	272	122	280
Pederson, Charles S., Alstad, Wis. Collar and cuff button	819,590	May 1	1086	239	122	244
Peer Artificial Leg Manufacturing Co. (See Peer, John A., assignor.)						
Peer, John A., assignor to Peer Artificial Leg Manufacturing Co., Washington, D. C. Artificial leg	822,385	June 5	305	63	122	1792
Peetz, Gustav, New York, N. Y., assignor, by mesne assignments, to T. J. Moran, Arlington, N. J. Ironing-wax pad	821,532	May 22	5111	1088	122	1314
Pehrson, Jonas, Willowbrook, assignor to I. T. Avelsgarde, Yorkton, Canada. Hose and pipe coupling	820,437	May 15	2863	623	122	758
Peirce, John R., New York, N. Y. Stone-working machine	819,080	May 1	90	21	122	24
Peiser, Firm of Albert. (See Riebe, Gustav, assignor.)						
Pekat, Charles, Chicago, Ill. Mounting for keys of musical instruments	821,533	May 22	5112	1089	122	1314
Pell, John L. E., and E. L. C. Clark, Great Barrington, Mass. Hockey-game apparatus	821,881	May 29	5800	1236	122	1523
Pellar, Max. (See Isaacs and Pellar.)						
Penberthy, William, deceased, Chicago, Ill.; American Trust and Savings Bank, administrator. Steam-injector	821,827	May 29	5716	1218	122	1505
Penn Surgical Mfg. Co. (See Root, Charles M., assignor.)						
Pennepacker, Harry W., Allegheny, Pa. Bed-spring	819,671	May 1	1249	272	122	280
Pennie, John C. (See Schulze, Andrew, assignor.)						
Pennington, William J., Brooklyn, N. Y. Stair-chair	820,125	May 8	2251	490	122	565

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Pennsylvania Globe Gas Light Company. (See Shaw, Arthur E., assignor.)						
Percival, Herbert E., Galveston, Tex., assignor of one-half to B. W. Key, Woodward, Okla. Ter. Reinforcement for concrete railway-ties	819,919	May 8	1755	378	122	456
Percy, Harry C., Natchitoches, La. Range-finder	819,591	May 1	1087	239	122	244
Perkins, Alfred P., New York, N. Y. Baby-chair	822,472	June 5	465	94–5	122	1826
Perkins, Charles E., *et al.* (See Perkins, Harry J., assignor.)						
Perkins Corporation. (See Tregoning, William C., assignor.) (Reissue.)						
Perkins, Frederick L., *et al.* (See Perkins, Harry J., assignor.)						
Perkins, Harry J., assignor of two-thirds to F. L. and C. E. Perkins, Grand Rapids, Mich. Propeller-wheel	821,534	May 22	5115	1089	122	1315
Perkins, James H., Seattle, Wash. Saw-guide	820,312	May 8	2616	570	122	645
Perkins, John L., Holyoke, Mass. Machine for reducing rags for paper-stock	822,765	June 5	1062	218	122	1961
Perkins, Julius A., Omaha, Nebr., assignor to Moffett Bearing Company, Council Bluffs, Iowa. End-thrust bearing	820,986	May 22	4034	857	122	1077
Perkins, Julius A., Omaha, Nebr., assignor to Moffett Bearing Company, Council Bluffs, Iowa. Roller-bearing	821,882	May 29	5800	1236	122	1523
Perkins, Ludlow P. (See Kitchen and Perkins.)						
Perkins, William M., North Manchester, Ind. Fence-post	821,535	May 22	5116	1089	122	1315
Perks, Charles J., New York, assignor to D. C. Storr, New Paltz, N. Y. Link-closing press	819,451	May 1	836	180	122	187
Perky, Henry D. (See Higbee, Harriet A., assignor.)						
Perotti, Louis, Newark, N. J. Liquid-distributer	820,987	May 22	4036	858	122	1078
Perra, Arthur L., Millbury, assignor of one-half to A. E. Pariso, Sutton, Mass. Adjustable curtain-fixture	823,481	June 12	2523	529	122	2325
Perrine, George H., New York, N. Y. Garment-supporter	822,866	June 5	1261	260	122	2002
Perry, Albert, Caribou, Colo. Ore-separator	821,430	May 22	4932	1048	122	1275
Perry, Arthur I., New York, N. Y. Air-brake system	822,073	May 29	6174	1316	122	1609
Perry, George W., Tuscarora, Pa. Coal-crusher	820,518	May 15	3044	655	122	799
Perry, Wilton H., New York, N. Y. Baker's oven	823,695	June 19	2955	625	122	2479
Persing, William G., Braman, Okla. Ter. Corner-support for vehicles	820,251	May 8	2504	541	122	621
Person, Walfrid. (See Fisk, Carl A., assignor.)						
Pessou, Alphonse O., New Orleans, La. Cane-harvester	820,730	May 15	3434	735–6	122	883
Pester, Max E., Glen Cove, N. Y. Exhibition and amusement apparatus	824,436	June 26	4378	931	122	2840
Pestor, Julius, Los Angeles, Cal. Windmill	820,988	May 22	4037	858	122	1078
Peter, Philip. (See Dutcher and Peter.)						
Peters, Anton F., Cortland, N. Y. Folding clothes-rack	823,807	June 19	3162	669	122	2524
Peters, Bassett W., Toledo, Ohio. Gate	820,822	May 15	3640	777	122	930
Peters, Frank M., Chicago, Ill. Filling-machine	821,186	May 22	4415	940–1	122	1161
Peters, Frank M., Chicago, Ill. Water attemperating and measuring system	821,187	May 22	4419	941	122	1162
Peters, Frank M., Chicago, Ill. Sugar-wafer machine	824,202	June 26	3900	832–4	122	2742
Peters, Herbert Z. (See Ike, John, assignor.)						
Peters, Robert K., Rockwood, Tenn. Pinless clothes-line	822,473	June 5	468	95	122	1827
Petersen, Henry A. F., New York, N. Y. Valve	820,598	May 15	3190	686	122	831
Petersen, Herman H. (See Smith, Lewis C., assignor.)						
Petersen, John N., assignor of one-half to W. F. Pettit, New Orleans, La. Ball-bearing	821,057	May 22	4164	885	122	1105
Peterson, Anton, *et al.* (See Stenstrom, John P., assignor.)						
Peterson, Frans A., assignor to L. C. Smith & Bros. Typewriter Company, Syracuse, N. Y. Type-bar for type-writing machines	822,396	June 5	311	63	122	1793
Peterson, Jacob E. and J. M., Dayton, Ohio. Rotary engine	821,734	May 29	5525	1178–9	122	1461
Peterson, Jacob M. (See Peterson, Jacob E. and J. M.)						
Peterson, John M., Colegrove, Pa. Mail-box	822,014	May 29	6059	1291	122	1581
Peterson, P. (See Cornish, Harry B., assignor.)						
Peterson, Peter M., Narragansett Pier, R. I. Bottle-fastener	823,437	June 12	2424	510	122	2303
Petrelli, Joseph, New Haven, Conn. Chuck	823,545	June 19	2672	563	122	2416
Petrelli, Joseph, New Haven, Conn. Drilling and tapping device	823,546	June 19	2675	563–4	122	2416
Petrich, Johan, and L. Duloves, Chicago, Ill. Bow-facing oar	823,075	June 12	1690	349–50	122	2143
Petsche, Gustav B., assignor to Southwark Foundry & Machine Company, Philadelphia, Pa. Engine construction	822,387	June 5	312	64	122	1793
Pett, William, Muskegon, Mich. Furnace, &c.	821,961	May 29	5962	1270	122	1559
Petterson, Ludwig, Chicago, Ill. Gasolene-motor	820,010	May 8	2008	441	122	510
Pettit, Silas W. (See Waddell, Montgomery, assignor.)						
Pettit, William F. (See Petersen, John N., assignor.)						
Pevey, Charles K. (See Hassam, Walter E., assignor.)						
Pfeifer, John, assignor of one-third to F. R. Burton, Springfield, Ohio. Wrapping-machine	821,375	May 22	4804	1020–1	122	1248
Pfaff, Philip, Chicago, Ill. Stove-board	819,163	May 1	242	52	122	60
Pfleger, Harry M., St. Louis, Mo. Combined brace and draw-bar pocket for car-body bolsters	821,735	May 29	5526	1179	122	1461
Pflager, Harry M., assignor to Transom Draft-Gear Company, St. Louis, Mo. Combined car-body bolster and draw-bar spring-pocket	824,203	June 26	3904	834	122	2743
Phelps, George H., assignor to George Frost Company, Boston, Mass. Garment-supporter	819,164	May 1	243	53	122	61
Phelps, George H., assignor to George Frost Company, Boston, Mass. Garment-supporter	819,165	May 1	245	53	122	61
Phelps, Lucius J., Stoneham, assignor, by mesne assignments, to Shawmut Motor Company, Boston, Mass. Muffler	821,828	May 29	5717	1218	122	1505
Phelps, Ono S., Mapleton, Oreg. Crank	820,731	May 15	3439	736	122	884
Phelps, William J., Detroit, Mich. Electric incandescent lamp	819,793	May 8	1523	323	122	403
Phenis, Joseph N., Richmond, Ind. Cracker-case	822,627	June 5	802	163	122	1904
Phenix Tube Company. (See Koenig, Robert, assignor.)						
Phifer, Washington I., Edwardsville, Ill. Rotary engine	819,920	May 8	1757	378–9	122	457
Philadelphia Cyanide Process Campany. (See Muffly, Sidney T., assignor.)						
Philippart, Gustave, Brussels, Belgium. Double top for games	822,628	June 5	804	163	122	1904
Phillips, Charles C., assignor of one-half to J. R. Tennelly, Owensboro, Ky. Signaling device	824,580	June 26	4664	993	122	2904
Phillips, Chester, Rochester, N. Y. Power transmission	822,629	June 5	805	163	122	1905
Phillips, Denison H. (See Schreiber, Elias L., assignor.)						
Phillips, Edgar A., assignor to Hamilton & Hamilton, Jr., Providence, R. I. Bracelet	824,379	June 26	4250	905	122	2815
Phillips, Frank E., Hyde Park, Mass. Non-refillable box	822,766	June 5	1064	218	122	1962
Phillips, Fredrick W., Jamestown, N. Y. Garment-supporter	819,166	May 1	246	53	122	61
Phillips, Hiram W., Quincy, Mass. Guide for joining pipe-sections	820,126	May 8	2252	490	122	565
Phillips, Lonegan C., Richmond, Va. Lifting mechanism	819,692	May 1	1089	239–40	122	245
Phillips, Lucy A., Lucca, N. D. Skirt-supporter	820,313	May 8	2617	570	122	645
Phillips, William A., East Cleveland, Ohio. Throttle-valve	821,120	May 22	4289	913	122	1133
Phillips, William H., Columbus, Ohio. Concrete-mixing machine	824,204	June 26	3905	834–5	122	2744
Pianova Company. (See Haschke, William H., assignor.)						
Picard Charles, Paris, France. Blowpipe	821,188	May 22	4421	941	122	1162

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Pickford Drill & Tool Company. (See Norris, Henry M., assignor.)						
Pickford, William. (See Reed and Pickford.)						
Pickles, Charles K., St. Louis, Mo. Nozzle	820,668	May 15	3315	711	122	858
Picrome Hide Company. (See Widmer, Charles A., assignor.)						
Pierce, Robert F., Shaw, Ga. Railway car and brake	820,366	May 8	2714	591	122	667
Pigott, William, Chicago, Ill. Suspenders	819,794	May 8	1525	323	122	404
Pike, Edwin B., Pike, N. H. Combined whetstone, blotter, and paper-weight	824,138	June 26	3769	805	122	2713
Pilger, George J., Scranton, Pa. Air-brake gasket-replacing tool	823,189	June 12	1940	400	122	2200
Pilliner, Philip F., Philadelphia, Pa. Implement for putting on pneumatic tires	824,041	June 19	3609	768	122	2620
Pilling, James L., Detroit, Mich. Hoisting-engine	820,939	May 15	3900	832	122	987
Pilling, James L., Detroit, Mich. Propelling-wheel for turn-tables	822,221	May 29	6455	1371	122	1673
Pine, James K. P., assignor to United Shirt and Collar Company, Troy, N. Y. Collar	819,593	May 1	1093	240–1	122	245
Pine Ridge New Idea Company. (See Walker, John D., assignor.)						
Pinkham, Charles F. (See Thompson and Pinkham.)						
Pinsent, Rosina, Torquay, England. Infant-soother	823,076	June 12	1693	350	122	2144
Pintsch, Firm of Julius. (See Schaller, Otto, assignor.)						
Piper, Edmund F., Fargo, N. D. Automatic steering device for traction-engines	821,253	May 22	4539	966	122	1189
Pitman, John R. (See Dobbs and Pitman.)						
Pitman, Robert, Philadelphia, Pa. Centrifugal pump	823,077	June 12	1693	350	122	2144
Pittard, Frédéric, assignor to Société Anonyme de Broderie Automatique, Lyon, France. Reader or machine for perforating paper to be used with the jacquards in automatic embroidery-machines	824,380	June 26	4252	905–6	122	2815
Pittsburg Lamp, Brass & Glass Company. (See Rymill, Painter, and Miller, assignors.)						
Pittsburg Meter Company. (See Chrisman, Horace, assignor.)						
Pittsburgh Electrolytic Manufacturing Company. (See Frazier, George W., assignor.)						
Pittsburgh Reduction Company. (See Gibboney, William K., assignor.)						
Planters Compress Company. (See Lowry, George A., assignor.)						
Plato, John B., Denver, Colo. Horse-hitching device	823,964	June 19	3460	739	122	2590
Platt Brothers & Company. (See White, Franklin R., assignor.)						
Player, John, Schenectady, assignor to American Locomotive Company, New York, N. Y. Locomotive-truck	823,482	June 12	2524	529	122	2325
Plew & Motter. (See Reindel, Frederick W., assignor.) (Reissue.)						
Plouff, Fred H., Boston, Mass. Feed-water regulator	823,635	June 19	2846	602	122	2456
Plumer, Carrie R., assignor to Renstrom Tempered Copper Company, Seattle, Wash. Hardening copper	822,299	June 5	154		122	1762
Plummer, George C., Philadelphia, Pa. Conveyer-belt	821,121	May 22	4290	913	122	1133
Plumtree, Oliver L. (See Cochran and Plumtree.)						
Plunkett, Richard. (See Grant, Charles, assignor.)						
Plym, Francis J., Kansas City, Mo. Store-front construction	820,438	May 15	2864	624	122	758
Podstata, Vaclav H., Dunning, Ill. Pneumatic cushion	819,452	May 1	838	180	122	188
Poetzl, Andrew, Dover, N. J. Sock or stocking	820,989	May 22	4039	858	122	1079
Pohlig, John, New Orleans, La. Wagon-top	820,514	May 8	2618	570	122	645
Poix, Gabrielle M., New York, N. Y. Brassières	823,547	June 19	2678	564	122	2417
Polatsik, William, assignor to himself and J. L. Bloom, Chicago, Ill. Producing whalebone or rubber substitutes	820,315	May 8	2619		122	646
Pollock, David J., Nottingham, Pa. Match-box	823,359	June 12	2284	478	122	2275
Pollock, James, Wilkes-Barre, Pa. Coal-separator	819,252	May 1	431	91	122	101
Polster, Tobias, St. Louis, Mo. Combination-cabinet	820,732	May 15	3440	737	122	884
Pomeroy, Henry C., Chicago, Ill. Hook and eyelet setting machine	819,921	May 8	1761	379	122	458
Pons, Angel G., Mexico, Mexico. Fiber-cleaning machine	822,767	June 5	1064	219–20	122	1962
Pool, John G., Lynn, Mass., assignor to National Bung Manufacturing Company, Portland, Me. Tool-grinding machine	820,519	May 15	3045	655–7	122	800
Pool, Morris W., New York, assignor to Monarch Typewriter Company, Syracuse, N. Y. Type-writing machine	824,581	June 26	4665	993	122	2905
Pool, Morris W., New York, assignor to Monarch Typewriter Company, Syracuse, N. Y. Type-writing machine	824,582	June 26	4672	994	122	2906
Pope, Charles H., Cambridge, Mass. Apparatus for the utilization of solar heat	820,127	May 8	2254	490–1	122	566
Pope Manufacturing Company. (See Copeland, James S., assignor.)						
Pope, William J. (See Mather, Hübner, and Pope.)						
Portable Wagon Dump and Elevator Company. (See White, John F., assignor.)						
Porter, Alamanza, Scranton, Pa. Car construction	822,474	June 5	469	95	122	1827
Porter, Christopher, St. Paul, Minn. Water-heater	823,636	June 19	2848	602	122	2456
Porter, Delmer C., and J. Erwin, Cedar Rapids, Iowa. Steam-heated collar-shaper	823,360	June 12	2285	478	122	2275
Porter, Ephraim M., Golinza, Pa. Pipe-wrench	819,795	May 8	1526	324	122	404
Porter, Ernest, Monticello, Ky. Rope and rope-socket protector	821,829	May 29	5718	1218	122	1505
Porter, Jesse M., Cuyahoga Falls, Ohio. Safety-door for elevators	823,965	June 19	3464	740	122	2591
Porter, John, and F. C. Mayer, Frostburg, Md. Bottle-closure	819,594	May 1	1094	241	122	246
Porter Safety Seal Company. (See Hulsing, Garrett H., assignor.)						
Porter Screen Manufacturing Company. (See Southworth, Henry E., assignor.)						
Porter, Wilson E., assignor to New Haven Clock Co., New Haven, Conn. Watch-barrel arbor	820,252	May 8	2505	541	122	621
Porter, Wilson E., assignor to New Haven Clock Co., New Haven, Conn. Clock	820,669	May 15	3318	711	122	858
Porter, Wilson E., assignor to New Haven Clock Co., New Haven, Conn. Intermittent-alarm clock	823,894	June 19	3322	707	122	2560
Porter, Wilson E., assignor to New Haven Clock Co., New Haven, Conn. Intermittent-alarm clock	824,205	June 26	3908	835	122	2744
Posson, Edward, Chicago, Ill. Grain-door for cars	822,630	June 5	806	164	122	1905
Post, Claude L., Chicago, Ill. Multicolor-printing press	819,309	May 1	553	118	122	127
Post, Claude L., Chicago, Ill. Printing-press	819,310	May 1	556	119	122	128
Post, Ezra L., Wallingford, Conn. Clutch for leather-stretching machines	824,139	June 26	3770	805	122	2713
Post, John, Philadelphia, Pa. Street-railway-car fender	820,738	May 15	3441	737	122	885
Post, John, Philadelphia, Pa. Brake-actuating device	823,966	June 19	3466	741	122	2592
Postal Printing & Supply Company. (See Ray, Jabez E., assignor.)						
Potolowsky, Michael, Moscow, Russia. Treating marine-animal oils	823,361	June 12	2286	478	122	2275
Potter, Alexander, Newark, N. J. Manhole-cover	821,736	May 29	5528	1179	122	1461
Potter & Buffinton Company. (See Fetting, Frederick, assignor.)						
Potter, Clifford B., *et al.* (See Dunnell, Frederick W., assignor.)						
Potter, Frank W. (See Westcott and Potter.) (Reissue.)	821,884	May 29	5803	1236	122	1523
Potter, James C., assignor to American Spindle Company, Pawtucket, R. I. Spindle	821,189	May 22	4422	941–2	122	1163
Potter, John A., San Francisco, Cal. Smelting ores	821,190	May 22	4425	942–3	122	1163
Potter, John A., San Francisco, Cal. Apparatus for smelting ores						
Potter, William B., Schenectady, N. Y., assignor to General Electric Company. Time-limit dash-pot	821,431	May 22	4935	1049	122	1276
Potts, Augustus M., Cedar Point, Kans. Cultivator attachment	823,808	June 19	3164	669	122	2525
Potts, George H. (See Duncan and Potts.)						
Pougher, Charles F., assignor to Birmingham Small Arms Company, Limited, Birmingham, England. Variable-speed mechanism	821,597	May 22	5226	1115	122	1338

Alphabetical list of patentees for May and June—Continued.

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Poulsen, Valdemar, Copenhagen, Denmark, assignor, by mesne assignments, to American Telegraphone Company. Apparatus for effecting the storing up of speech or signals	822,222	May 29	6456	1371–2	122	1673
	820,253	May 8	2506	542	122	621
Poulson, Joseph, Phillipsburg, N. J. Mold-ramming machine						
Powell, Albert M. (See Millet and Powell.)						
Powell, Charles A., Whitesboro, N. Y. Button-sewing machine	822,551	June 5	626	126	122	1864
Powell, Charles A., Whitesboro, N. Y. Undergarment	824,140	June 26	3774	805	122	2714
Powell, Charles R., and W. Bevan, Scranton, Pa. Machine for teaching touch typewriting	823,362	June 12	2288	479	122	2276
Powell, Frank. (See Weaver, Isaac H., assignor.)						
Powell, John J., Logan, Utah. Wood-embossing machine	821,737	May 29	5530	1179	122	1462
Powell, John M., Potecasi, N. C. Electric time-signal	824,262	June 26	4025	861	122	2769
Powell, Sarah E., Fort Worth, Tex. Mixing device	820,254	May 8	2509	543	122	622
Powell, William P., Grand Rapids, Mich. Window-curtain support	824,042	June 19	3809	769	122	2620
Powers, George W., *et al.* (See Kitchell and Swanson, assignors.)						
Powers, Howard, Lincoln, assignor of four-fifths to Jolbert Construction Company, Berlin, N. H. Apparatus for sorting chips	824,141	June 26	3774	805–6	122	2714
	823,809	June 19	3165	669	122	2525
Powers, Michael L., Springfield, Mass. Spinning-top	824,381	June 26	4255	906	122	2815
Powner, Dixon, and T. C. Thompson, Leeds, England. Safety-gate for hoists	823,637	June 19	2849	603	122	2457
Prame, Frank J., Shiloh, Ohio. Blast-regulator for grain and seed cleaners	822,300	June 5	155	31	122	1762
Prasse, Oscar C., West Brighton, N. Y. Washing apparatus	821,738	May 29	5531	1180	122	1462
Pratt, Leverett A., Bay City, Mich. Mold for concrete posts	822,015	May 29	6060	1291–2	122	1582
Pratt, Lewis M., Belleville, Kans. Molding-machine						
Pratt, Louis L. (See Wheeler and Pratt.)						
Pray, Ida H., executrix. (See Pray, Stuart H.)						
Pray, Stuart H., deceased, Norwood, Mass.; I. H. Pray, executrix. Feeding mechanism for articles in sheet form	819,376	May 1	696	147	122	159
	820,599	May 15	3192	686	122	832
Prendergast, Frank P., Dagus Mines, Pa. Spark-arrester	823,739	June 19	3031	641	122	2494
Prentice, George H., Painesville, Ohio. Device for preventing the creeping of rails						
Prentice, John P., Barberton, Ohio, assignor to Sterling Company. Lantern and plug for water-tube boilers	821,739	May 29	5534	1180	122	1462
Presbrey, Edward F., assignor to Hamilton & Hamilton, Jr., Providence, R. I. Slide-bracelet	824,309	June 26	4100	877	122	2785
Prescott, George E., assignor of one-half to C. H. Smith and B. W. Page, Skowhegan, Me. Lug-strap fastener for loom picker-sticks	821,058	May 22	4166	886	122	1105
	820,670	May 15	3319	712–13	122	858
Preston, Albert F., Boston, Mass. Machine for driving fasteners	822,867	June 5	1262	260	122	2002
Preston, Albert F., East Boston, Mass. Nailing-machine	820,011	May 8	2010	441	122	510
Preston, Edith B., Mexico, Mo. Bed-spring						
Prevost, Camille. (See Martineau and Prevost.)						
Pribil, Frank J., Jr., Appleton City, and J. N. Utterson, Montrose, Mo. Undertaker's mitten	822,868	June 5	1266	261	122	2003
	823,696	June 19	2957	625–6	122	2479
Price, George W., Chicago, Ill. Hat-frame former	822,475	June 5	471	96	122	1828
Price, James H., Shenandoah, Va. Flue-ferrule						
Price, Orvey, Plainfield, assignor, by mesne assignments, to Taylor Iron & Steel Company, High Bridge, N. J. Safe or vault door bolting mechanism	821,740	May 29	5537	1180–1	122	1463
	823,438	June 12	2425	511	122	2303
Price, Thomas, Minneapolis, Minn. Trolley-hanger	823,967	June 19	3468	741	122	2592
Price, Walter B., New Orleans, La. Collapsible box or crate						
Price, William C., assignor to Staver Carriage Company, Chicago, Ill. Driving mechanism for automobiles	819,377	May 1	701	147–8	122	159
	821,536	May 22	5118	1089	122	1315
Price, William W., Dayton, Ohio. Pipe-coupling ring	821,537	May 22	5118	1090	122	1315
Price, William W., Dayton, Ohio. Ring for pipe-couplings	821,538	May 22	5119	1090	122	1315
Price, William W., Dayton, Ohio. Ring for pipe-couplings	820,012	May 8	2011	441	122	511
Priebe, Herman C., Blue Island, Ill. Draft-gear						
Priest, Edward D., Schenectady, N. Y., assignor to General Electric Company. Electric locomotive	823,968	June 19	3469	742	122	2592
Priest, Edward D., Schenectady, N. Y., assignor to General Electric Company. Electric locomotive	823,969	June 19	3472	742	122	2593
	822,768	June 5	1069	220	122	1963
Priest, Frank L., St. Louis, Mo. Railway-rail joint						
Prince, Sherman W., *et al.* (See Kitchell and Swanson, assignors.)						
Pringle, Robert M., assignor to Corey Estate Company, St. Louis, Mo. Fire-hydrant	821,191	May 22	4429	943	122	1164
	819,595	May 1	1095	.....	122	246
Prins, Peter, Minneapolis, Minn. Making strawboard	819,167	May 1	248	54	122	61
Pritchard, Albert R., Rochester, N. Y. Tubular lantern	823,078	June 12	1695	350	122	2144
Pritchard, Albert R., Rochester, N. Y. Globe-lifting device for lanterns						
Pritchard-Strong Company. (See Buckley, Kline, and Singleton, assignors.)						
Procter, William H., Jatni, India. Lubricating device	821,432	May 22	4937	1049	122	1276
Proctor, Augusta, Viroqua, Wis. Holder for lacework. (Reissue)	12,479	May 8	2750	598	122	675
Prouty, Theodore C., Albion, Mich. Forging-machine	821,059	May 22	4166	886	122	1106
Prouty, Theodore C., assignor to Wilcox Manufacturing Company, Aurora, Ill. Door-hanger	819,796	May 8	1527	324	122	404
Pruitt, Lee C. (See Cagle, Carter M., assignor.)						
Pugh, James M. (See Armstrong, Pugh, and Magee.)						
Pugsley, William S., assignor to J. G. Noyes, London, Canada. Folding clothes-drier and hat and coat holder combined	822,552	June 5	631	126–7	122	1865
	821,312	May 22	4665	994	122	1214
Pulliam, Oswald S., Pittsburg, Pa. Car-truck bolster	821,313	May 22	4666	994	122	1215
Pulliam, Oswald S., Pittsburg, Pa. Truck end casting	824,437	June 26	4381	932	122	2840
Pulliam, Oswald S., Pittsburg, Pa. Side frame for railway-car trucks						
Pullman Automatic Ventilator Company. (See Pullman, Charles L., assignor.)						
Pullman, Charles L., Pequanac, N. J., assignor to Pullman Automatic Ventilator Company, Washington, D. C. Ventilator	822,074	May 29	6178	1316	122	1610
Pullman Company. (See Dodds, Ethan I., assignor.)						
Pupin, Michael I., New York, N. Y. Telegraphy	821,741	May 29	5543	1181	122	1465
Pupke, Arnold W., New York, N. Y. Variable-speed mechanism	823,970	June 19	3474	742–3	122	2593
Purdie, Hume, Edinburgh, Scotland. Dynamometer	823,895	June 19	3323	708	122	2560
Purdy, Simeon D., Richmond Hill, N. Y. Brush	823,363	June 12	2291	479	122	2276
Purser, Charles. (See Lovatt and Purser.)						
Pustle, Michael J., Erie, Pa. Clam-shell bucket	823,290	June 12	2160	450–1	122	2248
Purvis, George H. (See Ellis and Purvis.)						
Purvis, William R., Bayonne, N. J. Coat, hat, and umbrella rack	819,311	May 1	559	119	122	128
Pusteria, Attilio, and P. Testi, Brooklyn, N. Y. Water-carousal	821,060	May 22	4170	887	122	1106
Q & H Company. (See Elliott, Percy M., assignor.)						
Quade, Augustus. (See Jorgenson, John, assignor.)						
Quensel, Hermann, Leipsic, Germany. Album for collecting post-cards	823,291	June 12	2161	451	122	2248
Quigley, William D., and J. H. Gay, Newark, N. J. Means for truing the spring-rolls of leather-splitting machines	819,168	May 1	249	54	122	62
Quimby, Edward C. (See Munsm, Quimby, and Anderson.)						
Quinn, John C., New York, N. Y., assignor, by mesne assignments, to Engineer Company. Regulation of furnaces	819,672	May 1	1251	273	122	280

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Quinn, Michael J., Chicago, Ill. Water-closet	820,128	May 8	2258	491	122	566
Quist, Andreas G., West Chelmsford, Mass. Lewis	822,769	June 5	1070	220	122	1963
Quitman, Otto E., Jr., Newark, N. J. Combined bolt and nut lock	824,382	June 26	4256	907	122	2816
R. M. Keating Motor Company. (See Keating, Robert M., assignor.)						
Rabb, George W. (See Weaver, Henry F., assignor.)						
Rabenhorst, Otto. (See Liedke and Rabenhorst.)						
Racine Boat Mfg. Co. (See Collier, William E., assignor.)						
Radell, Anthony H., assignor to B. M. Frees, Chicago, Ill. File-sharpening apparatus	819,922	May 8	1762	379–80	122	458
Rafferty, William J., Chicago, Ill. Apparatus for heating, purifying, and distributing air in buildings	821,671	May 29	5390	1150	122	1431
Ragsdale, William A., New Orleans, La., assignor to International Cotton Seed Delinting Company, Washington, D. C. Cotton-seed-delinting machine	821,254	May 22	4540	966–7	122	1189
Ragsdale, William A., New Orleans, La., assignor to International Cotton Seed Delinting Company, Washington, D. C. Cotton-seed-delinting machine	821,255	May 22	4543	967–8	122	1190
Ragsdale, William A., assignor to International Cotton Seed Delinting Company, Washington, D. C. Cotton-seed-delinting machine	821,256	May 22	4546	968	122	1190
Ragsdale, William A., assignor to International Cotton Seed Delinting Company, Washington, D. C. System of delinting cotton-seed and recovering lint	821,257	May 22	4551	969	122	1191
Rail Joint Company. (See Dalton, Philip J., assignor.)						
Railroad Supply Company. (See De Souchet, Julius T., assignor.)						
Railroad Supply Company. (See Smith, Adolph H., assignor.)						
Railroad Supply Company. (See Vaughan, Henry H., assignor.)						
Railroad Supply Company. (See Vogel, Eugene W., assignor.)						
Railsback, Hubert T., Mountain View, Okla. Ter. Draft-equalizer	821,433	May 22	4938	1049	122	1277
Railway Electric Power Company. (See Kandó, Coloman de, assignor.)						
Rainville, William, Woonsocket, R. I. Saddle for the top rolls of spinning-machines	822,075	May 29	6179	1316	122	1610
Rais, Thomas, Philadelphia, Pa. Revoluble-body chute-wagon	823,079	June 12	1696	351	122	2145
Ralph, Arthur W., Ukiah, Cal. Tree-protecting attachment for agricultural implements	820,734	May 15	3445	738	122	887
Ralston, Gavin C., Twickenham, England. Apparatus for removing ashes and clinkers from steamships	819,312	May 1	560	119	122	129
Ralston, John M., Barrhead, Scotland. Nut tapping or screwing machine	821,376	May 22	4811	1022	122	1250
Ralston, William A., assignor to Caldwell Manufacturing Company, Rochester, N. Y. Sash-holder	819,453	May 1	539	181	122	188
Ramage, Alexander G., assignor of one-half to G. Macmillan, Edinburgh, Scotland. Spring-wheel	822,476	June 5	471	96	122	1828
Ramsdell Inverted Gas Lamp Company. (See Ullmann, Albert, assignor.)						
Ramsden, James T., Leeds, assignor of one-half to J. C. Gabel, Leeds, Sioux City, Iowa. Band-cutter and feeder for threshing-machines	820,255	May 8	2510	543–4	122	622
Ramsey, Henry C. (See Teate, Thomas A., assignor.)						
Rancourt, Napoleon W. (See Murphy and Rancourt.)						
Rand, Charles A. A., Chicago, Ill., assignor to International Harvester Company. Grain-divider attachment for harvesters	819,797	May 8	1529	324	122	404
	819,923	May 8	1767	380	122	459
Randall, Phineas M., Jr., Westerly, R. I. Printing-press	823,548	June 19	2679	564	122	2417
Randall, Samuel F., Chicago, Ill. Game						
Randerson, William T., assignor of one-half to J. Horton, Munhall, Pa. Lubricant-receptacle	819,454	May 1	540	181	122	188
	822,016	May 29	6061	1292	122	1582
Rankin, James A., assignor of one-third to F. R. Scroggins, Wheeling, W. Va. Square						
Ransom, Frederick W. (See Smith, Downie, and Ransom.)						
Ranson, Georges, assignor to E. Marlier, Brussels, Belgium. Manufacture of sulfid of zinc	823,896	June 19	3325	708	122	2560
Rate, Robert G., Iowa City, Iowa. Corn-husker	821,962	May 29	5963	1270–1	122	1559
Rauh, Leopold. (See Dana, William H., assignor.)						
Raube, Carl, Düsseldorf, Germany. Set of artificial teeth	821,192	May 22	4431	943	122	1165
Ray, David B., New York, N. Y. Space for justifying lines of type	821,885	May 29	5804	1237	122	1524
Ray, Frederick, East Orange, N. J., assignor to Henry R. Worthington, New York, N. Y. Centrifugal, turbine, and similar pump	820,439	May 15	2865	624	122	758
Ray, Jabez E., Toledo, Ohio, assignor, by mesne assignments, to Postal Printing & Supply Company. Machine for the manufacture of facing-slips for the postal service	821,122	May 22	4293	914–15	122	1133
Ray, Sevrin, Racine, Wis. Hay and straw puller	819,798	May 8	1530	325	122	405
Raymond, Joseph O., Concord, N. H. Carrier system	821,963	May 29	5966	1271	122	1560
Raymond, Oscar L., Marinette, Wis. Log-hoist and car-loader	822,152	May 29	6325	1345	122	1644
Raynor, Alfred J., Toronto, Canada. Water-tube boiler	822,982	June 12	1496	309–10	122	2099
Rea, Victor H., Elgin, Ill. Garment-holder	821,742	May 29	5546	1181	122	1466
Read, Alonzo P., Chicago, Ill. Can-opener	819,455	May 1	842	181	122	188
Reagan, James and W., Philadelphia, Pa. Fuel-feeding device for boiler-furnaces	823,549	June 19	2680	564–5	122	2417
Reagan, William. (See Reagan, James and W.)						
Reames, Lewis E., West Liberty, Ohio. Gate	820,735	May 15	3446	738	122	887
Reams, Joseph A., West Norfolk, assignor of one-half to T. K. Parrish, Richmond, Va. Dough-mixing machine	819,799	May 8	1531	325	122	405
Reams, Joseph A., Norfolk, assignor of one-half to T. K. Parrish, Richmond, Va. Dough-mixing machine	823,740	June 19	3033	641–2	122	2494
Reaulme, Daniel F., *et al.* (See Desrosiers, Odilon, assignor.)						
Reavell, William, Ipswich, England. Air-compressor	819,924	May 8	1770	381	122	460
Redding, Oliver C., assignor of one-half to W. K. Kenly, Chicago, Ill. Cableway	822,770	June 5	1071	220–1	122	1963
Reece Buttonhole Machine Company. (See Dahl, Charles A., assignor.)						
Reed, Dan E., *et al.* (See Robinson, Frank T., assignor.)						
Reed, Robert E., and W. Pickford, Canon City, Colo. Ditching-machine	819,313	May 1	561	120	122	129
Reed, Sylvanus A., New York, N. Y. Selective system	824,266	June 26	3910	835	122	2744
Reeder, John, Collegeview, Nebr. Clamp for horse-collars	820,600	May 15	3193	687	122	832
Reese, Edwin M., Yuma, Ariz. Ter. Automatically-anchoring excavator and conveyer	821,743	May 29	5547	1181–2	122	1466
Reese, Jacob, Sharon Hill, Pa., assignor to Steel Patents Company. Manufacture of steel from phosphoritic iron	821,744	May 29	5552	.....	122	1467
	820,256	May 8	2513	544	122	623
Reese, James T., Roane, Tex. Gate						
Reeve, Sidney A., Worcester, assignor to C. F. Brown, trustee, Reading, Mass. Automatic boiler-pump	824,142	June 26	3776	806–7	122	2715
Reeve, Sidney A., Worcester, and E. P. Noyes, Winchester, assignors to C. F. Brown, trustee, Reading, Mass. Liquid-level apparatus	824,143	June 26	3780	807	122	2716
Reffet, Littleton, *et al.* (See Urban, Fredrick H., assignor.)						
Regenfuss, Mathew, *et al.* (See Wiza, Anthony J., assignor.)						
Regester, Edward C. (See Share, Albert, assignor.)						
Rehberger, George E., Baltimore, Md. Machine for bagging potatoes	821,314	May 22	4667	994–5	122	1215
Reichert, Margaret. (See O'Byrne, William, assignor.)						
Reichmann, Fritz, assignor to W. & L. E. Gurley, Troy, N. Y. Portable balance	821,745	May 29	5553	1182	122	1467
Reid, Arthur B., Chicago, Ill. Stenographer's copy-holder	820,066	May 8	2139	465–6	122	540
Reid, Henry, Meridian, Okla. Ter. Insect-trap	822,388	June 5	313	64	122	1794

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Reidenbaugh, John, *et al.* (See Stump, Oman L., assignor.)						
Reilly, Barney T. (See French and Reilly.)						
Reindel, Frederick W., Cleveland, Ohio, assignor to Plew & Motter, Chicago, Ill. Temporary binder. (Reissue)	12,489	May 22	5256	1120	122	1345
Reinhold, Frank J., Detroit, Mich., assignor to Diamond Match Company, New York, N. Y. Box-making machine	822,301	June 5	156	31-2	122	1762
Reinking, Karl, assignor to Badische Anilin & Soda Fabrik, Ludwigshafen-on-the-Rhine, Germany. Discharging-paste and making same	820,589	May 15	3798	.....	122	964
Reister, Robert, Dessau, Germany. Hydraulic condenser	819,596	May 1	1096	241	122	246
Reizenstein, Emile, Waltham, Mass. Combination-tool	822,553	June 5	633	127	122	1866
Rembof, Charles, New York, N. Y. Curtain-pole ring	820,257	May 8	2514	544	122	623
Rémoudy, Léon E., Vincennes, France. Irreversible controlling apparatus	823,971	June 19	3480	743	122	2594
Remppis, William F. (See Schaeffer, William G., assignor.)						
Renard, Wilhelmine R., New York, N. Y. Sash operating and locking device	824,583	June 26	4678	994-5	122	2908
Rendahl, Ragnar H., assignor to Gesellschaft für Drahtlose Telegraphie m. b. H., Berlin, Germany. Detector for electromagnetic waves or the like	820,258	May 8	2515	544	122	623
Renninger, Abner W. (See De Grey, Gerald, assignor.)						
Renshaw, Alfred H., Darien, Conn. Car-coupling	819,314	May 1	563	120-1	122	120
Renshaw, Alfred H., Troy, N. Y. Draw-head knuckle	819,315	May 1	566	121	122	130
Renshler, John D., Findlay, Ohio. Burial-casket	823,741	June 19	3035	642	122	2495
Renstrom Tempered Copper Company. (See Plumer, Carrie R., assignor.)						
Renvoize, James S., London, England. Spirometer	820,259	May 8	2517	545	122	623
Republic Railway Appliance Co. (See Flatau, Louis S., assignor.)						
Reuter, Baptist. (See Stolz and Reuter.)						
Rever, Everett I. (See Rever, Robert P., assignor.)						
Rever, Robert P., assignor of one-half to E. I. Rever, Newark, N. J. Trolley-pole	820,440	May 15	2866	624	122	758
Reversible Disc Plow & Implement Company. (See Buchanan, Judson, assignor.)						
Reynolds and Co., John W. (See Reynolds, John W., assignor.)						
Reynolds, Elmer L., assignor of one-half to W. R. Sutter, Seattle, Wash. Book-mark and page-holder	824,144	June 26	3783	807	122	2717
Reynolds, Frederick L., Chicago, Ill., assignor of one-half to E. Tietgens, Youngstown, Ohio. Advertising apparatus	819,673	May 1	1252	273	122	281
Reynolds, George A., assignor to Faatz-Reynolds Felting Company, Lestershire, N. Y. Pad for horse-collars	824,145	June 26	3784	807	122	2717
Reynolds, Henry L., Seattle, Wash., assignor to Bullard Automatic Wrench Company, Los Angeles, Cal. Wrench	824,081	June 19	3678	782	122	2635
Reynolds, Henry L., Seattle, Wash., assignor to Bullard Automatic Wrench Company, Los Angeles, Cal. Wrench	824,082	June 19	3679	783	122	2635
Reynolds, Herman M., and W. E. Sherwood, Oneida, assignors to White Mop Wringer Company, Fultonville, N. Y. Mop-wringer	819,253	May 1	432	91	122	101
Reynolds, James H., assignor to Huntington Curtain Pole Company, Huntington, W. Va. Combined curtain-pole and shade-bracket support	819,597	May 1	1097	241	122	246
Reynolds, John W., assignor to J. W. Reynolds and Co., Frankfort, Ind. Gate	824,584	June 26	4680	995	122	2908
Reynolds, Marcus T. (See Whitman, James N., assignor.)						
Reynolds, Mercer, Clarksdale, Miss. Gin	823,439	June 12	2427	511	122	2304
Rheinische Metallwaren-und Maschinenfabrik. (See Völler, Karl, assignor.)						
Rhinelander, Henry A., Freedom, Pa. Rail-joint	819,456	May 1	842	182	122	189
Rhoades, Archibald E., Elk Grove, Cal. Bale-tie machine	819,925	May 8	1771	381-2	122	460
Rhoda, Richard, Coatesville, Pa. Valve	822,983	June 12	1495	310	122	2103
Rhodes, Charles M., Steubenville, Ohio. Rail-joint	819,457	May 1	844	182	122	189
Rhodes, John E., New York, N. Y. Garment-securing device	822,076	May 29	6180	1317	122	1610
Rhodes, William J., Elizabeth, Ind. Tension device	820,736	May 15	3448	738	122	887
Rice, Donald B., *et al.* (See Dunnell, Frederick W., assignor.)						
Rice, Marion, Los Angeles, Cal. Concrete-block-making machine	820,129	May 8	2259	491	122	567
Rice, Robert F., Bridgeport, Conn. Amusement-vehicle	822,302	June 5	160	32	122	1763
Rich, George W., assignor of one-half to J. S. Lightburne, Memphis, Tenn. Clack-valve	822,077	May 29	6181	1317	122	1611
Richard, Augusto, Milan, Italy. Insulator	821,746	May 29	5554	1182	122	1468
Richard, Jules, Paris, France. Registering differential-speed indicator	823,440	June 12	2430	511-12	122	2304
Richards, Emanuel L., New London, Conn. Mass-mixing machine	819,800	May 8	1533	325-6	122	406
Richards, Emanuel L., New London, Conn. Granulating-machine	823,550	June 19	2683	565-6	122	2418
Richards, Francis H., Hartford, Conn. Carving-machine	824,146	June 26	3785	808-9	122	2717
Richards, Francis H., Hartford, Conn., assignor, by mesne assignments, to American Typographic Corporation. Key-operated mechanism	823,080	June 12	1698	351-3	122	2145
Richards, Francis H., Hartford, Conn., assignor, by mesne assignments, to American Typographic Corporation. Movement-starting mechanism	823,081	June 12	1715	353-4	122	2149
Richards, Francis H., Hartford, Conn., assignor, by mesne assignments, to American Typographic Corporation. Pivot connection	823,137	June 12	1832	378	122	2175
Richards Manufacturing Company. (See Wideman, Gustavus, assignor.)						
Richards, Morris P., Utica, N. Y. Magazine in small-arms	819,801	May 8	1536	326	122	406
Richards, Thomas C., Winsted, Conn. Curtain-rod	821,377	May 22	4814	1023	122	1251
Richards, Walter J., Milwaukee, Wis. Automatic controller for motor-compressors	821,672	May 29	5392	1150-1	122	1431
Richards, Walter J., Milwaukee, Wis. Fluid-pressure control	821,673	May 29	5400	1151	122	1432
Richards, Walter J., Milwaukee, Wis. Controlling apparatus	821,747	May 29	5556	1183	122	1468
Richards, Walter J., Milwaukee, Wis. Automatic controller for pressure systems	822,233	May 29	6463	1372	122	1675
Richardson, Charles G., Springfield, Vt., assignor, by mesne assignments, to Massey Machine Company. Lathe	824,207	June 26	3914	836-9	122	2745
Richardson, Dwight S., New York, N. Y. Heating-furnace	820,130	May 8	2261	492	122	567
Richardson, Elmore S., Farmer, Ohio. Drinking-fountain	823,697	June 19	2958	626	122	2480
Richardson, George F. (See Otto, Edward C. F., assignor.)						
Richardson, Harry H., Beaver Falls, Pa., assignor to American Company, Rockford, Ill. Fish-line reel	824,438	June 26	4382	932	122	2841
Richardson, John S. (See Norwood, George, assignor.)						
Richardson, Lavinia D., Fredericksburg, Va. Pocket ash-receptacle	820,067	May 8	2142	466	122	541
Richardson Manufacturing Co. (See Brown, Theophilus, assignor.)						
Richardson, Robert, Allegheny, Pa. Automatic safety cut-out	824,439	June 26	4383	932	122	2841
Richardson, Robert L., assignor of one-half to D. B. Howard Keota, Iowa. Extension and other table	819,802	May 8	1538	326-7	122	406
Richardson, Wilber E. (See Sherman and Richardson.)						
Richardson, William C., Mystic, Conn. Door-mat	823,972	June 19	3482	743-4	122	2594
Richie, Charles W., *et al.* (See Levake, Anson S., assignor.)						
Richmond, Charles B., assignor of one-half to J. H. Tolman, St. Louis, Mo. Automatic watering or feed trough	820,316	May 8	2620	571	122	646
Richmond, William H., Mount Pleasant, Mich. Folding box	823,810	June 19	3167	670	122	2525
Richter, Carl, Chicago, Ill. Bottle-holder	822,984	June 12	1497	311	122	2104
Richter, Friedrich A. (See Schütze, August, assignor.)						
Richter, Henry O., Clinton, Mass. Antifreezing bottle	819,169	May 1	250	54	122	62

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Richter, Herman F., *et al.* (See Levake, Anson S., assignor.)						
Richwood, Clarence H., Boston, Mass. Vibrator-applicator and connection therefor	819,458	May 1	846	182	122	189
Richwood, Clarence H., Boston, Mass. Applicator for mechanical massage	819,459	May 1	848	182	122	190
Rickerd, Arthur E., Stanley, Wis. Vat-cleaning apparatus	819,803	May 8	1540	327	122	407
Rickets, Martin. (See Sischo, Frank M., assignor.)						
Rickheit, Henry C., Pittsfield, Mass. Dividers	823,364	June 12	2291	479	122	2276
Rieksecker, Alva C., *et al.* (See Smith, Frank L., assignor.)						
Ridd, Ambrose, Newport, Ky. Apparatus for bluing metal sheets	823,226	June 12	2039	424	122	2223
Rideout, William A., Sr., Oshkosh, Wis. Electrical switch-indicator	820,260	May 8	2518	545	122	624
Rider, Charles H., St. Louis, Mo. Ore-roasting furnace	824,263	June 26	4026	862	122	2769
Rider, Herbert E., assignor to G. A. Walton, New York, N. Y. Steam-generator	820,013	May 8	2014	442	122	512
Ridge, James B., Brooklyn, N. Y. Combined sash-lock and burglar-alarm	819,804	May 8	1541	327	122	407
Ridgely Trimmer Company. (See Vandermark, John L., assignor.)						
Ridgely Trimmer Company. (See Williams, Harry S., assignor.)						
Ridgway, Frederick J., J. Aynsley, and F. Hancock, Stoke-upon-Trent, England. Device for ornamenting earthenware articles	819,170	May 1	252	55	122	62
Riebe, August, and P. Brühl, Berlin, Germany. Ball-bearing	820,520	May 15	3052	657	122	801
Riebe, Gustav, Kattowitz, assignor to Firm of Albert Peiser, Breslau, Germany. Type-bar for type-writing machines	822,303	June 5	161	32	122	1764
Rieche, Friedrich. (See Weise, Rieche, and Barth.)						
Riedel, Paul, *et al.* (See Bartlebaugh, Benjamin C., assignor.)						
Ries, Oscar M., Toledo, Ohio. Mold	820,014	May 8	2018	442	122	512
Rieth, Julius C., and J. H. Chamberlain, Chicago, Ill. Pneumatic grain-moving apparatus	824,585	June 26	4682	995	122	2909
Rietzel, Adolph F., and G. E. Barstow, assignors to Thomson Electric Welding Company, Lynn, Mass. Automatic electric metal-working machine	821,061	May 22	4172	887-9	122	1107
Riggs, Richard M., South Norwalk, Conn. Curtain-fixture	820,131	May 8	2263	492	122	568
Riker, Andrew L., Bridgeport, Conn., assignor to "Locomobile" Company of America, New York, N. Y. Automatic circuit making and breaking device for automobiles and the like	823,811	June 19	3168	670	122	2526
Riley, Robert J. (See Sourby and Riley.)						
Ring Paper Clip Company. (See Hale, Joshua B., assignor.)						
Riordon, John J., Jr. (See McCarthy, John T., assignor.)						
Ris, Christopher, Basel, Switzerland. Blue sulfur dye and making same	821,378	May 22	4815	.....	122	1251
Rishel, John K., Williamsport, Pa. Extension-table	820,737	May 15	3449	739	122	887
Risley, Sheridan. (See Thomas and Gillette, assignors.)						
Ritchey, Edward D., Jr., Kahoka, Mo. Shoe-fastener	820,132	May 8	2264	492	122	568
Ritchie, George, North Mount Vernon, Scotland, assignor to Crawley Book Machinery Company, Newport, Ky. Machine for holding, cutting, and ornamenting the edges of books, papers, or cards	824,671	June 26	4839	1032-3	122	2942
Ritter, Philip T., St. Louis, Mo. Baby holding and walking device	823,812	June 19	3170	670	122	2526
Rivard, Hubert N., assignor to La Compagnie de Laiterie St. Laurent, Montreal, Canada. Cream pasteurizer and cooler	824,147	June 26	3789	809-10	122	2718
Rivard, John D., Los Angeles, Cal. Smelting-furnace	824,383	June 26	4257	907	122	2816
Riveroll, Elfego, Los Angeles, Cal. Furnace for smelting ores	820,133	May 8	2265	492	122	568
Riveroll, Elfego, Los Angeles, Cal. Smelting ores	820,134	May 8	2269	493	122	569
Roach, Ariand B., assignor to C. E. Doffiemyer and D. F. McKinney, Los Angeles, Cal. Cheese-cutter	823,138	June 12	1834	378	122	2175
Roach, Ariand B., Los Angeles, and A. J. Hodge, Pasadena, assignors to C. E. Doffiemyer and D. F. McKinney, Los Angeles, Cal. Cheese-cutter	823,227	June 12	2041	424	122	2223
Roach, James W., assignor of one-half to C. E. Hildebrand, Stroud, Okla. Ter. Display-rack	824,063	June 19	3680	783	122	2636
Roatch, Frank, Newberry, Mich. Boiler-flue cutter	819,598	May 1	1099	242	122	247
Robart, Albert. (See Carleton, Oscar M., assignor.)						
Robbel, Oscar, Kenosha, Wis. Gas-mixer	822,771	June 5	1075	221	122	1964
Robbins, Alexander, Kalamazoo, Mich. Spacing and dividing instrument	819,926	May 8	1774	382	122	460
Robbins, Jacob H. (See Sauvé, Stanislaus H., assignor.)						
Robert Gair Company. (See Beattie, James G., assignor.)						
Robert, Thomas, *et al.* (See Fuller, Eugene, assignor.)						
Roberts, Albert S., Hillsboro, Ill. Pocket-knife	824,148	June 26	3792	810	122	2719
Roberts, Charles F., Colorado Springs, Colo. Apple-corer	820,015	May 8	2019	442	122	513
Roberts, Charles V., Philadelphia, Pa. Valve	819,378	May 1	703	148-9	122	160
Roberts, George W., Ravenna, Nebr. Cement building-block	822,078	May 29	6182	1317	122	1611
Roberts, George W., Lemoore, Cal. Tank-indicator	824,672	June 26	4841	1033	122	2943
Roberts, Isaiah L., assignor of one-half to J. T. Morehead, New York, N. Y. Metallurgical furnace	821,830	May 29	5720	1219	122	1506
Roberts, Mark. (See Monville and Roberts.)						
Roberts, Robert J. (See Hunt and Roberts.)						
Roberts, Samuel C., assignor to Automatic Game Table Company, Springfield, Mass. Game-table	820,367	May 8	2715	592	122	668
Roberts, William N., and H. B. Mathews, Ansonia, Ohio. Lantern-holder	819,805	May 8	1543	328	122	407
Robertson, Andrew G., Philadelphia, and J. H. Robertson, Cheltenham, Pa.; said J. H. assignor to said Andrew G. Robertson. Loom for weaving pile fabric	823,698	June 19	2959	626	122	2480
Robertson, Archibald J., Chicago, Ill. Wheel	821,886	May 29	5806	1237	122	1524
Robertson, Frederick H., Wichita, Kans. Golf-stick	823,082	June 12	1724	354	122	2152
Robertson, James P., North Sydney, near Sydney, New South Wales, Australia. Electrical fire-alarm apparatus	820,823	May 15	3641	777-9	122	930
Robertson, John H. (See Robertson, Andrew G. and J. H.)						
Robertson, Joseph W., Hot Springs, Va. Car-coupling	821,539	May 22	5120	1090	122	1316
Robertson, William, Chicago, Ill. Material and cinder-pit elevator	822,153	May 29	6327	1346	122	1644
Robinson, Aaron J., Fremont, N. H. Grinding-mill disk	819,599	May 1	1100	242	122	247
Robinson Company. (See Robinson, Frank, assignor.)						
Robinson, Cyrus E., Goldenridge, Me. Fence-post	823,441	June 12	2432	512	122	2305
Robinson, Edwin W., Punxsutawney, Pa. Rail-bond	823,292	June 12	2162	451	122	2248
Robinson, Frank, New York, N. Y., assignor to Robinson Company, Bangor, Me. Exhaust for locomotives	819,806	May 8	1545	328	122	407
Robinson, Frank T., assignor to D. E. Reed and F. W. Moser, Chicago, Ill. Binder for bottle-stoppers and the like	824,507	June 26	4513	958	122	2872
Robinson, George W., Portalegre, Portugal. Roller for washing, wringing, mangling, and other similar machines	822,772	June 5	1075	221	122	1964
Robinson, Grant W., Lodi, Wis. Garden implement	820,601	May 15	3194	687	122	832
Robinson, Hanson, assignor to American Foundry & Machine Company, Hanover, Pa. Metal-planing machine	822,985	June 12	1497	311	122	2104
Robinson, Harry C., Muncy, Pa. Grinding-mill	823,365	June 12	2294	480	122	2276
Robinson, James F. (See Noble, Edward J., assignor.)						
Robinson, William A., Woonsocket, assignor to Manville Company, Providence, R. I. Textile article provided with lappet figures and producing the same	820,602	May 15	3196	687	122	833

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Robinson, William H., Steinway, N. Y., assignor, by mesne assignments, to himself, and W. M. Hanes, Winston Salem, N. C. Down-separating apparatus	819,171	May 1	253	55	122	62
Rochet, Jean, Lons-le-Saulnier, France. Head and nape covering	822,986	June 12	1500	312	122	2105
Rochow, Ferdinand J., Brooklyn, N. Y. Rotary pump, compressor, motor, engine, and like machinery	819,674	May 1	1255	273–4	122	282
Rockwell, Byrd C., Gifford, Ark. Hollow mortising-chisel	824,673	June 26	4842	1033	122	2943
Rockwood, William M., Indianapolis, Ind. Pulley	821,379	May 22	4817	1023	122	1251
Roderick Lean Mfg. Co. (See Goss, George W. and C. E., assignors.)						
Rodger Ballast Car Company. (See Meissner and Yost, assignors.)						
Rodgers, W. J., *et al.* (See Burkins, Eugene, assignor.)						
Rodgers, William S. S. (See Shobe, Jacob S., assignor.)						
Rodjeff, Leonard J., Chicago, Ill. Display-vehicle	819,600	May 1	1101	243	122	247
Rodkey, David B., Spangler, Pa. Folding shipping-crate	822,389	June 5	314	64–5	122	1794
Rodkey, I. N. (See Johnson, Gustaf G., assignor.)						
Rodman, Rollin L., Lott, Tex. Embroidering attachment for sewing-machines	823,442	June 12	2433	513	122	2305
Roebuck, Alvah C., Chicago, Ill. Film-reeling mechanism	820,441	May 15	2868	624–5	122	759
Roehr, Curt J., Philadelphia, Pa. Treating brewers' and distillers' slop	823,366	June 12	2298	.....	122	2277
Roehr, Curt J., assignor to himself and W. F. Parry, Philadelphia, Pa. Treating distillery-slop	820,824	May 15	3649	.....	122	931
Roemer, Joseph, Santa Maria, Cal. Pipe-wrench	822,017	May 29	6062	1292	122	1582
Roemer, Mary T., Wabasha, Minn. Attachment for pans and the like to prevent burning	823,699	June 19	2960	627	122	2480
Roesch, Alfred, Bridgeport, Conn., assignor to Davis & Roesch Temperature Controlling Company, New York, N. Y. Regulator	822,554	June 5	634	127–8	122	1866
Rogers, Andrew W., assignor to S. W. Winslow, trustee, Beverly, Mass. Buffing-machine	822,154	May 29	6329	1346–7	122	1645
Rogers, Byron M., Watertown, N. Y. Envelop-moistener	822,773	June 5	1076	222	122	1964
Rogers, David J., Lexington, Ky. Attachment for ink bottles or stands	820,671	May 15	3324	713	122	859
Rogers, Edward L., Boston, Mass. Spring box-hinge	822,555	June 5	637	128	122	1866
Rogers, Frank B., and C. H. Dittmer, Maddux, Mont. Hair-fastener	819,927	May 8	1775	382	122	461
Rogers, George R., assignor of two-thirds to S. Scott and G. Little, Crawfordsville, Ind. Gate	823,293	June 12	2163	451–2	122	2249
Rogers, Isaac N., New York, N. Y. Box-opener	819,316	May 1	567	121	122	130
Rogers, Longinus V. (See Walton and Rogers.)						
Rogers, Marshall C., assignor of one-half to W. C. Rogers, Woodland, Cal. Water and feed trough for fowls	824,508	June 26	4514	958	122	2872
Rogers, Ridgeway and Faith. (See Knobel, Abraham, assignor.)						
Rogers, Robert H., Schenectady, N. Y., assignor to General Electric Company. Dynamo-electric machine	822,304	June 5	162	32	122	1764
Rogers, William C. (See Rogers, Marshall C., assignor.)						
Rogers, William J., San Jose, Cal. Candle-lamp	819,379	May 1	706	149	122	161
Rohrberg Bros. (See Rohrberg, John, assignor.)						
Rohrberg, John, Sioux City, Iowa, assignor of one-half to Rohrberg Bros., Osmond, Nebr. Grain-door for freight-cars	822,477	June 5	472	96	122	1828
Rolfe, Charles A., Adrian, Mich., assignor, by mesne assignments, to Rolfe Electric Co., Rochester, N. Y. Electrical protective device	820,521	May 15	3053	657	122	801
Rolfe Electric Co. (See Rolfe, Charles A., assignor.)						
Rolkin, Edward. (See Bankson, Severin B., assignor.)						
Roller, Frank W., Plainfield, N. J. Electrical measuring instrument	822,987	June 12	1501	312	122	2105
Rolph, Frederick L., Fitchburg, Mass. Boot and shoe cleaner	821,193	May 22	4432	944	122	1165
Rome Saddlery Hardware Manufacturing Company. (See Craig, Alexander M., assignor.)						
Rominger, George S., assignor to Girard Iron Works, Philadelphia, Pa. Cask-support	824,586	June 26	4683	996	122	2909
Ronconi, Romeo, New York, N. Y. Collapsible box	823,813	June 19	3172	671	122	2526
Roney, John W., *et al.* (See Chamberlain, Theron T., assignor.)						
Rood, Philo T., St. Louis, Mo. Apparatus for cleaning cotton-seed	822,478	June 5	474	96	122	1828
Rooney, Elwin H. (See Owen and Rooney.)						
Rooney, Elwin H., New Bedford, assignor to Whitin Machine Works, Whitinsville, Mass. Combing-machine	822,479	June 5	475	97–8	122	1828
Rooney, Henry F., Randolph, assignor to C. E. Hale, Walpole, Mass. Vibrator	821,831	May 29	5721	1219	122	1506
Rooney, James, New York, N. Y. Door-fastening	819,460	May 1	850	183	122	190
Root, Charles F., and B. O. Conn, Mansfield, Ohio. Paper pasting and turning-in machine	822,480	June 5	480	98–9	122	1830
Root, Charles M., assignor to Penn Surgical Mfg. Co., Philadelphia, Pa. Stethoscope	821,315	May 22	4671	995	122	1216
Roper, Charles F., assignor to Draper Company, Hopedale, Mass. Filling-exhaustion-indicating mechanism for looms	821,123	May 22	4301	916	122	1134
Roper, Charles F., assignor to Draper Company, Hopedale, Mass. Selvage-motion for looms	823,638	June 19	2851	603–4	122	2457
Rosat, Henri, Fils, Le Locle, Switzerland. Stem-winding watch	822,018	May 29	6064	1292	122	1582
Rose, William, Gainsborough, England, assignor to Wright's Automatic Tobacco Packing Machine Company, Lynchburg, Va. Packing-machine	822,988	June 12	1505	312–13	122	2105
Ross, William H., Baltimore, Md. Disinfecting apparatus	822,019	May 29	6065	1293	122	1583
Ross, William H., Baltimore, Md. Disinfecting apparatus	822,020	May 29	6067	1293	122	1583
Rosenbaum, Louis, St. Louis, Mo. Sad-iron	823,190	June 12	1941	401	122	2201
Rosenberg, Augustus, London, England. Apparatus for the generation of acetylene gas	824,509	June 26	4516	958–9	122	2872
Rosenbluth, Edwin M., Philadelphia, Pa. Acetylene-gas apparatus	821,540	May 22	5121	1090–1	122	1316
Rosier, Leo A. (See Barnes and Rosier.)						
Rosner, Heinrich, Lemberg, Austria-Hungary. Apparatus for constructing conduits for wires, cables, &c.	820,672	May 15	3326	713–14	122	859
Ross, Charles D., Portland, Oreg. Lumber-drying kiln	822,481	June 5	489	99	122	1833
Ross, David M., and F. T. Edwards, Fletcher, Ga. Turpentine-still	821,887	May 29	5808	1237	122	1524
Ross, James A., Chicago, Ill. Steam-boiler	819,601	May 1	1103	243	122	248
Ross, John F., assignor to P. F. and W. E. Ross and C. F. Vanhorn, Toronto, Canada, Can.	821,888	May 29	5809	1238	122	1525
Ross, Percy F., *et al.* (See Ross, John F., assignor.)						
Ross, William E., *et al.* (See Ross, John F., assignor.)						
Rossilli, Joseph F. (See Johnson, Marquis H., assignor.)						
Rossi, Auguste J., New York, assignor of forty-two and one-half one-hundredths to J. MacNaughton, deceased, Tahawus, (Janet MacNaughton, executrix,) and fifteen one-hundredths to P. C. Peck, New York, N. Y. Production of steel containing titanium	822,305	June 5	164	33	122	1764
Rostron, William H., Germantown, Pa. Smoke-consumer	820,016	May 8	2020	443	122	513
Roth, John, Jersey City Heights, N. J. Die	820,603	May 15	3198	687	122	833
Rothermundt, Adolf, Dresden-Blasewitz, Germany. Device for perforating music-rolls for self-playing piano attachments	824,208	June 26	3922	839	122	2747
Rounds, Myron, Boston, Mass. Railway-car	824,209	June 26	3923	840–1	122	2747
Rouse, Harry B., Chicago, Ill. Gas-generating apparatus	821,258	May 22	4553	969	122	1191
Rousy, Louis, Geneva, Switzerland. Hypodermic syringe	822,079	May 29	6183	1318	122	1611
Roux, Charles P. T., Niort, France. Douche apparatus	821,259	May 22	4556	969	122	1192
Rowden, George, Newark, N. J. Plate-press	821,380	May 22	4818	1023–4	122	1251
Rowe, Thomas, Dollar Bay, Mich. Pole-tip	819,807	May 8	1546	328	122	408
Roy, Edward H. (See Burton and Roy.)						
Royal Typewriter Company. (See Hess, Edward B., assignor.)						
Roys, Herbert M. (See Macy and Duncan, assignors.)						
Ru Ton, Hiram W., Goshen, assignor to National Sweeper Co., Marion, Ind. Carpet-sweeper	822,631	June 5	809	164	122	1905
Rubber Balloon Company of America. (See Faber and Seal, assignors.)						
Rubber and Celluloid Harness Trimming Co. (See Schreiner, Joseph, assignor.)						
Rubberhide Company. (See Schaffer, Frederick F., assignor.)						
Rubbertex Cloth and Paper Company. (See Bond, Lon A., assignor.)						
Ruby, Aday C. (See Shafer and Ruby.)						
Ruddell, Robert U., Hartford, Conn., and W. Ruddell, New York, N. Y. Cue-holder	824,149	June 26	3793	810	122	2719
Ruddell, William. (See Ruddell, Robert U. and W.)						
Rue, Edward, Amboy, Minn. Washing-machine	824,674	June 26	4843	1033	122	2943
Ruehs, Charles L., and G. Weiss, assignors of one-third to P. J. Keeney and J. F. Volz, Chicago, Ill. Vegetable and fat cutting machine	824,587	June 26	4684	996	122	2909
Ruge, Karl, and S. Katzenstein, Charlottenburg, Germany. Automatic watering-trough for cattle and horses	824,588	June 26	4687	996	122	2910
Ruhlman, George H., and G. C. Miller, Cardington, Ohio. Washing-machine	819,254	May 1	435	91	122	102
Rule, John A., Cincinnati, Ohio. Coin-operated vending-machine	822,869	June 5	1267	261	122	2004
Rulon, Watson B. (See Steele, William O., assignor.)						
Runner, John B., assignor to Hoosier Jack and Combination Tool Company, Indianapolis, Ind. Combination-tool	824,264	June 26	4029	862	122	2769
Rupp, Henry, Kraft, Mich. Sprayer	819,602	May 1	1104	243	122	248
Russ, John D., assignor of seven-twelfths to F. F. McIntosh and A. J. Lyons, Spencer, W. Va. Trigger mechanism	821,889	May 29	5813	1238	122	1526
Russ, John D., assignor of seven-twelfths to F. F. McIntosh and A. J. Lyons, Spencer, W. Va. Firearm	821,890	May 29	5820	1238–9	122	1527
Russell, Charles W., Louisville, Ky. Awning	820,261	May 8	2521	546	122	624
Russell and Company. (See Heggem, Charles O., assignor.)						
Russell & Erwin Manufacturing Company. (See Caley, Charles J., assignor.)						
Russell, Freddie F., Daniel, Miss. Churning-machine	820,135	May 8	2272	493–4	122	569
Russell, Isaac O., assignor to J. T. Horn, Indianapolis, Ind. Physical exercising device	820,017	May 8	2021	443	122	513
Russell, James H., Manistee, Mich. Receptacle for delivering goods	821,541	May 22	5124	1091–2	122	1316
Russell, Robert A. C., Stafford, England. Riding and driving saddletree	820,136	May 8	2273	494	122	570
Russell, William H., Douglastown, Canada. Roller-bearing	823,083	June 12	1725	355	122	2151
Rust, Mortimer R., assignor to Dilts Machine Works, Fulton, N. Y. Lighter-bar stand	820,137	May 8	2275	495	122	570
Ruth, John W., East Huntingdon township, Westmoreland county, and D. Harden, Everson, Pa. Knife for wood-planing machines	824,589	June 26	4689	997	122	2911
Rutter, Mont, Newark, N. J. Detonating toy	819,928	May 8	1775	382–3	122	461
Ryan, James. (See Ryan, John D., assignor.)						
Ryan, John, New York, N. Y. Mail-catching device	824,440	June 26	4387	933	122	2842
Ryan, John D., Sistersville, W. Va., assignor of one-half to J. Ryan, Chicago, Ill. Wrench	823,367	June 12	2299	481	122	2277
Ryden, Claes, Providence, R. I. Bobbin for winding-machines	822,224	May 29	6467	1372	122	1676
Ryf, Johann C. (See Treyer, Franz, assignor.)						
Rymill, Joseph S., Pittsburg, W. A. Painter and J. C. Miller, Allegheny, assignors to Pittsburg Lamp, Brass & Glass Company, Pittsburg, Pa. Universal shade-holder	821,891	May 29	5826	1239	122	1529
Ryon, Eppa H., Worcester, Mass., assignor to Crompton & Knowles Loom Works. Shuttle-box motion for looms	820,018	May 8	2022	443	122	513
Rypinski, Maurice C. (See La Roche and Rypinski.)						
S. Pearson and Son. (See Japp, Henry, assignor.)						
S. Pearson and Son. (See Moir, Ernest W., assignor.)						
S. F. Bowser and Company. (See Dunn, Henry F., assignor.)						
Sachs, Ernst. (See Höpflinger and Sachs.)						
Sachsenröder, Gustav, Barmen-Unterbarmen, Germany. Manufacturing artificial parchment	821,434	May 22	4939	.....	122	1277
Saco & Pettee Machine Shops. (See Mills, Charles, assignor.)						
Sadler, Malander F. (See Tygart, John A., assignor.)						
Sadler, Octavius. (See Bryan and Sadler.)						
Saecker, Herman G., Appleton, Wis. Paper-stock-refining engine	820,522	May 15	3054	657–8	122	801
Sage, Jearum A., Stryker, Ohio. Car-fender	820,317	May 8	2021	571	122	646
Sager, E. E., *et al.* (See Dieterich, Albert E., assignor.)						
Saint Chamas, Albert de, Chicago, Ill. Wall-bracket	824,150	June 26	3797	810	122	2720
Salchli, John F., Frankfort, Ky. Garment-clasp	821,748	May 29	5561	1183	122	1470
Salem Glass Works. (See McElherron, Thomas J., assignor.)						
Salmon, Wilmer W., Buffalo, N. Y. Signaling system	821,381	May 22	4820	1024	122	1252
Salmon, Wilmer W., assignor, by mesne assignments, to General Railway Signal Company, Buffalo, N. Y. Railway switching and signaling apparatus	821,435	May 22	4940	1049–50	122	1277
Salviolo, Carmine J., New York, N. Y. Suit-case lock	824,590	June 26	4690	997	122	2911
Sammis, Frank R., Stratford, Conn. Ditching-machine	823,191	June 12	1943	401	122	2201
Sampson, Winslow F., Medford, assignor of one-half to L. Seyster, Boston, Mass. Compound scaling-ladder	819,929	May 8	1780	383	122	462
Samuel Winslow Skate Co. (See Everett, Otis W., assignor.)						
Samuel Winslow Skate Mfg. Company. (See Everett, Otis W., assignor.)						
Sandberg, William. (See Norem and Sandberg.)						
Sander, Henry C., Newark, N. J. Meat-chopper	820,990	May 22	4039	858–9	122	1079
Sanders, Louis, New York, N. Y. Buckle	822,080	May 29	6185	1318	122	1611
Sanders, Newell, Chattanooga, Tenn. Expanding wheeled plow	822,632	June 5	810	165	122	1906
Sanders, Wilbur E., Helena, Mont., assignor of one-half to T. C. De Sollar, Denver, Colo. Car-axle journal-box	819,675	May 1	1257	274	122	282
Sanderson & Porter. (See Lang, William H., assignor.)						
Sanderson, Thomas C., West New Brighton, N. Y. Tire for vehicles	820,673	May 15	3328	714	122	860
Sanderson, Thomas C., West New Brighton, N. Y. Tire for vehicles	820,738	May 15	3450	739	122	888
Sanderson, Thomas C., West New Brighton, N. Y. Tire for vehicles and making the same	822,021	May 29	6068	1293	122	1583
Sandham, Frederick, Los Angeles, Cal. Hinge	823,443	June 12	2434	513	122	2305
Sandler, Philip, Los Angeles, Cal. Sewing-machine guide	820,523	May 15	3056	658	122	802
Sandner, Erich, assignor to American Suction Gas Producer Company, Lansing, Mich. Gas-producer	824,284	June 26	4260	907	122	2817
Sands, Walter E., Brooklyn, assignor to L. A. Thompson Scenic Railway Company, New York, N. Y. Electric block-signal for railways	819,808	May 8	1547	328–9	122	408
Sanfilippo, Ignazio, Casteltermini, Italy. Ore-roasting furnace	820,138	May 8	2277	495	122	570
Sanger, John N., assignor, by mesne assignments, to Fred Adee Company, New York, N. Y. Flashing device	822,306	June 5	166	33	122	1764

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Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Sanitary Can Machinery Company. (See Brenzinger, Julius, assignor.)						
Sanitary Manufacturing Company. (See Henn, William A., assignor.)						
Sanitary Sectional Brush Company. (See Fetters, Charles A., assignor.)						
Sano, Kashichi, Tokyo, Japan. Seamless-bottom sack or bag and making the same	822,081	May 29	6186	1318	122	1612
Sano, Kashichi, Tokyo, Japan. Seamless bag or sack and making the same	822,155	May 29	6334	1347	122	1646
Sarafian, Hovcep, Yonkers, assignor to N. Costikyan, New York, N. Y. Woven fabric	820,825	May 15	3650	779	122	931
Sargent, Charles E., Greenville, Ill. Farm-gate	822,156	May 29	6335	1347–8	122	1646
Sargent, Willis H., assignor to E. and T. Fairbanks and Company, St. Johnsbury, Vt. Railway-track scale	824,591	June 26	4691	997	122	2911
Sartor, Ernest W., Paducah, Ky. Pendulum-beat adjuster	819,809	May 8	1550	329	122	409
Sassaman, Benjamin F., Gibbstown, N. J. Measuring instrument	823,444	June 12	2435	513–14	122	2305
Satter, Joseph S. (See Meyer and Satter.)						
Sauer, Constanze. (See Sauer, Hermann and C.)						
Sauer, George L. (See Fairbanks and Sauer.)						
Sauer, Hermann and C., Lübeck, Germany. Device for hanging wall-mirrors, pictures, and the like	820,674	May 15	3328	714	122	860
Sauer, Rudolph, Minneapolis, Minn. Bottle	824,210	June 26	3925	841	122	2748
Saunders, Addison T. and G. H., Akron, Ohio. Ball-winding machine	822,482	June 5	491	100–1	122	1833
Saunders, Addison T., assignor of one-half to F. A. Selberling, Akron, Ohio. Ball-rolling machine	820,139	May 8	2278	495–6	122	570
Saunders, Addison T., assignor of one-half to F. A. Selberling, Akron, Ohio. Ball-rolling machine	820,140	May 8	2281	496	122	571
Saunders, George H. (See Saunders, Addison T. and G. H.)						
Saunders, James W., Reynolds, Ill. Match-box	819,603	May 1	1105	244	122	248
Saunders, John R. (See Kinyon and Saunders.)						
Sauvé, Stanislaus H., assignor of forty-nine one-hundredths to J. H. Robbins, Spokane, Wash. Induction-coil	823,973	June 19	3483	744	122	2594
Savage, George E., assignor to Manning, Bowman and Company, Meriden, Conn. Percolator	821,124	May 22	4306	916	122	1135
Savage, George E., and J. W. Chapman, assignors to Manning, Bowman and Company, Meriden, Conn. Percolator	821,125	May 22	4307	916	122	1136
Savoie, Leo L., New Orleans, La. Rail-joint	819,172	May 1	257	55	122	64
Sawyer, Fred L., and J. H. Fulford, Americus, Ga. Bagging and weighing machine	819,930	May 8	1782	383–4	122	462
Sayer, Edmund S., Jr., Oklahoma, Okla. Ter. Field chest and desk	823,700	June 19	2962	627	122	2480
Sayers, William B., Glasgow, Scotland. Means for driving turbines	821,436	May 22	4942	1050	122	1278
Saylor, Abraham B. (See Sharpe, John, assignor.)						
Scales, Richmond P., and J. F. McElroy, assignors to Consolidated Car Heating Company, Albany, N. Y. Automatic steam-trap	824,441	June 26	4388	933	122	2842
Scarborough, William W., and C. E. Schultz, Knoxville, Tenn. Pneumatic-tire protector	822,307	June 5	167	34	122	1765
Schaad, Henry D., Chicago, Ill. Bottle	823,639	June 19	2855	604	122	2458
Schaaf, Peter L., Botkins, Ohio. Fence-post mold	823,139	June 12	1837	379	122	2176
Schacht, Julius, assignor to S. C. Hirschberg, New York, N. Y. Thermometer	819,380	May 1	708	149	122	161
Schade, John, Jr., New York, N. Y. Loose-leaf binder	819,461	May 1	851	183	122	190
Schaeffer, Frank M., assignor of one-half to S. A. Fletcher, Indianapolis, Ind. Sand-drier	822,022	May 29	6069	1293–4	122	1584
Schaeffer, Frederick W., Chicago, Ill. Fireproof window frame and sash	819,810	May 8	1551	329	122	409
Schaeffer, William G., assignor to W. F. Remppis, Reading, Pa. Adjustable lamp-bracket	821,749	May 29	5562	1183	122	1470
Schafer, Charles, Violetville, Md. Ironing-board support	820,262	May 8	2522	546	122	625
Schafer, William L., Star, Ill. Plate, pan, or pot lifter	820,141	May 8	2284	497	122	572
Schaffer, Frederick F., Naugatuck, Conn., assignor to Rubberhide Company. Rubber boot	822,692	June 5	937	191	122	1936
Schaller, Otto, Steglitz, near Berlin, assignor to Firm of J. Pintsch, Berlin, Germany. Electric coupling	820,604	May 15	3199	688	122	833
Scharps, Albert T. (See Ashley, Frank M., assignor.)						
Schaub, Julius W., Chicago, Ill. Concrete road-bed for railways	819,081	May 1	92	21–2	122	25
Schauer, John W., Kalispell, Mont., assignor to Kalispell Manufacturing & Improvement Company. Grain-conveyer	819,676	May 1	1259	274	122	282
Schaum, Otto W., Philadelphia, Pa. Warp supporting and guiding means	824,310	June 26	4101	877	122	2785
Schauman, Bror M., assignor to himself, M. K. Harr, J. F. Stevens, and J. D. Smith, Philadelphia, Pa. Copying-machine	822,390	June 5	315	65	122	1794
Schäyer, Max S., Denver, Colo. Jelly-press	824,592	June 26	4692	998	122	2911
Schebler, Theodore N. E., Davenport, Iowa. Conductor-pipe holder	820,991	May 22	4042	859	122	1079
Scheele, Walter T., assignor to W. J. Hooper, Baltimore, Md. Apparatus for preserving by liquid air	820,442	May 15	2871	625	122	759
Schenck, Martin B., Meriden, Conn. Sheet-metal roller-bearing furniture-caster	821,750	May 29	5563	1183	122	1470
Schenk, John M., Waterloo, and J. Schenk, Emmettsburg; said J. Schenk assignor to J. H. Stewart, Waterloo, Iowa. Tile-machine	819,931	May 8	1785	384–5	122	463
Schenk, Joseph. (See Schenk, John M. and J.)						
Scherff, Anna M., Wells, Nev. Portable wardrobe	823,814	June 19	3173	671	122	2526
Schermerhorn, M. J., *et al.* (See McNeley, Martin M., assignor.)						
Scheu, William, Philadelphia, Pa. Awning	819,381	May 1	709	150	122	161
Scheuber, August W. (See Hartford and Scheuber.)						
Schielke, Herman. (See Steinmann and Schielke.)						
Schimmel, John, Jr., Olean, N. Y. Stamp-affixing apparatus	820,739	May 15	3451	739–40	122	888
Schirmacher, Karl, assignor to Farbwerke, vorm. Meister, Lucius & Brüning, Höchst-on-the-Main, Germany. Vat-dye and making same	823,294	June 12	2165	.....	122	2249
Schirmer, Edward E. (See Kootz and Schirmer.)						
Schlapbach, F. M., *et al.* (See Cummings, James N., assignor.)						
Schlared, Charles, assignor of three-fourths to M. H. Neil and J. Webb, Columbus, Ohio. Car-coupling	822,483	June 5	499	101	122	1835
Schlegel, Bernhard, New York, N. Y. Valve for vents	820,142	May 8	2285	497	122	572
Schlemmer, George, New York, N. Y. Stop-valve	824,442	June 26	4390	933	122	2843
Schlueter, Henry, Scribner, Nebr. Bridle-bit	823,368	June 12	2300	481	122	2277
Schmaltz, Friedrich, Mühlweg, Offenbach-on-the-Main, Germany. Drill-grinding machine	819,173	May 1	259	55–7	122	64
Schmaltz, Friedrich, Offenbach-on-the-Main, Germany. Apparatus for grinding drills, borers, and like tools	822,391	June 5	315	65	122	1794
Schmid, Peter, Basel, Switzerland. Apparatus for ungumming silk	822,774	June 5	1078	222	122	1964
Schmid, William A., and C. J. Macomber, assignors to Wide Range Drill-Chuck & Tool Co., Muncie, Ind. Chuck	820,263	May 8	2524	546–7	122	625
Schmidt, Adolph W., Lewiston, Idaho. Valve for conveyer-tubes	820,740	May 15	3454	740	122	888
Schmidt, Albert G. A., and L. Champeau, St. Paul, Minn. Automatic grain-shocking machine	821,542	May 22	5127	1092–3	122	1317
Schmidt, Charles, assignor to Packard Motor Car Company, Detroit, Mich. Mud-guard for motor-vehicles	821,751	May 29	5565	1184	122	1471

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Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Schmidt, Charles, assignor to Packard Motor Car Company, Detroit, Mich. Carbureter-control mechanism for motor-vehicles	823,742	June 19	3036	642–3	122	2495
Schmidt, Charles, assignor to Packard Motor Car Company, Detroit, Mich. Motor-vehicle brake	824,151	June 26	3799	811	122	2720
Schmidt, Frank E., Philadelphia, Pa. Suspension-support for hammocks	819,932	May 8	1788	385	122	463
Schmidt, Frank E., Philadelphia, Pa. Suspension-support for hammocks	820,605	May 15	3200	688	122	833
Schmidt, Franz, Oberschöneweide, Germany. Printing mechanism for warp-printing devices	822,308	June 5	168	34–5	122	1765
Schmidt, Wilhelm, Wilhelmshöhe, near Cassel, Germany. Boiler with superheating-tubes	823,551	June 19	2686	566–8	122	2419
Schmitt, Jacob, Newark, N. J. Gas-cock	822,484	June 5	500	101	122	1835
Schneible, Joseph, Weehawken, N. J. Treatment of refractory water	820,524	May 15	3057	658	122	802
Schneider, Charles P. E., Le Creusot, France. Regulation or control of dynamo-electric machines or electric motors	819,933	May 8	1790	385–7	122	464
Schneider, Hermann, St. Louis, Mo. Cooper's plane	821,543	May 22	5131	1094	122	1317
Schnell, John F., Ardwick, England. Vaporizer and wickless burner for oil-lamps, &c.	822,870	June 5	1268	261	122	2004
Schnell, Julius, Rührort, Germany. Turn-table	823,552	June 19	2689	568–9	122	2419
Schniewind, Frederic W. C., Everett, Mass., assignor to United Coke and Gas Company, Charleston, W. Va. Treating and utilizing gases	820,525	May 15	3058	659	122	803
Schnoor, Peter J. A., Holstein, Iowa. Condiment-holder	824,443	June 26	4391	934	122	2843
Schnurr, William, New York, N. Y., assignor to United States Printing Company, Cincinnati, Ohio. Clamp	822,775	June 5	1079	222	122	1965
Schobert, George A., Racine, Wis. Trunk	823,140	June 12	1838	379	122	2176
Schoen, Paul E., assignor to Hall, Hartwell & Company, Troy, N. Y. Sewing-machine	819,811	May 8	1552	330	122	410
Schoenman, Arnold, New York, N. Y. Alarm-lock	823,701	June 19	2964	627	122	2481
Schoenner, Georg, Nuremberg, Germany. Adjusting device in compasses	824,311	June 26	4103	878	122	2785
Schofield, Eugene H. (See Kamper and Schofield.)						
Schofield, James M. (See Allen and Schofield.)						
Schofield, John B., Tomahawk, Wis. Stave-press	819,462	May 1	852	183	122	191
Scholes, Daniel R., assignor to Aermotor Company, Chicago, Ill. Transmission-tower	821,126	May 22	4308	917	122	1136
Schooley, Clayton M., and O. N. Casey, assignors of thirty-five one-hundredths to said Schooley, fifteen one-hundredths to said Casey, and one-half to J. H. Grubb, Leesburg, Va. Nut-lock	822,989	June 12	1507	314	122	2106
Schopf, Anton. (See Gerhard, Ferdinand, assignor.)						
Schowalter, Heinrich, Ladenburg, Germany. Oil-dressing for leather	821,260	May 22	4557	.....	122	1192
Schrader, Herman H. (See Thompson and Schrader.)						
Schrader, William F. A., Brooklyn, assignor to Traun Rubber Co., College Point, N. Y. Producing elastic and scented rubber sheeting	822,309	June 5	172	.....	122	1766
Schramm, Christopher, Denver, Colo. Tent-cottage and ventilator therefor	820,526	May 15	3061	659	122	803
Schramm, Adolph W., assignor to Electro Dental Manufacturing Company, Philadelphia, Pa. Alternating-current motor	820,890	May 15	3799	810–11	122	964
Schramm, Ernst, Friedrichshagen, near Berlin, Germany. Manufacture of imitation silk	823,445	June 12	2437	514	122	2306
Schramm, Theobald, Columbus, Ohio. Lifting-jack	822,157	May 29	6338	1348	122	1646
Schraubstadter, William A., St. Louis, Mo. Type-perfecting mechanism	821,127	May 22	4309	917–18	122	1137
Schreiber, Elias L., assignor of one-half to D. H. Phillips, New York, N. Y. Safety attachment for scarf-pins	823,743	June 19	3038	643	122	2495
Schreiber, Georges M., Roubaix, France. Railway signaling and safety system and apparatus	820,143	May 8	2287	497–500	122	572
Schreidt, Frank, Mansfield, Ohio. Valve	822,023	May 29	6071	1294	122	1584
Schreiner, Joseph, Newark, N. J., assignor to Rubber and Celluloid Harness Trimming Co. Brush	819,934	May 8	1792	387–8	122	464
Schreiter, Charles W., Wimbledon, N. D. Carriage-curtain	820,264	May 8	2525	547	122	625
Schrick, August G., Hennessey, Okla. Ter. Picture-frame	822,633	June 5	812	165	122	1907
Schröder, Adolph, assignor to A. Krause, Berlin, Germany. Drying-chamber	822,990	June 12	1508	314	122	2106
Schroeder, Frederick W., London, England. Speed-gearing	823,369	June 12	2301	481	122	2277
Schroeder, Frederick W., London, England. Device for securing corks in bottles	823,370	June 12	2302	482	122	2278
Schroeder, Frederick W., London, England. Padlock	824,593	June 26	4694	998	122	2912
Schroyer, Charles A. (See Lawrence and Schroyer.)						
Schroyer, William O., Cincinnati, Ohio. Embalming instrument	820,606	May 15	3201	689	122	834
Schübel, Carl, assignor to Electrische Glühlampen-Fabrik "Watt," Scharf & Co., Vienna, Austria-Hungary. Electric incandescent lamp	819,935	May 8	1794	388	122	464
Schubert, Ferdinand, Cincinnati, Ohio. Street and station indicator	820,443	May 15	2872	625	122	760
Schultz, Carl R., Murray Hill, N. J. Siphon-collar	821,437	May 22	4946	1050	122	1279
Schultz, Charles E. (See Scarborough and Schultz.)						
Schultz, George A., Ringle, Wis. Plow attachment	821,128	May 22	4312	918	122	1137
Schultz, William J., Cincinnati, Ohio. Loose-leaf binder	823,192	June 12	1946	402	122	2202
Schulz, Richard, Berlin, Germany. Steam-generator	819,382	May 1	710	150	122	161
Schulze, Andrew, assignor of one-half to J. C. Pennie, Washington, D. C. Tool-shank	823,640	June 19	2857	604	122	2458
Schumacher, Eberhard. (See Pease and Schumacher.)						
Schuman, George E., Louisville, Ky. Calculating-machine	824,510	June 26	4518	959–60	122	2873
Schuppisser, Hermann, Zurich, Switzerland. Gas-regulator for incandescent lights	823,084	June 12	1726	355	122	2151
Schurek, Joseph, Milwaukee, Wis. Ornamental material	824,444	June 26	4392	934	122	2843
Schuster, Harry H., Mishawaka, and D. Maier, South Bend, Ind. Soap-dispenser	823,446	June 12	2438	514	122	2306
Schütze, August, assignor to F. A. Richter, Rudolstadt, Germany. Rolling-stock for toy railways	819,812	May 8	1555	331	122	410
Schwanhausser, William. (See Thomas, Philip, assignor.)						
Schwanhausser, William, assignor to Henry R. Worthington, New York, N. Y. Condenser	824,312	June 26	4104	878	122	2786
Schwarz, Carl H. R., Hamburg, Germany. Pile-driving machine	820,992	May 22	4043	959–60	122	1079
Schwarz, Jakob, Budapest, Austria-Hungary. Combined date and note block	823,702	June 19	2965	628	122	2481
Schwarz, Joseph. (See Hogan, Denis, assignor.)						
Schwarzschild, Solomon, Rochester, N. Y. Compound for protecting commercial papers	822,556	June 5	638	.....	122	1867
Schwechler, John, Philadelphia, Pa., assignor, by mesne assignments, to Hygienic Soap Granulator Company. Cake of soap	824,152	June 26	3800	811	122	2720
Schweitman, Ferdinand C., St. Louis, Mo. Sash-weight	821,316	May 22	4672	995	122	1216
Schweinler, Henry R., Brooklyn, N. Y., assignor to W. T. Macon, administrator, Tampa, Fla., and F. M. Simonton. Speed-controller for sewing-machines	821,129	May 22	4313	918	122	1137
Schweitzer, Edmund O., Chicago, Ill. Device for controlling electrical circuits	823,295	June 12	2165	452	122	2249
Schweizer-Schatzmann, Arnold, Chaux-de-Fonds, Switzerland. Watch	822,776	June 5	1080	222	122	1965
Schwem, Fredrick C., Tripoli, Iowa. Fence-post	820,318	May 8	2623	571	122	647
Schwennker, Charles F., Schenectady, N. Y., assignor to General Electric Company. Oil-gage	819,604	May 1	1105	244	122	248
Sclater, William, *et al.* (See Coleman, James M., assignor.)						
Scofield, Edson M., Philadelphia, Pa. Concrete-steel construction	824,594	June 26	4695	998–9	122	2912
Scofield, Edson M., Philadelphia, Pa. Supporting device for reinforcing-bars of concrete-steel construction	824,595	June 26	4698	999	122	2912

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Scott, Hamilton C., Philadelphia, Pa. Whiffletree-hook	822,557	June 5	639	128	122	1867
Scott, Harry W. (See Glocker, William H., assignor.)						
Scott, Henry S., and H. F. Tyzack, Gateshead, England. Turbine	822,991	June 12	1510	314–15	122	2106
Scott, Hermon C., Ritzville, Wash. Draft-equalizer	819,463	May 1	854	184	122	191
Scott, James A., Havelock, Iowa. Breast-strap protector	819,174	May 1	268	57	122	68
Scott, John M., Racine, Wis. Rail-anchor	819,175	May 1	269	57	122	68
Scott, Robert W. (See Williams, Louis N. D., assignor.)						
Scott, Samuel, *et al.* (See Rogers, George R., assignor.)						
Scott, Simon, Wellington, New Zealand. Mold used in the manufacture of short-bread and similar cake	824,445	June 26	4392	934	122	2843
Scott, Walter, Plainfield, N. J. Printing-machine	819,813	May 8	1556	331	122	410
Scott, Walter, Plainfield, N. J. Printing-machine	823,553	June 19	2690	569	122	2419
Scott, Walter, Plainfield, N. J. Paper transmitting and controlling device	824,313	June 26	4107	878–9	122	2786
Scott, Walter R., assignor of one-half to T. Turner, Philadelphia, Pa. Staking-machine	819,605	May 1	1107	244	122	249
Scott, Wilber H., Ottawa, Canada. Tea-packing machine	822,310	June 5	174	35	122	1766
Scott, William M., *et al.* (See Mayer, Walter S., assignor.)						
Scott, Wilson A., Paul, Nebr. Fish-hook	821,544	May 22	5132	1094	122	1318
Scovel, John C., Jr., Chicago, Ill. Gas-engine	820,891	May 15	3802	811	122	965
Scovill Manufacturing Company. (See Warner, Frank E., assignor.)						
Scroggins, Frank R. (See Rankin, James A., assignor.)						
Sculfin-Gallagher Iron & Steel Company. (See Gallagher, Thomas M., assignor.) (Reissue.)						
Seal, Harry E. (See Faber and Seal.)						
Sealy, Dayton L., *et al.* (See Sessions, George B., assignor.)						
Searer, Vernon O., Wakarusa, Ind. Draft-connector for vehicles	819,936	May 8	1795	388	122	465
Sears, George H., assignor of three-fourths to W. B. and A. E. Huther, Rochester, N. Y. Calculating-machine	823,897	June 19	3327	709–10	122	2561
Seaton, William, Jr., New York, N. Y. Mechanical stoker	819,937	May 8	1796	388–9	122	465
Sebring, Norman B. and W. A., Blissfield, Mich. Beet-harvester	824,211	June 26	3927	841	122	2748
Sebring, Walter A. (See Sebring, Norman B. and W. A.)						
Sechiari, Parascheva, Paris, assignor to La Société Civile d'Études de l'Indechirable Grimson, Lyon-Villeurbanne, France. Pipe or hose and manufacturing the same	824,446	June 26	4393	934	122	2843
Sechiari, Parascheva, Paris, assignor to La Société Anonyme du Grimson, Charenton, Seine, France. Cork fabric and making the same	824,675	June 26	4845	.....	122	2943
Secrest, Harry O., Cleveland, Ohio. Lawn-trimming device	819,176	May 1	270	58	122	68
See, Filer S., Gem, Kans. Device for transporting passengers to and from moving trains	822,777	June 5	1082	223	122	1965
Seeley, Frank A., New York, N. Y. Car-fender	820,607	May 15	3203	689	122	834
Seeley, James E., assignor to Sychronous Static Co., Los Angeles, Cal. Electrical discharge apparatus	821,832	May 29	5722	1219	122	1506
Seever, Elmer J., assignor of one-half to E. G. Klinck, Rose, N. Y. Tellurian	822,693	June 5	938	191	122	1936
Seguin, Arthur J., and E. P. Gingras, Ottawa, Canada. Wire and insulator holder	821,062	May 22	4185	889	122	1110
Selb, George A., assignor to Monarch Typewriter Company, Syracuse, N. Y. Typewriting machine	821,382	May 22	4822	1025	122	1252
Selberling, Frank A. (See Saunders, Addison T., assignor.)						
Selbert, John M., Pekin, Ill. Initiation apparatus	819,814	May 8	1560	332	122	412
Seigle, Ralph A. (See Kahn and Seigle.)						
Selkirk Fence Company. (See Overholt, Elliott G., assignor.)						
Selle, Herman C., assignor of one-half to L. F. Selle, Grinnell, Iowa. Cornmeal-bolter	819,177	May 1	271	58	122	69
Selle, L. F. (See Selle, Herman C., assignor.)						
Selleck, William J., Riverside, Conn. Apparatus for unloading, storing, and reloading material	820,527	May 15	3065	660	122	804
Seltzer William H. (See Skevington, Whitehead, and Seltzer.)						
Selzer, Mitchell J., assignor to H. C. Clippinger and J. Dettling, Akron, Ohio. Machine for winding balls	820,608	May 15	3205	689	122	835
Seng, Julius T., Chicago, Ill., assignor, by mesne assignments, to Geneva Furniture Mfg. Company, Geneva, N. Y. Sofa-bed	820,826	May 15	3652	779–80	122	932
Senior, Alfred I., Motueka, New Zealand. Steam-turbine	823,641	June 19	2858	604	122	2458
Senter, John F., Birmingham, Ala., assignor of one-half to Walsh and Weidner Boiler Company, Chattanooga, Tenn. Furnace	824,385	June 26	4261	908	122	2817
Sepulchre, Louis, Herstal, near Liege, Belgium. Chimney	819,938	May 8	1800	389	122	466
Sessions, Frank L., assignor to J. A. Jeffrey, Columbus, Ohio. Conductor for electric cars	821,317	May 22	4673	996	122	1216
Sessions, Frank L., assignor to J. A. Jeffrey, Columbus, Ohio. Electric locomotive and means for controlling the same	824,314	June 26	4109	879	122	2787
Sessions, George B., assignor of two-thirds to D. L. Sealy and W. L. David, Findlay, Ohio. Oil-well jack	822,392	June 5	317	66	122	1795
Setter, Michael, assignor to Automatic Electric Company, Chicago, Ill. Electric relay	819,082	May 1	94	22	122	25
Setter, Michael, assignor to Automatic Electric Company, Chicago, Ill. Electric bell	819,083	May 1	97	22	122	26
Setter, Michael, assignor to Automatic Electric Company, Chicago, Ill. Telephone-transmitter	819,084	May 1	99	22	122	27
Setter, Michael, assignor to Automatic Electric Company, Chicago, Ill. Strip of lamp-jacks	819,085	May 1	103	23	122	28
Sevigny, Ludger, Sherbrooke, Canada. Cue-rack	824,386	June 26	4264	908	122	2818
Sewall, Stephen A., and L. H. Abbee, Denver, Colo. Refrigerator	824,387	June 26	4266	909	122	2818
Seward, Frank, Wentworth, Mo. Horseshoeing-stand	822,158	May 29	6339	1348	122	1646
Seward, George O., Holcombs Rock, Va., assignor to Wilson Aluminum Company, New York, N. Y. Carbon-holder for electric furnaces	824,153	June 26	3802	812	122	2721
Seyler, Edward J., assignor of one-half to H. J. Friesbie, Erie, Pa. Door-securer	820,019	May 8	2024	444	122	514
Seymour, Dudley S., Oak Park, assignor to Union Special Sewing Machine Company, Chicago, Ill. Lubricating device	821,063	May 22	4186	889	122	1110
Seymour, Ralph C., assignor to C. B. Cottrell & Sons Company, New York, N. Y. Folding-machine	820,675	May 15	3329	714–15	122	860
Seyster, Lee. (See Sampson, Winslow F., assignor.)						
Shafer, Aaron V., and A. C. Ruby, Fort Wayne, Ind. Saw-set	819,939	May 8	1803	390	122	466
Shafer, Louis H., Fridley, Mont. Splint	819,607	May 1	1111	245	122	250
Shafer, William H., assignor to Ahrens Fire Engine Company, Cincinnati, Ohio. Steam-pump	821,674	May 29	5402	1151	122	1433
	820,020	May 8	2025	444	122	514
Shaffer, John, Forbes Road, Pa. Car-door apparatus						
Shaffner, Claude, *et al.* (See Shaffner, George, assignor.)						
Shaffner, George, assignor to G. and C. Shaffner and R. H. Gray, Dallas City, Ill. Support	821,833	May 29	5725	1220	122	1507
	819,086	May 1	105	23	122	28
Shaffner, Harry D., Philadelphia, Pa. Horseshoe	820,609	May 15	3207	689	122	835
Shakespeare, William, Jr., Kalamazoo, Mich. Fishing-reel						
Shaler, Justin B., New York, assignor to one-half to W. J. O'Hearn, Brooklyn, N. Y. Step-ladder	821,834	May 29	5727	1220	122	1507
Shanks, Frank F., Chicago, Ill. Phonograph, gramophone, and other similar sound-reproducing machines	822,024	May 29	6074	1294	122	1585

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Shanno, Lawrence, *et al.* (See Liljeros, Carl O., assignor.)						
Shapleigh, Samuel B. (See Lehmkuhl, William B., assignor.)						
Share, Albert, assignor of one-third to E. C. Regester, Baltimore, Md. Tank-support	822,159	May 29	6340	1348	122	1647
Sharick, Justice W. (See Smith and Heckman, assignors.)						
Sharp, John A., *et al.* (See Meyer, John J., assignor.)						
Sharp, Lee C., Omaha, Nebr. Metallic post	820,319	May 8	2624	571	122	647
Sharp, Lee C., Omaha, Nebr. Metallic railway-tie	820,368	May 8	2719	592	122	668
Sharp, Trevelyan, Manchester, England. Apparatus for compressing scrap metal	823,703	June 19	2966	628	122	2481
Sharpe, John, assignor to A. B. Saylor, Bloomfield, Canada. Water-motor for cream-separating machines	819,087	May 1	108	23	122	29
Sharples, James, Birmingham, England. Burner for oil-lamps	820,068	May 8	2142	466	122	541
Sharts, Truman P., Readsboro, assignor of three-fourths to C. J. Howe, Jamaica, W. C. Davis and J. H. Cole, Readsboro, Vt. Apparatus for producing carbon	819,606	May 1	1109	245	122	249
Shaughnessy, Micheal L. (See Barry and Shaughnessy.)						
Shaver, George F., New York, N. Y., assignor to Hygienic Soap Granulator Company. Cake of soap	824,154	June 26	3904	812	122	2721
Shaw, Arthur E., assignor to Pennsylvania Globe Gas Light Company, Philadelphia, Pa. Street-light	820,369	May 8	2720	593	122	668
Shaw, Frederick E., Providence, R. I. Sewer appurtenance	821,675	May 29	5404	1151	122	1433
Shaw, Frederick E., Providence, R. I. Sewer-pipe	823,141	June 12	1840	379	122	2176
Shaw, Henry C., Glenshaw, Pa. Continuous magnetic furnace	821,752	May 29	5566	1184–5	122	1471
Shaw, John I., Novinger, Mo. Whiffletree connection	824,265	June 26	4030	862	122	2770
Shaw, William A., North Clarendon, assignor of one-half to C. W. Titus, Warren, Pa. Well-tube safety-catch	823,974	June 19	3484	744	122	2595
Shaw, William E., San Francisco, Cal., assignor of one-half to H. B. Copland, Boston, Mass. Detachable-calk horseshoe	823,296	June 12	2168	452–3	122	2250
Shawmut Motor Company. (See Phelps, Lucius J., assignor.)						
Sheak, Andrew G., Binghamton, N. Y., assignor to Nineteen Hundred Washer Co. Water-filter	821,194	May 22	4433	944–5	122	1165
Sheehy, James B., assignor of one-third to P. C. Peck, New York, N. Y. Incandescent burner	820,676	May 15	3331	715	122	861
Sheets, George T., assignor of one-third to G. G. Gray, Salt Lake City, Utah. Door check and closer	822,992	June 12	1512	315	122	2107
Shelby, H. G., *et al.* (See Wheeler, George E., assignor.)						
Sheley, Peter A., Louisville, Ky. Street-sweeper	819,178	May 1	274	59	122	69
Shellaberger, Edward F., Dekalb, Ill. Weather-strip	821,261	May 22	4558	969	122	1192
Shelton, John, Denver, Colo. Dump-car	822,778	June 5	1084	223–4	122	1966
Shelton, Leander F., Sr. (See Harper, Andrew J., assignor.)						
Shepard, Charles C., assignor to Multiple Woven Hose & Rubber Company, Worcester, Mass. Former for tubular fabrics	824,212	June 26	3930	842	122	2749
Shepard, Edgar T., Oneida, N. Y. Yoke for split sheet-metal pulleys	823,483	June 12	2525	530	122	2326
Shepard, Frank P., Edmond, Okla. Ter., assignor to Oliver Typewriter Company, Chicago, Ill. Shift-key action for type-writers	821,262	May 22	4558	970	122	1192
Shepard, Frank P., Edmond, Okla. Ter., assignor to Oliver Typewriter Company, Chicago, Ill. Type-writer	821,263	May 22	4561	970	122	1193
Shepard, James P., West Union, W. Va. Rotary engine	823,228	June 12	2043	424	122	2223
Sheperd, William B., assignor of one-half to W. H., L. J., and L. Baker, Urbana, Ohio. Machine for making cell-cases	824,155	June 26	3806	812–13	122	2722
Shepherd, Chester G., Rutland, Ill. Seal-lock	823,297	June 12	2171	453	122	2250
Shepherd, John H., Huron, Ohio. Sinker	822,694	June 5	939	192	122	1936
Sheppard, George B. (See Sheppard and Mankin.)						
Sheppard, John P. and G. B., and A. J. Mankin, Salem, N. J.; said G. B. Sheppard and Mankin assignors to said John P. Sheppard. Knitting-machine	824,043	June 19	3611	769	122	2620
Sheridan, George W., and W. A. Wheeler, Bridgeport, Conn. Blank-check file	820,069	May 8	2144	467	122	541
Sheridan Iron Works *et al.* (See Bredenberg, Alfred, assignor.)						
Sherman, Erwin C., and W. W. McKelvey, assignors to William B. Pollock Company, Youngstown, Ohio. Dumping-car	820,144	May 8	2292	500–1	122	573
Sherman, Willis S., assignor to Sight Feed Oil Pump Company, Milwaukee, Wis. Oil-pump motor	821,195	May 22	4437	945	122	1166
Sherman, Willis S., Milwaukee, Wis., and W. E. Richardson, New York, N. Y., assignors to Sight Feed Oil Pump Company, Milwaukee, Wis. Oil-pump motor	821,196	May 22	4438	945	122	1166
Sherrard, James H., Sparta, Ill. Tank-pump and liquid-measure	819,088	May 1	109	23	122	29
Sherrerd, John M. (See Smith and Sherrerd.)						
Sherry, John C., Vallejo, Cal. Water-tube boiler	821,964	May 29	5969	1271–2	122	1560
Sherwood, Earl, Honesdale, Pa. Fuse-box	819,608	May 1	1112	245	122	250
Sherwood, George B., Cincinnati, Ohio. Nut-lock	823,229	June 12	2045	425	122	2224
Sherwood, Louis C. (See Boileau, James W., assignor.)						
Sherwood Manufacturing Company. (See Dean, Cyrus S., assignor.)						
Sherwood Manufacturing Company. (See Dean, George W., assignor.)						
Sherwood, William E. (See Reynolds and Sherwood.)						
Sherwood, William H., New York, N. Y. Ribbon-feed for type-writers	822,993	June 12	1514	315	122	2107
Shewry, William M., Chicago, Ill. Cuff and wristband	822,695	June 5	940	192	122	1937
Shigley, Cyrus C., Hart, and S. H. Paxton, Grand Rapids, Mich. Record-roll for phonographs	822,485	June 5	500	101	122	1835
Shilling, Carl S., and A. L. Link, Chicago, Ill. Section-liner	822,160	May 29	6340	1349	122	1647
Shimer, Elmer S. and G. S., Milton, Pa. Cutter-head	820,892	May 15	3804	811–12	122	965
Shimer, George S. (See Shimer, Elmer S. and G. S.)						
Shimer, Joseph D., Martins Creek, Pa. Whip-socket	822,779	June 5	1086	224	122	1966
Shimer, Will A., Rochester, N. Y. Portable telephone	821,753	May 29	5568	1185	122	1472
Shipley, Lewis C., New York, N. Y. Automobile extension canopy-frame	822,634	June 5	813	165	122	1907
Shipley, Willis M. (See Hart, Luphfer I., assignor.)						
Shirreffs, James R., Amesbury, Mass. Acetylene-gas generator	820,993	May 22	4044	860	122	1080
Shobe, Jacob S., assignor to W. S. S. Rodgers, Columbus, Ohio. Combined mop head and wringer	820,145	May 8	2294	501	122	573
Shoecraft, Fred W., and H. L. Allard, Sturgis, Mich.; said Allard assignor to said Shoecraft. Step-ladder	820,370	May 8	2721	593	122	669
Shoemaker, Charles W., and J. M. Lithgow, Allegheny, Pa. Gas-turbine	819,089	May 1	110	24–5	122	29
Shoemaker, George A., Chicago, Ill., assignor to Metal Sectional Furniture Company, Portland, Me. Temporary binder	820,827	May 15	3654	780	122	932
Shoemaker, Harry, assignor to M. V. Gehring, Philadelphia, Pa., and International Wireless Telegraph Company. Wireless-telegraph system	824,676	June 26	4846	1034	122	2943
Shofner, Joseph T., Haley, Tenn. Station-indicator	823,142	June 12	1842	380	122	2176
Shonfield, Alexander L., Muncie, Ind. Watch cover and holder	822,393	June 5	319	66	122	1795
Shonnard, Harold W., New York, N. Y. Self-playing musical instrument	824,315	June 26	4112	880–1	122	2788
Shoob, Isaac, London, England. Burner for incandescent gas-light or for heating purposes	822,871	June 5	1269	262	122	2004

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Short, William A. D., Lexington, Ky. Railway-signal	821,835	May 29	5728	1220	122	1508
Shorthouse, Benjamin, London, England. Self-propelling device	819,609	May 1	1113	245	122	250
Shortt, Edward G., assignor of one-half to New York Lime Company, Carthage, N. Y. Pneumatic filter	819,179	May 1	276	59–60	122	69
Shotts, Harry P., Chicago, Ill., assignor to Howe and Davidson Company, East Orange, N. J. Paper tray or receptacle	823,898	June 19	3334	710	122	2563
Shrewsbury, Joseph E., Longbeach, assignor of one-half to H. MacDavenport, Los Angeles, Cal. Submarine obeervation-tower	819,317	May 1	568	121–2	122	131
Shuflin, Frank H., and J. C. White, Columbus, Ohio. Wire-fence fastener	822,994	June 12	1517	316	122	2108
Shuler, Theodore G., Elloree, S. C. Agricultural implement	821,892	May 29	5826	1239	122	1529
Shurtleff, Frank, assignor of one-half to E. H. Sleight, Moline, Ill. Heating system	820,320	May 8	2624	572	122	647
Siber, Bernhart F. (See Broderick and Siber.)						
Sibley, Clarence C., Perth Amboy, N. J., and G. A. Lutz, New York, N. Y. Outlet or junction box	820,321	May 8	2626	572	122	648
Sibley, Clarence C., Perth Amboy, N. J., and G. A. Lutz, New York, N. Y. Elbow for conduits for electric wires	820,322	May 8	2628	572	122	648
Sieber, Ferdinand, Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company. Dynamo-electric machine	821,064	May 22	4187	890	122	1111
Sieber & Trussell Manufacturing Company. (See Dawson, James C., assignor.)						
Sieber & Trussell Manufacturing Company. (See Nelson, Charles R., assignor.)						
Siebers, Otto, Dresden, Germany. Collecting-brush for electric-current generators and motors	823,642	June 19	2860	605	122	2459
	822,696	June 5	942	192	122	1937
Sieder, Frederick, Swissvale, Pa. Sash-fastener						
Siegfried, Robert, and N. W. Storer, Pittsburg, Pa., assignors to Westinghouse Electric & Manufacturing Company. Brush-holder for electrical machines	824,213	June 26	3932	842	122	2749
Siemens, Frederick, Dresden, Germany. Regenerative gas-furnace	822,486	June 5	502	102	122	1836
Sieurin, Sven E., Höganäs, Sweden. Revolving kiln for generating gas	822,394	June 5	320	66	122	1795
Sight Feed Oil Pump Company. (See Sherman, Willis S., assignor.)						
Sight Feed Oil Pump Company. (See Sherman and Richardson, assignors.)						
Sight Feed Oil Pump Company. (See West, Arthur J., assignor.)						
Sigourney Tool Company. (See Harrington and Smith, assignors.)						
Silk, George. (See Enright, Michael, assignor.)						
Silliman, Benjamin F. (See Squires and Silliman.)						
Silver & Company. (See Ernst, John H., assignor.)						
Silvius, Charles E., Roselle Park, N. J. Horseshoe	822,780	June 5	1087	224	122	1966
Simmen, Paul J., Chico, Cal. Electric block-signal system	819,677	May 1	1261	275	122	283
Simmons, Bert G., assignor to Johnson & Johnson, New Brunswick, N. J. Dental waste-cotton receptacle	819,678	May 1	1262	275	122	283
Simmons, Henry P. (See Goff and Simmons.)						
Simmons, James L., Washington, D. C., assignor to Washington Vending Machine Company. Coin-controlled vending-machine	824,677	June 26	4849	1034	122	2944
Simmons, Jessey L., *et al.* (See Fowler, Edward, assignor.)						
Simmons, Oty T., *et al.* (See Fowler, Edward, assignor.)						
Simms, Joseph, Detroit, Mich. Punch-bowl	821,545	May 22	5133	1094	122	1318
Simonds, Frank A., Grand Rapids, Mich., assignor of one-third to C. D. Burnop, Albany, N. Y. Drain-valve for radiators	820,146	May 8	2295	501	122	573
Simonds Manufacturing Company. (See Miller and Howard, assignors.)						
Simons, Benjamin, Charleston, S. C. Automatic weighing apparatus	819,610	May 1	1114	246–7	122	250
Simonton, Frank M., *et al.* (See Schweinler, Henry R., assignor.)						
Simplex Railway Appliance Company. (See Bauer and Susemihl, assignors.)						
Simpson, James, Crookston, Minn. Napkin-holder	823,704	June 19	2968	628	122	2482
Simpson, Robert D., Columbus, assignor to Berea Novelty Company, Berea, Ohio. Repeating exploder	820,070	May 8	2145	467	122	542
Sinclair, Edward M. (See Crawford and Sinclair.)						
Singler, Frank J., Temple, assignor of one-half to M. D. Bartholomew, Mineola, Tex. Vehicle running-gear	823,371	June 12	2304	482	122	2278
Singleton, Herbert. (See Buckley, Kline, and Singleton.)						
Sinnott, John, Philadelphia, Pa. Wheel	820,741	May 15	3455	740–1	122	889
Sischo, Frank M., assignor of one-half to M. Rickets, Cadillac, Mich. Column-support	822,995	June 12	1518	316	122	2108
Sisco, Henry C., assignor of one-half to H. L. Millspaugh, Anderson, Ind. Seal for stop-cocks	822,025	May 29	6077	1295	122	1586
	820,742	May 15	3457	741	122	889
Sisk, Claude J., Hopkinsville, Ky. Motor-sleigh						
Skall, Julius. (See Nejedlo, Frantisek J., assignor.)						
Skall, Max A., New York, assignor of one-half to E. B. Hirsch, Brooklyn, N.Y. Show-case	820,828	May 15	3656	780–1	122	933
Skellenger, Charles F. (See Watkins and Skellenger.)						
Skelton, William, Surbiton, and H. D. Chudleigh, Acton, England. Railway signaling apparatus	821,754	May 29	5570	1185–6	122	1472
Skevington, Henry H., W. L. Whitehead, and W. H. Seltzer, Philadelphia, Pa. Singeing-machine	821,676	May 29	5406	1152	122	1434
Skillman, Arthur D., assignor to American Switch and Signal Company, Los Angeles, Cal. Automatic car-stopping device	822,161	May 29	6342	1349–50	122	1647
Skinner, Orson F., assignor of one-half to F. W. Collins, Hastings, Mich. Safety-bung attachment	820,371	May 8	2722	593	122	669
Slaine, George. (See Matusak and Slaine.)						
Slater, Florence W., Flushing, N. Y. Rain-coat	820,893	May 15	3806	812	122	966
Slater, Olney A., Pontiac, Mich. Bridge construction of reinforced cement	820,743	May 15	3458	741	122	890
Slattery, William H., assignor to Deitsch Brothers, New York, N. Y. Bag-clasp	821,318	May 22	4679	996	122	1218
Slaughter, Joel C., Dallas, Tex. Electric regenerator	819,815	May 8	1561	332	122	412
Slayden, Wesley, Wichita, Kans. Car-coupling	823,643	June 19	2860	605	122	2459
Sleight, Edward H. (See Shurtleff, Frank, assignor.)						
Slider, William T., assignor of one-half to B. A. Brown, Indianapolis, Ind. Tool-post	821,065	May 22	4189	890	122	1111
Sloman, Eugene H. (See Stoddard, Edgar R., assignor.)						
Sloman, Eugene H., Detroit, Mich. Bath-tub	821,755	May 29	5572	1186	122	1473
Slutz, Thomas W., and K. O. Lee, Aberdeen, S. D. Grain-separator	820,265	May 8	2526	547–8	122	625
Slyder, William J., assignor to G. S. Long, Troy, Ohio. Canopy-support	822,635	June 5	816	166	122	1907
Small, James M., Westminster, England. Apparatus for propelling rotary motors	823,815	June 19	3173	671	122	2526
Small, Thomas, Camden, N. J. Safety attachment for boilers	824,214	June 26	3934	842	122	2750
Smallbone, Harry E., Chicago, Ill. Multiple-cylinder engine	821,546	May 22	5133	1094–5	122	1318
Smallmon, D. M., *et al.* (See Kelly, Charles T., assignor.)						
Smart, William F., Pittsburg, Pa. Bottle	824,447	June 26	4395	935	122	2843
Smead, Charles R., St. Paul, Minn. File and fastener	819,464	May 1	856	184	122	192
Smillie, George W., Newark, N. J. Car-coupling	820,677	May 15	3333	715	122	861
Smith, Abraham L., New York, N. Y. Game apparatus	822,558	June 5	640	129	122	1867
Smith, Adolph H., assignor to Railroad Supply Company, Chicago, Ill. Tie-plate	824,678	June 26	4850	1034	122	2944
Smith, Albert J., East Dulwich, England. Appliance for use with saucepans and the like	819,940	May 8	1804	390	122	466
Smith, Alfred J., Mauch Chunk, Pa. Hame-tug	823,744	June 19	3039	643	122	2495

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Smith, Andrew J. (See Brooks, Newitt, and Smith.)						
Smith, Antoinette L., Norwood, Ohio. Paste holding and applying device	823,298	June 12	2172	453	122	2251
Smith, Antoinette L., Norwood, Ohio. Telephone call-list and memorandum-slip attachment	823,299	June 12	2174	454	122	2251
Smith, Archie M., and W. C. Dean, Ballinger, Tex. Scraper	819,090	May 1	114	25	122	30
Smith, Arthur A., Goldfield, Iowa. Wire-stretcher. (Reissue)	12,484	May 22	5244	1118	122	1342
Smith, Arthur J., Hazleton, Pa. Dinner-pail	824,156	June 26	3810	813	122	2723
Smith, Arthur P., Springfield, Mass. Water-cooling apparatus	822,996	June 12	1519	316	122	2108
Smith, Charles F., assignor to Landers, Frary and Clark, New Britain, Conn. Food-chopper	821,756	May 29	5573	1186	122	1473
Smith, Charles L. (See Harrington and Smith.)						
Smith, Clyde H., *et al.* (See Prescott, George E., assignor.)						
Smith, Edward L., Breckenridge, Colo., and J. M. Sherrerd, Easton, Pa. Dredge-chain	822,395	June 5	321	66–7	122	1796
Smith, Edward M., Plevna, Kans. Staple extractor and holder	821,893	May 29	5828	1240	122	1529
Smith, Edwin F., assignor to Edwin F. Smith Company, Philadelphia, Pa. Veneer-drier	822,997	June 12	1520	316–17	122	2108
Smith, Enoch, assignor of one-third to G. Curley, Salt Lake City, Utah. Dumping-wagon	823,554	June 19	2692	569–70	122	2420
Smith, Fletcher, assignor of one-half to J. V. Smith, Mertens, Tex. Plow attachment	820,147	May 8	2297	502	122	574
Smith, Francis M., Woodstock, Canada. Rotary paper-trimmer	821,757	May 29	5574	1186	122	1473
Smith, Frank A. (See Champlin, Alexander G., assignor.)						
Smith, Frank L., assignor to A. C. Ricksecker and L. A. Nichols, Chicago, Ill. Valve	821,758	May 29	5575	1187	122	1473
Smith, Furmon S., Ramona, Mich. Cross-line buckle	822,396	June 5	324	67	122	1797
Smith, George C., St. Kilda, near Melbourne, assignor to A. E. Langford, Melbourne, Victoria, Australia. Calipers and dividers	822,397	June 5	326	67	122	1797
Smith, George H., Cedar Rapids, Iowa, assignor to Union Typewriter Company, Jersey City, N. J. Type-writing machine	824,157	June 26	3812	813–14	122	2723
Smith, George H., and J. Stieglitz, Yonkers, N. Y. Comb-fastener	823,555	June 19	2695	570	122	2421
Smith, George W., Buffalo, N. Y. Metal railway-tie	819,941	May 8	1805	390	122	467
Smith, Harlet E., *et al.* (See Eddy and Hadley, assignors.)						
Smith, Harry B., Janesville, Wis. Device for filling fountain-pens	823,975	June 19	3486	744	122	2595
Smith, Harry F., Lexington, Ohio. Charging-door for gas-producers	822,781	June 5	1088	225	122	1966
Smith, Harry W., North Grafton, Mass. Woven fabric	820,994	May 22	4048	860	122	1080
Smith, Harry W., Renforth, Canada. Band-cutter and feeder	822,998	June 12	1524	317	122	2109
Smith, Henry. (See Arnold and Smith.)						
Smith, Henry R., Gambrills, assignor of two-thirds to A. A. Joyce and L. H. Gadd, Annapolis, Md. Wrench	821,438	May 22	4947	1051	122	1279
Smith, Henry S., Neenah, Wis. Wire-hoop-lock-forming device	823,556	June 19	2697	570	122	2421
Smith, J. T. (See Alcorn, Robert L., assignor.)						
Smith, James D., *et al.* (See Schauman, Bror M., assignor.)						
Smith, James M., assignor of two-thirds to C. L. Altemus and H. B. Bowles, Philadelphia, Pa. Current-distributer for sparking devices	822,782	June 5	1091	225	122	1967
Smith, Jimi, Cleveland, Ohio. Leather-cutting machine	820,148	May 8	2298	502	122	574
Smith, Joe V. (See Smith, Fletcher, assignor.)						
Smith, John A. (See Laganke and Smith.)						
Smith, John A., assignor to J. B. Bishop and A. Paul, Philadelphia, Pa. Music-stand	824,596	June 26	4700	1000	122	2913
Smith, John E., Kansas City, Kans. Mail-pouch catcher	824,388	June 26	4268	909	122	2818
Smith, John G., Chicago Heights, Ill., assignor of one-half to American Bed Company, St. Louis, Mo. Spring bed-bottom	822,999	June 12	1526	317–18	122	2110
Smith, John M., Reynoldsville, R. M. Downie and F. W. Ransom, assignors to Keystone Driller Company, Beaver Falls, Pa. Core-drill	821,130	May 22	4316	919	122	1138
Smith, John W., Congress, Ariz. Ter. Vehicle-brake	820,266	May 8	2530	548	122	626
Smith, John W., assignor to Ball Engine Company, Erie, Pa. Steam-turbine	823,447	June 12	2440	514–15	122	2307
Smith, Jolin W., and N. L. Heckman, Liberty, Ind.; said Smith assignor and said Heckman assignor of one-third to J. W. Sharick, Springfield, Ohio. Grain-distributer	822,872	June 5	1271	262–3	122	2004
Smith, Joseph F., Everett, Wash. Course-finder	822,783	June 5	1093	226	122	1967
Smith, Lewis C., assignor of one-half to H. H. Petersen, New York, N. Y. Stringed musical instrument	824,316	June 26	4119	881	122	2789
Smith, Louis, assignor of one-half to C. A. Ambruster, Chicago, Ill. Check-marker	819,318	May 1	571	122	122	131
Smith, Nathan, Garrison, Mont. Cattle-guard for railways	821,439	May 22	4948	1051	122	1280
Smith, Orren F., Ames, Iowa. Mail-box	821,440	May 22	4950	1051	122	1280
Smith, Perley S., *et al.* (See Eddy and Hadley, assignors.)						
Smith, Rexford M., *et al.* (See Luckett, John P., assignor.)						
Smith, Thomas A., Salem, Ind. Coffin and casket lid	820,744	May 15	3459	742	122	890
Smith, Thomas B., Cynthiana, Ky. Body-protector	819,091	May 1	115	25	122	30
Smith, Thomas P., Erdington, England. Paper-bag-making machine	820,071	May 8	2147	467–8	122	542
Smith & Wesson. (See Neal, Elmer E., assignor.)						
Smith, William B., Chicago, Ill. Spring draft device	819,092	May 1	117	26	122	31
Smith, William H., Morton, Pa. Cork-extractor	820,022	May 8	2028	445	122	515
Smith, William H., Morton, Pa. Attaching extractors to corks	820,072	May 8	2149	468	122	542
Smith, William H., Morton, Pa. Attaching extractors to corks	823,448	June 12	2445	515	122	2308
Smith, William H., Buffalo, assignor to J. R. Keim, New York, N. Y. Reinforcing-tube	822,487	June 5	505	102	122	1836
Smith, William L., Cookville, Tex. Carriage-top stop	824,679	June 26	4851	1034	122	2945
Smith, William M., New Cumberland, W. Va. Multiple-stay hinge	820,995	May 22	4048	861	122	1080
Smith, William R., assignor to Buffalo Leather Co., Buffalo, N. Y. Tumbling-drum	820,021	May 8	2026	444	122	514
Smith, William R., West Norwood, assignor to T. H. Pearse, London, England. Driver's brake-valve for compressed-air brakes	821,759	May 29	5576	1187	122	1474
Smith, William S. H., Croydon, England. Wheel	819,942	May 8	1806	390	122	467
Smith, William T., Philadelphia, Pa. Woven fabric	824,448	June 26	4396	935	122	2844
Smythe, James N., and W. S. Ayres, Newark, Ohio. Wall construction	824,511	June 26	4529	960–1	122	2876
Snedeker, James W., assignor to Page Woven Wire Fence Company, Adrian, Mich. Wire-fabric machine	823,193	June 12	1947	402–6	122	2202
Snelgrove, Alexander, *et al.* (See Bellamy, Albert, assignor.)						
Snelgrove, James P., Atlanta, Ga. Door-fastener	823,300	June 12	2176	454	122	2251
Snevely, James E., San Francisco, Cal. Feather duster	821,131	May 22	4320	919	122	1139
Snevely, James E., San Francisco, Cal. Feather duster	824,512	June 26	4531	961	122	2876
Snigo, James J., Pittsburg, Pa. Ice-cream can	819,465	May 1	857	184	122	192
Snow, George W., Holyoke, Mass. Railway-switch	820,267	May 8	2531	548	122	626
Snow, Gilbert B., Elgin, Ill. Windmill	819,943	May 8	1807	391	122	467
Snowhill, William W., Spotswood, assignor of one-half to L. Wolfson, New Brunswick, N. J. Lamp-bracket	823,000	June 12	1529	318	122	2110
Snyder, Charles O., New York, N. Y. Brake-rigging for self-propelled vehicles	824,215	June 26	3935	842–3	122	2750
Snyder, Frederick T., Oak Park, Ill. Treating wood for the extraction of turpentine	821,264	May 22	4564	970	122	1193
Snyder, Frederick T., Kansas City, Mo., assignor, by mesne assignments, to International Separator Company, Chicago, Ill. Magnetic separator	823,301	June 12	2177	454	122	2251
Snyder, Frederick T., Oak Park, assignor, by mesne assignments, to International Separator Company, Chicago, Ill. Magnetic separator	823,302	June 12	2179	454–6	122	2252

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Snyder, Frederick T., Oak Park, assignor, by mesne assignments, to International Separator Company, Chicago, Ill. Magnetic separator	823,303	June 12	2184	455–6	122	2253
Snyder, Frederick T., Oak Park, assignor, by mesne assignments, to International Separator Company, Chicago, Ill. Magnetic separator	823,304	June 12	2188	456–7	122	2254
Sober, Leslie M., assignor of one-half to J. A. Walsh, Oklahoma, Okla. Ter. Rail-joint	820,268	May 8	2533	548–9	122	627
Sober, Leslie M., and E. E. Brown; said Brown assignor to J. L. McCune, Oklahoma, Okla. Ter. Time check or recorder	820,894	May 15	3808	813–14	122	966
Société Anonyme de Broderie Automatique. (See Pittard, Frédéric, assignor.)						
Société Anonyme des Anciens Etablissements Panhard et Levassor. (See Krebs, Arthur, assignor.)						
Société Anonyme des Pneumatiques Cuir "Samson." (See Gallien, Valery, assignor.)						
Société Anonyme des Procedes Maslin & Theryc. (See Maslin and Theryc, assignors.)						
Société des Inventions Jan Szczepanik & Cie. (See Szczepanik, Jan, assignor.)						
Société Française de la Viscose. (See Olivier, Maurice G., assignor.)						
Society of Chemical Industry in Basle. (See Kroeber, Thilo, assignor.)						
Soderling, August, Bodie, Cal. Apparatus for treatment of ores and tailings	822,398	June 5	327	67–8	122	1797
Sodestrom, John A., Sac City, Iowa. Hand-power brick-machine	820,895	May 15	3815	814	122	968
Sohlberg, Edmond W., assignor of two-thirds to M. Lehman and J. L. Stiebel, Kansas City, Mo. Light-projecting apparatus	819,611	May 1	1116	247–8	122	251
Solon, Henry J. (See Huxley, Charles E., assignor.)						
Sonn, Anson L., Troy, N. Y. Brush	821,894	May 29	5830	1240	122	1530
Sonn, Emanuel J., Brooklyn, N. Y. Manufacturing rubber nipples and the like	821,066	May 22	4191	890	122	1111
Sontag, John M., St. Charles, Ill. Incubator	820,323	May 8	2630	573	122	648
Sorensen, Otto A., New York, N. Y. Valve	820,610	May 15	3209	690	122	835
Sorg, Frederick W., Englewood, N. J. Electric-conductor union	823,484	June 12	2527	530	122	2326
Sothen, Rudolf von, Berlin, Germany. Type-writing machine	824,597	June 26	4702	1000	122	2913
Sourby, John R., and R. J. Riley, Zion City, Ill. Fly-trap	821,965	May 29	5971	1272	122	1561
Sousa, Manuel J. (See Alley and Sousa.)						
Southam, Arthur D., New York, N. Y. Overfeed-stoker	820,528	May 15	3068	660–1	122	805
Southam, Arthur D., New York, N. Y. Electrically-operated fountain	820,996	May 22	4049	861	122	1081
Southgate, Louis W. (See Gillette, King C., assignor.)						
Southwark Foundry & Machine Company. (See Petsche, Gustav B., assignor.)						
Southwick, Edward M., Worcester, assignor to G. A. Weid, Winchester, Mass. Buckle	819,180	May 1	281	60	122	71
Southwick, N. M. (See Blake, James E., assignor.)						
Southwick, William S. (See Stimpson and Southwick.)						
Southworth, Edward, Portland, Me. Machine for perforating paper	824,044	June 19	3615	770	122	2621
Southworth, Henry E., Colchester, assignor to Porter Screen Manufacturing Company, Burlington, Vt. Window-screen	821,384	May 22	4827	1025	122	1253
Southworth, Horatio W., Mittineague, Mass. Motor-vehicle	820,444	May 15	2874	626	122	760
Spang, George A., Butler, Pa. Packer	820,149	May 8	2300	502	122	575
Spanogle, Harry H., assignor of one-third to F. C. Keith, Altoona, Pa. Rivet-cutter	820,073	May 8	2150	468	122	543
Sparks, Thomas H., Wichita, Kans. Listed-corn cultivator	819,612	May 1	1123	248–9	122	252
Sparks, Wm., *et al.* (See House, James N., assignor.)						
Spatz, John F., assignor of one-half to C. W. Griffin, Bonesteel, S. D. Chimney-top	823,194	June 12	1955	407	122	2203
Spear, Lawrence Y., Quincy, Mass., assignor to Electric Boat Company, Bayonne, N. J. Duct-keel for submarine boats	821,895	May 29	5830	1240	122	1530
Spear, Lawrence Y., and T. S. Bailey, Quincy, Mass., assignors to Electric Boat Company, Bayonne, N. J. Automatic safety-depth-regulating valve for submarine or submergible boats	820,372	May 8	2723	593–4	122	669
Spear-Marshall Co. (See Hill, Elwin K., assignor.)						
Speer, Arthur R., Pittsburg, Pa. Packing-case	820,445	May 15	2880	626	122	762
Speer, Arthur R., Pittsburg, Pa. Metal packing-case	821,760	May 29	5579	1187–8	122	1474
Speer, Arthur R., Pittsburg, Pa. Partition structure	823,557	June 19	2698	571	122	2421
Speirs, Charles W., London, and J. Frith, Manchester, England. Brush-holder for dynamo-electric machines and the like	821,197	May 22	4441	945–6	122	1166
Spelman, Mark R., New York, N. Y. Sugar-cane mill	820,074	May 8	2151	469–70	122	543
Spencer, Edward E., Jr., New York, N. Y. Embossing or creasing machine	823,305	June 12	2192	457	122	2255
Spencer, John W., Newcastle-upon-Tyne, England. Manufacture of steel	822,082	May 29	6187	.....	122	1612
Spencer, Julius A., Dwight, Ill. Baling-press	819,319	May 1	574	122–3	122	132
Spencer, Verne H. (See White, Orris O., assignor.)						
Sperry, Edwin A., assignor of one-third to W. G. Wilson, Denver, Colo. Ore-separator	819,093	May 1	118	26	122	31
Sperry, Evelyn P., Oak Park, Ill. Mechanism for operating and securing windows	823,195	June 12	1956	407	122	2204
Sperry, Evelyn P., Oak Park, Ill. Floor-support for buildings	823,558	June 19	2700	571	122	2422
Spillman, William H., and F. Fowler, St. Joseph, Mich. Whiffletree	821,393	May 22	4826	1025	122	1253
Spillman, William H., and F. Fowler, St. Joseph, Mich. Metallic thill	822,026	May 29	6078	1295	122	1586
Spinelli, John, Chelsea, Mass. Non-refillable bottle	819,320	May 1	577	123	122	133
Spirella Company. (See Mallett, Francis W., assignor.)						
Spittle, Walter C., Olton, England. Waist-belt	824,598	June 26	4705	1001	122	2914
Sponenburg, Hiram H., Wadsworth, Ill., assignor of one-half to E. Laas, Ottumwa, Iowa. Railway-rail stay. (Reissue)	12,485	May 22	5246	1118	122	1343
Sponneck-Mayer, Angelica M. A., Kensington, London, England. Rotary engine	823,449	June 12	2446	516–17	122	2308
Spotswood, Muscoe L., and T. A. Weller, Richmond, Va. Tobacco-pipe	821,836	May 29	5730	1220	122	1508
Spragg, William P., Moberly, Mo. Shears	823,816	June 19	3176	672	122	2527
Sprague, Austin V. M., New York, N. Y. Treating surgical articles	819,383	May 1	711	151	122	162
Sprague Canning Machinery Company. (See Halght James P., assignor.)						
Sprake, Edmund T., Plymouth, Pa. Automatic power-compression grease-cup	821,966	May 29	5973	1272	122	1561
Spreyer, George S., Elkton, assignor of one-half to E. M. De La Vergne, Colorado Springs, Colo. Drill-sharpener	820,023	May 8	2029	445–6	122	515
Springer, William N., assignor to Avery Manufacturing Company, Peoria, Ill. Apparatus for molding threaded shafts	819,094	May 1	120	26	122	31
Springman, Charles T., Detroit, Mich. Easel	821,132	May 22	4321	919	122	1139
Spyker, Jacobus, Trompenburg, Netherlands. Automobile	822,784	June 5	1094	226	122	1968
Squier, George O. (See Crehore and Squier.)						
Squires, Charles E., and B. F. Silliman, Cleveland, Ohio. Steam-trap	819,321	May 1	578	123	122	133
St. John, Solan C. (See Halpin, William J., assignor.)						
St. Louis Car Company. (See Vogel, Henry F., assignor.)						
St. Louis Car Company. (See Witte, Hubert, assignor.)						
St. Louis Car Roof Company. (See Link, Oliver, assignor.)						
Stack, Frederic W., New York, N. Y. Coin-card	823,817	June 19	3177	672	122	2527
Stacy, George, Perth, Western Australia, Australia. Voting-machine	823,899	June 19	3337	711	122	2563
Stafford, Nelson, Brooklyn, assignor to N. Stafford Company, New York, N. Y. Badge	821,547	May 22	5136	1096	122	1318
Stafford, Walter, and R. C. Holt, Little Falls, N. Y. Rack-stitch rib-knitting machine	823,818	June 19	3178	672–3	122	2528
Stagg, Thomas H., assignor to Kilbourne and Jacobs Manufacturing Company, Columbus, Ohio. Dumping-car	820,024	May 8	2032	446	122	515
Stahl, George, assignor of two-thirds to W. P. and J. I. Coffman, Dayton, Ohio. Friction-clutch	820,446	May 15	2882	626–7	122	762

Alphabetical list of patentees for May and June—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Stahle, Jacob A., Ogden, Utah. Pencil	823,705	June 19	2968	628	122	2482
Stahle, Jacob A., Ogden, Utah. Pencil	823,706	June 19	2970	629	122	2482
Staib, Henry, Ozone Park, N. Y. Window frame and sash	822,785	June 5	1095	236	122	1968
Standard Bottle Company. (See Brock, Peter A., assignor.)						
Standard Dry Kiln Company. (See Hussey, William P., assignor.)						
Standard Gas Engine Company. (See Mohrdieck, Peter, assignor.)						
Standard Gas & Heating Company. (See Akeson, Anders, assignor.)						
Standard Labeling Machine Company. (See Muslar, Nelson, assignor.)						
Standard Scale and Foundry Company. (See Tyrrell, Nathan E., assignor.)						
Standard Sewing Machine Company. (See Bouton, Arthur A., assignor.)						
Standard Steam Specialty Company. (See Kjerner, Ragnar L., assignor.)						
Standard Steel Car Company. (See Stucki, Arnold, assignor.)						
Stanley, Albert M., Wellington, Kans. Cigar-vending machine	821,761	May 29	5581	1188	122	1475
Stanley Electric Manufacturing Company. (See Acly, Harry M., assignor.)						
Stanley Electric Manufacturing Company. (See Andrews, Leonard, assignor.)						
Stanley Electric Manufacturing Company. (See Laird, Wesley E., assignor.)						
Stanley Instrument Company. (See Gough, Edgar W., assignor.)						
Stanley Rule & Level Company. (See Bartholomew, Joseph P., assignor.)						
Stanley Rule & Level Company. (See Traut, Justus A., assignor.)						
Stanley, William, Great Barrington, Mass. Dynamo-electric apparatus	821,837	May 29	5731	1221	122	1508
Stanley, William, Great Barrington, Mass. Generating alternating currents	821,838	May 29	5733	1221	122	1509
Stanley, William, Great Barrington, Mass. Dynamo-electric machine	822,697	June 5	943	192–3	122	1937
Stansbury, Joseph A., Los Angeles, Cal. Apparatus for truing grinding-disks	819,384	May 1	712	151	122	162
Stark, Alexander M., assignor to Stark Electrical System Limited, Toronto, Canada. Communicating electric system	819,095	May 1	122	26	122	32
Stark Electrical System. (See Stark, Alexander M., assignor.)						
Starrett, Danville W., Oakland, Cal. Liquid-impelling apparatus	821,677	May 29	5409	1152	122	1434
Staten, Claude S., Dallas, Tex. Shade and curtain fixture	821,133	May 22	4322	920	122	1140
Stauch, Philip H., Chicago, Ill. Automatic digger and conveyer	820,829	May 15	3657	781	122	933
Staude, Edwin G., Minneapolis, Minn. Sack folding and securing machine	819,466	May 1	858	185–8	122	192
Staver Carriage Company. (See Price, William C., assignor.)						
Stearns, Frank R., Greeley, Colo. Gripper for printing-presses	822,027	May 29	6079	1295	122	1586
Stebbins, Frank E. (See Wright and Stebbins.)						
Steel Patents Company. (See Reese, Jacob, assignor.)						
Steel Products Company. (See Goe, David E., assignor.)						
Steele, Lawrence C., Wheeling, W. Va., assignor to American Sheet and Tin Plate Company, Pittsburg, Pa. Tin-plate catcher	822,698	June 5	946	193	122	1937
Steele, Lawrence C., Wheeling, W. Va., assignor to American Sheet & Tin Plate Company, Pittsburg, Pa. Branner feeding device	822,699	June 5	948	194	122	1938
Steele, William O., Grenloch, N. J., assignor to W. B. Rulon, Philadelphia, Pa. Rotary engine	822,700	June 5	949	194	122	1938
Steer, Herbert H., Windsor, Canada. Combined presser-foot and guard for woodworking-machines	822,636	June 5	819	166–7	122	1908
Steere, Merrill O., Pawtucket, and S. W. Wardwell, Providence, R. I., assignors to Brindle-Steere Company, Portland, Me. Harness-motion for looms	821,762	May 29	5584	1188–90	122	1475
Stegner, Frederick A., Cincinnati, Ohio. Tobacco-pipe	823,819	June 19	3182	673	122	2528
Stein, Alexander, Berlin, Germany. Collapsible baby-carriage	821,896	May 29	5831	1240–1	122	1530
Steinberger, Louis, New York, N. Y. Prong-insulator	823,820	June 19	3182	673	122	2528
Steinbrenner, William J., and G. J. Mayer, assignors of one-third to W. H. Kreinheder, Buffalo, N. Y. Carbureter for explosive-engines	823,485	June 12	2529	530–1	122	2326
Steinecke, Daniel G., deceased, New York, N. Y.; S. and W. Steinecke, administrators. Electric dental furnace	820,025	May 8	2035	446–7	122	515
Steinecke, Samuel, *et al.*, administrators. (See Steinecke, Daniel G.)						
Steinecke, William, *et al.*, administrators. (See Steinecke, Daniel G.)						
Steiner, Elmer E., Knightstown, Ind. Automatic train-reporting system	820,529	May 15	3072	661	122	806
Steiner, Melchior, *et al.* (See Wiza, Anthony J., assignor.)						
Steinhauser, George R., St. Louis, Mo., assignor to National Moving Window Display Company, Chicago, Ill. Display device	821,067	May 22	4192	890–1	122	1112
Steinmann, Edward, Bettendorf, Iowa, and H. Schielke, Cleveland, Ohio. Indicator for check-rowers	822,488	June 5	505	102–3	122	1836
Steinmetz, Charles P., Schenectady, N. Y., assignor to General Electric Company. Controlling the speed of motors	819,613	May 1	1125	249	122	253
Steinmetz, Charles P., Schenectady, N. Y., assignor to General Electric Company. Armature-winding	820,997	May 22	4053	862	122	1061
Steinmetz, Charles P., Schenectady, N. Y., assignor to General Electric Company. Alternating-current motor	822,311	June 5	176	35	122	1766
Steiner, William F., Danville, Ill., assignor to Collapsible Toy Company. Toy	823,143	June 12	1843	380	122	2177
Stem, Edgar S., assignor of two-fifths to T. S. Boyd, Alderson, Pa. Music holder and turner	823,707	June 19	2970	629	122	2482
Stem, Edgar S., assignor of two-fifths to T. S. Boyd, Alderson, Pa. Music holder and turner	823,708	June 19	2976	630	122	2483
Stendebach, John P., San Francisco, Cal. Non-refillable bottle	821,598	May 22	5229	1115–16	122	1338
Stenstrom, John P., assignor of two-thirds to A. Peterson and A. M. Anderson, Mora, Minn. Convertible spade and hoe	819,181	May 1	283	60	122	71
Stephan, Friedrich C., Crimmitschau, Germany. Measuring of fabrics	821,839	May 29	5735	1221	122	1509
Stephens, John R., Lake Waccabuc, N. Y. Window-shade roller	821,265	May 22	4566	971	122	1194
Stephens, Thomas J. (See Guion, Prior M. and J. R., assignors.)						
Sterling Company. (See Prentice, John P., assignor.)						
Sterling, William J., Norfolk, Va. Rail-track system	822,399	June 5	329	68	122	1797
Stevens, Fay W., Wichita, Kans. Seesaw	822,083	May 29	6188	1319	122	1612
Stevens, George E., Lynn, Mass., assignor to General Electric Company. Rheostat	822,312	June 5	178	35	122	1767
Stevens, James F., *et al.* (See Schauman, Bror M., assignor.)						
Stevens, John L. (See Leonard, Almanzo B., assignor.)						
Stevens, Richard H., Munhall, Pa. Metal sheet-piling	824,513	June 26	4532	961	122	2876
Stevens, Seriah, Boston, Mass. Fastening device	822,513	June 5	181	36	122	1767
Stevens, Sturley T., and O. Walcott, Comstock, Nebr. Door-opener	823,372	June 12	2306	483	122	2278
Stevenson, Archibald W., *et al.* (See Coleman, James M., assignor.)						
Stevenson, James A., New Castle, Pa. Bib-cock	819,944	May 8	1809	391	122	468
Stevenson, Theodore A., Lansing, Kans. Burial-vault	823,709	June 19	2978	630	122	2483
Stevenson, William, Chicago, Ill. Brake-beam	823,306	June 12	2195	458	122	2256
Stevenson, William M., Indian Orchard, Mass., assignor to Hodges Fiber Carpet Company, Portland, Me. Woven fabric	821,441	May 22	4951	1052	122	1280
Steward, Harry M., Somerville, Mass. Device for supporting and spacing guard-rails	821,897	May 29	5832	1241	122	1530
Steward, John A., Rutland, Vt. Can-seaming machine	821,134	May 22	4324	920–1	122	1140
Stewart, Benjamin F., Chicago, Ill. Gas-engine	823,450	June 12	2448	517–18	122	2308

Alphabetical list of patentees for May and June—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Stewart, Charles C., assignor of one-half to A. T. James, Philadelphia, Pa. Carpet fabric	824,045	June 19	3616	770	122	2622
Stewart Hartshorn Company. (See Hartshorn, Edmund F., assignor.)						
Stewart, John H. (See Schenk, John M. and J., assignors.)						
Stewart, John K., Chicago, Ill. Speed-multiplying power-transmitting device	824,216	June 26	3936	843	122	2750
Stewart, Samuel B., New Orleans, La. Filter	821,442	May 22	4952	1052	122	1280
Stewart, Scott, Fairmont, W. Va. Shade-fixture	823,745	June 19	3040	643	122	2498
Stewart, William K., and F. Mowrey, Philadelphia, Pa. Wrench	819,614	May 1	1126	249	122	253
Stidder, James G., Brockley, London, England. Method of and means for constructing walls, partitions, and the like	822,559	June 5	642	129	122	1867
Stiebel, Joseph L., *et al.* (See Sohlberg, Edmond W., assignor.)						
Stieglitz, Jacob. (See Smith and Stieglitz.)						
Stillman, Francis H. (See Wigtel, Carl, assignor.)						
Stimpson, Edward S., and W. S. Southwick, assignors to Draper Company, Hopedale, Mass. Hopper-actuating mechanism for automatic looms	823,644	June 19	2862	605	122	2459
Stine, Virgel E., Clearfield, Pa. Fruit-receptacle	824,514	June 26	4532	961	122	2876
Stinson, Daniel O., Falkville, Ala. Order-box for train-despatchers	819,945	May 8	1810	391-2	122	468
Stirckler, Frank B., Revere, assignor to J. W. Mackintosh, Sharon, Mass. Lacing-tip	819,946	May 8	1812	392	122	468
Stirling, William E., Baltimore, Md. Die attachment for paper-cutters	819,615	May 1	1127	249-50	122	253
Stitt, Gilbraith, Saltsburg, Pa. Conveyer	823,900	June 19	3340	711-12	122	2554
Stivers, John O., Denver, Colo. Nail-clenching device for the heels of wooden lasts	822,489	June 5	507	103	122	1837
Stock, Robert, Buffalo, N. Y. Bottle-stopper	822,400	June 5	330	68	122	1798
Stocker, Basil E. S., Wellington, New Zealand. Cleaner for rifles and shotguns	821,198	May 22	4443	946	122	1167
Stocker, George W. (See Harris and Stocker.)						
Stocker, John W., Chicago, Ill. Card-painting machine	823,645	June 19	2867	605-6	122	2461
Stockham, William G., Piqua, Ohio. Sand-mixer	823,710	June 19	2979	630	122	2483
Stockton, Harry N. (See Martin and Stockton.)						
Stoddard, Edgar R., assignor to E. H. Sloman, Detroit, Mich. Hydrant	820,940	May 15	3901	832	122	987
Stoddard, Haserick, Richards & Company. (See Henry, William, assignor.)						
Stokes, Charles F., assignor to C. B. Stokes, Washington, D. C. Splint-stretcher	820,026	May 8	2038	447	122	516
Stokes, Charlotte B. (See Stokes, Charles F., assignor.)						
Stokes and Smith Company. (See Cardy, William A., assignor.)						
Stolz, Friedrich, and B. Reuter, assignors to Farbwerke, vorm. Meister, Lucius & Brüning, Höchst-on-the-Main, Germany. Alkaminester	820,830	May 15	3659	.....	122	933
Stone, Clinton M., assignor of two-thirds to F. I. Barrows, trustee, and F. I. Barrows, Connersville, Ind. Storm-front for vehicles	824,515	June 26	4533	962	122	2877
Stone, Harry W., Brooklyn, N. Y. Directory attachment	823,559	June 19	2702	571	122	2422
Stone, Russel E. (See Beatty, John H., assignor.)						
Stone, Wilbur M., New York, N. Y., assignor to Continental Paper Bag Company, Rumford Falls, Me. Paper-bag machine	820,678	May 15	3336	716	122	861
Stone, Wilbur M., New York, N. Y., assignor to Arlington Company. Making combs	823,001	June 12	1530	318-19	122	2110
Stoney, George G. (See Parsons and Stoney.)						
Stopple, John J., Dallas, Tex. Baling-press	824,599	June 26	4707	1001-2	122	2914
Stopple, John J., Dallas, Tex. Baling-press	824,600	June 26	4709	1002	122	2914
Storer, Norman W. (See Siegfried and Storer.)						
Storr, David C. (See Perks, Charles J., assignor.)						
Story, Willard A., and W. A. Hall, Chillicothe, Ohio. Lifting-jack	821,840	May 29	5736	1221	122	1509
Stout, George G., Parkersburg, W. Va. Electric-circuit breaker	822,084	May 29	6189	1319	122	1613
Stout, Robert P. (See Hughes and Stout.)						
Stovel, Charles J. (See Stovel, Frederick B., assignor.)						
Stovel, Frederick B., Toronto, Canada, assignor of one-half to C. J. Stovel, San Francisco, Cal. Picture frame and mounting	823,307	June 12	2197	458	122	2256
Stowell, Edward R., Portland, Ind. Composition for the construction of bricks	819,467	May 1	869	.....	122	195
Strack, John, assignor of one-half to F. Brabson, Newark, N. J. Nut-lock	819,947	May 8	1812	392	122	468
Strange, William H., assignor of one-half to J. P. Sullivan and R. H. Langston, Chicago, Ill. Floor-polisher	821,763	May 29	5587	1190	122	1476
Strasshoefer, Henry W., Cleveland, Ohio. Carpet-cleaning machine	821,764	May 29	5588	1190-1	122	1476
Strauss, Julius, Astoria, Oreg. Carrying-handle	821,967	May 29	5974	1273	122	1561
Strawbridge, William, Burnside, South Australia, Australia. Means and apparatus for trapping rabbits and other animals	821,199	May 22	4444	946	122	1167
Strawhorn, Joseph. (See Dunn, Louis, assignor.)						
Streator Metal Stamping Company. (See Morris, James, assignor.)						
Streeter, William, and E. Wallis, Rochester, N. Y. Permutation-lock	821,548	May 22	5138	1096	122	1319
Strickland, James L., Westport, assignor of fifty-one one-hundredths to H. R. McLellan, St. Johns, Canada. Rotary engine	823,821	June 19	3184	673-4	122	2529
Stringfellow, Robert L., White Bluffs, Tenn. Animal-trap	819,255	May 1	437	92	122	102
Striplin, Abel M., Escondido, Cal. Fruit cutting, pitting, and spreading device	820,150	May 8	2301	503	122	575
Stroud, Wiley N., Shreveport, La. Buggy-top support	822,225	May 29	6469	1373	122	1676
Struble, Jacob B., Wilkinsburg, assignor to Union Switch & Signal Company, Swissvale, Pa. Electric signaling	819,322	May 1	579	124	122	133
Struble, Jacob B., Wilkinsburg, assignor to Union Switch & Signal Company, Swissvale, Pa. Railway signaling	819,323	May 1	582	124	122	134
Struble, Jacob B., Wilkinsburg, assignor to Union Switch and Signal Company, Swissvale, Pa. Signaling system	823,646	June 19	2869	606	122	2461
Struble, Jacob B., New York, N. Y., assignor to Union Switch and Signal Company, Swissvale, Pa. Railway signaling system	822,028	May 29	6080	1295	122	1587
Struble, Jacob B., New York, N. Y., assignor to Union Switch and Signal Company, Swissvale, Pa. Railway signaling system	822,314	June 5	182	36	122	1768
Struck, Wilhelm, Berlin, Germany. Elastic wheel-tire	822,786	June 5	1097	226	122	1968
Struve, Clemens A., Fayetteville, Tex. Baling-press	820,831	May 15	3660	781	122	934
Stuart, Charles J., Montreal, Canada. Turbine-engine	824,449	June 26	4397	935	122	2844
Stuart, Harve R., Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company. System of motor control	819,816	May 8	1563	332	122	412
Stuart, Joseph, *et al.* (See Duff, Hugh Y. B., assignor.)						
Stucki, Arnold, Allegheny, assignor to Standard Steel Car Company, Pittsburg, Pa. Metallic underframe for passenger-cars	824,084	June 19	3681	783	122	2636
Studley, Hervey B., Corona, N. Y. Attachment for bottles	820,679	May 15	3341	716	122	862
Stuhr, David H., Davenport, Iowa, assignor to American Grain Purifier Constructing Company, Pierre, S. D. Apparatus for purifying grain, &c	820,680	May 15	3342	716	122	862
Stumma, Charles, Brandon, Iowa. Motor-vehicle	822,162	May 29	6350	1350	122	1649
Stump, Oman L., assignor of two-thirds to J. Reidenbaugh and E. D. Packard, Marion, Ohio. Filter for feed-water heaters	824,389	June 26	4269	909-10	122	2818
Stumpf, Johann, Berlin, Germany, assignor to General Electric Company. Multistage steam-turbine	819,616	May 1	1129	250	122	254
Stumpf, Johann, Berlin, Germany, assignor to General Electric Company. Turbine	822,315	June 5	184	36	122	1768

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Stumpf, Johann, Charlottenburg, Germany, assignor to General Electric Company. Steam-turbine	821,599	May 22	5233	1116	122	1340
Stumpf, Johann, Charlottenburg, Germany, assignor to General Electric Company. Steam-turbine	822,316	June 5	185	36	122	1768
Stumpf, Johann, Charlottenburg, Germany, assignor to General Electric Company. Steam-turbine	822,317	June 5	187	37	122	1768
Sturm, William, Chicago, Ill. Rock-drill	820,530	May 15	3074	661	122	806
Sturr, Richard W., Dayton, Ohio. Compartment-cabinet	823,901	June 19	3342	712	122	2564
Sturtevant, Charles A., Plainfield, N. J., assignor to E. C. Fuller Company, New York, N. Y. Side register for sheet-folding and other machines	823,002	June 12	1533	319	122	2111
Sturtevant, Edward H., Franklin, N. H. Knitting-machine needle	822,401	June 5	331	69	122	1798
Sturtevant Mill Company. (See Sturtevant, Thomas L. and T. J., assignors.)						
Sturtevant, Thomas J. (See Sturtevant, Thomas L. and T. J.)						
Sturtevant, Thomas L., Quincy, and T. J. Sturtevant, Wellesley, Mass., assignors to Sturtevant Mill Company, Portland, Me. Lubricator	821,266	May 22	4568	971	122	1194
Sturts, Charles F. A., San Francisco, Cal. Electromagnet	824,046	June 19	3618	770	122	2622
Suerth, Joseph A., Chicago, Ill. Carrier system	823,822	June 19	3186	674	122	2530
Suesskind, Adolph, New York, N. Y. Advertising device	824,516	June 26	4537	962	122	2877
Sullivan, John P., *et al.* (See Strange, William H., assignor.)						
Sullivan Machinery Company. (See Ball, Albert, assignor.)						
Sulzer, Ernest T., New York, N. Y. Toy fish-tank	819,468	May 1	870	188-9	122	195
Summers, George S., Gordonville, Mo. Chicken-brooder	823,902	June 19	3343	712-13	122	2565
Summers, Henry C., Townsend, Mont. Box-fastener	820,531	May 15	3075	662	122	806
Summers, John W., Mattoon, Ill. Lamp-heater	822,402	June 5	332	69	122	1798
Summers, Warren R., Georgetown, Ind. Attachment for harrows	823,144	June 12	1845	381	122	2177
Sumter Telephone Manufacturing Company. (See Mason, Charles T., assignor.)						
Sundh, August, Yonkers, N. Y. System of train control	823,196	June 12	1959	407-09	122	2204
Superior Hay Stacker Manufacturing Company. (See Vroom, Oler P., assignor.)						
Superneaw, John W., *et al.* (See La Londe, Moses, assignor.)						
Surbrug, John W., New York, N. Y. Tobacco-package	822,318	June 5	188	37	122	1768
Surety Alarm Company. (See Naser, James, assignor.)						
Surfacing Machine Company. (See Wattles, Cyra B., assignor.)						
Susemihl, Frank L. (See Bauer and Susemihl.)						
Sussman, Leon. (See Wilner and Sussman.)						
Süssmann, Heinrich, assignor to Deutsche Gasglühlicht-Aktiengesellschaft, Berlin, Germany. Gas-burner	823,308	June 12	2198	458	122	2256
Süssmann, Heinrich, assignor to Deutsche Gasglühlicht-Aktiengesellschaft, Berlin, Germany. Inverted incandescent gas-burner	823,309	June 12	2200	458-9	122	2256
Sutherland, John, Springer, N. Mex. Ter. Box	823,823	June 19	3188	674	122	2530
Sutter, William R. (See Reynolds, Elmer L., assignor.)						
Sutterley, George H. (See Sutterley, Gilbert T., assignor.)						
Sutterley, Gilbert T., Bordentown, N. J., assignor to himself, and G. H. Sutterley, Philadelphia, Pa. Alcohol-lamp	820,151	May 8	2303	503	122	576
Sutton, John W., New York, N. Y. Bench for use in playing musical instruments	820,745	May 15	3461	742	122	890
Sutton, John W., New York, N. Y. Bench for use in playing musical instruments	822,701	June 5	952	195	122	1939
Suydam, James C., Edenton, N. C. Steam-generator	823,230	June 12	2046	425	122	2224
Svoboda, Lawrence, and J. Kudrle, Chicago, Ill. Cloth-pressing machine	820,681	May 15	3346	716-17	122	863
Swan, Henry C., Oshkosh, Wis. Vehicle-seat lock	821,319	May 22	4680	997	122	1219
Swan, William M. (See MacMillan, James A., assignor.)						
Swank, Clayton J. (See Thompson and Swank.)						
Swanson, Carl W. (See Kitchell and Swanson.)						
Swanson, Neis E., York, Nebr. Clutch	819,469	May 1	871	189	122	195
Swanson, Theodore A., and G. E. Boyle, Whittemore, Iowa. Mixing-machine	821,267	May 22	4570	971-2	122	1195
Swarthout, Frank, Saginaw, Mich. Lock washer-nut	820,941	May 15	3902	832	122	988
Swasey, Ambrose, assignor to Warner & Swasey Company, Cleveland, Ohio. Telescopic sight for firearms	820,998	May 22	4054	862-3	122	1062
Swasey, Ambrose, and G. L. Fecker, assignors to Warner & Swasey Company, Cleveland, Ohio. Optical instrument	819,948	May 8	1818	393	122	470
Sweeney, Patrick L. and L. C. Jahn, Jasper, Ind. Combined wrench and bit-stock	819,817	May 8	1565	332	122	413
Sweeney, Ulysses G., and M. L. Mayes, Orosi, Cal. Bicycle-seat spring	822,403	June 5	334	69	122	1799
Sweeney, William W., and F. A. Sylva, assignors to Pacific Surgical Manufacturing Company, Los Angeles, Cal. Joint	823,451	June 12	2450	518	122	2309
Sweningston, Lawrence G. (See March, George E., assignor.)	820,152	May 8	2304	503-4	122	576
Swift, Willis C. (See Mills, Charles, assignor.)						
Swope, David, Merchantville, N. J. Clamp	823,903	June 19	3345	713	122	2565
Sychronous Static Co. (See Seeley, James E., assignor.)						
Sykes, William W., Manchester, assignor of one-half to L. Casselman, Richmond, Va. Mail-catcher	824,601	June 26	4713	1003	122	2915
Sylva, Frank A. (See Sweeney and Sylva.)						
Sylvester, Irving M., assignor to Parks Brothers and Rogers, Providence, R. I. Button	820,532	May 15	3077	662	122	807
Sylvester, Irving M., assignor to Parks Bros. & Rogers, Providence, R. I. Button or stud	820,682	May 15	3348	717	122	863
Sylvester, Irving M., assignor to Parks Bros. & Rogers, Providence, R. I. Stud or button	820,683	May 15	3350	717	122	864
Szameitat, Carl, Hamburg, Germany. Saddle adjusting itself automatically in two directions	821,135	May 22	4332	921	122	1142
Szczepanik, Jan, Vienna, Austria-Hungary. Production of photographs in natural colors	821,200	May 22	4445	946	122	1168
Szczepanik, Jan, assignor to Société des Inventions Jan Szczepanik & Cie., Vienna, Austria-Hungary. Multicolorous woven fabric	824,158	June 26	3819	.....	122	2725
T. W. & C. B. Sheridan Company *et al.* (See Bredenberg, Alfred, assignor.)						
T. W. Phillips Manufacturing Company. (See Campbell and Johnson, assignors.)						
Tabor, Clinton D., assignor to Tabor Sash Company, Newark, N. J. Casement and similar window	820,027	May 8	2040	448	122	517
Tabor, Harris, Elizabeth, N. J., assignor to Tabor Manufacturing Company, Philadelphia, Pa. Molding-machine	824,317	June 26	4121	881-2	122	2789
Tabor Manufacturing Company. (See Tabor, Harris, assignor.)						
Tabor Sash Company. (See Tabor, Clinton D., assignor.)						
Tallaksen, Einar, Chicago, Ill. Car-fender	823,003	June 12	1536	320	122	2111
Tallman, Perry H, Blooming Prairie, assignor to Johnson & Tallman, St. Charles, Minn. Implement for cleaning receptacles	820,269	May 8	2534	549	122	627
Talliqvist, Theodor W., Helsingfors, Russia. Stethoscope	824,450	June 26	4403	936	122	2845
Talmadge, Elmer W., Plantsville, assignor to Peck, Stow & Wilcox Company, Southington, Conn. Machine for folding sheet metal	821,765	May 29	5589	1191	122	1476
Taplin, Alden B., Keene, N. H. Tension device for dresser-reels	821,549	May 22	5141	1096	122	1319
Tarbox, Alfred B., Boston, Mass. Block	820,999	May 22	4057	863	122	1062

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Tarbox, Alfred B., Boston, Mass. Block	823,231	June 12	2049	425	122	2225
Tarver, Freeman D., Blanton, Ga. Lifting-jack	820,832	May 15	3663	782	122	934
Tarwater, Lawson, and C. K. McKnight, St. Joseph, Mo. Reversible reclining railway-coach chair	822,163	May 29	6352	1350	122	1650
Tarwater, Lawson, and C. K. McKnight, St. Joseph, Mo. Revoluble reclining railway-coach chair	822,164	May 29	6354	1351	122	1650
Tate, Hugh J., assignor of two-thirds to S. G. Miller, Philadelphia, Pa., E. Howard, Charlotte, N. C., and J. A. Ferguson, Philadelphia, Pa. Cotton-gin	824,602	June 26	4713	1003–4	122	2915
Tate, William E., Weatherford, Tex. Press-feeder	819,949	May 8	1820	393	122	470
Tatnall, Walter G., Wilmington, Del., assignor to himself, E. Armstrong, Woodbury, N. J., and W. G. Tatnall, Jr., Wilmington, Del. Axle-lubricating device	822,085	May 29	6191	1320	122	1613
Tatum, Henry, assignor of one-half to W. Hodges, Miakka, Fla. Combined bevel and compasses	823,373	June 12	2307	483	122	2279
Taylor, Albert H., Easton, Pa., assignor to Ingersoll-Sergeant Drill Company, New York, N. Y. Reversing mechanism for rotary motors	819,470	May 1	873	189–90	122	196
Taylor, Albert H., Easton, Pa., assignor to Ingersoll-Sergeant Drill Company, New York, N. Y. Reversing mechanism for rotary motors	820,684	May 15	3351	717–18	122	864
Taylor, Alexander V. (See Fox, Charles A., assignor.)						
Taylor, Cecil H., Philadelphia, Pa., assignor, by mesne assignments, to K. Taylor, High Bridge, N. J. Firearm	821,766	May 29	5590	1191–2	122	1477
Taylor, Cecil H., Philadelphia, Pa., assignor, by mesne assignments, to K. Taylor, High Bridge, N. J. Automatic gun	823,004	June 12	1538	320–1	122	2112
Taylor, Charles F., Hartford, Conn. Paper-ruling machine	822,404	June 5	335	69–70	122	1799
Taylor, Charles L., Hartford, Conn. Cloth-tentering machine	820,746	May 15	3462	742	122	891
Taylor, Charles M., Jr., Philadelphia, Pa. Means for making a milk product	819,819	May 8	1568	333	122	414
Taylor, Clarence L., assignor to Morgan Engineering Company, Alliance, Ohio. Apparatus for breaking pig-iron	819,818	May 8	1566	333	122	413
Taylor, Clarence L., assignor to Morgan Engineering Company, Alliance, Ohio. Overhead traveling crane	821,136	May 22	4332	921	122	1143
Taylor, Clarence L., assignor to Morgan Engineering Company, Alliance, Ohio. Clutch-operating mechanism	823,085	June 12	1728	355–6	122	2152
Taylor, Clarence W., Oak Park, Ill. Comb and comb-cleaner combined	820,533	May 15	3077	662	122	807
Taylor, Clarence W., Oak Park, Ill. Comb and comb-cleaner combined	820,534	May 15	3078	662	122	807
Taylor, Edmund B. and F. A., Waltham, Mass. Directory-holder	822,490	June 5	508	103	122	1837
Taylor, Frank. (See Cochran, James S., assignor.)						
Taylor, Fred A. (See Taylor, Edmund B. and F. A.)						
Taylor, Fred A., and N. E. Flint, San Francisco, Cal. Friction graining-machine	819,182	May 1	284	61	122	71
Taylor, George, Jr., *et al.* (See Loveless, David H., assignor.)						
Taylor, George T. (See Newton, Joel W., assignor.)						
Taylor, Henry G., Milton, Mass. Automatic match-box	819,617	May 1	1132	250	122	255
Taylor Iron and Steel Company. (See Latimer, Frank, assignor.)						
Taylor Iron & Steel Company. (See Price, Orvey, assignor.)						
Taylor, James E., assignor of one-half to S. Dodge, Sandoval, Ill. Nut-lock	820,324	May 8	2632	573	122	649
Taylor, James T., Fort Worth, Tex. Nut-lock	824,047	June 19	3619	770	122	2622
Taylor, John, J. A. McMillen, and T. C. B. Milbery, Castle Shannon, Pa. Safety elevator device	824,452	June 26	4405	937	122	2846
Taylor, John A., Saco, Mont. Animal-releasing mechanism	820,270	May 8	2536	549	122	628
Taylor, John B., Schenectady, N. Y., assignor to General Electric Company. Portable potential-indicator	822,319	June 5	189	37	122	1769
Taylor, John D., assignor, by mesne assignments, to General Railway Signal Company, Buffalo, N. Y. Railway switching and signaling apparatus	821,385	May 22	4828	1025–6	122	1253
Taylor, John D., assignor, by mesne assignments, to General Railway Signal Company, Buffalo, N. Y. Apparatus for operating and controlling railway switches and signals	821,386	May 22	4833	1026–7	122	1254
Taylor, Knox. (See Taylor, Cecil H., assignor.)						
Taylor, Percival, Smithills, Bolton, England. Yarn-winding frame	822,086	May 29	6193	1320	122	1613
Taylor, Walter G., *et al.* (See Loveless, David H., assignor.)						
Taylor, William A., assignor to Kellogg Switchboard and Supply Company, Chicago, Ill. Central-energy telephone system	821,898	May 29	5834	1241	122	1531
Taylor, William F., Superior, Wis. Emergency knuckle-sleeve	824,451	June 26	4404	936	122	2846
Taylor, William H., assignor of one-half to T. Cooney, Philadelphia, Pa. Self-acting switch	823,310	June 12	2202	459	122	2257
Taylor, William P., Buffalo, N. Y. Brake-shoe	821,000	May 22	4058	863	122	1083
Taylor, William W., Oxford, England. Door, window, and the like	821,201	May 22	4448	947	122	1168
Taylor, Zane B., Orbisonia, Pa. Composition building material	821,550	May 22	5142	.....	122	1320
Tcherniack, Abraham, New York, N. Y. Loom for weaving. (Reissue)	12,493	June 5	1342	277–9	122	2019
Teal, Benjamin F., Glenside, Pa. Apparatus for recording the movements of vehicles	819,618	May 1	1133	250–1	122	255
Teate, Thomas A., assignor of one-half to H. C. Ramsey, Thomasville, Ga. Fabric-measuring device	819,096	May 1	126	27	122	33
Teese, Robert W., Warren, Pa. Column for flagstaffs	822,405	June 5	339	70	122	1800
Tefft, Charles W., Toledo, Ohio. Car-door	820,153	May 8	2308	504–5	122	577
Teller, John C., Minneapolis, Minn. Furnace	819,183	May 1	285	61	122	72
Tennelly, James R. (See Phillips, Charles C., assignor.)						
Terrell, Elah, Columbus, Ohio. Calendar-clock	819,950	May 8	1822	393–4	122	471
Terry, Charles H., Bristol, Conn. Reel-clamp for fishing-rods	820,685	May 15	3352	718	122	864
Tesch, Charles H., Milwaukee, Wis. Support for swing-seats, shelves, &c.	824,217	June 26	3937	843	122	2751
Testi, Paolo. (See Pusterla and Testi.)						
Teter, William W., *et al.* (See Nicewarner, Theodore G., assignor.)						
Thayer, Harry M., Woodhull, Ill. Metallic feed-box	820,075	May 8	2159	470	122	545
Thayer, James H., Chicago, Ill. Automatic tightener for bed-springs	823,824	June 19	3189	675	122	2530
Theberath, John H., South Orange, assignor to Bippart, Griscom & Osborn, Newark, N. J. Collar-supporter	821,678	May 29	5414	1153	122	1435
Theryc, Charles. (See Maslin and Theryc.)						
Theuret, Theophile J. M., Gaillon, France. Nailing-machine	819,471	May 1	874	190–1	122	196
Thiedemann, Hinry and J. H., Hickman, Nebr. Draft-evener	819,097	May 1	128	27	122	33
Thiedemann, Jurgen H. (See Thiedemann, Hinry and J. H.)						
Thielmann, Peter, and J. Meisenburg, Duisburg, Germany. Apparatus for making frames for mine-cages and the like	823,711	June 19	2981	631	122	2484
Thiselle, William J., *et al.* (See Keiser, Francis R., assignor.)						
Thomann, Paul, Halle-on-the-Saale, Germany. Brick-machine	823,232	June 12	2051	426	122	2225
Thomas, Albert R. (See Westlake and Thomas.)						
Thomas, Augustus O., Kearney, Nebr. Building-block and wall constructed therefrom	822,320	June 5	191	37	122	1769
Thomas, Charles O. (See Peck, Luke B., assignor.)						
Thomas, Henry E., assignor of one-half to G. Tressler, San Francisco, Cal. Rotary engine	820,447	May 15	2883	627	122	762
Thomas, John H., Johannesburg, Transvaal. Drill for drilling holes in rock or the like	821,202	May 22	4450	947	122	1168
Thomas, John R., assignor to J. A. Fay & Egan Company, Cincinnati, Ohio. Planing machinery	821,137	May 22	4334	922	122	1143

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Thomas Maddock's Sons Company. (See Kelly, John F., assignor.)						
Thomas, Philip, New York, assignor of one-half to W. Schwanhausser, Brooklyn, N. Y. Chuck	824,085	June 19	3683	784	122	2636
Thomas, Robert P., *et al.* (See Levake, Anson S., assignor.)						
Thomas, Thomas W., and G. W. Gillette, assignors of one-half to S. Risley, Cleveland, Ohio. Automatic changeable sign	821,068	May 22	4194	891–2	122	1112
Thomas, William R., Watertown, Wis. Rail-joint	824,390	June 26	4272	910	122	2819
Thompson, Elwin L. (See Oliver, Walton F., assignor.)						
Thompson, Everett L., Brooklyn, N. Y. Automatic sprinkler	824,453	June 26	4407	937	122	2846
Thompson, George B. (See Agin and Thompson.)						
Thompson, George S., Hockessin, Del. Stay-bolt	823,825	June 19	3193	675	122	2531
Thompson, James, Somerville, Mass. Lug-strap connection for looms	822,321	June 5	192	38	122	1769
Thompson, James, and H. H. Schrader, Greeley, Colo. Shingle-bracket	821,551	May 22	5143	1096	122	1320
Thompson, John and J., Belfast, Ireland. Collar for personal wear	821,443	May 22	4952	1052	122	1281
Thompson, John I., Elk Grove, Cal. Ladder	819,951	May 8	1824	394	122	471
Thompson, Joseph. (See Thompson, John and J.)						
Thompson, Joseph H., assignor of one-half to J. Murphy, Passaic, N. J. Sewing-machine table	823,005	June 12	1543	321	122	2113
Thompson, Robert R., Chicago, Ill., assignor, by mesne assignments, to United Mattress Machinery Company. Mattress-tufting machine	819,952	May 8	1825	394–9	122	471
Thompson, Robert R., Boston, Mass., assignor, by mesne assignments, to United Mattress Machinery Company. Knotter for mattress-tufting machines	819,953	May 8	1837	399–403	122	474
Thompson, Robert R., and C. F. Pinkham, Boston, Mass., assignors to United Mattress Machinery Company. Knotter	819,954	May 8	1850	403–8	122	476
Thompson, Robert R., and C. F. Pinkham, Boston, Mass., assignors to United Mattress Machinery Company. Machine for tufting mattresses	819,955	May 8	1860	408–13	122	477
Thompson, Thomas C. (See Powner and Thompson.)						
Thompson, William E., Tecumseh, Nebr. Fly-trap	824,517	June 26	4538	962	122	2878
Thompson, William H., and C. J. Swank, Norton, Va. Lubricating car-wheel	822,560	June 5	644	129	122	1868
Thomsen, Hugo A., Madison, N. J. Fire-escape	819,956	May 8	1872	413–14	122	478
Thomson Electric Welding Company. (See Rietzel and Barstow, assignors.)						
Thomson, Elihu, Swampscott, Mass., assignor to General Electric Company. Thermostatic control	822,323	June 5	197	39	122	1770
Thomson, Elihu, Swampscott, Mass., assignor to General Electric Company. Governing mechanism for elastic-fluid turbines	822,324	June 5	199	40–1	122	1770
Thomson, Elihu, Swampscott, Mass., assignor to General Electric Company. Insulated coil for electrical apparatus and making the same	824,048	June 19	3620	771	122	2622
Thomson, Elihu, Swampscott, and A. A. Ball, Jr., Lynn, Mass., assignors to General Electric Company. Engine	822,322	June 5	193	38–9	122	1769
Thomson, Hugh A., Shawlands, Scotland. Switch mechanism	823,647	June 19	2871	606–7	122	2462
Thomson, John, Invercargill, New Zealand. Tire for vehicle-wheels	821,679	May 29	5416	1153	122	1435
Thordarson, Chester H. (See Kenny and Thordarson,)						
Thorne, Emanuel H., Hagan, Ga. Railway-switch	821,001	May 22	4060	863–4	122	1083
Thornton, William, Chattanooga, Tenn. Antifriction-bearing	819,184	May 1	287	61	122	72
Thorp, Robert T., *et al.* (See Larkin, Patrick H., assignor.)						
Thorp, Thomas, Whitefield, England. Spring	824,318	June 26	4123	882	122	2790
Thorp, Winfield S., New York, N. Y. Advertising-calendar	822,406	June 5	340	70	122	1800
Thouverey, Jean C. A., St. Lô, France. Exercising apparatus	819,472	May 1	878	191	122	196
Thratt, Richard A., Ivanhoe, N. C. Hat-brim	819,324	May 1	587	124	122	136
Threlkeld, John H., Lucas Station, Iowa. Spring-bolster	819,385	May 1	714	152	122	163
Thropp, Peter D., Trenton, N. J. Apparatus for manufacturing wheel-tires	822,561	June 5	645	129	122	1868
Thullen, Louis H., Edgewood, Pa. Railway signaling	823,648	June 19	2874	607	122	2462
Thullen, Louis H., Edgewood Park, assignor to Union Switch and Signal Company, Swissvale, Pa. Railway signaling system	821,767	May 29	5595	1192	122	1478
Thullen, Louis H., Edgewood Park, assignor to Union Switch and Signal Company, Swissvale, Pa. Railway-signal-operating mechanism	821,899	May 29	5841	1241–2	122	1533
Thullen, Louis H., Edgewood, assignor to Union Switch and Signal Company, Swissvale, Pa. Alternating-current-translating device	823,086	June 12	1730	356	122	2152
Thurber, Guy P., Pittsburg, Pa. Time relay recording-clock and signal mechanism	822,029	May 29	6082	1296	122	1587
Thürrid, Frank, St. Louis, Mo. Plow and seeder	823,374	June 12	2308	483	122	2279
Thurston, Charles H., Worcester, Mass. Pipe-wrench	822,407	June 5	342	70	122	1800
Thurston, John M., trustee. (See Miller, John A., assignor.)						
Thurston, Samuel H., Newark, N. J. Coating one metal with another and the resulting product	822,873	June 5	1272	263	122	2005
Tibbals, Frank A., Weymouth Center, assignor to W. E. Drake, Boston, Mass. Machine for covering eyeglass-cases	821,900	May 29	5844	1242	122	1534
Tibbals, Frank A., Weymouth Center, assignor to W. E. Drake, Boston, Mass. Machine for lining eyeglass-cases	821,901	May 29	5846	1242	122	1535
Tibbett, George, assignor of one-half to S. L. David, Jackson, Ohio. Journal-lubricator	821,203	May 22	4451	948	122	1169
Tibbetts, Fred O., Pontiac, Ill. Ship's course-recorder	823,976	June 19	3487	745	122	2595
Tidd, Jacob L., Lancaster, Ohio. Merry-go-round museum	821,138	May 22	4338	922–3	122	1144
Tidemand, Harald, *et al.* (See Christiansen, Hans L., assignor.)						
Tidick, Paul, Niederhof, near Bischdorf, Germany. Stove, furnace, and the like	823,904	June 19	3347	713	122	2566
Tietgens, Ernst. (See Reynolds, Frederick L., assignor.)						
Tight, Jennie C., St. Anthony, Iowa. Skirt measurer and pattern	822,874	June 5	1274	263	122	2005
Tilden, Bert O., New York, N. Y. Flush-tank-operating device	821,002	May 22	4062	864	122	1084
Tilden, Bert O., assignor to American Sanitary Works, New York, N. Y. Siphon-closet. (Reissue)	12,496	June 12	2570	542	122	2334
Tillinghast, Joseph H., Stockton, Cal. Wool-scouring machine	821,139	May 22	4340	923	122	1145
Timberlake, John B. (See Patterson, Charles L., assignor.)						
Time Marking Machine Company. (See Malmborg, Ernst R., assignor.)						
Timm, Friedrich C. W., Hamburg, Germany. Dissolving solid fluxes in fluid slag	822,087	May 29	6195	1320	122	1614
Tingley, Egbert M., Pittsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company. Ventilating means for inclosed machines	819,820	May 8	1569	334	122	414
Tinkham, Francis M., Springfield, Mass. Extensible sofa-bed	823,649	June 19	2875	608	122	2463
Tirrill, Allen A., Schenectady, N. Y. Electric switch	819,821	May 8	1571	334	122	414
Tirrill, Allen A., Schenectady, N. Y. Snap electric switch	819,822	May 8	1575	334–5	122	415
Titcomb, George E. (See Leslie, Alexander, assignor.)						
Titus, Cornelius W. (See Shaw, William A., assignor.)						
Titus, Joseph V. E., assignor to Electrical Devices Company, Keokuk, Iowa. Controller-regulator	821,768	May 29	5597	1192–3	122	1478
Todd, Henry B., Meriden, Conn. Static-induction generator	821,902	May 29	5848	1243	122	1535
Todd, Jesse J., assignor of one-half to W. Morris, Wichita, Kans. Picture-exhibitor	824,266	June 26	4031	863	122	2770
Tolen, James H., and D. B. Hostetter, Roachdale, Ind. Meat-tenderer	824,319	June 26	4125	882	122	2790
Tolke, Hugo, New York, N. Y., W. T. Hensel, Philadelphia, Pa., and H. Hensel, New York, N. Y. Non-refillable bottle	821,903	May 29	5849	1243	122	1535

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Tolman, John H. (See Richmond, Charles B., assignor.)						
Tomlinson, Charles H., assignor to Tomlinson Coupler Company, Denver, Colo. Unlocking means for car-couplings	821,204	May 22	4453	948	122	1169
Tomlinson Coupler Company. (See Tomlinson, Charles H., assignor.)						
Tompkins, James G. (See Bogear and Tompkins.)						
Tonkin, John C., assignor of one-half to T. J. Ferrell, Glassboro, N. J. Elastic-fluid generator	822,491	June 5	511	104	122	1837
Tonkin, John J., Oswego, N. Y., assignor to Oil Well Supply Company, Pittsburg, Pa. Steam-boiler	821,552	May 22	5144	1097	122	1320
Tonko, Max, Langenzersdorf, assignor to E. Lederer, Korneuburg, Austria-Hungary. Boot and the like stretching device	820,942	May 15	3903	833	122	988
Toomey, Patrick A., Chicago, Ill. Toilet-powder receptacle	824,391	June 26	4274	911	122	2819
Topham, Howard W., assignor to J. S. Topham, Washington, D. C. Portable cabinet-carrying case for phonograph and graphophone records	822,875	June 5	1276	263–4	122	2005
Topham, James S. (See Topham, Howard W., assignor.)						
Topliff, George F. (See Wills, Frank J., assignor.)						
Tornberg, Knut, Lynn, Mass., assignor to General Electric Company. Contact device	822,325	June 5	205	41	122	1771
Touceda, Enrique A., Albany, N. Y. Metallurgy	823,560	June 19	2703	571–2	122	2423
Touceda, Enrique A., Albany, N. Y. Metallurgical apparatus	823,561	June 19	2705	572	122	2423
Tournier, Julius C., Schenectady, N. Y., assignor to General Electric Company. Rosette	821,444	May 22	4953	1052	122	1281
Tower, William G., Corona, Cal. Rail-fastener	821,841	May 29	5738	1222	122	1510
Towle, Herbert L., Richmond Hill, N. Y., assignor to Waterbury Tool Company, Waterbury, Conn. Balanced engine	821,553	May 22	5146	1097–8	122	1320
Towle, Stanley, Fall River, Mass. Making dental devices	824,218	June 26	3938	844	122	2751
Towles, John M. (See Wever, La Fayette T., assignor.)						
Towne, Nathan P., Philadelphia, Pa. Valve	820,154	May 8	2311	505	122	578
Townley, Arthur C., Elizabeth, N. J. Strip-cutting machine	823,006	June 12	1544	321	122	2113
Townsend, Harry P., assignor to Corbin Cabinet Lock Company, New Britain, Conn. Lock	824,392	June 26	4276	911	122	2819
Traill, John C., Malvern, Victoria, Australia. Safety-pin	823,905	June 19	3348	713	122	2566
Trainer, James, Pointrock, Ohio. Power-transmitting apparatus	821,003	May 22	4064	864	122	1084
Transom Draft-Gear Company. (See Pflager, Harry M., assignor.)						
Traube, Wilhelm, Berlin, Germany. Making dialkyl-barbituric acids	822,165	May 29	6355	.....	122	1650
Traun Rubber Co. (See Schrader, William F. A., assignor.)						
Traut, Justus A., assignor to Stanley Rule & Level Company, New Britain, Conn. Level	820,028	May 8	2046	449	122	518
Traves, Webster F. (See Huey, Charles M., assignor.)						
Traves, Webster F., *et al.* (See Williams, Charle C., assignor.)						
Travis, Herbert J., New York, N. Y. Locomotive-boiler	821,904	May 29	5851	1243	122	1536
Travis, Herbert J., New York, N. Y. Locomotive-boiler	823,562	June 19	2707	572–3	122	2423
Travis, Herbert J., New York, N. Y. Fuel-feeding apparatus	823,563	June 19	2708	573	122	2424
Trebesiner, Carl, Pittsburg, Pa. Device for setting switches by the motorman from the car	819,619	May 1	1137	251	122	256
Tregoning, William C., Hackensack, N. J., assignor by mesne assignments, to Perkins Corporation, Hartford, Conn. Push-button electric switch. (Reissue)	12,480	May 8	2751	598	122	675
Treichel, Albert R., St. Louis, Mo. Christmas-tree attachment	824,603	June 26	4717	1004	122	2916
Trembley, Joseph, Argyle, Minn. Clamp for holding meat	822,166	May 29	6356	1351	122	1650
Treskow, Leo von, New Orleans, La. Jet-condenser	820,325	May 8	2633	573	122	649
Tresidder, John J., New York, assignor to American Column Company, Brooklyn, N. Y. Column and column-cap	820,155	May 8	2313	505	122	578
Tresidder, John J., New York, assignor to American Column Company, Brooklyn, N. Y. Fireproof column	820,156	May 8	2314	505	122	578
Tressler, George. (See Thomas, Henry E., assignor.)						
Trewhella, Benjamin. (See Trewhella, William, assignor.)						
Trewhella, William, assignor to himself and B. Trewhella, Trentham, Victoria, Australia. Lifting-jack	821,769	May 29	5600	1193	122	1479
Treyer, Franz, assignor to J. C. Ryf, Zurich, Switzerland. Microphone	824,159	June 26	3819	815	122	2725
Trigg, Louis B., Wheeling, W. Va. Rain-water cut-off	819,823	May 8	1580	335	122	416
Triner, James M., Chicago, Ill. Weighing-scale	819,325	May 1	589	124–5	122	136
Trinks, Franz, Brunswick, Germany. Calculating-machine	823,375	June 12	2310	484–5	122	2279
Triolo, John P., Corona, Cal. Means to cure fruit for transportation	821,205	May 22	4455	948	122	1169
Tripp Fruit Wrapping Machine Company. (See Ballard, Milton H., assignor.)						
Triumph Voting Machine Company. (See Fosdick, William I. T., assignor.)						
Tropp, Bernhard, assignor to W. H. Laird, New York, N. Y. Self-winding electric clock	821,140	May 22	4342	923	122	1145
Trotman, Walter K., Wood Green, England. Watermarking of paper	821,206	May 22	4456	949	122	1169
Troy, Matthew O., Schenectady, N. Y., assignor to General Electric Company. Operating constant-current transformers	819,620	May 1	1139	251	122	256
Truax, John, Long Branch, N. J. Fender	821,770	May 29	5601	1193	122	1479
True, Charles, Sherwood, Oreg. Hop-scoop	823,007	June 12	1548	322	122	2114
True, Meshack, Watervalley, Miss. Combined harrow and cultivator	822,787	June 5	1098	227	122	1968
Trueb, Jacob, St. Louis, Mo. Interfering-boot	819,473	May 1	878	191	122	197
Truesdell, Zina L., Camden, Ind. Centrifugal cream-separator	821,554	May 22	5146	1098	122	1321
Trumbull Electric Manufacturing Company. (See Trumbull, John H., assignor.)						
Trumbull, John H., assignor to Trumbull Electric Manufacturing Company, Plainville, Conn. Panel switch and cut-out	820,076	May 8	2160	470	122	545
Truswell, Richard, Trail, Canada. Mold for casting anode-plates	823,977	June 19	3490	745	122	2595
Tryon, Charles H. (See Knoff, Frank, assignor.)						
Tryon, Frank H., Utica, N. Y. Water-jacket	822,326	June 5	208	41	122	1772
Tschentscher, Rudolph. (See Dean and Tschentscher.)						
Tucker, Emett L., Chicago, Ill. Metering device for engines	822,637	June 5	822	167	122	1909
Tucker, Francis J., Philadelphia, Pa. Fastener for manhole-covers	822,562	June 5	646	130	122	1868
Tucker, Ross F., New York, N. Y. Method of and apparatus for lining tunnels with concrete	820,747	May 15	3463	743	122	891
Tuckfield, Charles, East Molesey, England. Liquid-purifier	821,207	May 22	4458	949	122	1170
Tulka, Bohumil, Prague, Austria-Hungary. Bicycle handle-bar	819,474	May 1	879	191–2	122	197
Tulka, Bohumil, Prague, Austria-Hungary. Handle-bar	821,905	May 29	5852	1244	122	1536
Tupper, Melburn H., Buda, Canada. Folding brush	821,320	May 22	4681	997	122	1219
Turbine Motor Tool Company. (See Fletcher, Nathan W., assignor.)						
Turk, James W. B., Poteau, Ind. Ter. Wrench	824,267	June 26	4032	863	122	2770
Turley, Patrick H., Harrisburg, Pa. assignor to Elliott-Fisher Company, New York, N. Y. Register-support for type-writing and adding machines	820,833	May 15	3664	782	122	934
Turner Atherton & Co. (See Eickemeyer, Carl, assignor.)						
Turner Brass Works. (See Brisbois, Odilon, assignor.)						
Turner, Charles H., New York, N. Y. Journal-lubricator	819,475	May 1	880	192	122	197
Turner, George E., assignor to Bellefontaine Foundry & Machine Company, Bellefontaine, Ohio. Friction-clutch	821,680	May 29	5418	1153	122	1436
Turner, Harry C., Los Angeles, Cal. Shock-absorber	819,386	May 1	715	152	122	163

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Turner, Henry B., Huntington, W. Va. Shade-fixture	819,957	May 8	1873	414	122	478
Turner, Lucius A., Denver, Colo. Gravity-lock for sliding doors	820,271	May 8	2536	549–50	122	628
Turner, Maurice C., assignor to New York Telephone Company, New York, N. Y. Bridging-connector for telephone-lines	822,492	June 5	512	104	122	1838
Turner, Maurice C., assignor to New York Telephone Company, New York, N. Y. Telephone-booth	822,493	June 5	513	104–5	122	1838
Turner Samuel J., assignor of one-half to H. J. Fish, Chicago, Ill. Wheel	822,088	May 29	6196	1321	122	1614
Turner, Thomas. (See Scott, Walter R., assignor.)						
Turpin, Thomas L., Aubrey, Tex. Measure	820 448	May 15	2886	627	122	763
Turton, Harry, assignor to A. Buermann, Newark, N. J. Bridle-bit	823,564	June 19	2709	573	122	2424
Turton, Harry, assignor to A. Buermann, Newark, N. J. Bridle-bit	823,565	June 19	2710	573	122	2424
Tüschel, Gustav, New York, N. Y. Polishing-machine	820,748	May 15	3466	743	122	892
Tuthill, George, and W. H. Boyd, Portland, Oreg. Protector for horses' tails	822,788	June 5	1099	227–8	122	1960
Tuttle, Willard S., Brooklyn, N. Y. Hot-air register	822,408	June 5	342	71	122	1801
Twining, William A., Cleveland, Ohio, assignor to Elliott-Fisher Company, New York, N. Y. Automatic ribbon-reverse	820,834	May 15	3666	782–4	122	935
Twiss, James G., New York, N. Y. Game apparatus	822,789	June 5	1100	228	122	1969
Twitchell, Charles R., assignor of one-half to J. M. Brennan, Los Angeles, Cal. Pneumatic tire	819,387	May 1	717	152	122	163
Twitchell, Charles R., assignor of one-half to J. M. Brennan, Los Angeles, Cal. Pneumatic tire	824,604	June 26	4718	1004	122	2916
Twitchell, James E., Detroit, Mich. Garment-hanger	823,376	June 12	2313	485	122	2279
Two-Edge Manufacturing Company. (See McLeran, Alvord M., assignor.)						
Tygart, John A., assignor of one-half to M. F. Sadler, Belleville, Ark. Wire-stretcher	823,087	June 12	1732	357	122	2153
Tyler, John C. (See McCoy, Ernest K., assignor.)						
Tyrell, Henry, Ottawa, Canada. Filter	819,958	May 8	1874	414	122	479
Tyrrell, Nathan E. (See Gumbel and Tyrrell.)						
Tyrrell, Nathan E., assignor to Standard Scale and Foundry Company, Kansas City, Mo. Weighing-scale	819,959	May 8	1875	415	122	479
Tyzack, Henry F. (See Scott and Tyzack.)						
U. S. Standard Voting Machine Company. (See Lausterer, William J., assignor.)						
Ude, Waldemar, St. Louis, Mo., assignor to Johnson & Johnson, New Brunswick, N. J. Lens-finder for clinical thermometers	821,141	May 22	4345	924	122	1146
Uhlmann, Bernhard, Passaic, N. J. Adjustable pedal-crank for bicycles	823,712	June 19	2982	631	122	2484
Uhlmann, Charles R., Peoria, Ill. Hair-brush	819,960	May 8	1880	415	122	481
Ulbrich, William, Atlantic, Iowa. Seed-testing apparatus	823,088	June 12	1733	357	122	2153
Ullmann, Albert, Macon, Ga., assignor of one-half to Ramsdell Inverted Gas Lamp Company. Gas-check	820,835	May 15	3674	784	122	937
Ullmann, Philipp, assignor to Firm of Kinley-Licht & Apparatebau Gesellschaft m. b. H., Frankfort-on-the-Main, Germany. Bunsen burner for liquid hydrocarbons	824,268	June 26	4033	863	122	2770
Underhill, Dillen, Toledo, Ohio. Hinge	819,098	May 1	129	27	122	33
Underwood Typewriter Company. (See Helmond, William F., assignor.)						
Underwood Typewriter Company. (See Kunath, Edward F., assignor.)						
Underwood Typewriter Company. (See McCormack, Harry S., assignor.)						
Underwood Typewriter Company. (See Wagner, Franz X., assignor.)						
Unger, Isaac, Iron Mountain, Mich. High chair	821,387	May 22	4839	1027	122	1255
Unger, Isaac, Iron Mountain, Mich. Chair-guard	821,388	May 22	4840	1027	122	1255
Union Carbide Company. (See Willson, Thomas L., assignor.)						
Union Gas Company. (See Crawford and Sinclair, assignors.)						
Union Hardware Company. (See Hoerle, Christian G., assignor.)						
Union Horse Nail Company. (See Abbott, Benjamin J., assignor.)						
Union Manufacturing Company. (See Church, Albert E., assignor.)						
Union Paper Bag Machine Company. (See Lorenz and Merritt, assignors.)						
Union Special Machine Company. (See Woodward, Russel G., assignor.)						
Union Special Sewing Machine Co. (See Woodward, Russel G., assignor.)						
Union Special Sewing Machine Co. (See Woodward and McNeil, assignors.)						
Union Special Sewing Machine Company. (See Corey, Daniel W., assignor.)						
Union Special Sewing Machine Company. (See Seymour, Dudley S., assignor.)						
Union Switch and Signal Company. (See Ames and Hobson, assignors.)						
Union Switch and Signal Company. (See Griffin, Henry W., assignor.)						
Union Switch and Signal Company. (See Struble, Jacob B., assignor.)						
Union Switch and Signal Company. (See Thullen, Louis H., assignor.)						
Union Switch and Signal Company. (See Van Wyck, Matthias M. V., assignor.)						
Union Typewriter Company. (See Smith, George H., assignor.)						
United Coke and Gas Company. (See Schnlewind, Frederic W. C., assignor.)						
United Engineering & Foundry Company. (See Ellis, Frank I., assignor.)						
United Engineering and Foundry Company. (See Gardner, Kirtland C., assignor.)						
United Iron Works Company. (See Hornsby and Weston, assignors.)						
United Lead Company. (See Bailey, John W., assignor.)						
United Mattress Machinery Company. (See Thompson, Robert R., assignor.)						
United Mattress Machinery Company. (See Thompson and Pinkham, assignors.)						
United Printing Machinery Company. (See Berry, Benjamin F., assignor.)						
United Shirt and Collar Company. (See Pine, James K. P., assignor.)						
United Shoe Machinery Company. (See Bayley, Charles H., assignor.)						
United Shoe Machinery Company. (See Brock, Matthias, assignor.)						
United Shoe Machinery Company. (See Collins, James E., assignor.)						
United Shoe Machinery Company. (See Davenport, Eugene F., assignor.)						
United Shoe Machinery Company. (See Fowler, Alfred B., assignor.)						
United States Coin Register Company. (See Nagel, William G., assignor.)						
United States Envelope Company. (See Pahlitzsch, Bruno, assignor.)						
United States Envelope Company. (See Williams, Harry J., assignor.)						
United States Printing Company. (See Schnurr, William, assignor.)						
Universal Tire Company. (See Ellis and Davis, assignors.)						
Upton, George W., Warren, Ohio. Fishing-reel	820,326	May 8	2635	574	122	650
Urbach, John T., assignor of one-eighth to M. M. Duvall, Baltimore, Md. Wrench	822,790	June 5	1101	228	122	1969
Urban, Fredrick H., assignor of three-fourths to L. Reffet and O. E. Adams, Brazil, Ind. Metallic railway-tie	823,311	June 12	2205	459	122	2257
Urie, Henry F., Lake City, Fla. Metallic railway-tie	820,611	May 15	3211	690	122	836
Urmston, Henry H., Jackson, Tenn. Means for removably connecting moving parts of machinery	822,494	June 5	514	105	122	1838
Utke, Ernst. (See Damhorst, Kemper, and Utke.)						
Utterback, Forrest H. (See Utterback, James, assignor.)						
Utterback, James, assignor of one-half to F. H. Utterback, Honeoye Falls, N. Y. Fruit-picking bag	824,160	June 26	3821	815	122	2725
Utterson, John N. (See Pribil and Utterson.)						
Vaaler, Jens, assignor to Clemetsen Company, Chicago, Ill. Type-writer desk	820,272	May 8	2539	550	122	629

Alphabetical list of patentees for May and June—Continued.

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Valerius, Theodore L., Fort Atkinson, Wis., assignor to Creamery Package Mfg. Company, Chicago, Ill. Turbine bottle-washer	820,749	May 15	3468	744	122	892
Vallee, John A. (See Koenig and Vallee.)						
Van Dervort, Adrian O., Troy, N. Y. Packing	821,682	May 29	5422	1154	122	1436
Van Dorin, Lewis, San Bernardino, Cal. Power punch and shears	819,621	May 1	1140	251–2	122	256
Van Every, Gordon E., assignor of one-fourth to K. H. Cressman, Naper, Nebr. Telephone or other line-supporting post	823,377	June 12	2314	485	122	2280
Van Haeften, Cornelis H. J., The Hague, Netherlands. Producing manure from peat	821,555	May 22	5149	1098	122	1321
Van Horn, Arthur C., and A. A. Miller, Groton, N. Y. Rifle-sight	823,145	June 12	1846	381	122	2177
Van Horn, Charles B., Philadelphia, assignor to Guarantee Title and Trust Co., trustee, Pittsburg, Pa. Wheel	819,824	May 8	1581	336	122	416
Van Houweling, Arthur C., Pella, Iowa. Governor	822,495	June 5	516	105	122	1839
Van Oordt, Gabriel. (See Haber, Van Oordt, and Bran.)						
Van Orden Corset Company. (See Van Orden, John M., assignor.)						
Van Orden, John M., Cedar Grove, N. J., assignor to Van Orden Corset Company. Belt	824,605	June 26	4720	1005	122	2917
Van Patten, Frank, Davenport, Iowa. Shipping-crate	820,896	May 15	3817	815	122	968
Van Riper, Anthony B. (See Frost and Van Riper.)						
Van Sickle, Nial. (See Kneedler, Van Sickle, Couch, and Hanson.)						
Van Voast, Albert B., *et al.* (See Vincent, George P., assignor.)						
Van Winkle, Edward. (See Grimes, Thaddeus S., assignor.)						
Van Winkle, Edward, Jersey City, N. J. Cloth-guiding device	821,906	May 29	5852	1244	122	1536
Van Wyck, Matthias M. V., New York, N. Y., assignor to Union Switch and Signal Company, Swissvale, Pa. Control of apparatus governing the passage of cars or vehicles along a railway	819,327	May 1	598	126	122	137
Van Wyck, Matthias V., New York, N. Y., assignor to Union Switch and Signal Company, Swissvale, Pa. Control of apparatus governing the passage of cars or vehicles along a railway	819,326	May 1	593	125–6	122	137
Vanderbilt, Cornelius, New York, N. Y. Boiler	823,486	June 12	2533	531–5	122	2327
Vanderman, William, Willimantic, Conn. Bath-tub	824,454	June 26	4409	937	122	2847
Vandermark, John L., Chicago, Ill., assignor, by mesne assignments, to Ridgely Trimmer Company, Springfield, Ohio. Combined straight-edge and paper-cutter	821,681	May 29	5420	1154	122	1436
Vanderveld, Anthony. (See Page and Vanderveld.)						
Vanhorn, Charles F., *et al.* (See Ross, John F., assignor.)						
Vareille, Karl J., Levallois-Perret, France. Apparatus for the electrolysis of water	823,650	June 19	2878	608–9	122	2463
Varina, Nicholas B. (See Crowell and Varina.)						
Varney, Gordon E. (See Cheyne, Frederick H., assignor.)						
Vaughan, David F., Haddonfield, N. J. Tie-plate	823,826	June 19	3197	676	122	2532
Vaughan, David F., Haddonfield, N. J. Tie-plate	823,827	June 19	3199	676	122	2533
Vaughan, David F., Haddonfield, N. J. Means for securing rails	823,828	June 19	3201	676–7	122	2533
Vaughan, Henry H., Cleveland, Ohio, assignor to Railroad Supply Company, Chicago, Ill. Magazine-holder for milling-cutters	819,961	May 8	1882	415–16	122	481
Vaughan, Henry H., Cleveland, Ohio, assignor to Railroad Supply Company, Chicago, Ill. Machine for manufacturing channel-pins	821,556	May 22	5151	1099	122	1321
Vaughn, Charles C., assignor, by mesne assignments, to G. X. Wendling, San Francisco, Cal. Bed warmer or cooler	822,167	May 29	6358	1351	122	1651
Vaughn, Henry C., assignor of one-half to L. N. Barton, Jefferson City, Mo. Oil-cup	823,978	June 19	3492	746	122	2596
Vaughn, James A., Chanute, Kans. Stay-plate for coats	823,746	June 19	3042	644	122	2496
Veazie, Henry A., New Orleans, La. Vaporizer	821,004	May 22	4065	865	122	1084
Vendig, Isaac H., Philadelphia, Pa. Coupon-bottle	823,006	June 12	1549	322	122	2114
Vernon, Edwin E., *et al.* (See Harrigan, Edward, assignor.)						
Vesperman, Henry, Steubenville, Ohio. Rake	820,449	May 15	2887	628	122	764
Vestal, Oscar E., Pittsburg, Pa. Shock-absorber	823,829	June 19	3203	677	122	2534
Vestal, William B., Dallas, Tex. Churn-dasher	819,099	May 1	131	28	122	33
Vester, Gustave J., Providence, R. I. Salt-shaker	822,638	June 5	824	168	122	1909
Vezie, Eugene, *et al.* (See Greene, Jacob R., Jr., assignor.)						
Vicars, John, Sr., T., and John, Jr., Earlstown, England. Mechanical stoking appliance	819,476	May 1	881	192	122	197
Vicars, Thomas. (See Vicars, John, Sr., T., and John, Jr.)						
Vickerman, Isaac A., Preston, Minn. Building-block	819,100	May 1	132	28	122	34
Vickery, Frank M., Boston, Mass. Spring shade-roller	823,452	June 12	2452	518	122	2309
Victor Manufacturing Company. (See Williams, James P., assignor.)						
Victory, Patrick E., Manville, R. I. Loom	821,600	May 22	5235	1116–17	122	1340
Viebrock, William L., Lime Spring, Iowa. Draft-equalizer	819,256	May 1	438	92	122	102
Vincent, George P., assignor of three-fourths to H. Wagner, A. B. Van Voast, and M. F. Vincent, Schenectady, N. Y. Valve-indicator	819,185	May 1	288	62	122	72
Vincent, James B., Flatbush, N. Y. Sash-lock	821,842	May 29	5739	1222	122	1510
Vincent, M. Frankie, *et al.* (See Vincent, George P., assignor.)						
Voelpel, Charles W., Port Richmond, N. Y. Bottle-stopper	820,836	May 15	3678	784	122	938
Vogel, Ernest H., New York, N. Y. Elevator	819,257	May 1	440	92–3	122	103
Vogel, Eugene W., assignor to Railroad Supply Company, Chicago, Ill. Channel-pin	822,168	May 29	6359	1351	122	1651
Vogel, Henry F., assignor to St. Louis Car Company, St. Louis, Mo. Railway-car	822,639	June 5	825	168	122	1909
Vogel, Henry F., assignor to St. Louis Car Company, St. Louis, Mo. Passenger-car	824,393	June 26	4277	911	122	2820
Vogel, Otto, Berlin, Germany, assignor to S. L. Goldman, London, England. Bottle or similar washing apparatus	821,005	May 22	4067	865–6	122	1085
Völler, Karl, Düsseldorf, assignor to Rheinische Metallwaren-und Maschinenfabrik, Düsseldorf-Derendorf, Germany. Trigger mechanism for guns	821,557	May 22	5154	1099–1100	122	1322
Vollmer, John, Rellinghausen, near Essen-on-the-Ruhr, and H. Herbaczowski, assignors to F. Krupp Aktiengesellschaft, Essen-on-the-Ruhr, Germany. Plastic gas-check for screw breech mechanisms	819,186	May 1	291	62	122	73
Volz, John F., *et al.* (See Ruehs and Weiss, assignors.)						
Vosburgh, John R., Johnstown, N. Y. Repair device for tires	823,089	June 12	1734	357	122	2153
Voshardt, Herman F. (See Friedley, Albert, assignor.)						
Voshardt, Herman F. (See McLeod, John P., assignor.)						
Voss, Friedrich, Burg, in Dithmarschen, Germany. Beer-glass tray	821,208	May 22	4459	949	122	1170
Voss, William H., Davenport, Iowa. Mechanical movement	823,651	June 19	2881	609	122	2464
Votey, Edwin S., Summit, N. J., assignor to Aeolian Company, New York, N. Y. Musical-instrument support	819,962	May 8	1884	416	122	481
Votey, Edwin S., assignor to Aeolian Company, New York, N. Y. Mechanical musical apparatus	824,049	June 19	3621	771	122	2623
Votey, Edwin S., assignor to Aeolian Company, New York, N. Y. Portable player for musical instruments	824,050	June 19	3625	772	122	2624
Vraalstad, Edward J., assignor of one-half to Buffalo Pitts Company, Buffalo, N. Y. Grain-weigher	824,606	June 26	4721	1005	122	2917
Vroom, Oler P., assignor to Superior Hay Stacker Manufacturing Company, Linneus, Mo. Hay-stacker	819,187	May 1	292	62–3	122	73

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Vynne, Emma M. (See Clark, George P., assignor.)						
W. F. & John Barnes Company. (See Barnes, Joseph P., assignor.)						
W. J. O'Leary & Company. (See O'Leary and Coonan, assignors.)						
W. & L. E. Gurley. (See Reichmann, Fritz, assignor.)						
Wachter, Frederick, Jersey City, N. J. Chloroform-dropper	823,233	June 12	2051	426	122	2225
Waddell, John M., Alexandria, La. Saw-sharpening machine	823,830	June 19	3204	677–8	122	2534
Waddell, Montgomery, New York, N. Y., assignor to S. W. Pettit, Philadelphia, Pa. Spinning-head for forming filaments of viscose or similar material	823,009	June 12	1550	322	122	2115
Waddingham, J. H. (See Grannatt, Henry C., assignor.)						
Wade, Charles E., *et al.* (See Coleman, James M., assignor.)						
Wade, Evan H., and J. L. Nicholson, assignors to American Locomotive Equipment Co., Chicago, Ill. Locomotive-boiler furnace	820,450	May 15	2888	628	122	764
Wade, Evan H., and J. L. Nicholson, assignors to American Locomotive Equipment Co., Chicago, Ill. Locomotive-furnace	820,451	May 15	2893	629	122	765
Wade, Lawrence W., Tacoma, Wash. Detonating burglar-alarm	824,161	June 26	3823	815	122	2726
Wade, Thadious M., Lithopolis, Ohio. Milking-machine	822,640	June 5	826	169	122	1910
Waechter, William B., Garfield, N. J., assignor to American Tracing Cloth Company, New York, N. Y. Tracing-cloth mangle	824,455	June 26	4414	937–8	122	2849
Wagandt, Charles L., Baltimore, Md., assignor to National Enameling & Stamping Company. Damper	821,209	May 22	4460	950	122	1170
Wagener, Heinrich W., Moscow, Russia. Steam-boiler	821,558	May 22	5156	1100	122	1322
Wagner, Franz X., assignor, by mesne assignments, to Underwood Typewriter Company, New York, N. Y. Type-writing machine	819,963	May 8	1889	417–18	122	482
Wagner, Friedrich J. R., Berlin, Germany, assignor, by mesne assignments, to General Electric Company. Automatic air-brake	823,979	June 19	3493	746	122	2596
Wagner, George H., Cedar Falls, Iowa. Gage	823,378	June 12	2315	485	122	2280
Wagner, Herman, *et al.* (See Vincent, George P., assignor.)						
Wagner, John, Portage, Wis. Heat-saving smoke-arrester	822,409	June 5	346	71	122	1801
Wagner, John F., Tamaqua, Pa. Car-coupling	819,388	May 1	719	152	122	163
Wagner, Orville, and J. S. Lewis, Wabash, Ind. Show-window fixture	823,747	June 19	3043	644	122	2496
Wagoner, Henry V., New York, N. Y. Leaf-holder	821,142	May 22	4346	924	122	1146
Wahlstrom, Verner J. (See Burchardi and Wahlstrom.)						
Wait, Henry H., assignor to International Separator Company, Chicago, Ill. Magnetic ore-separator	823,234	June 12	2053	426	122	2225
Wait, Henry H., assignor to International Separator Company, Chicago, Ill. Magnetic separator	823,235	June 12	2055	427	122	2226
Waite, Edgar T., assignor to American Optical Company, Southbridge, Mass. Lens-drilling machine	824,220	June 26	3940	844	122	2751
Waite, Henry E., Newton, Mass. Self-feeding mail-marking machine	822,791	June 5	1102	228–9	122	1970
Walcott, Orval. (See Stevens and Walcott.)						
Walden, Frederick E., Worcester, assignor to Bay State Tool Company, Boston, Mass. Clamp	823,748	June 19	3045	644	122	2497
Walder, Emil, Philadelphia, Pa. Match box and lighter	824,221	June 26	3942	844–5	122	2751
Waldron, Edward, Philadelphia, Pa., assignor to Waldron Flexible Rotary Engine Company, Camden, N. J. Compound rotary engine	822,410	June 5	347	71–2	122	1801
Waldron Flexible Rotary Engine Company. (See Waldron, Edward, assignor.)						
Walker, Albert E., A., and G., Norwood Green, near Halifax, England. Thread-cutting device	822,169	May 29	6361	1352	122	1651
Walker, Alexander, assignor to What Cheer Tool Company, What Cheer, Iowa. Drilling-machine	820,837	May 15	3679	785	122	938
Walker, Arthur. (See Walker, Albert E., A., and G.)						
Walker, Casslus M., assignor to Walker-Moore Rock Drill Manufacturing and Supply Company, Pueblo, Colo. Rock-drilling machine	823,980	June 19	3496	747	122	2597
Walker, Charles W., Bridgeport, Conn., assignor to Yost Writing Machine Company, Ilion, N. Y. Type-writing machine	823,010	June 12	1553	323–4	122	2115
Walker, Edwin. (See Head, Robert, assignor.)						
Walker, Edwin, Erie, Pa., assignor to Brunhoff Manufacturing Company Cincinnati, Ohio. Cigar-tip cutter. (Reissue)	12,487	May 22	5250	1119	122	1344
Walker, George. (See Walker, Albert E., A., and G.)						
Walker, George, assignor to Landers, Frary and Clark, New Britain, Conn. Spring-scale	822,641	June 5	827	169	122	1910
Walker, Jay B., assignor to Handbury Heater Company, Peoria, Ill. Hot-water boiler	823,981	June 19	3500	748	122	2597
Walker, John, *et al.* (See Osten, James H., assignor.)						
Walker, John D., assignor to Pine Ridge New Idea Company, Pineridge, La. Trap	820,686	May 15	3354	718	122	864
Walker-Moore Rock Drill Manufacturing and Supply Company. (See Walker, Casslus M., assignor.)						
Walker, Robert L., Brooklyn, N. Y. Smoke-consuming furnace	821,268	May 22	4573	972	122	1195
Walker, William B., New York, N. Y. Can, jar, &c.	820,273	May 8	2541	551	122	629
Wall, Charles F., Philadelphia, Pa. Eyeglass-mounting	824,607	June 26	4722	1005	122	2917
Wallace, G. E., *et al.* (See House, James N., assignor.)						
Wallace, Robert W., San Francisco, Cal. Boiler-feeder	821,683	May 29	5424	1154–5	122	1437
Waller, John A., assignor of one-third to H. O. Anderson, Chicago, Ill. Chain	820,452	May 15	2896	629	122	766
Wallin, Victor F., Brooklyn, N. Y. Lock	821,210	May 22	4462	950	122	1171
Wallis, Edward. (See Streeter and Wallis.)						
Walmsley, Charles, Bury, England, assignor to Wandel & Co. Metalltuch-Fabrik, Reutlingen, Germany. Means for operating picker-drums	820,838	May 15	3681	785	122	938
Walrath, Abram, Weedsport, N. Y. Silo	820,750	May 15	3471	744	122	893
Walsh, Harry C. H., assignor to Consolidated Press and Tool Company, Chicago, Ill. Can-heading machine	820,454	May 15	2899	630	122	766
Walsh, James D., St. Louis, Mo. Pleasure-car	820,453	May 15	2898	630	122	766
Walsh, James D., St. Louis, Mo. Feed mechanism for polishing-machines	821,143	May 22	4347	924	122	1146
Walsh, James D., St. Louis, Mo. Display-rack	821,144	May 22	4349	925	122	1147
Walsh, James D., St. Louis, Mo. Hanger for pictures, cardboard, and the like	823,379	June 12	2315	486	122	2280
Walsh, Joseph A. (See Sober, Leslie M., assignor.)						
Walsh, Joseph H. (See Atcheson and Walsh.)						
Walsh, Thomas P., Worcester, Mass., assignor to Crompton & Knowles Loom Works. Loom-multiplier mechanism	821,321	May 22	4683	997–8	122	1219
Walsh and Weidner Boiler Company. (See Senter, John F., assignor.)						
Walter, August C., Alex, Ind. Ter. Straddle-row cultivator	821,145	May 22	4352	925	122	1148
Walter, Jeanne, Philadelphia, Pa. Garment	824,456	June 26	4417	938	122	2849
Walter, Sidney, Marysville, Kans. Feeding-trough	823,380	June 12	2317	486	122	2280
Walters, Aldin V., Gallon, Ohio. Boiler-flue	823,907	June 19	3353	715	122	2567
Walters, Julius W., New York, N. Y. Clutch and transmission gear	822,702	June 5	954	195	122	1940
Walther, Charles F. (See Jacobs, Robert F., assignor.)						
Walther, Heinrich, assignor to Firm of Nollesche Werke, Weissenfels, Germany. Lasting mechanism for tacking and stapling machines	823,906	June 19	3350	714	122	2566

Alphabetical list of patentees for May and June—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Walton, Frederick J., and L. V. Rogers, Finchley, England. Advertising apparatus	821,146	May 22	4354	926	122	1148
Walton, George A. (See Rider, Herbert E., assignor.)						
Walton, Robert A., Los Angeles, Cal. Telephone-transmitter attachment	823,090	June 12	1736	357	122	2154
Walton, Robert A., Los Angeles, Cal. Telephone switching apparatus	823,091	June 12	1737	358	122	2154
Walton, Robert A., Los Angeles, Cal. Telephone-transmitter attachment	823,092	June 12	1738	358	122	2154
Wanamaker, Charles B., and C. B. Miles, assignors to Brown Straw Binder Company, Indianapolis, Ind. Tucker for straw-binders	822,563	June 5	649	130–3	122	1869
Wandel & Co. Metalltuch-Fabrik. (See Walmsley, Charles, assignor.)						
Wands, John C., St. Louis, Mo. Car-truck bolster	819,188	May 1	294	63	122	73
Wanner, Albert, Jr., New York, N. Y. Hinge-bracket for chair-seats	819,477	May 1	882	193	122	197
Wanner, Albert, Jr., Hoboken, N. J. Bent-wood chair	819,478	May 1	883	193	122	198
Wanner, Albert, Jr., Hoboken, N. J. Chair	823,146	June 12	1847	381	122	2177
Wanner, Martin, New York, N. Y., assignor of one-half to T. S. Harrison, Philadelphia, Pa. Simultaneously mining and washing clay, kaolin, &c.	823,749	June 19	3046	645	122	2497
Wanz, Friedrich. (See Bamberger, Böck, and Wanz.)						
Ward, Alexander F., Memphis, Tenn. Hoop-coiler	823,236	June 12	2057	427	122	2226
Ward, Charles E. (See Keefer and Ward.)						
Wardwell, Simon W. (See Steere and Wardwell.)						
Ware, Charles H., and C. M. Holmes, Barry, Ill. Roundabout	822,876	June 5	1277	264	122	2005
Ware & Vilqueney *et al.* (See Nicewarner, Theodore G., assignor.)						
Warmuth, Henry C., Landis Store, Pa. Wagon-brake	820,157	May 8	2315	506	122	578
Warner, Alonzo A., assignor to Landers, Frary and Clark, New Britain, Conn. Coffee-percolator	821,445	May 22	4954	1053	122	1281
Warner, Arthur P. and C. H., assignors to Warner Instrument Company, Beloit, Wis. Magnetic tachometer	823,237	June 12	2059	428	122	2227
Warner, Charles F. P., Providence, R. I. Mechanical implement	824,394	June 26	4278	912	122	2820
Warner, Charles H. (See Warner, Arthur P. and C. H.)						
Warner, De Ver H., Bridgeport, Conn. Corset	822,792	June 5	1106	229	122	1971
Warner, Edgar E. (See Mitten, Philip J., assignor.)						
Warner, Frank E., assignor to Scovill Manufacturing Company, Waterbury, Conn. Snap-fastener	820,612	May 15	3212	690	122	836
Warner Instrument Company. (See Jones, Frederick B., assignor.)						
Warner Instrument Company. (See Warner, Arthur P. and C. H., assignors.)						
Warner, James S., Forest Gate, England. Radial railway and tramway truck	819,189	May 1	295	63–4	122	74
Warner, Michael, St. Louis, Mo. Securing-clamp for washing-machines	821,559	May 22	5158	1100	122	1323
Warner & Swasey Company. (See Swasey, Ambrose, assignor.)						
Warner & Swasey Company. (See Swasey and Fecker, assignors.)						
Warnock, Wallace S., Chicago, Ill. Printer's registering device	819,101	May 1	133	28	122	34
Warren, Edward K. (See Holdred, Frank, assignor.)						
Warren Featherbone Company. (See Lackey, George A., assignor.)						
Warren Featherbone Company. (See Webster, William, assignor.)						
Warren, Henry E., Newton, assignor to Lombard Governor Company, Boston, Mass. Speed-regulating device for water-wheels	822,030	May 29	6084	1296–7	122	1588
Warren, Joseph D., Providence, R. I. Electric-wire terminal	819,389	May 1	721	153	122	164
Warren, Joseph H., assignor to Western Electric Company, Chicago, Ill. Line-connecting device	824,222	June 26	3945	845	122	2752
Warren, Peter R., Brookline, Mass. Paper box	821,907	May 29	5854	1244	122	1537
Warren, Thomas J., Stanley, N. C. Plow	819,390	May 1	722	153	122	164
Warren Webster and Company. (See Harrison, Amos, assignor.)						
Warren, William H., Brooklyn, N. Y., assignor to Western Electric Company, Chicago, Ill. Warning-signal for electric-motor controllers	824,223	June 26	3947	845	122	2752
Warren, William P., Sheridan, Ill. Wheeled scraper	821,560	May 22	5159	1100–1	122	1323
Warriner, Robert. (See Mowbray, Black, and Warriner.)						
Wartman, Edward, South Bend, Wash. Railway-switch	823,147	June 12	1848	381	122	2178
Washburn, Charles F., New London, Conn. Type-writer attachment	822,327	June 5	209	42	122	1772
Washburn, Edgar. (See Colburn and Washburn.)						
Washburn, Edgar. (See Colburn, Washburn, and Irwin.)						
Washburn, Henry T. and S. G., Goodwin, S. D. Loading apparatus	824,457	June 26	4418	938–9	122	2850
Washburn, Selden G. (See Washburn, Henry T. and S. G.)						
Washington Vending Machine Company. (See Simmons, James L., assignor.)						
Waterbury Tool Company. (See Towle, Herbert L., assignor.)						
Waterbury Tool Company. (See Williams, Harvey D., assignor.)						
Waterhouse, E. (See Garrigus, Walter A., assignor.)						
Waterman, Lewis E., assignor to Emerson Manufacturing Company, Rockford, Ill. Cultivator	823,238	June 12	2063	428–9	122	2227
Waterman, Lewis E., assignor to Emerson Manufacturing Company, Rockford, Ill. Cultivator	823,239	June 12	2066	429–30	122	2228
Waterman, Lewis E., assignor to Emerson Manufacturing Company, Rockford, Ill. Harrow-disk	823,240	June 12	2067	430	122	2229
Waterman, Lewis E., assignor to Emerson Manufacturing Company, Rockford, Ill. Wheeled plow	823,241	June 12	2068	430	122	2229
Waterman, Lewis E., assignor to Emerson Manufacturing Company, Rockford, Ill. Seeding-machine	823,242	June 12	2068	430–1	122	2229
Waterman, Lewis E., assignor to Emerson Manufacturing Company, Rockford, Ill. Disk harrow	823,243	June 12	2070	431	122	2229
Waterman, Lewis E., assignor to Emerson Manufacturing Company, Rockford, Ill. Wheeled plow	823,244	June 12	2072	431–2	122	2230
Waterman, Lewis E., assignor to Emerson Manufacturing Company, Rockford, Ill. Corn-planter	823,245	June 12	2076	432	122	2231
Waterman, Lewis E., assignor to Emerson Manufacturing Company, Rockford, Ill. Riding attachment for harrows	823,652	June 19	2883	610	122	2465
Waters, William L., Milwaukee, Wis. Dynamo-electric machinery	823,566	June 19	2711	574	122	2424
Waters, William L., Milwaukee, Wis. Governing mechanism for engines	823,567	June 19	2713	574	122	2425
Waters, William L., Milwaukee, Wis. Commutator	823,568	June 19	2715	575	122	2425
Waters, William L., Milwaukee, Wis. Brush-holder	823,569	June 19	2717	575	122	2425
Watkins, Isaac, Hartford, Conn. Burglar-alarm	823,831	June 19	3208	679	122	2535
Watkins, Orla H., and C. F. Shellenger, Clinton, Iowa, assignors to B. F. Windsor, Kenosha, Wis. Wire-working machine	819,479	May 1	884	193–4	122	198
Watkins, Orla H., and C. F. Shellenger, Clinton, Iowa, assignors to B. F. Windsor, Kenosha, Wis. Wire-working machine	819,622	May 1	1141	252	122	257
Watkins, Orla H., and C. F. Shellenger, Clinton, Iowa, assignors to B. F. Windsor, Kenosha, Wis. Wire-working machine	819,623	May 1	1148	253	122	258
Watkins, William D., San Jose, Cal. Telephone selecting device	821,059	May 22	4199	893	122	1113
Watley, Willis M. B., Chicago, Ill. Hand-truck	820,274	May 8	2542	551	122	630
Watson, Clarence M., Wadsworth, Ohio. Loading apparatus	824,162	June 26	3824	815–16	122	2726
Watson, Francis B., Caldwell, Kans. Match-box	819,964	May 8	1893	419	122	482

Alphabetical list of patentees for May and June—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Watson, George A. (See Brooks and Watson.)						
Watson, Seymour D., St. Johns, Mich. Heater	821,269	May 22	4576	973	122	1196
Watters, William J., assignor to Office Supply Company, Chicago, Ill. Binder-frame	823,653	June 19	2885	610	122	2465
Wattles, Cyra B., Providence, R. I. Floor-dressing machine	820,751	May 15	3472	744–5	122	893
Wattles, Cyra B., assignor to Surfacing Machine Company, Providence, R. I. Floor-dressing machine	819,391	May 1	723	153	122	164
Waugh, Edward H., Chicago, Ill., assignor, by mesne assignments, to Double-Friction Coil Clutch Company. Friction-clutch	822,496	June 5	518	105–6	122	1839
Waugh, Henry H., Brooklyn, N. Y. Bottle-heater	820,029	May 8	2047	449	122	518
Wayman, Walter N., Staunton, Va. Gas-administering apparatus	819,392	May 1	726	154	122	165
Wayman, William O., assignor to Illinois Malleable Iron Company, Chicago, Ill. Cistern	823,832	June 19	3211	679	122	2536
Wear, Frank F., San Francisco, Cal. Automatic computing cheese-cutter	819,679	May 1	1263	275–6	122	283
Wearne, Richard L., assignor to Nineteen Hundred Washer Co., Inc., Binghamton, N. Y. Washing-machine	819,102	May 1	136	28–9	122	35
Weatherson, Christopher, assignor to American Bridge Company, Chicago, Ill. Punching-machine	823,148	June 12	1850	382	122	2178
Weaver, Henry F., Lincolnton, assignor of one-half to G. W. Rabb, Newton, N. C. Plow and planter	821,070	May 22	4202	893	122	1114
Weaver, Isaac H., assignor of one-half to F. Powell, Toledo, Ohio. Bag-holder	821,771	May 29	5602	1194	122	1479
Webb, Elisha, Jr., Philadelphia, Pa. Galley hot-water system	819,103	May 1	139	29	122	35
Webb, George H., Pawtucket, R. I. Machine for forming key-seats in hubs of gears, &c.	823,833	June 19	3212	679	122	2536
Webb, Isaac H., Emlenton, Pa. Curtain-pole bracket	822,170	May 29	6363	1352	122	1651
Webb, Jean F., and C. E. Frederickson, Denver, Colo. Electric signaling system	819,190	May 1	297	64–5	122	74
Webb, Joseph, *et al.* (See Schlared, Charles, assignor.)						
Webb, Robert D., Minden, La. Automatic weighing and dumping machine	820,455	May 15	2901	630	122	767
Weber, Carl, Chicago, Ill. Chimney	823,197	June 12	1966	409–10	122	2206
Weber, George J., Kansas City, Mo. Electric igniter for explosive-engines	820,535	May 15	3079	663	122	807
Weber, J. M., *et al.* (See Lange, Fred, assignor.)						
Weber, John, Newark, N. J. Easel	819,680	May 1	1266	276	122	284
Weber, Josef. (See Goldschmidt and Weber.)						
Weber, Peter, Orange, assignor to New Jersey Patent Company, West Orange, N. J. Phonograph-horn	820,158	May 8	2317	506	122	579
Weber, Peter, Orange, assignor to New Jersey Patent Company, West Orange, N. J. Phonograph	821,071	May 22	4205	894	122	1114
Weber, Peter M., Homestead, Pa. Universal mill	824,518	June 26	4539	962–3	122	2878
Weber, Rosa, Fort Wayne, Ind. Artist's bottle	822,793	June 5	1107	230	122	1971
Weber, Rudolf P., Brooklyn, N. Y. Brick for chimneys	823,011	June 12	1563	324	122	2118
Webster, Cheever L., Gallon, Ohio. Roll-drop window-shade	822,031	May 29	6090	1297	122	1589
Webster, Guy, York, Pa. Sheet-piling	823,982	June 19	3503	748	122	2598
Webster, John A., assignor to F. A. Morrison, New York, N. Y. Pencil-sharpener	819,104	May 1	140	29	122	36
Webster, Willard, *et al.* (See Nicholls, Moses, assignor.)						
Webster, William, London, Canada, assignor to Warren Featherbone Company, Three Oaks, Mich. Stiffening-blade	824,608	June 26	4724	1006	122	2918
Weddington, Robert L., assignor of one-half to C. H. Howe, Hugo, Ind. Ter. Attachment to stoves	819,681	May 1	1267	276	122	284
Weed, Elisha L., assignor of one-half to M. M. Gault, Medford, Oreg. Miner's candlestick	824,609	June 26	4725	1006	122	2918
Weeks, Arthur J., Akron, Ohio. Jug	819,191	May 1	302	65	122	75
Weeks, William H., Philadelphia, Pa. Machine for coating confectionery	820,030	May 8	2048	449–50	122	519
Wehrenberg, Charles E., Mound City, Ill. Baling-press	822,411	June 5	349	72–3	122	1802
Weichsel, William C., and U. G. Knuppenburg, Avonmore, Pa. Machine for cleaning tin plates	821,908	May 29	5855	1244–5	122	1537
Weigel, Robert. (See Drame, Bernard M., assignor.)						
Weiler, Nicholas, Sioux City, Iowa. Lifting-jack	819,825	May 8	1583	336	122	417
Weinrich, Moriz, Yonkers, N. Y. Purifying masse-cuite or syrup	822,171	May 29	6364	1352	122	1651
Weise, Julius, F. Rieche, and A. Barth, assignors to R. Koepp & Co., Oestrich-on-the-Rhine, Germany. Making formates	820,159	May 8	2319	.....	122	579
Weise, Julius, F. Rieche, and A. Barth, assignors to R. Koepp & Co., Oestrich-on-the-Rhine, Germany. Making formates	820,373	May 8	2725	.....	122	670
Weise, Julius, F. Rieche, and A. Barth, assignors to R. Koepp & Co., Oestrich-on-the-Rhine, Germany. Making formates	820,374	May 8	2727	.....	122	670
Weiskopf, H. E., *et al.* (See Knox, Luther L., assignor.)						
Weiss, Carl W., Brooklyn, N. Y. Internal-combustion engine	819,258	May 1	443	94	122	104
Weiss, George. (See Ruehs and Weiss.)						
Weitzmann, Niels J. H., Malmoe, Sweden. Refining and cleansing coffee	824,320	June 26	4126	883	122	2790
Welch, Alpha W., Albion, Mich. Folding bed	822,328	June 5	210	42	122	1772
Welch, George R., Detroit, Mich. Mechanical lubricator	824,458	June 26	4421	939	122	2850
Welcher, Frank R., Newark, N. J. Stanchion	819,826	May 8	1584	336	122	417
Welcome, Solon B., Los Angeles, Cal., assignor to Western Iron Works. Internal-combustion engine	822,172	May 29	6366	1352	122	1652
Weld, George A. (See Southwick, Edward M., assignor.)						
Weller, Harvey A. (See Heiser, Valentine, assignor.)						
Weller, Turner A. (See Spotswood and Weller.)						
Wellman, Harold R., Riverside, assignor to Western Electric Company, Chicago, Ill. Sewing-machine motor	820,327	May 8	2637	574–5	122	650
Wellman-Seaver-Morgan Company. (See Hulett, George H., assignor.)						
Wells, Charles L., St. Paul, Minn. Medicine-distributer	821,389	May 22	4841	1028	122	1256
Wells, Frank L. (See MacDonald, John A., assignor.)						
Wells, George A., Jr., New York, N. Y. Apparatus for the regulation of electric systems	821,909	May 29	5858	1245	122	1537
Welsbach Light Company. (See Colina, William, assignor.)						
Wendling, G. X. (See Vaughn, Charles C., assignor.)						
Wenning, Edward. (See Hartman, George, assignor.)						
Wenrich, Daniel K., Joplin, Mo. Delivery device for vending-machines	819,393	May 1	728	154–5	122	165
Wensel, Theodor, St. Paul, Minn. Register-clamp	819,827	May 8	1586	337	122	418
Weny, Charles, assignor of one-half to R. Mueller, Chicago, Ill. Vinegar apparatus	823,570	June 19	2719	575–6	122	2426
Wenzelmann, Gustav, and E. H. Overholt, Galesburg, Ill., assignors to Wenzelmann Manufacturing Company. Portable distributing-conveyer	822,412	June 5	351	73–4	122	1802
Wenzelmann Manufacturing Company. (See Wenzelmann and Overholt, assignors.)						
Werk, Robert F., New Orleans, La. Oil-press mat	820,275	May 8	2543	551	122	630
Werlin, Louis, Elsmere, Del. Regenerating and purifying of ammonia	824,459	June 26	4424	940	122	2851
Werner, Christian H. (See Hammer, Charles, assignor.)						
Weser, George W., New York, N. Y. Piano	824,224	June 26	3949	846	122	2753
Wesler, Frederick. (See MacMahon and Wesler.)						
Weep, Christian, Buffalo, N. Y. Shifting-seat carriage	821,910	May 29	5861	1246	122	1538
Wessel, Julius, New York, N. Y. Waterproofing composition	823,246	June 12	2078	.....	122	2231
Wessinger, Henry J., Duluth, Minn. Latch-operating mechanism for dredges	820,456	May 15	2902	631	122	768

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Wesson, Joseph. (See Davidson and Wesson.)						
West, Arthur J., assignor to Sight Feed Oil Pump Company, Milwaukee, Wis. Oil-pump motor	821,147	May 22	4355	926	122	1148
West, Frank L., and C. J. Kortz, Cleveland, Ohio. Wire-hook bill-file	823,654	June 19	2886	610	122	2466
West, George E., Scranton, Pa. Adjustable shade and lace-curtain fixture	822,226	May 29	6470	1373	122	1677
West, Joel W. (See Jones, John W., assignor.)						
West Leechburg Steel Co. (See Conklin, William F., assignor.)						
West, Louis G. M., Baltimore, Md. Lubricator	821,072	May 22	4206	894	122	1114
West, Walter D., and V. Mauck, Conshohocken, Pa. Apparatus for treating textile fabrics	823,834	June 19	3215	679–80	122	2536
Westby, Ingolf J., Kinloss, N. D. Safety-box	822,032	May 29	6091	1297–8	122	1589
Westcott, Valorus S., Pawtucket, and F. W. Potter, Central Falls, R. I. Sliver-evening device for drawing-frames. (Reissue)	12,478	May 8	2746	597–8	122	673
Western Clock Manufacturing Company. (See Klein, Joseph, assignor.)						
Western Electric Company. (See Conner, Merritt S., assignor.)						
Western Electric Company. (See Enochs, Claude D., assignor.)						
Western Electric Company. (See McBerty, Frank R., assignor.)						
Western Electric Company. (See McQuarrie, James L., assignor.)						
Western Electric Company. (See Opitz, Joseph, assignor.)						
Western Electric Company. (See Warren, Joseph H., assignor.)						
Western Electric Company. (See Warren, William H., assignor.)						
Western Electric Company. (See Wellman, Harold R., assignor.)						
Western Implement Manufacturing Co. (See Barlow, John W., assignor.)						
Western Iron Works. (See Welcome, Solon B., assignor.)						
Western Patent Right and Investment Company. (See Bush, Harry E., assignor.)						
Western Wheeled Scraper Company. (See McKnight, Thomas R., assignor.)						
Westinghouse Air Brake Company. (See Krimmelbein, Leopold, assignor.)						
Westinghouse Electric & Manufacturing Company. (See Abtmeyer, Theodore, assignor.)						
Westinghouse Electric & Manufacturing Company. (See Bradshaw, William M., assignor.)						
Westinghouse Electric & Manufacturing Company. (See Daus, Adolph H., assignor.)						
Westinghouse Electric & Manufacturing Company. (See Lamme, Benjamin G., assignor.)						
Westinghouse Electric & Manufacturing Company. (See Lehr, Edwin E., assignor.)						
Westinghouse Electric & Manufacturing Company. (See McCoy, Walter E., assignor.)						
Westinghouse Electric & Manufacturing Company. (See McMahan, Hugh J., assignor.)						
Westinghouse Electric & Manufacturing Company. (See Paton, John D., assignor.)						
Westinghouse Electric & Manufacturing Company. (See Sieber, Ferdinand, assignor.)						
Westinghouse Electric & Manufacturing Company. (See Siegfried and Storer, assignors.)						
Westinghouse Electric & Manufacturing Company. (See Stuart, Harve R., assignor.)						
Westinghouse Electric & Manufacturing Company. (See Tingley, Egbert M., assignor.)						
Westinghouse Electric & Manufacturing Company. (See Wikander, Ragnar, assignor.)						
Westinghouse Electric & Manufacturing Company. (See Wilbur, Samuel P., assignor.)						
Westinghouse, George. (See Armor, James C., assignor.)						
Westinghouse, George. (See Bennett, Edward, assignor.)						
Westinghouse, George. (See Hanks, Marshall W., assignor.)						
Westlake, Charles T., St. Louis, Mo. Car-truck	819,480	May 1	892	195	122	199
Westlake, Charles T., assignor to Davis Locomotive Wheel Company, St. Louis, Mo. Counterbalancing crank-wheels	823,750	June 19	3049	645	122	2498
Westlake, Charles T., St. Louis, Mo., and A. R. Thomas, Granite City, Ill., assignors to Davis Locomotive Wheel Company, St. Louis, Mo. Draft-gear for locomotives and railway-cars	820,375	May 8	2728	594	122	670
Westlake, Charles T., St. Louis, Mo., and A. R. Thomas, Granite City, Ill., assignors to Davis Locomotive Wheel Company, St. Louis, Mo. Means for balancing crank-wheels	823,012	June 12	1565	324–5	122	2119
Westlake, Joseph W., Marysville, Ohio. Fence-post	823,655	June 19	2887	610	122	2466
Weston, Thomas R. (See Hornsby and Weston.)						
Weston, William S., Chicago, Ill., assignor to Buda Foundry & Manufacturing Company. Railway switch-rod	822,413	June 5	353	74	122	1803
Westover, George A., Westhope, N. D. Belt shifter and replacer	820,457	May 15	2905	631	122	768
Wetzel, Frederick L., assignor to Columbia Biscuit Company, St. Louis, Mo. Carrier-crate	821,684	May 29	5426	1155	122	1437
Wever, La Fayette T., Crawfordville, Fla. Railway-switch	823,453	June 12	2454	519	122	2309
Wever, La Fayette T., assignor of one-half to J. M. Towles, Crawfordville, Fla. Wrench	819,192	May 1	303	65	122	75
Wever, La Fayette T., Crawfordville, assignor of two-thirds to J. D. and C. A. Cay, Tallahassee, Fla. Railway-switch	821,772	May 29	5603	1194	122	1479
What Cheer Tool Company. (See Walker, Alexander, assignor.)						
Wheelon, Francis O., St. Paul, Minn., assignor to International Railway Device Company. Locomotive	819,828	May 8	1588	337–8	122	418
Wheaton, Almaron F., Menlo, Wash. Snatch-block	821,148	May 22	4357	927	122	1149
Wheeler, Clifton H., Philadelphia, Pa., and L. L. Pratt, Milford, Del., assignors, by mesne assignments, to C. H. Wheeler Manufacturing Company, Philadelphia, Pa. Cooling-tower	821,561	May 22	5160	1101	122	1323
Wheeler, Ezekiel, Kingfisher, Okla. Ter. Metallic rail tie and chair	819,481	May 1	894	196	122	200
Wheeler, George E., assignor of two-thirds to W. W. Copeland and H. G. Shelby, Burlington, Iowa. Shipping-crate	820,536	May 15	3084	663	122	808
Wheeler, Joseph, assignor of one-half to H. Brown, Philadelphia, Pa. Circular independent-needle knitting-machine	822,564	June 5	652	133–4	122	1869
Wheeler, Seth, Castleton, N. Y. Paper-cabinet	819,482	May 1	895	195–6	122	200
Wheeler, Seth, Castleton, N. Y. Producing packages of interfolded sheets	821,562	May 22	5162	1101	122	1324
Wheeler, William A. (See Sheridan and Wheeler.)						
Wheeler & Wilson Manufacturing Company. (See Gray, Charles F., assignor.)						
Wheeler & Wilson Manufacturing Company. (See Laubscher, Alexander, assignor.)						
Wheelock, Albert A. (See Barton, Lyman G., assignor.)						
Wheelock, Etta W., East Milton, Mass. Guard for open railway-cars	822,703	June 5	957	195	122	1940
Wheless, Thomas H., New York, N. Y. Submarine boat	822,565	June 5	658	135–6	122	1871
Whellams, Creasey J., St. Paul, Minn. Window-screen	822,227	May 29	6471	1373	122	1677
Whigham, William, assignor to Carnegie Steel Company, Pittsburg, Pa. Metallic tie and rail-fastening	819,483	May 1	897	196	122	200
Whitaker, Frederick E., New Haven, Conn. Copy-holder	823,908	June 19	3384	715	122	2567
Whitaker, John. (See Dy Arman, George W., assignor.)						
Whitaker, Joseph W., Noble, Ill. Coffee and tea pot	820,897	May 15	3818	815	122	969
Whitaker, Richard, New Brunswick, N. J., assignor to Brunswick Refrigerating Company. Gas-pump	821,563	May 22	5163	1102	122	1324
White, Andrew J., Mertens, Tex. Lifting-jack, clamp, and wire-stretcher	823,140	June 12	1853	383	122	2179
White, Bruce C., Mosgrove, Pa. Ladle	820,613	May 15	3214	660–1	122	836
White, Charles W., Evansville, Ind. Sawmill-dog	823,013	June 12	1567	325	122	2119

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White, Corey O., and R. Wilcox; said Wilcox assignor to W. E. Brewer, Jackson, Mich. Cement block and post machine	820,458	May 15	2907	632	122	769
White, Frank C., and G. W. Haywood, assignors to Wilcox & White Co., Meriden, Conn. Tracker mechanism for automatic music-playing mechanisms	822,033	May 29	6094	1298	122	1590
White, Franklin R., assignor to Platt Brothers & Company, Waterbury, Conn. Fastener	821,006	May 22	4070	866	122	1085
White, Franklin R., assignor to Platt Brothers & Company, Waterbury, Conn. Fastener	821,007	May 22	4071	867	122	1086
White, Franklin R., assignor to Patent Button Company, Waterbury, Conn. Glove-fastener	821,008	May 22	4072	866	122	1086
White, George, Jersey City, N. J. Transfer-press	819,829	May 8	1591	338–9	122	419
White, George, Jersey City, N. J. Transfer-press	821,911	May 29	5863	1246–7	122	1538
White, George P., Wallace, Idaho. Molding-machine	821,270	May 22	4578	974–5	122	1197
White, Henry R., Brainerd, Minn. Flame-regulator for lamp-burners	824,395	June 26	4280	912	122	2820
White, Herbert E., assignor to General Fireproofing Company, Youngstown, Ohio. Machine for expanding metal	819,484	May 1	899	196–7	122	200
White, Herbert E., assignor to General Fireproofing Company, Youngstown, Ohio. Machine for expanding metal	821,685	May 29	5428	1155–6	122	1438
White, Herbert E., assignor to General Fireproofing Company, Youngstown, Ohio. Expanding sheet metal	821,843	May 29	5740	1222	122	1510
White, John E., Moline, Ill. Clamp	819,259	May 1	445	94	122	104
White, John F., Bloomington, Ill., assignor to Portable Wagon Dump and Elevator Company. Portable wagon-dump	821,686	May 29	5430	1156–7	122	1438
White, John M., Ware Shoals, S. C. Shot-spreader	820,459	May 15	2908	632	122	769
White, Joseph C. (See Shuflin and White.)						
White Mop Wringer Company. (See Reynolds and Sherwood, assignors.)						
White, Orris O., assignor of one-half to V. H. Spencer, Garland, Pa. Boiler-feed regulator	822,794	June 5	1108	230	122	1971
White, Paul H., Indianapolis, Ind. Excavating apparatus	821,271	May 22	4581	975	122	1198
White, Thomas C., St. Louis, Mo. Wood strain-insulator	822,642	June 5	830	169	122	1911
White, Willard S., Chattanooga, Tenn. Vehicle-wheel	823,454	June 12	2455	519	122	2309
Whiteford, William, Virden, Canada. Grain-measuring apparatus	822,566	June 5	667	136	122	1875
Whitehead, Edward E., Goshen, Ind. Tamping-bar and post-hole pick	823,571	June 19	2721	576	122	2427
Whitehead, William L. (See Skevington, Whitehead, and Seltzer.)						
Whiteley, George S., Baltimore, Md. Vehicle-wheel	820,077	May 8	2162	471	122	545
Whitin Machine Works. (See Owen, Oscar L., assignor.)						
Whitin Machine Works. (See Owen and Rooney, assignors.)						
Whitin Machine Works. (See Rooney, Elwin H., assignor.)						
Whiting, Marie E. M. (See Parker and Whiting.)						
Whitlow, Jidy W., Roscoe, Tex. Bedstead	822,414	June 5	356	74	122	1803
Whitman, Henry L., St. Louis, Mo. Friction-clutch	824,610	June 26	4726	1006	122	2918
Whitman, James N., Philadelphia, Pa., assignor of one-half to M. T. Reynolds, Albany, N. Y. Manufacturing iron direct from its oxids	820,898	May 15	3819	.....	122	969
Whitney, Edgar H., Boston, Mass. Gas-heater	819,260	May 1	446	94	122	104
Whitney, Edwin H., assignor to Eddy Valve Company, Waterford, N. Y. Valve-indicator	824,163	June 26	3827	816	122	2726
Whitney Electrical Instrument Company. (See Hoyt, Adrian H., assignor.)						
Whitney, Francis H. (See Methfessel and Hartson, assignors.) (Reissue.)						
Whitney, George E., Boston, Mass., assignor to Whitney Motor Wagon Company, Kittery, Me. Stuffing-box adjuster	819,485	May 1	902	197	122	201
Whitney Motor Wagon Company. (See Whitney, George E., assignor.)						
Whitney, Pardon A., and R. C. Ellrich, assignors to Peck, Stow & Wilcox Company, Southington, Conn. Chuck	821,687	May 29	5434	1157	122	1439
Whitney, Pardon A., and R. C. Ellrich, assignors to Peck, Stow & Wilcox Company, Southington, Conn. Chuck	821,688	May 29	5435	1157	122	1440
Whitney, Pardon A., and R. C. Ellrich, assignors to Peck, Stow & Wilcox Company, Southington, Conn. Chuck	821,689	May 29	5437	1158	122	1440
Whittemore, John Q. A. (See Burke, Charles G., assignor.)						
Whittemore, John Q. A. (See Burke, Charles G. and E. J., assignors.)						
Whitten, Weston, assignor of one-half to A. Bacon, Unity, Me. Pot-lifter	820,460	May 15	2909	632	122	769
Whittingham, George H., New York, N. Y., assignor to Automatic Switch Company. Automatic motor-reverser	821,009	May 22	4073	867	122	1086
Whittington, Ernest M., Nashville, Tenn. Blotter-holder	821,912	May 29	5865	1247	122	1539
Whomes, Francis H., Los Angeles, Cal. Protector for cigars	823,014	June 12	1568	325	122	2119
Wichmann, Georg C. H., and A. B. Evans, Leeds, England. Machine for printing on tin plates or the like	823,835	June 19	3218	680–1	122	2537
Wick, Mathias, assignor of two-thirds to E. Kienle, New York, and J. A. Zibell, Tappan, N. Y. Car-fender	824,519	June 26	4540	964	122	2878
Wickham, Amos C., Carthage, assignor to Anchor Implement Company, St. Louis, Mo. Cultivator	822,795	June 5	1109	230	122	1971
Wicks, Frederick, Esher, England. Punch-cutting or engraving apparatus	822,089	May 29	6198	1321	122	1614
Wideman, Gustavus, assignor to Richards Manufacturing Company, Aurora, Ill. Track for door-hangers	822,090	May 29	6199	1321	122	1615
Widmer, Charles A., assignor to Pierome Hide Company, Syracuse, N. Y. Bushing	821,690	May 29	5438	1158	122	1440
Wiebke, Charles, New York, N. Y. Chenille-machine	822,704	June 5	959	195–6	122	1941
Wiebke, Charles, New York, N. Y. Spinning-flier	822,796	June 5	1110	230–1	122	1972
Wiegand, Henry J., assignor to Cutler-Hammer Mfg. Co., Milwaukee, Wis. Hand-wheel	821,272	May 22	4583	975	122	1198
Wiemann, William P., Allegheny, assignor to Empire Machine Company, Pittsburg, Pa. Gas-burner	823,836	June 19	3220	681	122	2537
Wiens, Aron N., Winkler, Canada. Self-binding harvester	820,276	May 8	2544	551	122	630
Wiens, John P., Milwaukee, Wis. Brush	821,968	May 29	5976	1273	122	1562
Wiest, Jonas H., Indianapolis, Ind. Form for molding concrete cisterns	820,160	May 8	2321	506–7	122	579
Wiggs, Jonathan N., assignor of one-half to J. H. Bradley, Senath, Mo. Cleaner for cotton-gin saws	821,446	May 22	4955	1053	122	1281
Wight, J. Howard. (See Goodwin, Oscar, assignor.)						
Wight, William N., New York, N. Y. Building construction and the like	820,461	May 15	2910	632–3	122	769
Wigtel, Carl, assignor to F. H. Stillman, Brooklyn, N. Y. Hydraulic pipe-riveting machine	819,193	May 1	305	65–6	122	76
Wigtel, Carl, assignor to F. H. Stillman, Brooklyn, N. Y. Hydraulic pipe-riveting machine	819,194	May 1	309	66–7	122	77
Wikander, Ragnar, Edgewood Park, Pa., assignor to Westinghouse Electric & Manufacturing Company. Voltage-regulator	824,225	June 26	3950	846–7	122	2753
Wilbur, Samuel P., Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company. Dash-pot	821,073	May 22	4208	894	122	1115
Wilbur, Wallace D., Hawkeye, Iowa. Display-rack	822,415	June 5	357	75	122	1804
Wilcox, Hettie O., Chicago, Ill. Basket	821,010	May 22	4077	867–8	122	1087
Wilcox, Hettie O., Chicago, Ill. Basket	821,074	May 22	4209	894–5	122	1115

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Wilcox Manufacturing Company. (See Prouty, Theodore C., assignor.)						
Wilcox, Margaret A., Chicago, Ill. Physical-culture appliance	822,329	June 5	212	42	122	1773
Wilcox, Ray. (See White and Wilcox.)						
Wilcox & White Co. (See White and Haywood, assignors.)						
Wilde, Daniel, Washington, Iowa. Spring-bolt for windows	821,390	May 22	4842	1028	122	1256
Wildenberg, Charles P., New York, N. Y. Hat-machine	822,797	June 5	1112	231	122	1972
Wilder, William H., Gardner, Mass. Reservoir for oil and vapor stoves	820,376	May 8	2730	594–5	122	670
Wilkie, David, Battle Creek, Mich. Sash-lock	823,656	June 19	2888	611	122	2466
Wilkin, John T., Connersville, Ind. Gas-exhauster	819,830	May 8	1594	339	122	420
Wilkinson, Ernest. (See Driggs and Wilkinson.)						
Wilkinson, James, Providence, R. I., assignor to Wilkinson Turbine Company. Bucket-wheel	819,105	May 1	142	30	122	36
Wilkinson, James, Providence, R. I., assignor to Wilkinson Turbine Company. Turbine bucket-wheel	819,106	May 1	145	30	122	37
Wilkinson, James, Providence, R. I., assignor to Wilkinson Turbine Company. Elastic-fluid turbine	822,799	June 5	1122	232	122	1975
Wilkinson, James, Providence, R. I., assignor to Wilkinson Turbine Company. Turbine-shaft packing	822,800	June 5	1125	232	122	1975
Wilkinson, James, Providence, R. I., assignor to Wilkinson Turbine Company. Turbine bucket-wheel	822,801	June 5	1128	233	122	1976
Wilkinson, James, Providence, R. I., assignor to Wilkinson Turbine Company. Shaft-packing	822,802	June 5	1131	233	122	1976
Wilkinson, James, Providence, R. I., assignor to Wilkinson Turbine Company. Elastic-fluid-turbine nozzle	823,909	June 19	3355	715	122	2567
Wilkinson, James, Birmingham, Ala., assignor to Wilkinson Turbine Company. Turbine and controller mechanism therefor	822,798	June 5	1114	232	122	1973
Wilkinson Turbine Company. (See Wilkinson, James, assignor.)						
Wilks, Herbert J., and M. Klaiber, New York, assignors to Modern Improvements Mfg. Co., Brooklyn, N. Y. Coupling for pipes and tubes	821,564	May 22	5165	1102	122	1324
Willard, John B., New York, N. Y. Hinge	820,462	May 15	2916	633	122	770
Willcox, Junius R., Norfolk, Va. Load-limit mechanism for elevators	823,455	June 12	2457	519	122	2310
Wille, August R. L., Leipsic, Germany. Timing mechanism for electric circuits	820,078	May 8	2163	471	122	545
Willett, Marinus, Brookgreen, S. C. Agricultural appliance	819,486	May 1	904	197–8	122	202
William B. Pollock Company. (See Sherman and McKelvey, assignors.)						
William Wharton, Jr., & Company, Incorporated. (See Cooke, Warner B., assignor.)						
Williams-Abbott Electric Company. (See Knight, Herbert L., assignor.)						
Williams, Alice L. (See Williams, Russell R., assignor.)						
Williams, Amanda A., Florence, Tex. Musical instrument	819,487	May 1	906	198	122	202
Williams, Amos J. (See Gregg and Williams.)						
Williams, Benjamin F., Chicago, Ill. Drawbridge	820,687	May 15	3355	719	122	865
Williams, Charle C., assignor to G. E. Harbaugh and W. F. Traves, Cleveland, Ohio. Speed-changing mechanism	823,487	June 12	2543	536	122	2328
Williams, Evander, Memphis, Tenn. Cultivator	820,537	May 15	3085	664	122	808
Williams, Frederick, Minersville, Pa. Safety brake or lock for elevators	822,803	June 5	1135	233	122	1977
Williams, George A., Port Clinton, Ohio. Bottle-cap fastener	822,567	June 5	669	136	122	1875
Williams, George R., assignor to E. C. Fuller Company, New York, N. Y. Detecting mechanism	824,460	June 26	4427	940–1	122	2852
Williams, Gurdon H., Cleveland, Ohio. Clam-shell bucket	823,015	June 12	1570	325–6	122	2120
Williams, Harry B., New York, N. Y. Wheel-rim	823,093	June 12	1739	358	122	2154
Williams, Harry J., New Haven, Conn., assignor to United States Envelope Company, Springfield, Mass. Toilet-paper fixture	819,488	May 1	907	199	122	202
Williams, Harry J. Meriden, Conn., assignor to United States Envelope Company, Springfield, Mass. Toilet-paper fixture	819,682	May 1	1268	276	122	285
Williams, Harry S., assignor, by mesne assignments, to C. E. Dawson, Los Angeles, Cal. Advertising device	819,394	May 1	731	155	122	166
Williams, Harry S., assignor to Ridgely Trimmer Company, Springfield, Ohio. Leveling instrument	819,965	May 8	1894	419	122	482
Williams, Harvey D., Washington, D. C., assignor of one-half to Waterbury Tool Company, Waterbury, Conn. Mechanical movement	819,683	May 1	1270	277	122	285
Williams, Herbert F. (See Beckwith and Lawrence, assignors.)						
Williams, James P., Boston, Mass., assignor, by mesne assignments, to Victor Manufacturing Company. Attachment for beds	821,691	May 29	5439	1158–9	122	1440
Williams, Joseph, Jr., Pittsburg, Pa. Boiler-cleansing compound	821,844	May 29	5742	.....	122	1511
Williams, Louis N. D., Ashbourne, assignor of one-half to R. W. Scott, Philadelphia, Pa. Stop-motion device for knitting-machines	821,969	May 29	5979	1273	122	1562
Williams, Miles W., Sharon, Pa. Rail-joint-base bond	823,198	June 12	1968	410	122	2207
Williams, Morris. (See Kohlbraker, Francis H., assignor.)						
Williams, Robert E., Dallas, Tex. Brush	823,312	June 12	2206	460	122	2257
Williams, Robert J., Cincinnati, Ohio. Window-cleaner	820,688	May 15	3357	719	122	865
Williams, Russell R., assignor to A. L. Williams, Morrison, Colo. Automatic gate and door	819,831	May 8	1596	339–40	122	420
Williams, Thomas B., assignor to Leavitt Machine Company, Orange, Mass. Valve-reseating machine	824,321	June 26	4127	883	122	2790
Williams, Walter W., Littlefork, Minn. Wire choker-trap	822,228	May 29	6473	1373	122	1677
Williams, William E., Chicago, Ill. Shredded-wheat biscuit	820,899	May 15	3821	815	122	969
Williams, William H. (See Cartier, Cyrille, assignor.)						
Williams Wire-Hinging Machine Company. (See McMurray, William, assignor.)						
Williamson, Charley H., Blissfield, Ohio. Means for unloading gravel	820,538	May 15	3086	664	122	808
Williamson, John B., and A. V. Oldham, assignors of one-fourth to T. L. Jefferson, Louisville, Ky. Container-top	823,381	June 12	2318	486	122	2280
Williamson, Samuel F., Philadelphia, Pa. Fireboard	822,497	June 5	522	106	122	1840
Willis, Henry M., East Williston, N. Y. Weighing instrument	822,804	June 5	1137	234	122	1977
Willis, Henry M., East Williston, N. Y. Universal indicator	822,805	June 5	1139	234	122	1978
Willis, Houston M., Prairieville, Ala. Attachment for guitars	823,657	June 19	2892	611	122	2467
Willman, Herman V., Chicago, Ill. Attachment for chandeliers	819,107	May 1	147	30	122	37
Wills, Frank J., Winchester, assignor of one-half to G. F. Topliff, Boston, Mass. Ticket printing and auditing machine	820,277	May 8	2545	552–5	122	630
Willson Aluminum Company. (See Seward, George O., assignor.)						
Willson, Gustave, A. E. and E. Ostberg, Genoa, Nebr. Grain-car door	819,108	May 1	148	31	122	38
Willson, James F., assignor of two-thirds to I. G. Aker and F. W. Buckley, Deuel, Colo. Beet-topper	824,051	June 19	3628	772	122	2625
Willson, John W., assignor of one-half to E. Mott, Granite City, Ill. Churn	824,164	June 26	3828	817	122	2727
Willson, Thomas A., Reading, Pa. Spectacles	822,806	June 5	1140	234	122	1978
Willson, Thomas L., New York, N. Y., assignor, by mesne assignments, to Union Carbide Company. Reducing calcium oxid	820,031	May 8	2053	450	122	519
Wilmot, John F., Detroit, Mich. Joint for furniture	820,689	May 15	3358	720	122	865
Wilmot, John F., Detroit, Mich. Folding bed	823,456	June 12	2460	520	122	2310

Alphabetical list of patentees for May and June—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Wilner, Elias R., New York, N. Y., and L. Sussman, Bayonne, N. J. Rotary tool	824,322	June 26	4129	884	122	2791
Wilson, Alfonzo F., Worthington, Ind. Lifting-jack and wire-stretcher	821,565	May 22	5166	1102–3	122	1325
Wilson, Benton, Cambridge City, Ind. Saw-table for curved work	822,330	June 5	213	43	122	1773
Wilson, Charles H., Red Oak, Iowa. Pipe or conduit	822,705	June 5	963	197	122	1941
Wilson, Francis W., Boston, Mass. Soap-holder	823,572	June 19	2722	576	122	2427
Wilson, Frank G., Platte, Mich. Fly-trap	821,913	May 29	5866	1247	122	1530
Wilson, Frank N., assignor of one-half to G. D. Kilborn, Cripple Creek, Colo. Mine-cage	824,269	June 26	4034	863	122	2771
Wilson, Henry L. (See Neal, James H., assignor.)						
Wilson, James R., Lawson, Mo. Lace-cabinet	824,323	June 26	4131	884	122	2791
Wilson, John A., assignor, by meane assignments, of one-half to L. D. Wilson, Georgetown, Ohio. Storm-front for buggies	822,173	May 29	6369	1353	122	1652
Wilson, John T., Des Moines, Iowa. Mold for cement posts	823,457	June 12	2462	520	122	2311
Wilson, Joseph L., Los Angeles, Cal. Piano-action	819,328	May 1	602	127	122	138
Wilson, Lora D. (See Wilson, John A., assignor.)						
Wilson, Reginald W., and F. G. D. Johnston, Newcastle-upon-Tyne, England. Variable-speed gear	823,658	June 19	2892	612	122	2467
Wilson, Scott K., Grand Rapids, Mich. Making excelsior from broom-corn clippings	823,573	June 19	2723	.....	122	2427
Wilson, Walter J., Homestead, Pa. Sleeper or stringer for railways	824,324	June 26	4133	884	122	2791
Wilson, William P., Trenton, N. J. Flue-cleaner	822,706	June 5	964	197	122	1941
Wilson, Wylie G. (See Sperry, Edwin A., assignor.)						
Wiltse, Sara E., Boston, Mass. Exercising apparatus for children	821,391	May 22	4843	1028	122	1256
Wimmer, Robert, assignor to Badische Anilin & Soda Fabrik, Ludwigshafen-on-the-Rhine, Germany. Reduction of indigo coloring-matters	820,900	May 15	3822	.....	122	969
Winans, Linnaeus, Hood River, Oreg. Railway-rail-joint support	821,566	May 22	5168	1103	122	1325
Winchester Repeating Arms Co. (See Johnson, Thomas C., assignor.)						
Windecker, Samuel, assignor to H. G. Jeanneret, Chicago, Ill. Frame for holding net fabrics	819,109	May 1	150	31	122	38
Winder, James C., assignor to Atlanta Utility Works, Inc., East Point, Ga. Cotton-seed separator	822,416	June 5	358	75	122	1804
Winder, Robert C., Newark, N. J. Condenser	822,807	June 5	1141	234	122	1978
Window Glass Machine Company. (See Hitner, Harry F., assignor.)						
Window Glass Machine Company. (See Lubbers, John H., assignor.)						
Windsor, Benjamin F. (See Watkins and Skellenger, assignors.)						
Wine, John J. (See Crites and Wine.)						
Wines, Walter E., Minneapolis, Minn. Reel	821,567	May 22	5169	1103	122	1325
Wingert, James L., Randolph, Nebr. Driving-bit	822,174	May 29	6370	1353	122	1652
Winkler, Elisha H. (See McGinnity and Winkler.)						
Winn, James A., Morrisville, Vt. Sash-fastener	822,417	June 5	361	75	122	1804
Winnek, Frederick G., Dearborn, Mo. Fifth-wheel for vehicles	819,395	May 1	732	156	122	166
Winner Block Machine Company. (See Miller, John, assignor.)						
Winslow, Marlon H., Terre Haute, Ind. Platform-scale	823,313	June 12	2207	460	122	2258
Winslow, Sidney W., trustee. (See Rogers, Andrew W., assignor.)						
Winsor, John, *et al.* (See Greene, Jacob R., Jr., assignor.)						
Winsted Silk Company. (See Lawler, James J., assignor.)						
Winter, William A., Cincinnati, Ohio. Sash lock and balance	822,498	June 5	522	106	122	1840
Winters, L. D. (See Heuston, Thomas W., assignor.)						
Wise, Harry, assignor of one-half to A. H. Gembler, Houston, Tex. Saw-set	820,161	May 8	2324	507	122	580
Wisewell, Percy W., Boston, Mass. Magazine-gun	824,165	June 26	3830	817	122	2727
Wisner, Gustavus H., Pioneer, Mont. Washing-machine	822,331	June 5	215	43–4	122	1773
Witte, Eugene B. (See Leib and Witte.)						
Witte, Hubert, assignor to St. Louis Car Company, St. Louis, Mo. Car-seat	822,643	June 5	832	170	122	1911
Witzel, Andrew C., New York, N. Y. Bottle-closing device	820,032	May 8	2058	450	122	521
Wiza, Anthony J., assignor of one-half to M. Regenfuss and M. Steiner, Milwaukee, Wis. Seaming-machine	819,329	May 1	603	127–8	122	138
Wm. H. Armstrong & Company. (See Armstrong, Pugh, and Magee, assignors.)						
Woeltjen, Henry L., Chicago, Ill. Gun	822,808	June 5	1143	235	122	1979
Wohlpart, Adolph P. S. and P., New York, N. Y. Cooler	823,016	June 12	1572	326	122	2120
Wohlpart, Philip. (See Wohlpart, Adolph P. S. and P.)						
Wolcott, Edson R., Golden, Colo. Locating and extracting metals beneath the earth's surface	822,175	May 29	6371	1353	122	1653
Wolf, Andrew. (See Jasper, William, assignor.)						
Wolfe, David C., Lyons, Kans. Automatic electric signaling device for railway switch systems	821,914	May 29	5867	1247–8	122	1539
Wolfe, Edward O., Williamsport, Pa. Miter-jack	823,017	June 12	1573	327	122	2120
Wolff, Herbert W. (See Lipschutz, Arthur, assignor.)						
Wolff, Herbert W., assignor to American Car & Foundry Company, St. Louis, Mo. End bracing for cars	819,489	May 1	909	199	122	203
Wolff, Herbert W., assignor to American Car & Foundry Company, St. Louis, Mo. End brace for cars	823,837	June 19	3221	681	122	2538
Wolff, Herbert W., assignor to American Car & Foundry Company, St. Louis, Mo. End bracing for cars	823,838	June 19	3223	682	122	2538
Wolfson, Louis. (See Snowhill, William W., assignor.)						
Wolke, Herman, San Francisco, Cal. Automatic dancing figure	822,707	June 5	966	197	122	1942
Wollensak, Andrew, assignor to Wollensak Optical Company, Rochester, N. Y. Means for clamping photographic shutters, color-screens, &c., to photographic-lens mounts	819,110	May 1	151	31	122	38
Wollensak Optical Company. (See Wollensak, Andrew, assignor.)						
Wolseley Tool and Motor Car Company. (See Austin, Herbert, assignor.)						
Wood, Alpheus H., Ann Arbor, Mich. Railway	820,539	May 15	3088	664	122	809
Wood, Augustus, Hamilton, Ohio, assignor to Niles-Bement-Pond Company, Jersey City, N. J. Composite speed-changer	823,247	June 12	2078	432–3	122	2231
Wood, Eugenio K., San Francisco, Cal. Non-refillable bottle	819,490	May 1	910	199	122	203
Wood, Everett S., assignor to Draper Company, Hopedale, Mass. Filling-detecting mechanism for looms	823,248	June 12	2080	433	122	2232
Wood, Frederick W., Kansas City, Mo. Pneumatic action for musical instruments	821,568	May 22	5171	1104	122	1326
Wood, Henry A. W., assignor to Campbell Printing Press & Manufacturing Company, New York, N. Y. Registering mechanism for printing-presses	824,325	June 26	4135	885	122	2792
Wood, Howard I., Schenectady, N. Y., assignor to General Electric Company. Incandescent electric lamp	819,624	May 1	1155	254	122	259
Wood, James J., Fort Wayne, Ind. Prepayment electric meter	822,091	May 29	6199	1321–2	122	1615
Wood, Joseph H. (See Corbishley, Wood, and Collins.)						
Wood, Montraville M., Schenectady, N. Y., assignor to General Electric Company. Induction-coil	822,332	June 5	217	44	122	1774
Wood, William A., Ansonia, Conn., assignor to Coe Brass Manufacturing Company. Apparatus for treating heated metal under pressure	819,261	May 1	447	94–5	122	105
Wood, William A., Ansonia, Conn., assignor to Coe Brass Manufacturing Company. Automatic guilding and feeding machine	823,018	June 12	1575	327	122	2121

Alphabetical list of patentees for May and June—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Woodbridge, Joseph, Philadelphia, Pa. System of electrical distribution	819,832	May 8	1599	340	122	421
Woodhouse Hardware Manufacturing Company. (See Crecelius, Theodore E., assignor.)						
Woodmansee, Harry W. (See Baker, Rieman D., assignor.)						
Woodrow, Thomas J., Fountain Park, Ohio. Neck-yoke	823,574	June 19	2724	577	122	2427
Woodruff, Sidney H., Buffalo, N. Y. Reinforcement for concrete girders, &c	820,839	May 15	3682	785	122	939
Woodruff, William L., Troy, Ariz. Ter. Surgical appliance	822,092	May 29	6206	1323	122	1616
Woods, Charles L., *et al.* (See Crites and Wine, assignors.)						
Woods, Margaret A., *et al.* (See Woods, Thomas S., assignor.)						
Woods Motor Vehicle Company. (See Newman, Frederick J., assignor.)						
Woods, Rodney P. (See Jones, Philip H., assignor.)						
Woods, Thomas S., assignor to D. H. Morrison and M. A. Woods, Somerville, Mass. Gutter for buildings	822,418	June 5	362	76	122	1805
Woodward, Russel G., Waukegan, assignor to Union Special Sewing Machine Co., Chicago, Ill. Presser-foot for sewing-machines	821,773	May 29	5604	1194	122	1480
Woodward, Russel G., Waukegan, assignor to Union Special Machine Company, Chicago, Ill. Lubricating device	822,877	June 5	1279	264	122	2006
Woodward, Russel G., Waukegan, and C. McNeil, assignors to Union Special Sewing Machine Co., Chicago, Ill. Tuck-forming attachment for sewing-machines	821,774	May 29	5605	1194	122	1480
Woodward, Russel G., Waukegan, and C. McNeil, assignors to Union Special Machine Company, Chicago, Ill. Tuck-forming attachment for sewing-machines	821,775	May 29	5608	1195	122	1481
Woolf, Ellis J., assignor to Woolf Valve Gear Co., Minneapolis, Minn. Explosive-engine	824,396	June 26	4281	912–13	122	2820
Woolf Valve Gear Co. (See Woolf, Ellis J., assignor.)						
Woollen, Clinton A., assignor of one-half to E. W. Bareuther, Mattoon, Ill. Securing device for rubber shoes	820,033	May 8	2060	450	122	521
Word, William F., Helena, Mont. Electric gong	824,397	June 26	4285	913	122	2821
World, Robert S., *et al.* (See Bellamy, Albert, assignor.)						
Worrell, Thomas M., Hatfield, Ark. Roller-bearing	821,322	May 22	4686	998	122	1219
Worth Wire Works. (See Horsley, Robert L., assignor.)						
Wright, Albert E. (See Meister and Wright.)						
Wright, Earl E., New Brighton, Pa. Clutch mechanism	822,034	May 29	6097	1298	122	1590
Wright, Geo. M., *et al.* (See Burkins, Eugene, assignor.)						
Wright, Ira O., and J. H. Farlow, assignors to Farlow Draft Gear Company, Baltimore, Md. Draft and buffing gear for cars	820,840	May 15	3685	786	122	940
Wright, John R., Wheeling, Mo. Hay-stacker	821,392	May 22	4844	1028–9	122	1256
Wright, Marshall W., Chicago, Ill. Brush	822,708	June 5	970	198	122	1942
Wright, Orville and W., Dayton, Ohio. Flying-machine	821,393	May 22	4847	1029	122	1257
Wright, Parvin, Los Angeles, Cal. Electric elevator	819,195	May 1	314	67–8	122	78
Wright, Ransom C., Philadelphia, Pa., and F. E. Stebbins, Washington, D. C. Construction of car-trucks	819,111	May 1	152	32	122	38
Wright, Richard S., Nelson, Ark. Cross-tie cutter	819,491	May 1	912	199–200	122	204
Wright, Wilbur. (See Wright, Orville and W.)						
Wright, William A., Masonville, N. J., assignor of one-half to A. J. Lamborn, Philadelphia, Pa. Signal-lantern	824,052	June 19	3630	772	122	2625
Wright, William A., Masonville, N. J., assignor of one-half to A. J. Lamborn, Philadelphia, Pa. Signal-lantern	824,053	June 19	3631	773	122	2625
Wright, William N., and E. Carson, Beaver, Pa. Tire	823,839	June 19	3224	682	122	2538
Wright, William S., Wheeling, W. Va. Gate-operating mechanism for railway-cars	821,273	May 22	4585	976	122	1199
Wright's Automatic Tobacco Packing Machine Company. (See Rose, William, assignor.)						
Wuest, Philip, Jr., assignor to Auto-Manual Piano Action Company, Philadelphia, Pa. Musical instrument	820,079	May 8	2164	471	122	545
Wuest, Philip, Jr., assignor to Auto-Manual Piano Action Company, Philadelphia, Pa. Mechanical musical instrument	820,080	May 8	2166	471–2	122	546
Wulff, Heinrich G., Eilenburg, Germany. Means for intermittently rotating tables	823,249	June 12	2084	434	122	2233
Wurtz, Henry, Newark, N. J., assignor to American Chemical Eduction Company. Apparatus for distilling coals and other hydrocarbonaceous substances	821,323	May 22	4688	999	122	1220
Wyatt, Everett, Fort Worth, Tex. Combined stock and freight car	823,983	June 19	3504	748–9	122	2588
Wyckoff, Seamans & Benedict. (See Farnum, William C., assignor.)						
Wyer, Ira E., Portamouth, Ohio. Carpenter's jack	822,093	May 29	6207	1323	122	1616
Wylie, Richard, Napa, Cal. Dish-cleaning apparatus	819,112	May 1	163	32	122	43
Wylie, Thomas B., Pittsburg, Pa. Gas-controller	819,492	May 1	913	200	122	204
Wylie, Thomas B., Pittsburg, Pa. Gas-lamp	819,493	May 1	915	200	122	204
Wyman, Charles O., Anoka, Minn. Finger-bar	820,943	May 15	3904	833	122	988
Yankee Novelty Company. (See Kellogg, William M., assignor.)						
Yarnell, Eugene A., Washington, D. C. Gas-check pad	822,644	June 5	834	170	122	1912
Yarnell, Ithamer E., Toledo, Ohio. Concrete-building-block machine	822,333	June 5	218	44–5	122	1774
Yeasa, Osvaldo A., Guatemala, Guatemala. Hypodermic syringe	819,330	May 1	607	128	122	130
Yeager, William B., Reading, Pa. Metallic window frame and sash	824,326	June 26	4137	885	122	2792
Yetter, Edward J., Denver, Colo. Composition for roofing, paving, &c	819,833	May 8	1600	.....	122	421
Yetter, Edward J., Denver, Colo. Composition for roofing, paving, &c	820,162	May 8	2326	.....	122	581
Yetter, Edward J., Denver, Colo. Composition for roofing, paving, &c	820,163	May 8	2328	.....	122	581
Yoe, Philip, assignor to P. Yoe, E. W. Hanley, and K. Fitzpatrick, Dayton, Ohio. Voting-machine	819,684	May 1	1272	277–8	122	285
Yoe, Philip, assignor to P. Yoe, E. W. Hanley, and K. Fitzpatrick, Dayton, Ohio. Voting-machine	819,685	May 1	1275	278–9	122	286
Yost, Winfield. (See Meissner and Yost.)						
Yost Writing Machine Company. (See Walker, Charles W., assignor.)						
Young, Francis L., assignor to Aeolian Company, New York, N. Y. Tempo-indicator	819,113	May 1	164	32–3	122	43
Young, Francis L., Brooklyn, assignor to Aeolian Company, New York, N. Y. Templet for placing expression-lines	820,752	May 15	3475	745	122	894
Young, J Lowe, Detroit, Mich. Blowpipe and Bunsen burner	820,690	May 15	3360	720	122	866
Young, Joseph S., and J. N. Harvey, assignors to J. Q. Everson, Pittsburg, Pa. Door-check	822,334	June 5	220	45	122	1774
Young, Oscar L. (See Grettum and Young.)						
Young, William B., assignor of one-fourth to G. T. S. Foote, Albion, N. Y. Combined reading and invalid table	822,809	June 5	1146	235	122	1979
Youngstrom, Carl, Meckling, S. D. Calking-machine	821,970	May 29	5980	1274	122	1563
Zalinski, Edmund L., New York, N. Y. Torpedo-gun	819,834	May 8	1602	340	122	421
Zalinski, Edmund L., New York, N. Y. Reflector	822,810	June 5	1147	236	122	1980
Zamel, Albert G., Chicago, Ill. Track-sanding device	824,461	June 26	4435	941	122	2854
Zander, John, Chicago, Ill. Hydrocarbon turbine-engine	822,176	May 29	6372	1353–4	122	1653
Zeiller, Robert, Munich, Germany. Smoke-consuming furnace	824,327	June 26	4138	885	122	2792
Zell, Erland, Schenectady, N. Y. assignor to General Electric Company. Electric muffle	819,625	May 1	1156	254	122	269
Zent, Lewis D., Bellefontaine, Ohio. Cooling device for engine-cylinders	820,278	May 8	2559	555	122	633
Zibell, Julius A., *et al.* (See Wick, Mathias, assignor.)						
Ziegenhorn, Johann K., Syracuse, N. Y. Extensible phonograph-horn support	819,906	May 8	1895	419	122	483
Zielinski, John, Detroit, Mich. Trolley-stand	822,709	June 5	971	198	122	1943

Alphabetical list of patentees for May and June—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Zierleyn, Anthony B., Grand Rapids, Mich. Electric time-switch	824,054	June 19	3633	773	122	2626
Zieseniss, Albert. (See Myser and Zieseniss.)						
Zimmer, Anthony D., Russell, N. D. Gage or marker and rule	822,094	May 29	6208	1323	122	1616
Zimmer, Paul H., Schenectady, N. Y., assignor to General Electric Company. Motor starting and regulating rheostat	819,626	May 1	1158	254	122	269
Zimmerman, Casper, Aberdeen, S. D. Attachment for telephone-receivers	820,463	May 15	2917	634	122	771
Zimmerman, Charles W., and M. E. Burke, assignors to F. G. Barnes, Columbus, Ohio. Furniture-coupling	820,540	May 15	3090	665	122	809
Zimmerman, Emil. (See Carter, Clarence W., assignor.)						
Zimmerman, William, Chicago, Ill. Mechanism for transporting earth	822,419	June 5	364	76	122	1805
Zinke, Bernhard. (See Landré, Julius H. W., assignor.)						
Zoffer Plate Glass Manufacturing Company. (See Bagnall, Edward, assignor.)						
Zöller, Carl F. W., assignor to Firm of A. Gutmann Actien Gesellschaft für Maschinenbau, Altona-Ottensen, Germany. Means for removing dust	821,776	May 29	5609	1195	122	1481
Zorge, Robert J., assignor to Zorge Safety Railway Equipment Company, Chicago, Ill. Alarm-signal	824,270	June 26	4035	864	122	2771
Zorge Safety Railway Equipment Company. (See Zorge, Robert J., assignor.)						
Zucco, Pierre. (See Hooper and Zucco.)						
Zucco, Pierre, Baltimore, Md. Armored cement	821,569	May 22	5172	1104	122	1326
Zulderhoek, Leendert L. D., Amsterdam, Netherlands. Manufacture of coke briquets	824,680	June 26	4852	.....	122	2945

ALPHABETICAL LIST OF PATENTEES OF DESIGNS.

Name, residence, and design.	No.	Date.	Official Gazette. Volume.	Page.
Anderson, William C., Lansing, Mich., assignor to Libbey Glass Company, Toledo, Ohio. Cut-glass vessel	38,000	May 8	122	678
Andresen, Alfred, Minneapolis, Minn. Cake-iron cover	38,013	May 15	122	994
Bain, John, Pittsburg, Pa. Watchcase	37,971	May 1	122	299
Beach, Henry B., and H. Kayser, assignors to International Silver Company, Meriden, Conn. Back for hand-mirrors, brushes, and similar articles	38,066	June 12	122	2334
Beach, Henry B., and H. Kayser, assignors to International Silver Company, Meriden, Conn. Back for hand-mirrors, brushes, and similar articles	38,067	June 12	122	2335
Bell, Harry J., Philadelphia, Pa. Seat end	38,074	June 12	122	2336
Berger, Christian L., Boston, Mass. Trivet	38,078	June 12	122	2337
Blacklinton & Co., R. (See Keller, Sidney A., assignor.)				
Blanford, Paul G., Portsmouth, Va. Badge	38,010	May 15	122	993
Boal, Stanhope, Piqua, Ohio. Stove	38,041	May 29	122	1682
Bowman, Mark K., Montclair, N. J. Door for feed-water heaters and similar apparatus	38,082	June 12	122	2338
Bromley & Sons, John. (See Petzold, Adolph, assignor.)				
Brown, Frank A., West Pike, Pa. Family-record-book leaf	38,030	May 22	122	1348
Budd, Edward G., Philadelphia, Pa. Seat end	38,075	June 12	122	2336
Busse, Frederick, New York, N. Y. Badge	38,033	May 29	122	1681
C. H. Wurst Company. (See Frey, Frank J., assignor.)				
Celluloid Company. (See Smith, William C., assignor.)				
Ceramic Transfer Co. (See Ehrlich, Hermann, assignor.)				
Ceramic Transfer Co. (See Markert, Franz, assignor.)				
Chambers, George, and R. J. Stewart, Mount Clemens, Mich. Spoon or similar article	37,989	May 8	122	675
Cheney Brothers. (See Crownfield, Sophia L., assignor.)				
Cheney Brothers. (See Doughty, Emma W., assignor.)				
Cheney Brothers. (See Papin, Alfred F., assignor.)				
Clulee, John, Wallingford, assignor to International Silver Co., Meriden, Conn. Handle for spoons, forks, or similar articles	38,018	May 22	122	1346
Clulee, John, Wallingford, assignor to International Silver Co., Meriden, Conn. Handle for spoons, forks, or similar articles	38,019	May 22	122	1346
Codman, William C., assignor to Gorham Manufacturing Company, Providence, R. I. Handle of spoons, forks, or similar articles	38,020	May 22	122	1346
Codman, William C., assignor to Gorham Manufacturing Company, Providence, R. I. Back of brushes	38,090	June 19	122	2637
Codman, William C., assignor to Gorham Manufacturing Company, Providence, R. I. Back of brushes	38,091	June 19	122	2638
Coleman, Aaron, New York, N. Y. Suspender-box	38,057	June 5	122	2022
Condé, Frederic, Oswego, N. Y. Knitted fabric	38,046	May 29	122	1684
Condé, Frederic, Oswego, N. Y. Knitted fabric	38,047	May 29	122	1684
Cretors, Charles, Chicago, Ill. Vehicle-top	38,042	May 29	122	1683
Cretors, Charles, Chicago, Ill. Vehicle-top	38,043	May 29	122	1683
Critz, Lizzie B., West Point, Miss. Dish	38,094	June 19	122	2638
Crownfield Sophia L., New York, N. Y., assignor to Cheney Brothers, South Manchester, Conn. Textile fabric	38,061	June 5	122	2023
Crownfield, Sophia L., New York, N. Y., assignor to Cheney Brothers, South Manchester, Conn. Textile fabric	38,062	June 5	122	2023
Crownfield, Sophia L., New York, N. Y., assignor to Cheney Brothers, South Manchester, Conn. Textile fabric	38,063	June 5	122	2023
Crownfield, Sophia L., New York, N. Y., assignor to Cheney Brothers, South Manchester, Conn. Textile fabric	38,064	June 5	122	2024
Crownfield, Sophia L., New York, N. Y., assignor to Cheney Brothers, South Manchester, Conn. Textile fabric	38,065	June 5	122	2024
Crownfield, Sophia L., New York, N. Y., assignor to Cheney Brothers, South Manchester, Conn. Textile fabric	38,085	June 12	122	2339
Crownfield, Sophia L., New York, N. Y., assignor to Cheney Brothers, South Manchester, Conn. Textile fabric	38,086	June 12	122	2339
Crozier, Hugh V., Morrillton, Ark. Cabinet	38,008	May 8	122	680
Davies, Benjamin F., West Hoboken, N. J., assignor to L. Straus & Sons, New York, N. Y. Glass vessel	37,999	May 8	122	677
Deming, Eli R., Alameda, Cal. Scraper	37,980	May 1	122	300
Doleshy, Frank F., Seattle, Wash. Hotel-register desk	38,029	May 22	122	1348
Doughty, Emma W., Ramapo, N. Y., assignor to Cheney Brothers, South Manchester, Conn. Textile fabric	38,097	June 19	122	2639
Doughty, Emma W., Ramapo, N. Y., assignor to Cheney Brothers, South Manchester, Conn. Textile fabric	38,098	June 19	122	2639
Doughty, Emma W., Ramapo, N. Y., assignor to Cheney Brothers, South Manchester, Conn. Textile fabric	38,099	June 19	122	2639
Doughty, Emma W., Ramapo, N. Y., assignor to Cheney Brothers, South Manchester, Conn. Textile fabric	38,100	June 19	122	2640
Doughty, Emma W., Ramapo, N. Y., assignor to Cheney Brothers, South Manchester, Conn. Textile fabric	38,101	June 19	122	2640
E. and T. Fairbanks and Company. (See Sargent, Willis H., assignor.)				
Eagle Pencil Company. (See McIntyre, Frank, assignor.)				
Ehrlich, Hermann, Fürth, Germany, assignor to Ceramic Transfer Co. Plate	38,104	June 26	122	2957
Eldridge, Hilliary, *et al.* (See Waldeck, Carl E., assignor.)				
Ernsting, Chris. W. (See Paye, Charles T., assignor.)				
Evens, Mabel L., and P. H. Lindner, Chicago, Ill. Button	38,032	May 29	122	1681
Fahys Watch Case Company. (See Habensack, Frederick, assignor.)				
Fiske, Henry G. (See Schaaf and Fiske.)				
Flanagan, Chester A., Union, Oreg. Wall-pocket or music-rack	38,077	June 12	122	2337
French, Charles H., Canton, Mass., assignor to French & Ward, New York, N.Y. Elder-down cloth	38,045	May 29	122	1683
French & Ward. (See French, Charles H., assignor.)				
Frey. Frank J., assignor to C. H. Wurst Company, Quincy, Ill. Cooking-range	38,028	May 22	122	1348

Alphabetical list of patentees of designs for May and June—Continued.

Name, residence, and design.	No.	Date.	Official Gazette. Vol.	Page.
Frey, Frank J., Quincy, Ill., assignor to H. Wetter Mfg. Co., Memphis, Tenn. Stove	38,083	June 12	122	2338
Geisman & Musliner. (See Musliner, Louis M., assignor.)				
Gorham Manufacturing Company. (See Codman, William C., assignor.)				
Grindley, William H., Barlaston, England, assignor to W. S. Pitcairn, New York, N. Y. Plate or similar article	38,036	May 29	122	1682
H. Wetter Mfg. Co. (See Frey, Frank J., assignor.)				
Habenstack, Frederick, Sag Harbor, assignor to Fahys Watch Case Company, New York, N. Y. Handle of spoons, forks, or similar articles	38,068	June 12	122	2335
Hawthorne and Sheble Manufacturing Company. (See Sheble, Horace, assignor.)				
Hewitt, Herbert H. (See Shultz, Albert B., assignor.)				
Hillbom, Henric, assignor to R. Wallace & Sons Mfg. Co., Wallingford, Conn. Handle for spoons, forks, or similar articles	38,069	June 12	122	2335
Hillbom, Henric, assignor to R. Wallace & Sons Mfg. Co., Wallingford, Conn. Teapot or similar article	38,070	June 12	122	2335
Hirschfeld, Henry W., assignor to International Silver Company, Meriden, Conn. Handle for spoons, forks, or similar articles	38,103	June 26	122	2957
Hogan, William A., New York, N. Y. Shade for lamps	38,056	June 5	122	2022
Howe, George, New York, N. Y. Electrically-illuminated sign	38,014	May 15	122	994
Hullhorst, William G., Toledo, Ohio. Dental cabinet	38,079	June 12	122	2337
Huss, William C., Cincinnati, Ohio. Billiard-table	38,080	June 12	122	2338
Huss, William C., Cincinnati, Ohio. Billiard-table	38,081	June 12	122	2338
Imperial Glass Company. (See Owens, John, assignor.)				
International Silver Co. (See Clulee, John, assignor.)				
International Silver Company. (See Beach and Kayser, assignors.)				
International Silver Company. (See Hirschfeld, Henry W., assignor.)				
International Silver Company. (See Leech, John, assignor.)				
Jacobs, Benjamin W., Lancaster, Ohio. Fruit-bowl	38,055	June 5	122	2021
Kayser, Henry. (See Beach and Kayser.)				
Keller, Sidney A., New York, N. Y., assignor to William H. Saart Company. Back for brushes, mirrors, or similar articles	38,021	May 22	122	1346
Keller, Sidney A., New York, N. Y., assignor to R. Blackinton & Co., North Attleboro, Mass. Handle of spoons, forks, or similar articles	38,092	June 19	122	2638
Kelly, John F., assignor to Thomas Maddock's Sons Company, Trenton, N. J. Lavatory	38,040	May 29	122	1682
Kilburn, John B., Philadelphia, Pa. Seat end	38,076	June 12	122	2337
Knapp, Charles E., New York, N. Y. Rubber binding	38,095	June 19	122	2638
Lattin, Albert N., assignor to S. Sternau & Company, Brooklyn, N. Y. Bath-room hook	38,025	May 22	122	1347
Lawson, Stanley M., Cincinnati, Ohio. Clock-frame	37,972	May 1	122	299
Lawson, Stanley M., Cincinnati, Ohio. Clock-frame	37,973	May 1	122	299
Lawson, Stanley M., Cincinnati, Ohio. Clock-frame	37,974	May 1	122	299
Lawson, Stanley M., Cincinnati, Ohio. Clock-frame	37,975	May 1	122	299
Lawson, Stanley M., Cincinnati, Ohio. Clock-frame	38,011	May 15	122	993
Lawson, Stanley M., Cincinnati, Ohio. Clock-frame	38,022	May 22	122	1347
Lawson, Stanley M., Cincinnati, Ohio. Clock-frame	38,034	May 29	122	1681
Leech, John, assignor to International Silver Company, Bridgeport, Conn. Handle for forks, spoons, and similar articles	37,990	May 8	122	675
Leete, Murray B., assignor to R. Wallace & Sons Mfg. Co., Wallingford, Conn. Teapot or similar article	38,093	June 19	122	2638
Lewis, Ralph C., Boston, Mass. Automobile-front casing	38,108	June 26	122	2958
Libbey Glass Company. (See Anderson, William C., assignor.)				
Libbey Glass Company. (See Spillane, Dennis F., assignor.)				
Lindner, Paul H. (See Evens and Lindner.)				
Manning, Bowman & Company. (See Savage, George E., assignor.)				
Markert, Franz, Altwasser, Germany, assignor to Ceramic Transfer Co. Plate	38,035	May 29	122	1681
Markert, Franz, Altwasser, Germany, assignor to Ceramic Transfer Co. Transfer-sheet	38,105	June 26	122	2957
Mayer, Moritz, New York, N. Y. Match-holder	38,023	May 22	122	1347
McBerty, Frank R., Evanston, assignor to Western Electric Company, Chicago, Ill. Telephone-switchboard casing	38,027	May 22	122	1348
McIntyre, Frank, assignor to Eagle Pencil Company, New York, N. Y. Eraser-tip	38,038	May 29	122	1682
Merchant, Dalleth Z., Portsmouth, Va. Badge	38,017	May 22	122	1346
Merchant, Dalleth Z., Portsmouth, Va. Badge	38,087	June 19	122	2637
Mitchell, Charles W., Brooklyn, N. Y. Box-strap	38,039	May 29	122	1682
Murdheim, Samuel, Brooklyn, N. Y. Hat	38,031	May 22	122	1348
Musliner, Louis M., assignor to Geisman & Musliner, New York, N. Y. Embossed fabric	38,060	June 5	122	2022
Mygatt, Otis A., New York, N. Y. Prismatic-glass reflector for artificial lights	37,981	May 1	122	300
Mygatt, Otis A., New York, N. Y. Prismatic-glass reflector for artificial lights	37,982	May 1	122	301
Mygatt, Otis A., New York, N. Y. Prismatic-glass reflector	37,983	May 1	122	301
Mygatt, Otis A., New York, N. Y. Glass reflector	37,984	May 1	122	301
Mygatt, Otis A., New York, N. Y. Reflector	37,985	May 1	122	301
Mygatt, Otis A., New York, N. Y. Incandescent-electric-lamp bulb	38,005	May 8	122	679
Mygatt, Otis A., New York, N. Y. Prismatic-glass reflector	38,006	May 8	122	679
Mygatt, Otis A., New York, N. Y. Prismatic-glass reflector	38,026	May 22	122	1347
National Casket Co. (See Wetmore, Clayton F., assignor.)				
Noke, Charles J., Stoke-upon-Trent, England, assignor to W. S. Pitcairn, New York, N. Y. Jug or similar article	38,051	June 5	122	2022
Noke, Charles J., Stoke-upon-Trent, England, assignor to W. S. Pitcairn, New York, N. Y. Jug or similar article	38,052	June 5	122	2022
Noke, Charles J., Stoke-upon-Trent, England, assignor to W. S. Pitcairn, New York, N. Y. Jug or similar article	38,053	June 5	122	2022
Numan, Charles H., New York, N. Y. Inkstand	38,102	June 26	122	2956
Owens, John, Wheeling, W. Va., assignor to Imperial Glass Company, Bellaire, Ohio. Glass vessel	38,012	May 15	122	994
Papin, Alfred F., Yonkers, N. Y., assignor to Cheney Brothers, South Manchester, Conn. Textile fabric	38,109	June 26	122	2958
Papin, Alfred F., Yonkers, N. Y., assignor to Cheney Brothers, South Manchester, Conn. Textile fabric	38,110	June 26	122	2958
Parker, Susie D., Macon, Ga. Badge	38,048	June 5	122	2020
Paye, Charles T., North Attleboro, Mass., assignor, by mesne assignments, to C. W. Ernsting, San Diego, Cal. Handle for spoons, forks, and similar articles	37,991	May 8	122	675
Peters, Charles H T., Baltimore, Md. Delivery-wagon body	38,009	May 8	122	680
Petsold, Adolph, assignor to J. Bromley & Sons, Philadelphia, Pa. Rug	37,986	May 1	122	302
Petsold, Adolph, assignor to J. Bromley & Sons, Philadelphia, Pa. Rug	37,987	May 1	122	302
Philbin, Mary A., Pittston, Pa. Burse	38,089	June 19	122	2637
Pitcairn, William S. (See Grindley, William H., assignor.)				
Pitcairn, William S. (See Noke, Charles J., assignor.)				
Pitcairn, William S. (See Slater, John, assignor.)				
Podmore, Henry, assignor to Trenton Potteries Company, Trenton, N. J. Lavatory	38,007	May 8	122	679

Alphabetical list of patentees of designs for May and June—Continued.

Name, residence, and design.	No.	Date.	Official Gazette. Vol.	Page.
R. Wallace & Sons Mfg. Co. (See Hillbom, Henric.)				
R. Wallace & Sons Mfg. Co. (See Leete, Murray B., assignor.)				
Rhoads, William M., Denver, Colo. Book-cover	37,976	May 1	122	300
Robin, Joseph T., New York, N. Y. Show-case	38,058	June 5	122	2022
Rooney, Margaret M. J., New York, N. Y. Crumb-tray	38,037	May 29	122	1682
Ruettgers, Ernst, New York, N. Y. Nail-file	37,988	May 8	122	675
Sargent & Company. (See Stevens, William E., assignor.)				
Sargent, Willis H., assignor to E. and T. Fairbanks and Company, St. Johnsbury, Vt. Scale-supporting stand	38,024	May 22	122	1347
Savage, George E., assignor to Manning, Bowman & Company, Meriden, Conn. Beverage-percolator	38,071	June 12	122	2336
Schaaf, Albert E., and H. G. Fiske, Toledo, Ohio. Dash for automobiles	38,096	June 19	122	2639
Schwab, Emanuel, New York, N. Y. Glass cigar and ash tray	37,977	May 1	122	300
Schwab, Emanuel, New York, N. Y. Glass cigar and ash tray	38,072	June 12	122	2336
Sheble, Horace, assignor to Hawthorne and Sheble Manufacturing Company, Philadelphia, Pa. Horn for talking-machines	38,106	June 26	122	2957
Shultz, Albert B., assignor of one-half to H. H. Hewitt, Buffalo, N. Y. Automobile engine-hood and seat-support	38,044	May 29	122	1683
Simons, Orrin W., New York, N. Y. Font of printing-type	38,015	May 15	122	994
Slater, John, Brown Edge, Stoke-upon-Trent, England, assignor to W. S. Pitcairn, New York, N. Y. Jug or similar article	38,054	June 5	122	2021
Smith, Joseph J., New York, N. Y. Humidifier-casing	38,107	June 26	122	2957
Smith, William C., New York, N. Y., assignor to Celluloid Company. Hair-comb	37,979	May 1	122	300
Spillane, Dennis F., assignor to Libbey Glass Company, Toledo, Ohio. Cut-glass vessel	38,001	May 8	122	678
Spillane, Dennis F., assignor to Libbey Glass Company, Toledo, Ohio. Cut-glass vessel	38,002	May 8	122	678
Sternau & Company, S. (See Lattin, Albert N., assignor.)				
Stevens, William E., assignor to Sargent & Company, New Haven, Conn. Casket-trimming	38,084	June 12	122	2338
Stewart, Robert J. (See Chambers and Stewart.)				
Straus & Sons, L. (See Davies, Benjamin F., assignor.)				
Sturdevant, Thomas K., Wilkes-Barre, Pa. Flag	38,088	June 19	122	2637
Thomas Maddock's Sons Company. (See Kelly, John F., assignor.)				
Thuemler, Hugo, Pittsburg, Pa. Drinking-tumbler	38,003	May 8	122	678
Tower, John J., Montclair, N. J. Handle of screw-drivers or similar articles	37,992	May 8	122	676
Tower, John J., Montclair, N. J. Handle of screw-drivers or similar articles	37,993	May 8	122	676
Tower, John J., Montclair, N. J. Handle of screw-drivers or similar articles	37,994	May 8	122	676
Tower, John J., Montclair, N. J. Handle of screw-drivers or similar articles	37,995	May 8	122	676
Tower, John J., Montclair, N. J. Handle of screw-drivers or similar articles	37,996	May 8	122	677
Tower, John J., Montclair, N. J. Handle of screw-drivers or similar articles	37,997	May 8	122	677
Tower, John J., Montclair, N. J. Handle of screw-drivers or similar articles	37,998	May 8	122	677
Trenton Potteries Company. (See Podmore, Henry, assignor.)				
Van Rensselaer, Florence, Swartswood, N. J. Hat	38,016	May 15	122	994
Waldeck, Carl E., Wayne, assignor to H. Eldridge and J. C. Young, Jersey City, N. J. Globe-support	38,073	June 12	122	2336
Weeks, Frank A., Plainfield, N. J. Fountain-pen holder	37,978	May 1	122	300
Weeks, Frank A., Plainfield, N. J. Fountain-pen-holding receptacle	38,049	June 5	122	2020
Western Electric Company. (See McBerty, Frank R., assignor.)				
Wetmore, Clayton F., Jersey City, N. J., assignor to National Casket Co., New York, N. Y. Casket, coffin, or similar article	38,059	June 5	122	2022
Wiesler, William, Cleveland, Ohio. Hanging flower-pot	38,004	May 8	122	679
Willenbrink, Fritz, Augusta, Mo. Christmas crib	38,050	June 5	122	2020
William H. Saart Company. (See Keller, Sidney A., assignor.)				
Young, James C., *et al.* (See Waldeck, Carl E., assignor.)				

ALPHABETICAL LIST OF REGISTRANTS OF TRADE-MARKS.

Name, residence, and title.	No.	Date.	Official Gazette. Volume.	Page.
A. Baldwin & Co. Limited, New Orleans, La. Blades for knives and razors	54,696	June 26	122	3006
A. Priesmeyer Shoe Co., Jefferson City, Mo. Leather boots and shoes	52,708	May 15	122	1037
A. A. Berry Seed Company, Clarinda, Iowa. Popcorn	53,380	June 5	122	2047
A. A. Berry Seed Company, Clarinda, Iowa. Popcorn	53,381	June 5	122	2047
A. B. Clark Co., New York, N. Y. Sheep, kid, calf, and goat leather	53,265	May 29	122	1714
A. B. Clark Co., New York, N. Y. Sheep, calf, goat, and kid leather	54,052	June 19	122	2679
A. B. Clark & Co., New York, N. Y. Sheep, calf, goat, and kid leather	54,053	June 19	122	2679
A. C. Lawrence Leather Co., Boston, Mass. Leather for boots and shoes	54,317	June 26	122	2990
A. D. Granger Co., New York, N. Y. Water-tube boilers	53,654	June 12	122	2375
A. D. Porter Company, New York, N. Y. Periodically-issued story-paper	52,842	May 22	122	1383
A. F. MacLaren Imperial Cheese Co., Limited, Toronto, Canada. Cheese, especially cream-cheese	52,563	May 15	122	1031
A. G. Hyde & Sons, New York, N. Y. Bleached, unbleached, dyed, and printed textile fabrics	54,261	June 26	122	2988
A. G. Spalding & Bros., New York, N. Y. Golf-balls	52,125	May 1	122	343
A. G. Spalding & Brothers, New York, N. Y. Base-ball gloves and mitts	54,029	June 19	122	2678
A. J. Bates Co., Webster, Mass. Leather shoes for ladies, men, and children	53,300	May 29	122	1715
A. J. Bates Co., Webster, Mass. Leather shoes for ladies, men, and children	53,371	June 5	122	2047
A. J. Medlar Company, Limited, Philadelphia, Pa. Biscuits, crackers, and cakes	54,634	June 26	122	3003
A. J. Tower Company, Portland, Me., and Boston, Mass. Oiled clothing of all kinds	53,091	May 29	122	1707
A. M. Collins Manufacturing Company, Philadelphia, Pa. Picture-frames	53,714	June 12	122	2377
Abbott Alkaloidal Co., Chicago, Ill. Medicinal tablets and granules	53,331	May 29	122	1716
Abbott Grocery Co., Keene, N. H. Canned vegetables and canned fruit	54,400	June 26	122	2993
Abe Stein Co., New York, N. Y. Cotton sheeting and drilling	54,540	June 26	122	2999
Abraham & Straus, Brooklyn, N. Y. Gloves	52,652	May 15	122	1035
Ackermann & Goedecke, New York, N. Y. Silks	51,957	May 1	122	337
Acme Cement Plaster Co., St. Louis, Mo. Wall-plaster, plaster-of-paris, calcined plaster, and stucco	53,673	June 12	122	2376
Acme Cement Plaster Co., St. Louis, Mo. Wall-plaster, plaster-of-paris, calcined plaster, and stucco	53,674	June 12	122	2376
Acme Cement Plaster Co., St. Louis, Mo. Wall-plaster, plaster-of-paris, calcined plaster, and stucco	53,675	June 12	122	2376
Acme Machinery Co., Cleveland, Ohio. Bolt and nut making machinery	53,967	June 19	122	2676
Actien-Gesellschaft für Anilin-Fabrikation, Berlin, Germany. Internal remedy, being a diuretic medicine	54,566	June 26	122	3000
Ada-lur-iem Medicine Company, New York, N. Y. Remedy for certain named diseases	54,318	June 26	122	2990
Addressograph Company, Chicago, Ill. Machine for printing addresses or other matter	54,697	June 26	122	3006
Adler & Co., Jacob, New York, N. Y. Gloves	52,632	May 15	122	1034
Adler, Louis J., Pittsburg, Pa. Whisky	53,111	May 29	122	1708
Adler, Louis J., Pittsburg, Pa. Whisky	53,397	June 5	122	2048
Adolph Frankau & Co. Ltd., London, England. Tobacco-pipes, cigar and cigarette tubes	53,112	May 29	122	1708
Adolph Frankau & Co. Ltd., London, England. Tobacco-pipes, cigar and cigarette tubes	53,968	June 19	122	2676
Adolph Frankau & Co. Ltd., London, England. India-rubber or gutta-percha tobacco-pouches	54,054	June 19	122	2672
Aeolian Company, New York, N. Y. Mechanical piano-players	54,154	June 19	122	2683
Aerators Limited, London, England. Seltzogenes and analogous vessels for aerated liquids	54,698	June 26	122	3006
Aerocar Company, Detroit, Mich. Automobiles	52,895	May 22	122	1385
Aerocar Company, Detroit, Mich. Automobiles	52,896	May 22	122	1386
Aetna Powder Co., Chicago, Ill. Detonating-caps and blasting-fuses	52,843	May 22	122	1383
Agar Packing Company, Des Moines, Iowa. Fresh beef, pork, and mutton	52,928	May 22	122	1387
Akerman & Tuffley, North San Diego, Cal. Olives	52,524	May 8	122	724
Akerman & Tuffley, North San Diego, Cal. Olive-oil	52,799	May 15	122	1041
Akron Belting Company, Akron Ohio. Belting	52,286	May 8	122	714
Aktiebolaget Södertelje Tändsticksfabrik, Södertelje, Sweden. Matches	54,699	June 26	122	3006
Alaska Packers Association, San Francisco, Cal. Canned salmon	53,738	June 12	122	2378
Albagli & Avayon, Philadelphia, Pa. Pastry with a filling of cream or ices	54,370	June 26	122	2992
Albany Perforated Wrapping Paper Co., Albany, N. Y. Dispensing-cabinets	52,287	May 8	122	714
Albert Dickinson Company, Chicago, Ill. Grass, grain, timothy, clover, hemp, canary, and rape seeds	51,979	May 1	122	338
Albert & J. M. Anderson Manufacturing Company, Boston, Mass. Circuit-controllers or switches	52,653	May 15	122	1035
Albert M. Gugenheim Co., Cincinnati, Ohio. Whisky	54,650	June 26	122	3004
Alberti, John, Brooklyn, N. Y. Corks	53,586	June 5	122	2056
Albo Chemical Co., Cincinnati, Ohio. Germicide disinfectant	52,709	May 15	122	1037
Albright, Chester E., Philadelphia, Pa. Combined coin and paper purse or a coin-purse	54,349	June 26	122	2991
Alfred Andresen & Co., Minneapolis, Minn. Leather-dressing	54,092	June 19	122	2698
Allcock Manufacturing Co., New York, N. Y. Plasters	53,159	May 29	122	1710
Allcock Manufacturing Co., New York, N. Y. Pills	53,906	June 12	122	2384
Allcock Manufacturing Co., New York, N. Y. Porous plasters	53,969	June 19	122	2676
Allcock Manufacturing Co., New York, N. Y. Pills	54,093	June 19	122	2681
Allcock Manufacturing Co., New York, N. Y. Medicinal plasters	54,302	June 26	122	2990
Allcock Manufacturing Co., New York, N. Y. Pills	54,303	June 26	122	2990
Allen, Benjamin, Chicago, Ill. Mainsprings for timepieces	52,929	May 22	122	1387
Alliance Milling Company, Denton, Tex. Wheat-flour	52,525	May 8	122	724
Alma Manufacturing Co., Baltimore, Md. Buttons	52,897	May 22	122	1386
Althen & Mende, Halle-on-the-Saale, Germany. Albumen preparations for use as food	53,475	June 5	122	2051
Altmayer, Sallie, Macon, Ga. Whisky	53,398	June 5	122	2048
Ambrose, Eugene E., Denver, Colo. Composition used as a foot-powder	52,404	May 8	122	719
Ambrosio, Luigi d', Brooklyn, N. Y. Remedies for diphtheria and other diseases of the throat	53,055	May 22	122	1392
American Agricultural Chemical Co., New York, N. Y. Fertilizers	52,391	May 8	122	718
American Broom & Brush Co., Amsterdam, N. Y. Brooms	52,288	May 8	122	714
American Broom & Brush Co., Amsterdam, N. Y. Brooms	52,405	May 8	122	719
American Broom & Brush Co., Amsterdam, N. Y. Brooms	54,567	June 26	122	3000
American Caramel Co., Lancaster, Philadelphia, and York, Pa. Caramels and candies	52,313	May 8	122	715
American Cereal Company, Akron, Ohio; Chicago, Ill., and Cedar Rapids, Iowa. Breakfast-food, rolled oats, and oatmeal	52,765	May 15	122	1039
American Cereal Company, Akron, Ohio; Chicago, Ill., and Cedar Rapids, Iowa. Prepared cereal food	52,800	May 15	122	1041

Alphabetical list of registrants of trade-marks for May and June—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
American Cereal Company, Akron and Ravenna, Ohio; Chicago, Ill., and Cedar Rapids, Iowa. Cereal foods made from oats	53,907	June 12	122	2385
American Cereal Company, Akron and Ravenna, Ohio; Chicago, Ill., and Cedar Rapids, Iowa. Cereal foods made from oats	53,908	June 12	122	2385
American Cereal Company, Akron and Ravenna, Ohio; Chicago, Ill., and Cedar Rapids, Iowa. Cereal foods made from oats	53,909	June 12	122	2385
American Cereal Company, Akron and Ravenna, Ohio; Chicago, Ill., and Cedar Rapids, Iowa. Cereal foods made from oats	53,910	June 12	122	2385
American Cereal Company, Akron and Ravenna, Ohio; Chicago, Ill., and Cedar Rapids, Iowa. Cereal foods made from oats	54,155	June 19	122	2683
American Cereal Company, Akron and Ravenna, Ohio; Chicago, Ill., and Cedar Rapids, Iowa. Cereal foods made from oats	54,401	June 26	122	2993
American Cereal Company, Akron and Ravenna, Ohio; Chicago, Ill., and Cedar Rapids, Iowa. Certain named cereal foods	54,541	June 26	122	2999
American Cereal Company, Akron and Ravenna, Ohio; Chicago, Ill., and Cedar Rapids, Iowa. Certain named cereal foods	54,568	June 26	122	3000
American Cereal Company, Akron and Ravenna, Ohio; Chicago, Ill., and Cedar Rapids, Iowa. Flours and meals	54,635	June 26	122	3003
American Chemical Works, Chicago, Ill. Boiler compounds for preventing or removing incrustation	53,332	May 29	122	1716
American Chicle Co., New York, N. Y. Chewing-gum	53,531	June 5	122	2053
American Chicle Co., New York, N. Y. Chewing-gum	53,532	June 5	122	2053
American Chicle Co., New York, N. Y. Chewing-gum	53,533	June 5	122	2053
American Chicle Co., New York, N. Y. Chewing-gum	53,534	June 5	122	2053
American Chicle Co., New York, N. Y. Chewing-gum	54,461	June 26	122	2996
American Chicle Co., New York, N. Y. Chewing-gum	54,506	June 26	122	2998
American Cigar Company, New York, N. Y. Cigars	52,314	May 8	122	715
American Crayon Co., Sandusky, Ohio. Crayons	52,898	May 22	122	1386
American Crayon Co., Sandusky, Ohio. Crayons	52,899	May 22	122	1386
American Dyewood Co., Philadelphia, Pa. Manufactured colors for printing and dyeing	54,094	June 19	122	2681
American Glue Co., Boston, Mass. Gelatin	52,750	May 15	122	1038
American Glue Co., Boston, Mass. Glue	52,801	May 15	122	1041
American Glue Co., Boston, Mass. Glue	52,802	May 15	122	1041
American Glue Co., Boston, Mass. Glue	54,462	June 26	122	2996
American Hard Rubber Co., New York, N. Y. Hard-rubber combs	52,085	May 1	122	342
American Hard Rubber Co., New York, N. Y. Hard-rubber combs	52,086	May 1	122	342
American Hard Rubber Co., New York, N. Y. Soft-rubber bulb and fountain syringes	54,202	June 26	122	2988
American Hard Rubber Co., New York, N. Y. Hard-rubber syringes	54,350	June 26	122	2991
American Horse Shoe Company, Phillipsburg, N. J. Horse and mule shoes	53,535	June 5	122	2054
American Iron & Steel M'f'g Co., Lebanon and Reading Pa. Track-bolt nuts	54,732	June 26	122	3007
American-La France Fire Engine Co., Elmira, N. Y. Fire-extinguishers	53,839	June 12	122	2382
American Lead Pencil Co., New York, N. Y. Lead-pencils	52,165	May 1	122	345
American Oak Leather Company, Cincinnati, Ohio. Leather for harness and saddlery	53,135	May 29	122	1708
American Perfumer Company, Springfield, Mass. Hand-soap	51,958	May 1	122	337
American Peroxide and Chemical Co., New York, N. Y. Peroxid of hyrogen	54,651	June 26	122	3004
American Petroleum Products Co., New York, N. Y. Lubricating-oils	52,061	May 1	122	341
American Powder Mills, Boston, Mass. Gunpowder	52,991	May 22	122	1389
American Powder Mills, Boston, Mass. Gunpowder	53,113	May 29	122	1708
American Powder Mills, Boston, Mass. Gunpowder	53,655	June 12	122	2375
American Printing Company, Fall River, Mass. Calicoes	52,257	May 8	122	713
American Screw Company, Providence, R. I. Certain named metal goods	53,739	June 12	122	2378
American Seeding Machine Company, Jersey City, N. J.; Springfield, Ohio; Richmond, Ind.; Louisville, Ky., and Shortsville and Macedon, N. Y. Seeding-machines	52,351	May 8	122	716
American Standard Publishing Company, New York, N. Y. Weekly newspaper	52,062	May 1	122	341
American Steel and Wire Company, Chicago, Ill. Woven-wire fencing	53,740	June 12	122	2378
American Tool Company, Highland Park, Ky. Axes	52,943	May 22	122	1387
American Wine Co., St. Louis, Mo. Champagne or sparkling wine	52,766	May 15	122	1039
American Wringer Company, New York, N. Y. Clothes-wringers and the parts composing the same	52,406	May 8	122	719
American Wringer Company, New York, N. Y. Wringers	52,689	May 15	122	1036
American Wringer Company, New York, N. Y. Carpet-sweepers	53,413	June 5	122	2048
American Wringer Company, New York, N. Y. Wringing-machines	53,448	June 5	122	2050
American Wringer Company, New York, N. Y. Clothes-wringers and the parts composing the same	53,449	June 5	122	2050
American Wringer Company, New York, N. Y. Clothes-wringers and the parts composing the same	53,450	June 5	122	2050
American Wringer Company, New York, N. Y. Clothes-wringers and the parts composing the same	53,451	June 5	122	2050
American Wringer Company, New York, N. Y. Clothes-wringers	53,452	June 5	122	2050
American Wringer Company, New York, N. Y. Clothes-wringers	53,453	June 5	122	2050
American Wringer Company, New York, N. Y. Clothes-wringers	53,454	June 5	122	2050
American Wringer Company, New York, N. Y. Clothes-wringers	53,455	June 5	122	2050
American Wringer Company, New York, N. Y. Clothes-wringers	53,456	June 5	122	2050
American Wringer Company, New York, N. Y. Clothes-wringers	53,457	June 5	122	2050
American Wringer Company, New York, N. Y. Clothes-wringers and parts thereof	53,476	June 5	122	2051
American Wringer Company, New York, N. Y. Clothes-wringers	53,477	June 5	122	2051
American Wringer Company, New York, N. Y. Clothes-wringers	53,741	June 12	122	2378
American Wringer Company, New York, N. Y. Wringers	53,742	June 12	122	2378
American Wringer Company, New York, N. Y. Clothes-wringers	53,995	June 19	122	2677
Amory, Browne & Co., Boston, Mass., and New York, N. Y. Shade-cloths and cotton piece goods	54,127	June 19	122	2682
Anderson Computing Scale Company, Anderson, Ind. Counter-scales	53,536	June 5	122	2054
Anderson Computing Scale Company, Anderson, Ind. Computing cheese-cutters	53,537	June 5	122	2054
Anderson Cotton Mills, Anderson, S. C. Cotton piece goods	53,538	June 5	122	2054
Anderson, Gustaf Y., Chicago, Ill. Saw-sets, saw-jointers, and saw-gages	54,156	June 19	122	2683
Andrew Jergens Co., New York, N. Y., and Cincinnati, Ohio. Soap	53,478	June 5	122	2051
Anheuser-Busch Brewing Association, St. Louis, Mo. Beer	52,633	May 15	122	1034
Anheuser-Busch Brewing Association, St. Louis, Mo. Extract of malt and hops	52,654	May 15	122	1035
Anheuser-Busch Brewing Association, St. Louis, Mo. Extract made from malt and hops	52,767	May 15	122	1039
Anheuser-Busch Brewing Association, St. Louis, Mo. Beer	52,902	May 22	122	1389
Anheuser-Busch Brewing Association, St. Louis, Mo. Beer	53,875	June 12	122	2383
Anheuser-Busch Brewing Association, St. Louis, Mo. Beer	52,672	May 15	122	1035
Ansted & Burk Company, Springfield, Ohio. Wheat-flour	52,710	May 15	122	1037
Apollinaris Company, Limited, London, England. Mineral water	54,090	June 19	122	2678
Appell Company, Adam, Portland, Oreg. Water-bags	54,031	June 19	122	2678
Appell Company, Adam, Portland, Oreg. Water-bags				
Arbuckle Bros., New York, N. Y.; Pittsburg, Pa., and Chicago, Ill. Cocoa and preparations thereof	52,053	May 1	122	341

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Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Arbuckle Bros., New York, N. Y.; Pittsburg, Pa., and Chicago, Ill. Chocolate and preparations thereof	52,054	May 1	122	341
Arbuckle Bros., New York, N. Y.; Pittsburg, Pa., and Chicago, Ill. Teas	54,198	June 19	122	2685
Arithmograph Company, Chicago, Ill. Combined type-writing and adding machines	53,970	June 19	122	2676
Arnold Print Works, North Adams, Mass. White, printed, or dyed textile fabrics of cotton, wool, or silk	53,238	May 29	122	1712
Arondack Spring Company, Saratoga Springs, N. Y. Mineral water	53,743	June 12	122	2378
Artesia Cream Company, Waco, Tex. Face-powder	52,166	May 1	122	345
Artesia Cream Company, Waco, Tex. Soap	53,479	June 5	122	2051
Asbestos Manufacturing and Roofing Co., St. Louis, Mo. Prepared sheet-felt roofing	52,690	May 15	122	1036
Asbestos Manufacturing and Roofing Co., St. Louis, Mo. Roofing-paint	54,409	June 26	122	2994
Aschenbach & Miller, Philadelphia, Pa., assignors to Aschenbach & Miller, Incorporated. Medicine for horses, cattle, and poultry	52,450	May 8	122	720
Aschenbach & Miller, Philadelphia, Pa., assignors to Aschenbach & Miller, Incorporated. Herb bitters	52,768	May 15	122	1039
Aspegren & Co., New York, N. Y. Ground wood and wood-pulp	53,136	May 29	122	1708
Atlantic Chemical Co., New York, N. Y. Dressed and dyed furs	52,031	May 1	122	340
Atlantic Refining Company, Cleveland, Ohio. Waterproof structural and roof paint	52,055	May 1	122	341
Atlantic Refining Company, Franklin and Philadelphia, Pa. Lubricating-oils	53,715	June 12	122	2377
Atwood, Lemuel G., Franklin, N. H. Remedies for canines	53,301	May 29	122	1715
Auburn Wagon Co., Martinsburg, W. Va. Wagons, carts, drays, and trucks	52,711	May 15	122	1037
Augustus Wright Company, Petersburg, Va. Leather shoes	54,351	June 26	122	2991
Aultman & Taylor Machinery Company, Mansfield, Ohio. Water-tube boilers	52,634	May 15	122	1034
Austin, Poor & Co., New York, N. Y. Cotton and cotton-and-silk piece goods	54,319	June 26	122	2990
Avery Stamping Company, Cleveland, Ohio. Shovels, spades, and scoops	52,352	May 8	122	716
Avery Stamping Company, Cleveland, Ohio. Shovels, spades, and scoops	52,353	May 8	122	717
Avery Stamping Company, Cleveland, Ohio. Sidewalk and ice scrapers	52,618	May 15	122	1033
Ayer, Frederick, Boston, Mass. Liniments	54,095	June 19	122	2681
Ayling Bros., Chicago, Ill. Metal-polish	53,945	June 19	122	2675
Ayling Bros., Chicago, Ill. Shoe-polish or leather-dressing	53,996	June 19	122	2677
Azure Mining Co., New York, N. Y. American turquoises	53,382	June 5	122	2047
B. F. Goodrich Company, Akron, Ohio. Pneumatic tires for wheels	53,744	June 12	122	2378
Bacon Brothers, Seattle, Wash. Type-writer ribbon	53,771	June 12	122	2379
Badische Anilin- & Soda- Fabrik, Ludwigshafen-on-the-Rhine, Germany. Dyestuff	52,223	May 1	122	347
Badische Anilin- & Soda- Fabrik, Ludwigshafen-on-the-Rhine, Germany. Dyestuff	52,224	May 1	122	347
Badische Anilin- & Soda- Fabrik, Ludwigshafen-on-the-Rhine, Germany. Dyestuff	52,225	May 1	122	374
Badische Anilin- & Soda- Fabrik, Ludwigshafen-on-the-Rhine, Germany. Dyestuff	52,226	May 1	122	347
Badische Anilin- & Soda- Fabrik, Ludwigshafen-on-the-Rhine, Germany. Dyestuff	52,227	May 1	122	347
Badische Anilin- & Soda- Fabrik, Ludwigshafen-on-the-Rhine, Germany. Dyestuff	52,228	May 1	122	347
Badische Anilin- & Soda- Fabrik, Ludwigshafen-on-the-Rhine, Germany. Dyestuff	52,229	May 1	122	347
Badische Anilin- & Soda- Fabrik, Ludwigshafen-on-the-Rhine, Germany. Dyestuff	52,230	May 1	122	347
Badische Anilin- & Soda- Fabrik, Ludwigshafen-on-the-Rhine, Germany. Dyestuff	52,231	May 1	122	348
Badische Anilin- & Soda- Fabrik, Ludwigshafen-on-the-Rhine, Germany. Dyestuff	52,232	May 1	122	348
Badische Anilin- & Soda- Fabrik, Ludwigshafen-on-the-Rhine, Germany. Dyestuff	52,233	May 1	122	348
Badische Anilin- & Soda- Fabrik, Ludwigshafen-on-the-Rhine, Germany. Dyestuff	52,234	May 1	122	348
Badische Anilin- & Soda- Fabrik, Ludwigshafen-on-the-Rhine, Germany. Dyestuff	52,235	May 1	122	348
Badische Anilin- & Soda- Fabrik, Ludwigshafen-on-the-Rhine, Germany. Dyestuff	52,236	May 1	122	348
Badische Anilin- & Soda- Fabrik, Ludwigshafen-on-the-Rhine, Germany. Dyestuff	52,237	May 1	122	348
Badische Anilin- & Soda- Fabrik, Ludwigshafen-on-the-Rhine, Germany. Dyestuff	52,238	May 1	122	348
Badische Anilin- & Soda- Fabrik, Ludwigshafen-on-the-Rhine, Germany. Dyestuff	52,239	May 1	122	348
Badische Anilin- & Soda- Fabrik, Ludwigshafen-on-the-Rhine, Germany. Dyestuff	52,240	May 1	122	348
Badische Anilin- & Soda- Fabrik, Ludwigshafen-on-the-Rhine, Germany. Dyestuff	52,803	May 15	122	1041
Baeck Wall Paper Co., New York, N. Y. Wall-papers	52,258	May 8	122	713
Baird, Archie F., Boston, Mass. Toilet-paper	53,195	May 29	122	1711
Baker, Harry J., Fulton, N. Y. Green salve	54,569	June 26	122	3000
Balbi & Co., Lgi. New York, N. Y. Tomato sauce	53,302	May 29	122	1715
Ball Chemical Co., Allegheny, Pa. Spirit-varnish	53,772	June 12	122	2379
Ball, Thomas J., Chelsea Station, Mass. Food for babies and invalids	54,239	June 26	122	2987
Ball, Webster C., Cleveland, Ohio. Watches	52,969	May 22	122	1388
Ballard & Ballard Co., Louisville, Ky. Wheat-flour	52,970	May 22	122	1388
Ballard & Ballard Co., Louisville, Ky. Wheat-flour	53,196	May 29	122	1711
Ballard, James F., St. Louis, Mo Antiseptics or germicides	53,197	May 29	122	1711
Ballard, James F., St. Louis, Mo. Antiseptics or germicides	53,239	May 29	122	1712
Ballard, James F., St. Louis, Mo. Germicide and an antiseptic compound	53,512	June 5	122	2053
Ballard, James F., St. Louis, Mo. Vermifuge	54,263	June 26	122	2988
Balme, J. B. Clément, New York, N. Y. Hair-dressing	52,751	May 15	122	1038
Baltimore Copper Smelting & Rolling Co., Baltimore, Md. Copper	54,320	June 26	122	2990
Banks, Winston T., Bonanza, Ark. Gun and blasting powder	53,946	June 19	122	2675
Barclay & Barclay, New York, N. Y. Medicinal soap	53,947	June 19	122	2675
Barclay & Barclay, New York, N. Y. Medicinal soap	53,971	June 19	122	2676
Barclay & Barclay, New York, N. Y. Hair and skin tonic	54,096	June 19	122	2681
Barclay & Barclay, New York, N. Y. Hair and skin tonic	52,564	May 15	122	1031
Barnet Leather Co., New York, N. Y. Enameled leather	53,333	May 29	122	1716
Barrett & Barrett, St. Paul, Minn. Cider	52,692	May 15	122	1036
Barrett, Denton & Lynn Company, Dalton, Ga. Wheat-flour	52,693	May 15	122	1036
Barrett, Denton & Lynn Company, Dalton, Ga. Wheat-flour	52,804	May 15	122	1041
Barrett, Denton & Lynn Company, Dalton, Ga. Wheat-flour	52,691	May 15	122	1036
Barrett Manufacturing Company, New York, N. Y. Ready tar and felt roofing	53,997	June 19	122	2677
Barrett Manufacturing Company, New York, N. Y. Coal-tar paint	52,435	May 8	122	720
Barrett-White Company, Springfield, Ohio. Certain named chemical compound	54,733	June 26	122	3007
Barrett, William H., Southport, England. Gasolene-motors and motor machinery and parts thereof	54,240	June 26	122	2987
Barrett, William L., Bristol, Conn. Glass-cutters	54,055	June 19	122	2679
Barron & Co., James S., New York, N. Y. Brooms and brushes	54,371	June 26	122	2993
Barth, Jacob S., Indianapolis, Ind. Gravity-creamers	52,241	May 1	122	348
Basilea & Calandra, New York, N. Y. Cordials	53,414	June 5	122	2048
Bastrup, Louis, *et al.*, administrators. (See Canepa, John B.)	54,264	June 26	122	2988
Batjer & Co., New York, N. Y. Rye whisky	53,027	May 22	122	1391
Bauer & Black, Chicago, Ill. Corn and bunion plasters	53,028	May 22	122	1391
Bauer, Charles W., St. Louis, Mo. Whisky	52,436	May 8	122	720
Bauer & Co., Berlin, Germany. Dietetic albuminous preparations	54,188	June 19	122	2684
Baumann-Klage Co., Chicago, Ill. Absorbent paints or stains	52,242	May 1	122	348
Baxter & Bro., H. C., Brunswick, Me. Canned lobster	52,694	May 15	122	1036
Baxter Bros. Co., Brunswick, Me. Canned vegetables	53,773	June 12	122	2379
Baxter, Hartley C., Brunswick, Me. Canned lobster and canned mackerel				
Baxter, Hartley C., Brunswick, Me. Canned fruits and vegetables				
Baxter, Hartley C., Brunswick, Me. Canned fish, canned lobsters, canned clams, and canned clam-chowder	54,157	June 19	122	2683

Alphabetical list of registrants of trade-marks for May and June—Continued.

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Bay State Milling Company, Winona, Minn., and Boston, Mass. Wheat-flour	53,160	May 29	122	1709
Bayles Distributing Co., Kansas City, Mo. Antiseptic adhesive poultice-plaster	52,591	May 15	122	1032
Beadleston & Woerz, New York, N. Y. Beers	54,007	June 19	122	2681
Beadleston & Woerz, New York, N. Y. Lager-beer	54,128	June 19	122	2682
Beals & Torrey Shoe Co., Milwaukee, Wis. Men's, youths', and boys' leather shoes	52,056	May 1	122	341
Beaumont & Fils, S., Roubaix, France. Hair-pins	54,734	June 26	122	3007
Beck, Victor E., New York, N. Y. Tonics and remedies for dyspepsia and stomach and intestinal disorders	52,805	May 15	122	1041
Becker, Ferdinand W., Philadelphia, Pa. Carbonated water	53,587	June 5	122	2056
Becker, Francis L., deceased; G. L. Becker, executor, New York, N. Y. Pegs and chin and shoulder rests	53,774	June 12	122	2379
Becker, Gustav L., executor. (See Becker, Francis L.)				
Beckwith, Philo D., deceased; F. E. Lee and W. G. Howard, Dowagiac, Mich., executors. Steel range	52,207	May 1	122	347
Beebe-Webber Company, Holyoke, Mass. Woolen piece goods	54,489	June 26	122	2997
Beecham, Joseph, St. Helens, England. Pills	54,158	June 19	122	2683
Beecham, Joseph, St. Helens, England. Pills	54,241	June 26	122	2987
Beecham, Joseph. St. Helens, England. Pills	54,242	June 26	122	2987
Bell, Jesse D., Dawson, Ga. Pomade	53,513	June 5	122	2053
Belle Waist Co., Boston, Mass. Ladies' shirt-waists	54,490	June 26	122	2997
Ben J. Goldman Co., San Francisco, Cal. Whisky	52,126	May 1	122	343
Ben J. Goldman Co., San Francisco, Cal. Whisky	53,399	June 5	122	2048
Benbow-Brammer Manufacturing Company, St. Louis, Mo. Rotary washing-machines	52,437	May 8	122	720
Benjamin Atha & Company, Newark, N. J. Gears	53,972	June 19	122	2676
Berger Bros. Co., Philadelphia, Pa. Oven-turnbuckles and wrought-iron pipe-strap	53,617	June 5	122	2057
Bergner & Engel Brewing Co., Philadelphia, Pa. Beer	52,635	May 15	122	1034
Bergstrom Stove Co., Neenah, Wis. Stoves and ranges	52,127	May 1	122	343
Berkowitz, Armin, Hamilton, Ohio. Whisky	53,588	June 5	122	2056
Berry & Co., C., Boston, Mass. Cocktails	53,911	June 12	122	2385
Best, Ernst M., New York, N. Y. Magazine	53,137	May 29	122	1708
Best Gum Co. Louisville, Ky. Chewing-gum	53,618	June 5	122	2057
Best, John H., Galva, Ill. Display-racks	53,161	May 29	122	1709
Betts, Edwin, Newark, N. J. Certain named powders	52,128	May 1	122	343
Beyer Brothers Commission Company, Providence, R. I.; Boston, Mass., and New York, N. Y. Eggs	53,458	June 5	122	2050
Bickmore Gall Cure Company, Old Town, Me. Salve or ointment	53,198	May 29	122	1711
Bigbie Bros. & Co., Lynchburg, Va. Whisky	54,032	June 19	122	2678
Bigelow Carpet Company, Boston, Mass. Woven carpets and rugs	52,673	May 15	122	1035
Bigham, John, Pittsburg, Pa. Rolling-ball puzzles	53,138	May 29	122	1709
Billings, Edith E., West Springfield, Mass. Squabs	53,775	June 12	122	2379
Binswanger & Bro., Simon, St. Joseph, Mo. Malt whisky	52,504	May 8	122	723
Binswanger & Bro., Simon, St. Joseph, Mo. Whisky	53,266	May 29	122	1714
Bird & Co., J. A. & W., Boston, Mass. Insulating and sheathing paper and cloth	52,655	May 15	122	1035
Bird & Son, F. W., Walpole, Mass. Roof and building paper	52,087	May 1	122	342
Birdsey & Somers, New York, N. Y. Corsets	52,354	May 8	122	717
Birdsey & Somers, New York, N. Y. Corsets	52,674	May 15	122	1035
Birdsey & Somers, New York, N. Y. Corsets	52,675	May 15	122	1035
Birdsey & Somers, New York, N. Y. Corsets	52,676	May 15	122	1036
Birdsey Somers Co., New York, N. Y. Corsets	52,032	May 1	122	340
Bischoff, Ernst, New York, N. Y. Remedy for the cure of rheumatism and gout	53,066	May 22	122	1393
Bischoff, Frederick, New York, N. Y. Cocoa and chocolate products	52,123	May 1	122	342
Bissell, Leavitt P., Suffield, Conn. Cigars	53,303	May 29	122	1715
Blackwell's Durham Tobacco Co., New York, N. Y. Smoking-tobacco	54,491	June 26	122	2997
Blair, Henry A., San Antonio, Tex. Certain named medicinal preparations	52,769	May 15	122	1039
Blakeslee, Havilah A., Hartford, Conn. Soap of paste-like consistency	53,998	June 19	122	2677
Blakey's Boot Protectors, Limited, Leeds, England. Boot-protectors of metal	53,092	May 29	122	1707
Blakey's Boot Protectors, Limited, Leeds, England. Boot-protectors of metal and of metal and rubber together	53,114	May 29	122	1708
Blankenburg & Co., R., Philadelphia, Pa. Woolen and worsted yarns	54,321	June 26	122	2990
Bloch Bros. Tobacco Co., Wheeling, W. Va. Chewing and smoking tobacco	52,944	May 22	122	1387
Blodgett & Orswell Co., Pawtucket, R. I. Spool-cotton	52,033	May 1	122	340
Blodgett & Orswell Co., Pawtucket, R. I. Spool-cotton	52,088	May 1	122	342
Blood, Ernest, Philadelphia, Pa. Hosiery	52,877	May 22	122	1385
Bloomington Canning Co., Bloomington, Ill. Canned fruits and vegetables	52,129	May 1	122	343
Blue Ribbon Candy Company of Baltimore City, Baltimore, Md. Chocolate creams, caramels, and candies	53,716	June 12	122	2377
Blue Seal Supply Co., Boston, Mass. Carbonated tonic beverage and the extract for making the same	52,945	May 22	122	1387
Blue Valley Creamery Company, St. Joseph, Mo. Butter	53,240	May 29	122	1712
Blumenthal Bros., New York N. Y. Dentifrice	52,167	May 1	122	345
Blumenthal, Sigmund, New York, N. Y. Strings for violins, guitars, zithers, and banjos	51,980	May 1	122	338
Blumenthal, Sigmund, New York, N. Y. Strings for violins, guitars, zithers, and banjos	52,004	May 1	122	339
Bluthenthal & Bickart, Atlanta, Ga. Whisky	52,460	May 8	122	721
Bluthenthal & Bickart, Atlanta, Ga. Whisky	52,565	May 15	122	1031
Bluthenthal & Bickart, Atlanta, Ga. Whisky	53,029	May 22	122	1391
Bluthenthal & Bickart, Atlanta, Ga. Whisky	53,619	June 5	122	2057
Boehlke, Richard A. (See Benton, Edward, assignor.)				
Boker, Carl F., New York, N. Y. Pocket-knives	52,566	May 15	122	1031
Boker, Carl F., New York, N. Y. Pocket-knives	53,115	May 29	122	1708
Bon-Bon Company, New York, N. Y. Chewing-gum	54,463	June 26	122	2996
Bondy, B., New York, N. Y. Whisky	52,193	May 1	122	346
Book-Keeper Publishing Company, Ltd., Detroit, Mich. Monthly magazines	52,089	May 1	122	342
Boonville Mineral Spring Co., Utica, N. Y. Carbonated tonic beverage	54,464	June 26	122	2996
Booth Packing Company, Baltimore, Md. Canned fruits and vegetables	52,993	May 22	122	1389
Booth Packing Company, Baltimore, Md. Canned pineapple	53,267	May 29	122	1714
Booth Packing Company, Baltimore, Md. Canned oysters	53,415	June 5	122	2049
Booth Packing Company, Baltimore, Md. Canned fruits and vegetables	54,410	June 26	122	2994
Borden's Condensed Milk Co., Jersey City N. J., and New York, N. Y. Condensed milk	52,243	May 1	122	348
Borden's Condensed Milk Co., Jersey City, N. J., and New York, N. Y. Condensed milk	52,315	May 8	122	715
Borden's Condensed Milk Co., Jersey City, N. J., and New York, N. Y. Condensed milk	52,392	May 8	122	718
Borden's Condensed Milk Co., Jersey City, N. J., and New York, N. Y. Condensed milk	52,407	May 8	122	719
Borden's Condensed Milk Co., Jersey City, N. J., and New York, N. Y. Condensed milk	52,408	May 8	122	719
Borden's Condensed Milk Co., Jersey City, N. J., and New York, N. Y. Condensed milk	52,409	May 8	122	719
Borden's Condensed Milk Co., Jersey City, N. J., and New York, N. Y. Condensed milk	52,410	May 8	122	719
Borden's Condensed Milk Co., Jersey City, N. J., and New York, N. Y. Condensed milk	52,526	May 8	122	724
Borden's Condensed Milk Co., Jersey City, N. J., and New York, N. Y. Coenndsed milk	52,636	May 15	122	1034

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Borden's Condensed Milk Co., Jersey City, N. J., and New York, N. Y. Condensed milk	52,637	May 15	122	1034
Borden's Condensed Milk Co., Jersey City, N. J., and New York, N. Y. Condensed milk	52,638	May 15	122	1034
Borden's Condensed Milk Co., Jersey City, N. J., and New York, N. Y. Condensed milk	52,639	May 15	122	1034
Borden's Condensed Milk Co., Jersey City, N. J., and New York, N. Y. Condensed milk	52,640	May 15	122	1034
Borden's Condensed Milk Co., Jersey City, N. J., and New York, N. Y. Condensed milk	53,776	June 12	122	2379
Borden's Condensed Milk Co., New York, N. Y. Milk, condensed milk, cream, and evaporated cream	52,546	May 8	122	725
Boston and Lockport Block Company, Lockport, N. Y., and Boston, Mass. Tackle and hoisting blocks and sheaves for the same	54,636	June 26	122	3003
Boston Varnish Company, Everett, Mass. Varnish, japan, driers, and liquid fillers	53,948	June 19	122	2675
Botany Worsted Mills, Passaic, N. J., and New York, N. Y. Woolen or worsted fabrics	52,712	May 15	122	1037
Bowlby & Co., R. Y., Denton, Tex. Brazing compound	52,168	May 1	122	345
Bowles, Homer E., Muncie, Ind. Remedy for exterminating parasites	53,876	June 12	122	2383
Bowsky, Max, New York, N. Y. Furs in the piece and fur garments	52,946	May 22	122	1387
Brachvogel, Robert A., Chicago, Ill. Chewing-gum	54,033	June 19	122	2678
Bradham, Caleb D., Newbern, N. C. Non-alcoholic tonic beverages	51,959	May 1	122	337
Bradley & Metcalf Company, Milwaukee, Wis. Leather boots and shoes	52,825	May 22	122	1383
Bradley & Son, D. R., New York, N. Y. Perfumes, toilet waters, extracts, and colognes	53,840	June 12	122	2387
Brainerd & Armstrong Company, New London, Conn. Silk threads and cords	53,999	June 19	122	2677
Brand Brothers Company, Chicago, Ill. Tonic for the regulation of the alimentary organs	52,451	May 8	122	720
Brand Brothers Company, Chicago, Ill. Whisky	53,416	June 5	122	2049
Brandle & Smith Co., Philadelphia, Pa. Candy	52,005	May 1	122	339
Brandreth Co., Oseining and New York, N. Y. Proprietary medicine	53,199	May 29	122	1711
Brandreth Co., Oseining, N. Y. Medical compound	53,581	June 5	122	2055
Braun Manufacturing Co., Pittsburg, Pa. Wall-ties	54,701	June 26	122	3006
Brennan, John J., Worcester, Mass. Remedy for constipation	53,200	May 29	122	1711
Bristol-Myers Company, Brooklyn, N. Y. Laxatives	52,497	May 8	122	722
Bristol-Myers Company, Brooklyn, N. Y. Medicinal preparations in liquid and solid form for internal use	53,030	May 22	122	1391
Bristol-Myers Company, Brooklyn, N. Y. Medicinal preparations in liquid and solid form for internal use	53,031	May 22	122	1391
Brockton Shoe Company. (See Moody, William A., assignor.)				
Brokaw Bros., New York, N. Y. Coats, vests, trousers, and overcoats	54,542	June 26	122	2999
Bronson-Walton Company, Cleveland, Ohio. Coffee-mills	53,717	June 12	122	2377
Broom & Newman, New York, N. Y. Men's dress-shirts	53,877	June 12	122	2383
Brown & Company, L. P., Chicago, Ill. Electric soldering-tools	52,900	May 22	122	1386
Brown, Durrell & Co., assignors, by mesne assignments, to Brown, Durrell Co., Boston, Mass. Skirts and petticoats	52,947	May 22	122	1388
Brown-Forman Co., Louisville, Ky. Whisky	54,652	June 26	122	3004
Brown Knitting Co., Philadelphia, Pa. Hosiery	53,162	May 29	122	1710
Brown & Shaw, New York, N. Y. Salt	53,777	June 12	122	2379
Brownley, Walter, Washington, D. C. Candy	52,438	May 8	122	720
Bruce, William G., Milwaukee, Wis. Monthly magazine	52,316	May 8	122	715
Brugerolle, Leopold, Matha, France. Liqueurs or cordials	52,169	May 1	122	345
Bruml, Charles, Cleveland, Ohio. Whisky	54,735	June 26	122	3007
Brunner, Mond & Co., Limited, Northwich, England. Certain named chemicals	54,612	June 26	122	3002
Bruno, Charles, New York, N. Y. Accordions	52,878	May 22	122	1385
Bryden Horse Shoe Company, Catasauqua, Pa. Horseshoes	53,163	May 29	122	1710
Bryden Horse Shoe Company, Catasauqua, Pa. Horseshoes	53,214	May 29	122	1711
Bube, C., Hanover-Bothfeld, Germany. Lineal measures of all kinds	54,702	June 26	122	3006
Buckeye Manufacturing Company, Anderson, Ind. Explosive-engines	53,718	June 12	122	2377
Buckman & Vanderpoel, New York, N. Y. Dessert-jelly	53,164	May 29	122	1710
Buckner & Co., J. M., Jr., Louisville, Ky. Leaf-tobacco "in the hand"	54,543	June 26	122	2999
Buffalo Cotton Mills, Buffalo, S. C. Sheetings and drillings	52,948	May 22	122	1388
Burnham & Morrill Company, Portland, Me. Canned lobsters	52,289	May 8	122	714
Burnham & Morrill Company, Portland, Me. Canned lobsters	52,290	May 8	122	714
Burnham & Morrill Company, Portland, Me. Canned lobsters	52,291	May 8	122	714
Burnham & Morrill Company, Portland, Me. Clams, clam juice and chowder	52,505	May 8	122	723
Burnham & Morrill Company, Portland, Me. Canned corn	54,372	June 26	122	2992
Burnham & Morrill Company, Portland, Me. Canned succotash	54,492	June 26	122	2997
Burton Bros. & Co., New York, N. Y. Cotton fabric having an old Irish-linen finish	52,506	May 8	122	723
Bussey, William J., Albany, N. Y. Liquid polish for wood and metals	52,393	May 8	122	718
Buster Brown Stocking Company, New York, N. Y. Hosiery	51,981	May 1	122	338
Buster Brown Stocking Company, New York, N. Y. Hosiery	51,982	May 1	122	338
Butler, Annie S., London, England. Powdered paper, being a preparation for the skin or toilet use	52,527	May 8	122	724
Butler-Butler, (Incorporated,) New York, N. Y. Cigarettes	51,980	May 1	122	337
Butler-Butler, (Incorporated,) New York, N. Y. Cigarettes	51,981	May 1	122	337
Butler-Butler, (Incorporated,) New York, N. Y. Little cigars	52,057	May 1	122	341
Butler-Butler, (Incorporated,) New York, N. Y. Cigarettes	52,058	May 1	122	341
Butler-Butler, (Incorporated,) New York, N. Y. Cigarettes	52,059	May 1	122	341
Butler-Butler, (Incorporated,) New York, N. Y. Little cigars	52,060	May 1	122	341
Butler-Butler, (Incorporated,) New York, N. Y. Smoking-tobacco	52,061	May 1	122	341
Butler-Butler, (Incorporated,) New York, N. Y. Cigarettes	53,719	June 12	122	2377
Butler-Butler, (Incorporated,) New York, N. Y. Cigarettes	54,442	June 26	122	2995
Butler-Butler, (Incorporated,) New York, N. Y. Cigarettes	54,493	June 26	122	2997
C. Howard Hunt Pen Co., Camden, N. J. Steel and plated pens	52,411	May 8	122	719
C. Poyet, Inc., New York, N. Y. Certain named confectionery	52,259	May 8	122	713
C. Poyet, Inc., New York, N. Y. Confectionery	52,318	May 8	122	715
C. J. Kindel Bedding Company, St. Louis, Mo. Davenport-beds	52,412	May 8	122	719
C. M. Clapp Co., Buffalo, N. Y. Shoes made wholly or in part of leather	54,098	June 19	122	2681
C. S. A. Chemical Co., Portsmouth, Va. Headache remedy	54,099	June 19	122	2681
C. S. Bell Co., Hillsboro, Ohio. Mills for grinding	53,514	June 5	122	2053
C. S. Morey Mercantile Company, Denver, Colo. Coffee	52,130	May 1	122	344
Caco Chemical Co., Baltimore, Md. Liniment	53,241	May 29	122	1713
Cafolin Co. Ltd., London, England. Coffee extract	54,159	June 19	122	2683
Cahill Iron Works, Chattanooga, Tenn. Stationary washbasins	54,265	June 26	122	2988
California Canneries Co., San Francisco, Cal. Canned fruits	52,770	May 15	122	1039
California Canneries Co., San Francisco, Cal. Canned fruits	54,402	June 26	122	2993
California Fig Syrup Co., San Francisco, Cal. Liquid purgative compounds	54,322	June 26	122	2990
Callard, Stewart & Watt, Ltd., London, England. Bread and biscuits	54,373	June 26	122	2992
Calman & Co., Emil, New York, N. Y. Insulating compound	52,901	May 22	122	1386
Cambior, Muntaner & Co., San Juan, Porto Rico. Leather boots and shoes	54,613	June 26	122	3002
Camors & Co., J. B., New Orleans, La. Wheat-flour	53,098	May 29	122	1707
Campbell, Morrell & Co., Passaic, N. J. Food for poultry and pigeons	52,544	May 8	122	724
Campe & Co., Henry, San Francisco, Cal. Whisky	53,589	June 5	122	2056

Alphabetical list of registrants of trade-marks for May and June—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Canepa, John B., deceased; L. Bastrup and K. Sunkes, administrators, assignors to John B. Canepa Company, Chicago, Ill. Macaroni, vermicelli, spaghetti, and noodles	52,971	May 22	122	1388
Canton Steel Company, Pittsburg, Pa. Steel	53,116	May 29	122	1708
Cantrell & Cochrane Limited, Dublin, Ireland, and New York, N. Y. Soda-water	53,620	June 5	122	2057
Capewell Horse Nail Company, Hartford, Conn. Horse-nails	54,637	June 26	122	3003
Carey, Bayne & Smith Company, (Incorporated,) New York, N. Y. Sheetings	52,930	May 22	122	1387
Cargill Cleveland & Co., Westfield, Mass. Whips	53,803	June 12	122	2381
Carolyn & Co., New York, N. Y. Ladies' hats	54,000	June 19	122	2677
Carpenter, Owen J., Covington, Ky. Whisky	52,619	May 15	122	1033
Carpenter, Owen J., Covington, Ky. Whisky	53,841	June 12	122	2382
Carreras Limited, London, England. Cigars	54,507	June 26	122	2998
Carroll, James M., Torrington, Conn. Whisky	52,713	May 15	122	1037
Carruth, Charles T., Boston, Mass. Roofing felt and paper	53,590	June 5	122	2056
Carson Pirie Scott & Co., Chicago, Ill. Knitted hosiery, undershirts, and drawers	53,094	May 29	122	1707
Carstairs Bros., Highlandstown, Md. Whisky	52,131	May 1	122	344
Carter Medicine Company, New York, N. Y. Pills	53,591	June 5	122	2056
Carter's Ink Company, Boston, Mass., and New York, N. Y. Carbon-paper	54,034	June 19	122	2678
Carter's Ink Company, Boston, Mass., and New York, N. Y. Type-writer ribbons	54,072	June 19	122	2680
Carter's Ink Company, Boston, Mass., and New York, N. Y. Type-writer ribbons	54,370	June 26	122	3001
Carter's Ink Company, Boston, Mass., and New York, N. Y. Carbon-paper	54,371	June 26	122	3001
Carver File Company, Philadelphia, Pa. Files and rasps	54,129	June 19	122	2682
Cassella Color Company, New York, N. Y. Anilin dyes	52,090	May 1	122	342
Cassella Color Company, New York, N. Y. Anilin dyes	53,621	June 5	122	2057
Castor Oil Tablet Co., New York, N. Y. Castor-oil confection	52,771	May 15	122	1039
Cave, George E., Chicago, Ill. Sweeping compounds	54,224	June 26	122	2987
Cawston, Edwin, South Pasadena, Cal. Boas, muffs, and capes made from ostrich-feathers, and ostrich-plumes	54,323	June 26	122	2990
Cayey-Caguas Tobacco Co., New York, N. Y., and Caguas, Porto Rico. Cigars, cheroots, and cigarettes made of cigar-tobacco	52,902	May 22	122	1386
Cayey-Caguas Tobacco Company, New York, N. Y., and Caguas, Porto Rico. Cigars, cheroots, and cigarettes made of cigar-tobacco	52,528	May 8	122	724
Cayey-Caguas Tobacco Company, New York, N. Y, and Caguas, Porto Rico. Cigars, cheroots, and cigarettes made of cigar-tobacco	52,529	May 8	122	724
Cayey-Caguas Tobacco Company, New York, N. Y., and Caguas, Porto Rico. Cigars, cheroots, and cigarettes made of cigar-tobacco	52,714	May 15	122	1037
Cayey-Caguas Tobacco Company, New York, N. Y., and Caguas, Porto Rico. Cigars, cheroots, and cigarettes made of cigar-tobacco	54,508	June 26	122	2998
Cayey-Caguas Tobacco Company, New York, N. Y., and Caguas, Porto Rico. Cigars, cheroots, and cigarettes made of cigar-tobacco	54,544	June 26	122	3000
Cazenovia Canning Co., Cazenovia, N. Y. Canned fruits and canned vegetables	54,130	June 19	122	2682
Cazenovia Canning Co., Cazenovia, N. Y. Canned fruits and canned vegetables	54,131	June 19	122	2682
Cazenovia Canning Co., Cazenovia, N. Y. Canned fruits and canned vegetables	54,132	June 19	122	2682
Cazenovia Canning Co., Cazenovia, N. Y. Canned fruits and canned vegetables	54,133	June 19	122	2682
Celero Drug Co., Boston Mass. Headache cure	53,304	May 29	122	1715
Central Stamping Company, New York, N. Y. Dust-pans	52,656	May 15	122	1035
Central Stamping Company, New York, N. Y. Household and cooking utensils made of enameled steel	54,572	June 26	122	3001
Cephalgine Company, Spencer, Mass. Medicine for certain named diseases	53,242	May 29	122	1713
Chaffard & Coudert, Salon, Bouches-du-Rhone, France. Olive-oil	52,244	May 1	122	348
Challenge Cutlery Corporation, Bridgeport, Conn. Razors	52,477	May 8	122	722
Chanavas & Slazenger, Inc., New York, N. Y. Leather leggings	52,245	May 1	122	348
Chapman Double Ball Bearing Co. of America, New York, N. Y. Journal-bearings	52,317	May 8	122	715
Charles & Co., New York, N. Y. Wine	53,032	May 22	122	1391
Charles E. Hires Company, Philadelphia, Pa. Root-beer, root-beer extract, and the dry ingredients for making root-beer	54,465	June 26	122	2996
Charles N. Crittenton Company, New York, N. Y. Remedy for certain named diseases	53,842	June 12	122	2382
Charles N. Crittenton Company, New York, N. Y. Hair-restorer	53,843	June 12	122	2382
Charles N. Crittenton Company, New York, N. Y. Hair-restorer	53,844	June 12	122	2382
Charles N. Crittenton Company, New York, N. Y. Remedy for toothache	53,845	June 12	122	2382
Charles N. Crittenton Company, New York, N. Y. Remedy for toothache	53,846	June 12	122	2382
Charles N. Crittenton Company, New York, N. Y. Tonic, digestive, and nutrient preparation	53,847	June 12	122	2382
Charles N. Crittenton Company, New York, N. Y. Dye for the hair	53,848	June 12	122	2382
Charles N. Crittenton Company, New York, N. Y. Dye for the hair	53,878	June 12	122	2383
Charles N. Crittenton Company, New York, N. Y. Dye for hair and whiskers	54,160	June 19	122	2683
Charles N. Crittenton Company, New York, N. Y. Soap	54,425	June 26	122	2994
Chas. A. Maish Co., Cincinnati, Ohio. Comforts	54,161	June 19	122	2683
Chas. F. Stiel Company, Allegheny, Pa. Harness-leather	54,352	June 26	122	2991
Chas. H. Phillips Chemical Co., New York, N. Y. Liquid magnesia preparation	52,772	May 15	122	1039
Chas. H. Phillips Chemical Co., New York, N. Y. Preparations of cocoa and chocolate	54,423	June 26	122	2994
Chas. L. Klewert Co., Milwaukee, Wis. Hops	54,424	June 26	122	2994
Chas. Shaffner & Co., Chicago, Ill. Whisky	53,820	June 12	122	2381
Chase, Andrew J., Melrose, Mass. Finish-nails	54,638	June 26	122	3003
Chase Co., F. M., Nebraska City, Nebr. Baking-powder	52,641	May 15	122	1034
Chase, Roberts & Company, Dobb's Ferry and Long Island City, N. Y. Varnishes	54,221	June 19	122	2685
Chase & Sanborn, Boston, Mass. Coffee	54,403	June 26	122	2993
Chase & Sanborn, Boston, Mass. Tea	54,422	June 26	122	2994
Chatland & Lenhart, Brownsville, Pa. Crackers	52,530	May 8	122	724
Chattanooga Paint Co., Chattanooga, Tenn. Mineral coloring-matter for mortar and bricks	53,949	June 19	122	2675
Chelf Chemical Co., Richmond, Va. Medicinal compound	52,773	May 15	122	1040
Chemische Fabrik Helfenberg, A. G. vorm. E. Dieterich, Helfenberg, Germany. Non-alcoholic solutions of iron-manganese-peptone	54,266	June 26	122	2988
Cheney Bros., South Manchester, Conn. Printed and piece-dyed silks	53,912	June 12	122	2385
Chester Kent & Co., Boston, Mass. Remedies for internal use	52,715	May 15	122	1037
Chicago Concentrating Company, Chicago, Ill. Sugar-syrup and maple-syrup	53,305	May 29	122	1715
Chicago Distilling Co., Chicago, Ill. Whisky	53,033	May 22	122	1391
Chicago Distilling Co., Chicago, Ill. Gin	54,736	June 26	122	3007
Chicago Varnish Co., Chicago, Ill. Varnishes, stains, japans, and surfacers	54,001	June 19	122	2677
Chipman's Sons, Charles, Easton, Pa. Hosiery	53,243	May 29	122	1713
Chittenden & Eastman Co., Burlington, Iowa. Mattresses and pillows	54,592	June 26	122	3001
Christian Feigenspan, a Corporation, Newark, N. J. Lager-beer	52,507	May 8	122	723
Chromolithographische Kunstanstalt Paul Finkenrath, Gesellschaft mit beschränkter Haftung, Berlin, Germany. Pictorial post-cards, congratulatory cards, fancy cards, and posters	54,653	June 26	122	3004
Church & Dwight Company, New York, N. Y. Baking-soda and baking-powder	52,292	May 8	122	714
Cifuentes, Fernandes y Ca., Havana, Cuba. Cigars	53,480	June 5	122	2051
Cincinnati Soap Company, Cincinnati, Ohio. Toilet soap	52,508	May 8	122	723
Clapp & Tapley, Danvers, Mass. Leather boots and shoes	54,134	June 19	122	2682

Alphabetical list of registrants of trade-marks for May and June—Continued.

Name, residence, and title	No.	Date.	Official Gazette. Vol.	Page.
Clarey, James, New York, N. Y. Bread, biscuits, rolls, pies, cakes, and crackers	53,745	June 12	122	2378
Clark Mile-End Spool Cotton Co., East Newark, N. J. Cotton thread	52,355	May 8	122	717
Clark Mile-End Spool Cotton Co., East Newark, N. J. Darning-cotton, crochet-cotton, and cotton thread	54,324	June 26	122	2990
Clark Mile-End Spool Cotton Co., East Newark, N. J. Cotton thread	54,443	June 26	122	2995
Clark Thread Co., Newark, N. J. Cotton thread of all kinds	54,654	June 26	122	3004
Clarke, Charles J., Paris, Ky. Poultry medicine for limber-neck and roup	53,067	May 22	122	1392
Clauberg & Co., F. A., New York, N. Y. Razors	53,306	May 29	122	1715
Clauberg & Co., F. A., New York, N. Y. Razors	54,737	June 26	122	3007
Clawson, Clement C., Flagtown, N. J. Ice-shaving machines	51,983	May 1	122	338
Clawson, Clement C., Flagtown, N. J. Ice-shaving machines	51,984	May 1	122	338
Cleveland Baking Powder Company, New York, N. Y. Baking-powder	52,994	May 22	122	1389
Cleveland & Sandusky Brewing Company, Cleveland, Ohio. Beer in bottles	52,091	May 1	122	342
Cleveland Twist Drill Co., Cleveland, Ohio. Certain named tools and tool-holders	53,720	June 12	122	2377
Cleveland Twist Drill Company, Cleveland, Ohio. Nail-sets	53,539	June 5	122	2054
Cleveland Twist Drill Company, Cleveland, Ohio. Certain named mills	53,540	June 5	122	2054
Climax Road Machine Co., Marathon, N. Y. Rock-crushers	53,973	June 19	122	2676
Clincher Automobile Tire Manufacturers' Association, Akron, Ohio. Metallic rims for vehicle-wheels	52,293	May 8	122	714
Cling-Surface Company, Buffalo, N. Y. Preservatives and fillers for belts	53,307	May 29	122	1715
Clover Leaf Wine Co., assignor to Jaros Importing and Distributing Co., New York, N. Y. Whisky	54,738	June 26	122	3007
Cloverine Fertilizer Co., Mount Pleasant, Tenn. Artificial fertilizers	54,466	June 26	122	2996
Cluett Peabody & Co., Troy, N. Y. Collars	54,225	June 26	122	2987
Cluett Peabody & Co., Troy, N. Y. Collars	54,226	June 26	122	2987
Cluett Peabody & Co., Troy, N. Y. Collars	54,227	June 26	122	2987
Cluett Peabody & Co., Troy, N. Y. Collars	54,228	June 26	122	2987
Cluett Peabody & Co., Troy, N. Y. Collars	54,229	June 26	122	2987
Cluett Peabody & Co., Troy, N. Y. Collars	54,230	June 26	122	2987
Cluett Peabody & Co., Troy, N. Y. Collars	54,231	June 26	122	2987
Cluett Peabody & Co., Troy, N. Y. Collars	54,232	June 26	122	2987
Cluett Peabody & Co., Troy, N. Y. Collars	54,233	June 26	122	2987
Cluett Peabody & Co., Troy, N. Y. Collars	54,267	June 26	122	2988
Cluett Peabody & Co., Troy, N. Y. Collars	54,268	June 26	122	2988
Cluett Peabody & Co., Troy, N. Y. Collars	54,269	June 26	122	2988
Cluett Peabody & Co., Troy, N. Y. Collars	54,270	June 26	122	2988
Cluett Peabody & Co., Troy, N. Y. Collars	54,271	June 26	122	2988
Cluett Peabody & Co., Troy, N. Y. Collars	54,272	June 26	122	2988
Coalite Company, Boston, Mass. Compound for treating waste materials containing carbon to render them combustible	52,439	May 8	122	720
Cochrane Manufacturing Co., East Dedham and Malden, Mass., and New York, N. Y. Handkerchiefs	51,962	May 1	122	337
Cohen & Son, Charles J., Philadelphia, Pa. Envelops and paper	52,879	May 22	122	1385
Cohen & Son, Charles J., Philadelphia, Pa. Envelops and paper	52,880	May 22	122	1385
Cohen & Son, Charles J., Philadelphia, Pa. Envelops and paper	52,881	May 22	122	1385
Colgate & Co., New York, N. Y. Soaps for toilet, laundry, and household use	54,002	June 19	122	2677
Collin County Mill & Elevator Company, McKinney, Tex. Wheat-flour	52,194	May 1	122	346
Collin County Mill & Elevator Company, McKinney, Tex. Wheat-flour	53,778	June 12	122	2379
Collins Company, Collinsville, Conn. Plows and parts thereof	52,092	May 1	122	342
Collins, James M., Salt Lake City, Utah. Blood and nerve tonics	53,622	June 5	122	2057
Colorado Bedding Co., Pueblo, Colo. Mattresses	53,139	May 29	122	1709
Colorado Iron Works Co., Denver, Colo. Ore-smelting and ore-milling machinery	53,117	May 29	122	1708
Colt's Patent Fire Arms Manufacturing Company, Hartford, Conn. Pistols	52,903	May 22	122	1386
Colt's Patent Fire Arms Manufacturing Company, Hartford, Conn. Pistols	52,904	May 22	122	1386
Columbia Knitting Company, Milwaukee, Wis. Hosiery	53,541	June 5	122	2054
Columbia Refining Co., New York, N. Y. Oil and water-color paints	52,006	May 1	122	339
Columbian Hdw. Co., Cleveland, Ohio. Spring-hinges	53,676	June 12	122	2376
Columbian Hdw. Co., Cleveland, Ohio. Spring-hinges	53,692	June 12	122	2376
Columbian Hdw. Co., Cleveland, Ohio. Spring-hinges	53,693	June 12	122	2376
Columbian Hdw. Co., Cleveland, Ohio. Spring-hinges	53,694	June 12	122	2376
Columbian Hdw. Co., Cleveland, Ohio. Spring-hinges	53,695	June 12	122	2376
Compañía Vinícola del Norte de España, Bilbao, Spain. Claret in bottles	52,478	May 8	122	722
Compañía Vinícola del Norte de España, Bilbao, Spain. White wine in bottles	52,509	May 8	122	723
Conklin, Horace E., Binghamton, N. Y. Field-seeds and grass-seeds, including clover-seeds	52,905	May 22	122	1386
Conley, Oliver P. G., Troup, Tex. Certain named medical compound	54,655	June 26	122	3004
Connor, John P., Lowell, Mass. Whisky	52,195	May 1	122	346
Connor, John P., Lowell, Mass. Whisky	52,196	May 1	122	346
Consumers Park Brewing Co., Brooklyn, N. Y. Lager-beer	52,510	May 8	122	723
Continental Color and Chemical Co. (See Kutroff, Pickhardt & Company, assignor.)				
Cook and Van Evera Co., Chicago, Ill. Cooking ranges and stoves	53,677	June 12	122	2376
Cook's Sons, Adam, New York, N. Y. Lubricating-grease	52,007	May 1	122	339
Cook's Sons, Adam, New York, N. Y. Lubricating-grease	52,547	May 15	122	1031
Cooper, Edwin, Vienna, Austria-Hungary. Packing materials for steam and water joints	53,372	June 5	122	2047
Copeland, Charles C., Milton, Mass. Carbonated tonic beverage	53,592	June 5	122	2056
Cordell Gin & Milling Company, Cordell, Okla. Ter. Wheat-flour	52,882	May 22	122	1385
Corrizo Extract Co., New York, N. Y. Vanilla-oil	52,949	May 22	122	1388
Cough Checker Manufacturing Co., Newburgh, N. Y. Cough mixture	52,511	May 8	122	723
Countie, Charles J., Boston, Mass. Toilet cream	53,849	June 12	122	2382
Cox, William H., Stuart, Iowa. Liniment for the cure of cuts and flesh wounds	53,334	May 29	122	1716
Cracker Jack Liniment Company, Burkes Garden, Va. Liniments	53,623	June 5	122	2057
Cranston, John M., Augusta, Ga. Whisky	52,642	May 15	122	1034
Cranston, John M., Augusta, Ga. Whisky	53,879	June 12	122	2383
Creamery Package Mfg. Company, Chicago, Ill. Certain named glassware	52,319	May 8	122	715
Crescent Burner Manufacturing Co., New York, N. Y. Burners for acetylene and other gases	52,716	May 15	122	1037
Crescent Macaroni & Cracker Co., Davenport, Iowa. Macaroni, spaghetti, vermicelli, and noodles	53,438	June 5	122	2049
Crescent Macaroni & Cracker Co., Davenport, Iowa. Crackers, biscuits, and cakes	54,545	June 26	122	3000
Crimmings-Megrath Co. Inc., Boston, Mass. Tooth-powder containing phenol	53,268	May 29	122	1714
Crist, Scott & Parshall, Cooperstown, N. Y. Monthly magazines	53,215	May 29	122	1711
Cristadoro, Alexander, New York, N. Y. Hair-dyes	52,452	May 8	122	720
Cromley, James B., New York, N. Y. Rheumatism cure	53,593	June 5	122	2056
Crues, C. V., san Francisco, Cal. Powders for indigestion, &c	54,503	June 26	122	3001
Croteau, Isaie, Providence, R. I. Remedy for impoverished blood and nerves	54,035	June 19	122	2678
Crowder-Mason Shoe Co., Indianapolis, Ind. Leather boots and shoes	52,413	May 8	122	719
Crown Oil & Wax Company, Wilmington, Del., and Baltimore, Md. Dry paste	52,294	May 8	122	714
Crucible Steel Company of America, Pittsburg, Pa. Steel	52,260	May 8	122	713
Crucible Steel Company of America, Pittsburg, Pa. Steel	52,261	May 8	122	713
Crucible Steel Company of America, Pittsburg, Pa. Steel	52,657	May 15	122	1035
Crucible Steel Company of America, Pittsburg, Pa. Steel	52,907	May 22	122	1386

Alphabetical list of registrants of trade-marks for May and June—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Crucible Steel Company of America, Pittsburg, Pa. Steel	53,118	May 29	122	1708
Crucible Steel Company of America, Pittsburg, Pa. Steel	53,624	June 5	122	2057
Crucible Steel Company of America, Pittsburg, Pa. Steel	53,721	June 12	122	2377
Crucible Steel Company of America, Pittsburg, Pa. Steel	54,003	June 19	122	2677
Crucible Steel Company of America, Pittsburg, Pa. Steel	54,739	June 26	122	3007
Crystaline Salt Company, Boston, Mass. Salt	54,199	June 19	122	2685
Cummings, Edwin J., Philadelphia, Pa. Coal	54,509	June 26	122	2998
Curran and Joyce Co., Lawrence, Mass. Beer	54,504	June 26	122	3001
Currier-Boyce Company, Chicago, Ill. Magazine or periodical	52,906	May 22	122	1386
Curtin & Clark Hardware Company, St. Joseph, Mo. Silver table-cutlery	53,140	May 29	122	1709
D. Goff & Sons, Pawtucket, R. I. Mercerized cotton braid	53,542	June 5	122	2054
D. E. Wood Butter Co., Elgin, Ill. Butter	53,201	May 29	122	1711
D. & W. Fuse Co., Providence, R. I. Electric switches and parts thereof and mountings and inclosures therefor	52,844	May 22	122	1383
Dalselle, Sanford J., Beaumont, Tex. Remedy for certain named diseases	52,440	May 8	122	720
Daniel, Charles A., Philadelphia, Pa. Machinery-packing	52,414	May 8	122	719
Darby Candy Co., Baltimore, Md. Candy	52,973	May 22	122	1389
Darrell & Co., E. F., New York, N. Y. Oil-meal made from linseed	52,197	May 1	122	346
Dausse & Co., P., New York, N. Y. Wheat-flour	51,985	May 1	122	338
Davenport Ice Chipping Machine Co., Davenport, Iowa. Ice-machines	52,512	May 8	122	723
David B. Crockett Company, Bridgeport, Conn. Varnish-stains	53,950	June 19	122	2675
David E. Fouts Co., Baltimore, Md. Condimental foods for horses, cattle, swine, and other stock	52,513	May 8	122	723
Davis, Thomas P., Rio Vista, Va. Cornmeal	52,531	May 8	122	724
Davis, B. F., Huntington, W. Va. Pills for liver and bowel complaints	53,068	May 22	122	1392
Davis, Joseph M., Minneapolis, Minn. Whisky	53,034	May 22	122	1391
Davis and Lawrence Co., New York, N. Y. Medicinal preparation for external and internal use	54,100	June 19	122	2681
Dayton, A. H., *et al.*, administrators. (See May, James O.)				
Dayton Paper Novelty Co., Dayton, Ohio. Wrapping-paper	53,779	June 12	122	2380
Dayton Paper Novelty Co., Dayton, Ohio. Wrapping-paper	54,101	June 19	122	2681
De-Fi Manufacturing Co., New York, N. Y. Carbon-paper	52,262	May 8	122	713
De Laval Separator Company, New York and Poughkeepsie, N. Y. Centrifugal liquid-separators	52,583	May 15	122	1032
De Laval Separator Company, New York and Poughkeepsie, N. Y. Cream-separators	52,995	May 22	122	1389
De Laval Separator Company, New York and Poughkeepsie, N. Y. Cream-separators	52,996	May 22	122	1389
Decatur Cereal Coffee Works, Decatur, Ill. Cereal substitute for coffee	53,459	June 5	122	2050
Decker & Son, New York, N. Y. Pianos	52,974	May 22	122	1389
Deere & Webber Co., Minneapolis, Minn. Gasolene-engines	54,740	June 26	122	3007
Deimel Linen-Mesh System Company, San Francisco, Cal., and New York, N. Y. Undershirts and drawers and union suits	53,828	June 12	122	2382
Delacre & Cie., Ch, Brussels, Belgium. Castor-oil	54,656	June 26	122	3004
Delamothe, Louis G., East Syracuse, N. Y. Blood remedies and tonics	53,308	May 29	122	1715
Demarest and Carver, New York, N. Y. Packing gages and cutters	52,356	May 8	122	717
Devolld, William C., Red Lodge, Mont. Medicinal plaster	53,974	June 19	122	2676
Dexter Brothers Co., Boston, Mass. Shingle-stains	53,951	June 19	122	2675
Dey Time Register Co., Syracuse, N. Y. Time-registers	54,162	June 19	122	2683
Dey Time Register Co., Syracuse, N. Y. Time-registers	54,163	June 19	122	2683
Dey Time Register Co., Syracuse, N. Y. Time-registers	54,164	June 19	122	2683
Dey Time Register Co., Syracuse, N. Y. Time-registers	54,165	June 19	122	2683
Diamond Chain & Manufacturing Co., Indianapolis, Ind. Repair-links for link chains	54,703	June 26	122	3006
Die Actiengesellschaft Apollinaris Brunnen, Neuenahr, Germany. Mineral water	53,335	May 29	122	1716
Dill & Collins Co., Philadelphia, Pa. Printing-paper	52,295	May 8	122	714
Dill & Collins Co., Philadelphia, Pa. Printing and writing paper	54,135	June 19	122	2682
Dilling & Co., Indianapolis, Ind. Candy	52,082	May 1	122	341
Dock & Coal Co., Plattsburg, N. Y. Cattle-food	53,746	June 12	122	2378
Doctor Blosser Company, Atlanta, Ga. Medical preparation for certain named diseases	54,056	June 19	122	2679
Dolan Mercantile Co., Atchison, Kans. Tea	52,514	May 8	122	723
Dolan Mercantile Co., Atchison, Kans. Rice	52,515	May 8	122	723
Dolan Mercantile Co., Atchison, Kans. Coffee	54,200	June 19	122	2685
Doll, William F., New York, N. Y. Watches, watch-movements, watchcases, and watch parts	54,353	June 26	122	2991
Dorman, Carrie V., Washington, D. C. Liquid antiseptic and disinfectant	52,415	May 8	122	719
Dorman, Carrie V., Washington, D. C. Hair-dressing	52,808	May 15	122	1041
Dorman, Carrie V., Washington, D. C. Remedy for croup, coughs, and bronchial affections	53,594	June 5	122	2056
Dort, Elizabeth, Buffalo, N. Y. Stomachic and carminative	52,170	May 1	122	345
Dort, Elizabeth, Buffalo, N. Y. Salves, liniments, and porous strengthening-plasters	54,304	June 26	122	2990
Dowd & Co., J. C., New York, N. Y. Certain named toilet articles	54,325	June 26	122	2990
Downer, Hawes and Company, Incorporated, Bridgeport, Conn. Corsets	52,084	May 1	122	340
Dr. A. Gude & Co., G. m. b. H., Leipsic, Germany. Certain named medicine	52,472	May 8	122	721
Dr. J. Parker Pray Company, Limited, New York, N. Y. Finger-nail polish	54,273	June 26	122	2988
Dr. Miles Medical Co., Elkhart, Ind. Analgesic and sedative	54,274	June 26	122	2988
Dr. Peter Fahrney & Sons Co., Chicago, Ill. Medicinal preparation for the treatment of diseases of the blood and skin	52,246	May 1	122	343
Dr. Peter Fahrney & Sons Co., Chicago, Ill. Periodical publication	53,804	June 12	122	2388
Dr. Shoop Family Medicine Co., Racine, Wis. Laxative	52,247	May 1	122	349
Draper, Oscar M., deceased; A. M. and E. E. Hale, North Attleboro, Mass., executors. Ornamental watch and neck chains	54,355	June 26	122	2992
Dreka Company, Philadelphia, Pa. Steel pens	52,008	May 1	122	331
Dreyfuss & Co., A. L., New York, N. Y. Velvets	52,357	May 8	122	717
Drumm, Robert, Fort Worth, Tex. Poison for insects	53,336	May 29	122	1717
Duncan, George S., Edinburgh, Scotland. Set-off liquor and printer's paste	51,963	May 1	122	337
Duncan & Moorhead, Inc., Philadelphia, Pa. Cigars	53,337	May 29	122	1717
Dunham, Carrigan & Hayden Co., San Francisco, Cal. Valves	53,165	May 29	122	1710
Dunham Manufacturing Company, New York, N. Y. Prepared cocoanut	53,460	June 5	122	2050
Dunne, Chas. M., Norwich, N. Y. Tooth-paste	54,704	June 26	122	3006
Durkee & Co., E. R., New York, N. Y. Spices and mustard	52,296	May 8	122	714
Durkee & Co., E. R., New York, N. Y. Spices	53,096	May 29	122	1707
Durkee & Co., E. R., New York, N. Y. Spices	53,096	May 29	122	1707
Durkee & Co., E. R., New York, N. Y. Spices and mustard	53,097	May 29	122	1707
Durkee & Co., E. R., New York, N. Y. Baking-powder, cream of tartar, saleratus, and bicarbonate of soda	53,202	May 29	122	1711
Durkee & Co., E. R., New York, N. Y. Spices and mustard	53,244	May 29	122	1713
Durkee & Co., E. R., New York, N. Y. Flavoring extracts	53,780	June 12	122	2380
Durkee & Co., E. R., New York, N. Y. Spices and mustard	53,781	June 12	122	2380
Durkee & Co., E. R., New York, N. Y. Spices and mustard	54,374	June 26	122	2992
Durkee & Co., E. R., New York, N. Y. Spices and mustard	54,548	June 26	122	3000
Durkee & Co., E. R., New York, N. Y. Machine-oils	54,614	June 26	122	3002
E. Godel and Sons, Peoria, Ill. Hams, shoulders, and bacon	52,221	May 8	122	715
E. Stebbins Manufacturing Company, Springfield, Mass. Faucets	54,742	June 26	122	3008

Alphabetical list of registrants of trade-marks for May and June—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
E. A. Williams, Incorporated, Newark, N. J. Wheat bread	53,417	June 5	122	2049
E. C. Atkins & Company, Indianapolis, Ind.; New York, N. Y.; Memphis, Tenn.; Atlanta, Ga.; Minneapolis, Minn.; Portland, Oreg.; Seattle, Wash.; San Francisco, Cal.; Chicago, Ill., and Toronto, Canada. Saws of all kinds	54,741	June 26	122	3007
E. C. De Witt & Co., Chicago, Ill. Remedies for diseases common to children	53,069	May 22	122	1392
E. E. Sutherland Medicine Co., Paducah, Ky. Salve for the treatment of sore eyes	54,073	June 19	122	2680
E. E. Sutherland Medicine Co., Paducah, Ky. Salve for the treatment of sore eyes	54,275	June 26	122	2988
E. H. Hotchkiss Co., Norwalk, Conn. Strips of united staples, &c	53,216	May 29	122	1711
E. H. Taylor, Jr., & Sons, Incorporated, Frankfort, Ky. Whisky	53,035	May 22	122	1391
E. H. Wright Company, Ltd., Kansas City, Mo. Liquid smoke distilled from wood	53,070	May 22	122	1392
E. J. Hart & Co. Limited, New Orleans, La. Remedies for stomach, intestinal, and bowel disorders	52,250	May 1	122	348
E. L. Parker & Co., Baltimore, Md. Certain named metal manufactures	53,760	June 12	122	2379
E. O. Hall and Son, Ltd., Honolulu, Hawaii. Lubricating-oil	53,338	May 29	122	1717
Eagle Pencil Company, New York, N. Y. Metallic tips for lead-pencils	52,807	May 15	122	1041
Eagle Wagon Works, Auburn, N. Y. Wagons	54,743	June 26	122	3008
Earl & Wilson, Troy, N. Y. Collars	52,132	May 1	122	344
Eastern Granite Roofing Company, New York, N. Y. Roofing material	53,656	June 12	122	2375
Eastern Refining Co., New York, N. Y. Molasses	54,201	June 19	122	2685
Eastern Shore of Virginia Produce Exchange, Onley, Va. Irish and sweet potatoes	52,248	May 1	122	348
Eberhardt, John H., New York, N. Y. Antiseptic solution	52,171	May 1	122	345
Eberle & Co., J. N., Augsburg-Pfersee, Germany. Saws	53,119	May 29	122	1708
Eberle & Co., J. N., Augsburg-Pfersee, Germany. Saws	54,305	June 26	122	2990
Eclipse Machine Co., Elmira Heights, N. Y. Back-pedaling coaster-brakes and parts thereof	54,705	June 26	122	3006
Eddystone Manufacturing Co., Eddystone and Philadelphia, Pa. Printed and dyed textile fabrics	52,643	May 15	122	1034
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Art drapery-robes	52,355	May 8	122	717
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Moreens	52,394	May 8	122	718
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Bleached, unbleached, printed, and dyed textile fabrics	52,395	May 8	122	718
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Printed and dyed textile fabrics	53,625	June 5	122	2057
Edel's Sons, S. T., Baltimore, Md. Butter	52,249	May 1	122	348
Edgar Allen & Co. Limited, Sheffield, England. Steel in various forms	53,543	June 5	122	2054
Edison Portland Cement Company, West Orange and New Village, N. J. Portland cement	53,657	June 12	122	2375
Edison and Swan United Electric Light Company, Limited, London, England. Incandescent electric lamps and fittings of ordinary metal for the same	52,320	May 8	122	751
Edison and Swan United Electric Light Company Limited, London, England. Incandescent electric lamps	52,620	May 15	122	1033
Edison and Swan United Electric Light Company Limited, London, England. Incandescent electric lamps and electric lighting apparatus	52,621	May 15	122	1033
Edmondson, Robert E., New York, N. Y. Financial-news bulletins	53,141	May 29	122	1709
Edsall, Henry F., San Francisco, Cal. Internal remedies	52,133	May 1	122	344
Edsall, Henry F., San Francisco, Cal. Internal remedies having tonic and alterative properties	52,134	May 1	122	344
Edsall, Henry F., San Francisco, Cal. Remedies for certain named diseases	52,997	May 22	122	1390
Edward Katzinger Company, Chicago, Ill. Baking-pans	52,416	May 8	122	719
Edward L. Baldwin Co., San Francisco, Cal. Remedy for certain named diseases	53,339	May 29	122	1717
Edward L. Baldwin Co., San Francisco, Cal. Remedy for certain named diseases	54,657	June 26	122	3004
Egerton Bros., Baltimore, Md. Wheat-flour	51,964	May 1	122	337
Eiseman & Company, Samuel, New York, N. Y. Ribbons	54,243	June 26	122	2987
Eisenman & Co., Charles, Cleveland, Ohio. Men's shirts and boys' shirts, waists, and blouses	53,829	June 12	122	2382
Elsing & Co., E., New York, N. Y. Whisky	53,166	May 29	122	1710
El Zernac Co., New York, N. Y. Analgesics	54,615	June 26	122	3002
Electric Cigar Company, Boston, Mass. Cigars	51,965	May 1	122	337
Electric Lustre Starch Company, Boston, Mass. Laundry starch	52,198	May 1	122	346
Eley Brothers Limited, London, England. Percussion-caps	53,747	June 12	122	2378
Elgin Chemical Co., Elgin, Ill. Corn cure	54,326	June 26	122	2990
Ellendale Milling Company, Ellendale, N. D. Wheat-flour	52,883	May 22	122	1385
Elliott, Samuel K., Los Angeles, Cal. Alterative, tonic, and blood-purifying compounds	53,071	May 22	122	1392
Emerald Manufacturing Co., Superior, Wis. Prepared cereal food	52,532	May 8	122	724
Emerson Piano Company, Boston, Mass. Pianos	53,383	June 5	122	2047
Empire State Dry Battery Co., New York, N. Y. Dry batteries	52,950	May 22	122	1388
Enders and Mechener, Seattle, Wash. Cocoa	53,217	May 29	122	1712
Endicott-Johnson Company, Boston, Mass. Leather boots and shoes	54,166	June 19	122	2683
Engineering & Mining Journal, Incorporated, New York, N. Y. Weekly magazine	52,658	May 15	122	1035
Enterprise Coffee Company of Baltimore City, Baltimore, Md. Roasted coffee and roasted and ground coffee	54,547	June 26	122	3000
Epnstein, Milton L., Fort Worth, Tex. Syrup for beverages	52,998	May 22	122	1390
Equitable Coal & Coke Company, Chicago and Du Quoin, Ill. Coal	53,481	June 5	122	2051
Erb, Fred H., Jr., Lafayette, Ind. Foods for live stock and other animals	52,533	May 8	122	724
Ericka Mfg. Co. Incorporated, Springfield, Mass. Toilet and laundry soap	53,952	June 19	122	2675
Ericsson Telephone Company, New York, N. Y. Telephone transmitters and receivers	52,567	May 15	122	1032
Ern, Carl F., Wald, Germany. Razors and safety-razor blades	54,327	June 26	122	2991
Ernst Schliemann's Export Ceresin Fabrik Gesellschaft m. b. Haftung, Hamburg, Germany. Ceresin	54,658	June 26	122	3004
Ernst, Wilhelm, Hanover, Germany. Suppositories	53,203	May 29	122	1711
Estes Mills, Fall River, Mass. Mops	52,063	May 1	122	341
Estes Mills, Fall River, Mass. Mops	52,067	May 1	122	341
Eugene Dietzgen Co., Chicago, Ill. Paper for process printing	54,706	June 26	122	3006
Eureka Fire Hose Company, Jersey City, N. J. Fabric hose	53,167	May 29	122	1710
Eureka Fire Hose Company, Jersey City, N. J. Fabric hose	53,168	May 29	122	1710
Evans, Ezekiel C., Philadelphia, Pa. Liquid roofing compounds made from coal-tar products	54,444	June 26	122	2995
Evans & Son, Geo. T., Indianapolis, Ind. Wheat-flour	52,774	May 15	122	1040
Evans & Son, Geo. T., Indianapolis, Ind. Wheat-flour	53,169	May 29	122	1710
Everett Mills, Lawrence, Mass. Cotton piece goods	52,516	May 8	122	723
Everett Mills, Lawrence, Mass. Cotton piece goods	52,960	May 22	122	1388
Excelsior Needle Company, Torrington, Conn. Sewing-machine needles	52,659	May 15	122	1035
Excelsior Needle Company, Torrington, Conn. Sewing-machine needles	52,660	May 15	122	1035
Excelsior Needle Company, Torrington, Conn. Needles	53,544	June 5	122	2054
F. Mayer Boot & Shoe Co., Milwaukee, Wis. Leather shoes	53,309	May 29	122	1715
F. Mayer Boot & Shoe Co., Milwaukee, Wis. Leather shoes	54,306	June 26	122	2990
F. O. Pierce Company, New York, N. Y. Color varnish	51,966	May 1	122	337
F. O. Pierce Company, New York, N. Y. Red paint	51,967	May 1	122	337
F. S. Royster Guano Co., Norfolk, Va. Bone fertilizer	52,845	May 22	122	1384
F. W. Poe Mfg. Co., Greenville, S. C. Cotton piece goods	53,170	May 29	122	1710
F. W. Poe Mfg. Co., Greenville, S. C. Cotton piece goods	53,545	June 5	122	2054
Faber, A. W., Stein, Germany. Lead-pencils	54,595	June 26	122	3001
Faber, Eberhard, New York, N. Y. Rubber erasers	52,417	May 8	122	719
Faber, Eberhard, New York, N. Y. Pencils	54,354	June 26	122	2992

Alphabetical list of registrants of trade-marks for May and June—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Fahnestock, Benjamin S., Pittsburg, Pa. Worm medicines	52,461	May 8	122	721
Fairfax & Co., Alexandria, Va. Whisky	52,479	May 8	122	722
Falk Mercantile Co. Ltd., Boise, Idaho. Evaporated milk and cream	52,584	May 15	122	1032
Falk Mercantile Co. Ltd., Boise, Idaho. Wheat-flour	54,404	June 26	122	2993
Fall River Bleachery, Fall River, Mass. Bleached cotton goods	52,775	May 15	122	1040
Farbenfabriken of Elberfeld Co., New York, N. Y. Photographic papers	54,596	June 26	122	3001
Farbwerke vorm. Meister Lucius & Brüning, Höchst-on-the-Main, Germany. Antiseptics and deodorants	52,135	May 1	122	344
Farbwerke vorm. Meister Lucius & Brüning, Höchst-on-the-Main, Germany. Anesthetics	53,072	May 22	122	1392
Fast, Edward, New York, N. Y. Ladies' shirt-waists	54,494	June 26	122	2998
Fauitless Rubber Co., Akron, Ohio. Certain named rubber goods	53,171	May 29	122	1710
Fearey, Anna S., Albany, N. Y. Leather boots and shoes	52,009	May 1	122	339
Feeney & Pallotto, Carnegie, Pa. Tonic for rheumatism	54,328	June 26	122	2991
Feist, Leo, New York, N. Y. Sheet-music and music-books	54,074	June 19	122	2680
Fellheimer and Company, New York, N. Y. Corsets	54,548	June 26	122	3000
Fellows Medical M'f'g Co., Limited, New York, N. Y. Preparation of hypophosphites	53,204	May 29	122	1711
Ferdinand, Lorrin W., Boston, Mass. Glue-cement	54,467	June 26	122	2996
Fernando Fruit Growers Association, Fernando, Cal. Oranges, lemons, and grape-fruit	52,251	May 1	122	348
Ferriss, John M., Jr., Tacoma, Wash. Lumber-handling lever	52,846	May 22	122	1384
Ferry Drug Co., San Francisco, Cal. Medicinal preparation	54,744	June 26	122	3006
Fetzer & Company, Middletown, Ohio. Certain named agricultural machines	54,745	June 26	122	3006
Fetzer & Company, Middletown, Ohio. Certain named agricultural machines	54,746	June 26	122	3006
Feuchter Bros., Cairo, Ill. Whisky	53,036	May 22	122	1391
Fidalgo Island Packing Co., Anacortes, Wash. Canned salmon	53,269	May 29	122	1714
Fidalgo Island Packing Co., Anacortes, Wash. Canned salmon	54,189	June 19	122	2684
Fidalgo Island Packing Co., Anacortes, Wash. Canned salmon	54,190	June 19	122	2684
Fiebeger Heating Company, Akron, Ohio. Stoves and furnaces for heating buildings	52,263	May 8	122	713
Finck & Son, A., New York, N. Y. Lager-beer	53,595	June 5	122	2056
Fischer Chemical Importing Co., New York, N. Y. Cold-cream	52,136	May 1	122	344
Fiske Brothers Refining Co., New York, N. Y. Lubricating-oil	54,004	June 19	122	2677
Fitzpatrick, Thomas B., Boston Mass. Underwaists for women and children	54,234	June 26	122	2987
Fleischmann Co., Cincinnati, Ohio, and New York, N. Y. Compressed yeast	52,999	May 22	122	1390
Fleischmann Co., Cincinnati, Ohio, and New York, N. Y. Compressed yeast	53,000	May 22	122	1390
Fleischmann, Paul, East Boston, Mass. Bread	53,205	May 29	122	1711
Fletcher Manufacturing Company, Providence, R. I. Lamp and candle wicks	52,568	May 15	122	1032
Flinn, Fitz Allen, New York, N. Y. Paper and envelops	52,931	May 22	122	1387
Florence Manufacturing Company, Northampton, Mass. Tooth-brushes	52,808	May 15	122	1041
Florence Manufacturing Company, Northampton, Mass. Tooth-brushes	53,373	June 5	122	2047
Florence Manufacturing Company, Northampton, Mass. Tooth-brushes	53,374	June 5	122	2047
Florence Manufacturing Company, Northampton, Mass. Tooth-brushes	53,546	June 5	122	2054
Fluhrer Tobacco Company, Boonville, Ind. Smoking and chewing tobacco in twist form	53,340	May 29	122	1717
Follansbee Brothers Company, Pittsburg, Pa. Tin and terne plates	51,986	May 1	122	338
Follansbee Brothers Company, Pittsburg, Pa. Tin and terne plates	53,120	May 29	122	1708
Forbes, Andrew, Philadelphia, Pa. Whisky	53,626	June 5	122	2057
Forquignon, Emil, New York, N. Y. Scissors and shears	52,908	May 22	122	1386
Foss Gas Engine Company, Springfield, Ohio. Explosive-engines	53,975	June 19	122	2676
Foss, Packard & Co., Boston, Mass. Leather and canvas shoes	53,782	June 12	122	2380
Foster-McClellan Company, Buffalo, N. Y. Cathartic pills and tablets	53,073	May 22	122	1392
Foster-McClellan Company, Buffalo, N. Y. Cathartic pills and tablets	53,074	May 22	122	1393
Foster-McClellan Company, Buffalo, N. Y. Ointments	53,075	May 22	122	1393
Four Oaks Distilling Co., Birmingham, Ala. Whisky	54,747	June 26	122	3008
Fowler, Milton E., Lindale, Tex. Peach-trees	54,573	June 26	122	3001
Fownes Brothers & Co., London, England, and New York, N. Y. Gloves	52,137	May 1	122	344
Fox River Butter Company, Aurora, Ill. Butter	52,297	May 8	122	714
Fox River Butter Company, Aurora, Ill. Butter	54,426	June 26	122	2995
Francis H. Leggett & Company, New York, N. Y. Canned vegetables and fruits	52,322	May 8	122	715
Francis H. Leggett & Company, New York, N. Y. Olives	52,462	May 8	122	721
Francis H. Leggett & Company, New York, N. Y. Dried fruits	52,480	May 8	122	722
Francis H. Leggett & Company, New York, N. Y. Flavoring extracts	52,517	May 8	122	723
Francis H. Leggett & Company, New York, N. Y. Prepared cereal breakfast-foods	52,518	May 8	122	723
Franciscan Company, Santa Barbara, Cal. Cordial bitters	53,850	June 12	122	2382
Frank, George, San Jose, Cal. Dried fruits	54,427	June 26	122	2995
Franklin Electric Mfg. Co., Hartford, Conn., and New York, N. Y. Electric lamps	52,622	May 15	122	1034
Franklin, Lewis W., Boston, Mass. Leather shoes	53,821	June 12	122	2381
Franklin, Lewis W., Boston, Mass. Leather shoes	54,329	June 26	122	2991
Fraser, George H., New York, N. Y. Pulverizing machinery	53,515	June 5	122	2053
Fraser, George H., New York, N. Y. Pulverizing machinery	53,516	June 5	122	2053
Fred F. Field Co., Brockton, Mass. Leather boots, shoes, and slippers and leather therefor	54,707	June 26	122	3006
Frederick Stearns & Co., Detroit, Mich. Medicine for affections of the throat and bronchial tubes	53,037	May 22	122	1391
Frederick Stearns & Co., Detroit, Mich. Laxatives	53,076	May 22	122	1393
Frederick Stearns & Co., Detroit, Mich. Neuralgia and headache remedy	53,077	May 22	122	1393
Frederick Stearns & Co., Detroit, Mich. Neuralgia and headache remedy	53,078	May 22	122	1393
Frederick Stearns & Co., Detroit, Mich. Medicine for certain named diseases	53,079	May 22	122	1393
Frederick Stearns & Co., Detroit, Mich. Medicated wine	53,596	June 5	122	2056
Freeman Brothers, New York, N. Y. Men's and boys' stiff, soft, and straw hats	52,481	May 8	122	722
Freiberg, J. & A., Cincinnati, Ohio. Gin	52,323	May 8	122	715
Freiberg & Kahn, Cincinnati, Ohio. Whisky	53,038	May 22	122	1391
Freiberg & Kahn, Cincinnati, Ohio. Whisky	53,172	May 29	122	1710
Freiberg & Workum, Cincinnati, Ohio. Whisky	53,627	June 5	122	2057
Freiler, Philip, Elgin, Ill. Whisky	52,644	May 15	122	1034
Freiler, Philip, Elgin, Ill. Brandy	53,039	May 22	122	1391
French & Ward, New York, N. Y., and West Stoughton, Mass. Knit goods in the piece	52,717	May 15	122	1040
French, William W., Gloucester and Boston, Mass. Food for cats and kittens	52,776	May 15	122	1037
Freystadt Straussfeder Fabrik, W., Berlin, Germany. Ostrich-feathers	52,975	May 22	122	1389
Frictionless Metal Company, Richmond, Va. Bearing metal	52,264	May 8	122	713
Frictionless Metal Company, Richmond, Va. Bearing metal	52,265	May 8	122	713
Frictionless Metal Company, Richmond, Va. Bearing metal	52,266	May 8	122	713
Friend Bros. Clo. Co., Milwaukee, Wis. Overcoats and suits	54,102	June 19	122	2681
Frink, I. P., New York, N. Y. Electric and gas light reflectors	53,517	June 5	122	2053
Frits Thies Mercantile Co., Denver, Colo. Whisky	53,628	June 5	122	2057
Frostlene Manufacturing Company, Boston, Mass. Chemical and vegetable substitute for egg-whites	53,206	May 29	122	1711
Frostlene Manufacturing Company, Boston, Mass. Chemical and vegetable substitute for egg-whites	54,375	June 26	122	2992
Fruhauf & Co., Max, Cincinnati, Ohio. Whisky	53,418	June 5	122	2049
Fulton Bag & Cotton Mills, Atlanta, Ga. Twine	52,482	May 8	122	722

Alphabetical list of registrants of trade-marks for May and June—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Fulton Company, Knoxville, Tenn. Heat-regulators for use on boilers, furnaces, and stoves	53,173	May 29	122	1710
Fulton Tool Works, Canal Fulton, Ohio. Coal-miners' picks	52,748	June 12	122	2378
Funke, Albert H., New York, N. Y. Horns for motor-vehicles	52,208	May 8	122	714
Funke, Albert H., New York, N. Y. Acetylene-lamps and generators therefor for motor-vehicles	53,270	May 29	122	1714
G. Kammermann & Co. Schweizerische Trockenmilchgesellschaft, Glockenthal, Switzerland. Dry milk and dry-milk products in powder form	54,708	June 26	122	3006
Gabarró y Castelló, Alejo, Igualada, Spain. Playing-cards	53,437	June 5	122	2049
Gabriel & Schall, New York, N. Y. Asphalt mastic	54,005	June 19	122	2677
Gandy, Katherine, New York, N. Y. Women's bonnets, hats, and head-dresses	52,826	May 22	122	1383
Gargiulo & Co., P., New York, N. Y. Wines	53,040	May 22	122	1391
Garlock Packing Co., Palmyra, N. Y. Piston-rod and valve packing	54,202	June 19	122	2685
Garrettson & Co., F. P., Newport, R. I., and New York, N. Y. Tea	53,482	June 5	122	2051
Garrettson & Co., F. P., Newport, R. I., and New York, N. Y. Laundry soap	53,483	June 5	122	2051
Gary, Presley, Tiptonville, Tenn. Ointment	53,080	May 22	122	1393
Geary Milling & Elevator Company, Geary, Okla. Ter. Wheat-flour	52,951	May 22	122	1388
Gebauer, Max, New York, N. Y. Remedies for certain named diseases	52,418	May 8	122	719
Gelbtrunk, Isidoro, New York, N. Y. Cotton piece goods	52,093	May 1	122	342
Gem City Stove Co., Dayton, Ohio. Gas-stoves	53,122	May 29	122	1708
Gem City Stove Manufacturing Co., Quincy, Ill. Heating-stoves and cooking-stoves	53,658	June 12	122	2375
Gendron Wheel Co., Toledo, Ohio. Certain named vehicles	54,103	June 19	122	2681
General Safety Mantle Light Co., New York, N. Y. Burning fluids for use in lamps	52,299	May 8	122	714
Gennerich & Von Bremen, New York, N. Y. Canned fish	52,199	May 1	122	346
Gennerich & Von Bremen, New York, N. Y. Dried fruits	52,200	May 1	122	346
Gennerich & Von Bremen, New York, N. Y. Canned or bottled vegetables	52,201	May 1	122	346
Gennerich & Von Bremen, New York, N. Y. Spices	52,976	May 22	122	1389
Gennerich & Von Bremen, New York, N. Y. Macaroni and spaghetti	54,549	June 26	122	3000
Geo. A. Schmidt Co., Chicago, Ill. Toilet soap	53,341	May 29	122	1717
Geo. A. Schmidt Co., Chicago, Ill. Liquid, semiliquid, granular, and cake soap for toilet use	53,976	June 19	122	2676
Geo. Benz & Sons, St. Paul, Minn. Wine	53,914	June 12	122	2385
Geo. D. Witt Shoe Co., Lynchburg, Va. Leather boots and shoes	53,218	May 29	122	1712
Geo. D. Witt Shoe Co., Lynchburg, Va. Leather boots and shoes	53,419	June 5	122	2049
Geo. E. Keith Company, Brockton, Mass. Leather boots and shoes	52,267	May 8	122	713
Geo. E. Keith Company, Brockton, Mass. Shoe-dressing	53,001	May 22	122	1390
Geo. F. Eberhard Company, San Francisco, Cal. Disinfectants, antiseptics, and germicides	52,453	May 8	122	721
Geo. G. Snow Co., Brockton, Mass. Leather boots, shoes, and slippers	54,075	June 19	122	2680
George Bieler Sons Company, Cincinnati, Ohio. Whisky	53,880	June 12	122	2383
George Frost Company, Boston, Mass. Hose-supporters	53,174	May 29	122	1710
George Lueders & Co., New York, N. Y. Oil of orange, oil of bergamot, and oil of lemon	54,276	June 26	122	2989
George Martin Leather Co., Milwaukee, Wis. Calfskin	53,783	June 12	122	2380
George Wostenholm and Son, Limited, Sheffield, England. Certain named cutlery	53,722	June 12	122	2377
Georgetown Chemical Works, Georgetown, S. C. Spirits of turpentine	54,428	June 26	122	2995
Georgia Chemical Works, Augusta, Ga. Fertilizers	53,606	June 12	122	2376
Georgia Chemical Works, Augusta, Ga. Fertilizers	53,607	June 12	122	2376
Georgia Chemical Works, Augusta, Ga. Fertilizers	53,608	June 12	122	2376
Georgia Chemical Works, Augusta, Ga. Fertilizers	54,057	June 19	122	2679
Georgia Chemical Works, Augusta, Ga. Fertilizers	54,411	June 26	122	2994
Georgia Chemical Works, Augusta, Ga. Fertilizers	54,412	June 26	122	2994
Georgia Chemical Works, Augusta, Ga. Fertilizers	51,987	May 1	122	338
Gerhard, Philip H., Austin, Tex. Wood-preserving compounds	51,988	May 1	122	338
Gerstendorfer Bros., New York, N. Y. Oil and varnish paints, enamels, varnishes, and wood-stains	52,441	May 8	122	720
Gerstendorfer Bros., New York, N. Y. Metallic water-colors	52,847	May 22	122	1384
Gerstendorfer Bros., New York, N. Y. Certain named painters' supplies	53,547	June 5	122	2054
Gerstle Medicine Co., Chattanooga, Tenn. Remedy for certain named diseases	53,142	May 29	122	1709
Gibbens & Stream, New Orleans, La. Rubber packing	52,202	May 1	122	346
Gibbs Preserving Company of Baltimore City, Baltimore, Md. Canned oysters	54,187	June 19	122	2683
Gibbs Preserving Company of Baltimore City, Baltimore, Md. Canned oysters	52,203	May 1	122	346
Gilbert & Bennett Manufacturing Company, Georgetown, Conn. Door and window screen wire-cloth	53,098	May 29	122	1707
Gilbert Manufacturing Company, New York, N. Y. Cotton piece goods with a moiré finish	52,419	May 8	122	719
Gilbert, Son & Co., Murray, Ky. Smoking and chewing tobacco	52,560	May 15	122	1033
Gilliam, John, New York, N. Y. Canned lobsters	53,805	June 12	122	2381
Gilmaker Bros., San Francisco, Cal. Leather shoes	52,420	May 8	122	719
Gilpin, Langdon & Company, Incorporated, Baltimore, Md. Insect-powder	53,175	May 29	122	1710
Ginter Grocery Company, Boston, Mass. Gin	53,176	May 29	122	1710
Ginter Grocery Company, Boston, Mass. Gin	52,204	May 1	122	346
Glassup, Frederick, assignor to J. Gow & Company, New York, N. Y. Whisky	52,324	May 8	122	715
Glencoe Lime & Cement Company, St. Louis, Mo. Plaster	52,094	May 1	122	342
Glidden Varnish Company, Cleveland, Ohio. Varnish	52,884	May 22	122	1385
Globe Overall Co., Cincinnati, Ohio. Overalls	54,676	June 19	122	2680
Goetz and Co., Brooklyn, N. Y. Pianos	52,713	May 15	122	1037
Goetz Silk Manufacturing Company, Holyoke, Mass. Silk linings and dress-silks	53,177	May 29	122	1710
Golden and Company, Washington, D. C. Hams, shoulders, and bacon	54,610	June 26	122	3008
Golden and Company, Washington, D. C. Lard	54,203	June 19	122	2685
Golden Eagle Tea Co. Inc., Wilmington, Del. Wheat-flour	52,396	May 8	122	718
Goldman & Co., M., New York, N. Y., and Cleveland, Ohio. Women's, misses', and children's outer skirts	52,138	May 1	122	344
Goldman, Mary T., St. Paul, Minn. Tonics	54,616	June 26	122	3002
Goldoft, Isaac, El Paso, Tex. Wine	52,570	May 15	122	1032
Goldsmith, Edwin M., Philadelphia, Pa. Men's coats and trousers	52,483	May 8	122	722
Goldsmith's Sons, P., Cincinnati, Ohio. Gloves for athletic sports	53,310	May 29	122	1715
Gollings, Ellick H., Chicago, Ill. Laundry soap	53,597	June 5	122	2056
Goodall, Perkins & Co., San Francisco, Cal. Blasting-fuses	52,139	May 1	122	344
Goodlander Milling Company, Fort Scott, Kans. Wheat-flour	53,582	June 5	122	2055
Goodrich Drug Co., Omaha, Nebr. Liquid medicine	53,245	May 29	122	1713
Goodrich & Jennings, Anoka, Minn. Liniment	54,330	June 26	122	2991
Goodwin Durrell Co., Boston, Mass. Sleeping-garments	54,709	June 26	122	3006
Goodyear Rubber Company, New York, N. Y. Rubber boots and rubber shoes	52,661	May 15	122	1035
Gorham Mfg. Co., Providence, R. I. Silver-polish in liquid, powder, or paste form	54,036	June 19	122	2678
Gorham Mfg. Co., Providence, R. I. Leather purses and hand-bags	54,077	June 19	122	2680
Gorham Mfg. Co., Providence, R. I. Umbrellas and parasols	54,331	June 26	122	2991
Gorham Mfg. Co., Providence, R. I. Plated silverware				
Gorham Mfg. Co., Providence, R. I. Leather writing sets, writing-pads, and leather-bound blotting-pads	54,597	June 26	122	3002
Gorham Mfg. Co., Providence, R. I. Sterling and solid silver hollow ware, flat ware, and tableware	54,763	June 26	122	3008
Gorham Rubber Company, San Francisco, Cal. Rubber belting	52,008	May 1	122	341
Gorham Rubber Company, San Francisco, Cal. Rubber packing	52,268	May 8	122	713

Alphabetical list of registrants of trade-marks for May and June—Continued.

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Gorham Rubber Company, San Francisco, Cal. Rubber hose	54,550	June 26	122	3000
Gottschalk Co., Baltimore, Md. Whisky	52,677	May 15	122	1036
Gow & Company, John. (See Glassup, Frederick, assignor.)				
Gowan Medical Co., Durham, N. C. Remedy for pneumonia	54,617	June 26	122	3002
Graef, A., New York, N. Y. Razors	53,123	May 29	122	1708
Graef, A., New York, N. Y. Razors	53,723	June 12	122	2377
Graef & Schmidt, New York, N. Y. Pocket-knives	52,752	May 15	122	1039
Grafton, Edwin W., Washington, D. C. Roof-paints	54,066	June 19	122	2677
Graham Bros. & Co., Chicago, Ill. Skin-foods and complexion creams and ointments	53,041	May 22	122	1391
Grand Rapids Brush Co., Grand Rapids, Mich. Certain named brushes	54,204	June 19	122	2685
Grand Union Tea Co., Brooklyn, N. Y. Laundry and toilet soap	52,300	May 8	122	714
Grand Union Tea Co., Brooklyn, N. Y. Baking-powder	52,325	May 8	122	715
Grant, George S., Inveraven, Scotland. Pure malt Scotch whisky	53,002	May 22	122	1390
Graves & Sons, C. H., Boston, Mass. Whisky	53,400	June 5	122	2048
Gray, Fred L., Montpelier, Vt. Cough cure	54,598	June 26	122	3002
Greeder Manufacturing Company, Cincinnati, Ohio. Polishing-pad for flat-irons	52,678	May 15	122	1036
Green, Albert W., deceased; E. M. Green, St. Louis, Mo., executor. Cotton sheetings	53,629	June 5	122	2057
Green, Edwin M., executor. (See Green, Albert W.)				
Greene Tweed & Co., New York, N. Y. Belt awls and punches	52,035	May 1	122	340
Greene Tweed & Co., New York, N. Y. Belt-fasteners	52,359	May 8	122	717
Greene Tweed & Co., New York, N. Y. Belt-fasteners	52,519	May 8	122	723
Greene Tweed & Co., New York, N. Y. Packing	53,420	June 5	122	2049
Greenwood Cotton Mill, Greenwood, S. C. Cotton sheetings and drillings	52,977	May 22	122	1389
Griffin, Horatio M., Galt, Canada. Aromatic food preparations for animals	53,484	June 5	122	2051
Griffin & Skelley Co., San Francisco, Cal. Dried and evaporated fruits	53,749	June 12	122	2378
Griffiths Charcoal Iron Mills, Washington, Pa. Unmanufactured iron ternes in sheet-form	53,977	June 19	122	2676
Grifton Company, New York, N. Y. Worsted, woolen, and cotton mixed piece goods	52,952	May 22	122	1388
Grifton Company, New York, N. Y. Worsted, woolen, and cotton mixed piece goods	53,915	June 12	122	2385
Griggs, Cooper & Co., St. Paul, Minn. Syrup	52,326	May 8	122	715
Griggs, Cooper and Company, St. Paul, Minn. Castor-oil	52,172	May 1	122	345
Griggs, Cooper & Company, St. Paul, Minn. Canned lobster	52,327	May 8	122	715
Griggs, Cooper & Company, St. Paul, Minn. Canned fruits and vegetables	52,645	May 15	122	1034
Griggs, Cooper and Company, St. Paul, Minn. Olives	53,784	June 12	122	2380
Griggs, Cooper & Company, St. Paul, Minn. Pickled limes	54,205	June 19	122	2685
Griggs, Cooper & Company, St. Paul, Minn. Horse-radish cream	54,206	June 19	122	2685
Griggs, Cooper & Company, St. Paul, Minn. Capers	54,207	June 19	122	2685
Grom, Otto C. B., New York, N. Y. Remedy for coughs and colds	54,058	June 19	122	2679
Grosvenor & Co., J. M., Boston, Mass. Medicinal plasters	51,980	May 1	122	338
Grosvenor & Co., J. M., Boston, Mass. Medicinal plasters	52,140	May 1	122	344
Grosvenor & Co., J. M., Boston, Mass. Capsules	54,599	June 26	122	3002
Grunert, Ferdinand, Chicago, Ill. Butter	52,885	May 22	122	1385
Guckenheimer & Bros., Asher, Pittsburg, Pa. Whisky	52,173	May 1	122	345
Guckenheimer & Bros., Asher, Pittsburg, Pa. Whisky	53,042	May 22	122	1391
Guckenheimer & Bros., Asher, Pittsburg, Pa. Whisky	53,124	May 29	122	1708
Gulden, Charles, New York, N. Y. Olives	53,099	May 29	122	1707
Gulf Refining Company, Port Arthur, Tex., and Pittsburg, Pa. Petroleum lubricating-oils	52,592	May 15	122	1033
Gulf Refining Company, Port Arthur, Tex., and Pittsburg, Pa. Petroleum lubricating-oils	52,593	May 15	122	1033
Gus Edwards Music Publishing Co., New York, N. Y. Sheet-music, music-instruction books, and opera-scores	54,277	June 26	122	2989
Gutchess, Huber C., Port Byron, N. Y. Pie-fillings	52,777	May 15	122	1040
H. Adler Company, Carnegie, Pa., and Kansas City, Mo. Heating and cooking appliances	54,278	June 26	122	2989
H. Adler Company, Carnegie, Pa., and Kansas City, Mo. Gas-burners	54,574	June 26	122	3001
H Jayess Remedy Co., Baltimore, Md. Liquid remedy for liver and bowel ailments	52,252	May 1	122	348
H. A. Metz & Co., New York, N. Y. Materials suitable for the sizing and finishing of textile fibers	53,750	June 12	122	2378
H. A. Metz & Co., New York, N. Y. Materials suitable for the sizing and finishing of textile fibers	53,751	June 12	122	2378
H. A. Metz & Co., New York, N. Y. Dyestuffs and coloring-matters	53,851	June 12	122	2382
H. A. Metz & Co., New York, N. Y. Dyestuffs and coloring-matters	53,852	June 12	122	2382
H. A. Metz & Co., New York, N. Y. Dyestuffs and coloring-matters	53,853	June 12	122	2382
H. A. Metz & Co., New York, N. Y. Dyestuffs and coloring-matters	53,854	June 12	122	2382
H. A. Metz & Co., New York, N. Y. Dyestuffs and coloring-matters	53,855	June 12	122	2383
H. A. Metz & Co., New York, N. Y. Dyestuffs and coloring-matters	53,861	June 12	122	2383
H. A. Metz & Co., New York, N. Y. Dyestuffs and coloring-matters	53,916	June 12	122	2385
H. A. Metz & Co., New York, N. Y. Dyestuffs and coloring-matters	53,917	June 12	122	2385
H. A. Metz & Co., New York, N. Y. Dyestuffs and coloring-matters	53,918	June 12	122	2385
H. C. Christians Co., Johnson Creek, Wis. Butter	54,495	June 26	122	2998
H. D. Smith Co., Cincinnati, Ohio. Chewing-gum	53,219	May 29	122	1712
H. F. Webb Company, Portland, Me. Canned corn and canned succotash	54,136	June 19	122	2682
H. F. Webb Company, Portland, Me. Canned corn and canned succotash	54,137	June 19	122	2682
H. F. Webb Company, Portland, Me. Canned corn and canned succotash	54,191	June 19	122	2684
H. K. Mulford Company, Philadelphia, Pa. Mouth and tooth wash	54,618	June 26	122	3002
H. L. Griesedieck Dist'g Co., St. Louis, Mo. Whisky	53,043	May 22	122	1391
H. T. Paiste Co., Philadelphia, Pa. Devices for connecting branch and main circuits	52,909	May 22	122	1386
H. T. Paiste Co., Philadelphia, Pa. Current-distributing cut-out boards	53,220	May 29	122	1712
H & W Company, Newark, N. J. Corsets and corset-waists	52,679	May 15	122	1036
Haan, Rudolph M., New York, N. Y. Scotch whisky	53,548	June 5	122	2054
Hagan & Dodd Co., Atlanta, Ga. Ginger-ale	53,598	June 5	122	2056
Halderman & Michael, Chicago, Ill. Facial cream	52,141	May 1	122	344
Hale, Annie M., *et al.*, executors. (See Draper, Oscar M.)				
Hale, Edwin E., *et al.*, executors. (See Draper, Oscar M.)				
Hall Hartwell & Co., Troy, N. Y. Shirts, collars, and cuffs	54,270	June 26	122	2989
Hallaman, Michael, New York, N. Y. Elastic foot-coverings for horses	52,095	May 1	122	342
Hamann, Adolf, Dresden, Germany. Porcelain ware of all kinds	52,719	May 15	122	1037
Hamburger Company, Ph., Pittsburg, Pa. Whisky	53,246	May 29	122	1713
Hamilton-Brown Shoe Company, St. Louis, Mo. Leather shoes	54,037	June 19	122	2678
Hamilton-Brown Shoe Company, St. Louis, Mo. Men's and boys' leather shoes	54,038	June 19	122	2678
Hamilton-Brown Shoe Company, St. Louis, Mo. Men's leather shoes	54,138	June 19	122	2682
Hamilton-Brown Shoe Company, St. Louis, Mo. Men's leather shoes	54,139	June 19	122	2682
Hamilton-Brown Shoe Company, St. Louis, Mo. Men's leather shoes	54,140	June 19	122	2682
Hammacher, Dehus & Co., New York, N. Y. Steel in bars and sheets	54,748	June 26	122	3006
Hanan-Matthewson Company, Cleveland, Ohio. Shoes and slippers manufactured from leather	54,168	June 19	122	2683
Hanan & Son, New York, N. Y. Leather and cloth boots, slippers, and shoes	53,143	May 29	122	1709
Hance Bros. & White, Philadelphia, Pa. Antiseptic or disinfecting chemical compound	52,778	May 15	122	1040
Hance Bros. & White, Philadelphia, Pa. Cigars	54,104	June 19	122	2681
Hansen, Julius G., Reading, Pa. Cigars	54,445	June 26	122	2995
Hansen-Schmitt Co., Milwaukee, Wis. Long-cut tobacco for both smoking and chewing	53,724	June 12	122	2377
Harper, Charles W., Boston, Mass. Electrical appliances for assisting the hearing	52,978	May 22	122	1389
Harris, Thomas, New York, N. Y. Scrapple				

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Hart & Crouse Co., Utica, N. Y. Steam, hot-water, and hot-air heaters	52,596	May 15	122	1033
Hart, Edgar J. M., New York, N. Y. Lotion	54,659	June 26	122	3004
Hart, Francis X., New York, N. Y. Certain named medicines	54,078	June 19	122	2680
Hart Manufacturing Company, Hartford, Conn. Certain named electrical appliances	52,848	May 22	122	1384
Hartford Carpet Corporation, Thompsonville, Conn., and New York, N. Y. Rugs	54,105	June 19	122	2681
Hartmann Brewing Company, Bridgeport, Conn. Lager-beer	53,421	June 5	122	2049
Hartmiller, Frank J., Lebanon, Mo. Remedy for certain named diseases	53,342	May 29	122	1717
Harvard Brewing Co., Lowell, Mass. Beer and lager-beer	52,484	May 8	122	722
Harvard Brewing Co., Lowell, Mass. Beer and lager-beer	52,646	May 15	122	1034
Harvard Brewing Co., Lowell, Mass. Beer and lager-beer	53,881	June 12	122	2384
Harvard Brewing Co., Lowell, Mass. Beer and lager-beer	53,125	May 29	122	1708
Harvey & Son, Squire T., Chicago, Ill. Whisky	53,862	June 12	122	2383
Harvey, Theodore R., Westfield, N. J. Tooth-powder and antiseptic mouth-wash	52,695	May 15	122	1036
Hauck, Louise, New York, N. Y. Polishing and cleansing preparations	52,720	May 15	122	1037
Hauck, Louise, New York, N. Y. Shampoo and scalp-cleansing preparations	52,696	May 15	122	1036
Havana Commercial Company, Jersey City, N. J., and New York, N. Y. Havana cigars	53,978	June 19	122	2676
Havana Commercial Company, Jersey City, N. J., and New York, N. Y. Havana cigars	54,007	June 19	122	2677
Havana Commercial Company, Jersey City, N. J., and New York, N. Y. Havana cigars	53,485	June 5	122	2051
Havana Commercial Company, New York, N. Y. Havana cigars	53,486	June 5	122	2051
Havana Commercial Company, New York, N. Y. Havana cigars	54,496	June 26	122	2998
Havana Commercial Company, New York, N. Y. Havana cigars	52,953	May 22	122	1388
Hawkes, A. K., Atlanta, Ga. Spectacles, eyeglasses, and lenses	54,008	June 19	122	2677
Hawley & Hoops, New York, N. Y. Cocoa and chocolate	54,619	June 26	122	3002
Hayden, Sarah H. E., Bedford Springs, Mass. Remedy for certain named diseases	52,174	May 1	122	345
Hayden W. Wheeler & Co., New York, N. Y. Watchcases and watch-movements	52,662	May 15	122	1035
Hayes Mfg. Co., Paterson, N. J. Range-boilers	54,039	June 19	122	2678
Heide, Henry, New York, N. Y. Various kinds of chocolates and bonbons	54,208	June 19	122	2685
Heide, Henry, New York, N. Y. Peanut-butter	53,599	June 5	122	2056
Heine & Co., New York, N. Y. Oils used in the manufacture of perfume	54,700	June 26	122	3006
Heinr. Böker & Co., Solingen, Germany. Scissors and shears	54,511	June 26	122	2998
Heinzerling & Co., Baltimore, Md. Carbonated non-intoxicating tonic beverage	54,512	June 26	122	2998
Heinzerling & Co., Baltimore, Md. Carbonated non-intoxicating tonic beverage	54,600	June 26	122	3002
Heinzerling & Co., Baltimore, Md. Carbonated non-intoxicating tonic beverage	53,630	June 5	122	2057
Heisel, Joseph H., Leetonia, Ohio. Wheat-flour	54,040	June 19	122	2678
Heller-Aller Co., Napoleon, Ohio. Windmills	53,822	June 12	122	2381
Hellert & Sons, H. J., Vincennes, Ind. Whisky	52,454	May 8	122	721
Henke, Elizabeth, Stanley, Wis. Remedy for dropsy	54,446	June 26	122	2995
Hennessy & Co., Jas., Cognac, France. Brandy	53,003	May 22	122	1390
Henry Block Co., Limited, New Orleans, La. Wine	53,678	June 12	122	2376
Henry Disston & Sons, Incorporated, Philadelphia, Pa. Saws	53,699	June 12	122	2377
Henry Disston & Sons, Incorporated, Philadelphia, Pa. Saws	53,700	June 12	122	2377
Henry Disston & Sons, Incorporated, Philadelphia, Pa. Saws	53,701	June 12	122	2377
Henry Disston & Sons, Incorporated, Philadelphia, Pa. Saws	53,702	June 12	122	2377
Henry Disston & Sons, Incorporated, Philadelphia, Pa. Saws	53,752	June 12	122	2379
Henry Disston & Sons, Incorporated, Philadelphia, Pa. Saws	54,244	June 26	122	2987
Henry Disston & Sons, Incorporated, Philadelphia, Pa. Saws	54,245	June 26	122	2987
Henry Disston & Sons, Incorporated, Philadelphia, Pa. Saws	52,442	May 8	122	720
Henry E. Frankenberg Company, New York, N. Y. Woolen, worsted, and mohair yarns	52,443	May 8	122	720
Henry E. Frankenberg Company, New York, N. Y. Woolen, worsted, and mohair yarns	52,328	May 8	122	715
Henry Milward & Sons, Limited, Redditch, England. Needles for hand and machine sewing	52,485	May 8	122	722
Henry Milward & Sons, Limited, Redditch, England. Fish-hooks	53,540	June 5	122	2054
Henry Milward & Sons Limited, Redditch, England. Fish-hooks, artificial flies, and artificial baits	53,311	May 29	122	1715
Henry Tobias and Company, New York, N. Y. Cigars	53,823	June 12	122	2381
Hentz, Jacob H., Jr., Philadelphia, Pa. Rye whisky	53,895	June 12	122	2384
Herbst Importing Co., S. C., Milwaukee, Wis. Cocktails	52,827	May 22	122	1383
Herring-Hall-Marvin Safe Company, Hamilton, Ohio, and New York, N. Y. Safes	54,280	June 26	122	2989
Herring-Hall-Marvin Safe Company, Hamilton, Ohio, and New York, N. Y. Safes	54,710	June 26	122	3006
Herring-Hall-Marvin Safe Company, Hamilton, Ohio, and New York, N. Y. Safes	54,749	June 26	122	3008
Hersey Manufacturing Company, Boston, Mass. Fluid-meters	52,205	May 1	122	347
Hersey, Oscar H., Portland, Me. Wooden toothpicks	52,397	May 8	122	718
Hershey, Milton S., Derry Church, Pa. Sweetened chocolate and candy of all kinds	52,398	May 8	122	718
Hershey, Milton S., Derry Church, Pa. Sweetened chocolate and candy of all kinds	52,399	May 8	122	718
Hershey, Milton S., Derry Church, Pa. Sweetened chocolate and candy of all kinds	54,041	June 19	122	2678
Hershey, Milton S., Derry Church, Pa. Chocolate, cocoa, and preparations thereof	54,497	June 26	122	2998
Hershey, Milton S., Derry Church, Pa. Chocolate, cocoa, and chocolate preparations	53,631	June 5	122	2057
Hess-Bright Manufacturing Co., Philadelphia, Pa. Ball-bearings	52,175	May 1	122	345
Hess & Clark, Dr., Ashland, Ohio. Insect killer or exterminator	53,081	May 29	122	1393
Hess & Clark, Dr., Ashland, Ohio. Heave-powder	53,247	May 22	122	1713
Hess & Clark, Dr., Ashland, Ohio. Medicinal and stock food	52,828	May 22	122	1383
Hess, Lippman F., Philadelphia, Pa. Rain-proof coats	53,659	June 12	122	2375
Hessenbruch, Hermann, Philadelphia, Pa. Razors	53,660	June 12	122	2375
Heuter, E. L., San Francisco, Cal. Varnish	52,099	May 1	122	341
Heymann & Co., Oscar, New York, N. Y. Corks	52,680	May 15	122	1036
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Certain named knives and razors	52,681	May 15	122	1036
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Sewing-machines and sewing-machine parts	52,682	May 15	122	1036
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Certain named knives and razors	52,697	May 15	122	1036
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Telephones and parts thereof				
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Silver-plated hollow ware, flat ware, and tableware	52,721	May 15	122	1037
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Harness, saddles, and parts thereof	52,722	May 15	122	1037
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Harness, saddles, and parts thereof	52,723	May 15	122	1037
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Silver-plated hollow ware, flat ware, and tableware	52,724	May 15	122	1037
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Certain named knives	53,178	May 29	122	1710
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Lawn-mowers and parts thereof	53,248	May 29	122	1713
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Shovels, spades, scoops, and spading-forks	53,550	June 5	122	2054
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Shears and scissors	53,679	June 12	122	2376
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Saws and saw-blades	53,680	June 12	122	2376
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Food and meat choppers	53,681	June 12	122	2376
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Shotguns, rifles, pistols, and parts thereof	53,979	June 19	122	2676
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Kitchen utensils made of tin	54,042	June 19	122	2678
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Axes, hatchets, and adzes	54,059	June 19	122	2679
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Knives and razors	54,060	June 19	122	2679
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Axes, hatchets, and adzes	54,061	June 19	122	2679
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Axes, hatchets, and adzes	54,079	June 19	122	2680
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Base-balls, foot-balls, and tennis-balls	54,106	June 19	122	2681
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Axes, hatchets, and adzes	54,107	June 19	122	2681

Alphabetical list of registrants of trade-marks for May and June—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Foot-balls, base-balls, and tennis-balls	54,141	June 19	122	2682
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Knives and razors	54,246	June 26	122	2987
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Bicycles, tricycles, velocipedes, and parts thereof	54,247	June 26	122	2987
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Mixed paints	54,468	June 26	122	2996
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Household utensils made of enameled steel or iron ware	54,601	June 26	122	3002
Higdon, John C., St. Louis, Mo. Automobiles	53,725	June 12	122	2377
Highland Milling Company, Highland, Ill. Wheat-flour	52,954	May 22	122	1388
Hilbert Mercantile Co., San Francisco, Cal. Whisky	52,647	May 15	122	1034
Hildreth, Herbert L., Boston, Mass. Candy	52,070	May 1	122	341
Hill, James B., Los Angeles, Cal. Metal-polish	52,301	May 8	122	714
Hill, Joseph P., Worcester, Mass. Ash-sifters	52,849	May 22	122	1384
Hill, Robert, New York, N. Y. Olive-oil	52,753	May 15	122	1039
Hill, Robert, New York, N. Y. Olive-oil	52,754	May 15	122	1039
Hill, Robert, New York, N. Y. Olive-oil	52,755	May 15	122	1039
Hill Top Oil Co. Ltd., New Orleans, La. Axle-grease	53,461	June 5	122	2050
Hiller Confectionery Company, Canajoharie, N. Y. Candy	54,469	June 26	122	2996
Himes, Jacob E., Kansas City, Mo. Brewers' pitch	53,221	May 29	122	1712
Hinds, Aurelius S., Portland, Me. Liquid lotion or emulsion for the skin	54,660	June 26	122	3004
Hinkley Bone Liniment Company, Saginaw, Mich. Liniment	53,312	May 29	122	1715
Hirsch Brothers, New Haven, Conn. Waterproof hats and caps	54,043	June 19	122	2678
Hirsch Brothers, New Haven, Conn. Leather and canvas boots and shoes	54,080	June 19	122	2680
Hirsch & Co., S., Kansas City, Mo. Whisky	52,176	May 1	122	345
Hirsch & Co., S., Kansas City, Mo. Whisky	54,750	June 26	122	3008
Hirschhorn, Edward, New York, N. Y. Whisky	54,751	June 26	122	3008
Hirschman, Harris, Baltimore, Md. Black Graham bread	52,543	May 8	122	724
Hirsh Brothers, New Haven, Conn. Waterproof textile fabrics and garments made therefrom	52,360	May 8	122	717
Hobson Houghton & Co. Ltd., Sheffield, England. Steel in bars, plates, rods, and wire	54,661	June 26	122	3004
Hochstadter, Sigmund, New York, N. Y. Bitters	53,551	June 5	122	2054
Hodge Fence & Lumber Co., Ltd., Lake Charles, La. Wire fences and combination wood and wire fences	54,009	June 19	122	2677
Hoffheimer Bros. Co., Cincinnati, Ohio. Whisky	53,126	May 29	122	1708
Hoffheimer Bros. Co., Cincinnati, Ohio. Whisky	53,600	June 5	122	2056
Hoffheimer Bros. Co., Cincinnati, Ohio. Whisky	53,632	June 5	122	2058
Hoffman and Co., Red Hook, N. Y. Chewing and smoking tobacco	52,486	May 8	122	722
Hohenadel, P., Jr., Janesville, Wis., and Rochelle, Ill. Canned corn	52,979	May 22	122	1389
Hohenadel, P., Jr., Janesville, Wis., and Rochelle, Ill. Canned corn and canned sauer-kraut	54,513	June 26	122	2998
Hohenadel, P., Jr., Janesville, Wis., and Rochelle, Ill. Canned corn and canned sauer-kraut	54,514	June 26	122	2998
Hol-Tan Company, New York, N. Y. Automobiles	54,281	June 26	122	2989
Holberg, Abraham S., Mobile, Ala. Ginger-ale	52,096	May 1	122	342
Holgate, George H., Philadelphia, Pa. Self-carbureting lamps	53,144	May 29	122	1709
Holland Rusk Co., Holland, Mich. Biscuits known as rusks	52,206	May 1	122	347
Hollingsworth & Whitney Company, Boston, Mass. Wrapping-paper, paper bags, and paper sacks.	53,223	May 29	122	1712
Hollingsworth & Whitney Company, Boston, Mass. Wrapping-paper, paper bags, and paper sacks.	53,343	May 29	122	1717
Hollingsworth & Whitney Company, Boston, Mass. Wrapping-paper, paper bags, and paper sacks.	53,384	June 5	122	2047
Hollingsworth & Whitney Company, Boston, Mass. Wrapping-paper, paper bags, and paper sacks.	53,385	June 5	122	2047
Holloway, William, Philadelphia, Pa. Medicated ointment	53,207	May 29	122	1711
Holmes & Barber, Valdosta, Ga. Ginger-ale	54,551	June 26	122	3000
Holophane Glass Company, New York, N. Y. Periodical publication	53,806	June 12	122	2381
Holzman Mfg. Co., Baltimore, Md., and New York, N. Y. Shirt-waists and shirt-waist suits	54,662	June 26	122	3004
Hook & Crownfield, Baltimore, Md. Chocolate-coated candy	52,071	May 1	122	341
Hoon, Nettie M., Mercer, Pa. Antiseptic solution	52,142	May 1	122	344
Hooper Medicine Company, Hillsboro, Tex. Cure for tetter	53,313	May 29	122	1716
Hopkins, Ferdinand T., New York, N. Y. Depilatory powders	54,663	June 26	122	3004
Horn, James A., Hornsprings, Tenn. Mineral water	53,314	May 29	122	1716
Horton Manufacturing Company, Bristol, Conn. Fishing-rods	52,756	May 15	122	1039
Horton, Stephen D., Peekskill, N. Y. Fire-bricks for lining stoves and furnaces	52,548	May 15	122	1031
Horwood, Edward H., New York, N. Y. Underwaists	53,552	June 5	122	2054
Hoster-Columbus Associated Breweries Co., Columbus, Ohio. Beer	53,884	June 12	122	2384
Hoster-Columbus Associated Breweries Co., Columbus, Ohio. Beer	54,602	June 26	122	3002
Hoster-Columbus Associated Breweries Co., Columbus, Ohio. Beer	54,603	June 26	122	3002
Hovey & Co., C. F., Boston, Mass. Dress-shields	53,249	May 29	122	1713
Howard, Wm. G., *et al.*, executors. (See Beckwith, Philo D.)				
Howe, Brown & Co., Ltd., Pittsburg, Pa. Steel	54,307	June 26	122	2990
Howe, Charles L., Boston, Mass. Certain named chemical preparation	54,108	June 19	122	2681
Howell Mfg. Co. Hamilton, Ohio. Baking-powder	54,552	June 26	122	3000
Howells Mining Drill Co., Plymouth, Pa. Drills and drilling-machines	52,361	May 8	122	717
Hoyt, Joseph M., Danvers, Mass. Checking-crayons, school-crayons, and marking-crayons	53,422	June 5	122	2049
Hubbs & Corning Co., Baltimore, Md. Wrapping cord and twine	52,362	May 8	122	717
Hubbs & Corning Co., Baltimore, Md. Toilet-papers	52,421	May 8	122	719
Hudon, Charles B., Manchester, N. H. Internal remedy for headache	52,779	May 15	122	1040
Hudson & Co., Inc., New York, N. Y. Preparations for the treatment of the head and hair	53,082	May 22	122	1393
Hudson County Consumers Brewing Co., West Hoboken, N. J. Lager-beer	52,520	May 8	122	723
Hughes Company, William O., Los Angeles, Cal. Antiseptic dressing	54,044	June 19	122	2679
Hughes, Henry L., Chicago, Ill. Hair-brushes	54,282	June 26	122	2989
Hughes, Russell M., Louisville, Ky. Fruit-juice beverage	52,329	May 8	122	716
Hull Coal and Coke Corporation, Roanoke, Va. Coal and coke	52,072	May 1	122	341
Hulman & Co., Terre Haute, Ind. Spices and mustard	53,100	May 29	122	1707
Humphreys, Godwin & Co., Memphis, Tenn. Cotton-seed meal and nut-cake	53,401	June 5	122	2048
Hunold, Ernest, Providence, R. I. Liquids for use in sharpening edged instruments	53,980	June 19	122	2676
Hunter, J. B., Zanesville, Ohio. Leather boots and shoes	52,829	May 22	122	1383
Hunter, J. B., Zanesville, Ohio. Leather boots and shoes	52,932	May 22	122	1387
Hutchison Acoustic Company, New York, N. Y. Telephones	53,753	June 12	122	2379
Hygienic Food Co., Battle Creek, Mich. Prepared cereal breakfast-foods	54,376	June 26	122	2992
Hylin & Co., Fabriks Aktiebolag, Stockholm, Sweden. Antiseptic compound	54,332	June 26	122	2991
Hyman & Son, Elias, Cincinnati, Ohio. Whisky	54,752	June 26	122	3008
I. B. Kleinert Rubber Company, New York, N. Y. Dress-shields	52,549	May 15	122	1031
I. B. Kleinert Rubber Company, New York, N. Y. Hose-supporters	52,550	May 15	122	1031
I. B. Kleinert Rubber Company, New York, N. Y. Hose-supporters	52,551	May 15	122	1031
I. B. Kleinert Rubber Company, New York, N. Y. Dress-shields	52,571	May 15	122	1032
I. B. Kleinert Rubber Company, New York, N. Y. Dress-shields	52,572	May 15	122	1032
I. B. Kleinert Rubber Company, New York, N. Y. Dress-shields	52,573	May 15	122	1032
I. B. Kleinert Rubber Company, New York, N. Y. Dress-shields	52,574	May 15	122	1032
I. B. Kleinert Rubber Company, New York, N. Y. Dress-shields	52,575	May 15	122	1032
I. B. Kleinert Rubber Company, New York, N. Y. Dress-shields	54,142	June 19	122	2682

Alphabetical list of registrants of trade-marks for May and June—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
I. S. Remson Mfg. Co., Brooklyn, N. Y. Carriages and wagons	54,711	June 26	122	3006
Ide & Sons, A. L., Springfield, Ill. Side-crank steam-engines	54,333	June 26	122	2991
Ide & Sons, A. L., Springfield, Ill. Center-crank steam-engines	54,334	June 26	122	2991
Idone, Angelicus R., Pittsburg, Pa. Plasters	51,966	May 1	122	337
Ihle and Grupp, Buffalo, N. Y. Brushes	52,143	May 1	122	344
Illuminating Engineering Publishing Co., New York, N. Y. Periodical publication	53,807	June 12	122	2381
Importers Coffee Company, Duluth, Minn. Roasted coffee in cans or other packages	52,663	May 15	122	1035
Independent Cotton Oil Co., Chicago, Ill. Cooking and baking oils	53,487	June 5	122	2051
Independent Snuff Company, Chicago, Ill. Smoking and chewing tobacco	53,315	May 29	122	1716
Independent Tobacco Manufacturers Promoting Company, Chicago, Ill. Cigars, stogies, and cheroots	53,344	May 29	122	1717
Independent Tobacco Manufacturers Promoting Company, Chicago, Ill. Leaf-tobacco, smoking and chewing tobacco	54,447	June 26	122	2996
Indian Head Mills of Alabama, Cordova, Ala. Cotton piece goods	54,169	June 19	122	2683
Indiana Mfg. Company, Peru, Ind. Refrigerators and ice-chests	54,283	June 26	122	2989
Industrie-Gesellschaft für Schappe, Basel, Switzerland. Spun silk	53,633	June 5	122	2058
Ineeda-Cofpho Company, Incorporated, Louisville, Ky. Antiseptic and emollient medicine	54,620	June 26	122	3002
Ingram, Frederick F., Detroit, Mich. Face-creams	52,177	May 1	122	345
Institut Pasteur. (See Yvon, Paul, assignor.)				
Interior Hardwood Co., Indianapolis, Ind. Liquid-varnish coating for interior woodwork	53,661	June 12	122	2375
International Harvester Co. of America, Chicago, Ill. Self-binding harvesters, reapers, mowers, and separate parts thereof	52,097	May 1	122	342
International Harvester Co. of America, Chicago, Ill. Harvesters, mowers, and reapers and parts thereof	52,521	May 8	122	724
International Harvester Company of America, Chicago, Ill. Harvesters	52,010	May 1	122	339
International Harvester Company of America, Chicago, Ill. Harvesters and parts thereof	53,726	June 12	122	2378
International Harvester Company of America, Chicago, Ill. Centrifugal cream-separators	54,515	June 26	122	2998
International Shirt and Collar Company, Troy, N. Y. Shirts, collars, and cuffs	54,664	June 26	122	3004
International Silver Company, Meriden, Conn. Silver-plated hollow ware	52,757	May 15	122	1039
International Union of Journeymen Horseshoers, Denver, Colo. Horseshoes	52,910	May 22	122	1386
Isaac Harter Milling Company, Toledo and Fostoria, Ohio. Wheat-flour	52,698	May 15	122	1036
Ives & Co., W. P., Norfolk, Va. Whisky	53,402	June 5	122	2048
Iwahara, Kenzo, New York, N. Y. Cotton sheetings and drills	54,553	June 26	122	3000
J. Ellwood Lee Company, Conshohocken, Pa. Elastic hosiery	52,363	May 8	122	717
J. Ellwood Lee Company, Conshohocken, Pa. Suspensory bandages and trusses	52,422	May 8	122	719
J. Ellwood Lee Company, Conshohocken, Pa. Trusses	52,623	May 15	122	1034
J. Ellwood Lee Company, Conshohocken, Pa. Trusses	52,624	May 15	122	1034
J. Ellwood Lee Company, Conshohocken, Pa. Suspensory bandages	52,664	May 15	122	1035
J. Ellwood Lee Company, Conshohocken, Pa. Adhesive plaster	52,665	May 15	122	1035
J. Ellwood Lee Company, Conshohocken, Pa. Medicinal plasters	54,712	June 26	122	3006
J. C. Pearson Co., Boston, Mass. Nails provided with a non-metallic coating	52,269	May 8	122	713
J. D. Riedel Aktiengesellschaft, Berlin, Germany. Certain named medicinal preparation	53,919	June 12	122	2385
J. & F. Schroth Packing Co., Cincinnati, Ohio. Lards	54,377	June 26	122	2992
J. G. Haas Soap Co., St. Louis, Mo. Laundry soap	52,850	May 22	122	1384
J. G. Haas Soap Co., St. Louis, Mo. Laundry soap	54,429	June 26	122	2995
J. G. Haas Soap Co., St. Louis, Mo. Laundry soap	54,430	June 26	122	2995
J. H. Williams & Co., New York, N. Y. Wrenches and vises	54,062	June 19	122	2679
J. J. Douglas Co., Louisville, Ky. Gin	53,403	June 5	122	2048
J. M. Horton Ice Cream Co., New York, N. Y. Ice-cream, ices, and frozen custards	51,969	May 1	122	337
J. & P. Coats, Ltd., Paisley, Scotland. Sewing-cotton wound on spools or reels	53,250	May 29	122	1713
J. P. Eustis Mfg. Co., Portland, Me. Certain named holders	54,753	June 26	122	3008
J. W. Beardsley's Sons, New York, N. Y. Salted and boneless fish	52,144	May 1	122	344
J. W. Beardsley's Sons, New York, N. Y. Salted and boneless codfish	52,145	May 1	122	344
J. W. Beardsley's Sons, New York, N. Y. Salted and boneless fish	54,554	June 26	122	3000
Jacob J. Seeds & Co., Philadelphia, Pa. Panama hats	54,022	June 19	122	2678
Jaenecke Printing Ink Co., Newark, N. J. Certain named colors and inks	53,488	June 5	122	2051
Jaenecke Printing Ink Co., Newark, N. J. Printing and lithographing inks, printing-ink varnishes and dry colors	54,604	June 26	122	3002
James A. Banister Company, Newark, N. J. Men's and boys' leather boots, shoes, and slippers	52,911	May 22	122	1386
James C. Lindsay Hardware Co., Pittsburg, Pa. Pocket-knives and butcher-knives	53,754	June 12	122	2379
James Hanley Brewing Co., Providence, R. I. Ale	52,036	May 1	122	340
James Irving & Son, Limited, Chester, Pa. Cassimeres	54,335	June 26	122	2991
James Means Company, Kittery, Me. Leather shoes	54,248	June 26	122	2988
Jamison, James, New York, N. Y. Hosiery	54,192	June 19	122	684
Jaros Importing and Distributing Co. (See Clover Leaf Wine Co., assignor.)				
Jay C. Wemple Co., New York, N. Y. Window-shade cloth and shades	52,912	May 22	122	1386
Jenkins, Alfred B., New York, N. Y., and Boston, Mass. Rubber packing, gaskets, disks, rings, and washers	54,081	June 19	122	2680
Jenkins, Alfred B., New York, N. Y., and Boston, Mass. Rubber packing, rubber gaskets, rubber disks, rubber rings, and rubber washers	54,209	June 19	122	2685
Jennings, Albert G., New York, N. Y. Hair-nets	52,146	May 1	122	344
Jennings, Albert G., New York, N. Y. Hair-nets	52,147	May 1	122	344
Jewett Piano Co., Leominster, Mass. Pianos	52,423	May 8	122	719
Joern, Theodore, St. Louis, Mo. Preparation for cleaning	52,594	May 15	122	1033
John B. Canepa Company. (See Canepa, John B., assignor.)				
John B. Canepa Company, Chicago, Ill. Macaroni, spaghetti, and vermicelli	52,980	May 22	122	1389
John B. Stetson Company, Philadelphia, Pa. Hats and caps	51,990	May 1	122	338
John Boehm Co., Pittsburg, Pa. Noodles and vermicelli	53,462	June 5	122	2050
John F. Meyer & Sons Milling Co., St. Louis and Springfield, Mo. Wheat-flour	54,516	June 26	122	2998
John F. Wiessner & Son's Brewing Co. of Baltimore City, Baltimore, Md. Lager-beer	52,585	May 15	122	1032
John J. Clark & Co., Pawtucket, R. I. Spool-cotton	52,098	May 1	122	342
John J. Clark & Co., Pawtucket, R. I. Spool-cotton	52,099	May 1	122	342
John J. Clark & Co., Pawtucket, R. I. Spool-cotton	52,100	May 1	122	342
John J. Clark & Co., Pawtucket, R. I. Spool-cotton	53,101	May 1	122	342
John J. Clark & Co., Pawtucket, R. I. Spool-cotton	53,102	May 1	122	342
John L. Whiting & Son Co., Boston, Mass. Brushes of all kinds	52,830	May 22	122	1383
John L. Whiting & Son Co., Boston, Mass. Brushes of all kinds	52,831	May 22	122	1383
John L. Whiting & Son Co., Boston, Mass. Brushes of all kinds	52,832	May 22	122	1383
John L. Whiting & Son Co., Boston, Mass. Brushes of all kinds	52,833	May 22	122	1383
John L. Whiting & Son Co., Boston, Mass. Brushes of all kinds	52,834	May 22	122	1383
John L. Whiting & Son Co., Boston, Mass. Brushes of all kinds	52,835	May 22	122	1383
John L. Whiting & Son Co., Boston, Mass. Brushes of all kinds	52,836	May 22	122	1383
John L. Whiting & Son Co., Boston, Mass. Brushes of all kinds	52,837	May 22	122	1383
John L. Whiting & Son Co., Boston, Mass. Brushes of all kinds	52,838	May 22	122	1383
John L. Whiting & Son Co., Boston, Mass. Brushes of all kinds	52,851	May 22	122	1384
John L. Whiting & Son Co., Boston, Mass. Brushes of all kinds	52,852	May 22	122	1384

Alphabetical list of registrants of trade-marks for May and June—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
John L. Whiting & Son Co., Boston, Mass. Brushes of all kinds	52,864	May 22	122	1384
John L. Whiting & Son Co., Boston, Mass. Brushes of all kinds	52,865	May 22	122	1384
John L. Whiting & Son Co., Boston, Mass. Brushes of all kinds	52,866	May 22	122	1384
John L. Whiting & Son Co., Boston, Mass. Brushes of all kinds	52,867	May 22	122	1384
John L. Whiting & Son Co., Boston, Mass. Brushes of all kinds	52,868	May 22	122	1384
John L. Whiting & Son Co., Boston, Mass. Brushes of all kinds	52,869	May 22	122	1384
John L. Whiting & Son Co., Boston, Mass. Brushes of all kinds	52,870	May 22	122	1384
John Lane Company, New York, N. Y. Monthly magazine	53,145	May 29	122	1709
John Morrell & Company, Limited, Ottumwa, Iowa. Bacon and hams	52,073	May 1	122	341
John T. Lewis & Bros. Co., Philadelphia, Pa. White lead	52,211	May 1	122	347
John T. Lewis & Bros. Co., Philadelphia, Pa. White lead	53,981	June 19	122	2676
John W. Masury & Son, Brooklyn, N. Y. Mixed paints	53,982	June 19	122	2676
Johnson, Edwin, Pittsburg, Pa. Wood-finish	52,699	May 15	122	1036
Johnson & Johnson, New Brunswick, N. J. Adhesive plasters	54,010	June 19	122	2677
Johnson & Johnson, New Brunswick, N. J. Felted absorbent cotton	52,955	May 22	122	1388
Johnson & Johnson, New Brunswick, N. J. Felted absorbent cotton	52,956	May 22	122	1388
Johnson & Johnson, New Brunswick, N. J. Felted absorbent cotton	52,957	May 22	122	1388
Johnson & Johnson, New Brunswick, N. J. Suspensory bandages	54,235	June 26	122	2987
Johnson & Johnson, New Brunswick, N. J. Suspensory bandages	54,249	June 26	122	2988
Johnson & Johnson, New Brunswick, N. J. Medical and surgical plasters	54,308	June 26	122	2990
Johnson & Johnson, New Brunswick, N. J. Catheters, stomach-tubes, and bougies	54,309	June 26	122	2990
Johnson, Robert H. N., London, England. Pills	53,044	May 22	122	1391
Johnson & Son, S. C., Racine, Wis. Wax	51,991	May 1	122	1036
Johnson & Son, W. S., Henderson, Ky. Laxatives	52,487	May 8	122	338
Johnston, Michael H., Galesburg, Ill. Laxative for the human system	54,109	June 19	122	722
Johnston, William J., New York, N. Y. Weekly periodical	52,725	May 15	122	2681
Joliet Stove Works, Joliet, Ill. Heating and cooking stoves	54,021	June 26	122	1037
Jonas Brook & Bros., Limited, Meltham, England. Sewing cotton and thread	52,148	May 1	122	3002
Jonas Brook & Bros., Limited, Meltham, England. Cotton thread	54,236	June 26	122	344
Jonas Brook & Bros., Limited, Meltham, England. Cotton yarn, sewing-cotton, and crochet-cotton	54,336	June 26	122	2987
Jonas Brook & Bros., Limited, Meltham, England. Sewing-cotton on spools or reels	54,665	June 26	122	2991
Jonas Brook & Bros., Limited, Meltham, England. Cotton thread	54,666	June 26	122	3004
Jones Bros. Overall Company, Dubuque, Iowa. Children's suits and parts of suits	53,330	June 12	122	3004
Jones & Co., W. H., Boston, Mass. Wine	52,522	May 8	122	2382
Jones and Co., W. H., Boston, Mass. Whisky	52,596	May 15	122	724
Jones and Co., W. H., Boston, Mass. Whisky	53,045	May 22	122	1033
Jones and Co., W. H., Boston, Mass. Wine	53,046	May 22	122	1391
Jones and Co., W. H., Boston, Mass. Cocktails and punch	53,422	June 5	122	1391
Jones, Thaddeus C., St. Paul, Minn. Dressed-skin underwear	54,667	June 26	122	2049
Joralemon, Edgar M., Newark, N. J. Certain named seats and tanks	54,045	June 19	122	3004
Jordan, Andrew J., St. Louis, Mo. Certain named cutlery, except of precious metal	54,754	June 26	122	2679
Joseph Burnett Co., Boston, Mass. Color-pastes	53,316	May 29	122	3008
Joseph Schlitz Brewing Company, Milwaukee, Wis. Lager-beer	52,011	May 1	122	1716
Joseph W. Woods and Son Corporation, Boston, Mass. Printed cotton fabrics	53,863	June 12	122	339
Josselson Bros. & Co., Louisville, Ky. Whisky	54,170	June 19	122	2383
Juda Bros., San Francisco, Cal. Ladies' dress-waists	54,496	June 26	122	2683
Judd, Henry S., Chicago, Ill. Washing-machines	53,317	May 29	122	2998
Jungmann, J., New York, N. Y. Remedy for cure of diseases of the respiratory organs	53,920	June 12	122	1716
K K K Medicine Company, Keokuk, Iowa. Laxatives	53,063	May 22	122	2385
K K K Medicine Company, Keokuk, Iowa. Liniments and ointments	53,251	May 29	122	1393
K. k. landespriv. Milly-Kernsen-, Seifen-und Glycerin-Fabrik, von F. A. Sarg's Sohn & Co., Vienna and Liesing, Austria-Hungary. Preparations for the cleansing and preservation of the teeth and of the mouth	54,110	June 19	122	1713
Kahle, Francis U., Buffalo, N. Y. Remedy for certain named diseases	53,601	June 5	122	2681
Kahn & Bros., F. & L., Hamilton, Ohio. Stoves and furnaces	52,330	May 8	122	2056
Kahn & Co., L., Cleveland, Ohio. Whisky	52,270	May 8	122	716
Kamp Distilling Co., St. Louis, Mo. Whisky	54,193	June 19	122	713
Kastor & Bros., Adolph, New York, N. Y. Scissors	52,666	May 15	122	2684
Kastor & Bros., Adolph, New York, N. Y. Pocket-knives	52,853	May 22	122	1035
Kastor & Bros., Adolph, New York, N. Y. Razors and knives	54,356	June 26	122	1384
Kathairo Chemical Co., New York, N. Y. Disinfectants	53,316	May 29	122	2992
Kauffmann Bros. & Co., Toledo, Ohio. Whisky	53,885	June 12	122	1716
Kaufmann, Baer & Co., Cincinnati, Ohio. Whisky	53,047	May 22	122	2384
Kaumagraph Co., New York, N. Y. Stamps for stamping trade-marks upon textiles	54,575	June 26	122	1391
Keatinge, John R., New York, N. Y. Carbon-papers	54,668	June 26	122	3001
Keatinge, John R., New York, N. Y. Inked pads for type-writers	54,713	June 26	122	3004
Kees Manufacturing Co., F. D., Beatrice, Nebr. Adjustable corn-huskers	54,755	June 26	122	3006
Kef Chemical Co., Washington, D. C. Headache medicine	53,345	May 29	122	3006
Kefilac Company, Atlanta, Ga. Lozenges or tablets for fermentation purposes	52,149	May 1	122	1717
Kehlmann, Leopold, New York, N. Y. Cigarette-paper in all forms	52,913	May 22	122	344
Keidel, Henry, Baltimore, Md. Razors	51,992	May 1	122	1396
Keidel, Henry, Baltimore, Md. Steel axes and hatchets	52,331	May 8	122	338
Keith Brothers & Co., Chicago, Ill. Hats and caps for men and boys	53,602	June 5	122	716
Keith Brothers & Co., Chicago, Ill. Hats and caps for men and boys	53,634	June 5	122	2056
Keith, Simmons & Co., Nashville, Tenn. Razors and pocket, butcher, and table knives	54,699	June 26	122	2058
Kellogg-Mackay-Cameron Co., Chicago, Ill. Boilers for heating purposes	54,714	June 26	122	3004
Kellom, Charles F., Philadelphia, Pa. Lubricating oils and grease	53,727	June 12	122	3006
Kelly, George W., Belmont, Ohio. Cigars	53,319	May 29	122	2378
Kennedy, Dennis T., Haverhill, Mass. Patent kid and patent colt-skins	53,424	June 5	122	1716
Kentucky Wagon Manufacturing Company, Louisville, Ky. Farm-wagons	52,576	May 15	122	2049
Kentucky Wagon Manufacturing Company, Louisville, Ky. Farm-wagons	52,854	May 22	122	1032
Kentucky Wagon Manufacturing Company, Louisville, Ky. Farm-wagons and dump-carts	52,855	May 22	122	1384
Kentucky Wagon Manufacturing Company, Louisville, Ky. Farm-wagons	52,856	May 22	122	1384
Kerrin, Patrick, New York, N. Y. Chemical solution	53,635	June 5	122	1384
Kertell, Charles P., San Francisco, Cal. Prepared food for animals and poultry	53,755	June 12	122	2058
Kevil & Sons, R. U., Princeton, Ky. Wheat-flour	52,488	May 8	122	2379
Kieler & Co., Los Angeles, Cal. Whisky	53,898	June 12	122	722
Kilbourne & Jacobs Manufacturing Company, Columbus, Ohio. Earth-scrapers	52,958	May 22	122	2384
King & Co., J. B., New York, N. Y. Cement-plaster	54,517	June 26	122	1388
Kirk-Geary & Company, Sacramento and San Francisco, Cal. Intensifiers for weak negatives	52,103	May 1	122	2998
Klas, Hilarius, San Francisco, Cal. Peach bitters	54,606	June 26	122	342
Klineschmidt, Augustus A., St. Louis, Mo. Blood-purifier and liver-tonic	52,726	May 15	122	3002
Klumm, Charles W., Bloomington, Ill. Children's suits	53,179	May 29	122	1037
Kline, John J., Brooklyn, N. Y. Salve which is a cure or remedy for freckles	53,921	June 12	122	1710
Kloczewski & Co., Washington, D. C. Vegetable compound	53,224	May 29	122	2385
				1712

Alphabetical list of registrants of trade-marks for May and June—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Knerr, Levi J., Philadelphia, Pa. Certain named medicine	52,473	May 8	122	721
Knickerbocker Chocolate Company, New York, N. Y. Rock-candy and rock-candy syrups	53,463	June 5	122	2050
Kohary, Alexander A., Pittsburg, Pa. Smoking-tobacco, chewing-tobacco, and tobacco used for making cigarettes	54,499	June 26	122	2998
Kops Bros., New York, N. Y. Corsets	52,683	May 15	122	1036
Kora Co., New York, N. Y. Dress-shields	54,555	June 26	122	3000
Körting & Mathiesen Actiengesellschaft, Leutzsch, Germany. Electric lamps of all kinds	52,424	May 8	122	719
Kratz, Paul, Louisville, Ky. Periodical	54,284	June 26	122	2989
Krementz & Co., Newark, N. J. Brooches, scarf-pins, and cuff-pins	53,386	June 5	122	2047
Kroeger Piano Co., New York, N. Y. Pianos	54,670	June 26	122	3005
Kroto Pharmaceutical Company, Albany, N. Y. Specific for the treatment of whooping-cough	52,455	May 8	122	721
Krusius, Ewald, New York, N. Y. Knives and razors	54,171	June 19	122	2684
Kuhlmann, Elizabeth, Cincinnati, Ohio. Whisky	52,160	May 1	122	344
Kuttroff, Pickhardt & Company, assignor to Continental Color and Chemical Co., New York, N. Y. Dyestuff	52,425	May 8	122	719
Kuttroff, Pickhardt & Company, assignor to Continental Color and Chemical Co., New York, N. Y. Dyestuff	52,426	May 8	122	719
Kuttroff, Pickhardt & Company, assignor to Continental Color and Chemical Co., New York, N. Y. Dyestuff	52,427	May 8	122	720
Kuttroff, Pickhardt & Company, assignor to Continental Color and Chemical Co., New York, N. Y. Dyestuff	52,428	May 8	122	720
L. Otzen & Co., Inc., San Francisco, Cal. Dried fruits	54,378	June 26	122	2993
L. E. Waterman Company, New York, N. Y. Fountain-pens	51,993	May 1	122	338
L. S. Brown Charcoal Company, Incorporated, Springfield, Mass. Charcoal	53,225	May 29	122	1712
La-Lo Manufacturing Company, Boston, Mass. Chemical preparations	54,672	June 26	122	3005
Labatt, John, London, Canada. Ale	53,048	May 22	122	1391
Laboratory Company, Leeds, England. Medicinal pills, tablets, and capsules	54,671	June 26	122	3005
Lalliberte, Albert S., Williamstown, Mass. Liquid paint	54,194	June 19	122	2684
Lamar & Rankin Drug Company, Atlanta, Ga. Castor-oil	54,357	June 26	122	2992
Lambert, Moses H., New Haven, Conn. Shirts, collars, and cuffs	52,037	May 1	122	340
Landau & Co., St. Louis, Mo. Canned fruits and vegetables	53,346	May 29	122	1717
Lang, Schenck & Co., Columbus, Ohio. Whisky	52,332	May 8	122	716
Lang, Schenck & Co., Columbus, Ohio. Whisky	52,648	May 15	122	1035
Lange, Morris, Cincinnati, Ohio. Whisky	54,448	June 26	122	2996
Lanigan, Edward N., St. Louis, Mo. Toilet powders and toilet creams	53,583	June 5	122	2055
Lanman & Kemp, New York, N. Y. Sarsaparilla	52,456	May 8	122	721
Landingh, Van Rensselaer, New York, N. Y. Periodical publication	53,808	June 12	122	2381
Lattemann, John J., New York, N. Y. Ankle-supporting leather shoes	53,785	June 12	122	2380
Lattimer-Williams Manufacturing Company, Columbus, Ohio. Stoves and ranges	52,333	May 8	122	716
Laughlin, Elmyr A., Chicago, Ill. Prepared roofing-felt	52,012	May 1	122	339
Lavoris Chemical Company, Minneapolis, Minn. Mouth, nose, and throat wash	53,922	June 12	122	2385
Law, Hartland, Herbert E. Law, San Francisco, Cal. Remedies for certain named diseases	54,673	June 26	122	3005
Lawall's Son & Co., Cyrus, Easton, Pa. Vermicide	52,780	May 15	122	1040
Lawrenceburg Roller Mills Company, Lawrenceburg, Ind., and Boston, Mass. Wheat-flour	52,151	May 1	122	344
Lawrenceburg Roller Mills Company, Lawrenceburg, Ind., and Boston, Mass. Wheat-flour	52,152	May 1	122	344
Lawrenceburg Roller Mills Company, Lawrenceburg, Ind., and Boston, Mass. Wheat-flour	53,439	June 5	122	2049
Lawrenceburg Roller Mills Company, Lawrenceburg, Ind., and Boston, Mass. Wheat-flour	54,470	June 26	122	2997
Lawton, Harry A., Cleveland, Ohio. Mineral compound for cleaning brass and other metals	52,444	May 8	122	720
Lazarus, Louis, Lynchburg, Va. Whisky	52,586	May 15	122	1032
Lazarus & Nassauer, Cairo, Ill. Whisky	53,887	June 12	122	2384
Lazell, Dalley & Co., Incorporated, New York, N. Y. Perfumes and toilet waters	54,764	June 26	122	3008
Le Compte, Benjamin W., Galveston, Tex. Whiskey	53,425	June 5	122	2049
Leak, William H., Watertown, N. Y. Root-canal filling	52,463	May 8	122	721
Ledeboer & Van Der Held, Rotterdam, Netherlands. Wheat-flour	52,534	May 8	122	724
Lee Broom & Duster Company, Lincoln, Nebr. Brooms	53,375	June 5	122	2047
Lee, Frank, Newport News, Va. Medicine for poultry	52,498	May 8	122	722
Lee, Fred E., *et al.*, executors. (See Beckwith, Philo D.)				
Lee, William H., Chicago, Ill. Diaries	52,038	May 1	122	340
Leffler, Thiele & Co., New York, N. Y. Hollow enameled steelware	52,896	May 22	122	1385
Leggett & Brothers, New York, N. Y. Insecticides	52,781	May 15	122	1040
Leona Garment Company, Chicago, Ill. Women's combination undergarments	53,101	May 29	122	1707
Leonard & Co., George H., Boston, Mass. Sumac, gambier, oak, and hemlock extracts	52,464	May 8	122	721
Leonhardt & Co., Schoeneberg, Germany. Horseshoe-studs	53,127	May 29	122	1708
Leonhardt, Oscar F., Baltimore, Md. Toothache-wax	52,457	May 8	122	721
Lester Piano Company, Philadelphia, Pa. Upright and grand pianos	53,387	June 5	122	2047
Leuschner, Paul, Mount Clemens, Mich. Ointments	54,337	June 26	122	2991
Lever Brothers Company, Cambridge, Mass. Soap	53,489	June 5	122	2052
Levi Strauss and Company, San Francisco, Cal. Undervests, jerseys, and drawers	53,102	May 29	122	1707
Levy, Henry S., Brooklyn, N. Y. Bread	54,431	June 26	122	2995
Lewinsohn, E., Berlin, Germany. Fancy feathers, ostrich-feathers, and feather trimmings	53,923	June 12	122	2385
Libbey Glass Company, Toledo, Ohio. Cut-glass articles	54,172	June 19	122	2684
Liberty Mills, Nashville, Tenn. Wheat-flour	52,535	May 8	122	724
Liberty Mills, Nashville, Tenn. Wheat-flour	52,536	May 8	122	724
Liberty Mills, Nashville, Tenn. Wheat-flour	52,537	May 8	122	724
Liberty Silk Company, New York, N. Y. Dress-silk	52,153	May 1	122	344
Lichtenstein's Sons, L., Richmond, Va. Linen thread	53,252	May 29	122	1713
Liebig Extract Company, New York, N. Y. Beef extracts and beef, iron, and wine	52,782	May 15	122	1040
Lilly Coal Co., Altoona, Pa. Semibituminous coal used for welding and forging iron and steel	52,489	May 8	122	722
Lion Fence Co., Adrian, Mich. Wire fencing	52,039	May 1	122	340
Lipman, Albert, Cincinnati, Ohio. Whisky	52,577	May 15	122	1032
Lippe-Murbach Co. of Baltimore City, Baltimore, Md. Candy	54,500	June 26	122	2998
Lisk Manufacturing Co., Limited, Canandaigua, N. Y. Culinary utensils made of copper ware	52,809	May 15	122	1041
Lisk Manufacturing Co., Limited, Canandaigua, N. Y. Culinary utensils made of galvanized ware	52,914	May 22	122	1386
Lisk Manufacturing Co., Limited, Canandaigua, N. Y. Household articles made of enameled steel-ware	53,388	June 5	122	2047
Lisk Manufacturing Co., Limited, Canandaigua, N. Y. Cooking utensils made of tinware	53,404	June 5	122	2048
Lisk Manufacturing Co., Limited, Canandaigua, N. Y. Culinary articles made of tinware	53,756	June 12	122	2379
Lisk Manufacturing Co., Limited, Canandaigua, N. Y. Household articles made of copper ware	53,786	June 12	122	2380
Lisk Manufacturing Co., Limited, Canandaigua, N. Y. Household articles made of galvanized ware	53,809	June 12	122	2381
Little, Calvin W., Montclair, N. J. Medals and badges	54,358	June 26	122	2992
Littleford, George, Cincinnati, Ohio. Hair-pins	54,715	June 26	122	3006
Lloyd Brothers, Cincinnati, Ohio. Pharmaceutical preparation	52,178	May 1	122	345
Lloyd Brothers, Cincinnati, Ohio. Anodynes	52,490	May 8	122	732
Lodge and Shipley Machine Tool Company, Cincinnati, Ohio. Book of directions for technical instructions	52,302	May 8	122	714
Loeb, Adolph, Cincinnati, Ohio. Whisky	53,888	June 12	122	2384

Alphabetical list of registrants of trade-marks for May and June—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
London Needle Company, New York, N. Y. Self-threading needles	52,104	May 1	122	343
Londonderry Lithia Spring Water Company, Nashua, N. H. Lithia-spring water	52,334	May 8	122	716
Lonke, John, New York, N. Y. Bolted woolen dress goods	54,556	June 26	122	3000
Loonen, Charles, Paris, France. Tooth-brushes	53,271	May 29	122	1714
Lorillard Refrigerator Co., New York, N. Y. Refrigerators	52,074	May 1	122	341
Lorillard Refrigerator Co., New York, N. Y. Refrigerators	52,429	May 8	122	720
Louderbough, Harry, Jersey City, N. J. Marine paint	54,432	June 26	122	2995
Louderbough, Harry, Jersey City, N. J. Marine paint	54,433	June 26	122	2995
Lowenthal, Milton S., Niagara Falls, N. Y. Whisky	54,716	June 26	122	3006
Lowenthal, William, Cohoes, N. Y. Cotton-batting	52,727	May 15	122	1038
Lowenthal, William, Cohoes, N. Y. Cotton-batting	52,915	May 22	122	1386
Lubelsky & Son, Moses, New York, N. Y. White lead	53,728	June 12	122	2378
Lueders & Co., George, New York, N. Y.; Chicago, Ill., and San Francisco, Cal. Vanillin and cumarin	52,783	May 15	122	1040
Lueders & Co., George, New York, N. Y.; Chicago, Ill., and San Francisco, Cal. Olive-oil and salad-oil for table use and cooking	52,810	May 15	122	1041
Luffkin Rule Co., Saginaw, Mich. Measuring-tapes	54,338	June 26	122	2991
Lunkenheimer Company, Cincinnati, Ohio. Grease-cups	52,335	May 8	122	716
Lunkenheimer Company, Cincinnati, Ohio. Blow-off valves	52,336	May 8	122	716
Lustig Bros., New York, N. Y. Panama hats	51,970	May 1	122	337
Lustig Bros., New York, N. Y. Hats	53,253	May 29	122	1713
Luyties Brothers, New York, N. Y. Gin	53,924	June 12	122	2385
Luze & Fils, A. de, Bordeaux, France. Wines of all kinds	54,082	June 19	122	2680
Lynchburg Shoe Co., Lynchburg, Va. Leather boots and shoes	53,389	June 5	122	2047
Lynchburg Shoe Co., Lynchburg, Va. Leather boots and shoes	54,285	June 26	122	2989
Lyon, A. Maynard, New York, N. Y. Chewing-gum	53,320	May 29	122	1716
Lyon & Healy, Chicago, Ill. Musical boxes and tune-disks	53,146	May 29	122	1709
Lyon & Healy, Chicago, Ill. Guitars and mandolins	53,147	May 29	122	1709
Lyon & Healy, Chicago, Ill. Guitars and mandolins	53,148	May 29	122	1709
Lyon & Healy, Chicago, Ill. Concertinas and accordions	53,180	May 29	122	1710
Lyon & Healy, Chicago, Ill. Certain named musical instruments	53,390	June 5	122	2047
Lyon & Healy, Chicago, Ill. Supplies for musical instruments	54,359	June 26	122	2992
Lyon & Healy, Chicago, Ill. Guitars and zithers	54,518	June 26	122	2999
Lyon & Healy, Chicago, Ill. Supply-packages for musical instruments	54,519	June 26	122	2999
Lyons Ink, Limited, Manchester, England. Liquid glue, gum, and mucilage	52,981	May 22	122	1389
M. Steinert & Sons Co., Boston, Mass. Pianos	54,639	June 26	122	3003
M. Wile & Company, Buffalo, N. Y. Coats, vests, trousers, and overcoats	52,950	May 22	122	1388
M. D. Wells Co., Chicago, Ill. Leather boots, shoes, and slippers	54,111	June 19	122	2681
M. K. Goetz Brewing Co., St. Joseph, Mo. Malt extracts	52,758	May 15	122	1039
M. K. Goetz Brewing Co., St. Joseph, Mo. Malt extracts	53,405	June 5	122	2048
Macbeth-Evans Glass Company, Pittsburg, Pa. Cartons for lamp-chimneys and globes	53,518	June 5	122	2053
Mackrell, Susanna W., Asbury Park, N. J. Remedy for the cure of St. Vitus' dance or chorea	52,784	May 15	122	1040
Macomber & Whyte Rope Company, Chicago, Ill. Wire rope	53,553	June 5	122	2054
Madden, William J., New York, N. Y. Candied popcorn	54,501	June 26	122	2998
Magic Curler Company, Philadelphia, Pa. Hair-curlers	53,049	May 22	122	1391
Magnet Wire Company, New York, N. Y. Magnet-wire for trolley use	53,636	June 5	122	2058
Magnolia Metal Company, New York, N. Y. Antifriction metals or alloys	53,519	June 5	122	2053
Magnolia Metal Company, New York, N. Y. Antifriction metals or alloys	53,520	June 5	122	2053
Magnolia Metal Company, New York, N. Y. Antifriction metals or alloys	54,717	June 26	122	3007
Magnus & Co., Jos. A., Cincinnati, Ohio. Whisky	53,050	May 22	122	1392
Mahoney, J. & E., Portsmouth, Va. Whisky	54,449	June 26	122	2996
Malarine Medical Company, Providence, R. I. Medicine for fever	53,554	June 5	122	2054
Malcomson, Alexander Y., Detroit, Mich. Coal	54,640	June 26	122	3003
Mandis, Anthony K., Washington, D. C. Medicine for epilepsy	54,286	June 26	122	2989
Manheimer & Bros., Louis, Chicago, Ill. Watch-movements	54,083	June 19	122	2680
Manitou Mineral Springs Company, Manitou, Colo. Ginger-champagne	53,662	June 12	122	2375
Manitou Mineral Springs Company, Manitou, Colo. Effervescent or carbonated mineral water	53,663	June 12	122	2375
Manitou Mineral Springs Company, Manitou, Colo. Ginger-champagne	53,664	June 12	122	2375
Manning, Joseph A., Boston, Mass. Leather and cloth shoes	53,376	June 5	122	2047
Manufacture Française D'Oeillets Métalliques (ancienne Maison G. Bac), Paris, France. Eyelets for shoes	52,811	May 15	122	1041
Manufacturing Company of America, Philadelphia, Pa. Mint candy	52,075	May 1	122	341
Manufacturing Company of America, Philadelphia, Pa. Candy	53,555	June 5	122	2054
Marcus Bros., New York, N. Y. Taffeta silk, crêpe de chine, mousseline silk, and peau de soie	53,556	June 5	122	2054
Mariani & Co., New York, N. Y. Tonics and medicated wines	53,084	May 22	122	1393
Marine Paint Corporation, Norfolk, Va. Mixed paint	53,490	June 5	122	2052
Marsh & Riley, Pine Bluff, Ark. Wheat-flour	53,440	June 5	122	2050
Marshall Chemical Company, Marshall, Va. Cleaning and polishing soap	54,413	June 26	122	2994
Marshall Field & Company, Chicago, Ill. Quilts	54,557	June 26	122	3000
Marshall Field & Company, Chicago, Ill. Hosiery	54,641	June 26	122	3003
Marshall Field & Company, Chicago, Ill. Knitted underwear and hosiery	54,674	June 26	122	3005
Marshuetz & Co., A. G., New York, N. Y. Whisky	53,899	June 12	122	2384
Martin & Bro., G. W., New York, N. Y. Eggs	53,441	June 5	122	2050
Martin, Robert C., Albemarle, La. Sugar and molasses	54,379	June 26	122	2993
Martindale & Co., Thomas, Philadelphia, Pa. Olive-oil	54,622	June 26	122	3002
Maryland Distilling Co., Baltimore, Md. Whisky	52,728	May 15	122	1038
Maryland Distilling Co., Chicago, Ill. Whisky	53,890	June 12	122	2384
Mason, Albert G., Cleveland, Ohio. Sewing-machines	52,076	May 1	122	341
Massachusetts Chemical Company, Walpole, Mass. Insulating-tape	52,857	May 22	122	1384
Massachusetts Cotton Mills, Lowell, Mass. Cotton piece goods	51,994	May 1	122	338
Massachusetts Cotton Mills, Lowell, Mass. Cotton piece goods	52,154	May 1	122	344
Massachusetts Cotton Mills, Lowell, Mass. Cotton piece goods	52,271	May 8	122	713
Massachusetts Cotton Mills, Lowell, Mass. Cotton piece goods	52,272	May 8	122	713
Massachusetts Cotton Mills, Lowell, Mass. Denims	52,578	May 15	122	1032
Massachusetts Cotton Mills, Lowell, Mass. Blue denims	52,579	May 15	122	1032
Massachusetts Cotton Mills, Lowell, Mass. Cotton piece goods	53,637	June 5	122	2058
Massachusetts Cotton Mills, Lowell, Mass. Cotton piece goods	53,824	June 12	122	2381
Massachusetts Cotton Mills, Lowell, Mass. Cotton piece goods	53,825	June 12	122	2381
Massachusetts Cotton Mills, Lowell, Mass. Cotton piece goods	53,826	June 12	122	2381
Massachusetts Cotton Mills, Lowell, Mass. Cotton piece goods	53,831	June 12	122	2382
Massachusetts Cotton Mills, Lowell, Mass. Cotton piece goods	53,832	June 12	122	2382
Massachusetts Cotton Mills, Lowell, Mass. Cotton piece goods	53,833	June 12	122	2382
Massachusetts Cotton Mills, Lowell, Mass. Cotton piece goods	53,834	June 12	122	2382
Massachusetts Cotton Mills, Lowell, Mass. Cotton piece goods	53,926	June 12	122	2385
Massachusetts Cotton Mills, Lowell, Mass. Cotton piece goods	54,558	June 26	122	3000
Massachusetts Cotton Mills, Lowell, Mass. Cotton piece goods	54,559	June 26	122	3000

Alphabetical list of registrants of trade-marks for May and June—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Masurite Explosive Company, Masury, Ohio. Electrical exploders	53,521	June 5	122	2053
Masurite Explosive Company, Masury, Ohio, and New York, N. Y. Explosives	54,310	June 26	122	2990
Mathis, John B., Detroit, Tex. Laundry soaps	53,953	June 19	122	2675
Maw, Son & Sons, S., London, England. Brushes	53,051	May 22	122	1392
May and Flebeger, Akron, Ohio. Air-heating furnaces for buildings	52,273	May 8	122	713
May, James O., deceased; A. H. Dayton and G. T. Wigmore, administrators, Naugatuck, Conn. Emulsified preparations, cough mixtures, and lotions	53,913	June 12	122	2385
Mayer, Sons & Co., Philadelphia, Pa. Whisky	53,864	June 12	122	2383
Mayer, Sons & Co., Philadelphia, Pa. Whisky	53,865	June 12	122	2383
Mayer, Sons & Co., Philadelphia, Pa. Whisky	53,906	June 12	122	2385
McCaskey, John G., Pittsburg, Pa. Sauer-kraut	52,155	May 1	122	344
McCleary, Wallin & Crouse, Amsterdam, N. Y. Rugs	52,927	June 12	122	2385
McCray Refrigerator Co., Kendallville, Ind. Refrigerators	52,105	May 1	122	343
McGlinn, John, Philadelphia, Pa. Whisky	54,143	June 19	122	2682
McIlhenny's Son, E., Avery Island and New Iberia, La. Pepper-sauce	53,928	June 12	122	2385
McIlhenny's Son, E., Avery Island and New Iberia, La. Pepper-sauce	53,929	June 12	122	2385
McIlhenny's Son, E., Avery Island and New Iberia, La. Pepper-sauce	53,954	June 19	122	2675
McKee, Andrew K., Philadelphia, Pa. Coal	52,179	May 1	122	345
McKee, John A., Toronto, Canada. Pills	52,729	May 15	122	1038
McKesson & Robbins, New York, N. Y. Certain named chemical preparations	53,930	June 12	122	2385
McKesson & Robbins, New York, N. Y. Laxative remedy				
McNab & Harlin Manufacturing Company, New York, N. Y. Steam, gas, oil, and water pipes, fittings, and connections therefor	52,587	May 15	122	1032
McQuade, Elias A., Lowell, Mass. Whisky	53,866	June 12	122	2383
Meadville, Pennsylvania Distilling Company, Inc., Meadville, Pa. Pure rye and malt whiskies	54,450	June 26	122	2996
Medicura Food Co., Indianapolis, Ind. Medicated stock and poultry food	54,339	June 26	122	2991
Meier, Hermann F., Dresden-Blasewitz, Germany. Hollow-walled vessels	51,995	May 1	122	338
Mendleson's Sons, A., Albany, N. Y. Chlorid of lime	54,675	June 26	122	3005
Merchants Coffee Company of New Orleans, Ltd., New Orleans, La. Coffee	54,520	June 26	122	2999
Mertz, Edward P., Washington, D. C. Medicines for certain named diseases	53,347	May 29	122	1717
Meserole, William H., New York, N. Y. Portland cement	51,996	May 1	122	338
Metallic Cap Manufacturing Coy., New York, N. Y. Primers or caps for blasting purposes	53,557	June 5	122	2054
Metallic Cap Manufacturing Co'y, New York, N. Y. Caps or primers for blasting purposes	54,011	June 19	122	2677
Metallic Cap Manufacturing Co'y, New York, N. Y. Caps or primers for blasting purposes	54,012	June 19	122	2677
Metropolitan Manufacturing Company, Boston, Mass. Wringers and the rolls thereof	52,077	May 1	122	341
Meukow & Co., A. C., Cognac, France. Cognac brandy	52,208	May 1	122	347
Meurer, Jacob, Brooklyn, N. Y. Tin plates and roofing-tin	51,971	May 1	122	337
Meurer, Jacob, Brooklyn, N. Y. Tin plates and roofing-tin	51,972	May 1	122	337
Meyer Brothers Coffee and Spice Company, St. Louis, Mo. Coffee	52,209	May 1	122	347
Meyer Marx Co., Birmingham, Ala. Whisky	54,144	June 19	122	2683
Michaels, David, Boston, Mass. Liquid medicinal compound	53,348	May 29	122	1717
Michigan Alkali Company, Ford City, Mich. Soda-ash and caustic soda	53,349	May 29	122	1717
Michigan Carbon Works, Detroit, Mich. Gelatin	52,538	May 8	122	724
Michigan Condensed Milk Co., Lansing, Mich., and New York, N. Y. Condensed milk	54,380	June 26	122	2993
Migranose Importing Co., Philadelphia, Pa. Headache specific put up in tabular form	53,085	May 22	122	1393
Miller, Cyrus R., Milwaukee, Wis. Bread	53,757	June 12	122	2379
Miller, Thomas A., Toledo, Ohio. Tonic remedy	52,253	May 1	122	348
Minard's Liniment Manufacturing Company, Framingham and Boston, Mass. Liniment	52,210	May 1	122	347
Miner, Benjamin F., Montague, Mass. Hair-tonic	52,465	May 8	122	721
Miner, Benjamin F., Montague, Mass. Remedy for inflammation	52,466	May 8	122	721
Miner, Benjamin F., Montague, Mass. Compound used as a tonic and flavoring	54,063	June 19	122	2679
Minneapolis Brewing Co., Minneapolis, Minn. Beer	54,642	June 26	122	3003
Minneapolis Brewing Co., Minneapolis, Minn. Beer	54,643	June 26	122	3003
Minot, Hooper & Co., New York, N. Y. Sheeting	54,311	June 26	122	2990
Missouri Valley Milling Company, Mandan, N. D. Wheat-flour	52,539	May 8	122	724
Missouri Valley Milling Company, Mandan, N. D. Wheat-flour	53,128	May 29	122	1708
Missouri Valley Milling Company, Mandan, N. D. Wheat-flour	53,208	May 29	122	1711
Missouri Valley Milling Company, Mandan, N. D. Wheat-flour	53,254	May 29	122	1713
Mittag, Frank O., Park Ridge, N. J. Type-writer ribbons	53,350	May 29	122	1717
Mittag, Frank O., Park Ridge, N. J. Type-writer ribbons	54,381	June 26	122	2988
Mohns-Frese Commercial Company, San Francisco, Cal. Wheat-flour	52,982	May 22	122	1389
Molassine Company, Ld., London, England. Stock-food	54,112	June 19	122	2681
Moline Wagon Company, Moline, Ill. Wagons	52,933	May 22	122	1387
Monahan Antiseptic Co., Chicago, Ill. Soap	54,382	June 26	122	2993
Monarch Milling Co., Hutchinson, Kans. Wheat-flour	52,667	May 15	122	1035
Monroe Foundry & Furnace Co., Monroe, Mich. Heating-furnaces and boilers	53,810	June 12	122	2381
Montanye, Charles H., New York, N. Y. Coffees	52,430	May 8	122	720
Montgomery Bros. Inc., Philadelphia, Pa. Rubber cement	52,431	May 8	122	720
Montgomery Bros. Inc., Philadelphia, Pa. Rubber cement	52,445	May 8	122	720
Montgomery Bros. Inc., Philadelphia, Pa. Rubber cement	52,446	May 8	122	720
Montgomery Bros. Inc., Philadelphia, Pa. Rubber cement	52,447	May 8	122	720
Montgomery Bros. Inc., Philadelphia, Pa. Rubber cement	52,448	May 8	122	720
Monticello Distilling Company, Baltimore, Md. Whisky	52,649	May 15	122	1035
Moody, William A., Boston, Mass., assignor to Brockton Shoe Company. Leather boots, shoes, and slippers	53,811	June 12	122	2381
Moore-Shafer Shoe Mfg. Co., Brockport, N. Y. Leather boots, shoes, oxfords, sandals, and slippers	54,287	June 26	122	2989
Moras, Edmond R., Chicago, Ill. Certain named medicine	53,931	June 12	122	2386
Morehouse, William H., Toledo, Ohio. Field-seeds	54,064	June 19	122	2679
Morey, Charles I., New York, N. Y. Cocktail-sauce	52,180	May 1	122	345
Morgenthau, Mengo I., New York, N. Y. Candies, bonbons, and chocolate candy	53,004	May 22	122	1390
Moro Medical Co., Montreal, Canada. Remedy for certain named diseases	53,086	May 22	122	1393
Morrin-Powers Merc. Co., Kansas City, Mo. Whisky	52,785	May 15	122	1040
Morrin-Powers Merc. Co., Kansas City, Mo. Whisky	54,145	June 19	122	2683
Morris, James P., Paris, Tex. Remedy for skin diseases	54,607	June 26	122	3002
Morse & Rogers, New York, N. Y. Boots, shoes, and slippers of leather or textile material, or both, and soles therefor	54,312	June 26	122	2990
Morse & Rogers, New York, N. Y. Certain named boots, shoes, and slippers and soles therefor	54,360	June 26	122	2992
Mossberg Wrench Company, Central Falls, R. I. Wrenches	53,665	June 12	122	2375
Mosser & Co., Wm. F., Boston, Mass. Sole-leather	54,608	June 26	122	3002
Mount Vernon-Woodberry Cotton Duck Company, Baltimore, Md. Cotton duck	53,522	June 5	122	2053
Mount Vernon-Woodberry Cotton Duck Company, Baltimore, Md. Cotton duck	53,638	June 5	122	2058
Mueller, Edward P., Milwaukee, Wis. Molasses food for horses and cattle	52,156	May 1	122	345
Muller, Frederick, Jr., Hoboken, N. J. Medicine for the cure of constipation and bowel and stomach ailments	52,467	May 8	122	721
Mumm & Co., G. H., Rheims, France. Champagne-wine	54,113	June 19	122	2681
Mundy, Joseph S., Newark, N. J. Steam hoisting, mining, stationary, and dredging engines	54,718	June 26	122	307
Munson Supply Company, New York, N. Y. Cushion finger-keys	52,364	May 8	122	717

Alphabetical list of registrants of trade-marks for May and June—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Munyons Homoeopathic Home Remedy Co., Philadelphia, Pa. Toilet soaps	52,040	May 1	122	340
Munyon's Homoeopathic Home Remedy Co., Philadelphia, Pa. Homeopathic medical preparations for the prevention and cure of diseases	54,114	June 19	122	2681
Murphy Varnish Company, Newark, N. J. Varnishes	53,955	June 19	122	2675
Murphy Varnish Company, Newark, N. J. Priming, coating, and preparing material for varnishes	53,956	June 19	122	2675
Murr, Richard, San Francisco, Cal. Cut glass	54,609	June 26	122	3002
Murray, Edgar A., Detroit, Mich. Compound for exterminating vermin	52,157	May 1	122	345
Myers, Angelo, Philadelphia, Pa. Whisky	52,181	May 1	122	346
Myers & Bro., F. E., Ashland, Ohio. Hay-carriers	52,365	May 8	122	717
Myers & Bro., F. E., Ashland, Ohio. Pumps	53,603	June 5	122	2056
Myers & Brother, F. E., Ashland, Ohio. Water-pumps	52,274	May 8	122	713
Myers, Henry R., Covington, Ky. Wine	53,827	June 12	122	2381
Myers, Henry R., Covington, Ky. Blackberry cordial	54,756	June 26	122	3008
N. Benjamin Son Inc., Brooklyn, N. Y. Beer	52,759	May 15	122	1039
N. K. Fairbank Company, Chicago, Ill. Soap	52,597	May 15	122	1033
N. K. Fairbank Company, Chicago, Ill. Soap	52,598	May 15	122	1033
N. K. Fairbank Company, Chicago, Ill. Soap	52,599	May 15	122	1033
N. K. Fairbank Company, Chicago, Ill. Soap	52,600	May 15	122	1033
N. K. Fairbank Company, Chicago, Ill. Soap	52,601	May 15	122	1033
N. K. Fairbank Company, Chicago, Ill. Soap	52,602	May 15	122	1033
N. K. Fairbank Company, Chicago, Ill. Soap	52,603	May 15	122	1033
N. K. Fairbank Company, Chicago, Ill. Soap	52,604	May 15	122	1033
N. K. Fairbank Company, Chicago, Ill. Soap	52,605	May 15	122	1033
N. K. Fairbank Company, Chicago, Ill. Soap	52,606	May 15	122	1033
N. K. Fairbank Company, Chicago, Ill. Soap	52,607	May 15	122	1033
N. K. Fairbank Company, Chicago, Ill. Soap	52,608	May 15	122	1033
N. K. Fairbank Company, Chicago, Ill. Soap	52,609	May 15	122	1033
N. K. Fairbank Company, Chicago, Ill. Soap	52,610	May 15	122	1033
N. K. Fairbank Company, Chicago, Ill. Soap	52,611	May 15	122	1033
N. K. Fairbank Company, Chicago, Ill. Soap	52,612	May 15	122	1033
N. K. Fairbank Company, Chicago, Ill. Soap	52,613	May 15	122	1033
N. K. Fairbank Company, Chicago, Ill. Soap	52,614	May 15	122	1033
N. K. Fairbank Company, Chicago, Ill. Soap	52,615	May 15	122	1033
N. K. Fairbank Company, Chicago, Ill. Soap	52,786	May 15	122	1040
N. K. Fairbank Company, Chicago, Ill. Prepared fatty, oleaginous, or unctuous food substances	52,787	May 15	122	1040
N. K. Fairbank Company, Chicago, Ill. Soap	53,005	May 22	122	1390
N. K. Fairbank Company, Chicago, Ill. Soap	53,006	May 22	122	1390
N. K. Fairbank Company, Chicago, Ill. Soap	53,007	May 22	122	1390
N. K. Fairbank Company, Chicago, Ill. Soap	53,226	May 29	122	1712
N. K. Fairbank Company, Chicago, Ill. Soap	53,321	May 29	122	1716
N. K. Fairbank Company, Chicago, Ill. Soap	53,322	May 29	122	1716
N. K. Fairbank Company, Chicago, Ill. Soap	53,323	May 29	122	1716
N. K. Fairbank Company, Chicago, Ill. Soap	53,351	May 29	122	1717
N. K. Fairbank Company, Chicago, Ill. Soap	53,352	May 29	122	1717
N. K. Fairbank Company, Chicago, Ill. Lard	53,484	June 5	122	2051
N. K. Fairbank Company, Chicago, Ill. Lard	53,486	June 5	122	2051
N. K. Fairbank Company, Chicago, Ill. Soap	53,491	June 5	122	2052
N. K. Fairbank Company, Chicago, Ill. Soap	54,013	June 19	122	2677
Narrow Fabric Co., Wyomissing, Pa. Shoe-laces	54,014	June 19	122	2677
Nash, George, New York, N. Y. Unmanufactured steel, including steel blanks, shapes, rods, billets, and sheets	52,625	May 15	122	1034
Nashville Chemical Company, Nashville, Tenn. Stains	53,957	June 19	122	2675
Nashville Tobacco Works, Nashville, Tenn. Smoking or chewing tobacco	54,471	June 26	122	2997
Nashville Tobacco Works, Nashville, Tenn. Smoking or chewing tobacco	54,472	June 26	122	2997
Nashville Tobacco Works, Nashville, Tenn. Smoking or chewing tobacco	54,473	June 26	122	2997
Nashville Tobacco Works, Nashville, Tenn. Smoking or chewing tobacco	54,474	June 26	122	2997
Nathan & Co., Julius, Fort Wayne, Ind. Whisky	53,324	May 29	122	1716
National Candy Mold and Manufacturing Company, Dayton, Ohio. Roll-paper holders and cutters	54,046	June 19	122	2679
National Cash Register Co., Jersey City, N. J., and Dayton, Ohio. Cash-registers and autographic registers	53,129	May 29	122	1708
National Casket Co., New York, N. Y. Burial-caskets, coffins, and fixtures therefor	54,047	June 19	122	2679
National Coal Tar Company, Boston, Mass. Certain named chemical preparation	54,048	June 19	122	2679
National Cutlery Co., Detroit, Mich. Axes and hatchets	52,013	May 1	122	339
National Grocer Company, Chicago, Ill. Syrup and molasses	52,182	May 1	122	346
National Lead Company, Jersey City, N. J., and New York, N. Y. White lead and oxids of lead	53,983	June 19	122	2676
National Lead Company, Jersey City, N. J., and New York, N. Y. White lead and oxids of lead	53,984	June 19	122	2676
National Lead Company, Jersey City, N. J., and New York, N. Y. White lead	54,015	June 19	122	2677
National Lead Company, Jersey City, N. J., and New York, N. Y. Castor-oil	54,115	June 19	122	2681
National Lead Company, Jersey City, N. J., and New York, N. Y. White lead	54,222	June 19	122	2685
National Lead Company, Jersey City, N. J., and New York, N. Y. Solder	54,250	June 26	122	2908
National Lead & Oil Co. of Pa., Pittsburg, Pa. Linseed-oil	53,758	June 12	122	2379
National Lead & Oil Co. of Pa., Pittsburg, Pa. White lead and oxids of lead	53,985	June 19	122	2676
National Lead & Oil Co. of Pa., Pittsburg, Pa. White lead and oxids of lead	54,016	June 19	122	2677
National Lead & Oil Co. of Pa., Pittsburg, Pa. White lead and oxids of lead	54,017	June 19	122	2677
National Lead & Oil Co. of Pa., Pittsburg, Pa. Oxids of lead	54,018	June 19	122	2677
National Lock Washer Company, Newark, N. J. Lock-washers and nut-locks	52,366	May 8	122	717
National Malleable Castings Company, Cleveland, Ohio. Vertical-plane car-couplings	52,916	May 22	122	1386
National Malleable Castings Company, Cleveland, Ohio, and Indianapolis, Ind. Railway-car castings	53,103	May 29	122	1707
National Malleable Castings Company, Cleveland and Toledo, Ohio. Railway-car castings	53,558	June 5	122	2054
National Malleable Castings Company, Cleveland, Ohio, and Sharon, Pa. Railway-car castings	53,559	June 5	122	2054
National Medical Company, Sheldon, Iowa. Antiseptic germ, insect, and worm destroyer	53,227	May 29	122	1712
National Musical String Co., New Brunswick, N. J. Harmonicas	52,432	May 8	122	720
National Oyster Carrier Company, Albuquerque, N. Mex. Ter. Containers for oysters, clams, fish, and other sea foods	54,719	June 26	122	3007
National Pipe Bending Company, New Haven, Conn. Feed-water heaters	52,871	May 22	122	1384
National School of Salesmanship, Minneapolis, Minn. Books on salesmanship	52,078	May 1	122	341
National School of Salesmanship, Minneapolis, Minn. Books on salesmanship	52,303	May 8	122	714
National School of Salesmanship, Minneapolis, Minn. Books on salesmanship	52,934	May 22	122	1387
National Soap Co., Detroit, Mich. Soap	53,958	June 19	122	2675
Natural Food Company, Niagara Falls, N. Y. Biscuit or crackers	52,858	May 22	122	1384
Natural Food Company, Niagara Falls, N. Y. Biscuit or crackers	52,961	May 22	122	1388
Navassa Guano Company of Wilmington, Wilmington, N. C. Fertilizers	53,703	June 12	122	2377
Navassa Guano Company of Wilmington, Wilmington, N. C. Fertilizers	53,704	June 12	122	2377
Navassa Guano Company of Wilmington, Wilmington, N. C. Fertilizers	53,705	June 12	122	2377
Navassa Guano Company of Wilmington, Wilmington, N. C. Fertilizers	53,706	June 12	122	2377

Alphabetical list of registrants of trade-marks for May and June—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Navassa Guano Company of Wilmington, Wilmington, N. C. Fertilizers	53,707	June 12	122	2377
Navassa Guano Company of Wilmington, Wilmington, N. C. Fertilizers	54,434	June 26	122	2995
Nelson Distilling Co., St. Louis, Mo. Whisky	53,891	June 12	122	2384
Nelson, Louisa, Nashville, Tenn. Whisky	52,212	May 1	122	347
Nelson, Nathaniel M., Haverhill, Mass. Leather boots and shoes	52,812	May 15	122	1041
Neostyle Company, New York, N. Y. Duplicating-ink	53,787	June 12	122	2380
Neostyle Company, New York, N. Y. Stencil-duplicating machines and parts thereof	54,288	June 26	122	2989
Neurihrer, Julius, Newark, N. J. Biscuits	52,213	May 1	122	347
Neuss, Hesslein & Co., New York, N. Y. Bleached, gray, printed, and fancy damasks	53,892	June 12	122	2384
Neuss Hesslein & Co., New York, N. Y. Bleached, gray, printed, and fancy damasks	54,560	June 26	122	3000
Nevermyss Fire Extinguisher Company, Middletown, N. Y. Fire-extinguisher in powdered form	52,788	May 15	122	1040
Neverslip Manufacturing Company, New Brunswick, N. J. Horseshoes and calks	52,917	May 22	122	1386
New England Brewing Company, Boston, Mass. Beer	53,932	June 12	122	2386
New England Brewing Company, Boston, Mass. Malt wine	54,116	June 19	122	2681
New England Brewing Company, Boston, Mass. Ale	54,196	June 19	122	2684
New England Brewing Company, Boston, Mass. Ale	54,435	June 26	122	2995
New Jersey Car Spring & Rubber Co., Jersey City, N. J. Hose	54,340	June 26	122	2991
New London Milling Company, New London, Minn. Wheat-flour	54,502	June 26	122	2998
New Orleans Coffee Co. Ltd., New Orleans, La. Laundry starch	52,304	May 8	122	714
New Orleans Coffee Co. Ltd., New Orleans, Pa. Roasted and ground coffee	53,130	May 29	122	1706
New Orleans Coffee Co. Ltd., New Orleans, La. Laundry starch	54,576	June 26	122	3001
New Orleans Import Co., Limited, New Orleans, La. Mixed teas	53,492	June 5	122	2052
New Orleans Import Co., Limited, New Orleans, La. Mixed teas	53,493	June 5	122	2052
New Process Raw Hide Co., Syracuse, N. Y. Specially-prepared rawhide	52,275	May 8	122	713
New Process Yeast Co., Chicago, Ill. Yeast	53,759	June 12	122	2379
New Winona Mfg. Co., Winona, Minn. Grinding-mills	53,639	June 5	122	3058
New York Central Iron Works Co., Geneva, N. Y. Steam and hot-water boilers for heating purposes	53,729	June 12	122	2378
New York Consolidated Card Company, New York, N. Y. Playing-cards	52,014	May 1	122	339
New York Consolidated Card Company, New York, N. Y. Playing-cards	52,015	May 1	122	339
New York Consolidated Card Company, New York, N. Y. Playing-cards	52,016	May 1	122	339
New York Consolidated Card Company, New York, N. Y. Playing-cards	52,017	May 1	122	339
New York Consolidated Card Company, New York, N. Y. Playing-cards	52,018	May 1	122	339
New York Consolidated Card Company, New York, N. Y. Playing-cards	52,019	May 1	122	339
New York Consolidated Card Company, New York, N. Y. Playing-cards	52,491	May 8	122	722
New York Consolidated Card Company, New York, N. Y. Playing-cards	52,552	May 15	122	1031
New York Consolidated Card Company, New York, N. Y. Playing-cards	52,553	May 15	122	1031
New York Consolidated Card Company, New York, N. Y. Playing-cards	52,554	May 15	122	1031
New York Consolidated Card Company, New York, N. Y. Playing-cards	52,555	May 15	122	1031
New York Consolidated Card Company, New York, N. Y. Playing-cards	52,556	May 15	122	1031
New York Consolidated Card Company, New York, N. Y. Playing-cards	52,557	May 15	122	1031
New York Consolidated Card Company, New York, N. Y. Playing-cards	52,558	May 15	122	1031
New York Consolidated Card Company, New York, N. Y. Playing-cards	52,559	May 15	122	1031
New York Consolidated Card Company, New York, N. Y. Playing-cards	53,052	May 22	122	1392
New York Consolidated Card Company, New York, N. Y. Playing-cards	53,053	May 22	122	1392
New York Consolidated Card Company, New York, N. Y. Playing-cards	53,054	May 22	122	1392
New York Consolidated Card Company, New York, N. Y. Playing-cards	53,131	May 29	122	1708
New York Consolidated Card Company, New York, N. Y. Playing-cards	53,406	June 5	122	2048
New York Consolidated Card Company, New York, N. Y. Playing-cards	53,426	June 5	122	2049
New York Consolidated Card Company, New York, N. Y. Playing-cards	53,427	June 5	122	2049
New York Consolidated Card Company, New York, N. Y. Playing-cards	53,442	June 5	122	2050
New York Consolidated Card Company, New York, N. Y. Playing-cards	54,451	June 26	122	2996
New York Consolidated Card Company, New York, N. Y. Playing-cards	54,452	June 26	122	2996
New York Consolidated Card Company, New York, N. Y. Playing-cards	54,623	June 26	122	3002
New York Glucose Co., New York, N. Y. Corn-starch or corn-flour	52,214	May 1	122	347
New York Herald Company, New York, N. Y. Comic sections or pages of newspapers	54,720	June 26	122	3007
New York Insulated Wire Company, New York, N. Y. Insulated wire and adhesive tapes commonly used for insulating	52,337	May 8	122	716
New York Insulated Wire Company, New York, N. Y. Insulated wire and insulating-tapes	53,666	June 12	122	2375
New York Standard Watch Co., Jersey City, N. J. Watches, watchcases, watch-movements, and parts thereof	52,839	May 22	122	1383
Nichols, Howard E., St. Louis, Mo. Hair tonics, stains, removers, and dandruff cures	53,933	June 12	122	2386
Nicolay & Co., Zurich, Switzerland. Ferruginous preparation	54,341	June 26	122	2991
Ninety Six Cotton Mill, Ninety Six, S. C. Cotton piece goods	53,560	June 5	122	2054
Norfolk Novelty Corporation, Norfolk, Va. Burglar-alarms	52,367	May 8	122	717
Northwestern Consolidated Milling Co., Minneapolis, Minn. Wheat-flour	54,503	June 26	122	2998
Norwich Pharmacal Company, Norwich, N. Y. Reconstructive food and tonic	53,353	May 29	122	1717
Nostrand Trading Co., New York, N. Y. Extract of sarsaparilla	52,813	May 15	122	1041
Nostrand Trading Co., New York, N. Y. Extract of sarsaparilla	52,814	May 15	122	1041
Nostrand Trading Co., New York, N. Y. Extract of sarsaparilla	52,815	May 15	122	1041
Nuhring, Charles, Cincinnati, Ohio. Machinery-packing	52,983	May 22	122	1389
Nusbaum, Samuel, Albany, N. Y. Bags	52,403	May 8	122	719
O'Bryan Bros., Nashville, Tenn. Coats, vests, trousers, and overalls	53,255	May 29	122	1713
O'Callaghan & Fedden, New York, N. Y. Hosiery	52,158	May 1	122	345
O'Keefe, Thomas E., Oswego, N. Y. Whisky	54,453	June 26	122	2996
Odom, James L., Lester, S. C. Remedies for the cure of rheumatism and similar diseases	53,087	May 22	122	1393
Oehm & Co., Baltimore, Md. Coats, overcoats, pants, and vests	52,159	May 1	122	345
Oil Seeds Company, New York, N. Y. Cocoanut-butter	54,624	June 26	122	3003
Oklahoma Wholesale Grocer Co., Oklahoma, Okla. Ter. Roasted coffee	52,730	May 15	122	1038
Oklahoma Wholesale Grocer Co., Oklahoma, Okla. Ter. Spices	52,887	May 22	122	1385
Oklahoma Wholesale Grocer Co., Oklahoma, Okla. Ter. Flavoring extracts	54,625	June 26	122	3003
Okonite Company, Limited, New York, N. Y. Adhesive tape	53,523	June 5	122	2053
Old Kentucky Distillery, Louisville, Ky. Whisky	53,494	June 5	122	2052
Old Kentucky Distillery, Louisville, Ky. Whisky	53,495	June 5	122	2052
Old Kentucky Distillery, Louisville, Ky. Whisky	53,524	June 5	122	2053
Old Kentucky Distillery, Louisville, Ky. Whisky	53,604	June 5	122	2056
Old Kentucky Distillery, Louisville, Ky. Whisky	53,605	June 5	122	2056
Oldfield, John M., Philadelphia, Pa. Remedy for the treatment and prevention of diseases peculiar to women	52,789	May 15	122	1040
Olds, Edward A., New York, N. Y. Toilet and medicinal lotions	53,525	June 5	122	2053
Olympia Brewing Co., Olympia, Wash. Lager-beer	51,907	May 1	122	338
Oppenheimer, Ely, Cincinnati, Ohio. Whisky	54,676	June 26	122	3005
Ordway, Aaron P., New York, N. Y. Bitters	52,468	May 8	122	721
Orrine Company of the District of Columbia, Washington, D. C. Medicines for the cure of alcoholic and drug habits	53,354	May 29	122	1717
Oscar Onken Co., Cincinnati, Ohio. Certain named furniture	52,276	May 8	122	713

Alphabetical list of registrants of trade-marks for May and June—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Ostasiatische Handels-Gesellschaft, Hamburg, Germany. Rubber boots, shoes, and galoshes	54,475	June 26	122	2997
Ostermayer, Philipp, Jersey City, N. J. Heel-ball, black-ball, and polishing wax for shoemakers' use	52,215	May 1	122	347
Oswego Maize Products Co., Oswego, N. Y. Laundry starch	54,173	June 19	122	2684
Ottenheimer, Alfred, New York, N. Y. Corsets	53,561	June 5	122	2054
Ottenheimer & Sons, E., Louisville, Ky. Baking-powder	53,466	June 5	122	2051
Outing Publishing Company, Deposit, N. Y. Magazines	53,496	June 5	122	2052
Overholt & Co., A., Pittsburg, Pa. Whisky	52,183	May 1	122	346
Owl's Head Creamery Company, Enosburg Falls, Vt. Butter	53,008	May 22	122	1390
P. C. Murphy Trunk Company, St. Louis, Mo. Trunks, valises, and satchels	52,368	May 8	122	717
P. J. Bowlin Liquor Co., St. Paul, Minn. Rock and rye	52,650	May 15	122	1035
P. J. Bowlin Liquor Co., St. Paul, Minn. Brandy	53,055	May 22	122	1092
P. J. Bowlin Liquor Co., St. Paul, Minn. Whisky	54,117	June 19	122	2682
Pacific Coast Condensed Milk Co., Seattle, Wash. Condensed milk	54,383	June 26	122	2993
Pacific Portland Cement Co., San Francisco, Cal. Portland cement	54,476	June 26	122	2997
Packard Company, Fort Wayne, Ind. Pianos	53,788	June 12	122	2380
Packard Company, Fort Wayne, Ind. Organs	54,174	June 19	122	2684
Paine Lumber Company, Limited, Oshkosh, Wis. Doors	53,789	June 12	122	2380
Palmaline Malarial Remedy Company, New York, N. Y. Fever cures	54,118	June 19	122	2682
Palmer, Eddy, New York, N. Y. Soap	53,497	June 5	122	2052
Palmetto Metal Company, Chicago, Ill. Babbitt and antifriction bearing metals	54,342	June 26	122	2991
Paragon Plaster Company, Syracuse, N. Y. Plasters and plastic compounds	54,477	June 26	122	2997
Pardridge & Blackwell, Detroit, Mich. Whisky	53,181	May 29	122	1710
Park Steel Company, Pittsburg, Pa. Steel	52,277	May 8	122	713
Park Steel Company, Pittsburg, Pa. Steel	52,278	May 8	122	713
Park Steel Company, Pittsburg, Pa. Steel	54,019	June 19	122	2678
Park Steel Company, Pittsburg, Pa. Steel	54,361	June 26	122	2992
Parke, Davis & Co., Detroit, Mich., and New York, N. Y. Hemostatic, astringent, blood-pressure-raising, and stimulating preparations for medicinal or surgical purposes	53,934	June 12	122	2386
Parker Blake Co. Ltd., New Orleans, La. Vermifuge	53,355	May 29	122	1717
Parker Blake Co. Ltd., New Orleans, La. Vermifuge	53,356	May 29	122	1717
Parker Blake Co. Ltd., New Orleans, La. Medicinal tonic for women	54,084	June 19	122	2680
Parker & Co., E. L., Baltimore, Md. Certain named metal manufactures	53,667	June 12	122	2375
Parker & Co., E. L., Baltimore, Md. Certain named metal manufactures	53,668	June 12	122	2375
Parker Holmes & Company, Boston, Mass. Leather boots, shoes, and slippers	52,816	May 15	122	1041
Parlin & Orendorff Co., Canton, Ill. Riding and walking plows	54,313	June 26	122	2990
Parsons, Charles A., Newcastle-upon-Tyne, England. Turbo-compressors and pumps	51,998	May 1	122	338
Parsons, Charles A., Newcastle-upon-Tyne, England. Steam-turbines and parts thereof	51,999	May 1	122	338
Passavant & Co., New York, N. Y. Silk piece goods	52,369	May 8	122	717
Patterson Sargent Company, Cleveland, Ohio. Mixed paints	54,521	June 26	122	2999
Paul E. Wolff Shirt Company, St. Louis, Mo. Outer shirts	54,677	June 26	122	3005
Paul E. Wolff Shirt Company, St. Louis, Mo. Outer shirts	54,678	June 26	122	3005
Paul F. Beich Co., Bloomington, Ill. Candy	53,761	June 12	122	2379
Paul Taylor Brown Co., New York, N. Y. Canned pineapples	53,443	June 5	122	2050
Payot, Upham & Co., San Francisco, Cal. Steel pens	52,888	May 22	122	1385
Payot, Upham & Co., San Francisco, Cal. Steel pens	52,889	May 22	122	1385
Peacock Chemical Company, St. Louis, Mo. Remedy for diseases of the liver	53,867	June 12	122	2383
Pearless Smelting & Refining Co., Philadelphia, Pa. Babbitt metal	53,584	June 5	122	2055
Peck, Frederick W., Cohoes, N. Y. Axes, adzes, and hatchets	52,106	May 1	122	343
Peirce & Son, Thomas F., Providence, R. I. Leather boots and shoes	52,760	May 15	122	1039
Pellucide Company, San Francisco, Cal. Polishing preparations for glass or bright metal	54,020	June 19	122	2678
Pelton Water Wheel Co., San Francisco, Cal. Water-wheels and water-wheel motors	52,020	May 1	122	339
Penick & Ford, Ltd., Shreveport, La. Syrups and molasses	54,384	June 26	122	2993
Penick & Ford, Ltd., Shreveport, La. Syrup	54,385	June 26	122	2993
Penick & Ford, Ltd., Shreveport, La. Sugar-cane syrups and molasses	54,577	June 26	122	3001
Peninsular Paper Co., Ypsilanti, Mich. Book and cover paper	52,731	May 15	122	1038
Pennsylvania Baking Company, Scranton, Pa. Ginger-snaps	52,523	May 8	122	724
Pennsylvania Salt Manuf'g Co., Philadelphia, Pa. Potash	53,935	June 12	122	2386
Pennsylvania Salt Manuf'g Co., Philadelphia, Pa. Bicarbonate of soda	53,936	June 12	122	2386
Pennsylvania Soap Company, Lancaster, Pa. Soap	53,730	June 12	122	2378
Peoria Drill and Seeder Co., Peoria, Ill. Broadcast seeding-machines	52,370	May 8	122	717
Pepper Company, Peabody, Mass. Candy	54,522	June 26	122	2999
Perkins, Charles B., Boston, Mass. Cigars	52,400	May 8	122	718
Perkins, Charles B., Boston, Mass. Cigars	52,401	May 8	122	718
Perkins, Charles B., Boston, Mass. Cigars	54,478	June 26	122	2997
Perkins, Charles B., Boston, Mass. Cigars	54,479	June 26	122	2997
Perkins Corporation, Hartford, Conn. Snap-switches	54,626	June 26	122	3003
Perkins, George H., Gloucester, Mass. Cured fish, (smoked, dried, or salted)	53,256	May 29	122	1713
Perkins, George H., Gloucester, Mass. Cured fish, (smoked, dried, or salted)	53,257	May 29	122	1713
Perkins, George H., Gloucester, Mass. Cured fish	53,444	June 5	122	2050
Perrin & Cie., Charles, Grenoble, France. Kid gloves	54,504	June 26	122	2998
Perry & Co., Philadelphia, Pa. Coats, vests, pantaloons, overcoats, and men's and boys' suits	52,732	May 15	122	1038
Peter Henderson & Co., New York, N. Y. Agricultural and horticultural seeds	52,492	May 8	122	722
Peter Schoenhofen Brewing Company, Chicago, Ill. Lager-beer	53,149	May 29	122	1709
Peter Schoenhofen Brewing Company, Chicago, Ill. Lager-beer	53,182	May 29	122	1710
Peter Schoenhofen Brewing Company, Chicago, Ill. Lager-beer	53,183	May 29	122	1710
Peter Schoenhofen Brewing Company, Chicago, Ill. Lager-beer	53,184	May 29	122	1710
Peter Schoenhofen Brewing Company, Chicago, Ill. Lager-beer	53,428	June 5	122	2049
Peter Schoenhofen Brewing Company, Chicago, Ill. Lager-beer	53,429	June 5	122	2049
Peter Schoenhofen Brewing Company, Chicago, Ill. Lager-beer	53,430	June 5	122	2049
Peter Schoenhofen Brewing Company, Chicago, Ill. Lager-beer	53,431	June 5	122	2049
Peter Schoenhofen Brewing Company, Chicago, Ill. Lager-beer	53,432	June 5	122	2049
Peter Schoenhofen Brewing Company, Chicago, Ill. Lager-beer	53,433	June 5	122	2049
Peter Schoenhofen Brewing Company, Chicago, Ill. Lager-beer	53,893	June 12	122	2384
Peter Schoenhofen Brewing Company, Chicago, Ill. Lager-beer	54,644	June 26	122	3003
Peters Shoe Co., St. Louis, Mo. Leather shoes	54,578	June 26	122	3001
Petraccione, Louis, New York, N. Y. Combination sash adjusters and locks	53,009	May 22	122	1390
Pfabe, Hugo, Delavan, Wis. Flash-light compounds	52,216	May 1	122	347
Pfromm, Adam, Philadelphia, Pa. Bluing	53,467	June 5	122	2051
Pfromm, Adam, Philadelphia, Pa. Bluing	53,468	June 5	122	2051
Philadelphia Watch Case Co., Riverside, N. J. Watches, watchcases, and watch-movements	52,850	May 22	122	1384
Philip Hano & Co., New York, N. Y. Manifolding devices	52,021	May 1	122	339
Phillips Insulated Wire Co., Pawtucket, R. I. Insulated wires	52,626	May 15	122	1034
Phoenix Glass Co., Pittsburg, Pa. Decorated vase-lamps made of glass	53,562	June 5	122	2055
Phoenix Horse Shoe Co., Chicago, Ill. Horse and mule shoes	53,986	June 19	122	2676
Pickering Governor Company, Portland, Conn. Engine-governors	52,627	May 15	122	1034

Alphabetical list of registrants of trade-marks for May and June—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Pillsbury-Washburn Flour Mills Company, Limited, Minneapolis, Minn. Wheat breakfast-food	54,627	June 26	122	3003
Pimbley Paint & Glass Co., St. Joseph, Mo. House-paints	52,338	May 8	122	716
Pioneer Packing Company, Omaha, Nebr. Extract of beef	52,981	May 22	122	1389
Pioneer Suspender Company, Philadelphia, Pa. Suspenders	52,371	May 8	122	717
Pioneer Suspender Company, Philadelphia, Pa. Hose-supporters	53,272	May 29	122	1714
Piorkowski, Max, Berlin, Germany. Venereal disease remedies	53,894	June 12	122	2384
Piper, George W., New York, N. Y. Mixed paints	53,325	May 29	122	1716
Pittman & Harrison Co., Sherman, Tex. Cornmeal and corn-chop	53,790	June 12	122	2380
Plank, Frederick F., Petaluma, Cal. Vegetable-sauce	54,175	June 19	122	2684
Platt & Company, Baltimore, Md. Canned fruits and vegetables	52,684	May 15	122	1036
Platt & Company, Baltimore, Md. Canned fruits and vegetables	54,523	June 26	122	2999
Plymouth Cordage Company, Plymouth, Mass. Fibrous and textile rope and twine	54,721	June 26	122	3007
Pomeroy Company, New York, N. Y. Elastic stockings	52,279	May 8	122	713
Pond's Extract Company, New York, N. Y. Talcum powder	52,107	May 1	122	343
Pond's Extract Company, New York, N. Y. Skin-cream	52,108	May 1	122	343
Pond's Extract Company, New York, N. Y. Dentifrices in powder, paste, or liquid form	52,109	May 1	122	343
Popper, Gray & Co., New York, N. Y. Cheese	52,890	May 22	122	1385
Porritt & Sons, Joseph, Helmshore, England. Paper-makers' feltings	54,579	June 26	122	3001
Portland Packing Co., Portland, Me. Canned corn	53,791	June 12	122	2380
Portland Packing Company, Portland, Me. Canned lobsters, canned mackerel, canned clams, and canned clam-chowder	54,176	June 19	122	2684
Postum Cereal Co., Limited, Battle Creek, Mich. Non-alcoholic food drinks which are produced from a cereal	52,560	May 15	122	1031
Potter Drug & Chemical Corporation, Boston, Mass. Medicated and perfumed soap	53,762	June 12	122	2379
Pratt, Abram E., New York, N. Y. Compounds for filling teeth and curing toothaches	54,679	June 26	122	3005
Pratt Company, B. G., New York, N. Y. Insecticides	54,343	June 26	122	2991
Pratt Food Co., Philadelphia, Pa. Remedies for bloat in animals	52,790	May 15	122	1040
Pratt-Low Preserving Co., San Jose, Cal. Canned fruits and vegetables	53,326	May 29	122	1716
Premier Motor Manufacturing Company, Indianapolis, Ind. Motor-vehicles commonly known as automobiles	52,872	May 22	122	1385
Prescott, Amos L., New York, N. Y. Certain named polish	52,733	May 15	122	1038
Prescott, Jesse, Webster, Mass. Wall-ties	53,185	May 29	122	1710
Preston B. Keith Shoe Company, Brockton, Mass. Leather boots, shoes, and slippers	53,228	May 29	122	1712
Preston Manufacturing Company, Portland, Oreg. Antiseptic and disinfectant mineral soap	53,731	June 12	122	2378
Price Baking Powder Company, Chicago, Ill. Baking-powder	52,734	May 15	122	1038
Price Fireproofing Company, Poughkeepsie, N. Y. Fireproof starch	52,735	May 15	122	1038
Price Fireproofing Company, Poughkeepsie, N. Y. Fireproof starch	53,229	May 29	122	1712
Price's Patent Candle Co. Limited, London. Battersea, and Bromborough Pool Works, England. Glycerin	52,110	May 1	122	343
Price's Patent Candle Company Limited, London, Battersea, and Bromborough Pool Works, England. Candles and tapers	52,079	May 1	122	342
Prince M'f'g Co., New York, N. Y. Metallic paint in dry powder and in oil	54,414	June 26	122	2994
Pritchard, Edward, New York, N. Y. Tomato catsup, relish, and chili sauce	54,628	June 26	122	3003
Procter & Gamble Co., Ivorydale and Cincinnati, Ohio, and Kansas City, Kans. Soap for toilet, laundry, and general use	54,415	June 26	122	2994
Protopazzi Brothers, London, England. Dried figs	54,580	June 26	122	3001
Putnam, Frederic H., Boston, Mass. Medicinal tablets	53,327	May 29	122	1716
R. Hudnut's Pharmacy, New York, N. Y. Soap	52,080	May 1	122	342
R. Hudnut's Pharmacy, New York, N. Y. Toilet and sachet powder	52,160	May 1	122	345
R. Wallace & Sons Mfg. Co., Wallingford, Conn. Sterling-silver ware	54,561	June 26	122	3000
R. E. Dietz Company, New York, N. Y. Lantern-burners	52,817	May 15	122	1041
R. E. Dietz Company, New York, N. Y. Lamps and lanterns and parts thereof	54,289	June 26	122	2989
R. L. Perry Co., Boston, Mass. Chocolates and bonbons	53,357	May 29	122	1717
Radam, Ida, New York, N. Y. Microbe-killer	52,499	May 8	122	723
Railway Educational Association, New York, N. Y. Educational books for railway employees	52,700	May 15	122	1036
Railway Educational Association, New York, N. Y. Educational books for railway employees	52,701	May 15	122	1036
Railway Educational Association, New York, N. Y. Educational books for railway employees	54,251	June 26	122	2988
Rainer-Heinly Co., Danville, Ill. Tomato tonic and beverage	54,177	June 19	122	2684
Randall-Adams Co., Lynn, Mass. Leather boots and shoes	52,217	May 1	122	347
Randolph Milling Company, Baldwin, Ill. Wheat-flour	54,210	June 19	122	2685
Ransom & Randolph Co., Toledo, Ohio. Fire and acid proof composition	53,640	June 5	122	2058
Rasin-Monumental Company of Anne Arundel County, Baltimore, Md. Fertilizers	53,682	June 12	122	2376
Rasin-Monumental Company of Anne Arundel County, Baltimore, Md. Fertilizers	53,683	June 12	122	2376
Rasin-Monumental Company of Anne Arundel County, Baltimore, Md. Fertilizers	53,684	June 12	122	2376
Rasin-Monumental Company of Anne Arundel County, Baltimore, Md. Fertilizers	53,708	June 12	122	2377
Rasin-Monumental Company of Anne Arundel County, Baltimore, Md. Fertilizers	53,959	June 19	122	2675
Rath, Chas., Philadelphia, Pa. Metal-polishes	52,702	May 15	122	1037
Rea, Charles L., New York, N. Y. Veterinary gall-ointments, healing-powders, and liniments	54,362	June 26	122	2992
Rea-Patterson Milling Company, Coffeyville, Kans. Wheat-flour	54,386	June 26	122	2993
Rea-Patterson Milling Company, Coffeyville, Kans. Wheat-flour	54,387	June 26	122	2993
Red Jacket Manufacturing Company, Davenport, Iowa. Piston well-pumps	52,372	May 8	122	717
Reddick, William A., Niles, Mich. Animal-traps	53,641	June 5	122	2058
Reed & Barton Corporation, Taunton, Mass. Hollow silverware	54,119	June 19	122	2682
Reed Manufacturing Co., Newark, N. Y. Culinary utensils made of tinware	53,150	May 29	122	1709
Reeves & Co., J. S., Nashville, Tenn. Woven cotton piece goods	54,178	June 19	122	2684
Reins & Meiss, Cincinnati, Ohio. Hosiery	53,868	June 12	122	2383
Reisinger, Hugo, New York, N. Y. Carbons for electrical purposes	52,668	May 15	122	1035
Rendle, Arthur E., New York, N. Y. Windows and skylights	53,563	June 5	122	2055
Renton, Edward, Trenton, N. J., assignor to R. A. Boehike, Philadelphia, Pa. Mechanical illusion apparatus	54,344	June 26	122	2991
Renziehausen, Frederick C., Pittsburg, Pa. Whisky	52,184	May 1	122	346
Reo Car Co., Lansing, Mich. Automobile vehicles	54,722	June 26	122	3007
Republic Belting & Supply Co., Cleveland, Ohio. Leather belting	54,581	June 26	122	3001
Reymer & Brothers, Incorporated, Pittsburg, Pa. Candy	53,564	June 5	122	2055
Reymer & Brothers, Incorporated, Pittsburg, Pa. Candy	54,524	June 26	122	2999
Reynolds & Co., James E., New York, N. Y. Carpet-warps	53,358	May 29	122	1717
Reynolds, James E., New York, N. Y. Carpet-warps	52,373	May 8	122	717
Rhomberg Bros. & Co., Dubuque, Iowa. Whisky	53,606	June 5	122	2056
Rhomberg Bros. & Co., Dubuque, Iowa. Whisky	53,642	June 5	122	2058
Rice & Co., A. H., Pittsfield, Mass. Silk thread	53,104	May 29	122	1707
Rice, Erie H., Jamestown, N. Y. Skin-food or massage-cream	54,680	June 26	122	3005
Rice & Hutchins, Incorporated, Boston, Mass., assignor to Rice and Hutchins, Incorporated. Leather boots and shoes and leather used in their manufacture	52,000	May 1	122	338
Rice & Hutchins, Incorporated, Boston, Mass., assignor to Rice and Hutchins, Incorporated. Leather boots and shoes and leather used in their manufacture	52,628	May 15	122	1034

Alphabetical list of registrants of trade-marks for May and June—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Rice & Hutchins, Incorporated, Boston, Mass., assignor to Rice and Hutchins Incorporated. Rubber boots and shoes of all kinds	54,525	June 26	122	2999
Rice & Hutchins, Incorporated, Boston, Mass., assignor to Rice and Hutchins Incorporated. Leather boots and shoes and leather used in their manufacture	54,526	June 26	122	2999
Rice, Stearns & Co., Hanford, Cal. Foot-powder	52,474	May 8	122	721
Rice, Stix Dry Goods Company, St. Louis, Mo. Hosiery	54,290	June 26	122	2989
Rice, Stix Dry Goods Company, St. Louis, Mo. Hosiery	54,291	June 26	122	2989
Richard B. Green & Co., Limited, Liverpool, England. Canned and tinned salmon	53,792	June 12	122	2380
Richard Young Company, New York, N. Y. Sheepskins having a special finish	52,818	May 15	122	1041
Richards, Ed. T., Chicago, Ill. Powdered nerve and muscle tonic	52,500	May 8	122	723
Richards, Edwin G., Sharon, Mass. Self-rising flour	54,388	June 26	122	2993
Richardson Brunsing Co., San Francisco, Cal. Whisky	54,681	June 26	122	3005
Richford Garment Company, Richford, Vt. Overalls, bibs, and coats	53,869	June 12	122	2383
Richmond & Backus Co., Detroit, Mich. Ledgers	52,305	May 8	122	714
Richter, Friedrich A., New York, N. Y., and Rudolstadt, Germany. Perfuming extracts	53,643	June 5	122	2058
Richter, Friedrich A., Rudolstadt Germany, and New York, N. Y. Liniment	54,292	June 26	122	2989
Richter, Friedrich A., Rudolstadt, Germany, and New York, N. Y. Music-boxes	54,582	June 26	122	3001
Ries, Jacob, Shakopee, Minn. Carbonated tonic beverage	53,644	June 5	122	2058
Ries, Jacob, Shakopee, Minn. Carbonated tonic beverage	53,645	June 5	122	2058
Ries, Jacob, Shakopee, Minn. Carbonated tonic beverage	54,610	June 26	122	3002
Riggs, George C., New York, N. Y. Linen and linen piece goods	52,475	May 8	122	721
Ring Paper Clip Company, Providence, R. I. Spring paper-clips	53,273	May 29	122	1714
River Co., Waterbury, Conn. Corrugated brass shoe-nails	52,022	May 1	122	339
Robert F. Mackenzie Co., Cleveland, Ohio. Candy	53,010	May 22	122	1390
Robert F. Mackenzie Co., Cleveland, Ohio. Cough-drops	53,646	June 5	122	2058
Robert F. Mackenzie Co., Cleveland, Ohio. Candy	53,732	June 12	122	2378
Robert Smith Ale Brewing Co., Philadelphia, Pa. Ale	52,469	May 8	122	721
Robert Smith Ale Brewing Company, Philadelphia, Pa. Stout	53,407	June 5	122	2048
Robert Smith Ale Brewing Company, Philadelphia, Pa. Stout	53,408	June 5	122	2048
Robertson & Son, John, Bellows Falls, Vt. Toilet-paper	53,812	June 12	122	2381
Rochester Candy Works, Rochester, N. Y. Candies	53,607	June 5	122	2057
Rochester Nonrust Tinware Co., Rochester, N. Y. Sheet-metal vessels for domestic or household purposes	52,561	May 15	122	1031
Rochester. Richmond, New York, N. Y. Vegetable-fiber rope, cord, and twine	54,252	June 26	122	2988
Rock Plaster Co. of New York & New Jersey, New York, N. Y. Lime and plaster	52,588	May 15	122	1032
Rockey, Joseph W., Miamisburg, Ohio. Peach-trees	52,081	May 1	122	342
Roderick Lean Manufacturing Co., Mansfield, Ohio. Harrows	53,105	May 29	122	1707
Roe, Wm. H., New York, N. Y. Silk dress goods	52,339	May 8	122	716
Rogers & Hubbard Co., Middletown, Conn. Bone for case-hardening, coloring, and annealing	52,082	May 1	122	342
Rogers Paper Mfg. Co. Inc., South Manchester, Conn. Press-board or press-paper	54,629	June 26	122	3003
Rogers Paper Mfg. Co. Inc., South Manchester, Conn. Press-board or press-paper	54,682	June 26	122	3005
Rogers & Thompson, New York, N. Y. Silk piece goods	52,023	May 1	122	339
Rogers & Thompson, assignors to Rogers & Thompson, New York, N. Y. Silk dress goods in the piece	53,647	June 5	122	2058
Roosa, Herbert H., Lincoln, Nebr. Leather boots, shoes, slippers, and insoles	54,363	June 26	122	2992
Rosemary Manufacturing Company, Roanoke Rapids, N. C. Cotton damask	52,685	May 15	122	1036
Rosemary Manufacturing Company, Roanoke Rapids, N. C. Cotton damask	52,962	May 22	122	1388
Rosemary Manufacturing Company, Roanoke Rapids, N. C. Cotton damask	54,211	June 19	122	2685
Rosenbaum Company, Pittsburg, Pa. Corsets	52,041	May 1	122	340
Rosenbush & Co., Al. A., Boston, Mass. Leather boots and shoes	52,935	May 22	122	1387
Rosenwasser Bros., New York, N. Y. Leggings	52,042	May 1	122	340
Ross & Co., Charles H., Baltimore, Md. Whisky	54,723	June 26	122	3007
Rowell, Jennie, St. Louis, Mo. Ointment for the complexion	54,293	June 26	122	2989
Royal Baking Powder Company, New York, N. Y. Flavoring extracts	53,209	May 29	122	1711
Royal Baking Powder Company, New York, N. Y. Cream of tartar	54,120	June 19	122	2682
Royal Metal Steel Co., New York, N. Y. Tool-steel	52,111	May 1	122	343
Rubber & Celluloid Harness Trimming Co., Newark, N. J. Lather-brushes	53,648	June 5	122	2058
Rucker, Harry D., Lafayette, Ind. Remedies for certain named diseases	54,085	June 19	122	2680
Rumford Chemical Works, Providence, R. I. Phosphatic powders	53,230	May 29	122	1712
Runkel Brothers, Incorporated, New York, N. Y. Cocoa	52,043	May 1	122	340
Runkel Brothers, Incorporated, New York, N. Y. Chocolate	52,044	May 1	122	340
Russ-Suchard & Cie., Neuchâtel, assignors to Suchard Société Anonyme, Serrieres, Neuchâtel, Switzerland. Chocolates and cocoas	54,480	June 26	122	2997
Russ-Suchard & Cie., Neuchâtel, Switzerland, assignors to Suchard Société Anonyme. Chocolate candies, chocolate, and preparations of chocolate and cocoas	54,527	June 26	122	2999
Russell & Company, Fort Ogden, Fla., and New York, N. Y. Oranges, lemons, grape-fruit, tangerines, and mandarins	52,761	May 15	122	1039
Ryan-Hampton Tobacco Co., Newburg, Ind. A particularly fine grade of plug-tobacco	52,616	May 15	122	1033
Ryan, Thomas J., Nashville, Tenn. Whisky	54,724	June 26	122	3007
S. Grabfelder & Co., Louisville, Ky. Whisky	53,409	June 5	122	2048
S. Hamill Company, Keokuk, Iowa. Canned fruits and vegetables	52,936	May 22	122	1387
S. C. Herbst Importing Co., Milwaukee, Wis. Rye and Bourbon and all kinds of whiskies	52,669	May 15	122	1035
S. C. Tooker & Co., Minneapolis, Minn. Dried fruits	52,891	May 22	122	1385
S. M. Howes Company, Boston, Mass. Dampers for hot-air pipes and smoke-pipes	52,046	May 1	122	340
S. S. Pierce Co. Boston, Mass. Tea	54,389	June 26	122	2993
S. S. Stafford, Inc., New York, N. Y. Copying, indelible, and writing inks	54,294	June 26	122	2989
S. S. Stafford, Inc., New York, N. Y. Mucilage, paste, and sealing-wax	54,481	June 26	122	2997
S. S. White Dental Mfg. Co., Philadelphia, Pa.; Chicago, Ill.; New York, Brooklyn, and Rochester, N. Y.; Boston, Mass.; Atlanta, Ga.; New Orleans, La.; Toronto, Canada; Buenos Ayres, Argentina; Berlin, Germany, and St. Petersburg, Russia. Dental rubber	53,151	May 29	122	1709
S. S. White Dental Mfg. Co., Philadelphia, Pa.; Chicago, Ill.; New York, Brooklyn, and Rocheseer, N. Y.; Boston, Mass.; Atlanta, Ga.; New Orleans, La.; Toronto, Canada; Buenos Ayres, Argentina; Berlin, Germany; and St. Petersburg, Russia. Gutta-percha tooth-filling	53,152	May 29	122	1709
S. S. White Dental Mfg. Co., Philadelphia, Pa.; Chicago, Ill.; New York, Brooklyn, and Rochester, N. Y.; Boston, Mass.; Atlanta, Ga.; New Orleans, La.; Toronto, Canada; Buenos Ayres, Argentina; Berlin, Germany, and St. Petersburg, Russia. Gutta-percha tooth-filling	53,153	May 29	122	1709
S. S. White Dental Mfg. Co., Philadelphia, Pa.; Chicago, Ill.; New York, Brooklyn, and Rochester, N. Y.; Boston, Mass.; Atlanta, Ga.; New Orleans, La.; Toronto, Canada; Buenos Ayres, Argentina; Berlin, Germany, and St. Petersburg, Russia. Wax	53,258	May 29	122	1713
S. S. White Dental Mfg. Co., Philadelphia, Pa.; Chicago, Ill.; New York, Brooklyn, and Rochester, N. Y.; Boston, Mass.; Atlanta, Ga.; New Orleans, La.; Toronto, Canada; Buenos Ayres, Argentina; Berlin, Germany, and St. Petersburg, Russia. Tooth-paste	53,359	May 29	122	1717
S. S. White Dental Mfg. Co., Philadelphia, Pa., Chicago, Ill.; New York, Brooklyn, and Rochester, N. Y.; Boston, Mass.; Atlanta, Ga.; New Orleans, La.; Toronto, Canada; Buenos Ayres, Argentina; Berlin, Germany, and St. Petersburg, Russia. Investment and impression compounds	53,360	May 29	122	1718

Alphabetical list of registrants of trade-marks for May and June—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
S. S. White Dental Mfg. Co., Philadelphia, Pa.; Chicago, Ill.; New York, Brooklyn, and Rochester, N. Y.; Boston, Mass.; Atlanta, Ga.; New Orleans, La.; Toronto, Canada; Buenos Ayres, Argentina; Berlin, Germany, and St. Petersburg, Russia. Cavity-linings	53,361	May 29	122	1718
S. S. White Dental Mfg. Co., Philadelphia, Pa.; Chicago, Ill.; New York, Brooklyn, and Rochester, N. Y.; Boston, Mass.; Atlanta, Ga.; New Orleans, La.; Toronto, Canada; Buenos Ayres, Argentina; Berlin, Germany, and St. Petersburg, Russia. Investment and impression compounds	53,362	May 29	122	1718
S. S. White Dental Mfg. Co., Philadelphia, Pa.; Chicago, Ill.; New York, Brooklyn, and Rochester, N. Y.; Boston, Mass.; Atlanta, Ga.; New Orleans, La.; Toronto, Canada; Buenos Ayres, Argentina; Berlin, Germany, and St. Petersburg, Russia. Polishing and abrading strips	53,565	June 5	122	2055
S. S. White Dental Mfg. Co., Philadelphia, Pa., Chicago, Ill.; New York, Brooklyn, and Rochester, N. Y.; Boston, Mass.; Atlanta, Ga.; New Orleans, La.; Toronto, Canada; Buenos Ayres, Argentina; Berlin, Germany, and St. Petersburg, Russia. Abrading disks, wheels, and points	53,566	June 5	122	2055
Sachs and Sons, D., Louisville, Ky. Whisky	52,580	May 15	122	1032
Saco Valley Canning Company, Portland, Me. Certain named canned goods	54,146	June 19	122	2683
Saco Valley Canning Company, Portland, Me. Canned corn and canned succotash	54,147	June 19	122	2683
Saco Valley Canning Company, Portland, Me. Certain named canned goods	54,148	June 19	122	2683
Saco Valley Canning Company, Portland, Me. Canned corn and canned succotash	54,436	June 26	122	2995
Salt Lake City Soda Water Co., Salt Lake City, Utah. Tonic beverage	52,218	May 1	122	347
Sample & Co., New York, N. Y. Whisky	53,608	June 5	122	2057
Samson & Co., E. J., Chicago, Ill. Earthenware vessels	54,611	June 26	122	3002
Samuel Fox & Co., Limited, Stocksbridge Works, near Sheffield, England. Umbrella-frames of metal	53,896	June 12	122	2384
Samuel Fox & Co., Limited, Stocksbridge Works, near Sheffield, England. Umbrella frames and ribs of metal	53,897	June 12	122	2384
Samuel Fox & Co., Limited, Stocksbridge Works, near Sheffield, England. Umbrella-frames	53,898	June 12	122	2384
Samuel Fox & Co., Limited, Stocksbridge Works, near Sheffield, England. Umbrella-frames	53,899	June 12	122	2384
Samuel Fox & Co., Limited, Stocksbridge Works, near Sheffield, England. Umbrella-frames	53,900	June 12	122	2384
Samuel Fox & Co., Limited, Stocksbridge Works, near Sheffield, England. Umbrella-frames of metal	53,901	June 12	122	2384
Samuel Fox & Co., Limited, Stocksbridge Works, near Sheffield, England. Umbrella-frames of metal	53,902	June 12	122	2384
Sanchez & Haya Co., Tampa, Fla. Cigars	52,002	May 1	122	339
Saunders, Frederick, San Francisco, Cal. Fresh mince-meat	53,469	June 5	122	2051
Savage, Marion W., Minneapolis, Minn. Incubators and brooders	52,374	May 8	122	717
Savage, Marion W., Minneapolis, Minn. Stock-food	52,791	May 15	122	1040
Savage, Marion W., Minneapolis, Minn. Stock-food	53,011	May 22	122	1390
Savage, Marion W., Minneapolis, Minn. Poultry-food	53,012	May 22	122	1390
Scanlan, Kickham, *et al.*, administrators. (See Canepa, John B.)				
Scarlett Wm. G., Baltimore, Md. Grass and field seeds	52,985	May 22	122	1389
Schabinger Co., L. J., Cleveland, Ohio. Medicine for stomach diseases	53,567	June 5	122	2055
Schenkelberger, Albert F., Boston, Mass. Sole-leather, cut and uncut	54,683	June 26	122	3005
Schenley Distilling Company, Schenley, Pa. Whisky	53,568	June 5	122	2055
Scherer, Fred S., Utica, N. Y. Whisky	52,737	May 15	122	1038
Schilling & Co. A., San Francisco, Cal. Tea	54,528	June 26	122	2999
Schilling & Co., A., San Francisco, Cal. Tea	54,529	June 26	122	2999
Schindler, Charles E., Coldwater, Ohio. Remedies for catarrh	54,630	June 26	122	3003
Schlenker & Klenzle, Schwenningen, Germany. Clock-movements	52,306	May 8	122	715
Schlichten, Geo. W., New York, N. Y Woven and knitted underwear	54,253	June 26	122	2988
Schmidt, Florian J., Chicago, Ill. Certain named medicine	53,088	May 22	122	1393
Schmidt, Fritz. New York, N. Y. Gloves	53,649	June 5	122	2058
Schneider, John R., Augusta, Ga. Wines	53,154	May 29	122	1709
Schoble & Co., Frank, Philadelphia, Pa. Hats and caps	51,973	May 1	122	337
Schoble & Co., Frank, Philadelphia, Pa. Hats and caps	52,083	May 1	122	342
Schoenberg, Ralph A., New York, N. Y. Electric switches, push-buttons, and fittings for electric circuits and lights	54,725	June 26	122	3007
Schülke & Mayr, Hamburg, Germany. Disinfectants and antiseptics	53,937	June 12	122	2386
Schülke & Mayr, Hamburg, Germany. Disinfectants and antiseptics	53,938	June 12	122	2386
Schulz, Friedrich A., Leipsic, Germany. Antiseptics and washes for the mouth and teeth	54,583	June 26	122	3001
Schwab Clothing Co., St. Louis, Mo. Coats, vests, overcoats, and trousers	54,237	June 26	122	2987
Schwabacher Bros. & Co. Inc., Seattle, Wash. Canned fruits	52,340	May 8	122	716
Schwabacher Bros. & Co. Inc., Seattle, Wash. Canned fruits and vegetables	52,341	May 8	122	716
Schwabacher Bros. & Co., Inc., Seattle, Wash. Baking-powder	54,197	June 19	122	2685
Schwartz, Joseph H., Plymouth, Pa. Whisky	53,056	May 22	122	1392
Schwob, Adolphe, New York, N. Y. Watches and parts thereof	54,179	June 19	122	2684
Schwob, Adolphe, New York, N. Y. Watches and parts thereof	54,530	June 26	122	2999
Schwob, Adolphe, New York, N. Y. Watches and parts thereof	54,531	June 26	122	2999
Scott-Blake Co., Portland, Me. Hat-pins	53,733	June 12	122	2378
Scott & Company Norfolk, Va. Butter	54,390	June 26	122	2993
Scott Paper Co., Philadelphia, Pa. Toilet-paper	53,155	May 29	122	1709
Scott Paper Co., Philadelphia, Pa. Toilet-paper	53,377	June 5	122	2047
Scott Paper Co. Philadelphia, Pa. Toilet-paper	54,364	June 26	122	2992
Scott Paper Co., Philadelphia, Pa. Toilet-paper	54,365	June 26	122	2992
Scott Paper Co , Philadelphia, Pa. Toilet-paper	54,366	June 26	122	2992
Scranton Whetstone and Abrasive Wheel Co., Scranton, Pa. Oilstones, waterstones, whetstones, hones, and grindstones	52,738	May 15	122	1038
Scranton Whetstone and Abrasive Wheel Co., Scranton, Pa. Oilstones, whetstones, hones, waterstones, and grindstones	53,364	May 29	122	1718
Scranton Whetstone and Abrasive Wheel Co., Scranton, Pa. Oilstones, waterstones, whetstones, and grindstones	54,021	June 19	122	2678
Scranton Whetstone and Abrasive Wheel Company, Scranton, Pa. Oilstones, waterstones, whetstones, hones, and grindstones	53,363	May 29	122	1718
Seamless Rubber Co., New Haven, Conn. Nipples for nursing-bottles	53,328	May 29	122	1716
Searing, Peter J. L., New York, N. Y. Salt	52,963	May 22	122	1388
Searing, Peter J. L., New York, N. Y. Salt	54,212	June 19	122	2685
Secor, May, Weehawken, N. J. Liquid preparation for the complexion to be used externally	52,458	May 8	122	721
Security Milling Company, Abilene, Kans. Wheat-flour	52,986	May 22	122	1389
Seebohm & Dieckstahl Ld., Sheffield, England. Steel and iron in bar, rod, rail, sheet, and wire	54,765	June 26	122	3008
Selby Smelting & Lead Company, San Francisco, Cal. Shot	52,629	May 15	122	1034
Selby Smelting & Lead Company, San Francisco, Cal. Solder, Babbitt, or other antifriction metal	52,630	May 15	122	1034
Selby Smelting and Lead Company, San Francisco, Cal. Lead traps and bends	52,631	May 15	122	1034
Semel & Co., J. H., New York, N. Y. Knit underwear	53,870	June 12	122	2383
Seneca Mill & Elevator Company, Seneca, Mo. Wheat-flour	53,186	May 29	122	1710
Seneca Mill & Elevator Company, Seneca, Mo. Wheat-flour	53,939	June 12	122	2386
Senour Manufacturing Co., Chicago, Ill. Mixed paints	53,231	May 29	122	1712
Seyd, Otto, New York, N. Y. Certain named dress fabrics	54,562	June 26	122	3000
Shackamaxon Worsted Co., Philadelphia, Pa. Woolen and worsted piece goods	53,106	May 29	122	1707
Sheboygan Chair Cmpany, Sheboygan, Wis. Chairs	53,813	June 12	122	2381
Sheeline Son & Co., D., New York, N. Y. Paper wrappers for rolls of ribbon	53,793	June 12	122	2380
Sheer Cut Shear Co., Chicago, Ill. Shears	53,569	June 5	122	2055

Alphabetical list of registrants of trade-marks for May and June—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Sheffield-King Milling Co., Minneapolis, Minn. Wheat-flour	52,045	May 1	122	340
Shoemaker & Busch, Philadelphia, Pa. Compounds of chlorids and formaldehyde	54,631	June 26	122	3003
Sibley, William E., Freeport, Ill. Coffee	54,391	June 26	122	2993
Sidney Fairchild Company, New York, N. Y. Cordial	53,410	June 5	122	2048
Siegel, Cooper & Co., Chicago, Ill. Soap	53,960	June 19	122	2675
Siegel, Cooper & Co., Chicago, Ill. Jams, jellies, and preserves	54,180	June 19	122	2684
Siemssen & Co., Hamburg, Germany. Cotton sheetings, shirtings, drills, and tickings	53,259	May 29	122	1713
Silberstein, Albert L., New York, N. Y. Razors and pocket-knives	52,342	May 8	122	716
Silver & Company, New York, N. Y. Tea and coffee pots	53,794	June 12	122	2380
Silver & Company, New York, N. Y. Tea and coffee pots and coffee-urns	53,814	June 12	122	2381
Silver Lake Company, Boston, Mass. Cords, lines, twines, and ropes	52,375	May 8	122	717
Silver Lake Company, Boston, Mass. Cords, lines, twines, and ropes	52,376	May 8	122	717
Silver Lake Company, Boston, Mass. Ropes, cords, twines, and lines	54,345	June 26	122	2991
Simmons Hardware Company, St. Louis, Mo. Planes and plane-irons	53,685	June 12	122	2376
Simmons Hardware Company, St. Louis, Mo. Chisels and gouges	53,686	June 12	122	2376
Simmons Hardware Company, St. Louis, Mo. Razors	53,687	June 12	122	2376
Simmons Hardware Company, St. Louis, Mo. Pocket-knives	53,709	June 12	122	2377
Simmons Hardware Company, St. Louis, Mo. Augers, bits, and gimlets	53,710	June 12	122	2377
Simmons Hardware Company, St. Louis, Mo. Files and rasps	53,711	June 12	122	2377
Simmons Hardware Company, St. Louis, Mo. Corn-knives and hay-knives	53,712	June 12	122	2377
Simmons Hardware Company, St. Louis, Mo. Saws, saw-blades, and saw-handles	53,763	June 12	122	2379
Singer Manufacturing Company, New York, N. Y. Lubricating-oil	53,987	June 19	122	2676
Singer Manufacturing Company, New York, N. Y. Needles for sewing by hand and by machine	54,023	June 19	122	2678
Singer, Nimick & Co., Inc., Pittsburg, Pa. Steel	54,367	June 26	122	2992
Sinnott, Joseph F., Philadelphia, Pa. Whisky	52,686	May 15	122	1036
Sinnott, Joseph F., Philadelphia, Pa. Whisky	54,049	June 19	122	2679
Sinnott, Joseph F., Philadelphia, Pa. Whisky	54,419	June 26	122	2499
Sir Isaac Pitman & Sons Ltd., Bath, England. Writing-paper	53,156	May 29	122	1709
Sleepy Eye Milling Company, Sleepy Eye, Minn. Breakfast-food and farina made from wheat	52,493	May 8	122	722
Sleepy Eye Milling Company, Sleepy Eye, Minn. Self-rising flour	52,540	May 8	122	724
Sleepy Eye Milling Company, Sleepy Eye, Minn. Wheat-flour	52,819	May 15	122	1041
Sleepy Eye Milling Company, Sleepy Eye, Minn. Wheat-flour	53,107	May 29	122	1707
Sloan, Earl S., Boston, Mass. Liniment	54,295	June 26	122	2989
Smedley, James L., New York, N. Y. Cure for rheumatism	52,792	May 15	122	1040
Smith-Briscoe Shoe Company, Lynchburg, Va. Leather boots and shoes	52,433	May 8	122	720
Smith-Briscoe Shoe Company, Lynchburg, Va. Leather boots and shoes	53,157	May 29	122	1709
Smith-Briscoe Shoe Company, Lynchburg, Va. Leather boots and shoes	53,329	May 29	122	1716
Smith-Briscoe Shoe Company, Lynchburg, Va. Men's leather boots and shoes	54,086	June 19	122	2680
Smith, Charles E., Reading, Pa. Knitted underwear	52,377	May 8	122	717
Smith, Charles W., Warren, Pa. Medicinal oil for external use	52,470	May 8	122	721
Smith & Hemenway Company, New York, N. Y. Razors	53,570	June 5	122	2055
Smith & Hemenway Company, New York, N. Y. Nail-clippers	53,571	June 5	122	2055
Smith & Hemenway Company, New York, N. Y. Razors	53,572	June 5	122	2055
Smith & Hemenway Company, New York, N. Y. Razors	54,757	June 26	122	3008
Smith, Hogg & Co., New York, N. Y. Blankets, comfortables, and spreads	54,149	June 19	122	2683
Smith, James P., Augusta, Ga. Remedy for chills and fever	54,684	June 26	122	3005
Smith & Kaufmann, New York, N. Y. Ribbons	52,378	May 8	122	717
Smith & Scott Tobacco Co., Paducah, Ky. Chewing and smoking tobacco	54,532	June 26	122	2999
Smith, Sidney S., Allegheny, Pa. Cigars and stogies	53,498	June 5	122	2052
Smith & Wheeler, Newark, N. J. Extracts for coffee	53,795	June 12	122	2380
Smith, William B., New London, Conn. Ointments	54,065	June 19	122	2679
Snow Flake Canning Co., Brunswick, Me. Canned sea foods	52,254	May 1	122	348
Société Anonyme de la Distillerie de la France. Cordial	53,260	May 29	122	1713
Société Anonyme de la Distillerie de la France. Cordial	54,405	June 26	122	2994
Société Anonyme de la Distillerie de la France. Cordial	54,406	June 26	122	2994
Société Anonyme de la Distillerie de la France. Cordial	54,416	June 26	122	2994
Société Anonyme de la Distillerie de la France. Cordial	54,417	June 26	122	2994
Société Anonyme de la Distillerie de la France. Cordial	54,418	June 26	122	2994
Société Anonyme "Luna," Lausanne, Switzerland. Photographic paper and films	52,581	May 15	122	1032
Société Générale Suisse de Chocolats, Vevey, Switzerland. Chocolate	52,937	May 22	122	1387
Société Générale Suisse de Chocolats, Vevey, Switzerland. Chocolate	52,938	May 22	122	1387
Solomon, Philip H., St. Louis, Mo. Metal-polish	54,482	June 26	122	2997
Soltmann, Edward G., New York, N. Y. Lead-pencils, drawing-pencils, and drawing-charcoal	53,365	May 29	122	1718
Sommer, John J., North Attleboro, Mass. Collarettes and chains	54,181	June 19	122	2684
Southern Cross Fruit Co., Johnstown and New York, N. Y., and San Juan, Porto Rico. Certain named fruits	53,470	June 5	122	2051
Southern Cross Fruit Co., Johnstown and New York, N. Y., and San Juan, Porto Rico. Certain named fruits	53,471	June 5	122	2051
Southern Engine & Boiler Works, Jackson, Tenn. Stationary steam-engines	53,988	June 19	122	2676
Southern Hog Remedy Co., Fort Worth, Tex. Remedy for curing diseases of swine, and particularly hog cholera	53,330	May 29	122	1716
Southern Optical Company, Knoxville, Tenn. Spectacles and eyeglasses and parts thereof	53,989	June 19	122	2676
Southern Refining Company, Los Angeles, Cal. Refined asphaltum	53,232	May 29	122	1712
Southern Spring Bed Company, Atlanta, Ga. Mattresses	53,573	June 5	122	2055
Specialties Sales Co., Chicago, Ill. Attachment for closet-seats	54,726	June 26	122	3007
Speck, Marshall & Co., Pittsburg, Pa. Spiral, sectional ring, flax, and sheet packing	52,820	May 15	122	1042
Speck, Marshall & Co., Pittsburg, Pa. Rubber hose	52,821	May 15	122	1042
Speck, Marshall & Co., Pittsburg, Pa. Rubber belting	52,822	May 15	122	1042
Speidel, John G., Reading, Pa. Dumb-waiters	53,109	June 5	122	2057
Speidel, John G., Reading, Pa. Dumb-waiters	54,024	June 19	122	2678
Spencer, Clinton A., Boston, Mass. Chestnut-oak extract	52,255	May 1	122	348
Spencerian Pen Co., New York, N. Y. Metallic pens	52,860	May 22	122	1384
Spencerian Pen Co., New York, N. Y. Metallic pens	53,378	June 5	122	2047
Spiegel, Samuel, New York, N. Y. Cigars	54,483	June 26	122	2997
Spiegelberger, Mathilde, Fürth, Germany. Hand-beaten leaf metals	53,132	May 29	122	1708
Sprague, Warner & Company, Chicago, Ill. Flavoring extracts	52,112	May 1	122	343
Sprague, Warner & Company, Chicago, Ill. Baking-powder	52,185	May 1	122	346
Sprague, Warner & Company, Chicago, Ill. Spices	52,186	May 1	122	346
Sprague, Warner & Company, Chicago, Ill. Syrup	52,187	May 1	122	346
Sprague, Warner & Company, Chicago, Ill. Canned fruits and vegetables	52,651	May 15	122	1035

Alphabetical list of registrants of trade-marks for May and June—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Sprague, Warner & Company, Chicago, Ill. Coffee	52,739	May 15	122	1038
Sprague, Warner & Company, Chicago, Ill. Tea	52,740	May 15	122	1038
Sprague, Warner & Company, Chicago, Ill. Baking-powder	53,013	May 22	122	1390
Sprague, Warner & Company, Chicago, Ill. Extracts	53,014	May 22	122	1390
Sprague, Warner & Company, Chicago, Ill. Candy	53,669	June 12	122	2375
Sprague, Warner & Company, Chicago, Ill. Coffee	54,392	June 26	122	2993
Sprague, Warner & Company, Chicago, Ill. Spices and mustard	54,393	June 26	122	2993
Sprague, Warner & Company, Chicago, Ill. Canned fruits and canned vegetables	54,394	June 26	122	2993
Sprigg, Thomas F., Baltimore, Md. Toilet-paper	52,823	May 15	122	1042
Sprigg, Thomas F., Baltimore, Md. Toilet-paper	52,918	May 22	122	1386
Springfield Breweries Company, Springfield, Mass. Beer	53,499	June 5	122	2052
Squibb & Co., W. P., Lawrenceburg, Ind. Whisky	52,161	May 1	122	345
Squire Dingee Co., Chicago, Ill. Pickles	53,500	June 5	122	2052
St. Joseph Pump Co., St. Joseph, Mo. Purifying-pumps, otherwise known as bucket or chain pumps	52,345	May 8	122	716
St. Louis Motor Carriage Co., St. Louis, Mo. Automobiles	54,758	June 26	122	3008
St. Louis Shovel Co., St. Louis, Mo. Shovels, scoops, and spades	53,991	June 19	122	2676
St. Louis Shovel Co., St. Louis, Mo. Shovels, scoops, and spades	54,314	June 26	122	2990
St. Louis Shovel Co., St. Louis, Mo. Shovels, scoops, and spades	54,346	June 26	122	2991
St. Paul Roofing, Cornice & Ornament Company, St. Paul, Minn. Waterproof roofing-felt	53,734	June 12	122	2378
St. Paul Roofing, Cornice & Ornament Company, St. Paul, Minn. Eaves-troughs	53,764	June 12	122	2379
Stafford Drug Co. of Baltimore City, Baltimore, Md. Remedy for corns, bunions, and ingrown nails	53,940	June 12	122	2386
Stahl, John M., Chicago, Ill. Agricultural newspapers	53,796	June 12	122	2380
Standard Bottling & Extract Co., Boston, Mass. Ginger-ale	52,307	May 8	122	715
Standard Emulsion Co., New York, N. Y. Emulsions for use in all conditions of malnutrition	53,366	May 29	122	1718
Standard Horse Nail Company, New Brighton, Pa. Horse-nails	52,343	May 8	122	716
Standard Horse Nail Company, New Brighton, Pa. Horse-nails	52,344	May 8	122	716
Standard Oil Co. of New York, New York, N. Y. Illuminating-petroleum	52,308	May 8	122	715
Standard Oil Co. of New York, New York, N. Y. Illuminating-oils	52,617	May 15	122	1033
Standard Oil Co. of New York, New York, N. Y. Turpentine	53,015	May 22	122	1390
Standard Oil Co. of New York, New York, N. Y. Illuminating-oils manufactured from petroleum	53,445	June 5	122	2050
Standard Oil Co. of New York, New York, N. Y. Illuminating-oils	54,025	June 19	122	2678
Standard Oil Co. of New York, New York, N. Y. Turpentine	54,533	June 26	122	2999
Standard Sanitary Mfg. Co., Pittsburg, Pa. Bath-tubs	53,016	May 22	122	1390
Star Distillery Co., Cincinnati, Ohio. Whisky	52,188	May 1	122	346
Star Distillery Co., Cincinnati, Ohio. Whisky	52,280	May 8	122	714
Star Distillery Co., Cincinnati, Ohio. Whisky	52,545	May 8	122	725
Star Distillery Co., Cincinnati, Ohio. Whisky	53,057	May 22	122	1392
Stark Bro's. Nurseries & Orchards Company, Louisiana, Mo. Grape-vines, cuttings, scions, &c	52,113	May 1	122	343
Stark Bro's. Nurseries & Orchards Company, Louisiana, Mo. Grape-vines, cuttings, scions, &c	52,124	May 1	122	343
Starkey, John B., San Diego, Cal. Certain named medicinal remedies	52,476	May 8	122	722
Steel, Robert, Philadelphia, Pa. Whisky	53,411	June 5	122	2048
Steeves, John W., Baltimore, Md. Apparatus for administering magnetic currents to invalids	52,281	May 8	122	714
Steibel, Elizabeth M., Washington, D. C. Skin lotions and washes	53,871	June 12	122	2383
Stephenson & Co., Woodbine, N. J., and Philadelphia, Pa. Knit jackets and sweaters	52,379	May 8	122	718
Sterling Remedy Company, Kramer, Ind. Cathartic medicine	52,189	May 1	122	346
Sterling Remedy Company, Kramer, Ind. Medicine for indigestion	52,459	May 8	122	721
Steuart, Knatz & Co., Baltimore, Md. Syrups and molasses	52,162	May 1	122	345
Steurer, Charles D., New York, N. Y. Magazine	52,380	May 8	122	718
Stevens and Company, Providence, R. I. Spectacles and eyeglasses and their mountings and parts	52,381	May 8	122	718
Stewart Heater Co., Buffalo, N. Y. Feed-water heaters	53,990	June 19	122	2676
Stewart, Thomas, St. Andrews, Scotland. Iron or other metal heads of golf-clubs	54,045	June 26	122	3003
Stillwagon, Alexander H., Connellsville, Pa. Preservative coatings for metals	53,670	June 12	122	2375
Stockham, Edward V., Perryman, Md. Canned vegetables	52,219	May 1	122	347
Stoddard, Gilbert & Co., New Haven, Conn. Canned vegetables and fruits	53,815	June 12	122	2381
Stokes & Smith Company, Philadelphia, Pa. Electrically-played pianos and electrical players for pianos	52,114	May 1	122	343
Stokes & Son, Thomas, New York, N. Y. Certain named cured meats	54,182	June 19	122	2684
Stone, Charles Z., Barre, Vt. Liniment for rheumatism and sprains	53,261	May 29	122	1713
Stork Company, Boston, Mass. Waterproof sheetings	52,501	May 8	122	723
Stransky, Maurice, New York, N. Y. Enameled-steelware household and cooking utensils	52,939	May 22	122	1387
Straus Gunst & Co., Richmond, Va. Whisky	54,685	June 26	122	3005
Straus Gunst & Co., Richmond, Va. Gin	54,686	June 26	122	3005
Strause, Henry P., New York, N. Y. Cigars, cheroots, stogies, together with tobacco used for making the same	52,003	May 1	122	339
Strause, Henry P., New York, N. Y. Cigarettes	54,484	June 26	122	2997
Strauss, Pritz & Co., Cincinnati, Ohio. Whisky	53,903	June 12	122	2384
Strawbridge & Clothier, Philadelphia, Pa. Dolls	53,187	May 29	122	1710
Streator Metal Stamping Co., Streator, Ill. Carpet-sweepers	52,309	May 8	122	715
Streett & Company, J. D., St. Louis, Mo. Cylinder and valve oil	52,310	May 8	122	715
Streit & Co., Samuel, New York, N. Y. Gin	53,904	June 12	122	2384
Stromberg, Alice E., Denver, Colo. Anodyne possessing analgesic and antipyretic qualities	53,274	May 29	122	1714
Stuebner, Gustavus L., Long Island City, N. Y. Bottom-dumping buckets	53,188	May 29	122	1710
Suchard Société Anonyme. (See Russ-Suchard & Cie., assignors.)				
Suffern & Co., New York, N. Y. Cotton piece goods, sheetings, shirtings, and drills	52,047	May 1	122	340
Suffern, Robert A., New York, N. Y. Sheetings, shirtings, and drills	54,213	June 19	122	2685
Suffern, Robert A., New York, N. Y. Sheetings, shirtings, and drills	54,214	June 19	122	2685
Suffolk Brewing Company, Boston, Mass. Ale	54,121	June 19	122	2682
Sumter Telephone Mfg. Co., Sumter, S. C. Telephone-switchboards	52,861	May 22	122	1384
Sunlit Fruit Company, San Francisco, Cal. Certain named beverages and fruit-juices	52,434	May 8	122	720
Sunlit Fruit Company, San Francisco, Cal. Jams, jellies, marmalades, preserved and conserved fruits	54,183	June 19	122	2684
Supplee Hardware Company, Philadelphia, Pa. Axes, hatchets, and adzes	52,687	May 15	122	1036
Supplee Hardware Company, Philadelphia, Pa. Pocket-knives	52,964	May 22	122	1388
Supplee Hardware Company, Philadelphia, Pa. Shovels	52,965	May 22	122	1388
Supplee Hardware Company, Philadelphia, Pa. Lawn-mowers	54,238	June 26	122	2987
Supplee Hardware Company, Philadelphia, Pa. Lawn-mowers	54,254	June 26	122	2988
Supplee Hardware Company, Philadelphia, Pa. Lawn-mowers	54,255	June 26	122	2988
Sweet Springs Milling Company, Sweet Springs, Mo. Wheat-flour	52,688	May 15	122	1036
Sweet Springs Milling Company, Sweet Springs, Mo. Wheat-flour	52,741	May 15	122	1038
Sweet Springs Milling Company, Sweet Springs, Mo. Wheat-flour	54,184	June 19	122	2684
Swope & Mangold, Incorporated, Dallas, Tex. Whisky	53,574	June 5	122	2055
Sykes & Ab. Kirschbaum & Co., New York, N. Y. Suits and overcoats for young men	53,610	June 5	122	2057
Syracuse Dry Goods Co., Syracuse, N. Y. Coats, pants, and overalls	52,282	May 8	122	714
Taber, Fred J., Boston, Mass. Whisky	53,058	May 22	122	1392
Taber, Fred J., Boston, Mass. Whisky	53,059	May 22	122	1392

Alphabetical list of registrants of trade-marks for May and June—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Taber, Fred J., Boston, Mass. Whisky	53,060	May 22	122	1392
Talbot Mills, Billerica, Mass. Woolen cloth	52,742	May 15	122	1038
Tanzer, Adolph, New York, N. Y. Rings	53,526	June 5	122	2053
Taro Food Co. Ined, Danbury, Conn. Prepared food for infants and invalids	53,797	June 12	122	2380
Tarr & Wonson, Limited, Gloucester, Mass. Preservative paint for the bottoms of ships and boats.	53,961	June 19	122	2675
Tarr & Wonson, Limited, Gloucester, Mass. Preservative paint for the bottoms of ships and boats.	53,962	June 19	122	2675
Tate, Albert E., High Point, N. C. Poultry-foods	54,584	June 26	122	3001
Taylor & Co., W. A., New York, N. Y. Madeira wines	52,024	May 1	122	340
Taylor & Co., W. A., New York, N. Y. Whisky	52,190	May 1	122	346
Taylor & Co., W. A., New York, N. Y. Wines	53,446	June 5	122	2050
Taylor & Co., W. A., New York, N. Y. Whisky	53,611	June 5	122	2057
Taylor & Co., W. A., New York, N. Y. Jamaica rum	53,612	June 5	122	2057
Taylor, Herbert, Portsmouth, England. Infants' food	54,395	June 26	122	2993
Taylor, Horace B., Philadelphia, Pa. Pennyroyal and tansy pills	53,572	June 12	122	2383
Tefft Weller Company, New York, N. Y. Stockings	53,575	June 5	122	2055
Temple Pump Company, Chicago, Ill. Buckets for pump-bucket chains	52,919	May 22	122	1386
Temple Pump Company, Chicago, Ill. Gas or oil engines	52,920	May 22	122	1386
Tengwall Company, Chicago, Ill. Loose-leaf ledgers, binders, files, and leaves therefor	53,391	June 5	122	2048
Teofani & Co., London, England. Cigarettes	53,367	May 29	122	1718
Terre Haute Brewing Co., Terre Haute, Ind. Lager-beer and bottled beer	52,762	May 15	122	1039
Tetlow, Joseph, Philadelphia, Pa. Face-powder	52,220	May 1	122	347
Teweles, Ludwig, Milwaukee, Wis. Grass-seed and field-seed	54,585	June 26	122	3001
Thatcher, Charles J., Easton, Pa. Effervescent powder for making aperient mineral water	54,122	June 19	122	2682
Theodore W. Foster & Bro. Co., Providence, R. I. Sterling-silver jewelry for personal adornment	52,840	May 22	122	1383
Thomas, Bertha R., New York, N. Y. Ink-eradicators	54,586	June 26	122	3001
Thomas G. Plant Company, Boston, Mass. Men's, women's, and children's leather boots and shoes	54,315	June 26	122	2990
Thomas Millen Co., Wayland, N. Y. Portland cement	54,437	June 26	122	2995
Thomas Stationery Manufacturing Company, Springfield, Ohio. Paper-fasteners	53,816	June 12	122	2381
Thomas Walker & Son Limited, Birmingham, England. Ship-logs and sounding-machines	52,703	May 15	122	1037
Thomas Walker & Son, Ltd., Birmingham, England. Ships' logs and sounding-machines	52,382	May 8	122	718
Thomas Walker & Son Ltd., Birmingham, England. Ship-logs	52,704	May 15	122	1037
Thomas Walker & Son Ltd., Birmingham, England. Ship-logs and sounding-machines	52,705	May 15	122	1037
Thomas Walker & Son, Ltd., Birmingham, England. Ship-logs and sounding-machines	54,687	June 26	122	3005
Thompson & Christie, New York, N. Y. Certain named garments	52,115	May 1	122	343
Thonet Brothers, Vienna, Austria-Hungary. Bent-wood furniture	54,066	June 19	122	2679
Threefoot Bros. & Co., Meridian, Miss. Cheroots	53,963	June 19	122	2675
Thüringische Nadel & Stahlwaaren Fabrik Wolff, Knippenberg & Co., Actien Gesellschaft, Ichtershausen, Germany. Needles of all kinds	52,346	May 8	122	716
Timen, Gust, Chicago, Ill. Tonic for the scalp and skin	53,061	May 22	122	1392
Timson, Charles O., Lynn, Mass. Leather turned shoes	52,862	May 22	122	1384
To-Kalon Wine Co., Washington, D. C. Wines	53,905	June 12	122	2384
Toch Brothers, New York, N. Y. Ready-mixed paints	51,974	May 1	122	337
Toch Brothers, New York, N. Y. Waterproofing paint	51,975	May 1	122	338
Toch Brothers, New York, N. Y. Metal and wood preservative paint	51,976	May 1	122	338
Toch Brothers, New York, N. Y. Metallic paints	51,977	May 1	122	338
Toch Brothers, New York, N. Y. Artists' blue colors	53,501	June 5	122	2052
Toch Brothers, New York, N. Y. Artists' white colors	53,502	June 5	122	2052
Toch Brothers, New York, N. Y. Fresco-paints	54,420	June 26	122	2994
Toch Brothers, New York, N. Y. Coating for walls	54,534	June 26	122	2999
Tolhausen & Klein, Frankfort-on-the-Main, Germany. Albumen obtained from the treatment of starch	53,017	May 22	122	1390
Tone Bros., Des Moines, Iowa. Baking-powder	53,798	June 12	122	2380
Topeka Milling Company, Topeka, Kans. Wheat-flour	54,396	June 26	122	2993
Torsch Packing Co., Baltimore, Md. Canned fruits and vegetables	52,163	May 1	122	345
Totem Machine Co., New York, N. Y. Ladies' wire hat-frames made without tie-wires	54,646	June 26	122	3003
Tousey Varnish Co., Chicago, Ill. Varnish-hardeners	54,485	June 26	122	2997
Translucent Fabric Co., Quincy, Mass. Sheet translucent fabric	53,576	June 5	122	2055
Traun Rubber Co., New York, N. Y. Rubber for dental purposes	52,191	May 1	122	346
Traun & Söhne, Dr. Heinrich, Hamburg, Germany. Combs	52,192	May 1	122	346
Traun & Söhne, Dr. Heinrich, Hamburg, Germany. Combs	53,210	May 29	122	1711
Traun & Söhne, Dr. Heinrich, Hamburg, Germany. Combs	53,211	May 29	122	1711
Tremont & Suffolk Mills, Lowell, Mass. Cotton piece goods	53,835	June 12	122	2382
Tremont & Suffolk Mills, Lowell, Mass. Cotton piece goods	53,836	June 12	122	2382
Tremont & Suffolk Mills, Lowell, Mass. Cotton piece goods	53,837	June 12	122	2382
Tremont & Suffolk Mills, Lowell, Mass. Cotton piece goods	53,941	June 12	122	2386
Tremont & Suffolk Mills, Lowell, Mass. Cotton piece goods	54,296	June 26	122	2989
Tripod Paint Co., Atlanta, Ga. Calcimine	54,486	June 26	122	2997
Triumph Voting Machine Company, Pittsfield, Mass. Voting-machines	53,233	May 29	122	1712
Tropic Fruit Company, Ltd., Wahiawa, Hawaii. Combination of papaya, pineapple, and sugar	53,189	May 29	122	1710
Tropic Fruit Company, Ltd., Wahiawa, Hawaii. Mixture of the juice of the guava and sugar	53,190	May 29	122	1711
Tropic Fruit Company, Ltd., Wahiawa, Hawaii. Mixture of pulp of the guava and sugar	53,434	June 5	122	2049
Troy Belting and Supply Company, Troy, N. Y. Round and flat leather belting	54,215	June 19	122	2685
Troy Laundry Machinery Company, Limited, Chicago, Ill. Laundry soap	52,671	May 15	122	1035
Troy Laundry Machinery Company, Limited, Chicago, Ill. Laundry starch	54,563	June 26	122	3000
Tsakona, Aristotle, San Francisco, Cal. Puddings	52,793	May 15	122	1040
Tucker & McCormack, Memphis, Tenn. Whisky	54,123	June 19	122	2682
U. S. Rubber Reclaiming Works of New York, New York, N. Y. Reclaimed rubber	52,743	May 15	122	1038
U. S. Rubber Reclaiming Works of New York, New York, N. Y. Reclaimed rubber	52,744	May 15	122	1038
U. S. Rubber Reclaiming Works of New York, New York, N. Y. Reclaimed rubber	52,745	May 15	122	1038
U. T. Hungerford Brass & Copper Co., New York, N. Y. Metal manufactures	52,347	May 8	122	716
Udolpho Wolfe Co., New York, N. Y. Medicinal tonic or cordial	54,150	June 19	122	2683
Udolpho Wolfe Co. New York, N. Y. Medicinal tonic or cordial	54,151	June 19	122	2683
Udolpho Wolfe Company, New York, N. Y. Medicinal tonic and cordial	53,062	May 22	122	1392
Ullman Einstein Co., Columbus, Ohio. Whisky	53,613	June 5	122	2057
Ullmann Dreifus & Co., Cincinnati, Ohio. Flavoring extracts	52,541	May 8	122	724
Ulrici, Charles J., New York, N. Y. Remedies for diseases of the throat, nasal organs and lungs	52,221	May 1	122	347
Ultramarine Company, New York, N. Y. Bluing	53,735	June 12	122	2378
Underwood, Charles E., Dayton, Ohio. Candies	51,978	May 1	122	338
Union Bag & Paper Company, New York, N. Y. Paper bags	52,383	May 8	122	718
Union Bag & Paper Company, New York, N. Y. Paper bags	52,384	May 8	122	718
Union Bag & Paper Company, New York, N. Y. Paper bags	52,385	May 8	122	718
Union Bag & Paper Company, New York, N. Y. Paper bags	52,386	May 8	122	718
Union Bag & Paper Company, New York, N. Y. Paper bags	53,234	May 29	122	1712
Union Bag & Paper Company, New York, N. Y. Paper bags	53,577	June 5	122	2055
Union Bag & Paper Company, New York, N. Y. Paper bags	54,223	June 19	122	2685

Alphabetical list of registrants of trade-marks for May and June—Continued.

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Union Bag & Paper Company, New York, N. Y. Paper bags	54,297	June 26	122	2989
Union Fibre Co., Winona, Minn. Certain named fabrics	53,018	May 22	122	1390
Union Hoe Co., Atlanta, Ga. Hoes	53,578	June 5	122	2055
Union Special Machine Co., Chicago, Ill. Sewing-machines and parts thereof	53,235	May 29	122	1712
Union Special Machine Co., Chicago, Ill. Sewing-machines and parts thereof	53,236	May 29	122	1712
Union Special Machine Company, Chicago, Ill. Machine-needles	54,759	June 26	122	3008
United Indurated Fibre Co. of New Jersey, Lockport, N. Y. Indurated fiber ware	54,688	June 26	122	3005
United Indurated Fibre Co. of New Jersey, Lockport, N. Y. Indurated fiber ware	54,689	June 26	122	3005
United Iron Works, Oakland, Cal. Hydraulic pumps	52,589	May 15	122	1032
United Shoe Machinery Co., Boston, Mass. Leather welted boots and shoes	54,185	June 19	122	2684
United Shoe Machinery Company, Boston, Mass. Nails	53,736	June 12	122	2378
United States Brewing Company of Chicago, Chicago, Ill. Beer	53,262	May 29	122	1713
United States Graphite Company, Saginaw, Mich. Foundry-facings	54,026	June 19	122	2678
United States Graphite Company, Saginaw, Mich. Pulverized graphite	54,454	June 26	122	2996
United States Graphite Company, Saginaw, Mich. Plumbago (or graphite) axle-grease	54,647	June 26	122	3004
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	52,025	May 1	122	340
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	52,026	May 1	122	340
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	52,027	May 1	122	340
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	52,028	May 1	122	340
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	52,029	May 1	122	340
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	52,471	May 8	122	721
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	52,763	May 15	122	1039
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	53,063	May 22	122	1392
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	53,089	May 22	122	1393
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	53,435	June 5	122	2049
Utica Cement Mfg. Co., Utica, Ill. Hydraulic cement	52,892	May 22	122	1385
Utica Heater Co., Utica, N. Y. Boilers	53,650	June 5	122	2058
Utica Hydraulic Cement Co., Utica, Ill. Hydraulic cement	53,368	May 29	122	1718
Utica Hydraulic Cement Co., Utica, Ill. Hydraulic cement	54,487	June 26	122	2997
V. Schoenecker Boot & Shoe Company, Milwaukee, Wis. Leather boots and shoes	52,222	May 1	122	347
Valentine Franz Co., Philadelphia, Pa. Bitters	53,121	May 29	122	1708
Valk & Bro., S. J., New York, N. Y. Stuffed olives	52,893	May 22	122	1385
Valk & Bro., S. J., New York, N. Y. Jelly-powder	53,191	May 29	122	1711
Valvoline Oil Company, Edgewater, N. J., and New York, N. Y. Lubricating-oils	53,237	May 29	122	1712
Van Deusen, Florence E., New York, N. Y. Machines for exhibiting advertising and display matter	54,298	June 26	122	2989
Van Duzer, S. R., New York, N. Y. Hair-restoratives	53,585	June 5	122	2056
Van Horn & Sawtell, New York, N. Y. Antiseptic non-fatty and soluble lubricating-jelly	54,124	June 19	122	2682
Van Vleet-Mansfield Drug Co., Memphis, Tenn. Whisky	52,746	May 15	122	1038
Vandyck Churchill Company, New York, N. Y. Lathes	52,387	May 8	122	718
Vane-Calvert Paint Co., St. Louis, Mo. Mixed liquid paint	53,737	June 12	122	2378
Vereinigte Chemische Werke Aktiengesellschaft, Charlottenburg, Germany. Medicine for Graves' disease	53,527	June 5	122	2053
Vereinigte Chininfabriken Zimmer & Co., Ges. mit beschränkter Haftung, Frankfort-on-the-Main, Germany. Medicament	54,087	June 19	122	2680
Vereinigte Chininfabriken Zimmer & Co., Ges. mit beschränkter Haftung, Frankfort-on-the-Main, Germany. Derivatives of cinchona alkaloids	54,088	June 19	122	2680
Vermont Condensed Milk Co., Richmond, Vt., and New York, N. Y. Condensed milk	52,894	May 22	122	1385
Vermont Condensed Milk Co., Richmond, Vt., and New York, N. Y. Condensed milk	52,940	May 22	122	1387
Vermont Condensed Milk Co., Richmond, Vt., and New York, N. Y. Condensed milk	52,941	May 22	122	1387
Vermont Condensed Milk Co., Richmond, Vt., and New York, N. Y. Condensed milk	52,987	May 22	122	1389
Vermont Condensed Milk Co., Richmond, Vt., and New York, N. Y. Condensed milk	53,019	May 22	122	1390
Vermont Condensed Milk Co., Richmond, Vt., and New York, N. Y. Condensed milk	53,020	May 22	122	1390
Vermont Condensed Milk Co., Richmond, Vt., and New York, N. Y. Condensed milk	54,397	June 26	122	2993
Victor Koechl & Co., New York, N. Y. Medicinal preparation	54,398	June 26	122	2993
Victor Talking Machine Co., Camden, N. J. Smoking-tobacco and cigarettes	53,873	June 12	122	2383
Victor Talking Machine Co., Camden, N. J. Talking-machine records	54,027	June 19	122	2678
Victor Talking Machine Co., Camden, N. J. Talking-machine records	54,368	June 26	122	2992
Victor Talking Machine Co., Camden, N. J. Talking-machine records	54,535	June 26	122	2999
Victor Talking Machine Co., Camden, N. J. Talking-machine records	54,536	June 26	122	2999
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	53,275	May 29	122	1714
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Sanavnah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	53,276	May 29	122	1714
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	53,277	May 29	122	1714
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	53,278	May 29	122	1714
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	53,279	May 29	122	1714
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	53,280	May 29	122	1714
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	53,281	May 29	122	1714
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	53,282	May 29	122	1714
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	53,283	May 29	122	1714
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	53,284	May 29	122	1714
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	53,285	May 29	122	1714
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	53,286	May 29	122	1714

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Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	53,287	May 29	122	1714
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	53,288	May 29	122	1715
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	53,289	May 29	122	1715
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	53,290	May 29	122	1715
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	53,291	May 29	122	1715
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	53,292	May 29	122	1715
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	53,293	May 29	122	1715
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	53,294	May 29	122	1715
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	53,295	May 29	122	1715
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	53,472	June 5	122	2051
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	53,473	June 5	122	2051
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	53,474	June 5	122	2051
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	53,503	June 5	122	2052
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	53,504	June 5	122	2052
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	53,505	June 5	122	2052
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	53,506	June 5	122	2052
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	53,507	June 5	122	2052
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	53,508	June 5	122	2052
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	53,509	June 5	122	2052
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	53,510	June 5	122	2052
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	53,614	June 5	122	2057
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	53,688	June 12	122	2376
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	53,689	June 12	122	2376
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	53,690	June 12	122	2376
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	53,691	June 12	122	2376
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	53,713	June 12	122	2377
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	53,964	June 19	122	2675
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	53,965	June 19	122	2675
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	54,050	June 19	122	2679
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	54,067	June 19	122	2679
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	54,407	June 26	122	2994
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	54,408	June 26	122	2994

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Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	54,438	June 26	122	2995
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	54,439	June 26	122	2995
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	54,455	June 26	122	2996
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Altanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	54,456	June 26	122	2996
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	54,457	June 26	122	2996
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	54,488	June 26	122	2997
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	54,505	June 26	122	2998
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	54,648	June 26	122	3004
Virol, Limited, London, England. Food preparation of bone-marrow and malt	54,216	June 19	122	2685
Vischer & Co., Basel, Switzerland, and New York, N. Y. Ribbons	53,615	June 5	122	2057
Vischer & Co., Basel, Switzerland, and New York, N. Y. Ribbons	53,651	June 5	122	2058
Voigt & Co., Chattanooga, Tenn. Remedy for indigestion	53,212	May 29	122	1711
Voigt & Co., Chattanooga, Tenn. Tonic cordial	53,213	May 29	122	1711
Voigt & Co., Chattanooga, Tenn. Aromatic syrup for disguising quinin	53,263	May 29	122	1713
Vulcan Plow Co., Evansville, Ind. Plows and cultivators	52,116	May 1	122	343
Vulcanite Portland Cement Co., Philadelphia, Pa. Portland cement	54,537	June 26	122	2999
W. Schneider W. W. & L. Co., St. Louis, Mo. Whisky	52,494	May 8	122	722
W. A. Castle Co., Springfield, Mass. Olive-oil	53,447	June 5	122	2050
W. H. Coe Mfg. Company, Providence, R. I. Package-rolls of gold, silver, aluminium, composition, or other metal leaf	52,117	May 1	122	343
W. H. Reisner Manufacturing Co., Hagerstown, Md. Nose-guards for eyeglasses	53,992	June 19	122	2676
W. J. Dickey & Sons, Incorporated, Baltimore, Md. Kerseys and cassimeres	53,108	May 29	122	1707
W. L. Douglas Shoe Co., Portland, Me. Leather boots and shoes	53,799	June 12	122	2380
W. L. Douglas Shoe Co., Portland, Me. Leather boots and shoes	53,800	June 12	122	2380
W. S. Tyler Company, Cleveland, Ohio. Wire cloths and screens	52,388	May 8	122	718
W. W. Kimball Company, Chicago, Ill. Pianos	54,564	June 26	122	3000
Wacker & Birk Br'g & M'lt'g Co., Chicago, Ill. Beer	53,942	June 12	122	2386
Wagner, Edw. H., New York, N. Y. Hand stick fireworks	54,760	June 26	122	3008
Wagner, Edward H., New York, N. Y. Torpedo-fireworks	53,021	May 22	122	1390
Wagner, Edward H., New York, N. Y. Torpedo-fireworks	53,022	May 22	122	1390
Wagner, Edward H., New York, N. Y. Hand stick fireworks	53,023	May 22	122	1390
Wagner, Edward H., New York, N. Y. Torpedo-fireworks	53,024	May 22	122	1391
Wagner, Edward H., New York, N. Y. Non-explosive fire and smoke emitting fireworks	53,192	May 29	122	1711
Wagner, Edward H., New York, N. Y. Torpedo-fireworks	53,993	June 19	122	2677
Wagner, Edward H., New York, N. Y. Torpedo-fireworks	54,347	June 26	122	2991
Waite, Merton E. Syracuse, N. Y. Toilet lotion	52,256	May 1	122	348
Walker, James W., San Francisco, Cal. Hair-invigorators and color-restorers	53,616	June 5	122	2057
Wall, Jerrie B., Ardmore, Ind. Ter.; Hair-vigor and dandruff cure	52,794	May 15	122	1040
Wallerstein, Max, New York, N. Y. Water-hardening compounds	53,528	June 5	122	2053
Walter M. Lowney Company, Boston, Mass. Chocolates and other bonbons	54,028	June 19	122	2678
Waltham Novelty Company, Waltham, Mass. Toilet powder	54,632	June 26	122	3003
Walworth Manufacturing Co., Boston, Mass. Wrenches	52,118	May 1	122	343
Walworth Manufacturing Company, Botson, Mass. Wrenches	53,579	June 5	122	2055
Ward, William P., New York, N. Y. Remedy for baldness and falling off of the hair	52,502	May 8	122	723
Ward, William P., New York, N. Y. Balm for beautifying the complexion	52,503	May 8	122	723
Ward, William P., New York, N. Y. Puddings and custards	52,542	May 8	122	724
Ward, William P., New York, N. Y. Liniment	54,690	June 20	122	3005
Wardlow, S. & C., New York, N. Y. Steel	54,299	June 20	122	2989
Warner & Co., William R., Philadelphia, Pa. Medicines in pill form	52,747	May 15	122	1038
Warren Brothers Company, Boston, Mass. Bituminous pavements and compositions or cements for making the same	52,348	May 8	122	716
Warren Chemical & Manufacturing Company, New York, N. Y. Roofing, sheathing, and building felt	52,048	May 1	122	340
Warren Chemical & Manufacturing Company, New York, N. Y. Asphalt	52,049	May 1	122	341
Warren Chemical & Manufacturing Company, New York, N. Y. Asphalt	53,652	June 5	122	2058
Warren-Ehret Company, Philadelphia, Pa. Roofing, sheathing, waterproofing, and building felt	52,988	May 22	122	1389
Warren & Williams, Providence, R. I. Rings	52,824	May 15	122	1042
Warwick China Co., Wheeling, W. Va. Earthenware	53,109	May 29	122	1707
Washburn-Crosby Company, Minneapolis, Minn. Wheat-flour	52,748	May 15	122	1038
Washington Tool Co., Owatonna, Minn. Pincers, nippers, and hoof-trimmers	54,727	June 26	122	3007
Waterloo Milling Company, Waterloo, Ill. Wheat-flour	52,164	May 1	122	345
Wayne County Preserving Co., Newark, N. Y. Canned fruits and vegetables	53,296	May 29	122	1715
Wayne County Preserving Co., Newark, N. Y. Canned fruits and vegetables	53,297	May 29	122	1715
Wayne County Preserving Co., Newark, N. Y. Canned fruits and vegetables	53,298	May 29	122	1715
Wayne County Preserving Co., Newark, N. Y. Canned fruits and vegetables	53,299	May 29	122	1715
Wayne County Preserving Co., Newark, N. Y. Canned fruits and vegetables	54,309	June 26	122	2993
Wayne Knitting Mills, Fort Wayne, Ind. Hosiery for both ladies and gentlemen	54,649	June 26	122	3004
Weber and Heilbroner, New York, N. Y. Neckscarfs	54 348	June 26	122	2991
Wedl, Anton, New York, N. Y. Certain named dry goods	52,389	May 8	122	718
Wedl, Anton, New York, N. Y. Linens and linen piece goods	52,449	May 8	122	720
Weeks, Frank A., New York, N. Y. Solid composition eraser	53,158	May 29	122	1709
Weideman Co., Cleveland, Ohio; Chicago, Ill., and New York, N. Y. Coffee	52,562	May 15	122	1031
Weideman Company, Cleveland, Ohio. Whisky	54,068	June 19	122	2680
Weimer, Wright & Watkin, Philadelphia, Pa. Leather and canvas shoes	53,110	May 29	122	1707
Weindorf & Co., Long Island City, N. Y. Hair-tonic	54,633	June 26	122	3003
Weiner, Michael, Milwaukee, Wis. Whisky	53,580	June 5	122	2055
Weinreich, Joseph, Dayton, Ohio. Cigars	52,283	May 8	122	714
Weinreich, Joseph, Dayton, Ohio. Cigars	52,311	May 8	122	715
Weinreich, Joseph, Dayton, Ohio. Cigars	52,921	May 22	122	1386
Weinreich, Joseph, Dayton, Ohio. Cigars	53,671	June 12	122	2375

Alphabetical list of registrants of trade-marks for May and June—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Weiss Eichold Liquor Co., Mobile, Ala. Whisky	54,761	June 26	122	3008
Weld, Colburn & Wilckens, New York, N. Y. Suspenders for trousers	53,193	May 29	122	1711
Weldarine Manufacturing Company, Topeka, Kans. Metallic brazing compound	53,369	May 29	122	1718
Wellenberger, P. F. & J. A., New York, N. Y. Proprietary remedies	54,125	June 19	122	2682
Weller & Sons, W. L., Louisville, Ky. Whisky	53,064	May 22	122	1392
Wells Brothers Company, Greenfield, Mass. Taps, dies, and screw-plates	54,069	June 19	122	2680
Wells, Ephraim S., Jersey City, N. J. Rat, vermin, and insect destroyer or exterminator	54,051	June 19	122	2679
Wells & Nellegar Company, Chicago, Ill. Enameled-steel kitchen utensils	54,070	June 19	122	2680
Wells & Richardson Company, Burlington, Vt. Preparations for coloring butter	52,795	May 15	122	1040
Wells & Richardson Company, Burlington, Vt. Preparations for coloring butter	53,943	June 12	122	2386
Wells & Richardson Company, Burlington, Vt. Prepared food, primarily for infants and invalids.	54,587	June 26	122	3001
Wells & Richardson Company, Burlington, Vt. Prepared food, primarily for infants and invalids.	54,588	June 26	122	3001
Welsbach Light Company, Gloucester City, N. J. Gas-burners and mantles therefor	52,942	May 22	122	1387
Wertheim, Joseph, Meerane, Germany. Remedies for bronchial affections	54,126	June 19	122	2682
Wertheimer-Swarts Shoe Co., St. Louis, Mo. Leather shoes for men	53,818	June 12	122	2381
Weschcke, Charles, Springfield, Minn. Medicine for treatment of appendicitis	54,589	June 26	122	3001
West India Oil Company, New York, N. Y. Illuminating-oil	52,706	May 15	122	1037
Wester Bros., New York, N. Y. Pocket-knives and razors	54,458	June 26	122	2996
Western Brewery Co., Belleville, Ill. Beer	52,495	May 8	122	722
Western Clock Mfg. Co., La Salle, Ill. Clocks and watches	52,989	May 22	122	1389
Western Clock Mfg. Co., La Salle, Ill. Alarm-clocks	53,379	June 5	122	2047
Western Leather Company, Milwaukee, Wis. Pasted leather sheets	53,392	June 5	122	2048
Western Leather Company, Milwaukee, Wis. Pasted leather sheets	53,393	June 5	122	2048
Western Leather Company, Milwaukee, Wis. Pasted leather sheets	53,394	June 5	122	2048
Western Leather Company, Milwaukee, Wis. Pasted leather sheets	53,395	June 5	122	2048
Western Leather Company, Milwaukee, Wis. Pasted leather sheets	53,765	June 12	122	2379
Western Leather Company, Milwaukee, Wis. Pasted leather sheets	53,766	June 12	122	2379
Western Leather Company, Milwaukee, Wis. Pasted leather sheets	53,801	June 12	122	2381
Western Leather Company, Milwaukee, Wis. Pasted leather sheets	53,802	June 12	122	2381
Western States Portland Cement Company, Independence, Kans. Portland cement	54,089	June 19	122	2680
Wheatena Company, New York, N. Y. Wheat breakfast-food	53,025	May 22	122	1391
Wheeler Condenser & Engineering Co., New York, N. Y. Centrifugal pumps	53,672	June 12	122	2375
Wheeler Condenser & Engineering Co., New York, N. Y. Feed-water heaters	54,300	June 26	122	2989
Wheeler Condenser & Engineering Co., New York, N. Y. Surface and jet condensers	54,316	June 26	122	2990
Whitcher, Frank W., Boston, Mass. Shoe-pincers	54,256	June 26	122	2988
White, Charles W., Waco, Tex. Mattresses	52,736	May 15	122	1038
White-Dunham Shoe Co., Brockton, Mass. Leather boots and shoes	54,728	June 26	122	3007
White, Edward B., Lancaster, Ohio. Cure or specific for neuralgia	52,796	May 15	122	1040
White & Son, John, Memphis, Tenn. Solid-fuel-burning heating and cooking stoves	53,133	May 29	122	1708
Whitehall Portland Cement Co., Cementon and Philadelphia, Pa. Portland cement	54,538	June 26	122	2999
Whitman & Barnes Manufacturing Company, Akron, Ohio. Cultivators	52,863	May 22	122	1384
Whitman & Barnes Manufacturing Company, Akron, Ohio. Grindstone-frames	52,873	May 22	122	1385
Whitman & Barnes Manufacturing Company, Akron, Ohio. Tack-claws	52,874	May 22	122	1385
Whitman & Barnes Manufacturing Company, Akron, Ohio. Screw-drivers	52,875	May 22	122	1385
Whitman & Barnes Manufacturing Company, Akron, Ohio. Knife-sections	52,876	May 22	122	1385
Whitman & Barnes Manufacturing Company, Akron, Ohio. Mower, binder, reaper, and header knife and sickle heads	52,922	May 22	122	1386
Whitman & Barnes Manufacturing Company, Akron, Ohio. Wrenches	52,966	May 22	122	1388
Whitman & Barnes Manufacturing Company, Akron, Ohio. Guards for mowers, binders, harvesters, and headers	54,257	June 26	122	2988
Whitman & Barnes Manufacturing Company, Akron, Ohio. Lawn-mowers	54,258	June 26	122	2988
Whitman & Barnes Manufacturing Company, Akron, Ohio. Wrenches	54,259	June 26	122	2988
Whitman & Barnes Manufacturing Company, Akron, Ohio. Spring-cotters	54,260	June 26	122	2988
Whitman & Barnes Manufacturing Company, Akron, Ohio. Guard-plates for mowers, reapers, harvesters, and headers	54,729	June 26	122	3007
Whitman & Barnes Manufacturing Company, Akron, Ohio. Chisels and punches	54,730	June 26	122	3007
Whitman & Co., O. M., Boston, Mass. Refrigerators	53,396	June 5	122	2048
Whitman Grocery Company, Orange, Mass. Prepared tapioca	52,119	May 1	122	343
Whittemore Bros. and Co., Cambridge, Mass. Polish for cleaning and polishing russet and tan-colored shoes	54,090	June 19	122	2680
Whittemore Brothers and Company, Cambridge, Mass. Polish for shoes	52,312	May 8	122	715
Wiebke, Louis, New York, N. Y. Leather boots and shoes	52,120	May 1	122	343
Wiebusch & Hilger, Limited, New York, N. Y. Pocket-knives	52,496	May 8	122	722
Wiehle Soap Company, Ironton, Ohio. Bar-soap	54,421	June 26	122	2994
Wiehle Soap Company, Ironton, Ohio. Bar-soap	54,440	June 26	122	2995
Wigmore, G. T., *et al.*, administrators. (See May, James O.)	52,121	May 1	122	343
Wilburine Oil Works, Ltd., New York, N. Y. Lubricating-oils	52,122	May 1	122	343
Wilburine Oil Works, Ltd., New York, N. Y. Petroleum or mineral jelly	54,691	June 26	122	3005
Wilcox & Godding, Eaton Rapids, Mich. Proprietary medicine	54,692	June 26	122	3005
Wilcox & Wagoner Company, New York, N. Y. Silver hollow ware, flat ware, and tableware	54,459	June 26	122	2996
Wile Sons & Co., Julius, New York, N. Y. Wine	52,923	May 22	122	1387
Wilkinson, Gaddis & Co., Newark, N. J. Canned lobster	52,924	May 22	122	1387
Wilkinson, Gaddis & Co., Newark, N. J. Canned fruits and vegetables	54,590	June 26	122	3001
Wilkinson, Gaddis & Co., Newark, N. J. Salt	54,591	June 26	122	3001
Wilkinson, Gaddis & Co., Newark, N. J. Rolled oats	54,071	June 19	122	2680
Wilkinson Shear & Cutlery Co., Reading, Pa. Culinary knives	52,925	May 22	122	1387
Willcox & Gibbs Sewing Machine Co., New York, N. Y. Sewing-machines and sewing-machine parts and attachments	52,926	May 22	122	1387
Willcox & Gibbs Sewing Machine Co., New York, N. Y. Sewing-machines and sewing-machine parts and attachments	53,529	June 5	122	2053
Willcox & Gibbs Sewing Machine Co., New York, N. Y. Sewing-machines	52,284	May 8	122	714
William A. Hardy & Son's Co., Fitchburg, Mass. Antifriction and bearing metals	52,285	May 8	122	714
William A. Hardy & Son's Co., Fitchburg, Mass. Antifriction and bearing metals	54,762	June 26	122	3008
William A. Hardy & Son's Co., Fitchburg, Mass. Antifriction or bearing metals	52,841	May 22	122	1383
William Barzer Company, Watervliet, N. Y. Collars and cuffs	54,369	June 26	122	2992
William Eastwood and Son Company, Rochester, N. Y. Leather boots and shoes	54,217	June 19	122	2685
William G. Bell Company, Boston, Mass. Spiced seasonings	54,218	June 19	122	2685
William G. Bell Company, Boston, Mass. Spiced seasonings	54,219	June 19	122	2685
William G. Bell Company, Boston, Mass. Spiced seasonings	54,460	June 26	122	2996
William H. Lee & Co., St. Louis Mo. Whisky	53,026	May 22	122	1391
William M. Crane Co., New York, N. Y. Gas-stoves	52,402	May 8	122	718
William Skinner Manufacturing Co., Holyoke and Boston, Mass.; New York, N. Y.; Chicago, Ill., and Philadelphia, Pa. Silk braids and mohair braids	52,990	May 22	122	1389
William Underwood Company, Boston, Mass. Canned sardines	54,441	June 26	122	2995
William Waltke & Co., St. Louis, Mo. Soap	54,539	June 26	122	2999
William Waltke & Co., St. Louis, Mo. Laundry soap				

Alphabetical list of registrants of trade-marks for May and June—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Williams & Brenckle Cigar Manufacturing Co., Milwaukee, Wis. Cigars	53,966	June 19	122	2676
Willis & Co., Grinnell, New York, N. Y. Bleached and unbleached shirtings and sheetings, cambrics, and long-cloth	53,264	May 29	122	1713
Willis & Co., Grinnell, New York, N. Y. Bleached and unbleached shirtings, sheetings, cambrics, and long-cloth	54,220	June 19	122	2685
Willis & Co., Grinnell, New York, N. Y. Bleached and unbleached shirtings and sheetings, cambrics, and long-cloth	54,565	June 26	122	3000
Wilmerding-Loewe Co., San Francisco Cal. Whisky	54,152	June 19	122	2683
Wilson, George, Farrell, Miss. Catarrhal remedy	53,090	May 22	122	1393
Wilson Grocery Company, Peoria, Ill. Canned, bottled, and preserved fruits and vegetables	52,590	May 15	122	1032
Wilson Grocery Company, Peoria, Ill. Canned, bottled, or preserved fruits and vegetables	54,187	June 19	122	2684
Winchester Repeating Arms Co., New Haven, Conn. Shotguns and rifles	52,927	May 22	122	1387
Winchester Repeating Arms Co., New Haven, Conn. Shotguns and rifles	53,194	May 29	122	1711
Winchester Repeating Arms Co., New Haven, Conn. Shotguns and rifles	53,964	June 19	122	2677
Wing, George H. G., Boston, Mass. Cigarettes	52,707	May 15	122	1037
Witte, Alexis, New York, N. Y. Razors	52,349	May 8	122	716
Wittemann Bros., New York, N. Y. Flavoring extracts	53,767	June 12	122	2379
Wittemann Bros., New York, N. Y. Flavoring extracts	53,768	June 12	122	2379
Wittemann Bros., New York, N. Y. Flavoring extracts	53,769	June 12	122	2379
Wittemann Bros., New York, N. Y. Flavoring extracts	53,770	June 12	122	2379
Wm. A. Rogers Limited, New York, N. Y. Silver-plated flat ware, hollow ware, and tableware	54,731	June 26	122	3007
Wm. A. Rogers, Ltd., New York, N. Y. Silver-plated flat ware, hollow ware, and tableware	54,186	June 19	122	2684
Wm. Hoelscher and Co., Incorporated, San Francisco, Cal. Wine	53,874	June 12	122	2383
Wm. L. Gilbert Clock Company, Winsted, Conn. Alarm-clocks	53,817	June 12	122	2381
Wm. Lanahan & Son, Baltimore, Md. Whisky	54,195	June 19	122	2684
Wm. Numsen & Sons, Inc., Baltimore, Md. Fruits and vegetables in tins or glass	53,412	June 5	122	2048
Wolf & Co., A. A., Pittsburg, Pa. Whisky	53,134	May 29	122	1708
Wolley & Co., A. Herbert, Nottingham, England. Silk nets for the hair	52,390	May 8	122	718
Wood & Sons, J. R., New York, N. Y. Gold finger-rings	53,819	June 12	122	2381
Woodbury & Company, E. S., Boston, Mass. Leather boots and shoes	52,084	May 1	122	342
Woodford Distilling Co., Chicago, Ill. Whisky	53,436	June 5	122	2049
World Today Company, Chicago, Ill. Monthly magazines	52,764	May 15	122	1039
Wrensch, Henry E., Jr., Montclair, N. J. Liniment	53,944	June 12	122	2386
Wright & Co., Hoboken, N. J. Bust-forms	52,050	May 1	122	341
Wunderle, Philip, Philadelphia, Pa. Candy	52,350	May 8	122	716
Wunderle, Philip, Philadelphia, Pa. Candy	52,582	May 15	122	1032
Wunderle, Philip, Philadelphia, Pa. Candy	53,370	May 29	122	1718
Wunderle, Philip, Philadelphia, Pa. Candy	53,653	June 5	122	2058
Wyckoff, Seamans & Benedict, Ilion, N. Y. Type-writing machines	53,530	June 5	122	2053
X-Ray Stove Polish Co., New York, N. Y. Powdered stove-polish	52,030	May 1	122	340
Yates, Harry, Buffalo and Orchard Park, N. Y. Milk and cream	53,511	June 5	122	2052
Year Clock Company, Mount Vernon, N. Y. Clocks	52,749	May 15	122	1038
York Manufacturing Co., Saco, Me. Cotton, worsted, and mixed cotton and wool piece goods	53,838	June 12	122	2382
York Manufacturing Co., Saco, Me. Cotton piece goods	54,153	June 19	122	2683
York Manufacturing Co., Saco, Me. Cotton piece goods	54,301	June 26	122	2989
Youmans, New York, N. Y. Men's, women's, and children's hats	54,694	June 26	122	3006
Youmans, New York, N. Y. Men's, women's, and children's hats	54,695	June 26	122	3006
Young, Albert B., Buffalo, N. Y. External remedy for animals	52,797	May 15	122	1041
Young, Albert B., Buffalo, N. Y. External remedy for animals	52,798	May 15	122	1041
Young, Charles P., York, Pa. Base-ball bats	54,091	June 19	122	2680
Yvon, Paul, assignor to Institut Pasteur, Paris, France. Serums	54,693	June 26	122	3005
Zabriskie, Frank L., New York, N. Y. Baking-powder	52,968	May 22	122	1388

ALPHABETICAL LIST OF REGISTRANTS OF LABELS.

Name, residence, and title.	No.	Date.	Official Gazette. Volume.	Page.
A. G. Wiedmann Cigar-Box Co., St. Joseph, Mo. "The Black Cat." (For Cigars)	12,822	May 1	122	349
Aetna Self-Heating Food Company, New York, N. Y. "The Aetna Self-Heating." (For Self-Heating Cans Containing Food)	12,962	June 26	122	3009
Amann, Clemens, Sidney, Ohio. "Cushion Corn Cure." (For Corn Cure)	12,959	June 26	122	3009
Ambrosia Chocolate Company, Milwaukee, Wis. "Ambrosia Pure Chocolate Wafers." (For Confectionery)	12,860	May 8	122	726
American Lithographic Co., New York, N. Y. "Red Seal Brand Medicine Dropper." (For a Medicine-Dropper)	12,867	May 8	122	726
American Lithographic Co., New York, N. Y. "Red Seal Brand Medicine Dropper." (For Medicine-Droppers)	12,868	May 8	122	726
American Lithographic Company, New York, N. Y. "Purity Seamless Nipples Non-Collapsible." (For Nipples)	12,970	June 26	122	3009
American Skirt Mfg. Co. Inc., Louisville, Ky. "The American Girl Skirt." (For Ladies', Misses', and Children's Skirts)	12,870	May 8	122	726
Andreas & Co., Geo., St. Louis, Mo. "Senator Andreas." (For Whisky)	12,940	June 19	122	2686
Barclay Brown & Taylor, Inc., Boston, Mass. "Otter Island Brand." (For Canned Clams)	12,915	June 5	122	2059
Barclay Brown & Taylor, Inc., Boston, Mass. "Eagle Island Brand." (For Canned Clams)	12,916	June 5	122	2059
Beckwith-Chandler Company, Newark, N. J. "Blue Ribbon Crystalac." (For Interior Varnishes)	12,902	May 22	122	1394
Beckwith-Chandler Company, Newark, N. J. "Copalac." (For a Floor-Finish)	12,935	June 12	122	2387
Blew, Ada, New York, N. Y. "Theiform." (For a Medical Preparation for the Scalp and Hair)	12,961	June 26	122	3009
Borderland Coal Company, Borderland, W. Va. "Borderland Coal" (For Coal)	12,841	May 1	122	349
Boynton, C. H. (See Wilmarth and Boynton.)				
Brannon, Mary J., Dayton, Ohio. "Marthas Darzie Dlabanon." (For a Skin Preparation)	12,957	June 26	122	3009
Brehm, Freda, New York, N. Y. "Princess Hair Tonic." (For Hair-Tonic)	12,907	May 29	122	1719
Capron Chemical Co., Malone, N. Y. "Pure Breath Tablets." (For Breath-Tablets)	12,896	May 22	122	1394
Carola, Nicholas, New York, N. Y. "Karotone." (For Hair-Tonic)	12,897	May 22	122	1394
Carson, Pirie, Scott and Company, Chicago, Ill. "Great Western." (For Embroideries)	12,835	May 1	122	349
Carson, Pirie, Scott and Company, Chicago, Ill. "American Beauty." (For Embroideries)	12,836	May 1	122	349
Carson, Pirie, Scott and Company, Chicago, Ill. "Marvel." (For Ginghams)	12,837	May 1	122	349
Carson, Pirie, Scott and Company, Chicago, Ill. "Acme." (For Percales)	12,838	May 1	122	349
Carson, Pirie, Scott and Company, Chicago, Ill. "Dunedin." (For Percales)	12,839	May 1	122	349
Carson, Pirie, Scott and Company, Chicago, Ill. "E Z Fix." (For Combination Curtain and Window-Shade Holders)	12,840	May 1	122	349
Carson, Pirie, Scott and Company, Chicago, Ill. "Tenderfoot." (For Hosiery)	12,965	June 26	122	3009
Catlin, Burge D., Buffalo, N. Y. "U-Want-It." (For Butter)	12,941	June 19	122	2686
Chas. P. Stanley Cigar Co., St. Louis, Mo. "Chastan." (For Cigars)	12,901	May 22	122	1394
Clifton Forge Bottling Works, Clifton Forge, Va. "Flag Rock." (For Ginger-Ale)	12,939	June 19	122	2686
Coleman, Robt., New York, N. Y. "Coleman's Mustard." (For Mustard)	12,909	May 29	122	1719
Colgate & Co., New York, N. Y. "Violet Talc Powder." (For Talc Powder)	12,956	June 26	122	3009
Collins, James J., Boston, Mass. "Pura World's-Best." (For Coffee)	12,872	May 15	122	1043
Diamond Red Paint Co., Chicago, Ill. "Diamond Red." (For Paint)	12,945	June 19	122	2686
Didsbury, F. A., Bridgeport, Conn. "Pocket Knife Blade, Grinders, and Finishers Union Label." (For Pocket-Knives)	12,944	June 19	122	2686
Dodge, Walter L., Chicago, Ill. "Tiz for Tender Feet." (For Foot-Bath Tablets)	12,960	June 26	122	3009
Dr. Warner Remedy Co., Chicago, Ill. "Radiozone." (For Medicated Preparations and Articles)	12,894	May 22	122	1394
E. Guittard & Co., San Francisco, Cal. "Guittard's Pure Cream of Yeast." (For Baking-Powder)	12,823	May 1	122	349
E. M. Higgins Co., Rochester, N. Y. "Worthmore." (For Rye Whisky)	12,874	May 15	122	1043
Edstrom, O. E., Los Angeles, Cal. "Edstrom's Blood Purifier." (For a Blood-Purifier for Blood and Skin Diseases)	12,924	June 5	122	2059
Elliott, S. K., Los Angeles, Cal. "Elliott's Brain and Nerve Food." (For Brain and Nerve Food Tablets)	12,828	May 1	122	349
Elliott, S. K., Los Angeles, Cal. "Elliott's Digestive Tablet." (For Digestive Tablets)	12,829	May 1	122	349
Elliott, S. K., Los Angeles, Cal. "Elliott's Inhalant." (For an Inhalant for Pulmonary Diseases)	12,923	June 5	122	2059
Ensign Knitting Co., Salt Lake City, Utah "Nauvoo Brand Garments." (For Knitted Combination Union Suits)	12,869	May 8	122	726
Fischer & Co., B., New York, N. Y. "Cingala." (For Tea)	12,885	May 22	122	1394
Fleisher Brothers, Philadelphia, Pa. "Fleisher Clothing." (For Clothing)	12,820	May 1	122	349
Garcia & Bros., Perfecto, Chicago, Ill. "Flor De P. Garcia & Bros." (For Cigars)	12,898	May 22	122	1394
Gordon Manufacturing Company, New Rochelle, N. Y. "Gordon Suspenders." (For Suspenders)	12,926	June 5	122	2059
Grossman Paper Box Co., Cleveland, Ohio. "Glinsmann's High Grade Confections." (For Confections)	12,827	May 1	122	349
Hager, Daniel S., Chicago, Ill. "Muro." (For Medicine)	12,830	May 1	122	349
Hart, Emery B., Thomaston, Me. "Gay's Island Brand Clams." (For Canned Clams)	12,933	June 12	122	2387
Helmer, Adell G., Helmer, Ga. "A Study in Cotton." (For a School Study-Box for Children)	12,928	June 5	122	2059
Henschel & Co., A. C., Chicago, Ill "Don Renato." (For Cigars)	12,900	May 22	122	1394
Herschman, Michael, Brooklyn, N. Y. "The Elizabeth Salve." (For a Medical Preparation for the Cure of Skin Diseases)	12,925	June 5	122	2059
Hilton Co., New York, N. Y. "Its Mighty Easy to Spot Hilton Clothes." (For Clothing)	12,966	June 26	122	3009
Holland, Mary H., Grand Rapids, Mich. "Holland's Wonderful Rheumatic Remedy." (For Medicine for the Cure of Rheumatism)	12,833	May 1	122	349
Homeo Remedy Co., Philadelphia, Pa. "Homeo." (For Poultry Remedies)	12,880	May 15	122	1043
Hornstein Grocery Co., Washington, D. C. "Winchester Pure Rye Whiskey." (For Whisky)	12,875	May 15	122	1043
Hornstein Grocery Co., Washington, D. C. "Monument Pure Rye Whiskey." (For Whisky)	12,876	May 15	122	1043
Horowitz, M., New York, N. Y. "Mashallah Coffee." (For Coffee)	12,851	May 8	122	726
Horton, H. A. R., Dallas, Tex. "Diamond Liniment." (For a Liniment)	12,918	June 5	122	2059
Hyndman Roofing Company, Cincinnati, Ohio. "Protected Roofing." (For Roofing)	12,906	May 22	122	1394
Igleheart Brothers, Inc., Evansville, Ind. "Harvesta." (For Prepared Cooked Wheat)	12,949	June 26	122	3009
Javarone, Giuseppe, Naples, Italy. "Ferro-China Iavarone." (For a Medicine and Tonic)	12,891	May 22	122	1394
Jeffries, Thomas T., Pine Beach, Va. "Mosquitone." (For a Liquid Solution)	12,952	June 26	122	3009
Jeffries, Thomas T., Pine Beach, Va. "Jeffries' Reliable Headache Powders." (For Medicine)	12,953	June 26	122	3009
Jeffries, Thomas T., Pine Beach, Va. "Jeffries' No. 1 Cough Mixture." (For Medicine)	12,954	June 26	122	3009
Jeffries, Thomas T., Pine Beach, Va. "Liquoseptol." (For Medicine)	12,955	June 26	122	3009
Keep Novelty Company, New York, N. Y. "Keep-Kuffs-Klene." (For Cuff-Protectors)	12,881	May 15	122	1043
Kimball Flour Co., Troy, N. Y. "Ondawa." (For Flour)	12,913	June 5	122	2059
Knoch, William, Naperville, Ill. "Knoch." (For Cigars)	12,846	May 8	122	726
Lafferty, John, Philadelphia, Pa. "Radnor Club Pure Rye Whiskey." (For Whisky)	12,826	May 1	122	349
Lakewood Pine Co., Jersey City, N. J. "Pinozone." (For a Proprietary Medicine)	12,893	May 22	122	1394

Alphabetical list of registrants of labels for May and June—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Langdon & Boyd, La Crosse, Wis. "The Virginia Brand." (For Pork Products)	12,934	June 12	122	2387
Levy, Henry S., Brooklyn, N. Y. "Star Tea Matzoths." (For Biscuits)	12,857	May 8	122	726
Levy, Henry S., Brooklyn, N. Y. "Star Baby Egg Matzoths." (For Biscuits)	12,858	May 8	122	726
Levy, Isaac H., New Haven, Conn. "Brightine." (For a Polish)	12,911	May 29	122	1719
Lipps-Murbach Co. of Baltimore City, Baltimore, Md. "Shredded Chocolates." (For Candy)	12,877	May 15	122	1043
Lowney Chocolate Company, Mansfield, Mass. "Lowney's Milk Chocolate." (For Chocolate)	12,948	June 26	122	3009
Lyon, B., Chicago, Ill. "Greater Than King." (For Cigars)	12,849	May 8	122	726
Marshall Bottling Co., Springfield, Ill. "Mault-Ayle." (For a Light Beer)	12,946	June 26	122	3009
McAllister, J. J., Milton, Oreg. "McAllister's Specific." (For Specific Liniment)	12,919	June 5	122	2059
McVay, Albert L., Chicago, Ill. "Zynoxall." (For Medicine)	12,920	June 5	122	2059
Medina County Creamery Company, Cleveland, Ohio. "The Medina County Creamery Co." (For Butter)	12,951	June 26	122	3009
Menendez Bros. & Verplanck, Tampa, Fla. "El Genio." (For Cigars)	12,938	June 19	122	2686
Merker, Charles F., East St. Louis, Ill. "Kermer's 'E. T.' (Every Time)." (For a Medicine)	12,866	May 8	122	726
Mertens, Adolf, Chicago, Ill. "La Mertina." (For Cigars)	12,850	May 8	122	726
Meyer, A. & G., Newburgh, N. Y. "A No. 1." (For Tea)	12,932	June 12	122	2387
Meyer, A. & G., Newburgh, N. Y. "A No. 1." (For Coffee)	12,947	June 26	122	3009
Mishkowsky, Herman, Chicago, Ill. "Supreme." (For German Knitting-Worsted)	12,927	June 5	122	2059
Mound City Dishwasher Co., St. Louis, Mo. "Iron-Clad and Medicated Gloves." (For Gloves)	12,964	June 26	122	3009
Mull, E. Edward, Chicago, Ill. "Mull's Pain Cure." (For Medicine)	12,892	May 22	122	1394
National Tea Importing Company, Salt Lake City, Utah. "Fragrant Shamrock." (For Tea)	12,873	May 15	122	1043
Newbourg, Chas., Sioux Falls, S. D. "E-Z' Wax." (For an Ironing-Wax)	12,910	May 29	122	1719
O. L. Schwencke Lithographic Co., Brooklyn, N. Y. "El Scientifico." (For Cigars)	12,842	May 8	122	726
O. L. Schwencke Lithographic Co., Brooklyn, N. Y. "Clay-Ola." (For Cigars)	12,843	May 8	122	726
O. L. Schwencke Lithographic Co., Brooklyn, N. Y. "William Bond." (For Cigars)	12,844	May 8	122	726
O. L. Schwencke Lithographic Co., Brooklyn, N. Y. "Little Victor." (For Cigars)	12,845	May 8	122	726
Ohlandt, William M., Hoboken, N. J. "Ohlandt's Black Headache Powders." (For Medicine)	12,832	May 1	122	349
Oregon Condensed Milk Co., Hillsboro, Oreg. "Pacific Evaporated Cream." (For Evaporated Cream)	12,825	May 1	122	349
Palmer, Mary L., Chicago, Ill. "The Kookizer." (For a Fireless Cooker and Icer Combined)	12,942	June 19	122	2686
Paschal, Lilian C., New York, N. Y. "Chockorn." (For a Bonbon)	12,859	May 8	122	726
Pennsylvania Chocolate Company, Pittsburg, Pa. "Indian." (For Cocoa)	12,852	May 8	122	726
Pennsylvania Chocolate Company, Pittsburg Pa. "Indian." (For Chocolate)	12,853	May 8	122	726
Pennsylvania Chocolate Company, Pittsburg, Pa. "Indian." (For Chocolate)	12,854	May 8	122	726
Pennsylvania Chocolate Company, Pittsburg, Pa. "Indian." (For Chocolate)	12,855	May 8	122	726
Pensacola Grocery Company, Pensacola, Fla. "Elegant." (For Flour)	12,856	May 8	122	726
Ph. Exelbirt & Co., New York, N. Y. "Salam-Alakim." (For Turkish Coffee)	12,824	May 1	122	349
Quick, Jacques V., Wahpeton, N. D. "Lightning Washing Fluid." (For Washing Fluid)	12,879	May 15	122	1043
Rex, Anderson K., Chicago, Ill. "Turtle Egg Shampoo." (For a Hair-Wash)	12,862	May 8	122	726
Riley, Wm. E., Louisville, Ky. "Elco." (For a Beverage)	12,930	June 12	122	2387
Ronan & Co., J. Howard, Trenton, N. J. "Half Century Coffee." (For Package-Coffee)	12,912	June 5	122	2059
Royal Cream Company, Chicago, Ill. "Royal Cream for Shaving." (For Shaving-Cream)	12 861	May 8	122	726
Ruehl Brothers Brewing Company, Chicago, Ill. "Tadellos." (For Beer)	12,889	May 22	122	1394
Schlein, Samuel, Philadelphia, Pa. "Reliance." (For Ladies' Shirt-Waists)	12,904	May 22	122	1394
Schmidt & Co., New York, N. Y. "Mercedes." (For Cigars)	12,847	May 8	122	726
Schmidt & Co., New York, N. Y. "Cleverettes." (For Cigars)	12,848	May 8	122	726
Schmidt & Co., New York, N. Y. "Constellation." (For Cigars)	12,937	June 19	122	2686
Scott Paper Co., Philadelphia, Pa. "Foldum." (For Toilet-Paper)	12,905	May 22	122	1394
Sliverstein, Isaac J., New York, N. Y. "Prime." (For Thread and Cotton)	12,871	May 8	122	726
Slocum, M. G., Wichita, Kans. "Mentho-Camph." (For an Ointment)	12,864	May 8	122	726
Smith, A. M., Minneapolis, Minn. "Crescent." (For Port-Wine)	12,887	May 22	122	1394
Smith, Author M., Minneapolis, Minn. "Pennant." (For Whisky)	12,888	May 22	122	1394
Smith Manufacturing Company, Durham, N. C. "High Grade." (For Overalls)	12,819	May 1	122	349
Société Anme. Filature & Filteries Réunies, Alost Belgium. "Sublime." (For Linen Thread)	12,963	June 26	122	3009
Sommer Company, H., Quakertown, Pa. "John Milton." (For Cigars)	12,899	May 22	122	1394
St. Bernard Medicine Co., Montgomery, Ala. "St. Bernard Extract of Bark." (For Extract of Bark)	12,863	May 8	122	726
St. Louis, Rocky Mountain & Pacific Co., Raton, N. Mex. Ter. "Tin Pan Coal." (For Receptacles for Coal)	12,971	June 26	122	3009
Stampede Remedy Co., San Francisco, Cal. "The Stampede Mixture." (For Medicine)	12,831	May 1	122	349
Star Chemical Co., Louisville, Ky. "McGee's Corn Cure." (For Corn Cure)	12,958	June 26	122	3009
Strong, Wm. C., Paducah, Ky. "White Elephant Cough Cure." (For a Medicine)	12,908	May 29	122	1719
Stuart Bastow Co., Inc., Pawtucket, R. I. "Bastow's Cocoanut Biscuits." (For Cocoanut Biscuits)	12,914	June 5	122	2059
Texas Company, Chicago, Ill. "Dread-Naught Motor Goggle." (For Goggles)	12,882	May 15	122	1043
Tropic Fruit Company, Limited, Wahiawa, Hawaii. "Hawaiian Pineapple (Diced)." (For Pineapple)	12,950	June 26	122	3009
Victor Talking Machine Company, Camden, N. J. "Victor Victrola." (For Talking-Machines and Parts Thereof)	12,967	June 26	122	3009
Victor Talking Machine Company, Camden, N. J." Victor Auxetophone." (For Talking-Machines and Parts Thereof)	12,968	June 26	122	3009
Victor Talking Machine Company, Camden, N. J. "Victor Junior Gramophone." (For Talking-Machines and Parts Thereof)	12,969	June 26	122	3009
Vincent, Mack, Norfolk, Va. "Gatling Gun Remedy." (For Medicine)	12,922	June 5	122	2059
Wakeman, A. V. H., New York, N. Y. "Circleanum." (For a Cancer Remedy)	12,865	May 8	122	726
Walton, George E., Daytona, Fla. "Walton's Pepsin Dental Gum." (For Chewing-Gum)	12,878	May 15	122	1043
Webber Fish Co., B. S., Gloucester, Mass. "Pride of Gloucester." (For Cream-Codfish)	12,883	May 22	122	1394
Webber Fish Co., B. S., Gloucester, Mass. "Pride of Gloucester." (For Sliced Smoked Halibut)	12,884	May 22	122	1394
Weigel, Ernest A., New York, N. Y. "Star Indian Pastille." (For Pastils)	12,834	May 1	122	349
Western Fire Appliance Co., Toledo, Ohio. "Fire Chief." (For a Dry Chemical Fire-Extinguisher)	12,936	June 12	122	2387
William Underwood & Co., Boston, Mass. "Don't use Can Opener; use a nail or something similar." (For Cans)	12,903	May 22	122	1394
Willis W. Russell Card Co., Milltown, N. J. "Label for Russell's Playing Cards." (For Playing-Cards)	12,929	June 5	122	2059
Wilmanns Bros. Co., Milwaukee, Wis. "Jetter's Malt Tonic." (For Malt Tonics)	12,890	May 22	122	1394
Wilmanns Bros. Co., Milwaukee, Wis. "Old German Lager." (For Beer)	12,931	June 12	122	2387
Wilmarth, E. S., and C. H. Boynton, Chicago, Ill. "Darn-Nit." (For Hosiery, Toe Caps or Shields Therefor)	12,943	June 19	122	2686
Wilson, Herbert G., Baltimore, Md. "Golden Success." (For Medicine)	12,921	June 5	122	2059
Wohl & Comstock Co., Chicago, Ill. "Havana Seconds." (For Cigars)	12,821	May 1	122	349
Woolson Spice Company, Toledo, Ohio. "Sabo Blend." (For Roasted Coffees)	12,886	May 22	122	1394
Woolson Spice Company, Toledo, Ohio. "Red Dragon Brand." (For Spices)	12,917	June 5	122	2059
Wright, Barrett & Stilwell Co., St. Paul, Minn. "Klondyke Blue Plaster Board." (For Plaster-Board)	12 972	June 26	122	3009
Wright, George H., Denver, Colo. "Wright's Electric Catarrh Cure." (For a Jelly-Like Substance for Relief and Cure of Catarrh)	12,895	May 22	122	1394

PRINTS.

Name, residence, and title.	No.	Date.	Official Gazette. Volume.	Page.
A. Leschen & Sons Rope Co., St. Louis, Mo. "Timely Tips Right off the Reel." (For Wire Rope)	1,693	June 5	122	2059
American Cereal Co., Akron, Ohio. "Pettyjohn Says." (For a Cereal Preparation)	1,660	May 15	122	1043
American Cereal Co., Akron, Ohio. "Pettyjohn Says." (For a Cereal Preparation)	1,661	May 15	122	1043
American Cereal Co., Akron, Ohio. "Pettyjohn Says." (For a Cereal Preparation)	1,662	May 15	122	1043
American Cereal Company, Chicago, Ill. "Good Morning." (For Puffed Rice)	1,709	June 26	122	3009
American Cigar Company, New York, N. Y. "Tarita." (For Cigars)	1,695	June 12	122	2387
Battle Creek Breakfast Food Co. Ltd., Quincy, Ill. "Dere aint go'n'er be no leavin's." (For Food Products)	1,666	May 22	122	1394
Body Builders Medicine Co., Binghamton, N. Y. "Body Builders." (For Medicinal Remedies)	1,690	June 5	122	2059
Burk, Louis, Philadelphia, Pa. "Burk's Butternut Boneless Breakfast Bacon." (For Bacon)	1,700	June 19	122	2686
Butcher & Co., Minneapolis, Minn. "At Your Service." (For Wheat)	1,668	May 22	122	1394
Coe Jr. Co. C. A., Oshkosh, Wis. "The Positive Milk Fever Cure." (For a Milk-Fever Remedy for Cattle)	1,675	May 22	122	1394
Coulson Poultry & Stock Food Co., Petaluma, Cal. "Coulson's Egg Food." (For Egg-Food)	1,667	May 22	122	1394
Coulson Poultry & Stock Food Co., Petaluma, Cal. "Coulson's Hog Fattening Meal." (For Hog-Fattening Meal)	1,676	May 22	122	1394
Coulson Poultry & Stock Food Co., Petaluma, Cal. "Coulson Egg Food." (For Poultry-Foods)	1,692	June 5	122	2059
Cream of Wheat Company, Minneapolis, Minn. "Cream of Wheat for Hot Weather." (For a Food Preparation)	1,701	June 19	122	2686
Cream of Wheat Company, Minneapolis, Minn. "Top of the Morning." (For a Food Preparation)	1,702	June 19	122	2686
Cream of Wheat Company, Minneapolis, Minn. "A Sure Sign of Good Eating." (For a Food Preparation)	1,703	June 19	122	2686
Cream of Wheat Company, Minneapolis, Minn. "The Joy Maker." (For a Food Preparation)	1,704	June 19	122	2686
Cream of Wheat Company, Minneapolis, Minn. "Happy Dispositions." (For a Food Preparation)	1,705	June 19	122	2686
Elkus, Laurence, Indianapolis, Ind. "Composite Brick." (For Brick Manufactured from a Combination of Sand, Lime, and Cement)	1,699	June 12	122	2387
Gage Brothers & Co., Chicago, Ill. "Plaid Trimmed." (For Millinery and Straw Hats)	1,638	May 8	122	726
Gage Brothers & Co., Chicago, Ill. "Picturesque Chapeau." (For Millinery and Straw Hats)	1,639	May 8	122	726
Gage Brothers & Co., Chicago, Ill. "Rose Garlanded." (For Millinery and Straw Hats)	1,640	May 8	122	726
Gage Brothers & Co., Chicago, Ill. "Wings and Bows." (For Millinery and Straw Hats)	1,641	May 8	122	726
Gage Brothers & Co., Chicago, Ill. "A Tricorne." (For Millinery and Straw Hats)	1,642	May 8	122	726
Gage Brothers & Co., Chicago, Ill. "Ribbon Streamers." (For Millinery and Straw Hats)	1,643	May 8	122	726
Gage Brothers & Co., Chicago, Ill. "Peacock Feather." (For Millinery and Straw Hats)	1,644	May 8	122	727
Gage Brothers & Co., Chicago, Ill. "Velvet-Box-Plait." (For Millinery and Straw Hats)	1,645	May 8	122	727
Gage Brothers & Co., Chicago, Ill. "Plateau Drape." (For Millinery and Straw Hats)	1,646	May 8	122	727
Gage Brothers & Co., Chicago, Ill. "Mushroom Fashion." (For Millinery and Straw Hats)	1,647	May 8	122	727
Gage Brothers & Co., Chicago, Ill. "American Beauty." (For Millinery and Straw Hats)	1,648	May 8	122	727
Gage Brothers & Co., Chicago, Ill. "Panama Sailor." (For Millinery and Straw Hats)	1,649	May 8	122	727
Gage Brothers & Co., Chicago, Ill. "Floral Effects." (For Millinery and Straw Hats)	1,650	May 8	122	727
Gage Brothers & Co., Chicago, Ill. "Black and White." (For Millinery and Straw Hats)	1,651	May 8	122	727
Gerstendorfer Bros., New York, N. Y. "Sapolin Gloss Carriage Colors." (For Carriage-Colors)	1,658	May 8	122	727
Gile, Ernest S., Boston, Mass. "Soo Tannery." (For Leather)	1,637	May 1	122	349
Hering, Ardo, New York, N. Y. "The Kismet Holder." (For Glass and Bottle Holders)	1,636	May 1	122	849
Hering, Ardo, New York, N. Y. "The 'Kismet' Holder." (For Glass and Bottle Holders)	1,712	June 26	122	3009
Heymann, William, New York, N. Y. "The Continental Garter." (For Garters)	1,710	June 26	122	3009
Hoosier Manufacturing Co., Newcastle, Ind. "The Hoosier Kitchen Cabinet, Cabinet No. 142." (For a Kitchen-Cabinet)	1,679	May 22	122	1394
Hoosier Manufacturing Co., Newcastle, Ind. "The Hoosier Kitchen Cabinet, Cabinet No. 111." (For a Kitchen-Cabinet)	1,680	May 22	122	1394
Hubbard, Luther P., Minneapolis, Minn. "Father of Waters." (For Flour)	1,657	May 8	122	727
J. A. Scriven Company, New York, N. Y. "Scriven's Elastic Seam Knit Shirts." (For Shirts)	1,685	June 5	122	2059
J. A. Scriven Company, New York, N. Y. "Scriven's Elastic Seam Shirt, Coat Style, Sleeveless." (For Shirts)	1,686	June 5	122	2059
J. A. Scriven Company, New York, N. Y. "The Scriven Improved Elastic Seam Shirts, Short Sleeves." (For Shirts)	1,687	June 5	122	2059
John P. Squire & Company, Cambridge, Mass. "Corn Fed." (For Provisions)	1,691	June 5	122	2059
L. Adler Bros. & Co., Rochester, N. Y. "Men's Apparel." (For Men's Apparel)	1,711	June 26	122	3009
Liquid Carbonic Company, Chicago, Ill. "Liquid Fruits and Diamond Brand Crushed Fruits." (For Fruit-Syrups and Crushed Fruits)	1,671	May 22	122	1394
McKenney, I. A., Philadelphia, Pa. "Seek no Further." (For Proprietary Medical Remedies)	1,689	June 5	122	2059
Meek Company, Coshocton, Ohio. "Nature's Romance." (For Beer)	1,672	May 22	122	1394
Meek Company, Coshocton, Ohio. "The Home of Sierra." (For Beer)	1,673	May 22	122	1394
Milwaukee Lithographing Company, Milwaukee, Wis. "It Makes the Mountain Smile." (For Beer)	1,663	May 15	122	1043
N. M. Url & Co., Inc., Louisville, Ky. "Montreal Malt Rye." (For Liquors)	1,696	June 12	122	2387
Otoe Preserving Company, Nebraska City, Nebr. "Otoe Preserving Co." (For Canned Cream Sugar-Corn)	1,669	May 22	122	1394
Owens, Charles, Chattanooga, Tenn. "We Can't Improve Our Soap or Box Either." (For Soap-Holders)	1,707	June 19	122	2686
Post, John, Philadelphia, Pa. "Unit Street Car." (For Street-Cars)	1,694	June 5	122	2059
Racine Feet Knitting Co., Racine and Beloit, Wis. "Boys Indestructible Hose." (For Hosiery)	1,698	June 12	122	2387
Russell & Erwin Manufacturing Co., New Britain, Conn. "The Jones Rafter Square." (For a Rafter-Square)	1,635	May 1	122	349
Singer Sewing Machine Co., New York, N. Y. "The Singer Fashion Series." (For Corset-Covers and Petticoats)	1,652	May 8	122	727
Singer Sewing Machine Co., New York, N. Y. "The Singer Fashion Series." (For Wedding Gowns)	1,653	May 8	122	727
Singer Sewing Machine Co., New York, N. Y. "The Singer Fashion Series." (For Tailored Traveling Costumes)	1,654	May 8	122	727
Singer Sewing Machine Co., New York, N. Y. "The Singer Fashion Series." (For Afternoon Gowns)	1,655	May 8	122	727

Alphabetical list of registrants of prints for May and June—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Singer Sewing Machine Co., New York, N. Y. "The Singer Fashion Series." (For Shirt-Waist Costumes)	1,656	May 8	122	727
Spinney, Alice M., Milwaukee, Wis. "The Handicraft Doll Furniture." (For Doll Furniture)	1,713	June 26	122	3009
St. Louis Seed Company, St. Louis, Mo. "The Key to Good Crops 'Pure & Sure' Seeds." (For Seeds)	1,664	May 15	122	1043
Stahl and Jaeger Inc., New York, N. Y. "Huyler's Chocolate." (For Huyler's Chocolate)	1,670	May 22	122	1394
Stahl and Jaeger, Inc., New York, N. Y. "We Root for Fleischmann's Yeast." (For Yeast)	1,697	June 12	122	2387
Tindle & Jackson, Buffalo, N. Y. "Slack Cooperage Stock." (For Slack Cooperage Stock)	1,681	May 22	122	1394
United States Playing Card Company, Cincinnati, Ohio. "Jumbo Indexes Sportsmans' Playing Cards." (For Playing-Cards)	1,634	May 1	122	349
United States Playing Card Company, Cincinnati, Ohio. "Noodles, Moonlight, Pocahontas, Colonial Girl, Knuckle-down, and In Old Madrid backs, Congress Playing Cards." (For Playing-Cards)	1,714	June 26	122	3009
United States Rubber Company, New York, N. Y. "Wales-Goodyear Rubbers." (For Rubbers)	1,677	May 22	122	1394
United States Rubber Company, New York, N. Y. "Ready for the Storm." (For Rubbers)	1,678	May 22	122	1394
Virginia-Carolina Chemical Co., Richmond, Va. "Highest Prices Paid for Tobacco Grown With Virginia-Carolina Fertilizers." (For Fertilizers)	1,683	May 29	122	1719
Washburn-Crosby Company, Minneapolis, Minn. "If You Please—Don't Merely ask for Flour." (For Flour)	1,682	May 29	122	1719
Washburn-Crosby Company, Minneapolis, Minn. "The Model Flour Mill." (For Flour)	1,708	June 26	122	3009
Wells-Whitehead Tobacco Co., Wilson, N. C. "Carolina Brights Cigarettes, Manufactured by Wells-Whitehead Tobacco Co." (For Cigarettes)	1,674	May 22	122	1394
Wells-Whitehead Tobacco Co., Wilson, N. C. "Carolina Brights Cigarettes, They Satisfy the World." (For Cigarettes)	1,688	June 5	122	2059
William Cramp & Sons Ship & Engine Bldg. Co., Philadelphia, Pa. "Parsons." (For Manganese Bronze and White Brass)	1,684	May 29	122	1719
Willis W. Russell Card Co., Milltown, N. J., and New York, N. Y. "Russell's Regulars." (For Playing-Cards)	1,659	May 8	122	727
Wm J. Lemp Brewing Co., St. Louis, Mo. "Lemp Extra Pale." (For Beer)	1,706	June 19	122	2686
Yankee Fuel Company, New York, N. Y. "Yankee Coal." (For Fuel)	1,665	May 15	122	1043

DISCLAIMER.

Name, residence, and invention.	No.	Filed.	Official Gazette. Volume.	Page.
Johnson, William C., Memphis, Tenn.; disclaimer filed by patentee and assignees. Process of and apparatus for treating cotton seed and hulls	530,533	May 26, 1906	122	1727

ALPHABETICAL LIST OF TRADE-MARK APPLICANTS.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Volume.	Page.
A. Baldwin & Co. Limited, New Orleans, La. Blades for pocket-knives, razors, butcher-knives, carvers, table-cutlery, and kitchen-knives	4,138	May 8	122	684
A. Bauer & Co., Inc., Chicago, Ill. Whisky	16,030	June 12	122	2361
A. Breslauer Company, Milwaukee, Wis. Gin	8,888	June 12	122	2349
A. Burdsal Co., Indianapolis, Ind. Liquid paint	3,593	May 29	122	1686
A. Graf Distilling Co., St. Louis, Mo. Whisky	3,068	May 15	122	997
A. Klipstein & Company, New York, N. Y. Quebracho extract	18,405	June 26	122	2979
A. Schoenhut Company, Philadelphia, Pa. Toys and toy-circus equipment	17,612	May 15	122	1024
A. A. Berry Seed Company, Clarinda, Iowa. Popcorn	16,869	May 15	122	1021
A. A. Wood & Sons Company, Atlanta, Ga. Gin-saw filing and gumming machines	11,055	May 29	122	1691
A. B. Clark Co., New York, N. Y. Kid leather made from sheep and goat skins	13,917	May 15	122	1011
A. B. Dick Company, Chicago, Ill. Stencil-paper	5,986	May 8	122	685
A. B. Dick Company, Chicago, Ill. Duplicating-ink	5,987	May 8	122	685
A. B. Dick Company, Chicago, Ill. Duplicating-machines and parts thereof	5,988	May 29	122	1687
A. C. Lawrence Leather Co., Boston, Mass. Leather for boots and shoes	7,807	May 1	122	310
A. D. Porter Company, New York, N. Y. Periodically-issued magazine	12,374	June 19	122	2654
A. & E. Leather Goods Co., New York, N. Y. Leather purses and satchels	7,544	June 19	122	2648
A. F. MacLaren Imperial Cheese Co. Limited, Toronto, Canada. Cream-cheese	2,870	June 5	122	2027
A. F. Young & Co., New York, N. Y.; Pittsburg, Pa., and Boston, Mass. Cantaloups	19,283	June 19	122	2673
A. F. Young & Co., New York, N. Y. Cantaloups	19,257	June 26	122	2985
A. G. Hyde & Sons, New York, N. Y. Bleached unbleached, dyed, and printed textile fabrics	17,243	May 1	122	331
A. J. Bates Co., Webster, Mass. Leather shoes for ladies, men, and children	16,659	June 19	122	2660
A. J. Houghton Co., Roxbury, Mass. Beer	7,410	June 12	122	2346
A. J. Medlar Company, Limited, Philadelphia, Pa. Biscuits, crackers, and cakes	12,645	May 8	122	696
A. R. Champney Co., Elyria, Ohio. Non-intoxicating carbonated health-giving tonic beverage	16,308	June 19	122	2658
A. V. Stuart & Co., San Jose, Cal. Olive-oil and olive-oil butter	12 910	June 26	122	2968
Abbott Grocery Co., Keene, N. H. Canned vegetables and fruit	11,750	May 1	122	315
Abbott Grocery Co., Keene, N. H. Canned vegetables and fruits	11,751	June 5	122	2032
Abe, Edwin, Wapakoneta, Ohio. Cigars	17,278	May 15	122	1023
Abe Stein Co., New York, N. Y. Cotton sheeting and drilling	5,108	May 8	122	684
Abel Morrall Limited, Redditch, England. Black-head pins	14,771	June 12	122	2358
Abernethy, James B., Clarksdale, Miss. Watches	13,166	May 29	122	1693
Acetylene Lamp Co., New York, N. Y. Lamps for generating and burning acetylene gas	18,279	June 12	122	2368
Acme Gas Company, Chicago, Ill. Gas-generators	6,252	May 29	122	1687
Acme Harvesting Machine Company, Peoria, Ill. Grain headers and binders, reapers, mowers and parts thereof	14,535	May 22	122	1369
Acme Harvesting Machine Company, Peoria, Ill. Grain-headers and parts thereof	14,536–7	May 22	122	1369
Acme White Lead & Color Wks., Detroit, Mich. Paints of all kinds, enamels, stains, and varnishes	10,457	June 26	122	2964
Acme White Lead & Color Works, Detroit, Mich. Calcimine	19,214	June 19	122	2673
Actien-Gesellschaft für Anilin-Fabrikation, Berlin, Germany. Diuretic medicine	12,340	May 8	122	694
Actien-Gesellschaft für Anilin-Fabrikation, Berlin, Germany. Perfumes	12,336–7	June 26	122	2967
Ada-lur-lem Medicine Company, New York, N. Y. Remedy in tablet, liquid, and powder form for the curing of nervous disorders, dyspepsia, insomnia, loss of memory, and general debility	13,419	May 1	122	318
Adams, Charles H., New Orleans, La. Bag-bluing	18,373	June 5	122	2043
Adams, Lindsey K., Chase, Kans. Baking-powder	16,672	June 5	122	2038
Addressograph Company, Chicago, Ill. Machines for printing addresses or other matter	2,022	May 8	122	682
Addressograph Company, Chicago, Ill. Printing-machines	17,909	May 29	122	1704
Adolph Frankau & Co., Ltd., London, England. India-rubber and gutta-percha pouches and receptacles for holding tobacco	8,248	May 22	122	1357
Aerators Limited, London, England. Seltzogenes and analogous vessels for aerated liquids	15,337	May 8	122	702
Aermotor Company, Chicago, Ill. Windmills	13,653	June 12	122	2356
Aetna Mill & Elevator Company, Wellington, Kans. Wheat-flour	10,009	June 12	122	2350
Ainsworth Shoe Co., Toledo, Ohio. Leather shoes	12,936	May 1	122	317
Ainsworth Shoe Co., Toledo, Ohio. Leather shoes	7,193	June 19	122	2647
Aitken, Son & Co., New York, N. Y. Velvet piece goods	14,547	May 29	122	1695
Aitken, Son & Co., New York, N. Y. Silk piece goods	14,549	May 29	122	1695
Aitken, Son & Co., New York, N. Y. Veilings and chiffons	14,550	May 29	122	1695
Aitken, Son & Co., New York, N. Y. Dress-trimmings and braids	14,551	May 29	122	1695
Aitken, Son & Co., New York, N. Y. Ribbons	14,552	May 29	122	1696
Ajax Manufacturing Company, Cleveland, Ohio. Drills and drilling-machines for drilling in metal	16,054	May 15	122	1018
Aktiebolaget Salenius Werkstäder, Stockholm, Sweden. Milk centrifugal-machines and milk cooling and pasteurizing machines and apparatus	4,334	May 15	122	998
Aktiebolaget Södertelje Tändsticksfabrik, Södertelje, Sweden. Safety, phosphoric, and other matches	16,276	May 8	122	706
Aktiebolaget Södertelje Tändsticksfabrik, Södertelje, Sweden. Safety-matches	16,275	May 15	122	1019
Aktienbrauerei zum Löwenbräu in München, Munich, Bavaria, Germany. Beer	12,807	June 12	122	2354
Aktienbrauerei zum Löwenbräu in München, Munich, Bavaria, Germany. Beer	13,038	June 12	122	2354
Aktienbrauerei zum Löwenbräu in München, Munich, Bavaria, Germany. Beer	13,068	June 12	122	2355
Albagli & Avayon, Philadelphia, Pa. Pastry with a filling of cream or ices	16,643	May 1	122	330
Albert Dickinson Company, Chicago, Ill. Popcorn	8,595	June 12	122	2348
Albert M. Gugenheim Co., Cincinnati, Ohio. Whisky	17,042	May 8	122	709
Albertus, S. A., Los Angeles, Cal. Cure for catarrh, asthma, la grippe, hay-fever, common colds, or any head, throat, or lung affections	14,364	May 15	122	1013
Albo Chemical Co., Cincinnati, Ohio. Disinfectant	13,097	May 22	122	1365
Albright, Chester E., Lewisburg, Pa. Combined coin and paper purse or a coin-purse	17,157	May 1	122	331
Alden & Co., Geo. A., Boston, Mass. Gum-shellac	4,764	May 22	122	1352
Aldine Grate & Mantel Co., Grand Rapids, Mich. Fireplace-grates	15,340	May 22	122	1371
Alfred Andresen & Co., Minneapolis, Minn. Liquid extract for preserving meats	17,154	June 19	122	2661
Allcock Manufacturing Co., New York, N. Y. Medicinal plasters	9,248	May 1	122	311
Allcock Manufacturing Co., New York, N. Y. Pills	9,254	May 1	122	311

Alphabetical list of trade-mark applicants published during May and June—Continued.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Allen & Co., S. L., Philadelphia, Pa. Sleds	15,731	June 5	122	2036
Allmens Distilling Company, Kansas City, Mo. Rye whisky	2,822	June 12	122	2343
Altmayer, S., Macon, Ga. Whisky	5,965	June 5	122	2028
Alvin Mfg. Co., New York, N. Y. Silver table, hollow, and flat ware	1,755	June 26	122	2959
American Bank Protection Company, Minneapolis, Minn. Electrical burglar-alarms	14,609	June 19	122	2656
American Broom & Brush Co., Amsterdam, N. Y. Brooms	17,775	May 8	122	710
American Cereal Company, Akron and Ravenna, Ohio; Chicago, Ill., and Cedar Rapids, Iowa. Cereal foods made from oats	5,615	May 1	122	308
American Cereal Company, Akron and Ravenna, Ohio; Chicago, Ill., and Cedar Rapids, Iowa. Oatmeal, rolled oats, cracked wheat, rolled wheat, farina, hominy-grits, pearled barley, prepared rice, and breakfast-foods	2,309-10	May 8	122	682-3
American Cereal Company, Akron and Ravenna, Ohio; Chicago, Ill., and Cedar Rapids, Iowa. Flours made from wheat, oats, rye, corn, and buckwheat and meals made from rye, corn, and oats	14,718	May 8	122	700
American Cereal Company, Akron and Ravenna, Ohio; Chicago, Ill., and Cedar Rapids, Iowa. Wheat, oat, rye, corn, and buckwheat flours and rye, corn, and oat meals	14,720	May 8	122	700
American Chemical Manufacturing & Mining Company, Rochester, N. Y. Shoe-polish	14,462	May 15	122	1013
American Chemical Manufacturing & Mining Company, Rochester, N. Y. Polishing-brushes and daubers for shoe-polish	18,636	June 19	122	2668
American Chicle Co., New York, N. Y. Chewing-gum	8,144	May 1	122	310
American Chicle Co., New York, N. Y. Chewing-gum	8,152	May 8	122	688
American Fertilizing Company, Norfolk, Va. Fertilizers	17,877-9	June 26	122	2977
American Fertilizing Company, Norfolk, Va. Fertilizers	17,880	May 15	122	1026
American Glue Co., Boston, Mass. Glue	15,104	May 8	122	701
American Hard Rubber Co., New York, N. Y. Hard-rubber syringes	5,159	May 1	122	307
American Hard Rubber Co., New York, N. Y. Soft-rubber bulb and fountain syringes	5,165	May 1	122	307
American Hard Rubber Co., New York, N. Y. Hard-rubber battery-cells	5,162	May 15	122	999
American Iron & Steel M'f'g Co., Lebanon and Reading, Pa. Track-bolt nuts	6,364	May 8	122	686
American Lava Company, Chattanooga, Tenn. Burners and tips for illuminating-gas	18,185	June 19	122	2666
American Manufacturing Company, New York, N. Y. Rope and twine manufactured from vegetable fiber	15,091	May 15	122	1015
American Manufacturing Company, New York, N. Y. Bagging	15,096-101	May 15	122	1015
American Manufacturing Company, New York, N. Y. Rope, cord, lines, and twine manufactured from vegetable fiber	15,094	May 22	122	1370
American Manufacturing Company, New York, N. Y. Vegetable-fiber rope, cord, lines, and twine	15,095	June 5	122	2035
American Metal Polish Co., Somerville, Mass. Metal-polish	6,415	May 29	122	1687
American Peroxide and Chemical Co., New York, N. Y. Peroxid of hydrogen	15,781	May 8	122	705
American Peroxide & Chemical Co., New York, N. Y. Skin-lotions in liquid and paste form	17,980	June 26	122	2977
American Pharmacal Co., Evansville, Ind. Liver-powder for dyspepsia, constipation, &c., and dysentery of the bilious type	12,776	May 15	122	1009
American Pin Co., Waterville, Conn. Safety-pins	11,828	May 22	122	1363
American Pin Company, Waterville, Conn. Safety-pins	18,387	May 22	122	1381
American Record Co., New York, N. Y. Sound-records	7,887	June 19	122	2649
American Screw Company, Providence, R. I. Tire bolts and rivets	11,772	May 22	122	1363
American Shearer Manufacturing Co., Nashua, N. H. Hair and wool clippers and their parts	17,905	May 22	122	1380
American Silver Company, Bristol, Conn. Silver hollow, flat, and table ware	7,111	May 29	122	1687
American Specialty Co., Allegheny, Pa. Carbonated water	17,703	June 5	122	2040
American Stocking Company, New York, N. Y. Hosiery	17,443	May 1	122	332
American Thread Company, Jersey City, N. J. Spool and sewing cotton and thread	17,966	May 29	122	1704
American Thread Company, Jersey City, N. J. Spool-cotton and thread	17,967	June 5	122	2042
American Thread Company, Jersey City, N. J. Spool and sewing cotton and thread	18,360-1	June 5	122	2043
Amidon, Frederick S., Hartford, Conn. Stomach bitters or tonics	11,685	May 15	122	1007
Amory, Browne & Co., Boston, Mass. Cotton piece goods	16,968	May 22	122	1377
Anderson, Charles L., Denver, Colo. Wheat-flour	19,143	June 26	122	2984
Anderson, David H., Chicago, Ill. Magazine or periodical	18,374	June 12	122	2369
Anheuser-Busch Brewing Association, St. Louis, Mo. Beer	9,763	June 12	122	2350
Anti-Uric Co., Peoria, Ill. Remedy for rheumatism, gout, sciatica, lumbago, &c	2,982	May 29	122	1686
Apollinaris Company, Limited, London, England. Mineral water	14,310-12	May 29	122	1695
Arabol M'f'g Co., New York, N. Y. Mucilage, liquid starch gums, liquid sizings and pastes	11,146	May 15	122	1006
Arabol M'f'g Co., New York, N. Y. Turkey-red oil, also called soluble oil and soluble grease, as used for dyeing, lubricating, finishing, and softening purposes	4,013	May 22	122	1351
Arcand, Joseph G., New York, N. Y. Candy	17,306	June 19	122	2662
Arkell Safety Bag Company, New York, N. Y. Paper-lined bags and paper linings for bags, barrels, and like receptacles	10,444	May 22	122	1360
Armour & Company, Chicago, Ill. Lard	18,623	June 5	122	2044
Armstrong Cork Company, Pittsburg, Pa. Bottle and prescription corks	551	June 12	122	2341
Arondack Spring Company, Saratoga Springs, N. Y. Mineral water	13,067	May 29	122	1693
Asbestos Manufacturing and Roofing Co., St. Louis, Mo. Roofing-paint	12,455	May 1	122	316
Ashworth, Lewis, Indianapolis, Ind. Remedy affecting the stomach, liver, and kidneys	17,813	June 26	122	2976
Atchison Oat Meal and Cereal Co., Atchison, Kans. Rolled oats	16,055	May 15	122	1018
Atlantic Paint Works of Baltimore City, Baltimore, Md. Ready-mixed paints	16,830	June 5	122	2039
Aubry, Matilda R., Toledo, Ohio. Massage-creams, rouges, and depilatory powders	8,563	May 29	122	1688
Auerbach & Co., L., Fuerth, Bavaria. Bronze colors, leaf metals, and brocades	10,854	June 5	122	2031
Aughinbaugh Canning Company, Baltimore, Md. Fruits and vegetables hermetically sealed in tin or glass	10,963	May 15	122	1006
Augustus Wright Company, Petersburg, Va. Leather shoes	15,470	May 1	122	325
Aurora Milling Company, Aurora, Mo. Wheat-flour	18,598	May 15	122	1028
Austin, Poor & Co., New York, N. Y. Cotton and cotton-and-silk piece goods	10,404	May 1	122	313
Autopiano Company, New York, N. Y. Automatic piano-players	2,018	June 19	122	2643
Axton-Fisher Tobacco Company, Louisville, Ky. Smoking-tobacco	17,954	May 1	122	333
Ayres & Sons, William, Philadelphia, Pa. Horse-blankets	15,573	June 12	122	2359
B. M. Jones & Co., Incor., Boston, Mass. Twist-drills	17,494	May 22	122	1378
B. M. Jones & Co Incor, Boston, Mass. Iron in billets, pigs, rods, sheets, and plates	17,245	June 26	122	2973
Bachtold & Ackermann, Walla Walla, Wash. Whisky	17,943	May 22	122	1380
Bachtold & Ackermann, Walla Walla, Wash. Whisky	17,942	June 26	122	2977
Badische Anilin- & Soda- Fabrik, Ludwigshafen-on-the-Rhine, Germany. Dyestuff	10,607	May 15	122	1005
Badische Anilin- & Soda- Fabrik, Ludwigshafen-on-the-Rhine, Germany. Dyestuff	14,516	May 22	122	1369
Badische Anilin- & Soda- Fabrik, Ludwigshafen-on-the-Rhine, Germany. Chemicals used for reducing, discharging, and bleaching purposes	12,379	June 26	122	2068
Baetzhold, August, Buffalo, N. Y. Whisky	6,637	June 19	122	2646
Bailey Brothers, Inc., Winston Salem, N. C. Chewing-tobacco	18,603	May 22	122	1381
Bailey, Charles J., Boston, Mass. Automobile-tires and tire-treads	791	May 22	122	1349
Baird-Daniels Company, New York, N. Y. Gin	8,685	June 12	122	2348
Baker & Hamilton, San Francisco, Cal. Rubber tires for vehicles	9,350	May 8	122	689
Baker Manufacturing Co., Evansville, Wis. Explosive-engines	11,649	May 22	122	1363

Alphabetical list of trade-mark applicants published during May and June—Continued.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Balbi & Co., Lgi, New York, N. Y. Tomato sauce	14,387	May 8	122	699
Ball, Webster C., Cleveland, Ohio. Watches	12,176	May 1	122	316
Ball & Wood Co., Elizabeth, N. J., and New York, N. Y. Welded flanges	16,766	June 12	122	2363
Ballard, James F., St. Louis, Mo. Pills for bilious and digestinal derangements	7,315	May 15	122	1000
Balme, J. B. Clément, New York, N. Y. Hair-dressing	15,331	May 1	122	324
Balston, Richard J., Springfield Mill, Maidstone, England. Writing and drawing paper	18,307	May 15	122	1026
Balston, Richard J., Springfield Mill, Maidstone, England. Writing and drawing paper	18,306	June 5	122	2043
Baltimore Belting Company, Baltimore, Md. Leather belting	18,687-8	June 26	122	2981
Bandon Packing Co., Bandon, Oreg. Canned salmon	14,730	May 22	122	1369
Banks, Winston T., Bonanza, Ark. Gun and blasting powder	12,157	May 1	122	316
Banta & Son, F. J., Lima, Ohio. Chewing-gum	15,250	May 22	122	1371
Barber Milling Company, Minneapolis, Minn. Wheat-flour	18,890	May 15	122	1029
Barrett Manufacturing Company, New York, N. Y. Roofing, sheathing, and building paper	19,247	June 12	122	2373
Barrett Manufacturing Company, New York, N. Y. Roofing, sheathing, waterproofing, and building felt	19,248	June 26	122	2985
Barrett, William H., Southport, England. Gasolene-motors, either stationary or in motor-cars, and motor machinery and parts thereof	7,609	May 8	122	687
Barrett, William L., Bristol, Conn. Glass-cutters	15,357	May 1	122	325
Barron & Company, James S., New York, N. Y. Whisk-brooms	16,902	May 22	122	1376
Barth, Jacob S., Indianapolis, Ind. Gravity-creamers	9,840	May 1	122	312
Bass-Hueter Paint Co., San Francisco, Cal. Prepared paints	18,712	June 19	122	2669
Battista, Onorato, Naples, Italy. Remedies for nervous disorders	13,088	June 19	122	2654
Bauer & Black, Chicago, Ill. Corn and bunion plasters	16,587	May 1	122	330
Baugh & Sons Company, Philadelphia, Pa. Bone phosphate	2,686	May 1	122	304
Baum & Sons, Adam, Philadelphia, Pa. Whisky	18,130	June 26	122	2978
Bayer, David, Columbus, Ohio. Bread	18,979	May 15	122	1030
Bayles, James C., New York, N. Y. Disinfectant antiseptic powder	12,938	May 15	122	1010
Beacon Ointment Co., Chicago, Ill. Ointments and salves	9,014	May 29	122	1688
Beall, William E., New York, N. Y. Fermented milk beverages	17,210	June 5	122	2040
Beasley Harwood Shoe Co. Inc., Lynchburg, Va. Leather boots and shoes	18,591	June 19	122	2668
Beasley Harwood Shoe Co. Inc., Lynchburg, Va. Women's leather shoes	18,701	June 19	122	2669
Beasley Harwood Shoe Co. Inc., Lynchburg, Va. Leather boots and shoes	18,792-3	June 19	122	2670
Beasley Harwood Shoe Co. Inc., Lynchburg, Va. Children's leather and canvas shoes	18,794	June 19	122	2670
Beasley Harwood Shoe Co. Inc., Lynchburg, Va. Women's leather shoes	18,795	June 19	122	2670
Beaumont & Fils, S., Roubaix, France. Hair-pins	11,252	May 8	122	692
Beaumont & Fils, S., Roubaix, France. Hair-wavers	11,250	May 29	122	1691
Beckwith, Philo D., deceased; F. E. Lee and W. G. Howard, Dowagiac, Wis., executors. Heating and cooking stoves, ranges, and furnaces	12,478	June 26	122	2968
Bedell Company, New York, N. Y. Cloaks, dress-skirts, and waists and tailor-made suits	14,227	May 29	122	1694
Beebe-Webber Company, Holyoke, Mass. Woolen piece goods	16,338	May 8	122	706
Beebe-Webber Company, Holyoke, Mass. Woolen piece goods	16,339	May 22	122	1373
Beecham, Joseph, St. Helens, England. Pills	16,526-7	May 1	122	330
Behr & Co., Herman, New York, N. Y. Abrasive material made of paper and cloth coated with flint, sand, and emery	10,585	June 5	122	2031
Behr & Co., Herman, New York, N. Y. Abrasive material made of paper and cloth coated with flint, sand, and emery	10,586	June 19	122	2653
Beiersdorf & Co., P., Hamburg, Germany. Plasters and salves	11 084	June 12	122	2352
Beimes, Frederick H., St. Louis, Mo. Coffee in the bean	18,840	June 26	122	2982
Belcher & Taylor Agricultural Tool Co., Chicopee Falls, Mass. Corn-planters	961	May 22	122	1350
Belle Waist Co., Boston, Mass. Ladies' shirt-waists	17,656	May 8	122	710
Belton Mills, Belton, S. C. Sheetings	18,813	June 26	122	2982
Ben J. Goldman Co., San Francisco, Cal. Gin	5,139	June 12	122	2344
Benbow-Brammer Manufacturing Company, St. Louis, Mo. Rotary washing-machines	15,019	May 29	122	1696
Benda, George, New York, N. Y. Bronze-powder and bronzing liquids	16,573	May 29	122	1698
Benners, Edwin H., New York, N. Y. Car-bolster	11,137	June 12	122	2352
Berkowitz, Armin, Hamilton, Ohio. Whisky	6,272	June 12	122	2345
Bernard Gebrüder, Offenbach-on-the-Main, Germany. Smoking and chewing tobacco and snuff	15,689	June 12	122	2359
Bernheim Distilling Co. Inc., Louisville, Ky. Whisky	9,706	May 29	122	1689
Billingsley, Ellis A., Fairmont, W. Va. Preparation for the relief and cure of nasal catarrh, cold in the head, and hay-fever	17,614	June 26	122	2974
Binger, Arnold, New York, N. Y. Signs and window display-cards	11,934	June 19	122	2653
Binney & Smith Company, New York, N. Y. Glue	18,477	June 12	122	2370
Birkmeyer & Sons, John F., Baltimore, Md. Candy	18,422	May 15	122	1028
Birkmeyer & Sons, John F., Baltimore, Md. Round or oblong piece of candy attached to a stick	18,421	June 26	122	2980
Birmingham Fertilizer Company, Birmingham, Ala. Fertilizers	17,890	June 26	122	2977
Bischoff, Frederick, New York, N. Y. Pulverized or powdered unsweetened chocolate and cocoa	2,763	June 12	122	2342
Bischoff, Frederick, New York, N. Y. Pure cane-sugar globules, absorbent sugar disks, and refined sugar-of-milk tablets	2,764	June 26	122	2980
Bissell, Willeston W., Rochester, N. Y. Spectacle and eyeglass lenses and frames	15,464	June 12	122	2359
Black Band Coal and Coke Company, Charleston, W. Va. Coal and coke	15,062	June 5	122	2035
Blackwell's Durham Tobacco Co., New York, N. Y. Smoking-tobacco	12,798	May 8	122	696
Blakenburg & Co., R., Philadelphia, Pa. Woolen and worsted yarns	1,270	May 1	122	304
Blanchard, Joseph, Minneapolis, Minn. Lotion or external remedy for eczema and other kindred diseases	17,521	June 26	122	2974
Blanchard, Young & Co., Providence, R. I. Souvenir post-cards	18,248	May 29	122	1704
Blandola Company Limited, Whaley Bridge, near Stockport, England. Vegetable gelatin and finishing-sizing	17,217	June 26	122	2973
Blanke-Wenneker Candy Company, St. Louis, Mo. Caramels	19,191	June 26	122	2984
Blenio Fireproofing Co., New York, N. Y. Fireproof compositions, &c	17,324	June 12	122	2365
Bligh, Martin J., Logansport, Ind. Whisky	3,812	June 5	122	2027
Block & Co., Edward, Kansas City, Mo. Whisky	11,505	June 12	122	2352
Block & Griff, Sol., Kansas City, Mo. Whisky	3,795	June 26	122	2960
Blodgett, Ordway & Webber, Boston, Mass. Woolen batistes	14,244	May 22	122	1368
Blondeau, Berque & Co., Reims, France. Champagne	16,451	June 26	122	2972
Bloomington Canning Co., Bloomington, Ill. Canned vegetables	171	May 15	122	995
Blue Seal Supply Co., Boston, Mass. Extracts and colors used in the manufacture of carbonated tonic beverages	12,483	June 5	122	2032
Blum & Koch, New York, N. Y. Straw hats	18,020	May 22	122	1380
Bluthenthal & Bickart, Atlanta, Ga. Whisky	3,351	May 29	122	1686
Bluthenthal & Heilbronner, Memphis, Tenn. Whisky	6,660	June 19	122	2646
Boehike, Richard A. (See Benton, Edward, assignor.)				
Böker & Co., Heinr., Solingen, Germany. Scissors and shears	14,785	May 8	122	700
Bomhard, Henry C., Milwaukee, Wis. Stove-polish	17,271	June 12	122	2365
Bon-Bon Company, New York, N. Y. Chewing-gum	14,508	May 1	122	322

Alphabetical list of trade-mark applicants published during May and June—Continued.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Boonville Mineral Spring Co., Utica, N. Y. Carbonated tonic beverage	12,482	May 1	122	316
Booth, Louis N., Dallas, Tex. Metal and glass polishing powder	18,250	May 29	122	1705
Booth Packing Company, Baltimore, Md. Canned fruits and vegetables	13,796–9	May 1	122	320
Booth Packing Company, Baltimore, Md. Canned fruits and vegetables	17,802	May 22	122	1379
Borden's Condensed Milk Co., Jersey City, N. J., and New York, N. Y. Milk, condensed milk, cream, evaporated cream, and buttermilk	7,816	May 29	122	1687
Borden's Condensed Milk Co., Jersey City, N. J., and New York, N. Y. Condensed milk	7,820	June 12	122	2347
Boston and Lockport Block Company, Lockport, N. Y., and Boston, Mass. Tackle and hoisting blocks and sheaves for the same	18,573	May 8	122	712
Bouvier, Joseph A. W., Fall River, Mass. Teething and cooling powders for children	4,672	May 15	122	998
Bouvier, Joseph A. W., Fall River, Mass. Powders for infants and children during teething, for cooling and purifying the blood, and a remedy for infantile illnesses, &c	5,895	May 15	122	999
Bowen, James K., Allentown, Pa. Coffee	17,467	June 19	122	2663
Bowman, Jeremiah B., Lititz, Pa. Cutters' extension-blades	14,963	June 5	122	2034
Boyer, Mary J., Baltimore, Md. Canned oysters, shrimp, lobsters, clams, and crabs	13,502	June 26	122	2968
Boynton, Frederic G., Boston, Mass. Condition-powders	4,742	May 15	122	998
Bradford Dyers' Association, Limited, Bradford, England. Cotton sateens	16,551	June 19	122	2659
Bradham, Caleb D., New Bern, N. C. Tonic beverage	1,732	June 12	122	2342
Bradley, Ada B., San Francisco, Cal. Diuretic, laxative, diaphoretic, and tonic medicine	8,071	June 19	122	2649
Braun Manufacturing Co., Pittsburg, Pa. Wall-ties	13,074	May 8	122	697
Breen & Kennedy, Chicago, Ill. Whisky	5,172	June 5	122	2027
Brentanos, New York, N. Y. Card-game-scoring devices	18,500	June 5	122	2044
Bresnahan & Son, T., Columbus, Ohio. Whisky	16,024	June 12	122	2361
Brewington, Henry S., Baltimore, Md. Writing-pens	12,873	May 29	122	1693
Bristol Company, Waterbury, Conn. Pressure-recorders	19,378	June 12	122	2374
Bristol Company, Waterbury, Conn. Thermometers and telethermometers	19,380	June 12	122	2374
Bristol Company, Waterbury, Conn. Electric meters	19,381	June 12	122	2374
Broderick & Bascom Rope Co., St. Louis, Mo. Wire rope	19,373	June 26	122	2985
Brokaw Bros., New York, N. Y. Coats, vests, trousers, and overcoats for men, youths, and children	13,524	May 8	122	697
Brown, David S., New York, N. Y. Toilet soaps	18,008	May 22	122	1390
Brown, David S., New York, N. Y. Washing-powder	18,007	June 5	122	2042
Brown, Durrell & Co., assignors, by mesne assignments, to Brown, Durrell Co., Boston, Mass. Overalls, overall-suits, pants, coats, and blouses	13,344	May 22	122	1366
Brown-Forman Co., Louisville, Ky. Whisky	1,829	May 8	122	682
Brown Hoisting Machinery Company, Cleveland, Ohio. Dovetailed corrugated sheet metal	9,120	May 22	122	1358
Brown, Norman A., New York, N. Y. Sleeve-ironing boards	18,928	June 19	122	2672
Brown, Orlan C., Fort Wayne, Ind. Liquid medicinal remedy for rheumatism	14,379	May 15	122	1013
Brown & Sharpe Manufacturing Co., Providence, R. I. Calipers, dividers, and try-squares	5,941	June 12	122	2345
Brown, William S., Rogersville, Tenn. Stock and poultry food	16,606	May 22	122	1375
Browning & Baines, Inc., Washington, D. C. Coffee	15,238	May 22	122	1371
Brunner, Mond & Co., Limited, Northwich, England. Chlorid of ammonium, muriate of ammonia, or sal-ammoniac in tablet form	16,522	May 8	122	707
Brunner, Mond & Co., Limited, Northwich, England. Ammonium chlorid	16,523	May 15	122	1020
Brunner, Mond & Co., Limited, Winnington, Northwich, England. Hydrates, carbonates, and chlorids of ammonium, sodium, lithium, and potassium	16,524	June 5	122	2038
Bruns, Benjamin J., San Francisco, Cal. Blood-purifier for stomach, liver, and kidney diseases	6,663	May 22	122	1354
Brush, William, Hoboken, N. J. Tooth-powder	16,798	May 22	122	1376
Bube, C., (a Firm,) Hanover-Bothfeld, Germany. Lineal measures of all kinds	15,561	May 8	122	703
Buckeye Manufacturing Company, Anderson, Ind. Motor trucks, runabouts, business-wagons, &c	13,589	May 15	122	1010
Buckner & Co., J. M., Jr., Louisville, Ky. Leaf-tobacco "in the hand"	15,613	May 1	122	326
Buegeleisen & Jacobson, New York, N. Y. Violins and parts thereof	18,347	June 26	122	2979
Bulsing & Heslenfeld, Amsterdam and Rotterdam, Netherlands. Wheat-flour	16,370	May 15	122	1019
Burgon & Ball, Limited, Sheffield, England. Sheep and garden shears	12,597	May 15	122	1009
Burke, Harry J., South Boston, Mass. Pile cure	11,481	May 15	122	1007
Burke, William H., Belmont, Mass. Sausages	16,989	June 12	122	2363
Burlington Soap Company, Burlington, Iowa. Soap	16,048	May 29	122	1697
Burnham & Morrill Company, Portland, Me. Canned corn	6,188	May 1	122	309
Burnham & Morrill Company, Portland, Me. Canned succotash	6,189	May 8	122	686
Burrus Mill & Elevator Company, Fort Worth, Tex. Wheat-flour	12,737	June 26	122	2968
Burton, J. S., Sherman, Tex. Liniment	2,935	May 22	122	1351
Busk & Jevons, New York, N. Y. Unbleached cotton piece goods not figured or printed	15,926	May 1	122	328
Butler-Butler, (Incorporated,) New York, N. Y. Cigarettes	16,405	May 1	122	329
Butler-Butler, (Incorporated,) New York, N. Y. Cigarettes	16,410	May 8	122	706
Butler-Butler, (Incorporated,) New York, N. Y. Cigarettes	8,826	May 15	122	1002
Butler-Butler, (Incorporated,) New York, N. Y. Smoking-tobacco	16,414	May 29	122	1698
Butler-Butler, (Incorporated,) New York, N. Y. Cigarette	8,830	June 5	122	2030
Butler-Butler, (Incorporated,) New York, N. Y. Cigarettes	8,827	June 12	122	2348
Butler-Butler, (Incorporated,) New York, N. Y. Smoking-tobacco	8,832	June 12	122	2348
Butler-Butler, (Incorporated,) New York, N. Y. Chewing-tobacco	8,833	June 19	122	2650
Byrne, Daniel P., New York, N. Y. Remedies for stomach troubles of children	7,967	May 22	122	1357
Byron & Sons, W. D., Williamsport, Md. Patent-leather for shoes	18,473	June 12	122	2370
C. Howard Hunt Pen Co., Camden, N. J. Pens other than fountain-pens	614–18	June 5	122	2025–6
C. Howard Hunt Pen Co., Camden, N. J. Pens other than fountain-pens	621	June 5	122	2026
C. Stölzle's Söhne, Actiengesellschaft für Glasfabrikation, Vienna, Austria. Bottles and siphons	15,045	May 22	122	1370
C. B. Woodworth Sons Co., Rochester, N. Y. Perfumes	2,991	May 22	122	1351
C. F. Blanke Tea & Coffee Co., St. Louis, Mo. Coffee	18,683	June 26	122	2981
C. F. Mueller Co., Jersey City, N. J. Macaroni	12,202	June 26	122	2967
C. S. Bell Co., Hillsboro, Ohio. Cane-mills	18,275	May 29	122	1705
Cadillac Automobile Company, assignor to Cadillac Motor Car Company, Detroit, Mich. Automobiles	11,765	May 15	122	1008
Cadillac Motor Car Company. (See Cadillac Automobile Company, assignor.)				
Cadman & Sons, Thos. R., Sheffield, England. Razors, knives, and forks	16,955	May 29	122	1699
Cahill Iron Works, Chattanooga, Tenn. Stationary washbasins	17,366	May 1	122	332
Cahn, Belt & Co., Baltimore, Md. Whisky	153	June 19	122	2641
California Canneries Co., San Francisco, Cal. Canned fruits	12,755	May 1	122	316
California Fig Syrup Co., San Francisco, Cal. Liquid purgative compounds	6,623	May 1	122	309
California Wine Association, San Francisco, Cal. Wine	14,040	June 12	122	2357
California Wine Association, San Francisco, Cal. Brandy	14,036	June 19	122	2656
California Wine Association, San Francisco, Cal. Wine	14,038	June 19	122	2656
Callard, Stewart & Watt, Ltd., London, England. Bread and biscuits	15,851	May 1	122	327
Calman & Co., Emil, New York, N. Y. Substitute for shellac	18,664	June 19	122	2669
Cambior, Muntaner & Co., San Juan, Porto Rico. Leather boots and shoes	17,654	May 8	122	710
Campe & Co., Henry, San Francisco, Cal. Whisky	12,642	June 12	122	2353
Canton Gum Company, Canton, Ohio. Chewing-gum	18,173	May 15	122	1026

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Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Cantrell & Cochrane, Limited, Dublin, Ireland, and New York, N. Y. Sarsaparilla	12,136	May 22	122	1364
Capewell Horse Nail Company, Hartford, Conn. Horse-nails	18,251	May 8	122	712
Carlisle, R. M., Macon, Ga. Liquid medicine for liver and blood troubles	11,051	June 26	122	2965
Carolina Supply Co., Greenville, S. C. Piston-rod packing composed of rubber and canvas	16,602	May 15	122	1020
Carolina Supply Co., Greenville, S. C. Rubber belting	16,603	May 22	122	1375
Carpetina Company, Minneapolis, Minn. Preparation for cleaning fabrics by evaporation	18,372	June 12	122	2369
Carreras Limited, Aldgate, London, England. Cigars	7,154	May 1	122	309
Carter's Ink Company, Boston, Mass., and New York, N. Y. Type-writer ribbons	17,891	May 8	122	711
Carter's Ink Company, Boston, Mass., and New York, N. Y. Carbon-paper	17,892	May 8	122	711
Case, Clarence O., Boston, Mass. Spring-wheat flour	17,143	May 29	122	1700
Castaing, Amédée, New York, N. Y. Chemical preparation which acts as a bleacher, deodorizer, disinfectant, and germicide	17,686	June 19	122	2664
Castle Brothers, Incorporated, San Francisco, Cal. Dried fruit	17,432–4	May 22	122	1378
Caulk & McCready, Baltimore, Md. Canned fruits and vegetables	11,008	June 26	122	2965
Cave, George E., Chicago, Ill. Sweeping compounds used in sweeping to prevent dust from rising and to aid in the cleansing process	15,594	May 1	122	325
Cawston, Edwin, South Pasadena, Cal. Boas, muffs, and capes made from ostrich-feathers, and ostrich-plumes	12,227	May 1	122	316
Cayey-Caguas Tobacco Company, New York, N. Y., and Caguas, Porto Rico. Cigars, cheroots, and cigarettes made of cigar-tobacco	11,290–1	May 1	122	314
Cayey-Caguas Tobacco Company, New York, N. Y., and Caguas, Porto Rico. Cigars, cheroots, and cigarettes made of cigar-tobacco	14,950–1	May 15	122	1014
Celluloid Company, New York, N. Y., and Newark, N. J. Collars, cuffs, and shirt-fronts made of celluloid	11,733	May 29	122	1692
Celluloid Company, New York, N. Y., and Newark, N. J. Waterproof collars and cuffs	9,551	June 5	122	2030
Celluloid Company, New York, N. Y., and Newark, N. J. Waterproof collars and cuffs comprised in part of pyroxylin	9,550	June 12	122	2349
Celluloid Company, New York, N. Y., and Newark, N. J. Waterproof shirt-fronts, collars, and cuffs	9,554	June 12	122	2350
Celluloid Company, New York, N. Y., and Newark, N. J. Waterproof shirt-fronts, collars, and cuffs	9,556	June 12	122	2350
Central Kansas Milling Company, Lyons, Kans. Wheat-flour	15,807	June 5	122	2036
Central Stamping Company, New York, N. Y. Household and cooking utensils made of enameled steel	9,078	May 8	122	688
Century Biscuit Company, Indianapolis, Ind. Crackers	19,156	June 19	122	2672
Cereal Laxative Co., San Francisco, Cal. Biscuits	18,409	June 19	122	2667
Chambersburg Shoe Mfg. Co., Chambersburg, Pa. Leather, canvas, or cloth shoes	17,700	June 26	122	2975
Chandler, George, Boston, Mass. Corsets	16,456	June 19	122	2659
Chapman Valve Manufacturing Company, Indian Orchard, Mass. Valves and hydrants	4,533	May 22	122	1352
Charles & Co., New York, N. Y. Fresh fruits and vegetables	7,525	May 22	122	1355
Charles E. Hires Company, Philadelphia, Pa. Root-beer, root-beer extract, and the dry ingredients for making root-beer	14,320	May 1	122	322
Charles, Harry H., Quincy, Ill. Portable tanks for containing a fire-extinguishing chemical	17,759	June 19	122	2664
Charles Jacquin et Cie., Inc., New York, N. Y. Cordial	10,155	June 26	122	2964
Charles M. Crittenton Company, New York, N. Y. Soap in which is included pine-tar as one of its ingredients	16,846	May 1	122	330
Charles N. Crittenton Company, New York N. Y. Soap in which is included pine-tar	16,845	June 26	122	2972
Chas. A. Maish Co., Cincinnati, Ohio. Bed-springs	17,620	May 29	122	1703
Chas. A. Maish Co., Cincinnati, Ohio. Mattresses	17,622	June 12	122	2366
Chas. F. Stifel Company, Allegheny, Pa. Harness-leather	1,017	May 1	122	303
Chas. H. Phillips Chemical Co., New York, N. Y. Preparations of cocoa and chocolate used as foods and beverages	15,923	May 1	122	328
Chas. H. Phillips Chemical Co., New York, N. Y. Quinin preparation	15,921	May 15	122	1018
Chas. H. Phillips Chemical Co., New York, N. Y. Cod-liver-oil emulsion	15,922	May 15	122	1018
Chas. H. Phillips Chemical Co., New York, N. Y. Liquid magnesia preparation	16,576	May 22	122	1374
Chas. L. Kiewert Co., Milwaukee, Wis. Hops	8,796	May 1	122	311
Chas. R. Long Jr. Company, Louisville Ky, Mixed paint	11,152	May 29	122	1691
Chase, Andrew J., Melrose, Mass. Finish-nails	14,793	May 8	122	700
Chase & Sanborn, Boston, Mass. Coffee	10,559	May 1	122	313
Chase & Sanborn, Boston, Mass. Tea	10,561	May 1	122	314
Chase & Sanborn, Boston, Mass. Coffee	17,910	May 22	122	1380
Chase & Sanborn, Boston, Mass. Coffee	10,558	June 5	122	2031
Chase & Sanborn, Boston, Mass. Tea	10,560	June 5	122	2031
Chase & Sanborn, Boston, Mass. Tea	17,911	June 5	122	2042
Chatland & Lenhart, Brownsville, Pa. Crackers	17,912	June 19	122	2665
Cheever, Ralph P, Boston, Mass. Neckties or cravats	17,094	May 15	122	1022
Chelf Chemical Co., Richmond, Va. Soluble effervescent salt for nervine preparations	11,468	May 22	122	1362
Chelf Chemical Co., Richmond, Va. Soluble compound in form of powder exposed as a disinfectant, or in solution for local application in morbid conditions of mucous membrane, &c	1,073	May 15	122	995
Chemische Fabrik Helfenberg, A. G. vorm. E. Dieterich, Halfenberg, Saxony, Germany. Non-alcoholic solutions of iron-manganese-peptone	1,074	May 15	122	995
Chemische Fabrik von Heyden, Aktiengesellschaft, Radebeul, near Dresden, Germany. Guaiacol carbonate for internal use	7,271	May 1	122	310
Chemische Fabrik von Heyden, Aktiengesellschaft, Radebeul, near Dresden, Germany. Creosote carbonate for medical purposes	10,368	May 22	122	1360
Chicago Distilling Co., Chicago, Ill. Whisky	10,369	May 22	122	1360
Chicago Flexible Shaft Company, Chicago, Ill. Horse-clippers and sheep-shears	10,044	June 19	122	2652
Chidester, John H., New York, N. Y. Cans	8,427	June 19	122	2650
Children's Amusement Co., West Haven, Conn. Game	15,486	June 5	122	2035
Chittenden & Eastman Co., Burlington, Iowa. Mattresses and pillows	17,413	May 22	122	1378
Choate Drug and Chemical Company, Boston, Mass. Medicines for bronchial and pulmonary affections	14,171	May 8	122	699
Chromolithographische Kunstanstalt Paul Finkenrath, Gesellschaft mit beschränkter Haftung, Berlin, Germany. Pictorial post-cards, congratulatory and fancy cards, and posters	15,773	May 8	122	705
Chubb, Morgan, Brooklyn, N. Y. Toilet powder for infants and adults	15,852	May 8	122	705
Church & Dwight Company, New York, N. Y. Soda and saleratus, either alone or mixed with a powdered acid to form a baking-powder, and sal-soda	17,222	June 26	122	2973
Cincinnati Cordage & Paper Co., Cincinnati, Ohio. Writing-paper	13,810	May 29	122	1694
Citizens' Wholesale Supply Co., Columbus, Ohio. Toilet or face powders, tooth-powders, face-creams, and hair-shampoos	18,268	May 29	122	1705
Citizens' Wholesale Supply Co., Columbus, Ohio. Hair restoratives and tonics	15,607	June 12	122	2359
Clark Manufacturing Company, Boston, Mass. Supporters for hose and skirts	17,265	June 12	122	2364
Clark Mile-End Spool Cotton Co., East Newark, N. J. Cotton thread	18,359	May 29	122	1705
Clark Mile-End Spool Cotton Co., East Newark, N. J. Darning and crochet cotton and cotton thread	13,055	May 1	122	317
	13,056	May 1	122	318

Alphabetical list of trade-mark applicants published during May and June—Continued.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Clark, Robert M., Boston, Mass. Device for preventing self-scratching, sucking the fingers, &c.	17,766	June 19	122	2665
Clark Thread Co., Newark, N. J. Cotton thread of all kinds	13,677–8	May 8	122	698
Clark Thread Co., Newark, N. J. Crochet-cotton or cotton thread	14,318	May 15	122	1012
Clark Thread Co., Newark, N. J. Vamping-thread	14,317	June 12	122	2357
Clark Thread Co., Newark, N. J. All kinds of cotton thread	13,679	June 26	122	2969
Clauberg & Co., F. A., New York, N. Y. Scissors and shears	15,750	May 1	122	326
Clauberg & Co., F. A., New York, N. Y. Razors	11,537	May 8	122	692
Clauberg & Co., F. A. New York, N. Y. Razors and pocket, table, hunting, and butcher knives.	11,535	May 29	122	1692
Clauss, Henrie, Fremont, Ohio. Razors	9,662	June 19	122	2651
Clawson Company, Philadelphia, Pa. Cold-cream	16,836	June 5	122	2039
Cleveland Twist Drill Company, Cleveland, Ohio. Twist-drills, reamers, taps, counterbores, and cutters for milling metal surfaces	8,368–	May 22	122	1358
Clicquot Club Company, Millis, Mass. Ginger-ale, blood-orange, birch-beer, sarsaparilla, and plain soda	18,650	May 15	122	1029
Climax Fuse Co., New York, N. Y. Fuses	1,469	May 15	122	996
Climax Fuse Co., New York, N. Y. Safety-fuse for exploding gunpowder, &c.	1,468	May 29	122	1685
Clinton Brewing Co., Clinton, Iowa. Beer	15,072	June 19	122	2657
Clossett & Devers, Portland, Oreg. Baking-powder	17,737	June 5	122	2041
Clover Leaf Wine Co., assignor to Jaros Importing and Distributing Co., New York, N. Y. Whisky	11,508	May 8	122	692
Cloverine Fertilizer Co., Mount Pleasant, Tenn. Artificial fertilizers	15,667	May 8	122	704
Cluett, Peabody & Co., Troy, N. Y. Collars	18,221–4	May 1	122	334
Cluett, Peabody & Co., Troy, N. Y. Collars	18,226–36	May 1	122	334–5
Clyde Kraut Company, Clyde, Ohio. Sauer-kraut	16,991	May 29	122	1699
Co-operative Foundry Co., Rochester, N. Y. Stoves, ranges, furnaces, and heaters	17,785	May 29	122	1703
Co-operative Foundry Co., Rochester, N. Y. Stoves, ranges, furnaces, and steam and hot-water heaters	17,784	June 5	122	2041
Cockle & Co., James, London, England. Medical preparation in pill form for diseases of the digestive tract and its accessory organs	12,494	May 22	122	1365
Coes Wrench Co., Worcester, Mass. Adjustable screw-wrenches	12,407	May 1	122	316
Coffield & Son, Peter T., Dayton, Ohio. Power-operated washing-machines	16,044	May 22	122	1373
Cohn, George, Louisville, Ky. Whisky	7,711	June 19	122	2648
Colburn, Birks & Co., Peoria, Ill. Cordials	9,418	June 19	122	2651
Cole & Co., J. W., Jackson, Wis. Salves, ointments, &c., containing carbolic acid	16,695	May 29	122	1698
Cole & Co., J. W., Black River Falls, Wis. Ointments and salves	17,183	June 19	122	2661
Colebrookdale Iron Company, Colebrookdale, Pa. Food-choppers	19,345	June 12	122	2374
Colgate & Co., New York, N. Y. Soap	10,985	June 19	122	2653
Colgate & Co., New York, N. Y. Soaps and soap powders	18,557	June 19	122	2668
Colgate & Co., New York, N. Y. Soaps and soap powders	18,752–4	June 19	122	2669
Collier & Son, P. F., New York, N. Y. Weekly illustrated magazine	16,732	May 29	122	1698
Collins Company, Collinsville, Conn. Machetes, terçados, swords, bush, hunting, skinning, rubber, and coffee, &c., knives	12,913	May 22	122	1365
Colonial Press, Boston, Mass. Magazines	18,708	June 26	122	2981
Columbia Distilling Co., Albany, N. Y. Whisky	5,180	June 12	122	2344
Columbia Refining Co., New York, N. Y. Machinery-greases and lubricating-oils	5,016	June 19	122	2644
Columbian Hdw. Co., Cleveland, Ohio. Coat and hat hooks	19,085	June 5	122	2045
Columbian Hdw. Co., Cleveland, Ohio. Door hinges, springs, and pulls	18,061	June 12	122	2367
Columbian Hdw. Co., Cleveland, Ohio. Door-springs	18,072	June 19	122	2666
Columbian Hdw. Co., Cleveland, Ohio. Vises and parts thereof	18,079	June 26	122	2977
Columbus Shirt Company, Chicago, Ill. Dress and negligée shirts	101	May 22	122	1349
Common Sense Garter Co., Malone, N. Y. Garters	12,630	June 19	122	2654
Commonwealth Manufacturing Co., Portland, Me., and Boston, Mass. Chemical solvents for gums and oils	9,674	May 22	122	1359
Commonwealth Shoe and Leather Company, Boston, Mass. Leather boots and shoes for men, women, and youths	16,119	June 12	122	2361
Commonwealth Shoe and Leather Company, Boston, Mass. Leather boots and shoes for men and women	16,118	June 26	122	2971
Compagnie Ray mit beschränkter Haftung, Berlin, Germany. Soap	17,470	May 29	122	1702
Compañía General de Tabacos de Filipinas, Barcelona, Spain. Cigars	9,388	May 22	122	1358
Compañía General de Tabacos de Filipinas, Barcelona, Spain. Cigars	9,387	May 29	122	1689
Compañía General de Tabacos de Filipinas, Barcelona, Spain. Cigars	9,389	June 12	122	2350
Computing Scale Co., Dayton, Ohio. Weighing-scales	5,486–7	June 5	122	2028
Conley, Oliver P. G., Troup, Tex. Compound for skin and blood diseases and antidote for insect-bites	15,651	May 8	122	704
Connecticut Breweries Company, Bridgeport, Conn. Lager-beer	14,080	June 19	122	2656
Conner, Wallace L., New York, N. Y. Furniture-polish	16,874	May 15	122	1021
Conroy, Thos. J., New York, N. Y. Fishing-lines of all kinds	11,382	May 22	122	1362
Consumers Brewing Company, St. Louis, Mo. Beer	18,402	June 19	122	2667
Continental Vending Company, Rochester, N. Y. Chewing-gum	19,519	June 19	122	2674
Cooper Underwear Co., Kenosha, Wis. Knit undershirts and drawers	7,077	May 15	122	1000
Corbin & Co., H. F., Cincinnati, Ohio. Whisky	8,913	June 12	122	2349
Covillea Tridentata Mfg. Co., Tempe, Ariz. Ter. Salve	17,648	June 26	122	2975
Coyle, Frederick J., Pawtucket, R. I. Wheat-flour	17,606	June 5	122	2040
Crandall, Frank A., Chicago, Ill. Floor filler and surfacer	15,121	June 5	122	2035
Crane Ice Cream Company, Philadelphia, Pa. Ice-cream	18,364	May 15	122	1027
Crates & Bowen, Findlay, Ohio. Chemical preparation to clear rain-water	13,090	June 12	122	2355
Crawford, John, New York, N. Y. Steel pens	14,133	May 15	122	1012
Cream of Wheat Co., Minneapolis, Minn. Breakfast-food made from wheat	11,245	May 29	122	1691
Crescent Macaroni & Cracker Co., Davenport, Iowa. Crackers, biscuits, and cakes	11,701	May 8	122	692
Cresencia Soap Co., Gloversville, N. Y. Soap	18,509	May 22	122	1391
Crete Mills, Crete, Nebr. Wheat-flour	14,977	June 12	122	2358
Crist, Scott & Parshall, Cooperstown, N. Y. Monthly magazine	15,529	May 15	122	1016
Critic Publishing Company, Colorado Springs, Colo. Periodical journals for investors, operators, and speculators	19,056	June 26	122	2983
Cross, C. V., San Francisco, Cal. Powders for indigestion, &c	11,633	May 8	122	692
Crowley, James J., Washington, D. C. Whisky	18,995	May 29	122	1706
Crown Dental Laboratory, Chicago, Ill. Bite-wax	17,820	June 26	122	2976
Crucible Steel Company of America, Pittsburg, Pa. Steel rods, billets, bars, blooms, &c	5,509	May 8	122	685
Crucible Steel Company of America, Pittsburg, Pa. Steel bars, rods, billets, blooms, sheets, plates, slabs, strips, blocks, and forgings	5,498	May 22	122	1353
Crucible Steel Company of America, Pittsburg, Pa. Steel rods, bars, blooms, &c	19,273	June 19	122	2673
Cultivator Publishing Company, Atlanta, Ga. Magazine or periodical	18,844	June 19	122	2671
Cummings, Edwin J., Philadelphia, Pa. Coal	8,854	May 1	122	311
Cummings, Wilbur E., Los Angeles, Cal. Leather shoes	4,169	May 8	122	684
Cunningham & Thompson, Gloucester, Mass. Cured fish, dried and salted	19,332–3	June 19	122	2673
Curran and Joyce Co., Lawrence, Mass. Beer	13,862	May 8	122	698

Alphabetical list of trade-mark applicants published during May and June—Continued.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Curtice Brothers Company, Rochester, N. Y. Catchup packaged in bottles	18,086	June 5	122	2042
Curtice Brothers Company, Rochester, N. Y. Catchup packaged in bottles	18,085	June 19	122	2666
Curtis & Son Company, Portland, Me. Chewing-gum	18,396	May 15	122	1028
Curtis & Son Company, Portland, Me. Chewing-gum	18,574	June 5	122	2044
Curtis's & Harvey, Limited, London, England. Gunpowder	16,528	June 19	122	2659
Cutter & Crossette, Chicago, Ill. Stiff-bosom, negligée, outing, and full-dress shirts	17,105	June 5	122	2039
D. Holzman & Co., Spokane, Wash. Whisky	3,361	June 5	122	2027
D. & L. Slade Co., Boston, Mass. Mustard	18,117	May 29	122	1704
Dale Company, New York, N. Y. Tap-receptacles	16,540	May 15	122	1020
Dalsimer Brothers, New York, N. Y. Knit hosiery, underwear, sweaters, and gloves	17,412	June 19	122	2662
David C. Cook Publishing Company, Elgin, Ill. Monthly periodical	15 131	June 26	122	2970
Davidson, John Z., Baltimore, Md. Flavoring extract	18,154	June 19	122	2666
Davidson Rubber Co., Boston, Mass. Nursing-bottle nipples	12,434	May 29	122	1692
Daviess County Distilling Co., Owensboro, Ky. Whisky	17,483	June 12	122	2365
Davis, Charles P., Agawam, Mass. Newspapers	18,270	June 26	122	2979
Davis Company, H. B., Baltimore, Md. Semipaste paint	18,704	June 19	122	2669
Day & Co., James B., Chicago, Ill. Shellac-varnish	16,599	June 19	122	2659
Dayton Paper Novelty Co., Dayton, Ohio. Wrapping-paper	15,992	May 15	122	1018
Dayton Paper Novelty Co., Dayton, Ohio. Paper packages or cartons for confectionery and popcorn	15,989	May 29	122	1697
De-Fi Manufacturing Co., New York, N. Y. Type-writer ribbons	4,052	June 19	122	2643
De Groff & Son, Lewis, New York, N. Y. Canned, bottled, and preserved fruits and vegetables	14,515	May 29	122	1695
De Laval Separator Company, New York and Poughkeepsie, N. Y. Cream-separators	9,446	May 29	122	1689
De Laval Separator Company, New York and Poughkeepsie, N. Y. Cream-separators	9,448	June 5	122	2030
De Long Hook & Eye Company, Philadelphia, Pa. Hooks and eyes	11	June 5	122	2025
De Vilbiss Manufacturing Company, Toledo, Ohio. Atomizers and powder-blowers	17,369	June 19	122	2662
De Vilbiss Mfg. Co., Toledo, Ohio. Bone-cutting forceps	18,521	June 19	122	2667
De Vilbiss Mfg. Co., Toledo, Ohio. Trephines	18,522	June 19	122	2667
De Vilbiss Mfg. Co., Toledo, Ohio. Specula	18,523	June 19	122	2667
Dean Electric Company, Elyria, Ohio. Telephone signaling apparatus	18,381	June 12	122	2369
Debar, Joseph, Cincinnati, Ohio. Whisky	8,500	June 19	122	2650
Decatur Cereal Coffee Works, Decatur, Ill. Cereal substitute for coffee	15,134	May 15	122	1015
Decatur Cereal Coffee Works, Decatur, Ill. Cereal substitute for coffee	15,137	May 15	122	1016
Deere & Webber Co., Minneapolis, Minn. Gasolene-engines	17,406	May 8	122	709
Delacre & Cie., Ch, Brussels, Belgium. Castor-oil	15,122	May 8	122	701
Dempsey & Co., P., Boston, Mass. Whisky	12,677	June 19	122	2654
Densten, Joseph, Scranton, Pa. Remedy for diseases arising from uric-acid diathesis, &c	16,073	June 12	122	2361
Derror, John F., Mansfield, Ohio. Liquid tree-wash for spraying trees and shrubbery	12,206	June 12	122	2353
Des Moines Hosiery Mills, Des Moines, Iowa. Hosiery	15,661	May 22	122	1372
Desgrandchamps et Cie., Paris, France. Talking-machines and parts thereof	7,049	June 19	122	2647
Dexter Yarn Company, Pawtucket, R. I. Embroidery, knitting, and crocheting yarns	1,995	June 26	122	2960
Diamond Chain & Manufacturing Co., Indianapolis, Ind. Repair-links for link chains	16,188	May 8	122	705
Diamond Ink Company, Milwaukee, Wis. Mucilage, paste, liquid glue, and cement	965	May 22	122	1350
Dickson Mill & Grain Co., Scranton, Pa. Wheat-flour	98	June 19	122	2641
Dieter Co., J. P., Chicago, Ill. Baking-powder	4,609	June 19	122	2644
Dill & Collins Co., Philadelphia, Pa. Surface-coated papers	17,631	June 19	122	2664
Dill & Collins Co., Philadelphia, Pa. Wrapping-paper	17,632	June 19	122	2664
Dillemann Fils & Co., Paris, France. Pocket and table knives and razors	6,832	May 22	122	1354
District of Columbia Paper Mfg. Co., Washington, D. C. Blotting-paper	16,615	June 19	122	2650
District of Columbia Paper Mfg. Co., Washington, D. C. Blotting-paper	16,617	June 19	122	2650
Divvens, Nathan, Uniontown, Pa. Cigars, cheroots, stogies, tobies, and all-tobacco cigarettes	5,735	May 22	122	1353
Doll, William F., New York, N. Y. Watches, watch-movements, watchcases, and watch parts	16,263	May 1	122	329
Donahue Brothers, Troy, N. Y. Tomato catchup	18,642	June 19	122	2668
Dort Elizabeth, Buffalo, N. Y. Salves, liniments, and porous strengthening-plasters	8,015	May 1	122	310
Doubleday, Page & Company, New York, N. Y. Periodical magazines	12,508	June 26	122	2968
Douglas Manufacturing Company, Newark, N. J. Liquid compound used as a substitute for a court-plaster	2,521	June 19	122	2643
Dover Mfg. Co., Canal Dover, Ohio. Sad-irons	18,014	May 29	122	1704
Dow, Matthew J., Muskegon, Mich. Preparation for internal and external use for rheumatism, neuralgia, tic-douloureux, headache, toothache, bruises, sprains, cholera morbus, &c	13,979	May 22	122	1367
Dowd & Co., J. C., New York, N. Y. Hand-mirrors, manicure sets, toilet and tooth brushes, toilet-trays, and boxes of enameled ware	5,356	May 1	122	308
Dr. Charles Co., New York, N. Y. Medicated soap	18,286	June 19	122	2666
Dr. Charles Co., New York, N. Y. Preparation for skin and flesh food	18,285	June 26	122	2979
Dr. Charles Co., New York, N. Y. Face-powder	18,287	June 26	122	2979
Dr. Dadirrian & Sons' Co., New York, N. Y. Fermented milk	18,148	June 19	122	2666
Dr. J. Parker Pray Company, Limited, New York, N. Y. Finger-nail polish	5,533	May 1	122	308
Dr. J. Parker Pray Company, Limited, New York, N. Y. Toilet preparations for removing stains from the skin and finger-nails and for bleaching and manicuring the nails	5,531	May 15	122	999
Dr. Miles Medical Co., Elkhart, Ind. Analgesic and sedative	3,427	May 1	122	305
Dr. Richards Dyspepsia Tablet Association, New York, N. Y. Medicines in the form of tablets for diseases of the blood and nervous system	17,103	June 12	122	2364
Dr. Willis A. Myers Veterinary Medical Co., Wenona, Ill. Hoof-ointment, salve, colic and cough remedies, blisters, and absorbents	14,246	May 1	122	322
Draper, John S., Cincinnati, Ohio. Brandy	16,153	June 19	122	2658
Draper, Oscar M., deceased; A. M. and E. E. Hale, North Attleboro, Mass., executors. Ornamental watch and neck chains	17,302	May 1	122	332
Draper, Oscar M., deceased; A. M. and E. E. Hale, North Attleboro, Mass., executors. Ornamental chains and parts thereof and attachments therefor	17,303	May 29	122	1701
Draper, Oscar M., deceased; A. M. and E. E. Hale, North Attleboro, Mass., executors. Plated chains and bracelets	17,304	May 29	122	1701
Dregen, Robert, Washington, D. C. Remedy for indigestion	16,864	June 12	122	2363
Dubois Watch Case Company, New York, N. Y. Watches and parts thereof	18,314	May 15	122	1027
Dubuque Brewing & Malting Co., Dubuque, Iowa. Malt tonic or extract	1,550	June 26	122	2959
Duche & Sons, T. M., New York, N. Y. Refined cocoanut-fat	13,944	May 22	122	1368
Dudley & Company, U. H., New York, N. Y. Canned sardines	17,455	June 12	122	2365
Dunham Brothers, Windham, Vt. Men's and boys' leather boots and shoes	17,819	May 15	122	1025
Dunlap & Co., New York, N. Y. Hats and caps	6,850	June 19	122	2647
Dunlevy & Brother, Pittsburg, Pa. Hams, breakfast-bacon, &c., sausages, and fresh pork	4,696	June 12	122	2343
Duplicate Whist Company, New York, N. Y. Replay-card-game apparatus	16,765	May 22	122	1376
Duranoid M'F'G. Co., Newark, N. J. Plastic composition containing nitrocellulose	10,959	May 29	122	1691
Duranoid M'F'G. Co., Newark, N. J. Certain plastic composition containing shellac, clay, and fiber	10,959	June 12	122	2352
Durkee & Co., E. R., New York, N. Y. Spices and mustard	3,962	May 1	122	305

Alphabetical list of trade-mark applicants published during May and June—Continued.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Durkee & Co., E. R., New York, N. Y. Spices and mustard	13,153	May 1	122	318
Durkee & Co., E. R., New York, N. Y. Spices and mustard	3,983	May 8	122	683
Durkee & Co., E. R., New York, N. Y. Salad-dressing and sauces	3,966	May 15	122	998
Durkee & Co., E. R., New York, N. Y. Spices and mustard	3,986	June 12	122	2343
Durkee & Co., E. R., New York, N. Y. Caster-oil and medicinal sweet oil	14,774	June 12	122	2358
Dusal Chemical Co., New York, N. Y. Uric-acid solvent	10,712	June 12	122	2351
Dutchess Manufacturing Co., Poughkeepsie, N. Y. Trousers	3,217	May 22	122	1351
E. Godel and Sons, Peoria, Ill. Hams	8,306	June 19	122	2650
E. Horton & Son Company, Windsor Locks, Conn. Lathe-chucks	10,780	June 5	122	2031
E. Seidenberg, Stiefel & Co., New York, N. Y. Cigars and cheroots	3,873	June 26	122	2960
E. Stebbins Manufacturing Company, Springfield, Mass. Faucets	6,417	May 8	122	686
E. C. Atkins & Company, Indianapolis, Ind.; New York, N. Y.; Memphis, Tenn.; Atlanta, Ga.; Minneapolis, Minn.; Portland, Oreg.; Seattle, Wash.; San Francisco, Cal.; Chicago, Ill., and Toronto, Canada. Saws of all kinds	8,290	May 8	122	688
E. C. Atkins & Company, Indianapolis, Ind.; New York, N. Y.; Memphis, Tenn.; Atlanta, Ga.; Minneapolis, Minn.; Portland, Oreg.; Seattle, Wash.; San Francisco, Cal.; Chicago, Ill., and Toronto, Canada. Saws of all kinds	7,998	May 15	122	1001
E. E. Sutherland Medicine Co Paducah, Ky. Salve for sore eyes	2,631	May 1	122	304
E. E. Sutherland Medicine Co., Paducah, Ky. Preparations for the cure and alleviation of coughs, lung and bronchial affections, and chills and fever	15,654	May 15	122	1017
E. S. Dingley Company, Farmington, Me. Canned vegetables	17,485	June 19	122	2663
E. and T. Fairbanks and Company, St. Johnsbury, Vt. Weighing-scales and appurtenances thereof	5,972	May 22	122	1354
Eagle Pencil Company, New York, N. Y. Lead-pencils	18,122–4	May 15	122	1026
Eagle Pencil Company, New York, N. Y. Lead-pencils	18,266	May 15	122	1026
Eagle Pencil Company, New York, N. Y. Lead-pencils	18,121	June 12	122	2367
Eagle Wagon Works, Auburn, N. Y. Wagons	10,849	May 8	122	691
Eagle Water Heater Company, New York, N. Y. Water-heaters	15,235	May 22	122	1371
Earl, William D., Leominster, Mass. Hair-pins and ornamental combs	15,508	May 15	122	1016
Earl & Wilson, Troy, N. Y. Linen undershirts and drawers	17,950	June 19	122	2665
Eastlack, Oscar A., Camden, N. J. Butter	19,284	June 19	122	2673
Eastman Kodak Co., Rochester, N. Y. Sensitized photographic film	11,226	June 5	122	2031
Eaton, Clara S., New York, N. Y. Belt-fasteners for belts for driving machinery	18,144	June 26	122	2978
Eberle & Co., J. N., Augsburg-Pfersee, Germany. Saws	9,519	May 1	122	312
Eccles, Thomas, Philadelphia, Pa. Liniment	12,949	June 5	122	2032
Eclipse Machine Co. Elmira Heights N. Y. Back-pedaling coaster-brake and parts thereof	17,204	May 8	122	709
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Bleached, unbleached, printed, and dyed specially-finished textile fabrics	9,470	May 15	122	1002
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Bleached, unbleached, printed, and dyed cotton textile fabrics having a silk-like finish	9,474	May 15	122	1003
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Bleached, unbleached, printed, and dyed specially-finished textile fabrics	9,475	May 15	122	1003
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Printed and dyed cotton textile fabrics	9,477	May 15	122	1003
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Bleached, unbleached, printed, and dyed specially-finished textile fabrics	9,477	May 15	122	1003
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Printed and dyed specially-finished cotton textile fabrics	9,480	May 15	122	1003
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Bleached, unbleached, printed, and dyed specially-finished textile fabrics	9,482	May 15	122	1003
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Printed and dyed textile fabrics	9,809	May 15	122	1003
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Bleached, unbleached, printed, and dyed textile fabrics having a distinctive finish	9,928	May 15	122	1003
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Bleached, unbleached, printed, and dyed textile fabrics	10,306	May 15	122	1004
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Printed and dyed textile fabrics	10,309	May 15	122	1004
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Bleached, unbleached, printed, and dyed linings	10,365	May 15	122	1004
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Printed and dyed textile fabrics	10,366	May 15	122	1004
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Printed and dyed textile fabrics	10,553	May 15	122	1005
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Printed and dyed textile fabrics	12,490	May 15	122	1009
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Bleached and unbleached, printed, and dyed textile fabrics	17,446	May 22	122	1378
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Solid black cotton prints	9,657	May 29	122	1689
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Bleached, unbleached, printed, and dyed textile fabrics	9,659	May 29	122	1689
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Printed and dyed textile fabrics	17,156	May 29	122	1700
Edgewood Dist. Co., Cincinnati, Ohio. Whisky	18,977	June 12	122	2372
Edgeworth, John F., Boston, Mass. Wheat-flour in sacks or barrels	4,482	June 12	122	2343
Edmonston, Elizabeth, New York, N. Y. Cigars	7,283	June 12	122	2346
Edward L. Baldwin Co., San Francisco, Cal. Preparation for internal use for the cure of nervousness, headache, &c., following alcoholic and other excesses, mental exhaustion, seasickness, &c.	17,340	May 29	122	1701
Edward Ripley & Son, Limited, Bradford, England. Cloths and stuffs of wool, worsted, or hair.	15,745	May 8	122	704
Eerkes-Van Der Maaten Co., Orange City, Iowa. Rusks	16,549	May 22	122	1374
Eglah Limited, London, England. Prepared food substance for making sweets, desserts, and the like	19,021	May 22	122	1382
Einstein, Guggenheim & Company, Cleveland, Ohio. Ladies' shirt-waists and shirt-waist suits.	16,375	May 29	122	1698
Eisendrath, Benjamin D., Racine, Wis. Chrome-tanned, glazed, and dull-finish horsehides and coltskins	17,270	June 12	122	2364
El Zernee Co., New York, N. Y. Analgesics	6,646	June 19	122	2646
El Zernee Co., New York, N. Y. Analgesics	12,216	May 8	122	694
Electric Rubber Manufacturing Company, Rutherford, N. J. Rubber tires	12,215	June 12	122	2353
Elgin Chemical Co., Elgin, Ill. Corn cure	12,800	June 12	122	2354
Elliott, Samuel C., Bardstown, Ky. Goose-grease	15,937	May 1	122	328
Ellison-Harvey Co., Richmond, Va. Whisky	13,520	June 12	122	2356
Ellison-Harvey Company, Richmond, Va. Whisky	17,158	June 26	122	2973
Ely Brothers, New York, N. Y. Medicinal compound for catarrhal diseases and colds	17,046	May 15	122	1021
Eminence Distillery Co., St. Paul, Minn. Whisky	2,876	June 5	122	2027
	16,001	June 12	122	2361

Alphabetical list of trade-mark applicants published during May and June—Continued.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Empire State Wine Co., Penn Yan, N. Y. Champagne	5,185	June 19	122	2645
Enge, Baldwin E., Oberlösnitz, Saxony, Germany. Cocoa and preparations thereof	15,735	May 22	122	1372
Enge, Baldwin E., Oberlösnitz, Saxony, Germany. Coffee	15,734	June 19	122	2657
Enterprise Coffee Company of Baltimore City, Baltimore, Md. Roasted and roasted and ground coffee	4,097	May 8	122	683
Enterprise Coffee Company of Baltimore City, Baltimore, Md. Roasted coffee and roasted and ground coffee	4,099	May 15	122	998
Enterprise Coffee Company of Baltimore City, Baltimore, Md. Roasted and roasted and ground coffee	4,095	May 29	122	1686
Eppstein, Milton L., Fort Worth, Tex. Whisky	8,935	June 19	122	2651
Epstein, Rosalind, New York, N. Y. Ladies' dresses	9,371	May 15	122	1002
Equinox Company, Manchester, Vt. Ginger-ale, sarsaparilla, and other non-alcoholic carbonated beverages	18,657	June 26	122	2981
Erdreich Bros. & Marx, Birmingham, Ala. Whisky	4,120	June 19	122	2644
Erie Preserving Company, Brant and Buffalo, N. Y. Canned fruits, vegetables, jellies, fruit-butter, and fruit-jams	17,649	June 19	122	2664
Ern, Carl F., Wald, Germany. Razors and safety-razor blades	10,773	May 1	122	314
Ernst Schliemann's Export Ceresin Fabrik Gesellschaft m. b. Haftung, Hamburg, Germany. Ceresin	10,543	May 8	122	691
Ernst Schliemanns Oelwerke Gesellschaft mit Beschrankter Haftung, Hamburg, Germany. Mineral lubricating-oils	11,392	May 22	122	1362
Ernstthal & Pohly, New York, N. Y. Knit stockings, socks, undershirts, and underdrawers	11,235	June 19	122	2653
Eugene Dietzgen Co., Chicago, Ill. Prepared and unprepared paper for blue and other process printing	16,817	May 8	122	708
Eureka Brass Company, St. Louis, Mo. Antifriction metal	19,372	June 12	122	2374
Evans, Ezekial C., Philadelphia, Pa. Liquid roofing compounds made from coal-tar products	16,134	May 1	122	329
Evans Shoe Co., East Napa, Cal. Leather boots and shoes	16,749	May 29	122	1699
Everett Mills, Lawrence, Mass. Cotton piece goods	14,342–3	May 15	122	1012–13
Everett Mills, Lawrence, Mass. Sheetings, shirtings, drillings, ducks, osnaburgs, &c	14,341	May 22	122	1368
Everett Mills, Lawrence, Mass. Cotton piece goods	15,577	June 5	122	2035
Ewart & Co., S., Pittsburg, Pa. Lard	18,082	June 12	122	2367
Excelsior Needle Company, Torrington, Conn. Knitting-machine needles	17,219	May 22	122	1377
F. Mayer Boot & Shoe Co., Milwaukee, Wis. Leather shoes	13,000–1	May 1	122	317
F. Mayer Boot & Shoe Co., Milwaukee, Wis. Leather boots and shoes	14,723	June 12	122	2358
F. Reddaway & Co., Limited Manchester, England. All descriptions of woven driving-belting with or without an envelop or covering of india-rubber or gutta-percha	16,362	May 22	122	1374
F. W. Drosten Jewelry Company, St. Louis, Mo. Pearls, diamonds, and other precious and semiprecious stones mounted and unmounted	6,838	June 19	122	2646
Faber, A. W., Stein, Germany. Lead-pencils	15,456	May 8	122	702
Faber, A. W., Stein, Germany. Lead-pencils	15,455	June 26	122	2971
Faber, Eberhard, New York, N. Y. Pencils	15,850	May 1	122	327
Fairchild & Bro., M. H., Chicago, Ill. Pulverized scouring-soap	17,679	June 12	122	2366
Falk Mercantile Co. Lt., Boise, Idaho. Wheat-flour	17,213	May 1	122	331
Farbenfabriken of Elberfeld Co., New York, N. Y. Photographic papers	15,501	May 8	122	703
Farbwerke vorm. Meister Lucius & Brüning, Höchst-on-the-Main, Germany. Anesthetics	12,711	June 5	122	2032
Farina gegenüber dem Jülichs-Platz, Johann M., Köln-on-the-Rhine, Prussia. Eau-de-cologne.	12,085	May 22	122	1364
Farina gegenüber dem Jülichs-Platz, Johann M., Köln-on-the-Rhine, Prussia. Eau-de-cologne.	12 222	May 22	122	1364
Farm Life Publishing Co., Chicago, Ill. Monthly periodical	16,557	June 12	122	2362
Farwell & Rhines, Watertown, N. Y. Wheat-flour	11,315	May 22	122	1362
Fast, Edward, New York, N. Y. Ladies' shirt-waists	17,027	May 8	122	708
Federal Clay Product Co., Mineral City, Ohio. Face and fire brick and terra-cotta	16,361	June 19	122	2658
Federal Stove Co., New York, N. Y. Stoves	19,208	June 12	122	2373
Feeney & Pallotto, Carnegie, Pa. Tonic for rheumatism	13.521	May 1	122	319
Fellheimer and Company, New York, N. Y. Corsets	11,086	May 8	122	691
Fels & Co., Philadelphia, Pa. Soap for antiseptic and disinfecting purposes	8,271	May 15	122	1001
Fels & Company, Philadelphia, Pa. Soap	18,001	June 19	122	2665
Ferdinand, Lorrin W., Boston, Mass. Glue-cement	15,511	May 1	122	325
Ferris & Company, F. A., New York, N. Y. Smoked and pickled meats	17,311	May 15	122	1023
Ferry Drug Co., San Francisco, Cal. Preparation put up in the form of an aqueous solution for internal and external use for the cure of nasal, throat, and stomach catarrh and all diseases affecting the mucous membrane	15,753	May 8	122	704
Fetzer & Company, Middletown, Ohio. Planters, transplanters, harrows, drills, and seeders or distributers, also the parts thereof	17,799–800	May 8	122	711
Fidelity Carbon Paper Company Boston, Mass. Carbon-paper	17,694	June 12	122	2366
Financier Co., New York, N. Y. Weekly trade journal	14.241	June 12	122	2357
Firth-Sterling Steel Company, Pittsburg, Pa. Tool-steel	18.867	May 22	122	1382
Firth-Sterling Steel Company, Pittsburg, Pa. High-speed cutting-steel	18,865	June 5	122	2045
Firth-Sterling Steel Company, Pittsburg, Pa. Magnet-steel	19,301	June 12	122	2373
Fisher, Bruce & Co Philadelphia, Pa. Self-sealing glass jars	17,816	May 22	122	1379
Fitzpatrick, Thomas B., Boston, Mass. Underwaists for women and children	15,925	May 1	122	328
Fletcher Hardware Co., Detroit, Mich. Hatchets and axes	6,026	June 26	122	2961
Florence Manufacturing Company, Northampton, Mass. Hair, clothes, and hat brushes	625	May 15	122	995
Florence Manufacturing Company, Northampton, Mass. Tooth-brushes	17,600	May 15	122	1024
Floto, Theodore D., Brooklyn, N. Y. Coffee substitute	17,207	June 12	122	2364
Floyd Cotton Mills, Rome, Ga. Cotton piece goods	17,170–1	May 29	122	1700
Foamacina Hair Preparation Co., Alameda, Cal. Preparation put up in paste or soap form for the hair and scalp	16,346	June 5	122	2038
Foley & Company, Chicago, Ill. Remedies for affections of the throat, chest, and lungs	1,093	May 15	122	995
Follansbee Brothers Company, Pittsburg, Pa. Tin and terne plates	9,625	May 29	122	1689
Follansbee Brothers Company, Pittsburg, Pa. Tin and terne plates	9,610	June 12	122	2350
Follansbee Brothers Company, Pittsburg, Pa. Tin and terne plates	9,632	June 12	122	2350
"Force" Food Company, New York, N. Y. Cooked and flaked wheat	7,360	June 19	122	2648
Foster-McClellan Company, Buffalo, N. Y. Ointments	16,211	May 15	122	1018
Foster-Milburn Co., Buffalo, N. Y. Oil for external and internal use	7,885	May 29	122	1688
Four Oaks Distilling Co., Birmingham, Ala. Whisky	17,440	May 8	122	710
Fowler, Milton E., Lindale, Tex. Peach-trees	17,769	May 8	122	710
Fox River Butter Company, Aurora, Ill. Butter	5,214	May 1	122	307
Francesconi, Diego Sani, Lucca, Italy. Olive-oil	13,455	June 12	122	2356
Frank Disinfecting Co., P. M., New York, N. Y. Insect-poison	15,297	June 26	122	2970
Frank Miller Co., New York, N. Y. Dressings for boots and shoes	17,335	May 29	122	1701
Frankfort Distillery, Frankfort, Ky. Whisky	9,011	June 26	122	2962
Frankfort Distillery, Frankfort, Ky. Whisky	12,226	June 26	122	2967
Frankfort Distillery, Frankfort, Ky. Whisky	12,252	June 26	122	2967
Frankfort Distillery, Frankfort, Ky. Whisky	12,254–5	June 26	122	2967
Franklin, Charles, San Francisco, Cal. Blood and nerve tonics, remedy for rheumatism, &c.	12,101	June 12	122	2353
Franklin County Creamery Association, St. Albans, Vt. Butter	10,184	June 12	122	2351

Alphabetical list of trade-mark applicants published during May and June—Continued.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Franklin, Lewis W., Boston, Mass. Leather shoes	2,494	May 1	122	304
Fraser-Campbell, Evan J., New York, N. Y. Bleached and unbleached textile fabrics	18,457	June 12	122	2369
Fraser-Campbell, Evan J., New York, N. Y. Bleached and unbleached textile fabrics	18,459	June 12	122	2370
Fraser-Campbell, Evan J., New York, N. Y. Bleached and unbleached textile fabrics	18,456	June 19	122	2667
Frazier, Robert T., Pueblo, Colo. Saddles	19,147	June 26	122	2984
Fred F. Field Co., Brockton, Mass. Leather boots, shoes, and slippers of all kinds and upper and sole leather used in their manufacture	6,819	May 8	122	686
Fred F. Field Company, Brockton, Mass. Leather boots and shoes	19,017	June 26	122	2982
Fred Fear & Company, New York, N. Y. Scrubbing-soap	17,615	May 22	122	1378
Frederick Stearns & Co., Detroit, Mich. Perfumes	6,031	May 15	122	999
Frederick Stearns & Co., Detroit, Mich. General antiseptics for surgical and medicinal use	14,520	June 12	122	2358
Freiberg & Workum, Cincinnati, Ohio. Whisky	18,441	May 29	122	1705
Freiler, Philip, Elgin, Ill. Whisky	1,897	May 15	122	996
Fremery & Company, James de, San Francisco, Cal. Chocolate	15,380	May 1	122	325
French & Ward, New York, N. Y. Knitted cloth in the piece and having a napped or fleeced face or faces	17,730	May 29	122	1703
Frictionless Metal Company, Richmond, Va. Bearing metal	4,905	May 15	122	999
Frieberg & Kahn, Cincinnati, Ohio. Gin	16,753	June 12	122	2363
Friedenwald & Co., J. H., Baltimore, Md. Whisky	3,209	May 15	122	997
Friedenwald & Co., J. H., Baltimore, Md. Whisky	3,210	June 5	122	2027
Friedlaender, David, Berlin, Germany. Ointments, pastes, paste pencils, and creams for obviating perspiration	16,440–1	June 12	122	2362
Friedman, Keller & Co., Paducah, Ky. Whisky	3,799	June 5	122	2027
Frostlene Manufacturing Company, Boston, Mass. Chemical and vegetable substitute for egg-whites	8,962	May 1	122	311
Fuller, James C., assignor to Vimedia Company, Kansas City, Mo. Remedy in capsule form for uterine diseases	11,465	May 29	122	1691
Funk & Wagnalls Company, New York, N. Y. Dictionaries, atlases, and cyclopedias	16,182	June 5	122	2038
G. Kammermann & Co. Schweizerische Trockenmilchgesellschaft, Glockenthal, Switzerland. Dry milk and dry-milk products in powder form	6,827	May 8	122	686
G. B. Farrington Company, New York, N. Y. Coffee	17,074–9	May 15	122	1021–2
G. & H. Barnett Company, Philadelphia, Pa. Files and rasps	7,923	May 22	122	1357
G. & H. Barnett Company, Philadelphia, Pa. Files and rasps	7,924	May 29	122	1688
G. W. Chase & Son Mercantile Co., St. Joseph, Mo. Cigars in boxes	6,816	June 12	122	2345
Gamewell Fire-Alarm Telegraph Company, New York, N. Y. Apparatus for fire-alarm and police-signal telegraphing	18,658	May 15	122	1029
Gantt, James T., Macon, Ga. Cotton-planters, guano-distributers, and grain and fertilizer drills	11,669	June 12	122	2352
Garrettson & Co., F. P., Newport, R. I., and New York, N. Y. Tea	4,573	May 15	122	998
Garrettson & Co., F. P., Newport, R. I., and New York, N. Y. Coffee	4,575	May 15	122	998
Garrison, Alice V., Reedville, Va. Rheumatism cure	17,388	June 12	122	2365
Gebhart, J. W., Spokane, Wash. Clear Havana cigars	17,680	June 19	122	2664
Gehlert, Gustav B., Benton Harbor, Mich. Cider-vinegar and cider	9,074	May 29	122	1688
General Automobile Supply Company, New York, N. Y. Automobile oil-lamps	7,419	June 19	122	2648
Gennerich & Von Bremen, New York, N. Y. Marcaroni and spaghetti	11,171	May 8	122	692
Geo. Benz & Sons, St. Paul, Minn. Whisky	15,975	June 12	122	2361
Geo. Borgfeldt & Co., New York, N. Y. Magic lanterns	17,969	May 29	122	1704
Geo. D. Witt Shoe Co., Lynchburg, Va. Leather boots and shoes	13,461	May 22	122	1366
Geo. E. Keith Company, Brockton, Mass. Leather and canvas boots and shoes	10,451	May 15	122	1004
Geo. F. Dittmann Boot & Shoe Company, St. Louis, Mo. Leather boots and shoes	11,592	June 26	122	2986
Geo. F. Dittmann Boot & Shoe Company, St. Louis, Mo. Leather boots and shoes	11,595–8	June 26	122	2986
Geo. F. Dittmann Boot & Shoe Company, St. Louis, Mo. Leather boots and shoes	11,601–2	June 26	122	2986
Geo. F. Dittmann Boot & Shoe Company, St. Louis, Mo. Leather boots and shoes	11,604–5	June 26	122	2987
George Blome & Son Co., Baltimore, Md. Candy	18,779	June 19	122	2670
George G. Fox Company, Boston, Mass. Bread, cake, pastry, and crackers	12,633	May 15	122	1009
George Lueders & Co., New York, N. Y. Oil of orange, bergamot, and lemon	16,722	May 1	122	330
George Wostenholm & Son, Limited, Sheffield, England, and New York, N. Y. Razors	13,864	May 22	122	1367
George Wostenholm & Son, Limited, Sheffield, England, and New York, N. Y. Pocket, table, butcher, bowie, and farriers' knives and razors	13,865	May 22	122	1367
Georgetown Chemical Works, Georgetown, S. C. Spirits of turpentine	17,668	May 1	122	332
Georgia Chemical Works, Augusta, Ga. Fertilizers	17,870	May 1	122	333
Georgia Chemical Works, Augusta, Ga. Fertilizers	18,131–2	May 1	122	334
Georgia Chemical Works, Augusta, Ga. Fertilizers	17,875	June 5	122	2042
Georgia Chemical Works, Augusta, Ga. Fertilizers	17,874	June 26	122	2976
Gertsen, Bernard H., Hudson, N. Y. Preparation for external and internal application for coughs, &c., and general lung affections and for an ointment	15,386	May 8	122	702
Gill Brothers Company, Steubenville, Ohio. Glass chimneys, lantern-globes, and reflectors	2,429	May 8	122	683
Gill Brothers Company, Steubenville, Ohio. Glass chimneys, lantern-globes, and reflectors	18,499	May 15	122	1028
Gill Brothers Company, Steubenville, Ohio. Glass chimneys, lantern-globes, and reflectors	2,429	May 22	122	1350
Gilliams, Jones & Co., Philadelphia, Pa. Whisky	9,587	May 1	122	312
Gilliams, Jones & Co., Philadelphia, Pa. Rye whisky	9,060	May 15	122	1002
Gilpin, Langdon & Company, Incorporated, Baltimore, Md. Vermifuge	14,362	May 15	122	1013
Ginter Grocery Co., Boston, Mass. Candy kisses	17,044	June 5	122	2039
Ginter Grocery Co., Boston, Mass. Candy kisses	18,698	June 5	122	2044
Gisholt Machine Company, Madison, Wis. Lathes, milling-machines, boring-mills, and screw-machines	14,245	May 15	122	1012
Glidden, Hyde & Co., Boston, Mass. Stockings	19,251	June 12	122	2373
Globe Optical Co., Boston, Mass. Eyeglasses, spectacles, opera and field glasses, and frames and lenses therefor	11,556	May 22	122	1362
Gold, Sigmund N., New York, N. Y. Metal-polish	17,660	June 26	122	2975
Golden and Company, Washington, D. C. Lard	16,270	May 8	122	706
Golden Rule Company, Boston, Mass. Magazines	17,811	June 5	122	2041
Goldoft, Isaac, El Paso, Tex. Wine	4,136	May 8	122	684
Good Samaritan Ointment Company, Camden, N. J. Ointment	12,689	June 12	122	2354
Gooderham & Worts, Limited, Toronto, Canada. Whisky	7,746	May 15	122	1001
Goodhart-Hartman Co., Chicago, Ill. Whisky	8,233	June 12	122	2347
Goodwin Durrell Co., Boston, Mass. Night-shirts, pajamas, night-robes, and sleeping-garments	1,531	May 1	122	304
Goodyear Rubber Company, New York, N. Y. Rubber boots and shoes	6,304	May 8	122	686
Gordley, M. M., Mount Olivet, Ky. Veterinary liniments	16,756	May 22	122	1376
Gordon Brothers, Philadelphia, Pa. Haircloth	18,739	June 26	122	2981
Gordon Manufacturing Company, New Rochelle, N. Y. Suspenders	18,321	June 5	122	2043
Gorham Mfg. Co., Providence, R. I. Electroplated hollow ware, electroplated or silver-plated table and flat ware	14,695	May 1	122	323
Gorham Mfg. Co., Providence, R. I. Combination leather writing sets or secretaries, leather-bound blotting-pads, and leather writing-pads	14,667	May 8	122	699
Gorham Mfg. Co., Providence, R. I. Sterling and solid silver hollow, flat, and table ware	17,630	May 8	122	710
Goss, Daniel S., Rutherford, N. J. Breads, rolls, cakes, and pies	14,762	May 22	122	1369

Alphabetical list of trade-mark applicants published during May and June—Continued.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Gottschalk Co., Baltimore, Md. Whisky	11,866	May 22	122	1364
Govatos, John, Wilmington, Del. Candies of all kinds, including chocolate candies	16,260	June 19	122	2658
Gowan Medical Co., Durham, N. C. Remedy for pneumonia	9,278	May 8	122	689
Graf & Comp., Dr., Schoeneberg, near Berlin, Germany. Vegetable extracts containing caffeine, theine, and caffeo-tannic acid	15,468	May 22	122	1371
Graf, Robert R., Baltimore, Md. Platinum	18,089	June 19	122	2666
Grape Products Co., Detroit, Mich. Grape-juice	18,651	May 15	122	1029
Gray, Fred L., Montpelier, Vt. Cough cure	12,075	May 8	122	693
Great Western Cereal Co., Chicago, Ill. Compressed rolled oats	10,739	May 29	122	1691
Greene, Harry A., New York, N. Y. Copper plates for engravers' use	18,499	June 12	122	2370
Greenfield, Morris H., Newark, N. J. Roach and bug destroyer	16,711	June 12	122	2363
Greenlees Brothers, London, England. Scotch whisky	17,254	June 19	122	2662
Greenstein, Simon & Leerburger, New York, N. Y. Boys' coats, vests, and pantaloons	12,418	May 15	122	1009
Grell & Co., B. S., Cincinnati, Ohio. Whisky	8,735	May 15	122	1001
Griffin & Skelley Company, San Francisco, Cal. Canned fruits	579	May 8	122	681
Griffith, Wm. H., New York, N. Y. Remedies for the treatment of rheumatism, gout, lumbago, and various forms of neuralgia	7,282	June 26	122	2961
Griggs, Cooper and Company, St. Paul, Minn. Canned fruits and vegetables	9,549	May 22	122	1359
Groblewski, Albert G., Plymouth, Pa. Spices	17,146	June 5	122	2039
Grosvenor & Co., J. M., Boston, Mass. Capsules	11,215	May 8	122	692
Grove Co., Salem, Ohio. Chewing-gum	17,664	June 19	122	2664
Gruen & Sons, D., Cincinnati, Ohio. Watches, watchcases, and watch-movements	18,604	June 12	122	2371
Gudewill & Bucknall, New York, N. Y. Cork or cork wood	17,416–25	May 29	122	1701–2
Gulfport Grocery Co., Gulfport, Miss. Canned fruits and vegetables	12,801	May 15	122	1009
Gus Edwards Music Publishing Co., New York, N. Y. Sheet-music, instruction-books, and opera-scores	14,252	May 1	122	322
H. Adler Company, Carnegie, Pa., and Kansas City, Mo. Gas stoves, heaters, &c., hot-plates, burners, and their parts	16,978	May 1	122	331
H. Adler Company, Carnegie, Pa., and Kansas City, Mo. Gas-burners	16,979	May 8	122	708
H. De Cabanas y Carbajal, New York, N. Y. Havana cigars	11,435	June 12	122	2352
H. Mueller Manufacturing Company, Decatur, Ill. Valves and cocks	2,932	May 15	122	997
H. Mueller Manufacturing Company, Decatur, Ill. Valves and faucets	2,933	May 22	122	1351
H. A. Metz & Co., New York, N. Y. Dyestuffs and coloring-matters	14,685	May 1	122	323
H. B. Wiggin's Sons Company, Bloomfield, N. J. Draperies, hangings, &c	3,443	May 22	122	1351
H. C. Christians Co., Johnson Creek, Wis. Butter	7,349	May 8	122	687
H. F. Brammer Manufacturing Company, Davenport, Iowa. Rotary washing-machines	2,284	June 19	122	2643
H. F. Brammer Manufacturing Company, Davenport, Iowa. Lever washing-machines	2,471	June 19	122	2643
H. J. Grell Butter & Egg Company, Johnson Creek, Wis. Butter	11,858	May 22	122	1364
H-O (Hornby's Oatmeal) Company, New York, N. Y. Self-rising flour	7,305	June 19	122	2647
H-O (Hornby's Oatmeal) Company, New York, N. Y. Rolled oats	7,306	June 19	122	2647
H-O (Hornby's Oatmeal) Company, New York, N. Y. Flours, self-rising flours, flaked wheat, rolled oats, hominy, &c	7,307	June 19	122	2647
H-O (Hornby's Oatmeal) Company, New York, N. Y. Cooked and flaked wheat	7,309–10	June 19	122	2647–8
H. S. Crocker Company, San Francisco, Cal. Writing-paper and envelops	16,385	June 19	122	2658
H. T. Lawler Milling & Trading Co., Ltd., New Orleans, La. Wheat-flour	17,090–1	May 29	122	1699
H. T. Stock Food Company, Cleveland, Ohio. Stock-food	4,754	June 26	122	2980
H. & W. Company, Newark, N. J. Corsets and corset-waists	11,555	May 15	122	1007
H. W. Crooker Shoe Co., Boston, Mass. Leather boots and shoes	17,108	May 15	122	1022
Haffner Bros., Cincinnati, Ohio. Harness-leather	6,269	May 22	122	1354
Hale, Annie M., *et al.*, executors. (See Draper, Oscar M.)				
Hale, Edwin E., *et al.*, executors. (See Draper, Oscar M.)				
Hall Hartwell & Co., Troy, N. Y. Shirts, collers, and cuffs	17,949	May 1	122	333
Hall's Safe Company, Cincinnati, Ohio. Fire and burglar safes, vault-doors, &c	19,184	May 29	122	1706
Hambuechen, Carl, Riverside, Ill. Polishing-powder to be used in making a cleaning solution	16,050	June 12	122	2361
Hamburg Amerikanische Ahrenfabrik, Schramberg, Germany. Clocks, clock cases and movements, and parts thereof	15,271	June 5	122	2035
Hamilton, William E., Topeka, Kans. Antizymotic remedy	7,619	June 19	122	2648
Hammacher, Dellus & Co., New York, N. Y. Steel in bars and sheets	8,041	May 8	122	687
Hammond, Benjamin, Fishkill Landing, N. Y. Fungicide	9,799	May 22	122	1359
Hammond, Benjamin, Fishkill Landing, N. Y. Insecticide for bugs and blight	9,800	May 22	122	1359
Hampden Watch Co., Canton, Ohio. Watches and watch parts	18,778	June 19	122	2670
Hanan & Son, New York, N. Y. Leather and cloth boots, shoes, and slippers	18,575	June 12	122	2371
Hansen, Henry R., Jersey City, N. J. Candies	12,900	May 15	122	1010
Hansen-Schmitt Co., Milwaukee, Wis. Long-cut tobacco for both smoking and chewing	17,364	May 1	122	332
Hansen-Schmitt Co., Milwaukee, Wis. Long-cut tobacco for smoking and chewing	17,459	June 5	122	2040
Hardtmuth, L & C, Vienna and Budweis, Austro-Hungary, and London, England. India-rubber pencil-erasers	8,065	May 22	122	1357
Hardtmuth, L & C, Vienna and Budweis, Austro-Hungary, and London, England. Lead-pencils	8,068	May 22	122	1357
Hardtmuth, L & C, Vienna and Budweis, Austro-Hungary, and London, England. Lead-pencils	8,070	May 22	122	1357
Hardtmuth, L & C, Vienna and Budweis, Austro-Hungary, and London, England. Tracing-cloth	8,067	June 5	122	2029
Hardtmuth, L & C, Vienna and Budweis, Austro-Hungary, and London, England. Lead-pencils	8,069	June 19	122	2649
Harpers Ferry Lime Company, Millville, W. Va. Lime, both crude and refined, caustic and hydated	17,379	June 19	122	2662
Harpers Ferry Lime Company, Millville, W. Va. Lime, crude and refined, caustic and hydrated	17,380	June 26	122	2974
Harrington Cutlery Co., Southbridge, Mass. Shoe, rubber, bread, cloth, &c., knives	18,156	June 12	122	2368
Harrington & Richardson Arms Co., Worcester, Mass. Revolvers, pistols, rifles, and shotguns	19,002	June 19	122	2672
Harrington & Richardson Arms Co., Worcester, Mass. Revolvers, pistols, rifles, and shotguns	19,004	June 19	122	2672
Harris & Bro., Robt., Reidsville, N. C. Smoking-tobacco	13,736	May 29	122	1694
Harris, Johnson & Co., Cincinnati, Ohio. Whisky	9,711	June 19	122	2652
Harris Suspender Co., New York, N. Y. Garters, sleeve-holders or armlets	783	June 12	122	2341
Hart, Edgar J. M., New York, N. Y. Lotion to remove grease, paint, burnt cork, soot, or dust from the face and to soften and cleanse the skin in general	9,406	May 8	122	689
Hartmann & Bauers, Hanover, Germany. Creosote and guaiacol	13,385	May 22	122	1366
Hauselt & Luneschloss, New York, N. Y. Olive-oil	18,463	June 19	122	2667
Havana Commercial Company, Jersey City, N. J., and New York, N. Y. Havana cigars	17,442	May 8	122	710
Havana Commercial Company, Jersey City, N. J., and New York, N. Y. Havana cigars	17,605	May 22	122	1379
Havana Commercial Company, Jersey City, N. J., and New York, N. Y. Havana cigars	17,375	May 29	122	1701
Havana Commercial Company, Jersey City, N. J., and New York, N. Y. Havana cigars	17,604	June 5	122	2040
Hawaiian Specialty Co., Los Angeles, Cal. Syrup for coughs, croups, catarrh, &c	12,228	June 5	122	2032
Hawkeye Flour Company, Cedar Rapids, Iowa. Wheat-flour	17,773	May 15	122	1025
Hayden, Sarah H. E., Bedford, Mass. Medical compound for dismenorrhea, menorrhagia, convulsions, rigors, &c	8,414	May 8	122	688
Haydenville Company, Haydenville, Mass. Valves, cocks, and faucets	5,568	May 22	122	1353
Hazel-Atlas Glass Company, Wheeling, W. Va. Fruit-jars	18,249	May 15	122	1026
Headstream & de Flon, Mauston, Wis. Medical compounds for diseases of the scalp	17,491	June 26	122	2974

Alphabetical list of trade-mark applicants published during May and June—Continued.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Hecht, Hirschler Co., Norfolk, Va. Knitted stockings	17,357	June 19	122	2662
Heide, Henry, New York, N. Y. Almond paste	16,889	May 22	122	1376
Heine, Fred J., El Reno, Okla. Ter. Veterinary remedy for lump jaw	9,975	June 19	122	2652
Heineman Bros., Baltimore, Md. Cigars	17,186	May 22	122	1377
Heinzerling & Co., Baltimore, Md. Carbonated non-intoxicating tonic beverage	10,505–6	May 1	122	313
Heinzerling & Co., Baltimore, Md. Carbonated non-intoxicating tonic beverage	10,507	May 8	122	691
Heissler & Junge Company, Chicago, Ill. Extract of malt for bakers' use	1,418	June 12	122	2342
Heitmann Bros., Cologne, Germany. Powdered form of dyes	13,861	May 29	122	1694
Heller & Co., B., Chicago, Ill. Vegetable-flour for binding and blending sausage	8,239	May 29	122	1688
Hendee Wire Brush Co., Milwaukee, Wis. Brushes of all kinds for cleaning and toilet purposes	18,282	June 26	122	2979
Henderson, Charles A., Anderson, Ind. Insecticide	12,803	June 19	122	2654
Hennessy & Co., Jas., Cognac, France. Brandy	12,835	May 1	122	317
Hennessy & Co., Jas., Cognac, France. Brandy	12,837–8	May 15	122	1009
Henry Disston & Sons, Incorporated, Philadelphia, Pa. Saws	14,106	May 1	122	321
Henry Disston & Sons, Incorporated, Philadelphia, Pa. Saws	14,117	May 1	122	321
Henry Milward & Sons, Limited, Redditch, England. Fishing-lines, fishing-gut, and gut lines	13,195	May 15	122	1010
Henry Milward & Sons, Limited, Redditch, England. Needles for hand-sewing and for the sewing-machine	13,196	May 29	122	1693
Henry Milward & Sons, Limited, Redditch, England. Needles	18,571	June 12	122	2370
Henton, Clarence H., Chicago, Ill. Toilet powder	6,839	June 5	122	2028
Hermitage Cotton Mills, Camden, S. C. Cotton piece goods	15,258	May 1	122	324
Hern, Marshall B., London, England. Violins, violoncellos, violas, and parts of such instruments	16,547	May 22	122	1374
Herring-Hall-Marvin Safe Company, Hamilton, Ohio, and New York, N. Y. Safes	8,363	May 1	122	310
Herring-Hall-Marvin Safe Company, Hamilton, Ohio, and New York, N. Y. Safes	16,995	May 8	122	709
Hersey Manufacturing Company, Boston, Mass. Fluid-meters				
Hershey, Milton S., Derry Church, Pa. Chocolate, cocoa, sweet and milk chocolate, and chocolate coatings, liquor, and powder	16,826	May 8	122	708
Hertfelder Bros., Philadelphia, Pa. Coats, vests, and trousers	17,638	May 8	122	710
Hess & Clark, Dr., Ashland, Ohio. Poultry medicine	17,262	June 19	122	2662
Heyl, Cornelius, Worms, Germany. Patent-leather, calfskin, and waxed calfskin	8,187	June 5	122	2029
Heywood Boot & Shoe Company, Worcester, Mass. Leather shoes	17,099	June 5	122	2039
Heywood Boot & Shoe Company, Worcester, Mass. Leather boots and shoes	1,656	May 29	122	1686
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Pocket, table, butcher, sticking, skinning, paring, and carving knives and razors	1,657–8	June 5	122	2026
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Bicycles, tricycles, velocipedes, and parts thereof	13,845	May 1	122	321
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Mixed paints	13,849	May 1	122	321
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Enameled steel or iron household utensils	13,586	May 8	122	697
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Fishing-rods	13,843	May 8	122	698
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Axes, hatchets, and adzes	13,587	May 15	122	1010
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Silver and silver-plated hollow, flat, and table ware	18,742	May 15	122	1029
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Mixed paints	13,837	May 22	122	1367
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Fishing-rods	13,847	May 22	122	1367
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Rubber and hemp packing	13,851	May 22	122	1367
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Scythes, scythe-blades, and grass-hooks	17,739	May 29	122	1703
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Razor strops and hones	17,740	May 29	122	1703
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Axes, hatchets, and adzes	17,744	May 29	122	1703
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Gimlet and auger bits and braces	13,846	June 12	122	2356
Higgins Chemical Co., Townsend, Mass. Remedy for colds, la grippe, influenza, bronchitis, &c	17,741	June 26	122	2976
Hiller Confectionery Company, Canajoharie, N. Y. Candy	15,232	June 26	122	2970
Hilo Gum Co., Chicago, Ill. Chewing-gum	13,410	May 1	122	318
Hilpp & Company, S. A., Louisville, Ky. Coats, vests, and trousers	14,906	June 5	122	2034
Hinde, Aurelius S., Portland, Me. Liquid lotion or emulsion for the skin	7,507	May 15	122	1000
Hirsch & Co., S., Kansas City, Mo. Whisky	1,408	May 8	122	682
Hirsch & Co., S., Kansas City, Mo. Whisky	15,638	May 1	122	326
Hobson Houghton & Co. Ltd., Sheffield, England. Steel in bars, plates, rods, and wire	15,552	May 8	122	703
Hoffheimer Soap Co., Chicago, Ill. Soap for cleaning and dressing harness	10,161–2	May 8	122	690
Hoffman and Co., Red Hook, N. Y. Chewing-tobacco	11,335	May 15	122	1006
Hoffman-Corr Mfg. Co., Philadelphia, Pa. Flags	17 655	May 22	122	1379
Hoffman-Corr Mfg. Co., Philadelphia, Pa. Hammocks and hammock nets and netting	15,636	May 29	122	1697
Hoffman, George W., Indianapolis, Ind. Compound for polishing metals, wood, glass, and marble	15,633	June 5	122	2036
Hoffman and Murphy, Chicago, Ill. Overcoat-collars	13,358	May 15	122	1010
Hoffmann, Emil, Leipzig-Lindenau, Germany. Flour paste	13,964	June 19	122	2655
Hogg, James R., Poplar Bluff, Mo. Whisky	15,192	May 22	122	1370
Hohenadel, P., Jr., Janesville, Wis., and Rochelle, Ill. Canned corn and sauer-kraut	17,797	May 22	122	1379
Hoi-Tan Company, New York, N. Y. Automobiles	12,610	May 8	122	696
Holland Medicine Company, Philadelphia, Pa. Medicinal oil, commonly known as "Haarlem oil," for external and internal use	17,135	May 1	122	331
Holler & Co., John S., New York, N. Y. Pocket-knives, razors, and manicure implements	15,688	May 22	122	1372
Holler & Co., John S., New York, N. Y. Pocket-knives, razors, and manicure cutting implements	5,520	June 5	122	2028
Hollingworth, Robert, Lincoln, Nebr. Account-books	5,521	June 26	122	2961
Holmes & Barber, Valdosta, Ga. Ginger-ale	13,651	May 15	122	1011
Holton & Adams, New York, N. Y. Almond-meal compound for the toilet	15,739	May 1	122	326
Holsman Mfg. Co., Baltimore, Md., and New York, N. Y. Shirt-waists and shirt-waist suits	16,172	June 12	122	2361
Home Game Co., Buffalo, N. Y. Game apparatus	16,056	May 8	122	705
Home Game Company, Chicago, Ill. Playing-cards	18,400	June 19	122	2667
Home Life Publishing Company, Chicago, Ill. Magazine or periodical	11,624	May 15	122	1007
Home Mill & Grain Co., Mount Vernon, Ind. Wheat-flour	18,404	June 12	122	2369
Home Physician Co., Mercersburg, Pa. Portable cabinet for medicines	18,847	May 15	122	1029
Home Silk Mills, New York, N. Y. Silk piece goods	19,210	May 29	122	1706
Hood Rubber Co., Boston Mass. Rubber boots and shoes	17,045	May 29	122	1699
Hopkins, Ferdinand T., New York, N. Y. Depilatory powders	18,406	May 15	122	1028
Hosford & Clark, New York, N. Y. Knit hosiery and underwear	7,170	May 8	122	697
Hoster-Columbus Associated Breweries Co., Columbus, Ohio. Beer	16,170	May 29	122	1697
Hotel Security Checking Company, Medford, Mass. Checks or slips and checkers' sheets used by waiters and other employees in hotels, restaurants, &c., for account-checking and cash-registering	3,634–5	May 8	122	683
House, Charles H., Buffalo, N. Y. Non-alcoholic, acidulated, carbonated soda-water	16,258	May 29	122	1698
Howard, Wm. G., *et al.*, executors. (See Beckwith, Philo D.)	17,729	May 15	122	1025
Howe, Brown & Co., Ltd., Pittsburg, Pa. Steel rods, bars, blooms, billets, plates, sheets, slabs, strips, blocks, and forgings	5,491	May 1	122	308
Howe & French Isinglass Co., Boston, Mass. Isinglass of a gelatinous nature	19,047–8	June 12	122	2372–3
Howell Mfg. Co., Hamilton, Ohio. Baking-powder	2,508	May 8	122	683

Alphabetical list of trade-mark applicants published during May and June—Continued.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Hubert, Isaac, Toledo, Ohio. Facial creams	13,754	May 15	122	1011
Hughes, Henry L., Chicago, Ill. Hair-brushes	9,048	May 1	122	311
Hulman & Co., Terre Haute, Ind. Whisky	5,677	June 12	122	2344
Humidine Limited, London, England. Non-corrosive and antifouling paints for ships, &c	16,141	June 12	122	2361
Humphrey Coffee & Tea Co., New York, N. Y. Coffee	10,788	June 19	122	2653
Huntley & Palmers Ltd., Reading, England. Biscuits	9,445	June 19	122	2651
Hurley Manufacturing and Supply Co., St. Louis, Mo. Mixed paints	10,536	June 26	122	2964
Hutchins Pharmacal Company, St. Louis, Mo. Hair and skin tonics	18,141	June 26	122	2978
Hygienic Food Co., Battle Creek, Mich. Prepared cereal breakfast-foods	4,387	May 1	122	306
Hylin & Co. Fabriks Aktiebolag, Stockholm, Sweden. Antiseptic compound	16,042	May 1	122	328
Hyman & Son, Elias, Cincinnati, Ohio. Whisky	5,440	May 8	122	685
I. B. Kleinert Rubber Co., New York, N. Y. Dress-shields	17,953	May 15	122	1026
I. C. Johnson & Co., Limited, London, England. Portland cement	16,552	May 22	122	1374
I. S. Remson Mfg. Co., Brooklyn, N. Y. Carriages and wagons	15,255	May 8	122	702
Ide & Sons, A. L., Springfield, Ill. Side-crank steam-engines	2,873	May 1	122	304
Ide & Sons, A. L., Springfield, Ill. Center-crank steam-engines	2,874	May 1	122	304
Ideal Stock Food Co., Cynthiana, Ind. Prepared stock-food	17,301	June 19	122	2662
Imboden, Adam H., Wichita, Kans. Games played with disks	4,776	May 15	122	999
Imperial Specialty Mfg. Co., Pittsburg, Pa. Wall-ties	18,605	June 5	122	2044
Independent Brewing Ass'n, Chicago, Ill. Malt tonic	1,344	June 19	122	2642
Independent Tobacco Manufacturers Promoting Company, Chicago, Ill. Leaf, smoking, and chewing tobacco	15,790	May 1	122	326
Indiana Mfg. Company, Peru, Ind. Refrigerators and ice-chests	6,104	May 1	122	308
Ineeda-Cofpho Company, Louisville, Ky. Antiseptic and emollient medicine	9,600½	May 8	122	689
Inland Printer Company, Chicago, Ill. Monthly magazines	18,430	June 26	122	2980
Institut Pasteur. (See Yvon, Paul, assignor.)				
International Art Publishing Co., New York, N. Y. Fancy calendars and show-cards	10,255	May 15	122	1004
International Harvester Company of America, Chicago, Ill. Centrifugal cream-separators	15,754	May 8	122	704
International Shirt and Collar Company, Troy, N. Y. Shirts, collars, and cuffs	17,469	May 8	122	710
Iowa Soap Company, Burlington, Iowa. Toilet soap	2,756	June 12	122	2342
Iron City Chemical Co., Pittsburg, Pa. Poisonous preparation for exterminating roaches, bugs, and other insects	17,945	June 26	122	2977
Iroquois Brewing Co., Buffalo, N. Y. Lager-beer	12,299	May 29	122	1692
Iwahara, Kenzo, New York, N. Y. Cotton sheetings and drills	10,245	May 8	122	690
J. Ellwood Lee Company, Conshohocken, Pa. Medicinal plasters	17,063	May 8	122	709
J. Ellwood Lee Company, Conshohocken, Pa. Medicinal plasters	17,064	May 29	122	1699
J. Ellwood Lee Company, Conshohocken, Pa. Adhesive plasters	17,062	June 5	122	2039
J. Ellwood Lee Company, Conshohocken, Pa. Splints	17,056	June 12	122	2363
J. Ellwood Lee Company, Conshohocken, Pa. Medicinal and adhesive plasters	17,060–1	June 12	122	2364
J. Ellwood Lee Company, Conshohocken, Pa. Medicinal and adhesive plasters	17,066	June 12	122	2364
J. Ellwood Lee Company, Conshohocken, Pa. Trusses and supporters	17,069	June 12	122	2364
J. Ellwood Lee Company, Conshohocken, Pa. Medicinal and adhesive plasters	17,065	June 19	122	2660
J. Shepherd Clark Company, New York, N. Y. Monthly magazine or periodical	18,059	May 29	122	1704
J. Sigmund Ullman Co., New York, N. Y. Printing-ink	18 502	June 5	122	2044
J. B. Williams Company, Glastonbury, Conn. Shaving-soap	1,061	June 12	122	2342
J. D. McCann Co., Hornellsville, N. Y. Skin-food and massage-cream	11,438	June 26	122	2966
J. D. Riedel Aktiengesellschaft, Berlin, Germany. Medicinal preparation for internal use against nervous disorders	13,125	May 15	122	1010
J. D. Riedel Aktiengesellschaft, Berlin, Germany. Internal medicinal preparation against gonorrhea and other diseases	13,126	May 15	122	1019
J. F. Humphreys & Co., Bloomington, Ill. Canned fruits and vegetables	9,132	June 19	122	2651
J. F. Humphreys & Co., Bloomington, Ill. Canned fruits and vegetables	9,131	June 26	122	2963
J. F. Humphreys & Co., Bloomington, Ill. Canned fruits and vegetables	9,133	June 26	122	2963
J. F. Johnson Milling Co., Bridgeton, N. J. Wheat-flour	13,157	May 29	122	1693
J. & F. Schroth Packing Co., Cincinnati, Ohio. Lards	15,844	May 1	122	326
J. & F. Schroth Packing Co., Cincinnati, Ohio. Canned meats	15,845	May 1	122	327
J. F. Zahm Tobacco Co., Toledo, Ohio. Smoking-tobacco	18,615	May 22	122	1382
J. F. Zahm Tobacco Co., Toledo, Ohio. Smoking-tobacco	18,614	June 26	122	2980
J. G. Brill Company, Philadelphia, Pa. Motor-trucks for carrying a motor or cable grip	11,300	June 5	122	2032
J. G. Brill Company, Philadelphia, Pa. Railway-car seats	14,864	June 5	122	2034
J. G. Haas Soap Co., St. Louis, Mo. Laundry soap	955	May 1	122	303
J. G. Haas Soap Co., St. Louis, Mo. Laundry soap	961	May 1	122	303
J. G. Haas Soap Co., St. Louis, Mo. Laundry soap	962	May 22	122	1349
J. G. Haas Soap Co., St. Louis, Mo. Laundry soap	953	June 5	122	2026
J & J M Worrall (Limited), Salford, England. Cotton piece goods	14,823	May 29	122	1696
J. P. Eustis Mfg. Co., Portland, Me. Holders for soap, sponges, brushes, towels, combs, and tumblers, and paper-holders	1,024	May 8	122	682
J. S. Murias y Ca., Jersey City, N. J., and New York, N. Y. Havana cigars	11,436	May 15	122	1007
J. W. Beardsley's Sons, New York, N. Y. Salted and boneless fish	13,414	May 8	122	697
J. W. Beardsley's Sons, New York, N. Y. Shredded codfish	1,101	May 15	122	996
J. W. McCoy Pottery Co., Roseville, Ohio. Earthenware cooking vessels	18,038	June 5	122	2042
Jacobs, James, Troy, N. Y. White lead	18,732	June 19	122	2669
Jaeger Bros. Co., Dubuque, Iowa. Whisky	7,009	May 22	122	1355
Jaenecke Printing Ink Co., Newark, N. J. Printing and lithographing inks and printing-ink varnishes and dry colors	13,781	May 8	122	698
James A. McCaffrey & Sons, Philadelphia, Pa. Olive-oil	1,154	June 19	122	2642
James E. Blake Company, Attleboro, Mass. Hair, clothing, hat, and bonnet brushes	10,263	June 19	122	2652
James Graham Manufacturing Co., San Francisco, Cal. Cooking stoves and ranges	17,109	June 19	122	2661
James Irving & Son, Limited, Chester, Pa. Cassimeres	16,770	May 1	122	330
James Means Company, Kittery, Me. Leather shoes	11,793	May 1	122	315
James Rowland & Company, New York, N. Y. Butter	14,467	May 22	122	1368
Jamison Bros., Philadelphia, Pa. Pantaloons and knee-pants	16,220	June 12	122	2362
Janssen, B. H., New York, N. Y. Pianos	16,640	May 22	122	1375
Jaros Importing and Distributing Co. (See Clover Leaf Wine Co., assignor.)				
Jenkins, Alfred B., New York, N. Y., and Boston, Mass. Rubber packing, gaskets, disks, rings, and washers	15,011	May 15	122	1015
Jennison, Elmer E., Denver, Colo. Non-explosive lamp-powder for rendering explosive oils non-explosive	8,362	June 12	122	2348
Jireh Diabetic Food Co., New York, N. Y. Cereal diabetic flour preparations, &c	16,556	June 12	122	2362
John A. Cole Milling Company, Rochester, Minn. Wheat-flour	19,331	June 19	122	2673
John A. Roebling's Sons Co., Trenton, N. J. Rubber-covered electrical wire	16,918	May 15	122	1021
John F. Meyer & Sons Milling Co., St. Louis and Springfield, Mo. Wheat-flour	11,745	May 8	122	698
John H. Ebeling Milling Company, Green Bay, Wis. Wheat-flour	18,483	May 8	122	712
John Knight & Sons, Limited, London, England. Shaving-soap and toilet soaps	16,548	May 8	122	707
John P. Squire & Company, Boston, Mass. Bacon, ribs, loins, shoulders, and hams	14,369	June 5	122	2034
John P. Squire & Company, Jersey City, N. J. Sausages	19,272	June 19	122	2673

Alphabetical list of trade-mark applicants published during May and June—Continued.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
John Power & Son, Ltd., Dublin, Ireland. Irish whisky	10,630	June 26	122	2965
Johns-Pratt Co., Hartford, Conn. Electrical insulating and protective devices	12,058	June 12	122	2353
Johnson & Co., W. W., Cincinnati, Ohio. Whisky	13,313	June 5	122	2033
Johnson & Johnson, New Brunswick, N. J. Medical and surgical plasters	13,666	May 1	122	310
Johnson & Johnson, New Brunswick, N. J. Surgical dressings of cotton or gauze	13,669	May 1	122	329
Johnson & Johnson, New Brunswick, N. J. Toilet or nursery powder	13,670	May 1	122	320
Johnson & Johnson, New Brunswick, N. J. Catheters, stomach-tubes, and bougies	13,671	May 1	122	320
Johnson & Johnson, New Brunswick, N. J. Suspensory bandages	13,997-8	May 1	122	321
Johnson & Johnson, New Brunswick, N. J. Dental absorbents	13,664	May 22	122	1367
Johnson & Johnson, New Brunswick, N. J. Disinfectants	13,665	May 29	122	1694
Johnson & Johnson, New Brunswick, N. J. Medicinal plasters	13,990	May 29	122	1694
Johnson & Johnson, New Brunswick, N. J. Medicinal and adhesive plasters	13,993	June 12	122	2357
Johnson & Johnson, New Brunswick, N. J. Surgical dressings	13,999	June 12	122	2357
Johnson & Johnson, New Brunswick, N. J. Syringes	14,001	June 12	122	2357
Johnson & Johnson, New Brunswick, N. J. Soap	14,004	June 12	122	2357
Johnson, Manander M., Clay Center, Nebr. Incubators and brooders	7,143	June 5	122	2028
Johnson, Mary E., trustee, Fitchburg, Mass. Bicycles	15,452	May 15	122	1016
Johnson, Mary E., trustee, Fitchburg, Mass. Shotguns and revolvers	14,787	June 5	122	2034
Johnston, William J., New York, N. Y. Weekly periodical	12,139	May 8	122	694
Joliet Stove Works, Joliet, Ill. Heating and cooking stoves	18,349	May 8	122	712
Jonas Brook & Bros., Limited, Meltham, England. Cotton yarn, sewing and crochet cotton not on spools or reels, sewing-cotton on spools or reels	13,694	May 1	122	320
Jonas Brook & Bros., Limited, Meltham, England. Cotton thread	13,698	May 1	122	320
Jonas Brook & Bros., Limited, Meltham, England. Sewing-cotton on spools or reels	13,695	May 8	122	698
Jonas Brook & Bros., Limited, Meltham, England. Cotton thread	13,697	May 8	122	698
Jones, Frank M., Lockport, N. Y. Eye-water	13,693	June 5	122	2034
Jones, Thaddeus C., St. Paul, Minn. Dressed-skin underwear	18,186	June 26	122	2978
Jönköpings och Vulcans Tändsticksfabriksaktiebolag, Jönköping, Sweden. Safety-matches	17,359	May 8	122	709
Jönköpings och Vulcans Tändsticksfabriksaktiebolag, Jönköping, Sweden. Safety-matches	16,924	May 15	122	1021
Jordan, Andrew J., St. Louis, Mo. Hand-knives of all kinds, razors, nail-cutters, champagne-wire cutters, and table-cutlery, except of precious metal	16,921-2	May 29	122	1699
Jordan Marsh Company, Boston, Mass. Perfumery	1,911	May 8	122	682
Jordan Marsh Company, Boston, Mass. Dress-shields	8,866	May 15	122	1002
Jordan Marsh Company, Boston, Mass. Tooth-powders	8,868	June 12	122	2348
Joseph Tomey & Sons, Limited, Birmingham, England. Water-gage glasses for boilers	16,741	June 19	122	2660
Joshua Oldham and Sons, Brooklyn, N. Y. Circular, band, hand, and crosscut saws	12,251	June 26	122	2967
Joshua Oldham & Sons, Brooklyn, N. Y. Circular, band, hand, and crosscut saws	18,380	May 22	122	1381
Juda Bros., San Francisco, Cal. Ladies' dress-waists	18,856	June 19	122	2671
Judson & Co., P. O., New York, N. Y. Linoleum	16,723	May 8	122	707
Judson L. Thomson M'f'g. Co., Waltham, Mass. Rivets	15,142	May 22	122	1370
Kabo Corset Company, Chicago, Ill. Corsets	16,622	May 29	122	1698
Kampfe, Bros., New York, N. Y. Razors and razor-blades	9,970-1	May 22	122	1359
Kaplan & Goldsoll, New York, N. Y. Boots, shoes, slippers, and ties made wholly or partly of leather	1,872	June 5	122	2026
Kasseler Hafer-Kakao-Fabrik, Hausen & Co., Actien-Gesellschaft, Cassel, Germany. Chocolate and cocoa	10,190	May 29	122	1690
Kastor & Bros., Adolph, New York, N. Y. Razors, pocket, butcher, kitchen, hunting, and table knives	15,174	May 22	122	1370
Kaufmann Bros. & Co., Toledo, Ohio. Gin	4,911	May 1	122	306
Kaumagraph Co., New York, N. Y. Stamps for stamping trade-marks upon textiles	8,956	June 19	122	2651
Kay and Ess Co., Dayton, Ohio. Paint-oils	9,517	May 8	122	689
Kay and Ess Co., Dayton, Ohio. Mixed paints	10,474	May 22	122	1360
Kestinge, John R., New York, N. Y. Inked pads for type-writers	10,475	May 22	122	1360
Kestinge, John R., New York, N. Y. Carbon-papers	18,010	May 8	122	711
Kees Manufacturing Co., F. D., Bentrice, Nebr. Adjustable corn-huskers	18,011	May 8	122	711
Kehew-Bradley Company, Boston, Mass. Lubricating-oils	17,958	May 8	122	711
Kehew-Bradley Company, Boston, Mass. Hydrocarbon illuminating-oils	19,000	June 12	122	2372
Keith, Simmons & Co., Nashville, Tenn. Razors and pocket, butcher, and table knives	18,998	June 26	122	2982
Kellogg-Mackay-Cameron Co., Chicago, Ill. Boilers for heating purposes	12,304	May 8	122	694
Kelsey, Harry S., Providence, R. I. Bakery products consisting of pies, cakes, rolls, &c	14,966	May 8	122	700
Kelton-Bruce Manufacturing Co., Portland, Me. Belt and lace leather	14,321	May 22	122	1368
Kempshall Manufacturing Company, New York, N. Y. Golf-balls	11,784	May 15	122	1008
Kempshall Manufacturing Company, New York, N. Y. Golf-balls	17,734	June 12	122	2367
Kensett & Co., Thomas, Baltimore, Md. Canned fruits and vegetables	17,733	June 19	122	2664
Kensett & Co., Thomas, Baltimore, Md. Canned fruits and vegetables	11,545	May 22	122	1362
Kerr & Company, New York, N. Y. Belt-lacing	13,408	June 26	122	2968
Kewanee Boiler Company, Kewanee, Ill. Boilers for steam and water heating systems	15,506	May 15	122	1016
Keystone Leather Co., Philadelphia, Pa. Patent-leather	4,059	June 12	122	2343
Keystone Varnish Co., Brooklyn, N. Y. Varnishes, japans, and waterproof finish	15,857	June 19	122	2658
Keystone Varnish Co., Brooklyn, N. Y. Varnishes, japans, liquid fillers, &c	7,350	May 1	122	310
Keystone Watch Case Co., Philadelphia, Pa. Watches, watchcases, and watch-movements	7,350	June 5	122	2029
Kiefer, Oscar H., Los Angeles, Cal. Whisky	19,183	June 26	122	2984
Kimball Brothers Co., Council Bluffs, Iowa. Scales	9,125	June 19	122	2651
King & Co., J. B., New York, N. Y. Cement-plaster, the base of which is calcined gypsum	19,237	June 12	122	2373
Kingston & Kellogg, Waukesha, Wis. Hair-renewers	5,121	May 1	122	307
Kirkley, George S., Baltimore, Md. Rat, mice, and roach paste	17,724	June 26	122	2976
Kiser & Co., S. L., Indianapolis, Ind. Fountain-pens	17,329	June 26	122	2973
Klas, Hilarius, San Francisco, Cal. Peach-bitters	11,877	May 29	122	1692
Kleanit Manufacturing Company, Akron, Ohio. Soap containing a fine grit	12,501	May 8	122	695
Kleinman, Asher, New York, N. Y. Fishing-reels	2,627	June 12	122	2342
Kloeswski & Co., Washington, D. C. Medicine for headache and neuralgia	18,551	June 26	122	2980
Knapp, Lester H., Buffalo, N. Y. Anesthetic for dental and surgical operations	268	May 22	122	1349
Knapp Rubber Binding Company, New York, N. Y. Rubber binding	8,425	May 15	122	1001
Knapp Rubber Binding Company, New York, N. Y. India-rubber stair-nosings	17,352	May 29	122	1701
Knoll & Co., Ludwigshafen-on-the-Rhine, Germany. Preparations of sodium theobromate and sodium salicylate in powder, pills, or tablets for kidney and heart diseases	17,353	June 5	122	2040
Knothe, Adolphe C., New York, N. Y. Suspenders	10,290	May 22	122	1360
Knox Motor Truck Co., Springfield, Mass. Automobiles	12,695	June 12	122	2354
Koch, Gustave, New York, N. Y. Feather dusters	10,689	May 29	122	1690
Koechlin & Engelhardt, Newark, N. J. Silver and silver-plated hollow and flat ware	16,159	June 19	122	2658
Kohlery, Alexander A., Pittsburg, Pa. Smoking and chewing tobacco and tobacco used for making cigarettes	16,443	May 29	122	1698
Kohler Manufacturing Co., Baltimore, Md. Corn-salve	16,739	May 8	122	707
Kohler Manufacturing Co., Baltimore, Md. Medical preparation for the cure of headache and neuralgia	10,173	May 29	122	1690
	10,174	June 19	122	2652

Alphabetical list of trade-mark applicants published during May and June—Continued.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Kohlman, Benjamin J., Mobile, Ala. Whisky	8,226-7	June 19	122	2649
Kohn, Adler & Co., Philadelphia, Pa. Ribbons	17,032	May 22	122	1377
Kops Bros., New York, N. Y. Corsets	5,091	June 26	122	2961
Kora Co., New York, N. Y. Dress-shields	2,633	May 8	122	683
Kornit Manufacturing Company, New York, N. Y. Plastic compositions made from animals' horns and hoofs	16,202	June 12	122	2362
Körting & Mathiesen Aktiengesellschaft, Leutzsch, Germany. Electric-light carbons	17,000	May 15	122	1021
Körting & Mathiesen Aktiengesellschaft, Leutzsch, Germany. Electric arc and incandescent lamps	16,998	June 26	122	2973
Kratz, Paul, Louisville, Ky. Periodical devoted to the care and training of babies and children	17,372	May 1	122	332
Krementz & Co., Newark, N. J. Hat-pins, combs, and hair-pins of gold	12,024	May 15	122	1008
Krementz & Co., Newark, N. J. Chains, necklaces, and fobs	15,536	May 15	122	1017
Krieg, Joseph, Jersey City, N. J. Liquid compound of honey and rock-candy	16,502	May 15	122	1020
Krix-ol Chemical Co., Washington, D. C. Disinfectants	16,320	May 15	122	1019
Kroeger Piano Co., New York, N. Y. Pianos	12,520	May 8	122	695
Krupp Remedy Co., Chicago, Ill. Remedy for rheumatism, kidney, bladder, and catarrhal diseases	16,069	May 22	122	1373
Krusius, Ewald, New York, N. Y. Scissors and shears	2,718	May 22	122	1350
Kunhardt & Co., New York, N. Y. Cotton piece goods	18,746	June 12	122	2371
L. Hardy Co., Worcester, Mass. Shaving and whitening blades for use in tanneries, &c	18,905	June 12	122	2372
L. Martin Company, New York, N. Y. Lamp and gas black	18,087	May 29	122	1704
L. Otzen & Co., Inc., San Francisco, Cal. Dried fruits	15,283	May 1	122	324
L. F. Higinbotham Co., New York, N. Y. Artist's and draftsman's paper and cardboard	9,002	June 12	122	2349
La-Lo Manufacturing Company, Boston, Mass. Liquid preparation for deodorizing, disinfecting, insect-destroying, and dust-laying purposes	16,867	May 8	122	708
Labatt, John, London, Canada. Stout	4,086	May 22	122	1351
Labatt, John, London, Canada. Porter	15,276	May 29	122	1696
Laboratory Company, Leeds, England. Medicinal pills and tablets and capsules containing medicine	6,542	May 8	122	686
Lactoleum-Werke, Ges. mit beschr. Hftg., Berlin, Germany. Composition of matter for covering floors, walls, ceilings, &c	13,136	June 12	122	2305
Lacy, Lane, Richmond, Va. Bearing metal	4,936	June 19	122	2644
Lamar & Rankin Drug Company, Atlanta, Ga. Castor-oil	14,220	May 1	122	322
Lambert Pharmacal Company, St. Louis, Mo. Tooth-powder	6,164	June 26	122	2961
Lanahan & Son, Wm., Baltimore, Md. Whisky	3,821	June 12	122	2343
Landers, Frary and Clark, New Britain, Conn. Carving-knives	18,580	May 15	122	1028
Landers, Frary and Clark, New Britain, Conn. Percolators	18,577	June 12	122	2371
Landers, Frary and Clark, New Britain, Conn. Right and left hand stop and waste cocks	19,242	June 12	122	2373
Lange, Morris, Cincinnati, Ohio. Whisky	8,312	May 1	122	310
Lanman & Kemp, New York, N. Y. Toilet waters	4,466	May 15	122	998
Lappin Tea Company, New York, N. Y. Tea	17,658	May 15	122	1024
Larabee, F. S. & F. D., Stafford, Kans. Wheat-flour	755	May 29	122	1685
Laracy, Francis J., Kearney, N. J. Photographs	16,585	June 19	122	2659
Larson, John P., Chicago, Ill. Snuff	17,152	June 12	122	2364
Laurel Silk Works, New York, N. Y. Broad silks	14,167	May 22	122	1368
Law, Hartland, Herbert E. Law, San Francisco, Cal. Remedies for women's diseases, particularly diseases of the genital and urinary organs, catarrhal and other conditions	13,478	May 8	122	697
Lawrence, Charles H., El Paso, Tex. Cigar-clippings	18,805	June 12	122	2371
Lawrence Feed Co., Ltd., Crowley, La. Mixed feed composed of rice, corn, and molasses	13,608	June 26	122	2968
Lawrence & Son, W. A., Chester, N. Y. Cream cheese	8,620	May 8	122	688
Lawrenceburg Roller Mills Company, Boston, Mass. Wheat-flour	14,903	May 1	122	323
Lazarus, Louis, Lynchburg, Va. Whisky	4,489	June 19	122	2644
Lazell, Dalley & Co., Incorporated, New York, N. Y. Perfumes and toilet waters	12,175	May 8	122	694
Le Compte, Benjamin W., Galveston, Tex. Whisky	17,477	June 19	122	2663
Leatheroid Manufacturing Company, Kennebunk, Me. Parchmentized paper-board	15,281	May 22	122	1371
Leavy, William L., New York, N. Y. Infants' and children's dresses	7,133	May 29	122	1687
Lebovitz, Herman Chicago, Ill. Whisky	14,069	May 15	122	1012
Lee Broom & Duster Company, Lincoln, Nebr. Brooms	16,858	May 15	122	1021
Lee, Fred E., *et al.*, executors. (See Beckwith, Philo D.)				
Leffler Mfg. Co., New York, N. Y. Perfumes	13,576	May 22	122	1367
Lehealol Preparation Co., Melrose, Mass. Toilet and medicated soaps	17,267	May 15	122	1023
Lehigh Coal & Navigation Company, Philadelphia, Pa. Coal	17,636	May 22	122	1379
Leo I. Meinhard Company, New York, N. Y. Silk, duck, and leather belts	19,203	June 19	122	2672
Lester H. Greene Co., Montpelier, Vt. Pulmonary cough remedy in liquid and pill form	844	June 12	122	2341
Leuschner, Paul, Mount Clemens, Mich. Ointments	16,455	May 1	122	329
Levi & Blum, New York, N. Y. Dress-shields	11,952	May 22	122	1364
Levinson, Sol, Brooklyn, N. Y. Celery tonic beverage	10,522	May 15	122	1004
Levy, Henry S., New York, N. Y. Bread	15,758	May 1	122	326
Lewis Bros., Jordan, N. Y. Ointment	15,500	June 19	122	2657
Lewis, Frank P., Peoria, Ill. Cigars	11,297	May 15	122	1006
Libbey Glass Company, Toledo, Ohio. Lantern-globes	18,288-9	May 29	122	1705
Liberty Mills, Nashville, Tenn. Wheat-flour	16,713	May 29	122	1698
Lidgerwood Mill Company, Lidgerwood, N. D. Wheat-flour	17,687	June 12	122	2366
Lillard, Benjamin, New York, N. Y. Monthly trade journal	18,782	June 19	122	2670
Linker, William, Philadelphia, Pa. Gold and silver flat, hollow, and table ware	4,407	May 15	122	998
Lion Bros. Co., Baltimore, Md. Silk embroideries	17,641	May 15	122	1024
Lion Bros. Co., Baltimore, Md. Kimonas and dressing-sacks	17,643	June 12	122	2366
Lipps-Murbach Co. of Baltimore City, Baltimore, Md. Candy	17,670	May 8	122	710
Lipps-Murbach Co. of Baltimore City, Baltimore, Md. Candy	17,671	May 15	122	1025
Lipps-Murbach Co. of Baltimore City, Baltimore, Md. Candy	17,774	June 5	122	2041
Lipps-Murbach Co. of Baltimore City, Baltimore, Md. Candy	17,718	June 12	122	2366
Lisk Manufacturing Co., Limited, Canandaigua, N. Y. Cooking utensils made of tin	3,219	June 12	122	2343
Lister & Company, Limited, Bradford, England, and New York, N. Y. Waterproofed silk pile fabrics	7,575	May 15	122	1001
Lister & Company, Limited, Bradford, England, and New York, N. Y. Mohair pile fabrics	7,576	May 22	122	1355
Little, Calvin W., Montclair, N. J. Medals and badges	12,013	May 1	122	316
Littlefield & Steere Co., Knoxville, Tenn. Candy	9,753	May 22	122	1359
Littleford, George, Cincinnati, Ohio. Hair-pins	13,610	May 8	122	698
Lloyd Brothers, Cincinnati, Ohio. Medicated soap	9,225	June 5	122	2030
Locke Shoe Company, Wheeling, W. Va. Leather boots and shoes	16,899	May 8	122	708
Lodor, Napoleon, Richmond, Va. Headache remedies	4,880	June 19	122	2644
Loeser & Co., Frederick, New York, N. Y. Leather shoes	17,973	May 22	122	1350
Loewy, Joseph, New York, N. Y. Dress-shirts	18,346	June 26	122	2979
Lonke, John, New York, N. Y. Bolted woolen dress goods	13,594	May 8	122	698
Lord & Taylor, New York, N. Y. Hosiery	8,861	May 15	122	1001
Louderbough, Harry, Jersey City, N. J. Marine paint	4,289-90	May 1	122	306-6

Alphabetical list of trade-mark applicants published during May and June—Continued.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Lowenstein, Hugo, New York, N. Y. Inner soles for boots and shoes	15,007	May 15	122	1014
Lowenthal, Milton S., Niagara Falls, N. Y. Whisky	12,090	May 8	122	663
Luckenbach, D. and A., Bethlehem, Pa. Wheat-flour	18,369	May 15	122	1028
Ludowici Roofing Tile Company, Chicago and Chicago Heights, Ill., and Ludowici, Ga. Roofing-tiles	7,027	May 22	122	1355
Lufkin Rule Co., Saginaw, Mich. Measuring-tapes	13,209	May 1	122	318
Lundin & Lundin, Litchfield, Minn. Heave-cure	14,218	May 22	122	1368
Lung Germine Co., Jackson, Mich. Medicine for consumption, coughs, colds, &c	16,535	June 5	122	2038
Lung Germine Co., Jackson, Mich. Medicine for consumption, coughs, colds, &c	16,618	June 5	122	2038
Lung Germine Co., Jackson, Mich. Medicine for the cure of consumption, tuberculosis, &c	16,536	June 26	122	2972
Luyties Brothers, New York, N. Y. Whisky	10,240	May 29	122	1690
Luyties Brothers, New York, N. Y. Whisky	14,370	June 12	122	2357
Luyties, Frederick A., St. Louis, Mo. Laxative medicines	18,273	June 26	122	2978
Lynchburg Shoe Co., Lynchburg, Va. Leather boots and shoes	14,546	May 1	122	322
Lynchburg Shoe Co., Lynchburg, Va. Leather boots and shoes	15,146	May 1	122	324
Lynchburg Shoe Co., Lynchburg, Va. Leather boots and shoes	14,542	June 26	122	2970
Lyon & Healy, Chicago, Ill. Supply-packages for musical instruments containing strings, pegs, bridges, and picks	17,677	May 1	122	332
Lyon & Healy, Chicago, Ill. Guitars and zithers	11,353	May 8	122	692
Lyon & Healy, Chicago, Ill. Supply-packages for musical instruments, containing bridges, picks, pegs, and strings	11,374	May 8	122	692
Lyon & Healy, Chicago, Ill. Musical-instrument strings	17,826	June 5	122	2041
M. Steinert & Sons Co., Boston, Mass. Pianos	16,905	May 8	122	708
M. A. Gedney Pickling Co., Minneapolis, Minn. Vinegar	19,025	June 26	122	2983
M. C. Rosenfeld Co., Boston, Mass. Bottle-washing machines	14,789	May 15	122	1013
M. D. Wells Co., Chicago, Ill. Rubber boots, shoes, and overshoes	10,087	May 22	122	1360
M. D. Wells Co., Chicago, Ill. Leather boots, shoes, and slippers	10,094	June 12	122	2351
M. D. Wells Co., Chicago, Ill. Leather boots, shoes, and slippers	10,099	June 12	122	2351
M. D. Wells Co., Chicago, Ill. Leather boots, shoes, and slippers	10,101–3	June 12	122	2351
M. D. Wells Co., Chicago, Ill. Leather boots, shoes, and slippers	11,066	June 12	122	2352
M. D. Wells Co., Chicago, Ill. Leather boots, shoes, and slippers	11,069	June 12	122	2352
M. D. Wells Co., Chicago, Ill. Leather boots, shoes, and slippers	11,072	June 12	122	2352
M. D. Wells Co., Chicago, Ill. Leather boots, shoes, and slippers	11,076	June 12	122	2352
M. D. Wells Co., Chicago, Ill. Leather boots, shoes, and slippers	10,098	June 26	122	2964
M. D. Wells Co., Chicago, Ill. Leather boots, shoes, and slippers	10,100	June 26	122	2964
M. D. Wells Co., Chicago, Ill. Leather boots, shoes, and slippers	11,070–1	June 26	122	2965
M. D. Wells Co., Chicago, Ill. Leather boots, shoes, and slippers	11,074–5	June 26	122	2966
M. D. Wells Co., Chicago, Ill. Leather boots, shoes, and slippers	11,078	June 26	122	2966
M. L. Getchell Company, Monmouth, Me. Moccasins	17,496	May 22	122	1378
Macbeth-Evans Glass Company, Pittsburg, Pa. Lamp glasses and globes	5,782	May 29	122	1686
Madden, William J., New York, N. Y. Candied popcorn	17,978	May 8	122	711
Maddox, William J., Jamestown, N. Y. Tables	14,821	May 15	122	1014
Magne-Silica Company, Los Angeles, Cal. Fireproof insulation for floors and walls	7,743	June 26	122	2961
Magnolia Metal Company, New York, N. Y. Antifriction metals or alloys	17,389	May 8	122	709
Maire, August E., Minneapolis, Minn. Roof-preserving paint and heavy putty-like cement for filling crevices, &c	16,663	May 22	122	1375
Malcomson, Alexander Y., Detroit, Mich. Coal	14,026	May 8	122	698
Manchester Furniture Co. Inc., Manchester, Va. Washboards	18,589–90	May 29	122	1706
Mandis, Anthony K., Washington, D. C. Medicine for epilepsy	13,875	May 1	122	321
Manhattan Color Works, New York, N. Y. Calcimine	18,825	June 19	122	2671
Manhattan Color Works, New York, N. Y. Cold-water paints and calcimines	18,826	June 19	122	2671
Manhattan Screw & Stamping Works, New York, N. Y. Inverted gas-lamps and the parts thereof	18,323	June 19	122	2667
Manheimer & Bros., Louis, Chicago, Ill. Watch-movements and watchcases	16,637	May 22	122	1375
Mankin, James T., Mangum, Okla. Ter. Remedy for eczema, freckles, &c	18,385	June 26	122	2980
Manufacture Française D'Oeillets Métalliques (ancienne Maison G. Bac), Paris, France. Eyelets for shoes	12,388	June 12	122	2353
Manufacturers' Record Publishing Company, Baltimore, Md. Newspapers	15,350	May 29	122	1696
Manufacturers' Record Publishing Company, Baltimore, Md. Weekly magazines	15,351	June 26	122	2971
Marbleloid Company, New Durham, N. J. Artificial marble	17,107	June 5	122	2039
Mariani & Co., New York, N. Y. Pills, powders, lozenges, tablets, and dragees for anemia, bronchial, catarrhal, laryngeal, and pharyngeal troubles and for a systemic tonic	13,935	May 22	122	1367
Mariani & Co., New York, N. Y. Round bottles, substantially one-half of which are the bodies and one-half the necks	16,788	May 22	122	1376
Mariani & Co., New York, N. Y. Gothic-shaped bottles with Gothic decorations and Gothic rosace in amphora shape	16,962	May 22	122	1376
Maribel Mineral Springs Company, Cooperstown, Wis. Mineral water	16,312	June 5	122	2038
Marine Paint Corporation, Norfolk, Va. Mixed paint	19,398	June 19	122	2674
Marks, A. A., New York, N. Y. Artificial legs, arms, feet, and hands	11,450	May 15	122	1007
Marlin Fire Arms Company, New Haven, Conn. Shotguns, rifles, revolvers, and parts thereof	15,237	May 22	122	1370
Marlin Fire Arms Company, New Haven, Conn. Shotguns, rifles, and pistols	18,899	May 22	122	1382
Marshall Chemical Company, Marshall, Va. Cleaning and polishing soap	13,360	May 1	122	318
Marshall Field & Company, Chicago, Ill. Knitted underwear and hosiery	15,158	May 8	122	701
Marshall Field & Company, Chicago, Ill. Quilts	15,159	May 8	122	701
Marshall Field & Company, Chicago, Ill. Hosiery	16,330	May 8	122	706
Marshall, Thomas P., Macon, Ga. Remedy for bowel complaints	8,277	June 5	122	2029
Martin & Bro., G. W., New York, N. Y. Butter	12,926	May 22	122	1365
Martin, Robert C., Albemarle, La. Sugar and molasses	15,610	May 1	122	325
Martindale & Co., Thomas, Philadelphia, Pa. Olive-oil	14,722	May 8	122	700
Martinez & Bros., W. J., New Orleans, La. Leather boots and shoes	18,052	June 12	122	2367
Mason, Albert G., Cleveland, Ohio. Oscillating, rotating, and vibrating shuttle or looper sewing-machines, sewing-machine covers, tables, stands, and attachments, embracing rufflers, tuckers, &c	18,534	May 29	122	1706
Massachusetts Association for Promoting the Interests of the Adult Blind, Boston, Mass. Mops and the parts thereof	18,910	June 26	122	2982
Massachusetts Cotton Mills, Lowell, Mass. Cotton piece goods	4,995	May 8	122	684
Massachusetts Cotton Mills, Lowell, Mass. Sheetings, shirtings, drillings, ducks, osnaburgs, denims, canton-flannel, and cotton piece goods	5,249	May 8	122	684
Massachusetts Cotton Mills, Lowell, Mass. Cotton piece goods	17,435	May 15	122	1024
Massachusetts Cotton Mills, Lowell, Mass. Sheetings, shirtings, drillings, ducks, osnaburgs, denims, and canton-flannel	4,975	May 22	122	1352
Massachusetts Cotton Mills, Lowell, Mass. Denims, ducks, cheviots, and colored checks and stripes	5,237	May 22	122	1353
Massachusetts Cotton Mills, Lowell, Mass. Cotton piece goods	18,862–3	June 5	122	2044–5
Massachusetts Cotton Mills, Lowell, Mass. Cotton piece goods	17,436	June 12	122	2365
Massachusetts Cotton Mills, Lowell, Mass. Cotton piece goods	19,055	June 12	122	2373

Alphabetical list of trade-mark applicants published during May and June—Continued.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Massachusetts Cotton Mills, Lowell, Mass. Cotton shirtings, ducks, osnaburgs, denims, and canton-flannel	5,254	June 19	122	2645
Massachusetts Cotton Mills, Lowell, Mass. Cotton piece goods	18,864	June 19	122	2671
Masurite Explosive Company, Masury, Ohio, and New York, N. Y. Explosives	13,509	May 1	122	319
Masury, Young & Co., Boston, Mass. Disinfectants in liquid and powdered form	16,746	May 22	122	1376
Matchless Metal Polish Co., New York, N. Y., and Chicago, Ill. Material for cleaning and polishing metal, glass, marble, &c	18,393	May 8	122	712
Matchless Metal Polish Co., New York, N.Y., and Chicago, Ill. Material for cleaning and polishing metal, glass, marble, &c	18,389	June 5	122	2043
Matchless Metal Polish Co., New York, N. Y., and Chicago, Ill. Material for cleaning and polishing metal, glass, marble, &c	18,391	June 5	122	2043
Matthews, John, New York, N. Y. Soda-water	11,933	June 12	122	2353
Maule, Wm. H., Philadelphia, Pa. Weekly newspaper of general interest	18,947	June 26	122	2982
Mayer Fertilizer & Junk Company, St. Louis, Mo. Fertilizers	4,612	June 19	122	2644
Mazo Manufacturing Company, St. Louis, Mo. Soap	18,319	May 22	122	1381
McCart-Mosset Co., Cleveland, Ohio. Whiskies	8,910	May 22	122	1358
McConnel & Co., Limited, Manchester, England. Cotton yarns	16,554	June 19	122	2659
McCready, Joseph L., Baltimore, Md. Fresh shucked oysters	11,009	June 26	122	2965
McIlhenny's Son, E., Avery's Island, La. Pepper-sauce	8,776	May 29	122	1688
McKinley Music Co., Chicago, Ill. Music in sheet, folio, and book form	18,370	June 12	122	2369
Meadville, Pennsylvania Distilling Company, Inc., Meadville, Pa. Pure rye and malt whiskies	4,639	May 1	122	306
Mechanical Rubber Co., New York, N. Y. Piston, rod, and joint packings	15,792	May 8	122	705
Medical Lake Salts Mfg. Co., Spokane, Wash. Medicinal plasters	12,474	May 22	122	1365
Medicura Food Co., Indianapolis, Ind. Medicated stock and poultry food	7,974	May 1	122	310
Melchers & Effler, Toledo, Ohio. Whisky	5,366	May 29	122	1686
Mendel, Louis, Philadelphia, Pa. Lubricating-oil	17,812	May 15	122	1025
Mendleson's Sons, A., Albany, N. Y. Chlorid of lime	6,423	May 8	122	686
Mendleson's Sons, A., Albany, N. Y. Potash and lye	6,064–5	June 5	122	2028
Mendleson's Sons, A., Albany, N. Y. Potash	6,424	June 26	122	2961
Merchant's Coffee Co., Baltimore, Md. Roasted coffee	16,201	May 22	122	1373
Merchants Coffee Company of New Orleans, Ltd., New Orleans, La. Coffee	8,697	May 8	122	688
Merchants Gargling Oil Company, Lockport, N. Y. Oil liniment	16,386	May 22	122	1374
Merck, E., Darmstadt, Germany. Serum similar to antidiphtheritic serum used in Basedow's or Graves' disease	15,148	May 22	122	1370
Merry Optical Company, Kansas City, Mo. Spectacle and eyeglass frames and mountings	5,758	June 5	122	2028
Merry Optical Company, Kansas City, Mo. Opera-glasses	5,756–7	June 19	122	2645
Merry Optical Company, Kansas City, Mo. Spectacle and eyeglass frames, mountings, and lenses	5,762	June 19	122	2645
Metaxin-Fabrik Dr. Lilienfeld & Dr. Tedesko, Vienna, Austria. Colored and ornamented paper	12,950	June 26	122	2968
Meyer Marx Co., Birmingham, Ala. Whisky	8,181	June 19	122	2649
Meyers, Henry R., Covington, Ky. Brandy	7,609	June 12	122	2346
Michigan Condensed Milk Co., Lansing, Mich., and New York, N. Y. Condensed milk	18,394	May 1	122	335
Michigan Condensed Milk Co., Lansing, Mich., and New York, N. Y. Condensed milk	7,828	May 15	122	1001
Michigan Condensed Milk Co., Lansing, Mich., and New York, N. Y. Condensed milk	7,829–30	June 12	122	2347
Michigan Condensed Milk Co., Lansing, Mich., and New York, N. Y. Condensed milk	7,826	June 26	122	2961
Miller Bros., Washington, D. C. Whiskies	15,791	May 22	122	1372
Miller, John H., Warren, Pa. Medicated uterine wafers	12,093	June 5	122	2032
Mills Novelty Co., Chicago, Ill. Coin-operated vending-machine	18,322	June 12	122	2368
Milton Bradley Co., Springfield, Mass. Game	975	June 12	122	2341
Milton Bradley Co., Springfield, Mass. Game of cards	976	June 12	122	2342
Mineral Heave Remedy Co., Pittsburg, Pa. Remedy for heaves in horses	10,781	May 22	122	1361
Minneapolis Brewing Co., Minneapolis, Minn. Beer	11,823	May 8	122	693
Minneapolis Brewing Co., Minneapolis, Minn. Beer	11,825	May 8	122	693
Minneapolis Brewing Co., Minneapolis, Minn. Malt extract	11,826	May 29	122	1692
Minnesota Mining & Manufacturing Co., Duluth, Minn. Corundum, garnet, and emery paper and cloth	17,971	June 12	122	2367
Minot, Hooper & Co., New York, N. Y. Sheeting	3,642	May 1	122	305
Minot, Hooper & Co., New York, N. Y. Cotton piece goods	15,355	May 1	122	324
Minot, Hooper & Co., New York, N. Y. Woven cotton fabrics	15,356	May 1	122	325
Mistletoe Manufacturing Company, Denver, Colo. Cream for the toilet	4,680	June 12	122	2343
Mohns-Frese Commercial Company, San Francisco, Cal. Wheat-flour	14,588–9	May 1	122	322
Molassine Company, Ld., London, England. Prepared food and compounds for admixture with food for stock	1,987	June 19	122	2653
Moline Plow Co., Moline, Ill. Beet-pullers and potato-diggers	13,982	May 15	122	1011
Moline Plow Co., Moline, Ill. Stalk-cutters	13,983	May 15	122	1012
Moline Wagon Company, Moline, Ill. Carriages and wagons	14,487	June 12	122	2358
Monarch Milling Co., Hutchinson, Kans. Wheat-flour	16,872	May 1	122	330
Monheimer, Isa, Chicago, Ill. Bitters	2,543	May 22	122	1350
Mono Vineyard & Wine Co., Chicago, Ill. Bottled wines	10,842	May 15	122	1005
Montmorency Cotton Mills Coy., Montmorency, Quebec, Canada. Sheetings and shirtings	3,488	June 26	122	2960
Moore Shafer Shoe M'f'g Co., Brockport, N. Y. Leather boots, shoes, oxfords, sandals, and slippers	13,901	May 1	122	321
Moran Flexible Joint Co., Louisville, Ky. Pipe-joints	8,654	May 22	122	1358
Morgenthau, Mengo L., New York, N. Y. Candies, bonbons, and chocolate candies	5,950	May 22	122	1354
Morley, I. & R., London, England. Hosiery and knitted underwear	7,546	June 5	122	2029
Morris, James P., Paris, Tex. Remedy for skin diseases	10,636	May 8	122	691
Morse & Rogers, New York, N. Y. Boots, shoes, and slippers of leather or textile material, or both, and soles therefor	9 158–9	May 1	122	311
Mount & Robertson, New York, N. Y. Office-partitions made of ornamental panel, glasswork, posts, rails, and balusters	17,956	June 19	122	2665
Mount Vernon-Woodberry Cotton Duck Company, Baltimore, Md. Cotton duck	10,498	May 15	122	1004
Mount Vernon-Woodberry Cotton Duck Company, Baltimore, Md. Cotton duck	10,838–9	May 22	122	1361–2
Mountain City Mill Co., Chattanooga, Tenn. Wheat-flour	12,832	May 22	122	1365
Mountain City Mill Co., Chattanooga, Tenn. Biscuits, bread, cakes, crackers, flakes, wafers, and snaps	18,913	June 19	122	2671
Mountain City Mill Co., Chattanooga, Tenn. Biscuits, bread, cakes, crackers, &c	18,914–16	June 19	122	2672
Mouson & Co., J. G., Frankfort-on-the-Main, Germany. Toilet soap	19,042	May 29	122	1706
Mouson & Co., J. G., Frankfort-on-the-Main, Germany. Soap	17,054	June 5	122	2039
Mueller Chemical Co., Inc., Wapakoneta, Ohio. Remedy for stomach diseases and disorders of the alimentary canal	16,759	May 15	122	1020
Mueller, Wathen & Kobert, Lebanon, Ky. Whisky	7,187	June 5	122	2028
Mueller, Wathen & Kobert, Lebanon, Ky. Whisky	7,184–5	June 12	122	2345–6
Mueller, Wathen & Kobert, Lebanon, Ky. Whisky	7,188–9	June 12	122	2346
Mumford, Charles B., Kansas City, Mo. Pills for liver and kidney diseases	13,908	June 19	122	2655
Mumm & Co., G. H., Reims, France. Champagne-wine	14,155	June 26	122	2969
Mumm & Co., G. H., Reims, France. Champagne-wine	17,087–8	June 26	122	2973
Mundy, Joseph S., Newark, N. J. Steam hoisting, mining, stationary, and dredging engines	16,464	May 8	122	707

Alphabetical list of trade-mark applicants published during May and June—Continued.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Murfreesboro Bottling Works, Murfreesboro, Tenn. Beverages made from coca-leaves	1,044	June 12	122	2342
Murphy & Co., Frank, Chillicothe, Ohio. Whisky	8,739	June 19	122	2650
Murphy & Company, E. W., Hudson, N. Y. Press-board	18,900	June 19	122	2671
Murphy Shoe Co., Portsmouth, Ohio. Men's leather shoes	17,495	June 26	122	2974
Murr, Richard, San Francisco, Cal. Cut glass	17,903	May 8	122	711
Musselman, Norman B., Philadelphia, Pa. Prepared cements for gluing and fastening	16,184	May 29	122	1697
Myers & Gordon, New York, N. Y. Metal-polish in soap form	16,376	May 22	122	1374
Myers, Henry R., Covington, Ky. Blackberry-cordial	7,700	May 8	122	687
Myers, Henry R., Covington, Ky. Rum	8,501	June 19	122	2650
Myers, Henry R., Covington, Ky. Tonic	8,502	June 19	122	2650
N. K. Fairbank Company, Chicago, Ill. Soap	11,159	May 22	122	1362
N. K. Fairbank Company, Chicago, Ill. Prepared fatty oleaginous or unctuous food substances	11,164	May 22	122	1362
Naprstek, Henriette, New York, N. Y. Insecticides and rodent-poisons	2,001	May 15	122	996
Nashville Carbon & Oil Company, Nashville, Tenn. Carbon-paints	14,518	June 12	122	2357
Nashville Chemical Co., Nashville, Tenn. Fire-kindling composition	17,155	May 29	122	1760
Nashville Tobacco Works, Nashville, Tenn. Smoking or chewing tobacco	12,558-61	May 8	122	695-6
Natick Underwear Company, Springfield, Mass. Muslin underwear	6,067	May 8	122	685
National Coal Tar Company, Boston, Mass. Ready felt roofing	17,114	May 22	122	1377
National Distilling Co., Milwaukee, Wis. Yeast	6,605	May 15	122	1000
National Lead Company, Jersey City, N. J., and New York, N. Y. Solder	14,418	May 1	122	322
National Lead Company, Jersey City, N. J., and New York, N. Y. Oxids of lead and white lead	12,444	May 22	122	1364
National Lead Company, Jersey City, N. J., and New York, N. Y. Oxids of lead and sugar of lead	11,815	May 29	122	1692
National Lead & Oil Co. of Pa., Pittsburg, Pa. White lead and oxids of lead	12,993	May 22	122	1365
National Lead & Oil Co. of Pa., Pittsburg, Pa. White lead and oxids of lead	12,995	May 22	122	1365
National Lead & Oil Co. of Pa., Pittsburg, Pa. White lead and oxids of lead	12,992	May 29	122	1693
National Lead & Oil Co. of Pa., Pittsburg, Pa. White lead and oxids of lead	12,996	June 12	122	2354
National Malleable Castings Company, Cleveland, Ohio. Railway-car castings	1,333	May 15	122	996
National Oyster Carrier Company, Albuquerque, N. Mex. Ter. Containers for oysters, clams, fish, and other sea foods	16,392	May 8	122	706
National Remedy Company, New York, N. Y. Remedies for throat and lung diseases	4,809	May 15	122	999
National Remedy Company, New York, N. Y. Nerve and brain food	13,369	June 5	122	2033
National Remedy Company, New York, N. Y. Specific for malaria	13,371	June 5	122	2033
National Remedy Company, New York, N. Y. Medicinal oil or liniment for rheumatism, neuralgia, &c.	13,372	June 5	122	2033
National Remedy Company, New York, N. Y. Sarsaparilla extract	13,373	June 5	122	2033
National Remedy Company, New York, N. Y. Remedy for diseases of the liver, kidneys, stomach, and bowels	13,374	June 5	122	2033
National Remedy Company, New York, N. Y. Specific for worms	13,388	June 5	122	2033
National Remedy Company, New York, N. Y. Hair-preservative	13,370	June 12	122	2355
Navassa Guano Company of Wilmington, Wilmington, N. C. Fertilizers	17,857	May 1	122	333
Nave-McCord Mercantile Company, St. Joseph, Mo. Coffee	19,383-4	June 26	122	2985
Neble, Alexander J., New York, N. Y. Ice-cream	18,180	June 12	122	2368
Nell, Robert H., Cincinnati, Ohio. Fruit-juices	10,656	May 29	122	1691
Neostyle Company, New York, N. Y. Stencil duplicating-machines and parts thereof	5,927	May 1	122	306
Neostyle Company, New York, N. Y. Stencil-paper	5,929	May 1	122	308
Nesbit, David M., London, England. Separators used in connection with steam and hot-water heating apparatus	7,066	June 26	122	2961
Nestor Gianaclis Company, Boston, Mass. Cigarettes and tobacco for cigarettes	16,116	May 15	122	1018
Nestor Gianaclis Company, Boston, Mass. Cigarettes and tobacco for cigarettes	16,115	May 22	122	1373
Neumeyer & Dimond, New York, N. Y. Scissors	10,544	June 26	122	2965
Neuss, Hesslein & Co., New York, N. Y. Bleached, gray, printed, and fancy damasks	12,244	May 8	122	694
Neuss, Hesslein & Co., New York, N. Y. Bleached, gray, printed, and fancy damasks	12,245	May 29	122	1692
Neuss, Hesslein & Co., New York, N. Y. Bleached, gray, printed, and fancy damasks	12,371	May 29	122	1693
Nevada Milling Co., Nevada, Mo. Wheat-flour	17,176	June 19	122	2661
New Century Milling Company, Dallas, Tex. Wheat-flour	7,731	May 22	122	1356
New England Brewing Company, Boston, Mass. Ale	13,118	May 1	122	318
New England Confectionery Co., Portland, Me., and Boston, Mass. Candy	10,580	June 19	122	2653
New Era Milling Company, Arkansas City, Kans. Wheat-flour	19,197	June 26	122	2985
New Jersey Car Spring & Rubber Co., Jersey City, N. J. Hose	17,385	May 1	122	332
New Jersey Wire Cloth Co., Trenton, N. J. Woven and netted wire	19,069	June 19	122	2672
New London Milling Company, New London, Minn. Wheat-flour	15,463	May 8	122	703
New London Milling Company, New London, Minn. Wheat-flour	15,462	May 29	122	1696
New Orleans Coffee Co., (Ltd.,) New Orleans, La. Maple-syrup	4,010	May 1	122	305
New Orleans Coffee Co. Lt'd, New Orleans, La. Laundry starch	13,453	May 8	122	697
New Orleans Coffee Co. Ltd., New Orleans, La. Teas in any kind of package	15,451	May 15	122	1016
New Orleans Import Co. Limited, New Orleans, La. Tea	11,461	May 15	122	1007
New York Coffee Company, New York, N. Y. Coffee	18,057	May 15	122	1026
New York Consolidated Card Company, New York, N. Y. Playing-cards	3,954	May 1	122	305
New York Consolidated Card Company, New York, N. Y. Playing-cards	4,311	May 1	122	306
New York Consolidated Card Company, New York, N. Y. Playing-cards	10,151	May 8	122	689
New York Consolidated Card Company, New York, N. Y. Playing-cards	14,388	May 15	122	1013
New York Consolidated Card Company, New York, N. Y. Playing-cards	4,323	June 5	122	2027
New York Consolidated Card Company, New York, N. Y. Playing-cards	4,325	June 5	122	2027
New York Herald Company, New York, N. Y. Comic sections or pages of newspapers	16,043	May 8	122	705
New York Merchandise Company, New York, N. Y. Ribbon	18,098	May 15	122	1026
New York & New Jersey Lubricant Co., New York, N. Y. Lubricating-oils and oil compositions	8,122	June 19	122	2649
Newell, Robert L., Union, Nebr. Tooth-cleaning paste	17,633	June 26	122	2975
Nicolay & Co., Zurich, Switzerland. Ferruginous preparation	11,976	May 1	122	316
Nicolay & Co., Zurich, Switzerland. Medicine for the blood	11,977	June 12	122	2353
Niemann, Hermenia A., Philadelphia, Pa. Odorless chemical fertilizer compound	16,194	May 15	122	1018
Nierhaus, John, Baltimore, Md. Remedy for consumption	18,095	June 26	122	2978
Niles Tool Works Co., Hamilton, Ohio. Filter-presses	18,731	June 12	122	2371
Nixie Cough Co., York, Pa. Specific for bronchial irritation, colds, &c.	12,126	May 15	122	1006
Norden, Hermann, New York, N. Y. Cotton sheetings	16,215	May 15	122	1019
Nordstjernan Publishing Co., New York, N. Y. Weekly newspapers	18,200	June 26	122	2979
North, Ellen H., Geneseo, N. Y. Jams, jellies, preserves, and pickles	17,464	June 19	122	2663
Northfield Knife Company, Northfield, Conn. Pocket-knives and razors	7,276	May 22	122	1355
Northwestern Consolidated Milling Co., Minneapolis, Minn. Wheat-flour	5,045	May 8	122	684
Norton Emery Wheel Company, Worcester, Mass. Scythe-stones, abrasive stones, and hones	9,903	May 15	122	1003
Nuhring, Charles, Cincinnati, Ohio. Unlined linen fire-hose	8,049	June 26	122	2962
Nutter, Charles P., Boston, Mass. Check-protectors	15,125	May 22	122	1370
O. W. Nottingham Co., Martinsville, Ind. Tablets and writing-pads	11,377	June 26	122	2966
O'Keefe, Thomas E., Oswego, N. Y. Whisky	5,334	May 1	122	307
O'Keefe, Thomas E., Oswego, N. Y. Whisky	5,332	June 12	122	2344

Alphabetical list of trade-mark applicants published during May and June—Continued.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
O'Neill, Lawrence A., Holyoke, Mass. Bread	5,104	June 12	122	2344
O'Toole, James F., Baltimore, Md. Whisky	16,532	May 1	122	330
O'Toole, James F., Baltimore, Md. Gin	16,531	May 8	122	707
O'Toole, James F., Baltimore Md. Wine	16,571	May 8	122	707
O'Toole, James F., Baltimore, Md. Whisky	16,693	June 19	122	2660
Ohio Cultivator Company, Bellevue, Ohio. Cultivators	2,217	May 15	122	997
Ohio Cultivator Company, Bellevue, Ohio. Cultivators	1,383	May 22	122	1350
Oil Seeds Company, New York, N. Y. Cocoanut-butter	16,657	May 8	122	707
Oklahoma Wholesale Grocer Co., Oklahoma City, Okla. Ter. Flavoring extracts	16,417	May 8	122	707
Old Bangor Slate Company, Bethlehem and Bangor, Pa. Roofing-slates	14,855	June 19	122	2656
Old Kentucky Distillery, Louisville, Ky. Whisky	8,244	June 19	122	2650
Old McBrayer Distillery Co., Cincinnati, Ohio. Whisky	14,067	June 5	122	2034
Oliver Typewriter Company, Chicago, Ill. Carbon or transfer paper	2,292	June 5	122	2027
Omnès, Charles L., Paris, France. Tonic and strengthening compounds	10,843	June 5	122	2031
Oneida Community Limited, Oneida, N. Y. Platform spring animal-traps	13,602	June 5	122	2033
Oppenheimer, Ely, Cincinnati, Ohio. Whisky	16,193	May 8	122	705
Oregon Nursery Company, Limited, Salem, Oreg. Fruit-trees, buds, and scions thereof	15,554	May 15	122	1017
Original Farmers Coal Company, Kansas City, Mo. Coal	15,441	June 12	122	2359
Ostasiatische Handels-Gesellschalt, Hamburg, Germany. Rubber boots, shoes, and galoshes	5,095	May 1	122	307
Otto Marmet Coal and Mining Company, Raymond City, W. Va. Coal	17,415	June 12	122	2365
Querbacker, Gilmore Co., Louisville, Ky. Coffee	18,019	June 26	122	2977
P. J. Bowlin Liquor Co., St. Paul, Minn. Whisky	8,624	June 26	122	2962
Paas Dye Co., Newark, N. J. Transfer-papers	14,533	May 15	122	1013
Pabst Brewing Company, Milwaukee, Wis. Beer	14,348	June 26	122	2969
Pacific Coast Condensed Milk Co., Seattle, Wash. Condensed milk	17,330	May 1	122	332
Pacific Mills, Lawrence, Mass. Printed cotton fabrics	17,333	May 22	122	1377
Pacific Mills, Lawrence, Mass. Dyed and printed all-wool and cotton-warp piece goods and dyed and printed cotton piece goods	18,881	June 26	122	2982
Pacific Portland Cement Co., San Francisco, Cal. Portland cement	15,408	May 8	122	702
Pacific Refining & Roofing Co., San Francisco, Cal. Roofing paints and stains	16,094	June 12	122	2361
Palmetto Metal Company, Chicago, Ill. Babbitt and antifriction bearing metals	16,291	May 1	122	329
Palmetto Metal Company, Chicago, Ill. Babbitt and antifriction bearing metals	17,289	May 29	122	1700
Panchaud, Joseph A., Vevay, Switzerland. Artificial milk for rearing calves, sucking pigs, lambs, &c	16,596	May 22	122	1375
Paradis, Joseph, Holyoke, Mass. Sarsaparilla	14,905	May 15	122	1014
Paragon Malt Extract Company, New York, N. Y. Malt extract	9,362	May 29	122	1689
Paragon Plaster Company, Syracuse, N. Y. Plasters and plaster compounds for the walls, ceilings, and floors of dwellings and other buildings	13,365	May 1	122	318
Paramount Knitting Co., Chicago, Ill. Hosiery	17,936	May 1	122	333
Paramount Knitting Co., Chicago, Ill. Hosiery	13,705	June 5	122	2034
Paramount Knitting Co., Chicago, Ill. Hosiery	17,937	June 5	122	2042
Paramount Knitting Co., Chicago, Ill. Hosiery	17,940	June 5	122	2042
Paramount Knitting Co., Chicago, Ill. Hosiery	17,939	June 19	122	2665
Park, Louis M., Minneapolis, Minn. Natural lithia spring-water	17,145	June 19	122	2661
Park Steel Company, Pittsburg, Pa. Steel rods, bars, blooms, billets, plates, sheets, slabs, strips, blocks, and forgings	5,468	May 1	122	308
Parker Holmes & Company, Boston, Mass. Leather boots, shoes, and slippers	11,644	May 22	122	1363
Parker Holmes and Company, Boston, Mass. Leather boots, shoes, and slippers	19,113	June 26	122	2984
Parker, Joseph A., Portsmouth, Va. Knitted stockings	13,367-8	June 19	122	2655
Parlin & Orendorff Co., Canton, Ill. Riding and walking plows	11,211	May 1	122	314
Paschall, N. Julian, Fulton, Ky. Tonic for chills and fevers	10,394	June 5	122	2031
Pass Packing Co., Pass Christian, Miss. Canned shrimp and similar shell-fish	15,077	June 19	122	2657
Passaic Print Works, Passaic, N. J. Calico prints	18,539	June 26	122	2980
Passaic Print Works, Passaic, N. J. Calico prints	18,627	June 26	122	2980
Paste, Lemuel W., Galion, Ohio. Medicated stock-foods	17,479	June 26	122	2974
Patterson Sargent Company, Cleveland, Ohio. Mixed paints	12,772	May 8	122	696
Paul F. Wolff Shirt Company, St. Louis, Mo. Outer shirts	15,112-13	May 8	122	701
Pavian-Adams Co., St. Paul, Minn. Pocket-knives	18,936	June 12	122	2372
Peck, Albert W., Traverse City, Mich. Remedies for diseases of the mucous membrane of the eyes and nose	17,226	June 19	122	2661
Peek Beverage Company, Birmingham, Ala. Non-alcoholic extract and syrup for the making of beverages	16,090	June 19	122	2658
Peek Bros. & Winch, Limited, London, England. Tea	16,347	May 22	122	1374
Peerless Rubber Manufacturing Company, New York, N. Y. Rubber packing	14,598-9	May 22	122	1369
Penick & Ford, Ltd., Shreveport, La. Syrups and molasses	5,322	May 1	122	307
Penick & Ford, Ltd., Shreveport, La. Syrup	5,324	May 1	122	307
Penick & Ford, Ltd., Shreveport, La. Sugar-cane syrups and molasses	5,323	May 8	122	685
Pennsylvania Salt Manuf'g Co., Philadelphia, Pa. Potash	5,713	May 22	122	1353
Pennsylvania Salt Manuf'g Co., Philadelphia, Pa. Lye	5,715-17	May 22	122	1353
Pennsylvania Salt Manuf'g Co., Philadelphia, Pa. Bicarbonate of soda	5,887	June 5	122	2028
Penny, Salvator, New York, N. Y. Preparation for use as a mother's milk-producing and reconstructing remedy	16,504	May 8	122	707
Pepper Company, Peabody, Mass. Candy	5,763	May 1	122	308
Percy, L. Jennie, New York, N. Y. Phosphates, phosphites, and hypophosphites	10,198	June 5	122	2030
Perkins, Charles B., Boston, Mass. Cigars	6,904	May 8	122	686
Perkins, Charles B., Boston, Mass. Cigars	6,900	May 8	122	687
Perkins Corporation, Hartford, Conn. Snap-switches	18,431	May 8	122	712
Perrin & Cie, Charles, Grenoble, France. Kid gloves	15,721	May 8	122	704
Perrin & Cie, V., New York, N. Y., and Grenoble, France. Gloves	10,554	May 15	122	1005
Perrin & Cie, V., New York, N. Y., and Grenoble, France. Gloves	8,044	May 22	122	1357
Perrin & Cie, V., New York, N. Y., and Grenoble, France. Gloves	10,555-7	May 22	122	1360
Perrin & Cie, V., New York, N. Y., and Grenoble, France. Gloves	10,515	May 22	122	1360
Perrin & Cie, V., New York, N. Y., and Grenoble, France. Gloves	10,652-3	May 22	122	1361
Peter Schoenhofen Brewing Company, Chicago, Ill. Lager-beer	12,748	May 8	122	696
Peter Schoenhofen Brewing Company, Chicago, Ill. Lager-beer	12,908	May 29	122	1693
Peterman, William, New York, N. Y. Insecticides	18,091	June 19	122	2666
Peterman, William, New York, N. Y. Insecticides	18,138	June 19	122	2666
Peterman, William, New York, N. Y. Poison for the extermination of rats and mice	18,407	June 26	122	2980
Peter's Nachfolger, F., Vienna, Austria-Hungary. Collars, cuffs, and shirt-fronts	10,706	May 22	122	1361
Peters Shoe Co., St. Louis, Mo. Leather shoes	1,296	May 8	122	682
Peters Shoe Co., St. Louis, Mo. Leather shoes	5,853	May 22	122	1354
Peters Shoe Co., St. Louis, Mo. Leather shoes	5,854	June 12	122	2345
Peters Shoe Co., St. Louis, Mo. Leather shoes	6,338	June 26	122	2961
Peters Shoe Company, St. Louis, Mo. Leather shoes	15,662	May 22	122	1372
Peters Shoe Company, St. Louis, Mo. Leather shoes	15,663	June 19	122	2657
Petersen, Christian, Chicago, Ill. Preparation for cleaning cloth	14,084	May 22	122	1368

Alphabetical list of trade-mark applicants published during May and June—Continued.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Peterson, Frank W., Minneapolis, Minn. Hair-tonic	13,814	May 22	122	1367
Philipp Bauer Co., New York, N. Y. Shoe polish or blacking	19,180	June 26	122	2984
Phoenix Horse Shoe Co. Chicago, Ill. Metal horse and mule shoes	10,493	May 29	122	1690
Phoenix Milling Co., Sacramento, Cal. Wheat-flour	9,152	May 22	122	1358
Phoenix Milling Co., Sacramento, Cal. Wheat-flour	9,153	June 12	122	2349
Phosphor-Bronze Smelting Co., Limited, Philadelphia, Pa. Metallic alloys	7,518	May 15	122	1000
Phosphor-Bronze Smelting Co., Limited, Philadelphia, Pa. Metallic alloys	7,259	June 12	122	2346
Physicians Medical Supply Co., Chicago, Ill. Liquid antiseptic compound for removing and eradicating dandruff	14,999	May 8	122	701
Pierce, Arthur F., Wallingford, Conn. Remedy for the treatment of the feet	10,465	May 15	122	1004
Pilkington Bros. Limited, St. Helens, England. Prismatic, sheet, rolled, plate, cathedral, and ornamental glass	7,535	June 5	122	2029
Pillsbury-Washburn Flour Mills Company, Limited, Minneapolis, Minn. Wheat breakfast-food	15,620	May 8	122	703
Pine Tree Silk Mills Company, Philadelphia, Pa. Ribbons	13,389	June 12	122	2356
Pineule Medicine Co., Chicago, Ill. Remedies for curing liver diseases	605	May 29	122	1685
Pineule Medicine Co., Chicago, Ill. Tonic	606	May 29	122	1685
Pioneer Suspender Company, Philadelphia, Pa. Hose-supporters	14,613	May 8	122	699
Pioneer Suspender Company, Philadelphia, Pa. Hose-supporters	12,844	June 5	122	2032
Pita y Cia. S. en C., M., Vigo, Spain. Sardines and other preserved fish	16,225	June 12	122	2362
Pittsburg Pharmacal Company, Pittsburg, Pa. Cough remedies	15,819	May 22	122	1372
Pittsburgh Brewing Company, Pittsburg, Pa. Beer	19,261	June 19	122	2673
Pittsburgh Hardware & Home Supply Company, Pittsburg, Pa. Stoves, ranges, and furnaces	19,224	June 26	122	2985
Plainville Stock Company, Plainville, Mass. Scarf and stick pins, brooches, bracelets, chains, charms, sleeve and shirt buttons	10,453	June 26	122	2984
Platt & Company, Baltimore, Md. Canned fruits and vegetables	13,340	May 8	122	697
Plume & Atwood Mfg. Co., Waterbury, Conn., and New York, N. Y. Solid-headed straight pins	10,844	May 15	123	1005
Plume & Atwood Mfg. Co., Waterbury, Conn., and New York, N. Y. Rivets, washers, and burs of copper or brass	3,439	May 22	122	1351
Plymouth Cordage Company, Plymouth, Mass. Fibrous and textile rope and twine	18,143	May 8	122	712
Pope, Lawrence K., Chicago, Ill. Cigars	18,350	May 22	122	1381
Popper & Bro., Herman, Coney Island, N. Y. Whisky	8,737	June 12	122	2348
Porritt & Sons, Joseph, Helmshore, England. Paper-makers' feltings	9,595	May 8	122	689
Portland Packing Company, Portland, Me. Canned vegetables	9,192–3	June 5	122	2030
Portland Packing Company, Portland, Me. Canned corn	9,197	June 12	122	2349
Potter, Arthur N., Cambridge, Mass. Candies and bonbons	16,894	June 26	123	2972
Potter Drug & Chemical Corporation, Boston, Mass. Pill for use as an antiseptic, tonic, digestive, and blood-purifier	14,661	June 19	122	2656
Potter, Foster F., New York, N. Y. Preparation of uncooked cereals pressed into a wafer	17,823	June 26	122	2976
Potteries Selling Company, Trenton, N. J. Vitreous earthenware water-closets, urinals, and lavatories	15,892	May 22	122	1372
Powers, Lewis J., Springfield, Mass. Writing-paper, envelops, and tablets	17,628	June 12	122	2366
Pratt, Abram E., New York, N. Y. Compounds for filling teeth and curing toothaches	15,392	May 8	122	702
Pratt Company, B. G., New York, N. Y. Insecticides	13,739	May 1	122	320
Pratt Food Company, Philadelphia, Pa. Soap	18,560	May 22	122	1381
Prescott, Amos L., New York, N. Y. Polish for stoves and stovepipes, ranges, furnaces, boilers, and engines	17 230	June 19	122	2661
Preservaline Manufacturing Company, New York, N. Y. Cereal starch and flour binders, fillers, absorbents, and thickeners used in food products	12,351	May 15	122	1008
Pressed Prism Plate Glass Company, Morgan District, W. Va. Vitreous material	818–19	June 5	122	2026
Preston B. Keith Shoe Co., Brockton, Mass. Leather boots, shoes, and slippers	18,597	June 19	122	2368
Priddle, Arthur, San Francisco, Cal. Vault and sidewalk lights	18,136	June 12	122	2367
Prince M'f'g. Co., New York, N. Y. Metallic paint in dry powder and in oil	11,670	May 1	122	315
Prior, Julius E., New York, N. Y. Gingham	17,465	May 22	122	1378
Pritchard, Edward, New York, N. Y. Tomato catsup, relish, and chili sauce	18,184	May 8	122	712
Procter & Gamble Co., Ivorydale and Cincinnati, Ohio, and Kansas City, Kans. Soap for toilet, laundry, and general use	11,861	May 1	122	316
Protopapzi Brothers, London, England. Dried figs	10,986	May 8	122	691
Puritan Drug Company, Boston, Mass. Confectionery flavoring and coloring materials	18,377	June 19	122	2677
Putnam, F. Henry, Boston, Mass. Medicinal tablets for la grippe, constipation, coughs, colds, and bronchial troubles	13,987	May 15	122	1012
Quaker City Chocolate and Confectionery Company, Philadelphia, Pa. Chocolate candy	13,729–30	May 15	122	1011
Quaker City Chocolate and Confectionery Company, Philadelphia, Pa. Hard and soft candy	13,732	May 22	122	1367
Quaker Mill Company, Manchester, Iowa. Wheat, rye, corn, and buckwheat flour and wheat, rye, and corn meal	19,308	June 5	122	2046
Quaker Valley Manufacturing Company, Chicago, Ill. Silver, silver-plated, and white-metal knives, forks, and spoons	14,800	June 26	122	2970
Queen Manufacturing Company, New York, N. Y. Ladies' dress-waists, dress-skirts, coats, and wraps	15,053	June 12	122	2358
R. Hudnut's Pharmacy, New York, N. Y. Fluid soap	17,708	June 19	122	2664
R. Wallace & Sons Mfg. Co., Wallingford, Conn. Sterling-silver hollow ware, flat ware, and toilet articles	3,254	May 8	122	683
R. E. Dietz Company, New York, N. Y. Lamps and lanterns and parts thereof	14,196	May 1	122	322
R. E. Dietz Company, New York, N. Y. Dark-room lamps and lanterns and parts thereof	14,181	May 15	122	1012
R. E. Dietz Company, New York, N. Y. Tubular lamps and lanterns and parts thereof	18,797	June 19	122	2671
R. M. Rose Co., Atlanta, Ga. Whisky	7,004	June 19	122	2647
Rahtjen's American Composition Company, New York, N. Y. Marine anticorrosive and antifouling paint	17,630	June 26	122	2975
Railway Educational Association, New York, N. Y. Educational books for railway employees	11,805	May 1	122	315
Railway Equipment & Publication Co., New York, N. Y. Serial publications relating to the business of railroads	17,194–5	May 22	122	1377
Ralli Brothers, New York, N. Y. Binding-cords of jute fiber	5,096	June 12	122	2344
Raphael Tuck & Sons Co., Ltd., New York, N. Y. Pictorial post-cards	13,707	June 12	122	2356
Rasin-Monumental Company of Anne Arundel County, Baltimore, Md. Fertilizers	17,922	June 5	122	2042
Rasin-Monumental Company of Anne Arundel County, Baltimore, Md. Fertilizers	17,921	June 19	122	2665
Rasin-Monumental Company of Anne Arundel County, Baltimore, Md. Fertilizers	17,924	June 19	123	2665
Raymond, George T., New York, N. Y. Medicated plasters	15,737	June 12	122	2360
Rea, Charles L., New York, N. Y. Veterinary gall-ointments, healing-powders, and liniments	14,863	May 1	122	323
Rea-Patterson Milling Company, Coffeyville, Kans. Wheat-flour	13,570	May 1	122	319
Rea-Patterson Milling Company, Coffeyville, Kans. Wheat-flour	13,572–3	May 1	122	319
Rea-Patterson Milling Company, Coffeyville, Kans. Wheat-flour	13,566	June 19	122	2655
Read, Benjamin S., Bryan, Tex. Specific for treatment of the liver	10,572	June 19	122	2653
Read, Lawson O., Memphis, Tenn. Medicinal beverage	7,600	May 22	122	1356
Read, Samuel H., New Haven, Conn. Compound of oils and fats to be used as a substitute for lard	10,243	May 29	122	1690
Rebbell Sons Co., Worcester, Mass. Candy	14,582	June 26	122	2970
Red Rock Co., Jacksonville, Fla. Carbonated tonic beverage	12,481	June 19	122	2654

Alphabetical list of trade-mark applicants published during May and June—Continued.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Red Star Mill & Elevator Company, Wichita, Kans. Wheat-flour	13,262	May 29	122	1694
Reed and Gamage, Gloucester, Mass. Salted, smoked, fresh, and canned fish	3,242	June 19	122	2643
Reed Manufacturing Co., New York, N. Y. Household utensils made of enameled ware	18,654	June 12	122	2371
Reeves & Co., J. S., Nashville, Tenn. Knitted underwear and hosiery	17,749	June 26	122	2976
Regent Shirt Company, New York, N. Y. Negligée, golf, stiff-bosom, dress, and flannel outer shirts	17,448	May 15	122	1024
Regent Shirt Company, New York, N. Y. Negligée, golf, stiff-bosom, dress, and flannel outing shirts	17,328	May 22	122	1377
Reily, Taylor & Co., Ltd., New Orleans, La. Coffee	19,111	June 26	122	2984
Reimers, Reimer, Moline, Ill. Cigars, stogies, and all-tobacco cigarettes	14,213	June 26	122	2969
Reinert, Adolphus, New York, N. Y. Mixed drink commonly known as "Tom and Jerry"	7,977	June 26	122	2962
Reisch Brewing Co., Springfield, Ill. Beer	14,602	May 29	122	1696
Reliable Flour Company, Boston, Mass. Self-rising prepared flour	4,339	June 26	122	2960
Reliable Poultry Journal Publishing Co., Quincy, Ill. Magazine or periodical	19,081	June 26	122	2984
Remsen, George W., Philadelphia, Pa. Remedy for sunburn, chapped hands, &c	3,022	June 12	122	2343
Renton, Edward, Trenton, N. J., assignor to R. A. Boehlke, Philadelphia, Pa. Mechanical illusion apparatus	13,083	May 1	122	318
Renziehausen, Frederick C., Pittsburg, Pa. Whisky	6,361	June 19	122	2645
Reo Car Co., Lansing, Mich. Automobile vehicles	16,120	May 8	122	706
Repsold, Amandus, San Francisco, Cal. Brandy	16,038	June 26	122	2971
Republic Belting & Supply Co., Cleveland, Ohio. Leather belting	17,818	May 8	122	711
Republic Marble Company, Knoxville, Tenn. Marble in blocks and slabs	18,329	June 12	122	2368
Republic Metalware Company, Buffalo, N. Y. Cake and pie tins	18,572	June 19	122	2668
Reymer & Brothers, Incorporated, Pittsburg, Pa. Candy	7,171	May 1	122	309
Reymer & Brothers Incorporated, Pittsburg, Pa. Cigars	17,761	June 12	122	2367
Reynolds "Aertite" Carton Co., Dayton, Ohio. Paper cartons	3,567	June 19	122	2643
Rhinol Medicine Co., Carrollton, Mo. Veterinary remedy for poll-evil and fistula	15,668	June 5	122	2030
Rhoads & Sons, J. E., Philadelphia, Pa., and Wilmington, Del. Leather belting	16,213–14	June 19	122	2658
Rice, Erie H., Jamestown, N. Y. Toilet preparation consisting of a skin-food or massage-cream	14,512	May 8	122	699
Rice & Hutchins, Incorporated, Boston, Mass., assignor to Rice and Hutchins, Incorporated. Rubber boots and shoes of all kinds	7,782	May 8	122	687
Rice & Hutchins, Incorporated, Boston, Mass., assignor to Rice and Hutchins, Incorporated. Leather boots and shoes and leather used in their manufacture	7,794	May 8	122	687
Rice & Hutchins Incorporated, Boston, Mass., assignor to Rice and Hutchins Incorporated. Leather boots and shoes and leather used in their manufacture	7,784	May 22	122	1356
Rice & Hutchins Incorporated, Boston, Mass., assignor to Rice and Hutchins Incorporated. Leather boots and shoes and leather used in their manufacture	7,790–1	May 22	122	1356
Rice & Hutchins Incorporated, Boston, Mass., assignor to Rice and Hutchins Incorporated. Leather boots and shoes and leather used in their manufacture	7,793	May 22	122	1356
Rice & Hutchins Incorporated, Boston, Mass., assignor to Rice and Hutchins Incorporated. Leather boots and shoes and leather used in their manufacture	7,798–9	May 22	122	1357
Rice & Hutchins, Incorporated, Boston, Mass., assignor to Rice and Hutchins, Incorporated. Leather boots and shoes and leather used in their manufacture	7,780	May 29	122	1687
Rice & Hutchins, Incorporated, Boston, Mass., assignor to Rice and Hutchins, Incorporated. Leather boots and shoes and leather used in their manufacture	7,800	May 29	122	1687
Rice & Hutchins, Incorporated, Boston, Mass., assignor to Rice and Hutchins, Incorporated. Leather boots and shoes and leather used in their manufacture	7,783	June 12	122	2347
Rice & Hutchins, Incorporated, Boston, Mass., assignor to Rice and Hutchins, Incorporated. Leather boots and shoes and leather used in their manufacture	7,789	June 12	122	2347
Rice & Hutchins Incorporated, Boston, Mass., assignor to Rice and Hutchins Incorporated. Leather boots and shoes and leather used in their manufacture	7,787	June 19	122	2649
Rice, Stix Dry Goods Company, St. Louis, Mo. Hosiery	18,427–8	May 1	122	336
Rice, Stix Dry Goods Company, St. Louis, Mo. Outer and dress shirts and blouses	7,944	June 19	122	2649
Richards, Albert B., Sherman, Tex. Tonic remedy for chills and fever, biliousness, bilious and remittent fevers, and malarial diseases	5,127	May 15	122	999
Richards, Albert B., Sherman, Tex. Remedy for skin diseases and eruptions	6,236	May 15	122	1000
Richards, Albert B., Sherman, Tex. Liniment for man or beast	5,126	June 12	122	2344
Richards, Edwin G., Sharon, Mass. Self-rising flour	10,764	May 1	122	313
Richter, Friedrich, Rudolstadt, Germany, and New York, N. Y. Music-boxes	15,537	May 8	122	703
Richter, Friedrich A., Rudolstadt, Germany, and New York, N. Y. Liniment	3,055	May 1	122	305
Richter, Friedrich A., Rudolstadt, Germany, and New York, N. Y. Stone building-blocks	3,064	May 22	122	1351
Richter, Friedrich A., New York, N. Y., and Rudolstadt, Germany. Remedies for stomach diseases	1,623	May 15	122	998
Richter, Harry, St. Louis, Mo. Wheat bread	11,005	May 15	122	1005
Ries, Jacob, Shakopee, Minn. Carbonated tonic beverage	10,510	May 8	122	690
Ries, Jacob, Shakopee, Minn. Table-water	17,996	June 19	122	2665
Rippen, Herman, Perth Amboy, N. J. Smoking and chewing tobacco	5,266	May 22	122	1353
Rippen, Herman, Perth Amboy, N. J. Smoking and chewing tobacco	13,077	June 12	122	2355
Robert Porter & Company, Limited, London, England. Beer	16,349	May 22	122	1374
Roberts, Joseph C., Portland, Oreg. Mattresses	16,103	June 12	122	2361
Robertson Company, J. T., Manchester, Conn. Shaving-soap	10,275	June 5	122	2031
Robie, George T., Chicago, Ill. Sewing-machine needles	3,411	May 15	122	997
Robie, George T., Chicago, Ill. Sewing-machine oil	3,412	May 22	122	1351
Roby, Frank F., Kearney, Nebr. Wheat-flour	17,689	May 15	122	1025
Rochester, Richmond, New York, N. Y. Vegetable-fiber rope, cord, and twine	14,921	May 1	122	323
Rock Hill Buggy Co., Rock Hill, S. C. Buggies and carriages	11,724	May 15	122	1007
Rock Plaster Company of New York and New Jersey, New York, N. Y. Lime	10,858	June 26	122	2965
Rockford Silver Plate Co., Rockford, Ill. Sterling and solid silver hollow, flat, and table ware	16,262	June 26	122	2971
Rode Watch Co., New York, N. Y. Gold-filled watchcases and watch-movements	2,322	May 29	122	1686
Rode Watch Co., New York, N. Y. Watch dials and movements	2,323	June 19	122	2643
Rogers Paper Mfg Co. Inc, South Manchester, Conn. Press-board or press-paper	11,948–9	May 8	122	693
Rogers & Thompson, New York, N. Y. Silk dress goods in the piece	10,082	May 22	122	1359
Rohe & Brother, New York, N. Y. Sausages	18,646	June 19	122	2668
Roosa, Herbert H., Lincoln, Nebr. Leather boots, shoes, slippers, and insoles	15,683	May 1	122	326
Rose, Ernest W., St. Louis, Mo. Remedy for diseases of the skin and scalp	7,081	May 22	122	1355
Rosenbaum Company, Pittsburg, Pa. Men's and boys' clothing, consisting of coats, vests, and pants	16,819	May 15	122	1020
Rosenbaum Company, Pittsburg, Pa. Gloves	16,822	May 15	122	1020
Rosenbaum Company, Pittsburg, Pa. Hosiery	16,823	May 15	122	1020
Rosenfield Bros. & Co., Chicago, Ill. Whisky	8,453	June 19	122	2650
Rosenheim & Son, H., Baltimore, Md. Whisky	8,463	June 12	122	2348
Rowell, Jennie, St. Louis, Mo. Ointment for the complexion	13,783	May 1	122	320
Rowlinski, Robert A., Savannah, Ga. Cream or salve for the skin and complexion	16,388	May 15	122	1019
Royal Worcester Corset Company, Worcester, Mass. Women's and children's underwaists	18,037	June 5	122	2042
Royce, George W., Passaic, N. J. Chemical compound used as a cleanser, disinfectant, deodorizer, insecticide, bactericide, detergent, and antiseptic	12,311	May 22	122	1364

Alphabetical list of trade-mark applicants published during May and June—Continued.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Royce, James C., Davenport, Ontario, Canada. Lubricating compounds	10,976	June 12	122	2352
Ruddock & Son, T. S., Haverhill, Mass. Men's leather shoes	18,355	May 29	122	1705
Ruiz, Carlos, Havana, Cuba. Pineapples	16,424	June 26	122	2971
Ruppert, Jacob, New York, N. Y. Beer	16,336	May 15	122	1019
Ruppert, Jacob, New York, N. Y. Beer	16,337	May 29	122	1698
Ruschhaupt Bros., Fresno, Cal. Washing-powder used in laundering and cleaning generally	13,379	May 22	122	1366
Ruse-Suchard & Cie., Neufchatel, Switzerland, assignors to Suchard Societe Anonyme. Chocolate candies, chocolate, and preparations of chocolate and cocoa	6,766	May 1	122	309
Ruse-Suchard & Cie., Neufchatel, Switzerland, assignors to Suchard Societe Anonyme. Chocolate candies, chocolate, and preparations of chocolate and cocoa	7,147	May 1	122	309
Ryan, Edward, Ree Heights, S. D. Medicinal vegetable-oil to eradicate itch and vermin common to cattle, &c	7,515	June 19	122	2648
Ryan-Hampton Tobacco Co., Newburg, Ind. Chewing-tobacco	10,106	June 12	122	2351
Ryan, Thomas J., Nashville, Tenn. Whisky	15,465	May 8	122	703
S. Grover Graham Co., Newburgh, N. Y. Remedy for diseases of the digestive system	12,942	May 22	122	1365
S. B. Goff & Sons Co., Camden, N. J. Blood-purifiers, cough and worm syrups, and liniment	17,714	June 26	122	2975
S. B. Goff & Sons Co., Camden, N. J. Dyspepsia cure	17,716	June 26	122	2975
S. S. Pierce Co., Boston, Mass. Tea	15,052	May 1	122	323
S. S. Pierce Co., Boston, Mass. Coffee-blend	11,221	May 29	122	1691
S. S. Stafford, Inc., New York, N. Y. Copying, indelible, and writing inks	13,523	May 1	122	319
S. S. Stafford, Inc., New York, N. Y. Mucilage, paste, and sealing-wax	15,483	May 1	122	325
Saco Valley Canning Company, Portland, Me. Canned corn and succotash	5,876	May 1	122	308
Saginaw Milling Company, Saginaw, Mich. Wheat-flour	10,624	May 22	122	1361
Saginaw Milling Company, Saginaw, Mich. Wheat-flour	15,780	June 12	122	2360
Samson & Co., E. J., Chicago, Ill. Earthenware vessels	14,554	May 8	122	690
Samson Cordage Works, Boston, Mass. Natural or uncolored braided cotton cords	10,600	June 19	122	2653
Sanatorium System Co., South Orange, N. J. Remedy for constipation and kindred ailments	16,761	June 12	122	2361
Sanders, John M., Dalton, Ga. Pea-hullers	11,937	May 15	122	1008
Sanitol Chemical Laboratory Co., St. Louis, Mo. Dentifrice	887	May 22	122	1349
Sanitol Chemical Laboratory Co., St. Louis, Mo. Toilet powders for the person and bath	15,516	May 22	122	1371
Sanitol Chemical Laboratory Co., St. Louis, Mo. Toilet soap for the hands and for shaving	15,517	May 22	122	1371
Sanitol Chemical Laboratory Co., St. Louis, Mo. Face-cream	15,518	May 22	122	1372
Sanitol Chemical Laboratory Co., St. Louis, Mo. Tooth-brushes	15,519	May 22	122	1372
Sauquoit Canning Company, Utica, N. Y. Canned vegetables	5,021	May 22	122	1353
Sauquoit Canning Company, Utica, N. Y. Canned vegetables	5,022	June 26	122	2960
Savage, Marion W., Minneapolis, Minn. Medicated stock-food	7,451	May 15	122	1000
Savage, Marion W., Minneapolis, Minn. Medicated poultry-food	7,452	May 15	122	1000
Savage, Marion W., Minneapolis, Minn. Heave cure	7,446	June 5	122	2029
Savage, Marion W., Minneapolis, Minn. Worm-powder	7,448	June 5	122	2029
Savage, Marion W., Minneapolis, Minn. Medicated stock-food made from medicinal roots, barks, herbs, &c	19,078	June 5	122	2045
Savage, Marion W., Minneapolis, Minn. Gall cure	7,447	June 12	122	2347
Savage, Marion W., Minneapolis, Minn. Healing pine-oil	7,449	June 19	122	2648
Schaefler, R. F., Bangor, Pa. Particular brand of roofing-slate	13,041	June 12	122	2354
Schantz, Adam, Sr., deceased; Adam Schantz, Jr., Dayton, Ohio, trustee. Purified water	2,032	May 22	122	1350
Schein & Lasday, Pittsburg, Pa. Linen collars	17,688	June 19	122	2664
Schenkelberger, Albert F., Boston, Mass. Cut and uncut sole-leather	12,554	May 8	122	695
Schiffmann Company, Los Angeles, Cal. Remedies for consumption, liver and kidney diseases	14,734	June 12	122	2358
Schilling & Co., A., San Francisco, Cal. Tea	15,548	May 8	122	703
Schilling & Co., A., San Francisco, Cal. Tea	15,550	May 8	122	703
Schilling & Co., A., San Francisco, Cal. Flavoring extracts	15,549	May 15	122	1017
Schilling & Co., A., San Francisco, Cal. Flavoring extracts	15,551	May 15	122	1017
Schilling & Company, A., San Francisco, Cal. Coffee	9,287	June 12	122	2349
Schilling & Company, A., San Francisco, Cal. Baking-powder, bicarbonate soda, and cream of tartar	9,289	June 12	122	2349
Schilling & Company, A., San Francisco, Cal. Spices	9,365	June 12	122	2349
Schindler, Charles E., Coldwater, Ohio. Remedies for catarrh	16,833	May 8	122	708
Schlichten, Geo. W., New York, N. Y. Woven and knitted underwear	16,087	May 1	122	320
Schlichten, Geo. W., New York, N. Y. Woven and knitted underwear	16,086	May 29	122	1697
Schmidt, Florian J., Chicago, Ill. Medicine adapted to purify the blood and for all kidney and liver complaints, &c	7,748	June 19	122	2648
Schoenberg, Ralph A., New York, N. Y. Electric switches, push-buttons, and fittings for electric circuits and lights	14,607	May 8	122	699
Schofield, Mason & Co., Philadelphia, Pa. Brussels rugs	18,048	May 22	122	1380
Schöneberger and Noble, New York, N. Y. Celery tonic	18,191	June 5	122	2042
Schultes, August, Budapest, Hungary. Natural mineral waters	10,028	June 19	122	2652
Schulz, Emil, New York, N. Y. Gold, aluminum, and bronze enamel	16,969	June 12	122	2363
Schulz, Friedrich, Leipsic, Germany. Antiseptics and washes for the mouth and teeth	16,605	May 8	122	707
Schulz, Friedrich A., Leipsic, Germany. Specific for rheumatism, gout, and neuralgia	9,852	May 22	122	1359
Schuman, William, Buffalo, N. Y. Whisky	11,780	May 15	122	1008
Schutz & Klawans, Chicago, Ill. Whisky	17,947	May 22	122	1380
Schwab Clothing Co., St. Louis, Mo. Coats, vests, overcoats, and trousers	15,476	May 1	122	325
Schwab Clothing Co., St. Louis, Mo. Men's suits and overcoats	15,477	May 15	122	1016
Schwab, Emanuel, New York, N. Y. Glass plates	17,972	May 29	122	1704
Schwob, Adolphe, New York, N. Y. Watches and parts thereof	10,168	May 8	122	690
Schwob, Adolphe, New York, N. Y. Watches and parts thereof	10,170	May 8	122	690
Scott & Company, Norfolk, Va. Butter	17,191	May 1	122	331
Scott Paper Co., Philadelphia, Pa. Toilet-paper	15,244-5	May 1	122	324
Scott Paper Co., Philadelphia, Pa. Toilet-paper	15,247	May 1	122	324
Scott Paper Co., Philadelphia, Pa. Toilet-paper	19,043-4	June 26	122	2983
Scovill Manufacturing Company, Waterbury, Conn. Sew-on snap-fasteners for skirts	17,888	May 29	122	1704
Seabury & Johnson, East Orange, N. J., and New York, N. Y. Surgical dressings	162	June 12	122	2341
Seattle Pure Food Co., Inc., Seattle, Wash. Canned fruits and vegetables	17,097	June 19	122	2660
Seattle Shoe Co., Seattle, Wash. Men's leather boots and shoes	14,603	May 1	122	323
Seebohm & Dieckstahl Ld., Sheffield, England. Steel and iron in bar, rail, rod, sheet, and wire	12,603	May 8	122	690
Seel, William E., Harrisburg, Pa. Whisky	5,797	June 12	122	2344
Seely, Frank, New York, N. Y. Sarsaparilla, ginger-ale, lemon, cream, and raspberry soda, root and birch beer, orange phosphate, &c	10,063	June 26	122	2964
Selby, John A., Oakland, Cal. Tonic beverages and syrups therefor	12,312	June 19	122	2654
Selby Shoe Co., Portsmouth, Ohio. Leather boots and shoes	17,697	May 22	122	1379
Semler Milling Company, Hamilton, Ohio. Wheat-flour	16,400	June 5	122	2038
Seneca Mill & Elevator Company, Seneca, Mo. Cornmeal	15,317	June 26	122	2971
Senour Manufacturing Co., Chicago, Ill. Varnishes, japans, colors, &c	18,940	June 19	122	2672
Sereta Chemical Company, Minneapolis, Minn. Lotions, salves, and ointments for diseases or ailments of the skin and loose membrane	12,273	May 15	122	1008
Severn Liquor Company, Baltimore, Md. Whisky	18,175	May 29	122	1704

Alphabetical list of trade-mark applicants published during May and June—Continued.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Seville Packing Company, New York, N. Y. Olives in bottles and jars	17 405	May 15	122	1024
Seyd, Otto, New York, N. Y. Henrietta, voiles, crêpe de chine, mohair, sublime, and batiste	10,772	May 8	122	691
Sharood Shoe Corp., St. Paul, Minn. Leather shoes	20,000	June 26	122	2986
Shaw, Jardine & Co., Limited, Manchester, England. Cotton yarns	16,553	June 19	122	2659
Sherwin-Williams Co., Cleveland, Ohio. Mixed paints, painters' colors, stains, and oils	8,851	June 26	122	2962
Shoemaker & Busch, Philadelphia, Pa. Compounds of chlorid and formaldehydes used as antiseptics and disinfectants	20	May 8	122	681
Shoemart Company, St. Louis, Mo. Leather boots and shoes	18,437	May 15	122	1028
Shoop, C. I., Racine, Wis. Remedy put up in compressed tablets for colds, fever, and la grippe	12,275	May 15	122	1008
Showell & Fryer, Limited, Philadelphia, Pa. Whisky	16,799	May 8	122	706
Sibley, William E., Freeport, Ill. Coffee	794	May 1	122	303
Sicilian Asphalt Paving Co., New York, N. Y. Asphalt for waterproofing material, pavement, roofing, &c	15,057	June 19	122	2657
Siemon & Elting, New York, N. Y. Marine glue	17,023	June 19	122	2660
Silberstein, Albert L., New York, N. Y. Razors and pocket-knives	8,807	May 15	122	1001
Silk Textile Water-Proofing Co., New York, N. Y. Silks and silk-mixture textiles	18,197	June 19	122	2666
Sill Stove Works, Rochester, N. Y. Stoves, ranges, gas-stoves, and attachments and parts and repairs therefor	10,547	May 15	122	1005
Silver Lake Company, Boston, Mass. Ropes, cords, twines, and lines	3,168	May 1	122	305
Simmons Hardware Company, St. Louis, Mo. Picks, mattocks, grub-hoes, and eye-hoes	14,942	May 15	122	1014
Simmons Publishing Company, a Corporation, Springfield, Ohio. Magazine or periodical	18,536	June 12	122	2370
Simons, Hatch & Whitten Co., Boston, Mass. Knit stockings	14,137	June 12	122	2357
Simplex Piano Player Co., Worcester, Mass. Automatic piano-players	1,530	June 12	122	2342
Sindelar, Charles J., New York, N. Y. Medicinal ointment or lotion	17,647	June 5	122	2040
Singer, Nimick & Co., Inc., Pittsburg, Pa. Steel rods, bars, blooms, billets, plates, sheets, slabs, strips, blocks, and forgings	5,484	May 1	122	308
Sinnott, Joseph F., Philadelphia, Pa. Whisky	12,840	May 1	122	317
Sipe and Sipe, New York, N. Y. Preserved and candied pineapples	4,753	June 19	122	2644
Sitley & Son, Inc., Camden, N. J. Wheat-flour	13,507	May 22	122	1366
Skillman Bread and Pie Company, Baltimore, Md. Bread, buns, doughnuts, cakes, and crackers	14,173	June 26	122	2969
Sleepy Eye Milling Company, Sleepy Eye, Minn. Breakfast-food and farina made from wheat	8,383	May 15	122	1001
Sleepy Eye Milling Company, Sleepy Eye, Minn. Cereal coffee	8,387	June 12	122	2348
Sloan, Earl S., Boston, Mass. Liniment	6,265	May 1	122	309
Smith, Charles S., Sutton Center, Mass. Remedies to be applied to the skin and mucous membrane for germicidal purposes	17,624	June 26	122	2975
Smith, Edwin D., Pittsburg, Pa. Seesaws, roundabouts, and teeters	10,626	May 29	122	1690
Smith & Hemenway Company, New York, N. Y. Razors	17,646	May 8	122	710
Smith, James P., Augusta, Ga. Remedy for chills and fever	15,218	May 8	122	702
Smith, James P., Augusta, Ga. Liver-pills	15,219	May 15	122	1016
Smith & Scott Tobacco Co., Paducah, Ky. Chewing and smoking tobacco	1,467	May 1	122	304
Smith, Sydney H., Chicago, Ill. Toilet lotions	11,012	June 26	122	2965
Smith & Wesson, Springfield, Mass. Revolver-pistols	548	June 5	122	2025
Smith & Wesson, Springfield, Mass. Revolvers	549-50	June 5	122	2025
Snell & Atherton, Brockton, Mass. Heel-shaves and duplicate blades for heel-shaves	17,395	May 22	122	1377
Snow, G. Lyman, Boston, Mass. Leather shoes	14,385	May 22	122	1368
Société Anonyme de la Distillerie de la Liqueur Bénédictine de l'Abbaye de Fécamp, Fecamp, France. Cordial	15,872-4	May 1	122	327
Société Anonyme de la Distillerie de la Liqueur Bénédictine de l'Abbaye de Fécamp, Fecamp, France. Cordial	15,876-7	May 1	122	328
Société Anonyme de la Distillerie de la Liqueur Bénédictine de l'Abbaye de Fécamp, Fecamp, France. Liqueur and cordial	15,875	June 12	122	2360
Société Anonyme de la Distillerie de la Liqueur Bénédictine de l'Abbaye de Fécamp, Fecamp, France. Cordial	15,871	June 26	122	2971
Societe Generale Des Cirages Français, Paris, France. Perfumed waterproof shoe-blacking	11,717	May 22	122	1363
Sol Rauh & Sons Co., Dayton, Ohio. Whisky	8,969	May 15	122	1002
Sol Rauh & Sons Co., Dayton, Ohio. Whisky	8,970	June 19	122	2651
Solomon, Philip H., St. Louis, Mo. Metal-polish	11,542	May 1	122	314
Soltmann, Edward G., New York, N. Y. Lead-pencils	525-6	June 19	122	2641
Soltmann, Edward G., New York, N. Y. Blue-print paper	527	June 19	122	2642
Soltmann, Edward G., New York, N. Y. Lead-pencils	528-9	June 19	122	2642
Soltmann, Edward G., New York, N. Y. Black and colored pencils and crayons	530	June 19	122	2642
Soltmann, Edward G., New York, N. Y. Lead-pencils	532	June 19	122	2642
Soltmann, Edward G., New York, N. Y. Black and colored pencils or crayons	535	June 19	122	2642
Soltmann, Edward G., New York, N. Y. Blue-print cloth	541	June 19	122	2642
Soltmann, Edward G., New York, N. Y. Lead-pencils	13,100	June 19	122	2654
Souheur, Jean, Antwerp, Belgium. Insecticide-powder for plants and fruit-trees	16,632	June 12	122	2363
Sparrow Company, Cambridge, Mass. Chocolates and bonbons	18,239-40	June 5	122	2043
Specialties Sales Co., Chicago, Ill. Attachment for closet-seats	16,569	June 26	122	2972
Speights, James L., Baltimore, Md. Laxative preparation	4,548	May 8	122	684
Spengler, John, Kansas City, Mo. Whisky	18,328	June 26	122	2979
Spetzler, Henry C., Baltimore, Md. Rat, vermin, and insect destroyer or exterminator	10,039	June 26	122	2963
Spiegel, Samuel, New York, N. Y. Cigars	18,153	June 26	122	2978
Spokane Paint & Oil Co., Spokane, Wash. Varnish and hard oil finish	12,775	May 8	122	696
Sprague, Warner & Company, Chicago, Ill. Coffee	19,190	June 19	122	2672
Sprague, Warner & Company, Chicago, Ill. Spices and mustard	9,791	May 1	122	312
Sprague, Warner & Company, Chicago, Ill. Canned fruits and vegetables	9,797	May 1	122	312
Sprague, Warner & Company, Chicago, Ill. Ginger-ale root-beer, lemon-soda, celery phosphate, &c	16,471	May 1	122	320
Sprague, Warner & Company, Chicago, Ill. Spices and mustard	9,796	May 29	122	1690
Sprague, Warner & Company, Chicago, Ill. Baking-powder	18,546	June 5	122	2044
Sprague, Warner & Company, Chicago, Ill. Coffee	18,547	June 5	122	2044
Sprague, Warner & Company, Chicago, Ill. Tea	18,548	June 5	122	2044
Sprague, Warner & Company, Chicago, Ill. Salad-dressing	18,549	June 5	122	2044
Sprague, Warner & Company, Chicago, Ill. Flavoring extracts	19,073	June 5	122	2045
Sprague, Warner & Company, Chicago, Ill. Syrup	19,093	June 5	122	2045
Sprague, Warner & Company, Chicago, Ill. Lump-starch	19,095-6	June 5	122	2045-6
Sprague, Warner & Company, Chicago, Ill. Tea	18,550	June 26	122	2980
Sprague, Warner & Company, Chicago, Ill. Ham and bacon	19,070	June 26	122	2983
Springfield Breweries Company, Springfield, Mass. Ale	19,071	June 26	122	2983
Sprudel Water Co., Mount Clemens, Mich. Mineral water	7,841-2	May 29	122	1687-8
Squire Dingee Co., Chicago, Ill. Pickles	9,415	May 29	122	1689
St. Louis Motor Carriage Co., St. Louis, Mo. Automobiles	4,894	May 29	122	1686
St. Louis Shovel Co., St. Louis, Mo. Shovels, scoops, and spades	9,788	May 8	122	689
St. Mary's Mill Company, St. Marys, Mo. Wheat-flour	11,702-3	May 1	122	315
St. Mary's Mill Company, St. Marys, Mo. Wheat-flour	17,808	May 15	122	1025
	18,677	June 12	122	2371

Alphabetical list of trade-mark applicants published during May and June—Continued.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Staley, Augustus E., Baltimore, Md. Starch for food	15,943	June 5	122	2037
Staley, Augustus E., Baltimore, Md. Corn-starch	15,944–5	June 5	122	2037
Standard Bottling & Extract Co., Boston, Mass. Soluble flavoring extracts	11,327	May 15	122	1006
Standard Brewery Co. of Baltimore City, Baltimore, Md. Beer	15,934	May 22	122	1372
Standard Company, Torrington, Conn. Spokes and nipples for wheels of bicycles, &c	18,242	June 12	122	2368
Standard Distilling Co., Cincinnati, Ohio. Whisky	10,024	June 5	122	2030
Standard Milling Co., Clarksburg, W. Va. Spring-wheat flour	19,178	May 29	122	1706
Standard Oil Co. of New York, New York, N. Y. Turpentine	8,331	May 8	122	688
Standard Oil Co. of New York, New York, N. Y. Naphtha	16,878	May 22	122	1376
Standard Oil Co. of New York, New York, N. Y. Refined petroleum for illuminating purposes	16,442	June 26	122	2971
Standard Playing Card Manufacturing Co., Chicago, Ill. Playing-cards	13,985	May 15	122	1011
Standard Underground Cable Company, Pittsburg, Pa. Insulated wire for electric service	9,534	May 29	122	1689
Stanley Rule & Level Company, New Britain, Conn. Round-shank screw-drivers	16,646	May 15	122	1020
Star Brass Manufacturing Company, Boston, Mass. Valves and parts thereof	19,422	June 12	122	2374
Stark Mills, Manchester, N. H. Seamless woven bags	6,810	June 12	122	2345
Stärker, Hermann, Chemnitz, Germany, and New York, N. Y. Hosiery	10,534	May 29	122	1690
Stärker, Hermann, Chemnitz, Saxony, and New York, N. Y. Hosiery	13,108	June 12	122	2355
Stärker, Hermann, Chemnitz, Saxony, and New York, N. Y. Hosiery	16,458	June 12	122	2362
Steel, Ferdinand, Philadelphia, Pa. Washing compound	7,511	May 22	122	1355
Steel, Robert, Philadelphia, Pa. Whisky	4,554	May 22	122	1352
Stein-Falker Company, New York and Syracuse, N. Y. Antiseptics, germicides, and disinfectants	16,735	June 12	122	2363
Stemmler, Theodore W., New York, N. Y. Tonic reconstructive histogenetic	7,403	June 12	122	2346
Sterling Butter Company, Aurora, Ill. Butter	708	June 19	122	2642
Sterling Oil Company, Emlenton, Pa. Illuminating-oils and lubricating oils and greases	17,526	June 19	122	2663
Stern & Co. (incorporated), Richmond, Va. Leather boots and shoes	9,904	June 12	122	2350
Stern & Sons, Bernhard, Milwaukee, Wis. Wheat-flour	13,751	June 26	122	2969
Stevens, Frederic B., Detroit, Mich. Plumbago	17,527	May 29	122	1702
Stewart, Thomas, St. Andrews, Scotland. Iron or other metal heads of golf-clubs	17,162	May 8	122	709
Stirn, L. & E., New York, N. Y. Silk piece goods	17,188	May 29	122	1700
Stock Company, Boston, Mass. Dress-shields	19,045	June 26	122	2983
Stokes Bros. Manufacturing Co., Freehold, N. J. Rasps	14,849	May 15	122	1014
Stokes & Son, Thomas, New York, N. Y. Fancy kettle-rendered lard	17,698	June 5	122	2040
Stone, H. C., Oneida, N. Y. Cigars	15,002	May 15	122	1014
Stone Hill Wine Co., Hermann, Mo. Whisky	13,256	June 12	122	2355
Stratford Tobacco Company, New York, N. Y. Cigars	18,733	June 19	122	2669
Straus Gunst & Co., Richmond, Va. Whisky	5,298	May 8	122	685
Straus Gunst & Co., Richmond, Va. Gin	5,300	May 8	122	685
Strause, Henry P., New York, N. Y. Cigarettes	10,278	May 8	122	691
Strawbridge & Clothier, Philadelphia, Pa. Dolls	13,253	June 19	122	2655
Stritzinger & Co., F. G., Norristown, Pa. Wheat-flour	1,747	June 19	122	2643
Strohbeck, Chas. W., New York, N. Y. Footwear with leather soles	4,149	May 8	122	684
Strouse & Bros., Baltimore, Md. Coats, vests, trousers, and overcoats	125–6	June 19	122	2641
Strouse, W. and B., Harrisburg, Pa. Overcoats, suits, and trousers	17,772	June 5	122	2041
Studebaker Bros. Mfg. Co., South Bend, Ind. Buggies and carriages	15,817	June 12	122	2360
Stutz and Sons, Louis, New York, N. Y. Bacon	6,350	June 19	122	2645
Suffolk Brewing Company, Boston, Mass. Beer	13,110	May 8	122	697
Suffolk Brewing Company, Boston, Mass. Ale	13,114	May 22	122	1365
Suffolk Brewing Company, Boston, Mass. Beer	13,111	June 5	122	2032
Sun Manufacturing Company, Columbus, Ohio. Show-cases	13,226	May 22	122	1366
Sunny Side Distilling Co., Cincinnati, Ohio. Pure rye whisky	2,595	May 15	122	997
Supplee Hardware Company, Philadelphia, Pa. Lawn-mowers	13,819	May 1	122	320
Supplee Hardware Company, Philadelphia, Pa. Lawn-mowers	13,822–3	May 1	122	320
Surbrug Company, New York, N. Y. Pipe and cigarette tobacco	17,692	May 22	122	1379
Sussfeld, Lorsch & Co., New York, N. Y. Opera and field glasses	16,079–80	June 5	122	2037
Swift and Company, Chicago, Ill. Oleomargarin	18,617	June 12	122	2371
Swift and Company, Chicago, Ill. Pickled or corned beef	18,618	June 19	122	2668
Switzer, Fredrick M., St. Louis, Mo. Candy	7,986	June 26	122	2962
Swope & Mangold, Inc., Dallas, Tex. Whisky	18,371	June 12	122	2369
Swope & Mangold Incorporated, Dallas, Tex. Whisky	17,248	June 12	122	2364
Sykes, Harry T., London, England. Corsets	12,968	June 19	122	2654
T. F. Firth & Sons Limited, Brighouse, England. Rugs	14,813	June 19	122	2656
Tacoma Biscuit & Candy Company, Tacoma, Wash. Plain and fancy candies	13,889	June 26	122	2969
Tads Food Confection Co., New York, N. Y. Salted peanuts	16,204	May 1	122	329
Taeger, A. [redacted] administratrix. (See Taeger, Charles H.)				
Taeger, Charles H., deceased: A. M. Taeger, Burlington, Iowa, administratrix. Whisky	18,993	June 12	122	2372
Talford, John, Brooklyn, N. Y. Cathartic pills	16,745	May 22	122	1376
Tamaki, Yoshi, San Francisco, Cal. Writing-ink	18,676	June 26	122	2981
Tapley, Henry F., Boston, Mass. Leather boots and shoes	11,388	May 15	122	1006
Tate, Albert E. High Point, N. C. Poultry-foods	10,265	May 8	122	690
Tatreau, John B., San Jose, Cal. Dandruff cure and scalp-invigorator	18,004	June 26	122	2978
Tausig, Oscar, New York, N. Y. Whisky	5,330	May 8	122	685
Taylor Co., N. & G., Philadelphia, Pa. Tin and terne plate	7,839	June 12	122	2347
Taylor, Herbert, Portsmouth, England. Infants' food	10,763	May 1	122	313
Tennant & Hoyt, Lake City, Minn. Wheat-flour	17,690	June 5	122	2040
Teweles, Ludwig, Milwaukee, Wis. Grass and field seed for sowing or planting	1,001	May 8	122	681
Th. Lappe, (a Firm,) Neu-Dietendorf, Germany. Stomach-bitters	16,662	June 19	122	2660
Thatcher Furnace Co., Newark, N. J., and New York, N. Y. Hot-air, hot-water, and steam heaters or furnaces and cooking-ranges	18,412	June 12	122	2369
Theobald and Son Co., Columbus, Ohio. Whisky	8,925	June 26	122	2962
Thomas, Bertha R., New York, N. Y. Ink-eradicators	16,348	May 8	122	706
Thomas De La Rue and Company, Limited, London, England. Fountain and other writing pens	12,946	June 12	122	2354
Thomas G. Plant Company, Boston, Mass. Men's, women's, and children's leather boots and shoes	4,621	May 1	122	306
Thomas Laughlin Company, Portland, Me. Anchors	4,790	June 19	122	2644
Thomas Millen Co., Wayland, N. Y. Portland cement	3,891	May 1	122	305
Thomas' Sons, J. R., Youngstown, Ohio. Cheese	10,248	June 19	122	2652
Thomas Walker & Son Ltd., Birmingham, England. Ship-logs and sounding-machines	15,048	May 8	122	701
Thomas Walker & Son Ltd., Birmingham, England. Ship-logs	11,754	May 15	122	1008
Thomas Walker & Son Ltd., Birmingham, England. Ship-logs, ship-log lines for sounding and measuring, and lines for all kinds of nautical instruments	11,752	May 22	122	1363
Thompson-Ehlers Company, Chicago, Ill. Rubber heels	18,633	June 19	122	2668
Threefoot Bros. & Co., Meridian, Miss. Hams, breakfast-bacon, shoulders, &c	13,434	June 12	122	2356
Thuner, Alois, Detroit, Mich. Soluble powder to soften water	13,415	June 19	122	2655

Alphabetical list of trade-mark applicants published during May and June—Continued.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Tiffany & Co., New York, N. Y. Metal ware for table use composed in whole or in part of gold or silver or both metals	15,169	May 15	122	1016
Tiffany & Co., New York, N. Y. Watches and clocks	15,171	June 19	122	2657
Timmerman, Gerhard H., St. Louis, Mo. Crackers and biscuits	11,409	May 22	122	1362
Toch Brothers, New York, N. Y. Fresco-paints	11,576	May 1	122	315
Toch Brothers, New York, N. Y. Coating for walls, &c	11,579	May 8	122	692
Toch Brothers, New York, N. Y. Damp-resisting paints	11,581	May 22	122	1363
Toledo Field Seed Company, Toledo, Ohio. Clover-seed	12,933	May 29	122	1693
Toledo Rubber Co., Toledo, Ohio. Hose for conducting fluids composed wholly or in part of rubber	15,497	June 5	122	2035
Topeka Milling Company, Topeka, Kans. Wheat-flour	1,188	May 1	122	304
Topeka Milling Company, Topeka, Kans. Wheat-flour	13,749	June 5	122	2034
Toro, Aniceto F., New York, N. Y., and Mexico, Mexico. Remedy for leprosy and diseases of the blood	9,516	May 22	122	1358
Totem Machine Co., New York, N. Y. Ladies' wire hat-frames made without tie-wires	15,217	May 8	122	702
Tousey Varnish Co., Chicago, Ill. Varnish-hardeners	14,255	May 8	122	699
Tracy & Avery Company, Mansfield, Ohio. Cigars	16,521	June 5	122	2038
Traun & Söhne, Dr. Heinrich, Hamburg, Germany. Combs	10,672	May 22	122	1361
Treadwell & Moore, Dallas, Tex. Liquid headache medicine	16,181	May 22	122	1373
Tremont & Suffolk Mills, Lowell, Mass. Cotton piece goods	4,966	May 1	122	307
Tremont & Suffolk Mills, Lowell, Mass. Cotton piece goods	4,961	May 22	122	1352
Tremont & Suffolk Mills, Lowell, Mass. Cotton piece goods	4,963	May 22	122	1352
Tripod Paint Co., Atlanta, Ga. Calcimine	15,779	May 8	122	705
Trostell & Sons, Albert, Milwaukee, Wis. Calfskin, kid, and other upper-leathers	4,088	May 22	122	1352
Trowbridge Chocolate Chip Company, Meadville, Pa. Chocolate candies	17,650	May 22	122	1379
Troy Laundry Machinery Company, Limited, Chicago, Ill. Laundry starch	2,220	May 8	122	682
Turner, Ernest A., Rochester, N. Y. Photographic acidifiers, developers, intensifiers, reducers, restrainers, and sensitizers	11,052	May 29	122	1691
Twist, Emily A., New York, N. Y. Almond-meal, facial, cleansing, and cold cream, and lotions	5,276	June 19	122	2645
U. S. Chemical Rubber Co., Washington, D. C., and Chicago, Ill. Adhesive cement for mending purposes	13,417	May 29	122	1694
Ulery, Ulysses J., New York, N. Y. Razors	18,904	May 15	122	1030
Ullman Einstein Co., Cleveland, Ohio. Whisky	9,695	June 26	122	2963
Union Bag & Paper Company, New York, N. Y. Paper bags	17,011	May 1	122	331
Union Bag & Paper Company, New York, N. Y. Paper bags	19,058	June 5	122	2045
Union Cooperage Co., St. Louis, Mo. Wooden barrels, half-barrels, kegs, well-buckets, and pails	12,248	May 29	122	1692
Union Cotton Mills, Union, S. C. Sheetings	14,420	June 19	122	2656
Union Distilling Co., Cincinnati, Ohio. Whisky	258	June 5	122	2025
Union Distilling Co., Cincinnati, Ohio. Whisky	122	June 26	122	2959
Union Distilling Co., Cincinnati, Ohio. Whisky	124	June 26	122	2959
Union Distlg. Co., Cincinnati, Ohio. Whisky	18,535	May 1	122	335
Union Dist'l'g Co., Cincinnati, Ohio. Whisky	19,550	June 26	122	2986
Union Metallic Cartridge Company, Bridgeport, Conn., and New York, N. Y. Cartridges and cartridge-shells	18,413	June 12	122	2369
Union Petroleum Company, Philadelphia, Pa. Substitute for turpentine for thinning or diluting paints and varnishes	17,982	May 1	122	333
Union Special Machine Company, Chicago, Ill. Machine-needles	18,018	May 8	122	712
United Indurated Fibre Co. of New Jersey, Lockport, N. Y. Indurated fiber ware made from wood-pulp and waterproofed	12,487–8	May 8	122	695
United Paper Company, Atlanta, Ga. Wrapping-paper	18,849	June 19	122	2671
United States Coal and Oil Company, Holden, W. Va. Coal	15,902	June 12	122	2360
United States Graphite Company, Saginaw, Mich. Pulverized graphite	17,239	May 1	122	331
United States Graphite Company, Saginaw, Mich. Plumbago (or graphite) axle-grease	12,530	May 8	122	695
United States Graphite Company, Saginaw, Mich. Stove-polish	12,532	May 8	122	695
United States Graphite Company, Saginaw, Mich. Lubricating-graphite	17,295	May 29	122	1701
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	16,490–1	May 15	122	1019
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	17,904	May 15	122	1025
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	15,706	May 22	122	1372
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	16,725	May 22	122	1375
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	15,707	May 29	122	1697
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	15,704–5	June 5	122	2036
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	15,708–9	June 5	122	2036
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	15,697–703	June 12	122	2359–60
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	17,757–8	June 12	122	2367
Universal Cutter Company, St. Louis, Mo. Cloth-cutting machines	18,973	June 12	122	2372
Utica Canning Company, Utica, N. Y. Canned vegetables	5,017	June 19	122	2644
Utica Heater Co., Utica, N. Y. Heating-furnaces	14,479	May 15	122	1013
Utica Hydraulic Cement Co., Utica, Ill. Hydraulic cement	15,166	May 8	122	702
Utz & Dunn, Rochester, N. Y. Leather boots and shoes	13,259	June 5	122	2033
Valentine & Company, New York, N. Y. Varnishes, mixed paints, and enamels	10,269	June 26	122	2964
Van Deusen, Florence E., New York, N. Y. Machines for exhibiting advertising and display matter	17,205	May 1	122	331
Van Duzer, S. R., New York, N. Y. Preparation for the complexion in the form of a lotion	9,379	May 15	122	1002
Van Duzer, S. R., New York, N. Y. Hair-restoratives	9,375	June 19	122	2651
Van Fossen, James S., Macomb, Ill. Burial-vault	17,534	June 12	122	2365
Van Houten & Zoon, C. J., Weesp, Holland. Cocoa	10,703	May 22	122	1361
Van Nest, George R., Revere, Mass. Popcorn confectionery	14,728	June 12	122	2358
Vane-Calvert Paint Co., St. Louis, Mo. Colored pigments used for paint	11,316	June 19	122	2653
Vereinigte Chininfabriken Zimmer & Co. Ges. mit beschränkter Haftung, Frankfort-on-the-Main, Germany. Derivatives of cinchona alkaloids	15,880	June 19	122	2657
Vermont Condensed Milk Co., Richmond, Vt., and New York, N. Y. Condensed milk	7,833	May 1	122	310
Vermont Condensed Milk Co., Richmond, Vt., and New York, N. Y. Condensed milk	7,836	May 1	122	310
Vermont Condensed Milk Co., Richmond, Vt., and New York, N. Y. Condensed milk	7,832	May 8	122	687
Vermont Farm Machine Co., Bellows Falls, Vt. Centrifugal cream-separators	16,727	May 15	122	1020
Vernon, S. E. & M., New York, N. Y. Writing-papers	18,149	June 12	122	2368
Vicente Portuondo Cigar Manufacturing Company, Philadelphia, Pa. Cigars, cheroots, and stogies	18,058	May 22	122	1380
Victor Remedies Company, Frederick, Md. Remedies for diseases of the liver, lungs, &c	8,080	June 26	122	2962
Victor Talking Machine Co., Camden, N. J. Talking-machine records	9,274	May 1	122	312
Victor Talking Machine Co., Camden, N. J. Talking-machine records	9,270–1	May 8	122	690
Victor Talking Machine Company, Camden, N. J. Talking-machines and parts thereof	18,312	May 15	122	1027
Victor Talking Machine Company, Camden, N. J. Talking-machines and parts thereof	19,026	June 26	122	2983
Vienna Pressed Yeast Company, New York, N. Y. Yeast in solid form	18,495	June 5	122	2043
Vienna Pressed Yeast Company, New York, N. Y. Yeast in solid form	18,812	June 26	122	2981
Vimedia Company. (See Fuller, James C., assignor.)				
Vincent, Willis E., Hutchinson, Kans. Remedy for hog-cholera and kindred swine diseases	18,182	June 26	122	2978

Alphabetical list of trade-mark applicants published during May and June—Continued.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	17,830	May 1	122	333
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	17,838	May 1	122	333
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	17,853	May 1	122	333
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	18,103-4	May 1	122	333-4
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	18,111	May 1	122	334
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	18,113	May 1	122	334
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	18,115-16	May 1	122	334
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	17,572	May 8	122	710
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	17,835	May 8	122	711
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	18,108	May 8	122	710
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	17,574	May 15	122	1024
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	17,594	May 15	122	1024
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	17,450	May 22	122	1378
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	17,834	May 22	122	1379
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	17,849	May 22	122	1380
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	17,542-4	May 29	122	1702-3
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala., Durham, N. C., and Memphis, Tenn. Fertilizers	17,549	May 29	122	1703
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	17,560	May 29	122	1703
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	17,833	June 5	122	2041
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	17,846	June 5	122	2042
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	17,592	June 12	122	2366
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	17,591	June 19	122	2664
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	18,105	June 19	122	2666
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	17,578	June 26	122	2975
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	17,832	June 26	122	2976
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	17,844	June 26	122	2976
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	17,847	June 26	122	2976
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	17,851	June 26	122	2976
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	18,109	June 26	122	2978
Voegele & Dinning Co., Mansfield, Ohio. Chocolate creams and chocolate-coated candy	11,800	June 12	122	2353
Von Lengerke & Detmold, New York, N. Y. Shotguns	18,110	May 22	122	1381
Vosburg Lithia Springs Co., Gulfport, Miss. Mineral water	15,835	June 12	122	2360
Vulcanite Portland Cement Co., Philadelphia, Pa. Portland-cement	10,777	May 1	122	314
W. F. T. Bushnell Company, Aberdeen, S. D. Magazine or periodical	19,023	June 26	122	2982
W. H. Coe Manufacturing Company, Providence, R. I. Gilding-tools	16,739	June 19	122	2660
W. H. Hutchinson & Son, Chicago, Ill. Non-alcoholic beverages and the extracts used in their manufacture	17,763	May 15	122	1025
W. H. Miles Shoe Co., Inc., Richmond, Va. Leather shoes	7,268	May 22	122	1355

Alphabetical list of trade-mark applicants published during May and June—Continued.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
W. J. Hamilton Coal Co., Columbus, Ohio. Coal	10,438-40	June 19	122	2652-3
W. T. Beesley & Co., Ld., Sheffield, England. Cast-steel in bars, rods, sheets, plates, and wire, except steel balls	16,953	May 29	122	1699
W. W. Kimball Company, Chicago, Ill. Pianos	11,639	May 8	122	692
W. W. Kimball Company, Chicago, Ill. Organs	18,339	June 12	122	2368
W. W. Lawrence & Company, Pittsburg, Pa. Ready-mixed paints	17,403	June 19	122	2663
Wacker & Birk Br'g. & M'lt'g. Co., Chicago, Ill. Beer	15,269-70	May 22	122	1371
Wadsworth & Son, David, Auburn, N. Y. Hay, straw, and corn knives, scythes, grass-hooks, and sickles	15,014	May 15	122	1015
Wagner, Edw. H., New York, N. Y. Hand stick fireworks	10,573	May 8	122	691
Wagner, Edward H., New York, N. Y. Torpedo-fireworks	10,430	May 1	122	313
Waldorf Mfg. Co., Syracuse, N. Y. Shirt-waists and skirts	6,103	May 15	122	999
Wallace & Co., New York, N. Y. Candy	1,993	May 15	122	996
Walley, C. P., New York, N. Y. Gelatinous compounds used as adhesive for binding books, &c.	3,470	June 19	122	2643
Waltham Novelty Company, Waltham, Mass. Toilet powder	9,744	May 8	122	689
Wandell, Lewis S., New York, N. Y. Tonic preparation for the preservation of the hair and the nutriment of the scalp	16,439	May 8	122	707
Ward, Artemas, New York, N. Y. Periodical	18,140	May 29	122	1704
Ward, William P., New York, N. Y. Liniment	7,622	May 8	122	687
Wardlow, S. & C., New York, N. Y. Steel in the form of billets, rods, blanks, sheets, coils, bars, parts, strips, and wire	18,345	May 1	122	335
Ware Bros. Company, Philadelphia, Pa. Trade journals	18,351-3	May 15	122	1027
Ware Bros. Company, Philadelphia, Pa. Trade journals	18,354	May 22	122	1381
Ware Remedy Co., Dr. James, Lake Charles, La. Medicinal compounds for the cure of all derangements of the stomach and bowels	2,640	May 29	122	1686
Warren Brothers Company, Boston, Mass. Plastic flooring and composition for making the same	9,345	June 26	122	2963
Warren Featherbone Co., Three Oaks, Mich. Stiffening cords, blades, tapes, and fabrics for wearing-apparel	17,129-31	May 15	122	1023
Washburn Crosby Company, Minneapolis, Minn. Wheat-flour	18,666	May 8	122	712
Washington Mattress & Furniture Co., Seattle, Wash. Mattresses and pillows	17,336	May 15	122	1024
Washington Tool Co., Owatonna, Minn. Pincers, nippers, and hoof-trimmers	12,156	May 8	122	694
Watling & Co., A., New York, N. Y. Remedies for colds, coughs, and affections of the throat and lungs	10,181	May 8	122	690
Watson & Co, Angus, Newcastle-on-Tyne, England. Sardines and like fish	16,328	May 8	122	706
Wayne County Preserving Co., Newark, N. Y. Canned fruits and vegetables	15,576	May 1	122	325
Wayne Knitting Mills, Fort Wayne, Ind. Hosiery for ladies and gentlemen	17,169	May 8	122	709
Wayne Knitting Mills, Fort Wayne, Ind. Hosiery	15,967-8	June 5	122	2037
Weber and Heilbroner, New York, N. Y. Neckscarfs	10,791	May 1	122	314
Webster & Perks Tool Company, Springfield, Ohio. Paper-trimmers	10,621	May 22	122	1360
Wedehase, Frank, Sebastopol, Cal. Bread	18,728	June 19	122	2669
Weeks and Ascher, New York, N. Y. Hosiery	15,348	May 22	122	1371
Weiffenbach Mfg. Co., Chicago, Ill. Razor-strops	16,466	May 22	122	1374
Well & Company, E. A., Savannah, Ga. Men's leather shoes	16,066	May 1	122	328
Weindorf & Co., Long Island City, N. Y. Hair-tonic	1,391	May 8	122	682
Weinreben, Karl, Frankfort-on-the-Main, Germany. Remedy against gallstones	10,750	June 5	122	2031
Weld, Colburn & Wilckens, New York, N. Y. Men's neck ties and scarfs	14,159	May 15	122	1012
Weller & Sons, W. L., Louisville, Ky. Whisky	3,786	May 1	122	305
Wells, Lawrence and Gooch, Bowling Green, Mo. Mineral water	18,766	May 15	122	1029
Wells & Nellegar Company, Chicago, Ill. Hatchets, adzes, and axes	7,379	June 12	122	2346
Wells & Richardson Company, Burlington, Vt. Prepared food for infants and invalids	12,427-8	May 8	122	694
Wellsville Chemical Co., Wellsville, N. Y. Disinfectant, germicide, deodorizer, and insecticide	13,856	May 15	122	1011
Werner's Son, Geo. F., New York, N. Y. Calf-leather	11,136	May 15	122	1006
Weschcke, Charles, Springfield, Minn. Medicine for treatment of appendicitis	16,986	May 8	122	708
West Indies Chemical Works, Limited, Spanish Town, Jamaica, West Indies. Logwood extracts and crystals	288	June 12	122	2341
West Side Roasting and Milling Company, New York, N. Y. Coffee	18,726	June 26	122	2981
Wester Bros., New York, N. Y. Pocket-knives and razors	5,557	May 1	122	308
Western Clock Manufacturing Company, La Salle, Ill. Clocks and watches	17,373	June 26	122	2973
Western Color Print Co., San Francisco, Cal. Printed pictorial matter in natural colors	16,724	June 26	122	2972
Western Tobacco Works, La Crosse, Wis. Smoking and chewing tobacco	17,944	May 22	122	1380
Wheeler Condenser & Engineering Co., New York, N. Y. Surface and jet condensers	17,232	May 1	122	331
Wheeler Condenser & Engineering Co., New York, N. Y. Feed-water heaters	17,298	May 1	122	331
Wheeler & Wilson Manufacturing Company, Bridgeport, Conn. Sewing-machines and their parts and attachments	16,881-2	June 26	122	2972-3
Wheeler & Wilson Manufacturing Company, Bridgeport, Conn. Sewing-machines and their parts and attachments	16,885	June 26	122	2973
Whitcher, Frank W., Boston, Mass. Shoe-pincers	15,417	May 1	122	325
White-Dunham Shoe Co., Brockton, Mass. Leather boots and shoes	14,735	May 8	122	700
White Lily Washer Company, Davenport, Iowa. Gas-engines	17,916	June 19	122	2665
White Oak Coal Co., Macdonald, W. Va. Coal	16,171	May 22	122	1373
White Sewing Machine Co., Cleveland, Ohio. Rotating shuttle or looper sewing-machines, sewing-machine covers, tables, stands, and attachments, embracing rufflers, tuckers, &c.	18,517	May 29	122	1706
White Sewing Machine Co., Cleveland, Ohio. Oscillating, rotating, and vibrating shuttle or looper sewing-machines, sewing-machine covers, tables, stands, and attachments, embracing rufflers, tuckers, &c.	18,518	May 29	122	1706
Whitehall Portland Cement Co., Cementon, Pa. Portland cement	841	May 8	122	681
Whitman & Barnes Manufacturing Company, Akron, Ohio. Guards for mowers, binders, harvesters, and headers	14,592	May 1	122	322
Whitman & Barnes Manufacturing Company, Akron, Ohio. Lawn-mowers	14,595	May 1	122	323
Whitman & Barnes Manufacturing Company, Akron, Ohio. Wrenches	14,713	May 1	122	323
Whitman & Barnes Manufacturing Company, Akron, Ohio. Spring-cotters	14,715	May 1	122	323
Whitman & Barnes Manufacturing Company, Akron, Ohio. Guard-plates for mowers, reapers, harvesters, and headers	14,711	May 8	122	700
Whitman & Barnes Manufacturing Company, Akron, Ohio. Chisels and punches	15,115	May 8	122	701
Whitman & Barnes Manufacturing Company, Akron, Ohio. Knives for mowers and reapers	14,596	June 26	122	2969
Whitman Grocery Company, Orange, Mass. Prepared gelatin	8,168	June 19	122	2649
Whittemore Brothers and Company, Cambridge, Mass. Leather-polish	17,337	May 15	122	1024
Wichita Mill & Elevator Company, Wichita Falls, Tex. Wheat-flour	18,408	May 15	122	1028
Wiehle Soap Company, Ironton, Ohio. Bar-soap	9,307	May 1	122	312
Wiehle Soap Company, Ironton, Ohio. Bar-soap	9,309	May 1	122	312
Wiehle Soap Company, Ironton, Ohio. Soap	9,308	June 26	122	2963
Wilbur & Sons, H. O., Philadelphia, Pa. Solid chocolate confections	16,122	June 5	122	2037
Wilcox & Godding, Eaton Rapids, Mich. Croup mixture or compound for croup, coughs, colds, hoarseness, whooping-cough, and bronchitis	13,380	May 8	122	697
Wilcox & Wagoner Company, New York, N. Y. Silver hollow, flat and table ware	12,042	May 8	122	693

Alphabetical list of trade-mark applicants published during May and June—Continued.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Wile Sons & Co., Julius, New York, N. Y. Wine	10,067	May 1	122	312
Wiley Manufacturing Company, Atlanta, Ga. Chocolates and bonbons	18,467	May 15	122	1028
Wilkinson, Gaddis & Co., Newark, N. J. Salt	8,388	May 8	122	688
Wilkinson, Gaddis & Co., Newark, N. J. Rolled oats	8,393	May 8	122	688
Wilkinson, Gaddis & Co., Newark, N. J. Raisins and dried currants	8,390	June 5	122	2030
Willey, Charles A., New York, N. Y. Paints for carriages and railway-cars	598	June 26	122	2959
William A. Hardy & Son's Co., Fitchburg, Mass. Antifriction or bearing metals	5,939	May 8	122	685
William Eastwood and Son Company, Rochester, N. Y. Leather boots and shoes	15,447	May 1	122	325
William Edge & Sons, Limited, Bolton, England. Dyes	8,024	June 5	122	2029
William Edge & Sons, Limited, Bolton, England. Laundry blue	10,529	June 12	122	2351
William Flaccus Oak Leather Co., Pittsburg, Pa. Harness and skirting leather	10,105	June 19	122	2652
William H. Lee & Co., St. Louis, Mo. Whisky	10,073	May 1	122	313
William Hunt & Sons, The Brades, Limited, Brades Steel Works, near Birmingham, England. Trowels of all kinds, such as masons', brick, and plastering trowels	15,741–4	May 29	122	1697
William L. Barrell Co., Boston, Mass. Cotton duck	18,358	May 15	122	1027
William Waltke & Co., St. Louis, Mo. Laundry soap	6,493	May 1	122	309
William Waltke & Co., St. Louis, Mo. Soap	6,497	May 1	122	309
William Waltke & Co., St. Louis, Mo. Laundry soap	6,494	May 22	122	1354
William Waltke & Co., St. Louis, Mo. Soap	6,498	June 12	122	2345
William Waltke & Co., St. Louis, Mo. Laundry soap	6,492	June 19	122	2646
Willis & Co., Grinnell, New York, N. Y. Bleached and unbleached shirtings and sheetings, cambrics, and long-cloth	14,742	May 8	122	700
Willis & Co., Grinnell, New York, N. Y. Bleached and unbleached shirtings and sheetings, cambrics, and long-cloth	14,703	May 22	122	1369
Willis & Co., Grinnell, New York, N. Y. Bleached and unbleached shirtings and sheetings, cambrics, and long-cloth	14,709	June 5	122	2034
Willis & Co., Grinnell, New York, N. Y. Bleached and unbleached shirtings and sheetings, cambrics, and long-cloth	14 704–5	June 12	122	2358
Willis & Co., Grinnell, New York, N. Y. Bleached and half-bleached cotton piece goods	14,706	June 26	122	2970
Willmar Milling Company, Willmar, Minn. Flour	17,809	May 15	122	1025
Wills, Edward T., Boston, Mass. Extracts for making beverages when diluted with water	6,393	June 19	122	2646
Wilson Co., C. W., Toledo, Ohio. Game of United States history	15,332	June 5	122	2035
Wilson & Harris, Chicago Ill. Kindling	18,808	June 12	122	2372
Wimpfheimer and Brother, A., New York, N. Y. Piece goods made partly or wholly of silk and having a smooth surface	11,218	May 22	122	1362
Windle, William S., Oskaloosa, Iowa. Vegetable liquid compound of a laxative and tonic nature	11,218	May 22	122	1362
Winship, Bolt & Co., Wakefield, Mass. Knitted undergarments of wool, cotton, silk, flax, or admixtures of these fibers	6,133	May 22	122	1354
Winter, Charles A., New York, N. Y. Washing compound	8,291	May 22	122	1357
Wm. A. Rogers, Limited, New York, N. Y. Silver-plated flate, hollow and table ware	16,154	June 5	122	2037
Wm. Bergenthal Co., Milwaukee, Wis. Whisky	6,568	May 8	122	686
Wm. Bergenthal Co., Milwaukee, Wis. Gin	6,570	June 5	122	2028
Wm. Bergenthal Co., Milwaukee, Wis. Whisky	6,576	June 12	122	2345
Wm. Bergenthal Co., Milwaukee, Wis. Whisky	6,973	June 19	122	2647
Wm. F. Mosser & Co., Boston, Mass. Sole-leather	13,598	May 8	122	698
Wm. H. Richardson Co., Boston, Mass. Overcoats and suits	1,452	June 12	122	2342
Wm. Henning Co., Chicago, Ill. Cucumber pickles, mixed pickles, chow-chow, and pickled onions,	2,839	May 15	122	997
Wm. Henning Co., Chicago, Ill. Tomato catsup	9,099	May 15	122	1002
Wm. Henning Co., Chicago, Ill. Relishes consisting of mixtures of minced vegetables, either sour, sweet, or spiced	17,121	May 15	122	1022
Wm. Henning Co., Chicago, Ill. Salad-oil	17,122	May 15	122	1022
Wm. Henning Co., Chicago, Ill. Sauces consisting of spiced liquids intended for use with meats, fish, and soups	17,123	May 15	122	1022
Wm. Henning Co., Chicago, Ill. Mustard	17,124	May 15	122	1022
Wm. Henning Co., Chicago, Ill. Olives	17,125	May 15	122	1023
Wm. Hutton & Sons Ltd., Sheffield, England. Silver and plated ware of all kinds	16,956	May 29	122	1699
Wolf Brothers and Company, Cincinnati, Ohio. Ladies' leather shoes	14,992	June 19	122	2656
Wolf Brothers and Company, Cincinnati, Ohio. Ladies' leather shoes	14,991	June 26	122	2970
Wolf & Co., A. A., Pittsburg, Pa. Whisky	1,915	May 15	122	996
Wolf & Co., A. A., Pittsburg, Pa. Whisky	1,922	May 15	122	996
Wolverine Brass Works, Grand Rapids, Mich. Flexible-joint connections for basin and bath supplies	18,146	June 12	122	2368
Wood, William H., Cairo, Ill. Remedies for fever in pill form	4,386	June 26	122	2960
Woolson Spice Co., Toledo, Ohio. Coffee	17,794	June 5	122	2041
Woolson Spice Co., Toledo, Ohio. Coffee	19,312	June 26	122	2985
Wooster Brush Works, Wooster, Ohio. Paint, whitewash, wall, horse, &c., brushes	13,874	June 12	122	2356
Woronoco Paper Company, Woronoco, Mass. All kinds of writing-papers	10,016	June 5	122	2030
Woronoco Paper Company, Woronoco, Mass. Fine writing-paper	10,012	June 12	122	2350
Woronoco Paper Company, Woronoco, Mass. All kinds of writing-paper	10,013	June 12	122	2350
Woronoco Paper Company, Woronoco, Mass. Fine writing-paper	10,014	June 12	122	2351
Woronoco Paper Company, Woronoco, Mass. All kinds of fine writing-paper	10,010–11	June 26	122	2963
Worthy Paper Co., Mittineague, Mass. Linen, bond, ledger, and fine writing-papers	982	June 19	122	2642
Wright & Sons, Peter, Dudley, England. Anvils	9,357	June 26	122	2963
Wrought Iron Range Company, St. Louis, Mo. Heating-furnaces	18,971	June 12	122	2372
Wunderle, Philip, Philadelphia, Pa. Candy	7,583	May 22	122	1356
Wunderle, Philip, Philadelphia, Pa. Candy	7,584	May 22	122	1355
Yates, Harry, Buffalo and Orchard Park, N. Y. Cattle	13,644	May 15	122	1011
York Manufacturing Co., Saco, Me. Cotton piece goods	5,268	May 1	122	307
York Manufacturing Co., Saco, Me. Sheetings, shirtings, drillings, ducks, osnaburgs, denims, canton-flannel, and cotton piece goods	15,089	June 19	122	2657
Youmans, New York, N. Y. Men's, women's, and children's hats	9,093	May 8	122	688
Youmans, New York, N. Y. Men's, women's, and children's hats	11,078	May 8	122	692
Young Brothers, New York, N. Y. Hats	15,543	May 15	122	1017
Young & Co., Chas. W., Philadelphia, Pa. Laundry soap	1,025	May 22	122	1350
Yucca Co., Wichita, Kans. Liquid preparation for the cure of coughs, asthma, colic, &c	15,302	June 5	122	2035
Yuengling & Son, D. G., Pottsville, Pa. Ale, porter, and brown stout	19,585	June 26	122	2986
Yuengling & Son, D. G., Pottsville, Pa. Beer	19,586	June 26	122	2986
Yvon, Paul, assignor to Institut Pasteur, Paris, France. Serums	16,217	May 8	122	706
Zenith Milling Company, Kansas City, Mo. Wheat-flour	15,928	June 12	122	2360
Zimmer & Co., Inc., Petersburg, Va. Manufactured plug, twist, and cut tobaccos	17,456	June 19	122	2663

ALPHABETICAL LIST OF INVENTIONS.

Invention.	Name.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
Acetylene-generator	A. L. Eastman	820,103	May 8	2216	481	122	557
Acetylene-generator	E. Fonbonne	823,677	June 19	2925	618–19	122	2473
Acid. Concentrating diluted nitric	O. Balther	819,262	May 1	450	.....	122	105
Acids. Making dialkyl-barbituric	W. Traube	822,165	May 29	6355	.....	122	1650
Adding-machine	A. Macauley	823,474	June 12	2487	525–6	122	2317
Adding-machine attachment	C. C. Earnist	824,416	June 26	4335	923	122	2831
Addressing machine. Envelop and the like	J. J. Braun	823,988	June 19	3511	750–1	122	2600
Adhesives to paper, &c. Machine for applying	J. G. Beattie	820,096	May 8	2179	474–5	122	549
Adjustable mold	T. G. Johnson	819 229	May 1	392	83	122	93
Advertiser. Mechanical	B. F. McFarland and C. E. Crosby.	823,187	June 12	1935	399–400	122	2199
Advertising apparatus	F. L. Reynolds	819,673	May 1	1252	273	122	281
Advertising apparatus	F. J. Walton and L. V. Rogers	821,146	May 22	4354	926	122	1148
Advertising-calendar	W. S. Thorp	822,406	June 5	340	70	122	1800
Advertising-carton	W. F. Hill	822,841	June 5	1209	249	122	1992
Advertising device	H. S. Williams	819,394	May 1	731	155	122	166
Advertising device	L. Greenberg	822,734	June 5	1014	207	122	1951
Advertising device	A. Suesskind	824,516	June 26	4537	962	122	2877
Advertising display-stand	W. T. Little	824,126	June 26	3746	800	122	2709
Aerial tramways and the like. Coupling device for	J. A. Gyllenberg	824,645	June 26	4790	1021	122	2932
Aerial vessel	B. O'Kane	820,938	May 15	3897	831	122	986
Æth-oxy-phenyl-camphoryl imid and making same	A. H. C. Heltmann and E. C. Clemmensen.	824,357	June 26	4197	.....	122	2805
Agricultural appliance	M. Willett	819,486	May 1	904	197–8	122	202
Agricultural implement	T. G. Shuler	821,892	May 29	5826	1239	122	1529
Agricultural implements. Riding attachment for	N. H. Bloom	819,973	May 8	1912	423	122	486
Agricultural implements. Riding attachment for	N. H. Bloom	821 980	May 29	5996	1278	122	1566
Air and gas mixing apparatus	M. D. Colbath	819,124	May 1	183	38	122	47
Air-brake	E. A. Graves	822,520	June 5	572	115	122	1852
Air-brake	G. E. March	822,747	June 5	1035	212	122	1955
Air-brake	J. P. Kelly	823,048	June 12	1634	338	122	2134
Air-brake	E. B. Allen	823,315	June 12	2210	461	122	2258
Air-brake air-supply apparatus	O. E. Leib and E. B. Witte	824,034	June 19	3597	766–7	122	2617
Air-brake and steam coupling. Automatic	H. F. Bickel	823,023	June 12	1592	329–30	122	2125
Air-brake apparatus	F. J. R. Wagner	823,979	June 19	3493	746	122	2596
Air-brake. Automatic	T. Clegg	821,859	May 29	5763	1227	122	1515
Air-brake controller. Automatic	G. J. Pilger	823,189	June 12	1940	400	122	2200
Air-brake gasket-replacing tool	F. H. Dukesmith	819,415	May 1	767	164	122	173
Air-brake system	A. I. Perry	822,073	May 29	6174	1316	122	1609
Air-brake system	F. H. Dukesmith	820,291	May 8	2584	563	122	638
Air-brakes. Emergency cut-out cock for	E. Hill	819,655	May 1	1213	266	122	272
Air-compressor	W. Reavell	819,924	May 8	1770	381	122	460
Air-compressor	H. B. Cornish	821,926	May 29	5896	1253	122	1544
Air-compressor	B. Obear	822,689	June 5	932	189–90	122	1935
Air-compressor	A. J. Lavoie	821,299	May 22	4635	988–9	122	1209
Air-compressor and the like	F. C. Carr	821,607	May 29	5266	1123	122	1404
Air-compressor. Hydraulic	M. Bamberger, F. Böck, and F. Wanz.	819,704	May 1	1316	286	122	298
Air for respiration purposes. Apparatus for reoxygenating exhaled	W. J. Rafferty	821,671	May 29	5390	1150	122	1431
Air in buildings. Apparatus for heating, purifying, and distributing							
Alarm: *See* Burglar-alarm; Elevator safety-alarm; Fire-alarm; Rain-alarm.							
Alarm	F. M. Hobbs	822,125	May 29	6272	1335	122	1632
Alarm-lock	A. Schoenman	823,701	June 19	2964	627	122	2481
Alarm-signal	R. J. Zorge	824,270	June 26	4035	864	122	2771
Alarm system and apparatus	J. M. Latimer	819,231	May 1	396	84	122	93
Album for collecting post-cards	H. Quensel	823,291	June 12	2161	451	122	2248
Alcohol-burner	J. H. Ernst	821,406	May 22	4880	1036	122	1265
Alkaminester	F. Stolz and B. Reuter	820,830	May 15	3659	.....	122	933
Alkyloxyacetyl compound of pyrocatechinmonoethyl ether.	R. Berendes	822,339	June 5	227	.....	122	1775
Alloy	W. B. Driver	824,103	June 26	3707	.....	122	2700
Alloy	C. H. Birmingham	824,618	June 26	4744	.....	122	2922
Alloy	G. Chaudoir, Jr	820,954	May 22	3940	.....	122	1057
Alloy. Copper	P. and A. Gührs	824,644	June 26	4789	.....	122	2932
Alloys. Manufacturing zinc	C. E. Gard and J. W. Lynn	820,189	May 8	2376	516	122	591
Amalgamator	A. G. Macdonell	821,108	May 22	4269	908–9	122	1128
Amalgamator	B. Baldwin	823,577	June 19	2729	577–8	122	2428
Amalgamator. Mercurial	E. J. Duff	820,039	May 8	2076	452–3	122	526
Ammonia from gas. Recovering	R. Brunck	824,092	June 26	3694	787	122	2696
Ammonia from gases. Extracting	L. Werlin	824,459	June 26	4424	940	122	2851
Ammonia. Regenerating and purifying of	O. E. J. Brubaker	819,634	May 1	1176	257	122	264
Ammunition. Fixed	F. J. Johnston	820,118	May 8	2239	487	122	562
Amusement apparatus	C. D. Bunnell	820,346	May 8	2672	584	122	658
Amusement apparatus	T. A. and T. H. Fulton	821,409	May 22	4883	1037	122	1265
Amusement apparatus	J. H. Maguire	824,305	June 26	4094	875–6	122	2783
Amusement apparatus	R. A. Fowden	824,107	June 26	3715	793–4	122	2707
Amusement apparatus. Aquatic	W. F. Mangels	820,905	May 15	3598	770	122	921
Amusement device	W. L. Adams	822,420	June 5	368	76	122	1808
Anchor	G. W. Bowen	822,097	May 29	6214	1325	122	1618
Anchor. Stockless	P. E. Leveritt	822,743	June 5	1030	211	122	1954
Andiron							

Alphabetical list of inventions for May and June—Continued.

Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
				Spec.	Drg.	Vol.	Page.
Angle-sawing mechanism	P. A. Millet and A. M. Powell	822,291	June 5	135	26–7	122	1758
Animal or fish trap	W. Gabrielson	820,640	May 15	3252	699	122	845
Animal-releasing mechanism	J. A. Taylor	820,270	May 8	2536	549	122	628
Animal-trap	R. L. Stringfellow	819,255	May 1	437	92	122	102
Animal-trap	P. Armstrong	819,838	May 8	1610	342	122	423
Animal-trap	W. C. Hooker	821,802	May 29	5664	1207	122	1494
Animal-trap	S. G. Ewen, Jr.	822,835	June 5	1199	246	122	1990
Animal-trap	M. Krofft	823,126	June 12	1812	373	122	2170
Animal-trap	M. E. Mixson	823,736	June 19	3027	640	122	2493
Animal-trap	G. A. Jones	824,246	June 26	3999	856	122	2763
Antilubricant-throwing device	E. A. Barnes	822,238	June 5	13	3–4	122	1731
Apron	W. H. Hatton	823,777	June 19	3112	659	122	2512
Apron slat. Endless-	E. F. Fatzinger	820,632	May 15	3242	697	122	843
Aprons. Automatic guide for endless	A. Bess	824,059	June 19	3640	775	122	2627
Arbor. Friction-	P. P. Nungesser	822,467	June 5	457	92	122	1825
Arch construction	A. B. Foans	824,636	June 26	4776	1017–18	122	2929
Arch-supporter	A. E. Little	822,138	May 29	6291	1340	122	1633
Armature-coils. Frame for winding	L. R. R. De Planque and J. Biggerstaff.	823,265	June 12	2113	440	122	2239
Armature-winding	C. P. Steinmetz	820,997	May 22	4053	862	122	1081
Ash-receptacle. Pocket	L. D. Richardson	820,067	May 8	2142	466	122	541
Ashes and clinkers from steamships. Apparatus for removing	G. C. Ralston	819,312	May 1	560	119–20	122	129
Assembling apparatus	N. Marshall	821,946	May 29	5933	1263–5	122	1553
Assembling apparatus	N. Marshall	822,213	May 29	6440	1368	122	1670
Assembling apparatus. Jig for	N. Marshall	822,214	May 29	6442	1368	122	1670
Auger. Post-hole	J. M. Derryberry	819,739	May 8	1398	301	122	373
Autographic register	A. Krauth	824,185	June 26	3863	824	122	2735
Automatic brake	C. Klaus	819,287	May 1	511	107–8	122	118
Automatic digger and conveyer	P. H. Stauch	820,829	May 15	3657	781	122	933
Automatic gate and door	R. R. Williams	819,831	May 8	1596	339–40	122	420
Automatic press	H. A. Herr	819,996	May 8	1961	434–5	122	497
Automatic sprinkler	E. L. Thompson	824,453	June 26	4407	937	122	2846
Automobile	C. W. Duer	820,102	May 8	2213	481	122	556
Automobile	E. P. Brewer	821,154	May 22	4365	928	122	1151
Automobile	J. Spyker	822,784	June 5	1094	226	122	1968
Automobile controlling mechanism	B. A. Gramm	823,522	June 19	2631	553	122	2408
Automobile driving mechanism	W. C. Price	819,377	May 1	701	147–8	122	159
Automobile extension canopy-frame	L. C. Shipley	822,634	June 5	813	165	122	1907
Automobile headlight control	J. S. Detrick	823,163	June 12	1878	388	122	2185
Automobile steering-check	H. Geisenhöner and D. Miller	822,268	June 5	84	17	122	1747
Automobile-wheel	J. C. Higdon	822,665	June 5	868	178	122	1920
Automobile-wheels. Traction attachment for	G. Adams	820,691	May 15	3361	720	122	866
Automobiles and the like. Automatic circuit making and breaking device for	A. L. Riker	823,811	June 19	3168	670	122	2526
Automobiles. Change-speed and reversing gear for	J. H., R. M., and C. E. Chambers	824,624	June 26	4753	1012–13	122	2924
Awning	W. Scheu	819,381	May 1	709	150	122	161
Awning	F. A. Learned	820,214	May 8	2418	525	122	601
Awning	C. W. Russell	820,261	May 8	2521	546	122	624
Awning side attachment	W. Armstrong	823,096	June 12	1745	359	122	2156
Axle	S. H. and A. V. Nickerson	822,298	June 5	153	31	122	1762
Axle-boxes. Manufacture of	E. W. M. Hughes	822,128	May 29	6276	1336	122	1632
Axle. Car-	W. Hartill-Law	819,427	May 1	792	171	122	179
Axle gearing. Car-	C. E. Felt	821,631	May 29	5907	1132	122	1414
Axle-lubricating device	W. G. Tatnall	822,085	May 29	6191	1320	122	1613
Axle-lubricator	T. Hughes	819,281	May 1	502	106	122	116
Axle. Safety car-truck	B. S. Bowman	820,175	May 8	2350	512	1 2	585
Axle setter. Cold-	E. E. Krengel and W. G. McLennan.	820,503	May 15	3010	647	122	791
Axle-skein and sand-collar	T. R. McKnight	821,729	May 29	5518	1176–7	122	1459
Axle. Vehicle-	C. H. Driver	819,128	May 1	191	38	122	48
Axle. Vehicle-	M. W. Heyenga	820,112	May 8	2229	484–5	122	560
Axle. Vehicle-	J. L. McFarlane	820,433	May 15	2858	622	122	756
Axles and bodies. Mechanism for connecting vehicle	J. F. Byers	820,179	May 8	2359	513	122	587
Baby-chair	A. P. Perkins	822,472	June 5	465	94–5	122	1826
Baby holding and walking device	P. T. Ritter	823,812	June 19	3170	670	122	2526
Baby-jumper	J. M. Nunamaker	821,116	May 22	4281	911	122	1131
Back-pedaling brake	A. P. Morrow	821,522	May 22	5092	1085	122	1310
Badge	N. Stafford	821,547	May 22	5136	1096	122	1318
Badge and watch-guard	J. S. Martin and H. N. Stockton	822,969	June 12	1466	305	122	2094
Bag: *See* Fruit-picking bag. Laundry-bag.							
Bag-clasp	W. H. Slattery	821,318	May 22	4679	996	122	1218
Bag-holder	E. A. Hale	821,237	May 22	4514	960–1	122	1183
Bag-holder	I. H. Weaver	821,771	May 29	5602	1194	122	1479
Bag-holder	G. E. Dawson	821,929	May 29	5901	1254	122	1546
Bagging and weighing machine	F. L. Sawyer and J. H. Fulford	819,930	May 8	1782	383–4	122	462
Bait. Artificial fish-	C. H. Olsby	821,732	May 29	5523	1178	122	1460
Baking apparatus	G. A. Muller	819,575	May 1	1057	232	122	238
Baking-pan	E. Katzinger	821,104	May 22	4261	907	122	1127
Baking-pan for pastry-crusts	M. C. Haddock	823,216	June 12	2008	418	122	2214
Balance. Automatic electrical	W. Dworzynski	821,475	May 22	5006	1064–5	122	1292
Balances. Portable	F. Reichmann	821,745	May 29	5553	1182	122	1467
Balanced engine	H. L. Towle	821,553	May 22	5146	1097–8	122	1320
Bale-tie machine	A. E. Rhoades	819,925	May 8	1771	381–2	122	460
Baling apparatus	F. P. Ellis	821,405	May 22	4873	1034–6	122	1363
Baling-press	J. A. Spencer	819,319	May 1	574	122–3	122	132
Baling-press	C. A. Struve	820,831	May 15	3660	781	122	934
Baling-press	C. E. Wehrenberg	822,411	June 5	349	72–3	122	1802
Baling-press	J. B. Ammons	823,151	June 12	1857	383	122	2180
Baling-press	J. J. Stopple	824,599	June 26	4707	1001–2	122	2914
Baling-press	J. J. Stopple	824,600	June 26	4709	1002	122	2914
Baling-press self-feeder	C. E. Bower	822,915	June 12	1365	284	122	2073
Ball: *See* Trick-ball.							
Ball apparatus. Parlor base-	H. A. Filer	819,212	May 1	357	76	122	86

Alphabetical list of inventions for May and June—Continued.

Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
				Spec.	Drg.	Vol.	Page.
Ball-rolling machine	A. T. Saunders	820,139	May 8	2278	495–6	122	570
Ball-rolling machine	A. T. Saunders	820,140	May 8	2281	496	122	571
Ball-winding machine	M. J. Selzer	820,606	May 15	3205	689	122	835
Band. Clasping-	S. M. Danielsen	823,994	June 19	3526	752	122	2603
Band-cutter and feeder	F. Juno	821,646	May 29	5341	1138	122	1421
Band-cutter and feeder	H. W. Smith	822,998	June 12	1524	317	122	2109
Band-cutter and feeder	S. Dunkelberger	824,238	June 26	3977	852–3	122	2758
Band-cutter and feeder	S. Dunkelberger	824,289	June 26	4062	870–1	122	2776
Band-stripping machine. Hydraulic	W. Evans	819,871	May 8	1664	356–8	122	436
Bands. Machine for the manufacture of	D. L. Eustice	819,639	May 1	1186	259	122	205
Banjo	F. J. Bacon	823,985	June 19	3508	749	122	2599
Banjo dulcet attachment	N. Howard	821,494	May 22	5043	1074	122	1299
Bank. Savings-	E. Crapper	824,233	June 26	3966	850	122	2756
Bar: *See* Bicycle handle-bar. Handle-bar. Boring-bar. Pinch-bar. Finger-bar. Sash-bar. Grate-bar. Tamping-bar.							
Barber's pole	W. T. Cobb	822,923	June 12	1380	287	122	2076
Barge	A. M. Bowman	819,633	May 1	1174	257	122	263
Barge. Steel	M. G. Hilpert	820,974	May 22	3996	849–50	122	1070
Barrel-heater	B. Holmes and E. F. Beugler	821,591	May 22	5215	1113	122	1336
Barrel-roller machine	T. J. Merrell	822,288	June 5	126	25	122	1756
Basin. Folding wall-	L. C. Lazear	819,562	May 1	1030	226	122	232
Basket	H. J. Gerner	820,107	May 8	2223	482	122	559
Basket	H. O. Wilcox	821,010	May 22	4077	867–8	122	1087
Basket	H. O. Wilcox	821,074	May 22	4209	894–5	122	1115
Bath: *See* Portable bath.							
Bath-tub	E. M. Day	819,343	May 1	626	133	122	144
Bath-tub	E. H. Sloman	821,755	May 29	5572	1186	122	1473
Bath-tub	J. A. Lefferts	823,794	June 19	3138	665	122	2519
Bath-tub	W. Vanderman	824,454	June 26	4409	937	122	2847
Bath-tub cabinet	A. M. Elegar	822,355	June 5	254	53	122	1781
Bath-tub seat	J. P. Eustis. (Reissue)	12,499	June 26	4906	1043	122	2955
Bath-tubs. Combination spray and shower attachment for	W. G. Newton	819,582	May 1	1068	235	122	240
Batteries. Gas-separator for storage	T. A. Edison	821,624	May 29	5296	1130	122	1412
Batteries. Treating alkaline storage	T. A. Edison	821,625	May 29	5297	.....	122	1412
Battery: *See* Dry battery. Thermo-electric battery. Storage battery.							
Battery-filling apparatus. Storage-	T. A. Edison	821,623	May 29	5294	1130	122	1411
Battery jar. Storage-	R. M. Newbold	819,159	May 1	237	51	122	59
Battery-plate	Q. H. Fay	820,040	May 8	2079	453	122	527
Bayonet	T. S. Forbes	822,441	June 5	403	83	122	1812
Bean-shooter	J. H. Curry	822,190	May 29	6402	1359	122	1660
Bearing	E. J. Newton	822,297	June 5	147	30	122	1761
Bearing	B. S. Lawson. (Reissue)	12,498	June 26	4905	1042	122	2955
Bearing. Antifriction-	W. Thornton	819,184	May 1	287	61	122	72
Bearing. Ball-	W. Höpflinger and E. Sachs	819,656	May 1	1216	266	122	273
Bearing. Ball-	A. Riebe and P. Brühl	820,520	May 15	3052	657	122	801
Bearing. Ball-	J. N. Petersen	821,057	May 22	4164	885	122	1105
Bearing. Ball-	R. Conrad	821,461	May 22	4983	1059	122	1287
Bearing. Ball-	R. Conrad	821,702	May 29	5468	1164	122	1448
Bearing. Ball-	R. Conrad	821,703	May 29	5470	1164	122	1448
Bearing. Ball-	R. Conrad	822,723	June 5	996	203	122	1947
Bearing-box. Connecting-rod	H. F. Livermore	820,509	May 15	3024	650	122	795
Bearing cone. Ball-	C. Glover	819,753	May 8	1421	306	122	377
Bearing. End-thrust	J. A. Perkins	820,986	May 22	4034	857	122	1077
Bearing for rock-drills	T. E. Adams	821,325	May 22	4603	1000	122	1221
Bearing. Roller-	T. M. Worrell	821,322	May 22	4686	998	122	1219
Bearing. Roller-	C. S. Lockwood	821,656	May 29	5364	1143	122	1426
Bearing. Roller-	J. A. Perkins	821,882	May 29	5800	1236	122	1523
Bearing. Roller-	W. H. Russell	823,083	June 12	1725	355	122	2151
Bearing. Roller-	T. A. Edwards	824,533	June 26	4570	971–2	122	2884
Bearing. Swivel-	E. S. Lea	820,883	May 15	3785	807	122	961
Bearing. Truck side	C. E. Bauer and F. L. Susemihl	820,172	May 8	2346	510–11	122	584
Bearing. Vertical-shaft	E. W. Broomall	821,699	May 29	5457	1163	122	1445
Bearing. Wheel-	F. G. Hughes and R. P. Stout	820,575	May 15	3155	679	122	824
Bed	J. L. Dodge	824,068	June 19	3653	778	122	2650
Bed and chair. Combination child's	C. A. Koenig and J. A. Vallee	824,488	June 26	4485	950	122	2885
Bed and invalid's chair. Combined fracture-	J. T. Boyd	823,841	June 19	3226	682	122	2539
Bed and table. Combined folding	J. L. Bolsvert	824,404	June 26	4308	917	122	2826
Bed attachment	J. P. Williams	821,691	May 29	5439	1158–9	122	1440
Bed-bottom	I. Grossman	822,443	June 5	405	84	122	1813
Bed-bottom. Spring	C. D. Brouyette	820,091	May 8	2192	478	122	551
Bed-bottom. Spring	J. G. Smith	822,999	June 12	1526	317–18	122	2110
Bed-bottom. Spring	G. A. Mellon	823,427	June 12	2405	506–7	122	2299
Bed-bottom. Spring	L. B. Houston	823,600	June 19	2771	586–7	122	2438
Bed-bottom. Spring	F. W. Merriweather	823,800	June 19	3153	667	122	2522
Bed-clamp	G. A. Mellon	820,808	May 15	3602	770–1	122	923
Bed. Davenport-	C. J. Kindel and R. Coopersmith	823,879	June 19	3295	699–700	122	2554
Bed. Davenport-	G. A. Mellon	824,131	June 26	3757	802	122	2711
Bed. Davenport-	F. M. Tinkham	823,649	June 19	2875	608	122	2463
Bed. Extensible sofa-	R. Bollinger	819,631	May 1	1169	256	122	202
Bed. Extension-	W. S. McLewee	819,305	May 1	547	116	122	126
Bed Folding	J. J. Braznell	822,243	June 5	24	5	122	1734
Bed. Folding	A. W. Welch	822,328	June 5	210	42	122	1772
Bed. Folding	W. C. James	823,045	June 12	1629	337	122	2122
Bed. Folding	J. F. Wilmot	823,456	June 12	2460	520	122	2310
Bed. Folding	J. Gamber and O. F. Heer	823,271	June 12	2125	443	122	2240
Bed. Infant's	G. Harden	822,119	May 29	6263	1333–4	122	1629
Bed. Invalid-	W. H. Armstrong, J. M. Pugh, and R. W. Magee.	824,057	June 19	3637	774	122	2627
Bed. Invalid-	C. Jonas	819,435	May 1	810	174	122	182
Bed. Metallic folding							

Alphabetical list of inventions for May and June—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Bed-rail joint	J. Murphy	822,682	June 5	905	185	122	1929
Bed. Sofa-	J. T. Seng	820,826	May 15	3652	779–80	122	932
Bed-spring	H. W. Pennepacker	819,671	May 1	1249	272	122	280
Bed-spring	E. B. Preston	820,011	May 8	2010	441	122	510
Bed-spring	F. L. Groff	824,295	June 26	4080	872	122	2780
Bed-spring	J. H. Thayer	823,824	June 19	3189	675	122	2530
Bed-spring tightener. Automatic	C. C. Vaughn	822,167	May 29	6358	1351	122	1651
Bed warmer or cooler	S. B. Bankson	819,686	May 1	1282	280	122	288
Beds. Safety device for folding	J. T. Cowles	819,857	May 8	1639	349	122	431
Bedclothes-holder	W. A. Moore	819,241	May 1	417	87–8	122	98
Bedstead	F. R. Brown	820,951	May 22	3931	837	122	1055
Bedstead	E. Griffith and W. E. Logan	822,117	May 29	6259	1332	122	1628
Bedstead	J. W. Whitlow	822,414	June 5	356	74	122	1803
Bedstead	H. F. Babcock	823,152	June 12	1859	384	122	2180
Bedstead	J. Hodson	822,369	June 5	279	58	122	1786
Bedstead. Folding	W. C. Fischer	821,585	May 22	5206	1111	122	1333
Bedsteads. Caster-socket for metallic	M. Kegerreis	821,246	May 22	4526	963	122	1186
Bee-feeder	F. Voss	821,208	May 22	4459	949	122	1170
Beer-glass tray	R. F. Gilchrist	822,360	June 5	264	55–6	122	1783
Beet-rack	G. F. Conner	820,391	May 15	2773	601–2	122	741
Beet-topper	J. F. Willson	824,051	June 19	3628	772	122	2625
Beet-topper	P. Brown	820,385	May 15	2756	599	122	738
Beet-topping machine	H. V. Gould	820,861	May 15	3718	793	122	947
Beet-topping machine	A. Maguin	821,811	May 29	5684	1210–11	122	1499
Beet-washing machine	S. A. Beyland	822,715	June 5	981	199	122	1944
Bell-box	J. Erickson	819,049	May 1	27	6	122	9
Bell. Electric	M. Setter	819,083	May 1	97	22	122	26
Bell. Electric	J. R. Kidney	824,486	June 26	4480	949–50	122	2864
Bell. Push-button	J. Askew	822,710	June 5	973	198	122	1943
Belt	J. M. Van Orden	824,605	June 26	4720	1005	122	2917
Belt	G. C. Plummer	821,121	May 22	4290	913	122	1133
Belt. Conveyer-	R. Cannan	821,086	May 22	4235	900	122	1121
Belt-coupling	J. M. Greist	822,891	June 5	1308	270	122	2012
Belt-coupling	G. W. Parkes	823,892	June 19	3319	707	122	2559
Belt. Driving-	G. Bracco, Sr.	819,975	May 8	1915	424	122	487
Belt or band. Pelvical	E. A. Muller	821,181	May 22	4405	937–8	122	1159
Belt-shifter	D. McDonald	823,352	June 12	2276	476	122	2273
Belt-shifter	G. A. Westover	820,457	May 15	2905	631	122	768
Belt shifter and replacer	W. C. Spittle	824,598	June 26	4705	1001	122	2914
Belt. Waist-	W. M. Barnes	819,710	May 8	1336	289	122	360
Belts. Device for adjusting the tension of traveling conveying-	G. H. Boynton	822,503	June 5	531	109	122	1842
Belts of machinery. Means for cleaning the driving-	G. D. Moore	824,189	June 26	3872	827	122	2736
Belting and preparing and treating the same. Textile	J. B. Leonard	822,006	May 29	6043	.....	122	1578
Belting. Antislippage dressing for	C. H. Closterman and G. J. Kuehnle.	823,394	June 12	2340	491–2	122	2285
Bending-machine	A. Wanner, Jr.	819,478	May 1	883	193	122	198
Bent-wood chair	A. C. Houghton	821,291	May 22	4617	.....	122	1205
Benzoyl succinyl peroxid	F. Haber, G. Van Oordt, and F. Bran.	822,444	June 5	406	.....	122	1813
Beryllium hydroxid. Making	H. Tatum	823,373	June 12	2307	483	122	2279
Bevel and compasses. Combined	F. G. Bonfils	823,100	June 12	1756	361–2	122	2158
Bicycle. Aerial	L. De Rome	823,161	June 12	1874	387	122	2184
Bicycle attachment	J. S. Copeland	821,340	May 22	4737	1007	122	1234
Bicycle driving mechanism. Chainless-	B. Tulka	819,474	May 1	879	191	122	197
Bicycle handle-bar	B. Uhlmann	823,712	June 19	2962	631	122	2484
Bicycle pedal-crank. Adjustable	C. W. Errick	822,660	June 5	860	176	122	1918
Bicycle-saddle and spring therefor	U. G. Sweeney and M. L. Mayes	822,403	June 5	334	69	122	1799
Bicycle-seat spring	J. S. Copeland	820,038	May 8	2074	452	122	526
Bicycles, &c. Driving mechanism for	C. H. Nicholas	822,688	June 5	930	189	122	1934
Bicycles to form a quadricycle. Means for uniting a pair of	A. M. Hubert-Brierre	820,929	May 15	3881	827	122	983
Billiard-table beds. Apparatus for covering	A. M. Hubert-Brierre	820,930	May 15	3882	827	122	983
Billiard-table cushions. Apparatus for covering	J. C. Dozier	821,225	May 22	4484	955	122	1176
Bin: *See* Sliding bin.	G. W. Hopkins and A. B. Canfield.	824,297	June 26	4062	873	122	2780
Bin	W. J. Watters	823,653	June 19	2985	610	122	2465
Binder-frame	F. Egge	819,346	May 1	630	134	122	145
Binder. Loose-leaf	C. R. Nelson	819,368	May 1	683	143	122	156
Binder. Loose-leaf	J. Schade, Jr	819,461	May 1	851	183	122	190
Binder. Loose-leaf	A. Opalla	820,248	May 8	2499	540	122	620
Binder. Loose-leaf	G. Labarre	820,799	May 15	3576	765	122	916
Binder. Loose-leaf	J. C. Dawson	822,654	June 5	850	173	122	1916
Binder. Loose-leaf	W. J. Schultz	823,192	June 12	1946	402	122	2202
Binder. Loose-leaf	C. Keck	820,040	May 8	2094	457	122	530
Binder. Temporary	G. A. Shoemaker	820,827	May 15	3654	780	122	932
Binder. Temporary	F. W. Reindel. (Reissue)	12,480	May 22	5256	1120	122	1345
Binder. Temporary	H. F. Bushong	822,427	June 5	380	79	122	1806
Binders. Leaf or sheet for temporary or loose-leaf	W. E. Dow	821,029	May 22	4116	875	122	1096
Binding-post. Electric	E. A. Hawkins	820,493	May 15	2979	643	122	784
Bit: *See* Bridle-bit. Driving-bit.	W. Webster	824,608	June 26	4724	1006	122	2918
Blacking-guard	B. E. Eldred	821,994	May 29	6022	1283	122	1573
Blade. Stiffening-	W. Kemp	824,485	June 26	4478	940	122	2864
Blast-flame furnace	J. Barr	824,088	June 26	3690	796	122	2696
Blast-furnace	E. C. Harris	822,273	June 5	95	19	122	1749
Blind. Apparatus for producing literature for the	C. P. Ausband	824,273	June 26	4039	865	122	2772
Blind fitting. Window-							
Blind-slat fastener. Window-							
Block: *See* Building-block. Printer's block. Cement building-block. Snatch-block. Composite block. Tackle-block. Date and note block.							
Block	A. B. Tarbox	820,909	May 22	4057	863	122	1062
Block	A. B. Tarbox	823,231	June 12	2049	425	122	2225

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Block-signal system. Electric	P. J. Simmen	819,677	May 1	1261	275	122	283
Blotter-holder	E. M. Whittington	821,912	May 29	5865	1247	122	1539
Blower. Fan-	L. R. Parvis	819,079	May 1	89	20	122	24
Blower. Fan-	F. X. Müller	820,431	May 15	2853	621	122	755
Blowpipe	C. Picard	821,188	May 22	4421	941	122	1162
Blowpipe and Bunsen burner	J. L. Young	820,690	May 15	3360	720	122	866
Blue. Laundry	R. G. Griswold and W. T. Donovan.	824,294	June 26	4079	.....	122	2780
Board: *See* Distributing-board. Plaster-board. Game-board. Stove-board. Ironing-board. Surf-board. Meat-cutting board. Switchboard. Molding-board.							
Boat. Metallic	W. H. Mullins and W. C. Hare	819,784	May 8	1492	319	122	393
Boat. Submarine	E. Niehoff	821,595	May 22	5223	1114	122	1338
Boat. Submarine	T. H. Wheless	822,565	June 5	658	135–6	122	1871
Boats. Automatic safety-depth-regulating valve for submarine or submergible	L. Y. Spear and T. S. Bailey	820,372	May 8	2723	593–4	122	669
Boats. Duct-keel for submarine	L. Y. Spear	821,895	May 29	5830	1240	122	1530
Boats. Power transmission for explosive-motor-driven	W. E. Collier	821,925	May 29	5891	1252	122	1544
Bobbin-shaft attachment for twister-fliers	P. Hardman	819,134	May 1	196	40	122	50
Bodkin	L. F. Earl	822,728	June 5	1006	205	122	1950
Body-protector	T. B. Smith	819,091	May 1	115	25	122	30
Boiler: *See* Egg-boiler. Sectional boiler. Hot-water boiler. Steam-boiler. Locomotive-boiler. Water-heating boiler. Marine boiler. Water-tube boiler.							
Boiler	C. Vanderbilt	823,486	June 12	2533	531–5	122	2327
Boiler-cleaner	J. G. Broman	822,575	June 5	687	140	122	1879
Boiler-cleaning compound	J. R. Greene, Jr	824,112	June 26	3723	.....	122	2704
Boiler-cleansing compound	J. Williams, Jr	821,844	May 29	5742	.....	122	1511
Boiler fire-boxes. Superheater for	G. D. Miller	821,662	May 29	5373	1145	122	1427
Boiler-flue	A. V. Walters	823,907	June 19	3353	715	122	2567
Boiler-flue-cleaning apparatus	E. A. Baker	822,813	June 5	1152	237	122	1981
Boiler-flue cutter	F. Roatch	819,598	May 1	1099	242	122	247
Boiler furnace. Locomotive-	E. H. Wade and J. L. Nicholson	820,450	May 15	2888	628	122	764
Boiler furnace. Steam-	J. Monville and M. Roberts	822 537	June 5	598	120	122	1859
Boiler safety attachment	T. Small	824,214	June 26	3934	842	122	2750
Boiler stand and coupling. Combined	S. E. Hopper	822,843	June 5	1213	250	122	1993
Boiler-tube cleaner	C. L. Charvat	821,087	May 22	4236	901	122	1121
Boiler-tube cutting and fitting tool	P. W. and E. G. Chamberlain	819,516	May 1	952	206–9	122	213
Boiler with superheating-tubes	W. Schmidt	823,551	June 19	2686	566–8	122	2419
Boilers and the like. Grate for steam-	B. F. Hart, Jr	820,785	May 15	3538	758	122	908
Boilers. Chemical-injector for steam-	R. H. Fetta	823,941	June 19	3415	730	122	2580
Boilers. Lantern and plug for water-tube	J. P. Prentice	821,739	May 29	5534	1180	122	1462
Bolster. Body-	S. M. Curwen	819.736	May 8	1392	300	122	372
Bolster. Body-	T. M. Gallagher. (Reissue)	12.486	May 22	5248	1119	122	1344
Bolster. Spring-	J. H. Threlkeld	819,385	May 1	714	152	122	163
Bolt: *See* Lewis-bolt. Stay-bolt.							
Bolt and nut lock. Combined	O. E. Quitman, Jr	824,382	June 26	4256	907	122	2816
Bolt-retaining device	D. S. Kohler	821,297	May 22	4633	988	122	1208
Bolts. Machine for producing lath-	H. C. Erickson	820,855	May 15	3710	791	122	945
Book-back. Solid	A. C. Hafely	823,168	June 12	1892	390	122	2189
Book. Copy-	J. W. C. Gilman	819,877	May 8	1676	360	122	439
Book-cover	C. A. Johnson	823,605	June 19	2777	588	122	2439
Book-holder	E. J. Myers	819,910	May 8	1744	375	122	454
Book. Manifolding account-	B. A. Baxter	823,755	June 19	3059	648	122	2499
Book. Manifolding account-	B. A. Baxter	823,756	June 19	3060	648	122	2500
Book-mark and page-holder	E. L. Reynolds	824,144	June 26	3783	807	122	2717
Book-support	E. W. Barker	820,170	May 8	2343	510	122	584
Book-support	A. B. Brown	820,471	May 15	2931	636	122	773
Book-support	J. C. Dana	822,191	May 29	6403	1359	122	1661
Book-trimmer	A. Bredenberg	821,080	May 22	4220	897–8	122	1118
Books, papers, or cards. Machine for holding, cutting, and ornamenting the edges of	G. Ritchie	824,671	June 26	4839	1032–3	122	2942
Bookkeeping-machine	M. M. Cohn	822,584	June 5	708	143–4	122	1884
Boot and shoe cleaner	F. L. Rolph	821,193	May 22	4432	944	122	1165
Boot and the like stretching device	M. Tonko	820,942	May 15	3903	833	122	988
Boot. Interfering-	J. Trueb	819,473	May 1	878	191	122	197
Boot-tree and the like	F. von Essen	823,853	June 19	3252	688	122	2544
Boring-bar	S. and F. P. Dyer	819,743	May 8	1405	302	122	374
Boring-machine. Multiple	D. P. Page and A. Vanderveld	819,587	May 1	1063	238	122	243
Bottle	J. F. Moore	819,155	May 1	230	49	122	57
Bottle	L. A. Calhoun	820,093	May 8	2196	478	122	552
Bottle	J. W. McGowan	821,114	May 22	4279	910	122	1130
Bottle	E. W. Austen	821,579	May 22	5189	1107	122	1329
Bottle	H. D. Schaad	823,639	June 19	2855	604	122	2458
Bottle	R. Sauer	824,210	June 26	3925	841	122	2748
Bottle	W. F. Smart	824,447	June 26	4395	935	122	2843
Bottle. Antirefilling	H. O. Richter	819,169	May 1	250	54	122	62
Bottle. Artist's	R. Weber	822,793	June 5	1107	230	122	1971
Bottle attachment	H. B. Studley	820,679	May 15	3341	716	122	862
Bottle-cap	C. P. Byrnes	822,099	May 29	6219	1326	122	1619
Bottle-cap fastener	G. A. Williams	822,567	June 5	669	136	122	1875
Bottle-cap-finishing die	C. E. McManus	822,755	June 5	1046	214	122	1958
Bottle-closing device	A. C. Witzel	820,032	May 8	2058	450	122	521
Bottle-closure	J. Porter and F. C. Mayer	819,504	May 1	1094	241	122	246
Bottle-closure	C. Hammer	821,488	May 22	5035	1072	122	1298
Bottle-closure	C. H. Lyons	822,141	May 29	6294	1341	122	1636
Bottle-closure	L. Lawton	822,960	June 12	1448	302	122	2090
Bottle-closure	H. S. Brewington	823,026	June 12	1600	331	122	2126
Bottle-closure	H. S. Brewington	823,027	June 12	1601	331	122	2126

Alphabetical list of inventions for May and June—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Bottle-closure	G. Kirkegaard	823,125	June 12	1811	373	122	2170
Bottle-closure	W. J. Mueller	824,504	June 26	4509	956	122	2871
Bottle-closure	J. C. Kimsey	824,661	June 26	4821	1028	122	2938
Bottle. Coupon-	I. H. Vendig	823,008	June 12	1549	322	122	2114
Bottle-fastener	P. M. Peterson	823,437	June 12	2424	510	122	2303
Bottle-heater	H. H. Waugh	820,029	May 8	2047	449	122	518
Bottle-holder	C. Richter	822,984	June 12	1497	311	122	2104
Bottle-holder	R. B. Gilchrist	823,678	June 19	2927	619	122	2474
Bottle holder. Ink-	E. L. Drinkwater	822,725	June 5	999	204	122	1948
Bottle-indicator	W. H. Bixler	819,972	May 8	1911	423	122	486
Bottle-indicator	F. A. Frkovic	820,106	May 8	2221	482	122	559
Bottle-making apparatus	J. D. Cox	821,610	May 29	5271	1124	122	1405
Bottle-mold	T. C. Duffield	820,403	May 15	2797	608	122	745
Bottle-mold	T. C. Duffield	820,404	May 15	2799	609–10	122	745
Bottle. Non-refillable	J. Spinelli	819,320	May 1	577	123	122	133
Bottle. Non-refillable	E. K. Wood	819,490	May 1	910	199	122	203
Bottle. Non-refillable	S. C. Kindig	819,892	May 8	1710	367	122	447
Bottle. Non-refillable	J. De Haven	820,100	May 8	2208	480	122	555
Bottle. Non-refillable	E. L. Dimitry	820,401	May 15	2794	607	122	744
Bottle. Non-refillable	J. Burke	820,548	May 15	3105	668	122	812
Bottle. Non-refillable	G. C. Allen	820,754	May 15	3482	746	122	896
Bottle. Non-refillable	F. J. Gheen and A. Maucher	820,966	May 22	3982	845	122	1067
Bottle. Non-refillable	J. P. Stendebach	821,598	May 22	5229	1115–16	122	1338
Bottle. Non-refillable	H. Tolke, W. T. and H. Hensel	821,903	May 29	5849	1243	122	1535
Bottle. Non-refillable	D. Brummerhop	822,181	May 29	6383	1355	122	1655
Bottle. Non-refillable	J. F. Mullarkey	822,542	June 5	606	122	122	1860
Bottle. Non-refillable	G. De Grey	823,116	June 12	1789	368	122	2165
Bottle. Non-refillable	G. R. Howey	824,018	June 19	3565	761	122	2611
Bottle. Non-refillable	M. Loftus	824,035	June 19	3600	767	122	2618
Bottle. Non-refillable	J. Brunette	824,278	June 26	4047	866	122	2774
Bottle. Non-refillable	P. A. Brock	824,336	June 26	4153	889	122	2795
Bottle or similar washing apparatus	O. Vogel	821,005	May 22	4067	865–6	122	1085
Bottle or stand attachment. Ink	D. J. Rogers	820,671	May 15	3324	713	122	850
Bottle or vessel. Automatic dose-measuring	A. W. Hutchins	820,576	May 15	3156	680	122	824
Bottle. Protective	J. C. Henderson	822,739	June 5	1020	209	122	1952
Bottle-stopper	C. W. Voelpel	820,836	May 15	3678	784	122	938
Bottle-stopper	H. Bögelmann	821,456	May 22	4976	1058	122	1286
Bottle-stopper	M. J. and J. J. Harrington	821,638	May 29	5326	1134	122	1418
Bottle-stopper	R. Stock	822,400	June 5	330	68	122	1798
Bottle-stopper	H. B. Jones	824,122	June 26	3740	799	122	2707
Bottle-stopper	A. W. Cordes	824,341	June 26	4165	891	122	2797
Bottle-stopper fastener	J. A. Astarita	820,083	May 8	2172	473	122	547
Bottle-stoppers and the like. Binder for	F. T. Robinson	824,507	June 26	4513	958	122	2872
Bottle-washer. Turbine	T. L. Valerius	820,749	May 15	3468	744	122	892
Bottles and other vessels. Closure device for	R. Hoelemann	819,139	May 1	203	42	122	51
Bottles. Device for preventing the deceptive refilling of	L. F. Hammer	822,363	June 5	268	56	122	1784
Bottles. Device for preventing the deceptive refilling of	L. F. Hammer	822,364	June 5	269	57	122	1784
Bottles. Device for securing corks in	F. W. Schroeder	823,370	June 12	2302	482	122	2278
Bottles, jars, and similar vessels. Closure for	S. C. Kindig	823,124	June 12	1810	372	122	2169
Bottles, jars, &c. Closure for	S. C. Kindig	822,895	June 5	1315	271	122	2013
Bottles, jars, or other vessels. Self-fixing protective covering for	M. G Olivier	823,355	June 12	2280	477	122	2274
Bottles non-refillable. Means for rendering	H. O. Mascall	822,287	June 5	125	25	122	1756
Bowl. Casing	W. H. Kesselman	820,206	May 8	2406	522	122	598
Bowling-alley	H. B. Lahr	822,959	June 12	1447	302	122	2090
Bowling-alley pin-setter	J. C. Backus	821,276	May 22	4588	977	122	1200
Bowling-slipper	W. J. Barnett	820,757	May 15	3490	748	122	897
Box: *See* Bearing-box; Bell-box; Collapsible box; Display-box; Feed-box; Fire-alarm box; Folding box; Fuse-box; Grain-drill seedbox; Journal-box; Linotype-machine casting-box; Mail-box; Match-box; Match and cigarette box; Miter-box; Mold-box; Money-box; Non-refillable box; Outlet or junction box; Paper box; Pencil-box; Safety-box; Spool-holding box; Telephone toll-box; Tool-box; Train-despatcher's order-box.							
Box	P. H. Larkin	821,298	May 22	4635	988	122	1208
Box	J. Sutherland	823,823	June 19	3188	674	122	2530
Box blanks. Means for dampening the score-lines of folding-	F. B. Davidson and J. Wesson	823,850	June 19	3245	687	122	2542
Box construction	C. A. Herr	820,417	May 15	2832	617	122	751
Box-covering machine	J. Alger	820,166	May 8	2336	508–9	122	582
Box-covering machine	W. A. Cardy	823,032	June 12	1606	333	122	2127
Box-fastener	H. C. Summers	820,531	May 15	3075	662	122	806
Box-hinging machine	W. McMurray	820,244	May 8	2486	537–8	122	617
Box-lid holder	G. Mueller	822,975	June 12	1477	307	122	2097
Box-making machine	F. J. Reinhold	822,301	June 5	156	31–2	122	1762
Box-opener	I. N. Rogers	819,316	May 1	567	121	122	130
Boxes from hot forming-dies. Appliance for stripping pasteboard	J. Godfrey	824,293	June 26	4077	872	122	2780
Brace: *See* Breeching-brace; Car end brace.							
Bracelet	R. W. Inman	820,645	May 15	3262	701	122	846
Bracelet	F. Fetting	820,963	May 22	3975	844	122	1055
Bracelet	A. H. Bliss	823,024	June 12	1596	330	122	2125
Bracelet	T. W. Foster	824,072	June 19	3661	779	122	2632
Bracelet	T. W. Foster	824,073	June 19	3662	779	122	2632

Alphabetical list of inventions for May and June—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Bracelet	T. W. Foster	824,074	June 19	3663	780	122	2632
Bracelet	E. A. Phillips	824,379	June 26	4250	905	122	2815
Bracelet. Slide-	E. F. Presbrey	824,309	June 26	4100	877	122	2785
Bracket: *See* Car-door bracket; Curtain-pole bracket; Curtain-rod bracket; Electric-light bracket; Extensible bracket; Lamp-bracket; Shade-bracket; Shade and curtain bracket; Shade-roller bracket; Shingle-bracket; Wall-bracket; Window-bracket.							
Bracket	J. S. Detrick	823,162	June 12	1875	387–8	122	2184
Bracket. Universally-adjustable clamp-	F. B. Jones	819,285	May 1	508	107	122	118
Brake: *See* Air-brake; Automatic brake; Back-pedaling brake; Car-brake; Elevator-brake; Emergency-brake; Track-brake; Vehicle-brake; Wagon-brake.							
Brake	R. L. Alcorn	821,211	May 22	4464	950	122	1171
Brake-actuating device	J. Post	823,966	June 19	3466	741	122	2592
Brake-beam	W. Stevenson	823,306	June 12	2195	458	122	2256
Brake-beam	C. F. Huntoon	823,601	June 19	2774	587	122	2438
Brake-beam	C. F. Huntoon	823,602	June 19	2775	587	122	2439
Brake-beam	C. F. Huntoon	823,603	June 19	2775	587	122	2439
Brake-beam fulcrum	H. W. Frost	823,403	June 12	2350	496	122	2250
Brake-beam. Metal	J. R. Onderdonk	822,072	May 29	6172	1316	122	1608
Brake mechanism	E. O. Flichinger	823,942	June 19	3418	730	122	2611
Brake mechanism. Vehicle	G. D. Buchanan	819,511	May 1	943	206	122	211
Brake-shoe	H. T. Hornsby and T. R. Weston	820,115	May 8	2235	486	122	561
Brake-shoe	W. P. Taylor	821,000	May 22	4058	863	122	1083
Brake-shoe	J. C. Cordrey and P. J. Brady	821,462	May 22	4985	1059	122	1288
Brake-shoe	F. P. Collier	822,924	June 12	1382	288	122	2077
Brake-shoe	F. P. Collier	822,925	June 12	1383	288–9	122	2077
Brake-shoe. Steel-back	N. H. Davis	822,352	June 5	251	53	122	1781
Brake-shoes and manufacture. Composition for filled	W. R. Crowell and N. B. Varina	820,705	May 15	3386	.....	122	871
Braking apparatus	W. L. Holman	819,277	May 1	496	104	122	115
Branding-machine for casks, cases, and the like	J. Ingle	821,039	May 22	4136	879	122	1099
Branner feeding device	L. C. Steele	822,699	June 5	948	194	122	1938
Brassières	G. M. Poix	823,547	June 19	2678	564	122	2417
Bread and similar cake. Mold used in the manufacture of short-	S. Scott	824,445	June 26	4392	934	122	2843
Breast-strap protector	J. A. Scott	819,174	May 1	268	57	122	68
Breeching-brace. Harness	W. E. Murray	824,568	June 26	4641	986	122	2899
Brewers' and distillers' slop. Treating	C. J. Roehr	823,366	June 12	2298	.....	122	2277
Brick compound. Fire-	T. P. Gourley	822,600	June 5	749	.....	122	1893
Brick for chimneys	R. P. Weber	823,011	June 12	1563	324	122	2118
Brick. Interlocking	F. P. Allen and J. M. Schofield	824,329	June 26	4140	886	122	2793
Brick. Knife for striking off	J. Jackson and G. R. Hobbs	823,787	June 19	3124	662	122	2516
Brick-machine	P. Thomann	823,232	June 12	2051	426	122	2225
Brick-machine. Hand-power	J. A. Sodestrom	820,895	May 15	3815	814	122	968
Brick molding and pressing machine	H. G. Morris	819,781	May 8	1481	317	122	391
Brick-molding machine. Building-	A. C. Müller	820,590	May 15	3177	683	122	829
Bricks and artificial stone. Mold for manufacturing	G. A. Gould	820,298	May 8	2595	565	122	640
Bricks. Composition for the construction of	E. R. Stowell	819,467	May 1	869	.....	122	195
Bricks, &c. Device for cutting and setting	F. Beyer	821,453	May 22	4970	1057	122	1284
Bridge	C. Kutz	820,798	May 15	3575	764	122	916
Bridge	A. F. Campbell	822,581	June 5	703	142–3	122	1883
Bridge. Bascule-	R. E. Newton	824,135	June 26	3764	804	122	2712
Bridge. Draw-	B. F. Williams	820,687	May 15	3355	719	122	865
Bridge. Ferry-	N. W. Condict and J. B. French	824,627	June 26	4758	1014	122	2925
Bridge lock. Safety-	H. Alsop	820,842	May 15	3689	786	122	941
Bridle attachment	E. B. Merriman	820,658	May 15	3288	706	122	851
Bridle-bit	P. H. Flynn	821,033	May 22	4122	876	122	1097
Bridle-bit	H. Schlueter	823,368	June 12	2300	481	122	2277
Bridle-bit	H. Turton	823,564	June 19	2709	573	122	2424
Bridle-bit	H. Turton	823,565	June 19	2710	573	122	2424
Bridle-bit curber or controller	A. Buermann	822,504	June 5	533	109	122	1842
Briquet-press	J. J. Crawford	823,263	June 12	2110	439–40	122	2238
Briqueting-machine	C. Demetrak	820,288	May 8	2579	561–2	122	637
Broiler. Gas-	H. Gandar	824,477	June 26	4466	947	122	2861
Bronzing apparatus	C. Kohlbach	820,721	May 15	3419	731	122	880
Bronzing-machine	M. Fritsche	822,108	May 29	6234	1329	122	1622
Brooches, scarf-pins, and the like. Safety-lock for	F. Drissler	823,517	June 19	2621	551	122	2406
Brooder. Chicken-	G. S. Summers	823,902	June 19	3343	712–13	122	2565
Brooder. Cool	N. A. Lybeck	822,619	June 5	784	159	122	1901
Broom	C. E. Huxley	822,667	June 5	872	179	122	1921
Broom-holder	J. E. Kenerson	819,070	May 1	71	17	122	19
Broom-shield	H. E. Clark	822,507	June 5	537	110	122	1843
Brush	J. Schreiner	819,934	May 8	1792	387–8	122	464
Brush	H. W. Gowen	820,299	May 8	2597	565	122	641
Brush	W. H. Bennett	821,078	May 22	4216	896	122	1117
Brush	A. L. Sonn	821,894	May 29	5830	1240	122	1530
Brush	J. P. Wiens	821,968	May 29	5976	1273	122	1562
Brush	M. W. Wright	822,708	June 5	970	198	122	1942
Brush	R. E. Williams	823,312	June 12	2206	460	122	2257
Brush	S. D. Purdy	823,363	June 12	2291	479	122	2276
Brush	J. W. Ferguson	823,520	June 19	2624	551–2	122	2406
Brush and door-closer. Automatic fly-	A. Miller	821,880	May 29	5798	1235	122	1522
Brush-bridle	L. S. Lesso	822,377	June 5	293	60	122	1789
Brush cleaner. Paint and varnish	E. B. Alley and M. J. Sousa	820,081	May 8	2168	472	122	546
Brush-filling machine. Pneumatic	J. Morrison, Jr	824,503	June 26	4507	956	122	2871
Brush. Flat	J. F. Bowditch	822,571	June 5	679	138	122	1877
Brush. Folding	M. H. Tupper	821,320	May 22	4681	997	122	1219
Brush for bath-tubs. Adjustable back-	J. W. Bedford, Jr	819,200	May 1	328	70	122	81

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Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
				Spec.	Dr'g.	Vol.	Page.
Brush. Fountain-	W. I. Ferris	824,688	June 26	4873	1038	122	2948
Brush. Fountain paint-	G. Meyer and C. G. Braun	821,879	May 29	5797	1235	122	1522
Brush. Fountain paint-	C. H. Abbott	823,458	June 12	2464	520	122	2312
Brush. Hair-	C. R. Uhlmann	819,960	May 8	1880	415	122	481
Brush-holder	W. L. Waters	823,569	June 19	2717	575	122	2425
Brush-holder	C. A. Harris	824,206	June 26	4081	872	122	2780
Brush. Rotary	H. Nielson	822,757	June 5	1050	215	122	1959
Brush. Tooth-	S. E. Babcock	824,087	June 26	3688	785	122	2695
Brush with detachable handle. Bath-	B. D. Knickerbocker	823,471	June 12	2482	524	122	2316
Brush with grooved block. Sectional	C. A. Fetters	822,836	June 5	1200	246	122	1991
Bubble pipe. Soap-	J. Blonde	823,388	June 12	2330	488	122	2283
Bucket. Clam-shell	G. H. Williams	823,015	June 12	1570	325–6	122	2120
Bucket. Clam-shell	M. J. Purtle	823,290	June 12	2160	450–1	122	2248
Bucket Clam-shell	R. W. Kaltenbach and J. Griess, Jr.	823,412	June 12	2370	499	122	2292
Bucket. Clam-shell	R. W. Kaltenbach and J. Griess, Jr.	823,413	June 12	2373	500	122	2293
Bucket-wheel	J. Wilkinson	819,105	May 1	142	30	122	36
Buckle	E. M. Southwick	819,180	May 1	281	60	122	71
Buckle	H. D. and C. F. Jacobson	820 307	May 8	2808	568	122	644
Buckle	G. H. Ford	820,710	May 15	3399	727	122	876
Buckle	L. M. Kenton	821,170	May 22	4388	933–4	122	1155
Buckle	L. Sanders	822,080	May 29	6185	1318	122	1611
Buckle	C. A. Brewer	824,276	June 26	4043	866	122	2773
Buckle. Cross-line	C. A. Baker	821,976	May 29	5990	1277	122	1565
Buckle. Cross-line	F. S. Smith	822,396	June 5	324	67	122	1797
Buckle. Wrought-metal	C. S. and A. S. Huntington	823,868	June 19	3276	694	122	2550
Buffing-machine	A. W. Rogers	822,154	May 29	6329	1346–7	122	1645
Buffing-roll	J. Busfield	819,722	May 8	1361	294	122	366
Buggy	H. M. Foulk	819,133	May 1	196	40	122	49
Buggy-boot and fastener	P. J. Blaser	822,041	May 29	6115	1303	122	1595
Buggy-spring	W. M. Heeter	822,738	June 5	1019	209	122	1952
Buggy storm-front	J. A. Wilson	822,173	May 29	6369	1353	122	1652
Buggy. Top-	J. Morris	821,727	May 29	5513	1175	122	1458
Buggy-top support	W. N. Stroud	822,225	May 29	6469	1373	122	1676
Building-block	I. A. Vickerman	819,100	May 1	132	28	122	34
Building-block	C. S. Burton	820,387	May 15	2764	600	122	739
Building-block and wall constructed therefrom	A. O. Thomas	822,320	June 5	191	37	122	1769
Building-block lifter. Molded-	A. M. Balzer	820,946	May 22	3921	836	122	1053
Building construction	N. W. Harris and G. W. Stocker	823,528	June 19	2645	556	122	2410
Building construction	G. H. Dyer	824,470	June 26	4453	944	122	2858
Building construction and the like	W. N. Wight	820,461	May 15	2910	632–3	122	769
Building. Frame	A. Müller	822,295	June 5	141	28–9	122	1760
Building material. Composition	Z. B. Taylor	821,550	May 22	5142	.....	122	1320
Bundle of flexible material. Self-secured	J. F. Craft	819,858	May 8	1641	350	122	431
Bundling-press	T. C. Dexter	819,740	May 8	1399	301	122	373
Bundling-press	T. C. Dexter and C. O. L. Cardell.	819,741	May 8	1400	301–2	122	373
Bundling-press	T. C. Dexter	819,983	May 8	1931	427	122	490
Bundling-press	T. C. Dexter	819,984	May 8	1937	428	122	492
Bung attachment. Safety-	O. F. Skinner	820,371	May 8	2722	593	122	669
Bung. Faucet-	D. Beebe	824,228	June 26	3959	848	122	2755
Bung. Faucet-	D. Beebe	824,229	June 26	3961	849	122	2755
Bung-tin driver	E. J. Brooks	822,918	June 12	1375	286	122	2075
Bunsen burner for liquid hydrocarbons	P. Ulmann	824,268	June 26	4033	863	122	2770
Burglar-alarm	W. N. Fawcett	819,873	May 8	1670	359	122	438
Burglar-alarm	I. J. Neff	819,914	May 8	1748	376	122	455
Burglar-alarm	A. M. Andersen and H. H. Achershaug.	821,918	May 29	5877	1250	122	1541
Burglar-alarm	J. Balint	822,421	June 5	369	77	122	1806
Burglar-alarm	I. Watkins	823,831	June 19	3208	679	122	2535
Burglar-alarm	J. O. Morris	824,259	June 26	4019	860	122	2767
Burglar-alarm	J. Naser. (Reissue)	12,500	June 26	4008	1043	122	2956
Burglar-alarm. Detonating	L. W. Wade	824,161	June 26	3823	815	122	2726
Burial-casket	L. H. Montrose	819,301	May 1	537	114	122	124
Burial-casket	R. R. Cramer	823,035	June 12	1612	334	122	2129
Burial-casket	J. D. Renshler	823,741	June 19	3035	642	122	2495
Burner: *See* Alcohol-burner. Bunsen burner. Carbureted-air burner. Fluid-fuel burner. Gas-burner. Hydrocarbon-burner. Incandescent burner. Lamp-burner. Oil-burner.							
Bushing	C. A. Widmer	821,690	May 29	5438	1158	122	1440
Bushing. Split	R. Croasdale	819,982	May 8	1928	426	122	490
Butter and fats. Apparatus for melting and purifying	C. D. Monroe	823,803	June 19	3157	668	122	2523
Butter-cutter	G. Ericson	824,472	June 26	4456	945	122	2859
Butter-package	S. M. Brown	823,030	June 12	1604	332	122	2127
Butter-tray machine	P. D. and A. E. Moody	820,725	May 15	3426	733–4	122	882
Button	C. H. Lonsdale	819,807	May 8	1719	369	122	449
Button	I. M. Sylvester	820,532	May 15	3077	662	122	807
Button and pin fastener. Combined	R. Ellis	822,729	June 5	1007	205	122	1950
Button. Collar-	C. C. Figgatt	822,200	May 29	6415	1362	122	1663
Button. Collar-	H. T. Murphy	823,135	June 12	1828	377	122	2174
Button. Collar and cuff	C. S. Pederson	819,590	May 1	1086	239	122	244
Button. Collar or cuff	D. Pamp	820,729	May 15	3433	735	122	883
Button. Detachable	I. Miller	820,588	May 15	3171	683	122	827
Button-fastener	J. C. Morrison	822,539	June 5	600	121	122	1859
Button for gloves, &c. Detachable	H. Kerngood	822,957	June 12	1444	301	122	2090
Button or stud	I. M. Sylvester	820,682	May 15	3348	717	122	863
Cabinet	T. A. Ferris	821,350	May 22	4751	1010–11	122	1237
Cabinet. Combination-	T. Polster	820,732	May 15	3440	737	122	884
Cabinet. Commodity-	J. H. Boye	823,202	June 12	1973	411	122	2208
Cabinet. Compartment-	R. W. Sturr	823,901	June 19	3342	712	122	2564
Cabinet. Kitchen-	W. H. Hurt and J. E. Craig	821,167	May 22	4383	932–3	122	1154

Alphabetical list of inventions for May and June—Continued.

Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
				Spec.	Dr'g.	Vol.	Page.
Cabinet. Kitchen-	O. Goodwin	821,481	May 22	5022	1068–9	122	1295
Cable-reel turner	J. Cleeland	820,552	May 15	3112	670	122	814
Cables. Fair-lead for hoisting-	S. L. G. Knox and W. E. Magie	823,414	June 12	2376	500–1	122	2293
Cableway	O. C. Redding	822,770	June 5	1071	220–1	122	1963
Cake-forming machine	E. B. Anderson	822,568	June 5	671	137	122	1876
Calcining furnace. Carbon-	P. P. Nungesser	824,199	June 26	3893	831	122	2741
Calcium oxid. Reducing	T. L. Willson	820,031	May 8	2053	450	122	519
Calculating and type-writing machine. Combined	C. F. Laganke and J. A. Smith	820,879	May 15	3742	799–802	122	952
Calculating-machine	C. F. Laganke and J. A. Smith	820,880	May 15	3766	802–4	122	957
Calculating-machine	H. A. Hensley	823,219	June 12	2011	419–20	122	2215
Calculating-machine	F. Trinks	823,375	June 12	2310	484–5	122	2279
Calculating-machine	C. A. Mellicke	823,426	June 12	2400	506	122	2290
Calculating-machine	G. H. Sears	823,897	June 19	3327	709–10	122	2561
Calculating-machine	G. E. Schuman	824,510	June 26	4518	959–60	122	2873
Calculating or computing machine	J. Gruner	823,525	June 19	2637	554	122	2409
Calculator	F. W. Bennett	819,715	May 8	1343	291–2	122	362
Calculator	K. H. J. Marckwordt	820,226	May 8	2438	528	122	606
Calendar	J. N. Parker	822,690	June 5	934	190	122	1935
Calendar. Perpetual	J. Guidinger	823,723	June 19	3001	636	122	2488
Calipers	A. S. Koch	820,796	May 15	3573	764	122	915
Calipers and dividers	G. C. Smith	822,397	June 5	326	67	122	1797
Calipers. Micrometer-	F. G. Marbach	820,807	May 15	3602	770	122	922
Calking-machine	C. Youngstrom	821,970	May 29	5980	1274	122	1563
Cam. Sectional	J. J. Hervey	821,038	May 22	4134	878	122	1099
Camera. Hand-	C. E. Peczenik	819,918	May 8	1754	377–8	122	456
Cameras. Reversible back for photographic	L. Borsum	823,759	June 19	3067	649–50	122	2501
Cameras, telescopes, and other scientific instruments. Stand for photographic	W. Butler	821,335	May 22	4712	1003–4	122	1225
Can: *See* Dispensing-can. Garbage-can. Ice-cream can. Oil-can.							
Can	J. J. McLinden	820,592	May 15	3179	684	122	829
Can	J. F. Ross	821,888	May 29	5809	1238	122	1525
Can-body-making machines. Automatic blank-feed for	P. Foss	821,998	May 29	6028	1284	122	1574
Can-closure	J. J. Moser	823,429	June 12	2409	507	122	2300
Can-closure	J. J. Moser	823,430	June 12	2411	507	122	2300
Can-cover-lining machine	J. Brenzinger	822,342	June 5	230	47–8	122	1776
Can-drying apparatus	M. Leitch	823,731	June 19	3013	638–9	122	2490
Can-filling machine	J. P. Haight	819,274	May 1	488	101–2	122	113
Can-heading machine	J. Brenzinger	819,264	May 1	458	96	122	106
Can-heading machine	H. C. H. Walsh	820,454	May 15	2899	630	122	766
Can-heading machine	J. Brenzinger	821,605	May 29	5263	1122	122	1403
Can-heading machine	J. Brenzinger	823,254	June 12	2095	436	122	2235
Can-heading machine	E. A. Durfey	820,708	May 15	3391	726	122	873
Can holder. Oil-	W. B. Walker	820,273	May 8	2541	551	122	629
Can, jar, &c.	J. G. Hodgson	823,781	June 19	3117	660	122	2514
Can loading and counting machine	J. G. Hodgson	823,780	June 19	3115	660	122	2513
Can loading and counting mechanism or apparatus	A. P. Read	819,455	May 1	842	181	122	188
Can-opener	N. Nelson	822,624	June 5	795	162	122	1902
Can spout-cap. Oil-	W. E. Bowersock	822,179	May 29	6379	1355	122	1655
Canceling-tool	P. M. Knippenberg	820,209	May 8	2412	523	122	599
Candle holder and stick	J. Glatz	819,646	May 1	1200	.....	122	269
Candle materials. Manufacture of	E. L. Weed	824,609	June 26	4725	1006	122	2918
Candlestick. Miner's	K. Kiefer	819,286	May 1	511	107	122	118
Candying cherries	J. Buchanan	819,037	May 1	6	2	122	4
Cane-mill	M. R. Spelman	820,074	May 8	2151	469–70	122	543
Cane mill. Sugar-	E. J. Blood	821,331	May 22	4703	1002	122	1223
Cannon	W. C. Heitkamp	819,995	May 8	1960	434	122	497
Cannon. Smooth-bore rotating	W. J. Slyder	822,635	June 5	816	166	122	1907
Canopy-support	V. Mellberg	820,724	May 15	3422	732–3	122	881
Capsule closing and printing machine	H. King	820,720	May 15	3417	731	122	880
Capsule-filler	S. S. König	819,144	May 1	210	44	122	53
Capsule machine. Wafer-	R. F. Pierce	820,366	May 8	2714	591	122	667
Car and brake. Railway	G. E. Hanes	820,782	May 15	3534	757	122	907
Car appliance. Railway-	W. H. Emerick and P. Alquist	819,047	May 1	23	6	122	8
Car-body	H. M. Pflager	824,203	June 26	3904	834	122	2743
Car-body bolster and draw-bar spring-pocket. Combined	H. M. Pflager	821,735	May 29	5526	1179	122	1461
Car-body bolsters. Combined brace and draw-bar pocket for	J. B. Barnes	822,908	June 12	1352	281	122	2070
Car-bolster	S. Otis	822,979	June 12	1482	309	122	2098
Car bolster. Railway-	W. W. Broga	819,203	May 1	339	73	122	83
Car-brake	O. M. Jones	822,522	June 5	575	116	122	1852
Car-brake	H. T. Brown	823,255	June 12	2097	436	122	2235
Car-brake	C. B. Mead and R. S. Fullerton	823,285	June 12	2152	449	122	2246
Car-brake	P. W. Clark	824,093	June 26	3695	787–8	122	2697
Car-brake	H. B. Burke	824,467	June 26	4448	944	122	2857
Car-brake	E. I. Dodds	821,616	May 29	5282	1127	122	1408
Car-brake-actuating mechanism	S. A. Crone	819,734	May 8	1388	299	122	371
Car brake-beam. Railway-	E. I. Dodds	821,617	May 29	5284	1127	122	1409
Car-brake-operating mechanism	E. I. Dodds	821,618	May 29	5286	1128	122	1410
Car-brake-operating mechanism	T. McCormick	821,524	May 22	5007	1066	122	1311
Car-bumper. Pneumatic concrete steel	E. Wyatt	823,983	June 19	3504	748–9	122	2568
Car. Combined stock and freight	F. L. Sessions	821,317	May 22	4673	996	122	1216
Car conductor. Electric-	E. M. Erb	820,961	May 22	3970	843	122	1064
Car construction	J. C. Herrmann	821,490	May 22	5040	1073	122	1299
Car construction	A. Porter	822,474	June 5	499	95	122	1827
Car. Convertible	J. K. Cothern	821,464	May 22	4988	1060	122	1288
Car-coupling	A. H. Renshaw	819,314	May 1	563	120–1	122	129
Car-coupling	F. F. Wagner	819,388	May 1	719	152	122	163
Car-coupling	G. W. Smillie	820,677	May 15	3333	715	122	861
Car-coupling	J. Housholder and J. C. Galbreath.	820,871	May 15	3731	796	122	949
Car-coupling	J. W. Robertson	821,539	May 22	5120	1090	122	1316
Car-coupling	C. Dietz	821,789	May 29	5641	1201–2	122	1488

Alphabetical list of inventions for May and June—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Car-coupling	W. McConway, Jr	821,953	May 29	5948	1267	122	1555
Car-coupling	L. C. Cary	822,344	June 5	236	49	122	1777
Car-coupling	C. Schiared	822,483	June 5	499	101	122	1835
Car-coupling	M. R. Kneedler	822,526	June 5	581	117	122	1854
Car-coupling	W. Slayden	823,643	June 19	2980	605	122	2459
Car-coupling	L. G. Daniels and W. B. Kirkpatrick.	824,097	June 26	3701	789	122	2098
Car-coupling	J. Farlow	824,239	June 26	3685	853	122	2760
Car-coupling. Automatic	E. King	821,505	May 22	5061	1078	122	1303
Car-coupling. Automatic	H. L. Blue	823,154	June 12	1863	385	122	2181
Car-coupling. Automatic	S. P. Bush	823,990	June 19	3514	751	122	2601
Car-coupling-unlocking means	C. H. Tomlinson	821,204	May 22	4453	948	122	1169
Car-couplings. Emergency attachment for automatic	J. A. Hinson	820,644	May 15	3259	701	122	846
Car-couplings. Pivot-pin-retaining means for	R. E. L. Janney	820,048	May 8	2093	457	122	530
Car. Device for setting switches by the motorman from the	C. Trebesiner	819,619	May 1	1137	251	122	256
Car-door	C. W. Tefft	820,153	May 8	2308	504–5	122	577
Car-door apparatus	J. Shaffer	820,020	May 8	2025	444	122	514
Car-door bracket	J. L. Mallory	819,151	May 1	223	47	122	56
Car door. Grain-	G. Willson, A. E. and E. Ostberg	819,108	May 1	148	31	122	38
Car-door lock	C. M. Carnahan	823,762	June 19	3071	651	122	2502
Car-door-operating mechanism	E. I. Dodds	820,852	May 15	3707	791	122	945
Car-door-operating mechanism	J. C. Herrmann	823,862	June 19	3268	693	122	2548
Car-door-operating mechanism	J. C. Herrmann	823,863	June 19	3269	693	122	2549
Car-door safety guide-bracket	E. J. Kates	823,047	June 12	1633	338	122	2133
Car draft and buffing gear	I. O. Wright and J. H. Farlow	820,840	May 15	3685	786	122	940
Car draw-bar-centering device. Railway-	T. R. Brown	821,084	May 22	4231	900	122	1120
Car draw-bar-centering device. Railway-	T. R. Brown	821,085	May 22	4232	900	122	1120
Car. Dump-	E. S. Hart	820,046	May 8	2080	456	122	529
Car. Dump-	S. Otis	821,528	May 22	5101	1087	122	1312
Car. Dump-	J. Shelton	822,778	June 5	1084	223–4	122	1966
Car. Dump-	S. Otis	823,631	June 19	2837	600	122	2453
Car. Dumping-	A. Mieden	820,006	May 8	2000	438–9	122	508
Car. Dumping-	T. H. Stagg	820,024	May 8	2032	446	122	515
Car. Dumping-	E. C. Sherman and W. W. McKalvey.	820,144	May 8	2292	500–1	122	573
Car. Dumping-	J. Knittel	821,808	May 29	5679	1209	122	1497
Car. Dumping-	D. King	824,365	June 26	4223	900	122	2810
Car-dumping machines. Apron for	J. McMyler	820,434	May 15	2858	622	122	757
Car end brace	H. W. Wolff	823,837	June 19	3221	681	122	2538
Car end bracing	H. W. Wolff	819,489	May 1	909	199	122	203
Car end bracing	H. W. Wolff	823,838	June 19	3223	682	122	2538
Car-fender	J. Dobos	819,044	May 1	17	5	122	7
Car-fender	E. A. Johnson	820,117	May 8	2238	487	122	562
Car-fender	J. C. Jorgensen	820,204	May 8	2400	521	122	596
Car-fender	J. A. Sage	820,317	May 8	2621	571	122	646
Car-fender	F. A. Seeley	820,607	May 15	3203	689	122	834
Car-fender	H. Ekrem	821,346	May 22	4746	1009	122	1236
Car-fender	E. Tallaksen	823,003	June 12	1536	320	122	2111
Car-fender	M. Wick	824,519	June 26	4540	964	122	2878
Car-fender	C. Hager and T. D. Finizie	824,541	June 26	4585	975	122	2887
Car-fender	C. Hager and T. D. Finizie	824,542	June 26	4587	975	122	2887
Car-fender especially adapted for street-railways	M. S. Aisbitt	819,967	May 8	1897	420	122	483
Car fender. Street-	A. L. Mazzanovich	820,005	May 8	1998	438	122	507
Car fender. Street-railway-	J. Post	820,733	May 15	3441	737	122	885
Car folding stanchion. Lumber-	J. S. O'Neal	819,585	May 1	1079	237	122	243
Car for railways, &c. Removable	P. J. Mittan	824,188	June 26	3870	826–7	122	2736
Car-frame	W. H. Emerick and P. Alquist	819,048	May 1	24	6	122	8
Car frame. Passenger-	G. Gibbs	819,215	May 1	361	77–8	122	87
Car frame. Railway-	W. F. Kiesel, Jr	823,790	June 19	3131	663–4	122	2517
Car. Freight-	A. Becker	824,615	June 26	4740	1010	122	2921
Car grain-door	T. Lennox	822,458	June 5	435	89	122	1819
Car grain-door	E. Posson	822,630	June 5	806	164	122	1905
Car grain-door	L. J. Migheil	823,735	June 19	3026	640	122	2493
Car grain-door. Freight-	J. Rohrberg	822,477	June 5	472	96	122	1828
Car guard. Open-railway-	E. W. Wheelock	822,703	June 5	957	195	122	1940
Car-loader	J. G. Huffman	819,279	May 1	499	104–5	122	115
Car. Mine-	W. W. Keefer and C. E. Ward	822,671	June 5	885	181	122	1924
Car. Motor-	M. Ehret	822,104	May 29	6229	1328	122	1621
Car or wagon. Dumping	E. S. Boyd	822,820	June 5	1165	240	122	1963
Car. Passenger-	H. F. Vogel	824,393	June 26	4277	911	122	2820
Car. Pleasure-	J. D. Walsh	820,453	May 15	2898	630	122	766
Car. Poultry-	C. L. Bundy	819,512	May 1	946	207	122	212
Car. Railway-	H. F. Vogel	822,639	June 5	825	168	122	1909
Car. Railway-	M. Rounds	824,209	June 26	3923	840–1	122	2747
Car. Railway freight-	O. W. Meissner and W. Yost	820,058	May 8	2114	461	122	535
Car. Railway freight-	W. R. Mulock	820,340	May 8	2468	534–5	122	612
Car-replacer	S. C. Johnson and G. H. Miller	822,669	June 5	874	180	122	1921
Car-roof	O. Link	820,362	May 8	2703	590	122	665
Car-roof door	J. C. Herrmann	824,077	June 19	3670	781	122	2633
Car-roof. Metallic	A. Campbell	824,169	June 26	3838	819	122	2729
Car-roof. Metallic	A. Campbell	824,170	June 26	3839	820	122	2729
Car-seat	W. H. Heulings, Jr	819,757	May 8	1438	307	122	382
Car-seat	H. Witte	822,643	June 5	832	170	122	1911
Car-seat	E. G. Budd	823,256	June 12	2099	437	122	2235
Car. Sleeping-	T. O. Abbott	819,196	May 1	321	68–9	122	80
Car sliding doors. Guide-bracket for freight-	C. B Hale	819,754	May 8	1422	306	122	377
Car-stake	C. F. Flemming	823,270	June 12	2123	443	122	2240
Car stake and load-binding device	T. Green	819,216	May 1	363	79	122	87
Car standard. Flat-	G. W. Du Bes	819,527	May 1	972	213	122	218
Car-step. Extension	G. G. Johnson	820,876	May 15	3737	798	122	951
Car-step. Folding and extension	J. S. Coxey	822,102	May 29	6222	1326	122	1619
Car-step holder	J. Edwards	823,325	June 12	2227	464	122	2262
Car. Stock-	C. W. McKeehen	823,890	June 19	3317	706	122	2559
Car-stopping device. Automatic	A. D. Skillman	822,161	May 29	6342	1349–50	122	1647

Alphabetical list of inventions for May and June—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Car-unloading apparatus	A. Buquet and A. Crochet	824,621	June 26	4747	1011	122	2922
Car-vestibule curtain	E. C. Holmes	820,195	May 8	2386	519	122	594
Car-wheel	F. Latimer	819,202	May 1	519	109	122	120
Car-wheel	S. P. Bush	824,407	June 26	4312	918	122	2826
Car-wheel. Lubricating	W. H. Thompson and C. J. Swank	822,560	June 5	644	129	122	1868
Cars. Gate-opening mechanism for railway-	W. S. Wright	821,273	May 22	4585	976	122	1199
Cars. Locking and releasing mechanism for standards of logging-	G. W. Du Bes. (Reissue)	12,482	May 15	3911	834–5	122	990
Cars. Machine for loading coal from the tipples into	A. T. Goff	820,565	May 15	3136	674–5	122	819
Cars. Metallic underframe for passenger-	A. Stucki	824,084	June 19	3681	783	122	2636
Cars or vehicles along a railway. Control of apparatus governing the passage of	M. V. Van Wyck	819,326	May 1	593	125–6	122	137
Cars or vehicles along a railway. Control of apparatus governing the passage of	M. M. V. Van Wyck	819,327	May 1	598	126	122	137
Cars. Safety system for motor-propelled	J. A. Miller	823,478	June 12	2515	528	122	2323
Cars, &c. Self-releasing brake-handle for tram-	M. Belmondo	819,402	May 1	746	158	122	169
Cars, &c. Standard for lumber-	J. Malone	820,585	May 15	3168	682	122	827
Cars. Traction-increasing device for street-	H. H. Fox	821,352	May 22	4759	1012	122	1239
Carbid-feeder	O. M. Brauer	821,332	May 22	4707	1002–3	122	1224
Carbid. Manufacture of	H. L. Hartenstein	819,219	May 1	368	.....	122	88
Carbid. Manufacture of	H. L. Hartenstein	819,222	May 1	371	79	122	89
Carbid. Producing	H. L. Hartenstein	819,220	May 1	369	.....	122	88
Carbid. Production of	H. L. Hartenstein	819,221	May 1	370	.....	122	89
Carbon-producing apparatus	T. P. Sharts	819,606	May 1	1109	245	122	249
Carbureted-air burner for heating, cooking, &c.	O. M. Hudson	824,361	June 26	4202	898	122	2808
Carburetер	H. A. Burch	820,036	May 8	2065	451	122	523
Carburetер	M. D. Colbath	820,554	May 15	3114	671	122	814
Carburetер	P. H. Brennan	821,081	May 22	4224	898	122	1118
Carburetер	A. Akeson	823,382	June 12	2320	496	122	2281
Carbureter. Explosive-engine	J. B. D. M. Malezieux	823,608	June 19	2783	589–90	122	2440
Carbureter for explosive-engines	W. J. Steinbrenner and G. J. Mayer.	823,485	June 12	2529	530–1	122	2336
Carbureter for gasolene-engines	R. A. Middleton	822,681	June 5	903	185	122	1929
Carbureter. Hydrocarbon-engine	A. A., F., and G. Longuemare	820,583	May 15	3165	682	122	826
Card. Coin-	F. W. Stack	823,817	June 19	3177	672	122	2527
Card support. Jacquard-	A. J. Lagasse	824,491	June 26	4491	951	122	2867
Cards. Playing-	B. Cadwallader	821,781	May 29	5618	1197	122	1483
Cardboard cutting machine. Oval and round	D. T. McCall	822,976	June 12	1478	308	122	2097
Carousal. Water-	A. Pusterla and P. Testi	821,060	May 22	4170	887	122	1105
Carpenter's jack	I. E. Wyer	822,093	May 29	6207	1323	122	1616
Carpet-cleaner. Pneumatic	J. L. Chesnutt	824,683	June 26	4862	1036	122	2946
Carpet-cleaning machine	H. W. Strasshoefer	821,764	May 29	5588	1190–1	122	1476
Carpet-cutter and the like	N. W. Aldous	820,692	May 15	3362	720	122	866
Carpet fabric	C. C. Stewart	824,045	June 19	3616	770	122	2622
Carpet-fastener	W. Kernochan	820,502	May 15	3009	647	122	791
Carpet-sweeper	H. W. Ru Ton	822,631	June 5	809	164	122	1905
Carriage. Child's	S. D. Butterworth, Jr	824,622	June 26	4748	1011–12	122	2923
Carriage. Collapsible baby-	A. Stein	821,896	May 29	5831	1240–1	122	1530
Carriage-curtain	C. W. Schreiter	820,264	May 8	2525	547	122	625
Carriage-curtain knob	F. A. Neider	819,158	May 1	237	50	122	59
Carriage running-gear. Baby-	K. I. Faust	819,694	May 1	1301	283	122	292
Carriage. Shifting-seat	C. Wesp	821,910	May 29	5861	1246	122	1538
Carriage spring. Child's	W. Diemer	821,472	May 22	5002	1063	122	1291
Carriage-top stop	W. L. Smith	824,679	June 26	4851	1034	122	2945
Carrier: *See* Luggage-carrier. Poultry-carrier. Reel-carrier. Trace-carrier.	J. O. Raymond	821,963	May 29	5966	1271	122	1560
Carrier system	J. A. Suerth	823,822	June 19	3186	674	122	2530
Carrier system	J. Strauss	821,967	May 29	5974	1273	122	1561
Carrying-handle	H. Freise	822,265	June 5	79	16	122	1746
Cart. Dust-	H. F. Clark	819,518	May 1	956	209	122	214
Cartridge	F. H. Richards	824,146	June 26	3785	808–9	122	2717
Carving-machine							
Case: *See* Cracker-case. Display-case. Packing-case. Sewing-machine bobbin-case. Sewing-machine reel-case. Show-case. Show or display case. Syringe-case. Thermometer-case. Ticket-case.							
Case-hardening apparatus	A. W. Machlet	822,460	June 5	437	90	122	1820
Casement for swinging closures. Tight and noiseless	S. W. Funk	821,353	May 22	4760	1012	122	1239
Casing-spear	F. N. Donaldson	824,530	June 26	4558	969	122	2882
Casein solution and producing same	H. V. Dunham	821,620	May 29	5290	.....	122	1410
Cash-carrier apparatus	D. E. Chism	820,955	May 22	3941	839–40	122	1057
Cash-register	J. P. Cleal	822,824	June 5	1170	241–2	122	1984
Cash-register	L. Cooney, Jr	823,511	June 19	2598	547–8	122	2401
Cash-register	W. G. Doty	823,516	June 19	2617	550	122	2405
Cash-register	L. Cooney, Jr	823,767	June 19	3086	653–4	122	2505
Cash-register. Change-making	W. H. Collier	823,104	June 12	1763	363–5	122	2160
Cask, barrel, drum, and the like	A. Mauser	820,228	May 8	2441	529	122	607
Cask. Metal	A. Holle	820,306	May 8	2607	568	122	643
Cask-support	G. S. Rominger	824,586	June 26	4683	996	122	2909
Casket	T. F. Combs	824,284	June 26	4055	868	122	2775
Caster	J. M. Harper	824,422	June 26	4353	926	122	2835
Caster	T. and A. E. Bourne	824,619	June 26	4744	1010	122	2922
Caster attachment for adding-machine stands	A. Hendricks	823,468	June 12	2478	523	122	2315
Caster. Guarded	A. F. Hasey	823,408	June 12	2364	498	122	2291
Caster. Sheet-metal roller-bearing furniture-	M. B. Schenck	821,750	May 29	5563	1183	122	1470
Casting anode-plates. Mold for	R. Truswell	823,977	June 19	3490	745	122	2595
Casting mold. Metal	J. Janitschek	821,718	May 29	5499	.....	122	1455
Cattle-guard	E. R. Kerr	824,247	June 26	4000	856	122	2768
Cattle-guard	J. M. Lee	824,303	June 26	4091	875	122	2782
Cell-cases. Machine for making	W. B. Sheperd	824,155	June 26	3806	812–13	122	2722
Cellulose	J. S. Cochran	822,430	June 5	384	.....	122	1808

Alphabetical list of inventions for May and June—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Cellulose	J. S. Cochran	822,883	June 5	1292	266	122	2009
Cement. Armored	P. Zucco	821,569	May 22	5172	1104	122	1326
Cement block and post machine	C. O. White and R. Wilcox	820,458	May 15	2907	632	122	769
Cement-block machine	J. J. Cox	820,098	May 8	2204	479–80	122	554
Cement bridge construction. Reinforced-	O. A. Slater	820,743	May 15	3458	741	122	890
Cement building-block	G. W. Roberts	822,078	May 29	6182	1317	122	1611
Cement burial-vault	G. B. Okey	821,185	May 22	4412	939–40	122	1161
Cement cisterns. Extensible dome form for	F. R. Kelser	824,548	June 26	4609	978	122	2802
Cement clinker. Burning	H. L. Doherty	820,484	May 15	2964	641	122	781
Cement-mold	W. F. McNamire	823,963	June 19	3458	739	122	2390
Cement-post mold	J. T. Wilson	823,457	June 12	2462	520	122	2311
Cement-tile machine	L. R. Peck	819,251	May 1	429	90	122	100
Cementitious bodies. Reinforcing-bar for	E. F. Crane	820,704	May 15	3385	724	122	871
Centrifugal machine	A. J. Ericsson	822,196	May 29	6410	1361	122	1662
Centrifugal machine	F. Kaehl	823,948	June 19	3430	732	122	2584
Centrifugal machines. Means for hanging and centralizing overdriven	G. Dinkel	820,851	May 15	3702	790–1	122	943
Chain	C. W. Levalley	820,219	May 8	2426	526	122	603
Chain	J. A. Waller	820,452	May 15	2896	629	122	766
Chain	C. W. Levalley	823,420	June 12	2386	503	122	2295
Chain. Dredge-	E. L. Smith and J. M. Sherrerd	822,395	June 5	321	66–7	122	1796
Chair: *See* Baby-chair. Bent-wood chair. Child's chair. High chair. Rail-chair. Reclining-chair. Stair-chair.							
Chair	J. E. Hanger	820,864	May 15	3721	793–4	122	947
Chair	A. Wanner, Jr.	823,146	June 12	1847	381	122	2177
Chair attachment. Barber's	G. E. Organ	819,248	May 1	426	90	122	100
Chair-back. Adjustable	M. F. Glennon	824,006	June 19	3548	757	122	2607
Chair fanning attachment. Rocking-	B. Heinerid	824,481	June 26	4471	948	122	2962
Chair-guard	I. Unger	821,388	May 22	4840	1027	122	1255
Chair-iron	H. W. Bolens	820,620	May 15	3224	694	122	838
Chair-iron	J. E. Gilson	821,034	May 22	4126	877	122	1097
Chair-seats. Hinge-bracket for	A. Wanner, Jr.	819,477	May 1	882	193	122	197
Chandelier attachment	H. V. Willman	819,107	May 1	147	30	122	37
Channel-pin	E. W. Vogel	822,168	May 29	6359	1351	122	1651
Channel-pins. Machine for manufacturing	H. H. Vaughan	821,556	May 22	5151	1099	122	1321
Channeling-machine	A. H. Gibson	822,597	June 5	741	149–50	122	1801
Chart or scale. Color	A. H. Munsell	824,374	June 26	4238	903–4	122	2812
Check holding and cutting device. Conductor's	A. D. Joslin	822,523	June 5	576	116	122	1853
Check-loop	W. W. Gleckner	824,005	June 19	3547	757	122	2607
Check-marker	L. Smith	819,318	May 1	571	122	122	131
Check-protector	C. S. Carrier	819,705	May 1	1318	286	122	296
Check-rower indicator	E. Steinmann and H. Schielke	822,488	June 5	505	102–3	122	1836
Checking or unchecking device	C. J. Castera, Jr.	821,216	May 22	4472	952	122	1173
Cheese-cutter	C. W. Bridges	819,510	May 1	941	205–6	122	210
Cheese-cutter	J. Halliday	820,302	May 8	2601	566–7	122	642
Cheese-cutter	A. C. La May	821,175	May 22	4395	935–6	122	1157
Cheese-cutter	A. B. Roach	823,138	June 12	1834	378	122	2175
Cheese-cutter	A. B. Roach and A. J. Hodge	823,227	June 12	2041	424	122	2223
Cheese-cutter. Automatic computing	F. F. Wear	819,679	May 1	1263	275–6	122	283
Cheese-cutter. Computing	C. D. Lender	823,689	June 19	2945	623	122	2477
Cheese. Making	C. J. Buskist and J. W. Mutter	821,334	May 22	4711	.....	122	1225
Chenille-machine	C. Wiebke	822,704	June 5	959	195–6	122	1941
Chest and desk. Field	E. S. Sayer, Jr	823,700	June 19	2962	627	122	2480
Child's chair	W. F. Oliver	822,383	June 5	302	62	122	1791
Chimney	L. Sepulchre	819,938	May 8	1800	389	122	466
Chimney	C. Weber	823,197	June 12	1966	409–10	122	2206
Chimney-flue thimble	C. C. and N. B. Elliott	821,933	May 29	5909	1257	122	1548
Chimney-top	J. F. Spatz	823,194	June 12	1955	407	122	2203
Chip-sorting apparatus	H. Powers	824,141	June 26	3774	805–6	122	2714
Chisel. Hollow mortising-	B. C. Rockwell	824,673	June 26	4842	1033	122	2943
Chisel. Stone-cutter's	J. W. Fox	822,205	May 29	6425	1364	122	1665
Chlorin. Manufacture of	A. Clemm	819,410	May 1	760	.....	122	172
Chloroform-dropper	F. Wachter	823,233	June 12	2051	426	122	2225
Chocolate-cutter	L. H. and F. J. Finnegan	820,633	May 15	3243	697	122	843
Chopper: *See* Cotton-chopper. Food-chopper. Meat-chopper.							
Christmas-tree attachment	A. R. Treichel	824,603	June 26	4717	1004	122	2916
Chuck	W. A. Schmid and C. J. Macomber	820,263	May 8	2524	546–7	122	625
Chuck	P. A. Whitney and R. C. Ellrich	821,687	May 29	5434	1157	122	1439
Chuck	P. A. Whitney and R. C. Ellrich	821,688	May 29	5435	1157	122	1440
Chuck	P. A. Whitney and R. C. Ellrich	821,689	May 29	5437	1158	122	1440
Chuck	E. A. Noll	822,977	June 12	1479	308	122	2097
Chuck	J. F. Buckley, D. C. Kline, and H. Singleton	823,031	June 12	1605	332–3	122	2127
Chuck	J. Petrelli	823,545	June 19	2672	563	122	2416
Chuck	P. Thomas	824,085	June 19	3683	784	122	2636
Chuck	S. A. Eiermann	819,744	May 8	1407	303	122	374
Chuck. Drill-	A. E. Church	823,033	June 12	1609	333	122	2128
Chuck. Scroll-	F. La Bare	819,290	May 1	516	108	122	119
Churn	R. H. Garner and K. T. Henley	820,297	May 8	2593	565	122	640
Churn	J. W. Willson	824,164	June 26	3828	817	122	2727
Churn and butter-worker. Combined	F. La Bare and T. J. Howe	822,674	June 5	892	182	122	1922
Churn and ice-cream freezer. Combined	D. D. and E. F. Mayfield	823,612	June 19	2791	591	122	2446
Churn-dasher	W. B. Vestal	819,009	May 1	131	28	122	33
Churn-dasher	H. A. Bierley	824,524	June 26	4550	966	122	2881
Churn-operating mechanism	J. L. Hoyle	824,424	June 26	4356	927	122	2835
Churn-operator	J. T. Ham	819,649	May 1	1204	265	122	270
Churning-machine	F. F. Russell	820,135	May 8	2272	493–4	122	569
Churning-machine	A. Overbay	824,575	June 26	4653	989–90	122	2901
Chuts. Stock-	W. S. Gilleland	820,409	May 15	2808	611–12	122	748
Cigar and cigarette holder	W. R. Hammond	820,570	May 15	3147	677	122	822
Cigar and cigarette holder	G. Grice and C. J. Barrow	820,777	May 15	3524	755	122	904

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Cigar-bunching machine	A. Gordon	820,968	May 22	3984	846	122	1067
Cigar-humidifier	J. S. Conwell	819,341	May 1	624	132	122	144
Cigar-marker	A. Gruenberg	820,044	May 8	2085	455	122	528
Cigar-protector	F. H. Whomes	823,014	June 12	1568	325	122	2119
Cigar-tip cutter	L. E. Garrigus	819,875	May 8	1673	359	122	438
Cigar-tip cutter	F. Walker. (Reissue)	12,487	May 22	5250	1119	122	1344
Cigar-tip cutter	W. T. Coalter	819,730	May 8	1379	297–8	122	369
Cigarette-machine	O. F. Hammar	823,217	June 12	2009	418	122	2214
Cigarette-roller	J. La Cos	819,559	May 1	1026	225	122	231
Circuit-breaker	E. W. Gough	821,586	May 22	5306	1111	122	1334
Circuit-breaker	D. Hoyem	820,496	May 15	2985	644–5	122	786
Circuit-breaker. Automatic	C. F. Hutchings	820,421	May 15	2837	618	122	752
Circuit breaker. Electrical	W. O. Wayman	823,832	June 19	3211	679	122	2536
Cistern							
Clamp: *See* Bed-clamp. Collar-clamp. Fishing-rod reel-clamp. Hose-clamp. Meat-holding clamp. Pipe-clamp. Register-clamp. Supporting-clamp. Tube-clamp.							
Clamp	J. E. White	819,259	May 1	445	94	122	104
Clamp	A. O. Jones	819,887	May 8	1703	365	122	445
Clamp	W. Schnurr	822,775	June 5	1079	222	122	1965
Clamp	F. F. Walden	823,748	June 19	3045	644	122	2497
Clamp	D. Swope	823,903	June 19	3345	713	122	2565
Clamp							
Clasp: *See* Bag-clasp. Garment-clasp. Hose-supporter clasp.							
Clasp	H. C. Frank	819,534	May 1	985	216	122	221
Clasp	F. Hirsh	823,277	June 12	2140	446	122	2244
Classifier	C. W. Merrill	820,934	May 15	3887	829	122	984
Cleaner: *See* Boiler-cleaner. Boiler-tube cleaner. Boot and shoe cleaner. Brush-cleaner. Carpet-cleaner. Comb-cleaner. Flue-cleaner. Gas-cleaner. Gin-saw cleaner. Kettle-cleaner. Ore-cleaner. Rifle and shotgun cleaner. Ship-bottom cleaner. Tobacco-pipe cleaner. Tube-cleaner. Window-cleaner.							
Cleaning device	E. B. Colwell	819,853	May 8	1633	348	122	429
Cleaning implement. Receptacle-	P. H. Tallman	820,269	May 8	2534	549	122	627
Cleansing apparatus. Pneumatic	A. E. Moorhead	820,007	May 8	2002	439	122	508
Clevis	H. Kruse	821,511	May 22	5073	1080	122	1306
Clinker-catcher	H. A. Gibbs	824,642	June 26	4787	1020	122	2931
Clip: *See* Detector-bar clip. Paper-clip.							
Clock	W. E. Porter	820,669	May 15	3318	711	122	858
Clock	E. M. Goldsmith	822,598	June 5	744	150–1	122	1802
Clock	A. D. Gary	824,537	June 26	4581	974	122	2886
Clock	G. P. Thurber	822,029	May 29	6062	1296	122	1587
Clock and signal mechanism. Time relay recording-	E. Terrell	819,950	May 8	1822	393–4	122	471
Clock. Calendar-	W. E. Porter	823,894	June 19	3322	707	122	2560
Clock. Intermittent-alarm	W. E. Porter	824,205	June 26	3908	835	122	2744
Clock. Intermittent-alarm	A. Bannatyne	819,708	May 8	1334	289	122	360
Clock or watch wheel	B. Tropp	821,140	May 22	4342	923	122	1145
Clock. Self-winding electric	O. L. Bonney	824,525	June 26	4551	966–7	122	2881
Clocks and similar instruments. Leveling device for							
Closet: *See* Water-closet.							
Closet for shops and other purposes	A. E. Brown	819,406	May 1	750	159	122	170
Cloth-guiding device	E. Van Winkle	821,906	May 29	5852	1244	122	1536
Cloth on the bias. Machine for cutting	B. Hurd	819,431	May 1	803	172–3	122	181
Cloth-pressing machine	L. Svoboda and J. Kudrle	820,681	May 15	3346	716–17	122	863
Cloth-tentering machine	C. L. Taylor	820,746	May 15	3462	742	122	891
Clothes-drier	J. A. Black and G. M. Brewer	822,341	June 5	229	47	122	1776
Clothes-drier	A. T. Hagan	822,604	June 5	755	153	122	1894
Clothes-drier and hat and coat holder combined. Folding	W. S. Pugsley	822,552	June 5	631	126–7	122	1865
Clothes-line fastener	J. and A. F. Hamm	820,715	May 15	3409	729	122	878
Clothes-line pin	D. T. Bryan and O. Sadler	820,177	May 8	2356	512	122	589
Clothes-line. Pinless	E. J. Barnette	820,615	May 15	3218	692	122	837
Clothes-line. Pinless	R. K. Peters	822,473	June 5	468	95	122	1827
Clothes-line reel	W. J. Connell	823,931	June 19	3397	726	122	2576
Clothes-line support	F. McManus	820,815	May 15	3622	773	122	926
Clothes-pin	J. M. McChesney	823,889	June 19	3316	706	122	2550
Clothes-prop	V. Heiser	820,927	May 15	3877	826	122	982
Clothes-rack. Folding	A. F. Peters	823,807	June 19	3162	669	122	2524
Clutch	N. E. Swanson	819,469	May 1	871	189	122	195
Clutch	J. Y. Evans	821,091	May 22	4242	902	122	1122
Clutch	F. M. Ashley	821,212	May 22	4466	951	122	1171
Clutch	J. J. Campbell and H. C. Johnson	823,260	June 12	2104	438	122	2237
Clutch	B. T. Burchardi and V. J. Wahlstrom	821,984	May 29	6002	1280	122	1568
Clutch and counter-shaft mechanism	S. A. Johnson	820,422	May 15	2838	618	122	752
Clutch. Cable-	A. Hérisson	819,544	May 1	1002	220	122	225
Clutch. Friction-	T. J. Kehoe	819,800	May 8	1708	366	122	446
Clutch. Friction-	G. Stahl	820,446	May 15	2882	626–7	122	762
Clutch. Friction-	J. S. Jellison	820,874	May 15	3734	797	122	950
Clutch. Friction-	G. E. Turner	821,680	May 29	5418	1153	122	1436
Clutch. Friction-	H. D. Hubbard	822,454	June 5	420	87–8	122	1817
Clutch. Friction-	E. H. Waugh	822,496	June 5	518	105–6	122	1830
Clutch. Friction-	J. F. Duryea	822,726	June 5	1000	204	122	1948
Clutch. Friction-	J. F. Duryea	822,727	June 5	1003	204–5	122	1949
Clutch. Friction-	J. F. Duryea	822,833	June 5	1194	245	122	1989
Clutch. Friction-	H. S and C. E. Glenn	823,467	June 12	2476	523	122	2314
Clutch. Friction-	J. G. Babio	823,753	June 19	3054	647	122	2499

Alphabetical list of inventions for May and June—Continued.

Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
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Clutch. Friction	H. L. Whitman	824,610	June 26	4726	1006	122	2918
Clutch. Magnetic	H. H. Cutler	821,020	May 22	4094	871–2	122	1090
Clutch. Magnetic	H. H. Cutler	821,022	May 22	4102	872	122	1092
Clutch. Magnetic	G. A. Damon	821,024	May 22	4107	873	122	1094
Clutch mechanism	B. A. Gramm	819,421	May 1	777	167	122	176
Clutch mechanism	B. J. Abbott	821,570	May 22	5173	1104	122	1326
Clutch mechanism	E. E. Wright	822,034	May 29	6097	1298	122	1590
Clutch-operating mechanism	C. L. Taylor	823,065	June 12	1728	355–6	122	2152
Clutch-release means	L. J. Hinde	823,496	June 12	2561	540	122	2332
Coal-crusher	G. W. Perry	820,518	May 15	3044	655	122	799
Coal-separator	J. Pollock	819,252	May 1	431	91	122	101
Coat, hat, and umbrella lock	R. H. Heberling	820,191	May 8	2381	517	122	593
Coat, hat, and umbrella rack	W. R. Purvis	819,311	May 1	559	119	122	128
Coat. Rain	F. W. Slater	820,803	May 15	3806	812	122	966
Coats. Stay-plate for	J. A. Vaughn	823,746	June 19	3042	644	122	2496
Coating one metal with another and the resulting product.	S. H. Thurston	822,873	June 5	1272	263	122	2005
Cock. Bib	J. A. Stevenson	819,944	May 8	1899	391	122	468
Cock boxes. Centering device for stop	J. B. Batt	820,616	May 15	3219	692	122	837
Cock. Emergency angle	W. H. Maddox	824,036	June 19	3601	767	122	2618
Cock. Gage	F. W. Leidecker	820,424	May 15	2842	619	122	753
Cock. Gas	J. Schmitt	822,484	June 5	500	101	122	1835
Cock. Plug	E. Hill, Jr.	823,779	June 19	3114	659	122	2513
Coffee and tea pot	J. W. Whitaker	820,897	May 15	3818	815	122	969
Coffee apparatus. Jacket or hood for use in connection with the exhaust-heads of hot-water urns of	E. J. Moneuse	824,669	June 26	4834	1032	122	2941
Coffee-percolator	A. A. Warner	821,445	May 22	4954	1053	122	1281
Coffee. Refining and cleansing	N. J. H. Weitzmann	824,320	June 26	4126	883	122	2790
Coffee-roaster	J. S. Miller	824,037	June 19	3602	767	122	2618
Coffin and casket lid	T. A. Smith	820,744	May 15	3459	742	122	890
Coffin-lowering apparatus	F. J. Nejedlo	820,593	May 15	3180	684	122	830
Coin-controlled apparatus	E. A. Bartezki	820,543	May 15	3093	665–7	122	809
Coin-operated mechanism	W. A. Hickey and J. Brown	824,543	June 26	4590	976	122	2888
Coin-register tapes. Means for keeping records of	W. G. Nagel	824,196	June 26	3899	830	122	2740
Coke briquets. Manufacture of	L. L. D. Zuiderhoek	824,680	June 26	4852	.....	122	2945
Coke drawing, quenching, and conveying plant	H. E. Mann	819,899	May 8	1721	370	122	449
Cold-storage building	B. A. Norman	819,245	May 1	424	89	122	99
Collapsible box	R. Ronconi	823,813	June 19	3172	671	122	2526
Collapsible box or crate	W. B. Price	823,967	June 19	3468	741	122	2592
Collapsible screen	L. Dejonge, Jr.	820,769	May 15	3511	753	122	902
Collar	J. K. P. Pine	819,593	May 1	1093	240–1	122	245
Collar attachment. Horse	S. Boyer	822,242	June 5	23	5	122	1733
Collar clamp. Horse	J. Reeder	820,600	May 15	3193	687	122	832
Collar for personal wear	J. and J. Thompson	821,443	May 22	4952	1052	122	1281
Collar. Horse	H. A. Fonteine	822,204	May 29	6424	1364	122	1665
Collar pad. Horse	G. A. Reynolds	824,145	June 26	3784	807	122	2717
Collar-shaper. Steam-heated	D. C. Porter and J. Erwin	823,360	June 12	2285	478	122	2275
Collar. Shirt	F. W. Parsons	824,577	June 26	4656	990	122	2902
Collar stand or support	W. Delf	821,026	May 22	4111	874	122	1095
Collar. Storm	S. S. Alexander	820,465	May 15	2920	634	122	771
Collar-supporter	M. Connell	820,767	May 15	3510	752	122	902
Collar-supporter	J. H. Theberath	821,678	May 29	5414	1153	122	1435
Color lake and making same. Violet	R. Kirchhoff and L. Kerkovius	820,052	May 8	2098	.....	122	531
Coloring-machine	C. L. Burdick	822,578	June 5	602	140–1	122	1880
Coloring-matters. Making indigo	H. S. A. Holt	820,809	May 15	3729	.....	122	949
Coloring-matters. Reduction of indigo	R. Wimmer	820,900	May 15	3822	.....	122	969
Column and column-cap	J. J. Tresidder	820,155	May 8	2313	505	122	578
Column-support	F. M. Sischo	822,995	June 12	1518	316	122	2108
Comb: *See* Currycomb.							
Comb	E. C. Macartney	823,131	June 12	1823	376	122	2173
Comb and comb-cleaner combined	C. W. Taylor	820,533	May 15	3077	662	122	807
Comb and comb-cleaner combined	C. W. Taylor	820,534	May 15	3078	662	122	807
Comb-cleaner	E. Layton	823,128	June 12	1819	374	122	2172
Comb-fastener	G. H. Smith and J. Stieglitz	823,555	June 19	2695	570	122	2421
Combs. Making	W. M. Stone	823,001	June 12	1530	318–19	122	2110
Combing-machine	E. H. Rooney	822,479	June 5	475	97–8	122	1828
Combing machine. Cotton	O. L. Owen and E. H. Rooney	822,549	June 5	621	124–5	122	1863
Combing machine. Cotton, wool, &c	F. W. Chadderton	823,844	June 19	3231	683	122	2540
Combination-lock	J. J. Deal	820,557	May 15	3123	672	122	816
Combustion. Apparatus for promoting	G. R. Barns	819,400	May 1	742	157	122	168
Combustion. Conducting	H. L. Doherty	819,127	May 1	188	38	122	48
Commutator	W. L. Waters	823,568	June 19	2715	575	122	2425
Compasses. Adjusting device in	G. Schoenner	824,311	June 26	4103	878	122	2785
Composite block and making same	F. W. Dunnell	823,038	June 12	1615	.....	122	2130
Composition of matter	H. Friedmann	824,475	June 26	4464	.....	122	2861
Compositions in stick form. Receptacle or holder for	G. J. Orange	824,137	June 26	3768	804	122	2713
Compound rotary engine	E. Waldron	822,410	June 5	347	71–2	122	1801
Compound spring	J. L. Adams, Jr.	820,944	May 15	3905	833	122	988
Compressors. Relief device and attachment for	R. Conrader	823,845	June 19	3235	683–4	122	2540
Computing instrument. Fraction	W. T. Brewer	819,089	May 1	1288	281	122	289
Computing machine. Interest	C. A. Marble	819,667	May 1	1233	269–71	122	277
Concentrator	M. P. Boss	822,912	June 12	1358	282–3	122	2071
Concrete. Apparatus for forming artificial-stone building-blocks from	A. A. Pauly	822,013	May 29	6053	1290–1	122	1580
Concrete-block machine	T. C. Holt	821,642	May 29	5332	1135–6	122	1419
Concrete-block-making machine	M. Rice	820,129	May 8	2259	491	122	567
Concrete-brick machine	G. W. Dy Arman	821,031	May 22	4118	875–6	122	1096
Concrete-bridge reinforcement	G. M. Cheney	820,921	May 15	3868	824	122	979
Concrete-building-block machine	I. E. Yarnell	822,333	June 5	218	44–5	122	1774
Concrete-cistern-molding form	J. H. Wiest	820,160	May 8	2321	506–7	122	579
Concrete column. Metal-reinforced	R. A. Cummings	822,587	June 5	719	145	122	1887
Concrete-construction form	H. W. Hathaway	821,360	May 20	5779	1231–2	122	1519
Concrete girders, &c. Reinforcement for	S. H. Woodruff	820,830	May 15	3662	785	122	930
Concrete-metal construction. Tubular	W. C. Hooper and P. Zucco	822,047	May 29	6126	1304	122	1597

Alphabetical list of inventions for May and June—Continued.

Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
				Spec.	Dr'g.	Vol.	Page.
Concrete. Method of and apparatus for lining tunnels with	R. F. Tucker	820,747	May 15	3463	743	122	891
Concrete-mixer	J. Miller	819,299	May 1	535	113	122	123
Concrete-mixer	W. B. Martin	820,428	May 15	2849	621	122	755
Concrete-mixer	H. W. Hubbard	820,928	May 15	3878	826	122	982
Concrete-mixer	J. Dorweller	821,790	May 29	5643	1202	122	1489
Concrete-mixer	W. H. Phillips	824,204	June 26	3906	834–5	122	2744
Concrete-mixing machine	A. T. Foster and M. L. Jones	820,188	May 8	2374	516	122	591
Concrete-mold	I. L. Landis	822,284	June 5	115	24	122	1753
Concrete-mold	L. A. Pratt	821,738	May 29	5531	1180	122	1462
Concrete-post mold	R. J. Paul and W. C. Kershner	821,824	May 29	5705	1215–16	122	1503
Concrete-sewer construction. Form for	E. M. Scofield	824,504	June 26	4695	998–9	122	2912
Concrete-steel construction	E. M. Scofield	824,505	June 26	4698	999	122	2912
Concrete-steel construction. Supporting device for reinforcing-bars of	J. F. Ancona	822,499	June 5	523	106	122	1840
Concrete structure	B. A. Mueller	824,192	June 26	3883	828–9	122	2739
Concrete-wall construction. Mold for	B. A. Mueller	824,193	June 26	3886	829	122	2739
Concrete-wall constructions. Core for	C. H. Bellars	821,277	May 22	4590	978	122	1200
Concrete walls. Means for constructing	W. W. Massie	820,363	May 8	2705	590	122	665
Condenser	R. C. Winder	822,807	June 5	1141	234	122	1978
Condenser	W. Schwanhausser	824,312	June 26	4104	878	122	2786
Condenser. Hydraulic	R. Reister	819,596	May 1	1096	241	122	246
Condenser. Jet	L. von Treskow	820,325	May 8	2633	573	122	640
Condiment-holder	W. J. Bain	824,058	June 19	3639	774	122	2627
Condiment-holder	P. J. A. Schnoor	824,443	June 26	4391	934	122	2843
Conduits for wires, cables, &c. Apparatus for constructing	H. Rosner	820,672	May 15	3326	713–14	122	859
Confectionery-coating machine	W. H. Weeks	820,030	May 8	2048	449–50	122	519
Connecting-rod	J. A. Giles	822,361	June 5	265	56	122	1784
Contact device	K. Tornberg	822,325	June 5	205	41	122	1771
Contact substances used for catalytic action. Treating	I. Kitsee	821,042	May 22	4139	880	122	1100
Container-top	J. B. Williamson and A. V. Oldham.	823,381	June 12	2318	486	122	2280
Continuous kiln	W. A. Butler	822,580	June 5	701	142	122	1882
Control system. Multiple-unit	H. M. Harding and C. M. Clark	821,287	May 22	4610	983	122	1204
Controller-regulator	J. V. E. Titus	821,768	May 29	5597	1192–3	122	1478
Controlling apparatus	W. J. Richards	821,747	May 29	5556	1183	122	1468
Controlling apparatus. Irreversible	L. E. Rémondy	823,971	June 19	3490	743	122	2594
Conveyer	L. O. Miller	819,908	May 8	1741	374	122	453
Conveyer	F. F. Landis	823,418	June 12	2383	503	122	2295
Conveyer	G. Stitt	823,900	June 19	3340	711–12	122	2564
Conveyer. Portable distributing	G. Wenzelmann and E. H. Overholt.	822,412	June 5	351	73–4	122	1802
Conveyer system	I. S. Merrell	823,477	June 12	2506	527–8	122	2322
Cooker. Canned-goods	C. F. Gray	823,523	June 19	2632	553	122	2408
Cooking apparatus	D. Appleton	822,589	June 5	676	138	122	1876
Cooking utensil	R. A. W. Krampitz	823,415	June 12	2379	501	122	2294
Cooking utensil	E. C. Howland	824,119	June 26	3736	797	122	2706
Cooler: *See* Water-cooler.							
Cooler	J. O. Daughtry	821,469	May 22	4997	1062	122	1290
Cooler	A. P. S. and P. Wohlpart	823,016	June 12	1572	326	122	2120
Cooler	D. M. Livingston	824,492	June 26	4492	952	122	2867
Cooler	D. M. Livingston	824,493	June 26	4493	952	122	2868
Cooler	D. M. Livingston	821,422	May 22	4906	1043	122	1271
Cooling apparatus	C. H. Wheeler and L. L. Pratt	821 561	May 22	5160	1101	122	1323
Cooling-tower	C. A. Harp	824,242	June 26	3990	854	122	2761
Coop. Chicken	T. J. Lovett	821,516	May 22	5080	1082	122	1307
Copper and other values from certain ores. Recovering	B. Comba	820,555	May 15	3117	671	122	815
Copper from solutions containing it. Recovery of	C. R. Plumer	822,299	June 5	154	.....	122	1762
Copper. Hardening	F. E. Whitaker	823,908	June 19	3354	715	122	2567
Copy-holder	A. Brown	824,405	June 26	4309	917	122	2826
Copy-holder	A. B. Reid	820,066	May 8	2138	465–6	122	540
Copy-holder. Stenographer's	H. H. Harrison	823,860	June 19	3264	692	122	2547
Copying device	B. M. Schauman	822,390	June 5	315	65	122	1794
Copying-machine	J. W. Ligon	823,691	June 19	2949	.....	122	2478
Copying. Press	C. E. Adamson	823,094	June 12	1741	358–9	122	2154
Copying-press. Rotary	L. L. Miller	819,363	May 1	672	142	122	154
Cord and rope holder	C. F. Methfessel and W. J. Hartson. (Reissue.)	12,492	June 5	1340	277	122	2019
Cord-fastener. Metallic	M. H. Fletcher	820,858	May 15	3714	792	122	946
Core	J. M. Smith, R. M. Downie, and F. W. Ransom.	821,130	May 22	4316	919	122	1138
Core-drill	J. S. Nicholson	824,433	June 26	4374	930	122	2839
Core-making machine	C. F. Roberts	820,015	May 8	2019	442	122	513
Corer. Apple	H. H. Dunn	819,130	May 1	193	39	122	49
Cork-extractor	W. H. Smith	820,022	May 8	2028	445	122	515
Cork-extractor	P. Sechiari	824,675	June 26	4845	.....	122	2943
Cork fabric and making the same	W. H. Smith	820,072	May 8	2149	468	122	542
Corks. Attaching extractors to	W. H. Smith	823,448	June 12	2445	515	122	2306
Corks. Attaching extractors to	A. Otto, Jr.	820 249	May 8	2502	540–1	122	620
Corn-elevator	M. L. Mowrer	823,186	June 12	1934	396–9	122	2199
Corn hulling, degerminating, and hominying machine	H. C. Chapman	819,122	May 1	179	37	122	46
Corn-husker	R. G. Rate	821,962	May 29	5963	1270–1	122	1550
Corn-husker	O. Allen	820,329	May 8	2639	575	122	651
Corn-husking machine	W. G. Conover	822,187	May 29	6394	1358	122	1658
Corn-husking machine	C. L. Frisby	820,775	May 15	3520	752	122	904
Corn separator. Seed	J. C. Crosin	822,231	May 29	6476	1374	122	1678
Corn-shock binder	F. T. Martin	819,569	May 1	1045	229–30	122	235
Corn-snapper and feed-cutter	J. Moran	821,369	May 22	4793	1019	122	1246
Corn-turner	H. C. Selle	819,177	May 1	271	58	122	69
Cornmeal-bolter	G. E. Kidd	821,720	May 29	5503	1172	122	1458
Corpses. Device for handling	W. F. Brooks	819,405	May 1	749	159	122	170
Corset	L. F. Moylan	819,447	May 1	831	179	122	186
Corset							

Alphabetical list of inventions for May and June—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Corset	D. H. Warner	822,792	June 5	1106	229	122	1971
Corset. Apparel	D. Kops	824,489	June 26	4486	951	122	2865
Corset. Apparel	D. Kops	824,490	June 26	4488	951	122	2866
Corset. Bathing	K. Hatch	820,972	May 22	3993	848	122	1069
Corset-steel	E. M. Jordan	820,500	May 15	3007	647	122	791
Cot-canopy	I. C. Kerridge	820,719	May 15	3416	730–1	122	879
Cotton-chopper	H. Herrold	819,066	May 1	56	12–14	122	16
Cotton-chopper	S. B. Muirheid	821,815	May 29	5691	1213	122	1500
Cotton-chopper	A. R. Maret	823,132	June 12	1824	376	122	2173
Cotton chopper and cultivator	G. H. McGuire	820,886	May 15	3790	808–9	122	962
Cotton-chopping machine	O. L. Carmical	822,823	June 5	1169	241	122	1984
Cotton-elevator. Pneumatic	T. S. Grimes	823,858	June 19	3262	691	122	2547
Cotton feeder. Lint	J. A. Hague	819,542	May 1	997	218–19	122	224
Cotton-gin	P. F. King	819,393	May 8	1711	367–8	122	447
Cotton-gin	H. J. Tate	824,602	June 26	4713	1003–4	122	2915
Cotton-gin. Roller	W. L. Crowson	824,414	June 26	4328	921–2	122	2830
Cotton. Ginning	G. A. Lowry	821,423	May 22	4911	1043–4	122	1271
Cotton scraper, blocker, and cultivator. Combined	W. R. Cox	824,066	June 19	3651	777	122	2629
Cotton. Separating	W. A. Patterson	822,903	June 5	1334	276	122	2017
Cotton-separator	W. A. Patterson	822,864	June 5	1253	258–9	122	2001
Couch	M. J. Buckley	821,333	May 22	4709	1003	122	1225
Couch or sofa and bed. Combined	J. H. Hagedorn	823,327	June 12	2229	465	122	2263
Counting device	W. and W. Hucks, Jr	820,197	May 8	2389	519	122	594
Coupling: *See* Belt-coupling. Car-coupling. Electric coupling. Furniture-coupling. Glass-tube coupling. Hose-coupling. Hose and pipe coupling. Pipe-coupling. Pipe and tube coupling. Shaft-coupling. Stovepipe-coupling. Sucker-rod coupling. Thill-coupling. Tire-coupling. Universal coupling. Whiffletree-coupling.							
Coupling	G. Lloyd	822,744	June 5	1031	211	122	1955
Coupling-member guide	C. E. Felt and D. A. Kimbark	822,514	June 5	560	113	122	1850
Couplings. Pivot-pin support for	W. E. Coffin	824,526	June 26	4552	967	122	2881
Course-finder	J. F. Smith	822,783	June 5	1093	226	122	1967
Covers of receptacles. Apparatus for applying liquid to	W. C. Buhles	823,391	June 12	2334	489	122	2284
Cow-tail fastener	G. H. and E. C. Coit	821,222	May 22	4481	954	122	1175
Cracker-case	J. N. Phenis	822,627	June 5	802	163	122	1904
Cradle	S. L. Morse	824,133	June 26	3761	803	122	2712
Crane. Hoisting	M. F. Berry	821,399	May 22	4865	1031	122	1261
Crane. Overhead traveling	C. L. Taylor	821,136	May 22	4332	921	122	1143
Crane. Portable traveling	G. R. Cullingworth	824,342	June 26	4167	891	122	2798
Crank	O. S. Phelps	820,731	May 15	3439	736	122	884
Crank-wheel-balancing means	C. T. Westlake and A. R. Thomas	823,012	June 12	1565	324–5	122	2119
Crank-wheels. Counterbalancing	C. T. Westlake	823,750	June 19	3040	645	122	2498
Crate. Carrier	F. L. Wetzel	821,684	May 29	5426	1155	122	1437
Crate. Folding	O. L. Anderson	819,837	May 8	1608	341	122	423
Crate. Folding	G. F. Green	820,300	May 8	2597	565–6	122	641
Crate. Folding poultry	G. B. Henry and A. Marsh	823,945	June 19	3421	731	122	2581
Crate. Folding shipping	D. B. Rodkey	822,389	June 5	314	64–5	122	1794
Crate or box. Folding	C. L. Dolph	823,515	June 19	2616	550	122	2405
Crate. Shipping	E. M. Averill	819,117	May 1	171	34	122	45
Crate. Shipping	G. E. Wheeler	820,536	May 15	3084	663	122	808
Crate. Shipping	F. Van Patten	820,898	May 15	3817	815	122	968
Crate. Shipping	F. W. Bender	823,840	June 19	3225	682	122	2539
Crate. Shipping	J. F. Moss	824,566	June 26	4638	986	122	2898
Cream pasteurizer and cooler	H. N. Rivard	824,147	June 26	3789	809–10	122	2718
Cream-remover	E. S. Bartram	823,986	June 19	3508	749	122	2600
Cream-separating machines. Water-motor for	J. Sharpe	819,087	May 1	108	23	122	29
Cream-separator. Centrifugal	Z. L. Truesdell	821,554	May 22	5146	1098	122	1321
Credit-system apparatus	J. O. Greenwald	820,713	May 15	3404	728	122	877
Crib. Folding	L. Dejonge, Jr	823,321	June 12	2220	463	122	2261
Crib or bed	T. J. Hume	819,886	May 8	1701	365	122	445
Cross-head guide	W. B. Mason	824,080	June 19	3676	782	122	2635
Cross-tie cutter	R. S. Wright	819,491	May 1	912	199–200	122	204
Crusher: *See* Coal-crusher.							
Crushing-machine	C. G. Buchanan	819,976	May 8	1917	424	122	487
Crushing-mill	M. P. Boss	822,913	June 12	1362	283	122	2072
Crushing or pulverizing apparatus	W. Kitto	821,421	May 22	4905	1042	122	1270
Cue-holder	R. U. and W. Ruddell	824,149	June 26	3793	810	122	2719
Cue-rack	L. Sevigny	824,386	June 26	4264	908	122	2818
Cuff and wristband	W. M. Shewry	822,695	June 5	940	192	122	1937
Cultivator	S. L. Allen	819,836	May 8	1605	341	122	422
Cultivator	E. Williams	820,537	May 15	3085	664	122	808
Cultivator	W. L. Paul	821,119	May 22	4287	913	122	1132
Cultivator	G. W. and C. E. Goss	821,235	May 22	4504	959	122	1181
Cultivator	J. P. Hill	822,124	May 29	6270	1335	122	1631
Cultivator	A. C. Wickham	822,795	June 5	1109	230	122	1971
Cultivator	L. E. Waterman	823,238	June 12	2063	428–9	122	2227
Cultivator	L. E. Waterman	823,239	June 12	2066	429–30	122	2228
Cultivator	W. A. Gillentine	823,407	June 12	2363	498	122	2290
Cultivator attachment	A. M. Potts	823,808	June 19	3164	669	122	2525
Cultivator-beams. Device for securing shovel-standards to	A. Lindgren	823,340	June 12	2251	470	122	2268
Cultivator. Beet	A. Larsen	823,338	June 12	2248	469	122	2267
Cultivator. Combined riding and walking	W. S. Graham	820,043	May 8	2063	454–5	122	528
Cultivator. Gang	C. Bjorklund	821,979	May 29	5993	1278	122	1566
Cultivator, harrow, and planter. Combined	A. B. Johnson	822,609	June 5	762	155	122	1896
Cultivator. Listed-corn	T. H. Sparks	819,612	May 1	1123	248–9	122	252
Cultivator. Straddle-row	A. C. Walter	821,145	May 22	4352	925	122	1148
Cultivator. Sulky	E. R. Brookbank	821,083	May 22	4298	899	122	1119
Culvert construction	H. Besser	820,342	May 8	2065	581	122	657
Culvert-machine	J. M. Fluke	822,838	June 5	1205	247	122	1991

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Cup: *See* Grease-cup. Oil-cup.	W. S. Anderson	820,167	May 8	2339	509	122	583
Cupola	J. H. Koons	820,210	May 8	2413	523	122	600
Cupola	R. Arno	820,756	May 15	3487	748	122	896
Current meter. Alternating	E. Morck	819,242	May 1	418	88	122	98
Current meter on Ferraris principle. Alternating	C. R. Buffington	823,665	June 19	2908	615	122	2470
Current-motor	A. W. Schramm	820,890	May 15	3799	810–11	122	964
Current motor. Alternating	C. P. Steinmetz	822,311	June 5	176	35	122	1766
Current motor. Alternating	J. O. Heinze, Jr	823,495	June 12	2558	539	122	2331
Current motor. Alternating	F. E. Case	822,345	June 5	238	50	122	1778
Current motors. Controlling alternating	W. K. Gibboney	821,936	May 29	5914	1258	122	1548
Current-regulator	E. F. W. Alexanderson	819,627	May 1	1160	254	122	260
Current systems. Protective means for alternating	M. O. Troy	819,620	May 1	1139	251	122	256
Current transformers. Operating constant	L. H. Thullen	823,086	June 12	1730	356	122	2152
Current-translating device. Alternating	W. Stanley	821,838	May 29	5733	1221	122	1509
Currents. Generating alternating	M. C. A. Latour	819,560	May 1	1027	225	122	231
Currents. Producing a constant magnetization by means of alternating	K. T. Neste	819,790	May 8	1519	322	122	402
Currycomb	J. Q. and J. M. Adams	821,075	May 22	4210	895	122	1116
Currycomb	O. L. Bixler	820,547	May 15	3104	668	122	812
Curtain and shade support	P. F. McCarty	819,577	May 1	1060	233	122	238
Curtain-fixture	R. M. Riggs	820,131	May 8	2263	492	122	568
Curtain-fixture	J. M. Mills	822,009	May 29	6047	1289	122	1579
Curtain-fixture	I. B. Lamping	824,427	June 26	4361	928	122	2836
Curtain-fixture	B. Agin and O. B. Thompson	819,197	May 1	323	69	122	80
Curtain-fixture. Adjustable	A. L. Perra	823,481	June 12	2523	529	122	2325
Curtain-fixture. Adjustable	F. A. Justice	824,484	June 26	4476	949	122	2863
Curtain-frame	J. W. Henson	820,786	May 15	3541	759	122	909
Curtain-looper	J. M. Barb	819,399	May 1	740	157	122	168
Curtain-pole	S. Blakely	819,507	May 1	936	205	122	209
Curtain-pole	J. F. Burns	823,259	June 12	2103	438	122	2236
Curtain-pole	J. H. Reynolds	819,597	May 1	1097	241	122	246
Curtain-pole and shade-bracket support. Combined	I. H. Webb	822,170	May 29	6363	1352	122	1651
Curtain-pole bracket	C. Remhof	820,257	May 8	2514	544	122	623
Curtain-pole ring	T. C. Richards	821,377	May 22	4814	1023	122	1251
Curtain-rod	R. Palmer	819,588	May 1	1084	238	122	244
Curtain-rod bracket. Sash	J. M. Berry	824,230	June 26	3963	849	122	2755
Curtain-roller cap	W. P. Powell	824,042	June 19	3609	769	122	2620
Curtain support. Window	E. S. and G. S. Shimer	820,892	May 15	3804	811–12	122	965
Cushion: *See* Pneumatic cushion.	J. F. Harrison	822,893	June 5	1311	270	122	2012
Cushioning device for freely-gyrating mechanisms	J. F. Heidt	824,651	June 26	4801	1024	122	2934
Cuspidor attachment for bars	J. W. Cooper	824,287	June 26	4057	869	122	2775
Cuspidor. Flushing	L. B. Trigg	819,823	May 8	1580	335	122	416
Cut-off. Rain-water	R. Richardson	824,439	June 26	4383	932	122	2841
Cut-out. Automatic safety	J. C. Armor	822,336	June 5	222	46	122	1775
Cut-out for electric circuits. Thermal	W. A. Garrigus	821,636	May 29	5318	1134	122	1417
Cutter: *See* Band-cutter. Boiler-flue cutter. Butter-cutter. Carpet-cutter. Cheese-cutter. Chocolate-cutter. Cigar-tip cutter. Cross-tie cutter. Earth-cutter. Excavating-cutter. Insulation-cutter. Milling-cutter. Paper-cutter. Pipe-cutter. Pipe or tube cutter. Potato-cutter. Rivet-cutter. Rotary cutter. Stalk-cutter. Threshing-machine band-cutter. Vine-cutter. Weed-cutter.							
Cutter-head	F. Hamachek	823,422	June 12	2389	504–5	122	2296
Cutting-machine	E. J. Logan	820,116	May 8	2237	486	122	562
Cutting-mechanism attachment	J. Ike	821,457	May 22	4977	.....	122	1296
Cutting tubular bodies. Machine for	C. Bosch	820,095	May 8	2198	479	122	553
Cyanid-tank gate	A. W. Chesterman	823,915	June 19	3363	717	122	2569
Cyanogen compounds. Production of	J. B. Brooks and J. Holt	823,916	June 19	3365	718	122	2569
Cycle pedal-plate	J. B. Brooks and J. Holt	820,332	May 8	2647	578	122	653
Cycle-saddle	A. W. Applegate	819,147	May 1	215	45–6	122	54
Cycle-saddle	W. H. Lang	820,426	May 15	2845	620	122	754
Dam. Irrigation	H. A. Mann						
Dams. Flash-board for	C. L. Wagandt	821,209	May 22	4460	950	122	1170
Dampening collars at the lines of their folding. Machine for	H. Wolke	822,707	June 5	966	197	122	1942
Damper	S. P. Wilbur	821,073	May 22	4208	894	122	1115
Dancing figure. Automatic	W. B. Potter	821,431	May 22	4935	1049	122	1276
Dash-pot	J. Schwarz	823,702	June 19	2965	628	122	2481
Dash-pot Time-limit	G. B. Kreag	824,366	June 26	4226	901	122	2810
Date and note block. Combined	W. J. Hollier	824,244	June 26	3993	854–5	122	2762
Dauber	M. H. Bidwell	821,454	May 22	4972	1057	122	1285
Decorticating-machine	R. Derdeyn	820,957	May 22	3955	841–2	122	1060
Dehorning-gate	J. H. W. Landré	819,291	May 1	517	109	122	120
Delinting-machine	W. W. Crate	824,096	June 26	3700	788–9	122	2696
Delivery apparatus. Coin-controlled	S. Towle	824,218	June 26	3938	844	122	2751
Dental articulator	W. F. Green	823,167	June 12	1891	389	122	2188
Dental devices. Making	W. C. K. Buchanan	820,474	May 15	2941	637	122	776
Dental-disk shield	F. C. C. T. A. Osius	819,249	May 1	427	99	122	100
Dental-engine mandrel	D. G. Steinecke	820,025	May 8	2035	446–7	122	515
Dental filling	C. L. Alexander	823,150	June 12	1855	393	122	2179
Dental furnace. Electric	J. E. Herman	819,137	May 1	200	41	122	51
Dental handpiece	J. F. Hammond	820,781	May 15	3529	767	122	906
Dental matrix-retainer	W. S. Filley	819,641	May 1	1191	260	122	268
Dental motor. Suspended electric	F. L. Argall	821,150	May 22	4359	927	122	1149
Dental-plate machine	V. A. Gudex	820,045	May 8	2067	455	122	528
Dental swaging apparatus	B. G. Simmons	819,678	May 1	1262	275	122	283
Dental vulcanizer							
Dental waste-cotton receptacle							

Alphabetical list of inventions for May and June—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Derailer	E. H. Allfree and W. H. England.	824,462	June 26	4437	941–2	122	2855
Derrick	P. F. Fitzgibbons	822,837	June 5	1202	246–7	122	1991
Derrick. Portable	J. McCormick	821,954	May 29	5951	1267	122	1556
Design-roller	B. D. Marks	819,267	May 1	528	111–12	122	122
Desk	E. B. Lewis	821,945	May 29	5931	1262	122	1553
Desk and seat and other furniture. School	A. L. and G. H. Bancroft	820,336	May 8	2653	579	122	654
Desk and type-writer stand. Roller-top	W. H. O'Keefe	824,434	June 26	4376	930–1	122	2839
Desk-shelf. Swinging	C. Keck	820,050	May 8	2096	457–8	122	530
Desk utensil	J. N. Maingot	823,798	June 19	3151	666–7	122	2522
Detecting mechanism	G. R. Williams	824,460	June 26	4427	940–1	122	2852
Detector-bar clip	J. T. Hambay	824,355	June 26	4193	896	122	2804
Detinning	K. Goldschmidt and J. Weber	822,115	May 29	6255	1332	122	1627
Dialkylmalonyl ureas. Making	G. Keil	822,672	June 5	887	.....	122	1925
Die: *See* Bottle-cap-finishing die. Screw-threading die.							
Die	J. Roth	820,603	May 15	3198	687	122	833
Die	J. J. Brossoit	820,763	May 15	3504	751	122	901
Die	J. S. Alston	822,233	June 5	2	1	122	1729
Die-stock	F. B. Downs	819,868	May 8	1660	355–6	122	435
Die-stock	T. R. Leighton	824,428	June 26	4362	928	122	2836
Digger: *See* Automatic digger. Post-hole digger.							
Dipper-tooth	W. Bodette	820,906	May 15	3832	817	122	971
Dipping-tank	A. A. Kramer	821,809	May 29	5680	1210	122	1498
Direct-acting engine. Compensating	F. F. Nickel	823,694	June 19	2952	624–5	122	2478
Directory attachment	H. W. Stone	823,559	June 19	2702	571	122	2422
Directory device	C. A. Johnson	824,483	June 26	4474	948	122	2863
Directory-holder	E. B. and F. A. Taylor	822,490	June 5	506	103	122	1837
Dish-cleaning apparatus	R. Wylie	819,112	May 1	163	32	122	43
Dish scraper and cleaner	J. T. Foskett	824,473	June 26	4458	945	122	2859
Dish-washing apparatus	W. E. Niece	820,594	May 15	3182	685	122	830
Dish-washing apparatus	C. B. Miller	821,250	May 22	4533	965	122	1188
Dish-washing machine	O. Kitchell and C. W. Swanson	821,105	May 22	4263	907	122	1127
Dish-washing machine	A. W. Bodell	821,696	May 29	5447	1160–1	122	1442
Disinfecting apparatus	W. H. Rose	822,019	May 29	6065	1293	122	1583
Disinfecting apparatus	W. H. Rose	822,020	May 29	6067	1293	122	1583
Dispensing-can	R. F. Morse	822,622	June 5	791	161	122	1902
Dispensing device for receptacles	A. J. Mottlau	820,062	May 8	2120	462	122	536
Display-box	J. S. Auerbach	820,542	May 15	3092	665	122	809
Display-box. Folding	C. E. Isacke	823,604	June 19	2776	588	122	2430
Display-case	J. E. Allison	821,573	May 22	5178	1105	122	1327
Display-chest for silverware, &c	E. Herbeck	823,778	June 19	3112	659	122	2512
Display device	G. R. Steinhauser	821,067	May 22	4192	890–1	122	1112
Display device	F. F. Hough	821,242	May 22	4521	962	122	1185
Display device	E. A. Kahn and R. A. Seigle	823,536	June 19	2660	560	122	2413
Display-device clutch mechanism	J. W. Bragstad	824,062	June 19	3644	776	122	2628
Display device. Rotatable	M. Herskovitz	821,240	May 22	4518	961–2	122	1184
Display-frame	G. E. Leigh and J. A. Coleman	823,339	June 12	2250	469	122	2267
Display-rack	J. H. Kummer	819,230	May 1	394	83	122	93
Display-rack	J. D. Walsh	821,144	May 22	4349	925	122	1147
Display-rack	W. D. Wilbur	822,415	June 5	357	75	122	1804
Display-rack	J. W. Roach	824,063	June 19	3680	783	122	2636
Display-vehicle	L. J. Rodjeff	819,600	May 1	1101	243	122	247
Distances or altitudes. Appliance for use in ascertaining	R. H. Owen	820,597	May 15	3188	686	122	831
Distillation apparatus	J. J. Brennan	822,574	June 5	685	139	122	1879
Distillery-slop and making same. Desiccated	G. F. Ahlers	821,326	May 22	4695	.....	122	1221
Distillery-slop. Treating	C. J. Roehr	820,824	May 15	3649	.....	122	931
Distilling apparatus. Water-	C. R. Dudley	824,630	June 26	4767	1016	122	2927
Distilling coals and other hydrocarbonaceous substances. Apparatus for	H. Wurtz	821,323	May 22	4688	999	122	1220
Distributing-board	F. J. Dommerque	822,590	June 5	725	146	122	1888
Ditching-machine	R. E. Reed and W. Pickford	819,313	May 1	561	120	122	129
Ditching-machine	F. R. Sammis	823,191	June 12	1943	401	122	2201
Dividers	H. Dundas	820,352	May 8	2683	585	122	660
Dividers	H. C. Rickheit	823,364	June 12	2291	479	122	2276
Dock. Floating	J. H. Hansson	820,109	May 8	2225	483–4	122	559
Dock. Floating	A. Mehlhorn and P. von Klitzing	821,110	May 22	4273	909	122	1129
Doffer-comb motion	O. L. Owen	822,550	June 5	625	126	122	1864
Doll	O. Arnold	820,843	May 15	3691	787	122	941
Door	J. A. Meyer and J. S. Satter	823,065	June 12	1671	345–6	122	2140
Door and lock safety device	H. S. Brickell	820,606	May 15	3366	721	122	867
Door and shutter and certain connections therefor. Flexible	J. Baum	824,334	June 26	4148	888	122	2794
Door-check	H. Ernst	819,870	May 8	1662	356	122	436
Door-check	J. S. Young and J. N. Harvey	822,334	June 5	220	45	122	1774
Door-check	H. W. La Munyon and F. P. Gee	822,742	June 5	1028	210	122	1954
Door check and closer	G. T. Sheets	822,992	June 12	1512	315	122	2107
Door check and stop	M. La Londe	820,581	May 15	3163	681	122	826
Door-closer	W. L. Glersdorf	824,538	June 26	4582	974	122	2887
Door closer and check	W. K. Henry	821,714	May 29	5491	1169–70	122	1453
Door closer and stop	W. A. Hildyard and A. B. Drummond.	823,532	June 19	2654	559	122	2412
Door construction. Sliding-	J. R. Hussey	822,130	May 29	6278	1337	122	1633
Door. Convertible screen and storm	H. Barber	822,422	June 5	370	77	122	1806
Door-fastener	J. P. Snelgrove	823,300	June 12	2176	454	122	2251
Door-fastening	J. Rooney	819,460	May 1	850	183	122	190
Door-frame for cooling-rooms	H. Marten	820,657	May 15	3267	706	122	850
Door. Gable-	J. F. Deardurff	823,587	June 19	2751	583	122	2433
Door. Grain-	W. S. Gilleland	823,943	June 19	3419	730	122	2581
Door-hanger	T. C. Prouty	819,795	May 8	1527	324	122	404
Door-hanger	P. M. Elliott	821,630	May 29	5306	1131	122	1414
Door-hanger	D. D. Miller	823,066	June 12	1673	346	122	2145
Door-hanger track	G. Wideman	822,090	May 29	6199	1321	122	1614
Door-indicator	L. D. Holden	823,782	June 19	3119	661	122	2510

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Door lock. Emergency exit-	H. E. Clark	824,173	June 26	3845	821	122	2730
Door-mat	W. C. Richardson	823,972	June 19	3482	743–4	122	2594
Door-opener	S. T. Stevens and O. Walcott	823,372	June 12	2306	483	122	2278
Door opener and closer. Automatic	K. Nishimoto	819,583	May 1	1070	235–6	122	240
Door opening and closing apparatus	R. and C. C. Huitt	822,129	May 29	6277	1336	122	1632
Door-operating mechanism	C. A. Bell	820,949	May 22	3927	836–7	122	1055
Door or panel for lockers. Metallic	R. W. Jefferis	821,102	May 22	4259	906	122	1126
Door-releasing apparatus	C. A. Criqui	819,208	May 1	349	75	122	84
Door-securer	E. J. Seyler	820,019	May 8	2024	444	122	514
Door stop and holder	A. F. Liffvendahl	819,356	May 1	659	138	122	150
Door, window, and the like	W. W. Taylor	821,201	May 22	4448	947	122	1168
Doubletrees and swingletrees. Coupling for	L. Burg	824,063	June 19	3646	776	122	2628
Douche apparatus	C. P. T. Roux	821,259	May 22	4556	969	122	1192
Dough-cutting machine	G. E. Gowdy	824,008	June 19	3551	758	122	2608
Dough-mixing machine	J. A. Reams	819,799	May 8	1531	325	122	405
Dough-mixing machine	J. A. Reams	823,740	June 19	3033	641–2	122	2494
Dough molding, dividing, and shaping machine	R. M. Bryce	820,386	May 15	2758	600	122	738
Dough-raiser	J. H. Kefauver	823,537	June 19	2661	560–1	122	2414
Down-separating apparatus	W. H. Robinson	819,171	May 1	253	55	122	62
Draft-beam	W. H. Brown	819,335	May 1	615	130	122	142
Draft device. Spring	W. B. Smith	819,092	May 1	117	26	122	31
Draft-equalizer	W. L. Wiebrock	819,256	May 1	438	92	122	102
Draft-equalizer	H. C. Scott	819,463	May 1	7854	184	122	191
Draft-equalizer	H. T. Railsback	821,433	May 22	4938	1049	122	1277
Draft-equalizer	W. S. Emert	822,659	June 5	858	176	122	1918
Draft-equalizer	F. Humphreys	823,172	June 12	1898	391	122	2190
Draft-equalizer	W. F. Maas	824,254	June 26	4012	859	122	2766
Draft-equalizer	H. and J. H. Thiedemann	819,097	May 1	128	27	122	33
Draft-evener	H. C. Priebe	820,012	May 8	2011	441	122	511
Draft-gear	C. T. Westlake and A. R. Thomas	820,375	May 8	2728	594	122	670
Draft-gear for locomotives and railway-cars	M. Jones, (now by remarriage M. Franklin.)	819,438	May 1	816	175	122	183
Drafting implement	A. A. Allen	819,495	May 1	917	201	122	205
Drafting instrument	A. J. Harper	822,207	May 29	6427	1365	122	1666
Drag	E. M. Crawford	822,431	June 5	384	80	122	1808
Drapery. Ball	A. H. Renshaw	819,315	May 1	566	121	122	130
Draw-head knuckle	J. Herzog	822,123	May 29	6268	1335	122	1630
Drawer	I. H. Athey	821,578	May 22	5188	1107	122	1329
Drawer and the like. Sheet-metal	S. C. Hodell	824,653	June 26	4804	1024	122	2935
Drawer. Desk-	I. H. Athey	821,577	May 22	5185	1107	122	1328
Drawer for filing-cabinets. Drop-front	C. T. and H. Garden	823,721	June 19	2999	635	122	2487
Drawer-stops. Tool for setting	I. H. Athey	821,576	May 22	5183	1106–7	122	1328
Drawers and the like. Construction of	G. C. Gardner	822,359	June 5	263	55	122	1783
Drawers and the like. Guiding means for	V. S. Westcott and F. W. Potter. (Reissue.)	12,478	May 8	2746	597–8	122	673
Drawing-frames. Sliver-evening device for	C. Mills	820,982	May 22	4027	856	122	1076
Drawing-roll	L. S. Parker	821,669	May 29	5382	1148–9	122	1429
Dredge	L. S. Parker	821,670	May 29	5386	1149	122	1430
Dredge	C. N. Newcomb	822,863	June 5	1250	257–8	122	2000
Dredge. Suction-	H. J. Wessinger	820,456	May 15	2902	631	122	768
Dredges. Latch-operating mechanism for	B. H. Coffey	824,283	June 26	4053	867	122	2775
Dredging and excavating machine	A. B. Taplin	821,549	May 22	5141	1096	122	1319
Dresser-reel tension device	G. E. Chamberlain	822,185	May 29	6390	1357	122	1657
Drier: *See* Clothes-drier. Sand-drier. Grain-drier. Veneer-drier.							
Drier	J. W. Biles. (Reissue)	12,491	June 5	1336	277	122	2017
Drier	F. T. Johnson	822,953	June 12	1436	299	122	2088
Drier	A. T. Collins	823,106	June 12	1771	366	122	2161
Drier	A. T. Collins	823,262	June 12	2108	439	122	2237
Drier	C. J. Hirlimann	820,047	May 8	2091	457	122	530
Dry battery	A. Schröder	822,990	June 12	1508	314	122	2106
Drying-chamber	J. F. Hanrahan	820,865	May 15	3722	794	122	948
Drying-kiln							
Drill: *See* Core-drill. Rock-drill. Grain-drill. Twist-drill. Pneumatic drill.							
Drill	F. Caudle	819,978	May 8	1922	425	122	488
Drill for drilling holes in rock or the like	J. H. Thomas	821,202	May 22	4450	947	122	1168
Drill-press	H. F. Noyes	819,372	May 1	689	145	122	157
Drill-presses, lathes, &c. Work-centering device for	J. and P. B. Landgraf	821,651	May 29	5350	1140	122	1423
Drills or the like. Support for	A. Ball	823 662	June 19	2897	613	122	2468
Drilling and tapping device	J. Petrelli	823,546	June 19	2675	563–4	122	2416
Drilling attachment. Automatic chain-feed	J. S. Dikeman	821,473	May 22	5003	1064	122	1292
Drilling-machine	J. E. Conch	819,855	May 8	1637	349	122	430
Drilling-machine	A. Walker	820,837	May 15	3679	785	122	938
Drilling-machine	D. K. Peck	821,825	May 29	5707	1216–17	122	1503
Drilling-machine	W. H. Froggatt, Jr	820,965	May 22	3981	845	122	1067
Drilling, reaming, and broaching. Jig for	E. L. Cleveland	820,180	May 8	2360	513	122	588
Drilling-tool jar	B. F. House	821,493	May 22	5042	1073	122	1299
Drinking-fountain	E. S. Richardson	823,697	June 19	2958	676	122	2480
Drinking-fountain	J. L. Wingert	822,174	May 29	6370	1353	122	1652
Driving-bit	G. H. Cheney	821,701	May 29	5460	1163–4	122	1446
Driving, braking, and coasting mechanism	W. E. Golden	824,110	June 26	3721	795	122	2703
Driving-gear. Roller-tooth variable	D. L. Driver and C. I. Mansmith	824,102	June 26	3706	791	122	2699
Driving mechanism	J. Lahaÿe	819,440	May 1	819	176	122	184
Dropper: *See* Chloroform-dropper.							
Drug-mixer	M. J. Jones	819,999	May 8	1987	437	122	506
Drum-mill	R. Beneke	820,087	May 8	2183	475–6	122	549
Drum. Tumbling-	W. R. Smith	820,021	May 8	2026	444	122	514
Duplicating apparatus	M. J. D. Carter	823,920	June 19	3372	719	122	2571
Duplicating apparatus	A. B. Dick	823,937	June 19	3409	728–9	122	2579
Dust-collector. Gravity	D. Deneen	823,463	June 12	2471	522	122	2313
Dust-pan	J. T. Curtis	820,627	May 15	3236	696	122	848
Dust-removing means	C. F. W. Zöller	821,776	May 29	5809	1195	122	1481

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Duster	H. A. Hayden	823,725	June 19	3006	636	122	2488
Duster. Feather	J. E. Snevely	821,131	May 22	4320	919	122	1139
Duster. Feather	J. E. Snevely	824,512	June 26	4531	961	122	2876
Dye and making same. Anthracene	O. Bally and M. H. Isler	820,379	May 8	2740	.....	122	673
Dye and making same. Blue sulfur	C. Ris	821,378	May 22	4815	.....	122	1251
Dye and making same. Disazo	T. Kroeber	823,793	June 19	3136	.....	122	2518
Dye and making same. Green-blue sulfur	P. Julius and E. Münch	820,501	May 15	3008	.....	122	791
Dye and making same. Red sulfur	P. Friedlaender	819,348	May 1	633	.....	122	146
Dye and making same. Rhodamin	H. A. Bernthsen	821,452	May 22	4968	.....	122	1284
Dye and making same. Vat-	K. Schirmacher	823,294	June 12	2165	.....	122	2240
Dyeing apparatus	H. L'Hullier	820,654	May 15	3282	705	122	849
Dyeing-machine	J. Hussong	822,844	June 5	1214	250–1	122	1993
Dynamometer	H. Purdie	823,895	June 19	3323	708	122	2560
Earth cutter and grader	D. W. Jones	823,872	June 19	3282	696–7	122	2551
Earth-transporting mechanism	W. Zimmerman	822,419	June 5	364	76	122	1805
Earthenware articles. Device for ornamenting	F. J. Ridgway, J. Aynsley, and F. Hancock.	819,170	May 1	252	55	122	62
Easel	J. Weber	819,680	May 1	1266	276	122	284
Easel	C. T. Springman	821,132	May 22	4321	919	122	1139
Eaves-trough	J. F. Myser and A. Zieseniss	824,570	June 26	4647	988	122	2900
Eaves-trough hanger	A. B. Leonard	822,459	June 5	436	89	122	1820
Educational appliance	P. R. Bullard	819,847	May 8	1625	346	122	427
Egg-beater	J. S. Dunlap	820,405	May 15	2802	610	122	746
Egg-boiler. Time	F. F. Anderson	820,034	May 8	2061	451	122	522
Egg-boiler. Time	H. H. Chesbrough	821,857	May 29	5760	1226	122	1514
Ejector mechanism	E. H. Eller	824,555	June 26	4576	973	122	2885
Elbow-forming machine	N. W. Hartman	823,683	June 19	2934	621	122	2475
Electric apparatus. Dynamo-	W. Stanley	821,837	May 29	5731	1221	122	1508
Electric apparatus. Vapor	W. R. Burrows	820,348	May 8	2675	584	122	659
Electric cableway system	M. W. Day	822,250	June 5	42	9	122	1738
Electric-circuit breaker	G. G. Stout	822,084	May 29	6189	1319	122	1613
Electric circuit changer or switch. Automatic	F. T. Kitt	820,119	May 8	2240	487	122	563
Electric-circuit controller	S. H. Kanmacher	820,877	May 15	3738	798	122	951
Electric-circuit-controlling means	J. K. Lux. (Reissue)	12,490	May 29	6477	1375	122	1678
Electric-circuit timing mechanism	A. R. L. Wilie	820,078	May 8	2163	471	122	545
Electric-conductor union	F. W. Sorg	823,484	June 12	2527	530	122	2326
Electric conductors. Composition of matter for	W. G. Clark	821,017	May 22	4087	.....	122	1089
Electric coupling	O. Schaller	820,604	May 15	3199	688	122	833
Electric-current controller	L. Bradley	821 697	May 29	5450	1161–2	122	1443
Electric-current generators and motors. Collecting-brush for	O. Siebers	823,642	June 19	2860	605	122	2459
Electric elevator	P. Wright	819,195	May 1	314	67–8	122	78
Electric furnace	H. L. Hartenstein	819,224	May 1	377	79–81	122	89
Electric furnace	J. E. Hewes	820,574	May 15	3153	679	122	823
Electric heater	J. Härdén	819,650	May 1	1206	265	122	271
Electric indicator	G. S. Eble	823,164	June 12	1880	388–9	122	2186
Electric-light bracket	E. F. Hug	823,533	June 19	2655	559	122	2412
Electric lights. Locking-socket for	J. Murphy	819,702	May 1	1312	285	122	295
Electric machine and system	F. W. Knopfe	820,649	May 15	3268	702–3	122	847
Electric machine. Dynamo-	F. Sieber	821,064	May 22	4187	890	122	1111
Electric machine. Dynamo-	R. Lundell	821,249	May 22	4531	964	122	1187
Electric machine. Dynamo-	R. H. Rogers	822,304	June 5	162	33	122	1764
Electric machine. Dynamo-	W. Stanley	822,697	June 5	943	192–3	122	1937
Electric machines and the like. Brush-holder for dynamo-	C. W. Speirs and J. Frith	821,197	May 22	4441	945–6	122	1166
Electric machines or motors. Regulation or control of dynamo-	C. P. E. Schneider	819,933	May 8	1790	385–7	122	461
Electric machinery. Dynamo-	W. L. Waters	823,566	June 19	2711	574	122	2424
Electric meter. Coin-freed	J. Allan	824,522	June 26	4547	965	122	2880
Electric meter. Prepayment	J. J. Wood	822,091	May 29	6199	1321–2	122	1615
Electric motor and generator	J. F. Beck	819,971	May 8	1904	421–3	122	484
Electric regenerator	J. C. Slaughter	819,815	May 8	1561	332	122	412
Electric sparking device	A. E. Doman	819,268	May 1	473	98	122	110
Electric switch	A. A. Tirrill	819,821	May 8	1571	334	122	414
Electric switch	D. E. Gray	820,491	May 15	2977	643	122	784
Electric switch	C. S. Barkelew	822,237	June 5	10	3	122	1731
Electric switch	W. J. O'Leary and W. Coonan	823,073	June 12	1684	348	122	2142
Electric switch. Push-button	W. C. Tregoning. (Reissue)	12,480	May 8	2751	598	122	675
Electric switch. Snap	A. A. Tirrill	819,822	May 8	1575	334–5	122	415
Electric switches and circuit-breakers. Oil-break device for	J. H. Delany	819,524	May 1	967	212	122	217
Electric switches. System and apparatus for operating	H. P. Ball	821,077	May 22	4213	896	122	1116
Electric system. Communicating	A. M. Stark	819,095	May 1	122	26	122	32
Electric system of transmission	C. G. and E. J. Burke	822,579	June 5	697	141–2	122	1882
Electric systems. Apparatus for the regulation of	G. A. Wells, Jr	821,909	May 29	5858	1245	122	1537
Electric time-signal	J. M. Powell	824,262	June 26	4025	861	122	2769
Electric time-switch	F. C. Huber and J. E. Manzel	822,003	May 29	6039	1287	122	1578
Electric time-switch	A. B. Zierleyn	824,054	June 19	3633	773	122	2626
Electric transmission system	C. G. Burke	823,505	June 19	2583	545	122	2399
Electric-wire-conduit elbow	C. C. Sibley and G. A. Lutz	820,322	May 8	2628	572	122	648
Electric-wire terminal	J. D. Warren	819,389	May 1	721	153	122	164
Electrical-circuit-controlling device	E. O. Schweitzer	823,295	June 12	2165	452	122	2249
Electrical discharge apparatus	J. E. Seeley	821,832	May 29	5722	1219	122	1506
Electrical-distribution system	B. G. Lamme	819,770	May 8	1464	313	122	387
Electrical-distribution system	J. L. Woodbridge	819,832	May 8	1599	340	122	421
Electrical energy. System of applying alternating-current	B. G. Lamme	822,376	June 5	292	60	122	1789
Electrical machines. Brush-holder for	R. Siegfried and N. W. Storer	824,213	June 26	3932	842	122	2749
Electrical protective device	C. A. Rolle	820,521	May 15	3053	657	122	801
Electrical receptacle	P. H. Fielding	819,418	May 1	772	166	122	175
Electrical receptacle and plug	J. C. Hatzel and E. L. Morley	823,724	June 19	3003	636	122	2488
Electrical step-by-step controller	H. H. Cutler	821,021	May 22	4097	872	122	1091
Electrical switch	W. S. Mayer	819,360	May 1	666	140–1	122	152
Electrical switch	E. C. Bacon	822,036	May 29	6107	1301	122	1583
Electrical transmitting and receiving apparatus	J. P. L. Donlevy	821,931	May 29	5904	1256	122	1547

Alphabetical list of inventions for May and June—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Electrical vibratory motor	J. L. Adams, Jr	820,753	May 15	3476	745–6	122	894
Electrically-operated fountain	A. D. Southam	820,996	May 22	4049	861	122	1061
Electricity-meter for alternating currents	H. Aron	820,333	May 8	2648	578	122	653
Electricity. Removing static	W. H. Chapman	824,339	June 26	4161	890	122	2797
Electrolysis of water. Apparatus for the	K. J. Vareille	823,050	June 19	2878	608–9	122	2463
Electrolytic cell	G. A. Gabriel	822,109	May 29	6236	1329	122	1622
Electromagnet	C. F. A. Sturts	824,046	June 19	3618	770	122	2622
Electromagnets. Retarding device for	P. Kennedy	821,504	May 22	5059	1078	122	1303
Electromagnetic waves or the like. Detector for	R. H. Rendahl	820,258	May 8	2515	544	122	623
Electros. Apparatus for backing up of	E. Albert	821,845	May 29	5743	1222	122	1511
Elevator: *See* Corn-elevator. Electric elevator. Cotton-elevator.							
Elevator	E. H. Vogel	819,257	May 1	440	92–3	122	103
Elevator	B. E. Kingsley	820,208	May 8	2409	522–3	122	599
Elevator-brake	M. Fullenlove	823,720	June 19	2997	635	122	2487
Elevator-catch	J. Morgan	822,538	June 5	600	121	122	1859
Elevator-control system	J. D. Ihlder	820,498	May 15	2992	646	122	787
Elevator-control system. Electric-	J. D. Ihlder	820,499	May 15	3000	646	122	789
Elevator device. Safety	J. Taylor, J. A. McMillen, and T. C. B. Milbery.	824,452	June 26	4405	937	122	2846
Elevator driving mechanism	V. W. Mason	824,129	June 26	3752	801	122	2710
Elevator-hatchway closure	J. W. McGhee	823,479	June 12	2518	528	122	2324
Elevator load-limit mechanism	J. R. Willcox	823,455	June 12	2457	519	122	2310
Elevator safety-alarm	P. E. Chapman	822,186	May 29	6391	1357–8	122	1657
Elevator safety apparatus	J. G. Babb	824,523	June 26	4548	966	122	2890
Elevator safety brake or lock	F. Williams	822,833	June 5	1135	233	122	1977
Elevator safety device	W. H. Fern	819,052	May 1	34	7–8	122	11
Elevator safety device	A. D. Gable and J. Brickley	820,637	May 15	3249	698–9	122	844
Elevator safety-door	J. M. Porter	823,965	June 19	3464	740	122	2591
Elevator safety mechanism	G. Hall	824,646	June 26	4791	1021	122	2932
Elevator tumbler. Bucket-	J. H. Gray	822,601	June 5	751	152	122	1893
Elevators. Tumbler for bucket	J. H. Gray	821,163	May 22	4377	931	122	1153
Embalming instrument	W. O. Schroyer	820,606	May 15	3201	689	122	834
Embossing or creasing machine	E. E. Spencer, Jr	823,305	June 12	2192	457	122	2255
Embossing-press	A. Bredenberg	821,079	May 22	4218	897	122	1117
Embroidery-machines. Reader or machine for perforating paper to be used with the jacquards in automatic	F. Pittard	824,380	June 26	4252	905–6	122	2815
Embroidery-silk holder	J. J. Lawler	822,060	May 29	6148	1311	122	1602
Embroidery. Tulle or net	J. Diem-Beutler	824,100	June 26	3705	790	122	2689
Emergency-brake	F. B. Corey	823,992	June 19	3520	752	122	2602
Emery. Manufacture of artificial	A. Gacon	820,859	May 15	3716	.....	122	946
End-gate and lifting-jack. Combined	O. Bucklin	821,458	May 22	4978	1058	122	1286
Energy-meter for three-phase plants unsymmetrically loaded.	R. Arno	820,755	May 15	3483	746–8	122	896
Engine: *See* Balanced engine. Compound rotary engine. Direct-acting engine. Explosion-engine. Explosive-engine. Gas-engine. Gas and steam engine. Hoisting-engine. Hot-air engine. Internal-combustion engine. Multiple-cylinder engine. Oil-engine. Oscillating-piston engine. Paper-stock-refining engine. Rotary engine. Rotary explosive-engine. Steam-engine. Traction-engine. Turbine-engine.							
Engine	E. C. Meyer	819,905	May 8	1730	372–3	122	451
Engine	E. Thomson and A. A. Ball, Jr	822,322	June 5	193	38–9	122	1769
Engine	J. N. Cummings	822,586	June 5	717	145	122	1887
Engine and other cylinders. Means for cooling	E. P. Caldwell	820,549	May 15	3106	669	122	812
Engine construction	G. B. Petsche	822,387	June 5	312	64	122	1793
Engine-cylinder-cooling device	L. D. Zent	820,278	May 8	2559	555	122	633
Engine-lubricating device. Internal-combustion-	G. J. Altham	821,915	May 29	5868	1248	122	1539
Engine lubricating-pump. Locomotive-	J. F. McCanna	822,684	June 5	908	186–7	122	1930
Engine metering device	E. L. Tucker	822,637	June 5	822	167	122	1909
Engine spark and valve controlling device. Explosion-	R. M. Keating	822,525	June 5	579	116–17	122	1853
Engine sparking igniters. Adjusting device for explosive-	T. B. Jeffery	819,283	May 1	504	106	122	117
Engine speed-regulating mechanism. Gas-	G. H. Ellis	824,105	June 26	3711	792	122	2700
Engines. Actuating-gear for traction-	F. T. Flinchbaugh	821,477	May 22	5012	1065–6	122	1293
Engines. Automatic steering device for traction-	E. F. Piper	821,253	May 22	4539	966	122	1189
Engines. Device for facilitating the removal of valves from valve-boxes of internal-combustion	G. J. E. Alphandéry	821,149	May 22	4358	927	122	1149
Engines. Electric igniter for explosive-	G. J. Weber	820,535	May 15	3079	663	122	807
Engines. Mixing and combining device for gas-	L. J. Marks	819 219	May 1	413	87	122	97
Engines. Relief for explosive-gas	P. P. G. Hall, Jr	821,410	May 22	4886	1037	122	1266
Engines. Vaporizing device for internal-combustion	B. Garlius	820,408	May 15	2806	611	122	747
Enlargements. Making half-tone	V. Lamb	820,053	May 8	2100	458	122	531
Envelop	J. H. Gregg and A. J. Williams	821,484	May 22	5028	1071	122	1296
Envelop-closing machine	C. O. Liljeros	822,616	June 5	775	157–8	122	1899
Envelop feeding, moistening, and sealing machine. Automatic	J. Johnston	821,501	May 22	5054	1076–7	122	1302
Envelop for sensitized plates. Light-proof	A. A. Brooks and G. A. Watson	819,404	May 1	748	158	122	170
Envelop-machine folding mechanism	B. Pahlitzsch	821,529	May 22	5103	1087–8	122	1312
Envelop. Mailing-	J. Neihysel	821,666	May 29	5378	1147	122	1428
Eraser	F. M. Burrows	823,918	June 19	3368	718	122	2570
Eraser-tip for lead-pencils, penholders, pencil-point protectors, and the like.	F. McIntyre	824,375	June 26	4242	904	122	2813
Evaporating liquids	A. P. Geer	819,697	May 1	1304	284	122	293
Excavating and ditching machine	J. K. Sweeny	820,152	May 8	2304	503–4	122	576

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Excavating and grading machine. Universal	W. Gilmore	823,855	June 19	3254	689–90	122	2545
Excavating apparatus	P. H. White	821,271	May 22	4581	975	122	1198
Excavating apparatus. Tunnel-	J. C. Meem	819,443	May 1	823	177	122	185
Excavating-cutter	J. B. Cantwell	819,723	May 8	1365	295	122	366
Excavating-dipper	J. H. W. Libbe	822,529	June 5	587	118	122	1856
Excavating-machine	J. Helm	821,413	May 22	4890	1038–9	122	1267
Excavating-machine	A. J. Ducellier	824,531	June 26	4563	969–71	122	2883
Excavator	J. H. W. Libbe	820,055	May 8	2102	459	122	532
Excavator	G. W. Nicolson	822,547	June 5	615	124	122	1862
Excavator	T. P. Payne	822,865	June 5	1257	259–60	122	2002
Excavator	J. G. Fairbanks and G. L. Sauer	822,935	June 12	1400	293	122	2080
Excavator	E. M. Reese	821,743	May 29	5547	1181–2	122	1466
Excavator and conveyer. Automatically-anchoring	W. H. Niemeyer	823,432	June 12	2414	508–9	122	2301
Excelsior-cutting machine	S. K. Wilson	823,573	June 19	2723		122	2427
Excelsior from broom-corn clippings. Making	C. D. Enochs	820,187	May 8	2372	515–16	122	590
Exchange-selector. Automatic	J. C. A. Thouverey	819,472	May 1	878	191	122	196
Exercising apparatus	S. E. Wiltse	821,391	May 22	4843	1028	122	1256
Exercising apparatus for children	I. O. Russell	820,017	May 8	2021	443	122	513
Exercising device. Physical	M. E. Pester	824,436	June 26	4373	931	122	2840
Exhibition and amusement apparatus	R. D. Simpson	820,070	May 8	2145	467	122	542
Exploder. Repeating	H. D. Dibble	824,528	June 26	4554	968	122	2882
Explosion-engine	J. F. Crowley	820,626	May 15	3233	695–6	122	840
Explosive-engine	J. M. Morrison	821,370	May 22	4796	1019	122	1247
Explosive-engine	E. J. Woolf	821,396	June 26	4281	912–13	122	2820
Explosive-engine	C. J. Coleman	822,826	June 5	1177	242	122	1986
Explosive fluids. Safety-reservoir for	F. L. Demartini	823,588	June 19	2752	583	122	2433
Extensible bracket	R. L. Richardson	819,802	May 8	1538	328–7	122	406
Extension and other table	J. K. Rishel	820,737	May 15	3449	739	122	887
Extension-table	C. E. Nash	821,955	May 29	5952	1268	122	1556
Extension-table	T. M. McKee	822,901	June 5	1330	275	122	2016
Extension-table. Folding	C. M. Langhorne	824,186	June 26	3866	825	122	2735
Extractor: *See* Cork-extractor. Staple-extractor. Spike-extractor.							
Eyeglass-cases. Machine for covering	F. A. Tibbals	821,900	May 29	5844	1242	122	1534
Eyeglass-cases. Machine for lining	F. A. Tibbals	821,901	May 29	5846	1242	122	1535
Eyeglass-holder	E. B. Meyrowitz	823,133	June 12	1825	377	122	2173
Eyeglass-mounting	C. A. Hoffman	820,494	May 15	2961	644	122	785
Eyeglass-mounting	C. F. Wall	824,607	June 26	4722	1005	122	2917
Eyeglasses	J. Kovacs	821,649	May 29	5348	1140	122	1423
Eyeglasses	E. C. Bernheim	824,617	June 26	4742	1010	122	2921
Eyeglasses	C. H. Andrews	823,021	June 12	1584	328–9	122	2123
Eyeleting envelops, tags, or the like. Machine for							
Fabric: *See* Carpet fabric. Cork fabric. Metallic fabric. Pile fabric. Stitched fabric. Waterproof fabric. Woven fabric.							
Fabric-folding machine	M. Isaacs and M. Pellar	819,548	May 1	1009	221	122	227
Fabric-folding machine. Woven-	M. A. Gutte	819,991	May 8	1953	432	122	496
Fabric-holding frame. Net-	S. Windecker	819,109	May 1	150	31	122	38
Fabrics. Apparatus for treating textile	W. D. West and V. Mauck	823,834	June 19	3215	679–80	122	2536
Fabrics. Former for tubular	C. C. Shepard	824,212	June 26	3930	842	122	2749
Fabrics. Ornamenting pile	O. S. Davies	819,412	May 1	762	163	122	172
Fan. Fly-	P. F. Hodges	823,727	June 19	3008	637	122	2489
Fan or pump. Centrifugal	S. C. Davidson	820,397	May 15	2782	603–4	122	743
Fan or pump. Centrifugal	S. C. Davidson	820,398	May 15	2786	605	122	743
Fan. Oscillating motor-	R. E. Barker	819,630	May 1	1167	256	122	262
Fans or pumps. Inlet-opening or eye of centrifugal	S. C. Davidson	820,399	May 15	2790	606	122	744
Fanning-mill	S. S. Lofberg	824,666	June 26	4829	1030	122	2940
Farm-gate	C. E. Sargent	822,156	May 29	6335	1347–8	122	1646
Fastener	F. R. White	821,006	May 22	4070	866	122	1085
Fastener	F. R. White	821,007	May 22	4071	866	122	1086
Fasteners. Machine for driving	A. F. Preston	820,670	May 15	3319	712–13	122	858
Fastening device	S. Stevens	822,313	June 5	181	36	122	1767
Fats and the like from waste waters. Apparatus for the recovery of	C. Kremer	823,688	June 19	2943	622	122	2477
Faucet. Automatic	J. P. Luckett	819,566	May 1	1039	227	122	234
Faucet. Fluid-measuring	G. K. Cooke	824,096	June 26	3698	788	122	2697
Faucet. Measuring-	G. K. Cooke	820,556	May 15	3119	671–2	122	816
Faucets. Glass protector for	C. E. McKenna	820,517	May 15	3043	655	122	799
Fecal-analyzer	J. A. MacMillan	820,004	May 8	1996	438	122	507
Feed-box. Metallic	H. M. Thayer	820,075	May 8	2159	470	122	545
Feed regulator. Boiler-	O. O. White	822,794	June 5	1108	230	122	1971
Feed-water heater	H. C. Moore	820,665	May 15	3310	709–10	122	856
Feed-water heater	W. A. Moffat	822,972	June 12	1469	306	122	2095
Feed-water regulator	E. G. Ofeldt	819,078	May 1	88	20	122	24
Feed-water regulator	F. H. Plouff	823,635	June 19	2846	602	122	2456
Feeder. Boiler-	R. W. Wallace	821,693	May 29	5424	1154–5	122	1437
Feeder. Stock-	H. B. Gamblin	822,442	June 5	404	84	122	1813
Feeding and watering trough. Stock	J. Paulus	822,763	June 5	1059	217	122	1961
Feeding device for oranges and other articles	M. H. Ballard	820,378	May 8	2734	596	122	671
Feeding device. Stock-	M. J. Overfield	823,806	June 19	3161	669	122	2524
Feeding mechanism for oranges and other articles	M. H. Ballard	820,084	May 8	2173	473–4	122	547
Feeding-trough	S. Walter	823,380	June 12	2317	486	122	2280
Felly-connecting device. Wheel-	J. R. Hughes	820,788	May 15	3542	759	122	909
Fence	C. F. Frizzell	821,232	May 22	4498	957	122	1180
Fence fastener. Wire-	F. H. Shuflin and J. C. White	822,994	June 12	1517	316	122	2108
Fence lock. Wire-	E. G. Overholt	822,758	June 5	1052	215	122	1959
Fence machine. Wire-	I. N. Morford	821,112	May 22	4277	910	122	1129
Fence. Metal	A. P. Diescher	819,637	May 1	1181	258	122	265
Fence. Portable wire	J. M. Crawford	823,993	June 19	3523	752	122	2603
Fence-post	J. B. Cleven	819,729	May 8	1378	297	122	369
Fence-post	M. J. Mullarkey	819,783	May 8	1491	319	122	393
Fence-post	J. W Barnes	820,171	May 8	2344	510	122	584
Fence-post	G. M. Jackson	820,199	May 8	2391	520	122	595

Alphabetical list of inventions for May and June—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Fence-post	W. H. Kimball	820,207	May 8	2407	522	122	598
Fence-post	F. C. Schwem	820,318	May 8	2623	571	122	647
Fence-post	C. C. Dolan	821,474	May 22	5005	1064	122	1292
Fence-post	W. M. Perkins	821,535	May 22	5116	1089	122	1315
Fence-post	C. E. Robinson	823,441	June 12	2432	512	122	2305
Fence-post	J. W. Westlake	823,655	June 19	2887	610	122	2466
Fence-post	F. M. Garry	823,722	June 19	3000	635	122	2487
Fence-post	R. S. Hiltner	824,117	June 26	3732	797	122	2705
Fence-post	J. Ludwick	824,429	June 26	4364	929	122	2837
Fence-post	I. N. Miller	824,562	June 26	4631	985	122	2897
Fence-post	P. L. Schaaf	823,139	June 12	1837	379	122	2176
Fence-post mold	R. L. Horsley	820,870	May 15	3730	795	122	949
Fence-stay	G. R. Mills	822,292	June 5	137	27	122	1759
Fence tie. Wire-	S. E. Jackson	819,141	May 1	206	42	122	52
Fence. Wire	J. C. Dameron	820,395	May 15	2778	603	122	742
Fence-wire. Barbed	H. E. Bush	820,909	May 15	3835	818	122	972
Fence-wire twister	J. J. Morse	823,224	June 12	2035	423	122	2222
Fencing tie. Wire-							
Fender: *See* Car-fender.							
Fender	J. Truax	821,770	May 29	5601	1193	122	1479
Fertilizer	W. B. Chisolm	824,280	June 26	4050		122	2774
Fertilizer-distributer	F. A. Hamilton and W. A. Linker	821,485	May 22	5029	1071	122	1297
Fertilizer-distributer and cultivator. Combined	S. S. Cudd	823,398	June 12	2348	493–4	122	2287
Fertilizing material. Making	W. B. Chisolm	824,281	June 26	4051		122	2774
Fiber-cleaning machine	W. A. Adams	821,571	May 22	5175	1105	122	1326
Fiber-cleaning machine	A. G. Pons	822,767	June 5	1064	219–20	122	1962
Fiber-reducing machine	H. S. Albrecht	821,447	May 22	4957	1053–4	122	1282
Fiber-reducing machine	H. S. Albrecht	821,448	May 22	4960	1054–5	122	1282
Fibrous stalks. Treating	W. J. Hollier	824,243	June 26	3991	854	122	2761
Field or hunting flask	R. Burger and A. Aschenbrenner	820,347	May 8	2673	584	122	658
Fifth-wheel. Vehicle	F. G. Winnek	819,395	May 1	732	156	122	166
Filaments of viscose or similar material. Spinning-head for forming	M. Waddell	823,009	June 12	1550	322	122	2115
File and fastener	C. R. Smead	819,464	May 1	856	184	122	192
File and the like. Letter-	G. Mez	822,147	May 29	6318	1343	122	1642
File. Blank-check	G. W. Sheridan and W. A. Wheeler	820,069	May 8	2144	467	122	541
File-cabinet	I. H. Athey	821,575	May 22	5181	1106	122	1328
File. Wire-hook bill-	F. L. West and C. J. Kortz	823,654	June 19	2886	610	122	2466
Filing-case drawer-support	C. Ernst	823,771	June 19	3096	656	122	2508
Filling-machine	F. M. Peters	821,186	May 22	4415	940–1	122	1161
Film-cartridge	A. W. McCurdy	823,624	June 19	2818	597	122	2447
Film-holder. Magazine	O. Becker	822,501	June 5	526	107–8	122	1841
Film-reeling mechanism	A. C. Roebuck	820,441	May 15	2868	624–5	122	759
Films. Making conducting-	T. A. Edison	821,628	May 29	5301		122	1413
Films or flakes. Making metallic	T. A. Edison	821,626	May 29	5299		122	1412
Filter	H. Tyrell	819,958	May 8	1874	414	122	479
Filter	J. S. Barnes and L. A. Rosier	820,903	May 15	3825	816	122	970
Filter	F. K. Kreutz	821,173	May 22	4392	935	122	1156
Filter	F. B. Hinkson	821,360	May 22	4773	1015	122	1242
Filter	S. B. Stewart	821,442	May 22	4952	1052	122	1280
Filter	J. L. Greatsinger	821,937	May 29	5916	1258	122	1549
Filter	C. H. Loew	823,181	June 12	1925	396–7	122	2197
Filter	F. Hardie	823,527	June 19	2643	555	122	2410
Filter	W. B. Klein	824,487	June 26	4482	950	122	2865
Filter and purifier. Liquid	M. F. Adams	823,019	June 12	1579	328	122	2122
Filter-bed-cleaning apparatus	H. W. Blaisdell. (Reissue)	12,488	May 22	5253	1119–20	122	1945
Filter for feed-water heaters	O. L. Stump	824,389	June 26	4289	909–10	122	2818
Filter for purifying water	J. MacDougall	819,357	May 1	661	138–9	122	151
Filter. Oil-	C. E. Lefebvre	819,896	May 8	1715	368–9	122	448
Filter. Pneumatic	E. G. Shortt	819,179	May 1	276	59–60	122	69
Filter-presses. Sluice-discharge construction of	J. Chisholm	822,100	May 29	6220	1326	122	1619
Filter. Rotary	F. A. Evans	820,560	May 15	3127	673	122	817
Filter Submarine	P. McGranighan	819,579	May 1	1063	234	122	239
Filter. Suction-	P. Argall	822,812	June 5	1149	236–7	122	1980
Filter. Water-	A. G. Sheak	821,194	May 22	4433	944–5	122	1165
Filters. Cleaning	J. MacDougall	819,358	May 1	663	139	122	152
Finger-bar	C. O. Wyman	820,943	May 15	3904	833	122	988
Fire-alarm	G. H. Oatway and C. E. May	823,542	June 19	2669	562	122	2415
Fire-alarm apparatus. Electrical	J. P. Robertson	820,823	May 15	3641	777–9	122	930
Fire-alarm. Automatic	J. W. Griffin	821,098	May 22	4255	905	122	1125
Fire-alarm box	L. and F. G. Campbell	820,700	May 15	3374	723	122	868
Fire-alarm boxes and for other things. Guard for door-keys of	F. W. Cole	824,411	June 26	4319	919	122	2828
Fire-alarm system	B. F. Beane and R. P. Bennett	821,581	May 22	5193	1108	122	1330
Fire-escape	L. S. Franklin	819,419	May 1	774	166	122	175
Fire-escape	H. A. Thomsen	819,956	May 8	1872	413–14	122	478
Fire-escape	D. M. McCathie, W. R. and N. B. Cain.	820,241	May 8	2472	535	122	613
Fire-escape	J. C. Covert	820,702	May 15	3382	724	122	870
Fire-extinguisher	T. N. Burke	821,780	May 29	5616	1197	122	1483
Fire-extinguisher. Automatic	H. W. Martin	824,128	June 26	3750	801	122	2710
Fire-extinguishing apparatus	J. Holm	822,842	June 5	1210	249–50	122	1992
Fire-extinguishing device	O. Hammerstein	821,938	May 29	5918	1259	122	1549
Fire-hydrant	R. M. Pringle	821,191	May 22	4429	943	122	1164
Fire. Means for protecting ships from	H. W. McKinne	824,573	June 26	4650	989	122	2901
Firearm	C. H. Taylor	821,766	May 29	5590	1191–2	122	1477
Firearm	J. D. Russ	821,890	May 29	5820	1238–9	122	1527
Firearm	E. E. Neal	824,197	June 26	3891	830	122	2740
Firearm or rifle. Repeating	A. Michele	819,153	May 1	227	48–9	122	56
Firearm. Tubular-magazine	T. C. Johnson	819,549	May 1	1012	221	122	228
Firearm. Tubular-magazine	T. C. Johnson	819,550	May 1	1013	222	122	228
Firearms. Telescopic sight for	A. Swasey	820,998	May 22	4054	862–3	122	1062
Fireboard	S. F. Williamson	822,497	June 5	522	106	122	1840
Fireman's signaling system	A. J. Hart	821,639	May 29	5328	1135	122	1419

Alphabetical list of inventions for May and June—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Fireplace	S. Bender	820,173	May 8	2347	511	122	585
Fireproof column	J. J. Treadder	820,156	May 8	2314	505	122	578
Fireproof floor construction	A. Jordahl	824,363	June 26	4205	898	122	2906
Fireproof partition	A. E. Klotz	823,062	June 12	1643	340	122	2135
Fireproof safe	M. Mosler	824,373	June 26	4237	903	122	2812
Fireproof window	D. B. and A. C. Badger	821,975	May 29	5987	1276–7	122	1561
Fireproof window frame and sash	F. W. Schaeffer	819,810	May 8	1551	329	122	409
Fish-hook	W. A. Scott	821,544	May 22	5132	1094	122	1318
Fish-hook	A. F. Bingenheimer	823,460	June 12	2466	521	122	2312
Fish-line reel	H. H. Richardson	824,438	June 26	4382	902	122	2841
Fish-plates. Apparatus for manufacturing	P. J. Dalton	822,509	June 5	552	111	122	1848
Fishing-hook	W. Cooper	823,319	June 12	2218	462	122	2260
Fishing-reel	G. W. Upton	820,326	May 8	2635	574	122	650
Fishing-reel	W. Shakespeare, Jr.	820,609	May 15	3207	689	122	835
Fishing-reel	W. H. Glocker	822,113	May 29	6249	1331	122	1626
Fishing-reel	B. K. Donaldson	822,436	June 5	392	82	122	1810
Fishing-rod	G. C. Bearse	819,500	May 1	928	203	122	208
Fishing-rod reel-clamp	C. H. Terry	820,685	May 15	3352	718	122	864
Flagstaff-column	R. W. Teese	822,405	June 5	339	70	122	1800
Flakes or scales. Making metallic	T. A. Edison	821,627	May 29	5300	.....	122	1413
Flash-light apparatus	J. Fiedler and F. Hrdlička-Csiszár.	822,263	June 5	75	15	122	1745
Flash-light screen	F. L. Crocker	820,476	May 15	2943	637	122	777
Flask: *See* Field or hunting flask. Molding-flask.							
Flat-iron	F. Johnson	819,761	May 8	1446	309	122	384
Floats from logs of wood. Means for forming	H. Butenschön	820,699	May 15	3373	722	122	868
Floor and cabinet scraper	S. E. Collins	819,126	May 1	187	38	122	48
Floor. Artificial-stone	P. Langguth	823,950	June 19	3434	733	122	2584
Floor-dressing machine	C. B. Wattles	819,391	May 1	723	153	122	164
Floor-dressing machine	C. B. Wattles	820,751	May 15	3472	744–5	122	893
Floor-polisher	W. H. Strange	821,763	May 29	5587	1190	122	1476
Floor-scraper	A. O. Nordquist	821,525	May 22	5098	1086	122	1311
Floor-set	C. L. Hopkins	822,126	May 29	6274	1336	122	1632
Floor-support for buildings	E. P. Sperry	823,558	June 19	2700	571	122	2422
Flooring. Stable	A. G. Hupfel	821,417	May 22	4899	1041	122	1268
Flue-cleaner	W. P. Wilson	822,706	June 5	964	197	122	1941
Flue-cleaner turner	C. S. Dean	821,613	May 29	5276	1125–6	122	1407
Flue-ferrule	J. H. Price	822,475	June 5	471	96	122	1828
Flue-rattler	F. H. Adams	822,035	May 29	6099	1299–1301	122	1591
Flue-stop. Folding	J. C. Carr	819,515	May 1	951	208	122	213
Flue-stopper	C. L. Embody	821,792	May 29	5647	1203	122	1490
Flue-stopper	F. M. Needham	822,756	June 5	1049	215	122	1959
Fluid-compressor	N. A. Christensen	823,156	June 12	1865	385–6	122	2182
Fluid-fuel burner	E. G. Flager and F. L. McGahan	824,689	June 26	4876	1038	122	2949
Fluid generator. Elastic	J. C. Tonkin	822,491	June 5	511	104	122	1837
Fluid-impelling device. Rotary	A. E. Guy	819,273	May 1	487	101	122	113
Fluid in cities. Controller for distribution of	F. J. Foveaux	821,160	May 22	4372	930	122	1152
Fluid-pressure brakes. Feed-control valve device for	L. Krimmelbein	820,630	May 15	3271	703	122	848
Fluid-pressure-control system	W. J. Richards	821,673	May 29	5400	1151	122	1432
Fluid-pressure cylinder	T. J. Mitchell	821,663	May 29	5374	1146	122	1427
Fluid-pressure motor. Compound	J. P. Magney and W. H. Masterman.	823,060	June 12	1661	344	122	2138
Fluid-pressure motors. Governor for	C. H. Johnson	824,425	June 26	4357	927	122	2835
Fluid-pressure regulator	A. Andrews	821,574	May 22	5180	1106	122	1327
Fluids. Grating for facilitating the flow of	J. Grouvelle and H. Arquembourg.	822,736	June 5	1016	208	122	1952
Flush-tank-operating device	B. O. Tilden	821,002	May 22	4062	864	122	1064
Flushing apparatus	C. H. Colvin	821,282	May 22	4601	980	122	1202
Flushing attachment	J. Kleinbach and K. Bareis	820,795	May 15	3572	763	122	915
Flushing device	J. N. Sanger	822,306	June 5	166	33	122	1764
Flushometer	J. W. Grantland	822,116	May 29	6257	1332	122	1628
Fluxes in fluid slag. Dissolving solid	F. C. W. Timm	822,087	May 29	6195	1320	122	1614
Fly-catcher	J. Gribbin	822,735	June 5	1015	208	122	1951
Fly-press. Hydraulic	B. Gerdau	819,968	May 8	1949	430	122	495
Fly-screen	R. J. Meyer	822,534	June 5	592	119	122	1857
Fly-trap	T. M. Case	820,389	May 15	2770	601	122	740
Fly-trap	F. G. Wilson	821,913	May 29	5866	1247	122	1539
Fly-trap	J. R. Sourby and R. J. Riley	821,965	May 29	5971	1272	122	1561
Fly-trap	W. E. Thompson	824,517	June 26	4538	962	122	2878
Flying-machine	O. and W. Wright	821,393	May 22	4847	1029	122	1257
Folding box	L. F. Hale	820,301	May 8	2599	566	122	641
Folding box	W. H. Richmond	823,810	June 19	3167	670	122	2525
Folding-machine	R. C. Seymour	820,675	May 15	3329	714–15	122	860
Folding seat and step	C. N. Hazelton	820,973	May 22	3904	848	122	1069
Folding seat applicable for outdoor use, theaters, and other purposes	T. Brierley	820,344	May 8	2668	581–3	122	657
Follower	B. J. Lynch	822,849	June 5	1221	252	122	1995
Food-chopper	C. F. Smith	821,756	May 29	5573	1186	122	1473
Food extract from cornstalks	A. G. Manns	820,806	May 15	3600	.....	122	922
Footwear. Machine for manufacturing	M. C. Clark	823,927	June 19	3388	723–4	122	2575
Footwear. Manufacture of	M. C. Clark	823,924	June 19	3379	721	122	2572
Footwear. Manufacture of	M. C. Clark	823,926	June 19	3382	722–3	122	2573
Footwear. Manufacture of vulcanized	M. C. Clark	823,928	June 19	3392	724–5	122	2576
Force-feed lubricator	F. W. Hodges	820,419	May 15	2833	617	122	751
Force-feed lubricator	C. W. Manzel	820,979	May 22	4014	852–3	122	1073
Forceps. Obstetrical	L. G. Barton	820,845	May 15	3694	788	122	942
Forge-hood	F. W. Meier and W. A. Gipson	822,533	June 5	591	119	122	1856
Forging-machine	T. C. Prouty	821,059	May 22	4166	886	122	1106
Forging-machine	O. Briede	822,878	June 5	1280	264	122	2006
Fork: *See* Hay-fork.							
Formates. Making	J. Weise, F. Rieche, and A. Barth.	820,159	May 8	2319	.....	122	579
Formates. Making	J. Weise, F. Rieche, and A. Barth.	820,373	May 8	2725	.....	122	670
Formates. Making	J. Weise, F. Rieche, and A. Barth.	820,374	May 8	2727	.....	122	670

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Foundry or casting plant	J. W. Henderson. (Reissue)	12,495	June 12	2568	542	122	2333
Fountain: *See* Drinking-fountain. Stock-fountain. Electrically-operated fountain.							
Frame: *See* Binder-frame. Plow-frame. Car-frame. Quilting-frame. Curtain-frame. Scenic frame. Display-frame. Stencil-frame. Door-frame. Truck side frame. Fabric-holding frame. Vehicle-frame. Fireproof window-frame. Well-pit-mold frame. Winding-frame. Picture-frame. Window-frame.							
Frame structure	E. Molloy	824,502	June 26	4504	955–6	122	2870
Friction-set	M. B. Miner	823,802	June 19	3155	667	122	2522
Frog or crossing	C. C. Hardman	819,992	May 8	1954	432–3	122	496
Fruit-boxes. Machine for nailing	A. A. Macy and B. T. Duncan	822,142	May 29	6295	1342	122	1636
Fruit cutting, pitting, and spreading device	A. M. Striplin	820,150	May 8	2301	503	122	575
Fruit for transportation. Means to cure	J. P. Triolo	821,205	May 22	4455	948	122	1169
Fruit-picker	A. E. Burwell	821,855	May 29	5758	1226	122	1514
Fruit-picking bag	J. Utterback	824,160	June 26	3821	815	122	2725
Fruit-receptacle	V. E. Stine	824,511	June 26	4532	961	122	2876
Fruit weighing and packing machine	C. S. Cox	824,412	June 26	4321	920 1	122	2828
Frying rack. Fried-cake	O. G. Kelly	820,792	May 15	3569	762	122	915
Fuel and making same. Artificial	S. J. Hon	820,196	May 8	2388	.....	122	594
Fuel. Apparatus for the combustion of pulverulent	A. Moore	820,255	May 8	2452	531	122	608
Fuel-feeder	H. L. Day	821,930	May 29	5902	1255–6	122	1546
Fuel-feeding apparatus	H. J. Travis	823,563	June 19	2708	573	122	2424
Fuel-feeding device	F. Harcharick	824,756	June 26	4191	89[illegible]	122	2804
Fuel. Utilization of pulverulent	A. Moore	820,276	May 8	2455	532	122	609
Funnel	P. Epperson	820,353	May 8	2684	586	122	660
Furnace: *See* Blast-furnace. Locomotive-furnace. Blast-flame furnace. Magnetic furnace. Boiler-furnace. Metallurgical furnace. Calcining-furnace. Ore-roasting furnace. Dental furnace. Reverberatory furnace. Electric furnace. Roasting-furnace. Gas-generating furnace. Smelting-furnace. Heating-furnace. Smoke-consuming furnace. Liquid-fuel furnace. Tilting furnace.							
Furnace	J. C. Teller	819,183	May 1	285	61	122	72
Furnace	A. E. Johnson	819,228	May 1	390	82–3	122	92
Furnace	D. W. Bovee	819,632	May 1	1171	256–7	122	263
Furnace	A. C. Calkins	819,700	May 1	1309	285	122	294
Furnace	F. W. Burger	819,849	May 8	1628	347	122	428
Furnace, &c.	W. Pett	821,961	May 29	5962	1270	122	1559
Furnace	J. A. Kavanagh	822,955	June 12	1441	300	122	2089
Furnace	J. P. McLeod	823,962	June 19	3457	739	122	2590
Furnace	J. F. Senter	824,385	June 26	4261	908	122	2817
Furnace air-feeding mechanism	W. Mc Ilave	819,669	May 1	1244	271–2	122	279
Furnace-charging mechanism. Cupola	C. E. Bowron	822,502	June 5	528	108–9	122	1842
Furnace draft apparatus	W. N. Cox	823,396	June 12	2344	492–3	122	2286
Furnace for burning comminuted material	H. K. Kriebel	820,931	May 15	3883	828	122	983
Furnace for burning comminuted material	H. K. Kriebel	820,932	May 15	3885	828	122	983
Furnace-grate	A. Cotton	823,715	June 19	2988	633	122	2486
Furnace-grate	E. Einfeldt	824,534	June 26	4573	972–3	122	2885
Furnace lining. Combustion	W. Y. Gambee	819,696	May 1	1304	.....	122	293
Furnaces and preparing the same. Lining for electric or other	H. L. Hartenstein	819,223	May 1	375	.....	122	89
Furnaces. Application of heat in metallurgical and other	B. E. Eldred	819,045	May 1	18	5	122	7
Furnaces. Carbon-holder for electric	G. O. Seward	824,153	June 26	3802	812	122	2721
Furnaces. Distributer for blast	A. B. Neumann	820,065	May 8	2135	465	122	539
Furnaces. Fuel-feeding device for boiler	J. and W. Reagan	823,549	June 19	2680	564–5	122	2417
Furnaces. Means for controlling gas velocity in reverberatory	B. E. Eldred	819,046	May 1	21	5–6	122	7
Furnaces. Regulation of	J. C. Quinn	819,672	May 1	1251	273	122	280
Furnaces. Water-cooled door-frame for	L. L. Knox	824,184	June 26	3861	824	122	2734
Furniture	W. R. Dean	821,990	May 29	6014	1282	122	1571
Furniture	G. H. Abercrombie	822,904	June 12	1347	280	122	2089
Furniture attachment	J. C. Condo	821,338	May 22	4718	1005	122	1227
Furniture. Combination	J. Fedran	821,349	May 22	4750	1010	122	1237
Furniture construction	T. A. Cole	820,766	May 15	3509	752	122	902
Furniture. Convertible	D. H. Goodrich	824,076	June 19	3668	780	122	2633
Furniture-coupling	C. W. Zimmerman and M. E. Burke.	820,540	May 15	3090	665	122	809
Furniture. Folding	W. N. Anderson	819,969	May 8	1901	421	122	484
Furniture. Insecticide-holding attachment for	T. Alexander	824,272	June 26	4038	865	122	2772
Furniture-joint	J. F. Wilmot	820,689	May 15	3358	720	122	865
Furniture-leg. Folding	L. B. Jeffcott	822,049	May 29	6129	1305	122	1598
Furniture-sections. Connection for	A. McKenzie	819,913	May 8	1748	376	122	454
Furniture. Sliding shoe for	O. C. Little	822,963	June 12	1453	303	122	2091
Fuse	F. I. Du Pont	821,883	May 29	5892	1236	122	1523
Fuse and fuse-block. Cartridge	H. Hubbell	819,657	May 1	1217	266	122	273
Fuse and switch. Combined	F. H. Cheyne	819,206	May 1	347	74	122	84
Fuse-box	E. Sherwood	819,608	May 1	1112	245	122	250
Fuse. Electric	O. C. Hoffmann	821,873	May 29	5788	1233	122	1520
Fuse for projectiles. Centrifugal percussion	J. F. Meigs and E. A. Gathmann	819,668	May 1	1243	271	122	279
Fuse. Percussion	C. L. Gulick	823,681	June 19	2930	620	122	2474
Fuse-plug. Multiple	A. Hepke and K. Diener	823,044	June 12	1628	337	122	2132
Fuse. Projectile	H. P. Merriam	822,299	June 5	126	25–6	122	1786
Fuse. Shell	L. L. Driggs and E. Wilkinson	823,852	June 19	3248	687–8	122	2543

Alphabetical list of inventions for May and June—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Gage:							
See Beer-glass gage. Oil-gage. Measuring-gage. Rafter-gage. Micrometer-gage. Shingle-gage. Miter-gage. Skirt-gage. Mortar-gage. Water-gage. Mortise or hinge gage. Wire-gage.							
Gage	P. Noacre	819,370	May 1	686	144	122	157
Gage	E. H. Bateman	819,499	May 1	925	203	122	207
Gage	G. H. Wagner	823,378	June 12	2315	485	122	2280
Gage-glass	C. B. and F. W. Hodges	821,872	May 29	5785	1232–3	122	1519
Gage or marker and rule	A. D. Zimmer	822,094	May 29	6208	1323	122	1616
Gage-testing apparatus	C. H. Craig, Jr.	821,988	May 29	6010	1282	122	1570
Gaining-machine	A. Leclair	821,654	May 29	5357	1142	122	1425
Game	E. H. Enos	821,476	May 22	5011	1065	122	1293
Game	S. F. Randall	823,548	June 19	2679	564	122	2417
Game apparatus	E. L. Evens	819,132	May 1	195	40	122	49
Game apparatus	H. A. Finney	819,530	May 1	978	214	122	220
Game apparatus	B. Noreen and W. Sandberg	820,310	May 8	2611	569	122	644
Game apparatus	C. A. Miller	821,111	May 22	4274	909	122	1129
Game apparatus	E. S. Fatkin and E. B. Ertzman	821,348	May 22	4748	1010	122	1236
Game apparatus	A. L. Smith	822,558	June 5	640	129	122	1867
Game apparatus	J. G. Twiss	822,789	June 5	1100	228	122	1969
Game apparatus	W. H. Kelly	823,049	June 12	1638	338	122	2134
Game apparatus	J. F. Kidder	824,660	June 26	4819	1028	122	2938
Game apparatus. Hockey-	J. L. E. Pell and E. L. C. Clark	821,881	May 29	5800	1236	122	1523
Game-board	A. G. Gedney	820,356	May 8	2687	587	122	661
Game-board	R. T. Carr	823,507	June 19	2590	546	122	2399
Game-board	E. E. Hile	824,423	June 26	4354	926	122	2835
Game. Card	J. G. A. Fortier	821,229	May 22	4495	957	122	1179
Game device	R. D. Martin	824,560	June 26	4628	984	122	2896
Game or amusement device	P. W. Nelson	819,915	May 8	1750	376	122	455
Game. Parlor	J. A. S. Chevolleau	822,721	June 5	993	202	122	1947
Game-table	S. C. Roberts	820,367	May 8	2715	592	122	668
Games. Striking-bat for ball	E. B. Paget	819,250	May 1	428	90	122	100
Garbage-can	I. Hirsohn	821,241	May 22	4519	962	122	1185
Garden implement	G. W. Robinson	820,601	May 15	3194	687	122	832
Gardening-tool	D. L. Kent	824,123	June 26	3742	799	122	2708
Garment	W. S. Barker	821,977	May 29	5991	1277	122	1565
Garment	J. Walter	824,456	June 26	4417	938	122	2849
Garment-clasp	J. P. Croasdale	821,466	May 22	4992	1061	122	1290
Garment-clasp	J. F. Salchli	821,748	May 29	5561	1183	122	1470
Garment-clasp	H. H. Barnum	824,332	June 26	4145	887	122	2794
Garment clasp or supporter	M. B. Gardner	822,939	June 12	1407	295	122	2081
Garment-fastener	J. A. Knowlton	819,767	May 8	1459	312	122	386
Garment-fastener	C. B. Bowling	821,851	May 29	5751	1224–5	122	1512
Garment-hanger	C. L. Patterson	822,981	June 12	1485	309	122	2099
Garment-hanger	J. E. Twitchell	823,376	June 12	2313	485	122	2279
Garment-holder	V. H. Rea	821,742	May 29	5546	1181	122	1466
Garment or pajamas. Sleeping-	W. O. Lee	819,232	May 1	400	84	122	94
Garment-securing device	J. E. Rhodes	822,076	May 29	6180	1317	122	1610
Garment-supporter	G. H. Phelps	819,164	May 1	243	53	122	61
Garment-supporter	G. H. Phelps	819,165	May 1	245	53	122	61
Garment-supporter	F. W. Phillips	819,166	May 1	246	53	122	61
Garment-supporter	H. P. Coulter	820,393	May 15	2776	602	122	742
Garment-supporter	G. H. Perrine	822,866	June 5	1261	260	122	2002
Garment-supporter	L. O. Ma Lone	823,284	June 12	2150	449	122	2246
Garment-supporter	C. Chrysler	823,922	June 19	3376	720	122	2572
Garment-supporters. Friction-slide for	A. Abizaid	821,011	May 22	4078	868	122	1087
Garment-supporting device	J. Ettinger	820,856	May 15	3712	792	122	946
Garter	J. H. Beatty	820,380	May 8	2741	597	122	673
Garter. Boy's side	W. H. Bristol	822,180	May 29	6381	1355	122	1655
Gas-administering apparatus	W. N. Wayman	819,392	May 1	726	154	122	165
Gas and air for heating purposes. Mixing acetylene	A. Keith	823,538	June 19	2662	561	122	2414
Gas and steam engine	H. B. Nicodemus	821,373	May 22	4800	1020	122	1248
Gas apparatus	H. Y. B. Duff	820,959	May 22	3961	842	122	1061
Gas apparatus. Acetylene-	E. M. Rosenbluth	821,540	May 22	5121	1090–1	122	1316
Gas. Apparatus for the generation of acetylene	A. Rosenberg	824,509	June 26	4516	958–9	122	2872
Gas-burner	F. O. Carlson	820,623	May 15	3228	694	122	839
Gas-burner	L. H. Bacque	821,694	May 29	5444	1160	122	1442
Gas-burner	W. S. McLewee	822,465	June 5	453	92	122	1824
Gas-burner	F. Egge	823,165	June 12	1887	380	122	2187
Gas-burner	H. Süssmann	823,308	June 12	2198	458	122	2256
Gas-burner	G. Machlet, Jr.	823,475	June 12	2503	526	122	2321
Gas-burner	W. P. Wiemann	823,836	June 19	3220	681	122	2537
Gas-burner	H. W. O'Dowd	824,308	June 26	4099	877	122	2784
Gas burner. Acetylene-	J. Harris	823,329	June 12	2233	466	122	2263
Gas burner and lamp. Incandescent	A. S. Francis	820,711	May 15	3401	727	122	876
Gas-burner. Inverted incandescent	H. Süssmann	823,309	June 12	2200	458–9	122	2256
Gas-burner. Safety	S. Katz	820,647	May 15	3264	702	122	847
Gas-check	A. Ullmann	820,835	May 15	3674	784	122	937
Gas-check for screw breech mechanisms. Plastic	J. Vollmer and H. Heroaczowski	819,186	May 1	291	62	122	73
Gas-check pad	E. A. Yarnell	822,644	June 5	834	170	122	1912
Gas-cleaner	P. Meehan	821,425	May 22	4915	1044–5	122	1272
Gas-cleaning machine	C. O. Nordensson	820,247	May 8	2498	540	122	619
Gas. Coking and making	L. P. Lowe	819,663	May 1	1229	268	122	276
Gas-condensing apparatus	S. T. Muffly	820,884	May 15	3786	807–8	122	962
Gas-controller	T. B. Wylie	819,492	May 1	913	200	122	204
Gas-engine	F. H. Hurlbut and T. W. Munroe	820,497	May 15	2987	645–6	122	786
Gas-engine	J. C. Scovel, Jr	820,891	May 15	3802	811	122	965
Gas-engine	B. F. Stewart	823,450	June 12	2448	517–18	122	2308
Gas-exhauster	J. T. Wilkin	819,830	May 8	1594	339	122	420
Gas-fixture. Incandescent	W. T. Donnelly	822,353	June 5	252	53	122	1781
Gas-furnace. Regenerative	F. Siemens	822,486	June 5	502	102	122	1836

Alphabetical list of inventions for May and June—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Gas-generating apparatus	L. P. Lowe	819,666	May 1	1231	269	122	276
Gas-generating apparatus	H. B. Rouse	821,258	May 22	4553	969	122	1191
Gas-generating furnace	C. A. Buzzell	824,337	June 26	4156	889	122	2796
Gas-generating kiln. Revolving	S. E. Sieurin	822,394	June 5	320	66	122	1795
Gas-generating machine	O. V. Monroe	819,074	May 1	79	19	122	21
Gas-generator	A. H. Jones	822,132	May 29	6281	1337–8	122	1633
Gas generator. Acetylene-	M. D. Compton	819,980	May 8	1925	426	122	489
Gas generator. Acetylene-	C. W. Beck	820,468	May 15	2923	635	122	772
Gas generator. Acetylene-	J. R. Shirreffs	820,993	May 22	4044	860	122	1080
Gas generator. Acetylene-	R. A. Carl	822,249	June 5	40	9	122	1738
Gas generator. Acetylene-	G. E. Chandler	823,103	June 12	1760	362–3	122	2159
Gas generator and mixer	J. B. Crawford and E. M. Sinclair	819,731	May 8	1384	298	122	370
Gas generators. Valve for acetylene-	I. W. Higgs and H. Hoyoss	823,598	June 19	2767	586	122	2437
Gas-heater	E. H. Whitney	819,260	May 1	446	94	122	104
Gas-heater	C. Eickemeyer	823,267	June 12	2117	441	122	2239
Gas heating apparatus	A. C. Carey	824,338	June 26	4158	890	122	2795
Gas heating device	V. Kost	822,374	June 5	287	59	122	1788
Gas-holder	L. P. Lowe	819,665	May 1	1231	269	122	276
Gas-jet hood	F. B. Cather	823,261	June 12	2106	439	122	2237
Gas-light or for heating purposes. Burner for incandescent	I. Shoob	822,871	June 5	1269	262	122	2004
Gas. Making	F. Dannert	821,928	May 29	5900	1254	122	1546
Gas-making apparatus	L. P. Lowe	819,662	May 1	1227	268	122	275
Gas-making apparatus	L. P. Lowe	821,594	May 22	5221	1114	122	1337
Gas. Making hydrocarbon and combustible	H. S. Blackmore	819,506	May 1	935	.....	122	209
Gas. Manufacturing	L. P. Lowe	819,661	May 1	1226	268	122	275
Gas. Manufacturing	L. P. Lowe	822,531	June 5	589	118	122	1856
Gas-meter	J. Geen	820,563	May 15	3134	674	122	819
Gas-meters. Prepayment attachment for	R. L. Fersenheim	824,419	June 26	4347	924–5	122	2834
Gas-mixer	O. Robbel	822,771	June 5	1075	221	122	1964
Gas-producer	C. H. Morgan	819,075	May 1	83	19	122	22
Gas-producer	H. Gerdes	824,353	June 26	4191	896	122	2803
Gas-producer	R. Hilprecht	824,359	June 26	4199	897	122	2805
Gas-producer	E. Sandner	824,384	June 26	4260	907	122	2817
Gas-producer	H. F. Smith	822,781	June 5	1088	225	122	1966
Gas-producer charging-door	E. Higgins	824,358	June 26	4198	897	122	2805
Gas-producer. Suction	B. E. Eldred	820,485	May 15	2966	641	122	781
Gas. Producing	C. Ellis	821,995	May 29	6024	1284	122	1573
Gas producing and consuming apparatus	J. Bueb	822,246	June 5	28	6–7	122	1735
Gas-producing apparatus	A. Elsenhans	820,772	May 15	3515	754	122	903
Gas-purifying apparatus	G. E. Crookshank	824,413	June 26	4327	921	122	2830
Gas-regulator	H. Schupplaser	823,084	June 12	1726	355	122	2151
Gas-regulator for incandescent lights	L. P. Lowe	819,660	May 1	1225	268	122	275
Gas-washer	S. T. Muffly	820,813	May 15	3616	772	122	925
Gases and vapors. Condensing or dissolving	C. Clamond	820,283	May 8	2568	557	122	635
Gases. Process and apparatus for separating mixed	R. Knietsch	822,373	June 5	284	59	122	1787
Gases. Purifying burner-	F. W. C. Schniewind	820,525	May 15	3058	659	122	803
Gases. Treating and utilizing	J. H. Optenberg	824,377	June 26	4248	905	122	2814
Gasket-removing tool	L. Petterson	820,010	May 8	2008	441	122	510
Gasolene-motor							
Gate:							
See Automatic gate. Mine-gate. Cyanid-tank gate. Railway-gate. Dehorning-gate. Railway cattle-gate. End-gate. Tilting gate. Farm-gate. Water-gate.							
Gate	W. H. Mitchell and J. A. Isaman	819,300	May 1	536	114	122	124
Gate	C. Beliveau	819,332	May 1	609	129	122	140
Gate	J. S. Johnson	820,201	May 8	2394	520	122	595
Gate	J. T. Reese	820,256	May 8	2513	544	122	623
Gate	E. T. Morris	820,516	May 15	3042	654	122	799
Gate	L. E. Reames	820,735	May 15	3446	738	122	887
Gate	M. L. Howarth	820,787	May 15	3541	759	122	909
Gate	B. W. Peters	820,822	May 15	3640	777	122	930
Gate	J. Fears	821,793	May 29	5648	1203	122	1490
Gate	E. M. Hoagland	822,368	June 5	277	58	122	1786
Gate	C. C. Du Bois	822,513	June 5	559	113	122	1849
Gate	A. E. Cullem	823,037	June 12	1614	334	122	2129
Gate	G. R. Rogers	823,293	June 12	2163	451–2	122	2249
Gate	C. G. Lindsay	823,692	June 19	2950	624	122	2478
Gate	G. A. Mock and J. Mendenhall	824,500	June 26	4501	954–5	122	2869
Gate	J. W. Reynolds	824,584	June 26	4680	995	122	2908
Gate	J. W. Beall	823,501	June 19	2579	544	122	2398
Gate and door securer	T. Patterson	820,436	May 15	2863	603	122	758
Gates. Clamping-elbow for tubular farm-	E. P. Gray	823,524	June 19	2636	554	122	2409
Gear casing. Differential	G. H. Jones	819,436	May 1	813	174	122	183
Gear-casings. Magnetic metal-collector for	C. E. Lipe and A. T. Brown	821,248	May 22	4529	964	122	1187
Gear. Changeable	J. W. Walters	822,702	June 5	954	195	122	1940
Gear. Clutch and transmission-	J. R. Cardwell	819,266	May 1	462	97	122	107
Gear. Draft-	O. O. Furru	819,213	May 1	358	76–7	122	86
Gear. Reversible power-transmission	A. T. Brown	819,334	May 1	612	129–30	122	141
Gear. Transmission-	W. H. Hollopeter	822,453	June 5	424	87	122	1817
Gear. Transmission-	W. Baines	819,118	May 1	172	35	122	45
Gear. Variable-speed	R. W. Wilson and F. G. D. Johnston.	823,658	June 19	2892	612	122	2467
Gear. Variable-speed	F. L. Morse	824,132	June 26	3759	803	122	2711
Gear-wheel tooth. Detachable	H. Baerbalck	820,377	May 8	2732	595	122	671
Gearing	A. Harrold	822,449	June 5	417	85	122	1815
Gearing	J. P. Barnes	823,201	June 12	1972	411	122	2208
Gearing	A. Damians y Rovira	823,462	June 12	2469	522	122	2313
Gearing	F. W. Schroeder	823,369	June 12	2301	481	122	2277
Gearing. Speed-							
Generator:							
See Acetylene-generator. Steam-generator. Gas-generator. Vapor-generator. Induction-generator.							
Gin	M. Reynolds	823,439	June 12	2427	511	122	2304
Gin-saw cleaner. Cotton-	J. N. Wiggs	821,446	May 22	4055	1053	122	1281

Alphabetical list of inventions for May and June—Continued.

Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
				Spec.	Drg.	Vol.	Page.
Girder-cutting apparatus	H. John	823,871	June 19	3280	695-6	122	2551
Girdle	G. A. Lackey	822,283	June 5	114	23	122	1753
Glass:							
See Gage-glass. Opera-glass.							
Glass. Apparatus for drawing sheet-	I. W. Colburn and E. Washburn	823,581	June 19	2738	580	122	2430
Glass. Apparatus for the manufacture of sheet-	W. B. Keighley	820,205	May 8	2402	522	122	597
Glass articles. Apparatus for manufacturing	J. H. Croskey	820,477	May 15	2946	637-8	122	777
Glass articles. Apparatus for manufacturing	J. H. Croskey	820,478	May 15	2948	638	122	778
Glass articles. Apparatus for manufacturing	J. H. Croskey	820,479	May 15	2950	639	122	779
Glass articles. Machine for blowing hollow	C. J. Nolan	822,220	May 29	6454	1370-1	122	1672
Glass assembled. Clamp for holding plates of	H. Mahn	820,225	May 8	2406	528	122	606
Glass-blowing-machine speed-controlling device	H. F. Hitner	822,452	June 5	422	86-7	122	1816
Glass cylinders. Apparatus for the manufacture of	J. Forster	821,478	May 22	5015	1066-7	122	1293
Glass cylinders. Device for capping off	H. F. Hitner	821,361	May 22	4774	1015	122	1242
Glass cylinders. Drawing	J. H. Lubbers	822,678	June 5	898	184	122	1927
Glass. Drawing sheet-	J. H. Lubbers	822,212	May 29	6438	1367	122	1669
Glass-furnaces. Batch drying, heating, and feeding apparatus for	C. L. Betz	823,757	June 19	3062	649	122	2500
Glass grinding, smoothing, and polishing apparatus. Plate-	E. Bagnall	822,096	May 29	6210	1324-5	122	1616
Glass. Machine for the manufacture of sheet-	J. T. Hamilton	822,446	June 5	413	84-5	122	1814
Glass machine. Wire-	N. Franzen	822,357	June 5	257	54	122	1782
Glass. Method of and machine for forming wire-	N. Franzen	823,112	June 12	1780	367	122	2163
Glass-molding machine	H. A. Dwyer	821,070	June 19	3655	778-9	122	2630
Glass-pot furnace and pot and making the same	W. T. Nicholls	820,124	May 8	2249	489	122	564
Glass. Process and apparatus for drawing sheet-	I. W. Colburn, E. Washburn, and C. W. Irwin.	821,785	May 29	5628	1199-1200	122	1486
Glass. Process and apparatus for drawing sheet-	I. W. Colburn and E. Washburn	821,786	May 29	5632	1200-1	122	1486
Glass shade. Decorative	O. A. Mygatt	821,308	May 22	4658	992-3	122	1214
Glass sheets. Apparatus for drawing	J. H. Lubbers	821,724	May 29	5507	1173-4	122	1457
Glass-tube coupling	L. P. Lowe	822,530	June 5	588	118	122	1856
Glassware-manufacturing apparatus	T. J. McElherron	822,623	June 5	793	161	122	1902
Glazier's point	R. J. Henderson	820,192	May 8	2383	517	122	593
Glazier's tool	B. A. Brown	820,092	May 8	2195	478	122	552
Glove	R. N. Carson	823,204	June 12	1976	412	122	2208
Glove-fastener	F. R. White	821,008	May 22	4072	866	122	1086
Glove or mitt. Base-ball	R. F. Le Mat	820,120	May 8	2242	488	122	563
Go-cart	L. P. Halladay	822,944	June 12	1415	296	122	2083
Gold-leaf book	R. Henke, Jr	820,717	May 15	3411	729	122	878
Golf-club	C. E. R. Martin	819,900	May 8	1723	370	122	450
Golf-stick	F. H. Robertson	823,082	June 12	1724	354	122	2151
Gong. Electric	W. F. Word	824,397	June 26	4285	913	122	2821
Goods-delivering receptacle	J. H. Russell	821,541	May 22	5124	1091-2	122	1316
Governing mechanism	J. G. Callan	820,912	May 15	3847	820-1	122	974
Governing mechanism. Engine	W. L. Waters	823,567	June 19	2713	571	122	2425
Governing mechanism for prime movers	H. Keller	822,673	June 5	887	181-2	122	1925
Governor	R. Conrader	821,157	May 22	4369	929	122	1152
Governor	A. C. Van Houweling	822,495	June 5	516	105	122	1839
Governor	F. O. Ball	822,907	June 12	1351	280	122	2070
Governor. Engine-	C. Grant	821,286	May 22	4608	982-3	122	1203
Governor. Engine-	P. Mohrdieck	824,564	June 26	4633	985	122	2897
Governors. Oil-brake for speed-	M. Haeberlein	821,359	May 22	4771	1014-15	122	1242
Grader. Road-	A. L. Donogh	824,236	June 26	3973	851	122	2758
Grading and excavating machine	S. H. Bloomer	819,843	May 8	1618	344	122	426
Grading-machine attachment	W. E. Leighton	821,513	May 22	5076	1081	122	1306
Grain and seed cleaners. Blast-regulator for	F. J. Prane	823,637	June 19	2849	603	122	2457
Grain, &c. Apparatus for purifying	D. H. Stuhr	820,680	May 15	3342	716	122	862
Grain-conveyer	J. W. Schauer	819,676	May 1	1259	274	122	282
Grain-conveyer. Pneumatic	J. M. Akers	824,056	June 19	3635	774	122	2626
Grain. Device for separating cockle from	J. A. Eklund	822,105	May 29	6229	1328	122	1621
Grain-distributer	J. W. Smith and N. L. Heckman	822,872	June 5	1271	262-3	122	2004
Grain-drier	W. Griesser	819,424	May 1	784	169-70	122	177
Grain-drill	P. M. Gundlach	824,010	June 19	3557	759	122	2609
Grain-drill seedbox	W. F. Hoyt	822,002	May 29	6038	1287	122	1577
Grain-drill speed-changing mechanism	R. C. Livesay	821,810	May 29	5682	1210	122	1498
Grain dump and elevator	P. P. Oyer	823,436	June 12	2422	510	122	2302
Grain-moving apparatus. Pneumatic	J. C. Rieth and J. H. Chamberlain.	824,585	June 26	4682	995	122	2909
Grain separating and grading apparatus	J. F. Delany	823,322	June 12	2222	464	122	2261
Grain-separator	T. W. Slutz and K. O. Lee	820,265	May 8	2526	547-8	122	625
Grain-separator	A. McRae	820,816	May 15	3623	773-4	122	927
Grain separator and bagging device. Combined	T. C. Henninger	820,867	May 15	3725	795	122	948
Grain-shocking machine. Automatic	A. G. A. Schmidt and L. Champeau.	821,542	May 22	5127	1092-3	122	1317
Grain-tank and shelter-top. Combined	S. Engh	822,262	June 5	73	14-15	122	1744
Grain-weigher	E. J. Vraalstad	824,606	June 26	4721	1005	122	2917
Graining-machine. Friction	F. A. Taylor and N. E. Flint	819,182	May 1	284	61	122	71
Granular or comminuted nature. Apparatus for moving and mining material of a	A. McDougall	821,372	May 22	4798	1019-20	122	1247
Granulating-machine	E. L. Richards	823,550	June 19	2683	565-6	122	2418
Graphophone attachment	M. J. and J. Greevy	820,642	May 15	3255	700	122	845
Grappling-tongs	W. J. Jones	823,411	June 12	2369	499	122	2291
Grass-killing composition	C. M. Hulsey	821,244	May 22	4524	.....	122	1186
Grate	S. Neemes	822,296	June 5	144	29-30	122	1760
Grate and fuel feeder	E. Harcharick	820,783	May 15	3536	758	122	908
Grate attachment. Fire-	C. Dieterle	823,995	June 19	3528	753	122	2603
Grate-bar	R. C. Monteagle	820,060	May 8	2118	462	122	535
Grate. Chain	J. P. Barnes	824,331	June 26	4143	887	122	2793
Grate. Water-cooled	A. E. Johnson	821,500	May 22	5051	1075-6	122	1301
Grave-cover	W. J. Halpin	823,043	June 12	1627	376	122	2132
Gravel-unloading means	C. H. Williamson	820,538	May 15	3086	664	122	808
Gravity-lock for sliding doors	L. A. Turner	820,271	May 8	2536	549-50	122	628
Grease-cup. Automatic power-compression	E. T. Sprake	821,966	May 29	5973	1272	122	1561
Greenhouse	C. Ickes	820,198	May 8	2390	519	122	594
Grinder for cultivator disks and tools	G. B. Greene	823,857	June 19	3259	690-1	122	2546
Grinding apparatus	M. Dunn	821,621	May 29	5290	1128-9	122	1411

Alphabetical list of inventions for May and June—Continued.

Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
				Spec.	Drg.	Vol.	Page.
Grinding apparatus. Twist-drill-	G. Benicke	821,849	May 29	5747	1223-4	122	1511
Grinding-disks. Apparatus for truing	J. A. Stansbury	819,384	May 1	712	151	122	162
Grinding drills, bores, and like tools. Apparatus for	F. Schmaltz	822,391	June 5	315	65	122	1794
Grinding-machine	H. A. Higbee	820,193	May 8	2384	518	122	593
Grinding-machine	A. B. Landis	820,801	May 15	3579	765-7	122	917
Grinding-machine	J. C. Miller and L. E. Howard	823,613	June 19	2792	591-2	122	2442
Grinding machine. Drill-	F. Schmaltz	819,173	May 1	259	55-7	122	64
Grinding machine. Tool-	J. G. Pool	820,519	May 15	3045	655-7	122	800
Grinding-mill	H. A. Higbee	822,840	June 5	1208	248	122	1992
Grinding-mill	H. C. Robinson	823,365	June 12	2294	480	122	2276
Grinding-mill	M. F. Abbé	824,520	June 26	4543	964-5	122	2879
Grinding-mill disk	A. J. Robinson	819,599	May 1	1100	242	122	247
Grinding or polishing machine	J. T. Duff	822,656	June 5	854	174-5	122	1917
Grip	J. Dunbar	820,292	May 8	2586	563	122	638
Grip device. Intermittent	D. E. Lyman	821,301	May 22	4640	989	122	1209
Ground-roller	F. B. Moore	822,752	June 5	1041	213	122	1957
Guiding and feeding machine. Automatic	W. A. Wood	823,018	June 12	1575	327	122	2121
Guitar attachment	H. M. Willis	823,657	June 19	2892	611	122	2467
Gum from vegetable matter. Obtaining	E. Heber	824,116	June 26	3730	.....	122	2705
Gum. Treating	A. P. Eves	821,934	May 29	5910	1257	122	1548
Gumming-machine	E. A. Claus	823,714	June 19	2985	632	122	2485
Gun	H. L. Woeltjen	822,808	June 5	1143	235	122	1979
Gun. Air-	W. R. Benjamin	822,645	June 5	835	170	122	1912
Gun. Automatic	A. Burgess	821,922	May 29	5885	1251	122	1542
Gun Automatic	A. Burgess	822,851	June 5	1227	253	122	1995
Gun. Automatic	C. H. Taylor	823,004	June 12	1538	320-1	122	2112
Gun. Automatic magazine-	A. Burgess	821,921	May 29	5882	1250	122	1542
Gun firing mechanism	J. F. Meigs and H. G. Jakobsson	824,130	June 26	3735	801-2	122	2710
Gun. Magazine-	P. W. Wisewell	824,165	June 26	3830	817	122	2727
Gun-sight	J. H. Nickerson	821,821	May 29	5702	1215	122	1502
Gun-sight	C. O. Eckley	823,999	June 19	3535	754	122	2605
Gun stock. Jointed	H. W. Munson	824,545	June 26	4510	957	122	2871
Gun-stocks. Lock for fore-end of	E. H. Elder	822,886	June 5	1294	266	122	2009
Gun. Torpedo-	E. L. Zalinski	819,834	May 8	1602	340	122	421
Gun trigger mechanism	K. Völler	821,557	May 22	5154	1099-1100	122	1322
Guns. Single-trigger mechanism for	G. B. Osterhout	821,118	May 22	4284	911-13	122	1131
Guns. Wrought-metal fore-arm for	T. C. Johnson	819,551	May 1	1014	222	122	229
Gutter for buildings	T. S. Woods	822,418	June 5	362	76	122	1805
Hair-fastener	F. B. Rogers and C. H. Dittmer	819,927	May 8	1775	382	122	461
Hair-pin	J. Cook	820,625	May 15	3232	695	122	840
Hair-straightener	S. E. Monroe	819,444	May 1	825	178	122	185
Hame-fastener	J. H. Alexander	822,232	June 5	1	1	122	1729
Hame. Reversible	R. L. Bond	819,508	May 1	937	205	122	209
Hammer. Drop-	E. W. Merrill, Jr	821,303	May 22	4648	990	122	1211
Hammer. Drop-	J. P. McLeod	823,480	June 12	2520	528-9	122	2325
Hammer. Magazine tack-	W. F. Gant	823,041	June 12	1619	335	122	2130
Hammer. Pneumatic	M. Hardsocg	819,425	May 1	788	170	122	178
Hammer. Pneumatic	E. C. Meissner	822,146	May 29	6308	1343	122	1639
Hammock suspension-support	F. E. Schmidt	819,932	May 8	1788	385	122	463
Hammock suspension-support	F. E. Schmidt	820,605	May 15	3200	688	122	833
Hammock-swinging device	W. A. Kress	820,212	May 8	2415	524	122	600
Hand and foot power	J. F. Deal	819,523	May 1	965	211	122	215
Hand-protecting device	R. M. and F. E. Clark	824,174	June 26	3846	821	122	2730
Hand-wheel	H. J. Wiegand	821,272	May 22	4583	975	122	1198
Handle:							
See Carrying-handle.							
Handle	C. Kopf	821,648	May 29	5347	1139	122	1422
Handle	C. H. Maschmeyer	822,970	June 12	1467	306	122	2095
Handle-bar	B. Tulka	821,905	May 29	5852	1244	122	1536
Hanger:							
See Door-hanger. Pipe-hanger. Eaves-trough hanger. Shaft-hanger. Garment-hanger. Smoke-bell hanger. Lady's hat-hanger. Trolley-hanger. Picture-frame hanger. Trolley-wire hanger.							
Hanger	J. H. Dousman	820,771	May 15	3513	754	122	903
Hardware. Device for fastening cabinet-	C. S. Barnard	824,330	June 26	4141	896	122	2793
Hardware. Device for fastening cabinet-	E. W. Bassick	824,333	June 26	4147	898	122	2794
Harmonica	H. Hohner	821,492	May 22	5041	1073	122	1299
Harness	E. S. Dodge	822,831	June 5	1192	241	122	1989
Harness-rack. Self-locking	N. Lofstam	819,233	May 1	401	85	122	95
Harness-support	O. M. Carleton	821,761	June 19	3369	650	122	2502
Harness-terret	G. W. Begole	821,604	May 29	5262	1122	122	1403
Harrow	A. Friedemann	819,748	May 8	1413	304	122	376
Harrow	N. C. Allen	820,279	May 8	2560	555-6	122	633
Harrow	J. W. Newton	821,727	May 15	3430	735	122	883
Harrow and cultivator. Combined	M. True	822,787	June 5	1098	227	122	1968
Harrow attachment	W. R. Summers	823,144	June 12	1845	391	122	2177
Harrow-disk	L. E. Waterman	823,240	June 12	2067	430	122	2229
Harrow. Disk	L. E. Waterman	823,243	June 12	2070	431	122	2229
Harrow riding attachment	L. E. Waterman	823,652	June 19	2883	610	122	2465
Harrow. Rotary	C. J. Davis	821,933	June 19	3399	726	122	2577
Harrow-tooth holder	A. G. Dunlop	823,324	June 12	2225	464	122	2262
Harvester. Beet-	N. B. and W. A. Sebring	824,211	June 26	3927	841	122	2748
Harvester. Cane-	A. O. Pessou	820,730	May 15	3434	735-6	122	883
Harvester. Corn-	W. E. Koch	823,880	June 19	3297	700	122	2555
Harvester. Cotton-	A. G. M. Combee	823,034	June 12	1610	333	122	2129
Harvester-reel	G. A. Paddock	820,667	May 15	3313	711	122	857
Harvester. Self-binding	A. N. Wiens	820,276	May 8	2544	551	122	630
Harvesters. Grain-divider attachment for	C. A. A. Rand	819,797	May 8	1529	324	122	404
Harvesting machine. Beet-	G. F. Conner	823,583	June 19	2744	581	122	2432
Hasp and hook. Combined	T. E. Crecelius	822,189	May 29	6402	1359	122	1660
Hasp-fastener	S. J. McClung	824,260	June 26	4021	861	122	2768
Hasp-lock	J. A. Loftin	821,657	May 29	5367	1144	122	1426
Hat	J. Banks	824,274	June 26	4040	865	122	2772
Hat-blocking machine	C. Eickemeyer	821,284	May 22	4605	981-2	122	1203

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Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
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Hat-brim	R. A. Thratt	819,324	May 1	587	124	122	136
Hat-fastener	J. C. Morrison	822,540	June 5	602	121	122	1859
Hat-fastening	S. F. Egan	823,518	June 19	2622	551	122	2406
Hat-frame former	G. W. Price	823,696	June 19	2957	625–6	122	2479
Hat-guard and tag-holder	B. A. Garlinghouse	822,266	June 5	81	16	122	1746
Hat-hanger. Lady's	C. B. Hotchkiss	822,277	June 5	105	21	122	1751
Hat-machine	C. P. Wildenberg	822,797	June 5	1112	231	122	1972
Hat sizing, hardening, and starting machine	W. H. Behrens	823,153	June 12	1861	384–5	122	2181
Hay and straw puller	S. Ray	819,798	May 8	1530	325	122	405
Hay-cap retainer	G. M. Depew	821,862	May 29	5767	1228	122	1516
Hay-fork	E. Fromm and C. S. Edick	819,535	May 1	986	216	122	221
Hay-press	J. M. and E. C. Holderfield	819,546	May 1	1004	220	122	226
Hay-press	C. E. Davis	822,511	June 5	555	112	122	1848
Hay-rack	E. Neville	820,435	May 15	2860	623	122	757
Hay-rack	C. J. Larson	823,056	June 12	1656	343	122	2137
Head and nape covering	J. Rochet	822,986	June 12	1500	312	122	2105
Head and signal light. Locomotive	D. Burnfield	823,392	June 12	2336	490	122	2284
Head-rest	S. Kline	823,792	June 19	3135	665	122	2518
Headlight. Adjustable	F. C. Lyon	821,047	May 22	4148	882	122	1102
Headwear	J. U. Adams	823,314	June 12	2208	460	122	2258
Heater: *See* Barrel-heater, Bottle-heater, Electric heater, Feed-water heater, Gas-heater, Hot-water heater, Lamp-heater, Steam-heater, Tank-heater, Water-heater.							
Heater	A. von Chigor	820,096	May 8	2199	479	122	553
Heater	S. D. Watson	821,269	May 22	4576	973	122	1196
Heater	A. P. Hopler	822,607	June 5	759	154	122	1895
Heater and duplex burner	C. R. Harris	819,426	May 1	791	170	122	179
Heating apparatus	J. F. and F. O. Adams	821,971	May 29	5981	1274–5	122	1563
Heating apparatus	W. Kane	823,686	June 19	2940	621	122	2476
Heating device. Collapsible	J. G. Newcomb	819,916	May 8	1750	377	122	455
Heating device. Electric	I. Grettum and O. L. Young	824,643	June 26	4788	1020	122	2932
Heating fluids mechanically	F. J. Gilroy	823,856	June 19	3257	690	122	2546
Heating-furnace	D. S. Richardson	820,130	May 8	2261	492	122	567
Heating-furnace	J. F. and F. O. Adams	821,972	May 29	5983	1275	122	1563
Heating system	F. Shurtleff	820,320	May 8	2624	572	122	647
Heating system	C. E. Bowers	822,819	June 5	1164	239	122	1983
Heating system	A. G. Paul	823,074	June 12	1688	349	122	2143
Heating system. Hot-water	J. G. Demarest	821,991	May 29	6016	1283	122	1571
Heating system. Steam-	T. S. Morgan	820,809	May 15	3605	771	122	923
Heel-nailing machine	J. E. Collins	823,582	June 19	2742	581	122	2431
Hides and skins. Apparatus for dyeing	R. Martinet and A. Dulac	823,539	June 19	2664	561	122	2414
Hides and skins. Puring	E. F. Kick	820,648	May 15	3266	.....	122	847
High chair	I. Unger	821,387	May 22	4839	1027	122	1255
Hinge	D. Underhill	819,098	May 1	129	27	122	33
Hinge	J. B. Willard	820,462	May 15	2916	633	122	770
Hinge	H. N. Backus	821,012	May 22	4080	868–9	122	1087
Hinge	J. R. Carter	822,648	June 5	841	171	122	1914
Hinge	J. R. Carter	822,649	June 5	843	172	122	1914
Hinge	P. H. McGrath	822,686	June 5	925	188	122	1934
Hinge	F. Sandham	823,443	June 12	2434	513	122	2305
Hinge	J. C. Anderson	823,911	June 19	3358	716	122	2568
Hinge and support for edgewise-movable gates. Combined	F. E. Knapp	824,033	June 19	3596	766	122	2617
Hinge. Flush-butt	A. G. Lamb	824,367	June 26	4226	901	122	2811
Hinge for closet-seats	W. A. Henn	823,275	June 12	2132	444	122	2242
Hinge for folding furniture	J. Hodson	822,894	June 5	1313	270	122	2013
Hinge. Furniture-	E. A. Gay	820,776	May 15	3522	755	122	904
Hinge. Lock-	W. B. Croft	821,861	May 29	5766	1227	122	1516
Hinge. Multiple-stay	W. M. Smith	820,995	May 22	4048	861	122	1080
Hinge. Refrigerator-door	R. E. Jones	822,279	June 5	107	22	122	1751
Hinge. Spring-	E. Bommer	822,911	June 12	1357	282	122	2071
Hinge. Spring box-	E. L. Rogers	822,555	June 5	637	128	122	1866
Hinges. Ball-bearing for spring-	E. Bommer	822,570	June 5	677	138	122	1877
Hog-catching device	O. H. Betz and G. E. Holliday	824,402	June 26	4295	915	122	2824
Hog-cholera antitoxin. Manufacture of	M. Dorset	823,110	June 12	1777	.....	122	2163
Hoist. Log-	W. Bearry	823,502	June 19	2580	544	122	2398
Hoist-stop. Automatic	F. H. Kohlbraker	824,549	June 26	4610	978–9	122	2892
Hoist. Traveling	H. Japp	820,872	May 15	3732	706	122	950
Holster. Portable	A. Lambert	823,417	June 12	2381	502	122	2294
Hoisting and transferring apparatus	C. A. Morris	819,445	May 1	826	178	122	185
Hoisting apparatus	W. F. Hunt and R. J. Roberts	819,140	May 1	204	42	122	51
Hoisting apparatus	W. H. Brown	820,764	May 15	3505	752	122	901
Hoisting apparatus	W. H. Baldwin	820,844	May 15	3693	787–8	122	942
Hoisting apparatus	J. W. Johnson	824,025	June 19	3579	763	122	2614
Hoisting apparatus	W. W. Miller	824,258	June 26	4017	860	122	2767
Hoisting-apparatus sling	W. L. McCabe	819,576	May 1	1058	232–3	122	238
Hoisting-bucket	A. D. Mosby	821,523	May 22	5095	1085–6	122	1310
Hoisting-engine	J. L. Pilling	820,939	May 15	3900	832	122	987
Hoisting mechanism	F. W. Lovell	820,425	May 15	2843	619	122	753
Holder	J. P. Merline	822,063	May 29	6152	1311	122	1603
Hollow-article mold	H. Besser	822,040	May 29	6113	1303	122	1594
Hollow body. Electrically-heated	E. Haagn	822,270	June 5	88	18	122	1748
Honing-machine	C. F. Boldt	820,761	May 15	3499	750	122	899
Hoof-pad for horseshoes	B. P. Gray	820,108	May 8	2224	483	122	559
Hook: *See* Fish-hook, Fishing-hook, Lacing-hook, Lifting-hook, Pin-hook, Snap-hook, Telephone switch-hook, Toggle-hook, Whiffletree-hook.							
Hook and box. Combined	E. E. Gibson	823,213	June 12	2003	417	122	2213
Hook and eye	A. H. Michaelis	824,257	June 26	4016	860	122	2767
Hook-and-eye fastening	A. W. Berger	820,904	May 15	3828	817	122	971

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Hook and eyelet setting machine	H. C. Pomeroy	819,921	May 8	1761	379	122	458
Hook-lock	F. Lilliger	822,675	June 5	893	182	122	1926
Hoop-coiler	A. F. Ward	823,236	June 12	2057	427	122	2226
Hoop-driving machine. Barrel-	E. and B. Holmes and E. F. Beugler.	821,362	May 22	4775	1015–17	122	1243
Hop-scoop	C. True	823,007	June 12	1548	322	122	2114
Horizon. Artificial	H. A. Gadsden	824,640	June 26	4782	1019	122	2930
Horn-support	A. S. Marten	820,511	May 15	3031	652	122	796
Horse-detacher	J. Orteig	819,308	May 1	552	118	122	127
Horse-detacher	O. von Beglerbeg	819,712	May 8	1339	290	122	361
Horse-hitching device	J. B. Plato	823,964	June 19	3460	739	122	2590
Horse-pad	S. A. Ladd	820,800	May 15	3578	765	122	916
Horse-tail protector	G. Tuthill and W. H. Boyd	822,788	June 5	1099	227–8	122	1969
Horse toe-weight	G. W. Bottum	819,509	May 1	939	205	122	210
Horse-trainer	S. B. Arthurs	821,395	May 22	4855	1030	122	1259
Horses. Ear-carriage device for	F. J. Brown	822,919	June 12	1376	286	122	2075
Horses from vehicles. Means for freeing	D. Boldog	820,381	May 8	2742	597	122	673
Horses. Pacing device for	M. T. Bransfield	823,534	June 19	2582	544	122	2398
Horseshoe	H. D. Shaiffer	819,086	May 1	105	23	122	28
Horseshoe	B. and A. Messinger	820,232	May 8	2447	530	122	608
Horseshoe	G. B. Paul	821,530	May 22	5106	1088	122	1313
Horseshoe	A. G. Albro	821,973	May 29	5984	1275	122	1564
Horseshoe	R. O'Connell	822,468	June 5	458	93	122	1825
Horseshoe	W. J. Harris	822,737	June 5	1017	208	122	1952
Horseshoe	C. E. Silvius	822,780	June 5	1087	224	122	1966
Horseshoe	H. W. Hubbard	822,940	June 12	1425	297	122	2085
Horseshoe-calk	O. J. Hennebeul	821,414	May 22	4893	1040	122	1267
Horseshoe-calk	J. C. H. Cranmer	822,827	June 5	1183	243	122	1987
Horseshoe-calk	C. Loibl	823,423	June 12	2397	505	122	2298
Horseshoe-calk and fastener	B. Bogear and J. G. Tompkins	824,090	June 26	3692	787	122	2696
Horseshoe-calk. Removable	M. D. and H. H. Mudge	822,541	June 5	604	122	122	1860
Horseshoe. Detachable-calk	W. E. Shaw	823,296	June 12	2168	452–3	122	2250
Horseshoe. Nailless	A. King	822,612	June 5	768	155–6	122	1897
Horseshoe-sharpening device	J. Bomgardner	822,229	May 29	6474	1374	122	1678
Horseshoe. Soft-tread	J. McDermott and J. C. McBean	821,817	May 29	5694	1213	122	1501
Horseshoe-spreader	K. K. Allman	823,383	June 12	2323	487	122	2282
Horseshoes. Antislipping device for	L. Alarme	823,497	June 19	2575	543	122	2397
Horseshoeing-stand	F. Seward	822,158	May 29	6339	1348	122	1646
Horseshoeing-stocks	M. L. Hemphill	819,429	May 1	794	171–2	122	179
Hose and pipe coupling	J. Pehrson	820,437	May 15	2863	623	122	758
Hose-clamp	J. W. Adams	821,692	May 29	5441	1159	122	1441
Hose-coupling	R. Bates	822,423	June 5	371	77	122	1806
Hose-coupling	N. A. Christensen	823,510	June 19	2596	547	122	2401
Hose-coupling	J. F. McElroy	824,670	June 26	4836	1032	122	2942
Hose-nozzle	C. S. Alderman	820,328	May 8	2638	575	122	651
Hose-supporter	E. Johnson	824,426	June 26	4360	927	122	2836
Hose-supporter clasp	H. Miles	821,949	May 29	5944	1266	122	1554
Hose-supporter loop	I. B. Kleinert	821,106	May 22	4265	908	122	1127
Hosiery. Manufacture of seamless	E. E. Kilbourn	821,944	May 29	5930	1262	122	1553
Hosiery. Seamless	G. H. Gilbert	822,044	May 29	6121	1304	122	1596
Hosiery. Seamless	G. H. Gilbert	822,663	June 5	865	177	122	1919
Hosiery. Seamless	G. H. Gilbert	822,890	June 5	1307	269	122	2011
Hot-air engine	W. R. Honeywell	820,495	May 15	2982	644	122	785
Hot-air engine	F. W. Morse and F. B. Hubbard	822,463	June 5	450	91	122	1823
Hot-air register	W. S. Tuttle	822,408	June 5	342	71	122	1801
Hot-water boiler	J. B. Walker	823,981	June 19	3500	748	122	2597
Hot-water heater	P. H. Cosgrave	822,854	June 5	1234	254	122	1997
Hot-water regulator	S. J. G. Cornell	823,157	June 12	1868	386	122	2182
Hot-water system. Galley	E. Webb, Jr	819,103	May 1	139	29	122	35
House: *See* Portable house.							
Household use. Indicator for	H. E. Baker and H. E. Neavling	822,815	June 5	1155	237	122	1981
Hub-attaching device	J. W. Marler	823,425	June 12	2399	505	122	2298
Hub. Vehicle-	M. A. Elliott	824,345	June 26	4176	893	122	2801
Hub. Wheel-	O. Lundin	819,898	May 8	1719	369	122	449
Hubs of gears, &c. Machine for forming key-seats in	G. H. Webb	823,833	June 19	3212	679	122	2536
Humidifying and ventilating apparatus	S. W. Cramer	821,989	May 29	6012	1282	122	1570
Hydrant	E. R. Stoddard	820,940	May 15	3901	832	122	987
Hydrant	J. W. Callaghan	822,920	June 12	1377	286–7	122	2076
Hydraulic elevator and other hydraulic apparatus	E. M. Fraser	822,595	June 5	734	148–9	122	1890
Hydrocarbon-burner	W. Kemp	821,419	May 22	4903	1042	122	1269
Hydrocarbon-burner	F. L. McGahan and E. G. Flager	824,432	June 26	4372	930	122	2838
Ice-breaking device	J. H. Dale	821,927	May 29	5898	1253–4	122	1545
Ice-cream cabinet	C. Nelson	819,789	May 8	1518	322	122	402
Ice-cream can	J. J. Snigo	819,465	May 1	857	184	122	192
Ice-cream dipper	A. P. Olmstead	819,373	May 1	691	145	122	157
Ice-cream dipper	R. Buchanan	820,473	May 15	2939	636	122	776
Ice-cream freezer	H. J. Gerner	824,075	June 19	3665	780	122	2632
Ice-cream freezers. Clamp for the cross-bars of	C. Aichele	819,494	May 1	916	201	122	205
Ice-creeper	C. Feister	822,662	June 5	864	177	122	1919
Ice from ice-cans. Apparatus for thawing	T. G. Nicewarner	821,957	May 29	5955	1268–9	122	1557
Icing machine. Cake-	C. W. Carter	820,388	May 15	2766	600–1	122	739
Igniter. Sparking	C. M. Huey	824,245	June 26	3996	855	122	2762
Igniting device	W. B. Goodwin	822,942	June 12	1413	296	122	2062
Ignition apparatus. Electric	G. E. Franquist	820,636	May 15	3246	698	122	844
Illuminator	O. A. Mygatt	823,620	June 19	2808	595	122	2446
Illuminator	O. A. Mygatt	823,621	June 19	2811	595–6	122	2446
Incandescent burner	J. B. Sheehy	820,676	May 15	3331	715	122	861
Inclinometer	J. W. Cleland	819,339	May 1	621	131–2	122	143
Incubator	J. M. Sontag	820,323	May 8	2630	573	122	648
Incubator	C. E. Adair	821,324	May 22	4692	1000	122	1221
Incubator	O. W. Lutz	823,182	June 12	1928	397	122	2197
Incubator	C. A. Lingemann	824,665	June 26	4827	1029–30	122	2940
Index. Card-	E. C. Albree	821,602	May 29	5259	1121	122	1403
Index drawer. Card-	C. McPike	819,367	May 1	681	143	122	156
Index system	D. E. Freeman	821,710	May 29	5485	1168	122	1452

Alphabetical list of inventions for May and June—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Indicator: *See* Bottle-indicator. Street and station indicator. Check-rower indicator. Switch-indicator. Door-indicator. Tank-indicator. Electric indicator. Telephone sight-indicator. Letter-case indicator. Tempo-indicator. Measurement-indicator. Universal indicator. Music-sheet indicator. Valve-indicator. Poison-indicator. Water-level indicator. Speed-indicator. Station-indicator.							
Induction-coil	M. M. Wood	822,332	June 5	217	44	122	1774
Induction-coil	S. H. Sauvé	821,973	June 19	3483	744	122	2594
Induction generator. Static-	H. B. Todd	821,902	May 29	5848	1243	122	1535
Induction-motor	B. G. Lamme	821,044	May 22	4143	880	122	1101
Infant-soother	R. Pinsent	823,076	June 12	1693	350	122	2144
Infants. Device for caring for	K. I. Faust	822,889	June 5	1304	268–9	122	2011
Ingot-heating furnace. Continuous	W. R. Miller and P. V. Cole	822,380	June 5	297	61	122	1790
Inhaler and respirator	E. K. Hill	821,946	June 19	3423	731–2	122	2582
Inhaling apparatus	T. H. Gebauer	821,354	May 22	4762	1012	122	1240
Initiation apparatus	J. M. Seibert	819,814	May 8	1560	332	122	412
Injecting-needle	C. T. Daniel	824,686	June 26	4868	1037	122	2947
Injector. Steam-	W. Penberthy	821,827	May 29	5716	1218	122	1505
Ink-table-distribution presses. Bed-lock for	J. C. Bermingham	820,758	May 15	3491	749	122	897
Ink-well	B. Brower	821,852	May 29	5752	1225	122	1512
Ink-well	F. M. Ashley	822,905	June 12	1347	280	122	2069
Ink-well cover. Dust-proof	J. Kastner, Jr.	823,875	June 19	3287	697	122	2553
Inkstand. Automatic	F. M. Ashley	823,752	June 19	3052	646	122	2498
Inkstand. Safety-	B. Buffard	823,257	June 12	2101	437	122	2236
Insect-trap	H. Reid	822,388	June 5	313	64	122	1794
Insect-trap	H. Freimann	823,718	June 19	2994	634	122	2487
Insecticide	P. A. Cadogan	824,409	June 26	4315	.....	122	2827
Insecticide-trap	E. S. Bedford	820,341	May 8	2664	581	122	656
Insulated coil for electrical apparatus and making the same.	E. Thomson	824,048	June 19	3620	771	122	2622
Insulating appliance	W. A Bonnell	821,920	May 29	5881	1250	122	1542
Insulation-cutter	W. Chaussé	824,172	June 26	3843	820	122	2730
Insulator	T. Carter	821,401	May 22	4868	1032	122	1262
Insulator	A. Richard	821,746	May 29	5554	1182	122	1468
Insulator	F. M. Locke	822,211	May 29	6438	1366	122	1669
Insulator	A. Biele	823,912	June 19	3360	716	122	2568
Insulator	H. M. Acly	824,055	June 19	3635	773	122	2626
Insulator. Automatic	G. M. Corell	822,043	May 29	6119	1303	122	1595
Insulator for high-tension lines	E. Giraud	820,924	May 15	3873	825	122	981
Insulator. Heat-	E. Kunz	822,848	June 5	1220	252	122	1994
Insulator-pin	J. H. Bullard	823,461	June 12	2467	521	122	2312
Insulator. Prong-	L. Steinberger	823,820	June 19	3182	673	122	2528
Insulator-protector	J. L. Gleason	820,641	May 15	3253	700	122	845
Insulator. Wood strain-	T. C. White	822,642	June 5	830	169	122	1911
Internal-combustion engine	C. W. Weiss	819,258	May 1	443	94	122	104
Internal-combustion engine	J. B. King	819,557	May 1	1023	224	122	230
Internal-combustion engine	D. M. Livingston	820,222	May 8	2430	527	122	604
Internal-combustion engine	H. G. Giffard	820,712	May 15	3402	727	122	877
Internal-combustion engine	S. B. Welcome	822,172	May 29	6366	1352	122	1652
Internal-combustion engine	L. Mertens	823,286	June 12	2153	449	122	2246
Iron: *See* Chair-iron. Sad-iron. Flat-iron.							
Iron direct from its oxids. Manufacturing	J. N. Whitman	820,898	May 15	3819	.....	122	969
Ironing-board	G. H. Aigin	823,910	June 19	3357	715–16	122	2567
Ironing board	W. Bremer	824,091	June 26	3693	787	122	2696
Ironing-board cover	W. E. Hazard	823,169	June 12	1895	390	122	2189
Ironing-board support	C. Schafer	820,262	May 8	2522	546	122	625
Ironing machine. Seam-	R. L. Hall and T. C. Martin	819,698	May 1	1306	284	122	293
Ironing-table	B. S. Cross	820,284	May 8	2571	558	122	635
Ironing-table	L. C. Bullock	823,580	June 19	2736	579–80	122	2430
Ironing-wax pad	G. Peetz	821,532	May 22	5111	1088	122	1314
Jack: *See* Carpenter's jack. Shoe-ironing jack. Lifting-jack. Telescoping jack. Miter-jack.							
Jack	J. W. Hearn	821,239	May 22	4517	961	122	1184
Jail-bunk	W. Dowling	822,592	June 5	730	147	122	1889
Jar: *See* Battery-jar. Syrup-dispensing jar. Drilling-tool jar.							
Jar-closure	C. Barnes	820,902	May 15	3824	816	122	970
Jar-closure	C. C. Parker	821,596	May 22	5225	1115	122	1338
Jar-holder	G. M. Corsey	822,652	June 5	847	173	122	1915
Jar-opener	H. M. Hartshorn	824,114	June 26	3728	796	122	2705
Jar wrench. Fruit-	E. W. Macauley	824,369	June 26	4220	902	122	2811
Jelly-press	M. S. Schayer	824,592	June 26	4602	908	122	2911
Jewel grinding and polishing machine	O. H. Alton	819,628	May 1	1161	255	122	261
Jewel-pin and pallet-stone setter	O. O. Aune	821,396	May 22	4857	1030	122	1259
Jig or ore-concentrator	A. C. Campbell	824,623	June 26	4750	1012	122	2923
Joint: *See* Bed-rail joint. Railway-joint. Furniture-joint. Railway-rail joint. Rail-joint. Sheet-metal joint.							
Joint	W. W. Sweeney and F. A. Sylva	823,451	June 12	2450	518	122	2309
Joints. Apparatus for reducing dislocated	R. W. Bartlett	824,612	June 26	4730	1007–8	122	2919
Journal and lubricator. Combined	J. W. Barlow	821,490	May 22	4964	1056	122	1283
Journal-bearing	A. Buchner and E. P. McClure	820,765	May 15	3508	752	122	901
Journal-bearing	D. J. Llewellyn	823,693	June 19	2951	624	122	2478
Journal-bearing. Self-lubricating	J. B. Curtis	824,628	June 26	4760	1014	122	2926

Alphabetical list of inventions for May and June—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Journal-box	H. C. Buhoup	824,406	June 26	4310	918	122	2826
Journal-box	J. S. Patten	824,573	June 26	4636	991	122	2902
Journal-box and dust-guard	J. S. Patten	820,009	May 8	2006	440	122	510
Journal-box and dust-guard. Concaved	J. S. Patten	822,759	June 5	1053	215–16	122	1959
Journal-box and dust-guard. Convex	J. S. Patten	822,760	June 5	1054	216	122	1960
Journal-box brass	J. S. Patten	822,762	June 5	1058	217	122	1960
Journal-box. Car-	J. S. Patten	822,761	June 5	1056	216–17	122	1960
Journal-box. Car-axle	W. E. Sanders	819,675	May 1	1257	274	122	282
Journal-box dust-guard	G. L. Mansfield	824,127	June 26	3747	800	122	2709
Journal-boxes. Apparatus for cooling hot	D. H. Fairbanks	824,635	June 26	4773	1017	122	2928
Journal-lubricator	C. H. Turner	819,475	May 1	880	192	122	197
Journal-lubricator	G. Tibbett	821,203	May 22	4451	948	122	1169
Jug	A. J. Weeks	819,191	May 1	302	65	122	75
Keg. Sheet-metal	A. T. Kruse	819,768	May 8	1461	312	122	387
Kettle-cleaner	M. A. Davies	822,926	June 12	1385	289	122	2077
Kettle-cover fastening	A. W. Nelson	823,071	June 12	1681	348	122	2142
Key: *See* Piano-key. Telephone-key.							
Key and knob clamp	W. Deutsch	820,919	May 15	3865	823	122	978
Key-controlled machines. Line-counting attachment for	G. E. Marlatt	822,144	May 29	6299	1342	122	1637
Key-fastener	L. A. Foster	820,293	May 8	2587	564	122	639
Key-operated mechanism	F. H. Richards	823,080	June 12	1698	351–3	122	2145
Keyboard. Dummy	J. W. McCann	823,888	June 19	3314	706	122	2558
Kiln: *See* Continuous kiln. Lumber-drying kiln. Drying-kiln. Rotary kiln.							
Kiln	A. P. Broomell	822,245	June 5	27	6	122	1734
Kilns and the like. Temperature-indicator and automatic fire-extinguisher for drying-	L. Harlow	820,571	May 15	3148	677–8	122	822
Kite which can be taken to pieces. Tailless	A. J. Bergeron	824,616	June 26	4741	1010	122	2921
Kneading and aerating roller. Dough	W. Latham	819,772	May 8	1466	313	122	388
Knife: *See* Paper-knife. Putty-knife. Planing-machine knife. Trimming-knife. Pocket-knife.							
Knife	L. U. Crawford	822,432	June 5	385	80	122	1809
Knitting-machine	J. P. and G. B. Sheppard and A. J. Mankin.	824,043	June 19	3611	769	122	2620
Knitting-machine	M. Boas	824,403	June 26	4296	916–17	122	2824
Knitting-machine. Circular independent-needle	J. Wheeler	822,564	June 5	652	133–4	122	1869
Knitting-machine needle	E. H. Sturtevant	822,401	June 5	331	69	122	1798
Knitting-machine. Pattern	W. W. Burson	819,407	May 1	752	160–1	122	170
Knitting-machine power mechanism	T. F. Morris	824,565	June 26	4636	985	122	2898
Knitting machine. Rack-stitch rib-	W. Stafford and R. C. Holt	823,818	June 19	3178	672–3	122	2528
Knitting-machine stop-motion device	L. N. D. Williams	821,969	May 29	5979	1273	122	1562
Knob-lock. Cylinder	J. Montgomery	823,348	June 12	2269	473–4	122	2272
Knotter	R. R. Thompson and C. F. Pinkham.	819,954	May 8	1850	403–8	122	476
Knuckle-sleeve. Emergency	W. F. Taylor	824,451	June 26	4404	936	122	2846
Labeling and wrapping machine	F. Grover	822,118	May 29	6260	1333	122	1628
Labeling-machine	K. C. Gillette	824,680	June 26	4878	1039	122	2949
Labeling machine. Bottle-	N. Muslar	824,569	June 26	4642	987–8	122	2899
Labels, tickets, &c. Holder or receptacle for	F. G. Passino	823,357	June 12	2281	477	122	2274
Lace-cabinet	J. R. Wilson	824,323	June 26	4131	884	122	2791
Lace-securing device. Shoe-	B. G. Buchanan	820,693	May 15	3372	722	122	868
Lacing	W. E. Haws and G. W. Hill	819,993	May 8	1956	433	122	675
Lacing for wearing-apparel	M. Meyer	819,907	May 8	1738	374	122	453
Lacing-hook	C. E. Hodson	820,420	May 15	2836	617	122	752
Lacing-tip	F. B. Stirckler	819,946	May 8	1812	392	122	468
Lacework-holder	A. Proctor. (Reissue)	12,479	May 8	2750	598	122	497
Ladder	J. I. Thompson	819,951	May 8	1824	394	122	471
Ladder	C. Coplantz	823,512	June 19	2803	549	122	2402
Ladder. Compound scaling-	W. F. Sampson	819,929	May 8	1780	383	122	462
Ladder. Step-	F. W. Shoecraft and H. L. Allard	820,370	May 8	2721	593	122	669
Ladder. Step-	W. F. Beale	820,467	May 15	2922	635	122	771
Ladder. Step-	J. B. Shaler	821,834	May 29	5727	1220	122	1507
Ladders and the like. Bracket for step-	J. Jackson	821,498	May 22	5048	1075	122	1300
Ladle	B. C. White	820,613	May 15	3214	690–1	122	836
Lamp. Acetylene-gas-generating	F. E. Baldwin	821,580	May 22	5190	1108	122	1330
Lamp. Alcohol-	G. T. Sutterley	820,151	May 8	2303	503	122	576
Lamp and boiler. Combined alcohol	G. W. Huber	822,859	June 5	1245	256	122	1999
Lamp and prismatic-glass reflector. Composite electrical	O. A. Mygatt	823,619	June 19	2807	595	122	2446
Lamp. Arc-	S. H. Blake and G. R. Davison	822,240	June 5	19	4	122	1733
Lamp attachment	J. M. Cropper	823,160	June 12	1872	387	122	2188
Lamp-bracket	W. W. Snowhill	823,000	June 12	1529	318	122	2110
Lamp-bracket. Adjustable	W. G. Schaeffer	821,749	May 29	5562	1187	122	1470
Lamp-burner	L. Lorenz	819,564	May 1	1037	227	122	233
Lamp-burner	L. Lorenz	819,565	May 1	1038	227	122	234
Lamp-burner	G. Kerr	821,171	May 22	4389	934	122	1156
Lamp-burner	M. C. Ayer	823,200	June 12	1971	410	122	2207
Lamp burner. Oil-	J. Sharples	820,068	May 8	2142	466	122	541
Lamp-burners. Flame-regulator for	H. R. White	824,395	June 26	4280	912	122	2820
Lamp. Candle-	W. J. Rogers	819,379	May 1	706	149	122	161
Lamp. Electric	J T. H. Dempster	821,470	May 22	4998	1063	122	1291
Lamp. Electric-arc	E. J. Murphy	823,958	June 19	3449	737	122	2588
Lamp. Electric incandescent	W. J. Phelps	819,793	May 8	1523	323	122	403
Lamp-extinguisher	G. Kerr	822,457	June 5	433	88–9	122	1819
Lamp. Gas-	T. B. Wylie	819,493	May 1	915	200	122	204
Lamp-heater	J. W. Summers	822,402	June 5	332	69	122	1798
Lamp. Incandescent electric	H. I. Wood	819,624	May 1	1155	254	122	259
Lamp. Incandescent electric	C. Schübel	819,935	May 8	1794	388	122	464
Lamp. Incandescent electric	H. C. Parker	821,056	May 22	4163	885	122	1105
Lamp. Incandescent spirit-	W. Liedke and O. Rabenhorst	820,002	May 8	1994	437	122	506
Lamp-jacks. Strip of	M. Setter	819,085	May 1	103	23	122	28

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Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
				Spec.	Dr'g.	Vol.	Page.
Lamp. Kerosene incandescent	J. A. Mathes	823,733	June 19	3017	639	122	2491
Lamp-pendant	H. W. Hanwell	820,414	May 15	2827	615	122	750
Lamp receptacle. Electric-	P. H. Jaehnig	824,021	June 19	3569	762	122	2612
Lamp-shade holder. Electric-	F. McIntyre	822,219	May 29	6450	1370	122	1671
Lamp socket. Incandescent-	N. Marshall	822,007	May 29	6045	1288	122	1578
Lamp. Vehicle-	T. J. Corcoran	821,224	May 22	4483	955	122	1175
Lamps. Applying terminals to the glowers of electric	M. W. Hanks	822,365	June 5	270	57	122	1785
Lamps. Ballast device for Nernst	L. Glaser	820,489	May 15	2975	642	122	783
Lampe, &c. Vaporizer and wickless burner for oil-	J. F. Schnell	822,870	June 5	1268	261	122	2004
Land-roller	R. S. Buch	819,721	May 8	1360	294	122	366
Lantern-globe-lifting device	A. R. Pritchard	823,078	June 12	1695	350	122	2144
Lantern-holder	W. N. Roberts and H. B. Mathews	819,805	May 8	1543	328	122	407
Lantern-holder	J. G. Dittmer	824,101	June 26	3705	790–1	122	2699
Lantern. Signal-	W. A. Wright	824,052	June 19	3630	772	122	2625
Lantern. Signal-	W. A. Wright	824,053	June 19	3631	773	122	2625
Lantern. Tubular	A. R. Pritchard	819,167	May 1	248	54	122	61
Lap-robe	H. L. Hoenigsberger	823,469	June 12	2479	524	122	2315
Lasting-machine	M. Brock	823,664	June 19	2900	614	122	2469
Lasting mechanism for tacking and stapling machines	H. Walther	823,906	June 19	3350	714	122	2566
Lasts. Jack-pin for hinged	W. B. Arnold	819,970	May 8	1902	421	122	484
Lasts. Nail-clenching device for the heels of wooden	J. O. Stivers	822,489	June 5	507	103	122	1837
Latch	H. H. Engebretson	824,417	June 26	4343	923	122	2832
Latch and lock. Door	G. A. Lindström	820,056	May 8	2108	459–60	122	533
Latch. Door-	N. M. Hutton	823,786	June 19	3123	662	122	2515
Latch. Gate-	J. S. Johnson	819,284	May 1	506	106	122	117
Latch. Gate-	M. I. Jackson	821,363	May 22	4782	1017	122	1244
Latch. Gate-	N. A. McPhail	824,195	June 26	3888	830	122	2740
Latch. Spring-	M. S. Keeler	824,027	June 19	3583	764	122	2615
Lathe	C. G. Richardson	824,207	June 26	3914	836–9	122	2745
Lathe for turning axles	C. Mills	823,614	June 19	2796	592–3	122	2443
Lathe tool-holder	H. W. Hathorn	822,122	May 29	6267	1334	122	1630
Lathe. Turret-	C. J. Forsberg	821,351	May 22	4754	1011–12	122	1238
Lathes. Attachment for increasing the swing of	A. V. Carroll	821,608	May 29	5268	1123	122	1404
Lathes. Pulley-crowning attachment for	H. McLeod	822,754	June 5	1044	214	122	1958
Lathing. Machine for weaving sheet-	J. D. O'Brien	823,628	June 19	2830	599	122	2450
Lathing system	E. Nidds	820,246	May 8	2496	539	122	619
Laundry-assorting receptacle	E. E. and D. R. Niswonger	823,433	June 12	2417	509	122	2302
Laundry-bag	S. G. Coburn	821,996	May 29	6005	1281	122	1569
Lawn-trimming device	H. O. Secrest	819,176	May 1	270	58	122	68
Lead-making apparatus. White-	J. W. Bailey	823,097	June 12	1746	359–60	122	2156
Leaf-holder	H. V. Wagoner	821,142	May 22	4346	924	122	1146
Leather-board-making machine	E. D. Alvord and H. R. Knox	824,086	June 26	3687	785	122	2695
Leather. Composition of matter for softening and bleaching sole-	W. F. Morang	820,121	May 8	2244	.....	122	563
Leather-cutting machine	J. Smith	820,148	May 8	2298	502	122	574
Leather. Method of and apparatus for shredding	O. M. Cutler	819,863	May 8	1649	352	122	433
Leather. Oil-dressing for	H. Schowalter	821,260	May 22	4557	.....	122	1192
Leather-scarfing machine	M. A. Holmes and G. W. Allen	820,975	May 22	4003	850–1	122	1071
Leather-shredder	O. M. Cutler	819,862	May 8	1648	351–2	122	433
Leather-splitting machines. Means for truing the spring-rolls of	W. D. Quigley and J. H. Gay	819,168	May 1	249	54	122	62
Leather straps and belts. Machine for making	A. Feinblatt	823,269	June 12	2120	442	122	2239
Leather-stretching-machine clutch	E. L. Post	824,139	June 26	3770	805	122	2713
Leg. Artificial	J. T. Apgar	820,082	May 8	2170	472–3	122	546
Leg. Artificial	J. A. Peer	822,385	June 5	305	63	122	1792
Lens-drilling machine	E. T. Waite	824,220	June 26	3940	844	122	2751
Lens-mounting	V. Bertolini	820,174	May 8	2348	511	122	585
Letter-case indicator	W. D. Brown and C. H. Campbell	820,697	May 15	3368	722	122	867
Letters or other papers. Receptacle for	W. A. Cooke, Jr	821,019	May 22	4090	871	122	1090
Level	J. A. Traut	820,028	May 8	2046	449	122	518
Level. Ditching-	O. Halvorsen	824,479	June 26	4469	947	122	2862
Level. Long-distance	J. H. Janssen and F. T. Koester	819,350	May 1	638	136	122	146
Level. Spirit-	A. T. Gibson	824,109	June 26	3719	794	122	2703
Leveling instrument	H. S. Williams	819,965	May 8	1894	419	122	482
Lewis	A. G. Quist	822,769	June 5	1070	220	122	1963
Lewis-bolt	J. P. Murphy and N. W. Rancourt	821,952	May 29	5948	1267	122	1555
Life-preserver	S. Citron	822,882	June 5	1290	265	122	2008
Life-preserver	G. Krieger	824,664	June 26	4826	1029	122	2940
Lifter: *See* Building-block lifter. Pot-lifter. Pan-lifter. Pump-rod lifter. Plate, pan, or pot lifter.							
Lifter	J. E. Chenet	821,088	May 22	4238	901	122	1121
Lifter-rod holder and guide	A. F. and C. H. Norris	822,071	May 29	6170	1315	122	1608
Lifting-hook	J. A. Lease	822,897	June 5	1317	271	122	2014
Lifting-jack	S. T. Gogley	819,539	May 1	993	218	122	224
Lifting-jack	N. Weiler	819,825	May 8	1583	336	122	417
Lifting-jack	F. D. Tarver	820,832	May 15	3663	782	122	934
Lifting-jack	W. Trewhella	821,769	May 29	5600	1193	122	1479
Lifting-jack	W. A. Story and W. A. Hall	821,840	May 29	5736	1221	122	1509
Lifting-jack	T. Schramm	822,157	May 29	6338	1348	122	1646
Lifting-jack	E. Cook	822,350	June 5	249	52	122	1780
Lifting-jack	W. F., P., and L. Kidd	823,949	June 19	3432	732–3	122	2584
Lifting-jack	B. R. Beaver	824,614	June 26	4739	1009	122	2921
Lifting-jack and car-wheel holder	W. B Orr and W. J. McGee	821,823	May 29	5704	1215	122	1503
Lifting-jack and wire-stretcher	A. F. Wilson	821,565	May 22	5166	1102–3	122	1325
Lifting-jack, clamp, and wire-stretcher	A. J. White	823,149	June 12	1853	383	122	2179
Lifting mechanism	L. C. Phillips	819,592	May 1	1089	239–40	122	245
Lifting, moving, and depositing materials. Appliance for	J. M. Henderson	823,961	June 19	3266	692–3	122	2548
Light: *See* Head and signal light. Street-light.							
Light-fixture	H. R. Ives	819,068	May 1	62	14	122	18
Light-projecting apparatus	E. W. Sohlberg	819,611	May 1	1116	247–8	122	251
Lighter-bar stand	M. R. Rust	820,137	May 8	2275	495	122	570

Alphabetical list of inventions for May and June—Continued.

Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
				Spec.	Dr'g.	Vol.	Page.
Lightning-arrester	T. J. Johnston	822,610	June 5	763	155	122	1896
Lime-burning apparatus	C. Ellis	821,996	May 29	6025	1284	122	1574
Line-connecting device	J. H. Warren	824,222	June 26	3945	845	122	2752
Link-assembling machine. Metallic-	M. F. Capron	821,782	May 29	5620	1197–8	122	1483
Link-closing press	C. J. Perks	819,451	May 1	836	180	122	187
Linotype-machine	A. J. Benjamin	820,546	May 15	3102	668	122	812
Linotype-machine	P. E. Kent	821,296	May 22	4630	987	122	1208
Linotype-machine	C. T. Libby	822,286	June 5	118	24–5	122	1754
Linotype-machine	H. B. Bartlett. (Reissue)	12,494	June 12	2564	540–1	122	2332
Linotype-machine	D. S. Kennedy	824,659	June 26	4818	1027–8	122	2938
Linotype-machine attachment	E. S. Day and H. B. Hubbard	821,342	May 22	4740	1008	122	1235
Linotype-machine casting-box	J. B. Allen	823,660	June 19	2895	612–13	122	2468
Linotype-slugs. Machine for cutting or shortening	R. Jacobs	823,788	June 19	3125	662	122	2516
Liquid-actuating apparatus	R. Conrader	821,339	May 22	4720	1005–7	122	1227
Liquid-dispensing vessel	L. G. Langstaff	823,283	June 12	2149	448	122	2246
Liquid-distributer	L. Perotti	820,987	May 22	4036	858	122	1078
Liquid-fuel furnace. Portable	G. W. Meyer and C. G. Chevalier	819,906	May 8	1737	373	122	452
Liquid-impelling apparatus	D. W. Starrett	821,677	May 29	5409	1152	122	1434
Liquid-level apparatus	S. A. Reeve and E. P. Noyes	824,143	June 26	3780	807	122	2716
Liquid-measuring meter	H. Chrisman	822,428	June 5	381	79	122	1808
Liquid-purifier	C. Tuckfield	821,207	May 22	4458	949	122	1170
Liquid-receptacle head and filler	D. Landau	823,282	June 12	2147	448	122	2245
Liquid-separators. Driving mechanism for centrifugal	T. W. Morgan	822,974	June 12	1476	307	122	2097
Liquid-separators. Liner for centrifugal	B. Ljungström	822,964	June 12	1455	303	122	2092
Liquid-treating apparatus	L. Dion	819,209	May 1	351	75	122	85
Liquid-treating apparatus	L. Dion	820,482	May 15	2956	640	122	780
Liquids. Apparatus for ascertaining the level of	C. May	820,429	May 15	2851	621	122	755
Liquids. Apparatus for separating metals and other substances from	L. Dion	820,483	May 15	2960	640	122	780
Liquids. Apparatus for separating residues from	L. P. Lowe	819,664	May 1	1230	269	122	276
Liquids in casks. Apparatus for heating	O. T. Murphy	822,382	June 5	300	62	122	1791
Liquids in measured quantities. Apparatus for delivering acid and alkaline	M. Meyer	823,287	June 12	2155	450	122	2247
Liquids. Multiple drop-feed apparatus for	L. Kaczander	823,223	June 12	2034	422–3	122	2222
Lixiviator	S. T. Muffly	820,812	May 15	3614	772	122	925
Loader and unloader	M. Hudgens	821,243	May 22	4522	962–3	122	1185
Loading apparatus	C. M. Watson	824,162	June 24	3824	815–16	122	2726
Loading apparatus	H. T. and S. G. Washburn	824,457	June 26	4418	938–9	122	2850
Lock: *See* Alarm-lock. Bridge-lock. Car-door lock. Coat, hat, and umbrella lock. Combination-lock. Door-lock. Gravity-lock. Hasp-lock. Hook-lock. Knob-lock. Nut-lock. Permutation-lock. Sash-lock. Sash and door lock. Seal-lock. Suit-case lock. Vehicle-lock. Vehicle-seat lock. Water-gate lock. Window-lock.							
Lock	V. F. Wallin	821,210	May 22	4462	950	122	1171
Lock	R. Dario	821,283	May 22	4603	981	122	1202
Lock	E. George	822,000	May 29	6031	1285	122	1575
Lock	R. L. MacDonald	822,062	May 29	6150	1311	122	1602
Lock	J. Jorgenson	823,174	June 12	1900	392	122	2190
Lock	J. Jorgenson	823,221	June 12	2025	421	122	2219
Lock	J. Jorgenson	823,222	June 12	2028	422	122	2220
Lock	B. O. Berntsen	823,987	June 19	3509	750	122	2600
Lock	P. Magarò, No. 3	824,370	June 26	4231	902	122	2812
Lock	H. P. Townsend	824,392	June 26	4276	911	122	2819
Lock and latch	J. Herzog	824,652	June 26	4803	1024	122	2935
Lock and support. Combination-	C. J. Caley	819,120	May 1	176	36	122	45
Lock-bar pipe	C. J. Ericson	819,131	May 1	193	39	122	49
Lock-setting implement	M. Kronauer	822,004	May 29	6042	1288	122	1578
Locking device	B. K. Means	824,306	June 26	4096	876	122	2783
Locking system	W. N. Hall	819,275	May 1	490	102	122	114
Locomotive	A. Krebs	822,057	May 29	6142	1309	122	1600
Locomotive and means for controlling the same. Electric	F. O. Whealon	819,528	May 8	1588	337–8	122	418
Locomotive ash-pan	F. L. Sessions	824,314	June 26	4109	879	122	2787
Locomotive-boiler	L. S. Moore	819,364	May 1	673	142	122	154
Locomotive-boiler	H. J. Travis	821,904	May 29	5851	1243	122	1536
Locomotive-boiler	J. F de Navarro	823,188	June 12	1938	400	122	2200
Locomotive-cab windows. Hood or shield for	H. J. Travis	823,562	June 19	2707	572–3	122	2423
Locomotive driving-wheel or the like	E. W. Payne	824,261	June 26	4023	861	122	2768
Locomotive. Electric	J. B. Allfree and I. C. Hubbell	819,199	May 1	325	70	122	81
Locomotive. Electric	E. D. Priest	823,968	June 19	3469	742	122	2592
Locomotive-exhaust	E. D. Priest	823,969	June 19	3472	742	122	2593
Locomotive exhaust mechanism	F. Robinson	819,806	May 8	1545	328	122	407
Locomotive-furnace	J. J. Conolly and J. Herron	821,402	May 22	4869	1032–3	122	1262
Locomotive-lubricating system	E. H. Wade and J. L. Nicholson	820,451	May 15	2803	629	122	765
Locomotive-nozzle	C. W. Manzel	823,609	June 19	2785	590	122	2440
Locomotive. Turbine-driven	H. O. Olson	824,039	June 19	3606	768	122	2619
Locomotive turn-tables. End support for	H. Lentz	823,130	June 12	1822	375–6	122	2172
Log-hoist and car-loader	H. Fuller	823,405	June 12	2361	497	122	2290
Log-loader	O. L. Raymond	822,152	May 29	6325	1345	122	1644
Log-loaders. Base for	O. Cheverfield	821,089	May 22	4239	901	122	1122
Loom	J. R. McGiffert	822,010	May 29	6047	1289	122	1579
Loom beating-in device	P. E. Victory	821,600	May 22	5235	1116–17	122	1340
Loom filling-detecting mechanism	J. K. Dalkranian	824,685	June 26	4866	1037	122	2947
Loom filling-detecting mechanism	E. S. Wood	823,248	June 12	2080	433	122	2232
Loom for weaving	A. E. Benson	823,251	June 12	2089	434	122	2233
Loom for weaving pile fabric	A. Tchernisek. (Reissue)	12,493	June 5	1342	277–9	122	2019
Loom for weaving tubular fabrics	A. G. and J. H. Robertson	823,608	June 19	2959	626	122	2680
	C. Alvord	824,226	June 26	3954	847–8	122	2754

Alphabetical list of inventions for May and June—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Loom harness-motion	M. O. Steere and S. W. Wardwell	821,762	May 29	5584	1188–90	122	1475
Loom hopper-actuating mechanism. Automatic-	J. Northrop	823,627	June 19	2823	598	122	2449
Loom hopper-actuating mechanism. Automatic-	E. S. Stimpson and W. S. Southwick.	823,644	June 19	2862	605	122	2459
Loom-multiplier mechanism	T. P. Walsh	821,321	May 22	4683	997–8	122	1219
Loom. Needle-	E. Herzig	819,148	May 1	201	41–2	122	51
Loom pattern-resetting mechanism	H. W. Owen	824,200	June 26	3805	831–2	122	2741
Loom picker-sticks. Lug-strap fastener for	G. E. Prescott	821,058	May 22	4166	886	122	1105
Loom. Pile-fabric	J. K. Dalkranian	822,103	May 29	6225	1327–8	122	1620
Loom selvage attachment	T. Garisio	819,420	May 1	775	167	122	176
Loom selvage-motion	C. F. Roper	823,638	June 19	2851	603–4	122	2457
Loom-shuttle binder holding device	B. F. McGuiness	819,912	May 8	1746	375–6	122	454
Loom shuttle-box motion	E. H. Ryon	820,018	May 8	2022	443	122	513
Loom shuttle check and lock	F. A. Mills	820,589	May 15	3172	683	122	828
Loom shuttle check and lock	F. A. Mills	820,661	May 15	3293	707–8	122	852
Loom shuttle check and lock	F. A. Mills	820,664	May 15	3308	709	122	856
Loom shuttle-checking means	F. A. Mills	820,663	May 15	3305	709	122	855
Loom shuttle-lock	F. A. Mills	820,662	May 15	3301	708–9	122	854
Loom-shuttle. Self-threading	J. Northrop	823,626	June 19	2821	598	122	2448
Loom stop mechanism	J. W. Bridge	824,335	June 26	4150	888–9	122	2795
Loom stop-motion	J. Coldwell and C. G. Gildard. (Reissue.)	12,481	May 15	3907	834	122	989
Loom stop-motion	J. Corbishley, J. H. Wood, and T. F. Collins.	822,585	June 5	716	144	122	1886
Loom take-up mechanism	F. Benz, Sr	822,818	June 5	1163	239	122	1983
Loom warp-tensioning means	W. F. Draper	819,742	May 8	1403	302	122	374
Looms. Electric warp stop-motion for	G. E. Chandler	823,489	June 12	2546	536	122	2329
Looms. Filling-exhaustion-indicating mechanism for	C. F. Roper	821,123	May 22	4301	916	122	1134
Looms. Jacquard for weaving	H. Mackintosh	819,767	May 1	1040	227–8	122	234
Looms. Lug-strap connection for	J. Thompson	822,321	June 5	192	38	122	1769
Looms. Thread-parting mechanism for	H. F. Kelley	819,431	May 1	641	136	122	147
Lubricant-receptacle	W. T. Randerson	819,454	May 1	840	181	122	188
Lubricating apparatus	J. F. McCanna	822,685	June 5	920	187–8	122	1932
Lubricating device	D. S. Seymour	821,063	May 22	4186	889	122	1110
Lubricating device	W. H. Procter	821,472	May 22	4937	1049	122	1276
Lubricating device	R. G. Woodward	822,877	June 5	1279	264	122	2006
Lubricating device	W. D. Lowe	824,187	June 26	3867	825–6	122	2735
Lubricating mechanism	N. A. Christensen	821,582	May 22	5195	1108	122	1330
Lubricating the barrel-wheel bearings of barrel gig-mills. Apparatus for	E. H. Glanzberg	821,234	May 22	4503	959	122	1181
Lubricator: *See* Axle-lubricator. Pulley-lubricator. Drop-feed lubricator. Sight-feed lubricator. Force-feed lubricator. Valve-lubricator. Journal-lubricator. Windmill-lubricator. Mechanical lubricator.							
Lubricator	J. T. Pedersen	820,821	May 15	3635	776–7	122	929
Lubricator	L. G. M. West	821,072	May 22	4206	894	122	1114
Lubricator	T. L. and T. J. Sturtevant	821,266	May 22	4568	971	122	1194
Lubricator	J. F. McCanna	822,900	June 5	1327	275	122	2016
Lubricator	B. O. Kelly	824,729	June 19	3010	638	122	2490
Lubricator sight-feed	G. N. Elnsele	820,922	May 15	3871	821	122	980
Lubricator sight-feed	J. A. Erickson	823,209	June 12	1988	414	122	2210
Luggage-carrier	D. D. Leavy	823,058	June 12	1658	343	122	2137
Lumber-drying kiln	C. D. Ross	822,481	June 5	480	99	122	1833
Lunch-cabinet table	T. T. Chamberlain	819,851	May 8	1531	347–8	122	429
Macaroni-sawing machine	S. Mueller	822,218	May 29	6448	1369–70	122	1671
Machine-operating mechanism	C. R. Meston	821,661	May 29	5371	1145	122	1427
Machines and parts thereof. Connection for	H. Dock	821,027	May 22	4113	874	122	1095
Machinery. Means for removably connecting moving parts of	H. H. Urmston	822,494	June 5	514	105	122	1838
Magnet. Lifting-	C. E. F. Ahlm	822,095	May 29	6209	1324	122	1616
Magnetic cut-out apparatus	L. Andrews	822,234	June 5	3	1–2	122	1729
Magnetic furnace. Continuous	H. C. Shaw	821,752	May 29	5566	1184–5	122	1471
Magnetic separator	M. Dinge	821,615	May 29	5280	1126	122	1407
Magnetic separator	H. H. Wait	823,235	June 12	2055	427	122	2226
Magnetic separator	F. T. Snyder	823,301	June 12	2177	454	122	2251
Magnetic separator	F. T. Snyder	823,302	June 12	2179	454–5	122	2252
Magnetic separator	F. T. Snyder	823,303	June 12	2184	455–6	122	2253
Magnetic separator	F. T. Snyder	823,304	June 12	2188	456–7	122	2254
Magnetic separator	L. A. Dunham	823,492	June 12	2553	538	122	2330
Mail-bag crane	J. Cole	824,175	June 26	3847	821	122	2730
Mail-box	O. M. Aarseth	820,841	May 15	3688	786	122	940
Mail-box	O. F. Smith	821,440	May 22	4950	1051	122	1280
Mail-box	J. M. Peterson	822,014	May 29	6059	1291	122	1581
Mail-box	S. L. Coulter	823,585	June 19	2747	582	122	2432
Mail-box	A. King	823,730	June 19	3012	638	122	2490
Mail-box and transmitter	H. Mueller	822,294	June 5	140	27–8	122	1759
Mail-box signal	E. B. Kitchen	823,791	June 19	3134	664	122	2518
Mail-catcher	W. W. Sykes	824,601	June 26	4713	1003	122	2915
Mail catching and delivery means. Railway	J. G. Johnson	823,555	June 19	2657	560	122	2413
Mail catching device	J. Ryan	824,440	June 26	4387	933	122	2842
Mail-chute	J. W. Cutler	820,394	May 15	2777	602	122	742
Mail-chute	F. E. Anderson	821,275	May 22	4587	977	122	1199
Mail-delivery apparatus	J. J. Nohr	819,162	May 1	241	52	122	60
Mail-delivery apparatus. Rural-	R. M. Bartholomew	822,816	June 5	1157	238	122	1962
Mail-marking machine. Self-feeding	H. E. Waite	822,791	June 5	1102	228–9	122	1970
Mail-pouch catcher	J. E. Smith	824,388	June 26	4208	900	122	2818
Mail-pouch-exchanging device	G. W. Mosher	823,617	June 19	2803	594	122	2445
Mail-pouches. Means for delivering and catching	E. W. Hammersmith	822,447	June 5	414	85	122	1814
Mail receiving and delivery apparatus	F. M. Hurley	821,941	May 29	5923	1260–1	122	1551
Malt-turning machine. Green-	H. G. Krauss	819,145	May 1	212	45	122	53
Manhole-cover	A. Potter	821,736	May 29	5528	1179	122	1461
Manhole-cover fastener	F. J. Tucker	822,562	June 5	646	130	122	1868
Manure from peat. Producing	C. H. J. Van Haeften	821,555	May 22	5149	1098	122	1321
Manure-spreader	L. A. Keene	819,659	May 1	1221	267	122	274

Alphabetical list of inventions for May and June—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Manure-spreader	C. F. Lee	820,653	May 15	3279	704	122	849
Manure-spreader	L. H. Kellam	820,791	May 15	3560	761–2	122	912
Manure-spreader	T. Brown	821,779	May 29	5614	1196	122	1482
Manure-spreaders. Drive-gearing for	G. E. Crowell	823,846	June 19	3238	685	122	2541
Marble-shooter	V. Keller	819,891	May 8	1709	367	122	447
Marble, stone, &c., cutting or dressing tool	J. S. Costa	823,584	June 19	2746	582	122	2432
Marine boiler	B. Heftye	819,994	May 8	1958	433–4	122	497
Marker. Land-	E. L. Brillhart	821,082	May 22	4226	898	122	1119
Marker. Land-	J. C. Liston	821,178	May 22	4401	937	122	1158
Marking and canceling machine. Automatic	E. R. Malmborg	822,898	June 5	1319	271–4	122	2014
Mass-mixing machine	E. L. Richards	819,800	May 8	1533	325–6	122	406
Massage and vibrator machine. Electric	S. W. Moon	821,180	May 22	4403	937	122	1158
Massage. Applicator for mechanical	C. H. Richwood	819,459	May 1	848	182	122	190
Massage implement	J. Barker	819,498	May 1	923	203	122	206
Masse-cuite or syrup. Purifying	M. Weinrich	822,171	May 29	6364	1352	122	1651
Mat: *See* Door-mat. Oil-press mat.							
Mat-cutting board	C. E. Howard	823,685	June 19	2939	621	122	2476
Match and cigarette box. Combined	L. De Goll	820,860	May 15	3717	792	122	947
Match-box	J. W. Saunders	819,603	May 1	1105	244	122	248
Match-box	F. B. Watson	819,964	May 8	1893	419	122	482
Match-box	D. J. Pollock	823,359	June 12	2284	479	122	2275
Match-box and cigar-cutter. Self-feeding	J. W. Crites and J. J. Wine	823,036	June 12	1612	334	122	2129
Match box and lighter	E. Walder	824,221	June 26	3942	844–5	122	2751
Match-box. Automatic	H. G. Taylor	819,617	May 1	1132	250	122	255
Match-box-making machine	J. W. Denmead	822,251	June 5	45	9–10	122	1739
Match-box. Single-delivery	H. J. Beauchamp	819,501	May 1	929	203	122	208
Match receptacle and igniter. Combined	W. Chater	820,953	May 22	3934	838	122	1056
Match-safe	G. F. Garrity	823,854	June 19	3254	688	122	2545
Match-scratcher and advertising attachment	J. R. Brown	820,384	May 15	2754	599	122	737
Material and cinder-pit elevator	W. Robertson	822,153	May 29	6327	1346	122	1644
Matrix-trimming and similar machine	L. B. Benton	819,842	May 8	1614	343–4	122	425
Mattress	F. Maussner	819,903	May 8	1728	371	122	450
Mattress or cushion covering	C. A. Fisher	820,634	May 15	3244	698	122	843
Mattress-tufting machine	R. R. Thompson	819,952	May 8	1825	394–9	122	471
Mattress-tufting machine	R. R. Thompson and C. F. Pinkham.	819,955	May 8	1860	408–13	122	477
Mattress-tufting machines. Knotter for	R. R. Thompson	819,953	May 8	1837	399–403	122	474
Measure	T. L. Turpin	820,448	May 15	2886	627	122	763
Measurement-indicator	G. L. Hansen	820,303	May 8	2604	567	122	643
Measurer and pattern. Skirt	J. C. Tight	822,874	June 5	1274	263	122	2005
Measuring and computing machine. Rope	E. F. Hug	819,758	May 8	1440	307	122	382
Measuring apparatus. Grain-	W. Whiteford	822,566	June 5	667	136	122	1875
Measuring device	G. Mothes	819,243	May 1	420	88	122	98
Measuring device. Fabric-	T. A. Teate	819,096	May 1	126	27	122	33
Measuring device. Grain-	F. A. Brinkmann	822,917	June 12	1373	285	122	2075
Measuring device. Liquid-	D. Corcoran	823,932	June 19	3398	726	122	2576
Measuring fabrics	F. C. Stephan	821,839	May 29	5735	1221	122	1509
Measuring gage. Trousers-	W. Leigh	824,252	June 26	4010	858	122	2765
Measuring instrument	B. F. Sassaman	823,444	June 12	2435	513–14	122	2305
Measuring instrument. Alternating-current electrical	E. E. Lehr	824,696	June 26	4897	1041	122	2953
Measuring instrument. Electrical	F. A. La Roche and M. C. Rypinski.	819,071	May 1	72	17	122	20
Measuring instrument. Electrical	T. Abtmeyer	819,706	May 8	1329	288	122	359
Measuring instrument. Electrical	W. E. Laird	820,978	May 22	4012	852	122	1073
Measuring instrument. Electrical	A. H. Hoyt	821,292	May 22	4618	985	122	1205
Measuring instrument. Electrical	F. W. Roller	822,987	June 12	1501	312	122	2105
Measuring instruments. Bearing for	W. M. Bradshaw	822,425	June 5	376	78	122	1907
Measuring instruments. Bearing for electrical	W. E. McCoy	824,194	June 26	3887	830	122	2739
Measuring-machine	S. O. Myers	822,683	June 5	906	185–6	122	1929
Meat-chopper	H. C. Sander	820,990	May 22	4039	858–9	122	1079
Meat cutting or slicing machine attachment	F. W. Margetts	824,496	June 26	4407	953	122	2868
Meat-holding clamp	J. Trembley	822,166	May 29	6356	1351	122	1650
Meat. Preserving	P. H. O'Keeffe	822,548	June 5	619	.....	122	1863
Meat-rack	L. I. Berkowitz	820,618	May 15	3221	693	122	838
Meat-sacking machine	C. T. Kelly	822,956	June 12	1443	300	122	2089
Meat-tenderer	J. H. Tolen and D. B. Hostetter	824,319	June 26	4125	882	122	2790
Mechanical implement	C. F. P. Warner	824,394	June 26	4278	912	122	2820
Mechanical lubricator	G. R. Welch	824,458	June 26	4421	939	122	2850
Mechanical movement	H. Brammer	819,333	May 1	611	129	122	140
Mechanical movement	H. D. Williams	819,683	May 1	1270	277	122	285
Mechanical movement	C. G. Glasrud	822,941	June 12	1411	295	122	2082
Mechanical movement	E. G. Johanson	823,046	June 12	1632	337–8	122	2133
Mechanical movement	F. N. Livingston	823,341	June 12	2253	470	122	2268
Mechanical movement	W. H. Voss	823,651	June 19	2881	610	122	2464
Medical instrument	K. A. Bode	820,950	May 22	3930	837	122	1055
Medicated pencil	C. S. Maschal	819,901	May 8	1725	370	122	450
Medicine-distributer	C. L. Wells	821,389	May 22	4841	1028	122	1256
Mercerizing	W. Mather, J. Hübner, and W. J. Pope.	824,255	June 26	4014	859	122	2766
Mercerizing apparatus	W. Mather, J. Hübner, and W. J. Pope.	821,812	May 29	5686	1211–12	122	1499
Mercury-column	J. MacMahon and F. Wesler	824,304	June 26	4093	875	122	2783
Merry-go-round	G. B. McKinney	819,580	May 1	1065	234	122	240
Merry-go-round	J. B. Barnett	820,339	May 8	2660	580	122	656
Merry-go-round	J. L. Ariztia	820,901	May 15	3822	815–16	122	999
Merry-go-round	B. W. Davenport	822,435	June 5	391	81	122	1810
Merry-go-round museum	J. L. Tidd	821,138	May 22	4338	922–3	122	1144
Metal. Apparatus for compressing scrap	T. Sharp	823,703	June 19	2966	628	122	2481
Metal-bearing materials. Treating	C. W. Merrill	820,430	May 15	2852	.....	122	755
Metal coiling and straightening apparatus	W. F. Conklin	823,765	June 19	3080	652	122	2505
Metal-expanding machine	H. E. White	819,484	May 1	899	196–7	122	200
Metal-expanding machine	H. E. White	821,685	May 29	5428	1155–6	122	1438
Metal post	J. W. Baker	822,814	June 5	1154	237	122	1981
Metal-saving machine	J. B. Albers	820,614	May 15	3215	691–2	122	836

Alphabetical list of inventions for May and June—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Metal-sawing machine	C. A. Juengst	822,670	June 5	878	180–1	122	1922
Metal seat. Pressed-	R. T. J. Martin	820,227	May 8	2439	528	122	606
Metal sheets. Apparatus for bluing	A. Ridd	823,226	June 12	2039	424	122	2223
Metal straps. Finishing and straightening flat	W. F. Conklin	823,766	June 19	3084	652–3	122	2506
Metal structure. Tubular-	E. Molloy	824,501	June 26	4502	955	122	2870
Metal tie and rail-fastener	D. E. Olds	823,629	June 19	2835	599–600	122	2452
Metal trimming and slitting machine	W. W. Irwin	824,694	June 26	4993	1040–1	122	2952
Metal under pressure. Apparatus for treating heated	W. A. Wood	819,261	May 1	447	94–5	122	105
Metal-working device	R. O'Hearn	820,937	May 15	3896	830–1	122	996
Metal-working machine. Automatic electric	A. F. Rietzel and G. E. Barstow	821,061	May 22	4172	887–9	122	1107
Metals beneath the earth's surface. Locating and extracting	E. R. Wolcott	822,175	May 29	6371	1353	122	1653
Metals from their ores. Extracting	C. R. Arnold	823,576	June 19	2727	577	122	2428
Metallic fabric	G. H. Bedient	819,711	May 8	1338	290	122	361
Metallic leaf. Package-roll of	W. H. Coe	824,626	June 26	4757	1013	122	2925
Metallic post	L. C. Sharp	820,319	May 8	2624	571	122	647
Metallic post	S. Moltrup	821,725	May 29	5511	1174	122	1457
Metallic surfaces. Cleaning	T. A. Edison	821,622	May 29	5293	1130	122	1411
Metallic tie	C. Horrell	821,166	May 22	4381	932	122	1154
Metallic tie and rail-fastener	H. B. Burke	822,720	June 5	991	202	122	1946
Metallic tie and rail-fastening	W. Whigham	819,483	May 1	897	196	122	200
Metallurgical apparatus	E. A. Touceda	823,561	June 19	2705	572	122	2423
Metallurgical furnace	I. L. Roberts	821,830	May 29	5720	1219	122	1506
Metallurgical furnace	B. C. Lauth	823,057	June 12	1657	343	122	2137
Metallurgy	E. A. Touceda	823,560	June 19	2703	571–2	122	2423
Meter:							
See Current-meter. Energy-meter.							
Electric meter. Gas-meter.							
Electricity-meter. Telephone-call meter.							
Meters. Bill-delivery mechanism for	R. W. Gallagher	823,773	June 19	3103	657	122	2510
Micrometer	L. Kreutzkamp	821,721	May 29	5504	1172	122	1456
Micrometer-gage	C. A. Fisk	824,420	June 26	4350	925	122	2834
Microphone	F. Treyer	824,159	June 26	3819	815	122	2725
Milk. Apparatus for the distribution of whey or skimmed	J. J. Daniel	823,514	June 19	2615	550	122	2404
Milk-dipper	E. Burkins	821,700	May 29	5458	1163	122	1446
Milk-jar and the like cap	R. E. Pearce	822,471	June 5	465	94	122	1826
Milk product. Means for making a	C. M. Taylor, Jr	819,819	May 8	1568	333	122	414
Milking apparatus	P. Andersen	823,316	June 12	2214	461–2	122	2259
Milking-machine	T. M. Wade	822,640	June 5	826	169	122	1910
Mill:							
See Cane-mill. Pebble-mill.							
Crushing-mill. Pulverizing-mill.							
Drum-mill. Rolling-mill.							
Fanning-mill. Universal mill.							
Grinding-mill. Windmill.							
Milling-cutter	J. F. Dowding	822,591	June 5	729	146–7	122	1889
Milling-cutters. Magazine-holder for	H. H. Vaughan	819,961	May 8	1882	418–16	122	481
Milling-tool	S. Horr	821,290	May 22	4615	984–5	122	1205
Mine-cage	F. N. Wilson	824,269	June 26	4034	863	122	2771
Mine-cages and the like. Apparatus for making frames for	P. Thielmann and J. Meisenburg	823,711	June 19	2981	631	122	2484
Mine-gate	N. K. Bowman	820,090	May 8	2190	477	122	551
Mine-gate	N. K. Bowman	822,241	June 5	21	4–5	122	1733
Mines, tunnels, or subways. Ventilating system for	R. E. Boorsem	820,945	May 15	3907	833	122	989
Miner's tool	R. W. Minerd	819,154	May 1	229	49	122	57
Mining and washing clay, kaolin, &c. Simultaneously	M. Wanner	823,749	June 19	3046	645	122	2497
Mining apparatus	A. McDougall	823,960	June 19	3452	738	122	2589
Mining apparatus	A. McDougall	823,961	June 19	3455	738–9	122	2589
Mineral boring. Underreamer for	A. Cummings	819,042	May 1	13	4	122	6
Mirror	C. Borneisler	820,621	May 15	3225	694	122	839
Mirror-support. Adjustable	C. H. Ayer, F. J. Hole, and R. E. Olney	820,466	May 15	2921	634	122	771
Mirrors, pictures, and the like. Device for hanging wall-	H. and C. Sauer	820,674	May 15	3328	714	122	860
Miter-box	J. N. House	824,298	June 26	4083	873	122	2781
Miter-gage	T. H. Oxnam	821,959	May 29	5958	1269	122	1558
Miter-jack	E. O. Wolfe	823,017	June 12	1573	327	122	2120
Miters and octagons. Implement for laying out	P. L. Fox	821,094	May 22	4247	903	122	1123
Mitering and beveling machine	A. Cadorette and L. Laflamme	823,506	June 19	2587	545	122	2399
Mitten	J. Gulick	824,540	June 26	4584	974	122	2887
Mitten. Undertaker's	F. J. Pribil, Jr., and J. N. Utterson	822,868	June 5	1266	261	122	2003
Mixer:							
See Concrete-mixer. Gas-mixer.							
Drug-mixer. Sand-mixer.							
Mixing device	S. F. Powell	820,254	May 8	2509	543	122	622
Mixing-machine	T. A. Swanson and G. E. Boyle	821,267	May 22	4570	971–2	122	1195
Moistener. Envelop-	B. M. Rogers	822,773	June 5	1076	222	122	1964
Mold:							
See Adjustable mold. Concrete-post mold.							
Bottle-mold. Fence-post mold.							
Casting-mold. Hollow-article mold.							
Cement-mold. Stone-mold.							
Cement-post mold. Stone-making mold.							
Concrete-mold. Tile-mold.							
Mold	O. M. Ries	820,014	May 8	2018	442	122	512
Mold	J. Oliver	822,978	June 12	1481	308	122	2008
Mold	W. H. Lucas	824,557	June 26	4624	982	122	2895
Mold	W. H. Fisher	819,055	May 1	42	9	122	13
Mold-box	J. Poulson	820,253	May 8	2506	542	122	621
Mold-ramming machine	W. H. Lucas	820,224	May 8	2435	528	122	602
Mold-top	A. M. and M. J. Hewlett	819,893	May 8	1689	362–4	122	445
Molding apparatus	M. J. Hewlett	823,530	June 19	2648	557–8	122	2411
Molding apparatus	J. S. McQuinn	820,776	May 15	3470	734	122	882
Molding-board	H. Benner	822,039	May 29	6111	1302	122	1594
Molding device	G. M. Mills	822,536	June 5	598	120	122	1858
Molding device							

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Molding flask or box	D. McLain	820,501	May 15	3178	683	122	829
Molding-machine	G. P. White	821,270	May 22	4578	974–5	122	1197
Molding-machine	W. M. Duncan	821,791	May 29	5645	1202–3	122	1400
Molding-machine	L. M. Pratt	822,015	May 29	6060	1201–2	122	1582
Molding-machine	H. Tabor	824,317	June 26	4121	881–2	122	2789
Molding-machine	G. H. L. Clark	819,517	May 1	955	209	122	213
Molding-press	G. H. Harvey	820,971	May 22	3990	847	122	1069
Molten baths. Apparatus for drawing articles from	H. Harris	819,651	May 1	1207	265	122	271
Molten material. Distributing-box for	W. E. Cleveland	824,094	June 26	3696	788	122	2697
Money-box	R. Fancher	822,106	May 29	6231	1328	122	1621
Monuments and grave-markers. Securing photographs, name and record tablets to	S. C. Lawlor	819,895	May 8	1714	368	122	448
Mop-head and implement clamp	J. S. Shobe	820,145	May 8	2294	501	122	573
Mop head and wringer. Combined	J. F. Doebler, Jr	821,344	May 22	4743	1009	122	1235
Mop-holder for brooms	F. H. Fenton	820,561	May 15	3129	673	122	818
Mop-making machine	H. M. Reynolds and W. E. Sherwood	819,253	May 1	432	91	122	101
Mop-wringer	G. R. Beckwith and G. R. Lawrence	819,687	May 1	1283	280	122	288
Mop-wringer	J. V. Cook	824,286	June 26	4057	868	122	2775
Mop-wringing machine	D. F. Myers	820,309	May 8	2610	569	122	644
Mortar and concrete mixing machine	A. F. Koehler	820,580	May 15	3162	681	122	826
Mortar-gage	G. F. Fisher	823,593	June 19	2759	584	122	2435
Mortar-spreading machine	C. W. Fertick	820,042	May 8	2082	454	122	527
Mortise or hinge gage	G. D. McLeod	824,134	June 26	3762	803–4	122	2712
Motor:							
See Current-motor. Rotary motor.							
Dental motor. Sewing-machine motor.							
Electric motor. Spring-motor.							
Electrical vibratory motor. Steam-motor.							
Fluid-pressure motor. Surf-actuated motor.							
Gasolene-motor. Turbine-motor.							
Induction-motor. Water-motor.							
Pump-motor. Wave-motor.							
Motor	I. J. Paddock	819,586	May 1	1081	238	122	243
Motor and starting-switch. Alternating-current	M. Milch	819,572	May 1	1050	230	122	236
Motor-compressors. Automatic controller for	W. J. Richards	821,672	May 29	5392	1150–1	122	1431
Motor control. Alternating-current-	M. Milch	819,571	May 1	1048	230	122	235
Motor-control system	H. R. Stuart	819,816	May 8	1563	332	122	412
Motor-control system	G. H. Hill	822,275	June 5	98	20	122	1750
Motor-control system	S. Krohn	822,282	June 5	111	23	122	1752
Motor-control system	A. H. Daus	819,738	May 8	1395	300	122	372
Motor-control system. Electric-	W. T. Dean and R. Tschentscher	824,629	June 26	4761	1015	122	2926
Motor-control system. Electric-	J. B. Linn	819,563	May 1	1032	226	122	232
Motor controller. Electric-	A. S. Krotz	820,504	May 15	3011	647–8	122	791
Motor controller. Electric-	H. E. Dubois	824,237	June 26	3975	852	122	2758
Motor controller. Electric-	W. H. Warren	824,223	June 26	3947	845	122	2752
Motor controllers. Warning-signal for electric-	J. G. Callan	820,913	May 15	3851	821	122	975
Motor governing mechanism. Fluid-actuated-	G. H. Whittingham	821,000	May 22	4073	867	122	1086
Motor-reverser. Automatic	A. H. Taylor	819,470	May 1	873	189–90	122	196
Motor reversing mechanism. Rotary-	A. H. Taylor	820,694	May 15	3351	717–18	122	864
Motor reversing mechanism. Rotary-	A. W. Darby	824,687	June 26	4869	1037–8	122	2947
Motor-starter. Automatic	J. M. Small	823,815	June 19	3173	671	122	2526
Motors. Apparatus for propelling rotary	D. C. Jackson	823,220	June 12	2021	420–1	122	2217
Motors. Circuit connection for and method of operating alternating	C. P. Steinmetz	819,613	May 1	1125	249	122	253
Motors. Controlling the speed of	F. R. Lorenz	819,148	May 1	217	46	122	54
Motors. Feeding and igniting mechanism for explosion-	F. H. Richards	823,081	June 12	1715	353–4	122	2149
Movement-starting mechanism	P. Hanson	819,349	May 1	634	134–5	122	146
Mower	W. H. Coldwell	821,987	May 29	6006	1281	122	1569
Mower. Lawn-	F. Hamachek	821,635	May 29	5314	1134	122	1416
Mower or reaper guard-finger	G. H. Bartlett	821,978	May 29	5992	1277	122	1565
Mowers. Cutting apparatus for	C. Dahl and C. Lund	821,612	May 29	5275	1125	122	1406
Mowing-machines. Automatic disengaging device for the knife-gear of	S. L. Bailey	822,235	June 5	6	2	122	1730
Mudlage-bottles. Moisture-supply cap for	R. Newman	824,574	June 26	4652	989	122	2901
Mud-guard	E. Zell	819,625	May 1	1156	254	122	259
Muffle. Electric	E. P. Gray	820,566	May 15	3138	675	122	819
Muffler	L. J. Phelps	821,828	May 29	5717	1218	122	1506
Muffler	B. A. Gramm	823,115	June 12	1788	368	122	2165
Muffler	H. E. Smallbone	821,546	May 22	5133	1094–5	122	1318
Multiple-cylinder engine	F. M. Clease	821,783	May 29	5622	1198	122	1484
Muscular or physical development. Apparatus for promoting	E. S. Stem	823,707	June 19	2970	629	122	2482
Music holder and turner	E. S. Stem	823,708	June 19	2976	630	122	2483
Music holder and turner	R. P. Benedict	819,504	May 1	932	204	122	209
Music-leaf turner	F. C. White and G. W. Haywood	822,033	May 29	6094	1298	122	1590
Music-playing mechanisms. Tracker mechanism for automatic	G. B. Kelly	822,280	June 5	108	22	122	1752
Music-roll	A. Rothermundt	824,208	June 26	3922	839	122	2747
Music-rolls for self-playing piano attachments. Device for perforating	R. A. Gally	822,111	May 29	6241	1330	122	1623
Music-sheet and spool for self-playing musical apparatus	J. W. Heins	819,135	May 1	197	40–1	122	50
Music-sheet indicator	J. A. Smith	824,596	June 26	4700	1000	122	2913
Music-stand	J. H. Dickinson	819,985	May 8	1942	429	122	493
Musical apparatus. Mechanical	E. S. Votey	824,049	June 19	3621	771	122	2823
Musical apparatus. Mechanical	A. A. Williams	819,487	May 1	906	198	122	202
Musical instrument	P. Wuest, Jr	820,079	May 8	2164	471	122	545
Musical instrument	O. H. Newman	823,625	June 19	2819	598	122	2448
Musical instrument	C. L. Davis. (Reissue)	12,476	May 1	1321	287	122	297
Musical instrument. Mechanical	P. Wuest, Jr	820,080	May 8	2166	471–2	122	546
Musical instrument. Mechanical	W. H. Hoschke	822,666	June 5	869	178–9	122	1920
Musical instrument. Mechanical							

Alphabetical list of inventions for May and June—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Musical-instrument player. Portable	E. S. Votey	824,050	June 19	3625	772	122	2624
Musical instrument. Self-playing	H. W. Shounard	824,315	June 26	4112	880–1	122	2788
Musical instrument. Stringed	L. C. Smith	824,316	June 26	4119	881	122	2789
Musical-instrument support	E. S. Votey	819,962	May 8	1884	416	122	481
Musical instruments. Action for stringed	C. E. King	819,556	May 1	1022	224	122	230
Musical instruments. Bench for use in playing	J. W. Sutton	820,745	May 15	3461	742	122	800
Musical instruments. Bench for use in playing	J. W. Sutton	822,701	June 5	952	195	122	1939
Musical instruments. Body-rest for	J. W. Hughes	821,803	May 29	5665	1207–8	122	1494
Musical instruments. Expression-controlling device for	C. S. Burton	822,098	May 29	6216	1325–6	122	1618
Musical instruments. Expression mechanism for mechanically-operated	G. H. Davis	824,343	June 26	4168	892	122	2798
Musical instruments. Mounting for keys of	C. Pekat	821,533	May 22	5112	1089	122	1314
Musical instruments. Pneumatic action for	F. W. Wood	821,568	May 22	5171	1104	122	1326
Mutoscope	H. H. Eldredge and C. J. Doty	822,438	June 5	399	83	122	1811
Nail or screw for securing corrugated iron	J. B. Davies	821,025	May 22	4110	874	122	1094
Nailing-machine	T. J. M. Theuret	819,471	May 1	874	190–1	122	196
Nailing-machine	A. F. Preston	822,867	June 5	1262	260	122	2002
Naphtha, &c., from oil or other liquids. Apparatus for separating	E. R. Edson	824,104	June 26	3708	791–2	122	2700
Napkin-holder	J. Simpson	823,704	June 19	2968	628	122	2482
Nasal passages. Device for treating the	E. Baum	820,948	May 22	3926	836	122	1054
Nebulizer	A. C. Eggers	824,471	June 26	4455	945	122	2838
Necktie	F. L. Hill	821,289	May 22	4614	984	122	1205
Needle-lever bearing	D. W. Corey	822,884	June 5	1292	266	122	2009
Nest	W. M. Bunsen	820,952	May 22	3932	837	122	1056
Net. Landing-	L. French and B. T. Reilly	821,113	June 12	1782	367	122	2163
Nippers	J. N. Nettleton	821,183	May 22	4408	938	122	1160
Non-refillable box	F. E. Phillips	822,766	June 5	1064	218	122	1962
Nozzle	C. K. Pickles	820,668	May 15	3315	711	122	858
Nozzle. Distributing-	H. F. Newman	822,546	June 5	614	123	122	1862
Nozzle. Exhaust-	C. S. Mills	822,216	May 29	6445	1369	122	1670
Nut-fastening device. Wagon-	L. G. Huntley	821,497	May 22	5047	1075	122	1300
Nut-lock	G. Harwell	819,225	May 1	384	81	122	91
Nut-lock	A. Kootz and E. E. Schirmer	819,288	May 1	513	108	122	119
Nut-lock	J. Strack	819,947	May 8	1812	392	122	468
Nut-lock	J. E. Taylor	820,324	May 8	2632	573	122	649
Nut-lock	C. M. Schooley and O. N. Casey	822,989	June 12	1507	314	122	2106
Nut-lock	G. B. Sherwood	823,229	June 12	2045	425	122	2224
Nut-lock	W. N. Keen	823,876	June 19	3288	698	122	2553
Nut-lock	J. T. Taylor	824,047	June 19	3619	770	122	2622
Nut-lock	N. Howell	824,078	June 19	3671	782	122	2634
Nut-lock	J. W. Gilbert	824,177	June 26	3851	822	122	2731
Nut-lock	F. S. Di Vito and A. Meyn	824,219	June 26	3939	844	122	2751
Nut. Lock-	W. C. Matteson	819,902	May 8	1726	371	122	450
Nut. Lock-	H. J. Baker	821,695	May 29	5445	1160	122	1422
Nut. Lock washer-	F. Swarthout	820,941	May 15	3902	832	122	988
Nut-locking device	A. Kootz and E. E. Schirmer	819,289	May 1	514	108	122	119
Nut-tapping machine	W. M. McKenzie	823,225	June 12	2036	423	122	2222
Nut tapping or screwing machine	J. M. Ralston	821,376	May 22	4811	1022	122	1250
Nuts. Manufacture of	O. Briede	819,844	May 8	1619	345	122	426
Nuts. Means for the protection of screw-	P. Fewson	821,285	May 22	4607	982	122	1203
Nuts upon rail-securing bolts. Machine for placing and removing	W. E. N. Balsley	819,398	May 1	738	156	122	167
Oar	L. E. Noble	819,792	May 8	1522	323	122	403
Oar. Bow-facing	J. Petrich and L. Duloves	823,075	June 12	1690	349–50	122	2143
Observation-tower. Submarine	J. E. Shrewsbury	819,317	May 1	568	121–2	122	131
Oil-burner	I. Hollenbach, G. A. Haage, and J. G. Hollenbach.	821,165	May 22	4380	932	122	1154
Oil-burner	C. C. Cleveland	822,650	June 5	844	172	122	1914
Oil-burner	W. F. Hogan	823,866	June 19	3273	694	122	2550
Oil-cake. Apparatus for reducing hot	A. W. French	821,095	May 22	4248	904	122	1124
Oil-can	C. R. Harless	819,217	May 1	365	79	122	88
Oil-can	G. A. Harcourt	820,784	May 15	3537	758	122	908
Oil-cup	H. C. Vaughn	823,978	June 19	3492	746	122	2596
Oil-engine	J. W. Cross	820,285	May 8	2572	558–9	122	635
Oil-gage	C. F. Schwennker	819,604	May 1	1105	244	122	248
Oil on dusty roads. Means to sprinkle crude	J. F. Blunt	821,152	May 22	4363	928	122	1150
Oil-press mat	R. F. Werk	820,275	May 8	2543	551	122	630
Oils. Treating marine-animal	M. Potolowsky	823,361	June 12	2286	478	122	2275
Oiler	D. Herrmann	822,045	May 29	6123	1304	122	1596
Oiler. Shaft-	T. Hughes	819,280	May 1	502	105	122	116
Opera-glass	E. B. Meyrowitz	822,215	May 29	6443	1369	122	1670
Optical instrument	A. Swasey and G. L. Fecker	819,948	May 8	1818	393	122	470
Ore-cleaner	A. McDougall	822,753	June 5	1043	214	122	1957
Ore-concentrator	J. G. Kirksey	821,874	May 29	5790	1233–4	122	1520
Ore-roaster	J. W. Bolleau	820,088	May 8	2184	476	122	550
Ore-roasting furnace	I. Sanfilippo	820,138	May 8	2277	495	122	570
Ore-roasting furnace	C. H. Rider	824,263	June 26	4026	862	122	2769
Ore-separator	E. A. Sperry	819,093	May 1	118	26	122	31
Ore-separator	H. C. Groves	820,568	May 15	3141	676	122	820
Ore-separator	A. Perry	821,430	May 22	4932	1048	122	1275
Ore-separator	F. B. Finley	822,515	June 5	563	113–14	122	1850
Ore-separator. Magnetic	H. H. Wait	823,234	June 12	2053	426	122	2225
Ore-slimer	I. F. Monell	820,234	May 8	2449	530–1	122	608
Ores and tailings. Apparatus for treatment of	A. Soderling	822,398	June 5	327	67–8	122	1797
Ores. Machine for crushing and amalgamating metalliferous	H. Jones	822,052	May 29	6133	1306	122	1596
Ores. Melting primary baths for dissolving	R. Baggaley and C. M. Allen	822,712	June 5	975	.....	122	1943
Ores, &c. Nodulizing	C. Dellwik	822,929	June 12	1389	290	122	2078
Ores. Reduction of	W. Koehler	824,663	June 26	4824	1029	122	2939
Ores. Treating	J. O. Handy	821,637	May 29	5321	.....	122	1418
Ores. Utilizing as fuel the volatile portions of sulfid	R. Baggaley, C. M. Allen, and E. W. Lindquist.	822,713	June 5	977	.....	122	1944
Organ-action. Electric	C. J. Landin	824,079	June 19	3673	782	122	2634

Alphabetical list of inventions for May and June—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Organic substances in presence of vanadium compounds. Treating	E. Oppermann	823,435	June 12	2420	.....	122	2302
Ornamental material	J. Schurek	824,444	June 26	4392	934	122	2843
Oscillaphone	W. W. Massie	819,779	May 8	1479	316	122	391
Oscillating-piston engine	J. Bergesen	821,398	May 22	4862	1031	122	1260
Oscillation-responsive device	L. De Forest	824,637	June 26	4777	1018	122	2929
Oscillation-responsive device	L. De Forest	824,638	June 26	4780	1018	122	2930
Outlet or junction box	C. C. Sibley and G. A. Lutz	820,321	May 8	2626	572	122	648
Oven	G. R. Moon	824,288	June 12	2156	450	122	2247
Oven. Bake-	J. Faulds	819,417	May 1	771	165–6	122	174
Oven. Baker's	W. H. Perry	823,695	June 19	2955	625	122	2479
Oven stop mechanism. Baker's-	J. J. Linden	824,553	June 26	4615	980	122	2993
Overshoe	C. L. Higgins	823,331	June 12	2237	466	122	2265
Oyster-dredging hoist	P. P. G. Hall	821,411	May 22	4887	1038	122	1266
Ozone-ventilator	F. de Mare	820,656	May 15	3385	705–6	122	850
Package or mail despatching system	A. F. Johnson	824,024	June 19	3578	763	122	2613
Package-tie	J. A. Gray	819,648	May 1	1203	264	122	270
Packages. Machine for forming cylindrical	H. C. Herr	823,276	June 12	2132	445–6	122	2243
Packages of interfolded sheets. Producing	S. Wheeler	821,562	May 22	5162	1101	122	1324
Packages. Tool for fastening self-secured	J. F. Craft	819,859	May 8	1642	350	122	432
Packer	G. A. Spang	820,149	May 8	2300	502	122	575
Packing	A. O. Van Dervort	821,682	May 29	5422	1154	122	1436
Packing-case	A. R. Speer	820,445	May 15	2880	626	122	762
Packing-case. Metal	A. R. Speer	821,760	May 29	5579	1187–8	122	1474
Packing for elastic-fluid turbines	J. G. Callan	819,635	May 1	1177	257	122	264
Packing for rotary engines	D. Morell	821,428	June 12	2407	517	122	2300
Packing for shafts and rotary-valve stems	J. H. Hoyer	819,227	May 1	389	82	122	92
Packing joints. Means for	J. H. Jones	819,437	May 1	814	175	122	183
Packing-machine	J. B. Cornwall	821,463	May 22	4986	1059	122	1288
Packing-machine	W. Rose	822,988	June 12	1505	312–13	122	2105
Packing-machine	J. A. Keyes	823,051	June 12	1641	339–40	122	2135
Packing. Metallic	S. T. Hiatt	824,692	June 26	4889	1040	122	2951
Packing. Piston-	W. H. Myers	819,448	May 1	831	179	122	187
Packing. Piston-rod	J. H. Hoyer	821,100	May 22	4257	906	122	1126
Packing. Shaft-	J. Wilkinson	822,892	June 5	1131	233	122	1976
Packings. Machine for making fibrous	W. B. Fenn	819,269	May 1	476	98–100	122	111
Pad: *See* Collar-pad. Gas-check pad. Hoof-pad. Horse-pad. Ironing-wax pad.							
Padlock	Y. Q. Caldwell	823,919	June 19	3369	719	122	2570
Padlock	F. W. Schroeder	824,593	June 26	4694	998	122	2912
Pail and lantern. Lunch-	T. D. Comer	820,390	May 15	2771	601	122	741
Pail. Dinner-	G. L. Gerlach	821,795	May 29	5650	1204	122	1491
Pail. Dinner-	A. J. Smith	824,156	June 26	3810	813	122	2723
Pail holder. Milk-	A. M. Graf	822,362	June 5	267	56	122	1784
Pail. Milk-	G. A. Jones	822,051	May 29	6131	1306	122	1596
Pail. Minnow-	S. A. Jones	821,040	May 22	4137	879	122	1099
Paint	P. R. Herschman	822,947	June 12	1421	.....	122	2084
Paint. Composition of matter to be used as	P. R. Herschman	822,946	June 12	1421	.....	122	2084
Paint or composition. Non-corrosive and antifouling	F. E. Dunnett	824,069	June 19	3654	.....	122	2630
Paint-remover	G. Michaelis	823,801	June 19	3154	.....	122	2522
Painting machine. Card-	J. W. Stocker	823,645	June 19	2867	605–6	122	2461
Pallet	C. S. Long	822,139	May 29	6292	1341	122	1635
Pallet. Metallic	J. H. Earley	822,194	May 29	6407	1360	122	1662
Pan: *See* Baking-pan. Dust-pan.							
Pan-lifter	A. G. Johnson	820,577	May 15	3157	680	122	824
Pans and the like to prevent burning. Attachment for	M. T. Roemer	823,699	June 19	2960	627	122	2480
Pans. Making	E. Katzinger	820,976	May 22	4007	851–2	122	1072
Panel switch and cut-out	J. H. Trumbull	820,076	May 8	2160	470	122	545
Paper and book holder. Combined	E. Pashley	822,691	June 5	935	191	122	1935
Paper-bag machine	W. M. Stone	820,678	May 15	3336	716	122	861
Paper-bag machine	W. A. Lorenz and J. Merritt	822,618	June 5	780	158–9	122	1900
Paper-bag machine	G. Hartman	823,776	June 19	3108	658–9	122	2512
Paper-bag machine. Self-closing	O. Desrosiers	822,252	June 5	48	11	122	1739
Paper-bag-making machine	T. P. Smith	820,071	May 8	2147	467–8	122	542
Paper box	P. R. Warren	821,907	May 29	5854	1244	122	1537
Paper box. Knockdown	F. H. Berold, Jr	822,037	May 29	6108	1301	122	1593
Paper-box machines. Measuring attachment for	A. Bell	824,464	June 26	4443	943	122	2856
Paper-cabinet	S. Wheeler	819,482	May 1	895	195–6	122	200
Paper-clip	A. G. Bowen	819,717	May 8	1351	292	122	364
Paper-clip	F. J. Klein	819,766	May 8	1459	312	122	386
Paper-clip	F. J. Klein	820,361	May 8	2702	589	122	665
Paper-cutter die attachment	W. E. Stirling	819,615	May 1	1127	249–50	122	253
Paper cutter. Roll-	H. Helmeke	823,120	June 12	1803	371	122	2168
Paper-cutting machine	A. Bredenberg	819,718	May 8	1352	292–3	122	364
Paper-cutting machine	J. G. Hardie	823,119	June 12	1796	369–70	122	2167
Paper-feeding apparatus	M. Baumgartner	824,401	June 26	4293	915	122	2823
Paper-feeding device	C. J. Luce	820,804	May 15	3595	760	122	920
Paper fixture. Toilet-	H. J. Williams	819,488	May 1	907	199	122	202
Paper fixture. Toilet-	H. J. Williams	819,682	May 1	1268	276	122	285
Paper from one roll to another. Roll for the accurate winding of a sheet of	W. B. Fleming	822,517	June 5	567	114	122	1851
Paper-knife. Cigar-cutting	H. H. James	824,023	June 19	3577	763	122	2613
Paper. Machine for moistening and severing strips of gummed	L. W. Merriam	820,512	May 15	3032	653	122	797
Paper pasting and turning-in machine	C. F. Root and B. O. Conn	822,480	June 5	480	98–9	122	1839
Paper-perforating machine	E. Southworth	824,044	June 19	3615	770	122	2621
Paper-rack	C. E. Gilbert	819,989	May 8	1950	430	122	495
Paper-refining engines. Driving mechanism for	E. C. Crocker	823,109	June 12	1776	366	122	2162
Paper-roll adjustment	F. B. Davidson	823,848	June 19	3240	686	122	2541
Paper-rolls. Paper-lifting device for	E. S Brown	821,318	June 12	2217	462	122	2200
Paper-slitter	W. J. Lupton	823,797	June 19	3143	666	122	2520
Paper-stock. Machine for reducing rags for	J. L. Perkins	822,765	June 5	1062	218	122	1961

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Paper-stock-refining engine	H. G. Saecker	820,522	May 15	3064	657–8	122	801
Paper transmitting and controlling device	W. Scott	824,313	June 26	4107	878–9	122	2796
Paper tray	F. B. Davidson	823,847	June 19	3238	685	122	2541
Paper tray	F. B. Davidson	823,934	June 19	3400	727	122	2577
Paper tray or receptacle	H. P. Shotts	823,896	June 19	3334	710	122	2563
Paper-trimmer. Rotary	F. M. Smith	821,757	May 29	5574	1186	122	1473
Paper trimming and slitting machine	A. Aldrich	823,250	June 12	2085	434	122	2233
Paper vessel	C. T. Bloomer	822,910	June 12	1355	281–2	122	2071
Paper. Watermarking of	W. K. Trotman	821,206	May 22	4456	949	122	1169
Papers and the like. Making illuminated wall-	A. C. Knight	822,209	May 29	6434		122	1668
Papers. Compound for protecting commercial	S. Schwarzschild	822,556	June 5	538		122	1867
Parcel-bundling machine	G. H. Adshead	823,751	June 19	3050	645–6	122	2498
Parcel-carrying strap	J. A. Burton and E. H. Roy	823,258	June 12	2102	438	122	2236
Parchment. Manufacturing artificial	G. Sachsenröder	821,434	May 22	4039		122	1277
Parer for apples and other fruit	D. F. Hunt	824,300	June 26	4085	873–4	122	2781
Parer. Vegetable	W. F. Jetter	821,103	May 22	4260	906	122	1126
Partition structure	A. R. Speer	823,557	June 19	2698	571	122	2421
Paste and making same. Discharging	K. Reinking	820,889	May 15	3798		122	964
Paste holding and applying device	A. L. Smith	823,298	June 12	2172	453	122	2251
Paste. Weatherproof	M. Hennen	823,330	June 12	2237		122	2265
Pasteurizer	J. C. Miller	820,981	May 22	4023	855–6	122	1074
Pattern-chart	G. F. Parker and M. E. M. Whiting.	823,738	June 19	3029	640–1	122	2493
Patterns. Dovetail for	J. P. Exton and J. M. Hahn	821,997	May 29	6027	1284	122	1574
Patterns. Machine for transferring	H. P. Ball	819,263	May 1	452	95–6	122	106
Pavement and laying the same	W. E. Hasaam	819,652	May 1	1210		122	272
Pavement. Apparatus for raising asphalt	W. E. Kerns	819,142	May 1	307	43	122	52
Paving or flag stone	S. W. Lerch	823,473	June 12	2486	535	122	2317
Pawl-and-ratchet tools. Shifter-lock for	Z. T. Furbish	819,536	May 1	990	217	122	223
Pebble-mill	G. S. Emerick	820,559	May 15	3127	672	122	817
Pelt-stretcher. Universal	A. Hirsch	823,170	June 12	1896	391	122	2189
Pen and pencil holder	E. O. Bulman	820,908	May 15	3834	818	122	972
Pen. Automatically-adjustable drawing-	J. A. Martin-Cooke	821,878	May 29	5796	1235	122	1522
Pen-filling device. Fountain-	H. B. Smith	823,975	June 19	3486	744	122	2595
Pen. Fountain-	H. B. Levy	819,294	May 1	523	110	122	121
Pen. Fountain-	F. C. Brown	819,719	May 8	1357	293	122	365
Pen. Fountain-	J. Holland	821,940	May 29	5922	1260	122	1551
Pen. Fountain-	A. Hall	823,328	June 12	2232	466	122	2263
Pen-rack	D. Campbell	820,094	May 8	2197	478	122	553
Penholder	C. W. Boman	820,907	May 15	3833	818	122	971
Penholder	C. Dunn	821,993	May 29	6020	1283	122	1572
Penholder	A. H. Meach	822,008	May 29	6046	1288	122	1578
Pencil	J. A. Stahle	823,705	June 19	2968	628	122	2482
Pencil	J. A. Stahle	823,706	June 19	2970	629	122	2482
Pencil-box	C. C. Fleming	820,773	May 15	3517	754	122	903
Pencil-sharpener	J. A. Webster	819,104	May 1	140	29	122	36
Pencil-sharpener	J. A. Clough	819,123	May 1	182	37	122	47
Pencil-sharpener	F. Lagerholm	822,375	June 5	290	59	122	1789
Pendulum-beat adjuster	E. W. Sartor	819,809	May 8	1550	329	122	409
Percolator	G. E. Savage	821,124	May 22	4306	916	122	1135
Percolator	G. E. Savage and J. W. Chapman	821,125	May 22	4307	916	122	1136
Permutation-lock	W. Streeter and E. Wallis	821,548	May 22	5138	1096	122	1319
Pharmaceutical compound	F. Hofmann	822,370	June 5	281		122	1787
Phase-splitter	H. H. Cutler	821,023	May 22	4104	873	122	1093
Phonograph	P. Weber	821,071	May 22	4205	894	122	1114
Phonograph and graphophone records. Portable cabinet-carrying case for	H. W. Topham	822,875	June 5	1276	263–4	122	2005
Phonograph and stereopticon. Combined	J. Ballance	823,022	June 12	1591	329	122	2124
Phonograph, gramophone, and other similar sound-reproducing machines.	F. F. Shanks	822,024	May 29	6074	1294	122	1585
Phonograph-horn	P. Weber	820,158	May 8	2317	506	122	579
Phonograph-horn support. Extensible	J. K. Ziegenhorn	819,966	May 8	1995	419	122	483
Phonograph record-roll	C. C. Shigley and S. H. Paxton	822,485	June 5	500	101	122	1835
Phonograph repeating attachment	E. L. Aiken	820,165	May 8	2332	508	122	581
Phosphorous compound and making same	G. Martell	820,587	May 15	3170		122	827
Photographic apparatus	A. D. Erickson	823,465	June 12	2474	523	122	2314
Photographic developing apparatus	G. Eastman	822,437	June 5	394	82	122	1810
Photographic developing apparatus	A. W. McCurdy	823,623	June 19	2814	597	122	2447
Photographic-film cartridge	H. L. Gray	820,402	May 15	2978	643	122	784
Photographic plate for color photography	A. and L. Lumière	822,532	June 5	590	119	122	1856
Photographic-plate holder	G. Geiger	824,352	June 26	4190	895	122	2803
Photographic plates. Washing-box for	D. S. Jacobus	820,646	May 15	3263	702	122	847
Photographic sensitive emulsions. Base or support for	J. Findlay	822,107	May 29	6233		122	1621
Photographic shutters, color-screens, &c., to photographic-lens mounts. Means for clamping	A. Wollensak	819,110	May 1	151	31	122	38
Photographs in natural colors. Production of	J. Szczepanik	821,200	May 22	4445	946	122	1168
Physical-culture appliance	M. A. Wilcox	822,329	June 5	212	42	122	1773
Pianissimo device	C. Morgan	823,616	June 19	2801	593	122	2444
Piano	G. W. Weser	824,224	June 26	3949	846	122	2753
Piano-action	J. L. Wilson	819,328	May 1	602	127	122	138
Piano-action	C. A. Lambert	820,506	May 15	3018	649	122	793
Piano-action flange	F. C. Billings	822,716	June 5	963	200	122	1945
Piano-action. Pneumatic	A. Anderson	821,917	May 29	5874	1249	122	1541
Piano-action. Repetition	H. Hauser	821,288	May 22	4612	984	122	1204
Piano-actions. Rail attachment for	F. G. Billings	821,455	May 22	4975	1057	122	1285
Piano-key	J. Doyle	820,289	May 8	2582	562	122	638
Piano-pedal	E. Bornhoeft	820,622	May 15	3228	694	122	839
Piano-playing mechanism. Electrical	C. E. Brown	822,881	June 5	1288	265	122	2008
Piano-stringing hammer	C. J. Hindman	820,418	May 15	2833	617	122	751
Pianos. Disappearing pedal for automatic	M. Clark	821,460	May 22	4962	1058	122	1287
Pianos. Presser-bar for	J. E. and J. W. Matthews	824,498	June 26	4500	954	122	2869
Picker: *See* Fruit-picker.							
Picker-drum-operating means	C. Walmsley	820,838	May 15	3681	785	122	938
Picture, cardboard, and the like hanger	J. D. Walsh	823,379	June 12	2315	486	122	2280
Picture-exhibitor	J. J. Todd	824,266	June 26	4031	863	122	2770
Picture-frame	A. G. Schrick	822,633	June 5	812	165	122	1907
Picture frame and mounting	F. B. Stovel	823,307	June 12	2197	458	122	2256
Picture-frame hanger	L. Feldmann, Jr.	821,159	May 22	4371	930	122	1152
Picture-hanging device	L. Horinko	822,048	May 29	6127	1305	122	1597
Picture machine. Motion-	J. E. Cahill and C. F. Jenkins	819 514	May 1	950	208	122	219
Pictures. Apparatus for producing moving	H. A. Farrand	822,730	June 5	1008	205–6	122	1950
Pictures. Protective gate for moving	L. Bories	823,913	June 19	3361	716	122	2568
Pie-crimper and crust-cutter	N. E. Clem	820,553	May 15	3113	670	122	814
Pie-crust-rolling machine	O. Colborne and F. Deuerling	820,860	May 29	5765	1227	122	1515
Pie-making machine	O. Colborne	821,784	May 29	5623	1198–9	122	1484
Pig-iron-breaking apparatus	C. L. Taylor	819,818	May 8	1566	333	122	413
Pile-driver	F. P. Mayo	822,620	June 5	786	160	122	1901
Pile-driving machine	C. H. R. Schwarz	820,992	May 22	4043	859–60	122	1079
Pile fabric. Woven	W. V. Lowe	820,003	May 8	1995	437	122	507
Pile fabric. Woven	T. B. Dornan	823,996	June 19	3529	753	122	2604
Piles. Means for protecting	A. M. Hunt	819,282	May 1	503	106	122	116
Piles. Sinking and building concrete	R. A. Cummings	822,588	June 5	721	145	122	1887
Piles. Sinking concrete	R. A. Cummings	822,589	June 5	723	146	122	1888
Piling. Metal	J. J. Harold	820,304	May 8	2605	567	122	643
Piling. Metal	J. J. Harold	820,970	May 22	3990	847	122	1069
Piling. Metal sheet-	R. H. Stevens	824,513	June 26	4532	961	122	2876
Piling. Metallic	W. Hunter	819,067	May 1	61	14	122	17
Piling. Sheet-	G. Webster	823,982	June 19	3503	748	122	2598
Piling system	G. A. Le Fevre	823,129	June 12	1820	374–5	122	2172
Pill-mass rolls. Machine for forming	H. Copleston	822,101	May 29	6221	1326	122	1619
Pillows, bolsters, and cushions. Slip for	F. Coakley	823,930	June 19	3396	725	122	2576
Pillows, bolsters, or cushions. Slip or case for	F. Coakley	823,929	June 19	3395	725	122	2576
Pin: *See* Channeling-pin. Clothes-pin. Clothes-line pin. Hair-pin. Insulator-pin. Safety-pin. Stake-pin.							
Pin-hook	J. H. Best	823,317	June 12	2216	462	122	2260
Pins. Safety attachment for scarf-	E. L. Schreiber	823,743	June 19	3038	643	122	2495
Pinch-bar	E. A. Patterson	820,985	May 22	4033	857	122	1077
Pipe: *See* Blowpipe. Bubble-pipe. Lock-bar pipe. Radiator supply-pipe. Sewer-pipe. Tobacco-pipe.							
Pipe	W. J. Hayes and J. Fernandez	823,218	June 12	2010	419	122	2215
Pipe	L. E. Dare	823,716	June 19	2991	633	122	2486
Pipe and tube coupling	H. J. Wilks and M. Klaiber	821,564	May 22	5165	1102	122	1324
Pipe-clamp. Adjustable	J. J. Meyer	821,426	May 22	4921	1045–6	122	1273
Pipe clamp and wrench. Combined	J. W. Harris	820,966	May 15	3724	795	122	948
Pipe-coupling	A. G. Flyberg	820,774	May 15	3518	755	122	903
Pipe coupling. Automatic train-	L. C. Cary	819,408	May 1	756	161–2	122	171
Pipe-coupling ring	W. W. Price	821,536	May 22	5118	1089	122	1315
Pipe-coupling ring	W. W. Price	821,537	May 22	5118	1090	122	1315
Pipe-coupling ring	W. W. Price	821,538	May 22	5119	1090	122	1315
Pipe crushing and shearing machine	F. I. Ellis	823,326	June 12	2228	465	122	2262
Pipe-cutter	L. Leyes	823,796	June 19	3140	665–6	122	2519
Pipe-flange	E. L. Maxwell	823,346	June 12	2264	472	122	2271
Pipe grapple or puller	H. B. Childress	823,667	June 19	2911	615	122	2470
Pipe-hanger	J. Crawford	823,108	June 12	1774	366	122	2162
Pipe-hanger	G. Hossege	824,544	June 26	4592	976	122	2888
Pipe holder. Conductor-	T. N. E. Schebler	820,991	May 22	4042	859	122	1079
Pipe-main testing-plug	P. J. Coleman	821,223	May 22	4482	954	122	1175
Pipe or conduit	C. H. Wilson	822,705	June 5	963	197	122	1941
Pipe or hose and manufacturing the same	P. Sechiari	824,446	June 26	4393	934	122	2843
Pipe or tube cutter	T. W. Myrick	821,816	May 29	5693	1213	122	1500
Pipe-riveting machine. Hydraulic	C. Wigtel	819,193	May 1	305	65–6	122	76
Pipe-riveting machine. Hydraulic	C. Wigtel	819,194	May 1	309	66–7	122	77
Pipe-sections. Guide for joining	H. W. Phillips	820,126	May 8	2252	490	122	565
Pipe spacer and holder. Heating-	W. P. Hussey	823,869	June 19	3277	695	122	2550
Pipe-threading machine	J. A. Hock and E. Bernheim	820,114	May 8	2233	485–6	122	561
Pipe-wrench	F. A. Headson	819,428	May 1	793	171	122	179
Pipe-wrench	E. M. Porter	819,795	May 8	1526	324	122	404
Pipe-wrench	J. Roemer	822,017	May 29	6062	1292	122	1582
Pipes and other articles. Machine for turning	C. H. Thurston	822,407	June 5	342	70	122	1800
Pipes. Cap for	C. H. McCready	823,804	June 19	3159	668	122	2523
Pistol-grip	J. C. Lauth	821,876	May 29	5793	1234	122	1521
Piston	G. C. Bourne	822 646	June 5	838	171	122	1913
Piston-rod-cooling device	H. T. Jones	822,053	May 29	6135	1306	122	1599
Piston-support	R. Hartwig	821,640	May 29	5329	1135	122	1419
Pitcher. Syrup-	J. Brammer	820,695	May 15	3365	721	122	867
Pivot connection	M. Bradford	823,663	June 19	2899	613	122	2468
Plane	F. H. Richards	823,137	June 12	1832	378	122	2175
Plane	A. O. Jones	819,888	May 8	1704	365–6	122	446
Plane	J. D. Leffel	820,215	May 8	2419	525	122	602
Plane. Cooper's	A. N. Gabrielson	820,639	May 15	3252	699	122	845
Planing-machine	H. Schneider	821,543	May 22	5131	1094	122	1317
Planing-machine	G. A. Ensign	819,528	May 1	976	213–14	122	219
Planing-machine knife. Wood-	C. H. Amidon	820,330	May 8	2640	576	122	651
Planing machine. Metal-	J. W. Ruth and D. Harden	824,589	June 26	4689	907	122	2911
Planing machine. Metal-	H. E. and F. L. Eberhardt	821,932	May 29	5906	1256–7	122	1547
Planing-machine tool-feed	H. Robinson	822,985	June 12	1497	311	122	2104
Planing machinery	F. Harrington and C. L. Smith	820,416	May 15	2830	616	122	751
Planter	J. R. Thomas	821,137	May 22	4334	922	122	1143
Planter and marker. Automatic check-row corn-	P. Owen	824,576	June 26	4654	990	122	2901
Planter. Corn-	E. Hermon	820,305	May 8	2606	567–8	122	643
Planter. Corn-	R. E. Cheesman	819,409	May 1	758	162	122	172
Planter. Corn-	S. G. Lohr	822,617	June 5	778	158	122	1900
Planter. Corn-	L. E. Waterman	823,245	June 12	2076	432	122	2231
Planter. Seed-	J. F. and N. P. Devenney	824,176	June 26	3849	821	122	2731
	D. M. Pearce	823,358	June 12	2283	477–8	122	2274

Alphabetical list of inventions for May and June—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Planters. Marker for corn-	L. J. Lindsay	821,593	May 22	5219	1114	122	1337
Planters. Valve mechanism for seed-	A. C. Lindgren	823,884	June 19	3305	703	122	2557
Planting machine. Corn-	J. S. Berkey	821,451	May 22	4966	1056	122	1284
Plaster-board	H. Kimmet	820,793	May 15	3570	763	122	915
Plaster composition	C. R. Harris and C. C. Barrick	824,012	June 19	3559	.....	122	2610
Plastic articles. Die for making ornamented	J. L. Mahoney	819,150	May 1	222	47	122	55
Plastic or flexible material. Machine for crimping or bending the ends of cylinders formed of	A. J. Moxham	822,068	May 29	6161	1313–14	122	1695
Plate cooling and conveying apparatus	L. E. Edgar	823,400	June 12	2353	495	122	2288
Plate-holder. Magazine	A. A. Brooks and G. A. Watson	819,403	May 1	747	158	122	169
Plate, pan, or pot lifter	W. L. Schafer	820,141	May 8	2284	497	122	572
Plate-press	G. Rowden	821,380	May 22	4818	1023–4	122	1251
Plates to cylinders. Means for fastening	H. F. Bechman	823,099	June 12	1754	361	122	2158
Platform: *See* Tilting platform.							
Pliers	R. C. Koch	819,439	May 1	817	175–6	122	184
Pliers. Holding and gripping	T. J. Carter	819,121	May 1	177	36	122	46
Plow	J. Buchanan	819,038	May 1	8	3	122	5
Plow	T. J. Warren	819,390	May 1	722	153	122	164
Plow	W. G. Danielsen	819,737	May 8	1393	300	122	372
Plow	J. Q. A. Johnston	820,202	May 8	2396	520–1	122	596
Plow	F. A. Hamilton and W. A. Linker	821,486	May 22	5031	1071	122	1297
Plow	H. S. Harker	821,713	May 29	5489	1169	122	1453
Plow	T. W. Marcum	823,799	June 19	3152	667	122	2522
Plow	L. A. Lohrke	823,951	June 19	3435	733–4	122	2585
Plow	R. R. Hayward	824,014	June 19	3561	760	122	2610
Plow	F. H. Nichols	824,156	June 26	3766	804	122	2713
Plow and planter	H. F. Weaver	821,070	May 22	4202	893	122	1114
Plow and seeder	F. Thürrid	823,374	June 12	2308	483	122	2279
Plow attachment	F. Smith	820,147	May 8	2297	502	122	574
Plow attachment	G. A. Schultz	821,128	May 22	4312	918	122	1137
Plow-beam	R. T. Huggins	819,997	May 8	1978	436	122	504
Plow. Disk	E. Fowler	819,533	May 1	983	215–16	122	221
Plow. Disk	M. Lundin	820,057	May 8	2112	460	122	534
Plow. Disk breaking-	P. McFerson	820,242	May 8	2474	535	122	613
Plow draft-hitch. Gang-	R. R. Frey	821,231	May 22	4496	957	122	1179
Plow. Expanding wheeled	N. Sanders	822,632	June 5	810	165	122	1906
Plow-frame and attachment	J. G. Evans	824,633	June 26	4771	1017	122	2928
Plow harrow attachment	J. L. Crisler	819,733	May 8	1386	298–9	122	370
Plow harrow attachment	J. L. Crisler	819,861	May 8	1645	351	122	432
Plow. Motor-	J. W. McGuire	820,887	May 15	3793	809–10	122	963
Plow. Orchard-	C. A. Fox	820,635	May 15	3245	698	122	843
Plow-point	J. L. Brinly	820,035	May 8	2064	451	122	522
Plow. Subsoil-	J. C. Ogden	821,958	May 29	5956	1269	122	1557
Plow. Subsoil-	E. Kraai	822 847	June 5	1219	252	122	1994
Plow. Wheel disk	E. Fowler	819,532	May 1	981	214–15	122	220
Plow wheel-support	S. and J. Moeller	821,520	May 22	5089	1084	122	1309
Plow. Wheeled	L. E. Waterman	823,241	June 12	2068	430	122	2229
Plow. Wheeled	L. E. Waterman	823,244	June 12	2072	431–2	122	2230
Plows. Bearing and scraper for disk	E. Fowler	819,701	May 1	1310	285	122	294
Plows. Means for actuating gang-	W Gregory	819,423	May 1	781	168–9	122	177
Plumb-bob and rule. Combined	R. McDonald	821,371	May 22	4797	1019	122	1247
Pneumatic cushion	V. H. Podstata	819,452	May 1	838	180	122	188
Pneumatic drill	H. Brousseau	820,345	May 8	2670	583–4	122	657
Pneumatic drill	A. P. Hanscom	822,367	June 5	272	57	122	1785
Pneumatic economizer and air-injector	E. Hoxie	823,278	June 12	2141	447	122	2244
Pocket-fastener	E. S. Earhart	822,834	June 5	1197	245	122	1990
Pocket-knife	A. S. Roberts	824,148	June 26	3792	810	122	2719
Poison-indicator	P. H. Jones	823,873	June 19	3285	697	122	2552
Pole-changer	R. M. Newbold	819,160	May 1	238	51	122	59
Pole-tip	T. Rowe	819,807	May 8	1546	328	122	408
Polishing device	E. Franke	819,271	May 1	485	100	122	113
Polishing-machine	G. Tüschel	820,748	May 15	3466	743	122	892
Polishing-machine	D. McCance	823,540	June 19	2666	562	122	2414
Polishing-machine feed mechanism	J. D. Walsh	821,143	May 22	4347	924	122	1146
Pool-table. Automatic registering	G. Kindling	823,687	June 19	2942	622	122	2476
Portable bath	D. F. Fowler	821,230	May 22	4495	957	122	1179
Portable house	W. M. Ducker	819,129	May 1	192	39	122	49
Post: *See* Binding-post. Fence-post. Metal post. Metallic post. Tool-post.							
Post-driving machine	L. H. Ketcham	819,764	May 8	1454	311	122	385
Post-hole digger	O. K. Neste	819,791	May 8	1520	323	122	403
Postal cabinet	R. O'Reilly	823,630	June 19	2836	600	122	2453
Postal service. Machine for the manufacture of facing-slips for the	J. E. Ray	821,122	May 22	4293	914–15	122	1133
Pot: *See* Coffee and tea pot. Dash-pot.							
Pot-cover	C. W. Lasher	819,441	May 1	820	176	122	184
Pot-lifter	W. Whitten	820,460	May 15	2909	632	122	769
Pot-stirrer	F. M. Leaf	822,528	June 5	586	118	122	1855
Potato-bagging machine	G. E. Rehberger	821,314	May 22	4667	994–5	122	1215
Potato-cutter	I. B. Lansford	821,652	May 29	5352	1140	122	1423
Potential-indicator. Portable	J. B. Taylor	822,319	June 5	189	37	122	1769
Potentiometer	M. E. Leeds and E. F. Northrup.	819,355	May 1	655	137–8	122	150
Pouch	U. D. Ezell	824,634	June 26	4773	1017	122	2928
Poultry-carrier	D. A. Garber	819,056	May 1	43	9	122	13
Powder. Blasting-	B. Eberle	820,854	May 15	3709	.....	122	945
Powder for dusting patterns	F. Damhorst, A. Kemper, and E. Utke.	820,099	May 8	2207	.....	122	555
Powder. Machine for making comb-	C. Dobbs and J. R. Pitman	821,865	May 29	5772	1229	122	1517
Powder. Machine for making comb-	C. Dobbs and J. R. Pitman	821,866	May 29	5775	1230	122	1517
Powder. Machine for making grains or flakes of	C. Dobbs and J. R. Pitman	823,672	June 19	2919	617–18	122	2472
Powder receptacle. Toilet-	F. A. Toomey	824,391	June 26	4274	911	122	2819

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Power device	C. J. Coleman	820,701	May 15	3379	724	122	870
Power-generating apparatus	W. L. R. Emmet	822,259	June 5	66	13	122	1743
Power-generating apparatus	W. L. R. Emmet	822,260	June 5	68	14	122	1743
Power-generating apparatus	J. Flindall	822,264	June 5	76	15–16	122	1745
Power mechanism	J. C. Dunkelbarger	821,226	May 22	4485	955	122	1176
Power system	W. L. R. Emmet	822,261	June 5	70	14	122	1744
Power transmission	G. Morrice and C. G. Grim	820,122	May 8	2244	488	122	563
Power transmission	C. Phillips	822,629	June 5	805	163	122	1905
Power transmission and distribution. Electric-	J. Kruyswijk	823,055	June 12	1649	340–3	122	2136
Power-transmission mechanism. Frictional	I. Larsen and R. Hardie	823,178	June 12	1909	394–5	122	2192
Power-transmitting apparatus	J. Trainer	821,003	May 22	4064	864	122	1084
Power-transmitting device. Speed-multiplying	J. K. Stewart	824,216	June 26	3936	843	122	2750
Power-transmitting mechanism	T. C. Dexter	820,920	May 15	3866	823–4	122	979
Power-transmitting mechanism	T. C. Dexter	821,864	May 29	5769	1228–9	122	1516
Power-transmitting mechanism	C. A. Dahl	824,234	June 26	3968	850	122	2757
Precious metals. Apparatus for recovering	E. J. Garvin	822,940	June 12	1409	295	122	2081
Precious metals from their ores. Apparatus for extracting	S. T. Muffly	820,811	May 15	3610	771	122	924
Precious metals from their ores. Extracting	S. T. Muffly	820,810	May 15	3606	771	122	923
Precious metals. Recovering	J. A. Just	820,000	May 8	1989	.....	122	506
Preserves. Heating	S. Gábriel	820,638	May 15	3250	699	122	844
Preserving	F. B. Melton	821,947	May 29	5942	.....	122	1554
Preserving by liquid air. Apparatus for	W. T. Scheele	820,442	May 15	2871	625	122	759
Press: *See* Automatic press. Baling-press. Briquet-press. Bundling-press. Copying-press. Drill-press. Embossing-press. Fly-press. Hay-press. Jelly-press. Link-closing press. Molding-press. Plate-press. Printing-press. Stave-press. Transfer-press. Veneer-press.							
Press	J. E. Donaldson	819,414	May 1	764	163	122	173
Press	A. Marshall	821,517	May 22	5082	1082–3	122	1308
Press-feeder	W. E. Tate	819,949	May 8	1820	393	122	470
Presses and the like. Feeding mechanism for	A. Eschenbach	822,661	June 5	861	177	122	1919
Presses. Form for cylinder-	J. H. Matthews	823,062	June 12	1665	345	122	2139
Presses. Paper-guide for	F. B. Davidson	823,849	June 19	3242	686	122	2542
Pressure indicator and recorder	W. H. Bristol	822,244	June 5	25	6	122	1734
Pressure-regulator	F. M. Ashley	824,681	June 26	4853	1035	122	2945
Pressure systems. Automatic controller for	W. J. Richards	822,223	May 29	6463	1372	122	1675
Pressure-variating device	W. B. Mason	822,850	June 5	1223	253	122	1995
Price and measure indicator for vessels	H. F. Dunn	824,532	June 26	4569	971	122	2884
Printer's block	J. Kyle	823,416	June 12	2380	501	122	2294
Printer's chase	S. Moltrup and W. L. Horner	821,726	May 29	5512	1175	122	1458
Printer's registering device	W. S. Warnock	819,101	May 1	133	28	122	34
Printing	J. F. Bell	819,841	May 8	1614	343	122	425
Printing and auditing machine Ticket	F. J. Wills	820,277	May 8	2545	552–5	122	630
Printing. Composition for preventing set-offs in	G. S. Duncan and G. H. Potts	823,673	June 19	2921	.....	122	2473
Printing. Composition for preventing set-offs in	G. S. Duncan and G. H. Potts	823,674	June 19	2923	.....	122	2473
Printing. Composition for preventing set-offs in	G. S. Duncan and G. H. Potts	823,675	June 19	2924	.....	122	2473
Printing. Composition for preventing set-offs in	G. S. Duncan and G. H. Potts	823,676	June 19	2924	.....	122	2473
Printing device	P. T. Hahn	823,042	June 12	1623	336	122	2131
Printing device	A. Holtum	823,783	June 19	3120	661	122	2515
Printing-machine	T. M. North	819,307	May 1	551	117	122	127
Printing-machine	W. Scott	819,813	May 8	1556	331	122	410
Printing-machine	W. H. Brown	820,472	May 15	2931	636	122	773
Printing-machine	W. Scott	823,553	June 19	2690	569	122	2419
Printing-machine	S. L. Morgan	824,190	June 26	3674	827–8	122	2737
Printing-machine. Coin-operated	G. A. Moore	820,514	May 15	3037	653–4	122	798
Printing machine. Envelop-	M. P. Kenna	819,763	May 8	1450	310	122	384
Printing machine. Plate-	G. H. Kendall	823,878	June 19	3290	698–9	122	2553
Printing-machines. Sheet-feeding device for	G. Kleim	819,352	May 1	644	136	122	147
Printing mechanism for warp-printing devices	F. Schmidt	822,308	June 5	168	34–5	122	1765
Printing on tin plates or the like. Machine for	G. C. H. Wichmann and A. B. Evans.	823,835	June 19	3218	680–1	122	2537
Printing. Poster and color	C. S. Heermance	824,016	June 19	3563	760	122	2610
Printing-press	C. L. Post	819,310	May 1	556	119	122	128
Printing-press	C. H. Palmer and J. W. Denmead	819,375	May 1	694	147	122	158
Printing-press	P. M. Randall, Jr.	819,923	May 8	1767	380	122	459
Printing-press attachment. Platen-	W. Mayer	824,256	June 26	4015	859	122	2766
Printing-press gripper	F. R. Stearns	822,027	May 29	6079	1295	122	1586
Printing-press gripper	F. I. Macauley	822,967	June 12	1462	305	122	2094
Printing-press inking apparatus	J. A. Noel	819,371	May 1	686	144	122	157
Printing-press inking apparatus	H. F. Bechman	823,098	June 12	1752	360–1	122	2158
Printing-press inking mechanism	S. L. Morgan	824,191	June 26	3880	828	122	2738
Printing press. Multicolor-	F. H. Mowbray, W. Black, and R. Warriner.	819,157	May 1	232	50	122	58
Printing press. Multicolor-	C. L. Post	819,309	May 1	553	118	122	127
Printing-press perforating attachment	H. Caton	821,217	May 22	4473	952	122	1173
Printing-press. Platen	R. E. and A. Kemper	819,069	May 1	63	14–17	122	18
Printing-press registering mechanism	H. A. W. Wood	824,325	June 26	4135	885	122	2792
Printing-press. Rotary	B. F. Berry	823,387	June 12	2328	488	122	2283
Printing-press sheet-manipulating mechanism	L. E. Morrison	819,699	May 1	1307	264	122	294
Printing-press. Two-revolution cylinder	B. F. Berry	819,716	May 8	1349	292	122	363
Printing roller wrapping-paper. Machine for	H. Barnard	819,709	May 8	1335	289	122	360
Projectile	E. Niehoff	820,818	May 15	3628	775	122	928
Projectile	J. F. Meigs and E. A. Gathmann.	823,953	June 19	3439	734	122	2586
Propeller	F. C. Gordon	819,540	May 1	995	218	122	224
Propeller for marine vessels	J. Dela Mar	823,476	June 12	2505	526	122	2321
Propeller. Reversible or feathering screw-	H. K. Milham	822,064	May 29	6153	1312	122	1603
Propeller-wheel	H. J. Perkins	821,534	May 22	5115	1089	122	1315
Propelling device. Self-	B. Shorthouse	819,609	May 1	1113	245	122	250
Propelling ships	A. Gambin	822,732	June 5	1011	207	122	1951
Pruning implement	J. W. Payne	822,764	June 5	1060	218	122	1961

Alphabetical list of inventions for May and June—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Puller: *See* Hay and straw puller. Stump-puller. Spike-puller.							
Pulley	H. C. Grannatt	820,410	May 15	2810	612	122	748
Pulley	J. T. Johnson	821,169	May 22	4387	933	122	1155
Pulley	W. M. Rockwood	821,379	May 22	4817	1023	122	1251
Pulley. Expansible	E. E. James	824,022	June 19	3575	762	122	2613
Pulley. Guide	A. B. Ferdinand	819,874	May 8	1672	350	122	438
Pulley lubricator. Loose	L. C. Hobart	822,046	May 29	6124	1304	122	1597
Pulley. Self-lubricating loose	L. O. Goodwin	821,632	May 29	5309	1133	122	1414
Pulley. Split or divided	E. A. Hildreth	821,715	May 29	5493	1170	122	1454
Pulleys and chocks. Check attachment for	R. Kurella	822,058	May 29	6144	1309–10	122	1601
Pulleys. Yoke for split sheet-metal	E. T. Shepard	823,483	June 12	2525	530	122	2326
Pulp-screening machine	E. W. Goodrick	822,599	June 5	746	151–2	122	1892
Pulp-wood chips. Apparatus for assorting	N. M. Jones	819,889	May 8	1705	366	122	446
Pulverizing-mill	S. R. Krom	823,127	June 12	1814	373–4	122	2170
Pulverulent materials. Concentrator for	R. G. Neumann	821,819	May 29	5698	1214	122	1501
Pump	A. E. Guy	820,778	May 15	3524	756	122	905
Pump	A. C. Berry	822,178	May 29	6378	1354–5	122	1654
Pump	P. H. Deis	823,207	June 12	1965	413–14	122	2210
Pump and liquid-measure. Tank	J. H. Sherrard	819,088	May 1	109	23	122	29
Pump. Automatic boiler	S. A. Reeve	824,142	June 26	3776	806–7	122	2715
Pump. Centrifugal	R. Pitman	823,077	June 12	1693	350	122	2144
Pump. Centrifugal, turbine, and similar	F. Ray	820,439	May 15	2965	624	122	758
Pump, compressor, motor, engine, and like machinery. Rotary	F. J. Rochow	819,674	May 1	1255	273–4	122	282
Pump. Cycle	D. K. Bryson	819,600	May 1	1294	281	122	291
Pump. Electrically-driven	H. F. Gurney	823,118	June 12	1793	369	122	2166
Pump for wells	A. N. Ellis	819,966	May 8	1945	429	122	494
Pump. Gas	R. Whitaker	821,563	May 22	5163	1102	122	1324
Pump-governor	H. W. Geare	822,519	June 5	570	115	122	1851
Pump-lubricating apparatus. Air	P. Beahm	819,401	May 1	744	157–8	122	169
Pump mechanism	S. W. Luitwieler	819,295	May 1	525	110–11	122	121
Pump motor. Oil	A. J. West	821,147	May 22	4355	926	122	1148
Pump motor. Oil	W. S. Sherman	821,195	May 22	4437	945	122	1166
Pump motor. Oil	W. S. Sherman and W. E. Richardson.	821,196	May 22	4438	945	122	1166
Pump-piston	S. Munch	819,077	May 1	86	20	122	23
Pump-piston and packing therefor	W. M. Maloney	823,344	June 12	2260	472	122	2270
Pump-regulating system	G. E. Chamberlain and J. J. Merrill.	822,184	May 29	6388	1356–7	122	1656
Pump regulator. Air	W. Hildebrand	821,870	May 29	5783	1232	122	1519
Pump-rod clamp-guide	A. T. Ames	821,274	May 22	4586	976	122	1199
Pump-rod lifter	W. R. Johnson	821,645	May 29	5340	1137	122	1421
Pump. Sand and cavings	H. R. Hardenburg	819,063	May 1	51	11	122	15
Pump. Steam	J. C. Dean	819,864	May 8	1651	352–3	122	434
Pump. Steam	W. H. Shafer	821,674	May 29	5402	1151	122	1433
Pumping apparatus	A. E. Guy	820,779	May 15	3525	756	122	905
Punch and cutter. Belt	P. F. Coben	821,281	May 22	4600	980	122	1202
Punch and shears. Power	L. Van Dorin	819,621	May 1	1140	251–2	122	256
Punch-bowl	J. Simms	821,545	May 22	5133	1094	122	1318
Punch-cutting or engraving apparatus	F. Wicks	822,089	May 29	6198	1321	122	1614
Punch or perforator. Ticket	J. F. Ohmer	819,917	May 8	1752	377	122	455
Punching-bag. Coin-controlled	R. H. Hartley	822,664	June 5	866	178	122	1920
Punching-bag multiple ball-bearing support	J. F. Frazee	823,595	June 19	2763	585	122	2436
Punching-bag support	J. F. Frazee	823,594	June 19	2761	585	122	2436
Punching-machine	C. Weatherson	823,148	June 12	1850	382	122	2178
Putty knife and chisel	C. S. Leland	821,176	May 22	4399	936	122	1158
Puzzle	B. Dorstrom	819,345	May 1	628	134	122	145
Puzzle	B. S. McCain	821,182	May 22	4407	938	122	1160
Puzzle	F. W. Jacob	822,740	June 5	1021	209	122	1952
Puzzle	W. E. McGraw and A. M. Goodale.	822,862	June 5	1249	257	122	2000
Pyrometer	E. Bennett	822,338	June 5	225	46	122	1775
Pyromotor	W. W. French	824,474	June 26	4459	946	122	2859
Quahog-rake	O. Norton	820,595	May 15	3185	685	122	830
Quick-acting wrench	F. Norwood	823,541	June 19	2668	562	122	2415
Quill-treating machine	F. Holdred	823,122	June 12	1806	371–2	122	2169
Quilting-frame and curtain-stretcher. Combined	J. R. Monaghan	820,513	May 15	3035	653	122	797
Rabbit or poultry hutches or the like. Means for transporting	J. Parker	823,544	June 19	2671	563	122	2415
Rack: *See* Beet-rack. Hay-rack. Clothes-rack. Meat-rack. Coat, hat, and umbrella rack. Paper-rack. Pen-rack. Cue-rack. Scale stock-rack. Display-rack. Shoe-rack. Frying-rack. Wardrobe-rack. Harness-rack.							
Rack	B. L. Jessel	821,364	May 22	4784	1017	122	1244
Radiating, cooling, and condensing apparatus. Tube for	J. G. A. Kitchen and L. P. Perkins.	822,372	June 5	283	59	122	1787
Radiator	J. Maris	822,748	June 5	1036	212	122	1956
Radiator-disk	B. Briscoe	821,698	May 29	5456	1162	122	1445
Radiator drain-valve	F. A. Simonds	820,146	May 8	2295	501	122	573
Radiator. Sheet-metal	W. R. Kinnear	822,613	June 5	769	156	122	1897
Radiator supply-pipe and bracket	J. Collis	821,787	May 29	5638	1201	122	1487
Radiator-valve	E. H. Packard	823,632	June 19	2838	601	122	2453
Radiator valve-actuating mechanism	W. S. Bate	820,846	May 15	3096	788	122	942
Radium surface	H. Lieber	821,655	May 29	5361	1143	122	1425
Rafter-gage	V. A. Johndro	821,168	May 22	4385	933	122	1155
Rail-anchor	J. M. Scott	819,175	May 1	269	57	122	68
Rail-bond	E. W. Robinson	823,292	June 12	2162	451	122	2248
Rail-bond	J. P. Clark	824,625	June 26	4756	1013	122	2925
Rail-bond compressor	C. H. Oslund	823,356	June 12	2280	477	122	2274

Alphabetical list of inventions for May and June—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Rail-chair	A. Bellamy	820,545	May 15	3101	667	122	811
Rail-fastener	W. G. Tower	821,841	May 29	5738	1222	122	1510
Rail-fastening	G. S. Finkle	821,408	May 22	4882	1037	122	1265
Rail-fastening device	J. L. Dahl	821,467	May 22	4994	1062	122	1290
Rail-holding means	J. G. Barrett	820,085	May 8	2177	474	122	548
Rail-joint	J. P. Ank	819,035	May 1	2	1	122	3
Rail-joint	F. A. Haptonstall	819,062	May 1	50	11	122	15
Rail-joint	B. F. Lung	819,149	May 1	221	47	122	55
Rail-joint	L. L. Savoie	819,172	May 1	257	55	122	64
Rail-joint	H. A. Rhinelander	819,456	May 1	842	182	122	189
Rail-joint	C. M. Rhodes	819,457	May 1	844	182	122	189
Rail-joint	S. A. Beeler	819,502	May 1	930	204	122	208
Rail-joint	E. B. Hardman	819,882	May 8	1688	362	122	442
Rail-joint	W. Mears	820,229	May 8	2443	529	122	607
Rail-joint	L. M. Sober	820,268	May 8	2533	548–9	122	627
Rail-joint	A. H. Kramer	820,308	May 8	2609	568	122	644
Rail-joint	W. M. Heun	820,573	May 15	3152	678	122	823
Rail-joint	E. Killing	821,420	May 22	4905	1042	122	1270
Rail-joint	P. J. Miller	821,950	May 29	5945	1266	122	1555
Rail-joint	A. H. Knopf	822,896	June 5	1316	271	122	2014
Rail-joint	L. B. Leech	823,180	June 12	1924	396	122	2196
Rail-joint	E. L. Cook	824,285	June 26	4056	868	122	2775
Rail-joint	W. R. Thomas	824,390	June 26	4272	910	122	2819
Rail-joint	H. Allen. (Reissue)	12,497	June 26	4901	1042	122	2954
Rail-joint-base bond	M. W. Williams	823,198	June 12	1968	410	122	2207
Rail tie and chair. Metallic	E. Wheeler	819,481	May 1	894	195	122	200
Rail-track system	W. J. Sterling	822,399	June 5	329	68	122	1797
Rails. Device for bridging and uniting	J. D. Kneedler, N. Van Sickle, B. Couch, and N. T. Hanson.	821,508	May 22	5069	1079	122	1305
Rails. Device for covering and protecting charged	G. Egenolf	820,186	May 8	2371	515	122	590
Rails. Device for preventing the creeping of	G. H. Prentice	823,739	June 19	3031	641	122	2494
Rails. Device for supporting and spacing guard	H. M. Steward	821,897	May 29	5832	1241	122	1530
Rails. Jim-crow, &c., for bending	B. Newman	819,161	May 1	240	51–2	122	60
Rails. Means for securing	D. F. Vaughan	823,828	June 19	3201	676–7	122	2533
Rails. Securing means for track	J. D. Kneedler	821,509	May 22	5070	1080	122	1305
Railway	W. H. Arnold and H. Smith	819,839	May 8	1611	342	122	424
Railway	A. H. Wood	820,539	May 15	3088	664	122	809
Railway	L. Ginger	821,796	May 29	5651	1204	122	1491
Railway	M. R. Longacre	822,745	June 5	1031	211	122	1955
Railway and tramway truck. Radial	J. S. Warner	819,189	May 1	295	63–4	122	74
Railway-brake adjuster	R. E. Brooks, F. T. Newitt, and A. J. Smith.	823,917	June 19	3366	718	122	2569
Railway cattle-gate	C. R. Larkin	823,881	June 19	3209	701	122	2555
Railway cattle-guard	N. Smith	821,439	May 22	4948	1051	122	1280
Railway cattle-guard	I. J. Ball	823,498	June 19	2576	543	122	2397
Railway-coach chair. Reversible reclining	L. Tarwater and C. K. McKnight.	822,163	May 29	6352	1350	122	1650
Railway-coach chair. Revoluble reclining	L. Tarwater and C. K. McKnight.	822,164	May 29	6354	1351	122	1650
Railway construction	P. Holmes	821,592	May 22	5217	1114	122	1336
Railway cross-tie	A. E. Caskey	819,725	May 8	1369	295	122	367
Railway cross-tie	L. I. Hart	824,649	June 26	4798	1023	122	2934
Railway-crossing	R. W. Cress	822,828	June 5	1184	243	122	1987
Railway-crossing. Movable-point	W. B. Cooke	819,520	May 1	957	210	122	214
Railway crossover-switch. Portable	J. B. and A. L. Aldrich	824,271	June 26	4036	864	122	2771
Railway. Electric	M. A. Lazareff	819,293	May 1	521	109	122	121
Railway. Electric	J. A. Garey	820,407	May 15	2805	611	122	747
Railway. Electric	J. A. Garey	820,488	May 15	2973	642	122	783
Railway electric block-signal	W. E. Sands	819,808	May 8	1547	328–9	122	408
Railway emergency-chain	H. E. Brown	819,265	May 1	460	97	122	107
Railway-frog	J. G. Flugan, Sr	820,406	May 15	2803	610	122	746
Railway-gate	W. W. Moore	822,065	May 29	6156	1312	122	1604
Railway-gate. Electric	A. Knobel	822,958	June 12	1445	301	122	2090
Railway-joint	M. W. Bell	822,817	June 5	1162	239	122	1983
Railway. Overhead	B. W. Harris	822,120	May 29	6265	1334	122	1629
Railway paving plant	G. Merriman	819,904	May 8	1728	371–2	122	450
Railway rail and tie	D. E. Lindsay	820,722	May 15	3420	732	122	881
Railway-rail joint	J. Gabriel	819,537	May 1	991	217	122	223
Railway-rail joint	R. D. Creal	819,732	May 8	1386	298	122	370
Railway-rail joint	F. L. Priest	822,768	June 5	1069	220	122	1963
Railway-rail joint	S. S. Deemer	824,099	June 26	3704	790	122	2699
Railway-rail-joint support	L. Winans	821,566	May 22	5168	1103	122	1325
Railway-rail stay	H. H. Sponenburg. (Reissue)	12,485	May 22	5246	1118	122	1343
Railway-rails. Means for supporting and holding	H. Livesey	824,555	June 26	4620	981–2	122	2894
Railway-signal	R. A. Baldwin	819,397	May 1	735	156	122	167
Railway-signal	J. P. Norwood	821,252	May 22	4536	965–6	122	1188
Railway-signal	J. B. Lineback	821,515	May 22	5078	1082	122	1307
Railway-signal	W. A. D. Short	821,835	May 29	5728	1220	122	1508
Railway-signal	W. C. Burton	821,923	May 29	5887	1251	122	1543
Railway-signal	J. S. Jeffrey	822,951	June 12	1429	298	122	2085
Railway signal apparatus	E. L. Nolting	822,625	June 5	796	162	122	1903
Railway signal apparatus	E. L. Nolting	822,626	June 5	799	162	122	1903
Railway signal apparatus	J. W. Latta	823,179	June 12	1920	395	122	2196
Railway signal device	J. M. Eaton	822,195	May 29	6408	1360	122	1662
Railway-signal-operating mechanism	L. H. Thullen	821,899	May 29	5841	1241–2	122	1533
Railway signal system	H. W. Griffin	820,412	May 15	2818	614	122	749
Railway signaling	J. B. Struble	819,323	May 1	582	124	122	134
Railway signaling	L. H. Thullen	823,648	June 19	2874	607	122	2462
Railway signaling and safety system and apparatus	G. M. Schreiber	820,143	May 8	2287	497–500	122	572
Railway signaling apparatus	W. Skelton and H. D. Chudleigh	821,754	May 29	5570	1185–6	122	1472
Railway signaling device. Electric	H. A. Hoeschen	821,801	May 29	5662	1207	122	1494
Railway signaling-lantern	T. L. Moore	823,615	June 19	2900	593	122	2444
Railway signaling system	H. W. Griffin	820,411	May 15	2810	612–13	122	746
Railway signaling system	H. W. Griffin	820,413	May 15	2822	614–15	122	750
Railway signaling system	L. H. Thullen	821,767	May 29	5595	1192	122	1478
Railway signaling system	A. Ames, Jr., and J. S. Hobson	821,916	May 29	5870	1248–9	122	1540
Railway signaling system	J. B. Struble	822,028	May 29	6080	1295	122	1587
Railway signaling system	J. B. Struble	822,314	June 5	182	36	122	1766

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Railway. Single-track	F. P. Derr	821,863	May 29	5768	1228	122	1516
Railway sleeper or stringer	W. J. Wilson	824,324	June 26	4133	884	122	2791
Railway. Suspended	L. C. Harrison	821,799	May 29	5657	1206	122	1492
Railway-switch	G. W. Snow	820,267	May 8	2531	548	122	626
Railway-switch	E. H. Thorne	821,001	May 22	4060	863–4	122	1083
Railway-switch	H. R. Luther	821,424	May 22	4914	1044	122	1272
Railway-switch	L. T. Wever	821,772	May 29	5603	1194	122	1479
Railway-switch	E. Wartman	823,147	June 12	1848	381	122	2178
Railway-switch	L. T. Wever	823,453	June 12	2454	519	122	2309
Railway-switch	C. F. Comer and H. Lightcap	823,764	June 19	3078	651	122	2505
Railway-switch. Automatic	J. A. MacDonald	819,296	May 1	526	111	122	122
Railway-switch. Automatic	A. M. Frish	822,358	June 5	260	54–5	122	1782
Railway-switch. Frogless	J. E. Canham	821,016	May 22	4065	870	122	1089
Railway-switch-operating apparatus	M. M. McNeley	823,136	June 12	1830	377–8	122	2174
Railway switch. Overhead	B. W. Harris	822,121	May 29	6266	1334	122	1630
Railway switch-rod	W. S. Weston	822,413	June 5	353	74	122	1803
Railway-switch structure. Safety	H. R. Luther	823,732	June 19	3016	639	122	2491
Railway switch systems. Automatic electric signaling device for	D. C. Wolfe	821,914	May 29	5867	1247–8	122	1539
Railway switches and signals. Apparatus for operating and controlling	J. D. Taylor	821,386	May 22	4833	1026–7	122	1254
Railway switching and signaling apparatus	J. D. Taylor	821,385	May 22	4828	1025–6	122	1253
Railway switching and signaling apparatus	W. W. Salmon	821,435	May 22	4940	1049–50	122	1277
Railway switching and signaling apparatus	W. K. Howe	821,495	May 22	5044	1074	122	1299
Railway system. Electric	J. L. Moore	823,067	June 12	1674	346–7	122	2141
Railway-tie	G. A. Belknap	819,840	May 8	1612	342–3	122	424
Railway-tie	F. S. De Voe	820,558	May 15	3125	672	122	817
Railway-tie	N. J. Campbell	820,914	May 15	3856	821	122	976
Railway-tie	M. C. Broderick and B. F. Siber	821,014	May 22	4083	869	122	1088
Railway-tie	J. S. Brubaker	821,853	May 29	5755	1225	122	1513
Railway-tie	C. A. Minerd	822,217	May 29	6447	1269	122	1671
Railway-tie	R. C. Doerr	823,208	June 12	1987	414	122	2210
Railway-tie and rail-fastening. Metallic	C. Buhrer	819,846	May 8	1623	346	122	426
Railway-tie. Metal	G. W. Smith	819,941	May 8	1805	390	122	467
Railway-tie. Metallic	C. Buhrer	819,977	May 8	1920	425	122	488
Railway-tie. Metallic	L. C. Sharp	820,368	May 8	2719	592	122	668
Railway-tie. Metallic	H. F. Urie	820,611	May 15	3211	690	122	836
Railway-tie. Metallic	A. Morrison	821,951	May 29	5946	1266	122	1555
Railway-tie. Metallic	F. H. Urban	823,311	June 12	2205	459	122	2257
Railway-tie plate	G. W. Duke	822,832	June 5	1193	215	122	1989
Railway-ties. Reinforcement for concrete	H. E. Percival	819,919	May 8	1755	378	122	456
Railway traffic-controlling apparatus	C. J. Coleman	822,508	June 5	538	110	122	1843
Railways. Alarm-signal arrangement for use in connection with	R. W. Clery	823,668	June 19	2912	616	122	2470
Railways. Concrete road-bed for	J. W. Schaub	819,081	May 1	92	21–2	122	25
Railways. Rope-grip for suspended rope	A. W. Kützer	821,174	May 22	4394	935	122	1157
Railways. Safety system for operating	W. H. Dammond	823,513	June 19	2908	549	122	2403
Railways. Whip-guard for	W. H. Lawrence and C. A. Schroyer	819,354	May 1	654	137	122	149
Rain-alarm	V. A. Dever	819,525	May 1	968	212	122	217
Rake: *See* Quahog-rake.							
Rake	H. Vesperman	820,449	May 15	2887	628	122	764
Range. Cooking	M. V. Hammack	821,487	May 22	5032	1071–2	122	1297
Range-finder	H. C. Percy	819,591	May 1	1087	239	122	244
Range-finder	B. A. Fiske	822,201	May 29	6416	1362	122	1663
Ranges. Burner for gas	C. Ennis	822,932	June 12	1395	292	122	2079
Rat-trap	F. Klousnitzer	821,306	May 22	4789	1018	122	1245
Ratchet mechanism for tools	J. P. Bartholomew	822,714	June 5	979	199	122	1944
Ratchet wrench and drill. Combined	J. R. Neilson	822,687	June 5	927	188	122	1934
Razor. Safety	J. J. Fetzer	819,640	May 1	1190	259	122	267
Razor. Safety	W. J. Moore	819,780	May 8	1480	316	122	391
Razor. Safety	L. B. Gaylor	819,987	May 8	1947	430	122	494
Razor. Safety	M. A. Mihills	823,134	June 12	1827	377	122	2173
Razor. Safety	D. E. Goe	824,601	June 26	4887	1040	122	2951
Reading and invalid table. Combined	W. B. Young	822,909	June 5	1146	235	122	1979
Receptacle-closure	E. G. Dann	820,490	May 15	2952	639	122	779
Receptacle-closure. Hermetic	W. A. Lorenz	819,234	May 1	402	85	122	95
Receptacle-closure. Hermetic	W. A. Lorenz	819,235	May 1	405	85	122	95
Receptacle-closure. Hermetic	W. A. Lorenz	819,236	May 1	406	86	122	96
Receptacles. Means for emptying	G. M. Kneuper	821,875	May 29	5792	1234	122	1521
Reclining-chair	J. Landau	822,059	May 29	6145	1310	122	1601
Recorder: *See* Ship's course-recorder.							
Recording and adding machine. Combined number	A. S. Dennis	819,865	May 8	1653	353–5	122	434
Recording and calculating machine. Combined	C. F. Lazanke	820,881	May 15	3777	805–6	122	960
Recording apparatus. Electrical	J. A. Kenny and C. H. Thordarson.	824,364	June 26	4207	898–900	122	2807
Reel: *See* Clothes-line reel. Fish-line reel. Fishing-reel. Harvester-reel. Wire-reel.							
Reel	W. E. Wines	821,567	May 22	5169	1103	122	1325
Reel-carrier	W. G. Hatcher	822,450	June 5	419	86	122	1816
Reel for strap-iron, &c.	F. Gerhard	824,292	June 26	4076	872	122	2779
Reflector	Z. Matlowsky	819,570	May 1	1047	230	122	235
Reflector	E. L. Zalinski	822,810	June 5	1147	236	122	1980
Reflector. Decorated shade	O. A. Mygatt	821,309	May 22	4661	993	122	1214
Reflector for artificial lights. Compound	O. A. Mygatt	821,310	May 22	4662	993	122	1214
Reflector for artificial lights. Decorative shade	O. A. Mygatt	821,307	May 22	4655	992	122	1214
Reflector. Prismatic	O. A. Mygatt	821,308	May 22	4654	991	122	1213
Reflector. Prismatic-glass	O. A. Mygatt	821,311	May 22	4664	993	122	1214
Refrigerating apparatus	C. G. Kamiske	822,054	May 29	6136	1307	122	1598
Refrigerator	W. M. Keith	821,503	May 22	5058	1077	122	1303
Refrigerator	R. Kroll	821,650	May 29	5349	1140	122	1423
Refrigerator	L. Borden	824,061	June 19	3642	775	122	2628
Refrigerator	S. A. Sewall and L. H. Abbee	824,387	June 26	4266	909	122	2818
Regenerator or heat-exchanging apparatus	E. Maslin and C. Theryc	821,518	May 22	5086	1084	122	1309

Alphabetical list of inventions for May and June—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Register: *See* Autographic register. Cash-register. Hot-air register. Side register.							
Register-clamp	T. Wensel	819,827	May 8	1586	337	122	418
Regulator: *See* Controller-regulator. Current-regulator. Feed-water regulator. Fluid-pressure regulator. Gas-regulator. Hot-water regulator. Pressure-regulator. Pump-regulator. Vacuum-tube regulator. Voltage-regulator. Watch-regulator. Water-wheel regulator.							
Regulator	A. Roesch	822,554	June 5	634	127–8	122	1866
Rein-holder	E. May	823,003	June 12	1666	345	122	2139
Reinforcing-tube	W. H. Smith	822,487	June 5	505	102	122	1836
Relay	R. H. Manson	822,968	June 12	1464	305	122	2094
Relay device	J. P. Downs	821,902	May 29	6017	1283	122	1572
Relay device	J. P. Downs	822,193	May 29	6406	1360	122	1661
Relay. Electric	M. Setter	819,062	May 1	94	22	122	25
Remedy. Making an internal	R. Griese	824,539	June 26	4583	.....	122	2887
Resistance. Flexible sheet	H. E. Heath	819,654	May 1	1212	266	122	272
Resonance-circuit	G. von Arco	820,169	May 8	2342	509	122	584
Resquaring-shears	C. W. Bennett	819,201	May 1	330	70–1	122	81
Restaurants. Conveyer for	T. Holmes	823,470	June 12	2480	524	122	2315
Reverberatory furnace	M. Cummings	819,043	May 1	15	4–5	122	6
Reversing-switch	J. N. Anderson	820,331	May 8	2643	576–7	122	652
Rheostat	G. E. Stevens	822,312	June 5	176	35	122	1767
Rheostat. Motor-starting	H. Geisenhöner	822,269	June 5	86	18	122	1747
Rheostat. Motor starting and regulating	P. H. Zimmer	819,626	May 1	1158	254	122	260
Rheostat operated by means of compressed air. Automatically-regulated liquid	C. de Kandó	821,418	May 22	4900	1041	122	1269
Rheostat. Starting	D. Miller	822,290	June 5	134	26	122	1758
Ribbon-reverse. Automatic	W. A. Twining	820,834	May 15	3666	782–4	122	935
Rifle and shotgun cleaner	B. E. S. Stocker	821,198	May 22	4443	946	122	1167
Rifle-sight	A. C. Van Horn and A. A. Miller	823,145	June 12	1846	381	122	2177
Rifle with hinged or tilting barrel	F. Jäger	822,668	June 5	874	179	122	1921
Ring: *See* Curtain-pole ring. Pipe-coupling ring.							
Ringing and locking device. Selective	O. H. Newman	821,820	May 29	5698	1214	122	1502
Rivet	W. P. Bartel	821,397	May 22	4861	1031	122	1260
Rivet-cutter	H. H. Spanogle	820,073	May 8	2150	468	122	543
Rivets. Manufacture of	N. Marshall	820,586	May 15	3169	682	122	827
Riveting device	W. T. Gordon	824,007	June 19	3549	757–8	122	2607
Riveting-machine. Fluid-pressure	E. E. Hanna	823,273	June 12	2127	444	122	2241
Riveting-machine. Fluid-pressure	E. E. Hanna	823,274	June 12	2128	444	122	2241
Roaster: *See* Coffee-roaster. Ore-roaster.							
Roasting-furnace	A. W. Chase	823,393	June 12	2337	490–1	122	2285
Roasting-furnace	F. Klepetko	824,181	June 26	3857	823	122	2733
Rock-breaker. Subaqueous	B. H. Coffey. (Reissue)	12,501	June 26	4909	1043–4	122	2956
Rock-drill	H. Hellman and L. C. Bayles	819,755	May 8	1423	306	122	377
Rock-drill	W. Sturm	820,530	May 15	3074	661	122	806
Rock-drill	A. H. Gibson	822,596	June 5	740	149	122	1890
Rock-drill	E. Leichter	823,059	June 12	1659	344	122	2138
Rock-drilling machine	H. Hellman and L. C. Bayles	819,756	May 8	1430	306	122	380
Rock-drilling machine	C. M. Walker	823,980	June 19	3496	747	122	2597
Rocker. Base	A. H. Ordway	821,055	May 22	4162	885	122	1105
Rocking-stand	F. Grindy	819,878	May 8	1679	360	122	439
Rod: *See* Connecting-rod. Curtain-rod. Fishing-rod. Railway switch-rod. Wantage-rod.							
Roller: *See* Cigarette-roller. Design-roller. Ground-roller. Kneading and aerating roller. Land-roller. Shade-roller. Skate-roller.							
Rolling metal plates	T. H. Mathias	823,345	June 12	2263	472	122	2271
Rolling-mill	O. Briede	822,879	June 5	1284	265	122	2007
Rolling-mill for rolling seamless metal tubes	O. Briede	822,880	June 5	1287	265	122	2008
Rolling mill. Rod	F. H. Daniels	820,396	May 15	2779	603	122	742
Rolling-mills. Coupling-sleeve holder for the rollers of	W. Müller	819,909	May 8	1743	375	122	454
Rolling sheets	A. Paterson	819,589	May 1	1085	239	122	244
Rolling tubes. Machine for	R. Koenig	819,143	May 1	208	43–4	122	52
Roofing-lap	E. N. Brogan	821,606	May 29	5265	1122	122	1404
Roofing material	R. W. Bird	820,470	May 15	2929	635	122	773
Roofing, paving, &c. Composition for	E. J. Yetter	819,833	May 8	1600	.....	122	421
Roofing, paving, &c. Composition for	E. J. Yetter	820,162	May 8	2326	.....	122	581
Roofing, paving, &c. Composition for	E. J. Yetter	820,163	May 8	2328	.....	122	581
Roost. Chicken	G. H. Buckingham	819,204	May 1	345	74	122	84
Rope and rope-socket protector	E. Porter	821,829	May 29	5718	1218	122	1505
Rope-drum	T. S. Miller	821,305	May 22	4650	991	122	1212
Rope-straining device. Self-acting electrical	O. Adam	820,464	May 15	2918	634	122	771
Rosette	J. C Tournier	821,444	May 22	4953	1052	122	1281
Rotary cutter	A. J. Corley	822,351	June 5	250	52	122	1781
Rotary engine	R. C. Heunsch	819,276	May 1	492	102–3	122	114
Rotary engine	E. C. Duncan	819,638	May 1	1182	258	122	266
Rotary engine	A. H. Carpenter	819,724	May 8	1366	295	122	367
Rotary engine	A. F. Ford	819,747	May 8	1411	304	122	375
Rotary engine	W. I. Phifer	819,920	May 8	1757	378–9	122	457
Rotary engine	H. E. Thomas	820,447	May 15	2883	627	122	763
Rotary engine	C. G. Bauer	820,544	May 15	3097	667	122	810
Rotary engine	G. E. Anderson	821,449	May 22	4961	1055–6	122	1282
Rotary engine	A. G. Kinyon and J. R. Saunders	821,647	May 29	5343	1139	122	1422
Rotary engine	W. R. Dawe	821,707	May 29	5480	1166–7	122	1451

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Rotary engine	J. E. and J. M. Peterson	821,734	May 29	5525	1178–9	122	1461
Rotary engine	E. Harrigan	821,797	May 29	5652	1205	122	1491
Rotary engine	C. M. Cagle	822,343	June 5	234	49	122	1777
Rotary engine	G. P. Clark	822,347	June 5	244	51	122	1779
Rotary engine	A. S. Levake	822,378	June 5	295	60	122	1789
Rotary engine	W. A. Brown	822,426	June 5	377	78–9	122	1807
Rotary engine	W. O. Steele	822,709	June 5	949	194	122	1938
Rotary engine	W. A. Allan	823,020	June 12	1581	328	122	2122
Rotary engine	J. P. Shepard	823,228	June 12	2043	424	122	2223
Rotary engine	F. D. Blake	823,252	June 12	2090	435	122	2234
Rotary engine	A. M. A. Sponneck-Mayer	823,449	June 12	2446	516–17	122	2308
Rotary engine	G. S. MacDonald	823,607	June 19	2782	580	122	2440
Rotary engine	J. L. Strickland	823,821	June 19	3184	673–4	122	2529
Rotary engine	W. Lister	823,885	June 19	3307	703–4	122	2557
Rotary engine	R. W. Hamann	824,647	June 26	4794	1022	122	2933
Rotary engine	R. W. Hamann	824,648	June 26	4796	1022	122	2933
Rotary engine. Compound	W. J. Artibee	821,603	May 29	5260	1121	122	1403
Rotary explosive-engine	W. M. Jewell	822,952	June 12	1430	298–9	122	2086
Rotary explosive-engine	H. L. Mailliard	824,559	June 26	4626	983–4	122	2896
Rotary kiln	O. Gerlach	821,355	May 22	4764	1013	122	1240
Rotary motor	P. Ellis	823,717	June 19	2992	633–4	122	2486
Roundabout	G. Hermann	820,111	May 8	2229	484	122	560
Roundabout	C. H. Ware and C. M. Holmes	822,876	June 5	1277	264	122	2005
Rubber balloon-bag	H. B. Faber and H. E. Seal	824,071	June 19	3660	779	122	2632
Rubber boot	C. M. Hannis	822,366	June 5	271	57	122	1785
Rubber boot	F. F. Schaffer	822,692	June 5	937	191	122	1936
Rubber. Dissolving and regenerating	P. Alexander	821,394	May 22	4854	.....	122	1259
Rubber footwear. Apparatus for manufacturing	M. C. Clark	823,923	June 19	3377	720–1	122	2572
Rubber footwear. Manufacture of	M. C. Clark	823,925	June 19	3381	721	122	2573
Rubber from rubber waste. Recovering	W. A. Köneman	823,053	June 12	1645	.....	122	2136
Rubber nipples and the like. Manufacturing	E. J. Sonn	821,066	May 22	4191	860	122	1111
Rubber. Purifying	F. C. Hood	821,717	May 29	5497	1171–2	122	1455
Rubber sheeting. Producing elastic and scented	W. F. A. Schrader	822,309	June 5	172	.....	122	1766
Rubber shoes. Securing device for	C. A. Woollen	820,033	May 8	2060	450	122	521
Rubber-washing machine	F. C. Hood	821,716	May 29	5495	1170–1	122	1454
Rubber waste. Treating vulcanized	W. A. Köneman	823,054	June 12	1648	.....	122	2136
Rubbing and polishing machine	J. W. Maddox	822,461	June 5	446	90–1	122	1822
Rule. Combination	J. E. Huey	824,299	June 26	4084	873	122	2781
Rule-marker	J. L. Gastineau	823,406	June 12	2362	497	122	2290
Ruler. Folding	G. C. Gillespie	821,356	May 22	4766	1013–14	122	1240
Ruler. Parallel	I. M. Hofstad	823,865	June 19	3272	694	122	2549
Ruling machine. Paper	C. F. Taylor	822,404	June 5	335	69–70	122	1799
Sack	G. Leue	821,177	May 22	4400	936	122	1158
Sack folding and securing machine	E. G. Staude	819,466	May 1	858	185–8	122	192
Sack or bag and making the same. Seamless-bottom	K. Sano	822,081	May 29	5186	1318	122	1612
Sad-iron	J. M. Harper	820,643	May 15	3258	700	122	845
Sad-iron	L. Rosenbaum	823,190	June 12	1941	401	122	2201
Saddle adjusting itself automatically in two directions.	C. Szameitat	821,135	May 22	4332	921	122	1142
Saddle attachment	W. O'Neill	819,247	May 1	426	89	122	100
Saddle attachment for harness	J. Bloedel	824,231	June 26	3964	849	122	2756
Saddle. Harness	J. Mosher	819,446	May 1	829	179	122	186
Saddles and back-bands. Pad for gig	A. G. Eichhorn	823,590	June 19	2755	584	122	2434
Saddletree. Riding and driving	R. A. C. Russell	820,136	May 8	2273	494	122	570
Safe. Burglar-proof	J. H. Howard	819,430	May 1	801	172	122	180
Safe or vault door bolting mechanism	O. Price	821,740	May 29	5537	1180–1	122	1463
Safe-plate-forming machine	J. Baum and F. J. Nutting	824,613	June 26	4734	1009	122	2919
Safe, vault, &c	T. H. Holstein	823,334	June 12	2241	467–8	122	2265
Safety-box	I. J. Westby	822,032	May 29	6001	1297–8	122	1589
Safety-gate for hoists	D. Powner and T. C. Thompson	824,381	June 26	4255	906	122	2815
Safety-pin	T. S. Carroll	820,382	May 8	2744	597	122	673
Safety-pin	C. W. Engel	823,268	June 12	2118	442	122	2239
Safety-pin	J. C. Traill	823,905	June 19	3348	713	122	2566
Safety-pin. Pocket	B. Almy	822,335	June 5	221	45	122	1774
Safety-seat	W. H. A. Lewis	823,690	June 19	2947	623–4	122	2477
Sales-slips. Case for duplicate	C. C. Mumm, E. C. Quimby, and C. Anderson.	822,699	June 5	1326	274	122	2015
Salt-shaker	G. J. Vester	822,638	June 5	824	168	122	1909
Sand-blast apparatus	H. Luckenbach	822,379	June 5	296	61	122	1790
Sand-blast machine	C. A. P. Hess	821,415	May 22	4995	1040	122	1268
Sand-drier	F. M. Schaeffer	822,022	May 29	6069	1293–4	122	1584
Sand-mixer	W. G. Stockham	823,710	June 19	2979	630	122	2483
Sanding-tool	E. K. McCoy	819,578	May 1	1062	233–4	122	230
Sandpapering-machine	H. F. Holtmann	824,462	June 26	4472	948	122	2802
Sash and door lock	F. E. Busch	822,506	June 5	534	110	122	1843
Sash-balance	F. A. Blickley	822,717	June 5	965	200	122	1945
Sash-balance. Adjustable	E. M. Erb	820,962	May 22	3972	844	122	1055
Sash-bar	J. P. Comstock	819,854	May 8	1634	348–9	122	430
Sash, doors, &c. Fastener for window	O. A. Dahl	821,090	May 22	4241	902	122	1122
Sash-fastener	J. A. Winn	822,417	June 5	361	75	122	1804
Sash-fastener	F. Sieder	822,696	June 5	942	192	122	1937
Sash fastener	G. W. and G. P. Miller	824,667	June 26	4631	1030	122	2940
Sash fastener. Window	H. L. Benner	820,617	May 15	3220	692	122	837
Sash fastener. Window	B. F. Cline	821,337	May 22	4717	1004–5	122	1227
Sash frame. Window	J. Muir	820,885	May 15	3788	808	122	962
Sash-holder	W. A. Ralston	819,453	May 1	839	181	122	188
Sash holder and fastener	G. H. Akridge	823,659	June 19	2804	612	122	2467
Sash holder. Window	W. F. Evans	822,934	June 12	1398	293	122	2079
Sash-lock	R. D. Logan	820,223	May 8	2434	527	122	605
Sash-lock	W. Hinchliffe	820,866	May 15	3727	795	122	949
Sash-lock	J. B. Vincent	821,842	May 29	5736	1222	122	1510
Sash-lock	R. Neal	821,956	May 29	5954	1268	122	1557
Sash-lock	S. R. Heddeman	823,171	June 12	1897	391	122	2189
Sash-lock	J. S. Pasher	823,543	June 19	2670	563	122	2415
Sash-lock	D. Wilkie	823,666	June 19	2868	611	122	2466
Sash-lock	R. E. Harryman	823,775	June 19	3107	656	122	2511

Alphabetical list of inventions for May and June—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Sash lock and balance	W. A. Winter	822,498	June 5	522	106	122	1840
Sash-lock and burglar-alarm. Combined	J. B. Ridge	819,804	May 8	1541	327	122	407
Sash-lock. Automatic	M. L. Hubermann	824,545	June 26	4503	976	122	2889
Sash lock. Window	E. J. Glackin	821,097	May 22	4251	905	122	1124
Sash lock. Window	T. T. McEntee	823,070	June 12	1690	347	122	2142
Sash. Metal window	C. W. Ecker	823,266	June 12	2115	441	122	2239
Sash mover and lock	A. R. Hardy and R. N. Adams	820,415	May 15	2828	615–16	122	750
Sash operating and locking device	W. R. Renard	824,553	June 26	4678	994–5	122	2908
Sash-weight	F. C. Schwedtman	821,316	May 22	4672	995	122	1216
Sash weight. Window	D. W. Norton	824,198	June 26	3892	831	122	2740
Sashes. Handle attachment for window	C. A. Merryweather	820,231	May 8	2446	530	122	607
Saucepans, &c. Appliance for use with	A. J. Smith	819,940	May 8	1804	390	122	466
Savings-receptacle	H. M. Angle	819,115	May 1	167	33–4	122	44
Saw	H. Grelck	820,969	May 22	3989	847	122	1069
Saw-dressing device. Band	H. Johansen	821,293	May 22	4621	985	122	1206
Saw filing machine. Interchangeable and adjustable hand, band, and jig	H. Miller	819,573	May 1	1054	231	122	237
Saw-guide	J. H. Perkins	820,312	May 8	2616	570	122	645
Saw-set	G. Y. Anderson	819,114	May 1	166	33	122	44
Saw-set	A. Fleming	819,745	May 8	1408	303	122	375
Saw-set	A. V. Shafer and A. C. Ruby	819,939	May 8	1803	390	122	466
Saw-set	H. Wise	820,161	May 8	2324	507	122	580
Saw-set	J. F. Dorman	822,655	June 5	851	174	122	1916
Saw-setting device	S. L. Hawn	820,572	May 15	3150	678	122	822
Saw-sharpening machine	J. M. Waddell	823,800	June 19	3204	677–8	122	2534
Saw, square, and bevel. Combined	A. M. Bowes	823,101	June 12	1758	362	122	2159
Saw-swage	O. Dion	820,402	May 15	2795	607–8	122	745
Saw swage and shaper	W. Barkla	823,754	June 19	3057	647–8	122	2499
Saw-table for curved work	B. Wilson	822,330	June 5	213	43	122	1773
Sawing-machine	S. J. Gray and J. Horning	824,009	June 19	3553	759	122	2608
Sawing-machine	D. Alemian	824,328	June 26	4139	886	122	2793
Sawing-machine. Portable	N. McAslan	819,703	May 1	1313	285	122	295
Sawing-machine. Portable	H. A. Knox	822,056	May 29	6139	1308–9	122	1600
Sawmill-dog	A. A. De Loach	820,287	May 8	2577	559–60	122	636
Sawmill-dog	C. W. White	823,013	June 12	1567	325	122	2119
Scaffolding	J. Emberson	822,658	June 5	857	176	122	1918
Scale	J. W. Hughes	823,728	June 19	3009	637	122	2489
Scale attachment. Automatic	G. Hoepner	823,599	June 19	2769	586	122	2438
Scale attachment. Weighing	J. Barry and M. L. Shaughnessy	820,947	May 22	3923	846	122	1053
Scale. Automatic weighing	H. Hager	819,881	May 8	1686	361–2	122	441
Scale. Platform	G. Jones	822,455	June 5	429	88	122	1818
Scale. Platform	M. H. Winslow	823,313	June 12	2207	460	122	2258
Scale. Price	W. E. Craft	823,397	June 12	2347	493	122	2287
Scale. Railway-track	W. H. Sargent	824,591	June 26	4691	997	122	2911
Scale. Spring	G. Walker	822,641	June 5	827	169	122	1910
Scale stock-rack. Platform	H. C. Gumbel and N. E. Tyrrell	819,879	May 8	1681	360–1	122	439
Scale. Weighing	J. M. Triner	819,325	May 1	589	124–5	122	136
Scale. Weighing	N. E. Tyrrell	819,959	May 8	1875	415	122	479
Scale. Weighing	M. H. Hansen	821,035	May 22	4127	877	122	1098
Scale. Weighing	J. G. Blessing	821,214	May 22	4469	951	122	1172
Scale. Weighing	J. E. Cochran	821,220	May 22	4477	953	122	1174
Scale. Weighing	J. E. Cochran and O. L. Plumtree	821,221	May 22	4479	954	122	1174
Scale. Weighing	J. G. Blessing	821,278	May 22	4592	978	122	1200
Scale. Weighing	E. N. Gilfillan	823,679	June 19	2928	619	122	2474
Scales. Extension-arm for	P. J. Durbin	824,344	June 26	4175	892	122	2800
Scales. Sealing device for weighing	C. C. Neale	819,788	May 8	1516	322	122	402
Scenic frame	E. B. Carns	821,156	May 22	4367	929	122	1151
Scissors	W. E. Jones	822,456	June 5	432	88	122	1819
Scissors and pliers. Combined	C. W. Lurtey	821,659	May 29	5369	1144	122	1426
Scope and distance finder	T. H. Mitchell	822,751	June 5	1040	213	122	1957
Scraper	A. M. Smith and W. C. Dean	819,090	May 1	114	25	122	30
Scraper	B. Henninger	822,605	June 5	757	153	122	1895
Scraper	J. F. Delano	822,928	June 12	1388	290	122	2078
Scraper and grader. Road	J. H. Osten	822,902	June 5	1332	275–6	122	2017
Scraper. Wheeled	W. P. Warren	821,560	May 22	5159	1100–1	122	1323
Scraping-machine. Automatic	J. F. Coleman	821,583	May 22	5196	1109	122	1331
Screen: *See* Collapsible screen. Flash-light screen. Fly-screen. Sewage or the like screen. Window-screen.							
Screen	A. M. Gifford	819,876	May 8	1675	359	122	438
Screen	W. O'Byrne	821,429	May 22	4930	1048	122	1275
Screen	J. Keffler	821,502	May 22	5056	1077	122	1302
Screen	M. Benjamin	821,777	May 29	5610	1195	122	1482
Screw and nut locking device	C. H. Dewett and W. J. Griffiths	821,471	May 22	4999	1063	122	1291
Screw-cutting plate	P. Bäckström	820,334	May 8	2649	578	122	653
Screw. Locking	F. J. Herdle	824,017	June 19	3564	761	122	2611
Screw. Stays	F. T. Lippincott	820,655	May 15	3284	705	122	850
Screw-threading die	T. R. Leighton	824,697	June 26	4900	1042	122	2954
Scriber	F. Brais and S. Nadeau	822,916	June 12	1372	285	122	2075
Scrubbing machine. Floor	J. W. Howe	824,656	June 26	4813	1026	122	2936
Scrubbing-machine. Rotary	T. R. Jenkins, Jr.	822,050	May 29	6130	1305	122	1598
Seal	L. A. Foote	819,347	May 1	631	134	122	145
Seal. Box	E. J. Brooks	822,577	June 5	690	140	122	1879
Seal. Car	G. H. Huising	819,647	May 1	1006	221	122	226
Seal. Coil-wire	E. J. Brooks	822,576	June 5	689	140	122	1879
Seal for stop-cocks	H. C. Sisco	822,025	May 29	6077	1295	122	1586
Seal-lock	C. O. Shepherd	823,297	June 12	2171	453	122	2250
Seal. Self-locking	W. F. Harris	822,945	June 12	1418	297	122	2083
Sealing apparatus. Envelop	E. J. Brasseur	822,572	June 5	680	138–9	122	1877
Sealing machine. Envelop	J. A. Markoe	820,427	May 15	2847	620–1	122	754
Seaming-machine	A. J. Wiza	819,329	May 1	903	127–8	122	138
Seaming machine. Can	H. Diecks	819,526	May 1	909	212–13	122	217
Seaming machine. Can	J. A. Steward	821,134	May 22	4324	920–1	122	1140
Seamless bag or sack and making the same	K. Sano	822,155	May 29	6334	1347	122	1646
Search-light projectors. Control system for	J. L. Hall	822,271	June 5	90	18–19	122	1748

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Seat:							
See Car-seat. Safety-seat.							
Folding seat. Table-seat.							
Metal seat. Vehicle-seat.							
Seat-back. Portable knockdown	J. L. Amann	823,199	June 12	1970	410	122	2207
Seat-back support	A. C. Clark	822,506	June 5	536	110	122	1843
Seat-spider	H. W. Bolens	824,232	June 26	3965	849	122	2756
Section-liner	C. S. Shilling and A. L. Link	822,160	May 29	6340	1349	122	1647
Sectional boiler	M. A. Cook	821,705	May 29	5472	1165	122	1449
Sectional or compartment can	E. W. Carnes	819,336	May 1	616	130	122	142
Seed and recovering lint. System of delinting cotton-	W. A. Ragsdale	821,257	May 22	4551	989	122	1191
Seed-cleaning apparatus. Cotton-	P. T. Rood	822,478	June 5	474	96	122	1828
Seed-delinting machine. Cotton-	W. A. Ragsdale	821,254	May 22	4540	966–7	122	1189
Seed-delinting machine. Cotton-	W. A. Ragsdale	821,255	May 22	4543	967–8	122	1190
Seed-delinting machine. Cotton-	W. A. Ragsdale	821,256	May 22	4546	968	122	1190
Seed hullers. Cylinder-knife for cotton-	M. W. Faherty	824,002	June 19	3540	755	122	2606
Seed-separator	E. C. Foltz	823,111	June 12	1779	367	122	2163
Seed separator. Cotton-	J. C. Winder	822,416	June 5	358	75	122	1804
Seed-testing apparatus	W. Ulbrich	823,088	June 12	1733	357	122	2153
Seeding attachment	W. Fetzer	824,106	June 26	3712	792	122	2701
Seeding-machine	L. E. Waterman	823,242	June 12	2068	430–1	122	2229
Seesaw	F. W. Stevens	822,083	May 29	6188	1319	122	1612
Seesaw and roundabout	J. Mueller	823,618	June 19	2805	594	122	2445
Selective system	S. A. Reed	824,206	June 26	3910	835	122	2744
Self-acting switch	W. H. Taylor	823,310	June 12	2202	459	122	2257
Self-leveling table	F. F. Meyer	822,680	June 5	902	184	122	1928
Separator:							
See Coal-separator. Magnetic separator.							
Corn-separator. Ore-separator.							
Cotton-separator. Seed-separator.							
Cream-separator. Steam-separator.							
Grain-separator.							
Settee or chair	A. P. Boyer	823,102	June 12	1759	362	122	2159
Settling-tank	J. M. Callow	824,279	June 26	4048	867	122	2774
Sewage-ejector	F. Meyers and C. T. Hildebrandt	821,050	May 22	4154	883	122	1103
Sewage or the like screen	F. Brunotte	819,720	May 8	1358	293	122	365
Sewer and culvert mold	H. Besser	820,759	May 15	3493	749	122	898
Sewer appurtenance	F. E. Shaw	821,675	May 29	5404	1151	122	1433
Sewer-pipe	F. E. Shaw	823,141	June 12	1840	379	122	2176
Sewing-machine	P. E. Schoen	819,811	May 8	1552	330	122	410
Sewing-machine	W. Jasper	820,873	May 15	3733	797	122	950
Sewing-machine	C. Pedersen	821,826	May 29	5709	1217–18	122	1504
Sewing-machine. Blindstitch	D. Flanagan	819,642	May 1	1193	260–1	122	268
Sewing-machine bobbin-case	E. L. Bowers	819,688	May 1	1285	280	122	288
Sewing machine. Broom-	A. E. Miller	820,980	May 22	4017	853–5	122	1073
Sewing machine. Button-	C. A. Powell	822,551	June 5	626	126	122	1864
Sewing-machine cloth-feeding mechanism	D. Flanagan	820,354	May 8	2685	586	122	661
Sewing-machine embroidering attachment	R. L. Rodman	823,442	June 12	2433	513	122	2305
Sewing-machine feeding mechanism	C. F. Gray	821,587	May 22	5209	1111–12	122	1334
Sewing-machine feller-foot	M. Hoffert	821,491	May 22	5040	1073	122	1299
Sewing machine. Filled-sack-	M. C. Ellison	822,931	June 12	1392	291–2	122	2078
Sewing-machine guide	P. Sandler	820,523	May 15	3056	658	122	802
Sewing-machine locating-gage	H. C. Miller	822,535	June 5	593	119–20	122	1857
Sewing-machine motor	H. R. Wellman	820,327	May 8	2637	574–5	122	650
Sewing-machine presser-foot	R. G. Woodward	821,773	May 29	5604	1194	122	1480
Sewing-machine presser-foot	A. B[illegible]ins	822,340	June 5	228	46	122	1776
Sewing-machine reel-case	D. Flanagan	820,355	May 8	2686	587	122	661
Sewing-machine ruffler	J. M. Greist	822,892	June 5	1309	270	122	2012
Sewing-machine shuttle-actuating mechanism	A. B. Fowler	820,964	May 22	3976	844	122	1065
Sewing-machine speed-controller	H. R. Schweinler	821,129	May 22	4313	918	122	1137
Sewing-machine table	J. H. Thompson	823,005	June 12	1543	321	122	2113
Sewing-machine tension device	D. S. Drysdale	820,290	May 8	2583	563	122	638
Sewing-machine thread-controlling device	C. V. Bauer	822,337	June 5	224	46	122	1775
Sewing-machine tuck-forming attachment	R. G. Woodward and C. McNeil	821,774	May 29	5605	1194	122	1480
Sewing-machine tuck-forming attachment	R. G. Woodward and C. McNeil	821,775	May 29	5608	1195	122	1481
Sewing-machine tucker	C. P. Oldham	823,072	June 12	1683	348	122	2142
Sewing-machine. Wax-thread	M. D. Hebert	819,065	May 1	54	12	122	15
Sewing mechanism. Button-	A. A. Bouton	820,089	May 8	2186	476–7	122	550
Sewing sweat-bands in hats. Machine for	A. Laubscher	819,442	May 1	821	176–7	122	184
Sewing sweat-bands in hats. Machine for	A. Laubscher	822,135	May 29	6287	1339–40	122	1634
Shade and curtain bracket	W. J. Connell and L. C. Lowe	822,722	June 5	995	203	122	1947
Shade and curtain bracket. Adjustable window	A. Dennis	824,067	June 19	3652	777	122	2629
Shade and curtain fixture	C. S. Staten	821,133	May 22	4322	920	122	1140
Shade and lace-curtain fixture. Adjustable	G. E. West	822,226	May 29	6470	1373	122	1677
Shade-bracket and curtain-holder. Combination	J. C. Miller	819,362	May 1	671	141	122	153
Shade cord attachment. Window-	E. F. Hartshorn	819,064	May 1	52	11	122	15
Shade-fixture	H. B. Turner	819,957	May 8	1873	414	122	478
Shade-fixture	S. Stewart	823,745	June 19	3040	643	122	2496
Shade fixture. Window-	W. D. Harper	821,412	May 22	4889	1038	122	1266
Shade for artificial lights. Composite	O. A. Mygatt	823,622	June 19	2814	596	122	2446
Shade-holder	W. W. Abbott	820,164	May 8	2330	507	122	581
Shade-holder. Universal	J. S. Rymill, W. A. Painter, and J. C. Miller.	821,891	May 29	5826	1239	122	1529
Shade roll-drop. Window-	C. L. Webster	822,031	May 29	6090	1297	122	1589
Shade-roller bracket	C. L. Beam	820,693	May 15	3362	721	122	866
Shade-roller bracket	H. S. Dunbar	823,997	June 19	3532	753	122	2604
Shade-roller. Spring	F. M. Vickery	823,452	June 12	2452	518	122	2309
Shade roller. Window-	J. R. Stephens	821,265	May 22	4566	971	122	1194
Shaft-coupling	H. C. Hart	823,944	June 19	3420	730	122	2581
Shaft-hanger	G. E. Chamberlain	822,183	May 29	6386	1356	122	1656
Shaft-support	H. W. Davis	823,320	June 12	2219	463	122	2260
Shaft. Vehicle-	F. H. Jacobs	824,301	June 26	4068	874	122	2782
Shafts. Apparatus for molding threaded	W. N. Springer	819,094	May 1	120	26	122	31
Shafts. Obturator for flexible	A. E. Guy	820,780	May 15	3527	757	122	905
Shafts. Set-collar for	C. W. Levalley	820,220	May 8	2428	527	122	603
Shape-retainer	E. S. Lefevre	819,774	May 8	1472	314	122	389

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Sharpener. Disk-	G. Gerardy	821,096	May 22	4250	904	122	1124
Sharpener. Drill-	G. S. Spreyer	820,023	May 8	2029	445–6	122	515
Sharpener. Drill-	C. W. Atkinson	822,906	June 12	1350	280	122	2069
Sharpener. Knife-	W. M. Kellogg	823,279	June 12	2143	447	122	2244
Sharpener support. Knife-	L. W. Cruce	819,735	May 8	1391	299	122	371
Sharpening apparatus. File-	A. H. Radell	819,922	May 8	1762	379–80	122	458
Sharpening-machine	A. M. McLeran	822,070	May 29	6168	1315	122	1607
Shawl-strap bar. Extensible	J. Connett	822,349	June 5	248	52	122	1780
Shears:							
See Resquaring-shears.							
Shears	W. P. Spragg	823,816	June 19	3176	672	122	2527
Sheet form. Feeding mechanism for articles in	S. H. Pray	819,376	May 1	696	147	122	159
Sheet-metal doubler	E. Norton	821,667	May 29	5379	1147–8	122	1428
Sheet-metal elbows. Making	W. H. Klauer	824,302	June 26	4089	874–5	122	2782
Sheet metal. Expanding	H. E. White	821,843	May 29	5740	1222	122	1510
Sheet-metal-folding machine	E. W. Talmadge	821,765	May 29	5589	1191	122	1476
Sheet-metal joint	J. E. Dobson	819,866	May 8	1658	355	122	435
Sheet metal. Polishing	J. Nelson	819,369	May 1	685	144	122	156
Sheet-metal-working machine	L. S. Flatau	819,643	May 1	1195	261–2	122	268
Sheet-metal-working machine	L. S. Flatau	819,644	May 1	1197	263	122	269
Sheet-separating apparatus	A. B. Dick	823,935	June 19	3403	727–8	122	2577
Sheet-separating apparatus	A. B. Dick	823,936	June 19	3406	728	122	2578
Sheets, cards, and envelops. Automatic feeding device for	R. E. and A. Kemper	821,601	May 22	5238	1117–18	122	1341
Shingle-bracket	J. Thompson and H. H. Schrader	821,551	May 22	5143	1096	122	1320
Shingle-gage	W. W. Jones	823,874	June 19	3286	697	122	2552
Shingle-machine	D. F. Baker	824,168	June 26	3834	818–19	122	2728
Shingle. Metal	A. Friedley	820,294	May 8	2589	564	122	639
Shingle. Metallic	C. Fichter	822,199	May 29	6414	1361	122	1663
Ship-bottom cleaner. Electrolytic	G. W. Frazier	820,105	May 8	2219	482	122	558
Ships' bottoms. Applying antifouling coating to	G. D. Coleman	819,125	May 1	186	.....	122	48
Ship's course-recorder	F. O. Tibbetts	823,976	June 19	3487	745	122	2595
Ships. Warehouse machinery for unloading	G. H. Hulett	819,759	May 8	1441	308	122	383
Shock-absorber	H. C. Turner	819,396	May 1	715	152	122	163
Shock-absorber	O. E. Vestal	823,829	June 19	3303	677	122	2534
Shock and bundle loader	E. Kirk	822,134	May 29	6285	1338–9	122	1634
Shock-loading machine	E. Lumatta	819,776	May 8	1474	315	122	389
Shock-loading machine	W. O. Crawford	822,653	June 5	848	173	122	1915
Shoe	H. F. Browne	819,845	May 8	1621	345	122	426
Shoe	F. Gustaveson	820,862	May 15	3719	793	122	947
Shoe	A. J. Gabrielian	821,935	May 29	5912	1258	122	1548
Shoe	J. H. Lee	822,061	May 29	6149	1311	122	1602
Shoe	R. Moos	822,381	June 5	299	62	122	1791
Shoe-fastener	E. D. Ritchey, Jr	820,132	May 8	2264	492	122	568
Shoe-fastener	H. Fredrickson	822,206	May 29	6426	1365	122	1665
Shoe-horn	E. R. Mason	821,049	May 22	4153	883	122	1103
Shoe-ironing jack	H. D. Coffman	821,018	May 22	4089	870	122	1089
Shoe-machinery cutter-guard	L. B. Legge	822,860	June 5	1246	256	122	2000
Shoe-polishing cloths. Grip for	C. L. Durboraw	820,630	May 15	3240	697	122	842
Shoe-polishing compound	E. A. Cook	820,392	May 15	2775	.....	122	741
Shoe-polishing device	L. L. Clippinger	822,825	June 5	1175	242	122	1986
Shoe-protector	F. N. Patterson	820,250	May 8	2503	541	122	620
Shoe-rack	R. MacDonald	819,777	May 8	1475	316	122	390
Shoe-tie holder	J. Determan	819,413	May 1	763	163	122	172
Shoestring-fastener	T. Higgins	819,884	May 8	1698	364	122	444
Shooting. Means for promoting accurate	F. Courtinade	820,181	May 8	2361	513	122	588
Shot-spreader	J. M. White	820,459	May 15	2908	632	122	769
Shovel	L. Arnavat	821,847	May 29	5745	1223	122	1511
Shovels. Tooth for steam-	J. C. Cantlebery and W. J. Edwards.	821,215	May 22	4471	952	122	1172
Show-case	O. Jaeger	819,432	May 1	805	173	122	161
Show-case	M. A. Skall	820,828	May 15	3656	780–1	122	933
Show or display case	O. Jaeger	821,499	May 22	5050	1075	122	1301
Show-window and show-case	H. Brandenberger	823,203	June 12	1974	411	122	2208
Show-window fixture	O. Wagner and J. S. Lewis	823,747	June 19	3043	644	122	2496
Shredded-wheat biscuit	W. E. Williams	820,899	May 15	3821	815	122	960
Shutter	J. Cahill	824,410	June 26	4315	919	122	2827
Side register for sheet-folding and other machines	C. A. Sturtevant	823,002	June 12	1533	319	122	2111
Sifter and bucket. Combined ash	C. W. Conradt	823,395	June 12	2343	492	122	2286
Sifter. Flour-	H. Mackay	821,109	May 22	4272	909	122	1129
Sifter, separator, and grader	E. Hartzell	824,650	June 26	4799	1023	122	2934
Sifting device	A. A. Galloway	824,421	June 26	4352	926	122	2834
Sifting-machine spout	O. Grismore	823,117	June 12	1790	369	122	2165
Sight-feed lubricator	F. W. Edwards	819,693	May 1	1300	282–3	122	292
Sight-feed lubricator	F. Leonhardt	820,508	May 15	3023	650	122	794
Sign. Advertising-	M. D. Batchelder	823,459	June 12	2464	521	122	2312
Sign. Automatic changeable	T. W. Thomas and G. W. Gillette	821,068	May 22	4194	891–2	122	1112
Sign. Electric	W. Gierth and G. Latimer, Jr	823,774	June 19	3106	657	122	2511
Sign. Electric	G. R. Macomber	824,494	June 26	4494	952	122	2868
Sign. Illuminated	M. L. Felkin	822,593	June 5	731	147	122	1889
Sign. Metallic	W. F. Hutchinson	820,359	May 8	2697	589	122	664
Sign-support	A. P. Claridge	819,338	May 1	620	131	122	143
Signal:							
See Alarm-signal. Railway-signal.							
Electric time-signal. Railway electric block-signal.							
Mail-box signal.							
Signal apparatus	F. Muschenheim	824,430	June 26	4366	929	122	2837
Signal-receiving system. Visual	E. A. Faller	822,888	June 5	1299	267–8	122	2010
Signals. Means for actuating	A. B. Ferdinand	820,041	May 8	2080	453–4	122	527
Signaling and safety system. Block	J. M. Huey	819,278	May 1	497	104	122	115
Signaling apparatus. Tide-power	E. B. Cade	824,408	June 26	4313	918–19	122	2827
Signaling device	N. A. Butler	821,459	May 22	4980	1058	122	1287
Signaling device	C. C. Phillips	824,580	June 26	4664	993	122	2904
Signaling. Electric	J. B. Struble	819,322	May 1	579	124	122	133
Signaling system	W. W. Salmon	821,381	May 22	4820	1024	122	1252
Signaling system	J. B. Struble	823,646	June 19	2869	606	122	2461
Signaling system. Electric	J. F. Webb and C. E. Frederickson	819,190	May 1	297	64–5	122	74

Alphabetical list of inventions for May and June—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Signaling system. Train	J. Gerard	823,114	June 12	1784	367–8	122	2164
Silica and shaping the mass while plastic. Fusing	J. F. Bottomley and A. Paget	822,424	June 5	372	77–8	122	1806
Silk. Charging	G. Gianoli	819,751	May 8	1419	.....	122	377
Silk. Machine for making watered	J. J. Cavagnaro	823,509	June 19	2595	547	122	2400
Silk. Manufacture of artificial	L. Crespin	820,351	May 8	2681	585	122	660
Silk. Manufacture of imitation	E. Schramm	823,445	June 12	2437	514	122	2306
Silk-ungumming apparatus	P. Schmid	822,774	June 5	1078	222	122	1964
Silo	A. Walrath	820,750	May 15	3471	744	122	893
Singeing-machine	H. H. Skevington, W. L. Whitehead, and W. H. Seltzer.	821,676	May 29	5408	1152	122	1434
Sinker	J. H. Shepherd	822,694	June 5	939	192	122	1936
Siphon	G. D. Foster	822,356	June 5	256	54	122	1782
Siphon-closet	B. O. Tilden. (Reissue)	12,496	June 12	2570	542	122	2334
Siphon-collar	C. R. Schultz	821,437	May 22	4946	1050	122	1279
Siphon. Flush-tank	R. C. De La Hunt	822,512	June 5	556	112	122	1849
Siphon. Liquid-dispensing	A. Kleinfeldt	824,249	June 26	4004	857	122	2764
Skate. Motor roller-	H. Beauford	823,385	June 12	2325	487	122	2282
Skate. Roller-	C. G. Hoerle	823,333	June 12	2240	467	122	2265
Skate. Roller-	O. W. Everett	823,940	June 19	3413	729	122	2580
Skate. Roller-	W. S. Fulton	824,108	June 26	3718	794	122	2703
Skate-roller	O. W. Everett	823,939	June 19	3412	729	122	2580
Skating-rink. Merry	H. Loiseleur	822,677	June 5	897	183	122	1927
Skid	T. H. and J. W. Monahan	822,621	June 5	790	161	122	1902
Skirt evener and measurer	S. Greig and M. Mawson	820,567	May 15	3140	675	122	820
Skirt-gage	M. S. Doty	819,867	May 8	1658	355	122	435
Skirt-gage	M. Connor	821,788	May 29	5640	1201	122	1488
Skirt-supporter	A. W. Buey	819,119	May 1	175	36	122	45
Skirt-supporter	L. A. Phillips	820,313	May 8	2617	570	122	645
Skirt, waist, and belt holder	G. W. Mitchell	822,148	May 29	6319	1344	122	1643
Skiving-machine	C. H. Bayley	823,578	June 19	2731	578–9	122	2429
Skiving-machine	E. F. Davenport	823,586	June 19	2748	582	122	2432
Slack-adjuster	C. O. Anderson	823,095	June 12	1743	359	122	2155
Slag. Apparatus for pulverizing blast-furnace	H. Colloseus	821,609	May 29	5269	1124	122	1405
Slag-granulating apparatus	E. B. Clark	824,340	June 26	4162	890–1	122	2797
Sled	W. L. Holloway and E. Browning	823,684	June 19	2938	621	122	2476
Sled. Knockdown	P. K. Albright	821,693	May 29	5443	1159	122	1441
Sled. Logging-	A. D. McDonell	821,728	May 29	5516	1178	122	1459
Sleeve-adjuster	C. W. Hutchinson	823,534	June 19	2656	559	122	2413
Sleigh. Motor-	C. J. Sisk	820,742	May 15	3457	741	122	889
Sleigh-runner attachment for vehicle-wheels	L. J. Allard	821,974	May 29	5985	1276	122	1564
Slicer and grater. Fruit and vegetable	C. H. Farrar	820,857	May 15	3713	792	122	946
Slicer. Fruit-	W. H. Boutell	820,762	May 15	3500	750–1	122	909
Slicer. Vegetable-	F. Canfield	820,915	May 15	3857	822	122	977
Sliding bin	W. C. Horner	823,784	June 19	3121	661	122	2515
Slotting-machine	G. A. Owen	822,012	May 29	6050	1289–90	122	1579
Slotting-machine	C. C. Newton	823,354	June 12	2278	476	122	2273
Slubbing, intermediate, and roving and like frames. Building-motion of	J. Heywood	823,531	June 19	2652	558	122	2412
Small-arms. Magazine in	M. P. Richards	819,801	May 8	1536	326	122	406
Smelting apparatus. Ore-	J. A. Potter	821,190	May 22	4425	942–3	122	1163
Smelting-furnace	J. D. Rivard	824,383	June 26	4257	907	122	2816
Smelting furnace. Ore-	E. Riveroll	820,143	May 8	2265	493	122	568
Smelting lead-sulfid ores	A. G. Betts	821,330	May 22	4702	.....	122	1223
Smelting ores	E. Riveroll	820,134	May 8	2269	493	122	569
Smelting ores	J. A. Potter	821,189	May 22	4422	941–2	122	1163
Smoke-arrester. Heat-saving	J. Wagner	822,409	June 5	346	71	122	1801
Smoke-bell hanger	S. S. Myers	823,959	June 19	3451	737	122	2588
Smoke-consumer	W. H. Rostron	820,016	May 8	2020	443	122	513
Smoke-consuming furnace	R. L. Walker	821,268	May 22	4573	972	122	1195
Smoke-consuming furnace	R. Zeller	824,327	June 26	4138	885	122	2792
Smoke-consuming furnace	C. G. Mark	824,497	June 26	4498	953–4	122	2868
Smoke-machine	G. W. Helland	821,489	May 22	5037	1072	122	1298
Smoke-purifying apparatus	W. Cline	824,469	June 26	4451	944	122	2858
Snap-fastener	F. E. Warner	820,612	May 15	3212	690	122	836
Snap-hook	J. C. Covert	820,703	May 15	3383	724	122	871
Snap-hook	J. J. Hayes	824,179	June 26	3855	822	122	2733
Snap-hook and buckle. Combined	E. L. Carroll	821,856	May 29	5759	1226	122	1514
Snap-switch	H. Geisenhöner	819,645	May 1	1199	264	122	269
Snatch-block	A. F. Wheaton	821,148	May 22	4357	927	122	1149
Snatch-block	N. Ferguson	821,407	May 22	4881	1036	122	1265
Snout-piercing tool	D. Falconer	823,519	June 19	2623	551	122	2406
Snow-plow	H. Grimes	821,634	May 29	5312	1133–4	122	1415
Snow-plow	A. and H. S. Masten	821,660	May 29	5370	1144–5	122	1426
Soap. Cake of	J. Schwechler	824,152	June 26	3800	811	122	2720
Soap. Cake of	G. F. Shaver	824,154	June 26	3801	812	122	2721
Soap-dispenser	H. H. Schuster and D. Maier	823,446	June 12	2438	514	122	2306
Soap-feeding machine	R. H. Little	821,300	May 22	4638	989	122	1209
Soap-holder	F. W. Wilson	823,572	June 19	2722	576	122	2427
Soap-making apparatus	T. W. Alexander and E. F. Holsteen.	824,167	June 26	3832	818	122	2728
Soap-shaver	G. W. Browne	821,982	May 29	6000	1279	122	1567
Sock or stocking	A. Poetzl	820,989	May 22	4039	858	122	1079
Soda-water fountains. Sanitary syrup-receptacle for	F. H. Hecker. (Reissue)	12,477	May 1	1326	287	122	298
Solar heat. Apparatus for the utilization of	C. H. Pope	821,127	May 8	2254	499–1	122	566
Solder-edged-cap machine	J. G. Hodgson	823,357	May 8	2688	587–8	122	661
Solder to rims of can-caps. Machine for automatically applying molten	J. G. Hodgson	820,358	May 8	2693	588–9	122	663
Soldering machine. Can-end-	O. J. Johnson	821,644	May 29	5336	1137	122	1420
Sole. Ventilating-	H. Otterstedt	819,449	May 1	834	179	122	187
Sole vulcanizing and applying apparatus. Shoe-	G. F. Butterfield	821,336	May 22	4715	1004	122	1226
Sound-record	G. A. Manwaring	819,072	May 1	74	18	122	20
Sound-record tablet	H. Godwin and A. Hoffman	819,058	May 1	46	10	122	14
Sound-reproducer	R. Head	820,926	May 15	3876	826	122	982
Sound-reproducing machines. Automatic cut-off for	J. Eisl	821,629	May 29	5303	1130–1	122	1413
Sounding-board bridge	N. M. Ong	824,040	June 19	3606	768	122	2619
Spacing and dividing instrument	A. Robbins	819,926	May 8	1774	382	122	460
Spade and hoe. Convertible	J. P. Stenstrom	819,181	May 1	283	60	122	71

Alphabetical list of inventions for May and June—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Spanner-wrench	T. L. Churchill and W. B. Jones	821,280	May 22	4599	980	122	1202
Spark-arrester	F. P. Prendergast	820,509	May 15	3192	686	122	832
Spark-arrester	O. S. French and J. W. Miller	824,004	June 19	3546	756–7	122	2607
Spark-igniting plug	R. B. Kuhn	820,797	May 15	3574	764	122	916
Sparking devices. Current-distributer for	J. M. Smith	822,782	June 5	1091	225	122	1967
Spectacles	T. A. Willson	822,806	June 5	1140	234	122	1978
Spectacles protector	C. E. Linnig	822,137	May 29	6290	1340	122	1635
Speech or signals. Apparatus for effecting the storing up of	V. Poulsen	822,222	May 29	6456	1371–2	122	1673
Speed-changer. Composite	A. Wood	823,247	June 12	2078	432–3	122	2231
Speed-changing mechanism	C. C. Williams	823,487	June 12	2543	536	122	2328
Speed-increasing device. Automatic	G. Baehr	819,707	May 8	1331	288	122	59
Speed-indicator for vehicles, &c	C. Couleru-Meuri	820,916	May 15	3858	822	122	977
Speed-indicator. Mechanical	T. Hooker	821,804	May 29	5667	1208	122	1494
Speed-indicator. Registering differential	J. Richard	823,440	June 12	2430	511–12	122	2304
Speed mechanism. Variable-	H. M. Norris	820,984	May 22	4031	856–7	122	1076
Speed mechanism. Variable-	C. F. Pougher	821,597	May 22	5226	1115	122	1338
Speed mechanism. Variable-	A. W. Pupke	823,970	June 19	3474	742–3	122	2593
Speed-timing apparatus	A. L. McMurtry	820,123	May 8	2245	489	122	564
Speeder-cone	J. Herttagen	824,115	June 26	3729	796	122	2705
Spike-extractor	J. W Gorsuch	822,943	June 12	1415	296	122	2082
Spike-puller	O. B. Craft	821,404	May 22	4872	1033	122	1263
Spindle	J. C. Potter	821,884	May 29	5803	1236	122	1523
Spinning and like machine	F. A. Breeze	821,013	May 22	4081	869	122	1087
Spinning and twisting apparatus. Ring	J. Hayden, Jr	821,238	May 22	4515	961	122	1184
Spinning and twisting apparatus. Ring	J. Hayden, Jr	821,641	May 29	5331	1135	122	1419
Spinning and twisting machine bands. Machine for making	M. S. Burdette	819,848	May 8	1627	346–7	122	428
Spinning apparatus. Rotary ring-	G. O. Draper and C. E. Metcalf	820,628	May 15	3237	696	122	841
Spinning-flier	C. Wiebke	822,796	June 5	1110	230–1	122	1972
Spinning-machine	J. W. Martin	819,298	May 1	530	112–13	122	123
Spinning-machines. Saddle for the top rolls of	W. Rainville	822,075	May 29	6179	1316	122	1610
Spinning machines. Separator attachment for ring-	A. C. Allgood	819,496	May 1	919	201	122	205
Spinning or twisting apparatus. Ring	G. O. Draper and C. E. Metcalf	820,629	May 15	3239	696	122	842
Spinning or twisting apparatus. Ring	C. E. Metcalf	820,659	May 15	3290	707	122	851
Spinning-rings. Making	J. R. Coe	819,340	May 1	623	132	122	143
Spirometer	J. S. Renvoize	821,259	May 8	2517	545	122	623
Spirometer	J. A. Morris	821,664	May 29	5375	1146	122	1428
Splint	L. H. Shafer	819,607	May 1	1111	245	122	250
Splint-stretcher	C. F. Stokes	821,026	May 8	2038	447	122	516
Sponge and soap cake. Combined	R. H. Hutchinson	821,245	May 22	4524	963	122	1186
Sponge. Scrubbing-	F. S. Harrison	824,013	June 19	3560	760	122	2610
Spool-holding box	G. Norwood	820,596	May 15	3186	685	122	831
Spool or reel	A. H. Olmsted	821,117	May 22	4282	911	122	1131
Spool or reel	E. B. Crocker	822,433	June 5	386	80	122	1809
Spooling machine. Jack or dresser	M. Ingham	822,278	June 5	105	21–2	122	1751
Spoon. Ice-cream	D. H. Mosteller	821,061	May 8	2119	462	122	536
Sprayer	H. Rupp	819,602	May 1	1104	243	122	248
Spraying device	E. Eckart	820,631	May 15	3241	697	122	842
Spring: *See* Bed-spring. Bicycle-seat spring. Buggy-spring. Carriage-spring. Compound spring.							
Spring	T. Thorp	824,318	June 26	4123	882	122	2790
Spring-clips. Forming	J. B. Hale	822,445	June 5	410	84	122	1814
Spring-motor	H. T. Kingsbury	824,248	June 26	4002	856–7	122	2763
Spring-support	F. Karr	821,295	May 22	4628	986–7	122	1207
Spring-wheel	A. G. Ramage	822,476	June 5	471	96	122	1828
Spring-wheel	G. Bardet	823,384	June 12	2324	487	122	2282
Spring-wheel	E. V. Hartford and A. W. Scheuber.	823,529	June 19	2646	556	122	2411
Springs. Hydraulic machine for clamping plates in the manufacture of	W. Evans	819,872	May 8	1667	358	122	437
Sprinkler: *See* Automatic sprinkler.							
Sprinkler-head	P. Allen	820,541	May 15	3091	665	122	809
Square	S. R. Parks	821,374	May 22	4803	1020	122	1248
Square	J. A. Rankin	822,016	May 29	6061	1292	122	1582
Square and level	E. Oehrle	820,311	May 8	2613	569	122	645
Square and miter. Adjustable and separable	P. L. Fox	821,092	May 22	4244	903	122	1123
Square and miter. Adjustable and separable	P. L. Fox	821,093	May 22	4246	903	122	1123
Square attachment	M. Nicholls	821,115	May 22	4280	910–11	122	1130
Stack-cover	A. Mann	822,143	May 29	6298	1342	122	1637
Stacker and stacker attachment for threshing-machines. Pneumatic	S. D. Felsing	821,584	May 22	5200	1110	122	1332
Stacker. Hay-	O. P. Vroom	819,187	May 1	292	62–3	122	73
Stacker. Hay-	J. R. Wright	821,392	May 22	4844	1028–9	122	1256
Stacker. Hay-	J. M. Ganow	821,711	May 29	5487	1168	122	1453
Stair-chair	W. J. Pennington	820,125	May 8	2251	490	122	565
Stair. Folding	H. D. Keith	819,553	May 1	1017	222	122	229
Stake-pin	F. Knoff	824,182	June 26	3860	823	122	2734
Staking-machine	W. R. Scott	819,605	May 1	1107	244	122	249
Stalk-cutter	R. A. Clark	821,965	May 29	6004	1280	122	1568
Stamp-affixing apparatus	J. Schimmel, Jr	820,739	May 15	3451	739–40	122	888
Stamp-mill mortar	M. P. Boss	822,914	June 12	1363	283	122	2072
Stamping-mill tappet	W. McDonald	824,572	June 26	4649	989	122	2901
Stanchion	F. R. Welcher	819,826	May 8	1584	336	122	417
Stanchion	C. E. and E. Green	821,588	May 22	5210	1112	122	1334
Stanchion. Cattle-	R. Brehm	821,153	May 22	4364	928	122	1151
Stand: *See* Advertising display-stand. Collar-stand. Horseshoeing-stand. Lighter-bar stand. Music-stand. Rocking-stand. Tripod-stand. Trolley-stand.							
Staple-driving appliance	O. D. W. Inman	823,123	June 12	1808	372	122	2169

Alphabetical list of inventions for May and June—Continued.

Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
				Spec.	Drg.	Vol.	Page.
Staple extractor and holder	E. M. Smith	821,893	May 29	5828	1240	122	1529
Staple feeding and driving machine	W. McMurray	820,243	May 8	2475	535–7	122	613
Stapling-machine	E. M. Cobb	822,348	June 5	247	51	122	1780
Stapling-machine	L. Koppel	822,527	June 5	583	117	122	1855
Statement and envelop. Combined	A. D. Lord	821,723	May 29	5506	1173	122	1456
Station-indicator	C. E. Johnson	821,294	May 22	4622	985–6	122	1206
Station-indicator	J. T. Shofner	823,142	June 12	1842	380	122	2176
Station-indicator	L. Grillon	823,597	June 19	2765	585	122	2437
Stave-press	J. B. Schofield	819,462	May 1	852	183	122	191
Stay-bolt	G. S. Thompson	823,825	June 19	3192	675	122	2531
Stays for garments. Machine for forming metallic	F. W. Mallett	820,510	May 15	3025	651–2	122	795
Steam-boiler	J. A. Ross	819,601	May 1	1103	243	122	248
Steam-boiler	L. B. Lent	820,054	May 8	2101	458	122	531
Steam-boiler	G. H. Barrus	821,327	May 22	4667	1000–1	122	1222
Steam-boiler	J. J. Tonkin	821,552	May 22	5144	1097	122	1320
Steam-boiler	H. W. Wagener	821,558	May 22	5156	1100	122	1322
Steam-boiler	J. A. Doarnberger	823,399	June 12	2350	494–5	122	2287
Steam-boiler	F. J. Hickey	823,864	June 19	3271	693	122	2549
Steam-engine	C. A. Holcomb	822,001	May 29	6032	1285–7	122	1575
Steam-engine	J. F. Murphy	822,544	June 5	609	122–3	122	1861
Steam-generator	R. Schulz	819,382	May 1	710	150	122	161
Steam-generator	H. E. Rider	820,013	May 8	2014	442	122	512
Steam-generator	J. C. Suydam	823,230	June 12	2046	425	122	2224
Steam-heater	J. D. McEachren	819,911	May 8	1745	375	122	454
Steam-motor	L. Gilmore, Jr	819,752	May 8	1419	305	122	377
Steam-producer	I. H. Boyer	822,718	June 5	986	200–1	122	1945
Steam-separator	R. L. Kjerner	821,172	May 22	4391	934	122	1156
Steam-trap	C. E. Squires and B. F. Silliman	819,321	May 1	578	123	122	133
Steam-trap	E. V. Anderson	819,497	May 1	921	202	122	206
Steam-trap	J. T. Lindstrom	824,554	June 26	4618	980–1	122	2894
Steam-trap. Automatic	R. P. Scales and J. F. McElroy	824,441	June 26	4388	933	122	2842
Steel containing titanium. Production of	A. J. Rossi	822,305	June 5	164	33	122	1764
Steel from phosphoritic iron. Manufacture of	J. Reese	821,744	May 29	5552	.....	122	1467
Steel. Manufacture of	J. W. Spencer	822,082	May 29	6187	.....	122	1612
Steel tempering or hardening apparatus	H. H. Bickford	820,619	May 15	3223	693	122	838
Stem-winding mechanism	N. Béguelin	819,714	May 8	1342	290	122	362
Stencil-frame	J. S. Duncan	822,354	June 5	253	53	122	1781
Stenciling-machine	E. F. Kunath	824,695	June 26	4895	1041	122	2952
Stereoscope	C. Frazer	819,272	May 1	486	100	122	113
Stethoscope	C. M. Root	821,315	May 22	4671	995	122	1216
Stethoscope	T. W. Talliqvist	824,450	June 26	4403	936	122	2845
Still	J. J. Brennan	822,573	June 5	684	139	122	1878
Still. Turpentine	D. M. Ross and F. T. Edwards	821,887	May 29	5808	1237	122	1524
Still. Water	R. P. Barnstead	823,488	June 12	2545	536	122	2328
Stilt. Spring	A. Hanson	822,448	June 5	416	85	122	1815
Stirrup and hammock spring	S. P. Foster	822,731	June 5	1010	207	122	1950
Stitched fabric. Ornamental	R. Loeb	823,421	June 12	2388	504	122	2296
Stitching and embroidery machine. Ornamental	F. Gegauf	821,233	May 22	4499	958	122	1180
Stock and die	M. G. Cornell, Jr	821,403	May 22	4871	1033	122	1263
Stock-fountain	J. Falk	822,440	June 5	402	83	122	1812
Stoker	P. J. Duffy	820,184	May 8	2367	514–15	122	589
Stoker. Mechanical	W. Seaton, Jr	819,937	May 8	1796	388–9	122	465
Stoker. Overfeed	A. D. Southam	820,528	May 15	3068	660–1	122	805
Stoking appliance. Mechanical	J. Vicars, Sr., T. and J. Vicars, Jr.	819,476	May 1	881	192	122	197
Stone and other materials. Machine for sizing and cutting	W. F. Currier	822,724	June 5	998	203–4	122	1948
Stone-making machine. Artificial	A. A. Forbes	819,746	May 8	1409	303	122	375
Stone-making mold. Artificial	N. L. Damon	824,235	June 26	3970	850–1	122	2757
Stone. Means for making artificial building	O. B. Kaiser	822,524	June 5	577	116	122	1853
Stone mold. Artificial	A. Lake	819,769	May 8	1462	.....	122	387
Stone or the like. Press for molding artificial	W. H. Fisher	819,054	May 1	36	8–9	122	12
Stone-quarrying machine	E. T. Morris	823,351	June 12	2273	474–5	122	2272
Stone. Splitting	J. F. Copps	820,849	May 15	3700	789–90	122	943
Stone-splitting device	J. F. Copps	820,848	May 15	3699	789	122	943
Stone-working machine	J. R. Peirce	819,080	May 1	90	21	122	24
Stool	F. M. Conway	821,704	May 29	5471	1164	122	1448
Stools. Back for folding	G. B. Freeman	823,596	June 19	2764	585	122	2436
Stop-motion for sliver lap-machines	W. Henry	821,590	May 22	5213	1112–13	122	1335
Stopper: *See* Bottle-stopper. Flue-stopper.							
Stopper and liquid-dropper. Combination	J. L. Dunnock	824,631	June 26	4768	1016	122	2927
Stopper expanding and extracting device	E. W. Bennett	820,469	May 15	2928	635	122	773
Storage battery	T. A. Edison	821,032	May 22	4120	876	122	1097
Storage battery	G. A. Ford	824,348	June 26	4181	894	122	2802
Store-front construction	F. J. Plym	820,438	May 15	2964	624	122	758
Stove	N. D. Loughrey	819,775	May 8	1473	314	122	389
Stove	H. B. Brooks	823,389	June 12	2331	488	122	2283
Stove attachment	R. L. Weddington	819,681	May 1	1267	276	122	284
Stove attachment	E. F. Head	821,580	May 22	5212	1112	122	1335
Stove-board	P. Pfeil	819,163	May 1	242	52	122	60
Stove. Cooking	E. C. Cole	820,847	May 15	3697	789	122	943
Stove. Cooking and roasting	F. Glowacki	820,967	May 22	3983	845	122	1067
Stove doors. Mirror attachment for gas	B. F. Allen and G. R. Ford	821,846	May 29	5744	1223	122	1511
Stove, furnace, and the like	P. Tidick	823,904	June 19	3347	713	122	2506
Stove. Gas	G. W. Graves	821,533	May 29	5311	1133	122	1415
Stove. Gas	C. H. Hoffstetter	824,180	June 26	3856	823	122	2733
Stove-grate. Detachable adjustable	I. G. Chatfield	822,921	June 12	1378	287	122	2076
Stove. Kerosene-vapor	J. A. Mathes	823,734	June 19	3022	639	122	2492
Stoves. Reservoir for oil and vapor	W. H. Wilder	820,376	May 8	2730	594–5	122	670
Stovepipe-coupling	A. G. Flagg	822,202	May 29	6420	1363	122	1664
Stovepipe-coupling	H. B. Eazer	823,791	June 19	2756	584	122	2434
Straight-edge and paper-cutter. Combined	J. L. Vandermark	821,681	May 29	5420	1154	122	1436
Straw-binder tucker	C. B. Wanamaker and C. B. Miles	822,563	June 5	649	130–3	122	1869
Strawboard. Making	P. Prins	819,595	May 1	1095	.....	122	246
Street and station indicator	F. Schubert	820,443	May 15	2872	625	122	760
Street-light	A. E. Shaw	820,369	May 8	2720	593	122	668

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Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
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Street or station indicator. Electric-controlled	A. J. Clark	822,429	June 5	382	79–80	122	1808
Street-sweeper	P. A. Sheley	819,178	May 1	274	59	122	69
Street-sweeping machine	J. P. Clark	819,728	May 8	1376	296–7	122	369
Striking-bag or other fluid-receptacle	C. A. Lindsay	821,722	May 29	5505	1173	122	1456
Strip-cutting machine	A. C. Townley	823,006	June 12	1544	321	122	2113
Stroke and power changing device	H. A. Lewis	820,933	May 15	3886	828	122	984
Stropping-machine	E. B. Gibford	821,712	May 29	5488	1169	122	1453
Structural preservative	G. D. Coleman	823,205	June 12	1977	.....	122	2209
Stud or button	I. M. Sylvester	820,683	May 15	3350	717	122	864
Stud or button	A. J. O'Donnell	822,011	May 29	6049	1289	122	1579
Stuffing-box adjuster	G. E. Whitney	819,485	May 1	902	197	122	201
Stump-puller	W. A. Mushatt	822,861	June 5	1248	256–7	122	2000
Stump-puller. Hand-power	W. J. Fuller	821,479	May 22	5019	1068	122	1295
Stumps. Facilitating the removal of roots of	M. A. Fry	822,839	June 5	1207	247	122	1992
Submarine drag-bucket	E. J. Condlon	819,636	May 1	1180	258	122	265
Sucker-rod coupling	L. Chroninger	819,040	May 1	11	3	122	5
Suit-case lock	C. J. Salviolo	824,590	June 26	4690	997	122	2911
Sulfuric anhydrid. Making	R. Knietsch	823,472	June 12	2483	524	122	2316
Superheating compound	H. L. Hartenstein	819,218	May 1	366	.....	122	88
Support	G. Shaffner	821,833	May 29	5725	1220	122	1507
Supporting-clamp. Universal	H. D. Jones	824,026	June 19	3582	764	122	2614
Surf-actuated motor	T. Danford	820,286	May 8	2575	559	122	636
Surf-board. Pneumatic	A. S. Johnston	821,806	May 29	5673	1209	122	1496
Surgical appliance	W. L. Woodruff	822,092	May 29	6206	1323	122	1616
Surgical appliance	A. P. Barlow	823,499	June 19	2577	543	122	2397
Surgical arm-splint	E. N. Drier	821,619	May 29	5288	1128	122	1410
Surgical articles. Treating	A. V. M. Sprague	819,383	May 1	711	151	122	162
Surgical implement	A. C. Kellogg	823,877	June 19	3289	698	122	2553
Surgical table	W. Evans	822,197	May 29	6411	1361	122	1662
Surveying bore-holes. Means for	H. F. Marriott	821,048	May 22	4150	882–3	122	1102
Surveying instrument	J. Chubb and M. W. Cathon	820,551	May 15	3110	670	122	814
Suspenders	W. Pigott	819,794	May 8	1525	323	122	404
Suspenders	H. J. Galsman	820,486	May 15	2968	641	122	781
Suspenders	W. Freeman	820,562	May 15	3133	673	122	818
Suspenders	B. H. Cook	820,624	May 15	3230	695	122	840
Suspenders and waist-belt. Combined	H. J. Galsman	820,487	May 15	2970	641–2	122	782
Swift and support therefor. Combined	H. B. Frost and A. B. Van Riper	821,999	May 29	6030	1285	122	1575
Swimming-glove	M. S. Christopher	819,852	May 8	1633	348	122	429
Swing	B. Clow	821,219	May 22	4476	953	122	1174
Swing	G. E. Mellen	821,813	May 29	5688	1212	122	1500
Swing	W. W. Benbury	823,386	June 12	2327	487	122	2282
Swing. Centrifugal	R. H. Casswell	822,852	June 5	1231	254	122	1996
Swing-seats, shelves, &c. Support for	C. H. Tesch	824,217	June 26	3937	843	122	2751
Switch: *See* Electric switch. Reversing-switch. Electric time-switch. Self-acting switch. Electrical switch. Snap-switch. Panel-switch. Telephone-switch. Railway-switch. Railway crossover-switch.							
Switch-adjuster	J. F. Green	824,354	June 26	4192	896	122	2804
Switch controller. Synchronizing	H. J. McMahan	819,787	May 8	1511	321	122	400
Switch-indicator. Electrical	W. A. Rideout, Sr	820,260	May 8	2518	545	122	624
Switch locking and tripping device	H. M. Acly	823,984	June 19	3506	749	122	2599
Switch mechanism	H. A. Thomson	823,647	June 19	2871	606–7	122	2462
Switch-operating device	A. H. Gore	819,647	May 1	1201	264	122	270
Switch-operating device. Slip	L. Dunn	822,657	June 5	856	175–6	122	1917
Switch-operating mechanism	J. B. Albright	819,835	May 8	1604	340	122	422
Switch-signal	J. W. Hicks	823,726	June 19	3006	736–7	122	2489
Switch-throwing device	T. J. Colburn	822,230	May 29	6475	1374	122	1678
Switchboard	A. T. Newman	821,251	May 22	4535	965	122	1188
Switchboard	W. C. Marchant	823,183	June 12	1930	397	122	2198
Switchboards. Electrical connection for	H. Krantz	820,211	May 8	2414	524	122	600
Synchronizer	M. L. Ballard	821,151	May 22	4361	927–8	122	1150
Syringe case. Hypodermic	H. C. Michie, Jr	824,371	June 26	4234	903	122	2812
Syringe for subcutaneous or other injections	A. A. Gaillot	822,110	May 29	6239	1330	122	1622
Syringe. Hypodermic	O. A. Ycaza	819,330	May 1	607	128	122	139
Syringe. Hypodermic	L. Roussy	822,079	May 29	6183	1318	122	1611
Syringe. Vaginal	J. T. McCarthy	823,069	June 12	1679	347	122	2142
Syrup-dispensing jar	E. J. Calley	824,468	June 26	4449	944	122	2857
Table: *See* Extension-table. Lunch-cabinet table. Extension and other table. Pool-table. Sewing-machine table. Game-table. Surgical table. Ironing-table. Turn-table.							
Table	D. H. Allen	821,572	May 22	5177	1105	122	1327
Table-leg	G. Klanke	822,281	June 5	110	23	122	1752
Table-seat. Folding	E. H. Cassel	822,182	May 29	6385	1356	122	1656
Tables. Means for intermittently rotating	H. G. Wulff	823,249	June 12	2064	434	122	2233
Tablet counting and filling machine	J. W. and A. M. Ayers	824,463	June 26	4441	942–3	122	2856
Tablet-holder	W. N. Gunderson	822,603	June 5	754	152	122	1994
Tachometer. Magnetic	A. P. and C. H. Warner	823,237	June 12	2059	428	122	2227
Tachometers. Speed-changing attachment for	A. Fricker	819,695	May 1	1302	283	122	293
Tackle-block	A. P. Brown	823,989	June 19	3513	751	122	2601
Tag	A. E. Ellis	822,255	June 5	53	11	122	1740
Tag-making machine. Metal	F. C. Crowe	820,183	May 8	2364	514	122	588
Talking-machine	E. Leschbrandt	821,045	May 22	4145	881	122	1101
Talking-machine with rotatable horn	F. and W. Lochmann	824,368	June 26	4228	901	122	2811
Tamping-bar and post-hole pick	E. E. Whitehead	823,571	June 19	2721	576	122	2427
Tank: *See* Dipping-tank. Toy fish-tank. Settling-tank.							
Tank-heater	I. J. Lee and E. Erickson	823,419	June 12	2385	503	122	2295
Tank-indicator	G. W. Roberts	824,672	June 26	4841	1033	122	2943
Tank-support	A. Share	822,159	May 29	6340	1348	122	1647

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Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
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Tannin. Apparatus for the extraction of	L. Castets	823,508	June 19	2591	546	122	2400
Tap and nut wrench. Ratchet	F. G. Marbach	823,610	June 19	2788	591	122	2441
Tap-stock	G. A. Hoffman	820,194	May 8	2386	518	122	594
Tapping device	H. Hottinger	822,608	June 5	761	154	122	1896
Tappets, wheels, or shaft-couplings. Clamping device for	C. A. Canda	820,037	May 8	2072	452	122	525
Target apparatus	G. M. Haas	820,569	May 15	3145	677	122	821
Target. Self-acting collapsing	W. Ahr	819,198	May 1	325	69	122	80
Target sticker	A. Mount	824,307	June 26	4088	876	122	2784
Target-stickers. Device for holding	A. Mount	821,113	May 22	4278	910	122	1130
Target-trap	C. M. Ketcham	822,741	June 5	1022	209–10	122	1953
Target-traps. Electric release for	J. R. Birch	819,505	May 1	934	204	122	209
Taxometer or fare-indicator	G. Baum	820,281	May 8	2563	556–7	122	634
Tea-packing machine	W. H. Scott	822,310	June 5	174	35	122	1766
Tea strainer and infuser	F. N. Denison	823,670	June 19	2916	617	122	2471
Teaching and practicing of reading. Table of movable characters for the	A. J. de Freitas	822,937	June 12	1405	294	122	2080
Teaching touch type-writing. Machine for	C. R. Powell and W. Bevan	823,362	June 12	2288	479	122	2276
Teeth and forming the same. Attachment for natural	J. P. Carmichael	822,582	June 5	705	143	122	1884
Teeth. Cutting beveled	L. Boisard	823,025	June 12	1597	330–1	122	2126
Teeth. Making	H. A. Gollobin	824,111	June 26	3722	795	122	2703
Teeth. Metallic support for artificial	D. N. Booth	824,465	June 26	4444	943	122	2856
Teeth. Set of artificial	C. Rauhe	821,192	May 22	4431	943	122	1165
Telegraph and telephone pole protector	B. W. Hyder	822,131	May 29	6280	1337	122	1633
Telegraph-pole	D. W. Peck	821,733	May 29	5524	1178	122	1460
Telegraph system. Wireless-	L. De Forest	822,936	June 12	1402	294	122	2080
Telegraph system. Wireless-	L. De Forest	824,003	June 19	3542	755–6	122	2606
Telegraph system. Wireless-	H. Shoemaker	824,676	June 26	4846	1034	122	2943
Telegraph systems. Static valve for wireless-	L. De Forest	823,402	June 12	2355	496	122	2289
Telegraph-transmitter	A. C. Crehore and G. O. Squier	823,206	June 12	1978	412–13	122	2209
Telegraphic circuits. Transmitting-key for	I. Kitsee	824,029	June 19	3588	765	122	2615
Telegraphic sending device	I. Kitsee	824,028	June 19	3585	764	122	2615
Telegraphic system	J. W. Lattig, C. L. Goodrum, and E. E. Clement.	820,652	May 15	3277	704	122	849
Telegraphic transmitting device	I. Kitsee	821,043	May 22	4141	880	122	1100
Telegraphic transmitting-key	I. Kitsee	824,031	June 19	3593	765	122	2616
Telegraphones. Mechanism for operating the recording and reproducing mechanisms of	P. O. Pedersen	819,670	May 1	1246	272	122	280
Telegraphy	M. I. Pupin	821,741	May 29	5543	1181	122	1465
Telegraphy. Electric	I. Kitsee	820,977	May 22	4010	852	122	1072
Telegraphy. Electric	I. Kitsee	821,506	May 22	5062	1078	122	1304
Telegraphy. Electric	I. Kitsee	823,176	June 12	1906	393	122	2192
Telegraphy. Practicing wireless	A. Blondel	824,682	June 26	4856	1035–6	122	2946
Telephone	T. J. Merryman and C. L. Allen	823,886	June 19	3310	705	122	2558
Telephone attachment	H. L. Carpenter	821,924	May 29	5888	1251–2	122	1543
Telephone-booth	M. C. Turner	822,493	June 5	513	104–5	122	1838
Telephone call-list and memorandum-slip attachment	A. L. Smith	823,299	June 12	2174	454	122	2251
Telephone-call meter	C. T. Bradshaw	822,719	June 5	989	201–2	122	1946
Telephone-exchanges. Calling device for	F. A. Lundquist	822,965	June 12	1456	303–4	122	2092
Telephone-exchanges. Calling device for	F. A. Lundquist	822,966	June 12	1460	304	122	2093
Telephone-exchanges. Multiple switchboard for	M. G. Kellogg	820,360	May 8	2698	589	122	665
Telephone-exchanges. Multiple switchboard for	M. G. Kellogg	821,807	May 29	5674	1209	122	1496
Telephone-exchanges. Multiple switchboard for	M. G. Kellogg	822,611	June 5	765	155	122	1897
Telephone-key. Automatic	E. A. Faller and O. A. Danielson	824,291	June 26	4073	871	122	2779
Telephone-lines. Bridging-connector for	M. C. Turner	822,492	June 5	512	104	122	1838
Telephone-lines. Signaling system for party	J. L. McQuarrie	822,466	June 5	454	92	122	1824
Telephone lock-out device	R. C. M. Hastings and T. Matheny	821,800	May 29	5660	1206–7	122	1493
Telephone-mouthpiece	F. C. Fisher and W. C. Culin	819,531	May 1	979	214	122	220
Telephone-mouthpiece attachment. Antiseptic	G. W. Merritt	821,948	May 29	5942	1265	122	1554
Telephone or other line-supporting post	G. E. Van Every	823,377	June 12	2314	485	122	2280
Telephone. Portable	W. A. Shimer	821,753	May 29	5568	1185	122	1472
Telephone-receiver	C. T. Mason	823,061	June 12	1664	344	122	2139
Telephone-receiver attachment	C. Zimmerman	820,463	May 15	2917	634	122	771
Telephone-relay	E. E. Clement	823,763	June 19	3072	651	122	2502
Telephone selecting device	W. D. Watkins	821,069	May 22	4199	893	122	1113
Telephone. Selective	N. S. McKinsey and A. R. Nelson	820,064	May 8	2129	464–5	122	538
Telephone sets. Inclosing case for	F. R. McBerty	822,464	June 5	452	91	122	1823
Telephone sight-indicator	F. R. Lay	820,213	May 8	2416	524	122	601
Telephone-support	W. B. Lehmkuhl	821,247	May 22	4527	963	122	1186
Telephone-switch	W. E. McCormick	820,432	May 15	2855	622	122	756
Telephone-switch	A. L. Brinckle	821,981	May 29	5999	1279	122	1567
Telephone switch-hook	H. J. Guttman	819,061	May 1	49	11	122	15
Telephone switch-hook	W. A. Fricke	824,351	June 26	4189	895	122	2803
Telephone-switches. Indicating device for automatic	J. Erickson	819,050	May 1	28	7	122	10
Telephone-switchboard	W. E. McCormick	824,431	June 26	4367	929–30	122	2837
Telephone switching apparatus	R. A. Walton	823,091	June 12	1737	358	122	2154
Telephone system	C. L. Boyce	820,176	May 8	2351	512	122	586
Telephone system	J. H. Gorden	821,482	May 22	5024	1069–70	122	1296
Telephone system	C. R. and D. R. Green	823,215	June 12	2006	418	122	2214
Telephone system	W. Ohnesorge	824,376	June 26	4243	904	122	2813
Telephone system. Automatic	A. A. Monson	822,973	June 12	1471	306–7	122	2096
Telephone system. Central-energy	W. A. Taylor	821,898	May 29	5834	1241	122	1531
Telephone system. Selective	N. S. McKinsey and A. R. Nelson	820,063	May 8	2122	462–3	122	536
Telephone system. Two-division	J. H. Iendl	820,903	May 15	3589	769	122	919
Telephone system with centrally-arranged microphone-battery	G. P. Lambert	824,251	June 26	4008	858	122	2765
Telephone systems. Means for charging storage batteries of	T. G. Martin	819,073	May 1	75	18–19	122	20
Telephone toll-box	O. Brisbois	821,778	May 29	5611	1195–6	122	1482
Telephone-transmitter	M. Setter	819,084	May 1	99	22	122	27
Telephone-transmitter	W. W. Dean	819,267	May 1	468	98	122	109
Telephone-transmitter	E. R. Corwin and F. R. Parker	819,522	May 1	960	211	122	215
Telephone-transmitter	W. W. Dean	823,768	June 19	3089	654	122	2507
Telephone-transmitter attachment	R. A. Walton	823,090	June 12	1736	357	122	2154
Telephone-transmitter attachment	R. A. Walton	823,092	June 12	1738	358	122	2154
Telephone-transmitter mouthpiece	H. J. Guttman	819,059	May 1	47	10	122	14
Telephone-transmitter mouthpiece-guard	G. E. Grimm	823,494	June 12	2556	538	122	2331
Telephone-transmitter or audiphone-receiver	H. G. Pape	822,470	June 5	461	93–4	122	1825
Telephone-transmitter supporting-arm	S. A. Beyland	823,758	June 19	3064	649	122	2501
Telephone-transmitters. Muffler for	G. A. Long	821,877	May 29	5794	1235	122	1521
Telephone-trunk-line signaling system	M. S. Conner	820,350	May 8	2678	585	122	659
Telephony	I. Kitsee	824,030	June 19	3591	765	122	2616
Telephony	I. Kitsee	824,032	June 19	3594	766	122	2616
Telescoping jack or press. Tubular	S. B. Minnich	823,983	May 22	4029	856	122	1076
Tellurian	E. J. Seever	822,693	June 5	938	191	122	1936
Templet for placing expression-lines	F. L. Young	820,752	May 15	3475	745	122	894
Tempo-indicator	F. L. Young	819,113	May 1	164	32–3	122	43
Tennis-racket	H. Brown	823,028	June 12	1602	331	122	2126
Tenpin	F. K. Goff and H. P. Simmons	820,490	May 15	2976	643	122	784
Tension device	W. J. Rhodes	820,736	May 15	3448	738	122	887
Tent-cottage and ventilator therefor	C. Schram	820,526	May 15	3061	659	122	803
Terminal connector	J. Opitz	822,469	June 5	460	93	122	1825
Terminal strip	H. J. Guttman	819,060	May 1	48	10	122	14
Terret	W. J. Gagnon	819,749	May 8	1415	305	122	376
Testing-machine	T. Olsen	819,584	May 1	1076	236–7	122	242
Tether	W. F. Laws	819,561	May 1	1029	225	122	232
Textile article provided with lappet figures and producing the same.	W. A. Robinson	820,602	May 15	3196	687	122	833
Theater	H. Helbig	821,164	May 22	4379	932	122	1154
Thermo-electric battery and apparatus	G. H. Cove	824,684	June 26	4864	1036	122	2946
Thermo-electric couple	H. E. Heath	824,015	June 19	3562	.....	122	2610
Thermometer	J. Schacht	819,380	May 1	708	149	122	161
Thermometer	M. F. Beeton	821,848	May 29	5746	1223	122	1511
Thermometer case. Clinical-	J. F. Myers	824,038	June 19	3604	768	122	2619
Thermometer-shaking apparatus	F. Grösche	823,859	June 19	3263	691	122	2547
Thermometers. Lens-finder for clinical	W. Ude	821,141	May 22	4345	924	122	1146
Thermostatic control	E. Thomson	822,323	June 5	197	39	122	1770
Thill and pole support	J. C. Brock and C. J. Booker	824,620	June 26	4746	1011	122	2922
Thill-coupling	J. W. Jones	819,552	May 1	1016	222	122	229
Thill-coupling	R. E. Miller	820,660	May 15	3292	707	122	852
Thill. Metallic	W. H. Spillman and F. Fowler	822 026	May 29	6078	1295	122	1586
Thill-support	D. H. Loveless	823,424	June 12	2398	505	122	2298
Thread-cutter for spools	H. H. Butler	822,821	June 5	1167	240	122	1984
Thread-cutting device	A. E., A., and G. Walker	822,169	May 29	6361	1352	122	1651
Threshing-machine attachment	J. I. Huffhines	821,496	May 22	5046	1074	122	1300
Threshing-machine band-cutter and feeder	J. T. Ramsden	820,255	May 8	2510	543–4	122	622
Threshing-machine bodies. Device for shifting	H. J. McNeill	819,581	May 1	1066	235	122	240
Throwing or projecting apparatus	G. Obiols	824,506	June 26	4511	957	122	2872
Ticket-case	N. W. Moore	819,574	May 1	1056	232	122	237
Ticket counting and canceling machine	W. J. Coulter	821,465	May 22	4990	1060–1	122	1289
Ticket-dater	W. P. Nolan	821,731	May 29	5522	1177	122	1460
Ticket-delivering machine	H. H. Cummings	822,829	June 5	1185	243–4	122	1987
Ticket-holder	G. D. Kemmerer and W. B. Armstrong.	823,050	June 12	1639	339	122	2134
Ticket or tag	T. H. O'Brien	821,526	May 22	5099	1086	122	1311
Ticket stamping and delivering machine	H. H. Cummings	822,855	June 5	1236	254–5	122	1997
Ticket stamping and delivering machine	H. H. Cummings	822,856	June 5	1238	255	122	1998
Ticket stamping and delivery machine	H. H. Cummings	822,830	June 5	1188	244	122	1988
Tie: *See* Fencing-tie. Metal tie. Metallic tie. Package-tie. Rail-tie. Railway-tie. Railway cross-tie. Wall-tie.							
Tie-plate	J. T. De Souchet	821,343	May 22	4741	1008	122	1235
Tie-plate	D. F. Vaughan	823,826	June 19	3197	676	122	2522
Tie-plate	D. F. Vaughan	823,827	June 19	3199	676	122	2533
Tie-plate	A. H. Smith	824,678	June 26	4850	1034	122	2944
Tile for floor or wall coverings. Interlocking	A. W. Nilsson. (Reissue)	12,483	May 15	3918	835	122	993
Tile. Illuminating-	J. Jacobs	820,200	May 8	2393	520	122	595
Tile-machine	J. M. and J. Schenk	819,931	May 8	1785	384–5	122	463
Tile-mold	W. P. Meeker	823,184	June 12	1931	398	122	2198
Tile-molding device	H. Besser	822,038	May 29	6109	1302	122	1503
Tiles. Machine for applying mortar to	E. M. Dezendorf	820,706	May 15	3387	725	122	872
Tiling	L. F. Lindley	820,221	May 8	2429	527	122	604
Tilting furnace	J. C. Cromwell	823,669	June 19	2914	616	122	2471
Tilting gate	C. H. Lovering	822,746	June 5	1033	212	122	1955
Tilting platform	J. E. Briggs	823,914	June 19	3362	717	122	2568
Time check or recorder	L. M. Sober and E. E. Brown	820,894	May 15	3898	813–14	122	966
Timepieces. Barrel click-spring for	J. Klein	820,794	May 15	3571	763	122	915
Timepieces. Synchronizing mechanism for	A. L. Hahl	823,682	June 19	2932	620	122	2475
Tin-plate catcher	L. C. Steele	822,698	June 5	946	193	122	1937
Tin-plate-cleaning machine	W. C. Welchsel and U. G. Knuppenburg.	821,908	May 29	5855	1244–5	122	1537
Tin. Producing oxygen compounds of	C. E. Acker	824,398	June 26	4287	.....	122	2822
Tire	W. N. Wright and E. Carson	823,839	June 19	3224	682	122	2538
Tire-armor	J. Coan	822,651	June 5	846	172	122	1915
Tire armor. Cycle-	E. Grimme	821,868	May 29	5778	1231	122	1518
Tire construction	W. F. Ellis and E. C. Davis	822,439	June 5	400	83	122	1812
Tire-coupling	J. P. Lotzer	821,658	May 29	5368	1144	122	1426
Tire-cover	J. P. Gordon	823,680	June 19	2929	620	122	2474
Tire. Cushion-	F. M. Ashley	819,036	May 1	3	1–2	122	3
Tire. Cushioned pneumatic	D. B. Hislop	821,871	May 29	5784	1232	122	1519
Tire. Elastic wheel-	W. Struck	822,786	June 5	1097	226	122	1968
Tire for road-wheels. Elastic	E. C. F. Otto	819,374	May 1	692	145–6	122	158
Tire for vehicle-wheels. Supplemental	C. H. Goodman	824,240	June 26	3987	853	122	2760
Tire for vehicles and making the same	T. C. Sanderson	822,021	May 29	6068	1293	122	1583
Tire. Pneumatic	C. R. Twitchell	819,387	May 1	717	152	122	163
Tire. Pneumatic	P. W. Fawcett and E. L. W. Bellhouse.	820,104	May 8	2218	482	122	558
Tire. Pneumatic	H. L. Christiansen	821,858	May 29	5762	1227	122	1514
Tire. Pneumatic	C. R. Twitchell	824,604	June 26	4718	1004	122	2916

Alphabetical list of inventions for May and June—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Tire protector. Pneumatic	W. W. Scarborough and C. E. Schultz.	822,307	June 5	167	34	122	1765
Tire-repair device	J. R. Vosburgh	823,089	June 12	1734	357	122	2153
Tire-setter	J. and M. Evans	822,933	June 12	1397	292	122	2079
Tire. Vehicle	J. Christy	822,583	June 5	707	143	122	1884
Tire. Vehicle	T. C. Sanderson	820,673	May 15	3328	714	122	860
Tire. Vehicle	T. C. Sanderson	820,738	May 15	3450	739	122	888
Tire. Vehicle-wheel	V. E. Belledin	819,503	May 1	931	204	122	209
Tire. Vehicle-wheel	J. Thomson	821,679	May 29	5416	1153	122	1435
Tire. Wheel	T. Furlong	824,476	June 26	4465	946	122	2861
Tires. Apparatus for manufacturing wheel	P. D. Thropp	822,561	June 5	645	129	122	1868
Tires. Implement for putting on pneumatic	P. F. Pilliner	824,041	June 19	3609	768	122	2620
Tires. Making armored	V. Gallien	820,296	May 8	2592	564	122	640
Tires. Means for repairing punctures in pneumatic	H. Harrison	820,110	May 8	2227	484	122	560
Tires on the rims of vehicles. Appliance for putting	L. G. Morrill	819,156	May 1	231	49	122	57
Tires. Protecting-cover for pneumatic	E. Bardou, L. Clerc, and B. Desouches.	822,177	May 29	6377	1354	122	1654
Tires. Repair-plug for pneumatic	R. P. Kinney	821 041	May 22	4138	879	122	1100
Tobacco-cartridge	J. O. Licey	824,552	June 26	4614	979	122	2893
Tobacco-dipping machine	R. Bailey	820,335	May 8	2650	578	122	653
Tobacco-package	J. W. Surbrug	822,318	June 5	188	37	122	1768
Tobacco-pipe	W. F. Dugins	821,030	May 22	4117	875	122	1096
Tobacco-pipe	M. L. Spotswood and T. A. Weller	821,836	May 29	5730	1220	122	1508
Tobacco-pipe	F. A. Stegner	823,819	June 19	3182	673	122	2528
Tobacco-pipe cleaner	W. M. Kendall	819,555	May 1	1021	223	122	230
Tobacco-pipe condenser	C. G. Buschow	819,513	May 1	948	208	122	212
Tobacco-plug holder and cutter. Combined	J. H. Cobb	819,207	May 1	348	74	122	84
Tobacco. Treatment of	A. C. and G. Q. Bedortha	821,919	May 29	5878	1250	122	1541
Tobacco. Treatment of	A. C. and G. Q. Bedortha	822,239	June 5	18	4	122	1732
Toggle-hook	J. Ashland	820,383	May 15	2753	590	122	737
Toilet article. Combined	A. C. Eggers	823,464	June 12	2473	522	122	2314
Tongs	W. H. Markland	819,359	May 1	664	140	122	152
Tongs	W. C. Felton	823,466	June 12	2475	523	122	2314
Tongue and truck attachment. Binder cross	C. C. Norman	821,054	May 22	4161	885	122	1104
Tongue-support	J. E. Cronkhite	822,434	June 5	389	81	122	1809
Tongue support. Vehicle	S. Chrisco	821,218	May 22	4475	952	122	1173
Tool	J. W Edmands	820,185	May 8	2369	515	122	590
Tool-box	F. G. Marbach	824,495	June 26	4496	953	122	2868
Tool. Combination	J. P. McGinnity and E. H. Winkler.	820,814	May 15	3619	773	122	926
Tool. Combination	T. R. Carlton and J. D. Meadow	821,155	May 22	4366	929	122	1151
Tool. Combination	S. Morkert	822,066	May 29	6158	1313	122	1604
Tool. Combination	E. Reizenstein	822,553	June 5	633	127	122	1866
Tool. Combination	J. B. Runner	824,264	June 26	4029	862	122	2769
Tool. Compound	O. Matheney	820,723	May 15	3422	732	122	881
Tool. Cutting and punching	A. J. Levis	824,551	June 26	4613	979	122	2893
Tool. Extension	P. O'Reilley and F. G. Freese	821,527	May 22	5100	1087	122	1312
Tool. Hand-operated	H. D. Bartlett	821,328	May 22	4699	1001	122	1222
Tool-handle protector	J. H. Lyons	822,006	May 29	6043	1288	122	1578
Tool-holder	B. Bannister	824,275	June 26	4041	865	122	2772
Tool holder. Motor	C. B. Hastings	824,480	June 26	4470	947	122	2862
Tool holder. Pneumatic	A. E. Knapp	824,250	June 26	4006	857–8	122	2764
Tool. Motor-driven	N. W. Fletcher	824,347	June 26	4178	893–4	122	2801
Tool-post	W. T. Slider	821,065	May 22	4189	890	122	1111
Tool. Rotary	E. R Wilmer and L. Sussman	824,322	June 26	4129	884	122	2791
Tool-shank	A. Schulze	823,640	June 19	2857	604	122	2458
Tool. Steam	C. L. Charvat	819,727	May 8	1372	296	122	368
Tool-stock. Pneumatic-motor	F. W. Parsons	821,960	May 29	5959	1269–70	122	1558
Tooth-spreader	J. E. Herman	819,136	May 1	199	41	122	51
Toothed element. Flexible	F. Hutchins	820,789	May 15	3544	760	122	910
Top for games. Double	G. Philippart	822,628	June 5	804	163	122	1904
Top. Spinning	H. O. Costello	821,341	May 22	4739	1008	122	1235
Top. Spinning	M. L. Powers	823,809	June 19	3165	669	122	2525
Torpedo-expulsion valve	J. Barraja-Frauenfelder	822,500	June 5	524	107	122	1841
Torpedo. Railway signal	F. Dutcher and P. Peter	823,998	June 19	3533	754	122	2605
Torpedo-tube cap. Revolving	H. E. Grieshaber	820,925	May 15	3374	825	122	981
Torpedo. Track	W. D. Jackson	824,019	June 19	3566	761	122	2611
Torpedo. Track	W. D. Jackson	824,020	June 19	3567	761	122	2611
Torpedoes. Valve attachment for	E. Niehoff	820,888	May 15	3796	810	122	963
Towel or dish-cloth holder	J. W. Brown	823,029	June 12	1603	332	122	2127
Towel-rack. Roller	J. C. Christen, J. Orgeich, and C. Born.	822,346	June 5	242	50	122	1779
Towel-wringing device. Hot	J. Girard	822,733	June 5	1013	207	122	1951
Tower. Transmission	D. R. Scholes	821,126	May 22	4308	917	122	1136
Toy	J. R. Criste	820,182	May 8	2363	513	122	588
Toy	E. J. Noble	820,819	May 15	3632	775	122	928
Toy	S. M. Hall	820,863	May 15	3720	793	122	947
Toy	R. G. Dashiell	821,468	May 22	4995	1062	122	1290
Toy	W. C. Coryell	822,188	May 29	6399	1359	122	1659
Toy	P. J. Fahrne	822,198	May 29	6412	1361	122	1663
Toy	W. F. Stellner	823,143	June 12	1843	380	122	2177
Toy	J. Chein	823,713	June 19	2984	632	122	2485
Toy. Detonating	M. Rutter	819,928	May 8	1775	382–3	122	461
Toy fish-tank	E. T. Sulzer	819,468	May 1	870	188–9	122	195
Toy. Mechanical	C. A. Lewis	823,882	June 19	3300	701	122	2556
Toy. Mechanical detonating	W. H. Johnson	821,942	May 29	5926	1251	122	1552
Toy motor-vehicle	G. O. Hawke	819,653	May 1	1211	265	122	272
Toy. Musical	A. C. Fechtig	819,051	May 1	31	7	122	10
Toy railway and telegraph-pole	E. R. Ives	823,947	June 19	3429	732	122	2583
Toy-railway rolling-stock	A. Schütze	819,312	May 8	1555	331	122	410
Trace	J. Anderson	823,661	June 19	2896	613	122	2468
Trace-carrier	A. M. Craig	823,150	June 12	1871	387	122	2183
Trace-fastener	W. N. Crisp	819,981	May 8	1927	426	122	490
Trace-fastener	H. P. Monserud	824,372	June 26	4236	903	122	2812
Tracing-cloth mangle	W. B. Waechter	824,455	June 26	4414	937–8	122	2849
Track-brake	T. W. Fitch, Jr	823,772	June 19	3099	656–7	122	2509

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Track-clearer	W. E. Knowlton	824,183	June 26	3860	823	122	2734
Track-inspector. Automatic	T. Ellis and G. H. Purvis	824,536	June 26	4578	973–4	122	2886
Track-sander and brake-shoe	E. E. Keefe	819,762	May 8	1447	309–10	122	384
Track-sanding device	F. Bason	820,340	May 8	2662	580	122	656
Track-sanding device	A. G. Zamel	824,461	June 26	4435	941	122	2854
Track-sanding device. Street-railway	D. Hogan	824,118	June 26	3733	797	122	2706
Traction-engine	C. O. Heggem	819,226	May 1	385	81–2	122	91
Train-control system	A. Sundh	823,196	June 12	1959	407–9	122	2204
Train-despatcher's order-box	D. O. Stinson	819,945	May 8	1810	391–2	122	468
Train-reporting system. Automatic	E. E. Steiner	820,529	May 15	3072	661	122	806
Train-stopping apparatus	J. H. King	823,281	June 12	2145	448	122	2245
Trains. Device for transporting passengers to and from moving	F. S. See	822,777	June 5	1082	223	122	1965
Tramway-line and railway-line at level-crossings	W. J. Hollick	822,606	June 5	758	153–4	122	1895
Tramway-point	W. Kneen	822,055	May 29	6137	1307–8	122	1599
Transfer-press	G. White	819,829	May 8	1591	338–9	122	419
Transfer-press	G. White	821,911	May 29	5863	1246–7	122	1538
Transformer	W. S. Moody	822,293	June 5	138	27	122	1759
Transformer having the windings for one phase inoperative. Operating a multiphase	W. S. Moody	821,521	May 22	5090	1084	122	1309
Transmitter-arm	H. L. Knight	823,336	June 12	2244	468	122	2266
Transmitter-support	S. A. Beyland	823,579	June 19	2734	579	122	2429
Transom, draft-sill, and dead-wood. Combination cast-steel	P. M. Kilroy	824,124	June 26	3744	799	122	2708
Trap: *See* Animal-trap. Rat-trap. Animal or fish trap. Steam-trap. Fly-trap. Target-trap Insect-trap. Water-trap. Insecticide-trap. Wire choker-trap.							
Trap	J. D. Walker	820,686	May 15	3354	718	122	864
Trap	C. A. Murphy	822,543	June 5	607	122	122	1860
Trapping rabbits and other animals. Means and apparatus for	W. Strawbridge	821,199	May 22	4444	946	122	1167
Tree-protecting attachment for agricultural implements.	A. W. Ralph	820,734	May 15	3445	738	122	887
Trellis	G. D. Basse	824,227	June 26	3958	848	122	2754
Trick-ball	M. T. La Pierre	819,894	May 8	1713	368	122	448
Trick device	G. L. Maschin	824,561	June 26	4630	984	122	2896
Trigger mechanism	J. D. Russ	821 889	May 29	5813	1238	122	1526
Trimmer: *See* Book-trimmer. Paper-trimmer.							
Trimming-knife and guide	J. B. Allen	819,034	May 1	1	1	122	3
Triple-gage, butt-gage, and tool holder	P. Gyssler	819,541	May 1	996	218	122	224
Tripod-stand. Camera	A. McLeod	821,052	May 22	4158	884	122	1104
Trolley	J. R. Delly	820,481	May 15	2954	640	122	779
Trolley	M. H. Kashian	821,719	May 29	5501	1172	122	1455
Trolley-finder	W. J. Hinton	823,332	June 12	2239	467	122	2265
Trolley for electric railways	E. F. Creevy	821,611	May 29	5272	1124–5	122	1406
Trolley for overhead-trolley systems	E. F. Landis	820,123	May 15	2839	618–19	122	752
Trolley for railway-vehicles	J. D. Paton	824,201	June 26	3899	832	122	2742
Trolley-hanger	T. Price	823,438	June 12	2425	511	122	2303
Trolley-keeper	B. C. Bartlebaugh	824,611	June 26	4728	1006	122	2918
Trolley placer and guide	E. A. Leake	822,961	June 12	1450	302	122	2091
Trolley-pole	R. P. Rever	820,440	May 15	2866	624	122	758
Trolley-pole. Automatic safety	J. R. French	823,040	June 12	1618	335	122	2130
Trolley-pole controller	J. F. Mackin	820,584	May 15	3166	682	122	826
Trolley-stand	W. W. Annable	820,290	May 8	2561	556	122	633
Trolley-stand	J. Zielinski	822,709	June 5	971	198	122	1943
Trolley-wheel	G. W. Jobe	822,845	June 5	1216	251	122	1993
Trolley-wheel. Ball-bearing electric	R. S. Boyle and W. G. Cleveland	821,400	May 22	4866	1032	122	1261
Trolley-wheel guard	J. H. Lane and U. Gulnick	819,146	May 1	213	45	122	53
Trolley-wire hanger	A. J. Laverty	821,512	May 22	5074	1081	122	1306
Trough: *See* Eaves-trough. Watering or feed trough. Feeding-trough. Watering-trough.							
Trousers-form	A. Jones	820,203	May 8	2399	521	122	596
Trousers holder and presser	K. Nishimoto	823,891	June 19	3318	707	122	2559
Trousers-presser	R. P. Koons	820,478	May 15	3741	798	122	952
Truck	J. F. Firestone	819,053	May 1	35	8	122	11
Truck bolster. Car	J. C. Wands	819,188	May 1	294	63	122	73
Truck bolster. Car	J. B. Barnes	820,338	May 8	2659	579–80	122	655
Truck bolster. Car	O. S. Pulliam	821,312	May 22	4665	994	122	1214
Truck. Car	C. T. Westlake	819,490	May 1	892	195	122	199
Truck. Car	J. B. Barnes	820,337	May 8	2658	579	122	655
Truck. Car	P. N. Hyden	820,718	May 15	3411	729–30	122	878
Truck. Car	E. I. Dodds	820,770	May 15	3512	753–4	122	902
Truck. Car	J. A. Brill and W. S. Adams	821,279	May 22	4595	979–80	122	1201
Truck. Cast-steel car	A. Lipschutz	822,676	June 5	894	183	122	1926
Truck. Electric-motor	W. Dalton	823,490	June 12	2549	537	122	2329
Truck end casting	O. S. Pulliam	821,313	May 22	4666	994	122	1215
Truck for railway-cars. Metallic	F. Gebhardt	822,112	May 29	6248	1330–1	122	1625
Truck. Hand	W. M. B. Watley	820,274	May 8	2542	551	122	630
Truck. Locomotive	J. Player	823,482	June 12	2524	529	122	2325
Truck. Locomotive	W. Dalton	823,491	June 12	2551	537	122	2330
Truck. Piano	C. F. Hawk	822,274	June 5	96	20	122	1749
Truck side frame. Railway-car	O. S. Pulliam	824,437	June 26	4381	932	122	2840
Truck. Spring hand	T. Kendrick	820,001	May 8	1963	437	122	506
Truck. Trailing	J. F. De Voy	820,400	May 15	2792	607	122	744
Trucks. Construction of car	R. C. Wright and F. E. Stebbins	819,111	May 1	152	32	122	38
Trunk	W. H. Boschen	819,974	May 8	1913	423	122	486
Trunk	G. A. Schobert	823,140	June 12	1838	379	122	2176
Trunk-fastener	C. E. Lucas	823,343	June 12	2259	471	122	2270
Trunk-handle attachment	W. J. Hunter	823,173	June 12	1899	392	122	2190
Trunk. Wardrobe	F. H. Parkhurst	822,384	June 5	304	62	122	1791

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Truss	T. O'Malley	820,728	May 15	3432	735	122	883
Truss	H. Eagon	820,853	May 15	3708	791	122	945
Truss	G. C. Abraham	822,811	June 5	1148	236	122	1980
Truss	J. H. Campbell	822,822	June 5	1167	240	122	1984
Truss	A. P. Barlow	823,500	June 19	2578	543	122	2397
Truss-rod stand and anchor-bracket. Combination	P. M. Kilroy	824,125	June 26	3744	799	122	2708
Tub: *See* Bath-tub.							
Tub, sink, and washbowl. Combination	W. C. James	821,805	May 29	5671	1208	122	1495
Tube: *See* Reinforcing-tube.							
Tube clamp. Flexible	J. W. Mosley	823,068	June 12	1676	347	122	2141
Tube-cleaner	G. W. Dean	821,614	May 29	5277	1126	122	1407
Tube-compressor	E. K. Leffingwell and H. B. Eltonhead.	820,216	May 8	2420	525	122	602
Tubing-bending device	W. J. Herr	819,545	May 1	1003	220	122	226
Tubular articles. Making	G. W. Lee	822,285	June 5	117	24	122	1754
Tug. Flexible metal hame	A. M. Craig	823,158	June 12	1871	386	122	2183
Tug. Hame	A. J. Smith	823,744	June 19	3039	643	122	2495
Tumbler	D. T. Graham	821,483	May 22	5027	1070	122	1296
Tumbler-closure. Hermetic	W. A. Lorenz	819,237	May 1	408	86	122	96
Tunnel-calking apparatus	F. W. Moir	824,668	June 26	4832	1031	122	2941
Tunnel-roof shield	J. C. Meem	819,361	May 1	669	141	122	153
Turbine	G. L. Mundigler	822,069	May 29	6164	1314–15	122	1606
Turbine	D. C. Garroway	822,267	June 5	82	17	122	1747
Turbine	J. Stumpf	822,315	June 5	184	36	122	1768
Turbine	H. S. Scott and H. F. Tyzack	822,991	June 12	1510	314–15	122	2106
Turbine and controller mechanism therefor	J. Wilkinson	822,798	June 5	1114	232	122	1973
Turbine bucket-wheel	J. Wilkinson	819,106	May 1	145	30	122	37
Turbine bucket-wheel	J. Wilkinson	822,801	June 5	1128	233	122	1976
Turbine-driving means	W. B. Sayers	821,436	May 22	4942	1050	122	1278
Turbine. Elastic-fluid	A. E. Guy	820,714	May 15	3408	728	122	877
Turbine. Elastic-fluid	C. G. Curtis	821,706	May 29	5478	1166	122	1450
Turbine. Elastic-fluid	J. G. Callan and B. H. Hamilton	822,247	June 5	31	7–8	122	1735
Turbine. Elastic-fluid	W. L. R. Emmet	822,257	June 5	58	12–13	122	1741
Turbine. Elastic-fluid	W. L. R Emmet	822,258	June 5	62	13	122	1742
Turbine. Elastic-fluid	J. Wilkinson	822,799	June 5	1122	232	122	1975
Turbine-engine	L. Hachenberg	823,526	June 19	2641	555	122	2409
Turbine-engine	J. A. Groshon	821,113	June 26	3,24	795–6	122	2704
Turbine-engine	C. J. Stuart	824,449	June 26	4397	905	122	2844
Turbine-engine. Hydrocarbon	J. Zander	822,176	May 29	6372	1353–4	122	1653
Turbine. Explosion	F. H. Grawert-Zellin	819,990	May 8	1951	430–2	122	496
Turbine. Explosion	A. L. Moss	820,238	May 8	2463	533	122	611
Turbine. Fractional-supply steam and gas	J. W. O. Elling	821,347	May 22	4747	1010	122	1236
Turbine. Gas	C. W. Shoemaker and J. M. Lithgow.	819,089	May 1	110	24–5	122	29
Turbine governing mechanism	W. L. R. Emmet	822,256	June 5	54	12	122	1740
Turbine governing mechanism	O. Junggren	824,546	June 26	4595	977	122	2889
Turbine-motor	N. W. Fletcher	823,210	June 12	1990	414–15	122	2211
Turbine-motor	N. W. Fletcher	823,211	June 12	1995	415–16	122	2212
Turbine. Multiple-stage-reaction	P. F. Oddie	822,149	May 29	6320	1344	122	1643
Turbine. Multistage steam	J. Stumpf	819,616	May 1	1129	250	122	254
Turbine nozzle. Elastic-fluid	J. Wilkinson	823,909	June 19	3355	715	122	2567
Turbine-operating system. Gas	H. F. Blackwell	819,202	May 1	331	71–2	122	82
Turbine regulating mechanism	O. Junggren	824,547	June 26	4605	978	122	2891
Turbine-shaft packing	J. Wilkinson	822,800	June 5	1125	232	122	1975
Turbine. Steam	J. L. Moore	821,051	May 22	4155	884	122	1103
Turbine. Steam	J. Stumpf	821,599	May 22	5233	1116	122	1340
Turbine. Steam	C. A. Parsons and G. G. Stoney	822,150	May 29	6323	1345	122	1644
Turbine. Steam	J. Stumpf	822,316	June 5	185	36	122	1768
Turbine. Steam	J. Stumpf	822,317	June 5	187	37	122	1768
Turbine. Steam	J. W. Smith	823,447	June 12	2440	514–15	122	2307
Turbine. Steam	A. I. Senior	823,641	June 19	2858	604	122	2458
Turbines. Bucket for elastic-fluid	K. Ahlquist	824,521	June 26	4545	965	122	2880
Turbines. Governing mechanism for elastic-fluid	E. Thomson	822,324	June 5	199	40–1	122	1770
Turbines. Governing mechanism for elastic-fluid	W. L. R. Emmet	822,887	June 5	1296	267	122	2010
Turbines. Governing-valve mechanism for	O. Junggren	824,658	June 26	4815	1027	122	2937
Turbines. Operating	J. G. Dornbirer	822,253	June 5	50	11	122	1739
Turbines. Regulating mechanism for elastic-fluid	J. G. Callan	820,911	May 15	3844	820	122	974
Turbines. Speed-governor for elastic-fluid	J. G. Callan and F. R. C. Boyd	820,910	May 15	3836	818–19	122	972
Turbines. Stop mechanism for elastic-fluid	J. G. Callan	822,248	June 5	37	8	122	1737
Turn-table	J. Schnell	823,552	June 19	2689	568–9	122	2419
Turn-table	C. K. Ernst	824,672	June 26	4769	1016	122	2927
Turn-tables. Propelling-wheel for	J. L. Pilling	822,221	May 29	6455	1371	122	1673
Turpentine. Treating wood for the extraction of	F. T. Snyder	821,264	May 22	4564	970	122	1193
Twine-holder	E. O. Bulman	821,015	May 22	4084	870	122	1088
Twine holder and take-up	F. W. Copcutt	819,521	May 1	958	210	122	214
Twist-drill	P. W. Fawcett	824,346	June 26	4177	893	122	2801
Twisting-machine	D. Metzger	821,814	May 29	5690	1212	122	1500
Type-perfecting mechanism	W. A. Schraubstadter	821,127	May 22	4309	917–18	122	1137
Type. Printing	C. B. Askew	821,076	May 22	4211	895	122	1116
Type. Space for justifying lines of	D. B. Ray	821,885	May 29	5804	1237	122	1524
Type-writer	F. P. Shepard	821,263	May 22	4561	970	122	1193
Type-writer	J. W. Paul	824,579	June 26	4659	991–2	122	2902
Type-writer attachment	C. F. Washburn	822,327	June 5	209	42	122	1772
Type-writer copy-holder	E. A. Holritz	821,099	May 22	4256	905	122	1126
Type-writer desk	J. Vaaler	820,272	May 8	2539	550	122	629
Type-writer ribbon attachment. Sight-writing	C. A. Joerissen	821,643	May 29	5334	1136	122	1420
Type-writer ribbon-feed	W. H. Sherwood	822,993	June 12	1514	315	122	2107
Type-writers. Ball retaining and locating device for	W. R. Fox	819,270	May 1	483	100	122	112
Type-writers. Shift-key action for	F. P. Shepard	821,262	May 22	4558	970	122	1192
Type-writing and adding machines. Register-support for	P. H. Turley	820,833	May 15	3664	782	122	934
Type-writing and calculating machine. Combined	C. F. Laganke	820,882	May 15	3782	806–7	122	961
Type-writing machine	E. G. Latta	819,353	May 1	650	137	122	148

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Type-writing machine	H. A. Moyer and E. G. Latta	819,365	May 1	675	142	122	154
Type-writing machine	E. G. Latta	819,773	May 8	1467	313–14	122	388
Type-writing machine	H. A. Moyer and E. G. Latta	819,782	May 8	1483	318	122	392
Type-writing machine	H. S. McCormack	819,785	May 8	1493	319–20	122	394
Type-writing machine	H. S. McCormack	819,786	May 8	1502	320–1	122	397
Type-writing machine	F. X. Wagner	819,963	May 8	1886	417–18	122	482
Type-writing machine	H. Jarvis	819,998	May 8	1979	436	122	504
Type-writing machine	E. F. Kunath	820,505	May 15	3015	648–9	122	792
Type-writing machine	H. A. Moyer	820,935	May 15	3888	829–30	122	984
Type-writing machine	W. F. Helmond	821,036	May 22	4129	877	122	1098
Type-writing machine	E. G. Latta	821,107	May 22	4266	908	122	1128
Type-writing machine	G. A. Seib	821,382	May 22	4822	1025	122	1252
Type-writing machine	C. Gabrielson	822,938	June 12	1406	294	122	2081
Type-writing machine	C. W. Walker	823,010	June 12	1553	323–4	122	2115
Type-writing machine	G. H. Smith	824,157	June 26	3812	813–14	122	2723
Type-writing machine	W. C. Farnum	824,418	June 26	4343	924	122	2833
Type-writing machine	M. W. Pool	821,581	June 26	4665	993	122	2905
Type-writing machine	M. W. Pool	824,582	June 26	4672	994	122	2906
Type-writing machine	R. von Sothen	824,597	June 26	4702	1000	122	2913
Type-writing-machine attachment	A. H. Martin	819,778	May 8	1476	316	122	390
Type-writing-machine computing attachment	J. H. Neal	821,428	May 22	4024	1046–7	122	1274
Type-writing-machine paper-guide	E. M. Ingersoll	824,362	June 26	4203	898	122	2806
Type-writing-machine tabulating mechanism	H. Jarvis	819,433	May 1	806	173	122	181
Type-writing-machine type-bar	G. Riebe	822,303	June 5	161	32	122	1764
Type-writing-machine type-bar	F. A. Peterson	822,386	June 5	311	63	122	1793
Type-writing machines. Line-spacing and carriage-releasing mechanism for	E. G. Latta	822,210	May 29	6435	1366	122	1668
Type-writing machines. Securing means for the hangers of	H. A. Moyer	819,366	May 1	679	142–3	122	155
Umbrella	P. M. and J. R. Gulou	824,178	June 26	3852	822	122	2731
Umbrella	D. L. Osborn	824,378	June 26	4249	905	122	2814
Umbrella. Folding	N. I. and S. L. Newlin	822,245	May 8	2494	538–9	122	619
Umbrella runner and upper notch. Wireless	H. L. Furlow	820,295	May 8	2590	564	122	639
Umbrella runner or notch	C. MacMillan	819,238	May 1	411	86	122	97
Umbrellas. Device for holding expanded	E. Nootbaar	821,822	May 29	5703	1215	122	1503
Undergarment	C. A. Powell	821,140	June 26	3774	835	122	2714
Undergarment. Lady's	W. S. Lodge	821,046	May 22	4148	881	122	1102
Undereamer	E. Double	820,101	May 8	2209	480	122	555
Underwaist	E. H. Horwood	823,867	June 19	3274	694	122	2550
Universal coupling	H. C. Chase	822,853	June 5	1233	254	122	1997
Universal indicator	H. M. Willis	822,805	June 5	1139	234	122	1978
Universal mill	K. C. Gardner	819,538	May 1	992	217	122	223
Universal mill	P. M. Weber	824,518	June 26	4539	962–3	122	2878
Unloading, storing, and reloading material. Apparatus for	W. J. Selleck	820,527	May 15	3065	660	122	804
Upholstery	E. M. Hulse	823,785	June 19	3122	661	122	2515
Urn	C. J. Kamper and E. H. Schofield	821,365	May 22	4785	1017	122	1244
Vacuum device	S. S. Leonard	823,795	June 19	3139	665	122	2519
Vacuum-tube regulator	D. M. Moore	820,364	May 8	2706	590–1	122	666
Vacuum-tube regulator	D. M. Moore	820,365	May 8	2711	591	122	667
Vaginal irrigator	T. W. Heuston	823,409	June 12	2365	498	122	2291
Valve	C. V. Roberts	819,378	May 1	703	148–9	122	160
Valve	N. P. Towne	820,154	May 8	2311	505	122	578
Valve	A. Buerkle	820,178	May 8	2357	512	122	587
Valve	A. L. Moss	820,239	May 8	2466	534	122	612
Valve	H. A. F. Petersen	820,598	May 15	3190	686	122	831
Valve	O. A. Sorensen	820,610	May 15	3209	690	122	835
Valve	J. B. Culler	820,917	May 15	3861	822–3	122	978
Valve	W. H. Kline	821,507	May 22	5067	1079	122	1304
Valve	F. L. Smith	821,758	May 29	5575	1187	122	1473
Valve	J. Kennedy	821,943	May 29	5929	1261–2	122	1552
Valve	F. Schreidt	822,023	May 29	6071	1294	122	1584
Valve	C. W. A. Koelkebeck	822,846	June 5	1218	251	122	1994
Valve	R. Rhoda	822,983	June 12	1495	310	122	2103
Valve	W. Colina	824,527	June 26	4553	967	122	2881
Valve-actuating mechanism. Time-controlled	A. J. Oakes	821,184	May 22	4409	938–9	122	1160
Valve and ignition mechanism for internal-combustion engines.	H. Austin	819,116	May 1	169	34	122	44
Valve and seat. Pneumatic	G. P. Brand	823,842	June 19	3229	683	122	2539
Valve. Automatic relief	A. Harrison	821,798	May 29	5654	1205	122	1492
Valve. Check	G. W. Rich	822,077	May 29	6181	1317	122	1611
Valve. Engineer's	J. F. McElroy	821,818	May 29	5694	1213–14	122	1501
Valve. Engineer's equalizing and discharge brake	D. M. Caskey	819,726	May 8	1370	295–6	122	368
Valve for air-brake systems	J. H. Bleoo	823,760	May 15	3495	750	122	898
Valve for compressed-air brakes. Driver's brake	W. R. Smith	821 759	May 29	5576	1187	122	1474
Valve for conveyer-tubes	A. W. Schmidt	823,740	May 15	3454	740	122	888
Valve for corrosive liquids	G. E. Gannon	823,493	June 12	2555	538	122	2330
Valve for engines. Rotary	F. T. Liggett	823,883	June 19	3302	701–2	122	2556
Valve for explosive-engines. Intake	A. C. Menges	820,230	May 8	2444	529	122	607
Valve for gas-engines. Air	R. Miller, Jr	823,185	June 12	1933	398	122	2199
Valve for heating or other systems where steam is employed.	F. C. Goff and H. H. Fielding	822,114	May 29	6252	1331	122	1626
Valve for heating systems. Relief	A. McGonagle	823,805	June 19	3160	668	122	2524
Valve for steam-engines. Oscillating	T. V. Elliott	821,227	May 22	4486	956	122	1176
Valve. Gate	W. E. Crist	819,411	May 1	761	162	122	172
Valve-gear. Engine	T. H. Haberkorn	821,236	May 22	4508	960	122	1182
Valve-gear. Engine	H. Lentz	822,136	May 29	6289	1340	122	1635
Valve-gear. Engine	J. Hanser	824,011	June 19	3558	760	122	2609
Valve-gear for explosive-engines	F. B. Ells	823,039	June 12	1616	334–5	122	2130
Valve-gear for explosive-engines	A. C. Menges	823,347	June 12	2266	473	122	2271
Valve-gear. Pressure-actuated	W. H. Collier	823,105	June 12	1768	365	122	2161
Valve-gear. Reversible	H. W. Jones	824,657	June 26	4814	1026–7	122	2937
Valve-indicator	G. P. Vincent	819,185	May 1	288	62	122	72
Valve-indicator	E. H. Whitney	824,163	June 26	3827	816	122	2726
Valve lubricator. Engine	D. Morehouse	823,349	June 12	2271	474	122	2272
Valve mechanism. Rotary	E. C. Goddard	823,214	June 12	2004	417	122	2213

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Valve mechanism. Time	M. Laucher	820,582	May 15	3164	681	122	826
Valve. Pressure-regulated supply	E. D. Hodsdon	822,276	June 5	103	21	122	1750
Valve-reseating machine	T. B. Williams	824,321	June 26	4127	883	122	2790
Valve. Reversing	H Aiken	824,166	June 26	3831	818	122	2727
Valve-seat-recutting device	C. Cartier	820,550	May 15	3108	669	122	813
Valve-seat-truing device	J. D. Mitchell	821,367	May 22	4790	1018	122	1246
Valve. Steam	A. H. Farmer	821,867	May 29	5776	1230–1	122	1518
Valve. Stop	G. Schlemmer	824,442	June 26	4390	933	122	2843
Valve. Supply	E. A. Marsh	822,740	June 5	1038	213	122	1956
Valve. Throttle	W. A. Phillips	821,120	May 22	4289	913	122	1133
Valve. Vent	B. Schlegel	820,142	May 8	2285	497	122	572
Vapor-generator	R. F. Driscoll	819,211	May 1	356	76	122	85
Vaporizer	H. A. Veazie	821,094	May 22	4065	865	122	1084
Vase. Lawn	J. K. Andrews	820,168	May 8	2741	599	122	583
Vat-cleaning apparatus	A. E. Rickerd	819,803	May 8	1540	327	122	407
Vault. Burial	T. A. Stevenson	823,709	June 19	2978	630	122	2483
Vault. Portable burial	W. Parry	823,893	June 19	3320	707	122	2559
Vegetable and fat cutting machine	C. L. Ruehs and G. Weiss	824,587	June 26	4684	996	122	2909
Vehicle	F. J. Newman	819,244	May 1	422	88–9	122	99
Vehicle	M. Downer	820,707	May 15	3389	725	122	872
Vehicle	J. M. Coleman	820,956	May 22	3951	841	122	1059
Vehicle. Amusement	R. F. Rice	822,302	June 5	160	32	122	1763
Vehicle attachment	J. Leith	820,217	May 8	2421	525	122	602
Vehicle attachment	J. E. Blake	824,089	June 26	3691	786	122	2696
Vehicle-body	W. H. F. Blume	820,343	May 8	2666	581	122	657
Vehicle-body	W. D. McNutt	821,053	May 22	4159	884	122	1104
Vehicle-brake	J. W. Smith	820,266	May 8	2530	548	122	626
Vehicle-brake	A. A. Ball, Jr	822,236	June 5	7	3	122	1730
Vehicle-brake	H. E. Martin	822,750	June 5	1039	213	122	1957
Vehicle-brake	R. D. Baker	824,400	June 26	4289	914–15	122	2822
Vehicle brake. Motor	C Schmidt	824,151	June 26	3799	811	122	2720
Vehicle braking and starting device. Combined	J. de Mazaraki	822,679	June 5	900	184	122	1928
Vehicle. Combination	J. W. Nussbaum	821,668	May 29	5381	1148	122	1429
Vehicle corner-support	W. G. Persing	820,251	May 8	2504	541	122	621
Vehicle draft and steering gear	P. W. Martin	822,145	May 29	6306	1342–3	122	1639
Vehicle draft-connector	V. O. Searer	819,936	May 8	1795	388	122	465
Vehicle frame. Motor	L. Lazerges	824,550	June 26	4612	979	122	2893
Vehicle-loader	F. D. Aucutt	819,331	May 1	608	128	122	140
Vehicle-lock	R. Congreve	823,107	June 12	1773	366	122	2162
Vehicle lock-shoe	L. G. Gallup	819,214	May 1	360	77	122	86
Vehicle. Milk and cream	C. E. Austin	824,399	June 26	4288	914	122	2822
Vehicle. Motor	H. W. Southworth	820,444	May 15	2874	626	122	760
Vehicle. Motor	C. Durkee	820,709	May 15	3393	726–7	122	873
Vehicle. Motor	J. W. Bird	820,905	May 15	3829	817	122	971
Vehicle. Motor	C. Stumma	822,162	May 29	6350	1350	122	1649
Vehicle. Motor	A. Fröde	823,719	June 19	2994	634	122	2487
Vehicle. Motor road	W. B. Megone	821,302	May 22	4646	989–90	122	1211
Vehicle movements. Apparatus for recording	B. F. Teal	819,618	May 1	1133	250–1	122	255
Vehicle mud-guard. Motor	C. Schmidt	821,751	May 29	5565	1184	122	1471
Vehicle running-gear	F. J. Singler	823,371	June 12	2304	482	122	2278
Vehicle-scraper	J. M. Johnson	819,658	May 1	1218	267	122	273
Vehicle-seat	D. G. McDiarmid	820,008	May 8	2005	440	122	506
Vehicle-seat lock	H. C. Swan	821,319	May 22	4680	997	122	1219
Vehicle storm-front	C. M. Stone	824,515	June 26	4533	962	122	2877
Vehicle-top. Folding	R. B. Miles	820,059	May 8	2116	461	122	535
Vehicle-wheel	M. Bunker	819,039	May 1	9	3	122	5
Vehicle-wheel	S. S. and W. Childs, Jr	819,337	May 1	618	130–1	122	142
Vehicle-wheel	J. F. De Jarnette	819,344	May 1	627	133	122	144
Vehicle-wheel	G. S. Whiteley	820,077	May 8	2162	471	122	545
Vehicle-wheel	G. H. Mitchell	821,519	May 22	5088	1084	122	1309
Vehicle-wheel	L. G. Langstaff	822,615	June 5	774	157	122	1899
Vehicle-wheel	W. S. White	823,454	June 12	2455	519	122	2309
Vehicle-wheel	W. E. Greer	824,241	June 26	3989	854	122	2761
Vehicle-wheel	J. R. McAlister	824,571	June 26	4648	988	122	2900
Vehicle wheel. Road	A. C. Birkin	821,213	May 22	4467	951	122	1172
Vehicles. Brake-rigging for self-propelled	C. O. Snyder	824,215	June 26	3935	842–3	122	2750
Vehicles. Carbureter-control mechanism for motor	C. Schmidt	823,742	June 19	3036	642–3	122	2495
Vehicles. Gear-controlling device for motor	E. B. Gadsey and G. P. Dorris	821,161	May 22	4374	931	122	1153
Vehicles. Rotary washer for	J. D. Chapman and W. R. McAtee	820,475	May 15	2942	637	122	776
Vending device. Coin-controlled	G. W. Meredith	823,956	June 19	3447	736–7	122	2587
Vending-machine	P. E. Berger	822,909	June 12	1353	281	122	2070
Vending-machine	A. Merckens	823,064	June 12	1668	345	122	2140
Vending-machine	J. E. Packard	823,633	June 19	2840	601	122	2454
Vending-machine	J. E. Packard	823,634	June 19	2843	602	122	2455
Vending machine. Cigar	A. M. Stanley	821,761	May 29	5581	1188	122	1475
Vending machine. Cigar	G. W. Meredith	823,954	June 19	3441	735	122	2586
Vending machine. Cigar	G. W. Meredith	823,955	June 19	3443	736	122	2587
Vending-machine. Coin-actuated	J. J. Green	819,422	May 1	778	167–8	122	176
Vending-machine. Coin-controlled	J. L. Simmons	824,677	June 26	4849	1034	122	2944
Vending-machine. Coin-operated	J. A. Rule	822,869	June 5	1267	261	122	2004
Vending-machine delivery device	D. K. Wenrich	819,393	May 1	728	154–5	122	165
Vending machine. Postage-stamp	M. Delude	823,769	June 19	3092	654–5	122	2507
Veneer-cutting machine	W. R. Bright	822,647	June 5	840	171	122	1913
Veneer-drier	E. F. Smith	822,997	June 12	1520	316–17	122	2108
Veneer-press	M. Jungel	823,175	June 12	1904	392–3	122	2191
Vent. Receptacle	P. Donaldson	823,851	June 19	3247	687	122	2543
Ventilating apparatus. Automatic	J. H. Hummel	821,416	May 22	4896	1041	122	1268
Ventilating means for inclosed machines	E. M. Tingley	819,820	May 8	1569	334	122	414
Ventilator: *See* Ozone-ventilator.							
Ventilator	C. L. Pullman	822,074	May 29	6178	1316	122	1610
Ventilator	H. L. Morrill	823,350	June 12	2272	474	122	2272
Vessel	A. Leslie	821,514	May 22	5077	1081	122	1307
Vessel. Chemical	W. Kiel	819,765	May 8	1457	311	122	786
Vessel. Dumping	P. Constantene	819,691	May 1	1295	281	122	291
Vibrator	H. F. Rooney	821,831	May 29	5721	1219	122	1506

Alphabetical list of inventions for May and June—Continued.

Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
				Spec.	Drg.	Vol.	Page.
Vibrator-applicator and connection therefor	C. H. Richwood	819 458	May 1	846	182	122	189
Vibrators. Removable anvil-contact and bridge-support for electric	W. E. Dow	821,028	May 22	4114	874	122	1095
Vine-cutter	J. D. Gunn	819,880	May 8	1685	361	122	441
Vine-divider attachment	H. Climer	824,282	June 26	4052	867	122	2774
Vinegar apparatus	C. Weny	823,570	June 19	2719	575–6	122	2426
Violin	E. Carson	819,205	May 1	346	74	122	84
Vise	R. F. McNamara	823,353	June 12	2277	476	122	2273
Vise	J. K. Elmer	824,000	June 19	3537	754–5	122	2605
Vise	J. Hormby	824,360	June 26	4200	897	122	2806
Vise. Hand	H. T. Martin	823,611	June 19	2790	591	122	2442
Voltage-regulator	R. Wikander	824,225	June 26	3950	846–7	122	2753
Vote-registering machines. Ballot member for	D. L. Newcomb	819,306	May 1	548	116	122	126
Voting-machine	P. Yoe	819,684	May 1	1272	277–8	122	285
Voting-machine	P. Yoe	819,685	May 1	1275	278–9	122	286
Voting-machine	W. H. Dana	819,692	May 1	1297	282	122	291
Voting-machine	M. H. Johnson	820,790	May 15	3546	760–1	122	910
Voting-machine	W. J. Lausterer	820,802	May 15	3585	767–8	122	918
Voting-machine	G. Stacy	823,899	June 19	3337	711	122	2563
Voting-machine shutter-closing mechanism	W. I. T. Fosdick	824,639	June 26	4781	1019	122	2930
Voting-machine shutter-locking mechanism	W. I. T. Fosdick	824,340	June 26	4183	895	122	2802
Voting-machine shutter-locking mechanism	W. I. T. Fosdick	824,350	June 26	4187	895	122	2803
Vulcanized material and making the same	F. Ephraim	819,529	May 1	978	.....	122	220
Wafer machine. Sugar	F. M. Peters	824,202	June 26	3900	832–4	122	2742
Wagon	W. T. Daum	820,850	May 15	3701	790	122	943
Wagon	W. I. Brown	822,042	May 29	6117	1303	122	1595
Wagon-body	P. C. Gerhart	819,057	May 1	45	10	122	13
Wagon-brake	H. C. Warmuth	820,157	May 8	2315	506	122	576
Wagon-brake	T. N. Johnsen	820,875	May 15	3736	797	122	951
Wagon-brake	C. H. Gober	821,357	May 22	4769	1014	122	1241
Wagon brake. Dump	T. R. McKnight	821,730	May 29	5520	1177	122	1460
Wagon-dump. Portable	J. F. White	821,686	May 29	5430	1156–7	122	1438
Wagon. Dumping	G. D'Urso	819,416	May 1	769	164–5	122	174
Wagon. Dumping	P. Blatt	823,253	June 12	2092	435–6	122	2234
Wagon. Dumping	E. Smith	823,554	June 19	2692	569–70	122	2420
Wagon. Dumping	W. O. Long	823,606	June 19	2778	588	122	2439
Wagon. Dumping	H. S. Long	824,253	June 26	4011	858–9	122	2765
Wagon. Ladder or tower	G. A. Harrisson	820,190	May 8	2378	516–17	122	592
Wagon. Revoluble-body chute	T. Rais	823,079	June 12	1696	351	122	2145
Wagon-top	J. Pohlig	820,314	May 8	2618	570	122	645
Wagon-wheel	I. T. Hurd	823,335	June 12	2242	468	122	2266
Wagons for painting. Device for supporting	P. C. Ketterer	823,280	June 12	2144	447	122	2245
Wagons, &c. Loading apparatus for	L. Kniffen	822,614	June 5	770	156	122	1898
Wall	J. A. Ferguson	822,594	June 5	733	148	122	1889
Wall-bracket	A. de Saint Chamas	824,150	June 26	3797	810	122	2720
Wall. Building	C. A. Chamberlin	819,979	May 8	1923	425–6	122	489
Wall construction	J. C. Davidson	822,510	June 5	553	111	122	1848
Wall construction	J. N. Smythe and W. S. Ayres	824,511	June 26	4529	960–1	122	2876
Wall for dams, barriers, protection-walls, and reservoir-walls, and the like	F. Hennebique	821,037	May 22	4130	877–8	122	1098
Wall-packer. Soft-metal	J. T. Callanan	823,760	June 19	3068	650	122	2501
Wall structure	L. Millet	824,563	June 26	4632	985	122	2897
Wall-tie	J. F. Dunlap	819,869	May 8	1661	356	122	435
Walls, floors, &c. Construction of	E. Molloy	821,368	May 22	4792	1018	122	1246
Walls, partitions, and the like. Method of and means for constructing	J. G. Stidder	822,559	June 5	642	129	122	1867
Wantage-rod	G. P. Doern	819,210	May 1	354	76	122	85
Wardrobe. Portable	A. M. Scherff	823,814	June 19	3173	671	122	2526
Wardrobe-rack. Folding	J. W. Kennedy	822,133	May 29	6283	1338	122	1634
Warp supporting and guiding means	O. W. Schaum	824,310	June 26	4101	877	122	2785
Washer: *See* Bottle-washer. Gas-washer.							
Washer-making machine	H. C. Hart	819,543	May 1	999	219–20	122	225
Washing and scouring machine	R. F. E. Okrassa	823,434	June 12	2419	509–10	122	2302
Washing apparatus	O. C. Prasso	822,300	June 5	155	31	122	1762
Washing-machine	R. L. Wearne	819,102	May 1	136	28–9	122	35
Washing-machine	J. Matt	819,152	May 1	225	48	122	56
Washing-machine	G. H. Ruhlman and G. C. Miller	819,254	May 1	435	91	122	102
Washing-machine	C. A. Church	820,349	May 8	2676	585	122	659
Washing-machine	H. A. Bierley	821,850	May 29	5749	1224	122	1512
Washing-machine	G. H. Wisner	822,331	June 5	215	43–4	122	1773
Washing-machine	J. G. Kincaid	822,371	June 5	282	58	122	1787
Washing-machine	G. W. Dungan	823,323	June 12	2224	464	122	2261
Washing-machine	C. E. Mitchell	823,887	June 19	3312	705	122	2558
Washing-machine	J. S. Parrish	824,435	June 26	4376	931	122	2840
Washing-machine	C. Dietz	824,529	June 26	4557	968	122	2882
Washing-machine	E. Rue	824,674	June 26	4843	1033	122	2943
Washing-machine attachment	C. A. Colby	824,065	June 19	3650	777	122	2629
Washing-machines. Securing-clamp for	M. Warner	821,559	May 22	5158	1100	122	1323
Washing, wringing, mangling, and other similar machines. Roller for	G. W. Robinson	822,772	June 5	1075	221	122	1964
Watch	R. Manthey	819,568	May 1	1042	228–9	122	234
Watch	A. Schweizer-Schatzmann	822,776	June 5	1080	222	122	1965
Watch-barrel arbor	W. E. Porter	820,252	May 8	2505	541	122	621
Watch cover and holder	A. L. Shonfield	822,393	June 5	319	66	122	1795
Watch-hand remover	E. N. Parker	823,289	June 12	2158	450	122	2247
Watch-holder	H. Clark	822,922	June 12	1380	287	122	2076
Watch-regulator	J. Brun	824,466	June 26	4446	943	122	2857
Watch. Stem-winding	N. Béguelin	819,713	May 8	1341	290	122	362
Watch. Stem-winding	H Rosat, Fils	822,018	May 29	6064	1292	122	1582
Watch. Stem-winding	N. Béguelin	823,503	June 19	2582	544	122	2398
Watchman's outfit for temporary routes	G. M. Gest	824,478	June 26	4467	947	122	2862
Water and feed trough for fowls	M. C. Rogers	824,508	June 26	4514	958	122	2872
Water attemperating and measuring system	F. M. Peters	821,187	May 22	4419	941	122	1162
Water-closet	M. J. Quinn	820,128	May 8	2258	491	122	566
Water-closet	B. M. Drawe	823,770	June 19	3094	655	122	2508

Alphabetical list of inventions for May and June—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Water-closet bowl	J. F. Kelly	820,051	May 8	2097	458	122	531
Water-cooler	E. O. Butt	819,850	May 8	1629	347	122	428
Water-cooling apparatus	A. P. Smith	822,996	June 12	1519	316	122	2108
Water-gage. Automatic	N. O. Fleming	821,709	May 29	5483	1167	122	1451
Water-gate	A. J. Collar	820,097	May 8	2201	479	122	553
Water-gate	A. J. Collar	823,991	June 19	3516	752	122	2601
Water-gate lock	F. S. Burroughs	821,854	May 29	5757	1225	122	1513
Water-heater	R. E. Harris	821,929	May 29	5919	1259–60	122	1550
Water-heater	J. K. McLaughlin	822,545	June 5	611	123	122	1861
Water-heater	E. W. Dieterle	823,589	June 19	2753	583	122	2434
Water-heater	C. Porter	823,636	June 19	2848	602	122	2456
Water-heater. Electrical	W. A. Brown	820,282	May 8	2567	557	122	634
Water-heater. Noiseless steam	J. G. Hufnagel	822,127	May 29	6275	1336	122	1632
Water-heater. Solar	M. T. Cunniff	819,342	May 1	625	133	122	144
Water-heating boiler	C. H. Meyers and E. Loudenslager.	821,304	May 22	4649	990	122	1212
Water-jacket	F. H. Tryon	822,326	June 5	208	41	122	1772
Water-level indicator	J. T. Dawes	824,098	June 26	3702	789	122	2698
Water-motor for utilizing the ebb and flow of the tide	G. Geyer	821,480	May 22	5020	1068	122	1295
Water-ozonizing apparatus	M. Otto	822,980	June 12	1483	309	122	2098
Water-purifier	F. B. Hinkson	820,113	May 8	2232	485	122	561
Water-purifier. Electric	A. E. Dieterich	823,671	June 19	2917	617	122	2471
Water purifying and regulating apparatus	J. W. Gamble	823,212	June 12	2000	417	122	2213
Water-service	W. C. James	822,950	June 12	1426	298	122	2085
Water-softening apparatus	A. R. Holmen	819,885	May 8	1699	364	122	444
Water-trap	C. Martineau and C. Prevost	822,462	June 5	450	91	122	1823
Water. Treatment of refractory	J. Schneible	820,524	May 15	3057	658	122	802
Water-tube boiler	J. C. Beckley	821,329	May 22	4700	1001–2	122	1223
Water-tube boiler	W. T. Eastman	821,345	May 22	4744	1009	122	1236
Water-tube boiler	J. C. Sherry	821,964	May 29	5969	1271–2	122	1560
Water-tube boiler	H. Del Mar	822,857	June 5	1240	255	122	1998
Water-tube boiler	H. Del Mar	822,885	June 5	1293	266	122	2009
Water-tube boiler	A. J. Raynor	822,982	June 12	1486	309–10	122	2099
Water-tube boiler	H. Del Mar	823,264	June 12	2112	440	122	2238
Water-wheel	C. S. Dean	822,927	June 12	1386	289–90	122	2077
Water-wheel	F. Kirchbach	824,662	June 26	4822	1029	122	2939
Water-wheel regulator	G. H. Bailey	819,629	May 1	1165	255	122	261
Water-wheel speed-regulating device	H. E. Warren	822,050	May 29	6084	1296–7	122	1588
Watering or feed trough. Automatic	C. B. Richmond	820,316	May 8	2620	571	122	646
Watering-trough for cattle and horses. Automatic	K. Ruge and S. Katzenstein	824,588	June 26	4687	996	122	2910
Waterproof fabric	F. C. Overbury	819,450	May 1	835	180	122	187
Waterproof fabric	L. A. Bond	820,694	May 15	3364	721	122	866
Waterproofing buildings, &c	A. Gross and A. C. Horn	822,602	June 5	752	152	122	1894
Waterproofing composition	J. Wessel	823,246	June 12	2078	.....	122	2231
Wave-motor	D. H. Mowen	822,067	May 29	6159	1313	122	1605
Wave-motor	J. A. J. Fleming	822,203	May 29	6422	1363	122	1664
Wave-motor	J. A. McManus	823,431	June 12	2413	508	122	2301
Weather-strip	E. F. Shellaberger	821,261	May 22	4558	969	122	1192
Weather-strip	W. H. Etter	823,001	June 19	3539	755	122	2606
Web-coating machines. Adjustable brush-carrier for	H. D. Newell and A. T. Bryant	820,666	May 15	3311	710	122	857
Wedge	H. E. Denison and H. H. Blake	824,415	June 26	4331	922	122	2831
Weed-cutter	H. B. Nolen	820,820	May 15	3634	775–6	122	929
Weeder	F. Lange	819,771	May 8	1465	313	122	387
Weeder	J. H. Lamdry	823,337	June 12	2246	468–9	122	2267
Weeding-tool	T. D. Halpin	823,272	June 12	2126	443	122	2241
Weigher. Automatic	J. S. Herron	822,451	June 5	420	86	122	1816
Weighing and dumping machine. Automatic	R. D. Webb	820,455	May 15	2901	630	122	767
Weighing and sacking machine	P. L. Creighton	819,860	May 8	1644	350	122	432
Weighing apparatus	G. Kley	819,558	May 1	1025	225	122	231
Weighing apparatus. Automatic	B. Simons	819,610	May 1	1114	246–7	122	250
Weighing instrument	H. M. Willis	822,804	June 5	1137	234	122	1977
Weighing-machine or meter. Tip-tank	W. H. Pearce	821,531	May 22	5107	1088	122	1313
Weight-actuated apparatus	E. Puller	823,521	June 19	2626	552	122	2407
Well apparatus. Gas-	F. J. Moser	820,237	May 8	2457	532	122	609
Well casing-head. Oil-	J. R. Eddy and R. F. Hadley	822,930	June 12	1390	291	122	2078
Well-drilling apparatus	S. N. Hall	822,272	June 5	92	19	122	1749
Well-drilling machine	C. M. McAfee	820,936	May 15	3894	830	122	986
Well jack. Oil-	G. B. Sessions	822,392	June 5	317	66	122	1795
Well mechanism	M. E. Layne	821,653	May 29	5353	1141	122	1424
Well-pit-mold frame	W. H. Lucas	822,140	May 29	6293	1341	122	1636
Well. Terra-cotta-tile	J. Elliott	822,254	June 5	52	11	122	1740
Well-tube safety-catch	W. A. Shaw	823,974	June 19	3484	744	122	2595
Wells. Valve-adjuster for oil-	E. R. Matthews	822,971	June 12	1468	306	122	2095
Whalebone or rubber substitutes. Producing	W. Polatsik	820,315	May 8	2619	.....	122	646
Wheat-shocker	G. R. Keltner	819,554	May 1	1017	223	122	229
Wheat temperer and heater	I. J. Mills	819,240	May 1	415	87	122	97
Wheel:							
See Automobile-wheel. Bucket-wheel. Car-wheel. Clock or watch wheel. Fifth-wheel. Hand-wheel. Locomotive driving-wheel. Propeller-wheel. Spring-wheel. Trolley-wheel. Turbine bucket-wheel. Vehicle-wheel. Wagon-wheel. Water-wheel. Wind-wheel. Wooden-spoke wheel.							
Wheel	C. B. Van Horn	819,824	May 8	1581	336	122	416
Wheel	W. S. H. Smith	819,942	May 8	1806	390	122	467
Wheel	J. Sinnott	820,741	May 15	3455	740–1	122	889
Wheel	A. J. Robertson	821,886	May 29	5806	1237	122	1524
Wheel	S. J. Turner	822,088	May 29	6196	1321	122	1614
Wheel	J. F. Pease and E. Schumacher	822,151	May 29	6324	1345	122	1644
Wheel	A. Freschl	822,518	June 5	568	115	122	1851
Wheel	M. Dixon	823,938	June 19	3411	729	122	2579
Wheel-fastener	E. A. Johnston	819,434	May 1	808	174	122	182
Wheel-holder	O. G. Klein	820,579	May 15	3160	680–1	122	825

Alphabetical list of inventions for May and June—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Wheel-mount. Vehicle	G. D. Munsing	819,302	May 1	542	115	122	124
Wheel-mount. Vehicle	G. D. Munsing	819,303	May 1	545	115	122	125
Wheel-rim	H. B. Williams	823,003	June 12	1730	358	122	2154
Wheel rim and tire fastening	R. H. Atcheson and J. H. Walsh	822,711	June 5	974	199	122	1943
Wheelbarrow	F. J. Cooper	819,856	May 8	1638	349	122	430
Whetstone, blotter, and paper-weight. Combined	E. B. Pike	824,138	June 26	3769	805	122	2713
Whiffletree	A. R. Meister and A. E. Wright	821,179	May 22	4402	937	122	1158
Whiffletree	W. H. Spillman and F. Fowler	821,383	May 22	4826	1025	122	1253
Whiffletree	P. Blondell	824,060	June 19	3641	775	122	2627
Whiffletree connection	J. I. Shaw	824,265	June 26	4030	862	122	2770
Whiffletree-coupling	F. G. Davis	820,918	May 15	3863	823	122	978
Whiffletree-hook	C. H. Geery	820,564	May 15	3135	674	122	819
Whiffletree-hook	R. A. Dilts	821,158	May 22	4370	930	122	1152
Whiffletree-hook	H. C. Scott	822,557	June 5	639	128	122	1867
Whip-holder	L. Miller	821,427	May 22	4923	1046	122	1274
Whip-socket	J. D. Shimer	822,779	June 5	1086	224	122	1966
Whistle	P. A. Mortensen	819,076	May 1	85	20	122	23
Whistle	E. P. Gray	821,358	May 22	4770	1014	122	1241
Wind-wheel	E. Q. Fuller and E. P. Johnston	823,404	June 12	2359	496	122	2289
Windmill	G. B. Snow	819,943	May 8	1807	391	122	467
Windmill	J. Pestor	820,988	May 22	4037	858	122	1078
Windmill-lubricator	C. A. Hoff	823,410	June 12	2366	498	122	2291
Winding-drum	W. S. Edward	821,708	May 29	5482	1167	122	1451
Winding-drums. Rope-fastening for	W. Ferris	823,401	June 12	2354	495	122	2288
Winding frame. Yarn-	P. Taylor	822,086	May 29	6193	1320	122	1613
Winding machine. Ball-	A. T. and G. H. Saunders	822,482	June 5	491	100–1	122	1833
Winding-machine bobbin	C. Ryden	822,224	May 29	6467	1372	122	1676
Winding machine. Quill or cop	H. Kaufmann	823,789	June 19	3128	663	122	2516
Window	E. W. Humphreys	819,760	May 8	1443	308–9	122	383
Window	B. J. Leslie	820,218	May 8	2422	526	122	602
Window	R. M. Dixon	820,958	May 22	3957	842	122	1061
Window	E. M. Erb	820,960	May 22	3963	843	122	1062
Window	H. Hyde	821,101	May 22	4258	906	122	1126
Window	P. McGinnis	821,665	May 29	5376	1146	122	1428
Window and window-screen fastener. Storm	F. Flaschberger and M. Gebhart	822,516	June 5	565	114	122	1851
Window. Balanced	F. O. Hermance	822,521	June 5	574	115	122	1852
Window-bracket	A. Knox	821,510	May 22	5072	1080	122	1305
Window. Casement and similar	A. Brzykcy	821,983	May 29	6001	1279–80	122	1568
Window-cleaner	C. D. Tabor	820,027	May 8	2040	448	122	517
Window construction	R. J. Williams	820,688	May 15	3357	719	122	865
Window frame and sash	E. M. Erb	821 228	May 22	4488	956	122	1176
Window frame and sash	R. F. Nichols	820,817	May 15	3627	774	122	927
Window frame and sash. Metallic	H. Staib	822,785	June 5	1095	226	122	1965
Window-lock. Self-acting	W. B. Yeager	824,326	June 26	4137	885	122	2702
Window operating and securing mechanism	J. I. Moss	824,567	June 26	4639	986	122	2899
Window-screen	E. P. Sperry	823,195	June 12	1956	407	122	2204
Window-screen	S. H. Garrett	819,750	May 8	1416	305	122	376
Window-screen	G. D. Moncrief	820,233	May 8	2448	530	122	608
Window-screen	H. E. Southworth	821 384	May 22	4827	1025	122	1253
Window-screen	C. J. Whellams	822,227	May 29	6471	1373	122	1677
Window-screen	G. Holden	822,948	June 12	1422	297	122	2084
Window-screen	G. W. McFarland	823,737	June 19	3029	640	122	2493
Window-screen	A. J. Dapron	824,288	June 26	4060	869	122	2776
Window-screen	W. S. Hood	824,603	June 26	4891	1040	122	2952
Window-screen. Flexible	J. Angeletti	819,396	May 1	733	156	122	167
Window-sill	W. Corbett	819,041	May 1	12	4	122	6
Window-washer's platform	C. N. Christofferson and J. F. Lindberg.	823,921	June 19	3374	720	122	2571
Windows. Spring-bolt for	D. Wilde	821,390	May 22	4842	1028	122	1256
Windrower	L. Franzmeier	821,794	May 29	5649	1204	122	1490
Wire and insulator holder	A. J. Seguin and E. P. Gingras	821,062	May 22	4185	889	122	1110
Wire article	A. Haynes and J. F. Martin	820,716	May 15	3410	729	122	878
Wire choker-trap	W. W. Williams	822,228	May 29	6473	1373	122	1677
Wire-coiling tool	O. A. Gant	821,162	May 22	4376	931	122	1153
Wire-drawing machine	J. A. Horton	824,654	June 26	4805	1024–5	122	2935
Wire-drawing machine	J. A. Horton	824,655	June 26	4810	1025–6	122	2936
Wire-fabric machine	J. W. Snedeker	823,193	June 12	1947	402–6	122	2202
Wire-gage	J. G. Callan	824,064	June 19	3648	776–7	122	2629
Wire-hoop-lock-forming device	H. S. Smith	823,556	June 19	2697	570	122	2421
Wire-reel	W. E. Eichhoff	824,200	June 26	4072	871	122	2778
Wire-stretcher	A. A. and W. B. Kemp	820,578	May 15	3159	680	122	825
Wire-stretcher	A. A. Smith. (Reissue)	12,484	May 22	5244	1118	122	1342
Wire-stretcher	J. A. Tygart	823,087	June 12	1732	357	122	2153
Wire-stretcher	J. A. Hoyt	824,120	June 26	3737	798	122	2707
Wire-stretcher	I. B. Lowry and F. L. Arters	824,556	June 26	4623	982	122	2895
Wire-tightener	I. U. Campbell	823,666	June 19	2910	615	122	2470
Wire-winding machine	M. E. Layne	820,507	May 15	3020	649–50	122	794
Wire-working machine	O. H. Watkins and C. F. Skellenger.	819,479	May 1	884	193–4	122	193
Wire-working machine	O. H. Watkins and C. F. Skellenger.	819,622	May 1	1141	252	122	257
Wire-working machine	O. H. Watkins and C. F. Skellenger.	819,623	May 1	1148	253	122	258
Wire-working tool	D. L. McKinney and G. W. Henderson.	819,304	May 1	546	116	122	126
Wire-wrapping machine	A. G. Champlin	824,171	June 26	3841	820	122	2729
Wires. Lock for cross-	M. S. Anderson	819,968	May 8	1899	420	122	484
Wood-embossing machine	J. J. Powell	821,737	May 29	5530	1179	122	1462
Wood-ornamenting machine	W. H. Broadway	824,277	June 26	4044	866	122	2773
Wooden plate. Compound	H. Buyten	823,843	June 19	3231	683	122	2540
Wooden-spoke wheel	T. Garo	820,923	May 15	3873	825	122	981
Woodworking-machine	E. W. Lucas	823,952	June 19	3437	734	122	2585
Woodworking-machines. Combined presser-foot and guard for	H. H. Steer	822,636	June 5	819	166–7	122	1908
Woodworking mechanism	T. W. Lovatt and C. Purser	823,342	June 12	2255	470–1	122	2280
Woodworking-tool	M. Enright	823,592	June 19	2757	584	122	2434

Alphabetical list of inventions for May and June—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Wool-scouring machine	J. H. Tillinghast	821,139	May 22	4340	923	122	1145
Wool-scouring machine	T. A. Jones	822,954	June 12	1440	300	122	2088
Wool-treating device	T. F. Johnson	824,121	June 26	3739	798	122	2707
Woven fabric	G. C. Moore	820,515	May 15	3040	654	122	799
Woven fabric	H. Sarafian	820,825	May 15	3650	779	122	931
Woven fabric	H. W. Smith	820,994	May 22	4048	860	122	1080
Woven fabric	W. M. Stevenson	821,441	May 22	4951	1052	122	1280
Woven fabric	W. T. Smith	824,448	June 26	4396	935	122	2844
Woven fabric	J. Szczepanik	824,158	June 26	3819	.....	122	2725
Woven fabric. Multicolorous	J. Pfeifer	821,375	May 22	4804	1020–1	122	1248
Wrapping-machine							
Wrench:							
See Jar-wrench. Spanner-wrench. Pipe-wrench. Tap and nut wrench. Quick-acting wrench.							
Wrench	L. T. Wever	819,192	May 1	303	65	122	75
Wrench	C. H. Noyes	819,246	May 1	425	89	122	100
Wrench	W. K. Stewart and F. Mowrey	819,614	May 1	1126	249	122	253
Wrench	J. W. Lanham	820,651	May 15	3276	704	122	849
Wrench	H. R. Smith	821,438	May 22	4947	1051	122	1279
Wrench	J. T. Urbach	822,790	June 5	1101	228	122	1969
Wrench	C. Liaci	822,962	June 12	1451	302	122	2091
Wrench	D. L. Booker	823,155	June 12	1864	385	122	2181
Wrench	W. H. Glover	823,166	June 12	1889	389	122	2188
Wrench	B. E. Kline	823,177	June 12	1908	393	122	2192
Wrench	J. D. Ryan	823,367	June 12	2299	481	122	2277
Wrench	W. Buhl	823,390	June 12	2332	489	122	2284
Wrench	T. W. Jester	823,870	June 19	3278	695	122	2551
Wrench	H. L. Reynolds	824,081	June 19	3678	782	122	2635
Wrench	H. L. Reynolds	824,082	June 19	3679	783	122	2635
Wrench	J. W. B. Turk	824,267	June 26	4032	863	122	2770
Wrench	P. Matusak and G. Slaine	824,499	June 26	4500	954	122	2869
Wrench	L. Maier	824,558	June 26	4625	983	122	2869
Wrench	P. L. Sweeney and L. C. Jahn	819,817	May 8	1565	332	122	413
Wrench and bit stock. Combined							
Wringer:							
See Mop-wringer.							
Writing-guide	J. C. Dana	822,192	May 29	6405	1360	122	1661
Writing-machine	E. B. Hess	822,208	May 29	6429	1365–6	122	1666
Writing-machine	E. B. Hess	822,858	June 5	1242	256	122	1998
Writing-machine	E. B. Hess	823,121	June 12	1804	371	122	2168
Writing-machine	G. and F. Aid	823,575	June 19	2725	577	122	2428
Yoke center. Neck	T. J. Woodrow	823,574	June 19	2724	577	122	2427
Yoke. Neck	J. Miller	823,957	June 19	3448	737	122	2588
Yoke. Neck	G. Ranson	823,866	June 19	3325	708	122	2560
Zinc. Manufacture of sulfid of							

ALPHABETICAL LIST OF DESIGNS.

Design.	Name.	No.	Date.	Official Gazette. Volume.	Official Gazette. Page.
Automobile-dash	A. E. Schaaf and H. G. Fiske	38,006	June 19	122	2639
Automobile engine-hood and seat-support	A. B. Shultz	38,044	May 29	122	1683
Automobile-front casing	R. C. Lewis	38,108	June 26	122	2958
Badge	P. G. Blanford	38,010	May 15	122	993
Badge	D. Z. Merchant	38,017	May 22	122	1346
Badge	F. Busse	38,033	May 29	122	1681
Badge	S. D. Parker	38,048	June 5	122	2020
Badge	D. Z. Merchant	38,087	June 19	122	2637
Billiard-table	W. C. Huss	38,080	June 12	122	2338
Billiard-table	W. C. Huss	38,081	June 12	122	2338
Book-cover	W. M. Rhoads	37,976	May 1	122	300
Book leaf. Family record	F. A. Brown	38,030	May 22	122	1348
Box-strap	C. W. Mitchell	38,039	May 29	122	1682
Brush-back	W. C. Codman	38,090	June 19	122	2637
Brush-back	W. C. Codman	38,091	June 19	122	2638
Brushes, mirrors, or similar articles. Back for	S. A. Keller	38,021	May 22	122	1346
Burse	M. A. Philbin	38,189	June 19	122	2637
Button	M. L. Evens and P. H. Lindner	38,032	May 29	122	1681
Cabinet	H. V. Crozier	38,008	May 8	122	680
Cake-iron cover	A. Andresen	38,013	May 15	122	994
Casket, coffin, or similar article	C. F. Wetmore	38,059	June 5	122	2022
Casket-trimming	W. E. Stevens	38,084	June 12	122	2338
Clock-frame	S. M. Lawson	37,972	May 1	122	299
Clock-frame	S. M. Lawson	37,973	May 1	122	299
Clock-frame	S. M. Lawson	37,974	May 1	122	299
Clock-frame	S. M. Lawson	37,975	May 1	122	299
Clock-frame	S. M. Lawson	38,011	May 15	122	993
Clock-frame	S. M. Lawson	38,022	May 22	122	1347
Clock-frame	S. M. Lawson	38,034	May 29	122	1681
Cloth. Eider-down	C. H. French	38,045	May 29	122	1683
Comb. Hair	W. C. Smith	37,979	May 1	122	300
Crib. Christmas	F. Willenbrink	38,050	June 5	122	2020
Crumb-tray	M. M. J. Rooney	38,037	May 29	122	1682
Dental cabinet	W. G. Hullhorst	38,079	June 12	122	2337
Desk, Hotel-register	F. F. Doleshy	38,029	May 22	122	1348
Dish	L. B. Critz	38,094	June 19	122	2638
Door for feed-water heaters and similar apparatus	M. K. Bowman	38,082	June 12	122	2338
Eraser-tip	F. McIntyre	38,038	May 29	122	1682
Fabric. Embossed	L. M. Musliner	38,060	June 5	122	2023
Fabric. Knitted	F. Condé	38,046	May 29	122	1684
Fabric. Knitted	F. Condé	38,047	May 29	122	1684
Fabric. Textile	S. L. Crownfield	38,061	June 5	122	2023
Fabric. Textile	S. L. Crownfield	38,062	June 5	122	2023
Fabric. Textile	S. L. Crownfield	38,063	June 5	122	2023
Fabric. Textile	S. L. Crownfield	38,064	June 5	122	2024
Fabric. Textile	S. L. Crownfield	38,065	June 5	122	2024
Fabric. Textile	S. L. Crownfield	38,085	June 12	122	2339
Fabric. Textile	S. L. Crownfield	38,086	June 12	122	2339
Fabric. Textile	E. W. Doughty	38,097	June 19	122	2639
Fabric. Textile	E. W. Doughty	38,098	June 19	122	2639
Fabric. Textile	E. W. Doughty	38,099	June 19	122	2639
Fabric. Textile	E. W. Doughty	38,100	June 19	122	2640
Fabric. Textile	E. W. Doughty	38,101	June 19	122	2640
Fabric. Textile	A. F. Papin	38,109	June 26	122	2958
Fabric. Textile	A. F. Papin	38,110	June 26	122	2958
Flag	T. K. Sturdevant	38,088	June 19	122	2637
Flower-pot. Hanging	W. Wiesler	38,004	May 8	122	679
Forks, spoons, and similar articles. Handle for	J. Leech	37,990	May 8	122	675
Fruit-bowl	B. W. Jacobs	38,055	June 5	122	2021
Glass cigar and ash tray	E. Schwab	37,977	May 1	122	300
Glass cigar and ash tray	E. Schwab	38,072	June 12	122	2336
Glass reflector	O. A. Mygatt	37,984	May 1	122	301
Glass reflector for artificial lights. Prismatic	O. A. Mygatt	37,981	May 1	122	300
Glass reflector for artificial lights. Prismatic	O. A. Mygatt	37,982	May 1	122	301
Glass reflector. Prismatic	O. A. Mygatt	37,983	May 1	122	301
Glass reflector. Prismatic	O. A. Mygat	38,006	May 8	122	679
Globe-support	C. E. Waldeck	38,073	June 12	122	2336
Glass vessel	B. F. Davies	37,999	May 8	122	677
Glass vessel	J. Owens	38,012	May 15	122	994
Glass vessel. Cut	W. C. Anderson	38,000	May 8	122	678
Glass vessel. Cut	D. F. Spillane	38,001	May 8	122	678
Glass vessel. Cut	D. F. Spillane	38,002	May 8	122	678
Hat	F. Van Rensselaer	38,016	May 15	122	994
Hat	S. Mundheim	38,031	May 22	122	1348
Hook. Bath-room	A. N. Lattin	38,025	May 22	122	1347
Humidifier-casing	J. J. Smith	38,107	June 26	122	2957
Inkstand	C. H. Numan	38,102	June 26	122	2956
Jug or similar article	C. J. Noke	38,051	June 5	122	2020
Jug or similar article	C. J. Noke	38,052	June 5	122	2020
Jug or similar article	C. J. Noke	38,053	June 5	122	2020
Jug or similar article	J. Slater	38,054	June 5	122	2021
Lamp bulb. Incandescent-electric	O. A. Mygatt	38,005	May 8	122	679

Alphabetical list of designs for May and June—Continued.

Design.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Lamp-shade	W. A. Hogan	38,056	June 5	122	2022
Lavatory	H. Podmore	38,007	May 8	122	679
Lavatory	J. F. Kelly	38,040	May 29	122	1682
Match-holder	M. Mayer	38,023	May 22	122	1347
Mirrors, brushes, and similar articles. Back for hand-	H. B. Beach and H. Kayser	38,066	June 12	122	2334
Mirrors, brushes, and similar articles. Back for hand-	H. B. Beach and H. Kayser	38,067	June 12	122	2335
Nail-file	E. Ruettgers	37,988	May 8	122	675
Pen holder. Fountain-	F. A. Weeks	37,978	May 1	122	300
Pen-holding receptacle. Fountain-	F. A. Weeks	38,049	June 5	122	2020
Percolator. Beverage-	G. E. Savage	38,071	June 12	122	2336
Plate	F. Markert	38,035	May 29	122	1681
Plate	H. Ehrlich	38,104	June 26	122	2957
Plate or similar article	W. H. Grindley	38,036	May 29	122	1682
Range. Cooking-	F. J. Frey	38,028	May 22	122	1348
Reflector	O. A. Mygatt	37,985	May 1	122	301
Reflector. Prismatic-glass	O. A. Mygatt	38,026	May 22	122	1347
Rubber binding	C. E. Knapp	38,095	June 19	122	2638
Rug	A. Petzold	37,986	May 1	122	302
Rug	A. Petzold	37,987	May 1	122	302
Scale-supporting stand	W. H. Sargent	38,024	May 22	122	1347
Scraper	E. R. Deming	37,980	May 1	122	300
Screw-drivers or similar articles. Handle of	J. J. Tower	37,992	May 8	122	676
Screw-drivers or similar articles. Handle of	J. J. Tower	37,993	May 8	122	676
Screw-drivers or similar articles. Handle of	J. J. Tower	37,994	May 8	122	676
Screw-drivers or similar articles. Handle of	J. J. Tower	37,995	May 8	122	676
Screw-drivers or similar articles. Handle of	J. J. Tower	37,996	May 8	122	677
Screw-drivers or similar articles. Handle of	J. J. Tower	37,997	May 8	122	677
Screw-drivers or similar articles. Handle of	J. J. Tower	37,998	May 8	122	677
Seat end	H. J. Bell	38,074	June 12	122	2336
Seat end	E. G. Budd	38,075	June 12	122	2336
Seat end	J. B. Kilburn	38,076	June 12	122	2337
Show-case	J. T. Robin	38,058	June 5	122	2022
Sign. Electrically-illuminated	G. Howe	38,014	May 15	122	994
Spoon or similar article	G. Chambers and R. J. Stewart	37,989	May 8	122	675
Spoons, forks, and similar articles. Handle for	C. T. Paye	37,991	May 8	122	675
Spoons, forks, or similar articles. Handle for	J. Clulee	38,018	May 22	122	1346
Spoons, forks, or similar articles. Handle for	J. Clulee	38,019	May 22	122	1346
Spoons, forks, or similar articles. Handle for	H. Hillbom	38,069	June 12	122	2335
Spoons, forks, or similar articles. Handle for	F. Habensack	38,068	June 12	122	2335
Spoons, forks, or similar articles. Handle for	H. W. Hirschfeld	38,103	June 26	122	2957
Spoons, forks, or similar articles. Handle of	W. C. Codman	38,020	May 22	122	1346
Spoons, forks, or similar articles. Handle of	S. A. Keller	38,092	June 19	122	2638
Spoons, forks, or similar articles. Handle of	S. Boal	38,041	May 29	122	1682
Stove	F. J. Frey	38,083	June 12	122	2338
Stove	A. Coleman	38,057	June 5	122	2022
Suspender-box	H. Sheble	38,106	June 26	122	2957
Talking-machine horn	H. Hillbom	38,070	June 12	122	2335
Teapot or similar article	M. B. Leete	38,093	June 19	122	2638
Teapot or similar article	F. R. McBerty	38,027	May 22	122	1348
Telephone-switchboard casing	F. Markert	38,105	June 26	122	2957
Transfer-sheet	C. L. Berger	38,078	June 12	122	2337
Trivet	H. Thuemler	38,003	May 8	122	678
Tumbler. Drinking-	O. W. Simons	38,015	May 15	122	994
Type. Font of printing-	C. Cretors	38,042	May 29	122	1683
Vehicle-top	C. Cretors	38,043	May 29	122	1683
Vehicle-top	C. H. T. Peters	38,009	May 8	122	680
Wagon body. Delivery-	C. A. Flanagan	38,077	June 12	122	2337
Wall-pocket or music-rack	J. Bain	37,971	May 1	122	299
Watchcase					

ALPHABETICAL LIST OF TRADE-MARKS.

Title.	Name.	No.	Date.	Official Gazette. Volume.	Page.
Abrading and polishing strips	S. S. White Dental Mfg. Co	53,565	June 5	122	2055
Abrading disks, wheels, and points	S. S. White Dental Mfg. Co	53,566	June 5	122	2055
Accordions	C. Bruno	52,878	May 22	122	1385
Adhesive tape	Okonite Company	53,523	June 5	122	2053
Agricultural machines. Certain named	Fetzer & Company	54,745	June 26	122	3008
Agricultural machines. Certain named	Fetzer & Company	54,746	June 26	122	3008
Aloumen obtained from the treatment of starch	Tolhausen & Klein	53,017	May 22	122	1390
Ale	James Hanley Brewing Co	52,036	May 1	122	340
Ale	Robert Smith Ale Brewing Co	52,469	May 8	122	721
Ale	J. Labatt	53,048	May 22	122	1391
Ale	Suffolk Brewing Company	54,121	June 19	122	2682
Ale	New England Brewing Company	54,196	June 19	122	2684
Ale	New England Brewing Company	54,435	June 26	122	2995
Ale	A. S. Holberg	52,096	May 1	122	342
Ale. Ginger-	Standard Bottling & Extract Co	52,307	May 8	122	715
Ale. Ginger-	Hagan & Dodd Co	53,598	June 5	122	2056
Ale. Ginger-	Holmes & Barber	54,551	June 26	122	3000
Ale. Ginger-	S. K. Elliott	53,071	May 22	122	1392
Alterative, tonic, and blood-purifying compounds	Dr. Miles Medical Co	54,274	June 26	122	2988
Analgesic and sedative	El Zemac Co	54,615	June 26	122	3002
Analgesics	W. A. Reddick	53,641	June 5	122	2058
Animal-traps	A. E. Stromberg	53,274	May 29	122	1714
Anodyne possessing analgesic and antipyretic qualities	Lloyd Brothers	52,490	May 8	122	722
Anodynes	Farbwerke vorm. Meister Lucius & Brüning.	53,072	May 22	122	1392
Anesthetics		52,415	May 8	122	719
Antiseptic and disinfectant. Liquid	C. V. Dorman	54,332	June 26	122	2991
Antiseptic compound	Hylin & Co. Fabriks Aktiebolag	54,044	June 19	122	2679
Antiseptic dressing	W. G. Hughes Company	53,227	May 29	122	1712
Antiseptic germ, insect, and worm destroyer	National Medical Company	54,124	June 19	122	2682
Antiseptic non-fatty and soluble lubricating-jelly	Van Horn & Sawtell	52,778	May 15	122	1040
Antiseptic or disinfecting chemical compound	Hance Bros. & White	52,142	May 1	122	344
Antiseptic solution	N. M. Hoon	52,171	May 1	122	345
Antiseptic solution	J. H. Eberhardt	52,135	May 1	122	344
Antiseptics and deodorants	Farbwerke vorm. Meister Lucius & Brüning.	54,583	June 26	122	3001
Antiseptics and washes for the mouth and teeth	F. A. Schulz	53,196	May 29	122	1711
Antiseptics or germicides	J. F. Ballard	53,197	May 29	122	1711
Antiseptics or germicides	J. F. Ballard	52,358	May 8	122	717
Art drapery-robes	Eddystone Manufacturing Company.	52,049	May 1	122	341
Asphalt	Warren Chemical & Manufacturing Company.	53,652	June 5	122	2058
Asphalt	Gabriel & Schall	54,005	June 19	122	2677
Asphalt mastic	Southern Refining Company	53,232	May 29	122	1712
Asphaltum. Refined	Simmons Hardware Company	53,710	June 12	122	2377
Augers, bits, and gimlets	Reo Car Co	54,722	June 26	122	3007
Automobile vehicles	Premier Motor Manufacturing Company.	52,872	May 22	122	1385
Automobiles	Aerocar Company	52,895	May 22	122	1385
Automobiles	Aerocar Company	52,896	May 22	122	1386
Automobiles	J. C. Higdon	53,725	June 12	122	2377
Automobiles	Hol-Tan Company	54,281	June 26	122	2989
Automobiles	St. Louis Motor Carriage Co	54,758	June 26	122	3008
Automobiles	Greene Tweed & Co	52,035	May 1	122	340
Awls and punches. Belt	American Tool Company	52,943	May 22	122	1387
Axes	F. W. Peck	52,106	May 1	122	343
Axes, adzes, and hatchets	National Cutlery Co	52,013	May 1	122	339
Axes and hatchets	H. Keidel	52,331	May 8	122	716
Axes and hatchets. Steel	Supplee Hardware Company	52,687	May 15	122	1036
Axes, hatchets, and adzes	Hibbard, Spencer, Bartlett & Company.	54,059	June 19	122	2679
Axes, hatchets, and adzes	Hibbard, Spencer, Bartlett & Company.	54,061	June 19	122	2679
Axes, hatchets, and adzes	Hibbard, Spencer, Bartlett & Company.	54,106	June 19	122	2681
Axes, hatchets, and adzes	Hibbard, Spencer, Bartlett & Company.	54,107	June 19	122	2681
Axle-grease	Hill Top Oil Co	53,461	June 5	122	2050
Bacon and hams	John Morrell & Company	52,211	May 1	122	347
Bags	S. Nusbaum	52,403	May 8	122	719
Baking-powder	Sprague, Warner & Company	52,185	May 1	122	346
Baking-powder	Grand Union Tea Co	52,325	May 8	122	715
Baking-powder	E. M. Chase Co	52,641	May 15	122	1034
Baking-powder	Price Baking Powder Company	52,734	May 15	122	1038
Baking-powder	F. L. Zabriskie	52,968	May 22	122	1388
Baking-powder	Cleveland Baking Powder Company.	52,994	May 22	122	1389
Baking-powder	Sprague, Warner & Company	53,013	May 22	122	1390
Baking-powder	E. Ottenheimer & Sons	53,466	June 5	122	2051
Baking-powder	Tone Bros	53,798	June 12	122	2380

Alphabetical list of trade-marks for May and June—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Baking-powder	Schwabacher Bros. & Co	54,197	June 19	122	2685
Baking-powder	Howell Mfg. Co	54,552	June 26	122	3000
Baking-powder, cream of tartar, saleratus, and bicarbonate of soda.	E. R. Durkee & Co	53,202	May 29	122	1711
Balls. Base, foot, and tennis	Hibbard, Spencer, Bartlett & Company.	54,141	June 19	122	2682
Balls. Foot, base, and tennis	Hibbard, Spencer, Bartlett & Company.	54,079	June 19	122	2680
Balls. Golf	A. G. Spalding & Bros	52,125	May 1	122	343
Balm for the complexion	W. P. Ward	52,503	May 8	122	723
Bath-tubs	Standard Sanitary Mfg. Co	53,016	May 22	122	1390
Bats. Base-ball	C. P. Young	54,091	June 19	122	2680
Batteries. Dry	Empire State Dry Battery Co	52,950	May 22	122	1388
Bearings. Ball	Hess-Bright Manufacturing Co	53,631	June 5	122	2057
Beds. Davenport	C. J. Kindel Bedding Company	52,412	May 8	122	719
Beef extract	Pioneer Packing Company	52,984	May 22	122	1389
Beef extracts and beef, iron, and wine	Liebig Extract Company	52,782	May 15	122	1040
Beef, pork, and mutton. Fresh	Agar Packing Company	52,928	May 22	122	1387
Beer	Western Brewery Co	52,495	May 8	122	722
Beer	Anheuser-Busch Brewing Association.	52,633	May 15	122	1034
Beer	Bergner & Engel Brewing Co	52,635	May 15	122	1034
Beer	N. Benjamin Son	52,759	May 15	122	1039
Beer	Anheuser-Busch Brewing Association.	52,992	May 22	122	1389
Beer	United States Brewing Company of Chicago.	53,262	May 29	122	1713
Beer	Springfield Breweries Company	53,499	June 5	122	2052
Beer	Anheuser-Busch Brewing Association.	53,875	June 12	122	2383
Beer	Hoster-Columbus Associated Breweries Co.	53,884	June 12	122	2384
Beer	New England Brewing Company.	53,932	June 12	122	2386
Beer	Wacker & Birk Br'g & M'lt'g Co.	53,942	June 12	122	2386
Beer	Curran and Joyce Co	54,594	June 26	122	3001
Beer	Hoster-Columbus Associated Breweries Co.	54,602	June 26	122	3002
Beer	Hoster-Columbus Associated Breweries Co.	54,603	June 26	122	3002
Beer	Minneapolis Brewing Co	54,642	June 26	122	3003
Beer	Minneapolis Brewing Co	54,643	June 26	122	3003
Beer and lager-beer	Harvard Brewing Co	52,484	May 8	122	722
Beer and lager-beer	Harvard Brewing Co	52,646	May 15	122	1034
Beer and lager-beer	Harvard Brewing Co	53,881	June 12	122	2384
Beer in bottles	Cleveland & Sandusky Brewing Company.	52,091	May 1	122	342
Beer. Lager	Olympia Brewing Co	51,997	May 1	122	338
Beer. Lager	Joseph Schlitz Brewing Company.	52,011	May 1	122	339
Beer. Lager	Christian Feigenspan, a Corporation	52,507	May 8	122	723
Beer. Lager	Consumers Park Brewing Co	52,510	May 8	122	723
Beer. Lager	Hudson County Consumers Brewing Co.	52,520	May 8	122	723
Beer. Lager	John F. Wiessner & Son's Brewing Co. of Baltimore City.	52,585	May 15	122	1032
Beer. Lager	Peter Schoenhofen Brewing Company.	53,149	May 29	122	1709
Beer. Lager	Peter Schoenhofen Brewing Company.	53,182	May 29	122	1710
Beer. Lager	Peter Schoenhofen Brewing Company.	53,183	May 29	122	1710
Beer. Lager	Peter Schoenhofen Brewing Company.	53,184	May 29	122	1710
Beer. Lager	Hartmann Brewing Company	53,421	June 5	122	2049
Beer. Lager	Peter Schoenhofen Brewing Company.	53,428	June 5	122	2049
Beer. Lager	Peter Schoenhofen Brewing Company.	53,429	June 5	122	2049
Beer. Lager	Peter Schoenhofen Brewing Company.	53,430	June 5	122	2049
Beer. Lager	Peter Schoenhofen Brewing Company.	53,431	June 5	122	2049
Beer. Lager	Peter Schoenhofen Brewing Company.	53,432	June 5	122	2049
Beer. Lager	Peter Schoenhofen Brewing Company.	53,433	June 5	122	2049
Beer. Lager	A. Finck & Son	53,595	June 5	122	2056
Beer. Lager	Peter Schoenhofen Brewing Company.	53,893	June 12	122	2384
Beer. Lager	Beadleston & Woerz	54,128	June 19	122	2682
Beer. Lager	Peter Schoenhofen Brewing Company.	54,644	June 26	122	3003
Beer. Lager and bottled	Terre Haute Brewing Co	52,762	May 15	122	1039
Beer, root-beer extract, and dry ingredients for making root-beer. Root-	Charles E. Hires Company	54,465	June 26	122	2996
Beers	Beadleston & Woerz	54,097	June 19	122	2681
Belt-fasteners	Greene Tweed & Co	52,359	May 8	122	717
Belt-fasteners	Greene Tweed & Co	52,519	May 8	122	723
Belt-preservatives and fillers	Cling-Surface Company	53,307	May 29	122	1715
Belting	Akron Belting Company	52,286	May 8	122	714
Belting. Leather	Republic Belting & Supply Co	54,581	June 26	122	3001
Belting. Round and flat leather	Troy Belting and Supply Company.	54,215	June 19	122	2685
Beverage. Fruit-juice	R. M. Hughes	52,329	May 8	122	716

Alphabetical list of trade-marks for May and June—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Beverage-syrup	M. L. Eppstein	52,998	May 22	122	1390
Beverages and fruit-juices. Certain named	Sunlit Fruit Company	52,434	May 8	122	720
Bicycles, tricycles, velocipedes, and parts thereof	Hibbard, Spencer, Bartlett & Company.	54,247	June 26	122	2987
Biscuit or crackers	Natural Food Company	52,858	May 22	122	1384
Biscuit or crackers	Natural Food Company	52,961	May 22	122	1388
Biscuits	J. Neurihrer	52,213	May 1	122	347
Biscuits, crackers, and cakes	Crescent Macaroni & Cracker Co	54,545	June 26	122	3000
Biscuits, crackers, and cakes	A. J. Medlar Company	54,634	June 26	122	3003
Biscuits known as rusks	Holland Rusk Co	52,206	May 1	122	347
Bitters	A. P. Ordway	52,468	May 8	122	721
Bitters	V. Franz Co	53,121	May 29	122	1708
Bitters	S. Hochstadter	53,551	June 5	122	2054
Bitters	Franciscan Company	53,850	June 12	122	2382
Bitters. Cordial	Aschenbach & Miller	52,768	May 15	122	1039
Bitters. Herb	H. Klas	54,605	June 26	122	3002
Bitters. Peach	Smith, Hogg & Co	54,149	June 19	122	2683
Blankets, comfortables, and spreads	A. A. Kleinschmidt	52,726	May 15	122	1037
Blood-purifier and liver-tonic	P. Pfromm	53,467	June 5	122	2051
Bluing	A. Pfromm	53,468	June 5	122	2051
Bluing	Ultramarine Company	53,735	June 12	122	2378
Bluing	American Chemical Works	53,332	May 29	122	1716
Boiler compounds for preventing or removing incrustation	New York Central Iron Works Co.	53,729	June 12	122	2378
Boiler. Steam and hot-water heating	Utica Heater Co	53,650	June 5	122	2058
Boilers	Kellogg-Mackay-Cameron Co	54,714	June 26	122	3006
Boilers for heating purposes	Hayes Mfg. Co	52,662	May 15	122	1035
Boilers. Range	Aultman & Taylor Machinery Company.	52,634	May 15	122	1034
Boilers. Water-tube	A. D. Granger Co	53,654	June 12	122	2375
Bolt and nut making machinery	Acme Machinery Co	53,967	June 19	122	2676
Bone for case-hardening, coloring, and annealing	Rogers & Hubbard Co	52,082	May 1	122	342
Bonnets, hats, and head-dresses. Women's	K. Gandy	52,826	May 22	122	1383
Book of directions for technical instructions	Lodge and Shipley Machine Tool Company.	52,302	May 8	122	714
Books for railway employees. Educational	Railway Educational Association.	52,700	May 15	122	1036
Books for railway employees. Educational	Railway Educational Association.	52,701	May 15	122	1036
Books for railway employees. Educational	Railway Educational Association.	54,251	June 26	122	2988
Books on salesmanship	National School of Salesmanship.	52,078	May 1	122	341
Books on salesmanship	National School of Salesmanship.	52,303	May 8	122	714
Books on salesmanship	National School of Salesmanship.	52,934	May 22	122	1387
Boot-protectors. Metal	Blakey's Boot Protectors	53,092	May 29	122	1707
Boot-protectors. Metal and metal-and-rubber	Blakey's Boot Protectors	53,114	May 29	122	1708
Boots and shoes and leather for their manufacture. Leather	Rice & Hutchins	52,000	May 1	122	338
Boots and shoes and leather for their manufacture. Leather	Rice & Hutchins	52,001	May 1	122	338
Boots and shoes and leather used in their manufacture. Leather	Rice & Hutchins	52,628	May 15	122	1034
Boots and shoes and leather used in their manufacture. Leather	Rice & Hutchins	54,526	June 26	122	2999
Boots and shoes. Leather	A. S. Fearey	52,009	May 1	122	339
Boots and shoes. Leather	E. S. Woodbury & Company	52,084	May 1	122	342
Boots and shoes. Leather	L. Wiebke	52,120	May 1	122	343
Boots and shoes. Leather	Randall-Adams Co	52,217	May 1	122	347
Boots and shoes. Leather	V. Schoenecker Boot & Shoe Company.	52,222	May 1	122	347
Boots and shoes. Leather	Geo. E. Keith Company	52,267	May 8	122	713
Boots and shoes. Leather	Crowder-Mason Shoe Co	52,413	May 8	122	719
Boots and shoes. Leather	Smith-Briscoe Shoe Company	52,433	May 8	122	720
Boots and shoes. Leather	A. Priesmeyer Shoe Co	52,708	May 15	122	1037
Boots and shoes. Leather	T. F. Peirce & Son	52,760	May 15	122	1039
Boots and shoes. Leather	N. M. Nelson	52,812	May 15	122	1041
Boots and shoes. Leather	Bradley & Metcalf Company	52,825	May 22	122	1383
Boots and shoes. Leather	J. B. Hunter	52,829	May 22	122	1383
Boots and shoes. Leather	J. B. Hunter	52,932	May 22	122	1387
Boots and shoes. Leather	A. A. Rosenbush & Co	52,935	May 22	122	1387
Boots and shoes. Leather	Smith-Briscoe Shoe Company	53,157	May 29	122	1709
Boots and shoes. Leather	Geo. D. Witt Shoe Co	53,218	May 29	122	1712
Boots and shoes. Leather	Smith-Briscoe Shoe Company	53,329	May 29	122	1716
Boots and shoes. Leather	Lynchburg Shoe Co	53,389	June 5	122	2047
Boots and shoes. Leather	Geo. D. Witt Shoe Co	53,419	June 5	122	2049
Boots and shoes. Leather	W. L. Douglas Shoe Co	53,799	June 12	122	2380
Boots and shoes. Leather	W. L. Douglas Shoe Co	53,800	June 12	122	2380
Boots and shoes. Leather	Clapp & Tapley	54,134	June 19	122	2682
Boots and shoes. Leather	Endicott-Johnson Company	54,166	June 19	122	2683
Boots and shoes. Leather	Lynchburg Shoe Co	54,285	June 26	122	2989
Boots and shoes. Leather	William Eastwood and Son Company.	54,369	June 26	122	2992
Boots and shoes. Leather	Camblor, Muntaner & Co	54,613	June 26	122	3002
Boots and shoes. Leather	White-Dunham Shoe Co	54,728	June 26	122	3007
Boots and shoes. Leather and canvas	Hirsh Brothers	54,080	June 19	122	2680
Boots and shoes. Leather welted	United Shoe Machinery Company.	54,185	June 19	122	2684
Boots and shoes. Men's leather	Smith-Briscoe Shoe Company	54,086	June 19	122	2680
Boots and shoes. Men's, women's, and children's leather	Thomas G. Plant Company	54,315	June 26	122	2990
Boots, shoes, and slippers and leather therefor. Leather	Fred F. Field Co	54,707	June 26	122	3006
Boots, shoes, and slippers and soles therefor	Morse & Rogers	54,360	June 26	122	2992
Boots, shoes, and slippers. Leather	Parker Holmes & Company	52,816	May 15	122	1041
Boots, shoes, and slippers. Leather	Preston B. Keith Shoe Company	53,228	May 29	122	1712
Boots, shoes, and slippers. Leather	W. A. Moody	53,811	June 12	122	2381
Boots, shoes, and slippers. Leather	Geo. G. Snow Co	54,075	June 19	122	2680
Boots, shoes, and slippers. Leather	M. D. Wells Co	54,111	June 19	122	2681
Boots, shoes, and slippers. Leather	Hanan & Son	53,143	May 29	122	1709
Boots, shoes, and slippers. Leather and cloth	James A. Banister Company	52,911	May 22	122	1386
Boots, shoes, and slippers. Men's and boys' leather	Morse & Rogers	54,312	June 26	122	2990
Boots, shoes, and slippers of leather or textile material, or both, and soles therefor.	Moore-Shafer Shoe Mfg. Co	54,287	June 26	122	2989
Boots, shoes, oxfords, sandals, and slippers. Leather	H. H. Roosa	54,363	June 26	122	2992
Boots, shoes, slippers, and insoles. Leather					

Alphabetical list of trade-marks for May and June—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Bottle nipples. Nursing-	Seamless Rubber Co	53,328	May 29	122	1716
Braid. Mercerized cotton	D. Goff & Sons	53,542	June 5	122	2054
Braids. Silk and mohair	William Skinner Manufacturing Co.	52,402	May 8	122	718
Brakes and parts thereof. Back-pedaling coaster-	Eclipse Machine Co	54,705	June 26	122	3006
Brandy	P. Freiler	53,039	May 22	122	1391
Brandy	P. J. Bowlin Liquor Co	53,055	May 22	122	1392
Brandy	J. Hennessy & Co	54,446	June 26	122	2995
Brandy. Cognac	A. C. Meukow & Co	52,208	May 1	122	347
Brazing compound	R. Y. Bowlby & Co	52,168	May 1	122	345
Brazing compound. Metallic	Weldarine Manufacturing Company.	53,369	May 29	122	1718
Bread	P. Fleischmann	53,205	May 29	122	1711
Bread	C. R. Miller	53,757	June 12	122	2379
Bread	H. S. Levy	54,431	June 26	122	2995
Bread and biscuits	Callard, Stewart & Watt	54,373	June 26	122	2992
Bread, biscuits, rolls, pies, cakes, and crackers	J. Clary	53,745	June 12	122	2378
Bread. Black Graham	H. Hirschman	52.543	May 8	122	724
Bread. Wheat	E. A. Williams Incorporated	53,417	June 5	122	2049
Brewers' pitch	J. E. Himes	53,221	May 29	122	1712
Bricks for stove and furnace linings. Fire-	S. D. Horton	52,548	May 15	122	1031
Brooches, scarf and cuff pins	Krementz & Co	53,386	June 5	122	2047
Brooms	American Broom & Brush Co	52,288	May 8	122	714
Brooms	American Broom & Brush Co	52,405	May 8	122	719
Brooms	Lee Broom & Duster Company	53,375	June 5	122	2047
Brooms	American Broom & Brush Co	54,567	June 26	122	3000
Brooms and brushes	J. S. Barron & Co	54,055	June 19	122	2679
Brushes	Ihle and Grupp	52,143	May 1	122	344
Brushes	S. Maw, Son & Sons	53,051	May 22	122	1392
Brushes. Certain named	Grand Rapids Brush Co	54,204	June 19	122	2685
Brushes. Hair-	H. L. Hughes	54,282	June 26	122	2989
Brushes. Lather-	Rubber & Celluloid Harness Trimming Co.	53,648	June 5	122	2058
Brushes of all kinds	John L. Whiting & Son Co	52,830	May 22	122	1383
Brushes of all kinds	John L. Whiting & Son Co	52,831	May 22	122	1383
Brushes of all kinds	John L. Whiting & Son Co	52,832	May 22	122	1383
Brushes of all kinds	John L. Whiting & Son Co	52,833	May 22	122	1383
Brushes of all kinds	John L. Whiting & Son Co	52,834	May 22	122	1383
Brushes of all kinds	John L. Whiting & Son Co	52,835	May 22	122	1383
Brushes of all kinds	John L. Whiting & Son Co	52,836	May 22	122	1383
Brushes of all kinds	John L. Whiting & Son Co	52,837	May 22	122	1383
Brushes of all kinds	John L. Whiting & Son Co	52,838	May 22	122	1383
Brushes of all kinds	John L. Whiting & Son Co	52,851	May 22	122	1384
Brushes of all kinds	John L. Whiting & Son Co	52,852	May 22	122	1384
Brushes of all kinds	John L. Whiting & Son Co	52,864	May 22	122	1384
Brushes of all kinds	John L. Whiting & Son Co	52,865	May 22	122	1384
Brushes of all kinds	John L. Whiting & Son Co	52,866	May 22	122	1384
Brushes of all kinds	John L. Whiting & Son Co	52,867	May 22	122	1384
Brushes of all kinds	John L. Whiting & Son Co	52,868	May 22	122	1384
Brushes of all kinds	John L. Whiting & Son Co	52,869	May 22	122	1384
Brushes of all kinds	John L. Whiting & Son Co	52,870	May 22	122	1384
Brushes of all kinds	John L. Whiting & Son Co	53,145	May 29	122	1709
Brushes. Tooth-	Florence Manufacturing Company.	52,808	May 15	122	1041
Brushes. Tooth-	C. Loonen	53,271	May 29	122	1714
Brushes. Tooth-	Florence Manufacturing Company.	53,373	June 5	122	2047
Brushes. Tooth-	Florence Manufacturing Company.	53,374	June 5	122	2047
Brushes. Tooth-	Florence Manufacturing Company.	53,546	June 5	122	2054
Buckets. Bottom-dumping	G. L. Stuebner	53,188	May 29	122	1710
Bulletins. Financial-news	R. E. Edmondson	53,141	May 29	122	1709
Burglar-alarms	Norfolk Novelty Corporation	52,367	May 8	122	717
Burial-caskets, coffins, and fixtures therefor	National Casket Co	54,047	June 19	122	2679
Burning fluids for use in lamps	General Safety Mantle Light Co	52,299	May 8	122	714
Bust-forms	Wright & Co	52,050	May 1	122	341
Butter	S. T. Edel's Sons	52,249	May 1	122	348
Butter	Fox River Butter Company	52,297	May 8	122	714
Butter	F. Grunert	52,885	May 22	122	1385
Butter	Owl's Head Creamery Company	53,008	May 22	122	1390
Butter	D. E. Wood Butter Co	53,201	May 29	122	1711
Butter	Blue Valley Creamery Company	53,240	May 29	122	1712
Butter	Scott & Company	54,390	June 26	122	2993
Butter	Fox River Butter Company	54,426	June 26	122	2995
Butter	H. C. Christians Co	54,495	June 26	122	2998
Butter. Cocoanut-	Oil Seeds Company	54,624	June 26	122	3003
Butter-coloring preparations	Wells & Richardson Company	52,705	May 15	122	1040
Butter-coloring preparations	Wells & Richardson Company	53,943	June 12	122	2386
Butter. Peanut-	H. Heide	54,208	June 19	122	2685
Buttons	Alma Manufacturing Co	52,897	May 22	122	1386
Calcimine	Tripod Paint Co	54,486	June 26	122	2997
Calfskin	George Martin Leather Co	53,783	June 12	122	2380
Calicoes	American Printing Company	52,257	May 8	122	713
Candies	C. E. Underwood	51,978	May 1	122	338
Candies	Rochester Candy Works	53,607	June 5	122	2057
Candies, bonbons, and chocolate candy	M. L. Morgenthau	52,004	May 22	122	1390
Candy	Brandle & Smith Co	52,005	May 1	122	339
Candy	Dilling & Co	52,062	May 1	122	341
Candy	H. L. Hildreth	52,070	May 1	122	341
Candy	C. Wunderle	52,350	May 8	122	716
Candy	W. Brownley	52,438	May 8	122	720
Candy	P. Wunderle	52,582	May 15	122	1032
Candy	Darby Candy Co	52,973	May 22	122	1389
Candy	Robert F. Mackenzie Co	53,010	May 22	122	1390
Candy	P. Wunderle	53,370	May 29	122	1718

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Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Candy	Manufacturing Company of America.	53,555	June 5	122	2054
Candy	Reymer & Brothers	53,564	June 5	122	2055
Candy	P. Wunderle	53,653	June 5	122	2058
Candy	Sprague, Warner & Company	53,669	June 12	122	2375
Candy	Robert F. Mackenzie Co	53,732	June 12	122	2378
Candy	Paul L. Belch Co	53,761	June 12	122	2379
Candy	Hiller Confectionery Company	54,469	June 26	122	2996
Candy	Lipps-Murbach Co. of Baltimore City.	54,500	June 26	122	2998
Candy	Pepper Company	54,522	June 26	122	2999
Candy	Reymer & Brothers	54,524	June 26	122	2999
Candy and rock-candy syrups. Rock-	Knickerbocker Chocolate Company.	53,463	June 5	122	2050
Candy. Chocolate-coated	Hook & Crownfield	52,071	May 1	122	341
Candy. Mint-	Manufacturing Company of America.	52,075	May 1	122	341
Candles and tapers	Price's Patent Candle Company	52,079	May 1	122	342
Canned and tinned salmon	Richard B. Green & Co	53,792	June 12	122	2380
Canned, bottled, and preserved fruits and vegetables	Wilson Grocery Company	52,590	May 15	122	1032
Canned, bottled, or preserved fruits and vegetables	Wilson Grocery Company	54 187	June 19	122	2684
Canned corn	P. Hohenadel, Jr	52,979	May 22	122	1389
Canned corn	Portland Packing Company	53,791	June 12	122	2380
Canned corn	Burnham & Morrill Company	54,372	June 26	122	2992
Canned corn and sauer-kraut	P. Hohenadel, Jr	54,513	June 26	122	2998
Canned corn and sauer-kraut	P. Hohenadel, Jr	54,514	June 26	122	2998
Canned corn and succotash	H. F. Webb Company	54,136	June 19	122	2682
Canned corn and succotash	H. F. Webb Company	54,137	June 19	122	2682
Canned corn and succotash	Saco Valley Canning Company	54,147	June 19	122	2683
Canned corn and succotash	H. F. Webb Company	54,191	June 19	122	2684
Canned corn and succotash	Saco Valley Canning Company	54,436	June 26	122	2995
Canned fish	Gennerich & Von Bremen	52,199	May 1	122	346
Canned fish, lobster, clams, and clam-chowder	H. C. Baxter	54,157	June 19	122	2683
Canned fruits	Schwabacher Bros. & Co	52,340	May 8	122	716
Canned fruits	California Canneries Co	52,770	May 15	122	1039
Canned fruits	California Canneries Co	54,402	June 26	122	2993
Canned fruits and vegetables	Bloomington Canning Co	52,129	May 1	122	343
Canned fruits and vegetables	Torsch Packing Co	52,163	May 1	122	345
Canned fruits and vegetables	Schwabacher Bros. & Co	52,341	May 8	122	716
Canned fruits and vegetables	Griggs, Cooper & Company	52,645	May 15	122	1034
Canned fruits and vegetables	Sprague, Warner & Company	52,651	May 15	122	1035
Canned fruits and vegetables	Platt & Company	52,684	May 15	122	1036
Canned fruits and vegetables	Wilkinson, Gaddis & Co	52,924	May 22	122	1387
Canned fruits and vegetables	S. Hamill Company	52,936	May 22	122	1387
Canned fruits and vegetables	Booth Packing Company	52,993	May 22	122	1389
Canned fruits and vegetables	Wayne County Preserving Co	53,296	May 29	122	1715
Canned fruits and vegetables	Wayne County Preserving Co	53,297	May 29	122	1715
Canned fruits and vegetables	Wayne County Preserving Co	53,298	May 29	122	1715
Canned fruits and vegetables	Wayne County Preserving Co	53,299	May 29	122	1715
Canned fruits and vegetables	Pratt-Low Preserving Co	53,326	May 29	122	1716
Canned fruits and vegetables	L. Landau & Co	53,346	May 29	122	1717
Canned fruits and vegetables	H. C. Baxter	53,773	June 12	122	2379
Canned fruits and vegetables	Cazenovia Canning Co	54,130	June 19	122	2682
Canned fruits and vegetables	Cazenovia Canning Co	54,131	June 19	122	2682
Canned fruits and vegetables	Cazenovia Canning Co	54,132	June 19	122	2682
Canned fruits and vegetables	Cazenovia Canning Co	54,133	June 19	122	2682
Canned fruits and vegetables	Sprague, Warner & Company	54,394	June 26	122	2993
Canned fruits and vegetables	Wayne County Preserving Co	54,399	June 26	122	2993
Canned fruits and vegetables	Abbott Grocery Co	54,400	June 26	122	2993
Canned fruits and vegetables	Booth Packing Company	54,410	June 26	122	2994
Canned fruits and vegetables	Platt & Company	54,523	June 26	122	2999
Canned goods. Certain named	Saco Valley Canning Company	54,146	June 19	122	2682
Canned goods. Certain named	Saco Valley Canning Company	54,148	June 19	122	2683
Canned lobster	Griggs, Cooper & Company	52,327	May 8	122	715
Canned lobster	Wilkinson, Gaddis & Co	52,923	May 22	122	1387
Canned lobster	H. C. Baxter & Bro	54,188	June 19	122	2684
Canned lobster and mackerel	H. C. Barter	52,594	May 15	122	1036
Canned lobsters	Burnham & Morrill Company	52,289	May 8	122	714
Canned lobsters	Burnham & Morrill Company	52,290	May 8	122	714
Canned lobsters	Burnham & Morrill Company	52,291	May 8	122	714
Canned lobsters	J. Gilliam	52,569	May 15	122	1032
Canned lobsters, mackerel, clams, and clam-chowder	Portland Packing Company	54,176	June 19	122	2684
Canned or bottled vegetables	Gennerich & Von Bremen	52,201	May 1	122	346
Canned oysters	Gibbs Preserving Company of Baltimore City.	52,202	May 1	122	346
Canned oysters	Booth Packing Company	53,415	June 5	122	2049
Canned oysters	Gibbs Preserving Company of Baltimore City.	54,167	June 19	122	2683
Canned pineapple	Booth Packing Company	53,267	May 29	122	1714
Canned pineapples	Paul Taylor Brown Co	53,443	June 5	122	2050
Canned salmon	Fidalgo Island Packing Co	53,269	May 29	122	1714
Canned salmon	Fidalgo Island Packing Co	54,189	June 19	122	2684
Canned salmon	Fidalgo Island Packing Co	54,190	June 19	122	2684
Canned salmon	Alska Packers Association	53,738	June 12	122	2378
Canned sardines	William Underwood Company	52,990	May 22	122	1390
Canned sea foods	Snow Flake Canning Co	52,254	May 1	122	345
Canned succotash	Burnham & Morrill Company	54,492	June 26	122	2997
Canned vegetables	E. V. Stockham	52,219	May 1	122	347
Canned vegetables	Baxter Bros. Co	52,242	May 1	122	348
Canned vegetables and fruits	Francis H. Leggett & Company	52,322	May 8	122	715
Canned vegetables and fruits	Stoddard Gilbert & Co	53,815	June 12	122	2381
Capers	Griggs, Cooper & Company	54,207	June 19	122	2685
Caps and blasting-fuses. Detonating-	Aetna Powder Co	52,843	May 22	122	1383
Caps or primers for blasting	Metallic Cap Manufacturing Co	54,011	June 19	122	2677
Caps or primers for blasting	Metallic Cap Manufacturing Co	54,012	June 19	122	2677
Caps. Percussion-	Eley Brothers	53,747	June 12	122	2378

Alphabetical list of trade-marks for May and June—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Capsules	J. M. Grosvenor & Co	54,599	June 26	122	3002
Car castings. Railway	National Malleable Castings Company.	53,103	May 29	122	1707
Car castings. Railway	National Malleable Castings Company.	53,558	June 5	122	2054
Car castings. Railway	National Malleable Castings Company	53,559	June 5	122	2054
Car-couplings. Vertical-plane	National Malleable Castings Company.	52,916	May 22	122	1386
Caramels and candies	American Caramel Co	52,313	May 8	122	715
Carbons for electrical purposes	H. Reisinger	52,668	May 15	122	1035
Cards and posters. Pictorial post, congratulatory, and fancy	Chromolithographische Kunstanstalt Paul Finkenrath, Gesellschaft mit beschränkter Haftung.	54,653	June 26	122	3004
Cards. Playing	New York Consolidated Card Company.	52,014	May 1	122	339
Cards. Playing	New York Consolidated Card Company.	52,015	May 1	122	339
Cards. Playing	New York Consolidated Card Company.	52,016	May 1	122	339
Cards. Playing	New York Consolidated Card Company.	52,017	May 1	122	339
Cards. Playing	New York Consolidated Card Company.	52,018	May 1	122	339
Cards. Playing	New York Consolidated Card Company.	52,019	May 1	122	339
Cards. Playing	United States Playing Card Co	52,025	May 1	122	340
Cards. Playing	United States Playing Card Co	52,026	May 1	122	340
Cards. Playing	United States Playing Card Co	52,027	May 1	122	340
Cards. Playing	United States Playing Card Co	52,028	May 1	122	340
Cards. Playing	United States Playing Card Co	52,029	May 1	122	340
Cards. Playing	United States Playing Card Co	52,471	May 8	122	721
Cards. Playing	New York Consolidated Card Company.	52,491	May 8	122	722
Cards. Playing	New York Consolidated Card Company.	52,552	May 15	122	1031
Cards. Playing	New York Consolidated Card Company.	52,553	May 15	122	1031
Cards. Playing	New York Consolidated Card Company.	52,554	May 15	122	1031
Cards. Playing	New York Consolidated Card Company.	52,555	May 15	122	1031
Cards. Playing	New York Consolidated Card Company.	52,556	May 15	122	1031
Cards. Playing	New York Consolidated Card Company.	52,557	May 15	122	1031
Cards. Playing	New York Consolidated Card Company.	52,558	May 15	122	1031
Cards. Playing	New York Consolidated Card Company.	52,559	May 15	122	1031
Cards. Playing	United States Playing Card Co	52,763	May 15	122	1039
Cards. Playing	New York Consolidated Card Company.	53,052	May 22	122	1392
Cards. Playing	New York Consolidated Card Company.	53,053	May 22	122	1392
Cards. Playing	New York Consolidated Card Company.	53,054	May 22	122	1392
Cards. Playing	United States Playing Card Co	53,063	May 22	122	1392
Cards. Playing	United States Playing Card Co	53,089	May 22	122	1393
Cards. Playing	New York Consolidated Card Company.	53,131	May 29	122	1708
Cards Playing	New York Consolidated Card Company.	53,406	June 5	122	2048
Cards. Playing	New York Consolidated Card Company.	53,426	June 5	122	2049
Cards. Playing	New York Consolidated Card Company.	53,427	June 5	122	2049
Cards. Playing	United States Playing Card Co	53,435	June 5	122	2049
Cards. Playing	A. Gabarró y Castelló	53,437	June 5	122	2049
Cards. Playing	New York Consolidated Card Company.	53,442	June 5	122	2050
Cards. Playing	New York Consolidated Card Company.	54,451	June 26	122	2996
Cards. Playing	New York Consolidated Card Company.	54,452	June 26	122	2996
Cards. Playing	New York Consolidated Card Company.	54,623	June 26	122	3002
Carpet-sweepers	Streator Metal Stamping Co	52,309	May 8	122	715
Carpet-sweepers	American Wringer Company	53,413	June 5	122	2048
Carpet-warps	J. E. Reynolds	52,373	May 8	122	717
Carpet-warps	J. E. Reynolds & Co	53 358	May 29	122	1717
Carpets and rugs. Woven	Bigelow Carpet Company	52.673	May 15	122	1035
Carriages and wagons	I. S. Remson Mfg. Co	54,711	June 26	122	3006
Cartons for lamp-chimneys and globes	Macbeth-Evans Glass Company.	53,518	June 5	122	2053
Cash and autographic registers	National Cash Register Co	53,129	May 29	122	1708
Cassimeres	James Irving & Son	54,335	June 26	122	2991
Catheters, stomach-tubes, and bougies	Johnson & Johnson	54,309	June 26	122	2990
Catsup, relish, and chili sauce. Tomato	E. Pritchard	54,628	June 26	122	3003
Cavity-linings	S. S. White Dental Mfg. Co	53,361	May 29	122	1718
Cement. Hydraulic	Utica Cement Mfg. Co	52,892	May 22	122	1385
Cement. Hydraulic	Utica Hydraulic Cement Co	53,368	May 29	122	1718
Cement. Hydraulic	Utica Hydyanlic Cement Co	54,487	June 26	122	2997
Cement-plaster	J. B. Kling & Co	54,517	June 26	122	2998
Cement. Portland	W. H. Messrole	51,996	May 1	122	338

Alphabetical list of trade-marks for May and June—Continued.

Title.	Name.	No	Date.	Official Gazette. Vol.	Page.
Cement. Portland	Edison Portland Cement Company.	53,657	June 12	122	2375
Cement. Portland	Western States Portland Cement Company.	54,089	June 19	122	2680
Cement. Portland	Thomas Millen Co	54,437	June 26	122	2995
Cement. Portland	Pacific Portland Cement Co	54,476	June 26	122	2997
Cement. Portland	Vulcanite Portland Cement Co	54,537	June 26	122	2999
Cement. Portland	Whitehall Portland Cement Co	54,538	June 26	122	2999
Cement. Rubber	Montgomery Bros	52,430	May 8	122	720
Cement. Rubber	Montgomery Bros	52,431	May 8	122	720
Cement. Rubber	Montgomery Bros	52,445	May 8	122	720
Cement. Rubber	Montgomery Bros	52,446	May 8	122	720
Cement. Rubber	Montgomery Bros	52,447	May 8	122	720
Cement. Rubber	Montgomery Bros	52,448	May 8	122	720
Ceresin	Ernst Schliemann's Export Ceresin Fabrik Gesellschaft m. b. Haftung.	54,658	June 26	122	3004
Chain repair-links	Diamond Chain & Manufacturing Co.	54,703	June 26	122	3006
Chains. Ornamental watch and neck	O. M. Draper	54,355	June 26	122	2992
Chairs	Sheboygan Chair Company	53,813	June 12	122	2381
Champagne. Ginger	Manitou Mineral Springs Company.	53,662	June 12	122	2375
Champagne. Ginger	Manitou Mineral Springs Company.	53,664	June 12	122	2375
Champagne or sparkling wine	American Wine Co	52,766	May 15	122	1039
Charcoal	L. S. Brown Charcoal Company	53,225	May 29	122	1712
Cheese	Popper, Gray & Co	52,890	May 22	122	1385
Cheese-cutters. Computing	Anderson Computing Scale Company.	53.537	June 5	122	2054
Cheese, especially cream-cheese	A. F. MacLaren Imperial Cheese Co.	52,563	May 15	122	1031
Chemical compound. Certain named	Barrett-White Company	52,435	May 8	122	720
Chemical preparation. Certain named	National Coal Tar Company	54,048	June 19	122	2679
Chemical preparation. Certain named	C. L. Howe	54,108	June 19	122	2681
Chemical preparations	La-Lo Manufacturing Company	54,672	June 26	122	3005
Chemical preparations. Certain named	McKesson & Robbins	52,729	May 15	122	1038
Chemical solution	P. Kerrin	53,635	June 5	122	2058
Chemicals. Certain named	Brunner, Mond & Co	54,612	June 26	122	3002
Cheroots	Threefoot Bros. & Co	53,963	June 19	122	2675
Chisels and gouges	Simmons Hardware Company	53,686	June 12	122	2376
Chisels and punches	Whitman & Barnes Manufacturing Company.	54,730	June 26	122	3007
Chlorids and formaldehyde. Compounds of	Shoemaker & Busch	54,631	June 26	122	3003
Chocolate	Runkel Brothers	51,044	May 1	122	340
Chocolate	Société Générale Suisse de Chocolats.	52,937	May 22	122	1387
Chocolate	Société Générale Suisse de Chocolats.	52,938	May 22	122	1387
Chocolate and candy of all kinds. Sweetened	M. S. Hershey	52,397	May 8	122	718
Chocolate and candy of all kinds. Sweetened	M. S. Hershey	52,398	May 8	122	718
Chocolate and candy of all kinds. Sweetened	M. S. Hershey	52,399	May 8	122	718
Chocolate and preparations thereof	Arbuckle Bros	52,054	May 1	122	341
Chocolate, chocolate candies, and preparations of chocolate and cocoas.	Russ-Suchard & Cie	54,527	June 26	122	2999
Chocolate, cocoa, and chocolate preparations	M. S. Hershey	54,497	June 26	122	2998
Chocolate, cocoa, and preparations thereof	M. S. Hershey	54,044	June 19	122	2678
Chocolate creams, caramels, and candies	Blue Ribbon Candy Company of Baltimore City.	53,716	June 12	122	2377
Chocolates and bonbons	R. L. Perry Co	53,357	May 29	122	1717
Chocolates and bonbons. Various kinds of	H. Heide	54,039	June 19	122	2678
Chocolates and cocoas	Russ-Suchard & Cie	54,480	June 26	122	2997
Chocolates and other bonbons	Walter M. Lowney Company	54,028	June 19	122	2678
Cider	Barrett & Barrett	53,333	May 29	122	1716
Cigarette-paper in all forms	L. Kehlmann	52,913	May 22	122	1386
Cigarettes	Butler-Butler	51,960	May 1	122	337
Cigarettes	Butler-Butler	51,961	May 1	122	337
Cigarettes	Butler-Butler	52,058	May 1	122	341
Cigarettes	Butler-Butler	52,059	May 1	122	341
Cigarettes	G. H. G. Wing	52,707	May 15	122	1037
Cigarettes	Teofani & Co	53,367	May 29	122	1718
Cigarettes	Butler-Butler	53,719	June 12	122	2377
Cigarettes	Butler-Butler	54,442	June 26	122	2995
Cigarettes	H. P. Strause	54,484	June 26	122	2997
Cigarettes	Butler-Butler	54.493	June 26	122	2997
Cigars	Electric Cigar Company	51,965	May 1	122	337
Cigars	Sanchez & Haya Co	52,002	May 1	122	339
Cigars	J. Weinreich	52,283	May 8	122	714
Cigars	J. Weinreich	52,311	May 8	122	715
Cigars	American Cigar Company	52,314	May 8	122	715
Cigars	C. B. Perkins	52,400	May 8	122	718
Cigars	P. Weinreich	52,921	May 22	122	1386
Cigars	L. P. Bissell	53,303	May 29	122	1715
Cigars	Henry Tobias and Company	53,311	May 29	122	1715
Cigars	G. W. Kelly	53,319	May 29	122	1716
Cigars	Duncan & Moorhead	53,337	May 29	122	1717
Cigars	Cifuentes, Fernandez y Ca	53,480	June 5	122	2051
Cigars	J. Weinreich	53,671	June 12	122	2375
Cigars	Williams & Brenckle Cigar Manufacturing Co	53,966	June 19	122	2676
Cigars	J. G. Hansen	54,104	June 19	122	2681
Cigars	C. B. Perkins	54,478	June 26	122	2997
Cigars	C. B. Perkins	54,479	June 26	122	2997
Cigars	S. Spiegel	54,483	June 26	122	2997
Cigars	Carreras Limited	54,507	June 26	122	2998
Cigars and stogies	S. S. Smith	53,498	June 5	122	2052
Cigars, cheroots, and cigarettes made of cigar-tobacco	Cayey-Caguas Tobacco Company	52,528	May 8	122	724

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Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Cigars, cheroots, and cigarettes made of cigar-tobacco	Cayey-Caguas Tobacco Company.	52 529	May 8	122	724
Cigars, cheroots, and cigarettes made of cigar-tobacco	Cayey-Caguas Tobacco Company.	52,714	May 15	122	1037
Cigars, cheroots, and cigarettes made of cigar-tobacco	Cayey-Caguas Tobacco Co	52,902	May 22	122	1386
Cigars, cheroots, and cigarettes made of cigar-tobacco	Cayey-Caguas Tobacco Company.	54,508	June 26	122	2998
Cigars, cheroots, and cigarettes made of cigar-tobacco	Cayey-Caguas Tobacco Company.	54,544	June 26	122	3000
Cigars, cheroots, stogies, and tobacco for making same	H. P. Strause	52,003	May 1	122	339
Cigars. Havana	Havana Commercial Company	52,696	May 15	122	1036
Cigars. Havana	Havana Commercial Company	53,485	June 5	122	2051
Cigars. Havana	Havana Commercial Company	53,486	June 5	122	2051
Cigars. Havana	Havana Commercial Company	53,978	June 19	122	2676
Cigars Havana	Havana Commercial Company	54,088	June 19	122	2680
Cigars. Havana	Havana Commercial Company	54,496	June 26	122	2998
Cigars. Little	Butler-Butler	52,057	May 1	122	341
Cigars. Little	Butler-Butler	52,060	May 1	122	341
Cigars, stogies, and cheroots	Independent Tobacco Manufacturers Promoting Company.	53,344	May 29	122	1717
Cinchona alkaloids. Derivatives of	Vereinigte Chininfabriken Zimmer & Co., Ges. mit beschränkter Haftung.	54,088	June 19	122	2680
Circuit-controllers or switches	Albert and J. M. Anderson Manufacturing Company.	52,653	May 15	122	1035
Circuits. Device for connecting branch and main	H. T. Palste Co	52,909	May 22	122	1386
Clams, clam-juice, and clam-chowder	Burnham & Morrill Company	52,535	May 8	122	723
Claret in bottles	Compañia Vinicola del Norte de España.	52,478	May 8	122	722
Cleaning preparation	T. Joern	52,594	May 15	122	1033
Clock-movements	Schlenker & Kienzle	52,306	May 8	122	715
Clocks	Year Clock Company	52,749	May 15	122	1038
Clocks. Alarm	Western Clock Mfg. Co	53,379	June 5	122	2047
Clocks. Alarm	Wm. L. Gilbert Clock Company	53,817	June 12	122	2381
Clocks and watches	Western Clock Mfg. Co	52,989	May 22	122	1389
Closet-seat attachment	Specialties Sales Co	54,726	June 26	122	3007
Clothes-wringers	American Wringer Company	53,452	June 5	122	2050
Clothes-wringers	American Wringer Company	53,453	June 5	122	2050
Clothes-wringers	American Wringer Company	53,454	June 5	122	2050
Clothes-wringers	American Wringer Company	53,455	June 5	122	2050
Clothes-wringers	American Wringer Company	53,456	June 5	122	2050
Clothes-wringers	American Wringer Company	53,457	June 5	122	2050
Clothes-wringers and parts thereof	American Wringer Company	53,741	June 12	122	2378
Clothes-wringers and parts thereof	American Wringer Company	53,476	June 5	122	2051
Clothes-wringers and the parts composing the same	American Wringer Company	53,477	June 5	122	2051
Clothes-wringers and the parts composing the same	American Wringer Company	53,449	June 5	122	2050
Clothes-wringers and the parts composing the same	American Wringer Company	53,450	June 5	122	2050
Coal	American Wringer Company	53,451	June 5	122	2050
Coal	Equitable Coal & Coke Company	53,481	June 5	122	2051
Coal	A. K. McKee	53,954	June 19	122	2675
Coal	E. J. Cummings	54,509	June 26	122	2998
Coal	A Y. Malcomson	54,640	June 26	122	3003
Coal and coke	Hull Coal and Coke Corporation	52,072	May 1	122	341
Coal used for welding and forging. Semibituminous	Lilly Coal Co	52,489	May 8	122	722
Coatings. Metal preservative	A. H. Stillwagon	53,670	June 12	122	2375
Coats and trousers. Men's	E. M. Goldsmith	52,570	May 15	122	1032
Coats, overcoats, pants, and vests	Oehm & Co	52,159	May 1	122	345
Coats, pants, and overalls	Syracuse Dry Goods Co	52,282	May 8	122	714
Coats. Rain-proof	L. E. Hess	52,828	May 22	122	1383
Coats, vests, overcoats, and trousers	Schwab Clothing Co	54,237	June 26	122	2987
Coats, vests, pantaloons, overcoats, and men's and boys' suits	Perry & Co	52,732	May 15	122	1038
Coats, vests, trousers, and overalls	O'Bryan Bros	53,255	May 29	122	1713
Coats, vests, trousers, and overcoats	M. Wile & Company	52,959	May 22	122	1388
Coats, vests, trousers, and overcoats	Brokaw Bros	54,542	June 26	122	2999
Cocktails	S. C. Herbst Importing Co	53,895	June 12	122	2384
Cocktails	C. Berry & Co	53,911	June 12	122	2385
Cocktails and punch	W. H. Jones and Co	53,423	June 5	122	2049
Cocoa	Runkel Brothers	52,043	May 1	122	340
Cocoa	Enders and Mechener	53,217	May 29	122	1712
Cocoa and chocolate	Hawley & Hoopes	54,008	June 19	122	2677
Cocoa and chocolate. Preparations of	Chas. H. Phillips Chemical Co	54,423	June 26	122	2994
Cocoa and chocolate products	F. Bischoff	52,123	May 1	122	343
Cocoa and preparations thereof	Arbuckle Bros	52,053	May 1	122	341
Cocoanut. Prepared	Dunham Manufacturing Company.	53,460	June 5	122	2050
Coffee	C. S. Morey Mercantile Company	52,130	May 1	122	344
Coffee	Meyer Brothers Coffee and Spice Company.	52,209	May 1	122	347
Coffee	Weideman Co	52,562	May 15	122	1031
Coffee	Sprague, Warner & Company	52,739	May 15	122	1038
Coffee	Dolan Mercantile Co	54,200	June 19	122	2685
Coffee	W. F. Sibley	54,391	June 26	122	2993
Coffee	Sprague, Warner & Company	54,392	June 26	122	2993
Coffee	Chase & Sanborn	54,403	June 26	122	2993
Coffee	Merchants Coffee Company of New Orleans.	54,520	June 26	122	2999
Coffee. Cereal substitute for	Decatur Cereal Coffee Works	53,459	June 5	122	2050
Coffee extract	Cafolin Co	54,159	June 19	122	2683
Coffee extracts	Smith & Wheeler	53,795	June 12	122	2380
Coffee in cans, &c. Roasted	Importers Coffee Company	52,663	May 15	122	1035
Coffee-mills	Bronson-Walton Company	53,717	June 12	122	2377
Coffee. Roasted and ground	New Orleans Coffee Co	53,130	May 29	122	1708
Coffee. Roasted and roasted and ground	Enterprise Coffee Company of Baltimore City.	54,547	June 26	122	3000
Coffees	C. H. Montanye	53,810	June 12	122	2381
Coffees. Roasted	Oklahoma Wholesale Grocer Co	52,730	May 15	122	1038
Collarettes and chains	J. J. Sommer	54,181	June 19	122	2684
Collars	Earl & Wilson	52,132	May 1	122	344
Collars	Cluett Peabody & Co	54,225	June 26	122	2987
Collars	Cluett Peabody & Co	54,226	June 26	122	2987
Collars	Cluett Peabody & Co	54,227	June 26	122	2987

Alphabetical list of trade-marks for May and June—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Collars	Cluett Peabody & Co	54 228	June 26	122	2987
Collars	Cluett Peabody & Co	54,229	June 26	122	2987
Collars	Cluett Peabody & Co	54,230	June 26	122	2987
Collars	Cluett Peabody & Co	54,231	June 26	122	2987
Collars	Cluett Peabody & Co	54,232	June 26	122	2987
Collars	Cluett Peabody & Co	54,233	June 26	122	2987
Collars	Cluett Peabody & Co	54,267	June 26	122	2988
Collars	Cluett Peabody & Co	54,268	June 26	122	2988
Collars	Cluett Peabody & Co	54,269	June 26	122	2988
Collars	Cluett Peabody & Co	54,270	June 26	122	2988
Collars	Cluett Peabody & Co	54,271	June 26	122	2988
Collars	Cluett Peabody & Co	54 272	June 26	122	2988
Collars and cuffs	William Barker Company	52,841	May 22	122	1383
Color-pastes	Joseph Burnett Co	53,316	May 29	122	1716
Colors and inks. Certain named	Jaenecke Printing Ink Co	53,488	June 5	122	2051
Colors. Artists' blue	Toch Brothers	53,501	June 5	122	2052
Colors. Artists' white	Toch Brothers	53,502	June 5	122	2052
Colors for printing and dyeing. Manufactured	American Dyewood Co	54,094	June 19	122	2681
Colors. Metallic water	Gerstendorfer Bros	52,441	May 8	122	720
Coloring-matter for mortar and bricks. Mineral	Chattanooga Paint Co	53,949	June 19	122	2675
Combs	Dr. H. Traun & Söhne	52,192	May 1	122	346
Combs	Dr. H. Traun & Söhne	53,210	May 29	122	1711
Combs	Dr. H. Traun & Söhne	53,211	May 29	122	1711
Comforts	Chas. A. Maish Co	54,161	June 19	122	2683
Compound for treating waste materials containing carbon to render them combustible.	Coalite Company	52,439	May 8	122	720
Concertinas and accordions	Lyon & Healy	53,180	May 29	122	1710
Condensers. Surface and jet	Wheeler Condenser & Engineering Co.	54,316	June 26	122	2990
Confectionery	C. Poyet	52,318	May 8	122	715
Confectionery. Certain named	C. Poyet	52,259	May 8	122	713
Containers for oysters, clams, fish, and other sea foods	National Oyster Carrier Company	54,719	June 26	122	3007
Cooking and household utensils. Enameled-steelware	M. Stransky	52,939	May 22	122	1387
Copper	Baltimore Copper Smelting & Rolling Co.	52,751	May 15	122	1038
Copper household articles	Lisk Manufacturing Co	53,786	June 12	122	2380
Cord and twine. Wrapping	Hubbs & Corning Co	52,362	May 8	122	717
Cords, lines, twines, and ropes	Silver Lake Company	52,375	May 8	122	717
Cords, lines, twines, and ropes	Silver Lake Company	52,376	May 8	122	717
Cordial	Société Anonyme de la Distillerie de la Liqueur Bénédictine de l'Abbaye de Fécamp.	53,260	May 29	122	1713
Cordial	Sidney Fairchild Company	53,410	June 5	122	2048
Cordial	Société Anonyme de la Distillerie de la Liqueur Bénédictine de l'Abbaye de Fécamp.	54,405	June 26	122	2994
Cordial	Société Anonyme de la Distillerie de la Liqueur Bénédictine de l'Abbaye de Fécamp.	54,406	June 26	122	2994
Cordial	Société Anonyme de la Distillerie de la Liqueur Bénédictine de l'Abbaye de Fécamp.	54,416	June 26	122	2994
Cordial	Société Anonyme de la Distillerie de la Liqueur Bénédictine de l'Abbaye de Fécamp.	54,417	June 26	122	2994
Cordial	Société Anonyme de la Distillerie de la Liqueur Bénédictine de l'Abbaye de Fécamp.	54,418	June 26	122	2994
Cordial. Blackberry	H. R. Myers	54,756	June 26	122	3008
Cordials	Basilea & Calandra	52,241	May 1	122	348
Corks	O. Heyman & Co	52,069	May 1	122	341
Corks	J. Alberti	53,586	June 5	122	2056
Corn cure	Elgin Chemical Co	54,326	June 26	122	2990
Corn-huskers Adjustable	F. D. Kees Manufacturing Co	54,755	June 26	122	3008
Corn-starch or corn-flour	New York Glucose Co	52,214	May 1	122	347
Cornmeal	T. P. Davie	52,531	May 8	122	724
Cornmeal and corn-chop	Pittman & Harrison Co	53,790	June 12	122	2380
Corsets	Birdsey Somers Co	52,032	May 1	122	340
Corsets	Downer, Hawes and Company	52,034	May 1	122	340
Corsets	Rosenbaum Company	52,041	May 1	122	340
Corsets	Birdsey & Somers	52,354	May 8	122	717
Corsets	Birdsey & Somers	52,674	May 15	122	1035
Corsets	Birdsey & Somers	52,675	May 15	122	1035
Corsets	Birdsey & Somers	52,676	May 15	122	1036
Corsets	Kops Bros	52,683	May 15	122	1036
Corsets	A. Ottenheimer	53,561	June 5	122	2054
Corsets	Fellheimer and Company	54,548	June 26	122	3000
Corsets and corset-waists	H & W Company	52,679	May 15	122	1036
Cotters. Spring	Whitman & Barnes Manufacturing Company.	54,260	June 26	122	2988
Cotton and cotton-and-silk piece goods	Austin, Poor & Co	54,319	June 26	122	2990
Cotton-batting	W. Lowenthal	52,727	May 15	122	1038
Cotton-batting	W. Lowenthal	52,915	May 22	122	1386
Cotton damask	Rosemary Manufacturing Company.	52,685	May 15	122	1036
Cotton damask	Rosemary Manufacturing Company.	52,962	May 22	122	1388
Cotton damask	Rosemary Manufacturing Company.	54,211	June 19	122	2685
Cotton duck	Mount Vernon-Woodberry Cotton Duck Company.	53,522	June 5	122	2053
Cotton duck	Mount Vernon-Woodberry Cotton Duck Company.	53,638	June 5	122	2058
Cotton fabric having an old Irish-linen finish	Burton Bros. & Co	52,506	May 8	122	723
Cotton fabrics. Printed	Joseph W. Woods and Son Corporation.	53,863	June 12	122	2383
Cotton. Felted absorbent	Johnson & Johnson	52,956	May 22	122	1388

Alphabetical list of trade-marks for May and June—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Cotton. Felted absorbent	Johnson & Johnson	52,957	May 22	122	1388
Cotton goods. Bleached	Fall River Bleachery	52,775	May 15	122	1040
Cotton piece goods	Massachusetts Cotton Mills	51,994	May 1	122	338
Cotton piece goods	I. Gelbtrunk	52,093	May 1	122	342
Cotton piece goods	Massachusetts Cotton Mills	52,154	May 1	122	344
Cotton piece goods	Massachusetts Cotton Mills	52,271	May 8	122	713
Cotton piece goods	Massachusetts Cotton Mills	52,272	May 8	122	713
Cotton piece goods	Everett Mills	52,516	May 8	122	723
Cotton piece goods	Everett Mills	52,960	May 22	122	1388
Cotton piece goods	F. W. Poe Mfg. Co	53,170	May 29	122	1710
Cotton piece goods	Anderson Cotton Mills	53,538	June 5	122	2054
Cotton piece goods	F. W. Poe Mfg. Co	53,545	June 5	122	2054
Cotton piece goods	Ninety Six Cotton Mill	53,560	June 5	122	2054
Cotton piece goods	Massachusetts Cotton Mills	53,637	June 5	122	2058
Cotton piece goods	Massachusetts Cotton Mills	53,824	June 12	122	2381
Cotton piece goods	Massachusetts Cotton Mills	53,825	June 12	122	2381
Cotton piece goods	Massachusetts Cotton Mills	53,826	June 12	122	2381
Cotton piece goods	Massachusetts Cotton Mills	53,831	June 12	122	2382
Cotton piece goods	Massachusetts Cotton Mills	53,832	June 12	122	2382
Cotton piece goods	Massachusetts Cotton Mills	53,833	June 12	122	2382
Cotton piece goods	Massachusetts Cotton Mills	53,834	June 12	122	2382
Cotton piece goods	Tremont & Suffolk Mills	53,835	June 12	122	2382
Cotton piece goods	Tremont & Suffolk Mills	53,836	June 12	122	2382
Cotton piece goods	Tremont & Suffolk Mills	53,837	June 12	122	2382
Cotton piece goods	Massachusetts Cotton Mills	53,925	June 12	122	2385
Cotton piece goods	Tremont & Suffolk Mills	53,941	June 12	122	2386
Cotton piece goods	York Manufacturing Co	54,153	June 19	122	2683
Cotton piece goods	Indian Head Mills of Alabama	54,169	June 19	122	2683
Cotton piece goods	Tremont & Suffolk Mills	54,296	June 26	122	2989
Cotton piece goods	York Manufacturing Co	54,301	June 26	122	2989
Cotton piece goods	Massachusetts Cotton Mills	54,558	June 26	122	3000
Cotton piece goods	Massachusetts Cotton Mills	54,559	June 26	122	3000
Cotton piece goods, sheetings, shirtings, and drills	Suffern & Co	52,047	May 1	122	340
Cotton piece goods with a moiré finish	Gilbert Manufacturing Company	53,098	May 29	122	1707
Cotton piece goods. Woven	J. S. Reeves & Co	54,178	June 19	122	2684
Cotton, worsted, and mixed cotton and wool piece goods	York Manufacturing Co	53,838	June 12	122	2382
Cough cure	F. L. Gray	54,598	June 26	122	3002
Cough-drops	Robert F. Mackenzie Co	53,646	June 5	122	2058
Cough mixture	Cough Checker Manufacturing Co	52,511	May 8	122	723
Crackers	Chatland & Lenhart	52,530	May 8	122	724
Crayons	American Crayon Co	52,898	May 22	122	1386
Crayons	American Crayon Co	52,899	May 22	122	1386
Crayons. Checking, school, and marking	J. M. Hoyt	53,422	June 5	122	2049
Cream. Cold	Fischer Chemical Importing Co	52,136	May 1	122	344
Cream. Facial	Halderman & Michael	52,141	May 1	122	344
Cream for the skin	Pond's Extract Company	52,108	May 1	122	343
Cream of tartar	Royal Baking Powder Company	54,120	June 19	122	2682
Cream-separators	De Laval Separator Company	52,995	May 22	122	1389
Cream-separators	De Laval Separator Company	52,996	May 22	122	1389
Cream-separators. Centrifugal	International Harvester Company of America.	54,515	June 26	122	2998
Cream. Toilet	C. J. Countie	53,849	June 12	122	2382
Creams. Face	F. F. Ingram	52,177	May 1	122	345
Creamers. Gravity	J. S. Barth	54,371	June 26	122	2992
Culinary utensils made of copper ware	Lisk Manufacturing Co	52,809	May 15	122	1041
Culinary utensils made of galvanized ware	Lisk Manufacturing Co	52,914	May 22	122	1386
Cultivators	Whitman & Barnes Manufacturing Company.	52,863	May 22	122	1384
Current-distributing cut-out boards	H. T. Paiste Co	53,220	May 29	122	1712
Cutlery. Certain named	George Wostenholm and Son	53,722	June 12	122	2377
Cutlery. Certain named	A. J. Jordan	54,754	June 26	122	3008
Damasks. Bleached, gray, printed, and fancy	Neuss, Hesslein & Co	53,892	June 12	122	2384
Damasks. Bleached, gray, printed, and fancy	Neuss, Hesslein & Co	54,560	June 26	122	3000
Dampers. Hot-air and smoke-pipe	S. M. Howes Company	52,046	May 1	122	340
Denims	Massachusetts Cotton Mills	52,578	May 15	122	1032
Denims. Blue	Massachusetts Cotton Mills	52,579	May 15	122	1032
Dental rubber	Traun Rubber Co	52,191	May 1	122	346
Dental rubber	S. S. White Dental Mfg. Co	53,151	May 29	122	1709
Dentifrice	Blumenthal Bros	52,167	May 1	122	345
Dentifrices in powder, paste, or liquid form	Pond's Extract Company	52,109	May 1	122	343
Depilatory powders	F. T. Hopkins	54,663	June 26	122	3004
Diaries	W. H. Lee	52,038	May 1	122	340
Dietetic albuminous preparations	Bauer & Co	53,028	May 22	122	1391
Disinfectant. Germicide	Albo Chemical Co	52,709	May 15	122	1037
Disinfectants	Kathairo Chemical Co	53,318	May 29	122	1716
Disinfectants and antiseptics	Schülike & Mayr	53,937	June 12	122	2386
Disinfectants and antiseptics	Schülike & Mayr	53,938	June 12	122	2386
Disinfectants, antiseptics, and germicides	Geo. F. Eberhard Company	52,453	May 8	122	721
Dispensing-cabinets	Albany Perforated Wrapping Paper Co.	52,287	May 8	122	714
Display-racks	J. H. Best	53,161	May 29	122	1709
Dolls	Strawbridge & Clothier	53,187	May 29	122	1710
Doors	Paine Lumber Company	53,789	June 12	122	2380
Dress-shields	I. B. Kleinert Rubber Company	52,549	May 15	122	1031
Dress-shields	I. B. Kleinert Rubber Company	52,571	May 15	122	1032
Dress-shields	I. B. Kleinert Rubber Company	52,572	May 15	122	1032
Dress-shields	I. B. Kleinert Rubber Company	52,573	May 15	122	1032
Dress-shields	I. B. Kleinert Rubber Company	52,574	May 15	122	1032
Dress-shields	I. B. Kleinert Rubber Company	52,575	May 15	122	1032
Dress-shields	C. F. Hovey & Co	53,249	May 29	122	1713
Dress-shields	I. B. Kleinert Rubber Company	54,142	June 19	122	2682
Dress-shields	Kora Co	54,555	June 26	122	3000
Drills and drilling-machines	Howells Mining Drill Co	52,361	May 8	122	717
Dry goods. Certain named	A. Wedl	52,389	May 8	122	718
Dumb-waiters	J. G. Speidel	53,609	June 5	122	2057
Dumb-waiters	J. G. Speidel	54,024	June 19	122	2678
Dust-pans	Central Stamping Company	52,656	May 15	122	1035

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Dyes. Anilin	Cassella Color Company	52,090	May 1	122	342
Dyes. Anilin	Cassella Color Company	53,621	June 5	122	2057
Dyestuff	Badische Anilin- & Soda-Fabrik	52,223	May 1	122	347
Dyestuff	Badische Anilin- & Soda-Fabrik	52,224	May 1	122	347
Dyestuff	Badische Anilin- & Soda-Fabrik	52,225	May 1	122	347
Dyestuff	Badische Anilin- & Soda-Fabrik	52,226	May 1	122	347
Dyestuff	Badische Anilin- & Soda-Fabrik	52,227	May 1	122	347
Dyestuff	Badische Anilin- & Soda-Fabrik	52,228	May 1	122	347
Dyestuff	Badische Anilin- & Soda-Fabrik	52,229	May 1	122	347
Dyestuff	Badische Anilin- & Soda-Fabrik	52,230	May 1	122	347
Dyestuff	Badische Anilin- & Soda-Fabrik	52,231	May 1	122	348
Dyestuff	Badische Anilin- & Soda-Fabrik	52,232	May 1	122	348
Dyestuff	Badische Anilin- & Soda-Fabrik	52,233	May 1	122	348
Dyestuff	Badische Anilin- & Soda-Fabrik	52,234	May 1	122	348
Dyestuff	Badische Anilin- & Soda-Fabrik	52,235	May 1	122	348
Dyestuff	Badische Anilin- & Soda-Fabrik	52,236	May 1	122	348
Dyestuff	Badische Anilin- & Soda-Fabrik	52,237	May 1	122	348
Dyestuff	Badische Anilin- & Soda-Fabrik	52,238	May 1	122	348
Dyestuff	Badische Anilin- & Soda-Fabrik	52,239	May 1	122	348
Dyestuff	Badische Anilin- & Soda-Fabrik	52,240	May 1	122	348
Dyestuff	Kuttroff, Pickhardt & Company	52,425	May 8	122	719
Dyestuff	Kuttroff, Pickhardt & Company	52,426	May 8	122	719
Dyestuff	Kuttroff, Pickhardt & Company	52,427	May 8	122	720
Dyestuff	Kuttroff, Pickhardt & Company	52,428	May 8	122	720
Dyestuffs and coloring-matters	H. A. Metz & Co	53,851	June 12	122	2382
Dyestuffs and coloring-matters	H. A. Metz & Co	53,852	June 12	122	2382
Dyestuffs and coloring-matters	H. A. Metz & Co	53,853	June 12	122	2382
Dyestuffs and coloring-matters	H. A. Metz & Co	53,854	June 12	122	2382
Dyestuffs and coloring-matters	H. A. Metz & Co	53,855	June 12	122	2383
Dyestuffs and coloring-matters	H. A. Metz & Co	53,856	June 12	122	2383
Dyestuffs and coloring-matters	H. A. Metz & Co	53,857	June 12	122	2383
Dyestuffs and coloring-matters	H. A. Metz & Co	53,858	June 12	122	2383
Dyestuffs and coloring-matters	H. A. Metz & Co	53,859	June 12	122	2383
Dyestuffs and coloring-matters	H. A. Metz & Co	53,860	June 12	122	2383
Dyestuffs and coloring-matters	H. A. Metz & Co	53,861	June 12	122	2383
Dyestuffs and coloring-matters	H. A. Metz & Co	53,916	June 12	122	2385
Dyestuffs and coloring-matters	H. A. Metz & Co	53,917	June 12	122	2385
Dyestuffs and coloring-matters	H. A. Metz & Co	53,918	June 12	122	2385
Earthenware	Warwick China Co	53,109	May 29	122	1707
Earthenware vessels	E. J. Samson & Co	54,611	June 26	122	3002
Eaves-troughs	St. Paul Roofing, Cornice & Ornament Company.	53,764	June 12	122	2379
Egg-whites. Chemical and vegetable substitute for	Frostlene Manufacturing Company.	53,206	May 29	122	1711
Egg-whites. Chemical and vegetable substitute for	Frostlene Manufacturing Company.	54,375	June 26	122	2992
Eggs	G. W. Martin & Bro	53,441	June 5	122	2050
Eggs	Beyer Brothers Commission Company.	53,458	June 5	122	2050
Electric and gas light reflectors	I. P. Frink	53,517	June 5	122	2053
Electric switches and parts thereof	D. & W. Fuse Co	52,844	May 22	122	1383
Electric switches, push-buttons, and fittings for electric circuits and lights.	R. A. Schoenberg	54,725	June 26	122	3007
Electrical appliances. Certain named	Hart Manufacturing Company	52,848	May 22	122	1384
Electrical appliances for assisting the hearing	C. W. Harper	53,724	June 12	122	2377
Emulsified preparations, cough mixtures, and lotions	J. O. May	53,913	June 12	122	2385
Emulsions for all conditions of malnutrition	Standard Emulsion Co	53,366	May 29	122	1718
Engines. Center-crank steam	A. L. Ide & Sons	54,334	June 26	122	2991
Engines. Explosive	Buckeye Manufacturing Company.	53,718	June 12	122	2377
Engines. Explosive	Foos Gas Engine Company	53,975	June 19	122	2676
Engines. Gas or oil	Temple Pump Company	52,920	May 22	122	1386
Engines. Gasolene	Deere & Webber Co	54,740	June 26	122	3007
Engines. Side-crank steam	A. L. Ide & Sons	54,333	June 26	122	2991
Engines. Stationary steam	Southern Engine & Boiler Works	53,988	June 19	122	2676
Engines. Steam hoisting, mining, stationary, and dredging	J. S. Mundy	54,718	June 26	122	3007
Envelops and paper	C. J. Cohen & Son	52,879	May 22	122	1385
Envelops and paper	C. J. Cohen & Son	52,880	May 22	122	1385
Envelops and paper	C. J. Cohen & Son	52,881	May 22	122	1385
Eraser. Solid composition	F. A. Weeks	53,158	May 29	122	1709
Erasers. Rubber	E. Faber	52,417	May 8	122	719
Exhibiting advertising and display matter. Machines for	F. E. Van Deusen	54,298	June 26	122	2989
Exploders. Electrical	Masurite Explosive Company	53,521	June 5	122	2053
Explosives	Masurite Explosive Company	54,310	June 26	122	2990
Extract. Chestnut-oak	C. A. Spencer	52,255	May 1	122	348
Extracts	Sprague, Warner & Company	52,014	May 22	122	1390
Eyeglass nose-guards	W. H. Reisner Manufacturing Co	53,992	June 19	122	2676
Eyelets for shoes	Manufacture Française D'Oeillets Métalliques (ancienne Maison G. Bac).	52,811	May 15	122	1041
Fabric. Sheet translucent	Translucent Fabric Co	53,576	June 5	122	2055
Fabrics and garments made therefrom. Waterproof textile	Hirsh Brothers	52,360	May 8	122	717
Fabrics. Bleached, unbleached, dyed, and printed textile	A. G. Hyde & Sons	54,261	June 26	122	2988
Fabrics. Bleached, unbleached, printed, and dyed textile	Eddystone Manufacturing Company.	52,395	May 8	122	718
Fabrics. Certain named	Union Fibre Co	53,018	May 22	122	1390
Fabrics. Certain named dress	O. Seyd	54,562	June 26	122	3000
Fabrics of cotton, wool, or silk. White, printed, or dyed textile	Arnold Print Works	53,238	May 29	122	1712
Fabrics. Printed and dyed textile	Eddystone Manufacturing Co	52 643	May 15	122	1034
Fabrics. Printed and dyed textile	Eddystone Manufacturing Company.	53,625	June 5	122	2057
Faucets	E. Stebbins Manufacturing Company.	54,742	June 26	122	3008
Feathers and feather trimmings. Fancy and ostrich	E. Lewinsohn	53,923	June 12	122	2385
Feathers. Ostrich	W. Freystadt Straussfeder Fabrik	52,975	May 22	122	1389
Feed-water heaters	National Pipe Bending Company	52,871	May 22	122	1384
Feed-water heaters	Stewart Heater Co	53,990	June 19	122	2676

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Feed-water heaters	Wheeler Condenser & Engineering Co.	54,300	June 26	122	2989
Felt. Prepared roofing	E. A. Laughlin	52,012	May 1	122	339
Felt. Roofing, sheathing, and building	Warren Chemical & Manufacturing Company.	52,048	May 1	122	340
Felt. Roofing, sheathing, waterproofing, and building	Warren-Ehert Company	52,988	May 22	122	1389
Felt. Waterproof roofing	St. Paul Roofing, Cornice & Ornament Company.	53,734	June 12	122	2378
Fencing. Wire	Lion Fence Co	52,039	May 1	122	340
Fencing. Woven-wire	American Steel and Wire Company.	53,740	June 12	122	2378
Fences. Wire and combination wood and wire	Hodge Fence & Lumber Co	54,009	June 19	122	2677
Ferruginous preparation	Nicolay & Co	54,341	June 26	122	2991
Fertilizer. Bone	F. S. Royster Guano Co	52,845	May 22	122	1384
Fertilizers	American Agricultural Chemical Co.	52,391	May 8	122	718
Fertilizers	Virginia-Carolina Chemical Company.	53,275	May 29	122	1714
Fertilizers	Virginia-Carolina Chemical Company.	53,276	May 29	122	1714
Fertilizers	Virginia-Carolina Chemical Company.	53,277	May 29	122	1714
Fertilizers	Virginia-Carolina Chemical Company.	53,278	May 29	122	1714
Fertilizers	Virginia-Carolina Chemical Company.	53,279	May 29	122	1714
Fertilizers	Virginia-Carolina Chemical Company.	53,280	May 29	122	1714
Fertilizers	Virginia-Carolina Chemical Company.	53,281	May 29	122	1714
Fertilizers	Virginia-Carolina Chemical Company.	53,282	May 29	122	1714
Fertilizers	Virginia-Carolina Chemical Company.	53,283	May 29	122	1714
Fertilizers	Virginia-Carolina Chemical Company.	53,284	May 29	122	1714
Fertilizers	Virginia-Carolina Chemical Company.	53,285	May 29	122	1714
Fertilizers	Virginia-Carolina Chemical Company.	53,286	May 29	122	1714
Fertilizers	Virginia-Carolina Chemical Company.	53,287	May 29	122	1714
Fertilizers	Virginia-Carolina Chemical Company.	53,288	May 29	122	1715
Fertilizers	Virginia-Carolina Chemical Company.	53,289	May 29	122	1715
Fertilizers	Virginia-Carolina Chemical Company.	53,290	May 29	122	1715
Fertilizers	Virginia-Carolina Chemical Company.	53,291	May 29	122	1715
Fertilizers	Virginia-Carolina Chemical Company.	53,292	May 29	122	1715
Fertilizers	Virginia-Carolina Chemical Company.	53,293	May 29	122	1715
Fertilizers	Virginia-Carolina Chemical Company.	53,294	May 29	122	1715
Fertilizers	Virginia-Carolina Chemical Company.	53,295	May 29	122	1715
Fertilizers	Virginia-Carolina Chemical Company.	53,472	June 5	122	2051
Fertilizers	Virginia-Carolina Chemical Company.	53,473	June 5	122	2051
Fertilizers	Virginia-Carolina Chemical Company.	53,474	June 5	122	2051
Fertilizers	Virginia-Carolina Chemical Company.	53,503	June 5	122	2052
Fertilizers	Virginia-Carolina Chemical Company.	53,504	June 5	122	2052
Fertilizers	Virginia-Carolina Chemical Company.	53,505	June 5	122	2052
Fertilizers	Virginia-Carolina Chemical Company.	53,506	June 5	122	2052
Fertilizers	Virginia-Carolina Chemical Company.	53,507	June 5	122	2052
Fertilizers	Virginia-Carolina Chemical Company.	53,508	June 5	122	2052
Fertilizers	Virginia-Carolina Chemical Company.	53,509	June 5	122	2052
Fertilizers	Virginia-Carolina Chemical Company.	53,510	June 5	122	2052
Fertilizers	Virginia-Carolina Chemical Company.	53,614	June 5	122	2057
Fertilizers	Rasin-Monumental Company of Anne Arundel County.	53,682	June 12	122	2376
Fertilizers	Rasin-Monumental Company of Anne Arundel County.	53,683	June 12	122	2376
Fertilizers	Rasin-Monumental Company of Anne Arundel County.	53,684	June 12	122	2376
Fertilizers	Virginia-Carolina Chemical Company.	53,688	June 12	122	2376
Fertilizers	Virginia-Carolina Chemical Company.	53,689	June 12	122	2376
Fertilizers	Virginia-Carolina Chemical Company.	53,690	June 12	122	2376
Fertilizers	Virginia-Carolina Chemical Company.	53,691	June 12	122	2376
Fertilizers	Georgia Chemical Works	53,696	June 12	122	2377

Alphabetical list of trade-marks for May and June—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Fertilizers	Georgia Chemical Works	53,697	June 12	122	2377
Fertilizers	Georgia Chemical Works	53,698	June 12	122	2377
Fertilizers	Navassa Guano Company of Wilmington.	53,703	June 12	122	2377
Fertilizers	Navassa Guano Company of Wilmington.	53,704	June 12	122	2377
Fertilizers	Navassa Guano Company of Wilmington.	53,705	June 12	122	2377
Fertilizers	Navassa Guano Company of Wilmington.	53,706	June 12	122	2377
Fertilizers	Navassa Guano Company of Wilmington.	53,707	June 12	122	2377
Fertilizers	Rasin-Monumental Company of Anne Arundel County.	53,708	June 12	122	2377
Fertilizers	Virginia-Carolina Chemical Company.	53,713	June 12	122	2377
Fertilizers	Rasin-Monumental Company of Anne Arundel County.	53,959	June 19	122	2675
Fertilizers	Virginia-Carolina Chemical Company.	53,964	June 19	122	2675
Fertilizers	Virginia-Carolina Chemical Company.	53,965	June 19	122	2675
Fertilizers	Virginia-Carolina Chemical Company.	54,050	June 19	122	2679
Fertilizers	Georgia Chemical Works	54,057	June 19	122	2679
Fertilizers	Virginia-Carolina Chemical Company.	54,067	June 19	122	2679
Fertilizers	Virginia-Carolina Chemical Company.	54,407	June 26	122	2994
Fertilizers	Virginia-Carolina Chemical Company.	54,408	June 26	122	2994
Fertilizers	Georgia Chemical Works	54,411	June 26	122	2994
Fertilizers	Georgia Chemical Works	54,412	June 26	122	2994
Fertilizers	Navassa Guano Company of Wilmington.	54,434	June 26	122	2995
Fertilizers	Virginia-Carolina Chemical Company.	54,438	June 26	122	2995
Fertilizers	Virginia-Carolina Chemical Company.	54,439	June 26	122	2995
Fertilizers	Virginia-Carolina Chemical Company.	54,455	June 26	122	2996
Fertilizers	Virginia-Carolina Chemical Company.	54,456	June 26	122	2996
Fertilizers	Virginia-Carolina Chemical Company.	54,457	June 26	122	2996
Fertilizers	Virginia-Carolina Chemical Company.	54,488	June 26	122	2997
Fertilizers	Virginia-Carolina Chemical Company.	54,505	June 26	122	2998
Fertilizers	Virginia-Carolina Chemical Company.	54,648	June 26	122	3004
Fertilizers. Artificial	Cloverine Fertilizer Co	54,466	June 26	122	2996
Fever cures	Pamaline Malarial Remedy Company.	54,118	June 19	122	2682
Fiber sizing and finishing material. Textile	H. A. Metz & Co	53,750	June 12	122	2378
Fiber sizing and finishing material. Textile	H. A. Metz & Co	53,751	June 12	122	2378
Fiber ware. Indurated	United Indurated Fibre Co. of New Jersey.	54,688	June 26	122	3005
Fiber ware. Indurated	United Indurated Fibre Co. of New Jersey.	54,689	June 26	122	3005
Figs. Dried	Protopazzi Brothers	54,580	June 26	122	3001
Files and raspa	Simmons Hardware Company	53,711	June 12	122	2377
Files and raspa	Carver File Company	54,129	June 19	122	2682
Finger-nail polish	Dr. J. Parker Pray Company	54,273	June 26	122	2988
Fire and acid proof composition	Ransom & Randolph Co	53,640	June 5	122	2058
Fire-extinguisher in powdered form	Nevermyss Fire Extinguisher Company.	52,788	May 15	122	1040
Fire-extinguishers	American-La France Fire Engine Co.	53,839	June 12	122	2382
Fireproof starch	Price Fireproofing Company	52,735	May 15	122	1038
Fireproof starch	Price Fireproofing Company	53,229	May 29	122	1712
Fireworks. Hand stick	E. H. Wagner	53,023	May 22	122	1390
Fireworks. Hand stick	E. H. Wagner	54,760	June 26	122	3008
Fireworks. Non-explosive fire and smoke emitting	E. H. Wagner	53,192	May 29	122	1711
Fireworks. Torpedo	E. H. Wagner	53,021	May 22	122	1390
Fireworks. Torpedo	E. H. Wagner	53,022	May 22	122	1390
Fireworks. Torpedo	E. H. Wagner	53,024	May 22	122	1391
Fireworks. Torpedo	E. H. Wagner	53,993	June 19	122	2677
Fireworks. Torpedo	E. H. Wagner	54,347	June 26	122	2991
Fish. Cured	G. H. Perkins	53,256	May 29	122	1713
Fish. Cured	G. H. Perkins	53,257	May 29	122	1713
Fish. Cured	G. H. Perkins	53,444	June 5	122	2050
Fish-hooks	Henry Milward & Sons	52,485	May 8	122	722
Fish-hooks, artificial flies and baits	Henry Milward & Sons	53,549	June 5	122	2054
Fish. Salted and boneless	J. W. Beardsley's Sons	52,144	May 1	122	344
Fish. Salted and boneless	J. W. Beardsley's Sons	54,554	June 26	122	3000
Fish. Salted and boneless cod	J. W. Beardsley's Sons	52,145	May 1	122	344
Fishing-rods	Horton Manufacturing Company	52,756	May 15	122	1039
Flash-light compounds	H. Pfabe	52,216	May 1	122	347
Flat-iron polishing-pad	Greeder Manufacturing Company	52,678	May 15	122	1036
Flavoring extracts	Sprague, Warner & Company	52,112	May 1	122	343
Flavoring extracts	Francis H. Leggett & Company	52,517	May 8	122	723
Flavoring extracts	Ullmann Dreifus & Co	52,541	May 8	122	724
Flavoring extracts	Royal Baking Powder Company	53,209	May 29	122	1711
Flavoring extracts	Wittemann Bros	53,767	June 12	122	2379
Flavoring extracts	Wittemann Bros	53,768	June 12	122	2379

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Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Flavoring extracts	Wittemann Bros.	53,769	June 12	122	2379
Flavoring extracts	Wittemann Bros.	53,770	June 12	122	2379
Flavoring extracts	E. R. Durkee & Co	53,780	June 12	122	2380
Flavoring extracts	Oklahoma Wholesale Grocer Co.	54,625	June 26	122	3003
Flour. Self-rising	Sleepy Eye Milling Company	52,540	May 8	122	724
Flour. Self-rising	E. G. Richards	54,388	June 26	122	2993
Flour. Wheat-	Egerton Bros.	51,964	May 1	122	337
Flour. Wheat-	P. Dausse & Co	51,985	May 1	122	338
Flour. Wheat-	Sheffield-King Milling Co	52,045	May 1	122	340
Flour. Wheat-	Goodlander Milling Company	52,139	May 1	122	344
Flour. Wheat-	Lawrenceburg Roller Mills Company.	52,151	May 1	122	344
Flour. Wheat-	Lawrenceburg Roller Mills Company.	52,152	May 1	122	344
Flour. Wheat-	Waterloo Milling Company	52,164	May 1	122	345
Flour. Wheat-	Collin County Mill & Elevator Company.	52,194	May 1	122	346
Flour. Wheat	R. U. Kevil & Sons	52,488	May 8	122	722
Flour. Wheat-	Alliance Milling Company	52,525	May 8	122	724
Flour. Wheat-	Ledeboer & Van Der Heid	52,534	May 8	122	724
Flour. Wheat-	Liberty Mills	52,535	May 8	122	724
Flour. Wheat-	Liberty Mills	52,536	May 8	122	724
Flour. Wheat-	Liberty Mills	52,537	May 8	122	724
Flour. Wheat-	Missouri Valley Milling Company.	52,539	May 8	122	724
Flour. Wheat-	Ansted & Burk Company	52,672	May 15	122	1035
Flour. Wheat-	Sweet Springs Milling Company	52,688	May 15	122	1036
Flour. Wheat-	Barrett Denton & Lynn Company.	52,692	May 15	122	1036
Flour. Wheat-	Barrett, Denton & Lynn Company.	52,693	May 15	122	1036
Flour. Wheat-	Isaac Harter Milling Company	52,698	May 15	122	1036
Flour. Wheat-	Sweet Springs Milling Company	52,741	May 15	122	1038
Flour. Wheat-	Washburn-Crosby Company	52,748	May 15	122	1038
Flour. Wheat-	G. T. Evans & Son	52,774	May 15	122	1040
Flour. Wheat-	Barrett, Denton & Lynn Company.	52,804	May 15	122	1041
Flour. Wheat-	Sleepy Eye Milling Company	52,819	May 15	122	1041
Flour. Wheat-	Cordell Gin & Milling Company	52,882	May 22	122	1385
Flour. Wheat-	Ellendale Milling Company	52,883	May 22	122	1385
Flour. Wheat-	Geary Milling & Elevator Company.	52,951	May 22	122	1388
Flour. Wheat-	Highland Milling Company	52,954	May 22	122	1388
Flour. Wheat-	Ballard & Ballard Co	52,969	May 22	122	1388
Flour. Wheat-	Ballard & Ballard Co	52,970	May 22	122	1388
Flour. Wheat-	Security Milling Company	52,986	May 22	122	1389
Flour. Wheat-	J. B. Camors & Co	53,093	May 29	122	1707
Flour. Wheat-	Sleepy Eye Milling Company	53,107	May 29	122	1707
Flour. Wheat-	Missouri Valley Milling Company.	53,128	May 29	122	1708
Flour. Wheat-	Bay State Milling Company	53,160	May 29	122	1709
Flour. Wheat-	G. T. Evans & Son	53,169	May 29	122	1710
Flour. Wheat-	Seneca Mill & Elevator Company.	53,186	May 29	122	1710
Flour. Wheat-	Missouri Valley Milling Company.	53,208	May 29	122	1711
Flour. Wheat-	Lawrenceburg Roller Mills Company.	53,439	June 5	122	2049
Flour. Wheat-	Marsh & Riley	53,440	June 5	122	2050
Flour. Wheat-	J. H. Heisel	53,630	June 5	122	2057
Flour. Wheat-	Collin County Mill & Elevator Company.	53,778	June 12	122	2379
Flour. Wheat-	Seneca Mill & Elevator Company	53,939	June 12	122	2386
Flour. Wheat-	Sweet Springs Milling Company	54,184	June 19	122	2684
Flour. Wheat-	Golden Eagle Tea Co	54,203	June 19	122	2685
Flour. Wheat-	Randolph Milling Company	54,210	June 19	122	2685
Flour. Wheat-	Mohns-Frese Commercial Company.	54,381	June 26	122	2993
Flour. Wheat-	Monarch Milling Co	54,382	June 26	122	2993
Flour. Wheat-	Rea-Patterson Milling Company	54,386	June 26	122	2993
Flour. Wheat-	Rea-Patterson Milling Company	54,387	June 26	122	2993
Flour. Wheat-	Topeka Milling Company	54,396	June 26	122	2993
Flour. Wheat-	Falk Mercantile Co	54,404	June 26	122	2993
Flour. Wheat-	Lawrenceburg Roller Mills Company.	54,470	June 26	122	2997
Flour. Wheat-	New London Milling Company	54,502	June 26	122	2998
Flour. Wheat-	Northwestern Consolidated Milling Co.	54,503	June 26	122	2998
Flour. Wheat-	John F. Meyer & Sons Milling Co.	54,516	June 26	122	2998
Flours and meals	American Cereal Company	54,635	June 26	122	3003
Fluid-meters	Hersey Manufacturing Company	54,749	June 26	122	3008
Food. Albumen preparations for	Althen & Mende	53,475	June 5	122	2051
Food and farina made from wheat. Breakfast-	Sleepy Eye Milling Company	52,493	May 8	122	722
Food and meat choppers	Hibbard, Spencer, Bartlett & Company.	53,681	June 12	122	2376
Food and tonic. Reconstructive	Norwich Pharmacal Company	53,353	May 29	122	1717
Food. Cattle-	Dock & Coal Co	53,746	June 12	122	2378
Food drinks produced from a cereal. Non-alcoholic	Postum Cereal Co	52,560	May 15	122	1031
Food for animals and poultry. Prepared	C. P. Kertell	53,755	June 12	122	2379
Food for animals. Aromatic	H. M. Griffin	53,484	June 5	122	2051
Food for babies and invalids	T. J. Ball	53,772	June 12	122	2379
Food for cats and kittens	W. W. French	52,776	May 15	122	1040
Food for horses and cattle. Molasses	E. P. Mueller	52,156	May 1	122	345
Food for infants and invalids. Prepared	Taro Food Co	53,799	June 12	122	2380
Food for infants and invalids. Prepared	Wells & Richardson Company	54,587	June 26	122	3001
Food for infants and invalids. Prepared	Wells & Richardson Company	54,588	June 26	122	3001
Food. Infants'	H. Taylor	54,395	June 26	122	2993
Food. Medicinal and stock	Dr. Hess & Clark	53,247	May 29	122	1713
Food. Poultry-	M. W. Savage	53,012	May 22	122	1390
Food. Poultry and pigeon	Campbell, Morrell & Co	52,544	May 8	122	724

Alphabetical list of trade-marks for May and June—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Food preparation of bone-marrow and malt	Virol, Limited	54,216	June 19	122	2685
Food. Prepared cereal	Emerald Manufacturing Co	52,532	May 8	122	724
Food. Prepared cereal	American Cereal Company	52,800	May 15	122	1041
Food, rolled oats, and oatmeal. Breakfast-	American Cereal Company	52,765	May 15	122	1039
Food. Stock-	M. W. Savage	52,791	May 15	122	1040
Food. Stock-	Molassine Company	52,982	May 22	122	1389
Food. Stock-	M. W. Savage	53,011	May 22	122	1390
Food substances. Prepared fatty, oleaginous, or unctuous	N. K. Fairbank Company	52,787	May 15	122	1040
Food. Wheat breakfast-	Wheatena Company	53,025	May 22	122	1391
Food. Wheat breakfast-	Pillsbury-Washburn Flour Mills Company.	54,627	June 26	122	3003
Foods. Certain named cereal	American Cereal Company	54,541	June 26	122	2999
Foods. Certain named cereal	American Cereal Company	54,568	June 26	122	3000
Foods for horses, cattle, swine, and other stock. Condimental	David E. Foutz Co	52,513	May 8	122	723
Foods for live stock and other animals	F. H. Erb, Jr	52,533	May 8	122	724
Foods made from oats. Cereal	American Cereal Company	53,907	June 12	122	2385
Foods made from oats. Cereal	American Cereal Company	53,908	June 12	122	2385
Foods made from oats. Cereal	American Cereal Company	53,909	June 12	122	2385
Foods made from oats. Cereal	American Cereal Company	53,910	June 12	122	2385
Foods made from oats. Cereal	American Cereal Company	54,155	June 19	122	2683
Foods made from oats. Cereal	American Cereal Company	54,401	June 26	122	2993
Foods. Poultry-	A. E. Tate	54,584	June 26	122	3001
Foods. Prepared cereal breakfast-	Francis H. Leggett & Company	52,518	May 8	122	723
Foods. Prepared cereal breakfast-	Hygienic Food Co	54,376	June 26	122	2992
Foundry-facings	United States Graphite Company	54,026	June 19	122	2678
Fruits and vegetables in tins or glass	Wm. Numsen & Sons	53,412	June 5	122	2048
Fruits. Certain named	Southern Cross Fruit Co	53,470	June 5	122	2051
Fruits. Certain named	Southern Cross Fruit Co	53,471	June 5	122	2051
Fruits. Dried	Gennerich & Von Bremen	52,200	May 1	122	346
Fruits. Dried	Francis H. Leggett & Company	52,480	May 8	122	722
Fruits. Dried	S. C. Tooker & Co	52,891	May 22	122	1385
Fruits. Dried	L. Otzen & Co	54,378	June 26	122	2993
Fruits. Dried and evaporated	G. Frank	54,427	June 26	122	2995
Furnaces. Air-heating	Griffin & Skelley Co	53,749	June 12	122	2378
Furnaces and boilers. Heating-	May and Fiebeger	52,273	May 8	122	713
Furniture. Bent-wood	Monroe Foundry & Furnace Co	52,667	May 15	122	1035
Furniture. Certain named	Thonet Brothers	54,066	June 19	122	2679
Furs. Dressed and dyed	Oscar Onken Co	52,276	May 8	122	713
Furs in the piece and fur garments	Atlantic Chemical Co	52,031	May 1	122	340
Fuses. Blasting-	M. Bowsky	52,946	May 22	122	1387
Galvanized household articles	Goodall, Perkins & Co	53,597	June 5	122	2056
Garments. Certain named	Link Manufacturing Co	53,809	June 12	122	2381
Garments. Sleeping-	Thompson & Christie	52,115	May 1	122	343
Gas-burners	Goodwin Durrell Co	54,330	June 26	122	2991
Gas-burners	Crescent Burner Manufacturing Co.	52,716	May 15	122	1037
Gas-burners and mantles therefor	H. Adler Company	54,574	June 26	122	3001
Gears	Welsbach Light Company	52,942	May 22	122	1387
Gelatin	Benjamin Atha & Company	53,972	June 19	122	2676
Gelatin	Michigan Carbon Works	52,538	May 8	122	724
Germicide and an antiseptic compound	American Glue Co	52,750	May 15	122	1038
Gin	J. F. Ballard	53,239	May 29	122	1712
Gin	J. & A. Freiberg	52,323	May 8	122	715
Gin	Ginter Grocery Company	53,175	May 29	122	1710
Gin	Ginter Grocery Company	53,176	May 29	122	1710
Gin	J. J. Douglas Co	53,403	June 5	122	2048
Gin	S. Streit & Co	53,904	June 12	122	2384
Gin	Luyties Brothers	53,924	June 12	122	2385
Gin	Straus Gunst & Co	54,686	June 26	122	3005
Gin	Chicago Distilling Co	54,736	June 26	122	3007
Ginger-snaps	Pennsylvania Baking Company	52,523	May 8	122	724
Glass articles. Cut-	Libbey Glass Company	54,172	June 19	122	2684
Glass. Cut	R. Murr	54,509	June 26	122	3002
Glass-cutters	W. L. Barrett	54,240	June 26	122	2987
Glass or bright-metal polishing preparations	Pellucide Company	54,020	June 19	122	2678
Glassware. Certain named	Creamery Package Mfg. Company	52,319	May 8	122	715
Gloves	Fownes Brothers & Co	52,137	May 1	122	344
Gloves	J. Adler & Co	52,632	May 15	122	1034
Gloves	Abraham & Straus	52,652	May 15	122	1035
Gloves	F. Schmidt	53,649	June 5	122	2058
Gloves and mitts. Base-ball	A. G. Spalding & Brothers	54,029	June 19	122	2678
Gloves for athletic sports	P. Goldsmith's Sons	52,483	May 8	122	722
Gloves. Kid	C. Perrin & Cie	54,504	June 26	122	2998
Glue	American Glue Co	52,801	May 15	122	1041
Glue	American Glue Co	52,802	May 15	122	1041
Glue	American Glue Co	54,462	June 26	122	2996
Glue-cement	L. W. Ferdinand	54,467	June 26	122	2996
Glue, gum, and mucilage. Liquid	Lyons Ink, Limited	52,981	May 22	122	1389
Glycerin	Price's Patent Candle Co	52,110	May 1	122	343
Gold, silver, aluminium, composition, or other metal leaf. Package-rolls of	W. H. Coe Mfg. Company	52,117	May 1	122	343
Golf-clubs. Metal heads of	T. Stewart	54,645	June 26	122	3003
Governors. Engine-	Pickering Governor Company	52,627	May 15	122	1034
Grape-vines, cuttings, scions, grafts, &c	Stark Bros.' Nurseries & Orchards Company.	52,113	May 1	122	343
Grape-vines, cuttings, scions, grafts, &c	Stark Bros.' Nurseries & Orchards Company.	52,124	May 1	122	343
Graphite. Pulverized	United States Graphite Company	54,454	June 26	122	2996
Grease-cups	Lunkenheimer Company	52,335	May 8	122	716
Grinding-mills	C. S. Bell Co	53,514	June 5	122	2053
Grinding-mills	New Winona Mfg. Co	53,639	June 5	122	2058
Grindstone-frames	Whitman & Barnes Manufacturing Company.	52,873	May 22	122	1385
Guava-juice and sugar. Mixture of	Tropic Fruit Company	53,190	May 29	122	1711
Guava-pulp and sugar. Mixture of	Tropic Fruit Company	53,434	June 5	122	2049
Guitars and mandolins	Lyon & Healy	53,147	May 29	122	1709

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Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Guitars and mandolins	Lyon & Healy	53,148	May 29	122	1709
Guitars and zithers	Lyon & Healy	54,518	June 26	122	2999
Gum. Chewing-	H. D. Smith Co	53,219	May 29	122	1712
Gum. Chewing-	A. M. Lyon	53,320	May 29	122	1716
Gum. Chewing-	American Chicle Co	53,531	June 5	122	2053
Gum. Chewing-	American Chicle Co	53,532	June 5	122	2053
Gum. Chewing-	American Chicle Co	53,533	June 5	122	2053
Gum. Chewing-	American Chicle Co	53,534	June 5	122	2053
Gum. Chewing-	Best Gum Co	53,618	June 5	122	2057
Gum. Chewing-	R. A. Brachvogel	54,033	June 19	122	2678
Gum. Chewing-	American Chicle Co	54,461	June 26	122	2996
Gum. Chewing-	Bon-Bon Company	54,463	June 26	122	2996
Gum. Chewing-	American Chicle Co	54,506	June 26	122	2998
Guns and rifles. Shot-	Winchester Repeating Arms Co	52,927	May 22	122	1387
Guns and rifles. Shot-	Winchester Repeating Arms Co	53,194	May 29	122	1711
Guns and rifles. Shot-	Winchester Repeating Arms Co	53,994	June 19	122	2677
Guns, rifles, pistols, and parts thereof. Shot-	Hibbard, Spencer, Bartlett & Company.	53,979	June 19	122	2676
Hair and head. Preparations for the treatment of the	Hudson & Co	53,062	May 22	122	1393
Hair and skin tonic	Barclay & Barclay	53,971	June 19	122	2676
Hair and skin tonic	Barclay & Barclay	54,096	June 19	122	2681
Hair and whisker dye	Charles N. Crittenton Company	54,160	June 19	122	2683
Hair-curlers	Magic Curler Company	53,049	May 22	122	1391
Hair-dressing	C. V. Dorman	52,806	May 15	122	1041
Hair-dressing	J. B. C. Balme	54,263	June 26	122	2988
Hair-dye	Charles N. Crittenton Company	53,848	June 12	122	2382
Hair-dye	Charles N. Crittenton Company	53,878	June 12	122	2383
Hair-dyes	A. Cristadoro	52,452	May 8	122	720
Hair-invigorators and color-restorers	J. W. Walker	53,616	June 5	122	2057
Hair-nets	A. G. Jennings	52,146	May 1	122	344
Hair-nets	A. G. Jennings	52,147	May 1	122	344
Hair-nets. Silk	A. H. Woolley & Co	52,390	May 8	122	718
Hair-pins	G. Littleford	54,715	June 26	122	3006
Hair-pins	S. Beaumont & Fils	54,734	June 26	122	3007
Hair-restoratives	S. R. Van Duzer	53,585	June 5	122	2056
Hair-restorer	Charles N. Crittenton Company	53,843	June 12	122	2382
Hair-restorer	Charles N. Crittenton Company	53,844	June 12	122	2382
Hair-tonic	B. F. Miner	52,465	May 8	122	721
Hair-tonic	Weindorf & Co	54,633	June 26	122	3003
Hair tonics, stains, dandruff cures, &c	H. E. Nichols	53,933	June 12	122	2386
Hair-vigor and dandruff cure	J. B. Wall	52,794	May 15	122	1040
Hams, shoulders, and bacon	E. Godel and Sons	52,321	May 8	122	715
Hams, shoulders, and bacon	Golden and Company	53,177	May 29	122	1710
Handkerchiefs	Cochrane Manufacturing Co	51,962	May 1	122	337
Harmonicas	National Musical String Co	52,432	May 8	122	720
Harness, saddles, and parts thereof	Hibbard, Spencer, Bartlett & Company.	52,722	May 15	122	1037
Harness, saddles, and parts thereof	Hibbard, Spencer, Bartlett & Company.	52,723	May 15	122	1037
Harrows	Roderick Lean Manufacturing Co.	53,105	May 29	122	1707
Harvesters	International Harvester Company of America.	52,016	May 1	122	339
Harvesters and parts thereof	International Harvester Company of America.	53,726	June 12	122	2378
Harvesters, mowers, and reapers and parts thereof	International Harvester Co. of America.	52,521	May 8	122	724
Harvesters, mowers, and reapers and separate parts thereof	International Harvester Co. of America.	52,096	May 1	122	342
Hats	Lustig Bros	53,253	May 29	122	1713
Hats and caps	F. Shoble & Co	51,973	May 1	122	337
Hats and caps	John B. Stetson Company	51,990	May 1	122	338
Hats and caps	F. Schoble & Co	52,083	May 1	122	342
Hats and caps for men and boys	Keith Brothers & Co	53,602	June 5	122	2056
Hats and caps for men and boys	Keith Brothers & Co	53,634	June 5	122	2058
Hats and caps. Waterproof	Hirsh Brothers	54,043	June 19	122	2678
Hats. Ladies'	Carolyn & Co	54,000	June 19	122	2677
Hats. Men's and boys' stiff, soft, and straw	Freeman Brothers	52,481	May 8	122	722
Hats. Men's, women's, and children's	Youmans	54,694	June 26	122	3006
Hats. Men's, women's, and children's	Youmans	54,695	June 26	122	3006
Hats. Panama	Lustig Bros	51,970	May 1	122	337
Hats. Panama	J. J. Seeds & Co	54,022	June 19	122	2678
Hay-carriers	F. E. Myers & Bro	52,365	May 8	122	717
Headache cure	Celero Drug Company	53,304	May 29	122	1715
Heat-regulators for boilers, furnaces, and stoves	Fulton Company	53,173	May 29	122	1710
Heaters. Steam, hot-water, and hot-air	Hart & Crouse Co	52,596	May 15	122	1033
Heating and cooking appliances	H. Adler Company	54,278	June 26	122	2989
Heel and black ball and polishing wax for shoemakers' use	P. Ostermayer	52,215	May 1	122	347
Hemostatic, astringent, blood-pressure-raising, and stimulating preparations.	Parke, Davis & Co	53,934	June 12	122	2386
Hinges. Spring-	Columbian Hdw. Co	53,676	June 12	122	2376
Hinges. Spring-	Columbian Hdw. Co	53,692	June 12	122	2377
Hinges. Spring-	Columbian Hdw. Co	53,693	June 12	122	2377
Hinges. Spring-	Columbian Hdw. Co	53,694	June 12	122	2377
Hinges. Spring-	Columbian Hdw. Co	53,695	June 12	122	2377
Hoes	Union Hoe Co	53,578	June 5	122	2055
Holders. Certain named	J. P. Eustis Mfg. Co	54,753	June 26	122	3008
Hops	Chas. L. Kiewert Co	54,424	June 26	122	2994
Horns for motor-vehicles	A. H. Funke	52,298	May 8	122	714
Horse and mule shoes	American Horse Shoe Company	53,535	June 5	122	2054
Horse and mule shoes	Pheonix Horse Shoe Co	53,996	June 19	122	2676
Horse-radish cream	Griggs, Cooper & Company	54,206	June 19	122	2685
Horses' elastic foot-coverings	M. Hallanan	52,095	May 1	122	342
Horseshoe-studs	Leonhardt & Co	53,127	May 29	122	1708
Horseshoes	International Union of Journeymen Horseshoers.	52,910	May 22	122	1386
Horseshoes	Bryden Horse Shoe Company	53,163	May 29	122	1710

Alphabetical list of trade-marks for May and June—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Horseshoes	Bryden Horse Shoe Company	53,214	May 29	122	1711
Horseshoes and calks	Neversllp Manufacturing Company.	52,917	May 22	122	1386
Hose	New Jersey Car Spring & Rubber Co.	54,340	June 26	122	2991
Hose. Fabric	Eureka Fire Hose Company	53,167	May 29	122	1710
Hose. Fabric	Eureka Fire Hose Company	53,168	May 29	122	1710
Hose-supporters	I. B. Kleinert Rubber Company	52,550	May 15	122	1031
Hose-supporters	I. B. Kleinert Rubber Company	52,551	May 15	122	1031
Hose-supporters	George Frost Company	53,174	May 29	122	1710
Hose-supporters	Pioneer Suspender Company	53,272	May 29	122	1714
Hosiery	Buster Brown Stocking Company.	51,981	May 1	122	338
Hosiery	Buster Brown Stocking Company.	51,982	May 1	122	338
Hosiery	O'Callaghan & Fedden	52,158	May 1	122	345
Hosiery	E. Blood	52,877	May 22	122	1385
Hosiery	Brown Knitting Co	53,162	May 29	122	1710
Hosiery	C. Chipman's Sons	53,243	May 29	122	1713
Hosiery	Columbia Knitting Company	53,541	June 5	122	2054
Hosiery	Reins & Meiss	53,868	June 12	122	2383
Hosiery	J. Jamison	54,192	June 19	122	2684
Hosiery	Rice, Stix Dry Goods Company	54,290	June 26	122	2989
Hosiery	Rice, Stix Dry Goods Company	54,291	June 26	122	2989
Hosiery	Marshall Field & Company	54,641	June 26	122	3003
Hosiery. Elastic	J. Ellwood Lee Company	52,363	May 8	122	717
Hosiery for both ladies and gentlemen	Wayne Knitting Mills	54,649	June 26	122	3004
Hydrogen peroxid	American Peroxide and Chemical Co.	54,651	June 26	122	3004
Hypophosphites. Preparation of	Fellows Medical M'f'g Co	53,204	May 29	122	1711
Ice-cream, ices, and frozen custards	J. M. Horton Ice Cream Co	51,969	May 1	122	337
Ice-machines	Davenport Ice Chipping Machine Co.	52,512	May 8	122	723
Ice-shaving machines	C. C. Clawson	51,983	May 1	122	338
Ice-shaving machines	C. C. Clawson	51,984	May 1	122	338
Illusion apparatus. Mechanical	E. Renton	54,344	June 26	122	2991
Incubators and brooders	M. W. Savage	52,374	May 8	122	717
Ink. Duplicating-	Neostyle Company	53,787	June 12	122	2380
Ink-eradicators	B. R. Thomas	54,586	June 26	122	3001
Inks and printing-ink varnishes and dry colors. Printing and lithographing	Jaenecke Printing Ink Co	54,604	June 26	122	3002
Inks. Copying, indelible, and writing	S. S. Stafford, Inc	54,294	June 26	122	2989
Insect killer or exterminator	Dr. Hess & Clark	52,175	May 1	122	345
Insect-powder	Gilpin, Langdon & Company	52,420	May 8	122	719
Insecticides	Leggett & Brother	52,781	May 15	122	1040
Insecticides	B. G. Pratt Company	54,343	June 26	122	2991
Insulated wire and adhesive tapes used for insulating	New York Insulated Wire Company.	52,337	May 8	122	716
Insulated wire and insulating-tapes	New York Insulated Wire Company.	53,666	June 12	122	2375
Insulated wires	Phillips Insulated Wire Co	52,626	May 15	122	1034
Insulating and sheathing paper and cloth	J. A. & W. Bird & Co	52,655	May 15	122	1035
Insulating compound	E. Calman & Co	52,901	May 22	122	1386
Insulating-tape	Massachusetts Chemical Company.	52,857	May 22	122	1384
Investment and impression compounds	S. S. White Dental Mfg. Co	53,360	May 29	122	1718
Investment and impression compounds	S. S. White Dental Mfg. Co	53,362	May 29	122	1718
Iron ternes in sheet form. Unmanufactured	Griffiths Charcoal Iron Mills	53,977	June 19	122	2676
Jams, jellies, and preserves	Siegel, Cooper & Co	54,180	June 19	122	2684
Jams, jellies. marmalades, preserved and conserved fruits	Sunlit Fruit Company	54,183	June 19	122	2684
Jelly. Dessert-	Bucknam & Vanderpoel	53,164	May 29	122	1710
Jelly-powder	S. J. Valk & Bro	53,191	May 29	122	1711
Jewelry. Sterling-silver	Theodore W. Foster & Bro. Co	52,840	May 22	122	1383
Journal-bearings	Chapman Double Ball Bearing Co. of America.	52,317	May 8	122	715
Kerseys and cassimeres	W. J. Dickey & Sons	53,108	May 29	122	1707
Keys. Cushion finger-	Munson Supply Company	52,364	May 8	122	717
Knife-sections	Whitman & Barnes Manufacturing Company.	52,876	May 22	122	1385
Knives and razors	Hibbard, Spencer, Bartlett & Company.	54,060	June 19	122	2679
Knives and razors	E. Krusius	54,171	June 19	122	2684
Knives and razors	Hibbard, Spencer, Bartlett & Company.	54,246	June 26	122	2987
Knives and razors	Wester Bros	54,458	June 26	122	2996
Knives and razors	A. Baldwin & Co	54,696	June 26	122	3006
Knives and razors. Certain named	Hibbard, Spencer, Bartlett & Company.	52,680	May 15	122	1036
Knives and razors. Certain named	Hibbard, Spencer, Bartlett & Company.	52,682	May 15	122	1036
Knives. Certain named	Hibbard, Spencer, Bartlett & Company.	53,178	May 29	122	1710
Knives. Corn and hay	Simmons Hardware Company	53,712	June 12	122	2377
Knives. Culinary	Wilkinson Shear & Cutlery Co	54,071	June 19	122	2680
Knives. Pocket-	Wiebusch & Hilger	52,496	May 8	122	722
Knives. Pocket-	C. F. Boker	52,586	May 15	122	1031
Knives. Pocket-	Graef & Schmidt	52,752	May 15	122	1039
Knives. Pocket-	A. Kastor & Bros	52,853	May 22	122	1384
Knives. Pocket-	Supplee Hardware Company	52,964	May 22	122	1388
Knives. Pocket-	C. F. Boker	53,115	May 29	122	1708
Knives. Pocket-	Simmons Hardware Company	53,709	June 12	122	2377
Knives. Pocket and butcher	James C. Lindsay Hardware Company.	53,754	June 12	122	2379
Knit goods in the piece	French & Ward	52,717	May 15	122	1037
Knit jackets and sweaters	Stephenson & Co	52,379	May 8	122	718
Knit underwear	J. H. Semel & Co	53,870	June 12	122	2383

Alphabetical list of trade-marks for May and June—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Knitted hosiery, undershirts, and drawers	Carson Pirie Scott & Co	53,094	May 29	122	1707
Knitted underwear	C. E. Smith	52,377	May 8	122	717
Knitted underwear and hosiery	Marshall Field & Company	54,674	June 26	122	3005
Laces. Shoe	Narrow Fabric Co	54,014	June 19	122	2677
Lamps and electric lighting apparatus. Incandescent electric	Edison and Swan United Electric Light Company.	52,621	May 15	122	1033
Lamps and fittings of metal for same. Incandescent electric	Edison and Swan United Electric Light Company.	52,320	May 8	122	715
Lamps and generators therefor for motor-vehicles. Acetylene	A. H. Funke	53,270	May 29	122	1714
Lamps and lanterns and parts thereof	R. E. Dietz Company	54,289	June 26	122	2989
Lamps. Electric	Franklin Electric Mfg. Co	52,622	May 15	122	1034
Lamps. Incandescent electric	Edison and Swan United Electric Light Company.	52,620	May 15	122	1033
Lamps made of glass. Decorated vase	Phoenix Glass Co	53,562	June 5	122	2055
Lamps of all kinds. Electric	Körting & Mathiesen Actiengesellschaft.	52,424	May 8	122	719
Lamps. Self-carbureting	G. H. Holgate	53,144	May 29	122	1709
Lantern-burners	R. E. Dietz Company	52,817	May 15	122	1041
Lard	N. K. Fairbank Company	53,464	June 5	122	2051
Lard	N. K. Fairbank Company	53,465	June 5	122	2051
Lards	Golden and Company	54,510	June 26	122	2998
Lathes	J. & F. Schroth Packing Co	54,377	June 26	122	2992
Laxative	Vandyck Churchill Company	52,387	May 8	122	718
Laxative	Dr. Shoop Family Medicine Co	52,247	May 1	122	348
Laxatives	M. H. Johnston	54,109	June 19	122	2681
Laxatives	W. S. Johnson & Son	52,487	May 8	122	722
Laxatives	Bristol-Myers Company	52,497	May 8	122	722
Laxatives	Frederick Stearns & Co	53,076	May 22	122	1393
Laxatives	K K K Medicine Company	53,083	May 22	122	1393
Lead and oxids of lead. White	National Lead Company	53,983	June 19	122	2676
Lead and oxids of lead. White	National Lead Company	53,984	June 19	122	2676
Lead and oxids of lead. White	National Lead & Oil Co. of Pa	53,985	June 19	122	2676
Lead and oxids of lead. White	National Lead & Oil Company	54,016	June 19	122	2677
Lead and oxids of lead. White	National Lead & Oil Company	54,017	June 19	122	2677
Lead. Oxids of	National Lead & Oil Co. of Pa	54,018	June 19	122	2677
Lead. White	M. Lubelsky & Son	53,728	June 12	122	2378
Lead. White	John T. Lewis & Bros. Co	53,981	June 19	122	2676
Lead. White	John T. Lewis & Bros. Co	53,982	June 19	122	2676
Lead. White	National Lead Company	54,015	June 19	122	2677
Lead. White	National Lead Company	54,222	June 19	122	2685
Leather. Cut and uncut sole	A. F. Schenkelberger	54,683	June 26	122	3005
Leather-dressing	Alfred Andresen & Co	54,092	June 19	122	2681
Leather. Enameled	Barnet Leather Co	52,564	May 15	122	1031
Leather for boots and shoes	A. C. Lawrence Leather Co	54,317	June 26	122	2990
Leather. Harness	Chas. F. Stifel Company	54,352	June 26	122	2991
Leather. Harness and saddlery	American Oak Leather Company	53,135	May 29	122	1708
Leather. Sheep, calf, goat, and kid	A. B. Clark Co	54,052	June 19	122	2679
Leather. Sheep, calf, goat, and kid	A. B. Clark Co	54,053	June 19	122	2679
Leather. Sheep, kid, calf, and goat	A. B. Clark Co	53,265	May 29	122	1714
Leather sheets. Pasted	Western Leather Company	53,392	June 5	122	2048
Leather sheets. Pasted	Western Leather Company	53,393	June 5	122	2048
Leather sheets. Pasted	Western Leather Company	53,394	June 5	122	2048
Leather sheets. Pasted	Western Leather Company	53,395	June 5	122	2048
Leather sheets. Pasted	Western Leather Company	53,765	June 12	122	2379
Leather sheets. Pasted	Western Leather Company	53,766	June 12	122	2379
Leather sheets. Pasted	Western Leather Company	53,801	June 12	122	2381
Leather sheets. Pasted	Western Leather Company	53,802	June 12	122	2381
Leather. Sole	Wm. F. Mosser & Co	54,608	June 26	122	3002
Leather writing sets, blotting and writing pads	Gorham Mf'g. Co	54,597	June 26	122	3002
Ledgers	Richmond & Backus Co	52,305	May 8	122	714
Ledgers, binders, files, and leaves therefor. Loose-leaf	Tengwall Company	53,391	June 5	122	2048
Leggings	Rosenwasser Bros	52,042	May 1	122	340
Leggings. Leather	Chanavas & Slazenger	52,245	May 1	122	348
Lever. Lumber-handling	J. M. Ferriss, Jr	52,846	May 22	122	1384
Lime and plaster	Rock Plaster Co. of New York & New Jersey.	52,588	May 15	122	1032
Lime. Chlorid of	A. Mendleson's Sons	54,675	June 26	122	3005
Linen and cotton piece goods	G. C. Riggs	52,475	May 8	122	721
Linens and linen piece goods	G. C. Riggs	52,449	May 8	122	720
Liniment	Minard's Liniment Manufacturing Company.	52,210	May 1	122	347
Liniment	Caco Chemical Co	53,241	May 29	122	1713
Liniment	Goodrich & Jennings	53,245	May 29	122	1713
Liniment	Hinkley Bone Liniment Company.	53,312	May 29	122	1715
Liniment	H. E. Wrensch, Jr	53,944	June 12	122	2386
Liniment	F. A. Richter	54,292	June 26	122	2989
Liniment	E. S. Sloan	54,295	June 26	122	2989
Liniment	W. P. Ward	54,690	June 26	122	3005
Liniment for cuts and flesh wounds	W. H. Cox	53,334	May 29	122	1716
Liniment for rheumatism and sprains	C. Z. Stone	53,261	May 29	122	1713
Liniments	Cracker Jack Liniment Company	53,623	June 5	122	2057
Liniments	F. Ayer	54,095	June 19	122	2681
Liniments and ointments	K K K Medicine Company	53,251	May 29	122	1713
Liqueurs or cordials	L. Brugerolle	52,169	May 1	122	345
Liquid-separators. Centrifugal	De Laval Separator Company	52,583	May 15	122	1032
Lock-washers and nut-locks	National Lock Washer Company.	52 366	May 8	122	717
Lotion	E. J. M. Hart	54,659	June 26	122	3004
Lotion or emulsion for the skin. Liquid	A. S. Hinds	54,660	June 26	122	3004
Lotions and washes. Skin	E. M. Steibel	53,871	June 12	122	2383
Lotions. Toilet and medicinal	E. A. Olds	53,525	June 5	122	2053
Lozenges or tablets for fermentation purposes	Kadlac Company	52,149	May 1	122	344
Lubricating-grease	A. Cook's Sons	52,007	May 1	122	339
Lubricating-grease	A. Cook's Sons	52,547	May 15	122	1031
Macaroni and spaghetti	Gennerich & Von Bremen	54,549	June 26	122	3000
Macaroni, spaghetti, and vermicelli	John B. Canepa Company	52,960	May 22	122	1389

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Macaroni, spaghetti, vermicelli, and noodles	Crescent Macaroni & Cracker Co	53,438	June 5	122	2049
Macaroni, vermicelli, spaghetti, and noodles	J. B. Canepa	52,971	May 22	122	1388
Magazine	C. D. Steurer	52,380	May 8	122	718
Magazine	E. M. Best	53,137	May 29	122	1708
Magazine. Monthly	John Lane Company	52,073	May 1	122	341
Magazine. Monthly	W. G. Bruce	52,316	May 8	122	715
Magazine or periodical	Currier-Boyce Company	52,906	May 22	122	1386
Magazine. Weekly	Engineering & Mining Journal	52,658	May 15	122	1035
Magazines	Outing Publishing Company	53,496	June 5	122	2052
Magazines. Monthly	Book-Keeper Publishing Company.	52,080	May 1	122	342
Magazines. Monthly	World Today Company	52,764	May 15	122	1039
Magazines. Monthly	Crist, Scott & Parshall	53,215	May 29	122	1711
Magnesia preparation. Liquid	Chas. H. Phillips Chemical Co	52,772	May 15	122	1039
Magnet-wire for trolley use	Magnet Wire Company	53,636	June 5	122	2058
Magnetic currents to invalids. Apparatus for administering	J. W. Steeves	52,281	May 8	122	714
Mainsprings. Timepiece	B. Allen	52,929	May 22	122	1387
Malt and hops extract	Anheuser-Busch Brewing Association.	52,767	May 15	122	1039
Malt and hops. Extract of	Anheuser-Busch Brewing Association.	52,654	May 15	122	1035
Malt extracts	M. K. Goetz Brewing Co	52,758	May 15	122	1039
Malt extracts	M. K. Goetz Brewing Co	53,405	June 5	122	2048
Manifolding devices	Philip Hano & Co	52,021	May 1	122	339
Matches	Aktiebolaget Södertelje Tändsticksfabrik.	54,699	June 26	122	3006
Mattresses	C. W. White	52,736	May 15	122	1038
Mattresses	Colorado Bedding Co	53,139	May 29	122	1709
Mattresses	Southern Spring Bed Company	53,573	June 5	122	2055
Mattresses and pillows	Chittenden & Eastman Co	54,592	June 26	122	3001
Measures of all kinds. Lineal	C. Bube	54,702	June 26	122	3006
Measuring-tapes	Lufkin Rule Co	54,338	June 26	122	2991
Meats. Certain named cured	T. Stokes & Son	54,182	June 19	122	2684
Medals and badges	C. W. Little	54,358	June 26	122	2992
Medical and surgical plasters	Johnson & Johnson	54,308	June 26	122	2990
Medical compound	Brandreth Co	53,581	June 5	122	2055
Medical compound. Certain named	O. P. G. Conley	54,655	June 26	122	3004
Medical preparations for certain named diseases	Doctor Blosser Company	54,056	June 19	122	2679
Medical preparations. Homeopathic	Munyon's Homœopathic Home Remedy Co.	54,114	June 19	122	2681
Medicament	Vereinigte Chininfabriken Zimmer & Co., Ges. mit beschränkter Haftung.	54,114	June 19	122	2681
Medicated ointment	W. Holloway	54,087	June 19	122	2680
Medicated stock and poultry food	Medicura Food Co	53,207	May 29	122	1711
Medicated wine	Frederick Stearns & Co	54,339	June 26	122	2991
Medicinal compound	Chelf Chemical Co	53,596	June 5	122	2056
Medicinal compound. Liquid	D. Michaels	52,773	May 15	122	1040
Medicinal oil for external use	C. W. Smith	53,348	May 29	122	1717
Medicinal pills, tablets, and capsules containing medicine	Laboratory Company	52,470	May 8	122	721
Medicinal plasters	J. M. Grosvenor & Co	54,671	June 26	122	3005
Medicinal plasters	J. M. Grosvenor & Co	51,989	May 1	122	338
Medicinal plasters	Allcock Manufacturing Co	52,140	May 1	122	344
Medicinal plasters	J. Ellwood Lee Company	54,302	June 26	122	2990
Medicinal preparation	Victor Koechl & Co	54,712	June 26	122	3006
Medicinal preparation	Ferry Drug Co	53,873	June 12	122	2383
Medicinal preparation. Certain named	J. D. Riedel Aktiengesellschaft	54,744	June 26	122	3008
Medicinal preparation for diseases of the blood and skin	Dr. Peter Fahrney & Sons Co	53,919	June 12	122	2385
Medicinal preparation for external and internal use	Davis and Lawrence Co	52,246	May 1	122	348
Medicinal preparations. Certain named	H. A. Blair	54,100	June 19	122	2681
Medicinal preparations in liquid and solid form for internal use	Bristol-Myers Company	52,769	May 15	122	1039
Medicinal preparations in liquid and solid form for internal use	Bristol-Myers Company	53,030	May 22	122	1391
Medicinal tablets	F. H. Putnam	53,031	May 22	122	1391
Medicinal tablets and granules	Abbott Alkaloidal Co	53,327	May 29	122	1716
Medicinal tonic and cordial	U. Wolfe Company	53,331	May 29	122	1716
Medicinal tonic for women	Parker Blake Co	53,062	May 22	122	1392
Medicinal tonic or cordial	Udolpho Wolfe Co	54,004	June 19	122	2680
Medicinal tonic or cordial	Udolpho Wolfe Co	54,150	June 19	122	2683
Medicine. Antiseptic and emollient	Ineeda-Cofpho Company	54,151	June 19	122	2683
Medicine. Cathartic	Sterling Remedy Company	54,620	June 26	122	3002
Medicine. Certain named	Dr. A. Gude & Co., G. m. b. H	52,189	May 1	122	346
Medicine. Certain named	L. J. Knerr	52,472	May 8	122	721
Medicine. Certain named	F. J. Schmidt	52,473	May 8	122	721
Medicine. Certain named	E. R. Moras	53,088	May 22	122	1393
Medicine. Diuretic	Actien-Gesellschaft für Anilin-Fabrikation.	53,931	June 12	122	2386
Medicine for affections of the throat and bronchial tubes	Frederick Stearns & Co	54,566	June 26	122	3000
Medicine for appendicitis	C. Weschcke	53,037	May 22	122	1391
Medicine for certain named diseases	Frederick Stearns & Co	54,589	June 26	122	3001
Medicine for certain named diseases	Cephalgine Company	53,079	May 22	122	1393
Medicine for epilepsy	A. K. Mandia	53,242	May 29	122	1713
Medicine for fevers	Malarine Medical Company	54,286	June 26	122	2989
Medicine for Graves' disease	Vereinigte Chemische Werke Aktiengesellschaft.	53,554	June 5	122	2054
Medicine for horses, cattle, and poultry	Aschenbach & Miller	53,527	June 5	122	2053
Medicine for indigestion	Sterling Remedy Company	52,450	May 8	122	720
Medicine for limber-neck and roup. Poultry	C. J. Clarke	52,459	May 8	122	721
Medicine for stomach diseases	L. J. Schabinger Co	53,067	May 22	122	1392
Medicine for the cure of constipation and bowel and stomach ailments.	F. Muller, Jr	53,567	June 5	122	2055
Medicine. Headache	Kef Chemical Co	52,467	May 8	122	721
Medicine. Liquid	Goodrich Drug Co	53,345	May 29	122	1717
Medicine. Poultry	F. Lee	53,582	June 5	122	2055
Medicine. Proprietary	Brandreth Co	52,498	May 8	122	722
Medicine. Proprietary	Wilcox & Godding	53,199	May 29	122	1711
Medicines. Certain named	F. X. Hart	54,691	June 26	122	3006
		54,078	June 19	122	2680

Alphabetical list of trade-marks for May and June—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Medicines for alcoholic and drug habits	Orrine Company of the District of Columbia.	53,354	Hay 29	122	1717
Medicines for certain named diseases	E. P. Mertz	53,347	May 29	122	1718
Medicines in pill form	W. R. Warner & Co	52,747	May 15	122	1038
Medicines. Worm	B. S. Fahnestock	52,461	May 8	122	720
Metal. Babbitt	Peerless Smelting & Refining Co.	53,584	June 5	122	2055
Metal. Bearing	Frictionless Metal Company	52,264	May 8	122	713
Metal. Bearing	Frictionless Metal Company	52,265	May 8	122	713
Metal. Bearing	Frictionless Metal Company	52,266	May 8	122	713
Metal goods. Certain named	American Screw Company	53,739	June 12	122	2378
Metal manufactures	U. T. Hungerford Brass & Copper Co.	52,347	May 8	122	716
Metal manufactures. Certain named	E. L. Parker & Co	53,667	June 12	122	2375
Metal manufactures. Certain named	E. L. Parker & Co	53,668	June 12	122	2375
Metal manufactures. Certain named	E. L. Parker & Co	53,760	June 12	122	2379
Metal-polish	J. B. Hill	52,301	May 8	122	714
Metal-polish	Ayling Bros	53,945	June 19	122	2675
Metal-polish	P. H. Solomon	54,482	June 26	122	2997
Metal-polishes	C. Rath	52,702	May 15	122	1037
Metal. Solder Babbitt, or other antifriction	Selby Smelting & Lead Company.	52,630	May 15	122	1034
Metals. Antifriction and bearing	William A. Hardy & Son's Co	52,284	May 8	122	714
Metals. Antifriction and bearing	William A. Hardy & Son's Co	52,285	May 8	122	714
Metals. Antifriction or bearing	William A. Hardy & Son's Co	54,762	June 26	122	3008
Metals. Babbitt and antifriction bearing	Palmetto Metal Company	54,342	June 26	122	2991
Metals. Hand-beaten leaf	M. Spiegelberger	53,132	May 29	122	1770
Metals or alloys. Antifriction	Magnolia Metal Company	53,519	June 5	122	2053
Metals or alloys. Antifriction	Magnolia Metal Company	53,520	June 5	122	2053
Metals or alloys. Antifriction	Magnolia Metal Company	54,717	June 26	122	3007
Microbe-killer	I. Radam	52,499	May 8	122	723
Milk and cream	H. Yates	53,511	June 5	122	2062
Milk and cream. Evaporated	Falk Mercantile Co	52,584	May 15	122	1032
Milk and dry-milk products in powder form. Dry	G. Kammermann & Co. Schweizerische Trockenmilchgesellschaft.	54,708	June 26	122	3006
Milk. Condensed	Borden's Condensed Milk Co	52,243	May 1	122	348
Milk. Condensed	Borden's Condensed Milk Co	52,315	May 8	122	715
Milk. Condensed	Borden's Condensed Milk Co	52,392	May 8	122	718
Milk. Condensed	Borden's Condensed Milk Co	52,407	May 8	122	719
Milk. Condensed	Borden's Condensed Milk Co	52,408	May 8	122	719
Milk. Condensed	Borden's Condensed Milk Co	52,409	May 8	122	719
Milk. Condensed	Borden's Condensed Milk Co	52,410	May 8	122	719
Milk. Condensed	Borden's Condensed Milk Co	52,526	May 8	122	724
Milk. Condensed	Borden's Condensed Milk Co	52,636	May 15	122	1034
Milk. Condensed	Borden's Condensed Milk Co	52,637	May 15	122	1034
Milk. Condensed	Borden's Condensed Milk Co	52,638	May 15	122	1034
Milk. Condensed	Borden's Condensed Milk Co	52,639	May 15	122	1034
Milk. Condensed	Borden's Condensed Milk Co	52,640	May 15	122	1034
Milk. Condensed	Vermont Condensed Milk Co	52,894	May 22	122	1385
Milk. Condensed	Vermont Condensed Milk Co	52,940	May 22	122	1387
Milk. Condensed	Vermont Condensed Milk Co	52,941	May 22	122	1387
Milk. Condensed	Vermont Condensed Milk Co	52,987	May 22	122	1389
Milk. Condensed	Vermont Condensed Milk Co	53,019	May 22	122	1390
Milk. Condensed	Vermont Condensed Milk Co	53,020	May 22	122	1390
Milk. Condensed	Borden's Condensed Milk Co	53,776	June 12	122	2379
Milk. Condensed	Michigan Condensed Milk Co	54,380	June 26	122	2993
Milk. Condensed	Pacific Coast Condensed Milk Co.	54,383	June 26	122	2993
Milk. Condensed	Vermont Condensed Milk Co	54,397	June 26	122	2993
Milk. Condensed	Vermont Condensed Milk Co	54,398	June 26	122	2993
Milk, condensed milk, cream, and evaporated cream	Borden's Condensed Milk Co	52,546	May 8	122	725
Mills. Certain named	Cleveland Twist Drill Company	53,540	June 5	122	2054
Mince-meat. Fresh	F. Saunders	53,469	June 5	122	2051
Mineral compound for cleaning brass and other metals	H. A. Lawton	52,444	May 8	122	720
Molasses	Eastern Refining Co	54,201	June 19	122	2685
Mops	Estes Mills	52,063	May 1	122	341
Mops	Estes Mills	52,064	May 1	122	341
Mops	Estes Mills	52,065	May 1	122	341
Mops	Estes Mills	52,066	May 1	122	341
Mops	Estes Mills	52,067	May 1	122	341
Moreens	Eddystone Manufacturing Company.	52,394	May 8	122	718
Motors and motor machinery and parts thereof. Gasolene	W. H. Barrett	54,733	June 26	122	3007
Mouth and tooth wash	H. K. Mulford Company	54,618	June 26	122	3002
Mouth nose, and throat wash	Lavoris Chemical Company	53,922	June 12	122	2385
Mower, binder, harvester, and header guards	Whitman & Barnes Manufacturing Company.	54,257	June 26	122	2968
Mower, binder, reaper, and header knife and sickle heads	Whitman & Barnes Manufacturing Company.	52,922	May 22	122	1386
Mower, reaper, harvester, and header guard-plates	Whitman & Barnes Manufacturing Company.	54,729	June 26	122	3007
Mowers and parts thereof. Lawn	Hibbard, Spencer, Bartlett & Company.	53,248	May 29	122	1713
Mowers. Lawn	Supplee Hardware Company	54,238	June 26	122	2967
Mowers. Lawn	Supplee Hardware Company	54,254	June 26	122	2968
Mowers. Lawn	Supplee Hardware Company	54,255	June 26	122	2968
	Whitman & Barnes Manufacturing Company.	54,258	June 26	122	2968
Mucilage, paste, and sealing-wax	S. S. Stafford, Inc	54,481	June 26	122	2997
Music and music-books. Sheet	L. Feist	54,074	June 19	122	2680
Music-boxes	F. A. Richter	54,582	June 26	122	3001
Music, instruction-books, and opera-scores. Sheet	Gus Edwards Music Publishing Co.	54,277	June 26	122	2969
Musical boxes and tune-disks	Lyon & Healy	53,146	May 29	122	1709
Musical-instrument supplies	Lyon & Healy	54,359	June 26	122	2992
Musical-instrument supply-packages	Lyon & Healy	54,519	June 26	122	2999
Musical instruments. Certain named	Lyon & Healy	53,300	June 5	122	2047

Alphabetical list of trade-marks for May and June—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Nail-clippers	Smith & Hemenway Company	53,571	June 5	122	2055
Nail-sets	Cleveland Twist Drill Company	53,539	June 5	122	2054
Nails	United Shoe Machinery Company	53,736	June 12	122	2378
Nails. Corrugated brass shoe	River Co	52,022	May 1	122	339
Nails. Finish	A. J. Chase	54,638	June 26	122	3003
Nails. Horse	Standard Horse Nail Company	52,343	May 8	122	716
Nails. Horse	Standard Horse Nail Company	52,344	May 8	122	716
Nails. Horse	Capewell Horse Nail Company	54,637	June 26	122	3003
Nails provided with a non-metallic coating	J. C. Pearson Co	52,269	May 8	122	713
Neckscarfs	Weber and Heilbroner	54,348	June 26	122	2991
Needles	Excelsior Needle Company	53,544	June 5	122	2054
Needles for hand and machine sewing	Henry Milward & Sons	52,328	May 8	122	715
Needles for hand-sewing and machine	Singer Manufacturing Company	54,023	June 19	122	2678
Needles. Machine	Union Special Machine Company	54,759	June 26	122	3008
Needles of all kinds	Thüringische Nadel & Stahlwaaren Fabrik Wolff, Knippenberg & Co., Actien Gesellschaft	52,346	May 8	122	716
Needles. Self-threading	London Needle Company	52,104	May 1	122	343
Negative-intensifiers	Kirk-Geary & Company	52,103	May 1	122	342
Neuralgia cure or specific	E. B. White	52,796	May 15	122	1040
Newspaper comic sections or pages	New York Herald Company	54,720	June 26	122	3007
Newspaper. Weekly	American Standard Publishing Company.	52,052	May 1	122	341
Newspapers. Agricultural	J. M. Stahl	53,796	June 12	122	2380
Noodles and vermicelli	John Boehm Co	53,462	June 5	122	2050
Nuts. Track-bolt	American Iron & Steel M'f'g Co	54,732	June 26	122	3007
Oats. Rolled	Wilkinson, Gaddis & Co	54,591	June 26	122	3001
Oil. Castor	Griggs, Cooper and Company	52,172	May 1	122	345
Oil. Castor	National Lead Company	54,115	June 19	122	2681
Oil. Castor	Lamar & Rankin Drug Company	54,357	June 26	122	2992
Oil confection. Castor	C. Delacre & Cie	54,656	June 26	122	3004
Oil. Cylinder and valve	Castor Oil Tablet Co	52,771	May 15	122	1039
Oil for table use and cooking. Olive and salad	J. D. Streett & Company	52,310	May 8	122	715
Oil. Illuminating	G. Lueders & Co	52,810	May 15	122	1041
Oil. Linseed	West India Oil Company	52,706	May 15	122	1037
Oil. Lubricating	National Lead & Oil Co. of Pa	53,758	June 12	122	2379
Oil. Lubricating	E. O. Hall and Son	53,338	May 29	122	1717
Oil. Lubricating	Singer Manufacturing Company	53,987	June 19	122	2676
Oil-meal. Linseed	Fiske Brothers Refining Co	54,204	June 19	122	2677
Oil of orange, bergamot, and lemon	E. F. Darrell & Co	52,197	May 1	122	346
Oil. Olive	George Lueders & Co	54,276	June 26	122	2999
Oil. Olive	Chaffard & Coudero	52,244	May 1	122	348
Oil. Olive	R. Hill	52,753	May 15	122	1039
Oil. Olive	R. Hill	52,754	May 15	122	1039
Oil. Olive	R. Hill	52,755	May 15	122	1039
Oil. Olive	Akerman & Tuffley	52,799	May 15	122	1041
Oil. Olive	W. A. Castle Co	53,447	June 5	122	2050
Oils and grease. Lubricating	T. Martindale & Co	54,622	June 26	122	3002
Oils. Cooking and baking	C. F. Kellom	53,727	June 12	122	2378
Oils. Illuminating	Independent Cotton Oil Co	53,487	June 5	122	2051
Oils. Illuminating	Standard Oil Co. of New York	52,617	May 15	122	1033
Oils. Lubricating	Standard Oil Co. of New York	54,025	June 19	122	2678
Oils. Lubricating	American Petroleum Products Co.	52,051	May 1	122	341
Oils. Lubricating	Wilburine Oil Works	52,121	May 1	122	343
Oils. Lubricating	Valvoline Oil Company	53,237	May 29	122	1712
Oils. Machine	Atlantic Refining Company	53,715	June 12	122	2377
Oils manufactured from petroleum. Illuminating	E. R. Durkee & Co	54,614	June 26	122	3002
Oils. Petroleum lubricating	Standard Oil Co. of New York	53,445	June 5	122	2050
Oils. Petroleum lubricating	Gulf Refining Company	52,592	May 15	122	1033
Oils used in the manufacture of perfume	Gulf Refining Company	52,593	May 15	122	1033
Oiled clothing of all kinds	Heine & Co	53,599	June 5	122	2056
Oilstones, waterstones, whetstones, hones, and grindstones	A. J. Tower Company	53,091	May 29	122	1707
	Scranton Whetstone and Abrasive Wheel Co.	52,738	May 15	122	1038
Ointment	P. Gary	53,080	May 22	122	1393
Ointment for the complexion	J. Rowell	54,293	June 26	122	2989
Ointments	Foster-McClellan Company	53,075	May 22	122	1393
Ointments	W. B. Smith	54,055	June 19	122	2679
Ointments	P. Leuschner	54,337	June 26	122	2991
Olives	Francis H. Leggett & Company	52,462	May 8	122	721
Olives	Akerman & Tuffley	52,524	May 8	122	724
Olives	C. Gulden	53,099	May 29	122	1707
Olives. Stuffed	Griggs Cooper and Company	53,784	June 12	122	2380
Oranges, lemons, and grape-fruit	S. J. Valk & Bro	52,893	May 22	122	1385
	Fernando Fruit Growers Association.	52,251	May 1	122	348
Oranges, lemons, grape-fruit, tangerines, and mandarins	Russell & Company	52,761	May 15	122	1039
Organs	Packard Company	54,174	June 19	122	2684
Overalls	Globe Overall Co	52,884	May 22	122	1385
Overalls, bibs, and coats	Richford Garment Company	53,869	June 12	122	2383
Overcoats and suits	Friend Bros. Clo. Co	54,102	June 19	122	2681
Oven-turnbuckles and wrought-iron pipe-strap	Berger Bros. Co	53,617	June 5	122	2057
Packing	Greene Tweed & Co	53,420	June 5	122	2049
Packing gages and cutters	Demarest and Carver	52,356	May 8	122	717
Packing. Machinery	C. A. Daniel	52,414	May 8	122	719
Packing. Machinery	C. Nuhring	52,983	May 22	122	1389
Packing materials for steam and water joints	E. Cooper	53,372	June 5	122	2047
Packing. Piston-rod and valve	Garlock Packing Co	54,202	June 19	122	2685
Packing. Rubber	Gorham Rubber Company	52,268	May 8	122	713
Packing. Rubber	Gibbens & Stream	53,142	May 29	122	1709
Packing. Spiral, sectional ring, flax, and sheet	Speck, Marshall & Co	52,820	May 15	122	1042
Paint. Coal-tar	Barrett Manufacturing Company	53,997	June 19	122	2677
Paint for ship and boat bottoms. Preservative	Tarr & Wonson	53,961	June 19	122	2675
Paint for ship and boat bottoms. Preservative	Tarr & Wonson	53,962	June 19	122	2675
Paint in dry powder and in oil. Metallic	Prince M'f'g Co	54,414	June 26	122	2994
Paint. Liquid	A. S. Lalliberte	54,194	June 19	122	2684
Paint. Marine	H. Louderbough	54,432	June 26	122	2995

Alphabetical list of trade-marks for May and June—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Paint. Marine	H. Louderbough	54,433	June 26	122	2995
Paint. Metal and wood preservative	Toch Brothers	51,976	May 1	122	338
Paint. Mixed	Marine Paint Corporation	53,490	June 5	122	2052
Paint. Mixed liquid	Vane-Calvert Paint Co	53,737	June 12	122	2378
Paint. Red	F. O. Pierce Company	51,967	May 1	122	337
Paint. Roofing	Asbestos Manufacturing and Roofing Co.	54,409	June 26	122	2994
Paint. Waterproof structural and roof	Atlantic Refining Company	52,055	May 1	122	341
Paint. Waterproofing	Toch Brothers	51,975	May 1	122	338
Paints, enamels, varnishes, &c. Oil and varnish	Gerstendorfer Bros	51,988	May 1	122	338
Paints. Fresco	Toch Brothers	54,420	June 26	122	2994
Paints. House	Pimbley Paint & Glass Co	52,338	May 8	122	716
Paints. Metallic	Toch Brothers	51,977	May 1	122	338
Paints. Mixed	John W. Masury & Son	52,699	May 15	122	1036
Paints. Mixed	Senour Manufacturing Co	53,231	May 29	122	1712
Paints. Mixed	G. W. Piper	53,325	May 29	122	1716
Paints Mixed	Hibbard, Spencer, Bartlett & Company.	54,468	June 26	122	2996
Paints Mixed	Patterson Sargent Company	54,521	June 26	122	2999
Paints. Oil and water-color	Columbia Refining Co	52,006	May 1	122	339
Paints or stains. Absorbent	Baumann-Klage Co	52,436	May 8	122	720
Paints. Ready-mixed	Toch Brothers	51,974	May 1	122	337
Paints. Roof	E. W. Grafton	54,006	June 19	122	2677
Painters' supplies. Certain named	Gerstendorfer Bros	52,847	May 22	122	1384
Pans. Baking	Edward Katzinger Company	52,416	May 8	122	719
Papaya, pineapple, and sugar. Combination of	Tropic Fruit Company	53,189	May 29	122	1710
Paper and envelops	F. A. Flinn	52,931	May 22	122	1387
Paper and paper bags and paper sacks. Wrapping	Hollingsworth & Whitney Company.	53,384	June 5	122	2047
Paper and paper bags and paper sacks. Wrapping	Hollingsworth & Whitney Company.	53,385	June 5	122	2047
Paper and paper bags and sacks. Wrapping	Hollingsworth & Whitney Company.	53,223	May 29	122	1712
Paper and paper bags and sacks. Wrapping	Hollingsworth & Whitney Company.	53,343	May 29	122	1717
Paper bags	Union Bag & Paper Company	52,383	May 8	122	718
Paper bags	Union Bag & Paper Company	52 384	May 8	122	718
Paper bags	Union Bag & Paper Company	52,385	May 8	122	718
Paper bags	Union Bag & Paper Company	52,386	May 8	122	718
Paper bags	Union Bag & Paper Company	53,234	May 29	122	1712
Paper bags	Union Bag & Paper Company	53,577	June 5	122	2055
Paper bags	Union Bag & Paper Company	54,223	June 19	122	2685
Paper bags	Union Bag & Paper Company	54,297	June 26	122	2989
Paper. Book and cover	Peninsular Paper Co	52,731	May 15	122	1038
Paper. Carbon	De-Fi Manufacturing Co	52,262	May 8	122	713
Paper. Carbon	Carter's Ink Company	54,034	June 19	122	2678
Paper. Carbon	Carter's Ink Company	54,571	June 26	122	3001
Paper-clips. Spring	Ring Paper Clip Company	53,273	May 29	122	1714
Paper-fasteners	Thomas Stationery Manufacturing Company.	53,816	June 12	122	2381
Paper for process printing	E. Dietzgen Co	54,706	June 26	122	3006
Paper holders and cutters. Roll	National Candy Mold and Manufacturing Company.	54,046	June 19	122	2679
Paper-makers' feltings	J. Porritt & Sons	54,579	June 26	122	3001
Paper or press board	Rogers Paper Mfg. Co	54,629	June 26	122	3003
Paper or press board	Rogers Paper Mfg. Co	54,682	June 26	122	3005
Paper. Printing	Dill & Collins Co	52,295	May 8	122	714
Paper. Printing and writing	Dill & Collins Co	54,135	June 19	122	2682
Paper. Roof and building	F. W. Bird & Son	52,087	May 1	122	342
Paper. Toilet	A. F. Baird	52,258	May 8	122	713
Paper. Toilet	T. F. Sprigg	52,823	May 15	122	1042
Paper. Toilet	T. F. Sprigg	52,918	May 22	122	1386
Paper. Toilet	Scott Paper Co	53,155	May 29	122	1709
Paper. Toilet	Scott Paper Co	53,377	June 5	122	2047
Paper. Toilet	J. Robertson & Son	53,812	June 12	122	2381
Paper. Toilet	Scott Paper Co	54,364	June 26	122	2992
Paper Toilet	Scott Paper Co	54,365	June 26	122	2992
Paper. Toilet	Scott Paper Co	54,366	June 26	122	2992
Paper wrappers for rolls of ribbon	D. Sheeline Son & Co	53,793	June 12	122	2380
Paper. Wrapping	Dayton Paper Novelty Co	53,779	June 12	122	2380
Paper. Wrapping	Dayton Paper Novelty Co	54,101	June 19	122	2681
Paper. Writing	Sir Isaac Pitman & Sons	53,156	May 29	122	1709
Papers. Carbon	J. R. Keatinge	54,668	June 26	122	3004
Papers. Toilet	Hubbs & Corning Co	52,421	May 8	122	719
Papers. Wall	Baeck Wall Paper Co	52,803	May 15	122	1041
Paste. Dry	Crown Oil & Wax Company	52,294	May 8	122	714
Pastry with a filling of cream or ices	Albagli & Avayon	54,370	June 26	122	2992
Pavements and compositions or cements for making the same. Bituminous	Warren Brothers Company	52,348	May 8	122	716
Pegs and chin and shoulder rests	F. L. Becker	53,774	June 12	122	2379
Pencils	E. Faber	54,354	June 26	122	2992
Pencils and drawing-charcoal. Lead and drawing	E. G. Saltmann	53,365	May 29	122	1718
Pencils. Lead	American Lead Pencil Co	52,165	May 1	122	345
Pencils. Lead	A. W. Faber	54,585	June 26	122	3001
Pencils. Metallic tips for lead	Eagle Pencil Company	52,807	May 15	122	1041
Pens. Fountain	L. E. Waterman Company	51,963	May 1	122	338
Pens. Metallic	Spencerian Pen Co	52,860	May 22	122	1384
Pens. Metallic	Spencerian Pen Co	53,378	June 5	122	2047
Pens. Steel	Dreka Company	52,006	May 1	122	339
Pens. Steel	Payot, Upham & Co	52,888	May 22	122	1385
Pens. Steel	Payot, Upham & Co	52,889	May 22	122	1385
Pens. Steel and plated	C. Howard Hunt Pen Co	52,411	May 8	122	719
Peptone. Non-alcoholic solutions of iron-manganese	Chemische Fabrik Helfenberg, A. G. vorm. E. Dieterich.	54,266	June 26	122	2998
Perfumes and toilet waters	Lazell, Dalley & Co	54,764	June 26	122	3008
Perfumes, toilet waters, extracts, and colognes	D. R. Bradley & Son	53,840	June 12	122	2382
Perfuming extracts	F. A. Richter	53,643	June 5	122	2058

Alphabetical list of trade-marks for May and June—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Periodical	P. Kratz	54,284	June 26	122	2989
Periodical. Weekly	W. J. Johnston	52,725	May 15	122	1037
Petroleum. Illuminating	Standard Oil Co. of New York	52,308	May 8	122	715
Petroleum or mineral jelly	Wilburine Oil Works	52,122	May 1	122	343
Pharmaceutical preparations	Lloyd Brothers	52,178	May 1	122	345
Phosphatic powders	Rumford Chemical Works	53,230	May 29	122	1712
Photographic paper and films	Société Anonyme "Luna"	52,581	May 15	122	1032
Photographic papers	Farbenfabriken of Elberfeld Co	54,596	June 26	122	3001
Piano-players. Mechanical	Aeolian Company	54,154	June 19	122	2683
Pianos	Jewett Piano Co	52,422	May 8	122	719
Pianos	Decker & Son	52,974	May 22	122	1389
Pianos	Emerson Piano Company	53,383	June 5	122	2047
Pianos	Packard Company	53,788	June 12	122	2380
Pianos	Goetz and Co	54,076	June 19	122	2680
Pianos	W. W. Kimball Company	54,564	June 26	122	3000
Pianos	M. Steinert & Sons Co	54,639	June 26	122	3003
Pianos	Kroeger Piano Co	54,670	June 26	122	3005
Pianos and electrical players for pianos. Electrically-played	Stokes & Smith Company	52,114	May 1	122	343
Pianos. Upright and grand	Lester Piano Company	53,387	June 5	122	2047
Pickled limes	Griggs, Cooper & Company	54,205	June 19	122	2685
Pickles	Squire Dingee Co	53,500	June 5	122	2052
Picks. Coal-miners'	Fulton Tool Works	53,748	June 12	122	2378
Picture-frames	A. M. Collins Manufacturing Company.	53,714	June 12	122	2377
Pie-fillings	H. C. Gutchess	52,777	May 15	122	1040
Pills	J. A. McKee	52,179	May 1	122	345
Pills	R. H. N. Johnson	53,044	May 22	122	1391
Pills	Carter Medicine Company	53,501	June 5	122	2056
Pills	Allcock Manufacturing Co	53,906	June 12	122	2384
Pills	Allcock Manufacturing Co	54,093	June 19	122	2681
Pills	J. Beecham	54,158	June 19	122	2683
Pills	J. Beecham	54,241	June 26	122	2987
Pills	J. Beecham	54,242	June 26	122	2987
Pills	Allcock Manufacturing Co	54,303	June 26	122	2990
Pills and tablets. Cathartic	Foster-McClellan Company	53,073	May 22	122	1392
Pills and tablets. Cathartic	Foster-McClellan Company	53,074	May 22	122	1393
Pills for liver and bowel complaints	B. T Davis	53,068	May 22	122	1792
Pills. Pennyroyal and tansy	H. B. Taylor	53,872	June 12	122	2383
Pincers, nippers, and hoof-trimmers	Washington Tool Co	54,727	June 26	122	3007
Pincers. Shoe	F. W. Whitcher	54,256	June 26	122	2988
Pins. Hat	Scott-Blake Co	53,733	June 12	122	2378
Pipes, fittings, and connections therefor. Steam, gas, oil, and water	McNab & Harlin Manufacturing Company.	52,587	May 15	122	1032
Pistols	Colt's Patent Fire Arms Manufacturing Company.	52,903	May 22	122	1386
Pistols	Colt's Patent Fire Arms Manufacturing Company.	52,904	May 22	122	1386
Planes and plane-irons	Simmons Hardware Company	53,685	June 12	122	2376
Plaster	Glencoe Lime & Cement Company	52,324	May 8	122	715
Plaster. Adhesive	J. Ellwood Lee Company	52,665	May 15	122	1035
Plaster. Antiseptic adhesive poultice	Bayles Distributing Co	52,591	May 15	122	1032
Plaster. Medicinal	W. C. Devold	53,974	June 19	122	2676
Plaster, plaster-of-paris, and stucco. Wall and calcined	Acme Cement Plaster Co	53,673	June 12	122	2376
Plaster, plaster-of-paris, and stucco. Wall and calcined	Acme Cement Plaster Co	53,674	June 12	122	2376
Plaster, plaster-of-paris, and stucco. Wall and calcined	Acme Cement Plaster Co	53,675	June 12	122	2376
Plasters	A. R. Idone	51,968	May 1	122	337
Plasters	Allcock Manufacturing Co	53,159	May 29	122	1709
Plasters. Adhesive	Johnson & Johnson	52,955	May 22	122	1388
Plasters and plastic compounds	Paragon Plaster Company	54,477	June 26	122	2997
Plasters. Corn and bunion	Bauer & Black	54,264	June 26	122	2988
Plasters. Porous	Allcock Manufacturing Co	53,969	June 19	122	2676
Plows and cultivators	Vulcan Plow Co	52,116	May 1	122	343
Plows and parts thereof	Collins Company	52,092	May 1	122	342
Plows. Riding and walking	Parlin & Orendorff Co	54,313	June 26	122	2990
Plumbago axle-grease	United States Graphite Company	54,647	June 26	122	3004
Plumes and boas, muffs, and capes made from ostrich-feathers. Ostrich	E. Cawston	54,323	June 26	122	2990
Poison. Insect	R. Drumm	53,336	May 29	122	1717
Polish. Certain named	A. L. Prescott	52,733	May 15	122	1038
Polish for wood and metals. Liquid	W. J. Bussey	52,393	May 8	122	718
Polishing and cleansing preparations	L. Hauck	52,695	May 15	122	1036
Pomade	J. D. Bell	53,513	June 5	122	2053
Popcorn	A. A. Berry Seed Company	53,380	June 5	122	2047
Popcorn	A. A. Berry Seed Company	53,381	June 5	122	2047
Popcorn. Candied	W. J. Madden	54,501	June 26	122	2998
Porcelain ware of all kinds	A. Hamann	52,719	May 15	122	1037
Potash	Pennsylvania Salt Manuf'g Co	53,935	June 12	122	2386
Potatoes. Irish and sweet	Eastern Shore of Virginia Produce Exchange.	52,248	May 1	122	348
Powder and antiseptic mouth-wash. Tooth	T. R. Harvey	53,862	June 12	122	2383
Powder containing phenol. Tooth	Crimmings-Magrath Co	53,268	May 29	122	1714
Powder. Face	Artesia Cream Company	52,166	May 1	122	345
Powder. Face	J. Tetlow	52,220	May 1	122	347
Powder. Foot	E. E. Ambrose	52,404	May 8	122	719
Powder. Foot	Rice, Stearns & Co	52,474	May 8	122	721
Powder. Gun	American Powder Mills	52,991	May 22	122	1389
Powder. Gun	American Powder Mills	53,113	May 29	122	1708
Powder. Gun	American Powder Mills	53,655	June 12	122	2375
Powder. Gun and blasting	W. T. Banks	54,320	June 26	122	2990
Powder. Heave	Dr. Hess & Clark	53,081	May 22	122	1393
Powder. Talcum	Pond's Extract Company	52,107	May 1	122	343
Powder. Toilet	Waltham Novelty Company	54,632	June 26	122	3003
Powder. Toilet and sachet	R. Hudnut's Pharmacy	52,160	May 1	122	345
Powders and creams. Toilet	E. N. Lanigan	53,563	June 5	122	2055
Powders. Certain named	E. Betts	52,128	May 1	122	343
Powders for indigestion, &c	C. V. Cross	54,593	June 26	122	3001

Alphabetical list of trade-marks for May and June—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Powdered paper for the skin or toilet use	A. S. Butler	52,527	May 8	122	724
Preparation for the complexion. Liquid	M. Secor	52,458	May 8	122	721
Primers or caps. Blasting	Metallic Cap Manufacturing Coy.	53,557	June 5	122	2054
Printer's paste and set-off liquor	G. S. Duncan	51,963	May 1	122	337
Printing-machines	Addressograph Company	54,697	June 26	122	3006
Publication. Periodical	Dr. Peter Fahrney & Sons Co	53,804	June 12	122	2381
Publication. Periodical	Holophane Glass Company	53,806	June 12	122	2381
Publication. Periodical	Illuminating Engineering Publishing Co.	53,807	June 12	122	2381
Publication. Periodical	V. Lansingh	53,808	June 12	122	2381
Puddings	A. Tsakona	52,793	May 15	122	1040
Puddings and custards	W. P. Ward	52,542	May 8	122	724
Pulp and ground wood. Wood-	Aspegren & Co	53,136	May 29	122	1708
Pulverizing machinery	G. H. Fraser	53,515	June 5	122	2053
Pulverizing machinery	G. H. Fraser	53,516	June 5	122	2053
Pump buckets. Chain-	Temple Pump Company	52,919	May 22	122	1386
Pumps	F. E. Myers & Bro	53,603	June 5	122	2056
Pumps. Centrifugal	Wheeler Condenser & Engineering Co.	53,672	June 12	122	2375
Pumps. Hydraulic	United Iron Works	52,589	May 15	122	1032
Pumps, otherwise known as bucket or chain pumps. Purifying-	St. Joseph Pump Co	52,345	May 8	122	716
Pumps. Piston well-	Red Jacket Manufacturing Company.	52,372	May 8	122	717
Pumps. Water-	F. E. Myers & Brother	52,274	May 8	122	713
Purgative compounds. Liquid	California Fig Syrup Co	54,322	June 26	122	2990
Purse. Coin or combined paper and coin	C. E. Albright	54,349	June 26	122	2991
Purses and hand-bags. Leather	Gorham Mfg. Co	54,036	June 19	122	2678
Puzzles. Rolling-ball	J. Bigham	53,138	May 29	122	1709
Quilts	Marshall Field & Company	54,557	June 26	122	3000
Range. Steel	P. D. Beckwith	52,207	May 1	122	347
Ranges and stoves. Cooking	Cook and Van Evera Co	53,677	June 12	122	2376
Rat, vermin, and insect destroyer or exterminator	E. S. Wells	54, 51	June 19	122	2679
Rawhide. Specially-prepared	New Process Raw Hide Co	52,275	May 8	122	713
Razors	H. Keidel	51,992	May 1	122	338
Razors	A. Witte	52,349	May 8	122	716
Razors	Challenge Cutlery Corporation	52,477	May 8	122	722
Razors	A. Graef	53,123	May 29	122	1708
Razors	F. A. Clauberg & Co	53,306	May 29	122	1715
Razors	Smith & Hemenway Company	53,570	June 5	122	2055
Razors	Smith & Hemenway Company	53,572	June 5	122	2055
Razors	H. Hessenbruch	53,659	June 12	122	2375
Razors	Simmons Hardware Company	53,687	June 12	122	2376
Razors	A. Graef	53,723	June 12	122	2377
Razors	F. A. Clauberg & Co	54,737	June 26	122	3007
Razors	Smith & Hemenway Company	54,757	June 26	122	3008
Razors and knives	A. Kastor & Bros	54,356	June 26	122	2992
Razors and pocket, butcher, and table knives	Keith, Simmons & Co	54,669	June 26	122	3004
Razors and pocket-knives	A. L. Silberstein	52,342	May 8	122	716
Razors and safety-razor blades	C. F. Ern	54,327	June 26	122	2991
Refrigerators	Lorillard Refrigerator Co	52,074	May 1	122	341
Refrigerators	McCray Refrigerator Co	52,105	May 1	122	343
Refrigerators	Lorillard Refrigerator Co	52,429	May 8	122	720
Refrigerators	O. M. Whitman & Co	53,396	June 5	122	2048
Refrigerators and ice-chests	Indiana Mfg. Company	54,283	June 26	122	2989
Remedies and tonics. Blood	L. G. Delamothe	53,308	May 29	122	1715
Remedies. Catarrh	C. E. Schindler	54,630	June 26	122	3003
Remedies. Certain named medicinal	J. B. Starkey	52,476	May 8	122	722
Remedies for bloat in animals	Pratt Food Co	52,790	May 15	122	1040
Remedies for bronchial affections	J. Wertheim	54,126	June 19	122	2682
Remedies for canines	L. G. Atwood	53,301	May 29	122	1715
Remedies for certain named diseases	M. Gebauer	52,418	May 8	122	719
Remedies for certain named diseases	H. F. Edsall	52,997	May 22	122	1390
Remedies for certain named diseases	H. D. Rucker	54,085	June 19	122	2680
Remedies for certain named diseases	H. Law, H. E. Law	54,673	June 26	122	3005
Remedies for diphtheria, &c	L. d'Ambrosio	53,065	May 22	122	1392
Remedies for diseases common to children	E. C. De Witt & Co	53,069	May 22	122	1392
Remedies for diseases of the throat, nasal organs, and lungs	C. J. Ulrici	52,221	May 1	122	347
Remedies for internal use	Chester Kent & Co	52,715	May 15	122	1037
Remedies for rheumatism, &c	J. L. Odom	53,087	May 22	122	1393
Remedies for stomach, intestinal, and bowel disorders	E. J. Hart & Co	52,250	May 1	122	348
Remedies having tonic and alterative properties. Internal	H. F. Edsall	52,134	May 1	122	344
Remedies. Internal	H. F. Edsall	52,133	May 1	122	344
Remedies. Proprietary	P. F. & J. A. Wellenberger	54,125	June 19	122	2682
Remedies. Venereal-disease	M. Piorkowski	53,894	June 12	122	2384
Remedy. Catarrhal	G. Wilson	53,090	May 22	122	1393
Remedy for animals. External	A. B. Young	52,797	May 15	122	1041
Remedy for animals. External	A. B. Young	52,798	May 15	122	1041
Remedy for baldness	W. P. Ward	52,502	May 8	122	723
Remedy for certain named diseases	S. J. Dalzelle	52,440	May 8	122	720
Remedy for certain named diseases	Moro Medical Co	53,086	May 22	122	1393
Remedy for certain named diseases	Edward L. Baldwin Co	53,339	May 29	122	1716
Remedy for certain named diseases	F. J. Hartmiller	53,342	May 29	122	1717
Remedy for certain named diseases	Gerstle Medicine Co	53,547	June 5	122	2054
Remedy for certain named diseases	F. U. Kahle	53,601	June 5	122	2056
Remedy for certain named diseases	Charles N. Crittenton Company	53,842	June 12	122	2382
Remedy for certain named diseases	Ada-lur-lem Medicine Company	54,318	June 26	122	2990
Remedy for certain named diseases	S. H. E. Hayden	54,619	June 26	122	3002
Remedy for certain named diseases	Edward L. Baldwin Co	54,657	June 26	122	3004
Remedy for chills and fever	J. P. Smith	54,684	June 26	122	3005
Remedy for constipation	J. J. Brennan	53,200	May 29	122	1717
Remedy for corns, bunions, and ingrown nails	Stafford Drug Co. of Baltimore City.	53,940	June 12	122	2386
Remedy for coughs and colds	O. C. B. Grom	54,058	June 19	122	2679
Remedy for croup, coughs, and bronchial affections	C. V. Dorman	53,594	June 5	122	2056
Remedy for diseases of swine, particularly hog-cholera	Southern Hog Remedy Co	53,330	May 29	122	1717
Remedy for diseases of the liver	Peacock Chemical Company	53,867	June 12	122	2383

Alphabetical list of trade-marks for May and June—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Remedy for diseases of the respiratory organs	J. Jungmann	53,920	June 12	122	2385
Remedy for dropsy	E. Henke	52,454	May 8	122	721
Remedy for exterminating parasites	H. E. Bowles	53,876	June 12	122	2383
Remedy for impoverished blood and nerves	I. Croteau	54,035	June 19	122	2678
Remedy for indigestion	Voigt & Co	53,212	May 29	122	1711
Remedy for inflammation	B. F. Miner	52,466	May 8	122	721
Remedy for liver and bowel ailments. Liquid	H. Jayess Remedy Co	52,252	May 1	122	348
Remedy for pneumonia	Gowan Medical Co	54,617	June 26	122	3002
Remedy for rheumatism and gout	E. Bischoff	53,066	May 22	122	1392
Remedy for skin diseases	J. P. Morris	54,607	June 26	122	3002
Remedy for the cure of St. Vitus' dance or chorea	S. W. Mackrell	52,784	May 15	122	1040
Remedy for the treatment and prevention of diseases peculiar to women.	J. M. Oldfield	52,789	May 15	122	1040
Remedy. Headache	C. B. Hudon	52,779	May 15	122	1040
Remedy. Headache	C. S. A. Chemical Co	54,099	June 19	122	2681
Remedy. Laxative	McKesson & Robbins	53,030	June 12	122	2385
Remedy. Neuralgia and headache	Frederick Stearns & Co	53,077	May 22	122	1393
Remedy. Neuralgia and headache	Frederick Stearns & Co	53,078	May 22	122	1393
Remedy. Tonic	T. A. Miller	52,253	May 1	122	348
Remedy. Toothache	Charles N. Crittenton Company	53,845	June 12	122	2382
Remedy. Toothache	Charles N. Crittenton Company	53,846	June 12	122	2382
Rheumatism cure	J. L. Smedley	52,792	May 15	122	1040
Rheumatism cure	J. B. Cromley	53,593	June 5	122	2056
Ribbons	Smith & Kaufmann	52,378	May 8	122	717
Ribbons	Vischer & Co	53,615	June 5	122	2057
Ribbons	Vischer & Co	53,651	June 5	122	2058
Ribbons	S. Eiseman & Company	54,243	June 26	122	2987
Rice	Dolan Mercantile Co	52,515	May 8	122	723
Rings	Warren & Williams	52,824	May 15	122	1042
Rings	A. Tanzer	53,526	June 5	122	2053
Rings. Gold finger-	J. R. Wood & Sons	53,819	June 12	122	2381
Rock and rye	P. J. Bowlin Liquor Co	52,650	May 15	122	1035
Rock-crushers	Climax Road Machine Co	53,973	June 19	122	2676
Roofing compound made from coal-tar products. Liquid	E. C. Evans	54,444	June 26	122	2995
Roo ng. Felt and paper	C. T. Carruth	53,590	June 5	122	2056
Roofing material	Eastern Granite Roofing Company.	53,656	June 12	122	2375
Roofing. Prepared sheet-felt	Asbestos Manufacturing and Roofing Co.	52,690	May 15	122	1036
Roofing. Ready tar and felt	Barrett Manufacturing Company.	52,691	May 15	122	1036
Root-canal filling	W. H. Leak	52,463	May 8	122	721
Rope and twine. Fibrous and textile	Plymouth Cordage Company	54,721	June 26	122	3007
Rope, cord, and twine. Vegetable-fiber	R. Rochester	54,252	June 26	122	2988
Ropes, cords, twines, and lines	Silver Lake Company	54,345	June 26	122	2991
Rubber belting	Gorham Rubber Company	52,068	May 1	122	341
Rubber belting	Speck, Marshall & Co	52,822	May 15	122	1042
Rubber boots and shoes	Goodyear Rubber Company	54,709	June 26	122	3006
Rubber boots and shoes of all kinds	Rice & Hutchins	54,525	June 26	122	2999
Rubber boots, shoes, and galoshes	Ostasiatische Handels-Gesellschaft.	54,475	June 26	122	2997
Rubber bulb and fountain syringes. Soft-	American Hard Rubber Co	54,262	June 26	122	2988
Rubber combs. Hard-	American Hard Rubber Co	52,085	May 1	122	342
Rubber combs. Hard-	American Hard Rubber Co	52,086	May 1	122	342
Rubber goods. Certain named	Faultless Rubber Co	53,171	May 29	122	1710
Rubber hose	Speck, Marshall & Co	52,821	May 15	122	1042
Rubber hose	Gorham Rubber Company	54,550	June 26	122	3000
Rubber packing, gaskets, disks, rings, and washers	A. B. Jenkins	54,081	June 19	122	2680
Rubber packing, gaskets, disks, rings, and washers	A. B. Jenkins	54,209	June 19	122	2685
Rubber. Reclaimed	U. S. Rubber Reclaiming Works of New York.	52,743	May 15	122	1038
Rubber. Reclaimed	U. S. Rubber Reclaiming Works of New York.	52,744	May 15	122	1038
Rubber. Reclaimed	U. S. Rubber Reclaiming Works of New York.	52,745	May 15	122	1038
Rubber syringes. Hard-	American Hard Rubber Co	54,350	June 26	122	2991
Rugs	McCleary, Wallin & Crouse	53,927	June 12	122	2385
Rugs	Hartford Carpet Corporation	54,105	June 19	122	2681
Rum. Jamaica	W. A. Taylor & Co	53,612	June 5	122	2057
Safes	Herring-Hall-Marvin Safe Company.	52,827	May 22	122	1383
Safes	Herring-Hall-Marvin Safe Company.	54,280	June 26	122	2989
Safes	Herring-Hall-Marvin Safe Company.	54,710	June 26	122	3006
Salt	P. J. L. Searing	52,963	May 22	122	1388
Salt	Brown & Shaw	53,777	June 12	122	2379
Salt	Crystaline Salt Company	54,199	June 19	122	2685
Salt	P. J. L. Searing	54,212	June 19	122	2685
Salt	Wilkinson, Gaddis & Co	54,590	June 26	122	3001
Salve. Eye-	E. E. Sutherland Medicine Co	54,073	June 19	122	2680
Salve for cure of freckles	J. J. Kline	53,921	June 12	122	2385
Salve for sore eyes	E. E. Sutherland Medicine Co	54,275	June 26	122	2988
Salve. Green	H. J. Baker	53,195	May 29	122	1711
Salve or ointment	Bickmore Gall Cure Company	53,198	May 29	122	1711
Salves, liniments, and porous strengthening-plasters	E. Dort	54,304	June 26	122	2990
Sarsaparilla	Lanman & Kemp	52,456	May 8	122	721
Sarsaparilla extract	Nostrand Trading Co	52,813	May 15	122	1041
Sarsaparilla extract	Nostrand Trading Co	52,814	May 15	122	1041
Sarsaparilla extract	Nostrand Trading Co	52,815	May 15	122	1041
Sash adjusters and locks. Combination	L. Petraccione	53,009	May 22	122	1390
Sauce. Cocktail-	C. I. Morey	52,180	May 1	122	345
Sauce. Pepper-	E. McIlhenny's Sons	53,928	June 12	122	2385
Sauce. Pepper-	E. McIlhenny's Sons	53,929	June 12	122	2385
Sauce. Tomato	L. Balbi & Co	54,569	June 26	122	3000
Sauce. Vegetable-	F. F. Plank	54,175	June 19	122	2684
Sauer-kraut	J. G. McCaskey	52,155	May 1	122	344
Saw sets, jointers, and gages	G. Y. Anderson	54 156	June 19	122	2683

Alphabetical list of trade-marks for May and June—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Saws	J. N. Eberle & Co	53,119	May 29	122	1708
Saws	Henry Disston & Sons	53,678	June 12	122	2376
Saws	Henry Disston & Sons	53,699	June 12	122	2377
Saws	Henry Disston & Sons	53,700	June 12	122	2377
Saws	Henry Disston & Sons	53,701	June 12	122	2377
Saws	Henry Disston & Sons	53,702	June 12	122	2377
Saws	Henry Disston & Sons	53,752	June 12	122	2379
Saws	Henry Disston & Sons	54,244	June 26	122	2987
Saws	Henry Disston & Sons	54,245	June 26	122	2987
Saws	J. N. Eberle & Co	54,305	June 26	122	2990
Saws and saw-blades	Hibbard, Spencer, Bartlett & Company.	53,680	June 12	122	2376
Saws of all kinds	E. C. Atkins & Company	54,741	June 26	122	3007
Saws, saw blades and handles	Simmons Hardware Company	53,763	June 12	122	2379
Scales. Counter-	Anderson Computing Scale Company.	53,536	June 5	122	2054
Scissors	A. Kastor & Bros	52,666	May 15	122	1035
Scissors and shears	E. Forquignon	52,908	May 22	122	1386
Scissors and shears	H Böker & Co	54,700	June 26	122	3006
Scrapers. Earth-	Kilbourne & Jacobs Manufacturing Company.	52,958	May 22	122	1388
Scrapers. Sidewalk and ice	Avery Stamping Company	52,618	May 15	122	1033
Scrapple	T. Harris	52,978	May 22	122	1389
Screw-drivers	Whitman & Barnes Manufacturing Company.	52,875	May 22	122	1385
Seats and tanks. Certain named	E. M. Joralemon	54,045	June 19	122	2679
Seed. Grass and field	L. Teweles	54,585	June 26	122	3001
Seed meal and nut-cake. Cotton-	Humphreys, Godwin & Co	53,401	June 5	122	2048
Seeds. Agricultural and horticultural	Peter Henderson & Co	52,492	May 8	122	722
Seeds. Field-	W. H. Morehouse	54,064	June 19	122	2679
Seeds. Field, grass, and clover	H. E. Conklin	52,905	May 22	122	1386
Seeds. Grass and field	W. G. Scarlett	52,985	May 22	122	1389
Seeds. Grass, grain, timothy, clover, hemp, canary, and rape	Albert Dickinson Company	51,979	May 1	122	338
Seeding-machines	American Seeding Machine Company.	52,351	May 8	122	716
Seeding-machines. Broadcast	Peoria Drill and Seeder Co	52,370	May 8	122	717
Seltzogenes and analogous vessels for aerated liquids	Aerators Limited	54,698	June 26	122	3006
Serums	P. Yvon	54,693	June 26	122	3005
Sewing cotton and thread	Jonas Brook & Bros	52,148	May 1	122	344
Sewing-cotton on spools or reels	J. & P. Coats	53,250	May 29	122	1713
Sewing-cotton on spools or reels	Jonas Brook & Bros	54,665	June 26	122	3004
Sewing-machine needles	Excelsior Needle Company	52,659	May 15	122	1035
Sewing-machine needles	Excelsior Needle Company	52,660	May 15	122	1035
Sewing-machines	A. G. Mason	52,076	May 1	122	341
Sewing-machines and parts and attachments	Willcox & Gibbs Sewing Machine Co.	53,529	June 5	122	2053
Sewing-machines and parts and attachments	Willcox & Gibbs Sewing Machine Co.	52,925	May 22	122	1387
Sewing-machines and parts and attachments	Willcox & Gibbs Sewing Machine Co.	52,926	May 22	122	1387
Sewing-machines and parts thereof	Hibbard, Spencer, Bartlett & Company.	52,681	May 15	122	1036
Sewing-machines and parts thereof	Union Special Machine Co	53,235	May 29	122	1712
Sewing-machines and parts thereof	Union Special Machine Co	53,236	May 29	122	1712
Shade cloth and shades. Window-	Jay C. Wemple Co	52,912	May 22	122	1386
Shade-cloths and cotton piece goods	Amory, Browne & Co	54,127	June 19	122	2682
Shampoo and scalp-cleansing preparations	L. Hauck	52,720	May 15	122	1037
Sharpening edged instruments. Liquids for use in	E. Hunold	53,980	June 19	122	2676
Shears	Sheer Cut Shear Co	53,569	June 5	122	2055
Shears and scissors	Hibbard, Spencer, Bartlett & Company.	53,679	June 12	122	2376
Sheepskins having a special finish	Richard Young Company	52,818	May 15	122	1041
Sheet-metal vessels for domestic or household purposes	Rochester Nonrust Tinware Co	52,561	May 15	122	1031
Sheeting	Minot, Hooper & Co	54,311	June 26	122	2990
Sheeting and drilling. Cotton	Abe Stein Co	54,540	June 26	122	2999
Sheetings	Carey, Bayne & Smith Company	52,930	May 22	122	1387
Sheetings and drillings	Buffalo Cotton Mills	52,948	May 22	122	1388
Sheetings and drillings. Cotton	Greenwood Cotton Mill	52,977	May 22	122	1389
Sheetings and drills. Cotton	K. Iwahara	54,553	June 26	122	3000
Sheetings. Cotton	A. W. Green	53,629	June 5	122	2057
Sheetings, shirtings, and drills	R. A. Suffern	54,213	June 19	122	2685
Sheetings, shirtings, and drills	R. A. Suffern	54,214	June 19	122	2685
Sheetings, shirtings, drills, and tickings. Cotton	Siemssen & Co	53,259	May 29	122	1713
Sheetings. Waterproof	Stork Company	52,501	May 8	122	723
Ship-logs	Thomas Walker & Son	52,704	May 15	122	1037
Ship-logs and sounding-machines	Thomas Walker & Son	52,703	May 15	122	1037
Ship-logs and sounding-machines	Thomas Walker & Son	52,705	May 15	122	1037
Ship-logs and sounding-machines	Thomas Walker & Son	54,687	June 26	122	3005
Ships' logs and sounding-machines	Thomas Walker & Son	52,382	May 8	122	718
Shirt-waists and shirt-waist suits	Holzman Mfg. Co	54,662	June 26	122	3004
Shirt-waists. Ladies'	Belle Waist Co	54,490	June 26	122	2997
Shirt-waists. Ladies'	E. Fast	54,494	June 26	122	2998
Shirts and boys' shirts, waists, and blouses. Men's	C. Eisenman & Co	53,829	June 12	122	2382
Shirts, collars, and cuffs	M. H. Lambert	52,037	May 1	122	340
Shirts, collars, and cuffs	Hall Hartwell & Co	54,279	June 26	122	2989
Shirts, collars, and cuffs	International Shirt and Collar Company.	54,664	June 26	122	3004
Shirts. Men's dress-	Brown & Newman	53,877	June 12	122	2383
Shirts. Outer	Paul E. Wolff Shirt Company	54,677	June 26	122	3005
Shirts. Outer	Paul E. Wolff Shirt Company	54,678	June 26	122	3005
Shirtings, sheetings, cambrics, and long-cloth. Bleached and unbleached	G. Willis & Co	53,264	May 29	122	1713
Shirtings, sheetings, cambrics, and long-cloth. Bleached and unbleached	G. Willis & Co	54,220	June 19	122	2685
Shirtings, sheetings, cambrics, and long-cloth. Bleached and unbleached	G. Willis & Co	54,565	June 26	122	3000
Shoe-dressing	Geo. E. Keith Company	53,001	May 22	122	1390

Alphabetical list of trade-marks for May and June—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Shoe-polish	Whittemore Brothers and Company.	52,312	May 8	122	715
Shoe-polish or leather-dressing	Ayling Bros	53,996	June 19	122	2677
Shoes and slippers. Leather	Hanan-Mathewson Company	54,168	June 19	122	2683
Shoes. Ankle-supporting leather	J. J. Lattemann	53,785	June 12	122	2380
Shoes. Ladies', men's, and children's leather-	A. J. Bates Co	53,371	June 5	122	2047
Shoes. Leather	A. J. Bates Co	53,300	May 29	122	1715
Shoes. Leather	F. Mayer Boot & Shoe Co	53,309	May 29	122	1715
Shoes. Leather	Gilmaker Bros	53,805	June 12	122	2381
Shoes. Leather	L. W. Franklin	53,821	June 12	122	2381
Shoes. Leather	Hamilton-Brown Shoe Company	54,037	June 19	122	2678
Shoes. Leather	James Means Company	54,248	June 26	122	2988
Shoes. Leather	F. Mayer Boot & Shoe Co	54,306	June 26	122	2990
Shoes. Leather	L. W. Franklin	54,329	June 26	122	2991
Shoes. Leather	Augustus Wright Company	54,351	June 26	122	2991
Shoes. Leather	Peters Shoe Co	54,578	June 26	122	3001
Shoes. Leather and canvas	Weimer, Wright & Watkin	53,110	May 29	122	1707
Shoes. Leather and canvas	Foss, Packard & Co	53,782	June 12	122	2380
Shoes. Leather and cloth	J. A. Manning	53,376	June 5	122	2047
Shoes. Leather turned	C. O. Timson	52,862	May 22	122	1384
Shoes made wholly or in part of leather	C. M. Clapp Co	54,098	June 19	122	2681
Shoes. Men's and boys' leather	Hamilton-Brown Shoe Company	54,038	June 19	122	2678
Shoes. Men's leather	Wertheimer-Swarts Shoe Co	53,818	June 12	122	2381
Shoes. Men's leather	Hamilton-Brown Shoe Company	54,138	June 19	122	2682
Shoes. Men's leather	Hamilton-Brown Shoe Company	54,139	June 19	122	2682
Shoes. Men's leather	Hamilton-Brown Shoe Company	54,140	June 19	122	2682
Shoes. Men's, youths', and boys' leather	Beals & Torrey Shoe Co	52,056	May 1	122	341
Shoes. Polish for russet and tan	Whittemore Bro's and Co	54,090	June 19	122	2680
Shot	Selby Smelting & Lead Company	52,629	May 15	122	1034
Shovels	Supplee Hardware Company	52,965	May 22	122	1388
Shovels, scoops, and spades	St. Louis Shovel Co	53,991	June 19	122	2676
Shovels, scoops, and spades	St. Louis Shovel Co	54,314	June 26	122	2990
Shovels, scoops, and spades	St. Louis Shovel Co	54,346	June 26	122	2991
Shovels, spades, and scoops	Avery Stamping Company	52,352	May 8	122	716
Shovels, spades, and scoops	Avery Stamping Company	52,353	May 8	122	717
Shovels, spades, scoops, and spading-forks	Hibbard, Spencer, Bartlett & Company.	53,550	June 5	122	2054
Sifters. Ash-	J. P. Hill	52,849	May 22	122	1384
Silk, crêpe de chine, mousseline silk, c&. Taffeta	Marcus Bros	53,556	June 5	122	2054
Silk. Dress-	Liberty Silk Company	52,153	May 1	122	344
Silk dress goods	W. H. Roe	52,339	May 8	122	716
Silk dress goods in the piece	Rogers & Tompson	53,647	June 5	122	2058
Silk linings and dress-silks	Goetz Silk Manufacturing Company.	52,718	May 15	122	1037
Silk piece goods	Rogers & Thompson	52,023	May 1	122	339
Silk piece goods	Passavant & Co	52,369	May 8	122	717
Silk. Spun	Industrie-Gesellschaft für Schappe.	53,633	June 5	122	2058
Silks	Ackermann & Goedecke	51,957	May 1	122	337
Silks. Printed and piece-dyed	Cheney Brothers	53,912	June 12	122	2385
Silver hollow, flat, and table ware	Wilcox & Wagoner Company	54,692	June 26	122	3005
Silver hollow, flat, and table ware. Sterling and solid	Gorham Mfg. Co	54,763	June 26	122	3008
Silver-plated flat, hollow, and table ware	Wm. A. Rogers Ltd	54,186	June 19	122	2684
Silver-plated flat, hollow, and table ware	Wm. A. Rogers, Limited	54,731	June 26	122	3007
Silver-plated hollow, flat, and table ware	Hibbard, Spencer, Bartlett & Company.	52,721	May 15	122	1037
Silver-plated hollow, flat, and table ware	Hibbard, Spencer, Bartlett & Company.	52,724	May 15	122	1037
Silver-plated hollow ware	International Silver Company	52,757	May 15	122	1039
Silver-polish in liquid, powder, or paste form	Gorham Mfg. Co	52,661	May 15	122	1035
Silver table-cutlery	Curtin & Clark Hardware Company.	53,140	May 29	122	1709
Silver ware. Sterling-	R. Wallace & Sons Mfg. Co	54,561	June 26	122	3000
Silverware. Hollow	Reed & Barton Corporation	54,119	June 19	122	2682
Silverware. Plated	Gorham Mfg. Co	54,331	June 26	122	2991
Skin-food or massage-cream	E. H. Rice	54,680	June 26	122	3005
Skin-foods and complexion creams	Graham Bros. & Co	53,041	May 22	122	1391
Skins. Patent kid and patent colt	D. F. Kennedy	53,424	June 5	122	2049
Skirts and petticoats	Brown, Durrell & Co	52,947	May 22	122	1388
Skirts. Women's, misses', and children's outer	M. Goldman & Co	52,396	May 8	122	718
Smelting and m[illegible] machinery. Ore	Colorado Iron Works Co	53,117	May 29	122	1708
Smoke distilled from wood. Liquid	E. H. Wright Company	53,070	May 22	122	1392
Soap	R. Hudnut's Pharmacy	52,080	May 1	122	342
Soap	N. K. Fairbank Company	52,597	May 15	122	1033
Soap	N. K. Fairbank Company	52,598	May 15	122	1033
Soap	N. K. Fairbank Company	52,599	May 15	122	1033
Soap	N. K. Fairbank Company	52,600	May 15	122	1033
Soap	N. K. Fairbank Company	52,601	May 15	122	1033
Soap	N. K. Fairbank Company	52,602	May 15	122	1033
Soap	N. K. Fairbank Company	52,603	May 15	122	1033
Soap	N. K. Fairbank Company	52,604	May 15	122	1033
Soap	N. K. Fairbank Company	52,605	May 15	122	1033
Soap	N. K. Fairbank Company	52,606	May 15	122	1033
Soap	N. K. Fairbank Company	52,607	May 15	122	1033
Soap	N. K. Fairbank Company	52,608	May 15	122	1033
Soap	N. K. Fairbank Company	52,609	May 15	122	1033
Soap	N. K. Fairbank Company	52,610	May 15	122	1033
Soap	N. K. Fairbank Company	52,611	May 15	122	1033
Soap	N. K. Fairbank Company	52,612	May 15	122	1033
Soap	N. K. Fairbank Company	52,613	May 15	122	1033
Soap	N. K. Fairbank Company	52,614	May 15	122	1033
Soap	N. K. Fairbank Company	52,615	May 15	122	1033
Soap	N. K. Fairbank Company	52,786	May 15	122	1040
Soap	Monahan Antiseptic Co	52,933	May 22	122	1387
Soap	N. K. Fairbank Company	53,005	May 22	122	1390
Soap	N. K. Fairbank Company	53,006	May 22	122	1390

Alphabetical list of trade-marks for May and June—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Soap	N. K. Fairbank Company	53,007	May 22	122	1390
Soap	N. K. Fairbank Company	53,226	May 29	122	1712
Soap	N. K. Fairbank Company	53,321	May 29	122	1716
Soap	N. K. Fairbank Company	53,322	May 29	122	1716
Soap	N. K. Fairbank Company	53,323	May 29	122	1716
Soap	N. K. Fairbank Company	53,351	May 29	122	1717
Soap	N. K. Fairbank Company	53,352	May 29	122	1717
Soap	Andrew Jergens Co	53,478	June 5	122	2051
Soap	Artesia Cream Company	53,479	June 5	122	2051
Soap	Lever Brothers Company	53,489	June 5	122	2052
Soap	N. K. Fairbank Company	53,491	June 5	122	2052
Soap	E. Palmer	53,497	June 5	122	2052
Soap	Pennsylvania Soap Company	53,730	June 12	122	2378
Soap	National Soap Co	53,958	June 19	122	2675
Soap	Siegel, Cooper & Co	53,960	June 19	122	2675
Soap	N. K. Fairbank Company	54,013	June 19	122	2677
Soap	Charles N. Crittenton Company	54,425	June 26	122	2994
Soap	William Waltke & Co	54,441	June 26	122	2995
Soap. Antiseptic and disinfectant mineral	Preston Manufacturing Company	53,731	June 12	122	2378
Soap Bar-	Wichle Soap Company	54,421	June 26	122	2994
Soap. Bar-	Wichle Soap Company	54,440	June 26	122	2995
Soap. Cleaning and polishing	Marshall Chemical Company	54,413	June 26	122	2994
Soap for toilet, laundry, and general use	Procter & Gamble Co	54,415	June 26	122	2994
Soap. Hand-	American Perfumer Company	51,958	May 1	122	337
Soap. Laundry	Troy Laundry Machinery Company.	52,671	May 15	122	1035
Soap. Laundry	J. G. Haas Soap Co	52,850	May 22	122	1384
Soap. Laundry	E. H. Gollings	53,310	May 29	122	1715
Soap. Laundry	F. P. Garrettson & Co	53,483	June 5	122	2051
Soap. Laundry	J. G. Haas Soap Co	54,429	June 26	122	2995
Soap. Laundry	J. G. Haas Soap Co	54,430	June 26	122	2995
Soap. Laundry	William Waltke & Co	54,539	June 26	122	2999
Soap. Laundry and toilet	Grand Union Tea Co	52,300	May 8	122	714
Soap. Medicated and perfumed	Potter Drug & Chemical Corporation.	53,762	June 12	122	2379
Soap. Medicinal	Barclay & Barclay	53,946	June 19	122	2675
Soap. Medicinal	Barclay & Barclay	53,947	June 19	122	2675
Soap of paste-like consistency	H. A. Blakeslee	53,998	June 19	122	2677
Soap. Toilet	Cincinnati Soap Company	52,508	May 8	122	723
Soap. Toilet	Geo. A. Schmidt Co	53,341	May 29	122	1717
Soap. Toilet	Geo. A. Schmidt Co	53,976	June 19	122	2676
Soap. Toilet and laundry	Ericka Mfg. Co	53,952	June 19	122	2675
Soaps for toilet, laundry, and household use	Colgate & Co	54,002	June 19	122	2677
Soaps. Laundry	J. B. Mathis	53,953	June 19	122	2675
Soaps. Toilet	Munyons Homoeopathic Home Remedy Co.	52,040	May 1	122	340
Soda and baking-powder. Baking-	Church & Dwight Company	52,292	May 8	122	714
Soda-ash and caustic soda	Michigan Alkali Company	53,349	May 29	122	1717
Soda. Bicarbonate of	Pennsylvania Salt Manuf'g Co	53,936	June 12	122	2386
Soda-water	Cantrell & Cochrane	53,620	June 5	122	2057
Solder	National Lead Company	54,250	June 26	122	2988
Soldering-tools. Electric	L. P. Brown & Company	52,900	May 22	122	1386
Specific for the treatment of whooping-cough	Kroto Pharmaceutical Company	52,455	May 8	122	721
Specific. Headache	Migranose Importing Co	53,085	May 22	122	1393
Spectacles and eyeglasses and parts thereof	Southern Optical Company	53,989	June 19	122	2676
Spectacles and eyeglasses and their mountings and parts	Stevens and Company	52,381	May 8	122	718
Spectacles, eyeglasses, and lenses	A. K. Hawkes	52,953	May 22	122	1388
Spiced seasonings	William G. Bell Company	54,217	June 19	122	2685
Spiced seasonings	William G. Bell Company	54,218	June 19	122	2685
Spiced seasonings	William G. Bell Company	54,219	June 19	122	2685
Spices	Sprague, Warner & Company	52,186	May 1	122	346
Spices	Oklahoma Wholesale Grocer Co	52,887	May 22	122	1385
Spices	Gennerich & Von Bremen	52,976	May 22	122	1389
Spices	E. R. Durkee & Co	53,095	May 29	122	1707
Spices	E. R. Durkee & Co	53,096	May 29	122	1707
Spices and mustard	E. R. Durkee & Co	52,296	May 8	122	714
Spices and mustard	E. R. Durkee & Co	53,097	May 29	122	1707
Spices and mustard	Hulman & Co	53,100	May 29	122	1707
Spices and mustard	E. R. Durkee & Co	53,244	May 29	122	1713
Spices and mustard	E. R. Durkee Co	53,781	June 12	122	2380
Spices and mustard	E. R. Durkee & Co	54,374	June 26	122	2992
Spices and mustard	Sprague, Warner & Company	54,393	June 26	122	2993
Spices and mustard	E. R. Durkee & Co	54,546	June 26	122	3000
Spool-cotton	Blodgett & Orswell Co	52,033	May 1	122	340
Spool-cotton	Blodgett & Orswell Co	52,088	May 1	122	342
Spool-cotton	John J. Clark & Co	52,098	May 1	122	342
Spool-cotton	John J. Clark & Co	52,099	May 1	122	342
Spool-cotton	John J. Clark & Co	52,100	May 1	122	342
Spool-cotton	John J. Clark & Co	52,101	May 1	122	342
Spool-cotton	John J. Clark & Co	52,102	May 1	122	342
Squabs	E. E. Billings	53,775	June 12	122	2379
Stains	Nashville Chemical Company	53,957	June 19	122	2675
Stains. Shingle-	Dexter Brothers Co	53,951	June 19	122	2675
Stamps for stamping trade-marks upon textiles	Kaumagraph Co	54,575	June 26	122	3001
Staples, &c. Strips of united	E. H. Hotchkiss Co	53,216	May 29	122	1711
Starch. Laundry	Electric Lustre Starch Company	52,198	May 1	122	346
Starch. Laundry	New Orleans Coffee Co	52,304	May 8	122	714
Starch. Laundry	Troy Laundry Machinery Company.	54,563	June 26	122	3000
Starch. Laundry	Oswego Maize Products Co	54,173	June 19	122	2684
Starch. Laundry	New Orleans Coffee Co	54,576	June 26	122	3007
Steel	Crucible Steel Company of America.	52,260	May 8	122	713
Steel	Crucible Steel Company of America.	52,261	May 8	122	713
Steel	Park Steel Company	52,277	May 8	122	713

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Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Steel	Park Steel Company	52,278	May 8	122	713
Steel	Crucible Steel Company of America.	52,657	May 15	122	1035
Steel	Crucible Steel Company of America.	52,907	May 22	122	1386
Steel	Canton Steel Company	53,116	May 29	122	1708
Steel	Crucible Steel Company of America.	53,118	May 29	122	1708
Steel	Crucible Steel Company of America.	53,624	June 5	122	2057
Steel	Crucible Steel Company of America.	53,721	June 12	122	2377
Steel	Crucible Steel Company of America.	54,003	June 19	122	2677
Steel	Park Steel Company	54,019	June 19	122	2678
Steel	S. & C. Wardlow	54,299	June 26	122	2989
Steel	Howe, Brown & Co	54,307	June 26	122	2990
Steel	Park Steel Company	54,361	June 26	122	2992
Steel	Singer, Nimick & Co	54,367	June 26	122	2992
Steel	Crucible Steel Company of America.	54,739	June 26	122	3007
Steel and iron in bar, rod, rail, sheet, and wire	Seebohm & Dieckstahl	54,765	June 26	122	3008
Steel bars and sheets	Hammacher, Delius & Co	54,748	June 26	122	3008
Steel bars, plates, rods, and wire	Hobson Houghton & Co	54,661	June 26	122	3004
Steel blanks, shapes, rods, billets, and sheets. Unmanufactured	G. Nash	52,625	May 15	122	1034
Steel household and cooking utensils. Enameled-	Central Stamping Company	54,572	June 26	122	3001
Steel in various forms	Edgar Allen & Co	53,543	June 5	122	2054
Steel kitchen utensils. Enameled-	Wells & Nellegar Company	54,070	June 19	122	2680
Steel or iron household utensils. Enameled	Hibbard, Spencer, Bartlett & Company.	54,601	June 26	122	3002
Steel. Tool-	Royal Metal Steel Co	52,111	May 1	122	343
Steelware. Hollow enameled	Leffler, Thiele & Co	52,886	May 22	122	1385
Steelware household articles. Enameled-	Lisk Manufacturing Co	53,388	June 5	122	2047
Stencil-duplicating machines and parts thereof	Neostyle Company	54,288	June 26	122	2989
Stockings	Tefft Weller Company	53,575	June 5	122	2055
Stockings. Elastic	Pomeroy Company	52,279	May 8	122	713
Stomachic and carminative	E. Dort	52,170	May 1	122	345
Stones and hones. Oil, water, whet, and grind	Scranton Whetstone and Abrasive Wheel Co.	54,021	June 19	122	2678
Stones and hones. Oil, whet, water, and grind	Scranton Whetstone and Abrasive Wheel Company.	53,363	May 29	122	1718
Stones and hones. Oil, whet, water, and grind	Scranton Whetstone and Abrasive Wheel Co.	53,364	May 29	122	1718
Story-paper. Periodically-issued	A. D. Porter Company	52,842	May 22	122	1383
Stout	Robert Smith Ale Brewing Company.	53,407	June 5	122	2048
Stout	Robert Smith Ale Brewing Company.	53,408	June 5	122	2048
Stove-polish. Powdered	X-Ray Stove Polish Co	52,030	May 1	122	340
Stoves and furnaces	F. & L. Kahn & Bros	52,330	May 8	122	716
Stoves and furnaces. Heating	Fiebeger Heating Company	52,263	May 8	122	713
Stoves and ranges	Bergstrom Stove Co	52,127	May 1	122	343
Stoves and ranges	Lattimer-Williams Manufacturing Company.	52,333	May 8	122	716
Stoves. Gas-	W. M. Crane Co	53,026	May 22	122	1391
Stoves. Gas-	Gem City Stove Co	53,122	May 29	122	1708
Stoves. Heating and cooking	Gem City Stove Manufacturing Co.	53,658	June 12	122	2375
Stoves. Heating and cooking	Joliet Stove Works	54,621	June 26	122	3002
Stoves. Solid-fuel-burning heating and cooking	J. White & Son	53,133	May 29	122	1708
Sugar and molasses	R. C. Martin	54,379	June 26	122	2993
Suits and overcoats for young men	Sykes & Ab. Kirschbaum & Co	53,610	June 5	122	2057
Suits and parts of suits. Children's	Jones Bros. Overall Company	53,830	June 12	122	2382
Suits. Children's	C. W. Klemm	53,179	May 29	122	1710
Sumac, gambier, oak, and hemlock extracts	G. H. Leonard & Co	52,464	May 8	122	721
Suppositories	W. Ernst	53,203	May 29	122	1711
Suspenders	Pioneer Suspender Company	52,371	May 8	122	717
Suspenders. Trousers-	Weld, Colburn & Wickens	53,193	May 29	122	1711
Suspensory bandages	J. Ellwood Lee Company	52,664	May 15	122	1035
Suspensory bandages	Johnson & Johnson	54,235	June 26	122	2987
Suspensory bandages	Johnson & Johnson	54,249	June 26	122	2988
Suspensory bandages and trusses	J. Ellwood Lee Company	52,422	May 8	122	719
Sweeping compounds	G. E. Cave	54,224	June 26	122	2987
Switches. Snap-	Perkins Corporation	54,626	June 26	122	3003
Syrup	Sprague, Warner & Company	52,187	May 1	122	346
Syrup	Griggs, Cooper & Co	52,326	May 8	122	715
Syrup	Penick & Ford	54,385	June 26	122	2993
Syrup and molasses	National Grocer Company	52,182	May 1	122	343
Syrup for disguising quinin. Aromatic	Voigt & Co	53,263	May 29	122	1715
Syrup. Sugar and maple	Chicago Concentrating Company	53,305	May 29	122	1716
Syrups and molasses	Steuart, Knatz & Co	52,162	May 1	122	345
Syrups and molasses	Penick & Ford	54,384	June 26	122	2993
Syrups and molasses. Sugar-cane	Penick & Ford	54,577	June 26	122	3001
Tack-claws	Whitman & Barnes Manufacturing Company.	52,874	May 22	122	1385
Tackle and hoisting blocks and sheaves for the same	Boston and Lockport Block Company.	54,636	June 26	122	3003
Talking-machine records	Victor Talking Machine Co	54,368	June 26	122	2992
Talking-machine records	Victor Talking Machine Co	54,535	June 26	122	2999
Talking-machine records	Victor Talking Machine Co	54,536	June 26	122	2999
Tapioca. Prepared	Whitman Grocery Company	52,119	May 1	122	343
Taps, dies, and screw-plates	Wells Brothers Company	54,069	June 19	122	2680
Tea	Dolan Mercantile Co	52,514	May 8	122	723
Tea	Sprague, Warner & Company	52,740	May 15	122	1038
Tea	F. P. Garrettson & Co	53,482	June 5	122	2051
Tea	S. S. Pierce Co	54,389	June 26	122	2993

Alphabetical list of trade-marks for May and June—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Tea	Chase & Sanborn	54,422	June 26	122	2994
Tea	A. Schilling & Co	54,528	June 26	122	2999
Tea	A. Schilling & Co	54,529	June 26	122	2999
Tea and coffee pots	Silver & Company	53,794	June 12	122	2380
Tea and coffee pots and urns	Silver & Company	53,814	June 12	122	2381
Teas	Arbuckle Bros	54,198	June 19	122	2685
Teas. Mixed	New Orleans Import Co	53,492	June 5	122	2052
Teas. Mixed	New Orleans Import Co	53,493	June 5	122	2052
Teeth and curing toothache. Compounds for filling	A. E. Pratt	54,679	June 26	122	3005
Teeth and the mouth. Preparations for the cleansing and preservation of the	K. k. landespriv. Milly-Kerzen-, Seifen-und Glycerin-Fabrik, von F. A. Sarg's Sohn & Co.	54,110	June 19	122	2680
Telephone-switchboards	Sumter Telephone Mfg. Co	52,861	May 22	122	1384
Telephone transmitters and receivers	Ericsson Telephone Company	52,567	May 15	122	1032
Telephones	Hutchison Acoustic Company	53,753	June 12	122	2379
Telephones and parts thereof	Hibbard, Spencer, Bartlett & Company.	52,697	May 15	122	1036
Tetter cure	Hooper Medicine Company	53,313	May 29	122	1716
Thread and darning and crochet cotton. Cotton	Clark Mile-End Spool Cotton Co	54,324	June 26	122	2990
Thread. Cotton	Clark Mile-End Spool Cotton Co	52,355	May 8	122	717
Thread. Cotton	Jonas Brook & Bros	54,236	June 26	122	2987
Thread. Cotton	Clark Mile-End Spool Cotton Co	54,443	June 26	122	2995
Thread. Cotton	Jonas Brook & Bros	54,666	June 26	122	3004
Thread. Linen	L. Lichtenstein's Sons	53,252	May 29	122	1713
Thread of all kinds. Cotton	Clark Thread Co	54,654	June 26	122	3004
Thread. Silk	A. H. Rice & Co	53,104	May 29	122	1707
Threads and cords. Silk	Brainerd & Armstrong Company.	53,999	June 19	122	2677
Time-registers	Dey Time Register Co	54,162	June 19	122	2683
Time-registers	Dey Time Register Co	54,163	June 19	122	2683
Time-registers	Dey Time Register Co	54,164	June 19	122	2683
Time-registers	Dey Time Register Co	54,165	June 19	122	2683
Tin and terne plates	Follansbee Brothers Company	51,986	May 1	122	338
Tin and terne plates	Follansbee Brothers Company	53,120	May 29	122	1708
Tin cooking utensils	Lisk Manufacturing Co	53,404	June 5	122	2048
Tin culinary articles	Lisk Manufacturing Co	53,756	June 12	122	2379
Tin culinary utensils	Reed Manufacturing Co	53,150	May 29	122	1709
Tin kitchen utensils	Hibbard, Spencer, Bartlett & Company.	54,042	June 19	122	2678
Tin. Plate and roofing	J. Meurer	51,971	May 1	122	337
Tin. Plate and roofing	J. Meurer	51,972	May 1	122	337
Tires. Pneumatic	B. F. Goodrich Company	53,744	June 12	122	2378
Tobacco and cigarettes. Smoking	Victor Talking Machine Co	54,027	June 19	122	2678
Tobacco. Chewing and smoking	Hoffman and Co	52,486	May 8	122	722
Tobacco. Chewing and smoking	Bloch Bros. Tobacco Co	52,944	May 22	122	1387
Tobacco. Chewing and smoking	Smith & Scott Tobacco Co	54,532	June 26	122	2999
Tobacco "in the hand." Leaf	J. M. Buckner, Jr., & Co	54,543	June 26	122	2999
Tobacco. Leaf, smoking, and chewing	Independent Tobacco Manufacturers Promoting Company.	54,447	June 26	122	2996
Tobacco-pipes, cigar and cigarette tubes	Adolph Frankau & Co	53,112	May 29	122	1708
Tobacco-pipes, cigar and cigarette tubes	Adolph Frankau & Co	53,968	June 19	122	2676
Tobacco. Plug	Ryan-Hampton Tobacco Co	52,616	May 15	122	1033
Tobacco-pouches. Rubber or gutta-percha	Adolph Frankau & Co	54,054	June 19	122	2679
Tobacco. Smoking	Butler-Butler	52,061	May 1	122	341
Tobacco. Smoking	Blackwell's Durham Tobacco Co	54,491	June 26	122	2997
Tobacco. Smoking and chewing	Gilbert, Son & Co	52,419	May 8	122	719
Tobacco. Smoking and chewing	Independent Snuff Company	53,315	May 29	122	1716
Tobacco. Smoking and chewing	Fluhrer Tobacco Company	53,340	May 29	122	1717
Tobacco. Smoking and chewing long-cut	Hansen-Schmitt Co	54,445	June 26	122	2995
Tobacco. Smoking, chewing, and cigarette	A. A. Kohary	54,499	June 26	122	2998
Tobacco. Smoking or chewing	Nashville Tobacco Works	54,471	June 26	122	2997
Tobacco. Smoking or chewing	Nashville Tobacco Works	54,472	June 26	122	2997
Tobacco. Smoking or chewing	Nashville Tobacco Works	54,473	June 26	122	2997
Tobacco. Smoking or chewing	Nashville Tobacco Works	54,474	June 26	122	2997
Toilet articles. Certain named	J. C. Dowd & Co	54,325	June 26	122	2990
Toilet lotion	M. E. Waite	52,256	May 1	122	3482
Tonic	M. T. Goldman	52,138	May 1	122	3447
Tonic and beverage. Tomato	Raimer-Heinly Co	54,177	June 19	122	2684
Tonic and flavoring. Compound used as a	B. F. Miner	54,063	June 19	122	2679
Tonic beverage	Salt Lake City Soda Water Co	52,218	May 1	122	347
Tonic beverage and extract for making same. Carbonated	Blue Seal Supply Co	52,945	May 22	122	1387
Tonic beverage. Carbonated	C. C. Copeland	53,592	June 5	122	2056
Tonic beverage. Carbonated	J. Ries	53,644	June 5	122	2058
Tonic beverage. Carbonated	Boonville Mineral Spring Co	54,464	June 26	122	2996
Tonic beverage. Carbonated	J. Ries	54,610	June 26	122	3002
Tonic beverage. Carbonated non-intoxicating	Heinzerling & Co	54,511	June 26	122	2998
Tonic beverage. Carbonated non-intoxicating	Heinzerling & Co	54,512	June 26	122	2998
Tonic beverage. Carbonated non-intoxicating	Heinzerling & Co	54,600	June 26	122	3002
Tonic beverages. Non-alcoholic	C. D. Bradham	51,959	May 1	122	337
Tonic cordial	Voigt & Co	53,213	May 29	122	1711
Tonic, digestive, and nutrient preparation	Charles N. Crittenton Company	53,847	June 12	122	2382
Tonic for rheumatism	Feeney & Pallotto	54,328	June 26	122	2991
Tonic for the regulation of the alimentary organs	Brand Brothers Company	52,451	May 8	122	720
Tonic for the scalp and skin	G. Timen	53,061	May 22	122	1392
Tonic. Powdered nerve and muscle	E. T. Richards	52,500	May 8	122	723
Tonics and medicated wines	Mariani & Co	53,084	May 22	122	1393
Tonics and remedies for dyspepsia and stomach and intestinal disorders.	V. E. Beck	52,805	May 15	122	1041
Tonics. Blood and nerve	J. M. Collins	53,622	June 5	122	2057
Tools and tool-holders. Certain named	Cleveland Twist Drill Company	53,720	June 12	122	2377
Tooth-filling. Gutta-percha	S. S. White Dental Mfg. Co	53,152	May 29	122	1709
Tooth-filling. Gutta-percha	S. S. White Dental Mfg. Co	53,153	May 29	122	1709
Tooth-paste	S. S. White Dental Mfg. Co	53,359	May 29	122	1717
Tooth-paste	C. M. Dunne	54,704	June 26	122	3006
Toothache-wax	O. F Leonhardt	52,457	May 8	122	721
Toothpicks. Wooden	O. H. Hersey	52,206	May 1	122	347

Alphabetical list of trade-marks for May and June—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Traps and bends. Lead	Selby Smelting and Lead Company.	52,631	May 15	122	1034
Trees. Peach	J. W. Rockey	52,081	May 1	122	342
Trees. Peach	M. E. Fowler	54,573	June 26	122	3001
Trunks, valises, and satchels	P. C. Murphy Trunk Company	52,368	May 8	122	717
Trusses	J. Ellwood Lee Company	52,623	May 15	122	1034
Trusses	J. Ellwood Lee Company	52,624	May 15	122	1034
Turbines and parts thereof. Steam	C. A. Parsons	51,999	May 1	122	338
Turbo-compressors and pumps	C. A. Parsons	51,998	May 1	122	338
Turpentine	Standard Oil Co. of New York	53,015	May 22	122	1390
Turpentine	Standard Oil Co. of New York	54,533	June 26	122	2999
Turpentine. Spirits of	Georgetown Chemical Works	54,428	June 26	122	2995
Turquoises. American	Azure Mining Co	53,382	June 5	122	2047
Twine	Fulton Bag & Cotton Mills	52,482	May 8	122	722
Type-writer ribbon	Bacon Brothers	53,771	June 12	122	2379
Type-writer ribbons	F. O. Mittag	53,254	May 29	122	1713
Type-writer ribbons	F. O. Mittag	53,350	May 29	122	1717
Type-writer ribbons	Carter's Ink Company	54,072	June 19	122	2680
Type-writer ribbons	Carter's Ink Company	54,570	June 26	122	3001
Type-writers. Inked pads for	J. R. Keatinge	54,713	June 26	122	3006
Type-writing and adding machines. Combined	Arithmograph Company	53,970	June 19	122	2676
Type-writing machines	Wyckoff, Seamans & Benedict	53,531	June 5	122	2053
Umbrella-frames	Samuel Fox & Co	53,898	June 12	122	2384
Umbrella-frames	Samuel Fox & Co	53,899	June 12	122	2384
Umbrella-frames	Samuel Fox & Co	53,900	June 12	122	2384
Umbrella-frames and ribs of metal	Samuel Fox & Co	53,897	June 12	122	2384
Umbrella-frames. Metal	Samuel Fox & Co	53,896	June 12	122	2384
Umbrella-frames. Metal	Samuel Fox & Co	53,901	June 12	122	2384
Umbrella-frames. Metal	Samuel Fox & Co	53,902	June 12	122	2384
Umbrellas and parasols	Gorham Mfg. Co	54,077	June 19	122	2680
Undergarments. Women's combination	Leona Garment Company	53,101	May 29	122	1707
Undershirts, drawers, and union suits	Deimel Linen-Mesh System Company.	53,828	June 12	122	2382
Undervests, jerseys, and drawers	Levi Strauss and Company	53,102	May 29	122	1707
Underwaists	E. H. Horwood	53,552	June 5	122	2054
Underwaists for women and children	T. B. Fitzpatrick	54,234	June 26	122	2987
Underwear. Dressed-skin	T. C. Jones	54,667	June 26	122	3004
Underwear. Woven and knitted	G. W. Schlichten	54,253	June 26	122	2988
Valves	Dunham, Carrigan & Hayden Co	53,165	May 29	122	1710
Valves. Blow-off	Lunkenheimer Company	52,336	May 8	122	716
Vanilla-oil	Corrizo Extract Co	52,949	May 22	122	1388
Vanillin and cumarin	G. Lueders & Co	52,783	May 15	122	1040
Varnish	Glidden Varnish Company	52,094	May 1	122	342
Varnish	E. L. Hueter	53,660	June 12	122	2375
Varnish coating for interior woodwork. Liquid	Interior Hardwood Co	53,661	June 12	122	2375
Varnish. Color	F. O. Pierce Company	51,966	May 1	122	337
Varnish-hardeners	Tousey Varnish Co	54,485	June 26	122	2997
Varnish, japan, driers, and liquid fillers	Boston Varnish Company	53,948	June 19	122	2675
Varnish. Spirit	Ball Chemical Co	53,302	May 29	122	1715
Varnish-stains	David B. Crockett Company	53,950	June 19	122	2675
Varnishes	Murphy Varnish Company	53,955	June 19	122	2675
Varnishes	Chase, Roberts & Company	54,221	June 19	122	2685
Varnishes. Priming, coating, and preparing material for	Murphy Varnish Company	53,956	June 19	122	2675
Varnishes, stains, japans, and surfacers	Chicago Varnish Co	54,001	June 19	122	2677
Vegetable compound	Kloczewski & Co	53,224	May 29	122	1712
Vehicles. Certain named	Gendron Wheel Co	54,103	June 19	122	2681
Velvets	A. L. Dreyfuss & Co	52,357	May 8	122	717
Vermicide	C. Lawall's Son & Co	52,780	May 15	122	1040
Vermifuge	Parker Blake Co	53,355	May 29	122	1717
Vermifuge	Parker Blake Co	53,356	May 29	122	1717
Vermifuge	J. F. Ballard	53,512	June 5	122	2053
Vermin-exterminating compound	E. A. Murray	52,157	May 1	122	345
Vessels. Hollow-walled	H. F. Meier	51,995	May 1	122	338
Veterinary gall-ointments, healing-powders, and liniments	C. L. Rea	54,362	June 26	122	2992
Violin, guitar, zither, and banjo strings	S. Blumenthal	51,980	May 1	122	338
Violin, guitar, zither, and banjo strings	S. Blumenthal	52,004	May 1	122	339
Voting-machines	Triumph Voting Machine Company.	53,233	May 29	122	1712
Wagons	Moline Wagon Company	54,112	June 19	122	2681
Wagons	Eagle Wagon Works	54,743	June 26	122	3008
Wagons and dump-carts. Farm	Kentucky Wagon Manufacturing Company.	52,855	May 22	122	1384
Wagons, carts, drays, and trucks	Auburn Wagon Co	52,711	May 15	122	1037
Wagons. Farm	Kentucky Wagon Manufacturing Company.	52,576	May 15	122	1032
Wagons. Farm	Kentucky Wagon Manufacturing Company.	52,854	May 22	122	1384
Wagons. Farm	Kentucky Wagon Manufacturing Company.	52,856	May 22	122	1384
Waists. Ladies' dress	Juda Bros	54,498	June 26	122	2998
Wall-coating	Toch Brothers	54,534	June 26	122	2999
Wall-ties	J. Prescott	53,185	May 29	122	1710
Wall-ties	Braun Manufacturing Co	54,701	June 26	122	3006
Washbasins. Stationary	Cahill Iron Works	54,265	June 26	122	2988
Washing-machines	H. S. Judd	53,317	May 29	122	1716
Washing-machines. Rotary	Benbow-Brammer Manufacturing Company.	52,437	May 8	122	720
Watch-movements	L. Manheimer & Bros	54,083	June 19	122	2680
Watches	W. C. Ball	54,239	June 26	122	2987
Watches and parts thereof	A. Schwob	54,179	June 19	122	2684
Watches and parts thereof	A. Schwob	54,530	June 26	122	2999
Watches and parts thereof	A. Schwob	54,531	June 26	122	2999
Watches, watch cases and movements	Philadelphia Watch Case Co	52,859	May 22	122	1384
Watches, watch cases and movements, and parts thereof	New York Standard Watch Co	52,839	May 22	122	1383
Watches, watch movements, cases, and parts	W. F. Doll	54,353	June 26	122	2991
Watchcases and watch-movements	Halyden W. Wheeler & Co	52,174	May 1	122	345

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Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Water-bags	A. Appell Company	54,030	June 19	122	2678
Water-bags	A. Appell Company	54,031	June 19	122	2678
Water-bags	A. Appell Company	54,032	June 19	122	2678
Water-bags	A. Appell Company	54,033	June 19	122	2678
Water. Carbonated	F. W. Becker	53,587	June 5	122	2056
Water. Effervescent or carbonated mineral	Manitou Mineral Springs Company.	53,663	June 12	122	2375
Water. Effervescent powder for making aperient mineral	C. J. Thatcher	54,122	June 19	122	2682
Water-hardening compounds	M. Wallerstein	53,528	June 5	122	2053
Water. Lithia-spring	Londonderry Lithia Spring Water Company.	52,334	May 8	122	716
Water. Mineral	Apollinaris Company	52,710	May 15	122	1037
Water. Mineral	J. A. Horn	53,314	May 29	122	1716
Water. Mineral	Die Actiengesellschaft Apollinaris Brunnen.	53,335	May 29	122	1716
Water. Mineral	Arondack Company	53,743	June 12	122	2378
Water-wheels and water-wheel motors	Peton Water Wheel Co	52,020	May 1	122	339
Wax	S. C. Johnson & Son	51,991	May 1	122	338
Wax	S. S. White Dental Mfg. Co	53,258	May 29	122	1713
Wheels. Metallic rims for vehicle-	Clincher Automobile Tire Manufacturers Association.	52,293	May 8	122	714
Whips	Cargill Cleveland & Co	53,803	June 12	122	2381
Whiskies. Pure rye and malt	Meadville, Pennsylvania Distilling Company.	54,450	June 26	122	2996
Whiskies. Rye, Bourbon, and all kinds of	S. C. Herbst Importing Co	52,669	May 15	122	1035
Whisky	Ben J. Goldman Co	52,126	May 1	122	343
Whisky	Carstairs Bros	52,131	May 1	122	344
Whisky	E. Kuhlmann	52,150	May 1	122	344
Whisky	W. P. Squibb & Co	52,161	May 1	122	345
Whisky	A. Guckenheimer & Bros	52,173	May 1	122	345
Whisky	S. Hirsch & Co	52,176	May 1	122	345
Whisky	A. Myers	52,181	May 1	122	346
Whisky	A. Overholt & Co	52,183	May 1	122	346
Whisky	F. C. Renziehausen	52,184	May 1	122	346
Whisky	Star Distillery Co	52,188	May 1	122	346
Whisky	W. A. Taylor & Co	52,190	May 1	122	346
Whisky	B. Bondy	52,193	May 1	122	346
Whisky	J. P. Connor	52,195	May 1	122	346
Whisky	J. P. Connor	52,196	May 1	122	346
Whisky	F. Glassup	52,204	May 1	122	346
Whisky	L. Nelson	52,212	May 1	122	347
Whisky	L. Kahn & Co	52,270	May 8	122	713
Whisky	Star Distillery Co	52,280	May 8	122	714
Whisky	Lang, Schenck & Co	52,334	May 8	122	716
Whisky	Bluthenthal & Bickart	52,460	May 8	122	721
Whisky	Fairfax & Co	52,479	May 8	122	722
Whisky	W. Schneider W. W. & L. Co	52,494	May 8	122	722
Whisky	Star Distillery Co	52.545	May 8	122	725
Whisky	Bluthenthal & Bickart	52,565	May 15	122	1031
Whisky	A. Lipman	52,577	May 15	122	1032
Whisky	D. Sachs and Sons	52,580	May 15	122	1032
Whisky	L. Lazarus	52,586	May 15	122	1032
Whisky	W. H. Jones and Co	52,595	May 15	122	1033
Whisky	O. J. Carpenter	52,619	May 15	122	1033
Whisky	J. M. Cranston	52,642	May 15	122	1034
Whisky	P. Freiler	52,644	May 15	122	1034
Whisky	Hilbert Mercantile Co	52,647	May 15	122	1034
Whisky	Lang, Schenck & Co	52,648	May 15	122	1035
Whisky	Monticello Distilling Company	52,649	May 15	122	1035
Whisky	Gottschalk Co	52,677	May 15	122	1036
Whisky	J. F. Sinnott	52,686	May 15	122	1036
Whisky	J. M. Carroll	52,713	May 15	122	1037
Whisky	Maryland Distilling Co	52,728	May 15	122	1038
Whisky	F. S. Scherer	52,737	May 15	122	1038
Whisky	Van Vleet-Mansfield Drug Co	52,746	May 15	122	1038
Whisky	Morrin-Powers Merc. Co	52,785	May 15	122	1040
Whisky	C. W. Bauer	53,027	May 22	122	1391
Whisky	Bluthenthal & Bickart	53,029	May 22	122	1391
Whisky	Chicago Distilling Co	53,033	May 22	122	1391
Whisky	J. M. Davis	53,034	May 22	122	1391
Whisky	E. H. Taylor, Jr. & Son	53,035	May 22	122	1391
Whisky	Feuchter Bros	53,036	May 22	122	1391
Whisky	Freiberg & Kahn	53,038	May 22	122	1391
Whisky	A. Guckenheimer & Bros	53,042	May 22	122	1391
Whisky	H. L. Griesedieck Dist'g Co	53,043	May 22	122	1391
Whisky	W. H. Jones and Co	53,045	May 22	122	1391
Whisky	Kaufmann, Baer & Co	53,047	May 22	122	1391
Whisky	J. A. Magnus & Co	53,050	May 22	122	1392
Whisky	J. H. F. Schwartz	53,056	May 22	122	1392
Whisky	Star Distillery Co	53,057	May 22	122	1392
Whisky	F. J. Taber	52,058	May 22	122	1392
Whisky	F. J. Taber	52,059	May 22	122	1392
Whisky	F. J. Taber	52,060	May 22	122	1392
Whisky	W. L. Weller & Sons	53,064	May 22	122	1392
Whisky	L. J. Adler	53,111	May 29	122	1708
Whisky	A. Guckenheimer & Bros	53,124	May 29	122	1708
Whisky	S. T. Harvey & Son	53,125	May 29	122	1708
Whisky	Hoffheimer Bros. Co	53,126	May 29	122	1708
Whisky	A. A. Wolf & Co	53,134	May 29	122	1708
Whisky	E. Elsing & Co	53,166	May 29	122	1710
Whisky	Freiberg & Kahn	53,172	May 29	122	1710
Whisky	Fardridge & Blackwell	53,181	May 29	122	1710
Whisky	P. Hamburger Company	53,246	May 29	122	1713
Whisky	S. Binswanger & Bro	53,266	May 29	122	1714
Whisky	J. Nathan	53,304	May 29	122	1716
Whisky	L. J. Adler	53,397	June 5	122	2048

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Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Whisky	S. Altmayer	53,398	June 5	122	2048
Whisky	Ben J. Goldman Co	53,399	June 5	122	2048
Whisky	C. H. Graves & Son	53,400	June 5	122	2048
Whisky	W. P. Ives & Co	53,402	June 5	122	2048
Whisky	S. Grabfelder & Co	53,409	June 5	122	2048
Whisky	R. Steel	53,411	June 5	122	2048
Whisky	Brand Brothers Company	53,416	June 5	122	2049
Whisky	M. Fruhauf & Co	53,418	June 5	122	2049
Whisky	B. W. Le Compte	53,425	June 5	122	2049
Whisky	Woodford Distilling Co	53,436	June 5	122	2049
Whisky	Old Kentucky Distillery	53,494	June 5	122	2052
Whisky	Old Kentucky Distillery	53,495	June 5	122	2052
Whisky	Old Kentucky Distillery	53,524	June 5	122	2053
Whisky	Schenley Distilling Company	53,568	June 5	122	2055
Whisky	Swope & Mangold	53,574	June 5	122	2055
Whisky	M. Weiner	53,580	June 5	122	2055
Whisky	A. Berkowitz	53,588	June 5	122	2056
Whisky	H. Campe & Co	53,589	June 5	122	2056
Whisky	Hoffheimer Bro's. Co	53,600	June 5	122	2056
Whisky	Old Kentucky Distillery	53,604	June 5	122	2056
Whisky	Old Kentucky Distillery	53,605	June 5	122	2056
Whisky	Rhomberg Bros. & Co	53,606	June 5	122	2056
Whisky	Sample & Co	53,608	June 5	122	2057
Whisky	W. A. Taylor Co	53,611	June 5	122	2057
Whisky	Ullman Einstein Co	53,613	June 5	122	2057
Whisky	Bluthenthal & Bickart	53,619	June 5	122	2057
Whisky	A. Forbes	53,626	June 5	122	2057
Whisky	Freiberg & Workum	53,627	June 5	122	2057
Whisky	Fritz Thies Mercantile Co	53,628	June 5	122	2057
Whisky	Hoffheimer Bros. Co	53,632	June 5	122	2058
Whisky	Rhomberg Bros. & Co	53,642	June 5	122	2058
Whisky	Chas. Shaffner & Co	53,820	June 12	122	2381
Whisky	H. J. Hellert & Sons	53,822	June 12	122	2381
Whisky	O. J. Carpenter	53,841	June 12	122	2382
Whisky	Mayer, Sons & Co	53,864	June 12	122	2383
Whisky	Mayer, Sons & Co	53,865	June 12	122	2383
Whisky	E. A. McQuade	53,866	June 12	122	2383
Whisky	J. M. Cranston	53,879	June 12	122	2383
Whisky	George Bieler Sons Company	53,880	June 12	122	2383
Whisky	Kaufmann Bros. & Co	53,885	June 12	122	2384
Whisky	Kiefer & Co	53,886	June 12	122	2384
Whisky	Lazarus & Nassauer	53,887	June 12	122	2384
Whisky	A. Loeb	53,888	June 12	122	2384
Whisky	A. G. Marshuetz & Co	53,889	June 12	122	2384
Whisky	Maryland Distilling Co	53,890	June 12	122	2384
Whisky	Nelson Distilling Co	53,891	June 12	122	2384
Whisky	Strauss, Pritz & Co	53,903	June 12	122	2384
Whisky	Mayer, Sons & Co	53,926	June 12	122	2385
Whisky	Bigbie Bros. & Co	54,032	June 19	122	2678
Whisky	J. F. Sinnott	54,049	June 19	122	2679
Whisky	Weideman Company	54,068	June 19	122	2680
Whisky	P. J. Bowlin Liquor Co	54,117	June 19	122	2682
Whisky	Tucker & McCormack	54,123	June 19	122	2682
Whisky	J. McGlinn	54,143	June 19	122	2682
Whisky	Meyer Marx Co	54,144	June 19	122	2683
Whisky	Morrin-Powers Merc. Co	54,145	June 19	122	2683
Whisky	Wilmerding-Loewe Co	54,152	June 19	122	2683
Whisky	Josselson Bros. & Co	54,170	June 19	122	2683
Whisky	Kamp Distilling Co	54,193	June 19	122	2684
Whisky	W. Lanahan & Son	54,195	June 19	122	2684
Whisky	J. F. Sinnott	54,419	June 26	122	2994
Whisky	M. Lange	54,448	June 26	122	2996
Whisky	J. & E. Mahoney	54,449	June 26	122	2996
Whisky	T. F. O'Keefe	54,453	June 26	122	2996
Whisky	William H. Lee & Co	54,460	June 26	122	2996
Whisky	Albert M. Gugenheim Co	54,650	June 26	122	3004
Whisky	Brown-Forman Co	54,652	June 26	122	3004
Whisky	E. Oppenheimer	54,676	June 26	122	3005
Whisky	Richardson Brunsing Co	54,681	June 26	122	3005
Whisky	Straus Gunst & Co	54,685	June 26	122	3005
Whisky	M. S. Lowenthal	54,716	June 26	122	3006
Whisky	C. H. Ross & Co	54,723	June 26	122	3007
Whisky	T. J. Ryan	54,724	June 26	122	3007
Whisky	C. Bruml	54,735	June 26	122	3007
Whisky	Clover Leaf Wine Co	54,738	June 26	122	3007
Whisky	Four Oaks Distilling Co	54,747	June 26	122	3008
Whisky	S. Hirsch & Co	54,750	June 26	122	3008
Whisky	E. Hirschhorn	54,751	June 26	122	3008
Whisky	E. Hyman & Son	54,752	June 26	122	3008
Whisky	Weiss Eichold Liquor Co	54,761	June 26	122	3008
Whisky. Malt	S. Binswanger & Bro	52,504	May 8	122	723
Whisky. Pure malt Scotch	G. S. Grant	53,002	May 22	122	1390
Whisky. Rye	Batjer & Co	53,414	June 5	122	2048
Whisky. Rye	J. H. Hentz, Jr	53,823	June 12	122	2381
Whisky. Scotch	R. M. Haan	53,548	June 5	122	2054
Wicks. Lamp and candle	Fletcher Manufacturing Company.	52,568	May 15	122	1032
Windmills	Heller-Aller Co	54,040	June 19	122	2678
Windows and skylights	A. E. Rendle	53,563	June 5	122	2055
Wine	W. H. Jones & Co	52,522	May 8	122	724
Wine	Henry Block Co	53,003	May 22	122	1390
Wine	Charles & Co	53,032	May 22	122	1391
Wine	W. H. Jones and Co	53,046	May 22	122	1391
Wine	H. R. Myers	53,827	June 12	122	2381
Wine	Wm. Hoelscher and Co	53,874	June 12	122	2383
Wine	Geo. Benz & Sons	53,914	June 12	122	2385

Alphabetical list of trade-marks for May and June—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Wine	J. Wile Sons & Co	54,459	June 26	122	2996
Wine	I. Goldcft	54,616	June 26	122	3002
Wine. Champagne	G. H. Mumm & Co	54,113	June 19	122	2681
Wine in bottles White	Compañia Vinicola del Norte de España.	52,509	May 8	122	723
Wine. Malt	New England Brewing Company.	54,116	June 19	122	2681
Wines	P. Gargiulo & Co	53,040	May 22	122	1391
Wines	J. R. Schneider	53,154	May 29	122	1709
Wines	W. A. Taylor & Co	53,446	June 5	122	2050
Wines	To-Kalon Wine Co	53,905	June 12	122	2384
Wines. Madeira	W. A. Taylor & Co	52,024	May 1	122	340
Wines of all kinds	A. de Lure & Fils	54,082	June 19	122	2680
Wire-cloth. Door and window screen	Gilbert & Bennett Manufacturing Company.	52,203	May 1	122	346
Wire cloths and screens	W. S. Tyler Company	52,388	May 8	122	718
Wire hat-frames made without tie-wires. Ladies'	Totem Machine Co	54,646	June 26	122	3003
Wire rope	Macomber & Whyte Rope Company.	53,553	June 5	122	2054
Wood-finish	E. Johnson	54,010	June 19	122	2677
Wood-preserving compounds	P. H. Gerhard	51,987	May 1	122	338
Woolen and worsted piece goods	Shackamaxon Worsted Co	53,106	May 29	122	1707
Woolen cloth	Talbot Mills	52,742	May 15	122	1038
Woolen dress goods. Bolted	J. Lonke	54,556	June 26	122	3000
Woolen or worsted fabric	Botany Worsted Mills	52,712	May 15	122	1037
Woolen piece goods	Beebe-Webber Company	54,489	June 26	122	2997
Worsted, woolen, and cotton mixed piece goods	Griffon Company	52,952	May 22	122	1388
Worsted, woolen, and cotton mixed piece goods	Griffon Company	53,915	June 12	122	2385
Wrenches	Walworth Manufacturing Co	52,118	May 1	122	343
Wrenches	Whitman & Barnes Manufacturing Company.	52,966	May 22	122	1388
Wrenches	Walworth Manufacturing Company.	53,579	June 5	122	2055
Wrenches	Mossberg Wrench Company	53,665	June 12	122	2375
Wrenches	Whitman & Barnes Manufacturing Company.	54,259	June 26	122	2988
Wrenches and vises	J. H. Williams & Co	54,062	June 19	122	2679
Wringers	American Wringer Company	52,689	May 15	122	1036
Wringers	American Wringer Company	53,742	June 12	122	2378
Wringers and rolls thereof	Metropolitan Manufacturing Company.	52,077	May 1	122	341
Wringers and the parts thereof. Clothes	American Wringer Company	52,406	May 8	122	719
Wringers. Clothes	American Wringer Company	53,995	June 19	122	2677
Wringing-machines	American Wringer Company	53,448	June 5	122	2050
Yarn, sewing and crochet cotton. Cotton	Jonas Brook & Bros	54,336	June 26	122	2991
Yarns. Woolen and worsted	R. Blankenburg & Co	54,321	June 26	122	2990
Yarns. Woolen, worsted, and mohair	Henry E. Frankenberg Company	52,442	May 8	122	720
Yarns. Woolen, worsted, and mohair	Henry E. Frankenberg Company	52,443	May 8	122	720
Yeast	New Process Yeast Co	53,759	June 12	122	2379
Yeast. Compressed	Fleischmann Co	52,999	May 22	122	1390
Yeast. Compressed	Fleischmann Co	53,000	May 22	122	1390

ALPHABETICAL LIST OF LABELS.

Title.	Name.	No.	Date.	Official Gazette. Volume.	Page.
"A No. 1." (For Tea)	A. & G. Meyer	12,932	June 12	122	2387
"A No. 1." (For Coffee)	A. & G. Meyer	12,947	June 26	122	3009
"A Study in Cotton." (For a School Study-Box for Children)	A. G. Helmer	12,928	June 5	122	2059
"Acme." (For Percales)	Carson, Pirie, Scott and Company.	12,838	May 1	122	349
"Ambrosia Pure Chocolate Wafers." (For Confectionery)	Ambrosia Chocolate Company	12,860	May 8	122	726
"American Beauty." (For Embroideries)	Carson, Pirie, Scott and Company.	12,836	May 1	122	349
"Bastow's Cocoanut Biscults." (For Cocoanut Biscuits)	Stuart Bastow Co	12,914	June 5	122	2059
"Blue Ribbon Crystalac." (For Interior Varnishes)	Beckwith-Chandler Company	12,902	May 22	122	1394
"Borderland Coal." (For Coal)	Borderland Coal Company	12,841	May 1	122	349
"Brightine." (For a Polish)	I. H. Levy	12,911	May 29	122	1719
"Chastan." (For Cigars)	Chas. P. Stanley Cigar Co	12,901	May 22	122	1394
"Chockorn." (For a Bonbon)	L. C. Paschal	12,859	May 8	122	726
"Cingala." (For Tea)	B. Fischer & Co	12,885	May 22	122	1394
"Circleanum." (For a Cancer Remedy)	A. V. H. Wakeman	12,865	May 8	122	726
"Clay-Ola." (For Cigars)	O. L. Schwenke Lithographic Co.	12,843	May 8	122	726
"Cleverettes." (For Cigars)	Schmidt & Co	12,848	May 8	122	726
"Coleman's Mustard." (For Mustard)	R. Coleman	12,909	May 29	122	1719
"Constellation." (For Cigars)	Schmidt & Co	12,937	June 19	122	2686
"Copalac." (For a Floor-Finish)	Beckwith-Chandler Company	12,935	June 12	122	2387
"Crescent." (For Port-Wine)	A. M. Smith	12,887	May 22	122	1394
"Cushion Corn Cure." (For Corn Cure)	C. Amann	12,959	June 26	122	3009
"Darn-Nit." (For Hosiery, Toe Caps or Shields Therefor)	E. S. Wilmarth and C. H. Boynton.	12,943	June 19	122	2686
"Diamond Liniment." (For a Liniment)	H. A. R. Horton	12,918	June 5	122	2059
"Diamond Red." (For Paint)	Diamond Red Paint Co	12,945	June 19	122	2686
"Don Renato." (For Cigars)	A. C. Henschel & Co	12,900	May 22	122	1394
"Don't use can opener; use a nail or something similar." (For Cans.)	William Underwood & Co	12,903	May 22	122	1394
"Dread-Naught Motor Goggle." (For Goggles)	Texas Company	12,882	May 15	122	1043
"Dunedin." (For Percales)	Carson, Pirie, Scott and Company.	12,839	May 1	122	349
"E Z Fix." (For Combination Curtain and Window-Shade Holders.)	Carson, Pirie, Scott and Company.	12,840	May 1	122	349
"E-Z' Wax." (For an Ironing-Wax)	C. Newbourg	12,910	May 29	122	1719
"Eagle Island Brand." (For Canned Clams)	Barclay Brown & Taylor	12,916	June 5	122	2059
"Edstrom's Blood Purifier." (For a Blood-Purifier for Blood and Skin Diseases.)	O. E. Edstrom	12,924	June 5	122	2059
"El Genio." (For Cigars)	Menendez Bros. & Verplanck	12,938	June 19	122	2686
"El Scientifico." (For Cigars)	O. L. Schwenke Lithographic Co.	12,842	May 8	122	726
"Elco." (For a Beverage)	W. E. Riley	12,930	June 12	122	2387
"Elegant" (For Flour)	Pensacola Grocery Company	12,856	May 8	122	726
"Elliott's Brain and Nerve Food." (For Brain and Nerve Food Tablets.)	S. K. Elliott	12,828	May 1	122	349
"Elliott's Digestive Tablet." (For Digestive Tablets)	S. K. Elliott	12,829	May 1	122	349
"Elliott's Inhalant." (For an Inhalant for Pulmonary Diseases.)	S. K. Elliott	12,923	June 5	122	2059
"Ferro-China Iavarone." (For a Medicine and Tonic)	G. Javarone	12,891	May 22	122	1394
"Fire Chief." (For a Dry Chemical Fire-Extinguisher)	Western Fire Appliance Co	12,936	June 12	122	2387
"Flag Rock." (For Ginger-Ale)	Clifton Forge Bottling Works.	12,939	June 19	122	2686
"Fleisher Clothing." (For Clothing)	Fleisher Brothers	12,820	May 1	122	349
"Flor De P. Garcia & Bros." (For Cigars)	P. Garcia & Bros	12,898	May 22	122	1394
"Foldum." (For Toilet-Paper)	Scott Paper Co	12,905	May 22	122	1394
"Fragrant Shamrock." (For Tea)	National Tea Importing Company.	12,873	May 15	122	1043
"Gatling Gun Remedy." (For Medicine)	M. Vincent	12,922	June 5	122	2059
"Gay's Island Brand Clams." (For Canned Clams)	E. B. Hart	12,933	June 12	122	2387
"Glinsmann's High Grade Confections." (For Confections)	Grosaman Paper Box Co	12,827	May 1	122	349
"Golden Success." (For Medicine)	H. G. Wilson	12,921	June 5	122	2059
"Gordon Suspenders." (For Suspenders)	Gordon Manufacturing Company.	12,926	June 5	122	2059
"Great Western." (For Embroideries)	Carson, Pirie, Scott and Company.	12,835	May 1	122	349
"Greater Than King." (For Cigars)	B. Lyon	12,849	May 8	122	726
"Guittard's Pure Cream of Yeast." (For Baking-Powder)	E. Guittard & Co	12,823	May 1	122	349
"Half Century Coffee." (For Package-Coffee)	J. H. Ronan & Co	12,912	June 5	122	2059
"Harveata." (For Prepared Cooked Wheat)	Igleheart Brothers	12,949	June 26	122	3009
"Havana Seconds." (For Cigars)	Wohl & Comstock Co	12,821	May 1	122	349
"Hawaiian Pineapple (Diced)." (For Pineapple)	Tropic Fruit Company	12,950	June 26	122	3009
"High Grade." (For Overalls)	Smith Manufacturing Company.	12,819	May 1	122	349
"Holland's Wonderful Rheumatic Remedy." (For Medicine for the Cure of Rheumatism.)	M. H. Holland	12,833	May 1	122	349
"Homeo." (For Poultry Remedies)	Homeo Remedy Co	12,880	May 15	122	1043
"Indian." (For Cocoa)	Pennsylvania Chocolate Company	12,852	May 8	122	726
"Indian." (For Chocolate)	Pennsylvania Chocolate Company	12,853	May 8	122	726
"Indian." (For Chocolate)	Pennsylvania Chocolate Company	12,854	May 8	122	726
"Indian." (For Chocolate)	Pennsylvania Chocolate Company	12,855	May 8	122	726
"Iron-Clad and Medicated Gloves." (For Gloves)	Mound City Dishwasher Co	12,964	June 26	122	3009
"Its Mighty Easy to Spot Hilton Clothes." (For Clothing)	Hilton Co	12,966	June 26	122	3009
"Jeffries' No. 1 Cough Mixture." (For Medicine)	T. T. Jeffries	12,954	June 26	122	3009
"Jeffries' Reliable Headache Powders." (For Medicine)	T. T. Jeffries	12,953	June 26	122	3009
"Jetter's Malt Tonic." (For Malt Tonics)	Wilmanns Bros. Co	12,890	May 22	122	1394
"John Milton." (For Cigars)	H. Sommer Company	12,899	May 22	122	1394
"Karotone." (For Hair-Tonic)	N. Carola	12,897	May 22	122	1394
"Keep-Kuffs-Klene." (For Cuff-Protectors)	Keep Novelty Company	12,881	May 15	122	1043
"Kermer's 'E. T.' (Every Time)." (For a Medicine)	C. F. Merker	12,866	May 8	122	726

Alphabetical list of labels for May and June—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
"Klondyke Blue Plaster Board." (For Plaster-Board)	Wright, Barrett & Stillwell Co	12,972	June 26	122	3009
"Knoch." (For Cigars)	W. Knoch	12,846	May 8	122	726
"La Mertina." (For Cigars)	A. Mertens	12,850	May 8	122	726
"Label for Russell's Playing Cards." (For Playing-Cards)	W. W. Russell Card Co	12,929	June 5	122	2059
"Lightning Washing Fluid." (For Washing Fluid)	J. V. Quick	12,879	May 15	122	1043
"Liquoseptol." (For Medicine)	T. T. Jeffries	12,955	June 26	122	3009
"Little Victor." (For Cigars)	O. L. Schwenke Lithographic Co	12,845	May 8	122	726
"Lowney's Milk Chocolate." (For Chocolate)	Lowney Chocolate Company	12,948	June 26	122	3009
"Marthas Darzie Diabanon." (For a Skin Preparation)	M. J. Brannon	12,957	June 26	122	3009
"Marvel." (For Ginghams)	Carson, Pirie, Scott and Company	12,837	May 1	122	349
"Mashallah Coffee." (For Coffee)	M. Horowitz	12,851	May 8	122	726
"Mault-Ayle." (For a Light Beer)	Marshall Bottling Co	12,946	June 26	122	3009
"McAllister's Specific." (For Specific Liniment)	J. J. McAllister	12,919	June 5	122	2059
"McGee's Corn Cure." (For Corn Cure)	Star Chemical Co	12,958	June 26	122	3009
"Mentho Camph." (For an Ointment)	M. G. Slocum	12,864	May 8	122	726
"Mercedes." (For Cigars)	Schmidt & Co	12,847	May 8	122	726
"Monument Pure Rye Whiskey." (For Whisky)	Hornstein Grocery Co	12,876	May 15	122	1043
"Mosquitone." (For a Liquid Solution)	T. T. Jeffries	12,952	June 26	122	3009
"Mull's Pain Cure." (For Medicine)	E. E. Mull	12,892	May 22	122	1394
"Muro." (For Medicine)	D. S. Hager	12,830	May 1	122	349
"Nauvoo Brand Garments." (For Knitted Combination Union Suits.)	Ensign Knitting Co	12,869	May 8	122	726
"Ohlandt's Black Headache Powders." (For Medicine)	W. M. Ohlandt	12,832	May 1	122	349
"Old German Lager." (For Beer)	Wilmanns Bros. Co	12,931	June 12	122	2387
"Ondawa." (For Flour)	Kimball Flour Co	12,913	June 5	122	2059
"Otter Island Brand." (For Canned Clams)	Barclay Brown & Taylor	12,915	June 5	122	2059
"Pacific Evaporated Cream." (For Evaporated Cream)	Oregon Condensed Milk Co	12,825	May 1	122	349
"Pennant." (For Whisky)	A. M. Smith	12,888	May 22	122	1394
"Pinozone. (For a Proprietary Medicine)	Lakewood Pine Co	12,893	May 22	122	1394
"Pocket Knife Blade, Grinders, and Finishers Union Label." (For Pocket-Knives.)	F. A. Didsbury	12,944	June 19	122	2686
"Pride of Gloucester." (For Cream-Codfish)	B. S. Webber Fish Co	12,883	May 22	122	1394
"Pride of Gloucester." (For Sliced Smoked Halibut)	B. S. Webber Fish Co	12,884	May 22	122	1394
"Prime." (For Thread and Cotton)	I. J. Silverstein	12,871	May 8	122	726
"Princess Hair Tonic." (For Hair-Tonic)	F. Brehm	12,907	May 29	122	1719
"Protected Roofing." (For Roofing)	Hyndman Roofing Company	12,906	May 22	122	1394
"Pura World's-Best." (For Coffee)	J. J. Collins	12,872	May 15	122	1043
"Pure Breath Tablets." (For Breath-Tablets)	Capron Chemical Co	12,896	May 22	122	1394
"Purity Seamless Nipples Non-Collapsible." (For Nipples)	American Lithographic Company	12,970	June 26	122	3009
"Radiozone." (For Medicated Preparations and Articles)	Dr. Warner Remedy Co	12,894	May 22	122	1394
"Radnor Club Pure Rye Whiskey." (For Whisky)	J. Lafferty	12,826	May 1	122	349
"Red Dragon Brand." (For Spices)	Woolson Spice Company	12,917	June 5	122	2059
"Red Seal Brand Medicine Dropper." (For a Medicine-Dropper)	American Lithographic Co	12,867	May 8	122	726
"Red Seal Brand Medicine Dropper." (For Medicine-Droppers)	American Lithographic Co	12,868	May 8	122	726
"Reliance." (For Ladies' Shirt-Waists)	S. Schlein	12,904	May 22	122	1394
"Royal Cream for Shaving." (For Shaving-Cream)	Royal Cream Company	12,861	May 8	122	726
"Sabo Blend." (For Roasted Coffees)	Woolson Spice Company	12,886	May 22	122	1394
"Salam-Alakim." (For Turkish Coffee)	Ph. Exelbirt & Co	12,824	May 1	122	349
"Senator Andreas." (For Whisky)	G. Andreas & Co	12,940	June 19	122	2686
"Shredded Chocolates." (For Candy)	Lipps-Murbach Co. of Baltimore City.	12,877	May 15	122	1043
"St. Bernard Extract of Bark." (For Extract of Bark)	St. Bernard Medicine Co	12,863	May 8	122	726
"Star Baby Egg Matzoths." (For Biscuits)	H. S. Levy	12,858	May 8	122	726
"Star Indian Pastille." (For Pastilles)	E. A. Weigel	12,834	May 1	122	349
"Star Tea Matzoths." (For Biscuits)	H. S. Levy	12,857	May 8	122	726
"Sublime." (For Linen Thread)	Société Anme. Filature & Filteries Réuniés.	12,963	June 26	122	3009
"Supreme." (For German Knitting-Worsted)	H. Mishkowsky	12,927	June 5	122	2059
"Tadellos." (For Beer)	Ruehl Brothers Brewing Company.	12,889	May 22	122	1394
"Tenderfoot." (For Hosiery)	Carson, Pirie, Scott and Company.	12,965	June 26	122	3009
"The Aetna Self-Heating." (For Self-Heating Cans Containing Food.)	Aetna Self-Heating Food Company.	12,962	June 26	122	3009
"The American Girl Skirt." (For Ladies', Misses', and Children's Skirts.)	American Skirt Mfg. Co	12,870	May 8	122	726
"The Black Cat." (For Cigars)	A. G. Wiedmann Cigar Box Co	12,822	May 1	122	349
"The Elizabeth Salve." (For a Medical Preparation for the Cure of Skin Diseases.)	M. Herschman	12,925	June 5	122	2059
"The Kookizer." (For a Fireless Cooker and Iceer Combined)	M. L. Palmer	12,942	June 19	122	2686
"The Medina County Creamery Co." (For Butter)	Medina County Creamery Company.	12,951	June 26	122	3009
"The Stampede Mixture." (For Medicine)	Stampede Remedy Co	12,831	May 1	122	349
"The Virginia Brand." (For Pork Products)	Langdon & Boyd	12,934	June 12	122	2387
"Theiform." (For a Medical Preparation for the Scalp and Hair.)	A. Blew	12,961	June 26	122	3009
"Tin Pan Coal." (For Receptacles for Coal)	St. Louis, Rocky Mountain & Pacific Co.	12,971	June 26	122	3009
"Tiz for Tender Feet." (For Foot-Bath Tablets)	W. L. Dodge	12,960	June 26	122	3009
"Turtle Egg Shampoo." (For a Hair-Wash)	A. K. Rex	12,862	May 8	122	726
"U-Want-It." (For Butter)	B. D. Catlin	12,941	June 19	122	2686
"Victor Auxetophone." (For Talking-Machines and Parts Thereof.)	Victor Talking Machine Company	12,968	June 26	122	3009
"Victor Junior Gramophone." (For Talking-Machines and Parts Thereof.)	Victor Talking Machine Company	12,969	June 26	122	3009
"Victor Victrola." (For Talking-Machines and Parts Thereof)	Victor Talking Machine Company	12,967	June 26	122	3009
"Violet Talc Powder." (For Talc Powder)	Colgate & Co	12,956	June 26	122	3009
"Walton's Pepsin Dental Gum." (For Chewing-Gum)	G. E. Walton	12,878	May 15	122	1043
"White Elephant Cough Cure." (For a Medicine)	W. C. Strong	12,908	May 29	122	1719
"William Bond." (For Cigars)	O. L. Schwenke Lithographic Co	12,844	May 8	122	726
"Winchester Pure Rye Whiskey." (For Whisky)	Hornstein Grocery Co	12,875	May 15	122	1043
"Worthmore." (For Rye Whisky)	E. M. Higgins Co	12,874	May 15	122	1043
"Wright's Electric Catarrh Cure." (For a Jelly-Like Substance for Relief and Cure of Catarrh.)	G. H. Wright	12,895	May 22	122	1394
"Zynoxall." (For Medicine)	A. L. McVay	12,920	June 5	122	2059

PRINTS.

Title.	Name.	No.	Date.	Official Gazette. Volume.	Page.
"A Sure Sign of Good Eating." (For a Food Preparation)	Cream of Wheat Company	1,703	June 19	122	2686
"A Tricorne." (For Millinery and Straw Hats)	Gage Brothers & Co	1,642	May 8	122	726
"American Beauty." (For Millinery and Straw Hats)	Gage Brothers & Co	1,648	May 8	122	727
"At Your Service." (For Wheat)	Butcher & Co	1,668	May 22	122	1394
"Black and White." (For Millinery and Straw Hats)	Gage Brothers & Co	1,651	May 8	122	727
"Body Builders." (For Medicinal Remedies)	Body Builders Medicine Co	1,690	June 5	122	2059
"Boys Indestructible Hose." (For Hosiery)	Racine Feet Knitting Co	1,698	June 12	122	2387
"Burk's Butternut Boneless Breakfast Bacon." (For Bacon)	L. Burk	1,700	June 19	122	2686
"Carolina Brights Cigarettes, Manufactured by Wells-Whitehead Tobacco Co." (For Cigarettes.)	Wells-Whitehead Tobacco Co	1,674	May 22	122	1394
"Carolina Brights Cigarettes, They Satisfy the World." (For Cigarettes.)	Wells-Whitehead Tobacco Co	1,688	June 5	122	2059
"Composite Brick." (For Brick Manufactured from a Combination of Sand, Lime, and Cement.)	L. Elkus	1,699	June 12	122	2387
"Corn Fed." (For Provisions)	John P. Squire & Company	1,691	June 5	122	2059
"Coulson Egg Food." (For Poultry-Foods)	Coulson Poultry & Stock Food Co.	1,692	June 5	122	2059
"Coulson's Egg Food." (For Egg-Food)	Coulson Poultry & Stock Food Co.	1,667	May 22	122	1394
"Coulson's Hog Fattening Meal." (For Hog-Fattening Meal)	Coulson Poultry & Stock Food Co.	1,676	May 22	122	1394
"Cream of Wheat for Hot Weather." (For a Food Preparation.)	Cream of Wheat Company	1,701	June 19	122	2686
"Dere aint go'n'er be no leavin's." (For Food Products)	Battle Creek Breakfast Food Co. Ltd.	1,666	May 22	122	1394
"Father of Waters." (For Flour)	L. P. Hubbard	1,657	May 8	122	727
"Floral Effect." (For Millinery and Straw Hats)	Gage Brothers & Co	1,650	May 8	122	727
"Good Morning." (For Puffed Rice)	American Cereal Company	1,709	June 26	122	3009
"Happy Dispositions." (For a Food Preparation)	Cream of Wheat Company	1,705	June 19	122	2686
"Highest Prices Paid for Tobacco Grown With Virginia-Carolina Fertilizers." (For Fertilizers.)	Virginia-Carolina Chemical Co	1,683	May 29	122	1719
"Huyler's Chocolate." (For Huyler's Chocolate)	Stahl and Jaeger Inc	1,670	May 22	122	1394
"If You Please—Don't Merely ask for Flour." (For Flour)	Washburn-Crosby Company	1,682	May 29	122	1719
"It Makes the Mountain Smile." (For Beer)	Milwaukee Lithographing Company.	1,963	May 15	122	1043
"Jumbo Indexes Sportsmans' Playing Cards." (For Playing-Cards.)	United States Playing Card Company.	1,634	May 1	122	349
"Lemp Extra Pale." (For Beer)	Wm. J. Lemp Brewing Co	1,706	June 19	122	2686
"Liquid Fruits and Diamond Brand Crushed Fruits." (For Fruit-Syrups and Crushed Fruits.)	Liquid Carbonic Company	1,671	May 22	122	1394
"Men's Apparel." (For Men's Apparel)	L. Adler Bros. & Co	1,711	June 26	122	3009
"Montreal Malt Rye." (For Liquors)	N. M. Url & Co	1,696	June 12	122	2387
"Mushroom Fashion." (For Millinery and Straw Hats)	Gage Brothers & Co	1,647	May 8	122	727
"Nature's Romance." (For Beer)	Meek Company	1,672	May 22	122	1394
"Noodles, Moonlight, Pocahontas, Colonial Girl, Knuckledown, and in Old Madrid backs, Congress Playing Cards." (For Playing-Cards.)	United States Playing Card Company.	1,714	June 26	122	3009
"Otoe Preserving Co." (For Canned Cream Sugar-Corn)	Otoe Preserving Company	1,669	May 22	122	1394
"Panama Sailor." (For Millinery and Straw Hats)	Gage Brothers & Co	1,649	May 8	122	727
"Parsons." (For Manganese Bronze and White Brass)	William Cramp & Sons Ship & Engine Bldg. Co.	1,684	May 29	122	1719
"Peacock Feather." (For Millinery and Straw Hats)	Gage Brothers & Co	1,644	May 8	122	727
"Pettyjohn Says." (For a Cereal Preparation)	American Cereal Co	1,660	May 15	122	1043
"Pettyjohn Says." (For a Cereal Preparation)	American Cereal Co	1,661	May 15	122	1043
"Pettyjohn Says." (For a Cereal Preparation)	American Cereal Co	1,662	May 15	122	1043
"Picturesque Chapeau." (For Millinery and Straw Hats)	Gage Brothers & Co	1,639	May 8	122	726
"Plaid Trimmed." (For Millinery and Straw Hats)	Gage Brothers & Co	1,638	May 8	122	726
"Plateau Drape." (For Millinery and Straw Hats)	Gage Brothers & Co	1,646	May 8	122	727
"Ready for the Storm." (For Rubbers)	United States Rubber Company	1,678	May 22	122	1394
"Ribbon Streamers." (For Millinery and Straw Hats)	Gage Brothers & Co	1,643	May 8	122	726
"Rose Garlanded." (For Millinery and Straw Hats)	Gage Brothers & Co	1,640	May 8	122	726
"Russell's Regulars." (For Playing-Cards)	Willis W. Russell Card Co	1,659	May 8	122	727
"Sapolin Gloss Carriage Colors." (For Carriage-Colors)	Gerstendorfer Bros	1 658	May 8	122	727
"Scriven's Elastic Seam Knit Shirts." (For Shirts)	J. A. Scriven Company	1,685	June 5	122	2059
"Scriven's Elastic Seam Shirt, Coat Style, Sleeveless." (For Shirts.)	J. A. Scriven Company	1,686	June 5	122	2059
"Seek no Further." (For Proprietary Medical Remedies)	I. A. McKenney	1,689	June 5	122	2059
"Slack Cooperage Stock." (For Slack Cooperage Stock)	Tindle & Jackson	1,681	May 22	122	1394
"Soo Tannery." (For Leather)	E. S. Gile	1,637	May 1	122	349
"Tarita." (For Cigars)	American Cigar Company	1,695	June 12	122	2387
"The Continental Garter." (For Garters)	W. Heymann	1,710	June 26	122	3009
"The Handicraft Doll Furniture." (For Doll Furniture)	A. M. Spinney	1,713	June 26	122	3009
"The Home of Sierra." (For Beer)	Meek Company	1,673	May 22	122	1394
"The Hoosier Kitchen Cabinet, Cabinet No. 111." (For a Kitchen-Cabinet.)	Hoosier Manufacturing Co	1,680	May 22	122	1394
"The Hoosier Kitchen Cabinet, Cabinet No. 142." (For a Kitchen-Cabinet.)	Hoosier Manufacturing Co	1,679	May 22	122	1394
"The Jones Rafter Square." (For a Rafter-Square)	Russell & Erwin Manufacturing Co.	1,635	May 1	122	349
"The Joy Maker." (For a Food Preparation)	Cream of Wheat Company	1,704	June 19	122	2686
"The Key to Good Crops 'Pure & Sure' Seeds." (For Seeds)	St. Louis Seed Company	1,664	May 15	122	1043
"The Kismet Holder." (For Glass and Bottle Holders)	A. Hering	1,636	May 1	122	349
"The 'Kismet' Holder." (For Glass and Bottle Holders)	A. Hering	1,712	June 26	122	3009
"The Model Flour Mill." (For Flour)	Washburn-Crosby Company	1,708	June 26	122	3009

Alphabetical list of prints for May and June—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
"The Positive Milk Fever Cure." (For a Milk-Fever Remedy for Cattle.)	C. A. Coe Jr. Co	1,675	May 22	122	1394
"The Scriven Improved Elastic Seam Shirts, Short Sleeves." (For Shirts.)	J. A. Scriven Company	1,687	June 5	122	2059
"The Singer Fashion Series." (For Corset-Covers and Petticoats.)	Singer Sewing Machine Co	1,652	May 8	122	727
"The Singer Fashion Series." (For Wedding Gowns)	Singer Sewing Machine Co	1,653	May 8	122	727
"The Singer Fashion Series." (For Tailored Traveling Costumes.)	Singer Sewing Machine Co	1,654	May 8	122	727
"The Singer Fashion Series." (For Afternoon Gowns)	Singer Sewing Machine Co	1,655	May 8	122	727
"The Singer Fashion Series." (For Shirt-Waist Costumes)	Singer Sewing Machine Co	1,656	May 8	122	727
"Timely Tips Right off the Reel." (For Wire Rope)	A. Leschen & Sons Rope Co	1,693	June 5	122	2059
"Top of the Morning." (For a Food Preparation)	Cream of Wheat Company	1,702	June 19	122	2686
"Unit Street Car." (For Street-Cars)	J. Post	1,694	June 5	122	2059
"Velvet-Box-Plait." (For Millinery and Straw Hats)	Gage Brothers & Co	1,645	May 8	122	727
"Wales-Goodyear Rubbers." (For Rubbers)	United States Rubber Company	1,677	May 22	122	1394
"We Can't Improve Our Soap or Box Either." (For Soap-Holders.)	C. Owens	1,707	June 19	122	2686
"We Root for Fleischmann's Yeast." (For Yeast)	Stahl and Jaeger	1,697	June 12	122	2387
"Wings and Bows." (For Millinery and Straw Hats)	Gage Brothers & Co	1,641	May 8	122	726
"Yankee Coal." (For Fuel)	Yankee Fuel Company	1,665	May 15	122	1043

DISCLAIMER.

Invention.	Patentee.	No. of patent.	Date of patent.	Disclaimer filed.	Official Gazette. Volume.	Page.
Cotton seed and hulls. Process of and apparatus for treating	W. C. Johnson	530,533	Dec. 11, 1904	May 26, 1906	122	1727

ALPHABETICAL LIST OF TRADE-MARKS PUBLISHED.

Title.	Name.	Serial No.	Date.	Official Gazette. Volume.	Page.
Abrasive material made from paper and cloth coated with flint, sand, and emery.	H. Behr & Co	10,586	June 19	122	2653
Abrasive material made of paper and cloth coated with flint, sand, and emery.	H. Behr & Co	10,585	June 5	122	2031
Ale	New England Brewing Company	13,118	May 1	122	318
Ale	Suffolk Brewing Company	13,114	May 22	122	1365
Ale	Springfield Breweries Company	7,841-2	May 29	122	1687-8
Ale, blood-orange, birch-beer, sarsaparilla, and plain soda. Ginger-	Clicquot Club Company	18,650	May 15	122	1029
Ale. Ginger-	Holmes & Barber	15,739	May 1	122	326
Ale, porter, and brown stout	D. G. Yuengling & Son	19,585	June 26	122	2986
Ale, root-beer, lemon-soda, celery phosphate, &c. Ginger-	Sprague, Warner & Company	9,796	May 29	122	1690
Ale, sarsaparilla, and other beverages. Ginger-	Equinox Company	18,657	June 26	122	2981
Alloys. Metallic	Phosphor-Bronze Smelting Co	7,518	May 15	122	1000
Alloys. Metallic	Phosphor-Bronze Smelting Co	7,259	June 12	122	2346
Almond-meal compound for the toilet	Holton & Adams	16,172	June 12	122	2361
Almond-meal, facial, cleansing, and cold cream, and lotions	E. A. Twist	5,276	June 19	122	2645
Almond paste	H. Heide	16,889	May 22	122	1376
Ammonium chlorid	Brunner, Mond & Co	16,523	May 15	122	1020
Ammonium, muriate of ammonium, or sal-ammoniac in tablet form. Chlorid of	Brunner, Mond & Co	16,522	May 8	122	707
Ammonium, sodium, potassium, and lithium. Hydrates, carbonates, and chlorids of	Brunner, Mond & Co	16,524	June 5	122	2038
Analgesic and sedative	Dr. Miles Medical Co	3,427	May 1	122	305
Analgesics	El Zernac Co	12,216	May 8	122	694
Analgesics	El Zernac Co	12,215	June 12	122	2353
Anchors	Thomas Laughlin Company	4,790	June 19	122	2644
Anesthetic for dental and surgical operations	L. H. Knapp	8,425	May 15	122	1001
Anesthetics	Farbwerke vorm. Meister Lucius & Brüning.	12,711	June 5	122	2032
Antiseptic compound	Hylin & Co. Fabriks Aktiebolag	16,042	May 1	122	328
Antiseptic compound for removing and eradicating dandruff. Liquid	Physicians Medical Supply Co	14,999	May 8	122	701
Antiseptics and disinfectants. Compounds of chlorids and formaldehydes used as	Shoemaker & Busch	20	May 8	122	681
Antiseptics and washes for the mouth and teeth	F. A. Schulz	16,605	May 8	122	707
Antiseptics for surgical and medicinal use. General	Frederick Stearns & Co	14,520	June 12	122	2358
Antiseptics, germicides, and disinfectants	Stein-Falker Company	16,735	June 12	122	2363
Anvils	P. Wright & Sons	9,357	June 26	122	2963
Asphalt for waterproofing material, pavement, roofing, &c	Sicilian Asphalt Paving Co	15,057	June 19	122	2657
Atomizers and powder-blowers	De Vilbiss Manufacturing Company.	17,369	June 19	122	2662
Automobile vehicles	Reo Car Co	16,120	May 8	122	705
Automobiles	Hol-Tan Company	17 135	May 1	122	331
Automobiles	St. Louis Motor Carriage Co	9,788	May 8	122	689
Automobiles	Cadillac Automobile Company	11,765	May 15	122	1008
Automobiles	Knox Motor Truck Co	10,689	May 29	122	1690
Axes, hatchets, and adzes	Hibbard, Spencer, Bartlett & Company.	18,742	May 15	122	1029
Axes, hatchets, and adzes	Wells & Nellegar Company	7,379	June 12	122	2346
Axes, hatchets, and adzes	Hibbard, Spencer, Bartlett & Company.	13,846	June 12	122	2356
Bacon	L. Stutz and Sons	6,350	June 19	122	2645
Bacon, ribs, loins, hams, and shoulders	John P. Squire & Company	14,369	June 5	122	2034
Bagging	American Manufacturing Company.	15,096-101	May 15	122	1015
Bags. Seamless woven	Stark Mills	6,810	June 12	122	2345
Baking-powder	Howell Mfg. Co	2,508	May 8	122	683
Baking-powder	L. K. Adams	16,672	June 5	122	2038
Baking-powder	Closset & Devers	17,737	June 5	122	2041
Baking-powder	Sprague, Warner & Company	18,547	June 5	122	2044
Baking-powder	J. P. Dieter Co	4,609	June 19	122	2644
Baking-powder, bicarbonate of soda, and cream of tartar	A. Schilling & Company	9,289	June 12	122	2349
Balls. Golf-	Kempshall Manufacturing Company.	17,734	June 12	122	2367
Balls. Golf-	Kempshall Manufacturing Company.	17,733	June 19	122	2664
Barrels, half-barrels, kegs, well-buckets, and pails. Wooden.	Union Cooperage Co	12,248	May 29	122	1692
Basin and bath joint connections	Wolverine Brass Works	18,146	June 12	122	2368
Battery-cells. Hard-rubber	American Hard Rubber Co	5,162	May 15	122	999
Bed-canopies	Southern Canopy Company	18,239-40	June 5	122	2043
Bed-springs	Chas. A. Maish Co	17,620	May 29	122	1703
Beef. Pickled or corned	Swift and Company	18,618	June 19	122	2668
Beer	Hoster-Columbus Associated Breweries Co.	3,634-5	May 8	122	683
Beer	Minneapolis Brewing Co	11,823	May 8	122	693
Beer	Minneapolis Brewing Co	11,825	May 8	122	693
Beer	Suffolk Brewing Company	13,110	May 8	122	697
Beer	Curran and Joyce Co	13,862	May 8	122	698
Beer	J. Ruppert	16,336	May 15	122	1019
Beer	Wacker & Birk Br'g. & M'lt'g. Co	15,269-70	May 22	122	1371
Beer	Standard Brewing Co. of Baltimore City.	15,934	May 22	122	1372
Beer	Robert Porter & Company	16,349	May 22	122	1374
Beer	Reisch Brewing Co	14,602	May 29	122	1696

Alphabetical list of trade-marks published during May and June—Continued.

Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Beer	J. Ruppert	16,337	May 29	122	1698
Beer	Suffolk Brewing Company	13,111	June 5	122	2032
Beer	A. J. Houghton Co	7,410	June 12	122	2346
Beer	Anheuser-Busch Brewing Association.	9,763	June 12	122	2350
Beer	Aktienbrauerei zum Löwenbräu in München.	12,807	June 12	122	2354
Beer	Aktienbrauerei zum Löwenbräu in München.	13,038	June 12	122	2354
Beer	Aktienbrauerei zum Löwenbräu in München.	13,068	June 12	122	2355
Beer	Clinton Brewing Co	15,072	June 19	122	2657
Beer	Consumers Brewing Company	18,402	June 19	122	2667
Beer	Pittsburgh Brewing Company	19,261	June 19	122	2673
Beer	Pabst Brewing Company	14,348	June 26	122	2969
Beer	D. G. Yuengling & Son	19,586	June 26	122	2986
Beer. Lager-	Peter Schoenhofen Brewing Company.	12,748	May 8	122	696
Beer. Lager-	Iroquois Brewing Co	12,299	May 29	122	1692
Beer. Lager-	Peter Schoenhofen Brewing Company.	12,908	May 29	122	1693
Beer. Lager-	Connecticut Breweries Company	14,080	June 19	122	2656
Beer, root-beer extract, and dry ingredients for making root-beer. Root-	Charles E. Hires Company	14,320	May 1	122	322
Beet-pullers and potato-diggers	Moline Plow Co	13,982	May 15	122	1011
Belt-fasteners. Machinery	C. S. Eaton	18,144	June 26	122	2978
Belt-lacing	Kerr & Company	15,506	May 15	122	1016
Belts. Silk, duck, and leather	Leo I. Meinhard Company	19,203	June 19	122	2672
Belting. All descriptions of woven driving-	F. Reddaway & Co	16,362	May 22	122	1374
Belting. Leather	Republic Belting & Supply Co	17,818	May 8	122	711
Belting. Leather	J. E. Rhoads & Sons	16,213–14	June 19	122	2658
Belting. Leather	Baltimore Belting Company	18,687–8	June 26	122	2981
Belting. Rubber	Carolina Supply Co	16,603	May 22	122	1375
Beverages and extract and syrup for making the same	Peek Beverage Company	16,090	June 19	122	2658
Beverages and extracts for their manufacture. Non-alcoholic	W. H. Hutchinson & Son	17,763	May 15	122	1025
Beverages. Extracts for making	E. T. Wills	6,393	June 19	122	2646
Beverages. Fermented milk	W. F. Beall	17,210	June 5	122	2040
Beverages made from coca-leaves	Murfreesboro Bottling Works	1,044	June 12	122	2342
Bicycles	M. E. Johnson, trustee	15,452	May 15	122	1016
Bicycles, tricycles, velocipedes, and parts thereof	Hibbard, Spencer, Bartlett & Company.	13,849	May 1	122	321
Biscuits	Huntley & Palmers	9,445	June 19	122	2651
Biscuits	Cereal Laxative Co	18,409	June 19	122	2667
Biscuits, bread, cakes, crackers, &c	Mountain City Mill Co	18,913–16	June 19	122	2671–2
Biscuits, crackers, and cakes	Crescent Macaroni & Cracker Co	11,701	May 8	122	692
Biscuits, crackers, and cakes	A. J. Medlar Company	12,645	May 8	122	695
Bitters	I. Monheimer	2,543	May 22	122	1350
Bitters or tonic. Stomach	F. S. Amidon	11,685	May 15	122	1007
Bitters. Peach	H. Klas	15,501	May 8	122	695
Bitters. Stomach-	T. Lappe, (a Firm)	16,662	June 19	122	2660
Blacking. Perfumed waterproof shoe-	Societe Generale Des Cirages Français.	11,717	May 22	122	1363
Bleacher, deodorizer, disinfectant, and germicide	A. Castaing	17,686	June 19	122	2664
Bleaching, reducing, and discharging. Chemicals for	Badische Anilin- & Soda-Fabrik	12,379	June 26	122	2968
Blood-purifier for the treatment of stomach, liver, and kidney diseases.	B. J. Bruns	6,663	May 22	122	1354
Blood-purifiers, cough, and worm syrup and liniment	S. B. Goff & Sons Co	17,714	June 26	122	2975
Blue. Laundry	William Edge & Sons	10,529	June 12	122	2351
Blue-print cloth	E. G. Soltmann	541	June 19	122	2642
Blue-print paper	E. G. Soltmann	527	June 19	122	2642
Bluing. Bag-	C. H. Adams	18,373	June 5	122	2043
Boiler water-gage glasses	Joseph Tomey & Sons	12,251	June 26	122	2967
Boilers for heating purposes	Kellogg-Mackay-Cameron Co	14,966	May 8	122	700
Boilers for steam and water heating systems	Kewanee Boiler Company	4,059	June 12	122	2343
Bone phosphate	Baugh & Sons Company	2,686	May 1	122	304
Books. Account-	R. Hollingworth	13,651	May 15	122	1011
Books for railway employees. Educational	Railway Educational Association	11,805	May 1	122	315
Boot and shoe dressing	Frank Miller Co	17,335	May 29	122	1701
Boot and shoe inner soles	H. Lowenstein	15,007	May 15	122	1014
Boots and shoes and leather used in their manufacture. Leather	Rice & Hutchins	7,794	May 8	122	687
Boots and shoes and leather used in their manufacture. Leather	Rice & Hutchins	7,784	May 22	122	1356
Boots and shoes and leather used in their manufacture. Leather	Rice & Hutchins	7,790–1	May 22	122	1356
Boots and shoes and leather used in their manufacture. Leather	Rice & Hutchins	7,793	May 22	122	1356
Boots and shoes and leather used in their manufacture. Leather	Rice & Hutchins	7,798–9	May 22	122	1357
Boots and shoes and leather used in their manufacture. Leather	Rice & Hutchins	7,780	May 29	122	1687
Boots and shoes and leather used in their manufacture. Leather	Rice & Hutchins	7,800	May 29	122	1687
Boots and shoes and leather used in their manufacture. Leather	Rice & Hutchins	7,783	June 12	122	2347
Boots and shoes and leather used in their manufacture. Leather	Rice & Hutchins	7,789	June 12	122	2347
Boots and shoes and leather used in their manufacture. Leather	Rice & Hutchins	7,787	June 19	122	2649
Boots and shoes. Leather	Thomas G. Plant Company	4,621	May 1	122	306
Boots and shoes. Leather	A. C. Lawrence Leather Co	7,807	May 1	122	310
Boots and shoes. Leather	Lynchburg Shoe Co	14,546	May 1	122	322
Boots and shoes. Leather	Lynchburg Shoe Co	15,146	May 1	122	324
Boots and shoes. Leather	William Eastwood and Son Company.	15,447	May 1	122	325
Boots and shoes. Leather	White-Dunham Shoe Co	14,735	May 8	122	700

Alphabetical list of trade-marks published during May and June—Continued.

Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Boots and shoes. Leather	Locke Shoe Company	16,899	May 8	122	708
Boots and shoes. Leather	Cambior, Muntaner & Co	17,654	May 8	122	710
Boots and shoes. Leather	H. F. Tapley	11,388	May 15	122	1006
Boots and shoes. Leather	H. W. Crooker Shoe Co	17,108	May 15	122	1022
Boots and shoes. Leather	Shoemart Company	18,437	May 15	122	1028
Boots and shoes. Leather	Geo. D. Witt Shoe Co	13,461	May 22	122	1366
Boots and shoes. Leather	Selby Shoe Co	17,697	May 22	122	1379
Boots and shoes. Leather	Evans Shoe Co	16,749	May 29	122	1699
Boots and shoes. Leather	Heywood Boot & Shoe Company	1,657–8	June 5	122	2020
Boots and shoes. Leather	Utz & Dunn	13,259	June 5	122	2036
Boots and shoes. Leather	Stern & Co	9,904	June 12	122	2353
Boots and shoes. Leather	F. Mayer Boot & Shoe Co	14,723	June 12	122	2358
Boots and shoes. Leather	Commonwealth Shoe and Leather Company.	16,119	June 12	122	2361
Boots and shoes. Leather	W. J. Martinez & Bros	18,052	June 12	122	2367
Boots and shoes. Leather	Beasley Harwood Shoe Co	18,591	June 19	122	2668
Boots and shoes. Leather	Beasley Harwood Shoe Co	18,792–3	June 19	122	2670
Boots and shoes. Leather	Geo. F. Dittmann Boot & Shoe Company.	11,592	June 26	122	2966
Boots and shoes. Leather	Geo. F. Dittmann Boot & Shoe Company.	11,595–8	June 26	122	2966
Boots and shoes. Leather	Geo. F. Dittmann Boot & Shoe Company.	11,601–2	June 26	122	2966
Boots and shoes. Leather	Geo. F. Dittmann Boot & Shoe Company.	11,604–5	June 26	122	2967
Boots and shoes. Leather	Lynchburg Shoe Co	14,542	June 26	122	2970
Boots and shoes. Leather	Commonwealth Shoe and Leather Company.	16,118	June 26	122	2971
Boots and shoes. Leather	Fred F. Field Company	19,017	June 26	122	2982
Boots and shoes. Leather and canvas	Geo. E. Keith Company	10,451	May 15	122	1004
Boots and shoes. Men's and boys' leather	Dunham Brothers	17,817	May 15	122	1025
Boots and shoes. Men's leather	Seattle Shoe Co	14,603	May 1	122	323
Boots, shoes, and slippers and leather used in their manufacture. Leather	Fred F. Field Co	6,819	May 8	122	686
Boots, shoes, and slippers. Leather	Parker Holmes & Company	11,644	May 22	122	1363
Boots, shoes, and slippers. Leather	M. D. Wells Co	10,094	June 12	122	2351
Boots, shoes, and slippers. Leather	M. D. Wells Co	10,099	June 12	122	2351
Boots, shoes, and slippers. Leather	M. D. Wells Co	10,101–3	June 12	122	2351
Boots, shoes, and slippers. Leather	M. D. Wells Co	11,066	June 12	122	2352
Boots, shoes, and slippers. Leather	M. D. Wells Co	11,069	June 12	122	2352
Boots, shoes, and slippers. Leather	M. D. Wells Co	11,072	June 12	122	2352
Boots, shoes, and slippers. Leather	M. D. Wells Co	11,076	June 12	122	2354
Boots, shoes, and slippers. Leather	Preston B. Keith Shoe Co	18,597	June 19	122	2668
Boots, shoes, and slippers. Leather	M. D. Wells Co	10,098	June 26	122	2964
Boots, shoes, and slippers. Leather	M. D. Wells Co	10,100	June 26	122	2964
Boots, shoes, and slippers. Leather	M. D. Wells Co	11,070–1	June 26	122	2965
Boots, shoes, and slippers. Leather	M. D. Wells Co	11,074–5	June 26	122	2966
Boots, shoes, and slippers. Leather	M. D. Wells Co	11,078	June 26	122	2966
Boots, shoes, and slippers. Leather and cloth	Parker Holmes and Company	19,113	June 26	122	2984
Boots, shoes, and slippers of leather or textile material, or both, and soles therefor.	Hanan & Son	18,575	June 12	122	2371
Boots, shoes, oxfords, sandals, and slippers. Leather	Morse & Rogers	9,158–9	May 1	122	311
Boots, shoes, slippers, and insoles. Leather	Moore-Shafer Shoe Mfg. Co	13,901	May 1	122	321
Boots, shoes, slippers, and ties made wholly or partly of leather.	H. H. Roosa	15,683	May 1	122	326
Bottle nipples. Nursing-	Kaplan & Goldsoll	10,190	May 29	122	1690
Bottle-washing machines	Davidson Rubber Co	12,434	May 29	122	1692
Bottles and siphons	M. C. Rosenfeld Co	14,789	May 15	122	1013
Bottles, one-half of which are the bodies and one-half the necks. Round	C. Stölzle's Söhne Actiengesellschaft für Glasfabrikation.	15,045	May 22	122	1370
Bottles with Gothic decorations. Gothic-shaped	Mariani & Co	16,788	May 22	122	1376
Brakes and parts thereof. Back-pedaling coaster-	Mariani & Co	16,962	May 22	122	1376
Brandy	Eclipse Machine Co	17,204	May 8	122	709
Brandy	J. Hennessy & Co	12,835	May 1	122	317
Brandy	J. Hennessy & Co	12,837–8	May 15	122	1009
Brandy	H. R. Myers	7,699	June 12	122	2346
Brandy	California Wine Association	14,036	June 19	122	2656
Brandy	J. S. Draper	16,153	June 19	122	2658
Brandy	A. Repsold	16,038	June 26	122	2971
Bread	H. S. Levy	15,758	May 1	122	326
Bread	D. Bayer	18,979	May 15	122	1030
Bread	L. A. O'Neill	5,104	June 12	122	2344
Bread	F. Wedehase	18,728	June 19	122	2669
Bread and biscuits	Callard, Stewart & Watt	15,851	May 1	122	327
Bread, buns, doughnuts, &c	Skillman Bread and Pie Company	14,173	June 26	122	2969
Bread, cake, pastry, and crackers	George G. Fox Company	12,433	May 15	122	1009
Bread. Wheat	H. Richter	11,005	May 15	122	1005
Breads, rolls, cakes, and pies	D. S. Goss	14,762	May 22	122	1369
Brick and terra-cotta. Face and fire	Federal Clay Product Co	16,361	June 19	122	2658
Bronze colors, brocades, and leaf metals	L. Auerbach & Co	10,854	June 5	122	2031
Bronze-powder and bronzing liquid	G. Benda	16,573	May 29	122	1698
Brooms	American Broom & Brush Co	17,775	May 8	122	710
Brooms	Lee Broom & Duster Company	16,858	May 15	122	1021
Brooms. Whisk-	J. S. Barron & Company	16,902	May 22	122	1376
Brushes and daubers. Shoe-polishing	American Chemical Manufacturing & Mining Company.	18,636	June 19	122	2668
Brushes. Cleaning and toilet	Hendee Wire Brush Co	18,282	June 26	122	2979
Brushes. Hair-	H. L. Hughes	9,048	May 1	122	311
Brushes. Hair, clothes, and hat	Florence Manufacturing Company.	625	May 15	122	995
Brushes. Hair, clothing, hat, and bonnet	James E. Blake Company	10,263	June 19	122	2652
Brushes. Paint, whitewash, wall, hair, &c	Wooster Brush Works	13,874	June 12	122	2356
Brushes. Tooth-	Florence Manufacturing Company.	17,000	May 15	122	1024
Brushes. Tooth-	Sanitol Chemical Laboratory Co	15,519	May 22	122	1372

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Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Buggies and carriages	Rock Hill Buggy Co	11,724	May 15	122	1007
Buggies and carriages	Studebaker Bros. Mfg. Co	15,817	June 12	122	2360
Burglar-alarms. Electrical	American Bank Protection Company.	14,609	June 19	122	2656
Butter	Fox River Butter Company	5,214	May 1	122	307
Butter	Scott & Company	17,181	May 1	122	331
Butter	H. C. Christians Co	7,349	May 8	122	687
Butter	H. J. Grell Butter & Egg Company.	11,858	May 22	122	1364
Butter	G. W. Martin & Bro	12,926	May 22	122	1365
Butter	James Rowland & Company	14,467	May 22	122	1368
Butter	Franklin County Creamery Association.	10,184	June 12	122	2351
Butter	Sterling Butter Company	708	June 19	122	2642
Butter	O. A. Eastlack	19,284	June 19	122	2673
Butter. Cocoanut	Oil Seeds Company	16,657	May 8	122	707
Cake and pie tins	Republic Metalware Company	18,572	June 19	122	2668
Calcimine	Tripod Paint Co	15,779	May 8	122	705
Calcimine	Manhattan Color Works	18,825	June 19	122	2671
Calcimine	Acme White Lead & Color Works.	19,214	June 19	122	2673
Calendars and show-cards. Fancy	International Art Publishing Co.	10,255	May 15	122	1004
Calipers, dividers, and try-squares	Brown & Sharpe Manufacturing Company.	5,941	June 12	122	2345
Candied and preserved pineapples	Sipe and Sipe	4,753	June 19	122	2644
Candies	H. R. Hansen	12,900	May 15	122	1010
Candies and bonbons	A. H. Potter	16,694	June 26	122	2972
Candies, bonbons, and chocolate candies	M. L. Morgenthau	5,950	May 22	122	1354
Candies. Chocolate	Trowbridge Chocolate Chip Company.	17,650	May 22	122	1379
Candies of all kinds	J. Govatos	16,260	June 19	122	2658
Candies. Plain and fancy	Tacoma Buiscuit & Candy Company.	13,889	June 26	122	2969
Candy	Pepper Company	5,763	May 1	122	308
Candy	Reymer & Brothers	7,171	May 1	122	309
Candy	Hiller Confectionery Company	13,410	May 1	122	318
Candy	Lipps-Murbach Co. of Baltimore City.	17,670	May 8	122	710
Candy	Wallace & Co	1,993	May 15	122	996
Candy	Lipps-Murbach Co. of Baltimore City.	17,671	May 15	122	1025
Candy	J. F. Birkmeyer & Sons	18,422	May 15	122	1028
Candy	P. Wunderle	7,583–4	May 22	122	1355–6
Candy	Littlefield & Steere Co	9,753	May 22	122	1359
Candy	Lipps-Murbach Co. of Baltimore City.	17,774	June 5	122	2041
Candy	Lipps-Murbach Co. of Baltimore City.	17,718	June 12	122	2366
Candy	New England Confectionery Co	10,580	June 19	122	2653
Candy	J. G. Arcand	17,306	June 19	122	2662
Candy	George Blome & Son Co	18,779	June 19	122	2670
Candy	F. M. Switzer	7,986	June 26	122	2962
Candy	Rebboli Sons Co	14,582	June 26	122	2970
Candy attached to a stick. Round piece of	J. Birkmeyer & Sons	18,421	June 26	122	2980
Candy. Chocolate	Quaker City Chocolate and Confectionery Company.	13,729–30	May 15	122	1011
Candy. Hard and soft	Quaker City Chocolate and Confectionery Company.	13,732	May 22	122	1367
Candy kisses	Ginter Grocery Co	17,044	June 5	122	2039
Candy kisses	Ginter Grocery Co	18,698	June 5	122	2044
Cane-mills	C. S. Bell Co	18,275	May 29	122	1705
Canned, bottled, and preserved fruits and vegetables	L. De Groff & Son	14,515	May 29	122	1695
Canned corn	Burnham & Morrill Company	6,188	May 1	122	309
Canned corn	Portland Packing Company	9,197	June 12	122	2349
Canned corn and sauer-kraut	P. Hohenadel, Jr	10,161–2	May 8	122	690
Canned corn and succotash	Saco Valley Canning Company	5,876	May 1	122	308
Canned fruit	Griffin & Skelley Company	579	May 8	122	681
Canned fruits	California Canneries Co	12,755	May 1	122	316
Canned fruits and vegetables	Abbott Grocery Co	11,750	May 1	122	315
Canned fruits and vegetables	Booth Packing Company	13,798–9	May 1	122	320
Canned fruits and vegetables	Wayne County Preserving Co	15,576	May 1	122	325
Canned fruits and vegetables	Sprague, Warner & Company	16,471	May 1	122	329
Canned fruits and vegetables	Platt & Company	13,340	May 8	122	697
Canned fruits and vegetables	Gulfport Grocery Co	12,801	May 15	122	1009
Canned fruits and vegetables	Griggs, Cooper and Company	9,549	May 22	122	1359
Canned fruits and vegetables	T. Kensett & Co	11,545	May 22	122	1362
Canned fruits and vegetables	Booth Packing Company	17,802	May 22	122	1379
Canned fruits and vegetables	J. F. Humphreys & Co	9,132	June 19	122	2651
Canned fruits and vegetables	Seattle Pure Food Co	17,097	June 19	122	2660
Canned fruits and vegetables	J. F. Humphreys & Co	9,131	June 26	122	2963
Canned fruits and vegetables	J. F. Humphreys & Co	9,133	June 26	122	2963
Canned fruits and vegetables	Caulk & McCready	11,008	June 26	122	2965
Canned fruits and vegetables	T. Kensett & Co	13 408	June 26	122	2968
Canned fruits, vegetables, jellies, fruit-butter, and jams	Erie Preserving Company	17,649	June 19	122	2664
Canned meats	J. & F. Schroth Packing Co	15,845	May 1	122	327
Canned oysters, shrimp, lobsters, clams, and crabs	M. J. Boyer	13,502	June 26	122	2968
Canned salmon	Bandon Packing Co	14,730	May 22	122	1369
Canned sardines	U. H. Dudley & Company	17,455	June 12	122	2365
Canned shrimp, &c	Pass Packing Co	15,077	June 19	122	2657
Canned succotash	Burnham & Morrill Company	6,189	May 8	122	686
Canned vegetables	Bloomington Canning Co	171	May 15	122	995
Canned vegetables	Sauquoit Canning Company	5,021	May 22	122	1353
Canned vegetables	Portland Packing Company	9,192–3	June 5	122	2030
Canned vegetables	Utica Canning Company	5,017	June 19	122	2644
Canned vegetables	E. S. Dingley Company	17,485	June 19	122	2663
Canned vegetables	Sauquoit Canning Company	5,022	June 26	122	2960

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Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Canned vegetables and fruits	Abbott Grocery Co	11,751	June 5	122	2032
Cans	J. H. Chidester	15,486	June 5	122	2035
Cantaloups	A. F. Young & Co	19,283	June 19	122	2673
Cantaloups	A. F. Young & Co	19,257	June 26	122	2985
Capsules	J. M. Grosvenor & Co	11,215	May 8	122	692
Car-bolster	E. H. Benners	11,137	June 12	122	2352
Car castings. Railway	National Malleable Castings Company.	1,333	May 15	122	996
Car seats. Railway	J. G. Brill Company	14,864	June 5	122	2034
Caramels	Blanke-Wenneker Candy Company.	19,191	June 26	122	2984
Cards and posters. Pictorial post, congratulatory, and fancy	Chromolithographische Kunstanstalt Paul Finkenrath, Gesellschaft mit beschränkter Haftung.	15,852	May 8	122	705
Cards. Playing	New York Consolidated Card Company.	3,954	May 1	122	305
Cards. Playing	New York Consolidated Card Company.	4,311	May 1	122	306
Cards. Playing	New York Consolidated Card Company.	10,151	May 8	122	689
Cards. Playing	Home Game Company	11,624	May 15	122	1007
Cards. Playing	Standard Playing Card Manufacturing Co.	13,985	May 15	122	1011
Cards. Playing	New York Consolidated Card Company.	14,388	May 15	122	1013
Cards. Playing	United States Playing Card Co	16,490–1	May 15	122	1019
Cards. Playing	United States Playing Card Co	17,904	May 15	122	1025
Cards. Playing	United States Playing Card Co	15,706	May 22	122	1372
Cards. Playing	United States Playing Card Co	16,725	May 22	122	1375
Cards. Playing	United States Playing Card Co	15,707	May 29	122	1697
Cards. Playing	New York Consolidated Card Company.	4,323	June 5	122	2027
Cards. Playing	New York Consolidated Card Company.	4,325	June 5	122	2027
Cards. Playing	United States Playing Card Co	15,704–5	June 5	122	2036
Cards. Playing	United States Playing Card Co	15,708–9	June 5	122	2036
Cards. Playing	United States Playing Card Co	15, 697–703	June 12	122	2359–60
Cards. Playing	United States Playing Card Co	17,757–8	June 12	122	2367
Carriages and wagons	I. S. Remson Mfg. Co	15,255	May 8	122	702
Carriages and wagons	Moline Wagon Company	14,487	June 12	122	2358
Cartridges and cartridge-shells	Union Metallic Cartridge Company.	18,413	June 12	122	2369
Cassimeres	James Irving & Son	16,770	May 1	122	330
Catarrh, asthma, hay-fever, or any head, throat, or lung affection. Cure for	S. A. Albertus	14,364	May 15	122	1013
Catchup packaged in bottles	Curtice Brothers Company	18,086	June 5	122	2042
Catchup packaged in bottles	Curtice Brothers Company	18,085	June 19	122	2666
Catchup. Tomato	Donahue Brothers	18,642	June 19	122	2668
Catheters, stomach-tubes, and bougies	Johnson & Johnson	13,671	May 1	122	320
Catsup, relish, and chili sauce. Tomato	E. Pritchard	18,184	May 8	122	712
Catsup. Tomato	Wm. Henning Co	9,089	May 15	122	1002
Cattle	H. Yates	13,644	May 15	122	1011
Cement for mending. Adhesive	U. S. Chemical Rubber Co	13,417	May 29	122	1694
Cement. Hydraulic	Utica Hydraulic Cement Co	15,166	May 29	122	702
Cement-plaster, the base of which is calcined gypsum	J. B. King & Co	5,121	May 1	122	307
Cement. Portland	Thomas Millen Co	3,891	May 1	122	305
Cement. Portland	Vulcanite Portland Cement Co	10,777	May 1	122	314
Cement. Portland	Whitehall Portland Cement Co	841	May 8	122	681
Cement. Portland	Pacific Portland Cement Co	15,408	May 8	122	702
Cement. Portland	I. C. Johnson & Co	16,552	May 22	122	1374
Cements for gluing and fastening. Prepared	N. B. Musselman	16,184	May 29	122	1697
Cereal wafers. Preparation of uncooked	F. F. Potter	17,823	June 26	122	2976
Ceresin	Ernst Schliemann's Export Ceresin Fabrik Gesellschaft m. b. Haftung.	10,543	May 8	122	691
Chain repair-links	Diamond Chain & Manufacturing Co.	16,188	May 8	122	705
Chains and bracelets. Plated	O. M. Draper	17,304	May 29	122	1701
Chains and parts thereof and attachments therefor. Ornamental	O. M. Draper	17,303	May 29	122	1701
Chains, necklaces, and fobs	Krementz & Co	15,536	May 15	122	1017
Chains. Ornamental watch and neck	O. M. Draper	17,302	May 1	122	332
Champagne	Empire State Wine Co	5,185	June 19	122	2645
Champagne	Blondeau, Berque & Co	16,451	June 26	122	2972
Check-protectors	C. P. Nutter	15,125	May 22	122	1370
Checks or slips and checkers' sheets for waiters in hotels, restaurants, &c.	Hotel Security Checking Company.	16,258	May 29	122	1698
Cheese	J. R. Thomas' Sons	10,248	June 19	122	2652
Cheese. Cream	W. A. Lawrence & Son	8,620	May 8	122	688
Cheese. Cream	A. F. MacLaren Imperial Cheese Co.	2,870	June 5	122	2027
Chisels and punches	Whitman & Barnes Manufacturing Company.	15,115	May 8	122	701
Chocolate	J. de Fremery & Company	15,380	May 1	122	325
Chocolate and cocoa	Kasseler Hafer-Kakao-Fabrik, Hausen & Co., Actien-Gesellschaft.	15,174	May 22	122	1370
Chocolate and cocoa	F. Blechoff	2,763	June 12	122	2342
Chocolate, chocolate candies, and preparations of chocolate and cocoa	Russ-Suchard & Cie	6,739	May 1	122	309
Chocolate, chocolate candies, and preparations of chocolate and cocoa	Russ-Suchard & Cie	6,766	May 1	122	309
Chocolate, cocoa, sweet and milk chocolate, chocolate coatings, liquors, and powder	M. S. Hershey	16,826	May 8	122	708
Chocolate creams and chocolate-coated candy	Voegele & Dinning Co	11,800	June 12	122	2358

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Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Chocolates and bonbons	Wiley Manufacturing Company	18,467	May 15	122	1028
Chocolates and bonbons	Sparrow Company	16,569	June 26	122	2972
Chocolates and cocoas	Russ-Suchard & Cie	7,147	May 1	122	309
Chucks. Lathe	E. Horton & Son Company	10,780	June 5	122	2031
Cigar-clippings	C. H. Lawrence	18,805	June 12	122	2371
Cigars	Carreras Limited	7,154	May 1	122	309
Cigars	C. B. Perkins	6,904	May 8	122	686
Cigars	C. B. Perkins	6,906	May 8	122	687
Cigars	S. Spiegel	12,775	May 8	122	696
Cigars	F. P. Lewis	11,297	May 15	122	1006
Cigars	H. C. Stone	15,002	May 15	122	1014
Cigars	E. Abe	17,278	May 15	122	1023
Cigars	Compañia General de Tabacos de Filipinas.	9,388	May 22	122	1358
Cigars	Heineman Bros	17,186	May 22	122	1377
Cigars	L. K. Pope	18,350	May 22	122	1381
Cigars	Compañia General de Tabacos de Filipinas.	9,387	May 29	122	1689
Cigars	E. Edmonston	17,340	May 29	122	1701
Cigars	Tracy & Avery Company	16,521	June 5	122	2038
Cigars	Compañia General de Tabacos de Filipinas.	9,389	June 12	122	2350
Cigars	Reymer & Brothers	17,761	June 12	122	2367
Cigars	Stratford Tobacco Company	18,733	June 19	122	2669
Cigars and cheroots	E. Seidenberg, Stiefel & Co	3,873	June 26	122	2960
Cigars, cheroots, and cigarettes made of cigar-tobacco	Cayey-Caguas Tobacco Company	11,290-1	May 1	122	314
Cigars, cheroots, and cigarettes made of cigar-tobacco	Cayey-Caguas Tobacco Company	14,950-1	May 15	122	1014
Cigars, cheroots, and stogies	Vincente Portuondo Cigar Manufacturing Company.	18,068	May 22	122	1380
Cigars, cheroots, stogies, tobies, and all-tobacco cigarettes	N. Divvens	5,735	May 22	122	1353
Cigars. Clear Havana	J. W. Gebhart	17,680	June 19	122	2664
Cigars. Havana	Havana Commercial Company	17,442	May 8	122	710
Cigars. Havana	J. S. Murias y Ca	11,436	May 15	122	1007
Cigars. Havana	Havana Commercial Company	17,605	May 22	122	1379
Cigars. Havana	Havana Commercial Company	17,375	May 29	122	1701
Cigars. Havana	Havana Commercial Company	17,604	June 5	122	2040
Cigars. Havana	H. De Canabas y Carbajal	11,435	June 12	122	2352
Cigars in boxes	G. W. Chase & Son Mercantile Co.	6,816	June 12	122	2345
Cigars, stogies, and all-tobacco cigarettes	R. Reimers	14,213	June 26	122	2969
Cigarettes	Butler-Butler	16,405	May 1	122	329
Cigarettes	H. P. Strause	10,278	May 8	122	691
Cigarettes	Butler-Butler	16,410	May 8	122	706
Cigarettes	Butler-Butler	8,826	May 15	122	1002
Cigarettes	Butler-Butler	8,830	June 5	122	2030
Cigarettes	Butler-Butler	8,827	June 12	122	2348
Cigarettes	Butler-Butler	16,115	May 22	122	1373
Cigarettes and cigarette-tobacco	Nestor Gianaclis Company	16,116	May 15	122	1018
Cigarettes and tobacco for same	Nestor Gianaclis Company	15,880	June 19	122	2657
Cinchona alkaloids. Derivatives of	Vereinigte Chininfabriken Zimmer & Co. Ges. mit beschränkter Haftung.	18,389	June 5	122	2043
Cleaning and polishing material for metal, glass, marble, &c.	Matchless Metal Polish Co	18,391	June 5	122	2043
Cleaning and polishing material for metal, glass, marble, &c.	Matchless Metal Polish Co	18,393	May 8	122	712
Cleaning and polishing metal, glass, &c. Material for	Matchless Metal Polish Co	18,372	June 12	122	2369
Cleaning fabrics by evaporation. Preparation for	Carpetina Company	8,427	June 19	122	2650
Clippers and sheep-shears. Horse	Chicago Flexible Shaft Company	17,905	May 22	122	1380
Clippers and their parts. Hair and wool	American Shearer Manufacturing Co.	14,227	May 29	122	1694
Cloaks, dress-skirts, dress-waists, and suits	Bedell Company	17,373	June 26	122	2973
Clocks and watches	Western Clock Manufacturing Company.	15,271	June 5	122	2035
Clocks, clock cases and movements, and parts thereof	Hamburg Amerikanische Uhrenfabrik.	4,548	May 8	122	684
Closet-seat attachment	Specialties Sales Co	14,084	May 22	122	1368
Cloth-cleaning preparation	C. Petersen	18,973	June 12	122	2372
Cloth-cutting machines	Universal Cutter Company	16,549	May 22	122	1374
Cloths and stuffs of wool, worsted, and hair	Edward Ripley & Son	8,854	May 1	122	311
Coal	E. J. Cummings	14,026	May 8	122	698
Coal	A. Y. Malcomson	16,171	May 22	122	1373
Coal	White Oak Coal Co	17,636	May 22	122	1379
Coal	Lehigh Coal & Navigation Company.	15,441	June 12	122	2359
Coal	Original Farmers Coal Company	15,902	June 12	122	2360
Coal	United States Coal and Oil Company.	17,415	June 12	122	2365
Coal	Otto Marmet Coal and Mining Company.	10,438-40	June 19	122	2652-3
Coal and coke	W. J. Hamilton Coal Co	15,062	June 5	122	2035
Coats, vests, and pantaloons. Boys'	Black Band Coal and Coke Company.	12,418	May 15	122	1009
Coats, vests, and pants. Men's and boys'	Greenstein, Simon & Leerburger	16,819	May 15	122	1020
Coats, vests, and trousers	Rosenbaum Company	7,507	May 15	122	1000
Coats, vests, and trousers	S. A. Hilpp & Company	17,262	June 19	122	2662
Coats, vests, overcoats, and trousers	Hertfelder Bros	15,476	May 1	122	325
Coats, vests, trousers, and overcoats	Schwab Clothing Co	13,524	May 8	122	697
Coats, vests, trousers, and overcoats	Brokaw Bros	125-6	June 19	122	2641
Coats, vests, trousers, and overcoats	Strouse & Bros	19,242	June 12	122	2373
Cocks. Stop and waste	Landers, Frary and Clark	10,703	May 22	122	1361
Cocoa	C. J. Van Houten & Zoon	15,923	May 1	122	328
Cocoa and chocolate used as foods and beverages. Preparations of	Chas. H. Phillips Chemical Co	15,735	May 22	122	1372
Cocoa and preparations thereof	B. E. Enge	13,944	May 22	122	1368
Cocoanut fat. Refined	T. M. Duche & Sons	794	May 1	122	303
Coffee	W. E. Sibley	9,791	May 1	122	312
Coffee	Sprague, Warner & Company	10,559	May 1	122	313
Coffee	Chase & Sanborn				

Alphabetical list of trade-marks published during May and June—Continued.

Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page
Coffee	Merchants Coffee Company of New Orleans.	8,697	May 8	122	688
Coffee	F. P. Garrettson & Co	4,575	May 15	122	998
Coffee	G. B. Farrington Company	17,074-9	May 15	122	1021-2
Coffee	New York Coffee Company	18,057	May 15	122	1026
Coffee	Browning & Baines	15,238	May 22	122	1371
Coffee	Chase & Sanborn	10,558	June 5	122	2031
Coffee	Chase & Sanborn	10,560	June 5	122	2031
Coffee	Woolson Spice Co	17,794	June 5	122	2041
Coffee	Sprague, Warner & Company	18,548	June 5	122	2044
Coffee	A. Schilling & Company	9,287	June 12	122	2349
Coffee	Humphrey Coffee & Tea Co	10,788	June 19	122	2653
Coffee	B. E. Enge	15,734	June 19	122	2657
Coffee	J. K. Bowen	17,467	June 19	122	2663
Coffee	Querbacker, Gilmore Co	18,019	June 26	122	2977
Coffee	C. F. Blanke Tea & Coffee Co	18,683	June 26	122	2981
Coffee	West Side Roasting and Milling Company.	18,726	June 26	122	2981
Coffee	Reily, Taylor & Co	19,111	June 26	122	2984
Coffee	Woolson Spice Co	19,312	June 26	122	2985
Coffee	Nave-McCord Mercantile Company.	19,383-4	June 26	122	2985
Coffee-blend	S. S. Pierce Co	11,221	May 29	122	1691
Coffee. Cereal	Sleepy Eye Milling Company	8,387	June 12	122	2348
Coffee in the bean	F. H. Belmes	18,840	June 26	122	2982
Coffee. Roasted	Merchants Coffee Co	16,201	May 22	122	1373
Coffee. Roasted and roasted and ground	Enterprise Coffee Company of Baltimore City.	4,097	May 8	122	683
Coffee. Roasted and roasted and ground	Enterprise Coffee Company of Baltimore City.	4,099	May 15	122	998
Coffee. Roasted and roasted and ground	Enterprise Coffee Company of Baltimore City.	4,095	May 29	122	1686
Coffee substitute	Decatur Cereal Coffee Works	15,134	May 15	122	1015
Coffee substitute	Decatur Cereal Coffee Works	15,137	May 15	122	1016
Coffee substitute	T. D. Floto	17,207	June 12	122	2364
Collars	Cluett, Peabody & Co	18,221-4	May 1	122	334
Collars	Cluett, Peabody & Co	18,226-36	May 1	122	335
Collars and cuffs. Waterproof	Celluloid Company	9,551	June 5	122	2030
Collars and cuffs. Waterproof	Celluloid Company	9,550	June 12	122	2349
Collars, cuffs, and shirt-fronts	F. Peter's Nachfolger	10,706	May 22	122	1361
Collars, cuffs, and shirt-fronts made of celluloid	Celluloid Company	11,733	May 29	122	1692
Collars, cuffs, and shirt-fronts. Waterproof	Celluloid Company	9,554	June 12	122	2350
Collars, cuffs, and shirt-fronts. Waterproof	Celluloid Company	9,556	June 12	122	2350
Collars. Linen	Schein & Lasday	17,688	June 19	122	2664
Combs	Dr. H. Traun & Söhne	10,672	May 22	122	1396
Combs, hair and hat pins. Gold	Krementz & Co	12,024	May 15	122	1006
Compound for skin and blood diseases and antidote for mosquito and other insect bites.	O. P. G. Conley	15,651	May 8	122	704
Condensers. Surface and jet	Wheeler Condenser & Engineering Co.	17,232	May 1	122	331
Confectionery flavoring and coloring materials	Puritan Drug Company	18,377	June 19	122	2667
Confectionery. Popcorn	G. R. Van Nest	14,728	June 12	122	2358
Confections. Solid chocolate	H. O. Wilbur & Sons	16,122	June 5	122	2037
Containers for oysters, clams, fish, and other sea food	National Oyster Carrier Company.	16,392	May 8	122	706
Cooking utensils. Tin	Lisk Manufacturing Co	3,219	June 12	122	2343
Cooking vessels. Earthenware	J. W. McCoy Pottery Co	18,038	June 5	122	2042
Cordial	Société Anonyme de la Distillerie de la Liqueur Bénédictine de l'Abbaye de Fécamp.	15,872-4	May 1	122	327
Cordial	Société Anonyme de la Distillerie de la Liqueur Bénédictine de l'Abbaye de Fécamp.	15,876-7	May 1	122	327-8
Cordial	Charles Jacquin et Cie	10,155	June 26	122	2964
Cordial	Société Anonyme de la Distillerie de la Liqueur Bénédictine de l'Abbaye de Fécamp.	15,871	June 26	122	2971
Cordial. Blackberry	H. R. Myers	7,700	May 8	122	687
Cordials	Colburn, Birks & Co	9,418	June 19	122	2651
Cords. Braided cotton	Samson Cordage Works	10,600	June 19	122	2653
Cords of jute fiber. Binding	Ralli Brothers	5,096	June 12	122	3442
Cork or cork wood	Gudewill & Bucknall	17,416-25	May 29	122	1701-2
Corks of all kinds. Bottle and prescription	Armstrong Cork Company	551	June 12	122	2341
Corn cure	Elgin Chemical Co	15,937	May 1	122	328
Corn-huskers. Adjustable	F. D. Kees Manufacturing Co	17,958	May 8	122	711
Corn-starch	A. E. Staley	15,944-5	June 5	122	2037
Cornmeal	Seneca Mill & Elevator Company	15,317	June 26	122	2971
Corsets	Fellheimer and Company	11,086	May 8	122	691
Corsets	Kabo Corset Company	9,970-1	May 22	122	1351
Corsets	H. T. Sykes	12,968	June 19	122	2654
Corsets	G. Chandler	16,456	June 19	122	2659
Corsets	Kops Bros	5,091	June 26	122	2961
Corsets and corset-waists	H. & W. Company	11,555	May 15	122	1007
Corundum, garnet, and emery paper and cloth	Minnesota Mining & Manufacturing Co.	17,971	June 12	122	2367
Cotters. Spring	Whitman & Barnes Manufacturing Company.	14,715	May 1	122	323
Cotton and cotton-and-silk piece goods	Austin, Poor & Co	10,404	May 1	122	313
Cotton duck	Mount Vernon-Woodberry Cotton Duck Company.	10,498	May 15	122	1004
Cotton duck	William L. Barrell Co	18,358	May 15	122	1027
Cotton duck	Mount Vernon-Woodberry Cotton Duck Company.	10,838-9	May 22	122	1361-2
Cotton fabrics. Printed	Pacific Mills	17,333	May 22	122	1377
Cotton fabrics. Woven	Minot, Hooper & Co	15,356	May 1	122	325
Cotton piece goods	Tremont & Suffolk Mills	4,966	May 1	122	307

Alphabetical list of trade-marks published during May and June—Continued.

Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Cotton piece goods	York Manufacturing Co	5,268	May 1	122	307
Cotton piece goods	Hermitage Cotton Mills	15,258	May 1	122	324
Cotton piece goods	Minot, Hooper & Co	15,355	May 1	122	324
Cotton piece goods	Massachusetts Cotton Mills	4,995	May 8	122	684
Cotton piece goods	Everett Mills	14,342	May 15	122	1013
Cotton piece goods	Everett Mills	14,343	May 15	122	1012
Cotton piece goods	Massachusetts Cotton Mills	17,435	May 15	122	1024
Cotton piece goods	Tremont & Suffolk Mills	4,961	May 22	122	1352
Cotton piece goods	Tremont & Suffolk Mills	4,963	May 22	122	1352
Cotton piece goods	Amory, Browne & Co	16,968	May 22	122	1377
Cotton piece goods	J. & J. M. Worrall	14,823	May 29	122	1696
Cotton piece goods	Floyd Cotton Mills	17,170–1	May 29	122	1700
Cotton piece goods	Everett Mills	15,577	June 5	122	2035
Cotton piece goods	Massachusetts Cotton Mills	18,862–3	June 5	122	2044–5
Cotton piece goods	Massachusetts Cotton Mills	17,436	June 12	122	2365
Cotton piece goods	Kunhardt & Co	18,746	June 12	122	2371
Cotton piece goods	Massachusetts Cotton Mills	19,055	June 12	122	2373
Cotton piece goods	Massachusetts Cotton Mills	18,864	June 19	122	2671
Cotton piece goods	G. Willis & Co	14,706	June 26	122	2970
Cotton piece goods not figured or printed. Unbleached	Busk & Jevons	15,926	May 1	122	328
Cotton prints. Solid black	Eddystone Manufacturing Company.	9,659	May 29	122	1689
Cotton sateens	Bradford Dyers' Association	16,551	June 19	122	2659
Cough cure	F. L. Gray	12,075	May 8	122	693
Coughs, lung and bronchial affections, &c. Preparation for the cure and alleviation of	E. E. Sutherland Medicine Co	15,654	May 15	122	1017
Court-plaster. Liquid compound substitute for	Douglas Manufacturing Company	2,521	June 19	122	2643
Crackers	Chatland & Lenhart	17,094	May 15	122	1022
Crackers	Century Biscuit Company	19,156	June 19	122	2672
Crackers and biscuits	G. H. Timmerman	11,409	May 22	122	1362
Cream. Cold-	Clawson Company	16,836	June 5	122	2039
Cream. Face-	Sanitol Chemical Laboratory Co	15,518	May 22	122	1372
Cream or salve for the skin or complexion	R. A. Rowlinski	16,388	May 15	122	1019
Cream-separators	De Laval Separator Company	9,446	May 29	122	1689
Cream-separators	De Laval Separator Company	9,448	June 5	122	2030
Cream-separators. Centrifugal	International Harvester Company of America.	15,754	May 8	122	704
Cream-separators. Centrifugal	Vermont Farm Machine Co	16,727	May 15	122	1020
Cream. Toilet	Mistletoe Manufacturing Company.	4,680	June 12	122	2343
Creams. Facial	I. Hubert	13,754	May 15	122	1011
Creams, rouges, and depilatory powders. Massage	M. R. Aubry	8,563	May 29	122	1688
Creamers. Gravity-	J. S. Barth	9,840	May 1	122	312
Creosote and guaiacol	Hartmann & Hauers	13,385	May 22	122	1366
Cultivators	Ohio Cultivator Company	2,217	May 15	122	997
Cultivators	Ohio Cultivator Company	1,383	May 22	122	1350
Cutters' extension-blades	J. B. Bowman	14,963	June 5	122	2034
Damasks. Bleached, gray, printed, and fancy	Neuss Hesslein & Co	12,244	May 8	122	694
Damasks. Bleached, gray, printed, and fancy	Neuss, Hesslein & Co	12,245	May 29	122	1692
Damasks. Bleached, gray, printed, and fancy	Neuss, Hesslein & Co	12,371	May 29	122	1693
Dandruff cure and scalp-invigorator	J. B. Tatrean	18,094	June 26	122	2978
Denims, ducks, cheviots, and colored checks and stripes	Massachusetts Cotton Mills	5,237	May 22	122	1353
Dental absorbents	Johnson & Johnson	13,664	May 22	122	1367
Dentifrice	Sanitol Chemical Laboratory Co	887	May 22	122	1349
Deodorizing, disinfecting, insect-destroying, and dust-laying liquid preparation.	La-Lo Manufacturing Company	16,867	May 8	122	708
Depilatory powders	F. T. Hopkins	7,170	May 8	122	687
Device for preventing self-scratching, sucking the fingers, &c.	R. M. Clark	17,766	June 19	122	2665
Dictionaries, atlases, and cyclopedias	Funk & Wagnalls Company	16 182	June 5	122	2038
Disinfectant	Albo Chemical Co	13,097	May 22	122	1365
Disinfectant antiseptic powder	J. C. Bayles	12,938	May 15	122	1010
Disinfectant, deodorizer, cleanser, insecticide, &c. Chemical compound used as a	G. W. Royce	12,311	May 22	122	1364
Disinfectant for apartments, &c., or in solution for catarrh. Soluble compound in the form of a powder or tablet used as a	Chelf Chemical Co	1,074	May 15	122	995
Disinfectant, germicide, deodorizer and insecticide	Wellsville Chemical Co	13,856	May 15	122	1011
Disinfectants	Krix-ol Chemical Co	16,320	May 15	122	1019
Disinfectants	Masury, Young & Co	16,746	May 22	122	1376
Disinfectants	Johnson & Johnson	13,665	May 29	122	1694
Dolls	Strawbridge & Clothier	13,353	June 19	122	2655
Draperies, hangings, and woven fabrics for walls	H. B. Wiggin's Sons Company	3,443	May 22	122	1351
Dress-shields	Kora Co	2,633	May 8	122	683
Dress-shields	I. B. Kleinert Rubber Co	17,953	May 15	122	1026
Dress-shields	Levi & Blum	11,952	May 22	122	1364
Dress-shields	Jordan Marsh Company	8,868	June 12	122	2373
Dress-shields	Stork Company	19,045	June 26	122	2963
Dress waists and skirts, coats, and wraps. Ladies'	Queen Manufacturing Company	15,053	June 12	122	2358
Dresses. Infants' and children's	W. L. Leavy	7,133	May 29	122	1687
Dresses. Ladies'	R. Epstein	9,371	May 15	122	1002
Drills and drilling-machines for metal	Ajax Manufacturing Company	16,054	May 15	122	1018
Drink commonly known as "Tom and Jerry"	A. Reinert	7,977	June 26	122	2962
Duplicating-machines and parts thereof	A. B. Dick Company	5,968	May 29	122	1687
Dusters. Feather	G. Koch	16,150	June 19	122	2658
Dyes	William Edge & Son	8,024	June 5	122	2029
Dyes. Powdered form of	Heitmann Bros	13,861	May 29	122	1694
Dyestuff	Badische Anilin- & Soda-Fabrik	10,607	May 15	122	1005
Dyestuff	Badische Anilin- & Soda-Fabrik	14,516	May 22	122	1369
Dyestuffs and coloring-matters	H. A. Metz & Co	14,685	May 1	122	323
Dyspepsia cure	S. B. Goff & Sons Co	17,716	June 26	122	2975
Earthenware vessels	E. J. Samson & Co	14,554	May 8	122	699
Eau-de-cologne	J. M. Farina gegenüber dem Jülicher-Platz.	12,085	May 22	122	1364
Eau-de-cologne	J. M. Farina gegenüber dem Jülicher-Platz.	12,222	May 22	122	1364
Effervescent salt for nervine preparations	Chelf Chemical Co	1,073	May 15	122	995

Alphabetical list of trade-marks published during May and June—Continued.

Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Egg-whites. Chemical and vegetable substitute for	Frostlene Manufacturing Company.	8,962	May 1	122	311
Electric-light carbons	Körting & Mathiesen Aktiengesellschaft.	17,000	May 15	122	1021
Electric meters	Bristol Company	19 381	June 12	122	2374
Electric switches, push-buttons, and fittings for electric circuits and lights.	R. A. Schoenberg	14,607	May 8	122	699
Electrical wire. Rubber-covered	John A. Roebling's Sons Co	16,918	May 15	122	1021
Electroplated hollow ware, electroplated or silver-plated table and flat ware.	Gorham Mfg. Co	14,695	Ma 1	122	323
Embroideries. Silk	Lion Bros. Co	17,641	May 15	122	1024
Emulsion. Cod-liver-oil	Chas. H. Phillips Chemical Co	15,922	May 15	122	1018
Enamel. Gold, aluminum, and bronze	E. Schulz	16,989	June 12	122	2363
Enameled household utensils	Reed Manufacturing Co	18,654	June 12	122	2371
Engines. Center-crank steam-	A. L. Ide & Sons	2,874	May 1	122	304
Engines. Explosive-	Baker Manufacturing Co	11,649	May 22	122	1363
Engines. Gas-	White Lily Washer Company	17,916	June 19	122	2665
Engines. Gasolene-	Deere & Webber Co	17,406	May 8	122	709
Engines. Side-crank steam-	A. L. Ide & Sons	2,873	May 1	122	304
Engines. Steam hoisting, mining, stationary, and dredging	J. S. Mundy	16,464	May 8	122	707
Engravers' plates	H. A. Greene	18,499	June 12	122	2370
Erasers. Rubber pencil-	L & C Hardtmuth	8,065	May 22	122	1357
Exhibiting advertising and display matter. Machines for	F. E. Van Deusen	17,205	May 1	122	331
Explosives	Masurite Explosive Company	13,509	May 1	122	319
Extracts containing caffeine, theine, and caffeo-tannic acid. Vegetable	Dr. Graf & Comp	15,468	May 22	122	1371
Eye-water	F. M. Jones	18,186	June 26	122	2978
Eyeglasses, spectacles, opera and field glasses, and frames and lenses therefor.	Globe Optical Co	11,556	May 22	122	1362
Eyelets. Shoe-	Manufacture Française D'Oeillets Métalliques (ancienne Maison G. Bac).	12,388	June 12	122	2353
Fabrics. Bleached and unbleached, printed, and dyed textile	Eddystone Manufacturing Company.	9,657	May 29	122	1689
Fabrics. Bleached and unbleached textile	E. J. Fraser-Campbell	18,457	June 12	122	2369
Fabrics. Bleached and unbleached textile	E. J. Fraser-Campbell	18,459	June 12	122	2370
Fabrics. Bleached and unbleached textile	E. J. Fraser-Campbell	16,456	June 19	122	2667
Fabrics. Bleached, unbleached, dyed, and printed textile	A. G. Hyde & Sons	17,243	May 1	122	331
Fabrics. Bleached, unbleached, printed, and dyed specially-finished textile	Eddystone Manufacturing Company.	9,470	May 15	122	1002
Fabrics. Bleached, unbleached, printed, and dyed specially-finished textile	Eddystone Manufacturing Company.	9,475	May 15	122	1003
Fabrics. Bleached, unbleached, printed, and dyed specially-finished textile	Eddystone Manufacturing Company.	9,480	May 15	122	1003
Fabrics. Bleached, unbleached, printed, and dyed specially-finished textile	Eddystone Manufacturing Company.	9,809	May 15	122	1003
Fabrics. Bleached, unbleached, printed, and dyed textile	Eddystone Manufacturing Company.	10,309	May 15	122	1004
Fabrics. Bleached, unbleached, printed, and dyed textile	Eddystone Manufacturing Company.	17,156	May 29	122	1700
Fabrics having a distinctive finish. Bleached, unbleached, printed, and dyed textile	Eddystone Manufacturing Company.	10,306	May 15	122	1004
Fabrics having a silk-like finish. Bleached, unbleached, printed, and dyed cotton	Eddystone Manufacturing Company.	9,474	May 15	122	1003
Fabrics. Printed and dyed cotton textile	Eddystone Manufacturing Company.	9,477	May 15	122	1003
Fabrics. Printed and dyed specially-finished cotton textile	Eddystone Manufacturing Company.	9,482	May 15	122	1003
Fabrics. Printed and dyed textile	Eddystone Manufacturing Company.	9,928	May 15	122	1003
Fabrics. Printed and dyed textile	Eddystone Manufacturing Company.	10,365	May 15	122	1004
Fabrics. Printed and dyed textile	Eddystone Manufacturing Company.	10,553	May 15	122	1005
Fabrics. Printed and dyed textile	Eddystone Manufacturing Company.	12,490	May 15	122	1009
Fabrics. Printed and dyed textile	Eddystone Manufacturing Company.	17,446	May 22	122	1378
Fabrics. Printed and dyed textile	Eddystone Manufacturing Company.	18,977	June 12	122	2372
Faucets	E. Stebbins Manufacturing Company.	6,417	May 8	122	686
Feed composed of rice, corn, and molasses. Mixed	Laurence Feed Co	13,608	June 26	122	2968
Feed-water heaters	Wheeler Condenser & Engineering Co.	17,298	May 1	122	331
Felt roofing. Ready	National Coal Tar Company	17,114	May 22	122	1377
Felt. Roofing, sheathing, waterproofing, and building	Barrett Manufacturing Company.	19,245	June 26	122	2985
Ferruginous preparation	Nicolay & Co	11,976	May 1	122	316
Fertilizer compound. Odorless chemical	H. A. Niemann	16,194	May 15	122	1018
Fertilizers	Virginia-Carolina Chemical Company.	17,830	May 1	122	333
Fertilizers	Virginia-Carolina Chemical Company.	17,838	May 1	122	333
Fertilizers	Virginia-Carolina Chemical Company.	17,853	May 1	122	333
Fertilizers	Navassa Guano Company of Wilmington.	17,857	May 1	122	333
Fertilizers	Georgia Chemical Works	17,870	May 1	122	333
Fertilizers	Virginia-Carolina Chemical Company.	18,103–4	May 1	122	333
Fertilizers	Virginia-Carolina Chemical Company.	18,111	May 1	122	333
Fertilizers	Virginia-Carolina Chemical Company.	18,113	May 1	122	334
Fertilizers	Virginia-Carolina Chemical Company.	18,115–16	May 1	122	334
Fertilizers	Georgia Chemical Works	18,131–2	May 1	122	334

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Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Fertilizers	Virginia-Carolina Chemical Company.	17,572	May 8	122	710
Fertilizers	Virginia-Carolina Chemical Company.	17,835	May 8	122	711
Fertilizers	Virginia-Carolina Chemical Company.	18,108	May 8	122	712
Fertilizers	Virginia-Carolina Chemical Company.	17,574	May 15	122	1024
Fertilizers	Virginia-Carolina Chemical Company.	17,594	May 15	122	1024
Fertilizers	American Fertilizer Company	17,890	May 15	122	1026
Fertilizers	Virginia-Carolina Chemical Company.	17,834	May 22	122	1379
Fertilizers	Virginia-Carolina Chemical Company.	17,849	May 22	122	1380
Fertilizers	Virginia-Carolina Chemical Company.	18,110	May 22	122	1381
Fertilizers	Virginia-Carolina Chemical Company.	17,542-4	May 29	122	1702-3
Fertilizers	Virginia-Carolina Chemical Company.	17,549	May 29	122	1703
Fertilizers	Virginia-Carolina Chemical Company.	17,560	May 29	122	1703
Fertilizers	Virginia-Carolina Chemical Company.	17,842	May 29	122	1704
Fertilizers	Virginia-Carolina Chemical Company.	17,833	June 5	122	2041
Fertilizers	Virginia-Carolina Chemical Company.	17,846	June 5	122	2042
Fertilizers	Georgia Chemical Works	17,875	June 5	122	2042
Fertilizers	Rasin-Monumental Company of Anne Arundel County.	17,922	June 5	122	2042
Fertilizers	Virginia-Carolina Chemical Company.	17,592	June 12	122	2366
Fertilizers	Mayer Fertilizer & Junk Company.	4,612	June 19	122	2044
Fertilizers	Virginia-Carolina Chemical Company.	17,591	June 19	122	2664
Fertilizers	Rasin-Monumental Company of Anne Arundel County.	17,921	June 19	122	2665
Fertilizers	Rasin-Monumental Company of Anne Arundel County.	17,924	June 19	122	2665
Fertilizers	Virginia-Carolina Chemical Company.	18,105	June 19	122	2666
Fertilizers	Virginia-Carolina Chemical Company.	17,578	June 26	122	2975
Fertilizers	Virginia-Carolina Chemical Company.	17,832	June 26	122	2976
Fertilizers	Virginia-Carolina Chemical Company.	17,844	June 26	122	2976
Fertilizers	Virginia-Carolina Chemical Company.	17,847	June 26	122	2976
Fertilizers	Virginia-Carolina Chemical Company.	17,851	June 26	122	2976
Fertilizers	Georgia Chemical Works	17,874	June 26	122	2976
Fertilizers	American Fertilizing Company	17,877-9	June 26	122	2977
Fertilizers	Birmingham Fertilizer Company.	17,890	June 26	122	2977
Fertilizers	Virginia-Carolina Chemical Company.	18,109	June 26	122	2978
Fertilizers. Artificial	Cloverine Fertilizer Co	15,667	May 8	122	704
Figs. Dried	Protopazzi Brothers	10,986	May 8	122	691
Files and rasps	G. & H. Barnett Company	7,923	May 22	122	1357
Files and rasps	G. & H. Barnett Company	7,924	May 29	122	1688
Filter-presses	Niles Tool Works Co	18,731	June 12	122	2371
Finger-nail polish	Dr. J. Parker Pray Company	5,533	May 1	122	308
Fire-extinguishing chemicals. Portable tank for	H. H. Charles	17,759	June 19	122	2664
Fire-hose. Unlined linen	C. Nuhring	8,049	June 26	122	2962
Fire-kindling composition	Nashville Chemical Co	17,155	May 29	122	1700
Fireproof compositions	Blenio Fireproofing Co	17,324	June 12	122	2365
Fireproof insulation for floors and walls	Magne-Silica Company	7,743	June 26	122	2961
Fireworks. Hand stick	E. H. Wagner	10,573	May 8	122	691
Fireworks. Torpedo	E. H. Wagner	10,430	May 1	122	313
Fish. Cured	Cunningham & Thompson	19,332-3	June 19	122	2673
Fish. Salted and boneless	J. W. Beardsley's Sons	13,414	May 8	122	697
Fish. Salted, smoked, fresh, and canned	Reed and Gamage	3,242	June 19	122	2643
Fish. Shredded cod	J. W. Beardsley's Sons	1,101	May 15	122	996
Fishing-lines, fishing-gut, and gut lines	Henry Milward & Sons	13,196	May 15	122	1010
Fishing-lines of all kinds	T. J. Conroy	11,382	May 22	122	1362
Fishing-reels	A. Kleinman	18 351	June 26	122	2980
Fishing-rods	Hibbard, Spencer, Bartlett & Company.	13 587	May 15	122	1010
Fishing-rods	Hibbard, Spencer, Bartlett & Company.	13,851	May 22	122	1367
Flags	Hoffman-Corr Mfg. Co	15,636	May 29	122	1697
Flanges. Welded	Ball & Wood Co	16,766	June 12	122	2363
Flavoring extract	J. Z. Davidson	18,154	June 19	122	2666
Flavoring extracts	Oklahoma Wholesale Grocer Co	16,417	May 8	122	707
Flavoring extracts	A. Schilling & Co	15,549	May 15	122	1017
Flavoring extracts	A. Schilling & Co	15,551	May 15	122	1017
Flavoring extracts	Sprague, Warner & Company	19,003	June 5	122	2045
Flavoring extracts. Soluble	Standard Bottling & Extract Co.	11,327	May 15	122	1006
Floor filler and surfacer	F. A. Crandall	15,121	June 5	122	2035
Floors, walls, ceilings, &c. Composition of matter for covering	Lactoleum-Werke, Ges. mit beschr. Hftg.	13,136	June 12	122	2355
Flour	Willmar Milling Company	17,809	May 15	122	1025

Alphabetical list of trade-marks published during May and June—Continued.

Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Flour and wheat, rye, and corn meal. Wheat, rye, corn, and buckwheat	Quaker Mill Company	19,308	June 5	122	2046
Flour for binding and blending sausage. Vegetable	B. Heller & Co	8,239	May 29	122	1688
Flour in sacks or barrels. Wheat	J. F. Edgeworth	7,283	June 12	122	2346
Flour preparations. Cereal diabetic	Jireh Diabetic Food Co	16,556	June 12	122	2362
Flour. Self-rising	E. G. Richards	10,764	May 1	122	313
Flour. Self-rising	H-O (Hornby's Oatmeal) Company.	7,305	June 19	122	2647
Flour. Self-rising prepared	Reliable Flour Company	4,339	June 26	122	2960
Flour. Spring-wheat	C. O. Case	17,143	May 29	122	1700
Flour. Spring-wheat	Standard Milling Co	19,178	May 29	122	1706
Flour. Wheat	Topeka Milling Company	1,188	May 1	122	304
Flour. Wheat	Rea-Patterson Milling Company	13,570	May 1	122	319
Flour. Wheat	Rea-Patterson Milling Company	13,572-3	May 1	122	319
Flour. Wheat	Mohns-Frese Commercial Company.	14,588-9	May 1	122	322
Flour. Wheat	Lawrenceburg Roller Mills Company.	14,903	May 1	122	323
Flour. Wheat	Monarch Milling Co	16,872	May 1	122	330
Flour. Wheat	Falk Mercantile Co	17,213	May 1	122	331
Flour. Wheat	Northwestern Consolidated Milling Co.	5,045	May 8	122	694
Flour. Wheat	John F. Meyer & Sons Milling Co.	11,745	May 8	122	693
Flour. Wheat	New London Milling Company	15,463	May 8	122	703
Flour. Wheat	John H. Eberling Milling Company.	18,483	May 8	122	712
Flour. Wheat	Washburn Crosby Company	18,666	May 8	122	712
Flour. Wheat	Bulsing & Heslenfeld	16,370	May 15	122	1019
Flour. Wheat	F. F. Roby	17,689	May 15	122	1025
Flour. Wheat	Hawkeye Flour Company	17,773	May 15	122	1025
Flour. Wheat	St. Mary's Mill Company	17,808	May 15	122	1025
Flour. Wheat	D. and A. Luckenbach	18,369	May 15	122	1028
Flour. Wheat	Wichita Mill & Elevator Company.	18,468	May 15	122	1028
Flour. Wheat	Aurora Milling Company	18,598	May 15	122	1028
Flour. Wheat	Home Mill & Grain Co	18,847	May 15	122	1029
Flour. Wheat	Barber Milling Company	18,890	May 15	122	1029
Flour. Wheat	New Century Milling Company	7,731	May 22	122	1356
Flour. Wheat	Phoenix Milling Co	9,152	May 22	122	1358
Flour. Wheat	Saginaw Milling Company	10,624	May 22	122	1361
Flour. Wheat	Farwell & Rhines	11,315	May 22	122	1362
Flour. Wheat	Mountain City Mill Co	12,832	May 22	122	1365
Flour. Wheat	Sitley & Son	13,507	May 22	122	1366
Flour. Wheat	F. S. & F. D. Larabee	755	May 29	122	1685
Flour. Wheat	J. F. Johnson Milling Co	13,157	May 29	122	1693
Flour. Wheat	Red Star Mill & Elevator Company.	13,262	May 29	122	1694
Flour. Wheat	New London Milling Company	15,462	May 29	122	1696
Flour. Wheat	Liberty Mills	16,713	May 29	122	1698
Flour. Wheat	H.T. Lawler Milling & Trading Co.	17,090-1	May 29	122	1699
Flour. Wheat	Topeka Milling Company	13,749	June 5	122	2034
Flour. Wheat	Central Kansas Milling Company.	15,807	June 5	122	2036
Flour. Wheat	Semler Milling Company	16,400	June 5	122	2038
Flour. Wheat	F. J. Coyle	17,606	June 5	122	2040
Flour. Wheat	Tennant & Hoyt	17,690	June 5	122	2040
Flour. Wheat	Phoenix Milling Co	9,153	June 12	122	2349
Flour. Wheat	Aetna Mill & Elevator Company.	10,009	June 12	122	2350
Flour. Wheat	Crete Mills	14,977	June 12	122	2358
Flour. Wheat	Saginaw Milling Company	15,780	June 12	122	2360
Flour. Wheat	Zenith Milling Company	15,928	June 12	122	2360
Flour. Wheat	Lidgerwood Mill Company	17,687	June 12	122	2366
Flour. Wheat	St. Mary's Mill Company	18,677	June 12	122	2371
Flour. Wheat	Dickson Mill & Grain Co	98	June 19	122	2641
Flour. Wheat	F. G. Stritzinger & Co	1,747	June 19	122	2643
Flour. Wheat	Rea-Patterson Milling Company	13,568	June 19	122	2655
Flour. Wheat	Nevada Milling Co	17,176	June 19	122	2661
Flour. Wheat	John A. Cole Milling Company	19,331	June 19	122	2673
Flour. Wheat	Burrus Mill & Elevator Company.	12,737	June 26	122	2968
Flour. Wheat	B. Stern & Sons	13,751	June 26	122	2980
Flour. Wheat	C. L. Anderson	19,143	June 26	122	2984
Flour. Wheat	New Era Milling Company	19,197	June 26	122	2985
Flours and rye, corn, and oat meal. Wheat, oat, rye, corn, and buckwheat	American Cereal Company	14,720	May 8	122	700
Flours and rye, corn, and oat meals. Wheat, oat, rye, corn, and buckwheat	American Cereal Company	14,718	May 8	122	700
Flours, self-rising flours, flaked wheat, rolled oats, hominy, &c.	H-O (Hornby's Oatmeal) Company.	7,307	June 19	122	2647
Fluid-meters	Hersey Manufacturing Company.	17,638	May 8	122	710
Food and farina made from wheat. Breakfast	Sleepy Eye Milling Company	8,383	May 15	122	1001
Food-choppers	Colebrookdale Iron Company	19,345	June 12	122	2374
Food for infants and invalids. Prepared	Wells & Richardson Company	12,427-8	May 8	122	694
Food. Infants'	H. Taylor	10,763	May 1	122	313
Food made from wheat. Breakfast	Cream of Wheat Co	11,245	May 29	122	1691
Food. Prepared stock	Molassine Company	11,987	June 19	122	2653
Food. Prepared stock	Ideal Stock Food Co	17,301	June 19	122	2662
Food-starch	A. E. Staley	15,943	June 5	122	2037
Food. Stock	H. T. Stock Food Company	4,754	June 26	122	2960
Food. Stock and poultry	W. S. Brown	16,696	May 22	122	1375
Food substance for making table-sweets, desserts, &c. Prepared	Eglah Limited	16,375	May 29	122	1696
Food substances. Prepared fatty oleaginous or unctuous	N. K. Fairbank Company	11,164	May 22	122	1362
Food. Wheat breakfast	Pillsbury-Washburn Flour Mills Company.	15,620	May 8	122	703
Foods made from oats. Cereal	American Cereal Company	5,615	May 1	122	308
Foods. Poultry	A. E. Tate	10,265	May 8	122	690
Foods. Prepared cereal breakfast	Hygienic Food Co	4,387	May 1	122	306

Alphabetical list of trade-marks published during May and June—Continued.

Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Footwear with leather soles	C. W. Strohbeck	4,149	May 8	122	684
Forceps. Bone-cutting	De Vilbiss Mfg. Co	18,521	June 19	122	2667
Fruit. Dried	Castle Brothers	17,432-4	May 22	122	1378
Fruit-juices	R. H. Nell	10,656	May 29	122	1691
Fruits and vegetables. Fresh	Charles & Co	7,525	May 22	122	1355
Fruits. Dried	L. Otsen & Co	15,283	May 1	122	324
Fruits or vegetables in tins or glass	Aughinbaugh Canning Company	10,963	May 15	122	1008
Fungicide	B. Hammond	9,799	May 22	122	1359
Furnaces. Heating-	Utica Heater Co	14,479	May 15	122	1013
Furnaces. Heating-	Wrought Iron Range Company	18,971	June 12	122	2372
Furniture-polish	W. L. Conner	16,874	May 15	122	1021
Fuse for exploding gunpowder, &c. Safety-	Climax Fuse Co	1,468	May 29	122	1685
Fuses	Climax Fuse Co	1,469	May 15	122	996
Gall cure	M. W. Savage	7,447	June 12	122	2347
Game	Children's Amusement Co	17,413	May 22	122	1378
Game	Milton Bradley Co	975	June 12	122	2341
Game apparatus	Home Game Co	18,400	June 19	122	2667
Game apparatus. Replay-card-	Duplicate Whist Company	16,765	May 22	122	1376
Game. Card	Milton Bradley Co	976	June 12	122	2342
Game of United States history	C. W Vilson Co	15,333	June 5	122	2035
Game-scoring devices. Card-	Brentanos	18,500	June 5	122	2044
Games played with disks	A. H. Imboden	4,776	May 15	122	999
Garters	Common Sense Garter Co	12,630	June 19	122	2654
Garters and sleeve-holders or armlets	Harris Suspender Co	783	June 12	122	2341
Gas-burners	H. Adler Company	16,979	May 8	122	708
Gas burners and tips	American Lava Company	18,185	June 19	122	2666
Gas-generators	Acme Gas Company	6,252	May 29	122	1687
Gelatin and finishing-sizing. Vegetable	Blandola Company	17,217	June 26	122	2973
Gelatin. Prepared	Whitman Grocery Company	8,166	June 19	122	2649
Gelatinous compound used for binding pads, books, &c	C. P. Walley	3,470	June 19	122	2643
Gilding-tools	W. H. Coe Manufacturing Company.	16,739	June 19	122	2660
Gimlet and auger bits and braces	Hibbard, Spencer, Bartlett & Company.	17,741	June 26	122	2976
Gin	Straus Gunst & Co	5,300	May 8	122	685
Gin	J. T. O'Toole	16,531	May 8	122	707
Gin	Ben J. Goldman Co	5,139	June 12	122	2344
Gin	Wm. Bergenthal Co	6,576	June 12	122	2345
Gin	Baird-Daniels Company	8,085	June 12	122	2348
Gin	A. Brealauer	8,888	June 12	122	2349
Gin	Freiberg & Kahn	16,753	June 12	122	2363
Gin-saw filing and gumming machines	Kaufmann Bros. & Co	8,956	June 19	122	2651
Ginghams	A. A. Wood & Sons Company	11,055	May 29	122	1691
Glass chimneys, lantern-globes, and reflectors	J. E. Prior	17,465	May 22	122	1378
Glass chimneys, lantern-globes, and reflectors	Gill Brothers Company	2,429	May 8	122	683
Glass chimneys, lantern-globes, and reflectors	Gill Brothers Company	18,469	May 15	122	1026
Glass. Cut	Gill Brothers Company	2,429	May 22	122	1350
Glass-cutters	R. Murr	17,903	May 8	122	711
Glass plates	W. L. Barrett	15,357	May 1	122	325
Glass. Prismatic, sheet, rolled, plate, cathedral, and ornamental	E. Schwab	17,972	May 29	122	1704
Gloves	Pilkington Bros	7,535	June 5	122	2039
Gloves	V. Perrin & Cie	10,554	May 15	122	1005
Gloves	Rosenbaum Company	16,822	May 15	122	1020
Gloves	V. Perrin & Cie	8,044	May 22	122	1357
Gloves	V. Perrin & Cie	10,555-7	May 22	122	1360
Gloves	V. Perrin & Cie	10,615	May 22	122	1360
Gloves. Kid	V. Perrin & Cie	10,652-3	May 22	122	1361
Glue	C. Perrin & Cie	15,721	May 8	122	704
Glue	American Glue Co	15,104	May 8	122	701
Glue-cement	Binney & Smith Company	18,477	June 12	122	2370
Glue. Marine	L. W. Ferdinand	15,511	May 1	122	325
Gold and silver flat, hollow, and table ware	Siemon & Elting	17,023	June 19	122	2660
Golf-clubs. Metal heads of	W. Linker	4,407	May 15	122	998
Goose-grease	T. Stewart	17,162	May 8	122	709
Grape-juice	S. C. Elliott	13,520	June 12	122	2356
Graphite. Lubricating-	Grape Product Co	18,651	May 15	122	1029
Graphite. Pulverized	United States Graphite Company	17,295	May 29	122	1701
Grates. Fireplace-	United States Graphite Company	17,279	May 1	122	331
Greases and lubricating-oils. Machinery-	Aldine Grate & Mantel Co	15,340	May 22	122	1371
Guaiacol carbonate for internal use	Columbia Refining Co	5,016	June 19	122	26x4
Guitars and zithers	Chemische Fabik von Heyden Aktiengesellschaft.	10,368	May 22	122	1360
Gum. Chewing-	Lyon & Healy	11,353	May 8	122	692
Gum. Chewing-	American Chicle Co	8,144	May 1	122	310
Gum. Chewing-	Bon-Bon Company	14,509	May 1	122	322
Gum. Chewing-	American Chicle Co	5,152	May 8	123	688
Gum. Chewing-	Canton Gum Company	15,173	May 15	122	1026
Gum. Chewing-	Curtis & Son Company	18,206	May 15	122	1028
Gum. Chewing-	F. J. Banta & Son	15,250	May 22	122	1371
Gum. Chewing-	Hilo Gum Co	14,908	June 5	122	2034
Gum. Chewing-	Curtis & Son Company	18,574	June 5	122	2044
Gum. Chewing-	Grove Co	17,644	June 19	122	2664
Guns and revolvers. Shot-	Continental Vending Company	19,519	June 19	122	2674
Guns, rifles, and pistols. Shot-	M. E. Johnson	14,787	June 5	122	2034
Guns, rifles, revolvers, and parts thereof. Shot-	Martin Fire Arms Company	18,809	May 22	122	1362
Guns. Shot-	Martin Fire Arms Company	15,237	May 22	122	1370
Hair and scalp preparation put up in paste or soap form	Von Lengerke & Detmold	17,450	May 22	122	1378
Hair and skin tonics	Foamacina Hair Preparation Co	16,346	June 5	122	2038
Hair-dressing	Hutchins Pharmacal Company	18,141	June 26	122	2978
Hair-pins	J. B. C. Balme	15,231	May 1	122	324
Hair-pins	S. Beaumont & Fils	11,282	May 8	122	693
Hair-pins and ornamental combs	G. Littleford	13,610	May 8	123	688
Hair-preservative	W. D. Earl	15,508	May 15	122	1016
Hair-renewers	National Remedy Company	13,570	June 12	122	2355
	Kingston & Kellogg	17,724	June 26	122	2976

Alphabetical list of trade-marks published during May and June—Continued.

Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Hair-restoratives	S. R. Van Duzer	9,375	June 19	122	2651
Hair restoratives and tonics	Citizens' Wholesale Supply Co	17,265	June 12	122	2364
Hair-tonic	Weindorf & Co	1,391	May 8	122	682
Hair-tonic	L. S. Wandell	16,439	May 8	122	707
Hair-tonic	F. W. Peterson	13,814	May 22	122	1367
Hair-wavers	S. Beaumont & Fils	11,250	May 29	122	1691
Haircloth	Gordon Brothers	18,739	June 26	122	2981
Ham and bacon	Sprague, Warner & Company	19,071	June 26	122	2983
Hams	E. Godel and Sons	8,308	June 19	122	2650
Hams, breakfast-bacon, &c	Threefoot Bros. & Co	13,434	June 12	122	2356
Hams, breakfast-bacon, &c., sausages, and fresh pork	Dunlevy & Brother	4,696	June 12	122	2343
Hammocks and hammock nets and netting	Hoffman-Corr Mfg Co	15,533	June 5	122	2036
Hat-frames. Ladies' wire	Totem Machine Co	15,217	May 8	122	702
Hats	Young Brothers	15,543	May 15	122	1017
Hats and caps	Dunlap & Co	6,850	June 19	122	2647
Hats. Men's, women's, and children's	Youmans	9,093	May 8	122	688
Hats. Men's, women's, and children's	Youmans	11,678	May 8	122	692
Hats. Straw	Blum & Koch	18,020	May 22	122	1380
Hatchets and axes	Fletcher Hardware Co	6,026	June 26	122	2961
Headers and binders, reapers, mowers, and parts thereof. Grain	Acme Harvesting Machine Company.	14,535	May 22	122	1369
Headers and parts thereof. Grain-	Acme Harvesting Machine Company.	14,536-7	May 22	122	1369
Heaters, furnaces, and cooking-ranges. Hot-air, hot-water, and steam	Thatcher Furnace Co	18,412	June 12	122	2369
Heating apparatus. Separators for steam and hot-water	D. M. Nesbit	7,066	June 26	122	2961
Heave cure	Lundin & Lundin	14,218	May 22	122	1368
Heave cure	M. W. Savage	7,446	June 5	122	2029
Heel-shaves and duplicate heel-shave blades	Snell & Atherton	17,395	May 22	122	1377
Henrietta, voiles, crêpe de chine, &c	O. Seyd	10,772	May 8	122	691
Hides and coltskins. Chrome-tanned, glazed, and dull-finish horse-	B. D. Eisendrath	6,646	June 19	122	2646
Hinges, springs, and pulls. Door	Columbian Hdw. Co	18,081	June 12	122	2367
Honey and rock-candy. Liquid compound of	J. Krieg	16,502	May 15	122	1020
Hooks and eyes	De Long Hook & Eye Company	11	June 5	122	2025
Hooks. Coat and hat	Columbian Hdw. Co	19,085	June 5	122	2045
Hops	Chas. L. Kiewert Co	8,706	May 1	122	311
Horse and mule shoes. Metal	Phoenix Horse Shoe Co	10,493	May 29	122	1690
Horse-blankets	W. Ayres & Sons	15,573	June 12	122	2359
Hose	New Jersey Car Spring & Rubber Co.	17,385	May 1	122	332
Hose and skirt supporters	Clark Manufacturing Company	18,359	May 29	122	1705
Hose for conducting fluids composed wholly or in part of rubber.	Toledo Rubber Co	15,497	June 5	122	2035
Hose-supporters	Pioneer Suspender Company	14,643	May 8	122	699
Hose-supporters	Pioneer Suspender Company	12,844	June 5	122	2032
Hosiery	American Stocking Company	17,443	May 1	122	332
Hosiery	Paramount Knitting Co	17,936	May 1	122	333
Hosiery	Rice, Stix Dry Goods Company	18,427-8	May 1	122	336
Hosiery	Marshall Field & Company	16,330	May 8	122	706
Hosiery	Wayne Knitting Mills	17,169	May 8	122	709
Hosiery	Lord & Taylor	8,661	May 15	122	1001
Hosiery	Rosenbaum Company	16,823	May 15	122	1020
Hosiery	Weeks and Ascher	15,348	May 22	122	1371
Hosiery	Des Moines Hosiery Mills	15,661	May 22	122	1372
Hosiery	H. Stärker	10,534	May 29	122	1690
Hosiery	Paramount Knitting Co	13,705	June 5	122	2034
Hosiery	Wayne Knitting Mills	15,967-8	June 5	122	2037
Hosiery	Paramount Knitting Co	17,937	June 5	122	2042
Hosiery	Paramount Knitting Co	17,940	June 5	122	2042
Hosiery	H. Stärker	13,108	June 12	122	2355
Hosiery	H. Stärker	16,458	June 12	122	2362
Hosiery	Paramount Knitting Co	17,939	June 19	122	2665
Hosiery and knitted underwear	I. & R. Morley	7,546	June 5	122	2029
Hydrogen peroxid	American Peroxide and Chemical Co.	15,781	May 8	122	705
Ice-cream	Crane Ice Cream Company	18,364	May 15	122	1027
Ice-cream	A. I. Neble	18,180	June 12	122	2368
Illusion apparatus. Mechanical	E. Renton	13,083	May 1	122	318
Incubators and brooders	M. M. Johnson	7,143	June 5	122	2028
Ink. Duplicating-	A. B. Dick Company	5,987	May 8	122	685
Ink-eradicators	B. R. Thomas	16,348	May 8	122	706
Ink. Printing-	J. Sigmund Ullman Co	18,502	June 5	122	2044
Ink. Writing-	Y. Tamaki	18,676	June 26	122	2980
Inks and printing-ink varnishes and dry colors. Printing and lithographing	Jaenecke Printing Ink Co	13,781	May 8	122	698
Inks. Copying, indelible, and writing	S. S. Stafford, Inc	13,523	May 1	122	319
Insecticide	B. G. Pratt Company	13,739	May 1	122	320
Insecticide	C. A. Henderson	12,803	June 19	122	2654
Insecticide for bugs and blight	B. Hammond	9,800	May 22	122	1359
Insecticide-powder for plants and fruit-trees	J. Soubeur	16,632	June 12	122	2363
Insecticides	W. Peterman	18,091	June 19	122	2666
Insecticides	W. Peterman	18,138	June 19	122	2666
Insecticides and rodent-poisons	H. Napratek	2 001	May 15	122	998
Insulated wire for electric service	Standard Underground Cable Company.	9,534	May 29	122	1689
Insulating and protective devices. Electrical	Johns-Pratt Co	12,058	June 12	122	2363
Iron in billets, pigs, rods, sheets, and plates	B. M. Jones & Co	17,245	June 26	122	2973
Ironing boards. Sleeve-	N. A. Brown	18,928	June 19	122	2672
Isinglass of a gelatinous nature	Howe & French Isinglass Co	19,047-8	June 12	122	2372-3
Jams, jellies, preserves, and pickles	E. H. North	17,464	June 19	122	2663
Jars. Fruit-	Hazel-Atlas Glass Company	18 249	May 15	122	1026
Jars. Self-sealing glass	Fisher, Bruce & Co	17,816	May 22	122	1379
Journals. Periodical	Critic Publishing Company	19,056	June 26	122	2963
Kimonas and dressing-sacks	Lion Bros. Co	17,643	June 12	122	2366
Kindling	Wilson & Harris	18,808	June 12	122	2372

Alphabetical list of trade-marks published during May and June—Continued.

Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Knit hosiery and underwear	Hosford & Clark	16,170	May 29	122	1697
Knit hosiery, underwear, sweaters, and gloves	Dalsimer Brothers	17,412	June 19	122	2662
Knit stockings	Simons, Hatch & Whitten Co	14,137	June 12	122	2357
Knit stockings, socks, under shirts and drawers	Ernstthal & Pohly	11,235	June 19	122	2653
Knit undershirts and drawers	Cooper Underwear Co	7,077	May 15	122	1000
Knitted cloth in the piece and having napped or fleeced face or faces.	French & Ward	17,730	May 29	122	1703
Knitted hosiery and underwear	J. S. Reeves & Co	17,749	June 26	122	2976
Knitted stockings	J. A. Parker	13,367-8	June 19	122	2655
Knitted stockings	Hecht, Hirschler Co	17,357	June 19	122	2662
Knitted undergarments	Winship, Boit & Co	8,291	May 22	122	1357
Knitted underwear and hosiery	Marshall Field & Company	15,158	May 8	122	706
Knitting-machine needles	Excelsior Needle Company	17,219	May 22	122	1377
Knives and razors. Pocket-	Wester Bros	5,557	May 1	122	308
Knives and razors. Pocket-	Northfield Knife Company	7,276	May 22	122	1355
Knives and razors. Pocket and table	Dillemann File & Co	6,832	May 22	122	1354
Knives and razors. Pocket, butcher, and table	Keith, Simmons & Co	12,304	May 8	122	694
Knives and razors. Pocket, butcher, kitchen, hunting, and table	A. Kastor & Bros	4,911	May 1	122	306
Knives and razors. Pocket, table, butcher, bowie, and farriers'	George Wostenholm & Son	13 865	May 22	122	1367
Knives and razors. Pocket, table, kitchen, sticking, paring, &c.,	Hibbard, Spencer, Bartlett & Company.	13,845	May 1	122	321
Knives. Carving-	Landers, Frary and Clark	18,580	May 15	122	1028
Knives. Pocket-	Pavian-Adams Co	18,926	June 12	122	2372
Knives, razors, and manicure cutting implements	J. S. Holler & Co	5,521	June 26	122	2961
Knives, razors, and manicure implements. Pocket-	J. S. Holler & Co	5,520	June 5	122	2028
Knives, razors, carvers, and table-cutlery. Blades for pocket, butcher, and kitchen	A. Baldwin & Co	4,138	May 8	122	694
Knives, razors, nail-cutters, champagne-wire cutters, &c. Hand-	A. J. Jordan	1,911	May 8	122	682
Knives. Shoe, rubber, bread, cigar, cloth, &c	Harrington Cutlery Co	18,156	June 12	122	2368
Lamp and gas black	L. Martin Company	18,087	May 29	122	1704
Lamp glasses and globes	Macbeth-Evans Glass Company	5,782	May 29	122	1686
Lamps and lanterns and parts thereof	R. E. Dietz Company	14,196	May 1	122	322
Lamps and lanterns and parts thereof. Dark-room	R. E. Dietz Company	14,181	May 15	122	1012
Lamps and lanterns and parts thereof. Tubular	R. E. Dietz Company	18,797	June 19	122	2671
Lamps and parts thereof. Gas-	Manhattan Screw & Stamping Works.	18,323	June 19	122	2667
Lamps. Automobile oil-	General Automobile Supply Company.	7,419	June 19	122	2648
Lamps. Electric arc and incandescent	Körting & Mathiesen Aktiengesellschaft.	16,998	June 26	122	2973
Lamps for generating and burning acetylene gas	Acetylene Lamp Co	18,379	June 12	122	2368
Lantern-globes	Libbey Glass Company	18,288-9	May 29	122	1705
Lanterns. Magic	Geo. Borgfeldt & Co	17,969	May 29	122	1704
Lard	Golden and Company	16,270	May 8	122	706
Lard	Armour & Company	18,623	June 5	122	2044
Lard	S. Ewart & Co	18,082	June 12	122	2367
Lard. Fancy kettle-rendered	T. Stokes & Son	17,698	June 5	122	2040
Lard substitute	S. H. Read	10,243	May 29	122	1690
Lards	J. & F. Schroth Packing Co	15,844	May 1	122	326
Lathes, milling-machines, boring-mills, and screw-machines.	Gisholt Machine Company	14,245	May 15	122	1012
Laxative and tonic. Vegetable liquid compound for a	W. S. Windle	6,133	May 22	122	1354
Laxative preparation	J. L. Speights	18,328	June 26	122	2979
Lead and oxids of lead. White	National Lead & Oil Co. of Pa	12,444	May 22	122	1364
Lead and oxids of lead. White	National Lead & Oil Co. of Pa	12,993	May 22	122	1365
Lead and oxids of lead. White-	National Lead & Oil Co. of Pa	12,995	May 22	122	1365
Lead and oxids of lead. White	National Lead & Oil Co. of Pa	12,992	May 29	122	1693
Lead and oxids of lead. White	National Lead & Oil Co. of Pa	12,996	June 12	122	2354
Lead. Sugar and oxids of	National Lead Company	11,815	May 29	122	1692
Lead. White	J. Jacobs	18,732	June 19	122	2669
Leather. Belt and lace	Kelton-Bruce Manufacturing Co	11,784	May 15	122	1009
Leather. Calf-	G. F. Werner's Son	11,136	May 15	122	1006
Leather, calfskin, and waxed calfskin. Patent-	C. Heyl	17,099	June 5	122	2039
Leather. Cut and uncut sole-	A. F. Schenkelberger	12,554	May 8	122	695
Leather for shoes. Patent-	W. D. Byron & Sons	18,473	June 12	122	2370
Leather. Harness-	Chas. E. Stifel Company	1,017	May 1	122	303
Leather. Harness-	Haffner Bros	6,269	May 22	122	1354
Leather. Harness and skirting	William Flaccus Oak Leather Co	10,106	June 19	122	2652
Leather made from sheep and goat skins. Kid	A. B. Clark Co	13,917	May 15	122	1011
Leather. Patent-	Keystone Leather Co	15,857	June 19	122	2658
Leather-polish	Whittemore Brothers and Company.	17,337	May 15	122	1024
Leather. Sole-	Wm. F. Moeser & Co	13,598	May 8	122	698
Leather writing sets or secretaries, blotting and writing pads. Combination	Gorham Mfg. Co	14,667	May 8	122	699
Leathers. Calfskin, kid, and other upper	A. Trostel & Sons	4,088	May 22	122	1352
Legs, arms, feet, and hands. Artificial	A. A. Marks	11,450	May 15	122	1007
Lime	Rock Plaster Company of New York and New Jersey.	10,858	June 26	122	2965
Lime. Chlorid of	A. Mendleson's Sons	6,423	May 8	122	686
Lime. Crude, refined, caustic, and hydrated	Harpers Ferry Lime Company	17,379	June 19	122	2662
Lime. Crude, refined, caustic, and hydrated	Harpers Ferry Lime Company	17,380	June 26	122	2974
Liniment	F. A. Richter	3,055	May 1	122	305
Liniment	E. S. Sloan	6,205	May 1	122	309
Liniment	W. P. Ward	7,622	May 8	122	687
Liniment	J. S. Burton	2,935	May 22	122	1351
Liniment	T. Eccles	12,949	June 5	122	2032
Liniment for man and beast	A. B. Richards	5,126	June 12	122	2344
Liniment. Oil	Merchants Gargling Oil Company.	16,386	May 22	122	1374
Linings. Bleached, unbleached, printed, and dyed	Eddystone Manufacturing Company.	10,366	May 15	122	1004
Linoleum	P. O. Judson & Co	15,142	May 22	122	1370

Alphabetical list of trade-marks published during May and June—Continued.

Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Liquor and cordial	Société Anonyme de la Distillerie de la Liqueur Bénédictine de l'Abbaye de Fécamp.	15,875	June 12	122	2360
Logwood extracts and crystals	West Indies Chemical Works	288	June 12	122	2341
Lotion for the complexion	S. R. Van Duzer	9,379	May 15	122	1002
Lotion or emulsion for the skin	A. S. Hinds	1,408	May 8	122	682
Lotion to remove grease, burnt cork, &c., from the face and to cleanse and soften the skin.	E. J. M. Hart	9,406	May 8	122	689
Lotions, salves, and ointments	Sereta Chemical Company	12,273	May 15	122	1008
Lotions. Skin-	American Peroxide & Chemical Co.	17,980	June 26	122	2977
Lotions. Toilet	S. H. Smith	11,012	June 26	122	2965
Lubricating compounds. Commutator-	J. C. Royce	10,976	June 12	122	2352
Lye	Pennsylvania Salt Manuf'g Co	5,715-17	May 22	122	1353
Macaroni	C. F. Mueller Co	12,202	June 26	122	2967
Macaroni and spaghetti	Gennerich & Von Bremen	11,171	May 8	122	692
Machetes, terçados, swords, and bush, hunting, rubber, coffee, &c., knives.	Collins Company	12,913	May 22	122	1365
Magazine	A. D. Porter Company	12,374	June 19	122	2654
Magazine	Colonial Press	18,708	June 26	122	2961
Magazine. Monthly	Crist, Scott & Parshall	15,529	May 15	122	1016
Magazine. Monthly	Inland Printer Company	18,430	June 26	122	2960
Magazine or periodical	D. H. Anderson	18,374	June 12	122	2369
Magazine or periodical	Home Life Publishing Company	18,404	June 12	122	2369
Magazine or periodical	Simmons Publishing Company	18,536	June 12	122	2370
Magazine or periodical	Cultivator Publishing Company	18,844	June 19	122	2671
Magazine or periodical	W. F. T. Bushnell Company	19,023	June 26	122	2982
Magazine or periodical	Reliable Poultry Journal Publishing Co.	19,081	June 26	122	2984
Magazine or periodical. Monthly	J. Shepherd Clark Company	18,059	May 29	122	1704
Magazine. Periodical	Doubleday, Page & Company	12,508	June 26	122	2968
Magazine. Weekly	Manufacturers' Record Publishing Company.	15,351	June 26	122	2971
Magazine. Weekly illustrated	P. F. Collier & Son	16,732	May 29	122	1698
Magazines	Golden Rule Company	17,811	June 5	122	2041
Magnesia preparation. Liquid-	Chas. H. Phillips Chemical Co	16,576	May 22	122	1374
Malt extract	Paragon Malt Extract Company	9,362	May 29	122	1689
Malt extract	Minneapolis Brewing Co	11,826	May 29	122	1692
Malt extract for bakers	Heimler & Junge Company	1,418	June 12	122	2342
Malt extract or tonic	Dubuque Brewing & Malting Co	1,550	June 26	122	2959
Marble. Artificial	Marbleloid Company	17,107	June 5	122	2039
Marble in blocks and slabs	Republic Marble Company	18,329	June 12	122	2368
Matches	Aktiebolaget Södertelje Tändsticksfabrik.	16,276	May 8	122	706
Matches. Safety-	Aktiebolaget Södertelje Tändsticksfabrik.	16,275	May 15	122	1019
Matches. Safety-	Jönköpings och Vulcans Tändsticksfabriksaktiebolag.	16,924	May 15	122	1021
Matches. Safety-	Jönköpings och Vulcans Tändsticksfabriksaktiebolag.	16,921-2	May 29	122	1699
Mattresses	J. C. Roberts	16,103	June 12	122	2361
Mattresses	Chas. A. Maish Co	17,622	June 12	122	2366
Mattresses and pillows	Chittenden & Eastman Co	14,171	May 8	122	699
Mattresses and pillows	Washington Mattress & Furniture Co.	17,336	May 15	122	1024
Measures. Lineal	C. Bube, (a Firm)	16,561	May 8	122	703
Measuring-tapes	Lufkin Rule Co	13,209	May 1	122	318
Meat-preserving extract	Alfred Andresen & Co	17,154	June 19	122	2661
Meats. Smoked and pickled	F A Ferris & Company	17,311	May 15	122	1023
Medals and badges	C. W. Little	12,013	May 1	122	316
Medical and surgical plasters	Johnson & Johnson	13,666	May 1	122	319
Medical compound	S. H. E. Hayden	8,414	May 8	122	688
Medical compound for scalp diseases	Headstream & de Flon	17,491	June 26	122	2974
Medical preparation for headache and neuralgia	Kohler Manufacturing Co	10,174	June 19	122	2652
Medical preparation in pill form for diseases of the digestive tract.	J. Cockle & Co	12,494	May 22	122	1365
Medical purposes. Creosote carbonate for	Chemische Fabrik von Heyden Aktiengesellschaft.	10,369	May 22	122	1360
Medicated plasters	G. T. Raymond	15,737	June 12	122	2360
Medicated poultry-food	M. W. Savage	7,452	May 15	122	1000
Medicated stock and poultry food	Medicura Food Co	7,974	May 1	122	310
Medicated stock-food	M. W. Savage	7,451	May 15	122	1000
Medicated stock-food	L. W. Paste	17,479	June 26	122	2974
Medicated stock-food made from medicinal roots, barks, herbs, &c.	M. W. Savage	19,078	June 5	122	2045
Medicated uterine wafers	J. H. Miller	12,093	June 5	122	2032
Medicinal and adhesive plasters	Johnson & Johnson	13,993	June 12	122	2357
Medicinal and adhesive plasters	J. Ellwood Lee Company	17,060-1	June 12	122	2364
Medicinal and adhesive plasters	J. Ellwood Lee Company	17,066	June 12	122	2364
Medicinal and adhesive plasters	J. Ellwood Lee Company	17,065	June 19	122	2660
Medicinal beverage	D. O. Read	7,600	May 22	122	1356
Medicinal compounds for all derangements of the stomach and bowels.	Dr. J. Ware Remedy Co	2,640	May 29	122	1686
Medicinal compounds for catarrhal diseases and colds	Ely Brothers	2,876	June 6	122	2027
Medicinal oil or linment for rheumatism, neuralgia, &c	National Remedy Company	13,372	June 5	122	2033
Medicinal ointment or lotion	C. J. Sindelar	17,647	June 5	122	2040
Medicinal pills, tablets, and capsules containing medicine	Laboratory Company	6,542	May 8	122	686
Medicinal plasters	Allcock Manufacturing Co	9,248	May 1	122	311
Medicinal plasters	J. Ellwood Lee Company	17,063	May 8	122	709
Medicinal plasters	Medical Lake Salts Mfg. Co	12,474	May 22	122	1365
Medicinal plasters	Johnson & Johnson	13,990	May 29	122	1694
Medicinal plasters	J. Ellwood Lee Company	17,064	May 29	122	1699
Medicinal preparation for gonorrhea, &c	J. D. Riedel Aktiengesellschaft	13,126	May 15	122	1010
Medicinal preparation for nervous disorders	J. D. Riedel Aktiengesellschaft	13,125	May 15	122	1010
Medicinal remedy for rheumatism. Liquid	O. C. Brown	14,379	May 15	122	1013
Medicinal tablets for la grippe, constipation, &c	F. H. Putnam	13,987	May 15	122	1012

Alphabetical list of trade-marks published during May and June—Continued.

Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Medicinal vegetable-oil to eradicate itch and vermin common to cattle, &c.	E. Ryan	7,515	June 19	122	2648
Medicine. Antiseptic and emollient	Insecta-Cofpho Compnay	9,600‡	May 8	122	689
Medicine-cabinet. Portable	Home Physician Co	19,210	May 29	122	1705
Medicine. Diuretic	Actien-Gesellschaft für Anilin-Fabrikation.	12,340	May 8	122	694
Medicine. Diuretic, laxative, diaphoretic, and tonic	A. B. Bradley	8,071	June 19	122	2649
Medicine for appendicitis	C. Wesobcke	16,986	May 8	122	706
Medicines for bronchial and pulmonary affections	Choate Drug and Chemical Company.	15,773	May 8	122	705
Medicine for consumption, coughs, colds, &c.	Lung Germine Co	16,535	June 5	122	2038
Medicine for consumption, coughs, colds, &c.	Lung Germine Co	16,518	June 5	122	2038
Medicine for epilepsy	A. K. Mandis	268	May 22	122	1349
Medicine for headache and neuralgia	Kloczewski & Co	11,051	June 26	122	2965
Medicine for liver and blood troubles	R. M. Carlisle	11,977	June 12	122	2353
Medicine for the blood	Nicolay & Co	16,536	June 26	122	2972
Medicine for the cure of consumption, coughs, &c.	Lung Germine Co	16,181	May 22	122	1373
Medicine. Headache	Treadwell & Moore	8,187	June 5	122	2029
Medicine. Poultry	Dr. Hess & Clark	7,748	June 19	122	2648
Medicine to purify the blood and for all kidney and liver complaints, colds, &c.	F. J. Schmidt	17,103	June 12	122	2364
Medicines for diseases of the blood and nervous system	Dr. Richards Dyspepsia Tablet Association.	18,273	June 26	122	2978
Medicines. Laxative	F. A. Luyties	18,250	May 29	122	1706
Metal and glass polishing powder	L. N. Booth	19,372	June 12	122	2374
Metal. Antifriction	Eureka Brass Company	4,905	May 15	123	999
Metal. Bearing	Frictionless Metal Company	4,936	June 19	122	2644
Metal. Bearing	L. Lacy	13,353	May 15	122	1010
Metal, glass, and marble polishing compound	G. W. Hoffman	11,542	May 1	122	314
Metal-polish	P. H. Solomon	6,415	May 29	122	1687
Metal-polish	American Metal Polish Co	17,660	June 26	122	2975
Metal-polish	S. N. Gold	16,376	May 22	122	1374
Metal-polish in soap form	Myers & Gordon	5,939	May 8	122	685
Metals. Antifriction or bearing	William A. Hardy & Son's Co	16,291	May 1	122	329
Metals. Babbitt and antifriction bearing	Palmetto Metal Company	17,289	May 29	122	1700
Metals. Babbitt and antifriction bearing	Palmetto Metal Company	17,389	May 8	122	709
Metals or alloys. Antifriction	Magnolia Metal Company	6,827	May 8	122	686
Milk and dry-milk products in powder form. Dry	G. Kammermann & Co. Schweizerische Trockenmilch gesellschaft.	4,334	May 15	122	998
Milk centrifugal, cooling, and pasteurizing machines and apparatus.	Aktiebolaget Salenius Werkstäder.	7,833	May 1	122	310
Milk. Condensed	Vermont Condensed Milk Co	7,836	May 1	122	310
Milk. Condensed	Vermont Condensed Milk Co	17,350	May 1	122	332
Milk. Condensed	Pacific Coast Condensed Milk Co	18,394	May 1	122	335
Milk. Condensed	Michigan Condensed Milk Co	7,832	May 8	122	687
Milk. Condensed	Vermont Condensed Milk Co	7,828	May 15	122	1001
Milk. Condensed	Michigan Condensed Milk Co	7,820	June 12	122	2347
Milk. Condensed	Borden's Condensed Milk Co	7,829–30	June 12	122	2347
Milk. Condensed	Michigan Condensed Milk Co	7,826	June 26	122	2962
Milk. Condensed	Borden's Condensed Milk Co	7,816	May 29	122	1687
Milk, condensed milk, cream, evaporated cream, and buttermilk.	Dr. Dadirrian & Sons' Co	18,148	June 19	122	2666
Milk. Fermented	J. A. Panchaud	16,596	May 22	122	1375
Milk for rearing calves, pigs, lambs, &c	J. C. Dowd & Co	5,356	May 1	122	308
Mirrors, manicure sets, brushes, boxes, &c., of enameled ware. Hand-	M. L. Getchell Company	17,496	May 22	122	1378
Moccasins	Lister & Company	7,576	May 22	122	1355
Mohair pile fabrics	Massachusetts Association for Promoting the Interests of the Adult Blind.	18,910	June 26	122	2982
Mops, mop-heads, and mop parts	Buckeye Manufacturing Company	13,589	May 15	122	1010
Motor trucks, runabouts, business-wagons, and tonneau-cars.	W. H. Barrett	7,609	May 8	122	687
Motors and motor machinery. Gasolene	Whitman & Barnes Manufacturing Company.	14,596	June 26	122	2969
Mower and reaper knives	Whitman & Barnes Manufacturing Company.	14,592	May 1	122	322
Mower, binder, harvester, and header guards	Whitman & Barnes Manufacturing Company.	14,711	May 8	122	700
Mower, reaper, harvester, and header guard-plates	Supplee Hardware Company	13,819	May 1	122	320
Mowers. Lawn	Supplee Hardware Company	13,822–3	May 1	122	320
Mowers. Lawn	Whitman & Barnes Manufacturing Company.	14,595	May 1	122	322
Mowers. Lawn	Arabol M'f'g Co	11,146	May 15	122	1006
Mucilage, liquid starch, gums, liquid sizings and pastes	Diamond Ink Company	965	May 22	122	1350
Mucilage, paste, and liquid glue and cement	S. S. Stafford, Inc	15,483	May 1	122	325
Mucilage, paste, and sealing-wax	F. A. Richter	15,537	May 8	122	703
Music-boxes	McKinley Music Co	18,370	June 12	122	2349
Music in sheet, folio, and book form	Gus Edwards Music Publishing Co.	14,252	May 1	122	322
Music, instruction-books, and opera-scores. Sheet	Lyon & Healy	17,826	June 5	122	2041
Musical-instrument strings	Lyon & Healy	17,677	May 1	122	323
Musical-instrument supply-package containing strings, pegs, &c.	Lyon & Healy	11,374	May 8	122	692
Musical-instrument supply-packages containing bridges, picks, &c.	Wm. Henning Co	17,124	May 15	122	1022
Mustard	D. & L. Slade Co	18,117	May 29	122	1704
Mustard	A. J. Chase	14,793	May 8	122	700
Nails. Finish	Capewell Horse Nail Company	18,251	May 8	122	712
Nails. Horse	Standard Oil Co. of New York	16,578	May 22	122	1376
Naphtha	Weber and Heilbroner	10,791	May 1	122	314
Nekkmarks	Weld, Colburn & Wilckens	14,159	May 15	122	1012
Neck ties and scarfs. Men's	R. P. Cheever	11,466	May 22	122	1382
Neckties or cravats	Henry Milward & Sons	18,571	June 12	122	2370
Needles	Henry Milward & Sons	13,196	May 29	122	1693
Needles. Hand-sewing and machine					

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Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Needles. Machine	Union Special Machine Company	18,018	May 8	122	712
Nerve and brain food	National Remedy Company	13,369	June 5	122	2033
Newspaper comic sections or pages	New York Herald Company	16,043	May 8	122	705
Newspaper. Weekly	W. H. Maule	18,947	June 26	122	2982
Newspapers	Manufacturers' Record Publishing Company.	15,350	May 29	122	1696
Newspapers	C. F. Davis	18,270	June 26	122	2979
Newspapers. Weekly	Nordstjernan Publishing Co	18,290	June 26	122	2979
Nuts. Track-bolt	American Iron & Steel M'f'g Co	6,364	May 8	122	686
Oatmeal, cracked wheat, hominy-grits, &c	American Cereal Company	2,309–10	May 8	122	682–3
Oats. Compressed rolled	Great Western Cereal Co	10,739	May 29	122	1691
Oats. Rolled	Wilkinson, Gaddis & Co	8,393	May 8	122	688
Oats. Rolled	Atchison Oat Meal and Cereal Co	16,055	May 15	122	1018
Oats. Rolled	H-O (Hornby's Oatmeal) Company.	7,306	June 19	122	2647
Oil and grease used for dyeing, lubricating, finishing, and softening purposes. Soluble	Arabol M'f'g Co	4,013	May 22	122	1351
Oil and gum solvents	Commonwealth Manufacturing Co.	9,674	May 22	122	1359
Oil and medicinal sweet oil. Castor	E. R. Durkee & Co	14,774	June 12	122	2358
Oil and olive-oil butter. Olive	A. V. Stuart & Co	12,910	June 26	122	2968
Oil. Castor	Lamar & Rankin Drug Company	14,220	May 1	122	322
Oil. Castor	C. Delacre & Cie	15,122	May 8	122	701
Oil, commonly known as "Haarlem oil"	Holland Medicine Company	15,688	May 22	122	1372
Oil for external and internal use	Foster-Milburn Co	7,885	May 29	122	1688
Oil. Healing pine	M. W. Savage	7,449	June 19	122	2648
Oil. Lubricating	L. Mendel	17,812	May 15	122	1025
Oil of orange, bergamot, and lemon	George Lueders & Co	16,722	May 1	122	330
Oil. Olive	T. Martindale & Co	14,722	May 8	122	700
Oil. Olive	D. S. Franceschi	13,455	June 12	122	2356
Oil. Olive	J. A. McCaffrey & Sons	1,154	June 19	122	2642
Oil. Olive	Hauselt & Luneschloss	18,463	June 19	122	2667
Oil. Salad	Wm. Henning Co	17,122	May 15	122	1022
Oil. Sewing-machine	G. T. Robie	3,412	May 22	122	1351
Oils and lubricating oils and greases. Illuminating	Sterling Oil Company	17,526	June 19	122	2663
Oils. Hydrocarbon illuminating	Kehew-Bradley Company	18,998	June 26	122	2982
Oils. Lubricating	Kehew-Bradley Company	19,000	June 12	122	2372
Oils. Lubricating	New York & New Jersey Lubricant Co.	8,122	June 19	122	2649
Oils. Mineral lubricating	Ernst Schliemanns Oelwerke Gesellschaft mit Beschrankter Haftung.	11,392	May 22	122	1362
Oils non-explosive. Lamp-powder for rendering	E. E. Jennison	8,362	June 12	122	2348
Oils. Paint	Kay and Ess Co	10,474	May 22	122	1360
Ointment	Good Samaritan Ointment Company.	12,689	June 12	122	2354
Ointment	Lewis Bros	15,500	June 19	122	2657
Ointment for the complexion	J. Rowell	13,783	May 1	122	320
Ointment, salve, colic and cough remedies, &c. Hoof	Dr. Willis A. Myers Veterinary Medical Co.	14,246	May 1	122	322
Ointments	P. Leuschner	16,455	May 1	122	329
Ointments	Foster-McClellan Company	16,211	May 15	122	1018
Ointments and salves	Beacon Ointment Co	9,014	May 29	122	1688
Ointments and salves	J. W. Cole & Co	17,183	June 19	122	2661
Ointments, pastes, and creams	D. Friedlaender	16,440–1	June 12	122	2362
Oleomargarin	Swift and Company	18,617	June 12	122	2371
Olives	Wm. Henning Co	17,125	May 15	122	1023
Olives in bottles and jars	Seville Packing Company	17,405	May 15	122	1024
Opera and field glasses	Sussfeld, Lorsch & Co	16,079–80	June 5	122	2037
Opera-glasses	Merry Optical Company	5,756–7	June 19	122	2645
Organs	W. W. Kimball Company	18,330	June 12	122	2368
Overalls, overall-suits, pants, coats, and blouses	Brown, Durrell & Co	13,344	May 22	122	1366
Overcoat-collars	Hoffman and Murphy	13,964	June 19	122	2655
Overcoats and suits	Wm. H. Richardson Co	1,452	June 12	122	2342
Overcoats, suits, and trousers	W. and B. Strouse	17,772	June 5	122	2041
Oysters. Fresh shucked	J. L. McCready	11,009	June 26	122	2965
Packing, gaskets, disks, rings, and washers. Rubber	A. B. Jenkins	15,011	May 15	122	1015
Packing. Rubber	Peerless Rubber Manufacturing Company.	14,598–9	May 22	122	1369
Packing. Rubber and canvas piston-rod	Carolina Supply Co	16,602	May 15	122	1020
Packing. Rubber and hemp	Hibbard, Spencer, Bartlett & Company.	17,739	May 29	122	1703
Packings. Piston, rod, and joint	Mechanical Rubber Co	15,792	May 8	122	705
Paint and heavy putty-like cement. Roof-preserving	A. E. Maire	16,663	May 22	122	1375
Paint in dry powder and in oil. Metallic	Prince M'f'g Co	11,670	May 1	122	315
Paint. Liquid	A. Burdsal Co	3,503	May 29	122	1686
Paint. Marine	H. Louderbough	4,289–90	May 1	122	306–8
Paint. Marine anticorrosive and antifouling	Rahtjen's American Composition Company.	17,639	June 26	122	2975
Paint. Mixed	Chas. R. Long Jr. Company	11,152	May 29	122	1691
Paint. Mixed	Marine Paint Corporation	19,308	June 19	122	2674
Paint-pigments. Colored	Vane-Calvert Paint Co	11,316	June 19	122	2653
Paint. Roofing	Asbestos Manufacturing and Roofing Co.	12,455	May 1	122	316
Paint. Semipaste	H. B. Davis Company	18,704	June 19	122	2669
Paints and calcimines. Cold water	Manhattan Color Works	18,526	June 19	122	2671
Paints and compositions for ships, &c. Non-corrosive and antifouling	Humidine Limited	16,141	June 12	122	2361
Paints and stains. Roofing	Pacific Refining & Roofing Co	16,094	June 12	122	2361
Paints. Carbon	Nashville Carbon & Oil Company	14,518	June 12	122	2357
Paints. Carriage and car	C. A. Willey	508	June 26	122	2969
Paints, colors, stains, and oils. Mixed	Sherwin-Williams Co	8,851	June 26	122	2982
Paints. Damp-resisting	Toch Brothers	11,561	May 22	122	1368
Paints, enamels, and varnishes. Mixed	Valentine & Company	10,269	June 26	122	2984
Paints, enamels, stains, and varnishes	Acme White Lead & Color Wks	10,457	June 26	122	2964

Alphabetical list of trade-marks published during May and June—Continued.

Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Paints. Fresco-	Toch Brothers	11,576	May 1	122	315
Paints. Mixed	Patterson Sargent Company	12,772	May 8	122	696
Paints. Mixed	Hibbard, Spencer, Bartlett & Company.	13,586	May 8	122	697
Paints. Mixed	Kay and Ess Co	10,475	May 22	122	1360
Paints. Mixed	Hibbard, Spencer, Bartlett & Company.	13,847	May 22	122	1367
Paints. Mixed	Hurley Manufacturing and Supply Co.	10,536	June 26	122	2964
Paints. Prepared	Base-Hueter Paint Co	18,712	June 19	122	2669
Paints. Ready-mixed	Atlantic Paint Works of Baltimore City.	16,830	June 5	122	2039
Paints. Ready-mixed	W. W. Lawrence & Company	17,403	June 19	122	2663
Pantaloons and knee-pants	Jamison Bros	16,220	June 12	122	2362
Paper. All kinds of writing-	Woronoco Paper Company	10,013	June 12	122	2350
Paper and cardboard. Artist's and draftsman's	L. F. Higinbotham Co	9,002	June 12	122	2349
Paper and envelops. Writing-	H. S. Crocker Company	16,385	June 19	122	2658
Paper and press board	Rogers Paper Mfg Co	11,948-9	May 8	122	693
Paper bags	Union Bag & Paper Company	17,011	May 1	122	331
Paper bags	Union Bag & Paper Company	19,058	June 5	122	2045
Paper. Blotting-	District of Columbia Mfg. Co	16,615	June 19	122	2659
Paper. Blotting-	District of Columbia Mfg. Co	16,617	June 19	122	2659
Paper-board. Parchmentized	Leatheroid Manufacturing Company.	15,281	May 22	122	1371
Paper. Carbon-	Carter's Ink Company	17,892	May 8	122	711
Paper. Carbon-	J. R. Keatinge	18,011	May 8	122	711
Paper. Carbon-	Fidelity Carbon Paper Company	17,694	June 12	122	2366
Paper. Carbon or transfer	Oliver Typewriter Company	2,292	June 5	122	2027
Paper cartons	Reynolds "Aertite" Carton Co	3,567	June 19	122	2643
Paper. Colored and ornamented	Metaxin-Fabrik Dr. Lilienfeld & Dr. Tedesko.	12,950	June 26	122	2968
Paper, envelops, and tablets. Writing-	L. J. Powers	17,628	June 12	122	2366
Paper Fine writing-	Woronoco Paper Company	12,012-14	June 12	122	2350-1
Paper. Fine writing-	Woronoco Paper Company	10,010-11	June 26	122	2963
Paper for blue and other process printing. Prepared and unprepared	Eugene Dietzgen Co	16,817	May 8	122	706
Paper-holders and holders for soap, sponges, brushes, &c	J. P. Eustis Mfg. Co	1,024	May 8	122	682
Paper-lined bags and paper linings for bags, barrels, &c	Arkell Safety Bag Company	10,444	May 22	122	1360
Paper-makers' faltings	J. Porritt & Sons	9,595	May 8	122	689
Paper packages or cartons for confectionery and popcorn	Dayton Paper Novelty Co	15,989	May 29	122	1697
Paper. Roofing, sheathing, and building	Barrett Manufacturing Company	19,247	June 12	122	2373
Paper. Stencil	Neostyle Company	5,929	May 1	122	308
Paper. Stencil	A. B. Dick Company	5,986	May 8	122	685
Paper. Toilet-	Scott Paper Co	12,244-5	May 1	122	324
Paper. Toilet-	Scott Paper Co	15,247	May 1	122	324
Paper. Toilet-	Scott Paper Co	19,043-4	June 26	122	2963
Paper-trimmers	Webster & Perks Tool Company	10,621	May 22	122	1360
Paper. Wrapping-	Dayton Paper Novelty Co	15,992	May 15	122	1018
Paper. Wrapping-	Dill & Collins Co	17,632	June 19	122	2664
Paper. Wrapping-	United Paper Company	18,849	June 19	122	2671
Paper. Writing-	Cincinnati Cordage & Paper Co	18,268	May 29	122	1705
Paper. Writing and drawing	R. J. Balston	18,307	May 15	122	1026
Paper. Writing and drawing	R. J. Balston	18,306	June 5	122	2043
Papers. All kinds of writing-	Woronoco Paper Company	10,016	June 5	122	2030
Papers. Linen, bond, ledger, and fine writing-	Worthy Paper Co	982	June 19	122	2642
Papers. Surface-coated and enameled	Dill & Collins Co	17,631	June 19	122	2664
Papers. Transfer-	Paas Dye Co	14,533	May 15	122	1013
Papers. Writing-	S. E. & M. Vernon	18,149	June 12	122	2368
Partitions made of ornamental panel, glass work, posts, rails, and balusters. Office-	Mount & Robertson	17,956	June 19	122	2665
Paste. Flour	E. Hoffmann	15,192	May 22	122	1370
Pastry with a filling of cream or ices	Albagli & Avayon	16,643	May 1	122	330
Pea-hullers	J. M. Sanders	11,937	May 15	122	1008
Peanuts. Salted	Tads Food Confection Co	16,204	May 1	122	329
Pencils	E. Faber	15,850	May 1	122	327
Pencils. Lead-	A. W. Faber	15,456	May 8	122	702
Pencils. Lead-	Eagle Pencil Company	18,122-4	May 15	122	1026
Pencils. Lead-	Eagle Pencil Company	18,266	May 15	122	1026
Pencils. Lead-	L & C Hardtmuth	8,068	May 22	122	1357
Pencils. Lead-	L & C Hardtmuth	8,070	May 22	122	1357
Pencils. Lead-	Eagle Pencil Company	18,121	June 12	122	2367
Pencils. Lead-	E. G. Soltmann	525-6	June 19	122	2641
Pencils. Lead-	E. G. Soltmann	528-9	June 19	122	2642
Pencils. Lead-	E. G. Soltmann	532	June 19	122	2642
Pencils. Lead-	L. & C. Hardtmuth	8,089	June 19	122	2649
Pencils. Lead-	E. G. Soltmann	13,100	June 19	122	2654
Pencils. Lead-	A. W. Faber	15,455	June 26	122	2971
Pencils. Lead-	E. G. Soltmann	530	June 19	122	2642
Pencils. Lead-	E. G. Soltmann	535	June 19	122	2642
Pencils. Lead-	S. L. Kiser & Co	11,577	May 29	122	1692
Pens. Fountain-	Thomas De La Rue and Company	12,946	June 12	122	2354
Pens. Fountain and other writing	C. Howard Hunt Pen Co	614-18	June 5	122	2025-6
Pens other than fountain-pens	C. Howard Hunt Pen Co	621	June 5	122	2026
Pens other than fountain-pens	J. Crawford	14,133	May 15	122	1012
Pens. Steel	H. S. Brewington	12,873	May 29	122	1693
Pens. Writing-	Chemische Fabrik Helfenberg, A. G. vorm. E. Dieterich.	7,271	May 1	122	310
Peptone. Non-alcoholic solutions of iron-manganese-	Landers, Frary and Clark	18,577	June 12	122	2371
Percolators	Jordan Marsh Company	8,866	May 15	122	1002
Perfumery	Frederick Stearns & Co	6,081	May 15	122	999
Perfumes	C. B. Woodworth Sons Co	2,991	May 22	122	1351
Perfumes	Leffler Mfg. Co	13,576	May 22	122	1367
Perfumes	Actien-Gesellschaft für Anilin-Fabrikation.	12,336-7	June 26	122	2967
Perfumes and toilet waters	Lasell, Dalley & Co	12,175	May 8	122	694

Alphabetical list of trade-marks published during May and June—Continued.

Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Periodical	A. Ward	18,140	May 29	122	1704
Periodical devoted to the care and training of babies and children.	P. Kratz	17,372	May 1	122	332
Periodical. Monthly	Farm Life Publishing Co	16,557	June 12	122	2362
Periodical. Monthly	David C. Cook Publishing Company.	15,131	June 26	122	2970
Periodical. Weekly	W. J. Johnston	12,139	May 8	122	694
Petroleum for illuminating purposes. Refined	Standard Oil Co. of New York	16,442	June 26	122	2971
Phosphates, phosphites, and hypophosphites	L. J Percy	10,198	June 5	122	2030
Photographic acidifiers, developers, intensifiers, &c	E. A. Turner	11,052	May 29	122	1691
Photographic film. Sensitized	Eastman Kodak Co	11,226	June 5	122	2031
Photographic papers	Farbenfabriken of Elberfeld Co	15,501	May 8	122	703
Photographs	F. J. Laracy	16,585	June 19	122	2650
Piano-players. Automatic	Simplex Piano Player Co	1,530	June 12	122	2342
Piano-players. Automatic	Autopiano Company	2,018	June 19	122	2643
Pianos	W. W. Kimball Company	11,639	May 8	122	692
Pianos	Kroeger Piano Co	12,520	May 8	122	695
Pianos	M. Steinert & Sons Co	16,905	May 8	122	708
Pianos	B. H. Janssen	16,640	May 22	122	1375
Pickles	Squire Dingee Co	4,884	May 29	122	1686
Pickles and chow-chow. Cucumber, mixed, and onion	Wm. Henning Co	2,839	May 15	122	997
Picks, mattocks, and grub and eye hoes	Simmons Hardware Company	14,942	May 15	122	1014
Pies, rolls, cakes, biscuits, sandwiches, and doughnuts	H. S. Keley	14,321	May 22	122	1368
Pile cure	H. J. Burke	11,481	May 15	122	1007
Pill for use as an antiseptic, tonic, &c	Potter Drug & Chemical Corporation.	14,661	June 19	122	2656
Pills	Allcock Manufacturing Co	9,254	May 1	122	311
Pills	J. Beecham	16,526-7	May 1	122	330
Pills. Cathartic	J. Telford	16,745	May 22	122	1376
Pills for liver and kidney diseases	C. B. Mumford	13,908	June 19	122	2655
Pills for the cure of bilious and digestinal derangements	J. F. Ballard	7,315	May 15	122	1000
Pills. Liver-	J. P. Smith	15,219	May 15	122	1016
Pills, powders, lozenges, tablets, and dragees for anemia, catarrhal, &c., troubles, and for a tonic.	Mariana & Co	13,935	May 22	122	1367
Pincers, nippers, and hoof-trimmers	Washington Tool Co	12,156	May 8	122	694
Pincers. Shoe-	F. W. Whitcher	15,417	May 1	122	325
Pineapples	C. Ruiz	16,424	June 26	122	2971
Pins. Black-head	Abel Morrall Limited	14,771	June 12	122	2358
Pins, brooches, bracelets, chains, &c. Scarf and stick	Plainville Stock Company	10,453	June 26	122	2964
Pins. Safety-	American Pin Co	11,828	May 22	122	1363
Pins. Safety-	American Pin Company	18,387	May 22	122	1381
Pins. Solid-headed straight	Plume & Atwood Mfg. Co	10,844	May 15	122	1005
Pipe-joints	Moran Flexible Joint Co	8,654	May 22	122	1358
Pistols. Revolver-	Smith & Wesson	548	June 5	122	2025
Planters. Corn-	Belcher & Taylor Agricultural Tool Co.	981	May 22	122	1350
Planters, guano-distributers, and grain and fertilizer drills. Cotton-	J. T. Gantt	11,669	June 12	122	2352
Planters, transplanters, harrows, seeders, &c., and parts thereof.	Fetzer & Company	17,799-800	May 8	122	711
Plasters. Adhesive	J. Ellwood Lee Company	17,062	June 5	122	2039
Plasters and plastic compounds for walls, ceilings and floors	Paragon Plaster Company	13,365	May 1	122	318
Plasters and salves	P. Beiersdorf & Co	11,084	June 12	122	2354
Plasters. Corn and bunion	Bauer & Black	16,587	May 1	122	330
Plastic composition containing nitrocellulose	Duranoid M'F'G Co	10,959	May 29	122	1691
Plastic composition containing shellac, clay, and fiber	Duranoid M'F'G. Co	10,959	June 12	122	2352
Plastic composition made of horns and hoofs	Kornit Manufacturing Company	16,202	June 12	122	2362
Plastic flooring and composition for making same	Warren Brothers Company	9,345	June 26	122	2963
Platinum	R. R. Graf	18,089	June 19	122	2666
Plows. Riding and walking	Parlin & Orendorff Co	11,211	May 1	122	314
Plumbago	F. B. Stevens	17,527	May 29	122	1702
Plumbago axle-grease	United States Graphite Company	12,530	May 8	122	695
Plumes, and boas, muffs, and capes made from ostrich-feathers. Ostrich-	E. Cawston	12,227	May 1	122	316
Poison. Insect-	P. M. Frank Disinfecting Co	15,297	June 26	122	2970
Poison. Rat and mouse	W. Peterman	18,407	June 26	122	2980
Poisonous preparation for exterminating roaches, bugs, &c	Iron City Chemical Co	17,945	June 26	122	2977
Polishing-powder used in making a cleaning solution	C. Hambuechen	16,050	June 12	122	2361
Popcorn	A. A. Berry Seed Company	16,869	May 15	122	1021
Popcorn	Albert Dickinson Company	8,595	June 12	122	2348
Popcorn. Candied	W. J. Madden	17,978	May 8	122	711
Porter	J. Labatt	15,276	May 29	122	1696
Post-cards. Pictorial	Raphael Tuck and Sons Co	13,707	June 12	122	2356
Post-cards. Souvenir	Blanchard, Young & Co	18,248	May 29	122	1704
Potash	Pennsylvania Salt Manuf'g Co	5,713	May 22	122	1355
Potash	A. Mendleson's Sons	6,424	June 26	122	2961
Potash and lye	A. Mendleson's Sons	6,064-5	June 5	122	2028
Powder. Face-	Dr. Charles Co	18,287	June 26	122	2979
Powder for infants and adults. Toilet-	M. Chubb	17,222	June 26	122	2973
Powder for the cure of dyspepsia, constipation, malaria, &c	American Pharmacal Co	12,776	May 15	122	1009
Powder. Gun-	Curtis's & Harvey	16,528	June 19	122	2659
Powder. Gun and blasting	W. T. Banks	12,157	May 1	122	316
Powder. Toilet	Waltham Novelty Company	9,744	May 8	122	689
Powder. Toilet	C. H. Henton	6,839	June 5	122	2028
Powder. Toilet or nursery	Johnson & Johnson	13,670	May 1	122	320
Powder. Tooth-	W. Brush	16,798	May 22	122	1376
Powder. Tooth-	Lambert Pharmacal Company	6,164	June 26	122	2961
Powder. Worm-	M. W. Savage	7,448	June 5	122	2029
Powders. Condition-	F G. Boynton	4,742	May 15	122	998
Powders, face-creams, and hair-shampoos. Toilet or face and tooth	Citizens' Wholesale Supply Co	15,607	June 12	122	2359
Powders for indigestion, &c	C. V. Cross	11,633	May 8	122	692
Powders. Toilet	Sanitol Chemical Laboratory Co	15,516	May 22	122	1371
Powders. Tooth-	Jordan Marsh Company	16,741	June 19	122	2660
Precious and semiprecious stones	F. W. Drosten Jewelry Company	6,838	June 19	122	2445
Preparation for catarrh, cold in the head, and hay-fever	E. A. Billingslea	17,614	June 26	122	2974

Alphabetical list of trade-marks published during May and June—Continued.

Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Preparation for croup, colds, &c., and also for use as an ointment.	B. H. Gertzen	15,386	May 8	122	702
Preparation for the cure of nervousness, headache, mental exhaustion, &c.	Edward L. Baldwin Co	15,745	May 8	122	704
Preparation for the cure of rheumatism, tic-douloureux, headache, bruises, cuts, &c.	M. J. Dow	13,979	May 22	122	1367
Preparation in the form of an aqueous solution for the cure of catarrh, &c.	Ferry Drug Co	15,753	May 8	122	704
Preparations for the cure of asthma, coughs, colic, &c	Yucca Co	15,302	June 5	122	2035
Press-board	E. W. Murphy & Company	18,900	June 19	122	2671
Pressure-recorders	Bristol Company	19,378	June 12	122	2374
Printed pictorial matter	Western Color Print Co	16,724	June 26	122	2972
Printing-machines	Addressograph Company	2,022	May 8	122	682
Printing-machines	Addressograph Company	17,009	May 29	122	1704
Prints. Calico	Passaic Print Works	18,539	June 26	122	2980
Prints. Calico	Passaic Print Works	18,627	June 26	122	2980
Publication relating to the business of railroads. Serial	Railway Equipment & Publication Co.	17,194-5	May 22	122	1377
Pulp articles indurated and waterproofed. Wood-	United Indurated Fibre Co. of New Jersey.	12,487-8	May 8	122	695
Purgative compound. Liquid	California Fig Syrup Co	6,623	May 1	122	309
Purse. Coin or combined paper and coin	C. E. Albright	17,157	May 1	122	331
Purses and satchels. Leather	A. & E. Leather Goods Co	7,544	June 19	122	2648
Quebracho extract	A. Klipstein & Company	18,405	June 26	122	2979
Quilts	Marshall Field & Company	15,159	May 8	122	701
Quinin preparation	Chas. H. Phillips Chemical Co	15,921	May 15	122	1018
Raisins and dried currants	Wilkinson, Gaddis & Co	8,390	June 5	122	2030
Raspe	Stokes Bros. Manufacturing Co	14,849	May 15	122	1014
Rat, mice, and roach paste	G. S. Kirkley	17,329	June 26	122	2973
Rat, vermin, and insect destroyer	H. C. Spetzler	18,153	June 26	122	2978
Razor-strops	Weiffenbach Mfg. Co	16,468	May 22	122	1374
Razor-strops and bones	Hibbard, Spencer, Bartlett & Company.	17,744	May 29	122	1703
Razors	F. A. Clauberg & Co	11,537	May 8	122	692
Razors	Smith & Hemenway Company	17,648	May 8	122	710
Razors	C. J. Ulery	18,904	May 15	122	1030
Razors	George Wostenholm & Son	13,864	May 22	122	1367
Razors	H. Clauss	9,662	June 19	122	2651
Razors and pocket-knives	A. J. Silberstein	8,807	May 15	122	1001
Razors and pocket, table, hunting, and butcher knives	F. A. Clauberg & Co	11,535	May 29	122	1692
Razors and razor-blades	Kampfe Bros.	1,572	June 5	122	2026
Razors and safety-razor blades	C. F. Ern	10,773	May 1	122	314
Razors, knives, and forks	T. R. Cadman & Sons	16,955	May 29	122	1699
Refrigerators and ice-chests	Indiana Mfg. Company	6,104	May 1	122	308
Relishes of mixed vegetables. either sour, sweet, or spiced	Wm. Henning Co	17,121	May 15	122	1022
Remedies. Catarrh	C. E. Schindler	16,533	May 8	122	708
Remedies. Cough	Pittsburg Pharmacal Company	15,819	May 22	122	1372
Remedies for affections of the throat, chest, and lungs	Foley & Company	1,093	May 15	122	996
Remedies for consumption, liver and kidney diseases	Schiffmann Company	14,734	June 12	122	2358
Remedies for coughs, colds, and affections of the throat and lungs.	A. Watling & Co	10,181	May 8	122	690
Remedies for curing liver diseases	Pineule Medicine Co	605	May 29	122	1685
Remedies for diseases of the liver, lungs, &c	Victor Remedies Company	8,060	June 26	122	2962
Remedies for diseases of the mucous membrane of the eyes and nose.	A. W. Peck	17,226	June 19	122	2661
Remedies for diseases of the throat and lungs	National Remedy Company	4,809	May 15	122	999
Remedies for diseases of women	H. Law, H. E. Law	13,478	May 8	122	697
Remedies for nervous disorders	O. Battista	13,088	June 19	122	2654
Remedies for rheumatism, gout, lumbago, &c	W. H. Griffith	7,282	June 26	122	2961
Remedies for stomach diseases	F. A. Richter	1,623	May 15	122	996
Remedies for stomach troubles of children	D. P. Byrne	7,967	May 22	122	1357
Remedies. Headache	N. Lodor	4,889	June 19	122	2644
Remedies in capsule form for uterine diseases	J. C. Fuller	11,465	May 29	122	1691
Remedies in pill form for fever	W. H. Wood	4,386	June 26	122	2960
Remedies to be applied to the skin and mucous membrane for germicidal purposes.	C. S. Smith	17,624	June 26	122	2975
Remedy affecting the stomach, liver, and kidneys	L. Ashworth	17,813	June 26	122	2976
Remedy against gallstone	K. Weinreben	10,750	June 5	122	2031
Remedy. Antisymotic	W. C. Hamilton	7,619	June 19	122	2648
Remedy for bowel complaints	T. P. Marshall	8,277	June 5	122	2029
Remedy for chills and fever	J. P. Smith	15,218	May 8	122	702
Remedy for chills and fever, biliousness, agues, &c. Tonic	A. B. Richards	5,127	May 15	122	999
Remedy for colds, la grippe, influenza, &c	Higgins Chemical Co	15,232	June 26	122	2970
Remedy for constipation, &c	Sanatorium System Co	16,751	June 12	122	2363
Remedy for consumption	J. Nierhaus	18,095	June 26	122	2978
Remedy for diseases arising from uric-acid diathesis, &c	J. C. Densten	16,073	June 12	122	2361
Remedy for diseases of liver, kidneys, stomach, and bowels	National Remedy Company	13,374	June 5	122	2033
Remedy for diseases of the digestive system	S. Grover Graham Co	12,942	May 22	122	1365
Remedy for diseases of the skin and scalp	E. W. Rose	7,081	May 22	122	1355
Remedy for diseases of the stomach and disorders of the alimentary canal.	Mueller Chemical Co	16,759	May 15	122	1020
Remedy for eczema, &c	J. Blanchard	17,521	June 26	122	2974
Remedy for heaves in horses	Mineral Heave Remedy Co	10,781	May 22	122	1361
Remedy for hog-cholera, &c	W. E. Vincent	18,182	June 26	122	2978
Remedy for indigestion	R. Dragon	16,864	June 12	122	2363
Remedy for leprosy and blood diseases	A. F. Toro	9,516	May 22	122	1358
Remedy for pneumonia	Gowan Medical Co	9,278	May 8	122	680
Remedy for rheumatism, gout, sciatica, lumbago, &c	Anti-Uric Co	2,982	May 29	122	1686
Remedy for rheumatism, kidney, bladder, and catarrhal disease.	Krupp Remedy Co	16,069	May 22	122	1373
Remedy for skin diseases	J. P. Morris	10,636	May 8	122	691
Remedy for skin diseases and eruptions	A. B. Richards	6,236	May 15	122	1000
Remedy for sunburn, pimples, catarrh, eczema, &c	G. W. Remsen	3,022	June 12	122	2343
Remedy for the croup, coughs, hoarseness, bronchitis, &c	Wilcox & Golding	12,380	May 8	122	697
Remedy for the cure of eczema, barber's itch, ringworm, &c	J. T. Mankin	18,385	June 26	122	2980
Remedy for treatment of the feet	A. F. Pierce	10,465	May 15	122	1004

Alphabetical list of trade-marks published during May and June—Continued.

Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Remedy in concrete or tablet form for colds, fever, and la grippe.	C. I. Shoop	12,275	May 15	122	1008
Remedy in liquid and pill form for coughs	Lester H. Greene Co	844	June 12	122	2341
Remedy in tablet liquid, and powder form for nervous disorders, dyspepsia, insomnia, &c.	Ada-lur-lem Medicine Company	13,419	May 1	122	318
Remedy. Preparation for use as a mother's milk-producing and reconstructing	S. Penny	16,504	May 8	122	707
Revolvers	Smith & Wesson	549-50	June 5	122	2025
Revolvers, pistols, rifles, and shotguns	Harrington & Richardson Arms Co.	19,002	June 19	122	2672
Revolvers, pistols, rifles, and shotguns	Harrington & Richardson Arms Co.	19,004	June 19	122	2672
Rheumatism cure	A. V. Garrison	17,388	June 12	122	2365
Ribbon	New York Merchandise Company	18,098	May 15	122	1026
Ribbons	Kohn, Adler & Co	17,032	May 22	122	1377
Ribbons	Aitken, Son & Co	14,552	May 29	122	1696
Ribbons	Pine Tree Silk Mills Company	13,380	June 12	122	2356
Rivets	Judson L. Thomson M'f'g. Co	16,622	May 29	122	1698
Rivets, washers, and burs of copper or brass	Plume & Atwood Mfg. Co	3,439	May 22	122	1351
Roach and bug destroyer	M. H. Greenfield	16,711	June 12	122	2363
Roofing compound made from coal-tar products. Liquid	E. C. Evans	16,134	May 1	122	329
Roofing-slate	R. F. Schaeffer	13,041	June 12	122	2354
Roofing-slates	Old Bangor Slate Company	14,855	June 19	122	2656
Rope and twine. Fibrous and textile	Plymouth Cordage Company	18,143	May 8	122	712
Rope and twine. Vegetable-fiber	American Manufacturing Company.	15,091	May 15	122	1015
Rope, cord, and twine. Vegetable-fiber	R. Rochester	14,921	May 1	122	323
Rope, cord, lines, and twine. Vegetable-fiber	American Manufacturing Company.	15,094	May 22	122	1370
Rope, cord, lines, and twine. Vegetable-fiber	American Manufacturing Company.	15,095	June 5	122	2035
Ropes, cords, twines, and lines	Silver Lake Company	3,168	May 1	122	305
Rubber binding	Knapp Rubber Binding Company.	17,352	May 29	122	1701
Rubber boots and shoes	Goodyear Rubber Company	6,394	May 8	122	686
Rubber boots and shoes	Hood Rubber Co	18,406	May 15	122	1028
Rubber boots and shoes of all kinds	Rice & Hutchins	7,782	May 8	122	687
Rubber boots, shoes, and galoshes	Ostasiatische Handels-Gesellschaft.	5,095	May 1	122	307
Rubber boots, shoes, and overshoes	M. D. Wells Co	10,087	May 22	122	1360
Rubber bulb and fountain syringes. Soft-	American Hard Rubber Co	5,165	May 1	122	307
Rubber heels	Thompson-Ehlers Company	18,633	June 19	122	2668
Rubber stair-nosings	Knapp Rubber Binding Company	17,353	June 5	122	2040
Rubber syringes. Hard-	American Hard Rubber Co	5,159	May 1	122	307
Rugs	T. F. Firth & Sons	14,813	June 19	122	2656
Rugs. Brussels	Schofield, Mason & Co	18,048	May 22	122	1380
Rum	H. R. Myers	8,501	June 19	122	2650
Rusks	Eerkes-Van Der Maaten Co	19,021	May 22	122	1382
Sad-irons	Dover Mfg. Co	18,014	May 29	122	1704
Saddles	R. T. Frazier	19,147	June 26	122	2984
Safes	Herring-Hall-Marvin Safe Company.	8,363	May 1	122	310
Safes	Herring-Hall-Marvin Safe Company.	16,995	May 8	122	709
Safes, vault-doors, &c. Fire and burglar proof	Hall's Safe Company	19,184	May 29	122	1706
Salad-dressing	Sprague, Warner & Company	19,073	June 5	122	2045
Salad-dressing and sauces	E. R. Durkee & Co	3,966	May 15	122	998
Salt	Wilkinson, Gaddis & Co	8,388	May 8	122	688
Salve	Covilles Tridentata Mfg. Co	17,648	June 26	122	2975
Salve. Corn-	Kohler Manufacturing Co	10,173	May 29	122	1690
Salve for sore eyes	E. E. Sutherland Medicine Co	2,631	May 1	122	304
Salves, liniments, and plasters	E. Dort	8,015	May 1	122	310
Salves, ointments, &c., containing carbolic acid	J. W. Cole & Co	16,695	May 29	122	1698
Sardines and like fish	A. Watson & Co	16,328	May 8	122	706
Sardines and other preserved fish	M. Pita y Cia. S. en C	16,225	June 12	122	2362
Sarsaparilla	J. Paradis	14,905	May 15	122	1014
Sarsaparilla	Cantrell & Cochrane	12,136	May 22	122	1364
Sarsaparilla extract	National Remedy Company	13,373	June 5	122	2033
Sarsaparilla, ginger-ale, lemon-soda, root and birch beer, &c.	F. Seely	10 063	June 26	122	2964
Sauce. Pepper-	E. McIlhenny's Son	8,776	May 29	122	1688
Sauce. Tomato	L. Balbi & Co	14,387	May 8	122	699
Sauces of spiced liquids for use with meats, fish, and soups	Wm. Henning Co	17,123	May 15	122	1022
Sauer-kraut	Clyde Kraut Company	16,991	May 29	122	1699
Sausages	W. H. Burke	16,989	June 12	122	2363
Sausages	Robe & Brother	18,646	June 19	122	2668
Sausages	John P. Squire & Company	19,272	June 19	122	2673
Saws	J. N. Eberle & Co	9,519	May 1	122	312
Saws	Henry Disston & Sons	14,106	May 1	122	321
Saws	Henry Disston & Sons	14,117	May 1	122	321
Saws. Circular, band, hand, and crosscut	Joshua Oldham and Sons	18,380	May 22	122	1381
Saws. Circular, band, hand, and crosscut	Joshua Oldham & Sons	18,856	June 19	122	2671
Saws of all kinds	E. C. Atkins & Company	8,290	May 8	122	688
Saws of all kinds	E. C. Atkins & Company	7,998	May 15	122	1001
Scales	Kimball Brothers Co	19,237	June 12	122	2373
Scales and appurtenances thereof. Weighing-	E. and T. Fairbanks and Company	5,972	May 22	122	1354
Scales. Weighing-	Computing Scales Co	5,486-7	June 5	122	2028
Scissors	Neumeyer & Dimond	10,544	June 26	122	2965
Scissors and shears	F. A. Clauberg & Co	15,750	May 1	122	326
Scissors and shears	H. Boker & Co	14,785	May 8	122	700
Scissors and shears	E. Krusius	2,718	May 22	122	1350
Screw-drivers. Round-shank	Stanley Rule & Level Company	16,646	May 15	122	1020
Scythes, grass-hooks, sickles, and hay, straw, and corn knives	D. Wadsworth & Son	15,014	May 15	122	1015
Scythes, scythe-blades, and grass-hooks	Hibbard, Spencer, Bartlett & Company.	17,740	May 29	122	1703
Seed. Clover-	Toledo Field Seed Company	12,933	May 29	122	1693

Alphabetical list of trade-marks published during May and June—Continued.

Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Seed for sowing or planting. Grass and field	L. Teweles	1,001	May 8	122	681
Seesaws, roundabouts, and teeters	E. D. Smith	10,626	May 29	122	1690
Seltzogenes and analogous vessels for aerated liquids	Aerators Limited	15,337	May 8	122	702
Serum similar to antidiphtheritic serum	E. Merck	15,148	May 22	122	1370
Serums	P. Yvon	16,217	May 8	122	706
Sewing-cotton on spools or reels	Jonas Brook & Bros	13,695	May 8	122	698
Sewing-machine needles	G. T. Robie	3,411	May 15	122	997
Sewing-machines and their parts and attachments	Wheeler & Wilson Manufacturing Company.	16,881-2	June 26	122	2972-3
Sewing-machines and their parts and attachments	Wheeler & Wilson Manufacturing Company.	16,885	June 26	122	2973
Sewing-machines, sewing-machine covers, tables, and stands, and sewing-machine attachments. Oscillating, rotating, and vibrating shuttle	White Sewing Machine Co	18,518	May 29	122	1706
Sewing-machines, sewing-machine covers, tables, and stands, and sewing-machine attachments. Oscillating, rotating, and vibrating shuttle	A. G. Mason	18,534	May 29	122	1706
Sewing-machines, sewing-machine covers, tables, and stands, and sewing-machine attachments. Rotating shuttle or looper	White Sewing Machine Co	18,517	May 29	122	1706
Shears. Sheep and garden	Burgon & Ball	12,597	May 15	122	1009
Sheet metal. Dovetailed corrugated	Brown Hoisting Machinery Company.	9,120	May 22	122	1358
Sheeting	Minot, Hooper & Co	3,642	May 1	122	305
Sheeting and drilling. Cotton	Abe Stein Co	5,108	May 8	122	684
Sheetings	Union Cotton Mills	14,420	June 19	122	2656
Sheetings	Belton Mills	18,813	June 26	122	2982
Sheetings and drills. Cotton	K. Iwahara	10,245	May 8	122	690
Sheetings and shirtings	Montmorency Cotton Mills Coy	3,488	June 26	122	2960
Sheetings. Cotton	H. Norden	16,215	May 15	122	1019
Sheetings, shirtings, drillings, cotton piece goods, &c	Massachusetts Cotton Mills	5,249	May 8	122	684
Sheetings, shirtings, drillings, ducks, osnaburgs, denims, and canton-flannel	Massachusetts Cotton Mills	4,975	May 22	122	1352
Sheetings, shirtings, ducks, denims, &c	York Manufacturing Co	15,089	June 19	122	2567
Sheetings, shirtings, ducks, osnaburgs, &c	Everett Mills	14,341	May 22	122	1368
Shellac. Gum	G. A. Alden & Co	4,764	May 22	122	1352
Shellac substitute	E. Calman & Co	18,664	June 19	122	2669
Ship-logs	Thomas Walker & Son	11,754	May 15	122	1008
Ship-logs and sounding-machines	Thomas Walker & Son	15,048	May 8	122	701
Ship-logs, ship-log lines for sounding and measuring, and lines for all kinds of nautical instruments	Thomas Walker & Son	11,752	May 22	122	1363
Shirt-waists and shirt-waist suits	Holzman Mfg. Co	16,056	May 8	122	705
Shirt-waists and shirt-waist suits	Einstein, Guggenheim & Company.	17,270	June 12	122	2364
Shirt-waists and skirts	Waldorf Mfg. Co	6,103	May 15	122	999
Shirt-waists. Ladies'	E. Fast	17,027	May 8	122	708
Shirt-waists. Ladies'	Belle Waist Co	17,656	May 8	122	710
Shirts and blouses. Outer and dress	Rice, Stix Dry Goods Company	7,944	June 19	122	2649
Shirts and robes, pajamas, and sleeping-garments. Night	Goodwin Durrell Co	1,531	May 1	122	304
Shirts, collars, and cuffs	Hall Hartwell & Co	17,949	May 1	122	333
Shirts, collars, and cuffs	International Shirt and Collar Company.	17,469	May 8	122	710
Shirts. Dress	J. Loewy	18,346	June 26	122	2974
Shirts. Dress and negligée	Columbus Shirt Company	101	May 22	122	1349
Shirts. Negligée, golf, stiff-bosom, dress, and flannel outing	Regent Shirt Company	17,328	May 22	122	1377
Shirts. Negligée, golf, stiff-bosom, dress, and outer flannel	Regent Shirt Company	17,448	May 15	122	1024
Shirts. Outer	Paul E. Wolff Shirt Company	15,112-13	May 8	122	701
Shirts. Stiff-bosom, negligée, outing, and full-dress	Cutter & Crossette	17,105	June 5	122	2039
Shirtings and sheetings, cambrics, and long-cloth. Bleached and unbleached	G. Willis & Co	14,703	May 22	122	1369
Shirtings and sheetings, cambrics, and long-cloth. Bleached and unbleached	G. Willis & Co	14,704-5	June 12	122	2358
Shirtings, ducks, osnaburgs, &c	Massachusetts Cotton Mills	5,254	June 19	122	2645
Shirtings, sheetings, cambrics, and long-cloth. Bleached and unbleached	G. Willis & Co	14,742	May 8	122	700
Shirtings, sheetings, cambrics, and long-cloth. Bleached and unbleached	G. Willis & Co	14,709	June 5	122	2034
Shoe-polish	American Chemical Manufacturing & Mining Company.	14,462	May 15	122	1013
Shoe polish or blacking	P. Bauer Co	19,180	June 26	122	2984
Shoes. Children's leather and canvas	Beasley Harwood Shoe Co	18,794	June 19	122	2670
Shoes. Ladies' leather	Wolf Brothers and Company	14,992	June 19	122	2656
Shoes. Ladies' leather	Wolf Brothers and Company	14,991	June 26	122	2970
Shoes. Leather	L. W. Franklin	2,494	May 1	122	304
Shoes. Leather	James Means Company	11,793	May 1	122	315
Shoes. Leather	Ainsworth Shoe Co	12,936	May 1	122	317
Shoes. Leather	F. Mayer Boot & Shoe Co	13,000-1	May 1	122	317
Shoes. Leather	Augustus Wright Company	15,470	May 1	122	325
Shoes. Leather	Peters Shoe Co	1,296	May 8	122	682
Shoes. Leather	W. E. Cummings	4,169	May 8	122	684
Shoes. Leather	Peters Shoe Co	5,853	May 22	122	1354
Shoes. Leather	W. H. Miles Shoe Co	7,268	May 22	122	1355
Shoes. Leather	G. L. Snow	14,395	May 22	122	1368
Shoes. Leather	Peters Shoe Company	15,662	May 22	122	1372
Shoes. Leather	F. Loeser & Co	17,973	May 22	122	1380
Shoes. Leather	Heywood Boot & Shoe Company	1,656	May 29	122	1686
Shoes. Leather	Peters Shoe Co	5,854	June 12	122	2345
Shoes. Leather	Ainsworth Shoe Co	7,193	June 19	122	2647
Shoes. Leather	Peters Shoe Company	15,663	June 19	122	2657
Shoes. Leather	A. J. Bates Co	16,659	June 19	122	2660
Shoes. Leather	Peters Shoe Co	6,338	June 26	122	2961
Shoes. Leather	Sharood Shoe Corp	20,000	June 26	122	2986
Shoes. Leather, canvas, or cloth	Chambersburg Shoe Mfg. Co	17,700	June 26	122	2975
Shoes. Men's leather	E. A. Well & Company	16,068	May 1	122	328
Shoes. Men's leather	T. S. Ruddock & Son	18,355	May 29	122	1705
Shoes. Men's leather	Murphy Shoe Co	17,496	June 26	122	2974

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Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Shoes. Women's	Beasley Harwood Shoe Co	18,701	June 19	122	2669
Shoes. Women's leather	Beasley Harwood Shoe Co	18,795	June 19	122	2670
Shovels, scoops, and spades	St. Louis Shovel Co	11,702-3	May 1	122	315
Show-cases	Sun Manufacturing Company	13,226	May 22	122	1366
Signs and window display-cards	A. Binger	11,934	June 19	122	2653
Silk and silk-mixture textiles	Silk Textile Water-Proofing Co	18,197	June 19	122	2666
Silk dress goods in the piece	Rogers & Thompson	10,082	May 22	122	1359
Silk piece goods	Aitken, Son & Co	14,549	May 29	122	1695
Silk piece goods	Home Silk Mills	17,045	May 29	122	1699
Silk piece goods	L. & E. Stirn	17,188	May 29	122	1700
Silk piece goods	A. Wimpfheimer and Brother	11,218	May 22	122	1362
Silk piece goods having a smooth surface	Lister & Company	7,575	May 15	122	1001
Silk pile fabrics. Waterproofed	Laurel Silk Works	14,167	May 22	122	1368
Silks. Broad	Wm. Hutton & Sons	16,956	May 29	122	1699
Silver and plated ware of all kinds	Koechlin & Engelhardt	16,443	May 29	122	1698
Silver and silver-plated hollow and flat ware	Hibbard, Spencer, Bartlett & Company.	13,837	May 22	122	1367
Silver and silver-plated hollow, flat, and table ware	R. Wallace & Sons Mfg. Co	3,254	May 8	122	683
Silver hollow and flat ware and toilet articles. Sterling	Wilcox & Wagoner Company	12,042	May 8	122	693
Silver hollow, flat, and table ware	American Silver Company	7,111	May 29	122	1687
Silver hollow, flat, and table ware	Gorham Mfg. Co	17,630	May 8	122	710
Silver hollow, flat, and table ware. Sterling and solid	Wm. A. Rogers, Limited	6,568	May 8	122	686
Silver-plated flat, hollow, and table ware	Alvin Mfg. Co	1,755	June 26	122	2959
Silver table, hollow, and flat ware	Dr. Charles Co	18,285	June 26	122	2979
Skin and flesh food	J. D. McCann Co	11,438	June 26	122	2966
Skin-food and massage-cream	S. L. Allen & Co	15,731	June 5	122	2036
Sleds	Scovill Manufacturing Company	17,886	May 29	122	1704
Snap-fasteners for skirts. Sew-on	J. P. Larson	17,152	June 12	122	2364
Snuff	William Waltke & Co	6,497	May 1	122	309
Soap	N. K. Fairbank Company	11,159	May 22	122	1362
Soap	Mazo Manufacturing Company	18,319	May 22	122	1381
Soap	Cresenola Soap Co	18,559	May 22	122	1381
Soap	Pratt Food Company	18,560	May 22	122	1381
Soap	Burlington Soap Company	16,084	May 29	122	1697
Soap	Compagnie Ray mit beschränkter Haftung.	17,470	May 29	122	1702
Soap	William Waltke & Co	6,498	June 12	122	2345
Soap	Johnson & Johnson	14,004	June 12	122	2357
Soap	Colgate & Co	10,985	June 19	122	2653
Soap	Fels & Company	18,001	June 19	122	2665
Soap	Wiehle Soap Company	9,308	June 26	122	2963
Soap	Wiehle Soap Company	9,307	May 1	122	312
Soap. Bar	Wiehle Soap Company	9,309	May 1	122	312
Soap. Bar	Marshall Chemical Company	13,360	May 1	122	318
Soap. Cleaning and polishing	Kleanit Manufacturing Company	2,627	June 12	122	2342
Soap containing grit	R. Hudnut's Pharmacy	17,708	June 19	122	2664
Soap. Fluid	Fels & Co	8,271	May 15	122	1001
Soap for antiseptic and disinfecting purposes	Hoffheimer Soap Co	11,335	May 15	122	1006
Soap for cleaning and dressing harness	Procter & Gamble Co	11,861	May 1	122	316
Soap for toilet, laundry, and general use	Charles N. Crittenton Company	16,846	May 1	122	330
Soap in which pine-tar is one of its ingredients	J. G. Haas Soap Co	955	May 1	122	303
Soap. Laundry	J. G. Haas Soap Co	961	May 1	122	303
Soap. Laundry	William Waltke & Co	6,493	May 1	122	309
Soap. Laundry	J. G. Haas Soap Co	962	May 22	122	1349
Soap. Laundry	C. W. Young & Co	1,025	May 22	122	1350
Soap. Laundry	William Waltke & Co	6,494	May 22	122	1354
Soap. Laundry	J. G. Haas Soap Co	953	June 5	122	2026
Soap. Laundry	William Waltke & Co	6,492	June 19	122	2646
Soap. Medicated	Lloyd Brothers	9,925	June 5	122	2030
Soap. Medicated	Dr. Charles Co	18,286	June 19	122	2666
Soap. Pulverized scouring	M. H. Fairchild & Bro	17,679	June 12	122	2366
Soap. Scrubbing	Fred Fear & Company	17,615	May 22	122	1378
Soap. Shaving	J. T. Robertson Company	10,275	June 5	122	2031
Soap. Shaving	J. B. Williams Company	1,061	June 12	122	2342
Soap. Shaving and toilet	John Knight & Sons	16,548	May 8	122	707
Soap. Toilet	J. G. Mouson & Co	19,042	May 29	122	1706
Soap. Toilet	Iowa Soap Company	2,756	June 12	122	2342
Soap. Toilet and shaving	Santtol Chemical Laboratory Co	15,517	May 22	122	1371
Soap which has pine-tar as one of its ingredients	Charles N. Crittenton Company	16,845	June 26	122	2972
Soaps	J. G. Mouson & Co	17,054	June 5	122	2039
Soaps and soap powders	Colgate & Co	18,557	June 19	122	2668
Soaps and soap powders	Colgate & Co	18,752-4	June 19	122	2669
Soaps. Toilet	D. S. Brown	18,008	May 22	122	1380
Soaps. Toilet and medicated	Lôhealoi Preparation Co	17,267	May 15	122	1023
Soda and saleratus, either alone or mixed with a powdered acid	Church & Dwight Company	13,810	May 29	122	1694
Soda bicarbonate	Pennsylvania Salt Manuf'g Co	5,883	June 5	122	2028
Soda-water	J. Matthews	11,933	June 12	122	2353
Soda-water. Non-alcoholic, acidulated, carbonated	C. H. House	17,729	May 15	122	1025
Sodium theobromate and sodium salicylate preparations in powder, pill, and tablet form for kidney and heart diseases	Knoll & Co	10,290	May 22	122	1360
Solder	National Lead Company	14,418	May 1	122	322
Sound-records	American Record Co	7,887	June 19	122	2649
Specific for bronchial irritation, colds, &c	Nixie Cough Co	12,126	May 15	122	1008
Specific for malaria	National Remedy Company	13,371	June 5	122	2033
Specific for rheumatism, gout, and neuralgia	F. A. Schulz	9,853	May 22	122	1352
Specific for treatment of the liver	B. S. Read	10,572	June 19	122	2653
Specific. Worm	National Remedy Company	13,388	June 5	122	2033
Spectacle and eyeglass frames and mountings	Merry Optical Company	5,758	June 5	122	2028
Spectacle and eyeglass frames mountings, and lenses	Merry Optical Company	5,762	June 19	122	2645
Spectacle and eyeglass lenses and frames	W. W. Bissell	15,464	June 12	122	2359
Specula	De Vilbiss Mfg. Co	18,527	June 19	122	2667
Spices	A. G. Groblewski	17,146	June 5	122	2030
Spices	A. Schilling & Company	9,345	June 12	122	2349
Spices and mustard	E. R. Durkee & Co	3,982	May 1	122	305
Spices and mustard	Sprague, Warner & Company	9,797	May 1	122	312

Alphabetical list of trade-marks published during May and June—Continued.

Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Spices and mustard	E. R. Durkee & Co	13,153	May 1	122	318
Spices and mustard	E. R. Durkee & Co	3,983	May 8	122	683
Spices and mustard	Sprague, Warner & Company	18,546	June 5	122	2044
Spices and mustard	E. R. Durkee & Co	3,986	June 12	122	2343
Splints	J. Ellwood Lee Company	17,056	June 12	122	2363
Spokes and nipples for bicycle and other wheels	Standard Company	18,242	June 12	122	2368
Spoons, knives, and forks. Silver, silver-plated, and white-metal	Quaker Valley Manufacturing Company.	14,800	June 26	122	2970
Springs. Door-	Columbian Hdw. Co	18,072	June 19	122	2666
Stalk-cutters	Moline Plow Co	13,983	May 15	122	1012
Stamps for stamping trade-marks upon textiles	Kaumagraph Co	9,517	May 8	122	689
Starch and flour binders, fillers, &c., used in food products. Cereal	Preservaline Manufacturing Company.	12,351	May 15	122	1008
Starch. Laundry	Troy Laundry Machinery Company.	2,220	May 8	122	682
Starch. Laundry	New Orleans Coffee Co	13,453	May 8	122	697
Starch. Lump-	Sprague, Warner & Company	18,550	June 26	122	2980
Steel and iron in bar, rod, rail, sheet, and wire	Seebohm & Dieckstahl	12,603	May 8	122	696
Steel bars and sheets	Hammacher, Dellius & Co	8,041	May 8	122	687
Steel bars, plates, rods, and wire	Hobson Houghton & Co	12,610	May 8	122	696
Steel bars, rods, billets, blooms, &c	Crucible Steel Company of America.	5,498	May 22	122	1353
Steel bars, rods, blooms, billets, wire, &c	S. & C. Wardlow	18,345	May 1	122	335
Steel. High-speed cutting-	Firth-Sterling Steel Company	18,865	June 5	122	2045
Steel household and cooking utensils. Enameled-	Central Stamping Company	9,078	May 8	122	688
Steel in bars rods, sheets, plates, and wire. Cast-	W. T. Beesley & Co	16,953	May 29	122	1699
Steel. Magnet-	Firth-Sterling Steel Company	19,301	June 12	122	2373
Steel or iron household utensils. Enameled	Hibbard, Spencer, Bartlett & Company.	13,843	May 8	122	698
Steel rods, bars, blooms, billets, &c	Park Steel Company	5,468	May 1	122	308
Steel rods, bars, blooms, billets, &c	Singer, Minick & Co	5,484	May 1	122	308
Steel rods, bars, blooms, billets, &c	Howe, Brown & Co	5,491	May 1	122	308
Steel rods, bars, blooms, billets, &c	Crucible Steel Company of America.	19,273	June 19	122	2673
Steel rods, billets, bars, blooms, plates, &c	Crucible Steel Company of America.	5,509	May 8	122	685
Steel. Tool-	Firth Sterling Steel Company	18,867	May 22	122	1382
Stencil duplicating-machines and parts thereof	Neostyle Company	5,927	May 1	122	308
Sterling and solid silver hollow, flat, and table ware	Rockford Silver Plate Co	16,262	June 26	122	2971
Stiffening cords, blades, tapes, and fabrics for wearing-apparel.	Warren Featherbone Co	17,129–31	May 15	122	1023
Stockings	Glidden, Hyde & Co	19,251	June 12	122	2373
Stone building-blocks	F. A. Richter	3,064	May 22	122	1351
Stones and hones. Scythe and abrasive	Norton Emery Wheel Company	9,903	May 15	122	1003
Stout	J. Labatt	4,086	May 22	122	1351
Stove-polish	United States Graphite Company	12,532	May 8	122	695
Stove-polish	H. C. Bomhard	17,271	June 12	122	2365
Stoves	Federal Stove Co	19,208	June 12	122	2373
Stoves and ranges. Cooking	James Graham Manufacturing Co	17,109	June 19	122	2661
Stoves. Heating and cooking	Joliet Stove Works	18,349	May 8	122	712
Stoves, ranges, and furnaces	Pittsburgh Hardware & Home Supply Company.	19,224	June 26	122	2985
Stoves, ranges, and furnaces. Heating and cooking	P. D. Beckwith	12,478	June 26	122	2968
Stoves, ranges, furnaces, and heaters	Co-operative Foundry Co	17,785	May 29	122	1703
Stoves, ranges, furnaces, and heaters	Co-operative Foundry Co	17,784	June 5	122	2041
Stoves, ranges, furnaces, &c. Polish for	A. L. Prescott	17,230	June 19	122	2661
Stoves, ranges, gas-stoves, and attachments, parts, and repairs therefor.	Sill Stove Works	10,547	May 15	122	1005
Stoves, ranges, heaters, hot-plates, &c., and their parts. Gas	H. Adler Company	16,978	May 1	122	331
Sugar and molasses	R. C. Martin	15,610	May 1	122	325
Sugar globules, absorbent sugar disks, &c. Pure cane-	F. Bischoff	2,764	June 26	122	2960
Suits and overcoats. Men's	Schwab Clothing Co	15,477	May 15	122	1016
Surgical dressings	Seabury & Johnson	162	June 12	122	2341
Surgical dressings	Johnson & Johnson	13,999	June 12	122	2357
Surgical dressings of cotton or gauze	Johnson & Johnson	13,669	May 1	122	320
Suspenders	Gordon Manufacturing Company	18 321	June 5	122	2043
Suspenders	A. C. Knothe	12,695	June 12	122	2354
Suspensory bandages	Johnson & Johnson	13,997–8	May 1	122	321
Sweeping compounds for putting on the floor in connection with sweeping which prevent the dust from rising.	G. E. Cave	15,594	May 1	122	325
Switches. Snap-	Perkins Corporation	18,431	May 8	122	712
Syringes	Johnson & Johnson	14,001	June 12	122	2357
Syrup	Penick & Ford	5,324	May 1	122	307
Syrup	Sprague, Warner & Company	19,095–6	June 5	122	2045–6
Syrup for coughs, colds, catarrh, &c	Hawaiian Specialty Co	12,228	June 5	122	2032
Syrup. Maple-	New Orleans Coffee Co	4,010	May 1	122	305
Syrups and molasses	Penick & Ford	5,322	May 1	122	307
Syrups and molasses. Sugar-cane	Penick & Ford	5,323	May 8	122	685
Tables	W. J. Maddox	14,821	May 15	122	1014
Tableware composed of gold or silver, or both	Tiffany & Co	15,169	May 15	122	1016
Tablets and writing-pads	O. W. Nottingham Co	11,377	June 26	122	2966
Tackle and hoisting blocks and sheaves for the same	Boston and Lockport Block Company.	18,573	May 8	122	712
Talking-machine records	Victor Talking Machine Co	9,274	May 1	122	312
Talking-machine records	Victor Talking Machine Co	9,270–1	May 8	122	689
Talking-machines and parts thereof	Victor Talking Machine Company	18,312	May 15	122	1027
Talking-machines and parts thereof	E. Desgrandchamps et Cie	7,049	June 19	122	2647
Talking-machines and parts thereof	Victor Talking Machine Company	19,066	June 26	122	2963
Tamarlas, &c. Shaving and whitening blades for use in	L. Hardy Co	18,905	June 12	122	2372
Tap-receptacles	Dale Company	16,540	May 15	122	1020
Tea	Chase & Sanborn	10,561	May 1	122	314
Tea	S. S. Pierce Co	15,052	May 1	122	323
Tea	A. Schilling & Co	15,548	May 8	122	703
Tea	A. Schilling & Co	15,550	May 8	122	703
Tea	F. P. Garretson & Co	4,573	May 15	122	998
Tea	Lappin Tea Company	17,658	May 15	122	1024

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Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Tea	Peek Bros. & Winch	16,347	May 22	122	1374
Tea	Chase & Sanborn	17,910	May 22	122	1380
Tea	Chase & Sanborn	17,911	June 5	122	2042
Tea	Sprague, Warner & Company	18,549	June 5	122	2044
Tea	Chase & Sanborn	17,912	June 19	122	2665
Tea	Sprague, Warner & Company	19,070	June 26	122	2983
Teas	New Orleans Import Co	11,461	May 15	122	1007
Teas in any kind of package	New Orleans Coffee Co	15,451	May 15	122	1016
Teeth and curing toothaches. Compounds for filling	A. E. Pratt	15,392	May 8	122	702
Teething and cooling powders for children	J. A. W. Bouvier	4,672	May 15	122	998
Teething and cooling powders for children, also a remedy for infantile illnesses.	J. A. W. Bouvier	5,895	May 15	122	999
Telegraphing apparatus. Fire-alarm and police-signal	Gamewell Fire-Alarm Telegraph Company.	18,658	May 15	122	1029
Telephone signalling apparatus	Dean Electric Company	18,381	June 12	122	2369
Thermometers and telethermometers	Bristol Company	19,380	June 12	122	2374
Thread and darning and crochet cotton. Cotton	Clark Mile-End Spool Cotton Co	13,056	May 1	122	318
Thread and spool and sewing cotton	American Thread Company	17,966	May 29	122	1704
Thread and spool and sewing cotton	American Thread Company	18,960–1	June 5	122	2043
Thread and spool-cotton	American Thread Company	17,967	June 5	122	2042
Thread. Cotton	Clark Mile-End Spool Cotton Co	13,055	May 1	122	317
Thread. Cotton	Jonas Brook & Bros	13,698	May 1	122	320
Thread. Cotton	Jonas Brook & Bros	13,697	May 8	122	698
Thread. Cotton	Jonas Brook & Bros	13,693	June 5	122	2034
Thread. Cotton	Clark Thread Co	13,679	June 26	122	2969
Thread of all kinds. Cotton	Clark Thread Co	13,677–8	May 8	122	698
Thread or crochet-cotton. Cotton	Clark Thread Co	14,318	May 15	122	1012
Thread. Vamping-	Clark Thread Co	14,317	June 12	122	2357
Tiles. Roofing-	Ludowici Roofing Tile Company	7,027	May 22	122	1355
Tin and terne plate	N. & G. Taylor Co	7,839	June 12	122	2347
Tin and terne plates	Follansbee Brothers Company	9,625	May 29	122	1689
Tin and terne plates	Follansbee Brothers Company	9,610	June 12	122	2350
Tin and terne plates	Follansbee Brothers Company	9,632	June 12	122	2350
Tire bolts and rivets	American Screw Company	11,772	May 22	122	1363
Tires and tire-treads. Automobile-	C. J. Bailey	791	May 22	122	1349
Tires. Rubber	Baker & Hamilton	9,350	May 8	122	689
Tires. Rubber	Electric Rubber Manufacturing Company.	12,800	June 12	122	2354
Tobacco and snuff. Smoking and chewing	Bernard Gebrüder	15,689	June 12	122	2359
Tobacco. Chewing-	Hoffman and Co	17,655	May 22	122	1379
Tobacco. Chewing-	Bailey Brothers	18,603	May 22	122	1381
Tobacco. Chewing-	Ryan-Hampton Tobacco Co	10,106	June 12	122	2351
Tobacco. Chewing-	Butler-Butler	8,833	June 19	122	2650
Tobacco. Chewing and smoking	Smith & Scott Tobacco Co	1,467	May 1	122	304
Tobacco "in the hand." Leaf-	J. M. Buckner, Jr., & Co	15,613	May 1	122	326
Tobacco. Leaf, smoking, and chewing	Independent Tobacco Manufacturers' Promoting Company.	15,790	May 1	122	326
Tobacco. Long-cut smoking and chewing	Hansen-Schmitt Co	17,459	June 5	122	2040
Tobacco. Pipe and cigarette	Surbrug Company	17,692	May 22	122	1379
Tobacco pouches and receptacles. India-rubber and gutta-percha	Adolph Frankau & Co	8,248	May 22	122	1357
Tobacco. Smoking-	Axton-Fisher Tobacco Company	17,954	May 1	122	333
Tobacco. Smoking-	Blackwell's Durham Tobacco Co	12,798	May 8	122	696
Tobacco. Smoking-	J. F. Zahm Tobacco Co	18,615	May 22	122	1382
Tobacco. Smoking-	R. Harris & Bro	13,736	May 29	122	1694
Tobacco. Smoking-	Butler-Butler	16,414	May 29	122	1698
Tobacco. Smoking-	Butler-Butler	8,832	June 12	122	2348
Tobacco. Smoking-	J. F. Zahm Tobacco Co	18,614	June 26	122	2980
Tobacco. Smoking-	Hansen-Schmitt Co	17,364	May 1	122	332
Tobacco. Smoking and chewing	H. Rippen	5,266	May 22	122	1353
Tobacco. Smoking and chewing	Western Tobacco Works	17,944	May 22	122	1380
Tobacco. Smoking and chewing	H. Rippen	13,077	June 12	122	2355
Tobacco. Smoking and chewing	A. A. Kohány	16,789	May 8	122	707
Tobacco. Smoking, chewing, and cigarette	Nashville Tobacco Works	12,558–61	May 8	122	695–6
Tobacco. Smoking or chewing	Zimmer & Co	17,456	June 19	122	2663
Tobaccos. Manufactured plug, twist, and cut	E. H. Rice	14,512	May 8	122	699
Toilet preparation consisting of skin-food or massage-cream	Dr. J. Parker Pray Company	5,531	May 15	122	999
Toilet preparations for removing stains from the skin and finger-nails and bleaching and manicuring the nails.	Lanman & Kemp	4,466	May 15	122	998
Toilet waters	Pineule Medicine Co	608	May 29	122	1685
Tonic	H. R. Myers	8,502	June 19	122	2650
Tonic	C. L. M. Omnès	10,843	June 5	122	2031
Tonic and strengthening compounds	C. D. Bradham	1,732	June 12	122	2342
Tonic beverage	Boonville Mineral Spring Co	12,482	May 1	122	316
Tonic beverage. Carbonated	J. Ries	10,510	May 8	122	690
Tonic beverage. Carbonated	Heinzerling & Co	10,505–6	May 1	122	313
Tonic beverage. Carbonated non-intoxicating	Heinzerling & Co	10,507	May 8	122	691
Tonic beverage. Carbonated non-intoxicating	S. Levinson	10,522	May 15	122	1004
Tonic beverage. Celery	A. R. Champney Co	16,308	June 19	122	2658
Tonic beverage. Non-intoxicating	J. A. Selby	12,312	June 19	122	2654
Tonic beverages and syrups therefor	Red Rock Co	12,481	June 19	122	2654
Tonic beverages. Carbonated	Blue Seal Supply Co	12,483	June 5	122	2032
Tonic beverages. Extracts and colors used in the manufacture of carbonated	Schöneberger and Noble	18,191	June 5	122	2042
Tonic. Celery	N. J. Paschall	10,394	June 5	122	2031
Tonic for chills and fevers	Feeney & Pallotto	13,521	May 1	122	319
Tonic for rheumatism	Independent Brewing Ass'n	1,344	June 19	122	2642
Tonic. Malt	T. W. Stemmler	7,403	June 12	122	2346
Tonic, reconstructive histogenetic	C. Franklin	12,101	June 12	122	2353
Tonics. Blood and nerve	R. L. Newell	17,633	June 26	122	2975
Tooth-cleaning paste	A. Schoenhut Company	17,612	May 15	122	1024
Toys and toy-circus equipment	L. & C. Hardtmuth	8,067	June 5	122	2029
Tracing-cloth	Ware Bros. Company	18,351–3	May 15	122	1027
Trade journal	B. Lillard	18,782	June 19	122	2670
Trade journal. Monthly	Financier Co	14,241	June 12	122	2357
Trade journal. Weekly	Ware Bros. Company	18,354	May 22	122	1381
Trade journals					

Alphabetical list of trade-marks published during May and June—Continued.

Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Traps. Platform spring animal-	Oneida Community	13,602	June 5	122	2033
Trees and shrubbery. Wash for spraying	J. F. Derror	12,206	June 12	122	2353
Trees, buds, and scions thereof. Fruit-	Oregon Nursery Company	15,554	May 15	122	1017
Trees. Peach-	M. E. Fowler	17,769	May 8	122	710
Trephines	De Vilbiss Mfg. Co	18,522	June 19	122	2667
Trimmings and braids. Dress-	Aitken, Son & Co	14,551	May 29	122	1695
Trousers	Dutchess Manufacturing Co	3,217	May 22	122	1351
Trowels of all kinds	William Hunt & Sons, The Brades, Limited.	15,741-4	May 29	122	1697
Trucks for carrying a motor or cable grip. Motor-	J. G. Brill Company	11,300	June 5	122	2032
Trusses and supporters	J. Ellwood Lee Company	17,069	June 12	122	2364
Turpentine	Standard Oil Co. of New York	8,333	May 8	122	688
Turpentine. Spirits of	Georgetown Chemical Works	17,668	May 1	122	332
Turpentine substitute	Union Petroleum Company	17,982	May 1	122	333
Twist-drills	B. M. Jones & Co	17,494	May 22	122	1378
Twist-drills, reamers, taps, counterbores, and cutters for milling metal surfaces.	Cleveland Twist Drill Company	8,368-9	May 22	122	1358
Type-writer ribbons	Carter's Ink Company	17,891	May 8	122	711
Type-writer ribbons	De-Fi Manufacturing Co	4,052	June 19	122	2643
Type-writers. Inked pads for	J. R. Keatinge	18,010	May 8	122	711
Undershirts and drawers. Linen	Earl & Wilson	17,950	June 19	122	2665
Underwaists for women and children	T. B. Fitzpatrick	15,925	May 1	122	328
Underwaists. Women's and children's	Royal Worcester Corset Company	18,037	June 5	122	2042
Underwear. Dressed-skin	T. C. Jones	17,359	May 8	122	709
Underwear. Muslin	Natick Underwear Company	6,067	May 8	122	685
Underwear. Woven and knitted	G. W. Schlichten	16,087	May 1	122	329
Underwear. Woven and knitted	G. W. Schlichten	16,086	May 29	122	1697
Uric-acid solvent	Dusal Chemical Co	10,712	June 12	122	2351
Valves and cocks	H. Mueller Manufacturing Company.	2,932	May 15	122	997
Valves and faucets	H. Mueller Manufacturing Company.	2,933	May 22	122	1351
Valves and hydrants	Chapman Valve Manufacturing Company.	4,533	May 22	122	1352
Valves and parts thereof	Star Brass Manufacturing Company.	19,422	June 12	122	2374
Valves, cocks, and faucets	Haydenville Company	5,568	May 22	122	1353
Varnish and hard oil finish	Spokane Paint & Oil Co	19,190	June 19	122	2672
Varnish-hardeners	Toussey Varnish Co	14,255	May 8	122	699
Varnish. Shellac-	J. B. Day & Co	16,599	June 19	122	2659
Varnishes, japans, and waterproof finish	Keystone Varnish Co	7,350	May 1	122	310
Varnishes, japans, colors, &c	Senour Manufacturing Co	18,940	June 19	122	2672
Varnishes, japans, liquid fillers, &c	Keystone Varnish Co	7,350	June 5	122	2029
Vault and sidewalk lights	A. Priddle	18,136	June 12	122	2367
Vault. Burial-	J. S. Van Fossen	17,534	June 12	122	2365
Vellings and chiffons	Aitken, Son & Co	14,550	May 29	122	1695
Velvet piece goods	Aitken, Son & Co	14,547	May 29	122	1695
Vending-machines. Coin-operated	Mills Novelty Co	18,322	June 12	122	2368
Vermifuge	Gilpin, Langdon & Company	14,362	May 15	122	1013
Veterinary gall-ointments, healing-powders, and liniments	C. L. Rea	14,863	May 1	122	323
Veterinary liniments	M. M. Gordley	16,756	May 22	122	1376
Veterinary remedy for lump jaw	F. J. Heine	9,975	June 19	122	2652
Veterinary remedy for poll-evil and fistula	Rhinol Medicine Co	15,668	June 5	122	2036
Vinegar	M. A. Gedney Pickling Co	19,025	June 26	122	2983
Vinegar and cider. Cider-	G. B. Gehlert	9,074	May 29	122	1698
Violins and parts thereof	Buegeleisen & Jacobson	18,347	June 26	122	2979
Violins, violoncellos, violas, and parts of same	M. B. Hern	16,547	May 22	122	1374
Vises and parts thereof	Columbian Hdw. Co	18,079	June 26	122	2977
Vitreous material	Pressed Prism Plate Glass Company.	818-19	June 5	122	2026
Wagons	Eagle Wagon Works	10,849	May 8	122	691
Waists. Ladies' dress-	Juda Bros	16,723	May 8	122	707
Wall-coating	Toch Brothers	11,579	May 8	122	692
Wall-ties	Braun Manufacturing Co	13,074	May 8	122	697
Wall-ties	Imperial Specialty Mfg. Co	18,605	June 5	122	2044
Washbasins. Stationary	Cahill Iron Works	17,366	May 1	122	332
Washboards	Manchester Furniture Co	18,589-90	May 29	122	1705
Washing compound	F. Steel	7,511	May 22	122	1355
Washing compounds	C. A. Winter	16,154	June 5	122	2037
Washing-machines. Lever	H. F. Brammer Manufacturing Company.	2,471	June 19	122	2643
Washing-machines. Power-operated	P. T. Cofield & Son	16,044	May 22	122	1373
Washing-machines. Rotary	Benbow-Brammer Manufacturing Company.	15,019	May 29	122	1696
Washing-machines. Rotary	H. F. Brammer Manufacturing Company.	2,284	June 19	122	2643
Washing-powder	D. S. Brown	18,007	June 5	122	2042
Washing-powder for laundering and cleaning	Ruschhaupt Bros	13,379	May 22	122	1366
Watch dials and movements	Rode Watch Co	2,323	June 19	122	2643
Watch movements and cases	L. Manheimer & Bros	16,637	May 22	122	1375
Watches	W. C. Ball	12,176	May 1	122	316
Watches	J. B. Abernethy	13,166	May 29	122	1693
Watches and clocks	Tiffany & Co	15,171	June 19	122	2657
Watches and parts thereof	A. Schwob	10,168	May 8	122	690
Watches and parts thereof	A. Schwob	10,170	May 8	122	690
Watches and parts thereof	Dubois Watch Case Company	18,314	May 15	122	1027
Watches and watch parts	Hampden Watch Co	18,778	June 19	122	2670
Watches, watch cases and movements	D. Gruen & Sons	18,604	June 12	122	2371
Watches, watch cases and movements	Keystone Watch Case Co	19,188	June 26	122	2984
Watches, watch movements, cases, and parts	W. F. Doll	16,263	May 1	122	320
Watchcases and watch-movements. Gold-filled	Rode Watch Co	2,322	May 29	122	1696
Water. Carbonated	American Specialty Co	17,703	June 5	122	2040
Water. Chemical preparation to clear rain-	Crates & Bowen	13,090	June 12	122	2355
Water-closets, urinals, and lavatories. Vitreous earthenware	Potteries Selling Company	15,902	May 22	122	1372
Water-heaters	Eagle Water Heater Company	15,235	May 22	122	1371

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Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Water. Mineral	Wells, Lawrence and Gooch	18,766	May 15	122	1029
Water. Mineral	Sprudel Water Co	9,415	May 29	122	1689
Water. Mineral	Arondack Spring Company	13,067	May 29	122	1693
Water. Mineral	Apollinaris Company	14,310-12	May 29	122	1695
Water. Mineral	Maribel Mineral Springs Company	16,312	June 5	122	2038
Water. Mineral	Vossburg Lithia Springs Co	15,835	June 12	122	2360
Water. Mineral	L. M. Park	17,145	June 19	122	2661
Water. Natural lithia spring-	A. Schantz, Sr	2,032	May 22	122	1350
Water. Purified	A. Thumer	13,415	June 19	122	2655
Water. Soluble powder to soften	A. Schultes	10,028	June 19	122	2652
Waters. Natural mineral	J. Ries	17,996	June 19	122	2665
Waters. Table-	Crown Dental Laboratory	17,820	June 26	122	2976
Wax. Bite-	H-O (Hornby's Oatmeal) Company.	7,309-10	June 19	122	2647-8
Wheat. Cooked and flaked	"Force" Food Company	7,360	June 19	122	2648
Wheat. Cooked and flaked	McCart-Mosset Co	8,910	May 22	122	1358
Whiskies	Miller Bros	15,791	May 22	122	1372
Whiskies	Meadville, Pennsylvania Distilling Company.	4,639	May 1	122	306
Whiskies. Pure rye and malt	W. L. Weller & Sons	3,786	May 1	122	305
Whisky	T. E. O'Keefe	5,334	May 1	122	307
Whisky	M. Lange	8,312	May 1	122	310
Whisky	Gilliams, Jones & Co	9,587	May 1	122	312
Whisky	William H. Lee & Co	10,073	May 1	122	313
Whisky	J. F. Sinnott	12,840	May 1	122	317
Whisky	S. Hirsch & Co	15,638	May 1	122	326
Whisky	J. F. O'Toole	16,532	May 1	122	330
Whisky	Union Distlg. Co	18,535	May 1	122	335
Whisky	Brown-Forman Co	1,829	May 8	122	682
Whisky	Straus Gunst & Co	5,298	May 8	122	685
Whisky	O. Taussig	5,330	May 8	122	685
Whisky	E. Hyman & Son	5,440	May 8	122	685
Whisky	Clover Leaf Wine Co	11,508	May 8	122	692
Whisky	M. S. Lowenthal	12,090	May 8	122	693
Whisky	T J. Ryan	15,465	May 8	122	703
Whisky	S. Hirsch & Co	15,552	May 8	122	703
Whisky	E. Oppenheimer	16,193	May 8	122	705
Whisky	Showell & Fryer	16,799	May 8	122	708
Whisky	Albert M. Guzenheim Co	17,042	May 8	122	709
Whisky	Four Oaks Distilling Co	17,440	May 8	122	710
Whisky	P. Freiler	1,897	May 15	122	996
Whisky	A. A. Wolf & Co	1,915	May 15	122	996
Whisky	A. A. Wolf & Co	1,922	May 15	122	996
Whisky	A. Graf Distilling Co	3,068	May 15	122	997
Whisky	J. H. Friedenwald & Co	3,200	May 15	122	997
Whisky	Gooderham & Worts	7,746	May 15	122	1001
Whisky	B. S. Greil & Co	8,735	May 15	122	1001
Whisky	Sol Rauh & Sons Co	8,969	May 15	122	1002
Whisky	W. Schuman	11,780	May 15	122	1008
Whisky	H. J. Lebovitz	14,069	May 15	122	1012
Whisky	Ellison-Harvey Company	17,046	May 15	122	1021
Whisky	R. Steel	4,554	May 22	122	1352
Whisky	Jaeger Bros. Co	7,009	May 22	122	1355
Whisky	Gottschalk Co	11,866	May 22	122	1364
Whisky	J. R. Hogg	17,797	May 22	122	1379
Whisky	Bachtold & Ackermann	17,943	May 22	122	1380
Whisky	Schutz & Klawans	17,947	May 22	122	1380
Whisky	Bluthenthal & Bickart	3,351	May 29	122	1686
Whisky	Melchers & Efler	5,366	May 29	122	1689
Whisky	Bernheim Distilling Co	9,706	May 29	122	1689
Whisky	Luyties Brothers	10,240	May 29	122	1690
Whisky	Severn Liquor Company	15,175	May 29	122	1704
Whisky	Freiberg & Workum	18,441	May 29	122	1705
Whisky	J. J. Crowley	18,995	May 29	122	1708
Whisky	Union Distilling Co	258	June 5	122	2026
Whisky	J. H. Friedenwald & Co	3,210	June 5	122	2027
Whisky	D. Holzman & Co	3,361	June 5	122	2027
Whisky	Friedman, Keller & Co	3,799	June 5	122	2027
Whisky	M J. Bligh	3,812	June 5	122	2027
Whisky	Breen & Kennedy	5,172	June 5	122	2027
Whisky	S. Altmayer	5,965	June 5	122	2028
Whisky	Wm. Bergenthal Co	6,570	June 5	122	2028
Whisky	Mueller, Wathen & Kobert	7,187	June 5	122	2028
Whisky	Standard Distilling Co	10,024	June 5	122	2030
Whisky	W. W. Johnson & Co	13,313	June 5	122	2033
Whisky	Old McBrayer Distillery Co	14,067	June 5	122	2034
Whisky	W. Lanahan & Son	3,521	June 12	122	2343
Whisky	Edgewood Dist. Co	4,482	June 12	122	2343
Whisky	Columbia Distilling Co	5,180	June 12	122	2344
Whisky	T. E. O'Keefe	5,332	June 12	122	2344
Whisky	Hulman & Co	5,677	June 12	122	2344
Whisky	W. E. Seel	5,797	June 12	122	2344
Whisky	A. Berkowitz	6,272	June 12	122	2345
Whisky	Mueller, Wathen & Kobert	7,184-5	June 12	122	2345-6
Whisky	Mueller, Wathen & Kobert	7,188-9	June 12	122	2346
Whisky	Goodhart-Hartman Co	8,233	June 12	122	2347
Whisky	H. Rosenheim & Son	8,463	June 12	122	2348
Whisky	H. Popper & Bro	8,737	June 12	122	2348
Whisky	H. F. Corbin & Co	8,913	June 12	122	2349
Whisky	E. Block & Co	11,505	June 12	122	2352
Whisky	H. Campe & Co	12,642	June 12	122	2353
Whisky	Stone Hill Wine Co	13,256	June 12	122	2355
Whisky	Luyties Brothers	14,370	June 12	122	2357
Whisky	Geo. Benz & Sons	15,975	June 12	122	2361
Whisky	Eminence Distillery Co	16,001	June 12	122	2361
Whisky	T. Breanahan & Son	16,024	June 12	122	2361

Alphabetical list of trade-marks published during May and June—Continued.

Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Whisky	A. Bauer & Co	16,030	June 12	122	2361
Whisky	Swope & Mangold	17,248	June 12	122	2364
Whisky	Davless County Distilling Co	17,483	June 12	122	2365
Whisky	Swope & Mangold	18,371	June 12	122	2369
Whisky	C. H. Taeger	18,993	June 12	122	2372
Whisky	Cahn, Belt & Co	153	June 19	122	2641
Whisky	Erdreich Bros. & Marx	4,120	June 19	122	2644
Whisky	L. Lazarus	4,489	June 19	122	2644
Whisky	F. C. Renziehausen	6,361	June 19	122	2645
Whisky	A. Baetzhold	6,637	June 19	122	2646
Whisky	Bluthenthal & Heilbronner	6,660	June 19	122	2646
Whisky	Wm. Bergenthal Co	6,973	June 19	122	2647
Whisky	R. M. Rose Co	7,004	June 19	122	2647
Whisky	G. Cohn	7,711	June 19	122	2648
Whisky	Meyer Marx Co	8,181	June 19	122	2649
Whisky	B. J. Kohlman	8,226-7	June 19	122	2649
Whisky	Old Kentucky Distillery	8,244	June 19	122	2650
Whisky	Rosenfield Bros. & Co	8,452	June 19	122	2650
Whisky	J. Debar	8,500	June 19	122	2650
Whisky	F. Murphy & Co	8,739	June 19	122	2650
Whisky	M. L. Eppstein	8,935	June 19	122	2651
Whisky	Sol. Rauh & Sons Co	8,970	June 19	122	2651
Whisky	O. H. Kiefer	9,125	June 19	122	2651
Whisky	Harris, Johnson & Co	9,711	June 19	122	2652
Whisky	Chicago Distilling Co	10,044	June 19	122	2652
Whisky	P. Dempsey & Co	12,677	June 19	122	2654
Whisky	J. F. O'Toole	16,693	June 19	122	2660
Whisky	B. W. Le Compte	17,477	June 19	122	2663
Whisky	Union Distilling Co	122	June 26	122	2959
Whisky	Union Distilling Co	124	June 26	122	2959
Whisky	S. Block & Griff	3,795	June 26	122	2960
Whisky	P. J. Bowlin Liquor Co	8,624	June 26	122	2962
Whisky	Theobald and Son Co	8,925	June 26	122	2962
Whisky	Frankfort Distillery	9,011	June 26	122	2962
Whisky	Ullman Einstein Co	9,695	June 26	122	2963
Whisky	J. Spengler	10,039	June 26	122	2963
Whisky	Frankfort Distillery	12,226	June 26	122	2967
Whisky	Frankfort Distillery	12,252	June 26	122	2967
Whisky	Frankfort Distillery	12,254-5	June 26	122	2967
Whisky	Ellison-Harvey Co	17,158	June 26	122	2973
Whisky	Bachtold & Ackermann	17,942	June 26	122	2977
Whisky	A. Baum & Sons	18,130	June 26	122	2978
Whisky	Union Distl'g Co	19,550	June 26	122	2986
Whisky	John Power & Son	10,630	June 26	122	2964
Whisky. Irish	Sunny Side Distilling Co	2,595	May 15	122	997
Whisky. Pure rye	Gilliams, Jones & Co	9,060	May 15	122	1002
Whisky. Rye	Allmens Distilling Company	2,822	June 12	122	2343
Whisky. Rye	Greenlees Brothers	17,234	June 19	122	2662
Whisky. Scotch	Aermotor Company	13,653	June 12	122	2356
Windmills	J. Wile Sons & Co	10,067	May 1	122	312
Wine	I. Goldoft	4,136	May 8	122	684
Wine	J. F. O'Toole	16,571	May 8	122	707
Wine	California Wine Association	14,040	June 12	122	2357
Wine	California Wine Association	14,038	June 19	122	2652
Wine	G. H. Mumm & Co	14,155	June 26	122	2969
Wine. Champagne	G. H. Mumm & Co	17,087-8	June 26	122	2973
Wine. Champagne	Mono Vineyard & Wine Co	10,842	May 15	122	1005
Wines. Bottled	Broderick & Bascom Rope Co	19,373	June 26	122	2985
Wire rope	New Jersey Wire Cloth Company	19,069	June 19	122	2672
Wire. Woven and netted	Pacific Mills	18,881	June 26	122	2982
Wool and cotton-warp and cotton piece goods. Dyed and printed all-	Blodgett, Ordway & Webber	14,244	May 22	122	1368
Woolen batistes	J. Lonke	13,594	May 8	122	698
Woolen dress goods. Bolted	Beebe-Webber Company	16,338	May 8	122	706
Woolen piece goods	Beebe-Webber Company	16,339	May 22	122	1373
Woolen piece goods	Whitman & Barnes Manufacturing Company.	14,713	May 1	122	323
Wrenches	Coes Wrench Co	12,407	May 1	122	316
Wrenches. Adjustable screw	Jonas Brook & Bros	13,694	May 1	122	320
Yarn, sewing and crochet cotton. Cotton	Shaw, Jardine & Co	16,553	June 19	122	2659
Yarns. Cotton	McConnel & Co	16,554	June 19	122	2659
Yarns. Cotton	Dexter Yarn Company	1,995	June 26	122	2960
Yarns. Embroidery, knitting, and crocheting	R. Blankenburg & Co	1,270	May 1	122	304
Yarns. Woolen and worsted	National Distilling Co	6,605	May 15	122	1000
Yeast	Vienna Pressed Yeast Company	18,495	June 5	122	2043
Yeast	Vienna Pressed Yeast Company	18,812	June 26	122	2981
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